

Upton McGougan

Lyons Haulage Site
Worthing Road, Littlehampton

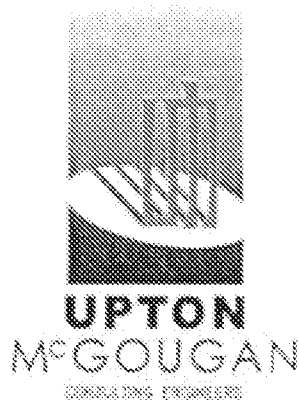
**RIGHT TURN LANE ACCESS
DESIGN CHECK REPORT**

for

Stuart Lyons (Haulage) Ltd

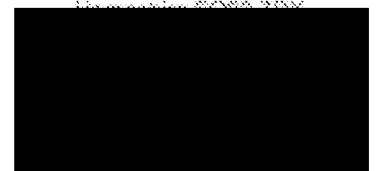
September 2009

Project No. 022.1832/PB/90619a



Upton McGougan

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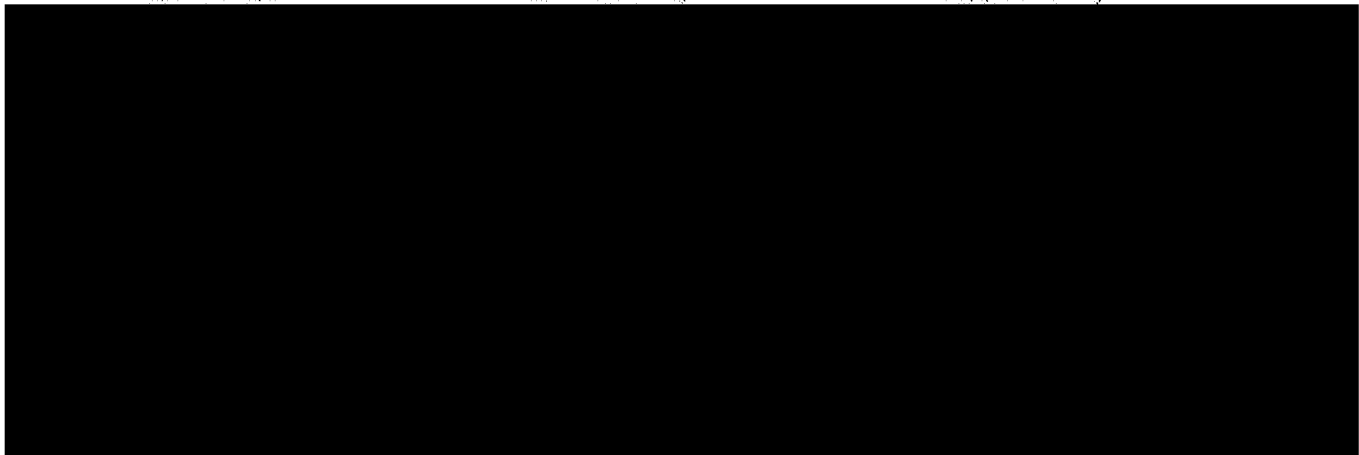
Revision History

Rev	Date	Purpose/Status	Document Ref.	Comments
-	28.08.09	Draft	022.1832/PB/90619	
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1.0 SUBMITTED INFORMATION

The following information has been submitted within the appendices of this design check report to allow a complete design check on the proposed access arrangement to be completed:

Drawing No: 022.1832.202.P4 Junction Access Option 5 including
Refuse Vehicle Swept Path (Large 3-Axle Vehicle)

Document Ref: 022.1832/PB/89871b) Trip Rate Impact Assessment
Including TRICS data and PICADY Analysis

Highway Ownership Records

Minutes of Pre-Application Discussion Meeting

2.0 DESCRIPTION OF HIGHWAY WORKS

Right turn lane on the A259 (Worthing Road) and associated carriageway realignment to improve an existing access to accommodate predicted traffic levels associated with a c.100 residential unit redevelopment of the existing haulage depot premises.

These improvement works should be considered in relation to the 'Development-Related Infrastructure' works on the A259 in the immediate vicinity of the proposed site access, as approved and implemented to West Sussex County Council (WSCC) Highways requirements in association with the Toddington Lane residential development.

Traffic Speed/Flow Information

Extensive traffic surveys and future year growth models were undertaken with the application for the neighbouring Toddington Lane scheme (application number LU/45/06), including Future Year 2015 'with development' traffic flows. It should be noted that the supporting assessment incorporated development traffic for 150 residential units being developed on the Lyons Haulage site, however not via the existing access on the A259. The assessment considered closure of the existing Lyons Haulage accesses and development traffic accessing the local road network through the neighbouring site. These traffic flows are considered within the attached Trip Rate Impact Assessment.

The speed limit on this section of the A259 is 40mph.

Accident History

A full accident data review has not been completed at this stage. The reason for this is simply that significant improvement works have been implemented on the A259 in the vicinity of the proposed site access within the last 12 months, which were subject to a full Section 278 design check and safety audit process. Limited accident data would be available since the implementation of these works, and accidents caused by highway design concerns that were recorded prior to these highway improvements may have now been resolved.

3.0 DESIGN FEATURES

Horizontal Alignment

The right turning lane is designed in accordance with **DMRB TD42/95** – Geometric Design of Major/Minor Priority Junctions and **TD9/93** – Highway Link Design.

The right turn lane is designed to **TD42/95** criteria for a ghost-island right turn lane. The geometric design for the right turning lane is influenced by the 40mph speed limit of Worthing Road (A259), the proximity to the Watersmead Roundabout and the predicted trip levels generated from residential redevelopment of the site.

The turning length of the right turn lane is determined by the peak traffic demand generated by the size and type of redevelopment, which we have calculated using the TRICS (2009b) database. Whilst further details can be found within the accompanying Trip Rate Impact Assessment (document ref: 022.1832/PB/89871b), the highest proportion of right turn manoeuvres into the site is 20 vehicles during the PM peak (1 vehicle every 3 minutes), with which the PICADY junction model highlights a minimal queue (as identified within the Trip Rate Impact Assessment). The turning length is however determined by referring to **TD42/95** paragraph 7.32 and 7.33 that specifies a minimum turning length of 10m to allow long vehicles to position themselves correctly before undertaking right turn manoeuvres.

The deceleration length for the right turning lane is designed based on the speed of Worthing Road (A259), which is a 40mph road. Based on **TD42/95** – Table 7/5a which sets out the deceleration length for Ghost Island and single lane dualling, the deceleration length is determined as 25m based on the design speed of 60kmph. The location of the Watersmead Roundabout (approximately 120m to the east of the site access) acts to keep speeds low, and so the 60kmph (~37.5mph) design speed should be considered appropriate. A 5m direct taper is required for the design speed of 60kmph.

The footway and cycleway is extended across one of the site access to connect with the junction bell mouth and across the splitter island to provide crossing points for both pedestrian and cyclists.

The access improvements include the closure of the existing eastern site access and the existing 3.0m shared footway/cycleway extended across the site frontage to connect with the relocated site access and splitter island, with additional drop kerbs and tactile paving to be implemented in accordance with *DfT Guidance on the use of Tactile Paving Surfaces*.

The geometric design for the site access is based on **TD42/95**, BS standard for kerbing radii and Manual for Streets. The lane width of 5.5m for the site access is determined using MfS with allowance for 2 HGVs to pass. The site access would provide a left out arrangement to prevent vehicles from turning right across the right turn lane to travel westbound along Worthing Road. With Watersmead Roundabout located approximately 120m to the east, it is our professional view that by restricting right turn movements out of the site, a significant improvement would be achieved over and above the current arrangement which sees large HGVs undertaking this manoeuvre. A PICADY assessment of this arrangement has been conducted and is incorporated into the accompanying Trip Rate Impact Assessment.

The kerb radii are based on the vehicle swept paths and manufacturer specification as per British Standards.

Vertical Alignment

The vertical alignment of the carriageway would remain as existing.

Drainage Proposals

The proposals would include the relocation of any existing gullies that may be directly impacted upon by the access improvements. Drainage relocation would be fully assessed at any future Section 278 stage, and we would envisage working closely with WSCC through the detailed stage to ensure this is achieved.

Street Lighting

The proposals would include the relocation of two street lighting columns to the rear of the proposed footway on the southern side of the carriageway (approximately 2.0m south of their current locations). Street lighting works would be fully assessed at any future Section 278 stage and we would envisage working closely with WSCC to ensure this is achieved.

Traffic Signals

N/A. There would be no impact on the signal pedestrian crossing approximately 80m east of the proposed access location.

Road Markings and Signage

It is intended that additional signage would be required at the site access to prohibit right turning manoeuvres (DIA 612) and highlight no entry into the exit lane of the site access (DIA 616).

Signage and street furniture currently located within the southern footway would be relocated within the proposed alignment for the southern footway.

All road markings and signing would be provided in accordance with TSRGD 2002 & Highway Authorities requirements. A road marking and signing schedule would be provided to support the S278 Detail Design stage submission.

Signage is indicatively demonstrated on attached drawing no 022.1832.202.P4.

Pavement Design

The proposed realigned footway would be constructed to meet WSCC requirements and specific construction specifications agreed at any future Section 278 stage.

Structures

N/A

Visibility

Visibility in the primary direction of 4.5m x 120m is achievable in accordance with DMRB requirements for a 40mph road.

Visibility in the secondary direction of 4.5m x 120m is achievable to the Watersmead Roundabout exit lane, with overtaking at this location prohibited by the splitter island of the roundabout. This is therefore in accordance with DMRB TD42/95 visibility splay requirements.

These visibility splays are demonstrated on drawing no 022.1832.202.P4.

Pedestrian and Cycle Facilities

Pedestrian and cycle facilities on the northern side of the A259 would be improved through the stopping up of the existing eastern access point to the Lyons Haulage site, and improve the western access with left only splitter island with dropped kerbs and tactile paving at the bellmouths. These works are demonstrated on the attached drawing no 022.1832.202.P4.

Public Transport Facilities

N/A

Road Safety Audit

As established with WSCC Highways Officers during pre-application discussions (minutes attached), this design check report will precede a full RSA of the proposed access arrangement, and we look forward to receiving these comments in due course.

Arboriculture

N/A

Standard Details

At the detail design check stage a list of WSCC Standard Details including Revision suffix, which are relevant to the works, will be provided.

Departures from Standard

N/A

4.0 CONCLUSION

Upton McGougan have been commissioned to assist in the development of an access strategy to the allocated land at Windroos Nursery for residential development. Due to third party land restrictions, the access option available to bring forward this site for development is directly via the A259 (Worthing Road).

Following pre-application discussions with WSCC Highways, this Design Check Report has been prepared, in conjunction with a Trip Rate Impact Assessment, to allow WSCC to fully appraise the design suitability of the proposed access arrangement.

In accordance with the pre-application discussions, a full Stage 1 Road Safety Audit would be undertaken following comments on the design by WSCC.

Appendix D

Right Turn Lane Access Design Check Report, Rev B