

Brown & Co JH Walter

Proposed Residential Development Eastfield Lane, Welton Transport Note

November 2022

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Client Commission

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LTP PROJECT TEAM

As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CVs are available upon request to demonstrate our experience and credentials.

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Document Control



PROPOSED RESIDENTIAL DEVELOPMENT EASTFIELD LANE, WELTON TRANSPORT NOTE

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I. INTRODUCTION

I.I Background

- 1.1.1 Local Transport Projects Ltd (LTP) has been commissioned by Brown & Co JHWalter to produce a Transport Note (TN) to address comments made by LCC Highways and the CLLP Team for the potential removal of the site as a proposed residential development allocation on land to the west of Eastfield Lane in Welton, Lincolnshire.
- 1.1.2 The local planning authority for the site is West Lindsey District Council (WLDC), and the local and highway authority for the site is Lincolnshire County Council (LCC).
- 1.1.3 This TN provides an appraisal of the proposed highway works on Eastfield Lane to the east and south of the site.
- 1.1.4 A Transport Assessment (TA) (LTP, 2022) that provides a detailed appraisal of all transport aspects associated with the proposed development was produced for the original planning application. Reference has been made to the associated TA when preparing this document, with specific information and traffic projections taken directly from the TA.

1.2 Site Location & Existing Use

1.2.1 The application site is located to the west of Eastfield Lane in the village of Welton and currently forms agricultural land. The site is bound by agricultural land to the north, a combination of agricultural land and Eastfield Lane to the east, residential properties served by Eastfield Lane, Dovecote Drive and Owls End to the south. The site is bound to the west by a public footpath (ref: Welt/54/1) that traverses north-south along the length of the development, connecting to Mill Lane further north and Eastfield Lane to the south. The approximate location and extents of the application site is shown in red below in Figure 1.



Figure 1: Site Location

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1.3 Development Proposals & Access Arrangements

- 1.3.1 This TN is based upon the proposals for the erection of circa 109 dwellings, comprising of a mix of dwelling type and size at land to the west of Eastfield Lane.
- 1.3.2 Vehicular access to the site is to be provided at the location of an existing farm access that is to be redesigned as part of the proposals to form a simple priority T-junction with Eastfield Lane on the eastern boundary of the site.
- 1.3.3 Cyclists are expected to access the site via the Eastfield Lane access on-carriageway, in line with the principles outlined within 'Manual for Streets' (MfS), which advises that "cyclists should generally be accommodated on the carriageway. In areas with low traffic volumes and speeds, there should not be any need for dedicated cycle lanes on the street" (DfT, 2007b).
- 1.3.4 Three pedestrian-only accesses are to be provided on the western boundary of the site, connecting to the existing public footpath that runs along the site's western boundary. Pedestrians are also expected to access the site via Eastfield Lane, with a footway proposed on the western side of the carriageway to tie in with existing local pedestrian infrastructure.
- 1.3.5 As part of the detailed design of the site, which is to form part of a subsequent reserved matters application, the proposed parking provision is expected to be provided in line with the requirements of LCC Highways, and is therefore expected to be suitable to accommodate the likely parking demand generated by the site.
- 1.3.6 Also as part of the detailed design of the site, the internal highway network of the site is to be designed to ensure that refuse and delivery vehicles can utilise the highway alignment to enter and exit the site in a forward gear.



Photo 1: Proposed Site Access

1.4 Allocation Status & Planning History

1.4.1 The site is potentially allocated for residential development in the 'Central Lincolnshire Local Plan Consultation Draft' (CLLPT, 2021) (ref: WL/WELT/008A), with an indicative capacity of 109 dwellings. The boundary of the allocation site is outlined in Figure 2.





Figure 2: WL/WELT/008A Allocation

Source: CLLPT, 2021

- 1.4.2 The allocation refers to two potential transport related mitigation measures which could be implemented as part of the development of the site, outlined as follows:
 - "Where possible provide new linkages for walking and cycling between new development and facilities outside of the site area"; and
 - "Development should promote the use of sustainable modes of transport and improve linkages to these".
- 1.4.3 Directly west of the proposed site, an application (ref: 143728) was submitted in August 2021 to 'erect 49 dwellings with associated highway networks, earthworks to create a drainage attenuation pond, landscaping and boundary treatments'. The application was subsequently approved in February 2022.
- 1.4.4 It is understood that there have been discussions surrounding the potential for an access route to be provided between the proposed site and the site directly west, which now has an adopted highway, although this is still subject to developer plans.

1.5 Local Highway Network

- 1.5.1 As highlighted previously in section 1.3, the site is to be accessed via a new simple priority T-junction with Eastfield Lane on the site's southern boundary. Eastfield Lane is a two-way single carriageway that varies in width between approximately 4.5m and 5.5m within the vicinity of the proposed access location. The road is subject to a derestricted speed limit (60mph) which reduces to a 30mph speed limit approximately 105m to the south of the proposed access. There are not any parking or waiting restrictions within the vicinity of the site on Eastfield Lane.
- 1.5.2 Feedback received from LCC Highways stated that it would be required to extend the current 30mph speed limit in order to cover the proposed site access junction. This would be subject to a Traffic Regulation Order (TRO) that is to be agreed with LCC and funded by the Developer.







1.5.3 Approximately 2.4km to the east of the proposed access, Eastfield Lane provides access to the A46 (Market Rasen Road) via a simple priority T-junction. Approximately 700m to the west of the site, Eastfield Lane provides access to Ryland Road and Dunholme Road via priority junctions. Ryland Road provides access to Hackthorne Road approximately 300m further west via a mini roundabout and continues west through Welton Village.



2. TRAFFIC DISTRIBUTION

2.1 Traffic Distribution on Eastfield Lane

- 2.1.1 The distribution of traffic associated with the proposed 109 dwellings has been predicted using a gravity model produced with the TA (LTP, 2022).
- 2.1.2 This trip distribution data has been combined with an assessment of route choice (traffic assignment) in order to determine the likely distribution of development traffic across the highway network. The predicted traffic assignment has been undertaken utilising journey planning tools to help determine the relative attractiveness of alternative routes, with consideration of influences such as the location and size of settlements, employment areas within each workplace destination, and known existing traffic conditions on the relevant routes. The defined zones utilised within the gravity model calculations are illustrated in Figure 3 below:



Figure 3: Gravity Model Zones

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2.1.3 The detailed calculations of the gravity model are attached as Appendix 4 of the TA (LTP, 2022), with the results summarised below in Table 1.



Zone	Route	Distribution Split	AM 2-Way	PM 2-Way
Α	Lincoln Road (S)	52.9%	28	28
В	Ryland Road (S)	13.5%	7	7
С	Cliff Road (W)	16.8%	9	9
D	Eastfield Lane (E)	11.6%	6	6
E	Hackthorn Road (N)	5.1%	3	3
TOTAL		100.0%	53	52

^{*}The total may not represent the sum of its parts due to rounding

2.2 Current Traffic Levels on Eastfield Lane

- 2.2.1 A DfT manual count was undertaken on the 8th June 2018 (ref: 802177) within the vicinity of the Eastfield Lane/A46 Market Rasen Road junction to the east of the proposed development site.
- 2.2.2 The manual count recorded 66 vehicles during the AM peak (08:00-09:00) and 73 vehicles during the PM peak hour (17:00-18:00) travelling along Eastfield Lane with 526 vehicles recorded between 07:00-19:00.
- 2.2.3 It should be noted that of the 526 total vehicles recorded on Eastfield Lane, 82 were Light Goods Vehicles (LGV) and two were Heavy goods Vehicles (HGV).

2.3 Impact on Local Junctions

2.3.1 The predicted increase in traffic across the key local junctions as a result of the development is summarised in Table 2.

Table 2: Predicted Traffic Impact at Key Local Junctions

Junction	Zones Included	Development Impact (Two-Way Vehicle Trips)		
AM Peak				
Eastfield Lane/Ryland Road/Dunholme Road Priority Junction	A, B, C, E	+47		
Ryland Road/Hackthorn Road Mini-Roundabout	A, C, E	+40		
Ryland Road/Lincoln Road/Cliff Road Priority Junction	A, C	+37		
Lincoln Road/A46 Junction	Α	+28		
Heath Lane/A15 Junction	С	+9		
Eastfield Lane/A46 Junction	D	+6		
PM Peak				
Eastfield Lane/Ryland Road/Dunholme Road Priority Junction	A, B, C, E	+47		
Ryland Road/Hackthorn Road Mini-Roundabout	A, C, E	+40		
Ryland Road/Lincoln Road/Cliff Road Priority Junction	A, C	+37		
Lincoln Road/A46 Junction	Α	+28		
Heath Lane/A15 Junction	С	+9		
Eastfield Lane/A46 Junction	D	+6		



- 2.3.2 The DfT has previously issued guidance that transport assessment of development impacts could be based on a threshold of "30 two-way peak hour vehicle trips" (DfT, 2007a). This guidance acknowledged that this threshold was not to be applied rigidly, but rather that it provided "a useful point of reference from which to commence discussions".
- 2.3.3 This national DfT guidance has now been superseded and replaced with the 'National Planning Policy Framework' (NPPF) (MHCLG, 2021) and its accompanying 'Planning Practice Guidance' (PPG) (DCLG, 2014). NPPF and PPG require that transport assessment is undertaken for "developments that generate significant amounts of movement", although this is not defined. It is therefore acknowledged that there is no set threshold for assessment within the current national planning policy.
- 2.3.4 As detailed within the TA (LTP, 2022), the development could be expected to generate up to 53 two-way trips during the AM peak hour and 52 during the PM peak hour. As demonstrated within Table 1 and Table 2 the vehicle trips expected to be generated by the development will split at a number of local junctions, subsequently reducing the impact.
- 2.3.5 Given that only 6 two-way vehicle trips (11.6%) generated by the development are expected to travel to the Eastfield Lane/A46 junction during the AM and PM peaks, it is considered that the proposed development is not expected to have a significant impact on the operation of Eastfield Lane to the east of the development site.



3. ROAD WIDTHS

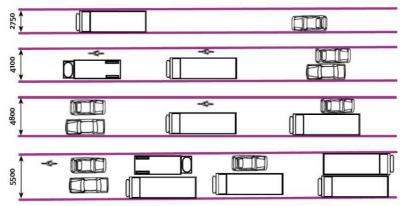
3.1 Introduction

- 3.1.1 Based on feedback received from LCC Highways (ref: John Clifton) requested that the following highway improvements will be required:
 - 3 no. passing places along Eastfield Lane between the development site and the A46/Eastfield Lane junction."

3.2 Road Widths on Eastfield Lane

3.2.1 The pre-application feedback outlined in Section 1.2 suggests that Eastfield Lane currently has a constrained width and is not suitable for two-way movement of traffic. Typically, a carriageway width of 4.1m can be suitable to accommodate the passing of two cars, with a width of 5.5m considered suitable to accommodate the passing of two Heavy Goods Vehicles (HGVs), or cars and caravans, based on guidance within Manual for Streets (MfS) (DfT, 2007) and illustrated in Figure 4.

Figure 4: Carriageway Width Requirements



Source: DfT, 2007

- 3.2.2 A carriageway width of 2.75m can only fit the passing of a single vehicle, a carriageway width of 4.1m can accommodate the passing of two cars, a width of 4.8m can accommodate the passing of a larger vehicle and a car, and a carriageway width of 5.5m can accommodate the passing of two large vehicles.
- 3.2.3 Eastfield Lane measures 4.0m in width within the vicinity of the proposed access and at its widest Eastfield Lane measures 4.8m in width to the east of the proposed access. At its narrowest, Eastfield Lane currently measures 3.8m in width for a short section at a point approximately 30m to the east of the proposed site access, although it is proposed to widen this section of the carriageway to 4.8m in width, as shown in the drawing attached as Appendix 2.



3.2.4 The average car in the UK typically has a width of between circa 1.6m and 1.9m, with the width of the largest vehicle to utilise the road (a standard HGV) expected to measure circa 2.5m. Based on this it is considered that, for the largest vehicle to pass a car on Eastfield Lane, a road width of circa 4.1-4.4m would be required. The width along Eastfield Lane was measured in several places along the length of the road, as shown in Appendix 1. On average the width of Eastfield Lane was measured at 4.3m which is sufficient to allow for the two-way movement of two average size cars.



Photo 3: Eastfield Lane

- 3.2.5 Whilst it is acknowledged that some short sections of Eastfield Lane are not of a sufficient width to accommodate two-way car movements (4.0m), as part of the proposals passing places are proposed on Eastfield Lane (as shown in Appendix 1), which are to be designed of a sufficient width and length to accommodate HGVs. Given that Eastfield Lane also has sufficient inter-visibility between the passing places, it is considered that the provision of the additional passing places would be suitable to accommodate vehicle movements generated by the proposals.
- 3.2.6 The proposed passing places would also be more than sufficient to accommodate the expected HGV movements that already occur on Eastfield Lane based on the recorded flows from the DfT's manual traffic count point wherein HGVs accounted for two out of the 526 recorded vehicle movements.



4. PROPOSED SITE SAFETY

4.1 Road Safety Impact

- 4.1.1 A road safety assessment was undertaken as part of the TA (LTP, 2022) that found a total of two collisions, have occurred on Eastfield Lane during the five-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements of the proposed development. It is therefore considered that there are no existing road safety issues pertinent to the development of the site. The DfT has released provisional part-year 2021 collision data covering the period 01/01/2021 to 30/06/2021. No additional collisions occurred within the study area in the first half of 2021 and therefore the findings of the above appraisal are unchanged.
- 4.1.2 If the internal roads and access junction are designed with due consideration to road safety, with appropriate highway design features incorporated into the detailed design, then the proposals should not have a detrimental road safety impact on the local highway network and should not adversely affect the safety of other road users. Furthermore, highway safety along Eastfield Lane is expected to be improved by the implementation of the proposed passing places, reducing the risk of collisions along the route.

4.2 Access Visibility

- 4.2.1 An assessment of the achievable visibility splays at the proposed access junction with Eastfield Lane was undertaken as part of the TA (LTP, 2022), both on-site and utilising OS mapping. On-site observations highlighted that the visibility splays at the access junction are not constrained due to the vertical alignment of the carriageway.
- 4.2.2 The analysis shows that the proposed access can achieve in excess of the required 2.4m x 215m visibility splay to the left.



Photo 4: Existing Visibility to the Left of the Access

4.2.3 The analysis undertaken as part of the TA (LTP, 2022) shows that the proposed access can achieve in excess of the required 2.4m x 120m visibility splay to the right. The 2.4m x 120m visibility splay (based on robust 40mph assumed speeds) encroaches over the ditch, however a visibility splay of 2.4m x 67m (required for 30mph speeds which is considered more representative of actual vehicle speeds on the northbound approach to the access) is achievable without encroaching over the ditch in the verge.



Photo 5: Existing Visibility to the Right of the Access

4.2.4 Therefore, the achievable visibility splays to the left and right of the access junction are considered to provide sufficient SSD.

4.3 Forward Visibility

- 4.3.1 Forward visibility relating to the visibility between westbound vehicles on Eastfield Lane and vehicles waiting to turn right into the site has been assessed on on-site observations and OS mapping as shown as Appendix 5 in the TA (LTP, 2022). The forward visibility assessment indicated that the required SSD of 215m appears to be achievable on the westbound approach to vehicles waiting to turn right into the site, subject to the trimming of vegetation within the apparent extents of the adopted highway.
- 4.3.2 Forward visibility relating to the visibility between vehicles waiting to turn right into the site access and northbound vehicles on Eastfield Lane has been assessment based on on-site observations and OS mapping in the TA (LTP, 2022). To form a robust assessment, the assessment was based on northbound vehicles approaching the access at 40mph therefore with a required SSD of 120m. The forward visibility envelope demonstrated that the required forward visibility of 120m is achievable on the northbound approach to vehicles waiting to turn right into the site.



5. HIGHWAY IMPROVEMENTS

5.1 LCC Highways Response

- 5.1.1 As previously mentioned in section 3.1.1, LCC Highways (ref: John Clifton) requested that highway improvements will be required for the proposed development and are summarised in full below:
 - "Eastfield Lane will require widening of the carriageway and the provision of a
 footway, to extend the existing footway into the site and provide adequate
 carriageway width. These improvement works will require the culverting of one or
 both existing roadside ditches and as such will be dependent on gaining the relevant
 permissions and consents;
 - Stone surfacing upgrade of the existing Public Right of Way that runs adjacent to the site;
 - The provision of tactile crossing points at the following locations Eastfield Lane, outside No. 25; Junction of Eastfield Road/Northfield Road; Junction of Hackthorn Road/Ryland Road and Ryland Road, outside No. 9;
 - Level surface upgrade of the bus stop outside No. 79 Ryland Road; and
 - 3 no. passing places along Eastfield Lane between the development site and the A46/Eastfield Lane junction."
- 5.1.2 A plan showing the proposed passing places is attached at Appendix 1. Three passing places are proposed along Eastfield Lane to the east of the proposed development site and are expected to be designed to be of sufficient width and length to accommodate standard HGVs.
- 5.1.3 A plan of the proposed highway widening works and extension to the footway on the western side of Eastfield Lane to the south of the proposed site access is attached as Appendix 2.



6. **CONCLUSIONS**

- 6.1.1 This Transport Note (TN) provides an appraisal of the proposed highway management works associated with the proposed residential development at land to the west of Eastfield Lane in Welton. This TN has been produced to address comments on the application from LCC Highways (dated: 05/05/2022).
- 6.1.2 The proposals are for a residential development of 109 dwellings on land to the north of Eastfield Lane. Vehicular access to the site will be provided via an existing farm access that is to be redesigned as part of the development proposals to form a simple priority T-junction with Eastfield Lane on the site's eastern boundary. It should be noted that discussions between the client and the developer of the residential development to the west have suggested the possibility of providing a second vehicular access to the site from said development to the west at some point in the future.
- 6.1.3 As part of the proposals, additional passing places are to be provided along Eastfield Lane between the site access and the A46 junction to allow the two-way passage of a car and an HGV. Current road widths on Eastfield Lane measured 4.3m on average, which is sufficient for the two-way safe passage of two cars (DfT, 2007).
- 6.1.4 The trip generation projections indicate that the development could be expected to generate up to 53 two-way trips during the AM peak hour and 52 during the PM peak hour (LTP, 2022).
- 6.1.5 The distribution and assignment of traffic across the local highway network has shown that the site would generate less than 30 two-way vehicle movements at junctions on the wider highway network during the AM and PM peak hours, including at the Eastfield Lane/A46 Junction, the Lincoln Road/A46 junction and the Heath Lane/A15 junction. The assessment determined that 11.6% of vehicle trips generated by the proposed development would be expected to travel to the Eastfield Lane/A46 junction, which equates to 6 two-way trips during the typical AM and PM peaks. Therefore, it is considered that the proposed development is not expected to have a significant impact on the operation of this junction.
- 6.1.6 The TA (LTP, 2022) also demonstrated that the distribution and assignment of traffic across the local highway network has shown that only slightly in excess of 30 two-way trips are expected to occur at local junctions within Welton village (Eastfield Lane/Ryland Road/Dunholme Road priority junction, the Ryland Road/Hackthorn Road mini-roundabout and the Ryland Road/Lincoln Road/Cliff Road priority junction). Therefore, it is considered that the proposed development is not expected to have a significant impact on the operation of these junctions. These junctions are minor priority junctions in a village and are therefore expected to currently be lightly trafficked, further suggesting that the proposed development is not expected to have a significant impact on the operation of these junctions



- 6.1.7 A road casualty study (LTP, 2022) showed that two PICs occurred on Eastfield Lane during the five-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements of the proposed development. If the internal roads and access junction are designed with due consideration to road safety, with appropriate highway design features incorporated into the detailed design, then the proposals should not have a detrimental road safety impact on the local highway network and should not adversely affect the safety of other road users
- 6.1.8 The required visibility splays of 2.4m x 120m to the right and 2.4m x 215m to the left of the proposed access appear to be achievable, subject to vegetation clearance within the highway boundary (LTP, 2022).
- 6.1.9 It is concluded from the assessments within this TN that the proposed development would be expected to not have a significant impact in terms of traffic impact, and the proposed access arrangements are suitable to serve the proposed development.



7. REFERENCES

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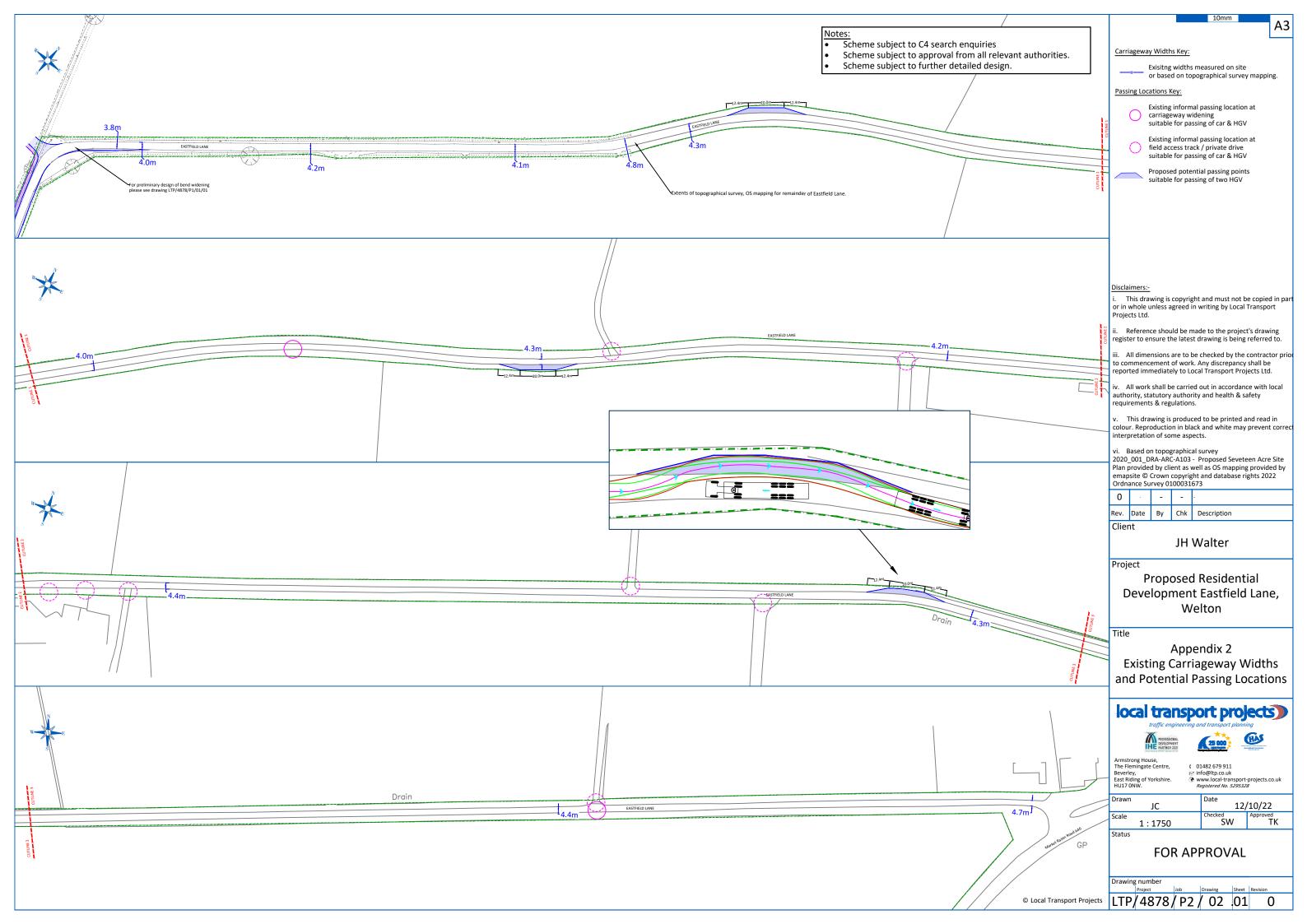
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Appendix I - Proposed Passing Places





Appendix 2 – Proposed Highway Works

