Regulation 18 Response - Multimodal Access Principles

Policies C6 and C7 - Merton Park and Hollow Lane

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1 Introduction

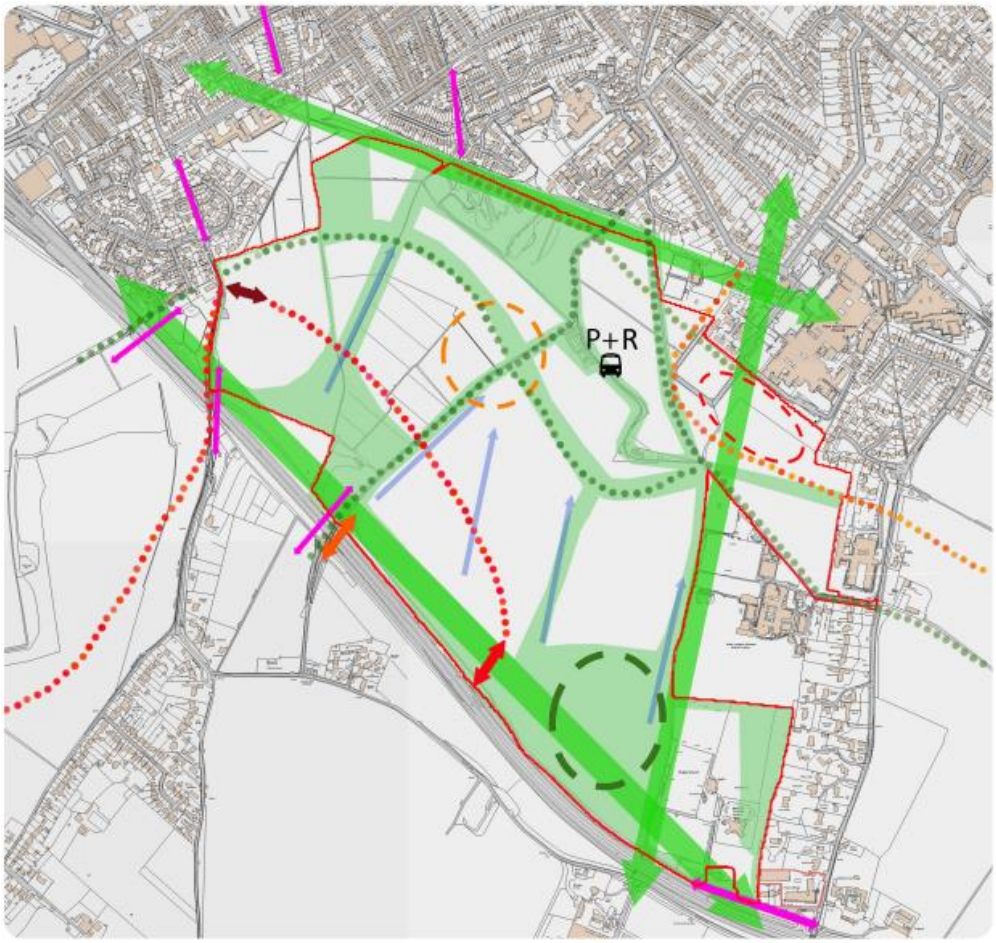
1.1 Overview

1.1.1 C&A have been appointed by Quinn Estates to provide transport and highways support for their site promotion activities associated with the emerging Canterbury City Council (CCC) Local Plan (2040).

1.1.2 Quinn Estates are promoting two main allocations, currently identified as draft Policies C6 and C7 and referred to as Merton Park and Land to the North of Hollow Lane respectively.

1.1.3 The draft allocation in Policy C6 is for approximately 2,250 dwellings, community facilities and associated transport services on a site between the A2 Dover Road and the Old Dover Road, as illustrated below.

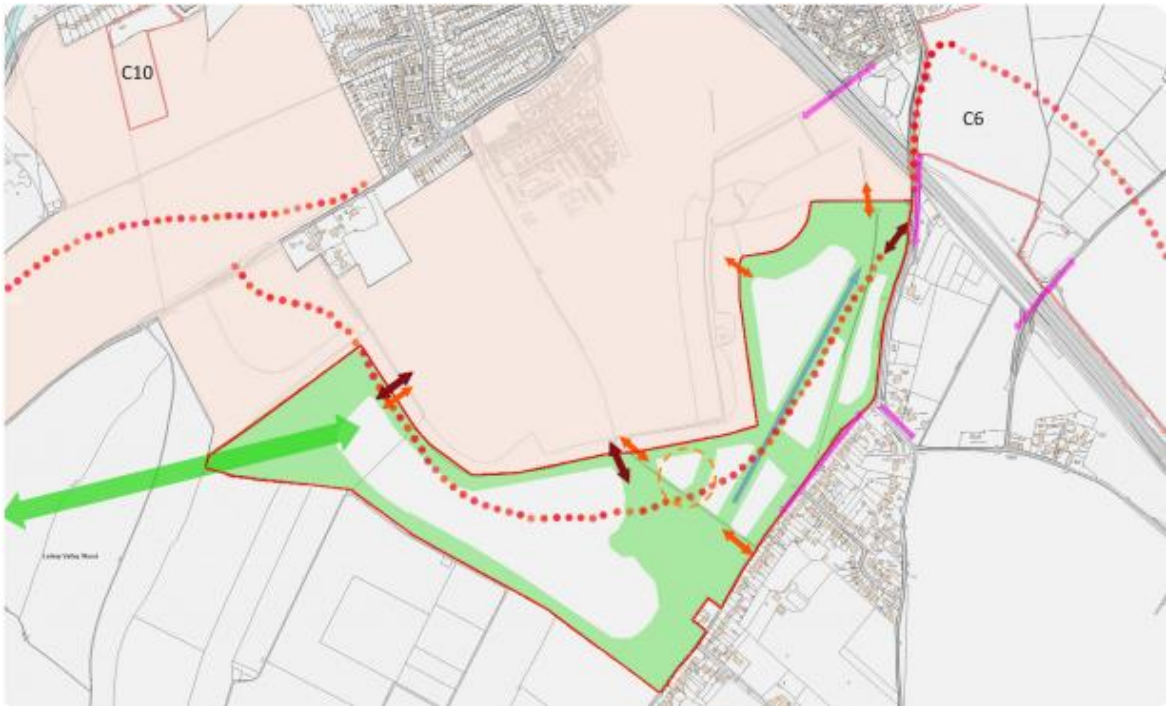
Figure 1.1 – Site C6 (Merton Park) Concept Masterplan



1.1.4 The proposed allocation of Merton Park within draft policy C6 is complemented by draft policy C11 - South West Canterbury Link Road, which is a component of the proposed transport strategy and elements of which would be delivered within the C6 allocation. Another allocation for development of Land at the North of Hollow Lane (policy C7) is similarly complemented by draft policy C11, giving rise to an association between all three policies.

1.1.5 Policy C7 is for an extension of the "Saxon Fields" development which is currently under construction. This includes approximately 800 dwellings, including affordable housing and other uses including a community hub within a local centre, a 2FE primary school and some commercial uses, as illustrated below.

Figure 1.2 – Site C7 (Land at the North of Hollow Lane) Concept Masterplan



1.1.6 Given this association, Quinn Estates are promoting both sites C6 and C7 for allocation in the emerging Local Plan. In support of those promotions, C&A have prepared a suite of evidence on transport and highways matters. This includes the following:

- *Multimodal Access Principles* – This considers and reviews a wide range of technical matters pertaining to the potential access opportunities for the allocation of both sites C6 and C7.
- *Initial Traffic Impact Appraisal* – This summarises an assessment of traffic impact arising from the cumulative delivery of both C6 and C7 allocations, with particular focus placed on specific baseline context assumptions.

- *Site Specific Sustainable Transport Strategy* – Sets the vision for, and means to deliver, a strategy for sustainable travel maximising opportunities for future development occupiers to travel by active or public transport modes. (This document is for policy C6. A similar strategy is to be prepared for C7 building on and consistent with the principles set out in this report.

1.2 Report Purpose

1.2.1 The Regulation 18 CCC Local Plan (2040), along with the accompanying Draft Transport Strategy, sets out site specific requirements for access and infrastructure delivery for the development of Policy C6 and C7 (as accompanied by Policy C11). As is appropriate for policy level documents, the details of the access and infrastructure are not provided.

1.2.2 The purpose of this report is to provide further detail on those aspects, primarily to demonstrate the deliverability of the suggested site accesses and the immediate 'access enabling' infrastructure, in order to ensure that the adoption of any policy based on the assumptions of delivery can be considered sound.

1.2.3 This document focuses on the component parts of that infrastructure and complements this with further detail on transport infrastructure deemed likely to be necessary for the purposes of the delivery development of sites C6 and C7. It does not seek to provide evidence as to the appropriateness or effectiveness of any one particular access and infrastructure delivery strategy. This is something covered in other current and emerging evidence which will take into consideration matters such as the wider growth context and the overarching transport strategy and sustainable travel objectives.

1.2.4 In summary, the report seeks to demonstrate that appropriate access and associated highways infrastructure options could be delivered but does not seek to establish if or when they should.

1.2.5 The report considers access on a multi-modal basis, rather than simply in vehicular terms. This is critical, as the development on sites C6 and C7 present exceptional opportunities to establish highly sustainable communities that can access services directly in the well-established City area, by both active travel and public transport modes.

1.2.6 Necessarily, some focus is placed on securing vehicle access and connectivity in the manner envisaged by the draft policy, as this can represent the most challenging to secure safely and effectively. Where vehicular access for buses is envisaged, detail on this is also provided. The report does not at this stage provide full assessment of the accesses in terms of traffic capacity. In order to undertake such an assessment, it is necessary to derive all of the relevant variables into a 'scenario', including the parameters of the development; the proposed access strategy; the wider infrastructure strategy and wider growth context. Contemporary approaches to the assessment of development impact also requires full consideration to be given to maximising opportunities for sustainable travel first; and only forecasting, assessing and potential designing for and mitigating the residual traffic impact following this. It is to be expected that multiple scenarios, with varying applications of these parameters being applied, will be required. This work to inform the evidence base for Local Plan continues to be undertaken.

1.2.7 In order to provide some assurance as to the appropriateness of the access and infrastructure components set out in this report, a separate *'Initial Traffic Appraisal'* report has been produced and is issued alongside this document. It derives a possible scenario from the above parameters and presents the findings of this to demonstrate the likely implications. Reference should be made to that report.

1.2.8 For non-vehicular access, this report establishes the appropriate location for and availability of connections across the site boundaries. However, for active travel modes in particular the effectiveness of an access is significantly influenced by the off-site infrastructure quality and suitability for purpose. These aspects are not covered in this report but are dealt with in appropriate detail in the accompanying '*Draft Site Specific Sustainable Transport Strategy'*.

1.3 Scoping and Evolution of Concepts

1.3.1 The information set out in this report has been developed over an extended period of consultation with CCC, KCC and NH. Its origins pre-date the current Regulation 18 Local Plan, with initial promotion activity and optioneering taking place in the context of the previously emerging Local Plan. During that time, significant changes to the context have taken place, including in particular to the wider Transport Strategy for Canterbury and decision to not advance the circulation plan (CCP). This document also comes forward in a changing immediate local context; with existing allocations and consents for development in the locality, including Saxon Fields, Cockering Farm and Mountfield Park at various stages of delivery. Each include elements of off-site infrastructure delivery that have the potential to significantly influence the future transport strategy for Policy C6 and C7 and the wider Local Plan (2040). As an example – the requirement to deliver a fourth slip road at Wincheap as committed within the Saxon Fields development remains to be determined and thus similarly proposed increase in capacity of the Wincheap Park & Ride (P&R) remains uncertain.

1.3.2 The various components of infrastructure discussed in this report have, to varying degrees, been scoped with the relevant authorities and have been utilised as core infrastructure assumptions in a number of strands of evidence gathering, including strategic model scenario testing.

1.3.3 It is anticipated that scoping will continue with all relevant authorities as more clarity on the preferred strategy and supporting evidence emerges, pursuant to a level of detail to establish the soundness of the Plan.

2 Policy and Design Context

2.1 Overview

2.1.1 This section of the report provides a summary of the relevant planning policy and guidelines which set the context within which the proposed allocation will be assessed.

2.2 National Policy

2.2.1 The NPPF as updated in December 2023 recommends in relation to transport and highways:

108. Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:
(a) the potential impacts of development on transport networks can be addressed;
(b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
(c) opportunities to promote walking, cycling and public transport use are identified and pursued;
(d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
(e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

110. Planning policies should:
(a) support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities;
(b) be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned;
(c) identify and protect, where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice and realise opportunities for large scale development;
(d) provide for attractive and well-designed walking and cycling networks with supporting facilities such as secure cycle parking (drawing on Local Cycling and Walking Infrastructure Plans);
…

115. Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

2.3 Kent Policy

2.3.1 Kent County Council adopted Local Transport Plan 4 in 2016. While this predates some of the recent advances in national transport policy, it notes the existing congestion in Canterbury but without recommending further significant road building:

Canterbury is a medieval city with a historic and constrained road network so congestion in the peaks is a regular occurrence and the four level crossings cause further delays.
…
There is a need to prioritise active travel and public transport use in relation to the private car, making best use of the existing infrastructure.

2.4 Canterbury District Policy

2.4.1 The adopted 2017 Canterbury Local Plan includes the following policy.

Policy T1 Transport Strategy
In considering the location of new development, or the relocation of existing activities, the Council will always take account of the following principles of the Transport Strategy:
a. Controlling the level and environmental impact of vehicular traffic including air quality;
b. Providing alternative modes of transport to the car by extending provision for pedestrians, cyclists and the use of public transport;
c. Reducing cross-town traffic movements in the historic centre of Canterbury;
d. Providing public car parking and controlling parking having regard to the Parking Strategy;
e. Assessing development proposals in the light of transport demands and the scope for choice between transport modes; and
f. Seeking the construction of new roads and/or junction improvements which will improve environmental conditions and/or contribute towards the economic well-being of the District.
5.22 In support of Policy T1, this plan proposes a hierarchy of transport modes. They will be considered in the following order: walking, cycling, public transport, park and ride, private car.

2.4.2 The emerging Local Plan builds on these themes and the policy documents have been considered further in Volume 3, particularly those in support of active travel and public transport.

2.4.3 The draft Canterbury District Transport Strategy (CDTS) provides high-level ideas for how the Local Plan growth can come forward in a way that supports decarbonisation and sustainable travel. It sets out a hierarchy of transport modes in which active travel is prioritised, followed by public transport (including emerging technologies), and lastly the use of private vehicles.

2.4.4 The CDTS notes that an earlier draft of the Local Plan included the Canterbury Circulation Plan, which would have split Canterbury into several access zones, alongside the construction of an extensive new bypass south and east of the city centre. This proposal has not been pursued and so the CDTS has been updated to state:

This revised transport strategy focuses on sustainable transport improvements and only new road building which is specifically required for new developments is included.

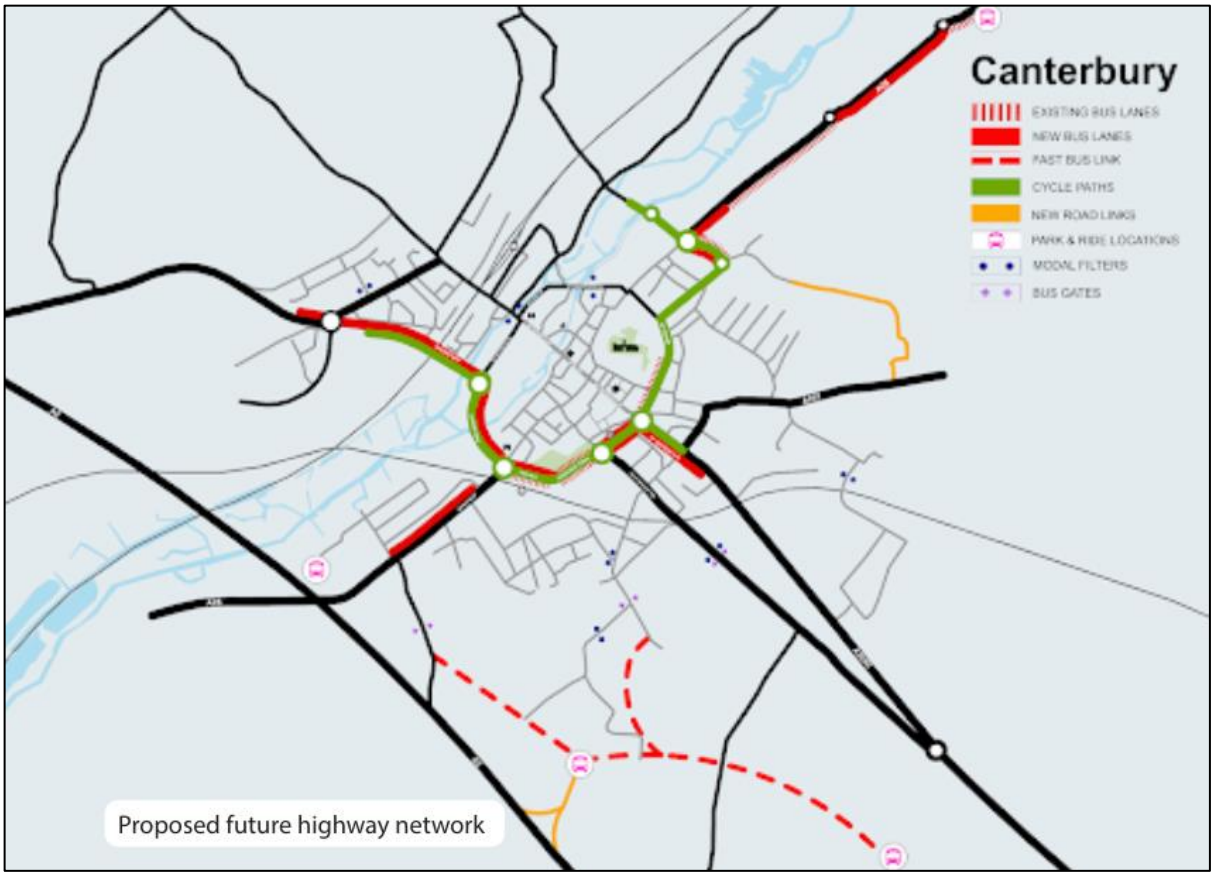
2.4.5 Section 16 of the CDTS identifies the highway schemes from the 2017 adopted Local Plan which are linked to major developments in Canterbury as shown below.

16.2 **Schemes set out in the 2017 Canterbury District Transport Strategy**

Development	Key infrastructure	Status/likely construction date
Mountfield Park, South Canterbury	South Canterbury A2 all movement interchange to replace the existing sub standard junction.	2030
Mountfield Park, South Canterbury	Relocation and expansion of New Dover Road Park & Ride site	2030
Mountfield Park, South Canterbury	FastBus link to city centre	2030
Thanington Park/ Cockering Farm	Wincheap off slip and expansion of Park & Ride site*	2027* but could be replaced by scheme at Merton Farm
Thanington Park/ Cockering Farm	Wincheap gyratory and traffic management scheme	2024

2.4.6 Notably this includes the A2 southbound off-slip road (“fourth slip road”) and expansion of Wincheap Park & Ride at the A2 / A28 Wincheap junction, which is linked to the ongoing development sites at Thanington Park and Cockering Farm. However, the report also notes that these changes could instead come forward at the Merton Park site and this is shown in the “Proposed future highway network” diagram.

Figure 2.1: CDTS - Proposed Future Highway Network



2.5 Design Guidance

2.5.1 The UK design guidance for active travel, public transport and general motor vehicle movements is covered in the following documents.

Manual for Streets (MfS)

2.5.2 Manual for Streets (MfS) promotes creating streets that are accessible, safe, and enjoyable for all users, including pedestrians, cyclists, and public transport users. It offers guidance on street design principles and practices that can contribute to the creation of more sustainable, healthy, and liveable communities.

2.5.3 In terms of transport strategy, the MfS guidance serve as a crucial resource for developing policies and guidelines that promote sustainable transport modes such as walking, cycling, and public transport. It can help establish a consistent approach to street design across a city or region and support the development of transport networks that are both safe and efficient.

Manual for Streets 2 (MfS 2), (CIHT)

2.5.4 MfS 2 is prepared by the Chartered Institution of Highways and Transportation (CIHT) as an extension to the original Manual for Streets (MfS) and offers additional direction for the design and management of residential streets.

2.5.5 The primary aim is to prioritise the needs of people, especially pedestrians, cyclists, and other non-motorized users, over vehicles in street design. It emphasizes the creation of safe and attractive environments for these users. To ensure that the design meets the needs of local communities, the guidance also encourages community involvement.

2.5.6 This guidance reflects the growing trend towards sustainable and people-focused urban design. It offers more detailed guidance on designing residential streets, considering changes in street design practices and research over the past decade.

Cycle Infrastructure Design (LTN 1/20)

2.5.7 LTN 1/20 provides the minimum standards that local authorities must adhere to when implementing new cycling infrastructure such as cycle crossings and junctions, cycle lanes, cycle tracks, cycle networks, and cycle parking. This guidance encompasses a broad range of topics such as planning, designing, integration with other modes of transportation, signage and wayfinding, management, maintenance, and inclusivity.

2.5.8 According to paragraph 4.2 of the guidance, there are five core design principles that must be followed to encourage more cycling and walking. These principles are Coherence, Directness, Safety, Comfort, and Attractiveness, and they represent fundamental requirements for the networks and routes of cycling infrastructure. Additionally, the LTN 1/20 includes two assessment tools, the Cycle Level of Service (CLOS) and Junction Assessment Tool (JAT), which can be used to evaluate schemes against these design principles.

CIHT Guidelines for Active Travel (Walking and Cycling)

2.5.9 The Chartered Institution of Highways and Transportation (CIHT) has published guidelines on promoting active travel, which suggest that when choosing locations to implement active travel infrastructure, factors such as transport modelling, community data, and the concerns of local residents should all be considered. To facilitate sustainable transportation in the development process, CIHT's *Better Planning, Better Transport, Better Places* (2019) outlines actionable measures that planners, developers, consultants, and local governments can adopt at either a strategic or local level. Planning for Walking (2015) and Planning for Cycling (2014) offer detailed guidance on the planning aspects of active travel.

Planning for Walking (2015)

2.5.10 Chapter 6 of CIHT's Planning for Walking (2015) offers an overview of developing effective strategies and plans for walking. The chapter acknowledges the increasing recognition of the benefits of walking, which has generated a surge of interest in improving the "walkability". To create an effective walking network, planners must consider factors such as the proximity and directness of routes to local services, the quality of sidewalks and street crossings, perceived personal safety, and the attractiveness of the routes themselves. These factors are supported by the 5Cs of good walking networks defined by Transport for London (TfL) in 2005, which include being connected, convivial, conspicuous, comfortable, and convenient.

Planning for Cycling (2014)

2.5.11 Chapter 7 of CIHT's Planning for Cycling (2014) presents a summary of the fundamental concepts and phases involved in constructing cycle networks. The goal of the guidelines is to construct an integrated and comprehensive network that delivers a dependable and uniform service for cycling traffic. This entails managing the current roadways, rights-of-way, and permitted paths while also creating new connections to connect any gaps in the network.

2.5.12 Furthermore, the guidelines emphasize enhancing the attractiveness and convenience of cycling routes for users, which involves regulating the volume and speed of motor traffic. The primary objective is to create direct and comfortable cycling routes that cater to users of all ages and types.

Design Manual for Roads and Bridges (DMRB)

2.5.13 The Design Manual for Roads and Bridges (DMRB) is a set of documents produced by the highway authorities of England, Scotland, Wales and Northern Ireland in collaboration in order to provide design standards relating to the Strategic Road Network (SRN). '*The Design Manual for Roads and Bridges (DMRB) contains information about current design standards relating to the design, assessment and operation of motorway and all-purpose trunk roads in the United Kingdom*.'

2.5.14 Document CD109 (March 2020) discusses Highway Link Design, in which section 2 provides information for specific parameters based on the design speed.

2.5.15 DMRB document CD122 (last updated in January 2022) refers to geometric design of grade separated junctions. Section 3 of this document provides design guidance for merging and diverging on motorways and all-purpose roads, while section 4 discusses the standards for weaving and spacing between junctions.

2.5.16 Section 2 of document CD127 ‘Cross-sections and headrooms’ (July 2021), provides information regarding the hard shoulder and hard strip transitions for merge and diverge designs, and section 3 discusses the cross-section components for all-purpose carriageway roads at structures.

3 Assumed Site Context

3.1 Transport Network Parameters

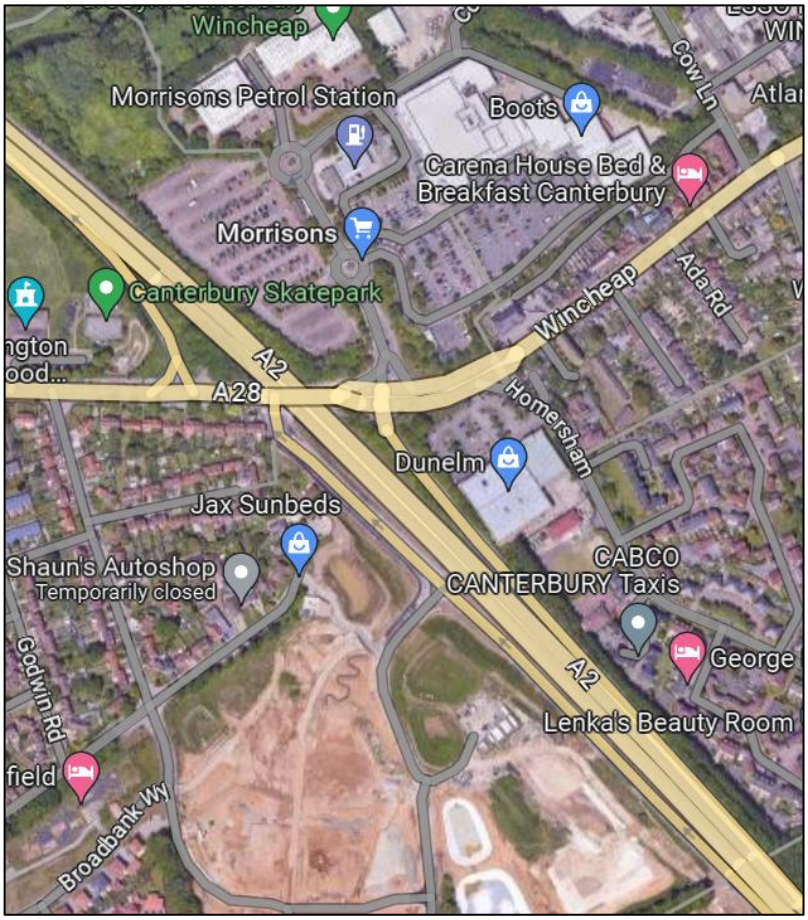
3.1.1 While this report is intended to be agnostic to the specific access and allocation strategy to be implemented, and alongside this the wider context, some consideration should be given to particular aspects of that wider context, such as assumed infrastructure delivery, which will have a notable bearing on the options for securing access. Three key elements of these are discussed below, along with some discussion as to the implications on any specific access strategy.

A2/A28 Wincheap Junction

3.1.2 An element which has the potential to affect both the travel patterns in the area and any proposed access strategy to the sites is the connection between the A2 Dover Road and the local highway network.

3.1.3 Currently the A2/A28 Wincheap junction includes on and off-bound slip roads for the northbound A2, and an on-slip only to the southbound A2, as shown in Figure 3.1.

Figure 3.1: A2/A28 existing junction with three slip roads (Google Maps)

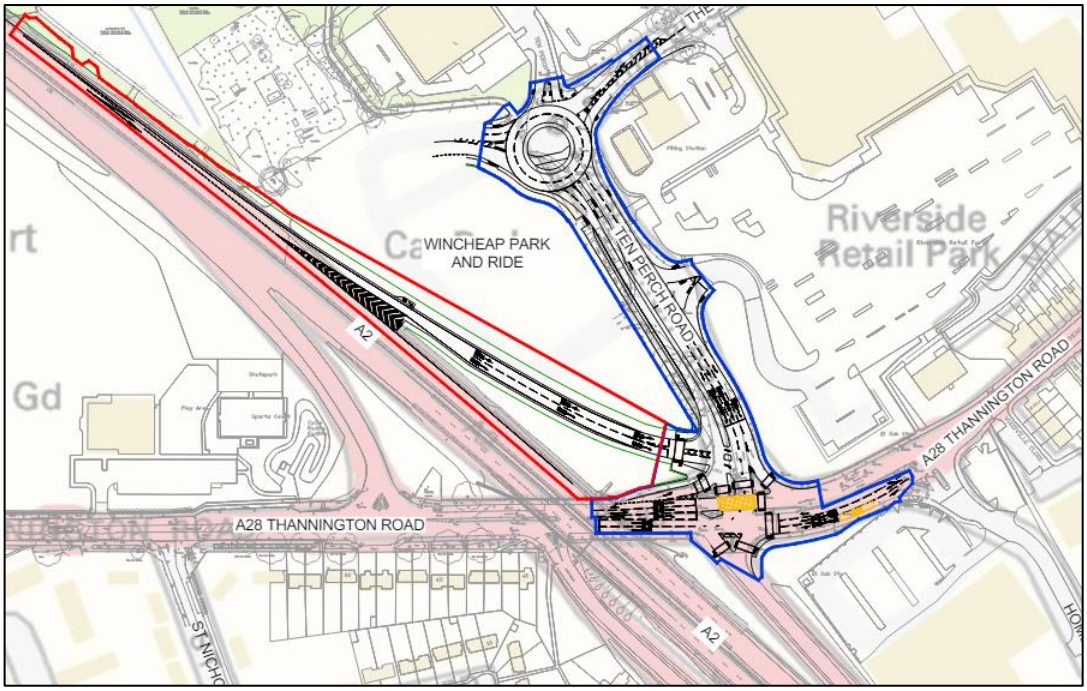


3.1.4 Committed development at Saxon Fields is required to bring forward the fourth slip road and thus facilitate expansion of the Wincheap P&R.

3.1.5 Earlier proposals for the fourth slip road came against insurmountable technical design issues following detailed review by National Highways, preventing delivery in this form. This subsequently led to abandonment of the established proposals to expand the Wincheap P&R (discussed further below).

3.1.6 Subsequent to this, a live planning application[1] specifically for the fourth slip road was submitted in late 2023 and remained to be determined as of June 2024. As shown below, this is for a scheme including a new southbound off-slip from the A2 and reconfiguration of the A28/Ten Perch Road signalised junction, Morrisons site access and the Wincheap Park & Ride roundabout access. This differs notably from the scheme originally proposed and rejected by NH and is understood by the applicants to address those concerns.

Figure 3.2: Fourth Slip Road Application Scheme



[1] CCC ref CA/23/02167

3.1.7 The Draft Canterbury Transport Strategy acknowledges some element of uncertainty as to the delivery of the fourth slip road (ref. Table 16.2) – noting that it could be alternately provided within the Policy C6 allocation. At a macro level, the delivery or otherwise of this proposed fourth slip could have a bearing on an access strategy – and more locally on the form that any access arrangements take. This would include the local assignment of traffic to/from the development as well as the form of any off-site access enabling infrastructure. As such, it is important be cognisant of the currently proposed design.

P&R (Possible Expansion)

3.1.8 Historically, the need for delivery of a fourth slip at Wincheap arose (at least in part) to facilitate access to P&R facilities to/from the important A2 (West) corridor. In the absence of the slip road or replacement, expansion of the Wincheap P&R would still fail to capture demand from that corridor.

3.1.9 A previous planning approval for the expansion (by decking) was withdrawn following challenge, given uncertainty as to the deliverability of the enabling slip-road infrastructure. However, the Draft Canterbury Transport Strategy retains delivery of this expansion as possible committed infrastructure, while again acknowledging the scope for this to be alternately provided with site C6.

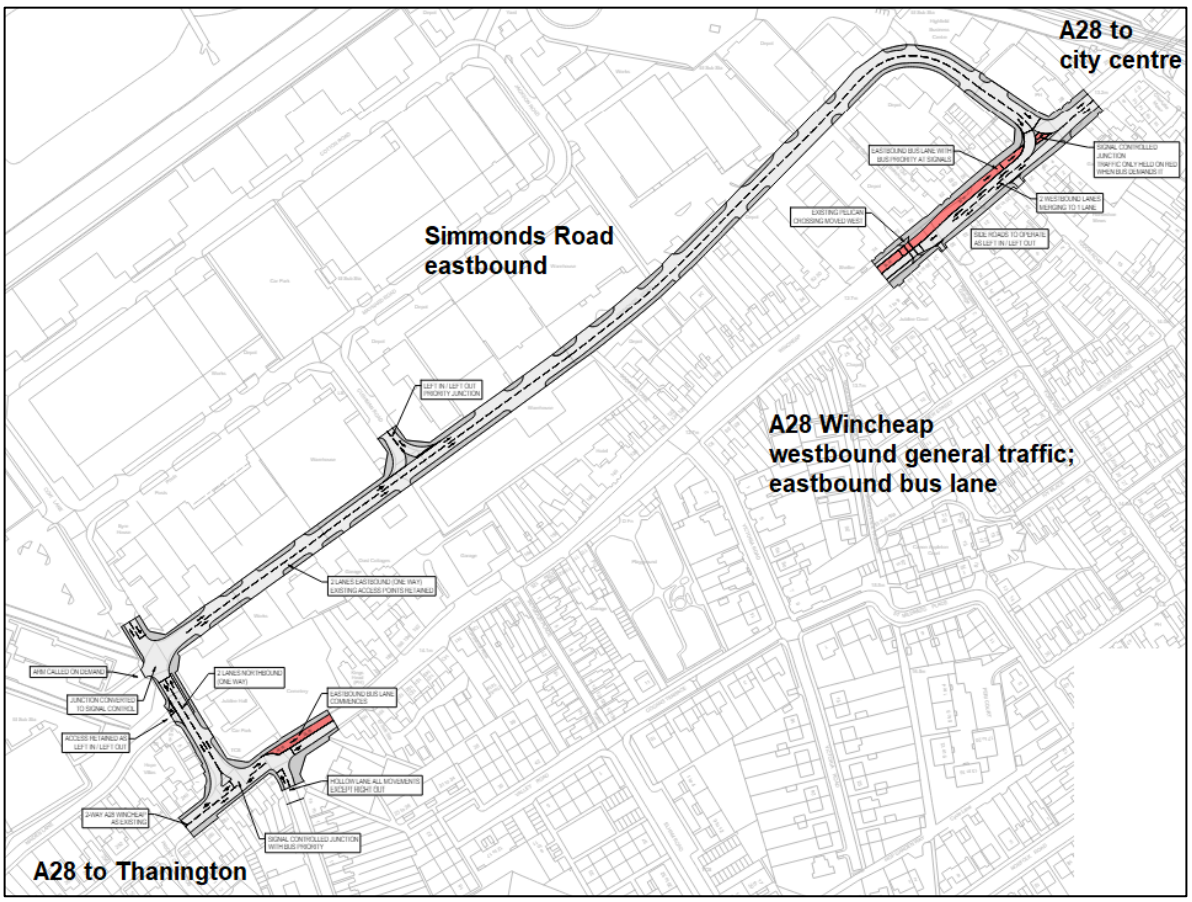
3.1.10 The delivery of an expansion to the Wincheap P&R is, in isolation, of limited consequence to an access strategy for C6 or C7. Given the existing proximity to the City centre, it can be readily assumed that the allocations would not make use of the facility as a component of any materially relevant trips. However, the delivery of an alternative P&R facility at C6 would present a change to the trip generating activities and therefore would represent a consideration in any access strategy.

Wincheap Gyratory

3.1.11 Further northeast along the A28 corridor, the Wincheap Gyratory scheme is committed from the Cockering Farm development[2]. While this is yet to be delivered, it is well advanced in design terms and is expected to come forward during the Local Plan period. This involves the reconfiguration of the A28 corridor through Wincheap, Cow Lane and Simmonds Road to create a one-way system as shown indicatively below.

[2] CCC ref CA/17/00519

Figure 3.3: Wincheap Gyratory Scheme



3.2 Development Assumptions

3.2.1 This report forms the starting point for discussions on connectivity, as well as all further modelling and assessment of the impact of the allocation on the network. As such a level of uncertainty over some elements of the proposals is unavoidable. In order for the assessment to move forward, a set of assumptions have been made regarding those elements as presented below:

- Scale of the C6 allocation at Merton Park – although this has the potential to change in the future, for the purposes of this report the Merton Park part of the proposed allocation is assumed to bring forward:
  - 2075 residential units and 210 retirement homes;
  - A 2 FE Primary School and a 1 FE Special Education Needs Centre;
  - A Local Centre;
  - A football and a rugby club;
  - Park & Ride facility – Potential delivery as an alternate to Wincheap expansion.
- Scale of the C7 allocation at Hollow Lane - proposed as 735 residential dwellings and 75 retirement dwellings. Again, this is indicative and could potentially change in the future.

- Expectations on Sustainability – at this stage, it is considered that the accompanying Site Specific Sustainable Transport Strategies would meet both local and national criteria on sustainability and will go a long way to providing connectivity and accessibility for all road users.
- Possible connectivity to the A2 – as the A2 forms part of the SRN, National Highways are being consulted on any such new connections. Due to the provision of a new southbound off-slip that does not currently exist on this part of the A2, it is anticipated from earlier discussions that a new connection would be viewed favourably – and thus it is assumed that a connection to the A2 could form part of the proposed access strategy. Nevertheless, this will be established after discussions with NH and updated as necessary.
- Possible delivery of a South West Canterbury Link Road – to the south of Thanington.

3.2.2 It is important to note that these development assumptions are indicative and are intended at this stage to simply allow appropriate consideration to be given to the likely demands arising from the allocations on sites C6 and C7.

4 Access Components

4.1 Introduction

4.1.1 As discussed previously, the principles of access need to emphasise the importance of active travel, in line with local and national guidance, facilitating movements for all network users and highlighting sustainable travel as the more attractive option for accessing areas of interest in the wider area. Vehicle connectivity may be more appropriate for travel further afield, with impact on the local road network kept at the minimum.

4.1.2 This section of the report discusses the principles of multi-model access to the proposed allocation at a higher level – how movements for all users will be facilitated and where on the allocation traffic will connect. Although the access principles presented below have been considered in feasibility terms, a more detailed approach on how the connections to the network will be formed is provided further in the next sections of the report.

4.2 Access Strategy Principles

4.2.1 The draft Local Plan includes requirements for site access by a range of transport modes as follows:

4 - Access and transportation

The access and transport strategy for the site should:

(a) Provide safe and convenient pedestrian and cycle connectivity including:

(i) New and improved walking and cycling connections to A28 Wincheap and Great Stour Way via Hollow Lane, Birch Road and Victoria Road;

(ii) New and improved cycle connections to the city centre and South Canterbury development (Policy CF1) using the fast bus route;

(iii) New and improved cycle connections to Canterbury East station;

(iv) New and improved walking and cycling connections to school locations, both within the site and surrounding communities;

(v) New and improved walking and cycling connections to the wider countryside to the south and south-east;

(vi) A direct cycle greenway between proposed Site C7 and the Kent and Canterbury Hospital; and

(vii) Improvements to the PRoW network crossing and around the site as required.

(b) Provide improvements to Canterbury East Station to include facilities for cycle parking and passenger flows;

(c) Provide new access from and to the coastbound A2 carriageway to serve the site and provide vehicular connectivity to Site C7;
(d) Provide new Park and Ride facilities containing a minimum of 500 car parking spaces, located on the eastern side of the site to connect to the fast bus link and the Sports Hub and incorporating cycle parking provision;
(e) Provide a dedicated fast bus link connecting Nackington Road and South Canterbury Road;
(f) Provide a Transport Assessment to demonstrate the connectivity of the site with the existing highway network, any necessary mitigation and measures to minimise the need for use of private cars; and
(g) Convert Stuppington Lane within the site to non-motorised/ recreational use/ access only, in combination with opportunities for similar changes with other historic lanes around the site.

4.2.2 There are also similar requirements for Site C7 – Hollow Lane.

4.2.3 These concepts have been used to inform the general principles of access and the components evaluated in this report. While vehicle movements have been carefully considered in terms of connecting to both the local and the strategic road network, sustainable travel has been prioritised, with provision for both pedestrian and cyclist routes as well as fast and reliable bus connections.

4.2.4 As set out in the draft policy, it is envisaged that an access strategy for the site could provide a route through the allocations that would connect the southeast of Canterbury to the A28 west, with the benefit of a direct connection to the southbound A2. This is anticipated to provide a route for outbound trips from the city to both west and south but also a good alternative for traffic from the west either southbound via the A2 slip road or to a potential on-site P&R facility.

4.2.5 **Appendix A** is a key diagram of the main components of a possible access strategy in the context of the proposed allocation and the surrounding area. This shows each possible connection point for each of the four main transport modes as indicated in the key below:

4.2.6 This builds upon previous work produced during the original Call for Sites stage, with minor adjustments to the work originally submitted.

4.2.7 The access points to existing highways or public rights of way (PROW) are listed below in a clockwise fashion and marked on the key diagram:

1. Hollow Lane – all modes
2. Footpath CC56 leading to footpath CC52– active travel only
3. Footpath CC52 towards Wincheap – active travel only
4. Footpath CC55 towards Lime Kiln Road – active travel only
5. Stuppington Lane (north east) – sustainable modes
6. Footpath CC49 towards Stuppington Lane – active travel only
7. South Canterbury Road near KCH – sustainable modes
8. Langton Lane – sustainable modes
9. A2 slip roads – motor vehicles only
10. Stuppington Lane overbridge – active travel only
11. Hollow Lane underpass – bus and motor vehicles
12. Site C7 Hollow Lane – all modes
13. Cockering Road – all modes

4.3 Sustainable Transport Connections to Canterbury

4.3.1 The proposed allocations sit to the southwest of Canterbury City Centre and thus benefit from their proximity to a wide range of local amenities, including schools, recreation areas, the Kent and Canterbury Hospital, while also being within walking and cycling distance of the city centre. This provides a unique opportunity to promote sustainable travel into Canterbury, in the form of bus connections but more critically, active travel modes. More information on the sustainable transport measures for C6 in particular are provided in the accompanying Site Specific Sustainable Transport Strategy.

4.3.2 The proposed allocations are surrounded by PROW network connections, and these would be diverted or extended to provide safe and convenient active travel connections towards Canterbury city centre.

4.3.3 As points 2, 3, 4 and 6 of the key diagram in **Appendix A** indicate, the access strategy allows for connections to PROWs CC56, CC52, CC55 and CC49.

4.3.4 In line with the draft policy, the north end of Stuppington Lane (point 5 in the key diagram) has the potetnial to be retained as an active travel and bus connection, without other motor vehicles. Pedestrians can join Stuppington Lane to the north, through CC49 (as per point 6) and then follow the footways along Junniper Close, before turning north into Stuppington Lane.

4.3.5 Another bus, pedestrian and cyclist connection to the southwest of Canterbury is available through the Canterbury Bowling Club (point 7 in the key diagram) which will allow access to the local network through South Canterbury Road.

4.3.6 Lastly, a sustainable transport connection is available towards Langton Lane (point 8 of the key diagram). This route would connect to the proposed fast bus service from the committed Mountfield Park development, forming a bus-priority signalised junction at Nackington Road/ Langton Lane. The fast bus service could then run through Mountfield Park into the proposed allocation and continue to the city centre.

4.4 A2 Access / Park & Ride Provision

4.4.1 As shown above, recent developments have committed to provide the fourth slip road at the A2 / A28 Wincheap junction and expansion of the Wincheap Park & Ride. The proposals for Merton Park include infrastructure which could present an alternative to those originally proposed for Wincheap.

4.4.2 Vehicle connection to the southbound A2 (point 9 in the key diagram) and the SRN could be provided in the form of slip roads – an on-slip and an off-slip.

4.4.3 It is reasonable to assume that the existing southbound merge onto the A2 would need to be closed to allow delivery of a southbound off-slip in at site C6, with a replacement on-slip also provided within the allocation. For traffic diverging from the A2, the proposed Park & Ride within the allocation would include high-quality onward sustainable connections to the city centre.

4.5 All-mode Connection to Wincheap – Hollow Lane

4.5.1 Connection to the A28 Wincheap Road could be provided for all road users via the access on Hollow Lane (point 1 of the key diagram). This access could facilitate movements between the A28 corridor and the development, and most importantly, the A2 southbound slip roads through Homersham if delivered.

4.6 Connection to the South-West

4.6.1 A possible connection between sites C6 and C7 would be by means ofthe Hollow Lane Underpass (point 11 in the key diagram and shown below).

Figure 4.1: Existing Hollow Lane Underpass (Street View)

4.6.2 Although the existing underpass would need to be upgraded to be able to accommodate both cars and buses, as discussed in the next section of the report, it is nevertheless a key potential element of the site access, should delivery of the South West Canterbury link be deemed appropriate as part of a strategy.

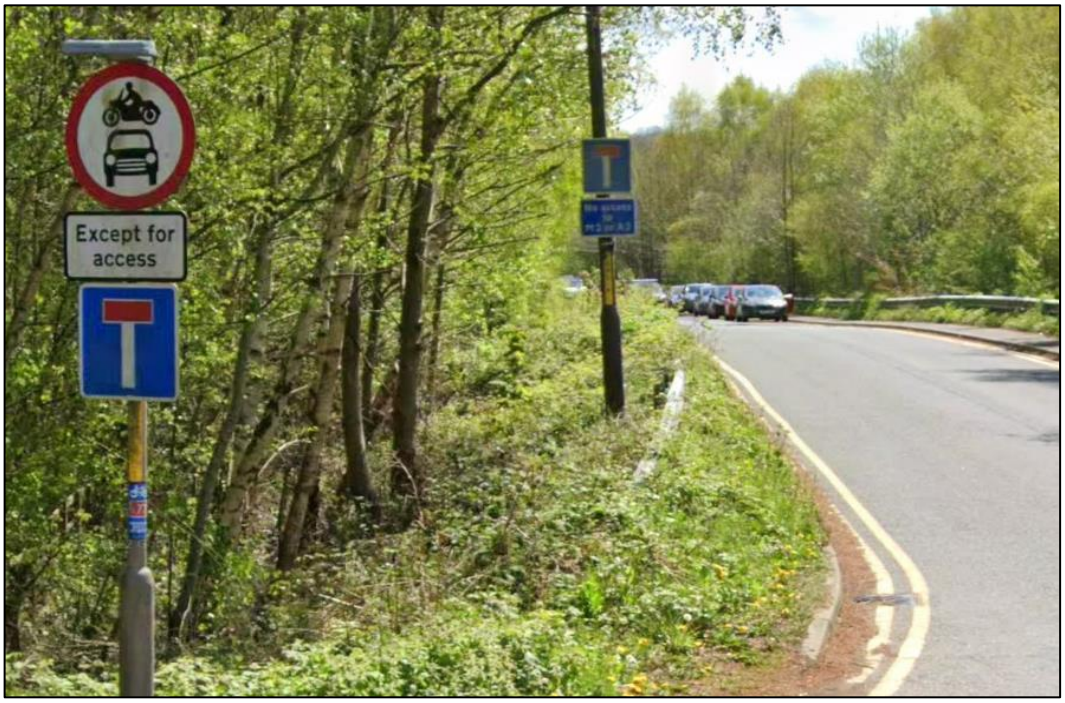
4.6.3 The upgrade of the underpass to faciliatate bus movements would mean that the footway along the underbridge would be removed. Neverthess, more conducive pedestrian and cyclist routes would be promoted nearby for north-south connectivity, as discussed below.

4.6.4 The underpass connects Merton Park and the access on Hollow Lane to the east of site C7 and Stuppington, via Merton Lane, allowing for an improved flow of traffic and providing a good and free-flowing alternative to the existing network.

4.6.5 Through site C7, the proposed link road could branch off and connect to the Saxon Fields and Cockering Farm developments (points 12 and 13 of the key diagram) to the south, providing a through connection for all road users. Through Thanington, traffic can join the A2 northbound off-slip and connect to the A28 and from there gain access to the northbound A2 through the on-slip.

4.6.6 An upgraded Hollow Lane Underpass could link the northt and south of the A2 with a high-standard highway connection so that the Stuppington Lane overbridge (point 11 of the key diagram) would no longer need to facilitate through vehicle movements. For this reason, as well as for discouraging 'rat running' on the rural lane network, Stuppington Lane could be filtered for active travel and motor access only to the few residences just south of the overbridge as shown in the example below.

Figure 4.2: Example filtering – no through vehicles



4.6.7 This could provide a wide and safe active travel route which would connect the dwellings around Stuppington Lane through the site and into Canterbury. A pedestrian bridge at Hollow Lane could also be explored if deemed necessary, although it is considered that the two crossings of Stuppington Lane and Birch Road provide sufficient connectivity between east and west of the A2.

5 Site Access Concept Designs

5.1 Introduction

5.1.1 This section of the report develops the key components of access discussed in the previous chapter to present conceptual designs to demonstrate deliverability.

5.1.2 The conceptual designs consider the topography of the location, as well as the geometry of the existing network, where applicable, and make high level assumptions on the scale of infrastructure needed, albeit in the absence of detailed forecast demand and analysis at this stage. Nevertheless, the concept designs take advantage of previous strategic model runs that, although dependent on specific scenarios of access and local context network, do give a useful indication of the level of traffic flows on the network and allow for a more rapid convergence towards a likely appropriate solution.

5.1.3 As appropriate, all relevant design guidance has been applied where applicable. The drawings discussed below are included in **Appendix B**.

5.2 Connection to the North-East – Canterbury

Langton Lane

5.2.2 Connectivity to Canterbury city centre and destinations to the northeast of the development is anticipated to be provided by means of walking, cycling and public transport. While connecting to the existing PRoW network does not necessitate a concept design, as is also the case for the filtering of vehicle traffic on Stuppington Lane, the bus access design through Langton Lane has been afforded greater attention to allow evaluation of feasibility.

5.2.3 Langton Lane was proposed as the most suitable link for a bus route to the east of the site, with potential to divert the Mountfield Park fast bus service via this area.

5.2.4 Agreement with the Simon Langton Grammar School for Boys provides the opportunity to introduce a bus-only link at the northeast edge of the school grounds by reallocating a secondary sporting facility and redesigning the parking area for the school. **Drawing 22-022-104** illustrates the link connecting the site access to Langton Lane.

5.2.5 Although the new link would be open only to buses, vehicle access to the school would be protected. For this purpose, Langton Lane could be widened wherever possible, in order to accommodate simultaneous movements by a bus and a car.

5.2.6 Nevertheless, there still remains a narrow part of Langton Lane to the west, just off the school access, where the topography and highway boundaries do not allow for widening, and where drivers would have to negotiate passage through. For this reason, a give-way has been introduced in the design for the buses arriving from the new link to ensure that the road is clear before proceeding. Warning signs for road narrowing will be introduced as appropriate.

5.2.7 In order to both support the fast-bus priority and also ensure that no two buses meet along Langton Lane, buses are controlled through traffic signal control, with a stop line and a signal head for the eastbound traffic on the new bus link, prior to the give-way position, and traffic lights on the Nackington Road/Langton Lane junction (discussed in more detail later on) for westbound traffic.

5.2.8 Traffic signals along the new link could also facilitate a pedestrian crossing for safer access into the school.

5.2.9 HGV, bus and refuse vehicles servicing the school would proceed through the school entrance as currently but go through the parking area and out of the bus-only link in order to go through the bus priority traffic lights. In this way, it is ensured that no opposing buses/HGVs will meet along Langton Lane.

5.3 A2 Connection

5.3.1 Connection to the southbound A2 is provided in the form of a set of on and off slip roads as shown in **Drawings 22-022-017 Rev A** and **22-022-018 Rev A**.

5.3.2 As designed, the slip roads would enter the proposed allocation at the western side of the Merton Park development. The off-slip leaves the mainline at the northernmost point possible, taking into account the existing Stuppington Lane bridge, and the on-slip joins the mainline at the southernmost point possible.

5.3.3 The configuration of the links to and from the A2 and the proximity of adjacent junctions require an assessment of the proposed merge and diverge arrangements and a weaving calculation to determine mainline carriageway configuration. This is shown in **Appendix C** and confirms that a compliant design could be achieved.

5.3.4 An appropriate masterplanning design would need to incorporate the two slip roads into the site internal road network.

5.4 Hollow Lane Access

5.4.1 The connection to the south of Hollow Lane, as discussed above, could take the form of a 3-arm roundabout, as shown in **Drawing 22-022-105 Rev A**.

5.4.2 This access could facilitate movements between the A28 Wincheap corridor and the allocation site C6, providing in this way a connection between the east of Canterbury and the southbound A2.

5.4.3 Travel patterns to the north of the Hollow Lane access are discussed in the next section of this report.

5.5 Nackington Road Access

5.5.1 The C6 allocation has the potential to secure vehicular access to Nackington Road, in addition to the aforementioned non-car access at Langton Lane. Historically such an option had been discounted due the previous boundary between the Circulation Plan zone being broadly on the alignment of Nackington Road. This no longer represents a constraint to any access strategy.

5.5.2 Merton Lane N links site C6 to Nackington Road, just north of the A2 bridge crossing at an established simple priority junction. Options for securing access in this location have been considered.

5.5.3 A connection to Nackington Road is not explicitly identified in the draft policy, likely both to its historical interrelationship with the CCP and the perceived lack of need where access directly to the A2 is established. Alternative access strategies, including those related to early sustainable delivery of housing on C6 before or in the absence of direct A2 connections would benefit from such connectivity.

5.5.4 A key aim of the access would be to form a local distributor connection between this access and the connection to Hollow Lane; thus providing an appropriate level of vehicle access permeability for the scale the development and to accord in this regard with guidance such as the Kent Design Guide.

5.5.5 It is not anticipated that this link would provide a strategic function other than supporting delivery of the allocations and would likely form a part of a strategy aimed at maximising sustainable travel opportunities rather than supporting and encouraging car use through highway infrastructure delivery – albeit potentially as part of early phase delivery.

5.5.6 Noting the above, a concept design of an upgraded junction has been developed which is considered appropriate to secure a Local Distributor connection, but with modest capacity in the form of a ghost island right turn lane priority junction. This is shown in **Drawing 22-022-005 RevA**.

5.6 Connection to the South-West

Hollow Lane Underpass

5.6.2 As discussed earlier, a connection between the sites C6 and C7 could be established via the Hollow Lane underpass of the A2. The proposals would involve an upgrade of the link so as to accommodate all vehicle types adequately.

5.6.3 To ensure the underpass is suitable for all vehicle types, the existing footway would need to be removed. Although it is acknowledged that the footway is part of the existing PRoW network, it is not an essential component of the bridge structure, and thus, the footway width could be repurposed for providing sufficient width for a road beneath the A2.

5.6.4 Nevertheless, alternative crossings to the A2 are highlighted as more conducive routes than the existing underpass, while the potential of a pedestrian bridge to replace the underpass at Hollow Lane will also be examined.

5.6.5 The potential Hollow Lane alignment through the underpass is shown in **Drawing 22-022-106 Rev A**. Again, this is a concept design as required for this stage of the planning process, while a more detailed design taking into account the levels and any arboricultural constraints would be provided at later stages if the connection were advanced.

Saxon Fields

5.6.6 A principle means of access to site C7 will be by means of connection between the allocation and the emerging Saxon Fields development. A minimum of two points of vehicular of connection between site C7 and Saxon Fields could be established, along with appropriate permeability for active travel users.

5.6.7 Saxon Fields itself connects directly to the improved A2 northbound off-slip, with two-way connectivity to the A28. A secondary access route is provided via St Nicholas Way, where at a new signalised junction with the A28 was secured by means of the Saxon Fields approval.

Cockering Road and Milton Manor Road

5.6.8 Delivery of a South West Canterbury Link Road in accordance with Policy C11 would see a connection established to Cockering Road in the west. With modifications to the Cockering Farm link road, this would provide an onwards connection to Milton Manor Road, parallel to the A28.

6 Off-Site Access Enabling Works

6.1 Introduction

6.1.1 This section of the report discusses the potential off-site enhancement schemes that may need to be undertaken to better integrate the access strategy into the wider road network.

6.1.2 The schemes discussed below should not be confused with mitigation proposals. Although they are subject to change based on modelling and assessment outcomes, they are assumed at this stage to be fundamental to the success of a number of access strategies, including that indicated in the draft policy and will be latterly supplemented by other off-site mitigation for various modes, if deemed necessary.

6.1.3 The drawings discussed in this section are included in **Appendix D**.

6.2 Connection to Site C7 – Hollow Lane

6.2.1 As discussed earlier, the allocation could connect to the Saxon Fields development which will be extended via draft policy C7. Through there, traffic would connect to the A2 northbound off-slip as well as St Nicholas Road to gain access to the A28 as well as the A2 northbound on-slip. Through the earlier phases of the development, high-standard infrastructure was delivered in order to facilitate traffic to and from the A2, in the form of a new roundabout at the access on the A2 off-slip as well as new or improved signals at the junctions of A28 with both the A2 off-slip and St Nicholas Road.

6.2.2 As such, no additional infrastructure is considered necessary for the connection of the allocation to the A28 Thanington Road and the A2 northbound off-slip.

6.3 Cockering Farm Connection

6.3.1 A design of the connection of the proposed link road through the Cockering Farm development with that development's Spine Road will be established at a later stage of the planning process, through dialogue with all parties involved.

6.4 Nackington Road

6.4.1 As an extension of the proposed bus access through Langton Lane, the junction of Langton Lane with Nackington Road has been reviewed on its suitability to facilitate the proposed bus priority movements.

6.4.2 As the Mountfield Park fast bus service is envisaged to connect to the Nackington Road/Langton Lane junction as an additional fourth arm to the east, it is expected that the service would continue into Langton Lane to also access the proposed allocation and the new Park and Ride facilities. As such, the junction would need to be signalised as shown in **Appendix B** in order to provide the bus priority necessary for the fast bus service to be effective.

6.4.3 Due to the width constraints along Langton Lane that were discussed earlier in the report, westbound buses would be held at a red signal at the Nackington Road junction and eastbound buses would be held entering Langton Lane to the west. Nevertheless, flaring to the Langton Lane arm of the Nackington Road junction up to 6.1 metres was introduced, in order to facilitate two buses to pass each other if necessary.

6.4.4 The signal phasing and staging, as well as assessment of the junction will be provided in the second document in this suite.

6.5 Wincheap Area

6.5.1 Due to the changes in traffic patterns in the Wincheap area that are likely to occur as a result of any strategy that includes closure of the A2 existing on-slip and the provision of the new A2 southbound slip roads at the proposed allocation, consideration is being given to the Wincheap area between the proposed access on Hollow Lane and the A28 Wincheap. Hollow Lane, from the site access to the A28, Homersham Lane as well as the signalised Wincheap junction have been considered within the context of the proposed allocation as well as the wider network parameters and assumptions mentioned earlier in the report.

6.5.2 A close study of the network was deemed paramount in order to understand the existing operation and establish a suitable approach for how to better influence the emerging travel patterns of the future year scenario. The residential nature of some links is proposed to be reinforced, while other suitable corridors could be upgraded in order to be able to facilitate increased traffic to the slip roads.

Hollow Lane

6.5.3 Hollow Lane is currently a two-way north-south residential street with some on-street parking occurring mainly to the north. It connects to the A28 just east of the junction with Cow Lane, and subsequently the junction sits within the proposed Wincheap Gyratory.

6.5.4 The proposals for Hollow Lane, shown in **Drawing 22-022-102**, intend to retain the residential nature of the link and dissuade vehicles from using the corridor to access the A28 from the proposed allocation and the A2 southbound off-slip. For this reason, a one-way system is suggested, with the section from the A28 to Hollowmede allowing southbound motor traffic only.

6.5.5 Moreover, for discouraging traffic from the A28 in the direction of the allocation and the A2 southbound on-slip, traffic calming measures are suggested. Although some form of traffic calming is indicated in this drawing, the extent of these would be dictated by any output traffic levels. As such, those measures are indicative at this stage.

Homersham

6.5.6 Consideration has been given to the most suitable route from the A28 to the proposed allocation and the new slip roads. Homersham was established as the most appropriate route, given the existing width of the carriageway as well as the limited level of frontage accesses along the route. It is a high standard route with link flow capacity higher than its existing flows.

Figure 6.1: Homersham alignment

6.5.7 There is currently some on-street parking on Homersham, despite the prevalence of off-street provision. The capacity of the link could be simply upgraded by moving the parking provision to off-street bays, as shown indicatively in **Drawing 22-022-103 Rev A**.

A28 Wincheap Junction

6.5.8 It is considered important to consider how the changes in the travel patterns arising from any particular access strategy might impact the signalised junction with the A28 at Wincheap. The impact on the junction would be a cumulation of a number of changes, the most significant being if there was closure of the A2 on-slip and the introduction of the Wincheap gyratory.

6.5.9 The closure of the A2 on-slip would result in the right turn facilities from the eastbound A28 eastbound traffic being no longer necessary. At the same time, the introduction of the gyratory means that the left turn into Ten Perch Road is more attractive in the future as it gives the opportunity to join the gyratory while avoiding a further set of signals – something that is verified by flow output of the existing model runs.

6.5.10 A set of options has been considered as to how the carriageway previously allocated to the right turn into the A2 on-slip could be better utilised for the most effective performance of the junction. Taking all the changes into consideration, **Drawing 22-022-101 Rev A** shows the most appropriate design for the future year scenario.

6.5.11 As anticipated, both right and left turns into the assumed closed A2 on-slip have been removed. The eastbound traffic coming into the junction, instead of one left turn, one right turn and two ahead now comprises two left and two ahead. This is also carried over to the two lanes coming into the junction from the west, with one allocated to the left turn traffic and the other to traffic continuing onto the A28.

6.5.12 As mentioned a number of times in the report, this is only a starting point for the assessment of the network and will be revised if the flow outputs and the junction assessment indicate otherwise.

6.5.13 It should be noted that these arrangements support a scenario in which the fourth slip is not delivered at Wincheap and instead the alternative provision is made on site C6. In the event that the fourth slip is delivered at Wincheap, it is considered appropriate to assume that the alternative provision would not be made on C6 and thus such changes to the Wincheap A28 signalised junction would not be required to facilitate access. Further work may be required at this junction in the form of off-site mitigation; however, this matter is beyond the scope of this report and as discussed above, is subject to determination of preferred overall scenario(s).

7 Summary

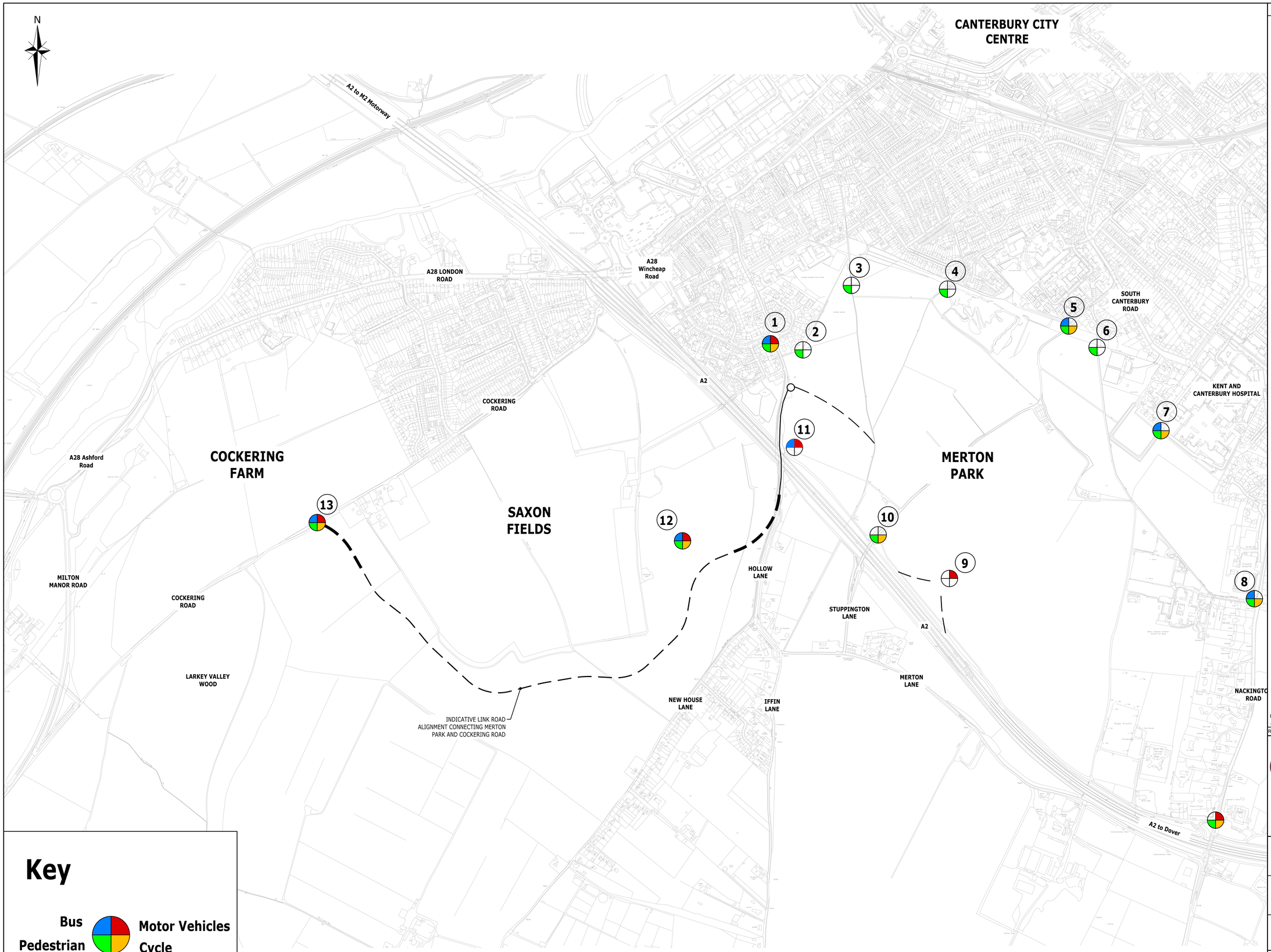
7.1.1 This report has been prepared in the context of Policies C6, C7 and C11 of the Draft Canterbury District Local Plan (2040). Its purpose is to demonstrate the deliverability of a number of key components of potential access infrastructure, considering all modes of travel.

7.1.2 The report stops short of a defining a specific ‘access strategy’ which would be necessarily informed by a number of external variables including assumed committed baseline and specifics of the wider Draft Transport Strategy.

7.1.3 By application of appropriate design standards and following engagement with key highway and transport stakeholders, it has been demonstrated that appropriate access to the allocations can be achieved and in a form which, if deemed appropriate and necessary, could support a wider strategy of infrastructure delivery.

7.1.4 The options outlined herein provided a sound basis against which evaluate access strategies as part of broader scenarios of development allocation.

Appendix A Overall Connections



Key

Bus
Pedestrian
Motor Vehicles
Cycle

0m 100m 200m 300m
Scale 1:5000

NOTES

Rev	Amendments	Drn	Chk	App	Date
B	Updated the labels and drawing title	DA	CG	JW	May 24
A	Updated to suite latest design	GW	AT	JW	May 23

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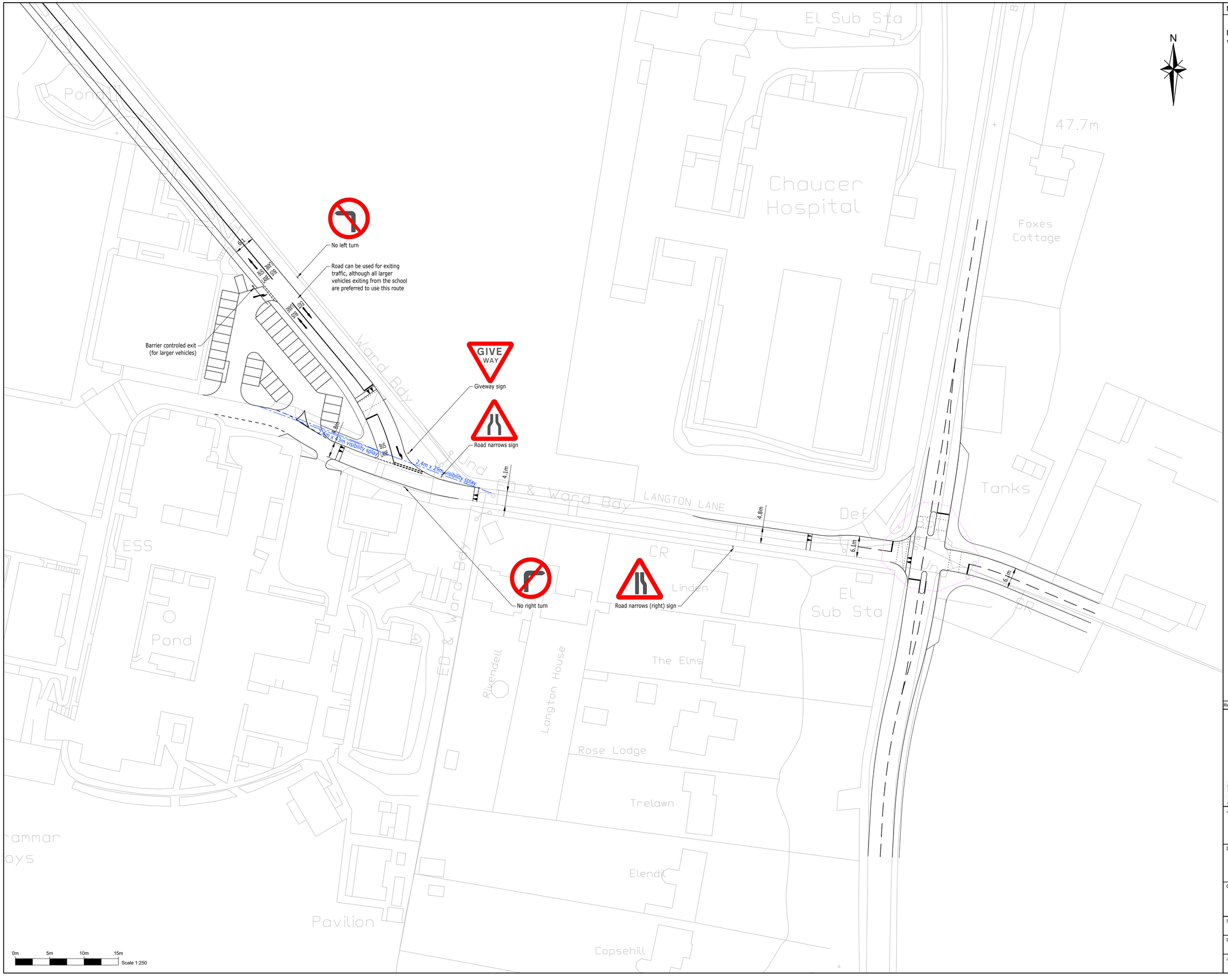
Job Title
Merton Park, Canterbury

Drawing Title
Multimodal Access

Client
Quinn Estates

Scale	Date	Designed
1:5000 @ A1	March 2023	DA
Drawn	Checked	Approved
DA	SW	JW
Job No	Drawing No	Rev
22-022	22-022/015	B

Appendix B Drawings – Site Access Points



N

NOTES

Drawing shows concept design and is subject to wider highway works

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Job Title

Merton Park, Canterbury
Scenario 1

Drawing Title

Site Access, Langton Lane
School Access and Traffic Signals

Client

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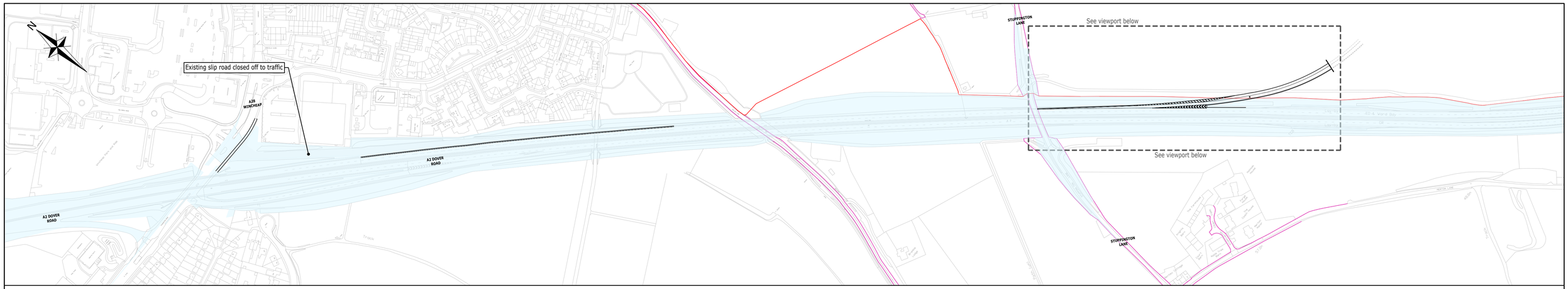
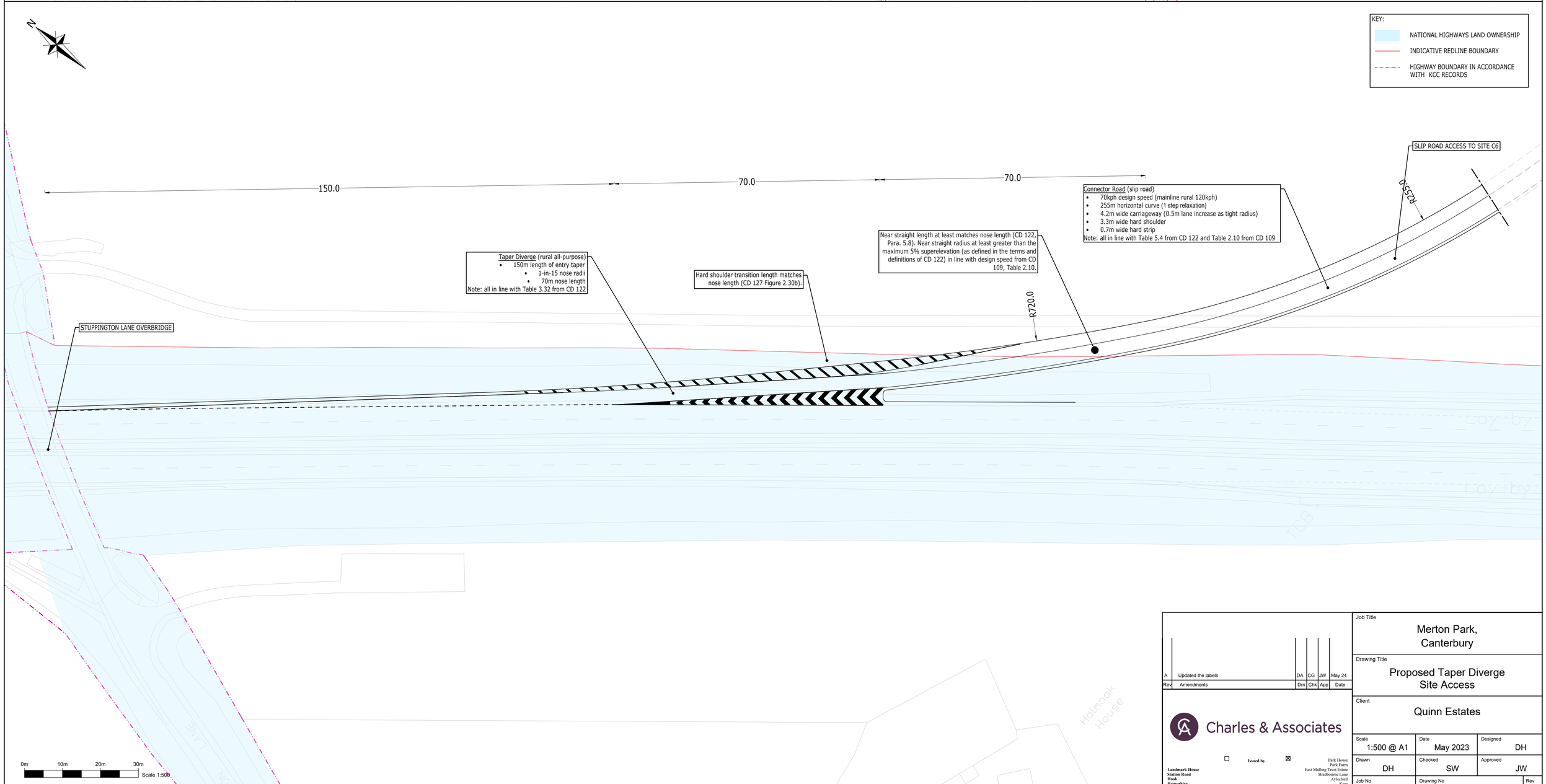
Scale	Date	Designed
1:500	May 2023	GPW
Drawn	**Checked**	**Approved**
GPW	AT	JW
Job No	**Drawing No**	**Rev**
22-022	22-022-104	-





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Job Title
Merton Park, Canterbury

Drawing Title
Proposed Taper Diverge Site Access

Client
Quinn Estates

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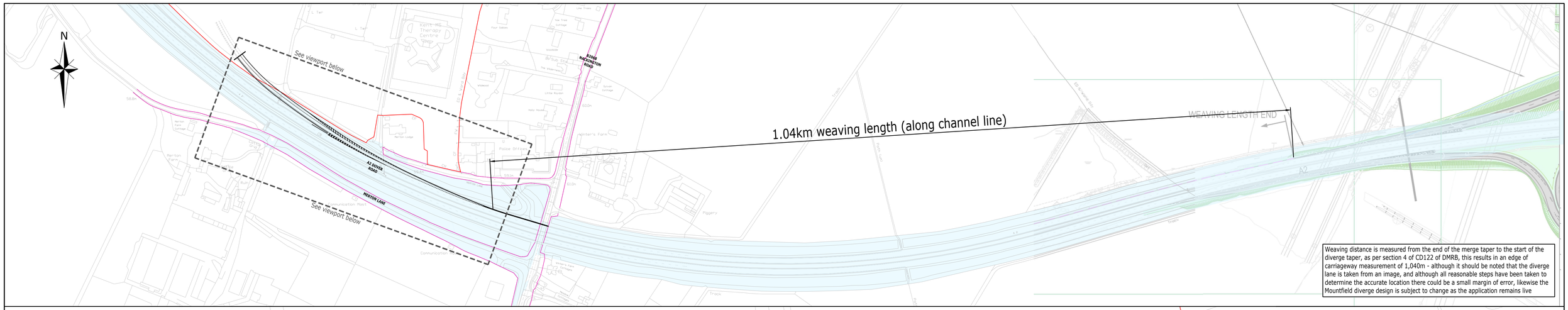
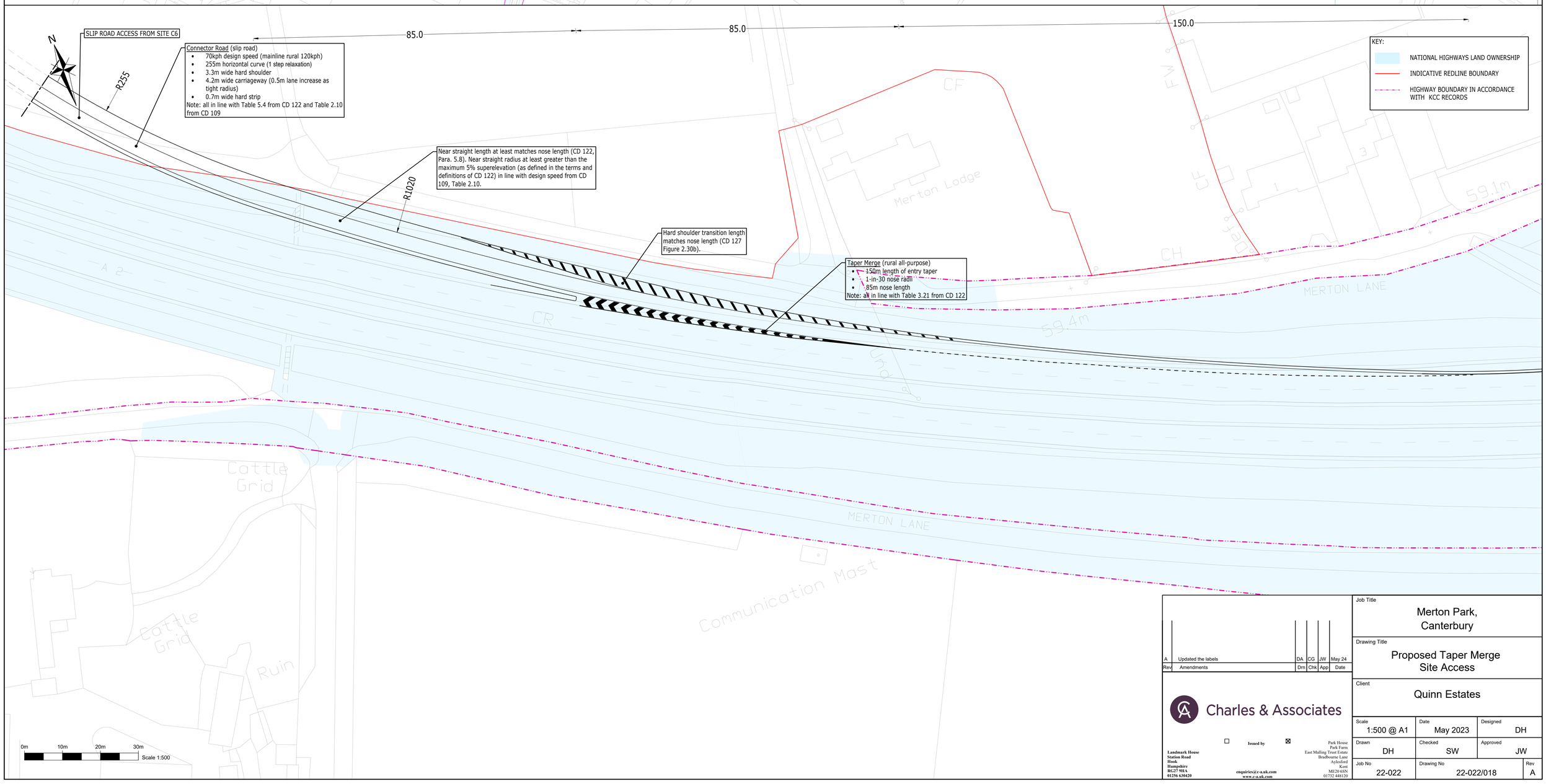
1:500 @ A1	May 2023	DH
Drawn	**Checked**	**Approved**
DH	SW	JW
Job No	**Drawing No**	**Rev**
22-022	22-022/017	A





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Job Title
Merton Park,
Canterbury

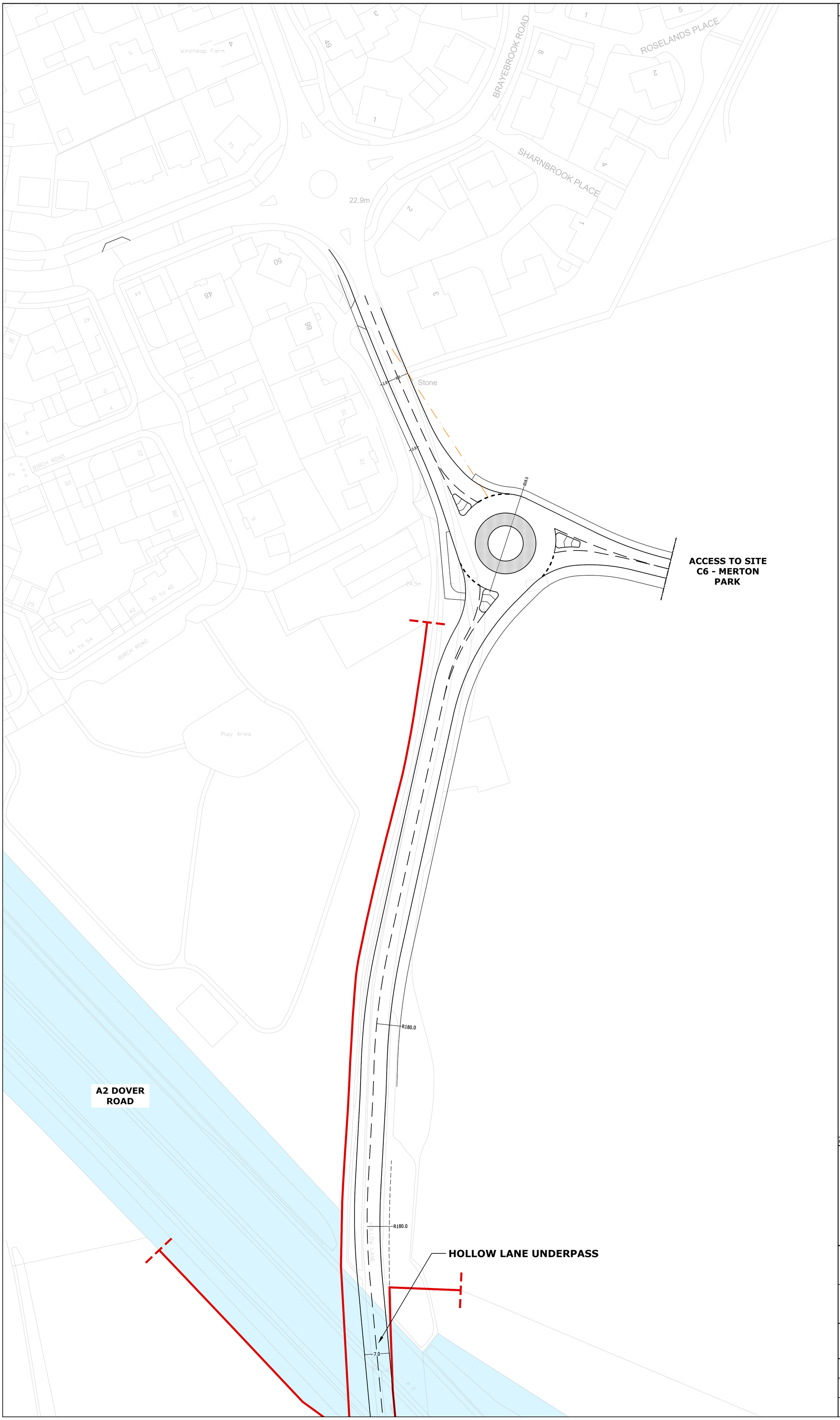
Drawing Title
Proposed Taper Merge
Site Access

Client
Quinn Estates

Scale	Date	Designed
1:500 @ A1	May 2023	DH
Drawn	Checked	Approved
DH	SW	JW
Job No	Drawing No	Rev
22-022	22-022/018	A

NOTES

Concept alignment, based on Ordance Survey mapping



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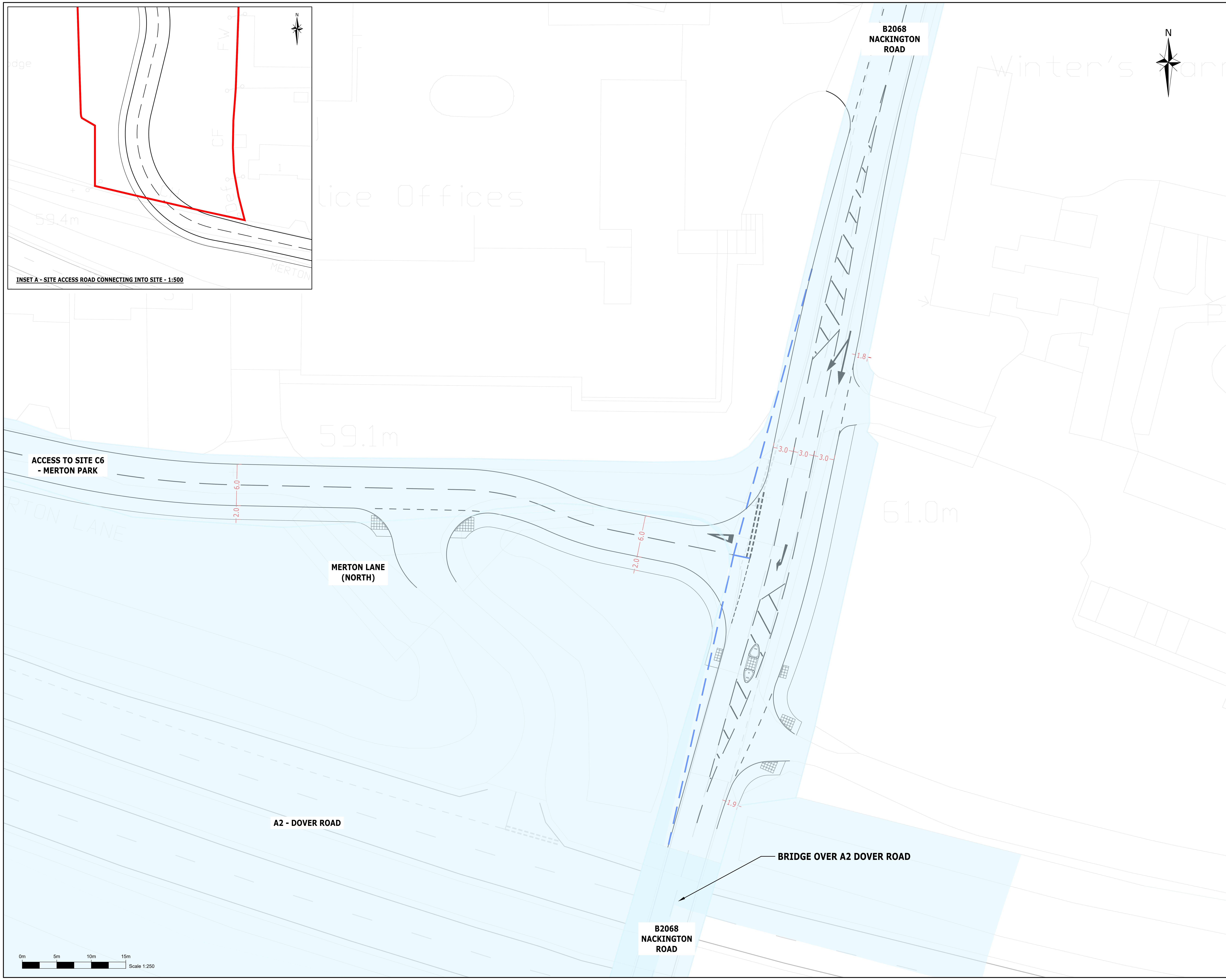
Job Title
Merton Park, Canterbury

Drawing Title
Site Access, Hollow Lane Alignment
Sheet 1 of 2 - North

Client
Quinn Estates

Scale	Date	Designed
1:500 @ A1	May 2023	GPW
Drawn	**Checked**	**Approved**
GPW	AT	JW
Job No	**Drawing No**	**Rev**
22-022	22-022-105	A



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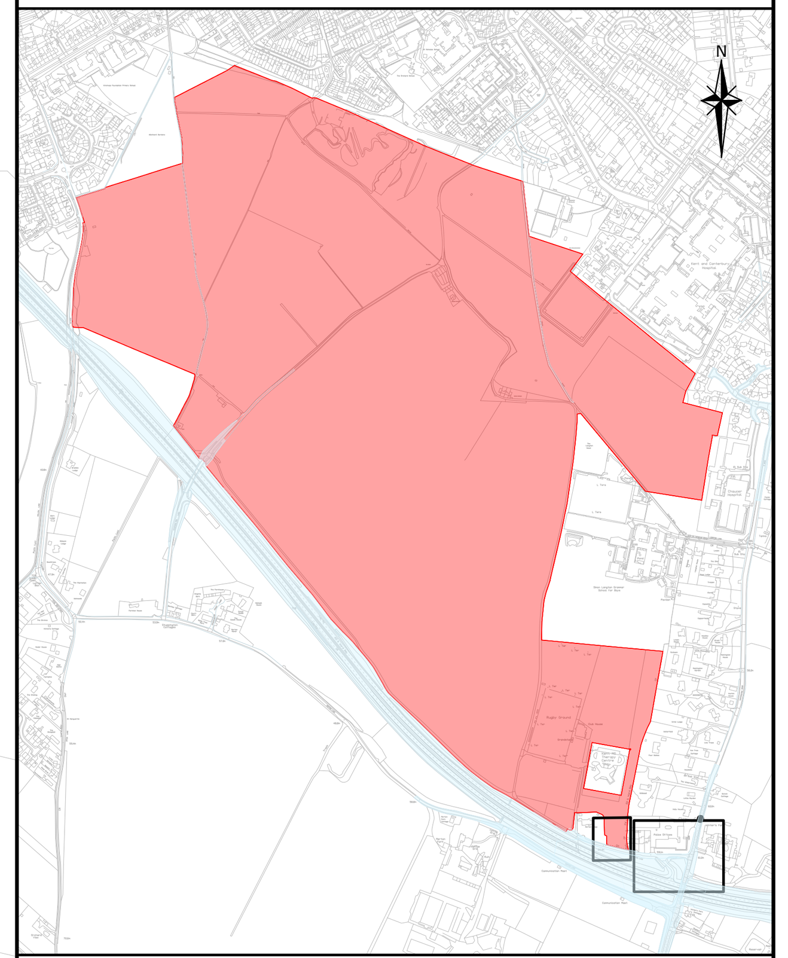

KEY:

SITE BOUNDARY

ADOPTED HIGHWAY

Rev	Amendments	Drn	Chk	App	Date
A	Updated the labels and title	DA	CG	JW	Jun 24

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Job Title

Merton Park, Canterbury

Drawing Title

Potential Site Access

Client

Quinn Estates

Scale	Date	Designed
1:250 @ A1	June 2022	DH
Drawn	**Checked**	**Approved**
DH	SW	JW
Job No	**Drawing No**	**Rev**
22-022	22-022/005	A

NOTES

Concept alignment, based on Ordnance Survey mapping

Connection to existing alignment of Hollow Lane requires additional information (levels and tree survey) to determine the most suitable option

R180.0

HOLLOW LANE

7.0

A 2

R180.0

R180.0

Stone

Stone

Ward Bay

Direct access to site access for Bramble Lodge

Any section of Hollow Lane which is no longer required for motor traffic could be used for other users (i.e. cycle track) subject to wider provision, as there are no driveways from the junction of New House Lane/Iffin Lane to the motorway overbridge other than Bramble Lodge

Bramble Lodge

40.8m

HOLLOW LANE

Connection between existing Hollow Lane (or the wider highway network at Stuppington) and new site access to be provided - design options require additional information (as a minimum levels and tree survey)

ACCESS TO SITE C7 - HOLLOW LANE

Access route within site subject to masterplan layout

Rev	Amendments	Drn	Chk	App	Date
A	Updated the labels and drawing title	DA	CG	JW	May 24

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Job Title

Merton Park, Canterbury

Drawing Title

Site Access, Hollow Lane Alignment
Sheet 2 of 2 - South

Client

Quinn Estates

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Appendix C A2 Slip Roads Assessment

A2 - Merge Diverge Assessment

This exercise was undertaken based on flow outputs from the existing strategic model runs, and therefore will be revisited and updated if deemed necessary once output from the model runs reflective of this access strategy are obtained.

A merge / diverge assessment for the Merton Park slip roads was carried out based on DMRB guidance.[1] The DMRB guidance indicates a single lane slip road for both the merge and diverge would be appropriate with a taper slip road design (A). The lane provision indicated is for a single lane upstream and 2 lanes downstream for the merge and 2 lanes upstream and a single lane downstream for the diverge. The A2 currently has 2 lanes.

The DMRB requires an assessment of weaving between closely spaced successive junctions (less than 2km for rural all-purpose roads), where a merge is followed by a diverge.
For the proposed off-slip road, it is considered that the existing on-slip at the A28 Wincheap junction will be closed, and thus, no weaving distance has been taken into consideration.
On the other hand, for the merging, weaving distance to the proposed Mountfield Park off-slip has been considered.

The minimum length of the weaving section should be 1km for rural all-purpose roads. Indicatively the minimum distance between the proposed Merton Park on-slip and the Mountfield Park off-slip is calculated at 1.04km and therefore the available weaving length is suitable subject to the provision of an appropriate number of lanes in the weaving section.

The number of lanes to be provided within a weaving section is calculated based on the weaving and non-weaving flows, minimum and available weaving lengths using Equation 4.7 set out in CD 122 Version 1.1.1 and shown below.

[1] CD 122 Geometric Design of Grade Separated Junctions – Revision 1.

Figure : CD 122 – Weaving Calculation

Equation 4.7 Number of traffic lanes required for weaving

$$N = \frac{1}{D}\left(Q_{nw} + Q_{w1} + Q_{w2}\left(2\frac{L_{min}}{L} + 1\right)\right)$$

where:

N	Number of traffic lanes
Q_{nw}	Total non-weaving flow in vph
Q_{w1}	Major weaving flow in vph
Q_{w2}	Minor weaving flow in vph
D	Maximum capacity of a single mainline lane: 1) 1,800 vph for motorways 2) 1,600 vph for all-purpose roads
L_{min}	Minimum weaving length for the road class
L	Actual (measured) weaving length available

NOTE 1 *The principle of the weaving section lanes calculation is that the weaving length is fixed based on road type and the carriageway width is calculated from the lane formula. The purpose of this is to establish the need for the addition of one or two auxiliary lanes.*

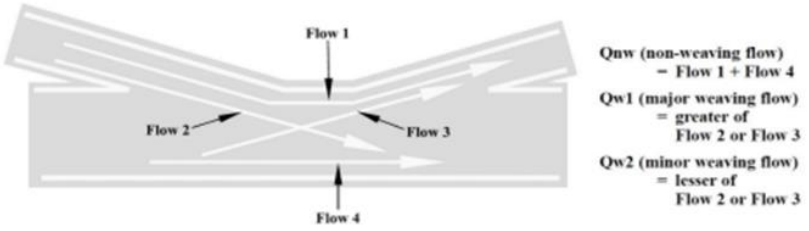
NOTE 2 *For the purpose of the calculation the 'available weaving length' is never less than the 'minimum weaving length'.*

NOTE 3 *The purpose of calculating lanes for weaving sections is to determine whether any additional lanes are needed over and above those provided for in Figures 3.12a, 3.12b. 3.26a and 3.26b.*

NOTE 4 *For weaving sections on motorways and dual carriageway roads, design flows are calculated as indicated in Section 3.*

NOTE 5 *The flows Q_{nw}, Q_{w1} and Q_{w2} are formed as indicated in Figure 4.7N5.*

Figure 4.7N5 Flow terms used in weaving



The weaving lane requirement was calculated based upon the 'minimum weaving length' of 1km as the 'available weaving length' to determine how sensitive this input to the equation is. The weaving lane requirement assessment inputs and outputs are summarised in the table below.

Table : Sensitivity Test Weaving Lane Requirement (1km Weaving Length)

Mainline flow	AM	PM
Total non-weaving flow	1283	1285
Major weaving flow	525	541
Minor weaving flow	247	219
Maximum mainline flow	1600	1600
Minimum weaving length	1km	1km
Available weaving length	1km	1km
Number of Lanes Required	**1.59**	**1.55**

As the A2 coastbound carriageway currently has two traffic lanes, it is evident form the above assessment that the existing provision is suitable to accommodate the forecast flows within the weaving section and therefore no additional lanes are required, based on the proposed spacing.

It should be highlighted that this calculation is indicative as the weaving distance is influenced by the flows on the mainline carriageway as shown above. As such, this exercise is subject to revisions once model output is available.

Appendix D Drawings – Off Site Highway Works

NOTES

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Job Title

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Drawing Title

Site Access, A28 Capacity Works
Sheet 2 of 3 - One Way, Hollow Lane

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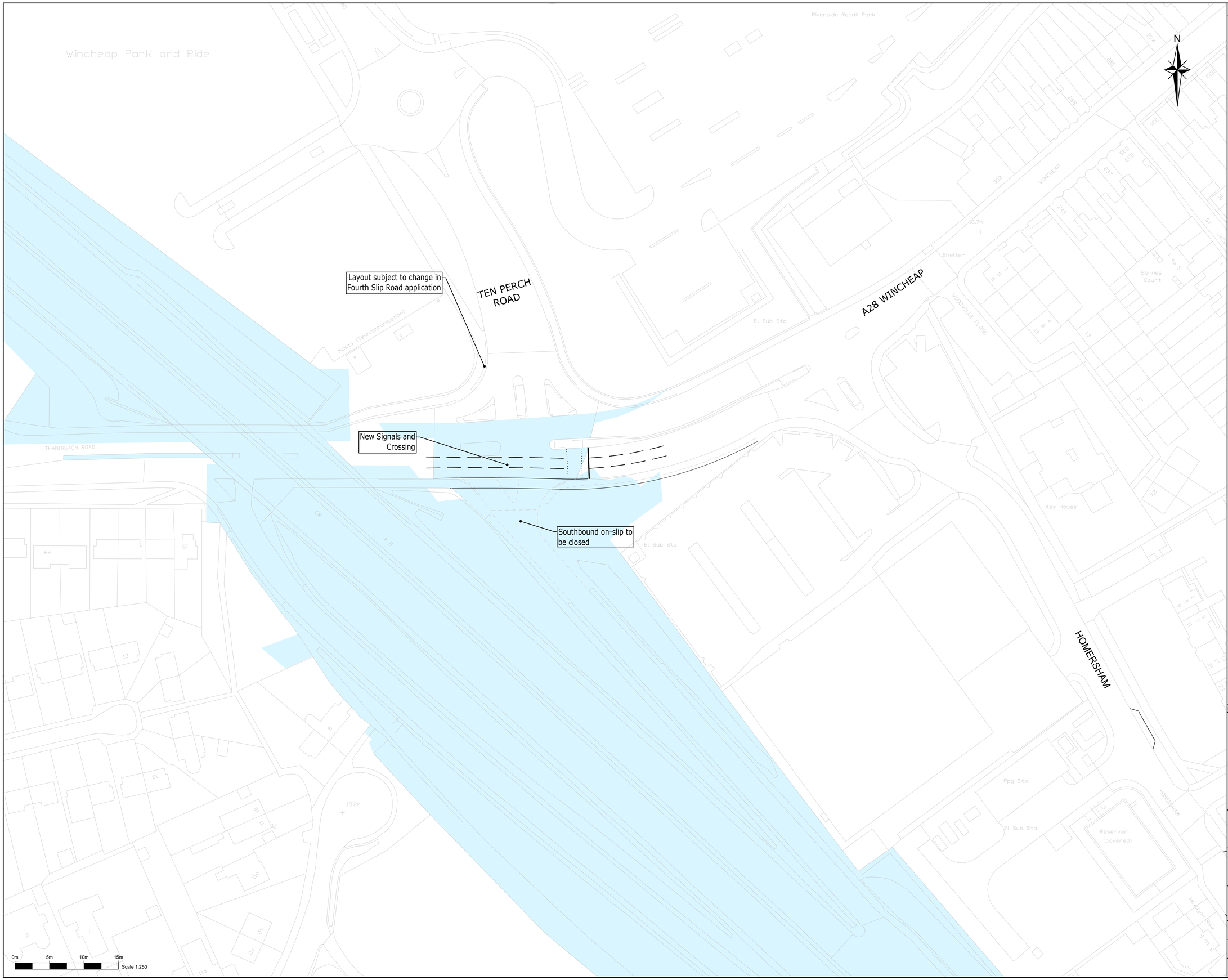

NOTES

Drawing shows concept design and is subject to wider highway works

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Job Title

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Drawing Title

Site Access, A28 Capacity Works
Sheet 1 of 3 - Ten Perch Signals

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NOTES

Drawing shows concept design and is subject to wider highway works

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Merton Park,
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Drawing Title

Additional Parking
Bays on Homersham

Client

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