

# **TECHNICAL NOTE 00**

# **SA4 HUNTS GROVE EXTENSION,**

# **GLOUCESTER**

## **CREST NICHOLSON 897**

Project No	23-201-20
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# Control Sheet

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# 1 INTRODUCTION

## 1.1 Background

- 1.1.1 Calibro is instructed by Crest Nicholson PLC to review the evidence submitted by Stroud District Council in relation to the resolution of highway capacity problems at J12. Calibro has a longstanding involvement in the promotion of strategic sites in the vicinity of J12, and as such has a clear interest in ensuring that the Local Plan is 'sound' in relation to its consideration of infrastructure delivery.
- 1.1.2 Specifically, Crest Nicholson is promoting land at Hunts Grove Extension for residential development. This site benefits from an existing allocation in the adopted Local Plan (Policy SA4) and is proposed to be rolled over into the SDLP under Policy PS30. It is important to note that the Hunts Grove Extension will be brought forward under the existing policy allocation – as confirmed by SDC in pre-application discussions - and therefore cannot be considered as a source of developer contributions towards the J12 improvements. This places a greater burden on other proposed allocations to fund the necessary infrastructure.
- 1.1.3 Without prejudice to the status of the Hunts Grove Extension site relative to the Stroud District Council Local Plan Review, the purpose of this Technical Note is to critically examine the evidence submitted and made available as part of the 'Examination Pause Technical Evidence Consultation 2024' exercise. In this way, the Technical Note will analyse the Council's proposals in relation to the design, costing, funding strategy, and deliverability of the proposed J12 improvements. It will assess whether the evidence adequately addresses the Inspector's reservations regarding the feasibility of the scheme, its funding, and its timely delivery to accommodate planned growth.
- 1.1.4 This Technical Note will demonstrate that despite the submitted evidence, Stroud District Council (with input from its partners) has not yet adequately addressed the Inspector's concerns, and significant uncertainties remain regarding the cost, funding, and deliverability of the J12 improvements, ultimately calling into question the 'soundness' of the SDLP.

## 1.2 The Inspector's Concerns

- 1.2.1 Stroud District Council (SDC) is currently undertaking a review of its Local Plan, which will guide development and growth in the district up to 2040. The Local Plan Review (SDLP) is currently under examination, following a series of hearing sessions held in 2023. During these hearings, the Inspectors raised significant concerns regarding the adequacy of the transport evidence base, particularly in relation to the capacity of Junction 12 of the M5 Motorway (J12) to accommodate planned growth.

1.2.2 In their letter dated 4th August 2023, the Inspectors stated:

***“We do not at this stage have confidence that necessary improvements to M5 Junctions 12 and 14 will be funded and delivered during the plan period.”***

1.2.3 This lack of confidence stemmed from several key concerns, including:

***“...the evidence does not clearly set out when the improvements would be required during the plan period and how they would be funded and secured. We consider convincing evidence on these points to be fundamental to the soundness of the Plan.”***

1.2.4 The Inspectors also expressed concerns about the methodology used to calculate financial contributions towards the necessary improvements, stating:

***“We have concerns regarding this methodology, specifically the lack of justification for the apportionment method used... and the lack of agreement with neighbouring Councils as to predicted growth within their areas.”***

1.2.5 Recognising the seriousness of these concerns, the Inspectors agreed to pause the examination process to allow SDC to undertake further technical work to address the identified issues. This work was to focus on providing clarity and certainty regarding the following key aspects:

- **The nature of the required improvements to J12:** The Inspectors sought detailed designs and specifications for the junction improvements, including clarification on whether any third-party land would be required.
- **The cost of the improvements:** The Inspectors requested a robust cost assessment that accurately reflects the full scope of the project and incorporates appropriate contingencies.
- **The funding strategy:** The Inspectors sought a detailed funding plan that identifies specific funding sources and demonstrates a realistic approach to securing the necessary financial resources.
- **The deliverability of the improvements:** The Inspectors emphasised the need for a clear delivery timeline that ensures the J12 improvements will be in place to accommodate planned growth within the Local Plan period.

1.2.6 The Inspectors' concerns highlight the importance of ensuring that the SDLP is 'sound' in relation to its infrastructure proposals. A sound Local Plan should be **positively prepared, justified, effective, consistent with national policy, and deliverable**. In this context, the effectiveness and deliverability of the J12 improvements are critical to ensuring that the residual highway capacity effects of the planned growth can be accommodated within a suitable timeframe so as to deliver the identified housing requirements by the end of the Plan Period.

## 2 The Council's Proposals

### 2.1 Introduction

2.1.1 GCC has submitted evidence to the Planning Inspectorate (PINS) in relation to the design and costing of improvement schemes for J12. The evidence comprises two main documents:

1. 'M5 Junction 12 Feasibility Study Stage 2: Optioneering Report' (hereafter referred to as the 'Optioneering Report'), which sets out the design and costing of a series of options for improvement schemes at J12; and
2. 'M5 Junction 12 and 14 Improvement Schemes Funding Overview' (hereafter referred to as the 'Funding Overview'), which sets out the funding strategy for the J12 improvements.

### 2.2 Design and Costing of Improvement Schemes

2.2.1 The Optioneering Report initially considers four options for improving J12:

- **Option 1:** Do Minimum (improvements to existing roundabout). [para. 18]
- **Option 2:** Partial Signalisation (with sub-options 2a and 2b). [para. 19]
- **Option 3:** Full Signalisation (with sub-options 3a and 3b). [para. 20]
- **Option 4:** Grade Separation (flyover). [para. 21]

2.2.2 Options 1, 2b, 3b, and 4 were ultimately discarded for various reasons, including limitations in accommodating future traffic growth, negative impacts on the strategic road network, and cost considerations. [para. 22] This highlights the challenges faced by SDC in identifying a viable solution that balances effectiveness, cost, and deliverability.

2.2.3 The Optioneering Report concludes that two options should be retained for further development:

- **Option 2a**, which includes a widened bridge to provide two lanes northbound; and
- **Option 3a**, which includes the junction becoming a full gyratory.

2.2.4 Copies of the associated junction layouts for each option have been extracted and included at [Appendix A](#).



2.2.5 The Optioneering Report estimates that:

***"...the cost of Option 2a would be in the region of £92.6m (excluding inflation)..." [para. 184]***

2.2.6 This estimate, however, immediately raises concerns. Firstly, it excludes inflation, which, given the current economic climate and projected timescales for delivery, could significantly increase the final cost. Secondly, it fails to account for essential elements such as land acquisition and utility diversions. As the report itself states:

***"The cost estimates presented within this report are based on the works identified within the options assessment... Costs associated with land acquisition and utility diversions are not included in the cost estimates." [para. 158]***

2.2.7 However, as identified later in this report, the potential cost implication of land and utilities diversions could be material and significant, especially in the case that Compulsory Purchase of land could be required (impacting both on delivery timescales and cost).

2.2.8 The report goes on to say that:

***...Option 3a includes the junction becoming a full gyratory. This is the highest cost option, with the cost potentially in the region of £134.5m (excluding inflation). This option is expected to deliver the greatest user benefits of all options, including the resolution of the delay on the B4008 and fully accommodate the traffic generated by the extent of Local Plan development. [para. 185]***

2.2.9 Again, this figure is subject to the same limitations as the estimate for Option 2a, raising serious doubts about the true cost of delivering the necessary improvements.

## 2.3 Funding Strategy

2.3.1 The Funding Overview sets out the funding strategy for the J12 improvements, concluding that:

***"...the funding of the M5 junction improvements will need to be from multiple funding streams. It is currently envisaged that the schemes would be the subject of a funding approach to Central Government, and that circa 15% of the funding would be generated from local contributions e.g. from allocated developments through the Development Management process."***

- 2.3.2 It is noted that whilst this assumption has been carried over from the Council's earlier approach to the Jct12 upgrade, the anticipated costs are now significantly higher and the proportionate approach therefore places significantly greater financial burden on individual allocations. It is not yet evident that the Council has tested whether this increased burden impacts on the viability of proposed allocations, especially given that the Hunts Grove Extension, as an existing commitment, would not be subject to the same regime (and therefore reducing the quantum of development from which contributions could be secured).
- 2.3.3 Furthermore, while the Council acknowledges that J12 is already over capacity, implying an urgent need for improvements, their reliance on developer contributions from sites that cannot be developed until the junction is improved creates a circular dependency. This raises questions about the deliverability of the scheme and the availability of funding for the initial phases of the project.
- 2.3.4 Conversely, it is important to note that while J12 is currently operating over capacity, there is no moratorium on development in the area. As demonstrated in the resolution to grant planning permission for Symmetry Park (S.21/2579/OUT) in April 2024, each development proposal will be assessed on its individual merits. Planning permission will be granted where it can be shown that there will be no residual impact on the operation of the junction, supporting the need for a robust assessment of the level of growth that can be accommodated on the existing network without an upgrade to J12.
- 2.3.5 Such an assessment should consider the potential for mitigating impacts through measures such as vision-led strategies. These strategies aim to maximise active travel and public transport usage, minimising the reliance on private vehicles and reducing the impact of development on J12 – in line with the objectives of the Local Plan Review and of national policy. Vision-led strategies are also likely to become an explicit requirement for future developments, as indicated by the Draft Proposed NPPF.
- 2.3.6 Both SDC's consultant (AECOM) and GCC acknowledged the potential of vision-led strategies for mitigating development impacts during the June 2023 Hearing Session. AECOM even suggested that such strategies could be deployed during the planning application stage to achieve further benefits beyond the assumptions underpinning the Council's evidence and modelling.
- 2.3.7 However, the investment required to realise vision-led strategies should be viewed as an alternative to physical improvements to J12. Firstly, because increasing highway capacity could undermine the effectiveness of vision-led strategies by making car travel more attractive. Secondly, the cost of implementing such strategies is significant, and it is unlikely that developers would be able to viably fund both vision-led strategies and contribute financially to the level indicated by the Council's evidence towards capacity improvements to J12 – especially since the increased availability of capacity in the network would implicitly require higher levels of investment to deliver the modal shift required to achieve the sort of low-car vision likely to be targeted in any strategy.



- 2.3.8 Furthermore, under the Community Infrastructure Levy (CIL) Regulation 122 tests, any financial contributions towards the capacity improvements of J12 would only be justified for residual impacts that cannot be mitigated through other means. This further emphasises the need for a robust assessment of the existing network capacity and the potential for impact mitigation, as well as the identification of external funding sources to facilitate the necessary enhancements to J12.
- 2.3.9 In respect of the sources of funding, the Funding Overview concludes that *"...there is a clear case to be made regarding the delivery of improvements at M5 J12 and J14 owing to the wider benefits which are available based on the unlocking of housing and economic growth within the region and alignment with NH objectives for the M5 corridor."*
- 2.3.10 While the strategic importance of J12 is undeniable, this statement alone does not constitute a robust funding strategy. Indeed, the Funding Overview relies heavily on securing funding from unspecified sources. It states that *"it is anticipated that the majority of the funding for the schemes will be sourced from Government funding streams"* but fails to identify specific funding programs or commitments.
- 2.3.11 The Funding Overview lacks concrete commitments from funding partners, particularly National Highways. Indeed, a review of the National Highways' Road Investment Strategy (RIS3) 2025-2030 reveals no allocated funding for J12 improvements. This was further supported by a statement made by National Highways in the June 2024 Hearing Session, in which they stated that even if an improvement of Jct12 were to be identified in future RIS funding programmes, the scope of such works (and funding for) would be limited to resolving existing capacity issues, rather than accommodating future Local Plan growth. This increases concerns about the feasibility of securing the necessary financial support. [para. National Highways RIS3 2025-2030].
- 2.3.12 Whilst the Funding Overview notes that there are case studies available which demonstrate how significant motorway infrastructure can be delivered outside of conventional National Highways (NH) funding arrangements, these require closer scrutiny.
- 2.3.13 The examples cited, such as the M55 Junction 3 and M11 Junction 7a, differ significantly from the J12 situation in terms of scale, complexity, and funding sources. For instance, the M55 Junction 3 improvement was partly funded through the Preston City Deal, a unique funding arrangement not applicable to the J12 project. Similarly, the M11 Junction 7a project benefited from significant private sector investment, a funding source that has not been identified for J12. The Funding Overview fails to demonstrate how these examples translate into a concrete funding plan for J12.

## 3 Deficiencies in the Council's Proposals

- 3.1.1 Calibro has identified a number of critical deficiencies in the Council's evidence that undermine its ability to address the Inspector's concerns regarding the J12 improvements.

### 3.2 Cost

- 3.2.1 The Optioneering Report's cost estimates are fundamentally flawed due to the following:

- a) **Exclusion of key cost elements:** As previously highlighted, the estimates omit land acquisition and utility diversions, which can constitute a substantial portion of overall project costs. [para. 158] To illustrate the potential impact, consider recent projects of similar scale. For example, the A14 Cambridge to Huntingdon improvement scheme, which involved widening a section of the A14 and constructing a new bypass, saw land acquisition costs exceeding £200 million. [para. Highways England A14 project data] While the J12 project is smaller in scale, it is not unreasonable to expect land acquisition costs to run into tens of millions of pounds. Similarly, utility diversions can be a significant expense, especially given the presence of major infrastructure in the vicinity of J12.
- b) **Unrealistic phasing assumptions:** The assumption of a single-phase delivery is highly optimistic for a project of this scale and complexity. A more realistic multi-phase approach would likely increase costs due to extended construction periods, inflation, and potential disruption to traffic flow. [para. 154, 155, 156, 157] Industry benchmarks suggest that multi-phase delivery can add 10-20% to overall project costs due to factors such as extended site mobilization, inflation, and the need for more complex traffic management strategies.
- c) **Inadequate risk assessment:** The report's acknowledgement of risks associated with land acquisition and phasing is not accompanied by a robust quantitative assessment of their potential cost implications. This contradicts best practice guidance from the Department for Transport (DfT), as outlined in 'Transport Analysis Guidance (TAG) Unit A1.2 – Scheme Costs', which emphasizes the need to explicitly incorporate risk and optimism bias into cost estimations. The lack of such analysis in the Council's evidence suggests a potentially significant underestimation of the true project cost. [para. 154, 158, DfT TAG Unit A1.2] For instance, the DfT guidance recommends applying a contingency of 10-30% to account for unforeseen risks, depending on the project's complexity and uncertainty.

- 3.2.2 To illustrate the potential impact of these omissions, consider a hypothetical scenario where land acquisition and utility diversions add 20% to the base cost, and multi-phase delivery with associated risks adds another 15%. Applying these to the estimated cost of Option 2a (£92.6 million) would result in an increase of approximately £33 million, bringing the total to £125.6 million. This is a conservative estimate, and the actual cost escalation could be even higher.

### 3.3 Funding

- 3.3.1 The Funding Overview fails to provide a convincing strategy for securing the necessary funding for the J12 improvements within a timescale that would facilitate detailed design, testing, land acquisition (allowing for potential CPO), tender and contract award, mobilisation, and construction) to enable delivery of planned growth within the Plan Period.

**a) Lack of specific funding sources:** The reliance on a "funding approach to Central Government" without concrete commitments or identified funding streams – especially in a period where public finances are significantly constrained and where public investment in transport schemes has been removed - raises concerns about the viability of the scheme. [para. 240, 241, 242]

- 3.3.2 The Funding Overview mentions various potential funding sources, such as the Levelling Up Fund and the Shared Prosperity Fund, but provides no indication of whether applications have been made or what the likelihood of success is.

**b) Over-reliance on developer contributions:** The expectation that 15% of the funding will come from developer contributions is unrealistic given the acknowledged overcapacity of J12. Development that would generate these contributions cannot proceed until the junction is improved, creating a funding deadlock. This suggests that the Council is either overly optimistic about securing external funding or is relying on a phased approach where initial phases are entirely funded externally, with developer contributions "recycled" for subsequent phases. This places immense pressure on securing upfront funding and raises questions about the long-term financial sustainability of the project. [para. 240, 241, 242] This tension is further highlighted in the Inspector's letter of August 4th, 2023, which states, "...we are not convinced that the necessary infrastructure can be funded and delivered in a timely manner to support the proposed level of growth." [para. 10]

**c) Absence from RIS3:** The lack of any mention of J12 in National Highways' RIS3 2025-2030 further undermines the Council's funding strategy. This indicates that the scheme is not currently prioritised for funding by the national body responsible for strategic road infrastructure. Moreover, as clearly stated during the June 2023 Hearing Sessions, even where improvements were prioritised by National Highways, this would only ever be targeted towards resolving exiting capacity constraint and would not deal with the additional pressures imposed

by planned growth. In this way, other sources of external funding would continue to be required even in this scenario.

### 3.4 Delivery

3.4.1 The Council's evidence also fails to convincingly demonstrate the timely delivery of the J12 improvements.

**a) Unrealistic timescales:** The Optioneering Report acknowledges the multi-year timeframe required for delivery but provides no detailed breakdown of the various stages involved. This lack of a clear timeline makes it difficult to assess the feasibility of delivering the improvements within a timeframe that aligns with the planned housing and employment growth.

**b) Complexity of the scheme:** The scale and complexity of constructing a grade-separated interchange over a live motorway, with the need to maintain existing traffic flows, are significant. The Council's evidence does not adequately address these challenges and their potential impact on the delivery timeline. [para. 187]

**c) Land acquisition through CPO:** The Council's potential reliance on Compulsory Purchase Orders (CPO) to acquire the necessary land introduces further uncertainty and potential delays. The CPO process can be lengthy and complex, involving public inquiries, potential legal challenges, and negotiations with landowners. Research by the Compulsory Purchase Association indicates that "the CPO process can take anywhere from 18 months to several years to complete". The Council's evidence does not appear to factor in these potential delays, suggesting an unrealistic assumption of willing landowners and a streamlined CPO process.

3.4.2 Furthermore, delays in the J12 improvements could have a significant impact on the delivery of housing in the Stroud district. The SDLP's housing trajectory relies on the timely delivery of infrastructure to support planned growth. Delays in the J12 improvements could lead to a shortfall in housing delivery, exacerbating the existing housing crisis in the district.

## 4 Conclusion

- 4.1.1 Calibro's review of the evidence submitted by SDC reveals significant deficiencies in the Council's proposals for improving M5 Junction 12. The cost estimates are likely underestimated, the funding strategy lacks concrete details and commitments, and the deliverability of the scheme within the required timeframe remains uncertain.
- 4.1.2 These deficiencies are particularly concerning in light of the Inspector's explicit concerns about the feasibility, funding, and timely delivery of the J12 improvements. The Council's evidence, in its current form, fails to alleviate these concerns and demonstrate the SDLP is unsound in relation to infrastructure provision.
- 4.1.3 Calibro recommends that SDC undertakes further work to address these deficiencies, including:
- a) **Refined cost estimates:** Conduct a comprehensive cost assessment that includes all relevant cost elements (land acquisition, utility diversions, etc.), incorporates a robust risk assessment in line with DfT guidance, and accounts for a realistic multi-phase delivery approach. This assessment should be supported by detailed breakdowns of individual cost components and clear justification for any assumptions made.
  - b) **Detailed funding strategy:** Develop a detailed funding plan that identifies specific funding sources, secures concrete commitments from funding partners (including National Highways), and addresses the reliance on developer contributions in light of the existing overcapacity at J12. The plan should clearly outline the funding sources for each phase of the project, demonstrate a realistic timeline for securing funding, and provide evidence of active engagement with potential funding partners. Where there is an assumption that development will contribute to the cost, updated viability assessment should be undertaken and reflected in the delivery plan (below).
  - c) **Comprehensive delivery plan:** Provide a detailed delivery plan that outlines the various stages of the project, including land acquisition (with realistic timescales for CPO procedures), construction phases, and traffic management strategies. This plan should demonstrate the feasibility of delivering the improvements within a timeframe that aligns with the planned housing and employment growth within the Plan Period.
- 4.1.4 Without these revisions, the SDLP remains at risk of being found unsound due to insufficient evidence supporting the timely delivery of critical infrastructure. This could have significant implications for the delivery of housing and economic growth in the Stroud district. The Council must take immediate action to address these deficiencies and provide the Inspector with the necessary assurances that the J12 improvements will be delivered in a timely and effective manner.

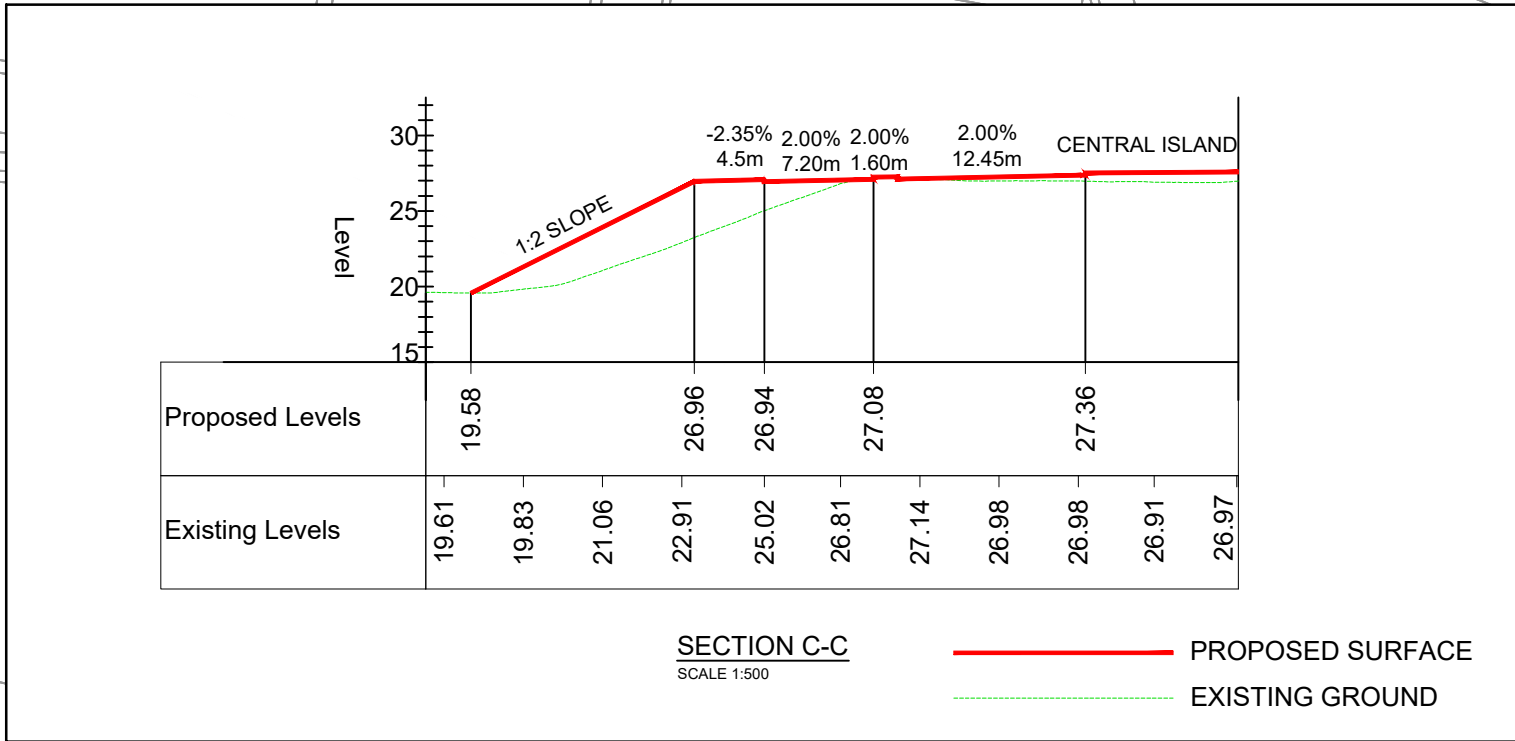
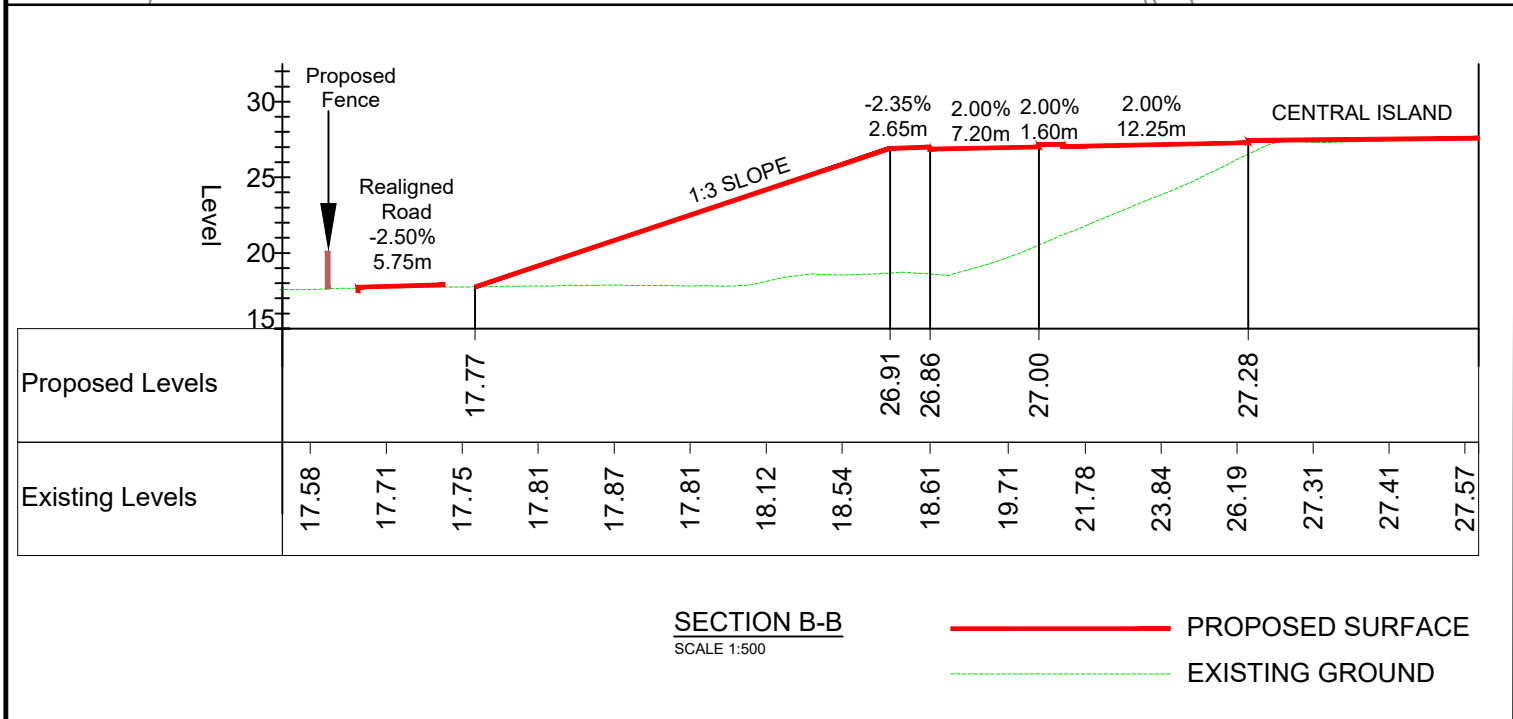
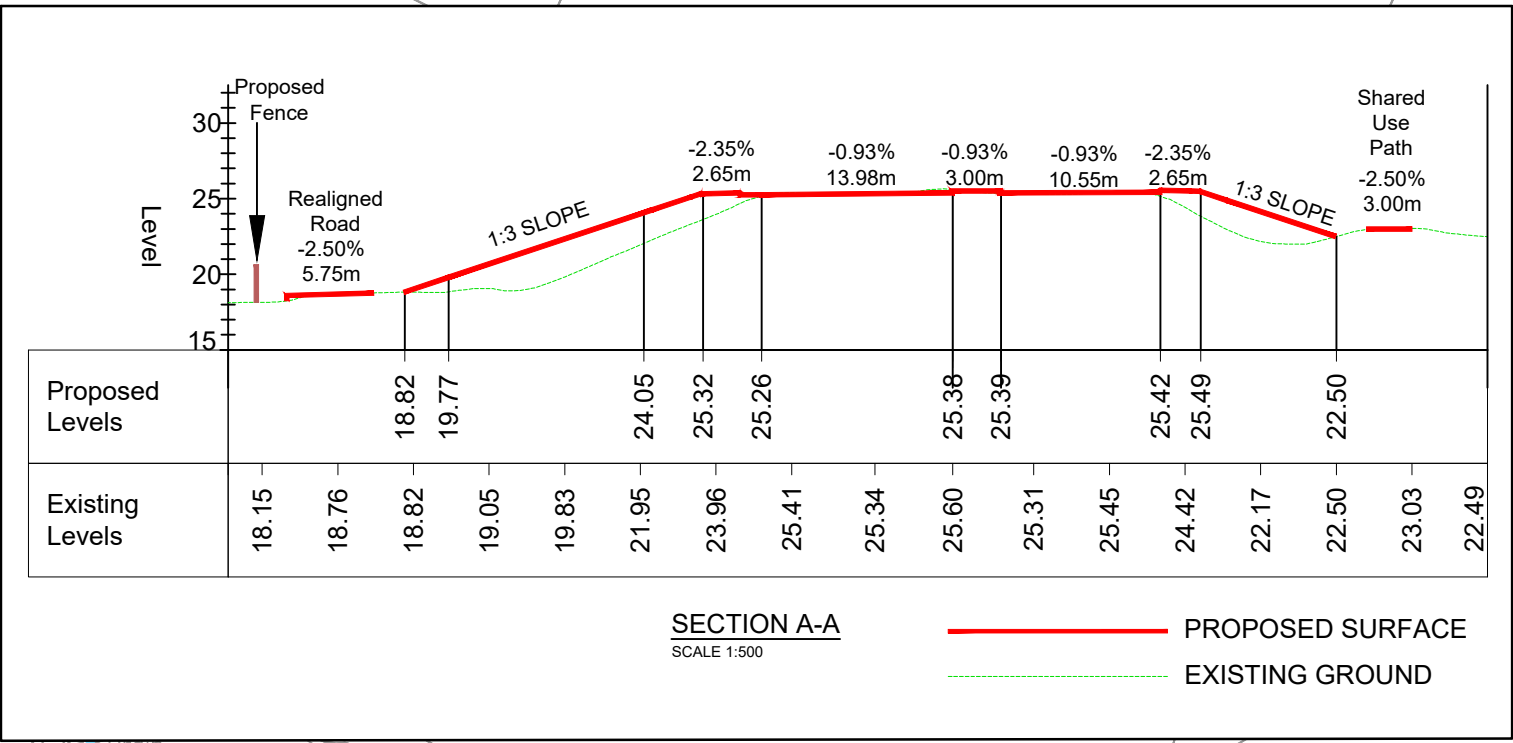
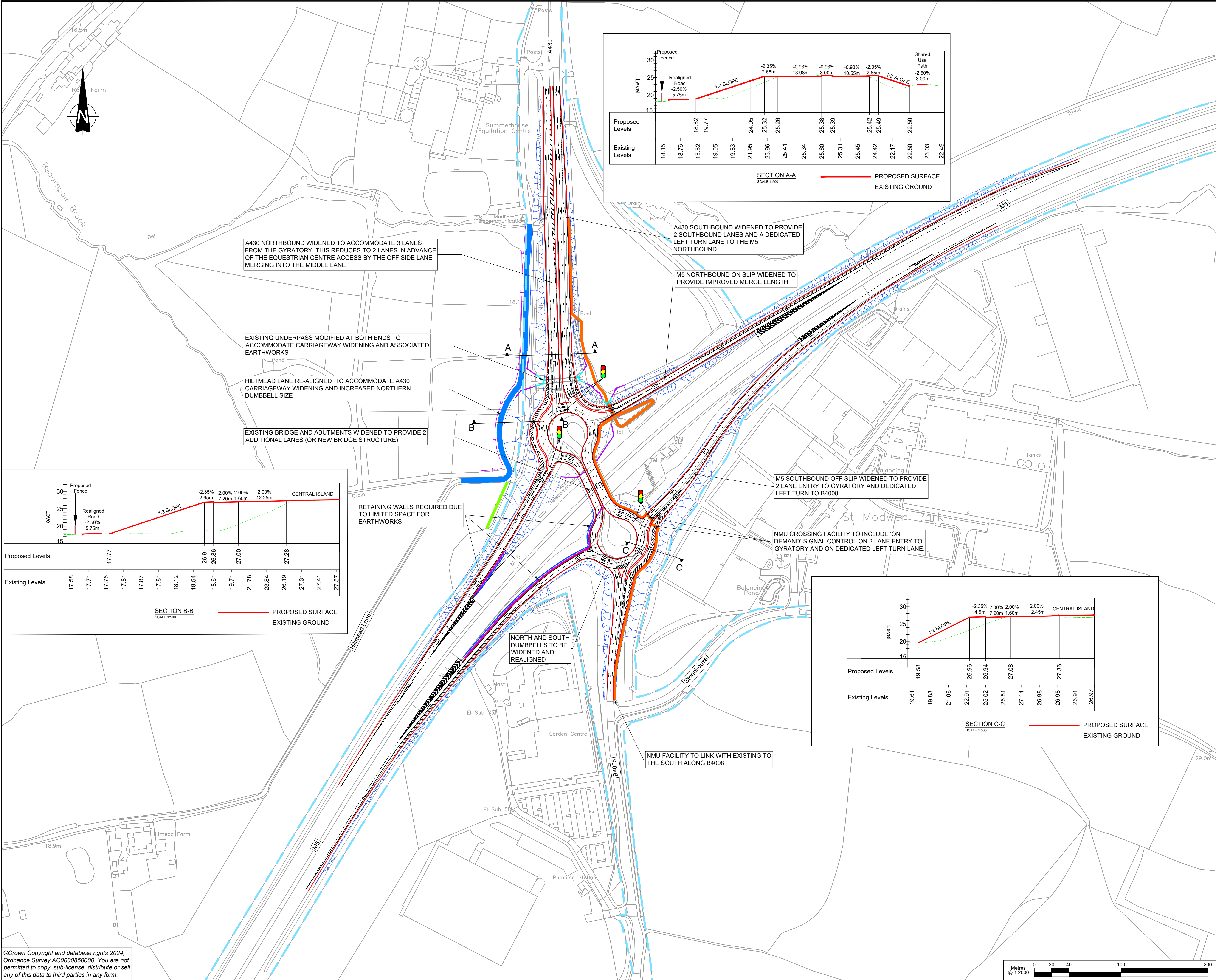
# APPENDICES



## APPENDIX A

### Junction Layouts





- KEY:**
- HIGHWAY BOUNDARY
  - PROPOSED CARRIAGEWAY
  - PROPOSED ROAD MARKINGS
  - PROPOSED RETAINING WALL
  - REALIGNED HILTSMEAD LANE
  - PROPOSED SHARED USE PATH
  - F PROPOSED FENCE
  - REALIGNED FARM TRACK
  - WIDENED / NEW UNDERPASS
  - EXISTING UNDERPASS
  - PROPOSED EARTHWORK
  - SIGNAL CONTROLLED JUNCTION

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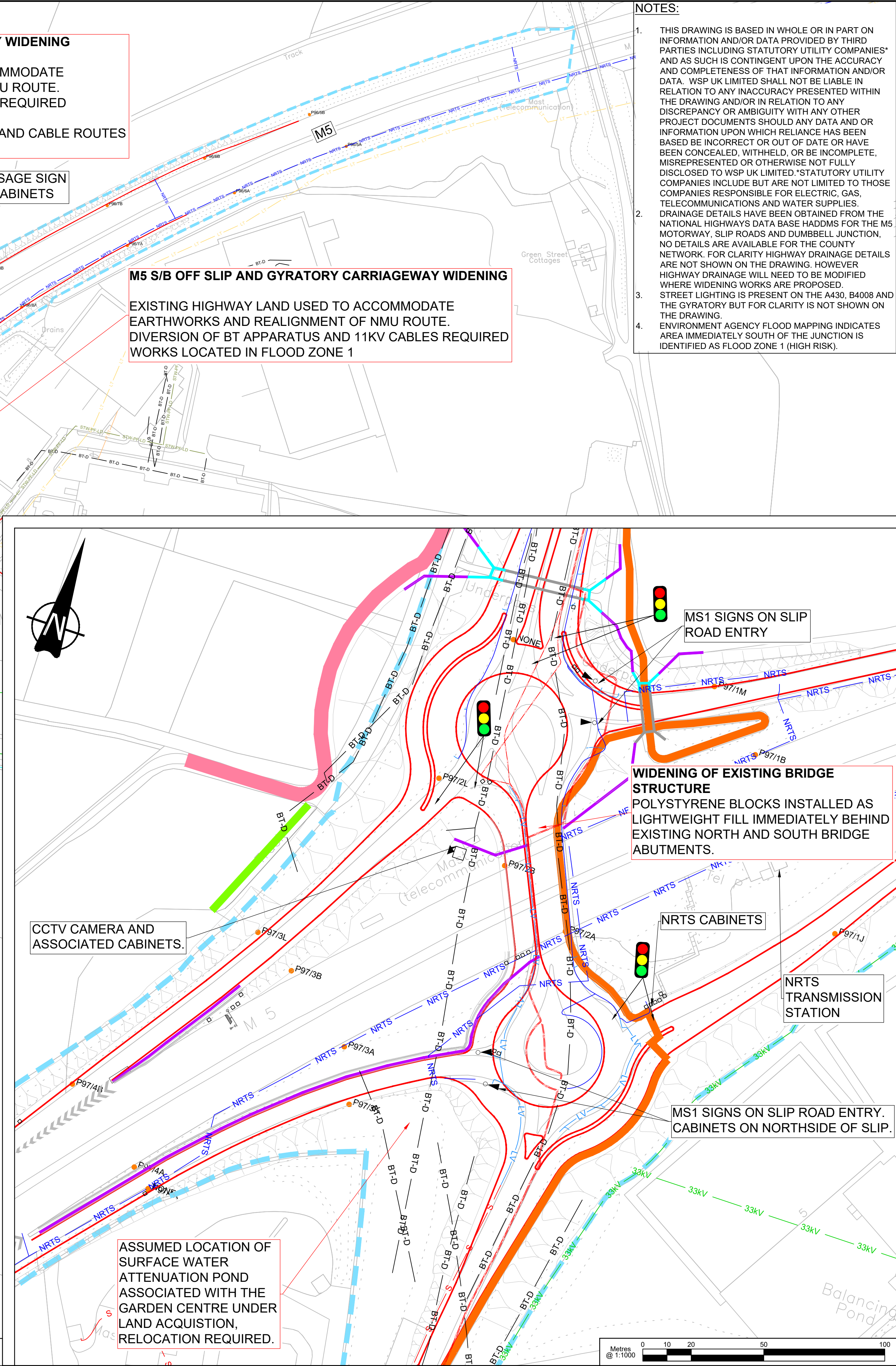
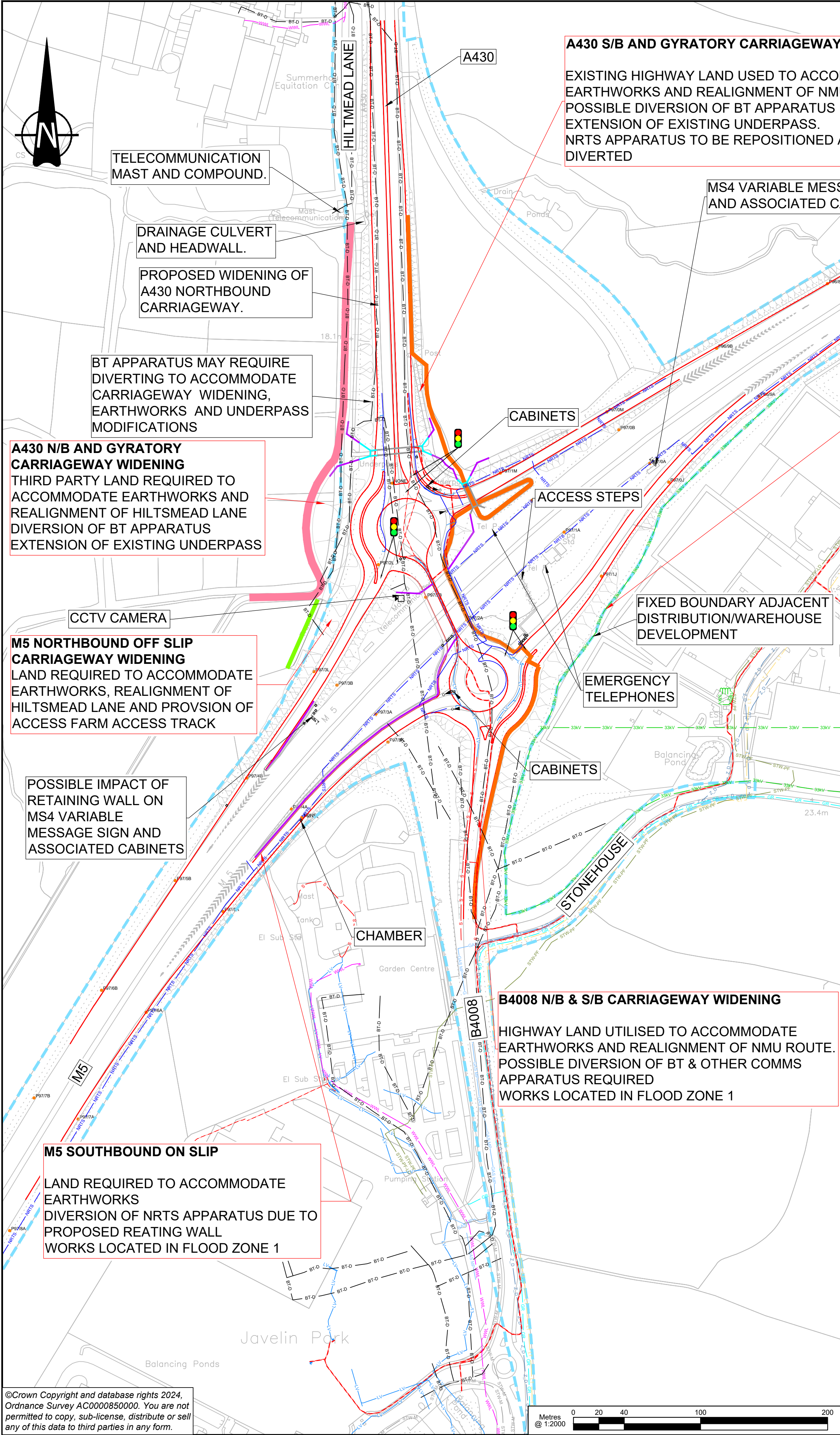
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GENERAL ARRANGEMENT  
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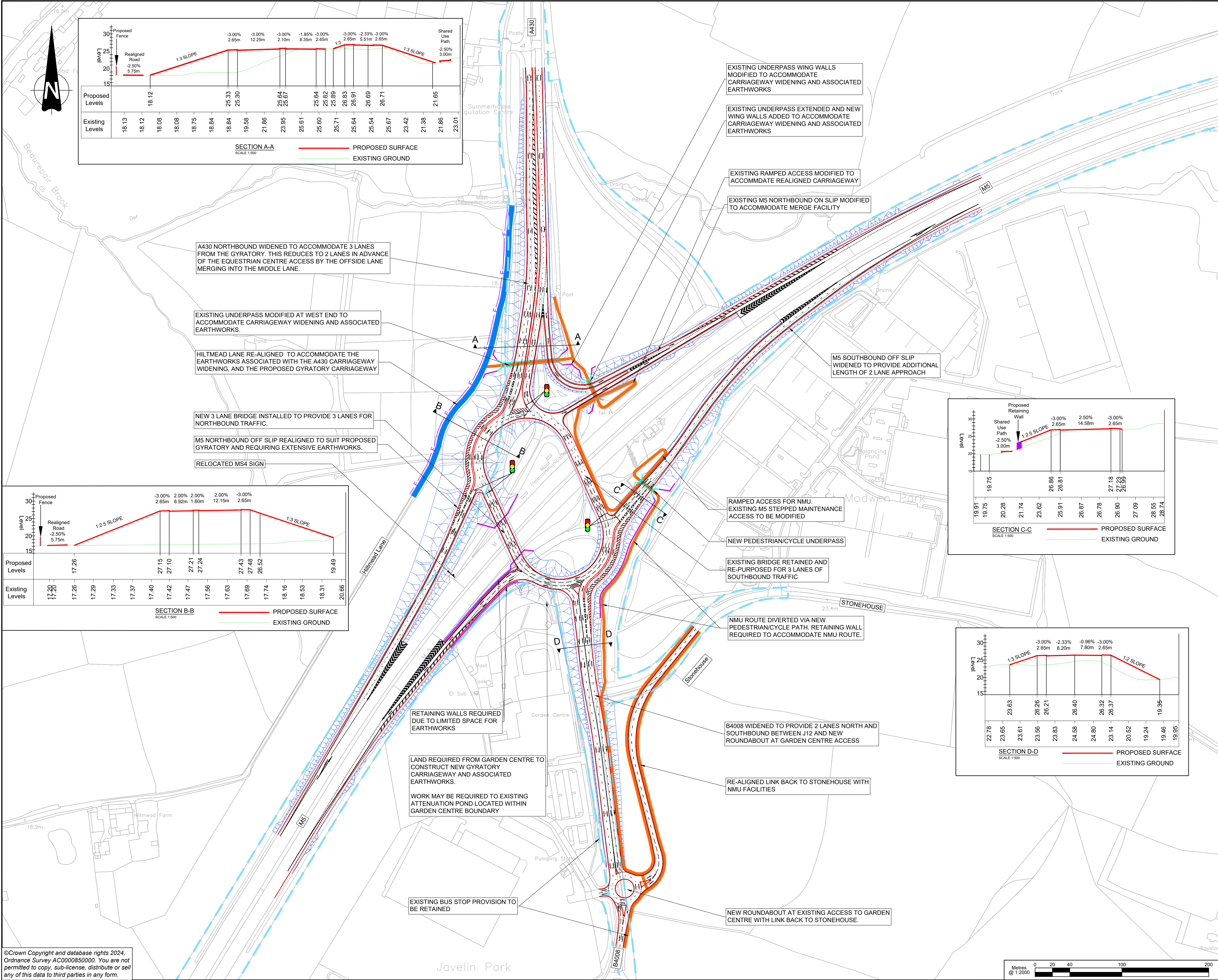


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  - DRAINAGE DETAILS HAVE BEEN OBTAINED FROM THE NATIONAL HIGHWAYS DATA BASE HADDMS FOR THE M5 MOTORWAY, SLIP ROADS AND DUMBBELL JUNCTION, NO DETAILS ARE AVAILABLE FOR THE COUNTY NETWORK. FOR CLARITY HIGHWAY DRAINAGE DETAILS ARE NOT SHOWN ON THE DRAWING. HOWEVER HIGHWAY DRAINAGE WILL NEED TO BE MODIFIED WHERE WIDENING WORKS ARE PROPOSED.
  - STREET LIGHTING IS PRESENT ON THE A430, B4008 AND THE GYRATORY BUT FOR CLARITY IS NOT SHOWN ON THE DRAWING.
  - ENVIRONMENT AGENCY FLOOD MAPPING INDICATES AREA IMMEDIATELY SOUTH OF THE JUNCTION IS IDENTIFIED AS FLOOD ZONE 1 (HIGH RISK).

- KEY:**
- BT-D BT DUCT
  - P-BT PROPOSED BT NETWORK
  - VM-UG-U VIRGIN MEDIA
  - VF-TP UNDERGROUND VODAFONE THIRD PARTY
  - VF-O UNDERGROUND VODAFONE OWNED
  - CF CITY FIBRE
  - WWL WALES & WEST LOW
  - 11KV 11KV UNDERGROUND
  - 33KV 33KV UNDERGROUND
  - LV LV
  - GR GIGACLEAR ROUTE
  - NNU NEOS NETWORK UNDERGROUND
  - S SERVICE
  - CL-N COIT INFRASTRUCTURE NETWORK
  - STW-PF-LD SEVERN-TRENT-PRESSURE FOUL LATERAL DRAIN
  - STW-LD SEVERN-TRENT-PRESSURE FOUL
  - STW-M SEVERN-TRENT-WATER MAIN
  - GAS-MP GAS-MEDIUM PRESSURE
  - Z-D ZAYO DUCT
  - LT LUMEN TECHNOLOGIES
  - NRTS NRTS DUCT
  - CCTV CAMERA
  - MS4 VARIABLE MESSAGE SIGN
  - MS1 SIGN CABINETS
  - SIGNAL CONTROLLED JUNCTION.
  - HIGHWAY BOUNDARY
  - PROPOSED CARRIAGEWAY
  - PROPOSED ROAD MARKINGS
  - PROPOSED RETAINING WALL
  - REALIGNED HILTSMEAD LANE
  - PROPOSED SHARED USE PATH
  - FARM TRACK
  - PROPOSED EARTHWORK MARKER POSTS
  - XXX ITEMS IDENTIFIED AS SIGNIFICANT CONSTRAINTS

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- KEY:**
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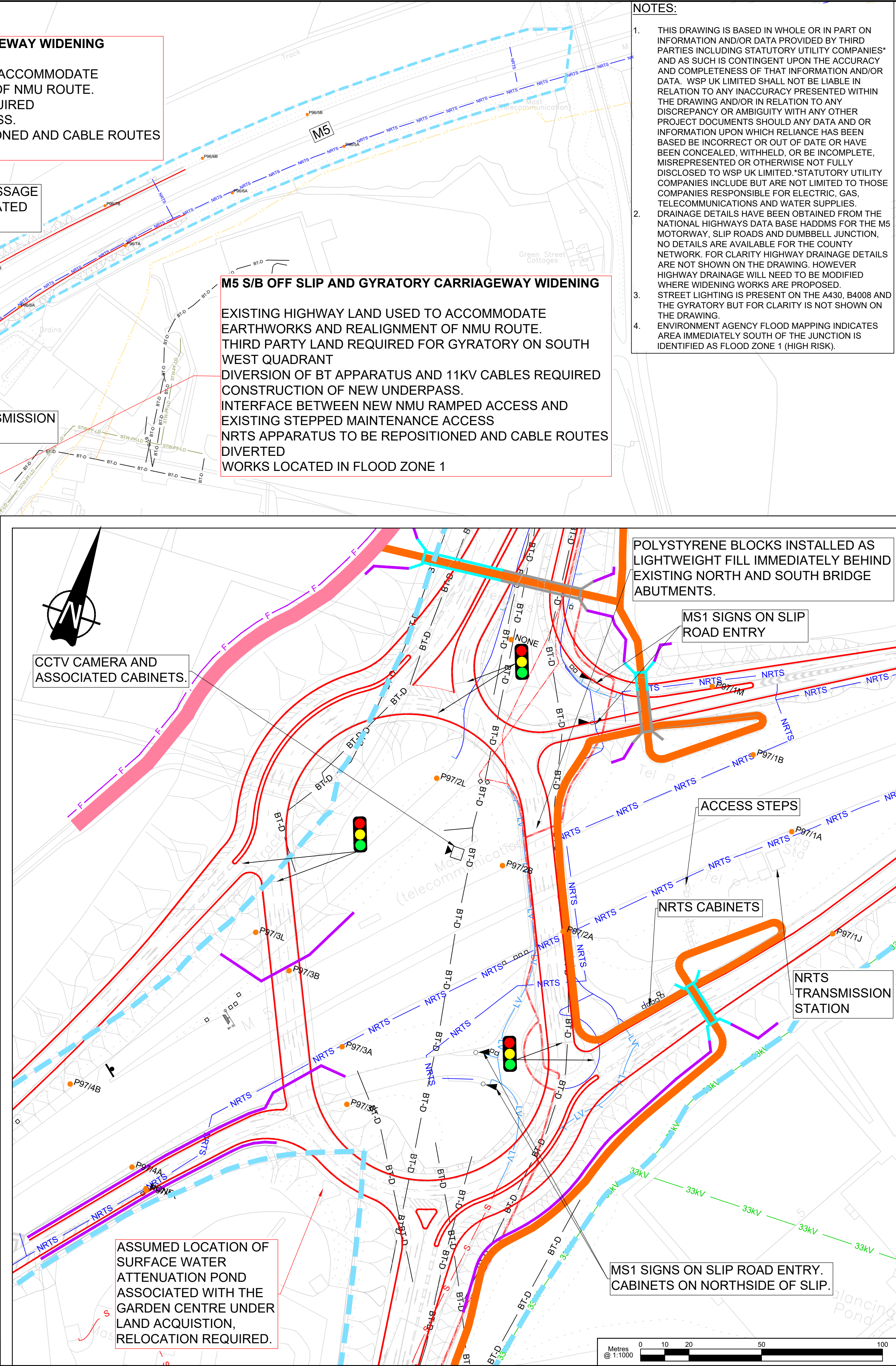
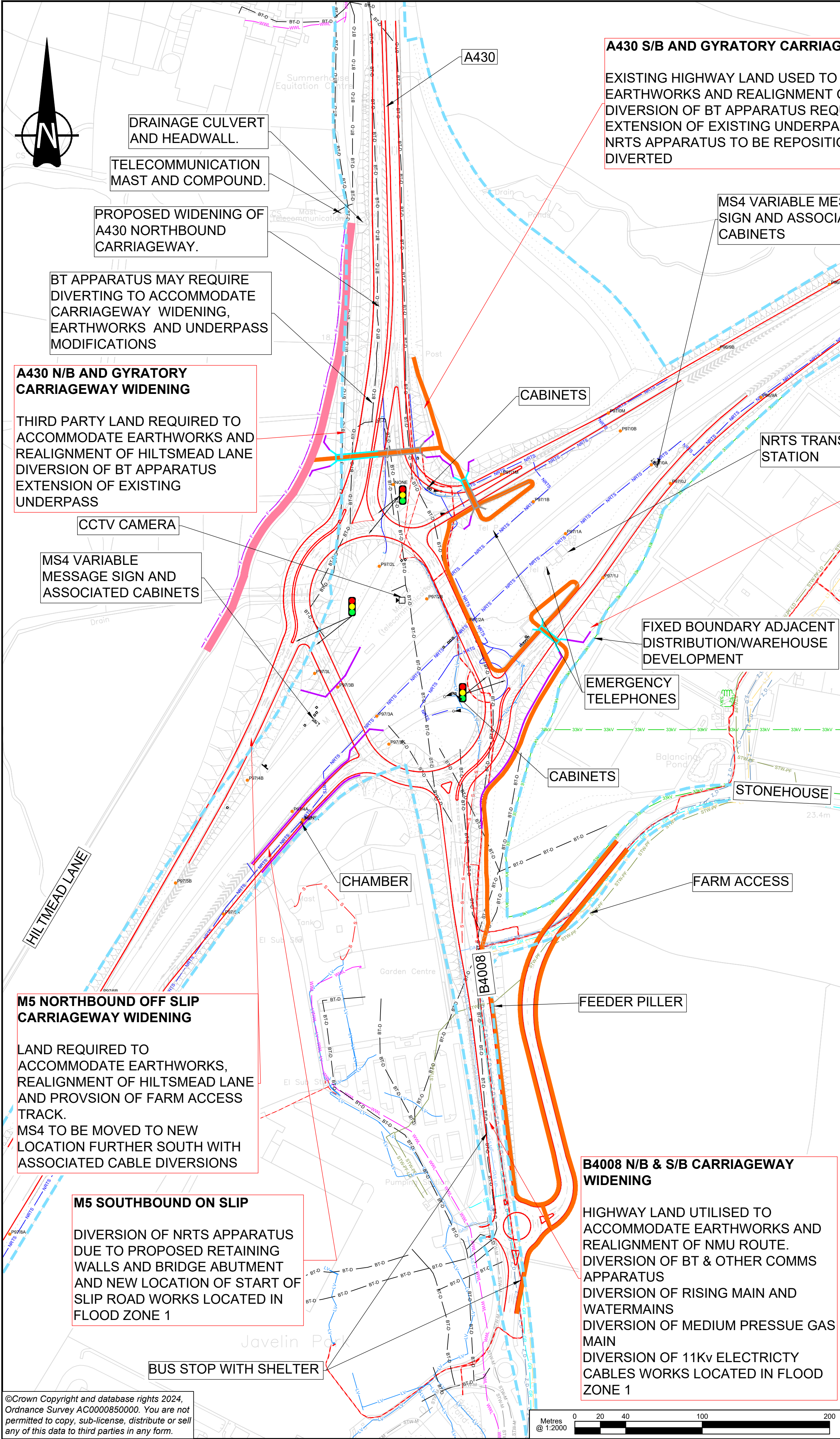
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TITLE: OPTION 3  
GENERAL ARRANGEMENT  
SHEET 01 OF 01

SCALE @ A1: 1:2000	CHECKED: PG	APPROVED: GH
PROJECT NO: 70123385	DESIGNED: RR	DRAWN: GM
DRAWING NO: 70123385-WSP-HGN-DR-CH-0030	DATE: 29/07/2024	REV: P01

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- NOTES:**
- THIS DRAWING IS BASED IN WHOLE OR IN PART ON INFORMATION AND/OR DATA PROVIDED BY THIRD PARTIES INCLUDING STATUTORY UTILITY COMPANIES\* AND AS SUCH IS CONTINGENT UPON THE ACCURACY AND COMPLETENESS OF THAT INFORMATION AND/OR DATA. WSP UK LIMITED SHALL NOT BE LIABLE IN RELATION TO ANY INACCURACY PRESENTED WITHIN THE DRAWING AND/OR IN RELATION TO ANY DISCREPANCY OR AMBIGUITY WITH ANY OTHER PROJECT DOCUMENTS SHOULD ANY DATA AND OR INFORMATION UPON WHICH RELIANCE HAS BEEN BASED BE INCORRECT OR OUT OF DATE OR HAVE BEEN CONCEALED, WITHHELD, OR BE INCOMPLETE, MISREPRESENTED OR OTHERWISE NOT FULLY DISCLOSED TO WSP UK LIMITED. \*STATUTORY UTILITY COMPANIES INCLUDE BUT ARE NOT LIMITED TO THOSE COMPANIES RESPONSIBLE FOR ELECTRIC, GAS, TELECOMMUNICATIONS AND WATER SUPPLIES.
  - DRAINAGE DETAILS HAVE BEEN OBTAINED FROM THE NATIONAL HIGHWAYS DATA BASE HADDMS FOR THE M5 MOTORWAY, SLIP ROADS AND DUMBBELL JUNCTION, NO DETAILS ARE AVAILABLE FOR THE COUNTY NETWORK. FOR CLARITY HIGHWAY DRAINAGE DETAILS ARE NOT SHOWN ON THE DRAWING. HOWEVER HIGHWAY DRAINAGE WILL NEED TO BE MODIFIED WHERE WIDENING WORKS ARE PROPOSED. STREET LIGHTING IS PRESENT ON THE A430, B4008 AND THE GYRATORY BUT FOR CLARITY IS NOT SHOWN ON THE DRAWING.
  - ENVIRONMENT AGENCY FLOOD MAPPING INDICATES AREA IMMEDIATELY SOUTH OF THE JUNCTION IS IDENTIFIED AS FLOOD ZONE 1 (HIGH RISK).

**KEY:**

- BT-D BT DUCT
- P-BT PROPOSED BT NETWORK
- VM-UG-U VIRGIN MEDIA
- VF-TP UNDERGROUND VODAFONE THIRD PARTY
- VF-O UNDERGROUND VODAFONE OWNED
- CF CITY FIBRE
- WWL WALES & WEST LOW
- 11KV 11KV UNDERGROUND
- 33KV 33HV UNDERGROUND
- LV LV
- GR GIGACLEAR ROUTE
- NNU NEOS NETWORK UNDERGROUND
- S SERVICE
- CL-N COIT INFRASTRUCTURE NETWORK
- STW-PF-LD SEVERN-TRENT-PRESSURE FOUL LATERAL DRAIN
- STW-PF SEVERN-TRENT-PRESSURE FOUL
- STW-LD SEVERN-TRENT-LATERAL DRAIN
- STW-M SEVERN-TRENT-WATER MAIN
- GAS-MP GAS-MEDIUM PRESSURE
- Z-D ZAYO DUCT
- LT LUMEN TECHNOLOGIES
- NRTS NRTS DUCT
- CCTV CAMERA
- MS4 VARIABLE MESSAGE SIGN
- MS1 SIGN
- CABINETS
- SIGNAL CONTROLLED JUNCTION.
- HIGHWAY BOUNDARY
- PROPOSED CARRIAGEWAY
- PROPOSED ROAD MARKINGS
- PROPOSED RETAINING WALL
- REALIGNED HILTSMEAD LANE
- PROPOSED SHARED USE PATH
- PROPOSED EARTHWORK
- MARKER POSTS
- XXX ITEMS IDENTIFIED AS SIGNIFICANT CONSTRAINTS

P01	29/07/2024	GM	FIRST ISSUE	PG	GH
REV	DATE	BY	DESCRIPTION	CHK	APP

DRAWING STATUS: S2 - FOR INFORMATION

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CLIENT: **Gloucestershire**  
COUNTY COUNCIL

SITE/PROJECT: M5 JUNCTION 12  
FEASIBILITY STUDY

TITLE: OPTION 3 CONSTRAINTS PLAN  
SHEET 01 OF 01

SCALE @ A1:	AS SHOWN	CHECKED:	PG	APPROVED:	GH
PROJECT NO:	70123385	DESIGNED:	RR	DRAWN:	GM
				DATE:	29/07/2024

DRAWING NO:	70123385-WSP-HGN-DR-CH-0130	REV:	P01
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