

Birmingham City Council

Report to Cabinet



19th March 2024

Subject: A34 WALSALL TO BIRMINGHAM SPRINT PHASE 2 – FULL BUSINESS CASE

Report of: Strategic Director of Place, Prosperity and Sustainability

Relevant Cabinet Member: Councillor Liz Clements – Transport

Relevant O &S Chair(s): Councillor Lee Marsham – Sustainability and Transport
Councillor Jack Deakin – Resources

Report author: Philip Edwards – Assistant Director, Transport and Connectivity
Tel: 07557 203167 Email: philip.edwards@birmingham.gov.uk

Are specific wards affected?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No – All wards affected
If yes, name(s) of ward(s): Perry Barr, Birchfield, Aston, Lozells, Newtown, Nechells, Ladywood		
Is this a key decision?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
If relevant, add Forward Plan Reference: 010763/2023		
Is the decision eligible for call-in?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Does the report contain confidential or exempt information?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If relevant, provide exempt information paragraph number or reason if confidential: Not applicable		

1 Executive Summary

1.1 This report provides an update on the A34 Walsall to Birmingham Sprint project on the Perry Barr corridor originally approved at Cabinet on 17th December 2019, with updated revenue costs reported to Cabinet on 17th March 2020, and seeks approval to the Full Business Case (FBC) for Phase 2 of the project. The scheme is delivered by Transport for the West Midlands (TfWM) on behalf of West Midlands Combined Authority (WMCA), with an estimated cost of £4.600m for delivery of Phase 2 measures within the Birmingham boundary. This report seeks authority for the City Council to approve highway measures within the city boundary in its capacity as Highway Authority and to enter into legal agreements with WMCA for them to deliver these works.

- 1.2 The procurement of the highway works will be carried out by WMCA, and they are also responsible for establishing the Sprint network including discussions with operators, installation of bus shelters, and development of ticketing and passenger information systems. It has been agreed that WMCA/TfWM will take financial responsibility for ongoing maintenance of highway measures resulting from the works. The maintenance of shelters and ticketing / information systems will be the responsibility of TfWM. The City Council will procure one bus lane enforcement (BLE) camera, funded by WMCA as part of the overall project. The City Council will be responsible for the on-going operation of the enforcement activity as detailed in Appendix A.

2 Recommendations

That Cabinet:

- 2.1 Acting on behalf of the City Council in its capacity as Highway Authority, notes the content of this report and approves the Full Business Case for A34 Walsall to Birmingham Sprint Phase 2 as set out in Appendix A, at a total scheme cost to WMCA of £4.600m, and authorises the Assistant Director Transport and Connectivity in consultation with the Cabinet Member for Transport to agree the final detail of the scheme with WMCA who are acting in their capacity as project promoter and funder.
- 2.2 Subject to WMCA having the necessary approvals and funding in place, approves the City Council entering into legal agreements with WMCA to allow the works to be carried out on the public highway within Birmingham, and for the legal agreement to be made without a bond being required from WMCA as detailed in paragraph 7.3.3.
- 2.3 Notes that following implementation, WMCA will be financially responsible for the ongoing maintenance resulting from the highway works at an estimated cost of £0.001m per year as detailed in Paragraph 7.3.8.
- 2.4 Notes the expenditure of fees and other costs for internal staff up to a value of £0.280m for the City Council to complete design reviews, legal agreements, traffic regulation orders and site inspections, and that the City Council will be reimbursed by WMCA based on actual costs rather than a fixed fee percentage, subject to an agreed cap on overhead rates of 15%.
- 2.5 Approves the installation of one further BLE camera in addition to the four reported in the original Cabinet report, at an estimated additional cost of £0.020m to be funded by WMCA as part of the overall project, and notes that following completion of the scheme the City Council will be responsible for the on-going operation of the BLE activity and the resultant income and expenditure including future maintenance obligations.
- 2.6 Authorise the Interim City Solicitor & Monitoring Officer (or their delegate) to negotiate, execute, seal and complete all necessary documentation to give effect to the above recommendations.

3 Background

Sprint Programme

- 3.1 The Sprint programme was originally promoted by WMCA through the HS2 Connectivity Package as part of the West Midlands Devolution Deal. The A34 Walsall to Birmingham route was one of the Sprint schemes proposed for accelerated delivery as part of the transport strategy to improve accessibility along the corridor.
- 3.2 The A34 Walsall to Birmingham Sprint scheme follows the corridor from Walsall to Birmingham via Scott Arms and Perry Barr, enhancing the public transport offer between those locations as well as connecting to the HS2 station at Curzon Street and other key transport nodes within the city centre. The total length of route is about 8.0km within the city boundary with a further 6.5km within the boundaries of Sandwell and Walsall. The original proposals within Birmingham were approved at Cabinet on 17th December 2019, while works within Sandwell and Walsall received separate approvals from those authorities.
- 3.3 A Strategic Outline Business Case was approved by WMCA in July 2017. TfWM completed preliminary design and public consultation in autumn 2018 and obtained their Outline Business Case approval from the WMCA Investment Board on 18th February 2019. An FBC for the full project, including a first phase of delivery, were approved at that Board on 14th February 2020.
- 3.4 The original cost estimate for the highway measures for A34 Sprint reported to Cabinet on 17th December 2019 was approximately £50.0m with £16.0m of that budget allocated to highway works within the Birmingham boundary. However at that time TfWM only had £32.1m available and so the scheme originally reported to Cabinet was split into two phases, with Phase 1 delivered ahead of the Commonwealth Games with the funding which WMCA then had available, and Phase 2 delayed until further funding could be secured.
- 3.5 WMCA have now secured a further £56.0m to carry out a Phase 2 of works on the A34 and A45 Sprint corridors, through central government's City Region Sustainable Transport Settlement (CRSTS) capital grants. Following this, an FBC Refresh covering Sprint Phase 2 was approved by the WMCA Board on 18th March 2022. Package E of TfWM's programme covers works in Birmingham and some minor works in Sandwell. Package G covers works in Walsall.
- 3.6 £4.600m of the CRSTS funding has been allocated to A34 Phase 2 measures within the Birmingham boundary. The remainder will be allocated to A34 measures in Sandwell and Walsall, works on the A45 Corridor, and to Sprint connections and associated measures in the city centre (from Lancaster Circus to Bordesley Circus). The A45 measures will be subject to a separate report on the same agenda for Cabinet, while the city centre proposals are still in development and will be subject to a separate governance report in due course.
- 3.7 It was originally expected that the total project would require the removal of thirty trees. The tree mitigation strategy was approved with the original Cabinet report,

this included future maintenance cost and a net gain in canopy cover. Following changes to the scheme, the overall impact on trees will now be less than thirty.

- 3.8 Phase 1 of the Sprint project was completed in June 2022, with the introduction of new bus lanes, traffic signal priority, and bus shelters. The initial outcomes from the project have met the predicted benefits – bus reliability on the A34 has improved by 31%, peak time bus journey have reduced by up to 6 minutes, and passenger satisfaction with the new bus shelters is 95%. These improvements benefit all bus passengers on the corridor, which represents in excess of 10 million passenger trips per year. Phase 2 will provide further benefits to give additional journey time improvements in key locations and complete the installation of Sprint shelters on the corridor.
- 3.9 The full Sprint project will include the introduction of zero-emission articulated vehicles. The articulated tram-like vehicles will allow for additional benefits to be achieved due to higher capacity, quicker boarding and alighting, improved accessibility, and enhanced safety. Funding to support the introduction of these vehicles on the network was secured by Transport for West Midlands as part of their Zero Emission Bus Regional Area (ZEBRA) award from the Department for Transport. It is currently expected that these vehicles will be introduced when Phase 2 is complete.

A34 Sprint Phase 2

- 3.10 Phase 2 incorporates some elements which could not be afforded as part of the original scheme, including junction changes to improve bus journey times at Birchfield Road / Trinity Road / Heathfield Road and at New Town Row / New John Street West, along with further bus shelter upgrades and new cycle parking 'M' stands on the footways at ten bus shelter locations (see plans in Appendix F). However, it has been decided not to proceed with further widening or roadspace reallocation on Walsall Road between Perry Barr and Scott Arms which was included in the Cabinet report approved on 17th December 2019, as it is felt that the costs could not be justified in terms of the further benefits which could be gained over and above those already achieved from the measures delivered before the Commonwealth Games. Avoiding further works on Walsall Road also retains roadspace for a potential future extension to the segregated cycling route on the corridor, to take it from Perry Barr to Scott Arms.
- 3.11 The New Town Row junction changes will extend the northbound and southbound bus lanes in this location and benefit over 80 buses per hour whilst all existing traffic and cycle movements will be retained. However, there will be a reduction in capacity for general traffic travelling straight along the A34 to and from the city centre.
- 3.12 The Heathfield Road junction changes will lengthen the existing bus lane and increase the capacity for northbound general traffic, improving journey times for all users. In the southbound direction parking will be retained, but there will be a

change in the hours of operation for loading to allow the bus lane to operate 7am to 7pm.

- 3.13 Four of the new Sprint shelters will be installed on the site of existing shelters. The Rodway Close/Newtown Baths (northbound) shelter will be introduced in a new location to improve the catchment of the stop. The Old Walsall Road (southbound) shelter will be introduced in a new location to improve the waiting environment for bus users and to facilitate multi-door boarding and alighting. Other than the two shelter relocations, the proposals do not lead to the removal of any existing bus stops. However, TfWM are carrying out a wider network review with operators, which could lead to some bus stops being relocated or removed.
- 3.14 It is not expected that there will be any detriment to human health as it is not expected that the proposals will have a significant impact on noise and vibration or on air quality. An air quality impact assessment was completed for the initial business case and concluded that the proposed development meets the objectives set out in the City Council's Plan 2018-2022 (as updated in 2019). The assessment has been reviewed against the updated 2022-26 plan and is still valid.
- 3.15 Camera enforcement is required to prevent and discourage general traffic from using the bus lanes, which disrupts services and reduces journey time reliability. One BLE camera is proposed, in addition to those approved in the original Cabinet report. This will be located on the outbound carriageway approaching the Heathfield Road junction. The camera will be procured by the City Council using its existing framework agreement for that purpose, including the supply and installation of camera equipment and associated back-office infrastructure, and the first year's maintenance and support. Installation of poles and electrical supply for the cameras will be carried out by WMCA's main works contractor. Following completion of the scheme the City Council will be responsible for the ongoing operation of the enforcement activity and the resultant income and expenditure including future maintenance obligations.
- 3.16 WMCA will be working in partnership with the bus operators on the Sprint corridors on wider elements such as procuring new vehicles. The main operator will contribute the majority of the cost of providing new vehicles, with WMCA contributing the extra-over cost of zero-emission vehicles. The exact type of vehicles is still to be determined.
- 3.17 TfWM have developed an Enhanced Partnership with local authorities and bus operators for the operation of the Sprint network and other key bus routes. Any bus specific measures, ie bus lanes or bus gates, will be incorporated into the Enhanced Partnership through a Variation once the works are complete and the relevant Traffic Regulation Orders (TROs) sealed.
- 3.18 The calculated benefits of the scheme remain as in WMCA's original business case with a Benefit Cost Ratio (BCR) of 2.05, with an adjusted BCR of 2.74 if wider economic benefits are taken into account, which represents 'High' value for money. Further details are given in Section C3 of the appended FBC.

4 Options Considered and Recommended Proposal

- 4.1 Options considered as part of the original scheme development were outlined as part of the previous FBC approved at Cabinet on 17th December 2019.
- 4.2 The first phase of A34 Sprint was completed prior to the Commonwealth Games and already provides significant benefits to buses. The scheme could be left as it is, without undertaking the further Phase 2 works, and the CRSTS funding reallocated to other corridors. However, modelling and analysis shows there are further benefits which can be obtained through the targeted interventions currently proposed.
- 4.3 The original proposals for Sprint had further widening and roadspace reallocation on Walsall Road, over and above that which has already been completed. This could be added back into the Phase 2 measures. However, it is felt that these would not give sufficient further benefits to justify the significant cost particularly as recent increases in construction costs mean that there are pressures on the available funding. Further work on Walsall Road may also make it more difficult to deliver an extension to the segregated cycle route on the corridor in future.

5 Consultation

- 5.1 The initial Sprint public consultation took place in autumn 2018, with subsequent targeted engagement in Perry Barr in autumn 2019 following changes to the scheme. The Phase 2 proposals have been subject to two separate consultations. The first consultation focussed on the introduction of the six new shelters, this ran from December 2022 to January 2023. Over half (56%) of the 260 responses fully support the replacement of the existing shelters with the proposed new shelters. 39% partially supported the replacements and 5% did not support this action.
- 5.2 The second consultation focussed on the intervention detail and ran from February 2023 to March 2023. The consultation included an online webinar and four drop in events for residents. Details of the outcome are given in WMCA's report contained in Appendix E, which covers both the A34 and A45 corridors.
- 5.3 For the A34 corridor (excluding not applicable answers for respondents who don't travel regularly along the A34) 54% of respondents use a car as their main form of transport with 39% using buses. 31% of respondents (excluding those offering no answer) really dislike the Phase 2 proposals for the A34 with 13% really liking the proposals. 54% didn't know or had no opinion. Of the 19 comments that were received, 16 were negative with 3 neither negative nor positive. 9 of the negative comments were specifically about the proposed move of one Walsall Road bus stop to a new location.

6 Risk Management

6.1 Scheme level Risk Registers have been established through a series of design, commercial and procurement related workshops held by the WMCA. Identification, analysis and evaluation of risks incorporates input from key stakeholders including the City Council and other local authorities. The risk register is managed and administered by the WMCA and accessible to partnering local authorities, an extract of key programme related risks can be found in Appendix C. These risks include:

- Unforeseen technical and/or financial issues that impact the ability of the operator to deliver articulated vehicles;
- Low-emission vehicles not delivered or not delivered on time (Dec 2024);
- Range and performance of electric articulated vehicles will be insufficient for requirements of Sprint;
- Communications / engagement activities must meet requirements as agreed with local authorities;
- Opposition to scheme including objections and legal challenge to Traffic Regulation Orders;
- Utility diversions take longer than planned;
- Disruption to road users during the construction stage.

7 Compliance Issues:

7.1 **How are the recommended decisions consistent with the City Council's priorities, plans and strategies?**

7.1.1 The scheme supports the policy objectives outlined in the City Council's Corporate Plan 2022-2026. This creates a vision to build '*a Bolder Brighter Birmingham*' with outcomes of '*increased levels of walking and cycling*' and '*improved transport infrastructure*'.

7.1.2 The proposals also support the objectives of the Birmingham Development Plan (BDP) 2031, the Birmingham Transport Plan, the 'Birmingham Bus Statement – Supporting Recovery' published in July 2020, and the West Midlands Strategic Transport Plan.

7.1.3 The measures support the Additional Climate Change Commitments including the aspiration for the City Council to be net zero carbon by 2030, as agreed by Cabinet on 30th July 2019, following the declaration of a Climate Change Emergency passed by full City Council on 11th June 2019.

7.1.4 The scheme will support central government policies including the Transport Decarbonisation Plan published in July 2021, the Levelling Up White Paper published in February 2022, and 'Bus Back Better – National Bus Strategy for England. published in March 2021.

7.2 Legal Implications

- 7.2.1 In order to deliver the West Midlands devolution deal, the WMCA through powers devolved to the Mayor of the West Midlands, were appointed to take on responsibility for a devolved and consolidated transport budget, and for a key route network. The order makes provision for identifying specific local authority roads as Combined Authority roads and to create a statutorily defined West Midlands Key Route Network (KRN).
- 7.2.2 The KRN provides WMCA with powers to exercise the functions of the constituent councils as local highway authorities specified in Section 8 of the Highways Act 1980. In turn, this allows WMCA to enter into agreements with local highway authorities and strategic highways companies in order to carry out certain works.
- 7.2.3 WMCA will enter into a legal agreement with the City Council and Sandwell and Walsall under Section 8 and Section 278 of the Highways Act, which will allow WMCA and their contractors to work on the public highway. Section 8 will apply to locations on the KRN and Section 278 will apply elsewhere. The City Council will retain Network Management Duty, including processing of permanent and temporary TROs.
- 7.2.4 The locations of highway works are within areas of Highway Maintainable at Public Expense. Planning and any other consents or approvals required for the scheme are the responsibility of WMCA.
- 7.2.5 The City Council in carrying out transportation, highway and infrastructure related work will do so under the relevant primary legislation comprising the Town and Country Planning Act 1990, Highways Act 1980, Road Traffic Act 1974, Road Traffic Regulation Act 1984, Traffic Management Act 2004, Traffic Act 2000, and other related regulations, instructions, directives, and general guidance.
- 7.2.6 Section 1 of the Localism Act 2011 contains the Council's general power of competence and Section 111 of the Local Government Act 1972 contains the Council's ancillary financial and expenditure powers in relation to the discharge of its functions.
- 7.2.7 BLE cameras are installed in accordance with the 'Provisional Guidance on bus lane (including tramway) enforcement in England outside London' (2005, revised 2008) and 'A Code of Practice for Bus Lane Camera Enforcement' (March 2007) and the 'Surveillance Camera Code of Practice' (June 2013).
- 7.2.8 The Civil Enforcement of Road Traffic Contraventions (Approved Devices, Charging Guidelines and General Provisions) (England) Regulations 2022 are also directly relevant to this report.

7.3 Financial Implications

Capital Costs

- 7.3.1 The original cost estimate for the highway measures for A34 Sprint reported to Cabinet on 17th December 2019 was approximately £50.0m with £16.0m of that budget allocated to highway works within the Birmingham boundary. However, at that time TfWM only had £32.1m available and so the scheme originally reported to Cabinet was split into two phases, with Phase 1 delivered ahead of the Commonwealth Games with the funding which WMCA then had available, and Phase 2 delayed until further funding could be secured.
- 7.3.2 WMCA have now secured a further £56.0m to carry out a Phase 2 of works on the A34 and A45 Sprint corridors, through central government's City Region Sustainable Transport Settlement (CRSTS) capital grants. It is estimated that the cost of delivering the further highway measures proposed for A34 Phase 2 within the Birmingham boundary will be £4.600m which will be the responsibility of WMCA to fund from the CRSTS allocation. A contingency sum of £1.000m has been incorporated into the scheme costs following completion of the Quantified Risk Assessment. There will be no call on City Council funding for delivery of these measures.
- 7.3.3 These works will be subject to a legal agreement between the City Council and WMCA. This legal agreement will not be subject to a Bond from WMCA, as they are a public-sector body and the scheme is predominantly public-funded. In the unlikely event of non-performance by WMCA then the legal agreement would give the City Council power to step in and complete works. The City Council would have to underwrite the resulting costs initially but would be able to recover these costs from WMCA under the terms of the legal agreement.
- 7.3.4 £0.020m of initial development fees were approved by the Assistant Director, Transport and Connectivity on 12th December 2022. This covers officers working with TfWM on agreeing the designs, assisting with stakeholder engagement, and producing this FBC. These costs will be reimbursed by WMCA but are separate to the legal agreement for delivery.
- 7.3.5 City Council costs for the delivery stage are estimated to be £0.280m are for staff time for design reviews, site inspections, time spent in relation to the preparation of legal agreements and all costs in relation to the temporary and permanent traffic regulation orders. These costs will be reimbursed by WMCA under the terms of the legal agreement, with quarterly invoices submitted retrospectively by the City Council. As the majority of work will be under Section 8 rather than Section 278 terms, and the input required is different from that for private developer schemes, the City Council will be reimbursed based on actual costs incurred rather than

a fixed fee percentage. This will be subject to an agreed cap on overhead rates of 15%. This was approved at S151 Spend Control Board on the 31st January 2024.

- 7.3.6 There will be a further cost on the City Council of £0.020m for one BLE camera which will be procured by the City Council, including the first year's maintenance and support. This cost will be funded by WMCA via a grant-funding contribution which will be included in the overall legal agreement.

Revenue Implications

- 7.3.7 This project will create assets that will form part of the highway upon completion of the project; as such they will need to be maintained within the overall highway maintenance regime. As part of the City Council's obligations under the Highway Maintenance and Management Private Finance Initiative (HMMPFI) contract, Highways have been formally notified of the proposed changes to the highway inventory arising from this scheme. The works for Phase 2 relate to SSD No. 7018. Phase 1 was completed under SSD No. 5926 and TfWM have now handed as-built information for that phase to the City Council.
- 7.3.8 The estimated net highway maintenance costs for the newly created assets associated with the A34 Phase 2 Sprint Corridor is £0.001m per year. This value was previously approved as part of the overall revenue budget to be funded by BCC as detailed in the March 2020 Sprint update Cabinet report. It is estimated that the further measures within Phase 2 can be contained within the original Cabinet approved Highway Change budget allocation and there will be no further revenue commitment required for Highways Maintenance held within Corporate Policy contingency. In addition, It has been agreed that the £0.001m per year revenue costs following implementation of Phase 2 are now to be funded directly by WMCA.
- 7.3.9 The City Council will be responsible for ongoing camera enforcement operations, and income will be generated from Penalty Charge Notices (PCNs) issued as part of the enforcement regime. This income will be used in the first instance to cover the operational costs of enforcement including cameras, associated equipment and administration costs. Any surpluses generated will be used in line with applicable regulations. The table in Section E1 of Appendix A shows a summary of the estimated income and expenditure for one additional camera, based upon experience from BLE schemes already in operation within the city. This shows that over the first five years of operation of the additional camera, income from PCNs is estimated at £0.234m with operational and other costs estimated at £0.116m, leaving a retained surplus of £0.118m. Any surpluses will be used in accordance with applicable regulations, which is in line with the strategy for utilising the sums generated from bus lane enforcement as outlined in the 'Transportation and Highways Capital Programme 2023/24

to 2028/29 – Annual Programme Update’ report approved at Cabinet on 21st March 2023.

7.4 Procurement Implications (if required)

- 7.4.1 The supply and installation with first year maintenance and support of the BLE camera and associated equipment will be provided by Yunex Traffic Ltd under the City Council’s framework agreement. Digital and Customer Services will appoint a project manager to oversee the work, who will liaise with the relevant City Council and TfWM officers to arrange installation, testing, commissioning and handover to the operational teams.
- 7.4.2 The procurement of all other elements of the works and associated requirements for the operation of Sprint is the responsibility of WMCA. There are no procurement implications for the City Council from these elements.
- 7.4.3 The City Council’s Works specifications will be incorporated into the tender documentation and subsequent contract to ensure compliance with the PFI contract.

7.5 Human Resources Implications (if required)

- 7.5.1 The scheme is being managed by WMCA, and the City Council’s input will be undertaken using existing internal resources, with support from external consultants when required. There are no human resource implications for the City Council.

7.6 Public Sector Equality Duty

- 7.6.1 An Equality Assessment (EqA) was completed for the Sprint concept as part of the Cabinet Report in January 2018 (ref: EA002569). This did not identify any negative impact on protected characteristics as a result of the Sprint strategy and concluded that a full assessment was not required at that stage.
- 7.6.2 A scheme-specific EqA for the A34 Walsall to Birmingham Sprint scheme was completed by WMCA in conjunction with the City Council and other local authority partners as part of the original scheme development in 2019, and is included as Appendix B. Officers from the City Council contributed to the assessment and agreed that all relevant factors have been identified and considered, and concurred with the conclusion that there will be either a neutral or positive impact on all protected characteristics, and that a further assessment is not required. The development of Phase 2 does not change these equalities implications.

8 Appendices

- 8.1 List of Appendices accompanying this report:
 - Appendix A – BCC Full Business Case

Appendix B – WMCA Equality Analysis

Appendix C – WMCA Risk Assessment

Appendix D – WMCA Environmental and Sustainability Assessment

Appendix E – WMCA Sprint Phase 2 Consultation Report

Appendix F – WMCA Scheme Plans

9 Background Documents

‘Sprint Bus Rapid Transit Network Development and Implementation Strategy’ – Report of the Corporate Director Economy to Cabinet, 24th January 2018.

‘A34 Walsall to Birmingham Sprint Outline Business Case’ – WMCA document, February 2019.

‘A34 Walsall to Birmingham Sprint – Full Business Case’ – Report of the Interim Director, Inclusive Growth to Cabinet, 17th December 2019.

‘A45 Birmingham to Airport and Solihull Sprint Full Business Case, Revised Sprint Tree Planting Strategy and A34 Revised Revenue Consequences’ – Report of the Interim Director, Inclusive Growth to Cabinet, 17th March 2020.

‘Sprint – A34 Walsall to Birmingham and A45 Birmingham to Airport and Solihull Phase 2 Funding Contribution’ – Report of the TfWM Director of Development and Delivery to the WMCA Board, 18th March 2022.

‘Transportation and Highways Capital Programme 2023/24 to 2028/29 – Annual Programme Update’ – Report of the Strategic Director of Place, Prosperity and Sustainability to Cabinet, 21st March 2023.

FULL BUSINESS CASE (FBC)

A. GENERAL INFORMATION

A1. General

Project Title <i>(as per Oracle)</i>	A34 WALSALL TO BIRMINGHAM SPRINT PHASE 2		
Oracle Code	L00119		
Portfolio / Committee	Transport Finance & Resources	Directorate	Place, Prosperity and Sustainability
Approved by Project Sponsor	Phil Edwards 13/02/2024	Approved by Finance Business Partner	Azhar Rafiq 09/02/2024

A2. Outline Business Case approval

This scheme is being promoted and funded by the West Midlands Combined Authority (WMCA) with support from the City Council and other partnering local authorities, and will be delivered on the WMCA's behalf by Transport for the West Midlands (TfWM).

The key principles of Sprint and agreement to progress the priority routes for the Commonwealth Games were approved by the City Council's Cabinet on 24th January 2018. TfWM gained Outline Business Case approval for A34 Sprint from the West Midlands Combined Authority (WMCA) Investment Board on 18th February 2019. A Full Business Case (FBC) for the full project, including a first phase of delivery, was approved at that Board on 14th February 2020.

An FBC for A34 Sprint was approved at Cabinet on 17th December 2019, and a package of work was completed prior to the Commonwealth Games in 2022. This new FBC covers a modified tranche of further measures which could not be delivered with the funding available for the original scheme.

As an Options Appraisal was completed as part of WMCA's Outline Business Case, the City Council has progressed internal governance directly to FBC.

A3. Project Description

Summary

This report represents the FBC for Phase 2 of the A34 Walsall to Birmingham Sprint project. The scheme is delivered by Transport for the West Midlands (TfWM) on behalf of West Midlands Combined Authority (WMCA), with an estimated cost of £4.600m including contingencies. The covering executive report seeks authority for the City Council to approve highway measures within the city boundary in its capacity as Highway Authority and to enter into legal agreements with WMCA for the delivery of those works.

The procurement of the highway works will be carried out by WMCA, and they are also responsible for establishing the Sprint network including discussions with operators, installation of bus shelters, and development of ticketing and passenger information systems.

WMCA/TfWM will take responsibility for ongoing maintenance of highway measures resulting from the works. The maintenance of shelters and ticketing / information systems will also be the responsibility of TfWM.

Background

The Sprint programme was originally promoted by WMCA through the HS2 Connectivity Package as part of the West Midlands Devolution Deal. The A34 Walsall to Birmingham route was one of the Sprint schemes proposed for accelerated delivery as part of the transport strategy for the Commonwealth Games in 2022. The key principles of Sprint and agreement to progress the priority routes for the Commonwealth Games were approved by Cabinet on 24th January 2018.

The A34 Walsall to Birmingham Sprint scheme follows the corridor from Walsall to Birmingham via Scott Arms and Perry Barr, enhancing the public transport offer between those locations as well as connecting to the HS2 station at Curzon Street and other key transport nodes within the city centre. The total length of route is about 8.0km within the city boundary with a further 6.5km within the boundaries of Sandwell and Walsall. The original proposals within Birmingham were approved at Cabinet on 17th December 2019, while works within Sandwell and Walsall received separate approvals from those authorities.

A Strategic Outline Business Case was approved by WMCA in July 2017. TfWM completed preliminary design and public consultation in autumn 2018 and obtained their Outline Business Case approval from the WMCA Investment Board on 18th February 2019. An FBC for the full project, including a first phase of delivery, were approved at that Board on 14th February 2020.

The original cost estimate for the highway measures for A34 Sprint reported to Cabinet on 17th December 2019 was approximately £50.0m with £16.0m of that budget allocated to highway works within the Birmingham boundary. However at that time TfWM only had £32.1m available and so the scheme originally reported to Cabinet was split into two phases, with Phase 1 delivered ahead of the Commonwealth Games with the funding which WMCA then had available, and Phase 2 delayed until further funding could be secured.

WMCA have now secured a further £56.0m to carry out a Phase 2 of works on the A34 and A45 Sprint corridors, through central government's City Region Sustainable Transport Settlement (CRSTS) capital grants. Following this, an FBC Refresh covering Sprint Phase 2 was approved by the WMCA Board on 18th March 2022. Package E of TfWM's programme covers works in Birmingham and some minor works in Sandwell. Package G covers works in Walsall.

£4.600m of the CRSTS funding has been allocated to delivery of the A34 Phase 2 measures within the Birmingham boundary. The remainder will be allocated to A34 measures in Sandwell and Walsall, works on the A45 Corridor, and to Sprint connections and associated measures in the city centre (from Lancaster Circus to Bordesley Circus). The A45 and city centre measures are still in development and will be subject to separate Cabinet reports in due course.

Delivery Strategy

Works will be delivered by WMCA using legal agreements with the City Council along with Sandwell and Walsall councils under Section 8 and Section 278 of the Highways Act, which will allow WMCA and their contractors to work on the public highway.

WMCA is responsible for the delivery of this scheme and will procure a main contractor through an open 'invitation to tender' process. The City Council and the other local authorities will be part of the quality evaluation panel.

WMCA will have responsible for establishing the Sprint network including discussions with operators, installation of bus shelters, and development of ticketing and passenger information systems.

The City Council will procure one Bus Lane Enforcement (BLE) camera, in addition to the four approved in the original FBC, funded by WMCA as part of the overall project.

Scheme Details

Phase 2 incorporates some elements which could not be afforded as part of the original scheme, including junction changes to improve bus journey times at Birchfield Road / Trinity Road / Heathfield Road and at New Town Row / New John Street West, along with further bus shelter upgrades and new cycle parking 'M' stands on the footways at ten bus shelter locations (see plans in Appendix F). However, it has been decided not to proceed with further widening or roadspace reallocation on Walsall Road between Perry Barr and Scott Arms which was included in the Cabinet report approved on 17th December 2019, as it is felt that the costs could not be justified in terms of the further benefits which could be gained over and above those already achieved from the measures delivered before the Commonwealth Games. Avoiding further works on Walsall Road also retains roadspace for a potential future extension to the segregated cycling route on the corridor, to take it from Perry Barr to Scott Arms.

The New Town Row junction changes will extend the northbound and southbound bus lanes in this location and benefit over 80 buses per hour whilst all existing traffic and cycle movements will be retained. However, there will be reduction in capacity for general traffic travelling straight along the A34 to and from the city centre.

The Heathfield Road junction changes will lengthen the existing bus lane and increase the capacity for northbound general traffic, improving journey times for all users. In the southbound direction parking will be retained, but there will be a change in the hours of operation for loading to allow the bus lane to operate 7am to 7pm.

Four of the new Sprint shelters will be installed on the site of existing shelters. The Rodway Close/Newtown Baths (northbound) shelter will be introduced in a new location to improve the catchment of the stop. The Old Walsall Road (southbound) shelter will be introduced in a new location to improve the waiting environment for bus users and to facilitate multi-door boarding and alighting. Other than the two shelter relocations, the proposals do not lead to the removal of any existing bus stops. However, TfWM are carrying out a wider network review with operators, which could lead to some bus stops being relocated or removed.

It is not expected that there will be any detriment to human health as it is not expected that the proposals will have a significant impact on noise and vibration or on air quality. An air quality impact assessment was completed for the initial business case and concluded that the proposed development meets the objectives set out in the City Council's Plan 2018-2022 (as updated in 2019).

Camera enforcement is required to prevent and discourage general traffic from using the bus lanes, which disrupts services and reduces journey time reliability. One BLE camera is proposed, in addition to those approved in the original Cabinet report. This will be located on the outbound carriageway approaching the Heathfield Road junction. The camera will be procured by the City Council using its existing framework agreement for that purpose, including the supply and installation of camera equipment and associated back-office infrastructure, and the first year's maintenance and support. Installation of poles and electrical supply for the cameras will be carried out by WMCA's main works contractor. Following completion of the scheme the City Council will be responsible for the ongoing operation of the enforcement activity and the resultant income and expenditure including future maintenance obligations.

WMCA will be working in partnership with the bus operators on the Sprint corridors on wider elements such as procuring new vehicles. The main operator will contribute the majority of the cost of providing new vehicles, with WMCA contributing the extra-over cost of zero-emission vehicles. The exact type of vehicles is still to be determined. These measures will support the Enhanced Partnership, which commits bus operators to the future introduction of zero emission buses on the corridor.

A4. Scope

This FBC covers Phase 2 of the A34 Walsall to Birmingham Sprint project, including changes to the scope of works since the original approval at Cabinet on 17th December 2019.

A5. Scope Exclusions

Works delivered before the Commonwealth Games were covered by the original FBC, approved at Cabinet on 17th December 2019.

There is separate governance for the A45 Birmingham to Airport Sprint project, and for a further package of measures in the city centre to better link the A34 and A45 corridors for public transport.

B. STRATEGIC CASE

B1. Project Objectives and Outcomes

Existing Situation and Issues

Bus Rapid Transit – or Sprint – is an enhanced bus service with dedicated bus lanes which will provide priority for public transport through areas of congestion, making journey times more dependable. The A34 Walsall to Birmingham Sprint scheme forms a significant part of the Metropolitan Rail and Rapid Transit Network, as outlined in the West Midlands Strategic Transport Plan - Movement for Growth. This network is based on suburban rail, light rail, tram-train, very light rail and 'Sprint' bus rapid transit lines running on suitable

routes to create one single network. Sprint will be integrated with local bus services and underpinned by passenger information, promotion and ticketing.

The vehicles operating on the Sprint routes will offer passengers a level of service and comfort similar to a tram, with off-board ticketing, multiple-door boarding, wheelchair and pushchair access, free wi-fi, air conditioning, as well as on-board audio-visual announcements and travel information.

Key objectives of Sprint are as follows:

- To facilitate the West Midlands growth agenda in the efficient and sustainable way, and to give commuters reliable and efficient modes of public transport.
- To facilitate a more equitable transport system, linking communities together and give additional opportunities to travel.
- To reduce travel times and congestion at peak times and improves journey time reliability.
- To increase in public transport patronage – the patronage forecast and modal shift for Sprint will help reduce highway congestion.
- Reducing general levels of traffic and modernising the bus fleet would lead to reductions in noise, air pollution and greenhouse gases.
- Other bus services will also benefit from the additional bus priority.

City Council Objectives

The scheme supports the policy objectives outlined in the City Council's Corporate Plan 2022-2026. This creates a vision to build '*a Bolder Brighter Birmingham*' with outcomes of '*increased levels of walking and cycling*' and '*improved transport infrastructure*', including priorities to:

- *Support inclusive economic growth*
- *Make the city safer*
- *Encourage and enable physical activity and healthy living*
- *Improve air quality*
- *Continue on the Route to Net Zero*

The proposals also support the objectives of Birmingham Development Plan (BDP) 2031 including:

- *'To provide high quality connections throughout the city and with other places including encouraging the increased use of public transport, walking and cycling'*.
- *'To create a more sustainable city that minimises its carbon footprint'*.
- *'To encourage better health and wellbeing'*.

The measures will also support the key principles of the Birmingham Transport Plan (November 2021), in particular one of the four principles of the Birmingham Transport Plan is 'Reallocating Road Space' whereby the allocation of road space will change away from single occupancy private cars to support the delivery of a public transport system fit for a global city, fundamentally changing the way that people and goods move around the city.

A34 Sprint is also a named scheme in the 'Birmingham Bus Statement – Supporting Recovery' published in July 2020.

The scheme supports the Additional Climate Change Commitments including the aspiration for the City Council to be net zero carbon by 2030, as agreed by Cabinet on 30th July 2019, following the declaration of a Climate Change Emergency passed by full City Council on 11th June 2019.

Combined Authority Objectives

The measures will support policies within the West Midlands Strategic Transport Plan:

- Economic Growth and Economic Inclusion: *'To accommodate increased travel demand by ... new sustainable transport capacity' and 'to improve connections to areas of deprivation'.*
- Population Growth and Housing Development: *'To improve connections to new housing ... primarily through sustainable transport connections'.*
- Environment: *'To help tackle climate change by ensuring a large decrease in greenhouse gases from the ... area's transport system'.*
- Public Health: *'To significantly increase the amount of active travel' and 'to assist with the reduction of health inequalities'.*
- Social Well-Being: *'to improve the accessibility of shops, services and other desired destinations for socially-excluded people'.*

B2. Project Deliverables

The initial A34 Sprint measures delivered between 2020 and 2022 included carriageway widening to provide new bus lanes, parking and loading restrictions to improve journey speeds, and bus lane enforcement cameras. The original FBC approved in December 2019 forecast that 4,300m of new bus lanes would be delivered. However, because of cost increases the project was only able to deliver 3,300m of bus lane within Birmingham with the funding available.

It was originally envisaged that the new funding from CRSTS would allow the remainder of the bus lanes to be delivered before CTSTS funding expires in 2027. However, it has now been determined by TfWM that the cost of widening and roadspace reallocation would not be justified by the further benefits that could be obtained. Therefore Phase 2 now focuses on two junction improvements at significant congestion spots, at the junctions of Birchfield Road / Trinity Road / Heathfield Road and of New Town Row and New John Street West (A4540 Ring Road), along with further bus shelter upgrades and new cycle parking.

One BLE camera will be installed, in addition to those approved in the original FBC.

It was originally expected that the total project would require the removal of thirty trees. A tree mitigation strategy was approved with the original Cabinet report, this included future maintenance cost and a net gain in canopy cover. Following changes to the scheme, the number of trees removed in Phase 1 was less than originally expected, and no further trees will be lost as part of Phase 2. The full tree mitigation strategy has been implemented, and so with the reduced number of trees lost there will be a higher than expected gain in canopy cover overall.

B3. Project Benefits	
Measure	Impact
Reduction in bus journey times, using bus AVL data	More destinations and services accessible within 45 minutes by public transport
Improved bus journey time reliability, using bus AVL data	More journey time assurance for bus passengers
Passenger satisfaction, from Transport Focus survey data	Increase in public transport attractiveness and use
Modal split, from cordon counts	Reduction in private car use and associated emissions
B4. Benefits Realisation Plan	
<p>The Sprint programme is managed at a senior level by a Programme Board consisting of the members outlined in Section F5.</p> <p>The Programme Board members meet monthly and are responsible for project control. They make decisions within the scope of scheme approvals and make appropriate decision on any minor scope alterations. Any exceptional decisions, including decisions outside of the approved scope, will be escalated to the appropriate level within WMCA and the City Council for consideration.</p>	
B5. Stakeholders	
<p>There is a Communication and Engagement Strategy established for the delivery phase of the Sprint project, which sets out its approach to stakeholder management during the construction of the project. The overarching engagement objective is to help achieve majority public and stakeholder support. This means approval which:</p> <ul style="list-style-type: none"> • Meets the transport, economic, environment, cultural heritage and community interest objectives for the scheme; • Is deliverable to the currently agreed budget and programme; and • Is broadly supported by the majority of the project's key stakeholders (including the local community). <p>To achieve this objective this strategy seeks to maximise advocacy and minimise active opposition to the Sprint project, particularly among key Tier 1 and 2 stakeholders, but also across local communities and road users.</p>	
C. ECONOMIC CASE AND OPTIONS APPRAISAL	
C1. Summary of options reviewed at Outline Business Case	
<p>Options considered as part of the original scheme development were outlined as part of the previous FBC approved at Cabinet on 17th December 2019.</p> <p>The first phase of A34 Sprint was completed prior to Commonwealth Games and already provides significant benefits to buses. The scheme could be left as it is, without undertaking the further Phase 2 works, and the CRSTS funding reallocated to other corridors. However, modelling and analysis shows there are further benefits which can be</p>	

obtained through the targeted interventions currently proposed.

The original proposals for Sprint had further widening and roadspace reallocation on Walsall Road, over and above that which has already been completed. This could be added back into the Phase 2 measures. However, it is felt that these would not give sufficient further benefits to justify the significant cost particularly as recent increases in construction costs mean that there are pressures on the available funding. Further work on Walsall Road may also make it more difficult to deliver an extension to the segregated cycle route on the corridor in future.

C2. Evaluation of key risks and issues

Scheme level Risk Registers have been established through a series of design, commercial and procurement related workshops held by the WMCA. Identification, analysis and evaluation of risks incorporates input from key stakeholders including the City Council and other local authorities. The risk register is managed and administered by the WMCA and accessible to partnering local authorities, an extract of key programme related risks can be found in Appendix C. These risks include:

- Unforeseen technical and/or financial issues that impact the ability of the operator to deliver articulated vehicles;
- Low-emission vehicle not delivered or not delivered on time (Dec 2024);
- Range and performance of electric articulated vehicles will be insufficient for requirements of Sprint;
- Communications / engagement activities must meet requirements as agreed with local authorities;
- Price increase (inflation) risk allowances are insufficient for resources, materials etc to enable for delivery;
- Price / inflationary increases effect the ability to deliver the scheme deliverables / outputs and impact the agreed business case BCR;
- Opposition to scheme including objections and legal challenge to Traffic Regulation Orders;
- Utility diversions take longer than planned;
- Disruption to road users during the construction stage.

C3. Other impacts of the preferred option

Value for Money

The calculated benefits of the scheme remain as in WMCA's original business case in 2019, with Present Value Costs (PVC) of £49.60m, Present Value of Benefits (PVB) of £101.58m and additional wider economic benefits (WEB) of £34.15m. This gives a Benefit Cost Ratio (BCR) of 2.05, with an adjusted BCR of 2.74 if the WEB figure is taken into account, which represents 'High' value for money.

The PVB and PVC data used in the economic evaluation of the scheme have been deflated to a common price base, ad costs have been converted from factor prices to market prices, discounted for the 60-year appraisal period. An optimism bias of 3% has also been applied to the PVC figure.

Air Quality

The scheme is expected to have a positive impact on air quality by encouraging the use of public transport and prioritising sustainable modes over private motorists. The impact on congestion will be minimised through the scheme design.

Equalities Assessment

An Equality Assessment (EqA) was completed for the Sprint concept as part of the Cabinet Report in January 2018 (ref: EA002569). This did not identify any negative impact on protected characteristics as a result of the Sprint strategy and concluded that a full assessment was not required at that stage.

A scheme-specific EqA for the A34 Walsall to Birmingham Sprint scheme was completed by WMCA in conjunction with the City Council and other local authority partners as part of the original scheme development in 2019, and is included as Appendix B. Officers from the City Council contributed to the assessment and agreed that all relevant factors have been identified and considered, and concurred with the conclusion that there will be either a neutral or positive impact on all protected characteristics, and that a further assessment is not required. The development of Phase 2 does not change the equalities implications.

D. COMMERCIAL CASE

D1. Partnership, joint venture and accountable body working

The scheme is being led and funded by WMCA and will be delivered on its behalf by TfWM.

The City Council will support WMCA by making the necessary Traffic Regulation Order (TRO) changes along this route, as well as retaining its Network Management Duty role, and implementing and operating the bus lane camera enforcement.

WMCA will be working in partnership with the bus operators on the Sprint corridors on wider elements such as procuring new vehicles. The main operator will contribute the majority of the cost of providing new vehicles, with WMCA contributing the extra-over cost of zero-emission vehicles. The exact type of vehicles is still to be determined.

TfWM have developed an Enhanced Partnership with local authorities and bus operators for the operation of the Sprint network and other key bus routes. Any bus specific measures, ie bus lanes or bus gates, will be incorporated into the Enhanced Partnership through a Variation once the works are complete and the relevant TROs sealed.

D2. Procurement implications and Contract Strategy

The procurement of the BLE camera and associated equipment will be undertaken by the City Council's Digital and Customer Services, from the framework agreed in November 2022 with our preferred supplier Yunex Traffic. Digital and Customer Services will appoint a project manager to oversee the work, who will liaise with the relevant City Council and TfWM officers to arrange installation, testing, commissioning and handover to the operational teams. The procurement of the camera will include the first year's maintenance and support.

The procurement of all other elements of the works and associated requirements for the operation of Sprint will be the responsibility of WMCA through an open tender process. The City Council will be invited to participate in the quality assessment panel for the works. There are no procurement implications for the City Council from these elements.

The City Council's works specifications will be incorporated into the tender documentation and subsequent contract to ensure compliance with the PFI contract.

The contract will include commitments for Social Value, including boosting the local economy and creation of local job opportunities.

D3. Staffing and TUPE implications

The scheme is being managed by WMCA, and the City Council's input will be undertaken using existing internal resources, with support from external consultants when required. There are no human resource implications for the City Council.

E. FINANCIAL CASE

E1. Financial implications and funding

	Financial Year:	Prior Years	2023/24	2024/25	Later Years	Total
		£000	£000	£000	£000	£000
Capital code: L00119 (BCC element only)						
CAPITAL EXPENDITURE (full WMCA/TfWM scheme)						
Costs to complete:						
	Main Works		810.0	810.0		1,620.0
	Utility Diversions		500.0	500.0		1,000.0
	Shelters		340.0	340.0		680.0
	Contingency			1,000.0		1,000.0
	City Council Costs (see below)		150.0	150.0		300.0
	Total capital expenditure	0.0	1,800.0	2,800.0	0.0	4,600.0
CAPITAL FUNDING:						
Costs funded by:						
	CRSTS Capital Grant		1,800.0	2,800.0		4,600.0
	Total capital funding	0.0	1,800.0	2,800.0	0.0	4,600.0
CAPITAL EXPENDITURE (City Council costs only)						
Costs already approved:						
	Development to FBC		20			20.0
Costs to complete (S8/S278 Agreement):						
	Design Reviews and Legal Agreement		100.0	20.0		120.0
	Traffic Regulation Orders		10.0	10.0		20.0
	Site Inspections		20.0	100.0		120.0
	BLE Camera			20.0		20.0
	Total capital expenditure	0.0	150.0	150.0	0.0	300.0
CAPITAL FUNDING:						
Costs funded by:						
	CRSTS Capital Grant **		150.0	150.0		300.0
	Total capital funding	0.0	150.0	150.0	0.0	300.0
**The City Council cost of £0.300m is taken from the overall scheme funding of £4.600m and will be reimbursed by WMCA from that funding						

Bus Lane Enforcement (BLE) - Operational Income & Expenditure and use of surplus						
	Estimated Value					
	2024/25	2025/26	2026/27	2027/28	2028/29	Total
	£000's	£000's	£000's	£000's	£000's	£000's
Bus Lane Enforcement Operational Income						
Sums	96.3	42.0	37.8	30.9	27.1	234.1
Total Operational Incomes	96.3	42.0	37.8	30.9	27.1	234.1
Bus Lane Enforcement Operational Expenditure						
Operational Costs	35.2	15.4	13.8	11.3	9.9	85.6
Total Operational Expenditure	35.2	15.4	13.8	11.3	9.9	85.6
Net Operational Surplus	61.1	26.6	24.0	19.6	17.2	148.5
Use Of Net Operational Surplus						
Contribution to camera renewal fund	5.0	5.0	5.0	5.0	5.0	25.0
Additional Highways Asset Cost	0.0	0.0	0.0	0.0	0.0	0.0
Camera Decommission cost	0.0	0.0	0.0	0.0	1.5	1.5
Future Information + Traffic Survey Activities	0.0	0.0	0.0	0.0	4.0	4.0
Relocation of Cameras	N/A	N/A	N/A	N/A	N/A	0.0
Total Use of Net Operating Surplus	5.0	5.0	5.0	5.0	10.5	30.5
Surplus/(Deficit) at Year-End	56.1	21.6	19.0	14.6	6.7	118.0
E2. Evaluation and comment on financial implications						
Capital Costs						
<p>The original cost estimate for the highway measures for A34 Sprint reported to Cabinet on 17th December 2019 was approximately £50.0m with £16.0m of that budget allocated to highway works within the Birmingham boundary. However at that time TfWM only had £32.1m available and so the scheme originally reported to Cabinet was split into two phases, with Phase 1 delivered ahead of the Commonwealth Games with the funding which WMCA then had available, and Phase 2 delayed until further funding could be secured.</p> <p>WMCA have now secured a further £56.0m to carry out a Phase 2 of works on the A34 and A45 Sprint corridors, through central government's City Region Sustainable Transport Settlement (CRSTS) capital grants. It is estimated that the cost of the further highway measures proposed for A34 Phase 2 will be £4.600m including contingencies, which will be the responsibility of WMCA to fund from the CRSTS allocation. There will be no call on City Council funding for delivery of these measures.</p>						

These works will be subject to a legal agreement between the City Council and WMCA. This legal agreement will not be subject to a Bond from WMCA, as they are a public-sector body and the scheme is predominantly public-funded. In the unlikely event of non-performance by WMCA then the legal agreement would give the City Council power to step in and complete works. The City Council would have to underwrite the resulting costs initially but would be able to recover these costs from WMCA under the terms of the legal agreement.

£0.020m of internal fees were agreed in a Programme Entry Proposal (PEP) approved by the Assistant Director, Transport and Connectivity on 12th December 2022. This covers officers working with TfWM on agreeing the designs, assisting with stakeholder engagement, and producing this FBC. These costs will be reimbursed by WMCA but are separate to the legal agreement for delivery.

City Council costs for the delivery stage are estimated to be £0.260m including staff time for design reviews, site inspections, time spent in relation to the preparation of legal agreements and all costs in relation to the temporary and permanent traffic regulation orders. These costs will be reimbursed by WMCA under the terms of the legal agreement, with quarterly invoices submitted retrospectively by the City Council. As the majority of work will be under Section 8 rather than Section 278 terms, and the input required is different from that for private developer schemes, the City Council will be reimbursed based on actual costs incurred rather than a fixed fee percentage. This will be subject to an agreed cap on overhead rates of 15%.

There will be a further cost on the City Council of £0.020m for one BLE camera which will be procured by the City Council, including the first year's maintenance and support. This cost will be funded by WMCA via a grant-funding contribution which will be included in the overall legal agreement.

Revenue Implications

This project will create assets that will form part of the highway upon completion of the project; as such they will need to be maintained within the overall highway maintenance regime. As part of the City Council's obligations under the Highway Maintenance and Management Private Finance Initiative (HMMPFI) contract, Highways have been formally notified of the proposed changes to the highway inventory arising from this scheme. The works for Phase 2 relate to SSD No. 7018. Phase 1 was completed under SSD No. 5926 and TfWM have now handed as-built information for that phase to the City Council.

The estimated net highway maintenance costs for the newly-created assets associated with the A34 Phase 2 Sprint Corridor is £0.001m per year. This value was previously approved as part of the overall revenue budget to be funded by BCC as detailed Cabinet in the March 2020 Sprint update Cabinet report. It is estimated that the further measures within Phase 2 can be contained within the original Cabinet approved Highway Change budget allocation and there will be no further revenue commitment required for Highways Maintenance held within Corporate Policy contingency. In addition, it has been agreed that the £0.001m per year revenue costs following implementation of Phase 2 are now to be funded directly by WMCA.

Bus Line Enforcements (BLE)

The City Council will be responsible for ongoing camera enforcement operations, and

income will be generated from Penalty Charge Notices (PCNs) issued as part of the enforcement regime. This income will be used in the first instance to cover the operational cost of enforcement. These costs will include employing staff specifically for BLE enforcement, including:

- Employing staff specifically for camera enforcement;
- on-going running costs for the cameras including maintenance, servicing, energy and licences;
- maintenance costs in ensuring that the sites remain compliant with the standards for signing and road markings under the latest version of Traffic Signs Regulations and General Direction (TSRGD), which are required for offence capturing;
- operational costs (processing and administration) of the PCNs;
- replacement of the cameras and associated equipment in future years;
- cost of decommissioning the cameras.

The City Council will manage the cameras as part of the wider enforcement camera network. To ensure that the income is sufficient to fund the costs of enforcement the level of penalty notices issued will be monitored closely and operational resources reviewed / adjusted accordingly.

The table in Section E1 shows a summary of the estimated income and expenditure based upon one additional camera and experience from bus lane enforcement schemes already in operation within the city. This shows that over the first five years of operation of the additional camera, income from PCNs is estimated at £0.234m with operational and other costs estimated at £0.116m, leaving a retained surplus of £0.118m. Any surpluses will be used in accordance with applicable regulations, which is in line with the strategy for utilising the sums generated from bus lane enforcement as outlined in the 'Transportation and Highways Capital Programme 2023/24 to 2028/29 – Annual Programme Update' report approved at Cabinet on 21st March 2023.

E3. Approach to optimism bias and provision of contingency

An annual 5.5% inflation rate has been assumed on quoted construction costs based in the sector inflation rate at the time that WMCA approved the FBC refresh. Other cost estimates did not allow for inflation.

Removal of the widening and roadspace reallocation measures on Walsall Road from the A34 Phase 2 project creates some headroom for additional inflation allowance and contingency sums, given the recent and projected increases in construction costs.

A contingency sum of £1.000m has been incorporated into the scheme costs following completion of the Quantified Risk Assessment.

E4. Taxation

There should be no adverse VAT implications for the City Council in this scheme as the maintenance of highways is a statutory function of the City Council such that any VAT paid to contractors or on the acquisition of land is reclaimable.

F. PROJECT MANAGEMENT CASE	
F1. Key Project Milestones	Planned Delivery Dates
WMCA Full Business Case submission	January 2022
WMCA Full Business Case approval	March 2022
Detailed Design commenced	November 2022
Detail Design complete	February 2024
Contractor appointed & commencement of ECI	February/March 2024
TRO consultation/completion	March 2024/May 2024
Works commence	July 2024
Works complete	Summer 2025
Date of Post Implementation Review	Winter 2025/26
F2. Achievability	
<p>The scheme is led by TfWM on behalf of WMCA. TfWM have appointed consultants to undertake detailed design. TfWM will also procure contractors for the works.</p> <p>Surveys have been undertaken to determine the positions of underground mains and services, to minimise the risk of unexpected problems during the works.</p>	
F3. Dependencies on other projects or activities	
<p>In order to carry out works on the highway, WMCA are required to enter into a legal agreement with the City Council. This will take the form of a combined Section 278 and Section 8 Agreement and is subject to agreement between the two parties. Works outside of the city boundary will require similar agreements with Sandwell and Walsall councils.</p> <p>The procurement of the highway works will be carried out by WMCA, and they are also responsible for establishing the Sprint network including discussions with operators, installation of bus shelters, and development of ticketing and passenger information systems.</p> <p>The Bus Lane Enforcement element will depend on the City Council procuring the equipment and installation through its existing framework.</p> <p>TfWM have developed an Enhanced Partnership with local authorities and bus operators for the operation of the Sprint network and other key bus routes. Any TRO changes affecting bus lane or bus gates as a result of the scheme will be incorporated into the Enhanced Partnership through a Variation.</p> <p>The City Council will retain the Network Management Duty, including the processing and making of permanent and temporary TROs.</p>	

F4. Officer support	
BCC Management Structure:	
Project Manager:	Nigel Tammo – Transport Projects Delivery Specialist Tel: 07803 261207 Email: nigel.tammo@birmingham.gov.uk
Programme Manager:	Robert Warner – Transport Delivery Specialist Email: robert.warner@birmingham.gov.uk
Project Accountant:	Andy Price – Finance Manager Tel: 0121 303 7107 Email: andy.r.price@birmingham.gov.uk
Project Sponsor:	Philip Edwards – Assistant Director Transport and Connectivity Tel: 07557 203167 Email: philip.edwards@birmingham.gov.uk
TfWM Management Structure:	
Delivery Manager:	Shah Rahim – Delivery Manager – Sustainable Transport Email: shah.rahim@tfwm.org.uk
Project Manager:	Andy Hart – Head of Delivery – Sustainable Transport Email: andy.hart@tfwm.org.uk
Programme Manager:	TBC
Project Accountant:	TBC
Project Sponsor:	Martin Pyne - Bus Transformation Manager Email: martin.pyne@tfwm.org.uk
F5. Project Management	
Transport for the West Midlands	
Project Sponsor – Martin Pyne, Bus Transformation Manager	
Senior Responsible Officer – Sandeep Shingadia, Director of Integrated Partnerships and Integrated Delivery	
Delivery Manager – Shah Rahim, Delivery Manager / Sustainable Transport	
Project Manager – Andy Hart, Head of Delivery / Sustainable Transport	
Project Accountant – TBC	
Birmingham City Council	
Project Sponsor – Philip Edward. Assistant Director Transport and Connectivity	
Senior Responsible Officer – Stuart Rawlins, Head of Major Transport Projects	
Programme Manager – Robert Warner, Transport Planning Manager (Scheme Development)	
Project Manager – Nigel Tammo, Transport Projects Manager	

Project Accountant – Azhar Rafiq, Interim Business Partner

G. SUPPORTING INFORMATION

G1. Project Plan

See keydates in Section F1 and a project programme in Appendix D.

G2. Summary of Risks and Issues Register

See Section C2 and Appendix X.

G3. External funding and other financial details

See Section E2.

G4. Stakeholder Analysis

Stakeholder	Role and Significance	How stakeholder relationships will be managed
WMCA	Scheme promotor/ lead.	Meetings including Project Boards and Programme Board. WMCA will lead on engagement with other stakeholders.
Birmingham City Council	Delivery Partner/ Signatory	Attendance at Project Boards and Programme Boards. To assist WMCA in providing necessary agreements to facilitate delivery works on the highway.
Other Local Authorities (ie Walsall MBC and Sandwell MBC)	Delivery Partner/ Signatory	Attendance at Project Boards and Programme Boards. To assist WMCA in providing necessary agreements to facilitate delivery works on the highway.
Transport Delivery Committee (TDC) (WMCA)	Strategic links	City Council councillors in attendance. Quarterly updates during the project – appropriate method including emails, telephone or meetings.
MP & Local Councillors	Local Impact to ensure they are aware of the scheme should they be approached by their constituents	Meeting before full council / Councillor drop in sessions Monthly updates during the project – appropriate method including emails, telephone or meetings. 1-2-1 Meeting with MPs
Resident Groups	To inform them about the scheme, promote the benefits of Sprint, obtain views and encourage use	Email with link to newsletters and website (Website will have details about the routes, benefits, maps, events, questionnaire) Ongoing depending on groups' requirements

APPENDIX A

Bus Operators (including National Express)		Regular updates through WMCA's Bus Alliance group and ad-hoc meetings.
General groups along the corridor eg Cycling & Walking, Bus Users or Residents Groups	To inform them about the scheme, promote the benefits of Sprint, and get their views	Email with link to website detailing public engagement events
Emergency Services	To inform them of our proposals and get their views.	Email/telephone/meetings as required
General Public (Including local businesses)	Benefits and timing inform them about the engagement, obtain views, sell the benefits of Sprint and encourage use	Leaflet, email, posters, postcards, letter-drop, Facebook advertising, social media, media releases/interviews, presentations, at-stop interviews, events etc

G5. Benefits Register

Refer to Section C3.

G5. Benefits Register

Refer to Section C3.

Other Attachments	
<ul style="list-style-type: none"> • Appendix B – WMCA Equality Analysis • Appendix C – WMCA Risk Assessment • Appendix D – WMCA Environmental and Sustainability Assessment • Appendix E – WMCA Sprint Phase 2 Consultation Report • Appendix F – WMCA Scheme Plans 	

EQUALITY IMPACT ASSESSMENT TEMPLATE

An Equality Impact Assessment (EqIA) is a review of a new or existing policy which establishes whether the policy has a differential impact on specific equality groups and identifies how the policy can help promote inclusion and improve equality of opportunity for different groups of people. The term policy is interpreted broadly and refers to anything that describes what we do and how we expect to do it. It can range from policies and procedures, to strategies, projects, schemes and everyday customs and practices that contribute to the way our policies are implemented and how our services are delivered. An EqIA aims at improving the WMCA’s work, by promoting equality and ensuring that the proposed or existing policy promotes equality can benefit a wide range of people and will not disbenefit

DIRECTORATE	TfWM
PEOPLE RESPONSIBLE FOR CONDUCTING AND OVERLOOKING ASSESSMENT	Duncan Fry
NAME OR TITLE	Sprint A34 route
DATE OF COMPLETION	January 2019
DATE DUE FOR REVIEW	N/A
PERSON RESPONSIBLE FOR ARRANGING REVIEW AND MONITORING	N/A

A. ABOUT THE POLICY

1. Describe the main aims, objectives, activities and outcomes of the policy. Who is expected to benefit?

Sprint is a brand new public transport service. It runs on the road, with dedicated bus lanes and priority through areas of congestion, making journey times much more reliable. It has been designed to deliver shorter and more dependable journey times for passengers. It will do this by providing priority over areas of congestion. A total of 7 routes will make up the Sprint network and these will be operational by 2026 in line with HS2. Three of these routes have been prioritised. They are:

- Birmingham Airport and Solihull to Birmingham City Centre (A45)

- Walsall to Birmingham City Centre (A34)
- Sutton Coldfield to Birmingham City Centre via Langley (SBL)

Sprint will provide a level of service, comfort and presence close to a tram. The vehicles used on sprint will deliver a similar level of customer experience to Metro and will serve limited stops.

The scheme will deliver:

- An increase in public transport patronage evidenced through PRISM. The patronage forecast and modal shift for Sprint will help reduce highway congestion.
- Improved journey times evidenced through impact assessment of interventions.
- Improved reliability evidenced through impact assessment of interventions and PRISM.
- A range of sustainable transport choices available within the corridor will encourage future inclusive growth.
- Other bus services using parts of the route will benefit from additional bus priority (such as 51, 52, 77, 424, 907, 937, and X51) evidenced through PRISM.
- Environmental benefits from the use of low emission vehicles.

The overall impact of the scheme will improve access to sustainable modes, providing enhanced connectivity from residential and industrial development within the corridor. The key destinations which will be linked by high standard public transport will be: Birmingham City Centre, Alexander Stadium, Aston Regional Investment Site (via interchange), Perry Barr, and Walsall and other new developments.

B. EQUALITY RELEVANCE/IMPACT

2.Does the policy affect the public or employees directly or indirectly? In what ways?

3. What information is available on the equality issues in the key target groups¹? (what inequalities, discrimination /and health inequalities currently exist in relation to the target groups? What information/data do you have that explains why these inequalities exist and how they are maintained?)

Key A34 area data (demographics as per 2011 Census)

¹ Equality target groups: Age, gender disability, race, religion and belief, pregnancy and maternity, socio-economic, sexual orientation

APPENDIX B

The 4 constituencies affected by the scheme are Ladywood, Perry Barr, West Bromwich and Walsall

Demographics for Ladywood: Over half the population live in the 5% most deprived neighbourhoods in England. The entire constituency lives in the 40% most deprived areas in the country. Ladywood Ward includes the city centre of Birmingham and an area to the west of it. It has a much younger age profile than the City average (21% are 20-24 compared to the 9% city average and the 7% England average). The percentage of ethnic minority residents is above the city average. Worklessness is below the city average but unemployment is similar to the city average. Over three quarters (78%) of Ladywood's population live in deprived neighborhoods, compared to 40% of the city as a whole. 43% of children in the Ladywood constituency are defined as being in poverty above the city rate of 37.1%. Within the constituency there is disparity in the levels of deprivation and child poverty, with Washwood Health having the highest levels and Hodge Hill ward the lowest levels. The constituency has a very diverse population with only 32% of the working age population from the White group, compared to 59% for Birmingham as a whole. Around 40% are Asian and 20% Black. In terms of language proficiency, 0.4% of the population cannot speak English at all while 3% do not speak English well.

Demographics for Perry Barr: In the 2011 census the population of Perry Barr was 23,652 and is made up of approximately 52% females and 48% males. The ward has a slightly older age profile than the city as a whole and a slightly higher BME share. The average age of people in Perry Barr is 36, while the median age is lower at 33. 78.0% of people living in Perry Barr were born in England. Other top answers for country of birth were 3.5% India, 3.3% Pakistan, 2.5% Jamaica, 1.8% Bangladesh, 1.4% Ireland, 0.8% China, 0.6% Nigeria, 0.5% Wales, 0.4% Scotland. In terms of language barriers, 2.9% of the population in Perry Barr whose main language is not English cannot speak English well and 0.6% cannot speak English at all. It is one of the least deprived wards in Birmingham. Resident employment rates are above the city average and claimant count unemployment proportions are below the Birmingham average.

Demographics for West Bromwich: In the 2011 census the population of West Bromwich Central was 13,290 and is made up of approximately 49% females and 51% males. The average age of people in West Bromwich Central is 38, while the median age is lower at 36. 66.2% of people living in West Bromwich Central were born in England. 40.9% of the population is BME. In West Bromwich 15% of residents do not have English as a main language, but this does not mean that they are not fluent English speakers. In Sandwell overall, 64.5% of residents whose main language is not English can speak English well or very well. Only a

very small proportion cannot speak English at all (0.8% of all residents aged 3 and over).

Demographics for Walsall Central: The ward has 15,088 residents (2011 census) with a split of 49% females and 51% males. The average age of people is 36, with the median age at 33. 76.2% of people living in St. Matthew's were born in England and 82.9% speak English as a main language. 53.1% are White British and 46.9% are BME. St Matthew's ward is the 8th most deprived ward of 20 wards in Walsall. 42.6% of households do not own a car/van (which compares to 28.8% in Walsall and 25.6% in England).

Transport inequalities

- Around a fifth of disabled people report having difficulties related to their disability in accessing transport
- Low income groups spend a high percentage of their income on transport (15-25% of weekly expenditure). Transport costs can even exceed wages for some on very low incomes, after tax and benefits withdrawal.
- Low income groups are more likely to travel less/shorter distances due to cost and car availability. A quarter of all households and almost half of those from the poorest quintile do not have access to a car. Two-thirds of job seekers are without access to a car. Car availability also tends to be lower amongst BME groups and that may be linked to the fact that poverty is higher amongst BME groups. Other groups heavily reliant on public transport, largely due to lower car ownership, are disabled people and older age groups as well as single parents.
- More bus trips and walk trips are made by the lowest income group than any other group whereas more rail and bicycle trips are made by those from high income group than others
- For young people on low incomes (student, care leavers etc.) affordability is a key barrier to accessing education, training and social activities.
- Only 14% of households in the richest fifth did not have access to a car, compared to almost half of those in the poorest fifth (48%). Car ownership is also much lower amongst BME people, disabled people, older people and young people. Fewer women hold driver's licenses and fewer women own cars. All these groups are more reliant on public transport.
- A third of young people who are NEET or in jobs without training think they would have done something better after Year 11 at school if they had received more assistance with travel costs.

4. Is the policy likely to have a positive or negative impact on any equality target groups? Please elaborate (Is it likely to affect some groups differently in either a positive or negative way? What elements of the policy will have a differential impact?)

The scheme is likely to have a positive impact on the general public as it will increase travel options for residents in the affected wards and improve transport connectivity, journey time and journey reliability. Positive impact is also anticipated for those groups that are more reliant on public transport – BME, young people, women and people with disabilities. The route also serves 4 of the most deprived wards in England – people from lower socio-economic backgrounds are more likely to be reliant on public transport.

5. Have you consulted interested parties (including representatives from the equality target groups) who will/may be affected by the policy? What were the outcomes of the consultation? If you haven't conducted consultation, is there need for consultation and who are you planning to consult?

Public consultation ran from 23rd August to 15th October 2018. Members of the public had their say via:

- An online survey
- On-street interviews
- Self-completion paper survey made available at public consultation events and on request
- Comments by letter, email, telephone helpline and social media.

Events/interviews

30th August – Sutton Parade

4th September – Scott Arms

13th September – Station Road, Solihull

17th September – Walsall

20th September – Birmingham Colmore Row/Bull St/Moor St Queensway

Every shelter along each route had a poster advertising ways they can get involved/have their say.

The consultation was also communicated to over 200 community and equality groups in the region.

The response rate to the consultation was high. In relation to the A34 route consultation, 569 responses were received on the A34 scheme during the consultation, with 73% fully supporting or partially supporting the scheme. 24% did not support the Sprint proposal for the A34 Walsall to Birmingham. Support

peaked amongst bus users (84% supported), dipping amongst car users (49% supported). The small group of cyclists also had a high level of support for the proposals (87%). Support was highest amongst those who travelled along the route for work (82% fully/partially support) or education purposes (92%, fully partially support). It dipped amongst those who lived on or near the route (68%, fully/partially support) with the share of respondents who do not support Sprint rising to 30%.

The main objections were from residents between Scott Arms and Perry Barr (where the proposal is to remove parking laybys) whose issues relate to loss of parking combined with safety and comparison to the X51. A separate petition was received from residents in this area, whose main objections to the scheme relate to these issues. The detailed design phase will look to mitigate parking issues where possible and this will be resolved prior to Full Business Case.

6. Is further research needed (i.e. consultations, working groups, surveys, data) to properly assess impact on the different equality target groups? If yes, how will it be undertaken and by when?

Engagement will continue throughout the project with all the stakeholders to ensure there is awareness of the impact of the scheme. The local highway authorities will need to present the final scheme for approval to their relevant council meetings, which will provide permission for WMCA to deliver works on the highway and provides another opportunity to express support of the proposals.

7. What measures does, or could, the policy or strategy include to help promote inclusion and equality of opportunity for and/or foster good relations between people from different equality groups?

- The scheme offers accessible and more spacious vehicles that are likely to improve the travel experience of disabled people, older people and people with children and buggies/prams
- Ticketing will remain in line with N network prices to ensure there are no barriers for people from lower economic backgrounds. On-board paying options should be retained to ensure that groups are not excluded due to their age, disability or/and employment status (for instance, a significant % of older people do not use debit cards)
- Disruption is anticipated during the construction phase. Any disruption information needs to be communicated effectively and widely to ensure that people are aware – this is especially important for disabled people who often pre-plan their journeys

- Sprint shelters are longer and wider – pathway accessibility is key in ensuring safe pedestrian access in line with key access design standards
- A number of on-street parking spaces are being removed on the A34 route in the Perry Barr section though all existing off street parking is to be retained. Where properties do not have off street parking the existing on street parking will remain. 4 properties to date have advised that there are accessibility/mobility needs and the scheme will ensure that on street parking is retained for those properties to access. Additional measures will help ensure that on-street parking is offered where possible

8. Do you think that the policy in the way it is planned and delivered will have a negative, positive or no impact on any of the equality target groups (please tick as appropriate)?

Positive impact: where the impact on a particular group of people is more positive than for other groups

Negative impact: where the impact on a particular group of people is more negative than for other groups

Neutral impact: neither a positive nor a negative impact on any group or groups of people, compared to others.

EQUALITY TARGET GROUP	AGE	GENDER (including gender reassignment)	DISABILITY	MATERNITY	RACE	RELIGION/BELIEF	SEXUAL ORIENTATION	SOCIO-ECONOMIC
POSITIVE IMPACT	√	√	√		√			√
NEGATIVE IMPACT								
NEUTRAL IMPACT				√		√	√	

12. If adverse/negative impact is noted to any of the listed equality target groups, can it be justified, i.e. on the grounds of promoting equality of opportunity for any other group/s?

Not applicable

13. ACTION PLAN

What practical actions can be taken to promote inclusion and reduce/remove any adverse/negative impact?

Issues to be addressed	Actions required	Responsible officer	Timescales	How would you measure impact/outcomes in practice
------------------------	------------------	---------------------	------------	---

APPENDIX B

Disruption during implementation of the scheme	Changes need to be communicated effectively to the public including equality groups in a number of ways – talking news, communication to community organisations etc.	Project manager	During implementation	-Few or no complaints
Pathway accessibility may be an issue	Explore options (land purchase etc.) to ensure key access standars are retained Engagement with key equality groups throughout the detailed design process	Project manager	Design stage	- Key accessibility standards met
Need to reduce the negative impact of the removal of on-street parking along the route (Perry Barr section)	Where properties do not have off street parking the existing on street parking will remain. 4 properties to date have advised that	Project manager	Design stage	- Satisfied residents, few complaints - Retention of accessibility for households

	there are accessibility/mobility needs and the scheme will ensure that on street parking is retained for those properties to access. Additional measures will help ensure that on-street parking is offered where possible			
--	--	--	--	--

Appendix C – WMCA Risk Assessment

Risk No	Risk description	Risk mitigation	Residual / current risk			Additional steps to be taken
			Likelihood	Impact	Prioritisation	
1.	<i>Failure to delivery identified saving savings resulting in a budget overspend.</i>	<i>Savings delivery closely monitored, by CMT and ECMT. Regular reports to Cabinet and Resources Overview & Scrutiny Committee.</i>	<i>Low</i>	<i>Medium</i>	<i>Tolerable</i>	<i>Ongoing</i>
1757	Price increases - Inflation & Global supply issues	<ul style="list-style-type: none"> • Assess/monitor exposure of inflation and market pressures on scheme/contractors/suppliers. • Order materials up front and free issue to appointed contractors. • Procurement schedule to be obtained from appointed principal contractors with requirement to plan ahead and order products with plenty of lead time. 	High	V High	High	<ul style="list-style-type: none"> • Identify locally sourced materials where appropriate. Early engagement with supply chain and programming of long leading items accordingly, with identification of ways of reducing cost/spend/scope.
1996	Price/inflationary increases effect the ability to deliver the scheme deliverables/outputs and impact the agreed business case BCR.	<ul style="list-style-type: none"> • Appointment of commercial consultants to review preliminary designs and provide detailed cost estimates, with identification of cost efficiencies. • Reviewing scheme deliverables to identify potential elements which 	Med	V High	High	<ul style="list-style-type: none"> • Continually reviewing and managing scheme cost base against market prices - ongoing.

		can be removed from scope, without significantly impacting the overall scheme BCR.				
284	Sprint Low Emission Vehicle not delivered (ZEBRA)	<ul style="list-style-type: none"> Engagement with the ZEBRA team to ensure there is a solution which works within timescales required. 	Low	V High	Med	<ul style="list-style-type: none"> Actively considering and progressing electric articulated vehicle solution within the ZEBRA project and considering implications for the procurement process.
2087	Sprint Principal Designer - Delay in receiving investigatory data/surveys	<ul style="list-style-type: none"> All parties to review the risk reduction and gap analysis to ensure information issue is prompt and in accordance with the agreed programme. To be reviewed in weekly contract meetings. 	Low	V High	Low	
1857	Sprints unique service offering isn't maintained	<ul style="list-style-type: none"> Develop mechanisms that keep the Bus Rapid Transit (BRT) routes special as part of a tiered network – with a permanence similar to that of Rail or Metro. 	Low	High	Low	<ul style="list-style-type: none"> Define roles and responsibilities that will help support mechanisms that keep the BRT routes special as part of a tiered network.

Measures of likelihood/ Impact:

Description	Likelihood Description	Impact Description
-------------	------------------------	--------------------

High	Almost certain, is expected to occur in most circumstances. Greater than 80% chance.	Critical impact on the achievement of objectives and overall performance. Critical opportunity to innovate/improve performance missed/wasted. Huge impact on costs and/or reputation. Very difficult to recover from and possibly requiring a long term recovery period.
Significant	Likely, will probably occur in most circumstances. 50% - 80% chance.	Major impact on costs and objectives. Substantial opportunity to innovate/improve performance missed/wasted. Serious impact on output and/or quality and reputation. Medium to long term effect and expensive to recover from.
Medium	Possible, might occur at some time. 20% - 50% chance.	Waste of time and resources. Good opportunity to innovate/improve performance missed/wasted. Moderate impact on operational efficiency, output and quality. Medium term effect which may be expensive to recover from.
Low	Unlikely, but could occur at some time. Less than 20% chance.	Minor loss, delay, inconvenience or interruption. Opportunity to innovate/make minor improvements to performance missed/wasted. Short to medium term effect.

Appendix D – Environment and Sustainability Assessment

Project Title:	A34 Sprint Phase 2			
Department: Transport and Connectivity	Team: Transport Planning (on behalf of Transport for the West Midlands)		Person Responsible for assessment: Thomas Skidmore (TfWM)	
Date of assessment: 14th March 2023	Is it a new or existing proposal? New			
Brief description of the proposal: Bus priority measures and bus shelter installation on the A34N				
Potential impacts of the policy/development decision/procedure/ on:	Positive Impact	Negative Impact	No Specific Impact	What will the impact be? If the impact is negative, how can it be mitigated, what action will be taken?
Natural Resources- Impact on natural resources including water, soil, air	X			Improvement in air quality.
Energy use and CO ₂ emissions	X			Reduction in energy use and CO ₂ emissions through encouragement of public transport.
Quality of environment	X			More pleasant environment due to less traffic and improved bus stop facilities.
Impact on local green and open spaces and biodiversity	X			The updated proposals result in the loss of one tree, compared to the proposals that were originally approved which would have resulted in the loss of an additional 13 trees.
Use of sustainable products and equipment			X	Use of sustainable products are evaluated during the procurement for contractor, with input from BCC's Route to Zero team.
Minimising waste			X	Measures to minimise waste are evaluated during the procurement for contractor, with input from BCC's Route to Zero team.

Council plan priority: a city that takes a leading role in tackling climate change	X			One of the four principles of the Birmingham Transport Plan is “Reallocating road space” whereby the allocation of road space will change away from single occupancy private cars to support the delivery of a public transport system fit for a global city, fundamentally changing the way that people and goods move around the city.
Overall conclusion on the environmental and sustainability impacts of the proposal	This proposal should have a positive impact in terms of encouraging the use of public transport through improved bus priority and passenger facilities.			

Phase 2 Consultation

Background

1. The Sprint project will link Walsall, Birmingham City Centre, and Solihull by joining the A34 with the A45 to create one continuous bus priority route.
2. Delivery of the project was split into two phases to allow the main infrastructure to be completed in time for the Commonwealth Games. Phase 1 construction began in January 2020 to introduce new bus lanes, install priority signalling at busy junctions, and install over 70 purpose-built shelters.
3. Phase 1 was completed in June 2022 with all local bus services along the corridor benefitting from more reliable, regular and predictable journey times (up to 22% journey time savings on certain sections and at certain times). The second phase will include further priority interventions in Birmingham, Solihull and Walsall, with cross city services and the introduction of zero-emission, articulated vehicles, expected to begin on the completion of Phase 2.
4. Funding for the second phase of Sprint was confirmed by the WMCA board in March 2022 and approved by the DfT as part of the City Regional Sustainable Transport Settlement at that time. Construction is expected to begin later this year subject to local authority approval for which a public consultation in Birmingham is a key part.
5. This consultation report will form part of the BCC cabinet report for approval of TfWM's Phase 2 proposals in Birmingham.

BCC Consultation

6. This was not a repeat consultation on the whole Sprint project, but on specific Phase 2 proposals in Birmingham. An extensive consultation was conducted in 2018 and further engagement in Perry Barr in 2019, as part of the original design process for the Sprint project as a whole.
7. However, four years have elapsed since the original consultation and some proposals for interventions in Phase 2 have changed beyond what was consulted on in 2018 and again in 2019 for some sections. For these reasons, BCC requested additional consultation as part of the cabinet approval process.
8. Further interventions for Phase 2 are in the following areas:
 - Birmingham A34 – junction improvements at Trinity Road and Newtown Middleway. 6 shelter upgrades.
 - Birmingham A45 – westbound bus lane extension through road widening, but mainly road space reallocation. 4 shelter upgrades.
 - Birmingham City Centre (consultation to follow later in the year).

9. The consultation was conducted in two parts –
- Part 1 - a shelter consultation of bus passengers who currently use the nine existing shelters for proposed upgrade, and;
 - Part 2 - a larger consultation of our bus priority proposals of residents, businesses and road users along the A34 and A45 in Birmingham.

Part 1 - Shelter consultation

10. The shelter consultation on our proposals to install a further ten Sprint shelters along the A34 and A45, was targeted at bus users and local residents, and ran between the 9 December and closed on the 9 January.
11. 256 bus passengers were interviewed at each of the shelters and 27 residents living in close proximity to the shelters were contacted.
- 260 interviews conducted with bus passengers at the stops where we propose to install new Sprint shelters.
 - Over half (56%) of the sample fully support the replacement of the existing shelters with the proposed new shelters. 39% partially supported the replacements and 5% did not support this action.

Part 2 - Bus priority consultation

12. The Phase 2 consultation along the A45 and A34 opened on the 24 February and closed on the 24 March 2023.
13. The proposed interventions on the A34 are for junction improvements at Trinity Road and New Town Row. On the A45 we consulted on proposals to extend the bus lanes installed in Phase 1, between Bordesley Circus and Swan Island and to install new bus lanes, largely through road space reallocation, but also some road widening between the Wheatsheaf junction and Clay Lane. There are also two proposed bus stop moves: on the A34 at Old Walsall Road southbound, and on the A45 at the Wheatsheaf southbound.
14. The main points of our approach:
- Briefing given to BCC Cabinet Member for Transport along with local ward members before the start of the consultation
 - Hosted on the BCC 'Be-Heard' platform
 - Shared on Sprint (TfWM) website and social media
 - Letter/leaflet drop to 3,600 properties along the A45 and on the A34 at Trinity Road junction and Newtown Middleway and at Old Walsall Road
 - More than 1,000 stakeholders in receipt of the Sprint newsletter
 - Adshel campaign along the A34 and A45
 - Radio Ads on Free Radio Birmingham
15. The following public events were held:
- Public drop-in sessions on the A45 at Lyndon Methodist Church Community Room and on the A34 at Birchfield Library WHAT DATES?
 - Two more drop-in sessions at the same venues on the 22nd and 23rd March
 - Webinar (recording available on the Sprint website)

- Residents meeting held at St Paul's Community Centre on 15 March in Perry Barr to explain the proposal to move the Old Walsall Road south stop.
16. The four drop-in events were attended by a total of 20 residents (17 on the A45 and 3 on the A34). Main issues raised:
- Loss of lane on westbound A45 will cause congestion
 - Traffic now uses side roads as rat runs
 - Creates dangerous junction for pedestrians and Lyndon Road
 - Further disruption from construction works
 - Changes to junction at Newtown Middleway/ring road will cause tailbacks to Lancaster Circus and cause gridlock during rush hour.
17. Ten residents and two local councillors attended the Old Walsall Road resident's meeting. Main issues raised:
- Pedestrian safety – proposal would mean the pedestrian crossing is further from the stop encouraging pedestrians to cross away from the safe crossing
 - Does current patronage require a larger stop?
 - Anti-social behaviour
 - Will make reversing out of properties more difficult/dangerous
 - Negative impact on value of properties
 - Loss of privacy from CCTV
 - Loss of parking – where will visitors/contractors park?
18. A total of 64 online responses were received. A breakdown of these responses is as follows:
- 39% of responses came from within the B26 postcode (in Sheldon between Swan Island and the Wheatsheaf on the A45). 19% came from within the B42 postcode (in Perry Barr between Perry Barr station and the Scott Arms junction on the A34). The next highest postcode areas accounted for only 3% of respondents with only two responses coming from outside of the Birmingham postcode area.

A45

- For the A45 Coventry Road, (excluding not applicable answers for respondents who don't travel regularly along the A45) 56% of respondents use a car as their main form of transport with 28% using buses.
- 45% of respondents (excluding those offering no answer) really dislike the Phase 2 proposals for the A45 with 24% really liking the proposals. 29% didn't know or had no opinion.
- Of the 40 comments that were received about the A45, 28 were confined to the Coventry Road proposals with 12 comments more generally about the Sprint project.
- 33 comments were negative with 6 broadly positive. 18 of the negative comments were specifically about the proposed interventions, particularly the reduction in lanes for general traffic, with 15 more broadly about the expected disruption of Phase 2 works.

A34

- For the A34 Walsall Road, (excluding not applicable answers for respondents who don't travel regularly along the A34) 54% of respondents use a car as their main form of transport with 39% using buses.
- 31% of respondents (excluding those offering no answer) really dislike the Phase 2 proposals for the A34 with 13% really liking the proposals. 54% didn't know or had no opinion.
- Of the 19 comments that were received about the A34, 16 were confined to the Birmingham Road proposals with three comments more generally about the Sprint project.
- 16 were negative with 3 neither negative nor positive. Nine of the negative comments were specifically about the proposed move of the Walsall Road southbound stop to a new location.

Outcomes and next steps

19. Responses to comments from residents will be issued with a version of this report sharing outcomes and next steps.
20. A report is expected to go to BCC cabinet in June for approval of Phase 2 proposals in Birmingham. Work is expected to begin at the end of the year.

ashley.jackson@tfwm.org.uk

The Sprint Team

April 2023

Appendix 1

Sprint Phase 2 consultation

Part 2 Bus priority

SPRINT is a limited stop bus service with dedicated bus lanes and priority through areas of congestion, making journey times more dependable for passengers. Your answers will help inform Phase 2 of SPRINT development.

The survey is being conducted in accordance with the Data Protection Act 2018 and General Data Protection Regulations (GDPR). Our surveys follow the Market Research Society Code of Conduct and any personal data is used for consultation purposes only and not shared with any other organisation. Information on how your data will be collected, stored and used is available at www.tfwm.org.uk/policies.

Q1 How often do you travel from this bus stop?

- 80 (31%) 5+ days per week
- 118 (46%) 2-4 days per week
- 33 (13%) At least once per week
- 10 (4%) At least once a month
- 18 (7%) Less often

Q2 What is the main purpose of your journey when travelling along this route?

- 100 (39%) Work
- 19 (7%) Education
- 76 (29%) Shopping
- 22 (8%) Leisure/recreation
- 15 (6%) Meeting friends and relatives
- 24 (9%) Personal business
- 2 (1%) Medical 1 (0%)
- Other 1 (100%)

Q3 What, if anything do you think is different about this bus shelter compared to other bus shelters? (can be more than one answer)

- 184 (71%) Its size/ bigger
- 212 (82%) It has different/wooden seating
- 55 (21%) It has different Real Time information
- 14 (5%) It has an extra timetable case
- 73 (28%) It has CCTV
- 79 (31%) Its branding/different colour
- 29 (11%) The paving/curbs around it are different

1 (0%) Nothing looks different

8 (3%) Other

Q4 With these requirements in mind, how would you rate the following aspects of the proposed SPRINT shelter in terms of: Your personal safety whilst at the stop

11 (4%) Very Good

197 (76%) Good

28 (11%) Neither

0 (0%) Poor

1 (0%) Very Poor

21 (8%) Unsure

The information provided at the bus stop

14 (5%) Very Good

196 (76%) Good

30 (12%) Neither

0 (0%) Poor

2 (1%) Very Poor

16 (6%) Unsure

Ease of use for people with mobility, sensory and/or other impairments

20 (8%) Very Good

199 (77%) Good

35 (14%) Neither

0 (0%) Poor

1 (0%) Very Poor

3 (1%) Unsure

Protection from bad weather (eg wind/rain)

12 (5%) Very Good

168 (65%) Good

38 (15%) Neither

21 (8%) Poor

16 (6%) Very Poor

4 (2%) Unsure

Design and comfort of the seating provided

35 (14%) Very Good

209 (81%) Good

10 (4%) Neither

0 (0%) Poor

4 (2%) Very Poor

1 (0%) Unsure

Overall design, layout and appearance of the shelter

39 (15%) Very Good

188 (73%) Good

26 (10%) Neither

2 (1%) Poor

3 (1%) Very Poor

1 (0%) Unsure

Q5 Overall, do you support the replacement of the existing shelter with the proposed shelter?

143 (56%) Fully support

100 (39%) Support somewhat

13 (5%) Do not support

Appendix 2

Sprint Phase 2 consultation

Part 2 Bus priority

Responses

64 responses received – 60 on-line and 4 postal responses.

Introduction

Are you responding to this consultation as an individual or on behalf of a business/organisation?

Please tick only one box

An individual citizen - 63

On behalf of a business/organisation - 1

About you

What is your postcode?

B26	25
B42	12
Not answered	4
B43	2
B92	2
B9	2
ST16	1
B90	1
B8	1
B36	1
B27	1
B24	1
B74	1
B42	1
B19	1
WS1	1
B91	1
B17	1
B30	1
B57	1
B32	1
B63	1
B46	1

How often do you travel on the A45 Coventry Road/Small Heath bypass between Bordesley Circus & the Wheatsheaf junction (or a section of this route)?

5 or more days a week	16
Never	13
Less often than 1 day per month	10
1-2 days a week	9
3-4 days a week	6
Not answered	5
1-2 days per month	5

When travelling on the A45 Coventry Road/Small Heath bypass between Bordesley Circus & the Wheatsheaf junction (or a section of this route), what mode(s) of transport do you most often use?

Car or van	28
Bus	14
Not applicable	14
Not answered	4
Cycle	2
Walk	1
Taxi (including services such as Uber)	1
Metro (tram)	0
Train	0
Motorcycle	0
Other	0

When travelling on the A45 Coventry Road/Small Heath bypass between Bordesley Circus & the Wheatsheaf junction (or a section of this route), typically what is the purpose of your trip?

Not applicable	15
Resident	10
Other	10
Visiting friends/family	10
Work	8
Personal business (inc doctor, dentist etc)	6
Not answered	5
Education (inc taking children to school)	0

How often do you travel on the A34 Walsall Road between the city centre and the Scott Arms junction (or a section of this route)?

Never	22
5 or more days a week	10
Less often than 1 day per month	14

Not answered	5
3-4 days a week	5
1-2 days per month	5
1-2 days a week	3

When travelling on the A34 Walsall Road between the city centre and the Scott Arms junction (or a section of this route), what mode(s) of transport do you most often use?

Not applicable	25
Car or van	21
Bus	15
Walk	2
Cycle	2
Taxi (including services such as Uber)	2
Not answered	1
Metro (tram)	0
Train	0
Motorcycle	0
Other	0

When travelling on the A34 Walsall Road between the city centre and the Scott Arms junction (or a section of this route), typically what is the purpose of your trip?

Not applicable	26
Resident	12
Work	8
Visiting friends/family	6
Not answered	6
Other	5
Personal business (inc doctor, dentist etc)	1
Education (inc taking children to school)	0

A45 - Coventry Road

Phase 2 proposals include:

Poets Corner to Bordesley Circus

Extension of the bus lanes (eastbound - out of city & westbound - into city) through road space reallocation No additional construction work required

Swan Island to Heybarnes Circus

Extension of bus lanes along this section of the road (eastbound - out of city & westbound - into city) through road space reallocation, with changes to road markings and signage

extension of the bus lane on the eastbound (out of city) approach to Swan Island through road space reallocation, with changes to road markings and signage. No additional construction work required.



Wheatsheaf junction to Clay Lane

Extension of bus lane on the westbound (into city) carriageway between **Gilbertstone Avenue** and **Clay Lane** through road space reallocation, with changes to road markings and signage. No additional construction work required.

Extension of bus lane on the westbound (into city) carriageway between **Brays Road** and **Gilbertstone Avenue** by widening the carriageway. A number of trees will need to be removed from the central reservation to allow this road widening.

Reducing the road down from two traffic lanes to one traffic lane on the westbound (into city) carriageway between **Wagon Lane** and **Brays Road** (just past the petrol station). No additional construction work required

Widening the westbound (into city) carriageway between **Lyndon Road** and **Wagon Lane** to extend the existing bus lane

Widening the westbound side of the **Lyndon Road** junction resulting in the loss of on street parking either side of the Lyndon Road bus stop and outside Tesco.



What do you think of the Phase 2 proposals for the A45 Coventry Road (on a scale of 0 to 5 where 0 is really dislike and 5 is really like)?

No answer	26
0 - Really dislike	17
Don't know/no opinion	11
5 - Really like	9
2 - Neither like nor dislike	1

Comments about the proposed scheme? (40)

1. It's a good idea.
2. The sooner the better.
3. Use the Sprint money to bring in Fare-Free Public Transport for you youngsters, too and for everyone. Not just my age group! Use the Sprint money to bring in vital bus priority measures on all dual carriageway radial city centre roads as the carrot for commuters who don't need their cars for their jobs. More road space is then made available for essential business users. Use Sprint money and staff to insulate the homes of the poorest at a time of growing energy/climate crisis. Sprint is far too expensive in price and in weight of GHG emissions. Like Metro!
4. The road markings (arrow) on Small Heath bypass (out of city direction) on the approach to Poets Corner in the right-hand lane are currently pointing in the wrong direction. The arrow in the right lane should point right (not straight as it currently does).
5. I think this scheme is a total waste of money considering it will duplicate a lot of National Express Bus Services that go beyond this proposed scheme to Coventry and past Solihull Town enter, the fact that these new type buses will not be interchangeable with other bus routes and that they cause friction with other road users unlike conventional buses, the age limit and

- cost of these buses when they require replacing and the fact the Midland Metro is planned along the same corridor as far as Birmingham Airport.
6. Unless the bus lane is only active between rush hour (AM/PM) reducing the A45 down to one lane between wagon lane and clay lane in both directions will not only cause horrendous traffic congestion (as it did with recent pavement repairs) it will also increase carbon emissions.
 7. Make Coventry Road, the side road between 1881 and 1900 to be one way. Then the junction near the petrol station can be reduced and therefore make it easier for pedestrians to cross. It would also save on signage. Make Howard Road & Henry Road one way. This would improve the consistency of the bus lane and enable the junctions to be slimmed down. Smaller junctions make it easier and safer for pedestrians crossing. It makes bus lanes more constant and it makes it easier and safer for cyclists who will ride in the bus lanes for more safety (Each junction, cyclists and buses are looking for traffic looking to turn into the side road and looking for vehicles coming out of the side road. By reducing the amount of junctions or making junctions one way only, cyclists and buses aren't having to be aware of as many dangers and as such can travel a little bit safer, focusing on the road ahead, not traffic in side streets. Otherwise, I fully agree
 8. From the last farcical management of road closures, I feel that this will cause yet more significant disruption to trading at an enormously difficult financial time. I witnessed cones blocking off access for months with little or no work being done, roads dug up and refilled only to be dug up again because someone had made an error (according to the workmen I spoke to) and lengthy queues of traffic. The queuing traffic was a constant gripe with customers who often reported they hadn't shopped as frequently due to the significant time taken out of their working day stuck in traffic. No regard was given to tradesmen or shops trying to earn a living.
 9. We already suffered 18 months of hell and breathing in toxic fumes from cars and busses stopping outside our house during phase one. Even though there is a bus lane the traffic has not eased off instead it has increased, as the A45 is a major artery connecting the south of Birmingham i.e. airport, JLR with the city centre. Both of these entities have expanded over the last few years and apart from lockdown the traffic has increased drastically, also with heavy 20 ton lorries going to and from the HS2 site by the airport, the building of a new junction on the M42 and road building in Catherine de Barnes. These lorries raise down this road at high speed and when we had the road works they used to come down the residential roads at the back because of the chaos the road works caused. The only bit of filter to clean the air are the trees in the middle and you are proposing to take our bit of lifeline and green space away. The road is used as a race track at night and no amount of bus lane or speed cameras will change this. We know the A45 is a mayor road, but residents have a human right to live on a street which is not like the M6 motorway, but unfortunately it is becoming more that way. Also people will not use public transport just

because you put in more bus lane, it has not happened so far, it just has proven that the whole exercise of phase 1 hasn't changed anything except in increasing car traffic. On another point we have also noticed that the foundations of the houses are suffering with all of that constant heavy disturbance. WE ARE REALLY OBJECTING TO THIS PHASE 2 PROPOSAL. PLEASE THINK OF OUR WELL BEING.

10. There needs to be two general traffic lanes along the route from Sheldon to the Swan Island. How will the volume of traffic be managed with one lane?
11. No.
12. Work is slow and drawn out therefore taking unnecessarily longer time to complete. Noise and pollution will increase not only whilst work is carried out, but afterwards. The cutting down of trees and green space will also increase pollution. Health will be affected by increased pollution. Property prices will decrease. Most of work will be carried out at night, blocking off road access to residents. Sleep will be affected by residents. Why weren't all residents sent letters?? We found out too late to attend the consultation meeting. Where is the Sprint bus?? Why isn't it running? What evidence do you have to prove the service will be fully utilised and cost effective. Can you please provide the survey taken prior to embarking on the work, which proves the service will be justified??
13. All looks good and sensible. As ever, the challenge will be Poets Corner. Im surprised that there is no real plan to resolve this - for example a bus gate hamburger through the junction (noting that thats extra cost). Or some alternative way of giving buses priority over traffic at the junction. Will need to be mindful of the extensive on road parking along the route. The bus lane has been extended past much of that. Deliveries etc. will complicate things, and general poor parking could make the bus lane almost unusable at times. Strong signage and enforcement, I think. Also please do consider the needs of cyclists and, more importantly, pedestrians within this. Any opportunities to upgrade crossing including giving priority to pedestrians should be encouraged. Whatever the end plan, one plea - get on with it!
14. Since the completion of phase 1, when traffic backs up, vehicles use local parallel roads as rat runs and at significant speeds. Sunnymead Road constantly has to deal with cars travelling in excess of 40 and 50mph at times whilst attempting to beat the traffic on the Coventry Road. This is particularly concerning due to the schools that are located near to Sunnymead Road. Further narrowing of roads and reallocating existing road space for the exclusive use of buses will only exacerbate this. In addition, you state you are working with National Express. Is it sensible to award such services to the already monopoly player within the area thus increasing the size and reach of said monopoly? Were other companies given a fair crack of the whip for operating this route?
15. I am a worried regarding the bus shelter proposed for Keswick Road in Sheldon as I actually live in the corner house on New Coventry Road and

- Keswick Road. I am expecting difficulty on leaving and entering my drive.
16. The A45 Coventry Road is a mess and has been for many years. This has caused lots of disruption to the surrounding roads with cars trying to avoid the Coventry Road. This Phase 2 isn't going to make any difference to people's lives.
 17. We are living in a road in Sheldon which is a Speedway most days and when the Coventry Road is congested which is most of the time then our road Cranes Park is a danger to children and the elderly. We have been raising this concern for many years.
 18. How about the contractors stop closing lanes on the Coventry Road simply so they can park their vehicles would it not be better to keep both lanes open where possible but lower the speed limit past any works taking place. If lane closure is needed re open when not being worked on. It took 5 months if not more to do the bus stop opposite the Horse Shoes on Coventry Road with the usual traffic nightmare being caused. Please show full consideration for other road users and local residents as roads such as Lyndon Road Wagon Lane ETC become rat runs.
 19. The chaos created by phase 1 was immense and negatively impacted the private lives and livelihoods of people living, working and travelling through the routes in question with little apparent benefit once phase 1 was complete. have the sprint buses actually started running yet as I can't say I have seen one. Further with the chaos it will create on main arterial routes, people that live on alterative routes and side roads will see increased traffic as people avoid using the a45/a34 negatively impacting their health with increased noise and pollution.
 20. Waste of time and money. The bus journey isn't that bad anyway and reducing cars to one lane is ridiculous and will cause traffic to back up.
 21. There is already enough traffic on this road without it going down to one lane by the whirlwind garage. It will be chaos, not only for people going to work etc but for residents in the area who live there. Instead of just thinking about the sprint, it would be nice for some thought for the residents. We have had to put up with road works for a long time while phase 1 was completed. We had disruption to get to our homes, work, shopping and most of all lack of sleep due to the work being done overnight. It is not fair that we had to put up with all the disruption overnight and then somehow try and do a days work without getting any sleep. Machines going all night, the flashing of the lights on the lorries etc shining through the bedrooms even with blackout curtains and the workman having no concern at all for the residents with them shouting over the road at each other and laughing and joking. Please if this does have to go ahead do the work during the day. Yes it will cause problems on the A45 with the traffic during the day but it's always been busy. it's about time us as residents were thought of rather than a lane for a bus.

22. Quite simply, yet more sleepless nights while work is going on across from my house, we have put up with loads of work outside last year and you want us to go through it again, workmen shouting all night is louder than the machinery, how is that even possible, cones been thrown from the back of the lorry, very loud. No more sleepless nights thank you. We have on numerous occasions, most recently only a couple of weeks ago been reduced to one lane, it doesn't work!!! From a cyclists point of view extremely dangerous...no room. From a car drivers perspective, endless queues. Obviously your going to go ahead because you're not actually going to listen to the people who are affected, so you should pay for me to have triple glazing to help with noise and pay for blackout curtains. Some compensation HAS to be awarded to the residents on both sides of Coventry Rd.
23. I don't really understand the proposal fully. However, I support them as long as there is little disruption during the work and the existing bus stops remain open and in use and are not subject to changes in the buses which currently serve them. During phase 1 bus users were greatly disadvantaged during the period. This was made especially difficult when looking after an elderly relative who struggles to use the buses anyway.
24. The A45 is a major artery into the city. At the best of times it is extremely busy. At peak times it resembles a car park. Under no circumstances should any section of the A45 be reduced to a single lane, to do so defies common sense. Recent road works have clearly shown the adverse impact of doing this by significantly increasing traffic along minor side roads such as Brays Road (where parking is concentrated around Brays School making the road dangerous to navigate during school hours) and Barrows lane (where the recent opening of a Mosque has led to inconsiderate and illegal parking on pavements at certain times of the week. If you go ahead with this plan you will increase accidents and put lives at risk.
25. Residents have already experienced a year of disruption due to Sprint. That disruption was horrendous. Outside my home, traffic queued for approximately four months causing a massive rise in air pollution; journeys normally taking ten minutes typically took forty-five minutes to an hour (despite no work taking place most of the time): I would call this 'time pollution', and caused a lot of stress and misery (people queued in correct lanes, while others 'cut-in' much further up the road; people get annoyed); pavements were blocked, and pedestrians asked to cross both carriageways to the other side of the road, and cross back further up the road, with no thought to old or disabled people. All Sprint work should have been completed last time. I've travelled on buses since completion: improvements are minimal. More of the same is unfair on residents.
26. Support in theory but reducing general traffic lanes from 2 to 1 between Wagon Rd to Brays Rd is unacceptable and will become a chokepoint considering the rest of the road is 2/3 lane general traffic operation. Entire

- road should be widened more or use New Coventry Road as a slip stop.
27. In the main, especially where construction is proposed for the into City route from the Wheatsheaf to Clay Lane I would argue it is unnecessary and likely to cause inconvenience for residents and businesses forever into the future. Living where I do I suffered greatly at the hands of yourselves when the prolonged construction was being carried out especially at the Wheatsheaf and Lyndon Road bus stops. I wrote to you several times to try and persuade you to get the contractors to do their job. I really hope you have all learned from the experiences at those two sites particularly. Further into the city towards Heybarnes and the Small Heath bypass the workings caused havoc and seemed to drag on forever. Your comments about phase 1 completion on time and on budget in my opinion lack credibility. However, that is behind us and bus lane and traffic flow is improved and works well. In general now, that route from the Wheatsheaf into city is not a bottleneck and doesn't warrant the destruction of roadside parking and trees / central reservations for new and extra bus lanes. There were recent traffic issues but that was due to your road works by Clay Lane, all cleared now and flowing well again. I think little would be gained in bus travel times. The effect for me and on businesses that don't have car parking will be disastrous, thinking of those between Halfords and Tesco (Lyndon Road) and onwards to the mosque opposite Aldi. Save yourself budget and scrap that unnecessary and of no benefit work. We in this area have suffered enough - I fear for those people who use the A34. Rant over and I just hope you listen to our feedback. Thanks.
28. Hopefully will give people better transport facilities to reach outer parts of Bham.
29. There is too much of a pinchpoint and a significant lack of clarity for road users and where to get into lane where the A45 splits eastbound to go under the underpass or at grade at the swan junction. The lanes very suddenly go from 4 to 3 lanes now, and the additional extension of the bus lane is going to make this even more confusing unless properly signposted and marked on the road. Surely there is RTC data that backs up this current poor alignment. I am not against the bus lane but the split at the grade separated junction needs to be significantly improved and lane markings changed so there is clarity and space for users to know how and where to get into lane. I am also very sorry to still see no dedicated cycle lane provisions as part of the SPRINT scheme. I cycle down the A45 between Heybarnes and Hathford Brook but for the largest part it is on the pavement or off road routes. I know i shouldn't cycle on the footpath, but unless there is a safer provision on the road for cyclists, there's no way I am going to cycle on a 40mph dual carriageway. I don't have any confidence in risking cycling on the main carriageway or the bus lanes. Some of the bus lanes are not marked as shared use for cyclists anyway, which means that I have to use the all-vehicle lanes...a terrifying idea.
30. The junction at the Wheatsheaf is going to be the achilles heel in the

scheme if it isn't rethought. With 2 bottle necks either side of the traffic lights (sheaf Lane and lode Lane,) traffic invariably blocks the main A45 carriageway into and out of Birmingham at peak times. Also traffic overshoot on red lights.

31. The bus stops clearly were designed by someone who never uses a bus stop. Why are they open to the elements? They should be enclosed. Also, litter bins should be replaced. I'm fed up of finding litter, bottles, cans and McDonald's food bags etc on the seats at the bus stop because there is no litter bin.
32. The bus stops offer no protection for rain and often seats are wet.
33. The loss of non-bus lanes is detrimental to local traffic, when the existing two lanes is changed to one, surely before anymore reduction is undertaken a review of the impact of the lane change from all traffic to bus only needs to be undertaken? I believe it's detrimental to local traffic and slowing the overall traffic down. Dedicating a whole lane to buses that run at most every 10 mins is not an effective use of the limited space and lanes. When using the bus as a passenger, the new lanes appear to have little impact, except for the bus gate at Haybarnes circus.
34. Having just spent a sum of money creating a new bus shelter at the Wheasheaf, why is it necessary to create another. Either bad planning or excessive waste of funds. Also, I cannot see any timeline for all this work which begs the question as to why not?
35. Sprint Phase 1 on the A34 seems to work fairly well, I took the bus to Walsall at about 6 pm and it got there on time, even though there was a long wait at the Scott Arms junction where no bus priority signalling was apparent, unlike many other lights that I could see turned green as the bus approached. The A45 plans look reasonable but it seems like they "give up" at some of the junctions. I'm concerned this might result in delaying buses at rush hour. I've got family considering Sheldon as somewhere to move to so if the Sprint Phase 2 can give a frequent fast and reliable service that would be beneficial.
36. We have had a nightmare for over 18 months of roadworks lane closures causing noise and pollution, now you are on about reducing carriageway to one lane past our houses, we will have to endure noise and stationary traffic plus the loss of green reservation and trees. Your surveyors should see what chaos ensues when one lane is closed, and 20 ton lorries will us rat runs like other motorist and people will be killed!
37. I am concerned that the current markings are dangerous, and therefore as there is not going to be any construction work I fail to see how this will improve; the bus lane carry's right on to the junction of clay lane, so if you want to turn to go to the cemetery there is no option to filter over to the left in order to make your turn, so you have to turn from the right lane- if there is a bus in the lane you then have to hold all of the traffic up in that lane-

assuming it stops!- to wait for the bus to pass before you can turn; most other junctions enable car drivers wishing to turn left to filter into the bus lane area as the bus lane ends well before the junction; this is not the case here & is very dangerous.

38. Not sure purpose of bus lane at Redhill Road given the lining layout. Signals need to be improved as part of the scheme. Why isn't Gilbertstone Ave bus stop being upgraded?
39. Emergency ambulances regularly travel along the A45 (Heartlands and Solihull Hospital). I would estimate a minimum of ten blue-light ambulances per hour. During the last phase, I witnessed blue-light ambulances stuck in the Sprint roadworks many times (while walking along the Coventry Road, or driving, or on a bus). Between Gilbertstone Road and Wagon Lane, for example, a blue-light ambulance would take approximately two to four minutes to negotiate the roadworks last year, whereas normally (without roadworks) that distance would probably take less than one minute at most. Adding up the amount of ambulances per day/week/month, I am quite convinced that these delays cost some people their lives, or resulted in long-term health problems. What provisions have you made this time (if any) to ensure ambulances are not delayed in your roadworks? And how do we find out what (if any) changes you make to your plans in response to consultations?
40. You're going to increase congestion on this road, it will be a nightmare.

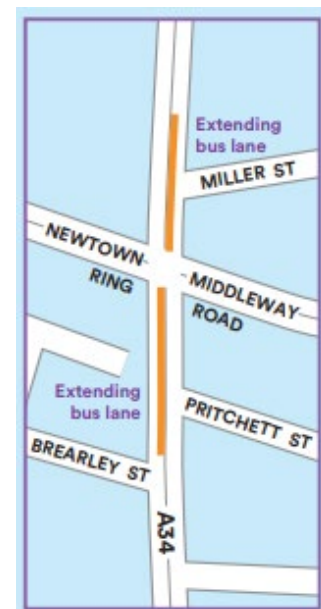
A34 - Walsall Road

Phase 2 proposals include:

Junction of New Town Row with New John Street West/Newtown Middleway

Extension of the existing bus lane back on the into city (southbound) and out of city (northbound) approaches to the signals (the left of the two straight ahead lanes) this is likely to lead to slightly longer waiting times at the signals for motorists travelling straight on (A34) at the junction.

Junction of A34 /Trinity Road/Heathfield Road





Widening of the northbound (out of city) carriageway at the junction with Heathfield Road to allow 2 straight ahead lanes to improve bus and general traffic movement through the junction

Improved access to the bus stop on the southbound (into city) carriageway near Trinity Road by building out the kerb, reducing the permitted hours for loading and additional enforcement to prevent illegal parking.

Six new shelter installations

We intend to install six more Sprint shelters at the following locations to provide better facilities for waiting passengers, with enhanced Real Time Information, CCTV and improved seating:

- Rodway Close northbound
- Hatfield Road northbound
- Gainsborough Road north and southbound
- Old Walsall Road north and southbound

We propose moving the southbound **Old Walsall Road** stop from its present location to accommodate a larger shelter. This will mean a realignment of the kerb line at the proposed new location with the loss of two parking spaces.

What do you think of the Phase 2 proposals for the A34 Walsall Road (on a scale of 0 to 5 where 0 is really dislike and 5 is really like)?

Don't know/no opinion	24
No answer	19
0 - Really dislike	14
5 - Really like	6
2 – Neither like nor dislike	1

Comments about the proposed scheme? (19)

1. We have been advised that a new stop will be repositioned right outside our property and we will lose access to existing parking. We strongly object to this as there is already an established stop. We take this as a personal attack on the way we live and our right to privacy. We will be subjected to:- High noise pollution from doors opening and closing; Braking and accelerating noises; Anti social behaviour associated with bus stops; Litter- On the pavement and thrown into our garden; Devaluation of property due to bus stop; restricted parking and lack of privacy.(We have

had this confirmed by an estate agent); Unsafe access by small children who we look after on a regular basis. I am a cancer patient and need safe access at all times. The threat of having a bus stop overlooking my property is causing extreme stress and anxiety which I can well do without. We trust that we will have the opportunity to put our objections across on an individual basis rather than as a collective where they are likely to be overlooked or ignored. We have been in contact with our local MP and council representatives for their advice and support in objecting to this proposal.

2. Conflict again with the traditional Bus Service many of which go from Birmingham Beyond Walsall to Cannock.
3. The changes at Newtown Middleway/ring road will cause tailbacks onto Lancaster Circus island causing gridlock around that area. This can happen at the moment when heavy traffic occurs or problems on the A34.
4. Would be good if something could be done at St Stephens Street/A34 junction so that buses heading northbound aren't stopped to let traffic come out of St Stephens Street.
5. We now have the utter ridiculousness of two bus stops which numbers change regularly confusing passengers who are often seen running to the right bus or missing the bus entirely.
6. There is nothing mentioned here about the moving of the bus stop on the southbound A34 at the old Walsall Road junction! Where is it being moved to? There is also mention in the sprint 2 map that 'local residents have been contacted about the changes'. When exactly was that, we have had nothing?
7. Re: 845 Walsall Road. We have been advised that a new stop will be repositioned right outside our property and we will lose access to existing parking. We strongly object to this as there is already an established stop.
8. Ensure bus lanes are enforced, currently busses can't use them as cars and lorries are parked.
9. Lane changes at Newtown Middleway is completely ridiculous, you talk about reducing carbon and congestion while doing the complete opposite, changing 2 lanes to turn right into 1 will create traffic mayhem backing on to the fly over increasing the risk of an accident, there is no need for a bus lane there which is only used by one bus, the number 7. It is complete unreasonable to change it to one lane as there at there is ever hardly any delays caused there to the bus route apart from when there is an accident at this notorious junction and the bus generally is able to proceed with traffic with no bottlenecks. This will increase the risk of drivers having an incident from having to change back lanes to the take the left turn onto alma way as aside to the matter fact of wasting our hard earned 'abused' money against the will of the people who live in the area on something that is utterly pointless. Lane changes at the Trinity Road/Heathfield Road

junction towards Perry Barr should take into consideration the delays caused by the the traffic lights to process straight that causes congestion to back up on to Birchfield road blocking the path to turn right on to trinity road as is currently the issues. Maybe when you decided to install the cycle lane you could have rededicated the width of the footpath, but no you didn't because you don't plan works effectively but waste our money per usual in the typical labour fashion and try to blame contractors.

10. I don't visit this area so can't comment on the proposals.
11. The road is fine as it is. Bus routes. 51 and x51 are adequate for commuting. I live by a proposed new bus stop. I will lose value on my home ...lose road parking. The bus stop is fine where it is.
12. The A34 used to be a really effective route for driving into the city but developments over recent years have made it increasingly congested with traffic hold-ups. These developments, particularly the Newtown proposal will serve only to delay traffic even more. Stationary traffic causes pollution and impacts on people's work and home lives so has no benefits.
13. I fear for the residents and trees.
14. **OBJECTION TO RELOCATION OF BUS STOP A34. Re: 845 Walsall Rd.**
It is proposed to move the bus shelter from its current location outside 853/855 Walsall Road where is it at least 20 metres from any residential property frontage and to relocate it outside 845/847 Walsall Road which is directly outside 2 residential properties. I do not support the movement of the shelter to its new location for the following reasons
1. The current location is large enough for an upgrade and is well situated for access with a zebra crossing enabling safe passage for pedestrians, it has been at this location for many years without causing any problem.
2. To move the shelter to its new proposed location raises a number of problems for local residents, increased noise, litter, anti-social behaviour and the close proximity of large vehicles. As a resident adjacent to the proposed location there are a number of road safety issues that will directly affect me, egress onto the main A34 which is currently problematic and which would be compounded by this installation by obstructing the view whilst trying to safely enter the flow of traffic , the same goes for re-entering my property. There are no really useful traffic calming measures apart from signage which is roundly ignored by many road users and excess speed whilst trying egress is a problem. It also risks pedestrians who I believe would be tempted to cross the A34 via the central reservation rather than using the crossing that is adjacent to the current shelter.
3. Privacy. I am concerned for my privacy if the shelter is placed so close to the property frontage as I feel it will encourage people using the shelter to 'gawp' into gardens and the property itself which I find uncomfortable, the current location is a considerable distance from any frontages and better suited for the shelter upgrade.
4. I a concerned about access for contractors, deliveries and visitors being able to make reasonable access to mine and my neighbour's

properties, for instance where would kerb side deliveries be made for heavy goods such as building materials etc.? 5. Reduction in available parking, the proposed new location would remove two parking spaces which effectively allows the safe parking of 4 saloon style cars, again this is an erosion of local facilities that are well used and well needed for all sorts of local people, visitors, agencies, local business users. 6. Devaluation of property prices, no one wants a bus stop directly outside their home as it is likely to put home buyers off due to the actual and perceived difficulties with property access, noise, litter, parking etc as I have already covered. These are my objections to moving the current shelter to this proposed new location, the concerns of residents directly affected by this proposal should be seriously considered going forward and ask that the shelter remains and upgraded at its current location which I consider large enough based on my own observation and that of my neighbours.

15. There are no issues with the current bus services and stops. Buses arrive on time and are efficient in service. The disruption is causing more inconvenience than is required. Money is better spent elsewhere on projects that require it.
16. Bus stop outside my home 845 Walsall Road. This is already a very busy main road. I work shifts and the noise is bad enough without putting a bus stop outside! Reversing off the drive is dangerous enough without this obscuring my view even more. Traffic comes off the motorway at great speed. They don't observe the speed limit.
17. I agree that public transport needs to improve, however with the works done in Phase 1 why are we now seeing additional works for Phase 2. I am a resident. Your proposal for a move in bus stop (southbound) directly affects me and my household. We did not purchase our home with a bus stop on our doorstep. Moving it from its current placement will 1. Decrease value in my home, 2. Restrict access to and from my house, 3. Remove my privacy (having cameras and people roundabout). Increase the risk of RTA – an average at least 1-2 times per week. Someone will walk across my drive while I drive to back out onto the road. I currently risk being hit by cars and lorries travelling at speed while I'm inching and slowly trying to approach my drive, 4. We have 4 cars only 2 fit on the drive. I use the allocated space where you propose to put the bus stop ... where will they park/what about the effect of our insurance by parking away from our home!! 5. I sue the bus stop in its current location around 3 times per week – daily in the winter. Most of the time there is no more than 3 people waiting either for the 28 or 51 bus. We don't need a bigger bus shelter. What's there in its current location is fine. You can utilize Scott Arms bus shelters if you must – there is plenty of space even with what's been recently done.
18. Objection to relocation of bus stop A34 Walsall Road. Ref 845 Walsall Road. We have been advised that a proposal has been put forward to reposition an existing bus stop right outside our property and we will lose

access to existing parking. We strongly object to this as there is already an existing stop. We take this as a personal attack on the way we live and our right to privacy. Under the Human Rights Act and our right to safety, we will be under constant scrutiny from people on the buses and those waiting at the stop – especially those who choose to stand outside the shelter. We will also have our every move monitored by the security cameras fitted to the stop. We will be subjected to: unsafe access when pulling onto and off our drive; unsafe access by small children on a very busy main road, who we look after on a regular basis; high noise pollution from 3 sets of doors opening and closing; braking and accelerating noises; anti-social behaviour associated with bus stops; litter on the pavement and thrown into our garden inviting vermin; devaluation of property which we have worked hard to maintain (we bought this property because of the close proximity to parking).

1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT SPECIFICATION AND THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS INCLUDING REVISION/AMENDMENTS AND ANY CLIENT SPECIFIC ADDITIONAL OR SUBSTITUTE CLAUSES.
2. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER.
3. ALL DIMENSIONS TO BE CHECKED BEFORE COMMENCEMENT OF WORK ON SITE.
4. ALL DIMENSIONS IN METRES UNLESS OTHERWISE STATED.

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

P05 19/05/23

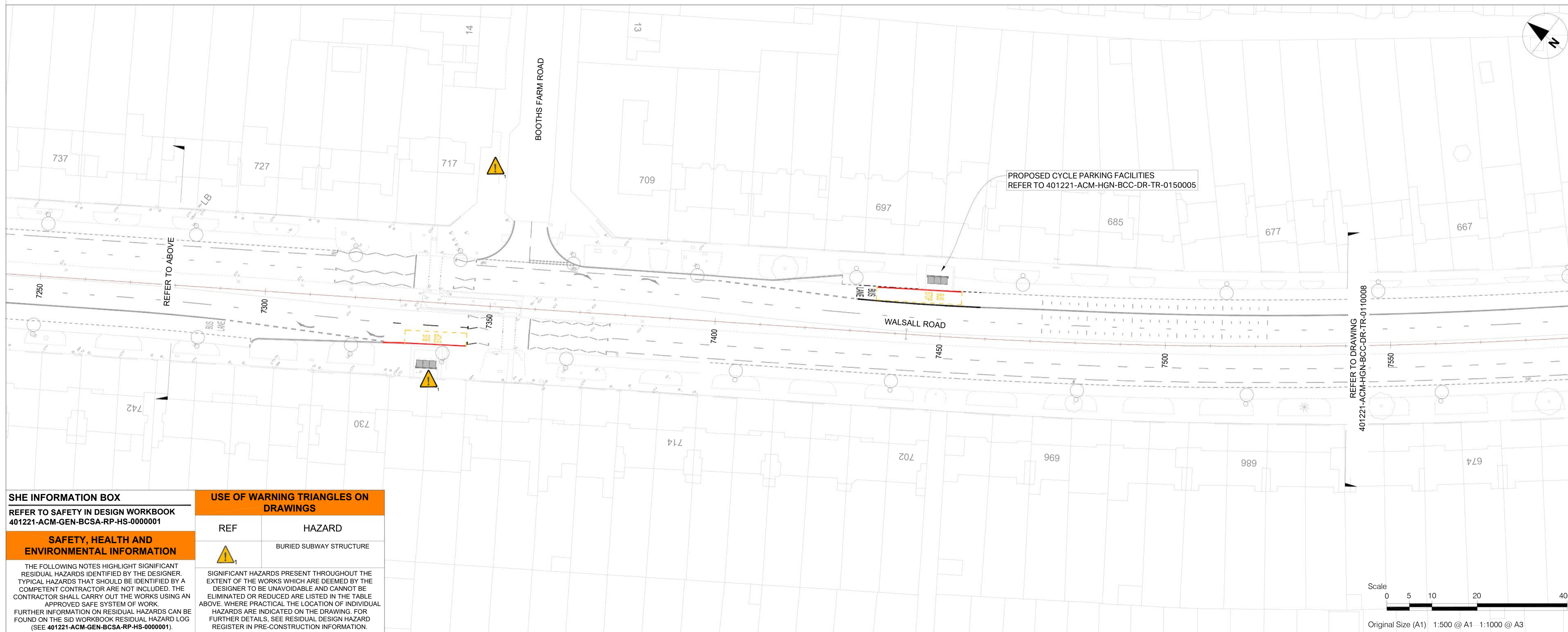
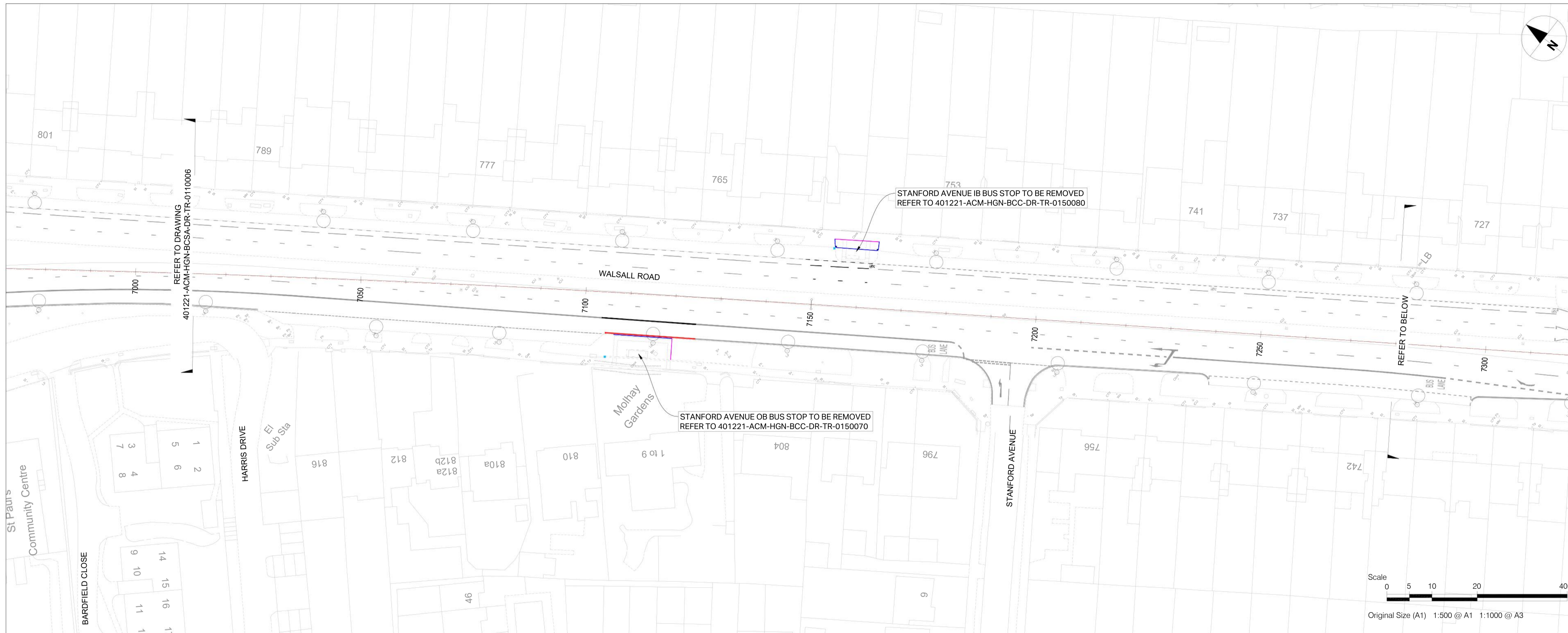
NO	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

Suitable for review & comment

60688007E

PACKAGE E
GENERAL ARRANGEMENT
SHEET 7

Project Number	Originator	I Volume
401221	ACM	HGN
BCC	DR	TR
		-0110 007
Location	I Type	I Role
		I MCHW
		I Number



SHE INFORMATION BOX
REFER TO SAFETY IN DESIGN WORKBOOK
401221-ACM-GEN-BCSA-RP-HS-0000001

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SD WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
	BURIED SUBWAY STRUCTURE

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as required by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

ISSUE	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue

ISSUE PURPOSE / SUITABILITY

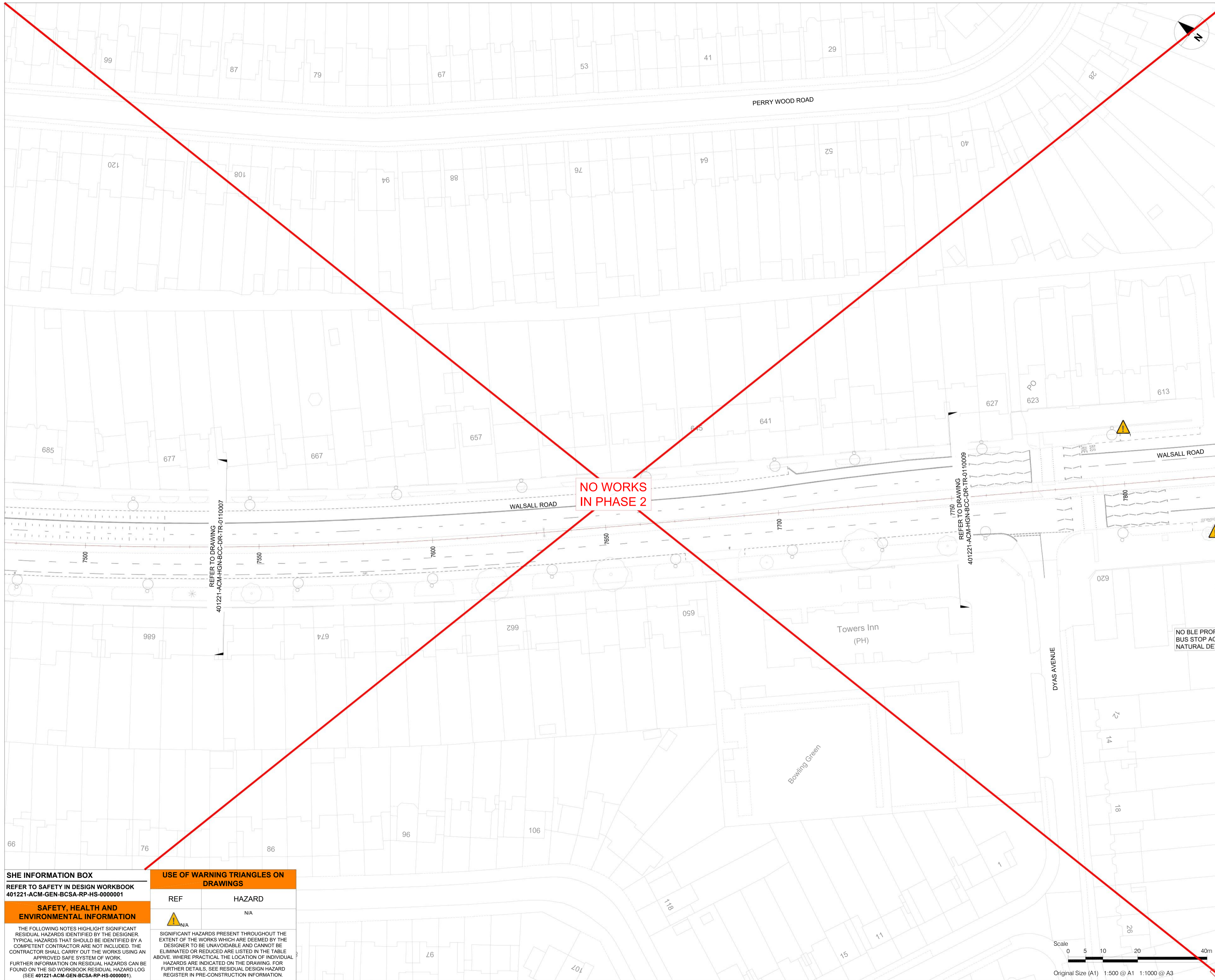
Suitable for review & comment

PROJECT NUMBER
60688007E

SHEET TITLE
PACKAGE E
GENERAL ARRANGEMENT
SHEET 8

SHEET NUMBER

Project Number	Originator	I Volume
401221	ACM	HGN
BCC	DR	TR
Location	I Type	I Role
		MCHW
		I Number
		0110 008



SHE INFORMATION BOX

REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

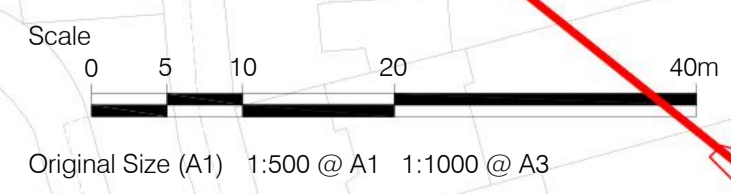
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
N/A	N/A

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

KEY

	PROPOSED KERB
	PROPOSED EDGING
	PROPOSED ROAD MARKING
	EXISTING ROAD MARKING
	PROPOSED SPRINT BUS SHELTER
	EXISTING SPRINT BUS SHELTER
	TACTILE (UNCONTROLLED CROSSING)
	TACTILE (CONTROLLED CROSSING)
	CORDUROY TACTILE
	TRAMLINE TACTILE
	PROPOSED FENCING
	PROPOSED TRAFFIC SIGNAL
	EXISTING TRAFFIC SIGNAL
	EXISTING LIGHTING COLUMNS
	PROPOSED SIGNS AND BOLLARDS
	PROPOSED GULLY
	EXISTING GULLY
	PROPOSED LITTER BIN BOLT DOWN
	FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

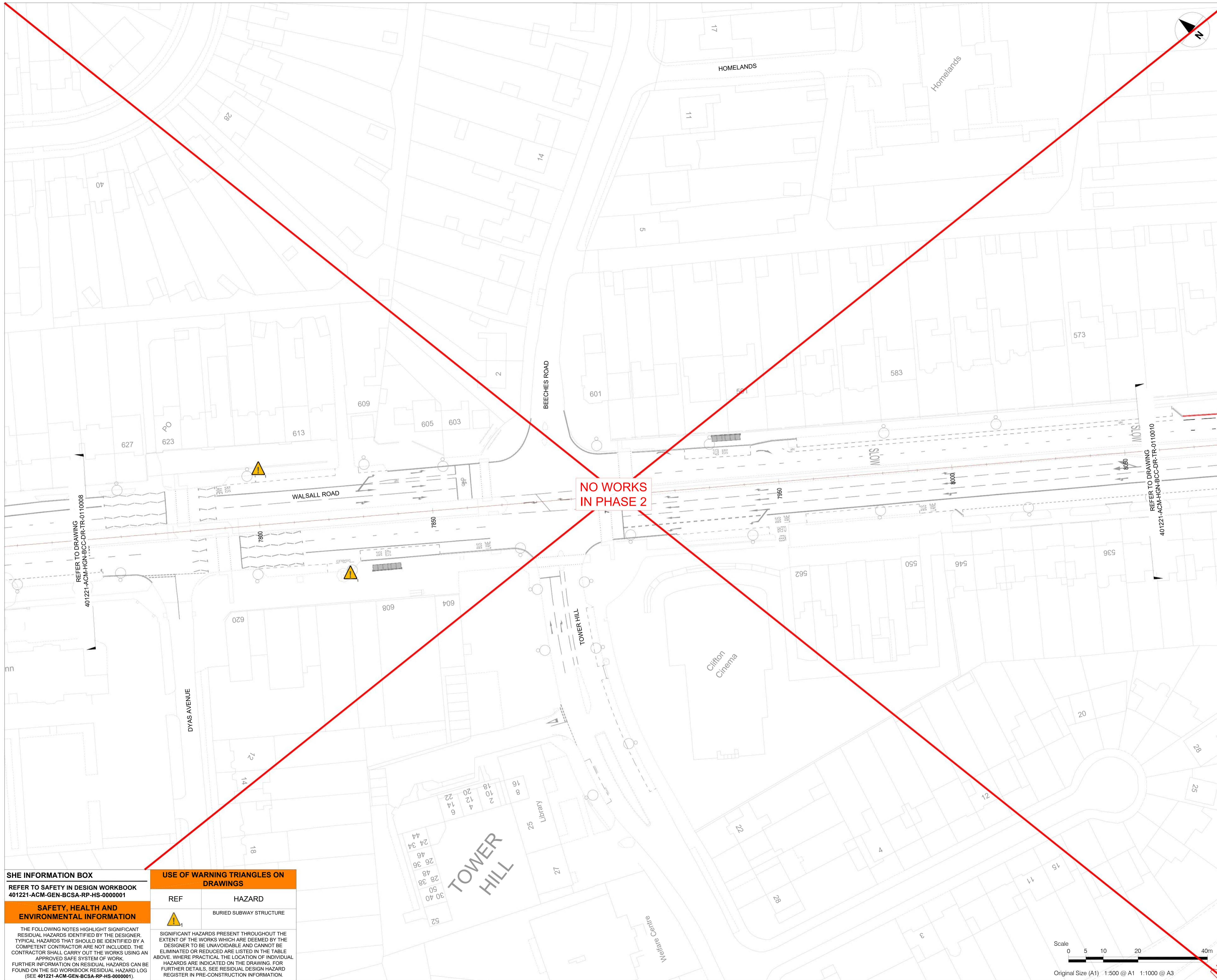
Suitable for review & comment

PROJECT NUMBER
60688007E

SHEET TITLE
PACKAGE E
GENERAL ARRANGEMENT
SHEET 9

SHEET NUMBER

Project Number	Originator	Volume
401221	ACM	HGN
BCC	-DR	-TR
Location	I Type	I Role
		I MCHW
		I Number
		009



SHE INFORMATION BOX

REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

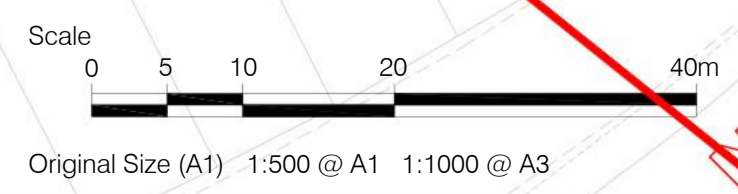
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
	BURIED SUBWAY STRUCTURE

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P06	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	12/04/23	Final Detailed Design
P06	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

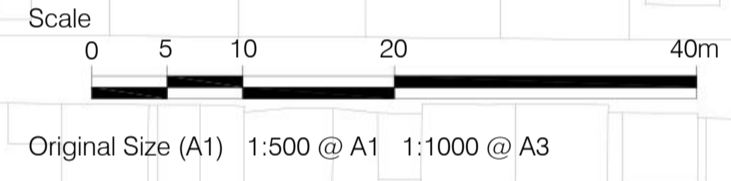
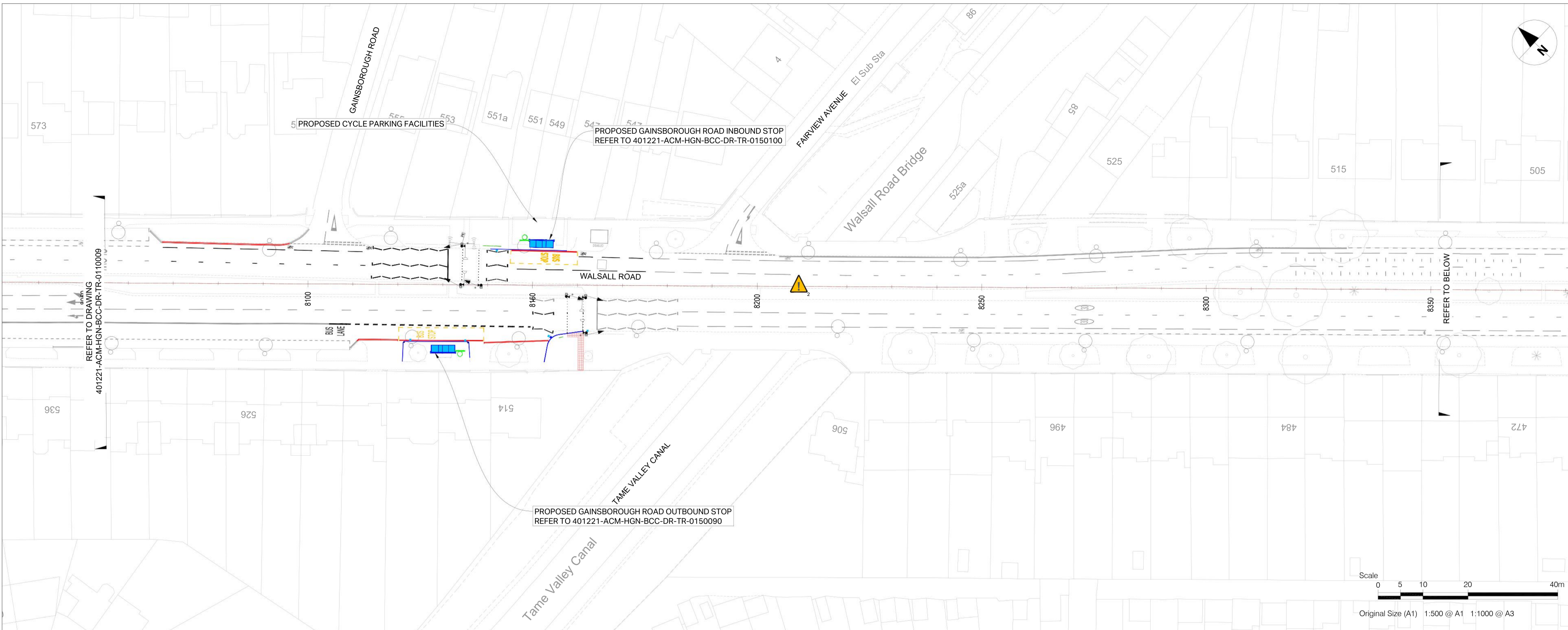
Suitable for review & comment

PROJECT NUMBER
60688007E

SHEET TITLE
PACKAGE E
GENERAL ARRANGEMENT
SHEET 10

SHEET NUMBER

Project Number	Originator	Volume
401221	ACM	HGN
BCC	DR	-TR
Location	I Type	I Role
		I MCHW
		I Number
		010



SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

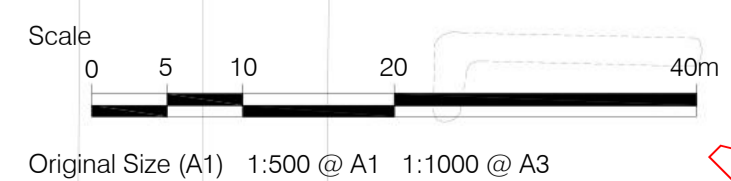
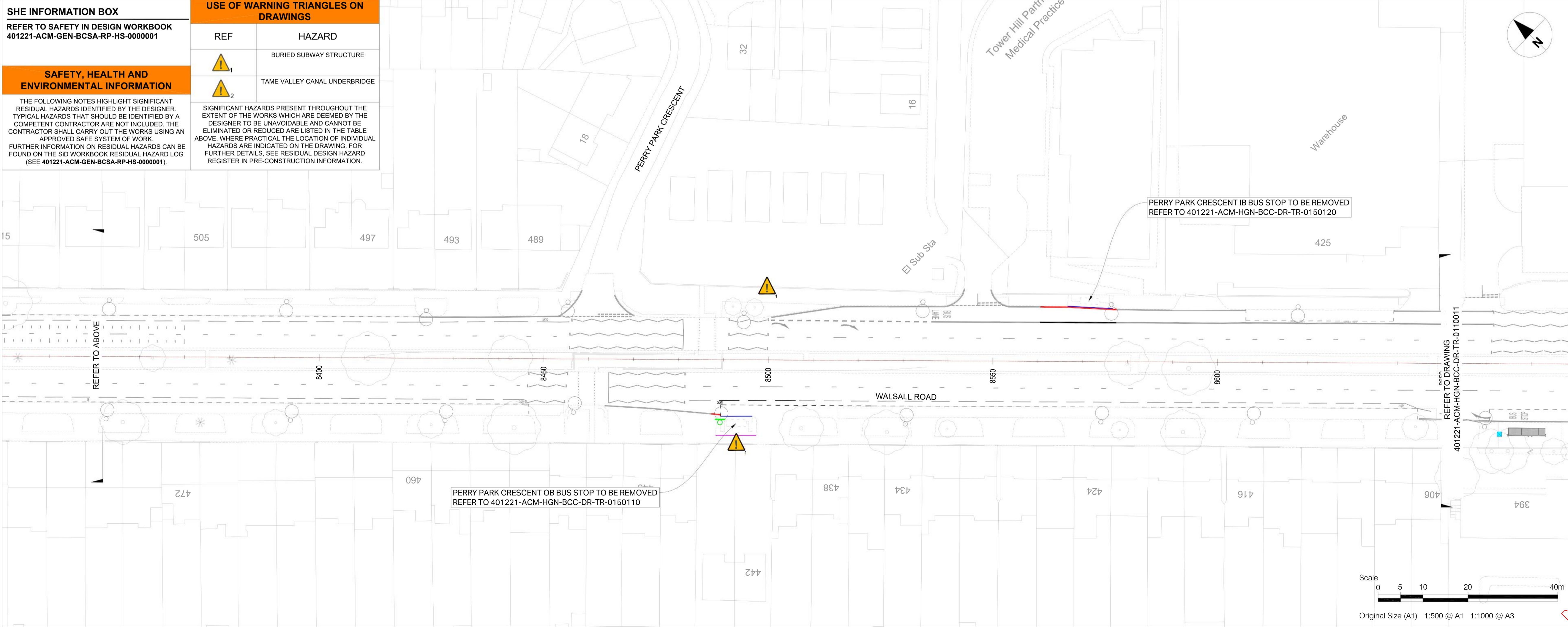
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

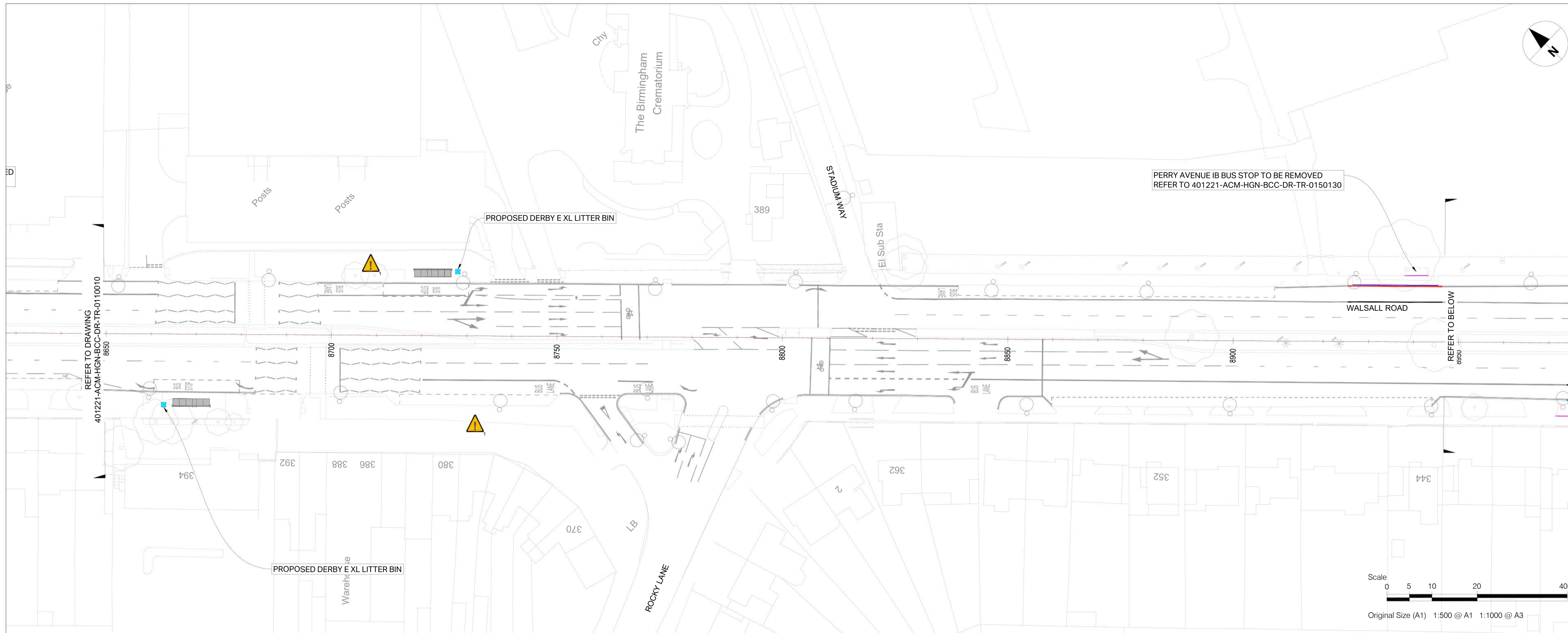
THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SD WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
1	BURIED SUBWAY STRUCTURE
2	TAME VALLEY CANAL UNDERBRIDGE

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.





SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

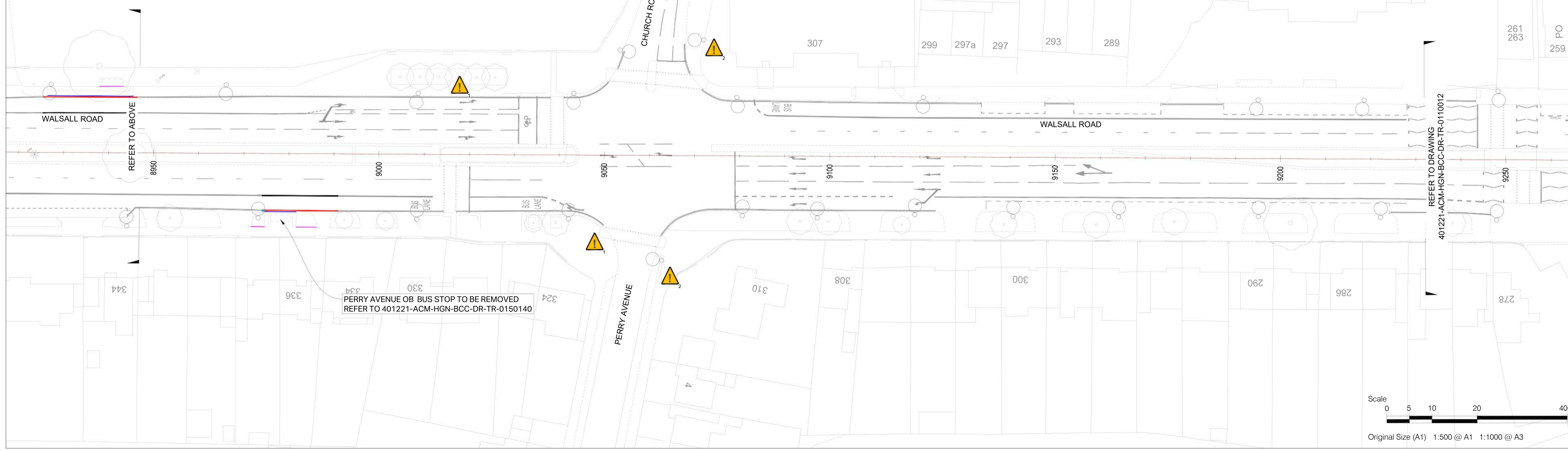
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

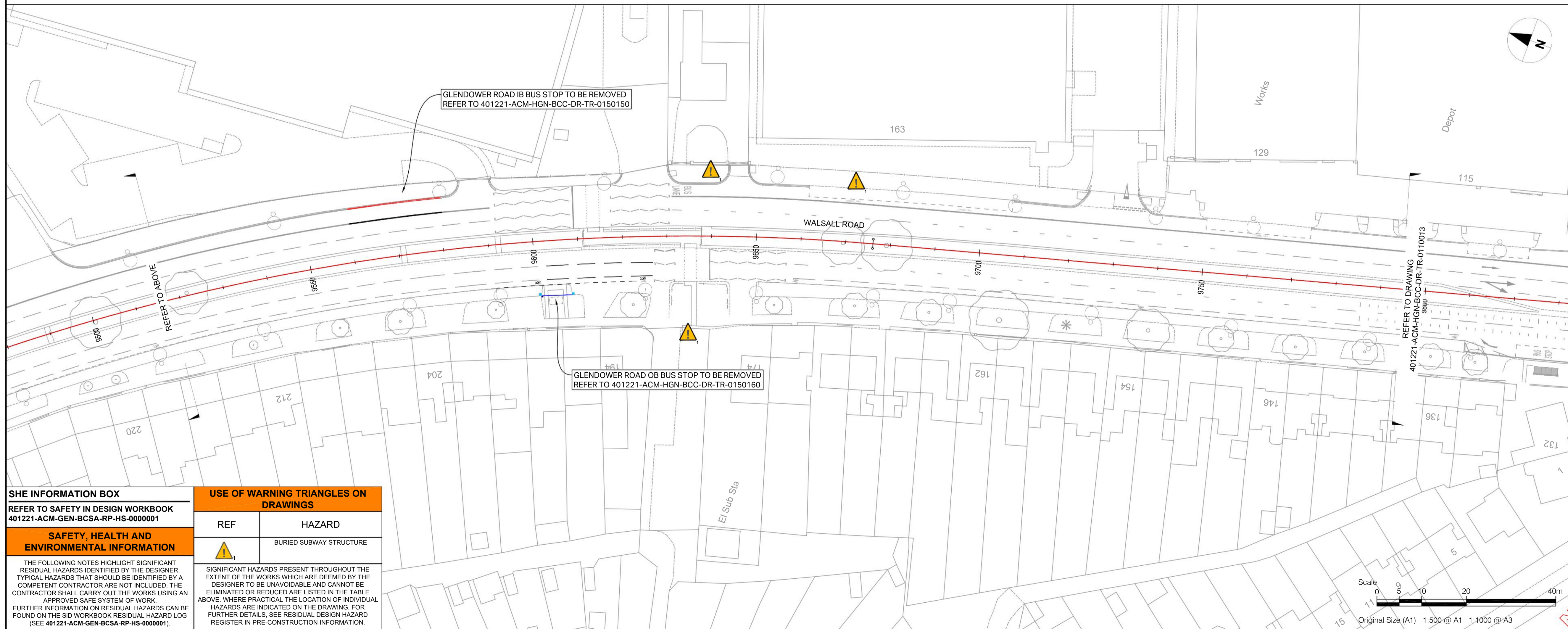
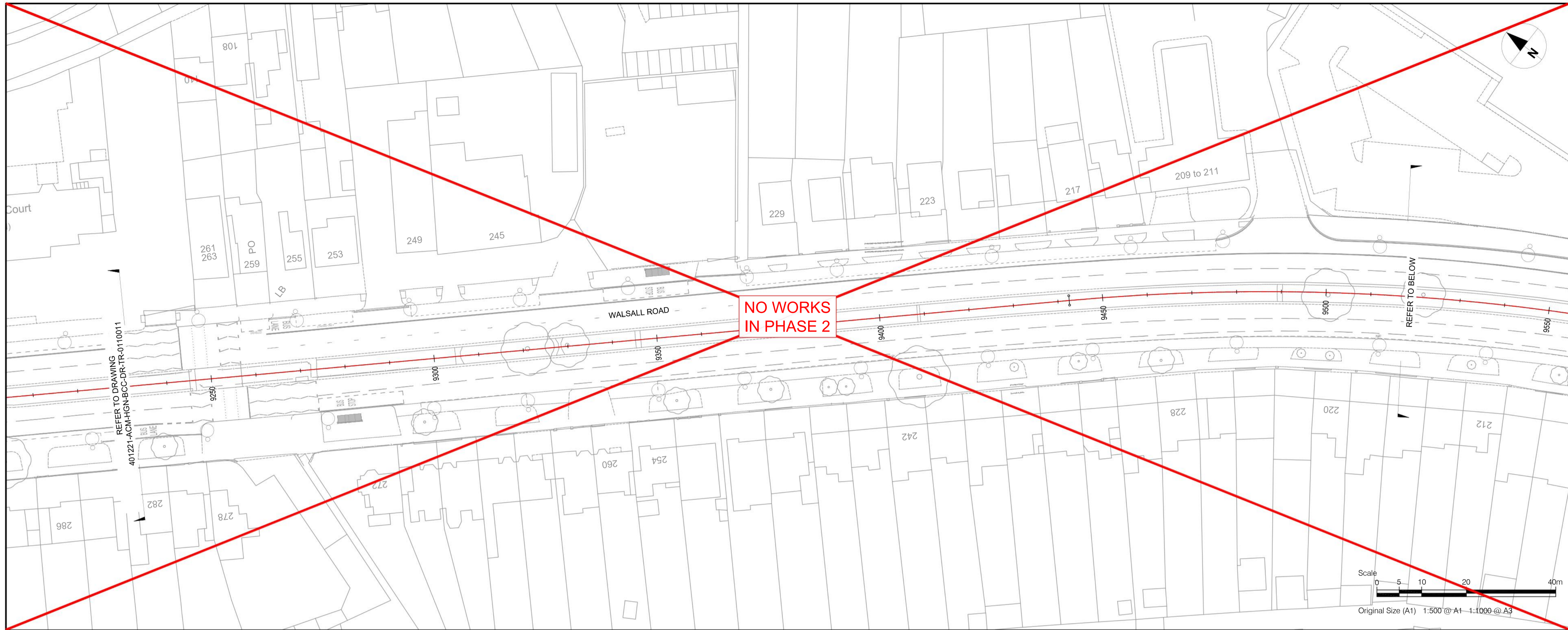
THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
1	BURIED SUBWAY STRUCTURE
2	MAINLINE OIL PIPELINE

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.





SHE INFORMATION BOX

REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
▲1	BURIED SUBWAY STRUCTURE

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE, WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. All measurements must be obtained from the stated dimensions.

KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

Suitable for review & comment

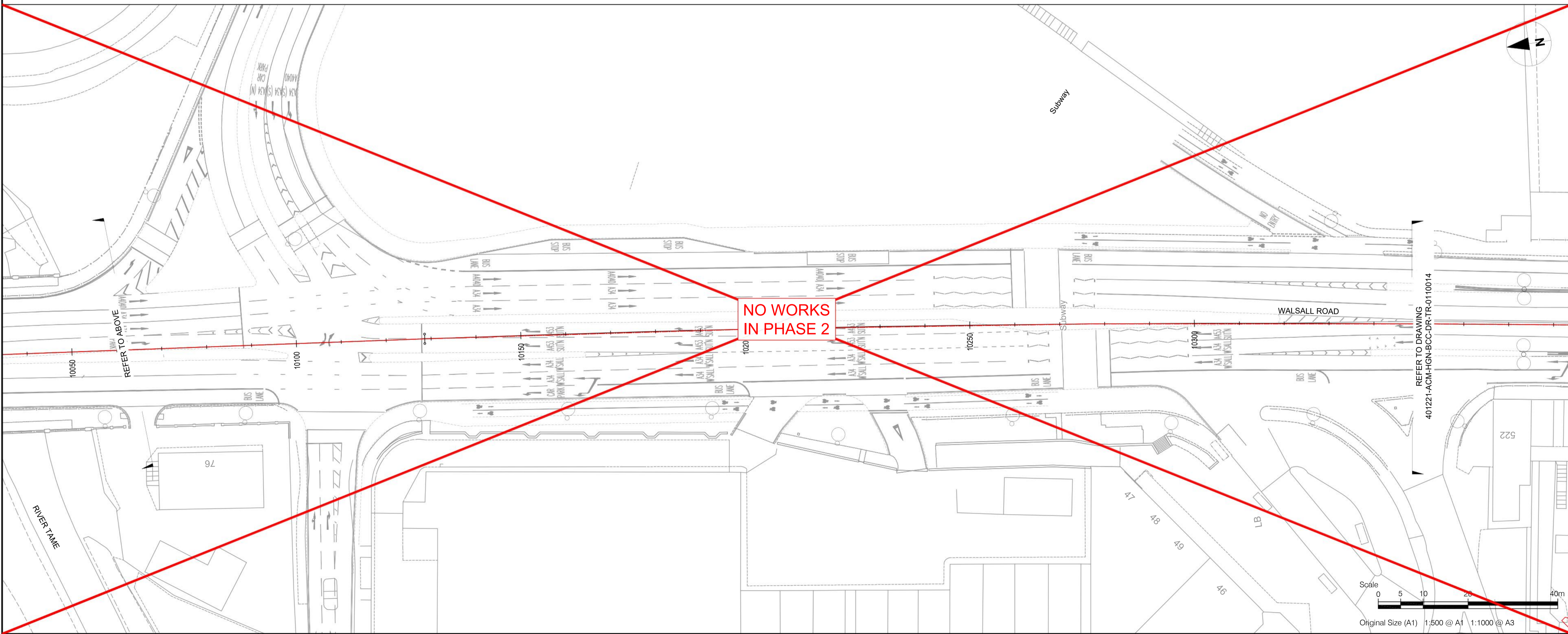
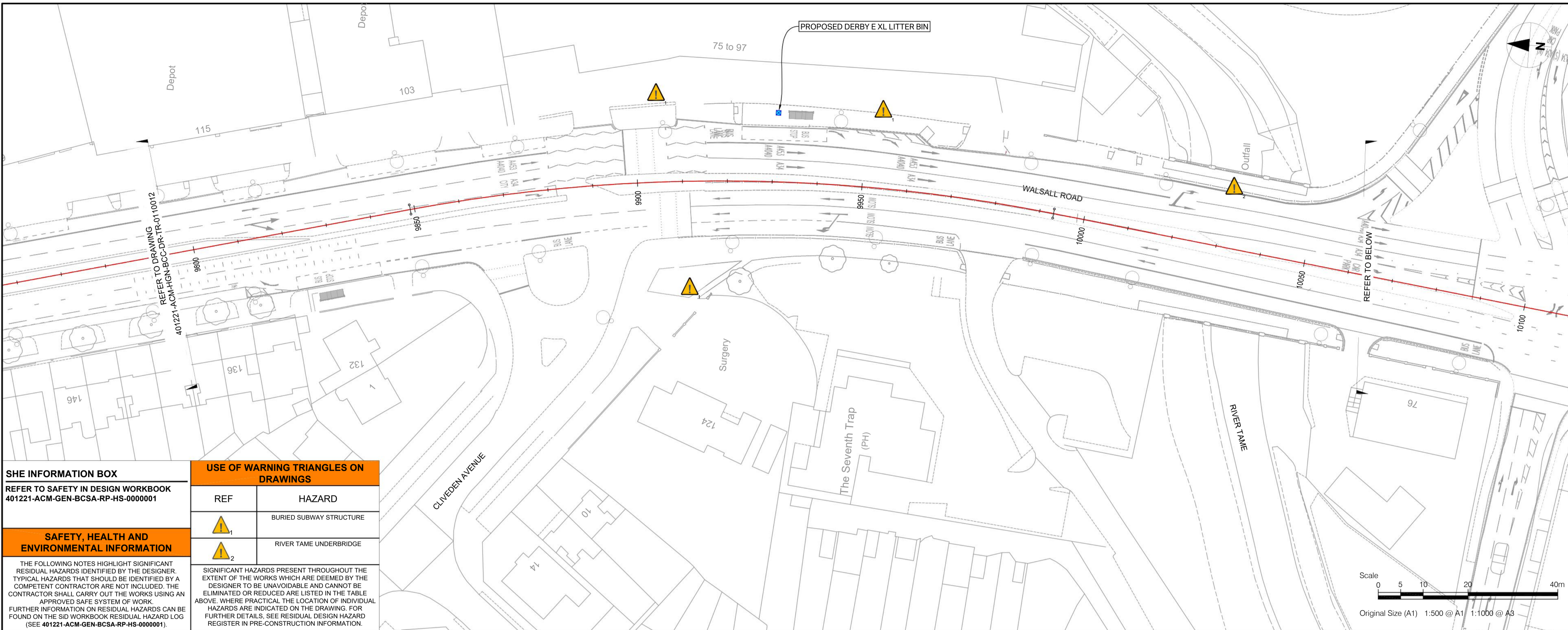
PROJECT NUMBER
 60688007E

SHEET TITLE
 PACKAGE E
 GENERAL ARRANGEMENT
 SHEET 13

SHEET NUMBER

401221	ACM	HGN
BCC	-DR	-TR
-0110	013	

Location I Type I Role I MCHW I Number



ISO A1 594mm x 841mm
 Drawn: RS
 Approved: AC
 Checked: PBM
 Designer: RS
 Project Management Initials: Revision:
 Last saved by: PATRICK MILLS (2023.05.19) Last Picked: 2023.05.19
 Filename: C:\P\WORKING\AECOM_DS02_UK-CLT\PATRICK.MILLS@AECOM.COM\0421232401221-ACM-HGN-BCC-DR-TR-0110014

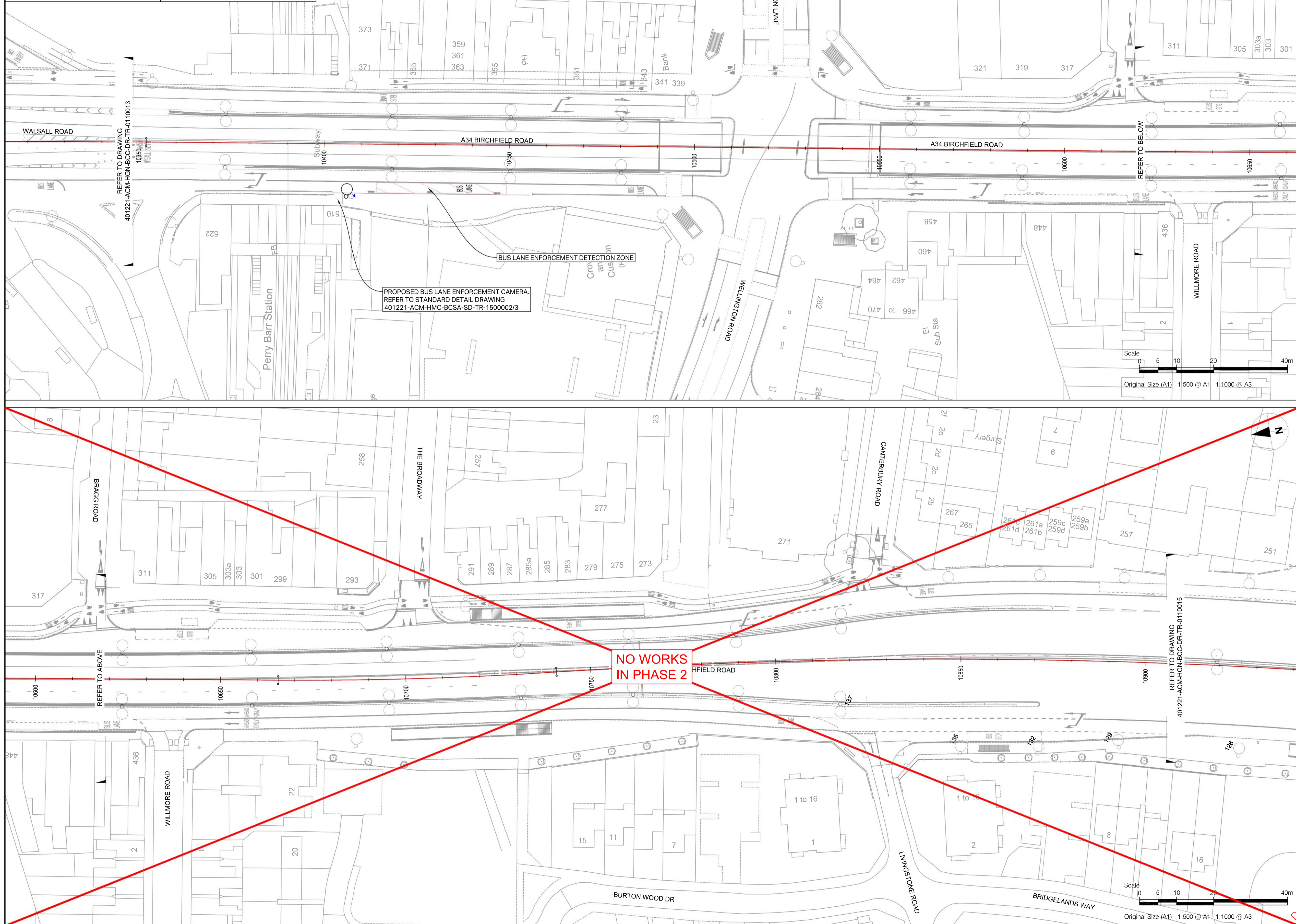
SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
▲ N/A	N/A

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.



PROJECT
 Sprint Phase 2
 Package E



CONSULTANT
 AECOM
 The Colmore Building
 Colmore Circus Queensway
 Birmingham
 +44 (0) 121 262 1900
www.aecom.com

REGISTRATION
 Reproduced from the Ordnance Survey map with the permission of the controller of H.M. Stationery Office. © Crown copyright reserved. Licence no. 100031673.

- NOTES**
- ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT SPECIFICATION AND THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS INCLUDING REVISION/AMENDMENTS AND ANY CLIENT SPECIFIC ADDITIONAL OR SUBSTITUTE CLAUSES.
 - ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER.
 - ALL DIMENSIONS TO BE CHECKED BEFORE COMMENCEMENT OF WORK ON SITE.
 - ALL DIMENSIONS IN METRES UNLESS OTHERWISE STATED.

- KEY**
- PROPOSED KERB
 - PROPOSED EDGING
 - PROPOSED ROAD MARKING
 - EXISTING ROAD MARKING
 - PROPOSED SPRINT BUS SHELTER
 - EXISTING SPRINT BUS SHELTER
 - TACTILE (UNCONTROLLED CROSSING)
 - TACTILE (CONTROLLED CROSSING)
 - CORDUROY TACTILE
 - TRAMLINE TACTILE
 - PROPOSED FENCING
 - PROPOSED TRAFFIC SIGNAL
 - EXISTING TRAFFIC SIGNAL
 - EXISTING LIGHTING COLUMNS
 - PROPOSED SIGNS AND BOLLARDS
 - PROPOSED GULLY
 - EXISTING GULLY
 - PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P06	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	12/04/23	Final Detailed Design
P06	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY
 Suitable for review & comment

PROJECT NUMBER
 60688007E

SHEET TITLE
 PACKAGE E
 GENERAL ARRANGEMENT
 SHEET 14

SHEET NUMBER

401221	ACM	HGN
BCC	-DR	-TR
		-0110 014

Location I Type I Role I MCHW I Number

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM, or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. All measurements must be obtained from the stated dimensions.

KEY

	PROPOSED KERB
	PROPOSED EDGING
	PROPOSED ROAD MARKING
	EXISTING ROAD MARKING
	PROPOSED SPRINT BUS SHELTER
	EXISTING SPRINT BUS SHELTER
	TACTILE (UNCONTROLLED CROSSING)
	TACTILE (CONTROLLED CROSSING)
	CORDUROY TACTILE
	TRAMLINE TACTILE
	PROPOSED FENCING
	PROPOSED TRAFFIC SIGNAL
	EXISTING TRAFFIC SIGNAL
	EXISTING LIGHTING COLUMNS
	PROPOSED SIGNS AND BOLLARDS
	PROPOSED GULLY
	EXISTING GULLY
	PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

Suitable for review & comment

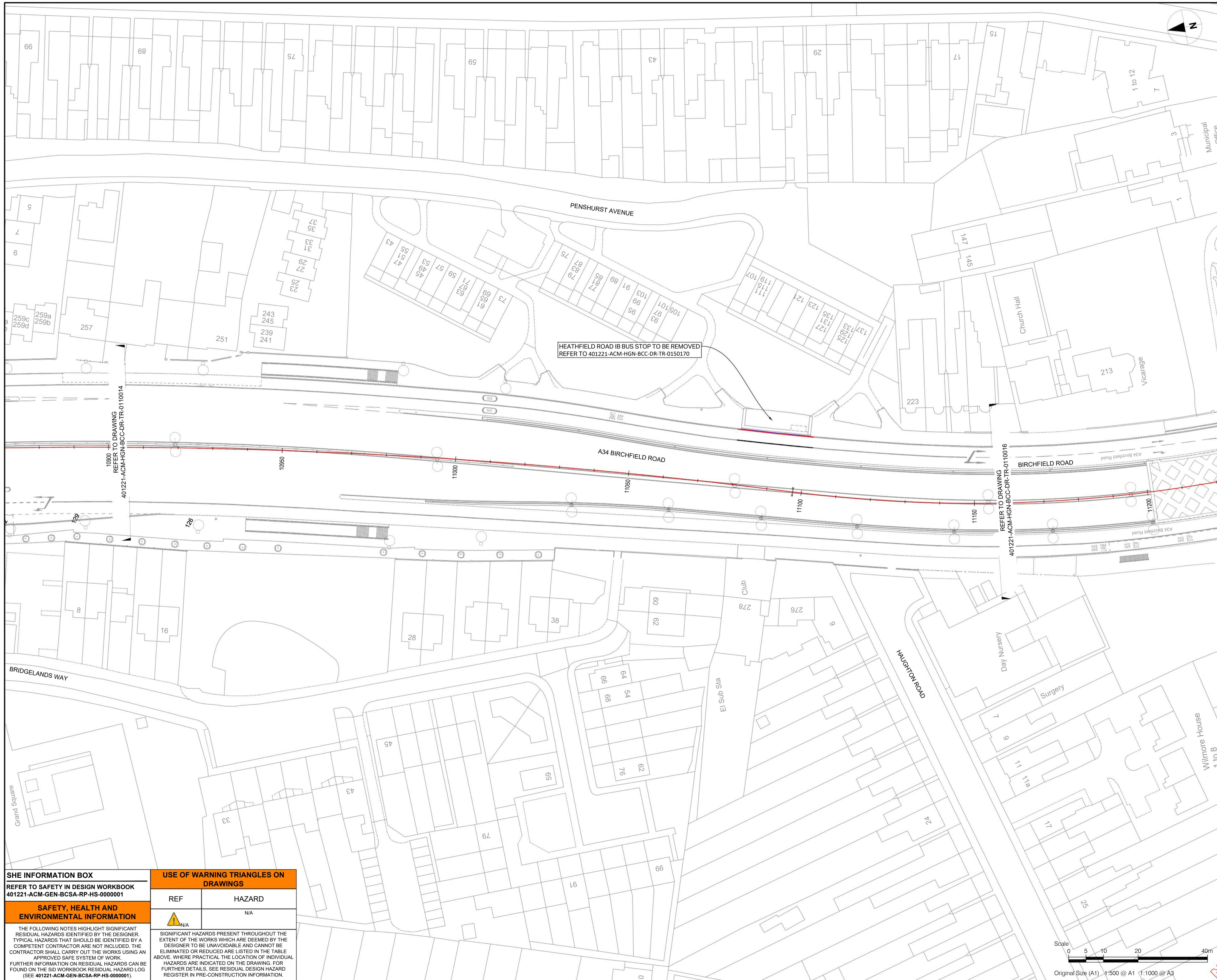
PROJECT NUMBER
60688007E

SHEET TITLE
PACKAGE E
GENERAL ARRANGEMENT
SHEET 15

SHEET NUMBER

401221	ACM	HGN
BCC	-DR	-TR
-0110	015	

Location I Type I Role I MCHW I Number



SHE INFORMATION BOX

REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

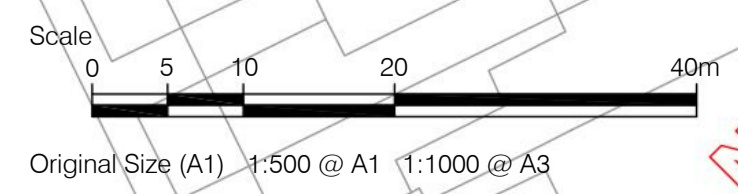
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

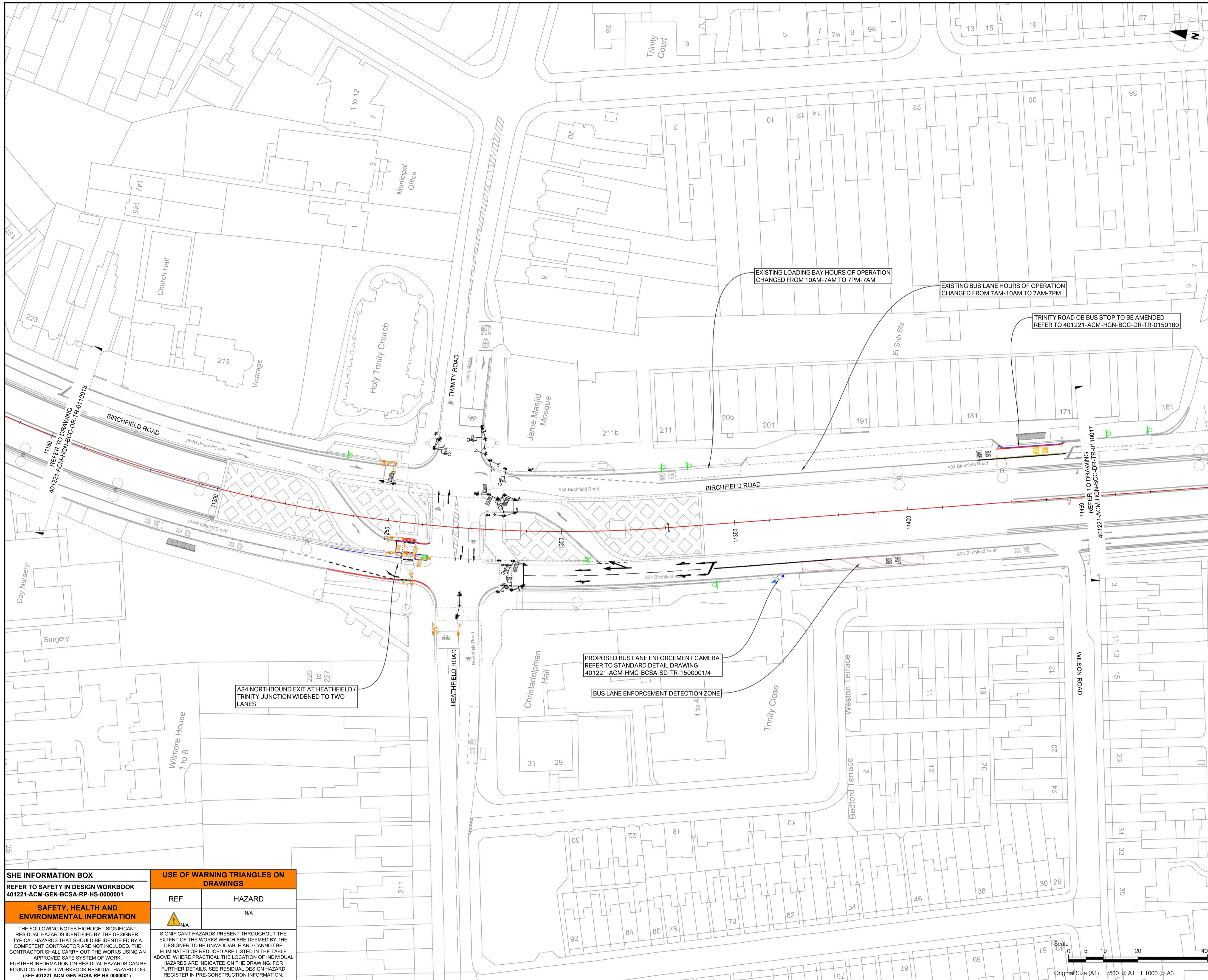
USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
N/A	N/A

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.



KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P06	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	12/04/23	Final Detailed Design
P06	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY
Suitable for review & comment

PROJECT NUMBER
60688007E

SHEET TITLE
PACKAGE E
GENERAL ARRANGEMENT
SHEET 16

SHEET NUMBER

401221	ACM	HGN
BCC	-DR	-TR
		-0110 016

Location I Type I Role I MCHW I Number

SHE INFORMATION BOX
REFER TO SAFETY IN DESIGN WORKBOOK
401221-ACM-GEN-BCSA-RP-HS-0000001

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SD WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).



















USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
N/A	N/A

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. All measurements must be obtained from the stated dimensions.

KEY

-  PROPOSED KERB
-  PROPOSED EDGING
-  PROPOSED ROAD MARKING
-  EXISTING ROAD MARKING
-  PROPOSED SPRINT BUS SHELTER
-  EXISTING SPRINT BUS SHELTER
-  TACTILE (UNCONTROLLED CROSSING)
-  TACTILE (CONTROLLED CROSSING)
-  CORDUROY TACTILE
-  TRAMLINE TACTILE
-  PROPOSED FENCING
-  PROPOSED TRAFFIC SIGNAL
-  EXISTING TRAFFIC SIGNAL
-  EXISTING LIGHTING COLUMNS
-  PROPOSED SIGNS AND BOLLARDS
-  PROPOSED GULLY
-  EXISTING GULLY
-  PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

ISSUE	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

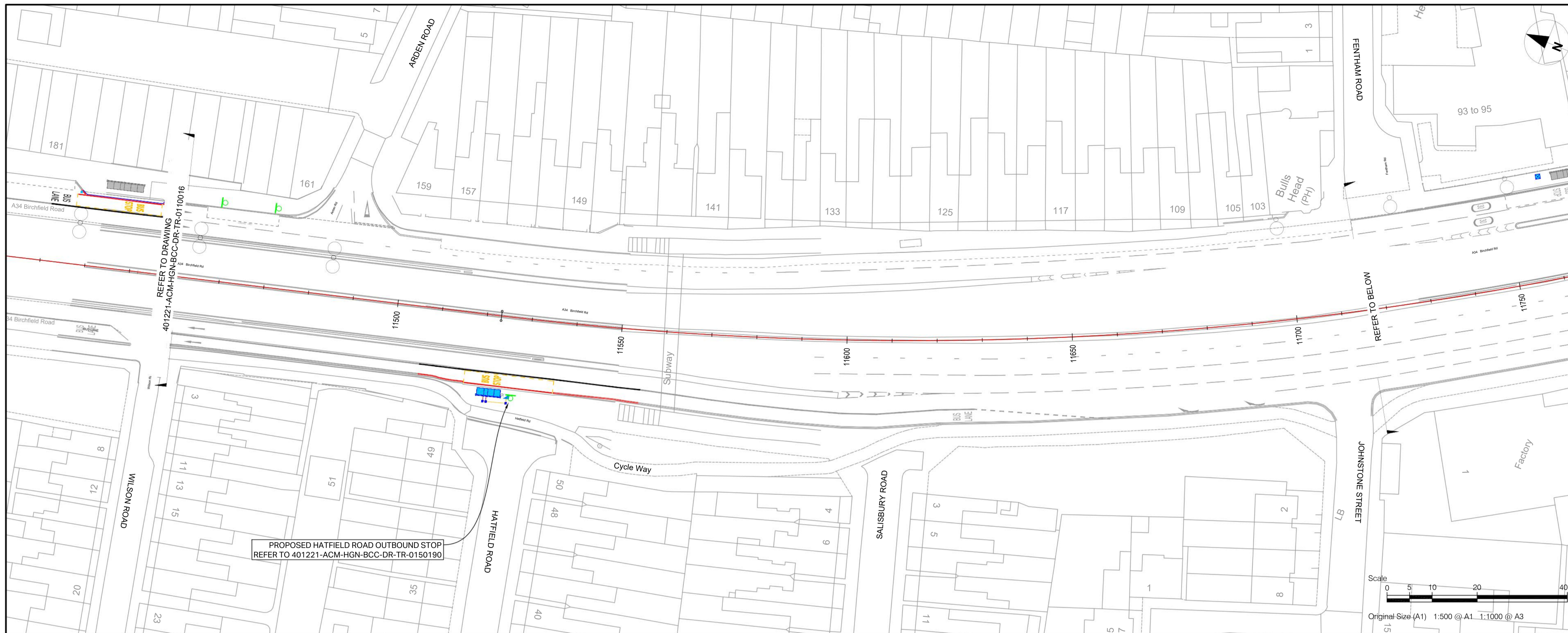
Suitable for review & comment

PROJECT NUMBER
60688007E

SHEET TITLE
PACKAGE E
GENERAL ARRANGEMENT
SHEET 17

SHEET NUMBER

Project Number	401221	Originator	ACM	HGN
Location	BCC	I Type	-DR	-TR
		I Role	-110	017
		I MCHW		
		I Number		




SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

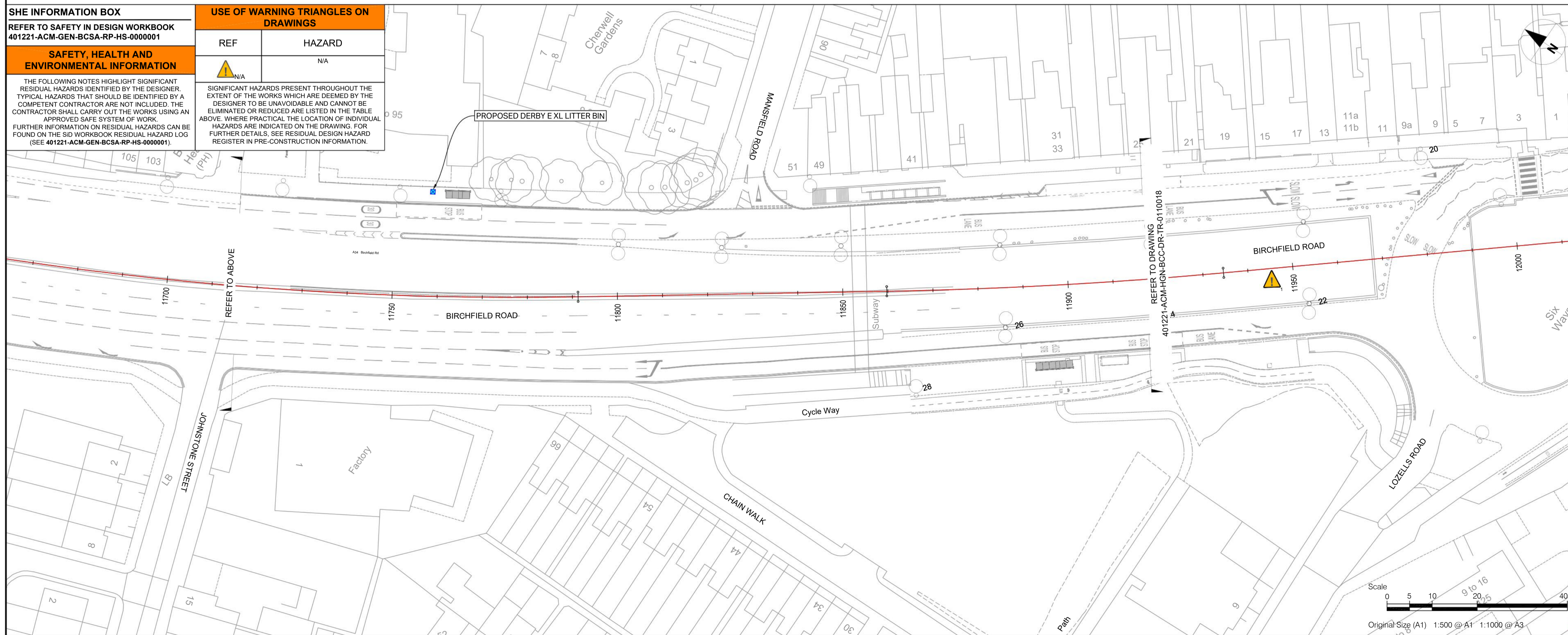
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

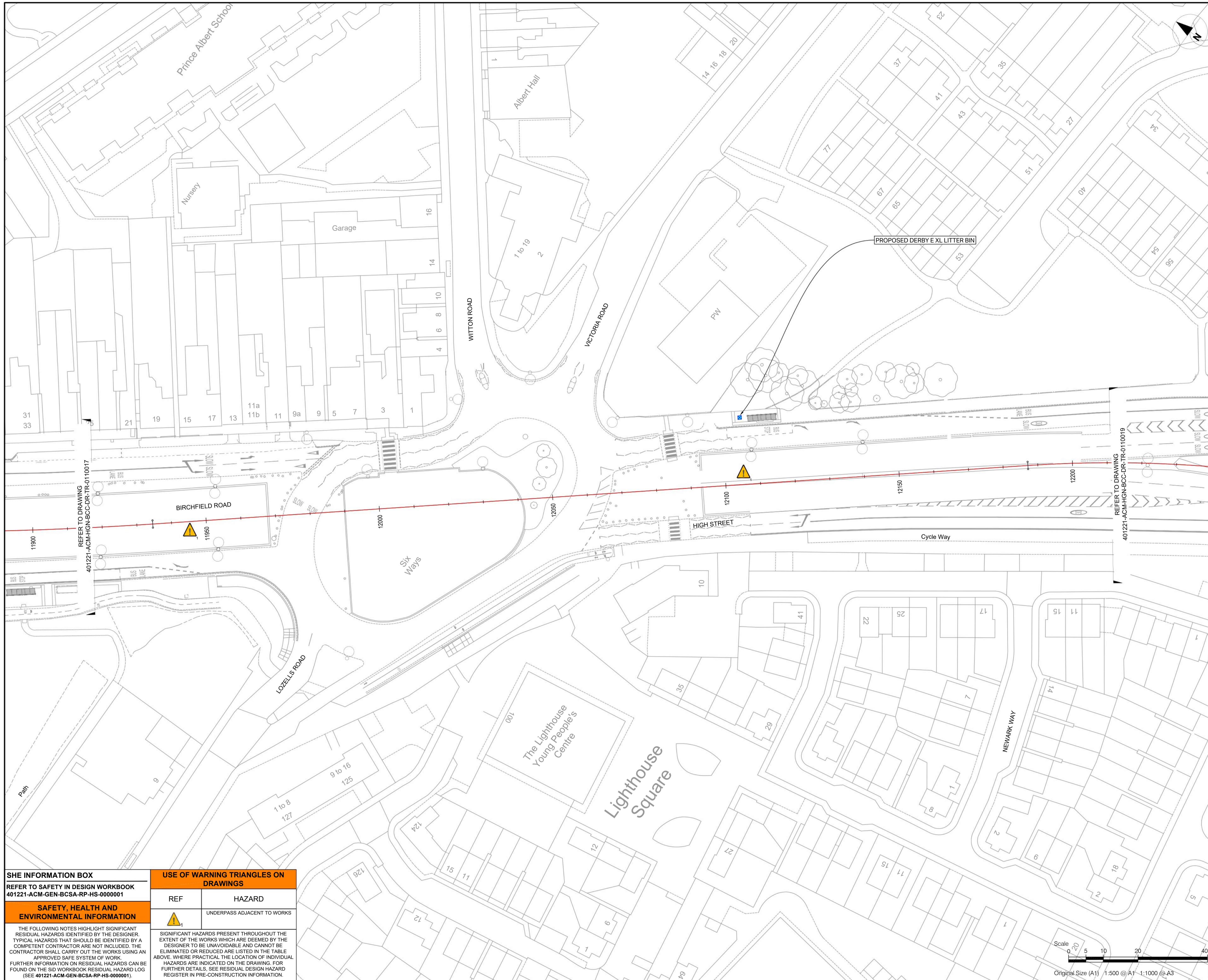
THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
 N/A	N/A

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.





KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN
- FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

ISSUE/REVISION	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

Suitable for review & comment

PROJECT NUMBER
60688007E

SHEET TITLE
PACKAGE E
GENERAL ARRANGEMENT
SHEET 18

SHEET NUMBER

Project Number	401221	Originator	ACM	HGN
Location	BCC	I Type	-DR	I Role
			-TR	I MCHW
			-0110	I Number
			018	

SHE INFORMATION BOX

REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

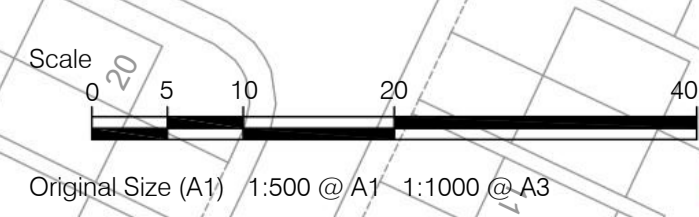
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

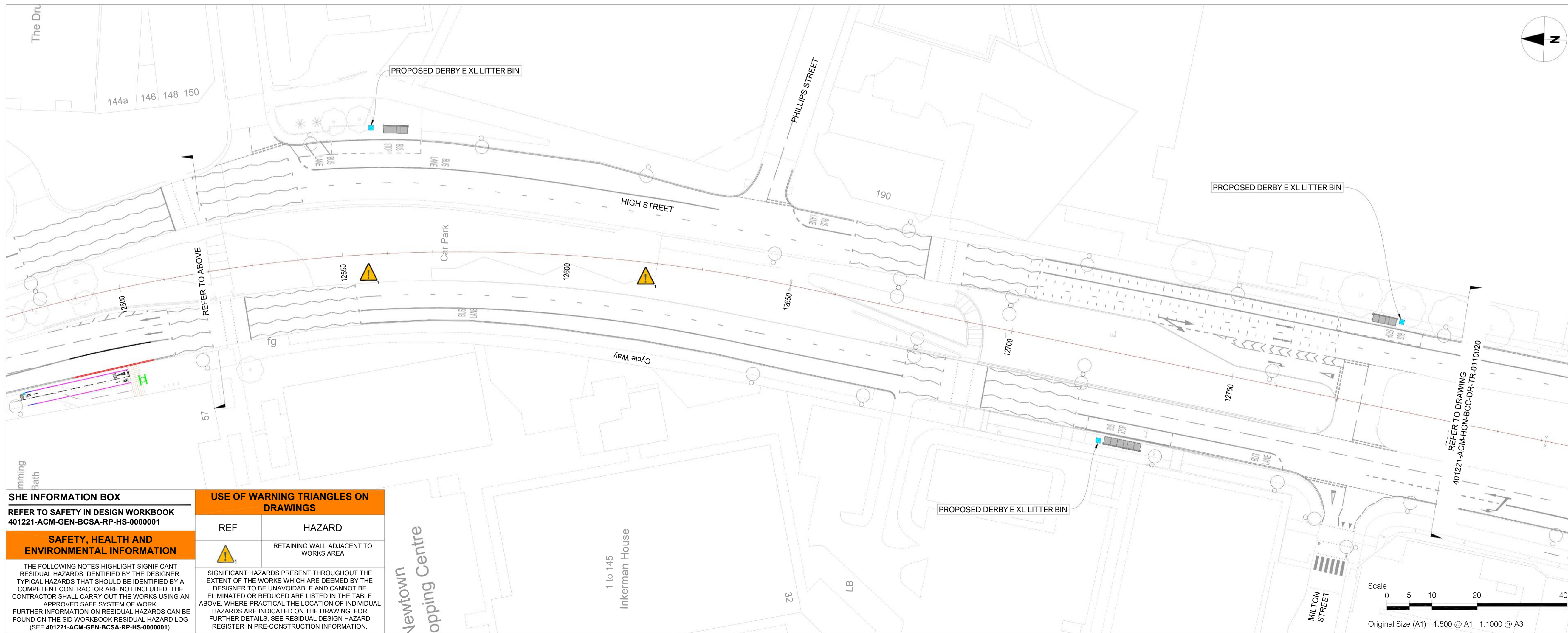
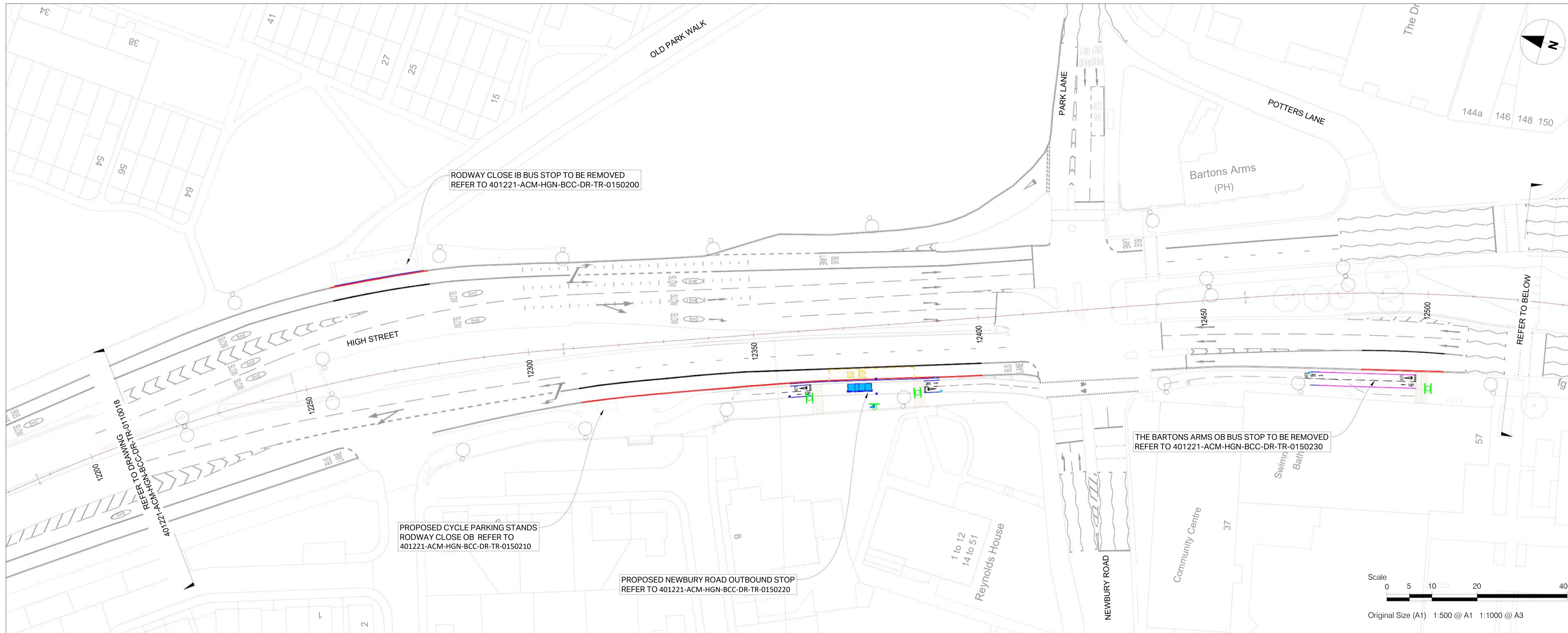
USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
1	UNDERPASS ADJACENT TO WORKS

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.



KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P06	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	12/04/23	Final Detailed Design
P06	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY
 Suitable for review & comment

PROJECT NUMBER
 60688007E

SHEET TITLE
 PACKAGE E
 GENERAL ARRANGEMENT
 SHEET 19

SHEET NUMBER

Project Number	Originator	I Volume
401221	ACM	HGN
BCC	DR	TR
		0110 019
Location	I Type	I Role
		I MCHW
		I Number

SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

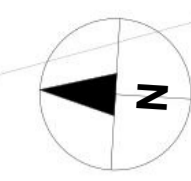
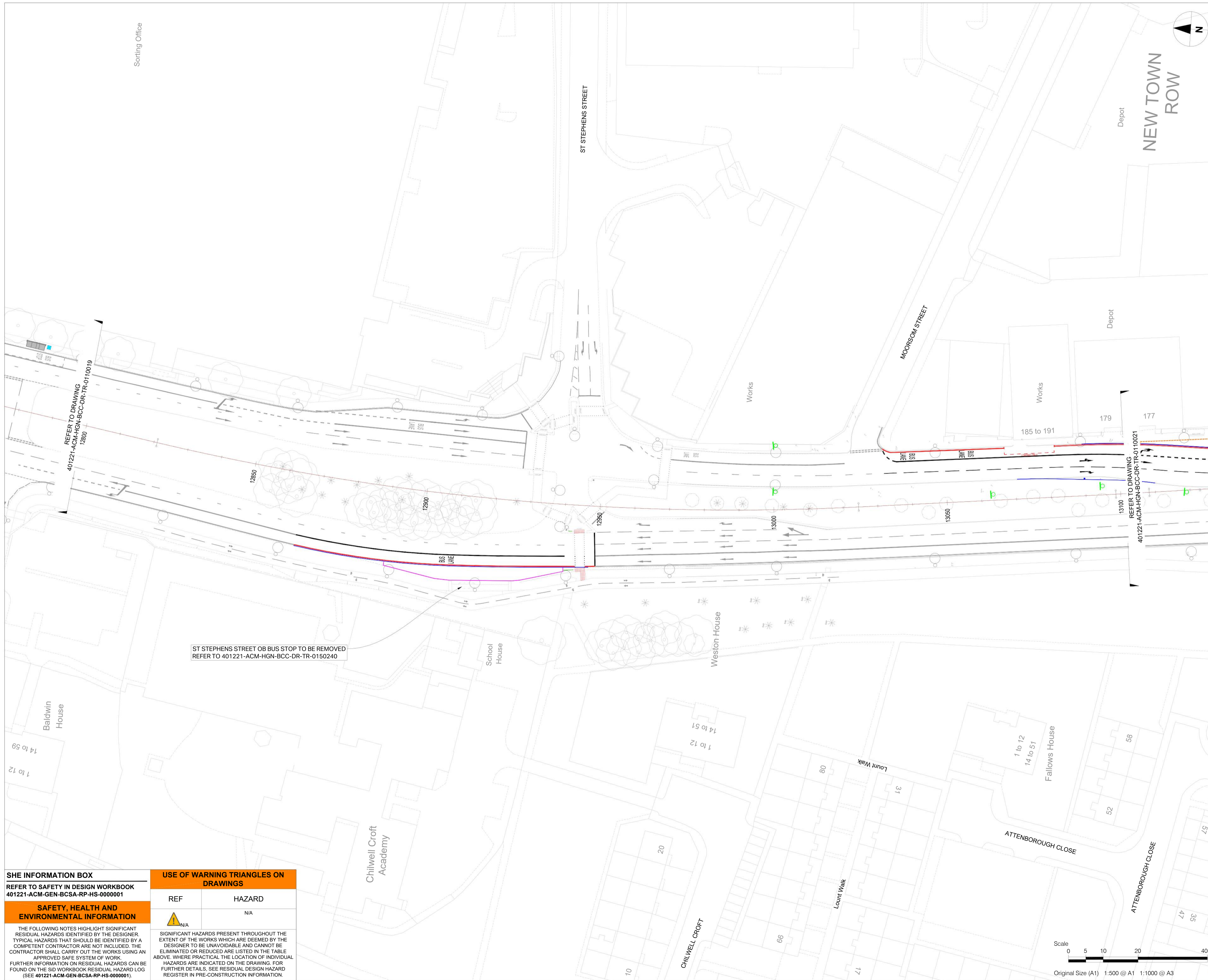
THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
	RETAINING WALL ADJACENT TO WORKS AREA
	SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

Sorting Office



PROJECT
 Sprint Phase 2
 Package E

CLIENT
 Transport for West Midlands

CONSULTANT
 AECOM
 The Colmore Building
 Colmore Circus Queensway
 Birmingham
 +44 (0) 121 262 1900
www.aecom.com

REGISTRATION
 Reproduced from the Ordnance Survey map with the permission of the controller of H.M. Stationery Office. © Crown copyright reserved. Licence no. 100031673.

- NOTES**
1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT SPECIFICATION AND THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS INCLUDING REVISION/AMENDMENTS AND ANY CLIENT SPECIFIC ADDITIONAL OR SUBSTITUTE CLAUSES.
 2. ANY DISCREPANCIES, ERRORS OR OMISSIONS TO BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER.
 3. ALL DIMENSIONS TO BE CHECKED BEFORE COMMENCEMENT OF WORK ON SITE.
 4. ALL DIMENSIONS IN METRES UNLESS OTHERWISE STATED.

- KEY**
- PROPOSED KERB
 - PROPOSED EDGING
 - PROPOSED ROAD MARKING
 - EXISTING ROAD MARKING
 - PROPOSED SPRINT BUS SHELTER
 - EXISTING SPRINT BUS SHELTER
 - TACTILE (UNCONTROLLED CROSSING)
 - TACTILE (CONTROLLED CROSSING)
 - CORDUROY TACTILE
 - TRAMLINE TACTILE
 - PROPOSED FENCING
 - PROPOSED TRAFFIC SIGNAL
 - EXISTING TRAFFIC SIGNAL
 - EXISTING LIGHTING COLUMNS
 - PROPOSED SIGNS AND BOLLARDS
 - PROPOSED GULLY
 - EXISTING GULLY
 - PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P06	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	12/04/23	Final Detailed Design
P06	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

Suitable for review & comment

PROJECT NUMBER

60688007E

SHEET TITLE

PACKAGE E
 GENERAL ARRANGEMENT
 SHEET 20

SHEET NUMBER

401221	ACM	HGN
BCC	-DR	-TR
-0110	020	
Location	I Type	I Role
	I MCHW	I Number

SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

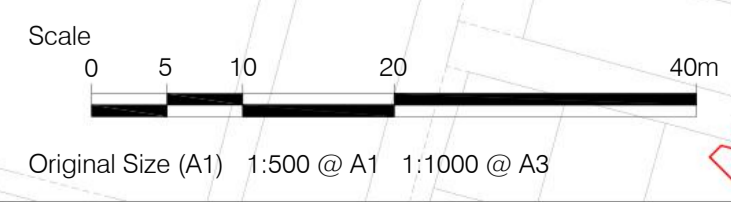
THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

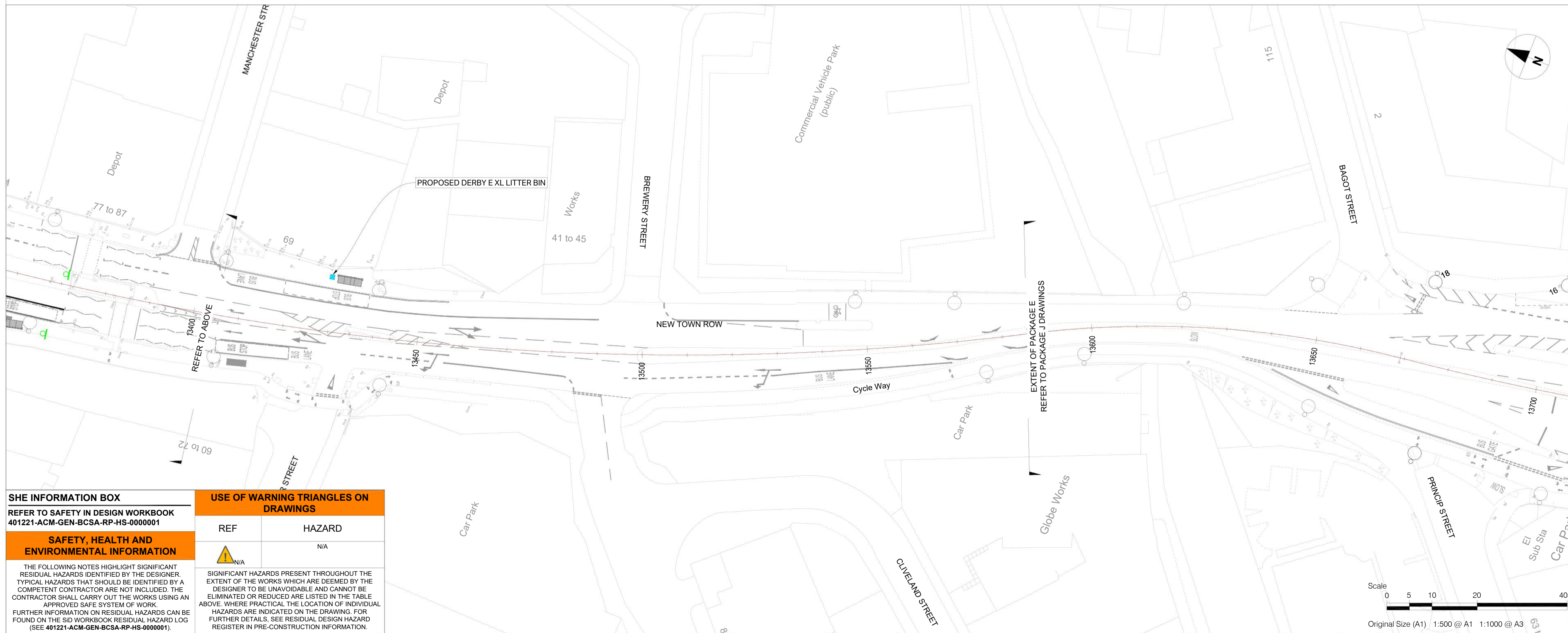
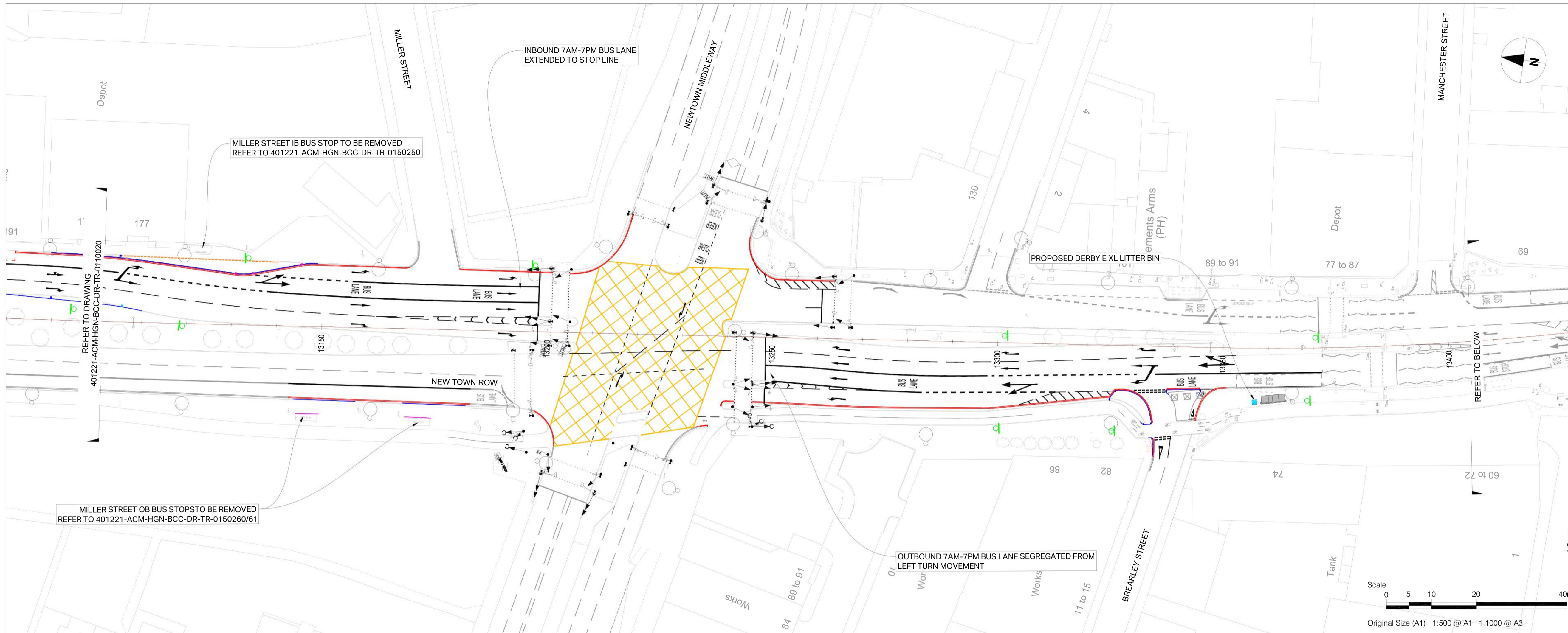
REF	HAZARD
N/A	N/A

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.

ST STEPHENS STREET OB BUS STOP TO BE REMOVED
 REFER TO 401221-ACM-HGN-BCC-DR-TR-0150240



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.



KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

ISSUE	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY
 Suitable for review & comment

PROJECT NUMBER
 60688007E

SHEET TITLE
 PACKAGE E
 GENERAL ARRANGEMENT
 SHEET 21

SHEET NUMBER

401221	ACM	HGN
BCC	DR	TR
-0110	021	

Location I Type I Role I MCHW I Number

SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
N/A	N/A

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as agreed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P05	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P02	28/09/22	Draft Preliminary Design Package
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

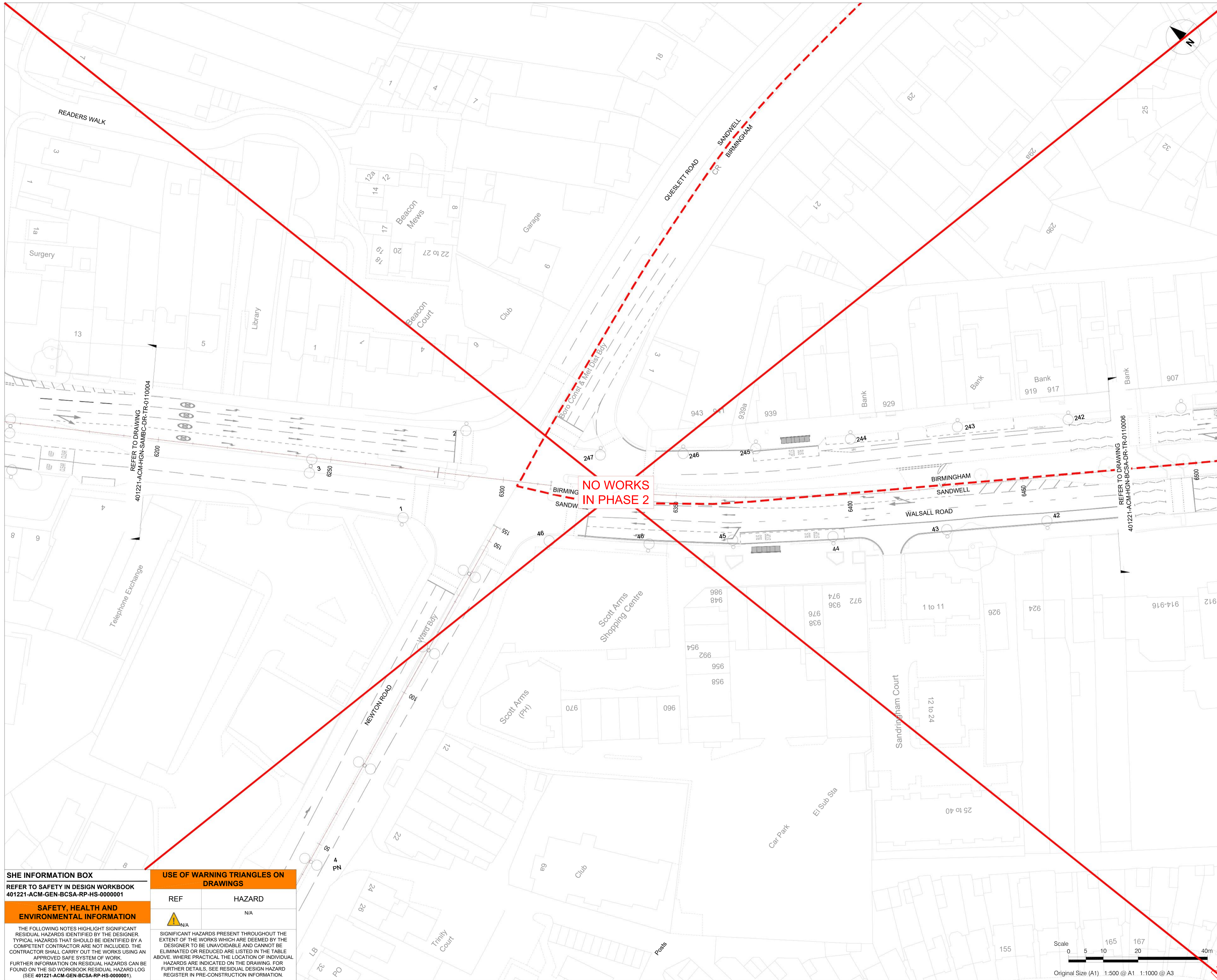
ISSUE PURPOSE / SUITABILITY
 Suitable for review & comment

PROJECT NUMBER
 60688007E

SHEET TITLE
 PACKAGE E
 GENERAL ARRANGEMENT
 SHEET 5

SHEET NUMBER

Project Number	Originator	I Volume
401221	ACM	HGN
BCSA -DR -TR	-0110	005
Location	I Type	I Role
		I MCHW
		I Number



SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

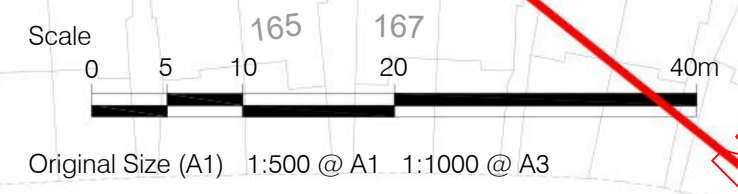
SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SD WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
N/A	N/A

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.



This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as required by law. AECOM accepts no responsibility, and denies any liability, whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

KEY

- PROPOSED KERB
- PROPOSED EDGING
- PROPOSED ROAD MARKING
- EXISTING ROAD MARKING
- PROPOSED SPRINT BUS SHELTER
- EXISTING SPRINT BUS SHELTER
- TACTILE (UNCONTROLLED CROSSING)
- TACTILE (CONTROLLED CROSSING)
- CORDUROY TACTILE
- TRAMLINE TACTILE
- PROPOSED FENCING
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- EXISTING LIGHTING COLUMNS
- PROPOSED SIGNS AND BOLLARDS
- PROPOSED GULLY
- EXISTING GULLY
- PROPOSED LITTER BIN BOLT DOWN FIXING REFER TO MANUFACTURES INSTRUCTION

REVISION / APPROVAL DATE

P06	19/05/23
-----	----------

ISSUE/REVISION

NO	DATE	DESCRIPTION
P03	01/11/22	Final Preliminary Design Package
P04	01/03/23	Draft Detail Design Package
P05	12/04/23	Final Detailed Design
P06	19/05/23	Tender Issue
I/R	DATE	DESCRIPTION

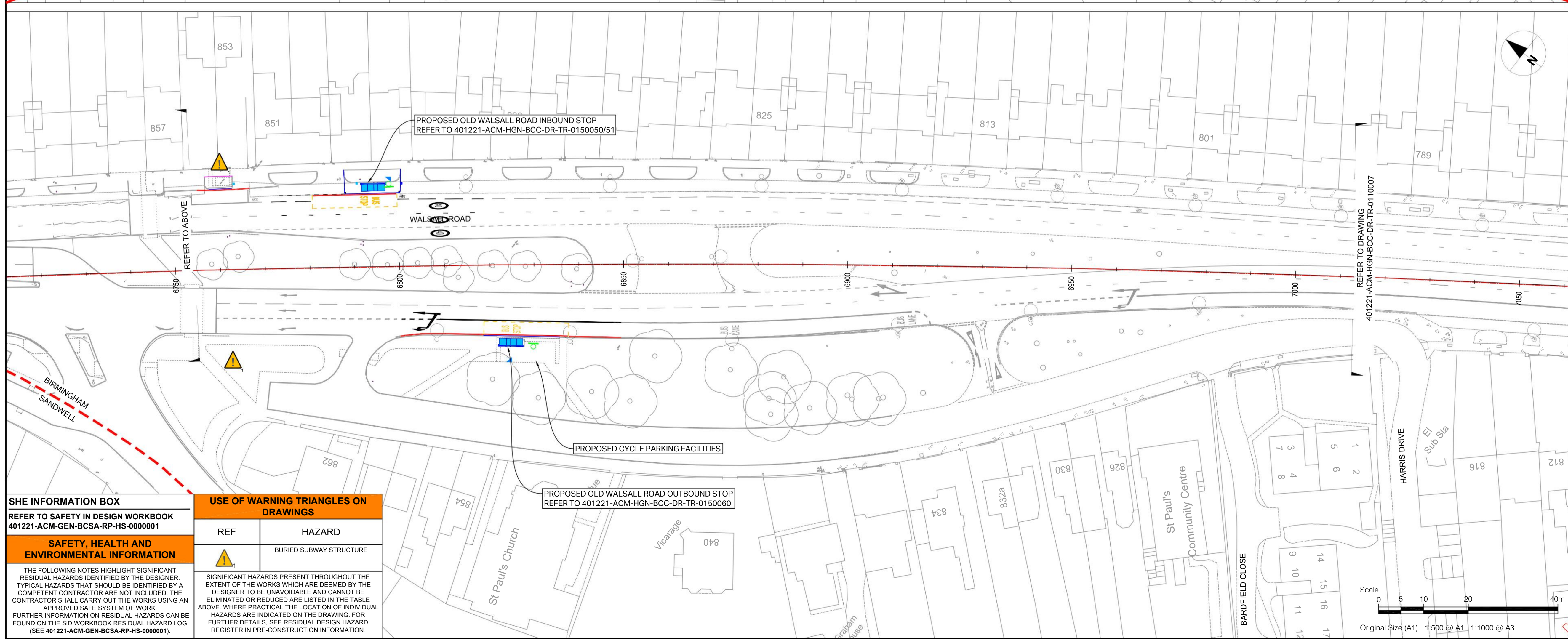
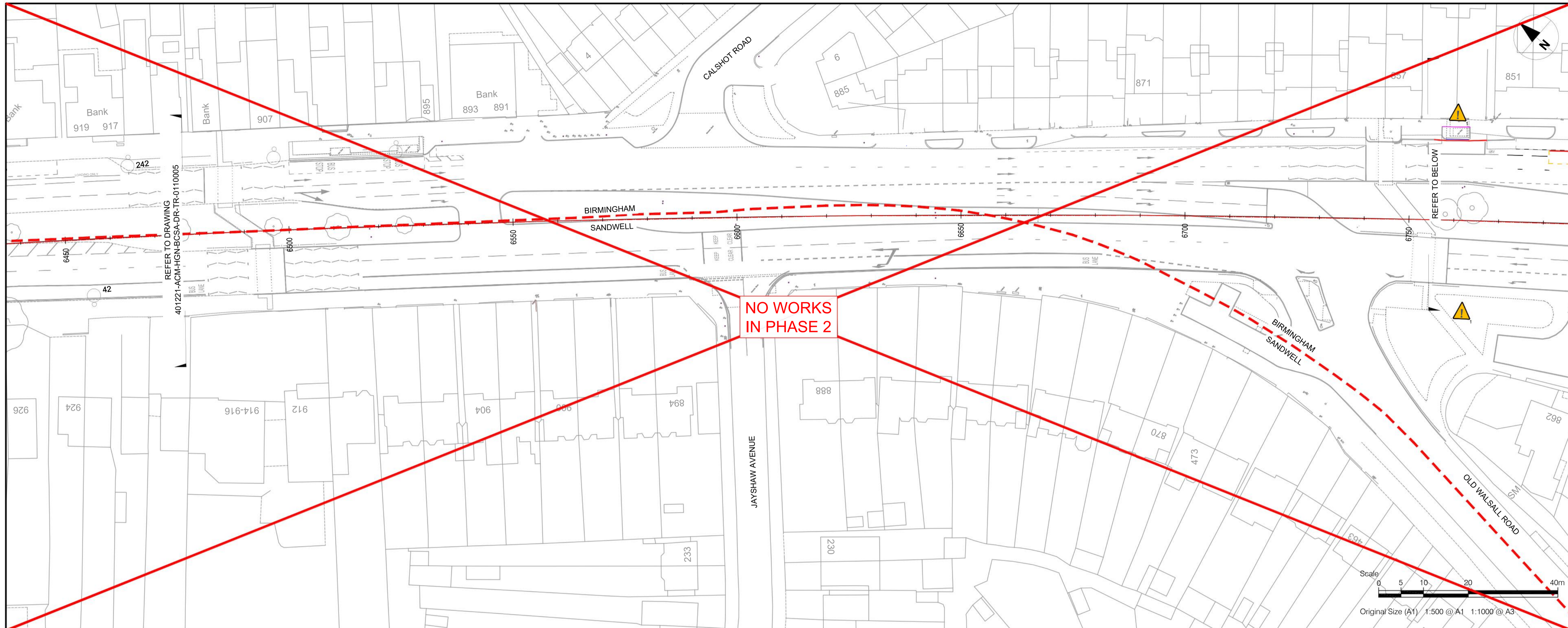
ISSUE PURPOSE / SUITABILITY
 Suitable for review & comment

PROJECT NUMBER
 60688007E

SHEET TITLE
 PACKAGE E
 GENERAL ARRANGEMENT
 SHEET 6

SHEET NUMBER

Project Number	401221	Originator	ACM	I Volume	HGN
Location	BCSA -DR-TR	I Type	-0110	I Role	006
				I MCHW	
				I Number	



SHE INFORMATION BOX
 REFER TO SAFETY IN DESIGN WORKBOOK
 401221-ACM-GEN-BCSA-RP-HS-0000001

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

THE FOLLOWING NOTES HIGHLIGHT SIGNIFICANT RESIDUAL HAZARDS IDENTIFIED BY THE DESIGNER. TYPICAL HAZARDS THAT SHOULD BE IDENTIFIED BY A COMPETENT CONTRACTOR ARE NOT INCLUDED. THE CONTRACTOR SHALL CARRY OUT THE WORKS USING AN APPROVED SAFE SYSTEM OF WORK. FURTHER INFORMATION ON RESIDUAL HAZARDS CAN BE FOUND ON THE SID WORKBOOK RESIDUAL HAZARD LOG (SEE 401221-ACM-GEN-BCSA-RP-HS-0000001).

USE OF WARNING TRIANGLES ON DRAWINGS

REF	HAZARD
1	BURIED SUBWAY STRUCTURE

SIGNIFICANT HAZARDS PRESENT THROUGHOUT THE EXTENT OF THE WORKS WHICH ARE DEEMED BY THE DESIGNER TO BE UNAVOIDABLE AND CANNOT BE ELIMINATED OR REDUCED ARE LISTED IN THE TABLE ABOVE. WHERE PRACTICAL THE LOCATION OF INDIVIDUAL HAZARDS ARE INDICATED ON THE DRAWING. FOR FURTHER DETAILS, SEE RESIDUAL DESIGN HAZARD REGISTER IN PRE-CONSTRUCTION INFORMATION.