



**SNC • LAVALIN**

# A350 Chippenham Bypass Improvements

Options Assessment Report

Wiltshire Council

01 April 2019



# Notice

This document and its contents have been prepared and are intended solely as information for Wiltshire Council and use in relation to assessing options proposed for the A350 Chippenham Bypass OBC.

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This document has 43 pages including the cover.

## Document history

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## Client signoff

Client	Wiltshire Council
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# 1. Introduction

- 1.1. This Options Assessment Report has been produced to support the creation of an Outline Business Case for the A350 Chippenham Bypass Improvements (Phases 4 & 5) scheme. The scheme is proposed by Wiltshire Council and is seen as a priority investment for the Western Gateway Sub-national Transport Body to begin construction in 2020.

## The Major Road Network

- 1.2. On 23 December 2017, the Government<sup>1</sup> launched a consultation setting out proposals for the creation of a Major Road Network (MRN) with the intention that it formed a middle tier of the country's busiest and most economically important local authority 'A' roads, sitting between the Strategic Road Network (SRN) and the rest of the local road network. Schemes to improve the MRN would be delivered through setting up two specific funding streams: the MRN fund where the DfT's contribution will normally be between £20 million and £50 million, although the lower threshold will not be applied rigidly; and the Large Local Major (LLM) fund for those schemes requiring more than £50m of DfT contribution. In each case, the local promoter will be expected to provide a minimum 15% contribution to delivering each scheme.
- 1.3. Five central objectives were established for the MRN which were linked to the Department for Transport's (DfT) 2017 Transport Investment Strategy<sup>2</sup>:
- Reduce congestion
  - Support economic growth and rebalancing
  - Support housing delivery
  - Support all road users
  - Support the SRN
- 1.4. Consultation on the proposals for the creation of a Major Road Network ran for 12 weeks until March 2018. Following this consultation, the DfT produced Investment Planning Guidance for the Major Road Network and Large Local Majors Programmes<sup>3</sup>.
- 1.5. The guidance sets out the criteria for schemes which are to be included in requests for funding, including:
- Bypasses or realignments which alleviate congestion
  - New roads that link existing stretches of the MRN or SRN
  - Widening of existing MRN roads where there are congestion points or safety risks
  - Major structural renewals
  - Traffic management and smart technology
  - Packages of improvements
- 1.6. MRN funding will initially cover investment for the period April 2020 to March 2025.

## Sub-national Transport Bodies

- 1.7. In 2016 the Government passed legislation through the Cities and Local Government Act 2016 to enable the creation of Sub-national Transport Bodies (STBs). The formation of the STBs was intended to empower neighbouring local authorities to create regional oversight on strategic transport planning. As single entities, the STBs can identify and implement schemes and strategies which will have a positive impact on key routes of regional importance.

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<sup>1</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/670527/major-road-network-consultation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670527/major-road-network-consultation.pdf)

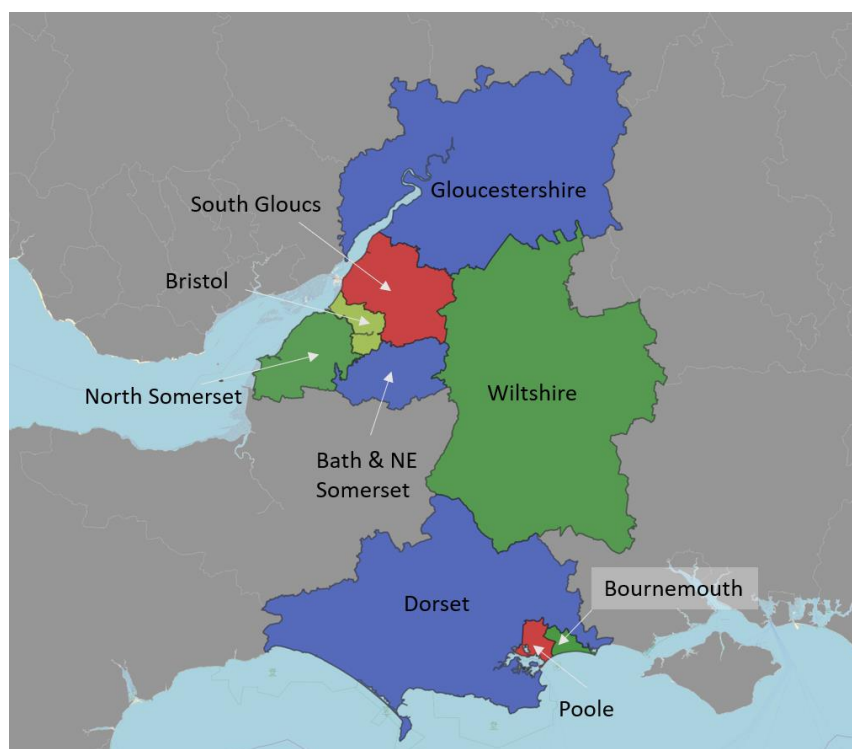
<sup>2</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/624990/transport-investment-strategy-web.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/624990/transport-investment-strategy-web.pdf)

<sup>3</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/765680/mrn-investment-planning-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765680/mrn-investment-planning-guidance.pdf)

1.8. The Western Gateway STB has ten member authorities listed below and shown in Figure 1-1:

- Bath and North East Somerset
- Bristol
- Poole
- Bournemouth
- Dorset
- Gloucestershire
- North Somerset
- South Gloucestershire
- Wiltshire
- West of England Combined Authority

**Figure 1-1 – Western Gateway STB**



1.9. In February 2019, the Western Gateway STB produced their Strategy Context Document which would feed into a Regional Evidence Base (REB) as required by the MRN guidance. The Western Gateway STB see transport as a key function in enabling economic growth by supporting key employment to thrive. The role of transport is two-fold: ensure there is sufficient capacity in the transport network to enable employees to get to work; and that goods can be transported to facilitate supply chains using good quality reliable strategic networks.

1.10. The role of the Western Gateway STB is to produce a long-term Strategic Transport Plan which will focus on sub-national connectivity and strategic travel corridors only. The strategy is intended to compliment local transport strategies to enable the delivery of shared objectives.

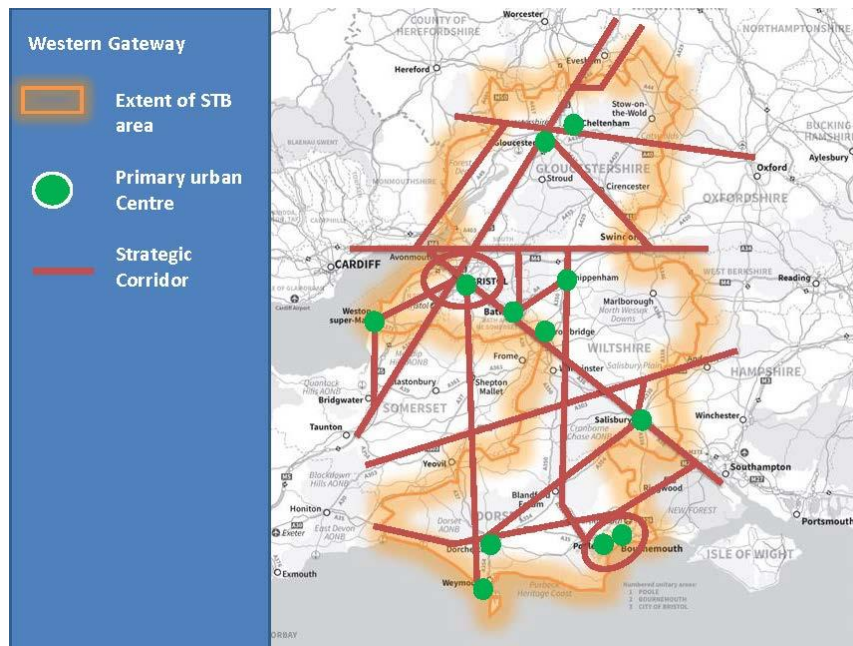
1.11. The emerging objectives for the Western Gateway STB Transport Strategy include:

- Improve strategic linkages to drive productivity growth, achieve greater integration between digital and innovation clusters (as identified in the Science and Innovation Audits) and facilitate the creation of new high-value jobs.

- Identify and address transport-related barriers to the effective operation of labour markets which is constraining the potential for business growth, particularly in the West of England and South East Dorset.
- Support the development of low carbon solutions to strategic connectivity to help reduce transport's impact on the local environment.
- Establish a whole corridor approach to traffic management on strategic corridors to improve reliability, safety and resilience.
- Address the poor connectivity of north-south links, particularly to and from the south coast ports, to help support planned development, drive business growth and improve access to international markets.
- Deliver key transport infrastructure that supports sustainable place-shaping by facilitating the delivery of significant land for new homes and employment opportunities.

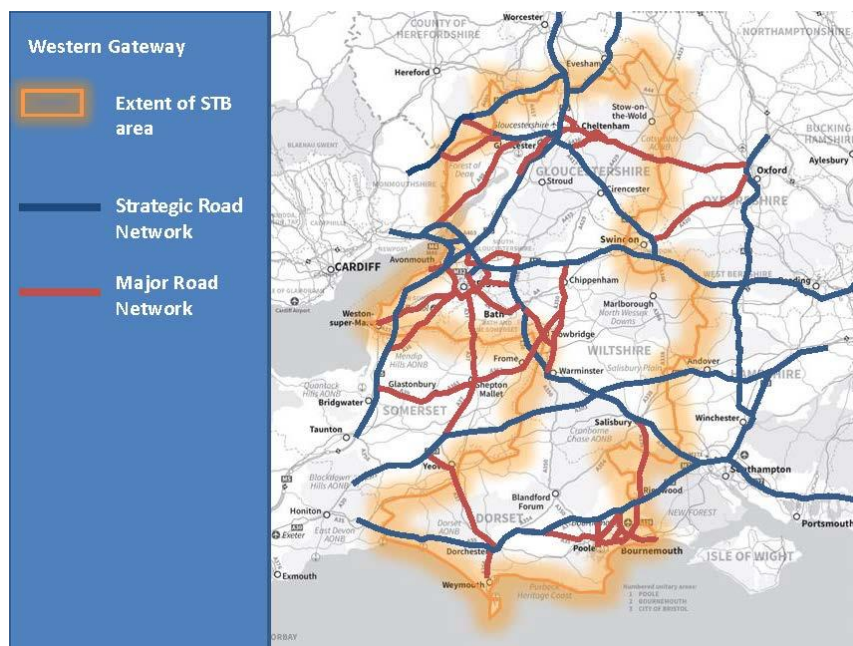
1.12. 15 strategic travel corridors have been identified, as shown in Figure 1-2 Figure 1-3 – Highway designations in the Western Gateway STB, which either traverse multiple authorities within the Gateway area or provide strategic linkages to neighbouring areas from which the Gateway area benefits. Taking a whole corridor approach to improve the reliability, safety and resilience of these corridors will be the basis of the Strategic Transport Plan.

**Figure 1-2 – Strategic travel corridors in the Western Gateway STB**



1.13. Figure 1-3 illustrates the Strategic and Major Road designations within the Gateway area.

Figure 1-3 – Highway designations in the Western Gateway STB

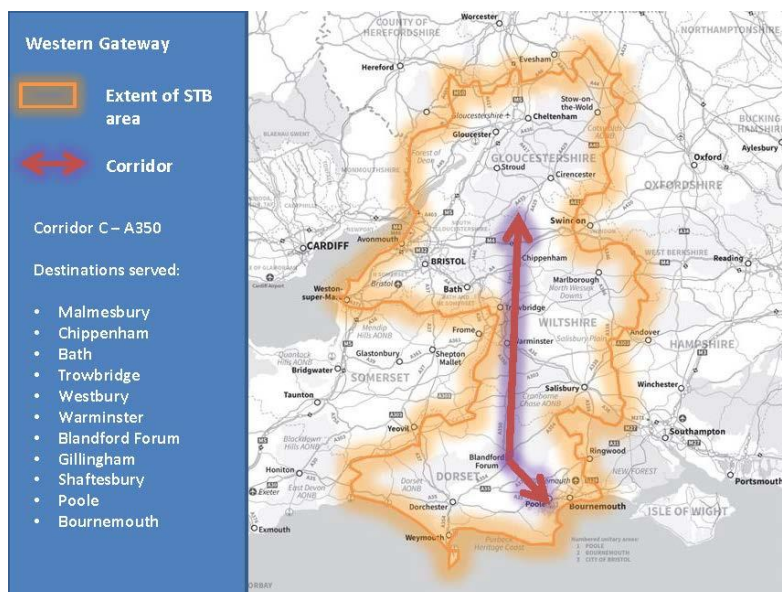


- 1.14. The A350 forms Strategic Corridor C from the strategy, as shown in Figure 1-4. Between M4 Junction 17 to the north of Chippenham to the A36 north of Warminster, the A350 is designated as a proposed MRN link. The remainder of the A350, continuing to Poole is local highway. The A350 provides key north-south connectivity, which is underrepresented through the rest of the Western Gateway area. Improving the performance of the A350 and therefore north-south connectivity is essential in linking many of the strategic growth locations for the region.
- 1.15. The role of the A350, its policy context, and its current conditions and performance is looked into in detail in Section 2 of this report. Towns which either lie on, or feed into the northern section of the A350 corridor between Warminster and Chippenham account for close to 80% (approximately 19,000 homes) of all the proposed future housing locations within the Swindon and Wiltshire Joint Spatial Framework<sup>4</sup> (which will inform the merging local plans up to 2036).

<sup>4</sup> Wiltshire Council and Swindon Borough Council (2017) Swindon and Wiltshire Joint Spatial Framework: <http://www.wiltshire.gov.uk/spp-swjsf-2017-11-issues-paper.pdf>



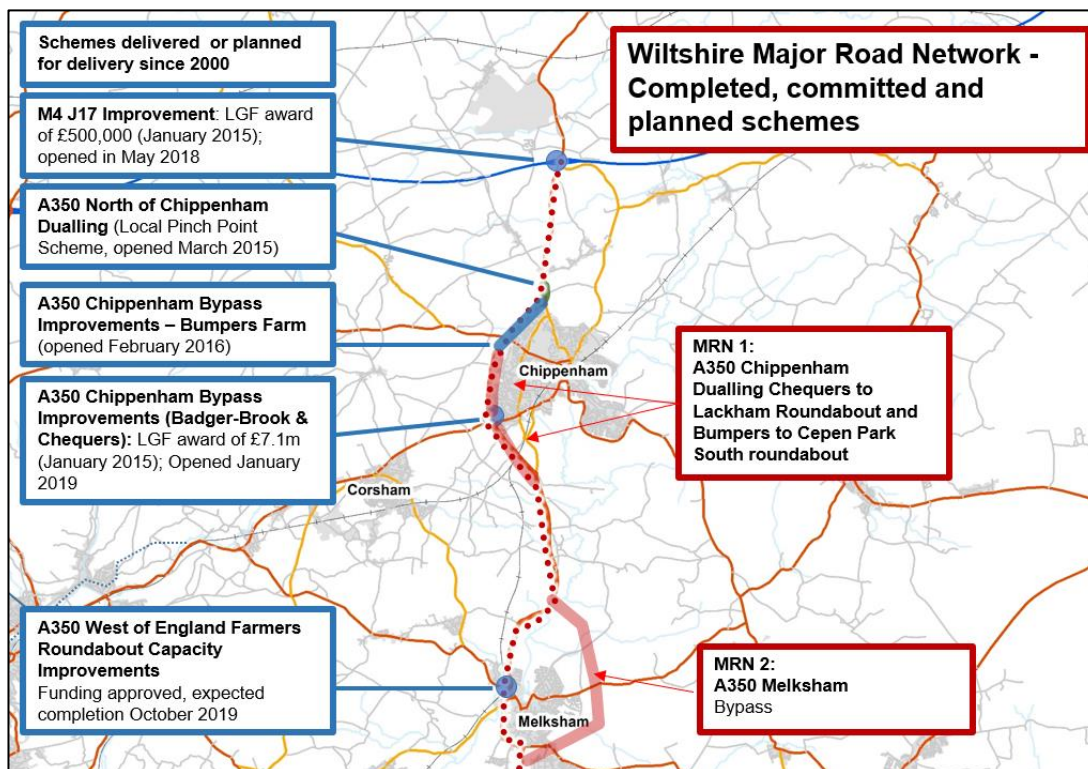
Figure 1-4 – Extent of Strategic Corridor C - A350 within the Western Gateway STB area



## Background to the scheme

- 1.16. The northern section of the A350 between Melksham and M4 J17 has in recent years seen substantial investment to improve performance on the corridor. Furthermore, several other schemes are under construction or planned and are shown with those that have been recently completed in Figure 1-5 and in the list below:
- A350 Chippenham Phase 1 – Jackson’s Lane to Badger roundabout (completed Q1 2015)
  - A350 Chippenham Phase 2 – Brook roundabout to Bumpers roundabout (completed Q1 2016)
  - A350 Chippenham Phase 3 – Badger roundabout to Brook roundabout / Chequers roundabout improvement (completed Q1 2018)
  - M4 Junction 17 partial signalisation (complete Q1 2019)
  - Farmers roundabout in Melksham (under construction until Q3 2019)
  - A350 Chippenham Phases 4 and 5 – Bumpers roundabout and Lackham roundabout improvements and full dualling (proposed MRN scheme to begin construction in 2020)
  - M4 Junction 17 full signalisation and capacity improvements (proposed MRN scheme to begin construction in 2022)
  - Melksham bypass (proposed Large Local Major scheme to begin construction in 2023)
- 1.17. Funding for the complete and committed scheme has to date come from the Local Growth Fund or central Government pinch point funding. The last three schemes on the above list have been proposed for inclusion in the Western Gateway STB priority lists for MRN and LLM investment.
- 1.18. The A350 Chippenham Improvements (Phases 4 & 5) - along with the first three phases - was identified by Wiltshire Council in 2013 and put forward to the Swindon and Wiltshire Local Economic Partnership for STB consideration to obtain Local Growth Fund allocated funds.
- 1.19. The scheme involves widening the final two sections of S2 (single-lane in each direction) carriageway, namely from Lackham roundabout to Chequers roundabout, and from Bumpers roundabout to Cepen Park South roundabout; signalisation of the Bumpers roundabout and improvements to the Lackham roundabout.

Figure 1-5 – Completed, committed and planned schemes on the norther A350



## Document purpose

- 1.20. This Option Assessment Report (OAR) sets out the key transport problems, transport needs, objectives and high level options for the A350 Chippenham Bypass Improvements scheme.
- 1.21. The overarching aim of the OAR is to identify reasons why certain options for the next phase of the A350 Chippenham Bypass are being progressed to OBC stage, pulling together evidence that exists and work that has been undertaken by Wiltshire Council over recent years.

## Document structure

- 1.22. The structure of this document matches the eight-step process that is recommended for the options development stage in TAG Unit 2.1.2d. These eight steps have been grouped as follows:
- Section 2 presents evidence to build an understanding of the current situation along the A350 in terms of current travel demands and levels of service, current policies and the potential opportunities and constraints that can be identified from the current circumstances. This covers Step 1 of the WebTAG process.
  - Section 3 discusses what can be expected in terms of the expected (future) transport **problems** on the A350 to the west of Chippenham (Step 2).
  - Section 4 draw upon information collated throughout Steps 1 and 2 to understanding the need for intervention
  - Section 3 presents a 'long-list' of **potential options** that have been considered for addressing the transport problems, along with an initial assessment of those options. A 'short-list' of the best performing options is provided. This section covers Steps 5-6 of the WebTAG process
  - Section 4 provided a **more detailed assessment** of the short-listed options
  - Section 5 **confirms the options** that are to be taken forward to the ASR and OBC stage



## 2. Step 1 - Understanding the current situation

- 2.1. The A350 provides an important strategic north-south link through Wiltshire, connecting Chippenham with Melksham, Trowbridge, Warminster and then on to Salisbury via the A36. It forms the main connection for Chippenham to the wider strategic network, including the M4 (Junction 17) to the north and the A36(T) to the south. However, high traffic volumes, particularly in the peak periods, result in congestion, delays and unpredictable journey times. Long queues commonly form on the A350 to the west (and north) of Chippenham during the morning and evening peak periods.
- 2.2. This section contributes to developing an understanding of the current situation in the study area in terms of:
- Current levels of service
  - Current transport and other policies
  - Current opportunities and constraints

### Current travel demands and levels of service

- 2.3. The A350 to the west of Chippenham (known as West Cepen Way or the Chippenham Bypass) was constructed during the early 1990s to form a western bypass to the town. The road was constructed as a single carriageway, although sufficient space was left within the highway boundary to upgrade to a dual-carriageway in the future. There are seven at-grade roundabouts along the bypass, most of which incorporate entry arms originally constructed at the minimum advisable entry widths. From north to south, the roundabouts are known as: Malmesbury Road (A350/B4158); Badger; Brook; Bumpers Farm (A350/A420); Cepen Park South; Chequers (A350/A4) Lackham (A350/B4528).
- 2.4. As mentioned in section 1, several major improvement works have been undertaken along the A350 since 2013, three of which are located along the A350 Chippenham bypass incorporating key junction improvements and stretches of bypass dualling. These are summarised in more detail in Table 2-1.

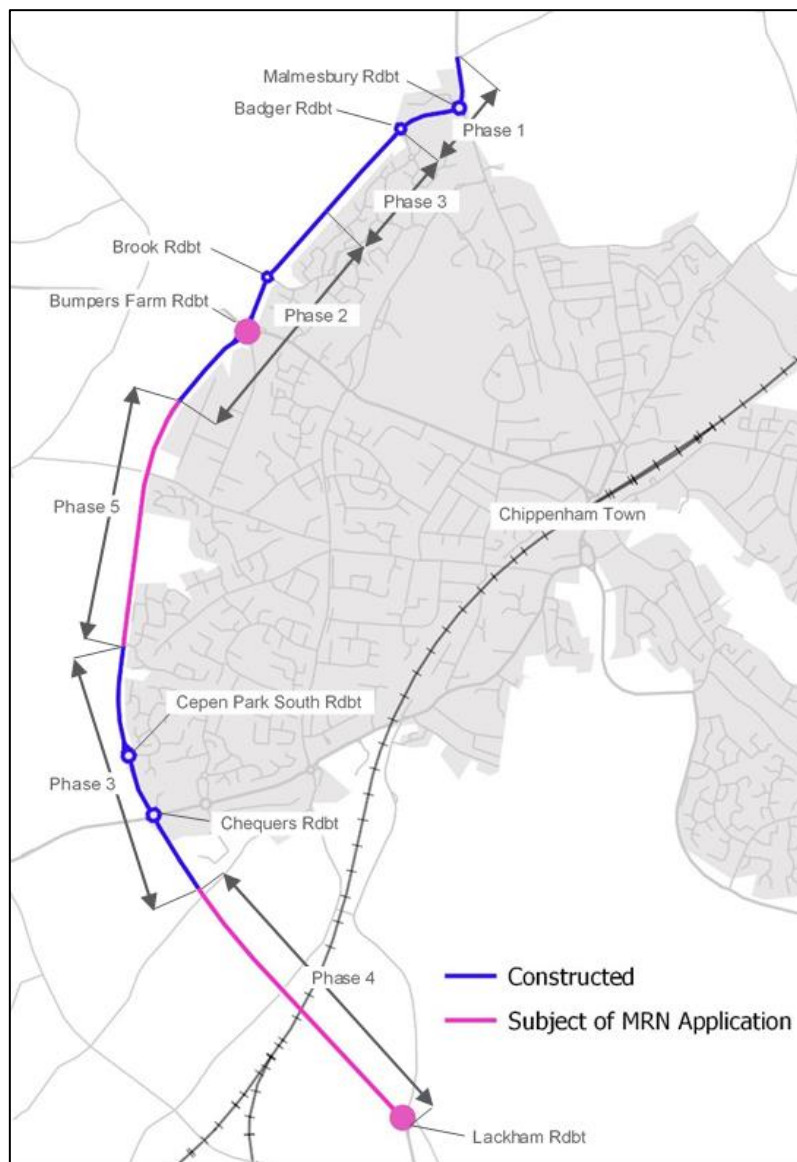
**Table 2-1 - Chippenham Bypass improvement schemes completed as of January 2019\***

Scheme Name	Completion and Funding	Description
<b>Phase 1:</b> A350 North of Chippenham	Completed: March 2015 £3m scheme partly funded through the Local Pinch Point Fund	<ul style="list-style-type: none"> <li>• Widening A350 between the Badger Roundabout and Malmesbury Road Roundabout to dual 2-lane</li> <li>• Minor adjustments to the entry/exit arms to the south of Badger Roundabout</li> <li>• Improving Malmesbury Road Roundabout</li> <li>• Widening A350 southbound between Jackson's Lane and Malmesbury Road Roundabout to 2- lane</li> </ul>
<b>Phase 2:</b> Bypass Improvements (Bumpers Farm)	Completed: February 2016 £3.4m scheme partly funded through the Local Growth Fund	<ul style="list-style-type: none"> <li>• Widening the A350 to dual 2-lane between Brook and Bumpers Farm</li> <li>• Additional widening of the A350 for ~ 250 metres north of Brook to allow for a suitable merge length back to single lane and two southbound lanes for 100 metres approaching Brook</li> <li>• Widening to dual 2-lane on a short stretch of the A350 immediately south of Bumpers Farm</li> <li>• Minor widening of the Bumpers Farm Industrial Estate entry arm to Bumpers Farm Roundabout</li> </ul>
<b>Phase 3:</b> Chippenham Bypass	Completed January 2019	<ul style="list-style-type: none"> <li>• Dualling the gap between pinch point improvements (Phase 1) and the Bumpers Farm improvements (Phase 2)</li> </ul>

Improvements (Badger-Brook & Chequers)	£7m scheme partly funded through the Local Growth Fund	<ul style="list-style-type: none"> <li>• Dualling the A350 between a point 250 meters North of Cepen Park South Roundabout and a point 250m South of Chequers Roundabout</li> <li>• Widening of the A4 Westbound approaches and exits at Chequers roundabout</li> </ul>
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2.5. Three of these schemes, were initially proposed as part of a larger combined option dualling the full stretch of the A350 from Malmesbury roundabout to Lackham roundabout and capacity improvements at junctions on the route. The scheme was designed to improve journey time reliability by reducing delays and congestion along the corridor to in turn provide sufficient capacity to unlock future housing potential, reduce greenhouse gas emissions and address the negative impacts on safety, security, health, equality of opportunity and quality of life. Due to temporal constraints of suitable funding becoming available, the scheme was split into five phases. The scope of each phase, both completed and pending application, is shown in Figure 2-1

**Figure 2-1 – Completed and proposed A350 Chippenham bypass schemes**



2.6. As part of the Options Assessment for the initial Chippenham Bypass improvement package<sup>5</sup>, a detailed assessment of the existing level of service along the A350 was completed. This revealed

<sup>5</sup> Chippenham Transport Strategy Development: Options Assessment and Transport Strategy – Final, SKM, May 2013

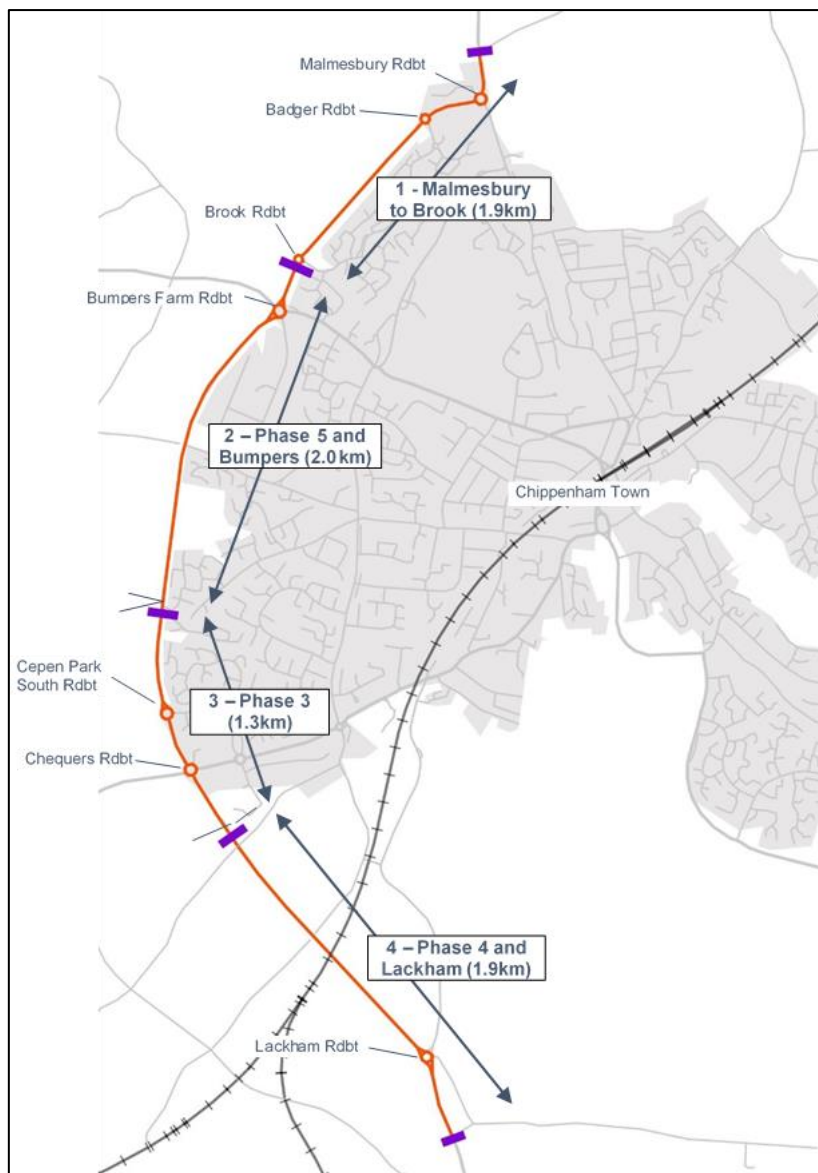
significant pinch points, areas of delay and accident hotspots along the route. Key findings from this assessment are summarised below.

- 2.7. Firstly, it was acknowledged that whilst traffic problems exist on this section of the road in both the morning and evening peak periods, the problems are most severe in the morning. Maximum observed queue lengths for both peak periods are presented in the S-Paramics Chippenham Model Development and Validation Report<sup>6</sup>, with data from two sample days during 2008; one day during March and one in April. This evidence confirms the basis for the perception that the problems are worse during the morning peak period.
- 2.8. Traffic queues were worst on the northern-most sections of the bypass, between Malmesbury Road and Chequers (A350/A4), and on the A350 to the north of the town. The most notable morning peak period (0800-0930) queues on the A350 southbound were observed on the approach to roundabouts as follows:
- 0.5 km on the southbound approach to Malmesbury Road, from the end of the dualled section south of M4 Junction 17 and through the single carriageway section, before the start of the bypass.
  - 1.1 km for the full extent of the Badger – Brook – Bumpers Farm section.
  - 0.4 km approaching Chequers, blocking back through Cepen Park South.
- 2.9. The most notable morning peak period queues on the A350 northbound were observed on the following approaches to roundabouts:
- 0.4 km approaching Bumpers Farm.
  - 1.2 km for the full extent of the Brook – Badger – Malmesbury Rd section.
  - During the PM peak period (1630-1800), the following queues were observed:
    - 0.8 km approaching Chequers, blocking back through Cepen Park South.
    - 1.0 km northbound approaching Bumpers Farm.
- 2.10. Whilst the previous phases of A350 Chippenham bypass dualling (Figure 2-1) have seen improvements in congestion-related issues, analysis of up to date TomTom journey time data and accident records reveal four key issues which persist along the bypass to be discussed in more detail below. Namely:
- Long journey times in peak periods.
  - Poor journey time reliability in peak periods, along the stretch of road between Bumpers roundabout and Cepen Park South.
  - Slow speeds in peak periods, caused by the congestion pinch-point at Bumpers roundabout.
  - Accidents caused by congestion at key junctions.
- 2.11. To provide a more in-depth analysis, the TomTom data, used to establish journey time averages, reliability and average travel speeds, has been cut into four sections as shown in Figure 2-2.
- 2.12. Route sections were selected so as to separate stretches of the bypass being considered for improvement from the remainder of the route. Some data is also presented for the full stretch of the route.

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<sup>6</sup> Chippenham Multi-modal Model: S-Paramics Model Development and Validation Report, PFA Consulting, December 2010

Figure 2-2 - Route sections for journey time analysis



Longer journey times in peak periods

- 2.13. Average journey time data for the A350 Chippenham Bypass has been analysed for the period January-February 2019 to capture average journey times following completion of the Phase 3 improvement schemes. Analysis is based on seven time periods.
- 2.14. Average journey times for both southbound and northbound journeys, across seven time periods, are presented in Table 2-2 and Table 2-3 respectively. Data is provided for the full length of the A350 Chippenham Bypass from Malmesbury roundabout to Lackham roundabout and broken down by route section as shown in Figure 2-2. The data shows that:
  - In general, average journey times are longer during the morning and evening peak periods than during the inter-peak;
  - When journey times are assessed along the full stretch southbound between Malmesbury and Lackham roundabouts, the greatest difference between time periods is observed between the inter-peak (1200-1300) and AM post peak (0830-0845) where average AM post peak travel times exceed that of the inter-peak by 1 minute and 33 seconds;
  - Closer inspection of scheme-specific sections reveals a substantial amount of journey time deviation in the peak periods can be attributed to the section between Bumpers and Cepen

Park South roundabouts, notably in the AM for Southbound trips and in the PM for Northbound trips; and

- Journey times are generally worse in the AM peak period which is reflective of the higher demand on the road at this time.

**Table 2-2 - Average journey time (minutes) A350 southbound M4 J17 to Lackham roundabout**

Analysis	AM Pre-Peak (07:15-07:30)	AM Peak (07:30-08:30)	AM Post Peak (08:30-08:45)	Inter Peak (12:00-13:00)	PM Pre-Peak (16:30-16:45)	PM Peak (16:45-17:45)	PM Post-Peak (17:45-18:00)
Full route extent	6:36	7:52	8:07	6:34	6:46	7:29	8:01
Malmesbury to Brook	1:57	2:38	2:39	1:52	2:10	2:34	2:36
Phase 5 and Bumpers	2:02	2:29	2:42	1:59	2:04	2:09	2:11
Phase 3	1:30	1:35	1:39	1:37	1:26	1:38	2:06
Phase 4 and Lackham	1:45	1:50	1:47	1:43	1:45	1:46	1:46

**Table 2-3 - Average journey time (minutes) A350 northbound Lackham roundabout to M4 J17**

Analysis	AM Pre-Peak (07:15-07:30)	AM Peak (07:30-08:30)	AM Post Peak (08:30-08:45)	Inter Peak (12:00-13:00)	PM Pre-Peak (16:30-16:45)	PM Peak (16:45-17:45)	PM Post-Peak (17:45-18:00)
Full route extent	8:02	8:10	7:34	7:27	7:52	7:52	7:39
Malmesbury to Brook	3:13	2:74	2:45	1:10	2:56	2:53	2:44
Phase 5 and Bumpers	2:03	2:09	2:09	2:03	2:16	2:17	2:13
Phase 3	1:34	1:36	1:32	1:32	1:30	1:33	1:30
Phase 4 and Lackham	1:46	1:46	1:43	1:43	1:44	1:44	1:47

### Poor journey time reliability

- 2.15. The problems identified by analysing average journey times only tell part of the story, as delays and congestion on the A350 also lead to considerable issues with the reliability and predictability of journeys.
- 2.16. Journey time reliability along route sections 1-4 has been analysed using TomTom data from January-February 2019 for average weekday traffic only.
- 2.17. An initial assessment of journey time reliability during the AM and PM peak periods (Figure 2-3), demonstrates that the predictability of journey times on the A350 is still a problem. Notably, the following observations can be made:
  - Reliability issues exist across the full length of the route in both the AM and PM peak periods for North and Southbound traffic, with 5% of journeys taking between ~25% and ~100% longer than the average travel time;
  - Journey time reliability is worst along sections 1 and 2 in the AM peak with 5% of journeys taking approximately 100% longer than average along section one and approximately 50% longer along section 2 for both south and northbound traffic; and

- Whilst variation can be seen in absolute values the general trend is the same during both the AM and PM peak.

**Figure 2-3 - A350 Chippenham Bypass journey time reliability sections 1-4, AM and PM peak hour**

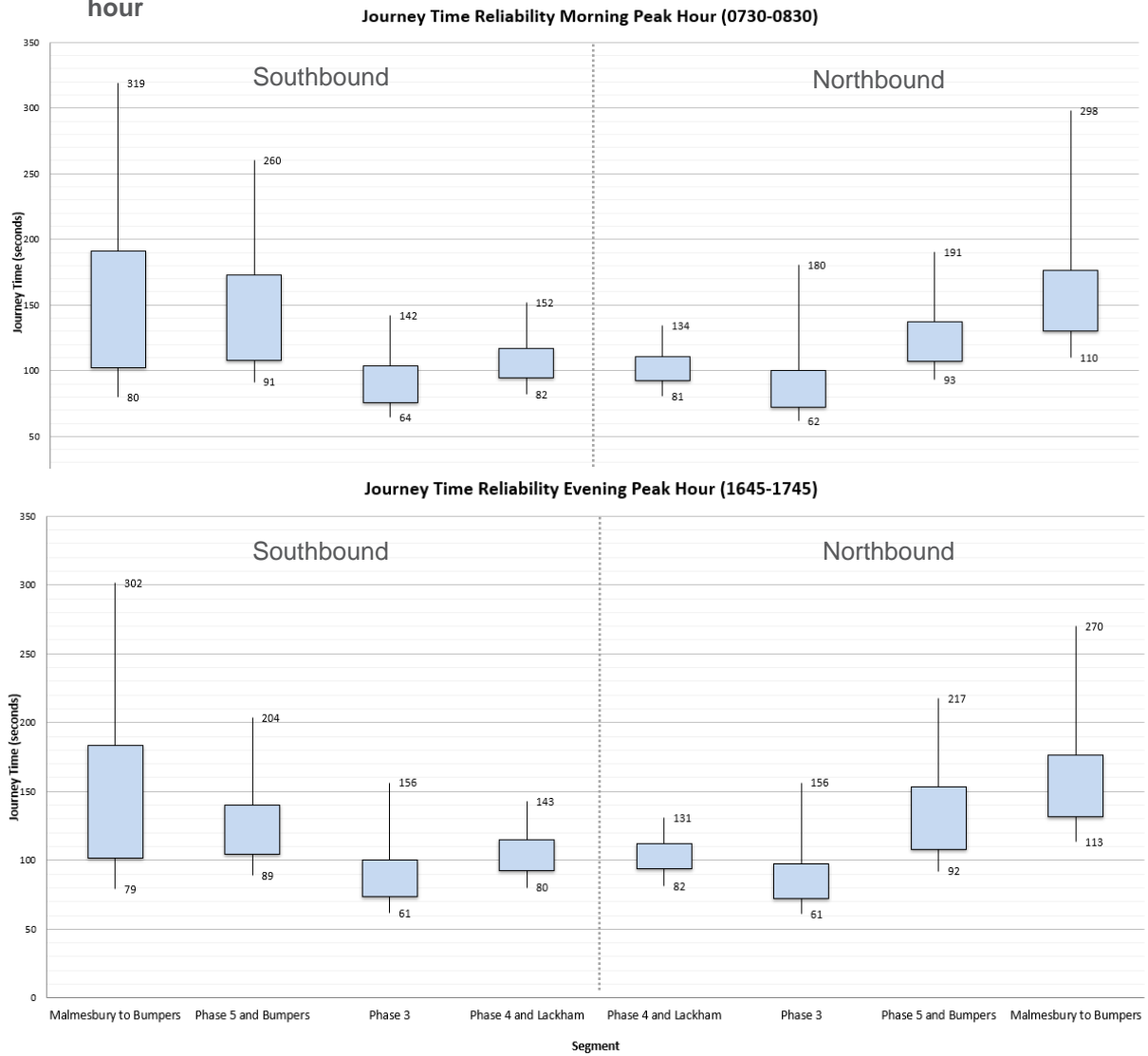
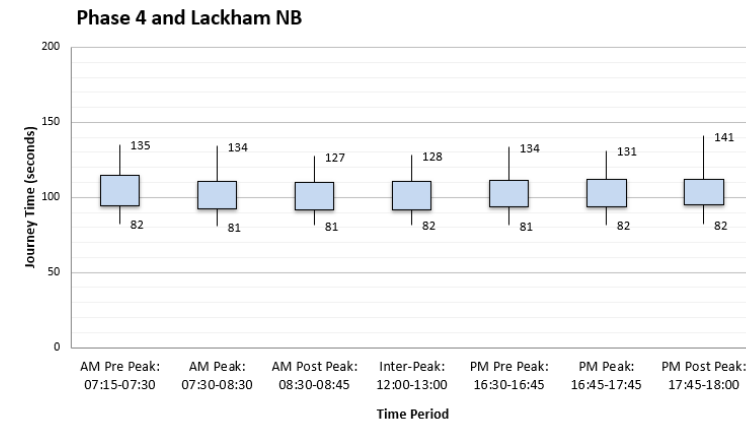
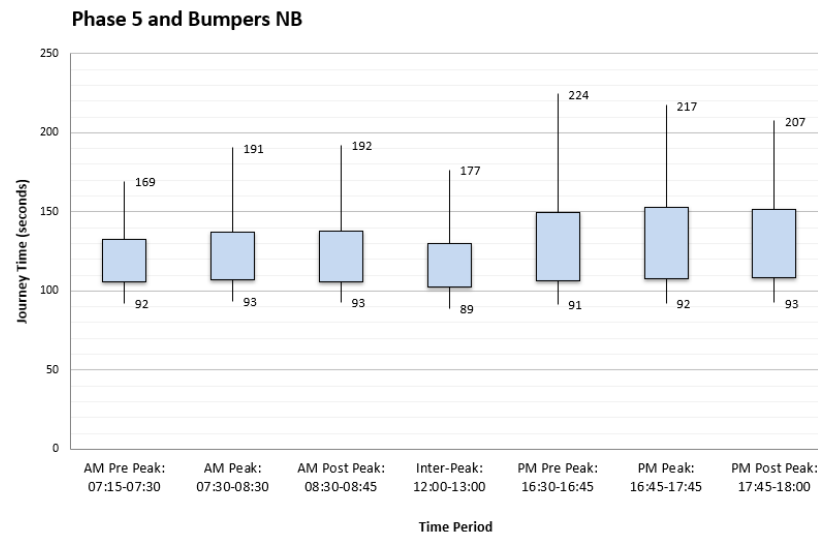
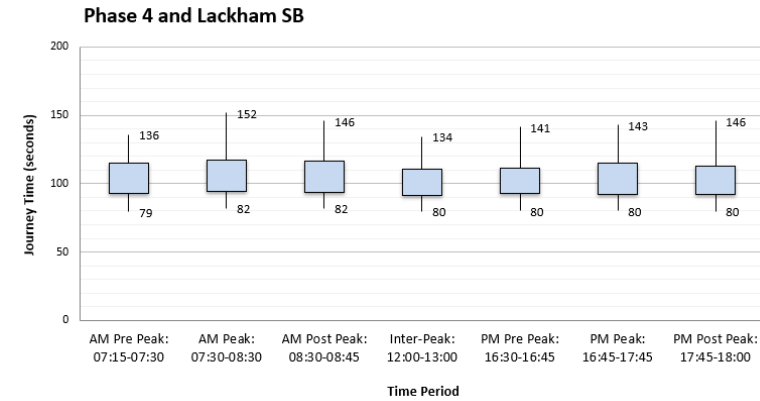
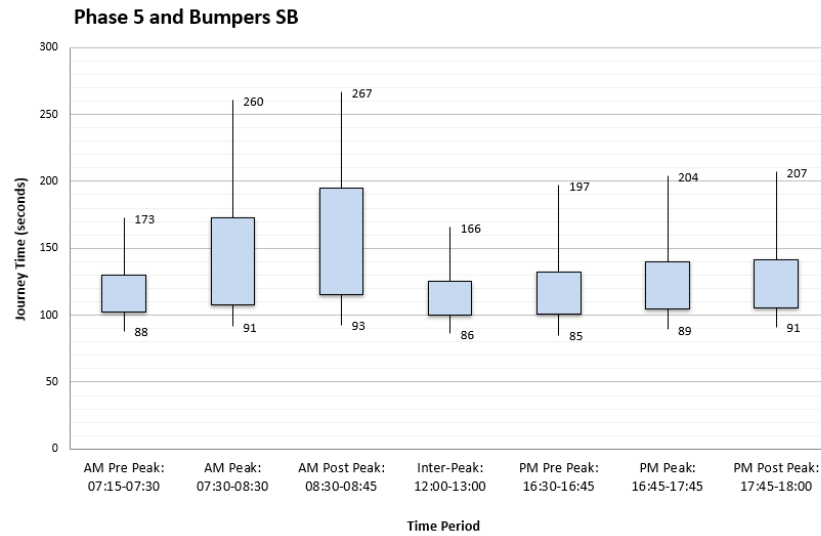




Figure 2-4 - A350 Chippenham Bypass journey time reliability on sections 2 and 4 across time periods



- 2.18. Further analysis of scheme impact areas (route sections 2 and 4) across all time periods (Figure 2-4) identifies the following:
- On route section 2 journey time reliability is worse in the peak periods by comparison with the inter-peak;
  - Whilst some journey time reliability issues do exist along section 4, there is no significant fluctuation between time periods along this section of the route;
  - Journey time reliability along section 2 is a particular problem during the weekday AM post-peak (0830-0845) for southbound journeys, with 5% of southbound journeys taking 4 minutes 27 seconds, nearly twice as longer as the average travel time along this section (2 minutes 42 seconds); and
  - For northbound traffic travelling along section 2, journey time reliability is worst during the PM pre-peak when 5% of journeys take approximately 1 minute 30 seconds longer than average.

#### Slow speeds caused by pinch points

- 2.19. Figure 2-5 shows average travel speed during the AM peak hour (07:30-08:30) based on TomTom data recorded for an average week day from January to February 2019. This identifies delay to traffic travelling north bound between Cepen Park South and Bumpers Farm and on the approaches to roundabouts at Bumpers and Chequers.

**Figure 2-5 - A350 average speeds (km/h) - weekday AM peak hour (07:30-08:30)**



- 2.20. A review of average speeds across all time periods (Table 2-4) shows speeds are generally slower during peak periods.



**Table 2-4 – Average speeds km/hr**

Direction	Analysis	AM Pre-Peak	AM Peak	AM Post Peak	Inter Peak	PM Pre-Peak	PM Peak	PM Post-Peak
		(07:15-07:30)	(07:30-08:30)	(08:30-08:45)	(12:00-13:00)	(16:30-16:45)	(16:45-17:45)	(17:45-18:00)
South Bound	Full Route Extent	58	48	47	58	56	51	48
	Malmesbury to Brook	51	38	37	53	46	39	38
	Phase 5 and Bumpers	59	48	44	61	58	55	55
	Phase 3	51	48	46	47	53	47	36
	Phase 4 and Lackham	67	64	66	68	67	67	67
North Bound	Full Route Extent	50	49	53	54	51	51	53
	Malmesbury to Brook	39	38	45	46	42	43	45
	Phase 5 and Bumpers	58	55	55	58	52	52	53
	Phase 3	48	47	49	49	50	48	50
	Phase 4 and Lackham	66	66	68	68	67	67	65

### Safety / Accidents

- 2.21. Due to the frequent improvement works undertaken along the A350 over the past 5 years, accident data provided by Wiltshire Council has been summarised below to reflect this.
- 2.22. **Accidents occurring before completion of phase 1 of the Chippenham Bypass improvement schemes (January 2010- March 2015)**
- 2.23. Queuing traffic has safety repercussions. During the five-year period prior to completion of the first phase of dualling (2010-2014 inclusive), the following personal injury accidents occurred on the A350 between Badger and Lackham roundabouts:
- 19 rear end shunts involving personal injury, two of which occurred on **approaches to Bumpers** roundabout.
  - 4 personal injury accidents involving U-turn manoeuvres, two of which were recorded on the northbound approach to Chequers and one on the section between the Brook and Badger roundabouts.
- 2.24. **Accidents occurring before completion of phase 2 dualling but after phase 1 completion (March 2015 - Feb 2016)**
- 3 rear end shunts, resulting from queuing traffic on stretches **approaching Cepen Park South roundabout** (x1) and Brook roundabout (x1)
  - 4 collisions due to vehicles incorrectly crossing paths within roundabouts either due to poor signalling or observation (3 at Malmesbury roundabout, **1 at Bumpers Farm**).
- 2.25. **Accidents occurring after phase 2 completion (Feb 2016 - July 2018)**
- 6 rear end shunts evenly spread across all major roundabouts, including **Bumpers**, with one resulting from a U-turn along the main carriageway.
  - 9 collisions due to vehicles incorrectly crossing paths whilst navigating the roundabout resulting from poor signalling and/or poor observation, 4 occurring at Malmesbury Roundabout and **3 at Bumpers**.
- 2.26. Accident statistics were not available following July 2018, thus the potential impact of the Phase 3 dualling, completed January 2019, cannot be interpreted. That said, it was acknowledged during economic appraisal of the scheme that whilst increased capacity was expected to improve journey quality overall, the addition of merge points between Bumpers and Cepen Park South and Chequers and Lackham could lead to higher accident rates in these areas.

## Current transport and other policies

- 2.27. The purpose of defining the current and future context and transport conditions is to set the scene in terms of economic, land use and transport plans, which are the key drivers of future travel demand.
- 2.28. The key local policies for spatial planning and transport that affect the A350 to the west of Chippenham have been distilled from the following policy documents and summarised in more detail below:
- DfT Transport Investment Strategy
  - MRN investment planning guidance
  - SWELP Strategic Economic Plan
  - Local Transport Plan 3 (LTP3) 2011-2026
  - Wiltshire Core Strategy
  - Chippenham Site Allocations Plan
  - Chippenham Transport Strategy
  - Western Gateway STB Strategy Context

## National Policy

### Department for Transport's (DfT) Transport Investment Strategy

- 2.29. The DfT's Transport Investment Strategy sets out the Government's strategy for transport investment in support of its Industrial Strategy. It identifies four strategic priorities:
- Creating a more reliable, less congested, and better-connected transport network that works for the users who rely on it
  - Building a stronger, more balanced economy by enhancing productivity and responding to local growth priorities
  - Enhancing Britain's global competitiveness by making it a more attractive place to trade and invest
  - Supporting the creation of new housing
- 2.30. The strategy also outlines the development of a Major Road Network (MRN), which will form a middle tier of roads sitting between the national Strategic Road Network (SRN) and the rest of the local road network. The A350 corridor is part of the MRN, stretching from the A429 near Malmesbury at its northern end, to Warminster at the south.

### MRN investment planning guidance

- 2.31. According to investment planning guidance published by the DfT, the MRN should function to fulfil five central objectives which build on the commitments of the Transport Investment Strategy. These objectives are as follows:
- **Reduce Congestion** to alleviate local and regional congestion, reducing traffic jams and bottle necks to improve air quality, biodiversity, noise, flood risk, war
  - **Support economic growth and rebalancing** to support the delivery of the Industrial Strategy, contributing to a positive economic impact that is felt across the regions
  - **Support housing delivery** to unlock land for new housing developments
  - **Support all road users** and recognise the needs of all users, including cyclists, pedestrians and disabled people
  - **Support the Strategic Road Network** where the MRN complements and supports the existing SRN by creating a more resilient road network in England
- 2.32. Accordingly, any issues which threaten the capability of the A350 Chippenham Bypass to fulfil each of these objectives should be mitigated.

## Local Policy

### Swindon Wiltshire Local Enterprise Partnership (SWLEP) and Strategic Economic Plan (SEP)

- 2.33. The SEP was submitted to Government on 31 March 2014. It sets out the vision and charts out the measures that will need to be taken to secure economic growth and accelerate employment and housing delivery (as set out in the Core Strategies) across Swindon and Wiltshire. The SEP focuses, in particular, on enabling economic growth in three core geographic areas: Swindon-M4 Growth Zone; A350 Growth Zone; and Salisbury-A303 Growth Zone. To support SEP development, work was undertaken to set out how Wiltshire's transport system should be developed through to 2026.
- 2.34. Targeted investments within each of the Growth Zones will be guided by the following strategic objectives:
- SEP1: Skills and talent - we need an appropriately skilled and competitive workforce to achieve our growth ambitions
  - SEP2: Transport infrastructure improvements - we need a well-connected, reliable and resilient transport system to support economic and planned development growth at key locations
  - SEP3: Digital capability - we need to deliver excellence in digital connectivity and cyber transformation to achieve business growth, innovative public services and influence societal change
  - SEP4: Place shaping - we need to deliver the infrastructure required to deliver our planned growth and regenerate our City and town centres, and improve our visitor and cultural offer
  - SEP5: Business development - we need to strengthen the competitiveness of small and medium sized businesses and attract a greater share of foreign and domestic investment into the area

Investment in the A350 is at the heart of objective SEP2 to ensure it can fulfil its north-south strategic function and support the significant economic and development growth planned for the Wiltshire and Swindon area.

### Local Transport Plan

- 2.35. The LTP vision is 'to develop a transport system which helps support economic growth across Wiltshire's communities, giving choice and opportunity for people to safely access essential services'. The most important goals for Wiltshire's transport system are to support economic growth and to reduce carbon emissions, with considerable emphasis also placed on creating a safer and healthier transport system for improved quality of life and a healthy natural environment.
- 2.36. In supporting economic growth, the strategic transport objectives for the LTP include:
- SO1 - To support and help improve the vitality, viability and resilience of Wiltshire's economy
  - SO4 - To minimise traffic delays and disruption and improve journey time reliability on key routes
  - SO6 - To make the best use of the existing infrastructure
  - SO10 - Encourage the efficient and sustainable distribution of freight in Wiltshire
  - SO12 - To support planned growth in Wiltshire
  - SO16 - To improve the resilience of the transport system.
- 2.37. In reducing carbon emissions, the strategic transport objectives include:
- SO2 - To provide, support and promote a choice of sustainable transport alternatives
  - SO11 - To reduce the level of air pollutant and climate change emissions from transport
  - SO13 - To reduce the need to travel, particularly by private car.
- 2.38. SO8 and SO3 outline goals to improve safety for all road users and to reduce the impact of traffic on Wiltshire's built and natural environment respectively to contribute towards the latter priority objectives.
- 2.39. Improvements to the A350 would align well with these objectives.

### Wiltshire Core Strategy

- 2.40. The Wiltshire Core Strategy sets out the Council's key objectives, spatial vision, and overall principles for development in the County over the plan period 2006 to 2026.
- 2.41. The underpinning idea of the Wiltshire Core Strategy is to 'strengthen communities, wherever possible, by maintaining and increasing the supply of jobs to ensure that Wiltshire remains strong and prosperous'. Job growth and meeting the needs of business are therefore central to the Core Strategy, in part to prevent any further increase in out-commuting. Furthermore, inward investment is to be encouraged by ensuring that potential barriers to investment, such as inadequate infrastructure, are overcome. It is clear that any proposals to deal with congestion issues on the A350 should support the principle of job growth and address the following core strategy objectives outlined in the Wiltshire Core Strategy:
- WCS1: Delivering a thriving economy.
  - WCS3: Providing everyone with access to a decent, affordable home.
  - WCS4: Helping to build resilient communities.
  - WCS6: Ensuring that adequate infrastructure is in place to support our communities
- 2.42. The spatial strategy makes provision for growth of around 27,500 jobs and at least 42,000 new homes in the 2006-2026 period, including at least 178ha of new employment land. Planned residential and employment growth along the A350 corridor which will likely increase travel demands along the Chippenham bypass are presented in Table 2-1.
- 2.43. **Core Policy 10 (CP 10)**, of the Wiltshire Core Strategy, sets out the spatial strategy for the Chippenham Community Area. Of the 5,090 houses proposed for the Chippenham Community area, it is stated that over the plan period (2006-2026) 4,510 houses should be developed at Chippenham, to be delivered as shown in Figure 2-6. CP10 also identifies Bumpers Farm Industrial Estate (adjacent to the A350/A420) and Methuen Park (adjacent to the A350/A4) as principle employment areas to be safeguarded from being relinquished for other development, in line with CP 35.
- 2.44. Two key policies, presented in the core strategy, identify some of the overall principles of developments in terms of transport provision.
- 2.45. **CP 66** states that work will be undertaken in conjunction with the Highways Agency (now Highways England), Network Rail, transport operators, neighbouring authorities and other agencies, that will seek to develop and improve the strategic transport network to support the objectives and policies in the Core Strategy and Local Transport Plan. CP 66 also identifies a Primary Route Network of the busiest non-trunk roads, including the A350. It states that sections of the A350 carry the highest volume of traffic and HGV movements on the county's non-trunk primary routes, and that the route will be selectively improved to maintain and enhance journey time reliability, with the aim of aiding employment growth at Chippenham, Melksham, Trowbridge, Westbury and Warminster.
- 2.46. CP 66 also identifies the A350 as a component of the strategic advisory freight route network. In **CP 65** it is stated that, where suitable rail and water carriage is not realistic, HGVs will be encouraged to make use of these strategic routes. Maintaining the strategic function of the A350 as a suitable route for freight traffic is therefore paramount to prevent re-routing by freight traffic to parallel, less suitable routes.

**Table 2-5 - Planned housing and employment land requirements on A350 corridor**

Community Area	Housing - requirement (2006-2026)	Housing – remainder to be identified	Employment land requirement (2006-2026)
Bradford on Avon	780	243	3 ha
Chippenham	5,090	3,024	26.5 ha
Corsham	1,395	330	6 ha
Malmesbury	1,395	151	5 ha
Melksham	2,370	662	6 ha
Trowbridge	6,975	4,249	25 ha
Warminster	2,060	1,265	6 ha
Westbury	1,615	473	18.5 ha
<b>Total</b>	<b>21,670</b>	<b>10,397</b>	<b>96 ha</b>

**Table 2-6 – Delivery of housing 2006 to 2026 (Chippenham Community Area)**

	Requirement 2006 - 2026	Housing already provided for		Housing to be identified	
		Completions 2006 - 2014	Specific permitted sites	Strategic sites	Remainder to be identified
Chippenham Town	4,510	995	829	0	2,686
Remainder	580	326	105	0	149
<b>Community Area Total</b>	<b>5,090</b>	<b>1,321</b>	<b>934</b>	<b>0</b>	<b>2,835</b>

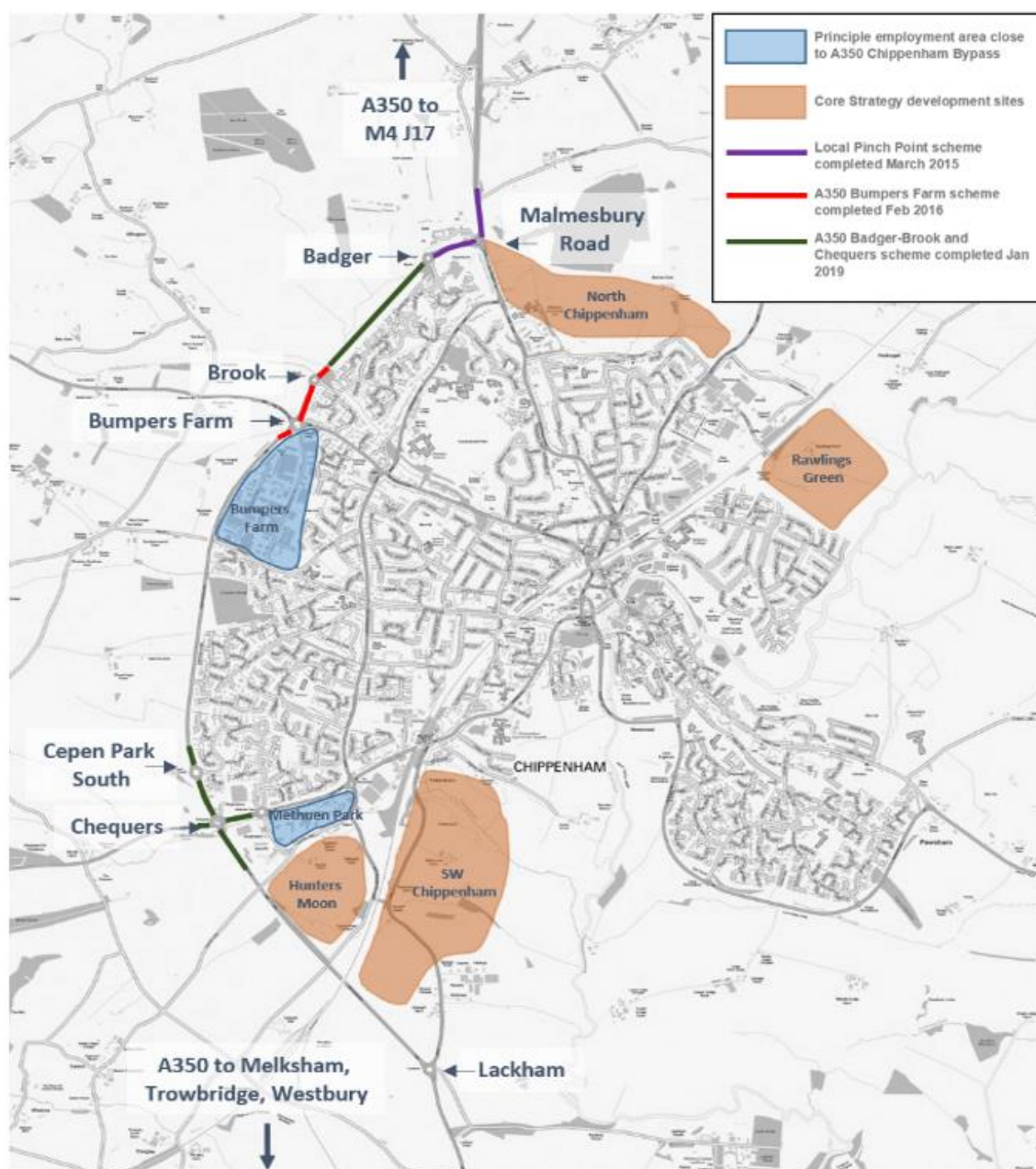
### Chippenham Site Allocations Plan

- 2.47. Sites for the remaining houses to be delivered in Chippenham (identified in Core Strategy CP10 and presented in Figure 2-6) have been allocated in the Chippenham Site Allocations Plan (CSAP).
- 2.48. The CSAP has adopted the same vision at the Wiltshire Core Strategy which, amongst other things, promises the following:
- Chippenham will have an integrated approach to transport so that traffic flow will be more efficient, the town centre will be less congested and there will be improved access for sustainable modes of transport.
  - Chippenham will take advantage of its excellent rail and road links and its position on the high-tech corridor between London, Bristol and beyond. It will strengthen its offer and role as a business location ensuring people can live and work locally.
- 2.49. To achieve this vision, site allocation was based on the following objectives set out in CP10 of the Wiltshire Core Strategy:
- O1: delivering economic growth.
  - O2: providing housing supported by appropriate infrastructure.
  - O3: Improving connectivity and reducing traffic impacts.
  - O4 Improving access to sustainable transport.
  - O5: minimising landscape impact and protecting the natural, historic and built environment.
  - O6: Managing flood risk.
- 2.50. As stated in the CSAP, two large strategic sites have already been committed:
- North Chippenham: 750 dwellings, 2.7ha of employment land (already with planning permission).



- Hunters Moon: 450 dwellings, 2.3 hectares of employment land (already with planning permission).
- 2.51. Accounting for these two site allocations, the residual housing requirement for Chippenham is at least 1,660 dwellings and 21.5 Ha of employment land.
- 2.52. The CSAP proposes two strategic sites for employment and residential development to fulfil this residual requirement:
- CH1 - South West Chippenham: 1,000 dwellings, 18ha of employment land at Rowden Park (plus possible 100 additional dwellings as part of a smaller extension site).
  - CH2 - Rawlings Green: 650 dwellings, 5ha of employment land.
- 2.53. Specific site allocations are shown in Figure 2-6 as well as the principle employment areas of Bumpers Farm and Methuen Park.

**Figure 2-6 - CSAP**



#### Chippenham Transport Strategy

- 2.54. The 2016 Chippenham Transport Strategy was developed to support the growth in housing and employment allocated in the Chippenham Site Allocations Plan (CSAP) and sets out objectives to

guide investment in transport interventions. The key themes of the transport objectives in the strategy are:

- Deliver a transport network for Chippenham that can provide for strategic development sites to minimise the impact of increased travel demand;
- Maintain the strategic function of the A350 and other key routes including the A4 and A420 by improving journey time reliability to safeguard the role of the A350 and preventing rat-running by freight and other vehicles as well as improving safety to reduce the number of casualties in Chippenham; and
- Improve the accessibility and attractiveness of the town centre by enabling convenient by sustainable modes for both short and long journeys and manage private vehicle traffic and reduce the negative impacts of congestion in the town centre.

- 2.55. Transport schemes and measures were identified on the basis of forecast highway network performance and accessibility in the town to support the delivery of strategic sites allocated in the CSAP.
- 2.56. The Chippenham Transport Strategy includes a wide range of schemes and measures including walking and cycling, travel planning, highway schemes, bus services and bus priority infrastructure. Of the full suite of proposed schemes, several are in close proximity to the A350 corridor.
- 2.57. Four highway schemes in the strategy would directly impact the A350 corridor and are as follows:
- Capacity improvements to the M4 J17: initial signal improvements, funded by the LGF, have been completed and a submission for MRN funding for further capacity improvements is in progress.
  - Malmesbury Road roundabout amendments.
  - Dualling of the Chippenham Bypass between Chequers and Lackham roundabouts and Cepen Park South and Bumpers; and
  - Capacity enhancements to A420 (east) approach to A350 Bumpers Farm roundabout.
- 2.58. Two identified pedestrian and cycle schemes (PC02 and PC11) follow routes parallel to the A350 and have been recommended to provide direct routes to employment at Bumpers Farm and secondary schools.

#### Western Gateway Sub-National Transport Body Strategy

- 2.59. The Western Gateway Sub-National Transport Body have outlined a proposed strategy which is based on the following objectives:
- Improve strategic linkages to drive productivity growth, achieve greater integration between digital and innovation clusters (as identified in the Science and Innovation Audits) and facilitate the creation of new high-value jobs.
  - Identify and address transport-related barriers to the effective operation of labour markets which is constraining the potential for business growth, particularly in the West of England and South East Dorset.
  - Support the development of low carbon solutions to strategic connectivity to help reduce transport's impact on the local environment.
  - Establish a whole corridor approach to traffic management on strategic corridors to improve reliability, safety and resilience.
  - Address the poor connectivity of north-south links, particularly to and from the south coast ports, to help support planned development, drive business growth and improve access to international markets.
  - Deliver key transport infrastructure that supports sustainable place-shaping by facilitating the delivery of significant land for new homes and employment opportunities.
- 2.60. The A350 corridor has been identified as one of 15 strategic corridors in the strategy and has been identified as being a key facilitator of north-south connectivity where connectivity is currently poor. It has also been identified as being important in linking several other strategic growth locations.

- 2.61. It is proposed that if journey times along the A350 were improved considerable productivity impacts may be realised due to the agglomeration effect this would have on in the local area economies.

## Current opportunities and constraints

- 2.62. Whilst Phases 1-3 of the Chippenham Bypass improvement schemes have improved the level of service along the route, some areas of congestion persist, as identified from the TomTom journey time data. This highlights an opportunity to make further improvements to maximise the potential for economic growth in the town by addressing transport network capacity constraints to support delivery of new housing and employment sites. As well as being a necessity to cater for future growth, existing stakeholder support and land availability make further improvement works along the route a feasible option.
- 2.63. Significant stakeholder support for improvements to be made to the highway network around Chippenham has existed for several years. In 2008, the Chippenham Vision document<sup>7</sup>, produced by the Chippenham Vision partnership group, stated that Chippenham requires 'a more integrated and accessible transport system in place with better, more efficient linkages between public and private transport [and] a reduction in traffic bottlenecks'. The need to 'provide for additional access/egress to Bumpers Farm and Methuen Park to counter regular traffic congestion' was also highlighted.
- 2.64. The available reserved land within the A350 Chippenham Bypass highway boundary presents a physical opportunity, providing the space required for a range of potential enhancement measures. This available land is a result of the space that was left deliberately for future upgrades when the road was built in the 1990s.
- 2.65. There are also established landscaped bunds which can continue to act as a buffer between the highway boundary and existing housing. Initial environmental searches indicate that there are no nationally designated Landscape Areas within 2 km of the highway and, similarly.
- 2.66. The presence of stakeholder support, reserved development land and pre-existing landscape bunds have already enabled the realisation of several A350 improvement works as summarised in Table 2-1. Further improvements to the A350 of the same nature are therefore likely to be accommodated.
- 2.67. That said, consideration should be given to the following physical constraints:
- Two flood risk zones of level 2/3 identified near to the A350 scheme boundary: one between Bumpers Farm and Chequers roundabouts, just south of Frogwell which intersects the carriageway; and another approximately 270m from the A350 between Chequers and Lackham roundabouts.
  - Information from the Heritage Gateway and Wiltshire and Swindon Historic Environmental Record identifies the presence of a variety of archaeological remains near to the line of the existing A350 between Bumpers Farm and Chequers roundabouts. This indicates that archaeological remains of interest may be located within the immediate vicinity of the road, regardless of which of option is progressed.

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<sup>7</sup> *A vision for Chippenham*, Chippenham Vision, September 2008



## 3. Step 2: Understanding the future situation

- 3.1. In this second step of the recommended WebTAG process for option development, the future land uses and policies that are likely to affect levels of service on the A350 corridor are established, relevant future transport system changes in close proximity are identified. An assessment of future travel demands along the corridor is also made, based on traffic forecast model outputs.

### Future land-use and policies

- 3.2. Existing housing and land supply policies presented in Wiltshire Core Strategy and Chippenham Site Allocations Plan have been outlined in step one. These plans identify a need for an additional 4,500 houses and 26Ha of employment land to be developed over the plan period up to 2026.
- 3.3. These developments will substantially increase the number of trips in and around the Chippenham area, placing additional pressure on the transport network.
- 3.4. Additional emerging policies outline plans to substantially increase these development quanta over an extended delivery period up to 2036 which could further increase pressure on the existing transport network. These emerging policies are discussed below.

### Emerging Local Plan for 2016-2036

- 3.5. Wiltshire Council, under its Local Development Scheme, commenced a review of its Local Plan in 2017 in partnership with Swindon Borough Council. When it is adopted it will provide a housing requirement for the Chippenham area for the period 2016-2036. The Strategic Housing Market Assessment (November 2017) identified the objectively assessed need using a method outlined in best practice at the time.
- 3.6. The method also considered employment trends, the relationship between the jobs forecast and projected number of workers, and the need for affordable housing.
- 3.7. The SHMA identified the Full Objectively Assessed Need for Housing for the period 2016-2036 to be 29,000 dwellings in Swindon (1,450 dwellings per annum) and 44,000 dwellings in Wiltshire (2,200 dwellings per annum), an overall total of 73,000 dwellings. The need for each housing market area being:
- Chippenham HMA: 22,250 dwellings.
  - Salisbury HMA: 8,250 dwellings.
  - Swindon HMA: 29,000 dwellings.
  - Trowbridge HMA: 13,500 dwellings.
- 3.8. The Wiltshire Local Plan Review<sup>8</sup> highlights that the Chippenham Housing Market Area (HMA) will continue to perform as a key growth area beyond the current Local Plan period.
- 3.9. The distribution of the growth requirement within the Chippenham HMA is currently being assessed, with Chippenham likely to continue its role as a strategic growth location.
- 3.10. The planned quantum of growth in the Chippenham HMA and across the wider Wiltshire and Swindon plan area would therefore have considerable impacts on the performance of the existing transport networks across Wiltshire and Swindon.

### Chippenham Urban Expansion

- 3.11. The Chippenham Urban Expansion (CUE) is a project being promoted to deliver 7,500 homes alongside significant community infrastructure on both Wiltshire Council and privately-owned development sites.
- 3.12. The project will help deliver a significant proportion of the identified housing need of 22,500 homes for the Chippenham HMA from 2016-2036. In March 2019 Wiltshire Council submitted a bid to the Housing Infrastructure Fund (HIF) which would fund the construction of a distributor road which would unlock the delivery of the CUE. The urban expansion would be a key strategic site in meeting the housing need and support the delivery of the emerging Local Plan.

<sup>8</sup> Chippenham Housing Market Area – Assessment Summary, Wiltshire Council, April 2019

- 3.13. The sites within the urban expansion are either Wiltshire Council's ownership or owned by private developers. The sites are included in the Strategic Housing Land Availability Assessment (SHLAA) and as such will be under consideration for selection as part of the Local Plan review site selection process.
- 3.14. The CUE will contribute to the SWLEP long-term economic ambitions for the M4-Swindon and A350 Growth Zones by providing the housing and employment needed to support growth in these areas. Wiltshire Council are expecting the decision on the HIF funding to be announced in Autumn 2019.

### Additional economic development sites

- 3.15. In addition to the developments included in the CUE there are two known employment sites planned at sites near to M4 Junction 17 that will bring considerable levels of additional employment to the local area. These are described in Table 3-1.

**Table 3-1 - Planned employment sites at M4 Junction 17**

Site	Description
Chippenham Gateway (also referred to as St Modwen Park)	<ul style="list-style-type: none"> <li>The site is located south-east of M4 Junction 17 on the B4122</li> <li>It comprises of approximately 90,000m<sup>2</sup> of Class B8 (storage and distribution) employment space and associated infrastructure</li> <li>The site is currently under construction, having passed through the planning system</li> </ul>
Hullavington Airfield (Dyson)	<ul style="list-style-type: none"> <li>Dyson have submitted a planning application to Wiltshire Council in 2018 for the second phase of development at the former Hullavington Airfield site</li> <li>Hullavington Airfield is accessed from the A429, north of M4 Junction 17</li> <li>The expansion will contain 45,000m<sup>2</sup> of new development space which will develop and test the company's electric vehicles</li> <li>Supporting facilities will be delivered alongside this, which includes a café, sports centre and technical facilities</li> </ul>

- 3.16. Chippenham Gateway and Hullavington Airfield development sites may attract additional commuter traffic from the A350 corridor area.

### Future transport system changes

- 3.17. Further to the schemes identified in the Chippenham Transport Strategy, several potential schemes have been identified to support the delivery of the Chippenham Urban Expansion, as follows:
- Chippenham Urban Expansion Distributor Road to the east of Chippenham, routing from from Malmesbury roundabout to Lackham roundabout.
  - Lackham roundabout improvements to cater for new distributor road.
  - A4 Link Road.
  - M4 J17 improvements.
  - Malmesbury roundabout improvements.
  - Chequers roundabout signalisation.
  - A4/Old Derry Hill Junction (SE).
- 3.18. Whilst these schemes have not yet been progressed to planning application stage it is important to be aware of schemes which may impact the function of the A350. Notably plans to develop and deliver the Chippenham Urban Expansion Distributor Road could have major implications at Lackham roundabout where the road is proposed to join the existing network. This scheme will also likely increase the volume of traffic along the A350 Chippenham Bypass, exacerbating existing capacity constraints.

## Future travel demands

- 3.19. According to the Chippenham Transport Strategy, 'the A350 carries the highest volume of vehicles and HGVs on Wiltshire's primary route network' and has experienced locally significant traffic growth in recent years. Significant growth in Chippenham over the Core Strategy & CSAP plan period to 2026 is likely to lead to increased congestion on the A350 to the west of Chippenham. In turn, this is likely to lead to an increase in the number of journeys on less suitable roads.
- 3.20. Transport modelling highlights that the highway network around Chippenham, in particular the A350, is forecast to become highly constrained without further intervention and will increasingly fail to cope with the additional trips created by planned growth at the strategic sites. This has significant implications for the west Wiltshire economy, including the Principal Settlements of Chippenham and Trowbridge.
- 3.21. In the 2026 AM peak period base case (i.e. without further transport interventions), the S-Paramics model suggests that the road network around Chippenham will suffer from the direct and indirect impacts of specific congestion hotspots, including the A350 between the A420 (Bumpers Farm roundabout) and Malmesbury Road roundabout. With development taking place to the south west of the town, the model forecasts that congested traffic conditions in the town centre will be exacerbated by traffic that is reassigning from the A350 to avoid congestion on the northern section of this strategic route in the morning peak.
- 3.22. Additional SATURN modelling has been undertaken to show the traffic flows that might be expected in 2036 along the A350 Chippenham Bypass if the current network supply were to remain the same. The SATURN traffic model shows that even under what can be considered a conservative growth scenario, flows along the A350 bypass are expected to increase by up to 288 PCUs northbound and 376 PCUs southbound between now and 2036 in the AM peak (08:00-09:00) 321 PCUs northbound and 444 PCUs southbound in the PM peak (17.00-18.00).
- 3.23. These flow increases are forecast result in the A350 Chippenham Bypass reaching full capacity in AM and PM peak hours along key stretches of the route, most notably along the southern approach to Bumpers roundabout where the bypass is currently only single lane. As seen in the 2026 S-Paramics model large flow increases are also forecast along routes through the town centre, with some routes also forecast to reach capacity by 2036. This may be in part due to the impact of re-routing away from the heavily congested A350 Chippenham Bypass as some areas of delay resulting from capacity constraints can be identified in the 2036 forecast along parallel local routes along Hungerdown lane and Hardenhuish lane.
- 3.24. Further SATURN modelling assessing the impact of the additional growth from the Chippenham Urban Expansion (CUE) identifies considerable traffic reassignment along the new distributor road which is required to unlock the delivery of the CUE. This in turn will lead to substantial increases in flow along the stretch of the A350 between Lackham and Chequers roundabouts which in turn has been shown to increase the level of delay along this section.
- 3.25. As traffic flow increases the number of accidents currently observed along this busy strategic route are also likely to increase due to the network becoming increasingly congested. This will likely lead to an increased risk of rear-end shunts caused by queuing traffic and collisions within roundabouts experiencing large traffic flows.

## 4. Step 3: Establishing the need for intervention

- 4.1. Work undertaken for steps 1 and 2 of the recommended WebTAG process for option development has highlighted the existing and forecast level of service on the A350 to the west of Chippenham, as well as summarising key strategic policies and objectives impacting the Wiltshire area.
- 4.2. The Chippenham Transport Strategy recommended investment in improvements to the A350 Chippenham Bypass, in particular to protect its strategic role within Wiltshire's road network. Whilst the level of service along the A350 has been largely improved by recent bypass improvement schemes, forecast traffic models have identified remaining areas of the network which do not hold sufficient capacity to accommodate the forecast increase in demand.
- 4.3. In addition to the detrimental impact this increased demand could have on existing users, capacity issues along the A350 are likely to present a constraint to planned and future housing and employment growth in Chippenham and across west Wiltshire. Forecast increases in congestion could discourage firms from expanding or locating in the western Wiltshire area, and as a result, create an imbalance in homes and jobs. Ultimately, this scenario would be detrimental to economic growth and undermine the ambitions of the SWLEP.
- 4.4. Table 4-1 summarises the key issues which would likely be realised should no transport mitigation be implemented.

**Table 4-1 - A350 Chippenham - the need for intervention**

Problem	Commentary
Existing congestion issues identified by the TomTom data will continue to negatively impact existing road users	<ul style="list-style-type: none"> <li>• Queuing and delays resulting from existing congestion constraints lead to slower travel times and reduced journey time reliability during peak periods, particularly in the AM.</li> <li>• This will continue to impact journey quality for existing users and the chance of accidents such as rear-end shunts resulting from queuing traffic will remain high.</li> <li>• Journey time reliability issues are especially concerning due to the fact that the A350 is part of Wiltshire's advisory freight route network, so unreliable journey times also affects the movement of goods by HGV.</li> </ul>
Forecast capacity constraints along the A350, between Malmesbury Road and Lackham will negatively impact journey quality and reliability for existing and future road users	<ul style="list-style-type: none"> <li>• Existing congestion issues are expected to worsen as the strategic sites are developed, even with the introduction of a comprehensive multi-modal transport package for Chippenham.</li> <li>• Every peak period road user in Chippenham will be affected in some way by the congestion, whether directly on the A350 or as a result of the knock-on traffic redistribution impacts.</li> </ul>
Insufficient capacity to accommodate additional Housing and employment growth planned for the Chippenham strategic sites could hinder the delivery of housing and inward investment into new employment sites	<ul style="list-style-type: none"> <li>• Chippenham, as one of three Principal Settlements, will need to cater for more than 10% of Wiltshire's new homes and almost 15% of new employment land to 2026. This will place considerable pressure on the A350.</li> <li>• The inability of the A350 to cope with the additional demand will hinder inward investment and successful employment growth at the strategic sites, which forms a central element of the Core Strategy.</li> </ul>
Forecast A350 traffic reassignment onto parallel routes	<ul style="list-style-type: none"> <li>• Congestion on the A350 Chippenham Bypass may lead to increasing levels of traffic reassignment onto parallel routes during the morning and evening peak periods, leading to further knock-on congestion impacts.</li> <li>• Consequential negative environmental impacts are expected to affect those living and working in Chippenham, reducing the attractiveness of the town centre for businesses.</li> </ul>

<p>Strategic role of the A350 threatened by increasing congestion, with potential negative connectivity and economic impacts for Chippenham and the west Wiltshire towns.</p>	<ul style="list-style-type: none"> <li>• The A350 Chippenham Bypass connects west Wiltshire towns, including Melksham, Trowbridge, Westbury and Warminster to the motorway network (at M4 Junction 17).</li> <li>• Negative connectivity and economic impacts for Chippenham and the West Wiltshire towns will likely ensue as journey reliability and route safety are forecast to worsen with increasing traffic demand.</li> <li>• Increasing congestion on the A350 corridor will reduce the attractiveness of the west Wiltshire towns for inward investment, undermining the strategic objectives for Wiltshire.</li> </ul>
<p>Rerouting along the new distributor road could increase demand along single dualled stretch of A350 between Lackham to Chequers roundabouts</p>	<ul style="list-style-type: none"> <li>• Whilst planning permission and funding for the construction of the CUE distributor road to the east of Chippenham has not yet been approved, consideration of the impact this may have should be made.</li> <li>• The new distributor road has been shown to increase the flow of traffic using the stretch of the A350 Chippenham Bypass between Lackham and Chequers roundabouts.</li> <li>• Whilst this stretch of road is not currently operating at full capacity, being only single-lane, capacity is likely to be reached should demand along this route substantially increase.</li> <li>• Should this development go forward its impacts on the function of the existing A350 should be closely monitored to ensure the strategic role of the A350 for providing north-south connectivity is preserved.</li> </ul>

## 5. Step 4 - Identifying objectives

### Objectives from key policy documents

- 5.1. In formulating the hierarchy of objectives, attention has been paid to ensure that they:
- Address the transport problems identified in step 3.
  - Relate to the strategic objectives of the key policy documents reviewed in chapter 2:
    - DfT Transport Investment Strategy
    - Swindon and Wiltshire Local Economic Plan
    - Wiltshire Local Transport Plan
    - Wiltshire Core Strategy
    - Chippenham Site Allocations Plan
    - Chippenham Transport Strategy
    - STB strategy context.

- 5.2. Strategic objectives and policies deemed relevant to A350 Chippenham Bypass improvements are presented in Table 5-1. Two consistent themes are evident across these objectives:

- Supporting economic growth.
- Improving transport connectivity, reliability and resilience.

These themes were applied to formulate both the strategic scheme objectives and subsequent high-level transport objectives outlined below.

**Table 5-1 - Strategic objectives and core policies**

Document	Summary of relevant strategic objectives and policies
DfT Transport Investment Strategy	<p><b>Strategic Objectives</b></p> <ul style="list-style-type: none"> <li>• DfT1: Creating a more reliable, less congested, and better-connected transport network that works for the users who rely on it.</li> <li>• DfT2: Building a stronger, more balanced economy by enhancing productivity and responding to local growth priorities.</li> <li>• DfT3: Enhancing our global competitiveness by making Britain a more attractive place to trade and invest.</li> <li>• DfT4: Supporting the creation of new housing</li> </ul>
Swindon and Wiltshire Strategic Economic Plan	<p><b>Strategic Objectives</b></p> <ul style="list-style-type: none"> <li>• SEP2: Transport infrastructure improvements - we need a well-connected, reliable and resilient transport system to support economic and planned development growth at key locations</li> <li>• SEP4: Place shaping - we need to deliver the infrastructure required to deliver our planned growth and regenerate our City and town centres, and improve our visitor and cultural offer</li> </ul>
Wiltshire Local Transport Plan 3	<p><b>Goal: Support Economic Growth</b></p> <ul style="list-style-type: none"> <li>• LTP1: Support and help improve the vitality, viability and resilience of Wiltshire's economy and market towns.</li> <li>• LTP4: Minimise traffic delays and disruption and improve journey time reliability on key routes</li> <li>• LTP6: To make the best use of existing infrastructure</li> <li>• LTP10: Encourage the efficient and sustainable distribution of freight in Wiltshire</li> </ul>



	<ul style="list-style-type: none"> <li>• LTP12: Support planned growth in Wiltshire and ensure that new developments adequately provide for their sustainable transport requirements and mitigate their traffic impacts</li> <li>• LTP16 – To improve the resilience of the transport system</li> </ul> <p><b>Goal: Reduce Carbon Emissions</b></p> <ul style="list-style-type: none"> <li>• LTP11: Reduce the level of air pollutant and climate change emissions from transport</li> </ul>
<p>Wiltshire Core Strategy</p>	<p><b>Strategic Objectives</b></p> <ul style="list-style-type: none"> <li>• WCS1: Delivering a thriving economy.</li> <li>• WCS3: Providing everyone with access to a decent, affordable home.</li> <li>• WCS4: Helping to build resilient communities.</li> <li>• WCS6: Ensuring that adequate infrastructure is in place to support our communities.</li> </ul> <p><b>Core policies</b></p> <ul style="list-style-type: none"> <li>• CP10 – Chippenham Area Strategy: allocation of 2,686 housing sites and 26.5ha of employment</li> <li>• CP65 – Encouraging use of the advisory freight network (A350 is part of this)</li> <li>• CP66 – Plans to improve the strategic road network to support economic growth</li> </ul>
<p>Chippenham Site Allocations Plan</p>	<p><b>The Chippenham Vision</b></p> <ul style="list-style-type: none"> <li>• Chippenham will have an integrated approach to transport so that traffic flow will be more efficient, the town centre will be less congested and there will be improved access for sustainable modes of transport.</li> <li>• Chippenham will take advantage of its excellent rail and road links and its position on the high-tech corridor between London, Bristol and beyond. It will strengthen its offer and role as a business location ensuring people can live and work locally.</li> </ul> <p><b>Site Allocation Objectives</b></p> <ul style="list-style-type: none"> <li>• CSAPO1: delivering economic growth</li> <li>• CSAPO2: providing housing supported by appropriate infrastructure</li> <li>• CSAPOO3: Improving connectivity and reducing traffic impacts</li> </ul>
<p>Chippenham Transport Strategy</p>	<p><b>Strategy Theme: Providing for strategic development sites</b></p> <ul style="list-style-type: none"> <li>• Deliver a transport network for Chippenham that can support planned growth at development sites and minimise the impact of increased travel demand on existing residents</li> <li>• Ensure development sites provide for necessary on-site, and appropriate off-site, transport infrastructure and services to accommodate and mitigate travel demand generated by the development</li> </ul> <p><b>Strategy Theme: Maintaining Strategic Function of A350 &amp; Key Routes</b></p> <ul style="list-style-type: none"> <li>• Minimise current and future traffic delay on the Chippenham Transport network and improve journey time reliability on the A350. A4. A420 and M4 J17</li> <li>• Safeguard the role of the A350 as a strategic route to ensure vehicles, including freight, travel on the most appropriate route</li> </ul>

	<ul style="list-style-type: none"> <li>• Improve road safety for all transport network users and help reduce the number of casualties in Chippenham</li> </ul> <p><b>Strategy Theme: Improving the accessibility and attractiveness of the town centre</b></p> <ul style="list-style-type: none"> <li>• Improve connectivity and manage traffic to reduce the negative effects of congestion on Chippenham Town Centre</li> </ul>
Western Gateway STB Strategy Context	<p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• STB1 - Improve strategic linkages to drive productivity growth, achieve greater integration between digital and innovation clusters (as identified in the Science and Innovation Audits) and facilitate the creation of new high-value jobs.</li> <li>• SBT4 - Establish a whole corridor approach to traffic management on strategic corridors to improve reliability, safety and resilience</li> <li>• STB5 - Address the poor connectivity of north-south links, particularly to and from the south coast ports, to help support planned development, drive business growth and improve access to international markets</li> <li>• STB6 - Deliver key transport infrastructure that supports sustainable place-shaping by facilitating the delivery of significant land for new homes and employment opportunities</li> </ul>

## Strategic outcomes

5.3. The strategic outcomes of improving the current level of service along the A350 is to:

- Preserve the strategic function of A350 corridor for Wiltshire.
- Improve North-South connectivity between Chippenham, the west Wiltshire towns and the A36/M4.
- Increase the capacity of the transport network to support planned growth (Wiltshire Core Strategy and CSAP) and future growth (emerging Local Plan).

## High-level and transport objectives

5.4. Taking the problems identified in Table 4-1 into consideration, the objectives for any improvements on the A350 corridor to the west (and north) of Chippenham should be to:

1. Improve journey time reliability and reduce total delay along the A350 Chippenham Bypass.
2. Reduce the frequency of personal injury accidents along the A350 Chippenham Bypass and parallel routes.
3. Improving journey time reliability on the A350 to preserve its key role as part of the advisory freight route network.
4. Increase the capacity of the A350 Chippenham Bypass to support planned growth (Wiltshire Core Strategy and CSAP) and future Growth (emerging Local Plan).
5. Improve journey time reliability and reduce total delay along the A350 Chippenham Bypass which may otherwise discourage inward investment towards new and existing employment sites in Chippenham.
6. Protect the strategic role of the A350, by increasing the road capacity to minimise traffic reassigning onto the local road network.

5.5. Whilst these objectives do not address the need to provide for sustainable modes, the schemes proposed in this document will be complemented by other measures set out in the Chippenham Transport Strategy, including improved provision for walking and cycling along parallel local routes and improvements to the local bus network.

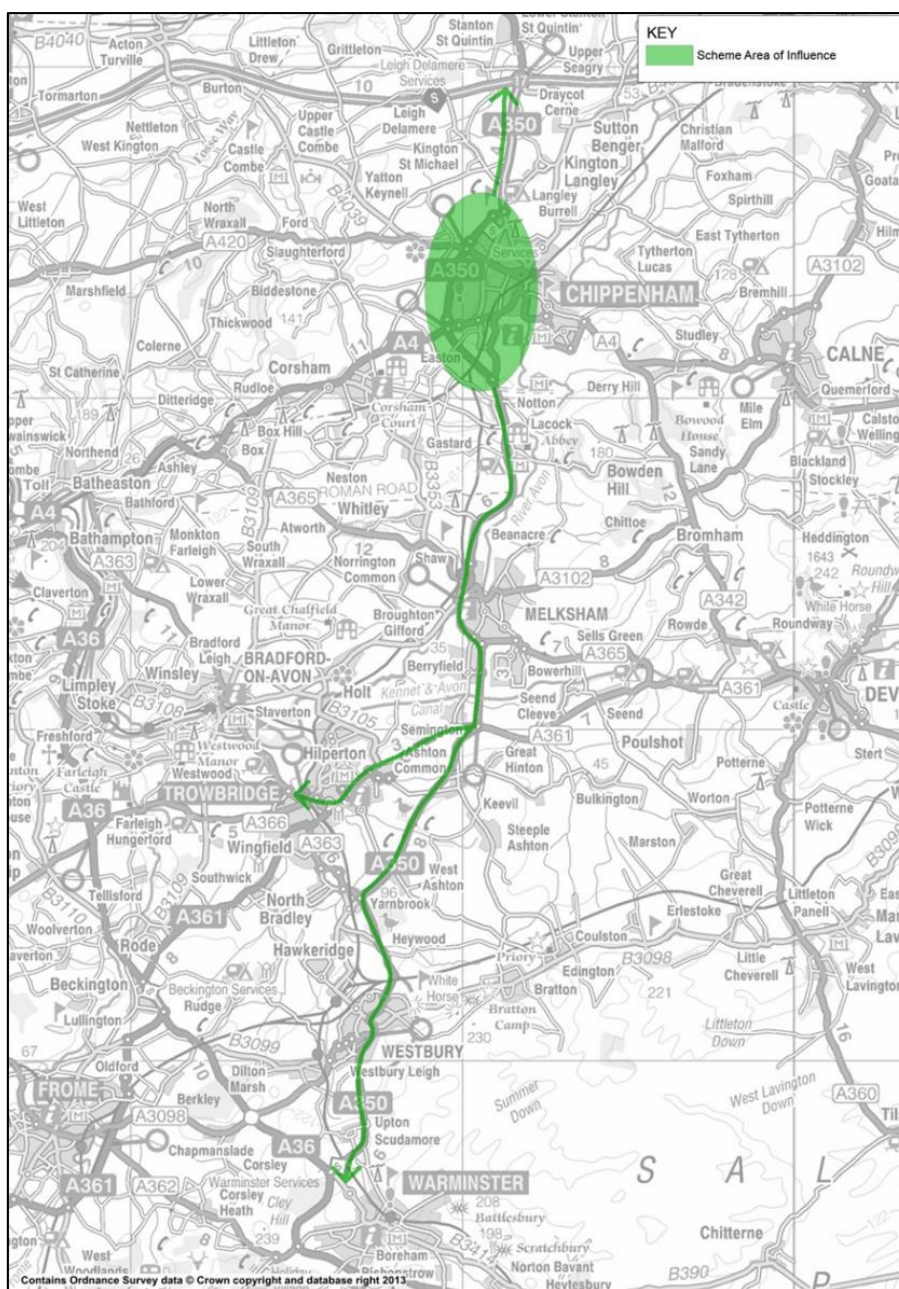
5.6. Therefore, maintaining the strategic role of the A350, by way of the objectives outlined above, will ensure capacity along the local road network is preserved for sustainable travel for local journeys.



## Geographic area of impact

- 5.7. Given the problems identified in Table 4-1, and the objectives identified in Step 4, any interventions should aim to have a beneficial impact on both the Chippenham urban area as a whole and the wider A350 corridor, as shown in Figure 5-1. Specifically, the geographic area of impact should encompass the following areas:
- i. Planned strategic sites at North Chippenham, Rawlings Green, Hunters moon and South West Chippenham.
  - ii. Chippenham town centre and the existing urban area, including Principal Employment Areas at Bumpers Farm Industrial Estate and Methuen Park.
  - iii. A350 corridor north of Chippenham to M4 Junction 17.
  - iv. A350 corridor south to Melksham and Trowbridge.

**Figure 5-1 - A350 Chippenham Bypass improvements - area of impact**



## 6. Initial option assessment (Steps 5-6)

### Step 5: Generating options

- 6.1. Eight potential interventions to address the problems identified in Table 4-1, and to meet some or all of the objectives in Step 4b, are listed in Table 6-1. These interventions are considered to cover the full range of options that have previously been considered for this area.
- 6.2. Schemes to be included in the options long list were selected if they were deemed to tackle all or some of the transport objectives listed in step 4 (Section 5).
- 6.3. Options for transport investment priorities (across all modes) relating to the Chippenham area have most recently been considered in the development of the Chippenham Transport Strategy. Option assessment work identified a need for capacity improvements to the A350 Chippenham Bypass to mitigate the effects of future growth on the corridor.

**Table 6-1 – Step 5: Option long-list**

Option	Objectives	Description
Option A – <b>Chippenham Bypass dualling phase 4</b>	1, 2, 3, 4, 5	Full dualling of the A350 between Chequers Roundabout and Lackham to extend the dualling completed during phases two and three of the A350 improvement programme to cover the full stretch of the orbital route identified as ‘Cumulative Route 2’ in the revised transport strategy. This option also incorporates roundabout capacity improvements at Lackham.
Option B – <b>Chippenham Bypass dualling phase 5</b>	1, 2, 3, 4, 5	Full dualling of the A350 between Cepen Park South Roundabout and Bumpers Farm, connecting the dualling completed during phases two and three of the A350 improvement programme
Option C – <b>Junction Capacity Improvements at Bumpers</b>	1, 2, 3, 4, 5	Capacity enhancements to A350 Bumpers Farm roundabout including: signalling all approach arms; extension of existing flares, bypass lanes for A420 (W) and Bumpers Way; flares added to A350 (N), A420 (E), and A350 (S); spiral road markings added to centre of roundabout; and dualling exit lanes for A420 (W), A420 (E) and Bumpers Way.
Option D – <b>Chippenham Bypass dualling phase 5 plus Junction Capacity Improvements at Bumpers</b>	1, 2, 3, 4, 5	Options B and C combined
Option E – <b>Combined dualling option</b>	1, 2, 3, 4, 5	Options A, B and C combined
Option F – <b>Parallel priority lanes</b>	1, 3, 4, 5	Additional lanes alongside the existing general traffic lanes to give priority to specific types of vehicle only, including high occupancy vehicles (with at least two people travelling in the vehicle), local buses and HGVs. Priority lanes could be provided in both directions along the full length of the bypass, or on specific sections where the most significant congestion problems are forecast to exist.
Option G – <b>Bus priority measures and new bus services</b>	1, 3, 4, 5	Bus lanes, bus gates and selective vehicle technology at traffic signals could be implemented to promote use of public transport when travelling to/from the strategic sites at North Chippenham and South West Chippenham. Alongside the infrastructure measures, new bus services would need to be provided to connect the strategic sites with existing employment sites such as the Bumpers Farm Industrial Estate and Methuen Park. The intention of this measure is to encourage

		mode shift to public transport for short distance trips that would have been made on the A350 by private car, thereby reducing overall traffic flows.
Option H – <b>Cycling infrastructure</b>	2	Infrastructure measures to encourage cycling between the strategic sites and the existing employment sites that are adjacent to the A350, including Bumpers Farm Industrial Estate and Methuen Park. Measures could include fully segregated cycleways alongside the Chippenham Bypass. As with Option 4, the intention of this measure is to encourage mode shift for short distance trips that would have been made on the A350 by private car.

## Step 6: Initial sifting

- 6.4. This stage of the option assessment process involves an initial option sifting exercise. The aim of this exercise is to identify any ‘show-stoppers’, based around key criteria under the DfT’s five cases model for the transport business case<sup>9</sup>, which would preclude further consideration of any of the options that have been identified in Step 5 (Table 6-1).
- 6.5. An initial sift of the five options was undertaken against the following ‘show-stopper’ criteria:
- Strategic Case: Option likely to have a negative impact (i.e. work against) any of the scheme objectives, local policy objectives, or national policy objectives for transport and spatial planning
  - Economic Case: There is certainty of the option offering very poor value for money, giving rise to a large adverse environmental impact, or a large adverse social impact
  - Financial Case: Option is unaffordable in terms of the capital investment required or ongoing revenue liabilities.
  - Management Case: Major deliverability risks (in relation to practicality or timescales) are presented, or there are likely to be considerable and insurmountable public acceptability issues
  - Commercial Case: option has limited or no possibility for funding.
- 6.6. Considering the above criteria, the only ‘show-stoppers’ identified was option H which failed to address key scheme objectives of maintaining the strategic function of the A350 in the face of increasing demand from new employment sites both in and around Chippenham. Based on the fact that the A350 is primarily used for strategic traffic it was deemed that improving cycling infrastructure in this location was unlikely to lead to substantial model shift the tackle existing and forecast capacity issues.
- 6.7. All remaining options, listed in Table 6-1, have been able to proceed to Step 7 of the recommended WebTAG process for option development.

<sup>9</sup> *The Transport Business Cases*, Department for Transport, January 2013. Criteria for the Commercial Case were not used in the initial sift

**Table 6-2 - Step 6: Option assessment**

Strategic option	Strategic Case	Economic Case	Financial Case	Management Case	Commercial Case	Overall assessment
<b>Option A</b> – Chippenham Bypass dualling phase 4	Pass	Pass	Pass	Pass	Pass	Pass
<b>Option B</b> – Chippenham Bypass dualling phase 5	Pass	Pass	Pass	Pass	Pass	Pass
<b>Option C</b> – Junction Capacity Improvements at Bumpers Roundabout	Pass	Pass	Pass	Pass	Pass	Pass
<b>Option D</b> – Chippenham Bypass dualling phase 5 plus Junction Capacity Improvements at Bumpers Roundabout	Pass	Pass	Pass	Pass	Pass	Pass
<b>Option E</b> – Combined dualling option	Pass	Pass	Pass	Pass	Pass	Pass
<b>Option F</b> – Chippenham Bypass parallel priority lanes	Pass	Pass	Pass	Pass	Pass	Pass
<b>Option G</b> – Bus priority measures and new bus services between strategic sites and existing employment sites	Pass	Pass	Pass	Pass	Pass	Pass
<b>Option H</b> – Cycling infrastructure improvements, potentially including segregated cycleways alongside the A350	Fail	Pass	Pass	Pass	Pass	Fail

## 7. Detailed option assessment (Steps 7-8)

### Step 7: Development and assessment of potential options

- 7.1. The purpose of this step is to identify the better performing scheme options, with regard to their relative costs and benefits. The assessment is based around the government's five case model for the transport business case. The intention is that the strongest options are carried forward to the OBC stage.
- 7.2. In line with the guidance in TAG Unit 2.1.2d, a proportionate assessment approach has been adopted. Sufficient information has been gathered in order to be able to distinguish the relative benefits and impacts of the various options. In line with a proportionate approach further analysis has not been undertaken in producing this report.
- 7.3. Swindon and Wiltshire LTB's scoring method was designed originally to help prioritise a wide range of major schemes across both authorities, given limited available funding; a scoring method flowchart is included in Appendix A. However, the scoring method can be adapted for different purposes, including comparing options for a scheme in a specific location. Some minor adjustments have been made to the original scoring method as follows:
- The 'scale of problem' adjustment (in the Strategic Case) is identical for all scheme options, as the options presented are designed to deal with the same set of transport problems on the A350 to the west of Chippenham;
  - The 'number of jobs' score (in the Economic Case) is identical for all scheme options and, similarly, the 'number of houses' scores. These scores relate directly to the number of jobs and houses anticipated to be provided on allocated development sites within the vicinity of the scheme. The 'certainty of unlocking' adjustments for employment and housing sites are therefore used to identify the differences between options; and
  - The 'amount of potential third-party funding' (in the Financial Case) is identical for all options, with the funding 'risk assessment' score used to reflect the fact that funding may be easier to secure for some options compared to others.
- 7.4. The scoring method allows scores to be calculated and weightings applied for each of the five cases from the government's five cases model. The same weightings applied in the LTB major scheme prioritisation have been used for this option assessment process, to reflect the different levels of importance attributed by the LTB to the five cases. The weightings applied (totalling 100%) are: 30% for the Strategic Case; 30% for the Economic Case; 10% for the Commercial Case; 10% for the Financial Case; and 20% for the Management Case.
- 7.5. The total score for each option is a maximum of 60 and a minimum of zero. It should be noted that the value for money or anticipated performance/effectiveness of an option cannot be inferred directly from the absolute score; a low score does not necessarily mean that the scheme performs poorly. The purpose of the total score is to enable comparison of the relative, rather than absolute, performance of the options where the most favourable option is the one which scores the highest regardless of the size of the score.
- 7.6. The assessment scores provided in Table 7-1 demonstrate that all eight options perform reasonably well against the criteria within the DfT's five cases model. It is inevitable that some options will perform better than others, but that is not to say that all of the least well performing options should be discarded. Some of the lower scoring options should remain as options for complementary transport improvements in Chippenham, even though they are not considered to be the right options to deal with the specific A350 traffic problems discussed in this document.
- 7.7. Focusing solely on dealing with the problems identified in Step 3, the strongest performing options are those that are expected to lead to congestion reduction benefits for traffic along the A350 Chippenham Bypass as well as more widely across the Chippenham urban area. The strongest performing options are also expected to lead to real improvements in journey time reliability.
- 7.8. Options B-E have a strong strategic fit and expected economic benefits. Importantly, all options are deliverable (Management Case) and present a low risk to Wiltshire Council in terms of procurement



(Commercial Case) and ongoing financial liabilities. Neither option is expected to give rise to strong negative environmental or social impacts<sup>10</sup>.

- 7.9. The economic case of Option A is reduced by comparison with Options B-E, due to its location crossing the Pudding Brook flood plain and being near to a bat SAC. That said, the Option A would have a strong strategic fit with the introduction of environmental mitigation. Furthermore, when this scheme is combined with option D it can be expected to perform well. Due to the economies of scale, it is recommended that this scheme would be better delivered in unison with Phase 5 dualling and junction capacity improvements.
- 7.10. It should also be noted that the strategic fit of Phase 4 can be considered a conservative estimate. Should the Chippenham Urban Expansion be delivered this stretch of road would be subject to even higher flows, thus increasing the rationale for investment. This scheme also performs well in terms of its commercial and management case presenting few concerns in terms of its deliverability.
- 7.11. The lower scoring options generally do not perform as strongly under the Economic Case, primarily because they are considered less likely (in relative terms) to make a difference to ‘unlocking’ the growth potential of the strategic sites. Option G (bus priority and new bus services) might provide successfully for future short distance trips relating to the strategic sites, reducing the impact of additional trips on the A350. However, it is expected to be insufficient to fully address the existing issues on the A350 corridor which is utilised for longer distance journeys.

**Table 7-1 – Step 7: Detailed option scoring assessment**

Option	Weighted Score ( <i>max.</i> = 60)	Unweighted scores by case ( <i>maximum</i> = 60)				
		Strategic	Economic	Commercial	Management	Financial
A) Chippenham Bypass dualling, Phase 4	42.7	53.3	23.8	60.0	50.0	36.0
B) Chippenham Bypass dualling Phase 5	48.0	60.0	33.8	60.0	50.0	36.0
C) Junction Capacity Improvements	50.0	60.0	33.8	60.0	60.0	36.0
D) Chippenham Bypass dualling, Phase 5 plus junction capacity improvements	49.3	60.0	37.5	60.0	50.0	36.0
E) Combined option (Options A+B+C)	51.6	60.0	37.5	60.0	60.0	36.0
F) Priority Lanes	42.1	43.3	31.3	60.0	50.0	36.0
G) Bus priority and new bus service	37.5	46.7	36.3	30.0	40.0	18.0

## Step 8: Option Assessment

- 7.12. Step 8 is the formal report summarising the work undertaken for Steps 1 to 7, as set out in TAG Unit 2.1.2d. This OAR therefore represents Step 8 of the option development process.

<sup>10</sup> The Economic Case considers a wide range of economic, environmental and social impacts

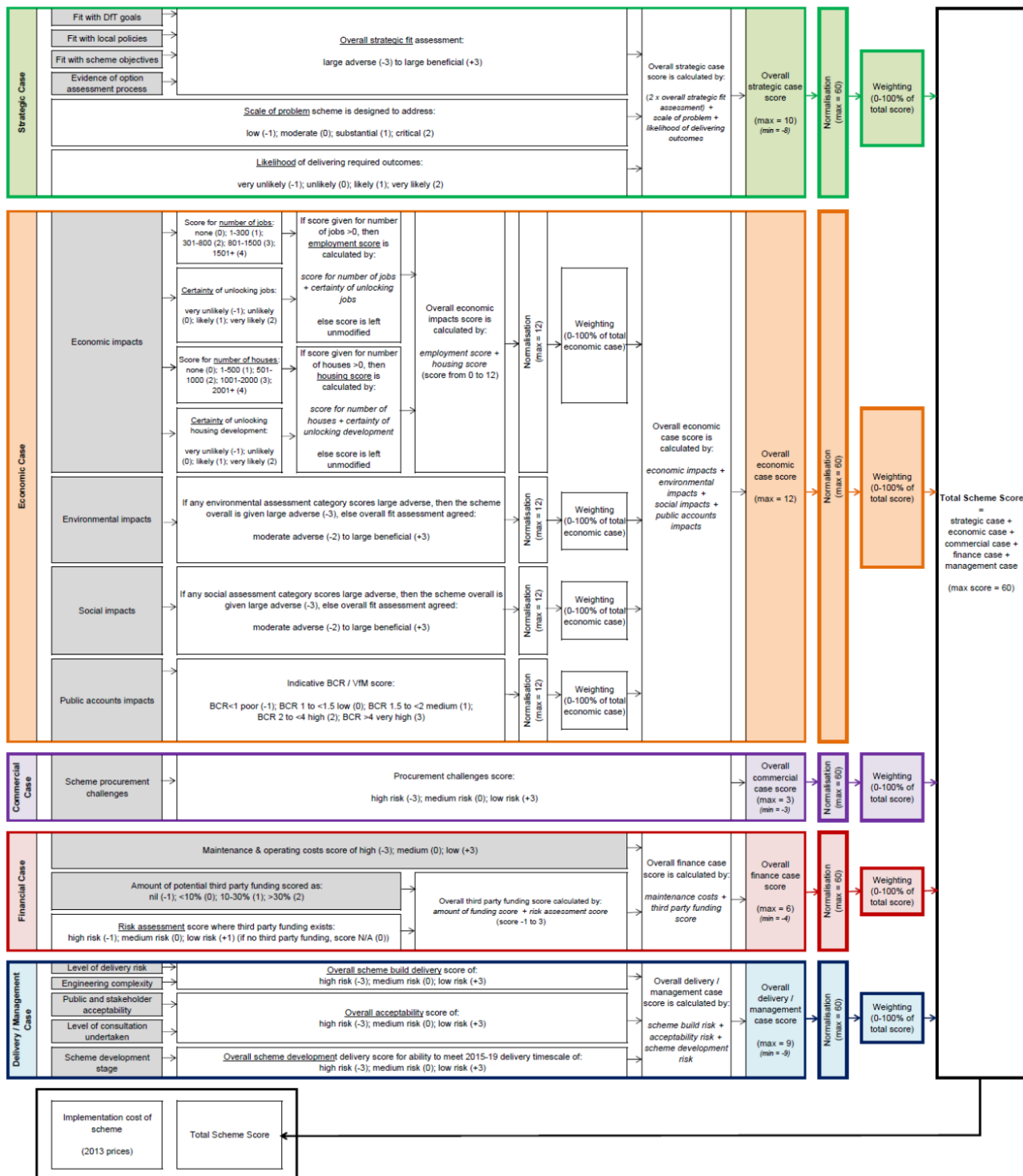
## 8. Confirmation of options for Outline Business Case

- 8.1. Based on the options assessment process described through steps 1 to 8, five options will be carried forward for assessment within the OBC:
- **Main option:** Option E, full combined option
  - **Three reduced Options:** Options A, B, C and D
- 8.2. Full dualling of the remaining stretches of the bypass, is assumed to be the strongest in terms of its performance under key strategic, economic, financial, commercial and management case criteria and therefore will form the main option being assessed within the OBC.
- 8.3. Given the prospect that funding availability may be restricted, the four lower cost options will also be explored.

# Appendices



# Appendix A. Option assessment scoring flow diagram



# A350 Chippenham Bypass Improvements Phases 4 and 5

Walking, Cycling and Horse-riding Review Report  
Wiltshire Council

June 2023





# Notice

This document and its contents have been prepared and are intended solely as information for Wiltshire Council and use in relation to use in relation to A350 Chippenham Improvements Phases 4 and 5 Bypass Walking, Cycling & Horse-riding Review Report. Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

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# 1. Background and Highway Scheme Description

## 1.1. Background

This review report has been produced following the principles of Design Manual for Roads and Bridges (DMRB) *GG 142 Walking, cycling and horse-riding assessment and review* (WCHAR) to inform the design process for the A350 Chippenham Bypass Phase 4 and 5.

Whilst the scheme is not associated with a trunk road and therefore GG 142 is not mandatory, this is a major scheme on a primary route and Wiltshire Council has taken the decision to utilise the GG 142 process due to it being generally accepted as UK-wide best practice and is referenced in Local Transport Note 1/20 Cycle Infrastructure Design. This review is being carried out at the completion of the detailed design stage of the scheme which is in accordance with GG 142; however, the project team has previously taken the decision to omit the preliminary design stage review as the scheme was already part-way through the preliminary design process when the assessment was undertaken. As this review is taking place at the end of the detailed design stage of the scheme the review team has not been involved in the design process.

This review commenced within twelve months of the preceding assessment and therefore there is no requirement to revisit and re-issue the assessment prior to undertaking the review. However, as there has been a change in Lead Assessor between the assessment and the review, the assessment report has been used to inform the review team prior to commencing the review process.

The purpose of the report is to provide a review of the design proposals for walking, cycling and horse-riding that have been included in the detailed design. Previously identified opportunities for improvements from the assessment phase have been reviewed in light of the completed detailed design.

## 1.2. Proposed Highway Scheme

The A350 is one of the most important routes in Wiltshire. It is a primary north-south route with regional significance connecting the south coast with the M4 and onwards to Bristol and the Midlands. In Wiltshire, it passes around the principal settlements of Chippenham and Trowbridge via the town of Melksham and on to Westbury and Warminster.

Wiltshire Council aspires to complete the dualling of the A350 Chippenham bypass (Phase 4 and 5). It has been a longstanding priority to improve north-south connectivity along the A350, and Wiltshire Council has been progressively bringing forward the dualling of the A350 Chippenham bypass. Over recent years, three major capital schemes (Phase 1, 2 and 3) have been brought forward. Those works have been largely successful in increasing traffic capacity, and Wiltshire Council is now looking to complete the dualling and is engaged in securing funding for the remaining sections. The new carriageways will be situated to the west of the existing road, and within the existing highway boundaries on land originally acquired for that purpose.

There are four key sections of Chippenham A350 dualling Phase 4 and 5<sup>1</sup>:

- Phase 4 dualling: widening the A350 to dual 2-lane carriageways between Chequers Roundabout (A4) and Lackham roundabout;
- Phase 5 dualling: widening the A350 to dual 2-lane carriageways along the full stretch between Cepen Park South Roundabout and Bumpers Farm Roundabout (A420);
- A significant remodelling of the Bumpers Farm roundabout junction to improve capacity and install traffic signals at each arm of the roundabout; and
- Alterations will be made to increase Lackham Roundabout capacity to accommodate the additional carriageway and subsequent traffic flows on approach.

Key drivers of this project include:

- Considering the needs and aspirations of all different types of highway user (drivers, pedestrians, cyclists, vulnerable road users, commercial vehicles, public transport etc.)

<sup>1</sup> <https://www.wiltshire.gov.uk/highways-improvements-a350>

- Ensuring the design is developed and the scheme implemented in line with the relevant technical standards (e.g. Highway design standards), and that any and all necessary approvals are sought and secured (e.g. funding approval, environment specialists approvals; approvals / liaison with any third parties as necessary);
- That the project is progressed in a manner which undertakes appropriate levels of and high-quality public and stakeholder engagement and liaison;
- Recognise and respond to the existing key traffic congestion issues that occur at Bumpers Farm – particularly (but not exclusively) the Bumpers Farm commercial area access / egress issues.

### 1.3. Review Team

The Designer appointed to provide improvements for this scheme is Atkins Ltd. and the project manager for the scheme has appointed the following Lead Assessor to undertake the walking, cycling and horse-riding assessment and review process.

**Lead Assessor:**            **Alison Foale**  
*BEng (Hons), MSc, MCIHT, MSoRSA*  
 Associate, Atkins Transportation

As per the guidelines GG 142, Alison has confirmed the previous Lead Assessor's judgement that the scheme is a 'large scheme' in relation to the potential impact on walking, cycling and horse-riding facilities. As this is not a trunk road scheme the project team has concluded that a preliminary design stage review report was unnecessary. Alison has appointed Rob Hunt as an additional assessor. Alison has judged that Rob has the appropriate previous experience to undertake the delegated tasks.

### 1.4. WCHAR Study Area

The approximate study area for the scheme is shown in Figure 1-1. The Lead Assessor has classified the scheme as a 'large scheme' based upon it being a scheme comprising an "All-purpose trunk road or motorway junction upgrade in existing urban area" (GG 142 Table 2.2.1), although it is noted again that GG 142 does not formally apply to this non-trunk road scheme. The Lead Assessor has concluded that the overall study area should cover an approximate distance of 5km around the scheme in keeping with the typical figure recommended in GG 142. This study area includes the settlements of:

- Chippenham
- Corsham
- Yatton Keynell
- Kington St Michael
- Lacock
- Kington Langley
- Langley Burrell
- Pewsham

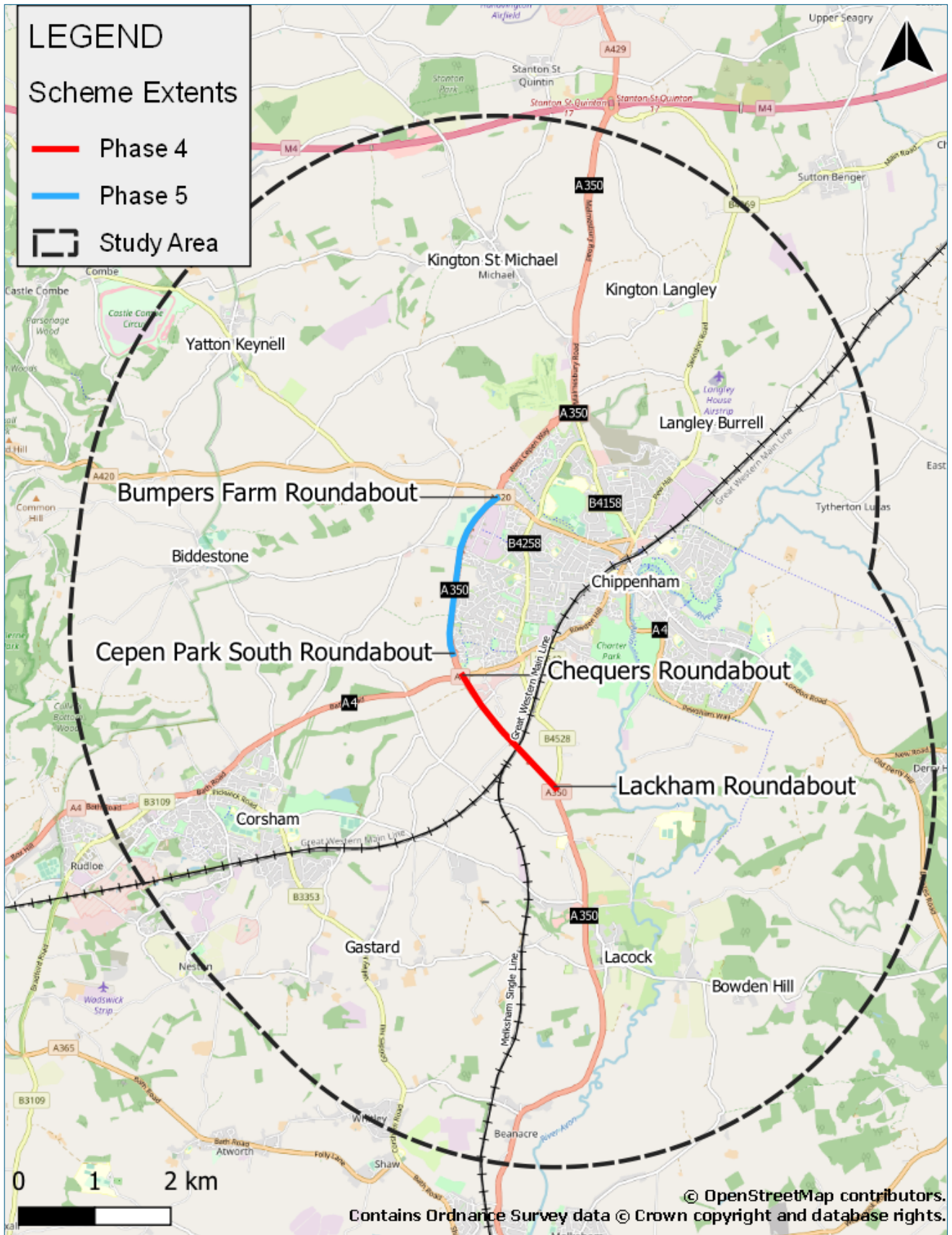


Figure 1-1 - A350 Chippenham Bypass Phase 4 and 5 Scheme Extents and 5km Study Area



## 2. Review of Walking, Cycling and Horse-riding Assessment Opportunities

Based on the findings from the desktop research, site visit and stakeholder liaison conducted during the assessment phase, the following opportunities were identified. These have now been revisited as part of the GG 142 WCHAR detailed design review.

GG 142 requires that the identification and evaluation of the needs of all user groups has been demonstrated in the preceding assessment report. It would be normal practice to report on the opportunities in sections specific to each user group. However, for this report non-strategic opportunities have been grouped geographically into one of three categories:

- Category 1: opportunities relating to the design of the bypass;
- Category 2: opportunities relating to complementary measures in the Chippenham urban area/town centre; and
- Category 3: opportunities that relate to links between the bypass and other areas such as Chippenham, Corsham, Biddestone and Lanhill.

### 2.1. Strategic Opportunities

#### Opportunity 1 (pedestrians and cyclists)

There is an opportunity for any new walking, cycling and horse-riding infrastructure to be designed as high-quality routes that are inclusive and accessible for all types of users appropriate for each route. Although the route would not form part of the trunk road network design, information for pedestrians, cyclists and equestrians can be found in CD 143 and CD 195 in the Design Manual for Roads and Bridges; for cycling guidance the design should refer to latest national guidance on Cycle Infrastructure Design (LTN 1/20) and the five core design criteria that all cycle routes should be coherent, direct, safe, comfortable, attractive. For equestrian routes reference to the British Horse Society design guides is recommended.

#### Action Taken/Outcome

Throughout the scheme the width of the shared use paths is understood to be maintained at 2m (where possible), which meets the minimum requirements for CD 143. LTN 1/20 (paragraph 4.4.4) indicates that shared use facilities can be adequate in rural circumstances where flows of pedestrians are very low. The usage of the paths within the scheme is expected to be very low relative to an urban setting – primarily due to the lack of significant onward routes and destinations – and therefore this guidance in LTN 1/20 would appear to be appropriate. LTN 1/20 notes that the route should be designed to meet the needs of cycle traffic including its width, alignment and treatment at side roads and other junctions.

A Departures from Standards Technical Note ([WC\\_A350-ATK-GEN-XX-DF-CX-000002](#)) has been compiled by the design team and includes sections that are specifically related to walking, cycling and horse-riding departures from guidance (specifically relating to cyclists only). The following is included directly from the technical note:

#### Horizontal Radius of Shared Use Paths

*As per Cycle Infrastructure Design LTN1/20, Table 5-7, a minimum horizontal radius of 4m is required for cycle design speed of 10kph.*

*In Phase 4, non-compliances have been observed at following locations.*

- a) *3.3m turning radius proposed for northbound SUP at Saltersford Lane location (Ch.820) due to space constraints from existing and proposed culvert headwalls and further with highway boundary.*
- b) *3.3m turning radius proposed for northbound SUP at Easton Lane Bridge location (Ch.1515) due to space constraints from highway boundary.*

*In Phase 5, non-compliances have been observed at following locations.*

- c) *1m turning radius proposed for northbound Shared Use Path (SUP) tie-in near Drake Crescent Junction (Ch. 241m) due to space constraints.*
- d) *Horizontal radius of 1m proposed for SUP near northbound Frogwell footbridge tie-in (Ch.1352). In this location, the cyclist needs to show down near to cul-de-sac/turning head location. Furthermore, a sign is proposed to inform the user about the ramp tie-in from Frogwell foot-over bridge*



- e) *Approx. 2m turning radius proposed for southbound SUP tie-in near PRow (opposite the Rugby ground) (Ch. 1715m) due to ground profile and space constraints.*
- f) *1m turning radius proposed for northbound Shared Use Path (SUP) tie-in near the Rugby ground (Ch. 1730m) due to space constraints.*

### **Outcome of Safety Risk Assessment**

*Throughout the scheme additional and/or improved WCH facilities are provided, in some cases there are substandard turning radii, notably at pinch points where existing structures are present which mean that it has not been possible to provide a fully compliant design.*

*Compared to a compliant design the SRA shows that there is a slight increase in risk for WCH users, however risk is assessed as low/tolerable and the requirements to manage road user risk to the required level of reasonably required for road users and ALARP for road workers, are likely to be met.*

### **Stopping Sight Distance for Shared Use Paths**

*As per DMRB CD195 Clause E/3.18 and LTN1/20 Table 5-5, minimum SSD for cycle tracks for a design speed of 20kph shall be 17m.*

*In Phase 5, departure from this standard have been observed at following locations.*

- a) *5.5m of forward visibility is achieved at northbound Frogwell footbridge tie-in (Ch.1352). The forward visibility at this location is restricted due to existing ramp from Frogwell footbridge. Further, a sign is proposed to inform the user about Frogwell ramp tie-in from Frogwell foot-over bridge.*
- b) *9m of forward visibility is achieved at southbound SUP tie-in with existing PRow (Ch.1560). Available forward visibility is less than the desired value as the verge width cannot be widened further to achieve standard visibility to reduce impact on existing ditch and existing culvert headwall in this location.*
- c) *10m of visibility is achieved at for northbound Shared Use Path (SUP) tie-in near Rugby ground (Ch. 1715m). The visibility at this location is restricted by existing culvert headwall.*

### **Outcome of Safety Risk Assessment**

*Throughout the scheme additional and/or improved WCH facilities are provided, in this case there is reduced visibility due existing structures which mean that it has not been possible to provide a fully compliant design.*

*Compared to a compliant design the SRA shows that there is a slight increase in risk for WCH users, however risk is assessed as low/tolerable and the requirements to manage road user risk to the required level of reasonably required for road users and ALARP for road workers, are likely to be met.*

### **Shared Use Path Crossing Visibility**

*As per DMRB CD 143 Table E/5.2 and Table E/5.3, visibility of  $y=120m$  at  $x=2.5m$  is required for 70kph (40mph) speed. Following departures have been observed.*

- a) *For SUP crossing at Cepen Park Roundabout (southbound), visibility of 32m is achieved for  $x=2.5m$ . This departure is unlikely to be mitigated as the proposed controlled crossing is near to roundabout exit.*
- b) *For SUP controlled crossing at Bumpers Roundabout A350 north arm (northbound), visibility of 30m is achieved for  $x=2.5m$ . SUP crossing visibility restricted due to VRS provision for the pylon.*
- c) *For SUP controlled crossing at Bumpers Roundabout A350 north arm (southbound), visibility of 60m is achieved for  $x=2.5m$ . SUP crossing visibility restricted due to VRS provision and limited space due to highways boundary.*
- d) *For SUP controlled crossing at Bumpers Roundabout A420 east arm (eastbound), visibility of 30m is achieved for  $x=2.5m$ . The SUP crossing is near to Bumpers existing arm (A350-East) and further the visibility is restricted due to VRS provision for mobile tower. It is assumed that the pedestrian guard rail is not obstructing the visibility.*
- e) *For SUP controlled crossing at Bumpers Roundabout A420 east arm (westbound), visibility of 85m is achieved for  $x=2.5m$ . SUP crossing visibility is restricted due to highways boundary earthen berm.*

### **Outcome of Safety Risk Assessment**

*Throughout the scheme additional and/or improved WCH facilities are provided, in this case it has not been possible to provide fully compliant visibility to shared use crossings due to structures which mean that drivers may not have clear visibility of the crossing. The WCH crossings provided are signalised and offer an improvement on the existing uncontrolled crossings at these locations.*

*For the A420 east arm (eastbound) exit at Bumpers Roundabout the cumulative effective of the lack of entry path curvature has been considered. **When combined with the reduced visibility, the risk of a collision with***

**pedestrians or cyclists using the crossing at that location is assessed as not meeting the safety requirement and further mitigations are required to reduce potentially high vehicle speeds.**

*For the remaining arms at Bumpers roundabout, the SRA shows that compared to a compliant design, there is a slight increase in risk for WCH users, however risk is assessed as low/tolerable and the requirements to manage road user risk to the required level of reasonably required for road users and ALARP for road workers, are likely to be met.*

*At the A420 eastbound approach to Bumpers roundabout further mitigations have been added to the original design to reduce traffic speeds. 'Traffic Signals ahead' warning signs and 'SLOW' road markings have been provided to supplement the existing mitigations, when considered together, with the extension of the 40mph speed limit, the revised SRA shows that the requirements to manage road user risk to the required level of reasonably required for road users, and ALARP for road workers are likely to be met.*

## Opportunity 2

There is an opportunity to enhance the usability and attractiveness of walking, cycling and horse-riding facilities by providing a comprehensive network of signage which supports local / regional navigation. In addition, it is important the infrastructure is maintained, and vegetation managed to ensure facilities continue to be fit for purpose.

### Action Taken/Outcome

There is a small number of signs for walking, cycling and horse-riding in the proposals. Most relevant signs are regulatory instead of providing guidance on routes. It is understood from the design team that this approach was specified by Wiltshire Council due to the lack of onward routes to the west of the A350 which appears to be reasonable justification. However, there does appear to be some sense in providing wayfinding signs guiding users to destinations to the east of the A350 such as the town centre. It seems reasonable that not all users will be familiar with the layout of Chippenham and therefore wayfinding signs could be useful.

The shared use path to the south of Cepen Park South Roundabout terminates to the south of the mini-roundabout at Sandown Drive/Beverley Way with no guidance on how to proceed, either in terms of joining the carriageway or which road might lead to any destinations. Wayfinding signs provide information about onward routes to destinations and do not include 'End of Route' signs. There remains an opportunity to provide wayfinding information for eastbound/Chippenham-bound pedestrians and cyclists in the vicinity of Cepen Park South Roundabout and Bumpers Farm Roundabout.

At Frogwell, a flag-type wayfinding sign is included in the design for pedestrians and cyclists pointing the way to the town centre (over the Frogwell footbridge).

A flag-type wayfinding sign is also provided on the A420 western arm of Bumpers Farm Roundabout directing westbound cyclists to cross the A420 via the splitter island to proceed on the carriageway towards Bristol.

On the east side of Bumpers Farm Roundabout a proposed Toucan crossing would connect into an existing shared use path alongside the southern side of the A420 Bristol Road. However, there is no wayfinding signing advising eastbound pedestrians or cyclists who have just crossed the A350 that this is the route towards the town centre or any other destinations; the route along the northern side of the A420 is a footway and so is inappropriate for cyclists. There is an opportunity to include a series of signs guiding eastbound cyclists (and pedestrians) from the signal-controlled crossings on the A350 north of Bumpers Farm Roundabout to the shared use path on the south side of the A420 Bristol Road.

A wayfinding sign is proposed to guide cyclists via a shared use path through a residential area north of the A420 Bristol Road to Cepen Park North. There is an opportunity to amend this sign to include pedestrians as the link equally applies to these users. In addition, cyclists may not be aware of this link and there is no certainty that cyclists would reach this point as some may find the Toucan crossing on the A420 and cross to the south side of the road. The route to the Toucan crossings would take cyclists away from the sign which may mean the sign is missed. There remains an opportunity to provide further eastbound/Chippenham-bound wayfinding signs between the signal-controlled crossings of the A350 to the north of Bumpers Farm Roundabout and (1) the Toucan crossing linking to the shared use path and (2) the link to Cepen Park North.

## 2.2. Category 1: Bypass Design Opportunities – High Priority

### A. Enhance Connectivity Across the Bypass

The A350 is a significant barrier to connectivity between the urban area of Chippenham and land, businesses and communities west of the bypass. Walking, cycling and equestrian provision is almost non-existent. The existing facilities include;

- A footway along the northern side of A420 Bristol Road which crosses the northern arm of Bumpers Farm Roundabout;
- CHIW6 and CHIP33 which links western Chippenham across the A350 to Chippenham Rugby Club and the rural area beyond, however there is a lack of crossing facilities across the A350;
- A crossing adjacent to Drake Crescent;
- An informal crossing of the A350 at Saltersford Lane; and
- Overbridges at Easton Lane and Frogwell.

There is therefore an opportunity to provide high-quality crossing facilities – the format of which should be considered carefully, of particular note the well-used crossing at Drakes Crescent. It may be desirable to divert some of the existing routes to better serve the needs of users. Of particular note CHIW6 and CHIP33 pass through the rugby club and terminate at nowhere in particular. If combined with an A350 parallel route (see Opportunity B) this route could be diverted along Bristol Road, via Bumpers Farm Roundabout. This would provide better access to businesses and activities. For access to the rugby club this could be achieved by again utilising an A350 parallel route to access the overbridge at Frogwell.

#### Action Taken/Outcome

##### **Bumpers Farm Roundabout:**

Project information: *The existing A350 crossing to the north of the roundabout will be upgraded to be traffic signal-controlled. It will be located between two roundabouts which are relatively close together. Traffic speeds will naturally tend to be lower and better controlled here, which will improve the safety for those using the crossing. The new facilities will also tie in and supplement the existing routes.*

The opportunity to provide a footway along the northern side of the A420 has been included in the scheme design and has been combined with cycling to and from a shared use route. This includes signal-controlled crossings of both carriageways of the north arm of Bumpers Farm Roundabout.

##### **Chippenham Rugby Club and Rural Land to the West – Public Rights of Way Changes**

Project information: *The current crossing of the A350 at the Rugby Club will be cut off by the new dual carriageway. To ensure the public rights of way is maintained, the footpath will be diverted south on both sides of the A350 and will cross over at the existing Frogwell Footbridge. This will provide for a safer crossing facility. Styles and fences will be replaced by gates where possible to aid accessibility.*

The scheme includes connections to the rugby club and Public Rights of Way across rural land to the west of the A350. These connections, which are in some cases longer than existing routes, include using the existing grade separated crossing of the A350 due to the significant safety concerns of crossing a high-speed dual carriageway.

##### **Drake Crescent – Public Rights of Way Changes**

Project information: *The current crossing at the end of Drake Crescent is well-used. The new dual carriageway will cut off access at this location, so we will be replacing this facility with a new crossing to the south of the Cepen Park South Roundabout.*

*The new crossing will be signal-controlled and placed between two roundabouts where the traffic speed is naturally lower; therefore, enhancing the safety for people wishing to access the countryside from the residential areas.*

*We will also be ensuring that connections to existing public routes are maintained and new ones are provided where needed, both to the residential area and to the existing rights of way network west of the A350.*

This crossing is now closed, and the route is diverted via crossings of the A350 to the south of Cepen Park South roundabout. This route, whilst longer, provides signal-controlled crossings of the A350.

### **Salterford Lane and Easton Lane – Public Rights of Way Changes and Other Facilities**

Project information: *An existing pedestrian desire line exists along the alignment of Salterford Lane, just to the north of the Railway bridge. This informal crossing location will be affected by the new dual carriageway construction.*

*A connection will be provided between the Salterford Lane area and Easton Lane which has recently been closed to vehicular traffic and is now a safe pedestrian and cycle link across the A350.*

A new connection has been included in the design which provides a grade separated crossing of the A350 over Easton Lane overbridge and ties in with existing routes.

#### **B. Parallel Route Opportunity**

There is an opportunity to provide infrastructure for pedestrians, cyclists and equestrians alongside or parallel to the A350 alignment. It is recommended that this provision is delivered to the west of the bypass in recognition of the likelihood of higher volumes of non-motorised users. Demand for such a path is already evident, as it was observed on site that an informal path has been demarcated by pedestrians between the A350 and Bumpers Farm Industrial Estate. This route would:

- Enhance connections to existing PRoWs surrounding the A350;
- Serve the same purpose as the bypass by providing a direct route to and between several trip attractors, including the retail and commercial areas at Bumpers Farm and Chequers Roundabout, and the residential estates adjacent to the bypass;
- Increase pedestrian and cyclist comfort and safety by formalising a route that is currently overgrown, narrow and unlit; and
- Enhance accessibility and journey options to and from the footbridge over the A350 at Frogwell.

#### **Action Taken/Outcome**

A route alongside the A350 within the highway boundary was not part of the original scheme when the land was purchased and so there is insufficient space within the highway boundary to accommodate the dual carriageway as well as a dedicated facility for pedestrians and cyclists (and possibly equestrians).

## **2.3. Category 2: Chippenham Urban Area Complementary Opportunities – Beyond the Immediate Scheme Extents, High User Benefit**

The opportunities outlined below have been identified due to their potential, in line with local policy ambitions, to deliver better connected and accessible walking and cycling routes. Each of the following opportunities stand to:

- Enhance walking and cycling access to Chippenham town centre, including Chippenham Rail Station, in delivering direct and integrated active travel routes;
- Improve connectivity to existing PRoWs and NCN 403;
- Improve road safety for vulnerable road users along these busy traffic routes; and
- Better and alternative access to business and leisure facilities located across the wider urban area of Chippenham

#### **C. Orbital Route Opportunity**

When the design for the A350 Chippenham bypass Phases 4&5 started in early 2022, Future Chippenham proposed the construction of a new link road around the eastern extents of Chippenham, mirroring that of the western A350 under assessment. The delivery of walking and cycling infrastructure in conjunction with new developments is implicit across national and local policies. There is therefore an opportunity to deliver active travel infrastructure adjacent to the A350 and connect or extend these provisions around the proposed eastern link road. This would create a high-quality, fully accessible and integrated orbital active travel network around Chippenham’s existing and future developments.

#### **Action Taken/Outcome**



The Future Chippenham scheme is now on hold with no indication of a date for any progression. As this opportunity could only be taken forward as part of the development of those proposals it is not clear whether this opportunity will be realised in the future.

#### D. A420 Route Opportunity

In recognition of existing walking and cycling provisions, namely by way of a shared use path along some of the extents, there is an opportunity to extend and connect active travel infrastructure along the A420, Bristol Road. As previously outlined, Bristol Road is a hot spot for collisions, several of which in the most recent 5-year period for which data is available (2016-2020) involved pedestrians. Improving the facilities along the A420 may serve as a collision reduction measure in bettering the road safety for vulnerable road users along this route. Furthermore, it would enhance access to and from Chippenham town centre as well as create an additional link to the NCN 403 route that currently exists along the eastern extents of this road. The A420 route would unlock active travel mode opportunities to numerous places of employment, leisure and residence.

#### Action Taken/Outcome

This opportunity has been reviewed as part of the scheme design process and it has been concluded that it lies outside the remit of the current scheme. However, delivery of this opportunity is possible through other Wiltshire Council programmes and therefore it will be assessed separately for potential future delivery.

#### E. Frogwell Route Opportunity

Frogwell, which extends along the southern extents of the Bumpers Farm Industrial Estate and connects to a footbridge over the A350, has been identified as another location whereby active travel opportunities can be unlocked. It was observed on site that measures have already been installed to reduce traffic levels at this location, with access via the industrial park no longer facilitated. The low traffic levels of this road (aside from those accessing residences) and its progression onto the footbridge makes it a pivotal route to and from Chippenham.

Walking and cycling numbers could be increased by extending traffic regulations along this route, acknowledging the attraction of traffic free routes in encouraging active travel modes for journeys of various types. At this location, it would serve those travelling to work at the business park, to Chippenham town centre or west to the rural countryside. It would also serve as a connection to the PRow footpath CHIP 116. Due to the limited number of crossing facilities across the A350, Frogwell footbridge is essential in providing safe access to non-motorised users across the bypass and walking and cycling infrastructure enhancements to encourage its use and better the accessibility to it is recommended.

#### Action Taken/Outcome

This opportunity has been reviewed as part of the scheme design process and it has been concluded that it lies outside the remit of the current scheme. However, delivery of this opportunity is possible through other Wiltshire Council programmes and therefore it will be assessed separately for potential future delivery.

#### F. Bath Road Opportunity

In the southern extents of the A350, Bath Road is another key route to and from Chippenham town centre. On route, Bath Road connects to a retail park, business park and Chippenham Community Hospital. A shared use path currently extends along this location. As outlined above, a collision cluster is evident at Pheasant Roundabout on Bath Road with five collisions involving cyclists being reported in the 5-year review period. Cyclists are already utilising this route, however there is an opportunity to further increase these numbers and a need to provide more appropriate infrastructure to ensure they can do so safely. Specifically, the initial focus could be to improve junctions and roundabouts, delivering infrastructure that prioritises active travellers over motorised users.

Additionally, the NCN 403 crosses Bath Road, there is therefore an opportunity to integrate active travel networks and extend provisions to cater to more communities across Chippenham.

#### Action Taken/Outcome

This opportunity has been reviewed as part of the scheme design process and it has been concluded that it lies outside the remit of the current scheme. However, delivery of this opportunity is possible through other Wiltshire Council programmes and therefore it will be assessed separately for potential future delivery.

## 2.4. Category 3: Network Connection Complementary Opportunities – Beyond the Immediate Scheme Area, High User Benefit

### G. Beyond the A350 Opportunity

The A420, Frogwell and Bath Route opportunities identified above all encompass further opportunities to better connect Chippenham to the west of the A350. In the north of the scheme extents, extending the recommended cycling and walking provisions along the A420 not only eastwards into Chippenham town centre, but west beyond the A350 stands to also serve the communities of Lanhill, Giddeahall and Ford. Active travel infrastructure within and to these communities will deliver policy sought sustainable transport mode options to residents and leisure trip undertakers.

Extending the enhanced active travel provisions at Frogwell westwards beyond the A350 will further unlock the potential of the footbridge and to Chippenham Rugby and Football Club and Sheldon Business Park.

In the southern extents of the scheme, the delivery of high-quality active travel infrastructure along Bath Road, again west of the A350, would establish a key link to the town of Corsham. This route would provide a safe connection to active travellers from Chippenham to the Wiltshire Cycleway and Vale of Pewsey Route and integrate a number of standalone PRowWs in Corsham. It stands to facilitate active travel modes for various journey purposes, including commuting and leisure.

#### Action Taken/Outcome

This opportunity has been reviewed as part of the scheme design process and it has been concluded that it lies outside the remit of the current scheme. However, delivery of this opportunity is possible through other Wiltshire Council programmes and therefore it will be assessed separately for potential future delivery.

### H. Equestrian Opportunity

Extending the identified Bath Road Route opportunity west of the A350 would also enhance the equestrian facilities in the study area. Delivering infrastructure not only for walkers and cyclists but equestrians too along this route would connect the currently segregated bridleways CHIW 8 and CHIW 10 with the bypass open to all traffic CORM 122. Recognising the predominantly rural nature of the environment west of the A350, this area is best suited to improving existing and delivering new safe equestrian facilities to ensure an integrated network exists.

#### Action Taken/Outcome

This opportunity has been reviewed as part of the scheme design process and it has been concluded that it lies outside the remit of the current scheme. However, delivery of this opportunity is possible through other Wiltshire Council programmes and therefore it will be assessed separately for potential future delivery.



## 3. Detailed Design Stage Walking, Cycling and Horse-riding Review

This section records any user-related opportunities identified at the completion of the detailed design stage (after the assessment report was issued). They have been developed following discussions within the review team and are recorded here along with actions taken/outcomes.

### 3.1. Opportunities Identified at the Detailed Design Stage

#### Opportunity R1

The signal-controlled crossing of the A350 immediately to the south of the Cepen Park South Roundabout could be designed to utilise a left-right stagger for pedestrians and cyclists such that these users are facing oncoming traffic as they move through the central reserve. In this way they can anticipate approaching vehicles and will be more aware of possible risks of being struck as they use the second crossing. As the operation of the roundabout is unlikely to be affected by the stagger of the crossing there is an opportunity to move the crossing of the northbound carriageway further to the south.

A similar stagger (albeit with a much longer distance between the two crossings) is incorporated into the signal-controlled crossings of the A350 to the north of Bumpers Farm Roundabout. However, it is noted that this stagger (and the distance between) is included for roundabout operational purposes.

#### Action Taken/Outcome

The design team has advised that the crossing is constrained between the roundabout and the existing concrete barrier in the central reserve. It is positioned to achieve the minimal distance from the roundabout while avoiding demolition of the existing concrete barrier.

The crossing on the southbound carriageway is further away from the roundabout to allow for storage capacity for vehicles as they exit the roundabout and reduce the possibility of traffic backing on to the roundabout.

#### Opportunity R2

The review team identified an opportunity to widen the shared use path adjacent to Cepen Park South Roundabout and on towards Beverley Way.

#### Action Taken/Outcome

The design team has advised that the shared use path width has been maintained at 2m in this location. This is due to lighting columns being located within the separation strip and the separation strip being used as a buffer between the carriageway and the path so that another form of protection (e.g. trief kerb or VRS) does not need to be provided.

#### Opportunity R3

There is an opportunity to increase the radii included in the design of the shared use paths in the scheme. Increased radii lead to an improved cycling experience including smoother journeys which help meet the core design criteria for directness and comfort that are at the heart of LTN 1/20. Very low or non-existent radii on cycle routes can be very awkward and uncomfortable for cyclists and make routes significantly less attractive. It has been suggested by the design team that the difficult alignment is required to control the speeds of cyclists as they approach crossings which does not align with LTN 1/20.

It is acknowledged that in most cases throughout the scheme the highway boundary precludes increasing the radii on the alignments of the shared use path, which is accommodated around the dual carriageway extents.

#### Action Taken/Outcome

The alignment, incorporating the low or non-existent radii on the approach to crossings, is being maintained due to the constraints of the highway boundary.

## Opportunities put forward by Chippenham Cycle Network Development Group (CCNDG)

The following proposals have been put forward by the CCNDG for consideration by the project team. These proposals have been summarised and grouped together based upon the type of proposal (WC\_A350-ATK-HGN-XX-RP-CH-000009). They are then accompanied by a summary of the response from the design team.

*Proposal: In line with DMRB GG 142, a WCHAR should have been undertaken for the scheme.*

GG 142 is not a requirement as the A350 is not part of the trunk road network. However, the WCHAR process has generally been followed based on GG 142 as use of this standard is considered best practice.

*Proposal: Reduce the speed limit to 50mph along the A350 throughout the length of the bypass.*

DfT guidance has been used to set the speed limits and this process takes into account a number of factors. Speed limits have been reduced where justified and other measures are planned for inclusion to address any safety concerns highlighted by historical collision data.

*Proposal: Include a parallel cycleway alongside the A350 that is physically separated from the dual carriageway with associated links to residential areas and Frogwell via the overbridge.*

It is understood that this facility could not be included in the scheme due to the constraints of the highway boundary that was set some time in the past.

*Proposal: Include signalised crossings across all roundabout entry/exit roads, as close to the desire line along the A350 as possible.*

A number of signal-controlled crossings have been included in the scheme where desire lines exist.

*Proposal: Segregation between people cycling and walking/wheeling.*

Due to low expected user flows, limited space within the highway boundary and the additional cost of providing segregated facilities, this option was not included in the design.

*Proposal: Cycle routes should not include sharp turns and should use straight-across cycle crossings so that they are able to accommodate all types of cycle.*

The design team has advised that the proposed crossings are typical of traditional layouts nationally and have been designed to prioritise the effective movement of traffic through the roundabouts. The design team believes that the lack of radii on the route will slow cyclists and thus make the route safer.

*Proposal: Cycleways must be set back from 40mph carriageway edge by at least 0.5m.*

The design team has advised that this requirement has been met except on the A420 west of Bumpers Farm Roundabout where land constraints have prevented this separation.

*Proposal: The surface of any facilities for cyclists should be smooth for cycling.*

The responsibility for this factor has been passed to the contractor.

*Proposal: Sub-surface detection loops should be used instead of push buttons.*

The design team has judged that method for monitoring crossing demand are appropriate for the anticipated level of use of the crossings.

*Proposal: If push buttons are used they should be set significantly back from the carriageway edge.*

The design team has advised that the signal equipment has been installed in accordance with standards, use is expected to be low and users are expected to be able to position themselves to reach one of the two buttons.

*Proposal: Minimise wait times for people walking, wheeling and cycling at signal-controlled crossings.*

The design team has advised that forecast traffic flows make the effective traffic operation of the roundabout difficult but a balance will be struck between different users and, as walking and cycling levels increase, the balance can be adjusted in favour of these users.

*Proposal: Set posts and other furniture back from cycleway edges.*

The design team has advised that all street furniture will be positioned 0.5m back from the facility edge where possible.

*Proposal: The scheme should connect to cycling routes on Easton Lane, Frogwell and Wiltshire College at Lackham.*

The links to Easton Lane and Frogwell have been included in the scheme design but a link to Wiltshire College is understood to be beyond the scope of the scheme.

*Proposal: Onward connections to a number of destinations were raised as aspirations.*

- *West along the A420 to Allington Farm crossroads;*
- *Public Rights of Way CHIW5 and CHIW10;*
- *Hathaway Medical Centre;*
- *The existing shared use path network within Cepen Park South; and*
- *The country lanes to the west of the A350.*

These items were determined to be outside the scope of the scheme.

## 4. Next Steps

As this review report has been prepared at the completion of the detailed design there are no further steps in the GG 142 WCHAR process.

# 5. Walking, Cycling and Horse-riding Assessment Team Statement

As Lead Assessor, I confirm that this walking, cycling and horse-riding review report has been compiled following the principles of GG 142 and any variances from the standard are noted in the Introduction section. The walking, cycling and horse-riding review was undertaken by the following assessment team:

## Walking, Cycling and Horse-riding Lead Assessor

Alison Foale BEng MSc MCIHT MSoRSA

Associate

Atkins Transportation

[alison.foale@atkinsglobal.com](mailto:alison.foale@atkinsglobal.com)

Signed:

Date:



June 2023

## Walking, Cycling and Horse-riding Assessors

Rob Hunt

Chief Engineer

Atkins Transportation

I confirm that in my professional opinion the appointed Lead Assessor has the appropriate experience for the role making reference to the Lead Assessor Expected Competencies contained in DMRB GG 142.

## Design Team Leader

Jeevan Rana

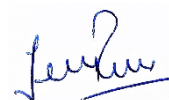
Associate

Atkins Transportation

[Jeevan.rana@atkinsglobal.com](mailto:Jeevan.rana@atkinsglobal.com)

Signed:

Date:



June 2023

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rob.hunt@atkinsglobal.com



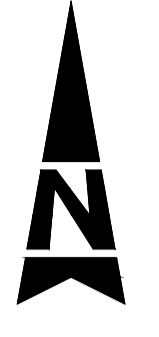




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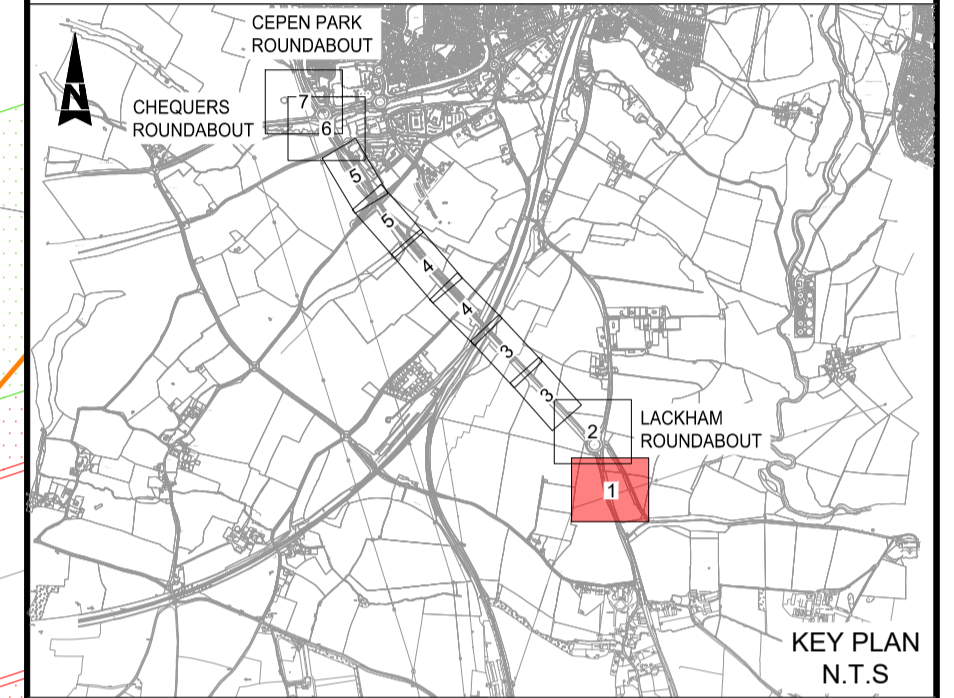


FOR CONTINUATION SEE DRAWING NO.  
WC\_A350-ATK-HGN-PH4-DR-CH-000002

TOWARDS  
M4  
JUNCTION 17

TOWARDS  
MELKSHAM

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  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH4-DR-CH-000001 TO WC\_A350-ATK-HFE-PH4-DR-CH-000007.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH4-DR-CH-000001 TO WC\_A350-ATK-HRR-PH4-DR-CH-000007.
  - FOR KERBS, FOOTWAYS, CYCLEWAYS AND PAVED AREAS, REFER TO DRAWING NO. WC\_A350-ATK-HKF-PH4-DR-CH-000001 TO WC\_A350-ATK-HKF-PH4-DR-CH-000007.
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**Construction**  
9. Undertaking excavation work in proximity of existing services / utilities.  
13. Working in the vicinity of 400kV Overhead Power Lines.

**Maintenance / Cleaning**  
13. Working in the vicinity of 400kV Overhead Power Lines.

**Use**  
None

**Decommissioning / Demolition**  
13. Working in the vicinity of 400kV Overhead Power Lines.

Description  
**FOR RSA STAGE 2**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A1	C02	VR	AKV	SD	AM	20/01/23

Description  
**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	C03	VR	AKV	SD	AM	24/03/23

Description  
**Issue For Construction**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	C04	JH	SS	TG	AM	22/11/23

Drawing Suitability: **APPROVED - CONSTRUCTION** Status: **A3**

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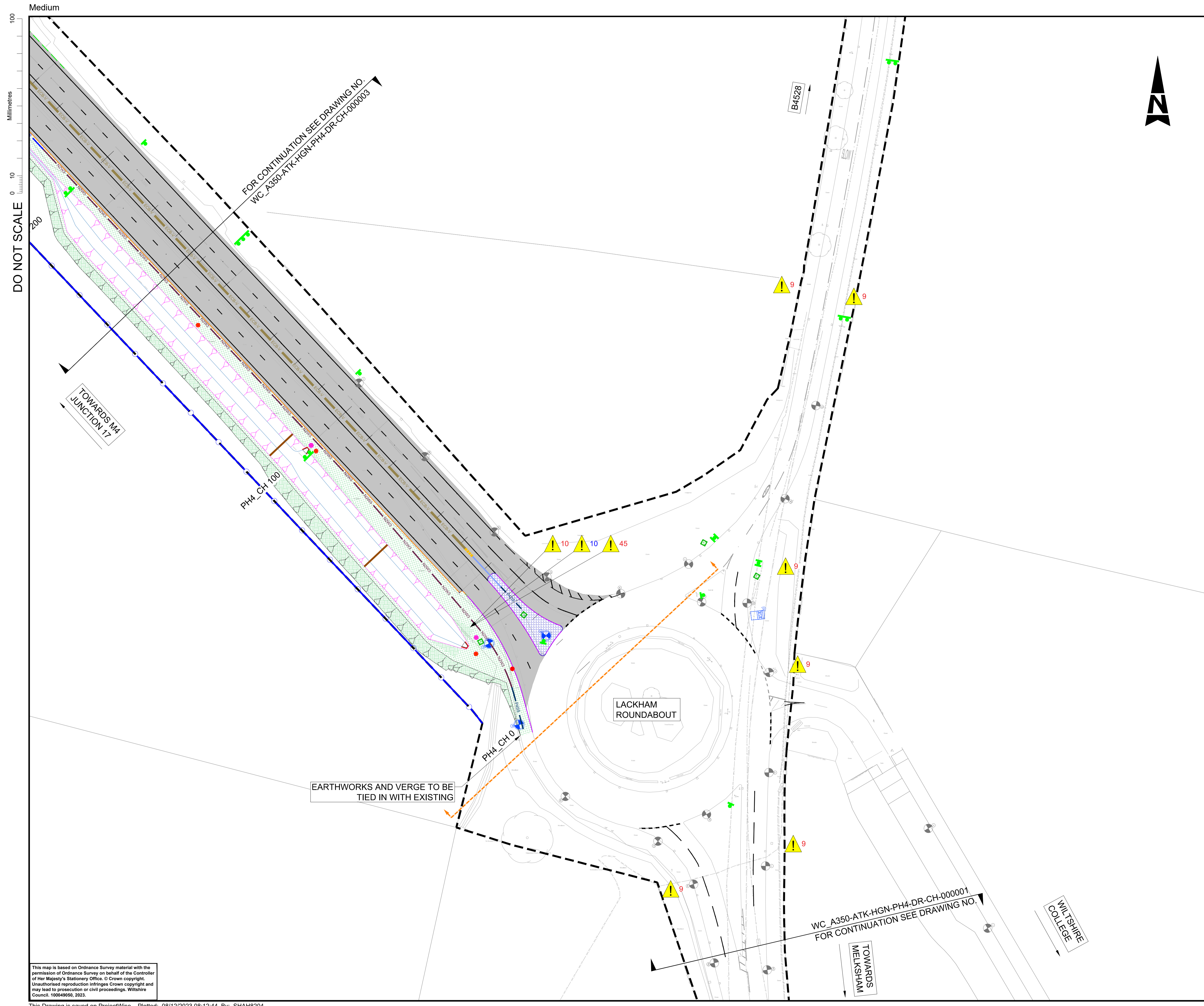
Client  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 4  
General Arrangement**

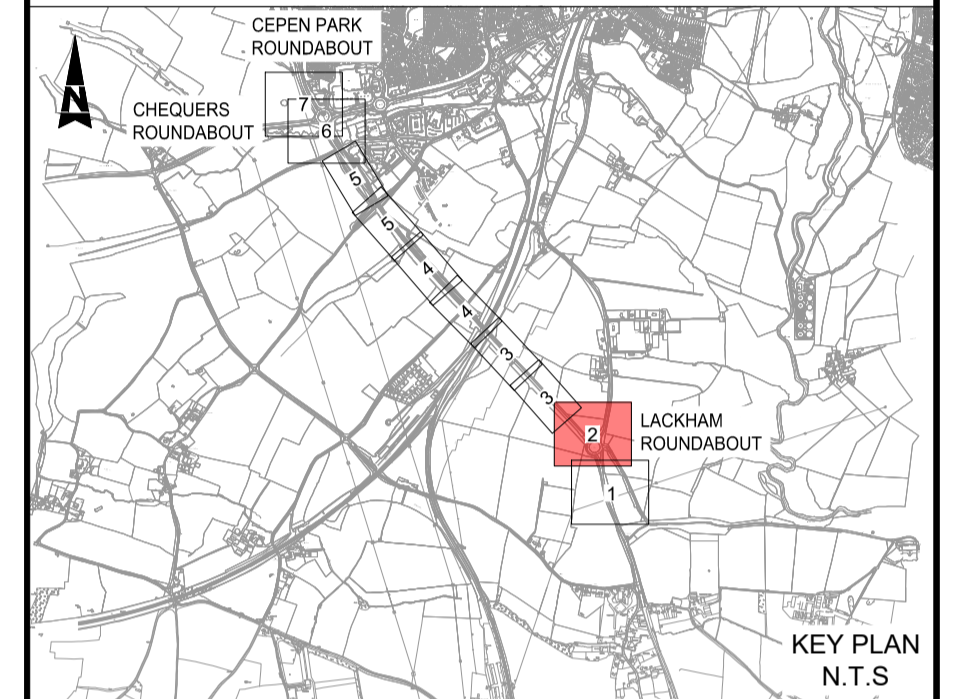
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		Sheet: 1 of 7
		Rev: <b>C04</b>

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  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH4-DR-CH-000001 TO WC\_A350-ATK-HFE-PH4-DR-CH-000007.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH4-DR-CH-000001 TO WC\_A350-ATK-HRR-PH4-DR-CH-000007.
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**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

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- Construction**
- 9. Undertaking excavation work in proximity of existing services / utilities.
  - 10. Discharge of polluted construction or highway runoff to natural watercourses.
  - 45. Working in watercourses and floodplain.

**Maintenance / Cleaning**  
None

**Use**  
10. Discharge of polluted construction or highway runoff to natural watercourses.

**Decommissioning / Demolition**  
None

**Description FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	C03	VR	AKV	SD	AM	24/03/23

**Issue For Construction**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	C04	JH	SS	TG	AM	22/11/23

Drawing Suitability: **APPROVED - CONSTRUCTION** Status: **A3**

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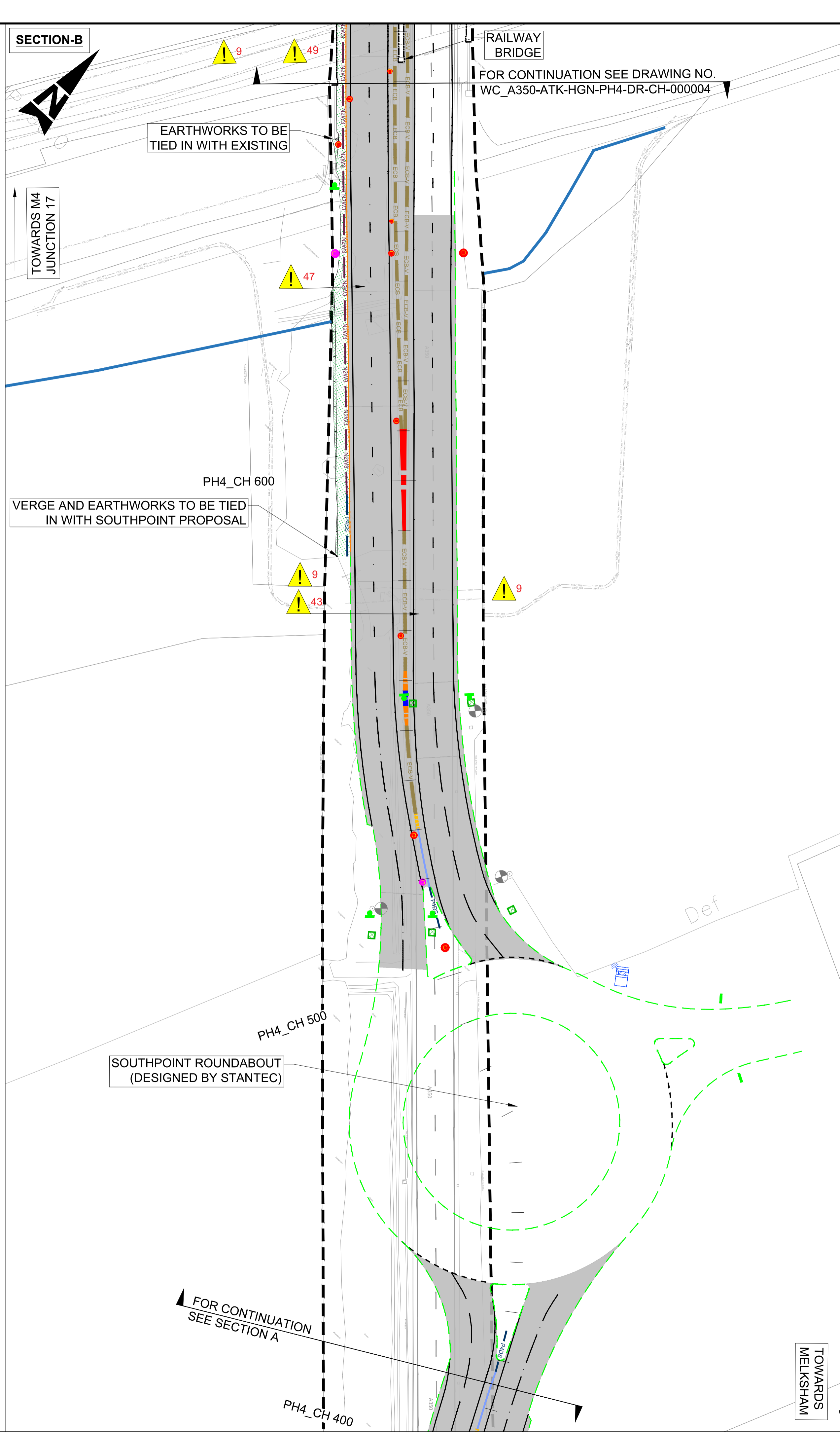
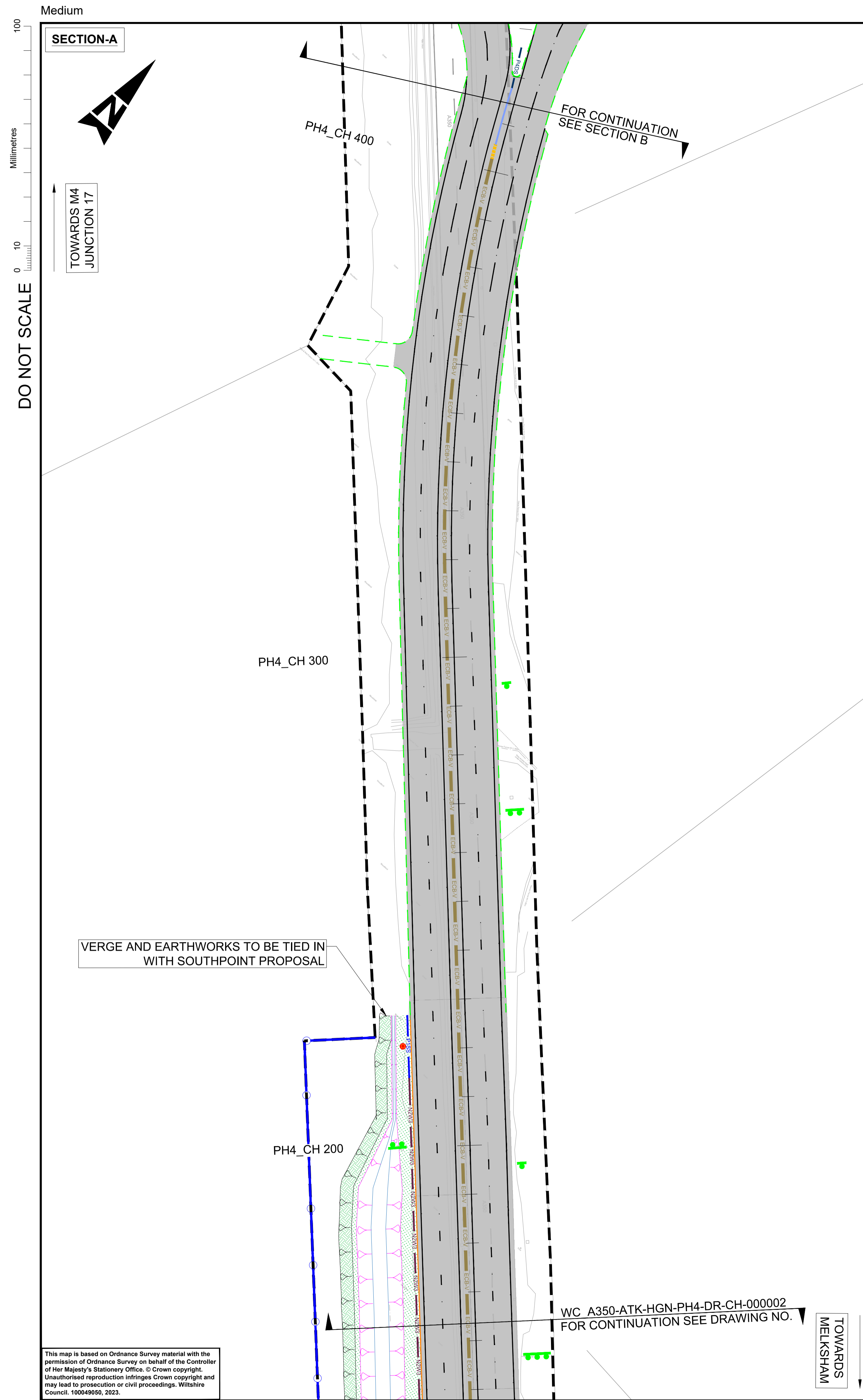
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Drawing Title: **Phase 4 General Arrangement**

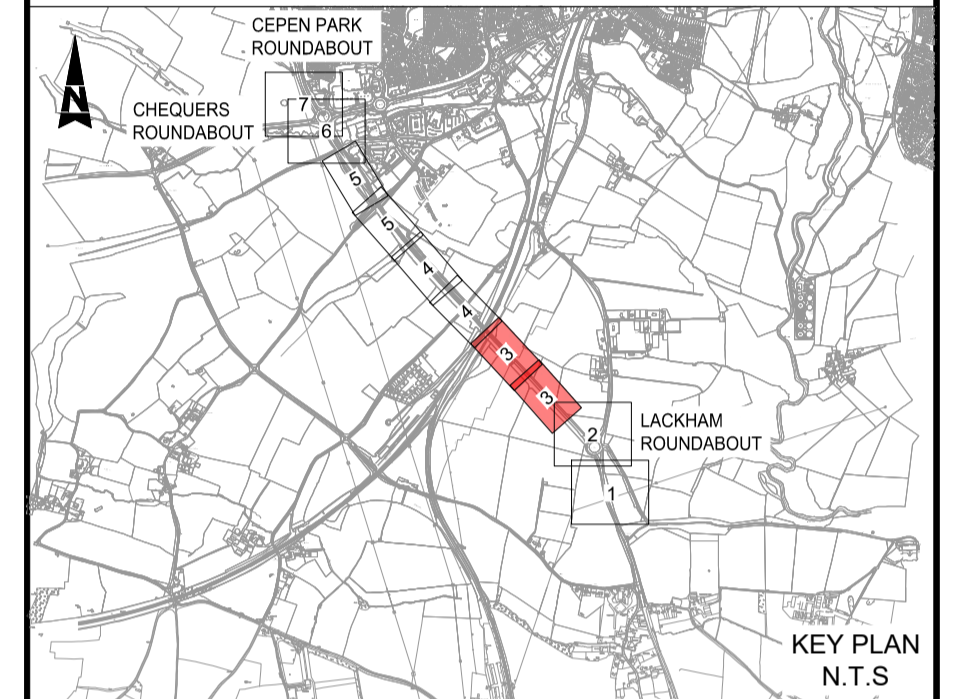
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PH4	DR	CH	000002
Location	Type	Role	Number
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Construction	9. Undertaking excavation work in proximity of existing services / utilities. 43. Works in proximity of high voltage overhead and buried electrical cables. 47. Construction loading on existing culverts. 49. Excavations in proximity of bridge and structure foundations.
Maintenance / Cleaning	None
Use	None
Decommissioning / Demolition	None

Description FOR TENDER							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A6	CO3	VR	AKV	SD	AM	24/03/23	
Issue For Construction							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A3	CO4	JH	SS	TG	AM	22/11/23	
Drawing Suitability	APPROVED - CONSTRUCTION						Status
							A3

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Project Title  
A350 Chippenham Ph45BL Detailed Design

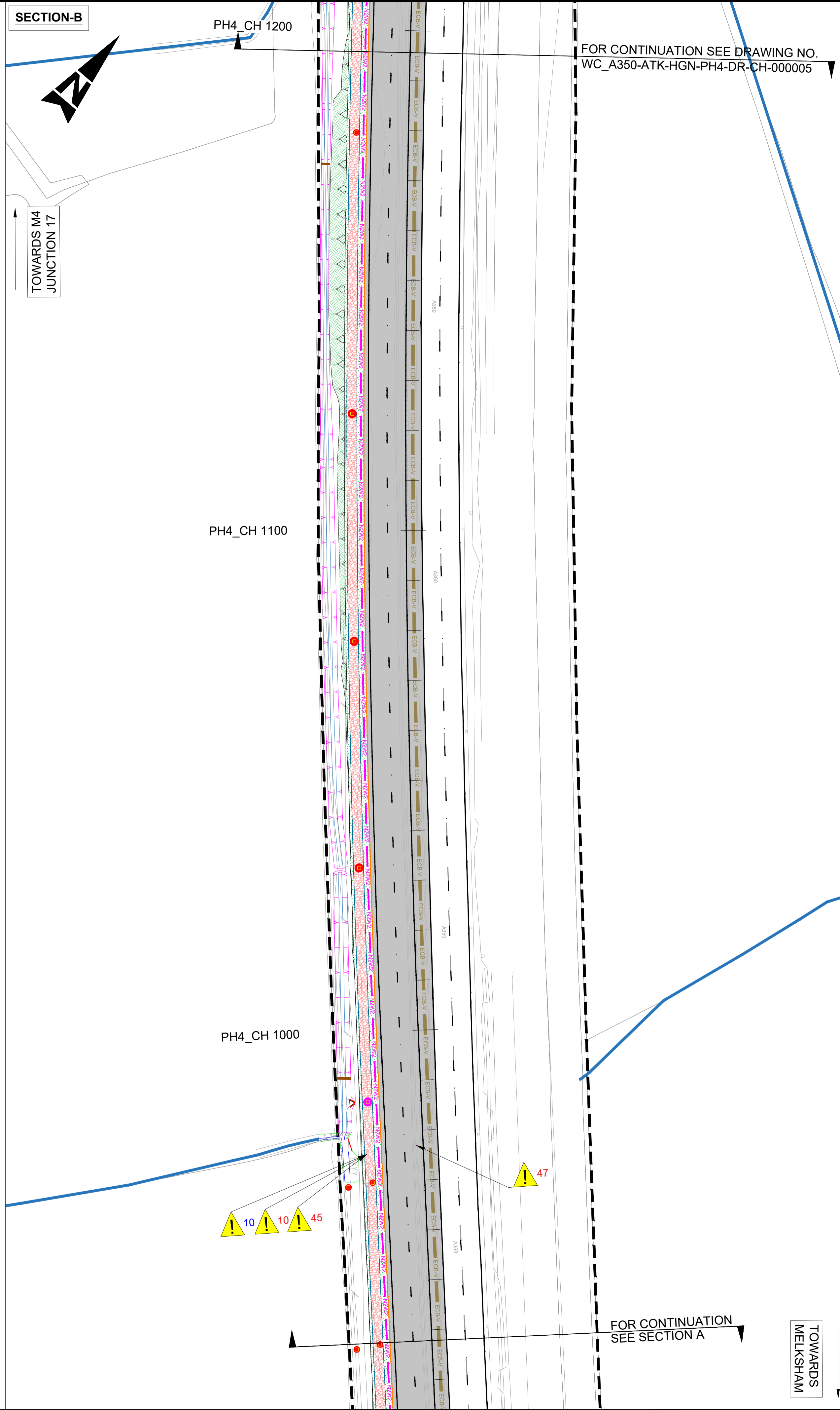
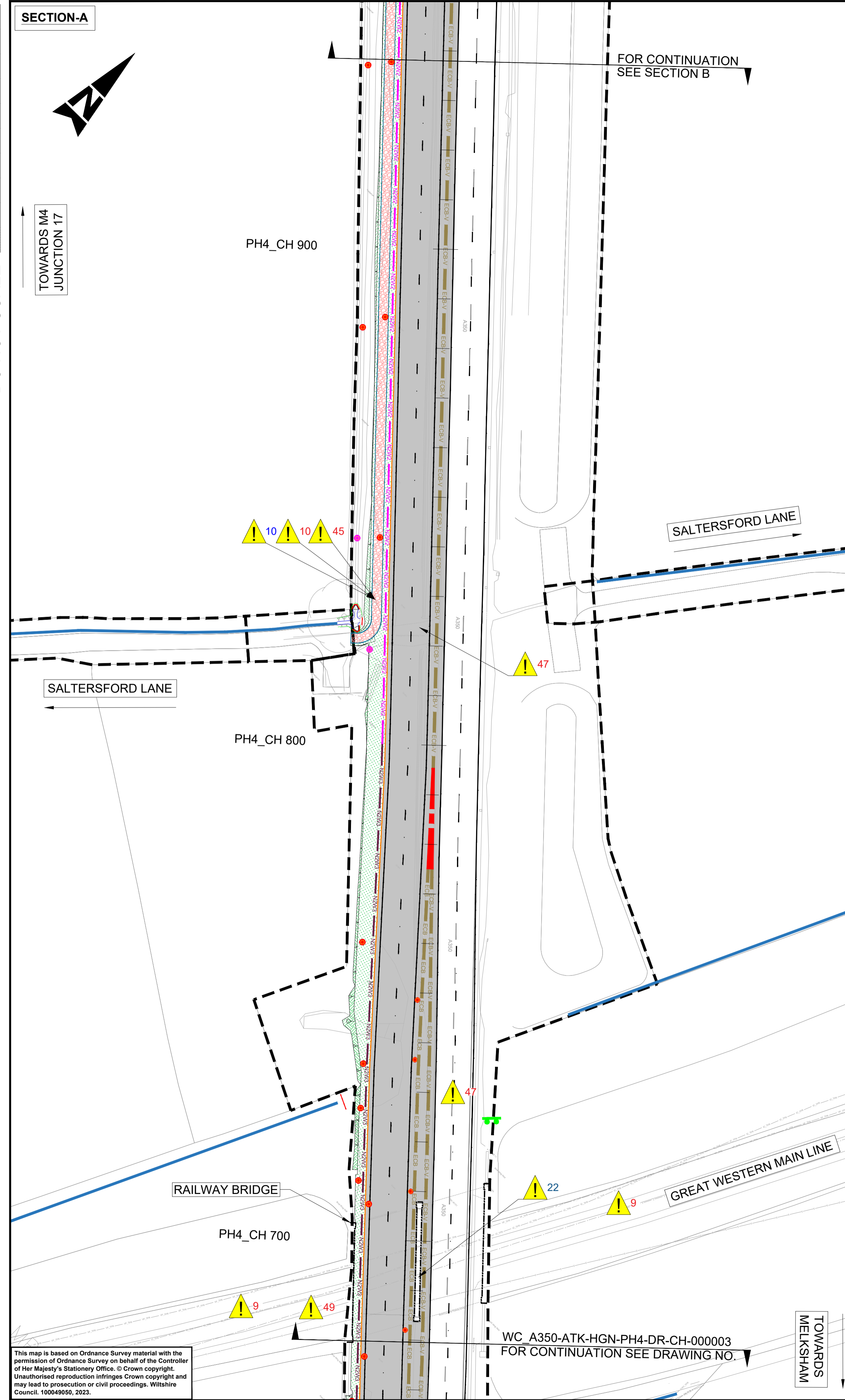
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PH4	- DR - CH - 000003		
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Original Size: A1	Scale: 1:500	Project Ref. No.: 5211118	Sheet: 3 of 7
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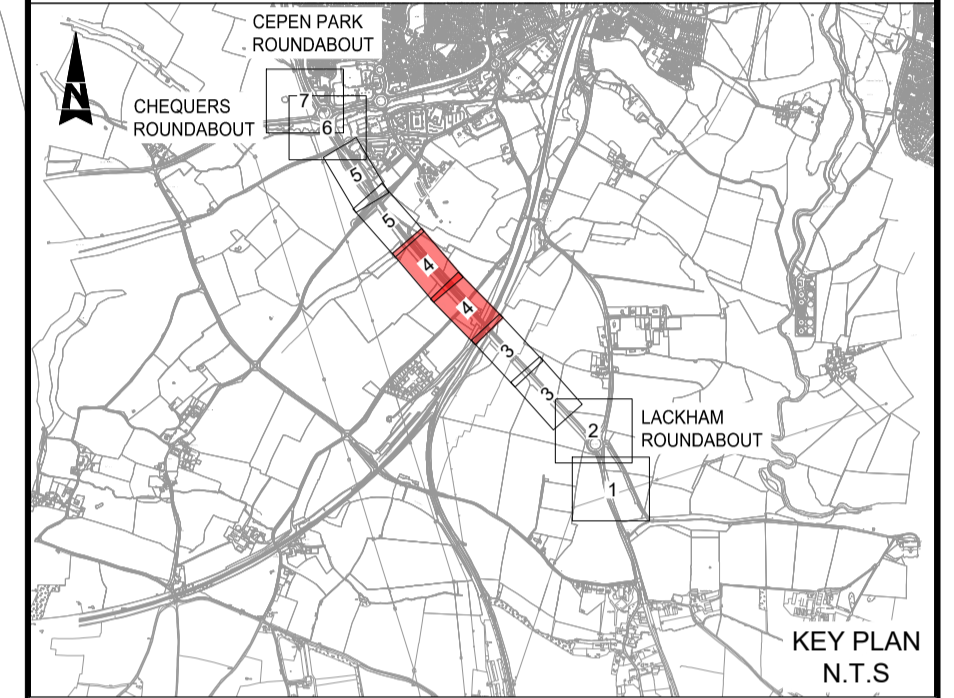
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**Construction**

- 9. Undertaking excavation work in proximity of existing services / utilities.
- 10. Discharge of polluted construction or highway runoff to natural watercourses.
- 45. Working in watercourses and floodplain.
- 47. Construction loading on existing culverts.
- 49. Excavations in proximity of bridge and structure foundations.

**Maintenance / Cleaning**

- 22. Inspection of overbridges.

**Use**

- 10. Discharge of polluted construction or highway runoff to natural watercourses.

**Decommissioning / Demolition**

None

Description  
**FOR RSA STAGE 2**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A1	CO2	VR	AKV	SD	AM	20/01/23

Description  
**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	CO3	VR	AKV	SD	AM	24/03/23

Description  
**Issue For Construction**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	CO4	JH1	SS	TG	AM	22/11/23

Drawing Suitability	Status
APPROVED - CONSTRUCTION	A3

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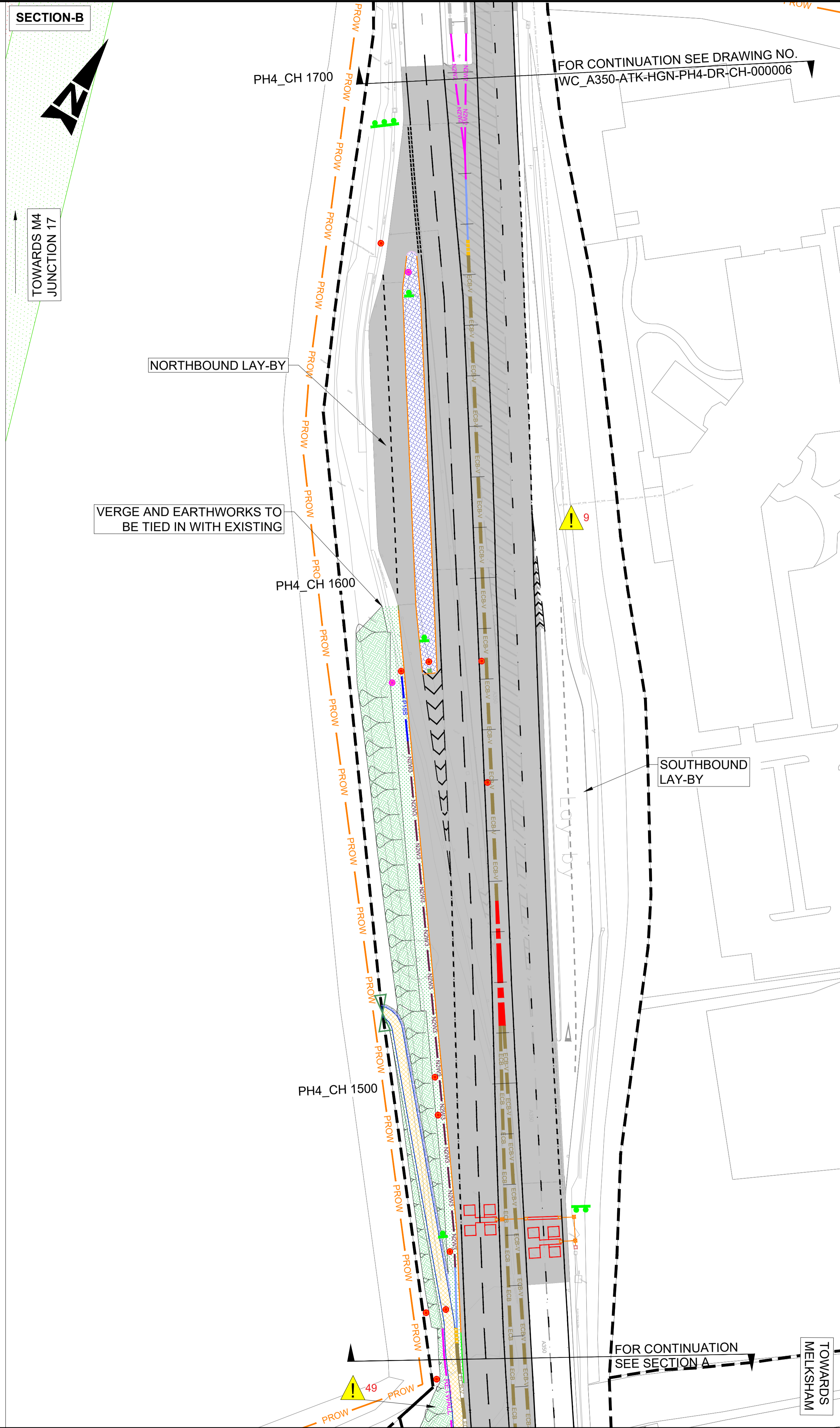
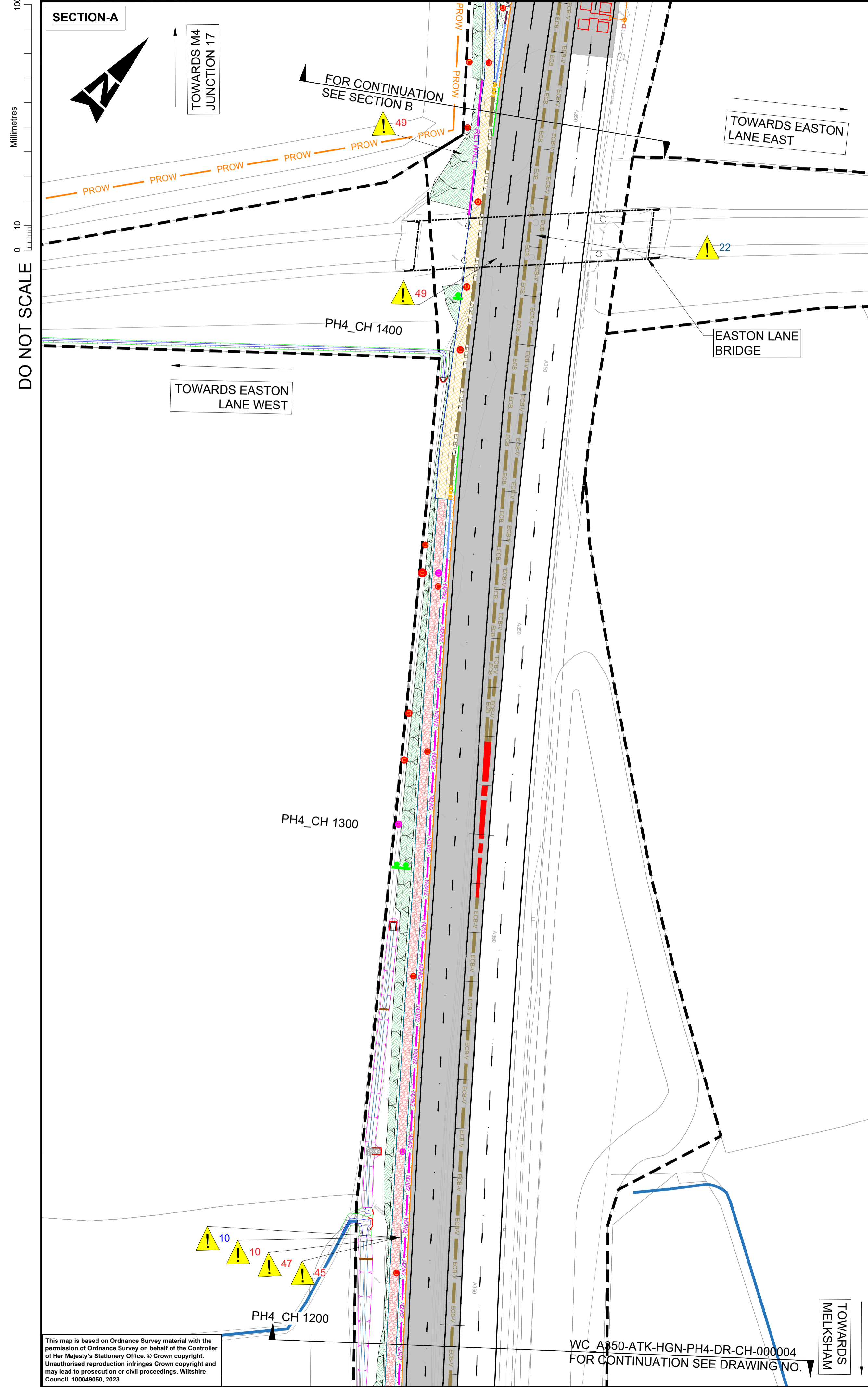
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**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 4  
General Arrangement**

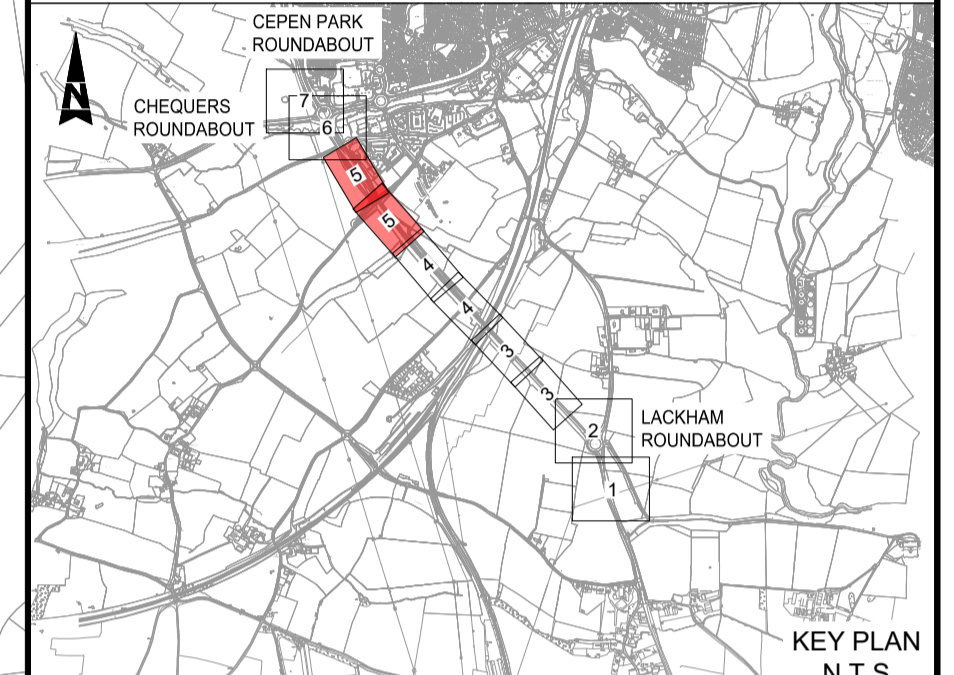
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  - FOR LONG SECTION, REFER TO DRAWING NO. WC\_A350-ATK-HML-PH4\_LS-DR-CH-000001 TO WC\_A350-ATK-HML-PH4\_LS-DR-CH-000003.
  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH4-DR-CH-000001 TO WC\_A350-ATK-HFE-PH4-DR-CH-000007.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH4-DR-CH-000001 TO WC\_A350-ATK-HRR-PH4-DR-CH-000007.
  - FOR KERBS, FOOTWAYS, CYCLEWAYS AND PAVED AREAS, REFER TO DRAWING NO. WC\_A350-ATK-HKF-PH4-DR-CH-000001 TO WC\_A350-ATK-HKF-PH4-DR-CH-000007.
  - FOR PROPOSED TRAFFIC SIGNS AND ROAD MARKINGS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CH-001201 TO WC\_A350-ATK-HGN-XX-DR-CH-001207.
  - FOR PROPOSED LIGHTING, REFER TO DRAWING NO. WC\_A350-ATK-HLG-PH4-DR-EO-000001 TO WC\_A350-ATK-HLG-PH4-DR-EO-000007.
  - FOR MOTORWAY COMMUNICATIONS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CX-000001.



**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the Designers Risk Assessment-WC\_A350-ATK-GEN-XX\_ML-RA-CX-000002).

**Construction**

- 9. Undertaking excavation work in proximity of existing services / utilities.
- 10. Discharge of polluted construction or highway runoff to natural watercourses. 45. Working in watercourses and floodplain.
- 47. Construction loading on existing culverts.
- 49. Excavations in proximity of bridge and structure foundations.

**Maintenance / Cleaning**

- 22. Inspection of overbridges.

**Use**

- 10. Discharge of polluted construction or highway runoff to natural watercourses.

**Decommissioning / Demolition**

None

Description: FOR RSA STAGE 2

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A1	CO2	VR	AKV	SD	AM	20/01/23

Description: FOR TENDER

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	CO3	VR	AKV	SD	AM	24/03/23

Description: Issue For Construction

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	CO4	JH1	SS	TG	AM	22/11/23

Drawing Suitability	Status
APPROVED - CONSTRUCTION	A3

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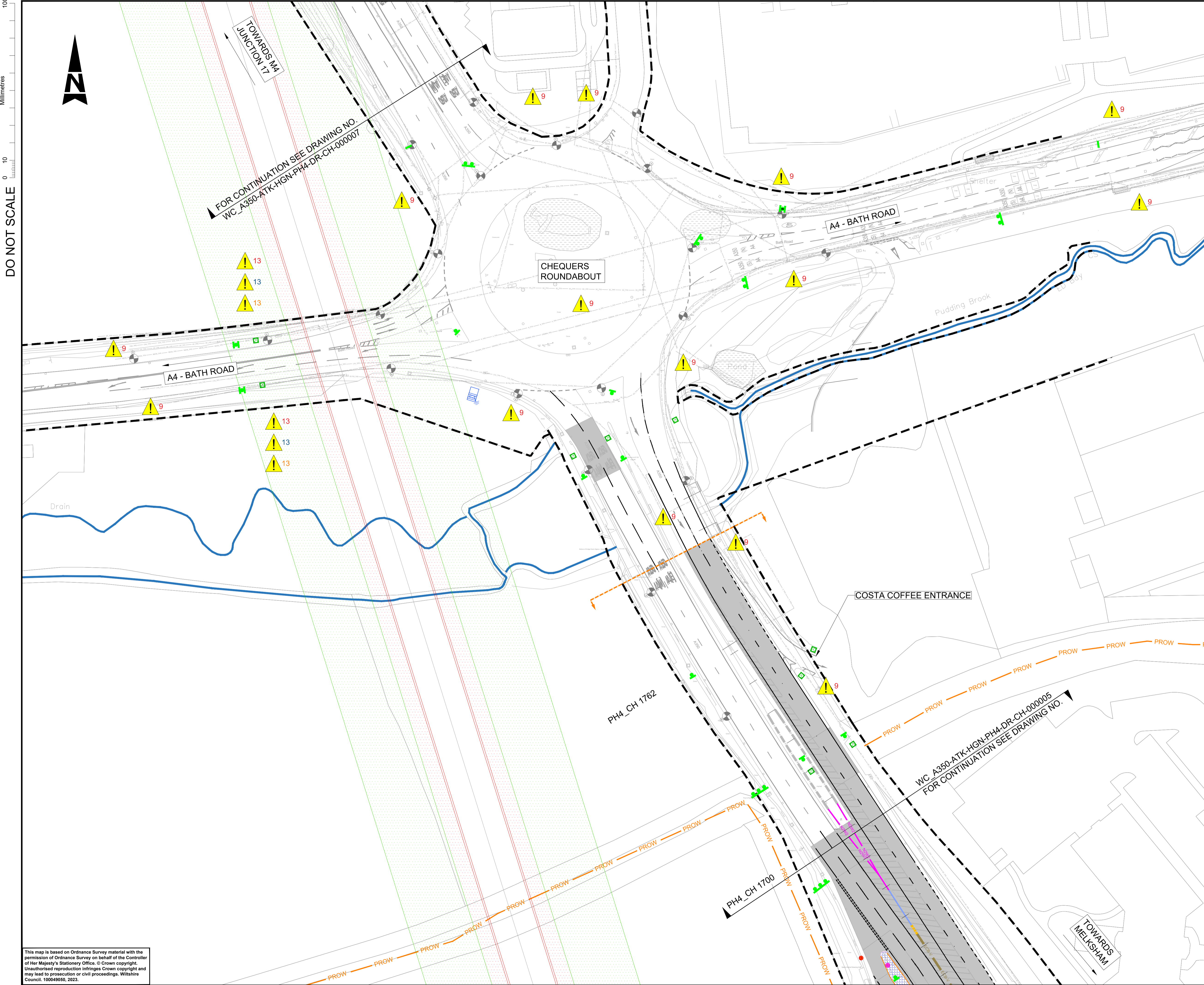
Client  
Project Title  
A350 Chippenham Ph45BL Detailed Design

Drawing Title  
Phase 4  
General Arrangement

Drawing Number	Project	Originator	Volume
WC_A350	ATK	HGN	
PH4	DR - CH - 000005		
Location	Original Size	Scale	Project Ref. No.
	A1	1:500	6211118
			Sheet: 5 of 7
			Rev: C04

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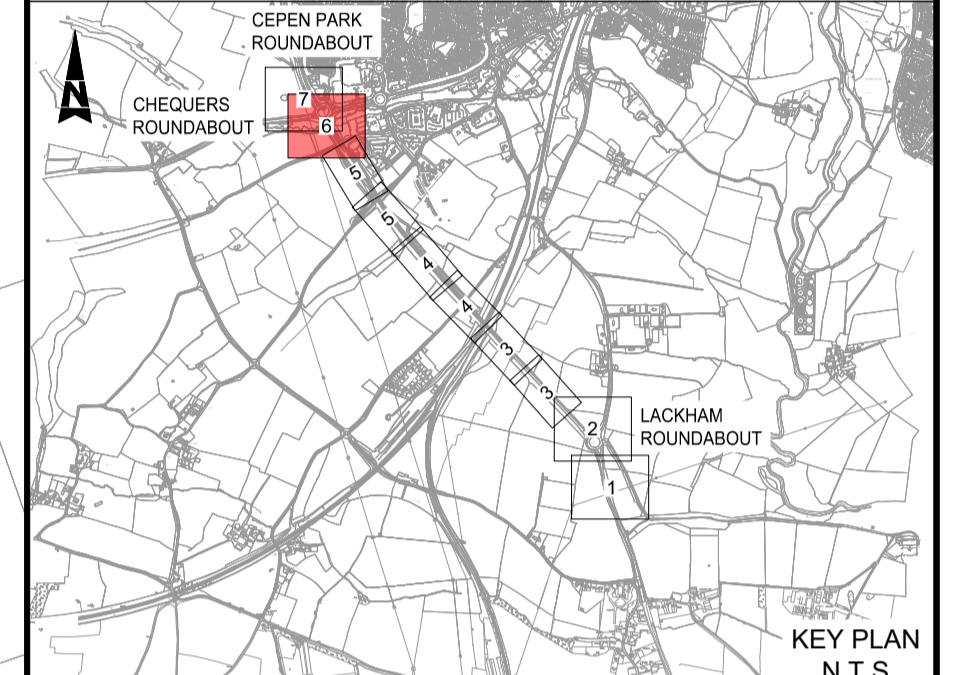
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  - FOR LONG SECTION, REFER TO DRAWING NO. WC\_A350-ATK-HML-PH4\_LS-DR-CH-000001 TO WC\_A350-ATK-HML-PH4\_LS-DR-CH-000003.
  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH4-DR-CH-000001 TO WC\_A350-ATK-HFE-PH4-DR-CH-000007.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH4-DR-CH-000001 TO WC\_A350-ATK-HRR-PH4-DR-CH-000007.
  - FOR KERBS, FOOTWAYS, CYCLEWAYS AND PAVED AREAS, REFER TO DRAWING NO. WC\_A350-ATK-HKF-PH4-DR-CH-000001 TO WC\_A350-ATK-HKF-PH4-DR-CH-000007.
  - FOR PROPOSED TRAFFIC SIGNS AND ROAD MARKINGS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CH-001201 TO WC\_A350-ATK-HGN-XX-DR-CH-001207.
  - FOR PROPOSED LIGHTING, REFER TO DRAWING NO. WC\_A350-ATK-HLG-PH4-DR-EO-000001 TO WC\_A350-ATK-HLG-PH4-DR-EO-000007.
  - FOR MOTORWAY COMMUNICATIONS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CX-000001.



**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the Designers Risk Assessment-WC\_A350-ATK-GEN-XX\_ML-RA-CX-000002).

Construction
9. Undertaking excavation work in proximity of existing services / utilities.
13. Working in the vicinity of 400kV Overhead Power Lines.
Maintenance / Cleaning
13. Working in the vicinity of 400kV Overhead Power Lines.
Use
None
Decommissioning / Demolition
13. Working in the vicinity of 400kV Overhead Power Lines.

Description							
FOR RSA STAGE 2							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A1	CO2	VR	AKV	SD	AM	20/01/23	

Description							
FOR TENDER							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A6	CO3	VR	AKV	SD	AM	24/03/23	

Description							
Issue For Construction							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A3	CO4	JH	SS	TG	AM	22/11/23	

Drawing Suitability	Status
APPROVED - CONSTRUCTION	A3

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Client  
**Wiltshire Council**

Project Title  
**A350 Chippenham Ph45BL Detailed Design**

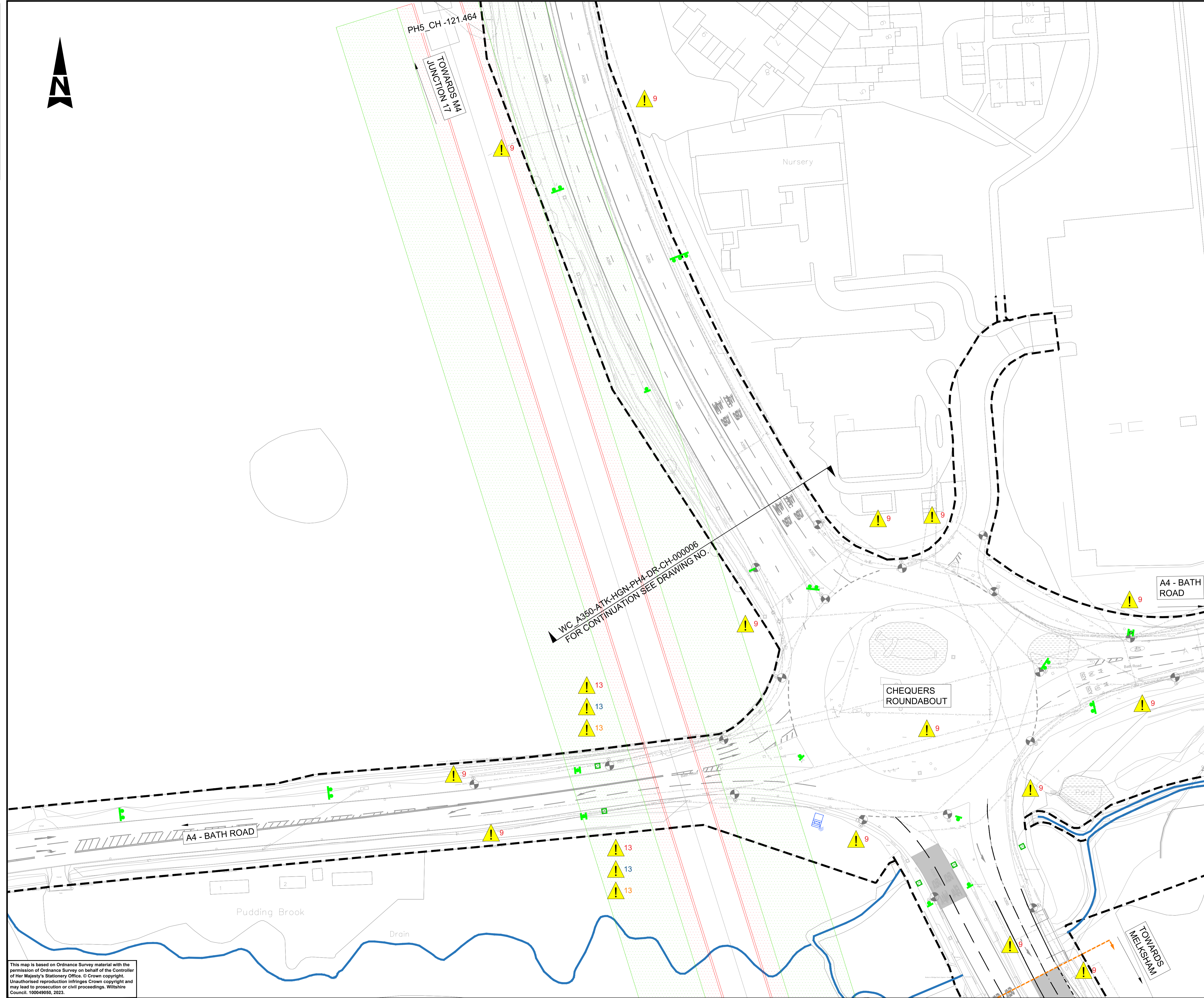
Drawing Title  
**Phase 4  
 General Arrangement**

Drawing Number	Project	Originator	Volume
WC_A350	ATK	HGN	
PH4	DR - CH - 000006		
Location	Type	Role	Number
A1	Scale: 1:500	Project Ref. No. 5211118	Sheet: 6 of 7
Original Size:	Scale: 1:500	Project Ref. No. 5211118	Sheet: 6 of 7
			Rev: C04

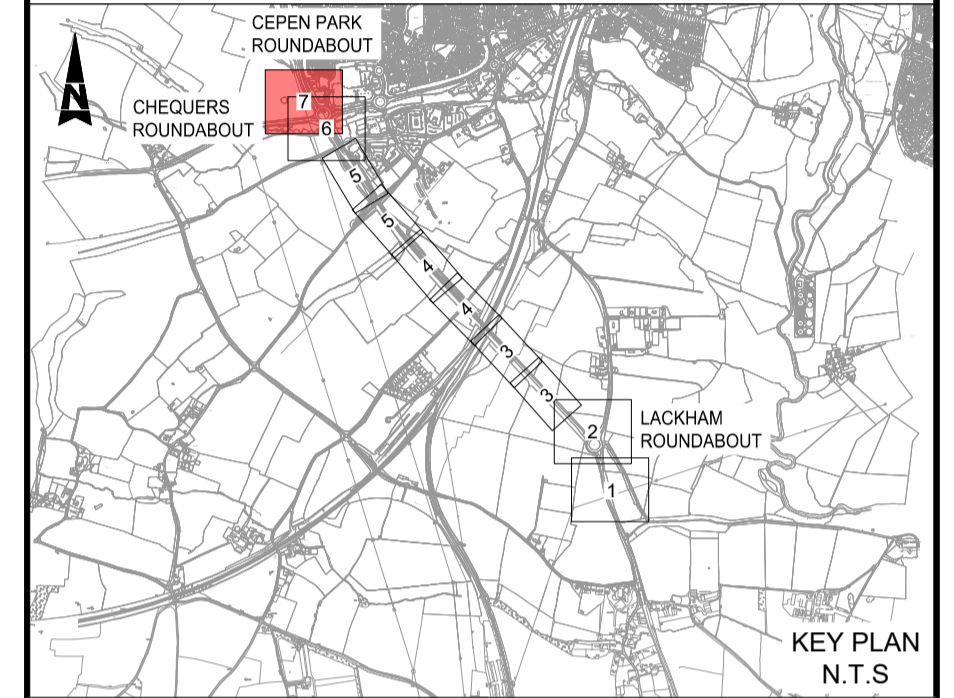
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  - FOR LONG SECTION, REFER TO DRAWING NO. WC\_A350-ATK-HML-PH4\_LS-DR-CH-000001 TO WC\_A350-ATK-HML-PH4\_LS-DR-CH-000003.
  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH4-DR-CH-000001 TO WC\_A350-ATK-HFE-PH4-DR-CH-000007.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH4-DR-CH-000001 TO WC\_A350-ATK-HRR-PH4-DR-CH-000007.
  - FOR KERBS, FOOTWAYS, CYCLEWAYS AND PAVED AREAS, REFER TO DRAWING NO. WC\_A350-ATK-HKF-PH4-DR-CH-000001 TO WC\_A350-ATK-HKF-PH4-DR-CH-000007.
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  - FOR PROPOSED LIGHTING, REFER TO DRAWING NO. WC\_A350-ATK-HLG-PH4-DR-EO-000001 TO WC\_A350-ATK-HLG-PH4-DR-EO-000007.
  - FOR MOTORWAY COMMUNICATIONS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CX-000001.



**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the Designers Risk Assessment-WC\_A350-ATK-GEN-XX\_ML-RA-CX-000002).

**Construction**  
9. Undertaking excavation work in proximity of existing services / utilities.  
13. Working in the vicinity of 400kV Overhead Power Lines.

**Maintenance / Cleaning**  
13. Working in the vicinity of 400kV Overhead Power Lines.

**Use**  
None

**Decommissioning / Demolition**  
13. Working in the vicinity of 400kV Overhead Power Lines.

Description FOR RSA STAGE 2							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A1	CO2	VR	AKV	SD	AM	20/01/23	

Description FOR TENDER							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A6	CO3	VR	AKV	SD	AM	24/03/23	

Description Issue For Construction							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A3	CO4	JH	SS	TG	AM	22/11/23	

Drawing Suitability: **APPROVED - CONSTRUCTION** Status: **A3**

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Client: **Wiltshire Council**

Project Title: **A350 Chippenham Ph45BL Detailed Design**

Drawing Title: **Phase 4 General Arrangement**

Original Size: <b>A1</b>	Scale: <b>1:500</b>	Project Ref. No.: <b>5211118</b>	Sheet: <b>7</b> of <b>7</b>	Rev: <b>C04</b>
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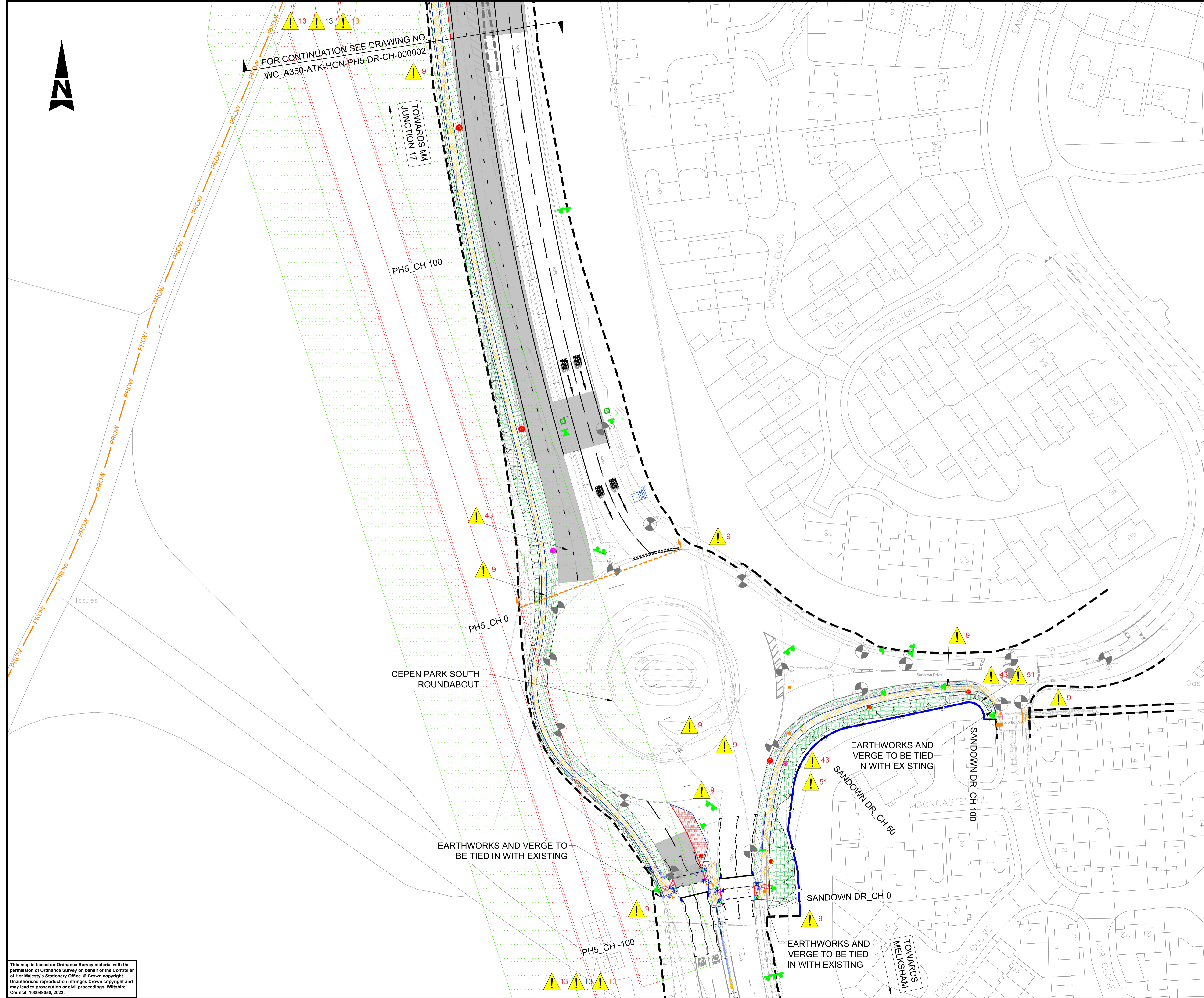
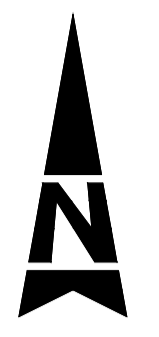
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  - FOR LONG SECTION, REFER TO DRAWING NO. WC\_A350-ATK-HML-PH5\_LS-DR-CH-000001 TO WC\_A350-ATK-HML-PH5\_LS-DR-CH-000005.
  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH5-DR-CH-000001 TO WC\_A350-ATK-HFE-PH5-DR-CH-000008.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH5-DR-CH-000001 TO WC\_A350-ATK-HRR-PH5-DR-CH-000008.
  - FOR KERBS, FOOTWAYS, CYCLEWAYS AND PAVED AREAS, REFER TO DRAWING NO. WC\_A350-ATK-HKF-PH5-DR-CH-000001 TO WC\_A350-ATK-HKF-PH5-DR-CH-000008.
  - FOR PROPOSED TRAFFIC SIGNS AND ROAD MARKINGS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CH-001208 TO WC\_A350-ATK-HGN-XX-DR-CH-001215.
  - FOR TRAFFIC SIGNAL, REFER TO DRAWING NO. WC\_A350-ATK-HTS-BRBT-DR-CH-000001 AND WC\_A350-ATK-HTS-PH5-DR-CH-000001.
  - FOR PROPOSED LIGHTING, REFER TO DRAWING NO. WC\_A350-ATK-HLG-PH5-DR-EO-000001 TO WC\_A350-ATK-HLG-PH5-DR-EO-000008.
  - FOR MOTORWAY COMMUNICATIONS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CX-000001.



**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the Designers Risk Assessment-WC\_A350-ATK-GEN-XX\_ML-RA-CX-000002).

<b>Construction</b>	9. Undertaking excavation work in proximity of existing services / utilities.
	13. Working in the vicinity of 400kV Overhead Power Lines.
	43. Works in proximity of high voltage overhead and buried electrical cables. 51. Excavations in proximity of Wessex Water assets.
<b>Maintenance / Cleaning</b>	13. Working in the vicinity of 400kV Overhead Power Lines.
<b>Use</b>	None
<b>Decommissioning / Demolition</b>	13. Working in the vicinity of 400kV Overhead Power Lines.

Description FOR TENDER							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A6	C03	SS	AKV	SD	AM	24/03/23	
Description Issue For Construction							
Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date	
A3	C04	JH	SS	TG	AM	22/11/23	
Drawing Suitability							Status
APPROVED - CONSTRUCTION							A3

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Client  
**Wiltshire Council**

Project Title  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 5  
General Arrangement**

Drawing Number	Project	Originator	Volume
WC_A350	ATK	HGN	
	PH5	DR - CH - 000001	
Location	Scale	Project Ref. No.	Sheet
A1	1:500	5211118	1 of 8
			Rev. C04

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SECTION-A

TOWARDS M4 JUNCTION 17

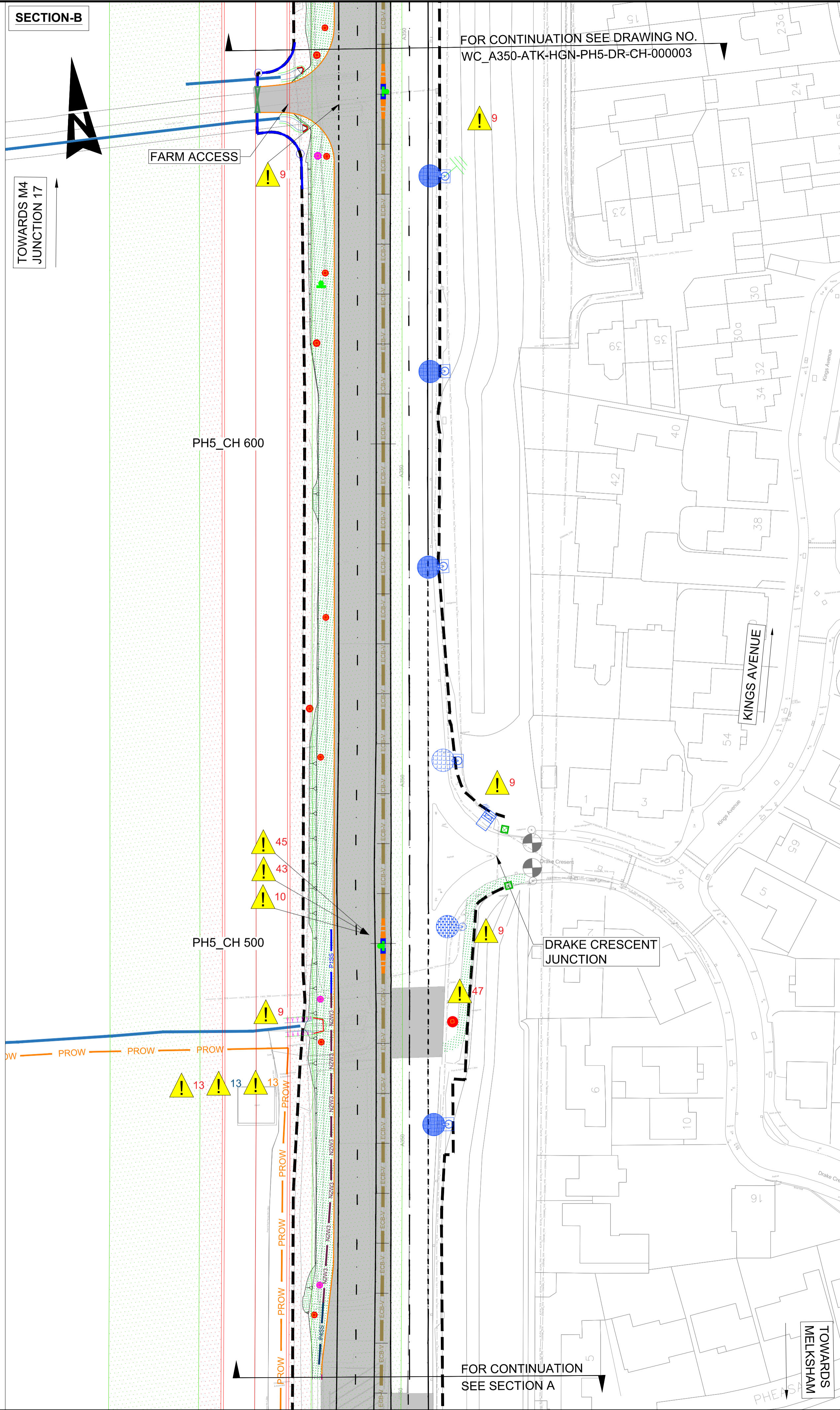
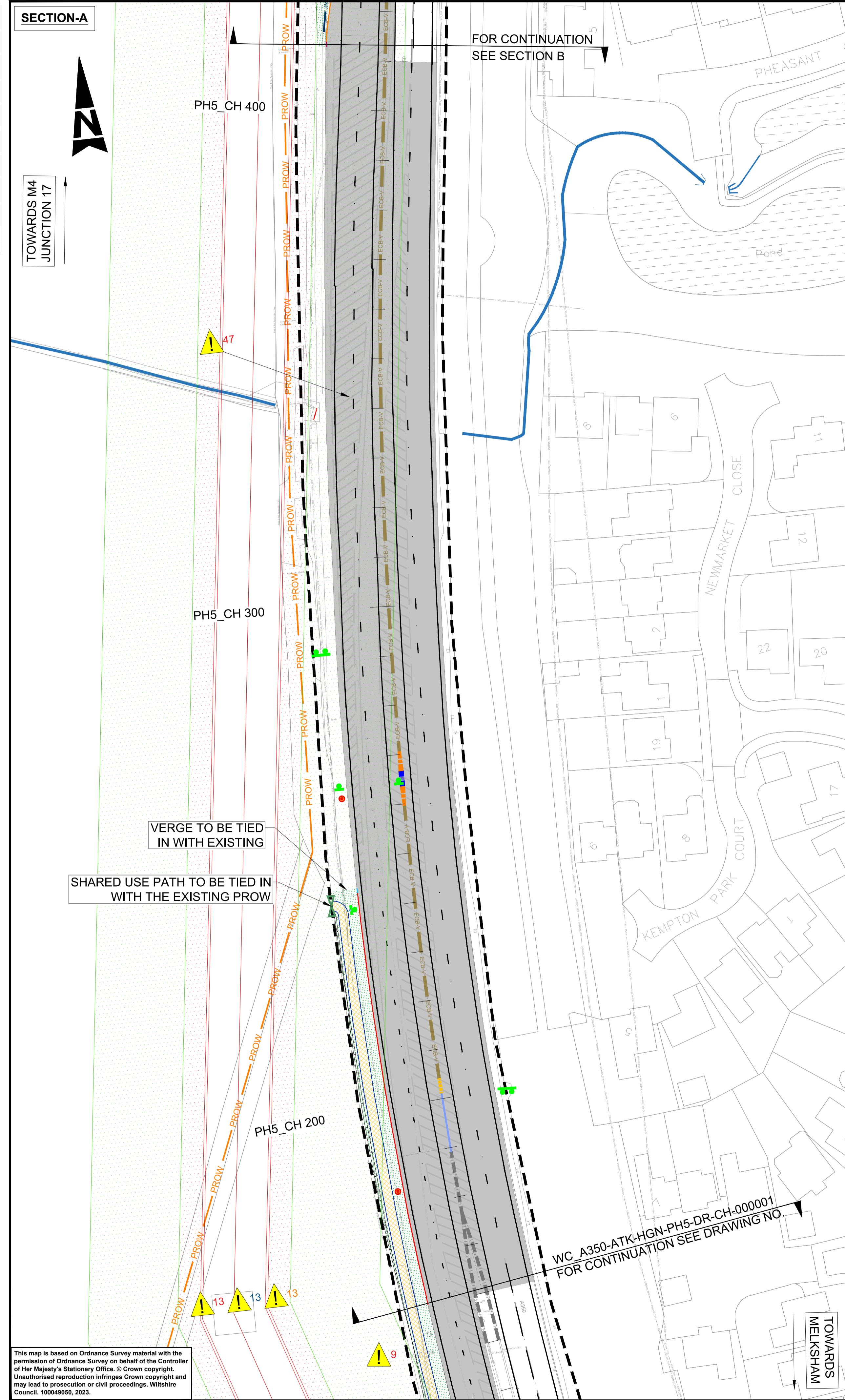
FOR CONTINUATION SEE SECTION B

SECTION-B

TOWARDS M4 JUNCTION 17

FOR CONTINUATION SEE DRAWING NO. WC\_A350-ATK-HGN-PH5-DR-CH-000003

FOR CONTINUATION SEE SECTION A



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  - FOR LONG SECTION, REFER TO DRAWING NO. WC\_A350-ATK-HML-PH5\_LS-DR-CH-000001 TO WC\_A350-ATK-HML-PH5\_LS-DR-CH-000005.
  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH5-DR-CH-000001 TO WC\_A350-ATK-HFE-PH5-DR-CH-000008.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH5-DR-CH-000001 TO WC\_A350-ATK-HRR-PH5-DR-CH-000008.
  - FOR KERBS, FOOTWAYS, CYCLEWAYS AND PAVED AREAS, REFER TO DRAWING NO. WC\_A350-ATK-HKF-PH5-DR-CH-000001 TO WC\_A350-ATK-HKF-PH5-DR-CH-000008.
  - FOR PROPOSED TRAFFIC SIGNS AND ROAD MARKINGS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CH-001208 TO WC\_A350-ATK-HGN-XX-DR-CH-001215.
  - FOR TRAFFIC SIGNAL, REFER TO DRAWING NO. WC\_A350-ATK-HTS-BRBT-DR-CH-000001 AND WC\_A350-ATK-HTS-PH5-DR-CH-000001.
  - FOR PROPOSED LIGHTING, REFER TO DRAWING NO. WC\_A350-ATK-HLG-PH5-DR-EO-000001 TO WC\_A350-ATK-HLG-PH5-DR-EO-000008.
  - FOR MOTORWAY COMMUNICATIONS, REFER TO DRAWING NO. WC\_A350-ATK-HGN-XX-DR-CH-000001.



**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the Designers Risk Assessment-WC\_A350-ATK-GEN-XX\_ML-RA-CX-000002).

- Construction**
- 9. Undertaking excavation work in proximity of existing services / utilities.
  - 10. Discharge of polluted construction or highway runoff to natural watercourses.
  - 13. Working in the vicinity of 400kV Overhead Power Lines.
  - 43. Works in proximity of high voltage overhead and buried electrical cables.
  - 45. Working in watercourses and floodplain.
  - 47. Construction loading on existing culverts.

**Maintenance / Cleaning**

- 13. Working in the vicinity of 400kV Overhead Power Lines.

**Use**  
None

**Decommissioning / Demolition**

- 13. Working in the vicinity of 400kV Overhead Power Lines.

**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	CO3	SS	AKV	SD	AM	24/03/23

**APPROVED - CONSTRUCTION**

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**Wiltshire Council**

Project Title  
A350 Chippenham Ph45BL Detailed Design

Drawing Title  
Phase 5  
General Arrangement

Original Size	Scale	Project Ref. No.	Project No.	Volume	Sheet	Rev.
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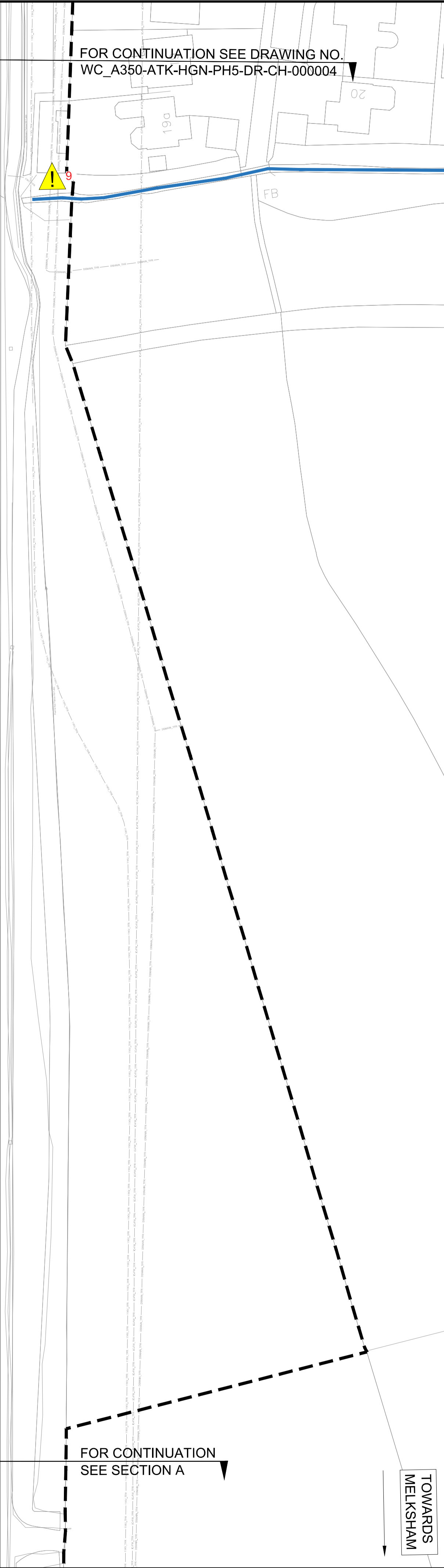
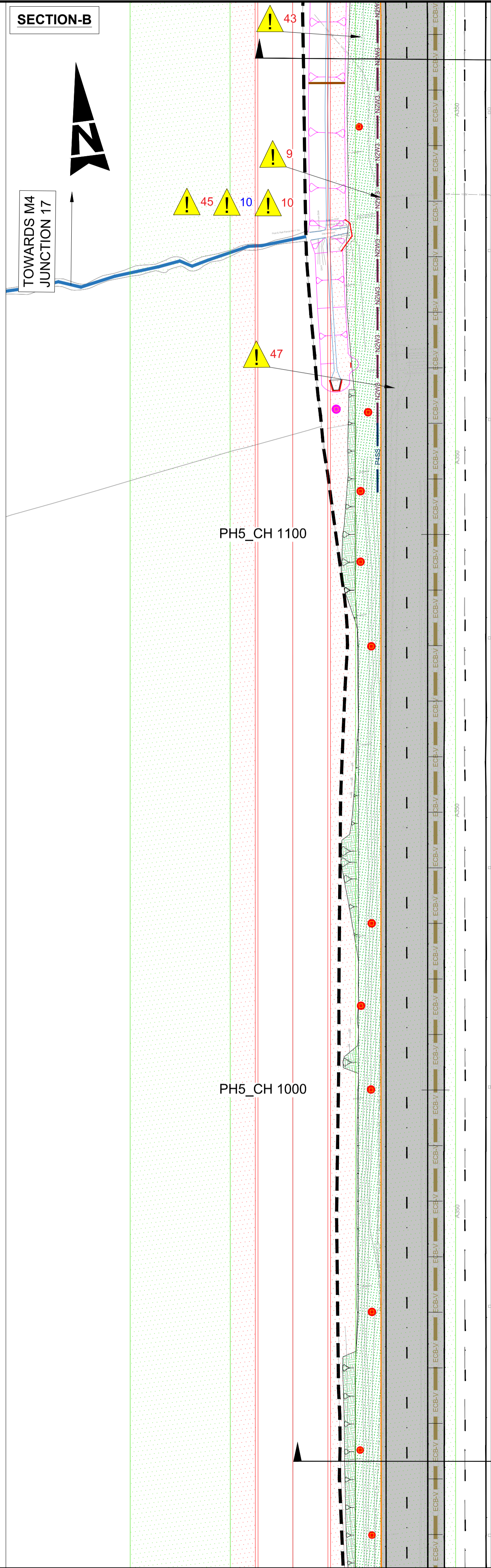
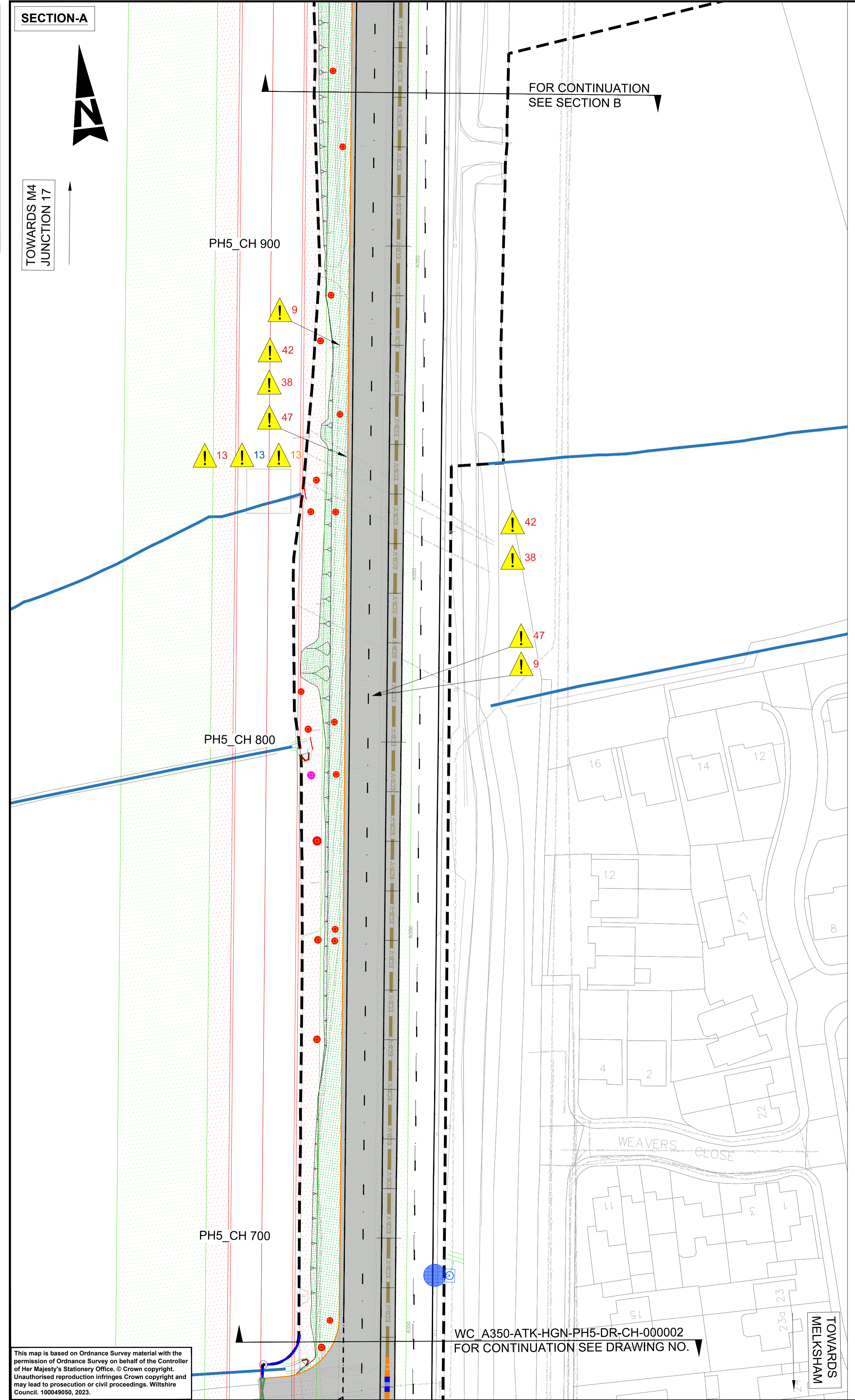
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  - FOR LONG SECTION, REFER TO DRAWING NO. WC\_A350-ATK-HML-PH5\_LS-DR-CH-000001 TO WC\_A350-ATK-HML-PH5\_LS-DR-CH-000005.
  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH5-DR-CH-000001 TO WC\_A350-ATK-HFE-PH5-DR-CH-000008.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH5-DR-CH-000001 TO WC\_A350-ATK-HRR-PH5-DR-CH-000008.
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  - FOR TRAFFIC SIGNAL, REFER TO DRAWING NO. WC\_A350-ATK-HTS-BRBT-DR-CH-000001 AND WC\_A350-ATK-HTS-PH5-DR-CH-000001.
  - FOR PROPOSED LIGHTING, REFER TO DRAWING NO. WC\_A350-ATK-HLG-PH5-DR-EO-000001 TO WC\_A350-ATK-HLG-PH5-DR-EO-000008.
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**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the Designers Risk Assessment-WC\_A350-ATK-GEN-XX\_ML-RA-CX-000002).

- Construction**
- 9. Undertaking excavation work in proximity of existing services / utilities.
  - 10. Discharge of polluted construction or highway runoff to natural watercourses.
  - 13. Working in the vicinity of 400kV Overhead Power Lines.
  - 38. General excavation over Oil pipe line.
  - 42. Drainage pipes crossing existing Oil lines.
  - 43. Works in proximity of high voltage overhead and buried electrical cables.
  - 45. Working in watercourses and floodplain.
  - 47. Construction loading on existing culverts.
- Maintenance / Cleaning**
- 13. Working in the vicinity of 400kV Overhead Power Lines.
- Use**
- 10. Discharge of polluted construction or highway runoff to natural watercourses.
- Decommissioning / Demolition**
- 13. Working in the vicinity of 400kV Overhead Power Lines.

**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	CO3	SS	AKV	SD	AM	24/03/23

**Issue For Construction**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	CO4	JH	SS	TG	AM	22/11/23

Drawing Suitability	Status
APPROVED - CONSTRUCTION	A3

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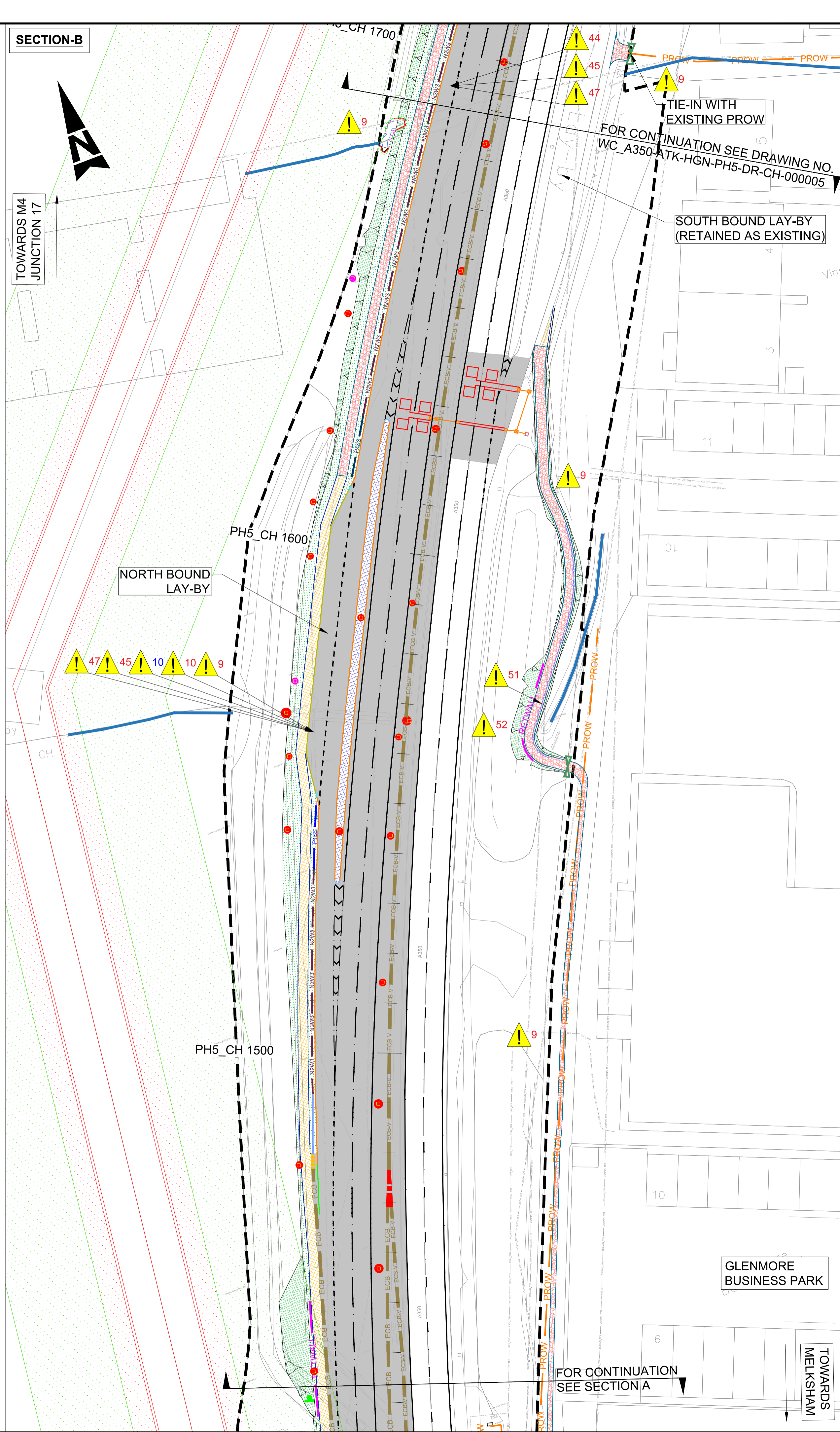
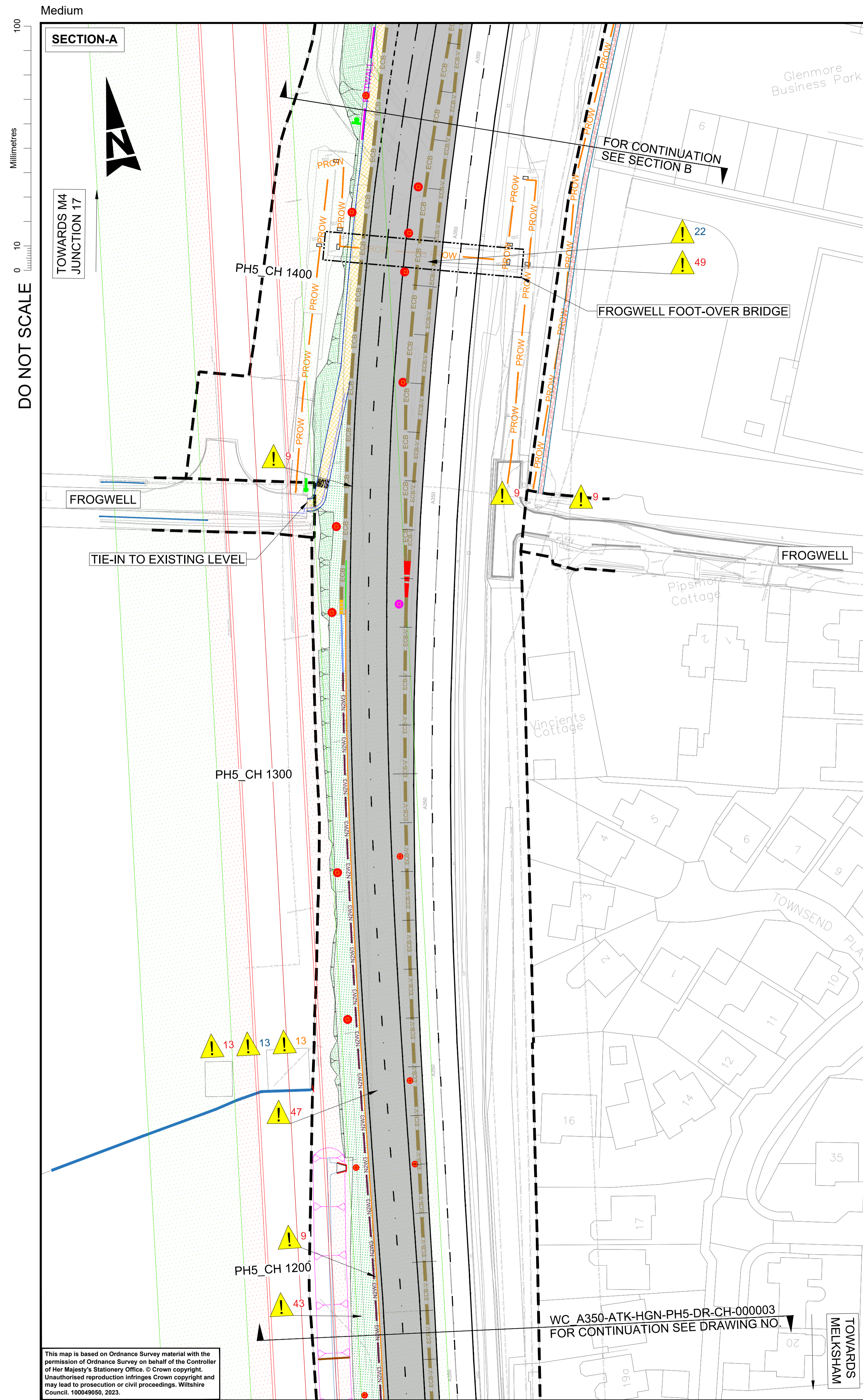
Project Title  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 5  
General Arrangement**

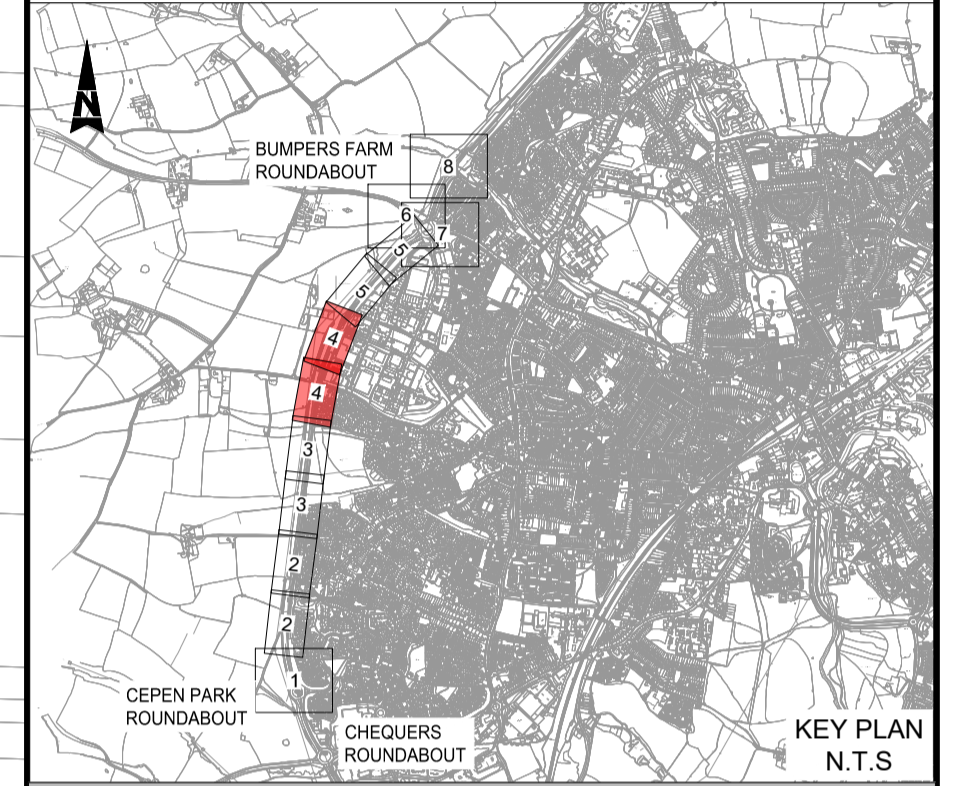
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WC_A350	ATK	HGN	
PH5	DR - CH - 000003		
Location	Type	Role	Number
A1	Scale: 1:500	Project Ref. No.: 5211118	Sheet: 3 of 8 Rev: C04

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  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH5-DR-CH-000001 TO WC\_A350-ATK-HFE-PH5-DR-CH-000008.
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  - FOR TRAFFIC SIGNAL, REFER TO DRAWING NO. WC\_A350-ATK-HTS-BRBT-DR-CH-000001 AND WC\_A350-ATK-HTS-PH5-DR-CH-000001.
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**Construction**

9. Undertaking excavation work in proximity of existing services / utilities.

10. Discharge of polluted construction or highway runoff to natural watercourses.

13. Working in the vicinity of 400kV Overhead Power Lines.

43. Working in proximity of high voltage overhead and buried electrical cables.

44. Excavations for culvert extension in close proximity to existing LPG main.

45. Working in watercourses and floodplain.

47. Construction loading on existing culverts.

49. Excavations in proximity of bridge and structure foundations.

51. Excavations in proximity of Wessex Water assets.

52. Existing shallow culvert under carriageway.

**Maintenance / Cleaning**

13. Working in the vicinity of 400kV Overhead Power Lines.

22. Inspection of overbridges.

**Use**

10. Discharge of polluted construction or highway runoff to natural watercourses.

**Decommissioning / Demolition**

13. Working in the vicinity of 400kV Overhead Power Lines.

**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	CO3	SS	AKV	SD	AM	24/03/23

**Issue For Construction**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	CO4	JH	SS	TG	AM	22/11/23

**APPROVED - CONSTRUCTION** A3

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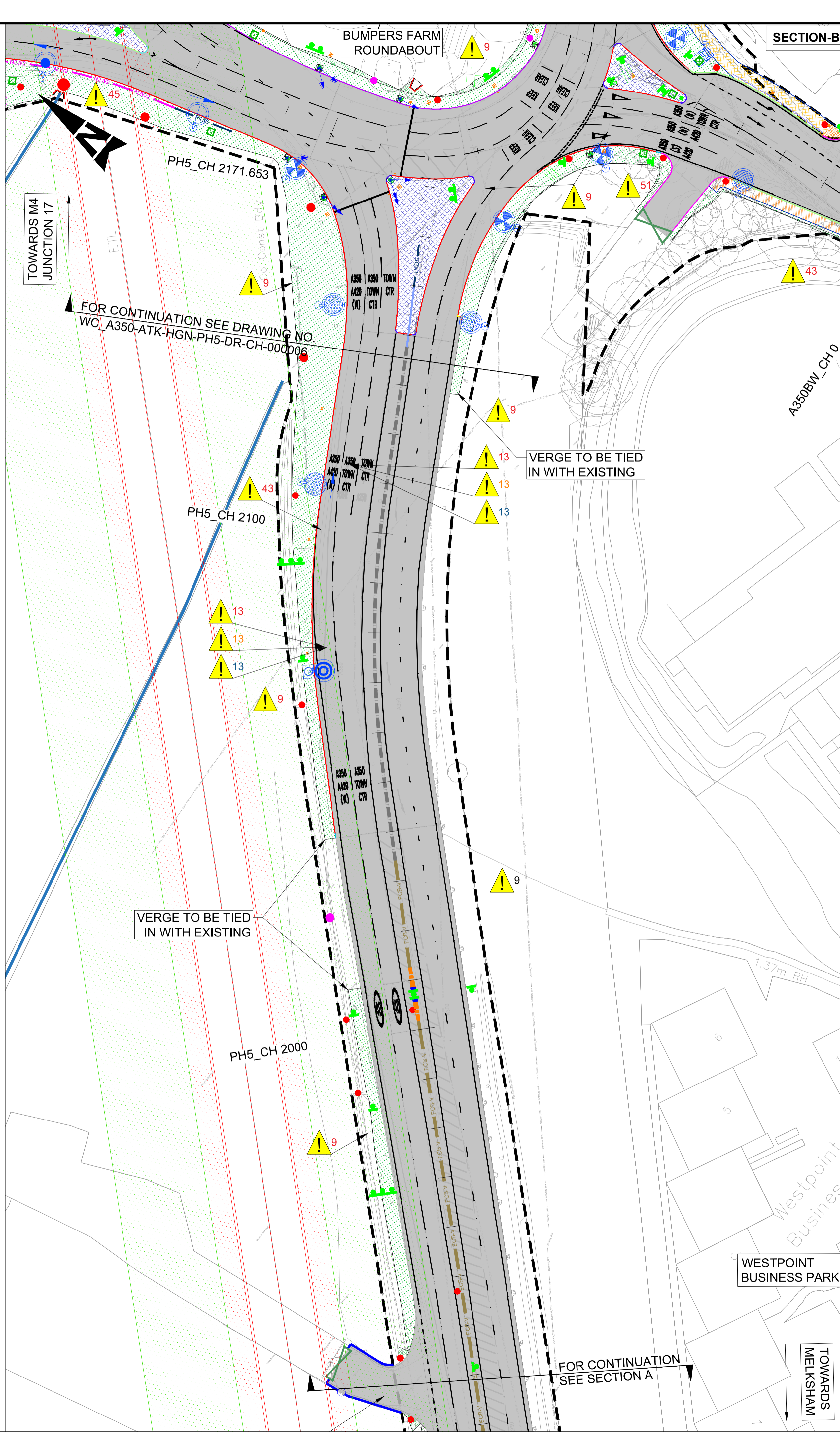
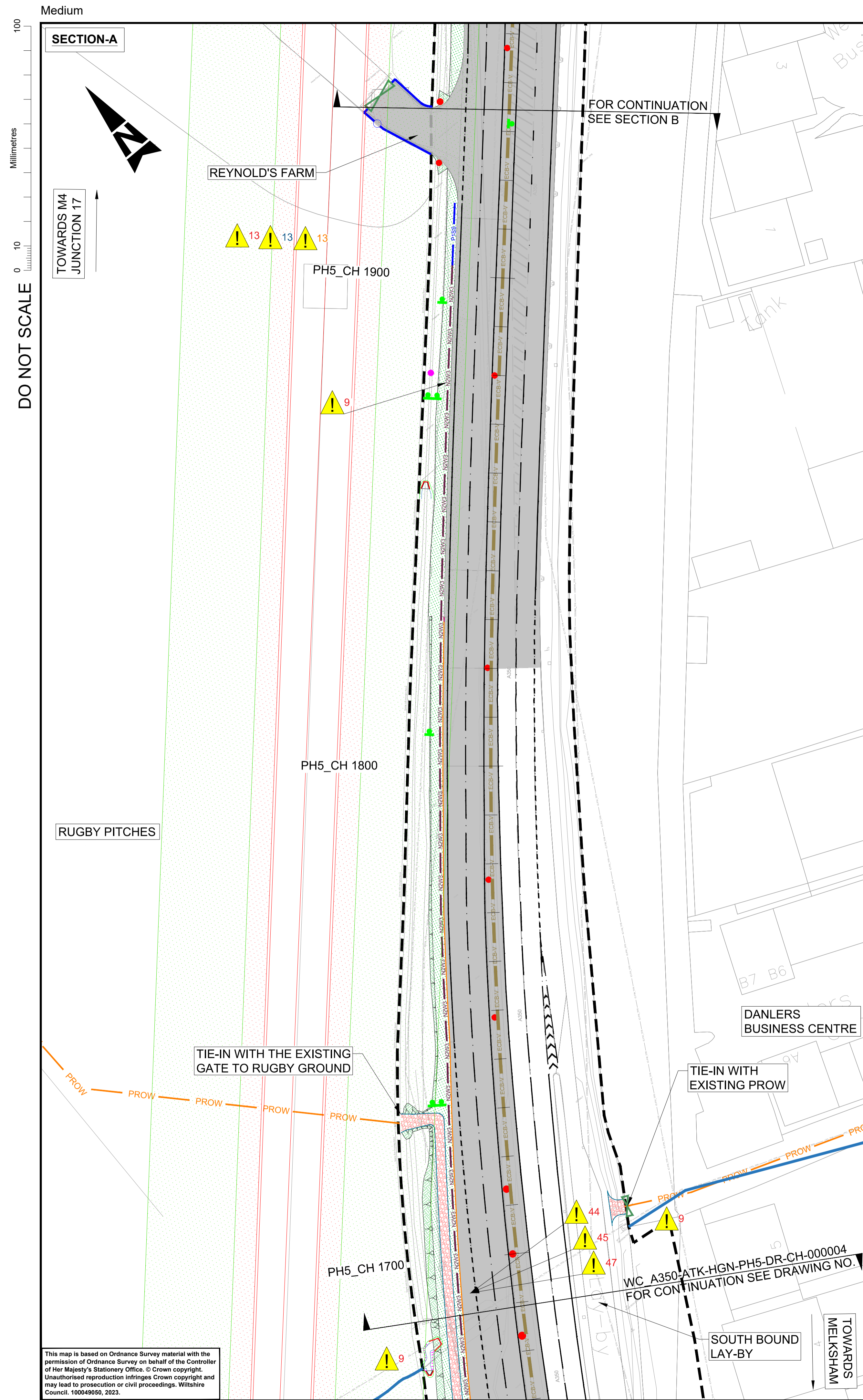
Project Title  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 5  
General Arrangement**

Drawing Number Project	Originator	Volume
WC_A350 - ATK - HGN - PH5 - DR - CH - 000004		
Location	Type	Role / Number
Original Size: A1	Scale: 1:500	Project Ref. No.: 5211118
		Sheet: 4 of 8
		Rev: C04

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  - FOR FENCING, REFER TO DRAWING NO. WC\_A350-ATK-HFE-PH5-DR-CH-000001 TO WC\_A350-ATK-HFE-PH5-DR-CH-000008.
  - FOR ROAD RESTRAINT SYSTEMS, REFER TO DRAWING NO. WC\_A350-ATK-HRR-PH5-DR-CH-000001 TO WC\_A350-ATK-HRR-PH5-DR-CH-000008.
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13.	Working in the vicinity of 400kV Overhead Power Lines.
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45.	Working in watercourses and floodplain.
47.	Construction loading on existing culverts.
51.	Excavations in proximity of Wessex Water assets.

Maintenance / Cleaning	
13.	Working in the vicinity of 400kV Overhead Power Lines.
Use	
None	
Decommissioning / Demolition	
13.	Working in the vicinity of 400kV Overhead Power Lines.

**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	C03	SS	AKV	SD	AM	24/03/23

**Issue For Construction**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	C04	JH	SS	TG	AM	22/11/23

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Client  
**Wiltshire Council**

Project Title  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 5  
General Arrangement**

Drawing Number	Project	Originator	Volume
WC_A350 - ATK - HGN - PH5 - DR - CH - 000005			

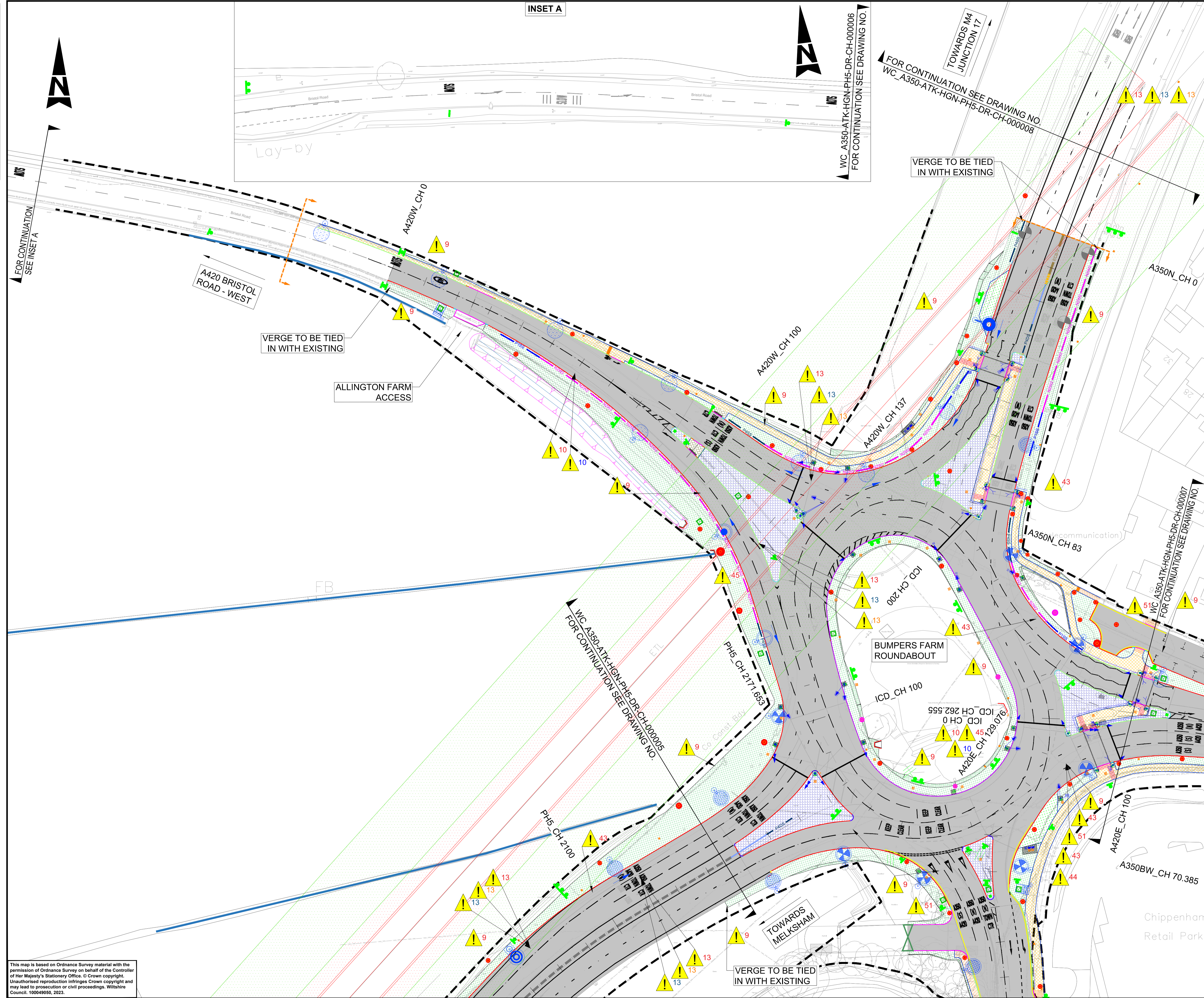
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  - 45. Working in watercourses and floodplain.
  - 51. Excavations in proximity of Wessex Water assets.
- Maintenance / Cleaning**
- 13. Working in the vicinity of 400kV Overhead Power Lines.
- Use**
- 10. Discharge of polluted construction or highway runoff to natural watercourses.
- Decommissioning / Demolition**
- 13. Working in the vicinity of 400kV Overhead Power Lines.

**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	CO3	SS	AKV	SD	AM	24/03/23

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	CO4	JH	SS	TG	AM	22/11/23

APPROVED - CONSTRUCTION A3

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Project Title  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 5  
General Arrangement**

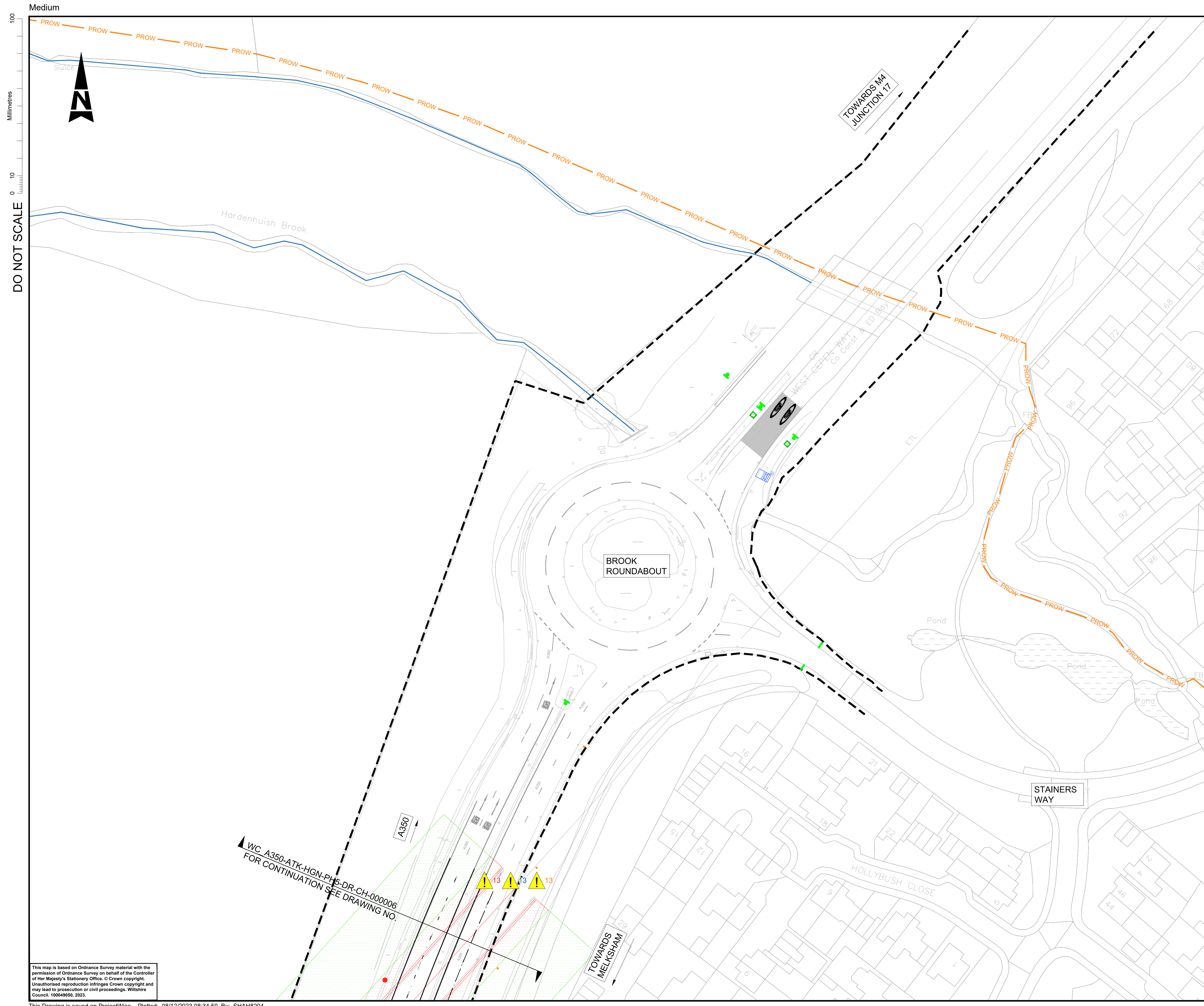
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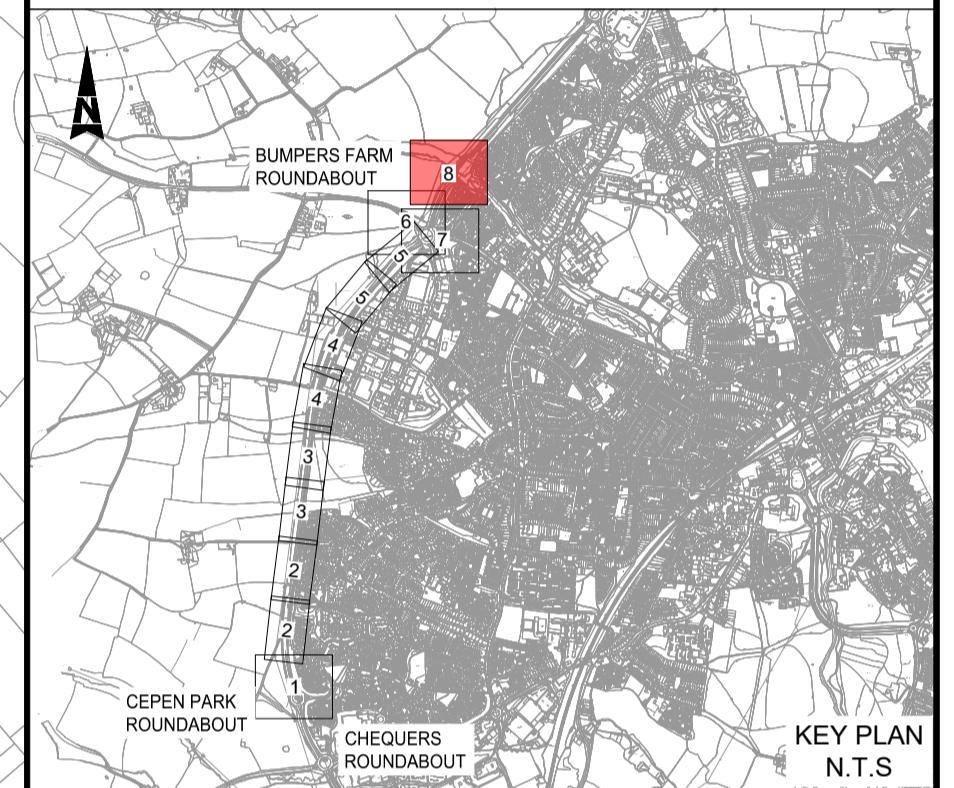


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- 13. Working in the vicinity of 400kV Overhead Power Lines.
- Maintenance / Cleaning**
- 13. Working in the vicinity of 400kV Overhead Power Lines.
- Use**
- Decommissioning / Demolition**
- 13. Working in the vicinity of 400kV Overhead Power Lines.

**FOR TENDER**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A6	C03	SS	AKV	SD	AM	24/03/23

**Issue For Construction**

Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
A3	C04	JH	SS	TG	AM	22/11/23

**Drawing Suitability**

APPROVED - CONSTRUCTION	A3
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Project Title  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Phase 5  
General Arrangement**

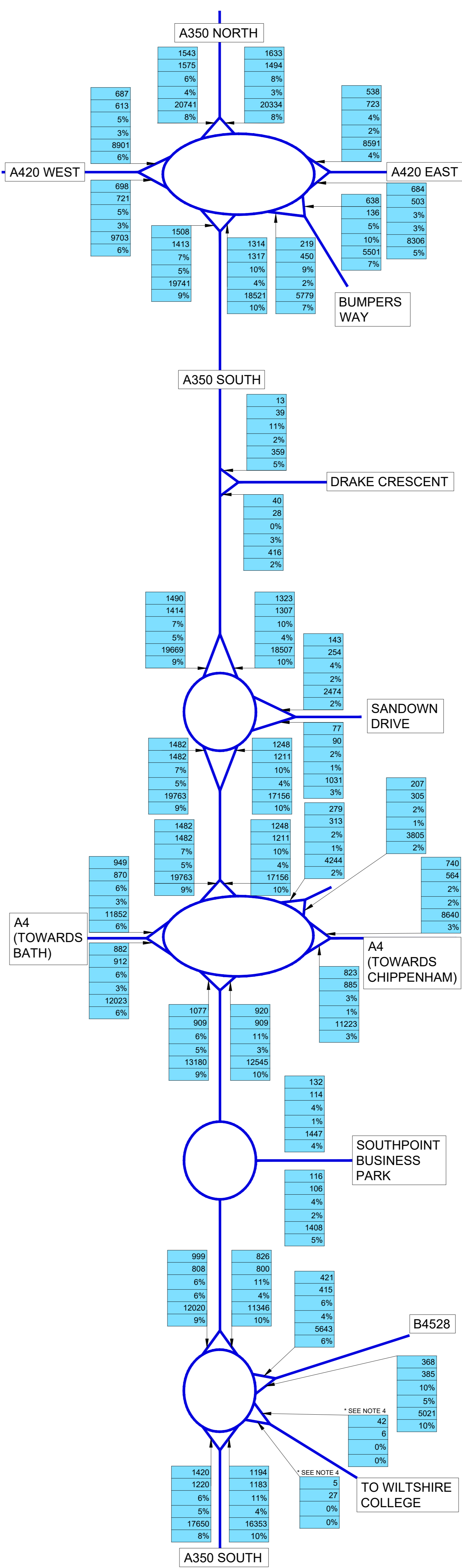
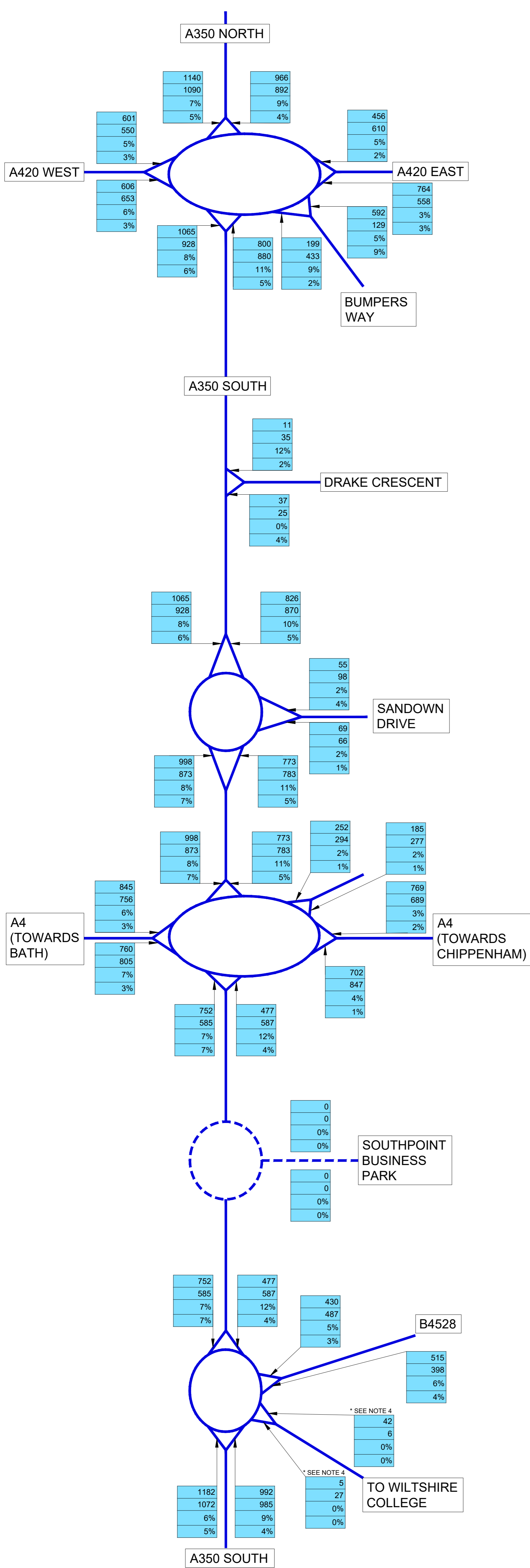
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Location	Type	Role
Original Size: A1	Scale: 1:500	Project Ref. No.: 5211118
		Sheet: 8 of 8
		Rev: C04

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- FOR LACKHAM ROUNDABOUT, WILTSHIRE COLLEGE ARM THE OBSERVED TRAFFIC DATA (2021) IS CONSIDERED AS BASE TRAFFIC AND NO TRAFFIC GROWTH IS ASSUMED FOR FORECAST YEAR (2036).

**KEY:**

311	AM (08:00 TO 09:00) PEAK HOUR TRAFFIC FLOW (vph)
537	PM (16:00 TO 17:00) PEAK HOUR TRAFFIC FLOW (vph)
8%	AM PEAK % HGV's
8%	PM PEAK % HGV's
5778	AADT
7%	HGV %

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following significant residual risks (Reference shall also be made to the design hazard log).

Construction	Not applicable for purpose of this drawing
Maintenance / Cleaning	Not applicable for purpose of this drawing
Use	Not applicable for purpose of this drawing
Decommissioning / Demolition	Not applicable for purpose of this drawing

Description	Status	Revision	Drawn	Checked	Reviewed	Authorised	Issue Date
First Issue	A1	Revision C01	Drawn VR	Checked JR	Reviewed NW	Authorised AM	Issue Date 27/04/22
For RSA Stage 2	A1	Revision C02	Drawn VR	Checked AKV	Reviewed SD	Authorised AM	Issue Date 19/01/23

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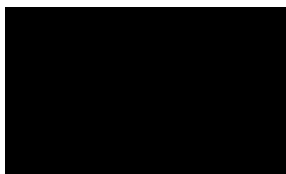


Project Title  
**A350 Chippenham Ph45BL Detailed Design**

Drawing Title  
**Base year and Design year Traffic Flow Data**

Drawing Number	Project	Originator	Volume
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Original Size	Scale	Project Ref. No.	Sheet
A1	1:1000	5211118	1 of 1
		Rev.	C02

## Technical Note

Project:	A350 Chippenham Bypass Phases 4&5 MRN		
Subject:	Active travel supporting information		
Author:	Linda Sullivan		
Date:	02/08/2023	Project No.:	
Atkins No.:		Icepac No.:	
Distribution:		Representing:	DfT DfT Wiltshire Council Wiltshire Council Wiltshire Council

### Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
2.1	Draft for WC comment	LS	NW	LS	AM	25/05/23
2.2	DfT issue	LS	NW	LS	AM	02/08/23

### Client signoff

Client	Wiltshire Council
Project	A350 Chippenham Bypass Phases 4&5 MRN
Project No.	
Client signature / date	



# 1. Introduction and background

This note has been developed in support of Wiltshire Council's Full Business Case (FBC) submission for the A350 Chippenham Bypass Improvements (Phase 4&5) scheme, which is being progressed through DfT's Major Road Network (MRN) fund. The Outline Business Case (OBC) was originally submitted in 2019, and ultimately received approval to proceed to FBC in 2021. Although focussed on enhancing the quality and function of the MRN, the MRN fund includes objectives to support all road users. Since the OBC submission, DfT has introduced the practice of seeking feedback on MRN proposals from Active Travel England (ATE) and its bus policy team.

This note specifically sets out key information on walking and cycling provision in relation to the proposed scheme. It provides relevant context and considers the existing situation for pedestrians, cyclists and how the scheme addresses walking and cycling needs. Further supporting information is available within the OBC and the Walking, Cycling & Horse-riding Assessment Report.

## 2. Overview of the scheme

### 2.1. The case for change

The A350 is one of the most important routes in Wiltshire. It is a primary north-south route with regional significance, connecting the south coast with the M4 and onwards to Bristol and the Midlands. In Wiltshire, it passes around the principal settlements of Chippenham and Trowbridge via the town of Melksham, and on to Westbury and Warminster. For many years, high traffic volumes on the A350 Chippenham Bypass have resulted in delays and unpredictable journey times for road users. Increasing traffic demand, associated with housing and employment growth, is forecast to make the situation worse. Growing congestion and delay on the A350 will hinder the economic relationships between the north and south of the area.

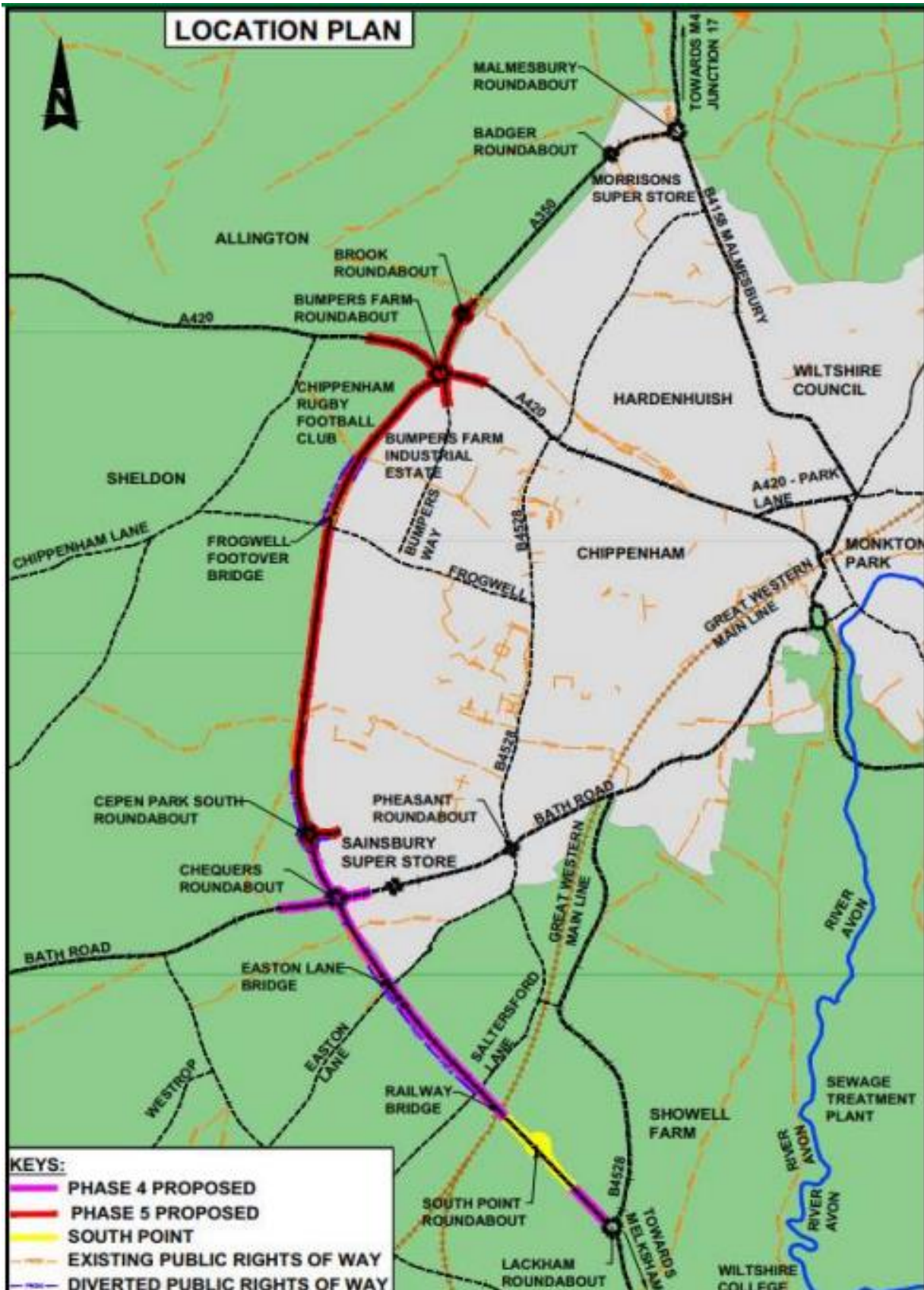
It has been a longstanding priority to improve north-south connectivity along the A350, and Wiltshire Council has been progressively bringing forward the dualling of the A350 Chippenham bypass with recent completion of three major capital schemes along the A350 in Chippenham (Phases 1, 2 and 3).

### 2.1. The scheme

The scheme will involve building new carriageways alongside the existing road between Bumpers Farm Roundabout (A420) and Cepen Park South Roundabout, and between Chequers Roundabout (A4) and Lackham Roundabout – see Figure 2-1.

This will complete dualling of the A350 between M4 J17 and Lackham Roundabout (south of Chippenham). The new carriageways will be to the west of the existing road, and within the existing highway boundaries on land originally acquired for that purpose. The bridges along the route were constructed to facilitate this dualling. The scheme also includes alterations to Bumpers Farm Roundabout.

Figure 2-1 – The A350 Chippenham Bypass Phases 4&5 MRN scheme



## 2.2. Scheme benefits

The benefits of the A350 Chippenham Phase 4&5 bypass scheme are:

### Local Benefits

- improvements at Bumpers Farm Roundabout will reduce peak time queuing on Bumpers Way and allow easier exit onto the roundabout.
- increased road capacity along the A350 Chippenham Bypass, which will:
  - help deter traffic from using alternative parallel routes on the local road network such as the B4528 Hardenhuish Lane and B4528 Hungerdown Lane
  - help support the local economy by improving connections.
- alterations to the local public rights of way network will improve safety for those accessing the countryside.
- improvement in journey-time reliability along the bypass and a reduction in congestion, which will:
  - support future growth in the town and help achieve the economic competitiveness and growth ambitions
  - contribute towards reducing greenhouse gas emissions and address the negative impacts on safety, security, health, and quality of life.
- reduction in the frequency of collisions along the bypass and parallel routes.

### Regional Benefits

- improvement in journey-time reliability along the bypass and a reduction in congestion, which will:
  - help preserve the route's key role as part of the advisory freight route network
  - reduce transport costs for businesses and transport operators and encourage inward investment to the A350 Growth Zone.

## 2.3. Scheme development

The development of the scheme has been informed by:

- A Walking, Cycling and Horse-riding Assessment Report (WCHAR) - used to help the designer provide engineering solutions with due regard for the needs of pedestrians, cyclists and equestrians. The opportunities identified have been reviewed as the scheme design progresses. The second stage of the Walking, Cycling and Horse-riding Assessment is currently in progress, based upon the latest detailed design.
- Stakeholder engagement – in particular, as part of the WCHAR (including Sustrans and Cycling UK) and a wider public exercise between November 2022 and February 2023.
- Progressive development of the scheme design to current standards, including LTN1/20 where applicable in relation to cyclist provision.

# 3. Walking and cycling

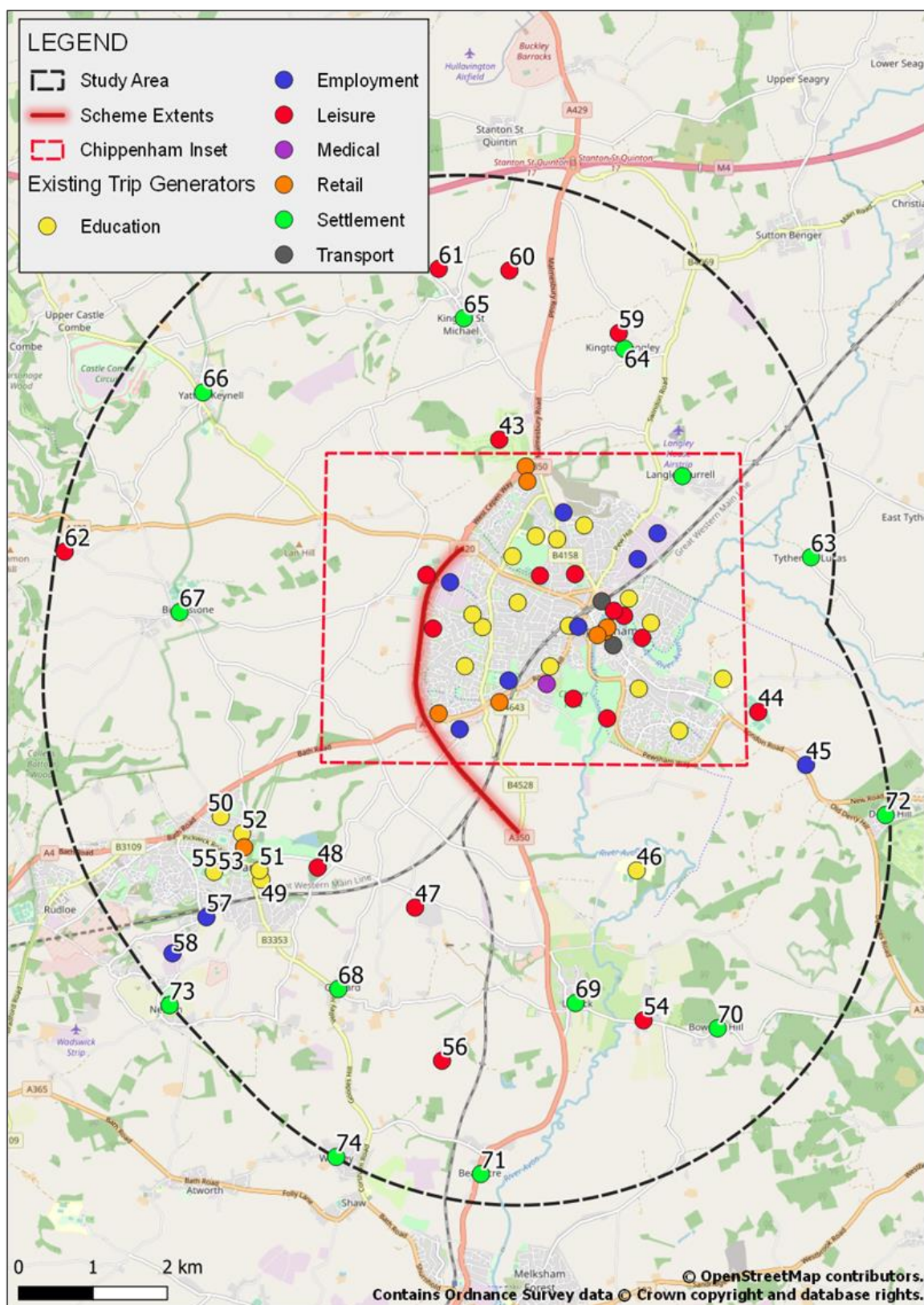
## 3.1. Context overview

Chippenham is a small to medium-sized market town with a population of approximately 37,000. It is located approximately 5 kilometres south of M4 Junction 17. The A350 corridor runs to the west of the town and forms a clear boundary to the western extent of the urban area. There are a few small villages located approximately 2 to 3 kilometres from the main urban area. The small town of Corsham is situated approximately 5 kilometres to the south west of Chippenham town.

Key trip attractors and generators are illustrated below. The vast majority of walking and cycling demand is within the town, which is almost entirely to the east of the scheme.



Figure 3-1 - Key trip attractors and generators in and around Chippenham



The railway station lies close to the town centre while the hospital is located southwest of the town centre, along Rowden Hill.

There are major employment sites to the north, such as Greenways Business Park, Parsonage Way Industrial Estate, and Langley Park. To the west, there's the Bumpers Farm Industrial estate and to the south, near the town's boundary line, the Methuen Park area. Key commercial zones are the town centre, Methuen Park area, and towards the north-west, Cepen Park North.

Wiltshire College & University Centre is located to the east of the railway station and to the north of the River Avon. The Town Council, Chippenham Museum, and the bus station are all located in close proximity south of the river and are accessible from the north via multiple bridges. There are committed and strategic development sites located to the north and south of the town.

There are planned and potential development sites to the south and south-west of the town – the Rawlings Green development is planned to provide approximately 1,400 dwellings in total. As is the case for the existing urban form, this development on the periphery of the town will be bounded by the A350 to the west.

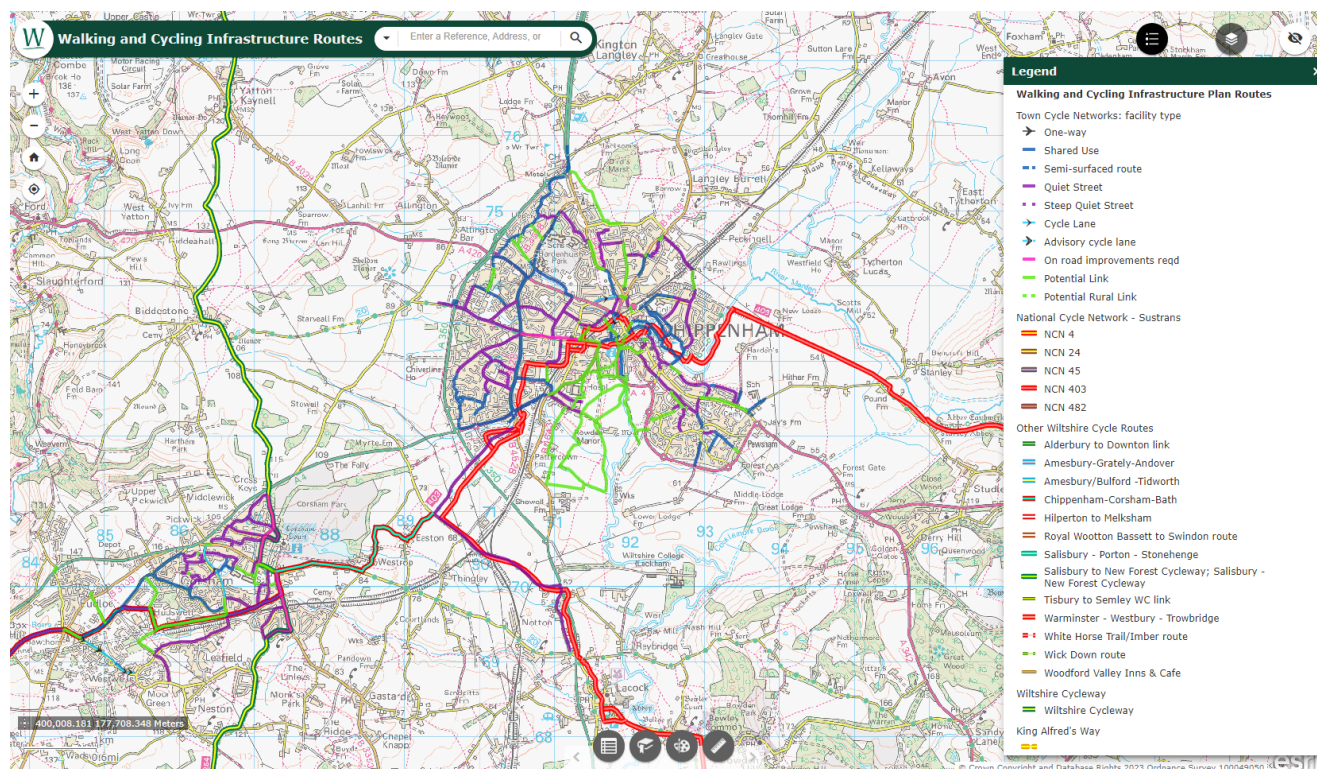
A new business park (Southpoint) is being constructed at the southern end of the scheme extent, south of the railway line, with a new roundabout junction providing access from the A350.

### 3.1.1. Current walking and cycling provision

The walking and cycling network is predominantly focused on connecting key local origins and destinations within the town to the east of the A350. Due to the nature of the existing A350 and its peripheral location to the town, there are no cycling and walking routes along its length. There are a small number of east-west connections across the A350.

The main cycle routes (existing and potential) are shown in Figure 3-2. The main north-south route to the west of the town is via the B4528 Hungerdown Lane and Hardenhuish Lane. The main east-west route is via Frogwell, which passes across the A350. NCN route 403 crosses the A350 via a bridge to the south west of the Chippenham urban area and provides connection south to Lacock village and west to Corsham (and onwards towards Bath) via an identified inter-urban route.

**Figure 3-2 - Key cycle routes in and around Chippenham**

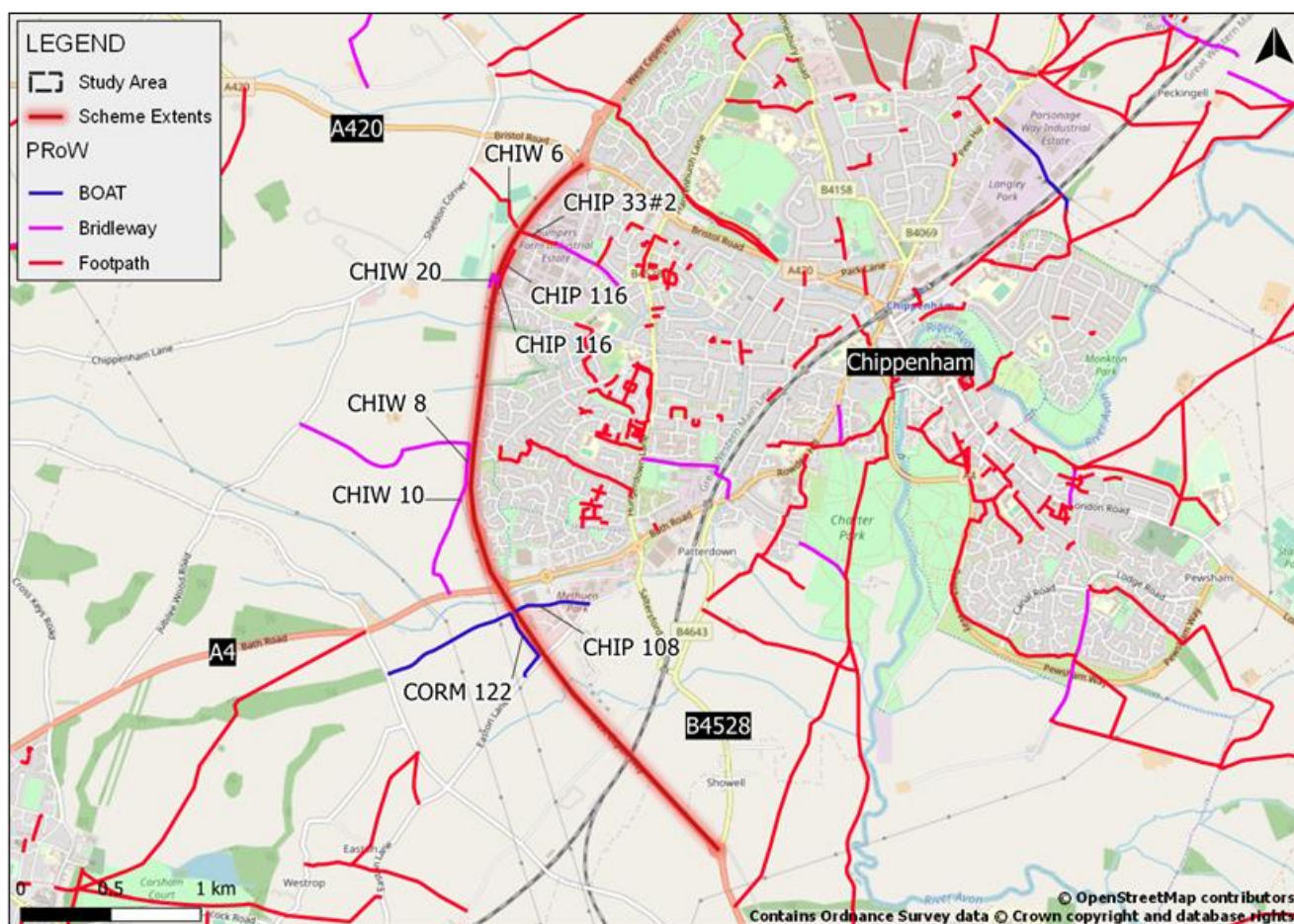


[Walking and Cycling Infrastructure Routes \(arcgis.com\)](https://arcgis.com)

The Public Rights of Way (PRoW) network in and around Chippenham is illustrated in Figure 3-3. Bridleways CHIP 116 and CHIW 20 provide the only PRoW crossing location along the scheme extents via an overbridge



Figure 3-3 – Public Rights of Way in and around Chippenham



### 3.1.2. Walking and cycling activity

Surveys and site observations undertaken in association with the WCHAR at several locations along the scheme extent identified low walking and cycling activity. The highest movements were recorded at Drake Crescent, although these did not exceed 30 observations over the duration of any single day. Activity was primarily associated with people accessing countryside to the west of the A350.

### 3.1.3. Strategy context

Wiltshire Council's Local Transport Plan (LTP) sets out the ambition to increase levels of walking and cycling, as the natural choices for shorter journeys or as part of a longer journey – consistent with DfT's Cycling and Walking Investment Strategy and Gear Change strategy. Wiltshire Council has produced a draft county-wide Local Cycling and Walking Infrastructure Plan (LCWIP), identifying overarching principles and key inter-urban routes. Subsidiary LCWIPs for key settlements are in development, including for Chippenham. These will build upon the Town Cycle Network Plans, developed in support of the current LTP (as per Figure 3-2), to enhance the quality and attractiveness of walking and cycling routes.

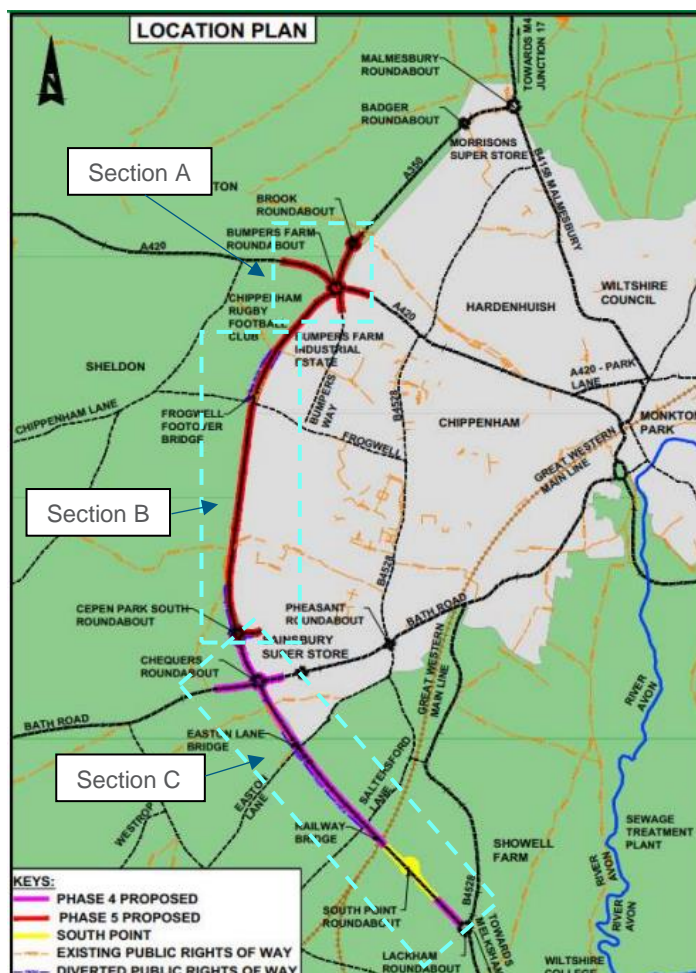
## 3.2. Walking and cycling provision in relation to the proposed scheme

For the purposes of this note, the proposed walking and cycling arrangements for the scheme (in relation to the existing provision) are addressed in relation to three sections of the A350 corridor, as follows and illustrated in Figure 3-4:

- Section A - Around Bumpers Farm roundabout, at the northern extent of the scheme;
- Section B - Between Bumpers Farm roundabout and Cepen Park South roundabout;
- Section C - Between Cepen Park South roundabout and Lackham roundabout.



Figure 3-4 – The A350 Chippenham Bypass Phases 4&5 MRN scheme



The scheme does not seek to provide an end to end walk / cycle route adjacent to the A350. Due to the nature of the spatial context, including the peripheral location of the A350, north-south connections are better served on other routes within the town. Cycling would be permitted on the upgraded A350. Up to 1 metre wide hardstrip is proposed as part of the design on the northbound carriageway.

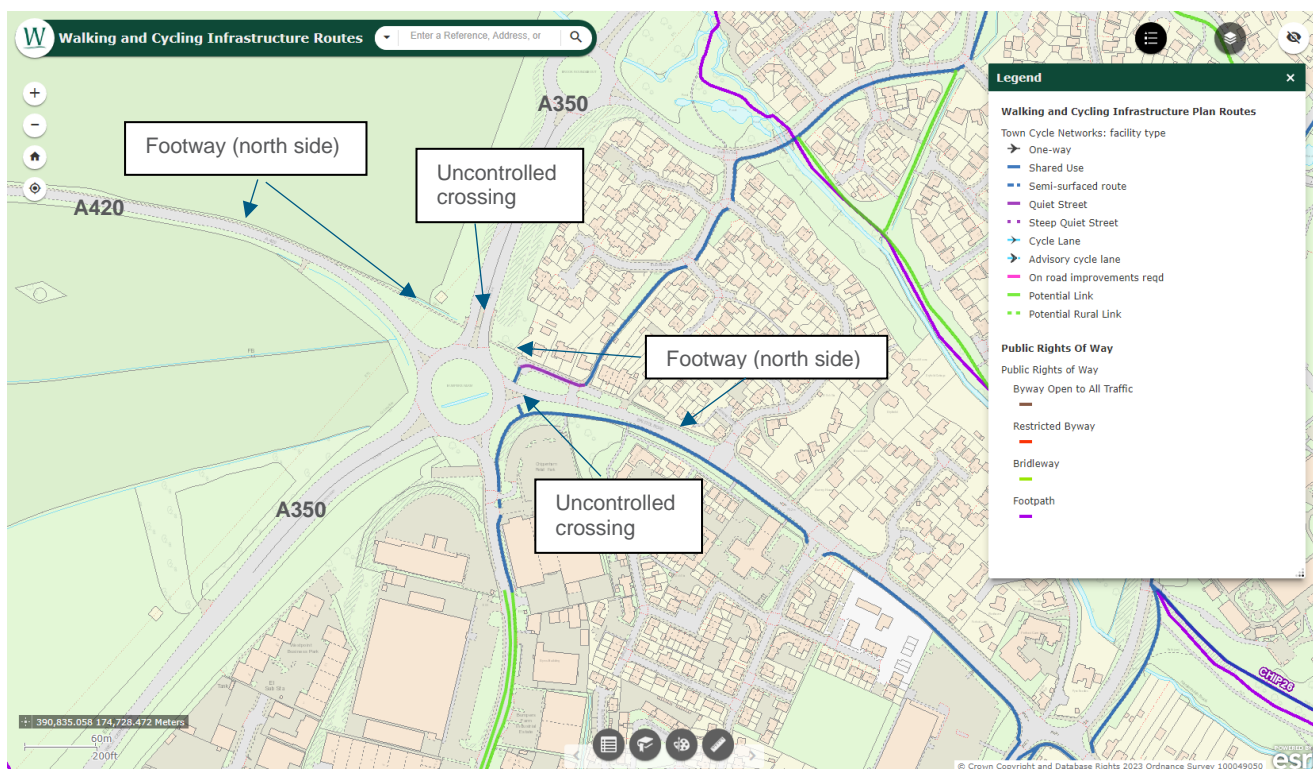
Localised amendments and enhancements to walking and cycling provision at relevant locations along the scheme corridor are addressed in the following sections and these typically involve movements across the A350 corridor. Wider benefits of the scheme to walking and cycling within the town are addressed in Section 3.3.

### 3.2.1. Section A: A350 Bumpers Farm Roundabout

#### Existing situation

As illustrated on Figure 3-5, a shared-use path provides for north-south movements between residential neighbourhoods and the Bumpers Farm Industrial Estate and its adjacent retail area. There is one central island on the A350, located north of Bumpers roundabout, which allows pedestrians to cross the A350. There is another island on Bristol Road (A420 eastern arm) providing an unsignalised north-south crossing.

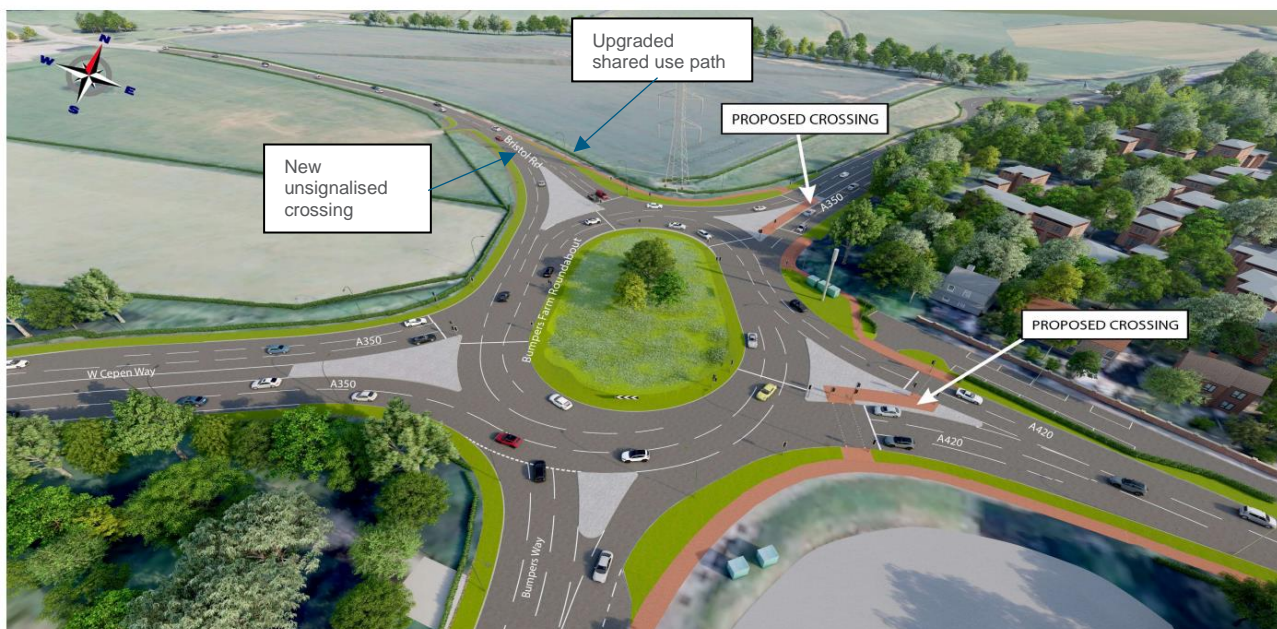
**Figure 3-5 – Walking and cycling provision around A350 Bumpers Farm Roundabout**



**Proposed scheme**

The proposals are illustrated in Figure 3-6.

**Figure 3-6 – Proposed walking and cycling provision around A350 Bumpers Farm Roundabout**



The existing A350 crossing to the north of the roundabout will be upgraded to be traffic signal-controlled. It will be located between two roundabouts which are relatively close together. Traffic speeds will naturally tend to be lower and better controlled here, which will improve the safety for those using the crossing. The existing crossing on the A420 east arm will also be upgraded to be traffic signal-controlled. The new facilities will also tie in and supplement the existing routes.



On the A420 western arm, the footway on the northern side will be upgraded to a shared use path on the approach to the junction. Furthermore, a new unsignalised crossing is proposed on this arm

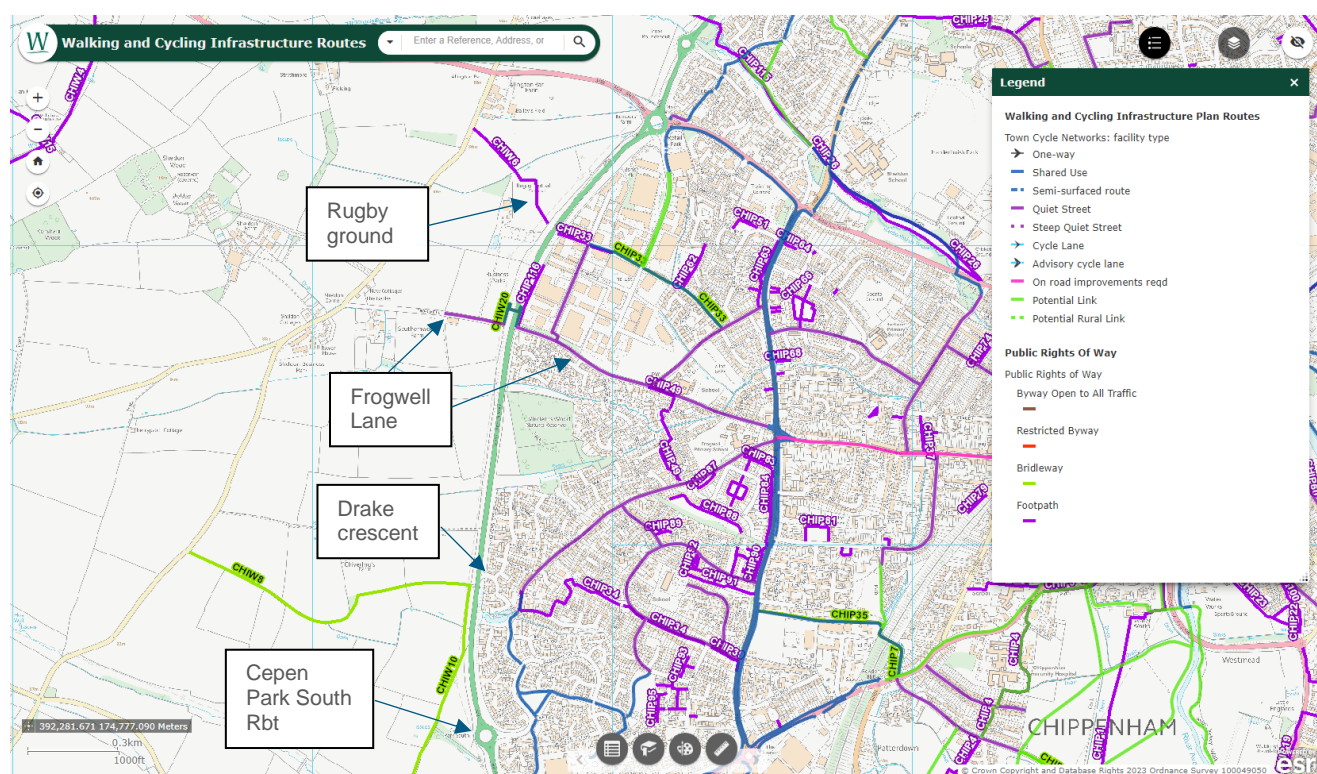
### 3.2.2. Section B: A350 between Bumpers Roundabout and Cepen Park South Roundabout

#### Existing situation

Along this section the existing walking and cycling provision comprises:

- An uncontrolled, informal crossing location between the west of Chippenham (PRoW CHIPP33) and the rugby ground to the west of the A350 and PRoW CHIPP6).
- A pedestrian/cycle bridge providing a crossing over the A350, linking west Chippenham to Sheldon. This does not connect into the wider PRoW network present in Chippenham. The bridge connects to Frogwell Lane either side of the A350, which is identified as a quiet route (see Figure 3-2).
- An uncontrolled, informal crossing location at Drake Crescent, between the west of Chippenham (PRoW CHIP34 and a quiet route on Derriards Lane) and PRoW CHIW8 / CHIW10.

**Figure 3-7 – Walking and cycling provision A350 Bumpers Farm Roundabout to Cepen Park South Roundabout**



#### Proposed scheme

##### Rugby Club / Frogwell Lane

The proposals are illustrated in Figure 3-8. The current crossing of the A350 at the Rugby Club will be closed off. To ensure the public rights of way is maintained, the footpath will be diverted south on both sides of the A350 and will cross over the A350 at the existing Frogwell Footbridge. This will provide a safer crossing facility, with styles and fences being replaced by gates where possible to aid accessibility.





Figure 3-9 – Proposed walking and cycling provision at Drake Crescent



### 3.2.3. Section C: A350 between Chequers Roundabout and Lackham Roundabout

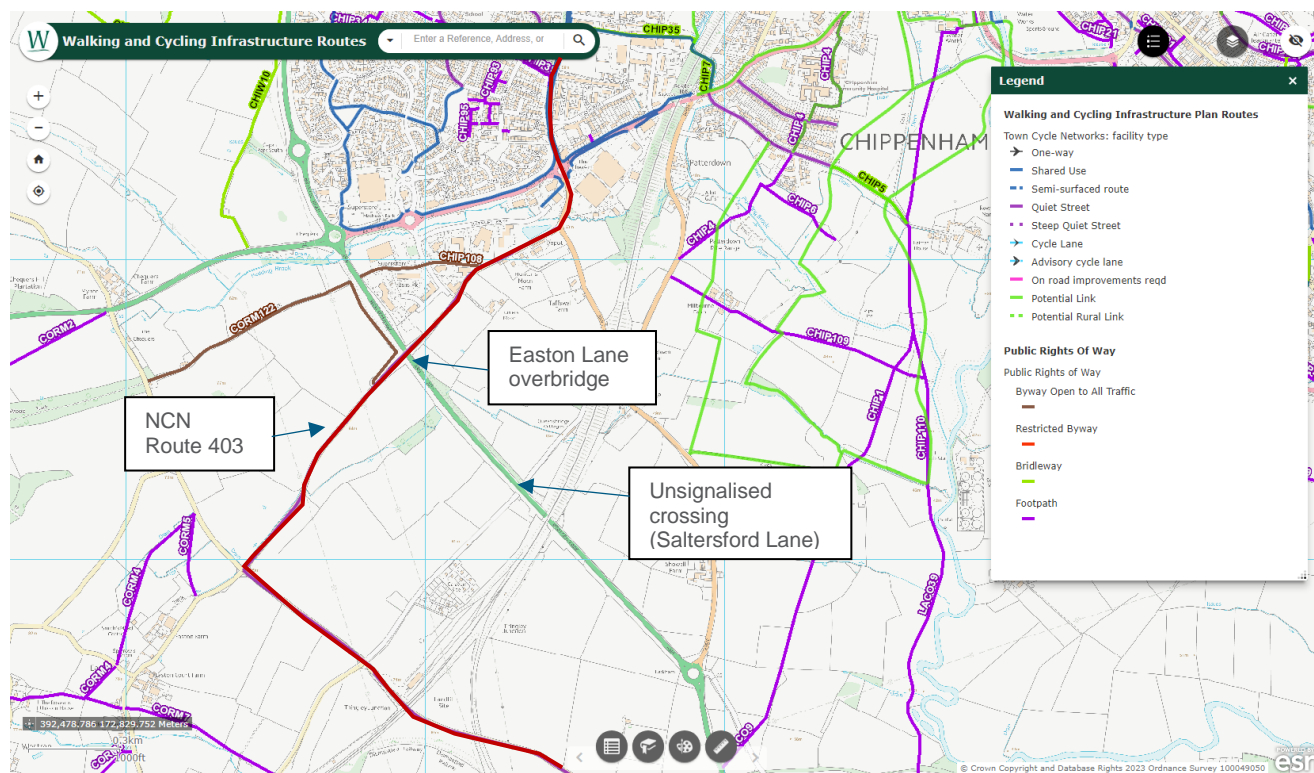
#### Existing situation

This stretch of the A350 is south of Chippenham’s urban area, meaning there is very little demand for walking and cycling movements. The existing situation is illustrated in Figure 3-10, with key features being:

- A National Cycle Network route (NCN 403) crosses over the A350 via a bridge on Easton Lane. Easton Lane has recently been closed to vehicular traffic and provides a safe pedestrian and cyclist link across the A350.
- An existing pedestrian desire line along the alignment of Saltersford Lane / Assart way, just to the north of the railway bridge. This existing informal crossing is considered unsafe in the current arrangement.



Figure 3-10 – Walking and cycling provision A350 Chequers Roundabout to Lackham Roundabout



### Proposed scheme

There are no proposed alterations to the A350 crossing at Easton Lane. The existing overbridge was constructed to accommodate potential future dualling and hence no modifications to the existing structure are required.

The informal crossing location at Saltersford Lane will be affected by the new dual carriageway construction. The current usage of this crossing is low and does not justify provision of a complex and expensive structure across A350, building which is likely to require land take on either side of A350. A connection will be provided between the Saltersford Lane area and Easton Lane, which provides a more appropriate and safer crossing point - see Figure 3-11.

Figure 3-11 - Proposed walking and cycling provision in Section C



### 3.3. Wider benefits of the scheme for walking and cycling

The scheme will help encourage traffic to remain on the A350, rather than cutting through Chippenham itself. This will help to manage traffic levels on existing and potential local walking/cycling routes and provide greater opportunity to improve infrastructure provision and create more attractive walking and cycling environments for pedestrians and cyclists within the town.

Transport modelling supporting the OBC has shown that, for instance, the scheme is predicted to be effective in reducing forecast traffic flows on some parallel local routes, such as the B4528 Hungerdown Lane and Hardenhuish Lane in west Chippenham. This is a residential area with schools and community amenities. Traffic speeds and safety is a known issue on this parallel route. Traffic which uses this route to avoid delays and congestion on the A350 contributes to safety issues for pedestrians and cyclists on the B4528.

## 4. Summary

The scheme will ensure the efficient functioning of the strategically important A350 route and thus help to manage traffic levels within Chippenham town, which is the focus of the existing and planned walk/cycle network. The scheme has been developed with regard to its interaction with existing /planned walking and cycling provision and activity. Walking and cycling activity is low, primarily due to the peripheral location. The main demands are leisure based between the west of Chippenham town and countryside to the west of the A350. Appropriate amendments to walking and cycling infrastructure are provided within the scheme design and maintain connectivity. These are also intended to improve pedestrian and cyclist safety.



## Technical Note

Project:	A350 Chippenham Bypass Phase 4&5 Full Business Case (Major Road Network Fund)		
Subject:	Considerations relating to provision for buses		
Author:	Linda Sullivan		
Date:	14/07/23	Project No.:	5211118
Atkins No.:		Icepac No.:	
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### Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
0.1	Draft for client review	LS	NW	LS	NW	31/05/23
1.0	Issue to DfT	LS	NW	LS	NW	14/07/23

### Client signoff

Client	Wiltshire Council
Project	A350 Chippenham Bypass Phase 4&5 Full Business Case (Major Road Network Fund)
Project No.	5211118
Client signature / date	

# 1. Background and purpose

This note has been developed in support of Wiltshire Council's Full Business Case (FBC) submission for the A350 Chippenham Bypass Improvements (Phase 4&5) scheme, which is being progressed through DfT's Major Road Network (MRN) fund. The Outline Business Case (OBC) was originally submitted in 2019, and ultimately received approval to proceed to FBC in 2021.

The MRN fund seeks to enhance the busiest and most economically important local authority 'A' roads, sitting between the national Strategic Road Network (SRN) and the rest of the local road network, in line with objectives to:

- Reduce congestion;
- Support economic growth and rebalancing;
- Support housing delivery;
- Support all road users; and
- Support the Strategic Road Network.

Since the OBC submission, DfT has introduced the practice of seeking feedback on MRN proposals from Active Travel England (ATE) and its bus policy team, consistent with the objective to support all road users.

This note specifically sets out key information on bus provision in relation to the proposed scheme. It provides relevant context and considers the existing situation and any relevant implications of the scheme in relation to bus services and operation. It should be read in conjunction with the business case and it has regard to the 'bus priority checklist' provided to scheme promoters by DfT – this checklist is included in section 7 of this note.

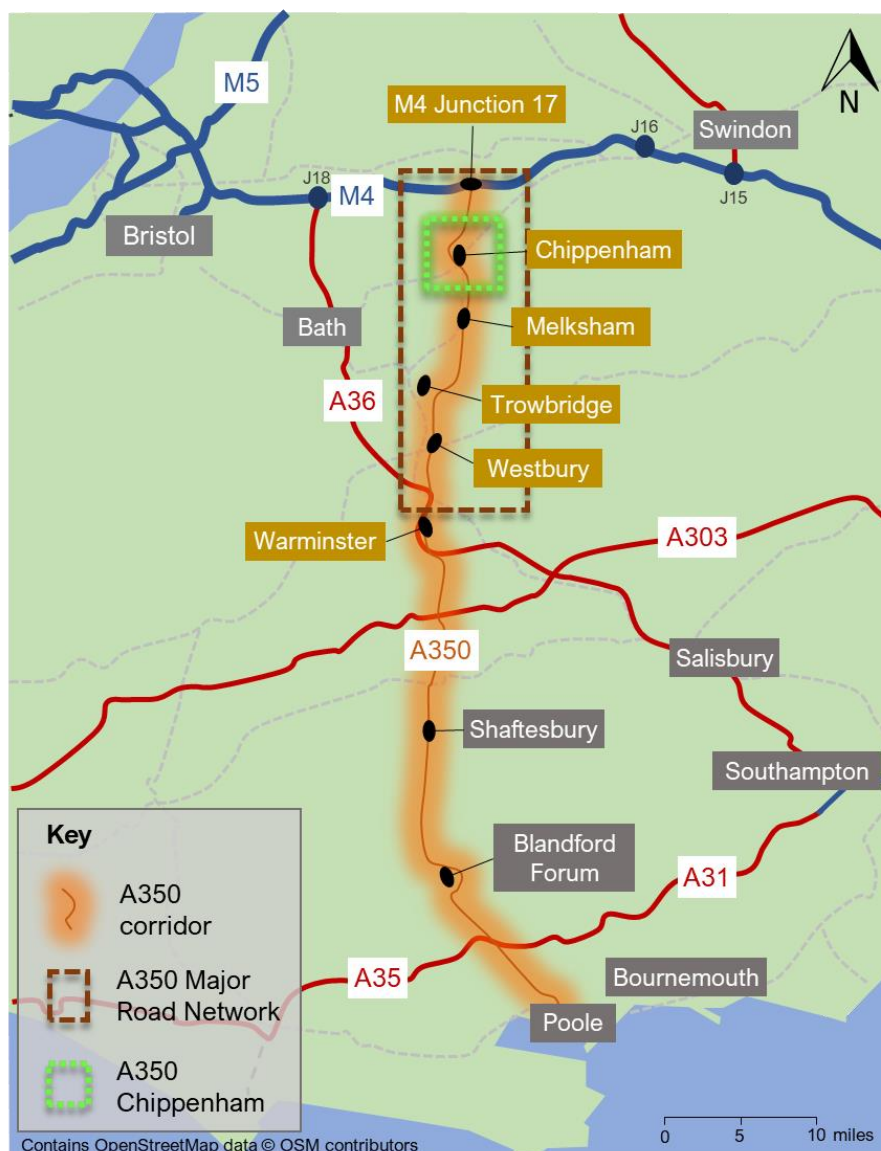
## 2. Context – geography and transport network

Wiltshire is a largely rural county. In the west of the county, the A350 provides strategically significant north-south connectivity between the South Coast and M4, via Junction 17 (and beyond to the Midlands, via the M5 or A429) – see **Figure 2-1**. The A350 also forms a local north-south spine connecting several market towns which form a cluster of population and economic activity south of the M4 but including Malmesbury to the north of the junction.

The cluster of towns around the A350 south of the M4 includes Chippenham, Corsham, Calne, Melksham, Trowbridge and Westbury.



Figure 2-1 – Locational context for A350 Chippenham and surrounding area



The Wiltshire bus service network (**Figure 2-2**) has remained largely unaltered for many years. Outside of Salisbury, only 30% of bus services operate on a commercial basis (the remainder being supported by Wiltshire Council). The inter-urban bus network provides reasonable connectivity, although it is typically lower frequency and the need to serve smaller villages *en route* can lead to less direct services with extended journey times.

Figure 2-2 – Overview of Wiltshire bus network (Bus Service Improvement Plan, October 2021)



In the west of the county, the bus plays an important role for inter-urban connections between the market towns. Rail (Great Western Mainline and TransWilts line) provides medium to longer distance connections between the towns and other significant centres (e.g. Swindon, Reading, Bath/Bristol). Active travel plays an important role in serving local, shorter distance trips within the towns.

## 3. Overview of the scheme

### 3.1. The case for change

The A350 is one of the most important routes in Wiltshire. It is a primary north-south route with regional significance, connecting the south coast with the M4 and onwards to Bristol and the Midlands. In Wiltshire, it passes around the principal settlements of Chippenham and Trowbridge via the town of Melksham, and on to Westbury and Warminster. For many years, high traffic volumes on the A350 Chippenham Bypass have resulted in delays and unpredictable journey times for road users. Increasing traffic demand, associated with housing and employment growth, is forecast to make the situation worse. Improving north-south connectivity is



a key challenge of the Western Gateway Sub-national Transport Body. Growing congestion and delay on the A350 will hinder the economic relationships between the north and south of the area.

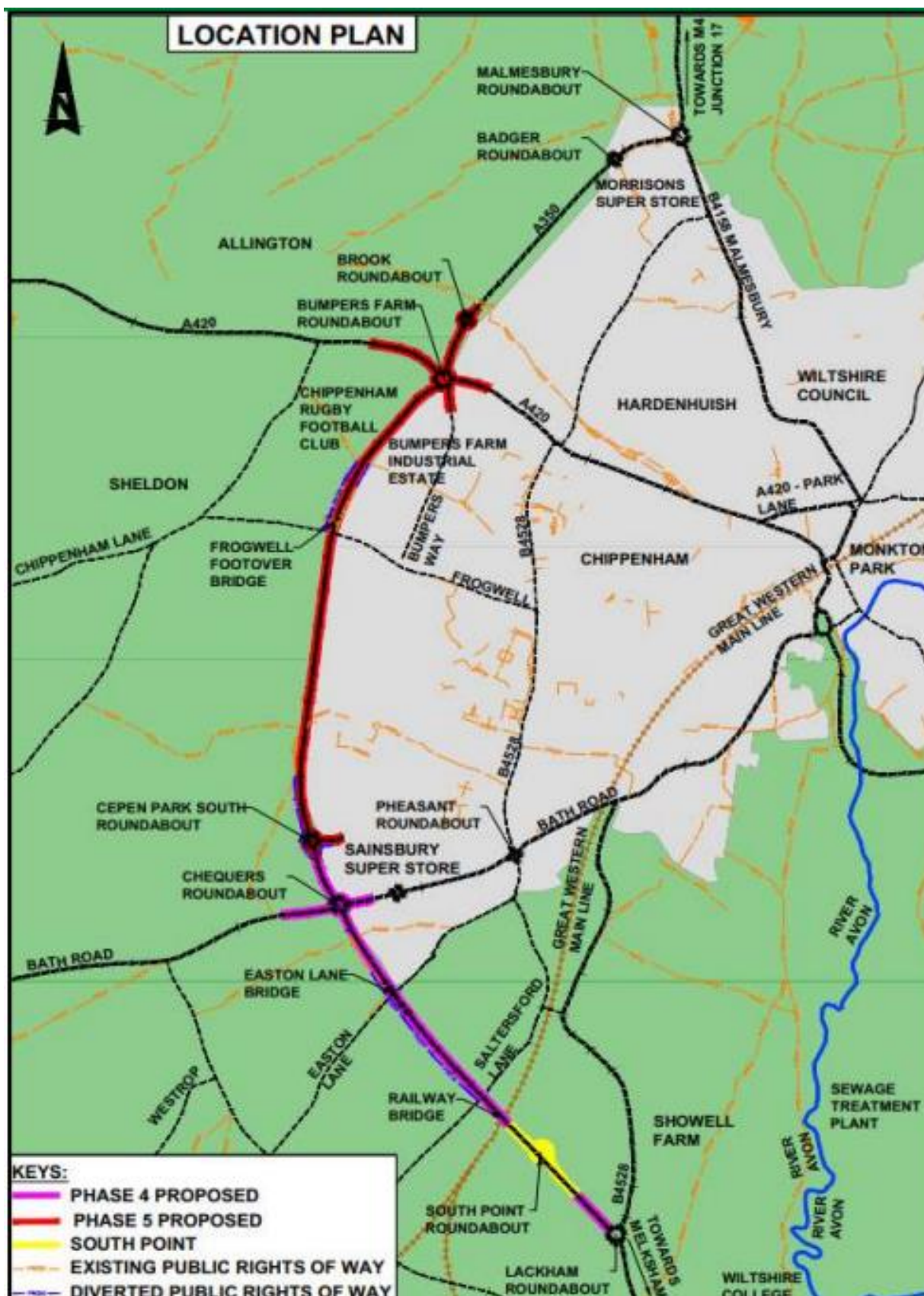
It has been a longstanding priority to improve north-south connectivity along the A350, and Wiltshire Council has been progressively bringing forward the dualling of the A350 Chippenham bypass with recent completion of three major capital schemes along the A350 in Chippenham (Phases 1, 2 and 3).

## 3.2. The scheme

The scheme will involve building new carriageways alongside the existing road between Bumpers Farm Roundabout (A420) and Cepen Park South Roundabout, and between Chequers Roundabout (A4) and Lackham Roundabout – see **Figure 3-1**.

This will complete dualling of the A350 between M4 J17 and Lackham Roundabout (south of Chippenham). The new carriageways will be to the west of the existing road, and within the existing highway boundaries on land originally acquired for that purpose. The bridges along the route were constructed to facilitate this dualling. The scheme also includes alterations to Bumpers Farm Roundabout.

Figure 3-1 – The A350 Chippenham Bypass Phases 4&5 MRN scheme





### 3.3. Scheme benefits

The benefits of the A350 Chippenham Phase 4&5 bypass scheme are:

#### Local Benefits

- improvements at Bumpers Farm Roundabout will reduce peak time queuing on Bumpers Way and allow easier exit onto the roundabout.
- increased road capacity along the A350 Chippenham Bypass, which will:
  - help deter traffic from using alternative parallel routes on the local road network such as the B4528 Hardenhuish Lane and B4528 Hungerdown Lane
  - help support the local economy by improving connections.
- alterations to the local public rights of way network will improve safety for those accessing the countryside.
- improvement in journey-time reliability along the bypass and a reduction in congestion, which will:
  - support future growth in the town and help achieve the economic competitiveness and growth ambitions
  - contribute towards reducing greenhouse gas emissions and address the negative impacts on safety, security, health, and quality of life.
- reduction in the frequency of collisions along the bypass and parallel routes.

#### Regional Benefits

- improvement in journey-time reliability along the bypass and a reduction in congestion, which will:
  - help preserve the route's key role as part of the advisory freight route network
  - reduce transport costs for businesses and transport operators and encourage inward investment to the A350 Growth Zone.

## 4. Bus services and demand at A350 Chippenham

### Existing situation

Bus services in relation to the proposed MRN scheme are illustrated in Figure 4-1, with supporting information provided in Table 4-1.

None of the bus services offer a north-south route fully along the A350. Services operate on the two main radial corridors to the west of Chippenham centre, providing connections to Corsham and Bath and surrounding villages. The main corridor between Chippenham and Bath is the A4, which intersects the A350 at Chequers Roundabout. The main north-south inter-urban bus service (X34) also operates via Chequers Roundabout. This junction itself (and approach arms) is not within the scope of the MRN scheme, rather the links to the north and the south. The junction was subject to improvement as part of a previous investment through the Local Growth Fund, completed in 2018.

Limited frequency local bus services operate via Bumpers Farm Roundabout (east-west on the A420). There is a total of approximately 20 buses operating via the junction across a typical day (school day). Services typically operate between approximately 08:00 to 17:00.

Figure 4-1 – Bus routes in Chippenham (source: Connecting Wiltshire, Wiltshire Council)





**Table 4-1 - Bus routes in relation to the proposed MRN scheme**

Number	Route	Connection with A350	Frequency	Notes
95, 95a (previously 35/35a)	A circular route between Chippenham and Littleton Drew, Grittleton, Upper Combe, Biddestone and Yatton Keynell	Uses A350 Bumpers Farm roundabout via A420.	M-F: a circular route running 4 times a day, Sat: a circular route running 3 times a day Sunday: no service.	Previously route number 35, 35a (pre Aug 2022)
X34	Inter-urban: Chippenham – Melksham – Trowbridge – Frome	Chippenham via Bath Road to Chequers roundabout, then uses A350 South to Trowbridge and Frome	M-F: Southbound 21 daily services each direction. Sat: 10 in each direction. Sunday: no service.	
635/636	Chippenham – Corsham – Colerne - Marshfield	635: Chippenham via Bristol Road to Bumpers Farm roundabout and onto A420. 636: Chippenham via Bath Road to Chequers roundabout and onto the A4.	M-F: 635 – 3-4 services a day. 636 – 6 services a day. Sat: no service Sunday: no service.	Up to 4 additional services across both routes during schooldays only.
X31	Inter-urban: Chippenham - Bath	Operates between Chippenham and Bath on the A4, via Chequers Rbt	M-F: 28 daily services each direction. Sat: 24 services each direction Sun: 8 services each direction	

Faresaver, one of the main bus service providers in the area, has a depot within the industrial estate off Bumpers Way (accessed from Bumpers Farm Roundabout).

## 5. Bus policy / strategic context

At a national level, key bus policy is reflected within the national bus strategy for England, '[Bus Back Better](#)', published in March 2021. This establishes the government's strategy to delivering better bus services, contributing to economic, social and environmental goals (including commitments to carbon reduction).

The national bus strategy required Local Transport Authorities to work in legal partnership with local bus operators to increase the number of people using public transport and to produce a Bus Service Improvement Plan (BSIP). [Wiltshire Council's BSIP](#) was published in October 2021 and sets out the vision for making buses a more attractive option and delivering a 10% patronage uplift by 2024/25, facilitated by an Enhanced Partnership with bus operators. The BSIP identifies a number of proposed measures (subject to funding), including:

- Development of Superbus corridors;
- Targeted bus priority measures;
- Service frequency enhancements; and
- Improvements to ticketing and integration with other modes.

The Wiltshire Enhanced Bus partnership and Wiltshire BSIP detail a number of locations where bus operators have expressed a desire for improvements, including:

- Priority for buses on High Street and Market Place/Gladstone Road bus gate
- Bridge Centre gyratory - westbound busway and bus only on Bath Road east (eastbound)
- Bath Road (east of Rowden Hill) inbound bus lane
- Bath Road west of Rowden Hill junction amendment and inbound bus lane
- Bath Road northbound bus lane to Rowden Hill
- London Road modal filter
- TSP at town centre junctions, including Station Hill junction and New Road signals

The BSIP has committed to 'assess the feasibility, design and implement measures' at locations including the above list. It should be noted that none of the above locations are on or near to the scheme.

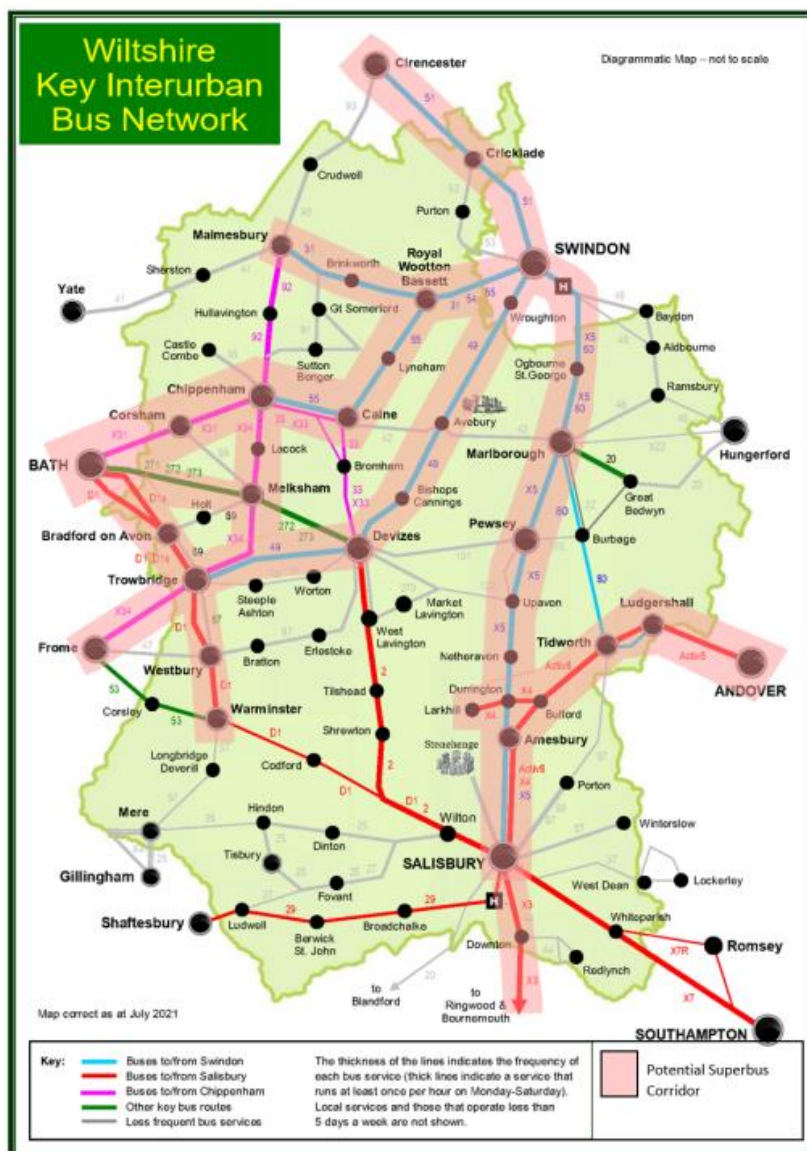
Wiltshire Council's BSIP is consistent with its Local Transport Plan (LTP), which seeks to enhance the range and quality of alternative modes of travel (including bus) in support of key strategic priorities such as decarbonisation, access to jobs/services and social wellbeing. Alongside this, the LTP and national policy (e.g. Transport Decarbonisation Plan, DfT) recognise the ongoing case for targeted investment in roads for efficient functioning of the economy and to reduce the congestion which is a significant source of carbon.

The BSIP sets out a strategy focused on a priority route hierarchy, with defined Superbus corridors having the highest priority (**Figure 5-1**).

The potential Superbus corridors within the vicinity of the MRN scheme are the Chippenham-Bath (X31) corridor and the Chippenham-Frome corridor (X34) – see also Figure 4-1. The X34 corridor is the only defined Superbus corridor which directly interfaces with the scope of the MRN scheme.



Figure 5-1 – Potential Superbus Corridors – Wiltshire Bus Service Improvement Plan



## 6. Impacts of the scheme on bus services and operation

### Direct implications of the MRN scheme

#### A350 Bumpers Farm Roundabout

As identified previously, there are approximately 20 buses a day operating via this junction (east-west on the A420), provided by the 95/95a, 635 and 636 services.

The improvements at Bumpers Farm roundabout include:

- additional lanes and highway capacity on the A420 approaches and exits in both directions;
- additional lanes on A350 northbound approach to the roundabout;
- introducing traffic signals to each of the A420 and A350 arms; and
- signal-controlled pedestrian and cycle crossings to the northern A350, and eastern A420 arms.

These improvements are predicted to benefit all arms of the junction and reduce queuing and delays for all traffic. The most recent junction modelling (microsimulation model) predicts:

- A reduction in average queuing across all arms in the AM and PM peak hours, based on a 2022 base year.
- The most significant reduction in average queuing in the PM peak hour for the A420 towards Chippenham – from 54 metres without the scheme, reduced to 7 metres with the scheme (the A420 being the bus route). This equates to a journey time saving of approximately 20 to 30 seconds per vehicle.
- Other significant reductions in average queuing on the A420 (eastbound and westbound) in the AM peak hour, and on Bumpers Way in the PM peak hour.
- The scheme is successful in addressing further predicted increases in delay associated with forecast traffic growth to 2036. The A420 eastbound is predicted to be particularly impacted by traffic growth on the main A350 route - in both the AM and PM peak hours – with average queues increasing to approximately 400 metres. This would have a significant impact on bus journey times and reliability for the services operating on this route. The scheme is predicted to reduce this queuing to 20 metres or less, representing a substantial improvement in journey times (and comparable to the 2022 base year).

The scheme optimises capacity for all traffic – given the low number of buses (and low levels of queuing predicted with the scheme in place) this is considered to provide the most efficient approach, rather than providing dedicated bus lanes, for example, which would necessitate reduced capacity for general traffic due to the site constraints which limit the scope for additional carriageway space.

Furthermore, the signalisation of Bumpers Farm roundabout allows for inclusion of bus priority technology to prioritise the green phase of an arm on detection of an approaching bus. This would further help to support bus journey time reliability.

The associated benefits to the Bumpers Way arm, particularly during the PM peak, will also be beneficial to bus operations due to the bus operator (Faresaver) depot located within the industrial estate.

### **A350 Chequers Roundabout to Lackham Roundabout**

The dualling of the A350 between Chequers Roundabout and Lackham Roundabout will provide some benefit to the X34 service, principally through enhanced reliability.

The scheme does not have any direct material impact on the Chequers Roundabout, which is not within the scope of the MRN scheme.

## **Wider benefits of the scheme for bus operation**

The proposed A350 Chippenham improvement scheme seeks to protect strategic connectivity and facilitate growth within the A350 corridor. The scheme will help encourage traffic to remain on the A350, rather than cutting through Chippenham itself. This will help to manage traffic levels on existing and potential local bus routes and provide greater opportunity to enhance bus operation, journey times and reliability.

# **7. Bus services checklist**

This note provides supporting context and information in relation to bus services and the impacts on bus operation with regards to the proposed A350 Chippenham Bypass MRN improvement scheme. This information supports the bus services checklist as provided by DfT and set out in Table 7-1.



**Table 7-1 - Bus services checklist for the A350 Chippenham Bypass Improvements MRN business case**

Item	Response
<p>In the event that bus services operate or are planned to operate on the route in question, the MRN scheme should be included in the LTA's Enhanced Partnership (EP) scheme or franchising delivery plan, and all requirements of the EP/franchising plan would then apply.</p>	<p>Buses do not operate on the north-south A350 route around Chippenham.</p> <p>Low frequency services operate east-west on the A420 and intersect the A350 at Bumpers Farm Rbt (within MRN scheme scope)</p> <p>An inter-urban bus route (X31) operates east-west on the A4 corridor (between Chippenham and Bath), intersecting the A350 at Chequers Rbt (not within MRN scheme scope).</p> <p>An inter-urban bus route (X34) operates on the section of the A350 between Chequers Rbt and Lackham Rbt (within MRN scheme scope).</p> <p>See section 4 for further details.</p> <p>The A350 Chippenham MRN scheme is not presently included within the EP.</p> <p>The EP Scheme is reviewed by the Board at least annually, including the Facilities, Measures and Requirements contained within.</p> <p>Wiltshire Council considers the MRN schemes (including M4 J17, A350 Chippenham and A350 Melksham Bypass) to provide a principle plank of the BSIP infrastructure provision. The forthcoming update will seek to integrate the MRN scheme proposals within the BSIP and EP scheme.</p>
<p>How does the MRN scheme support the ambition of the National Bus Strategy and your Bus Service Improvement Plan (BSIP), EP scheme or franchising delivery plan?</p>	<p>Wiltshire Council's BSIP sets out plans for enhancing bus services, in support of the National Bus Strategy - including making buses a more attractive option and delivering a 10% patronage uplift by 2024/25. Key measures include the development of Superbus corridors and targeted bus priority measures. The scope of the MRN scheme interfaces with a short section of one of the potential Superbus corridors (Chippenham – Frome), and the dualling of this section of the A350 would support journey reliability for buses and general traffic. The BSIP does not identify any specific bus priority proposals / plans within the vicinity of the MRN scheme.</p>
<p>Explain the expected impact of the scheme (positive or negative) on bus journey times. Provide details of how current bus services would be affected by the MRN scheme including which services they are, how frequently they operate, existing bus priority provision and average journey times, including any areas of noticeable congestion/delay and variability by time of day. The Analyse Bus Open Data service can help provide evidence of this and bus operator data should also be available from local bus operators.</p>	<p>The A350 Chippenham MRN scheme is predicted to deliver journey time and reliability benefits for all traffic, including buses, and deliver beneficial outcomes across the MRN objectives. Additional priority for buses through signal control (at Bumpers Farm Rbt) will further support bus reliability/punctuality. The scheme will help to protect bus services from increased journey times and deteriorating reliability, against a backdrop of forecast traffic growth.</p> <p>The MRN scheme also has a role in encouraging traffic to remain on the A350, rather than cutting through Chippenham itself. This will help to manage traffic levels on existing and potential local bus routes and provide greater opportunity to enhance bus operation, journey times and reliability.</p> <p>See section 6 for further details.</p>
<p>How might the scheme impact peak vehicle requirement (PVR)?</p>	<p>Upon scheme opening there is not expected to be any material impact on PVR. Due to the predicted increases in delays on the A420 arms</p>

<p>Are any significant changes expected over the appraisal life of the scheme?</p>	<p>at Bumpers Farm Roundabout (by 2036 forecast year), the improvements at this junction would help to mitigate the potential future need for additional vehicles to maintain service frequency (albeit frequencies are low at present).</p> <p>It should also be noted that the improvements at Bumpers Farm Rbt will provide improved access to/from the industrial estate on Bumpers Way, where the local bus operator depot (Faresaver) is located.</p>
<p>Provide evidence of inclusive and effective engagement with bus operators on bus priority options for the scheme, including their views on the proposed approach, which we would normally expect to be supportive except in exceptional circumstances</p>	<p>Wiltshire Council has undertaken general engagement with stakeholders as part of the scheme development, including most recently an engagement exercise held from Nov '22 to Feb'23. No specific feedback was received from bus operators. Wiltshire Council will continue to engage with key stakeholders, including bus operators, during final stages of scheme design and implementation.</p>
<p>The scheme should include the provision of bus lanes wherever there is a frequent service, congestion and the physical space to install them. Provide details of all the bus priority options considered directly on the scheme or to mitigate any adverse impacts it would have – including consideration of any BSIP bus priority schemes in the proximity of the project and affecting bus services that would use it. This should include both physical measures (bus lanes, bus gates) and technology solutions such as signal priority</p>	<p>At Bumpers Farm Roundabout. Frequencies are low, with approximately 20 buses per day. There are no BSIP bus priority proposals. At this location the MRN scheme design maximises capacity (for all traffic, including buses) within the site constraints. It also helps to balance the demands between the principal north-south A350 corridor (which buses do not operate on), and the east-west A420 corridor. The signalisation of Bumpers Farm roundabout will allow for future inclusion of bus priority technology to prioritise the green phase of an arm on detection of an approaching bus. This would further help to support bus journey time reliability.</p> <p>On the A350 link between Chequers Rbt and Lackham Rbt the X34 provides approximately 21 services (each direction) per day. There are no BSIP bus priority proposals. The dualling of this section of the A350 would support journey reliability for buses and general traffic.</p>