SLR Consulting Limited

Exeter City Council

Water Lane Design Code

SLR Project No.: 425.001040.00001

2 May 2024

Revision: V5

RE: LIVEABLE WATER LANE SUPPLEMENTRY PLANNING DOCUMENT – TRANSPORT & MOBILITY TECHNICAL NOTE

1.0 Introduction

1.1 This Technical Note (TN) sets out the considered response of Exeter City Council and Devon County Council to key Access, Movement & Parking matters resulting from consultation of the Liveable Water Lane Supplementary Planning Document (SPD).

1.2 For ease of reference this document has been set out under the following headings, referencing comments raised, and the authorities' agreed position:

1. Review of Access Options;
2. Review of School Impact;
3. Bus Routing;
4. Low Car/No Car Target Assumptions;
5. Safeguarding Parking and Access;
6. Tow Path and Pedestrian/Cycle Access;
7. Segregation of Cycle Lanes;
8. Off-site Infrastructure;
9. Gabriels Wharf to Marsh Barton Link;
10. Canal Bridge; and

11. Stewardship.

1.3 The above points have been considered in turn below.

2.0 Review of Access Options

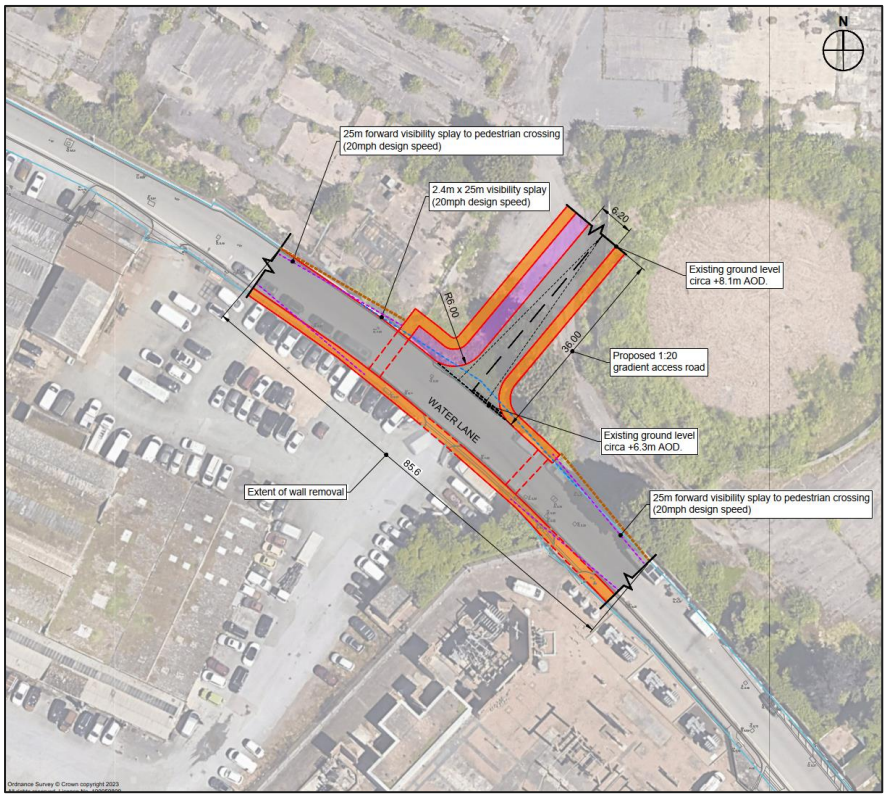
2.1 SLR has been tasked with progressing additional junction designs, exploring two further options to achieve access to the area of land to the north of Water Lane (the street) from Water Lane and Foundry Lane in accordance with the Water Lane Development Management Company (WLDMC) planning application (ref. 23/1007/OUT). In addition, a high-level review has been undertaken of the WLDMC design for the Water Lane/Tan Lane junction, to establish whether the application (with access to be approved in detail) restricts opportunities from Water Lane (east).

2.2 Considering each Option in turn:

Option 2b – Access from Water Lane

2.3 A feasibility drawing of Option 2b has been included in **Appendix A**, alongside vehicle tracking. An extract is included as **Insert 2.1** below.

Insert 2.1 – Option 2b – Access from Water Lane



2.4 The above highway arrangement comprises a simple priority junction accessing the National Grid/Wales & West site along the northern side of Water Lane. For the purpose of this feasibility design, encroachment into the Vulcan Works site is limited to that set out in the Compulsory Purchase Order only. This assumes traffic will approach the site to and from the west, via the Water Lane/Tan Lane junction.

2.5 Approximate spot heights have been taken from available information to inform a notional length of road at a gradient of 1:20 into the site itself. Due to the nature of Water Lane, width restrictions will likely restrict protected roadspace for pedestrians only with mixed traffic (cycles/vehs) sharing the remaining carriageway space.

2.6 Noting that the Water Lane development area is to comprise a low car neighbourhood, it is reasonable to expect that traffic flows will be maintained at a level that is consistent with this aspiration, being conducive for both vehicles and cyclists to occupy the same space. With reference to Local Traffic Note 1/20 (Cycle Infrastructure Design), this limits traffic flows to no more than 2,000 vehicle movements daily or 200 during the peak hour. Where required, this threshold is considered appropriate by both authorities.

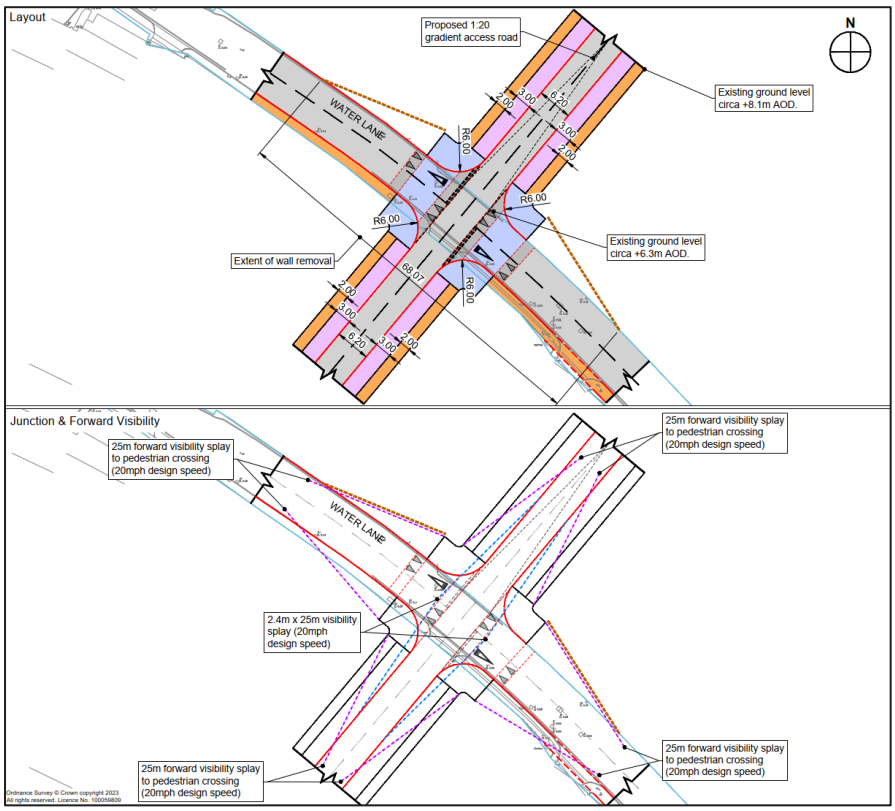
2.7 The access road into the National Grid site includes for both pedestrian and cycle segregation. Where space exists, segregation should be seen as a preference in the first instance, unless suitable justification is provided.

2.8 To conclude, Option 2b, as depicted above, could serve as a vehicle access to the Water Lane North development area, noting that width restrictions along Water Lane are such that vehicle flows will need to remain conducive to shared cycle/traffic use.

Option 3 – Access Via Foundry Lane

2.9 A feasibility drawing of Option 3 has been included in **Appendix B**, alongside vehicle tracking, with an extract included as **Insert 2.2** below.

Insert 2.2 – Option 3 – Access Via Foundry Lane



2.10 **Insert 2.2**, comprises a potential change in priority with development traffic approaching from the south, via Foundry Lane and across the neighbouring Vulcan Works site. Whilst a high-level feasibility plan only, this depicts an arrangement that includes both pedestrian and cycle segregation along the length of the access road, noting that the design is not limited by use of the Vulcan Works in this instance. Priority pedestrian/cycle crossings are shown across Water Lane in the interests of providing a high-quality active travel route. Notwithstanding this, should Water Lane form the principal active mobility corridor, the priority could change in preference to east/west movements (along Water Lane).

2.11 On this basis, it is evident that with the benefit of land currently controlled by the Vulcan Works, an alternative route would be achievable to the south, with the additional benefit of providing cycle segregation along its entire length. Furthermore, this could also reduce traffic on Water Lane such that it becomes a dedicated active and shared travel route through the centre of the site.

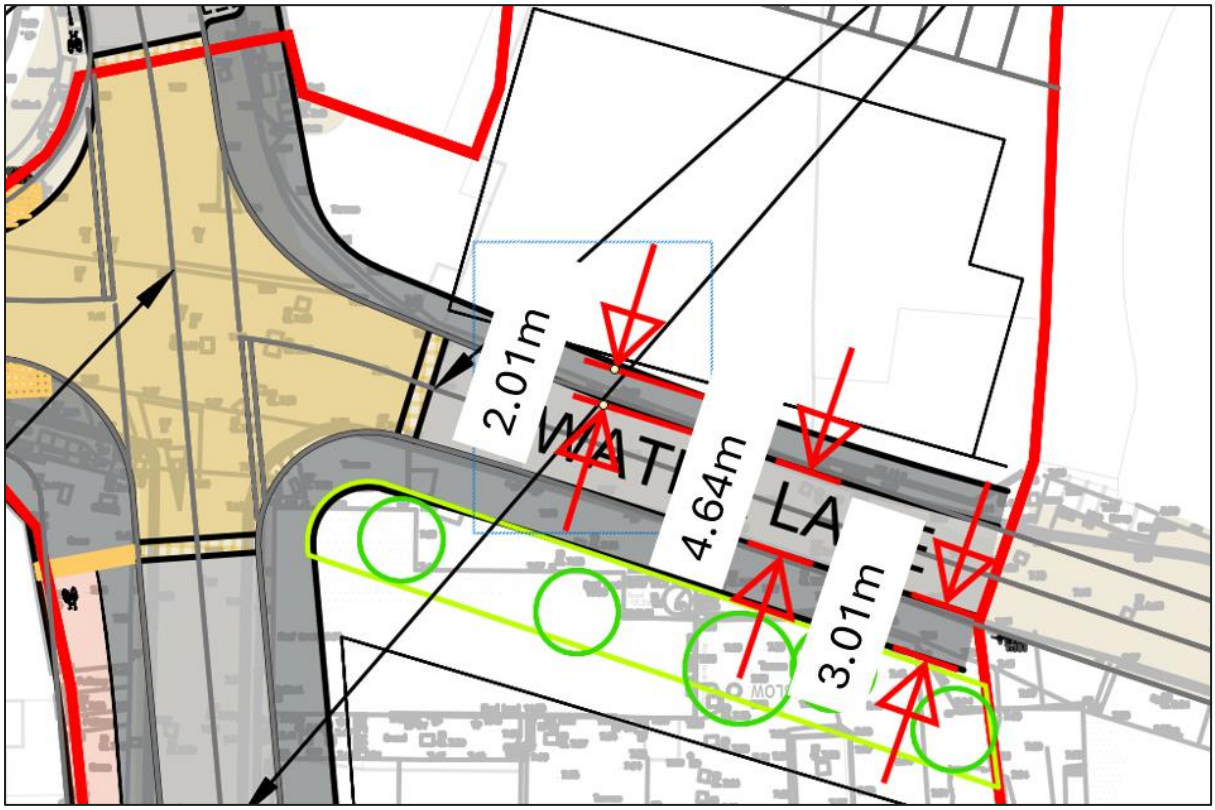
2.12 It is noteworthy that whilst traffic flows should remain conducive to shared cycle/traffic use, segregation should remain the preference, ensuring that options are available for vulnerable road users where possible.

WLDMC – Water Lane Link Design

2.13 Noting that the WLDMC are pursuing an active planning application with matters of access to be agreed, a review has been undertaken of the proposed access arrangement set out on Drawing No. 332310057-5503-001, submitted alongside the application. This specifically relates to the section of Water Lane from its junction with Tan Lane running east to the boundary with Vulcan Works and ECC land, establishing whether the design as proposed impacts on access opportunities for the Water Lane North development area, via Water Lane.

2.14 Measurements have been taken using the pdf file provided with the planning application, with approximate dimensions depicted in **Insert 2.3** below.

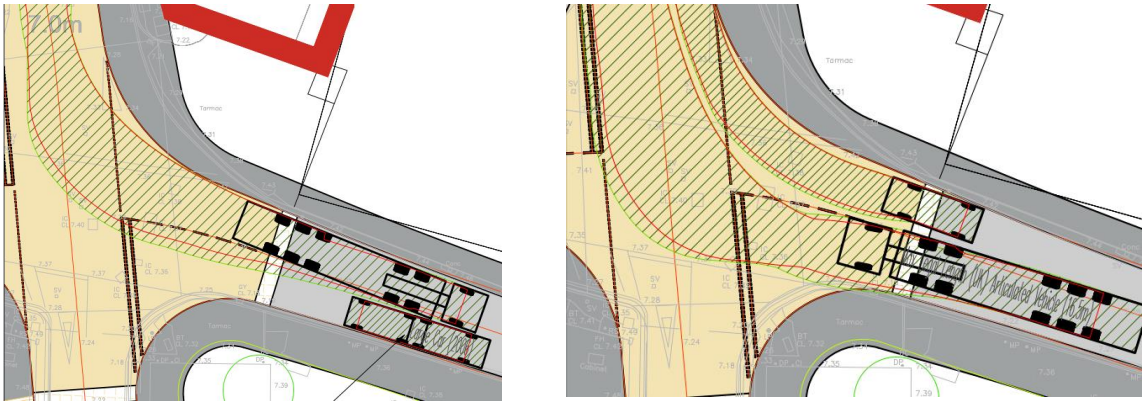
Insert 2.3 – Extract WLDMC Access Drawing plus SLR annotations



2.15 It is notable that the carriageway width appears to be inconsistent ranging from 4.8m in width to 5.0m, with a 3m shared footway cycleway along the southern side and a footway of 2m in width along the northern.

2.16 If Water Lane is to provide access for the Water Lane North development area (as depicted in Option 2b), the carriageway is not of a width to allow two service vehicles to pass one another, with the minimum criteria being 5.5m at slow speed. This is evident from the vehicle tracking submitted alongside the planning application which indicates that a large HGV and car would have difficulties passing one another along this length. Extracts of this tracking exercise are provided as **Insert 2.4** below.

Insert 2.4 – Vehicle Swept Path Assessment WLDMC Application – Water Lane/Tan Lane Junction



2.17 The WLDMC's proposed shared pedestrian/cycle provision along Water Lane is currently limited due to the width of the carriageway. Whilst shared cycle/traffic use may be possible, space can be made for further segregation; there is sufficient land under the applicant's control to facilitate a segregated cycle link subject to agreement between landowners. This would be the authorities' preference.

2.18 The current width of the carriageway is such that the movement of vehicles into and out of Water Lane will remain restricted, which could present an issue in the short to medium term if public transport services are expected to use this route, alongside vehicles currently serving the Vulcan Works site.

2.19 Should access Option 2a be progressed, this section of Water Lane should be reviewed accordingly. With Option 3, assuming the removal of general traffic from Water Lane, including that from the Vulcan Works, the current access design could be workable, subject to further refinement during reserve matters stages which should seek to prioritise pedestrian/cycle routing and segregation where possible. Suggestions have been set out within the SPD.

2.20 Alongside these access options, the restricted nature of Water Lane is such that on-street parking should be prevented along its length to ensure available carriageway space is maximised. Appropriate measures should be set out in future proposals which could comprise a mixture of discrete off-street parking for essential car users and servicing requirements, with appropriate restrictions and enforcement.

3.0 Review of School Impact

Traffic Impact

3.1 Applicants will need to set out in detail the proposed impact of the school site based on the principles of a sustainable low car neighbourhood. To inform current discussions an initial exercise has been completed below to establish the likely scale of impact and indicative quantum of parking.

3.2 This high-level assessment has been provided as an impact range, identifying the potential impact from an unfettered school site (based on a national database of similar locations), and sites located in a metropolitan area with higher sustainability levels. It should be noted that survey sites included in this calculation do not necessarily represent exemplar examples but rather provide an indication of how impacts can be affected by location and site characteristics.

3.3 The proposed primary school will have a registered capacity for 472 pupils. Weekday vehicular trip generation associated with pupil trips to the proposed primary school has been calculated using the TRICS database. Two trip generation outcomes have been produced, with the first being trip rates generated for primary schools across England (excluding London), that are located within similar parameters to the proposed site. The second assessment is drawn from primary education facilities within London, to mirror a smaller catchment area (resulting from higher development densities). The parameters for each assessment are as follows:

Assessment 1: Broad Parameters for Schools across England

- **Land Use**: 04 – Education;
- **Category**: A – Primary;
- **Regions**: England (excluding London);
- **Survey Days**: Monday to Friday;
- **Selected Locations**: Edge of Town Centre, Suburban Area.

Assessment 2: London Primary Schools

- **Land Use**: 04 – Education;
- **Category**: A – Primary;
- **Regions**: Greater London Only;
- **Survey Days**: Monday to Thursday;
- **Selected Locations**: Edge of Town Centre, Suburban Area.

3.4 The resultant trip rates and trip generation for up to 472 pupils with Assessment 1 is shown in **Table 2.1**.

Table 2.1: Vehicular Trip Generation (England exc. London)

Time Period	Trip Rate			Trip Generation (472 Pupils)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
07:00-08:00	0.059	0.022	0.081	28	10	38
08:00-09:00	0.307	0.23	0.537	145	109	253
09:00-10:00	0.03	0.073	0.103	14	34	49
15:00-16:00	0.264	0.29	0.554	125	137	261
16:00-17:00	0.026	0.057	0.083	12	27	39
17:00-18:00	0.012	0.024	0.036	6	11	17

3.5 The trip generation shown in **Table 2.1** demonstrates that a primary school of 472 pupils and 32 members of staff could have the potential to generate 253 two-way trips in the AM peak (08:00-09:00), 261 two-way vehicular trips between 15:00-16:00, which is the peak hour for the proposed site, and 17 two-way trips in the PM peak (17:00-18:00). The trip rates are based off broad parameters for primary schools across England. Whilst these provide an insight into the potential trip generation associated with the site, it is anticipated that the catchment area will be relatively small in scale, and given that the school will have limited car parking, walking and cycling are expected to be the main mode of transport to the school.

3.6 Further to these findings, the Exeter LCWIP (Adopted 2024) states that 70% of education trips in Exeter are undertaken by foot or by cycle, suggesting that the vehicular trip generation extracted from TRICS and shown in Table 2.1 is likely an overestimate of the actual number of trips associated with the proposed primary school as it does not accurately reflect recent changes in travel trends.

3.7 Given the proposed smaller catchment area of the school, an assessment of school trip rates associated with primary schools in London has been undertaken (Assessment 2). The resultant trip rates and trip generation for up to 472 pupils for Assessment 2 is shown in **Table 2.2**.

Table 2.2: Trip Generation (London)

Time Period	Trip Rate			Trip Generation		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
07:00-08:00	0.025	0	0.025	12	0	12
08:00-09:00	0.124	0.061	0.185	59	29	87
09:00-10:00	0.02	0.031	0.051	9	15	24
15:00-16:00	0.044	0.116	0.16	21	55	76
16:00-17:00	0.004	0.026	0.03	2	12	14
17:00-18:00	0	0.005	0.005	0	2	2

3.8 As shown in **Table 2.2**, the trip generation for schools in London are significantly lower than for the rest of the country, with 87 two-way trips in the AM peak (08:00-09:00), 76 two-way trips between 15:00-16:00, and 2 two-way trips in the PM peak (17:00-18:00). As with the

trip generation shown in **Table 2.1**, the afternoon peak is outside of the typical commuting period.

3.9 The results presented in **Table 2.2** are considered to be more representative of the trip generation for the proposed primary school on the basis that the catchment area is smaller, and the development will be situated within an urban area with active travel routes accessible nearby. It is also noteworthy that the London sites may comprise limited low car neighbourhoods and as such lower impacts should be targeted.

3.10 It should be noted that the above trips can be managed to some degree through the School Travel Plan, ensuring that for those needing to be driven, for example as part of a linked trip, appropriate provision is made such as drop off points off site and walking buses.

Parking

3.11 To inform parking levels for the school, further consideration has been given to the anticipated parking demand noting that this will be restricted to staff and visitor only, and need only cater for the anticipated demand. DCC as the LEA has confirmed that this would be subject to an individual assessment and a level of parking commensurate with the assessed demand would be acceptable.

3.12 With respect to the staff demand, census data has been extracted from the 2011 Method of Travel to Work dataset to determine the modal split for people working in the Middle Super Output Area (MSOA) of the proposed primary school (MSOA 014). This provides an insight into the choice of transport members of staff could travel by to the proposed school. It is anticipated that the school will accommodate 32 staff members. The resultant modal split for the staff is shown in **Table 2.3**.

Table 2.3: Method of Travel to Work

Method of Travel to Work	MSOA 014	Arrive	Depart	Two-Way
Underground, metro, light rail or tram	0%	0	0	0
Train	1%	0	0	1
Bus, minibus or coach	5%	1	1	3
Taxi	0%	0	0	0
Motorcycle, scooter or moped	2%	1	1	1
Driving a car or van	73%	23	23	47
Passenger in a car or van	5%	2	2	3
Bicycle	5%	2	2	3
On foot	9%	3	3	5
Other method of travel to work	0%	0	0	0
Total	**100%**	**32**	**32**	**64**

3.13 The modal split shown in **Table 2.3** indicates that 70% of people who work in MSOA 014 travel to work by car. This indicates that 70% of the 32 members of staff may use a private vehicle to arrive to and depart from the site. This equates to 23 vehicle trips generated in the AM and PM peak hours, and 47 two-way trips.

3.14 With respect to the anticipated parking demand, this is equivalent to 23 parking spaces. A similar exercise should be undertaken by future applicants to ensure excessive parking is not provided.

3.15 It is noteworthy that school parking could be shared with other uses during off-peak periods when the school is closed and measures should be explored to exploit trip patterns accordingly allowing the school to utilise opportunities within neighbouring development.

3.16 Considering the potential traffic generation attributed to staff parking, the vehicular trip generation for the 32 staff has been applied to the peak hour periods, with the assumption that staff will arrive between 07:00-09:00 and depart between 16:00-18:00. The results are shown in **Table 2.4**; it should be noted that staff trips are accounted for within the totals set out in Tables 2.1 & 2.2. These figures provide an indication of potential demand on the neighbouring Haven Banks 1 car park.

Table 2.4: Proposed Staff Vehicular Trip Generation

Time Period	Trip Generation (32 Staff)		
	Arrive	Depart	Two-Way
07:00-08:00	12	0	12
08:00-09:00	12	0	12
16:00-17:00	0	12	12
17:00-18:00	0	12	12
Total	**23**	**23**	**47**

3.17 As shown in **Table 2**, there would be a total of 47 two-way vehicular trips associated with staff travelling to and from the proposed primary school, with 24 trips across the two-hour period in the AM and PM periods. It should be noted that all trips will only occur during term time (Mon-Fri), which equates to approximately 190 days, with periodic attendance during school holidays for staff.

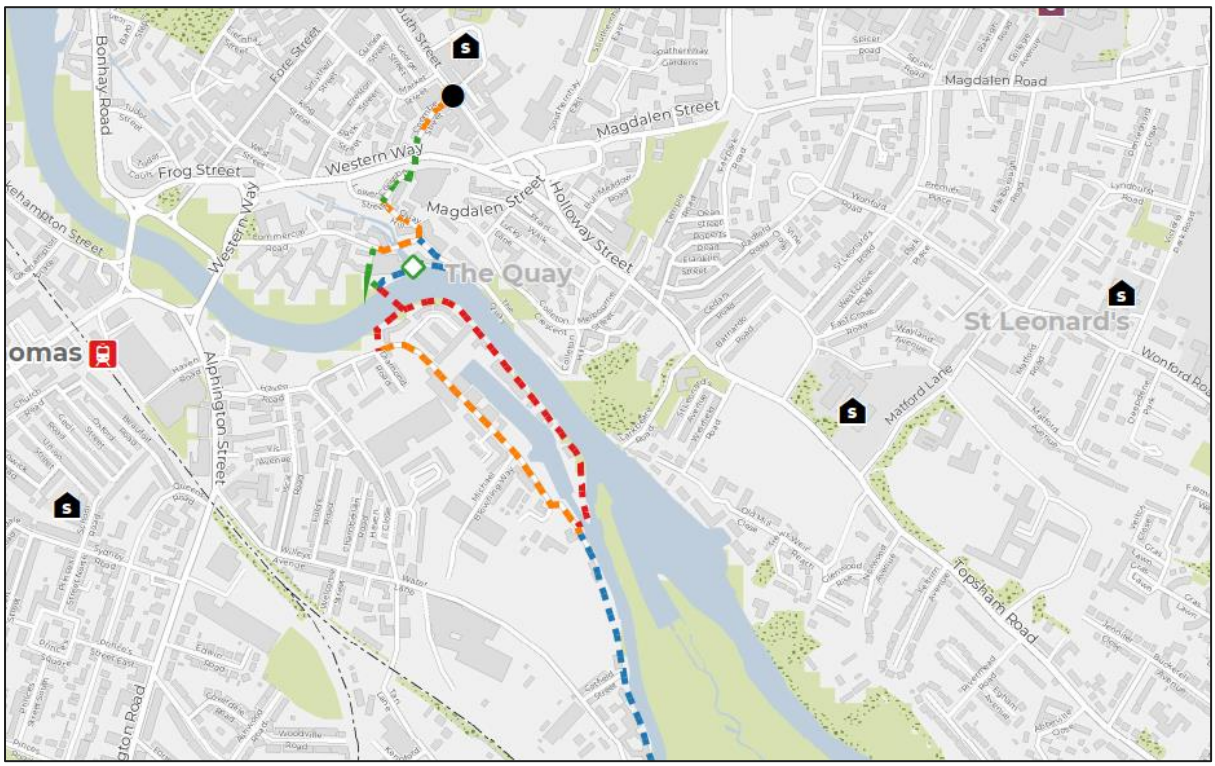
4.0 Bus Routing

4.1 The SPD identifies a potential future route across the Clapperbrook Bridge, ensuring that any proposals for the wider Water Lane development area do not prevent future shared transport links across the railway.

4.2 Whilst the bridge has an existing weight limit of 3t, the SPD should not disregard opportunities for smaller forms of shared transport that might be prevalent in the future, nor the opportunity for future upgrades to the bridge structure itself which would allow larger vehicles to utilise this route.

4.3 Due to limited highway extent along Haven Road (east) and Maritime Court, and aspirations set out within the Exeter LCWIP for a quiet cycle route along this route as depicted in **Insert 4.1**, it is now considered that bus routing via Haven Road and Maritime Court is not necessary and the removal of the public transport route would create additional opportunity for the reallocation of roadspace and an environment which benefits from the removal of larger public transport vehicles.

Insert 4.1 – Extract - Exeter CC LCWIP Route E 14

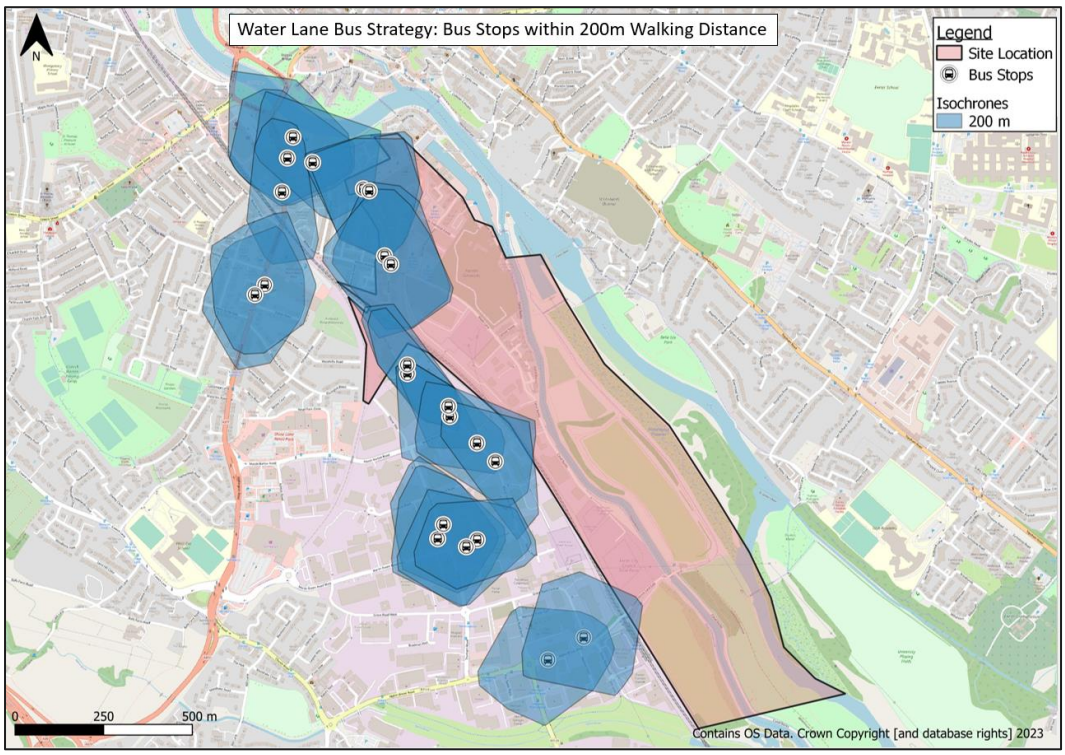


4.4 It is noteworthy that Water Lane runs broadly parallel to Haven Road, falling within 200-300m of Haven Road as it passes through the wider development area, 200m being the recommended spacing between bus stops (as set out within the SPD) and 250-300m being the preferred walk distance for residents. On this basis, it is anticipated that the benefits in avoiding public transport vehicles from using Haven Road will outweigh the additional distance to access passenger transport services.

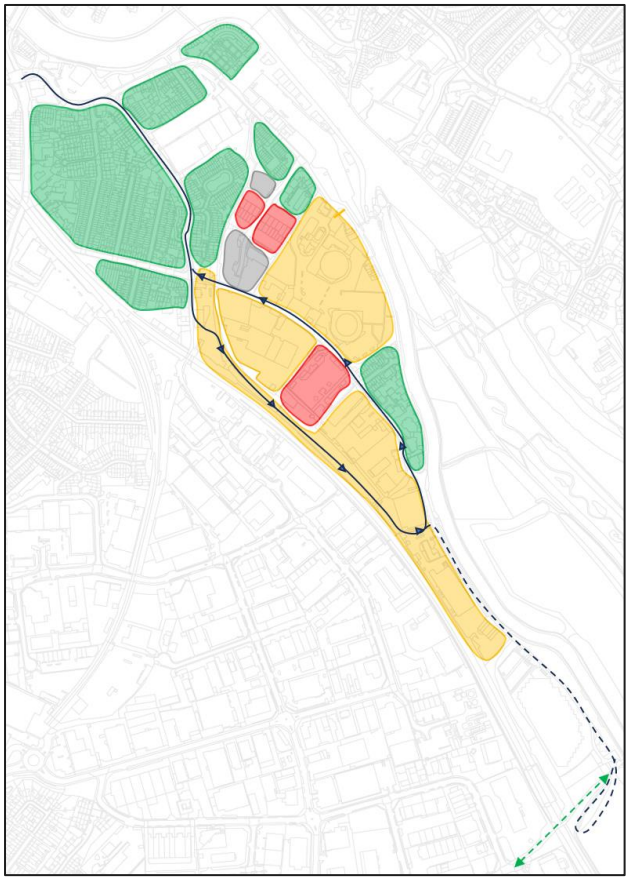
4.5 **Insert 4.2**, identifies walking isochrones from existing bus stops situated along existing routes running along Water Lane, Tan Lane and through the Marsh Barton estate. This indicates that whilst a deviation through the site is necessary, this could be facilitated using the proposed loop along Foundry Lane and Water Lane. **Insert 4.3** illustrates the revised routing proposed.

4.6 DCC is satisfied with the principle of reassigning the bus route away from Haven, on the basis that the alternative route would still serve the site appropriately and result in additional benefits to conditions along Haven Road and Maritime Court, including to the strategic cycle route. Further consultation with bus operators has not taken place, however noting that guidance has been referenced from the CIHT guidance, this is not considered material.

Insert 4.2 – 200m walking isochrones from existing bus route



Insert 4.3 – Suggested simplified bus routing strategy



5.0 Low Car/ No Car Target Assumptions

5.1 The Vision for Water Lane sets out a requirement to deliver a high quality, low-car new neighbourhood. For the purpose of the SPD, the following definition has been agreed with Devon County Council:

Low-car neighbourhoods are residential or mixed-use developments which offer limited car parking and are designed to reduce car use by residents etc. They are instead designed to encourage active travel as the natural choice for everyday journeys and create a low traffic environment in the immediate vicinity.

5.2 A low car concept should not be regarded solely as an opportunity to increase the density of development. Increases in density should allow space previously taken up by parking to be freed up for wider placemaking and health benefits and other mobility modes, improving the lives of residents and representing a net benefit in terms of existing traffic conditions.

5.3 On this basis the definition for low-car offers tangible benefits, reflecting a greater concern for the immediate environment of residents.

5.4 To help ensure this, it is considered that modal split targets will not guarantee changes to the environment that befit a low car neighbourhood. It is therefore suggested that some simple thresholds are set for key sections of highway that correspond to current recommendations for both mixed traffic/cycle usage (2,000 vehs/daily & 200 vehs peak)[1] and for that of shared surfaces (1,000 vehs/daily[2] & 100 vph peak)[3] thereby ensuring that the environment remains consistent with a low car neighbourhood, reducing traffic within the area and improving the urban environment. This will require applicants to not only consider the impact of their respective development sites but also the cumulative impact of the wider Water Lane development area.

5.5 On this basis the following thresholds have been agreed with DCC and are recommended as a clear aspiration for developers:

- **General Vehicle Access Streets** - Max 2,000 pcu's[4]/daily and 200 pcu's per peak hour; and

- **All other streets** – Max 1,000 pcu's/daily and 100 pcu's per peak hour.

5.6 It is acknowledged that in some instances this may not be achievable, however it will be for the applicant to clearly demonstrate where such thresholds are not achievable and that the principles of a low car neighbourhood are still prioritised.

[1] Local Transport Note 1/20 – Figure 4.1: Appropriate protection from motor traffic on highways

[2] The Quiet Lanes and Home Zones (England Regulations 2006

[3] Manual for Streets 2007 Department for Transport – para 7.2.14

[4] PCU – Passenger Car Unit

6.0 Safeguarding Parking and Access

6.1 Parking and access rights will be safeguarded for existing residents. A number of existing residents park on street and on this basis, it is suggested that a finite number of parking permits should be made available for these existing residents, with parking arrangements strictly controlled to ensure indiscriminate parking does not take place within the highway.

6.2 Access points from the public highway will be maintained for existing premises protecting existing access rights formed over time. This principle has been discussed and agreed with DCC.

7.0 Tow Path and Pedestrian/Cycle Access

7.1 The Exeter LCWIP identifies the existing tow path alongside the Canal as Route E14, identifying the section from Gabriels Wharf to Maritime Court as ‘New Provision’. This route provides the most coherent, direct, safe, and comfortable route through the site, following the alignment of the Canal towards the Quay and Cricklepit Bridge.

7.2 Whilst diversion of cycle traffic has been considered, it is anticipated that whilst additional routes improve connectivity around and through the site, diversions that are less attractive are unlikely to be used, causing cycle traffic to utilise the existing substandard width section of the Tow Path. On this basis it is noteworthy that this route will still need to be upgraded in accordance with the LCWIP requirement and on this basis, funding should be secured.

7.3 The existing tow path is substandard in width for shared pedestrian and cycle usage and will need to be widened alongside proposals for the wider area, requiring works to the existing embankment. A photo has been provided as **Insert 7.1**. Upgrades will need to be in line with design criteria set out in Local Transport Note 1/20 based on anticipated levels of cycle traffic. An engineering solution will need to be agreed with the relevant authorities.

Insert 7.1 – Existing Tow Path

8.0 Segregation of Cycle Lanes

8.1 Cycle segregation should be considered in line with the requirements set out in Local Transport Note 1/20, ensuring routes are coherent, direct, safe, comfortable and attractive. Due to existing site constraints, where required, development should seek to achieve a level of traffic conducive to the available cycle and pedestrian provision, mindful that cycle segregation should remain a preference. For areas where cycle segregation is not possible, a 20mph design speed should be applied and vehicle traffic flows maintained at a level conducive to mixed cycle/traffic use.

8.2 An aspiration to achieve nil detriment (i.e. to maintain traffic flows at the same level), does not represent a suitable vision for a new low car neighbourhood. Maximising development density can be a benefit in terms of supporting local services and creating a sustainable community, however this should be considered separately to traffic. There is concern that applications may not demonstrate clear low car principles, noting that for an average person at street level, with a nil detriment approach traffic volumes have not changed. It is necessary to understand how the development will minimise traffic impacts, cut congestion and help people live healthier lifestyles.

8.3 The Water Lane Principles seeks to create high-quality streets where active travel, public transport and shared mobility are the natural and most convenient choice for most journeys. Proposals will need to demonstrate how traffic levels will be conducive to this, seeking to minimise traffic impacts, congestion and achieve resulting health benefits.

9.0 Offsite Infrastructure

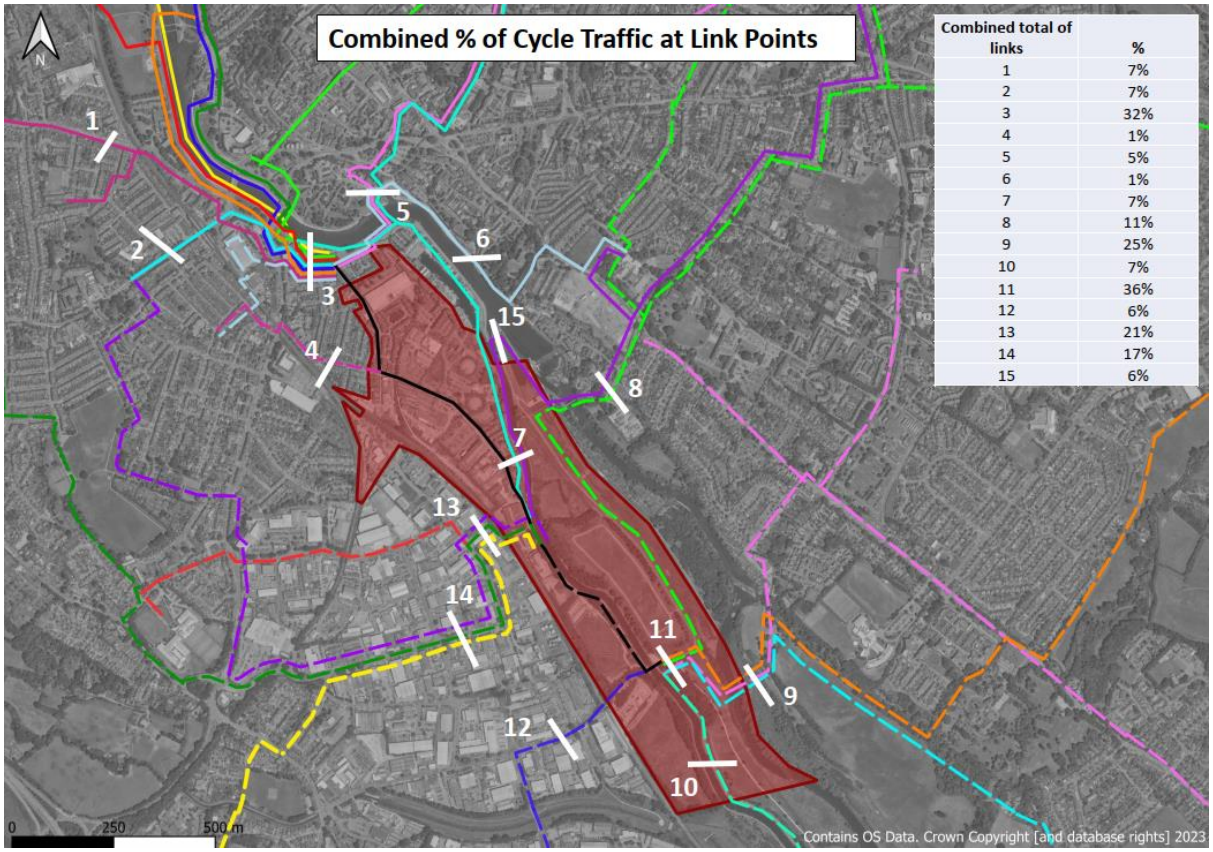
9.1 Detailed consideration of offsite infrastructure is outside the remit of the SPD. However, early work to establish potential demands around the site based on a simple gravity model, reflecting population density for work and leisure trips, and school location for education trips, identified some key cycle connections around the site. An extract is included as **Insert 9.1** below.

9.2 It should be noted that there are limitations to the gravity model shown at **Insert 9.1**, which considers routing from the centre of the site and is based on travel time only. Other subjective factors, such as the relative attractiveness of a route, could impact on demand. It is noteworthy that the assignment of traffic to the southwest of the site is shown via the existing Gabriel's Wharf subway, whereas a significant portion of this demand would also be catered for via Tan Lane and potentially the Clapperbrook Bridge. However, as a high-level assessment it demonstrates where the most significant demands might occur.

9.3 To allow Devon County Highways the opportunity to comment on offsite infrastructure requirements, it is suggested that the impact of the proposals on key links around the site is established using a more refined approach. Whilst the level of vehicular traffic at key points such as the A377/Haven Road junction may be less than previously generated, impacts attributed to cycle traffic will be far higher and appropriate mitigation should still be sought.

9.4 Noting the importance of achieving attractive and coherent links, the SPD should identify key routes to ensure that they are considered as part of planning applications.

Insert 9.1 – Cycle Gravity Model



10.0 Gabriel's Wharf to Marsh Barton Link

10.1 Initial feasibility work has been undertaken to establish potential costs in upgrading the existing subway between Gabriel's Wharf and Marsh Barton. The existing subway is currently 1.75m in height being insufficient clearance for pedestrians and cyclist to traverse with ease and as such currently represents an unattractive option both in terms of its physical dimensions but also its attractiveness as a safe route. Photographs of the existing subway are provided as **Insert 10.1**.

Insert 10.1 – Existing Gabriel's Wharf – Marsh Barton Subway

10.2 A review of potential costs using SPONS 2022 indicates that the cost of a bridge (underpass) of this type would be £3,830 per m2. Therefore, assuming 500mm thick walls and slab the structure would be £26,810 per linear metre, equivalent to £482,580 across its c18m length.

10.3 The above is a raw cost and it is usual to apply various proportional uplifts to account for various items, namely:

- 10% per year for inflation;
- 35% for preliminaries; and
- 20% Network Rail (cost for possessions etc)

10.4 For design fees this will comprise in the region of £150,000, accounting for £40,000 for design up to the structures option report (or NR equivalent process).

10.5 On this basis the cost of an underpass is likely to be in the region of £1 million, although this excludes wider constraints and may well be a conservative cost, noting the potential issues with drainage in providing additional headroom beneath the railway.

10.6 The implications of an overbridge have been considered. Devon County Council has constructed an overbridge further south along the railway line (see **Insert 10.2** below) which could be a reasonable proxy with respect to potential cost. However, the level of the railway appears to be broadly at grade, whilst the railway adjacent to the Water Lane site is approximately 2.5m above ground. With overhead line equipment it would be necessary to achieve clearance of 5.1m so a total bridge height of 7.6m.

10.7 With ramps of 1:20 (desirable min) plus landings of 2m every 20m, a ramp length of 182m would be required. If this is reduced to an absolute minimum of 1:15, this reduces to 134m. Considering the example in **Insert 10.2**, ramp lengths of 100m were provided so the cost is expected to be greater. With land requirements for a ramp, it would be necessary to consider creative solutions, noting the distance from Water Lane to the railway is approximately 67m.

Insert 10.2 – Example – Ramped Cycle Crossing – Adjacent Exe Estuary

10.8 A potential solution may be cycle wheel ramps and steps. However, these are not inclusive and so a lift system would also be required, similar to that being installed at railway stations across the country. An example, which could incorporate wheel ramps, is provided as **Insert 10.3** below.

Insert 10.3 – Example Solution – Wheel Ramps and steps

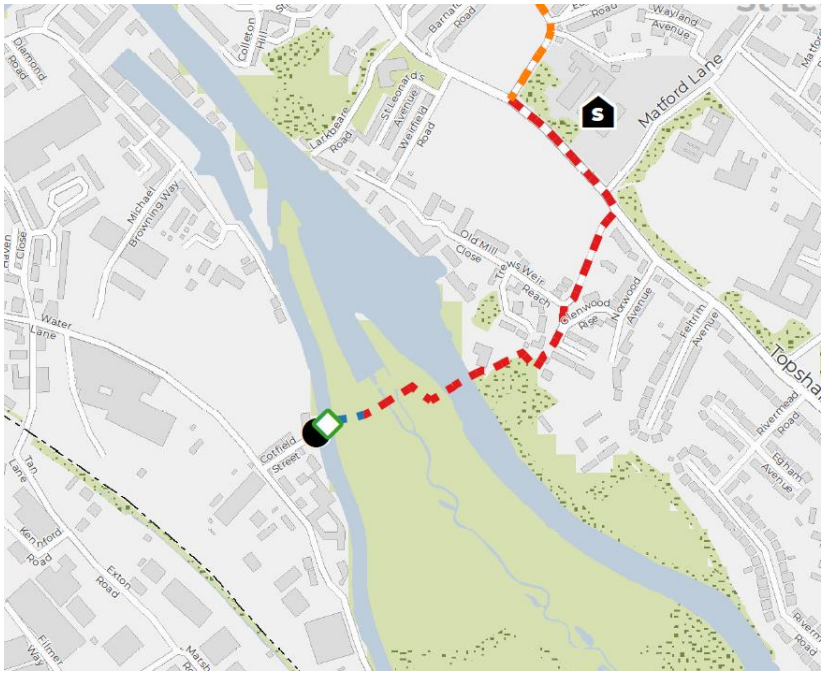
10.9 Noting the clear difficulties with achieving a suitable connection, and the need to liaise with neighbouring landowners to both the north and south of the railway, it is suggested that contributions are sought to enable provision of an improved link between Gabriel's Wharf and Marsh Barton.

11.0 Canal Bridge

11.1 The Exeter LCWIP identifies the requirement for a new bridge across the Canal as part of Route E22, as depicted indicatively in **Insert 11.1**. This is a requirement for the Water Lane development area, alongside other strategic infrastructure and identified within the draft Exeter Infrastructure Delivery Plan.

11.2 The bridge location will need to ensure it is linked to route E22 identified within the LCWIP and capable of allowing boats to pass along the canal. Further consideration should also be given to existing crossings of the Canal and river to ensure they are of an appropriate standard to meet the anticipated demand.

Insert 11.1 – Extract LCWIP Route E22

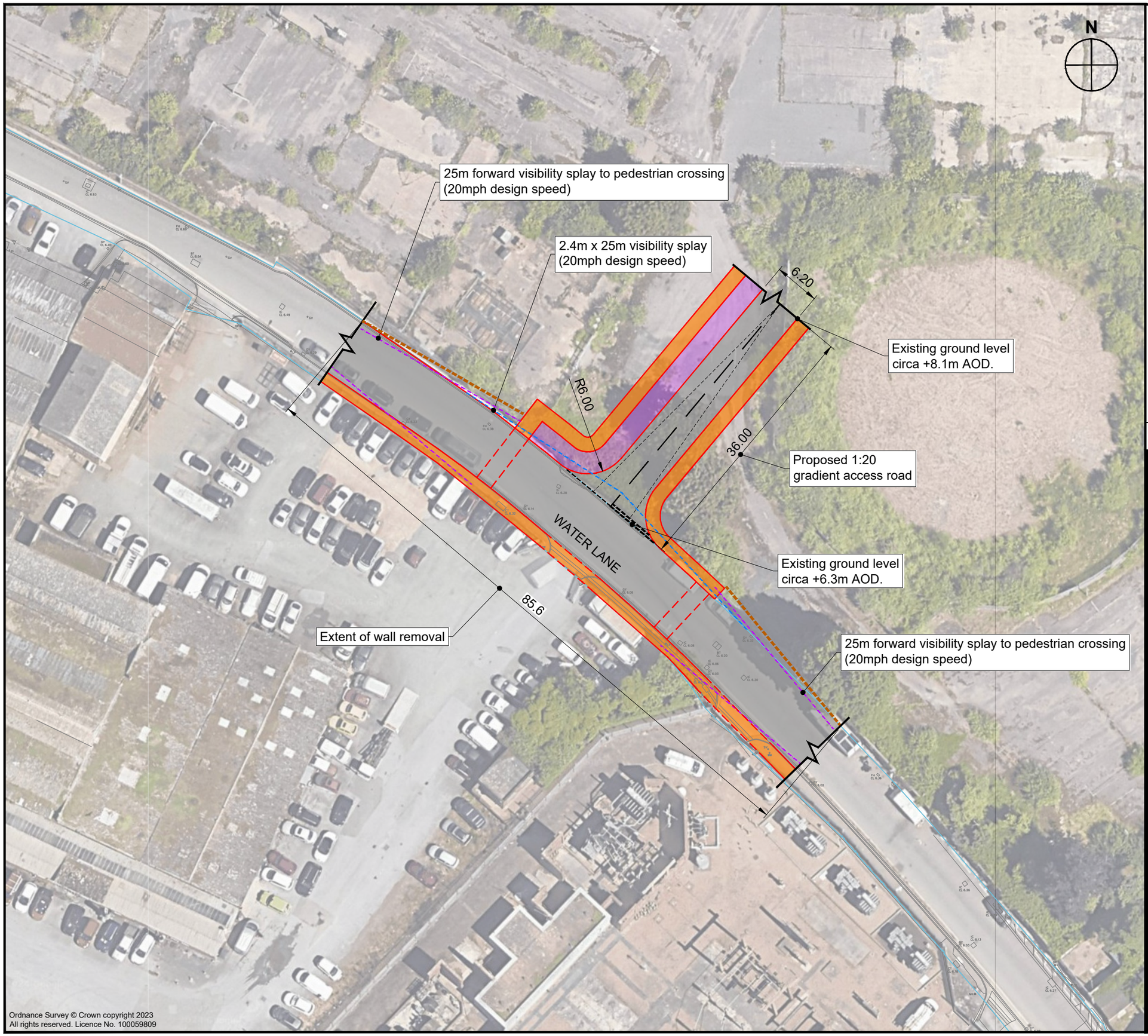


12.0 Stewardship and Adoptions

12.1 Developers should engage with Devon County Council as the local highway authority to establish limits of adoption and appropriate adoption criteria, noting the need to incorporate exemplar placemaking improvements. Adoption criteria will likely evolve over time to reflect wider policy changes, however in the interim early engagement with the authority will help to overcome obstacle and ensure that opportunities are maximised. Adoption of roads will be agreed on a case by case basis. .

Appendix A

Water Lane Access Option 2(b)



Notes:
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2. White lining is indicative only.
3. Existing layout is based on Topographical data

KEY:
- Junction visibility
- Forward visibility to pedestrian crossing
- Extent of wall removal
- Proposed Footway (2m wide)
- Proposed Cycleway (3m wide)
- Existing Carriageway (width varies see plan)
- Proposed Pedestrian / Cycle Crossing Point
- Extent of Publicly Maintainable Highway

REV.	DETAILS	DRAWN	CHECKED	DATE
-	-	-	-	-

STATUS:
INFORMATION ONLY

CLIENT:
Exeter City Council

PROJECT:
Water Lane Design Framework

DRAWING TITLE:
Water Lane Access Option 2(B)

SCALES:
1:500 at A3

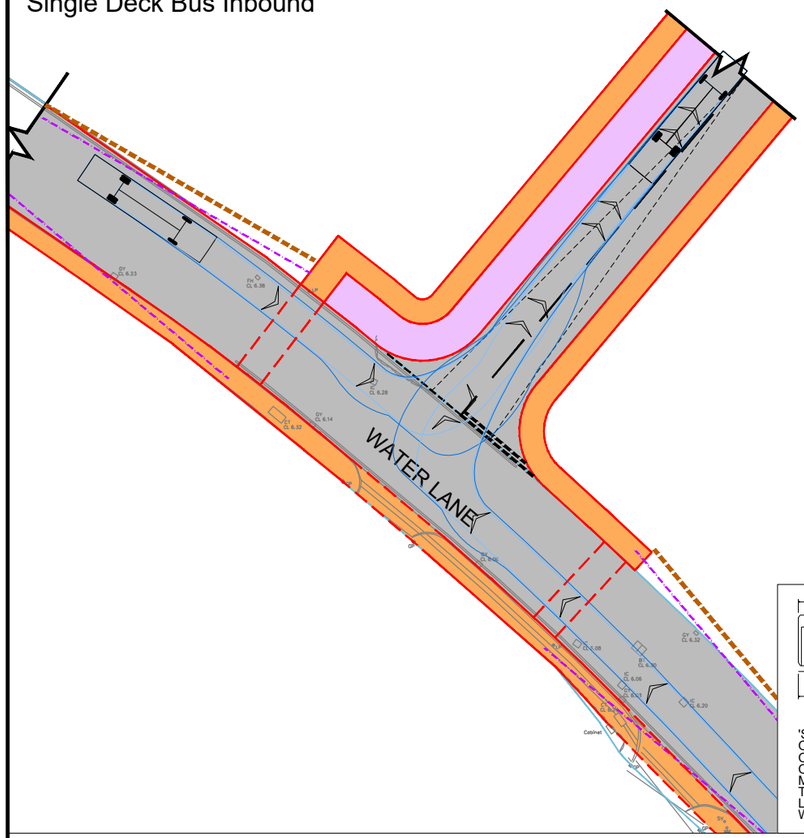
DRAWN:	CHECKED:	DATE:
JB	TB	08.03.2024

SLR

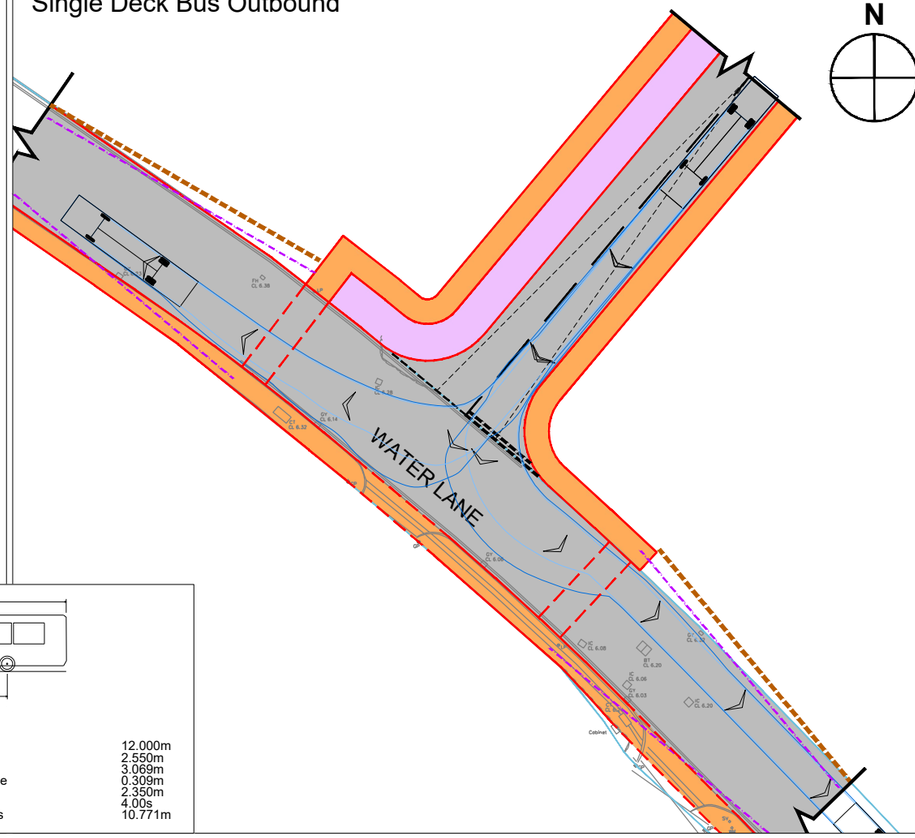
DRAWING NUMBER: 205287A/PD03

REVISION: -

Single Deck Bus Inbound



Single Deck Bus Outbound



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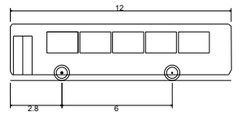
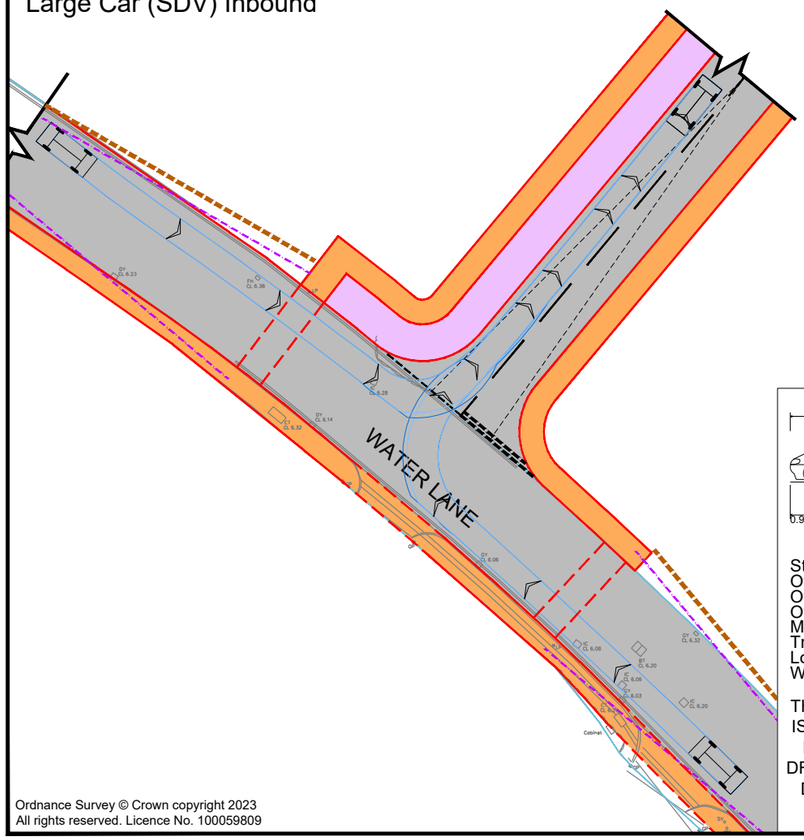
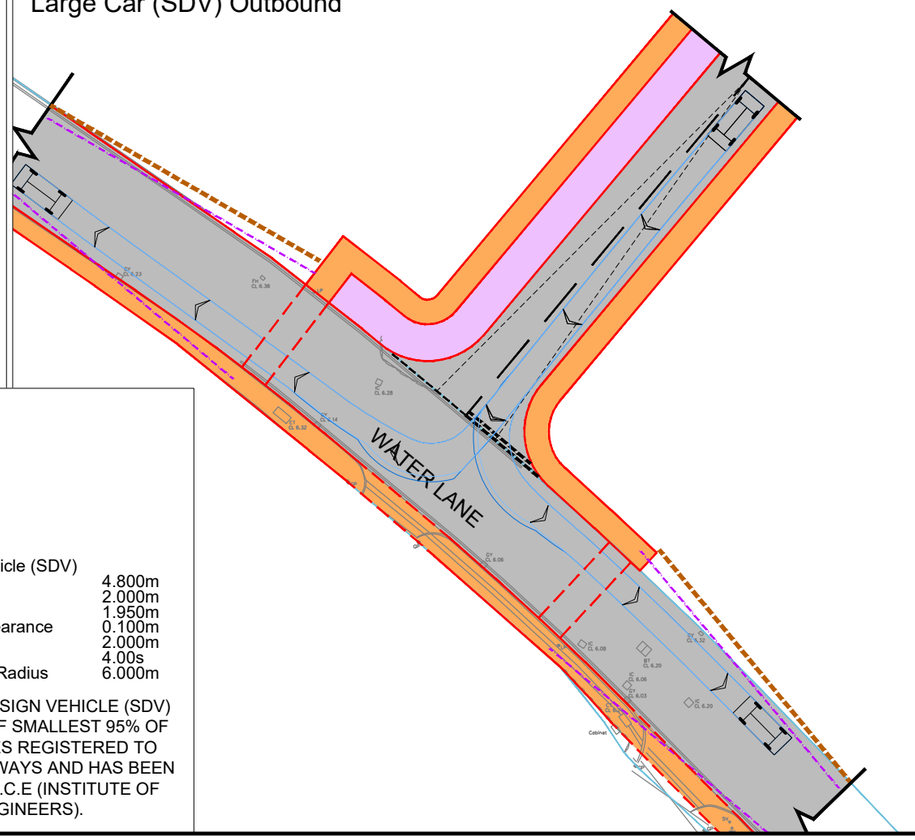


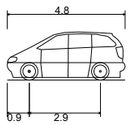
'Standard' Rigid Bus	
Overall Length	12.000m
Overall Width	2.550m
Overall Body Height	3.069m
Min Body Ground Clearance	0.309m
Track Width	2.350m
Lock to lock time	4.00s
Wall to Wall Turning Radius	10.771m

Large Car (SDV) Inbound



Large Car (SDV) Outbound





Standard Design Vehicle (SDV)	
Overall Length	4.800m
Overall Width	2.000m
Overall Body Height	1.950m
Min Body Ground Clearance	0.100m
Track Width	2.000m
Lock to lock time	4.00s
Wall to Wall Turning Radius	6.000m

THE STANDARD DESIGN VEHICLE (SDV) IS A COMPOSITE OF SMALLEST 95% OF PRIVATE VEHICLES REGISTERED TO DRIVE ON UK HIGHWAYS AND HAS BEEN DEVISED BY THE I.C.E (INSTITUTE OF CIVIL ENGINEERS).

Notes:
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REV.	DETAILS	DRAWN	CHECKED	DATE
-	-	-	-	-

STATUS:
INFORMATION ONLY

CLIENT:
Exeter City Council

PROJECT:
Water Lane Design Framework

DRAWING TITLE:
Swept Path Analysis
Single Deck Bus & Large Car (SDV)

SCALES:
1:500 at A3

DRAWN:	CHECKED:	DATE:
JB	TB	08.03.2024

SLR

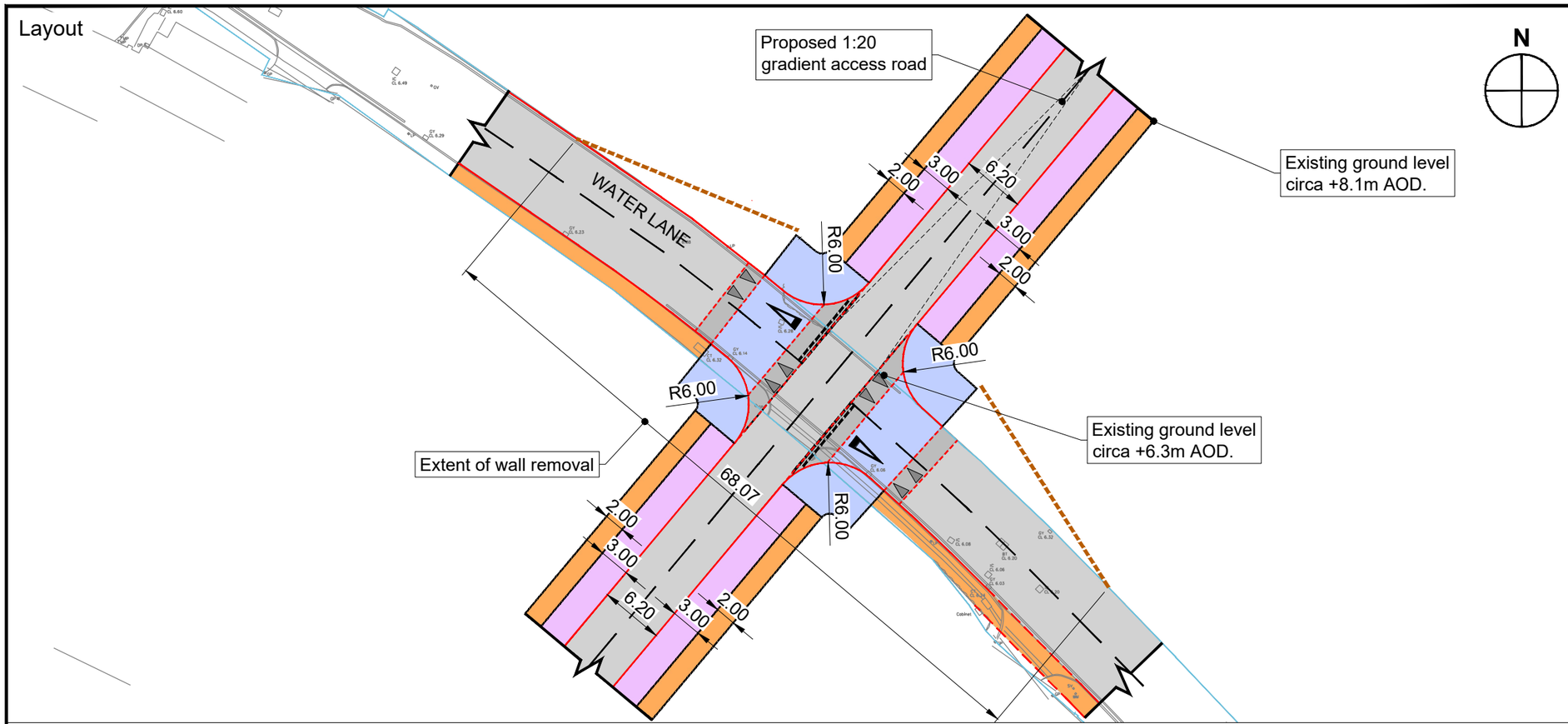
DRAWING NUMBER: 205287A/PD03/AT01

REVISION: -

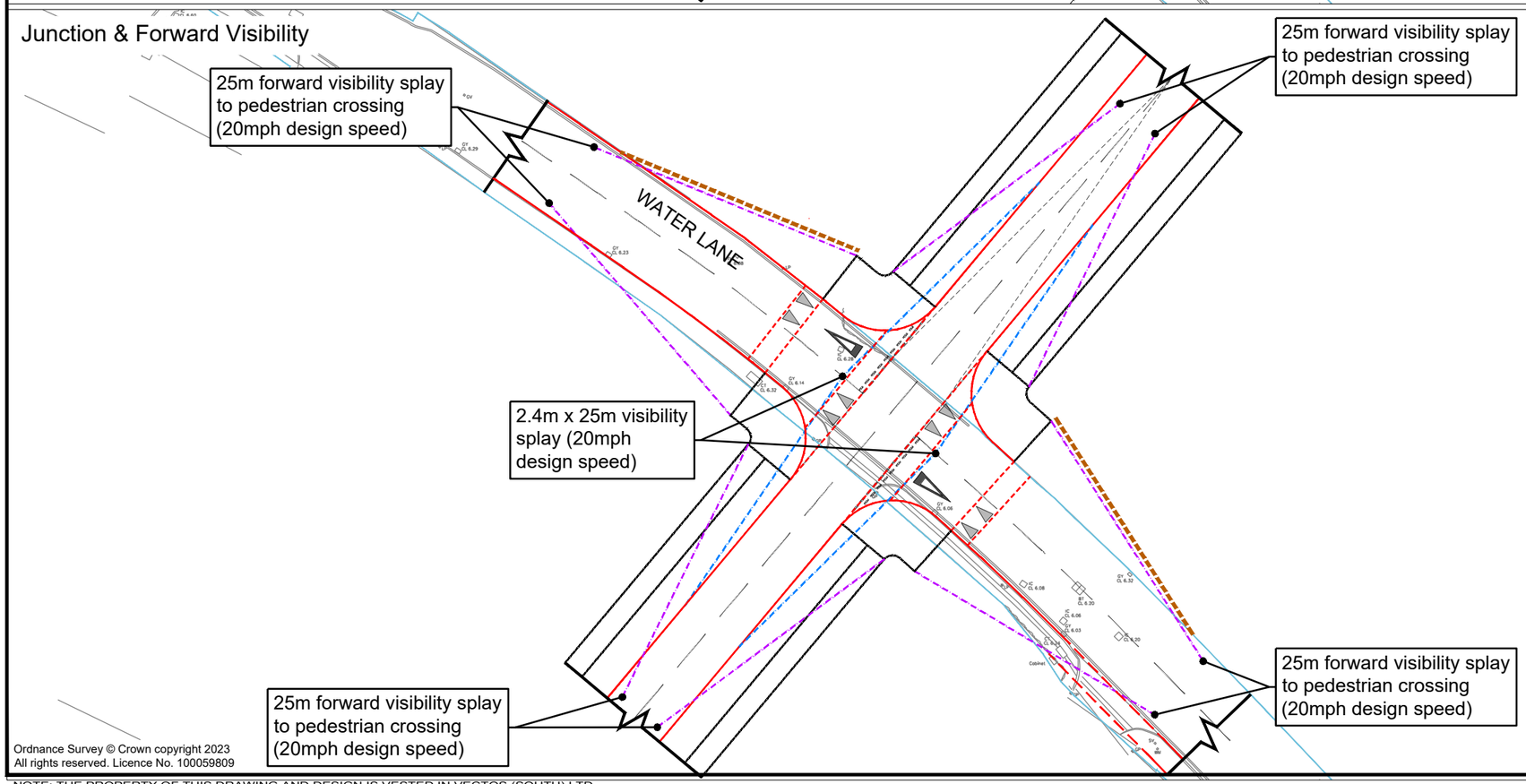
Appendix B

Foundry Lane/Water Lane Access Option 3

Layout



Junction & Forward Visibility



Notes:
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KEY:

- Junction visibility
- Forward visibility to pedestrian crossing
- Extent of wall removal
- Proposed footway
- Proposed cycleway
- Proposed shared use area
- Proposed carriageway
- Proposed raised table ramp
- Proposed pedestrian / cycle crossing point
- Extent of publicly maintainable highway

REV.	DETAILS	DRAWN	CHECKED	DATE
-	-	-	-	-

STATUS: INFORMATION ONLY

CLIENT: Exeter City Council

PROJECT: Water Lane Design Framework

DRAWING TITLE: Water Lane Access Option 3

SCALES: 1:500 at A3

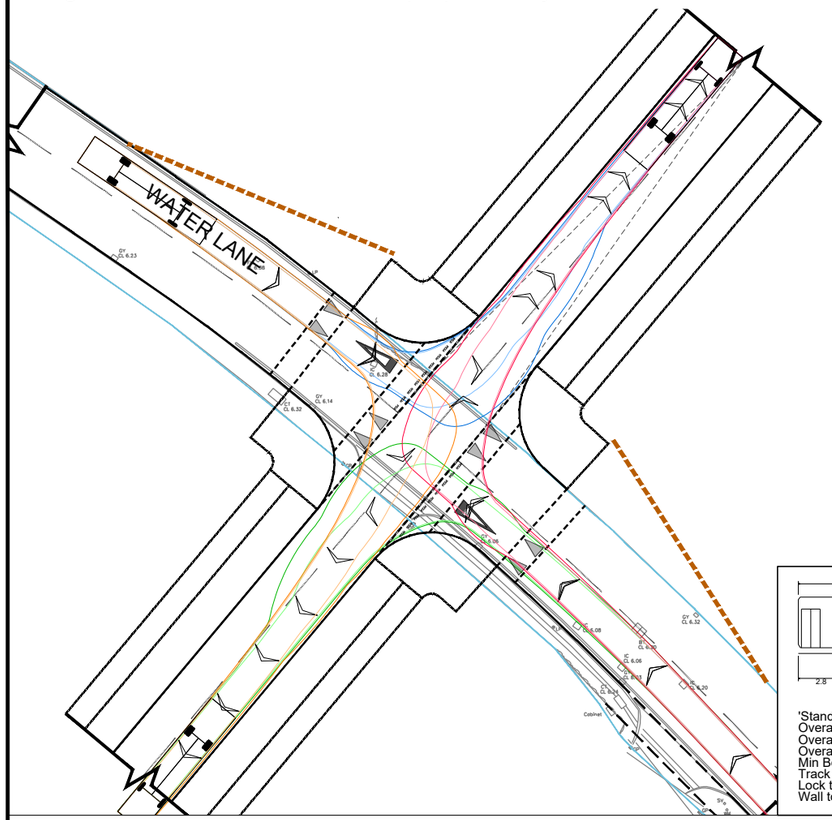
DRAWN:	CHECKED:	DATE:
JB	TB	18.03.2024

SLR

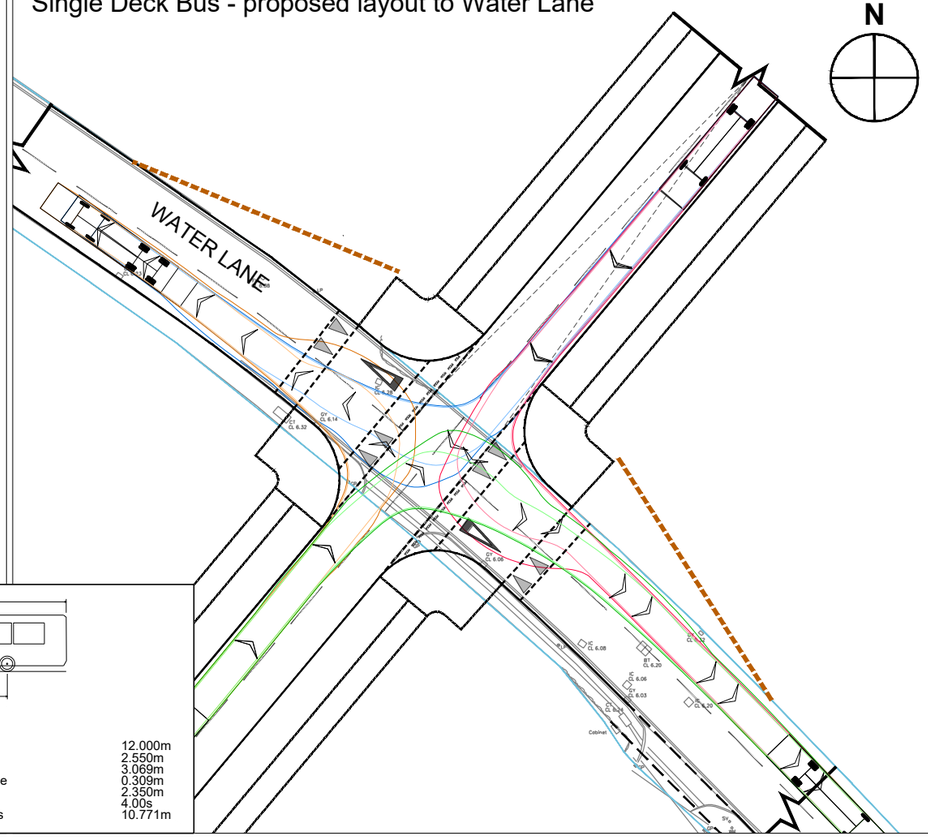
DRAWING NUMBER: 205287A/PD04

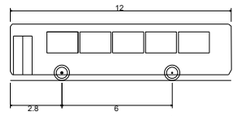
REVISION: -

Single Deck Bus - Water Lane to proposed layout



Single Deck Bus - proposed layout to Water Lane





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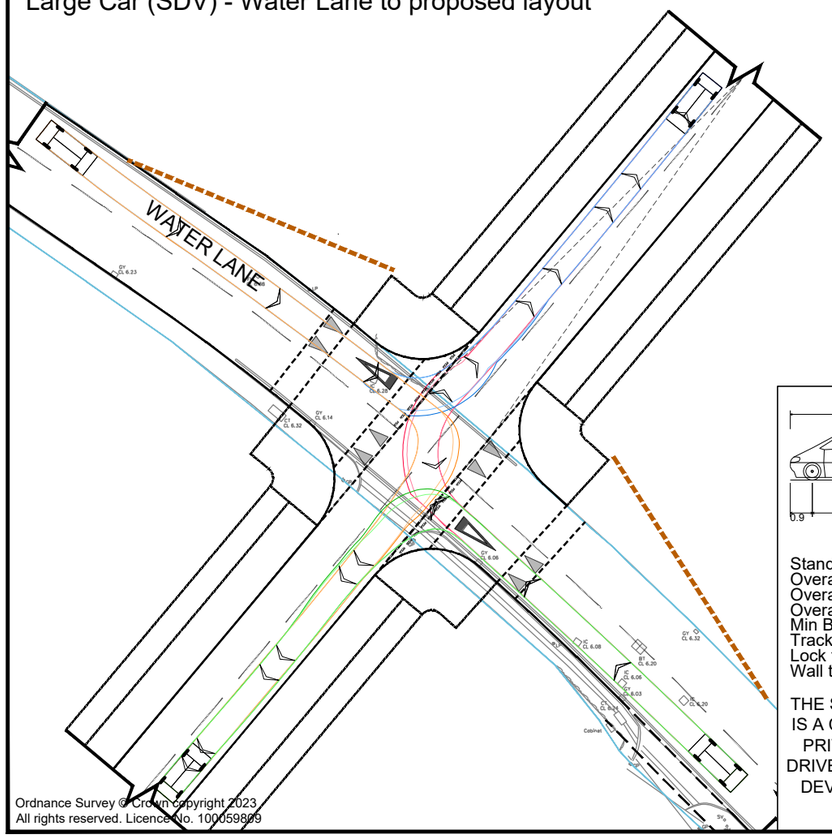
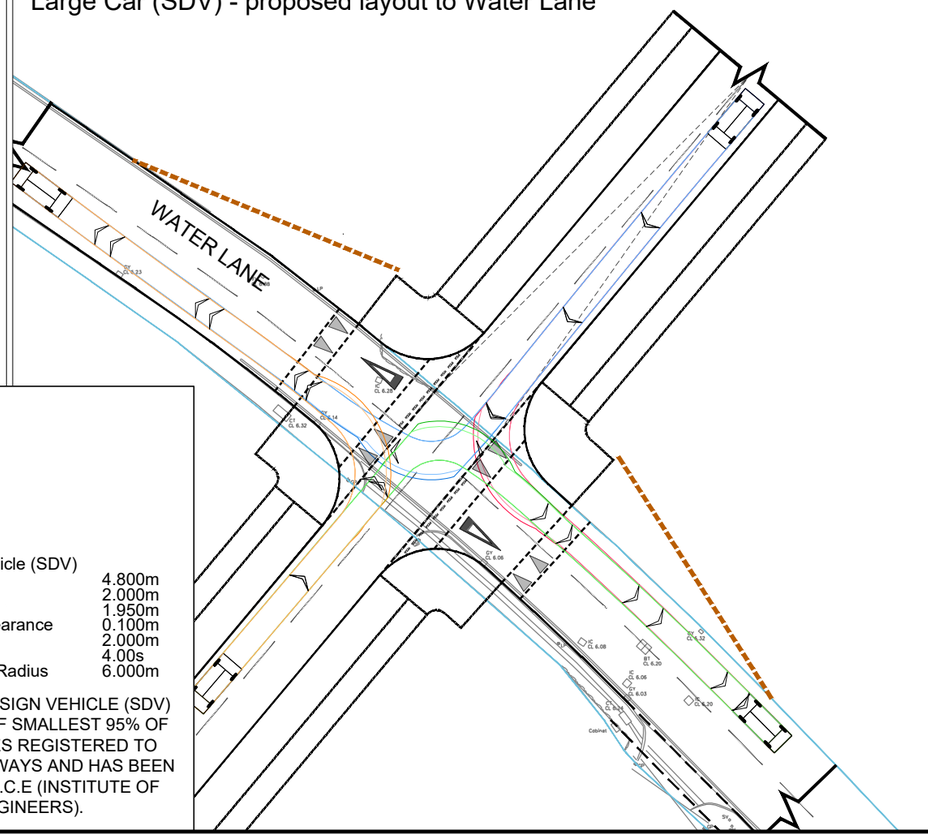
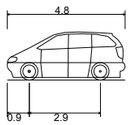
Wall to Wall Turning Radius	10.771m

Large Car (SDV) - Water Lane to proposed layout



Large Car (SDV) - proposed layout to Water Lane





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STATUS:
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Exeter City Council

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Water Lane Design Framework

DRAWING TITLE:
Swept Path Analysis
Single Deck Bus & Large Car (SDV)

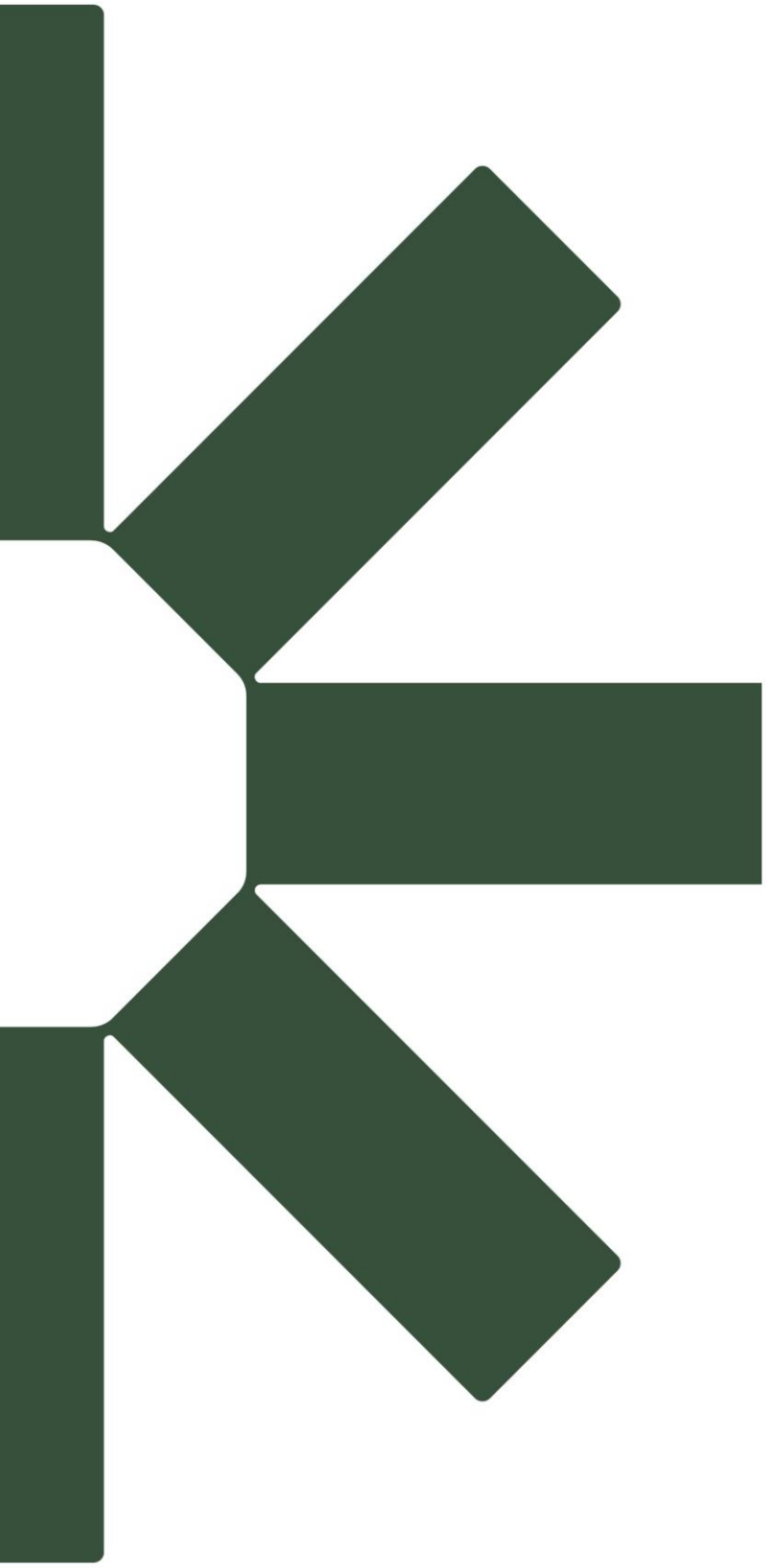
SCALES:
1:500 at A3

DRAWN:	CHECKED:	DATE:
JB	TB	08.03.2024

SLR

DRAWING NUMBER: 205287A/PD04/AT01

REVISION: -



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