



mode

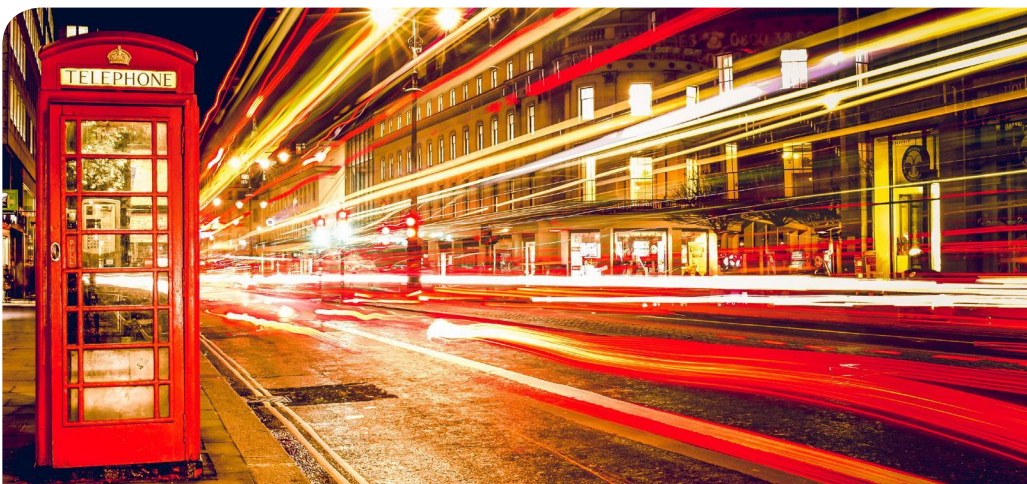
transport planning

Cala Homes

Land at Fiery Hill Road

Highways Review

December 2015



Technical Note

Job Title	Land at Fiery Hill Road		
Job Number	J322540	Date	15/12/2015
Copy	Copy	File reference	151112 322540 AY
Prepared by	Alan Young	Approved by	David Frisby
Subject	Highways Review		

1 Introduction

1.1 Mode Transport Planning (mode) has been requested by Cala Homes to review various transportation related documents produced to support a planning application for 88 new residential units at Fiery Hill Road, Barnt Green, Worcestershire. The application was deferred by Members at the last committee meeting, 2nd November 2015 and subsequently mode have undertaken a thorough review of:

- Transport Assessment (August 2011)
- Transport Statement (April 2013)
- Transport Statement (July 2013)

1.2 Other documents include:

- Traffic and speed survey by Sky High (April 2015)
- Comments made during Committee regarding perceived 'poor' visibility and subsequent safety risk

1.3 Comments made at the last committee meeting include:

- Members referred to extracts of the TA (July 2013), comments cited, '*very poor visibility is provided when looking right from Fiery Hill Road towards northbound traffic on Bittell Road*' (ref: paragraph 2.3.1).
- "*poor visibility looking right, creates a high risk of accidents at that junction*" (ref: 4.2.1).

Technical Note

- *“traffic speed data submitted as part of the application are flawed as they relate to exceptional conditions at the time of survey.”*

1.4 Taking each of these points in turn:

2 Poor Visibility

- 2.1 The Transport Assessment (April 2013 page 4, para 2.3.1) records that the current visibility splay is of 20m due to the lack of a footway under the southern side of the bridge. However this matter will be significantly improved with the footway being relocated to the southern side of the bridge (April 2013 page 4, para 4.2.2); Cala Homes drawing **M00311/S278/100** identifies an achievable visibility splay of 2.4m x 45m to the kerb with the relocation of the footway.
- 2.2 *“Manual for Streets”* allows for an increase in the Y-Distance element of the visibility splay over that previously used, by measuring to the near side running track of the carriageway, approximately 1m from the kerb (ref; MfS2 page 76 and MfS2 para 10.5.3). In paragraph 10.5.3 MfS2 states, *‘Therefore a more accurate assessment of visibility splay is made by measuring to the nearside edge of the vehicle track.’* The argument being that drawing visibility splays to kerbs was always a matter of convenience for design purposes and that in reality cars and motorcycles do not physically drive along the kerb. Furthermore, MfS1 and MfS2 contain formula to be applied to the actual measured speeds at a specific location rather than having to rely on a speed limit.
- 2.3 A recent speed survey conducted at the site (11th to 17th November 2015) gives a 7 day 85th percentile speed of just 27mph for vehicles approaching the Fiery Hill Road junction from the bridge. Applying the MfS formula to this speed gives a Y-Distance of 34.5m. Measuring out 1m from the kerb would increase the current 20m Y-Distance referred to above to an achievable visibility of 30m, just short of the 34.5m required by MfS.
- 2.4 As discussed above the 7-day 85th percentile speed from the survey is 27mph, however this increased on a Sunday to 33.1mph. Therefore, to ensure that visibility splay assumptions are robust we have also assessed this higher speed using the formula for visibility included in MfS which gives a visibility splay of 47m or 49.4 allowing for the bonnet of a vehicle. Figure **M00311/S278/101** shows that measuring 1m out to the nearside running track gives a visibility splay of 52.25m, thereby demonstrating that even with the higher speeds the junction meets current design standards.
- 2.5 Whilst being able to demonstrate that the junction has more than adequate visibility it should be remembered that there is no direct correlation between lack of visibility and an increase in the number of collisions. MfS2 states that;

‘It has often been assumed that a failure to provide a visibility at priority junctions in accordance with the values recommended in MfS1 or DMRB (as appropriate) will result in an increase risk of injury collisions. Research carried out by TMS Consultancy for MfS2 has found no evidence of this.’ The statement goes on, *‘Research into cycle safety at T-*

Technical Note

junctions found that higher cycle collision rates are associated with greater visibility.’ (Ref; MfS2 para 10.4.2)

2.6 The research concludes:

‘This study has been unable to demonstrate that road safety concerns regarding Y-Distance are directly associated with increased collisions risk at “high risk” urban sites.’ (Ref; MfS2 page 77)

2.7 Local Transport Note 1/08 (Department for Transport, March 2008) specifically advises:

‘Regulations and technical standards have a key role in the delivery of good design, but, if used as a starting point, they may serve to compromise the achievement of wider objectives. A standards-based template view of road junction design, for example, is inappropriate.’ (Ref; TN 1/08 para 3.2.1)

2.8 TN 1/08 goes further:

‘Available guidance is just that, guidance, and cannot be expected to cover the precise conditions and circumstances applying to the site under examination. (Ref; TN 1/08 para 3.2.2).

2.9 For this reason we need to examine evidence as well as guidance. In these circumstances it is evident that perception falls far short of reality and therefore a strict adherence to standards without reviewing all data would be inappropriate.

3 Road Safety

3.1 Comments from the committee included; *‘Very poor visibility is provided when looking right from Fiery Hill’,* and that it, *‘creates a high risk of accidents at the junction’.* However, we are of the opinion that the use of the term ‘high risk’ is unfounded and suggests a major issue with road safety that does not exist. Examination of the facts shows that of the 9 PIAs (personal injury accidents) quoted in the TA (August 2011) only one PIA (June 1998) occurred at the junction of Fiery Hill Road and Kendel Road in the 10-year period 1998 to 2008. Examination of Crash Map data for the 10-years data up to 2014 also shows only one PIA (October 2014) at the junction, i.e. no accidents recorded for the intervening 16-years.

3.2 The recorded data for the PIA states that the collision occurred between a car and pedal cyclist, when the cyclist was waiting to turn right and the car was in the act of turning right. The cyclist’s injuries were recorded as slight. Since both were turning right at the junction, visibility was not an issue. As a consequence, it can be stated with confidence that there has been no PIAs at the junction due to visibility for the last 10 years (**Crash Report included at the rear of this report**).

3.3 It is normal practice to consider a 3 or 5 year period when reviewing PIA data. Furthermore, many highway authorities would only consider improvements when a site experiences at least 3 PIAs per annum, depending on severity and impact on vulnerable road users.

Technical Note

- 3.4 Only one PIA over a 10-year period demonstrates that the junction is far from being at high risk, rather the opposite, it shows how safe the junction is in reality rather than perception.
- 3.5 The recent survey commissioned by mode (11th to 17th November 2015) gives an average two-way daily traffic flow along Kendal End Road of 8057 vehicles. This gives a 10-year traffic flow of over 29 million vehicles and only 1 PIA during the whole of that period. Clearly this is not an unsafe junction.

4 Traffic Surveys and Speed

- 4.1 At committee, members commented that the traffic speed data submitted as part of the application are flawed as they relate to exceptional conditions at the time of survey. We accept that at that time traffic flows were not typical and hence mode commissioned the more recent surveys referred to above, conducted in November 2015.
- 4.2 However, we have compared the various speed surveys undertaken along Kendal End in July 2010, April 2015 and the two surveys undertaken in November 2015.
- 4.3 When comparing July 2010 with November 2015, the average speeds show less than an 2mph difference; likewise, when comparing April 2015 with November 2015 the average speeds are within a 1.5 mph difference. This demonstrates that all three surveys are within an acceptable tolerance for a range of surveys taken over a number of days.
- 4.4 The following table summarises the various traffic surveys carried out on Kendal End Road over the last few years. It is evident that whilst all traffic flows are increasing over the whole period there is a clear discrepancy between those for April 2015 and the rest. Indeed, the traffic flows all fall from April to November 2015. The only logical explanation is that the repairs being carried out in the area resulted in rerouting of traffic to Kendal End Road. Nevertheless, the highway network demonstrated that it could cope with the additional traffic.

Table 1: Comparison of Traffic Flows on Kendall End Road

Date of Survey	AM Peak Hour		PM Peak Hour	
	Northbound	Southbound	Northbound	Southbound
Jun-08	311	411	532	292
Jul-10	331	390	478	333
Apr-15	419	636	728	435
Nov-15	381	477	594	321

- 4.5 It is quite evident from the table above that the highest traffic flows were recorded in April 2015. Mode understands that this was as a result of road closures redirecting traffic flow on the local highway network. A second set of surveys taken in the same location, in November 2015, indicate that two-way traffic flows fell by 23% in the AM Peak and 27% in the PM Peak when compared to April 2015; but are comparable to the traffic flows from the previous surveys. This “reduction” in traffic provides a longer gap between vehicles travelling along Kendall End Road

Technical Note

and therefore increases the decision making time for vehicles undertaking manoeuvres.

- 4.6 Vehicles exiting the railway bridge heading along Kendall End Road will accelerate and therefore the further the junction is away from the railway bridge, the greater the speed of vehicles and hence the greater visibility is required. This is verified by the two speed surveys undertaken in November 2015, where the average speed of vehicles increased as vehicles travelled away from the railway bridge.
- 4.7 Drawing **M00311/S278/103** compares the required and available visibility in all three scenarios (existing, consented and proposed junction). It is clearly evident that the proposed junction provides a greater percentage increase in visibility (available compared to required) than the existing junction or the consented junction. Hence, the proposed new location is an improvement on the currently approved location.
- 4.8 It is accepted that this percentage increase will not be as great on Sundays when the recorded 85th percentile speed was higher. However, as the flows on Sunday are significantly lower it is considered that the proposed junction will provide the greatest benefit to the majority of motorists.

5 Roundabout at Bittell Road/Hewell Road Junction

- 5.1 Some reference has been made regarding the potential for additional speed reduction of vehicles heading north west along Bittell Road from Hewell Road to Fiery Hill Road by adjusting the current mini-roundabout at Hewell Road. We are aware that the proposed improvements to the roundabout, which increase deflection and hence reduces speed, are under discussion with Worcestershire County Council. Indeed, the kerb realignments have already been agreed, leaving just the detailed design of the central island to be confirmed. The Cala Homes drawing **M00311/S278/102** compares the existing deflection with that being proposed. From research any increase in the deflection of vehicles will help to slow traffic (ref: MfS2 para 8.3.8 and Table 8.2, and research by TRL TA43.84). These improvements to the roundabout will reduce the speed of vehicles to lower than those recorded by the November 2015 survey.

6 Conclusions

- 6.1 The relocation of the footway under the bridge to the southern side of Bittel Road will provide far more visibility to/from Fiery Hill Road than that required under latest guidance.
- 6.2 The junction does not have an existing safety issue, rather the opposite, a review of the PIA data demonstrates that the junction is safe with only 1 PIA over a 10-year period.
- 6.3 The only PIA that has occurred was slight between a right turning cyclist and right turning car. Visibility was not an issue.
- 6.4 The modest increase in traffic due to the proposed development will add only 1 vehicle per minute and have a negligible impact on traffic, imperceptible to any observer.

Technical Note

- 6.5 All surveys have been reviewed and it has been concluded that all three surveys are within the an acceptable tolerance for a range of surveys taken over a number of days.
- 6.6 The relocation of the realignment of Fiery Hill Road could be considered safer as vehicle speeds past the relocated junction will be slower.
- 6.7 Latest survey data identifies a 7 day 85th percentile speed of traffic approaching Fiery Hill Lane from the bridge as just 27mph.
- 6.8 The survey also shows and 10-year traffic flow of over 29 million vehicles and just one PIA, demonstrating just how safe the junction is in reality rather than perception.
- 6.9 The proposed junction provides a greater percentage of visibility (available over required) than the consented scheme.



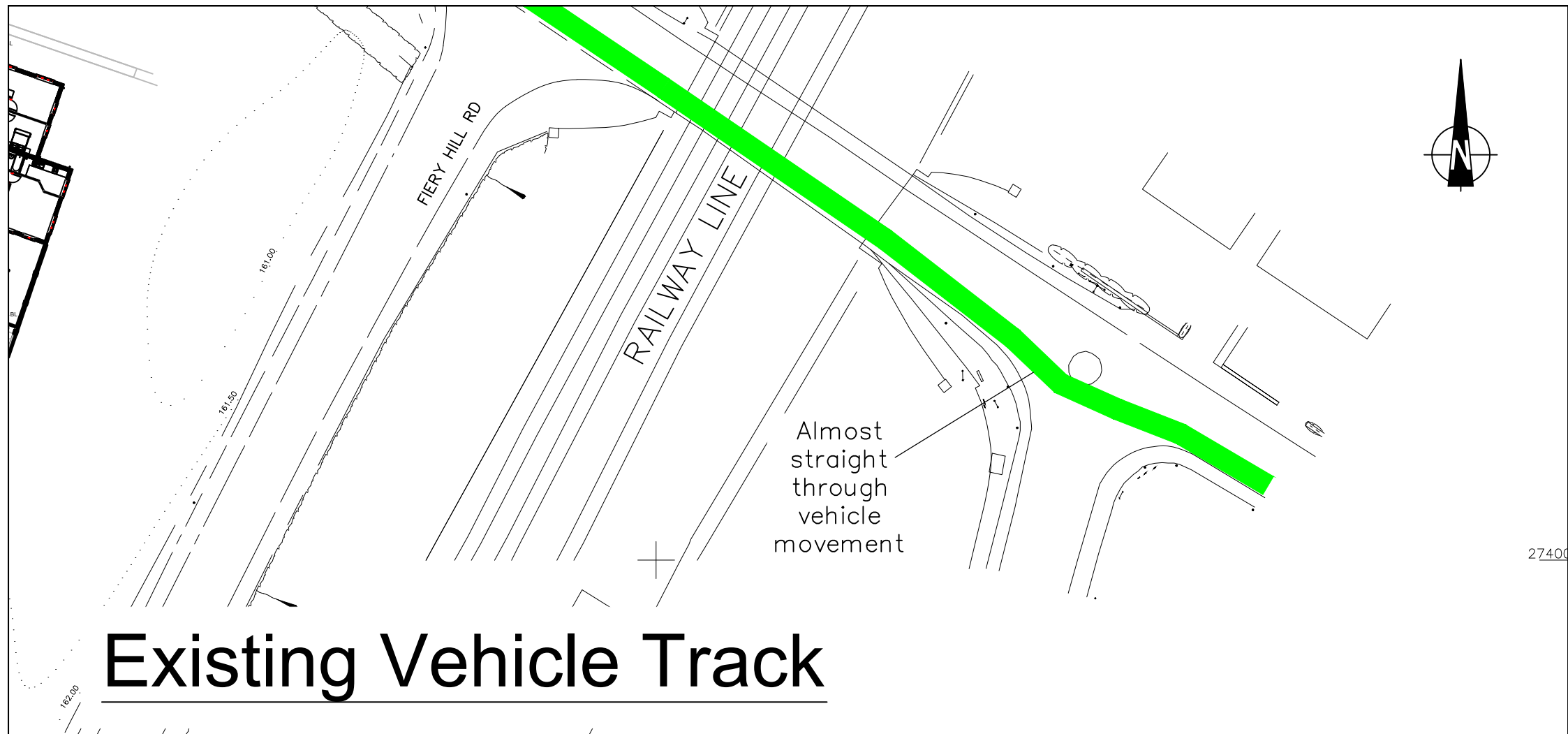
1m from
kerb line

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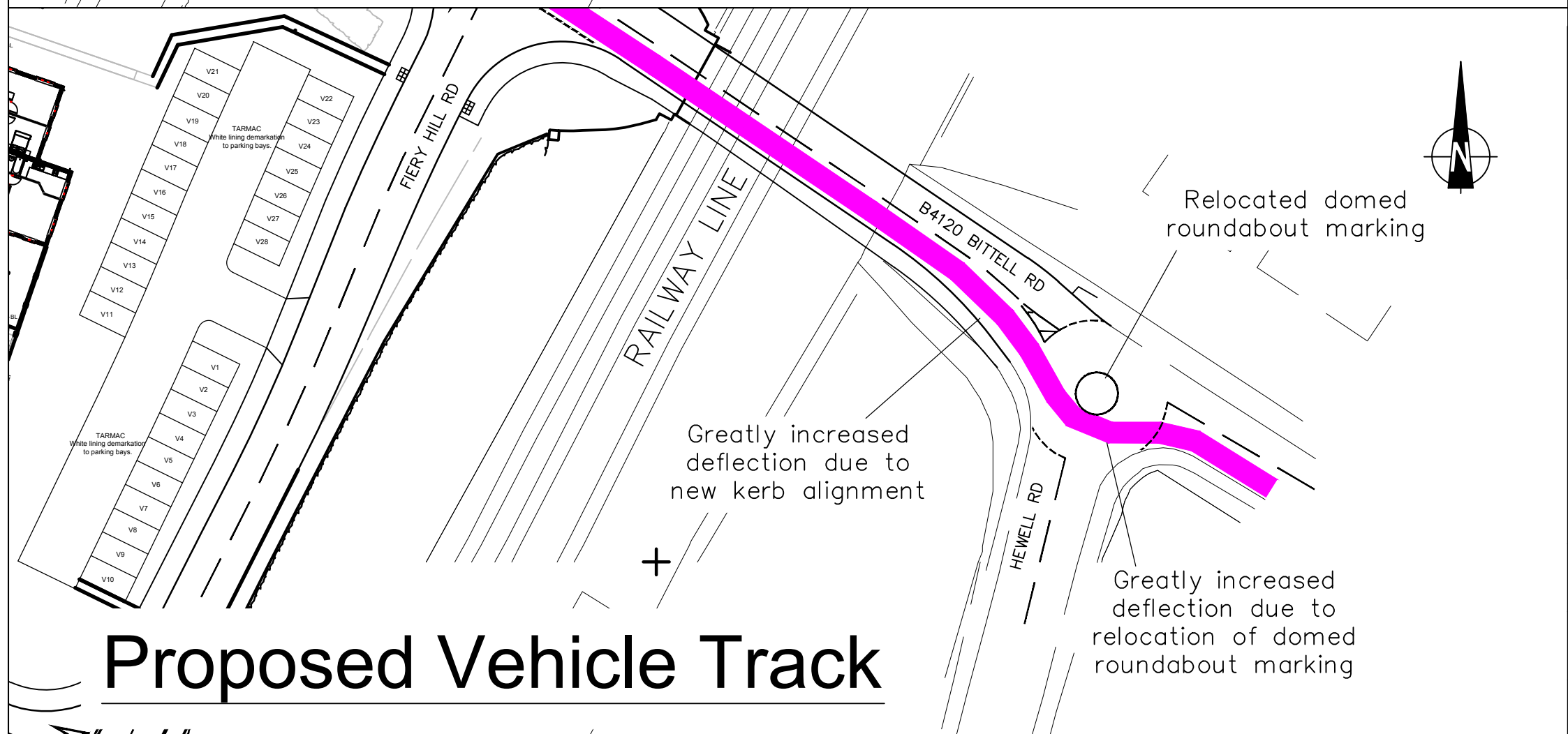
RAILWAY LINE

FIERY HILL RD

		CALA House Arleston Way Solihull B90 4LH Tel: 0121 711 5310 Fax: 0121 711 5311	
Site: Land off Fiery Hill Road Barnt Green			
Drawing Title: Fiery Hill Road Realignment Visibility to Vehicle Track			
Drawing No: M00311\S278\101			
Revision: -		Scale: 1:500 @ A3	
Date: 24.11.2015		Drawn: CB	



Existing Vehicle Track



Proposed Vehicle Track



CALA House
Arleston Way
Solihull
B90 4LH

Tel: 0121 711 5310
Fax: 0121 711 5311

Site: **Land off Fiery Hill Road**
Barnt Green

Drawing Title:
Fiery Hill Road Realignment
Vehicle Track at Roundabout

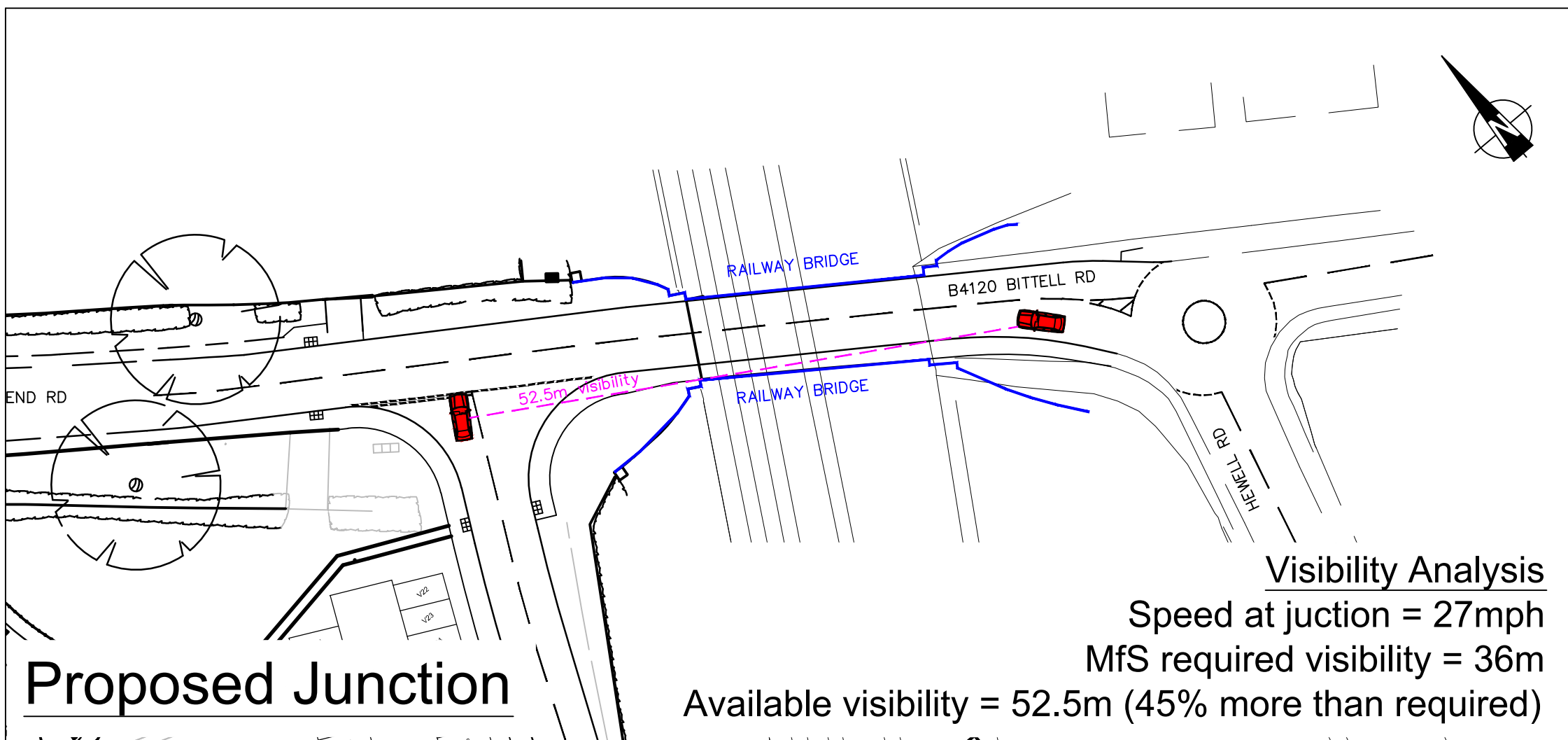
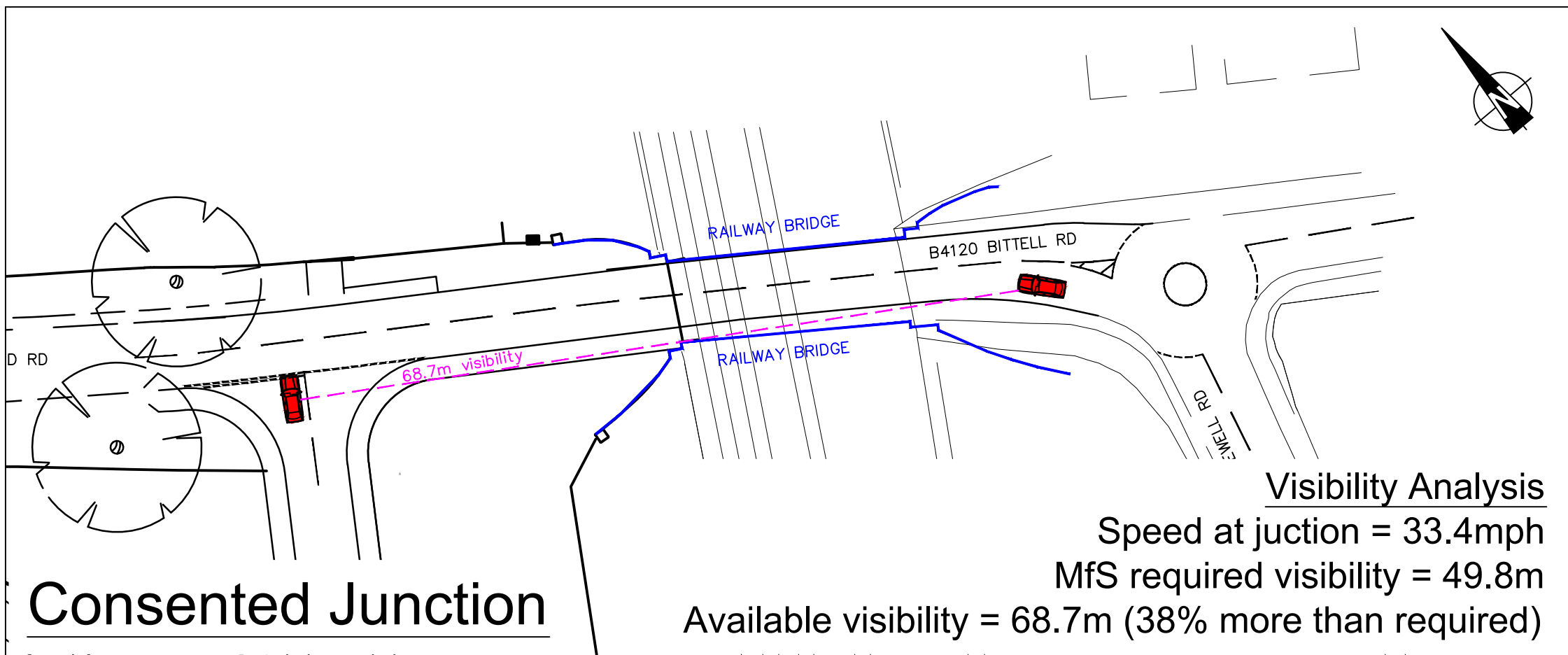
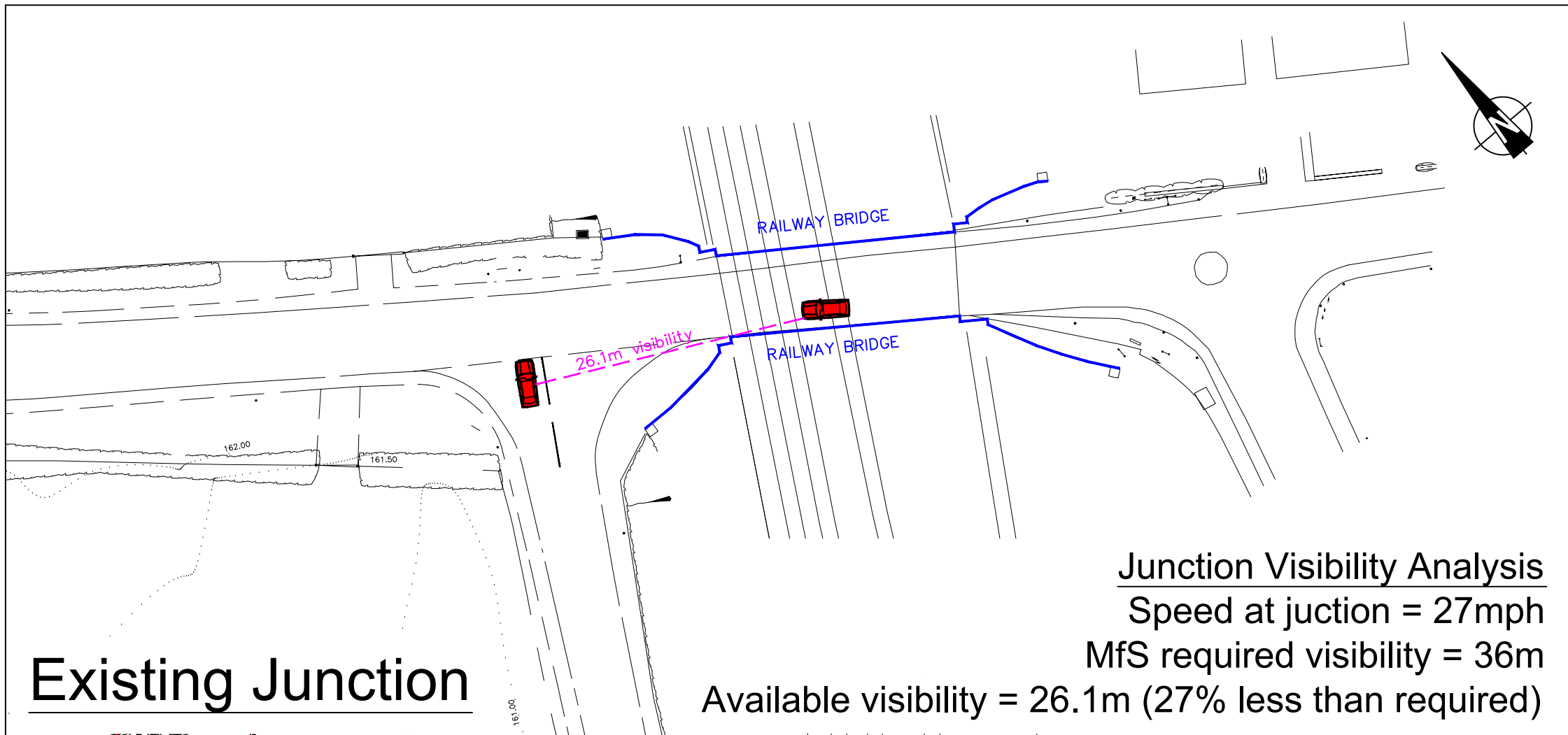
Drawing No: M00311\S278\102


Revision: -

Scale: 1:500 @ A3

Date: 24.11.2015

Drawn: CB



		CALA House Arleston Way Solihull B90 4LH Tel: 0121 711 5310 Fax: 0121 711 5311	
Site: Land off Fiery Hill Road Barnt Green			
Drawing Title: Fiery Hill Road Realignment Junction Visibility Analysis			
Drawing No: M00311/S278/103			
Revision: -		Scale: N.T.S @ A2	
Date: 15.12.2015		Drawn: CB	

Crash Report including Vehicle and Casualty Information



Crash Date:	Tuesday, October 07, 2014	Time of Crash:	10:30:00 AM	Crash Reference:	201422D403752
Highest Injury Severity:	Slight	Number of Vehicles:	2	Number of Casualties:	1
Highway Authority:	Worcestershire	OS Grid Reference:	400780	274040	
Local Authority:	Bromsgrove District				
Road Number:	U0	Road Type:	Single carriageway		
Weather Description:	Fine without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30	Junction Control:	Give way or uncontrolled		
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre
1	Car (excluding private hire cars 2005 onwards)	-1	Female	66 - 75	Vehicle is in the act of turning right
2	Pedal cycle	-1	Female	46 - 55	Vehicle is waiting to turn right

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	46 - 55	Unknown or other	Unknown or other

For more information about the data please visit: <http://www.crashmap.com/home/aboutthedata> and <http://www.crashmap.com/home/definitions>

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