

## **NR16**

## **Road Safety Audits**

#### **Road Safety Audit Brief**

## General details Highway improvement scheme name and road number Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)

**1.2 Type of scheme** (e.g. new road scheme, junction improvement, traffic signs and road markings improvement, traffic calming scheme, etc.)

The Anglia Level Crossing Reduction Strategy intends to reduce the risk that level crossings pose and have developed proposals to manage the possible closure or change of use of around 130 level crossings in Anglia across Cambridgeshire, Essex and Suffolk. The study intends to close level crossings by the means diverting people to nearby alternatives or creating new public rights of way to nearby infrastructure.

1.1RSA	1	2	1&2	3	Interim	4 (12	4 (36
stage						months)	months)
(tick as	✓						
appropriate)							
1.2 Overs	seeing orgar	isation proj	ect	1.3 De	sign organis	sation details	S
sponsor det	tails						
				Contact:			
Contact:				Jason Sn	nith		
Nicholas Eddy		Mott MacDonald					
Commercial Scheme Sponsor		2 Brewery Wharf, Kendell Street, Leeds			eeds		
Route Enhar				LS10 1JF	•	,	

Network Rail

Nicholas.Eddy@networkrail.co.uk

## 1.4 Police contact details (required for Stage 3 Road Safety Audits only)

Not required at this Stage 1 Road Safety Audit.

#### jason.smith@mottmac.com

Maintaining agent contact details

Cambridgeshire County Council

United Kingdom

1.5

#### 1.6 Road Safety Audit team membership

The RSA team will be made up of a Team Leader and one other member of staff selected according to availability.

Tim Blaney (Audit Team Leader)

Road Safety Auditor, Member of the Society of Road Safety Auditors Certificate of Competence in Accordance with IAN 152/11.

Certificate of Competence in Accordance with IAN 152/11.

Mott MacDonald, 35 Newhall Street, Birmingham, B3 3PU, United Kingdom

#### Andy Coleman

Road Safety Auditor, Member of the Society of Road Safety Auditors

Certificate of Competence in Accordance with IAN 152/11.

Mott MacDonald, 35 Newhall Street, Birmingham, B3 3PU, United Kingdom

Rachael Collins BA (Hons), MSc

Mott MacDonald, 111 Piccadilly, Manchester, M1 2HY

#### 1.7 Terms of reference

This Stage 1 Road Safety Audit (RSA) is to be undertaken in accordance with the DMRB Standard HD 19/15, and the contents of this Road Safety Audit Brief.

## 1. Scheme description / objective (provide a brief description of the scheme and its objectives)

#### **1.1 General** (including scheme purpose and start date for construction)

We have been working to reduce the risk that level crossings pose and have developed proposals to manage the possible closure or change of use of around 130 level crossings in Anglia across Cambridgeshire, Essex and Suffolk.

We believe it's possible to close level crossings:

- with private rights only
- by diverting people to where a nearby alternative exists
- by providing a new public route to a nearby alternative

We will also look to downgrade level crossings to non-motorised users. None of the crossings in this proposal involve closing public A or B roads.

We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.

Closing or modifying level crossings provide the following benefits:

- Improve the safety of level crossing users
- Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy
- Reduce the ongoing operating and maintenance cost of the railway
- Reduce delays to trains, pedestrians and other highway users
- Improve journey time reliability for all railway, highway and other rights of way users

The study involves two rounds of public consultation that will then potentially feed into a public enquiry. Construction start date is set for works to commence 2019.

#### 1.2 Design standards applied to the scheme design

Anglia Level Crossing Reduction Strategy is being promoted through a Transport and Works Act Order and designed in accordance with current industry standards at the time of design.

#### 1.3 Design speed

It is not proposed create or amend any speeds on the roads that from part of the proposals.

#### 1.4 Speed limits

The speed limits at the level crossing closure proposals are as follows:-

- C04 Station Road 30mph;
- C06 Barrington Road 30mph, A10 Cambridge Road 50mph;
- C07 B1368 London Road National Speed Limit:
- C11 Station Road 30mph:
- C14 Wype Road National Speed Limit
- C15 B1093 Benwick Road National Speed Limit;
- C18 Unclassified track, B1102 Station Road National Speed Limit/50mph, B142 50mph
- C19 Cherrytree Lane National Speed Limit;
- C20 Mill Drove National Speed Limit;
- C25 Padnal 30mph, Victoria Street 30mph;
- C29 Brinkley Road National Speed Limit and 40mph;

#### 1.5 Existing traffic flows / gueues

No traffic data is available at the moment, however traffic surveys and level crossing census surveys are being commissioned as part of the project and the data will be available at Stage 2.

#### 1.6 Forecast traffic flows

It is not anticipated that these proposals would generate or transfer significant volumes of traffic.

#### 1.7 Non-motorised users (NMU) desire lines

All existing Public Rights of Way (PROW), i.e. footpaths, cycle-ways and bridleways, in the vicinity of the level crossing closure proposals are shown on the attached plans.

The proposal drawings indicate the existing user route and the proposed diversion routes.

#### 1.8 Environmental constraints

The proposals may involve small scale improvement works either at the level crossing or along proposed or existing diversion routes. The assessments of the environmental impacts of these proposals are available separately if required.

#### 2. Description of locality

#### 2.1 General description

Anglia Level Crossing Reduction Strategy project has 33 level crossings within the county of Cambridgeshire. Of these 33 level crossing proposals, a prioritised list of 12 proposals was subject to a Stage 1 Road Safety Audit in November 2015. Since then a further 21 audits have been identified because either new alternative solutions have been identified or the previous option has been amended since the previous audit.

The purpose of this Stage 1 Road Safety Audit is to review the proposals at 21 level crossings which divert users along the public highway including any associated highway works within the county of Cambridgeshire. At this stage, the scheme proposals consist of indicative (high level) diversion routes as the result of closures and no formal highway works have been designed. Therefore this road safety audit is to consider potential road safety problems as a result of the proposed routes and their interaction with the highway.

The level crossing closure proposals are summarised below:-

- C04- Users would be diverted on a new footpath (routed along on existing private concrete track) which provides a link to Station Road to the north. The diversion will also utilise the existing footway and a bridge over the railway on Station Road.
- C06- Users may cross the railway at the immediately adjacent Foxton level crossing. If they
  wish to go to Barrington Road they would be diverted along Cambridge Road (A10) where a
  new pedestrian refuge will be provided and as well as a new footway along part of Barrington
  Road.
- C07- Users will be diverted on a new footpath along a field boundary which provides a link to London Road. Pedestrians would be diverted along the existing grassed verges on the north side of London Road.
- C11 Motorised users would be diverted to parallel alternative routes, crossing the railway at Third Drove level crossing to the south or the underpass on Straight Furlong to the north.
- C14 Users are diverted along a field boundary (parallel) to the railway before emerging onto the Wype Road where the diversion would link up with Bridleway Whittlesey 60 and Byway Whittlesey 49.
- C15 Extinguish footpath Whittlesey 48 with the intention that users are diverted along the existing public right of way network in the area.
- C18 Level crossing users are diverted on the west side of the railway making use of a
  private track and the existing footways on Station Road to join up where Footpath Fordham

19 currently emerges onto Station Road.

- C19 Users would be diverted south to cross the railway via a bridge on the A1123 Wicken Boad
- C20 Level crossing users are diverted north to Mill Drove Public Highway Automatic Half Barrier level crossing along a rural road.
- C25- Users would be diverted to Sandhill level crossing via the existing the existing facilities.
- C29- Users would be diverted via the level crossing on Brinkley Road.

#### 2.2 Relevant factors which may affect road safety

The following factors have been identified that may affect road safety:

- Non-motorised users are being diverted to alternative level crossings or grade separated crossings where they may be exposed to live traffic by:-
  - walking along existing footways;
  - o walking in existing grassed verges; or
  - o walking in the carriageway on rural roads.
- The interface of NMU's and agricultural vehicles on the PROWs; and
- The access points off the public highway for occasional use by large agricultural vehicles.
- **3. Personal injury collision analysis** (provide personal injury collision data covering both the extent of the scheme and the adjoining sections of highway)
- **3.1 Summary of personal injury collision data** (a minimum of the most recent 36 months available)

No personal injury collision data is available at the moment; however the information will be available at Stage 2.

#### 3.2 Personal injury collision details

See above

**4. Departures and relaxations from standards** (including details of their status – approved or pending) plus any Design Strategy Records produced for improvements to existing motorways and trunk roads.

#### 4.1 General

No departures from standards.

5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports

#### 5.1 Stage 1

N/A

#### 5.2 Exception Reports

N/A

6. Strategic decisions – items outside the scope of this RSA

#### 6.1 General

N/A

#### 7. List of included documents and drawings

#### 7.1 Documents

GRIP 1 Feasibility reports available on request.

#### 7.2 Drawings

The following figures, plans, information and drawings are provided:

• 11 Scheme Proposal Plans

8. Checklist (tick all that are included and provide reasons for those that are not included)				
o. Checklist (lick all the	at are included and provi	ue reasons for those that	rare not included)	
8.1 Road Safety Audit Brief including description of scheme objectives	✓ (Section 1.1)	8.2 Site location plan	<b>✓</b>	
8.3 Scale layout plans	<b>✓</b>	8.4 Construction / typical details	The scheme is not that developed	
8.5 Previous Road Safety Audit Reports	1	8.6 Previous Road Safety Audit Response Reports	x None prepared	
8.7 Road Safety Audit Exception Reports	× Not applicable	8.8 Departures and relaxation from standards	X None (section 4)	
<b>8.9</b> Traffic signal staging	× Not applicable	8.10 Personal injury collision data	x Not available at the moment	
8.11 Personal injury collision plot	x Not available at the moment	8.12 Traffic counts	x Not available at the moment	
8.13 Speed surveys	× Not available at the moment	8.14 NMU desire lines and volumes	1	
8.15 NMU Context and Audit Report	× None prepared	8.16 Items outside the scope of the RSA/ strategic decisions	(Section 6)	
8.17 Other factors that may impact on road safety	(Section 2.2)	8.18 Design speeds/speed limits	<ul> <li>X Design Speeds not applicable</li> <li>✓ Speed limits (Section 1.4)</li> </ul>	
8.19 Design standards used	✓ (Section 1.2)	8.20 Adjacent land uses	x Multiple sites with various land uses but mostly agricultural fields	

#### Road Safety Audit Brief approved by:

(The Project Sponsor)

Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail Nicholas.Eddy@networkrail.co.uk

## Summary CV

#### **Tim Blaney**

#### **Profile**

A Road Safety Engineer with a background in development control and road safety engineering work.

Has eleven years' experience in all aspects of road safety engineering and has worked in the UK and internationally. Undertaken 87 audits in the last 12 months as either an Audit Team Leader or Member and approximately 670 in total on a variety of schemes, including junction improvements, major maintenance, airport forecourts and safety improvements.

#### **Experience and skills**

#### Mott MacDonald, Principal Road Safety Engineer – Integrated Transport Division (2004 – present)

Currently team leader of the Road Safety Teams in the Manchester and Birmingham offices.

HD19/15 and SQA-0170 qualified Road Safety Audit Team Leader.

#### Selected projects

#### Nottingham Express Transit Phase Two

Responsible for overseeing the completion of Stage 2 and Stage 3 Road Safety Audits for the Beeston and Clifton extensions to the Nottingham tram system.

#### A63 Castle Street, Hull

Team Leader for a Stage 1 Safety Audit on a scheme to introduce a grade separated junction on a section of the A63 as it passes through Hull.

## **OVT Oost Safety Analysis, Utrecht, Netherlands**

As part of a multi-national team of experts, provided road safety input into a safety assessment of proposals for a new bus / tram interchange.

#### Crossrail, Old Oak Common

Completed a Stage 1 Road Safety Audit on new access arrangements for Old Oak Common maintenance depot as part of the Crossrail scheme.

#### Midland Metro Tram, City Centre, Centenary Square and Eastside Extensions

RSA Team Leader responsible for the organisation and completion of Stage 1

and Stage 2 Road Safety Audits for various extensions to the Midland Metro.

#### Victoria Station Upgrade

Responsible for the completion of Road Safety Reviews and Audits on traffic management arrangements in the vicinity of London Victoria Station during the completion of construction work.

#### **NMU Related Road Safety Audits**

Have experience of completing Non-Motorised User audits as well as road safety audits on a variety of NMU related schemes including:

- Sovereign Harbour Cycle Routes
- Bedlinog Square Shared Space
- East London Line Cycleway
- Bryn Glas Escape Routes
- Hunts Grove NMU Audit
- ECML Level Crossing Closures

#### **ECML** and East Anglia Level Crossings

Undertaken numerous safety audits and NMU audits for the closure of level crossings on a number of railway lines in East Anglia and on the East Coast.

#### **Tottenham Hale Bus Station**

RSA Team Leader for changes to the road layout to Tottenham Hale Gyratory and the provision of a new bus interchange.

#### Medway Dynamic Bus Station, Chatham

Responsible for providing road safety advice on the design of a new dynamic bus station in Chatham.

## Bath and North East Somerset Road Safety Audits

Undertaken numerous safety audits of varying stages for the local authority. These have ranged from junction improvement schemes to traffic calming. A number of these have been associated with bus route improvement including bus gates and park and ride schemes.

#### **Great Western Electrification**

Responsible for undertaking road safety audits for numerous road bridges along the Great Western Main Line that require modification for the electrification of the route.



**Position**Principal Road Safety Engineer

Year of birth 1983

Nationality

British

#### Language

English - mother tongue

#### **Qualifications**

BSc (Hons) Human and Physical Geography

Road Safety Engineering Course (CRASH@Aston)

Highways Agency Road Safety Audit Certificate of Competence

#### **Profession membership**

Chartered Member of the Institute of Logistics and Transport

Member of the Chartered Institution of Highways and Transportation

Member of the Society of Road Safety Auditors

CSCS Card holder – Yellow (Site visitor - Registration No. 04989485)

Highways Agency Motorway Pass (N3Q7GP4TIY7CZ, Epiry 10-Apr-19)

#### **Key skills**

HD 19/15 and SQA-0170 qualified Road Safety Audit Team Leader.

Proficient in the completion of Accident Investigation Studies and safety reviews.



#### **Supplementary Information for HD19**

The following details provide evidence that the above Road Safety Audit Team member meets the miniumum recommended requirements HD19/15 for the purposes of undertaking the Road Safety Audits upon the Highways England Motorway and Trunk Road network in the UK.

1. Training - Recognised Structured training in Road Safety Engeineering or Collision Investigation

Profile	Duration (Days)	Date (Days)	Organiser (Days)
CRASH@Aston	10	Jun-2006	Aston University
Non-motorised User Audit	2	Dec-2008	Aston University
Certificate of Competency in Road Safety Audit (Highways Agency approved)	2	May-2011	TMS Consultancy

Total 14 Days

Note: Formal Training does not include seminars, conferences, exhibitions and the like.

Experience - Example of Five Road Safety Audits undertaken in the last 24 months as either Team Leader, Team Member or Observer.

Scheme Name Client	Date	Audit Team Role	Audit Stage
Capacity improvements at signallised junction Windle Island, St Helens - St Helens MBC	Nov-2014	Leader	1/2
A590 Quebec Street Signalisation – Highways England	Nov-2015	Leader	2
Dalton Gate Junction Signalisation – Cumbria County Council	Jan-2016	Member	2
Motorway to Motorway Ramp Metering M6 to M62 – Highways England	Jan-2016	Leader	Interim 2
Garrison Roundabout, hamburger roundabout upgrade – Highways England	Mar-2016	Member	Stage 2

#### Undertaken 182 RSAs in past 24 months (87 in past 12 months)

Note: 'Full Road Safety Audit Record' of all audits undertaken available upon request.

 Continued Professional Development (CPD) record for last 12 months, in the field of Road safety Engineering, Collision Investigation or Safety Audit.

Profile	Duration (Days)	Date	Organiser
PTRC Evening Lectures - Road Safety Audits	1	09/12/2015	PTRC
Safe Way to Work	0.25	02/06/2016	Mott MacDonald
Personal Reading - SoRSA Conference 2016 Presentations	0.25	22/06/2016	CIHT
Safety Wheel Training	0.5	27/06/2016	Mott MacDonald

Total 2.0



#### **Andrew J Coleman**

#### **Profile**

Has 10 years' experience in Road Safety Engineering and 9 years' experience in the field of Collision Investigation.

A qualified HD19/15 Road Safety Audit Team Leader with a background in road safety engineering work. Have completed over 50 audits in the last 12 months as either an Audit Team Leader or Member and approximately 1500 in total on a variety of schemes in the UK, Europe and the Middle East. A Member of the Society of Road Safety Auditors and possesses the Highways England approved Certificate of Competency for Road Safety Auditors.

Has experience in carrying out road safety audits, cycle audits, NMU audits, Mobility audits, road safety assessments, site safety assessments, junction assessments and report writing. Also have experience in the use of various software packages including KeyACCIDENT, ARCADY, PICADY, LINSIG and Microsoft Office.

#### **Experience and skills**

Mott MacDonald (2014 – present) Integrated Transport Division

TMS Consultancy (2006 – 2014) Integrated Transport Division

#### **Selected projects**

#### **Road Safety Audits**

Undertaking Road Safety Audits as Audit Team Leader or Member on a variety of schemes in the UK, Europe and the Middle East, including motorway schemes, motorway service areas, dual carriageways, single carriageway bypasses, road realignment, major signal junctions, roundabout development access roads, safer routes to school schemes and cycle, mobility and NMU audits.

## **Local Network Management Schemes, Area 10**

Undertook an analysis of accidents for selected schemes and reported recommendations for engineering measures to address and improve accident performance. A full financial assessment measuring the potential improvements with BCR analysis was also carried out for each scheme.

#### Route Safety Reports, Area 10

Review of the road safety situation on numerous routes in Lancashire comparing the latest accident data with historical accident data to determine the route's performance. A detailed analysis of road safety issues identified from the last 5 years data was completed with a summary of potential schemes and areas for further investigation. The effectiveness of previously completed works/ initiatives along the route was also monitored.

#### M40 Accident Investigation

Accident investigation of the M40 between junctions 5 and 7 in Buckinghamshire, based on accident data highlighted by the annual road safety monitoring report. Provided recommendations for safety improvements.

#### A21 Tonbridge to Pembury, NMU Audit

Team Leader for the detailed design stage NMU Audit of the A21 dualling scheme between Tonbridge and Pembury in Kent. The 3.5km parallel NMU route is predominantly off line and features grade separated crossings and a crossing of an at-grade roundabout junction.

## West Midlands Authorities SLS Traffic Accidents

Responsible for producing the Annual Accident Data Report to the West Midlands Authorities making comparisons to national data and presenting areas for improvements.

#### **Tram Scheme Road Safety Audits**

Road Safety Auditor of several tram major schemes including Midland Metro, Nottingham Express Transit and Dublin Luas

## Contra Flow Cycle Facilities, Camden, London

Road Safety Assessor of proposals to permit cycle use of a contra flow cycle lane along the A40 High Holborn in the London Borough of Camden. Concern was raised regarding high volumes of illegal cycle use within a very busy and narrow contra flow bus lane with recommendations to improve safety presented.



**Position**Road Safety Engineer

Year of birth 1983

**Nationality** British

#### Language

English – mother tongue Dutch - moderate

#### **Qualifications**

BA (hons) 2005

RoSPA AIP Certificate 2007

Certificate of Competency in Road Safety Audit (Compliant to EU Directive 2008/96/EC, HE approved)

CSCS Card holder – Yellow (Site visitor - Registration No. 03141299)

Highways England Motorway Pass (Q86DEIRNPBFM2, Epiry 24-Apr-19)

#### **Profession membership**

Member of Chartered Institution of Highways and Transportation (MCIHT)

Member of Society of Road Safety Auditors (MSoRSA)

#### **Key skills**

Collision Investigation Road Safety Audit Road Safety Scheme Design



#### **Supplementary Information for HD19**

The following details provide evidence that the above Road Safety Audit Team member meets the miniumum recommended requirements of HD19/15 for the purposes of undertaking the Road Safety Audits upon the Highways England Motorway and Trunk Road network in the UK.

1. Training - Recognised Structured training in Road Safety Engeineering or Collision Investigation

Profile	Duration (Days)	Date (Days)	Organiser (Days)
RoSPA Accident Investigation & Prevention Certificate	10	Aug-2007	RoSPA (TMS Consultancy)
Introduction to Road Safety Audit	3	Dec-2007	TMS Consultancy
TD 19/06 Road Restraint Systems	2	Oct-2008	Aston University
Advanced Road Safety Audit	2	Feb -2011	TMS Consultancy
Non-motorised User Audit	2	Apr-2012	TMS Consultancy
Certificate of Competency in Road Safety Audit (Highways England approved)	2	Oct-2012	TMS Consultancy
T	ntal 21	Dave	

Note: Formal Training does not include seminars, conferences, exhibitions and the like.

#### Experience - Sample of Road Safety Audits undertaken in the last 24 months as either Team Leader or Team Meber .

Scheme Name Client	Date	Audit Team Role	Audit Stage
Modified priority cross road junction A64 Barton Hill, Yorkshire – Highways England	September 2015	Leader	2
Proposed link road to motorway junction M58 Pemberton Link Road, Wigan – Wigan Council	October 2015	Leader	3
Motorway to motorway metering M6 to M62 – Highways England	January 2016	Member	3
New dual carriageway signalised junctions  Aberdeen Exhibition & Conference Centre - Henry Boot Developments	May 2016	Leader	2
Redesign of signal junctions with cycle lanes & pedestrian crossings  Tameside Interchange – Ashton MBC	May 2016	Member	2

Note: Please request separate 'Full Road Safety Audit Record' for details of all audits undertaken in last 12 months.

#### Continued Professional Development (CPD) record for last 12 months, in the field of Road safety Engineering, Collision Investigation or Safety Audit.

Profile		Duration (Days)	Date (Days)	Organiser (Days)
SoRSA Conference, Birmingham		2	20-June-2016	CIHT
	Total	2	Days	



## **Road Safety Audit CV**



Name	Rachael Collins
Audit Team Position	Team Member
Contact Email address	rachael.collins@mottmac.com

Continued Professional Development Record		
CPD / Training Title (last 12 months)	Date	Duration
Introduction to Road Safety and Road Safety Auditing – Course tutor assisting with the provision of a 1 day introduction to road safety engineering.	May-15	1 Day
SoRSA Conference – variety of presentations relating to road safety engineering and auditing.	Jun-15	1 Day
Road Safety Audit – Highways England Approved CoC	Apr-16	2 Day

Qualifications		
Qualification Name & Awarding Body	Post Nominal	Date
Highways Agency Motorway Pass (X9SNZN7TEUQBY, Expiry 17-Dec-19)		2014
Construction Skills Certification Scheme (CSCS): Yellow (Site visitor -		2014
Registration No. 05180437)		2014
MSc European Traffic & Transportation, The Nottingham Trent University	MSc	2002
RoSPA AIP (Accident Investigation & Prevention)		1999
BSc Hons Geography, University of Staffordshire	BSc (Hons)	1998

Record of Recent Safety Audits (some examples from the last 12	months)	
Scheme / Details	Date	Role
A49, Ludlow, David Tucker Associates	June 2015	Member
Stage 1 Safety Audit on a scheme to introduce a site access off the A	49 In Ludlow.	
Colwyn Bay Promenade Phase 2 – Conwy County Borough	June 2015/Oct	Member
	2015	
Stage 1 & Stage 2 Road Safety Audits of the proposed improvements t	o the promenade in Col	wyn Bay. This is
an extension of improvements already made to a section of the prome	enade that have been pi	reviously
completed and audited. The scheme includes highway realignment, the	ne provision of improved	d parking,
pedestrian crossing facilities and a shared-space promenade for cyclis	ts and pedestrians.	
Chandag Road, Bath – Bath and North East Somerset	August 2015	Member
A Stage 2 Road Safety of road safety improvements including the pro	ovision of a Zebra cross	sing outside
Wellsway School, the installation and upgrade of uncontrolled crossi	ngs and the provision o	of In/OUT
signing at Chandag Road Shops.		
Daltongate, Ulverston – Cumbria County Council Sept 2015 Member		
A series of Stage 1 Road Safety Audit on proposed junction modification	on works. The scheme in	nvolves the
addition of a new arm to an existing junction and its signalisation to ir	nclude pedestrian crossi	ng facilities. The
scheme also includes localised road widening and kerb re-alignments.		
Mill Street, Llangollen	November 2015	Member
A Stage 3 Road Safety Audit for a new medical centre accessed off Mil	I Street. The scheme inc	ludes a new
access, PUFFIN crossing and footway improvements, minor highway		
Stage 1/2 was previously completed in December 2014.		•

#### Career Summary (including experience and key dates)

Rachael is Senior Road Safety Engineer based within Mott MacDonalds Northern road safety team. She is a Road Safety Auditor with over 10 years experience in road safety engineering and in the field of collision investigation, having completed over 350 Road Safety audits over her career. Rachael is a qualified HD 19/15 Road Safety Audit Team Member.

Rachael has a vast range of experience in transport engineering and planning but specialises in accident investigation & prevention (AIP) and undertaking of road safety audits.

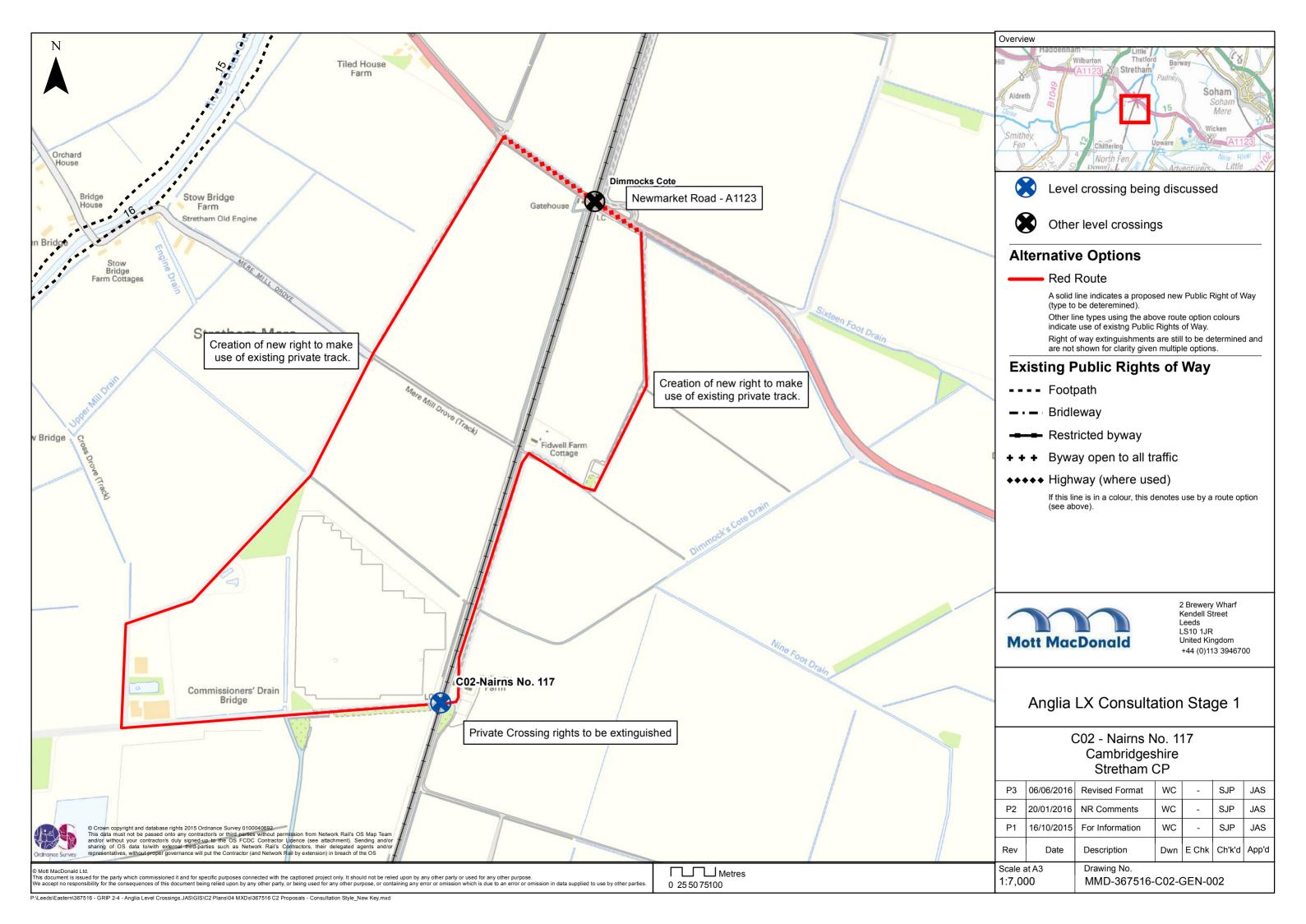
Rachael began her career at TMS Consultancy in 1998 where she gained a wide experience in areas including Junction and Transport Assessments, Safer Routes to Schools, site surveys, parking assessments, Local Safety schemes, Accident Investigation and undertook over 300 Road Safety Audits at various stages and of various scheme sizes. During her time at TMS Rachael attended the RoPSA 10 AIP Course.

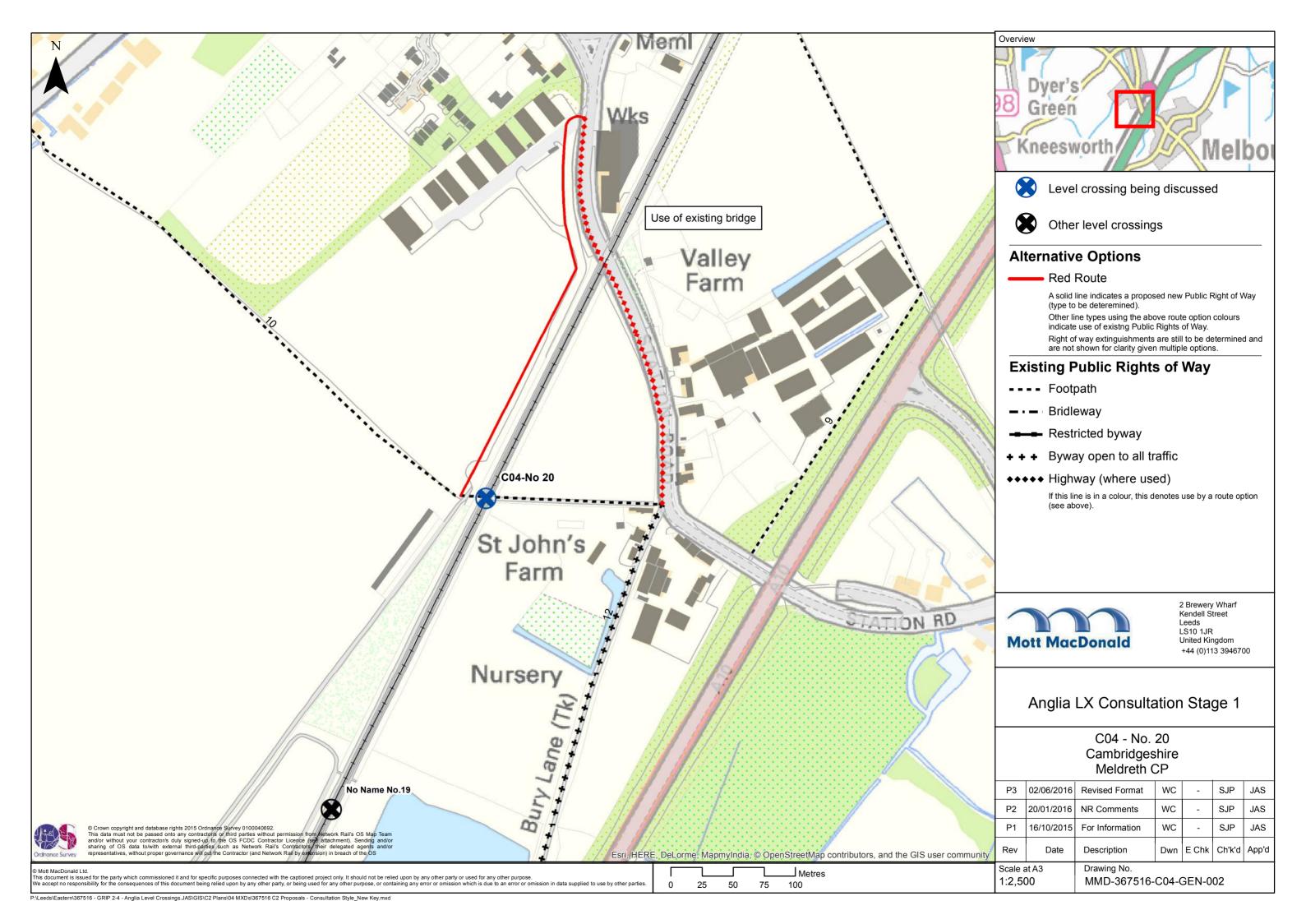
In 2003 Rachael joined Mott MacDonalds Transport Planning Team carrying out a combination of road safety engineering and AIP work and Junction and Transport Assessments. During this time Rachael was responsible for the Altrincham Road Safety Team and continued to undertake Road Safety Audits as Team Leader. During this time she also undertook a secondment to Stockport Council working on numerous Local Safety Schemes.

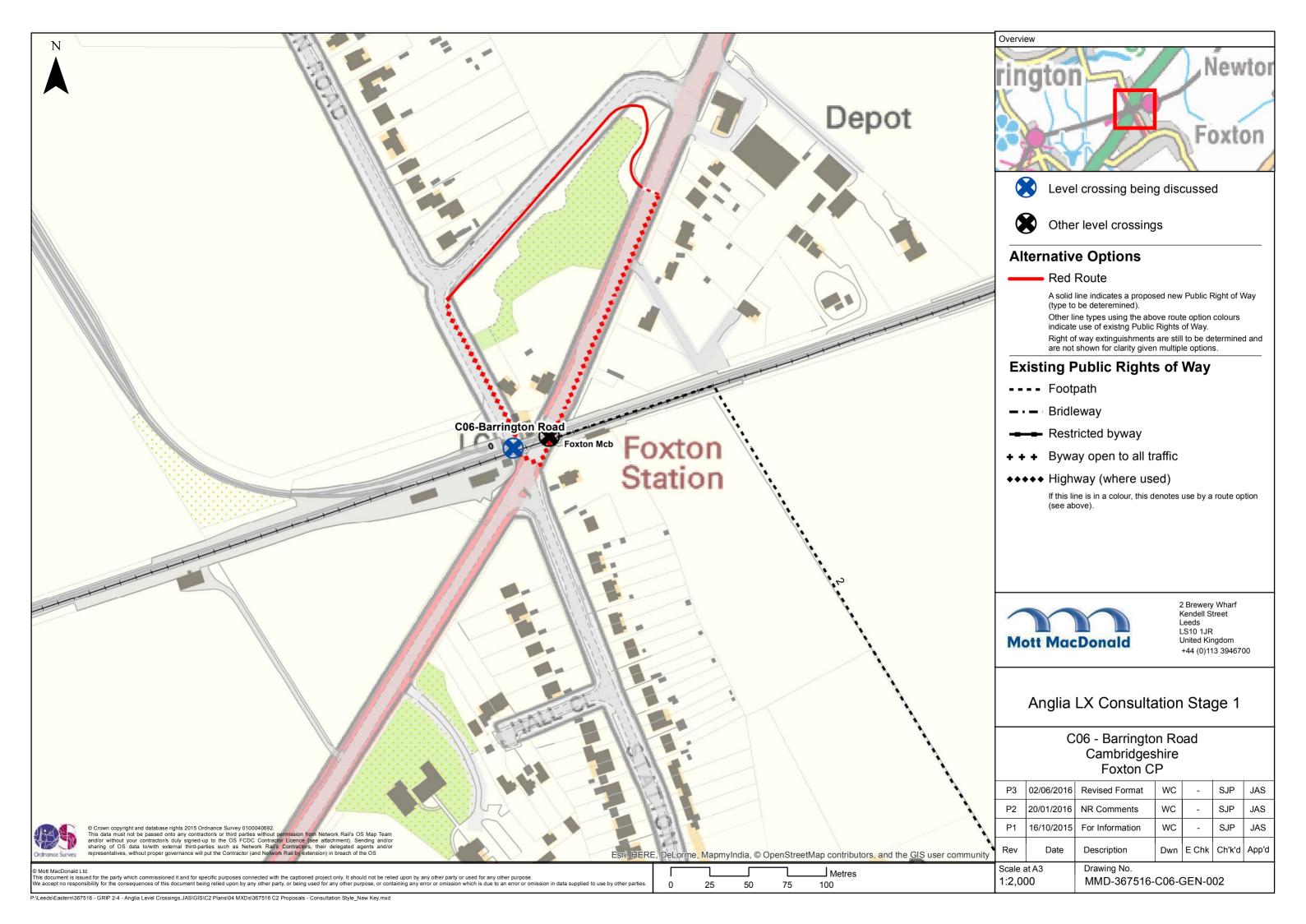
In 2009 Rachael took a career break but re-joined Mott MacDonald in 2014 and is currently a Senior Road Safety Engineer within the Northern Road Safety Team. She is a qualified Team Member having completed 30 audits in the last 12 months at stages 1 to 4 on varying size schemes throughout the UK, many of which include non-motorised user (NMU) elements. Experience also includes the undertaking of NMU audits. Since returning to Mott MacDoanld she has worked on numerous Area 10 Projects including the completion of Route Safety Reports and the feasibility of cycling schemes. Rachael continues to build upon her AIP experience to identify road safety issues and subsequently the generation of mitigation measures. She is proficient in the use of KeyACCIDENT.

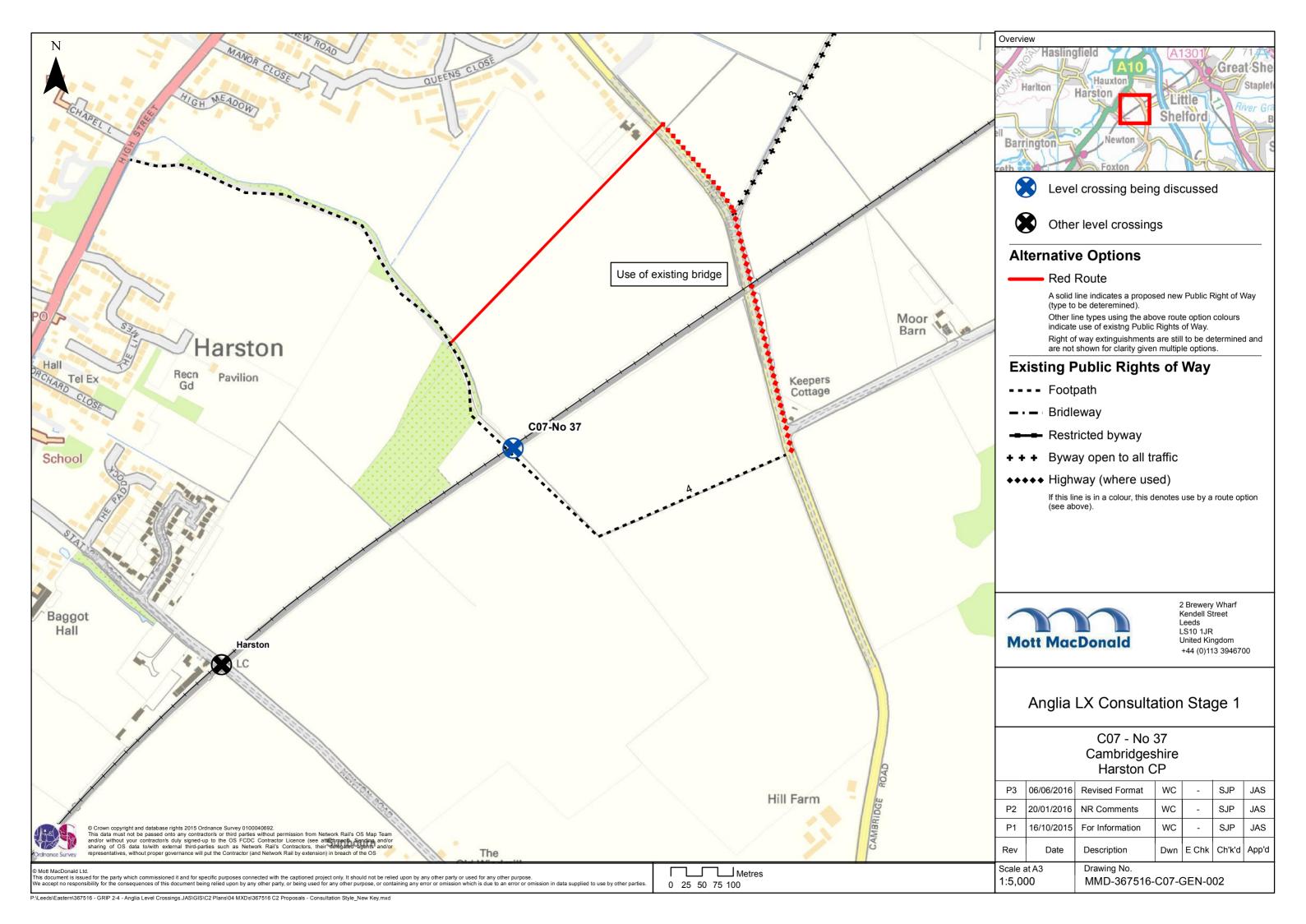
**Statement of Fact:** I confirm that the information given above is a true and accurate reflection of my experience and training and that I meet the requirements as defined in HD 19/15.

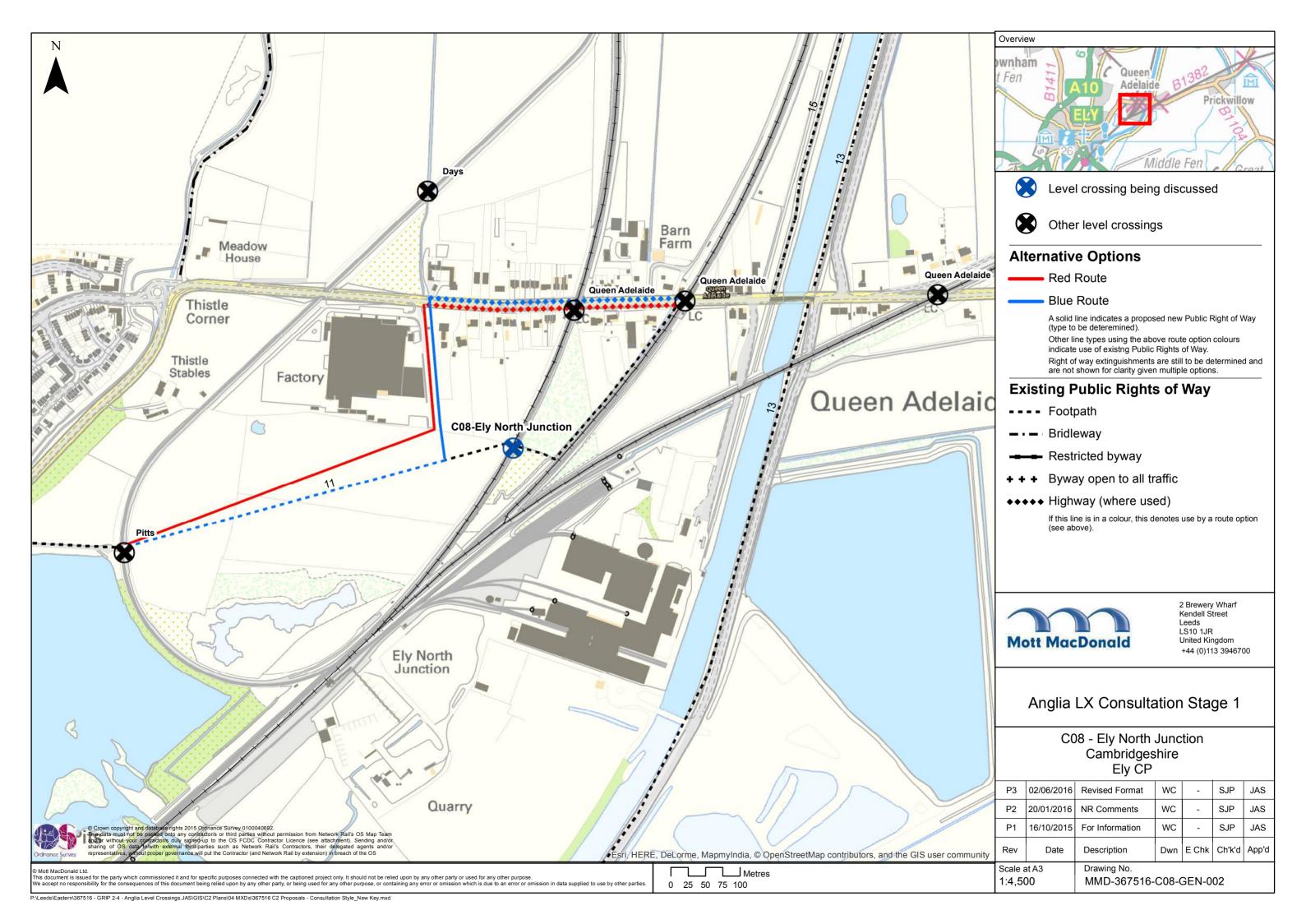
Name:	Rachael Collins	Signature:	falus.

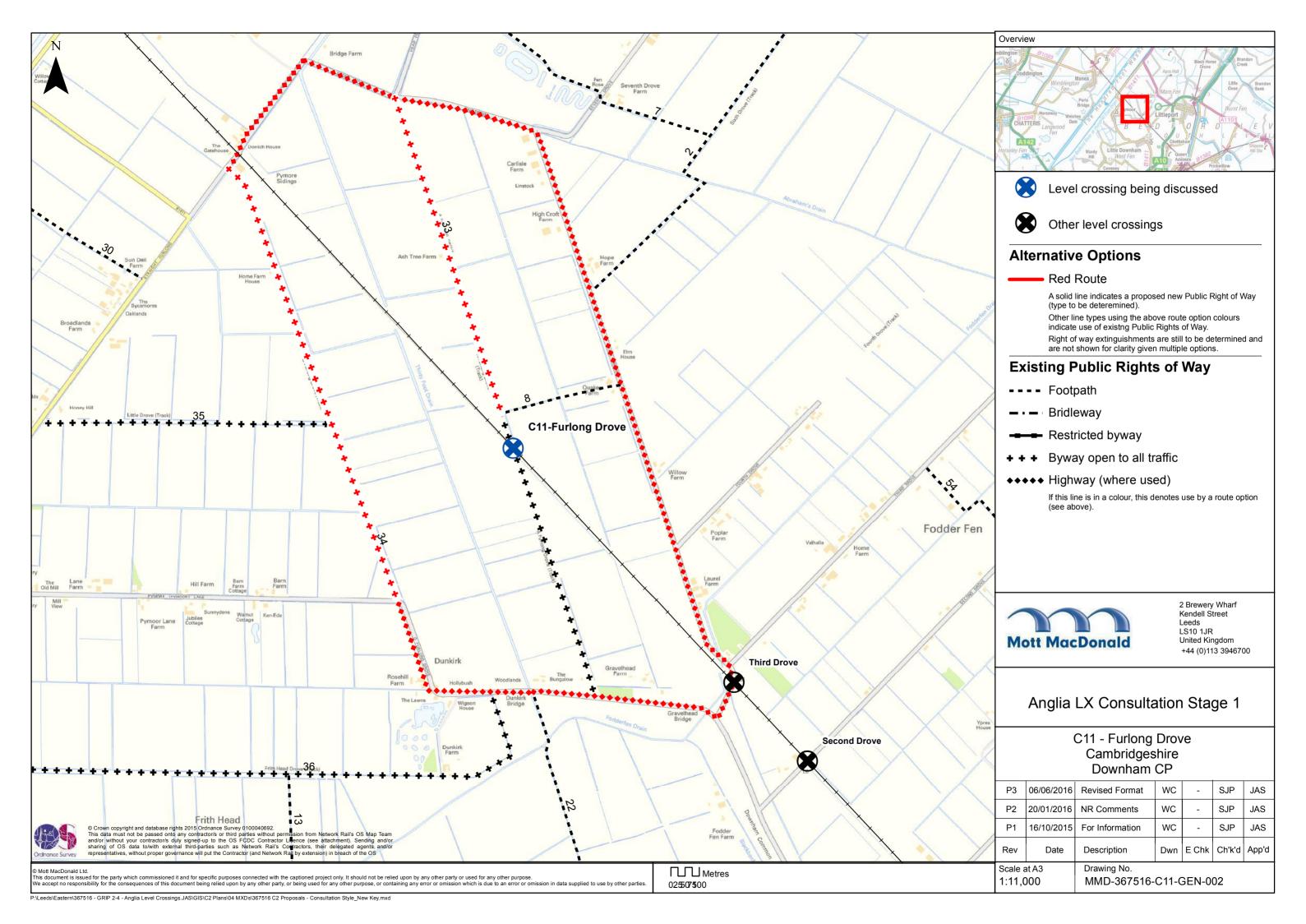


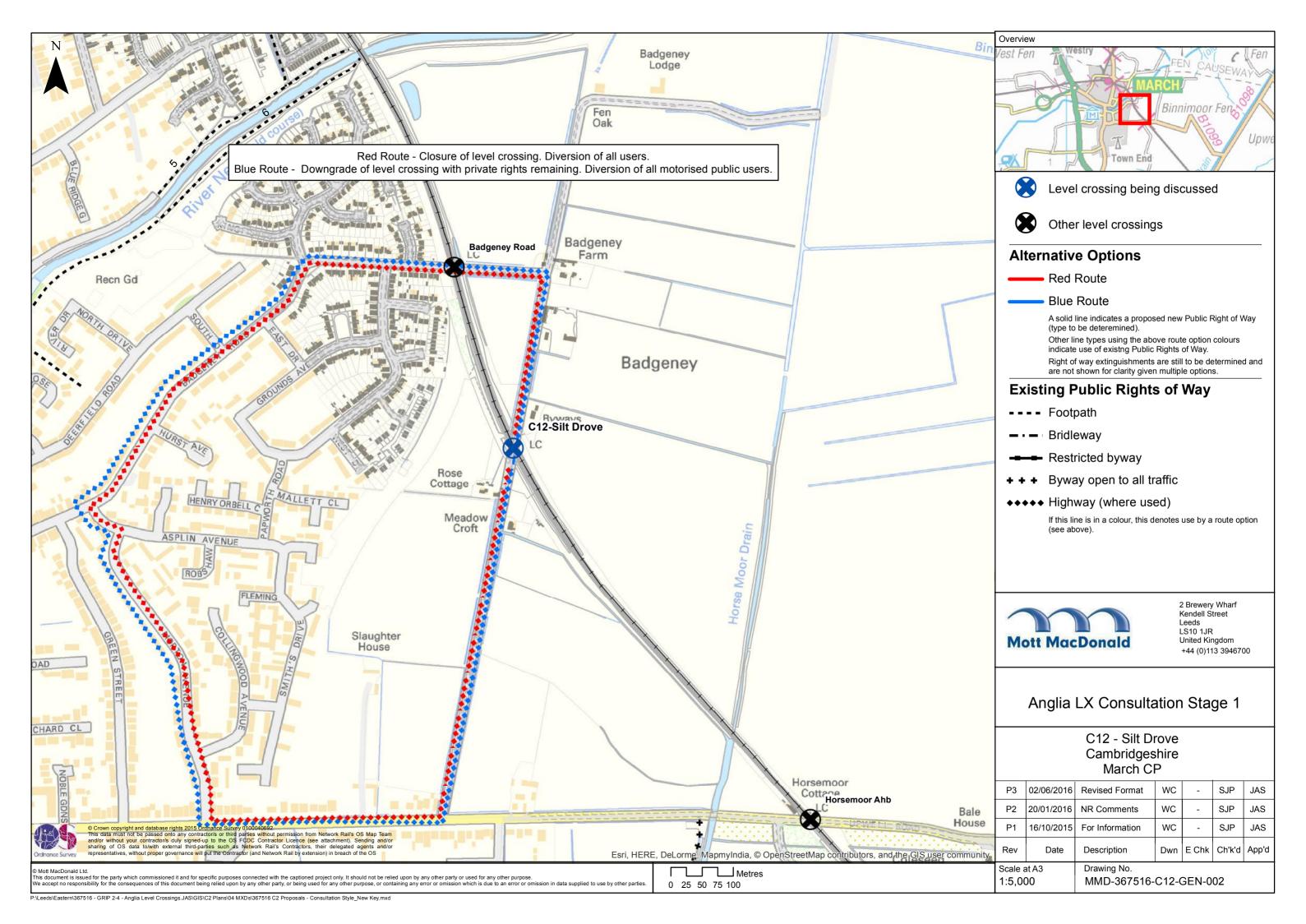


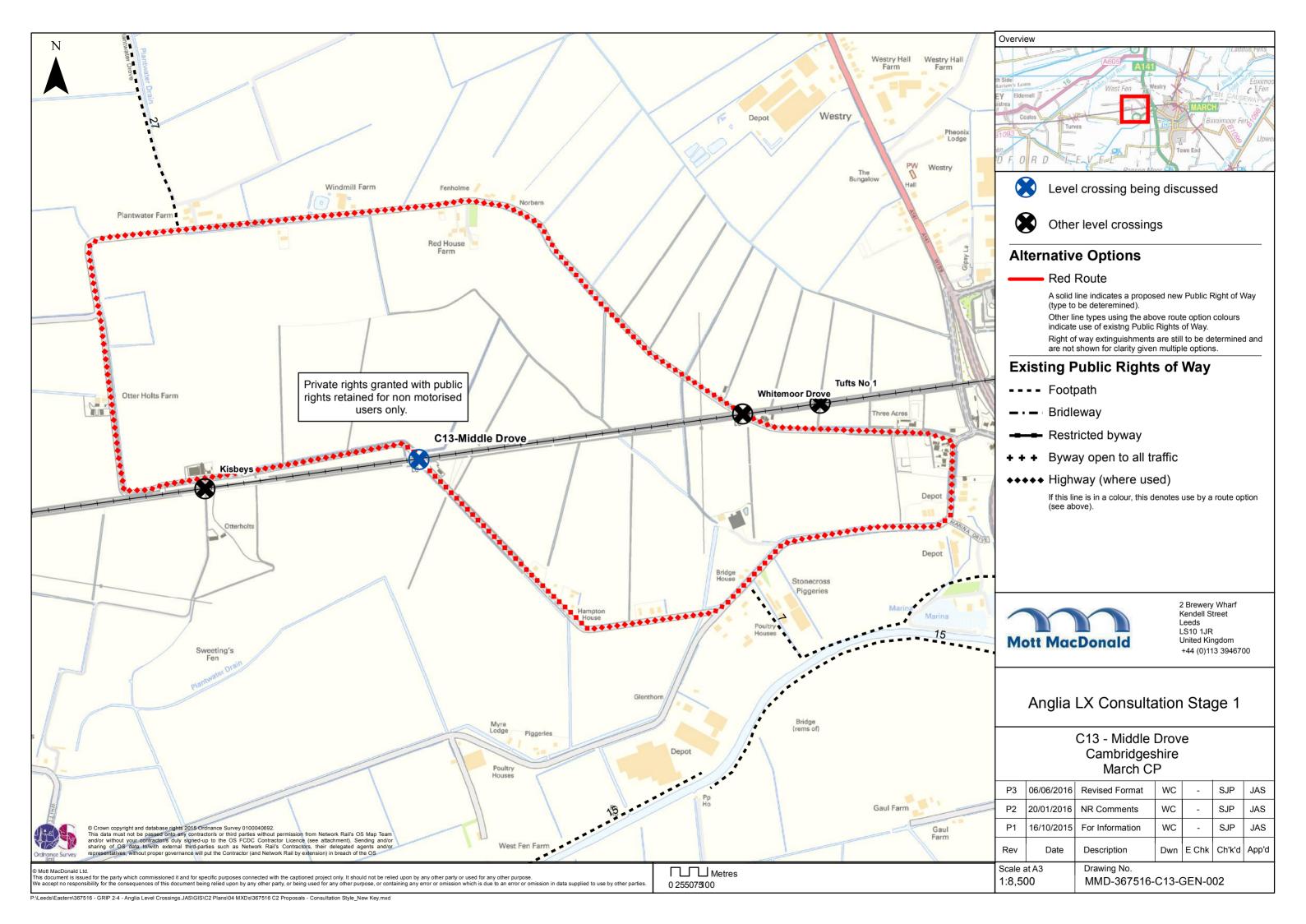


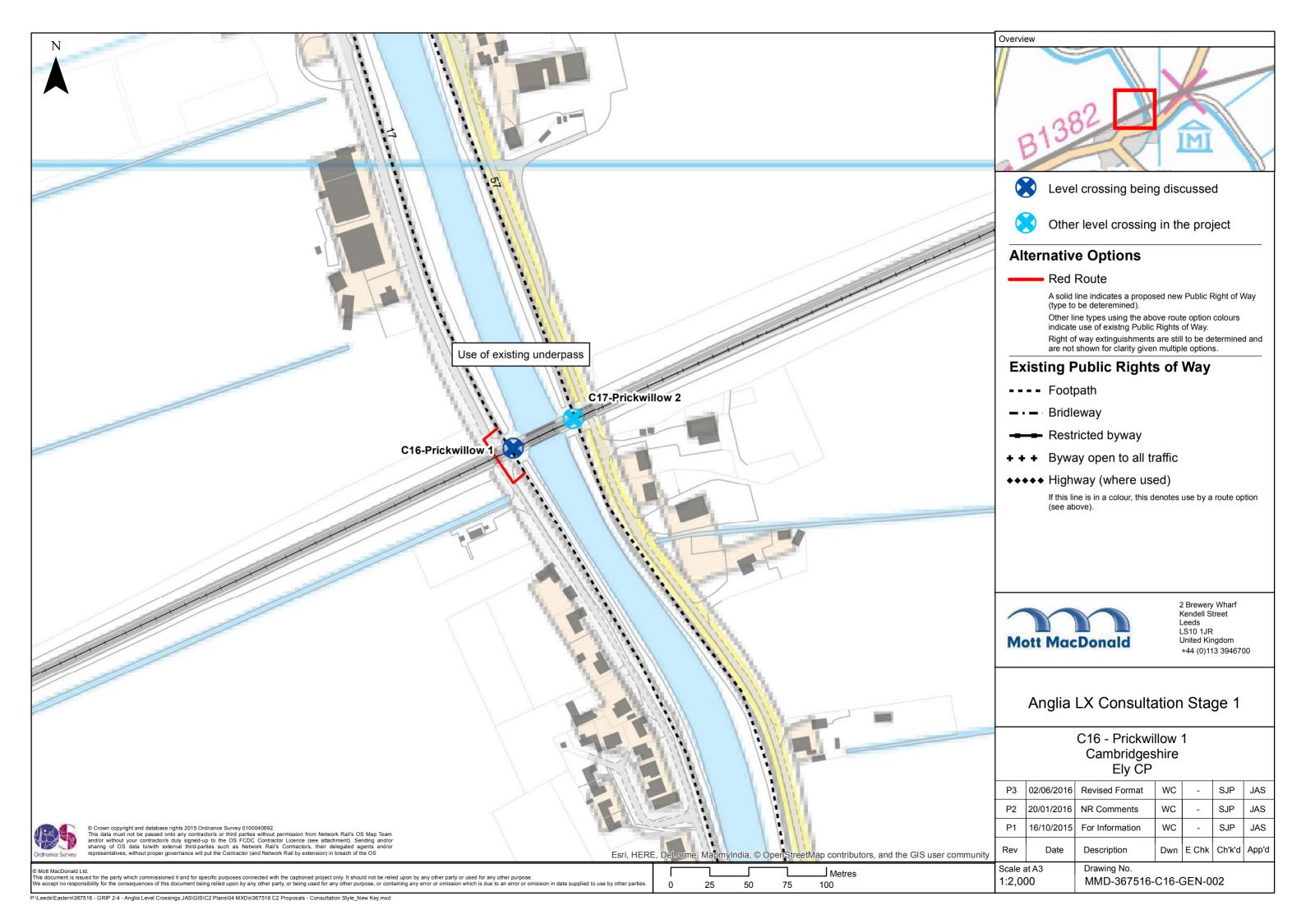


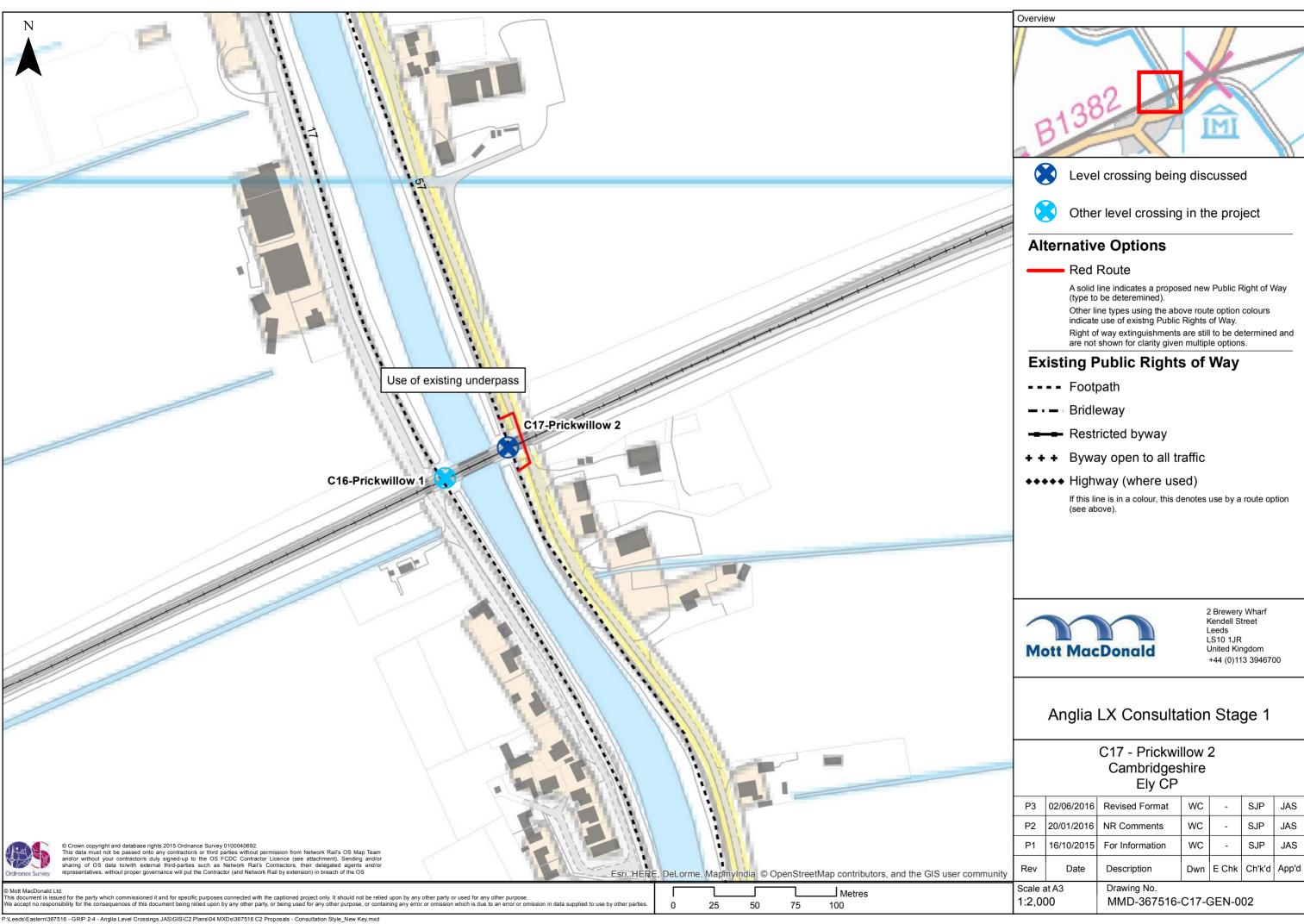












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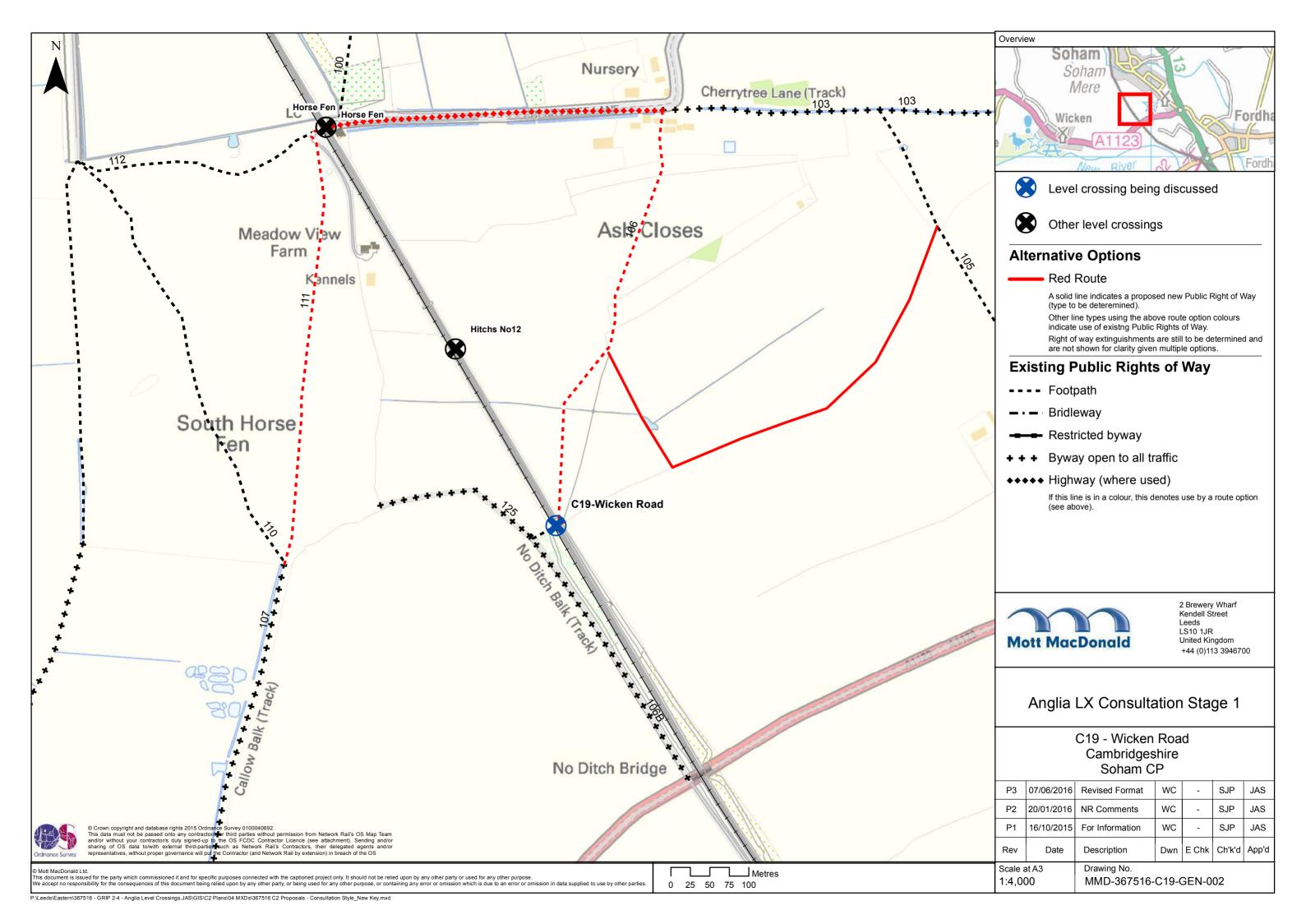
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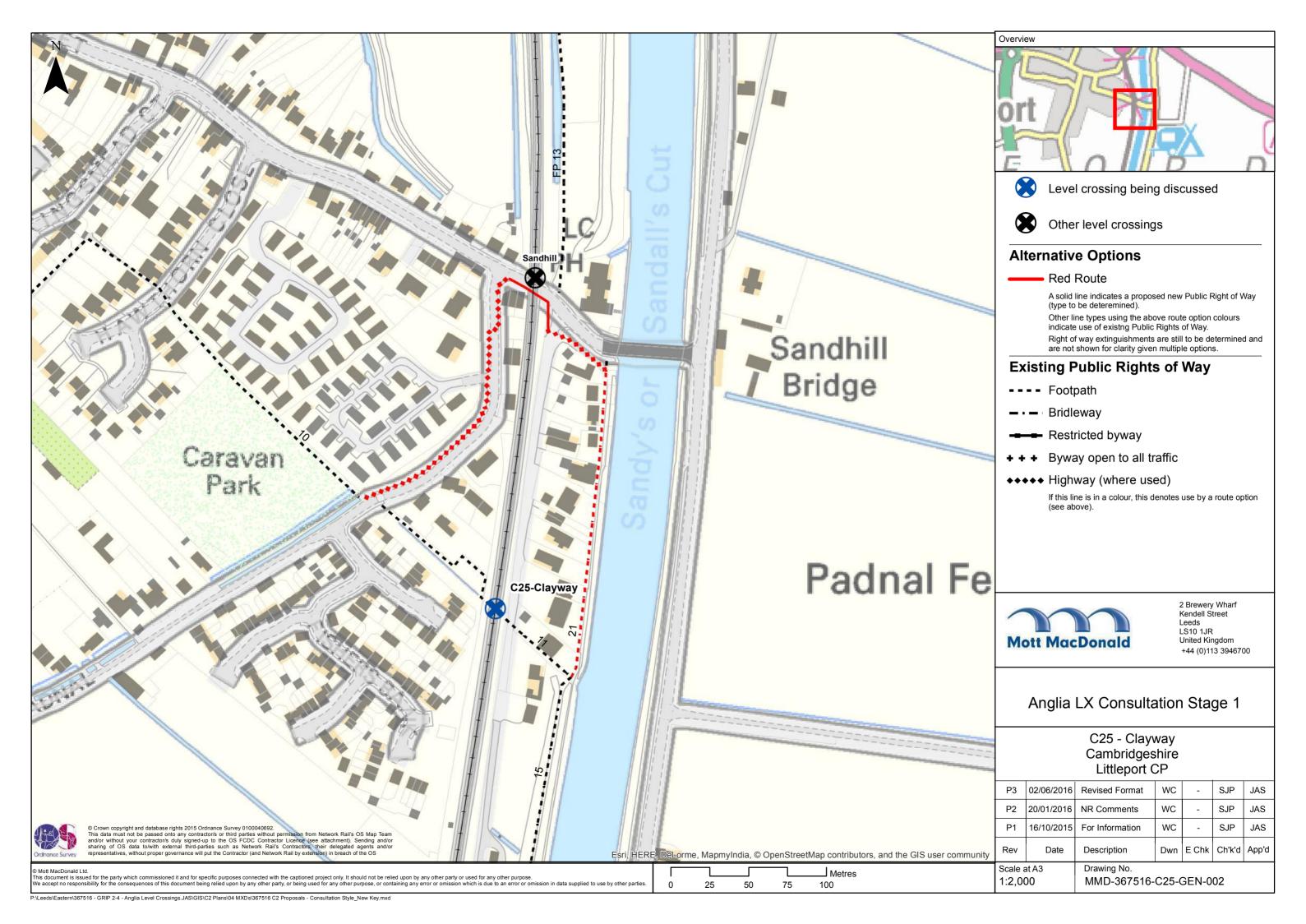
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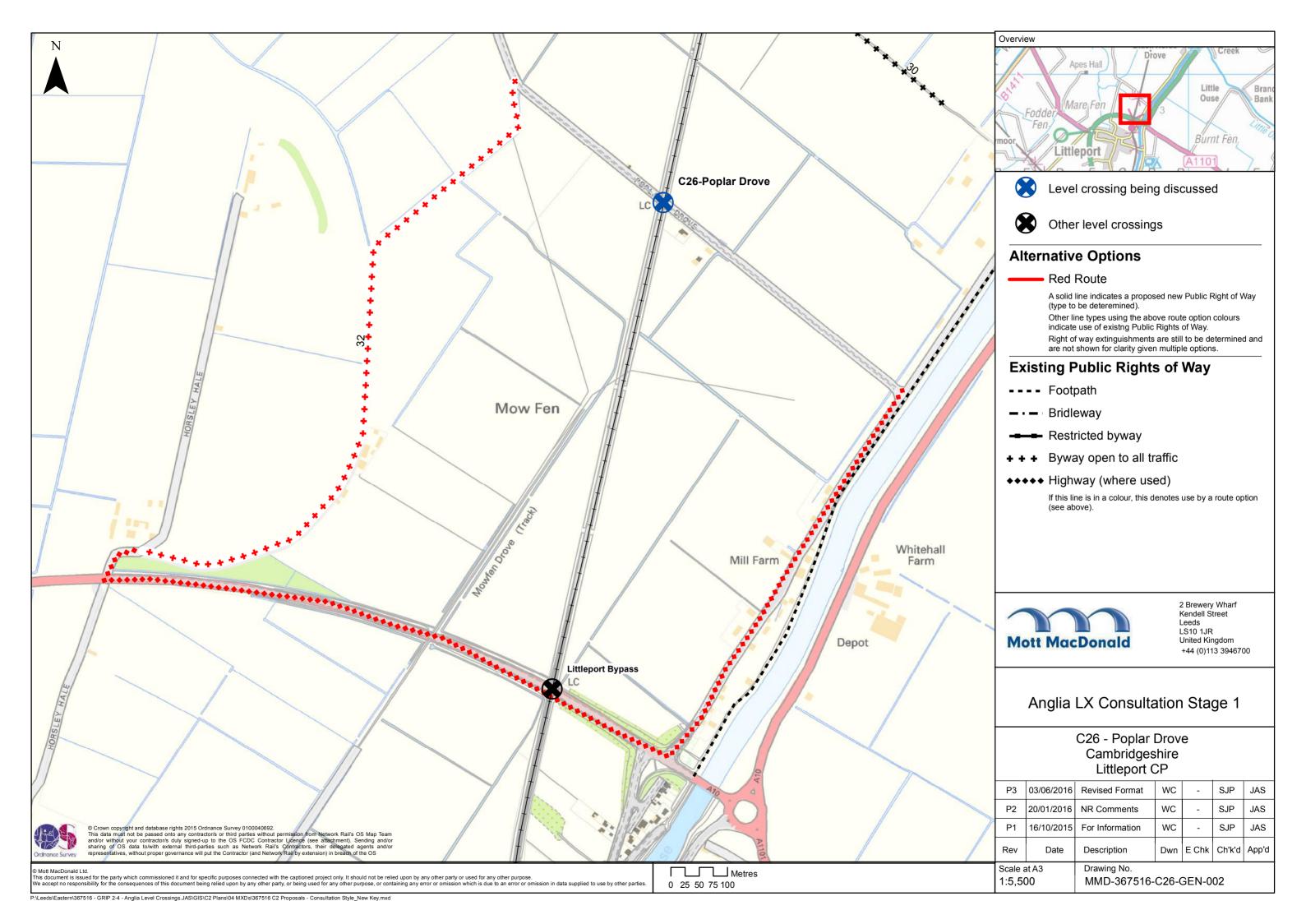
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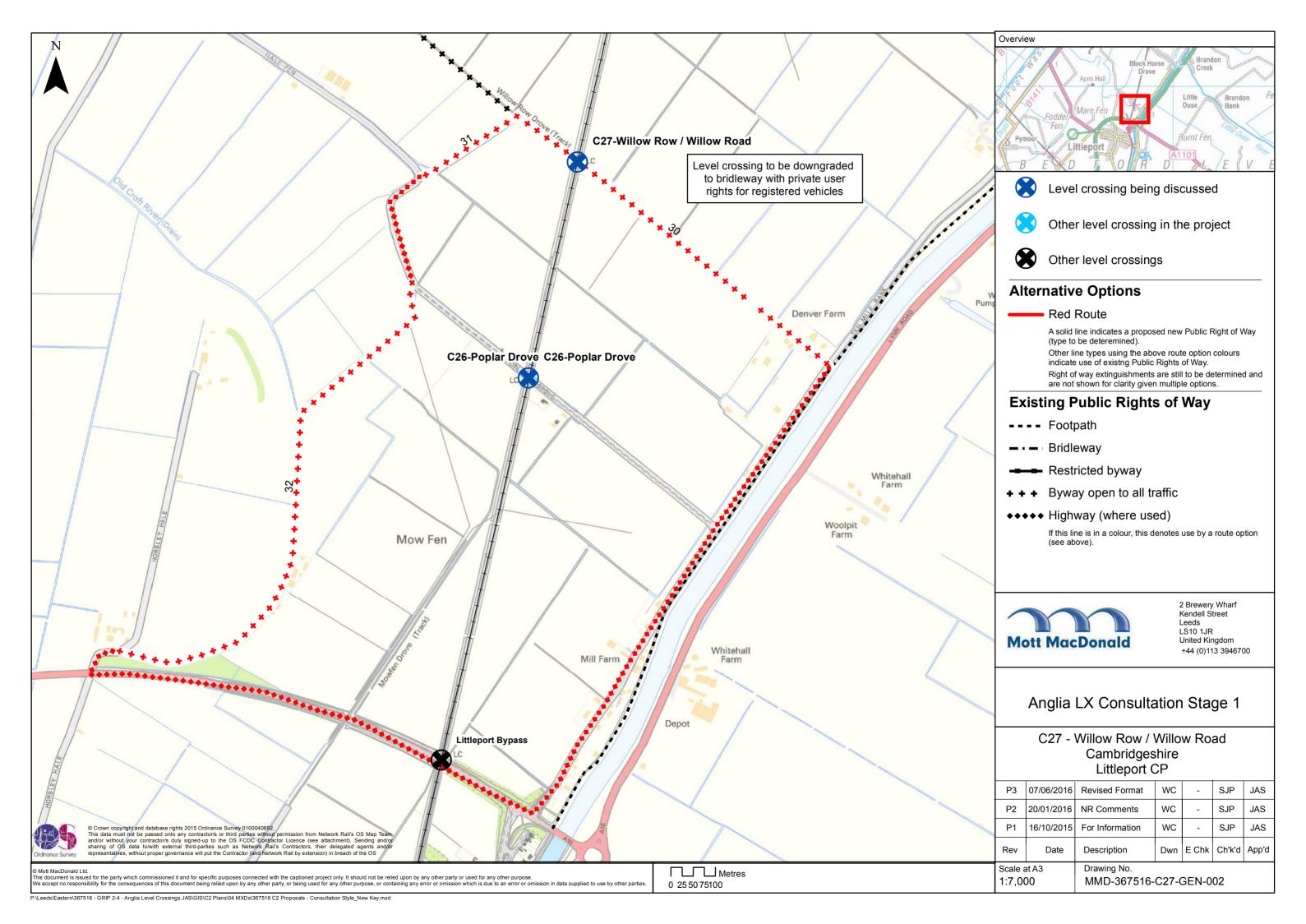
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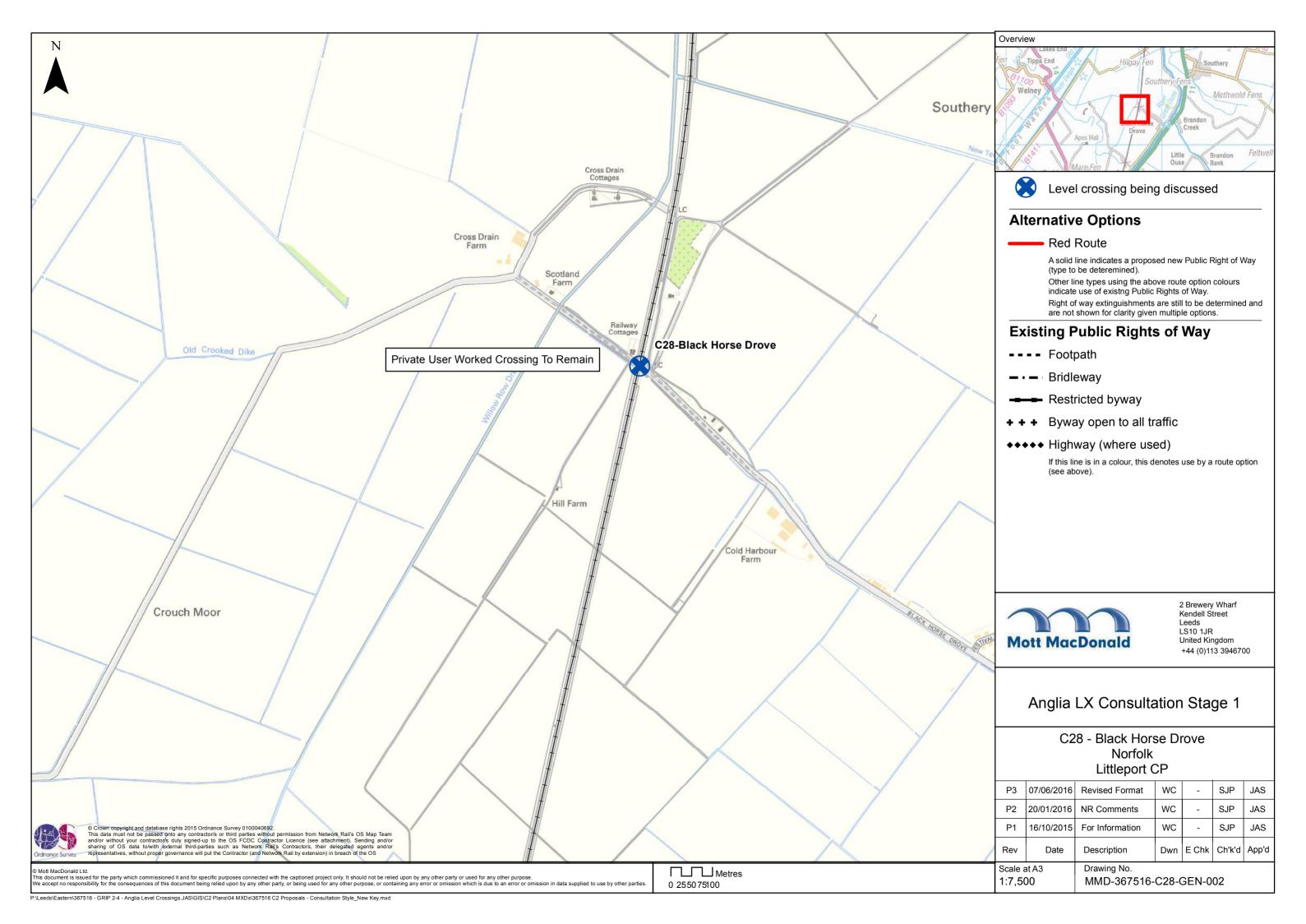
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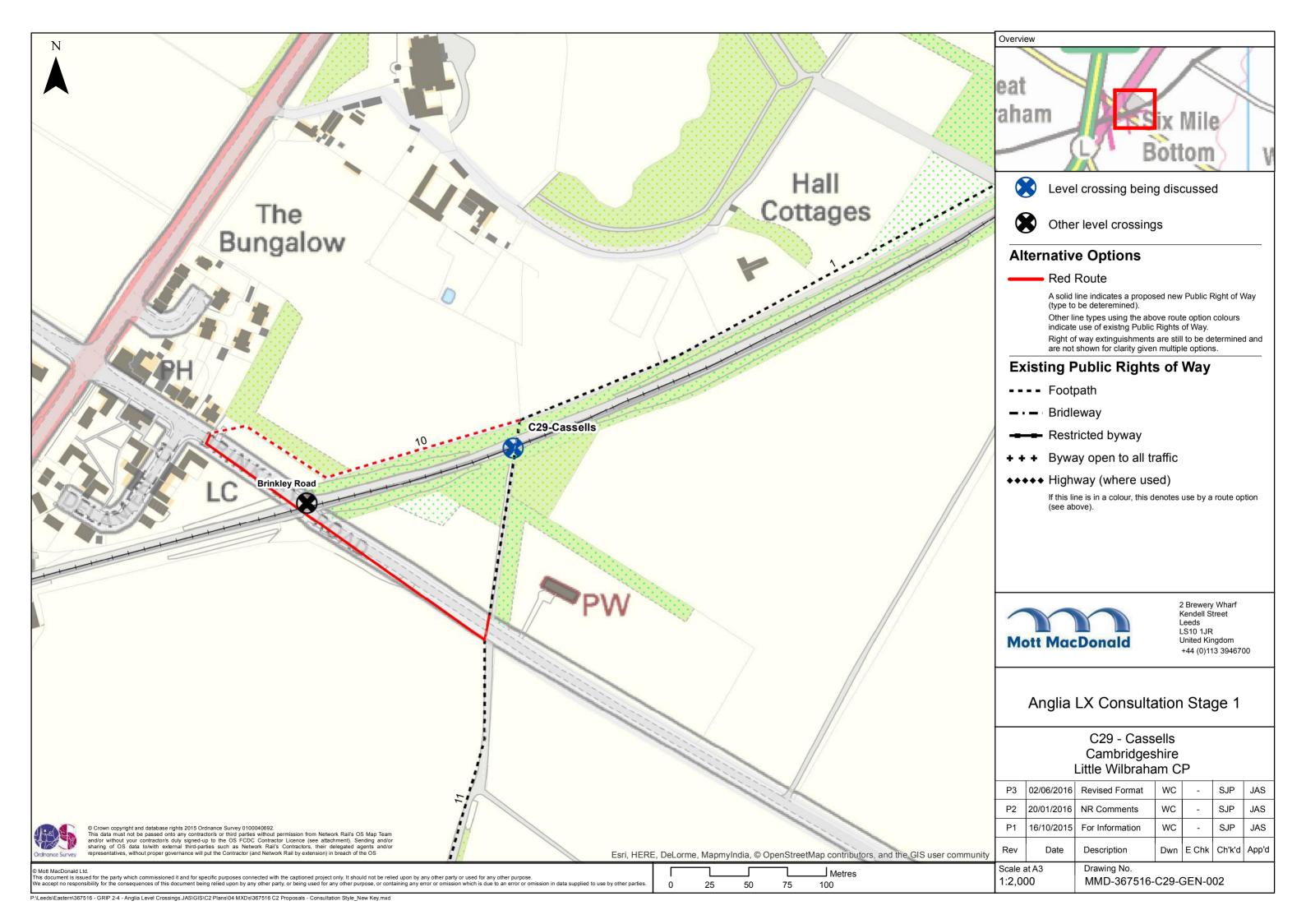


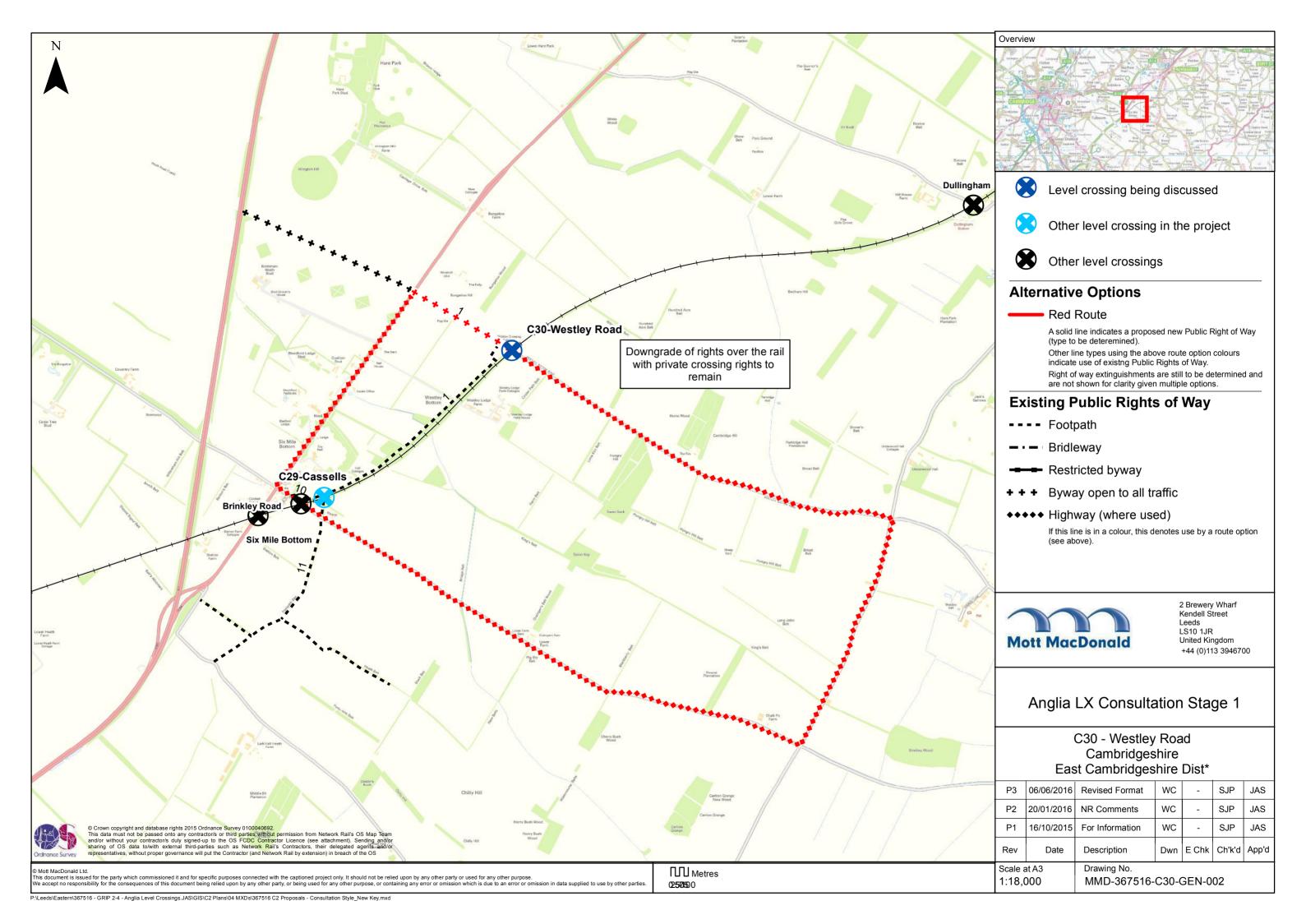


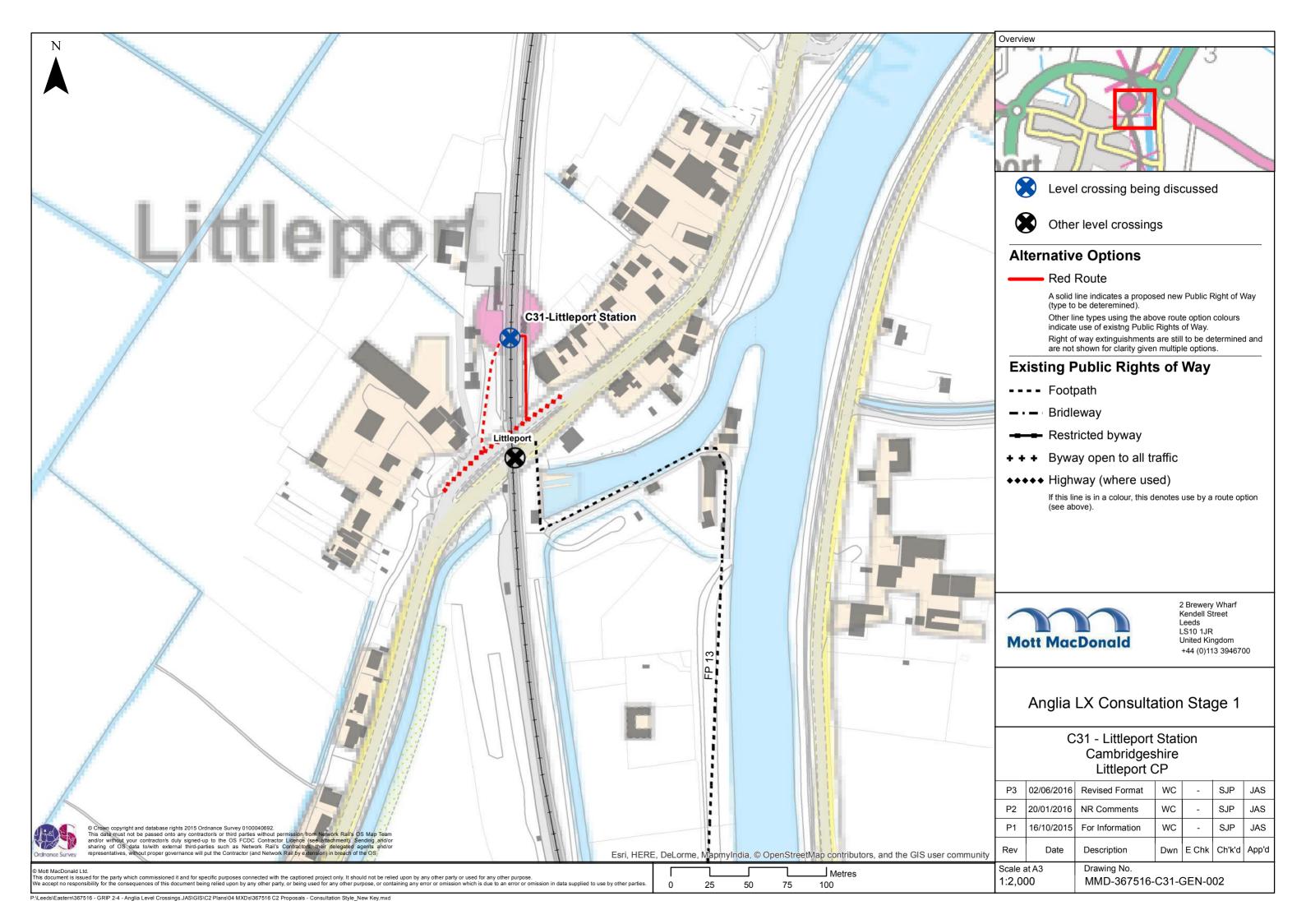


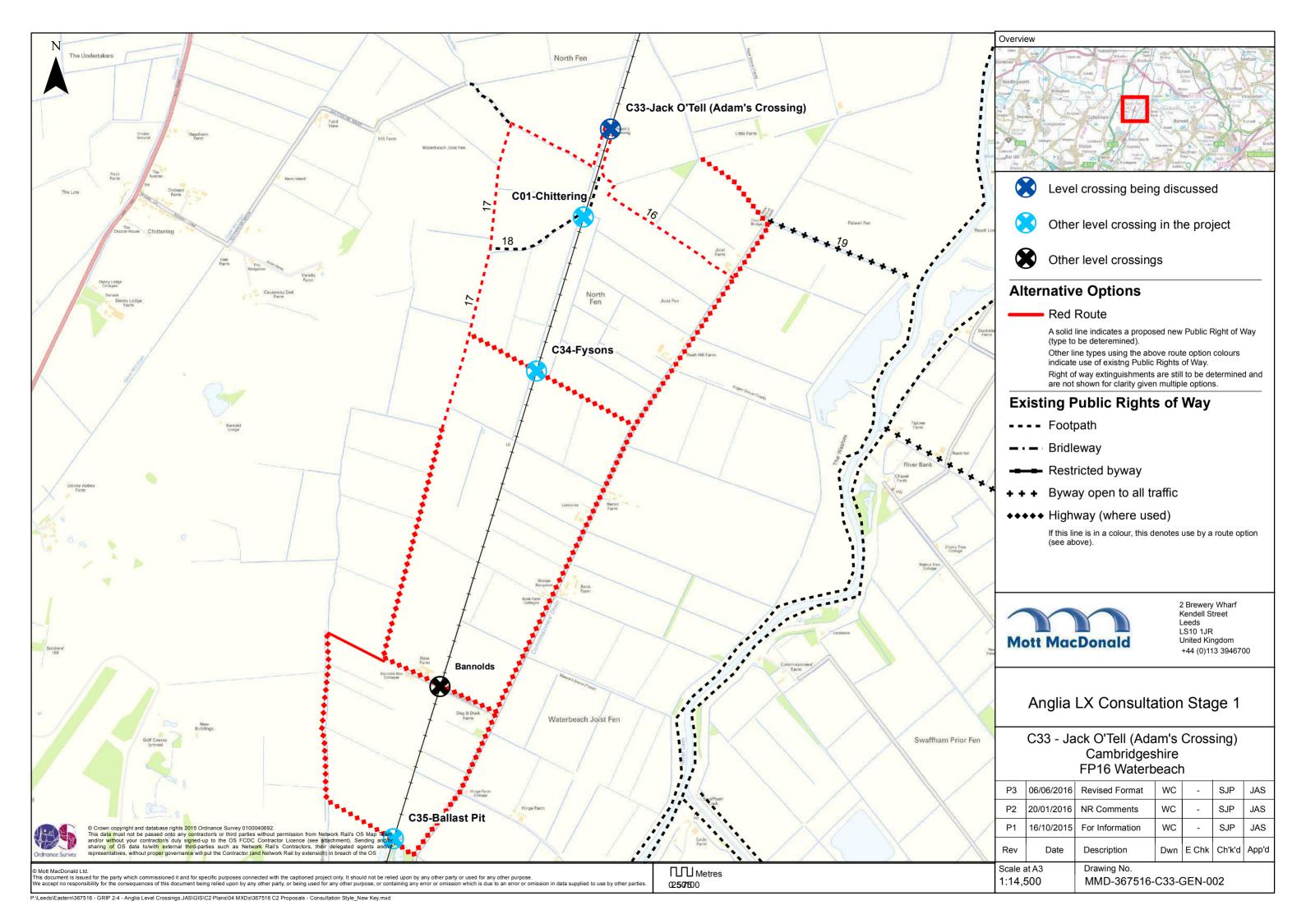


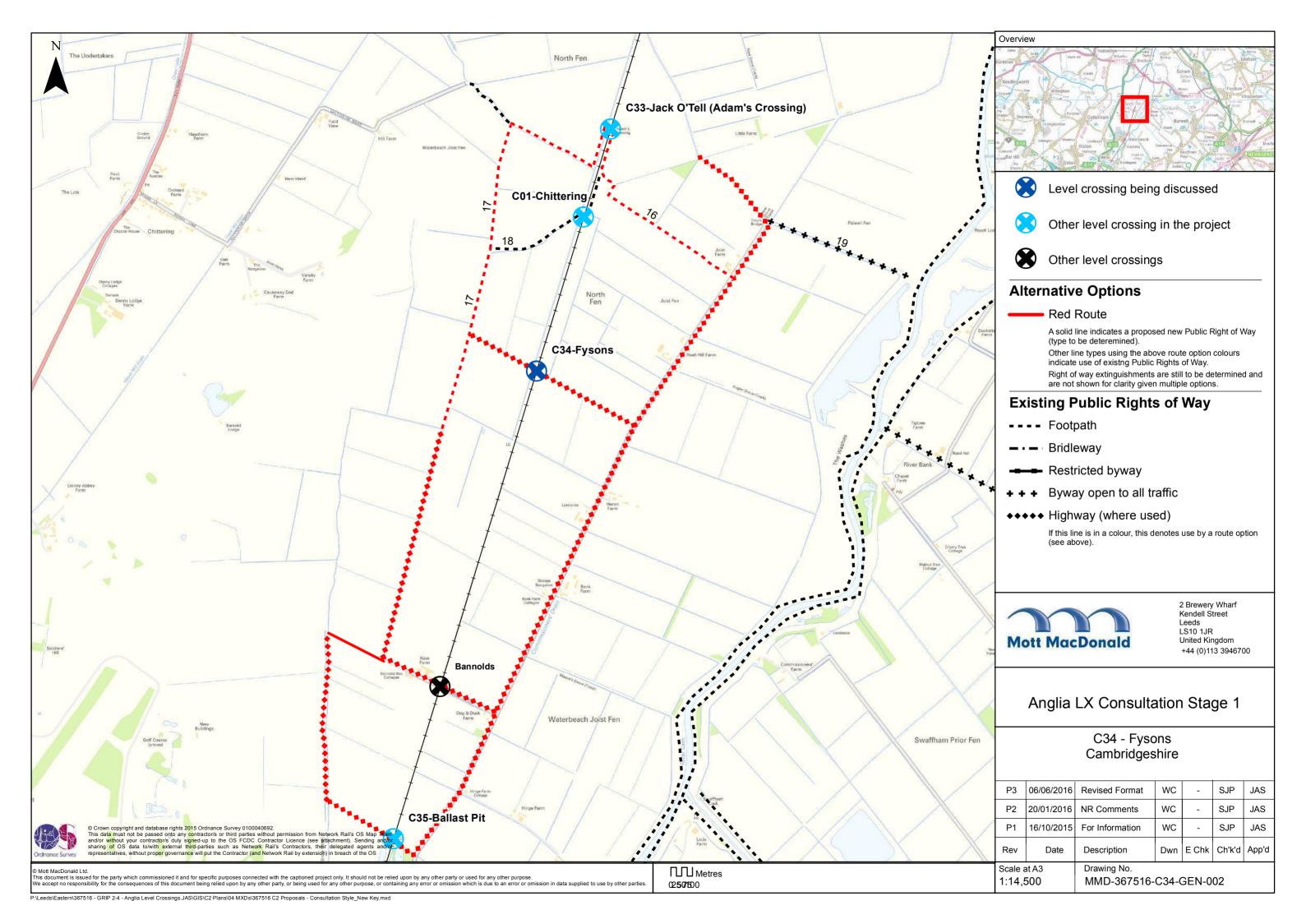


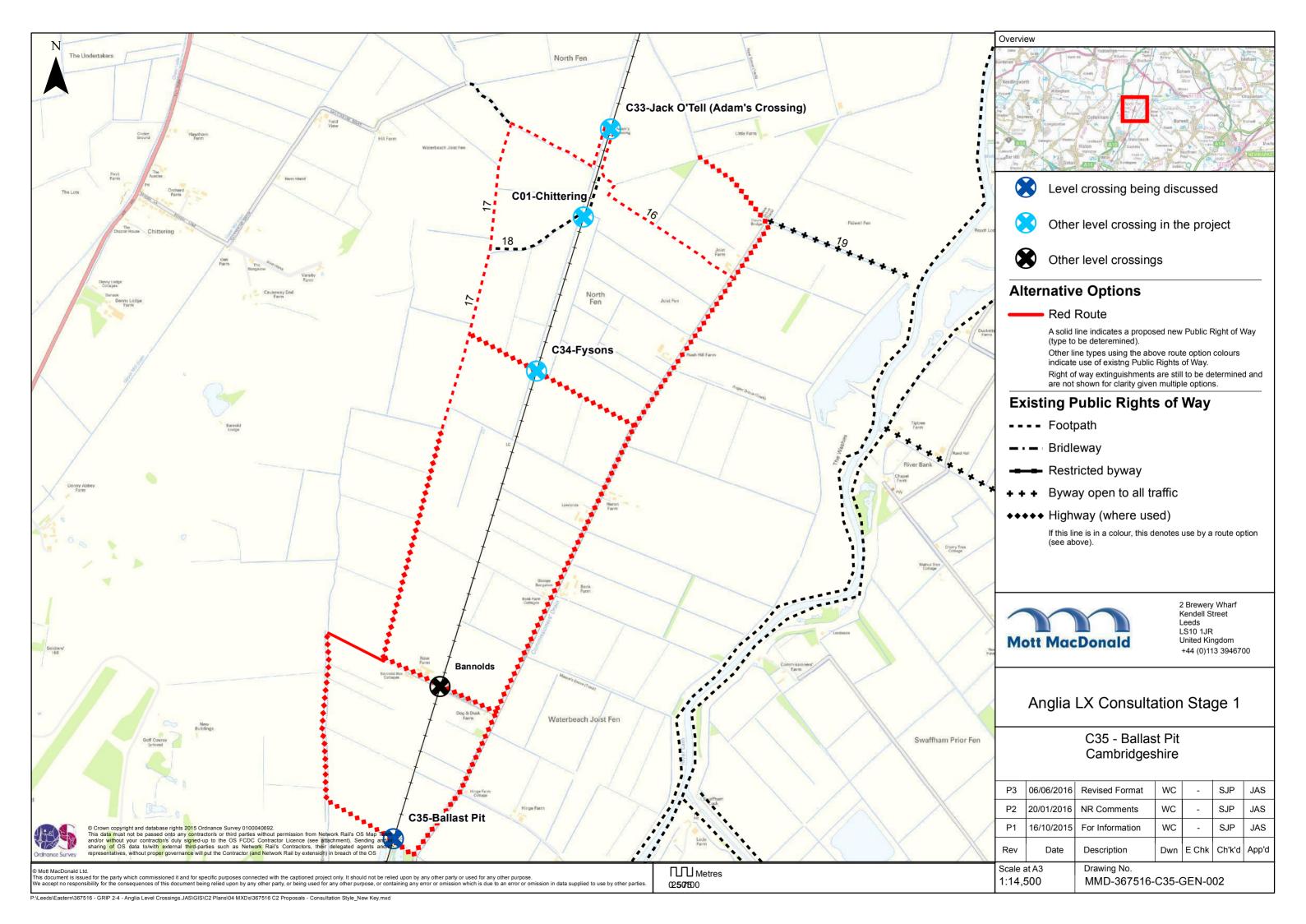














# Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review

Cambridgeshire Stage1 Road Safety Audit

Report Number 354763/RPT219
Revision A
December 2015





## Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review

Cambridgeshire Stage1 Road Safety Audit
December 2015
Network Rail

Infrastructure Projects, Buildings & Civils, Hudson House, Toft Green, York, YO1 6HP

# Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review Cambridgeshire Stage1 Road Safety Audit



## Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
Α	17/12/2015	A J Coleman / R J Collins	T J Blaney	C S Ridding	First Draft
		Elec	Tun Blancy	Cride	
		L67lms			

#### Information class: Standard

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# Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review Cambridgeshire Stage1 Road Safety Audit



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## 1 Introduction

Network Rail is carrying out feasibility studies to explore options for the closure of level crossings throughout Cambridgeshire, as part of their on-going commitment to deliver a safer, more efficient and reliable railway. Mott MacDonald is considering Network Rail's GRIP 0 Solution to enable the closure of level crossings.

This report describes a series of Stage 1 Road Safety Audits carried out on highway works associated with proposed level crossing closures throughout Cambridgeshire. The scheme proposals currently consist of indicative (high level) diversion routes as the result of closures and no formal highway works have been designed at this stage. Therefore this report considers potential road safety problems as a result of the proposed routes and their interaction with the highway. A detailed description of the proposed diversion routes at each location can be read in the respective individual level crossing review reports.

The audits took place at the Birmingham office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A**.

A visit to each site was completed on either Tuesday 3<sup>rd</sup> November 2015 between 10:30 and 14:00 or on Tuesday 10<sup>th</sup> November 2015 between 09:30 and 11:00 during which the weather conditions were cloudy and the road surface was dry.

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the feasibility design. It is also confirmed that the audit was carried out in accordance with the Highways England Departmental Standard HD19/15.

The Audit Team consisted of:

Andrew Coleman BA (Hons), MCHIT, MSoRSA (Team Leader)

Mott MacDonald

T Blaney BSc (Hons), CMILT, MCIHT, MSoRSA (Team Member)

Mott MacDonald

R Collins BA (Hons), MSc (Team Member)

Mott MacDonald

No attempt has been made to comment on the justification of the scheme or the appropriateness of the diversion routes. Consequently the auditors accept no responsibility for the design or construction of the scheme. All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Designer's response to the audit should be kept on file for future reference.

# Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review Cambridgeshire Stage1 Road Safety Audit



No Personal Injury Accident data has been provided and therefore has not been reviewed as part of this audit. Pedestrian or traffic flows are also not known to the Audit Team.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.



# 2 Items Raised at this Stage 1 Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

#### 2.1 C04 - No 20

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.2 C06 – Barrington Road

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.3 C07 - No 37

#### 2.3.1 No. 37 Problem 001

Location: London Road junction with Shelford Road.

Summary: Risk of pedestrian conflict with vehicles.

The drawing (MMD-3547630C07-GEN-001) shows the diversion along the eastern side of London Road with pedestrians crossing the junction of Shelford Road. This is a wide junction mouth where vehicles are turning at speed due to the relaxed radii and increases the potential for conflict between pedestrians and vehicles.

Figure 2.1: Wide junction mouth for pedestrians to cross.



Source: Mott MacDonald



#### Recommendation

It is recommended that pedestrians are diverted along the western side of London Road and cross to the east once they are north of the Shelford Road junction. Visibility from the railway bridge is good in both directions with a wide hardstanding on either side, and would be a suitable location for pedestrians to cross London Road.

#### 2.4 C11 – Furlong Drove

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.5 C14 – Eastrea Cross Drove

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.6 C15 – Brickyard Drove

The Audit Team did not identify any road safety related issues associated with the scheme.

#### **2.7 C18** – **Munceys**

#### 2.7.1 Munceys Problem 001

Location: Station Road.

Summary: Risk of pedestrian trip collisions.

The diversion route will guide pedestrians along the southern side of Station Road where the footway is in poor condition and either overgrown with grass or uneven. Pedestrians being guided along a footway would expect a suitable surface and the uneven slippery surface may lead to slip type accidents. In addition, the formal uncontrolled crossing of the southern roundabout arm of the A142 is completely overgrown and unsuitable for pedestrians.



Figure 2.2: Existing condition of the footway on Station Road.



Source: Mott MacDonald

Figure 2.3: A142 crossing point.



Source: Mott MacDonald

#### Recommendation

It is recommended that the footway is brought up to an appropriate standard and the crossing point is cleared to remove trip hazards.



#### 2.8 C19 - Wicken Road

#### 2.8.1 Wicken Road Problem 001

Location: Wicken Road.

Summary: Risk of vehicle to pedestrian collisions.

The diversion route will utilise the railway bridge on Wicken Road. Wicken Road has relatively high vehicle flows travelling relatively high speeds. There is a hardstanding area on either side of the bridge but it is currently overgrown by grass and with a build-up of silt and will force pedestrians to walk within the carriageway where they will be at risk of collisions with the high number and speed of vehicles.

Figure 2.4: Wicken Road railway bridge.



Source: Mott MacDonald

#### Recommendation

Suitable footway widths should be provided over the railway bridge otherwise an alternative route should be identified.

#### 2.9 C20 – Leonards

The Audit Team did not identify any road safety related issues associated with the scheme.



#### 2.10 C25 - Clayway

#### 2.10.1 Clayway Problem 001

Location: Padnal, opposite Hyde Park.

Summary: Risk of vehicle to pedestrian collisions.

Currently the footpath crosses Padnal at a raised flush crossing point. The proposed diversion route will guide pedestrians along the eastern side of Padnal where the footway terminates just south of Hyde Park. Pedestrians will be forced to negotiate full height kerbs to either cross or walk within the carriageway, with a risk of trip accidents as a result.

Figure 2.5: Padnal looking north.



Source: Mott MacDonald

#### Recommendation

It is recommended that a crossing point is provided where the eastern footway terminates, which would be equal to the existing provision on Padnal.



#### 2.11 C29 - Cassells

#### 2.11.1 Cassells Problem 001

Location: Brinkley Road.

Summary: Risk of vehicle collisions with pedestrians.

There is limited verge width along Brinkley Road and pedestrians are likely to be within the carriageway. Vehicle speeds were observed to be high along this section which may give drivers limited time to react to pedestrians within the carriageway possibly resulting in conflict between pedestrians and vehicles or result in head-on vehicle collisions if a vehicle was to swerve to avoid a pedestrian in the carriageway.

Figure 2.6: Limited carriageway and verge width.



Source: Mott MacDonald

#### Recommendation

It is recommended that a footpath is provided for pedestrians. If this cannot be achieved then an alternative route should be identified.



## 3 Audit Team Statement

I certify that this audit has been carried out in accordance with the Highways England Departmental Standard HD 19/15.

Audit Team Leader

A J Coleman BA (Hons), MCIHT, MSoRSA

Signed:

Date: 17<sup>th</sup> December 2015

Road Safety Engineer Mott MacDonald 35 Newhall Street Birmingham B3 3PU

Audit Team Member

R J Collins BA (Hons), MSc

Signed:

Date: 17<sup>th</sup> December 2015

Senior Road Safety Engineer Mott MacDonald 111 Piccadilly Manchester M1 2HY Audit Team Member

T J Blaney BSc (Hons), CMILT, MCIHT, MSoRSA

Signed:

Date: 17<sup>th</sup> December 2015

Principal Road Safety Engineer Mott MacDonald 35 Newhall Street Birmingham B3 3PU

# Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review Cambridgeshire Stage1 Road Safety Audit



# **Appendices**

Appendix A.	List of Submitted Documents	11
Appendix B.	Key Plans	12



# Appendix A. List of Submitted Documents

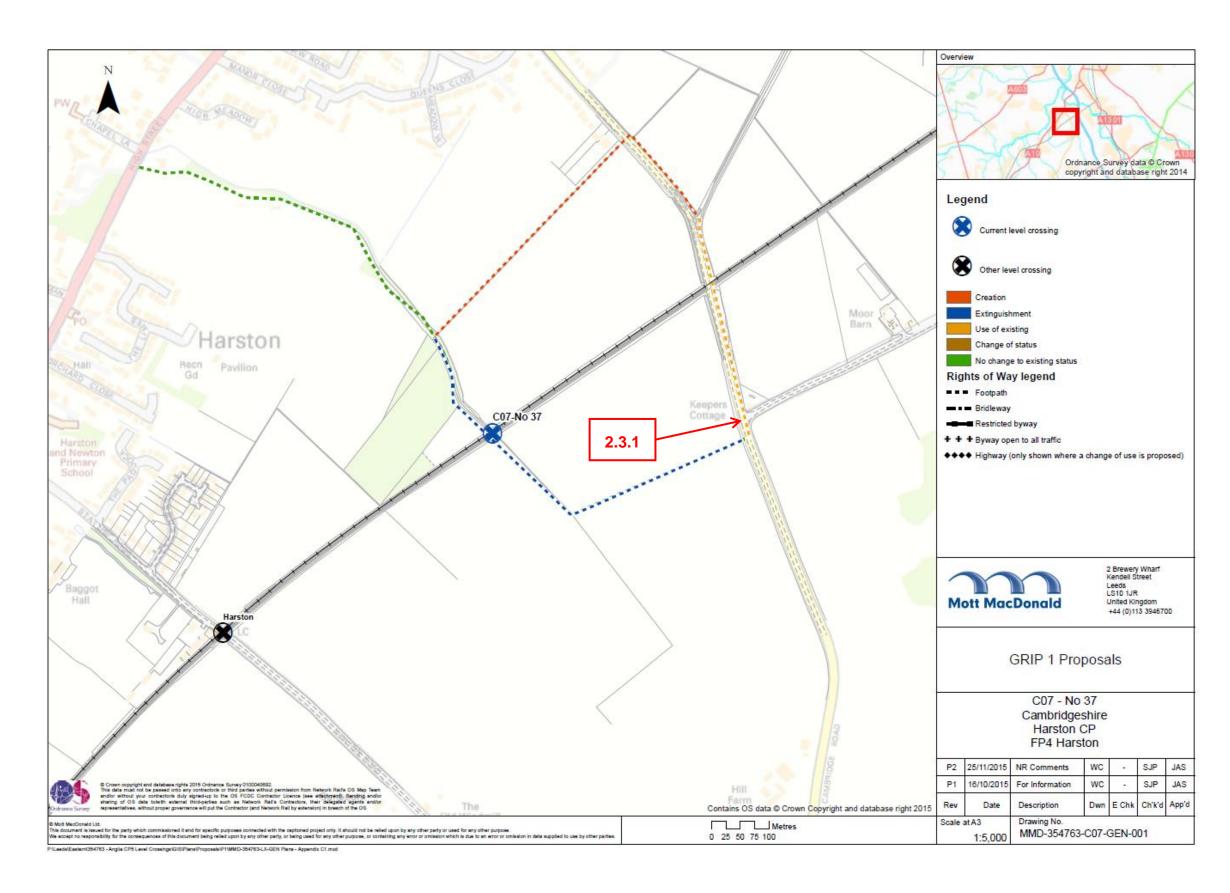
Table A.1: Drawings

Drawing	Rev	Title
MMD-354763-C04-GEN-001	P2	No Name No 20
MMD-354763-C06-GEN-001	P2	Barrington Road
MMD-354763-C07-GEN-001	P2	No Name No. 37
MMD-354763-C11-GEN-001	P2	Furlong Drove
MMD-354763-C14-GEN-001	P2	Eastrea Cross Drove
MMD-354763-C15-GEN-001	P2	Brickyard Drove
MMD-354763-C18-GEN-001	P2	Munceys
MMD-354763-C19-GEN-001	P2	Wicken Road
MMD-354763-C20-GEN-001	P2	Leonards
MMD-354763-C25-GEN-001	P2	Clayway
MMD-354763-C29-GEN-001	P1	Cassells

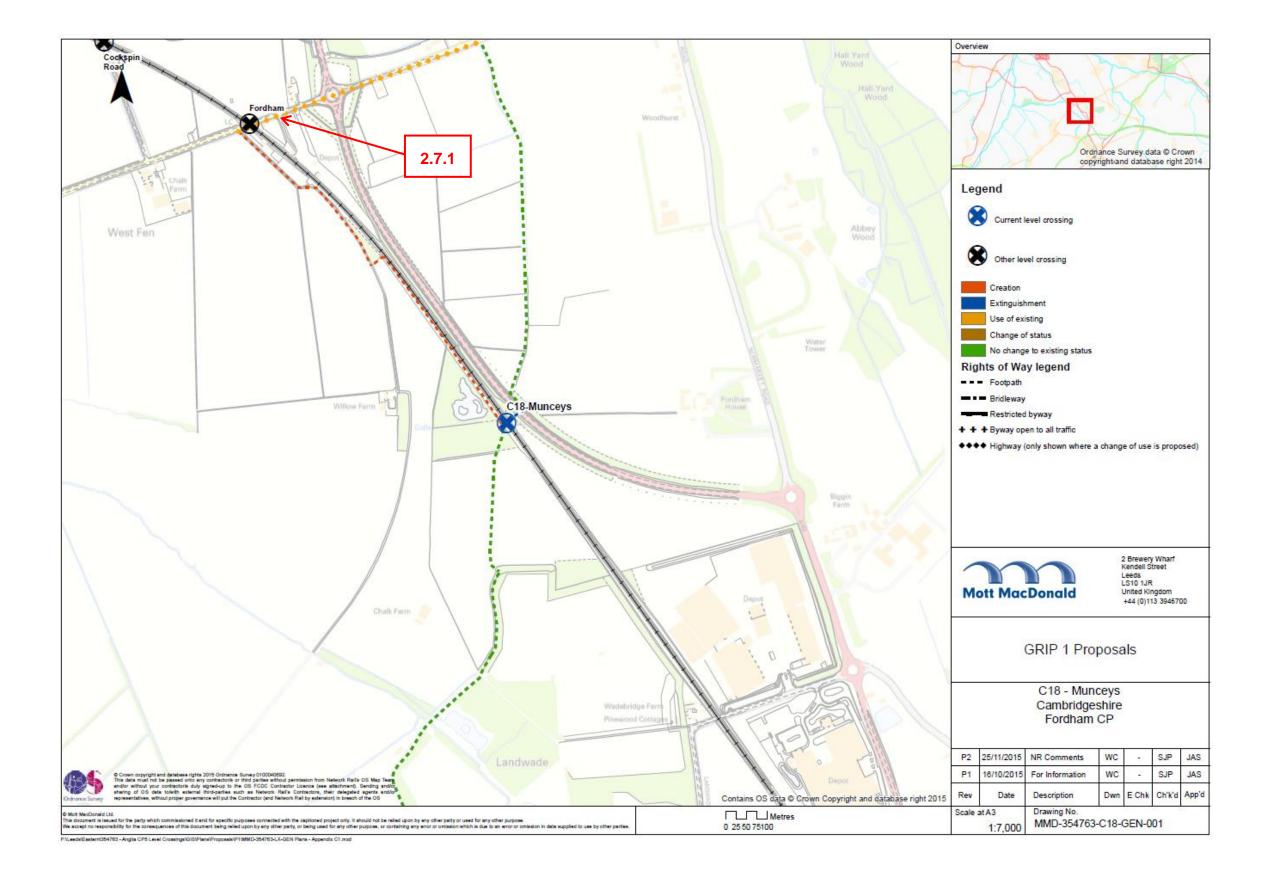
Source: Mott MacDonald, Sheffield



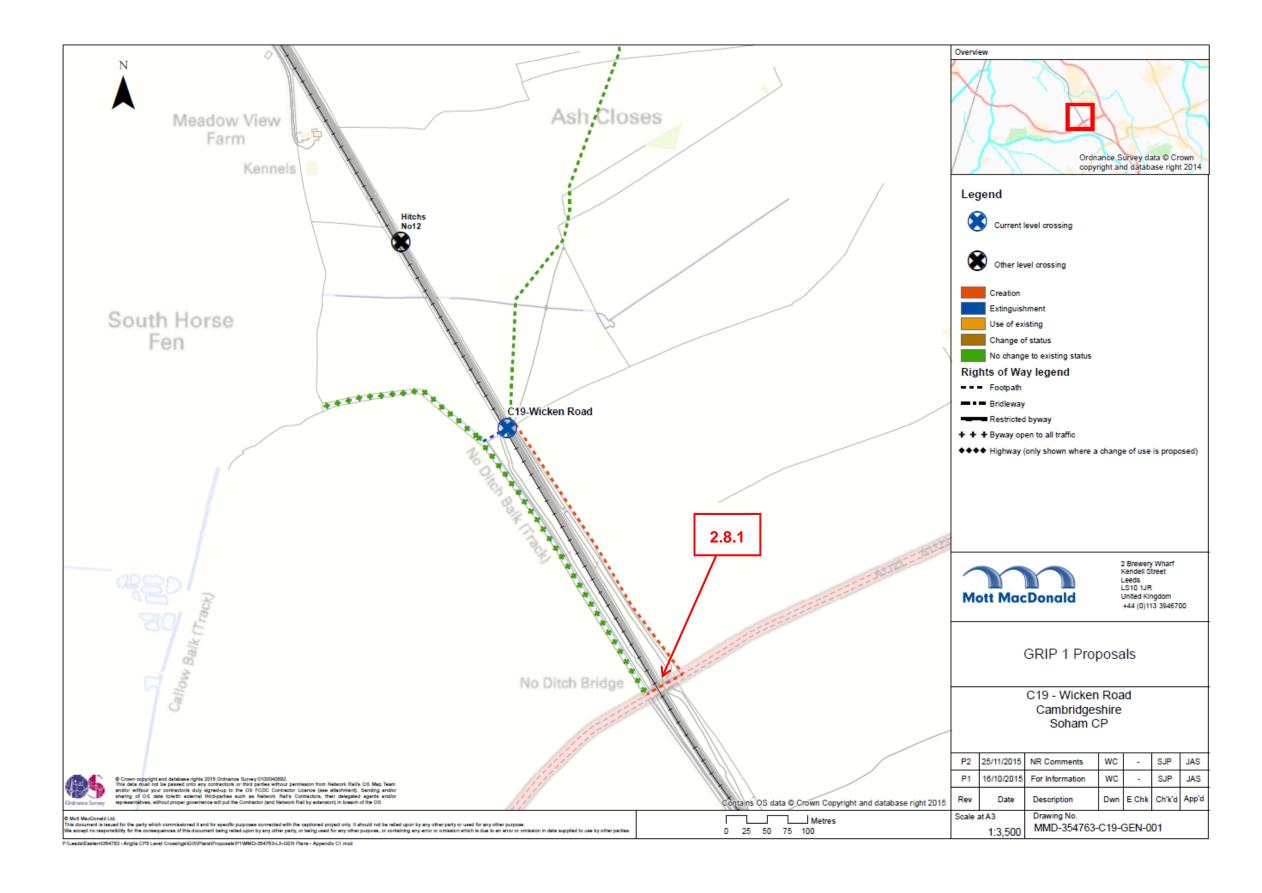
# Appendix B. Key Plans



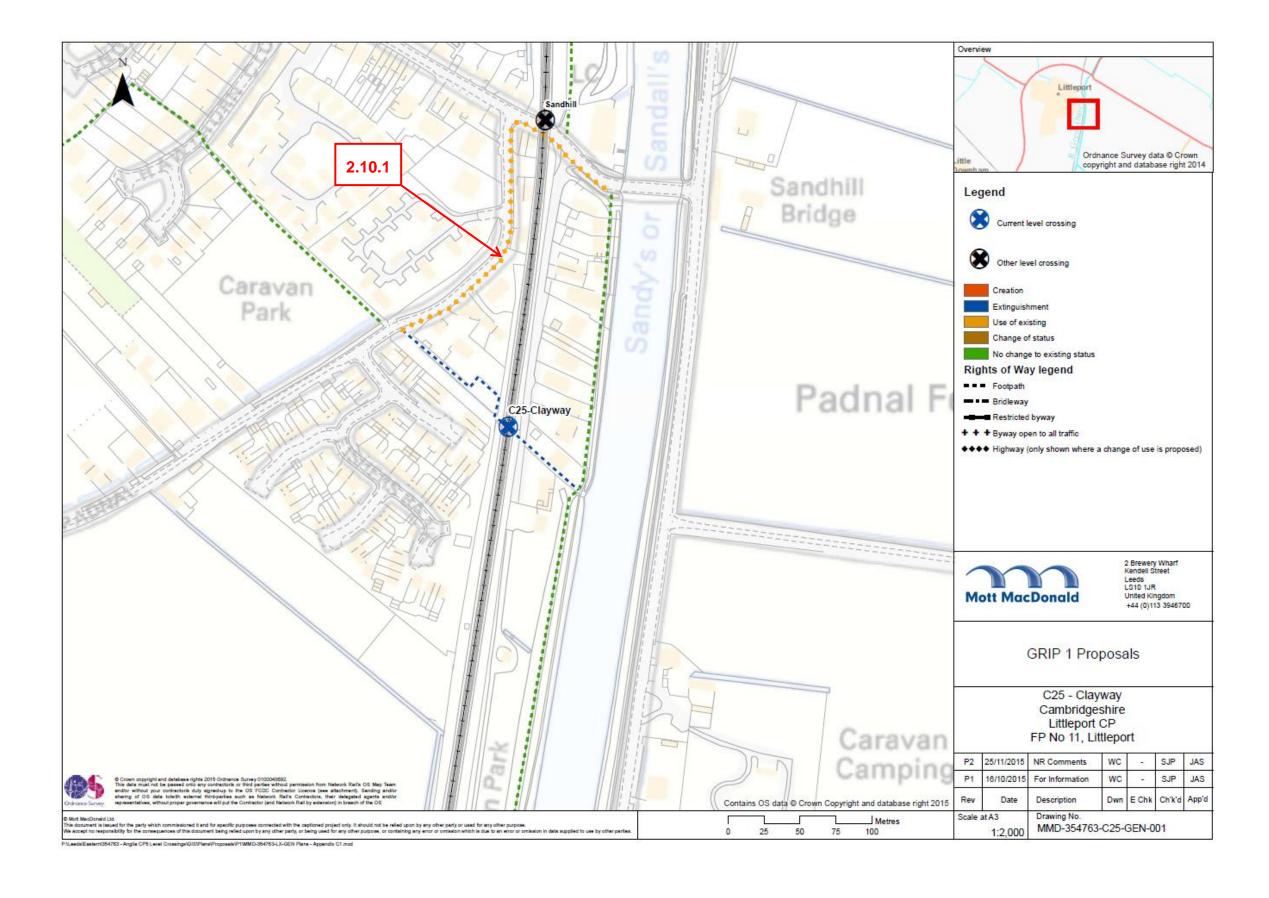




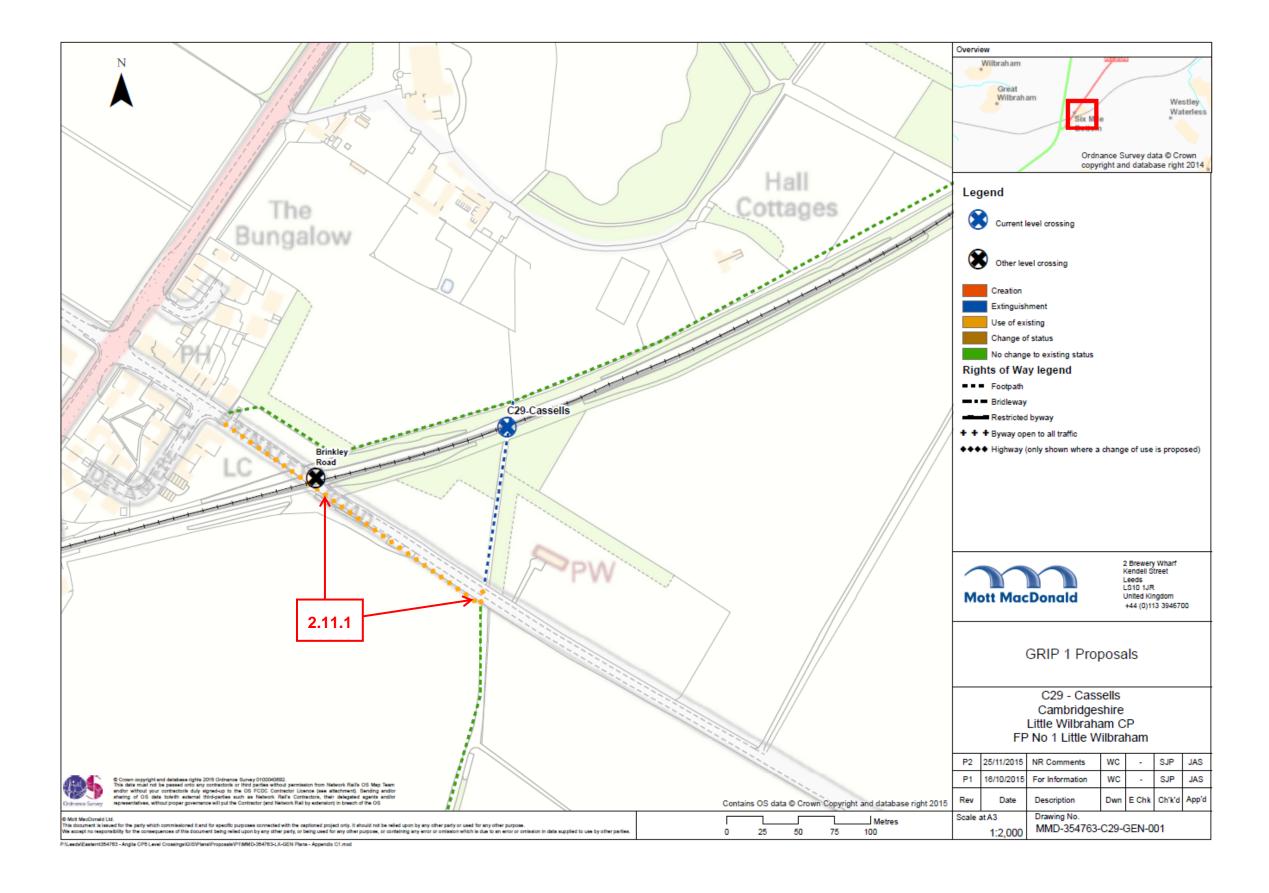












#### **Road Safety Audit Brief**

# General details Highway improvement scheme name and road number Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)

**1.2 Type of scheme** (e.g. new road scheme, junction improvement, traffic signs and road markings improvement, traffic calming scheme, etc.)

The Anglia Level Crossing Reduction Strategy intends to reduce the risk that level crossings pose and have developed proposals to manage the possible closure or change of use of around 130 level crossings in Anglia across Cambridgeshire, Essex and Suffolk. The study intends to close level crossings by the means diverting people to nearby alternatives or creating new public rights of way to nearby infrastructure.

1.1RSA	1	2	1&2	3	Interim	4 (12	4 (36
stage						months)	months)
(tick as	✓						
appropriate)							
1.2 Overs	seeing orgar	isation proj	ect	1.3 De	sign organis	sation details	S
sponsor det	tails						
				Contact:			
Contact:				Jason Sn	nith		
Nicholas Edd	dy			Mott Mac	Donald		
Commercial		nsor		2 Brewer	y Wharf, Ken	dell Street, Le	eeds
Route Enhar				LS10 1JF	•	,	

Network Rail

Nicholas.Eddy@networkrail.co.uk

# 1.4 Police contact details (required for Stage 3 Road Safety Audits only)

Not required at this Stage 1 Road Safety Audit.

#### jason.smith@mottmac.com

Maintaining agent contact details

Cambridgeshire County Council

United Kingdom

1.5

#### 1.6 Road Safety Audit team membership

The RSA team will be made up of a Team Leader and one other member of staff selected according to availability.

Tim Blaney (Audit Team Leader)

Road Safety Auditor, Member of the Society of Road Safety Auditors Certificate of Competence in Accordance with IAN 152/11.

Certificate of Competence in Accordance with IAN 152/11.

Mott MacDonald, 35 Newhall Street, Birmingham, B3 3PU, United Kingdom

#### Andy Coleman

Road Safety Auditor, Member of the Society of Road Safety Auditors

Certificate of Competence in Accordance with IAN 152/11.

Mott MacDonald, 35 Newhall Street, Birmingham, B3 3PU, United Kingdom

Rachael Collins BA (Hons), MSc

Mott MacDonald, 111 Piccadilly, Manchester, M1 2HY

#### 1.7 Terms of reference

This Stage 1 Road Safety Audit (RSA) is to be undertaken in accordance with the DMRB Standard HD 19/15, and the contents of this Road Safety Audit Brief.

## 1. Scheme description / objective (provide a brief description of the scheme and its objectives)

#### **1.1 General** (including scheme purpose and start date for construction)

We have been working to reduce the risk that level crossings pose and have developed proposals to manage the possible closure or change of use of around 130 level crossings in Anglia across Cambridgeshire, Essex and Suffolk.

We believe it's possible to close level crossings:

- with private rights only
- by diverting people to where a nearby alternative exists
- by providing a new public route to a nearby alternative

We will also look to downgrade level crossings to non-motorised users. None of the crossings in this proposal involve closing public A or B roads.

We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.

Closing or modifying level crossings provide the following benefits:

- Improve the safety of level crossing users
- Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy
- Reduce the ongoing operating and maintenance cost of the railway
- Reduce delays to trains, pedestrians and other highway users
- Improve journey time reliability for all railway, highway and other rights of way users

The study involves two rounds of public consultation that will then potentially feed into a public enquiry. Construction start date is set for works to commence 2019.

#### 1.2 Design standards applied to the scheme design

Anglia Level Crossing Reduction Strategy is being promoted through a Transport and Works Act Order and designed in accordance with current industry standards at the time of design.

#### 1.3 Design speed

It is not proposed create or amend any speeds on the roads that from part of the proposals.

#### 1.4 Speed limits

The speed limits at the level crossing closure proposals are as follows:-

- C02 A1123 Newmarket Road National Speed Limit;
- C04 Station Road 30mph;
- C06 Barrington Road 30mph, A10 Cambridge Road 50mph;
- C07 B1368 London Road National Speed Limit:
- C08 B1382 Ely Road 30mph;
- C11 Station Road 30mph;
- C12 Silt Drove National Speed Limit, B1099 Upwell Road 30mph, Green Street 30mph, Morton Avenue 30mph, Asplin Avenue 30mph and Badgeney Road 30mph
- C13 Middle Road National Speed Limit, Whitemoor Road National Speed Limit, Whittlsey Road National Speed Limit;
- C16 Padnal Bank 30mph;
- C17 Branch Bank National Speed Limit;
- C19 Cherrytree Lane National Speed Limit;
- C25 Padnal 30mph, Victoria Street 30mph;

- C26 Poplar Drove National Speed limit;
- C27 Willow Row Drove National Speed Limit;
- C28 Ten Mile Bank National Speed Limit, Littleport Bypass National Speed Limit, Hale Fen National Speed Limit;
- C29 Brinkley Road National Speed Limit and 40mph;
- C30 Westley Bottom Road National Speed Limit;
- C31 Station Road 30mph;
- C33 A1123 Newmarket Road National Speed Limit;
- C34 Unclassified tracks; and
- C35 Unclassified tracks

#### 1.5 Existing traffic flows / queues

No traffic data is available at the moment, however traffic surveys and level crossing census surveys are being commissioned as part of the project and the data will be available at Stage 2.

#### 1.6 Forecast traffic flows

It is not anticipated that these proposals would generate or transfer significant volumes of traffic.

#### 1.7 Non-motorised users (NMU) desire lines

All existing Public Rights of Way (PROW), i.e. footpaths, cycle-ways and bridleways, in the vicinity of the level crossing closure proposals are shown on the attached plans.

The proposal drawings indicate the existing user route and the proposed diversion routes.

#### 1.8 Environmental constraints

The proposals may involve small scale improvement works either at the level crossing or along proposed or existing diversion routes. The assessments of the environmental impacts of these proposals are available separately if required.

#### 2. Description of locality

#### 2.1 General description

Anglia Level Crossing Reduction Strategy project has 33 level crossings within the county of Cambridgeshire. Of these 33 level crossing proposals, a prioritised list of 12 proposals was subject to a Stage 1 Road Safety Audit in November 2015. Since then a further 21 audits have been identified because either new alternative solutions have been identified or the previous option has been amended since the previous audit.

The purpose of this Stage 1 Road Safety Audit is to review the proposals at 21 level crossings which divert users along the public highway including any associated highway works within the county of Cambridgeshire. At this stage, the scheme proposals consist of indicative (high level) diversion routes as the result of closures and no formal highway works have been designed. Therefore this road safety audit is to consider potential road safety problems as a result of the proposed routes and their interaction with the highway.

The level crossing closure proposals are summarised below:-

- C02- Is to close the private level crossing to all users. Users would be diverted to the A1123 Newmarket Road.
- C04- Users would be diverted on a new footpath (routed along on existing private concrete track) which provides a link to Station Road to the north. The diversion will also utilise the existing footway and a bridge over the railway on Station Road.
- C06- Users may cross the railway at the immediately adjacent Foxton level crossing. If they
  wish to go to Barrington Road they would be diverted along Cambridge Road (A10) where a

- new pedestrian refuge will be provided and as well as a new footway along part of Barrington Road. A new CCC cycle scheme has been implemented since the previous site visit.
- C07- Users will be diverted on a new footpath along a field boundary which provides a link to London Road. Pedestrians would be diverted along the existing grassed verges on the north side of London Road.
- C08- Users will be diverted along a new footpath between Pitts level crossing and Ely Road. The diversion route will then make use of existing footways along Ely Road.
- C11- Users would be diverted to parallel alternative routes, crossing the railway at Third Drove level crossing to the south or the underpass on Straight Furlong to the north. The byway open to all traffic to the north of the railway would be downgraded to footpath.
- C12- A new option is to divert all users on alternative routes via the local road.
- C13- Public motorised users would be diverted on alternative routes via the local highway
  network. Private crossing rights for motorised users would be granted at the level crossing for
  adjacent land owners. Public rights for non-motorised users would be retained at the level
  crossing.
- C16- Users would be diverted via a new footpath under the adjacent underbridge. Steps or ramps would be provided on the existing embankments.
- C17- Users would be diverted via a new footpath under the adjacent underbridge. Pedestrians would use the existing grass verges when walking under the bridge and steps or ramps would be provided on the embankments.
- C19- From the east side of the railway users would be diverted along an existing public footpath to Cherrytree Lane and would use Horse Fen level crossing to cross the railway. Users would then travel south on an existing footpath to the west of the railway. A circular walking route would be created east of the railway between footpath number 105 and 106.
- C25- Users would be diverted to Sandhill level crossing via an existing and new public footway.
- C26- Users would make use of existing alternatives such as Ten Mile Bank, the A10 and Horsley Hale.
- C27- all motorised users are diverted via the highway from Willow Road level crossing to Littleport Bypass level crossing, except registered private users who will continue to be able to use Willow Road.
- C28- The level crossing would be downgraded to an occupation type crossing with registered users.
- C29- Users would be diverted via the level crossing on Brinkley Road which involves the creation of a footway on the southwest side of Brinkley Road.
- C30- Non-registered vehicle users would be diverted to the A1304 London Road, Brinkley Road and Balsham Lane via the road level crossing at Six Mile Bottom. Non-motorised users would continue to use the crossing;
- C31- Users requiring access to the east platform will be diverted to the existing underpass,
  via a new ramped access, off the low level Station Road, 100m south of the level crossing. It
  is proposed to close the underpass to all vehicular or motorised traffic and use it as the
  means of getting between the platforms. Disabled parking will be provided at the bottom of
  the proposed ramp.
- C33- Vehicle users would be diverted to Bannolds level crossing to the south or the A1123 Newmarket Road.
- C34- Users would be diverted to Bannolds level crossing to the south; and
- C35- Users would be diverted to Bannolds level crossing to the north.

#### 2.2 Relevant factors which may affect road safety

The following factors have been identified that may affect road safety:

- Non-motorised users are being diverted to alternative level crossings or grade separated crossings where they may be exposed to live traffic by:-
  - walking along existing footways:
  - o walking in existing grassed verges; or

- walking in the carriageway on rural roads.
- The interface of NMU's and agricultural vehicles on the PROWs; and
- The access points off the public highway for occasional use by large agricultural vehicles.
- **3. Personal injury collision analysis** (provide personal injury collision data covering both the extent of the scheme and the adjoining sections of highway)
- **3.1 Summary of personal injury collision data** (a minimum of the most recent 36 months available)

No personal injury collision data is available at the moment, however the information will be available at Stage 2.

#### 3.2 Personal injury collision details

See above

**4. Departures and relaxations from standards** (including details of their status – approved or pending) plus any Design Strategy Records produced for improvements to existing motorways and trunk roads.

#### 4.1 General

No departures from standards.

5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports

#### 5.1 Stage 1

Stage 1 Road Safety were undertaken in November.

#### 5.2 Exception Reports

Not applicable – no exception reports were prepared following the Stage 1 Audits.

6. Strategic decisions – items outside the scope of this RSA

#### 6.1 General

N/A

#### 7. List of included documents and drawings

#### 7.1 Documents

GRIP 1 Feasibility reports available on request.

#### 7.2 Drawings

The following figures, plans, information and drawings are provided:

- 21 Scheme Proposal Plans
- 8. Checklist (tick all that are included and provide reasons for those that are not included)

8.1 Road Safety Audit	✓	8.2 Site location	✓
Brief including	(Section 1.1)	plan	
description of scheme	,		

objectives			
8.3 Scale layout plans	<b>✓</b>	8.4 Construction / typical details	X The scheme is not that developed
8.5 Previous Road Safety Audit Reports	✓	8.6 Previous Road Safety Audit Response Reports	x None prepared
8.7 Road Safety Audit Exception Reports	x Not applicable	8.8 Departures and relaxation from standards	X None (section 4)
8.9 Traffic signal staging	x Not applicable	8.10 Personal injury collision data	x Not available at the moment
8.11 Personal injury collision plot	x Not available at the moment	8.12 Traffic counts	x Not available at the moment
8.13 Speed surveys	x Not available at the moment	8.14 NMU desire lines and volumes	1
8.15 NMU Context and Audit Report	x None prepared	8.16 Items outside the scope of the RSA/ strategic decisions	(Section 6)
8.17 Other factors that may impact on road safety	(Section 2.2)	8.18 Design speeds/speed limits	<ul> <li>X Design Speeds not applicable</li> <li>✓ Speed limits (Section 1.4)</li> </ul>
8.19 Design standards used	(Section 1.2)	8.20 Adjacent land uses	X Multiple sites with various land uses but mostly agricultural fields

# **Road Safety Audit Brief approved by:** (The Project Sponsor)

Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail

Nicholas.Eddy@networkrail.co.uk

## **Summary CV**

#### **Tim Blaney**

#### **Profile**

A Road Safety Engineer with a background in development control and road safety engineering work.

Has eleven years' experience in all aspects of road safety engineering and has worked in the UK and internationally. Undertaken 87 audits in the last 12 months as either an Audit Team Leader or Member and approximately 670 in total on a variety of schemes, including junction improvements, major maintenance, airport forecourts and safety improvements.

#### **Experience and skills**

#### Mott MacDonald, Principal Road Safety Engineer – Integrated Transport Division (2004 – present)

Currently team leader of the Road Safety Teams in the Manchester and Birmingham offices.

HD19/15 and SQA-0170 qualified Road Safety Audit Team Leader.

#### **Selected projects**

#### Nottingham Express Transit Phase Two

Responsible for overseeing the completion of Stage 2 and Stage 3 Road Safety Audits for the Beeston and Clifton extensions to the Nottingham tram system.

#### A63 Castle Street, Hull

Team Leader for a Stage 1 Safety Audit on a scheme to introduce a grade separated junction on a section of the A63 as it passes through Hull.

## OVT Oost Safety Analysis, Utrecht, Netherlands

As part of a multi-national team of experts, provided road safety input into a safety assessment of proposals for a new bus / tram interchange.

#### Crossrail, Old Oak Common

Completed a Stage 1 Road Safety Audit on new access arrangements for Old Oak Common maintenance depot as part of the Crossrail scheme.

#### Midland Metro Tram, City Centre, Centenary Square and Eastside Extensions

RSA Team Leader responsible for the organisation and completion of Stage 1

and Stage 2 Road Safety Audits for various extensions to the Midland Metro.

#### Victoria Station Upgrade

Responsible for the completion of Road Safety Reviews and Audits on traffic management arrangements in the vicinity of London Victoria Station during the completion of construction work.

#### **NMU Related Road Safety Audits**

Have experience of completing Non-Motorised User audits as well as road safety audits on a variety of NMU related schemes including:

- Sovereign Harbour Cycle Routes
- Bedlinog Square Shared Space
- East London Line Cycleway
- Bryn Glas Escape Routes
- Hunts Grove NMU Audit
- ECML Level Crossing Closures

#### **ECML** and East Anglia Level Crossings

Undertaken numerous safety audits and NMU audits for the closure of level crossings on a number of railway lines in East Anglia and on the East Coast.

#### **Tottenham Hale Bus Station**

RSA Team Leader for changes to the road layout to Tottenham Hale Gyratory and the provision of a new bus interchange.

#### Medway Dynamic Bus Station, Chatham

Responsible for providing road safety advice on the design of a new dynamic bus station in Chatham.

## Bath and North East Somerset Road Safety Audits

Undertaken numerous safety audits of varying stages for the local authority. These have ranged from junction improvement schemes to traffic calming. A number of these have been associated with bus route improvement including bus gates and park and ride schemes.

#### **Great Western Electrification**

Responsible for undertaking road safety audits for numerous road bridges along the Great Western Main Line that require modification for the electrification of the route.



**Position**Principal Road Safety Engineer

Year of birth 1983

**Nationality** British

#### Language

English - mother tongue

#### **Qualifications**

BSc (Hons) Human and Physical Geography

Road Safety Engineering Course (CRASH@Aston)

Highways Agency Road Safety Audit Certificate of Competence

#### **Profession membership**

Chartered Member of the Institute of Logistics and Transport

Member of the Chartered Institution of Highways and Transportation

Member of the Society of Road Safety Auditors

CSCS Card holder – Yellow (Site visitor - Registration No. 04989485)

Highways Agency Motorway Pass (N3Q7GP4TIY7CZ, Epiry 10-Apr-19)

#### **Key skills**

HD 19/15 and SQA-0170 qualified Road Safety Audit Team Leader.

Proficient in the completion of Accident Investigation Studies and safety reviews.



#### **Supplementary Information for HD19**

The following details provide evidence that the above Road Safety Audit Team member meets the miniumum recommended requirements HD19/15 for the purposes of undertaking the Road Safety Audits upon the Highways England Motorway and Trunk Road network in the UK.

1. Training - Recognised Structured training in Road Safety Engeineering or Collision Investigation

Profile	Duration (Days)	Date (Days)	Organiser (Days)
CRASH@Aston	10	Jun-2006	Aston University
Non-motorised User Audit	2	Dec-2008	Aston University
Certificate of Competency in Road Safety Audit (Highways Agency approved)	2	May-2011	TMS Consultancy

Total 14 Days

Note: Formal Training does not include seminars, conferences, exhibitions and the like.

Experience - Example of Five Road Safety Audits undertaken in the last 24 months as either Team Leader, Team Member or Observer.

Scheme Name Client	Date	Audit Team Role	Audit Stage
Capacity improvements at signallised junction Windle Island, St Helens - St Helens MBC	Nov-2014	Leader	1/2
A590 Quebec Street Signalisation – Highways England	Nov-2015	Leader	2
Dalton Gate Junction Signalisation – Cumbria County Council	Jan-2016	Member	2
Motorway to Motorway Ramp Metering M6 to M62 – Highways England	Jan-2016	Leader	Interim 2
Garrison Roundabout, hamburger roundabout upgrade – Highways England	Mar-2016	Member	Stage 2

#### Undertaken 182 RSAs in past 24 months (87 in past 12 months)

Note: 'Full Road Safety Audit Record' of all audits undertaken available upon request.

3. Continued Professional Development (CPD) record for last 12 months, in the field of Road safety Engineering, Collision Investigation or Safety Audit.

Profile	Duration (Days)	Date	Organiser
PTRC Evening Lectures - Road Safety Audits	1	09/12/2015	PTRC
Safe Way to Work	0.25	02/06/2016	Mott MacDonald
Personal Reading - SoRSA Conference 2016 Presentations	0.25	22/06/2016	CIHT
Safety Wheel Training	0.5	27/06/2016	Mott MacDonald

Total 2.0



#### **Andrew J Coleman**

#### **Profile**

Has 10 years' experience in Road Safety Engineering and 9 years' experience in the field of Collision Investigation.

A qualified HD19/15 Road Safety Audit Team Leader with a background in road safety engineering work. Have completed over 50 audits in the last 12 months as either an Audit Team Leader or Member and approximately 1500 in total on a variety of schemes in the UK, Europe and the Middle East. A Member of the Society of Road Safety Auditors and possesses the Highways England approved Certificate of Competency for Road Safety Auditors.

Has experience in carrying out road safety audits, cycle audits, NMU audits, Mobility audits, road safety assessments, site safety assessments, junction assessments and report writing. Also have experience in the use of various software packages including KeyACCIDENT, ARCADY, PICADY, LINSIG and Microsoft Office.

#### **Experience and skills**

Mott MacDonald (2014 – present) Integrated Transport Division

TMS Consultancy (2006 – 2014) Integrated Transport Division

#### **Selected projects**

#### **Road Safety Audits**

Undertaking Road Safety Audits as Audit Team Leader or Member on a variety of schemes in the UK, Europe and the Middle East, including motorway schemes, motorway service areas, dual carriageways, single carriageway bypasses, road realignment, major signal junctions, roundabout development access roads, safer routes to school schemes and cycle, mobility and NMU audits.

## **Local Network Management Schemes, Area 10**

Undertook an analysis of accidents for selected schemes and reported recommendations for engineering measures to address and improve accident performance. A full financial assessment measuring the potential improvements with BCR analysis was also carried out for each scheme.

#### Route Safety Reports, Area 10

Review of the road safety situation on numerous routes in Lancashire comparing the latest accident data with historical accident data to determine the route's performance. A detailed analysis of road safety issues identified from the last 5 years data was completed with a summary of potential schemes and areas for further investigation. The effectiveness of previously completed works/ initiatives along the route was also monitored.

#### M40 Accident Investigation

Accident investigation of the M40 between junctions 5 and 7 in Buckinghamshire, based on accident data highlighted by the annual road safety monitoring report. Provided recommendations for safety improvements.

#### A21 Tonbridge to Pembury, NMU Audit

Team Leader for the detailed design stage NMU Audit of the A21 dualling scheme between Tonbridge and Pembury in Kent. The 3.5km parallel NMU route is predominantly off line and features grade separated crossings and a crossing of an at-grade roundabout junction.

## West Midlands Authorities SLS Traffic Accidents

Responsible for producing the Annual Accident Data Report to the West Midlands Authorities making comparisons to national data and presenting areas for improvements.

#### **Tram Scheme Road Safety Audits**

Road Safety Auditor of several tram major schemes including Midland Metro, Nottingham Express Transit and Dublin Luas.

## Contra Flow Cycle Facilities, Camden, London

Road Safety Assessor of proposals to permit cycle use of a contra flow cycle lane along the A40 High Holborn in the London Borough of Camden. Concern was raised regarding high volumes of illegal cycle use within a very busy and narrow contra flow bus lane with recommendations to improve safety presented.



**Position**Road Safety Engineer

Year of birth 1983

**Nationality** British

#### Language

English – mother tongue Dutch - moderate

#### Qualifications

BA (hons) 2005

RoSPA AIP Certificate 2007

Certificate of Competency in Road Safety Audit (Compliant to EU Directive 2008/96/EC, HE approved)

CSCS Card holder – Yellow (Site visitor - Registration No. 03141299)

Highways England Motorway Pass (Q86DEIRNPBFM2, Epiry 24-Apr-19)

#### **Profession membership**

Member of Chartered Institution of Highways and Transportation (MCIHT)

Member of Society of Road Safety Auditors (MSoRSA)

#### **Key skills**

Collision Investigation Road Safety Audit Road Safety Scheme Design



#### **Supplementary Information for HD19**

The following details provide evidence that the above Road Safety Audit Team member meets the miniumum recommended requirements of HD19/15 for the purposes of undertaking the Road Safety Audits upon the Highways England Motorway and Trunk Road network in the UK.

1. Training - Recognised Structured training in Road Safety Engeineering or Collision Investigation

Profile	Duration (Days)	Date (Days)	Organiser (Days)
RoSPA Accident Investigation & Prevention Certificate	10	Aug-2007	RoSPA (TMS Consultancy)
Introduction to Road Safety Audit	3	Dec-2007	TMS Consultancy
TD 19/06 Road Restraint Systems	2	Oct-2008	Aston University
Advanced Road Safety Audit	2	Feb -2011	TMS Consultancy
Non-motorised User Audit	2	Apr-2012	TMS Consultancy
Certificate of Competency in Road Safety Audit (Highways England approved)	2	Oct-2012	TMS Consultancy
T	ntal 21	Dave	

Note: Formal Training does not include seminars, conferences, exhibitions and the like.

#### Experience - Sample of Road Safety Audits undertaken in the last 24 months as either Team Leader or Team Meber .

Scheme Name Client	Date	Audit Team Role	Audit Stage
Modified priority cross road junction A64 Barton Hill, Yorkshire – Highways England	September 2015	Leader	2
Proposed link road to motorway junction M58 Pemberton Link Road, Wigan – Wigan Council	October 2015	Leader	3
Motorway to motorway metering M6 to M62 – Highways England	January 2016	Member	3
New dual carriageway signalised junctions  Aberdeen Exhibition & Conference Centre - Henry Boot Developments	May 2016	Leader	2
Redesign of signal junctions with cycle lanes & pedestrian crossings  Tameside Interchange – Ashton MBC	May 2016	Member	2

Note: Please request separate 'Full Road Safety Audit Record' for details of all audits undertaken in last 12 months.

#### Continued Professional Development (CPD) record for last 12 months, in the field of Road safety Engineering, Collision Investigation or Safety Audit.

Profile		Duration (Days)	Date (Days)	Organiser (Days)
SoRSA Conference, Birmingham		2	20-June-2016	CIHT
	Total	2	Days	



## **Road Safety Audit CV**



Name	Rachael Collins	
Audit Team Position	Team Member	
Contact Email address	rachael.collins@mottmac.com	

Continued Professional Development Record		
CPD / Training Title (last 12 months)	Date	Duration
Introduction to Road Safety and Road Safety Auditing – Course tutor assisting with the provision of a 1 day introduction to road safety engineering.	May-15	1 Day
SoRSA Conference – variety of presentations relating to road safety engineering and auditing.	Jun-15	1 Day
Road Safety Audit – Highways England Approved CoC	Apr-16	2 Day

Qualifications		
Qualification Name & Awarding Body	Post Nominal	Date
Highways Agency Motorway Pass (X9SNZN7TEUQBY, Expiry 17-Dec-19)		2014
Construction Skills Certification Scheme (CSCS): Yellow (Site visitor -		2014
Registration No. 05180437)	437)	
MSc European Traffic & Transportation, The Nottingham Trent University	MSc	2002
RoSPA AIP (Accident Investigation & Prevention)		1999
BSc Hons Geography, University of Staffordshire	BSc (Hons)	1998

Record of Recent Safety Audits (some examples from the last 12	months)	
Scheme / Details	Date	Role
A49, Ludlow, David Tucker Associates	June 2015	Member
Stage 1 Safety Audit on a scheme to introduce a site access off the A	49 In Ludlow.	
Colwyn Bay Promenade Phase 2 – Conwy County Borough	June 2015/Oct	Member
	2015	
Stage 1 & Stage 2 Road Safety Audits of the proposed improvements t	o the promenade in Col	wyn Bay. This is
an extension of improvements already made to a section of the prome	enade that have been pi	reviously
completed and audited. The scheme includes highway realignment, the provision of improved parking,		
pedestrian crossing facilities and a shared-space promenade for cyclis	ts and pedestrians.	
Chandag Road, Bath – Bath and North East Somerset	August 2015	Member
A Stage 2 Road Safety of road safety improvements including the pro	ovision of a Zebra cross	sing outside
Wellsway School, the installation and upgrade of uncontrolled crossi	ngs and the provision o	of In/OUT
signing at Chandag Road Shops.		
Daltongate, Ulverston – Cumbria County Council	Sept 2015	Member
A series of Stage 1 Road Safety Audit on proposed junction modification	on works. The scheme in	nvolves the
addition of a new arm to an existing junction and its signalisation to include pedestrian crossing facilities. The		
scheme also includes localised road widening and kerb re-alignments.		
Mill Street, Llangollen	November 2015	Member
A Stage 3 Road Safety Audit for a new medical centre accessed off Mil	Street. The scheme inc	ludes a new
access, PUFFIN crossing and footway improvements, minor highway		
Stage 1/2 was previously completed in December 2014.		-

#### Career Summary (including experience and key dates)

Rachael is Senior Road Safety Engineer based within Mott MacDonalds Northern road safety team. She is a Road Safety Auditor with over 10 years experience in road safety engineering and in the field of collision investigation, having completed over 350 Road Safety audits over her career. Rachael is a qualified HD 19/15 Road Safety Audit Team Member.

Rachael has a vast range of experience in transport engineering and planning but specialises in accident investigation & prevention (AIP) and undertaking of road safety audits.

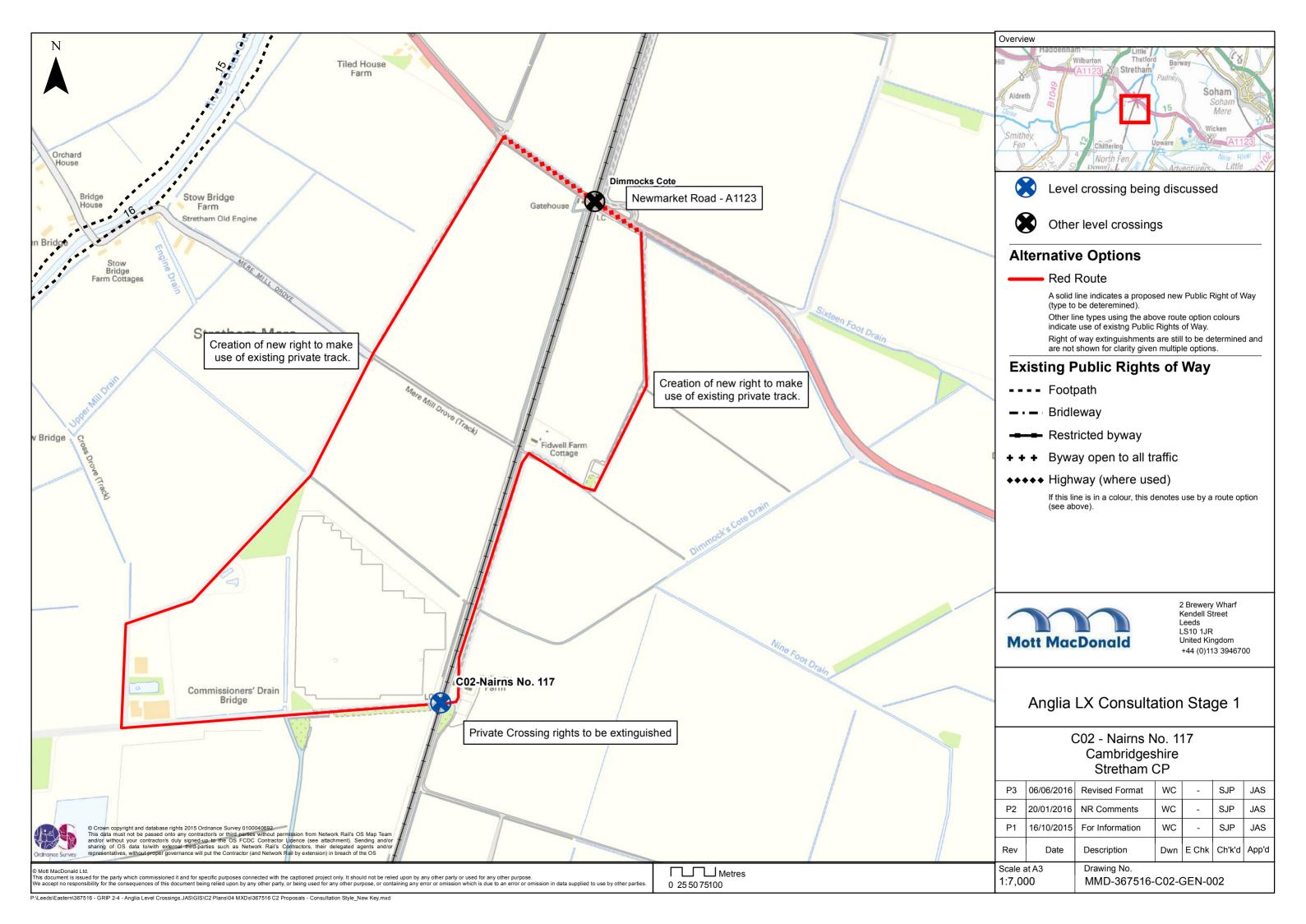
Rachael began her career at TMS Consultancy in 1998 where she gained a wide experience in areas including Junction and Transport Assessments, Safer Routes to Schools, site surveys, parking assessments, Local Safety schemes, Accident Investigation and undertook over 300 Road Safety Audits at various stages and of various scheme sizes. During her time at TMS Rachael attended the RoPSA 10 AIP Course.

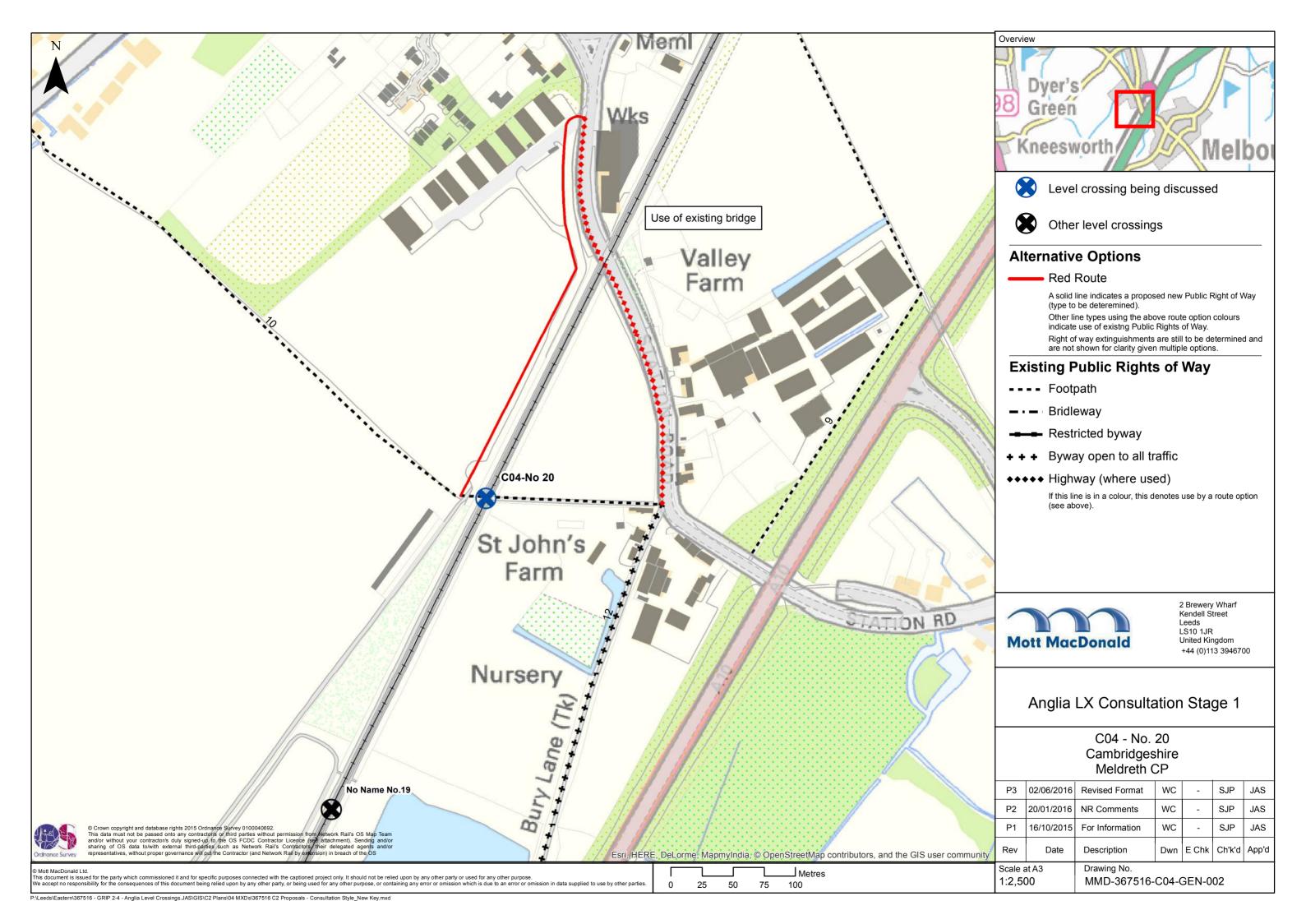
In 2003 Rachael joined Mott MacDonalds Transport Planning Team carrying out a combination of road safety engineering and AIP work and Junction and Transport Assessments. During this time Rachael was responsible for the Altrincham Road Safety Team and continued to undertake Road Safety Audits as Team Leader. During this time she also undertook a secondment to Stockport Council working on numerous Local Safety Schemes.

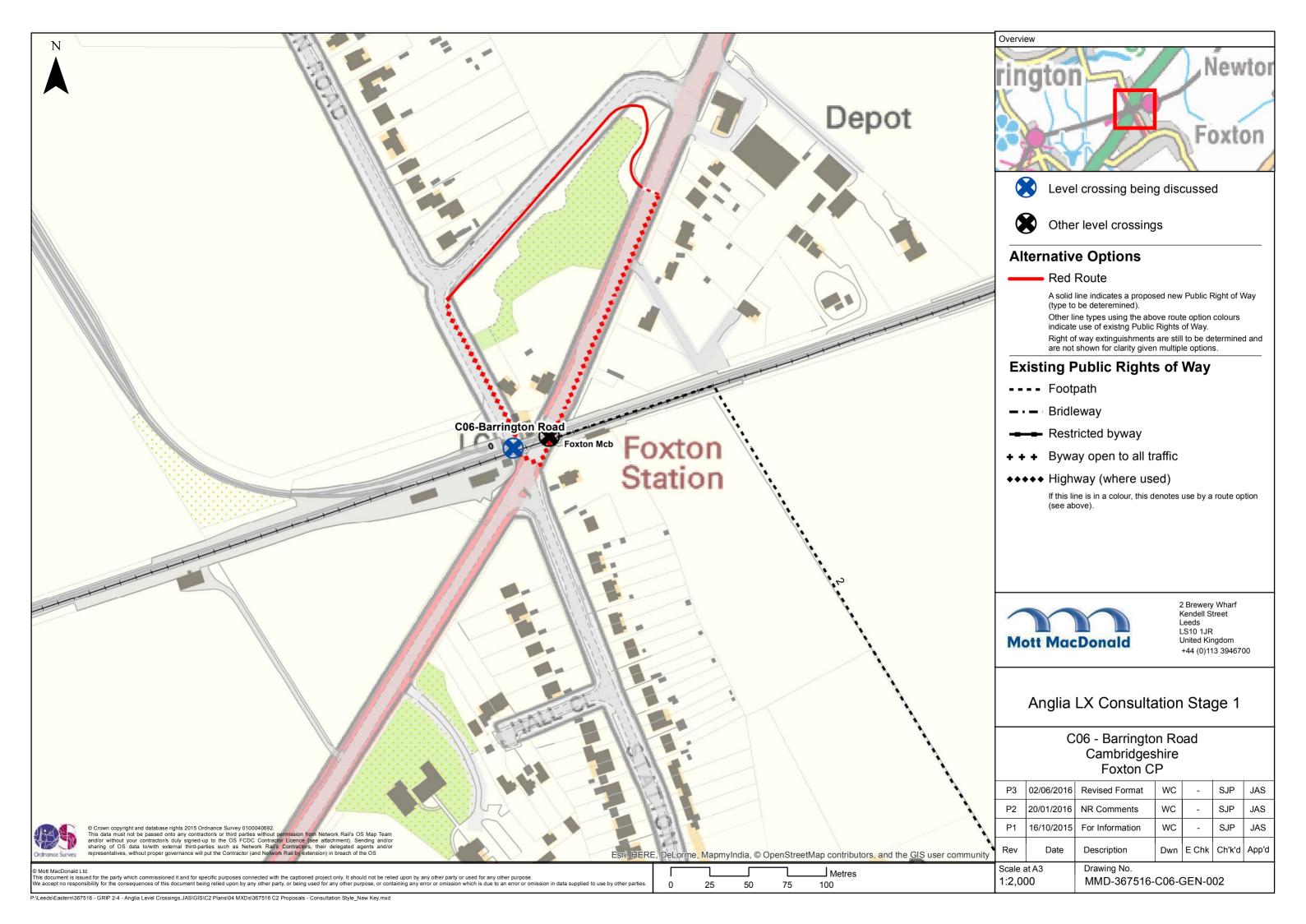
In 2009 Rachael took a career break but re-joined Mott MacDonald in 2014 and is currently a Senior Road Safety Engineer within the Northern Road Safety Team. She is a qualified Team Member having completed 30 audits in the last 12 months at stages 1 to 4 on varying size schemes throughout the UK, many of which include non-motorised user (NMU) elements. Experience also includes the undertaking of NMU audits. Since returning to Mott MacDoanld she has worked on numerous Area 10 Projects including the completion of Route Safety Reports and the feasibility of cycling schemes. Rachael continues to build upon her AIP experience to identify road safety issues and subsequently the generation of mitigation measures. She is proficient in the use of KeyACCIDENT.

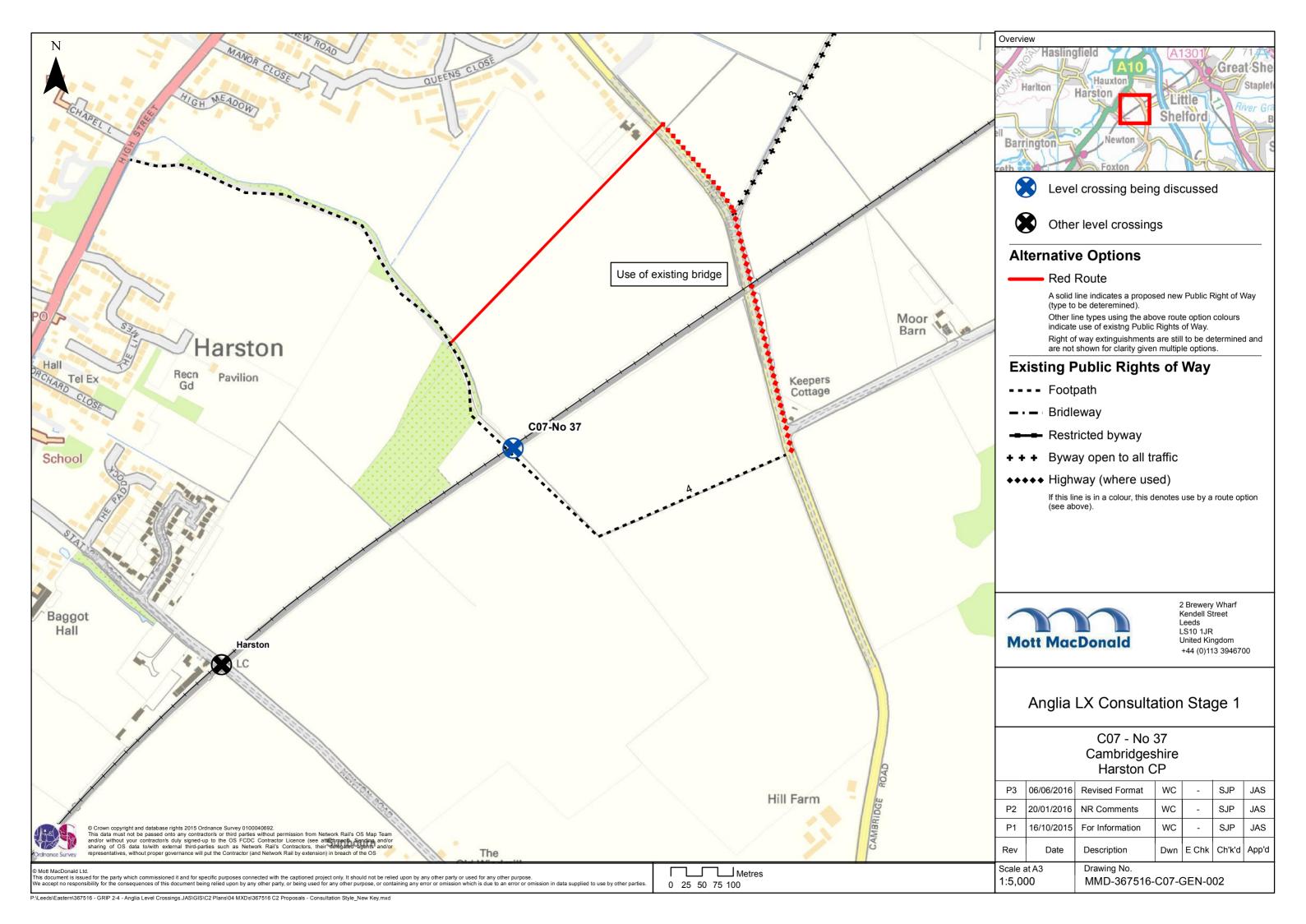
**Statement of Fact:** I confirm that the information given above is a true and accurate reflection of my experience and training and that I meet the requirements as defined in HD 19/15.

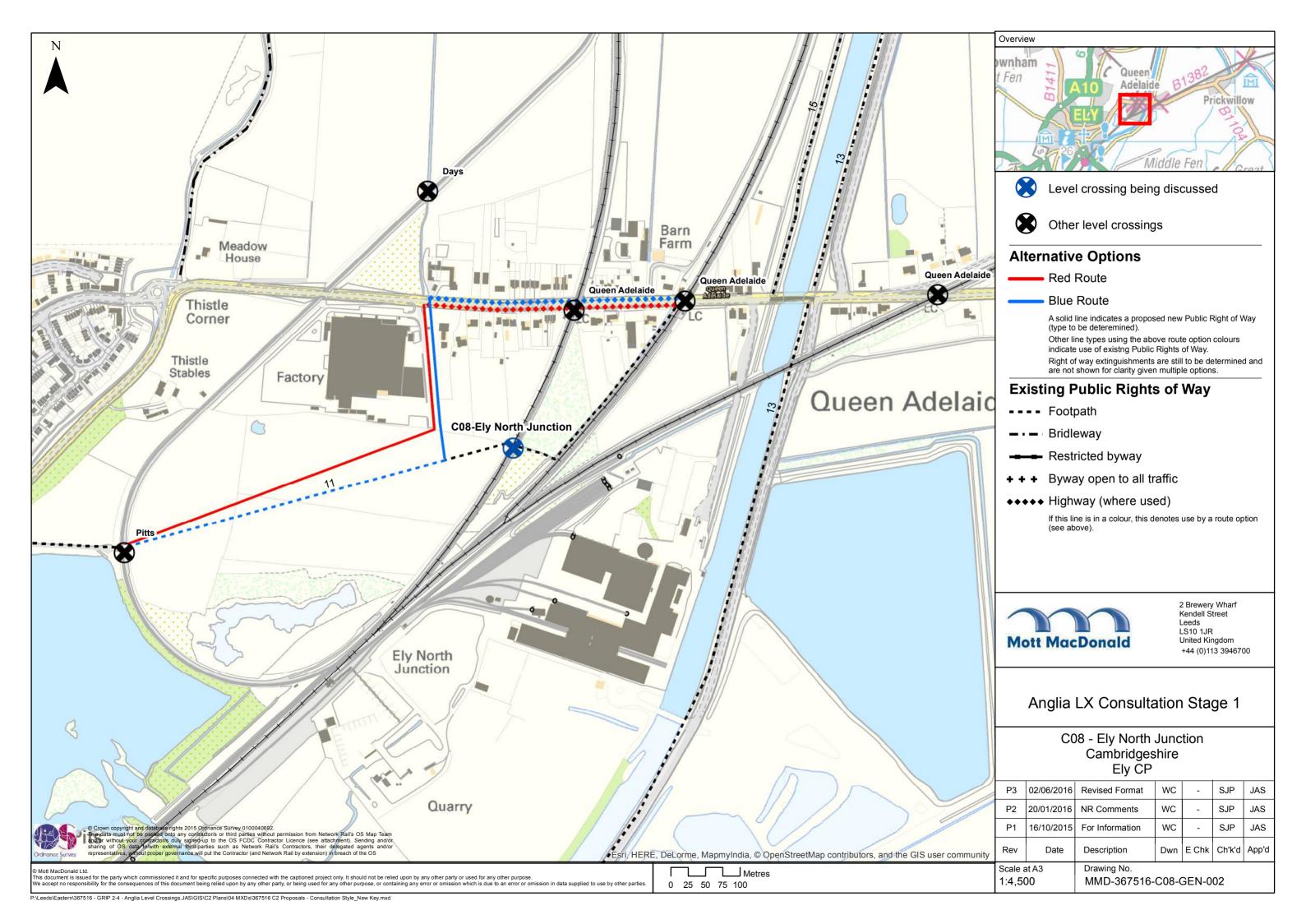
Name:	Rachael Collins	Signature:	Lams.

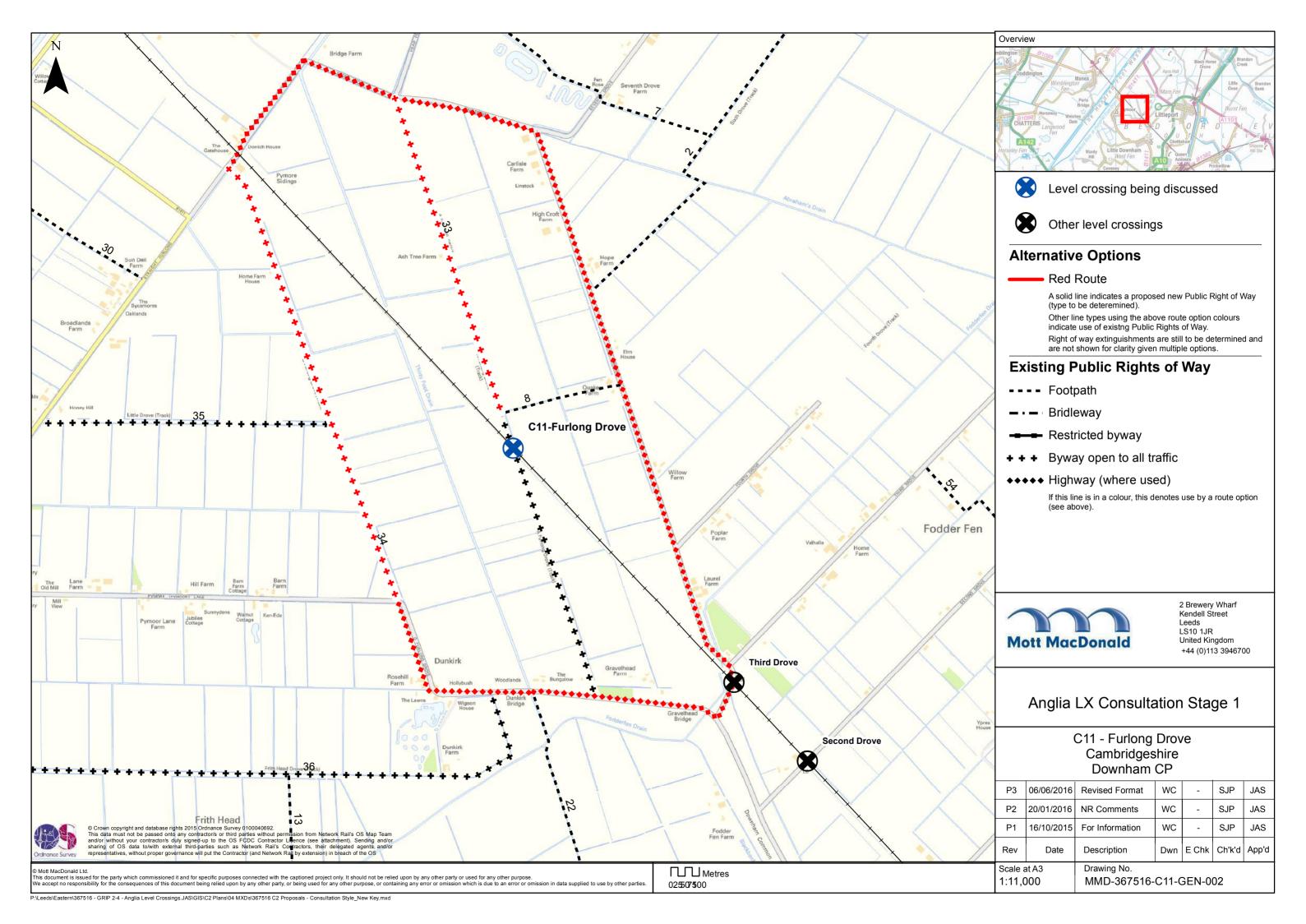


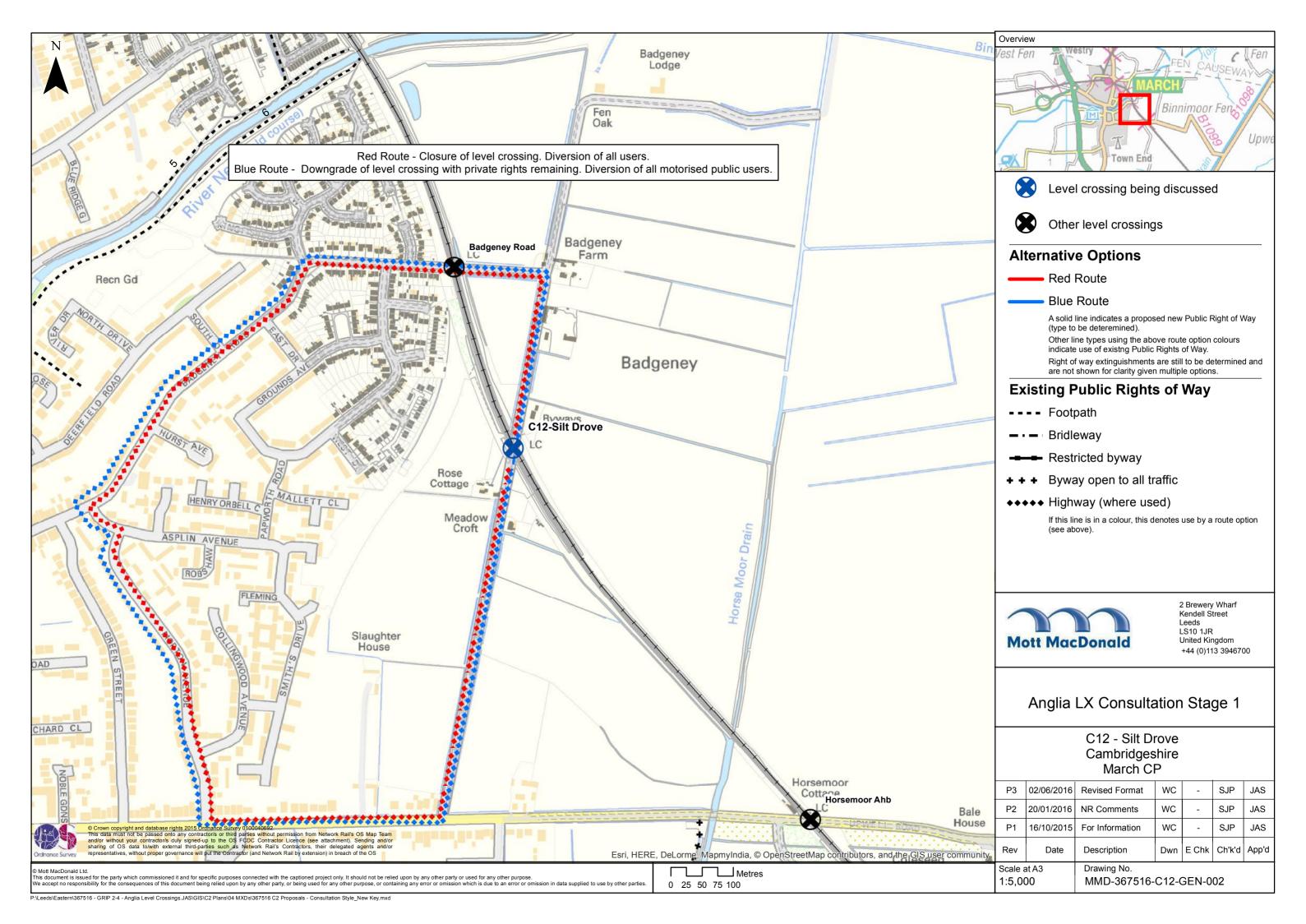


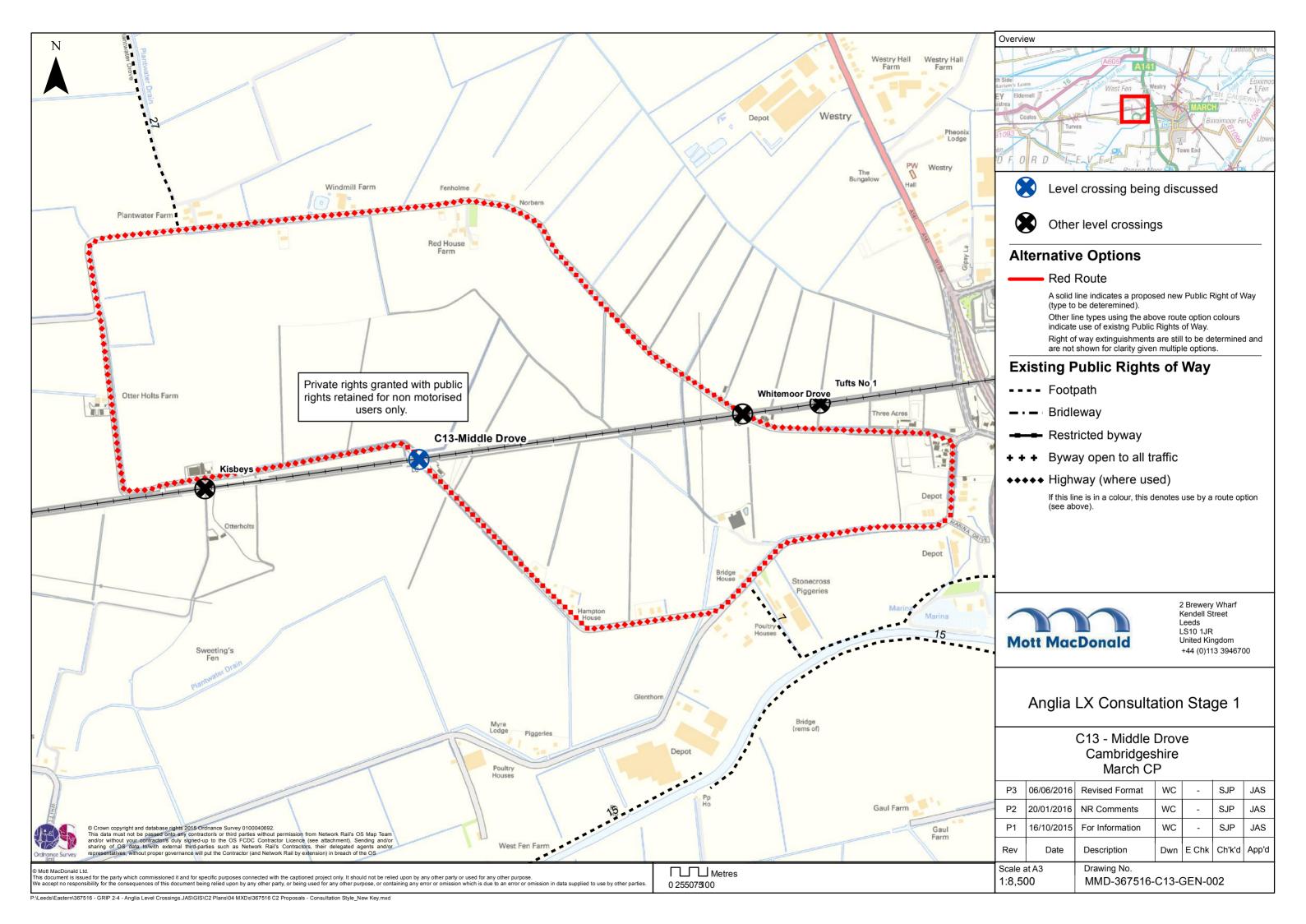


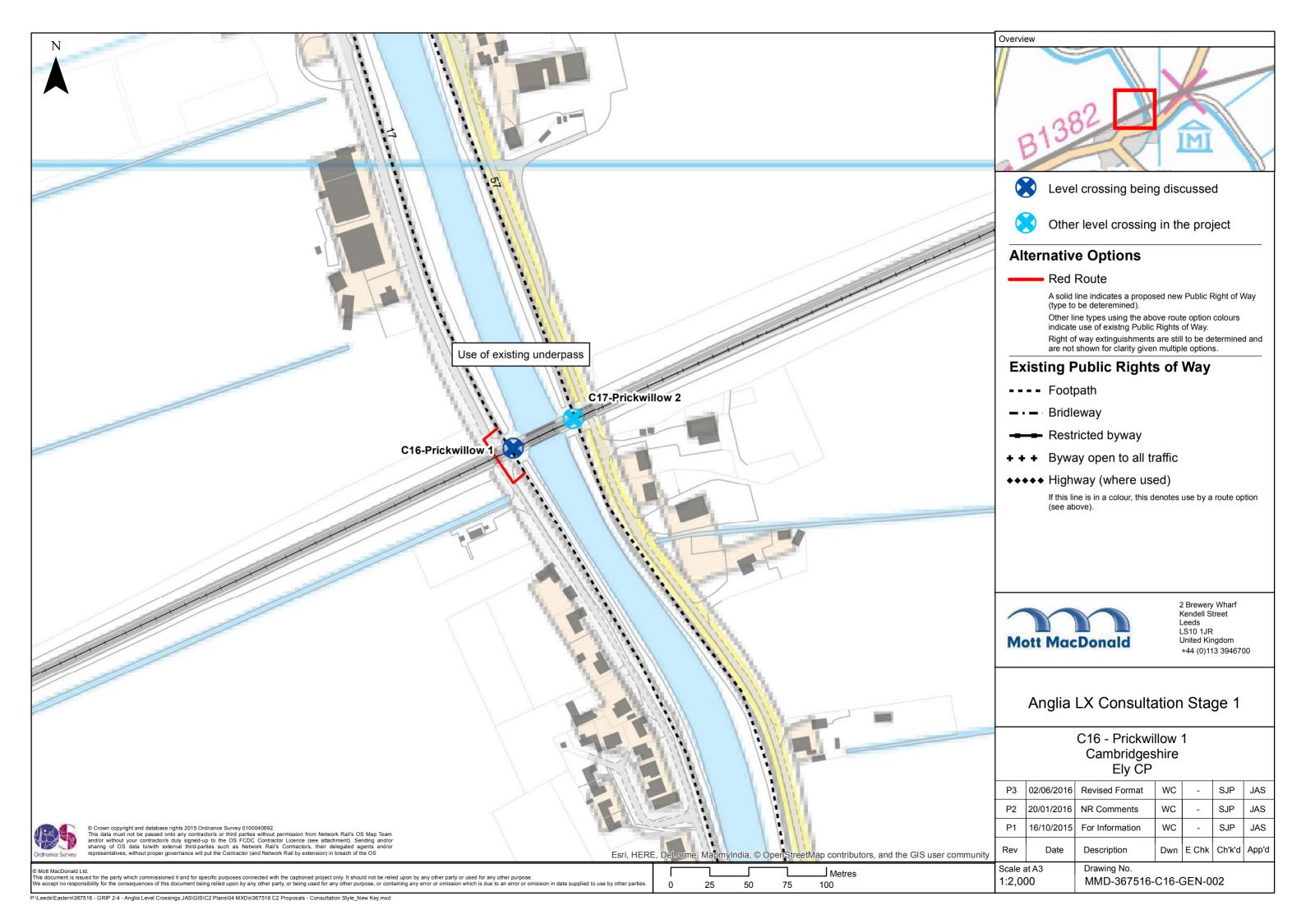


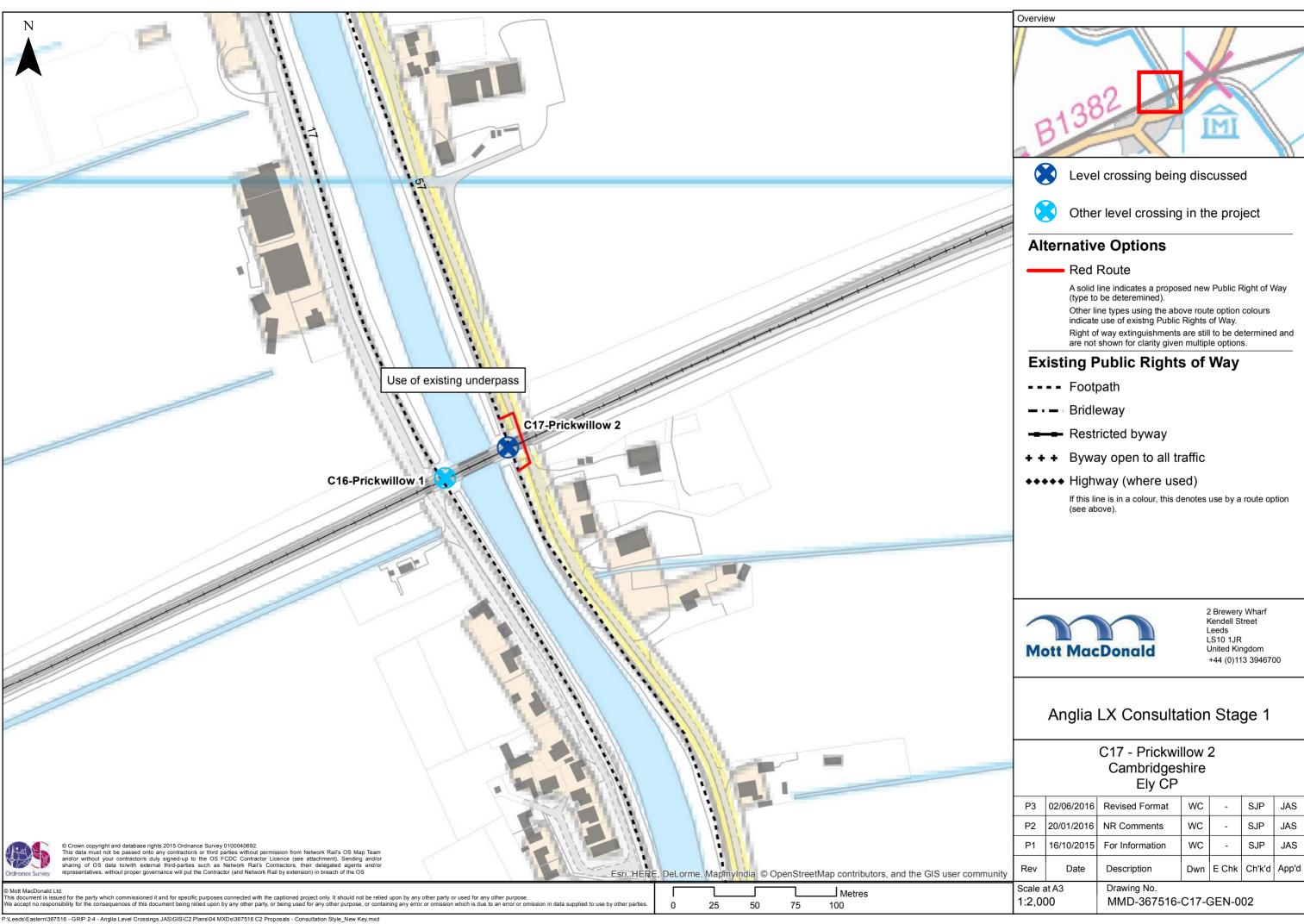












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SJP

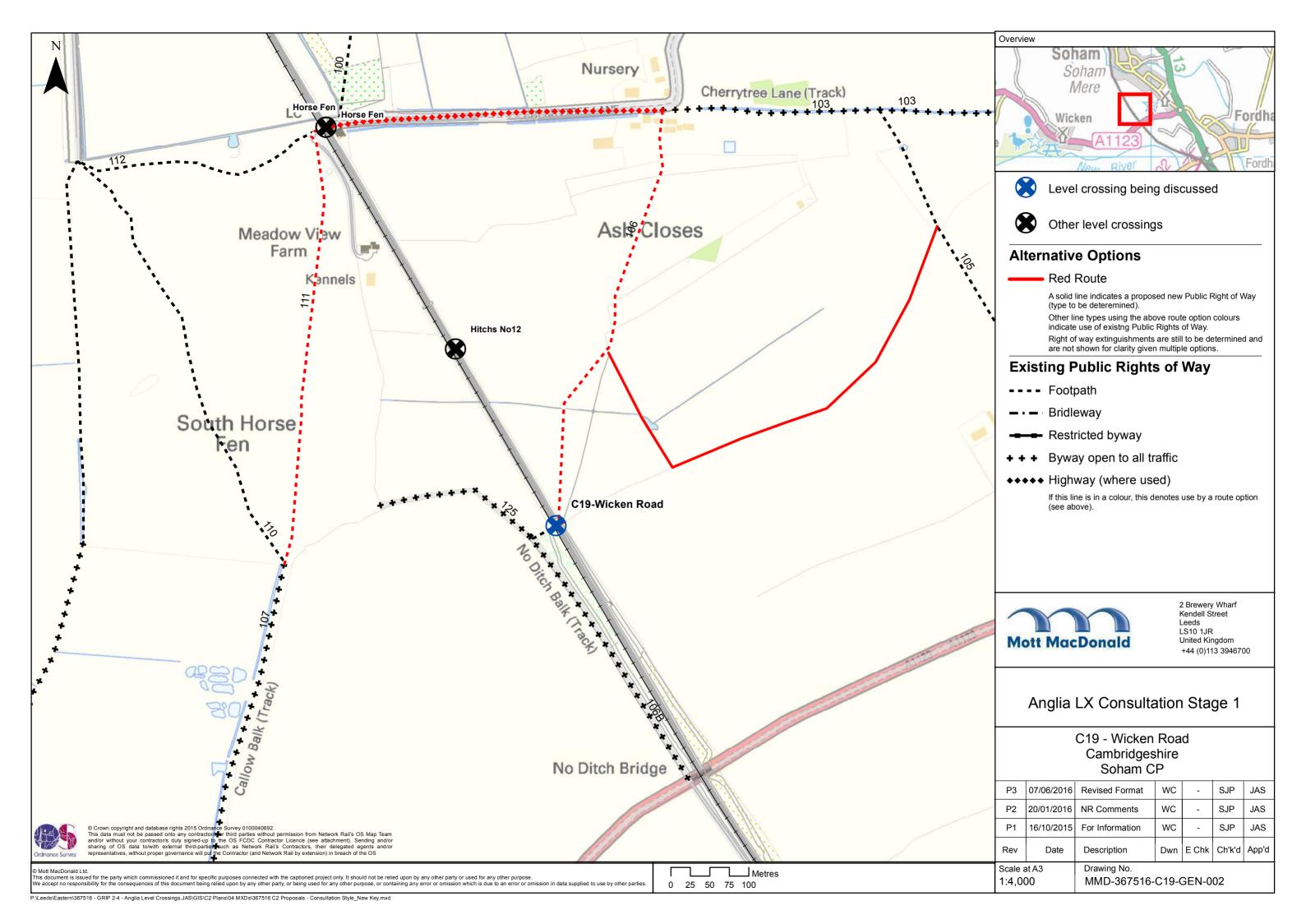
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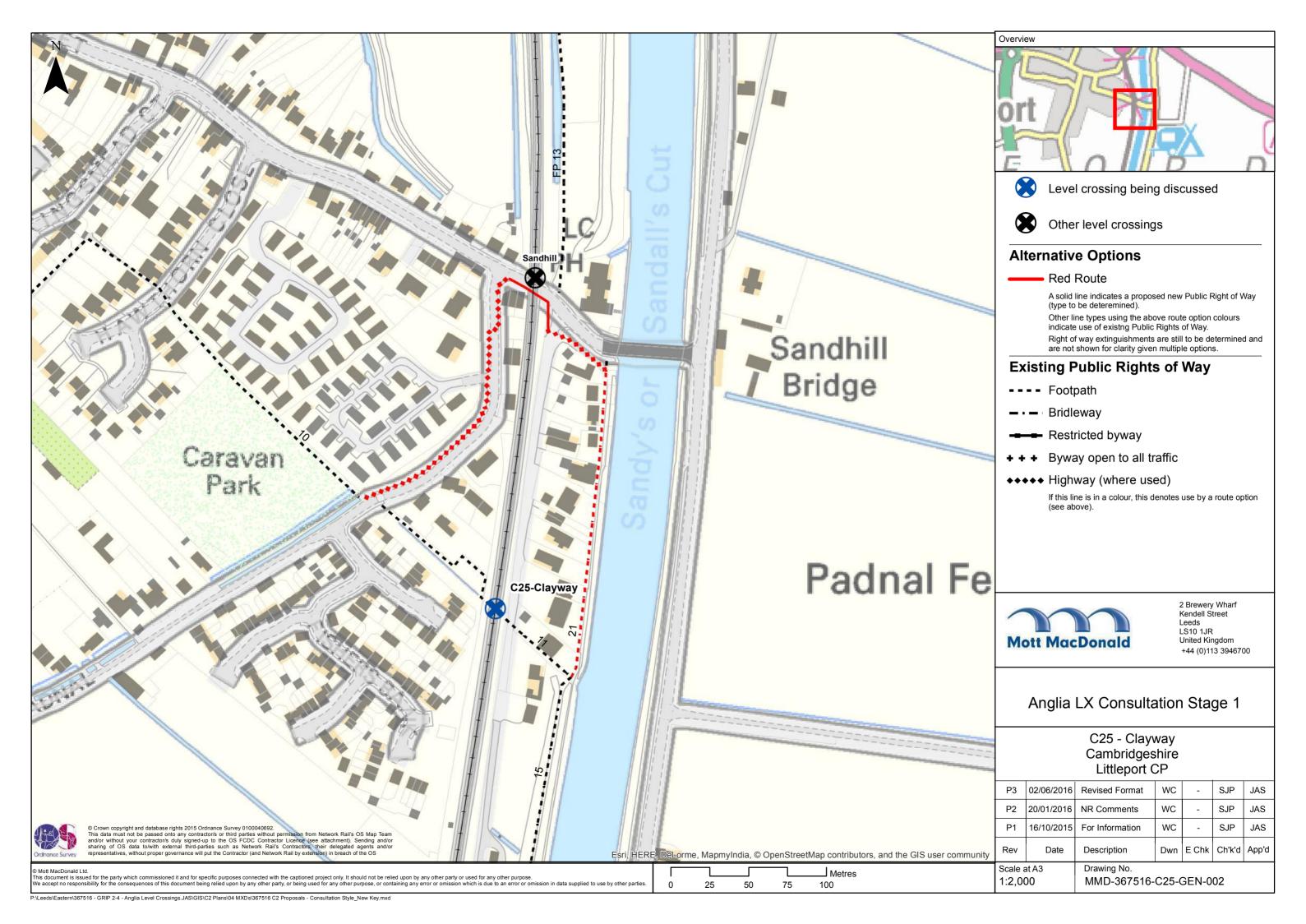
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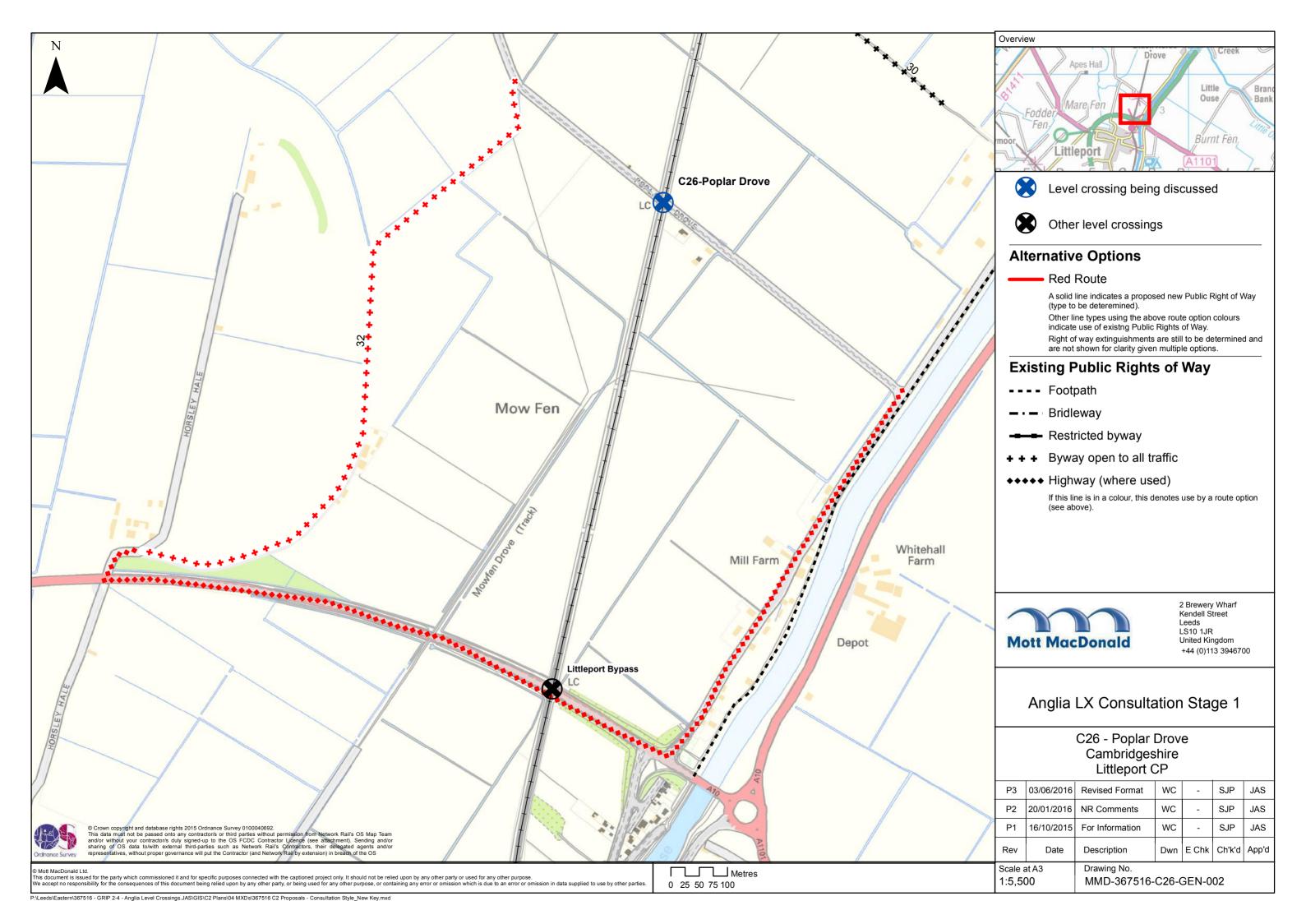
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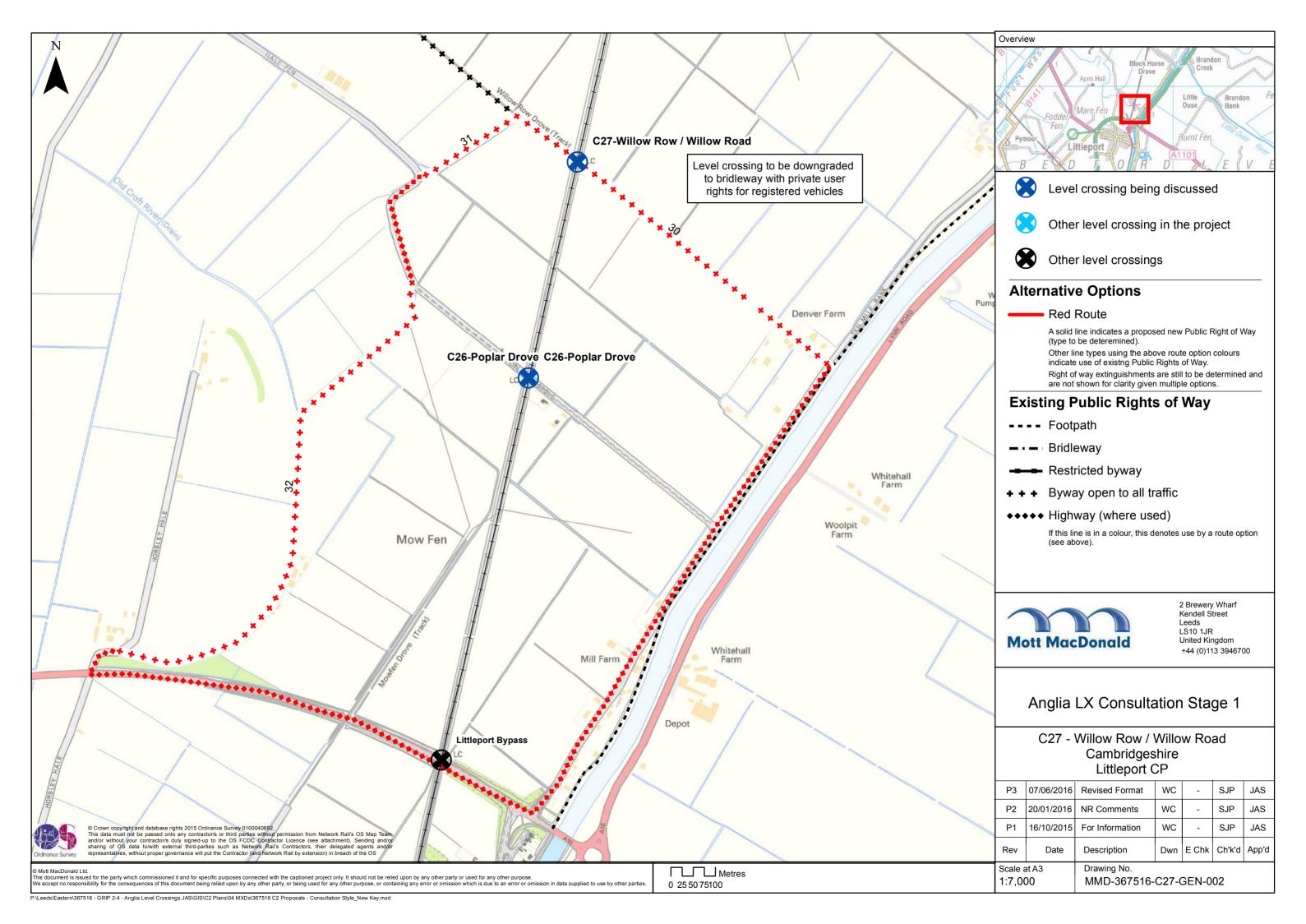
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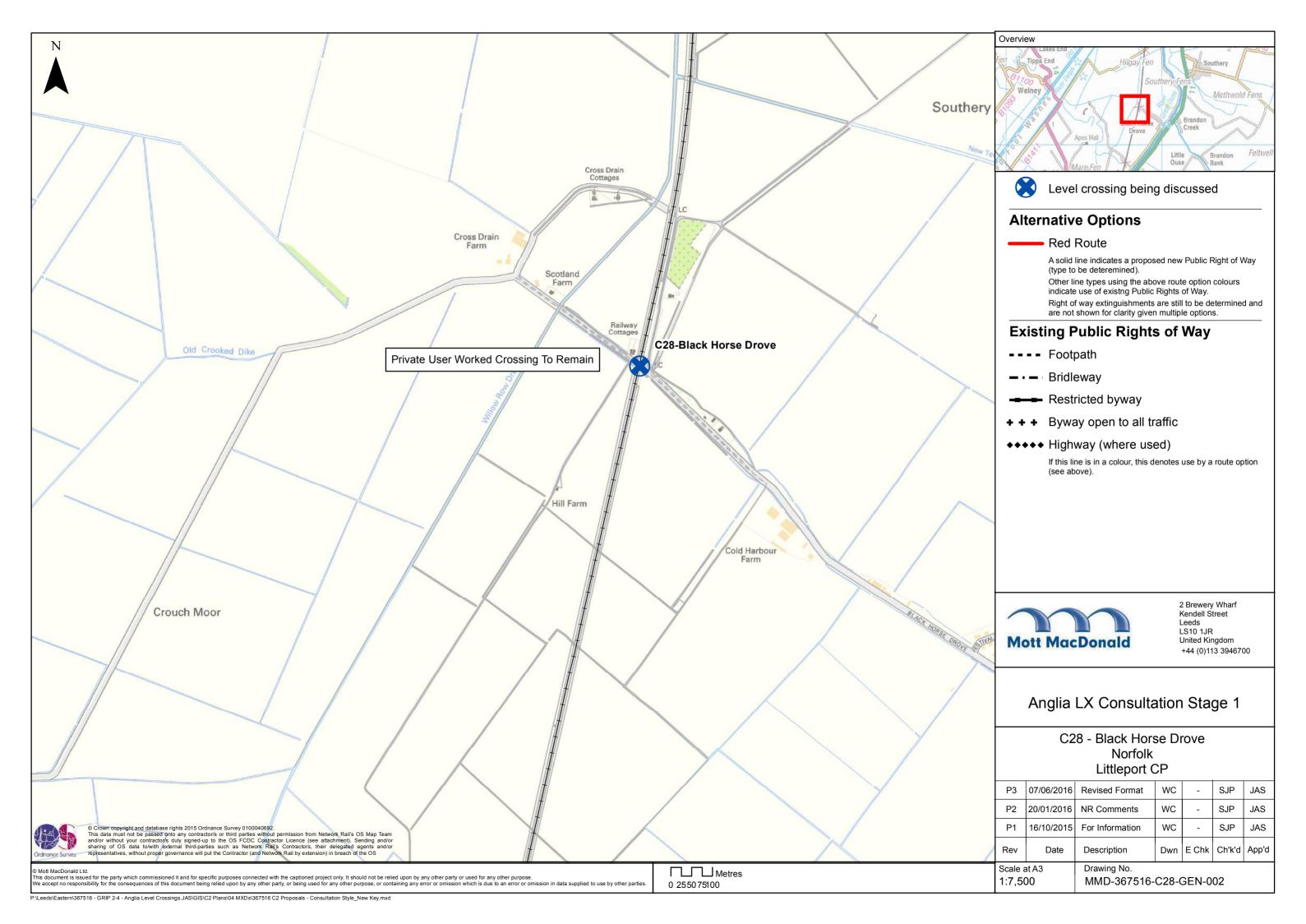
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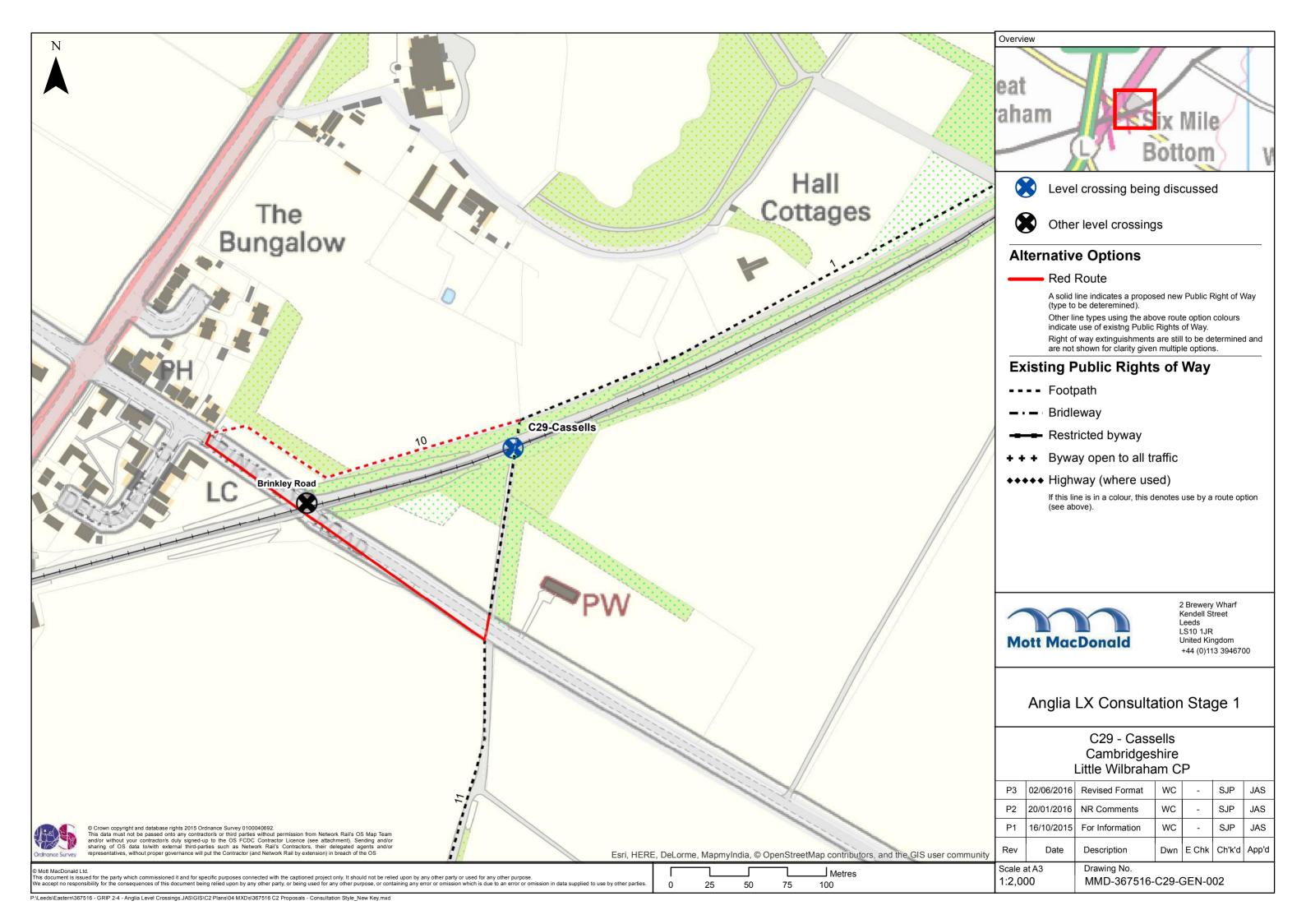


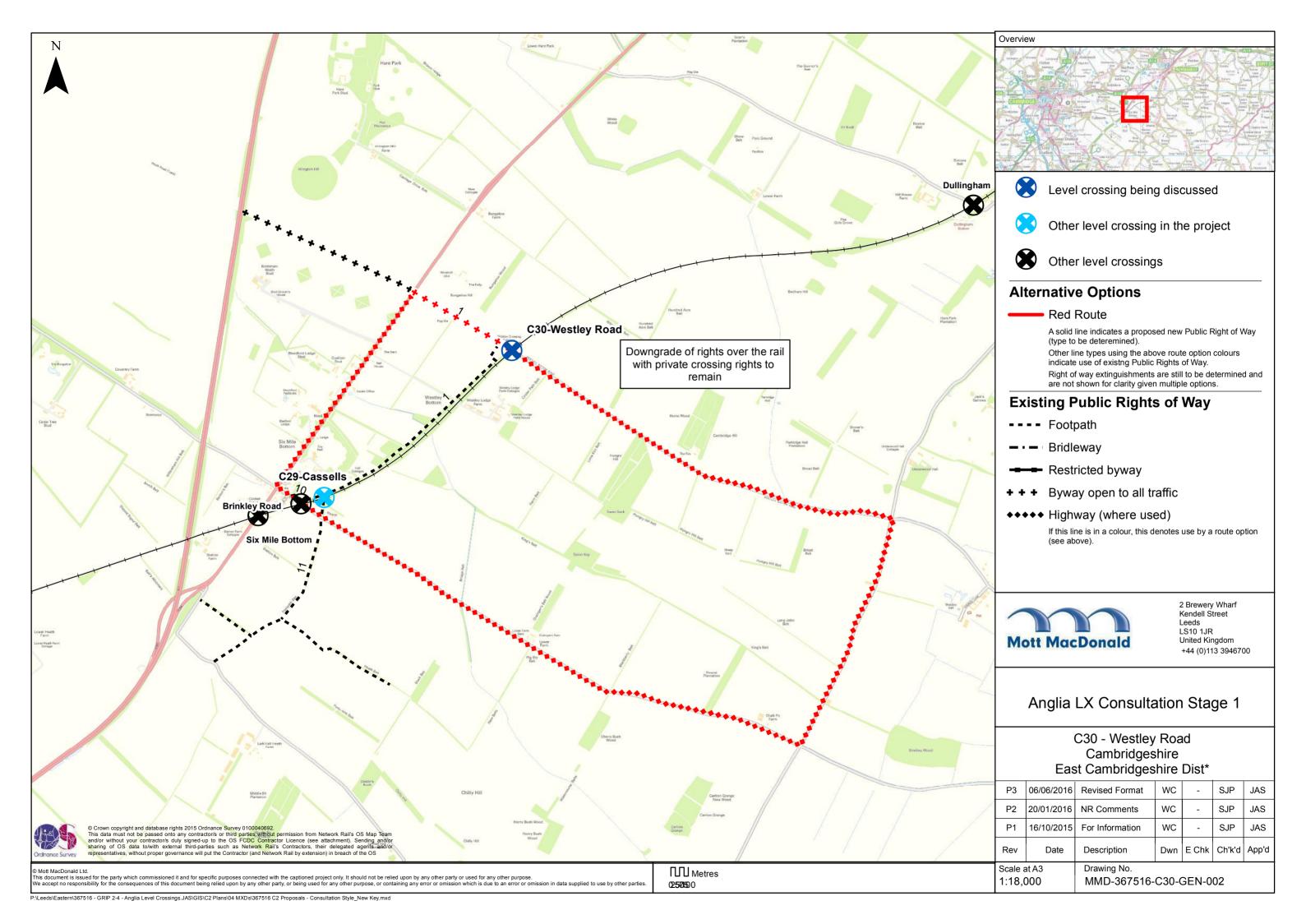


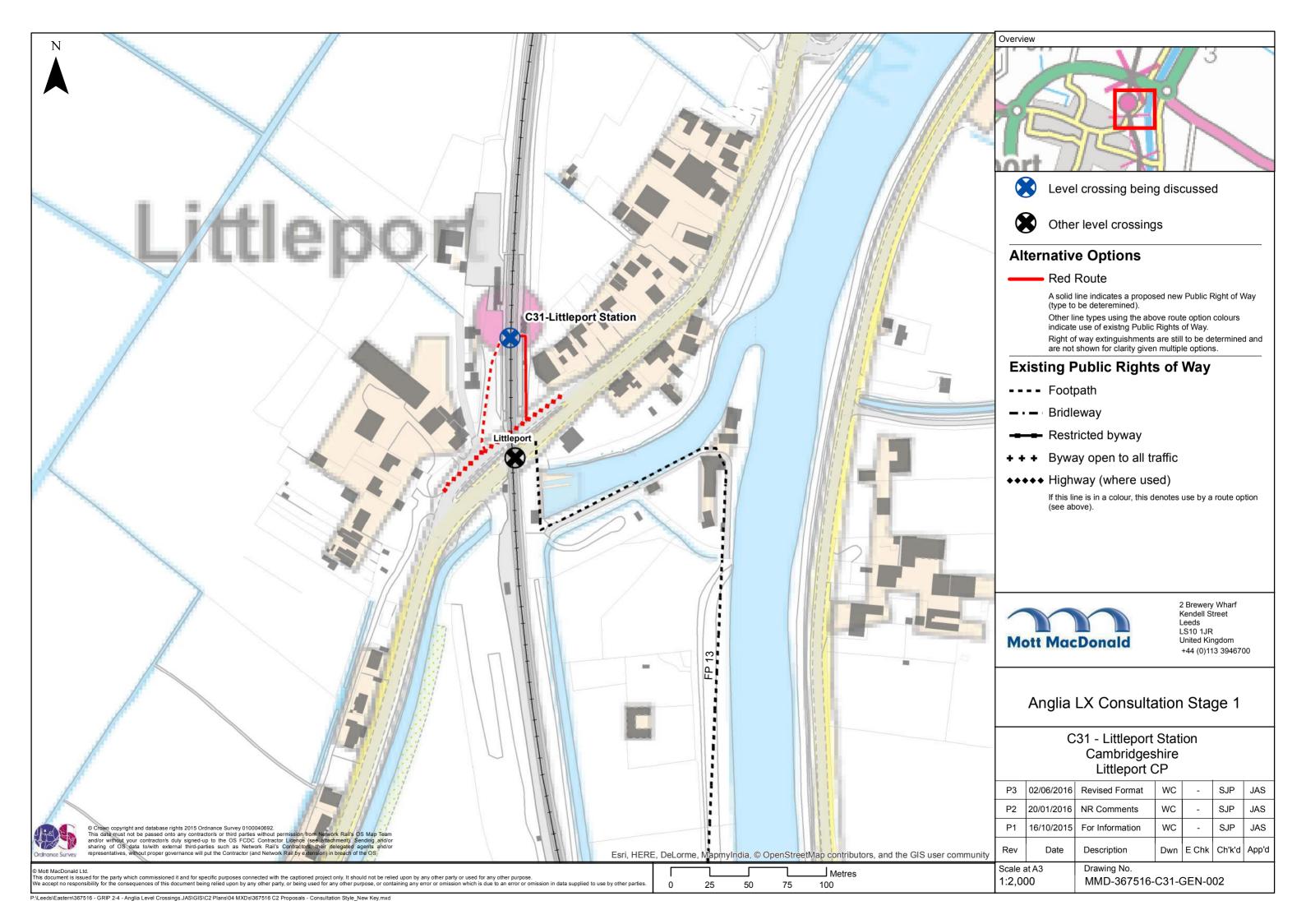


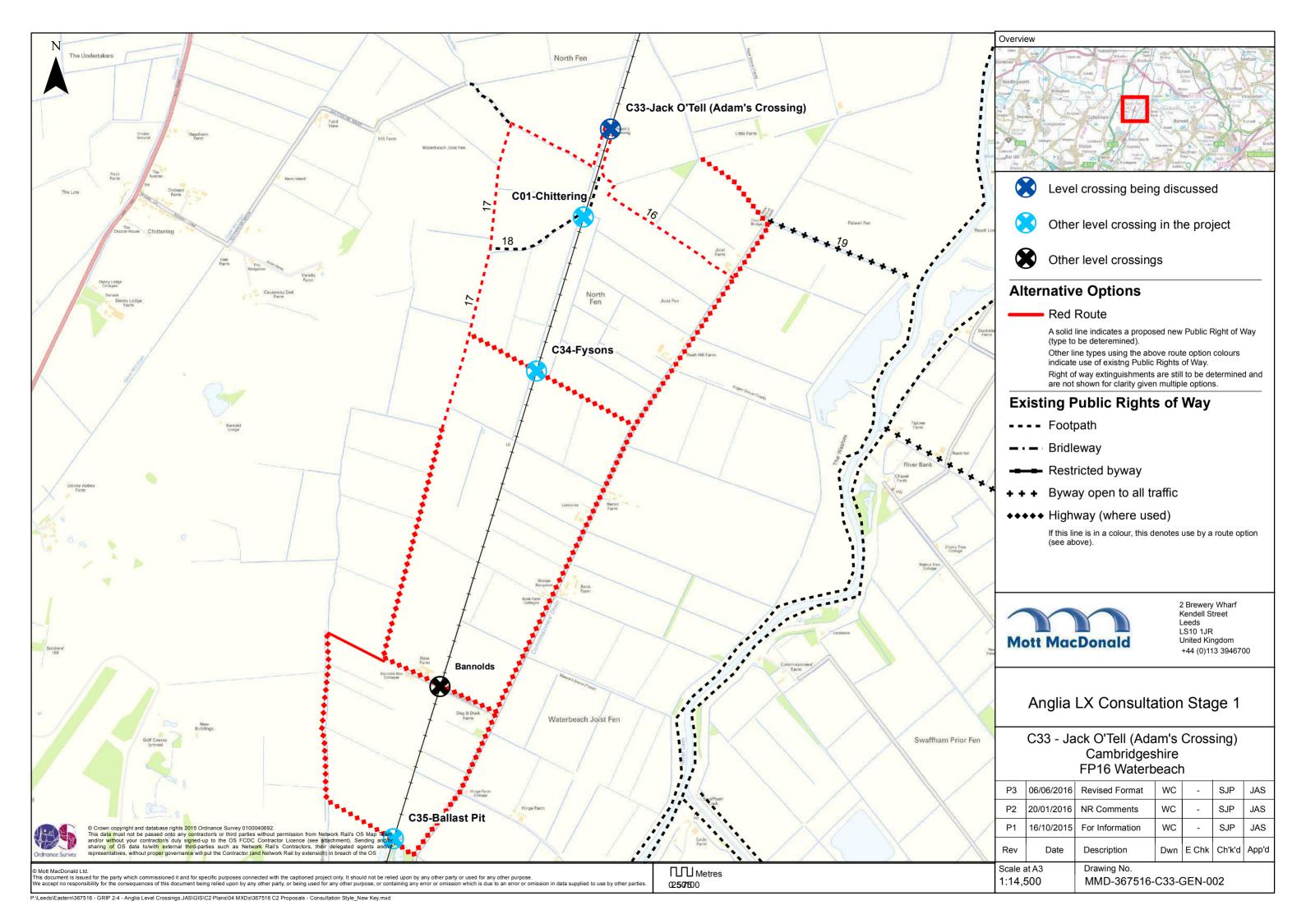


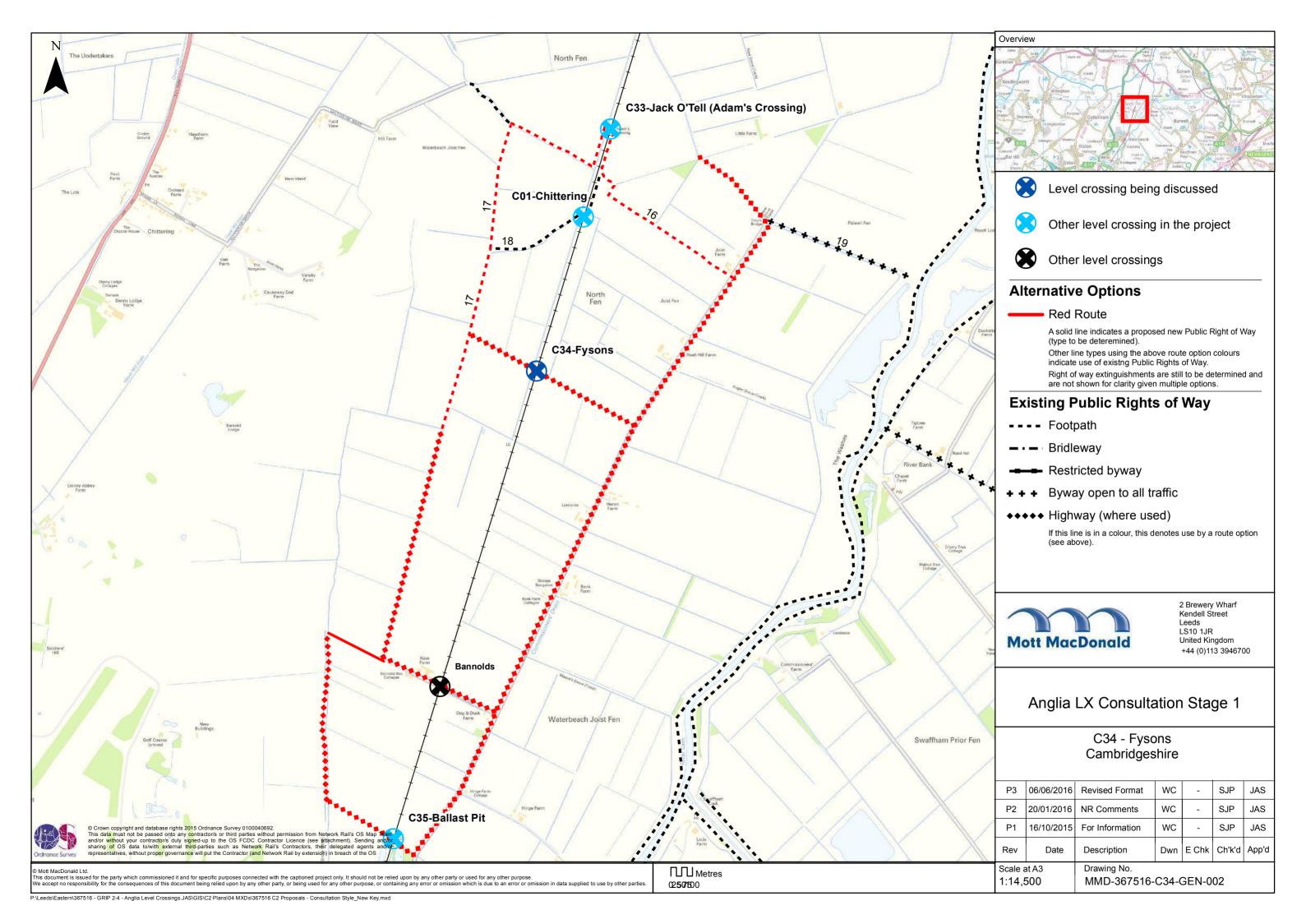


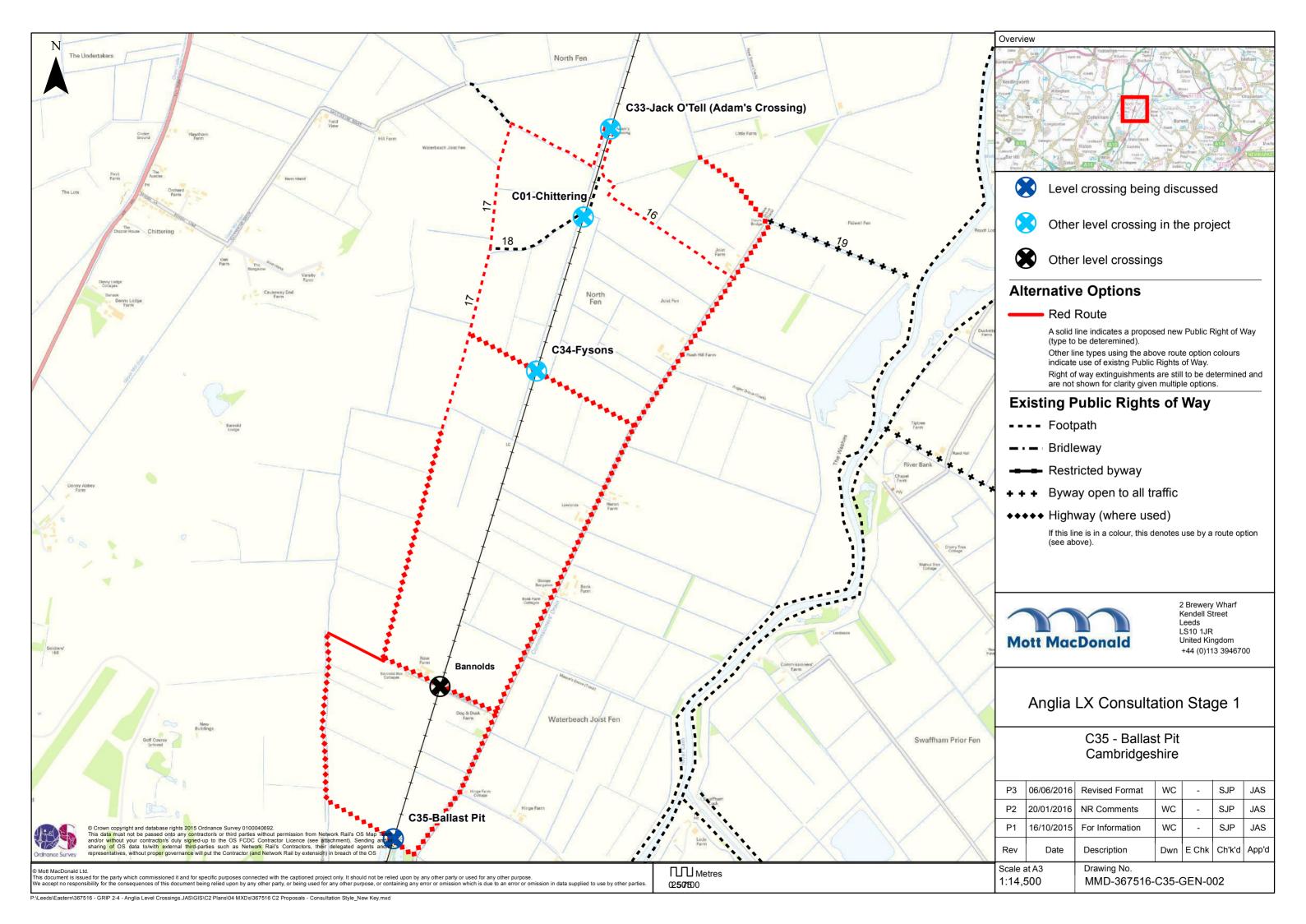














# Transport & Works Act Order (TWAO) Anglia Route GRIP 2 Review

Cambridgeshire Stage1 Road Safety Audit

Report Number 367516/RPT014 Revision B August 2016





# Transport & Works Act Order (TWAO) Anglia Route GRIP 2 Review

Cambridgeshire Stage1 Road Safety Audit

August 2016

**Network Rail** 

# Transport & Works Act Order (TWAO) Anglia Route GRIP 2 Review Cambridgeshire Stage1 Road Safety Audit



# Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
А	08/08/2016	R J Collins / T J Blaney	A J Coleman	J A Castle	First Draft
В	10/10/2016	T J Blaney	S J Tilbrook	J A Smith	Response to DRN comments

# Information class: Standard

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# Transport & Works Act Order (TWAO) Anglia Route GRIP 2 Review Cambridgeshire Stage1 Road Safety Audit



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Appendix B. Key Plans\_\_\_\_\_\_\_\_18



# 1 Introduction

Network Rail is carrying out feasibility studies to explore options for the closure of level crossings throughout Cambridgeshire, as part of their on-going commitment to deliver a safer, more efficient and reliable railway. Mott MacDonald is considering Network Rail's GRIP 0 Solution to enable the closure of level crossings.

This report describes a series of Stage 1 Road Safety Audits carried out on highway works associated with proposed level crossing closures throughout Cambridgeshire. The scheme proposals currently consist of indicative (high level) diversion routes as the result of closures and no formal highway works have been designed at this stage. Therefore this report considers potential road safety problems as a result of the proposed routes and their interaction with the highway. A detailed description of the proposed diversion routes at each location can be read in the respective individual level crossing review reports.

The audits took place at the Birmingham office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A**.

A visit to each site was completed on either Wednesday 20<sup>th</sup> July 2016 between 11:00 and 14:00, during which the weather was sunny and the road surface was dry or on Tuesday 26<sup>th</sup> July between 09:30 and 14:00 during which the weather conditions were sunny and the road surface was dry.

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the feasibility design. It is also confirmed that the audit was carried out in accordance with the Highways England Departmental Standard HD19/15.

The Audit Team consisted of:

Andrew Coleman BA (Hons), MCHIT, MSoRSA (Team Leader)

Mott MacDonald

T Blaney BSc (Hons), CMILT, MCIHT, MSoRSA (Team Member)

Mott MacDonald

R Collins BA (Hons), MSc (Team Member)

Mott MacDonald

No attempt has been made to comment on the justification of the scheme or the appropriateness of the diversion routes. Consequently the auditors accept no responsibility for the design or construction of the scheme. All of the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Report Response should be completed by the Design Team and kept on file for future reference.

# Transport & Works Act Order (TWAO) Anglia Route GRIP 2 Review Cambridgeshire Stage1 Road Safety Audit



An Audit Brief was submitted to the Audit Team, however, no Personal Injury Collision data was included and has therefore not been reviewed as part of this audit. Traffic flows and speed data were also not available to the Audit Team.

A previous Stage 1 Road Safety Audit (Document Ref: 354763/RPT221A) was undertaken in December 2015 on level crossing closure proposals within Cambridgeshire. This included some sites that have been audited on this occasion and sites that have been re-audited due to the development of alternative route options or amendments to the previously audited route. The table below lists the level crossing proposals that have been subject to a stage 1 road safety audit and when the audits were undertaken.

Site	December 2015	August 2016
C02 – Nairns (No 117)		✓
C04 – No 20	<b>✓</b>	✓
C06 – Barrington Road	<b>√</b>	✓
C07 – No 37	<b>√</b>	✓
C08 – Ely North Junction (Red and route)		✓
C08 – Ely North Junction (Blue route)		✓
C11 – Furlong Drove	<b>✓</b>	✓
C12 – Silt Drove (Red route)		✓
C12 – Silt Drove (Blue route)		✓
C13 – Middle Drove		✓
C14 – Eastrea Cross Drove	<b>√</b>	
C15 – Brickyard Drove	<b>√</b>	
C16 – Prickwillow 1		✓
C17 – Prickwillow 2		✓
C18 – Munceys	✓	



Site	December 2015	July16
C19 – Wicken Road	<b>✓</b>	✓
C20 – Leonards	<b>✓</b>	
C25 – Clayway	<b>✓</b>	✓
C26 – Poplar Drove		✓
C27 Willow Row / Willow Road		✓
C28 – Black Horse Drove		✓
C29 – Cassells	✓	✓
C30 – Westley Road		✓
C31 – Littleport Station		✓
C33 – Jack O'Tell		✓
C34 – Fysons		✓
C35 – Ballast Pit		✓

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.



# 2 Items Raised at this Stage 1 Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**.

# 2.1 C02 – Nairns (No 117)

#### 2.1.1 Problem

Location: A1123 Newmarket Road.

Summary: Risk of vehicle collisions with pedestrians.

The A1123 Newmarket Road carriageway is narrow and the verge is also narrow due to a steep embankment which is likely to result in pedestrians walking within the carriageway. Vehicle speeds were observed to be high along this section which may give drivers limited time to react to pedestrians within the carriageway, possibly resulting in collisions between vehicles and pedestrians. Alternatively, drivers may swerve to avoid a pedestrian in the carriageway with a risk of head-on vehicle collisions as a result.

Figure 2.1: Narrow carriageway and verge with steep embankment.



Source: Mott MacDonald

#### Recommendation

It is recommended that a footway is provided for pedestrians. If this cannot be achieved then an alternative route should be identified.



## 2.2 C04 - No 20

#### 2.2.1 Problem

Location: Station Road.

Summary: Lack of footway for pedestrians.

Diverted pedestrians will be required to continue along Station Road; it is the Audit Team's opinion that existing footway provisions are poor and traffic flow and vehicle speeds were observed to be high. Combined, this increases the risk of collisions between pedestrians and vehicles. The likely desire line along Station Road will be on the western side along an existing verge. This was observed to be undulating and difficult to walk on increasing the risk of trips and falls.

Figure 2.2: Poor pedestrian facilities on Station Road.



Source: Mott MacDonald

## Recommendation

It is recommended that the existing footway on the western side of Station Road is extended for the length of the diversion.



#### 2.2.2 Problem

Location: Station Road.

Summary: Lack of footway for pedestrians.

Diverted pedestrians will be required to continue along Station Road; it is the Audit Team's opinion that existing footway provisions are poor and traffic flow and vehicle speeds were observed to be high. This is of particular concern at the point where pedestrians are required to cross Station Road to use the existing footways. This is in close proximity to a blind bend and visibility to the south on the western side is further restricted by an existing lamp column. Combined, this increases the risk of collisions between pedestrians and vehicles.

Figure 2.3: Hazardous crossing locations on Station Road.



Source: Mott MacDonald

#### Recommendation

It is recommended that the existing footway on the western side of Station Road is extended for the length of the diversion.

# 2.3 C06 – Barrington Road



#### 2.4 C07 - No 37

## 2.4.1 Problem

Location: London Road.

Summary: Risk of pedestrian conflict with vehicles.

Pedestrians will be diverted along the eastern side of London Road resulting in the need to cross the junction of Shelford Road; this is a wide junction mouth with vehicles turning at speed due to the relaxed radii. Furthermore, there appears to be limited verge width available on the eastern side of London Road south of the railway which may result in pedestrians walking within the carriageway. Both situations increase the risk of collisions between pedestrians and vehicles.

Figure 2.4: Wide junction mouth for pedestrians to cross.



Source: Mott MacDonald

#### Recommendation

It is recommended that pedestrians continue along the western side of London Road and cross to the east north of the Shelford Road junction. Visibility from the railway bridge is good in both directions with a wide hardstanding on either side, and would be a suitable location for pedestrians to cross.



# 2.5 C08 – Ely North Junction (Red and Blue routes)

## 2.5.1 Problem

Location: Queen Adelaide.

Summary: Risk of vehicle collisions with pedestrians.

The red and blue routes both appear to direct pedestrians along an industrial site access road where HGV movements are taking place. HGV drivers may not be aware of pedestrians walking within the site which could result in conflict between vehicles and pedestrians, particularly when crossing the access to the warehousing units where large vehicles will be reversing.

Figure 2.5: Pedestrians directed through industrial site.



Source: Mott MacDonald

# Recommendation

It is recommended that a footpath is provided for pedestrians on the eastern side of the access road so that they are segregated from the industrial site traffic. If this cannot be achieved then an alternative route should be identified.



# 2.6 C11 – Furlong Drove

The Audit Team did not identify any road safety related issues associated with the scheme.

# 2.7 C12 – Silt Drove (Red route)

The Audit Team did not identify any road safety related issues associated with the scheme.

# 2.8 C12 – Silt Drove (Blue route)



## 2.9 C13 – Middle Drove

The Audit Team did not identify any road safety related issues associated with the scheme.

## **2.10** C16 – Prickwillow 1

The Audit Team did not identify any road safety related issues associated with the scheme.

# **2.11 C17** – **Prickwillow 2**

The Audit Team did not identify any road safety related issues associated with the scheme.

# 2.12 C19 - Wicken Road



# 2.13 C25 - Clayway

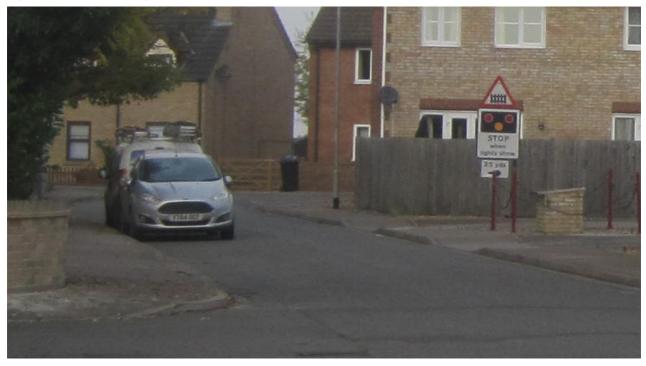
## **2.13.1 Problem**

Location: Padnal.

Summary: Risk of pedestrian trip collisions.

The proposed diversion route will likely result in pedestrians crossing Padnal between the accesses to a small residential car park. Full height kerbs are present at this location which may lead to trip type injuries.

Figure 2.6: Padnal looking north.



Source: Mott MacDonald

# Recommendation

It is recommended that a crossing point is provided on Padnal featuring dropped kerbs and tactile paving.



# 2.14 C26 - Poplar Drove

## **2.14.1 Problem**

Location: A10.

Summary: Risk of vehicle collisions with pedestrians.

No footways are present along this section of the A10 and although there is a relatively flat wide verge there are a number of signs placed within the verge which could force pedestrians into the carriageway. The A10 is a primary route and vehicle speeds and traffic flows were observed to be high which may give drivers limited time to react to pedestrians within the carriageway and could result in conflict between pedestrians and vehicles. Furthermore, should a pedestrian trip or slip and fall in the carriageway there is a risk of vehicle strikes and serious injuries.

Figure 2.7: Lack of footway along A10.



Source: Mott MacDonald

# Recommendation

It is recommended that a footway is provided for pedestrians.



#### 2.15 C27 Willow Row / Willow Road

## 2.15.1 **Problem**

Location: A10.

Summary: Risk of vehicle collisions with pedestrians.

No footways are present along this section of the A10 and although there is a relatively flat wide verge there are a number of signs placed within the verge which could force pedestrians into the carriageway. The A10 is a primary route and vehicle speeds and traffic flows were observed to be high which may give drivers limited time to react to pedestrians within the carriageway and could result in conflict between pedestrians and vehicles. Furthermore, should a pedestrian trip or slip and fall in the carriageway there is a risk of vehicle strikes and serious injuries.

Figure 2.8: Lack of footway along A10.



Source: Mott MacDonald

# Recommendation

It is recommended that a footway is provided for pedestrians.



#### 2.16 C28 – Black Horse Drove

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.17 C29 - Cassells

The Audit Team did not identify any road safety related issues associated with the scheme.

## 2.18 C30 – Westley Road

The Audit Team did not identify any road safety related issues associated with the scheme.

# 2.19 C31 - Littleport Station

The Audit Team did not identify any road safety related issues associated with the scheme.

# 2.20 C33 - Jack O'Tell

The Audit Team did not identify any road safety related issues associated with the scheme.

## **2.21 C34** – **Fysons**

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 



## 3 Audit Team Statement

We certify that this audit has been carried out in accordance with the Highways England Departmental Standard HD 19/15.

Audit Team Leader

A J Coleman BA (Hons), MCIHT, MSoRSA

Signed:

Date: 8<sup>th</sup> August 2016

Road Safety Engineer Mott MacDonald 35 Newhall Street Birmingham B3 3PU

Audit Team Member

Audit Team Member

Signed:

T J Blaney BSc (Hons), CMILT, MCIHT, MSoRSA

R J Collins BA (Hons), MSc

Lalus.

Signed:

Date: 8<sup>th</sup> August 2016

Principal Road Safety Engineer Mott MacDonald 35 Newhall Street Birmingham B3 3PU Date: 8<sup>th</sup> August 2016

Senior Road Safety Engineer Mott MacDonald 9 Portland Street Manchester M1 3BE

## Transport & Works Act Order (TWAO) Anglia Route GRIP 2 Review Cambridgeshire Stage1 Road Safety Audit



## **Appendices**

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## Appendix A. List of Submitted Documents

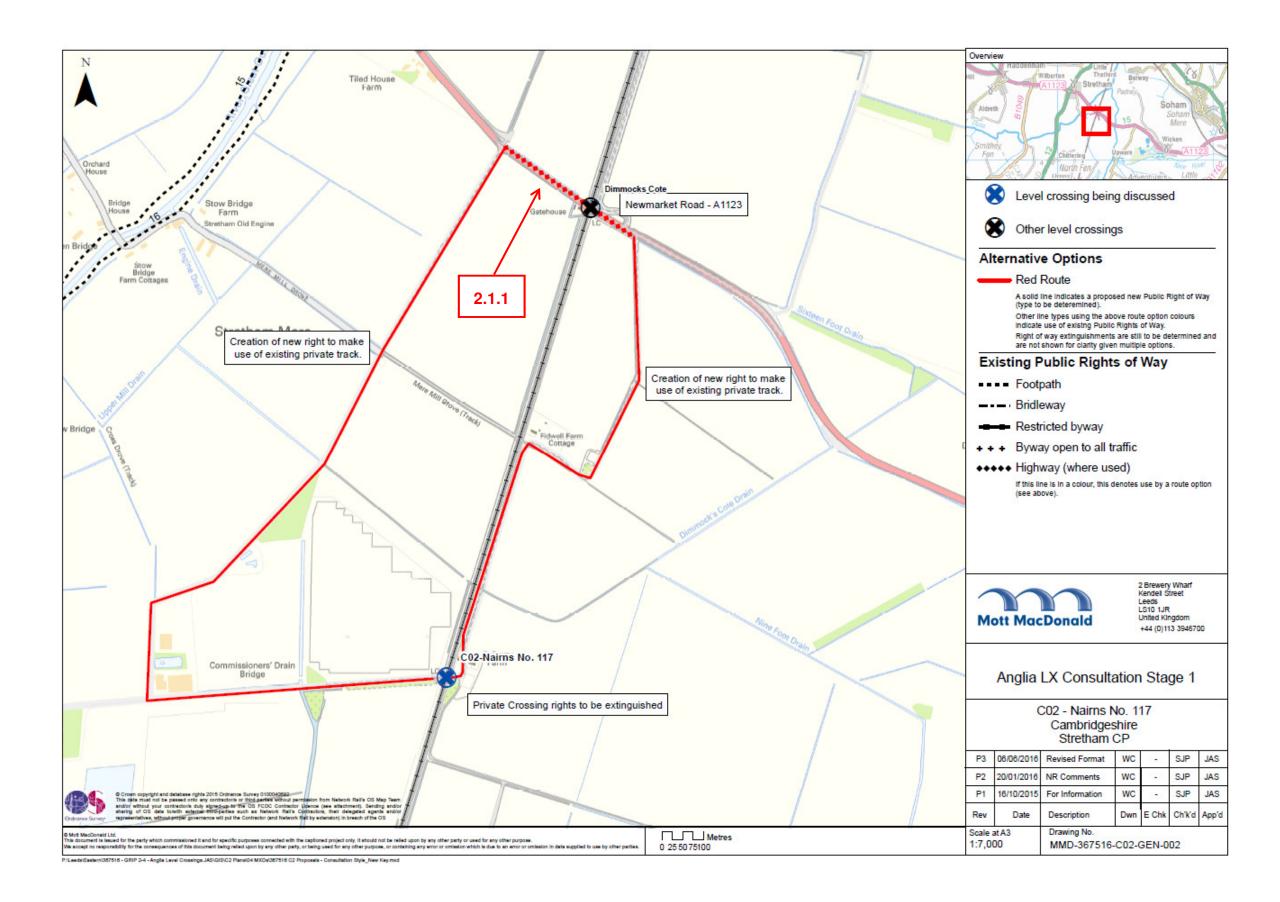
Table A.1: Drawings

Table A.T. Drawings		
Drawing	Rev	Title
MMD-367515-C02-GEN-002	P3	Nairns (No 117)
MMD-367515-C04-GEN-002	P3	No 20
MMD-367515-C06-GEN-002	P3	Barrington Road
MMD-367515-C07-GEN-002	P3	No. 37
MMD-367515-C08-GEN-002	P3	Ely North Junction
MMD-367515-C11-GEN-002	P3	Furlong Drove
MMD-367515-C12-GEN-002	P3	Silt Drove
MMD-367515-C13-GEN-002	P3	Middle Drove
MMD-367515-C16-GEN-002	P3	Prickwillow 1
MMD-367515-C17-GEN-002	P3	Prickwillow 2
MMD-367515-C19-GEN-002	P3	Wicken Road
MMD-367515-C25-GEN-002	P3	Clayway
MMD-367515-C26-GEN-002	P3	Poplar Drove
MMD-367515-C27-GEN-002	P3	Willow Road
MMD-367515-C28-GEN-002	P3	Black Horse Drove
MMD-367515-C29-GEN-002	P3	Cassells
MMD-367515-C30-GEN-002	P3	Westley Road
MMD-367515-C31-GEN-002	P3	Littleport Station
MMD-367515-C33-GEN-002	P3	Jack O'Tell
MMD-367515-C34-GEN-002	P3	Fysons
MMD-367515-C35-GEN-002	P3	Ballast Pit

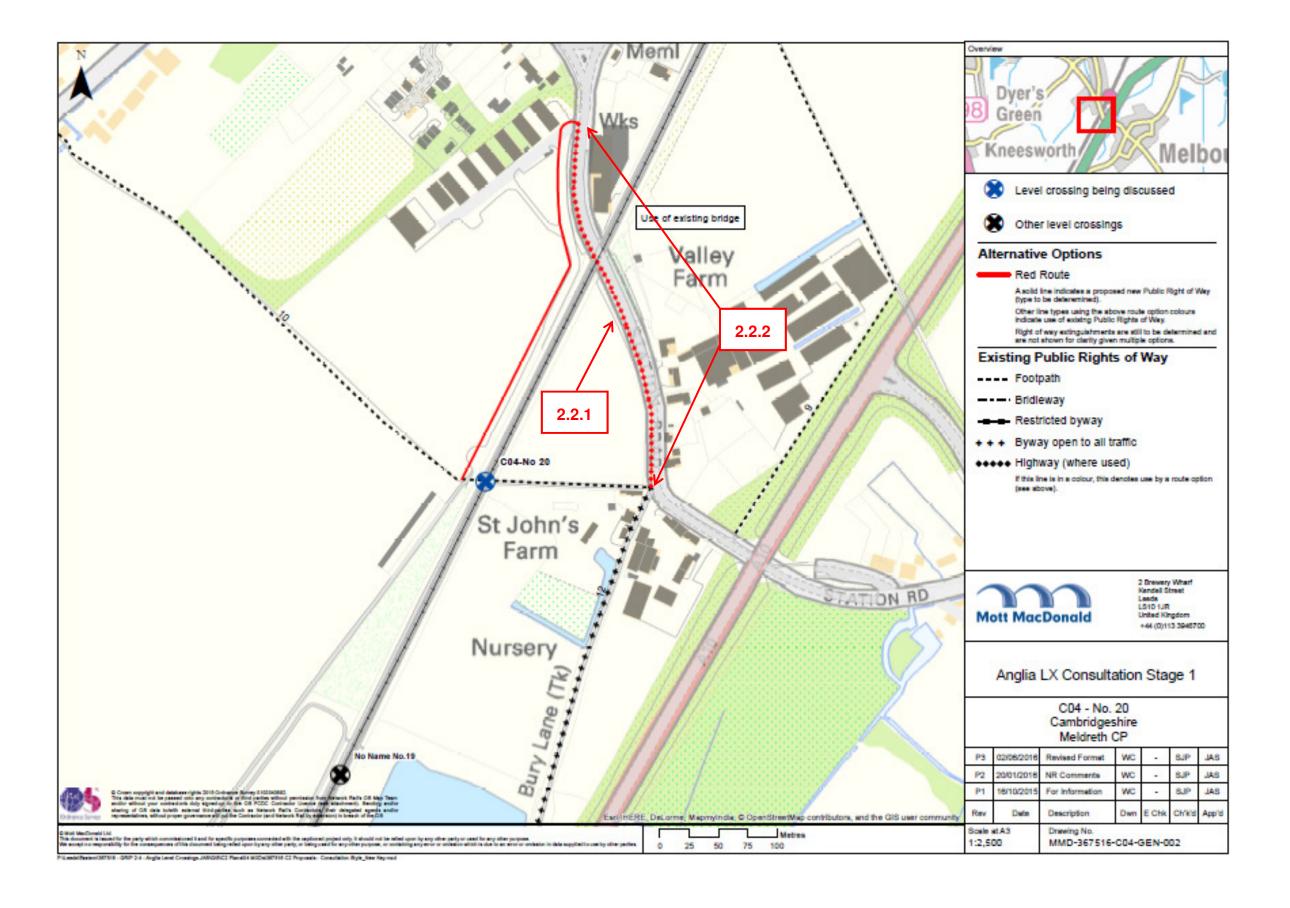
Source: Mott MacDonald, Sheffield



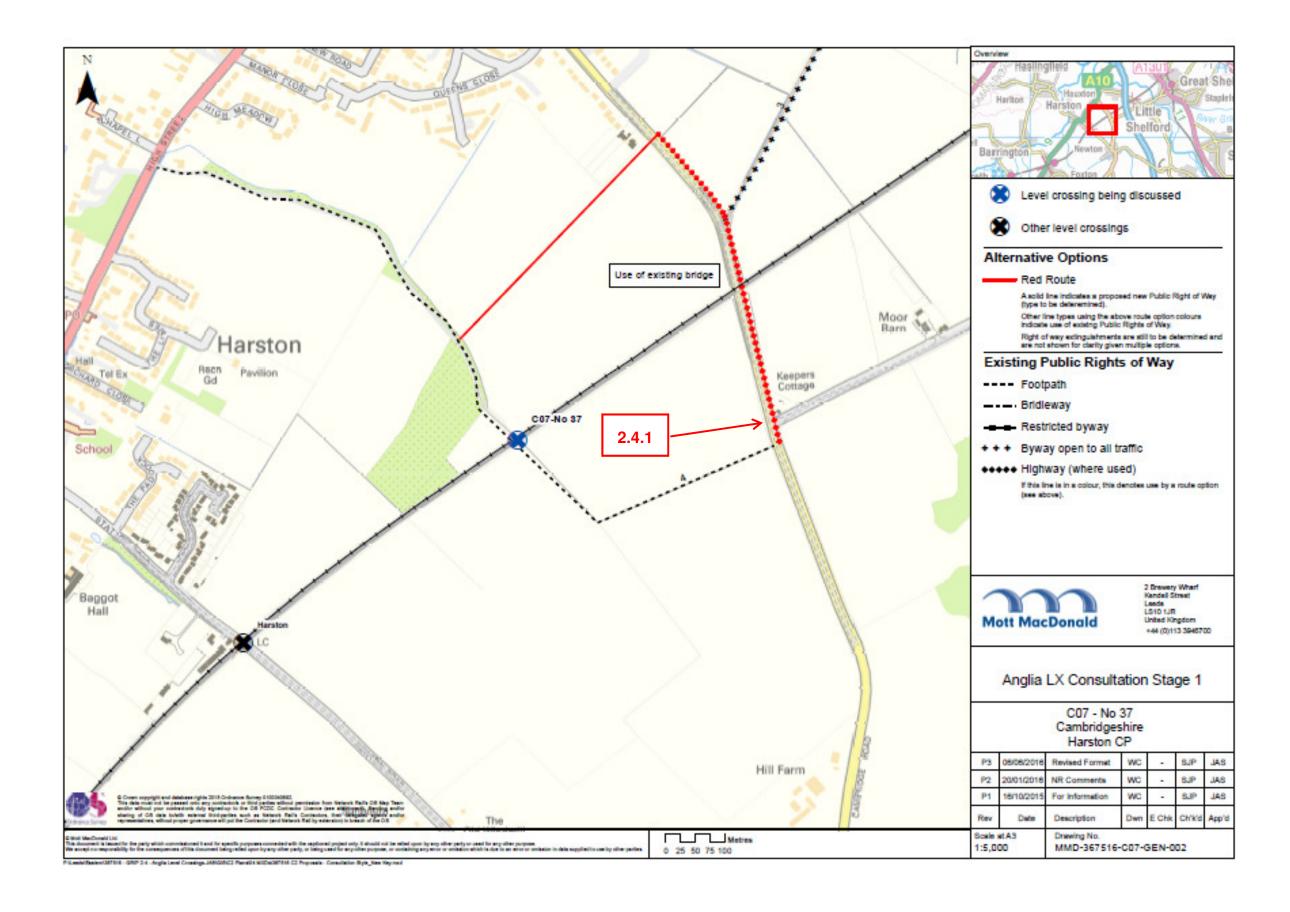
## Appendix B. Key Plans



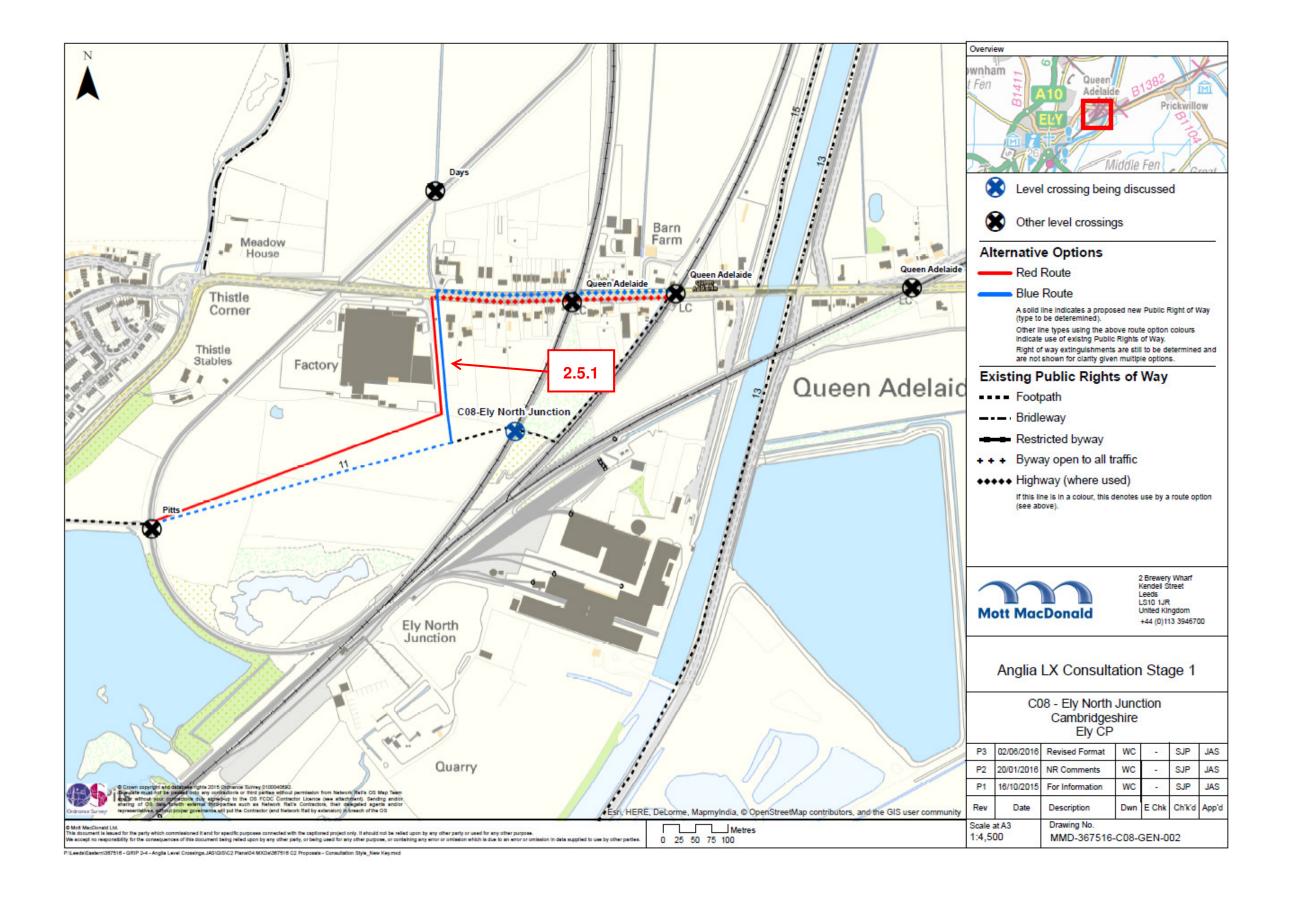




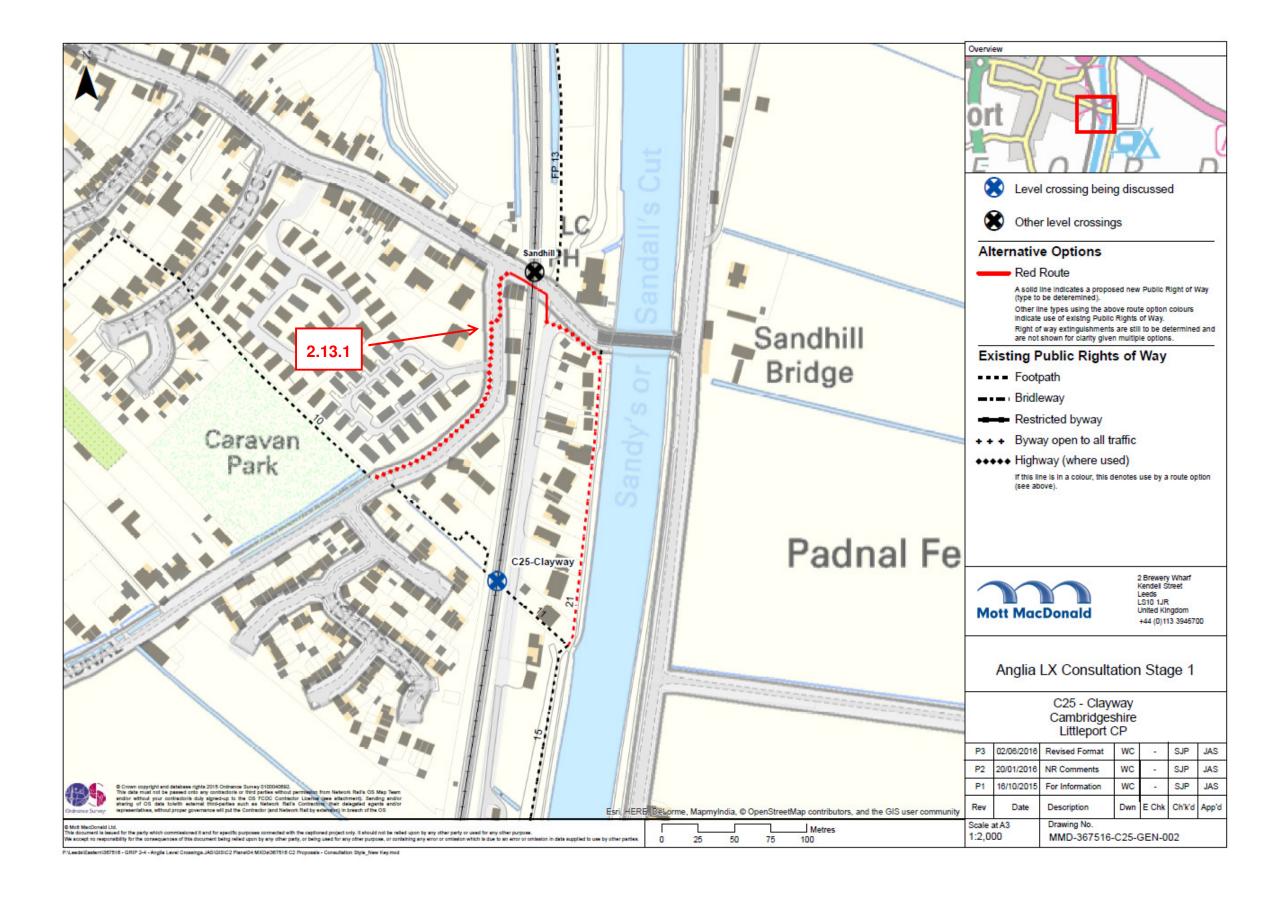




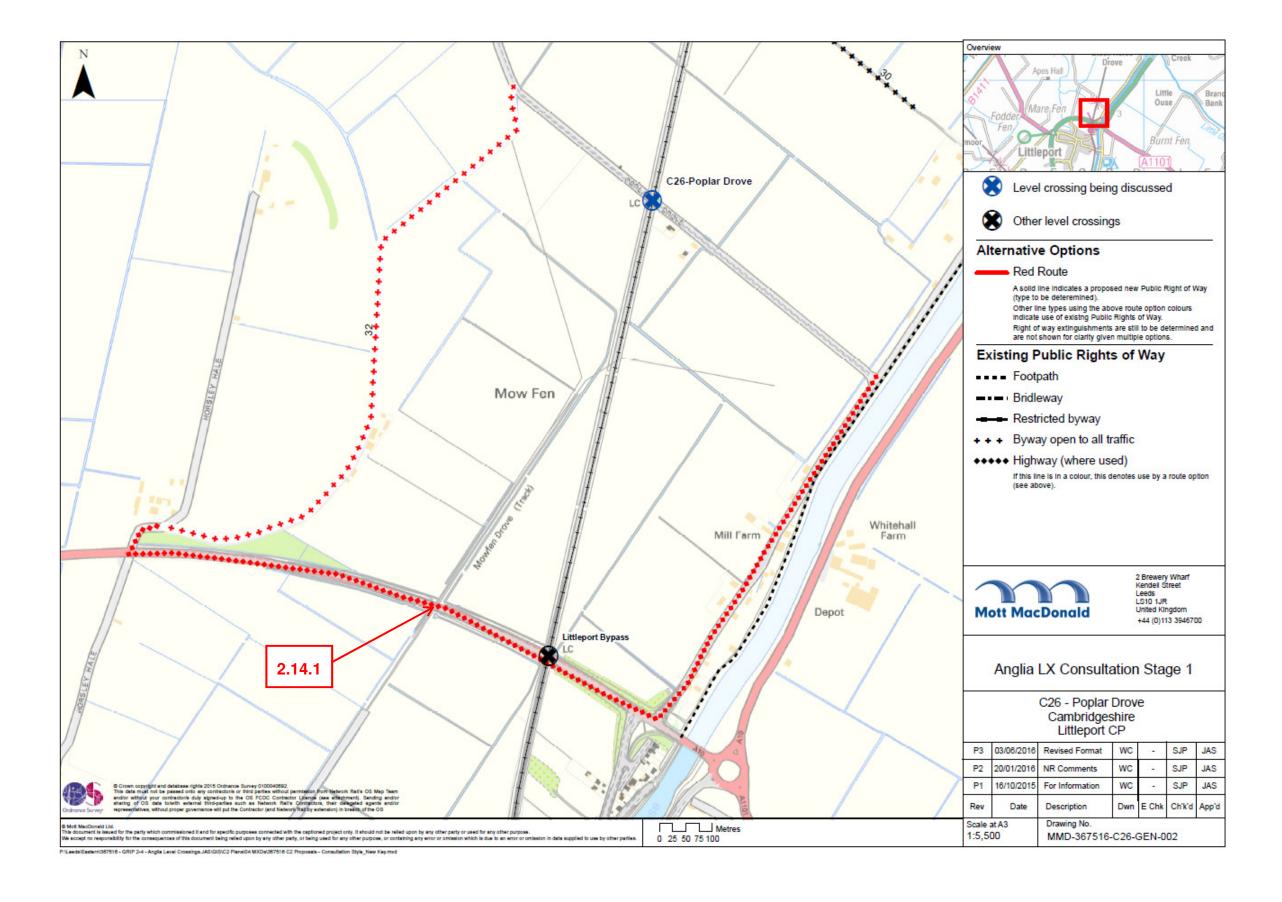




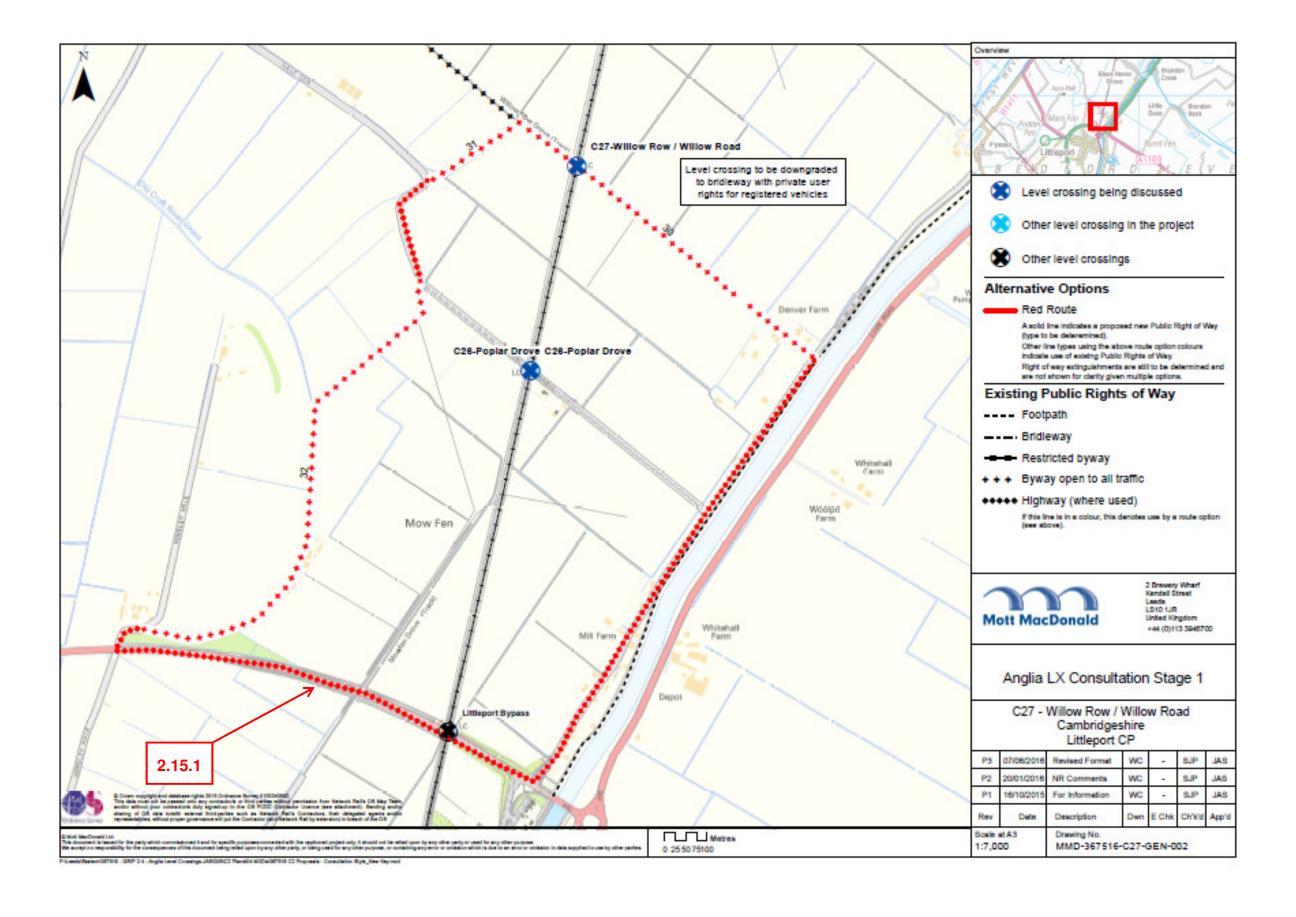














# Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review

Cambridgeshire Road Safety Audit Response Report

Report Number 367516/RPT019 Revision A October 2016





## Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review

Cambridgeshire Stage1 Road Safety Audit Response Report

October 2016

**Network Rail** 

#### Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Revi

Cambridgeshire Stage1 Road Safety Audit Response Report



## Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
Α	10/10/16	D. Weir	S. Tilbrook	JA Smith	First Draft

#### Information class: Standard

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#### Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Revi Cambridgeshire Stage1 Road Safety Audit Response Report



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### 1 Introduction

This document is Mott MacDonald design team's response to independent Stage 1 Road Safety Audits (RSA) undertaken in December 2015 and August 2016 on Network Rail's level crossing closure proposals in Cambridgeshire.

A Stage 1 Road Safety Audit was undertaken in December 2015 and its findings are reported in Document Ref: 354763/RPT221A. A second Stage 1 Road Safety Audit was undertaken in August 2016 and its findings are reported in Document Ref: 367516/RPT014B.

Of the 25 level crossing closure proposals in Cambridgeshire some were audited twice due to the development of alternative option or amendments to the previously audited option. The table below lists the level crossing proposals that have been subject to a stage 1 road safety audit and when the audits were undertaken.

Site	December 2015	August 2016
C02 – Nairns (No 117)		✓
C04 – No 20	✓	✓
C06 – Barrington Road	✓	✓
C07 – No 37	✓	✓
C08 – Ely North Junction (Red and Blue routes)		✓
C11 – Furlong Drove	✓	✓
C12 – Silt Drove (Red and Blue routes)		✓
C13 – Middle Drove		✓
C14 – Eastrea Cross Drove	✓	
C15 – Brickyard Drove	✓	
C16 – Prickwillow 1		✓
C17 – Prickwillow 2		✓
C18 – Munceys	✓	
C19 – Wicken Road	✓	✓
C20 – Leonards	✓	
C25 – Clayway	✓	✓
C26 – Poplar Drove		✓
C27 Willow Row / Willow Road		✓
C28 – Black Horse Drove		✓
C29 - Cassells	✓	✓
C30 – Westley Road		✓
C31 – Littleport Station		✓
C33 – Jack O'Tell		✓
C34 – Fysons		✓
C35 – Ballast Pit		✓

## Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review Cambridgeshire Stage1 Road Safety Audit Response Report



Network Rail is carrying out feasibility studies to explore options for the closure of level crossings throughout Anglia, as part of their on-going commitment to deliver a safer, more efficient and reliable railway.

The road safety audit reports considered the proposed level crossing closures throughout Cambridgeshire. The scheme proposals consisted of indicative (high level) diversion routes as the result of closures and no formal highway works were designed at this stage. Therefore the road safety audit reports considered potential road safety problems as a result of the proposed routes and their interaction with the highway. A detailed description of the proposed diversion routes at each location can be read in the respective individual level crossing review reports.



## Items Raised at the Stage 1 Road Safety Audit

This section describes road safety related issues identified by the Audit Team.

#### 2.1 C02 - Nairns (No 117 - August 2016)

#### 2.1.1 **Problem**

Location: A1123 Newmarket Road.

Summary: Risk of vehicle collisions with pedestrians.

The A1123 Newmarket Road carriageway is narrow and the verge is also narrow due to a steep embankment which is likely to result in pedestrians walking within the carriageway. Vehicle speeds were observed to be high along this section which may give drivers limited time to react to pedestrians within the carriageway, possibly resulting in collisions between vehicles and pedestrians. Alternatively, drivers may swerve to avoid a pedestrian in the carriageway with a risk of head-on vehicle collisions as a result.

Figure 2.1: Narrow carriageway and verge with steep embankment.



Source: Mott MacDonald

#### Recommendation

It is recommended that a footway is provided for pedestrians. If this cannot be achieved then an alternative route should be identified.



#### Design Team Response

Footway not required as this is a Private used worked crossing (used predominantly by vehicles). It is assumed NMUs would use alternative off road routes.

#### C04 - No 20 (December 2015 / August 2016) 2.2

#### 2.2.1 **Problem**

Location: Station Road.

Summary: Lack of footway for pedestrians.

Figure 2.2: Poor pedestrian facilities on Station Road.

Diverted pedestrians will be required to continue along Station Road; it is the Audit Team's opinion that existing footway provisions are poor and traffic flow and vehicle speeds were observed to be high. Combined, this increases the risk of collisions between pedestrians and vehicles. The likely desire line along Station Road will be on the western side along an existing verge. This was observed to be undulating and difficult to walk on increasing the risk of trips and falls.





It is recommended that the existing footway on the western side of Station Road is extended for the length of the diversion.

#### Design Team Response

An alternative off-road route along the field boundary behind the hedge row on Station Road instead of a new footway to be considered.

#### 2.2.2 Problem

Location: Station Road.

Summary: Lack of footway for pedestrians.

Diverted pedestrians will be required to continue along Station Road; it is the Audit Team's opinion that existing footway provisions are poor and traffic flow and vehicle speeds were observed to be high. This is of particular concern at the point where pedestrians are required to cross Station Road to use the existing footways. This is in close proximity to a blind bend and visibility to the south on the western side is further restricted by an existing lamp column. Combined, this increases the risk of collisions between pedestrians and vehicles.

Figure 2.3: Hazardous crossing locations on Station Road.





It is recommended that the existing footway on the western side of Station Road is extended for the length of the diversion.

#### Design Team Response

An alternative off-road route along the field boundary behind the hedge row on Station Road instead of a new footway to be considered.

#### 2.3 C06 - Barrington Road (December 2015 / August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.4 C07 - No 37 (December 2015 / August 2016)

#### 2.4.1 Problem

Location: London Road.

Summary: Risk of pedestrian conflict with vehicles.

Pedestrians will be diverted along the eastern side of London Road resulting in the need to cross the junction of Shelford Road; this is a wide junction mouth with vehicles turning at speed due to the relaxed radii. Furthermore, there appears to be limited verge width available on the eastern side of London Road south of the railway which may result in pedestrians walking within the carriageway. Both situations increase the risk of collisions between pedestrians and vehicles.

Figure 2.4: Wide junction mouth for pedestrians to cross.





It is recommended that pedestrians continue along the western side of London Road and cross to the east north of the Shelford Road junction. Visibility from the railway bridge is good in both directions with a wide hardstanding on either side, and would be a suitable location for pedestrians to cross.

#### Design Team Response

Agreed – Pedestrians will be encouraged to cross at the railway bridge with the provision of dropped kerbs.

#### 2.5 C08 - Ely North Junction (Red and Blue routes - August 2016)

#### 2.5.1 Problem

Location: Queen Adelaide.

Summary: Risk of vehicle collisions with pedestrians.

The red and blue routes both appear to direct pedestrians along an industrial site access road where HGV movements are taking place. HGV drivers may not be aware of pedestrians walking within the site which could result in conflict between vehicles and pedestrians, particularly when crossing the access to the warehousing units where large vehicles will be reversing.

Figure 2.5: Pedestrians directed through industrial site.





It is recommended that a footpath is provided for pedestrians on the eastern side of the access road so that they are segregated from the industrial site traffic. If this cannot be achieved then an alternative route should be identified.

#### Design Team Response

Disagree – Appropriate signing will be provided to warn pedestrians using the footpath. It would be recommended to provide awareness to the motorised users on the industrial site.

#### 2.6 C11 - Furlong Drove (December 2015 / August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.7 C12 - Silt Drove (Red route - August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.8 C12 - Silt Drove (Blue route - August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.9 C13 - Middle Drove (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.10 C14 - Eastrea Cross Drove (GRIP 1 - December 2015)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.11 C15 - Brickyard Drove (GRIP 1 - December 2015)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.12 C16 - Prickwillow 1 (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.13 C17 - Prickwillow 2 (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.



#### 2.14 C18 - Munceys (GRIP 1 - December 2015)

#### 2.14.1 **Problem**

Location: Station Road.

Summary: Risk of pedestrian trip collisions.

The diversion route will guide pedestrians along the southern side of Station Road where the footway is in poor condition and either overgrown with grass or uneven. Pedestrians being guided along a footway would expect a suitable surface and the uneven slippery surface may lead to slip type accidents. In addition, the formal uncontrolled crossing of the southern roundabout arm of the A142 is completely overgrown and unsuitable for pedestrians.

Figure 2.6: Existing condition of the footway on Station Road.



Figure 2.7: A142 crossing point.





Source: Mott MacDonald

#### Recommendation

It is recommended that the footway is brought up to an appropriate standard and the crossing point is cleared to remove trip hazards.

#### Design Team Response

Agreed – Cambridgeshire County Council is to be informed of the maintenance issues on their footways.

#### 2.15 C19 - Wicken Road (December 2015 / August 2016)

#### 2.15.1 **Problem**

Location: Wicken Road.

Summary: Risk of vehicle to pedestrian collisions.

The diversion route will utilise the railway bridge on Wicken Road. Wicken Road has relatively high vehicle flows travelling relatively high speeds. There is a hardstanding area on either side of the bridge but it is currently overgrown by grass and with a build-up of silt and will force pedestrians to walk within the carriageway where they will be at risk of collisions with the high number and speed of vehicles.

Figure 2.8: Wicken Road railway bridge.



Source: Mott MacDonald

#### Recommendation

It is recommended that the hardstanding across the bridge is cleared to enable use by pedestrians.



#### Design Team Response

Agreed – An appropriate width footway could not be achieved over the bridge and therefore the option has since been discounted and an alternative solution proposed..

#### 2.16 C20 - Leonards (GRIP 1 - December 2015)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.17 C25 - Clayway (December 2015 / August 2016)

#### 2.17.1 **Problem**

Location: Padnal.

Summary: Risk of pedestrian trip collisions.

The proposed diversion route, will likely result in pedestrians crossing Padnal between the accesses to a small residential car park. Full height kerbs are present at this location which may lead to trip type injuries.







It is recommended that a crossing point is provided on Padnal featuring dropped kerbs and tactile paving.

#### Design Team Response

Agreed – Dropped kerbs will be provided.

#### 2.18 C26 - Poplar Drove (August 2016)

#### 2.18.1 **Problem**

Location: A10.

Summary: Risk of vehicle collisions with pedestrians.

No footways are present along this section of the A10 and although there is a relatively flat wide verge there are a number of signs placed within the verge which could force pedestrians into the carriageway. The A10 is a primary route and vehicle speeds and traffic flows were observed to be high which may give drivers limited time to react to pedestrians within the carriageway and could result in conflict between pedestrians and vehicles. Furthermore, should a pedestrian trip or slip and fall in the carriageway there is a risk of vehicle strikes and serious injuries.

Figure 2.10: Lack of footway along A10.





It is recommended that a footway is provided for pedestrians.

#### Design Team Response

The proposed diversion route for NMUs is to cross the railway at Willow Row level crossing making use of Poplar Drove, Ten Mile Bank or Willow Row, thus avoiding the A10.

#### 2.19 C27 Willow Row / Willow Road (August 2016)

#### 2.19.1 **Problem**

Location: A10.

Summary: Risk of vehicle collisions with pedestrians.

No footways are present along this section of the A10 and although there is a relatively flat wide verge there are a number of signs placed within the verge which could force pedestrians into the carriageway. The A10 is a primary route and vehicle speeds and traffic flows were observed to be high which may give drivers limited time to react to pedestrians within the carriageway and could result in conflict between pedestrians and vehicles. Furthermore, should a pedestrian trip or slip and fall in the carriageway there is a risk of vehicle strikes and serious injuries.

Figure 2.11: Lack of footway along A10.



It is recommended that a footway is provided for pedestrians.

#### Design Team Response

Disagree – NMUs would continue to use the level crossing at Willow Row/Willow Road as it is being downgraded from a Byway open to all traffic (BOAT) to a Bridleway.

#### 2.20 C28 - Black Horse Drove (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.21 C29 - Cassells (December 2015 / August 2016)

#### 2.21.1 **Problem**

Location: Brinkley Road.

Summary: Risk of vehicle collisions with pedestrians.

There is limited verge width along Brinkley Road and pedestrians are likely to be within the carriageway. Vehicle speeds were observed to be high along this section which may give drivers limited time to react to pedestrians within the carriageway possibly resulting in conflict between pedestrians and vehicles or result in head-on vehicle collisions if a vehicle was to swerve to avoid a pedestrian in the carriageway.

Figure 2.12: Limited carriageway and verge width.





It is recommended that a footpath is provided for pedestrians. If this cannot be achieved then an alternative route should be identified.

#### Design Team Response

Agreed – Footway to be provided on the southwest side of Brinkley Road.

#### 2.22 C30 - Westley Road (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.23 C31 - Littleport Station (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.24 C33 - Jack O'Tell (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.25 C34 - Fysons (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

#### 2.26 C35 - Ballast Pit (August 2016)

The Audit Team did not identify any road safety related issues associated with the scheme.

## Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review Cambridgeshire Stage1 Road Safety Audit Response Report



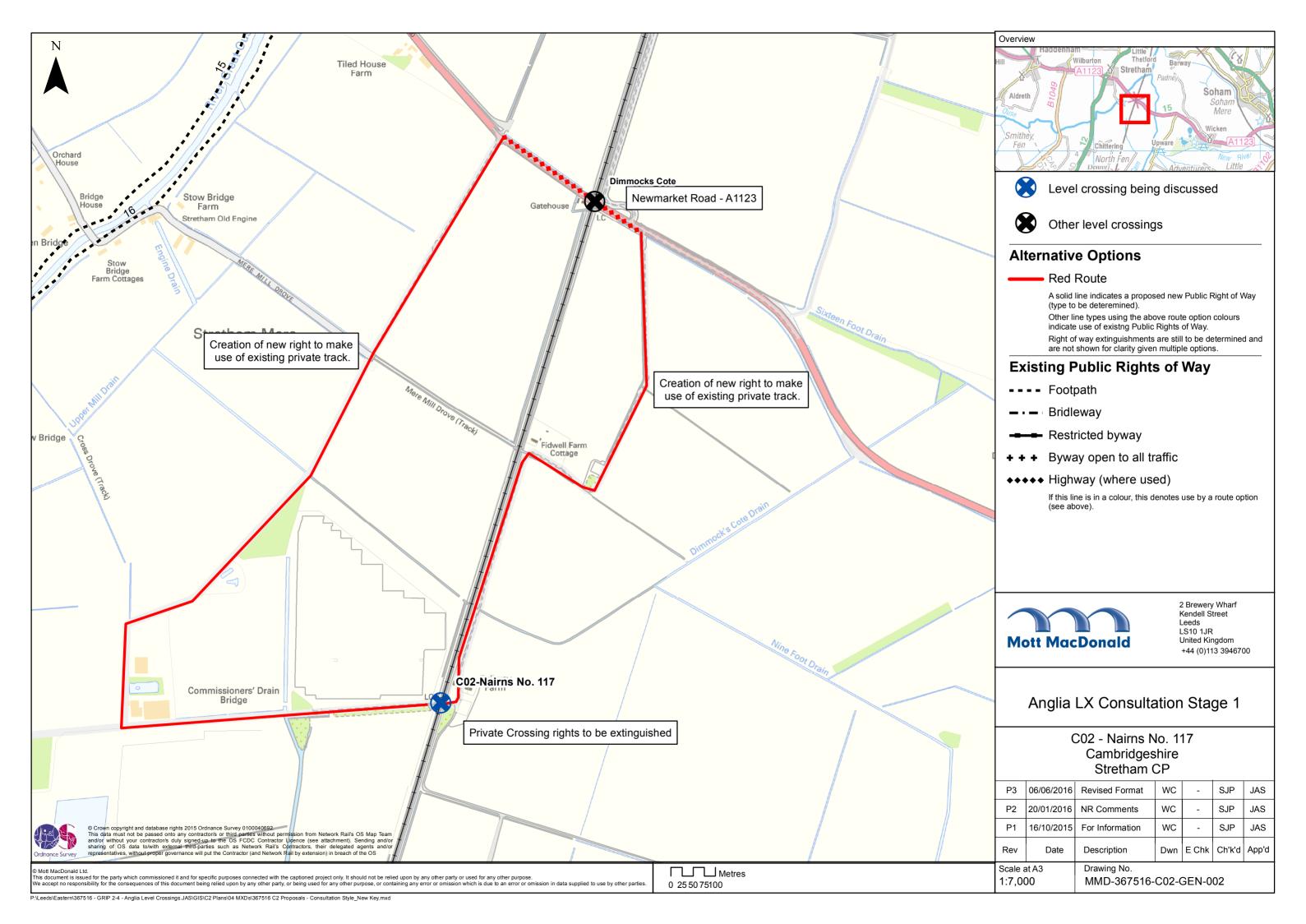
## **Appendices**

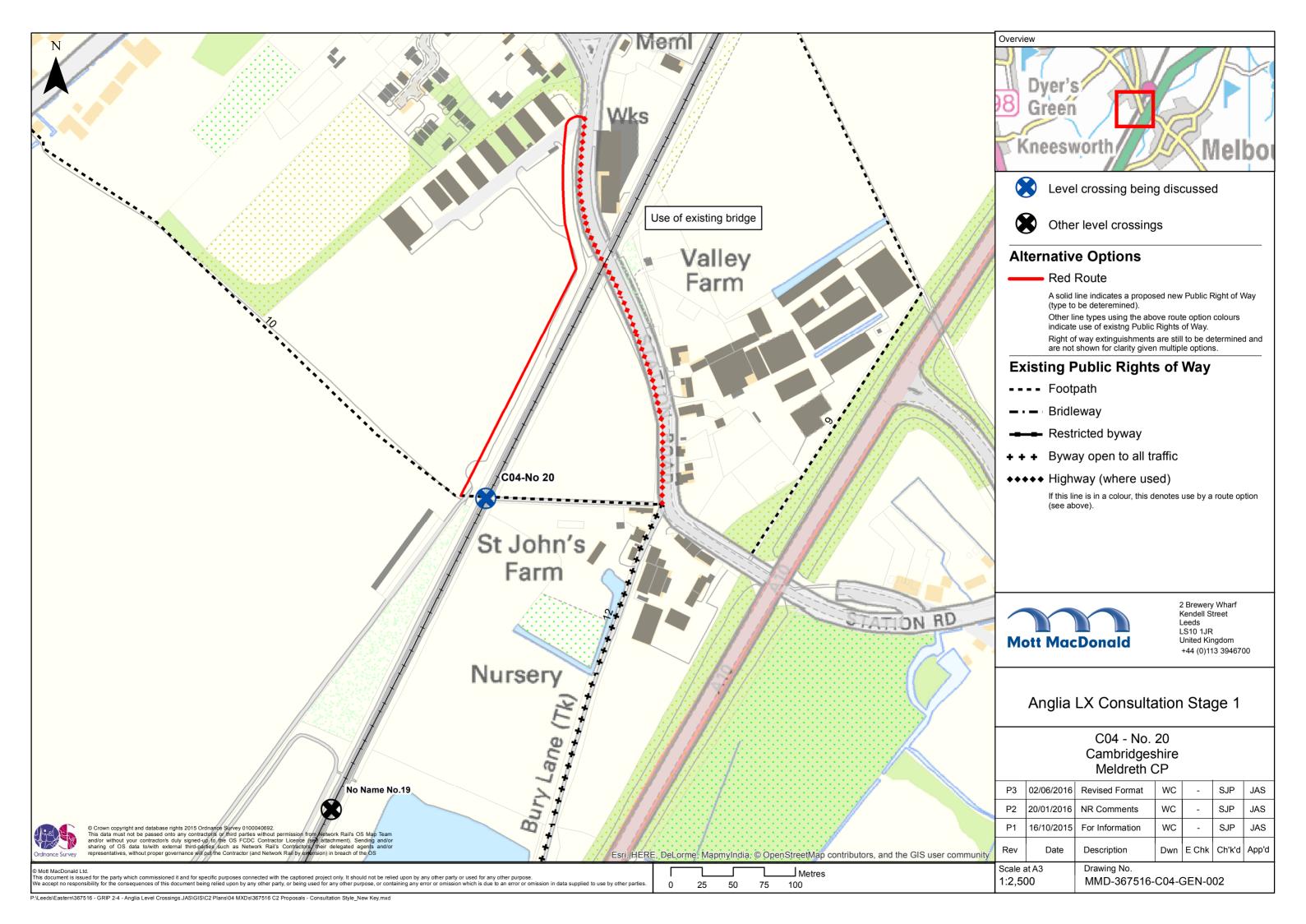
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Appendix A. Ne	y mans	1/

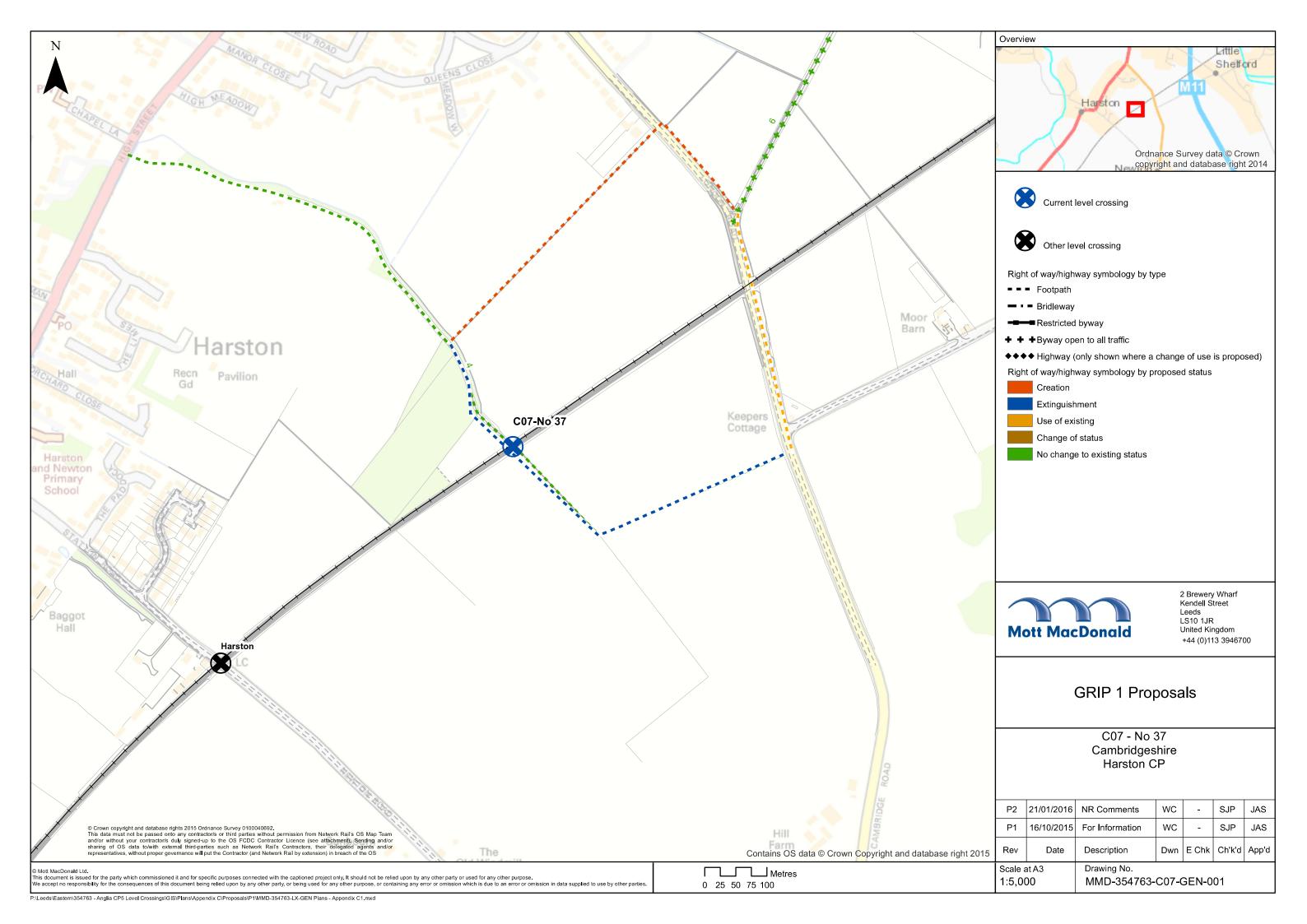


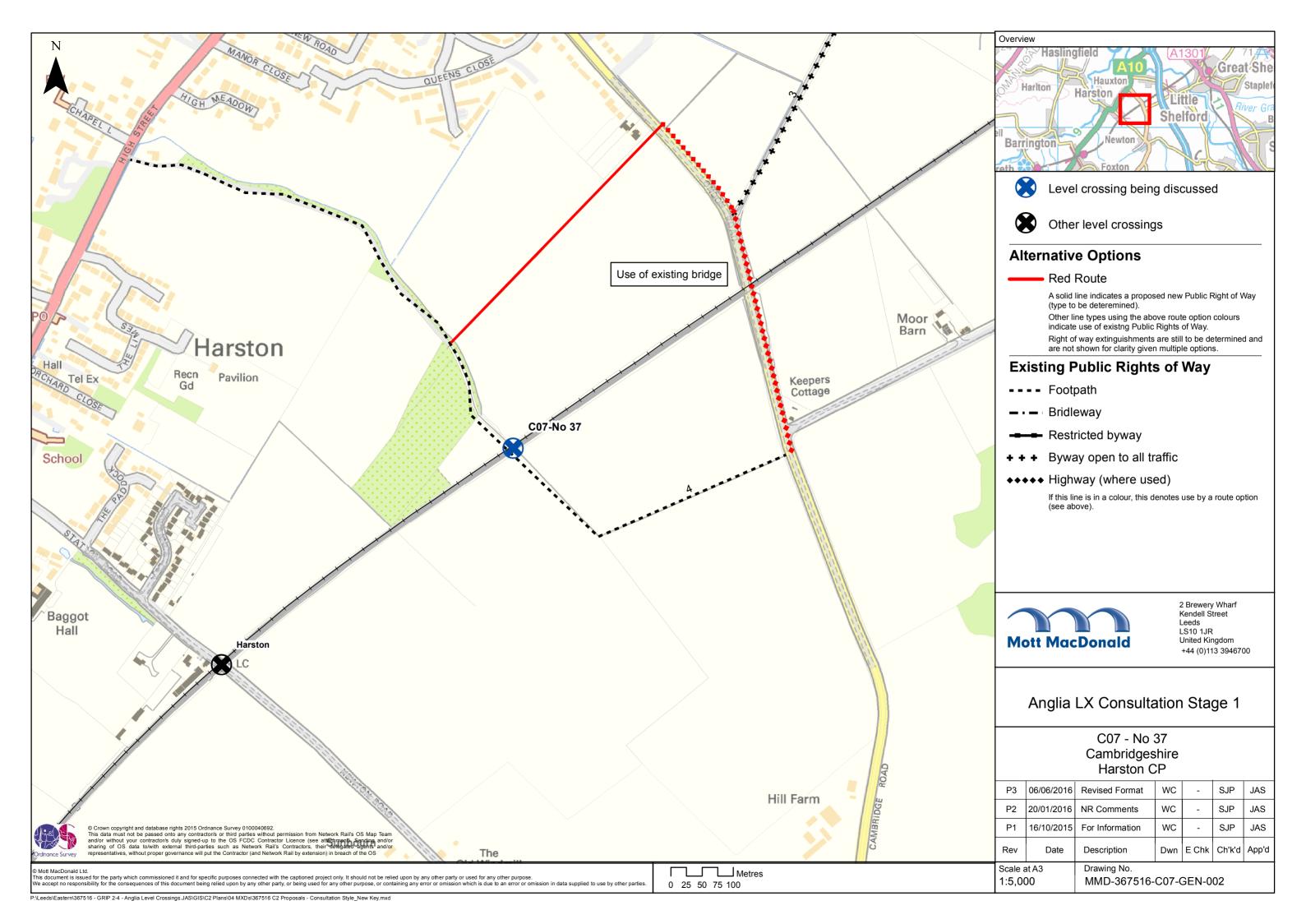
## Appendix A. Key Plans

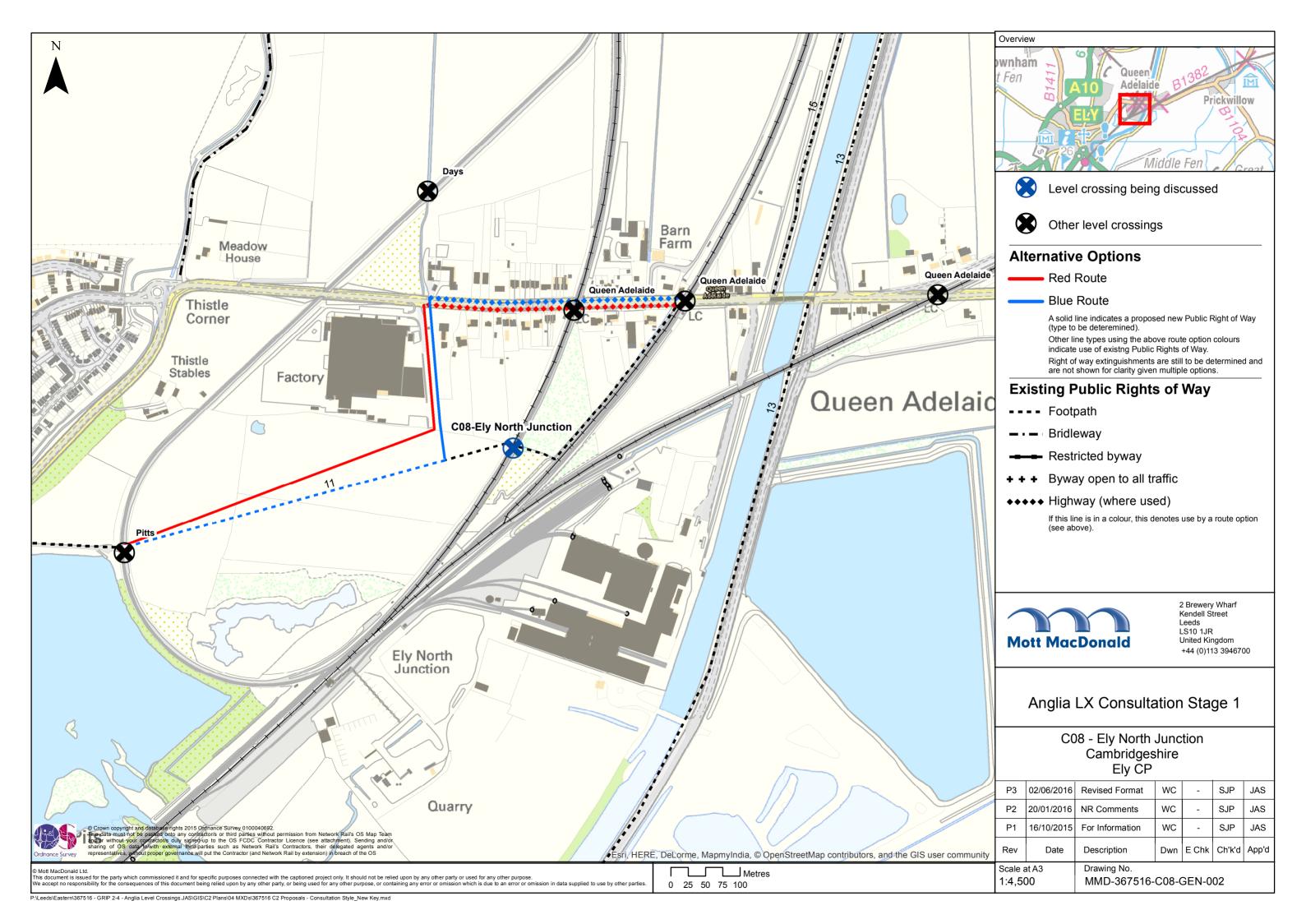
<b>A.1</b>	MMD-367516-C02-GEN-002
<b>A.2</b>	MMD-367516-C04-GEN-002
A.3	MMD-354763-C07-GEN-001
<b>A.4</b>	MMD-367516-C07-GEN-002
<b>A.5</b>	MMD-367516-C08-GEN-002
A.6	MMD-354763-C18-GEN-001
<b>A.7</b>	MMD-354763-C19-GEN-001
<b>A.8</b>	MMD-354763-C25-GEN-001
A.9	MMD-367516-C25-GEN-002
A.10	MMD-367516-C26-GEN-002
A.11	MMD-367516-C27-GEN-002
A.12	MMD-354763-C29-GEN-001

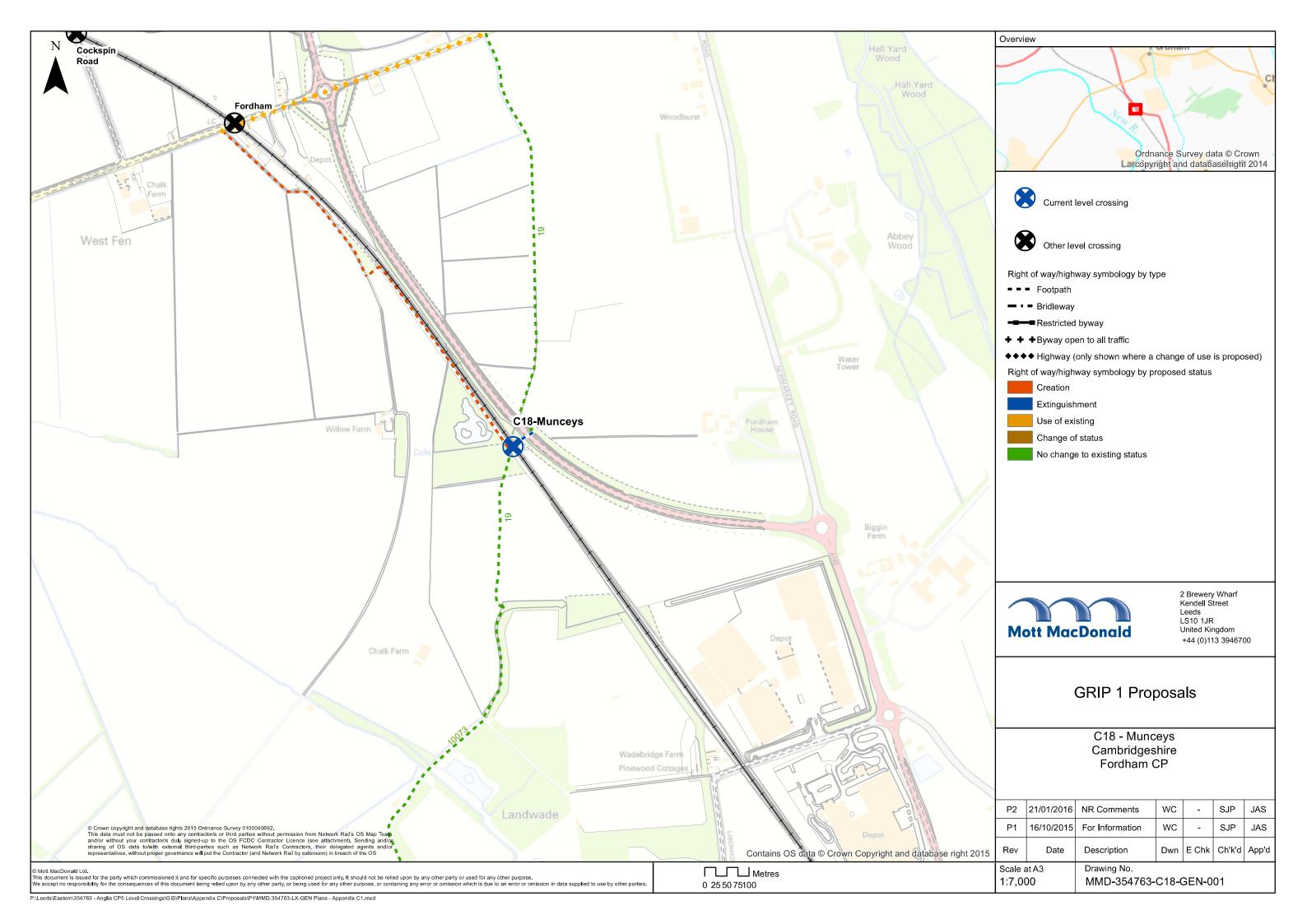


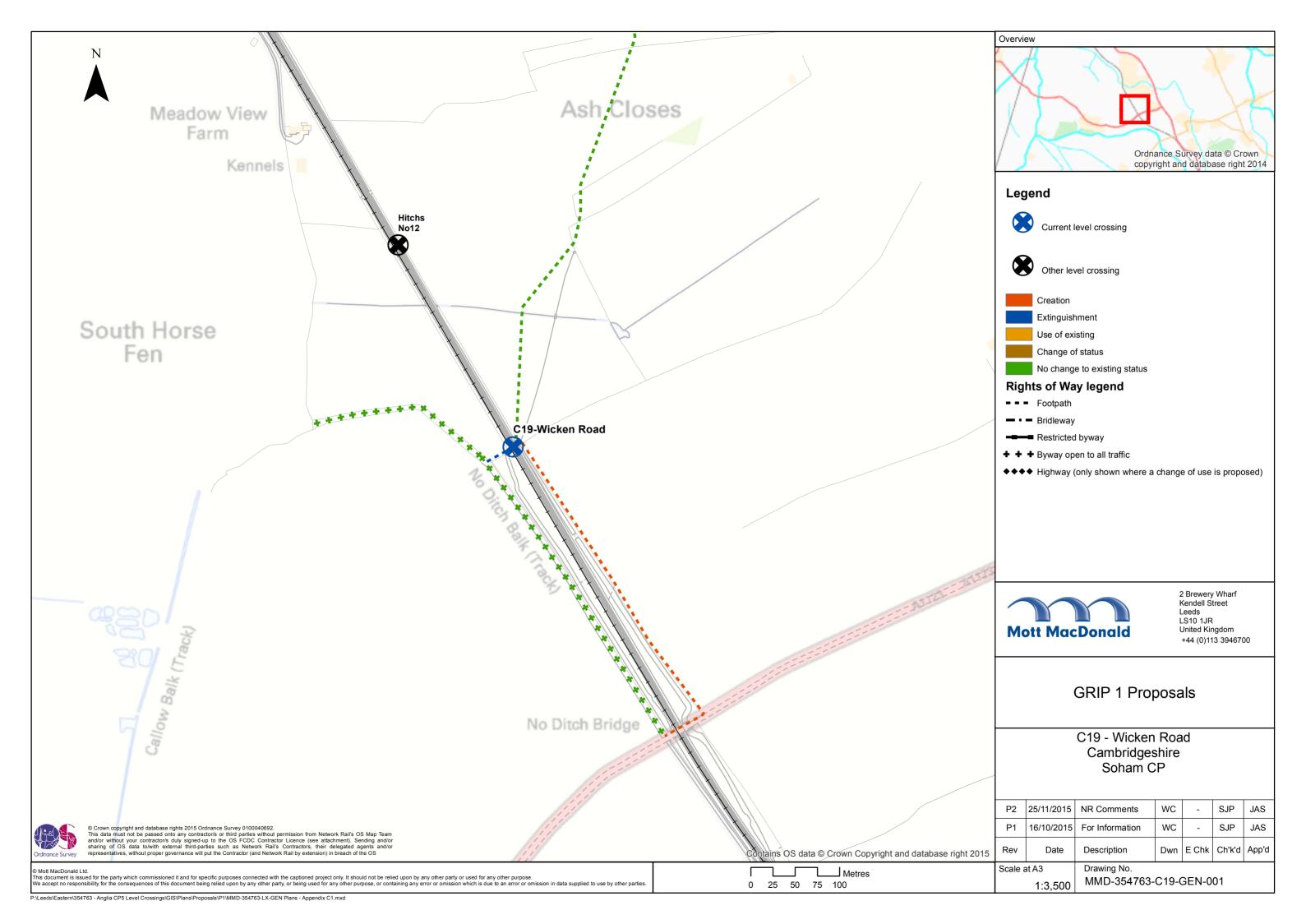


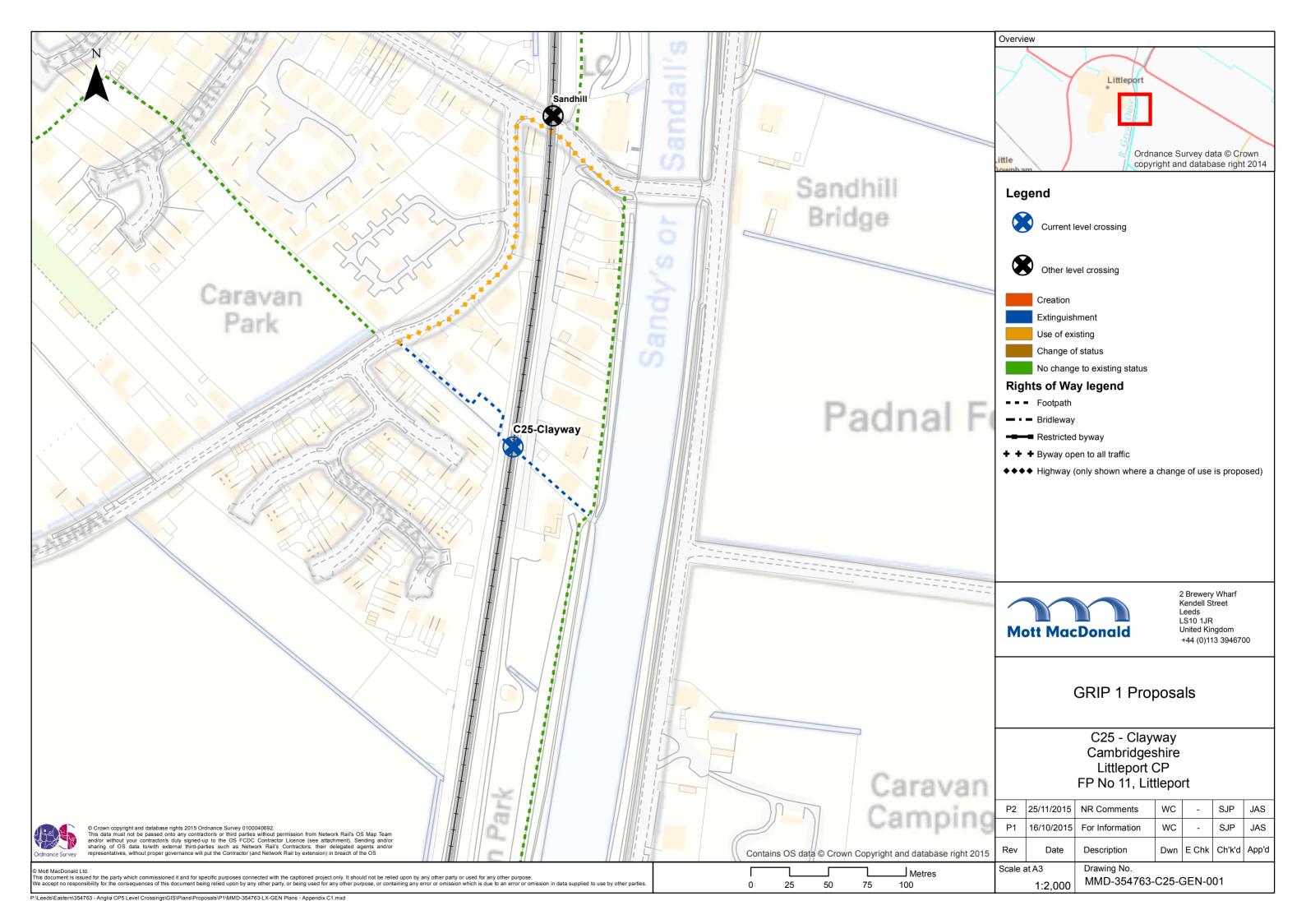


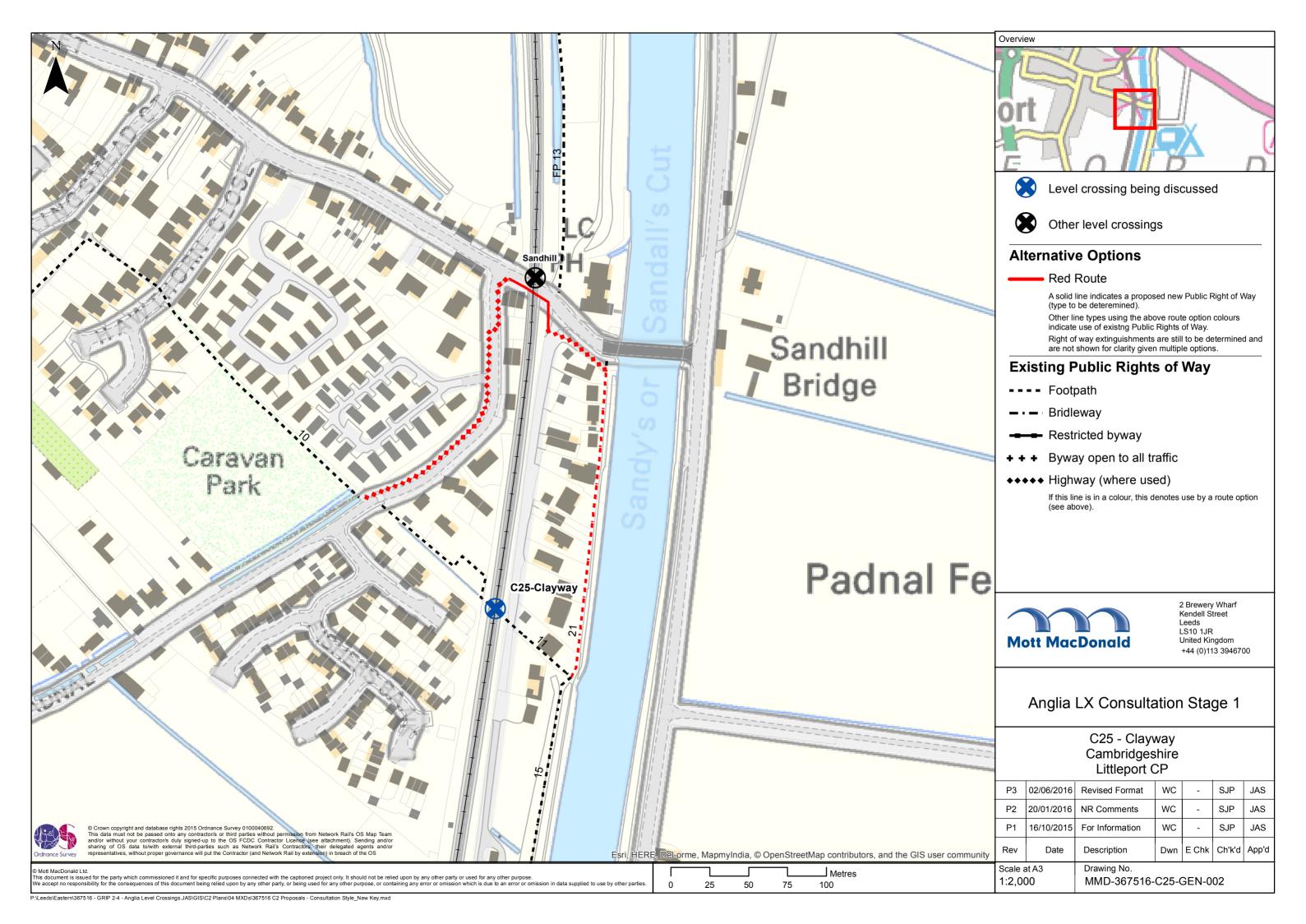


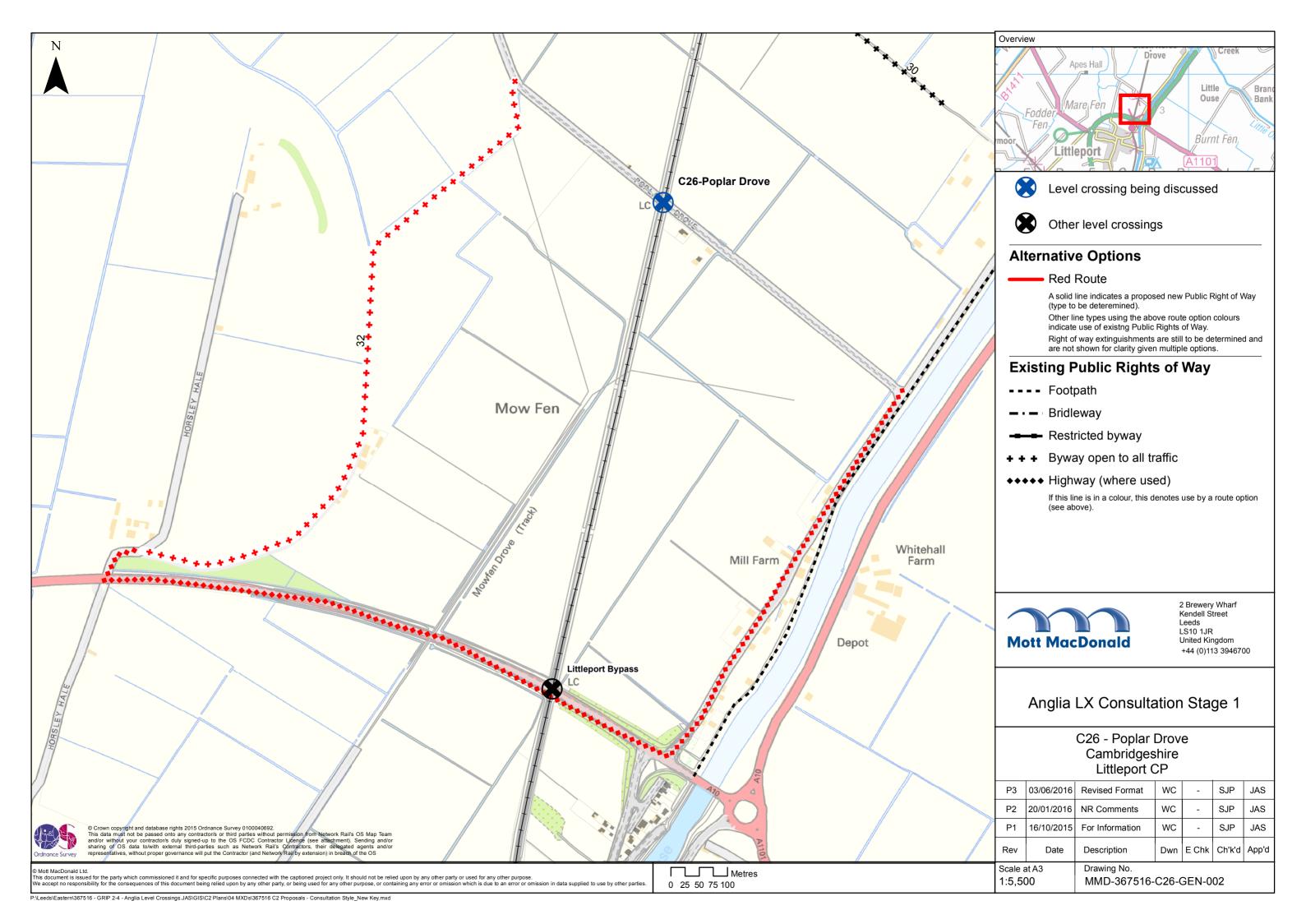


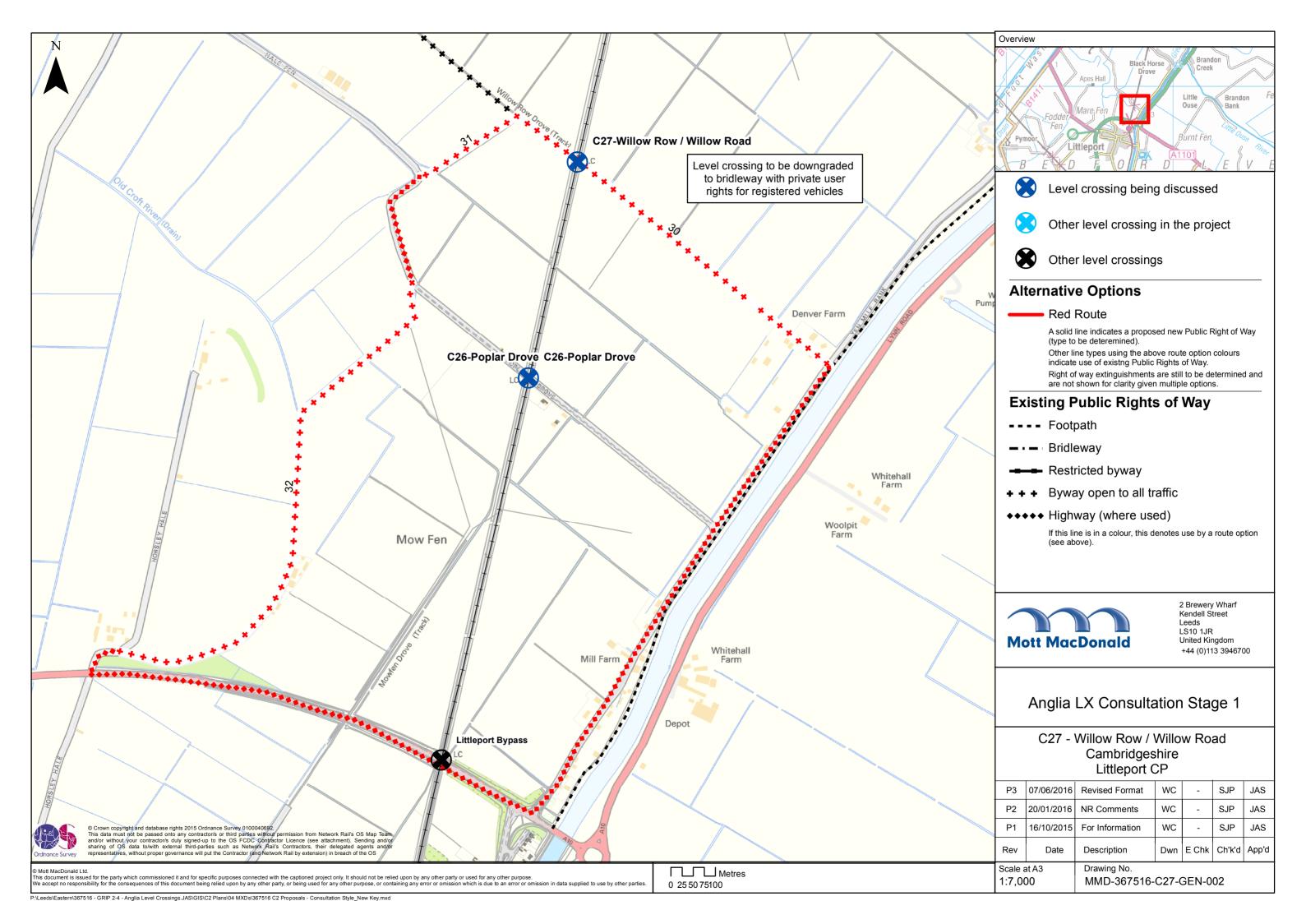


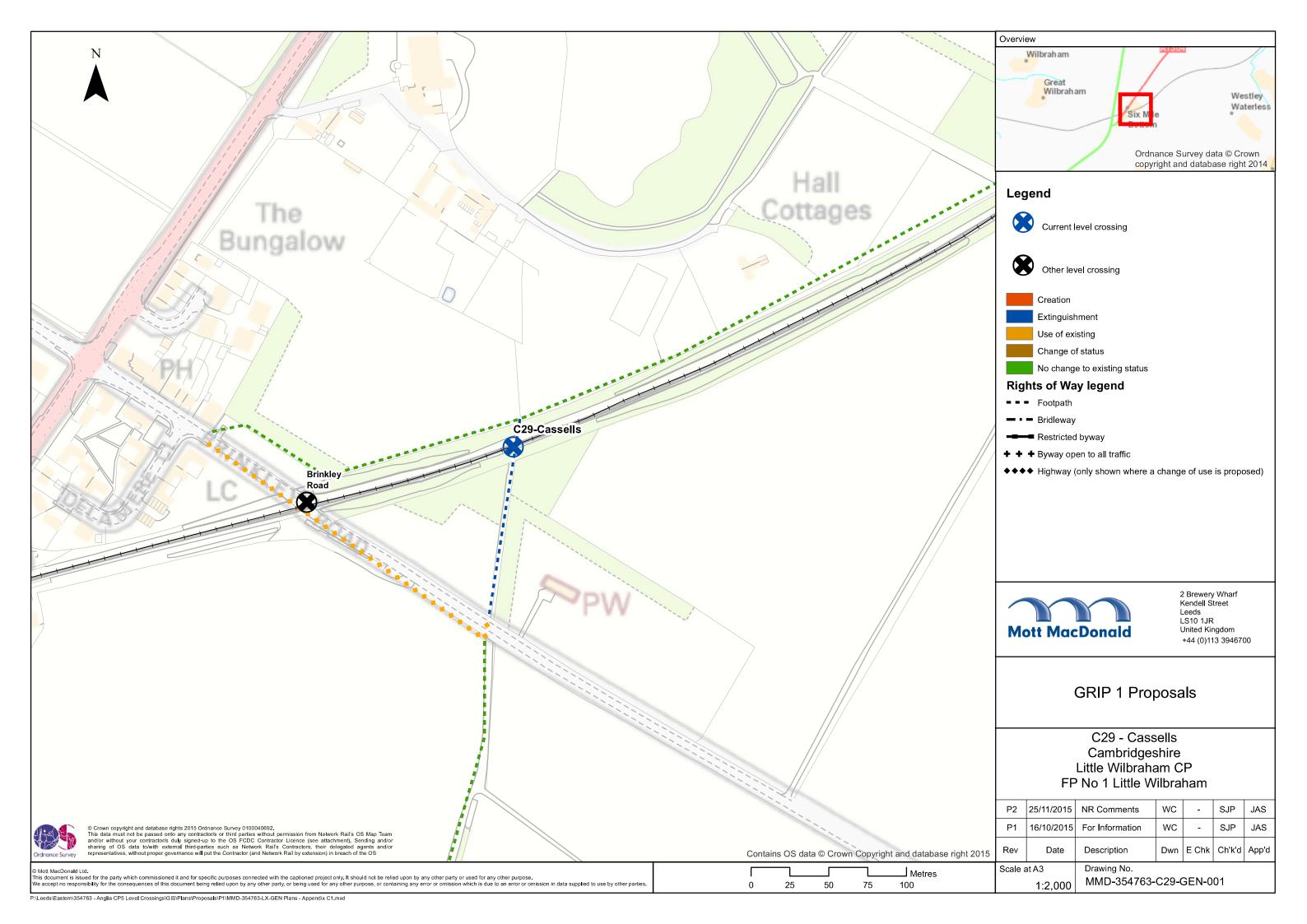












## Transport & Works Act Order (TWAO) Anglia Route GRIP 1 Review Cambridgeshire Stage1 Road Safety Audit Response Report



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