



**NR16**

## **Road Safety Audits**

## **Stage 1 Road Safety Audit Brief**

Anglia Level Crossing Reduction Strategy – Phase 1 & 2

November 2015

Prepared by: Daniel Weir

Mott MacDonald

On behalf of: Nicholas Eddy

Network Rail

## **AUTHORISATION SHEET**

Project: Anglia Level Crossing Reduction Strategy

Report Title: Stage 1 Road Safety Audit Brief

PREPARED BY:

Name: Dan Weir

Signed:



Organisation: Mott MacDonald

Date: 22/11/15

APPROVED ON BEHALF OF THE OVERSEEING ORGANISATION BY:

Name: Nicholas Eddy

Signed:

Organisation: Network Rail

Date: 22/11/15



## Road Safety Audit Brief

1. General details							
<b>1.1 Highway improvement scheme name and road number</b>				Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)			
<b>1.2 Type of scheme</b> (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.							
<b>1.1 RSA stage</b> (tick as appropriate)	1 ✓	2	1&2	3	Interim	4 (12 months)	4 (36 months)
<b>1.2 Overseeing organisation project sponsor details</b>  <b>Contact:</b> Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail  Nicholas.Eddy@networkrail.co.uk				<b>1.3 Design organisation details</b>  <b>Contact:</b> Jason Smith Mott MacDonald 2 Brewery Wharf, Kendell Street, Leeds LS10 1JR United Kingdom  <a href="mailto:jason.smith@mottmac.com">jason.smith@mottmac.com</a>			
<b>1.4 Police contact details (required for Stage 3 Road Safety Audits only)</b>  Not required at this Stage 1 Road Safety Audit.				<b>1.5 Maintaining agent contact details</b>  Essex County Council			
<b>1.6 Road Safety Audit team membership</b>  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. 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							
<b>1.7 Terms of reference</b>  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.							

<p><b>1. Scheme description / objective</b> (provide a brief description of the scheme and its objectives)</p>
<p><b>1.1 General</b> (including scheme purpose and start date for construction)</p> <p>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.</p> <p>We believe it's possible to close level crossings:</p> <ul style="list-style-type: none"> <li>• with private rights only</li> <li>• by diverting people to where a nearby alternative exists</li> <li>• by providing a new public route to a nearby alternative</li> </ul> <p>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.</p> <p>We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.</p> <p>Closing or modifying level crossings provide the following benefits:</p> <ul style="list-style-type: none"> <li>• Improve the safety of level crossing users</li> <li>• Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy</li> <li>• Reduce the ongoing operating and maintenance cost of the railway</li> <li>• Reduce delays to trains, pedestrians and other highway users</li> <li>• Improve journey time reliability for all railway, highway and other rights of way users</li> </ul> <p>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.</p>
<p><b>1.2 Design standards applied to the scheme design</b></p> <p>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.</p>
<p><b>1.3 Design speed</b></p> <p>It is not proposed create or amend any speeds on the roads that from part of the proposals.</p>
<p><b>1.4 Speed limits</b></p> <p>The speed limits at the level crossing closure proposals are as follows:-</p> <ul style="list-style-type: none"> <li>• E08 – North Hall Road national speed limit, Unnamed road national speed limit;</li> <li>• E09 – Station Road 30mph, B1383 High Street 30mph</li> <li>• E10 – B1383 Cambridge Road/Belmont Hill 30mph, Bridge End 30mph, Water Lane 20mph, Gaces Acre 20mph;</li> <li>• E11 – Rookery Lane national speed limit, B1383 London Road 50mph;</li> <li>• E12 – Chesnut Avenue National Speed Limit;</li> <li>• E13 – Littlebury Green Road National Speed Limit;</li> <li>• E14 – Church Lane National Speed Limit, B1002 High Street National Speed Limit;</li> <li>• E15 – Unclassified road leading to underpass National Speed Limit;</li> <li>• E16 – Maldon Road National Speed Limit/30mph;</li> <li>• E17 – Main Road National Speed Limit, A130 National Speed Limit, Generals Lane National Speed Limit, Quarry Road 30mph;</li> <li>• E18 – Main Road National Speed Limit, A130 National Speed Limit, Generals Lane National Speed Limit, Quarry Road 30mph;</li> </ul>

- E19 – Oak Road 30mph;
- E20 – Oak Road 30mph;
- E21 – Unnamed Road un-restricted;
- E22 – Unnamed Road un-restricted; A12 London Road National Speed Limit;
- E26 – Roche Avenue 30mph, Ashingdon Road 30mph, Ironwell Lane 30mph;
- E27 – Warley Street 50mph;
- E28 – Warley Street 50mph;
- E29 – St Mary's Lane 30mph/National Speed Limit;
- E30 – Ferry Road 30mph, High Street 30mph;
- E31 – Ferry Road 30mph, High Street 30mph;
- E32 – Woodgrange Drive 30mph, Butterys 30mph, Lifstan Way 30mph, A13 Southchurch Boulevard 30mph
- E34 – A120 National Speed Limit;
- E38 – A1245 National Speed Limit;
- E41 – Padget Road 30mph, Anglesea Road 10mph, Queens Road 30mph
- E42 – Alresford Road National Speed Limit
- E43 – Tenpenny Hill (B1027) 40mph
- E47 – Pork Lane National Speed Limit
- E52 – Fordham Road National Speed Limit

### **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 57 level crossings within the county of Essex. 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 Essex. 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:-

- E08 – Users would be diverted south on a new footpath on farm land east of the railway to the existing underpass beneath the railway. A new footpath will be created along a field boundary to the west of the railway to connect to the existing PROW;

- E09 – Users would be diverted to the south to the existing stepped footbridge at Newport Train Station. It would involve the creation of a 2m wide footpath (unsurfaced as per existing) on the east side of the railway to create a link to the existing footways and rural roads;
- E10 – Users would be diverted to the south making use of the existing footways on the B1383 Cambridge Road, Bridge End, Belmont Hill and Gaces Acre linking to existing footpaths.
- E11 – Users would be diverted north to Trees road barrier level crossing on Rockery Lane via the existing public rights of way, footways and roads;
- E12 – Private users could either make use of the existing paths on the private estate or make use of Chestnut Avenue, walking within the grassed verges;
- E13 – Users would be diverted south on the west side of the railway on a new 2m wide footpath (unsurfaced as per existing) along the field boundary to link up with the existing public footpath on the south side of Littlebury Green Road;
- E14 – All users would be diverted southwest along the existing private concrete track and railway overbridge.
- E15 – Users would be diverted northeast to an existing underpass northeast of Margaretting level crossing via existing tracks in the area. This includes registered private vehicles.
- E16 – Users would walk along Maldon Road using the grassed verge and footway, crossing the railway at the existing underpass;
- E17 – Users would divert around the railway on existing roads, verges and footways using the existing road bridge on Generals Lane to cross the railway
- E18 – Users would divert around the railway on existing roads, verges and footways using the existing road bridge on Generals Lane to cross the railway
- E19 – Users would be diverted southwest using new and existing PROW routes and footways on Oak Road to cross the railway at the existing underpass on Oak Road.
- E20 – Users would be diverted northeast using existing roads and footways on the A12 and Cranes Lane to cross the railway at the existing bridge on Cranes Lane.
- E21 – Users would be diverted northeast to an existing level crossing (Hill House 1) via an existing track and byway. Little Tey Road would be used to return walkers to the PROW north of the level crossing.
- E22 – Users would be diverted southwest to an existing level crossing (Hill House 1) via an existing track and byway and the footway along the A12. Little Tey Road would be used to return walkers to the PROW north of the level crossing.
- E26 – Users would divert around the railway on existing PROWS, private road and public footways using the underpass on Ironwell Lane to cross the railway
- E27 – Users would divert around the railway on existing and new PROWS and road/verge walking on Warley Lane using the bridge on Warley Lane to cross the railway.
- E28 – Users would divert around the railway on existing and new PROWS and road/verge walking on Warley Lane using the bridge on Warley Lane to cross the railway.
- E29 – Users would use road walking east on St Marys Lane and footways on Station Road and the bridge on St Marys Lane to cross the railway.
- E30 – Users would be diverted northwest to an existing underpass to cross the railway via existing footway along Ferry Road and High Street (north of the railway). A new PROW route would be created in land used for car parking north of the railway to return users to the level crossing.
- E31 – Users would be diverted northwest along an access road to join the diversion described for E30.
- E32 – Users would be diverted west using existing roads and footways on the A13 and Lifstan Way / Woodgrange Drive to cross the railway at the existing bridge on Lifstan Way.
- E34 – Users would be diverted north on a new PROW to the bridge on the A120. They would use the space under the bridge to cross under the railway and along a new field margin PROW west to re-join the PROW network.
- E38 – Users would be diverted up the highway embankment on a new PROW to the A1245 bridge immediately to the west to cross the railway. This would involve using the A1245 as part of the diversion route.
- E41 – Users would divert around the railway on existing roads and footways using the existing road bridge on Anglesea Road to cross the railway
- E42 – Users would divert around the railway on existing tracks, roads and footways using the existing road bridge on Alresford Road to cross the railway.
- E43 – Users would divert around the railway on a new PROW in private land to, via steps to

<p>existing road (B1027) and footways using the existing road bridge on B1027 to cross the railway. The footway is not continuous along the B1027.</p> <ul style="list-style-type: none"> <li>• E47 – Users would be diverted southwest on a new PROW to the bridge on Pork Lane. They would use the space under the bridge to cross under the railway and along a new field margin PROW south to re-join the PROW network.</li> <li>• E52 – Users would be diverted north on new and existing PROWs to cross the railway via the Dowling Road bridge. Users would have a length of road walking on Fordham Rd to the east.</li> </ul>
<p><b>2.2 Relevant factors which may affect road safety</b></p> <p>The following factors have been identified that may affect road safety:</p> <ul style="list-style-type: none"> <li>• Non-motorised users are being diverted to alternative level crossings or grade separated crossings where they may be exposed to live traffic by:- <ul style="list-style-type: none"> <li>○ walking along existing footways;</li> <li>○ walking in existing grassed verges; or</li> <li>○ walking in the carriageway on rural roads.</li> </ul> </li> <li>• The interface of NMU's and agricultural vehicles on the PROWs; and</li> <li>• The access points off the public highway for occasional use by large agricultural vehicles.</li> </ul>
<p><b>3. Personal injury collision analysis</b> (provide personal injury collision data covering both the extent of the scheme and the adjoining sections of highway)</p>
<p><b>3.1 Summary of personal injury collision data</b> (a minimum of the most recent 36 months available)</p> <p>No personal injury collision data is available at the moment; however the information will be available at Stage 2.</p>
<p><b>3.2 Personal injury collision details</b></p> <p>See above</p>
<p><b>4. Departures and relaxations from standards</b> (including details of their status – approved or pending) plus any Design Strategy Records produced for improvements to existing motorways and trunk roads.</p>
<p><b>4.1 General</b></p> <p>No departures from standards.</p>
<p><b>5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports</b></p>
<p><b>5.1 Stage 1</b></p> <p>N/A</p>
<p><b>5.2 Exception Reports</b></p> <p>N/A</p>
<p><b>6. Strategic decisions – items outside the scope of this RSA</b></p>
<p><b>6.1 General</b></p> <p>N/A</p>
<p><b>7. List of included documents and drawings</b></p>

<b>7.1 Documents</b>  GRIP 1 Feasibility reports available on request.			
<b>7.2 Drawings</b>  The following figures, plans, information and drawings are provided: <ul style="list-style-type: none"> <li>11 Scheme Proposal Plans</li> </ul>			
<b>8. Checklist</b> (tick all that are included and provide reasons for those that are not included)			
<b>8.1</b> Road Safety Audit Brief including description of scheme objectives	✓ (Section 1.1)	<b>8.2</b> Site location plan	✓
<b>8.3</b> Scale layout plans	✓	<b>8.4</b> Construction / typical details	✗ The scheme is not that developed
<b>8.5</b> Previous Road Safety Audit Reports	✓	<b>8.6</b> Previous Road Safety Audit Response Reports	✗ None prepared
<b>8.7</b> Road Safety Audit Exception Reports	✗ Not applicable	<b>8.8</b> Departures and relaxation from standards	✗ None (section 4)
<b>8.9</b> Traffic signal staging	✗ Not applicable	<b>8.10</b> Personal injury collision data	✗ Not available at the moment
<b>8.11</b> Personal injury collision plot	✗ Not available at the moment	<b>8.12</b> Traffic counts	✗ Not available at the moment
<b>8.13</b> Speed surveys	✗ Not available at the moment	<b>8.14</b> NMU desire lines and volumes	✓
<b>8.15</b> NMU Context and Audit Report	✗ None prepared	<b>8.16</b> Items outside the scope of the RSA/ strategic decisions	✓ (Section 6)
<b>8.17</b> Other factors that may impact on road safety	✓ (Section 2.2)	<b>8.18</b> Design speeds/ speed limits	✗ Design Speeds not applicable ✓ Speed limits (Section 1.4)
<b>8.19</b> Design standards used	✓ (Section 1.2)	<b>8.20</b> Adjacent land uses	✗ 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

## **Stage 1 Road Safety Audit Brief**

Anglia Level Crossing Reduction Strategy – Phase 1 & 2

November 2015

Prepared by: Daniel Weir

Mott MacDonald

On behalf of: Nicholas Eddy

Network Rail

## **AUTHORISATION SHEET**

Project: Anglia Level Crossing Reduction Strategy

Report Title: Stage 1 Road Safety Audit Brief

PREPARED BY:

Name: Dan Weir

Signed:

Organisation: Mott MacDonald

Date: 22/11/15

APPROVED ON BEHALF OF THE OVERSEEING ORGANISATION BY:

Name: Nicholas Eddy

Signed:

Organisation: Network Rail

Date: 22/11/15

## Road Safety Audit Brief

1. General details							
<b>1.1 Highway improvement scheme name and road number</b>				Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)			
<b>1.2 Type of scheme</b> (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, Suffolk and Essex area. 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.							
<b>1.1RSA stage</b> (tick as appropriate)	1  ✓	2	1&2	3	Interim	4 (12 months)	4 (36 months)
<b>1.2 Overseeing organisation project sponsor details</b>  <b>Contact:</b> Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail  Nicholas.Eddy@networkrail.co.uk				<b>1.3 Design organisation details</b>  <b>Contact:</b> Jason Smith Mott MacDonald 2 Brewery Wharf, Kendell Street, Leeds LS10 1JR United Kingdom  <a href="mailto:jason.smith@mottmac.com">jason.smith@mottmac.com</a>			
<b>1.4 Police contact details (required for Stage 3 Road Safety Audits only)</b>  Not required at this Stage 1 Road Safety Audit.				<b>1.5 Maintaining agent contact details</b>  Hertfordshire County Council			
<b>1.6 Road Safety Audit team membership</b>  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. 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							
<b>1.7 Terms of reference</b>  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.							



<b>1. Scheme description / objective</b> (provide a brief description of the scheme and its objectives)
<p><b>1.1 General</b> (including scheme purpose and start date for construction)</p> <p>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, Suffolk and Essex area.</p> <p>We believe it's possible to close level crossings:</p> <ul style="list-style-type: none"> <li>• with private rights only</li> <li>• by diverting people to where a nearby alternative exists</li> <li>• by providing a new public route to a nearby alternative</li> </ul> <p>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.</p> <p>We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.</p> <p>Closing or modifying level crossings provide the following benefits:</p> <ul style="list-style-type: none"> <li>• Improve the safety of level crossing users</li> <li>• Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy</li> <li>• Reduce the ongoing operating and maintenance cost of the railway</li> <li>• Reduce delays to trains, pedestrians and other highway users</li> <li>• Improve journey time reliability for all railway, highway and other rights of way users</li> </ul> <p>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.</p>
<p><b>1.2 Design standards applied to the scheme design</b></p> <p>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.</p>
<p><b>1.3 Design speed</b></p> <p>It is not proposed create or amend any speeds on the roads that from part of the proposals.</p>
<p><b>1.4 Speed limits</b></p> <p>The speed limits at the level crossing closure proposals are as follows:-</p> <ul style="list-style-type: none"> <li>• H05 – A1184 30mph, Spellbrook Lane East National Speed Limit; and</li> <li>• H06 – B1383 30mph/40mph.</li> </ul>
<p><b>1.5 Existing traffic flows / queues</b></p> <p>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.</p>
<p><b>1.6 Forecast traffic flows</b></p> <p>It is not anticipated that these proposals would generate or transfer significant volumes of traffic.</p>
<p><b>1.7 Non-motorised users (NMU) desire lines</b></p> <p>All existing Public Rights of Way (PROW), i.e. footpaths, cycle-ways and bridleways, in the vicinity of</p>

<p>the level crossing closure proposals are shown on the attached plans.</p> <p>The proposal drawings indicate the existing user route and the proposed diversion routes.</p>
<p><b>1.8 Environmental constraints</b></p> <p>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.</p>
<p><b>2. Description of locality</b></p>
<p><b>2.1 General description</b></p> <p>Anglia Level Crossing Reduction Strategy project has 9 level crossings within the County of Hertfordshire. The purpose of this Stage 1 Road Safety Audit is to review the proposals at 2 level crossings which divert users along the public highway including any associated highway works within the County of Hertfordshire. 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.</p> <p>The level crossing closure proposals are summarised below:-</p> <ul style="list-style-type: none"> <li>• H05 – Users would be diverted south to Spellbrook level crossing on Spellbrook Lane east via the existing footways on the A1184 and public footpaths on both sides of the railway;</li> <li>• H06 – Users would be diverted north on existing footways and footpaths to cross the railway using an existing footbridge;</li> </ul>
<p><b>2.2 Relevant factors which may affect road safety</b></p> <p>The following factors have been identified that may affect road safety:</p> <ul style="list-style-type: none"> <li>• Non-motorised users are being diverted to alternative level crossings or grade separated crossings where they may be exposed to live traffic by:- <ul style="list-style-type: none"> <li>○ walking along existing footways;</li> <li>○ walking in existing grassed verges; or</li> <li>○ walking in the carriageway on rural roads.</li> </ul> </li> <li>• The interface of NMU's and agricultural vehicles on the PROWs; and</li> <li>• The access points off the public highway for occasional use by large agricultural vehicles.</li> </ul>
<p><b>3. Personal injury collision analysis</b> (provide personal injury collision data covering both the extent of the scheme and the adjoining sections of highway)</p>
<p><b>3.1 Summary of personal injury collision data</b> (a minimum of the most recent 36 months available)</p> <p>No personal injury collision data is available at the moment, however the information will be available at Stage 2.</p>
<p><b>3.2 Personal injury collision details</b></p> <p>See above</p>
<p><b>4. Departures and relaxations from standards</b> (including details of their status – approved or pending) plus any Design Strategy Records produced for improvements to existing motorways and trunk roads.</p>
<p><b>4.1 General</b></p>

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:

- 5 Scheme Proposal Plans

## 8. Checklist (tick all that are included and provide reasons for those that are not included)

<b>8.1</b> Road Safety Audit Brief including description of scheme objectives	✓ (Section 1.1)	<b>8.2</b> Site location plan	✓
<b>8.3</b> Scale layout plans	✓	<b>8.4</b> Construction / typical details	✗ The scheme is not that developed
<b>8.5</b> Previous Road Safety Audit Reports	✓	<b>8.6</b> Previous Road Safety Audit Response Reports	✗ None prepared
<b>8.7</b> Road Safety Audit Exception Reports	✗ Not applicable	<b>8.8</b> Departures and relaxation from standards	✗ None (section 4)
<b>8.9</b> Traffic signal staging	✗ Not applicable	<b>8.10</b> Personal injury collision data	✗ Not available at the moment
<b>8.11</b> Personal injury collision plot	✗ Not available at the moment	<b>8.12</b> Traffic counts	✗ Not available at the moment
<b>8.13</b> Speed surveys	✗ Not available at the moment	<b>8.14</b> NMU desire lines and volumes	✓
<b>8.15</b> NMU Context and Audit Report	✗ None prepared	<b>8.16</b> Items outside the scope of the	✓ (Section 6)

		RSA/ strategic decisions	
<b>8.17</b> Other factors that may impact on road safety	✓ (Section 2.2)	<b>8.18</b> Design speeds/ speed limits	✗ Design Speeds not applicable ✓ Speed limits (Section 1.4)
Design standards used	✓ (Section 1.2)	<b>8.19</b> Adjacent land uses	✗ Multiple sites with various land uses including agricultural

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

Nicholas Eddy  
Commercial Scheme Sponsor  
Route Enhancements  
Network Rail

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Anglia Level Crossing Reduction Strategy – Phase 1 & 2

November 2015

Prepared by: Daniel Weir

Mott MacDonald

On behalf of: Nicholas Eddy

Network Rail

## **AUTHORISATION SHEET**

Project: Anglia Level Crossing Reduction Strategy

Report Title: Stage 1 Road Safety Audit Brief

PREPARED BY:

Name: Dan Weir

Signed:

Organisation: Mott MacDonald

Date: 22/11/15

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Name: Nicholas Eddy

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Organisation: Network Rail

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<b>1.1 Highway improvement scheme name and road number</b>				Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)			
<b>1.2 Type of scheme</b> (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, Suffolk and Essex area. 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.							
<b>1.1RSA stage</b> (tick as appropriate)	1  ✓	2	1&2	3	Interim	4 (12 months)	4 (36 months)
<b>1.2 Overseeing organisation project sponsor details</b>  <b>Contact:</b> Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail  Nicholas.Eddy@networkrail.co.uk				<b>1.3 Design organisation details</b>  <b>Contact:</b> Jason Smith Mott MacDonald 2 Brewery Wharf, Kendell Street, Leeds LS10 1JR United Kingdom  <a href="mailto:jason.smith@mottmac.com">jason.smith@mottmac.com</a>			
<b>1.4 Police contact details (required for Stage 3 Road Safety Audits only)</b>  Not required at this Stage 1 Road Safety Audit.				<b>1.5 Maintaining agent contact details</b>  Thurrock Council			
<b>1.6 Road Safety Audit team membership</b>  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. 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							
<b>1.7 Terms of reference</b>  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.							

<b>1. Scheme description / objective</b> (provide a brief description of the scheme and its objectives)
<p><b>1.1 General</b> (including scheme purpose and start date for construction)</p> <p>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, Suffolk and Essex area.</p> <p>We believe it's possible to close level crossings:</p> <ul style="list-style-type: none"> <li>• with private rights only</li> <li>• by diverting people to where a nearby alternative exists</li> <li>• by providing a new public route to a nearby alternative</li> </ul> <p>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.</p> <p>We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.</p> <p>Closing or modifying level crossings provide the following benefits:</p> <ul style="list-style-type: none"> <li>• Improve the safety of level crossing users</li> <li>• Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy</li> <li>• Reduce the ongoing operating and maintenance cost of the railway</li> <li>• Reduce delays to trains, pedestrians and other highway users</li> <li>• Improve journey time reliability for all railway, highway and other rights of way users</li> </ul> <p>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.</p>
<p><b>1.2 Design standards applied to the scheme design</b></p> <p>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.</p>
<p><b>1.3 Design speed</b></p> <p>It is not proposed create or amend any speeds on the roads that from part of the proposals.</p>
<p><b>1.4 Speed limits</b></p> <p>The speed limits at the level crossing closure proposals are as follows:-</p> <ul style="list-style-type: none"> <li>• H04 – A1014 50mph/National Speed Limit; and</li> <li>• T05 – (Fobbing) High Road 40mph/National Speed Limit.</li> </ul>
<p><b>1.5 Existing traffic flows / queues</b></p> <p>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.</p>
<p><b>1.6 Forecast traffic flows</b></p> <p>It is not anticipated that these proposals would generate or transfer significant volumes of traffic.</p>
<p><b>1.7 Non-motorised users (NMU) desire lines</b></p> <p>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.</p>

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 6 level crossings within the Unitary Authority of Thurrock. The purpose of this Stage 1 Road Safety Audit is to review 2 of the level crossings proposals which divert users along the public highway including any associated highway works within the Unitary Authority of Thurrock. 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:-

- H04 – Users would be diverted south along a new footpath to the west of the railway. Steps would be provided up to the footway crossing the railway at The Manorway (A1014) overbridge. Steps would then be provided down into the housing area and existing footpath to the east of the railway; and
- H05 – Users would be diverted east along Southend Road to Fobbing Road level crossing on High Road. The diversion would then make use of the existing footways along High Road and link to Inglefield 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;
  - 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.**



<b>4.1 General</b>  No departures from standards.			
<b>5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports</b>			
<b>5.1 Stage 1</b>  N/A			
<b>5.2 Exception Reports</b>  Not applicable – no exception reports were prepared following the Stage 1 Audits.			
<b>6. Strategic decisions – items outside the scope of this RSA</b>			
<b>6.1 General</b>  N/A			
<b>7. List of included documents and drawings</b>			
<b>7.1 Documents</b>  GRIP 1 Feasibility reports available on request.			
<b>7.2 Drawings</b>  The following figures, plans, information and drawings are provided: <ul style="list-style-type: none"> <li>2 Scheme Proposal Plans</li> </ul>			
<b>8. Checklist</b> (tick all that are included and provide reasons for those that are not included)			
<b>8.1</b> Road Safety Audit Brief including description of scheme objectives	✓ (Section 1.1)	<b>8.2</b> Site location plan	✓
<b>8.3</b> Scale layout plans	✓	<b>8.4</b> Construction / typical details	✗ The scheme is not that developed
<b>8.5</b> Previous Road Safety Audit Reports	✓	<b>8.6</b> Previous Road Safety Audit Response Reports	✗ None prepared
<b>8.7</b> Road Safety Audit Exception Reports	✗ Not applicable	<b>8.8</b> Departures and relaxation from standards	✗ None (section 4)
<b>8.9</b> Traffic signal staging	✗ Not applicable	<b>8.10</b> Personal injury collision data	✗ Not available at the moment
<b>8.11</b> Personal injury collision plot	✗ Not available at the moment	<b>8.12</b> Traffic counts	✗ Not available at the moment
<b>8.13</b> Speed surveys	✗ Not available at the moment	<b>8.14</b> NMU desire lines and volumes	✓

<b>8.15</b> NMU Context and Audit Report	✗ None prepared	<b>8.16</b> Items outside the scope of the RSA/ strategic decisions	✓ (Section 6)
<b>8.17</b> Other factors that may impact on road safety	✓ (Section 2.2)	<b>8.18</b> Design speeds/ speed limits	✗ Design Speeds not applicable ✓ Speed limits (Section 1.4)
Design standards used	✓ (Section 1.2)	<b>8.19</b> Adjacent land uses	✗ Multiple sites with various land uses including agricultural

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

Nicholas Eddy  
Commercial Scheme Sponsor  
Route Enhancements  
Network Rail

Nicholas.Eddy@networkrail.co.uk



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

Essex, Thurrock & Hertfordshire Stage1 Road Safety Audit

Report Number 354763/RPT219

Revision A

December 2015





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

Essex, Thurrock & Hertfordshire Stage1 Road Safety Audit

December 2015

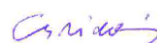
Network Rail

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



# Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	17/12/2015	A J Coleman / R J Collins	T J Blaney	C S Ridding	First Draft



## Information class: Standard

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# 1 Introduction

Network Rail is carrying out feasibility studies to explore options for the closure of level crossings throughout Essex and some closures in Thurrock and Hertfordshire, 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 Essex and some closures in Thurrock and Hertfordshire. 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 4<sup>th</sup> November 2015 between 12:30 and 15:40, during which the weather was raining and the road surface was wet, or on Tuesday 10<sup>th</sup> November 2015 between 10:30 and 17:45 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.

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 E08 – Henham

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

### 2.2 E09 – Elephant

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

### 2.3 E10 – Dixies

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

### 2.4 E11 – Windmills

#### 2.4.1 Windmills Problem 001

*Location: London Road / Mutlow Hill Roundabout with Sparrowsend Hill.*

*Summary: Lighting columns restrict available width with a risk of conflict between pedestrians and vehicles.*

The diversion route directs pedestrians along the western verge of London Road. Lighting columns are located within the verge which could restrict the width available to pedestrians, potentially causing them to enter the carriageway with a risk of conflict with vehicles.

#### Recommendation

A suitable verge or footway width should be provided behind the lighting columns.

### 2.5 E12 – Wallaces

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

### 2.6 E13 – Littlebury Gate House

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

### 2.7 E14 – Church Lane Cctv (ltn1)

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

## 2.8 E17 – Boreham

### 2.8.1 Boreham Problem 001

*Location: Hanson Bulls Lodge Access Road.*

*Summary: Pedestrians walking within the carriageway at risk of collisions with large vehicles.*

The diversion route guides pedestrians along the Bulls Lodge Quarry access road which is heavily used by large vehicles. Although the access road is wide and has good forward visibility, it is not recommended that pedestrians walk within the carriageway as any collision with a large vehicle is likely to result in serious injury to pedestrians.

Figure 2.1: Bulls Lodge Quarry access road.



Source: Mott MacDonald

#### Recommendation

It is recommended that a compacted footpath is provided and set back from the access road to encourage pedestrians to stay clear of the carriageway.

## 2.9 E18 – Noakes

### 2.9.1 Noakes Problem 001

See problems above (2.7.1 E17 – Boreham) as proposed diversion route utilises the same quarry access road.

#### **2.10 E19 – Potters**

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

#### **2.11 E20 – Snivellers**

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

#### **2.12 E21 – Hill House 1**

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

#### **2.13 E22 – Great Domsey**

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

#### **2.14 E26 – Barbara Close**

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

## 2.15 E27 – Puddle Dock

### 2.15.1 Puddle Dock Problem 001

*Location: Warley Street railway bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

The carriageway on Warley Street narrows over the railway bridge and only a narrow hardstanding (<0.5m) is present which would force pedestrians to walk within the carriageway. Traffic volumes and speeds were high and pedestrians walking in the carriageway would be at risk of collisions with vehicles, which would likely result in high severity injuries.

Figure 2.2: Reduced widths over railway bridge.



Source: Mott MacDonald

### Recommendation

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



## **2.16 E28 – Whipps Farmers**

### **2.16.1 Whipps Farmers Problem 001**

See problem above (2.15.1 E27 – Puddle Dock) as proposed diversion route utilises the same highway.

## **2.17 E29 – Brown & Tawse**

### **2.17.1 Brown & Tawse Problem 001**

*Location: St Marys Lane where it joins with the existing footpath.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

On St Marys Lane to the east of the existing footpath no verge is present and pedestrians would have to walk in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted around the bend. These factors could result in conflict between pedestrians and vehicles.

Figure 2.3: Lack of verge on St Marys Lane.



Source: Mott MacDonald

### **Recommendation**

A suitable footway should be provided otherwise an alternative route should be identified.

## **2.18 E30 – Ferry**

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

## **2.19 E31 – Brickyard Farm**

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

## **2.20 E32 – Woodgrange Close**

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

## **2.21 E34 – Cousins Number 1**

### **2.21.1 Cousins Number 1 Problem 001**

*Location: A120 Underpass.*

*Summary: Risk of anti-social behaviour.*

The proposed diversion will take pedestrians onto a suspended footbridge beneath the railway line and above the A120. The footbridge will not be overlooked and there is a risk some people may act inappropriately with potential to throw objects at westbound vehicles on the A120. Such behaviour may lead to vehicle loss of control and potentially serious collisions.

#### **Recommendation**

The footbridge should be enclosed to prevent users interacting with the vehicles on the A120.

### 2.21.2 Cousins Number 1 Problem 002

*Location: A120 southern verge.*

*Summary: Risk of vehicle to pedestrian collisions.*

The proposed diversion will run along the southern side of the A120 and it is not clear if this will be on the A120 side of the embankment or along the agricultural side at the top of the embankment. Pedestrians walking along the verge are at serious risk of injury in the event of loss of control collisions.

Figure 2.4: A120 westbound verge.



Source: Mott MacDonald

#### Recommendation

A suitable footway width should be provided behind the barrier and be clear of any obstructions.

### 2.22 E38 - Battlesbridge

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

### 2.23 E41 – Padget

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

## 2.24 E42 – Sand Pit

### 2.24.1 Sand Pit Problem 001

*Location: Alresford Road.*

*Summary: Risk of pedestrian trip accidents.*

The proposed diversion will run along the north eastern verge of the Arlesford Road and where the wide verge narrows the surface of the existing narrow verge is uneven with a lower worn area and a raised unworn area presenting a level difference. The worn area also features numerous pot holes. There is a risk of pedestrians tripping on the uneven surface and falling into the carriageway, at risk of collisions with vehicles.

Figure 2.5: Alresford Road north eastern verge.



Source: Mott MacDonald

#### Recommendation

A suitable level hardstanding should be provided to reduce the risk of pedestrians tripping.

## 2.25 E43 – High Elm

### 2.25.1 High Elm Problem 001

*Location: B1027 Ten Penny Hill.*

*Summary: Risk of vehicle to pedestrian collisions.*

The proposed diversion will guide pedestrians along Ten Penny Hill. Currently there is a footway on the north east side of Ten Penny Hill which terminates at Wivenhoe Road and a footway is provided on the south west side of Ten Penny Hill which continues as far as Coach Road, opposite where the proposed diversion will join Ten Penny Hill. Ten Penny Hill is a high speed road with a posted 50mph speed limit and is also quite wide. Pedestrians will be vulnerable to collisions with vehicles if required to cross the road twice to continue their journey.

Figure 2.6: Ten Penny Hill at the western interface looking south east.



Source: Mott MacDonald

#### Recommend

It is recommended that a suitable compacted footpath is provided on the north east side of Ten Penny Hill to avoid pedestrians having to cross the wide busy road twice.

## 2.26 E47 - Bluehouse

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

## 2.27 E52 – Golden Square

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

## 2.28 T04 – Jefferies

### 2.28.1 Jefferies Problem 001

*Location: Manorway.*

*Summary: Risk of vehicle to pedestrian collisions.*

The proposed diversion will run along the south eastbound A1014. The footway was inaccessible at the time of the site visit as it was located behind a large safety barrier and it was therefore difficult to determine the existing width. If there is insufficient width, there is a risk that pedestrians will be forced to travel within the carriageway to cross the railway at risk of collisions with vehicles, which were observed to travel at high speed.

Figure 2.7: Proposed footway behind safety barrier.



Source: Mott MacDonald

## Recommend

A suitable footway width should be provided behind the barrier and be clear of any obstructions.

## **2.29 T05 – Howells Farm**

### **2.29.1 Howells Farm Problem 001**

*Location: Southend Road / High Road roundabouts.*

*Summary: Increase in conflict points between pedestrians and vehicles.*

The proposed diversion directs pedestrians across a residential service road junction on High Road before guiding them across another access on Southend Road which provides access to a garage and petrol station directly from the roundabout. The route then directs pedestrians onto grassed island. Each of these crossings increases the potential for conflict between pedestrians and vehicles particularly at the roundabout where vehicles can exit from different angles.

#### **Recommendation**

It is recommended that the diversion utilises the existing footway that runs between High Road service road and Southend Road away from the two roundabouts. This removes the need for pedestrians to cross the carriageway, and the potential for conflict between pedestrians and vehicles.

### 2.29.2 Howells Farm Problem 002

*Location: Southend Road / High Road roundabouts.*

*Summary: Lack of footway potentially resulting in conflict between pedestrians and vehicles.*

The available verge width on Southend Road appeared restricted which could force pedestrians into the carriageway where they are at risk of collisions with vehicles. A cycleway is also present on Southend Road and cyclists may swerve to avoid pedestrians in the carriageway potentially resulting in conflict either between pedestrians and cyclists or between cyclists and vehicles.

Figure 2.8: Restricted verge width.



Source: Mott MacDonald

#### Recommendation

Suitable footway widths should be provided otherwise an alternative route should be identified.

### 2.30 H05 – Pattens

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

### 2.31 H06 – Gilston

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



### 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

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

Signed:



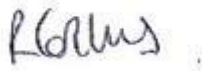
Date: 17<sup>th</sup> December 2015

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

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

# Appendix A. List of Submitted Documents

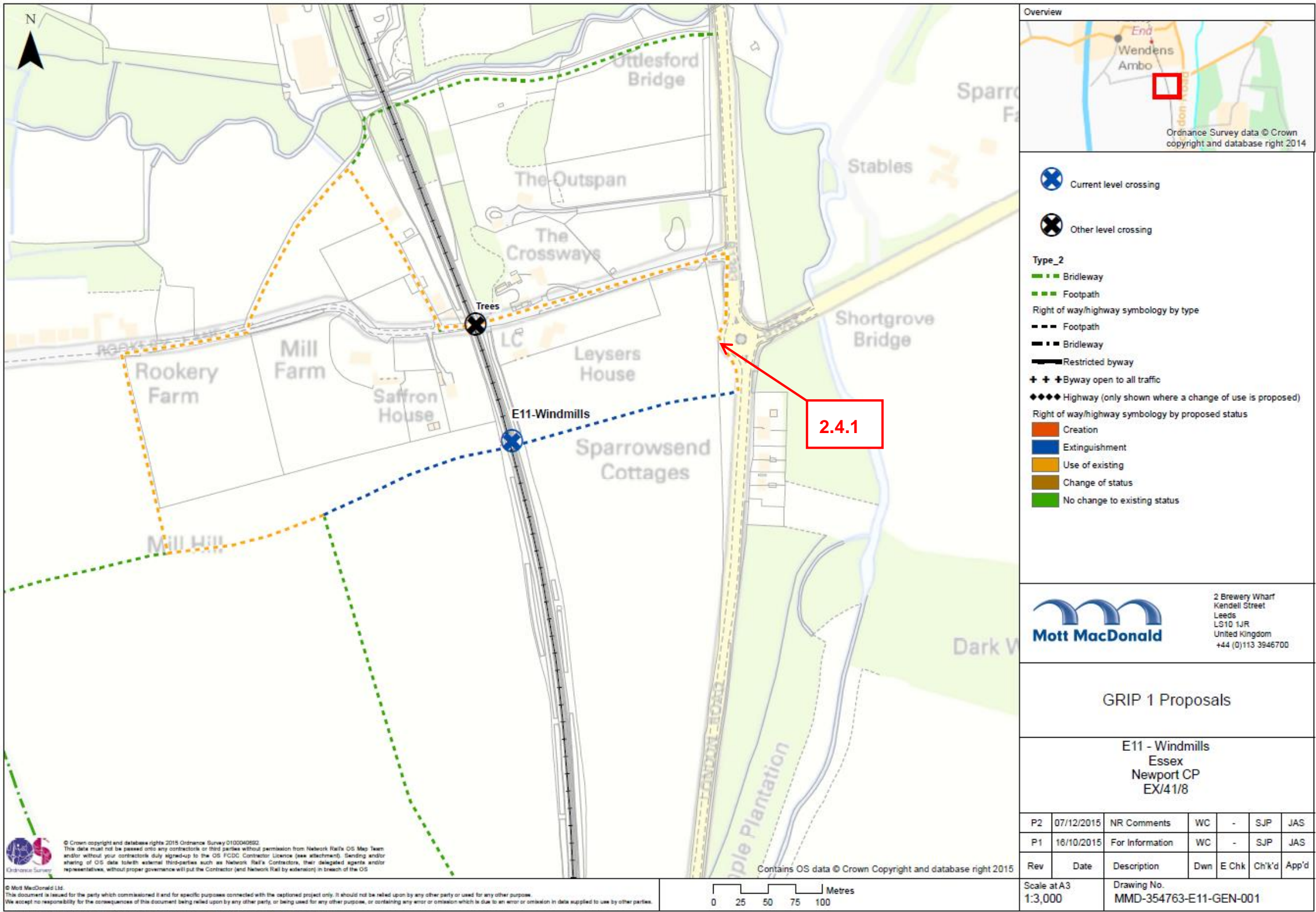
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Table A.1: Drawings

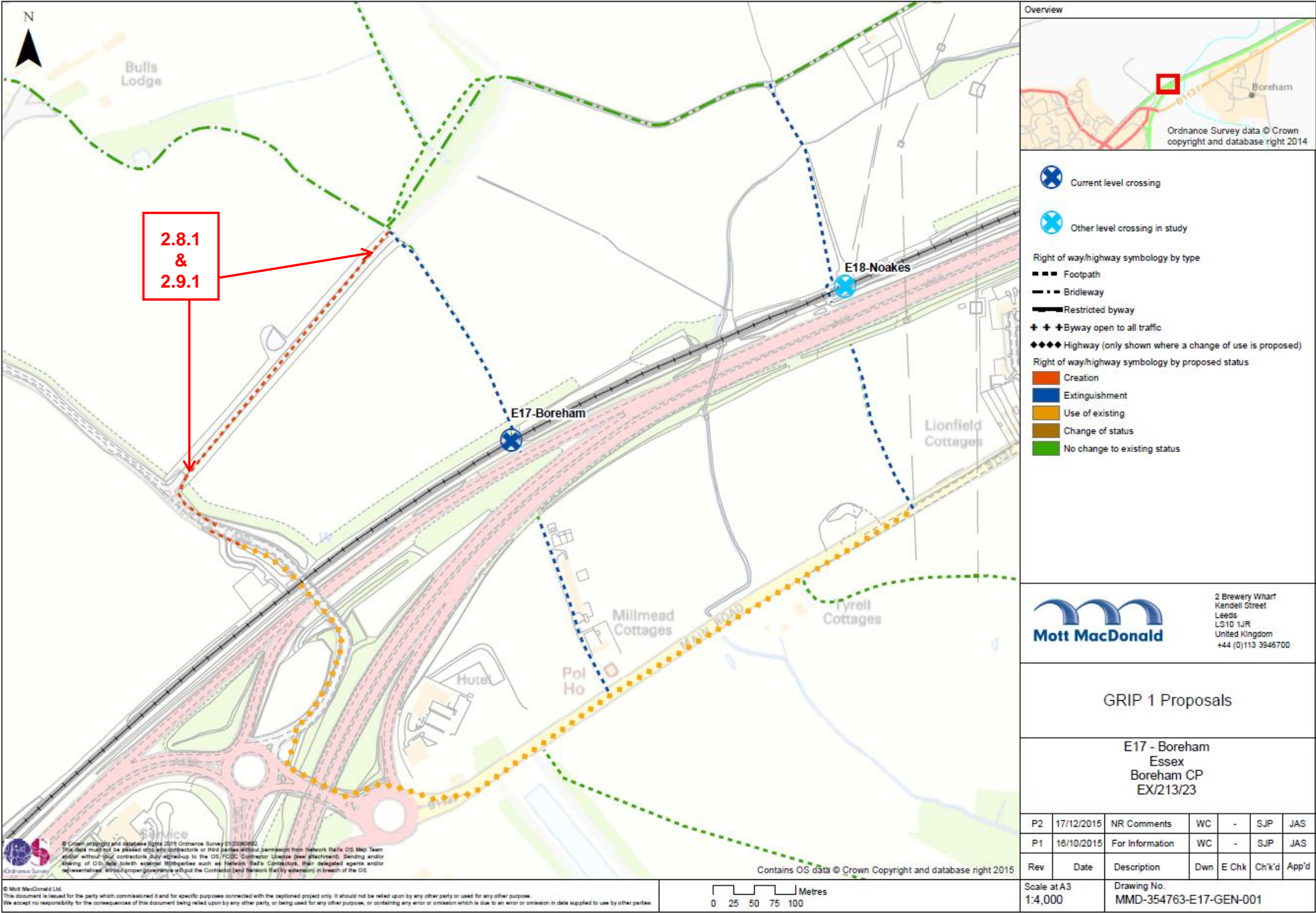
Drawing	Rev	Title
MMD-354763-E08-GEN-001	P2	Henham
MMD-354763-E09-GEN-001	P2	Elephant
MMD-354763-E10-GEN-001	P2	Dixies
MMD-354763-E11-GEN-001	P2	Windmills
MMD-354763-E12-GEN-001	P2	Wallaces
MMD-354763-E13-GEN-001	P2	Littlebury Gate house
MMD-354763-E14-GEN-001	P2	Church Lane Cctv (ltn1)
MMD-354763-E17-GEN-001	P2	Boreham
MMD-354763-E18-GEN-001	P2	Noakes
MMD-354763-E19-GEN-001	P2	Potters
MMD-354763-E20-GEN-001	P2	Snivellers
MMD-354763-E21-GEN-001	P2	Hill House 1
MMD-354763-E22-GEN-001	P2	Great Domsey
MMD-354763-E26-GEN-001	P2	Barbara Close
MMD-354763-E27-GEN-001	P2	Puddle Dock
MMD-354763-E28-GEN-001	P2	Whipps Farmers
MMD-354763-E29-GEN-001	P2	Brown & Tawse
MMD-354763-E30-GEN-001	P2	Ferry
MMD-354763-E31-GEN-001	P2	Brickyard Farm
MMD-354763-E32-GEN-001	P2	Woodgrange Close
MMD-354763-E34-GEN-001	P2	Cousins Number 1
MMD-354763-E38-GEN-001	P2	Battlesbridge
MMD-354763-E41-GEN-001	P2	Padget
MMD-354763-E42-GEN-001	P2	Sand Pit
MMD-354763-E43-GEN-001	P2	High Elm
MMD-354763-E47-GEN-001	P2	Bluehouse
MMD-354763-E52-GEN-001	P2	Golden Square
MMD-354763-T04-GEN-001	P2	Jefferies
MMD-354763-T05-GEN-001	P2	Howells Farm
MMD-354763-H05-GEN-001	P2	Pattens
MMD-354763-H06-GEN-001	P2	Gilston

Source: Mott MacDonald, Sheffield

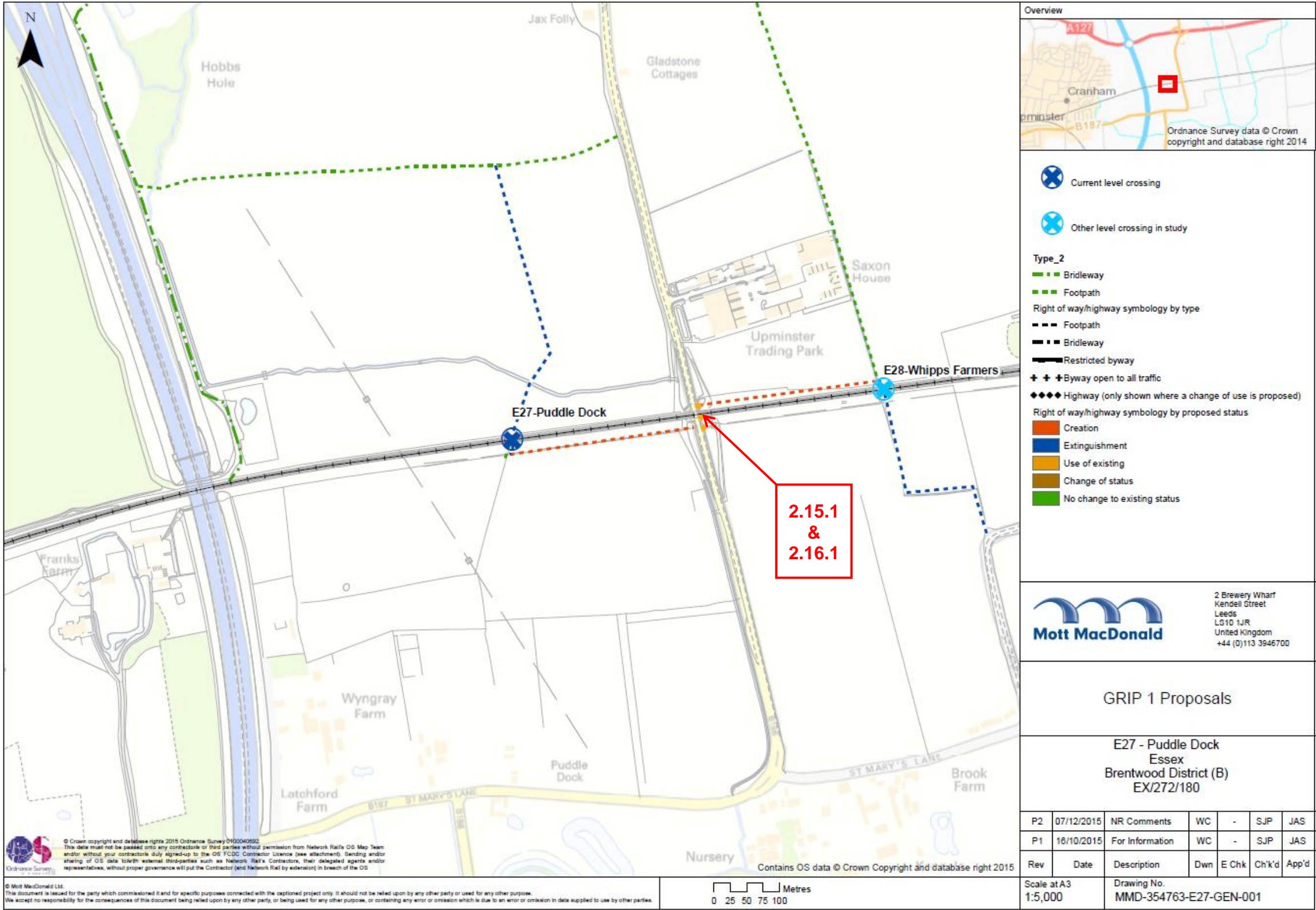
Appendix B. Key Plans

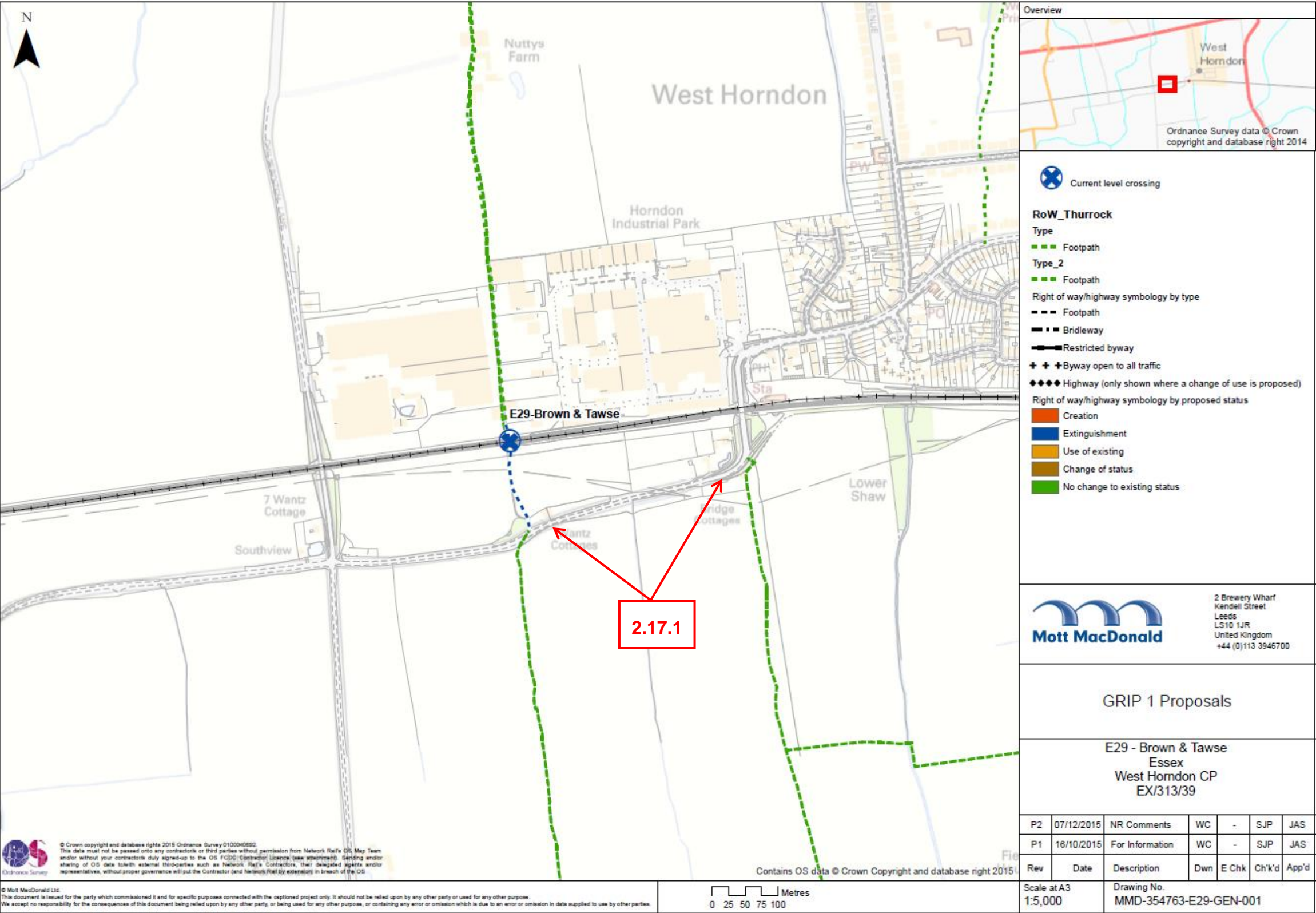




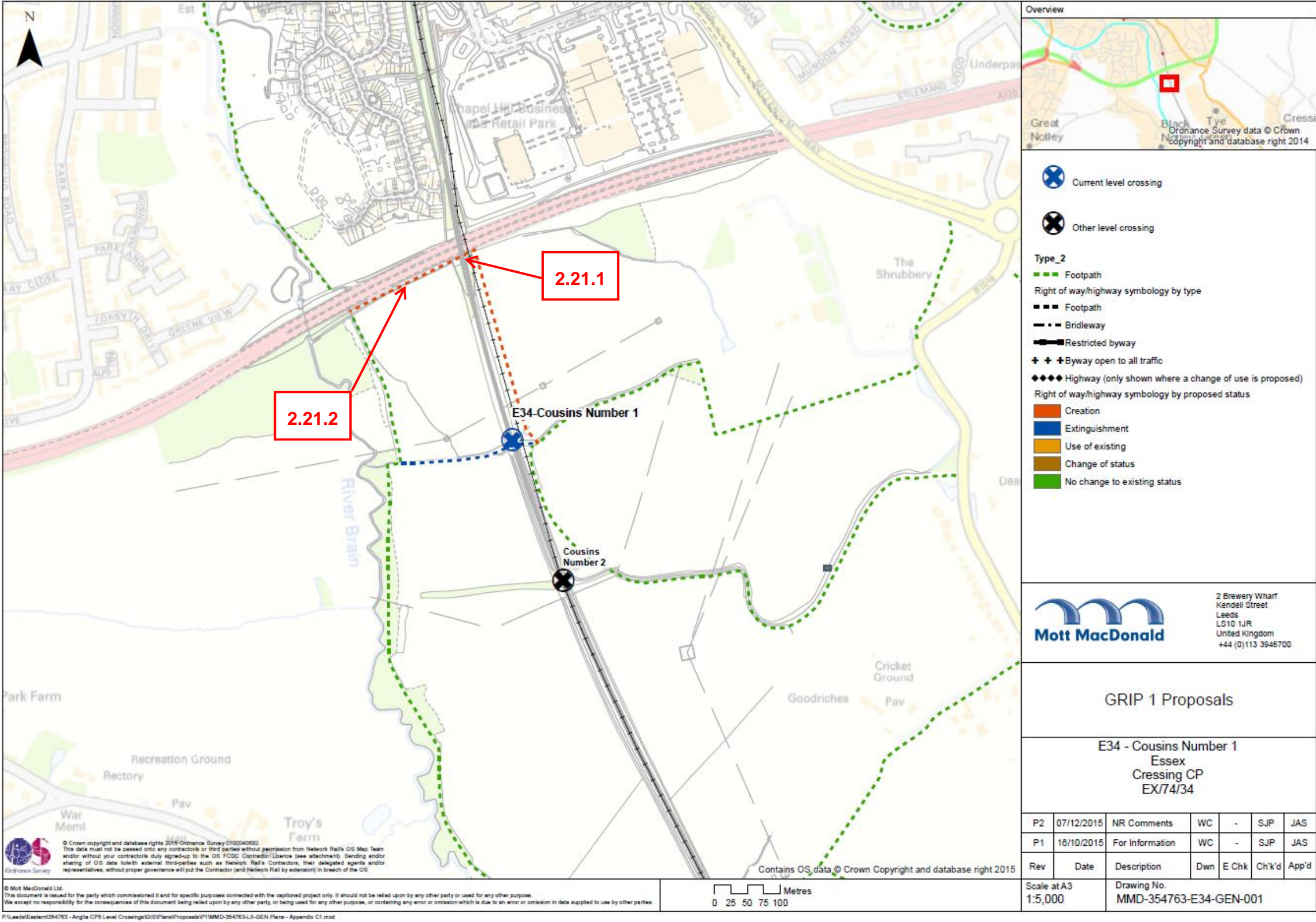




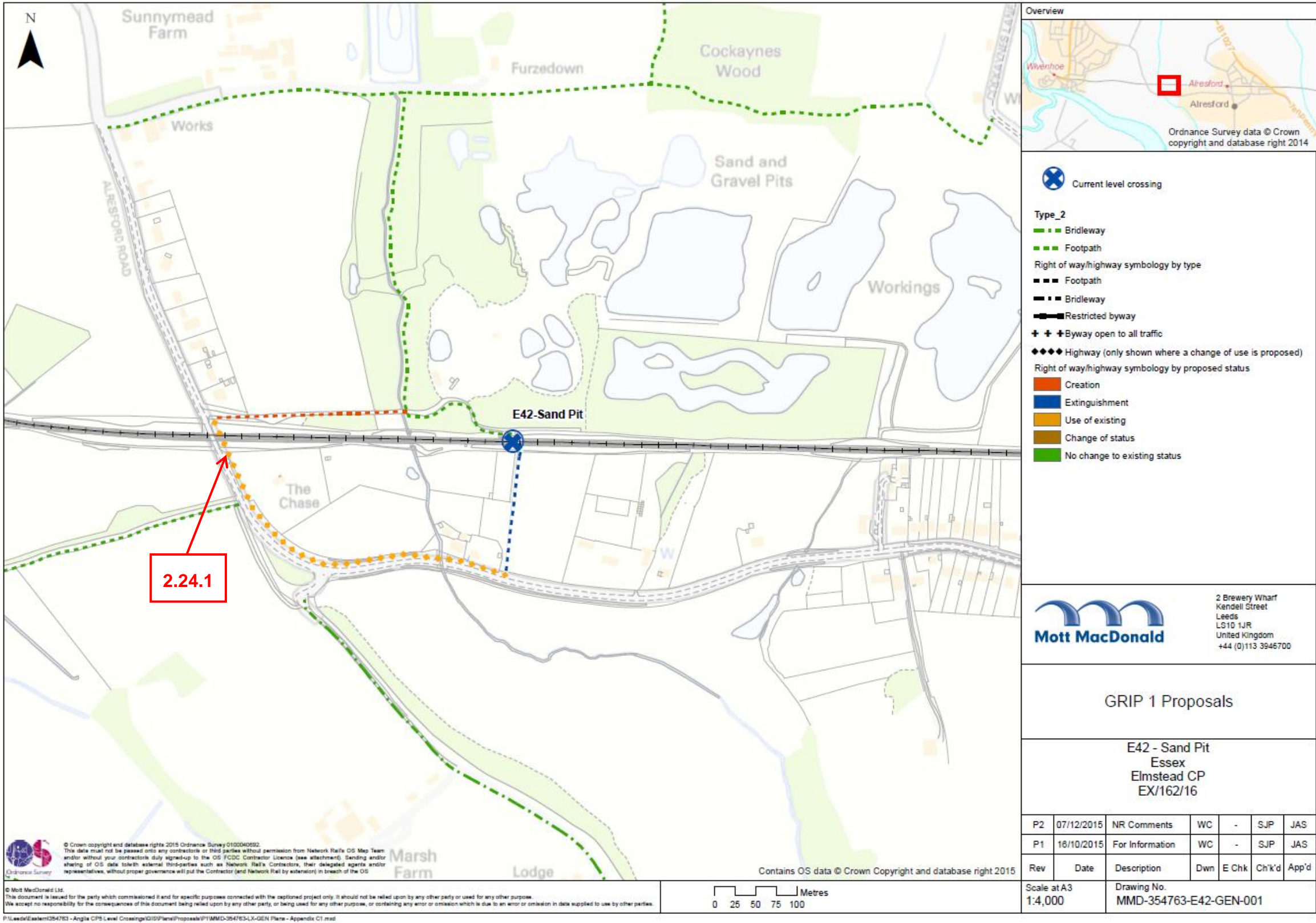




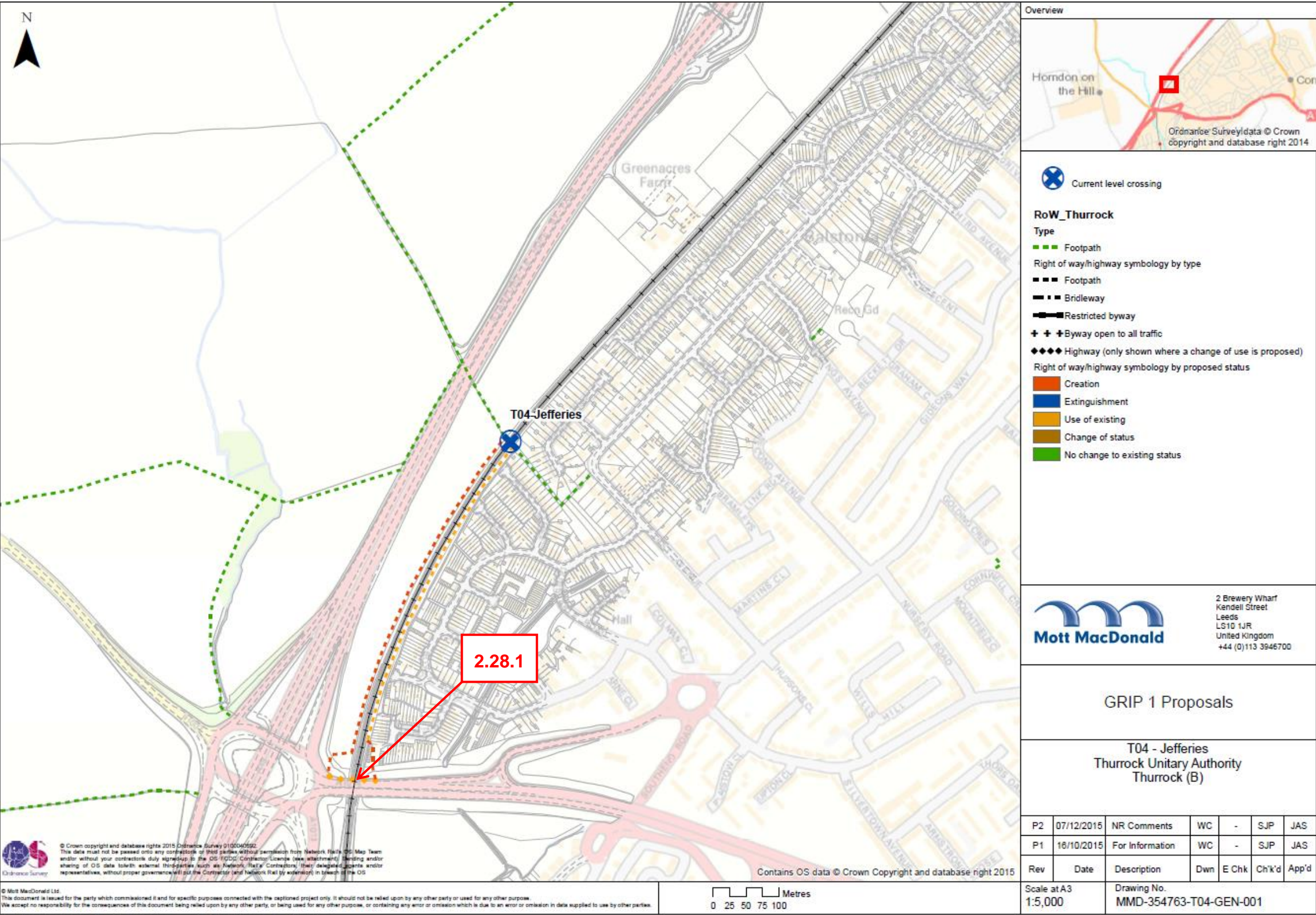




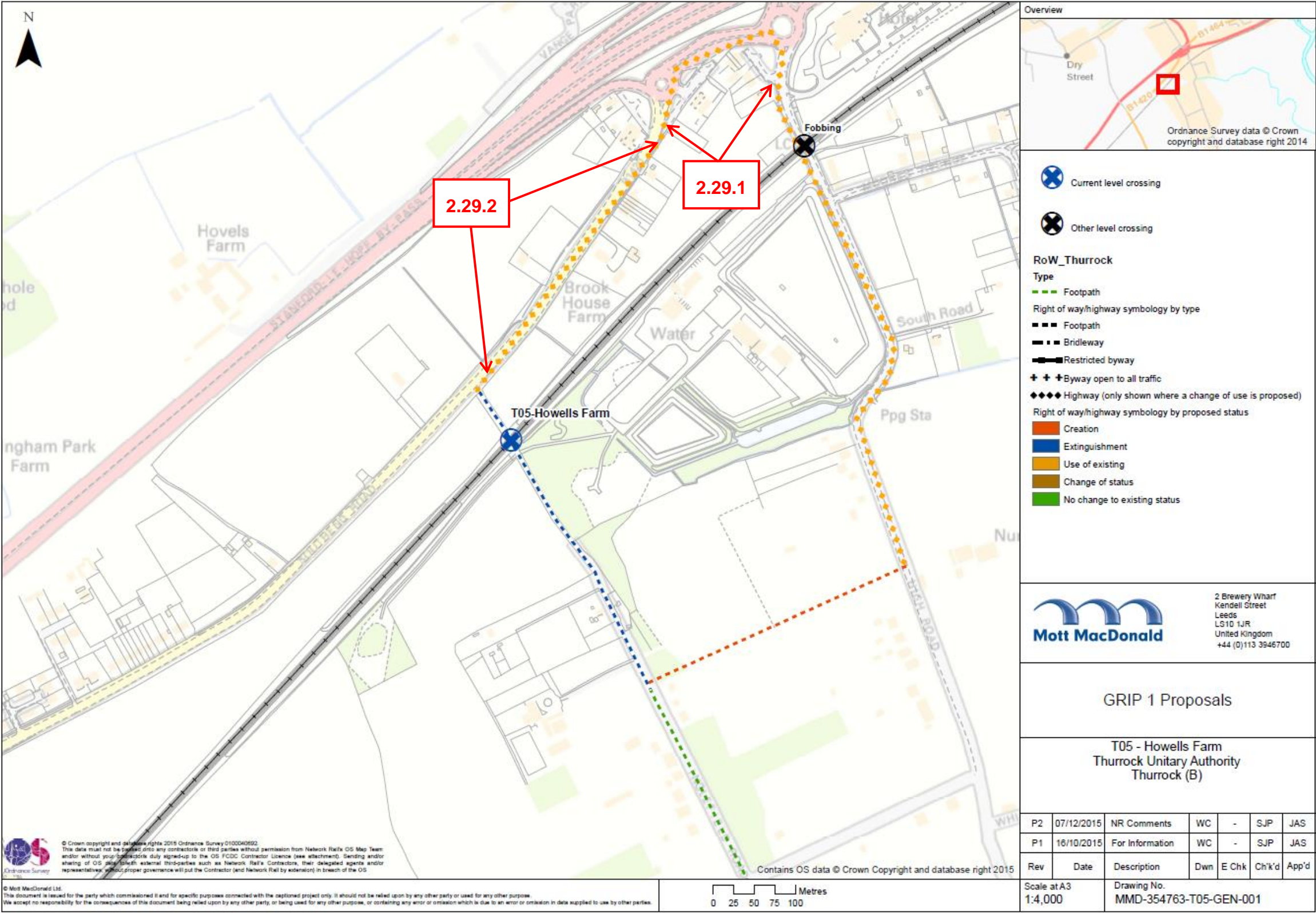












## **Stage 1 Road Safety Audit Brief**

Anglia Level Crossing Reduction Strategy – Phase 1 & 2

July 2016

Prepared by: Daniel Weir

Mott MacDonald

On behalf of: Nicholas Eddy

Network Rail

## **AUTHORISATION SHEET**

Project: Anglia Level Crossing Reduction Strategy

Report Title: Stage 1 Road Safety Audit Brief

PREPARED BY:

Name: Dan Weir

Signed:

Organisation: Mott MacDonald

Date: 22/07/16

APPROVED ON BEHALF OF THE OVERSEEING ORGANISATION BY:

Name: Nicholas Eddy

Signed:

Organisation: Network Rail

Date: 22/07/16

## Road Safety Audit Brief

1. General details							
<b>1.1 Highway improvement scheme name and road number</b>				Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)			
<b>1.2 Type of scheme</b> (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, Suffolk and Essex area. 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.							
<b>1.1RSA stage</b> (tick as appropriate)	1  ✓	2	1&2	3	Interim	4 (12 months)	4 (36 months)
<b>1.2 Overseeing organisation project sponsor details</b>  <b>Contact:</b> Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail  Nicholas.Eddy@networkrail.co.uk				<b>1.3 Design organisation details</b>  <b>Contact:</b> Jason Smith Mott MacDonald 2 Brewery Wharf, Kendell Street, Leeds LS10 1JR United Kingdom  <a href="mailto:jason.smith@mottmac.com">jason.smith@mottmac.com</a>			
<b>1.4 Police contact details (required for Stage 3 Road Safety Audits only)</b>  Not required at this Stage 1 Road Safety Audit.				<b>1.5 Maintaining agent contact details</b>  Essex County Council			
<b>1.6 Road Safety Audit team membership</b>  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. 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							
<b>1.7 Terms of reference</b>  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.							

<p><b>1. Scheme description / objective</b> (provide a brief description of the scheme and its objectives)</p>
<p><b>1.1 General</b> (including scheme purpose and start date for construction)</p> <p>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, Suffolk and Essex area.</p> <p>We believe it's possible to close level crossings:</p> <ul style="list-style-type: none"> <li>• with private rights only</li> <li>• by diverting people to where a nearby alternative exists</li> <li>• by providing a new public route to a nearby alternative</li> </ul> <p>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.</p> <p>We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.</p> <p>Closing or modifying level crossings provide the following benefits:</p> <ul style="list-style-type: none"> <li>• Improve the safety of level crossing users</li> <li>• Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy</li> <li>• Reduce the ongoing operating and maintenance cost of the railway</li> <li>• Reduce delays to trains, pedestrians and other highway users</li> <li>• Improve journey time reliability for all railway, highway and other rights of way users</li> </ul> <p>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.</p>
<p><b>1.2 Design standards applied to the scheme design</b></p> <p>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.</p>
<p><b>1.3 Design speed</b></p> <p>It is not proposed create or amend any speeds on the roads that from part of the proposals.</p>
<p><b>1.4 Speed limits</b></p> <p>The speed limits at the level crossing closure proposals are as follows:-</p> <ul style="list-style-type: none"> <li>• E04 – Parndon Mill Lane unrestricted, A1169 50mph;</li> <li>• E05 – Tye Green Road and Private development unclassified roads;</li> <li>• E06 – New Road 30mph, Old Mead Road 30/40mph;</li> <li>• E09 – Debden Road 30mph, B1383 High Street 30mph;</li> <li>• E10 – B1383 Cambridge Road/Belmont Hill 30mph, Bridge End 30mph, Water Lane 20mph, Gaces Acre 20mph;</li> <li>• E13 – Littlebury Green Road National Speed Limit;</li> <li>• E16 – Maldon Road National Speed Limit/30mph;</li> <li>• E20 – Oak Road 30mph</li> <li>• E24 – A12 National Speed Limit, Dobbies Lane unclassified roads; Jays Lane 30mph, Asbury Drive 30mph</li> <li>• E25 – London Road 30mph, Turkey Cock Lane 30mph, Turkey Cock Lane National speed limit</li> <li>• E27 – St Marys Lane 30mph and 40mph</li> <li>• E28 – St Marys Lane 50mph, St Marys Lane National speed limit, Warley Hall Lane National</li> </ul>

<p>speed limit</p> <ul style="list-style-type: none"> <li>•</li> <li>• E29 – Childerditch Lane National speed limit</li> <li>• E33 – Pitsea Mount 30 mph</li> <li>• E40 – Ferry Lane National speed limit</li> <li>• E48 – Church Road &amp; Station Road National speed limit</li> <li>• E49 – all roads 30mph</li> <li>• E51 – Unnamed road National speed limit</li> <li>• E53 – Bells Hill National Speed Limit</li> <li>• E55 – Bell Hill 30mph, Henny Road 30mph</li> <li>• E56 – Station Road National Speed Limit, Station Road 30mph, A137 30mph, A137 National Speed Limit, Little Bromley Lane National Speed Limit</li> <li>• E57 – B1028 National Speed Limit, A133 50 mph, A134 30mph/50mph and Eastern Approach 30mph and Lightship Way 30mph</li> <li>• E26 – Roche Avenue 30mph, Ashingdon Road 30mph, Ironwell Lane 30mph;</li> <li>• E27 – Warley Street 50mph;</li> <li>• E28 – Warley Street 50mph;</li> <li>• E29 – St Mary's Lane 30mph/National Speed Limit;</li> <li>• E30 – Ferry Road 30mph, High Street 30mph;</li> <li>• E31 – Ferry Road 30mph, High Street 30mph;</li> <li>• E32 – Woodgrange Drive 30mph, Butterys 30mph, Lifstan Way 30mph, A13 Southchurch Boulevard 30mph</li> <li>• E34 – A120 National Speed Limit;</li> <li>• E38 – A1245 National Speed Limit;</li> <li>• E41 – Padget Road 30mph, Anglesea Road 10mph, Queens Road 30mph</li> <li>• E42 – Alresford Road National Speed Limit</li> <li>• E43 – Tenpenny Hill 40mph</li> <li>• E47 – Pork Lane National Speed Limit</li> </ul> <p>E52 – Fordham Road National Speed Limit</p>
<p><b>1.5 Existing traffic flows / queues</b></p> <p>No traffic data is available at the moment, however traffic surveys and level crossing census surveys are ongoing and will be made available to the audit team once the project team has received the data.</p>
<p><b>1.6 Forecast traffic flows</b></p> <p>It is not anticipated that these proposals would generate or transfer significant volumes of traffic.</p>
<p><b>1.7 Non-motorised users (NMU) desire lines</b></p> <p>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.</p> <p>The proposal drawings indicate the existing user route and the proposed diversion routes.</p>
<p><b>1.8 Environmental constraints</b></p> <p>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.</p>
<p><b>2. Description of locality</b></p>
<p><b>2.1 General description</b></p> <p>Anglia Level Crossing Reduction Strategy project has 56 level crossings within the County of Essex, 21 of which were subject to a Stage 1 Road Safety Audit in November 2015.</p>

The purpose of this Stage 1 Road Safety Audit is to review the proposals at 22 level crossings which divert users along the public highway including any associated highway works within the County of Essex. 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:-

- E04– Users would be diverted to the south on Parndon Mill Lane and the A1169 making use of the existing footways on the A1169 and road walking on Parndon Mill Lane. The existing bridge on Parndon Mill Lane is used to cross the railway.
- E05 - Users would be diverted around the railway on a new 2m wide footpath (unsurfaced as per existing) along the field boundary, using the existing underpass to link up with the existing road Tye Green Road
- E06- Users would be diverted on an existing PROW to the west to use Bedwell Road and New Road footways to cross the railway at Elsenham full barrier (with pedestrian footbridge) level crossing. A new field PROW route would be created to the east.
- E09 - Users would be diverted to the south to the bridge on Debden Road. It would involve the creation of a 2m wide footpath (unsurfaced as per existing) on the east side of the railway to create a link to the existing footways and rural roads;
- E10– Users would be diverted to the south via the underpass on Water lane making use of the existing footways on the B1383 Cambridge Road, Belmont Hill. Bury Water Lane is also used which does not have a footway. This links to existing footpaths on the west side of the railway.
- E13– Users would be diverted south on the west side of the railway on a new 2m wide footpath (unsurfaced as per existing) along the field boundary to cross the railway at the existing road bridge on Littlebury Green Road. Littlebury Green Road would be used as the ongoing pedestrian route to the east.
- E16– Users would walk along Maldon Road using the grassed verge and footway, crossing the railway at the existing underpass;
- E20– Users would be diverted northeast using existing roads and footways on the A12 and Cranes Lane to cross the railway at the existing bridge on Cranes Lane.
- E24 - Users would be diverted southwest to an existing crossing (Long Green) via the existing roads A12, Dobbies Lane, Jays Lane and Asbury drive. There are footways on A12 and Asbury Lane and road walking would be undertaken elsewhere.
- E25 - Users would be diverted south on existing PROW to an existing underpass on Turkey Cock Lane via the existing roads London road and Turkey Cock lane. There are footways on London Road and road walking would be undertaken elsewhere.
- E27- Users would be diverted west on existing and new PROWs to an existing level crossing (Brickfields). Road walking on St Marys lane would be needed to return to the PROW network south of the level crossing. There are no footways.
- E28- Users would be diverted east on new PROWs either side of the railway to an existing bridge on Little Warley Hall lane. Road walking on Little Warley Hall lane would be needed. Users may also choose to walk on St Marys Lane to the south and east to join the proposed diversion for E27.
- E29 – Users would divert west on a new PROW to cross the railway at the existing bridge on Childerditch Lane. Road walking on Childerditch Lane would be needed.
- E33– Users would divert east on a new PROW south of the railway to cross the railway at the existing highway full barrier level crossing on Pitsea Mount which has an existing footway over the length of the diversion route.
- E40– Users would divert around the railway via a new PROW on existing road Ferry Road using the existing road underpass to cross the railway.
- E48– Users would divert around the railway via a new PROW north of the railway to existing roads Church Road and Station Road using the existing road bridge on Church Road to cross the railway.
- E49 - Users would divert around the railway via existing AHB road level crossing (Alexandra Road) to the south using existing public footways.



<ul style="list-style-type: none"> <li>• E51– Users would divert around the railway via a new PROW on both sides of the railway to existing rural road bridge to cross the railway. Rural road walking would be required.</li> <li>• E53 – Users would divert around the railway via the existing PROWs east and west of the railway to existing road Bells Hill using the existing road bridge to cross the railway. Rural road walking on Bells Hill would be required.</li> <li>• E55 - Users would divert around the railway via a new PROW on both sides of the railway to existing rural farmer's underpass to cross the railway. Rural road walking on Bell Hill and Henny Road would be required.</li> <li>• E56 - Users would divert around the railway via new and existing PROWs on both sides of the railway to either the existing bridge on Little Bromley lane to the northeast or Ardleigh full road barrier level crossing to the southwest. Footways on the B1029 (Station Rd), A137 Harwich Road would be used on the diversion as well as rural road walking on Little Bromley Lane.</li> <li>• E57 – Private farm users would be diverted on the B1028, A133, A134 and Eastern Approach and Lightship Way which would see an increase of large farm vehicles potentially interacting with pedestrian users.</li> <li>•</li> </ul>
<p><b>2.2 Relevant factors which may affect road safety</b></p> <p>The following factors have been identified that may affect road safety:</p> <ul style="list-style-type: none"> <li>• Non-motorised users are being diverted to alternative level crossings or grade separated crossings where they may be exposed to live traffic by:- <ul style="list-style-type: none"> <li>○ walking along existing footways;</li> <li>○ walking in existing grassed verges; or</li> <li>○ walking in the carriageway on rural roads.</li> </ul> </li> <li>• The interface of NMU's and agricultural vehicles on the PROWs; and</li> <li>• The access points off the public highway for occasional use by large agricultural vehicles.</li> </ul>
<p><b>3. Personal injury collision analysis</b> (provide personal injury collision data covering both the extent of the scheme and the adjoining sections of highway)</p>
<p><b>3.1 Summary of personal injury collision data</b> (a minimum of the most recent 36 months available)</p> <p>No personal injury collision data is available at the moment, however the information will be available at Stage 2.</p>
<p><b>3.2 Personal injury collision details</b></p> <p>See above</p>
<p><b>4. Departures and relaxations from standards</b> (including details of their status – approved or pending) plus any Design Strategy Records produced for improvements to existing motorways and trunk roads.</p>
<p><b>4.1 General</b></p> <p>No departures from standards.</p>
<p><b>5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports</b></p>
<p><b>5.1 Stage 1</b></p> <p>Stage 1 Road Safety and NMU Audits were undertaken in November.</p>
<p><b>5.2 Exception Reports</b></p>



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:

- 5 Scheme Proposal Plans

## 8. Checklist (tick all that are included and provide reasons for those that are not included)

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

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

Nicholas Eddy  
Commercial Scheme Sponsor  
Route Enhancements  
Network Rail

Nicholas.Eddy@networkrail.co.uk

## **Stage 1 Road Safety Audit Brief**

Anglia Level Crossing Reduction Strategy – Phase 1 & 2

July 2016

Prepared by: Daniel Weir

Mott MacDonald

On behalf of: Nicholas Eddy

Network Rail

## **AUTHORISATION SHEET**

Project: Anglia Level Crossing Reduction Strategy

Report Title: Stage 1 Road Safety Audit Brief

PREPARED BY:

Name: Dan Weir

Signed:

Organisation: Mott MacDonald

Date: 22/07/16

APPROVED ON BEHALF OF THE OVERSEEING ORGANISATION BY:

Name: Nicholas Eddy

Signed:

Organisation: Network Rail

Date: 22/07/16

## Road Safety Audit Brief

1. General details							
<b>1.1 Highway improvement scheme name and road number</b>				Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)			
<b>1.2 Type of scheme</b> (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, Suffolk and Essex area. 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.							
<b>1.1RSA stage</b> (tick as appropriate)	1  ✓	2	1&2	3	Interim	4 (12 months)	4 (36 months)
<b>1.2 Overseeing organisation project sponsor details</b>  <b>Contact:</b> Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail  Nicholas.Eddy@networkrail.co.uk				<b>1.3 Design organisation details</b>  <b>Contact:</b> Jason Smith Mott MacDonald 2 Brewery Wharf, Kendell Street, Leeds LS10 1JR United Kingdom  <a href="mailto:jason.smith@mottmac.com">jason.smith@mottmac.com</a>			
<b>1.4 Police contact details (required for Stage 3 Road Safety Audits only)</b>  Not required at this Stage 1 Road Safety Audit.				<b>1.5 Maintaining agent contact details</b>  Hertfordshire County Council			
<b>1.6 Road Safety Audit team membership</b>  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. 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							
<b>1.7 Terms of reference</b>  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.							

<b>1. Scheme description / objective</b> (provide a brief description of the scheme and its objectives)
<p><b>1.1 General</b> (including scheme purpose and start date for construction)</p> <p>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, Suffolk and Essex area.</p> <p>We believe it's possible to close level crossings:</p> <ul style="list-style-type: none"> <li>• with private rights only</li> <li>• by diverting people to where a nearby alternative exists</li> <li>• by providing a new public route to a nearby alternative</li> </ul> <p>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.</p> <p>We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.</p> <p>Closing or modifying level crossings provide the following benefits:</p> <ul style="list-style-type: none"> <li>• Improve the safety of level crossing users</li> <li>• Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy</li> <li>• Reduce the ongoing operating and maintenance cost of the railway</li> <li>• Reduce delays to trains, pedestrians and other highway users</li> <li>• Improve journey time reliability for all railway, highway and other rights of way users</li> </ul> <p>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.</p>
<p><b>1.2 Design standards applied to the scheme design</b></p> <p>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.</p>
<p><b>1.3 Design speed</b></p> <p>It is not proposed create or amend any speeds on the roads that from part of the proposals.</p>
<p><b>1.4 Speed limits</b></p> <p>The speed limits at the level crossing closure proposals are as follows:-</p> <ul style="list-style-type: none"> <li>• H04 – A1184 40mph;</li> <li>• H05 – A1184 30mph, Spellbrook Lane East National Speed Limit;</li> <li>• H06 – B1383 30mph/40mph;</li> <li>• H07 – Twyford Road 30mph, B1383 30mph; and</li> <li>• H09 – B1383 30mph.</li> </ul>
<p><b>1.5 Existing traffic flows / queues</b></p> <p>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.</p>
<p><b>1.6 Forecast traffic flows</b></p> <p>It is not anticipated that these proposals would generate or transfer significant volumes of traffic.</p>
<p><b>1.7 Non-motorised users (NMU) desire lines</b></p>

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 9 level crossings within the County of Hertfordshire, 2 of which were subject to a Stage 1 Road Safety Audit in November 2015.

The purpose of this Stage 1 Road Safety Audit is to review the proposals at 5 level crossings which divert users along the public highway including any associated highway works within the County of Hertfordshire. 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:-

- H04 – Users would be diverted south along the A1184 footway to a new east –west footpath to an existing private over bridge. The new footpath on the east of the railway linking to footpath Sawbridgeworth 003;
- H05 – Users would be diverted south to Spellbrook level crossing on Spellbrook Lane east via the existing footways on the A1184 and public footpaths on both sides of the railway;
- H06 – Users would be diverted north on existing footways and footpaths to cross the railway using an existing footbridge;
- H07 – Users would be diverted north along the footway on London Road to the riverside path and underneath the railway bridge. This would involve the creation of a new 2m wide footpath including a new timber footbridge on the east side of the railway to link back to Twyford Road; and
- H09 – Users would be diverted south to an existing underpass with the creation of footpaths along existing informal paths on both sides of the railway. The underpass is of restricted headroom with further assessment work required as its suitability for public use.

### **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;
  - 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.			
<b>3.2 Personal injury collision details</b>			
See above			
<b>4. Departures and relaxations from standards</b> (including details of their status – approved or pending) plus any Design Strategy Records produced for improvements to existing motorways and trunk roads.			
<b>4.1 General</b>			
No departures from standards.			
<b>5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports</b>			
<b>5.1 Stage 1</b>			
Stage 1 Road Safety and NMU Audits were undertaken in November.			
<b>5.2 Exception Reports</b>			
Not applicable – no exception reports were prepared following the Stage 1 Audits.			
<b>6. Strategic decisions – items outside the scope of this RSA</b>			
<b>6.1 General</b>			
N/A			
<b>7. List of included documents and drawings</b>			
<b>7.1 Documents</b>			
GRIP 1 Feasibility reports available on request.			
<b>7.2 Drawings</b>			
The following figures, plans, information and drawings are provided:			
<ul style="list-style-type: none"> <li>5 Scheme Proposal Plans</li> </ul>			
<b>8. Checklist</b> (tick all that are included and provide reasons for those that are not included)			
<b>8.1</b> Road Safety Audit Brief including description of scheme objectives	✓ (Section 1.1)	<b>8.2</b> Site location plan	✓
<b>8.3</b> Scale layout plans	✓	<b>8.4</b> Construction / typical details	× The scheme is not that developed
<b>8.5</b> Previous Road Safety Audit Reports	✓	<b>8.6</b> Previous Road Safety Audit Response Reports	× None prepared

<b>8.7</b> Road Safety Audit Exception Reports	✗ Not applicable	<b>8.8</b> Departures and relaxation from standards	✗ None (section 4)
<b>8.9</b> Traffic signal staging	✗ Not applicable	<b>8.10</b> Personal injury collision data	✗ Not available at the moment
<b>8.11</b> Personal injury collision plot	✗ Not available at the moment	<b>8.12</b> Traffic counts	✗ Not available at the moment
<b>8.13</b> Speed surveys	✗ Not available at the moment	<b>8.14</b> NMU desire lines and volumes	✓
<b>8.15</b> NMU Context and Audit Report	✗ None prepared	<b>8.16</b> Items outside the scope of the RSA/ strategic decisions	✓ (Section 6)
<b>8.17</b> Other factors that may impact on road safety	✓ (Section 2.2)	<b>8.18</b> Design speeds/ speed limits	✗ Design Speeds not applicable ✓ Speed limits (Section 1.4)
Design standards used	✓ (Section 1.2)	<b>8.19</b> Adjacent land uses	✗ Multiple sites with various land uses including agricultural

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

Nicholas Eddy  
Commercial Scheme Sponsor  
Route Enhancements  
Network Rail

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## **Stage 1 Road Safety Audit Brief**

Anglia Level Crossing Reduction Strategy – Phase 1 & 2

July 2016

Prepared by: Daniel Weir

Mott MacDonald

On behalf of: Nicholas Eddy

Network Rail

## **AUTHORISATION SHEET**

Project: Anglia Level Crossing Reduction Strategy

Report Title: Stage 1 Road Safety Audit Brief

PREPARED BY:

Name: Dan Weir

Signed:

Organisation: Mott MacDonald

Date: 22/07/16

APPROVED ON BEHALF OF THE OVERSEEING ORGANISATION BY:

Name: Nicholas Eddy

Signed:

Organisation: Network Rail

Date: 22/07/16

## Road Safety Audit Brief

1. General details							
<b>1.1 Highway improvement scheme name and road number</b>				Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)			
<b>1.2 Type of scheme</b> (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, Suffolk and Essex area. 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.							
<b>1.1RSA stage</b> (tick as appropriate)	1 ✓	2	1&2	3	Interim	4 (12 months)	4 (36 months)
<b>1.2 Overseeing organisation project sponsor details</b>  <b>Contact:</b> Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail  Nicholas.Eddy@networkrail.co.uk				<b>1.3 Design organisation details</b>  <b>Contact:</b> Jason Smith Mott MacDonald 2 Brewery Wharf, Kendell Street, Leeds LS10 1JR United Kingdom  <a href="mailto:jason.smith@mottmac.com">jason.smith@mottmac.com</a>			
<b>1.4 Police contact details (required for Stage 3 Road Safety Audits only)</b>  Not required at this Stage 1 Road Safety Audit.				<b>1.5 Maintaining agent contact details</b>  Thurrock Council			
<b>1.6 Road Safety Audit team membership</b>  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. 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							
<b>1.7 Terms of reference</b>  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.							

<b>1. Scheme description / objective</b> (provide a brief description of the scheme and its objectives)
<p><b>1.1 General</b> (including scheme purpose and start date for construction)</p> <p>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, Suffolk and Essex area.</p> <p>We believe it's possible to close level crossings:</p> <ul style="list-style-type: none"> <li>• with private rights only</li> <li>• by diverting people to where a nearby alternative exists</li> <li>• by providing a new public route to a nearby alternative</li> </ul> <p>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.</p> <p>We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.</p> <p>Closing or modifying level crossings provide the following benefits:</p> <ul style="list-style-type: none"> <li>• Improve the safety of level crossing users</li> <li>• Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy</li> <li>• Reduce the ongoing operating and maintenance cost of the railway</li> <li>• Reduce delays to trains, pedestrians and other highway users</li> <li>• Improve journey time reliability for all railway, highway and other rights of way users</li> </ul> <p>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.</p>
<p><b>1.2 Design standards applied to the scheme design</b></p> <p>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.</p>
<p><b>1.3 Design speed</b></p> <p>It is not proposed create or amend any speeds on the roads that from part of the proposals.</p>
<p><b>1.4 Speed limits</b></p> <p>The speed limits at the level crossing closure proposals are as follows:-</p> <ul style="list-style-type: none"> <li>• T01 – A1306 Arterial Road National Speed Limit, Tank Hill Road 30mph; and</li> <li>• T05 – (Fobbing) High Road 40mph/National Speed Limit.</li> </ul>
<p><b>1.5 Existing traffic flows / queues</b></p> <p>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.</p>
<p><b>1.6 Forecast traffic flows</b></p> <p>It is not anticipated that these proposals would generate or transfer significant volumes of traffic.</p>
<p><b>1.7 Non-motorised users (NMU) desire lines</b></p> <p>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.</p>

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 previously had 6 level crossings within the Unitary Authority of Thurrock, 2 of which were subject to a Stage 1 Road Safety Audit in November 2015. Owing to further assessment of proposals 3 level crossings dropped out of the scheme because they were no longer affordable in the funding envelope or they are to be delivered by other schemes.

The purpose of this Stage 1 Road Safety Audit is to review 2 of the 3 remaining level crossings proposals which divert users along the public highway including any associated highway works within the Unitary Authority of Thurrock. 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:-

- T01 – Users would be diverted north along the existing footways to the railway overbridge on New Tank Hill Road and the A1306; and
- T05 – Users would be diverted east along Southend Road to Fobbing Road level crossing on High Road. The diversion would then make use of the existing footways along High Road and along a track along on Inglefield 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;
  - 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.			
<b>4.1 General</b>			
No departures from standards.			
<b>5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports</b>			
<b>5.1 Stage 1</b>			
Stage 1 Road Safety and NMU Audits were undertaken in November.			
<b>5.2 Exception Reports</b>			
Not applicable – no exception reports were prepared following the Stage 1 Audits.			
<b>6. Strategic decisions – items outside the scope of this RSA</b>			
<b>6.1 General</b>			
N/A			
<b>7. List of included documents and drawings</b>			
<b>7.1 Documents</b>			
GRIP 1 Feasibility reports available on request.			
<b>7.2 Drawings</b>			
The following figures, plans, information and drawings are provided:			
<ul style="list-style-type: none"> <li>2 Scheme Proposal Plans</li> </ul>			
<b>8. Checklist</b> (tick all that are included and provide reasons for those that are not included)			
<b>8.1</b> Road Safety Audit Brief including description of scheme objectives	✓ (Section 1.1)	<b>8.2</b> Site location plan	✓
<b>8.3</b> Scale layout plans	✓	<b>8.4</b> Construction / typical details	✗ The scheme is not that developed
<b>8.5</b> Previous Road Safety Audit Reports	✓	<b>8.6</b> Previous Road Safety Audit Response Reports	✗ None prepared
<b>8.7</b> Road Safety Audit Exception Reports	✗ Not applicable	<b>8.8</b> Departures and relaxation from standards	✗ None (section 4)
<b>8.9</b> Traffic signal staging	✗ Not applicable	<b>8.10</b> Personal injury collision data	✗ Not available at the moment
<b>8.11</b> Personal injury collision plot	✗ Not available at the moment	<b>8.12</b> Traffic counts	✗ Not available at the moment

<b>8.13</b> Speed surveys	✗ Not available at the moment	<b>8.14</b> NMU desire lines and volumes	✓
<b>8.15</b> NMU Context and Audit Report	✗ None prepared	<b>8.16</b> Items outside the scope of the RSA/ strategic decisions	✓ (Section 6)
<b>8.17</b> Other factors that may impact on road safety	✓ (Section 2.2)	<b>8.18</b> Design speeds/ speed limits	✗ Design Speeds not applicable ✓ Speed limits (Section 1.4)
Design standards used	✓ (Section 1.2)	<b>8.19</b> Adjacent land uses	✗ Multiple sites with various land uses including agricultural

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

Nicholas Eddy  
Commercial Scheme Sponsor  
Route Enhancements  
Network Rail

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## **Stage 1 Road Safety Audit Brief**

Anglia Level Crossing Reduction Strategy – Phase 1 & 2

July 2016

Prepared by: Daniel Weir

Mott MacDonald

On behalf of: Nicholas Eddy

Network Rail

## **AUTHORISATION SHEET**

Project: Anglia Level Crossing Reduction Strategy

Report Title: Stage 1 Road Safety Audit Brief

PREPARED BY:

Name: Dan Weir

Signed:

Organisation: Mott MacDonald

Date: 22/07/16

APPROVED ON BEHALF OF THE OVERSEEING ORGANISATION BY:

Name: Nicholas Eddy

Signed:

Organisation: Network Rail

Date: 22/07/16

## Road Safety Audit Brief

1. General details							
<b>1.1 Highway improvement scheme name and road number</b>				Anglia Level Crossing Reduction Strategy Multiple Roads (specified in description below)			
<b>1.2 Type of scheme</b> (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, Suffolk and Essex area. 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.							
<b>1.1RSA stage</b> (tick as appropriate)	1  ✓	2	1&2	3	Interim	4 (12 months)	4 (36 months)
<b>1.2 Overseeing organisation project sponsor details</b>  <b>Contact:</b> Nicholas Eddy Commercial Scheme Sponsor Route Enhancements Network Rail  Nicholas.Eddy@networkrail.co.uk				<b>1.3 Design organisation details</b>  <b>Contact:</b> Jason Smith Mott MacDonald 2 Brewery Wharf, Kendell Street, Leeds LS10 1JR United Kingdom  <a href="mailto:jason.smith@mottmac.com">jason.smith@mottmac.com</a>			
<b>1.4 Police contact details (required for Stage 3 Road Safety Audits only)</b>  Not required at this Stage 1 Road Safety Audit.				<b>1.5 Maintaining agent contact details</b>  London Borough of Havering			
<b>1.6 Road Safety Audit team membership</b>  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. 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							
<b>1.7 Terms of reference</b>  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.							



<b>1. Scheme description / objective</b> (provide a brief description of the scheme and its objectives)
<p><b>1.1 General</b> (including scheme purpose and start date for construction)</p> <p>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, Suffolk and Essex area.</p> <p>We believe it's possible to close level crossings:</p> <ul style="list-style-type: none"> <li>• with private rights only</li> <li>• by diverting people on existing public routes to a nearby alternative crossing of the railway exists</li> <li>• by providing a new public route to a nearby alternative crossing of the railway</li> </ul> <p>We will also look to downgrade road level crossings to allow non-motorised users only. None of the crossings in this proposal involve closing public A or B roads.</p> <p>We recognise the importance of public rights of way and where possible we will maintain easy access to the countryside.</p> <p>Closing or modifying level crossings provide the following benefits:</p> <ul style="list-style-type: none"> <li>• Improve the safety of level crossing users</li> <li>• Deliver a more efficient and reliable railway, which is vital in supporting the regional and UK economy</li> <li>• Reduce the ongoing operating and maintenance cost of the railway</li> <li>• Reduce delays to trains, pedestrians and other highway users</li> <li>• Improve journey time reliability for all railway, highway and other rights of way users</li> </ul> <p>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.</p>
<p><b>1.2 Design standards applied to the scheme design</b></p> <p>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.</p>
<p><b>1.3 Design speed</b></p> <p>It is not proposed create or amend any speeds on the roads that from part of the proposals.</p>
<p><b>1.4 Speed limits</b></p> <p>The speed limits at the level crossing closure proposals are as follows:-</p> <ul style="list-style-type: none"> <li>• HA03 – Ockenden Road 40mph, Pea Lane National Speed Limit; and</li> <li>• HA04 – Dennis Road National Speed Limit.</li> </ul>
<p><b>1.5 Existing traffic flows / queues</b></p> <p>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.</p>
<p><b>1.6 Forecast traffic flows</b></p> <p>It is not anticipated that these proposals would generate or transfer significant volumes of traffic.</p>
<p><b>1.7 Non-motorised users (NMU) desire lines</b></p> <p>All existing Public Rights of Way (PROW), i.e. footpaths, cycle-ways and bridleways, in the vicinity of</p>

<p>the level crossing closure proposals are shown on the attached plans.</p> <p>The proposal drawings indicate the existing user route and the proposed diversion routes.</p>
<p><b>1.8 Environmental constraints</b></p> <p>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.</p>
<p><b>2. Description of locality</b></p>
<p><b>2.1 General description</b></p> <p>Anglia Level Crossing Reduction Strategy project has 4 level crossings within the London Borough of Havering, 2 of which will be subject to a Stage 1 Road Safety Audit.</p> <p>The purpose of this Stage 1 Road Safety Audit is to review the proposals at 2 level crossings which divert users along the public highway including any associated highway works within the London Borough of Havering. 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.</p> <p>The level crossing closure proposals are summarised below:-</p> <ul style="list-style-type: none"> <li>• HA03 – Users would be diverted north on the existing roads to cross the railway at the road bridge on Ockendon Road. The diversion also uses existing footpaths to the east of the railway..</li> <li>• HA04 – Users would be diverted south on a new footpath in farm land to the existing road bridge on West Road in South Ockenden to cross the railway. The diversion also uses existing footways on North Road and West Road, and rural roads.</li> </ul>
<p><b>2.2 Relevant factors which may affect road safety</b></p> <p>The following factors have been identified that may affect road safety:</p> <ul style="list-style-type: none"> <li>• Non-motorised users are being diverted to alternative level crossings or grade separated crossings where they may be exposed to live traffic by:- <ul style="list-style-type: none"> <li>○ walking along existing footways;</li> <li>○ walking in existing grassed verges; or</li> <li>○ walking in the carriageway on rural roads.</li> </ul> </li> <li>• The interface of NMU's and agricultural vehicles on the PROWs; and</li> <li>• The access points off the public highway for occasional use by large agricultural vehicles.</li> </ul>
<p><b>3. Personal injury collision analysis</b> (provide personal injury collision data covering both the extent of the scheme and the adjoining sections of highway)</p>
<p><b>3.1 Summary of personal injury collision data</b> (a minimum of the most recent 36 months available)</p> <p>No personal injury collision data is available at the moment, however the information will be available at Stage 2.</p>
<p><b>3.2 Personal injury collision details</b></p> <p>See above</p>
<p><b>4. Departures and relaxations from standards</b> (including details of their status – approved or</p>

pending) plus any Design Strategy Records produced for improvements to existing motorways and trunk roads.			
<b>4.1 General</b> No departures from standards.			
<b>5. Previous Road Safety Audit Reports, Road Safety Audit Response Reports, and Exception Reports</b>			
<b>5.1 Stage 1</b> No previous audits have been undertaken			
<b>5.2 Exception Reports</b> Not applicable			
<b>6. Strategic decisions – items outside the scope of this RSA</b>			
<b>6.1 General</b> N/A			
<b>7. List of included documents and drawings</b>			
<b>7.1 Documents</b> GRIP 1 Feasibility reports available on request.			
<b>7.2 Drawings</b> The following figures, plans, information and drawings are provided: <ul style="list-style-type: none"> <li>2 Scheme Proposal Plans</li> </ul>			
<b>8. Checklist</b> (tick all that are included and provide reasons for those that are not included)			
<b>8.1</b> Road Safety Audit Brief including description of scheme objectives	✓ (Section 1.1)	<b>8.2</b> Site location plan	✓
<b>8.3</b> Scale layout plans	✓	<b>8.4</b> Construction / typical details	✗ The scheme is not that developed
<b>8.5</b> Previous Road Safety Audit Reports	✓	<b>8.6</b> Previous Road Safety Audit Response Reports	✗ None prepared
<b>8.7</b> Road Safety Audit Exception Reports	✗ Not applicable	<b>8.8</b> Departures and relaxation from standards	✗ None (section 4)
<b>8.9</b> Traffic signal staging	✗ Not applicable	<b>8.10</b> Personal injury collision data	✗ Not available at the moment
<b>8.11</b> Personal injury collision plot	✗ Not available at the moment	<b>8.12</b> Traffic counts	✗ Not available at the moment

<b>8.13</b> Speed surveys	✗ Not available at the moment	<b>8.14</b> NMU desire lines and volumes	✓
<b>8.15</b> NMU Context and Audit Report	✗ None prepared	<b>8.16</b> Items outside the scope of the RSA/ strategic decisions	✓ (Section 6)
<b>8.17</b> Other factors that may impact on road safety	✓ (Section 2.2)	<b>8.18</b> Design speeds/ speed limits	✗ Design Speeds not applicable ✓ Speed limits (Section 1.4)
Design standards used	✓ (Section 1.2)	<b>8.19</b> Adjacent land uses	✗ Multiple sites with various land uses including agricultural

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

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

Essex Stage 1 Road Safety Audit

Report Number 367516/RPT016

Revision B

November 2016





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

Essex Stage 1 Road Safety Audit

November 2016

Network Rail





# Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	09/08/2016	R J Collins	A J Coleman	T J Blaney	First Draft
B	14/11/2016	R J Collins	A J Coleman	S J Tilbrook	Response to Comments

## Information class: Standard

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# 1 Introduction

Network Rail is carrying out feasibility studies to explore options for the closure of level crossings throughout Essex 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 Essex. 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 14:00 and 20:40, during which the weather was sunny and the road surface was dry or on Thursday 21<sup>st</sup> July between 08:00 and 11:00 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:

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

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.

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/RPT222A) was undertaken in December 2015 on level crossing closure proposals within Essex. 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
E04 – Parndons Mill		✓
E05 – Fullers End		✓
E06 – Elsenham Emergency Hut		✓
E08 – Henham	✓	
E09 – Elephant	✓	✓
E10 – Dixies	✓	✓
E11 – Windmills	✓	
E12 – Wallaces	✓	
E13 – Littlebury Gate House	✓	✓
E14 – Church Lane Cctv (ltn1)	✓	
E16 – Maldon Road		✓
E17 – Boreham	✓	
E18 – Noakes	✓	
E19 – Potters	✓	
E20 – Snivellers	✓	✓
E21 – Hill House 1	✓	
E22 – Great Domsey	✓	

Site	December 2015	August 2016
E24 – Church 1		✓
E25 – Church 2		✓
E26 – Barbara Close	✓	
E27 – Puddle Dock (Red Route)	✓	✓
E27 – Puddle Dock (Blue Route)		✓
E27 – Puddle Dock (Green Route)		✓
E28 – Whipps Farmers (Red Route)	✓	
E28 – Whipps Farmers (Blue Route)		✓
E28 – Whipps Farmers (Green Route)		✓
E29 – Brown & Tawse (Blue Route)		✓
E29 – Brown & Tawse (Red Route)		✓

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 E04 – Parndons Mill

#### 2.1.1 Problem

*Location: Elizabeth Way / Herons Wood.*

*Summary: Unnecessary carriageway crossing and lack of suitable crossing point.*

It is proposed that the alternative route will require pedestrians to cross Elizabeth Way to the southern side and continue along an existing footway. This footway crosses Herons Wood at a point where no appropriate crossing point is provided. This may result in trips or falls, or conflicts between pedestrians and vehicles. Furthermore, there is a segregated footway / cycleway along the length of the northern side of Elizabeth Way that would remove the need for pedestrians to cross any carriageways. Therefore, the proposed route unnecessarily increases the risk of collisions between crossing pedestrians and vehicles.

Figure 2.1: Lack of appropriate crossing facility on Herons Wood.



Source: Mott MacDonald

#### Recommendation

It is recommended that the route continues along the northern side of Elizabeth Way.



## **2.2 E05 – Fullers End (Red Route)**

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

## **2.3 E05 – Fullers End (Blue Route)**

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

## **2.4 E06 – Elsenham Emergency Hut (Red Route)**

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

## **2.5 E06 – Elsenham Emergency Hut (Blue Route)**

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

## **2.6 E09 – Elephant (Red Route)**

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

## **2.7 E09 – Elephant (Blue Route)**

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

## 2.8 E09 – Elephant (Green Route)

### 2.8.1 Problem

*Location: Debden Road railway bridge.*

*Summary: Restricted carriageway width over railway bridge.*

The carriageway width over the railway bridge narrows to single carriageway with no footway or verge meaning pedestrians would have to share the carriageway with vehicles. Forward visibility of pedestrians could be restricted (particularly eastbound) and although vehicles are travelling slowly over the bridge, this could result in conflict between pedestrians and vehicles.

Figure 2.2: Restricted width on Debden Road over railway line.



Source: Mott MacDonald

### Recommendation

It is recommended that measures are provided to either warn motorists of pedestrians within the carriageway or to further slow vehicles on the approach. However, if suitable remedial measures cannot be provided then an alternative route should be identified.

## **2.9 E10 – Dixies (Red Route)**

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

## 2.10 E13 – Littlebury Gate House

### 2.10.1 Problem

*Location: Littlebury Green Road.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Littlebury Green Road where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on Littlebury Green Road travelling at high speeds and visibility is restricted by the highway geometry and vegetation, particularly to the west of Goodwins Close. These factors may result in collisions between pedestrians and vehicles.

Figure 2.3: Lack of verge or footway on Littlebury Green Road.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided.

#### **2.11 E16 – Maldon Road**

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

#### **2.12 E20 – Snivellers (Red Route)**

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

#### **2.13 E24 – Church 1**

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

#### **2.14 E25 – Church 2**

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

#### **2.15 E27 – Puddle Dock (Red Route)**

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

#### **2.16 E27 – Puddle Dock (Blue Route)**

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

## 2.17 E27 – Puddle Dock (Green Route)

### 2.17.1 Problem

*Location: St Marys Lane.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of St Marys Lane where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted by the highway geometry. These factors may result in collisions between pedestrians and vehicles.

Figure 2.4: Lack of verge or footway on St Marys Lane.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.



## **2.18 E28 – Whipps Farmers (Blue Route)**

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

## **2.19 E28 – Whipps Farmers (Green Route)**

### **2.19.1 Problem**

*Location: St Marys Lane.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of St Marys Lane where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted by the highway geometry. These factors may result in collisions between pedestrians and vehicles.

Figure 2.5: Lack of verge or footway on St Marys Lane.



Source: Mott MacDonald

### **Recommendation**

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.

## **2.20 E29 – Brown & Tawse (Blue Route)**

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

## **2.21 E29 – Brown & Tawse (Red Route)**

### **2.21.1 Problem**

*Location: St Marys Lane Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of St Marys Lane where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted by the highway geometry and the railway road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.6: Lack of verge or footway on St Marys Lane.



Source: Mott MacDonald

### **Recommendation**

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.



## 2.22 E33 – Motorbike (Red Route)

### 2.22.1 Problem

*Location: Pitsea Hall Lane.*

*Summary: High HGV flow and speed.*

It is proposed that pedestrians will walk along a section of Pitsea Hall Lane on the western side of the carriageway where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high number of HGVs generally travelling at excessive speeds were observed on Pitsea Hall Lane. This may lead to an increased risk of collisions between pedestrians and vehicles.

Figure 2.7: Lack of verge or footway on western side of Pitsea Hall Lane.



Source: Mott MacDonald

### Recommendation

It is recommended that suitable crossing facilities are provided to allow pedestrians to cross to the eastern side and utilise the existing segregated footway / cycleway. Vegetation clearance will need to be undertaken to provide a suitable footway / cycleway width.

## 2.23 E33 – Motorbike (Blue Route)

### 2.23.1 Problem

*Location: Pitsea Hall Lane.*

*Summary: High HGV flow and speed.*

It is proposed that pedestrians will walk along a section of Pitsea Hall Lane on the western side of the carriageway where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high number of HGVs generally travelling at excessive speeds were observed on Pitsea Hall Lane. This may lead to an increased risk of collisions between pedestrians and vehicles.

Figure 2.8: Lack of verge or footway on western side of Pitsea Hall Lane.



Source: Mott MacDonald

### Recommendation

It is recommended that suitable crossing facilities are provided to allow pedestrians to cross to the eastern side and utilise the existing segregated footway / cycleway. Vegetation clearance will need to be undertaken to provide a suitable footway / cycleway width.

**2.24 E40 – Creaksea Place 1 (Red Route)**

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

**2.25 E40 – Creaksea Place 1 (Blue Route)**

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

**2.26 E44 – Frating Abbey (Red Route)**

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

**2.27 E44 – Frating Abbey (Blue Route)**

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

**2.28 E48 – Wheatsheaf**

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

**2.29 E49 – Maria Street**

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

**2.30 E51 – Thornfield Wood (Blue Route)**

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



## 2.31 E51 – Thornfield Wood (Red Route)

### 2.31.1 Problem

*Location: Jupe's Hill Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Jupe's Hill between Oldhouse Farm and Willow Cottage where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. Whilst traffic flows were observed to be low, speeds were excessive with visibility restricted by a road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.9: Lack of verge or footway on Jupe's Hill.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.

## 2.32 E53 – Josselyns (Blue Route)

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

### 2.33 E55 – Lamarsh Kings Farm (Green Route)

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

### 2.34 E56 – Abbots (Blue Route)

#### 2.34.1 Problem

*Location: Harwich Road / Little Bromley Road junction.*

*Summary: Lack of crossing facility may result in trips and falls.*

It is proposed that diverted pedestrians will utilise the footway on the northern side of Harwich Road and the carriageway on Little Bromley Road. This will require pedestrian to cross Harwich Road in the vicinity of its junction with Little Bromley Road. No crossing facilities are provided at this location and crossing pedestrians may either cross at inappropriate locations or trip on the full height kerb.

Figure 2.10: Lack of crossing point on Harwich Road at its junction with Little Bromley Road.



Source: Mott MacDonald

#### Recommendation

It is recommended that an appropriately positioned crossing point is installed on Harwich Road.

### **2.35 E56 – Abbots (Orange Route)**

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

### **2.36 E57 – Wivenhoe Park**

#### **2.36.1 Problem**

*Location: Lightship Way / River Colne waterfront.*

*Summary: Inappropriate interaction between agricultural vehicles and non-motorised users.*

It is proposed that diverted agricultural vehicles will access land to the west of the railway via Lightship Way and the River Colne waterfront path. There was a notable presence of vulnerable road users in the vicinity of Lightship Way whilst the River Colne path is for cyclists and pedestrians. Diverting agricultural vehicles through this residential area and onto the recreational riverside path may increase the risk of collisions between large vehicles and vulnerable road users.

#### **Recommendation**

It is recommended that agricultural vehicles are not diverted along this route.

### 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

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

Signed:



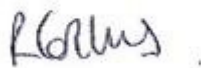
Date: 9<sup>th</sup> August 2016

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

Audit Team Member

**R J Collins BA (Hons), MSc**

Signed:



Date: 9<sup>th</sup> August 2016

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

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## Appendix A. List of Submitted Documents

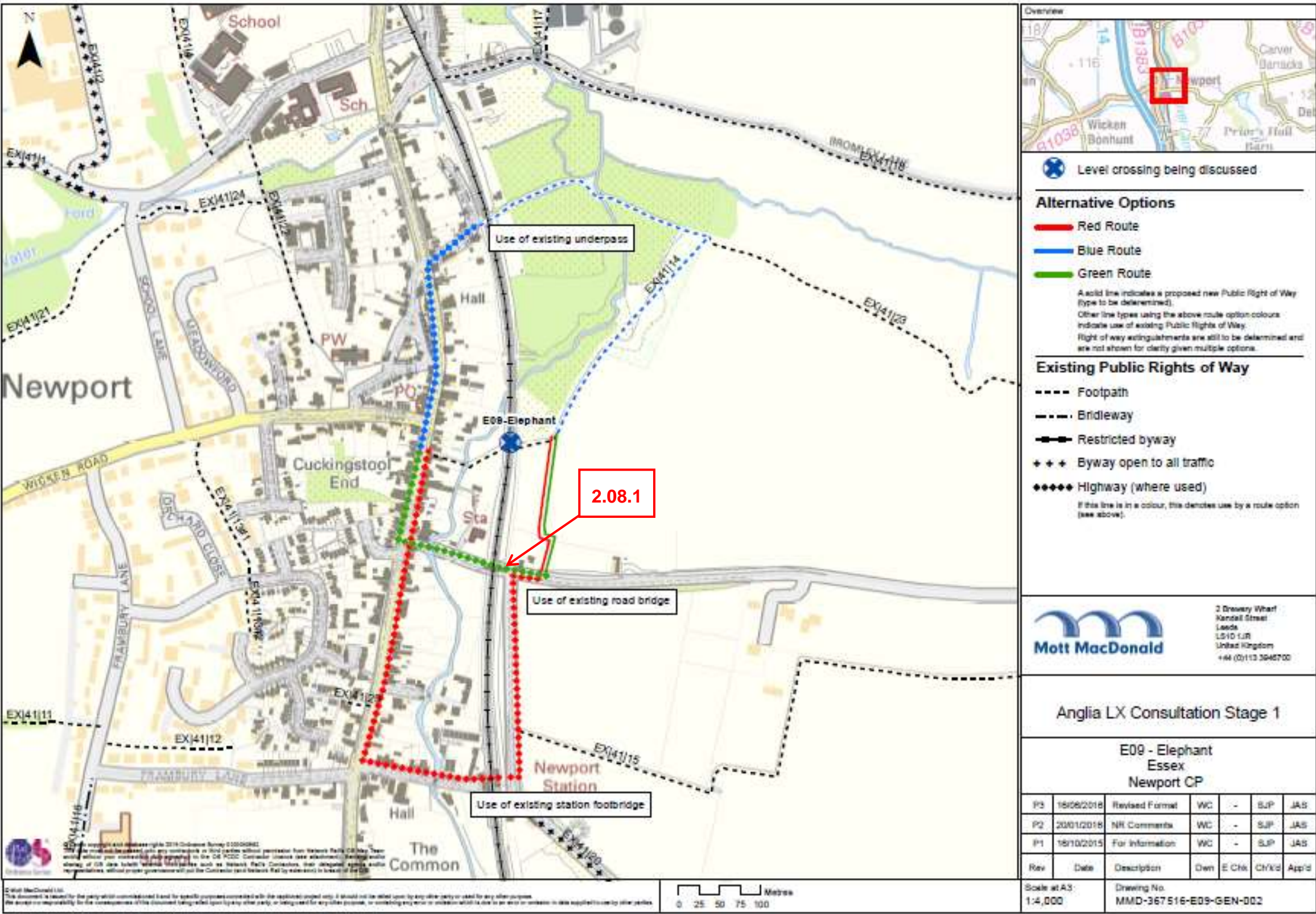
Table A.1: Drawings

Drawing	Rev	Title
MMD-367516-E04-GEN-002		Parndons Mill
MMD-367516-E05-GEN-002		Fullers End
MMD-367516-E06-GEN-002		Elsenham Emergency Hut
MMD-367516-E09-GEN-002		Elephant
MMD-367516-E10-GEN-002		Dixies
MMD-367516-E13-GEN-002		Littlebury Gate House
MMD-367516-E16-GEN-002		Maldon Road
MMD-367516-E20-GEN-002		Snivellers
MMD-367516-E24-GEN-002		Church 1
MMD-367516-E14-GEN-002		Church 2
MMD-367516-E27-GEN-002		Puddle Dock
MMD-367516-E28-GEN-002		Whipps Farmers
MMD-367516-E29-GEN-002		Brown & Tawse
MMD-367516-E33-GEN-002		Motorbike
MMD-367516-E40-GEN-002		Creaksea Place 1
MMD-367516-E44-GEN-002		Frating Abbey
MMD-367516-E48-GEN-002		Wheatsheaf
MMD-367516-E49-GEN-002		Maria Street
MMD-367516-E51-GEN-002		Thornfield Wood
MMD-367516-E53-GEN-002		Josselyns
MMD-367516-E55-GEN-002		Lamarsh Kings Farm
MMD-367516-E56-GEN-002		Abbotts LTN1 (56m 17ch)
MMD-367516-E57-GEN-002		Wivenhoe Park

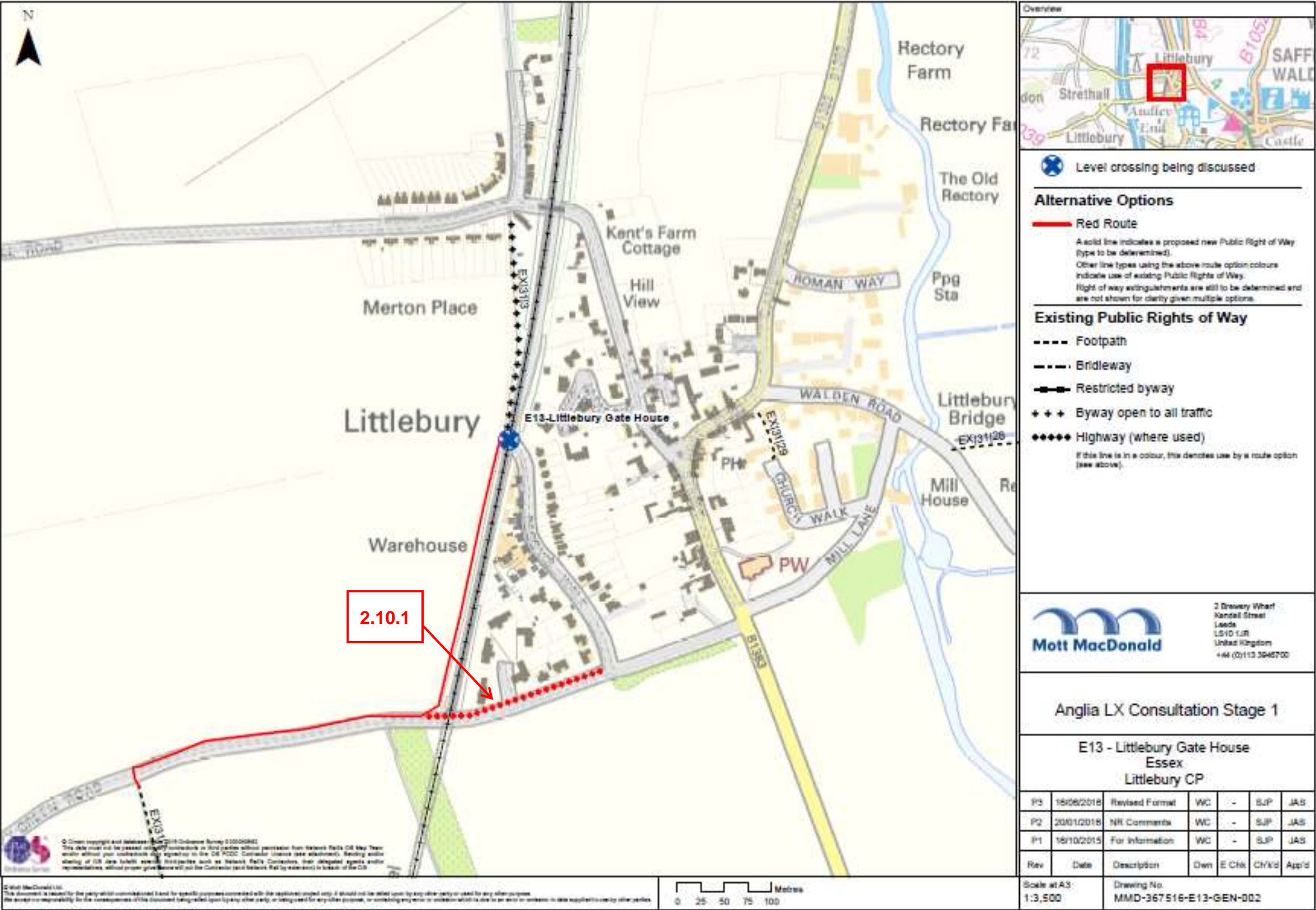
Source: Mott MacDonald, Sheffield



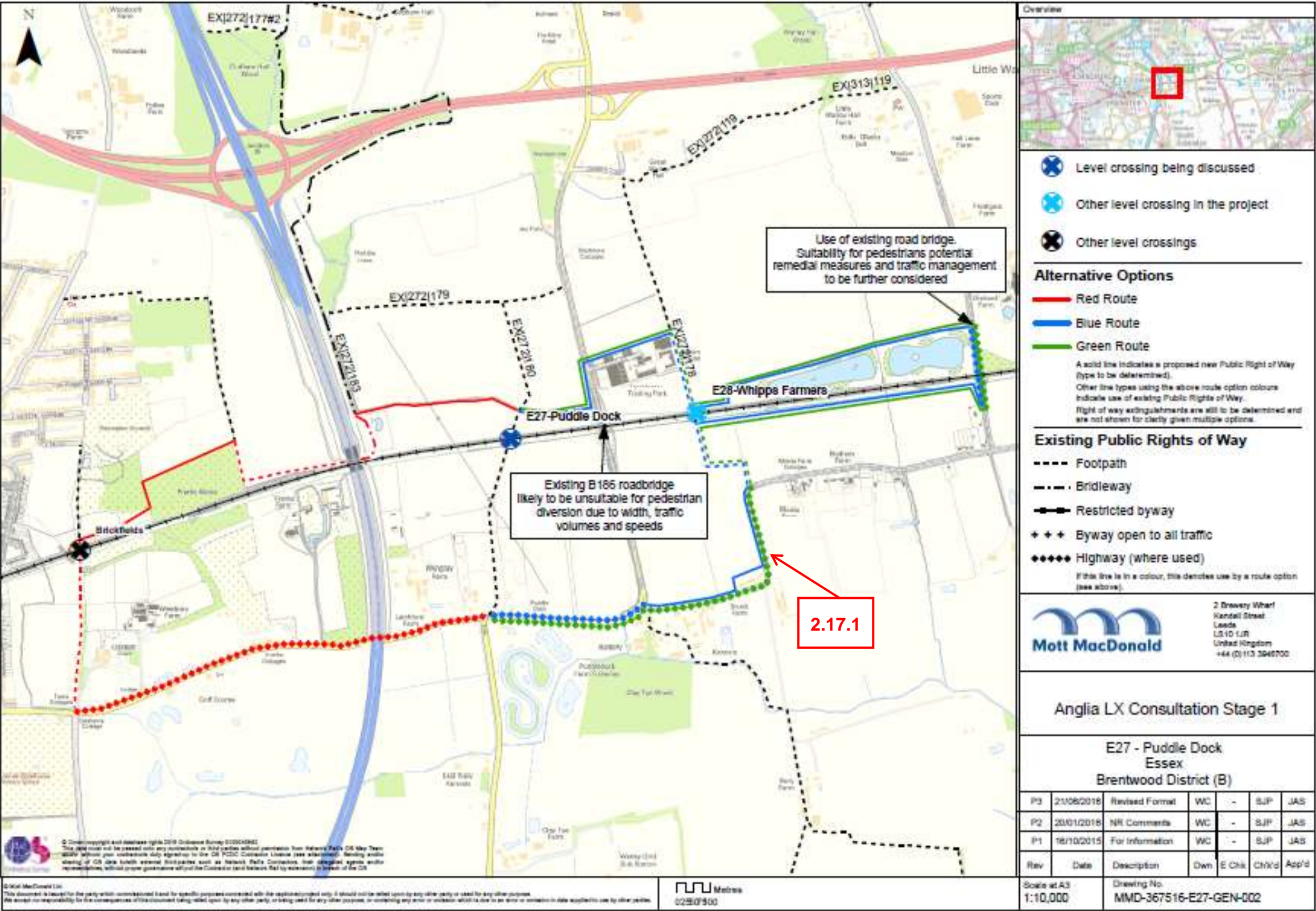




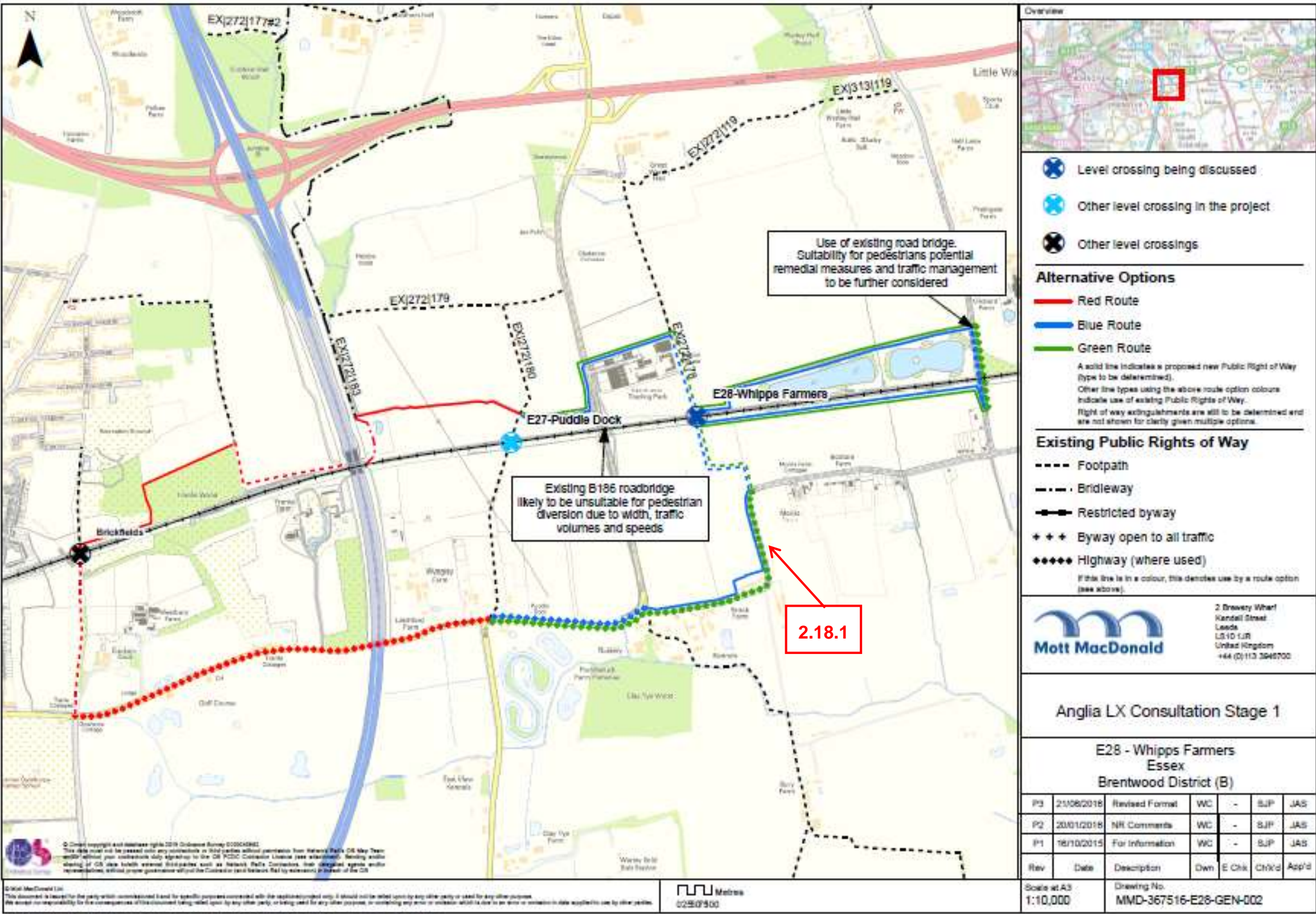




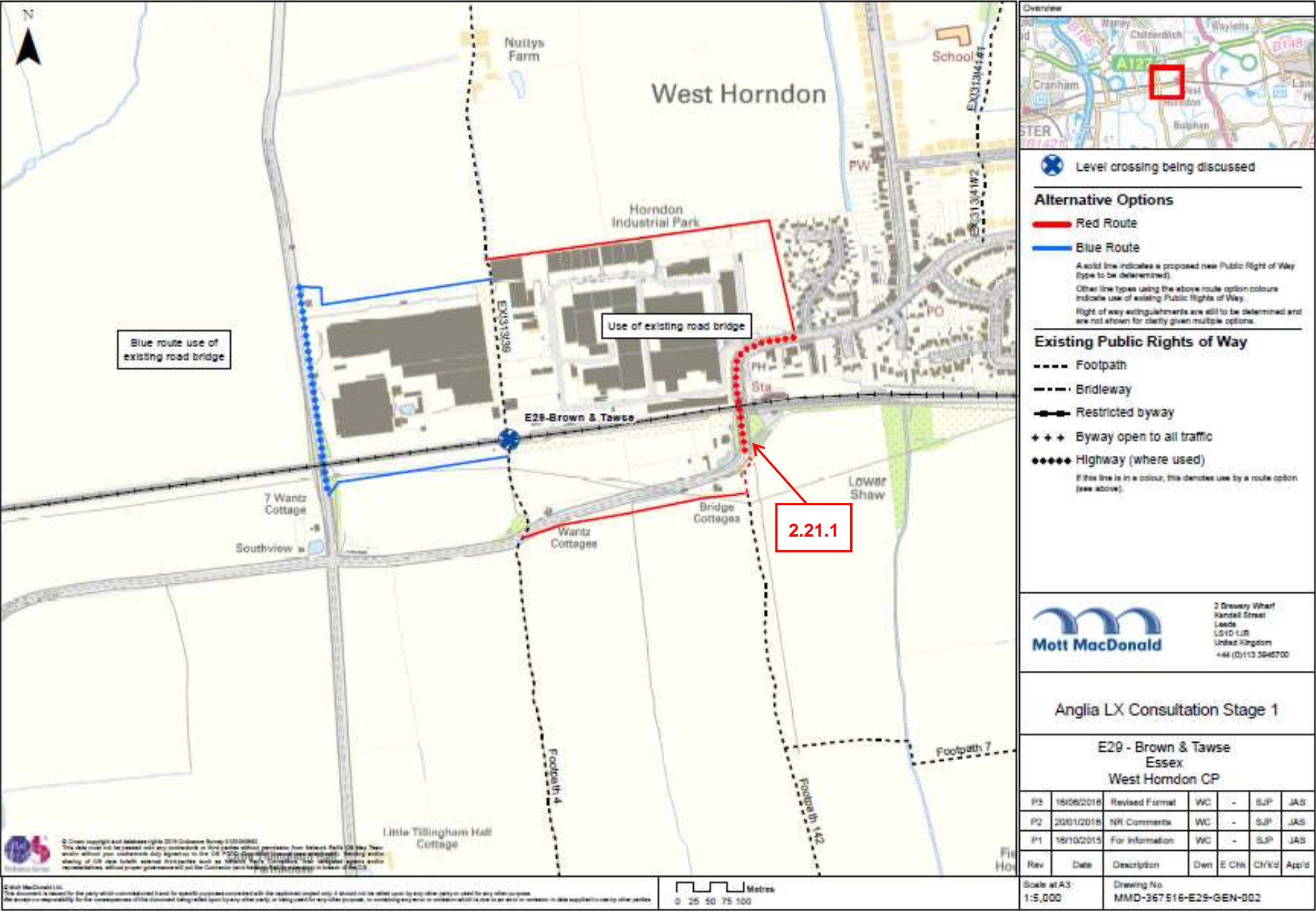




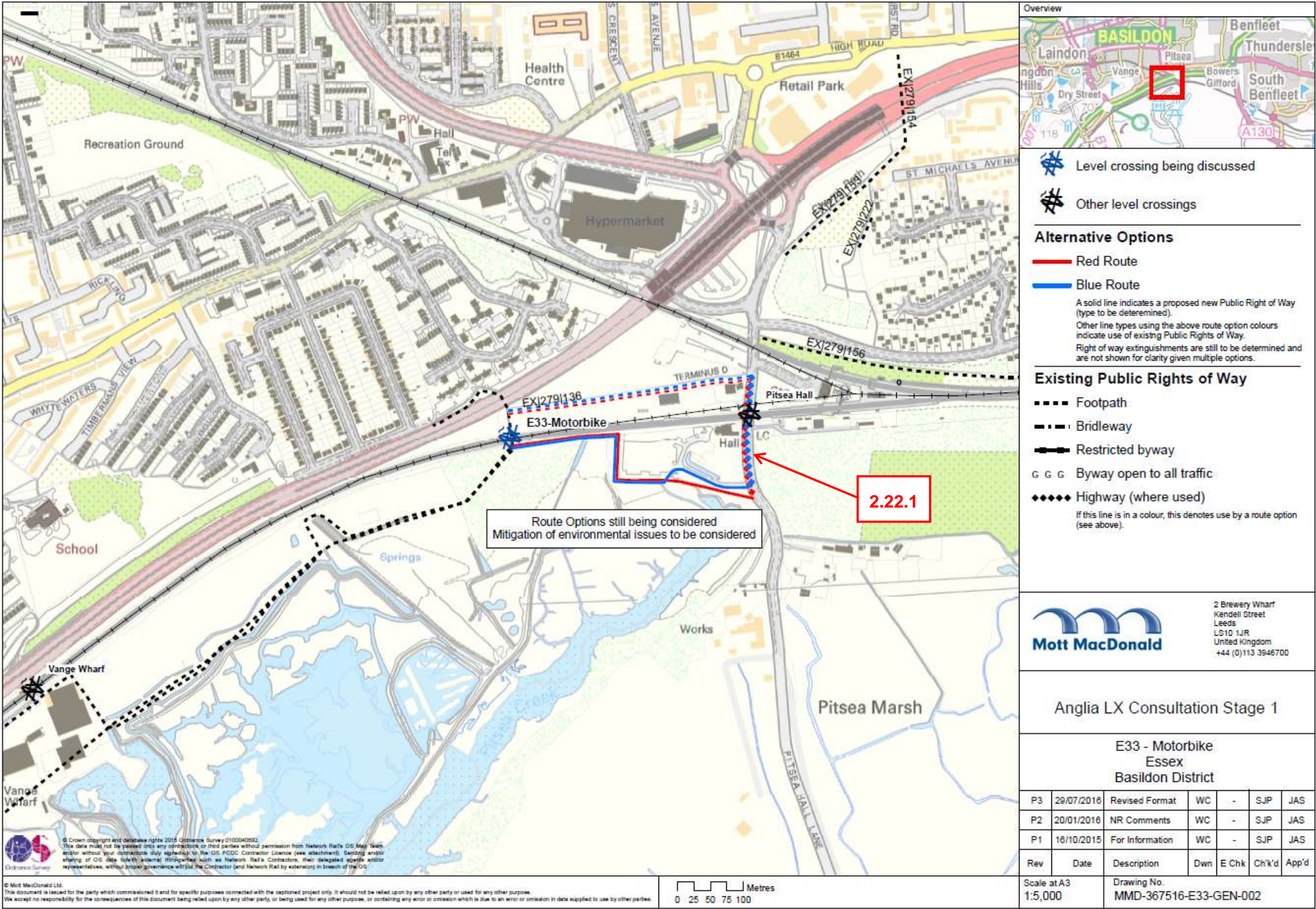




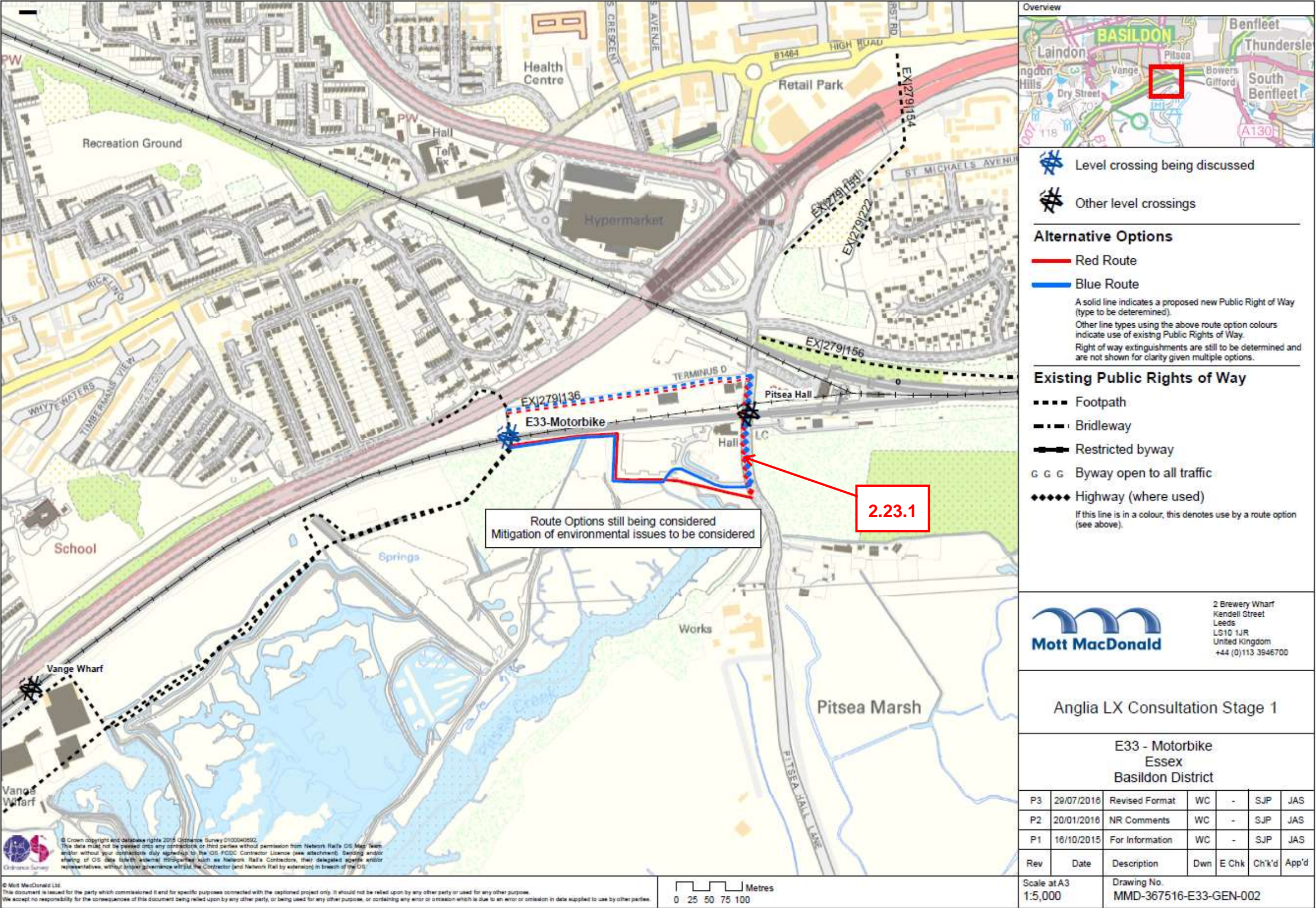








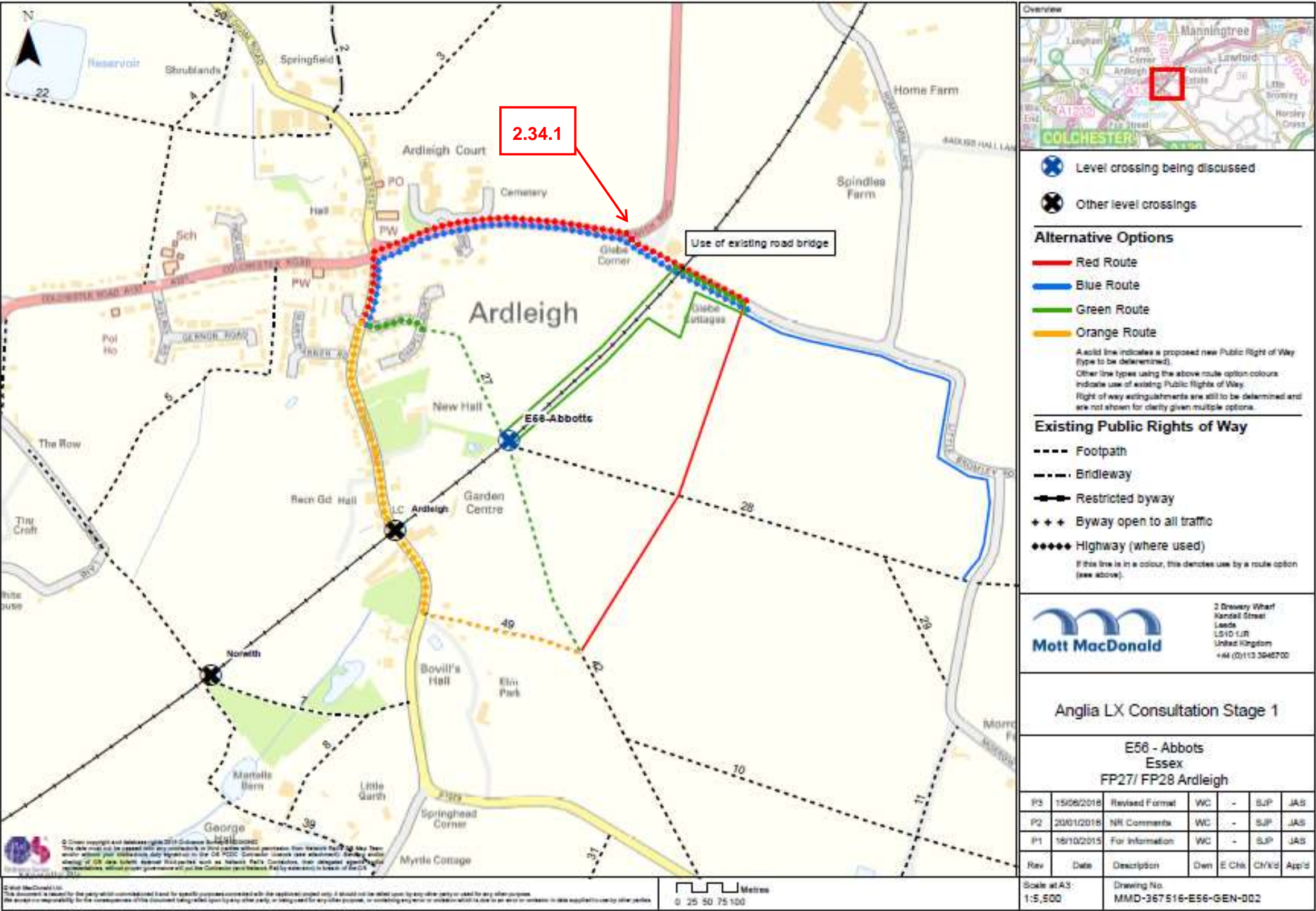




















# Transport & Works Act Order (TWAO) Anglia Route GRIP 2 Review

Havering, Hertfordshire, & Thurrock Stage 1 Road Safety Audit

Report Number 367516/RPT017  
Revision B  
November 2016





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

Havering, Hertfordshire, & Thurrock Stage 1 Road Safety Audit

November 2016

Network Rail





# Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	09/08/2016	R J Collins	A J Coleman	T J Blaney	First Draft
B	14/11/2016	R J Collins	A J Coleman	S J Tilbrook	Response to comments

## Information class: Standard

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# 1 Introduction

Network Rail is carrying out feasibility studies to explore options for the closure of level crossings throughout Thurrock, Hertfordshire and Havering 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 Havering, Hertfordshire, and Thurrock. 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 description of each proposed diversion route 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 Thursday 21<sup>st</sup> July between 08:00 and 11:00 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:

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

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.

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/RPT222A) was undertaken in December 2015 on level crossing closure proposals within Hertfordshire and Thurrock. 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
HA3 – Manor Farm		✓
HA4 – Eve's (Blue Route)		✓
HA4 – Eve's (Red Route)		✓
H04 – Tednambury (Blue and Red Routes)		✓
H05 – Pattens	✓	✓
H06 – Gilston	✓	✓
H07 – Twyford Road		✓
H09 – Fowlers		✓
T01 – No 131		✓
T04 – Jefferies	✓	
T05 – Howells Farm	✓	✓

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 HA3 – Manor Farm

#### 2.1.1 Problem

*Location: Ockendon Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Ockendon Road where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on Ockendon Road travelling at high speeds despite the 40mph speed limit and visibility is restricted by the highway geometry and the railway road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.1: Lack of verge or footway on Ockendon Road.



Source: Mott MacDonald

#### Recommendation

It is recommended that a suitable footway is provided. This should extend to Pea Lane with a dropped kerb provided at a suitable position to allow pedestrians to join the carriageway on Pea Lane.



## 2.2 HA4 – Eve's (Blue Route)

### 2.2.1 Problem

*Location: Ockendon Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Ockendon Road where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on Ockendon Road travelling at high speeds despite the 40mph speed limit and visibility is restricted by the highway geometry and the railway road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.2: Lack of verge or footway on Ockendon Road.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided. This should extend to Pea Lane with a dropped kerb provided at a suitable position to allow pedestrians to join the carriageway on Pea Lane.

### 2.2.2 Problem

*Location: Pea Lane.*

*Summary: Pedestrians walking for extended period of time in verge.*

It is proposed that pedestrians will walk along the length of Pea Lane where no footway or notable verge is present; a high volume of traffic was observed travelling at high speeds and visibility is restricted by the highway geometry and vegetation. These factors may result in collisions between pedestrians and vehicles.

Figure 2.3: Lack of footway on Pea Lane.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided along Pea Lane or that the Red Route is utilised taking into consideration issues raised in **Section 2.3**.



## 2.3 HA4 – Eve's (Red Route)

### 2.3.1 Problem

*Location: Dennis Road and West Road.*

*Summary: Pedestrians walking for extended period of time in verge.*

It is proposed that pedestrians will walk along a section of Dennis Road and West Road where no footway is present; pedestrians walking in the verge for extended periods of time may be vulnerable to trips and falls or choose to walk in the carriageway. A high volume of traffic was observed travelling at high speeds and visibility is restricted by the highway geometry and vegetation. These factors may result in collisions between pedestrians and vehicles.

Figure 2.4: Lack of footway on Dennis Road.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided on Dennis Road and West Road.

## 2.4 H04 – Tednambury (Blue and Red Routes)

### 2.4.1 Problem

*Location: A1184 Layby adjacent to The Gates.*

*Summary: Excessively overgrown verge.*

It is proposed that pedestrians will walk along an existing footway on the eastern side of the A1184. At a point where the footway follows the back of the layby adjacent to The Gates, excessive vegetation encroachment prevents the footway from being used. Pedestrians stepping into the carriageway to pass the vegetation may be struck by passing vehicles increasing the risk of personal injury.

Figure 2.5: Overgrown footway along back of layby.



Source: Mott MacDonald

### Recommendation

It is recommended that suitable vegetation clearance is undertaken at this location.

## **2.5 H05 – Pattens**

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

## **2.6 H06 – Gilston**

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

## **2.7 H07 – Twyford Road**

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

## **2.8 H09 – Fowlers**

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

## **2.9 T01 – No 131**

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

## **2.10 T05 – Howells Farm**

### **2.10.1 Problem**

*Location: Southend Road / High Road roundabouts.*

*Summary: Increase in conflict points between pedestrians and vehicles.*

The proposed diversion directs pedestrians across a residential service road junction on High Road before guiding them across another access on Southend Road which provides access to a garage and petrol station directly from the roundabout. The route then directs pedestrians onto a grassed island. Each of these crossings increases the potential for conflict between pedestrians and vehicles particularly at the roundabout where vehicles can exit from different angles.

### **Recommendation**

It is recommended that the diversion utilises the existing footway that runs between High Road service road and Southend Road away from the two roundabouts. This removes the need for pedestrians to cross the carriageway, and the potential for conflict between pedestrians and vehicles.

### 2.10.2 Problem

*Location: Southend Road.*

*Summary: Lack of footway potentially resulting in conflict between pedestrians and vehicles.*

The available verge width on Southend Road appeared restricted which could force pedestrians into the carriageway where they are at risk of collisions with vehicles. A cycleway is also present on Southend Road and cyclists may swerve to avoid pedestrians in the carriageway potentially resulting in conflict either between pedestrians and cyclists or between cyclists and vehicles.

Figure 2.6: Restricted verge width.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway are provided along Southend Road.



### 2.10.3 Problem

*Location: High Road.*

*Summary: Incomplete footway provision.*

The footway along the western side of High Road is incomplete in the vicinity of Fobbing Level Crossing. As such, pedestrian will either continue along the verge or cross unnecessarily to the eastern side before crossing back again. Both scenarios increase the risk of trips and falls or collisions with passing vehicles.

Figure 2.7: Incomplete footway.



Source: Mott MacDonald

### Recommendation

It is recommended that an additional section of footway is provided on the western side of High Road to the north of the railway, to remove the incomplete section of footway.



### 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

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

Signed:



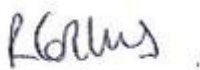
Date: 9<sup>th</sup> August 2016

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Date: 9<sup>th</sup> August 2016

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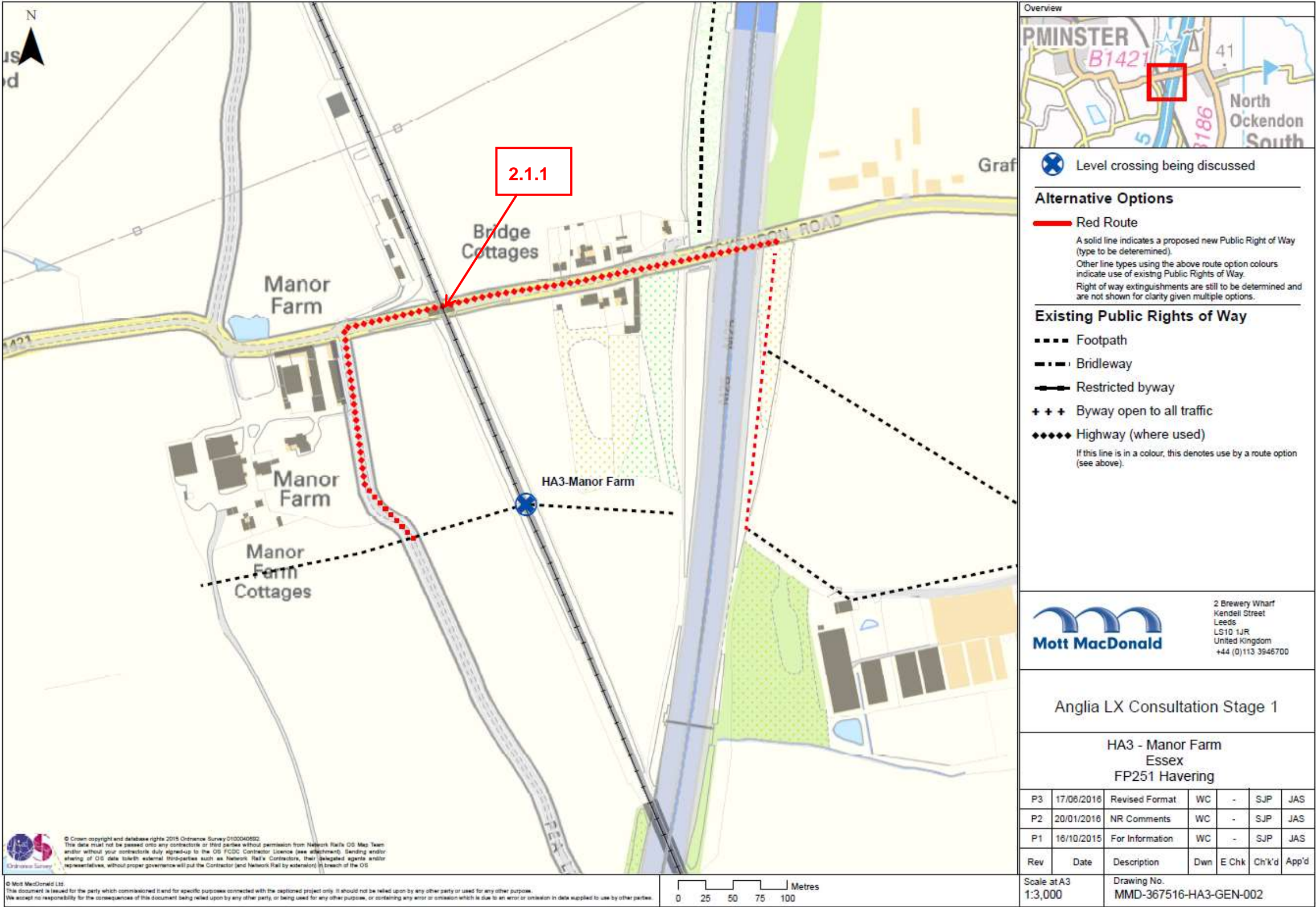
## Appendix A. List of Submitted Documents

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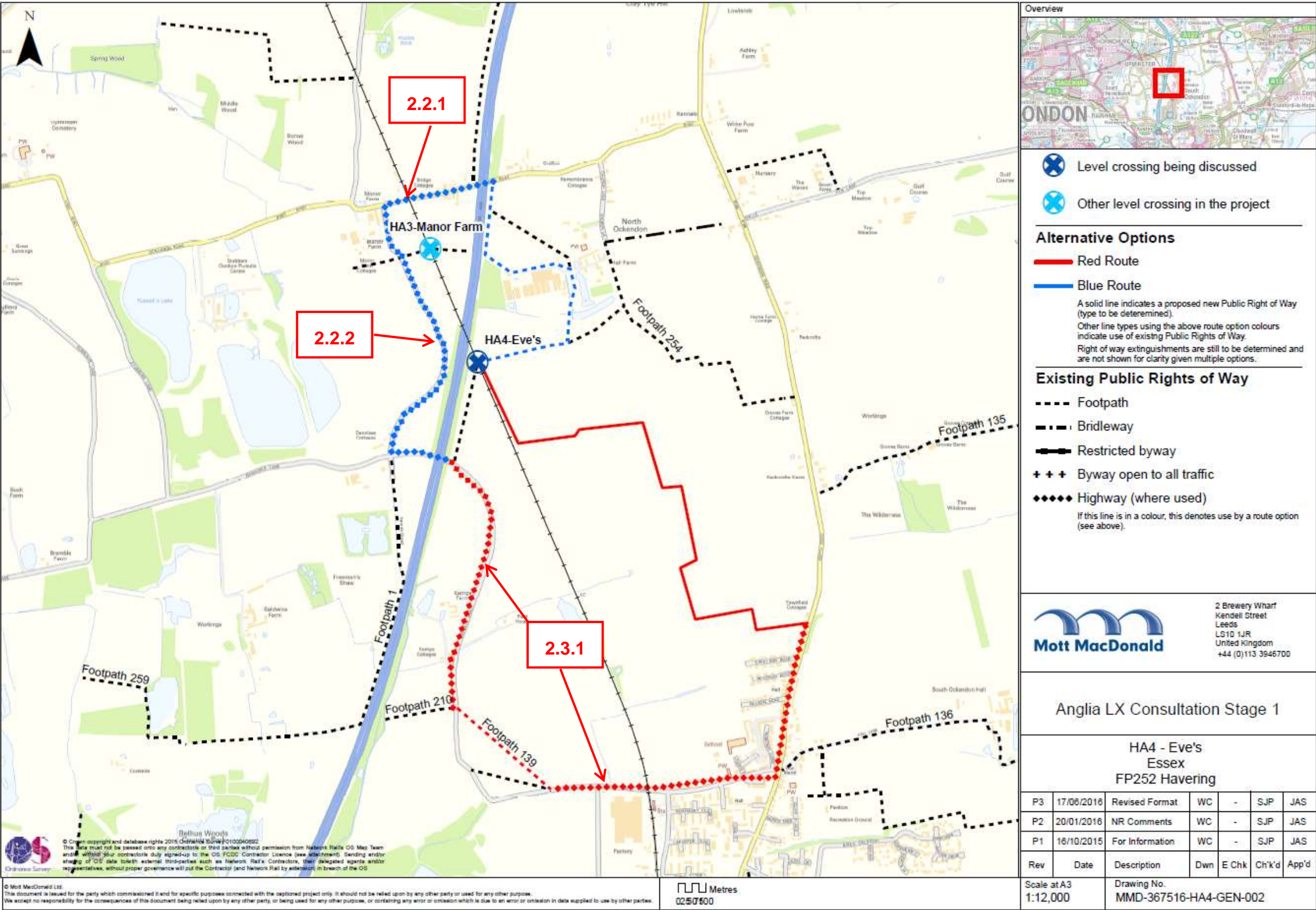
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MMD-367515-H04-GEN-002		Tednambury
MMD-367515-H05-GEN-002		Pattens
MMD-367515-H06-GEN-002		Gilston
MMD-367515-H07-GEN-002		Twyford Road
MMD-367515-H09-GEN-002		Fowlers
MMD-367515-HA3-GEN-002		Manor Farm
MMD-367515-HA4-GEN-002		Eve's
MMD-367515-T01-GEN-002		No Name Number 131
MMD-367515-T05-GEN-002		Howells Farm

Source: Mott MacDonald, Sheffield

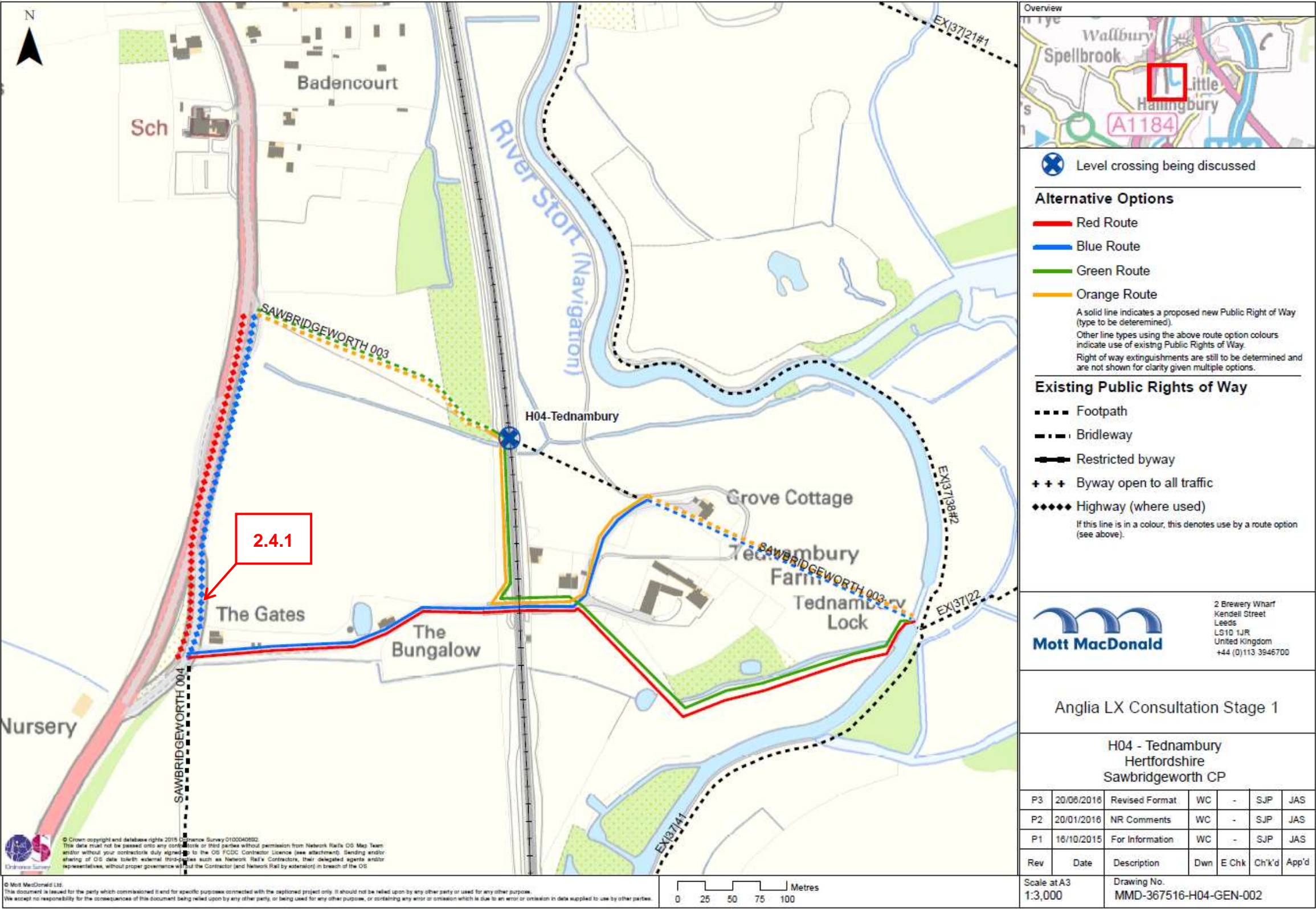
Appendix B. Key Plans



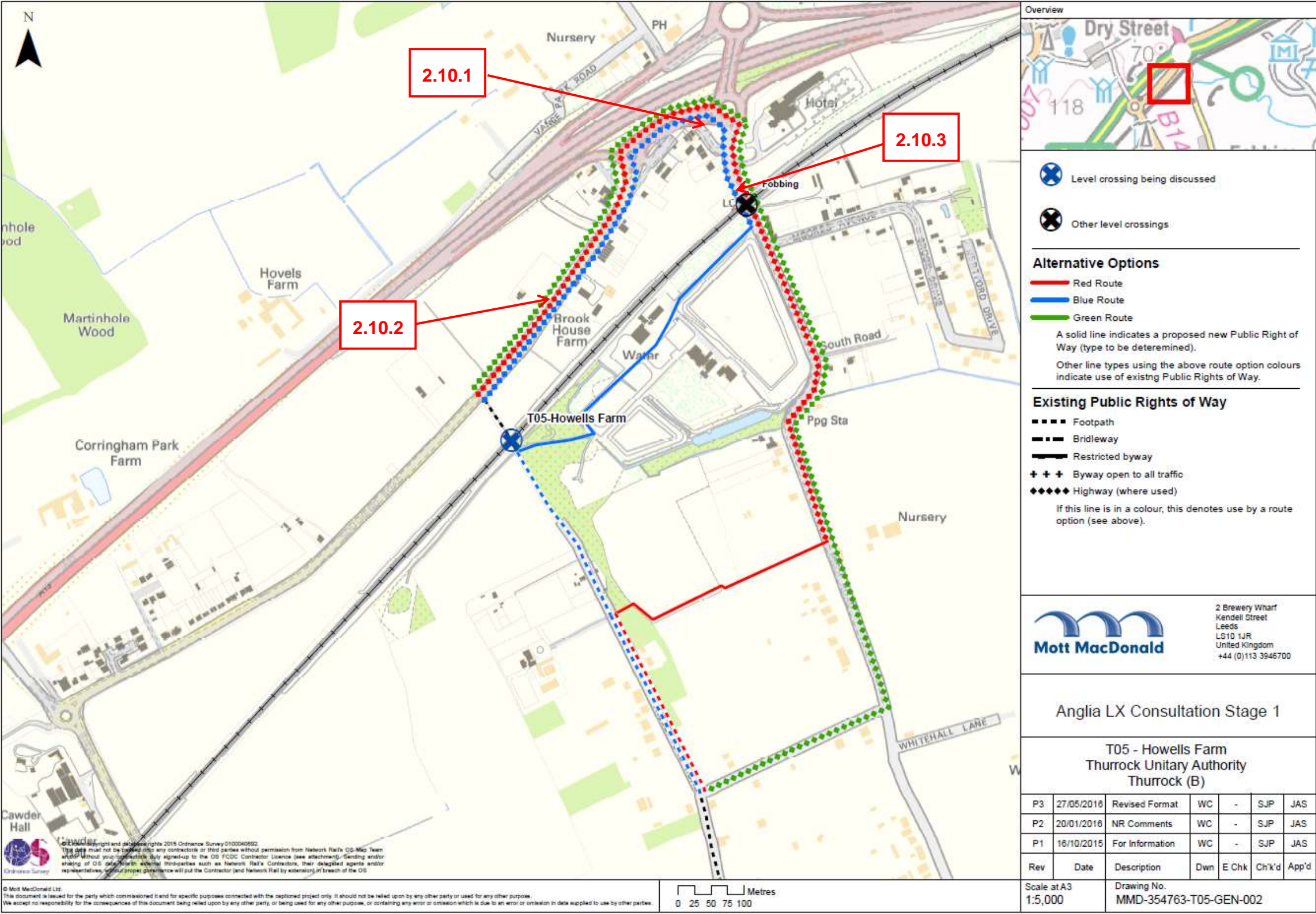














# Transport & Works Act Order (TWAO) Anglia Route

Essex Stage 1 Road Safety Audit Response Report

Report Number 367516/RPT021

November 2016

Network Rail



# Transport & Works Act Order (TWAO) Anglia Route

Essex Stage 1 Road Safety Audit Response Report

November 2016

Network Rail

Network Rail  
The Quadrant  
MK Elder Gate  
Milton Keynes  
MK9 1EN





# Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	18/11/2016	Wahiba Jennane	Steve Price	Sue Tilbrook	First Draft
B	25/11/2016	Wahiba Jennane	Steve Price	Sue Tilbrook	Response to comments

## Information class: Standard

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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 Essex, Havering, Hertfordshire and Thurrock.

A Stage 1 Road Safety Audit was undertaken in December 2015 and its findings are reported in Document Ref: 354763/RPT222A. A second Stage 1 Road Safety Audit was undertaken in August 2016 and its findings are reported in Documents Ref: 367516/RPT016A and 367516/RPT017A.

It should be noted that some crossings proposals that were audited in December 2015 were removed from the project prior to Grip stage 2. Where a particular solution has been discounted or a proposal has been removed from the project due to a road safety issue, it is noted in the design team response in section 2 of this report. Some of the level crossing closure proposals in Essex, Havering, Hertfordshire and Thurrock 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
E04 – Parndons Mill		✓
E05 – Fullers End ( Red and Blue Routes)		✓
E06 – Elsenham Emergency Hut (Red and Blue Routes)		✓
E08 – Henham	✓	
E09 – Elephant	✓	
E09 – Elephant (Red, Blue and Green Routes)		✓
E10 – Dixies	✓	
E10 – Dixies (Red Route)		✓
E11 – Windmills	✓	
E12 – Wallaces	✓	
E13 – Littlebury Gate House	✓	✓
E14 – Church Lane CCTV (ltn1)	✓	
E16 – Maldon Road		✓
E17 – Boreham	✓	
E18 – Noakes	✓	
E19 – Potters	✓	
E20 – Snivellers	✓	
E20 – Snivellers (Red Route)		✓
E21 – Hill House 1	✓	
E22 – Great Domsey	✓	
E24 – Church 1		✓
E25 – Church 2		✓
E26 – Barbara Close	✓	
E27 – Puddle Dock	✓	
E27 – Puddle Dock (Red, Blue and Green Routes)		✓
E28 – Whipps Farmers	✓	

Site	December 2015	August 2016
E28 – Whipps Farmers (Blue and Green Routes)		✓
E29 – Brown and Tawse	✓	
E29 – Brown & Tawse (Red and Blue Routes)		✓
E30 – Ferry	✓	
E31 – Brickyard Farm	✓	
E32 – Woodgrange Close	✓	
E33 – Motorbike (Red and Blue Routes)		✓
E34 – Cousins Number 1	✓	
E38 – Battlesbridge	✓	
E40 – Creaksea Place 1 (Red and Blue Routes)		✓
E41 – Padget	✓	
E42 – Sand Pit	✓	
E43 – High Elm	✓	
E44 – Frating Abbey (Red and Blue Routes)		✓
E47 – Bluehouse	✓	
E48 – Wheatsheaf		✓
E49 – Maria Street		✓
E51 – Thornfield Wood (Red and Blue Routes)		✓
E52 – Golden Square	✓	
E53 – Josselyns (Blue Route)		✓
E55 – Lamarsh Kings Farm (Green Route)		✓
E56 – Abbots (Blue and Orange Routes)		✓
E57 – Wivenhoe Park		✓
HA3 – Manor Farm		✓
HA4 – Eve's (Blue and Red Routes)		✓
H04 – Tednabury (Blue and Red Routes)		✓
H05 – Pattens	✓	✓
H06 – Gilston	✓	✓
H07 – Twyford Road		✓
H09 – Fowlers		✓
T01 – No131		✓
T04 – Jefferies	✓	
T05 – Howells Farm	✓	✓

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 Essex, Havering, Hertfordshire and Thurrock. 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.

## 2 Items Raised at the Stage 1 Road Safety Audit

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

### 2.1 E04 – Parndons Mill (August 2016)

#### 2.1.1 Problem

*Location: Elizabeth Way / Herons Wood.*

*Summary: Unnecessary carriageway crossing and lack of suitable crossing point.*

It is proposed that the alternative route will require pedestrians to cross Elizabeth Way to the southern side and continue along an existing footway. This footway crosses Herons Wood at a point where no appropriate crossing point is provided. This may result in trips or falls, or conflicts between pedestrians and vehicles. Furthermore, there is a segregated footway / cycleway along the length of the northern side of Elizabeth Way that would remove the need for pedestrians to cross any carriageways. Therefore, the proposed route unnecessarily increases the risk of collisions between crossing pedestrians and vehicles.

Figure 2.1: Lack of appropriate crossing facility on Herons Wood.



Source: Mott MacDonald

#### Recommendation

It is recommended that the route continues along the northern side of Elizabeth Way.



## Design Team Response

Agreed – It is the intention that pedestrians are routed along the footway on the northern side of Elizabeth Way.

### **2.2 E05 – Fullers End (Red Route – August 2016)**

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

### **2.3 E05 – Fullers End (Blue Route – August 2016)**

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

### **2.4 E06 – Elsenham Emergency Hut (Red Route – August 2016)**

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

### **2.5 E06 – Elsenham Emergency Hut (Blue Route – August 2016)**

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

### **2.6 E08 – Henham (GRIP 1 – December 2015)**

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

### **2.7 E09 – Elephant (GRIP 1 – December 2015)**

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

### **2.8 E09 – Elephant (Red Route – August 2016)**

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

### **2.9 E09 – Elephant (Blue Route – August 2016)**

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

## 2.10 E09 – Elephant (Green Route – August 2016)

### 2.10.1 Problem

*Location: Debden Road railway bridge.*

*Summary: Restricted carriageway width over railway bridge.*

The carriageway width over the railway bridge narrows to single carriageway with no footway or verge meaning pedestrians would have to share the carriageway with vehicles. Forward visibility of pedestrians could be restricted (particularly eastbound) and although vehicles are travelling slowly over the bridge, this could result in conflict between pedestrians and vehicles.

Figure 2.2: Restricted width on Debden Road over railway line.



Source: Mott MacDonald

## Recommendation

It is recommended that measures are provided to either warn motorists of pedestrians within the carriageway or to further slow vehicles on the approach. However, if suitable remedial measures cannot be provided then an alternative route should be identified.

## Design Team Response

Agreed – Alternative routes have been looked at and suitable remedial measures are being considered in this location.

### **2.11 E10 – Dixies (GRIP 1 – December 2015)**

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

### **2.12 E10 – Dixies (Red Route – August 2016)**

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

### **2.13 E11 – Windmills (GRIP 1 – December 2015)**

#### **2.13.1 Problem**

*Location: London Road / Mutlow Hill Roundabout with Sparrowsend Hill.*

*Summary: Lighting columns restrict available width with a risk of conflict between pedestrians and vehicles.*

The diversion route directs pedestrians along the western verge of London Road. Lighting columns are located within the verge which could restrict the width available to pedestrians, potentially causing them to enter the carriageway with a risk of conflict with vehicles.

## Recommendation

A suitable verge or footway width should be provided behind the lighting columns.

## Design Team Response

Disagree – In the absence of an existing footpath, users would make use of the existing footway on the opposite side (western side) of London Road and therefore no further provision is proposed. Users could then make use of the pedestrian island to join the B1052.

### **2.14 E12 – Wallaces (GRIP 1 – December 2015)**

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

## 2.15 E13 – Littlebury Gate House (December 2015 / August 2016)

### 2.15.1 Problem

*Location: Littlebury Green Road.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Littlebury Green Road where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on Littlebury Green Road travelling at high speeds and visibility is restricted by the highway geometry and vegetation, particularly to the west of Goodwins Close. These factors may result in collisions between pedestrians and vehicles.

Figure 2.3: Lack of verge or footway on Littlebury Green Road.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided.

### Design Team Response

Agreed – Provision of a footpath to be considered so that pedestrian are able to avoid the road walking.

#### **2.16 E14 – Church Lane CCTV (LTN1) (GRIP 1 – December 2015)**

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

#### **2.17 E16 – Maldon Road (August 2016)**

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

#### **2.18 E17 – Boreham (GRIP 1 – December 2015)**

##### **2.18.1 Problem**

Location: Hanson Bulls Lodge Access Road.

Summary: Pedestrians walking within the carriageway at risk of collisions with large vehicles.

The diversion route guides pedestrians along the Bulls Lodge Quarry access road which is heavily used by large vehicles. Although the access road is wide and has good forward visibility, it is not recommended that pedestrians walk within the carriageway as any collision with a large vehicle is likely to result in serious injury to pedestrians.

Figure 2.4: Bulls Lodge Quarry access road.



Source: Mott MacDonald



## Recommendation

It is recommended that a compacted footpath is provided and set back from the access road to encourage pedestrians to stay clear of the carriageway.

## Design Team Response

Agreed – This option was not taken forward and an alternative solution was proposed for this level crossing that removed the need to use Hanson Bulls Lodge Access Road.

### **2.19 E18 – Noakes (GRIP 1 – December 2015)**

#### **2.19.1 Problem**

See problems above (2.18 – E17 – Boreham) as proposed diversion route utilises the same quarry access road.

## Design Team Response

Agreed – This option was not taken forward and an alternative solution was proposed for this level crossing that removed the need to use Hanson Bulls Lodge Access Road.

### **2.20 E19 – Potters (GRIP 1 – December 2015)**

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

### **2.21 E20 – Snivellers (GRIP 1 – December 2015)**

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

### **2.22 E20 – Snivellers (Red Route – August 2016)**

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

### **2.23 E21 – Hill House 1 (GRIP 1 – December 2015)**

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

### **2.24 E22 – Great Domsey (GRIP 1 – December 2015)**

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

## **2.25 E24 – Church 1 (August 2016)**

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

## **2.26 E25 – Church 2 (August 2016)**

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

## **2.27 E26 – Barbara Close (GRIP 1 – December 2015)**

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

## **2.28 E27 – Puddle Dock (GRIP 1 – December 2015)**

### **2.28.1 Problem**

*Location: Warley Street railway bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

The carriageway on Warley Street narrows over the railway bridge and only a narrow hardstanding (<0.5m) is present which would force pedestrians to walk within the carriageway. Traffic volumes and speeds were high and pedestrians walking in the carriageway would be at risk of collisions with vehicles, which would likely result in high severity injuries.

Figure 2.5: Reduced widths over railway bridge.



Source: Mott MacDonald

## Recommendation

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

## Design Team Response

Agreed – An appropriate width footway could not be achieved over the bridge and therefore an alternative solution (red route referred to in 2.29 below) is under consideration. However, if this is found to be unsuitable, this level crossing will be removed from the project.

### **2.29 E27 – Puddle Dock (Red Route – August 2016)**

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

### **2.30 E27 – Puddle Dock (Blue Route – August 2016)**

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

### **2.31 E27 – Puddle Dock (Green Route – August 2016)**

#### **2.31.1 Problem**

*Location: St Marys Lane.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of St Marys Lane where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted by the highway geometry. These factors may result in collisions between pedestrians and vehicles.

Figure 2.6: Lack of verge or footway on St Marys Lane.



Source: Mott MacDonald

#### Recommendation

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.

#### Design Team Response

Agreed – Therefore an alternative solution (red route referred to in 2.29 above) is under consideration. However, if this is found to be unsuitable, this level crossing will be removed from the project.

### **2.32 E28 – Whipps Farmers (GRIP 1 – December 2015)**

#### **2.32.1 Problem**

See problem above (2.28 – E27 – Puddle Dock) as proposed diversion route utilises the same highway.

#### Design Team Response

Agreed – An appropriate width footway could not be achieved over the bridge and therefore alternative solutions were taken forward for consideration.

### **2.33 E28 – Whipps Farmers (Blue Route – August 2016)**

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

## 2.34 E28 – Whipps Farmers (Green Route – August 2016)

### 2.34.1 Problem

*Location: St Marys Lane.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of St Marys Lane where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted by the highway geometry. These factors may result in collisions between pedestrians and vehicles.

Figure 2.7: Lack of verge or footway on St Marys Lane.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.



### Design Team Response

Agreed – The route was dropped in favour of an alternative solution that reduced the level of road walking.

## 2.35 E29 – Brown & Tawse (GRIP 1 – December 2015)

### 2.35.1 Problem

*Location: St Marys Lane where it joins with the existing footpath.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

On St Marys Lane to the east of the existing footpath no verge is present and pedestrians would have to walk in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted around the bend. These factors could result in conflict between pedestrians and vehicles.

Figure 2.8: Lack of verge on St Marys Lane.



Source: Mott MacDonald

### Recommendation

A suitable footway should be provided otherwise an alternative route should be identified.

## Design Team Response

Agreed – An appropriate width footpath could not be achieved. The route was amended to provide a suitable off-road footpath to the south of Saint Mary's Road as a safer alternative.

### 2.36 E29 – Brown & Tawse (Blue Route – August 2016)

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

### 2.37 E29 – Brown & Tawse (Red Route – August 2016)

#### 2.37.1 Problem

*Location: St Marys Lane Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of St Marys Lane where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on St Marys Lane travelling at high speeds and visibility is restricted by the highway geometry and the railway road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.9: Lack of verge or footway on St Marys Lane.



Source: Mott MacDonald

## Recommendation

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.

## Design Team Response

Agreed – Due to insufficient highway space the footway could not be provided and the blue route was progressed instead.

### **2.38 E30 – Ferry (GRIP 1 – December 2015)**

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

### **2.39 E31 – Brickyard Farm (GRIP 1 – December 2015)**

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

### **2.40 E32 – Woodgrange Close (GRIP 1 – December 2015)**

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

### **2.41 E33 – Motorbike (Red Route – August 2016)**

#### **2.41.1 Problem**

*Location: Pitsea Hall Lane.*

*Summary: High HGV flow and speed.*

It is proposed that pedestrians will walk along a section of Pitsea Hall Lane on the western side of the carriageway where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high number of HGVs generally travelling at excessive speeds were observed on Pitsea Hall Lane. This may lead to an increased risk of collisions between pedestrians and vehicles.

Figure 2.10: Lack of verge or footway on western side of Pitsea Hall Lane.



Source: Mott MacDonald

### Recommendation

It is recommended that suitable crossing facilities are provided to allow pedestrians to cross to the eastern side and utilise the existing segregated footway / cycleway. Vegetation clearance will need to be undertaken to provide a suitable footway / cycleway width.

### Design Team Response

Agreed – A crossing point will be provided.

## 2.42 E33 – Motorbike (Blue Route – August 2016)

### 2.42.1 Problem

*Location: Pitsea Hall Lane.*

*Summary: High HGV flow and speed.*

It is proposed that pedestrians will walk along a section of Pitsea Hall Lane on the western side of the carriageway where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high number of HGVs generally travelling at excessive speeds were observed on Pitsea Hall Lane. This may lead to an increased risk of collisions between pedestrians and vehicles.

Figure 2.11: Lack of verge or footway on western side of Pitsea Hall Lane.



Source: Mott MacDonald

### Recommendation

It is recommended that suitable crossing facilities are provided to allow pedestrians to cross to the eastern side and utilise the existing segregated footway / cycleway. Vegetation clearance will need to be undertaken to provide a suitable footway / cycleway width.

### Design Team Response

Agreed – A crossing point will be provided.

## 2.43 E34 – Cousins Number 1 (GRIP 1 – December 2015)

### 2.43.1 Problem

*Location: A120 Underpass.*

*Summary: Risk of anti-social behaviour.*

The proposed diversion will take pedestrians onto a suspended footbridge beneath the railway line and above the A120. The footbridge will not be overlooked and there is a risk some people may act inappropriately with potential to throw objects at westbound vehicles on the A120. Such behaviour may lead to vehicle loss of control and potentially serious collisions.

### Recommendation

The footbridge should be enclosed to prevent users interacting with the vehicles on the A120.



### Design Team Response

Agreed – However, this proposal was withdrawn due to structural interface issues and this level crossing removed from the project.

#### 2.43.2 Problem

*Location: A120 southern verge.*

*Summary: Risk of vehicle to pedestrian collisions.*

The proposed diversion will run along the southern side of the A120 and it is not clear if this will be on the A120 side of the embankment or along the agricultural side at the top of the embankment. Pedestrians walking along the verge are at serious risk of injury in the event of loss of control collisions.

Figure 2.12: A120 westbound verge.



Source: Mott MacDonald

### Recommendation

A suitable footway width should be provided behind the barrier and be clear of any obstructions.

### Design Team Response

Disagree – Pedestrians would have been routed along the agricultural side and therefore not exposed to errant vehicles. However, this proposal was withdrawn and this level crossing removed from the project.

#### 2.44 E38 - Battlesbridge (GRIP 1 – December 2015)

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

#### **2.45 E40 – Creaksea Place 1 (Red Route – August 2016)**

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

#### **2.46 E40 – Creaksea Place 1 (Blue Route – August 2016)**

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

#### **2.47 E41 – Padget (GRIP 1 – December 2015)**

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

#### **2.48 E42 – Sand Pit (GRIP 1 – December 2015)**

##### **2.48.1 Problem**

*Location: Alresford Road.*

*Summary: Risk of pedestrian trip accidents.*

The proposed diversion will run along the north eastern verge of the Arlesford Road and where the wide verge narrows the surface of the existing narrow verge is uneven with a lower worn area and a raised unworn area presenting a level difference. The worn area also features numerous pot holes. There is a risk of pedestrians tripping on the uneven surface and falling into the carriageway, at risk of collisions with vehicles.

Figure 2.13: Alresford Road north eastern verge.



Source: Mott MacDonald

### Recommendation

A suitable level hardstanding should be provided to reduce the risk of pedestrians tripping.

### Design Team Response

Agreed – Suitable surfacing will be provided as part of the proposed measures on Alresford Road.

## 2.49 E43 – High Elm (GRIP 1 – December 2015)

### 2.49.1 Problem

*Location: B1027 Ten Penny Hill.*

*Summary: Risk of vehicle to pedestrian collisions.*

The proposed diversion will guide pedestrians along Ten Penny Hill. Currently there is a footway on the north east side of Ten Penny Hill which terminates at Wivenhoe Road and a footway is provided on the south west side of Ten Penny Hill which continues as far as Coach Road, opposite where the proposed diversion will join Ten Penny Hill. Ten Penny Hill is a high speed road with a posted 50mph speed limit and is also quite wide. Pedestrians will be vulnerable to collisions with vehicles if required to cross the road twice to continue their journey.

Figure 2.14: Ten Penny Hill at the western interface looking south east.



Source: Mott MacDonald

### Recommend

It is recommended that a suitable compacted footpath is provided on the north east side of Ten Penny Hill to avoid pedestrians having to cross the wide busy road twice.

### Design Team Response

Disagree – It is considered that there is a suitable footway on the opposite side of the carriageway. However, to mitigate the problem of pedestrians crossing Ten Penny Hill, as noted on the Road Safety Audit, it is proposed to install a suitable pedestrian refuge island at either end of the pedestrian route.

#### **2.50 E44 – Frating Abbey (Red Route – August 2016)**

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

#### **2.51 E44 – Frating Abbey (Blue Route – August 2016)**

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

#### **2.52 E47 - Bluehouse (GRIP 1 – December 2015)**

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

#### **2.53 E48 – Wheatsheaf (August 2016)**

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

#### **2.54 E49 – Maria Street (August 2016)**

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

#### **2.55 E51 – Thornfield Wood (Blue Route – August 2016)**

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

#### **2.56 E51 – Thornfield Wood (Red Route – August 2016)**

##### **2.56.1 Problem**

*Location: Jupe's Hill Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Jupe's Hill between Oldhouse Farm and Willow Cottage where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. Whilst traffic flows were observed to be low, speeds were excessive with visibility restricted by a road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.15: Lack of verge or footway on Jupe's Hill.



Source: Mott MacDonald

##### **Recommendation**

It is recommended that a suitable footway is provided or that the Blue Route Option is utilised.



## Design Team Response

Agreed – The blue route has been taken forward.

### **2.57 E52 – Golden Square (GRIP 1 – December 2015)**

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

### **2.58 E53 – Josselyns (Blue Route – August 2016)**

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

### **2.59 E55 – Lamarsh Kings Farm (Green Route – August 2016)**

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

### **2.60 E56 – Abbots (Blue Route – August 2016)**

#### **2.60.1 Problem**

*Location: Harwich Road / Little Bromley Road junction.*

*Summary: Lack of crossing facility may result in trips and falls.*

It is proposed that diverted pedestrians will utilise the footway on the northern side of Harwich Road and the carriageway on Little Bromley Road. This will require pedestrians to cross Harwich Road in the vicinity of its junction with Little Bromley Road. No crossing facilities are provided at this location and crossing pedestrians may either cross at inappropriate locations or trip on the full height kerb.

Figure 2.16: Lack of crossing point on Harwich Road at its junction with Little Bromley Road.



Source: Mott MacDonald

### Recommendation

It is recommended that an appropriately positioned crossing point is installed on Harwich Road.

### Design Team Response

Agreed – To mitigate this problem the route was amended to provide an off-road footpath parallel to the railway.

## **2.61 E56 – Abbots (Orange Route – August 2016)**

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

## **2.62 E57 – Wivenhoe Park (August 2016)**

### **2.62.1 Problem**

*Location: Lightship Way / River Colne waterfront.*

*Summary: Inappropriate interaction between agricultural vehicles and non-motorised users.*

It is proposed that diverted agricultural vehicles will access land to the west of the railway via Lightship Way and the River Colne waterfront path. There was a notable presence of vulnerable road users in the vicinity of Lightship Way whilst the River Colne path is for cyclists and pedestrians. Diverting agricultural vehicles through this residential area and onto the recreational riverside path may increase the risk of collisions between large vehicles and vulnerable road users.

## Recommendation

It is recommended that agricultural vehicles are not diverted along this route.

## Design Team Response

The diversion route may not be suitable for very large machinery and therefore further discussions with the landowner are being undertaken to ascertain the exact type and frequency of agricultural machinery movements.

### 2.63 HA3 – Manor Farm (August 2016)

#### 2.63.1 Problem

*Location: Ockendon Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Ockendon Road where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on Ockendon Road travelling at high speeds despite the 40mph speed limit and visibility is restricted by the highway geometry and the railway road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.17: Lack of verge or footway on Ockendon Road.



Source: Mott MacDonald

## Recommendation

It is recommended that a suitable footway is provided. This should extend to Pea Lane with a dropped kerb provided at a suitable position to allow pedestrians to join the carriageway on Pea Lane.

## Design Team Response

Disagree – The level crossing and public right of way are not present on site and therefore there are no users to undertake the diversion. However, as the route forms part of the diversion for Eve's crossing, provision of a field walking route adjacent to Ockendon Road to avoid as much road walking as possible will be considered.

### 2.64 HA4 – Eve's (Blue Route – August 2016)

#### 2.64.1 Problem

*Location: Ockendon Road Bridge.*

*Summary: Narrow road width may lead to conflict between pedestrians and vehicles.*

It is proposed that pedestrians will walk along a section of Ockendon Road where no footway or notable verge is present; this will result in pedestrians walking in the carriageway. A high volume of traffic was observed on Ockendon Road travelling at high speeds despite the 40mph speed limit and visibility is restricted by the highway geometry and the railway road bridge. These factors may result in collisions between pedestrians and vehicles.

Figure 2.18: Lack of verge or footway on Ockendon Road.





Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided. This should extend to Pea Lane with a dropped kerb provided at a suitable position to allow pedestrians to join the carriageway on Pea Lane.

### Design Team Response

The level crossing has very low or no usage and therefore it would be disproportionate to construct the footway measure given the road and verge width available. However, provision of a field walking route adjacent to Ockendon Road to avoid as much road walking as possible will be considered.

#### 2.64.2 Problem

*Location: Pea Lane.*

*Summary: Pedestrians walking for extended period of time in verge.*

It is proposed that pedestrians will walk along the length of Pea Lane where no footway or notable verge is present; a high volume of traffic was observed travelling at high speeds and visibility is restricted by the highway geometry and vegetation. These factors may result in collisions between pedestrians and vehicles.

Figure 2.19: Lack of footway on Pea Lane.





Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided along Pea Lane or that the Red Route is utilised taking into consideration issues raised in **Section 2.65**.

### Design Team Response

The level crossing has very low or no users and therefore it would be disproportionate to construct the footway measure given the road and verge width available. There is available verge width for the occasional pedestrian to step out of the carriageway into a position of safety as and when a vehicle passes.

## **2.65 HA4 – Eve's (Red Route – August 2016)**

### **2.65.1 Problem**

*Location: Dennis Road and West Road.*

*Summary: Pedestrians walking for extended period of time in verge.*

It is proposed that pedestrians will walk along a section of Dennis Road and West Road where no footway is present; pedestrians walking in the verge for extended periods of time may be vulnerable to trips and falls or choose to walk in the carriageway. A high volume of traffic was observed travelling at high speeds and visibility is restricted by the highway geometry and vegetation. These factors may result in collisions between pedestrians and vehicles.

Figure 2.20: Lack of footway on Dennis Road.



Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided on Dennis Road and West Road.

### Design Team Response

Agreed - However, the red route has been discounted and therefore the Road Safety Audit issues have been removed.

## 2.66 H04 – Tednambury (Blue and Red Routes – August 2016)

### 2.66.1 Problem

*Location: A1184 Layby adjacent to The Gates.*

*Summary: Excessively overgrown verge.*

It is proposed that pedestrians will walk along an existing footway on the eastern side of the A1184. At a point where the footway follows the back of the layby adjacent to The Gates, excessive vegetation encroachment prevents the footway from being used. Pedestrians stepping into the carriageway to pass the vegetation may be struck by passing vehicles increasing the risk of personal injury.

Figure 2.21: Overgrown footway along back of layby.



Source: Mott MacDonald

#### Recommendation

It is recommended that suitable vegetation clearance is undertaken at this location.

#### Design Team Response

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

#### **2.67 H05 – Pattens (December 2015 – August 2016)**

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

#### **2.68 H06 – Gilston (December 2015 – August 2016)**

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

#### **2.69 H07 – Twyford Road (August 2016)**

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

#### **2.70 H09 – Fowlers (August 2016)**

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

## 2.71 T01 – No 131 (August 2016)

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

## 2.72 T04 – Jefferies (GRIP 1 – December 2015)

### 2.72.1 Problem

*Location: Manorway.*

*Summary: Risk of vehicle to pedestrian collisions.*

The proposed diversion will run along the south eastbound A1014. The footway was inaccessible at the time of the site visit as it was located behind a large safety barrier and it was therefore difficult to determine the existing width. If there is insufficient width, there is a risk that pedestrians will be forced to travel within the carriageway to cross the railway at risk of collisions with vehicles, which were observed to travel at high speed.

Figure 2.22: Proposed footway behind safety barrier.



Source: Mott MacDonald

### Recommendation

A suitable footway width should be provided behind the barrier and be clear of any obstructions.

### Design Team Response

Agreed – A suitable footpath will be provided behind the barrier.

## 2.73 T05 – Howells Farm (December 2015 / August 2016)

### 2.73.1 Problem

*Location: Southend Road / High Road roundabouts.*

*Summary: Increase in conflict points between pedestrians and vehicles.*

The proposed diversion directs pedestrians across a residential service road junction on High Road before guiding them across another access on Southend Road which provides access to a garage and petrol station directly from the roundabout. The route then directs pedestrians onto a grassed island. Each of these crossings increases the potential for conflict between pedestrians and vehicles particularly at the roundabout where vehicles can exit from different angles.

#### Recommendation

It is recommended that the diversion utilises the existing footway that runs between High Road service road and Southend Road away from the two roundabouts. This removes the need for pedestrians to cross the carriageway, and the potential for conflict between pedestrians and vehicles.

#### Design Team Response

Agreed – It is the intention that users would be routed along the existing footway that runs between High Road service road and Southend Road on this section of the diversion route.

### 2.73.2 Problem

*Location: Southend Road.*

*Summary: Lack of footway potentially resulting in conflict between pedestrians and vehicles.*

The available verge width on Southend Road appeared restricted which could force pedestrians into the carriageway where they are at risk of collisions with vehicles. A cycleway is also present on Southend Road and cyclists may swerve to avoid pedestrians in the carriageway potentially resulting in conflict either between pedestrians and cyclists or between cyclists and vehicles.

Figure 2.23: Restricted verge width.





Source: Mott MacDonald

### Recommendation

It is recommended that a suitable footway is provided along Southend Road.

### Design Team Response

Disagree – Pedestrians currently use the verge to walk along this section of Southend Road and we are not proposing to change this part of their current journey. However, a new route running west from the crossing to B1420 on the south side of the railway provides an off road walking route between the footways on each road to the east and west of the crossing.

### 2.73.3 Problem

*Location: High Road.*

*Summary: Incomplete footway provision.*

The footway along the western side of High Road is incomplete in the vicinity of Fobbing Level Crossing. As such, pedestrian will either continue along the verge or cross unnecessarily to the eastern side before crossing back again. Both scenarios increase the risk of trips and falls or collisions with passing vehicles.

Figure 2.24: Incomplete footway.



Source: Mott MacDonald

### Recommendation

It is recommended that an additional section of footway is provided on the western side of High Road to the north of the railway, to remove the incomplete section of footway.

### Design Team Response

Disagree – Pedestrians currently use the footpath walk along this section of Southend Road and we are not proposing to change this part of their current journey.

# Appendices

Appendix A. Key Plans	38
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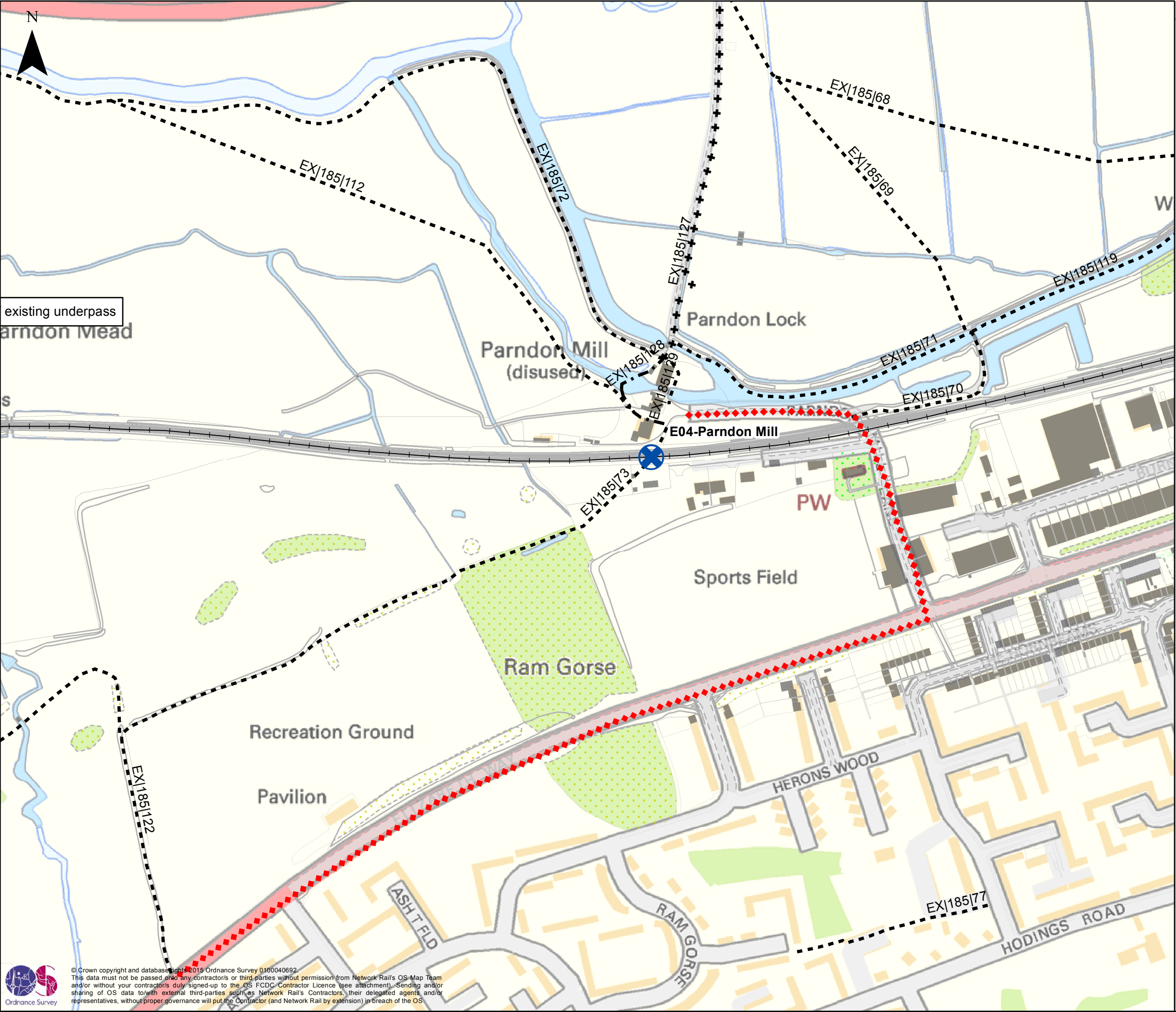
## Appendix A. Key Plans

- A.1 MMD-367516-E04-GEN-002**
- A.2 MMD-367516-E09-GEN-002**
- A.3 MMD-354763-E11-GEN-001 GRIP 1**
- A.4 MMD-367516-E13-GEN-002**
- A.5 MMD-354763-E17-GEN-001 GRIP 1**
- A.6 MMD-354763-E27-GEN-001 GRIP 1**
- A.7 MMD-367516-E27-GEN-002**
- A.8 MMD-367516-E28-GEN-002**
- A.9 MMD-354763-E29-GEN-001 GRIP 1**
- A.10 MMD-367516-E29-GEN-002**
- A.11 MMD-367516-E33-GEN-002**
- A.12 MMD-354763-E34-GEN-001 GRIP 1**
- A.13 MMD-354763-E42-GEN-001**
- A.14 MMD-354763-E43-GEN-001 GRIP 1**
- A.15 MMD-367516-E51-GEN-002**
- A.16 MMD-367516-E56-GEN-002**
- A.17 MMD-367516-E57-GEN-002**
- A.18 MMD-367516-HA3-GEN-002**
- A.19 MMD-367516-HA4-GEN-002**
- A.20 MMD-367516-H04-GEN-002**
- A.21 MMD-354763-T04-GEN-001 GRIP 1**

**A.22 MMD-354763-T05-GEN-002 GRIP 1**

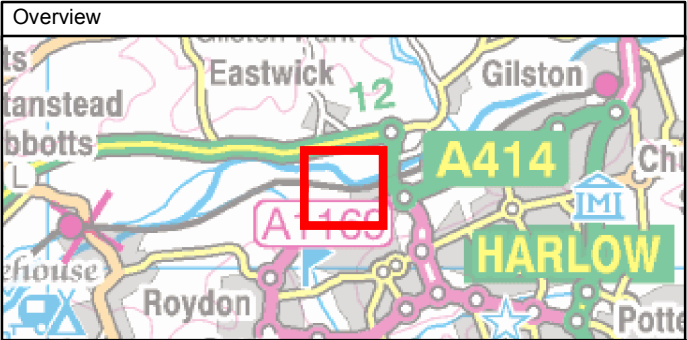
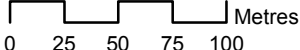
**A.23 MMD-367516-T05-GEN-002**





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Level crossing being discussed

### Alternative Options

#### Red Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

### Existing Public Rights of Way

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (where used)  
If this line is in a colour, this denotes use by a route option (see above).



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## Anglia LX Consultation Stage 1

### E04 - Parndon Mill Essex

P3	20/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

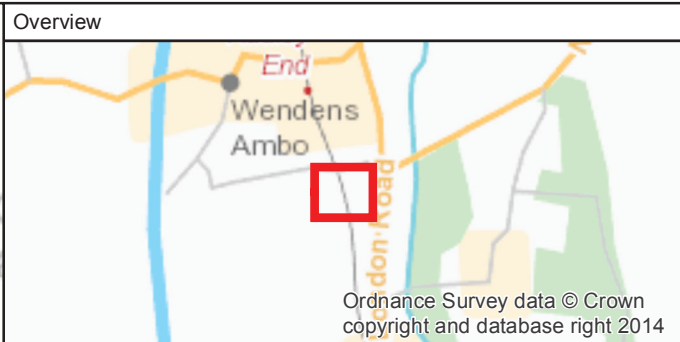
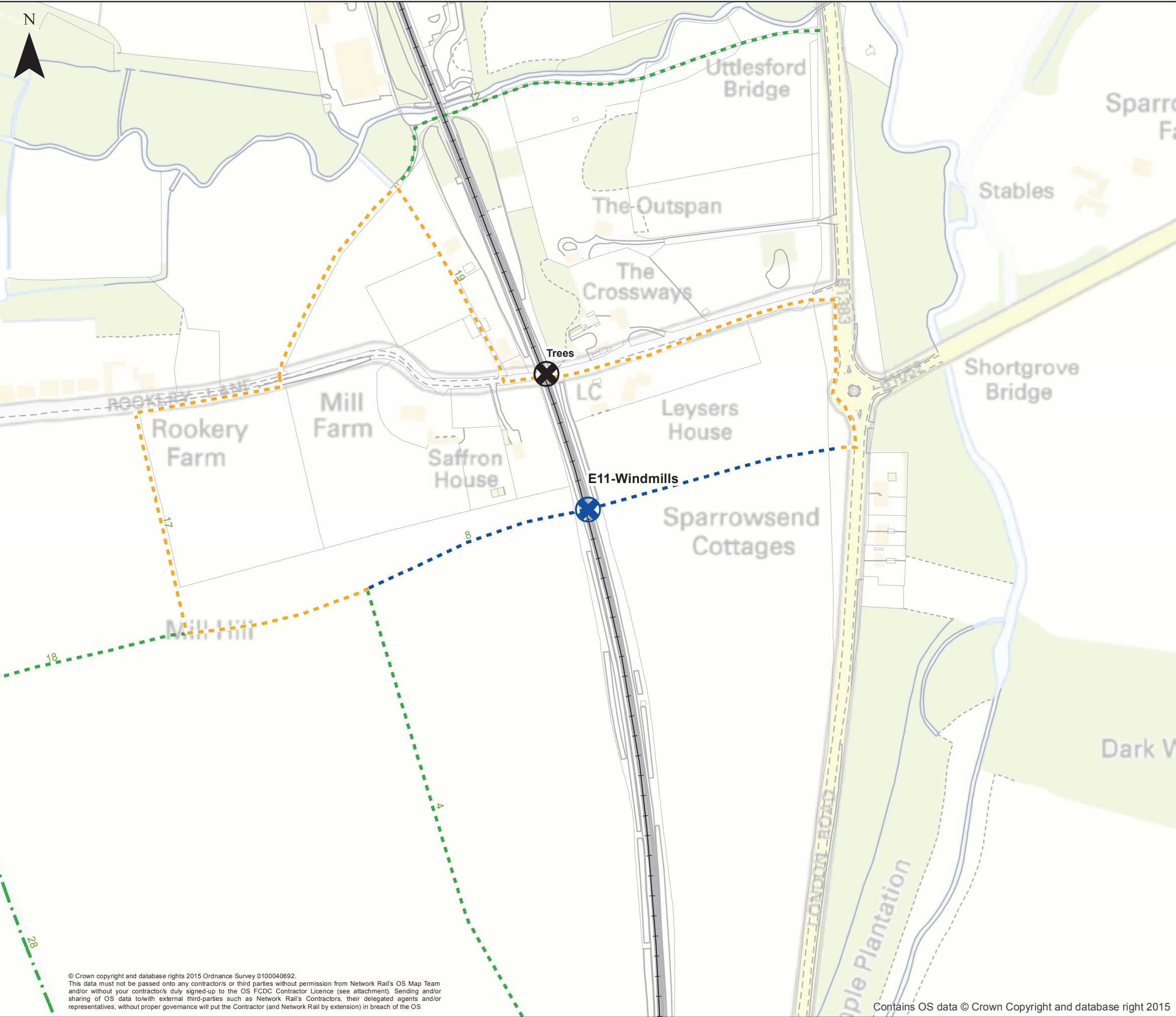
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Current level crossing

Other level crossing

Right of way/highway symbology by type

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (only shown where a change of use is proposed)

Right of way/highway symbology by proposed status

- Creation
- Extinguishment
- Use of existing
- Change of status
- No change to existing status

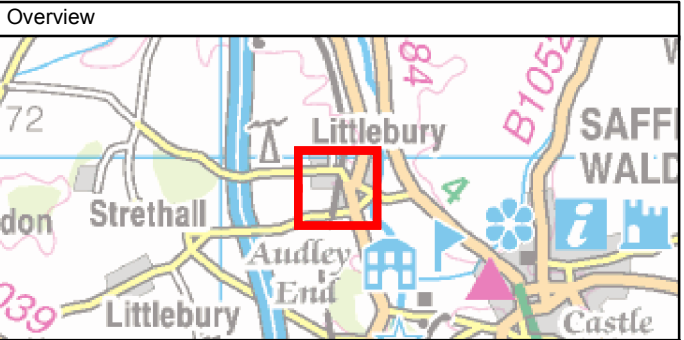
2 Brewery Wharf  
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## GRIP 1 Proposals

### E11 - Windmills Essex Newport CP

P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

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 Level crossing being discussed

### Alternative Options

 Red Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

### Existing Public Rights of Way

--- Footpath

- . - Bridleway

— Restricted byway

+ + + Byway open to all traffic

◆◆◆◆ Highway (where used)

If this line is in a colour, this denotes use by a route option (see above).



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## Anglia LX Consultation Stage 1

### E13 - Littlebury Gate House Essex Littlebury CP

P3	16/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

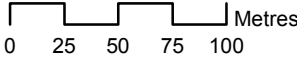
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Drawing No.  
MMD-367516-E13-GEN-002

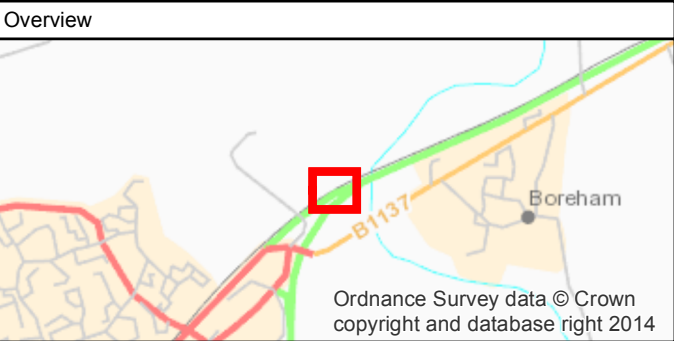
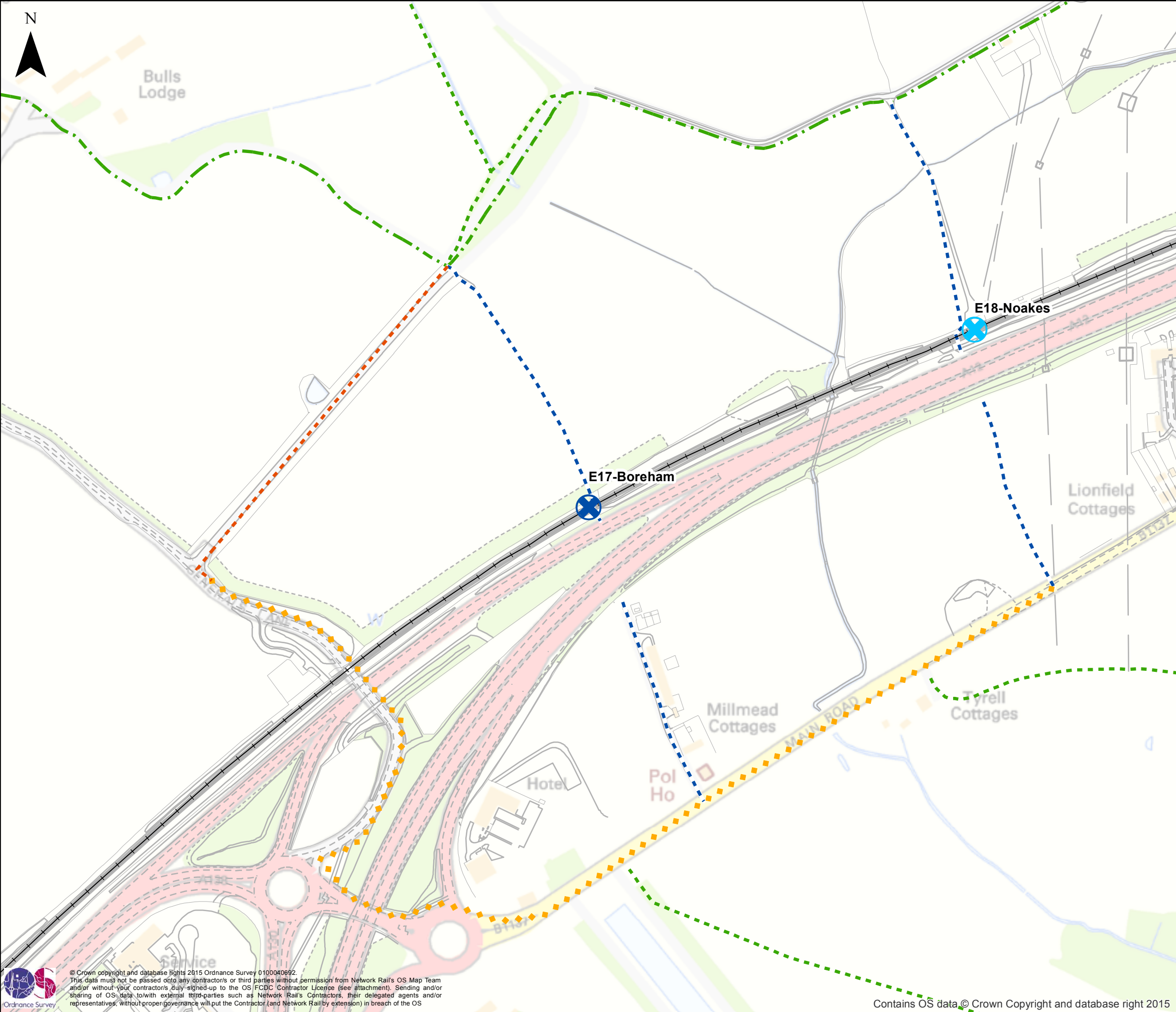


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- Current level crossing
- Other level crossing in study
- Type\_2
- Bridleway
  - Footpath
- Right of way/highway symbology by type
- Footpath
  - Bridleway
  - Restricted byway
  - Byway open to all traffic
  - Highway (only shown where a change of use is proposed)
- Right of way/highway symbology by proposed status
- Creation
  - Extinguishment
  - Use of existing
  - Change of status
  - No change to existing status

**Mott MacDonald**

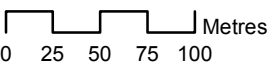
2 Brewery Wharf  
Kendell Street  
Leeds  
LS10 1JR  
United Kingdom  
+44 (0)113 3946700

### GRIP 1 Proposals

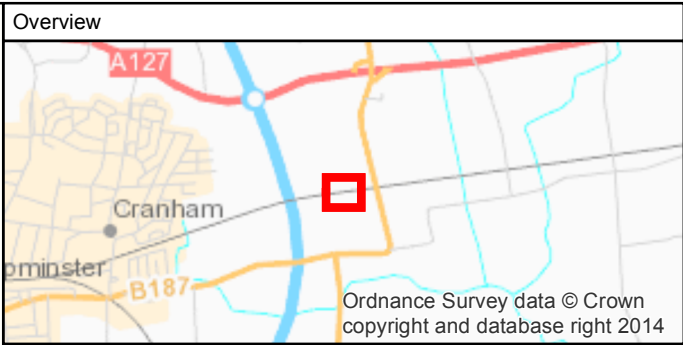
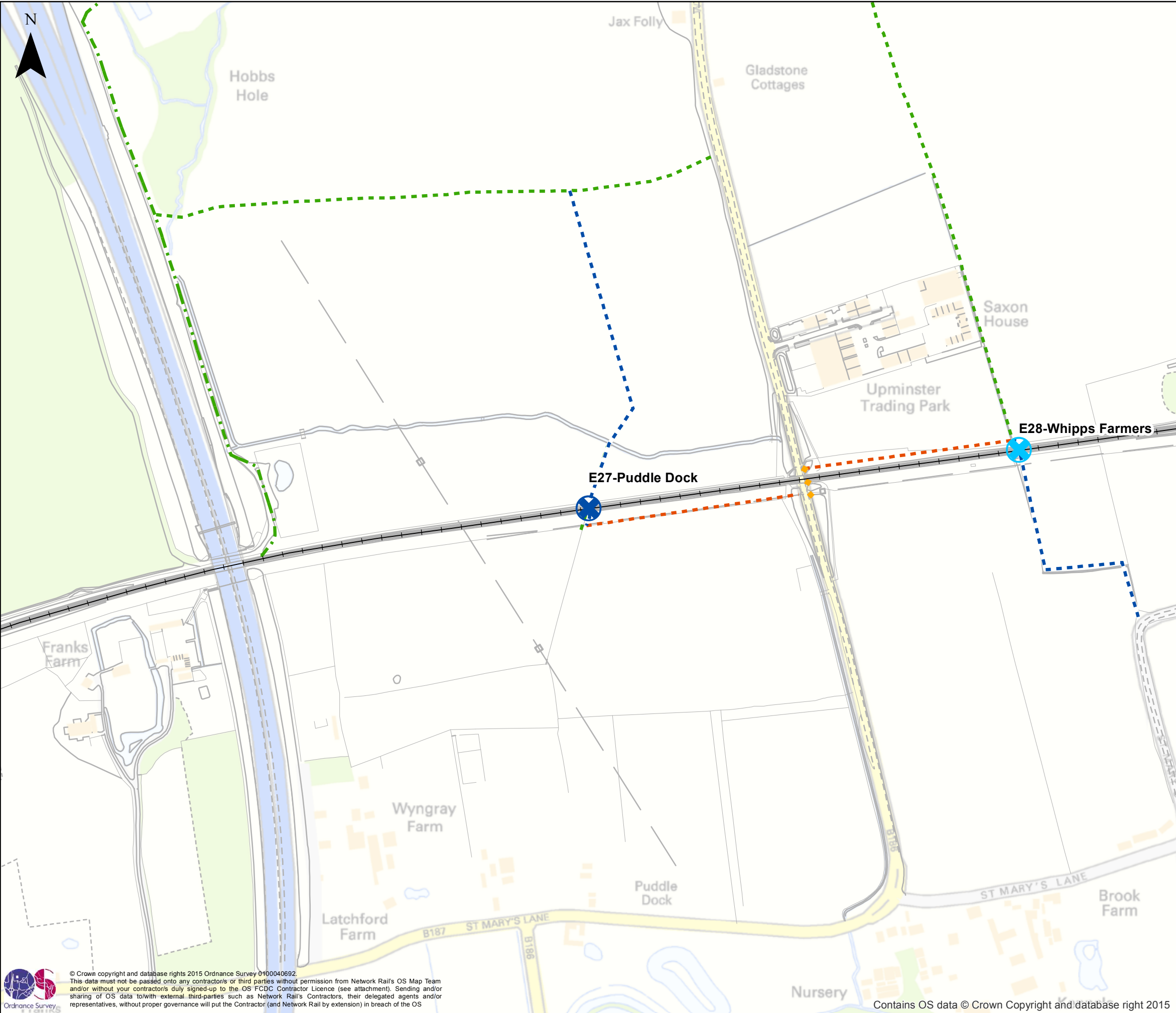
E17 - Boreham Essex Boreham CP EX/213/23						
P2	07/12/2015	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3 1:4,000	Drawing No. MMD-354763-E17-GEN-001
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Current level crossing

Other level crossing in study

Type\_2

- Bridleway
- Footpath

Right of way/highway symbology by type

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (only shown where a change of use is proposed)

Right of way/highway symbology by proposed status

- Creation
- Extinguishment
- Use of existing
- Change of status
- No change to existing status

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United Kingdom  
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## GRIP 1 Proposals

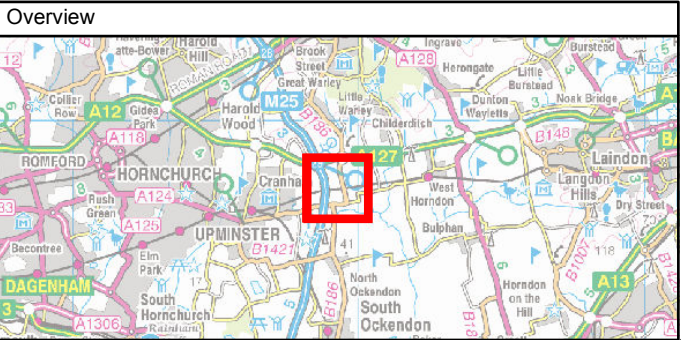
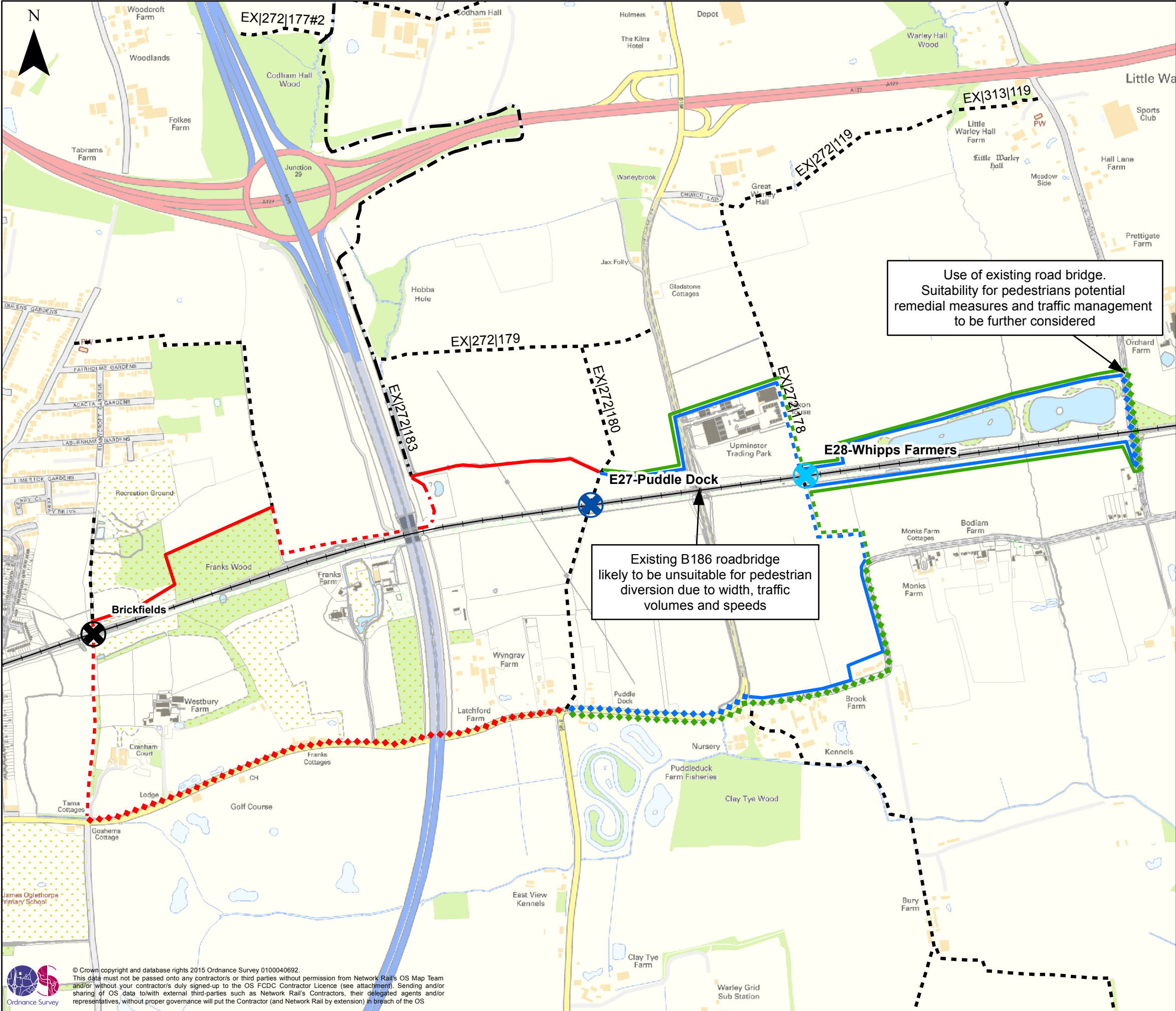
E27 - Puddle Dock Essex Brentwood District (B) EX/272/180						
P2	07/12/2015	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3 1:5,000	Drawing No. MMD-354763-E27-GEN-001
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Metres  
0 25 50 75 100



- Level crossing being discussed
- Other level crossing in the project
- Other level crossings

Alternative Options

- Red Route
- Blue Route
- Green Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

Existing Public Rights of Way

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (where used)

If this line is in a colour, this denotes use by a route option (see above).



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E27 - Puddle Dock  
Essex  
Brentwood District (B)

P3	21/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3  
1:10,000

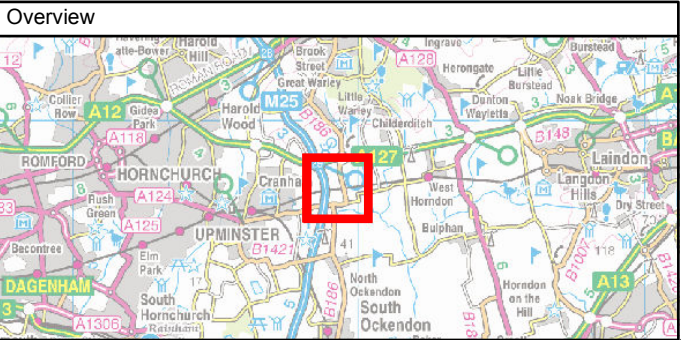
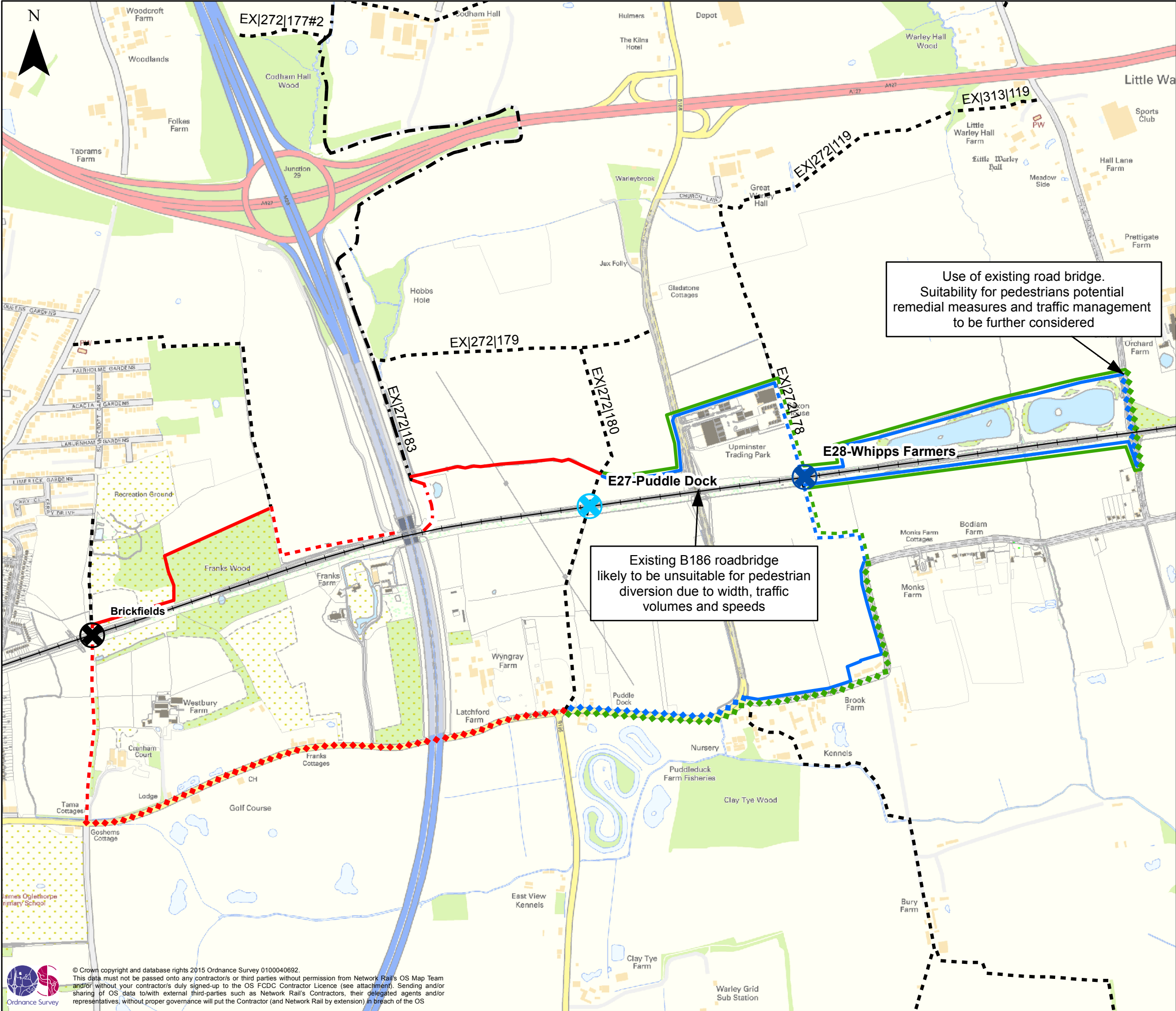
Drawing No.  
MMD-367516-E27-GEN-002

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Metres  
0 25 50 100





- Level crossing being discussed
- Other level crossing in the project
- Other level crossings

Alternative Options

- Red Route
- Blue Route
- Green Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

Existing Public Rights of Way

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (where used)

If this line is in a colour, this denotes use by a route option (see above).



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Anglia LX Consultation Stage 1

E28 - Whipps Farmers  
Essex  
Brentwood District (B)

P3	21/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

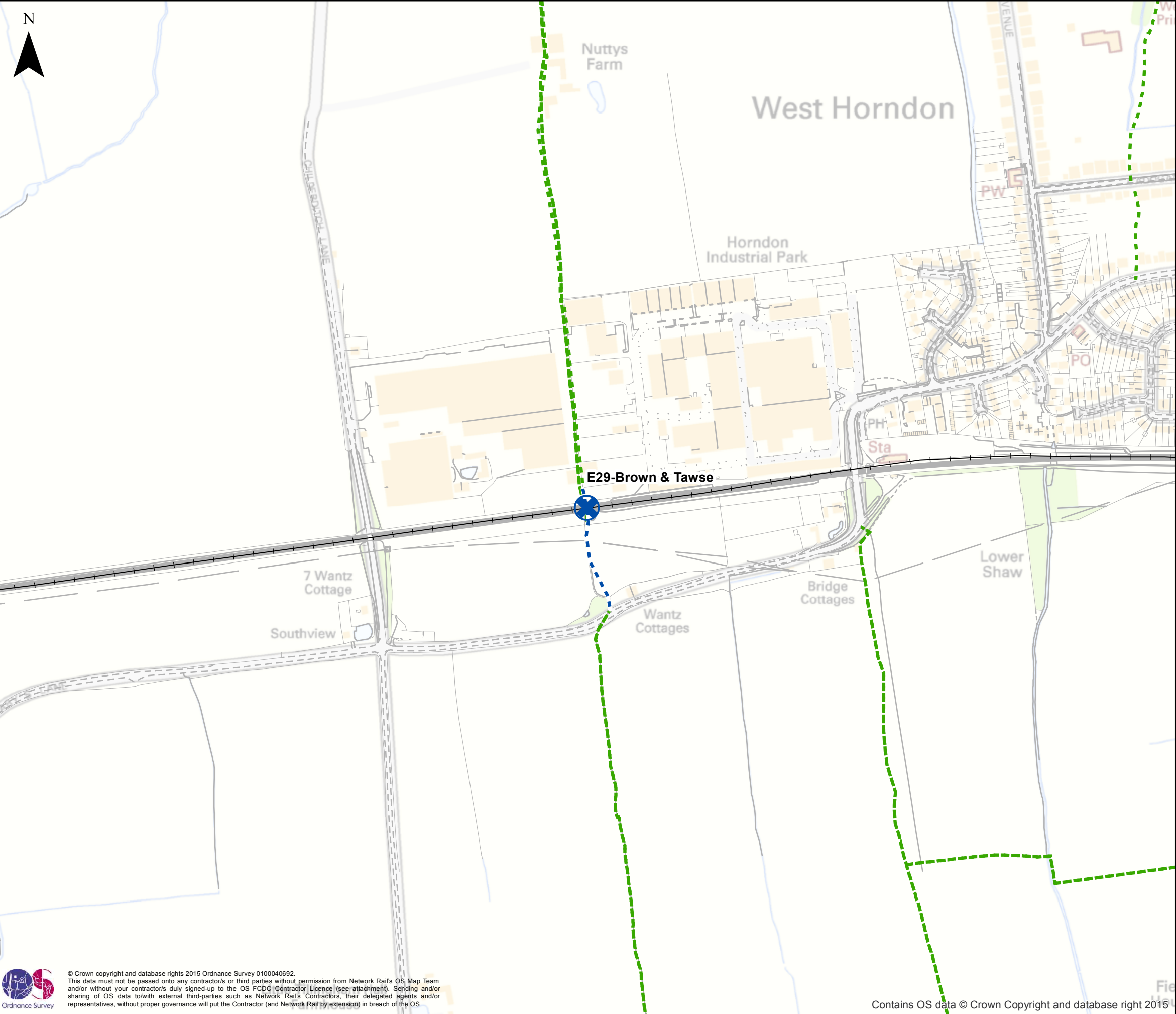
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Drawing No.  
MMD-367516-E28-GEN-002

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Metres  
0 25 50 75 100



Current level crossing

**RoW\_Thurrock**

Type

- Footpath

Type\_2

- Footpath

Right of way/highway symbology by type

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (only shown where a change of use is proposed)

Right of way/highway symbology by proposed status

- Creation
- Extinguishment
- Use of existing
- Change of status
- No change to existing status

2 Brewery Wharf  
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## GRIP 1 Proposals

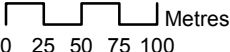
E29 - Brown & Tawse  
Essex  
West Horndon CP  
EX/313/39

P2	07/12/2015	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

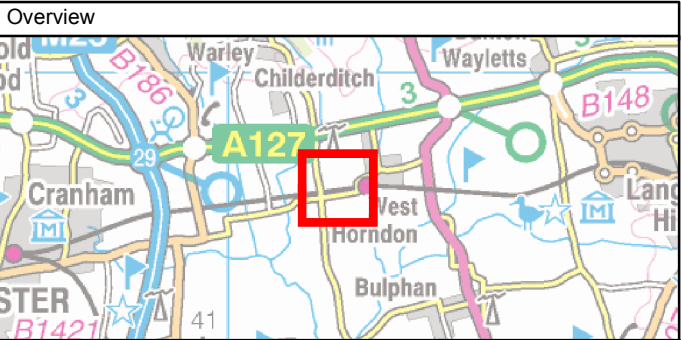
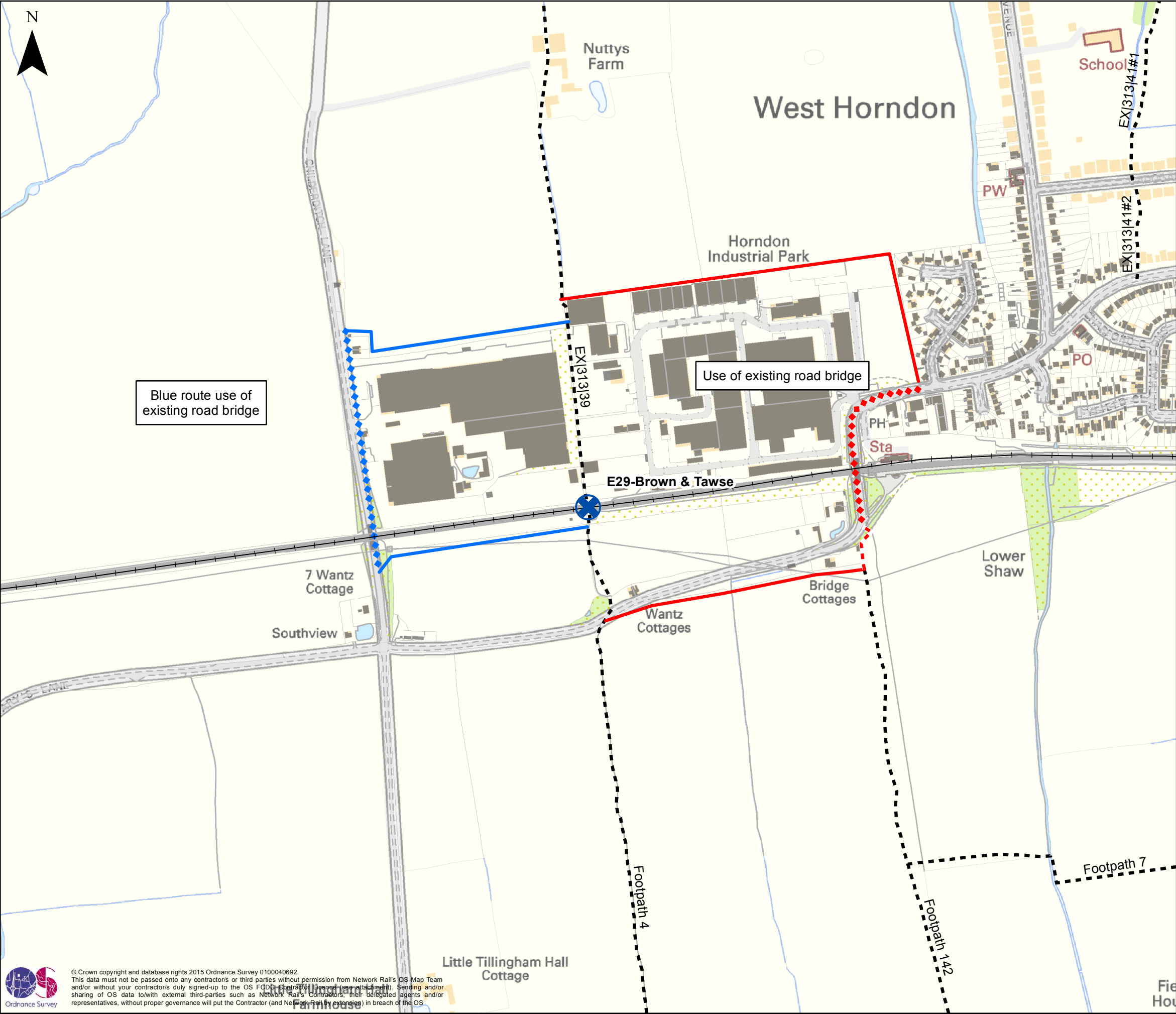
Scale at A3 1:5,000	Drawing No. MMD-354763-E29-GEN-001
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Level crossing being discussed

Alternative Options

- Red Route
- Blue Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

Existing Public Rights of Way

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (where used)  
  
If this line is in a colour, this denotes use by a route option (see above).



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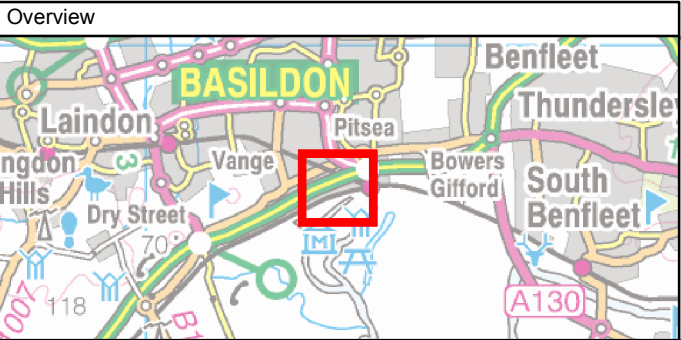
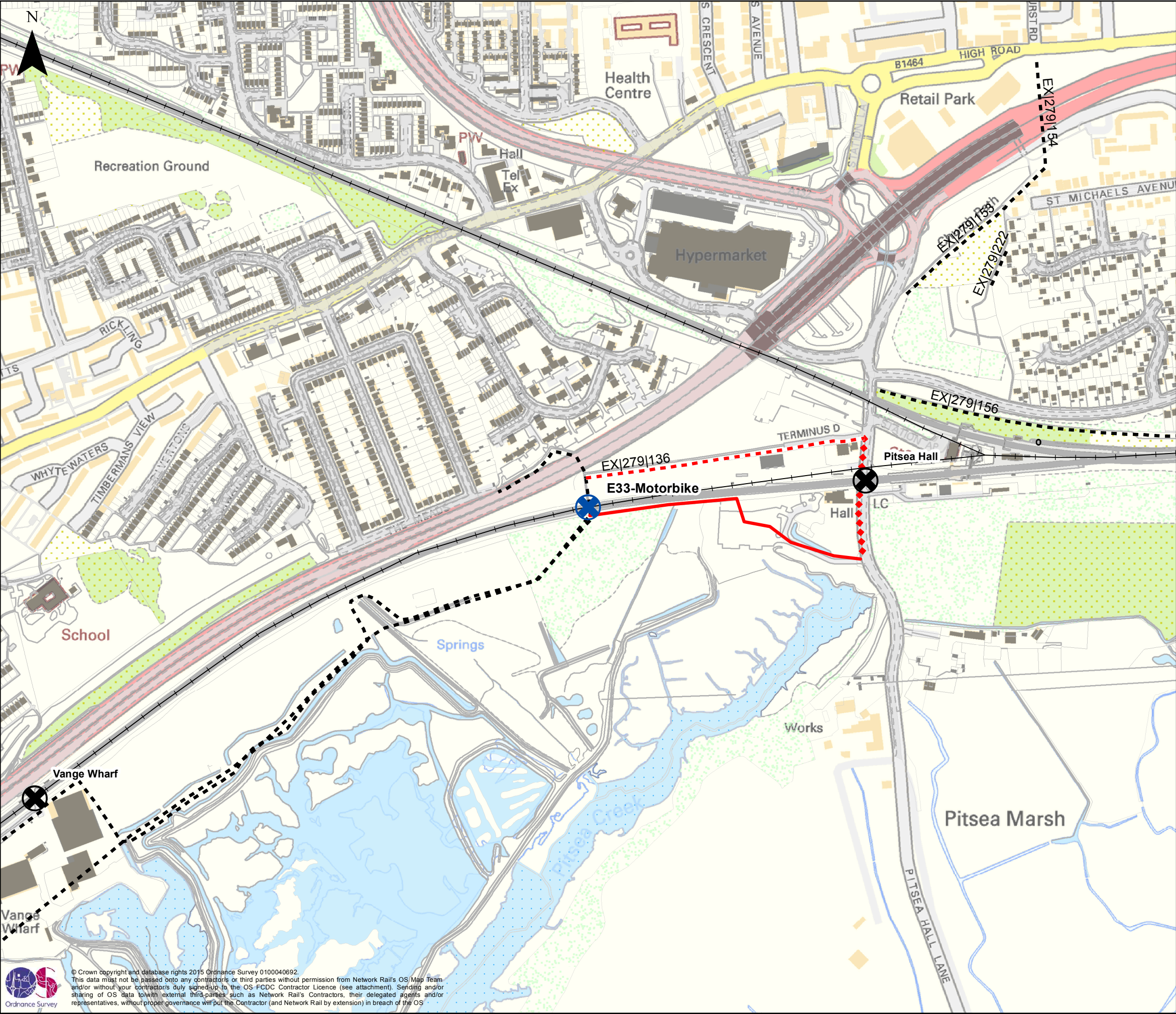
Anglia LX Consultation Stage 1

E29 - Brown & Tawse  
Essex  
West Horndon CP

P3	16/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3 1:5,000	Drawing No. MMD-367516-E29-GEN-002
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- Level crossing being discussed
- Other level crossings

Alternative Options

Red Route

A solid line indicates a proposed new Public Right of Way (type to be determined).

Other line types using the above route option colours indicate use of existing Public Rights of Way.

Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

Existing Public Rights of Way

- Footpath
  - Bridleway
  - Restricted byway
  - Byway open to all traffic
  - Highway (where used)
- If this line is in a colour, this denotes use by a route option (see above).



2 Brewery Wharf  
Kendell Street  
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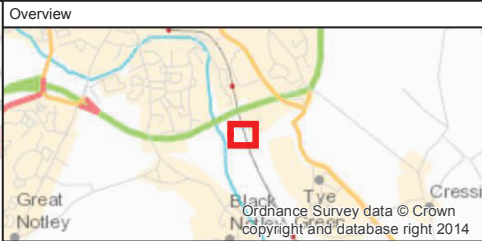
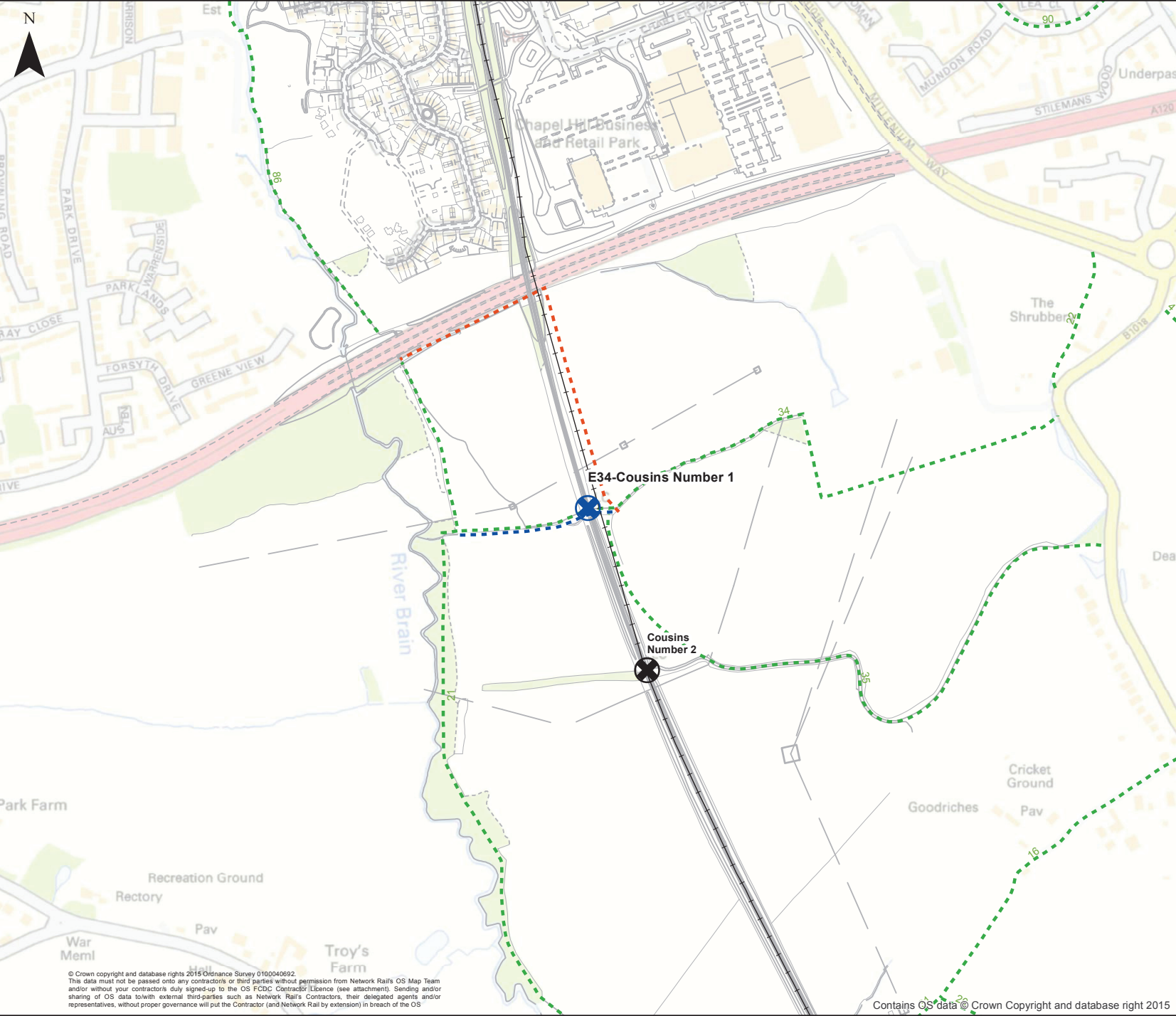
Anglia LX Consultation Stage 1

E33 - Motorbike  
Essex  
Basildon District

P3	16/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3 1:5,000	Drawing No. MMD-367516-E33-GEN-002
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Current level crossing

Other level crossing

Right of way/highway symbology by type

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (only shown where a change of use is proposed)

Right of way/highway symbology by proposed status

- Creation
- Extinguishment
- Use of existing
- Change of status
- No change to existing status



2 Brewery Wharf  
Kendell Street  
Leeds  
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United Kingdom  
+44 (0)113 3946700

# GRIP 1 Proposals

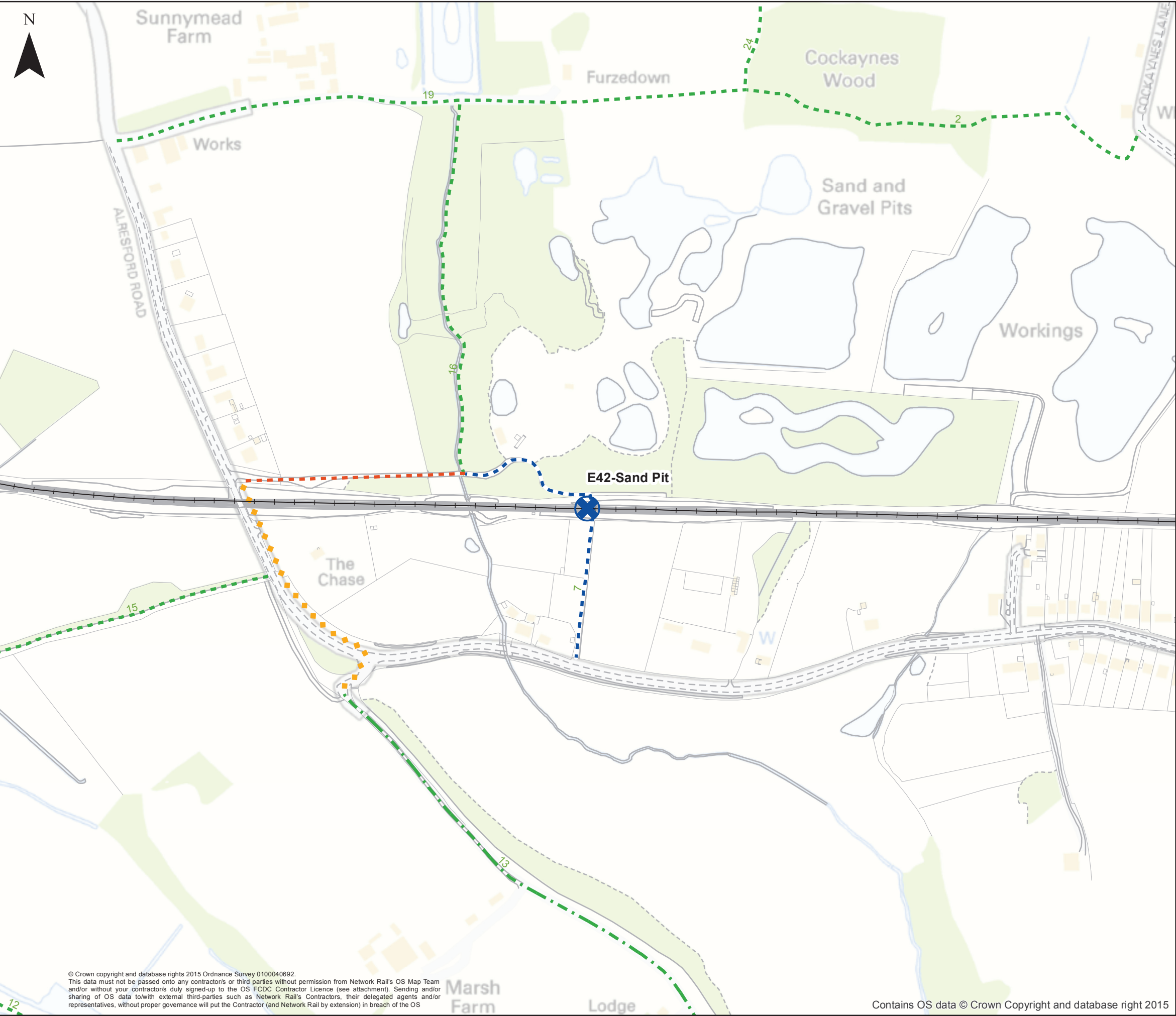
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P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3  
1:5,000

Drawing No.  
MMD-354763-E34-GEN-001





Current level crossing

Right of way/highway symbology by type

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (only shown where a change of use is proposed)

Right of way/highway symbology by proposed status

- Creation
- Extinguishment
- Use of existing
- Change of status
- No change to existing status

2 Brewery Wharf  
Kendell Street  
Leeds  
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## GRIP 1 Proposals

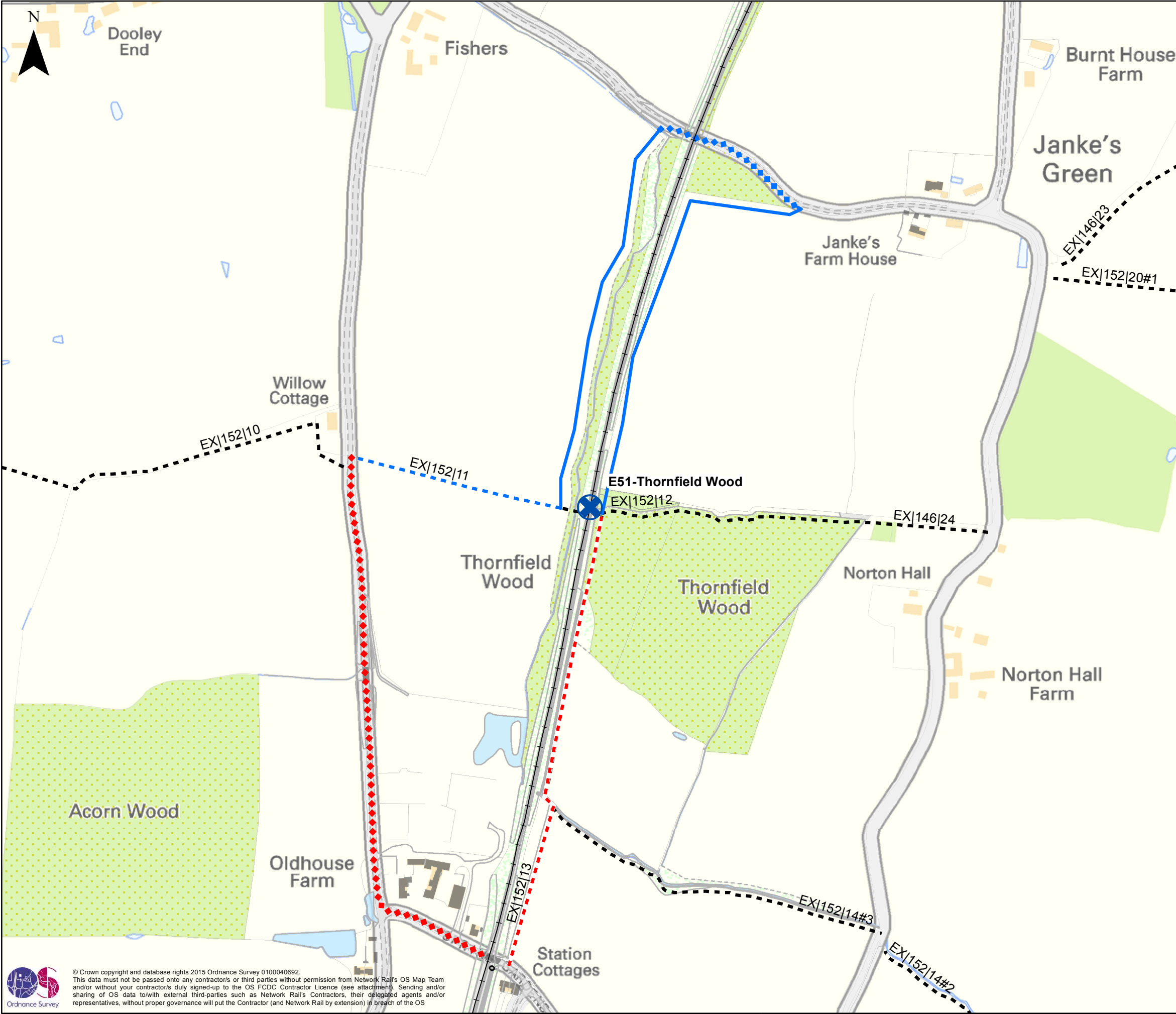
E42 - Sand Pit  
Essex  
Elmstead CP

P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3 1:4,000	Drawing No. MMD-354763-E42-GEN-001
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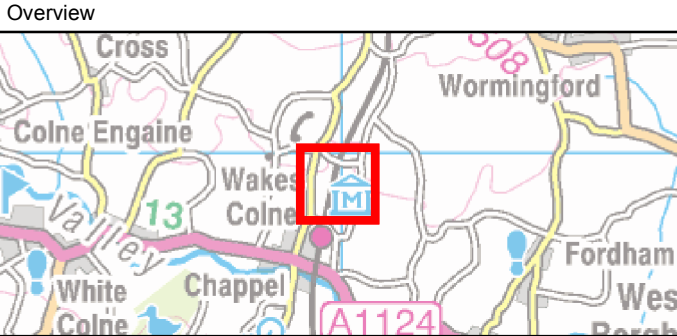
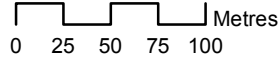






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Level crossing being discussed

**Alternative Options**

Red Route

Blue Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

**Existing Public Rights of Way**

Footpath

Bridleway

Restricted byway

Byway open to all traffic

Highway (where used)

If this line is in a colour, this denotes use by a route option (see above).



2 Brewery Wharf  
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Leeds  
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**Anglia LX Consultation Stage 1**

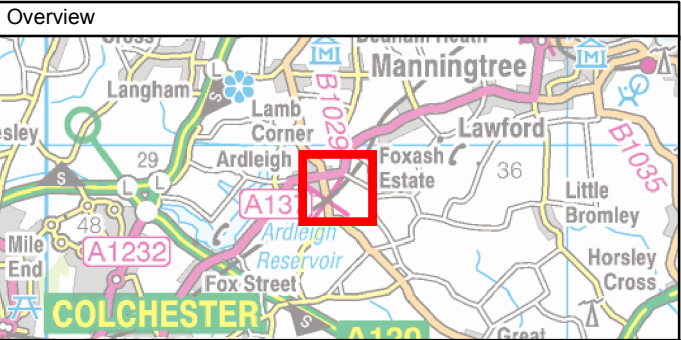
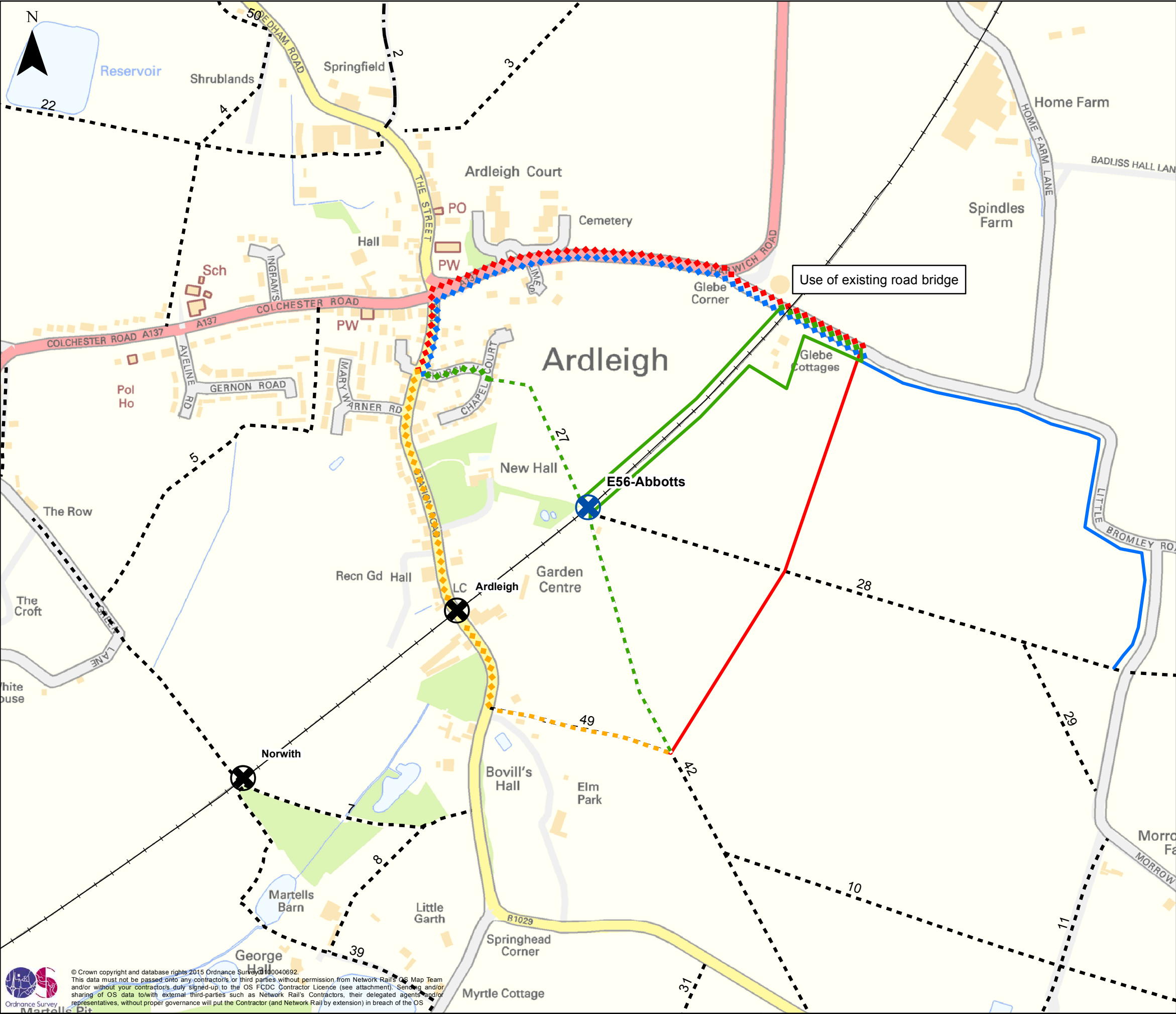
E51 - Thornfield Wood  
Essex  
Wakes Colne CP

P3	15/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3  
1:4,000

Drawing No.  
MMD-367516-E51-GEN-002





- Level crossing being discussed
- Other level crossings

Alternative Options

- Red Route
- Blue Route
- Green Route
- Orange Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

Existing Public Rights of Way

- Footpath
  - Bridleway
  - Restricted byway
  - Byway open to all traffic
  - Highway (where used)
- If this line is in a colour, this denotes use by a route option (see above).



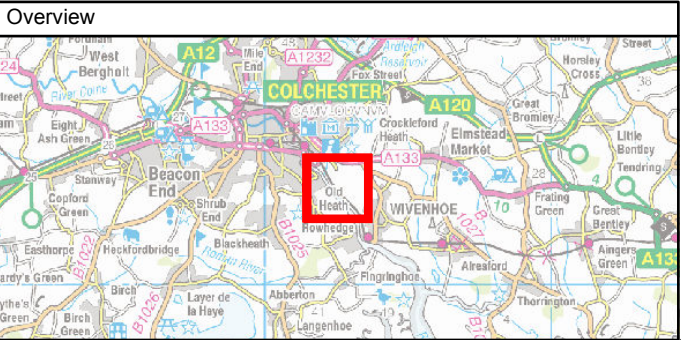
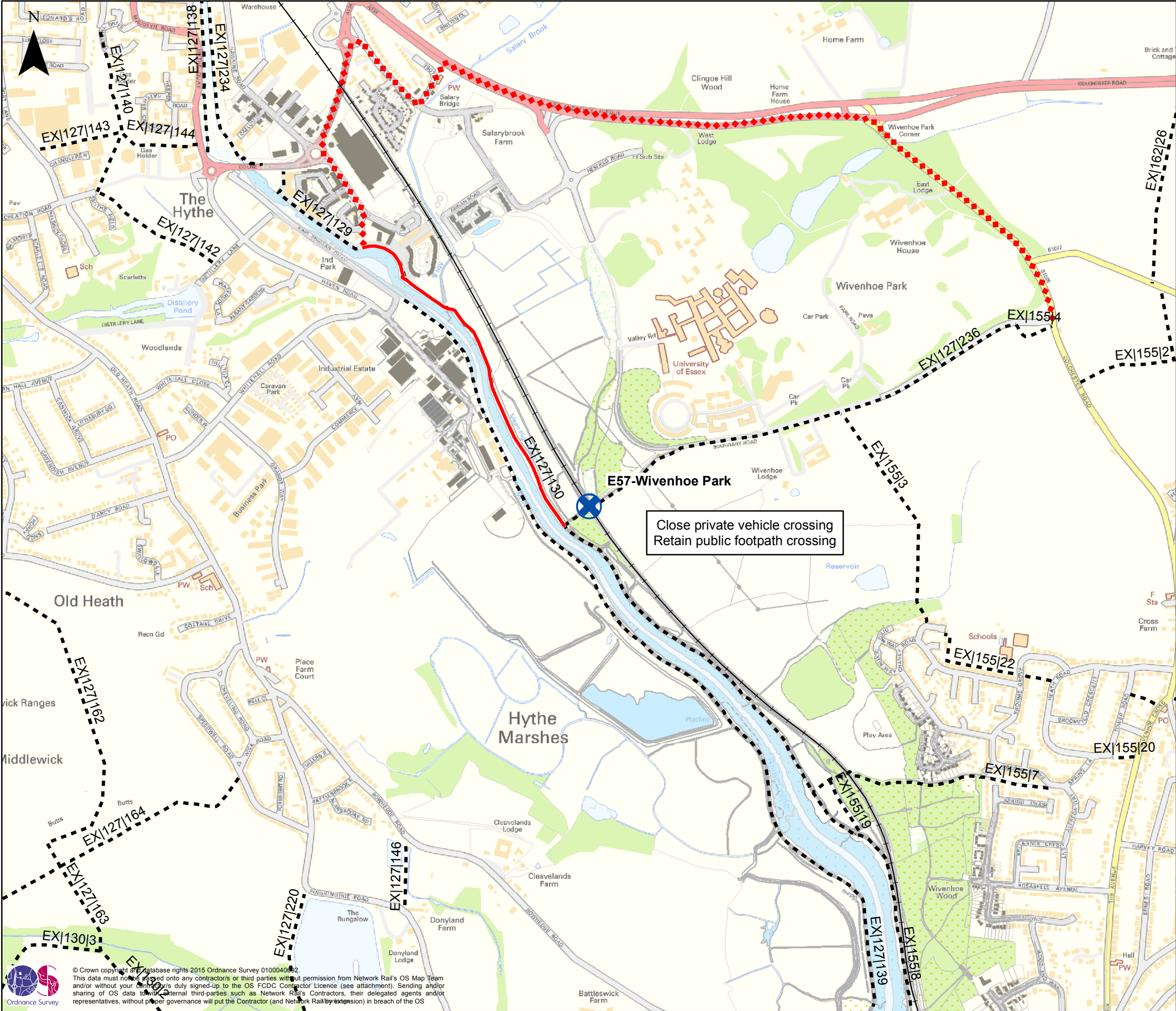
2 Brewery Wharf  
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Leeds  
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United Kingdom  
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Anglia LX Consultation Stage 1

E56 - Abbots Essex FP27/ FP28 Ardleigh						
P3	15/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3 1:5,500	Drawing No. MMD-367516-E56-GEN-002
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Level crossing being discussed

### Alternative Options

Red Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

### Existing Public Rights of Way

Footpath

Bridleway

Restricted byway

Byway open to all traffic

Highway (where used)

If this line is in a colour, this denotes use by a route option (see above).



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## Anglia LX Consultation Stage 1

### E57 - Wivenhoe Park Essex Wivenhoe CP

P3	14/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

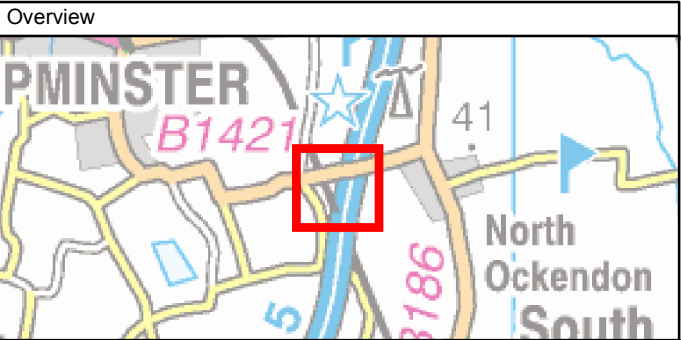
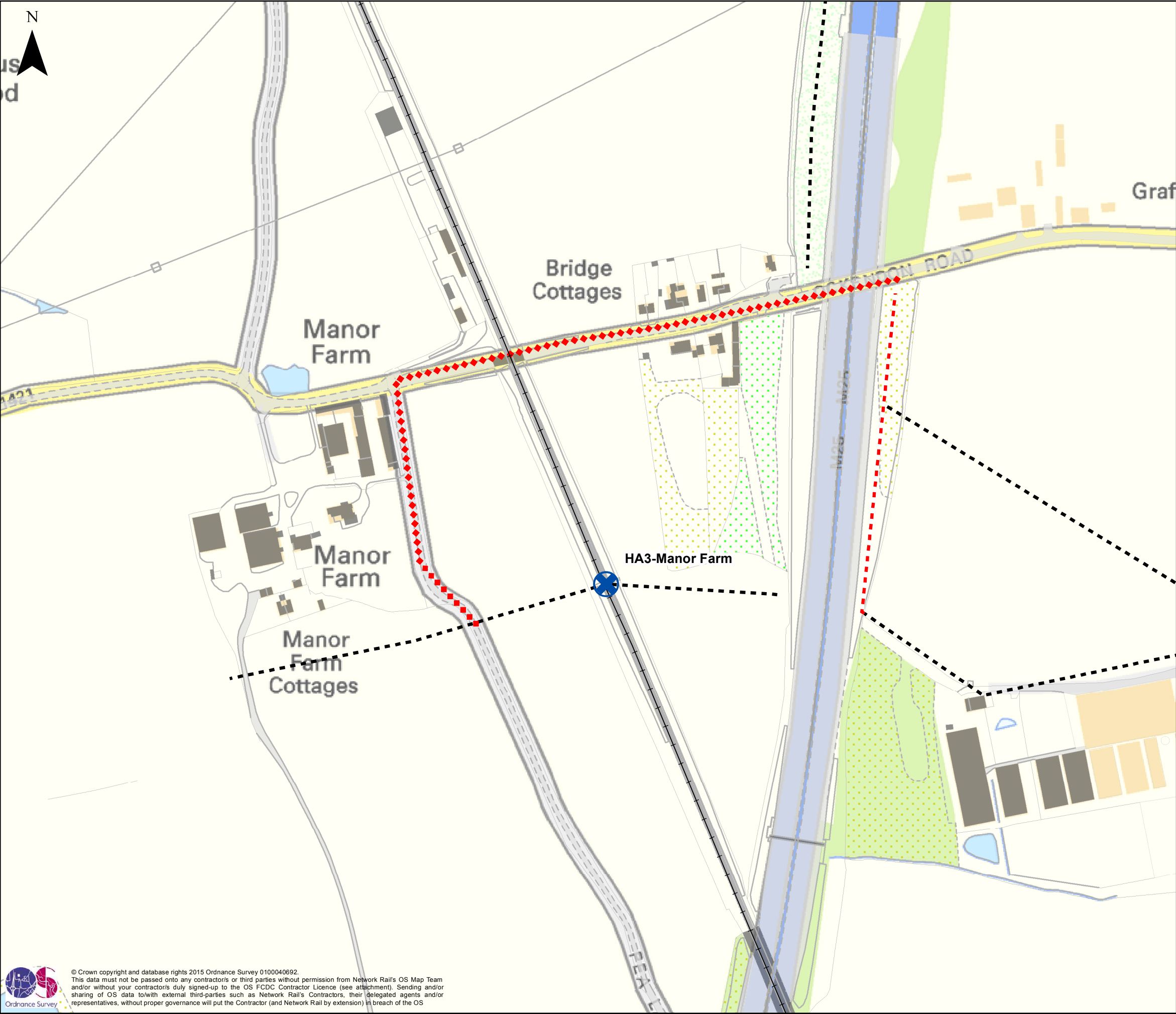
Scale at A3  
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Metres  
0 25 50 100










 Level crossing being discussed

Alternative Options

 Red Route

A solid line indicates a proposed new Public Right of Way (type to be determined). Other line types using the above route option colours indicate use of existing Public Rights of Way. Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

Existing Public Rights of Way

-  Footpath
  -  Bridleway
  -  Restricted byway
  -  Byway open to all traffic
  -  Highway (where used)
- If this line is in a colour, this denotes use by a route option (see above).



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Anglia LX Consultation Stage 1

HA3 - Manor Farm  
Essex  
FP251 Havering

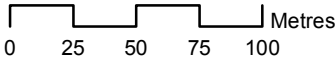
P3	17/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

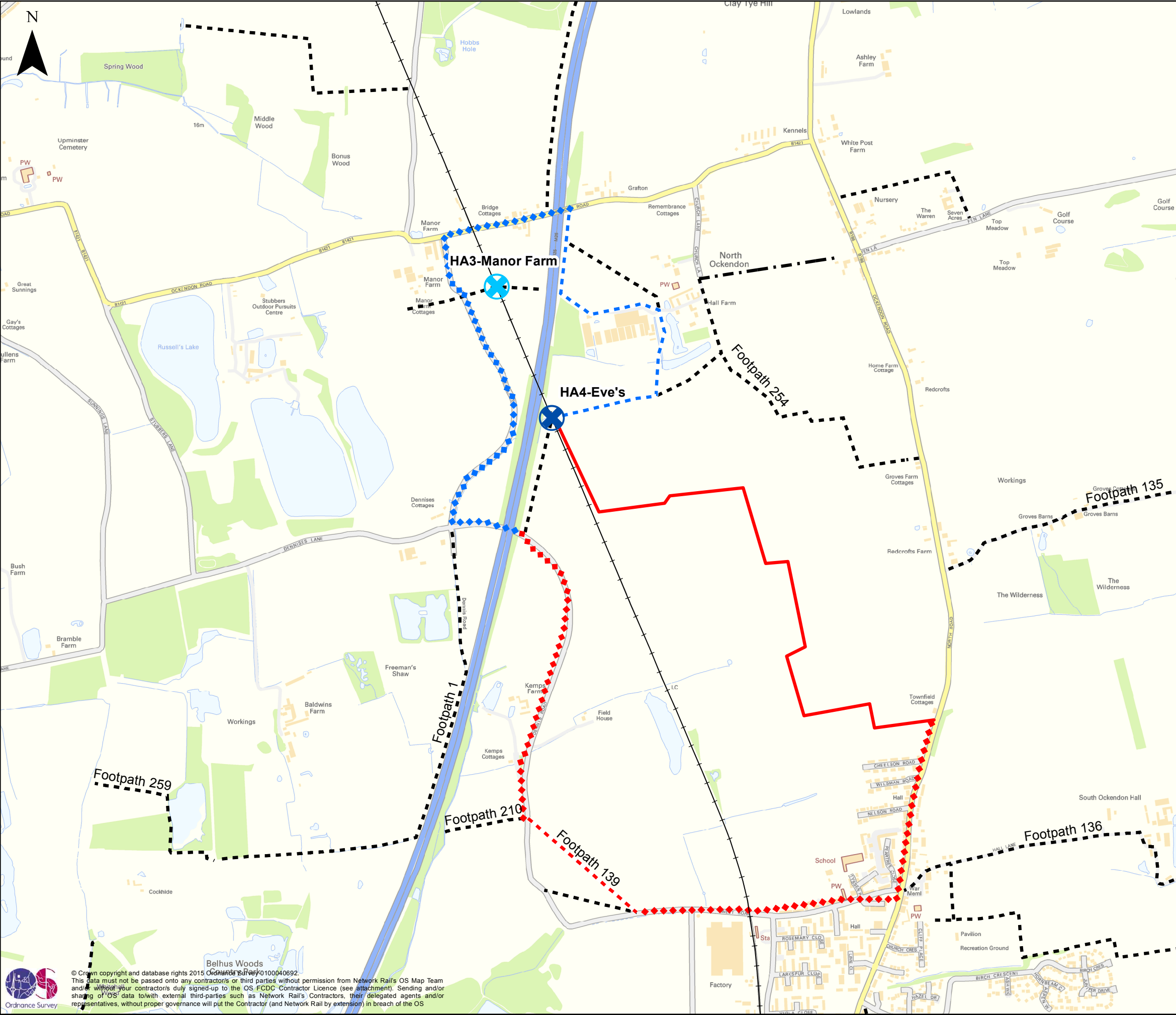
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Drawing No.  
MMD-367516-HA3-GEN-002

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Metres  
02507500

Overview



- Level crossing being discussed
- Other level crossing in the project

Alternative Options

- Red Route
- Blue Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

Existing Public Rights of Way

- Footpath
  - Bridleway
  - Restricted byway
  - Byway open to all traffic
  - Highway (where used)
- If this line is in a colour, this denotes use by a route option (see above).



2 Brewery Wharf  
Kendell Street  
Leeds  
LS10 1JR  
United Kingdom  
+44 (0)113 3946700

Anglia LX Consultation Stage 1

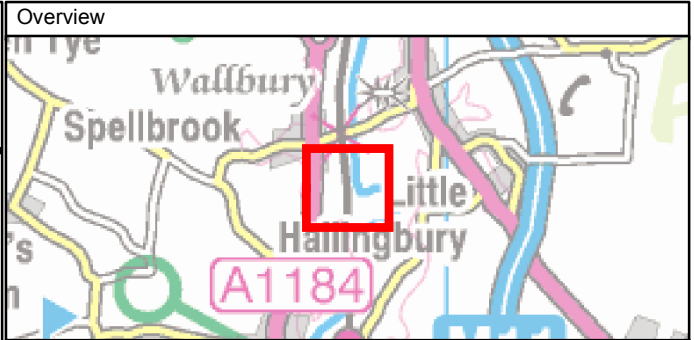
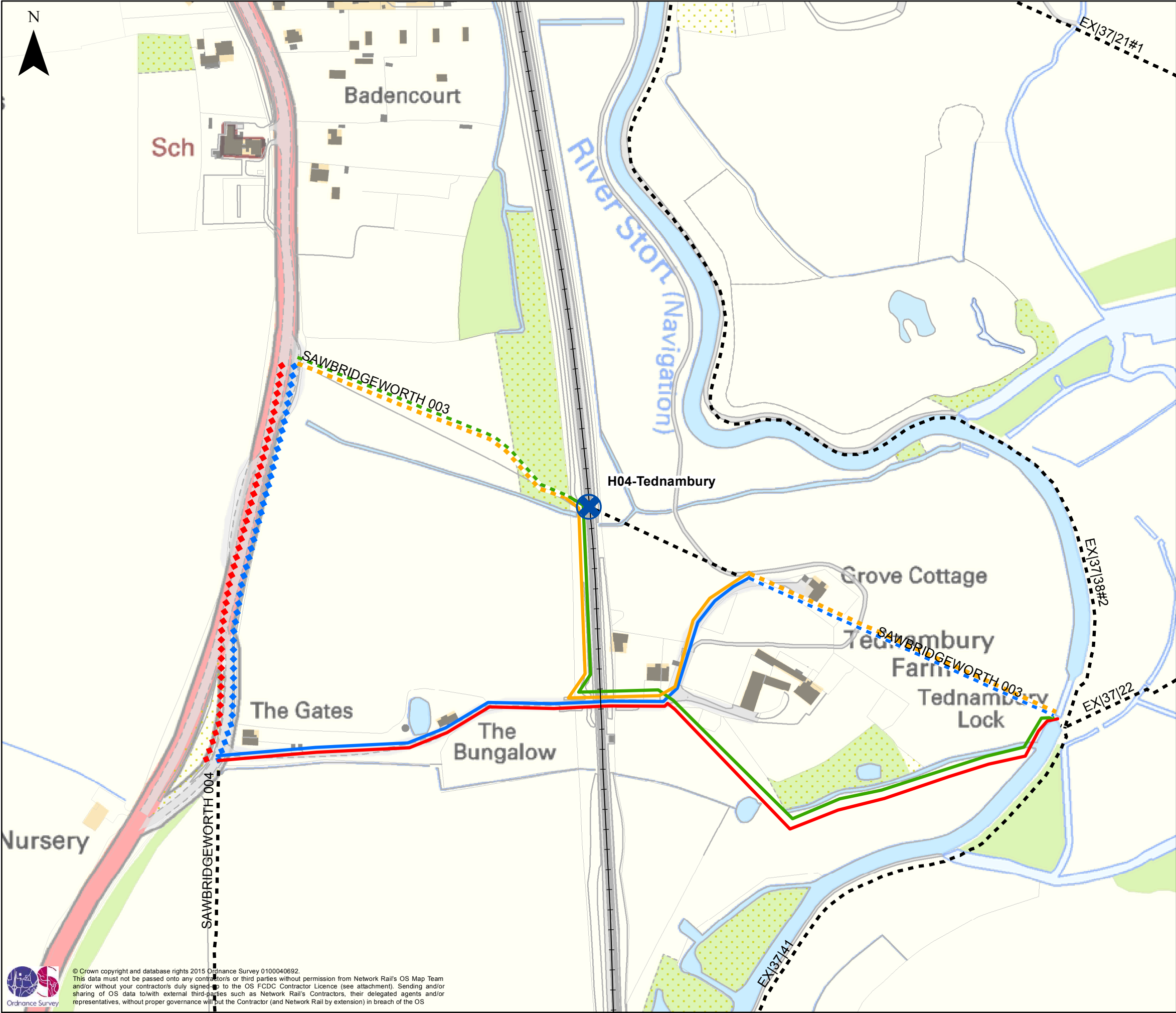
HA4 - Eve's  
Essex  
FP252 Havering

P3	17/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3  
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Drawing No.  
MMD-367516-HA4-GEN-002










 Level crossing being discussed

**Alternative Options**

-  Red Route
-  Blue Route
-  Green Route
-  Orange Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.  
Right of way extinguishments are still to be determined and are not shown for clarity given multiple options.

**Existing Public Rights of Way**

-  Footpath
-  Bridleway
-  Restricted byway
-  Byway open to all traffic
-  Highway (where used)

If this line is in a colour, this denotes use by a route option (see above).



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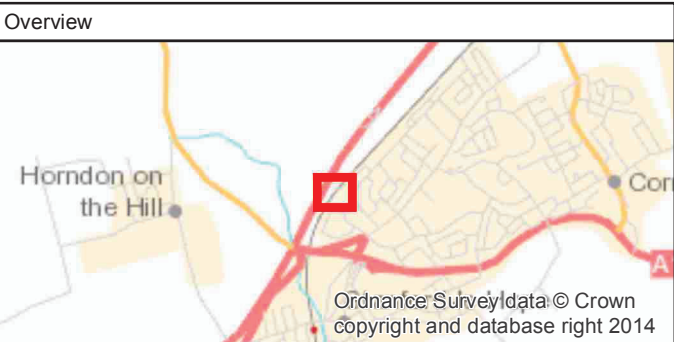
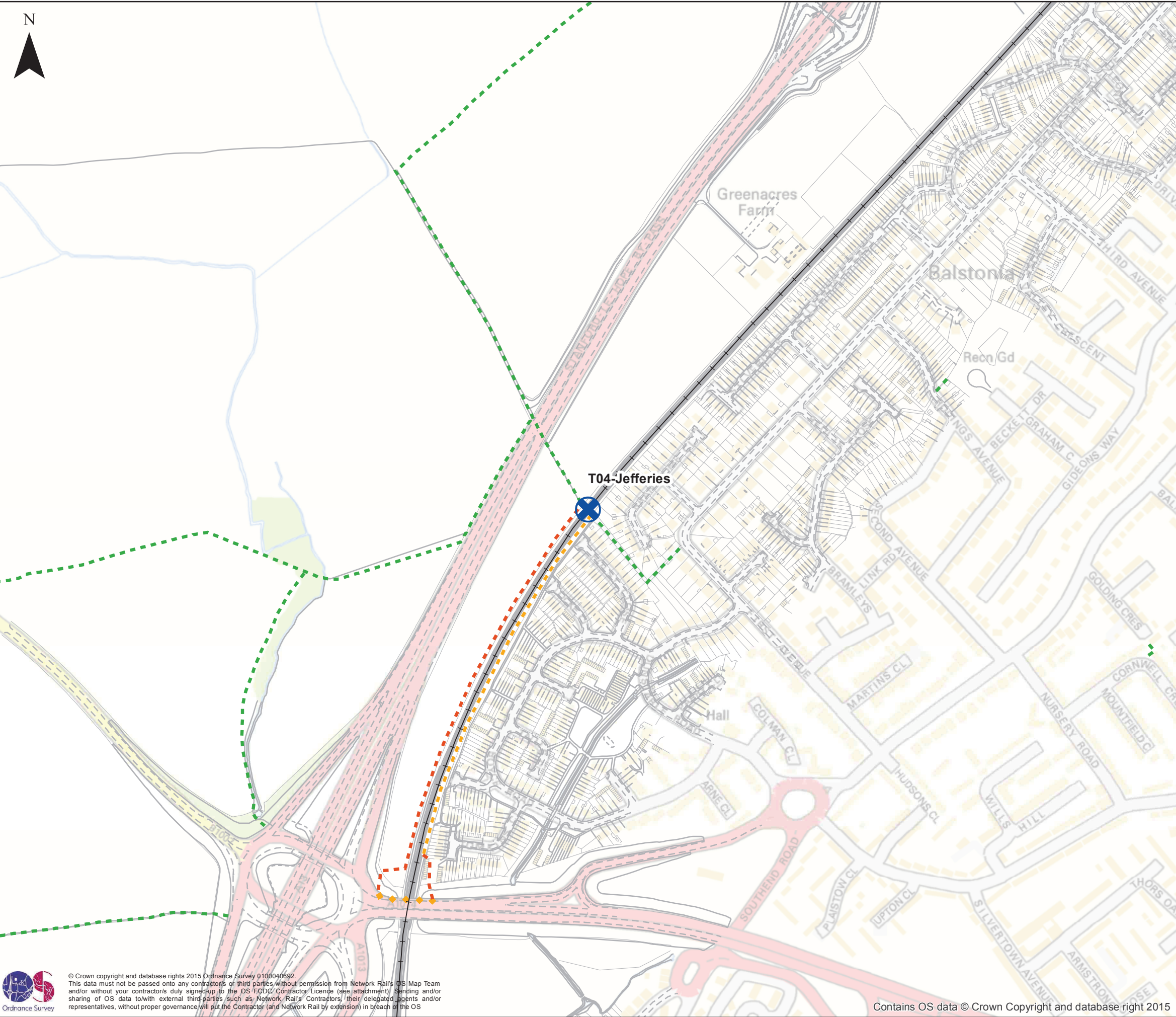
H04 - Tednambury  
Hertfordshire  
Sawbridgeworth CP

P3	20/06/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3  
1:3,000

Drawing No.  
MMD-367516-H04-GEN-002





Current level crossing

**RoW\_Thurrock**  
Type

- Footpath

Right of way/highway symbology by type

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (only shown where a change of use is proposed)

Right of way/highway symbology by proposed status

- Creation
- Extinguishment
- Use of existing
- Change of status
- No change to existing status

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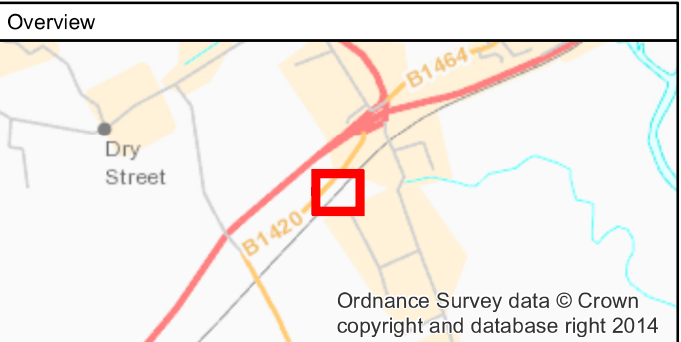
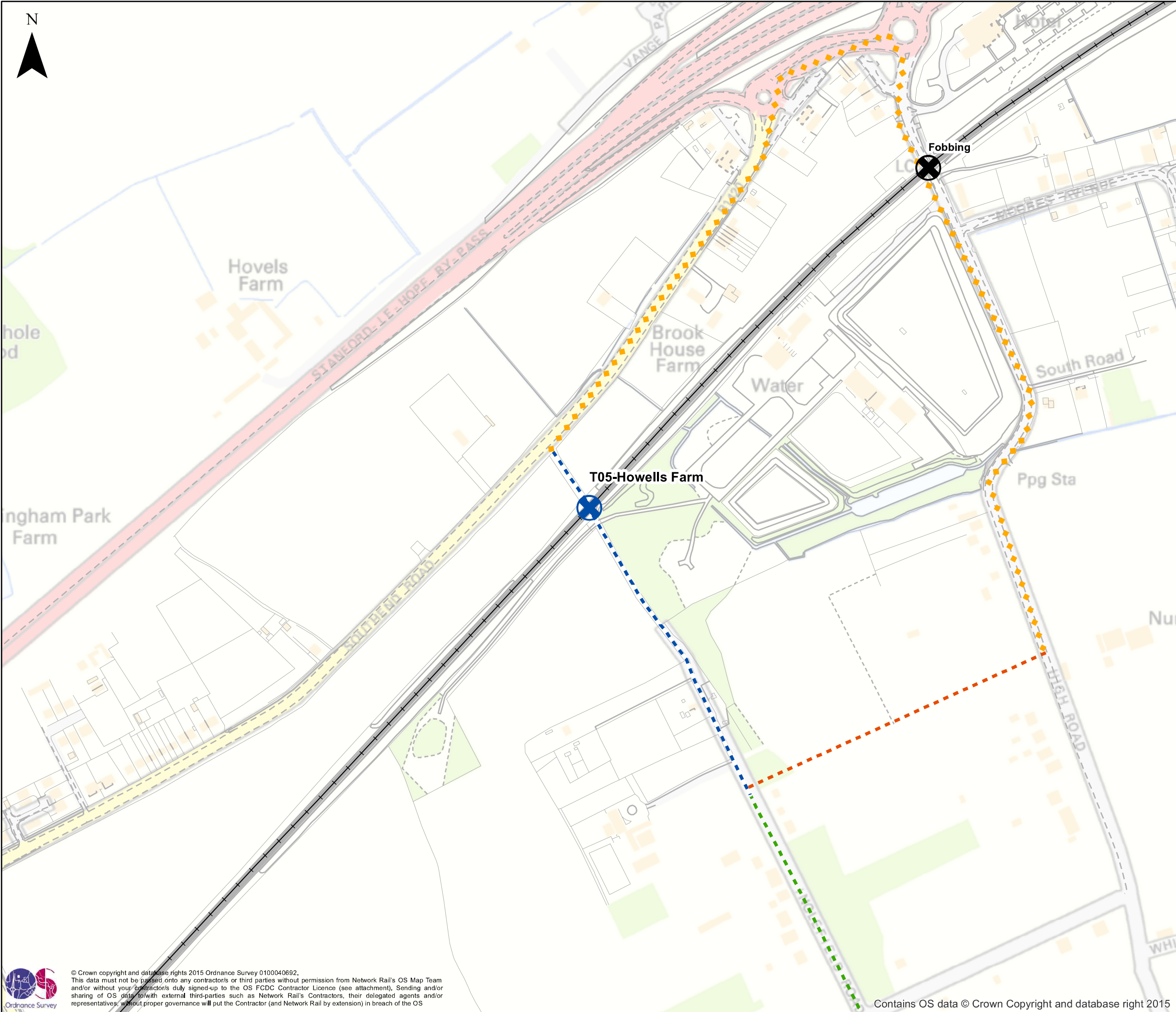
GRIP 1 Proposals

T04 - Jefferies  
Thurrock Unitary Authority  
Thurrock (B)

P2	07/12/2015	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

Scale at A3 1:5,000	Drawing No. MMD-354763-T04-GEN-001
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Current level crossing

Other level crossing

**RoW\_Thurrock**

Type

Footpath

Right of way/highway symbology by type

Footpath

Bridleway

Restricted byway

Byway open to all traffic

Highway (only shown where a change of use is proposed)

Right of way/highway symbology by proposed status

Creation

Extinguishment

Use of existing

Change of status

No change to existing status

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# GRIP 1 Proposals

T05 - Howells Farm  
Thurrock Unitary Authority  
Thurrock (B)

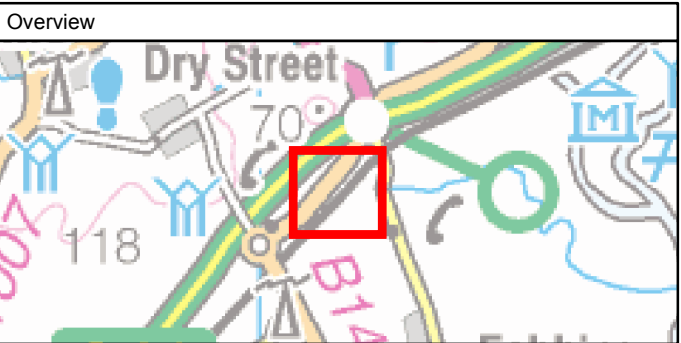
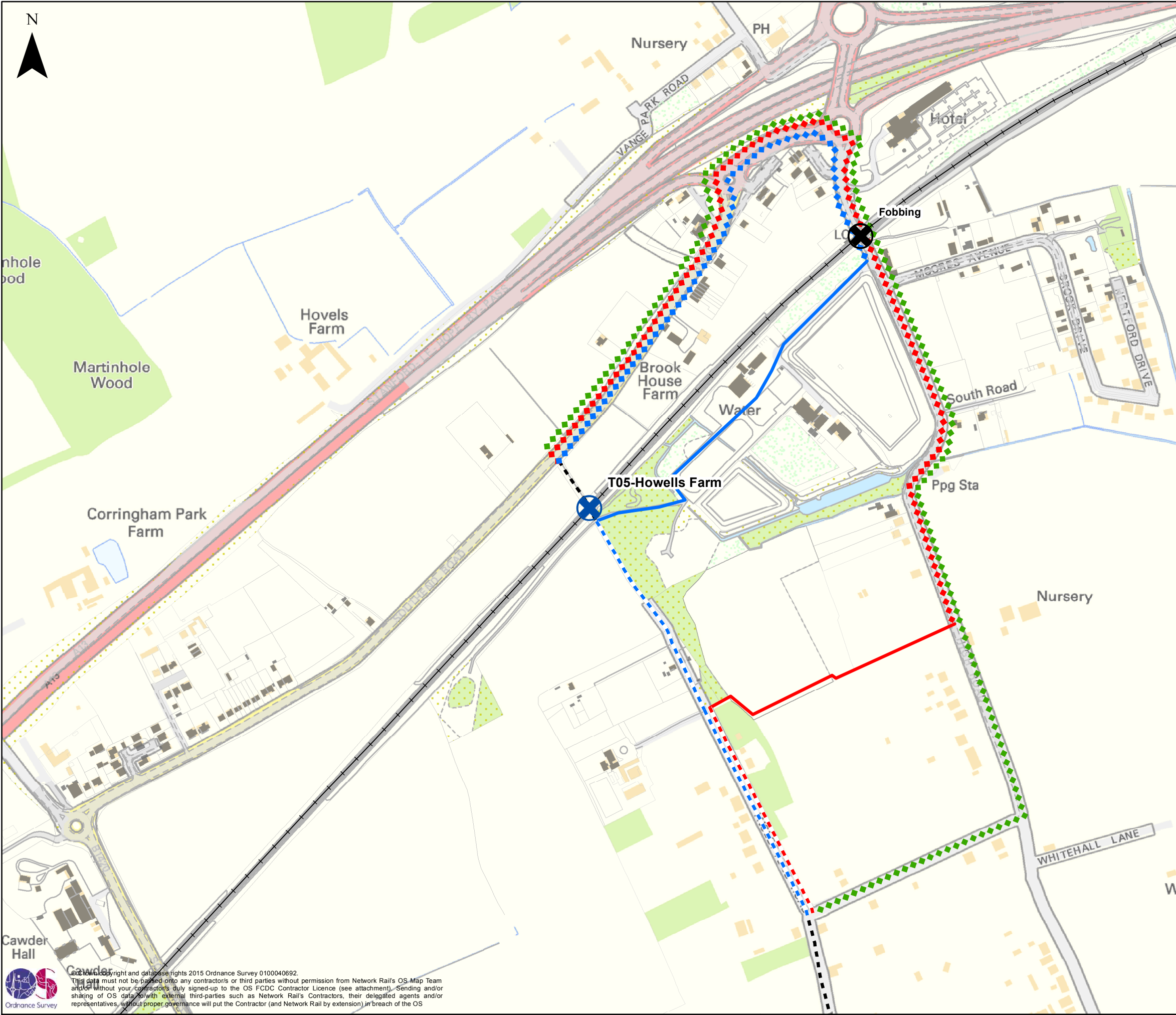
P2	07/12/2015	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
Rev	Date	Description	Dwn	E Chk	Ch'k'd	App'd

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1:4,000

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MMD-354763-T05-GEN-001

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- Level crossing being discussed
- Other level crossings

Alternative Options

- Red Route
- Blue Route
- Green Route

A solid line indicates a proposed new Public Right of Way (type to be determined).  
Other line types using the above route option colours indicate use of existing Public Rights of Way.

Existing Public Rights of Way

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic
- Highway (where used)

If this line is in a colour, this denotes use by a route option (see above).



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T05 - Howells Farm  
Thurrock Unitary Authority  
Thurrock (B)

P3	27/05/2016	Revised Format	WC	-	SJP	JAS
P2	20/01/2016	NR Comments	WC	-	SJP	JAS
P1	16/10/2015	For Information	WC	-	SJP	JAS
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