

SEWAGE WORKS, ROYSTON
LAND TO THE NORTH OF A505 ROYSTON BYPASS ROAD
PROPOSED IMPROVEMENTS TO DIRECT ACCESS

**REPORT FOR STAGE 1
OF SAFETY AUDIT
(Safety Audit Ref: DC5 / 536 / 2012)**

SWD/METS CODE: 1046346/007/001

Report Produced For: Roger Taylor
HCC - Environment Dept. – TP&S
-on behalf of Hertfordshire County Council

Report Dated: June 2012

Report Authorised for Issue by: -

signed..... date.....

name/job title.....

Hertfordshire Highways
(Safety Engineering Unit)
Highways House
41-45, Broadwater Road
Welwyn Garden City
Herts. AL7 3SP

A. Introduction

A.1 This report was prepared in response to a commission from Roger Taylor of HCC - Environment Dept: TP&S, received on 6 June 2012, to provide a Stage 1 Safety Audit Report for the above scheme. This report was compiled at the Welwyn Garden City office of Hertfordshire Highways, by the Audit Team named below, during June 2012 and included a visit to the site on 27 June 2012. The weather was fine and bright. The existing road surface was dry, and the traffic flows on Royston Bypass Road were moderate during this period in the afternoon.

A.2 The Audit Team membership for this audit was: -

Ian Batcock
(Audit Team Leader)

Hertfordshire Highways
(The Mouchel Group)

Alan Lusted
(Audit Team Member)

Hertfordshire Highways
(The Mouchel Group)

A.3 The following information, produced by “Cannon (Consulting Engineers)”, was supplied with this request, as part of the ‘Audit Brief’: -

- Drg No. E521/001 Rev A – Access Options (dated 16/04/2012).
- Letter: Ref: B871/RT/2012.04.25 – Cannon CE, dated 25/04/2012.

This information was not considered sufficient for the purposes of carrying out the safety audit requested. The following assumptions have, therefore, been made: -

1. There are no details for the alterations to the existing carriageway shown on the drawings included with the audit brief. It is assumed that appropriate construction drawings showing the proposed levels and cross sections, the construction details and the road drainage provision will be developed as the scheme is progressed, which would be re-submitted for Safety Audit.
2. There is no Traffic Signs Schedule included with drawings in the audit brief. It is, therefore, assumed that there are no proposals to incorporate any new road signs into the scheme.

- A.4 The terms of reference are as described in HD 19/03 (Volume 5, Section 2, Part 2 of The Design Manual for Roads and Bridges, produced by the Highways Agency).

The Audit Team has examined and reported only on the road safety implications to road users of the scheme as presented. It has not been examined or verified for compliance with any other standards or criteria.

This safety audit does not perform any “Technical Check” function on these proposals, as described in the “Audit Brief”. It is assumed that the Project Sponsor is satisfied that such a “Technical Check” has been successfully completed prior to requesting this safety audit.

In particular, it is assumed that the appropriate specialists have been, or will be consulted on the following elements of the scheme design: -

- a) Street Lighting/Road Signs.
- b) Road construction/Drainage associated with alterations to the Highway.

A.5 **Please note:**

- If any of the **Problems or Recommendations** within this safety audit report are not accepted a written response is required, stating the reasons for non-acceptance.
- Any issues identified during the audit that are not considered to be safety related, in-so-far as this report is concerned, but which the Audit Team wishes to draw to the attention of the Highway Authority, or other organisation commissioning the audit, will be set out in a separate document. These issues could include maintenance items.

- A.6 All comments and recommendations set out in the ‘Safety Comments’ section of this Report (below) are referenced to locations indicated on the A4 size location plans, provided as Figure 1 & Figure 2 of Appendix I within this report. Particular locations, described within the text as 'Point A', 'Location F', etc. refer to the annotations made to these location plans.

B. Description and Extent of the Scheme to be Audited

The current means of vehicular access to the Sewage Works on the northern side of the A505 Royston Bypass Road, Royston is to be improved, to accommodate the anticipated increase in turning movements by larger vehicles on the junction – attracted to the proposed Waste Water Treatment Works (WWTW).

The current means of access provides for a left in/left out direct access with a short deceleration lane off the northern side of the A505, on the eastbound lane of the dual carriageway. The access road junction falls on the section of the A505 between its roundabout junctions with A1198 Old North Road and the A10 Melbourn Road.

Note: This section of the A505 Royston Bypass dual carriageway is subject to the national speed limit (70mph).

C. ITEMS RAISED AT THIS STAGE 1 AUDIT

1.0 General: Road Geometry

1.1 PROBLEM

Location A – Access Road J/w Royston Bypass Road

Deceleration Lane

(Drg No: E521/001 Rev A)

Summary: The existing deceleration lane for the Sewage Works access road junction with A505 Royston Bypass is too short, which results in left turning vehicles decelerating in Lane 1 of the dual carriageway.

It is proposed to re-develop the Sewage Works site on the northern side of A505 Royston Bypass Road. It is understood that the re-developed site would attract approximately 36 No. turning movements on the junction.

The proposed road layout for the direct access raises the following points: -

- The existing auxiliary lane for those vehicles leaving the A505 to join the site access road is too short to meet current design standards. There is likely to be a propensity for larger vehicles attracted to the site to slow down in the eastbound Lane 1 of the dual carriageway; to negotiate the short deceleration lane for the Sewage Works junction.
- There is evidence that the near side kerb line around the western side of the access road bell mouth is overrun by larger vehicles – there are no proposals shown on the drawing to improve the exit width into the side road.
- The bell mouth on the eastern side of the access road junction is to be widened, to better accommodate the left turning movements of larger vehicles leaving the access road – the existing bell mouth kerbline and the verge behind it are currently being heavily overrun. The removal of the small trees and bushes at the back of the verge to accommodate the junction improvements would remove the current edge restraint, should an errant vehicle leave the dual carriageway at this location. (There is a significant change in levels down the embankment behind the verge).

A lack of appropriate deceleration lane length for the side road junction could leave through vehicles more vulnerable to conflict with a slow moving left turning vehicle in Lane 1 of the A505 eastbound carriageway on this high-speed road, with the attendant risk of a collision occurring as a result.

RECOMMEND

The auxiliary lane for vehicles decelerating for the side road junction should be at least 80m long, so that those vehicles turning left into the Sewage Works can slow down off the mainline of the eastbound Lane 1 of the dual carriageway.

The radius of the western bell mouth and the width of the traffic lane into the access road should be increased to better accommodate the turning movements and swept paths of those larger vehicles attracted to the development site.

The provision of a longer auxiliary deceleration lane would require removal of the vegetation behind the verge on this northern side of the A505. This would remove the existing edge restraint preventing an incursion by an errant vehicle into the land behind the verge down the embankment. The alterations to the auxiliary lane should also incorporate the provision of a suitable length of safety fencing in the verge alongside the auxiliary lane, to provide a suitable road edge restraint. Similarly, a suitable length of safety fencing should be provided in the verge behind the proposed alterations to the access road and the eastern side of the bell mouth of the Sewage Works junction.

-----End of the 'Safety Comments' section of this report-----

D. OTHER ISSUES FOR THE HIGHWAY AUTHORITY TO CONSIDER

2.0 General: Road Signs

Location A – Access Road J/w Royston Bypass Road

Deceleration Lane

(Drg No: E521/001 Rev A)

Summary: *A lack of suitable guidance for those vehicles attracted to the Waste Water Treatment Works site could lead to hesitation by some drivers not familiar with the site location.*

The preliminary assessment of trips to the new development suggest that there might be up to thirty six daily turning movements on the Sewage Works left in/left out junction. It is not known whether all of the vehicle drivers attending the site would be familiar with the current access arrangements.

The Highway Authority may wish to see that suitable direction signs are provided, to direct eastbound and westbound vehicles on the A505 towards the left in/left out junction. In particular, the use of a direction sign on the westbound approach to the site along the A505 dual carriageway would be beneficial. A sign similar to Diag 2010.1 (TSRGD) could be used; to show that vehicles attracted to the Waste Water Treatment Works should U-turn at the subsequent roundabout junction.

E. Audit Team Statement

I certify that this audit has been carried out in accordance with HD19/03.

AUDIT TEAM LEADER

Ian Batcock

Hertfordshire Highways
(Safety Engineering Unit)
Highways House
41-45, Broadwater Road
Welwyn Garden City
Herts. AL7 3SP

Signed

Dated

AUDIT TEAM MEMBER

Alan Lusted

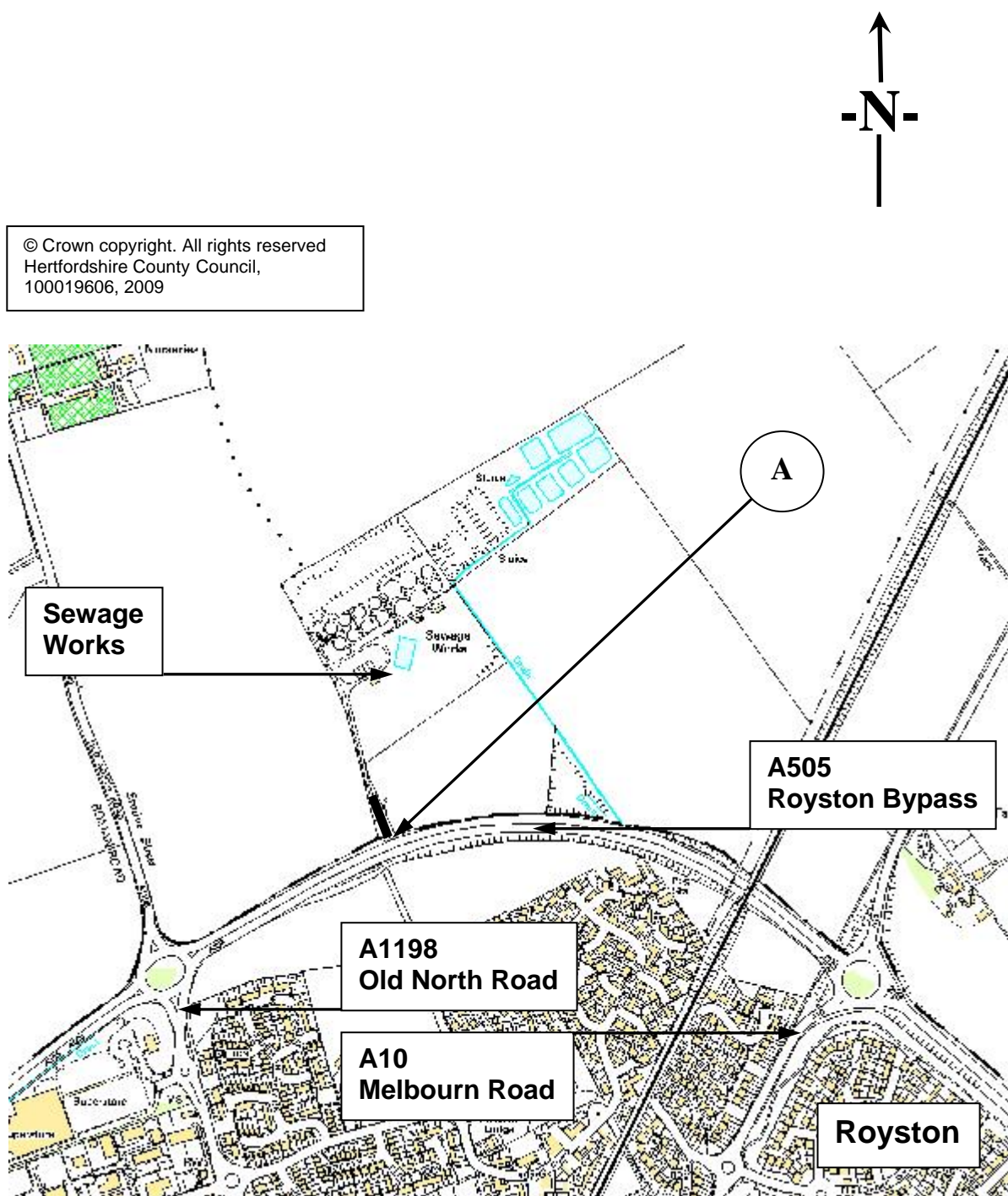
Hertfordshire Highways
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LAND NORTH OF A505 ROYSTON BYPASS ROAD, ROYSTON
PROPOSED IMPROVEMENTS TO DIRECT ACCESS FOR SEWAGE WORKS

APPENDIX I TO THE STAGE 1 SAFETY AUDIT REPORT

(Safety Audit Ref: DC5 / 536 / 2012)

FIGURE 1: SITE LOCATION PLAN

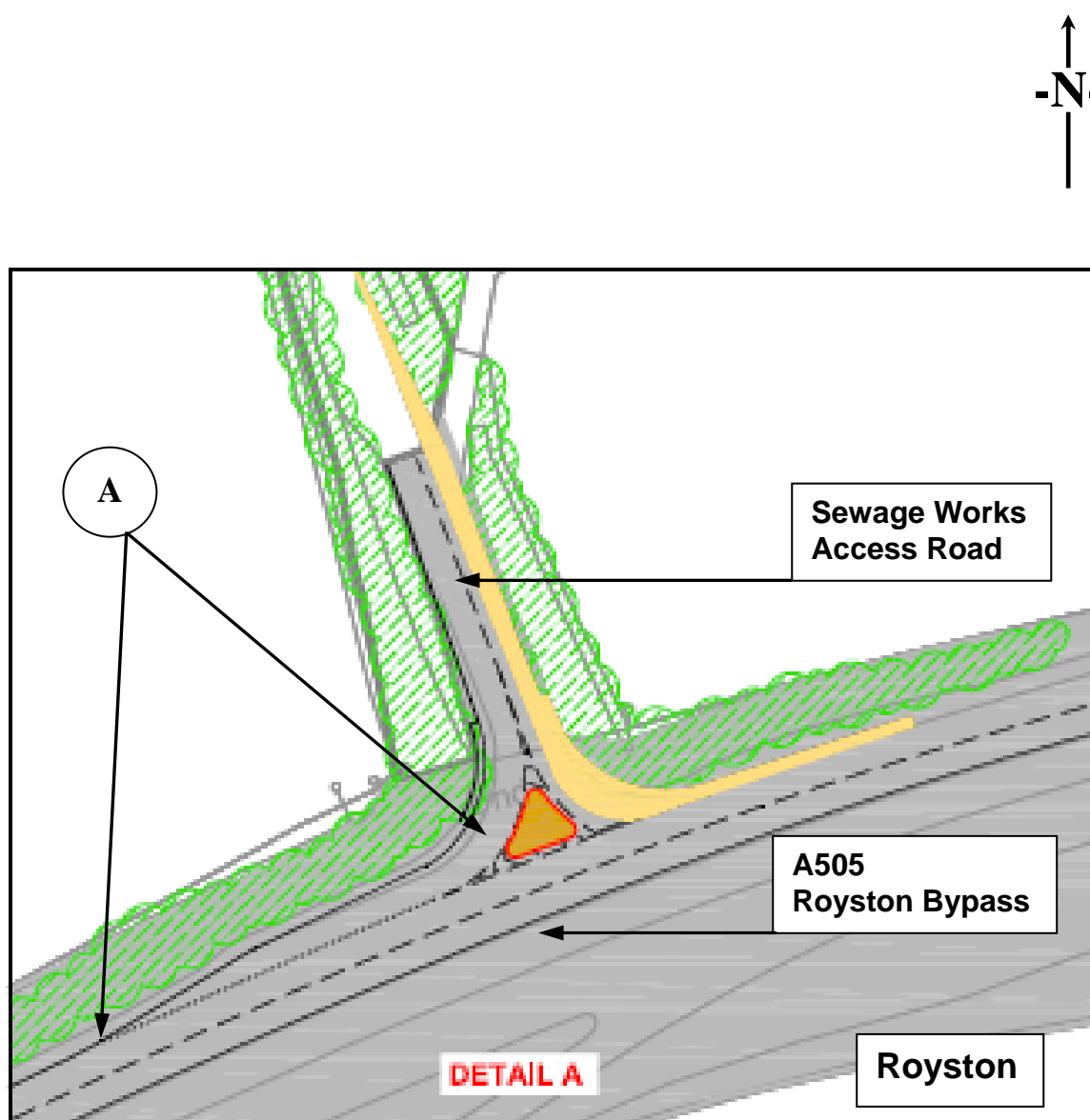


LAND NORTH OF A505 ROYSTON BYPASS ROAD, ROYSTON
PROPOSED IMPROVEMENTS TO DIRECT ACCESS FOR SEWAGE WORKS

APPENDIX I TO THE STAGE 1 SAFETY AUDIT REPORT

(Safety Audit Ref: DC5 / 536 / 2012)

FIGURE 2: SITE LOCATION PLAN



Mr. Roger Taylor
Transport Planning and Policy
Hertfordshire County Council
County Hall
Pegs Lane
Hertford
SG13 8DQ



25 April 2012

Our Ref: B871/RT/2012.04.25


Dear Roger

**Land north of the A505, Royston
Highway Access**

Cannon Consulting Engineers are working with Anglian Water to review the potential for development on land surplus to their operational requirements at the Royston Waste Water Treatment Works (WWTW). The AWG site is located on the northern side of the A505 between the A1198 and the A10. The Hertfordshire border follows the line of the A505 and therefore I think the site itself falls within Cambridgeshire, however, I assume the access with the A505 would fall within your remit? I have attached a site location plan for your information.

The site access currently operates as a left in/out arrangement directly from the A505 which is dual carriageway at this location. The site is located between the two principal roundabouts on the A505 Royston bypass so u-turns are easy to achieve and can be undertaken in a safe manner to provide site generated traffic with the ability to access the strategic road network in all directions. The existing WWTW attracts approximately 2 vans and 2-3 tankers per day plus monthly visits from ground maintenance vehicles. However, capital works and emergencies would generate further movements albeit irregular and unpredictable.

Those interested in the site are looking to install and run an Anaerobic Digestion (AD) plant on the surplus land which will process up to 42,000 tonnes per annum. The process will generate liquids and solids that are transported off-site for use in agriculture. There will be a 20% reduction in weight of the product leaving the site and I am still awaiting details of how much liquid will be produced. Once I have this information, and information regarding the types of vehicles used for transportation, I will be able to provide you with a more detailed estimation of the number of daily trips relating to the use. However, based on our initial understanding we expect the total traffic associated with the AD plant to be around 20-30 two way movements per day by HGV plus minimal staff vehicles (approximately 2 to 3).



As part of the proposal, we would improve the junction by providing an improved off-slip from the A505 and widen the access road within the site so that two HGVs can pass one another. The access is shown on the attached plan and outlines a simple priority arrangement with an improved off-slip lane from the A505. This will allow vehicles entering the site to more effectively slow down off the mainline A505, before making the turn into the access road. Vehicles leaving the site are currently required to give way formally at the A505 and await a gap in traffic before attempting to join the A505. This is deemed to be a safer arrangement than a slip road where vehicles would be moving too slowly to safely join the traffic flow and could be stranded in the slip road or merge lane.

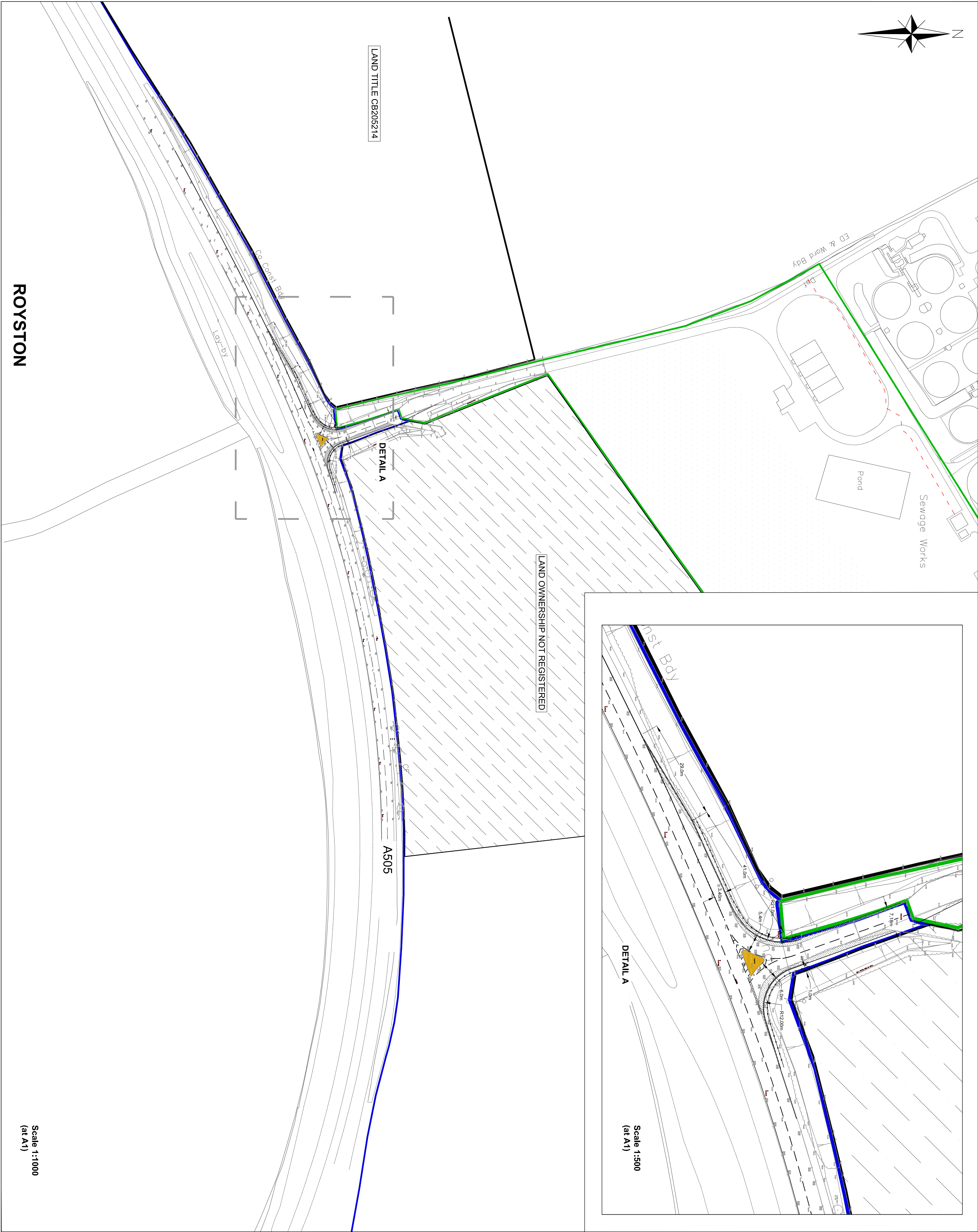
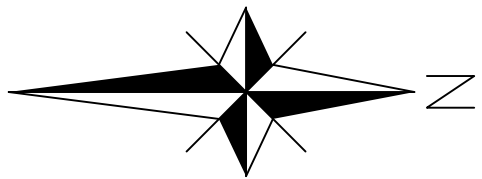
As an initial inquiry we would like to gauge your opinion on the proposal that will intensify the access. I should have more detailed information regarding the potential trip generation from the site next week at which point a meeting with you to discuss the proposal would be beneficial.

If you have any queries or would like any additional information at this stage please do not hesitate to contact me.

Yours sincerely

Jessica Pratt
Senior Transport Planner

Encl. Site Location Plan
Drawing E521/001 – Rev A



- KEY:
- EXTENT OF MAINTAINABLE HIGHWAY
 - EXTENT OF NEW ACCESS ROAD AND DIVERGE CONSTRUCTION
 - SAFETY BARRIER
 - SITE BOUNDARY
 - PROPERTY BOUNDARY

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|--|----------|----|-----------|----|----------|
| REVISED TO SHOW MAXIMUM AVAILABLE DIVERGE | | JB | JP | RT | 21.12.12 |
| REVISED TO SHOW 80m DIVERGE | | JB | JP | RT | 09.11.12 |
| REVISED TO SHOW PROPOSED SLIP ROAD OPTION | | JB | JP | RT | 09.11.12 |
| REVISED TO SHOW PROPOSED SAFETY BARRIER AND ACCESS WIDENING. | | JB | JP | RT | 20.08.12 |
| FRAME AND KEY REVISION | | JB | JP | RT | 16.06.12 |
| REV / DESCRIPTION | DE | DS | CH | PA | DATE |
| DESIGNED BY | DRAWN BY | | | | |
| JXB | JXB/LA | RT | PASSED BY | | |
| - | | | | | |

| | | | |
|------------------|------------|-------------|--------------|
| SCALES @ A1 SIZE | | DATE | ISSUE STATUS |
| AS SHOWN | 18/08/2009 | PRELIMINARY | |

LAND NORTH OF A505
ROYSTON

ACCESS OPTIONS AND
OTHER CONSTRAINTS

CLIENT
AWG LAND HOLDINGS LTD



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DRAWING NUMBER
E521/001

REV.

E

Scale 1:1000
(at A1)

ROYSTON

NOTE THE PROPERTY OF THIS DRAWING AND DESIGN IS VESTED IN CANNON CONSULTING ENGINEERS AND MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WITHOUT THEIR WRITTEN CONSENT