TRANSPORT AND WORKS ACT 1992

TRANSPORT AND WORKS (INQUIRIES PROCEDURE) RULES 2004

THE NETWORK RAIL (SUFFOLK LEVEL CROSSING REDUCTION) ORDER

SUSAN TILBROOK

REBUTTAL PROOF OF EVIDENCE

-FOR-

S23 HIGHAM
S24 HIGHAM GROUND FRAME

Document Reference	NR/32/4/7

Contents

1 Introduction

1.1 This Rebuttal Proof of Evidence has been prepared on behalf of Network Rail to respond to particular matters raised in the Proofs of Evidence submitted on behalf of the following parties which were received by Network Rail on 18 January 2018. These include the Proofs of Evidence of:

1.1.1 Suffolk County Council (OBJ/29)

a) Andrew Woodin
b) Andrew Haunton

1.1.2 The Ramblers (OBJ/36)

a) John Russell

1.2 It is not intended that this rebuttal proof should address matters that have already been addressed in my Proof of Evidence (NR32/1) or of other witnesses for the Promoter; however, cross references to relevant parts of that evidence are given below, where appropriate. The fact that I have not expressly rebutted a point does not mean that it is accepted.

1.3 I believe the facts and opinions stated to be true and that my evidence conforms to the standards and requirements of my professional body.

2 S23 Higham & S24 Higham Ground Frame

2.1 **Road Safety – Higham Road**

2.1.1 *At paragraph 4.24 of his Proof of Evidence John Russell states that "due to the lack of continuous verge on the section of the proposed diversion route on Higham Road pedestrians will need to walk part of this section of the diversion route within the carriageway including the Higham Road crossing of the railway line. This would be detrimental to pedestrian safety".*

2.1.2 *At paragraph 4.1.1. of Appendix 1 to Andrew Haunton's proof the Road Safety Audit Team commissioned by Suffolk County Council make the following recommendation:*

Pedestrian facilities along Higham Road should be improved (e.g. reprofiled verges, vegetation cut back), or an alternative footpath diversion route off the carriageway developed.

2.1.3 *At paragraph 16 of his Proof of Evidence (OBJ/29/W2), Andrew Woodin states "on each visit I have been struck by the absence along much of the alternative route of a walkable verge for pedestrians, who for most of the alternative route are thus forced to use the carriageway, including over the railway bridge, and are confronted with a blind bend at the war memorial on a road. The Design Freeze Drawings state that for S23 the alternative route has footway and verge available, whereas I consider walkable verges are only partly present, on a road with traffic travelling at some speed (I estimate 50mph to 60mph). This despite road bend warning signs to alert drivers to the hazard ahead. Users are required to cross the road to ensure better visibility around this bend".*

2.1.4 *At paragraph 33 of his Proof of Evidence (OBJ/29/W2), Andrew Woodin asks the inspector to recommend "the modification of the order to divert Higham Public Footpath 1 around the inside edge of the field on the south east edge, to exit onto the road at the rail overbridge", to address his concerns about road safety on this section of the route.*

2.1.5 In response, the existing verges on Higham Road are currently used as linkages between the PROW network in the area. A pedestrian is likely to be on the Higham Road section of the route (from the southern end of Footpath 01 Higham to the junction of Higham Road with the A14 slip road) for 7.5 minutes (based on a distance of 480m) during which time they could expect to be passed by 9 vehicles based on the traffic count data as set out at paragraph 2.14.41 of my proof **NR32/1**. The 85th percentile speed of traffic on Higham Road was recorded at 39.4mph. There has been 1 reported injury accident on this section of the diversion route in the last 19 years. This occurred in 2003 and was of slight severity.

2.1.6 It is considered that there is verge available along the full route, although pedestrians may need to cross the road to make use of the opposite verge in certain locations. The frequency and speed of passing traffic allows plenty of opportunity to cross safely.

2.1.7 There is sufficient verge adjacent to the northbound carriageway across the railway bridge for use by a pedestrian. Some pedestrians may choose to walk in the road, but it is considered that there is good visibility on each approach to the bridge to allow pedestrians sufficient time to step into the verge.

2.1.8 On the basis of the current usage of the route, verge availability, assessment of traffic speeds and volumes, I do not consider that there is a compelling case to take rights over private land in order to create a new, field edge path suggested by Mr Woodin.

2.1.9 The verges may benefit from some vegetation cut back and mowing, and more regular maintenance. Any additional burden on the highway authority will be dealt with through commuted sums.

2.1.10 *At paragraph 4.23 of his Proof of Evidence John Russell states that "no mitigation is proposed to facilitate safe crossing of the A14 westbound on-slip / Higham Road at the location proposed by NR. Given that the crossing requires pedestrians to be aware of traffic travelling in four different directions at a busy highway interchange compared to the existing situation of traffic approaching from a single direction, I would expect the risk of pedestrian —vehicle collisions to increase to the detriment of pedestrian safety."*

2.1.11 *At paragraph 4.1.2. of Appendix 1 to Andrew Haunton's proof the Road Safety Audit Team commissioned by Suffolk County Council make the following recommendation:*

A collision / conflict study should be carried to understand how and why the collisions are occurring at this junction. The study should inform the design of an appropriate crossing facility for the diverted footpath.

2.1.12 It is considered that due to the lack of ongoing routes north of the A14 boundary fence directly opposite the northern end of Footpath 001 Higham, users are likely to use the overbridge on Coalpit Lane to cross the A14 at present. As such, the proposed route on Higham Road and the provision of the new footway within the highway verge provides pedestrians with improved access to the ongoing routes to the north of the A14.

2.1.13 I have detailed the accident data available for the 5 year period 2011 to 2015 (the 5 year period considered as part of the route assessments carried out in 2016) in my proof at paragraph 2.14.44, which recorded one accident of slight severity at this junction. There has been one further accident at the junction in 2016, also of slight severity. The Audit Team have referred to accident data over a 10 year period, however, a 5 year period is normally considered suitable as this period reduces the possibility of the statistics being skewed by seasonal fluctuations and uncharacteristically bad years, whilst over a longer period changes in road layout or maintenance regimes can skew results.

2.1.14 The Stage 1 RSA carried out by Mott MacDonald identified the potential for the risk of pedestrian trip type accidents at the junction of Coalpit Lane and Higham Road with the recommendation for the installation of a dropped kerb crossing point at this location to guide pedestrians to cross in the safest crossing location. This is considered suitable to resolve any RSA concerns at this location and can be provided as part of the detailed design proposals subject to the approval of the Highway Authority.

2.1.15 In response, I note that Mr Russell makes an assumption that pedestrians will cross the A14 slip road at the point where Footpath 01 Higham meets the slip road, only needing to cross traffic travelling in a single direction. It should be noted that, although the A14 central reserve vehicle restraint system is laid out to accommodate a pedestrian crossing point, there is no ongoing PROW route shown on the Definitive Map immediately to the north of the A14 boundary at this point. Therefore, in the current situation, where no prescribed public rights of way are provided to link to the north end of footpath 01 Higham, pedestrians are faced with two choices. The first choice is to use the existing verges on the slip road and Higham Road to walk to the overbridge on Coalpit Lane in order to cross the A14 and continue onwards on the local PROW network.

Alternatively, they are faced with crossing the A14 at grade, which involves crossing 4 lanes of high volumes of fast moving traffic to walk up the exit slip road to access the PROW network at the junction with Coalpit Lane.

2.1.16 *At paragraph 4.1.2. of Appendix 1 to Andrew Haunton's proof the Road Safety Audit Team commissioned by Suffolk County Council make the following recommendation:*

Fully remove the remnants of the extinguished footpath (stile, sign and central reserve gap) from the northern side of the A14 and ensure that an appropriate route is implemented from north to south across A14 Junction 40.

2.1.17 The Audit Team commissioned by Suffolk County Council makes an assumption that pedestrians may approach the crossing from the north. However, it is not clear which routes pedestrians currently use beyond the point where Footpath 001 Higham meets the A14 slip road as there is no prescribed ongoing PROW route immediately to the north of the A14 boundary at this point, as noted by the Audit Team. It is considered unlikely that people would approach the crossing from the north of the eastbound carriageway of the A14 given the fact that users would have to walk down the exit slip road verge and would then be faced with crossing the A14 at grade, which involves crossing 4 lanes of high volumes of fast moving traffic.

2.1.18 The closure of the central reserve vehicle restraint arrangement should have been dealt with as part of the closure of the ongoing route to the north and the Suffolk Level Crossing Reduction It does not fall within the scope of this project to undertake alterations to highway infrastructure and/or remove the remnants of a public right of way previously extinguished under other proceedings, and which do not form part of the proposals contained within the draft Order.

2.2 **Road Safety – Coalpit Lane**

2.2.1 *At paragraph 4.34 of his Proof of Evidence John Russell states that "for people approaching from the south on Footpath 006 the diversion would take them to a point on Coalpit Lane just south of the railway line that is approximately 155m from the junction of the A14 westbound on-slip / Higham Road, A14 westbound off-slip and Coalpit Lane. To reach the same point following the proposed diversion, a pedestrian would be required to walk an additional 1.2km approximately: a total diversion route distance of approximately 1.355km as opposed to 0.155km following the direct route along Coalpit Lane."*

2.2.2 *At paragraphs 4.34 and 4.36 of his Proof of Evidence John Russell suggests that pedestrians are more likely to walk on Coalpit Lane as it is a more direct route. He also notes that the stage 1 RSA identified Coalpit Lane as presenting a high risk of collision between pedestrians and motorists due to the lack of suitable verges.*

2.2.3 *At paragraph 33 of his Proof of Evidence (OBJ/29/W2/S23), Andrew Woodin asks the inspector to recommend that the roadside hedge is cut back and a pedestrian refuge created in the verge allowing a pedestrian to assess when it is safe to cross the road in respect of Coalpit Lane*

2.2.4 *At paragraph 4.1.2. of Appendix 1 to Andrew Haunton's proof the Road Safety Audit Team commissioned by Suffolk County Council make the following recommendation:*

Ensure that visibility as per LTN 2/95 Table 1 is available where the footpath crosses Coalpit Lane.

2.2.5 In response, Mr Russell is incorrect in his assumption that pedestrians will be able to access Coalpit Lane at a point 155m to the south of the slip road junction. The proposed field edge

footpath route runs east to west and parallel to the railway before turning to the south (again in field edge) to run parallel to Coalpit Lane on the east side of a field edge ditch to a point opposite Footpath 005 Higham. At this point a proposed footpath bridge allows pedestrians to exit the field opposite Footpath 005 Higham, crossing directly over Coalpit Lane to continue onwards on Footpath 005 Higham.

2.2.6 It is considered that pedestrians are far less likely to turn back on themselves at this point to walk north along Coalpit Lane, as there will be an obvious route directly opposite them continuing on to Footpath 005 Higham. Whilst the proposed ongoing diversion route is not as direct as using Coalpit Lane, as it forms part of a leisure walk it is considered acceptable.

2.2.7 In response, the proposed diversion route makes use of Footpath 005 Higham, which currently exits from the field edge directly onto Coalpit Lane There are currently no available onward PROWs once the pedestrians access the road and therefore users of that footpath have to walk along Coalpit Lane at present. It is considered that the provision of the new PROW opposite this point provides safer routes for users wishing to access the wider PROW network.

2.2.8 Notwithstanding my response in 2.2.7 above, visibility at this crossing point has been considered and the forward visibility to the crossing point on Coalpit Lane has been calculated to be in excess of 150m, which accords with the desirable minimum for 85th Percentile traffic speeds of 85mph as set out in LTN 2/95 Table 1.

2.2.9 In addition, I attach an extract from TD 9/93, Highway Link Design (Volume 6, Section 1, Part 1 of the Design Manual for Roads and Bridges) showing Table 3, which sets out the stopping sight distance (SSD) required for each design speed of road. The speed limit on Coalpit Lane is 60mph which equates to a design speed of 100kph. The desirable minimum SSD for this design speed is 215m with a relaxation to one step below standard at 160m. Within the context of the crossing location within the rural road layout (no road junctions, easily understood road layout, no frontages for instance) it is considered that a relaxation of the stopping sight distance would still be suitable, in line with the guidance set out in TD 9/93.

2.2.10 It is accepted that there is some vegetation overgrowth adjacent to the point where Footpath 005 Highway joins Coalpit Lane. This vegetation is encroaching into the visibility splay and this exit point from the existing PROW network would benefit from cutback and regular maintenance to ensure that the maximum visibility available is achieved.

2.3 **Comparison of Risk**

2.3.1 *At paragraph 32 of his Proof of Evidence (OBJ/29/W2/S23), Andrew Woodin states "I am also very concerned I have seen no attempt by Network Rail to assess the comparative risks of closing the level crossing and pushing vulnerable users on to alternative routes that often include stretches of road walking."*

In response, the safety risk at level crossings cannot be directly compared to road safety as there is no accepted methodology for comparing the relative risk. The Road Safety Audit process (as set out in the Design Manual for Roads and Bridges, Volume 5, Section 2, HD19/15) is accepted procedure for assessing road safety for highway improvement schemes. Suffolk County Council, in their role as the highway authority, have not raised any issues with using the road safety audit procedure for assessing road safety on the project.

Appendices

A. Extract from TD 9/93 Highway Link Design

1.8 Urban Roads: Low speed limits (30-40 mph) may be required due to the amount of frontage activity, but also where physical restrictions on the alignment make it impractical to achieve geometry relative to a higher Design Speed. Design Speeds shall be selected with reference to the speed limits envisaged for the road, so as to permit a small margin for speeds in excess of the speed limit, as shown in Table 2. The minimum Design Speed for a primary distributor shall be 70A kph.

SPEED LIMIT		DESIGN SPEED
MPH	KPH	KPH
30	48	60B
40	64	70A
50	80	85A
60	96	100A

Table 2

Design Speed Related Parameters

1.9 The Design Speed bands 120, 100, 85 kph, etc dictate the minimum geometric parameters for the design, according to Table 3, which shows Desirable Minimum (Absolute Minimum For Sag Curves only) values and values for certain Design Speed steps below Desirable Minimum. Desirable Minimum values represent the comfortable values dictated by the Design Speed.

DESIGN SPEED kph	120	100	85	70	60	50	V^2/R
STOPPING SIGHT DISTANCE m							
Desirable Minimum	295	215	160	120	90	70	
One Step below Desirable Minimum	215	160	120	90	70	50	
HORIZONTAL CURVATURE m.							
Minimum R* without elimination of Adverse Camber and Transitions	2880	2040	1440	1020	720	520	5
Minimum R* with Superelevation of 2.5%	2040	1440	1020	720	510	360	7.07
Minimum R* with Superelevation of 3.5%	1440	1020	720	510	360	255	10
Desirable Minimum R with Superelevation of 5%	1020	720	510	360	255	180	14.14
One Step below Desirable Minimum R with Superelevation of 7%	720	510	360	255	180	127	20
Two Steps below Desirable Minimum Radius with Superelevation of 7%	510	360	255	180	127	90	28.28
VERTICAL CURVATURE							
Desirable Minimum* Crest K Value	182	100	55	30	17	10	
One Step below Desirable Min Crest K Value	100	55	30	17	10	6.5	
Absolute Minimum Sag K Value	37	26	20	20	13	9	
OVERTAKING SIGHT DISTANCES							
Full Overtaking Sight Distance FOSD m.	*	580	490	410	345	290	
FOSD Overtaking Crest K Value	*	400	285	200	142	100	

Table 3

* Not recommended for use in the design of single carriageways (see Paragraphs 7.25 to 7.31 inclusive)

The V^2/R values shown in Table 3 above simply represent a convenient means of identifying the relative levels of design parameters, irrespective of Design Speed.