

JH Walter LLP

**Proposed Residential Development,
Land Off Boston Road, Gosberton,
Spalding**

Highway Access Appraisal

December 2016

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Client Commission

Client:	JH Walter LLP	Date Commissioned:	Nov 2016
Commissioned By:	Stephen Catney	Order No:	-

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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 CV's are available upon request to demonstrate our experience and credentials.

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PROPOSED RESIDENTIAL DEVELOPMENT, LAND OFF BOSTON ROAD, GOSBERTON, SPALDING

HIGHWAY ACCESS APPRAISAL

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 Local Transport Projects Ltd (LTP) has been commissioned by JH Walter LLP to undertake a Highway Access Appraisal (HAA) in connection with proposals to develop a parcel of land located west of the B1397 Boston Road, Gosberton, Spalding. The proposal seeks to provide 46 dwellings at the site.
- 1.1.2 The Local Highway Authority, Lincolnshire County Council (LCC), has outlined the following potential concern with regards to the level of visibility that could be achieved from an access on Boston Road:
- 1.1.3 *“Can you please ask the Applicants/Agents to provide a drawing that shows the visibility that is to be provided at the access into this proposed development, Boston Road, from which this development would take its vehicular access, has a speed limit of 50mph, for which the stopping sight distance (the ‘y’ dimension of the visibility splay) is 160 metres. Note; The principal function of Boston Road is to provide vehicular movement and therefore the geometric highway design standards within Design Manual for Road and Bridges (DMRB) apply, rather than the standards within Manual for Streets (MfS). With the site’s frontage being on the inside of a bend in Boston Road, it very much appears as if the required junction visibility would not be achievable without taking land from adjacent properties” (Ref: Jon Sharpe, 31/08/16).*
- 1.1.4 The aim of this HAA is to assess whether it is felt that an access, which is provided with an appropriate level of visibility, could be provided to the site.

1.2 Site Location

- 1.2.1 The proposed development site is located on the western side of Boston Road, a short distance north of Gosberton village centre. The approximate boundary of the site is shown in Figure 1.

Figure 1: Site Location



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1.3 Development Proposals and Highway Access

- 1.3.1 The development proposals seek to provide 46 residential dwellings at the site. It is understood that the preferred location for a vehicular access is approximately mid-way along the site's frontage with Boston Road, however, there is flexibility to relocate the access if required. Any vehicular access would be flanked by a footway on both sides. A pedestrian/cycle only link is proposed to be provided to the site from the A152 High street.

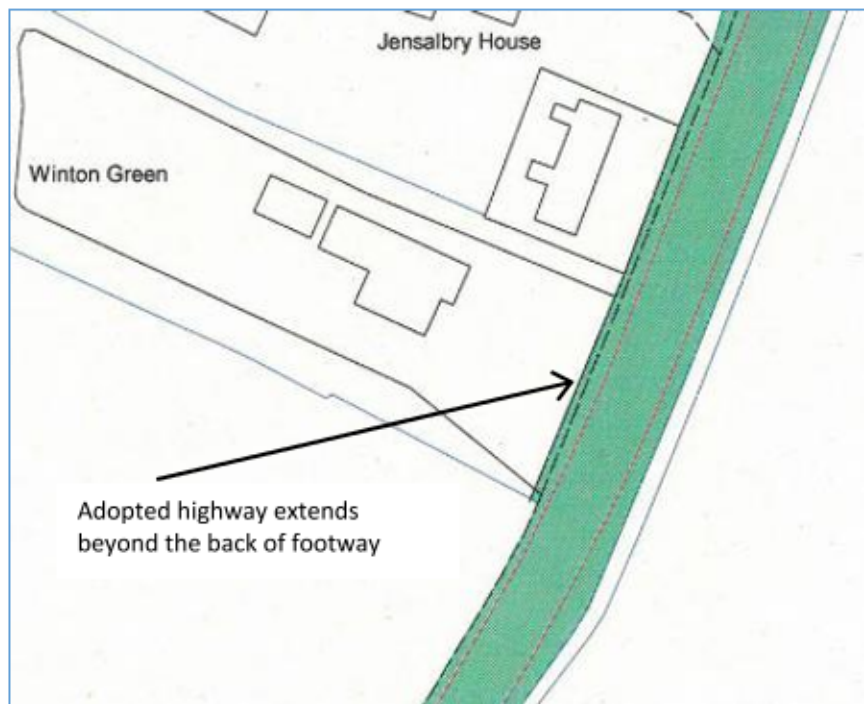
1.4 Local Highway Network

- 1.4.1 Within the vicinity of the site frontage, the posted speed limit on Boston Road is 50mph. A 30mph speed limit on Boston Road begins approximately 70m southwest of the site's southern boundary with Boston Road. Boston Road measures approximately 7.3m in width and is flanked by a footway on the western side.

1.5 Boston Road – Highway Boundary

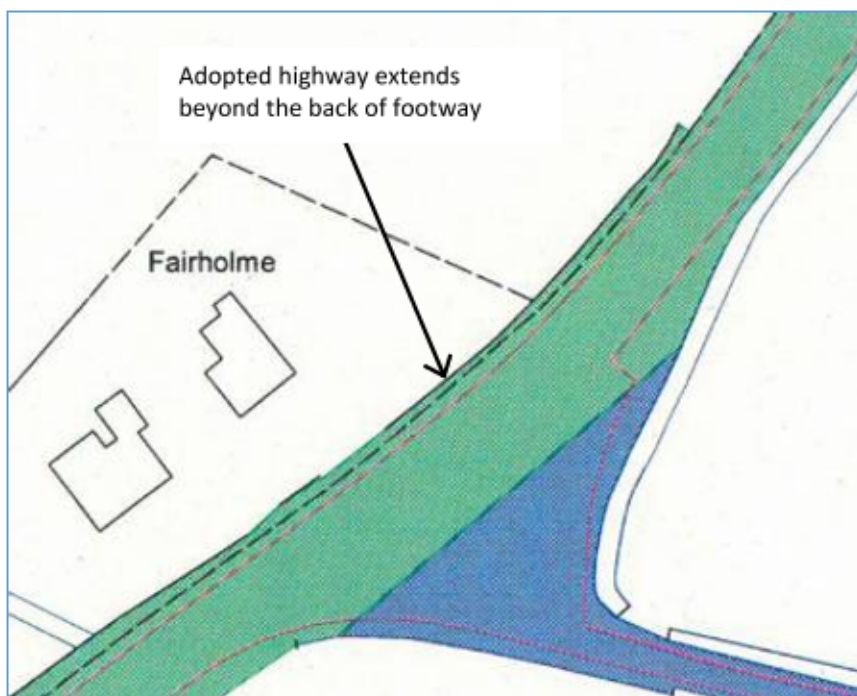
- 1.5.1 Ordinarily, at most sites, the highway boundary is denoted by either the back of the footway, the back of a verge or the centre of a hedge. In the case of the western side of Boston Road it was difficult to establish the exact line of the highway boundary at the time of the site visit. Although the back of footway would appear to provide this demarcation point, features that are normally located within the adopted highway (such as manhole covers and street lighting columns) were observed to be located behind the footway in land which appeared to be under private ownership.
- 1.5.2 Subsequent discussions with LCC (ref: Jon Sharpe, Principal Development Management Officer) has identified that the adopted highway along this section of Boston Road does extend beyond the back edge of the footway. This is illustrated on the LCC-supplied highway maintenance map which is included as Appendix 1 and from which screenshots are provided within Figure 2 and Figure 3. The back of footway is denoted by the dashed black line, with the adopted highway extending beyond this, as identified by the green shading.
- 1.5.3 Jon Sharpe has confirmed that in these locations *"At some time a standard width footway would have been constructed on the highway verge and whatever remained is still highway verge. The residents of the frontage properties have simply taken their front lawns up to the back edge of the footway and effectively maintain part of our highway verge as they cut their lawns"* (email dated 29/11/16).

Figure 2: LCC Highway Maintenance Map (Northeast of Development Site)



Source: base mapping provided by LCC

Figure 3: LCC Highway Maintenance Map (Southwest of Development Site)



Source: base mapping provided by LCC

2.0 VEHICLE SPEED SURVEY

2.1 Vehicle Speed Survey

- 2.1.1 A vehicle speed survey was carried out on Wednesday 16th November 2016 within the extents of the site's frontage with Boston Road. Vehicles travelling in free-flow traffic conditions were measured using a hand-held radar gun, with reference to 'TA 22/81 – Guidelines for Vehicle Speed Measurement on All Purpose Roads' (Highways Agency, 1981). The posted speed limit at the survey location is 50mph.
- 2.1.2 Speeds of 200 free-flowing vehicles (100 northbound and 100 southbound) were recorded between the hours of 10:20-11:35. At the time of the survey the road surface was dry with fine overhead conditions. The speed survey results are included in full as Appendix 2 and are summarised in Table 1.

Table 1: Vehicle Speed Survey Results

Speed Category	Northbound (From Gosberton)	Southbound (To Gosberton)
Mean	38mph	39.8mph
85 th percentile (dry)	42mph	44mph
Wet 85 th percentile	39.5mph	41.5mph

- 2.1.3 'TA 22/81' (HA, 1981) recommends that vehicle speeds measured in dry weather should be converted to 'wet weather' speeds for design purposes. The guidance states that for all-purpose single carriageways, 4kph (or 2.48mph) should be deducted from the dry weather 85th percentile to obtain the wet weather 85th percentile speeds. Accordingly, the calculated wet weather 85th percentile speeds are 39.5mph northbound and 41.5mph southbound.
- 2.1.4 The results provided within Table 1 identify that measured vehicle speeds are some way below the posted 50mph speed limit, with mean vehicle speeds less than 40mph in both directions and wet 85th %ile speeds around the 40mph level.

3.0 VISIBILITY REQUIREMENTS & VISIBILITY SURVEYS

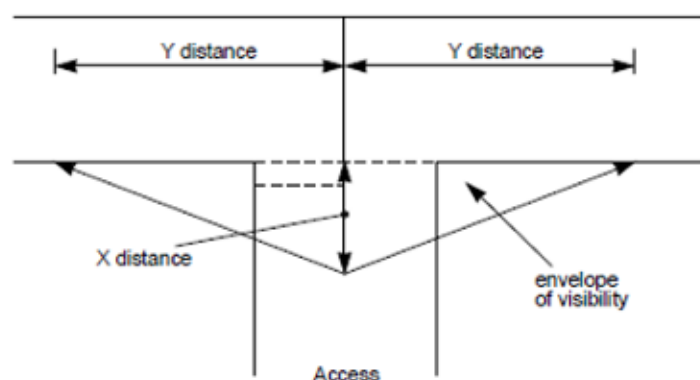
3.1 Background

- 3.1.1 It is acknowledged that LCC have outlined that, given the 50mph speed limit on Boston Road, the 'y' visibility splay should be consistent with guidance provided within the 'Design Manual for Roads and Bridges' (DMRB). However, given that measured vehicle speeds are some way below the posted 50mph speed limit, it is considered useful to review more recent visibility/Stopping Sight Distance (SSD) research that has been published since DMRB.

3.2 Visibility Splay Guidance Documents

- 3.2.1 There are currently two key documents that provide guidance relating to visibility splay requirements; DMRB, which is generally more applicable to predominantly trunk road, higher speed environments, and 'Manual for Streets' (MfS) (DfT, 2007), which is generally more applicable to low speed residential urban environments. MfS is also complemented by further guidance 'Manual for Streets 2' (MfS 2) (CIHT, 2010) for the application of the MfS principles on additional road types, such as busier streets and non-trunk roads. For information, Figure 4 illustrates the definition and measurement of the visibility splay distances described in this section.

Figure 4: Definition of 'x' and 'y' Distances



Source: DMRB TD 41/95 'Vehicular Access to All-Purpose Trunk Roads' (HA, 1995)

- 3.2.2 **'x' distance** – The DMRB guidance on the required setback, or 'x' distance, is outlined in 'TD 41/95 Vehicular Access to All-Purpose Trunk Roads', stating that "the 2.4m setback relates to normally only one vehicle wishing to join the trunk road at one time. The 4.5m covers the situation where two light vehicles may want to accept the same gap in the trunk road traffic" (HA, 1995a). Delays for vehicles looking to enter Boston Road from the site access would not be expected to be significant, with relatively low levels of traffic on the major and minor roads. It is therefore not considered to be necessary to provide visibility to allow two vehicles to utilise the same turning gap and, as such, the visibility splay requirements have been based on a 2.4m setback. Furthermore, more recent research indicates that the provision 'x' distances in excess of 2.4m can be detrimental to road safety, as "longer x distances may also result in more shunt collisions on the minor arm" (CIHT, 2010).

- 3.2.3 **'y' distance** – Stopping Sight Distance (SSD) is “the distance within which drivers need to be able to see ahead and stop from a given speed. It is calculated from the speed of the vehicle, the time required for a driver to identify a hazard and then begin to brake (the perception-reaction time), and the vehicle’s rate of deceleration” (DfT, 2007).
- 3.2.4 SSD research is provided in both DMRB and MfS/MfS 2. Depending on how the research is applied, a number of possible 'y' splay distances for the measured vehicle speeds on Boston Road may be appropriate. These different options are considered below.
- 3.2.5 DMRB (Design Speed Categories) – Within DMRB, desirable minimum SSDs are defined within 'TD 41/95 Vehicular Access to All-Purpose Trunk Roads' (HA, 1995a), as reproduced in Table 2 below.

Table 2: DMRB Stopping Sight Distances

Design Speed (kph)	Design Speed (mph)	Stopping Sight Distance (m)
50	31.07	70
60	37.28	90
70	43.50	120
85	52.82	160
100	62.14	215
120	74.56	295

- 3.2.6 As shown in Table 2, there is a marked change in SSD requirements between the different design speed categories, with a requirement for 120m where vehicle speeds slightly exceed 37.28mph, and 90m slightly below this speed. Applying the above design speed categories to the measured wet 85th %ile vehicle speeds on Boston Road (41.5mph southbound and 39.5mph northbound) would require SSDs (i.e. 'y' splay visibility distances) of 120m to both the left and right of the site access.
- 3.2.7 DMRB (SSD Formula) – As outlined above, use of the rounded design speed categories can provide marked difference in SSDs for minor differences in vehicle speeds. Therefore, an alternative approach and one that is more site specific is to calculate the actual SSD for the recorded vehicle speeds (using the SSD formula utilised to determine the DMRB thresholds in Table 2 above), rather than utilise the rounded categorised figure. Applying to the DMRB SSD formula to the measured speed on Boston Road would require 'y' splay distances of 107m to the left and 99m to the right.
- 3.2.8 MfS/MfS 2 – It is generally acknowledged that the SSD requirements outlined within the DMRB guidance are conservative, due to the adopted deceleration rate (2.45m/s^2) and driver perception-reaction time (2 seconds). In recent years, there has been significant research into SSD requirements. Some of this research was undertaken to inform the 'MfS' (DfT, 2007b) guidance and found that reaction times are generally lower than those adopted within DMRB, with the DMRB deceleration rates “more typically associated with snow-covered roads” (DfT, 2007).

- 3.2.9 MfS also outlines that “drivers are normally able to stop much more quickly than this [the distances referred to within DMRB] is response to an emergency. The stopping distances given in the Highway Code assume a driver reaction time of 0.67 seconds and a deceleration rate of 6.57 m/s^2 ” (DfT, 2007). The Highway Code driver reaction time (0.67 seconds) is therefore 66.5% quicker than that adopted within DMRB (2 seconds). The deceleration rate quoted within the Highway Code is between two and three times quicker than that outlined within DMRB.
- 3.2.10 Whilst MfS acknowledges that it is not appropriate to design street geometry based on braking in an emergency, it also outlines that there is scope for using lower SSDs. The SSD values within MfS are based on a perception-reaction time of 1.5 seconds and a deceleration rate of 4.41 m/s^2 .
- 3.2.11 Although MfS is generally more applicable to low speed residential urban environments, MfS is complemented by MfS 2 (CIHT, 2010) which applies MfS principles on additional road types, such as busier streets and non-trunk roads. MfS 2 “provides guidance on SSDs for streets where 85th percentile speeds are up to 60kph (37mph). This will generally be achieved within 30mph limits and may be achieved in some 40mph limits” (CIHT, 2010). However, at the same time, Table 1.1. of MfS 2 outlines that SSD principles can also apply in 40mph and 50mph+ environments, subject to local context.
- 3.2.12 In addition to the above, MfS 2 also states that “most MfS advice can be applied to a highway regardless of speed limit. It is therefore recommended that as a starting point for any scheme affecting non-trunk roads, designers, should start with MfS” (CIHT, 2010). The acceptance of applying MfS principles in higher speed environments has been demonstrated at some Planning Appeals. In one case in Fulbeck, Lincolnshire (App Ref: APP/E2530/A/10/2136072), the Planning Inspector considered that MfS principles should apply in a situation where the measured 85th %ile speed was 51mph.
- 3.2.13 Applying MfS SSDs to the measured speeds on Boston Road would require ‘y’ splay distances of 69m to the left and 64m to the right.
- 3.2.14 Summary – Table 3 compares the SSDs that are outlined in DMRB and MfS/MfS 2 for the recorded vehicle speeds on Boston Road.

Table 3: ‘y’ Visibility Splay Design Guidance

Vehicle Speed	Southbound Approach Speed	Northbound Approach Speed
Measured wet 85 th %ile Speed	41.5mph	39.5mph
Guidance Criteria	Visibility to the Left (Traffic Departure Side)	Visibility to the Right (Traffic Approach Side)
DMRB – Design speed categories	120m	120m
DMRB – SSD formula	107m	99m
MfS/MfS 2 SSD formula	69m	64m

- 3.2.15 Table 3 demonstrates that there is a considerable difference between the suggested SSDs outlined in DMRB and MfS/MfS 2 for the measured speeds. MfS/MfS 2 identify SSDs (64m-69m) that are almost half the level outlined within DMRB when using the design speed categories (120m).

3.3 Locating the Access to as to Maximise Available Visibility

- 3.3.1 Given the alignment of Boston Road in combination with adjacent property boundaries, in order to maximise achievable visibility, the access needs to be located at the southern end of the site. Positioning an access in this location would also have the benefit of being located closer to the start of the 30mph speed limit.

3.4 Visibility Survey

- 3.4.1 On-site visibility surveys in combination with desk-top assessments using a topographical survey have been undertaken to determine the level of visibility that could be achieved from an access located at the site's southern boundary with Boston Road. The assessments found that there would appear to be a number of potential options which provide different levels of visibility and these are discussed below.

- 3.4.2 **Standard access (see drawings included as Appendix 3)** – A leftwards 'y' visibility splay that meets the requirements of DMRB (120m), the DMRB SSD formula (107m) and MfS (69m) can be achieved to the nearside kerb within the extents of the public highway, or within land controlled by the applicant.

- 3.4.3 To the right:

- The DMRB splay (120m) is achievable to the nearside kerb line and a practical level of visibility in excess of this is available, as identified by the dashed blue line on Appendix 3. However, as Boston Road has a curved alignment a further check is required to determine if a sight line that meets the kerb line at a tangent can be achieved. In this instance, this additional sight line cannot be achieved due to third party land. Although this additional sight line cannot be achieved, it is unlikely that an approaching vehicle would be hidden for a significant period of time.
- When measured to the nearside kerb line, the DMRB SSD formula splay (99m) marginally encroaches into a slither of third party land at the adjacent Fairholme property. However, there are no current obstructions to visibility over this splay and given that the minor level of encroachment (a maximum of approximately 300mm) this would be expected to remain the case.
- Similar to the DMRB SSD formula, splay, the MfS splay (64m) also slightly encroaches over adjacent land at the Fairholme property. The level of encroachment is less than that associated with the DMRB SSD formula splay.

- 3.4.4 **Built-out access** – To overcome the rightwards visibility constraints identified above, it would be possible to 'build-out' the access by a small distance whilst retaining a carriageway width of at least 6.1m on Boston Road (see drawings included as Appendix 4). As with the previous options, all identified leftward visibility splays can be achieved. In terms of improvements to rightwards visibility, this option would allow the DMRB SSD formula (99m) and MfS (64m) splays to be achieved, without encroaching into third party land. A built-out access at this location would therefore meet both the visibility requirements outlined by the DMRB SSD formula and MfS.

- 3.4.5 Although further design work to that provided within Appendix 4 is likely to be required, it is felt that a build-out could be provided whilst still maintaining appropriate carriageway widths on Boston Road.
- 3.4.6 **Extension to 30mph speed limit** – It may be possible to extend the existing 30mph speed limit on Boston Road beyond the proposed site access. If the access formed part of a 30mph speed limit, then it is expected that MfS SSDs would apply by default. This would provide scope to move the access further north and allow MfS visibility plays to be achieved.
- 3.4.7 Although no formal assessments have been undertaken, some benefits of extending the existing 30mph speed limit are likely to include:
- A reduction in vehicle speeds from current levels;
 - A reduction in vehicle speeds could be expected to have road safety benefits. Research suggests that as a general rule for every 1mph reduction in average speed, collision frequency reduces by around 5% (Taylor, Lynam and Baruya, 2000);
 - There are currently a number of houses on the western side of Boston Road that are located north of the Gosberton village boundary and also north of the proposed development site. Extension of the 30mph speed limit would allow a greater proportion of the built-up area of the settlement to be covered by a reduced speed limit;
 - A reduced speed limit is likely to provide an enhanced environment for pedestrians and non-motorised users;
 - Reduced traffic speeds are likely to provide noise and environmental benefits.
- 3.4.8 It is not uncommon for proposals to modify speed limits to be submitted as part of planning applications. It is, however, noted that any changes to existing speed limits need to be agreed with the Highway Authority and subject to the necessary Traffic Regulation Order (TRO) and statutory consultation processes.
- 3.4.9 **Provision of a buffer 40mph speed limit** – An alternative to extending the existing 30mph speed limit may be to consider implementing a 40mph buffer speed limit on Boston Road within the vicinity of the site, particularly given that existing vehicle speeds appear to be generally consistent with a 40mph speed limit. It is also noted that the DfT's 'Circular 01/2013 Setting Local Speed Limits' (DfT, 2013) suggests that it might be appropriate to consider an intermediate/buffer 40mph speed limit prior to the 30mph terminal signs at village entrances, particularly in locations where there are outlying houses beyond the village boundary (as is the case on Boston Road). The provision of a 40mph speed limit would be likely to reduce vehicle speeds from current levels and would also increase the relevance of SSDs used within MfS.
- 3.4.10 **Purchase of third party land** – If a small strip of land at the front of the property Fairholme could be purchased, then a rightwards visibility splay that meets the DMRB SSD formula requirements could be achieved.

4.0 SUMMARY

4.1 Conclusions

- 4.1.1 Local Transport Projects Ltd (LTP) has been commissioned by JH Walter LLP to undertake a Highway Access Appraisal (HAA) in connection with proposals to develop a parcel of land located west of the B1397 Boston Road, Gosberton, Spalding. The proposal seeks to provide 46 dwellings at the site.
- 4.1.2 The Local Highway Authority, Lincolnshire County Council (LCC), has outlined a potential concern with regards to the level of visibility that could be achieved from a site access on Boston. LCC have cited that visibility splays that are commensurate with the posted 50mph speed limit would be required at the site access.
- 4.1.3 This HAA has found the following:
- The measured vehicle speeds on Boston Road within the vicinity of the proposed site are some way below the posted 50mph speed limit, with mean vehicle speeds less than 40mph in both directions and wet 85th %ile speeds around the 40mph level. As such, visibility splays that are commensurate with measured vehicle speeds, rather than the posted speed limit, are required.
 - In order to maximise achievable visibility, an access would need to be located at the southern end of the site.
 - In light of the speed survey findings, a range of visibility and Stopping Sight Distance (SSD) research has been considered. This includes standards within the Design Manual for Roads and Bridges (DMRB), which are generally more applicable to trunk road / higher speed environments, and more recent research that has been published as part of 'Manual for Streets' (MfS) (DfT, 2007) and 'Manual for Streets 2' (MfS 2) (CIHT, 2010). These documents generally provide guidance that is most applicable to non-trunk road settings.
 - Suitable levels of leftwards visibility can be achieved from an access provided at the southern end of the site.
 - There are some constraints to rightwards visibility from the proposed access location. However, in practical terms, the constraints do not appear to present major barriers to visibility.
 - There are potential options that would remove the above rightwards visibility constraints. These include providing a built-out access, reducing the speed limit on Boston Road or making minor third party land purchases. These are options that are to be discussed with the Highway Authority, LCC.

5.0 REFERENCES

Chartered Institution of Highways and Transportation (CIHT), 2010. **Manual for Streets 2: Wider Application of the Principles.**

Department for Transport (DfT), 2013. **Circular 01/2013 Setting Local Speed Limits.**

DfT, 2007. **Manual for Streets.**

Highways Agency (HA), 1995a. **TD 41/95 Vehicular Access to All-Purpose Trunk Roads.**

Highways Agency (HA), 1995b. **Geometric Design of Major/Minor Priority Junctions.**

HA, 1981. **TA 22/81 Vehicle Speed Measurement on All Purpose Roads.**

Taylor, M. C., Lynam, D. A. and Baruya, A, 2000. **TRL Report 421 – The Effects of Drivers' Speed on the Frequency of Road Accidents.** Crowthorne: TRL.

The Planning Inspectorate, 2011. **Appeal Decision – Appeal Ref: APP/E2530/A/10/2136072.**

Appendix I – LCC Highway Maintenance Map



Appendix 2 – Boston Road Vehicle Speed Survey

Radar Speed Survey

Location: B1397, Boston Road

Day: Wednesday 16th November 2016

Time: 10:20-11.35

Weather: Fine/Clear

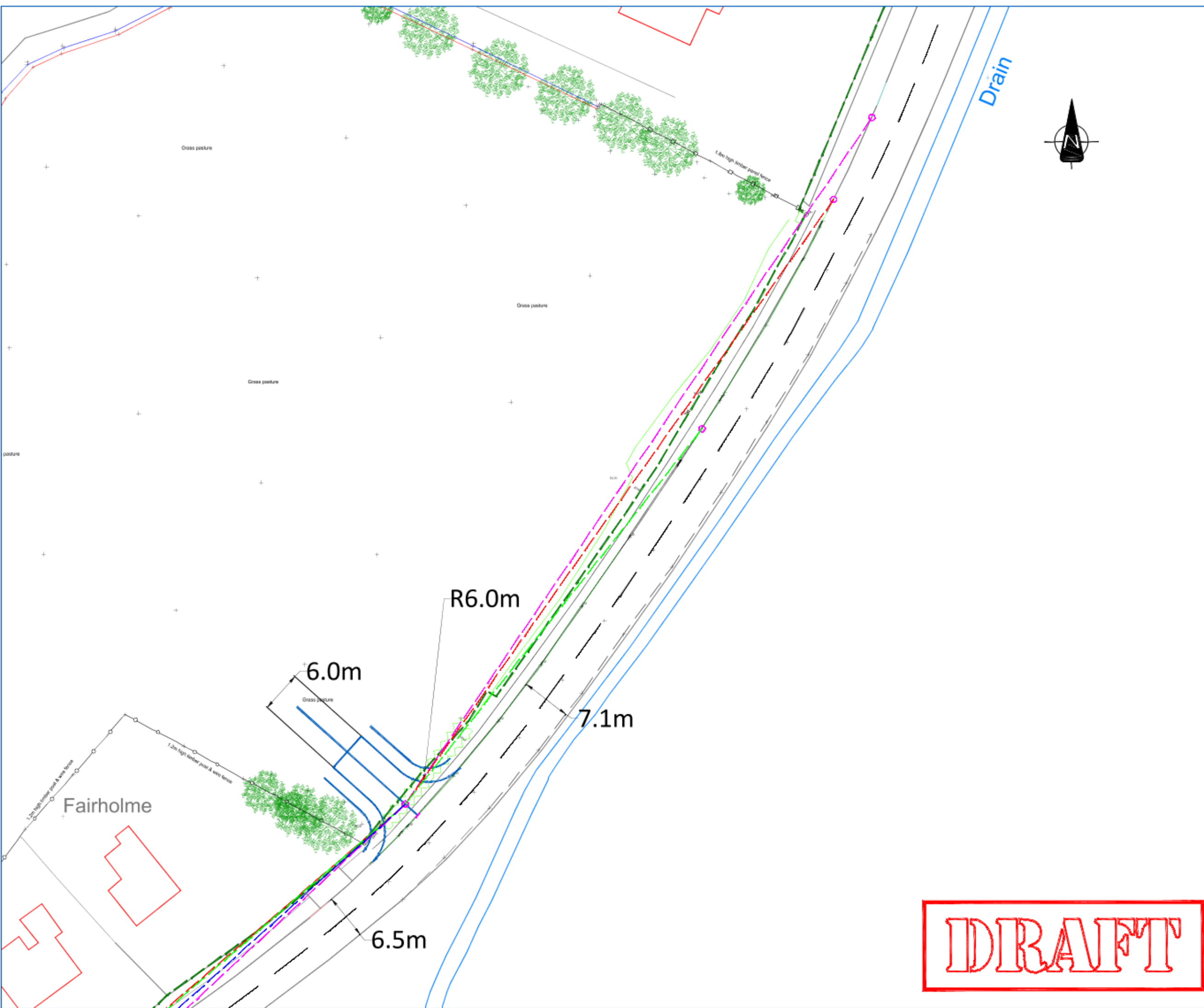
Road Surface: Dry

Ref	Vehicle Speeds (mph)			
	Northbound		Southbound	
1	35	35	47	41
2	44	39	40	44
3	47	40	41	42
4	39	37	37	43
5	43	33	39	38
6	46	32	45	39
7	31	31	41	37
8	48	36	37	42
9	35	41	41	35
10	32	37	39	36
11	38	30	40	41
12	39	40	37	38
13	42	39	41	36
14	40	40	38	47
15	34	37	34	39
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41	39	48	34	37
42	42	31	29	32
43	32	39	30	36
44	39	41	49	39
45	46	32	41	44
46	31	42	39	43
47	42	29	33	41
48	37	40	45	37
49	45	39	41	34
50	39	36	38	41

Min	29	29
Max	50	50
No.	100	100

Category	Northbound	Southbound
Mean	38.0	39.8
Combined	38.9	
85th %ile	42.0	44.0
Combined	43.2	
Wet 85th %ile	39.5	41.5
Combined	40.7	
Minimum	29.0	29.0
Combined	29.0	
Maximum	50.0	50.0
Combined	50.0	
Standard Dev	4.8	4.4
Combined	4.7	

Appendix 3 – Highway Access Option – Standard Access



10mm

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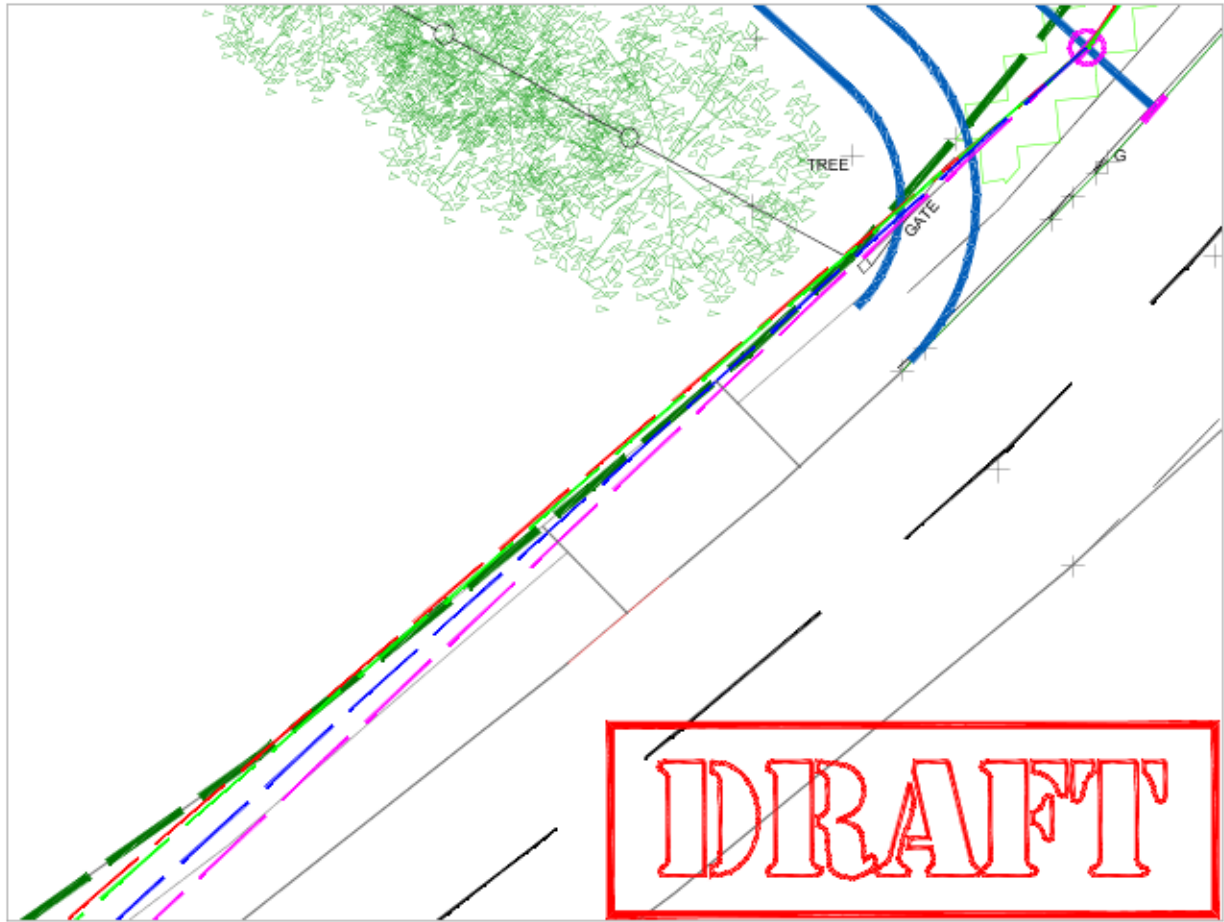
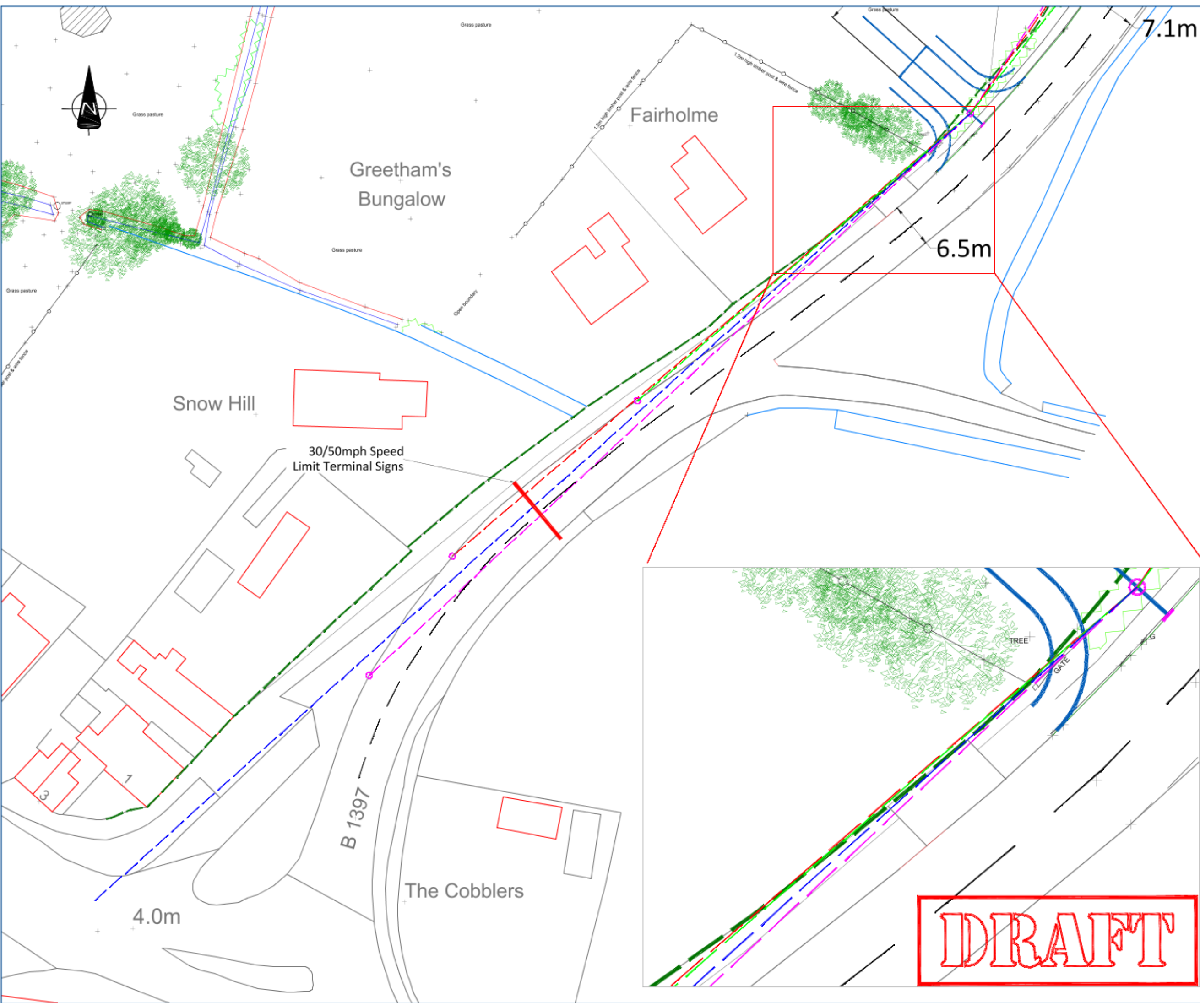
Key:-

- Proposed 2.4m x 120m Visibility Splay for 43.5mph (DMRB)
- Proposed interpolated 2.4m x 107m Visibility Splay to left for measured 41.5mph speed (DMRB)
- Proposed 2.4m x 69m Visibility Splay to left from measured 41.5mph speed (MfS)
- Existing Adopted Highway Boundary

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Rev.	Date	By	Chk	Description
Client				
JH Walter LLP				
Project				
Proposed Residential Development				
Land off Boston Road, Gosberton				
Title				
Proposed Access Visibility Splays to Left				
local transport projects traffic engineering and transport planning INSTITUTE OF HIGHWAY ENGINEERS Armstrong House, The Flemington Centre, Armstrong Way, Beverley. HU17 0NZ. 01482 679 911 info@local-transport-projects.co.uk www.local-transport-projects.co.uk Registered No. 5295328 01482 679 911 info@local-transport-projects.co.uk www.local-transport-projects.co.uk Registered No. 5295328				
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Scale	1 : 500	Checked	RP	
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Key:-

Proposed 2.4m x 120m Visibility Splay for 43.5mph (DMRB)

Proposed interpolated 2.4m x 99m Visibility Splay to right for measured 39.5mph speed (DMRB)

Proposed 2.4m x 64m Visibility Splay to right from measured 39.5mph speed (MfS)

Available visibility to right assuming highway boundary is constraint line

Existing Adopted Highway Boundary

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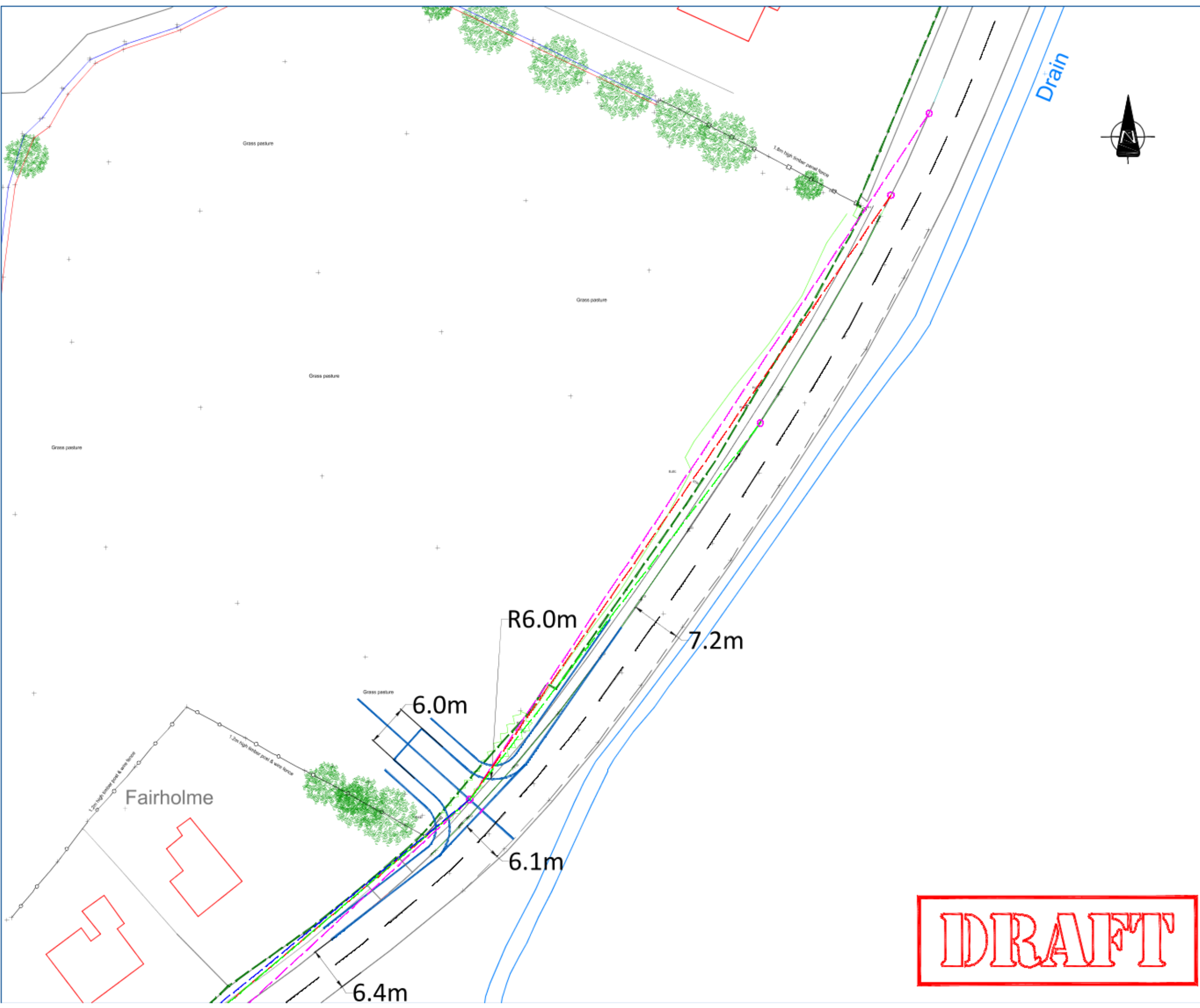
iii. All dimensions are to be checked by the contractor prior to commencement of work. Any discrepancy shall be reported immediately to Local Transport Projects Ltd

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INSTITUTE OF HIGHWAY ENGINEERS Armstrong House, The Flemingite Centre, Armstrong Way, Beverley, HU17 0NZ. 01482 679 911 info@local-transport-projects.co.uk www.local-transport-projects.co.uk Registered No. 5295328 <table><tr><td>Drawn</td><td>CW</td><td>Date</td><td>07 12 16</td></tr><tr><td>Scale</td><td>1 : 500</td><td>Checked</td><td>RP</td></tr><tr><td>Status</td><td colspan="3"> INTERNAL DRAFT DRAFT APPROVED PRELIMINARY CONSTRUCTION AS BUILT </td></tr><tr><td>Drawing number</td><td colspan="3"><table><tr><td>Project</td><td>Job</td><td>Drawing</td><td>Sheet</td><td>Revision</td></tr><tr><td>LTP/2588/</td><td>T1/</td><td>01</td><td>01</td><td>0</td></tr></table></td></tr></table>					Drawn	CW	Date	07 12 16	Scale	1 : 500	Checked	RP	Status	INTERNAL DRAFT DRAFT APPROVED PRELIMINARY CONSTRUCTION AS BUILT			Drawing number	<table><tr><td>Project</td><td>Job</td><td>Drawing</td><td>Sheet</td><td>Revision</td></tr><tr><td>LTP/2588/</td><td>T1/</td><td>01</td><td>01</td><td>0</td></tr></table>			Project	Job	Drawing	Sheet	Revision	LTP/2588/	T1/	01	01	0
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Appendix 4 – Highway Access Option – Built-out Access



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Key:-

Proposed 2.4m x 120m Visibility Splay for 43.5mph (DMRB)

Proposed interpolated 2.4m x 107m Visibility Splay to left for measured 41.5mph speed (DMRB)

Proposed 2.4m x 69m Visibility Splay to left from measured 41.5mph speed (MfS)

Existing Adopted Highway Boundary

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Rev.	Date	By	Chk	Description

Client

JH Walter LLP

Project

Proposed Residential Development

Land off Boston Road, Gosberton

Title

Proposed Access with Buildouts
Visibility Splays to Left

local transport projects

traffic engineering and transport planning

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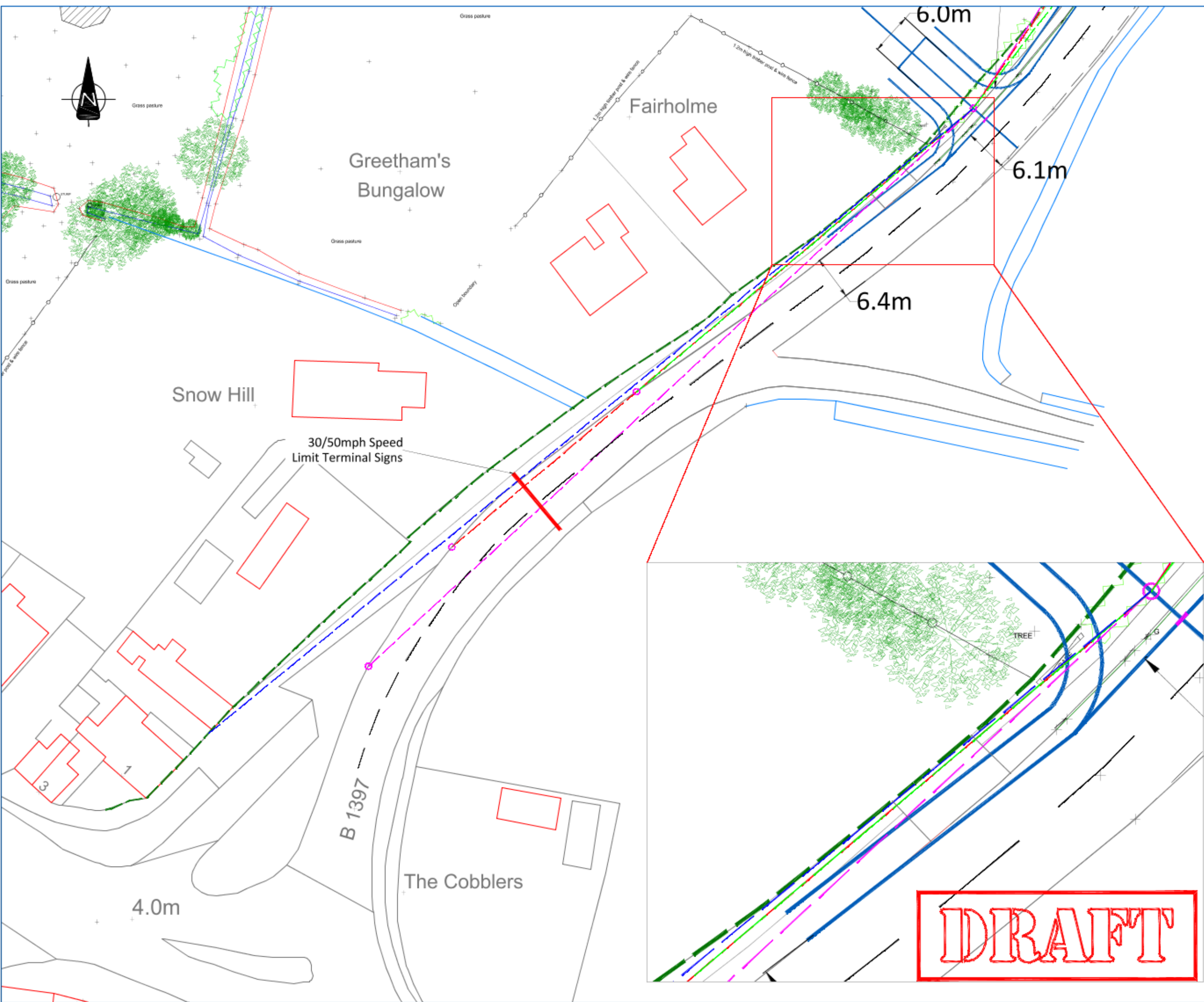
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Proposed interpolated 2.4m x 99m Visibility Splay to right for measured 39.5mph speed (DMRB)

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Available visibility to right assuming highway boundary is constraint line

Existing Adopted Highway Boundary

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