

DESIGN NOTES: Installation of a Toucan Crossing at Haverhill Relief Road, East of Roundabout, Suffolk

SCHEME BACKGROUND:

MLM Consulting contracted Green Signals Consulting (GSC) to undertake the design of a Toucan Crossing on the proposed Haverhill Relief Road, Suffolk. The local highway authority is Suffolk County Council.

The location of the Toucan crossing was decided by others.

This document covers the design considerations undertaken as part of the detailed design shown in Drawing No. 18007-101

LAYOUT AND OPERATION

The design has been created using a topographical survey.

The proposed crossing is located about 25m east of the roundabout

The Toucan crossing shall be 4.0m wide (10 tactile slabs).

Maintenance vehicle parking to be in maintenance bay located in the western footway south of the roundabout.

The proposed speed limit is to be 40mph along the entire length of the Relief Road.

With the design being created for a road that does not currently exist, from our experience of this type of road we have determined that the likely cruise speed will be approximately 12 meters per second.

This will require MOVA loops installed on both approaches with the IN Loop for the westbound approach at 101m and the X loop at 39m. For the Eastbound approach only the X loop will be installed at 20m due to the close proximity to the roundabout.

High friction surfaces have not been included within this design, Haverhill Relief road being a new road and therefore we have assumed that the road surface will meet the current Polished Stone Value (PSV) requirements of greater than 68. Should the measured PSV value be lower than 68, high friction surfaces may need to be installed.

Controller

The Controller will be Extra Low Voltage (ELV) and the signal equipment will be ELV LED type.

All signal equipment (Controller and Poles) will be coloured grey.

The controller operation will be MOVA with fall back to VA.

The controller will be positioned southwest of the crossing next to pole 1 in the verge.

Pole locations

4m straight poles are being used for all poles.

All poles are to be installed within NAL RS115 pole retention sockets or similar.

Detection

Detection for vehicles will be inductive Loops for both approaches. Both the IN and X Loop will be used on the westbound approach with only the X loop to be used on the eastbound approach due to the close proximity of a roundabout.

On-crossing pedestrian detection is to be used.

DFM periods: Vehicle detection, active 60 minutes, inactive 18 hours.

 Pedestrian buttons active 60 minutes, inactive not monitored.

 On crossing detection, active 60 minutes, inactive 18 hours.

Signal Equipment

All signal equipment will be ELV.

All signal heads will be central light source LED type.

Four poles are to be installed for this crossing with two primary and one closely associated secondary signal for each approach.

Push button unit with Toucan nearside indicator mounted above to be installed on poles 2 and 4 with pedestrian push buttons installed on the other two poles.

Tactile rotating cones shall be fitted in each push button.

Audibles will be installed on the right-hand PBU and timetabled to switch off between the hours of 22:00 and 07:00 every day.

Photo Electric Cell to be installed on pole 1, this will allow the signals to be dimmed during hours of darkness.

General

Signs to diagram 543 are not being used, in line with guidance from Chapter 4 of the signs manual and TAL 01/13 Reducing Sign Clutter. Chapter 4 of Signs Manual states that with 85th percentile speeds up to 40mph and with visibility greater than 100m, Diagram 543 signs are not required. This will also apply to signs to Diagram 7014.

Timings have been calculated using TAL 5/05.

Due to this scheme being part of a project to build a new road across a field it is likely that no Statutory Undertaker's Plant will be affected, however, prior to construction, a survey should be undertaken and normal precautions taken.