

## **DESIGN NOTES: Installation of a Toucan Crossing at Haverhill Relief Road, South 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. 18008-101.

### **LAYOUT AND OPERATION**

The design has been created using a topographical survey.

The proposed crossing is located about 50m south 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 verge north of the crossing.

The proposed speed limit is to be 30mph along this stretch 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 10 meters per second. To be validated as part of the commissioning process.

Due to the unknown 85<sup>th</sup> percentile speeds of the proposed road the mode of operation will be MOVA with fallback to VA.

High friction surfaces have not been included within this design, Haverhill Relief Road is 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 west of the crossing next to pole 1 in the verge.

### **Pole locations**

4m straight poles are being used for poles 2 and 4. Poles 1 and 3 will be 2m stub poles.

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

## **Detection**

Detection for vehicles will be AGD 318 Dual Output Detectors for both approaches.

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 one 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 poles 1 and 3.

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 4, 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.