Cheshire East Council
Highways

Congleton Link Road

OD056: Modified Preferred Route - Comparative Assessment Report

December 2014

Contents

1 Introduction

1.1 Introduction

In September 2012 Cheshire East Council (CEC) commissioned Jacobs through Ringway Jacobs, under the Highways Services Contract, to establish a range of transport infrastructure options that would support the sustainable economic growth of Congleton.

The Stage 1 Scheme Assessment Report (Doc. Ref. B1832001/OD004) documents the appraisal procedures which were carried out to identify a preferred Improvement Strategy. The report concluded that a link road between the A534 Sandbach Road and the A536 Macclesfield Road was the preferred option as it had a high contribution to the Scheme Objectives and also helped to resolve the traffic problems currently experienced by Congleton.

Following this, a number of link road route options were developed and appraised. This process is documented in the Route Appraisal Report (Doc. Ref. B1832001/OD015). A total of four link road options were identified, which were assessed specifically from an Engineering, Environment and Traffic perspective in the Stage 2 Scheme Assessment Report (Doc. Ref. B1832001/OD018).

Four link road options were presented at a Public Consultation in January/February 2014. The intention of the Public Consultation was to gauge public interest in the scheme, capture public opinion of the four link road options presented and help identify any constraints/considerations which may have been previously overlooked. The Public Consultation strategy, key issues raised by members of the public and the results from a consultation questionnaire are presented in the Public Consultation Report (Doc. Ref. B1832001/OD020).

Following feedback received from members of the public, modifications to the alignments taken to Public Consultation were considered. These modifications were compared and appraised; best performing options were incorporated into the Preferred Route which was announced in May 2014. Reasoning and justification for the alignment modifications were documented within the Preferred Route Announcement Report (Doc. Ref. B1832001/OD025).

1.2 Purpose of this Report

Following the Preferred Route Announcement in May 2014, the design of the scheme has been progressed with consideration given to more detailed engineering, environmental and cost assessments, as well as further consultations with land owners and other local interest groups. Through this design development, a number of potential alignment and / or junction modifications were identified that were considered to represent an overall improvement to the scheme.

This report describes the comparative assessment that was undertaken between any potential modifications and the Preferred Route Announcement from May 2014. It also recommends which of these modifications should be taken forward and incorporated into the Modified Preferred Route.

1.3 Assessment Methodology

In order to apply a consistent approach, a similar methodology for the comparative assessment has been adopted as described within the Preferred Route Announcement Report. This assessed each option in terms of the following key criteria:

- Scheme Cost Estimate
- Benefit to Cost Ratio (BCR)
- Development Potential
- Public Endorsement
- Engineering Constraints
- Road User Safety
- Landscape and Visual Impact
- Ecology
- Cultural Heritage
- Air Quality
- Noise and Vibration
- Soils, Geology and Hydrogeology
- The Water Environment
- Water Framework Directive
- Effects on All Travellers
- Private and Community Assets

The comparative assessment carried out for the Preferred Route Announcement Report considered alternative alignments for the full length of the scheme. As this report considers localised amendments on a much smaller scale, the following criteria have been amended or removed.

- **Benefit Cost Ratio**: The change in scheme cost estimate is not considered to have a notable impact on the BCR for any of the options considered. This criteria has therefore been removed from the assessment.
- **Public Endorsement:** A full scale public consultation has not been undertaken on the options. This category has therefore been removed from the assessment.
- **Quality of Local Plan:** The options within this report are not considered to have an overall impact on the quality of the Local Plan. However, they do have an impact on the area of land available for development. This category has therefore been amended to consider **Development Potential** only.

Although a public consultation has not been undertaken, we have been engaging with local land owners and residents in regards to the proposed changes. These views have been considered when carrying out our optioneering work. However, to avoid bias towards individual land owners and/or tenants, this has not been included within the quantitative assessment.

1.3.1 Qualitative Assessment

A qualitative assessment was first carried out comparing the alternative alignments against the Preferred Route Announcement (PRA) from May 2014. For each assessment the PRA has been denoted Option 1.

The options were assessed using indicative arrow symbols which signified their performance against the defined assessment criteria. Within the Preferred Route Announcement Report a 5-point scale was used. However, as the options in this report consider more localised amendments, this has been refined to a 7-point scale to include ‘slight’ impacts, as shown in Figure 1.

KEY:

						
Significantly Beneficial	Beneficial	Slightly Beneficial	Neutral	Slightly Adverse	Adverse	Significantly Adverse

Figure 1 – Impact Ratings

1.3.2 Quantitative Assessment

In addition to the qualitative assessment described in Section 1.3.1, a quantitative assessment of each option has been carried out. Again, a similar methodology has been adopted as described within the Preferred Route Announcement Report, whereby scores are assigned to each option to indicate their performance against the assessment criteria.

The 7-point scale described in 1.3.1 has been subsequently adapted and the following scores assigned: Significantly Beneficial (+3); Beneficial (+2); Slightly Beneficial (+1); Neutral (0); Slightly Adverse (-1); Adverse (-2); and Significantly Adverse (-3).

Weighting was also assigned to each assessment topic/factor so that the relative importance of each could be established i.e. so that the factors considered most important had a larger influence on the overall assessment. The relative weighting for each category are as used for the Preferred Route Announcement Report, and are listed below:

Topic / Factor	Weighting
Scheme Cost Estimate	2
Development Potential	1
Engineering Constraints*	0
Road User Safety	1
Landscape and Visual Impact	0.2
Ecology	0.2
Cultural Heritage	0.2
Air Quality	0.2
Noise and Vibration	0.2
Soils, Geology and Hydrogeology	0.2
The Water Environment	0.2
Water Framework Directive	0.2
Effects on All Travellers	0.2
Private and Community Assets	0.2

Table 1 – Criteria Weighting

* **Engineering constraints** has been given a weighting of zero. The engineering constraints and challenges specific to each option are important and have been considered. However, it is felt that all options considered are deliverable from a technical perspective, and none of the engineering constraints identified in Chapter 3 would prevent the scheme from being constructed. Furthermore, the engineering challenges identified in Chapter 3 could be overcome, but would result in increased scheme costs. Engineering constraints/difficulties are therefore reflected in the Scheme Cost Estimate assessment topic/factor.

2 Options Considered

Alignment modifications were considered in four separate areas along the length of the scheme. These are described in sections 2.1 to 2.4 of this chapter, together with justification as to why the alignment was reviewed, and a brief description of each option.

2.1 Mainline 1 / Sandy Lane

This section considers the comparative assessment that was undertaken on the section of mainline between A534 Sandbach Road and A54 Holmes Chapel Road.

One of the key reasons for the alignment adopted for the Preferred Route Announcement (PRA) in May 2014 (i.e. offline from the existing Sandy Lane) was that, at the time, this was the preference of affected landowners within the vicinity. However, since then, we have held further consultation with these landowners and identified that an online alignment that reduces field severance is now preferred. This change in preference owes primarily to the fact that direct access will be permitted from the link road, albeit minimised wherever possible.

Two alternative alignments have therefore been developed for Sandy Lane and compared against the PRA May 2014 (Option 1). These alignments are included in Appendix A, with a description provided below. Details and conclusions of the comparative assessment are provided in sections 3.1.1 to 3.1.2.

2.1.1 Option 1 (PRA May 2014)

Option 1 is based on the Preferred Route Announcement from May 2014, with the exception that the junction on Holmes Chapel Road has been shifted south away from the existing carriageway. It was considered that this had both constructability and environmental benefits irrespective of which option was chosen, therefore has not been considered as a separate option in its own right.

Option 1 runs from an offline roundabout adjacent to A534 Sandbach Road, heading north in a relatively straight alignment parallel to the existing Sandy Lane. The road then meets a new roundabout junction to the south of the existing A54 Holmes Chapel Road, before continuing north via a crossing of Loach Brook. This option runs approximately 50m west of the existing Sandy Lane through the centre of a number of fields. As a result of this option, 1 pond would be lost and a short realignment of Loach Brook would be required. Sandy Lane would remain open as a farm access track only, with access via the existing junction between Sandy Lane and Holmes Chapel Road retained.

2.1.2 Option 2

Option 2 runs from an offline roundabout immediately north west of the existing junction between Sandy Lane and Sandbach Road. The route then continues north adjacent to the existing Sandy Lane, leaving sufficient width to incorporate farm access and footway/cycleway/bridleway. The route then meets a new roundabout to be constructed online at Holmes Chapel Road. A offline roundabout to the south is not viable for this option due to an existing crossing of Loach Brook immediately to the east. The route then heads north west via a new crossing of Loach Brook, before swinging east to match the alignment of Option 1 approximately 500m north of the junction. This option would also result in the loss of 1 pond, as well as a slightly longer realignment of Loach Brook. Sandy Lane would remain open as a farm access track and NMU facility only. For this option, a new junction with the link road would be provided for farm access.

2.1.3 Option 3

Option 3 continues with the same alignment as Option 2 from the junction north west of Sandbach Road, heading north for approximately 600m. At this point, the road bends to the West to tie-in with a new offline roundabout to the south of Holmes Chapel Road. This route then continue north via a new crossing of Loach Brook as per Option 1. 2 ponds would be lost with this option and a short realignment of Loach Brook would be required. Sandy Lane would remain open as a farm access track only, with access via the existing junction between Sandy Lane and Holmes Chapel Road.

2.2 Mainline 2 Alignment

This section considers the comparative assessment that was undertaken on the section of mainline between Holmes Chapel Junction and Chelford Road. It was considered that an alignment shift in this location could minimise the environmental impacts for properties along Chelford Road, as well as reducing the impact on a local equestrian business.

Two alternative alignments were therefore considered for this assessment. These are shown on the drawing attached in Appendix B (Options 2 & 3), together with the alignment based on the Preferred Route announced in May 2014 (Option 1).

2.2.1 Option 1 (PRA May 2014)

Option 1 extends northwards from A54 Holmes Chapel Road, passing between two residential properties approximately 170m west of the existing junction with Sandy Lane. The route crosses over a new bridge over Loach Brook immediately north of Holmes Chapel Road before continuing north through a rectangular paddock of land. The route then curves round to the east in cutting before passing underneath Chelford Road, immediately adjacent to its junction with Back Lane. The route continues eastwards in cutting through agricultural farmland crossing Back Lane just the south of the entrances to two residential properties. The route continues in an easterly direction on the north side of Back Lane towards the proposed Radnor Park junction.

2.2.2 Option 2

Option 2 extends northwards from A54 Holmes Chapel Road, passing between two residential properties approximately 170m west of the existing junction with Sandy Lane. As per Option 1, the route crosses over Loach Brook via a new bridge before continuing north through a rectangular paddock of land. This route extends slightly further north east than Option 1, passing further from properties along Chelford Road. The alignment then curves round to the east in cutting before passing underneath Chelford Road, immediately south of Back Lane junction. Towards the east, the route passes further south from the existing Back Lane than Option 1, allowing for a 50m reduction in the length of retaining wall. The route then continues in an easterly direction as per Option 1 towards the proposed Radnor Park junction.

2.2.3 Option 3

Option 3 extends from A54 Holmes Chapel Road in a more north easterly direction than Option 1 and 2. The route crosses Loach Brook via a new bridge, before passing through an area of woodland north of Holmes Chapel Road. Unlike Option 1 & 2, this option passes through farmland to the West of the rectangular paddock of land, before curving east on a similar alignment to Option 2. Towards the east of Chelford Road, the route passes further from the existing Back Lane than Option 1, allowing for a 50m reduction in the length of retaining wall. The route then continues in an easterly direction as per Option 1 towards the proposed Radnor Park junction.

2.2.4 Rejected Options

Through consultation with local residents, it was requested we amend the alignment of the route to pass up to 100m further south in the vicinity of Back Lane. It was considered this would reduce the environmental impacts of the proposed route, namely noise, visual intrusion and air quality. It was also requested than the alignment be lowered and/or a landscape bund provided to further reduce these impacts.

In response to these concerns, we conducted a high level review of the alignment in this location. However, it was considered that by moving the alignment 100m to the south, the area available for future development would be significantly reduced, compromising one of the main objectives of the scheme (i.e. to open up areas of land for development). Other impacts as a result of the amendments would include a sub-standard of alignment, increased severance as well as loss of an existing pond. Overall, it was therefore considered that the adverse impacts of this alignment would significantly outweigh the benefits, and as such this option was rejected. A plan of the options considered through this area is attached in Appendix C.

Although moving the alignment 100m south was considered to have unacceptable impacts, we have however implemented more localised amendments to address some of the concerns raised. This includes amending the alignment of the mainline to pass approximately 15m further south in the vicinity of Back Lane. This amendment provides sufficient room to allow provision of a 2m high landscape bund, reducing noise and visual impacts further. This amendment is covered in more detail within Section 4.3 'Design Development'.

2.3 Radnor Park Junction

This section considers the comparative assessment that was undertaken on various options for Radnor Park Junction. These options were developed following discussions with local landowners on access requirements. Consideration was also given to the potential for future development opportunities at Strategic Location SL6.

Two alternative options were considered for this assessment. These are shown on the drawing attached in Appendix D (Options 2 & 3), together with the junction included in the Preferred Route Announced in May 2014 (Option 1).

2.3.1 Option 1 (PRA May 2014)

The Option 1 is based on the Preferred Route announced in May 2014. The roundabout leading to Radnor Park Industrial Estate would be located immediately south of a curved area of ancient woodland. Agricultural access to fields and properties to the north would be via a new access track linking with the existing Back Lane. No direct access to the north from the new link road would be feasible.

2.3.2 Option 2

The roundabout leading to Radnor Park Industrial Estate would be relocated approximately 50m west when compared to Option 1. This allows space for direct access to be provided from the roundabout to a severed triangle of land to the north. This access would be for agricultural use, whilst not restricting future development opportunities. Agricultural access to a property and a larger field to the north would be via a new access track linking with the existing Back Lane.

2.3.3 Option 3

The roundabout leading to Radnor Park Industrial Estate would be relocated approximately 130m west when compared to Option 1. This allows for direct access to be provided from the

roundabout to both northern fields, as well as Radnor Farm. The access would be for agricultural / private use, with the option to improve to accommodate access to future development.

2.3.4 Rejected Options

Overpass / Underpass

Consideration was given to provide an overpass/underpass along the existing access track between Back Lane and Radnor Hall Farm. Although this was the preference of the existing owner, it was considered the adverse impacts significantly outweighed the benefits, therefore this option was rejected. Principal reasons for rejection of this option are as below:

- Significant cost impact (in the region of £1m) for provision of either an underpass or overpass.
- Significant visual impact due to the high embankments required for an overpass (approximately 7.5m above existing ground level).
- Significant cutting required for provision of underpass (approximately 7.5m below existing ground level). This has significant engineering constraints, in particular a pumping station would be required for drainage with associated maintenance implications.
- No direct access to the link road, restricting any possible future development opportunities to the north.

Eastern Roundabout

It was the preference of nearby landowner to relocate the Radnor Park Junction further to the east, increasing the distance between the junction and the landowner's property. This was considered, but has not been implemented based on the following:

- Easterly shift would not allow direct access from the roundabout to the north
- A new junction would be required to provide direct access to the north for any future development opportunities. This would compromise both safety and capacity of the new link road, and minimise any benefits associated with an easterly shift of the roundabout.
- Roundabout would be located further south to avoid land take from ancient woodland, reducing area available for development.

2.4 Mainline 3 & 4

This section considers the comparative assessment that was undertaken on the two sections of mainline between Congleton Business Park Junction and the existing Macclesfield Road. It was considered that an alignment shift in this location would reduce the environmental impact of the scheme, in particular by avoiding a large pond to the West of Giantswood Lane.

An alternative alignment (Option 2) was therefore developed for this section of the scheme, and compared against the PRA May 2014 (Option 1). Both these options are included in Appendix E, with a description provided below. Details and conclusions of the comparative assessment are provided in sections 3.4.1 to 3.4.2.

2.4.1 Option 1 (PRA May 2014)

This option extends from the proposed new bridge over the River Dane on embankment in a north easterly direction to the proposed Congleton Business Park junction. The roundabout junction to Congleton Business Park is located to the northwest of a large pond to the east of Church Wood. The route continues east and impacts the northern section of this large pond, before entering a cutting and passing beneath a new overbridge along Giantswood Lane. It then

continues east towards a new roundabout with the A34 Manchester Road, passing through agricultural farmland and woodland, before meeting a new roundabout with the A536 Macclesfield Road approximately 580m south of Eaton village.

2.4.2 Option 2

This option extends from the proposed new bridge over the River Dane on embankment in an easterly direction towards the proposed Congleton Business Park junction. The roundabout junction to Congleton Business Park is located to the west of a large pond. The route continues east to the south of this large pond, before moving into cutting and passing beneath a new overbridge along Giantswood Lane. It then continues east, extending slightly further north further north than Option 1, before reaching a new roundabout with the A34 Manchester Road. The route continues on this more northerly alignment, passing through agricultural farmland and woodland and joins up with the A536 Macclesfield Road approximately 650m south of Eaton village.

3 Appraisal of Alternative Options

3.1 Mainline 1 / Sandy Lane

3.1.1 Qualitative Assessment

Using the methodology described in section 1.3, the following impact ratings have assigned for each of the alternative options when compared to the PRA May 2014 (Option 1). A plan showing each of the three options considered is attached in Appendix A.

Topic/Factor	Option 2	Option 3
Scheme Cost Estimate		
	Increased cost due to longer spanning structure over Loach Brook. Verge widening on northbound exit from Holmes Chapel Junction will also necessitate a wider structure. (Adverse) Increased land severance / compensation to the north of Holmes Chapel Road. (Adverse) Reduced land take / severance to the south of Holmes Chapel Road. (Slightly Beneficial) **Overall, this option has an adverse impact on scheme cost when compared to Option 1.**	Reduction in land take and severance (i.e. compensation costs) to the south of Holmes Chapel Road. (Slightly Beneficial) Similar structure lengths and land take / severance to the north of Holmes Chapel Road. (Neutral) **Overall, this option has slightly beneficial impact on scheme cost when compared to Option 1.**
Development Potential		
	No change in area available for development (Neutral) **Overall, this option has a similar impact on the Development Potential when compared to Option 1.**	No change in area available for development (Neutral) **Overall, this option has a similar impact on the Development Potential when compared to Option 1**

Topic/Factor	Option 2	Option 3
Engineering Constraints		
	Buildability issues with construction of online roundabout on Holmes Chapel Road (Adverse). Buildability issues with constructing the link road adjacent to the full length of existing Sandy Lane. (Adverse) Roundabout in close proximity to existing structure over Loach Brook. (Adverse). **Overall, this option has an adverse impact on engineering constraints when compared to Option 1.**	Buildability issues of with constructing the link road partly adjacent to the existing Sandy Lane. (Slightly Adverse) **Overall, this option has an adverse impact on engineering constraints when compared to Option 1.**
Road User Safety		
	Overtaking section removed due to restrictions on vertical alignment along existing Sandy Lane (Slightly Adverse) **Overall, this option has a slightly adverse impact on road safety when compared to Option 1.**	Overtaking section removed due to vertical alignment restrictions along Sandy Lane, and introduction of bend in the alignment. (Slightly Adverse) **Overall, this option has a slightly adverse impact on road safety when compared to Option 1.**
Cultural Heritage*		
	Physical impacts on a crop mark site (Asset 115) however less impact than option 1. Impact on setting - Route close to asset 102, but further from asset 103 & 104 than Option 1. **Overall this option has a slightly beneficial impact on Cultural Heritage when compared to Option 1.**	Physical impacts on a crop mark site (Asset 115) however less impact than option 1. Impact on setting – No change from Option 1 **Overall, this option has a slightly beneficial impact on Cultural Heritage when compared to Option 1.**

Topic/Factor	Option 2	Option 3
Landscape*		
	Less permanent loss of the linear belt of woodland along Sandbach Road at the new roundabout than option 1. The new roundabout on Holmes Chapel Road would result in a greater permanent loss of a number of mature trees than options 1 and 3. Less permanent loss of hedgerow field boundaries, hedgerow trees and agricultural land than option 1. Topography of the character area would be less altered than with option 1 as more of the road is at grade south of Holmes Chapel Road. The new road would not introduce an additional linear feature into the landscape. However would in effect widen the existing linear feature along Sandy Lane and cut across field boundaries at the edge with the permanent loss of one area of woodland. The road runs along the edge of fields so field remnants would be larger than with option 1. Properties along A534, would have oblique or direct views towards the construction work for the new road as it joins the existing carriageway although much less than with option 1. Newbold Astbury FP8, would be crossed at its end by the route, views of construction works would be open and direct however less so than option 1. **Overall, this option has a slightly beneficial impact on landscape when compared to Option 1.**	Less permanent loss of the linear belt of woodland along Sandbach Road at the new roundabout than option 1. Less permanent loss of hedgerow field boundaries, hedgerow trees and agricultural land than option 1. Topography of the character area would be less altered than with option 1 as more of the road is at grade south of Holmes Chapel Road. The new road would not introduce an additional linear feature into the landscape. The road runs along the edge of fields so field remnants would be reduced when compared to Option 1. This option would however widen the existing linear feature along Sandy Lane and cut across field boundaries at the edge with the permanent loss of one area of woodland. Properties along A534, would have oblique or direct views towards the construction work for the new road as it joins the existing carriageway although much less than with option 1. Newbold Astbury FP8, would be crossed at its end by the route, views of construction works would be open and direct however less so than option 1. **Overall, this option has a slightly beneficial impact on landscape when compared to Option 1.**

Topic/Factor	Option 2	Option 3
Ecology*		
	Bats This option is only 25 metres from the common pipistrelle and brown long-eared roosts at Hollies Farm. The foraging and commuting routes of these bats from this roost will be highly affected by this option. The brown long-eared bats at Congleton Lodge and the Daubenton's bats in the Loach Brook culvert will be less affected than with the other two options as the route is further away from this roost. **GCN** This passes further from GCN Pond 91 and over 100m from GCN Pond 105. **King Fisher** No change from Option 1. **Species Rich Semi-Improved Grassland** No change from Option 1. **Hedgerows** This route passes through 1 additional species rich hedgrerow and one additional species poor hedgerows when compared to Option 1. These hedgerows are important as nesting sites, commuting routes and a food source for birds, mammals and amphibians. **Trees** Additional trees will be lost within the hedgerow along Sandy Lane, and next to the junction with the A534. **Overall, this option has a slightly beneficial impact on ecology when compared to Option 1.**	**Bats** No change from Option 1. **GCN** This passes through GCN Pond 91 which would have a highly negative effect on the present GCN population. Should individuals from this population utilise the species rich grassland along the A54 for hibernacula, there will be barriers on all sides which will prevent them commuting to a waterbody in the following spring. This option will likely require provision of a GCN crossing beneath the road. **King Fisher** No change from Option 1. **Species Rich Semi-Improved Grassland** No change from Option 1. **Hedgerows** This route passes through 1 additional species rich hedgrerow and one additional species poor hedgerows when compared to Option 1. These hedgerows are important as nesting sites, commuting routes and a food source for birds, mammals and amphibians. **Trees** Additional trees will be lost within the hedgerow along Sandy Lane, and next to the junction with the A534. **Overall, this option has a slightly adverse impact on ecology when compared to Option 1.**

Topic/Factor	Option 2	Option 3
Air Quality*		
	Less impact on Greenways Cottage than option 1. Route 25m away from Hollies Farm, closest option to this property. Route further away from Congleton Lodge (over 130m). Route closest to the southern properties along Chelford Road. **This option would have a similar overall impact on air quality as Option 1.**	Less impact on Greenways Cottage than option 1. Route 57m away from Hollies Farm, further away than option 2 but same distance as Option 1. Route 58m away from Congleton Lodge, closer than option 2 but the same distance as Option 1. **This option would have a slightly lower impact on air quality when compared to Option 1.**
Noise*		
	Potential reduction in noise at Greenways Cottage compared to option 1. Potential increase in noise at Hollies Farm compared to options 1 and 3. Potential reduction in noise at Congleton Lodge compared to Option 1. Potential increase in noise at southern properties along Chelford Road. **This option would have a similar overall impact on noise as Option 1.**	Potential reduction in noise at Greenways Cottage compared to option 1. (Beneficial) **This option would have a slightly lower overall impact on noise as Option 1.**

Topic/Factor	Option 2	Option 3
Soils, Geology and Hydrogeology*		
	There are no differences between the three options for soils, geology and hydrogeology. (Neutral)	There are no differences between the three options for soils, geology and hydrogeology. (Neutral)
Road Drainage and Water Environment*		
	Greater extent of re-alignment of Loachbrook than option 1 and 3. Less cutting than Option 1 and 3, therefore likely reduced impact on groundwater quality. Permanent loss of 1 pond compared to loss of 2 ponds through provision of Option 1 or 3. **This option has a lower impact on the water environment than option 1.**	Less cutting than Option 1, likely reducing impact on water quality. Permanent loss of two ponds, as per Option 1. **This option has a slightly lower impact on the water environment than Option 1.**
Water Framework Directive*		
	Option 2 has the greatest length of re-alignment of Loach Brook and therefore the greatest potential for change in gradient and potential for greater adverse impacts downstream than option 1 and 3. **This option has a slightly greater impact than Option 1.**	Similar impact to Option 1. **This option would have a similar overall impact as Option 1.**

Topic/Factor	Option 2	Option 3
Effect on all Travellers*		
	By stopping up Sandy Lane this provides an additional safe route for NMU users. Removes severance of Newbold Astbury footpath (FP11). Greater number of accesses than Option 1 which may cause driver uncertainty. Drivers may experience greater disruption during construction with an on-line roundabout. **This option would have a similar overall impact as Option 1.**	By stopping up Sandy Lane this provides an additional safe route for NMU users. Removes severance of Newbold Astbury footpath (FP11). Route has greater number of accesses, and is less straight than Option 1 which could cause driver uncertainty. **This option has a slightly lower impact than Option 1.**
Private and Community Assets*		
	Similar Impact on community for each option. Less impact on SHLAA sites 2542 and 2543 (not developable) allowing potential redevelopment. Eliminates requirement to provide alternative access for Hollies Farm and Congleton Lodge. By moving the road closer to Sandy Lane it creates a greater area to farm for the landowners however a greater number of new temporary accesses will be required. **This option has a lower impact than Option 1**	Similar Impact on community for each option. Less impact on SHLAA sites 2542 and 2543 (not developable) allowing potential redevelopment. By moving the road closer to Sandy Lane it creates a greater area to farm for the landowners however a greater number of new temporary accesses will be required. **This option has a slightly lower impact than Option 1.**

* For location of environmental receptors referenced within the above table refer to Appendix J

3.1.2 Mainline 1 / Sandy Lane Quantitative Assessment

Using the methodology described in section 1.3, the following weighted scores have been generated for each of the alternative options. The alternative options (Option 2& 3) were compared against the preferred route announced in March 2014 (Option 1). A positive score indicates the option would have an overall benefit when compared to the PRA, and a negative score indicates it would have an overall adverse impact.

Key:

Significantly Beneficial	3
Beneficial	2
Slightly Beneficial	1
Neutral	0
Slightly Adverse	-1
Adverse	-2
Significantly Adverse	-3

		Unweighted Score		Weighted Score	
Topic / Factor	Weighting	Option 2	Option 3	Option 2	Option 3
Scheme Cost Estimate	2	-2	1	-4	2
Development Potential	1	0	0	0	0
Engineering Constraints	0	-2	-1	0	0
Road User Safety	1	-1	-1	-1	-1
Landscape and Visual Impact	0.2	1	1	0.2	0.2
Ecology	0.2	1	-1	0.2	-0.2
Cultural Heritage	0.2	1	1	0.2	0.2
Air Quality	0.2	0	1	0	0.2
Noise and Vibration	0.2	0	1	0	0.2
Soils, Geology and Hydrogeology	0.2	0	0	0	0
The Water Environment	0.2	2	1	0.4	0.2
Water Framework Directive	0.2	-1	0	-0.2	0
Effects on All Travellers	0.2	0	1	0	0.2
Private and Community Assets	0.2	2	1	0.4	0.2
		2	**6**	**-3.8**	**2.2**

Table 2 – Mainline 1 / Sandy Lane Quantitative Assessment

From the table above it can be seen that Option 3 is preferred when compared against both the PRA (Option 1) and Option 2. In particular, Option 2 provides benefits when compared to the PRA in terms of Scheme Cost, Landscape, Cultural Heritage, Air Quality, Noise, and The Water Environment, Effects on all Travellers and Private and Community Assets. This option has therefore been incorporated into the Modified Preferred Route.

In addition to the above, Option 3 was also preferred by the main landowner through which this section of route passes. This is considered to add further justification for implementing this option.

From Table 2 however it can be seen that Option 3 scored the worst overall for ecology, owing primarily to the impact on a Great Crested Newt pond. The option implemented into the Modified Preferred Route has therefore been amended to avoid this pond, as well as minimising a severed parcel of land south east of Holmes Chapel Junction. This aspect of design development is covered in more detail within Section 4.2.

3.2 Mainline 2 Alignment

3.2.1 Qualitative Assessment

Using the methodology described in section 1.3, the following impact ratings have assigned for each of the alternative options when compared to the PRA May 2014 (Option 1). A plan showing each of the three options considered is attached in Appendix B.

Topic/Factor	Option 2	Option 3
Scheme Cost Estimate		
	Reduced land take / severance of horse paddock, minimising effect on business and reducing compensation payable. (Slightly Beneficial) Alignment moves up to 56m away from properties along Chelford Road, anticipated to result in a notable reduction in the cost of Part 1 claims. (Slightly Beneficial) Orientation of alignment shifted away from Back Lane, notably reducing the required length of retaining wall to the east of Chelford Road. (Beneficial). 1 No. additional landowners affected, increasing the cost of land acquisition. (Adverse) **Overall, this Option has a slightly beneficial impact on scheme cost when compared to Option 1.**	No land take / severance of horse paddock, minimising adverse effect on business and significantly reducing compensation payable. (Beneficial) Alignment moves up to 54m away from properties along Chelford Road, anticipated resulting in a notable reduction in the cost of Part 1 claims. (Slightly Beneficial) Orientation of alignment shifted away from Back Lane, notably reducing the required length of retaining wall to the east of Chelford Road. (Beneficial). 1 No. additional landowners affected, increasing land acquisition / compensation costs. (Adverse) **Overall, this Option has a beneficial impact on scheme cost when compared to Option 1.**
Development Potential		
	No change in area available for development **Overall, this Option has a neutral impact on Development Potential when compared to Option 1.**	No change in area available for development **Overall, this Option has a neutral impact on Development Potential when compared to Option 1.**

Topic/Factor	Option 2	Option 3
Engineering Constraints		
	Improved buildability due to reduced length of Chelford Road retaining Wall. (Beneficial) Tighter radius curve resulting in additional cutting for verge widening. (Adverse) **Overall, this Option has a neutral impact on Engineering Constraints when compared to Option 1.**	Improved buildability due to reduced length of Chelford Road retaining Wall. (Beneficial) Tighter radius curve resulting in additional cutting for verge widening. (Adverse) **Overall, this Option has a neutral impact on Engineering Constraints when compared to Option 1.**
Road User Safety		
	Reduced radius bend (3 steps below compared to 2 steps below for Option 1). Likely mandatory 50mph speed limit required. (Slightly Adverse) **Overall, this Option has a slightly adverse impact on Road Safety when compared to Option 1.**	Reduced radius bend (3 steps below compared to 2 steps below for Option 1). Likely mandatory 50mph speed limit required. (Slightly Adverse) **Overall, this Option has a slightly adverse impact on Road Safety when compared to Option 1.**

Topic/Factor	Option 2	Option 3
Ecology*		
	Similar impact on woodland, species poor hedgerows and semi-improved grassland as Option 1. Potentially Loss of fewer trees along Back Lane. **This has a slightly lower overall impact on ecology than Option 1.**	Broad-leaved woodland surrounding Somerford / Mushroom Farm lost: possible impact on nesting birds & bats. Fewer species-poor hedgerows directly impacted within the footprint. Least amount of semi-improved grassland and marshy grassland within the footprint (and no poor semi-improved). Potentially loss of fewer trees along Back Lane. Large mature tree in field removed – not yet surveyed for bats as no access permitted. **This has a slightly lower overall impact on ecology than Option 1.**
Landscape*		
	As with Option 1, there would be a loss of a rectangular horse paddock approximately 250m west of Chelford Road. The residential properties situated off Chelford Road and Holmes Chapel Road would have long distance and direct views of the route. However, this option moves the road further from the properties when compared to Option 1 therefore short distance views would be less affected. **This has a slightly lower overall impact on landscape than Option 1.**	This option avoids a rectangular horse paddock and therefore would retain the hedgerow next to the horse paddock. This option would pass through a small section of woodland to the north of Loach Brook. The residential properties situated off Chelford Road and Holmes Chapel Road would have long distance and direct views of the route. However, this option moves the road further from the properties when compared to Option 1 therefore short distance views would be less affected. **This has a slightly lower overall impact on landscape than Option 1.**

Topic/Factor	Option 2	Option 3
Cultural Heritage*		
	All options would have similar impact on historic landscape. (Neutral)	All options would have similar impact on historic landscape. (Neutral)
Air Quality*		
	The route is situated further from a number of residential properties off Chelford Road and Holmes Chapel Road. **This has a slightly lower overall impact on air quality than option 1.**	The route is situated further from a number of residential properties off Chelford Road and Holmes Chapel Road. **This has a slightly lower overall impact on ecology than option 1.**
Noise*		
	The route is situated further from a number of residential properties off Chelford Road and Holmes Chapel Road. **This has a slightly lower overall impact on noise than Option 1.**	The route is situated further from a number of residential properties off Chelford Road and Holmes Chapel Road. **This has a slightly lower overall impact on noise than Option 1.**
Soils, Geology and Hydrogeology*		
	There are no differences between the three options for soils, geology and hydrogeology. (Neutral)	There are no differences between the three options for soils, geology and hydrogeology. (Neutral)
Road Drainage and Water Environment*		
	There are no major differences between the three options for road drainage and the water environment. (Neutral)	There are no major differences between the three options for road drainage and the water environment. (Neutral)

Topic/Factor	Option 2	Option 3
Water Framework Directive*	–	–
	All options would create one crossing point of Loach Brook. (Neutral)	All options would create one crossing point of Loach Brook. (Neutral)
Effect on all Travellers*	–	–
	All options would sever Somerford Footpath 2. For all three options there will be a new roundabout junction with Holmes Chapel Road, so drivers stress would be the same. (Neutral) **Overall, this Option has a neutral impact on All Travellers when compared to Option 1.**	All options would sever Somerford Footpath 2. For all three options there will be a new roundabout junction with Holmes Chapel Road, so drivers stress would be the same. (Neutral) **Overall, this Option has a neutral impact on All Travellers when compared to Option 1.**
Private and Community Assets*	–	↑
	No change from Option 1. (Neutral)	This option would avoid the horse paddock extending to the west, although an additional agricultural field would be severed. **This option would have a slightly lower overall impact on private and community assets than option 1.**

* For location of environmental receptors referenced within the above table refer to Appendix J

3.2.2 Mainline 2 Quantitative Assessment

Using the methodology described in section 1.3, the following weighted scores have been generated for each of the alternative options. The alternative options (Option 2& 3) were compared against the preferred route announced in March 2014 (Option 1). A positive score indicates the option would have an overall benefit when compared to the PRA, and a negative score indicates it would have an overall adverse impact.

Key

Significantly Beneficial	3
Beneficial	2
Slightly Beneficial	1
Neutral	0
Slightly Adverse	-1
Adverse	-2
Significantly Adverse	-3

		Unweighted Score			Weighted Score		
Topic / Factor	**Weighting**	**Option 1 (PRA)**	**Option 2**	**Option 3**	**Option 1 (PRA)**	**Option 2**	**Option 3**
Scheme Cost Estimate	2	0	1	2	0	2	4
Development Potential	1	0	0	0	0	0	0
Engineering Constraints	0	0	0	0	0	0	0
Road User Safety	1	0	-1	-1	0	-1	-1
Landscape and Visual Impact	0.2	0	1	1	0	0.2	0.2
Ecology	0.2	0	1	1	0	0.2	0.2
Cultural Heritage	0.2	0	0	0	0	0	0
Air Quality	0.2	0	1	1	0	0.2	0.2
Noise and Vibration	0.2	0	1	1	0	0.2	0.2
Soils, Geology and Hydrogeology	0.2	0	0	0	0	0	0
The Water Environment	0.2	0	0	0	0	0	0
Water Framework Directive	0.2	0	0	0	0	0	0
Effects on All Travellers	0.2	0	0	0	0	0	0
Private and Community Assets	0.2	0	0	1	0	0	0.2
		0	4	6	0	1.8	4

Table 3 - Mainline 2 Quantitative Assessment

From the Table 3, above it can be seen that both Option 2 & 3 represent an overall benefit when compared against the PRA (Option 1). Option 3 performs best overall, owing primarily to the cost savings anticipated through reduced compensation and removal of a retaining wall. Option 3 also performs better than the PRA in terms of Landscape, Ecology, Cultural Heritage, Air Quality, Noise and Private and Community Assets. It is therefore recommended that this option be incorporated into the Modified Preferred Route.

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3.3 Radnor Park Junction Options

3.3.1 Qualitative Assessment

Using the methodology described in section 1.3, the following impact ratings have assigned for each of the alternative options when compared to the PRA May 2014 (Option 1). A plan showing each of the three options considered is attached in Appendix X.

Topic/Factor	Option 2	Option 3
Scheme Cost Estimate		
	Similar scheme cost to option 1 (PRA). (Neutral)	Westerly shift of roundabout will minimise the required verge widening on the eastbound exit from the roundabout, notably reducing the amount of excavation required. (Slightly Beneficial) No requirement to provide access track linking Back Lane (Slightly Beneficial) Slight reduction in compensation for property to the north of the roundabout, due to less impact on an existing access route. (Slightly beneficial) Slight increase in compensation for property to the south of the roundabout, due to increased proximity to 3rd Avenue Link Road. (Slightly Adverse) Slight increase in the length of 3rd Avenue Link Road, increasing construction costs (Slightly Adverse). **Overall, this option has a slightly beneficial impact on scheme cost when compared to Option 1.**

Topic/Factor	Option 2	Option 3
Development Potential		
	Western shift of roundabout allows access from the link road to the severed triangle of land north of the junction. This opens up some development opportunities, albeit to a lesser extent than Option 3. (Slightly Beneficial) **Overall, this option has a slightly beneficial impact on Development Potential when compared to Option 1.**	Location of roundabout allows access from the link road to a severed triangle of land north of the junction, as well as a larger field directly to the east. This access arrangement does not restrict future development opportunities. (Significantly Beneficial) **Overall, this option has a significantly beneficial impact on Development Potential when compared to Option 1.**
Engineering Constraints		
	No change in engineering constraints when compared to Option 1. (Neutral)	No change in engineering constraints when compared to Option 1. (Neutral)
Road User Safety		
	More sinuous alignment of 3rd Avenue Link Road, encouraging vehicular speeds in line with proposed 30mph speed limit. (Slightly Beneficial) Farm access direct onto link road, potentially increasing likelihood of conflict. (Slightly Adverse). **Overall, this Option has a neutral impact on Road Safety when compared to Option 1.**	More sinuous alignment of 3rd Avenue Link Road, encouraging vehicular speeds in line with proposed 30mph speed limit. (Slightly Beneficial) This option would require a 3-step reduction in desirable minimum horizontal curvature. Although compliant to prevailing standards, this may increase the likelihood of loss of control type incidents. (Slightly Adverse) Farm access in close proximity to junction on 3rd Avenue Link Road, as well as direct on to roundabout, increasing likelihood of conflict. (Slightly Adverse) **Overall, this Option has a slightly adverse impact on Road Safety when compared to Option 1.**

Topic/Factor	Option 2	Option 3
Ecology*		
	The footprint of 3rd Avenue Link Road would be closer to a hedgerow and trees. The larger footprint than option 1 would mean greater loss of improved grassland. A longer section of the route runs alongside Radnor Woods possibly leading to greater disturbance to the species within the woodland and affecting foraging/commuting bats along the woodland edge. **This would have a slightly higher overall impact on ecology than option 1.**	The footprint of the 3rd Avenue Link Road would be closer to a hedgerow and trees. Smallest scheme footprint than option 1, causing the smallest loss of improved grassland. Roundabout and link road pass further from Radnor Woods causing a lower disturbance than option 1 to species within the woodland, as well as the impact on foraging / commuting bats along the woodland edge. **This would have a slightly lower overall impact on ecology than option 1.**
Landscape*		
	For this option both Radnor Park Junction and 3rd Avenue Link Road, would be closer to Paddock House Farm and Radnor Hall Farm, thus having slightly more significant visual impacts. **This would have a slightly higher overall impact on landscape than option 1.**	For this option both Radnor Park Junction and 3rd Avenue Link Road, would be closer to Paddock House Farm and Radnor Hall Farm, thus having slightly more significant visual impacts. **This would have a slightly higher overall impact on landscape than option 1.**
Cultural Heritage*		
	There are no differences between the two options for Cultural Heritage. (Neutral)	There are no differences between the two options for Cultural Heritage. (Neutral)

Topic/Factor	Option 2	Option 3
Air Quality*		
	For this option the route would be closer to Paddock House Farm and Radnor Hall Farm, potentially resulting in more significant air quality impacts. **This would have a slightly higher overall impact on air quality than option 1.**	For this option the route would be closer to Paddock House Farm and Radnor Hall Farm than option 1 and option 2, potentially resulting in more significant air quality impacts. **This would have a higher overall impact on air quality than option 1, and option 2.**
Noise*		
	For this option the route would be closer to Paddock House Farm and Radnor Hall Farm, potentially resulting in more significant air noise and vibration impacts. **This would have a slightly higher overall impact on noise than option 1.**	For this option the proposed 3rd Avenue Link Road would be closer to Paddock House Farm and Radnor Hall Farm than option 1 and option 2, potentially resulting in more significant air noise and vibration impacts. **This would have a higher overall impact on noise than option 1, and option 2.**
Soils, Geology and Hydrogeology*		
	There are no differences between the options for soils, geology and hydrogeology. (Neutral)	There are no differences between the options for soils, geology and hydrogeology. (Neutral)

Topic/Factor	Option 2	Option 3
Road Drainage and Water Environment*		
	This option has a slightly greater footprint of impermeable area and therefore potentially greater routine runoff from the highway, greater risk of groundwater pollution during construction and reduced groundwater recharge supply during operation (however it is unlikely that any of the options would cause significant impacts on groundwater flow or levels in the local area). **This would have a slightly higher overall impact on water environment than option 1.**	There is a notable reduction in the amount of cutting required for this option, potentially reducing the impact on ground water. This option has a slightly greater impermeable area and therefore potentially greater routine runoff from the highway, greater risk of groundwater pollution during construction and reduced groundwater recharge supply during operation (however it is unlikely that any of the options would cause significant impacts on groundwater flow or levels in the local area). **This would have a similar overall impact on water environment as option 1.**
Water Framework Directive*		
	All options would create one crossing point of the River Dane. (Neutral)	All options would create one crossing point of the River Dane. (Neutral)
Effect on all Travellers*		
	There are no differences between the options Effect on All Travellers. (Neutral)	There are no differences between the options Effect on All Travellers. (Neutral)
Private and Community Assets*		
	There is a similar impact on community for all three Options. This option would open up development land to the north of the route, but this benefit has been accounted for in the 'Development Potential' assessment. (Neutral) **Overall this option has a neutral impact on Private & Community Assets when compared to Option 1.**	There is a similar impact on community for all three Options. This option would open up development land to the north of the route, but this benefit has been accounted for in the 'Development Potential' assessment. (Neutral) **Overall this option has a neutral impact on Private & Community Assets when compared to Option 1.**

* For location of environmental receptors referenced within the above table refer to Appendix J

3.3.2 Radnor Park Junction Quantitative Assessment

Using the methodology described in section 1.1, the following weighted scores have been generated for each of the alternative options. Options 2 & 3 were compared against the preferred route announced in March 2014 (Option 1). A positive score indicates the option would have an overall benefit when compared to the PRA, and a negative score indicates it would have an overall adverse impact.

Key:

Significantly Beneficial	3
Beneficial	2
Slightly Beneficial	1
Neutral	0
Slightly Adverse	-1
Adverse	-2
Significantly Adverse	-3

		Unweighted Score			Weighted Score		
Topic / Factor	**Weighting**	**Option 1 (PRA)**	**Option 2**	**Option 3**	**Option 1 (PRA)**	**Option 2**	**Option 3**
Scheme Cost Estimate	2	0	0	1	0	0	2
Development Potential	1	0	1	3	0	1	3
Engineering Constraints	0	0	0	0	0	0	0
Road User Safety	1	0	1	-1	0	0	-1
Landscape and Visual Impact	0.2	0	-1	-1	0	-0.2	-0.2
Ecology	0.2	0	-1	1	0	-0.2	0.2
Cultural Heritage	0.2	0	0	0	0	0	0
Air Quality	0.2	0	-1	-2	0	-0.2	-0.4
Noise and Vibration	0.2	0	-1	-2	0	-0.2	-0.4
Soils, Geology and Hydrogeology	0.2	0	0	0	0	0	0
The Water Environment	0.2	0	-1	0	0	-0.2	0
Water Framework Directive	0.2	0	0	0	0	0	0
Effects on All Travellers	0.2	0	0	0	0	0	0
Private and Community Assets	0.2	0	0	0	0	0	0
		0	-1	-1	0	1	3.2

Table 4 – Radnor Park Junction Quantitative Assessment

From the Table 4 above it can be seen that Option 3 represents an overall benefit when compared to both the PRA (Option 1) and Option 2. This owes primarily to the benefits associated with the possibility of additional development land to the north of the link road, as well as a slight reduction in the impact on scheme costs and ecology. It is therefore recommended that Option 3 be included within the Modified Preferred Route.

It should also be noted that we have been engaging in consultation with landowners in the vicinity of the proposed amendment. Although the owner of the land through which this section

of the route passes is strongly in favour of Option 3, a separate land owner to the north, whose access would be affected by the amendment, is strongly against this Option. In selecting Option 3, we have therefore sought to reduce the impacts on this property as far as practicable. This includes provision of a track connecting the proposed 3rd Avenue with the existing Back Lane, reducing the impact on the existing access route. Consideration is being given to this access becoming an adopted highway rather than remaining a private means of access. We will also continue to liaise closely with this land owner as the design develops, in particular in relation to our proposals for environmental mitigation, to identify how impacts can be reduced further.

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3.4 Mainline 4 & 5 Optioneering

3.4.1 Qualitative Assessment

Using the methodology described in section 1.3, the following impact ratings have assigned for the alternative option when compared to the PRA May 2014 (Option 1). A plan showing the two options considered is attached in Appendix E.

Topic/Factor	Option 2
Scheme Cost Estimate	 Ability to provide integral (i.e. no bearing required) structure due to reduced skew angle over Giantswood Lane. This reduces the costs associated with the structure. (Slightly Beneficial) Slight reduction in length of Viking Way Link Road, reducing construction costs (Slightly Beneficial). Considered to reduce overall costs for compensation due to increased distance from a number of properties along Giantswood Lane. (Slightly Beneficial). The route passes through a localised high point in the existing topography. This reduced the amount of material to be excavated as the route passes beneath Giantswood Lane. (Slightly Beneficial) **Overall, this option has a slightly beneficial impact on scheme cost when compared to Option 1.**
Development Potential	 Net loss of approximately 1.5ha of land to the south of the link road, reducing the potential for development. (Adverse) **Overall, this option has an adverse impact on Development Potential when compared to Option 1**.
Engineering Constraints	 Alignment avoids a large pond, removing difficulties in embankment construction (Slightly Beneficial) **Overall, this option has a slightly beneficial impact on engineering constraints when compared to Option 1.**

Topic/Factor	Option 2
Road User Safety	 Both alignments provide an overtaking section and are compliant to prevailing standards. (Neutral) This Option moves Manchester Rd Junction slightly closer to the Quarry Access, potentially increasing the likelihood of conflict. (Slightly Adverse) This Option allows for a higher standard alignment and visibility provision along Giantswood Lane, reducing the risk of head on / loss of control type incidents. (Slightly Beneficial) **Overall, this option has a neutral impact on road safety when compared to Option 1.**
Air Quality*	 Although this option would be closer to a small number of properties, it would be further from the majority of properties in the area associated with Giantswood Lane. **This would have a slightly lower overall impact on air quality than option 1.**
Noise*	 Although this option would be closer to a small number of properties, it would be further from the majority of properties in the area associated with Giantswood Lane. **This would have a slightly lower overall impact on noise than option 1.**
Landscape*	 No change in landscape when compared to the PRA. (Neutral)
Cultural Heritage*	 The route would be situated closer to assets 57, 63, 64 and 80 which may have in impact on setting. This option would be further away from Church of St Michael, which is grade II listed, which would have a less significant impact on the setting compared to Option 1. Both options would have similar impact on historic landscape. **This would have a slightly lower overall impact on cultural heritage than option 1.**

Topic/Factor	Option 2
Soils, Geology and Hydrogeology*	 There are no differences between the two options for soils, geology and hydrogeology. (Neutral)
Ecology*	 No loss of ponds. Located further from two large ponds surrounded by marshy grassland (west of A34 Manchester Road), and one located within a field near the proposed eastern roundabout on A536 Macclesfield Road. A larger proportion of the broad-leaved woodland (BAP habitat), scrub, ephemeral/short perennial and plantation woodland surrounding the Eaton Hall Sand quarry would be lost, potentially impacting trees offering bat roost potential, bird nesting opportunities and badger. The road will sever links within the woodland. Potential greater loss of large mature trees surrounding the Eaton Hall Sand quarry. Small portion of semi-improved grassland located within the footprint surrounding Eaton Hall Sand quarry. Larger portion of broad-leaved woodland lost along the unnamed brook between Giantswood Lane and A34 Manchester Road. The footprint would be closer to the riparian habitats along the River Dane. Hedgerow and mature trees in field to the west of Congleton Road used a bat commuting corridor will be impacted. Marshy/species rich grassland lost to footprint of road. **This would have a slightly higher overall impact on ecology than option 1.**
Road Drainage and Water Environment*	 This option avoids a large pond reducing the adverse impact on the water environment. **This would have a slightly lower overall impact on the water environment than option 1.**

Topic/Factor	Option 2
Water Framework Directive*	 Both options would create two crossing points of the unnamed tributaries of River Dane, which would be converted. **This has a similar overall impact on The Water Framework Directive as option 1.**
Effect on all Travellers*	 For both options the route severs Hulme Wallfield FP 6, Hulme Walfield FP7 and Eaton FP2.(Neutral) For both options there will be a new roundabout junction with a link into Congleton Business Park, a new roundabout junction with the A34 and a new roundabout junction with the A536 so drivers stress would be the same. **This has a similar overall impact on travellers as option 1.**
Private and Community Assets*	 This option avoids any land take from a local cattery business. **This would have a slightly lower overall impact on the Private and Community Assets than option 1.**

* For location of environmental receptors referenced within the above table refer to Appendix J

3.4.2 Quantitative Assessment

Using the methodology described in section 1.3, the following weighted scores have been generated for the alternative option. The alternative option (Option 2) has been compared against the preferred route announced in March 2014 (Option 1). A positive score indicates the option would have an overall benefit when compared to the PRA, and a negative score indicates it would have an overall adverse impact.

Key:

Significantly Beneficial	3
Beneficial	2
Slightly Beneficial	1
Neutral	0
Slightly Adverse	-1
Adverse	-2
Significantly Adverse	-3

		Unweighted Score		Weighted Score	
Topic / Factor	**Weighting**	**Option 1 (PRA)**	**Option 2**	**Option 1 (PRA)**	**Option 2**
Scheme Cost Estimate	2	0	1	0	2
Development Potential	1	0	-2	0	-2
Engineering Constraints	0	0	1	0	0
Road User Safety	1	0	0	0	0
Landscape and Visual Impact	0.2	0	0	0	0
Ecology	0.2	0	-1	0	-0.2
Cultural Heritage	0.2	0	1	0	0.2
Air Quality	0.2	0	1	0	0.2
Noise and Vibration	0.2	0	1	0	0.2
Soils, Geology and Hydrogeology	0.2	0	0	0	0
The Water Environment	0.2	0	1	0	0.2
Water Framework Directive	0.2	0	0	0	0
Effects on All Travellers	0.2	0	0	0	0
Private and Community Assets	0.2	0	1	0	0.2
		0	4	0	0.8

Table 5 – Mainline 4 & 5 Quantitative Assessment

From the table above, it can be seen that Option 2 scores slightly better when compared to the PRA (Option 1), in particular for Scheme Cost, Cultural Heritage, Air Quality, Noise and The Water Environment. It is therefore recommended that this option be included within the Modified Preferred Route.

From the table above it can be seen that there is only an ecology impact in provision of Option 2 when compared to the PRA. This owes primarily to the adverse impact on Development Potential through a reduction in development land.

4 Design Development

4.1 Introduction

The designs assessed within this report were produced to a level of detail suitable for optioneering purposes, and to make informed recommendations for the Modified Preferred Route. Incorporating the preferred options outlined in Chapter 2 above, the design has been subsequently been progressed in more detail in order to confirm the land required to construct the road and form the basis of a planning application. This design development has included such aspects as a review of earthworks balance, incorporating drainage ponds, provision of accommodation works and value engineering exercises. We have also looked at optimisation the scheme in order to reduce or eliminate the adverse impacts identified within Chapter 3. A summary of the main changes incorporated through design development is provided below.

4.2 Holmes Chapel Road Junction

Although preferred overall, Option 3 from the Mainline 1 / Sandy Lane optioneering exercise resulted in a significant impact on ecology. This was a result of the mainline alignment passing through an existing Great Crested Newt pond. As part of the design development process, we have therefore relocated the roundabout approximately 25m to the east. This avoids the GCN, as well as offering other benefits such as minimising severance of an existing field, and is considered to offer an overall benefit in terms of environment. A plan showing this design amendment is attached n Appendix I.

4.3 Mainline 2 / Chelford Road Retaing Wall (North)

Section 2.2 of this report describes a rejected option that considered a 100m shift of the mainline in the vicinity of Back Lane. Although a change on this scale was not considered viable, we have however implemented a more localised amendment to try and address some of the concerns raised by nearby residents. This includes a shift of the mainline to pass approximately 15m further south when compared to the PRA May 2014. This is considered to reduce the impact on adjacent properties in terms of air quality, noise and visual intrusion. The alignment shift also provides sufficient space for a 2m high bund reducing these impacts further. A plan showing the staged process in which the design was developed in this area is attached in Appendix I.

By implementing the above, the mainline alignment moves further away from the existing Back Lane. The provides sufficient space for an earthworks embankment to the east of Chelford Road, therefore the proposed Chelford Road Retaining Wall (North) has been removed from the proposals.

4.4 Back Lane Link Road

Since the PRA May 2014, we have reviewed the impact of the scheme on local connectivity and community severance. It was identified that provision of an additional link road connecting the existing Back Lane with Chelford Road would reduce the overall impact on community severance, as well as minimising diversionary routes for many properties and landowners. This has therefore been included within our proposals.

4.5 Earthworks Balance

We have reviewed the vertical alignment of the route to try and achieve an earthworks balance across the scheme (i.e. avoid / minimise any costly and environmentally damaging export to

landfill). This has been done to a certain degree, but this will continue to be reviewed as proposals for environmental mitigation are developed (e.g. landscape bunds) and the results from the ground investigation are received.

4.6 Drainage Proposals

Following the options assessment work, we have progressed the design of the Preliminary Drainage Strategy. This is to identify the preliminary location and size of any required attenuation ponds and / or soak ways. These have now been included within our proposals, however are subject to change following feedback from the Ground Investigation.

4.7 Accommodation Works

Following feedback from an agricultural survey, we have proposed a series of tracks and field accesses to replace any existing accesses affected by the proposed scheme. These are only preliminary at this stage, and subject to change following further consultation with landowners.

5 Summary and Way Forward

5.1 Summary

In summary, the following key changes to the route alignment have been made since the Preferred Route Announcement in May 2014.

- **Mainline 1 / Sandy Lane (Option 3**) – Alignment of the mainline amended to run adjacent to the existing Sandy Lane. An additional modification has also been implemented to avoid an existing GCN pond.

- **Mainline 2 (Option 3)** – Alignment of the mainline amended to in a north easterly direction to avoid a horse paddock, and minimise associated impacts on the business, and allow removal of a retaining wall to the east of Chelford Road.

- **Radnor Park Junction (Option 3)** – Location of roundabout moved approximately 100m west to that proposed in the PRA 2014. This amendment opens up opportunities to develop to the north of the link road.

- **Mainline 4 & 5 (Option 2)** – Alignment amended to pass further south (along Mainline 4) and further north (along Mainline 5). This amendment results in a series of environmental benefits, as well as a reduction in scheme costs. However, Development Potential would be adversely affected.

Incorporating all the amendments above, we have also developed the design to consider other aspects such as drainage, earthworks balance and accommodation works. Plans showing the Preferred Route May 2014, and the proposed Modified Preferred Route as of Dec 2014 are attached in Appendix H and I respectively.

5.2 Way Forward

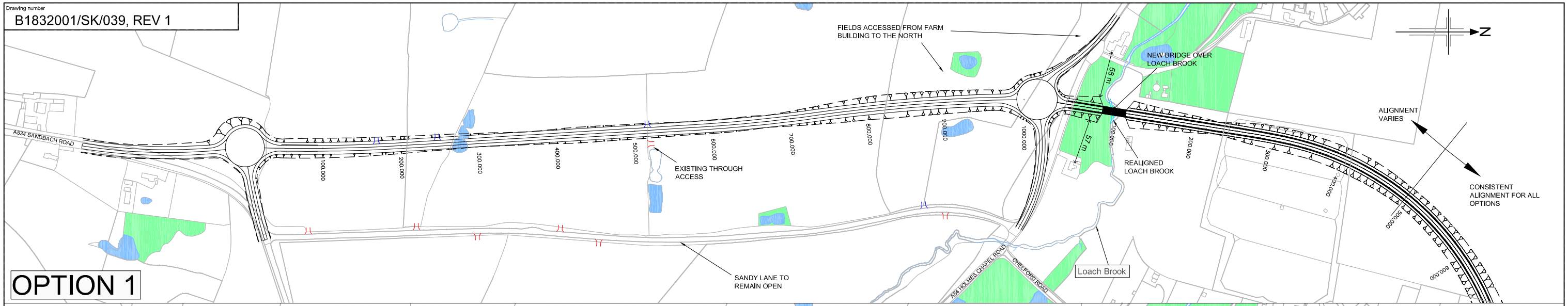
There remain a number of outstanding issues that need to be completed as part of the design development process. These include, but are not limited to, the following:

- Review of earthworks and drainage strategy based on results of the Ground Investigation
- Review of NMU strategy and pedestrian / cycle crossing provision
- Alignment review of 3rd Avenue and Viking Way Link Roads
- Roundabout capacity assessment and consideration of segregated left turn lanes
- Proposals for environmental mitigation (e.g. planting / landscape mounds)
- Review of accommodation and maintenance tracks and field accesses
- Review of side road strategy
- Value Engineering
- Road Safety Audit

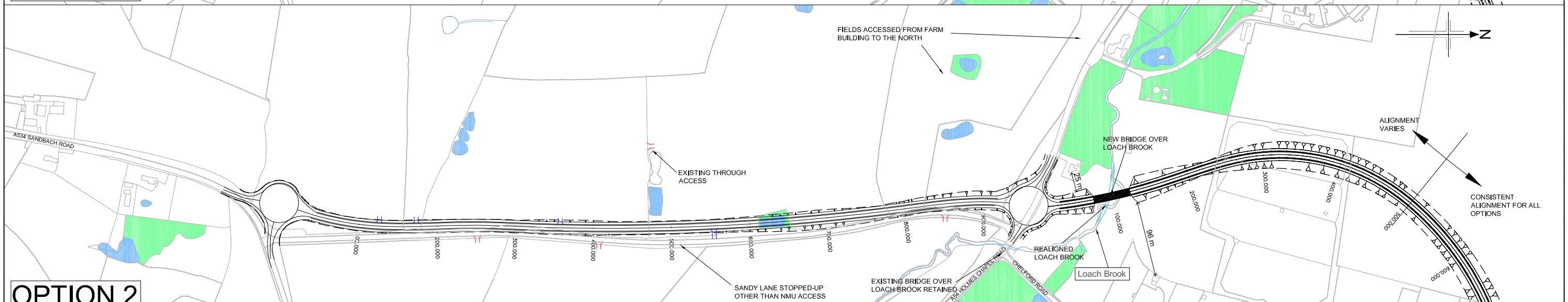
The above will be considered and incorporated into the design prior to a public consultation on the scheme planned for early to mid-2015. Based on the outcome of the public consultation, further amendments to the proposed design may be required which will be used for the basis of a planning application anticipated for mid 2015.

Appendix A – Sandy Lane Options

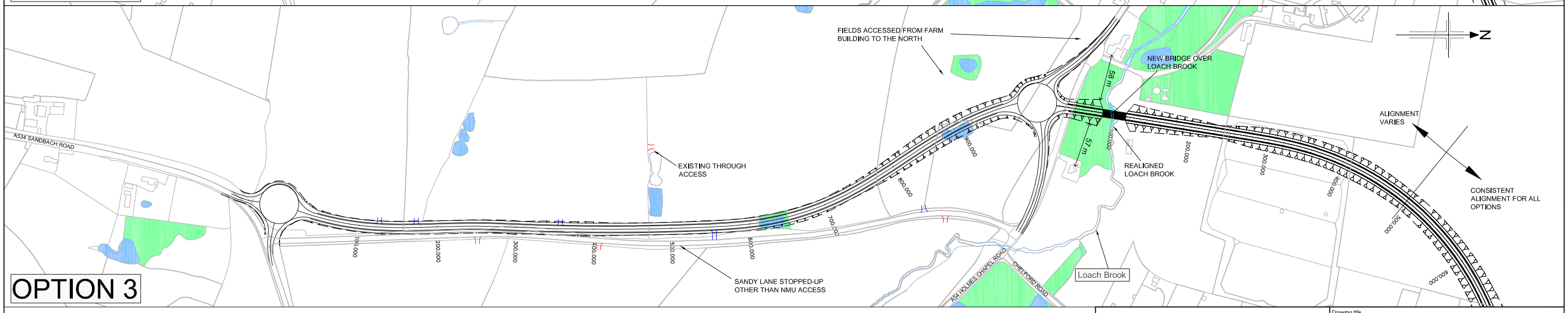
Drawing number
B1832001/SK/039, REV 1



OPTION 1



OPTION 2



OPTION 3

Notes:

1. The designs proposed are at conceptual stage only and subject to change following more detailed engineering and environmental assessments.

Key:

- Existing access
- Proposed new access
- Water Features
- Woodland

DRAFT

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Appr'd
1	06/08/2014	UPDATED NOTES	JH	TB	TB	
0	22/07/2014	DRAFT - FOR INFORMATION ONLY	JH	TB	TB	MD

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Client: Cheshire East Council

Project: CONGLETON LINK ROAD

Drawing title: SANDY LANE OPTIONEERING (ZONE A)

Drawing status: DRAFT - FOR INFORMATION

Scale	1:5000 @A3	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		
Drawing number	B1832001/SK/039	Rev 1

Appendix B – Mainline 2 Options

Drawing number
B1832001/SK/043, REV 0

11.2 m max verge widening to achieve desirable minimum SSD

OPTION 1 (PRA)

18.3 m max verge widening to achieve desirable minimum SSD

Reduced length of retaining wall (approx. 50m) due to increased distance to Back Lane

OPTION 2

17.5 m max verge widening to achieve desirable minimum SSD

Reduced length of retaining wall (approx. 50m) due to increased distance to Back Lane

OPTION 3

CHELFORD ROAD

BLACKFIRS LANE

BACK LANE

N

Notes:

1. Alignment options are in conception stage. Alignments are subject to change following more detailed engineering and environmental assessment.

KEY:

Option 1 (PRA) Earthworks Footprint

Option 2 Earthworks Footprint

Option 2 Earthworks Footprint

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
0	07/08/2014	FIRST ISSUE	JH	TB	JH	MD

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Client
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Project
CONGLETON LINK ROAD

Drawing title
MAINLINE 2
ALIGNMENT
OPTIONEERING

Drawing status
DRAFT - FOR INFORMATION

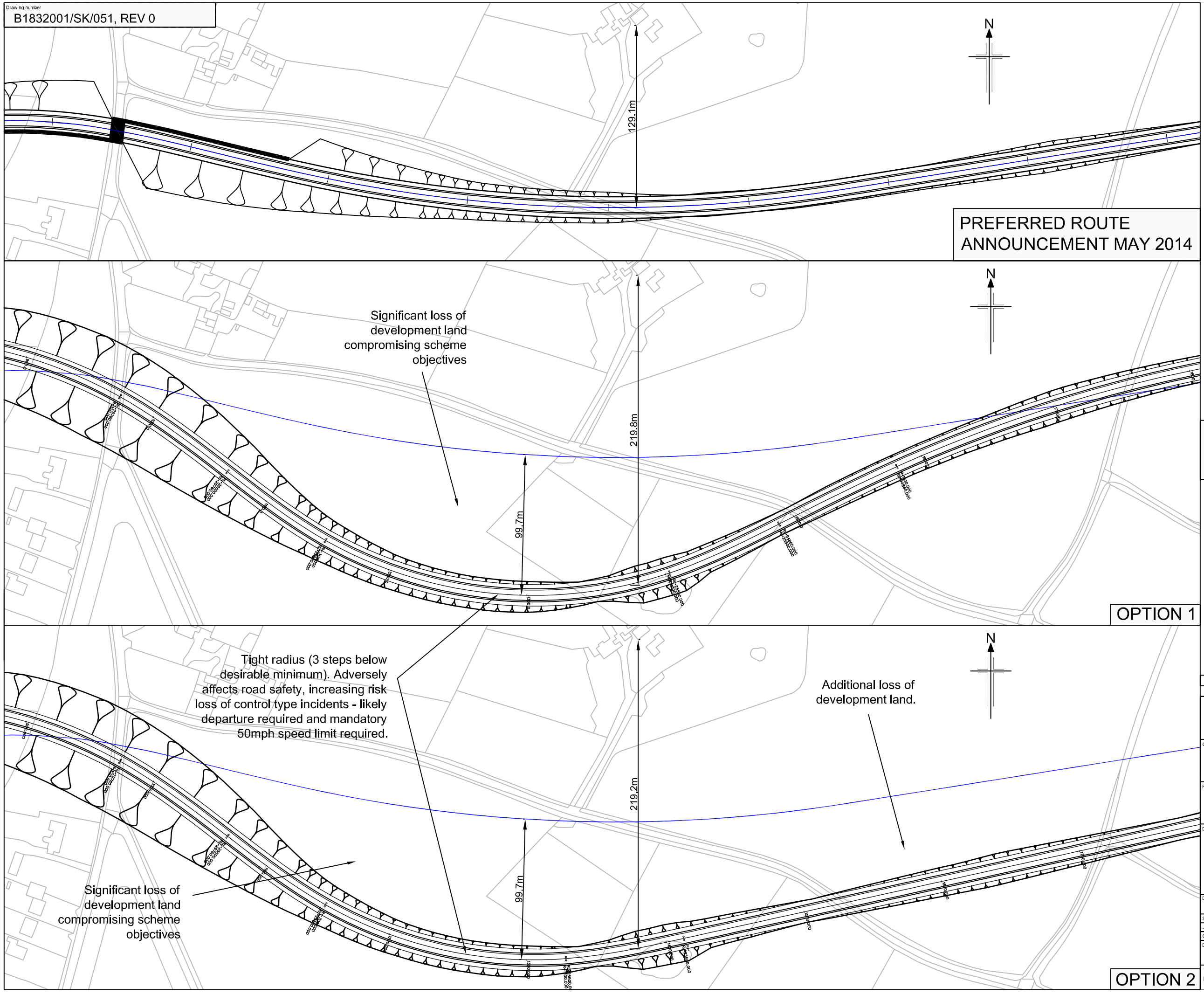
Scale	1:5000 @A3	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number
B1832001/SK/043

Rev
0

Appendix C – Mainline 2 Rejected Options

Drawing number
B1832001/SK/051, REV 0



Key:

Centreline PRA May 2014

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
0	12/11/14	FIRST ISSUE	TB	JH	JH	MD

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Client
Cheshire East Council

Project
CONGLETON LINK ROAD

Drawing title
MAINLINE 2
REJECTED OPTIONS

Drawing status
DRAFT - FOR INFORMATION

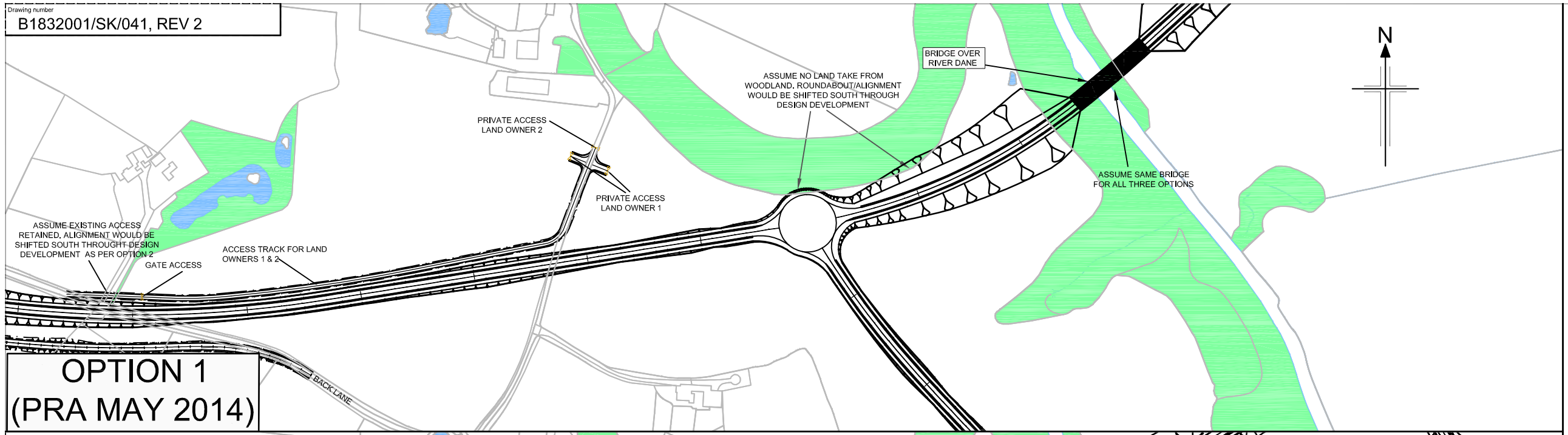
Scale	1:2500 @A3	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number
B1832001/SK/051

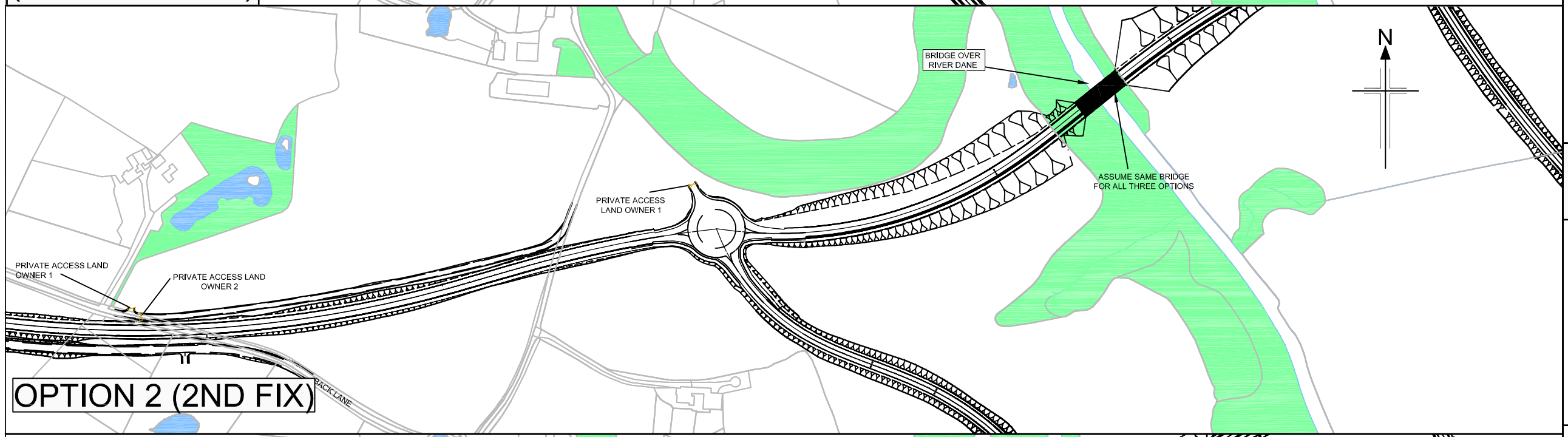
Rev
0

Appendix D – Radnor Park Junction Options

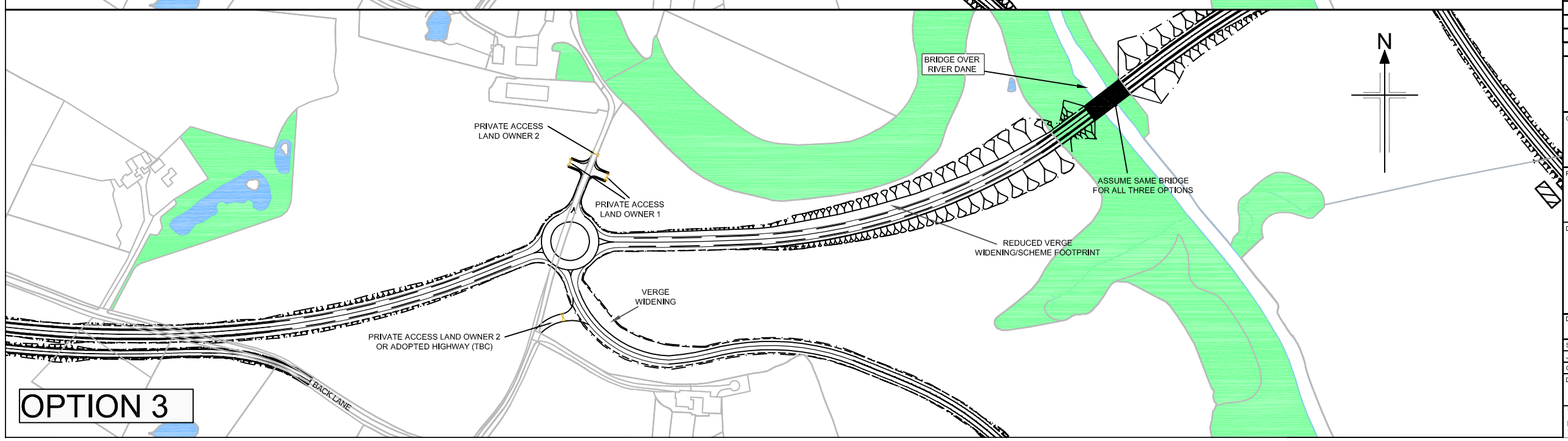
Drawing number
B1832001/SK/041, REV 2



OPTION 1
(PRA MAY 2014)



OPTION 2 (2ND FIX)



OPTION 3

Notes:

1. Alignment options are in conception stage. Alignments are subject to change following more detailed engineering and environmental assessment.

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
2	10/12/2014	LABELS UPDATE	DH	TB	TB	MD
1	21/10/2014	NEW OPTION INCLUDED AND EMERGING ROUTE UPDATED	JH	TB	TB	
0	06/08/2014	DRAFT	JH	TB	JH	

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Client
Cheshire East Council

Project
CONGLETON LINK ROAD

Drawing title
RADNOR
PARK JUNCTION
OPTIONEERING

Drawing status
DRAFT - FOR INFORMATION

Scale	1:4000 @A3	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number
B1832001/SK/041

Rev
2

Appendix E – Mainline 3 & 4 Options

N

Option 2

Option 1
(PRA May 2014)

Approx. 6ha additional land to the south of CLR when compared to the PRA.

Approx. 7.5ha reduction in land to the south of CLR when compared to the PRA

DRAFT

KEY:

Centreline of Preferred Route Announcement May 2014. (Option 1)

Notes:

1. Design shown is in conceptual stage only and is subject to change following detailed engineering and environmental assessments.

CONGLETON LINK ROAD

EASTERN ALIGNMENT OPTIONEERING

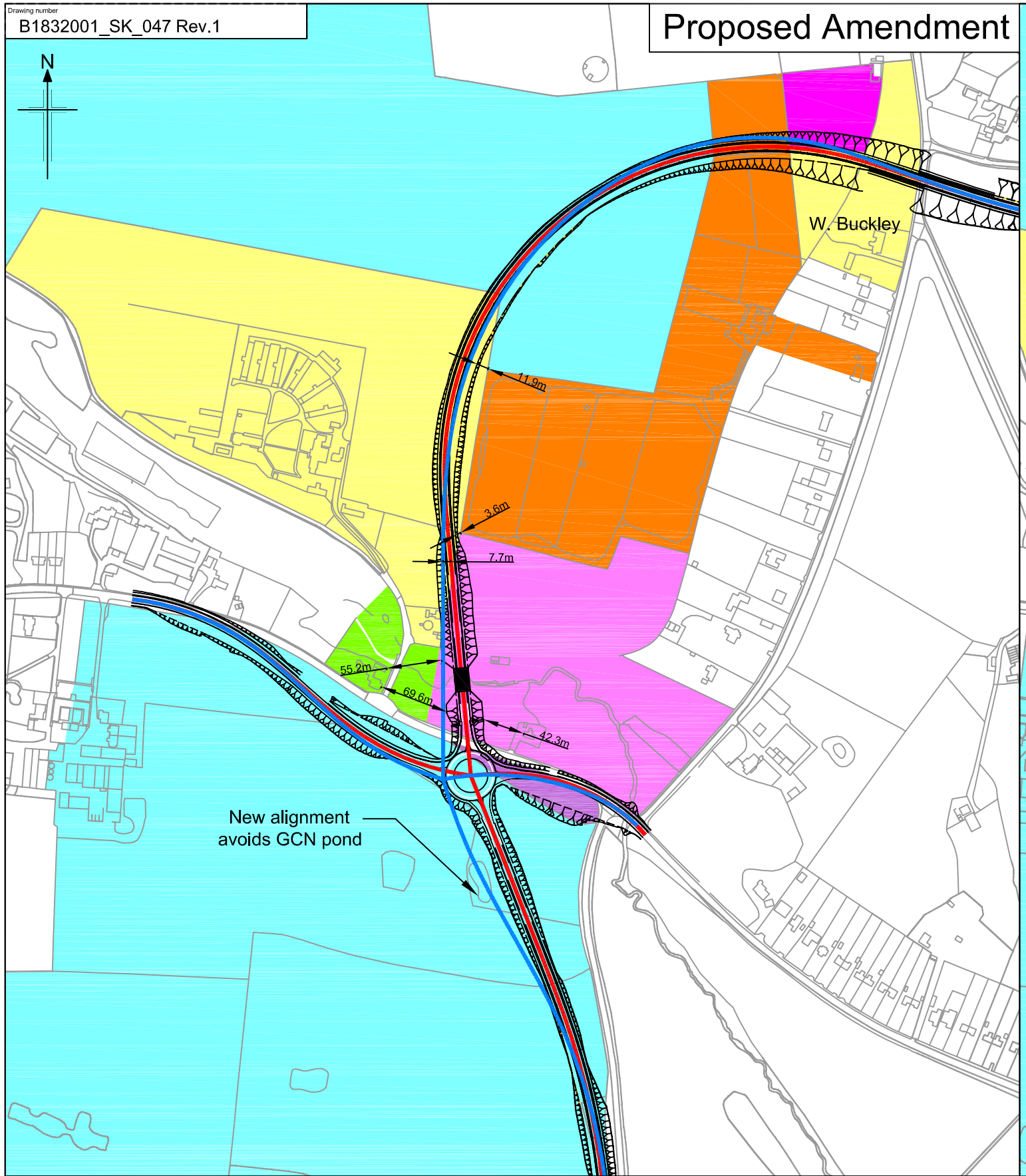
06/08/14

NOT TO SCALE

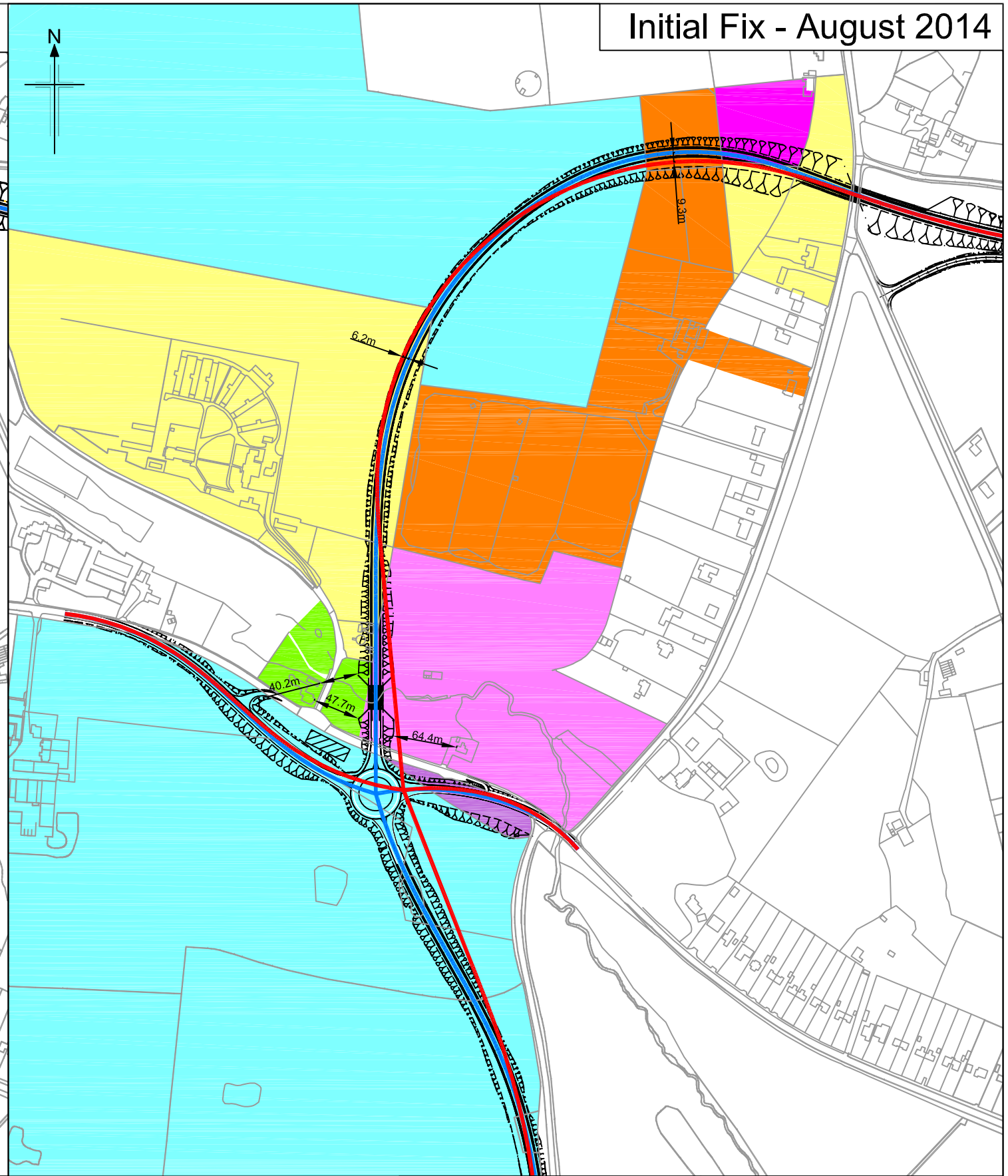
Appendix F – Holmes Chapel Junction Design Development

Drawing number
B1832001_SK_047 Rev.1

Proposed Amendment



Initial Fix - August 2014



Key:

- Proposed Amendment - Semtember 2014
- Initial Fix - August 2014
- Individual land ownership

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
1	Dec 2014	LABELS AMENDMENTS	DH	TB	TB	MD
0	Sep 2014	FOR INFORMATION	DH	TB	TB	MD

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Client: Cheshire East Council

Project: Congleton Link Road

Drawing title: JUNCTION 2 OPTIONEERING

Drawing status: For Information

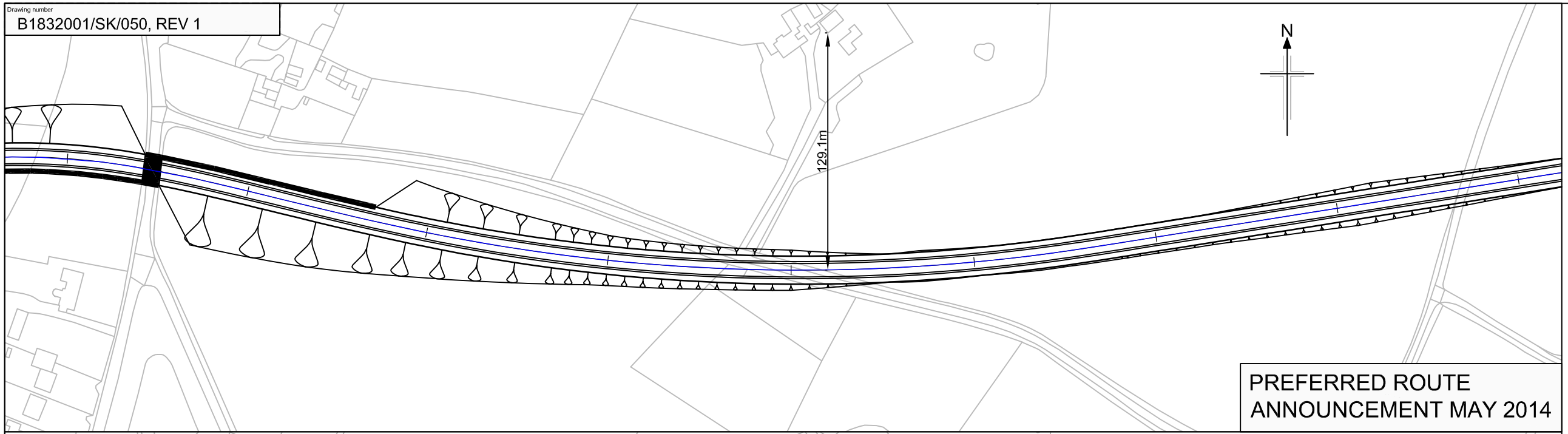
Scale	1:2500 @A3	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number: B1832001_SK_047 Rev: 1

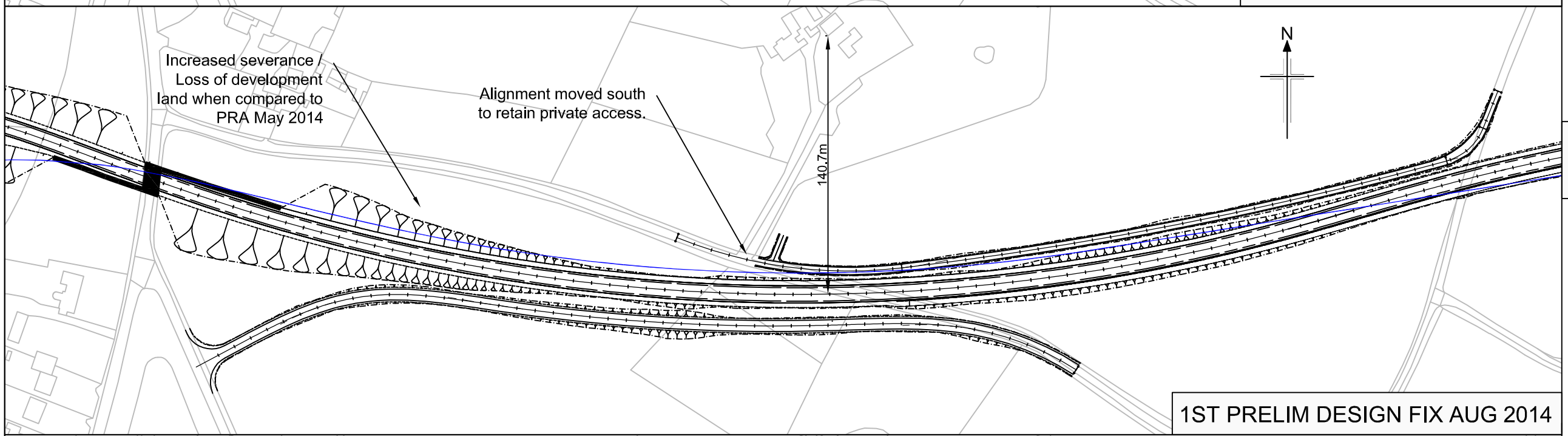
P:\Highways\Projects\B1832001 - Congleton Link Road\14 CAD\H - Highways\Sketches\B1832001_SK_47 Rev.1.dwg - 11/12/2014 15:32:53 - A3Frame - hoscild

Appendix G – Mainline 2 / Back Lane Design Development

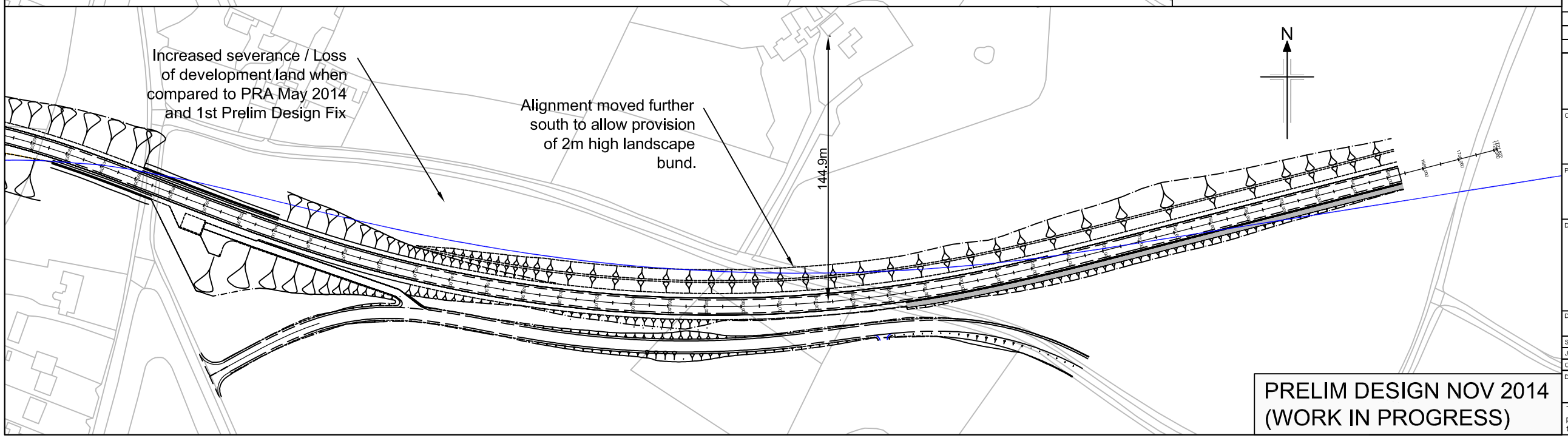
Drawing number
B1832001/SK/050, REV 1



PREFERRED ROUTE
ANNOUNCEMENT MAY 2014



1ST PRELIM DESIGN FIX AUG 2014



PRELIM DESIGN NOV 2014
(WORK IN PROGRESS)

Notes:
1. November 2014 Prelim Design is currently a work in progress, therefore subject to change.

Key:

Centreline PRA May 2014

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
0	11/12/14	LABELS UPDATE	DH	JH	JH	MD
0	12/11/14	FIRST ISSUE	TB	JH	JH	MD

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Client
Cheshire East Council

Project
CONGLETON LINK ROAD

Drawing title
MAINLINE 2
DESIGN DEVELOPMENT

Drawing status
DRAFT - FOR INFORMATION

Scale	1:2500 @A3	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number
B1832001/SK/050

Rev
1

Appendix H – Preferred Route Announcement May 2014

Drawing number
B1832001/H/WD/071 Rev 1

N

KNUTSFORD
GIANTSWOOD LANE
RIVER DANE
ST MICHAELS CHURCH
HULME WALFIELD
S/4 - GIANTSWOOD LANE OVERBRIDGE
S/3 - RIVER DANE BRIDGE
S/2 - CHELFORD ROAD OVERBRIDGE
S/6 - CHELFORD ROAD RETAINING WALL (SOUTH)
S/5 - CHELFORD ROAD RETAINING WALL (NORTH)
BACK LANE
CHELFORD ROAD
S/1 - LOACH BROOK BRIDGE
HOLMES CHAPEL
SOMERFORD
LOACH BROOK
SANDY LANE
CREWE
WALTHALL LANE
CONGLETON HIGH SCHOOL
A54 HOLMES CHAPEL ROAD
QUINTA PARK
A534 SANDBACH ROAD
PADGBURY LANE
WAGGON & HORSES ROUNDABOUT
A34 NEWCASTLE RD
A34 WEST ROAD
ASTBURY MERE
CONGLETON
RADNOR PARK TRADING ESTATE
CONGLETON BUSINESS PARK
TESCO STORE
TOWN HALL
A34 ROOD HILL
CONGLETON PARK
BIDDULPH
BUXTON
EATON HALL QUARRY
MANCHESTER
SCHOOL LANE
MANCHESTER ROAD
A34
FORMER QUARRY
EATON
MACCLESFIELD
A536 MACCLESFIELD ROAD
RIVER DANE
WESTLOW MERE

Notes:

1. The design proposed is indicative only and is subject to change through design development

Key:

- Congleton Link Road Preferred Route
- Watercourse/waterbody
- Vegetated area

0 150 300 450 600 750 m
SCALE 1 : 7500

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
1	05/08/2014	UPDATED LABELS	JH	TB	JH	TB
0	JULY 2014	FIRST ISSUE	JH	TB	TB	MD

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Client:
Cheshire East Council

Project
CONGLETON LINK ROAD

Drawing title
PREFERRED ROUTE LAYOUT PLAN

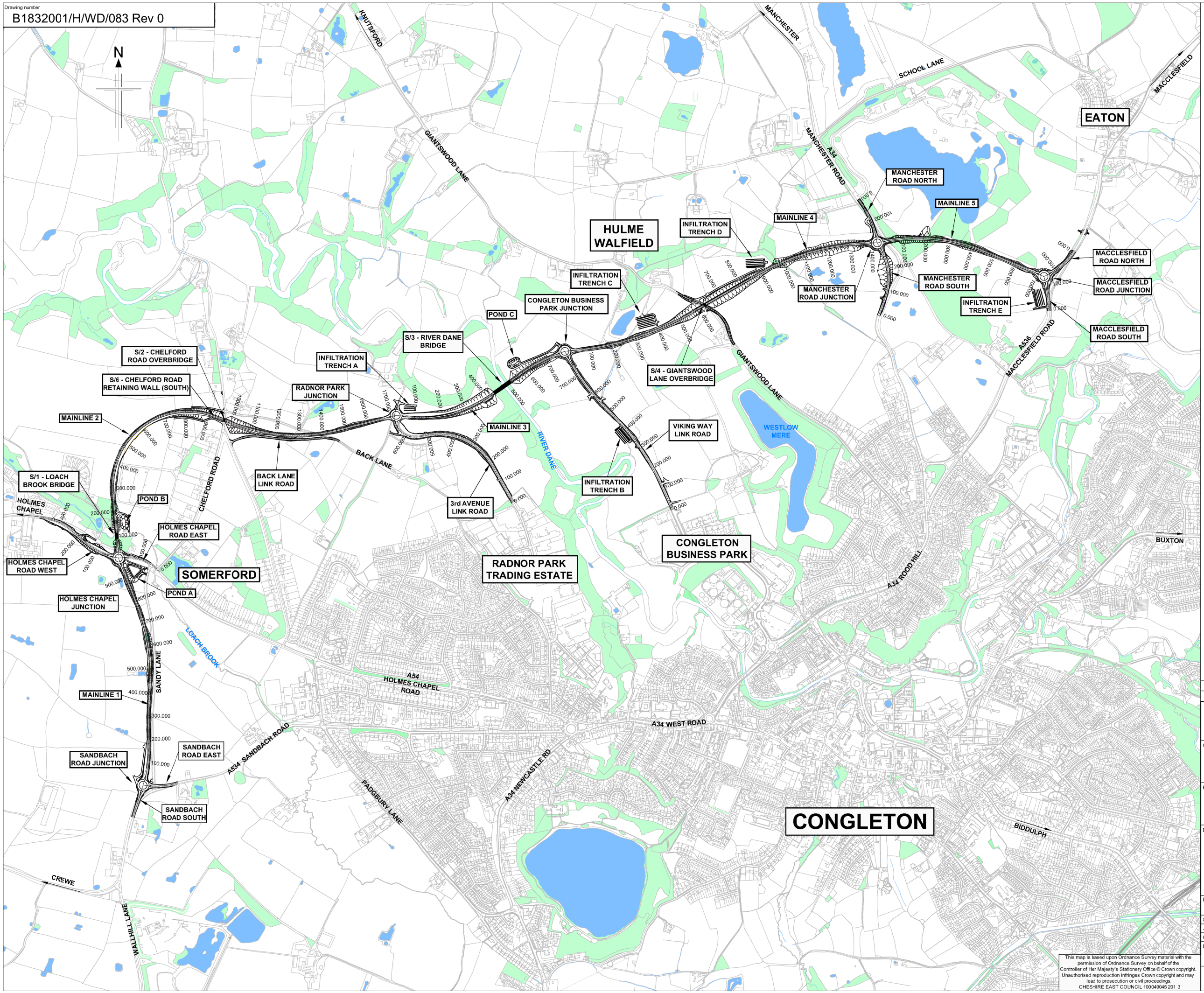
Drawing status
WORKING DRAWING

Scale	1:7500 @ A1	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		
Drawing number	B1832001/H/WD/071	Rev 1

Appendix I – Modified Preferred Route December 2014

Drawing number

B1832001/H/WD/083 Rev 0



Notes:

1. For 100 series General Arrangement drawings see B1832001_100_000 to B1832001_100_005
2. For General Arrangement Layout Plans refer to drawings B1832001/100/001, B1832001/100/002 and B1832001/100/003
3. For longitudinal sections refer to drawings B1832001/100/ 004 & 005.
4. Proposed layout based on 3rd preliminary design fix November 2014.
5. The design shown is preliminary and has been issued for the basis of more detailed engineering, environmental and cost assessments. The design is subject to change following the outcome of these assessments.
6. Ground conditions have been assumed based on information obtained from a desk study. Following the outcome of the Site Investigation, significant changes to the earthworks and drainage strategy may be required.
7. Location and size of proposed soakways or attenuation ponds are indicative only. These are subject to change following the outcome of the Site Investigation.
8. Proposed structures are indicative only.
9. Accommodation works and access tracks are indicative only. These are subject to change following further consultation with landowners and maintenance stakeholders.
10. The layout shown does not account for environmental mitigation works (e.g. bunding, planting etc). This will be included following the outcome of the more detailed environmental assessments.

Key:

- Congleton Link Road Emerging Preferred Route
- Watercourse/waterbody
- Vegetated area

0 150 300 450 600 750 m

SCALE 1 : 7500

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
3	03/12/2014	FIRST ISSUE	DH	TB	TB	MD

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Client: Cheshire East Council

Project: CONGLETON LINK ROAD

Drawing title: MODIFIED PREFERED ROUTE LAYOUT PLAN

Drawing status: PRELIMINARY

Scale	1:7500 @ A1	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number: B1832001/H/WD/083 Rev 0

Appendix J – Environmental Receptors

The plans within this Appendix have been extracted from various historic reports, and as such are associated with previous versions of the route alignment. These plans have been included to identify the location of environmental receptors referenced in Chapter 3 only (e.g. location of cultural heritage assets).

Drawing Number / Rev

B1832001/Figure 7.1

N

Legend

- Design Centreline
- 300m Study Area
- Locally Listed Building
- Grade II* Listed Building
- Grade II Listed Building
- Non-designated Cultural Heritage Asset

0 100 200 300 400 500 m

SCALE 1:15,000

Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
0	JUN 14	First Issue	AD	RM	JD	AS

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Client: Cheshire East Council

Project: CONGLETON LINK ROAD

Drawing title: ARCHAEOLOGICAL REMAINS AND HISTORIC BUILDINGS

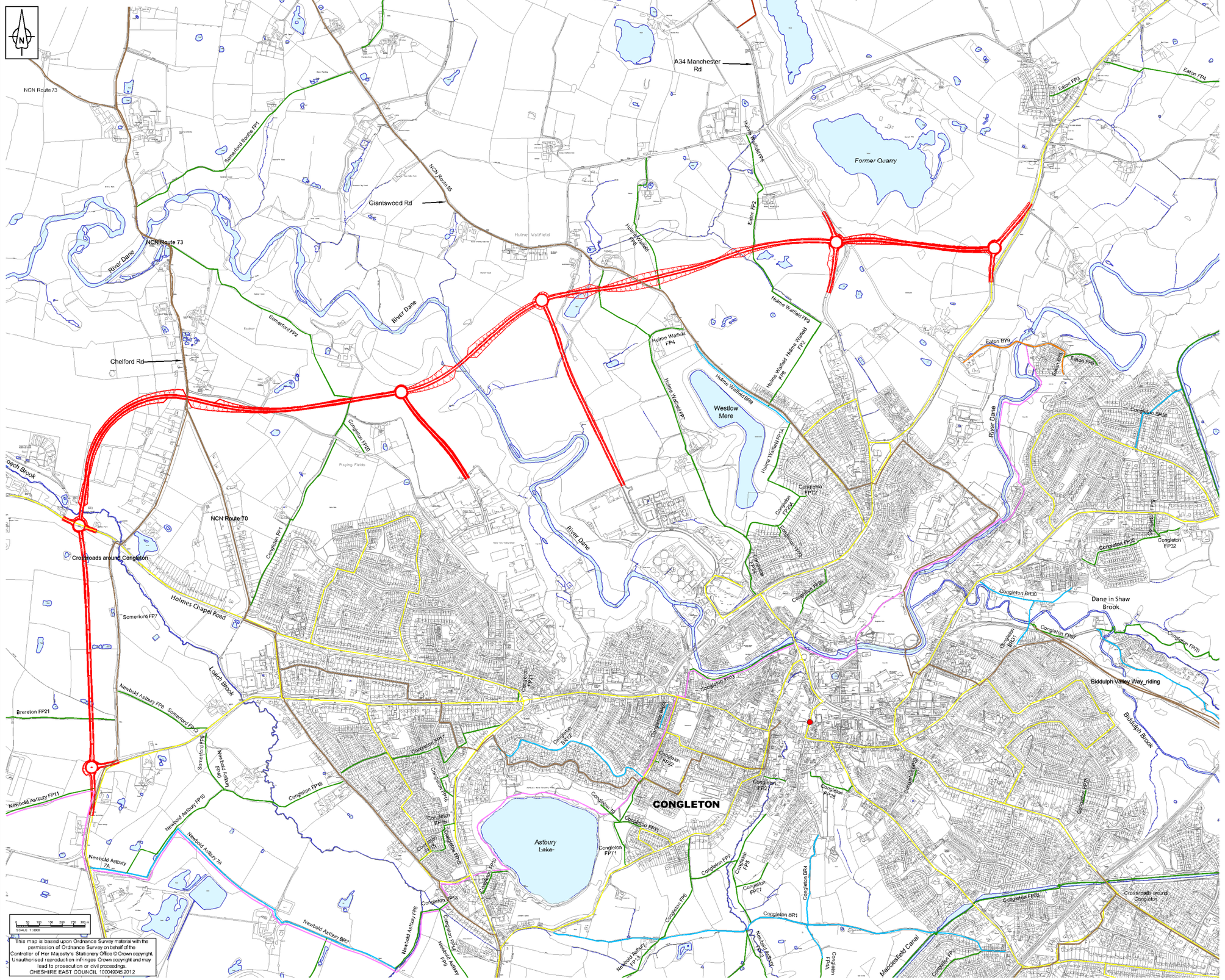
Drawing status

Scale	1:15,000 @ A3	DO NOT SCALE
Jacobs no.	B1832001	
Client no.		
Drawing number	B1832001/Figure 7.1	Rev 0

P:\B1500000\B1832001 - ah1112 - Congleton LR\5 Environment\GIS\Output\ScopingReport\B1832001_Figure_07_01.mxd

Drawing number / Rev

B1832001/Figure 13.1



Legend

- Preferred Route
- Cycle Routes
- Restricted Byways
- Public Footpaths
- Public Bridleways
- Byways Open to all Traffic
- Bus Routes
- Dane Valley Way Long Distance Footpath
- Bus Station

LOCATION PLAN
(1:200,000)

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Revd	Apprv'd
0	24-06-14	First Issue	CS	JH	SW	SB

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Client: Cheshire East Council

Project: CONGLETON LINK ROAD

Drawing title: FIGURE 13.1
EFFECTS ON ALL TRAVELLERS

Drawing status		
Scale	1:8000 @ A1	DO NOT SCALE
Jacobs No.	-	
Client no.		
Drawing number	B1832001/Figure 13.1	Rev 0

P:\ENVIRONMENT\PROJECTS\B1832001 - CONGLETON LINK ROAD\04 WORKING FOLDER\02 DRAWINGS\CIVIL 3D\MAPS\EI SCOPING\B1832001 EIA FIGURE 13-1 AFFECTS ON ALL TRAVELLERS.DWG

Drawing number / Rev

B1832001/Figure 13.3

Giantswood Lane To Manchester Road

Former Quarry

Congleton Business Park Extension

Back Lane And Radnor Park

Manchester Road to Macclesfield Road

Holme Wolfield

River Dane

Westlow Mere

Loach Brook

Playing Fields

Astbury Lake

Biddulph Brook

Macclesfield Canal

4399 4102 4398 2533 2409 2408 4397 4360 4401 2831 2538 2534 2539 4400 4402 4403 2540 2754 2535 2521 4241 2841 2501 2317 2320 2804 2542 2825 2838 2498 2827 2548 2387 2840 2306 2318 2354 2549 3554 3770 2536 2537 3942 2361 2541 2319 2369 243 2832 2316 2395 2544 2551 2543 2545 2396 2357 2397 2312 2798 2546 2509 2370 4243 2812 2322 2321 2406 2308 4179 2547 2799 4178 2862 2819 2852 3860

0 100 200 300 400 500 m

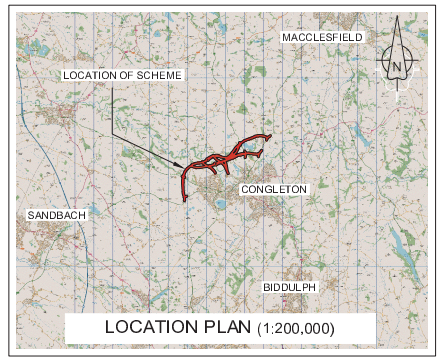
SCALE 1 : 8000

Legend

- Red Option Design Fix 2.1 October 2013
- Purple Option Design Fix 2.1 October 2013
- Green Option Design Fix 2.1 October 2013
- Blue Option Design Fix 2 September 2013
- All Options
- Principle Water Features (With flow direction for Main Rivers)
- General Waterways

Deliverability

- Strategic Sites
- Deliverable
- Developable
- Not Currently Developable



LOCATION PLAN (1:200,000)

Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Appr'd
0	16-09-13	First Issue	CS	AS	SB	SW

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Client: Cheshire East Council

Project: CONGLETON LINK ROAD

Drawing title: PRIVATE AND COMMUNITY ASSETS DEVELOPMENT LAND

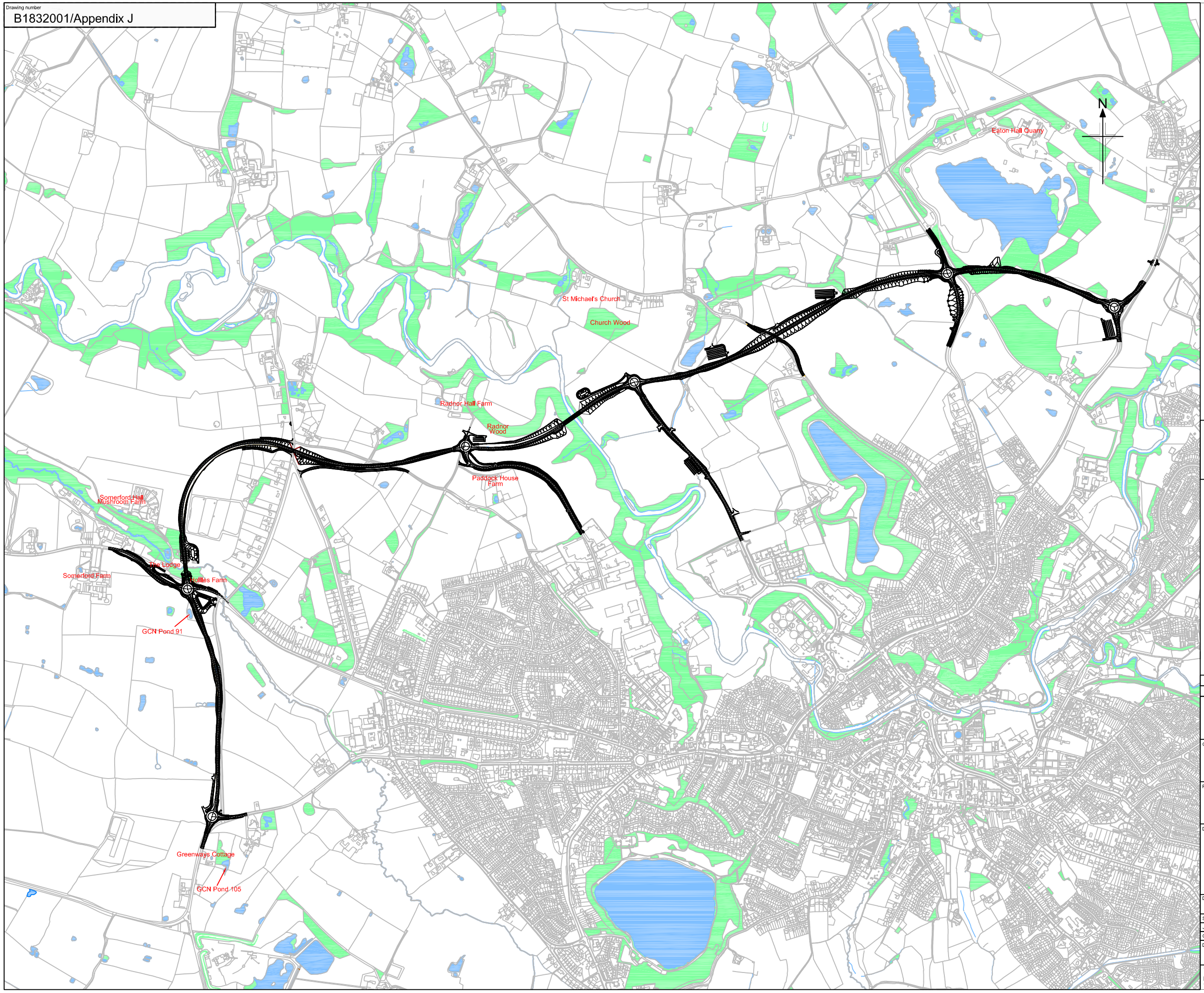
Drawing status:

Scale	1:8000 @ A1	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number: B1832001/Figure 13.3 Rev 0

P:\ENVIRONMENT\PROJECTS\B1832001 - CONGLETON LINK ROAD\04 WORKING FOLDER\02 DRAWINGS\CIVIL 3D\MAPS\B832001_FIGURE 13-3 REV 0 PRIVATE AND COMMUNITY ASSETS DEVELOPMENT LAND 131011.DWG

Drawing number
B1832001/Appendix J



Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	Apprv'd
0	DEC 14	FIRST ISSUE	TB			

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Client
Cheshire East Council

Project
CONGLETON LINK ROAD

Drawing title
MODIFIED PREFERRED ROUTE COMPARATIVE OPTION REPORT

ENVIRONMENTAL RECEPTORS

Drawing status
DRAFT - FOR INFORMATION

Scale	1:7500 @A1	DO NOT SCALE
Jacobs No.	B1832001	
Client no.		

Drawing number
B1832001/Appendix J

Rev
0