Appendix E

TRAFFIC ASSESSMENT

Cullompton Town Centre Relief Road

Traffic Modelling Report
September 2018

Devon County Council County Hall Topsham Road Exeter Devon EX2 4QD	

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CONTENTS

1. INTRODUCTION

1.1. Background

1.1.1. Traffic congestion within Cullompton has been a long-term issue resulting in poor air quality, constraints on development and associated restrictions on the future economic growth of the area. There is a single arterial route for vehicular traffic running north/south through the centre of the town, where carriageway width is less than 6.5m in places with typically narrow footways. The Tiverton Road/High Street junction is particularly narrow and it is difficult to turn right into the side road.

1.1.2. A high proportion of the working population in Cullompton and the surrounding area commute to work via the M5 motorway, accessing and egressing the M5 at Junction 28 either heading south towards Exeter and beyond or northwards towards Taunton.

1.1.3. In the morning peak traffic queues back from the motorway junction along Station Road and onto the High Street and Higher Street sections south and north of Station Road respectively. In the evening peak there are queues back from the signalised junction of High Street/Higher Street/Station Road that extend back onto the Junction 28 northbound off-slip.

1.1.4. A Relief Road east of the Town Centre has been included within the Local Plan since 2013, and before that in the Allocation and Infrastructure Development Plan Document in 2011, to divert north-south traffic away from Fore Street and through the town centre. Such a relief road would reduce queuing on both the local and national road networks with consequent improvements to air quality, whilst also permitting sustainable growth of the town.

1.2. Purpose of this Report

1.2.1. The purpose of this report is to summarise the methodology carried out to create the traffic model and report the outputs of each of the different options.

1.2.2. This report is intended to support the public consultation and should be read in conjunction with the Route Options Report.

1.2.3. Following the public consultation, the model will be updated to reflect the modelling results of the preferred route(s) to be taken forward.

1.3. Study Area

1.3.1. The Study Area is shown in Appendix 1, extracted from the Local Plan.

1.4. Structure of this Report

1.4.1. This report is structured as follows:

- Section 2 – provides an overview of the forecast modelling approach
- Section 3 – summarises the outputs of the traffic modelling

2. Model Overview

2.1. Introduction

2.1.1. In order to better understand the traffic issues in Cullompton, traffic surveys were carried out in 2012. These consisted of two roadside interview sites and a series of traffic counts, with the count data subsequently updated in 2016 following the signalisation of the southbound off-slip at Junction 28.

2.1.2. Devon County Council subsequently developed a SATURN traffic model of Cullompton which was built to assess the impact of the development proposed in the adopted Local Plan. This is a very simple model of the town but gives a good high-level assessment of different alignment options for the Town Centre Relief Road. The detailed data collection provides a good level of certainty that the model is able to accurately reflect the current traffic patterns in Cullompton and forms a good basis for predicting the future situation.

2.1.3. The model included all the development in the adopted Local Plan as well as the new link road through the North-West (NW) Cullompton development, linking the B3181 in the north to Tiverton Road in the West.

2.1.4. The existing model includes an assessment of a neutral weekday for the AM (08:00 – 09:00) and PM (17:00 – 18:00) peak hours.

2.2. Network

2.2.1. The existing model included a high level of detail to the west of the M5, but given the Local Plan Review proposes development to the east of the M5, the model was expanded to the east along Honiton Road, with indicative roads added to allow the development to be loaded onto the network.

2.2.2. The existing model included the J28 roundabout improvements carried out in 2013 as well as the signalising of the southbound off-slip in 2016. The model was updated to include the lengthening of the Honiton Road approach to the eastern signalised junction at Junction 28 which was completed in 2018.

2.3. Forecast Demand

2.3.1. Since the Mid Devon Local Plan was adopted in 2011, the level of development at some of the proposed sites has changed. Some of these have already been completed but none were occupied when the base model was made in 2012. In addition to this, Mid Devon District Council (MDDC) are proposing some development to the east of the M5 known as the Culm Garden Village in the emerging Local Plan.

2.3.2. To see how much traffic can be accommodated on the current network and how much will be unlocked by the Town Centre Relief Road, two different development scenarios were created and run through the traffic model. These are shown in Table 1 below.

Site	Development 1		Development 2	
	Dwellings	Employment (m²)	Dwellings	Employment (m²)
Venn Farm		12,000		12,000
Cummings Nursery	100		100	
Court Farm	76		76	
Exeter Road	45		45	
Padbrook	14		14	
Colebrook[1]	100		100	
Knowle Lane[2]	334		334	
Week Farm		15,000		15,000
NW Cullompton	**600**		**1350**	
Culm Garden Village[3]			**500**	

Table 1: Model Development Scenarios

2.3.3. To take account of other development outside of Cullompton which would impact on the network such as Willand, a background growth factor was applied to the trips entering the model from outside Cullompton.

[1] This is only a contingency site but has been included to model a worst-case scenario. These have not yet been built

[2] 74 of these have yet to be built

[3] This is the first phase of the development which is likely to be unlocked by the Relief Road. Additional development on this site is likely to require a strategic intervention to mitigate the impacts.

3. Model Outputs

3.1. Network Scenarios

3.1.1. Three different possible alignments are proposed as part of the public consultation and more information on these can be found in the Route Options Report. These are shown in Appendix 2 of this report and include:

- Option A – connecting Duke Street to Station Road through the middle of the Cullompton Community Association (CCA) fields;
- Option B – also connecting Duke Street to Station Road alongside the railway line to the eastern side of the CCA fields;
- Option C – crosses the railway line and motorway and connects Duke Street to Honiton Road

3.2. Issues

3.2.1. The three main traffic issues being addressed by the scheme are:

- AM queuing along Station Road eastbound
- PM queuing along Station Road westbound and extending back onto the M5 mainline
- Traffic flows through the Town Centre

3.2.2. Each scenario was assessed against each of the issues and is summarised below.

3.3. AM Station Road Queuing

3.3.1. In the AM peak, traffic joining the roundabout at Junction 28 is held up by circulatory traffic turning right to the services, M5 north and Honiton Road. This causes a queue along Station Road and often into the High Street and through the Air Quality Management Area (AQMA). It was suggested that the queue was a result of the signalised eastern junction, but onsite observations revealed that the queue from the signals extends back into the roundabout only once in every 10 cycles.

3.3.2. Devon County Council believed that this queue was becoming a major issue so recommended that MDDC refused any additional development within the Cullompton area until improvements were made as previously identified in the adopted Local Plan. This decision was appealed by a development site in Willand and the inspector concluded that whilst there is a queue along Station Road in the morning peak, '*this is not significant delay*.'

3.3.3. The decision by the inspector is seen as helpful in allowing a proportion of the adopted Local Plan development in Cullompton to come forward. However, it only delays the inevitable of the need to address the lack of capacity at M5 Junction 28 and its approach roads. Following discussions with MDDC and recognising the level of current planning applications it was suggested that 600 dwellings should be allowed to progress through the system while monitoring traffic conditions.

3.3.4. Once the 600 dwellings at NW Cullompton have been occupied the queue in the AM peak will extend back to Tiverton Road in the High Street and there is also a queue on Millennium Way. DCC believe this to be the limit of acceptable queuing and would

recommend that MDDC do not allow any further development until improvements are implemented to mitigate the queuing impacts.

3.3.5. Building the Town Centre Relief Road provides an alternative route for traffic to reach the motorway. This helps spread out the queue onto routes outside of the AQMA. Once the Development 2 sites have come forward (1350 dwellings at NW Cullompton and 500 at Culm Garden Village), the queue in the AM peak is once again back to the High Street so this is considered the limit of development that can come forward without a significant intervention.

3.3.6. Options A and B have the same traffic impact on the local highway network, but Option C distributes the traffic to both sides of Junction 28 and therefore provides more resilience to incidents and accidents as well as allowing some traffic to avoid the congested Junction 28 roundabout completely.

3.4. PM Northbound Off-Slip Queuing

3.4.1. In the PM peak, the flow of traffic through the High Street is slowed down by 'friction' of pedestrians, parked vehicles, unloading lorries and right turning traffic. This results in a queue extending back from the High Street, along Station Road and into Junction 28. This starts queuing down the M5 Junction 28 northbound off-slip and if this was to regularly extend back onto the mainline, this would be a significant safety issue.

3.4.2. Once the first 600 dwellings at NW Cullompton have been occupied, the queue in the PM peak is expected to extend onto the slip road on an average day. On the basis of this, it is considered that allowing any more development would increase the chances of the queue extending back onto the mainline to an unacceptable level. Therefore, DCC recommend that no further development is allowed to come forward until this issue has been addressed.

3.4.3. Constructing the relief road provides a route from the M5 into Cullompton that will be unobstructed from congestion in the High Street so reduces the chance of the queue extending back into Junction 28 and onto the mainline.

3.4.4. Once the Development 2 sites have been fully built out, the roundabout at Junction 28 approaches capacity and the chance of the queue extending onto the M5 increases again. The traffic lights at the eastern side of Junction 28 can be adjusted to hold the traffic on the Honiton Road approach to allow more traffic off the northbound off-slip to enter the roundabout. However, if this is adjusted too much, it will cause a large queue on Honiton Road and this will have implications for traffic exiting Kingsmill Industrial Estate.

3.4.5. As with the AM peak queuing, options A and B have the same level of mitigation on the High Street by providing an alternative route to and from Junction 28. Option C allows the traffic to choose to travel on the other side of the motorway and this helps distribute traffic more across the network, providing slightly more benefits to Junction 28.

3.5. Town Centre Traffic Flows

3.5.1. Cullompton Town Centre is a designated Conservation Area and Air Quality Management Area. The High Street has narrow pavements and roads between the shops and this is affecting businesses in the area. If traffic could be removed from the

High Street, then options for changing the layout of the town centre could be investigated.

3.5.2. Options A and B run parallel to the High Street so provide a direct alternative route and remove approximately 40% of the traffic out of the High Street once Development 2 sites have been completed. Option C is a longer route and is predicted to remove 30% of the peak hour traffic out of the High Street.

3.6. Conclusion

3.6.1. In summary, 600 dwellings at NW Cullompton, along with 100 dwellings at Colebrook and the remaining 74 dwellings at Knowle Lane can come forward without the Relief Road based on the inspector's decision. Once this level has been reached, mitigation of the queuing will be required. Devon County Council would prefer the road to be completed earlier in the development phasing and is hopeful that the road will be completed prior to the full build out of these developments.

3.6.2. All three alignments of the Relief Road would allow the remaining 750 dwellings at NW Cullompton to come forward along with the first 500 dwellings to the east of the M5 at Culm Garden Village. After this, a strategic intervention would be required to unlock the remaining dwellings at the Garden Village site.

3.6.3. Options A and B are likely to remove more traffic from the High Street but Option C is likely to offer more relief to Junction 28.

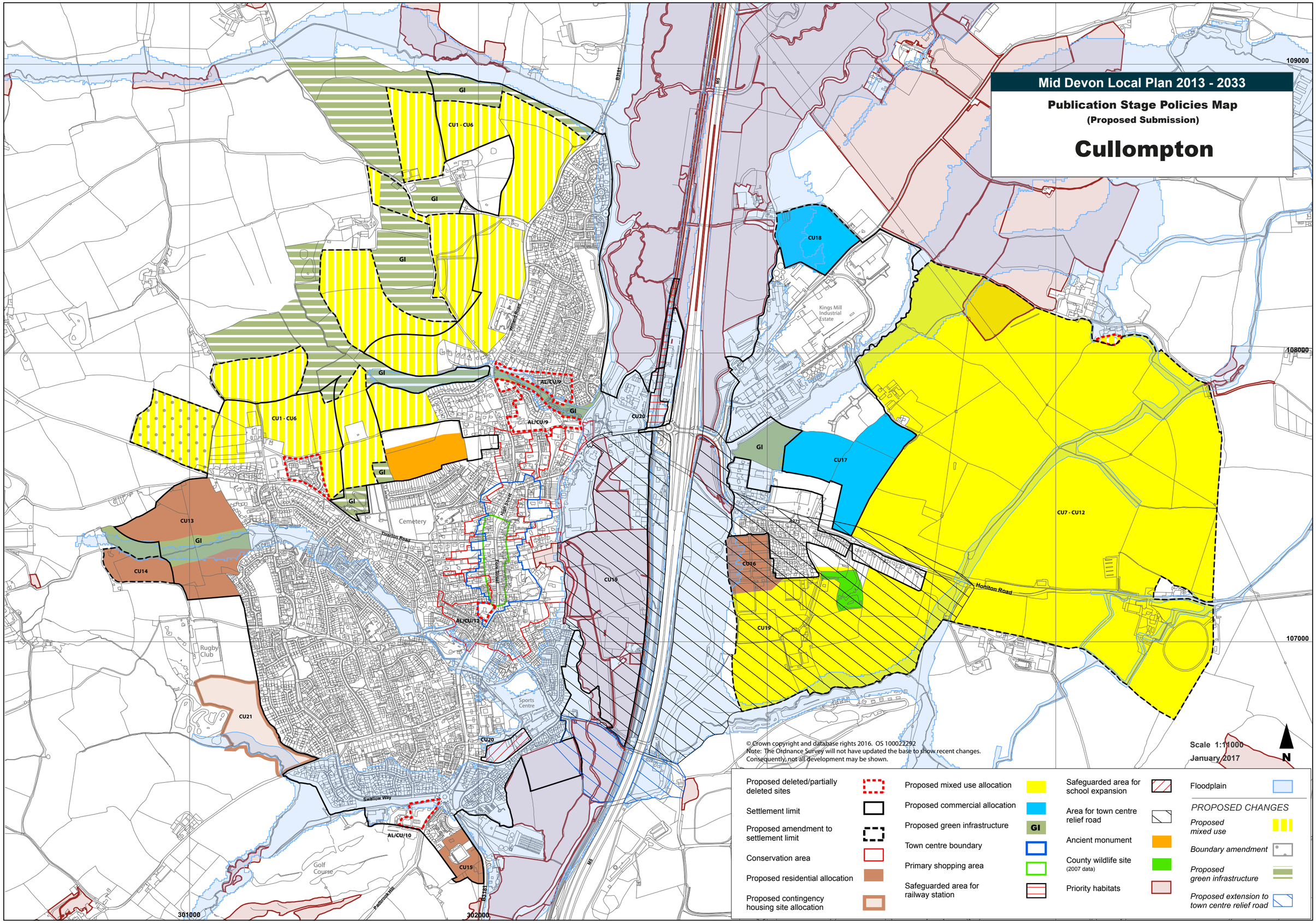
4. Appendices

4.1. Appendix 1: Cullompton Development Plan

Mid Devon Local Plan 2013 - 2033

Publication Stage Policies Map
(Proposed Submission)

Cullompton



Scale 1:11000
January 2017

N

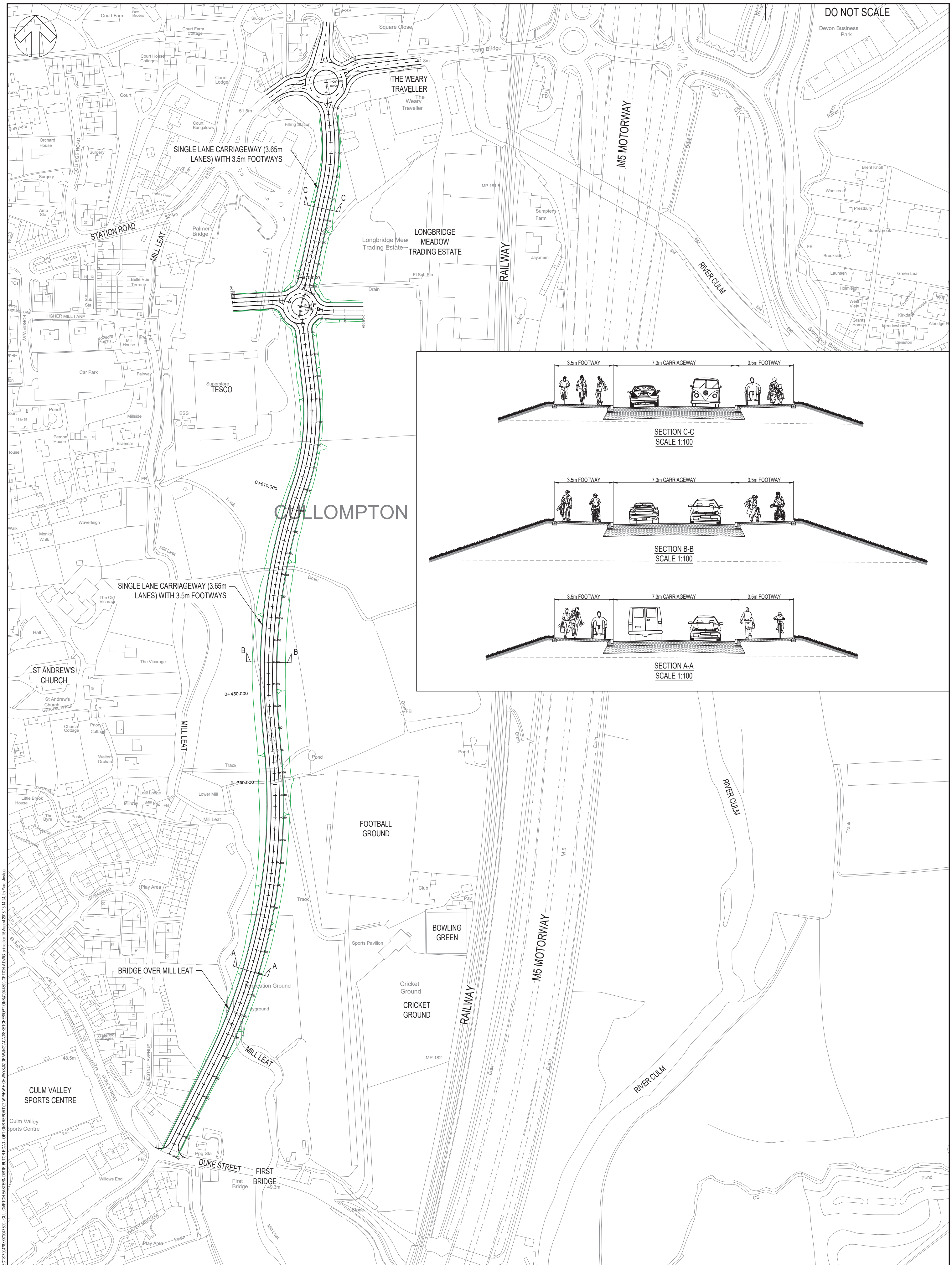
- Proposed deleted/partially deleted sites
- Settlement limit
- Proposed amendment to settlement limit
- Conservation area
- Proposed residential allocation
- Proposed contingency housing site allocation
- Proposed mixed use allocation
- Proposed commercial allocation
- Proposed green infrastructure
- Town centre boundary
- Primary shopping area
- Safeguarded area for railway station
- Safeguarded area for school expansion
- Area for town centre relief road
- Ancient monument
- County wildlife site (2007 data)
- Priority habitats
- Floodplain

PROPOSED CHANGES

- *Proposed mixed use*
- *Boundary amendment*
- *Proposed green infrastructure*
- *Proposed extension to town centre relief road*

4.2. Appendix 2: Town Centre Relief Road Options

DO NOT SCALE



REV	DATE	BY	DESCRIPTION	CHK	APP
P01	13/08/18	JY	FIRST ISSUE	AMR	TO

DRAWING STATUS: FOR INFORMATION

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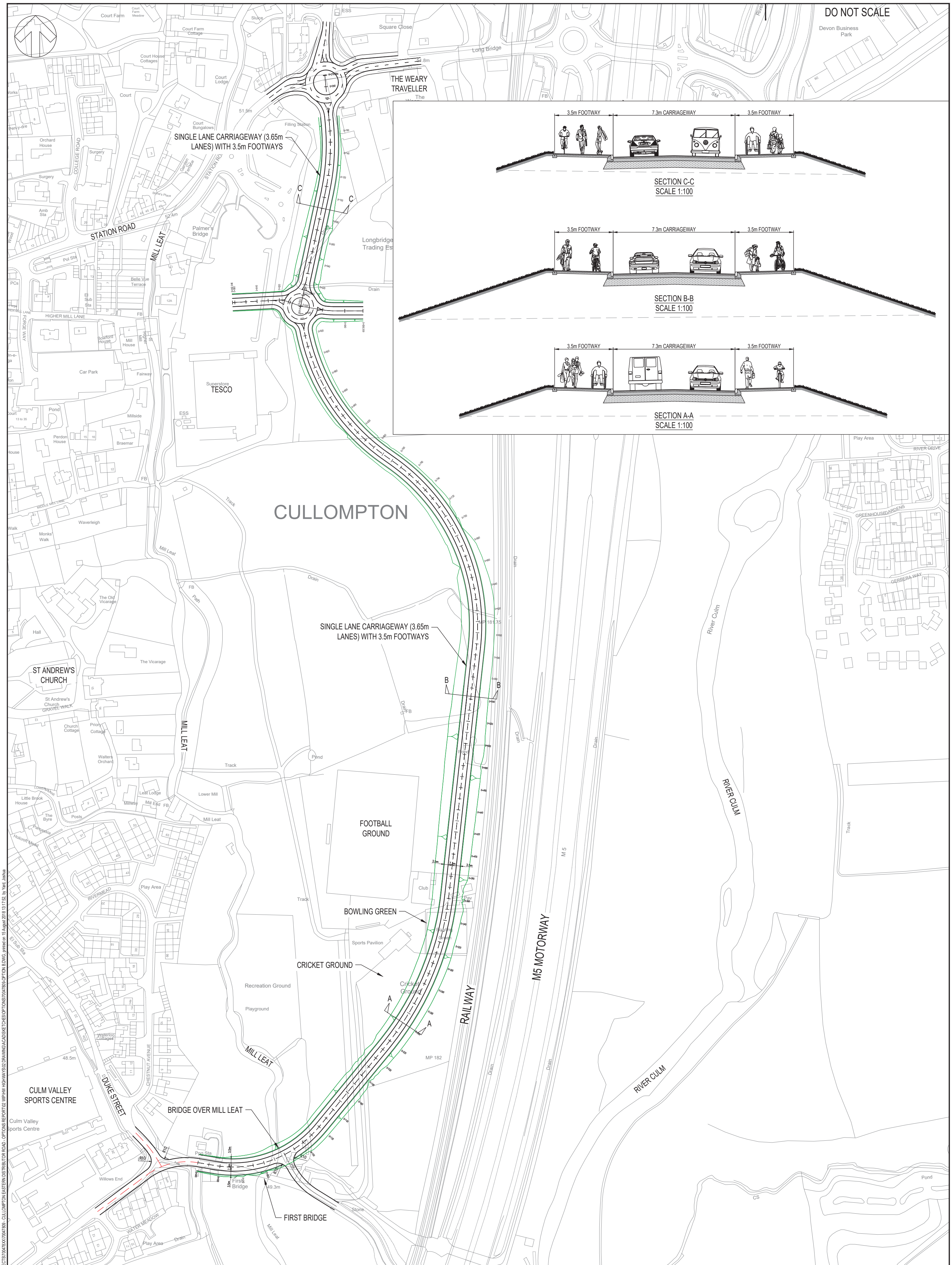
CLIENT: Devon County Council / Mid Devon District Council

PROJECT: CULLOMPTON TOWN CENTRE RELIEF ROAD - ROUTE OPTIONS REPORT

TITLE: OPTION A - LAYOUT PLAN

SCALE @ A1:	CHECKED:		APPROVED:
1:1500	AMR		TO
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70047809	AMR	OJ	26/06/18

DRAWING No: 70047809-OPTION A — REV: P01



P01	13/08/18	JY	FIRST ISSUE	AMR / TO
REV	DATE	BY	DESCRIPTION	CHK / APP

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CLIENT: Devon County Council; Mid Devon District Council

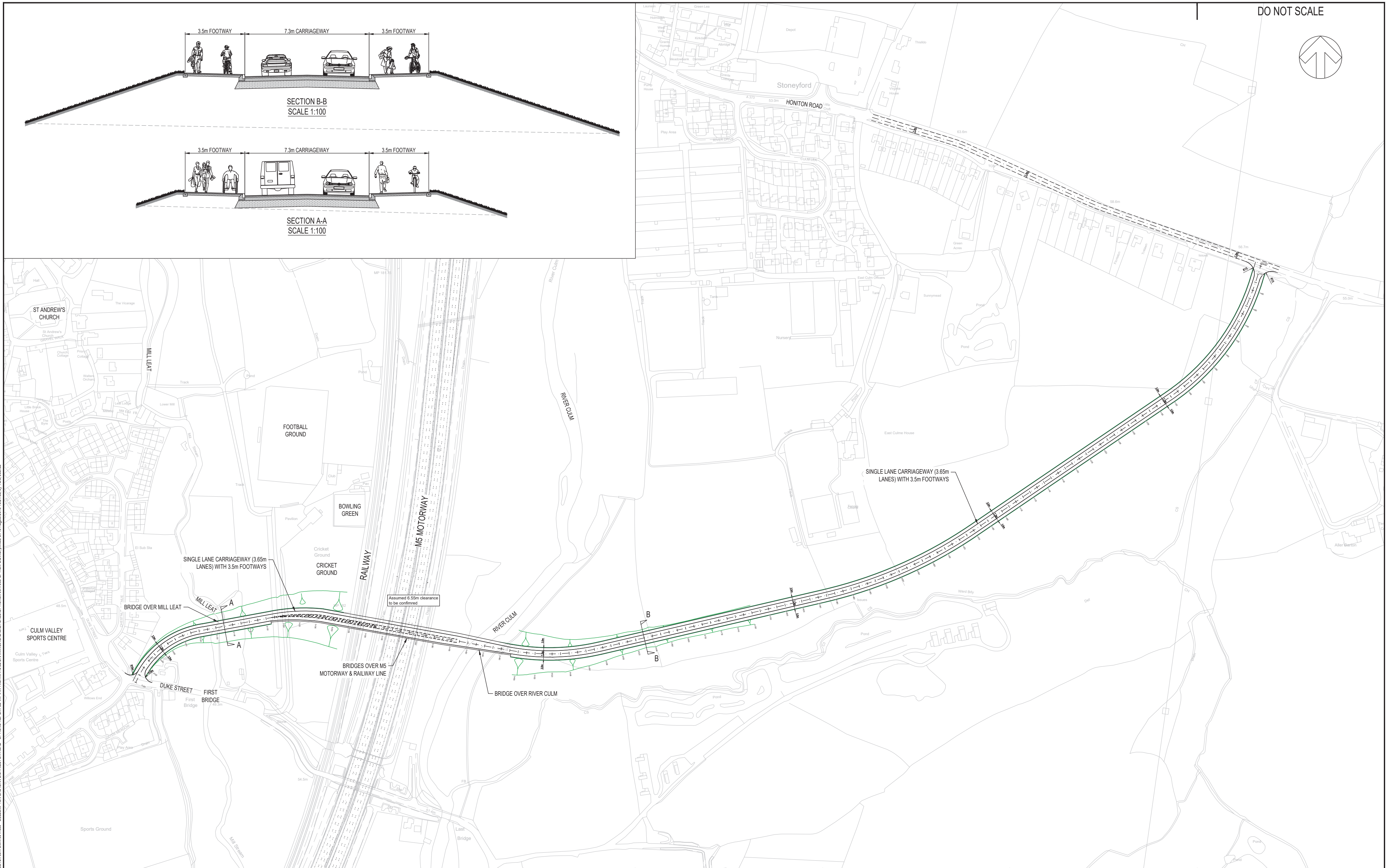
PROJECT: CULLOMPTON TOWN CENTRE RELIEF ROAD - ROUTE OPTIONS REPORT

TITLE: OPTION B - LAYOUT PLAN

SCALE @ A1:	CHECKED:	APPROVED:
1:1500	AMR	TO

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70047809	AMR	OJ	26/06/18

DRAWING No:	REV:
70047809-OPTION B	P01



REV	DATE	BY	DESCRIPTION	CHK	APP
P01	13/08/18	JY	FIRST ISSUE	AMR	TO

DRAWING STATUS: S0 - WORK IN PROGRESS

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PROJECT: CULLOMPTON TOWN CENTRE RELIEF ROAD - ROUTE OPTIONS REPORT

TITLE: OPTION C - LAYOUT PLAN

SCALE @ A1:	CHECKED:		APPROVED:
1:2000	AMR		TO
PROJECT No: 70047809	DESIGNED: AMR	DRAWN: OJ	DATE: August 18

DRAWING No: 70047809-OPTION C — REV: P01