



GRIDSERVE Electric Heavy Goods Vehicle (eHGV) Hub Baldock Services

Transport Statement

September 2024

GRIDSERVE
ELECTRIC HEAVY GOODS VEHICLE (eHGV) HUB
AT BALDOCK SERVICES

GRIDSERVE

TRANSPORT STATEMENT

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1.0 INTRODUCTION

- 1.1 Bryan G Hall has been appointed by GRIDSERVE Sustainable Energy Ltd (GRIDSERVE) to prepare a Transport Statement (TS) to accompany a full planning application for the construction of an Electric Heavy Goods Vehicle (eHGV) charging hub with associated works on land at Extra Baldock Services.
- 1.2 The land on which the eHGV charging hub site is proposed is currently part of a HGV parking area within Baldock Services. It is therefore clear that the principle of HGV parking on this part of the site is already well established. A site location plan is attached at **Appendix BGH1**.
- 1.3 Access to the site from the A1(M) and the A507 Great North Road will be the A1(M) Junction 10 grade separated junction (Stotfold Interchange). The junction provides access to the A507 Great North Road, which in turn provides access to Baldock Services site via the A507 Great North Road/Baldock Services roundabout. The route from the Strategic Road Network (SRN) already accommodates HGV movements to and from Baldock Services.
- 1.4 The eHGV charging hub proposals are for the provision of a total of 6 High Powered charging (DC) (350kW) spaces which will operate 24 hours a day, 7 days a week. The eHGV charging bays will replace the southernmost 9 of the HGV spaces in the existing row of 22 (3 further parallel HGV spaces are provided at the Services). These are all in one row and are the southernmost bays in this row. A proposed site layout plan for the charging hub is included at **Appendix BGH2**.
- Background to the eHGV Charging Hubs**
- 1.5 GRIDSERVE is the lead partner among 33 companies that have come together to deliver the transition to net zero transport. The role as project lead involves managing and delivering the Electric Freightway project and sourcing the vital data needed to inform further progress towards eHGV adoption. GRIDSERVE will develop, deliver and operate the eHGV charging hubs at motorway service areas as well as assisting in providing charging facilities at project partner depots thereby providing charging facilities both pre and post-journey, as well as enroute.
- 1.6 The project is funded by consortium members, as well as the Department for Transport and Innovate UK backed Zero Emission HGV and Infrastructure Demonstrator programme. The industry-leading project aims to lay the foundations for the biggest and most advanced eHGV charging network in the world, reshaping how goods are transported across the UK ahead of the 2040 zero emission HGV

deadline. The heavy goods sector currently accounts for just under 20% of the UK's transport CO₂ emissions, with a potential saving of 18.6 Mt CO₂e – the same as powering two million homes for a year – if the 400,000 HGVs on the UK's roads today were switched to electric.

- 1.7 The 'Electric Freightway' project will run until 2030 with a fleet of eHGVs on the road supported by a new network of charging infrastructure at motorway service areas, truck stops and commercial depot charging stations. During this time, the project aims to catalyse the uptake of much larger numbers of eHGVs using Electric Freightway charging infrastructure, together with the rollout of additional charging infrastructure for eHGVs in many more locations.
- 1.8 In the initial two year procurement phase of the project, eHGV charging hubs will be installed at both motorway services areas and truck stops to support long distance travel on major trunk roads in the UK. The project also includes more than 10 commercial depot charging locations for eHGVs. In total, over 200 chargers, each capable of delivering 350kW, will be installed. The new public charging infrastructure will be supplied by 100% net zero energy to ensure that fleets are charged with net zero carbon energy.
- 1.9 Around 140 eHGVs will initially be brought into fleets by UK-based companies to use the new network, with multi-national and small businesses collaborating side-by-side. Data collection will run for five years to collate valuable insights into the electrification of HGVs which will support the ongoing transition to net zero.
- 1.10 Following this introduction, this TS is set out as follows:
- Section 2.0** describes the location of the site and the surrounding highway network;
 - Section 3.0** includes details of the proposed development and provides a description of the access arrangements;
 - Section 4.0** describes the impact of the proposed development in terms of the expected traffic generation associated with the site; and
 - Section 5.0** provides a summary of the report and sets out the conclusions which have been reached.

2.0 THE SITE AND HIGHWAY NETWORK

The Site

- 2.1 Baldock Services is located to the northeast of Junction 10 of the A1(M), approximately 1.8 kilometres to the east of Stotford and 3.0 kilometres to the north of the centre of Baldock. It is bound to the north and east by agricultural land; to the south by the A507; and to the west by the A1(M). A site location plan showing the proposed eHGV charging area within the overall services site is attached at **Appendix BGH1** and indicated within Figure 1.1 below.

Figure 1.1 – Site Location



- 2.2 The proposed eHGV charging hub site is currently utilised as an area of HGV parking within the northern part of the Baldock Services site. A total of 25 HGV parking spaces are provided, as well as 10 coach spaces and 6 trailer spaces. As noted earlier, it is therefore clear that the principle of HGV use of this part of the site is well established.

- 2.3 Access to the Baldock Services site from the wider highway network is provided from the roundabout junction with the A507, at the southern boundary of the site. Access to the eHGV charging hub area will be gained by utilising the existing access roads within the Services site, which already accommodate HGV movements.

Highway Network in the vicinity of Baldock Services

- 2.4 In terms of the wider network in the vicinity of the site, the A507 forms the western and southern arms of the Baldock Services access roundabout. The southern arm runs in a broadly north to south direction and provides access to Baldock Town Centre. The western arm runs in a broadly north west to south east direction and connects the Services to Stotfold, Henlow and Shefford.
- 2.5 Footway facilities are provided on the eastern side of the A507 southern arm of the site access roundabout and there are dropped kerbs providing safe pedestrian links between the Services and Baldock Town.
- 2.6 Around 150 metres to the west of the Services access roundabout, the A507, which is a dual carriageway over this section, meets the A1(M) Junction 10 at a grade separated, priority controlled junction providing access to/from both the A1(M) motorway and the A507 Great North Road. Immediately to the north of the site, the A1(M) becomes the A1, the difference being that the A1(M) to the south is an upgrade to a section of the A1. The A1(M) motorway and A1 dual carriageway form part of the Strategic Road Network (SRN) and run in a broadly north-west to south-east alignment past the Baldock Services.
- 2.7 To the north-east, the A1 provides access to areas in the north of the UK including Peterborough, Doncaster, Leeds, Newcastle and Edinburgh. To the south-west of Junction 10, the A1(M) provides access to southern areas of Hertfordshire, meeting with the M25 around 38 kilometres to the south-west of the site. From this point, the A1 then continues 5 kilometres to the south, towards London.

3.0 THE PROPOSED DEVELOPMENT

- 3.1 The eHGV charging hub proposals are for the provision of 6 High Powered charging (DC) (350kW) spaces which will operate 24 hours a day, 7 days a week. The eHGV charging bays will replace 9 of the HGV spaces in the existing row of 22 (3 further parallel HGV spaces are provided at the Services). The proposed site layout plan is included at **Appendix BGH2**.

Vehicular Access

- 3.2 As described earlier, Baldock Services is accessible from the A1(M) and the A507 Great North Road from Junction 10 of the A1(M), via the A507 and an existing three arm roundabout junction. Once within Baldock Services, access to the proposed eHGV charging hub will be via the main circulatory route within Baldock Services. Access to the main car parking area is provided off this circulatory route, together with the access and egress to the existing HGV parking area to the north which is signed "Coaches and Lorries Parking". The route to and from the HGV parking area has been constructed to accommodate HGV movements. Upon exiting the existing HGV parking area, the circulatory route continues and provides the exit route from the Services back to the A507.

- 3.3 The proposed site layout shows that the 6 proposed eHGV charging bays on the northern side of the HGV parking area will be replacing 9 of the existing HGV bays, which are currently accessed by HGVs driving into the bays and pulling out in forward gear. It is proposed that the 6 new eHGV charging bays on the northern side will continue to be accessed in this manner.

Summary of Impact on Parking Spaces

- 3.4 The proposed 6 eHGV charging bays will effectively replace 9 existing HGV bays. Therefore, with the proposed eHGV charging bays in place, there will be a total of 22 HGV parking spaces at Baldock Services. This equates to a reduction in the total number of HGV parking bays on the site of only 3 bays, which it is considered will not materially impact on the operation of the HGV parking area.
- 3.5 Whilst it is acknowledged that the 6 eHGV charging bays would not be available as standard HGV rest area parking spaces, eHGV drivers would combine a rest break with a recharge of their vehicle and it is likely therefore that the eHGV spaces will allow drivers to combine a rest with a recharge. In addition, the eHGVs will be replacing existing internal combustion engine fleet vehicles that would otherwise visit Leeds Skelton Lake Services for a break and possibly to refuel. Therefore the

use of eHGV's will result in a reduction in demand for traditional HGV parking spaces.

- 3.6 Even with the removal of these spaces, there will be ample car parking provision available at Baldock Services and the removal of 3 spaces is not considered likely to impact on the operation of the car parking area.

Charging Islands

- 3.7 A plan showing the charging island configuration is attached at **Appendix BGH4**. The charging islands are designed to provide protection to the charging equipment through the provision of Trief style kerbs and bollards, whilst also accommodating the necessary lighting and signage associated with the charging equipment unit at carriageway level.

Swept Path Analysis of Access to the eHGV Charging Hubs

- 3.8 It is anticipated that the eHGV charging hubs will be utilised by both maximum legal length articulated vehicles (16.5m in length) and the longer semi-trailers (18.55m in length) which are part of the Department for Transport's extended eHGV trial.
- 3.9 Swept path analysis of the longer 18.55m eHGV has been carried out in relation to the proposed access and egress arrangements to the eHGV charging bays, as well as in relation to the proposed amendments to the car park exit which will be used by eHGVs to egress the drive through bays. The swept paths are illustrated on the drawings attached at **Appendix BGH5**.
- 3.10 The swept path analysis shows that an 18.55m eHGV can readily access and egress each charging bay with no issues. Swept paths of a 16.5 metre long maximum legal length articulated vehicles are less onerous than the longer semi-trailers vehicle hence there is no need carry out the tracking for this type of vehicle.

4.0 THE TRAFFIC IMPACT OF THE PROPOSED DEVELOPMENT

- 4.1 This section of the TS sets out the trip assumptions for the eHGV charging hub proposals and the potential for these trips to impact on the highway network in the vicinity of the site.

Trip Generation

- 4.2 Given that the concept of this type of development proposal is relatively new, there are no comparable sites within the TRICS database from which vehicle trip rates can be obtained. The number of vehicles that will use the facility has therefore been estimated by adopting a first principles approach to trip generation.
- 4.3 The new facility will operate similarly to the existing services area and similarly to any traditional motorway service area/truck stop facility. It is considered that eHGVs needing to recharge will simply divert from their existing route to use the eHGV charging hub, before re-joining their original route to continue their journey. HGV drivers are required to have at least a 45 minute rest period after no more than 4.5 hours drive time, therefore it is highly likely that eHGV journeys will be planned by freight operators such that drivers would charge their vehicle during the required break period. Consequently, it is assumed that eHGV drivers would combine a rest break with a recharge, and vehicles would stay within the eHGV charging hub for a minimum of 45 minutes.
- 4.4 The proposed eHGV charging hub will consist of 6 High Powered charging (DC) (350kW) spaces, which are capable of charging an eHGV from 0-80% (depending on battery type and size) in around 45 minutes. This is also the period of time that the drivers need to take for a rest break. This is therefore considered to be a reasonable predicted charging time per vehicle. The charging speed of eHGV's slows down after 80% charge is reached in order to protect the battery, therefore if a full charge is required eHGV drivers would likely need to stop and charge for periods over 45 minutes, perhaps over an hour.
- 4.5 For the purpose of this TS, the estimate of the highest number of eHGV trips that could be accommodated by the proposed eHGV charging hub on the basis of a 45 minute driver minimum break time therefore provides a worst case "high use" scenario. (It is unlikely that a driver would charge to less than 80% battery charge during any visit to the eHGV charging hub).
- 4.6 On this basis, it is considered that each charging space could generate a maximum of three one-way vehicle movements per hour i.e. one vehicle in at the start of the

hour, with that vehicle leaving after 45 mins and another vehicle arriving immediately after.

- 4.7 In the busiest hour then, it is therefore predicted that the 6 eHGV charging spaces could generate up to 18 movements either entering or exiting the hub (e.g. say 9 entering, and 9 exiting). This is the equivalent to approximately one vehicle in or one vehicle out every four minutes. This is considered to be very infrequent. This does assume that each charging space will be used back to back by eHGVs charging and therefore be fully utilised, which is unlikely to be the case.

Impact of Generated Traffic

- 4.8 The scheme would not result in any net change in overall trips to and from Baldock Services, as the eHGVs will be replacing existing internal combustion engine fleet vehicles that would otherwise visit the Services for a break and possibly to refuel. Therefore, any eHGV charging trips will not be new to the wider road network.

- 4.9 Given the scale of the proposed development, even if all the eHGV trips were new to the highway network, it is clear that in the high use scenario the trip generation of around 18 vehicle movements (9 in and 9 out) would have no impact on the operation of the adjacent highway network.

- 4.10 Given the relatively low usage that can be accommodated within the charging hub and the fact that the hub is effectively allowing the replacement of traditional internal combustion engine HGV's with eHGV's, it is considered that the proposed eHGV charging hub development will not result in any detrimental impact on the operation of the SRN or the local highway network in the vicinity of the site.

eHGV Charging Hub Overspill Parking Area

- 4.11 Should there be instances where the eHGV charging spaces are full, an eHGV driver would be able to observe that there are no available charging spaces on entering the HGV parking area. This will allow them to park in the adjacent HGV parking bays, until a charging bay becomes available. Should there be a need for eHGVs to recirculate, there is provision within the Services for them to do this, as shown on the site plan.

- 4.12 In the future, there is the potential that freight operators may be able to pre-book charging slots, so that they would be confident of being able to use the charging facilities at predesignated locations on the routes that they pass along. In this way, drivers would be confident when they enter an eHGV Hub that they will be able to recharge their vehicle.

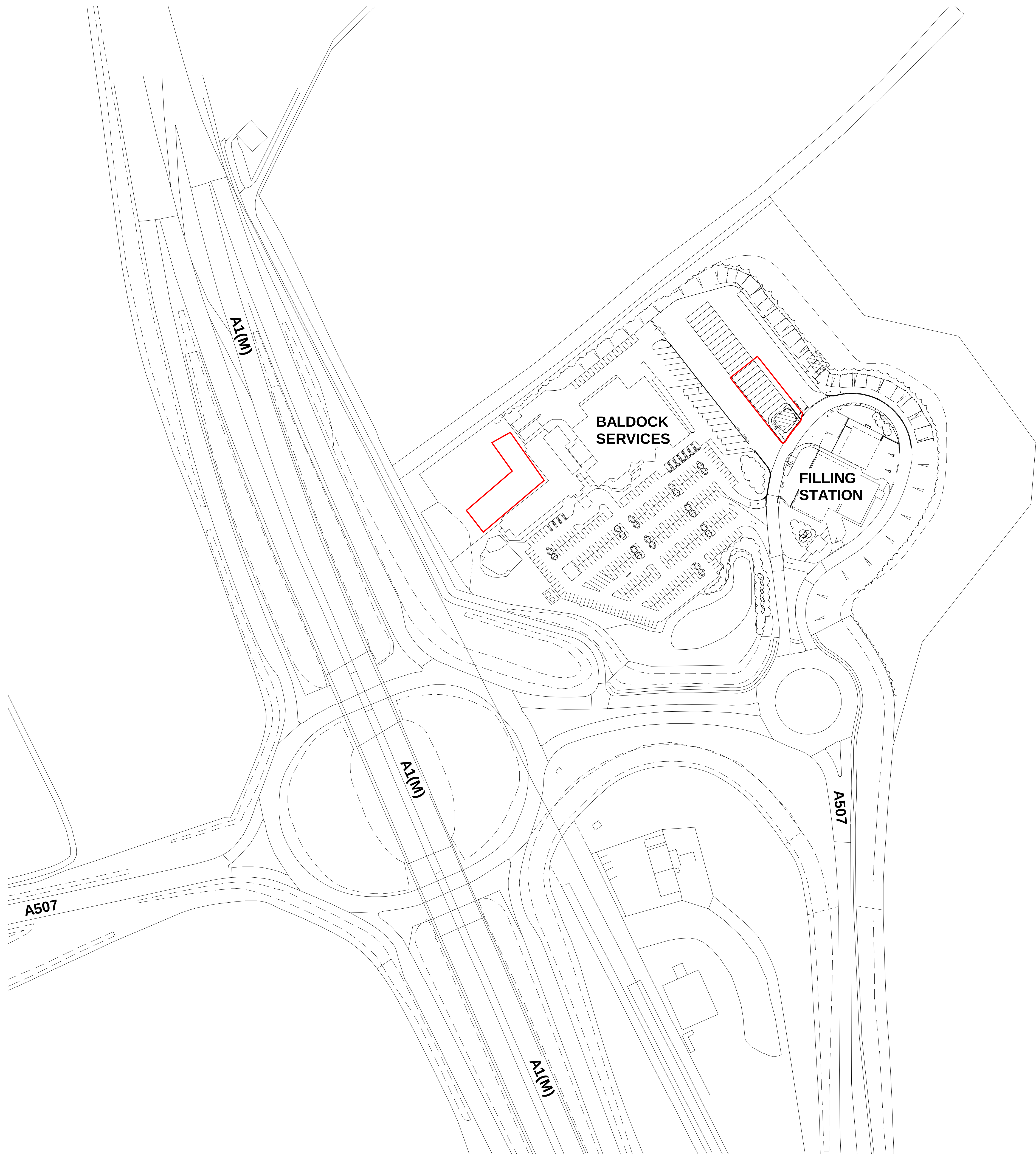
5.0 SUMMARY AND CONCLUSIONS

- 5.1 Bryan G Hall has been appointed by GRIDSERVE to prepare a Transport Statement to accompany a full planning application for the construction of an Electric Heavy Goods Vehicle (eHGV) charging hub with associated works, on an existing HGV parking area located within Extra Baldock Services.
- 5.2 The land on which the eHGV charging hub site is proposed is currently part of a HGV parking area within Leeds Skelton Lakes Services. It is therefore clear that the principle of HGV parking on this part of the site is already well established. The proposal will operate 24 hours a day, 7 days a week and will provide 6 High Powered charging (DC) (350kW) spaces.
- 5.3 A description of the highway network in the vicinity of the site has been provided. The site serves the A1(M) (part of the Strategic Road Network) and is adjacent to the A507 Great North Road. eHGVs that would visit the site are expected to travel along these roads.
- 5.4 Access to the site from both the A1(M) and the A507 Great North Road will be via the A1(M) Junction 10 grade separated junction. The junction provides access to the Great North Road via the A1(M)/A507 Great North Road roundabout. This route already accommodates HGV movements to and from Baldock Services.
- 5.5 The total 6 proposed eHGV charging bays are proposed on the southern side of the existing HGV parking area and will be accessed by eHGVs driving into the bays, as per the current HGV parking bay arrangements. The eHGV charging bays will replace 9 of the existing HGV bays to provide 6 eHGV bays, resulting in a net loss of only 3 HGV bays. It is not considered that this will result in any impact on the operation of the HGV parking area.
- 5.6 It has been demonstrated that the proposed eHGV charging bays can be satisfactorily accessed by the longer 18.55 metre long articulated HGVs. They can also accommodate maximum legal length articulated vehicles (16.5 metres). Swept path analysis of the internal site layout has been undertaken which demonstrates that the bays can be accessed and egressed satisfactorily.
- 5.7 In terms of trip generation, a worst case “high use” scenario trip generation for the proposed eHGV charging hub has been calculated using a first principles approach. This is in the absence of any historic data from which trip rates for this relatively new type of development proposal can be calculated. Given that eHGV drivers will

be required to take at least a 45 minute rest period after no more than 4.5 hours drive time, it is highly likely that eHGV journeys will be planned by freight operators such that drivers would charge their vehicle during their required break period. The proposed 6 High Powered charging (DC) (350kW) spaces are capable of charging an eHGV from 0-80% during the 45 minutes driver rest break. therefore this is considered to be a reasonable anticipated charging time per vehicle.

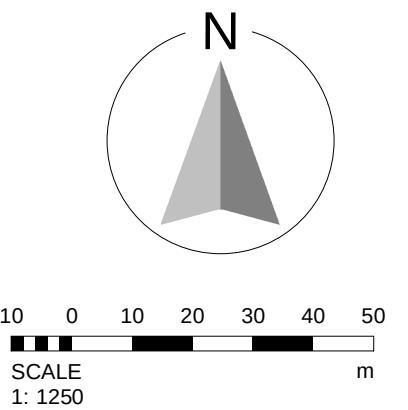
- 5.8 As a worst case then, it is considered that each charging space could therefore generate a maximum of three one-way vehicle movements per hour (i.e. one vehicle in at the start of the hour, with that vehicle leaving after 45 mins and another vehicle arriving immediately after). It is therefore predicted that in the busiest hour, the 6 eHGV charging spaces could generate up to 18 movements either in or out of the site (e.g. say 9 entering, and 9 exiting). This is the equivalent to one vehicle in or one vehicle out approximately every 2 minutes, which is a very low level of traffic.
- 5.9 Given that the eHGVs will be replacing existing internal combustion engine fleet vehicles that would otherwise visit Baldock Services to rest and refuel, the scheme would result in no additional trips to and from the Services. In effect, any eHGV trips using the site will not be new to the road network. However, even if all eHGV trips were considered to be new to the road network, the total trip generation (9 in and 9 out) would not have a material impact on the operation of the local or Strategic Road Network in the vicinity of the site.
- 5.10 Given the above, it is clear that the eHGV charging hub can deliver a high-quality facility to enable eHGV charging to flourish. It has been shown that, with minor modifications to the layout, the hub can be satisfactorily and safely accommodated within the existing Baldock Services, and that there will be no impact on the satisfactory operation of the adjacent local and strategic highway network. There is therefore no justifiable reason why planning permission should be refused on highways grounds.

APPENDIX BGH 1



236900.

 = Redline Boundary
0.20673ha



Revision	Date	By	Chk
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All dimensions to be verified on site, and the Architect informed of any discrepancy. All drawings and specifications should be read in conjunction with the Health and Safety Plan; all conflicts should be reported to the appointed Principal Designer.



GRIDSERVE
e-HGV Hub - Baldock
A1(M),10, Radwell, Baldock, SG7 5TR

Sheet Name: Site Location Plan

Purpose of issue: Planning Status:

Date: 05/09/24 Checked by: SJH

Drawn by: RS Scale @ A1: 1 : 1250

Project No: 8914 Revision:

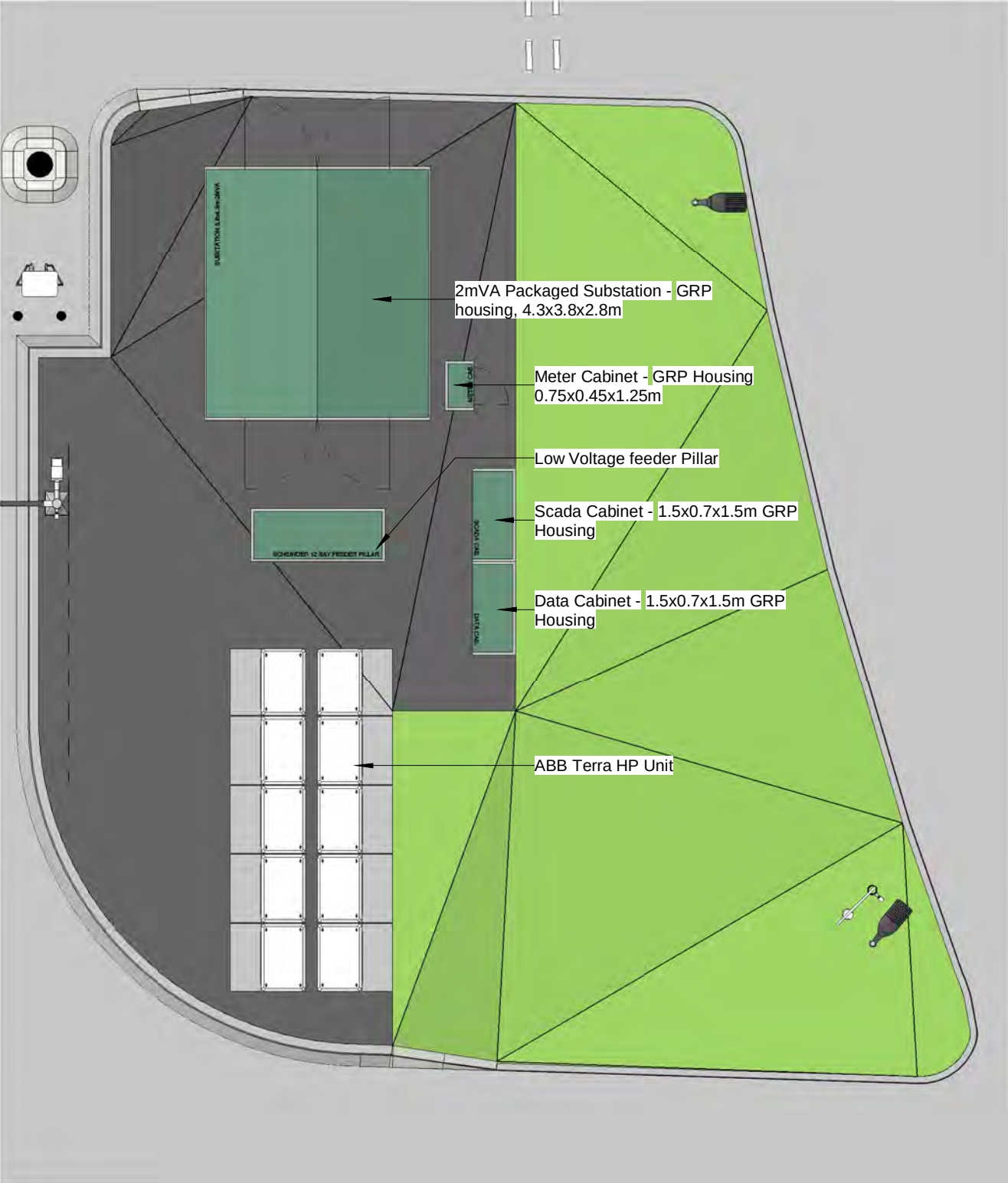
Drawing No : 8914-BOW-A0-00-DR-A-0101

236200.

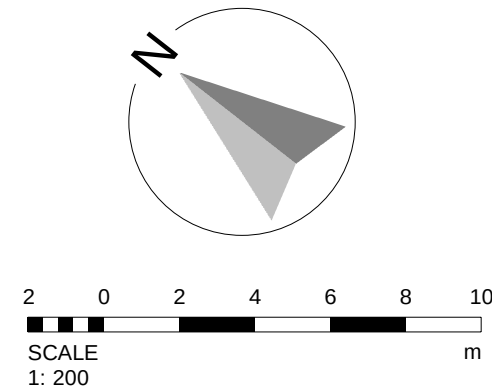
APPENDIX BGH 2



Proposed Site Plan
1 : 200



Proposed Site Plan - Callout 1
1 : 100

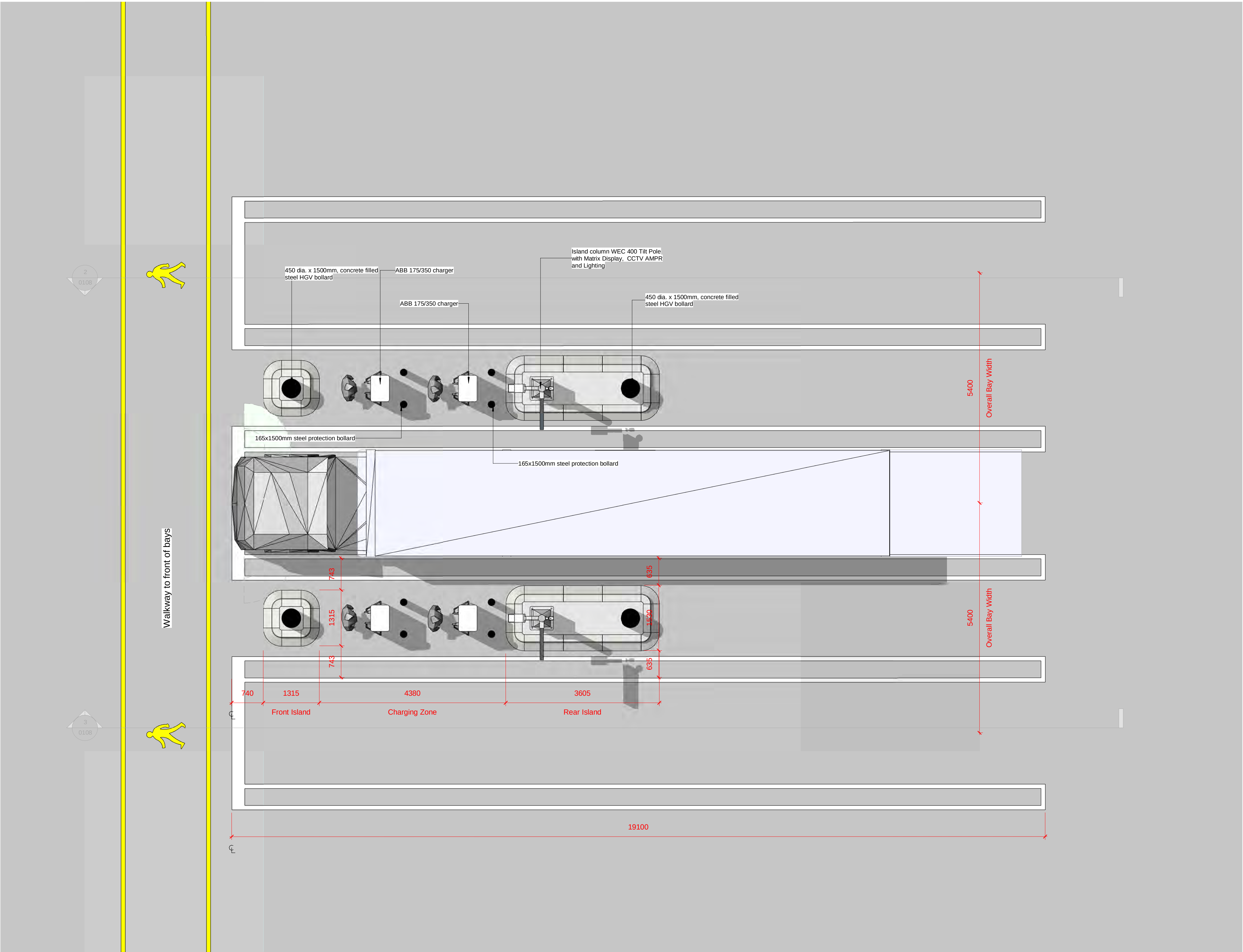


Revision	Date	By	Chk
All dimensions to be verified on site, and the Architect informed of any discrepancy. All drawings and specifications should be read in conjunction with the Health and Safety Plan; all conflicts should be reported to the appointed Principal Designer.			



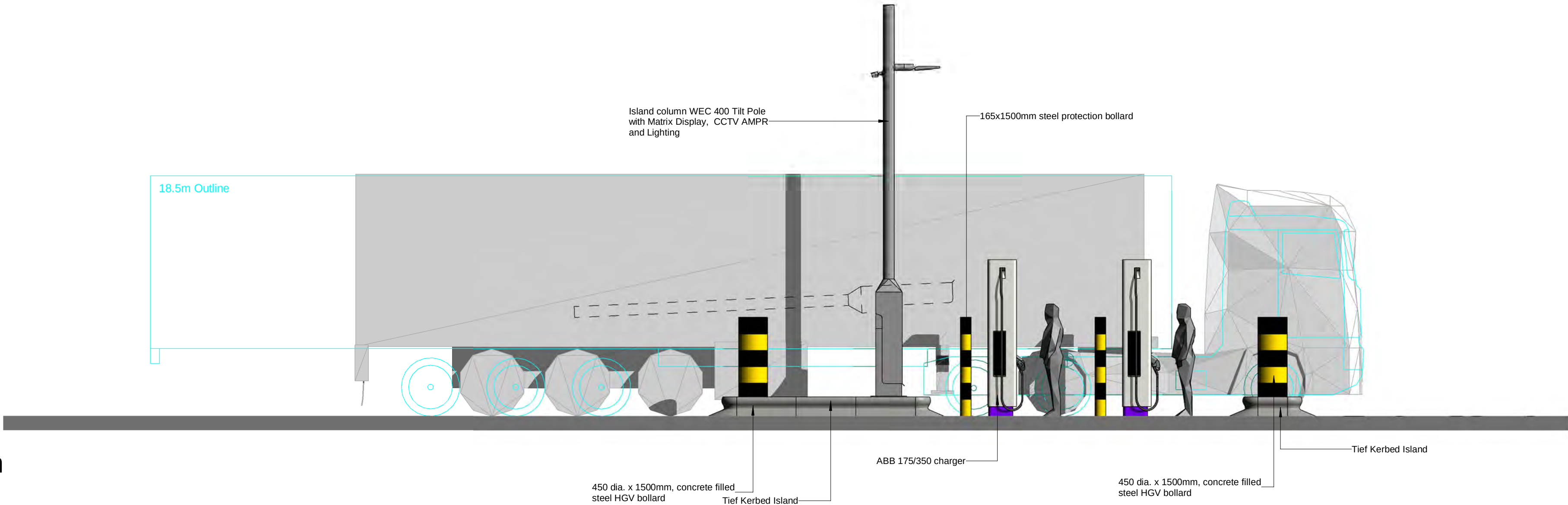
GRIDSERVE e-HGV Hub - Baldock A1(M),10, Radwell, Baldock, SG7 5TR			
Sheet Name: Proposed Site Plan			
Purpose of issue: Planning		Status:	
Date: 05/09/24		Checked by: SJH	
Drawn by: RS		Scale @ A1: As indicated	
Project No: 8914		Revision:	
Drawing No : 8914-BOW-A0-00-DR-A-0105			

APPENDIX BGH 3



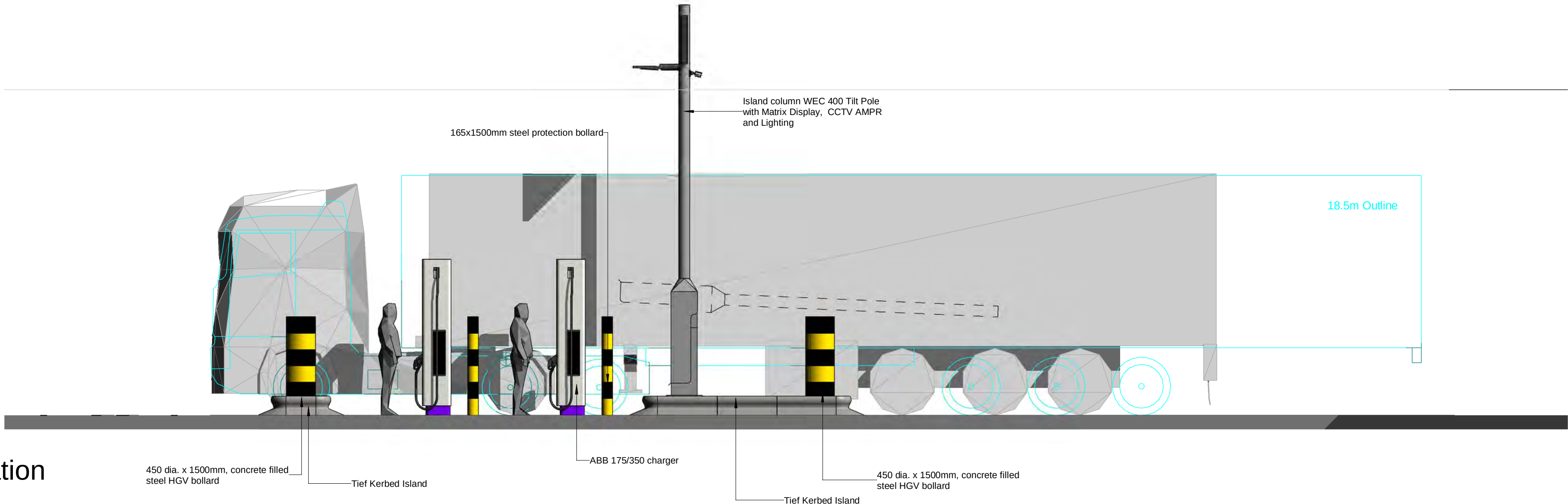
Typical Straight Through Approach

1 : 50



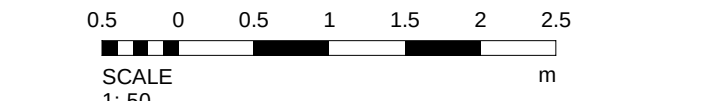
Straight Through Bay - Right Side Elevation

1 : 50



Straight Through Bay - Left Side Elevation

1 : 50



Revision	Date	By	Chk
All dimensions to be verified on site, and the Architect informed of any discrepancy. All drawings and specifications should be read in conjunction with the Health and Safety Plan; all conflicts should be reported to the appointed Principal Designer.			



GRIDSERVE
e-HGV Hub - Baldock
A1(M),10, Radwell, Baldock, SG7 5TR

Sheet Name: Proposed Charging Bay Plan and Elevations

Purpose of issue: Planning

Date: 05/09/24

Drawn by: RS

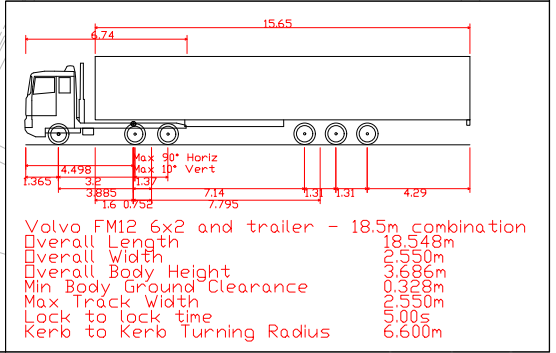
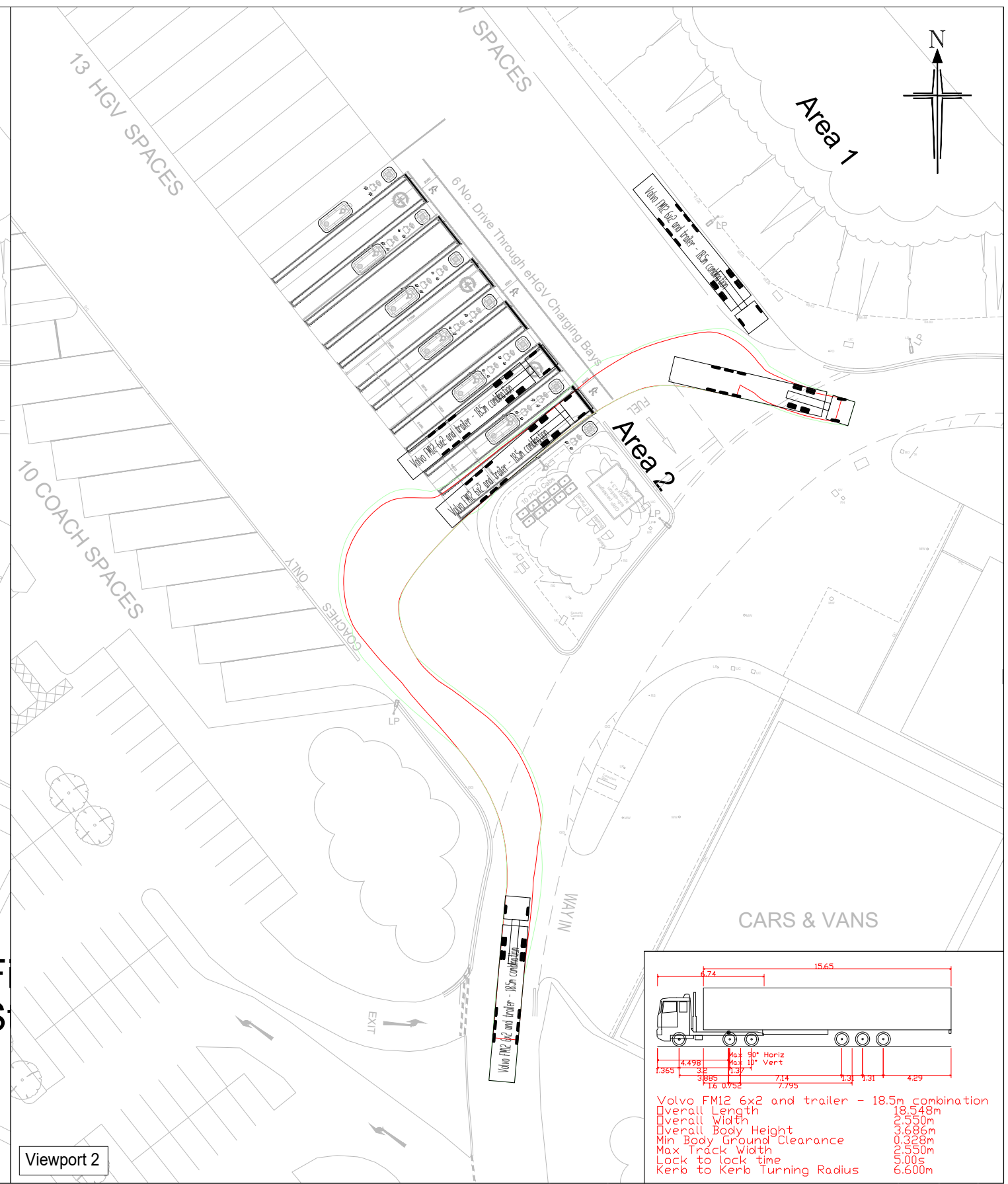
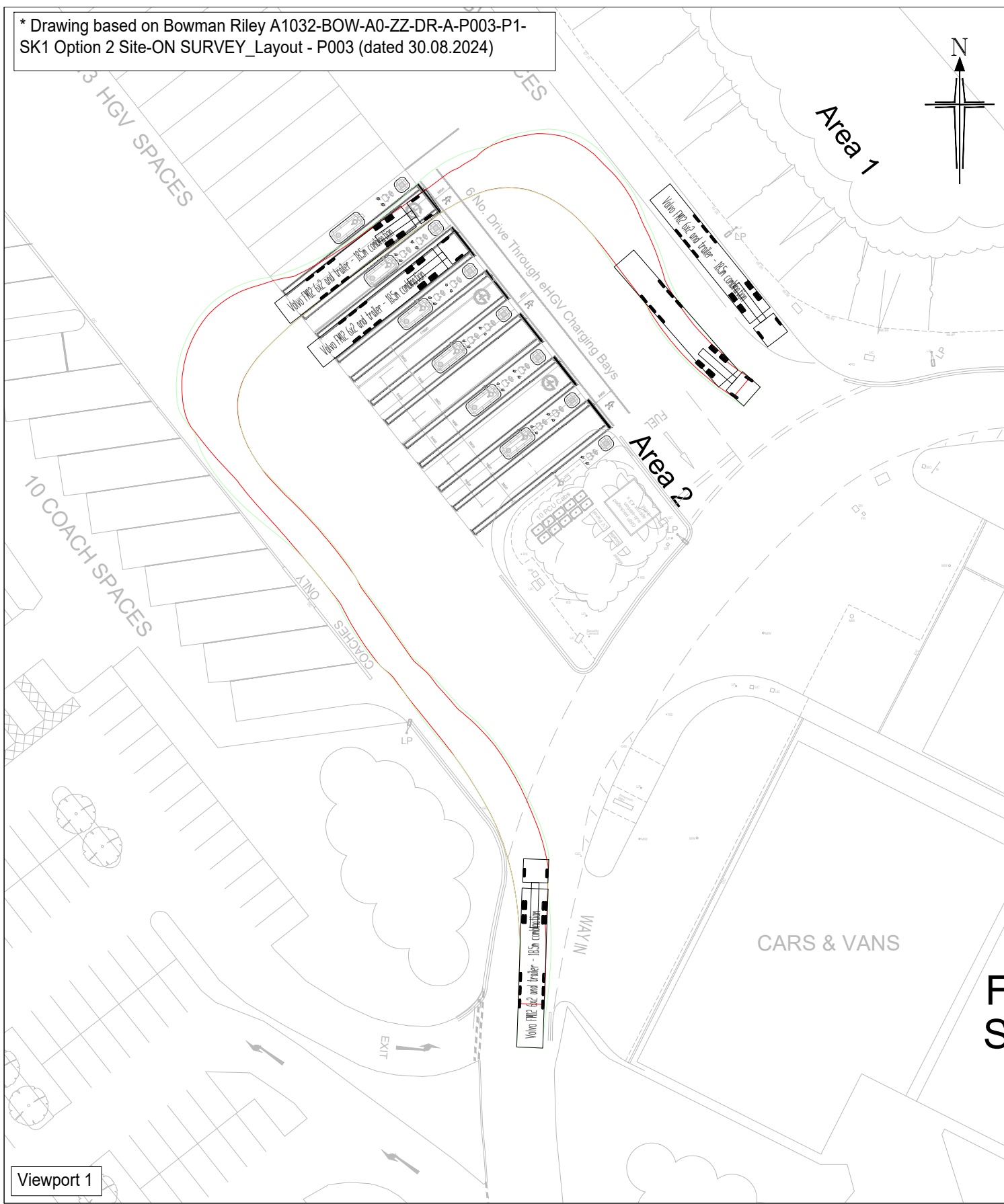
Project No: 8914

Drawing No: 8914-BOW-A0-00-DR-A-0108

Revision: 1:50

APPENDIX BGH 4

* Drawing based on Bowman Riley A1032-BOW-A0-ZZ-DR-A-P003-P1-SK1 Option 2 Site-ON SURVEY_Layout - P003 (dated 30.08.2024)



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Title: SWEPT PATH ANALYSIS OF eHGV - BALDOCK

Status: FOR INFORMATION

Scale: 1:500

Size: A3 - 420 x 297

Drawn: LW

Chkd: MC

Appvd: MC

Rev:	Date:	Amendment:	DRN	CHK	APR
Client:	GRIDSERVE				
Project:	GRIDSERVE eHGV SITE CONCEPT DESIGN				
Drawing No:	23/291/P/ATR/001				
Job No:	23-291-P				
Revision:	-				
Date:	02/09/24				

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