PARAGON HIGHWAYS



Equi-Trek, Stocksbridge, Sheffield

Stage 3 Road Safety Audit

April 2019

Project 1599

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On Behalf Of:

Equi-Trek Ltd

Local Authority:

Highways England / Barnsley Metropolitan Borough Council

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Quality Management

The Audit Team

	First Issue	Revision 1	Revision 2	Revision 3
	Stage 3 RSA			
Date	**Apr 2019**			
Prepared by	***RSA Team Leader*** **Haydn Vernals** **FIHE CMILT** **MCIHT MSoRSA**			
Checked by	***RSA Team Member*** **Dave Slack** **BSc (Hons)** **MCIHT**			
Observers	**N/A**			

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1 INTRODUCTION COMMISSIONING AND SCOPE

Scheme Description

1.1 Paragon Highway Consultants have been appointed to carry out a Stage 3 Road Safety Audit of works adjacent to the access for Equi-Trek Ltd, near Stocksbridge, Sheffield. The work comprises of the provision of vehicle stands for the display of vehicles, six flag poles, two totem signs and lighting to the totems and two older signs. The Road Safety Audit brief was provided by Equi-Trek. The Audit Team was approved by Equi-Trek.

1.2 The Audit Team Membership is given within the Quality Management Section of this report (Page 2) and immediately below. The terms of reference of this Road Safety Audit are as described in GG119 Road Safety Audit which forms part of Volume 5 of the Design Manual for Roads and Bridges (formerly HD19/15). It comprised an examination of the works on site. The Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The Audit Team	Haydn Vernals FIHE CMILT MCIHT MSoRSA, Road Safety Team Leader in accordance with GG119 and Directive 2008/96/EC (Certificate of Competency) Dave Slack BSc (Hons) MCIHT, Road Safety Team Member in accordance with GG119
Audit Observers	N/A

1.3 Tony Ashton of South Yorkshire Police was contacted for comment, he expressed concern over the distraction element, especially at night with the illumination of the signs and expressed that the sale of vehicles was an offence under the Clean Neighbourhoods and Environment Act 2005.

1.4 An invitation to attend the site visit was extended to the maintaining agent A-one+, the feed back was that the agent and Highways England were happy for the audit to remain independent of them.

1.5 Each of the auditors' responses is classified as a 'Problem' that is likely to result in a significant road safety hazard. All comments and recommendations are referenced to the detailed design drawings and the locations have been indicated on the plan at the end of the report.

1.6 Where recommendations are made, these do not comprise design decisions, and it remains the responsibility of the Design Team to incorporate any changes into the scheme and consider any interactions between design elements.

Site Visit

1.7 A site visit was carried out by both members on the 15th April 2019 between the hours of 19.15 and 20.00 hrs. During the site visit the weather was dry but cloudy and the road surface was dry. Traffic conditions were light and free flowing. A second visit was made during the hours of darkness between the hours of 20.45 and 21.00 hrs. During the site visit the weather was dry and the road surface was dry. Traffic conditions were light and free flowing

1.8 The plans were discussed at the site meeting and were analysed in more detail at the offices of Paragon Highway Consultants. The road safety audit was carried out by Road Safety Engineers approved by the Equi-Trek and have not been involved in the design / development process.

Supporting Information

1.9 The following information was submitted to the Audit Team by the designers.

- Letter from A-one+ regarding unauthorised signs on the public highway.

The Audit Team has not been made aware of any departures from standards.

1.10 The audit team are not aware of any previous Road Safety Audit being undertaken on the work as outlined above.

2 ITEMS RAISED IN THE STAGE 3 ROAD SAFETY AUDIT

PROBLEM – C-01

Location: A616 / Access to Equi-Trek – Deceleration lane west of access

Summary: Operations related to movement of vehicles on display may increase collisions.

The arrangement of vehicle stands provided in the verge for the display of vehicles, suggests that vehicles will need to be driven the wrong direction up the deceleration lane taper towards oncoming traffic, then reversed over the combined kerb and drainage units onto the gravel areas in the verge. Images provided in the letter from A-one+ provided by the client appear to confirm this. Manoeuvring vehicles in the deceleration taper, especially driving the wrong direction up that deceleration taper may increase the risk of a head on collision by a vehicle entering the deceleration taper intending to turn into the access.

RECOMMENDATION

It is recommended that any vehicle movements in the deceleration taper are made with respect to the direction of traffic the taper was designed to be used – i.e. towards the access. It is also recommended that any vehicle manoeuvres are made in a forward gear. This may require the construction of a hardstand in the verge that allows vehicles for display to be driven in a forward gear into an area separated from use by the general public or off highway. This area should be clear of the visibility splay requirements for the access onto the A616. Removal of vehicles, should be completed in a forward gear using the appropriate direction of travel on the main carriageway or using another route which is off highway.

PROBLEM – C-02

Location: A616 / Access to Equi-Trek

Summary: Obstructed visibility may increase the risk of junction related collisions.

An advertising sign has been placed about 75m to the west of the access, there are also vehicle stands provided in the verge for the display of vehicles. Although a technical check was not possible at the time of the site visit, the sign and potentially parked vehicles are located such that they may obstruct the junction visibility to the right as vehicles leave the access to join the A616. This will be a particular issue for large slow vehicles turning right out of the access seeking a suitable gap in traffic and may increase the risk of a junction related collision or a consequential shunt as traffic on the main carriageway slow unexpectedly in a following platoon.

RECOMMENDATION

It is recommended that an appropriate visibility sight line is provided that is clear of any physical obstructions such as advertising signs or parked vehicles. Should vehicles continue to be displayed in the verge, it is also recommended that a suitable means of indicating the visibility envelope is provided. DMRB requires a visibility sight line of 215m x 9.0m for a 100kph (60mph) design speed.

PROBLEM – C-03

Location: A616 / Access to Equi-Trek – Western Verge

Summary: Poor drainage may increase the risk of skidding type collisions.

The gravel that has been placed to facilitate the display of vehicles in the verge, is showing signs of being displaced along with other verge material into the combined kerb and drain system. Should this continue, there may be a risk that the drainage system becomes restricted by material or potentially blocked, reducing the performance of the drainage system. A reduction in the performance of the drainage system may increase the risk of ponding surface water, detritus or potentially ice in wintery conditions on the carriageway, which may consequentially increase the risk of skidding type collisions either in the deceleration lane or potentially the main carriageway.

RECOMMENDATION

It is recommended that the loose material is replaced with a material that will not be displaced by overrun, such as a bituminous or grasscrete type material.

PROBLEM – C-04

Location: A616 / Access to Equi-Trek – Western Verge

Summary: Poor drainage may increase the risk of skidding type collisions.

Vehicles on display appear to be routinely trafficked over the existing combined kerb and drain system, with a kerb check of at least 100mm. There was evidence of damage to the combined kerb and drain units, specifically where units had moved adjacent to each other and chipped the corners. Should this overrun of the units continue, the risk of further damage to the units may increase, reducing the performance of the drainage system. A reduction in the performance of the drainage system may increase the risk of ponding surface water, detritus or potentially ice in wintery conditions on the carriageway, which may consequentially increase the risk of skidding type collisions either in the deceleration lane or the main carriageway. In addition, regular overrun of a kerb of this height may increase the risk of damage to the tyres of the display vehicles, increasing the risk of a tyre related incident or collision at some future point remote to this site.

RECOMMENDATION

It is recommended that the combined kerb and drain units are replaced by a system that is appropriate for vehicle overrun with a kerb check appropriate for regular overrun.

PROBLEM – C-05

Location: A616 / Access to Equi-Trek – Both Verges

Summary: Poor electrical safety may increase the injury severity for occupants of errant vehicles following a collision.

A number of lighting units have been provided at low level to up-light various advertising signs either side of the access. The electrical service has been provided using what appears to be armoured cable, however the cable is in places above or near the surface of the verge and there appears to be no automatic disconnection facility. Should the lighting units be hit by an errant vehicle following a collision on the main carriageway, the risk from severed cables may increase the consequential risk of electric shock type injuries for occupants of the errant vehicle or anyone attempting offer assistance to the injured occupants.

RECOMMENDATION

It is recommended that ideally, the lighting and electrical service is removed. Should the lighting be retained, the provision of lighting units, service connections, automatic disconnection systems, residual current breakers and passive performance of the lighting and cable system should be compliant with the requirements for deployment on the trunk road network.

PROBLEM – C-06

Location: A616 / Access to Equi-Trek – Both Verges

Summary: Direct lighting glare may increase the risk of loss of control type collisions.

A number of lighting units have been provided at low level to up-light various advertising signs either side of the access. Some of these lighting units are positioned such that the lighting source is visible from approaching vehicles on the A616 mainline. In particular the western light to the verge mounted advertising sign (glare on approach from the M1) and the light illuminating the sign on the western side of the entry (glare on approach from Manchester). Direct illumination glare from lighting units may increase the risk of approaching drivers being distracted by glare, potentially confusing where oncoming traffic is approaching from, consequently increasing the risk of loss of control type collisions. This risk may increase in poor weather conditions, where heavy rain impairs visibility further.

RECOMMENDATION

It is recommended that ideally, the lighting units are removed. Should the lighting be retained, it is recommended that glare to oncoming vehicles is prevented by means of flush mounting illumination in the verge surface or baffle boards to block direct light glare.

PROBLEM – C-07

Location: A616 / Access to Equi-Trek – Both Verges

Summary: Lack of passive safety provision may increase the injury severity for occupants of errant vehicles following a collision.

Two large totem type advertising signs and six flag poles have been provided in the verges either side of the access. No details have been provided as to the materials used, in terms of post wall thickness and passive performance in the event of a collision. Poor passive safety performance may increase the injury severity in the event of a collision by an errant vehicle. Furthermore, no details have been provided with regard to the wind loading performance of the totem signs or the flags and fixings. Poor wind loading performance may increase the risk of sign face plating and/or material forming the flags breaking loose in high winds, consequently coming into collision with passing vehicles or other users, causing loss of control or other related injuries.

RECOMMENDATION

It is recommended that all sign posts, flagpoles and sign faces are compliant with the requirements for passive safety as outlined in the appropriate BS-EN's and national annex. It is also recommended that wind loading calculations are completed to ensure compliance with the requirements for sign structure and support design in DMRB, MCHW, related BS-EN's and national annex.

3 AUDIT TEAM STATEMENT

We certify that this Audit has been carried out in accordance with GG 119.

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Directive 2008/96/EC (Certificate of Competency)
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SIGNATURE



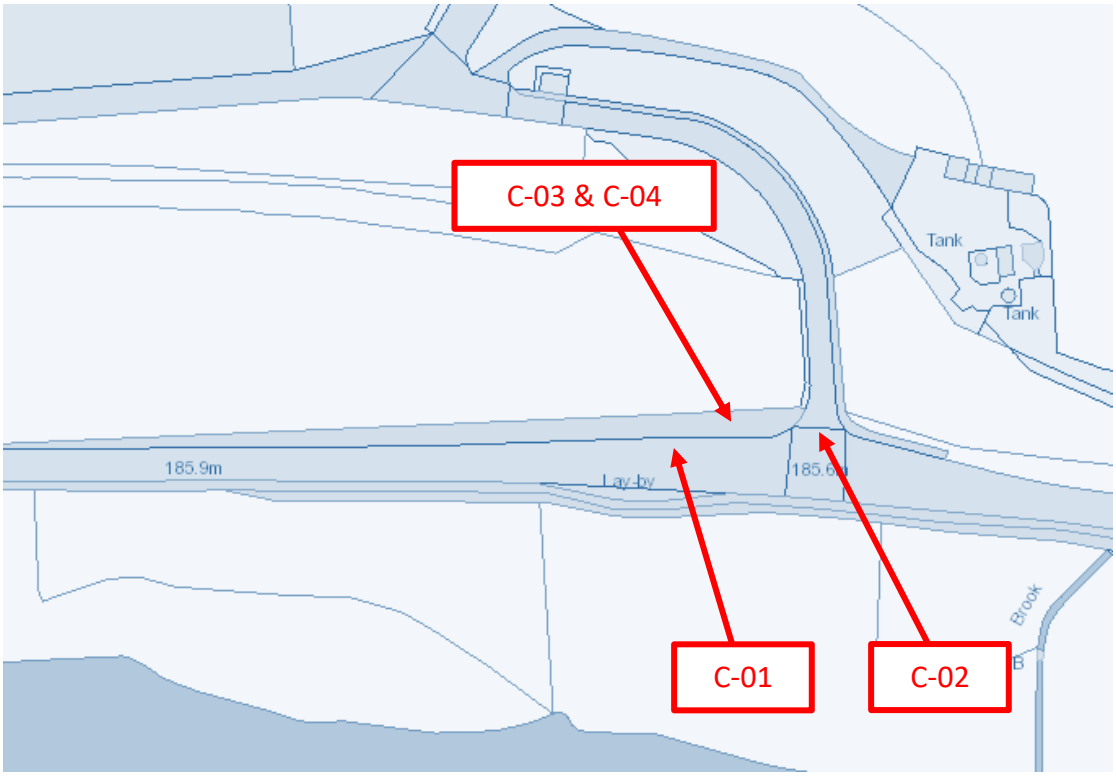
ROAD SAFETY AUDIT TEAM MEMBER
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Date: 16/04/2019

4 PROBLEM LOCATION PLAN



Extent of works C-05, C-06 & C-07