



STAGE 1 ROAD SAFETY AUDIT
Proposed Controlled Crossing Facilities
Marcham Road and Ock Street, Abingdon

Prepared for: Vale of White Horse District Council
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Figure 1: Location of Problems

1.0 Introduction

1.1 This report results from an independent Stage 1 Road Safety Audit carried out on proposed modifications to existing crossing facilities in the vicinity of the double mini-roundabout junction of B4017 Drayton Road / Marcham Road / Spring Road / Ock Street, Abingdon. The audit was carried out at the request of Vale of White Horse District Council.

The Audit Team membership was as follows:

- P.A. Whitehead BSc CEng MICE MCIHT
Associate Director, Glanville Consultants

- G. Turner BEng
Principal Engineer, Glanville Consultants

1.2 The terms of reference of the Audit are as described in HD 19/03 'Road Safety Audit' which forms part of the Design Manual for Roads and Bridges. The Audit Team has examined and reported only on the road safety implications for all users of the scheme as presented. The scheme has not been examined or verified for compliance with any other standards or criteria. However, in order to clearly explain a safety problem or a recommendation to resolve a safety problem, the Audit Team may on occasion refer to a design standard for information only. Any recommendations or comments made in this report should not be construed as implying that a technical audit of the scheme, as presented, has been undertaken in any respect.

1.3 Furthermore, any recommendations included within this report should not be regarded as being prescriptive design solutions to the safety problem identified. Recommendations are intended only to indicate a proportionate and viable means of eliminating or mitigating the safety problem identified, in accordance with HD19/03, and do not indicate that a technical audit has been undertaken. The Audit Team recognises that there may be alternative methods for addressing a safety problem which may be equally acceptable in achieving the desired elimination or mitigation and thus such alternatives should also be considered when responding to this report.

1.4 The Audit Team has had no involvement in any aspect of the scheme design and the Design Team has had no involvement in the road safety audit process.

1.5 The Audit took place at the Oxfordshire office of Glanville Consultants in March 2014. The Audit comprised examination of the following information.

Drawings

- VN50148-ECC-SK-0002 Rev A Potential Location of Pedestrian Crossing East of Drayton Road Roundabout
- VN50148-ECC-SK-0003 Potential Location of Repositioned Pedestrian Crossing on Marcham Road

Supplementary Information

- Notice of proposed amendments to pelican crossings
- Appeal Decision Report (Ref. APP / V3120 / A / 13 / 2191911), dated 11 July 2013

- 1.6 All comments and recommendations are referenced to the layout drawing at Figure 1 to indicate its location.
- 1.7 The Audit Team visited the site on Thursday 20 March 2014 between 11.30 and 12.45 hours to review the proposed highway works in context. During the site visit the weather conditions were dry and carriageways and footways were also dry.
- 1.8 The existing site is dominated by a double mini-roundabout junction at Drayton Road / Marcham Road, Spring Road / Ock Street.
- 1.9 Uncontrolled pedestrian crossing facilities comprising dropped kerbing and buff coloured tactile paving are provided across each of the roads forming this junction with the exception of Marcham Road which benefits from a signal controlled (pelican) crossing located approximately 20 metres to the west of the junction. Pedestrian guardrailing has been installed around the junction radii between Drayton Road and Marcham Road to channel pedestrians to the controlled crossing facility. A mid-crossing pedestrian refuge is provided as part of the uncontrolled crossing facilities on Drayton Road and Ock Street.
- 1.10 During the site visit traffic flows through the junction were considered to be busy and queues, typically 3 to 4 PCUs long, were regularly observed on all approaches.
- 1.11 Whilst pedestrian movements in the vicinity of the junction were generally considered to be light some pedestrians were observed using the existing crossing facilities. The existing controlled crossing was noted to be the most used with the principal flow being from south to north.



Photograph 1 - Three pedestrians, one of which was pushing a pushchair were observed crossing Spring Road via the existing uncontrolled crossing facility.

- 1.12 The Audit Team did not make a note of the onward route of any pedestrians using any of the crossing facilities provided at this junction.
- 1.13 The proposed highway works covered by this audit can be described as follows:
 - Relocation of the existing signal controlled (pelican) crossing located on Marcham Road to a point approximately 65 metres to the west of the double mini-roundabout junction.
 - Installation of a new signal controlled (pelican) crossing facility on Ock Street, approximately 25 metres to the east of the double mini-roundabout junction.

- 1.14 The Audit Team understands that these 'crossing' works are intended to mitigate for any severe traffic effects that may be caused by a proposed residential development to be located on the southern edge of Abingdon, by reducing incidences of westbound queuing traffic on Marcham Road blocking the junction and instead, creating sufficient gaps in the westbound traffic flow (i.e. travelling from Ock Street towards Marcham Road) to allow traffic travelling northbound on Drayton Road better opportunity to enter the junction.
- 1.15 The Audit Team has been informed that no Departures from Standard are required as part of these highway proposals.
- 1.16 No injury accident statistical data has been provided for the Audit Team to review and hence, the Audit Team is unable to determine whether the proposed highway works will exacerbate an existing accident problem.

2.0 Context

- 2.1 As part of its review, the Audit Team undertook a brief qualitative study of the routes likely to be taken by pedestrians locally, in order to appreciate better the particular characteristics of pedestrian use of the existing signal controlled (pelican) crossing at the junction and, in particular, how these may be influenced by pedestrian desire lines on routes to and from the junction. As it seems to be generally accepted that use of this crossing is predominantly south to north in the mornings and north to south in the evenings, this focussed on those walking between residential areas close to Drayton Road and the various trip destinations within Abingdon, including local facilities and amenities, shops, employment areas and schools. The majority of local facilities and amenities are located close to the town centre whilst employment areas are mainly located on the eastern and western edges of the town. Schools are mainly located to the north west of the town, e.g. Larkmead School and St Helen & St Katharine School.
- 2.2 The Audit Team took the view that pedestrians travelling to local facilities and amenities close to the town centre are likely to permeate through residential areas and along other local roads rather than taking a longer route via double mini-roundabout junction. The same applies to those travelling to employment areas located on the eastern edges of the town.
- 2.3 Pedestrians travelling to the employment or retail locations to the west are likely to walk towards the double mini-roundabout junction and either use the existing controlled crossing facility on Marcham Road, or use another controlled crossing facility which is located further to the west.
- 2.4 Those walking to nearby schools would cross Marcham Road at the junction and continue along Spring Road. The location of the schools are such that the natural pedestrian desire line would be along the west side of Spring Road, which would also minimise the need to cross roads.
- 2.5 The Audit Team consider that the predominant use of the existing signal controlled (pelican) crossing is likely to be by school pupils, associated with journeys to and from Larkmead School and St Helen & St Katharine School.

3.0 Items Resulting from the Stage 1 Road Safety Audit

3.1 Problem 1

Location: East side of double mini-roundabout junction.

Summary: Pedestrians crossing away from signalled facility leading to risk of pedestrian / vehicle collisions involving personal injury occurring.

The signalled crossing facility, re-sited east of the junction, requires pedestrians walking between Drayton Road and Spring Road to use the east side of both roads, which, for the majority, departs from their natural desire line on the west side. There is concern that, rather than divert even further to use the signalled crossing facility, significant numbers of such pedestrians will attempt to cross Ock Street on the direct desire line via the central splitter island.

Recommendation: The footway width is insufficient to allow pedestrian guardrailling to be provided.
Discourage pedestrians between Drayton Road and Spring Road from using the east side of by providing more attractive crossing provision on natural desire line on west side.

3.2 Problem 2

Location: North side of double mini-roundabout

Summary: Increased use of uncontrolled crossing facility across Spring Road near the junction, with poor visibility and insufficient footway width, leading to increased risk of pedestrian / vehicle collisions involving personal injury occurring.

Southbound pedestrians on west side of Spring Road will need to choose between significant diversion from desire line to the west to reach the signalled crossing facility re-sited further west or the new signalled crossing facility to the east. Those choosing to divert to the east first need to cross Spring Road. Most northbound pedestrians who crossed Ock Street will also need to cross Spring Road. This in itself introduces risk wherever crossing is attempted, but there is additional risk associated with poor visibility and insufficient footway width if crossing is attempted at the junction.

Recommendation: There is insufficient space to widen the footway close to the junction.
Notwithstanding sub-standard footway width, provide appropriate formal crossing facilities at a suitable location on Spring Road remote from the junction, or discourage pedestrians between Drayton Road and Spring Road from crossing to the east side of by providing more attractive crossing provision on natural desire line on west side.

3.3 Problem 3

Location: West side of double mini-roundabout

Summary: Pedestrians crossing away from signalled facility leading to risk of pedestrian / vehicle collisions involving personal injury occurring.

The signalled crossing facility, re-sited west of the junction, requires pedestrians crossing between Drayton Road and Spring Road on the west side of both roads to divert significantly from their natural desire line to use the re-sited signalled crossing. There is concern that, rather than divert, significant numbers of such pedestrians will attempt to cross Marcham Road closer to the desire line, broadly where the existing crossing to be removed is located, leading to increased risk of pedestrian / vehicle collisions involving personal injury occurring. There is further concern that southbound pedestrians may attempt to cross at a point where there is pedestrian guardrailing on the opposite side, effectively trapping pedestrians within the carriageway exposed to traffic.

Recommendation: Provision of pedestrian guardrailing on the north side is not recommended as to be effective this would need to extend as far as the crossing and commensurate extension of guardrailing on the south side would need to include a parking lay-by, rendering it unusable.

Discourage pedestrians between Drayton Road and Spring Road from crossing to the east side of by providing more attractive crossing provision on natural desire line on west side.

3.4 Problem 4

Location: South side of double mini-roundabout

Summary: Increased use of uncontrolled crossing facility across Drayton Road near the junction, leading to increased risk of pedestrian / vehicle collisions involving personal injury occurring.

Northbound pedestrians on west side of Drayton Road will need to choose between significant diversion from desire line to the west to reach the signalled crossing facility re-sited further west or the new signalled crossing facility to the east. Those choosing to divert to the east first need to cross Drayton Road. Some southbound pedestrians who crossed Ock Street will also need to cross Drayton Road. This in itself introduces risk, more so if such crossing is attempted away from the formal controlled facility further south on Drayton Road or the uncontrolled facility at the junction.

Recommendation: Discourage pedestrians walking between Drayton Road and Spring Road from crossing to the east side of by providing more attractive crossing provision of Marcham Road on natural desire line on west side.

4.0 Summary and Conclusion

- 4.1 The Audit Team accepts that, for some journeys the re-sited crossing to the west will be as convenient as the existing crossing. For most journeys, however, both of the re-sited crossings will be less convenient. Some pedestrians who would have previously used the existing crossing will transfer to the new crossing facility to be provided on the east side of the junction or the re-sited facility further to the west of the junction. However, the Audi Team consider that significant numbers may choose to attempt to cross away from the facilities provided. As stated by the Inspector in his Appeal Decision report, the number that would transfer cannot be reliably estimated.
- 4.2 There is particular safety concern in the case of pedestrians, particularly school pupils, walking between Drayton Road and Spring Road. Those who remain on the west side are likely to continue to cross Marcham Road, but not via the new relocated crossing which will not now be on the natural desire line. Those that do transfer to the new east crossing will have to cross either Spring Road or Drayton Road where no controlled facilities are provided. Owing to the presence of the splitter island on Ock Street, it is the Audit Team's opinion that such pedestrians are likely to use this as a crossing point rather than the new crossing to be provided at the eastern end of this island. This island is likely to continue to be attractive to pedestrians even if the dropped kerbing is removed. Guardrailing cannot be provided on the north side of Ock Street owing to insufficient footway width



Photograph 2: Splitter island on Ock Street approach

- 4.3 In essence, the Audit Team concludes that by relocating the existing controlled crossing facility a 'safe' arrangement is being replaced by a 'less safe' arrangement in that pedestrians are less likely to use the controlled crossing facility in its revised location across Ock Street east of Drayton Road as this is no longer on their natural desire line for the majority of users and those that do will be exposed to increased risk of accident involving injury because of the need to cross more roads either where:
- no formal crossing facilities are provided or
 - facilities provided are sub-standard with no practical prospect of improvement.

Figures

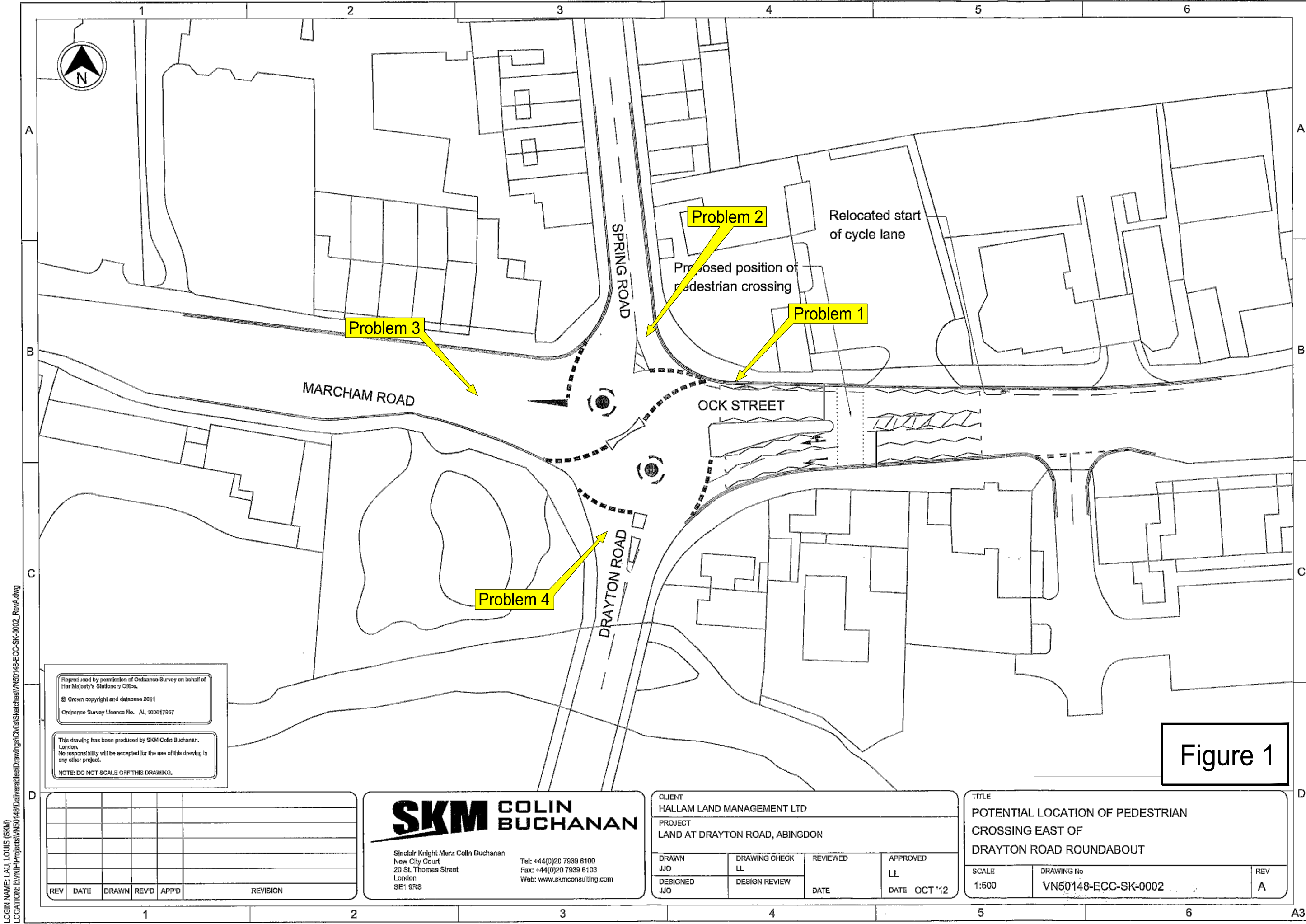


Figure 1

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PROJECT LAND AT DRAYTON ROAD, ABINGDON			
DRAWN JJO	DRAWING CHECK LL	REVIEWED	APPROVED LL
DESIGNED JJO	DESIGN REVIEW	DATE	DATE OCT '12

TITLE POTENTIAL LOCATION OF PEDESTRIAN CROSSING EAST OF DRAYTON ROAD ROUNDABOUT		
SCALE 1:500	DRAWING No VN50148-ECC-SK-0002	REV A


LOGIN NAME: LAU, LOUIS (SKM)
 LOCATION: \\SVNIP\Projects\VN50148\Deliverables\Drawings\Civils\Sketches\VN50148-ECC-SK-0002_RevA.dwg

Audit Team Statement

I certify that the Audit Team has examined the drawings and documents listed in the report. The examination has been carried out with the sole purpose of identifying any feature of the design which could be removed or modified in order to improve the safety of the scheme. The problems identified have been noted in this report, together with associated safety improvements which are recommended for implementation.

Audit Team Leader

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Signed: 
Date: 21 March 2013

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