

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

**VARLEY SOLAR FARM, CROMHALL, GLOUCESTERSHIRE, GL12
8AJ**

On behalf of RES Group

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1. INTRODUCTION

- 1.1. This Construction Traffic Management Plan (CTMP) has been prepared by Pegasus Group on behalf of RES Group (the Applicant) in order to address the traffic and transportation matters associated with the construction of a new solar farm on Varley Farm, Gloucestershire. It has been prepared further to site visits on the 1st June 2022 and 31st August 2022.
- 1.2. This CTMP covers a proposal for the construction and operation of a Solar Photovoltaic (PV) Farm comprising modules, power inverter cabinets and transformer station with the potential to produce up to 25 megawatts (MW). Further details of the proposal and the technology used, together with the proposed site layout, are provided separately as part of the planning application. The proposed development is referred to as “Varley Solar Farm” within this report.
- 1.3. The proposed site comprises parcels of open agricultural land located on land at Varley Farm, south of Talbots End, Cromhall, Gloucestershire, GL12 8AJ, circa 5.5 kilometres east of Thornbury. The Local Highway Authority (LHA) is South Gloucestershire Council (SGC).

Scoping

- 1.4. Initial pre application advice was sought with a response provided by South Gloucestershire Council in July 2022 (ref: PRE22/O331). The Highways comments provided noted Talbots End would not be suitable to accommodate construction vehicles and as such alternative access routes should be considered. It was requested the application was supported by a Construction Environmental Management Plan including details of the construction period, anticipated traffic movements, type of vehicles accessing the site including swept path analysis and visibility splays as appropriate. This CTMP seeks to provide the information requested.
- 1.5. Taking on board the initial comments, a detailed Scoping Note setting out the preferred access and construction route option, including a detailed review of alternative accesses and the constraints of these routes, was submitted to South Gloucestershire Council (SGC) on the 21st of September 2022. The Scoping Note also set out the proposed content of this CTMP and likely trip generation for both the construction and operation phase of the development.
- 1.6. As part of this scoping, the relative merits of taking access along Talbots End, Farleigh Lane, the B4058 in two locations and via Wickwar Quarry were all considered. SGC responded confirming the suitability of the preferred access strategy via Farleigh Lane subject to the provision of additional information and suitable mitigation. Details of these comments and how they have been addressed are set out in **Section 3** below, which sets out the access proposals. SGC raised no concerns in relation to the proposed trip generation or content of the CTMP.
- 1.7. Access to the site during the construction and operational phases will be to the south of Talbots End. The construction route will utilise Farleigh Lane and, for larger vehicles, a construction route will run parallel to Farleigh Lane through adjacent agricultural land to the west, as explained in **Section 3** below.

Report Structure

- 1.8. This CTMP describes the arrangements that are proposed for the period of construction activities at the site and sets out the following:
 - i. Site access arrangements;
 - ii. Routing for construction traffic;
 - iii. Vehicle numbers, size and frequency; and
 - iv. Proposed mitigation, including condition surveys.
- 1.9. It will be the responsibility of the appointed contractor to comply with all statutory regulations and guidelines as appropriate, in relation to construction and movement activities.
- 1.10. The appointed contractors will be provided with a copy of this CTMP and will adhere to it as part of the planning consent. The CTMP will form part of the information provided as part of the construction personnel's on-site induction processes. The contact details of the contractor, including a 24-hour emergency contact number, and those of the highway department at South Gloucestershire Council will be exchanged before commencement of the works on the site.

2. SITE CHARACTERISTICS

Site Location and Description

- 2.1. The proposed site access is in Cromhall, Gloucestershire located circa 5.5 kilometres east of Thornbury and 2.5 kilometres southwest of Charfield. The site is bound by open agricultural land to the north, west and south, with Cromhall Village located to the northwest of the site. To the east, the site is bound by Breeden Wickwar Quarry. An existing agricultural track currently serves as the site access from Talbots End which is proposed to be improved to serve the Varley Solar Farm proposed site. This access track is predominantly concrete with a short section of dirt and aggregate at the northern extent where it meets Talbots End.
- 2.2. The site covers approximately 50.5 hectares of open agricultural land parcels. Most of which is divided by hedgerows or dirt tracks. The context of the local area, including points of interest referenced in the report, is provided on the Construction Traffic Route Plan appended at **Appendix A**.

Local Highway Network

Existing Site Access at Talbots End

- 2.3. Existing access to the site is currently provided from Talbots End, as shown at **Appendix A**, via an existing field entrance gate and dirt and concrete track which serves Varley Farm. The site access measures between three and four metres in width currently and accommodates agricultural vehicles. It is located south of Cromhall, approximately three kilometres from Junction 14 on the M5 and 5.5 kilometres east of Thornbury, Gloucestershire (as the crow flies).
- 2.4. The proposed route for construction traffic will be from the M5 Junction 14 and is articulated in more detail in **Section 4** below and utilises the B4509, the B4058, Farleigh Lane and Talbots End.

B4509

- 2.5. The B4509 is a single carriageway road subject to a 40mph speed limit which links Junction 14 of the M5 to the surrounding area, including the B4058 in the east. It presently serves as a route for Heavy Goods Vehicles servicing the nearby Breeden Wickwar Quarry and is also the signed HGV route to Tortworth Business Park. At a width of circa 6 metres, it has the capacity and precedent to serve industrial vehicles.

B4058

- 2.6. The B4058 is a single carriageway road subject to a 50mph speed limit decreasing to 30mph within the village of Cromhall and the vicinity of the site. The B4058 links to the B4509, Wotton Road and Churchend Lane to the north east and continues towards Bristol in the southwest. The B4058 presently serves as a route for Heavy Goods Vehicles servicing employment sites such as the nearby Breeden Wickwar Quarry. The roundabout between the B4509 and the B4058 has a small island and large central runover area

indicating it has been designed to regularly accommodate HGV traffic. It is therefore understood that the B4058 has the capacity and precedent to serve industrial vehicles.

Farleigh Lane

- 2.7. Farleigh Lane is an unmarked single lane carriageway road, subject to a 30mph posted speed limit, which routes between the B4058 and Talbots End. It has no other road links or properties accessed directly from it. Farleigh Lane measures at 4.35 metres at its narrowest point.

Talbots End

- 2.8. Talbots End is an unmarked, single carriageway, subject to a posted 30mph speed limit, which primarily serves nearby residences and agricultural vehicles. The width of Talbots End measures circa 4.5m with informal passing places, direct accesses and gravel verges provided intermittently along its length to facilitate two way traffic.

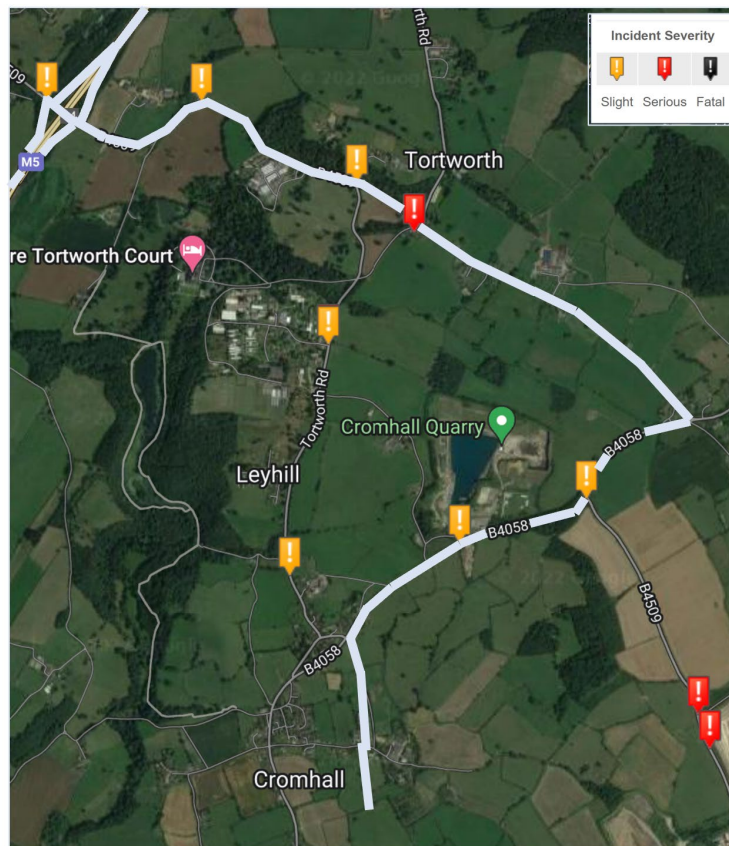
Public Rights of Way

- 2.9. Two Public Rights of Way (PRoW) route through this site, the locations of which are shown on **Appendix B**. The first PRoW routes east to west through the northern section of the site, providing a route between B4058 and Talbots End. This PRoW will be maintained during construction and operation within the proposed layout of the solar farm. A second PRoW briefly passes through the site at the south-eastern section of the site and routes down "Lake Lane" which runs along the majority of the eastern border of the site in a northwest/southeast alignment. This will also be maintained throughout construction and operation.

Highway Safety

- 2.10. Personal Injury Collision (PIC) data has been obtained for the local highway network in the most recent five-year period (2017-2021) from Crashmap. The study area covers the construction route between the M5 and the site (as further discussed in **Section 3** below), namely the B4509, the B4058, Farleigh Lane and Talbots End. The location and severity of PICs along the proposed construction route can be viewed at **Plate 2.1** below.
- 2.11. The study area also covers the village of Cromhall including Talbots End and the B4058 to the west of the site where potential access to the site was also considered. No personal injury collisions were recorded within Cromhall village.

Plate 2.1: PIC data on the proposed construction route (2017–2021)



- 2.12. The data demonstrates that there has been a total of five slight collisions and one serious collision within the last five years (01/01/2017 to 31/12/2021) along the proposed route. No collisions occurred within close vicinity of the site access, with no collisions recorded along Farleigh Lane or Talbots End.
- 2.13. Of the six incidents that occurred within the study area, two occurred on the B4058 and four occurred on the B4509, one of which occurred at the northbound exit of the M5 at Junction 14. All of the incidents are spread across the study area and there is no accident cluster associated with the recorded incidents.
- 2.14. The serious collision (on the 09/06/2018) occurred near Tortworth on the B4509 at the four-way intersection between Tortworth Road, Cromhall and the B4509, which involved two vehicles and resulted in one casualty.
- 2.15. Of the five slight collisions that occurred within the study area, three occurred on the B4509 and two occurred on the B4058.
- 2.16. It is concluded from the recorded PIC data that there is no evident collision pattern on the local highway network with no collision clusters in the vicinity of the site that would be exacerbated by the forecast development trips that are set out in **Section 5** below.

Summary

- 2.17. Based on the above desktop review and site visit observations, it is concluded that the local highway network is safe and suitable for the trips associated with the proposed development, with no existing highway safety issues identified within the vicinity of the site access or along the proposed construction route. The roads to and from the site are considered suitable to accommodate construction type vehicles, with the majority of the roads considered to be frequented by Heavy Goods Vehicles due to their classifications as B roads. Therefore, it is considered that the construction vehicles and operational traffic associated with the development can be accommodated.

3. DEVELOPMENT PROPOSALS AND SITE ACCESS ARRANGEMENTS

- 3.1. The development proposals associated with this application include the installation and operation of a renewable energy scheme comprising ground mounted photovoltaics which could produce approximately 25MW on land at Varley Farm, south of Talbots End, Cromhall, Gloucestershire. The development is referred to as Varley Solar Farm.

Primary Construction Route

- 3.2. The majority of construction traffic will utilise the Primary Construction route discussed in this section, with the exception of HGVs which diverge from the Primary Route on Farleigh Lane, as discussed in the section below. The route from the M5 Junction 14 to the northern extent of Farleigh Lane which will be utilised for all construction traffic has been illustrated in **Appendix C**.
- 3.3. All construction-related vehicles travelling from the northbound carriageway of the M5 will exit the highway at Junction 14 then turn right onto the B4509 eastbound. All construction-related vehicles travelling from the southbound carriageway of the M5 must exit the highway at Junction 14 then turn left onto the B4509 eastbound. From this point all construction traffic will follow the same route eastbound along the B4509. The B4509 is a single carriageway and subject to a 40mph speed limit.
- 3.4. Construction traffic will then proceed along this road until it reaches the roundabout servicing the B4509, B4058, Wotton Road and Churchend Lane circa three kilometres east of the M5 Junction 14. At the roundabout, construction traffic will take the third exit onto the B4058, which is a single lane carriageway subject to a 40mph speed limit. From this point, construction traffic will continue south along the B4058 for circa 1.8km before turning left onto Farleigh Lane at the northern extent of the village of Cromhall.
- 3.5. All construction traffic will be required to route via the M5 and Cromhall along the route set out above. HGV traffic shall not utilise Tortworth Road which connects the B4509 with Cromhall village as this route has a 7.5 tonne weight restriction. Based on site observations, much of the proposed access route appears to be frequented by HGV traffic in relation to existing employment sites such as Breedon and Wickwar Quarry. As a result, road width and turning space is anticipated to be adequately accounted for between the Strategic Highway Network and B4058 within Cromhall along the proposed access route.
- 3.6. LGVs and all other non-HGV-related construction traffic are then proposed to route through the entirety of Farleigh Lane. These vehicles will then turn right onto Talbots End, before turning immediately left into the site entrance in an 'S' manoeuvre. The Primary Construction Route from the top of Farleigh Lane to the site access is illustrated in **Appendix A**. These vehicles will not be materially larger than current users of Farleigh Lane and so mitigation works are not considered necessary.
- 3.7. Vehicles exiting the site will utilise the routes described above but in reverse. LGV and other non-HGV vehicles will utilise the Primary Construction Route in reverse, from the site access to the M5 Junction 14.

- 3.8. The available junction visibility at the existing Farleigh Lane/ B4058 priority junction has been considered to demonstrate the suitability of the proposed construction route.
- 3.9. Visibility drawings have been prepared at the Farleigh Lane/ B4058 junction. The first drawing demonstrates that a visibility of 2.4 x 43m can be achieved in accordance with the posted speed limit (30mph) and Manual for Streets included at **Appendix D**. It is however acknowledged that the junction is location near where the speed limit increases and vehicles could be travelling over 30mph. In the interest of further demonstrating the suitability of the access the second drawing included in **Appendix D** demonstrates that a visibility of 2.4m x 120m can be achieved in accordance with DMRB and a design speed of 70kph (40mph). During scoping correspondence with highways, SGC confirmed that:
- "The required visibility at the junction of Farleigh Lane and the B4058 can be achieved. It may be necessary to control parking in the visibility splay."*
- 3.10. Details of the temporary control of parking in the visibility splay are set out within the package of proposed mitigation measures set out below.

HGV Bypass Construction Route

- 3.11. During scoping, concerns were raised by SGC regarding the use of Farleigh Lane for large HGVs noting that road widening to accommodate the swept path of these vehicles could affect the hedge root system. SGC also noted tree canopies may need to be raised and that no passing places were shown.
- 3.12. A further site visit was undertaken which identified potential pinch points at the southern extent of Farleigh Lane. At its narrowest the highway (including verge) measured 4.35m with barn walls and hedges bounding the highway.
- 3.13. In order to avoid the narrowest points of Farleigh Lane and prevent the requirement for mitigation work on existing vegetation and structures, Heavy Goods Vehicles (HGV) will utilise an access track which routes parallel to Farleigh Lane through adjacent farmland. This forms the HGV Bypass Construction Route discussed below which will be utilised by rigid trucks and articulated vehicles which are unable to utilise Farleigh Lane appropriately.
- 3.14. The route from the M5 Junction 14 to the top of Farleigh Lane, will be the same as the Primary Construction Route utilising the B4509 and B4058 to Farleigh Lane, as illustrated in **Appendix C**. HGV traffic will not be permitted to utilise Tortworth Road which connects the B4509 with Cromhall village as this route has a 7.5 tonne weight restriction.
- 3.15. Heavy Goods Vehicles will then turn left onto Farleigh Lane as per the Primary Construction Route. However, 160m south of the junction HGVs will turn right onto the new bypass track, turning off Farleigh Lane. The bypass track which is circa 330m in length and 4m in width would then continue parallel to Farleigh Lane in the adjacent field before continuing between the existing farm buildings. South of the farm buildings vehicles will cross Talbots End to enter the site before joining the existing agricultural access track to the south of Talbots End, as shown on the Construction Traffic Route Plan SK04 included as **Appendix A**.
- 3.16. HGVs will use the HGV Construction Route in reverse, from the site access to the M5 Junction 14.

- 3.17. The proposed bypass track and existing agricultural tracks will accommodate the largest and heaviest vehicles that are anticipated to access the site. Passing places are proposed at intervals along the proposed bypass track to allow vehicles to pass without the requirement to reverse onto the public highway.
- 3.18. The construction of the access track would require the removal of a farm access gate and trimming back of a section of vegetation to facilitate vehicles turning off Farleigh Lane onto the access track. This route would allow for vehicles to bypass the narrowest sections of Farleigh Lane and avoid trees with low hanging branches. All vegetation will be retained where possible, trimming back to the core branches in favour of removing vegetation entirely. Where necessary, verge protection will also be provided in the form of temporary matting.
- 3.19. The Farleigh Lane bypass track is anticipated at this point to be constructed of gravel (surface source) over crushed rock (capping). This will be compacted but will be permeable to a certain extent.
- 3.20. Vehicle swept path analysis has been undertaken for the largest vehicle associated with the construction of the solar panels, a 16.5m x 2.55m articulated lorry and is appended as **Appendix E**. Passing bays have been provided to ensure that vehicles are not reversing back onto Farleigh Lane. It is however understood that construction vehicles and deliveries will also utilise rigid trucks. The tracking demonstrates access is achievable in a safe and suitable manner for the most onerous HGVs along the HGV Bypass Construction Route. If any minor road widening is required between Farleigh Lane and the HGV bypass it will be constructed of gravel (surface source) over crushed rock (capping). This will be compacted but will be permeable to a certain extent.
- 3.21. All vehicles have been adequately assessed to ensure that they are able to pass under all existing overhead obstacles, including overhead lines without the need for additional works. The overhead powerlines have been measured at nine metres above the road on Farleigh Lane and is therefore appropriate for the vehicle using this section of Farleigh Lane. HGVs are not anticipated to pass under any overhanging tree canopies when utilising the Farleigh Lane bypass and so mitigation regarding tree canopy heightening is not deemed to be necessary. Any smaller construction related vehicles which will utilise the full length of Farleigh Lane will not be materially larger than current users of the road.

Proposed Construction Site Vehicular Access

- 3.22. Construction traffic will access the Application Site via the proposed routes set out above.
- 3.23. The existing access to the site is served at Talbots End via a gated agricultural track to the south. Within the site, the exiting agricultural track is a combination of gravel and concrete. It is proposed to widen the existing access and access track to accommodate vehicles performing an 'S' manoeuvre from the construction track or Farleigh Lane to the north depending on the size of vehicle.
- 3.24. The access track will be widened to the south of Talbots End allowing vehicles to pass off the public highway and also provide a waiting area to allow vehicle to wait off the public highway if vehicles are approaching. This track will be retained as existing in terms of sections of concrete and compacted gravel. Improvement works will include the temporary

removal of gates and fencing in addition to an amended and, where required, track widening using compacted gravel.

Pedestrian Access

- 3.25. The existing two PRow in the vicinity of the proposed Varley Solar Farm site will be maintained at all times during the construction and operation of the site along their existing alignments. It is proposed that a fence shall be erected around the construction site to act as a barrier between the PRow and the construction work.

Construction Compound and Internal Routing

- 3.26. No parking by contractors, visitors or delivery vehicles will be permitted on any roads within the vicinity of the site or the access tracks leading to the site compound during the construction phase. Visitors will be advised of the parking arrangements in advance of travelling to the site. The site manager will monitor that parking is taking place within the designated area within the compound at regular intervals throughout the day.
- 3.27. The internal access roads associated with the Solar Farm will be accessed via Talbots End which serves the existing Varley Farm access track, adjoining the northern site boundary, and the proposed track adjacent to Farleigh Lane. The existing access and gate will be widened to accommodate the swept path of HGVs accessing the site from the north, allowing for two vehicles to pass to the south of Talbots End outside the public highway.
- 3.28. Within the Solar Farm site, the layout will include four-metre-wide access tracks through the site allowing for the movement of construction and maintenance vehicles. These will be completed during the initial stages of construction. The only haul road which will be required will be the route parallel to Farleigh Lane which forms the HGV Construction Route set out above. The tracks will be made to withstand the loads of HGVs and plant and reduce the propensity of debris being taken on to the adjacent access track and highway. Internal access tracks are anticipated to be constructed from gravel (surface course) over crushed rock (capping).
- 3.29. Wheel washing facilities will be provided in the form of a portable automated high-pressure washer with motion sensors to conserve water. All construction vehicles will therefore have to exit through the wheel wash area and as such will reduce the spread of mud and dirt onto the local highway network.

Operational / Maintenance Site Access

- 3.30. Following the construction period, operational visits and maintenance vehicles will either utilise Talbots End directly from the B4058 or utilise Farleigh Lane in its entirety without requiring the use of the access track bypass. Vehicles will enter the site at the existing agricultural access to the south of Talbots End. Operational trip generation is anticipated to comprise 15 vehicles accessing the site per year, this equates to 30 two way trips. Overall trip generation of this magnitude would not have any significant impact on the local highway network and no mitigation is considered necessary, in regards to the operational phase.

- 3.31. South Gloucestershire Council indicated within their initial scoping response that Talbots End "would be suitable for the occasional servicing vehicle once the solar farm has been constructed." The proposed trip generation of 15 vehicles per year is considered to represent 'occasional' access.

Proposed Mitigation Works

- 3.32. A comprehensive package of mitigation measures will be implemented in order to minimise the development impact on the local highway network. It is proposed, if necessary, that Farleigh Lane could be subject to temporary road closures during short periods of the construction period where particularly large vehicles are scheduled or during the peak construction period. Considering that no properties or land are accessed directly from Farleigh Lane and that a diversion utilising Talbots End and the B4058 will adequately accommodate for the temporary closure of this route, it is not considered that a road closure would have a material effect on public access.
- 3.33. If deemed necessary, the proposal could also temporarily restrict roadside parking on the B4058 in order to improve visibility at the B4058 / Farleigh Lane Junction. Any temporary measures would also only be in effect for the construction phase, or part of the construction phase, if and when pursued.
- 3.34. The contractor that is appointed to carry out the development works will introduce measures to minimise the effect on the local highway network resulting from construction activities. These will be managed by the Project Manager and the Site Manager.
- 3.35. The Site Manager will assume responsibility for the operation of the site. The details of the Site Manager will be provided to the Local Highway Authority in advance of any works being carried out.
- 3.36. Mitigation measures will be anticipated to include a variety of measures to be agreed between the contractor and Local Highway Authority in due course. This could typically include:
- i. Construction signage will be placed at strategic locations along the routes for vehicles approaching from the north, in accordance with The Traffic Signs Manual: Chapter 8 (2020). Delivery drivers, contractors and visitors will be provided with a route plan in advance of delivering to site to ensure that vehicles follow the proposed routes. SGC confirmed during scoping that temporary signage indicating the presence of the construction traffic access. Construction signage could include a combination of the follow typical examples;

- o Sign Ref: 2701 – Yellow directional signage at junctions allowing the route stating 'Solar Farm Traffic';



Example signage – Direction to a new development site

- Sign Ref: 7301 – Red signage stating ‘Caution Construction Traffic Turning’ at the site access and egress; and



Example signage – Temporary Construction Traffic Signage

- Sign Ref: 7305 – ‘Works Traffic’ directional signage along B4058, B4509, Farleigh Lane and Talbots End.



Example signage P7305 from DfT Traffic Signs Manual Chapter 8 part 3

- ii. A compound area for contractors set up on-site, including appropriate parking spaces. Contractors and visitors will be advised that parking facilities will be provided on-site in advance of visits and that they should not park outside of designated parking provisions;
- iii. The site will be secured at all times with appropriate security fencing;
- iv. There will be a requirement for engines to be switched off when not in use;
- v. Wheel washing facilities will be provided in the form of a portable automated high-pressure washer with motion sensors to conserve water. All construction vehicles will therefore have to exit through the wheel wash area and as such will reduce the spread of mud and dirt onto the local highway network;
- vi. A delivery schedule will be implemented in order to avoid two vehicles meeting on the access track. Suitable communication will be also be established between vehicles and the Site Manager to further manage vehicles to prevent them meeting on the track;
- vii. Passing places have been located along the access track adjacent to Farleigh Lane and within the site to facilitate two way traffic should vehicles be unavoidable within the delivery schedule such that vehicles will not have to reverse onto the public highway;
- viii. A construction route strategy, providing signage for all construction traffic will be provided, subject to a suitably worded planning condition, to direct construction vehicles associated with the development which will be installed along the route. All signs installed as part of the construction phase will be temporary and placed outside of visibility splays;
- ix. Spraying of areas with water supplied as and when conditions dictate to prevent dust; and

- x. Vehicles carrying water material off-site are to be sheeted.

Access Strategy Summary

- 3.37. The proposed site access is served by an existing gated agricultural track to the south of Talbots End. The site access will be amended as necessary to accommodate the proposed construction vehicles with the temporary widening of the gate and access track. All vehicles will approach the site from M5 Junction 14 heading east of the B4509 then south at the roundabout along the B4058 to Cromhall village. All vehicles will then turn left onto Farleigh Lane.
- 3.38. The Primary Construction Route will route vehicles south along the full length of Farleigh Lane. At its southern extent vehicles will turn right onto Talbots End then immediately left into the site access. For HGVs, in order to avoid the narrowest sections of Farleigh Lane, a construction access track will be provided parallel to Farleigh Lane accessed off Farleigh Lane circa 160m south of the B4058 junction. HGVs will cross Talbots End into the site, re-joining the Primary Construction Route and existing track within the site.
- 3.39. Vehicles exiting the site will utilise the same route in reverse to exit the site towards the M5 Junction 14.
- 3.40. The local highway network is considered to be suitable for the traffic movements associated with the development proposals.
- 3.41. Due to the high number of weight restricted carriageways on the surrounding road network, deviation from the disclosed route by construction traffic will not be permitted.
- 3.42. Operational and maintenance traffic will utilise Talbots End or Farleigh Lane as agreed with SGC.
- 3.43. Suitable mitigation will be provided in order to minimise the effects of the proposed development on the local highway network including appropriate signage, site compounds and facilities, passing places and persons.

4. VEHICLE TRIP ATTRACTION

Construction Phase

- 4.1. It is anticipated that the construction phase shall have a six to ten month duration, with the peak number of deliveries occurring in the first three months. This period includes the preparation of the site, including the installation of the access, erection of fencing, assembly and erection of the PV strings, installation of the inverters and grid connection.
- 4.2. It is likely construction workers will arrive and depart outside of the traditionally weekday peak hours as standard. Deliveries are to be scheduled between the hours of 8am to 6pm over a six-day work week on Monday to Saturday.
- 4.3. The construction period will include the use of HGVs to bring the equipment onto the site and this will be strictly managed to ensure that vehicle movements are controlled and kept to a minimum. The maximum sized vehicle to access the site is anticipated to be a 16.5m x 2.55 metre articulated HGV, however smaller HGVs, rigid trucks or LGVs will be used where possible.
- 4.4. Deliveries to the site shall be reported to the site manager and will be made on the smallest possible vehicles for each item(s) of plan or material to ensure that vehicles can manoeuvre safely. It is however acknowledged that the use of larger vehicle will in some instances allow additional materials to be transported together reducing the overall number of trips to the site. The components which are required to construct the Solar Farm Park will arrive by 16.5 metre articulated vehicles or smaller.
- 4.5. There is the potential that a small number of abnormal load deliveries will be required, namely for the harmonic filter prefab and the DNO building. These abnormal loads will be managed on a case-by-case basis where appropriate and kept to a minimum where possible. This will include notifying the relevant authorities of the proposed vehicles, routing and schedule, details of any temporary mitigation such as road closures and the provision of escort vehicles. Abnormal loads will use the same construction route as HGVs routing from the M5 Junction 14 to Farleigh Lane, utilising the access track to approach the site.
- 4.6. Based on the proposed construction programme, it is expected that there will be a maximum of 25-30 deliveries per day, 10 of which will be HGV trips, accessing the site during the beginning of the construction period when deliveries occur (one to three months). In addition to deliveries, it is anticipated there could be up to **50** construction personnel working on site concurrently. It is anticipated that this will equate to 25-30 two-way trips as not all workers will drive to the site due to car sharing which is considered to be likely and therefore the number of cars/ vans accessing the site is likely to be fewer than the number of staff.
- 4.7. This level of traffic during the temporary one to three months of the delivery period of the construction phase is not considered to be material and it is considered that this will not have a material effect on the safety and operation of the local highway network.
- 4.8. In summary the following construction traffic delivery movements could be associated with the construction of the Solar Farm, as set out in **Table 4.1**, for the whole construction period.

Table 4.1 – Forecast Construction Traffic Delivery Movements – Varley Solar Farm

Activity	Total Number of Deliveries (Two-way)
Mountain frame delivery	50
Module delivery	150
Cabinet delivery	10
Cable delivery	25
Plant equipment delivery	20
Gravel / hard core material delivery	270
Fencing / CCTV delivery	15
Total	540

Operational Phase

- 4.9. It is anticipated that the site will operate predominately by remote access and only visited on an occasional basis with minimal effect on the surrounding local network. It is anticipated that there will be 15 LGVs accessing the site per year, equating to 30 two-way LGV trips per year in the operational phase. The existing access is more than adequate for the operational phase.
- 4.10. HGVs are not anticipated to be required, unless in the event of a replacement of a major component.
- 4.11. There will be sufficient space within the site to allow for operational vehicles and service vehicles to enter, manoeuvre and exit the site in a forward gear.

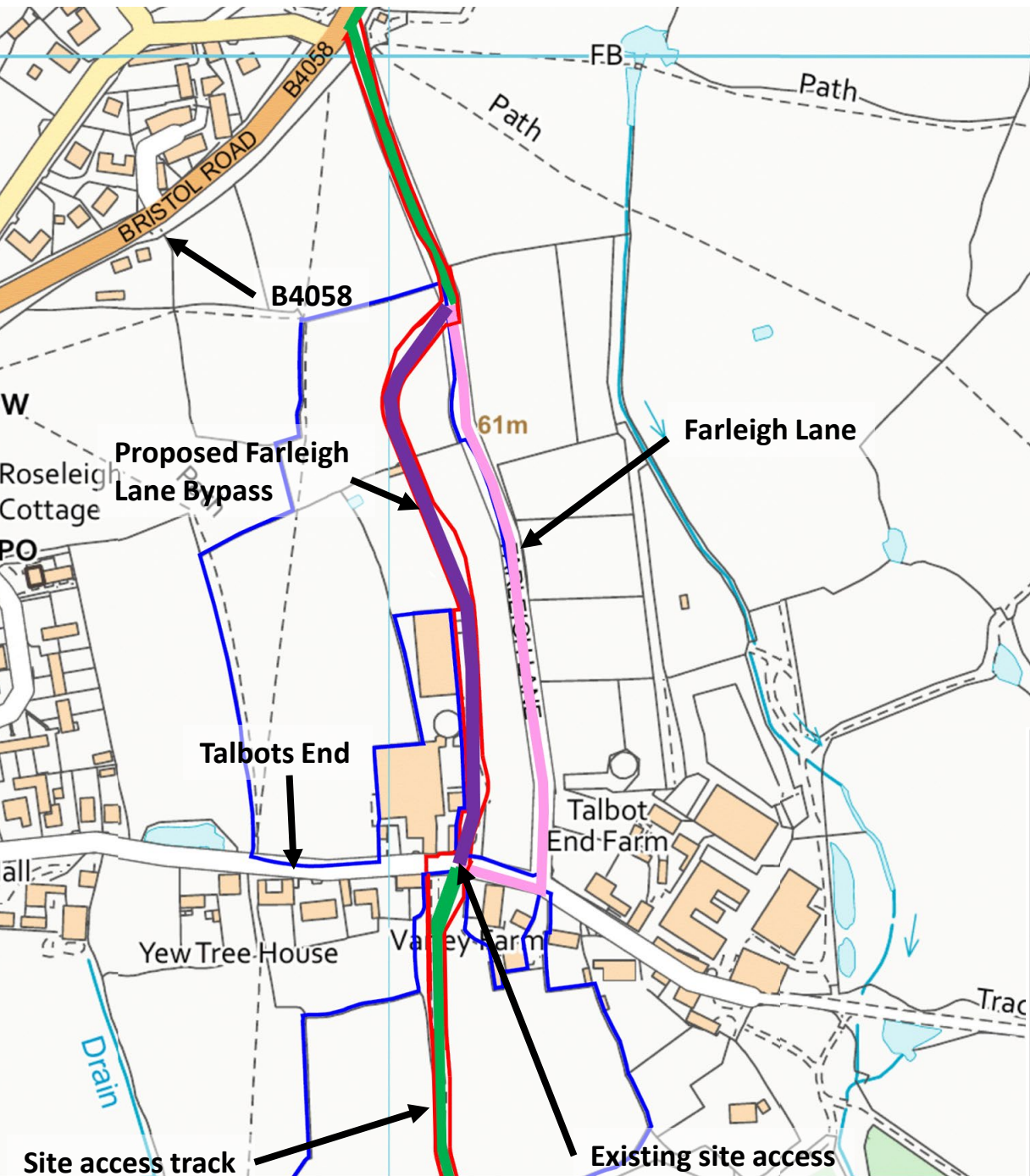
5. CONDITION SURVEY

- 5.1. If considered necessary by South Gloucestershire Council a pre-commencement walk-over condition survey could be carried out with Local Highways Officers on the northern section of Farleigh Lane to be used by construction traffic and where construction traffic which cross over on Talbots End to assess the baseline condition of the adopted highway before construction activities commence.
- 5.2. The survey would incorporate photographic records as appropriate. This would be followed by a further condition survey with Highways Officers with a further photographic record covering the same extent at the end of construction activities, in order to identify and agree remedial work relating to any damage reasonably attributable to construction activities.

6. CONCLUSION

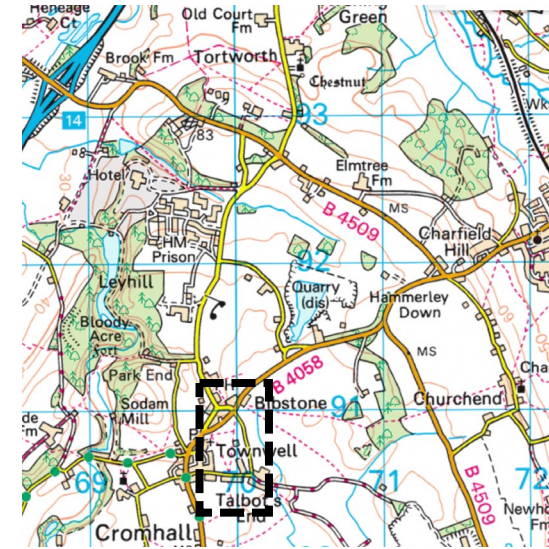
- 6.1. This Construction Traffic Management Plan (CTMP) has been prepared by Pegasus Group on behalf of RES Group to provide transport and highways advice to support a renewable led energy scheme on land to the west of Cromhall, Gloucestershire. The CTMP covers the installation and operation of a Solar Farm comprising ground mounted photovoltaics which could produce 25MW.
- 6.2. Access to the site is proposed via the existing farm access on Talbots End following minor improvement works. Construction vehicles would route from the M5 J14 along the B4509 and B4058 to Farleigh Lane. All LGVs and non HGV traffic will utilise Farleigh Lane
- 6.3. The Primary Construction Route will route vehicles south along the full length of Farleigh Lane. At its southern extent vehicles will turn right onto Talbots End then immediately left into the site access. For HGVs, in order to avoid the narrowest sections of Farleigh Lane, a construction access track will be provided parallel to Farleigh Lane accessed off Farleigh Lane circa 160m south of the B4058 junction. Both of these routes from Farleigh Lane to the site access are provided at **Appendix A**. HGVs will cross Talbots End into the site, re-joining the Primary Construction Route and existing track within the site. The routes to and from the site from the Strategic Road Network are generally on B roads already frequented by HGVs with the exception of Farleigh Lane, therefore the Construction Traffic Route Plan detailed in the report is considered appropriate. This route is shown in **Appendix C**.
- 6.4. Tracking for the largest construction vehicle anticipated to be associated with the development proposals has been shown to be achievable in a safe and suitable manner at **Appendix E**. Visibility splays have been provided at **Appendix D** to demonstrate that the Farleigh Lane junction with the B4058 Bristol Road has sufficient visibility for construction vehicles to utilise in a safe manner.
- 6.5. The development is anticipated to generate up to 25–30 deliveries per day (10 of which will be HGVs) during the peak of the construction phase for up to three months. The total construction period will be six to ten months.
- 6.6. Operational and maintenance traffic will utilise Talbots End or Farleigh Lane as agreed with SGC. The development will generate up to 15 vehicles per year, equating to 30 two-way trips per year during the operational phase.
- 6.7. Details regarding the construction programme and delivery vehicles types have been provided by RES Group based on its experience in supporting the development of similar sites elsewhere in the UK and abroad.
- 6.8. It is considered that the proposed access arrangement is suitable to accommodate the low number of construction related trips and operational trips associated with the Varley Solar Farm development.
- 6.9. Suitable mitigation will be provided in order to minimise the effects of the proposed development on the local highway network including appropriate signage, site compounds and facilities and passing places.
- 6.10. In summary, it is considered that there are no valid highway or transportation reasons which would prevent the proposed development of the site.

**APPENDIX A – CONSTRUCTION TRAFFIC ROUTE PLAN –
TOP OF FARLEIGH LANE TO SITE ACCESS**




KEY

- ALL CONSTRUCTION TRAFFIC
- PRIMARY CONSTRUCTION ROUTE
- HGV CONSTRUCTION ROUTE
- LANDOWNER'S BOUNDARY
- DEVELOPMENT BOUNDARY



Context Plan

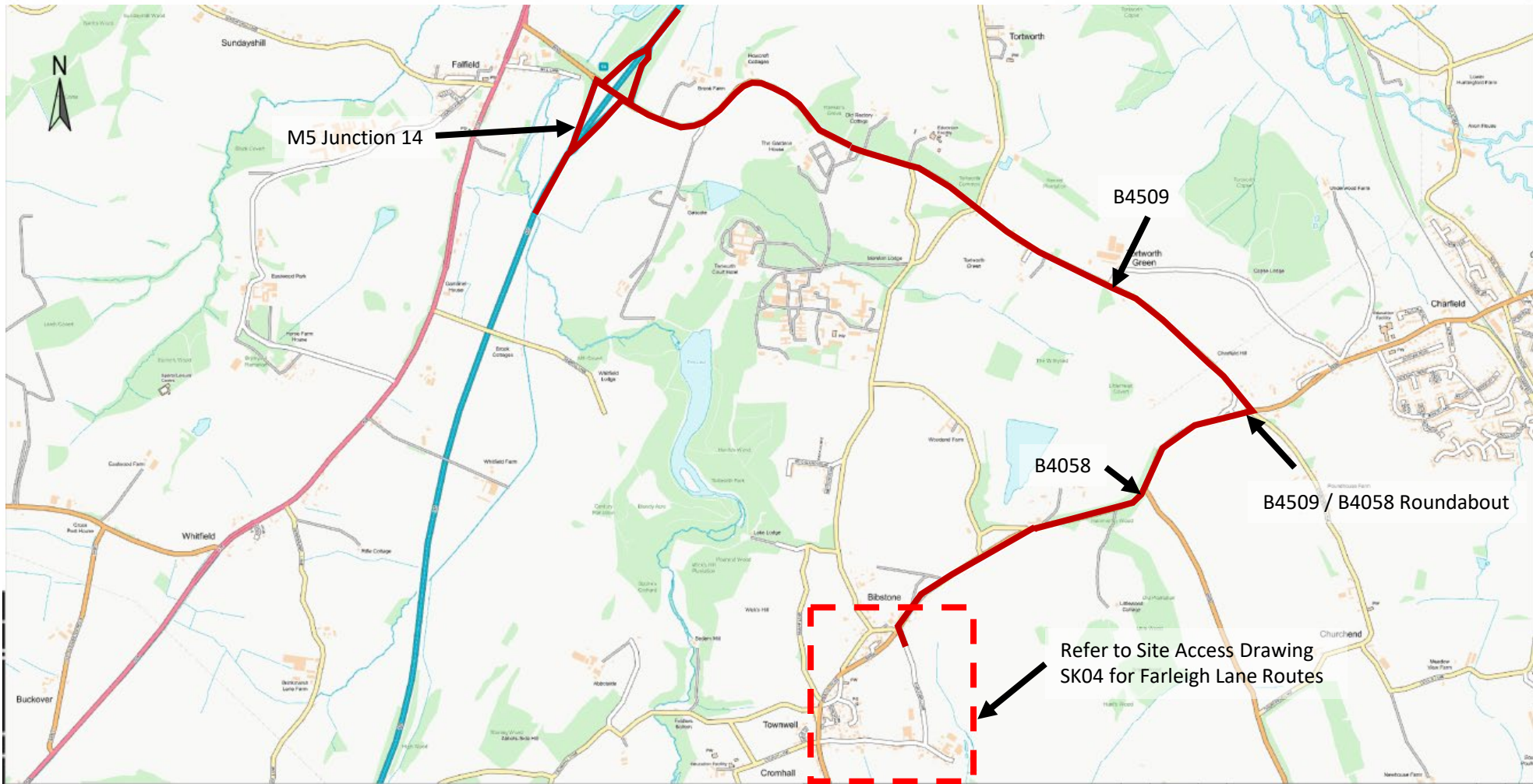
Fifth Floor, 1 Newhall Street, Birmingham B3 3NH 0121 308 9570 www.pegasusgroup.co.uk			REV	DATE	BY	DESCRIPTION	CHK	APD
CLIENT:	RES GROUP		SCALE @ A0:		CHECKED:		APPROVED:	
PROJECT:	VARLEY SOLAR FARM		NTS		KE		KE	
TITLE:	CONSTRUCTION TRAFFIC ROUTE PLAN – FARLEIGH LANE		DATE:		DESIGN-DRAWN:		DRAWING-STATUS:	
			21/10/2022		JK		SKETCH	
			PROJECT No:		DRAWING No:		REV:	
			P22-0915		SK04		-	

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APPENDIX B – PUBLIC RIGHT OF WAY PLAN


APPENDIX C – CONSTRUCTION TRAFFIC ROUTE PLAN – M5 JUNCTION 14 TO TOP OF FARLEIGH LANE

W10.6.1.1\DATA\PROJECTS\P22\22-0915_RES_VARLEY SOLAR FARM\05 PG WORK\05 DRAWINGS\06 TR\02 SKETCHES\P22-SK03RV1 - ROUTING PLAN.DWG



Key

 Construction Traffic Route between M5 Junction 14 and Farleigh Lane (All vehicles)

 For Construction Traffic Route between B4058 and site refer to drawing SK04 Construction Traffic Route Plan – Farleigh Lane

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CLIENT: RES GROUP				SCALE @ A3: NTS		CHECKED: KE		APPROVED: KE	
PROJECT: VARLEY SOLAR FARM				DATE: 21/10/22		DESIGN-DRAWN: JK		DRAWING-STATUS: SKETCH	
TITLE: CONSTRUCTION TRAFFIC ROUTE PLAN				PROJECT No: P22-0915		DRAWING No: SK03		REV: -	

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APPENDIX D – VISIBILITY SPLAYS AT FARLEIGH LANE

KEY:

--- VISIBILITY SPLAY

43m VISIBILITY SPLAYS
SHEET 1 OF 2



0	JM				First Issue
ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
PURPOSE				COORDINATES	
PRELIMINARY				OSGB 1936	
SCALE				DATUM	
1:500 @A3				N/A	
LAYOUT DRAWING				T-LAYOUT NO	
N/A				N/A	
PROJECT TITLE					
VARLEY FARM					
DRAWING TITLE					
FARLEIGH LANE / BRISTOL ROAD VISIBILITY SPLAYS					
RES DRAWING NUMBER					REV
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KEY:

--- VISIBILITY SPLAY



120m VISIBILITY SPLAYS
SHEET 1 OF 3



0	JM				First Issue
ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
PURPOSE				COORDINATES	
PRELIMINARY				OSGB 1936	
SCALE			DATUM		
1:1,000 @A3			N/A		
LAYOUT DRAWING				T-LAYOUT NO	
N/A				N/A	

PROJECT TITLE
VARLEY FARM

DRAWING TITLE
**FARLEIGH LANE / BRISTOL ROAD
VISIBILITY SPLAYS**

RES DRAWING NUMBER	REV
04886-RES-ACC-DR-PE-002	0

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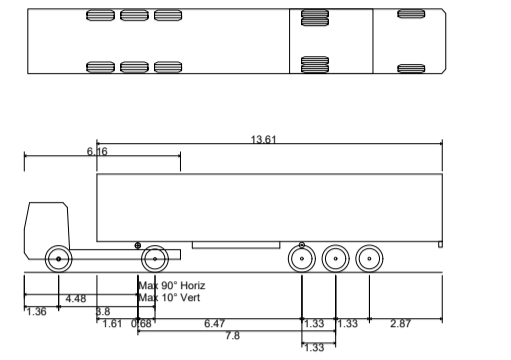


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APPENDIX E – SWEPT PATH ANALYSIS

- KEY:**
- DEVELOPMENT BOUNDARY
(OUTSIDE EDGE OF LINE DENOTES BOUNDARY)
 - NEW ACCESS TRACK
 - EXISTING ACCESS TRACK
 - VEHICLE BODY/EXTENTS
 - VEHICLE WHEEL EXTENTS

ANALYSIS CARRIED OUT FOR:

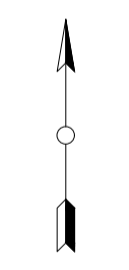


FTA Design Articulated Vehicle (2016)	16.480m
Overall Length	2.550m
Overall Width	3.370m
Overall Body Height	0.515m
Min Body Ground Clearance	2.470m
Max Track Width	3.000m
Lock to lock time	6.600m
Kerb to Kerb Turning Radius	



SITE LOCATION - NOT TO SCALE

OVERVIEW SHEET 1 OF 3



ISSUE	FG	VM	BD	2022-11-29	First Issue
DRAWN	CHD	APPD	DATE	REVISION NOTES	
PURPOSE	PERMITTING			COORDINATES OSGB 1936	
SCALE	1:500		@ A1	DATUM	N/A
LAYOUT DWG	N/A		T-LAYOUT NO.	N/A	

PROJECT TITLE
VARLEY FARM SOLAR

DRAWING TITLE
FIGURE 15 SWEPT PATH ANALYSIS

RES DRAWING NUMBER	04886-RES-ACC-DR-PT-002	REV	1
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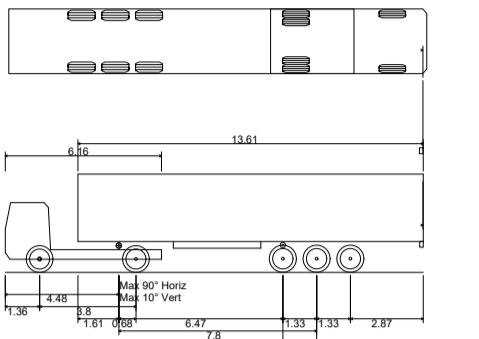


ARTICULATE VEHICLE TRAVELING FROM B4058 TO SOLAR FARM SITE

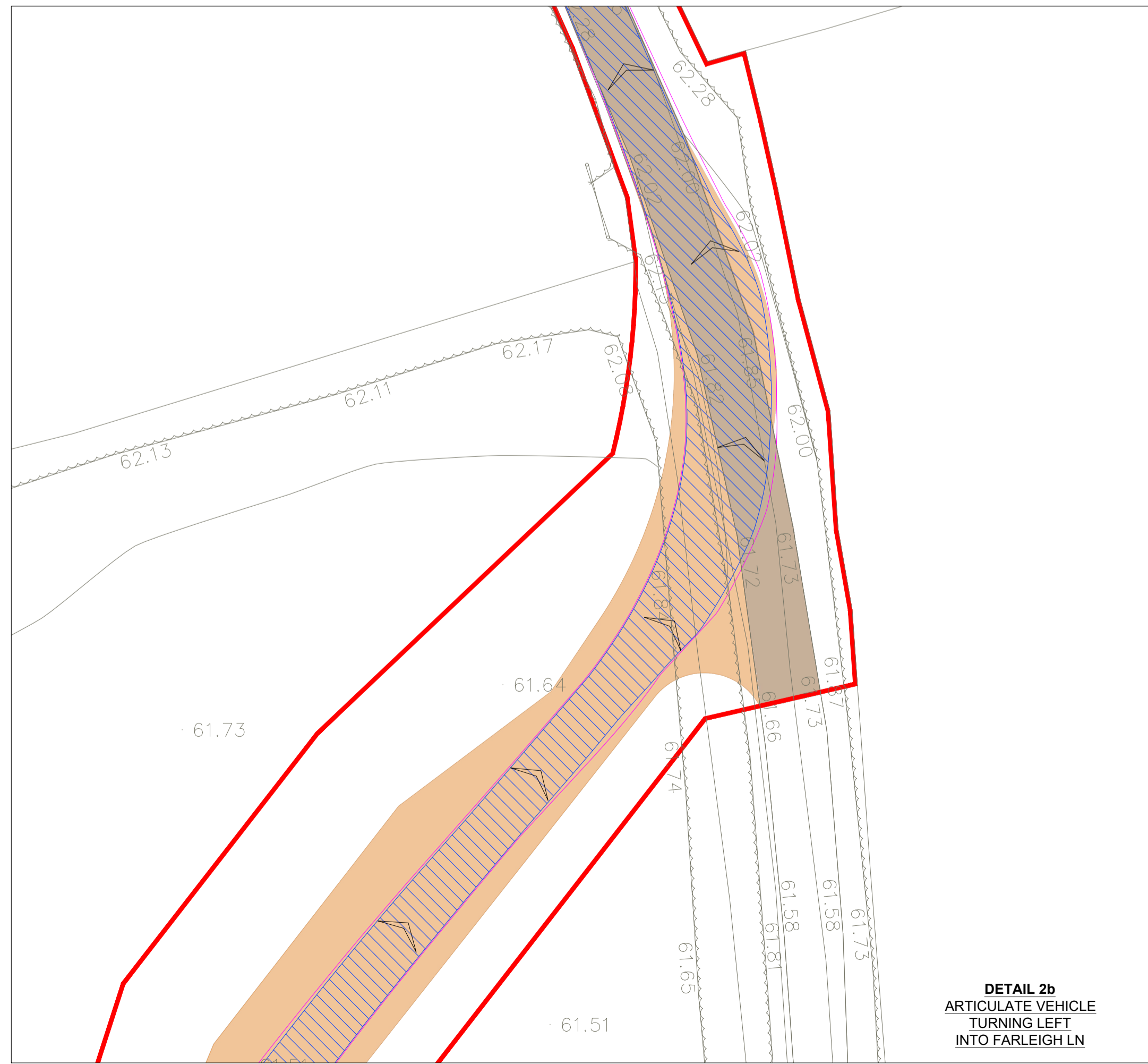
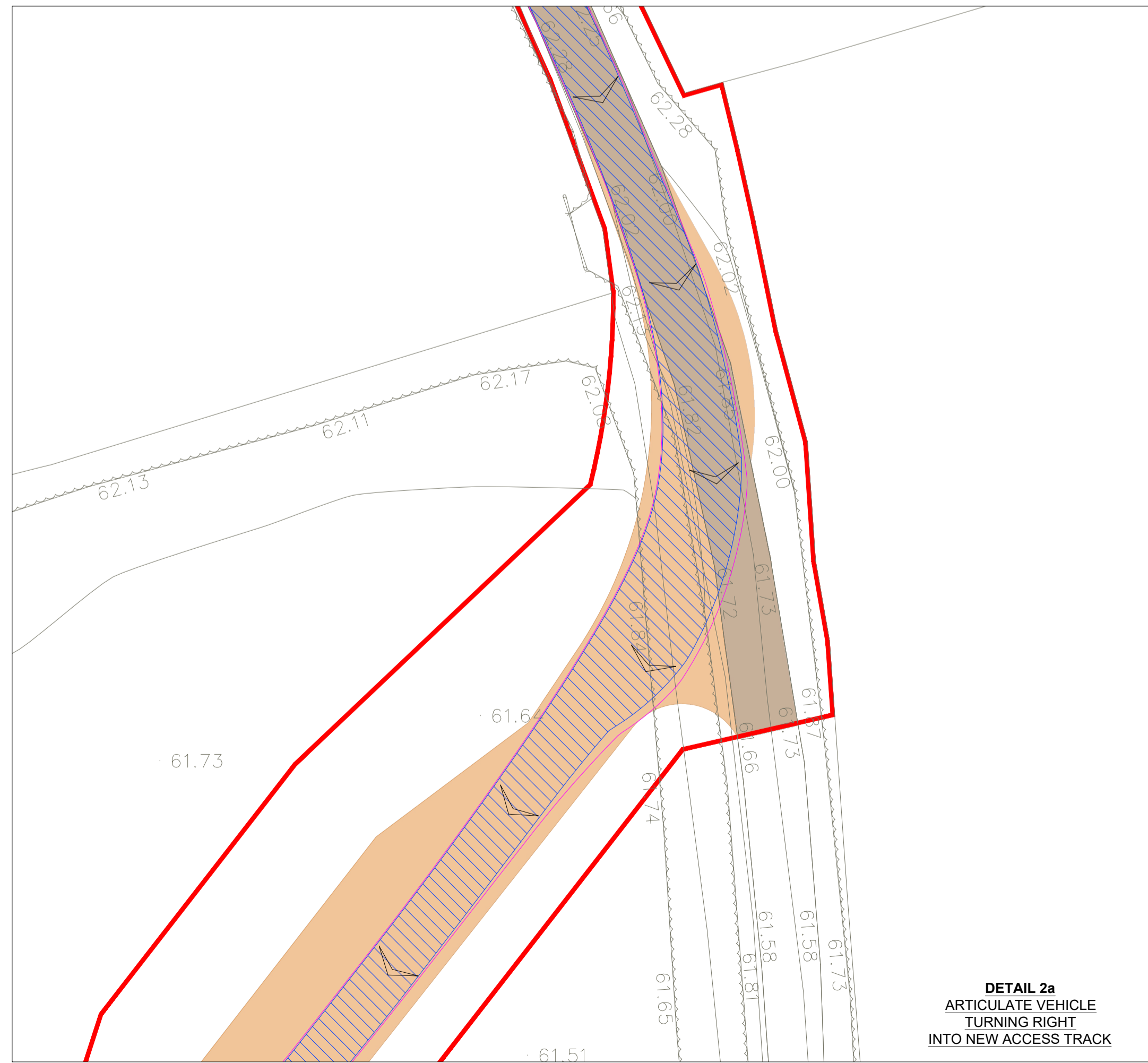
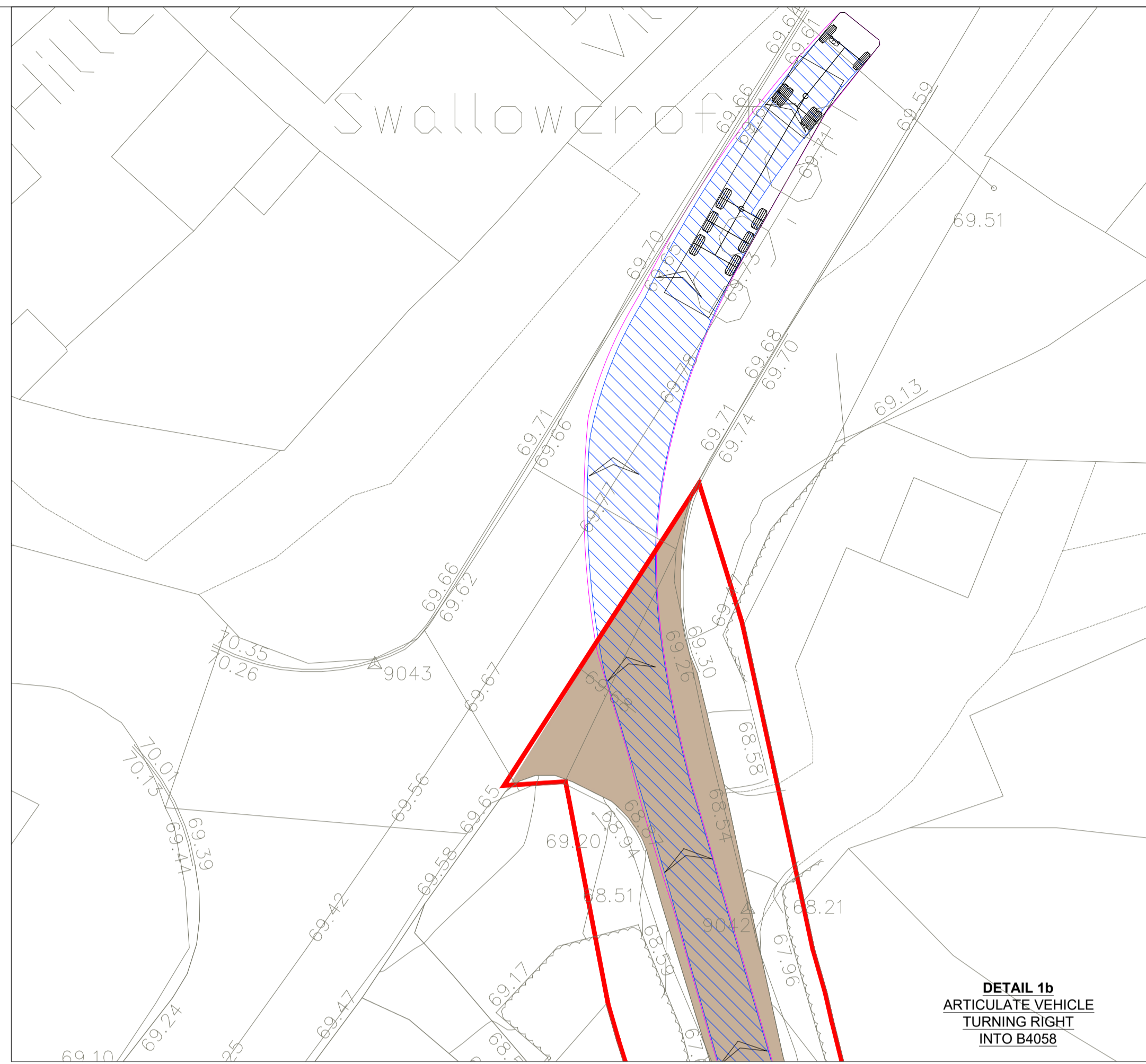
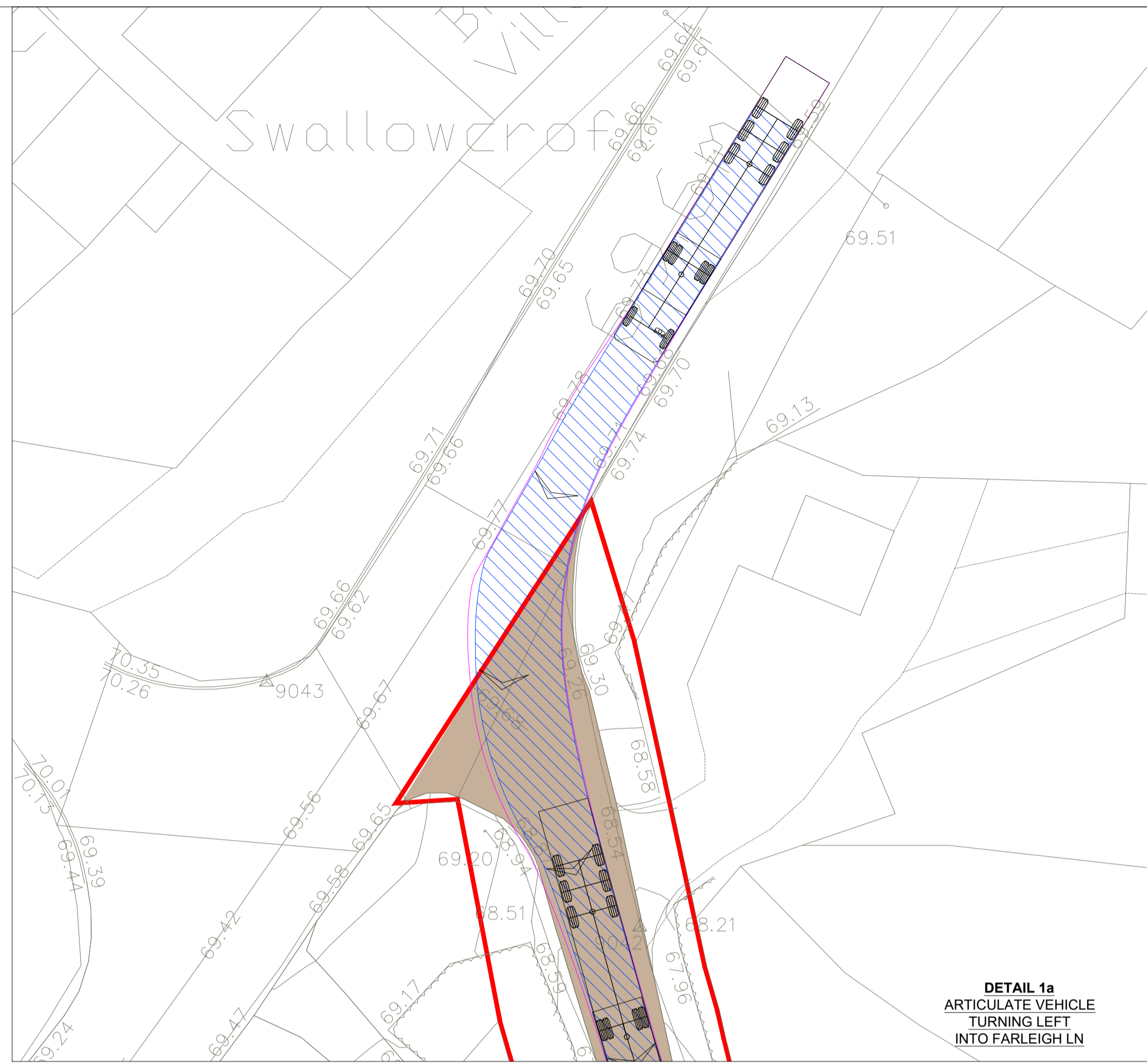
KEY:

- DEVELOPMENT BOUNDARY
(OUTSIDE EDGE OF LINE DENOTES BOUNDARY)
- NEW ACCESS TRACK
- EXISTING ACCESS TRACK
- VEHICLE BODY/EXTENTS
- VEHICLE WHEEL EXTENTS

ANALYSIS CARRIED OUT FOR:



FTA Design Articulated Vehicle (2016)	16.480m
Overall Length	2.550m
Overall Width	3.370m
Overall Body Height	0.515m
Min Body Ground Clearance	2.470m
Max Track Width	3.005m
Lock to lock time	6.600m
Kerb to Kerb Turning Radius	



SITE LOCATION - NOT TO SCALE

SHEET 2 OF 3



1	FG	VM	BD	2022-11-29	First Issue
ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
PURPOSE					COORDINATES
PERMITTING					OSGB 1936
SCALE				DATUM	N/A
1:200 @ A1					
LAYOUT DWG					T-LAYOUT NO.
N/A					N/A

PROJECT TITLE
VARLEY FARM SOLAR

DRAWING TITLE
FIGURE 15 SWEPT PATH ANALYSIS

RES DRAWING NUMBER	04886-RES-ACC-DR-PT-002	REV	1
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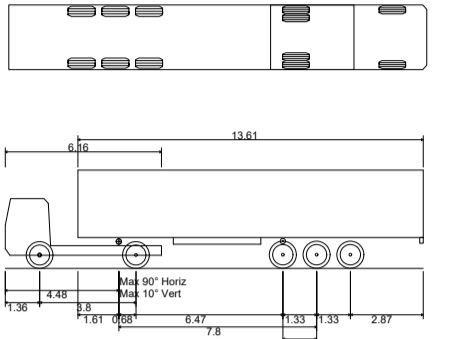


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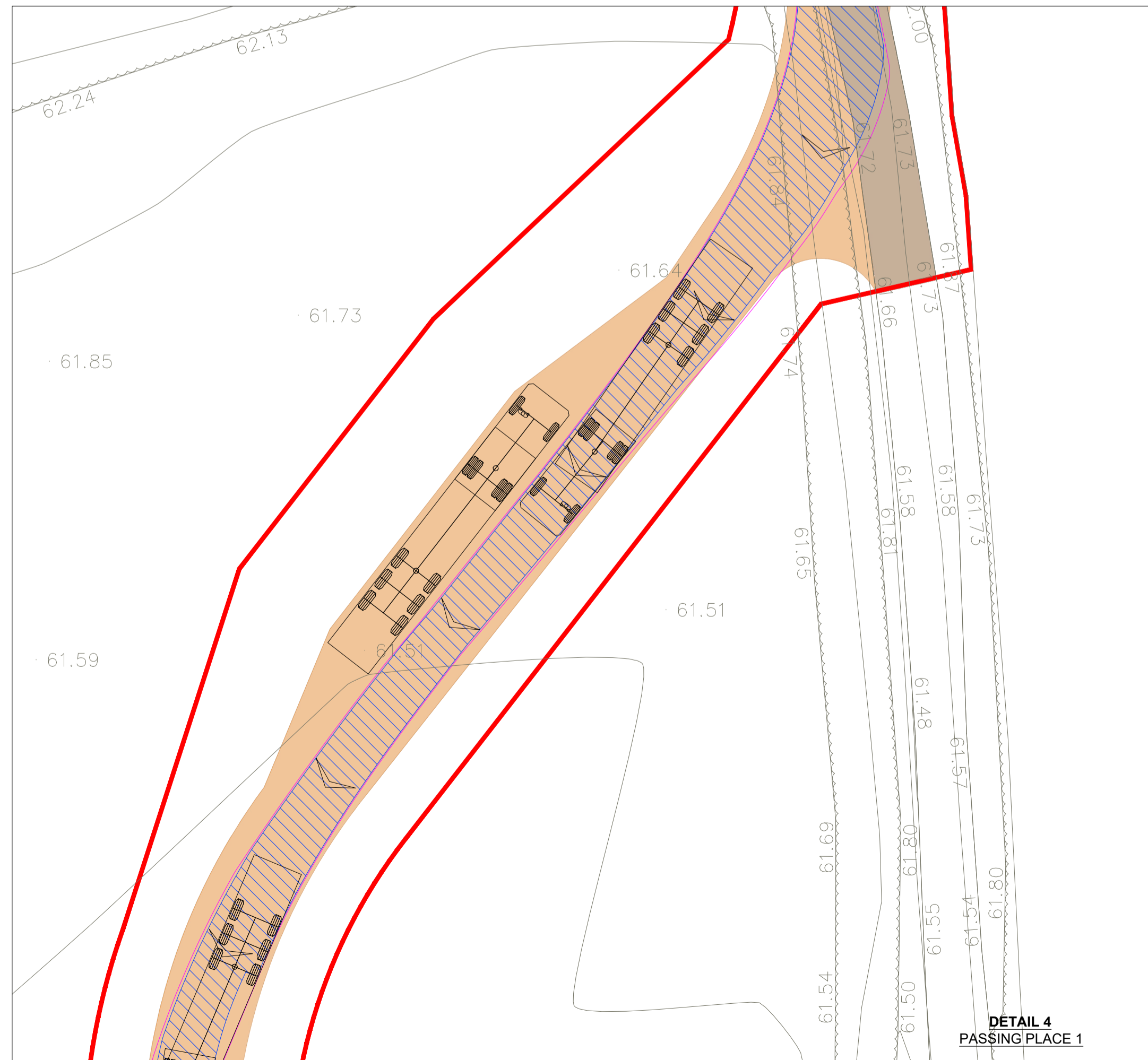
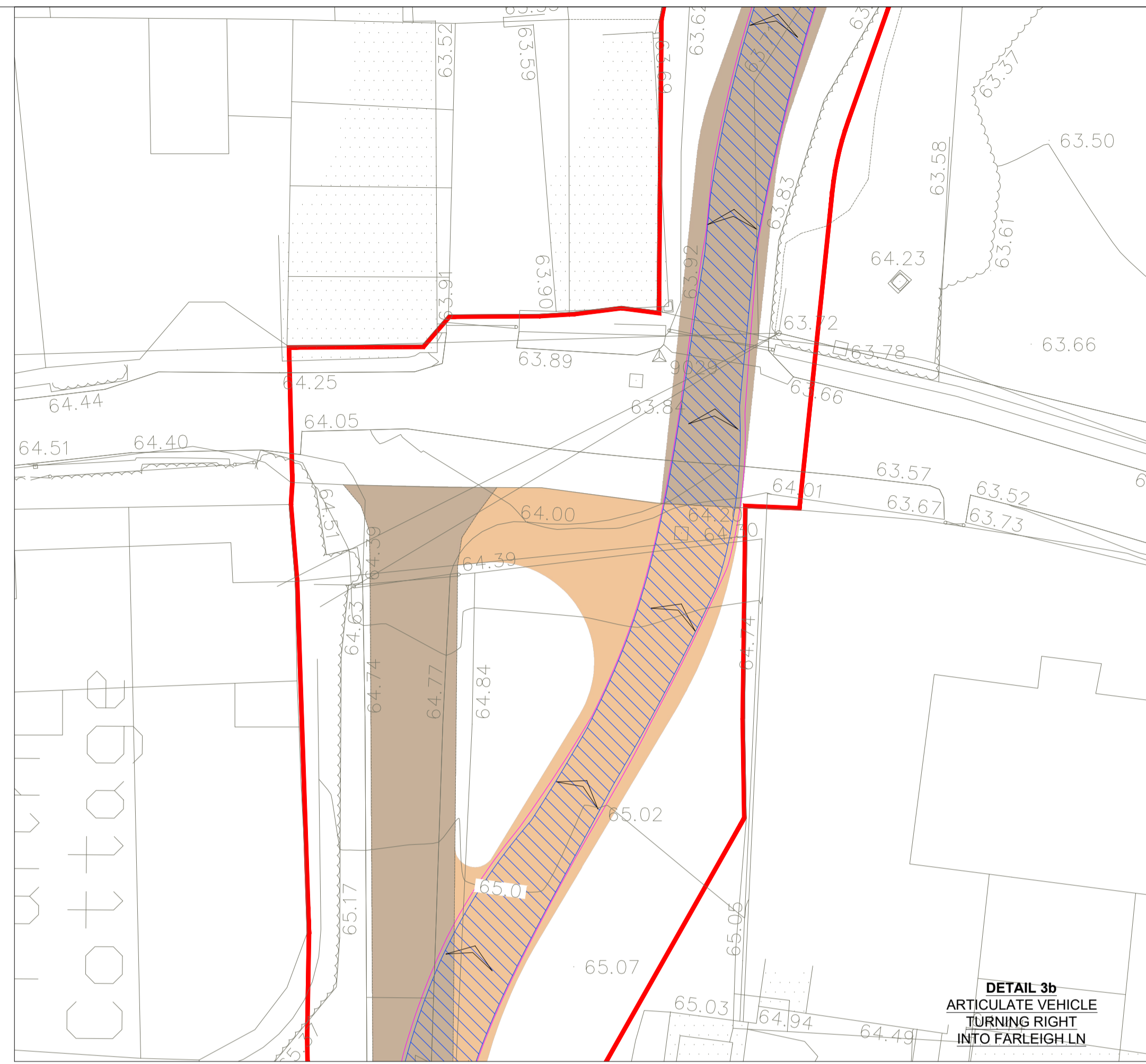
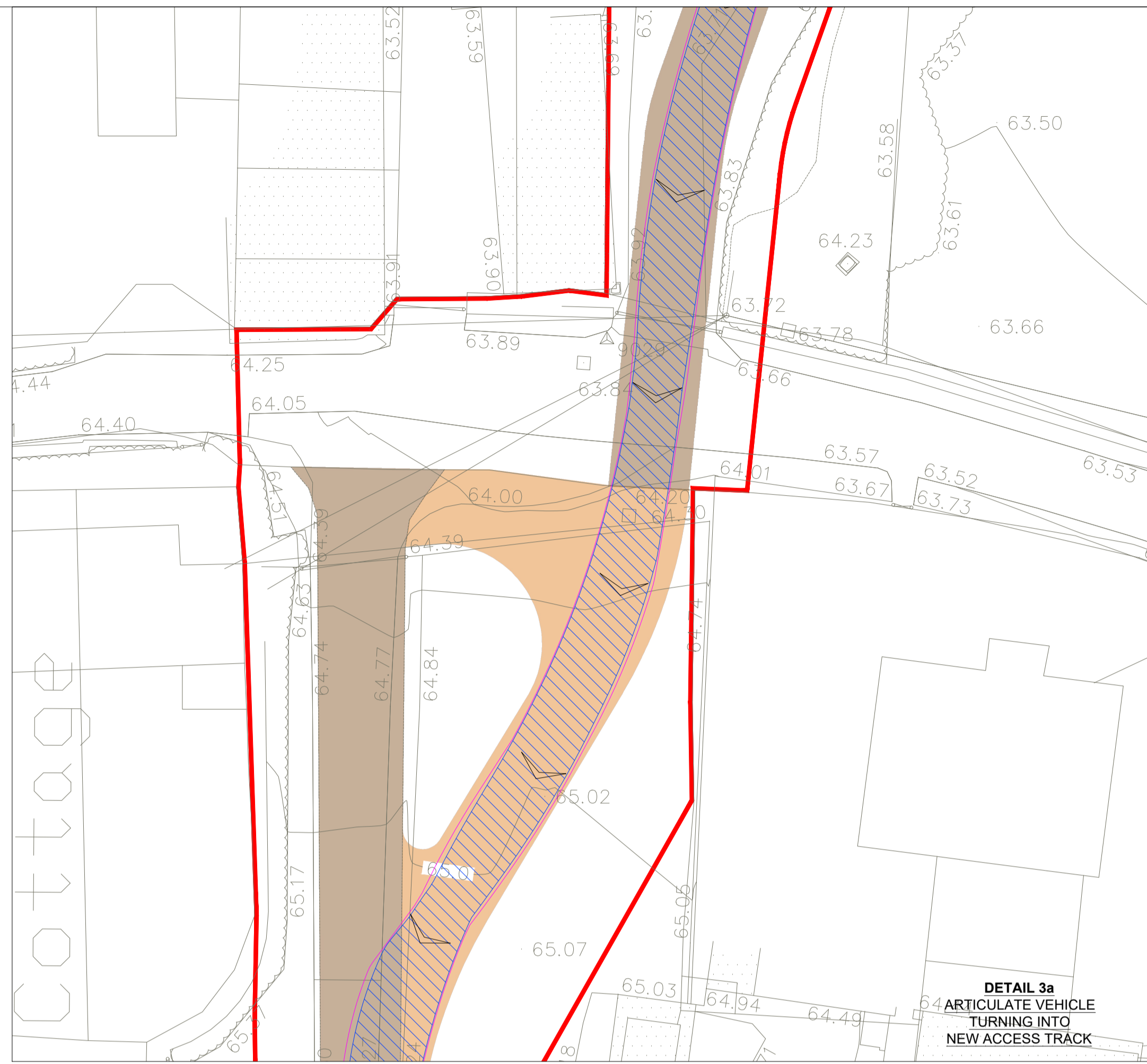
KEY:

- DEVELOPMENT BOUNDARY
(OUTSIDE EDGE OF LINE DENOTES BOUNDARY)
- NEW ACCESS TRACK
- EXISTING ACCESS TRACK
- VEHICLE BODY/EXTENTS
- VEHICLE WHEEL EXTENTS

ANALYSIS CARRIED OUT FOR:



FTA Design Articulated Vehicle (2016)	16.480m
Overall Length	2.520m
Overall Width	3.270m
Overall Body Height	0.515m
Min Body Ground Clearance	2.270m
Max Track Width	3.005m
Lock to lock time	6.600m
Kerb to Kerb Turning Radius	



SITE LOCATION - NOT TO SCALE

SHEET 3 OF 3



1	FG	VM	BD	2022-11-29	First Issue
ISSUE	DRAWN	CHKD	APPD	DATE	REVISION NOTES
PURPOSE					COORDINATES
PERMITTING					OSGB 1936
SCALE				DATUM	N/A
1:200 @ A1					
LAYOUT DWG					T-LAYOUT NO.
N/A					N/A

PROJECT TITLE		VARLEY FARM SOLAR	
DRAWING TITLE		FIGURE 15 SWEPT PATH ANALYSIS	
RES DRAWING NUMBER		04886-RES-ACC-DR-PT-002	
		REV	1

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