
Site NS1 – North of Stevenage

Baseline Report

January 2023

Site NS1 – North of Stevenage

Baseline Report

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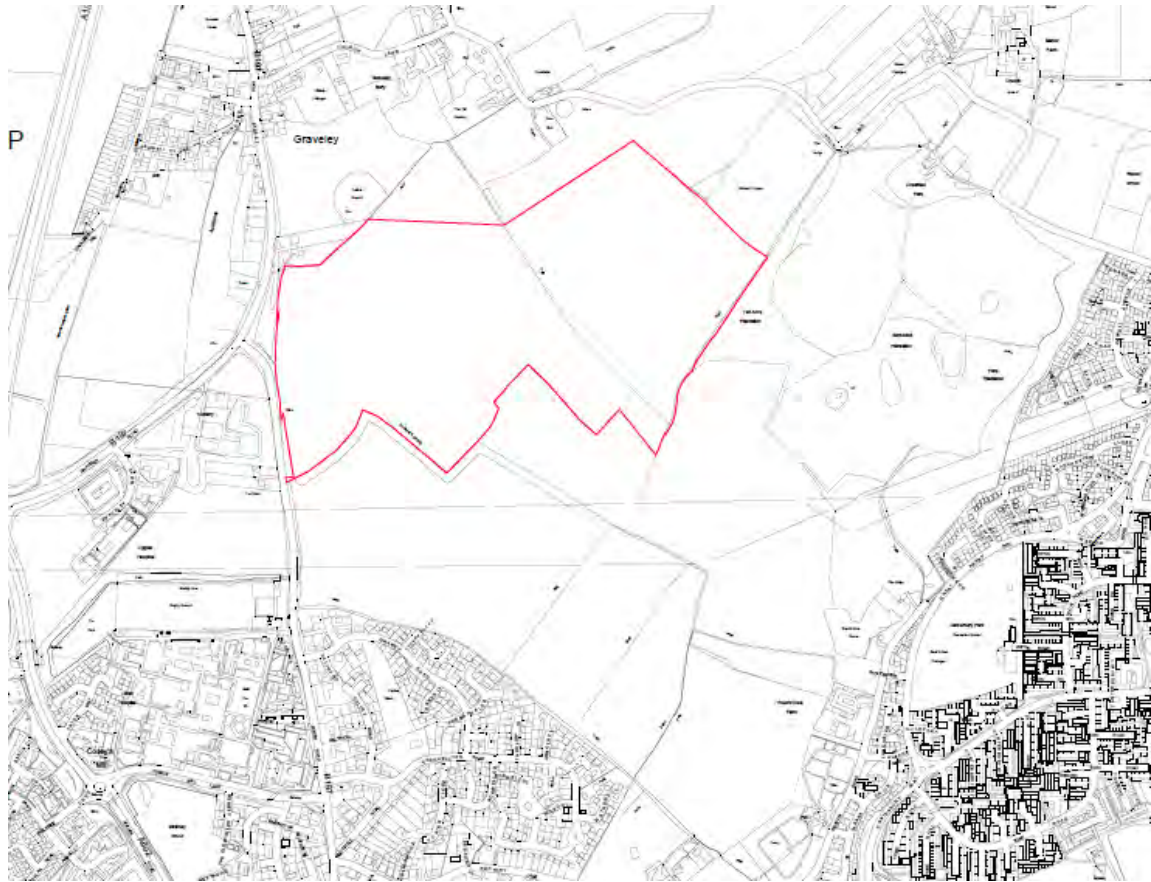
1.0 INTRODUCTION

- 1.1 This baseline report has been prepared by Barton Willmore LLP on behalf of Croudace Homes and with input from the technical team pursuant to the production of the Strategic Masterplan Brief. This is in relation to Site NS1 – Land North of Stevenage. The site forms an allocation within policy SP16 of the emerging North Hertfordshire District Council Local Plan for the provision of approximately 900 dwellings.
- 1.2 Work has been undertaken on the baseline assessments to support the Environmental Impact Assessment (EIA) which will support the future planning application at the site. This report includes the key findings from that research, which therefore sets out the baseline conditions at the site. The baseline conditions identified are presented within this document and have been used to inform the separate opportunities plan and constraints plan that will form the basis of any masterplan moving forward. These plans are presented at the beginning of this document.

Site and Setting

- 1.3 The site is located to the north of Stevenage, and is accessed from North Road to the west. Land to the south is subject to a planning application within Stevenage Borough Council for up to 800 dwellings (reference 17/00862/OPM).
- 1.4 The site comprises two large agricultural fields. There are six hedgerows and four trees sporadically located along the site's boundaries. The site rises from a low area in the north-west and north-east to the highest point in the south-east near Chesfield Park. The northern boundary of the site is bound by hedgerows and oak trees. A thin hedgerow runs along or near the eastern site boundary, with Robert's Copse to the north-east of the site boundary. The south-east of the site is bound by Ten Acre Plantation which encloses the site to the south-east, as does the outgrown hedgerow along the B197 to the west of the site. The containment of the site is mostly of the lower land within the site, near the boundaries. However, while the higher land to the south and east of the site is contained by shrubs and trees to the south, it is open to the north. The site is dominated by agricultural uses. There are no ancient woodland or Tree Preservation Orders within the site.
- 1.5 There is no relevant landscape or planning designations covering the site or the study area. The nearest Area of Outstanding Natural Beauty is the Chilterns, located over 10km from the site.

1.6 The site boundary of the site is shown on the plan below:



1.7 This report seeks to assist North Hertfordshire District Council in the understanding of baseline conditions to inform the Strategic Masterplan Brief document. In line with Stage 3 of the Brief, this report seeks to understand baseline conditions for the following disciplines:

- Phase 1 Geo-Environmental Report
- Social Infrastructure Requirements
- Townscape & Character Study
- Accessibility Audit
- TA Scoping
- Landscape and Visual Assessment
- Phase 1 Extended Habitat Report /Phase II Surveys
- BNG Baseline Calculation
- Tree Survey
- Hedgerow Assessment
- Heritage Impact Assessment
- Archaeological Desk-Based Assessment, Geo-Physical Survey and Field Evaluation

- Flooding & Sustainable Drainage Assessment
- Green Infrastructure Audit
- Noise Assessment
- Air Quality Assessment
- Utilities Assessment
- Sustainability and Energy Options

1.8 These are set out in the same order as listed in the Brief for ease of reference. Each section contains information relating to that discipline and attached plans where useful to allow full interpretation.

2.0 OPPORTUNITIES AND CONSTRAINTS

- 2.1 The baseline information highlighted in the subsequent chapters of this report have been collated and used in order to identify the opportunities and constraints of the site. These plans have been deliberately kept separate in order to clearly identify key factors that will inform the masterplan moving forward.
- 2.2 The constraints plan shows those physical factors that would impact future development. It shows the contours of the land, existing planting around the boundaries, and Rights of Way in and around the site. It also shows those designations in the vicinity such as the Graveley Conservation Area and locations of listed buildings. Added to these are results from landscape appraisal work showing sensitive edges to the site.
- 2.3 The opportunities plan builds upon this research to highlight the key opportunities the site could bring forward. This includes green links through the site, the gateway area at the entrance, connectivity, areas of key landscape planting/buffering, and potential drainage areas.
- 2.4 A full summary of the opportunities and constraints are set out below:

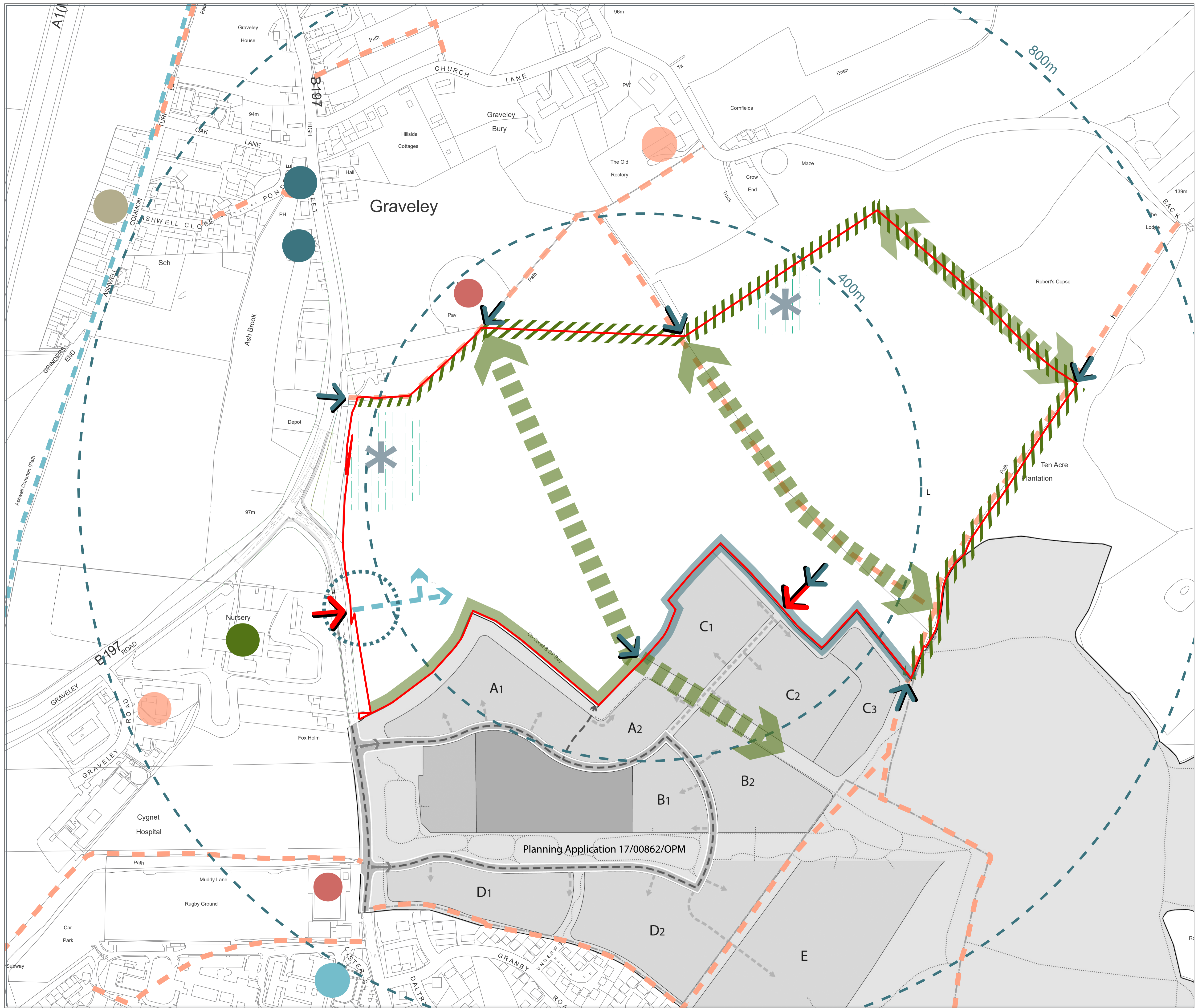
Opportunities Plan

- 2.5 In response to the site assessment carried out and the identified site features and constraints, a series of site opportunities have been identified to guide the design of the development. These are summarised below:
- Green corridors - Green corridors could be used to provide visual, noise and ecological buffers to the site edges, notably along the northern, southern, and eastern edges. Enhanced planting would aid in creating a green character responsive to the wider setting and supportive of a net gain in biodiversity. Green corridors should incorporate existing public rights of way and be link to the proposed internal foot, cycle and bridleway network, encouraging healthy and active lifestyles and reducing the need to use the private car. These spaces offer the potential to accommodate existing and proposed green and blue infrastructure, play facilities, trim trails and food growing spaces in turn supporting the creation of a healthy environment for all to enjoy. A green corridor along the northern boundary of the site should be incorporated into the proposals to retain separation from Graveley Village.

- Landscape features - Important landscape features that characterise the site offer the potential to become structural elements of the new settlement and contribute towards a distinctive character. The retention and enhancement of existing trees and hedgerows will provide habitats for wildlife and aid in the mitigation of climate change. The site's topography offers the opportunity to provide long-distance views over the surrounding area. High points should be incorporated into the open space network.
- Existing and aspirational links -The opportunity exists for existing and proposed links to create permeability through the site and to connect with the adjacent settlements and wider footpath / cycleway network. This could include providing links via the adjacent scheme.
- Community facilities - The site has the potential to provide a new Community Hub at the heart of the development that is accessible to all and responds to the needs of whole community. This should complement existing local facilities within Graveley and could comprise a mix of retail, educational, leisure and co-working spaces. A new 2FE Primary School and Nursery could be provided to support the educational needs of residents. There is the potential for a Mobility Hub to be provided as part of the new community hub. This could provide charging points for electric vehicles, e-scooters, bicycle storage and a bus hub. In addition to a new Community Hub, the opportunity exists to provide a range of leisure and recreation facilities within areas of open space including community allotments, orchards, children's play facilities, new walking and cycling routes and a trim trail.
- The wider opportunities plan demonstrates how the site links to existing destinations such as schools, shops and open spaces. It also shows existing infrastructure and how it connects to and between such facilities.

Site Constraints

- 2.6 The site constraints for the site are identified within the following chapters of this baseline report. These are summarised on the Constraints Plan provided below.



The scaling of this drawing cannot be assured

| | | | |
|---|---------------|-------|-------|
| Revision J | Date 18/01/22 | Drn - | Ckd - |
| Graphic changes Addition of green link to East of site | | | |

- Site boundary
- Public Right of Way
- National Cycle Route 12
- Vehicular access point
- Pedestrian/cyclist access point
- Green link
- Primary access route into site
- Opportunity for additional planting and landscape buffer. Landscape buffer to accommodate tree root protection zones
- Sensitive treatment of site boundary in response to adjacent development (Planning Application reference 17/00862/OPM)
- Opportunity to enhance woodland buffer
- Opportunity for open landscape at highest point
- Potential attenuation area at lowest point
- Main gateway
- Hospital
- Recreation
- Pub
- Garden Centre
- Care facility
- Primary school

Project
28718 North Stevenage

Drawing Title
Opportunities Plan

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| Date 03.11.21 | Scale 1:2500@A1 | Drawn by LP | Checked by BW |
| Project No. 28718 | Drawing No. Ai-M-01 | Revision J | |

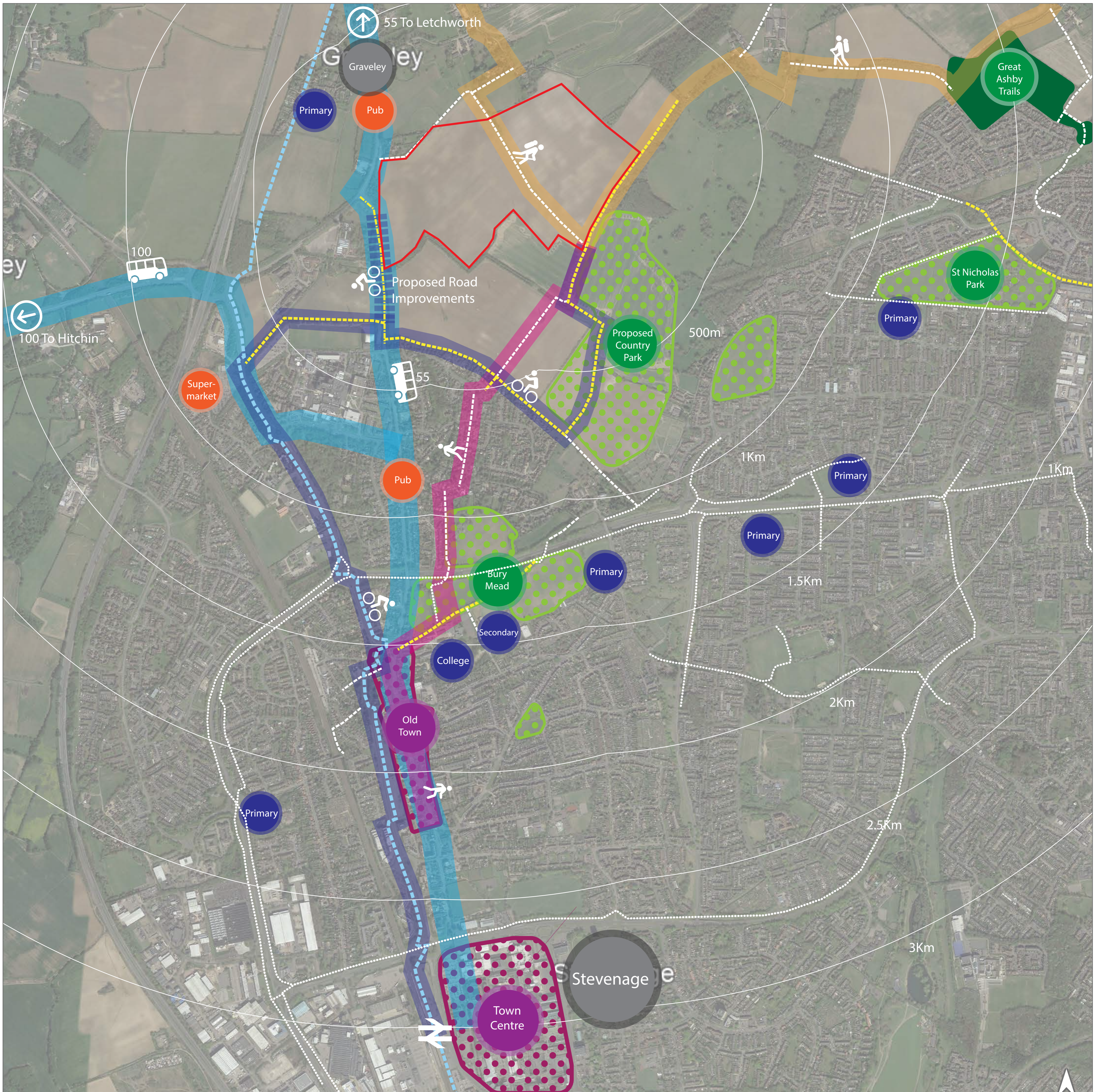
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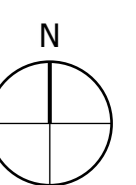


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| Revision | Date | Drn | Ckd |
|----------|------|-----|-----|
| - | - | - | - |

- | | | | |
|--|----------------------|--|------------------------|
| | Development Boundary | | Town Centre |
| | PROW | | Accessible Green Space |
| | Bridleway | | Accessible Woodland |
| | National Cycle Route | | Town/Village |
| | Undesignated Path | | Local Facilities |
| | Bus Route | | Green Spaces |
| | Walking Route | | Education |
| | Cycle Route | | Town Centre Uses |
| | Trail/Hiking Route | | |



Project
North Stevenage

Drawing Title
Wider Opportunities Plan

| | | | |
|------------|--------|----------|------------|
| Date | Scale | Drawn by | Checked by |
| 21/12/2022 | NTS@A1 | TS | BW |

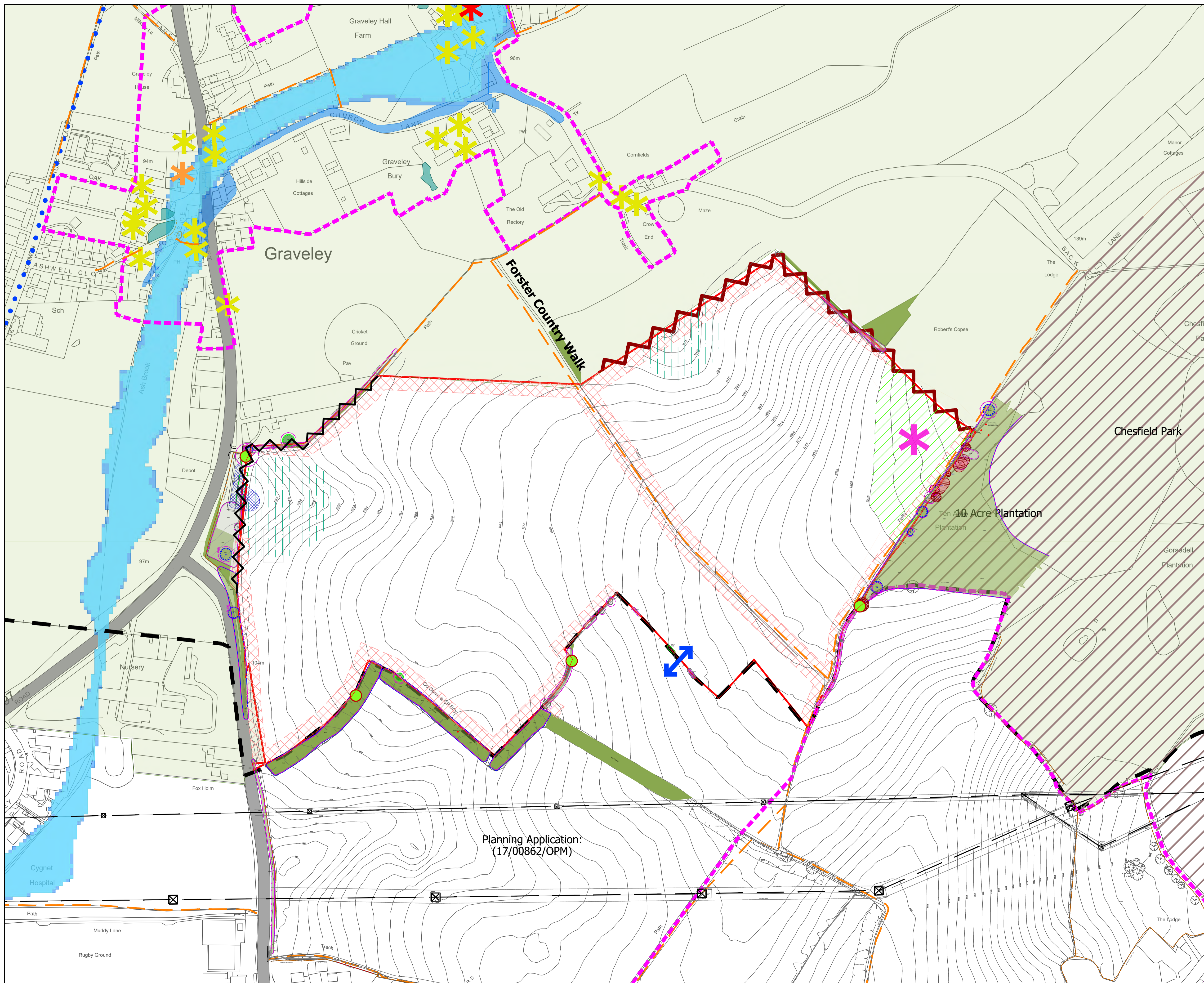
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| Project No. | Drawing No. | Revision |
| 28718 | Ai-M-07 | - |

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- Site Boundary
- Flood Zone 2
- Flood Zone 3
- Proposed Green Belt
- ✱ Listed Building - I
- ✱ Listed Building - II*
- ✱ Listed Building - II
- - - - Existing Public Rights of Way
- National Cycle Route 12
- - - - Existing Pylons and Overhead Lines
- - - - District Boundary
- - - - Conservation Area
- Non-designated Heritage Asset
- ~ Sensitive Edge viewed from the north
- ~ Sensitive Edge viewed from the west
- Enhance Connectivity and Create Dark Corridors
- ✱ Site high point
- Site low point
- Existing Woodland
- Existing Pond
- ~ 1m Contours
- Existing Tree/Hedge BS 5837:2012 Category A
- Existing Tree/Hedge BS 5837:2012 Category B
- Existing Tree/Hedge BS 5837:2012 Category C
- Existing Tree/Hedge BS 5837:2012 Category U
- Line of Root Protection Area (RPA) - calculated following guidelines set in BS 5837:2012
- Existing Tree/Hedge to be Removed BS 5837:2012 Category U
- Existing Tree/Hedge BS 5837:2012 Category U to leave as wildlife pole
- Additional feature which doesn't meet BS 5837:2012 categorisation but is included for reference
- Additional feature which doesn't meet BS 5837:2012 categorisation but is included for reference
- ✱ Dead or Dying Tree
- Tree with potential roosting feature
- Opportunity to provide area of open space at highest point
- ↔ Potential access point to adjacent development
- Surface water flooding

Planning Application:
(17/00862/OPM)

Project
North Stevenage
Stevenage

Drawing Title
Constraints Plan

Date 26.03.18 Scale 1:2,500 @ A1 Drawn by ALC Check by TL
 Project No 28718 Drawing No RG-M-02 Revision I



3.0 PHASE 1 GEO-ENVIRONMENTAL REPORT

- 3.1 An initial Contaminative Uses Phase I Desk Study has been completed for the site. Geological records indicate the site to be underlain by both the Middle and Lower Chalk Formations (Principal Aquifers) with glacial till and glacial sands and gravels (Secondary A Aquifer) overlying in the west and localised head deposits (secondary Undifferentiated Aquifer) in the central eastern area. The Site lies within a Source Protection Zone III (Total Catchment).
- 3.2 A historical Ordnance Survey map search was carried out and indicates that the site has a history of agricultural use. The old A1 road ran just outside the western section of the site (part of which is still visible), prior to the construction of the A1 (M), and realignment of the B197. Numerous small chalk and gravel pits were noted locally, historically, with one present on site in the southwest corner, until the early twentieth century.
- 3.3 On-site sources are generally localised (the former gravel pit), with agricultural pesticides and herbicides considered a site wide risk. The various off-site gas risks (chalk pits, which have been backfilled), although in close proximity to the site, given the size and age of most, are only considered a low risk at this stage.
- 3.4 Data provided by the British Geological Survey shows that the site is located in a lower probability radon area as less than 1% of homes are above the action level. It is further reported that no radon protective measures are required in the construction of new dwellings or extensions.
- 3.5 In summary, there is a generally low-level risk of contamination affecting the site, with possible moderate risk in isolated areas.
- 3.6 North Hertfordshire District Council, in their letter dated 3 August 2018, confirmed that 'land contamination' was to be scoped out and not included as part of the EIA given 'there would not be likely be significant impacts'. The application however will be accompanied by a phase 1 Report for consideration.

4.0 SOCIAL INFRASTRUCTURE REQUIREMENTS

- 4.1 Emerging policy SP16 includes the need for the site to deliver a 2 forms of entry primary school and neighbourhood level retail facilities subject to up-to-date assessment of local demand and supply.
- 4.2 In terms of the primary school, which will include a nursery element, this will be located within the site itself, and will not form any cross-boundary school with the development site to the south. The masterplan process will seek to identify the most appropriate site for the school, which may be adjacent to the other infrastructure described below to create a community hub at the settlement.
- 4.3 In order to ascertain an appropriate location, discussions will take place with Hertfordshire County Council. These discussions will also seek to understand the likely timing of the school coming forward, which will result in the approved trigger points to be secured through the Section 106 Agreement.
- 4.4 In line with current discussions with Hertfordshire County Council contributions to secondary school education will be through financial contributions secured through the Section 106 Agreement.
- 4.5 Barton Willmore prepared a report dated November 2021 to assess retail demand in the area, which sought to update a previous iteration to take into account considerations of Covid-19. The report concludes the following:

“There is a limited quantitative need for further retail floorspace in Site NS1 as part of the proposed development. The provision of Local Centre in the Land North of Stevenage proposals in Stevenage Borough, which is in close proximity and accessible to the Application Site would provide a better focus for retail serving both communities, than the provision of another similar but smaller facility within NS1 that would compete. Moreover, the proximity of the proposed foodstore on Graveley Road will also provide a neighbourhood facility in close proximity.

Accordingly, while a Local Centre providing services and facilities as a focus for the community is required by

planning policy, there is no empirical evidence to support the position that this should provide a predominantly retail function. Alternative community/commercial uses, the nature of which should be determined through the wider planning application, should be considered.”

4.6 Should the Stevenage Borough facility not come forward, the following comment is made:

“We note the emerging Local Plan evidence predicted a need for c1,300 sq m of retail floorspace within the site, However this was based on a 2016 Retail Study and retail growth rates and shopping behaviour has changed significantly since then (with increasing amounts of shopping undertaken via the internet and superstore deliveries as a result of the pandemic/lockdowns). A more recent assessment of retail demand has been produced as part of our retail supply and demand assessment note and concludes that a combined total of c£8.5 million of additional convenience expenditure will be created by the site and the North of Stevenage development. Taking account of expenditure retention patterns, this translates into the need for 341 sq m of convenience goods retailing.

The North of Stevenage development will provide a local centre of approximately 650 sqm of flexible commercial/retail floorspace. It is therefore capable of meeting the convenience retail need. This is not to say that an alternative Local Centre should not be provided in the Croudace Scheme, but this could be focussed on providing complementary community or commercial uses instead (through a flexible planning permission for Class E/F1/F2 uses). In the event that retail use was not delivered as part of the North of Stevenage scheme, and there is demand from retail operators, then the flexible permission for the local centre uses in the Croudace scheme could allow for some retail to come forward. Demand for retail use may, however, be dampened by the proposed Superstore on Graveley Road opposite the sites (Policy TC11 of the Stevenage Local Plan). This facility will provide a local retail function to the developments in any event.”

- 4.7 The report therefore is clear in its assessment of the viability of future retail use. There is clearly an adequate level of retail floorspace provision as part of the proposed Local Centre being brought forward as part of planning application (LPA Ref: 17/00862/OPM) to serve both developments, as well as existing convenience and comparisons stores within Stevenage Town Centre and the immediate local area. The floor area proposed on the site would therefore be best served for other purposes, such as community facilities. The content of these facilities will be negotiated during the planning application stage to ensure an appropriate provision.

5.0 TOWNSCAPE & CHARACTER STUDY

5.1 Four character areas have been identified in proximity to the Site which have been subject to a Character Area Study. The four areas are:

- High Street and Basils Road area within Stevenage Old Town
- Great Ashby
- Graveley
- Rectory Lane/Chancellors Road/Granby Road

5.2 Four sites are considered to provide a good understanding of the local vernacular and have a relationship with the Site given their proximity. The Study assesses the identify character areas under four specific headings; those being urban structure, built/plot form, public realm and open spaces, and details and materials. These headings assist in understanding the prevalent character of these areas.

5.3 The urban form aspect seeks to understand the road network of the area and how that has led to the development of location. Built form then describes how the area is set out, the location of buildings and the main character of the built development. The public realm section describes the provision of open space within an area, and also assesses car parking around a proposed area. Finally, the detail and materials seeks to identify those key characteristics within the built form of the areas.

5.4 The character study includes a summary section which sets out some key identified characters and how that should translate to the development of the North Stevenage site. This will then inform the masterplanning process as it moves forward.

HIGH STREET AND BASILS ROAD AREA

High Street and Basils Road are located within Old Stevenage which has a long history, with parts of the area dating back over 800 years. The High Street, in particular, has historically played a significant role in shaping the development of Stevenage, bringing trade and general traffic to and from London.

Layout

High Street - a rectilinear structure with a strong north to south and east to west pattern of development. A coarse grain with relatively long development blocks with limited street connections albeit a slightly finer grain around Baker Street. Land uses include shops, cafes, pubs small offices and housing based on higher densities.

Basils Road Area - rectilinear grid pattern based on perimeter blocks with back-to-back plots. The grain continues to be coarse with long development blocks and limited connecting streets to create permeability. The area is almost exclusively housing with medium to higher densities resulting from the predominance of terracing and significant runs of semi-detached houses.

Built Form and Scale

High Street Area - Mostly 2-2.5 storey through the High Street with some 3 storey buildings around key nodes and corners. The area contains continuous and unbroken building lines forming strong block definition and urban character.

Parking is mostly at the front of buildings or in small rear courtyards to help maintain the building line. The area to the rear of High Street around Primett Road feels underdeveloped due to vast areas of parking and dual carriageway.

Basils Road Area - 2 Storey semi-detached and terraced building forms interspersed with occasional detached houses. A strong building line is evident with minimal variance. Setbacks generally around 2-3 metres to allow for a small front garden. Parking is mostly on street but any on plot parking is to the side of dwellings.

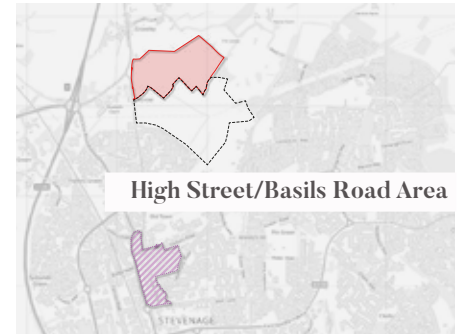
Public Realm and Landscape

The High Street is flat with few changes in level. It has a generous amount of public realm on either side of the street some of which is block paved. The public realm includes street tree planting to add environmental quality and legibility but also to break up parking areas. The linear character of the High Street provides good long-distance views and opens out northwards to reveal the Bowling Green public open space.

This is a well defined greenspace enclosed by 2 storey housing. It comprises mature trees, grass, public art and seating. There is also parking around some of its edges and a more informal approach to the design of the adjacent western highway.

Boundary treatments are mostly defined by the building edge along High Street .

The Basils Road area has limited street tree planting with public realm surfacing comprising black tarmac for the majority of streets. Letchmore Park is located at the end of Basils Road. The park is largely recreational grass with a childrens playground.



Boundary treatments to residential dwellings within the Basils Road area are generally low brick walls and shrub planting. There are some examples of black railings.

Appearance, Details and Materials

The High Street is characterised by a variety of materials including red brick and muted render with occasional buff brick. Also examples of timber frame buildings albeit limited. Georgian sash windows are common, with examples of contemporary white uPVC replacements.

The Basils Road area is predominantly characterised by red brick, with some white render and occasional use of timber frame.

Generally, white uPVC windows are prominent with occasional painted timber examples. Streets comprise a range of architectural details including bay windows, porch overhangs and tile overhanging. Residential roofs are a mix of red clay tile or slate with small gabled dormers and the frequent use of brick chimney stacks. There are some instances of catslide roof forms.



Varied materials palette and architectural detailing along High Street



Generally 2-3m setbacks for streets within the Basils Road area



Bowling Green - a small greenspace at the northern end of High Street



- ① High Street defined by higher densities and a strong building line
- ② Housing set within a rectilinear grid
- ③ Local green space well defined by strong and mostly continuous building lines
- ④ Coarse grain of development with large blocks and limited through routes



Front parking along High Street with planting in the public realm

GREAT ASHBY

Great Ashby is located on the north-eastern edge of Stevenage. Construction of the development began in 1999, with its own Community Council being formed in 2011. The area is characterised by significant landscape interventions including areas of woodland that define the eastern and northern edges.

Layout

The overall structure has been influenced by key landscape interventions namely the retention of existing woodland areas, the large linear park at the centre as a result of the overhead pylons and St Nicholas Park.

The area is composed of an informal grid pattern with a mix of back-to-back perimeter blocks and the use of rear courtyards. Although the area appears to have a finer grain of development the grid of streets to facilitate this are often part of cul-de-sacs that hinder the breakdown of blocks.

The area is mostly housing but also contains a local centre with a variety of different local services including retail, education and community uses. Density is considered medium due to the variety of terraces, semi-detached and detached houses.

Built Form and Scale

The area is comprised of predominantly 2 storey buildings with 3 storeys at key corners and vista ends. Building lines and setbacks vary across the area and are typically between 2m - 6m to accommodate front parking. Setbacks are greatest along Great Ashby Way due to the use of Private Drives to access groups of houses. The use of courtyard parking allows buildings to be brought forward on the plot to better enclose streets.

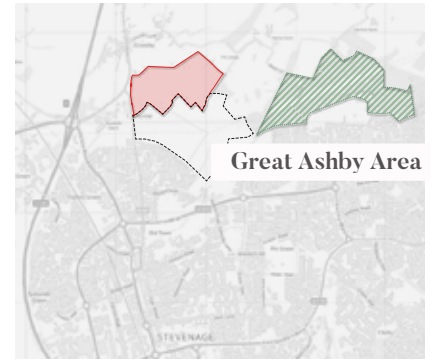
The local centre ranges in heights from single storey buildings up to 3 storeys. The local centre buildings are mostly inward looking based around a large car park.

Public Realm and Landscape

The area is predominantly flat and contains a mix of small, localised greenspaces such as Hunt Hill Close and more significant spaces such as Great Ashby Way Park and Saint Nicholas Park with access to play facilities. Green corridors provide connections to these spaces and the surrounding countryside. The area is largely contained to the south and north by tree and woodland planting and green spaces.

Most of the greenspaces and woodland are overlooked by housing albeit the area around The Chilterns backs onto the woodland. Great Ashby Way is made more prominent by a large number of planted trees in verges either side of the road creating an attractive scene.

Boundary treatments predominately comprise low level hedgerows and shrub planting with some use of fencing. The incorporation of trees within some front gardens further aids the creation of a green character.



Appearance, Details and Materials

Houses are generally red brick or buff brick with limited use of cream render. Window frames are generally white with some instances of brown frames. Doors are varied in colour which further helps to add character to the street scene.

Architectural details include dormers, front porches and porch overhangs, bay windows and some use of brick banding and brick detailing around openings.

Roofs are a mix of gable ended or fronted. Roof tiles generally comprise red or brown tones. There are some examples of decorative details to gable ends.

Local Centre buildings are generally buff brick and white block with heavy block banding contrasting with surrounding houses.



Local Centre



Verge and tree planting along Great Ashby Way



Housing overlooking existing woodland



Analysis Excerpt Plan

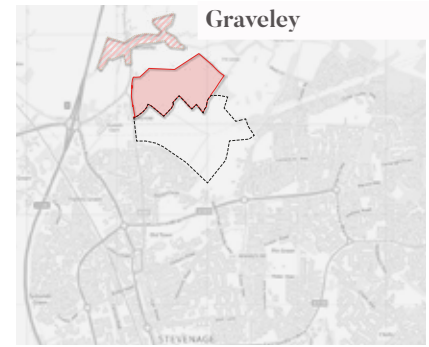
- 1 Local centre with central car park and inward focus
- 2 Great Ashby Way - tree lined avenue with segregated footway/ cycleway
- 3 Perimeter back-to-back blocks using a range of house typologies
- 4 Housing overlooking the existing woodland
- 5 Local green space with direct surveillance
- 6 Reduced interruption to cycleway through use of private drives facing onto main thoroughfare



Generally medium density shown by mix of terracing, semi and detached housing around green spaces

GRAVELEY

Graveley is a village located north of Stevenage, to the east of the A1(M). It is almost entirely bordered by agricultural land resulting in a rural character. Graveley Village is separated from the development site by existing fields and a cricket pitch. The village is covered almost in its entirety by Graveley Village Conservation Area.



Layout

The village follows a linear development along the B197 High Street. Church Lane and Oak Lane join the High Street connecting it to other parts of the village. A fragmented and scattered line of development runs along Church Lane. This culminates in a number of rural farmsteads developed in a courtyard pattern. Newer development along Oak Lane and Ashwell Common has a more rectilinear structure. The grain of the village is generally coarse with few connecting streets.

Land uses are mostly residential supported by a primary school, two pubs, a village hall and other small businesses.

The village is low density with a number of large dwellings interspersed with short runs of terracing or semi-detached houses.

Built Form and Scale

Most of the village is 2 storeys with occasional 2.5-3 storeys. There is an example of a single storey dwelling along Church Lane.

Building lines and setbacks are very irregular albeit generally deeper with frequent gaps between buildings creating an open and rural character.

The linear character of the High Street provides good long-distance views. The existing farmsteads offer examples of more well defined courtyards through linked building forms.

Public Realm and Landscape

Largely flat rising in the west from High Street, Graveley is interspersed with open spaces. However, there are very few public or formalised public open spaces for community use. Many of the green spaces surrounding the village are in agricultural use, with Graveley Cricket Club being the only formal green space.

Many of the streets are shared informal lanes with few separate footpaths or on one side only. More recent streets such as Ashwell Close also have verges including on both sides with occasional informal tree planting.

Along the High Street, boundary treatments are characterised by a mix of brick walls and fencing. Elsewhere, boundaries tend to comprise fencing and hedgerow treatments. Church Lane exhibits mature tree and shrub planting with many deep front gardens.

Appearance, Details and Materials

Buildings are generally red / red multi brick or light coloured render with some use of timber frames, painted brick and timber cladding.

A mix of architectural details result in a varied and interesting street scene. Details include window brick headers, parapets, chimneys, dormers, bay windows and some use of sash and casement windows on older properties.

Roofs are typically non gable fronted with occasional gable fronted on later buildings and comprise a mix of red and grey tones with red ceramic tiles and slate tiles.



Deep building setbacks particularly along Church Lane



Two storey redbrick dwellings along High Street



Analysis Excerpt Plan

1 Short terraced run of 2 storey cottages

2 Large detached home forming the end of a vista along Church Lane

4 Network of PROWs enabling rural connectivity

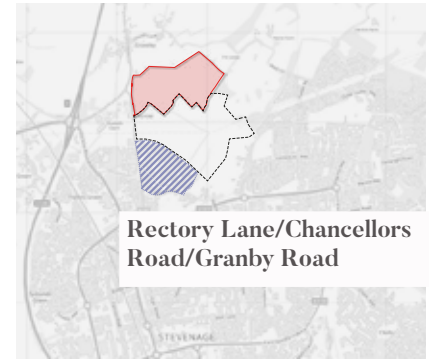
6 Farmstead displaying characteristic local vernacular set alongside St Marys Church

3 Historic pubs along High Street with outdoor seating

5 Network of hedges and planting defining field boundaries

RECTORY LANE /CHANCELLORS ROAD / GRANBY ROAD

Rectory Lane /Chancellors Road / Granby Road is located within the northern extent of Stevenage, east of North Road and south of site allocation HO3. The eastern boundary of the St. Nicholas / Rectory Lane Conservation Area runs along Rectory Lane.



Layout

Generally the grid pattern is informal and organic arranged around a set of cul-de-sacs. The homes along Granby Road are placed around internal courtyards, while the homes around Chancellors Road and Rectory Lane have a more organic arrangement facing the street. The use of cul-de-sacs leads to a coarse grain of development without proper connecting streets. The area is almost exclusively residential and very low density due to the abundance of large detached properties.

Built Form and Scale

The scale of buildings within the area is typically 2 storey with little variation.

Building lines and setbacks are varied albeit generally deeper particularly along Chancellors Road and Rectory Lane. Smaller roads off Granby Road contain well defined courtyards forming enclosed yet generous spaces. The main movement corridors generally have a very open and semi-rural quality due to generous verges, tree planting and homes deeply setback behind heavily planted boundaries.

Public Realm and Landscape

Parts of the area have been shaped by existing landscaping, in particular the woodland to the south of Granby Road. Mostly, homes back or side onto green spaces, which includes the northern edge to the adjacent fields.

A small informal green space containing a children's playground is located centrally close to Chancellors Road. However, the area benefits from access to more locally significant open spaces such as Bury Mead Park along Martins Way to the south and the PROW network providing links to the Forster Way Walk and the surrounding countryside.

The use of verges and the prevalence of mature trees and vegetation within front gardens softens the built form and results in a green character. This is especially prominent along Rectory Lane. Some streets have a 'lane' character due to the use of single sided footpaths and changes in paving.

Boundary treatments predominately comprise mature trees, hedgerows, and shrub planting with some use of low brick walls. There are some instances of timber fences.

Appearance, Details and Materials

Buildings around Chancellors Road are a mix of red / red multi brick, brown brick and some light coloured render. Buildings along Granby Road utilise a similar appearance with additional painted wood and tile embellishments. Dwellings along Rectory Lane are more varied, with each dwelling often showcasing its own individual style. There are examples of grey /pale blue and white weatherboard cladding alongside a more traditional material palette. Window frames are generally white with some instances of grey and cream frames. Doors are varied in colour.

A mix of architectural details help to add interest to the streetscene. Details include dormers, front porches and porch overhangs, chimneys, bay windows and some brick detailing around openings. There are also examples of timber frame elements.

Roofs are typically gable ended or fronted, and occasionally hipped. Roof tiles generally comprise red or brown tones. There are some examples of decorative details to gable ends.



Rectory Lane is characterised by large dwellings setback from the street



The Chancellor Road area predominately comprise late 20th century detached dwellings set within generous plots



The Granby Road area is defined by a set of cul-de-sacs laid out in a courtyard style.



- 1** Detached homes set around "courtyards" with formal building lines
- 3** Local green space with play facilities increasing accessibility locally
- 5** Homes with large front gardens and extensive hedges/tree planting displaying a rural character and a mix of architectural styles

- 2** Granby Road - main thoroughfare with verges both side of the road
- 4** Housing loosely arranged around cul-de-sacs and private drives
- 6** Housing backing or siding onto existing woodland.

6.0 ACCESSIBILITY AUDIT

- 6.1 The site is located on an existing greenfield location to the north of Stevenage. Primary access for all modes of transport would be via North Road, although the location would allow immediate access to public rights of way, such as the Hertfordshire Way, which run through the site. Efforts will be undertaken to seek a secondary access gained through the H03 development, to the south of the development area. This accessibility audit will consider the location of the site in the context of the surrounding sustainable transport network.
- 6.2 This section of the audit provides a review of the existing key trip attracting destinations to which connections should be made or enhanced. This will be followed by a review of the existing sustainable transport infrastructure in the vicinity of the site that provides the links to these locations.

Existing Key Attractors

- 6.3 The principal trip attractors within the vicinity of the site are identified in the table below:

| Destination | Land Use | Approximate Distance (km) | Walk Time (minutes based on 3mph/ 4.8kph) | Cycle time (minutes based on 12mph/ 19kph) |
|---|-----------------------|---------------------------|---|--|
| Sainsbury's Superstore | Retail | 1.30 | 16 | 4 |
| Stevenage Town Centre (Westgate Shopping Centre) | Retail/ Employment | 3.4 | 42 | 12 |
| Stevenage Old Town High Street | Retail | 2.2 | 27 | 7 |
| The John Henry Newman School (Secondary and Sixth Form) | Education | 1.6 | 20 | 7 |
| The Thomas Alleyne Academy | Education | 1.9 | 23 | 6 |

| Destination | Land Use | Approximate Distance (km) | Walk Time (minutes based on 3mph/ 4.8kph) | Cycle time (minutes based on 12mph/ 19kph) |
|---|------------------|----------------------------------|--|---|
| The Barclay School (Secondary and Sixth Form) | Education | 2.2 | 28 | 7 |
| Primary School | Education | On-Site | - | - |
| Nearest Bus Stop (North Road) | Public Transport | 0.3 | 1 | - |
| Additional Bus Stops (Lister Hospital) | Public Transport | 1.1 | 12 | 4 |
| Stevenage Railway Station | Public Transport | 3.5 | 42 | 14 |
| Stevenage Bus Station | Public Transport | 3.6 | 44 | 14 |
| Gunnels Wood Employment Area | Employment | 3.9 | 49 | 14 |
| Lister Hospital | Employment | 0.75 | 9 | 3 |
| Graveley Village (pubs and local facilities) | Leisure | 0.65 | 8 | 2 |
| National Cycle Route 12 | Leisure | 0.7 | 8 | 3 |
| Hertfordshire Way | Leisure | 0.1 | 1 | - |
| Almond Hill Junior School | Education | 2.10 | 26 | 7 |
| Letchmore Infants and Nursery School | Education | 3.10 | 31 | 9 |
| The Leys Primary and Nursery School | Education | 3.60 | 46 | 15 |
| Graveley Primary School | Education | 1.1 | 12 | 4 |
| Fairlands Primary School | Education | 2.9 | 35 | 11 |
| Trotts Hill School | Education | 2.8 | 37 | 14 |
| Larwood School | Education | 3.5 | 44 | 14 |
| Giles Junior School | Education | 3.5 | 44 | 14 |

| Destination | | Land Use | Approximate Distance (km) | Walk Time (minutes based on 3mph/ 4.8kph) | Cycle time (minutes based on 12mph/ 19kph) |
|-------------------|--------|-----------|---------------------------|---|--|
| Woolenwick School | Junior | Education | 2.7 | 34 | 9 |

* Taken from point of access on North Road – located approximately 520 metres south-west of the centre of the site

6.4 Distances in the table are measured from the point of access onto North Road, the distance to the centre of the site (within the central Greenway as shown by the purple circle below) would add 600m to the distances within the table (assuming journeys are taken direct to North Road).



Existing Pedestrian Network

6.5 The main pedestrian access to the site will be made from North Road, but it would be hoped that an additional pedestrian access could be achieved onto Graveley Road to the north of the Graveley Road/North Road junction. Secondary pedestrian access should also be available through the HO3 development and there will be additional links to the Public Rights of Way that pass through and border the site.

6.6 Adjacent to the site on North Road, there is an existing footway on the eastern side of the carriageway. The footway runs along the entire length of North Road between the junctions of North Road with High Street and Graveley Road and North Road with Lister Close. The footway is generally of good width and quality, however does experience some localised narrowing along its extent due to vegetation creep from the adjacent hedgerows. The footway currently accommodates only intermittent street lighting along its length.

- 6.7 In the vicinity of the site access, there are currently no pedestrian facilities on the south-western side of North Road, although there is a path worn into the verge on this side of the road. The pedestrian movements associated with this path are assumed to be related with pedestrians who park in the garden centre car park, which is utilised by staff of the Lister Hospital, who would walk along this side of the road to access the hospital.
- 6.8 To the north of the junction of North Road with High Street and Graveley Road, a footway is also accommodated on the eastern side of High Street. The footway is generally of good width and quality although again does only benefit from intermittent street lighting along its extent. This footway provides the existing pedestrian connections from the site toward the nearby village of Graveley.
- 6.9 To the south-west of the junction of North Road with High Street and Graveley Road, a footway is present on the southern side of Graveley Road which affords a connection to the nearby Wyevale garden centre. Beyond the garden centre, the footway extends to the grade separated junction 8 of the A1(M) motorway. Immediately before the junction a drop-kerb crossing of Graveley Road is present, which allows access to the National Cycle Route 12, which extends north from this point.
- 6.10 The footway provides a connection to the shared-use footway/cycleway on the eastern side of the A602 Hitchin Road, which extends south providing access to the Sainsbury's supermarket, which can be reached via an underpass under the A602 Hitchin Road or via the at-grade crossings which form part of the design of the traffic signal controlled Sainsbury's access junction.
- 6.11 A short distance to the south of the junction of North Road with Lister Close, a footway is also accommodated on the western side of North Road. The footways are generally of good width and quality and benefit from street lighting. The footways on this side of North Road link to those on Coreys Mill Lane, which provide access to Lister Hospital.
- 6.12 The footways on North Road, south of Coreys Mill Lane, form a route toward Stevenage High Street and the old town centre, which is located approximately 2km to the south of the site, via the footways on either side of the B1097. Coreys Mill Lane also provides access to the A602, where the shared use footway/cycleway crosses to the western side of the road and provides access to the John Henry Newman School.
- 6.13 To the south of the A602/Martins Way junction, the footways link to the extensive off-road footway and cycleways that are present throughout the centre of the town. These

provide excellent connections to the town centre, bus and rail stations and further afield to the Gunnels Wood employment area.

- 6.14 Within close proximity of the site, pedestrian crossing provision is considered to be good, with dropped kerbs and tactile paving generally present where required.
- 6.15 In addition to the frequent provision of dropped kerb crossings, more formal pedestrian crossings in the form of zebra-style and traffic signal controlled crossings are also provided within close vicinity of the site. In example, a traffic signal controlled crossing is accommodated across Coreys Mill Lane, adjacent to the pedestrian access to Lister Hospital, whilst a zebra-style crossing is accommodated across Stevenage High Street.
- 6.16 Whilst the existing shared footway in the immediate vicinity of the site are of good quality, there are extensive improvement planned as a result of mitigation associated with the HO3 development and associated with the Active Travel Fund scheme. These improvements will be discussed later in this appraisal.

Public Rights of Way

- 6.17 A number of public rights of way pass across or along the boundary of the site as follows:
- Footpath Graveley 006 which runs partially along the north-west boundary of the site allocation connecting North Road to Back Lane;
 - Footpath Graveley 007 which bisects the site running south-east to north-west connecting Footpath 006 to Bridleway 008; and
 - Bridleway Graveley 008 which runs along the eastern site boundary connecting from Back Lane to the Stevenage administrative boundary and Bridleway Stevenage 023 which runs south through the proposed country park towards St Nicholas Church
- 6.18 In part the footpaths through the site form part of the long distance walking route known as the Hertfordshire Way, which runs east-west through Graveley Village. As previously mentioned, National Cycle Route 12 runs to the west of the development site and this route forms a long distance leisure cycleway to Letchworth.

Cycle Network

- 6.19 Whilst no specific cycling infrastructure is accommodated along North Road within immediate vicinity of the site, the road is characterised by a wide carriageway with good levels of forward visibility and is subject to a 40mph speed limit.
- 6.20 To provide appropriate access to the site for those travelling by cycle, it will be necessary to provide enhancements to the cycle network to link the site to the excellent network of cycleways that are present in the centre of the town and to leisure routes such as the National Cycle Route 12, which runs north south to the west of the development site. Improvements have already been proposed along North Road as part of the mitigation associated with the HO3 development and those associated with the County Council's Active Travel scheme.
- 6.21 Within Stevenage, the route affords predominately off-carriageway connections toward Stevenage High Street, Stevenage town centre and local employment areas.

Public Transport

Bus

- 6.22 The nearest bus stops to the allocated site are positioned adjacent to the site frontage along North Road, approximately 250m from the site's centre. Northbound and southbound bus services are available, and both bus stops benefit from simple bus stop flags with timetable information.
- 6.23 Bus route number 55 currently services these stops, and offers northbound and southbound services every 30 minutes (in each direction) offering connections toward Lister Hospital, Stevenage High Street, Stevenage Town Centre and the adjacent settlement of Letchworth Garden City.
- 6.24 Further buses can be boarded at the stops on Coreys Mill Lane, which provide access to the Lister Hospital, located approximately 1.1k from the Site (a 14 minute walk). These services include the 8, 9, 55, 80, 100 Sapphire, 101 Sapphire, 301, 386, 390 and 635 service, which provides around 8 services per hour. These are summarised in the table below:

| Bus Route | From | To | Frequency - Weekday | | | Frequency - Weekend | |
|-----------|-------------------------|-------------------------|-----------------------|---|-------------------------|--------------------------------|---------|
| | | | AM Peak | PM Peak | Interpeak | Saturday | Sunday |
| 8 | Stevenage | Stevenage | 2-3 services an hour | 2-3 services an hour | 2-3 services an hour | 30 mins | 1 hour |
| 9 | Stevenage | Stevenage | 1 hour | 1 hour | 1 hour | - | 1 hour |
| 55 | Grange Estate | Stevenage | 2-3 services an hour | 2-3 services an hour | 2-3 services an hour | 30 mins | 2 hours |
| 55 | Stevenage | Grange Estate | 2-3 services an hour | 3 services an hour | 2-3 services an hour | 30 mins | 2 hours |
| 80 | Stevenage | Westmill Estate | 1-2 services an hour | 0-1 service an hour | 1 service an hour | 1 hour | - |
| 80 | Westmill Estate | Hitchin | 1 service an hour | 1-2 services an hour | 1 service an hour | - | - |
| 80 | Westmill Estate | Stevenage | - | - | - | 1 hour | - |
| 100 | Stevenage | Luton | 3 services an hour | 2-3 services an hour | 2-3 services an hour | 40 mins | 2 hours |
| 100 | Luton | Stevenage | 2 services an hour | 2-3 services an hour | 2-3 services an hour | 40 mins | 2 hours |
| 301 | Corey's Mill | Welwyn Garden City | 2-3 services an hour | 2-3 services an hour | 3-4 services an hour | 30 mins | - |
| 301 | Corey's Mill | St Albans | - | - | - | - | 1 hour |
| 301 | St Albans | Corey's Mill | 2 services an hour | 3 services an hour | 3 services an hour | 30 mins | 1 hour |
| 386 | Stevenage | Bishop's Stortford | 1 service in 2 hours | No service between 16:00-18:00 | 1 service in 2 hours | 4 services between 08:50-18:30 | - |
| 386 | Bishop's Stortford | Stevenage | 1 service in 2 hours | 1 service in 2 hours | 1 service in 2 hours | 4 services between 08:38-18:04 | - |
| 390 | Ware | St Nicholas | 2 services in 2 hours | 1-2 services in 2 hours | 0-2 services in 2 hours | - | - |
| 390 | Hertford | Stevenage | - | - | - | 2 hours | - |
| 390 | Corey's Mill | Hertford | 1 service in 2 hours | 1-2 services in 2 hours | 1-2 services in 2 hours | - | - |
| 390 | Stevenage | Hertford | - | - | - | 2 hours | - |
| 635 | Hitchin Railway Station | Hatfield/Watford | 0-1 services an hour | 1 service an hour | 1 service an hour | | |
| 635 | Hatfield/Watford | Hitchin Railway Station | 1 service an hour | 0-1 service an hour (e.g. 1 service over 2 hours) | 1 service an hour | | |

Rail

- 6.25 Stevenage railway station is located approximately 3.35km to the southwest of the site. It is based on the East Coast Mainline and is a stopping point for mainline LNER services between London and the north. It is also served by Greater Anglia and Thameslink services, linking Stevenage to London and beyond to the south, and Peterborough and Cambridge further north.

Committed Developments

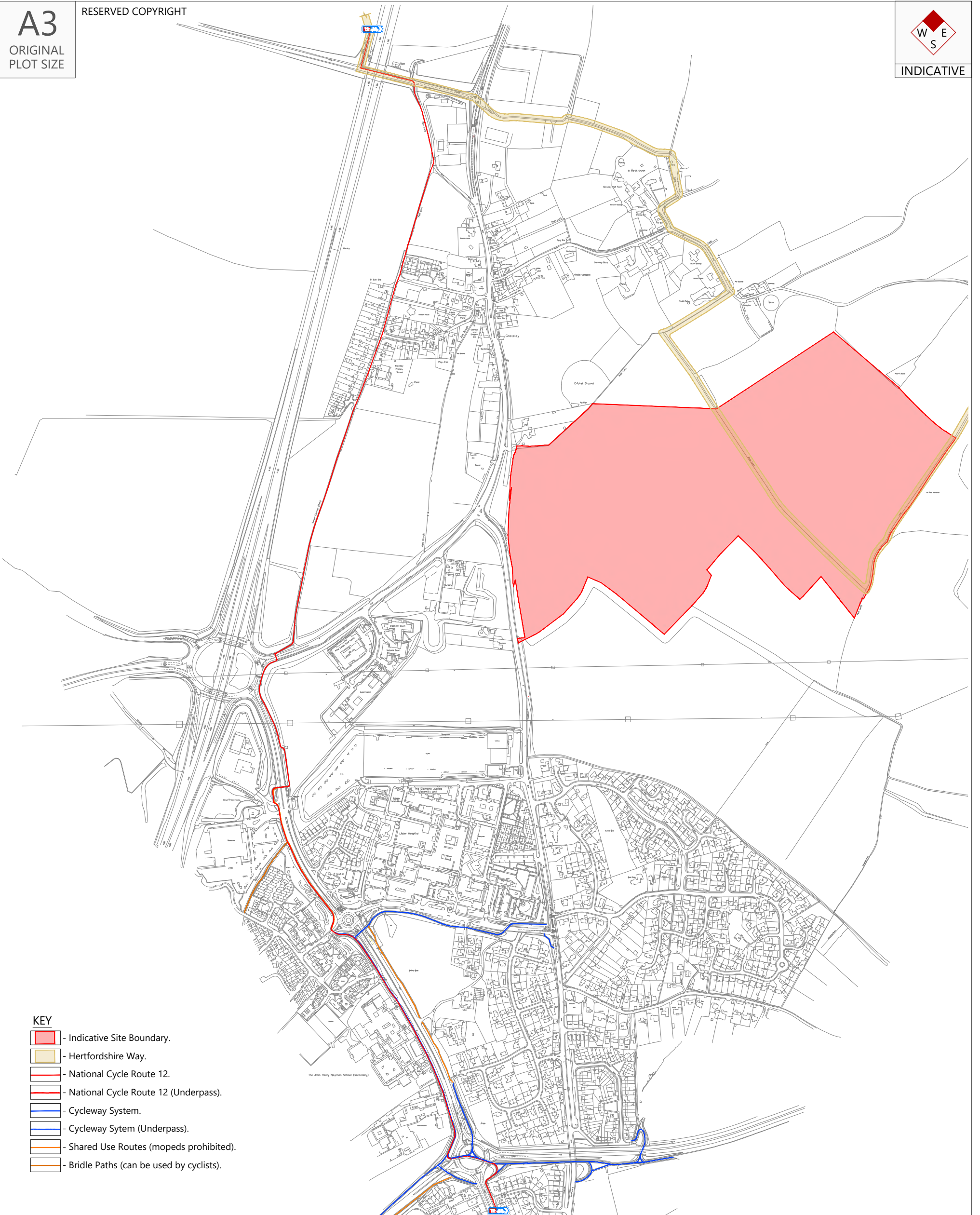
- 6.26 In the first instance, this audit identified the improvements in pedestrian, cycle and public transport infrastructure which will result from planning obligations from the HO3 (residential development on land North of Stevenage within Stevenage Borough Council) and EC1/4 (employment development west of North Road within Stevenage Borough Council) developments and further improvements along North Road proposed by Hertfordshire County Council (HCC) utilising an Active Travel Funding grant that was secured in September 2021.
- 6.27 The planning obligations associated with the HO3 development will provide two traffic signal controlled access junctions on North Road, which will also provide access into the EC1/4 development employment development and the proposed Rugby Club residential scheme. These junctions will include full pedestrian and cycle facilities in their designs, with the southern junction incorporating Pegasus crossing facilities movements from Bridleway 103 to the west of North Road to Bridleway 22 to the east.
- 6.28 It is also understood that funding from the HO3 development has been secure to convert the North Road/High Street/Graveley Road junction to traffic signal control. It is understood that the improvements of this junction will be carried out by HCC. Whilst the alterations to this junction are primarily associated with improving highway safety, the signalisation of the junction will allow controlled pedestrian and cycle crossings to be introduced across North Road and it will therefore be imperative that the junction is designed to include any improvements in sustainable transport links associated with the NS1 development.
- 6.29 The HO3 will also provide a 3.5m shared use footway/cycle way on North Road to the south, which will be supplemented by the HCC Active Travel funded scheme, which will continue cycleway/pedestrian improvement through the Coreys Mill Lane junction to link to Stevenage Old Town, to connect with the cycleway infrastructure that exists to the south of this point.
- 6.30 The Active Travel funded scheme will provide a new 2-way separated cycle route on the eastern side of North Road with separate footway and crossing improvements between Lister Hospital and A602 Lytton Way. These improvements to the south of the HO3 development on North Road are considered to be sufficient to provide sustainable transport connections along North Road as far north of the northern access to the HO3 development and therefore this area has been excluded from the audit conducted.

A3
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INDICATIVE



KEY

- Indicative Site Boundary.
- Hertfordshire Way.
- National Cycle Route 12.
- National Cycle Route 12 (Underpass).
- Cycleway System.
- Cycleway System (Underpass).
- Shared Use Routes (mopeds prohibited).
- Bridle Paths (can be used by cyclists).

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London
Manchester
Oxford
Welwyn Garden City



The Stables
7 Chesterton Mill
French's Road
Cambridge
CB4 3NP
01223 455385
www.tpa.uk.com

CLIENT:
Coudace Homes Limited

PROJECT:
**NS1 Site, North Stevenage,
Stevenage**

TITLE:
Local Cycle Network

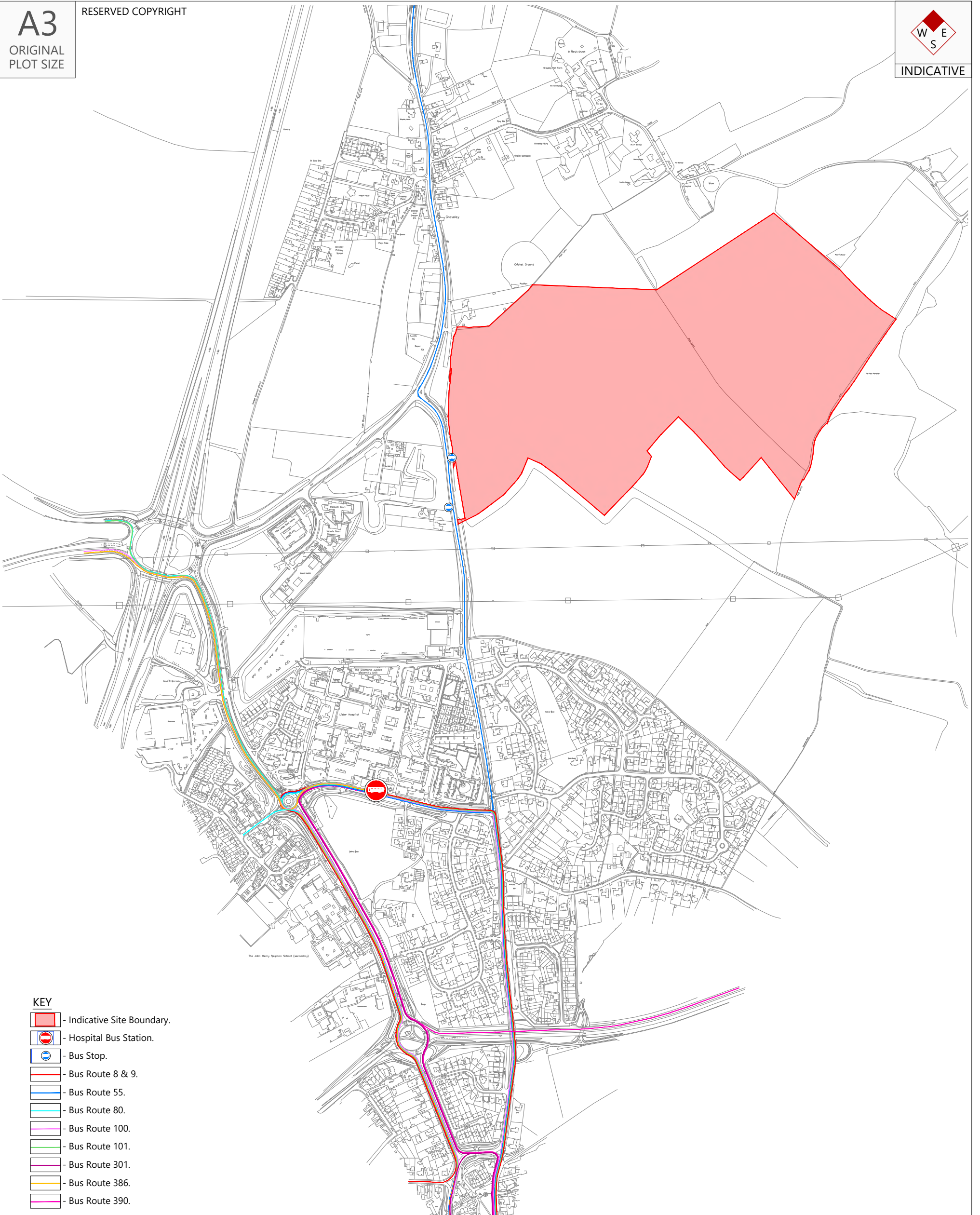
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| Rev | Date | Details | Drawn by | Checked by | Approved by |
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| SCALE: NTS | DATE: 24.11.21 | DRAWN: JA | CHECKED: IB | APPROVED: IB | |
| JOB NO: 1803-60 | | DRAWING NO: FIG.2.3 | | REVISION: - | |

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INDICATIVE



- KEY**
- Indicative Site Boundary.
 - Hospital Bus Station.
 - Bus Stop.
 - Bus Route 8 & 9.
 - Bus Route 55.
 - Bus Route 80.
 - Bus Route 100.
 - Bus Route 101.
 - Bus Route 301.
 - Bus Route 386.
 - Bus Route 390.

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CLIENT:
Coudace Homes Limited

PROJECT:
**NS1 Site, North Stevenage,
Stevenage**

TITLE:
Local Bus Routes

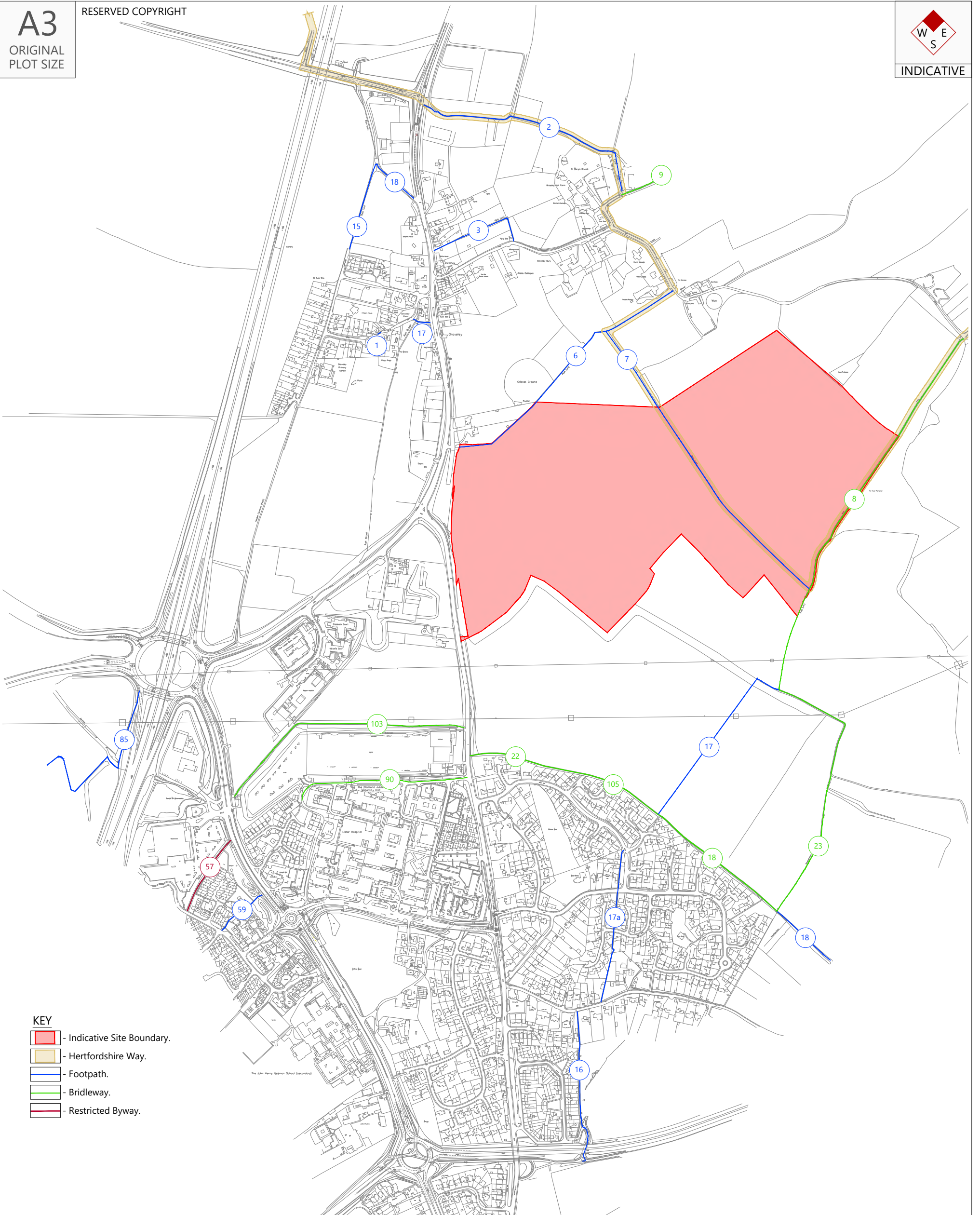
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| SCALE: NTS | DATE: 24.11.21 | DRAWN: JA | CHECKED: IB | APPROVED: IB | |
| JOB NO: 1803-60 | | DRAWING NO: FIG.2.4 | | REVISION: - | |

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INDICATIVE



- KEY**
- Indicative Site Boundary.
 - Hertfordshire Way.
 - Footpath.
 - Bridleway.
 - Restricted Byway.

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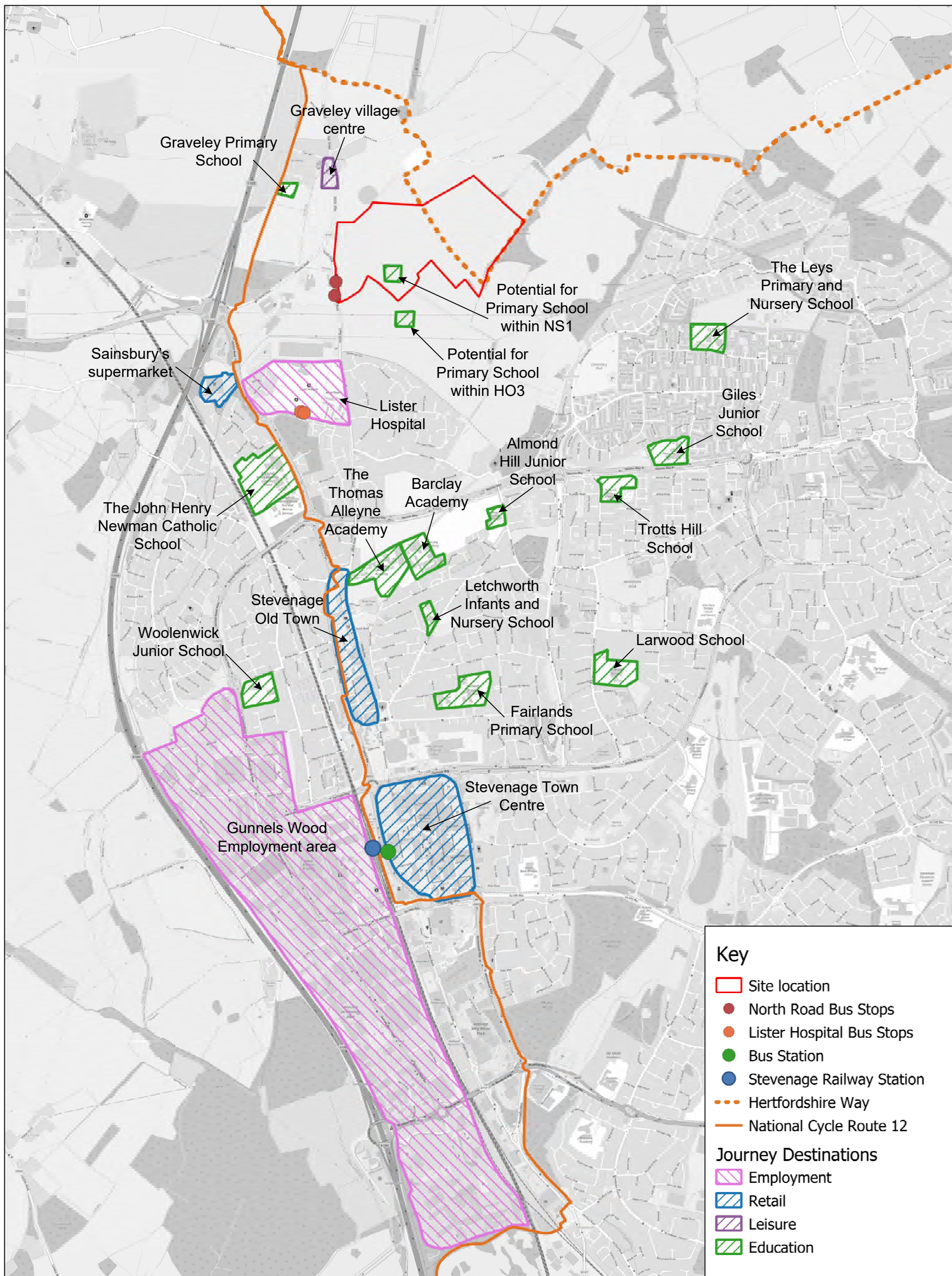
The Stables
7 Chesterton Mill
French's Road
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CLIENT:
Coudace Homes Limited

PROJECT:
**NS1 Site, North Stevenage,
Stevenage**

TITLE:
Local PROW

| | | | | | |
|--------------------|-------------|---------|-----------|------------|-------------|
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| JOB NO: | DRAWING NO: | | REVISION: | | |
| 1803-60 | FIG.2.2 | | - | | |



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tpa
Transport Planning Associates

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7 Chesterton Mill
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01223 455385
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Site NS1, North Stevenage, Stevenage

Principal Trip Attractors

Coudace Homes Limited

| | | | |
|--------------------|--------------|-------------|--------------|
| STATUS: | | | |
| INFORMATION | | | |
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| NTS | LM | IB | IB |
| JOB NO: | FIGURE NO: | DATE: | |
| 1803-60 | 2.1 | NOV '21 | |

7.0 TRANSPORT ASSESSMENT SCOPING

7.1 The study area for the assessment covers the A1(M) from Junction 9 in the north to Junction 7 of the A1(M) to the south and includes the A505 junction with the B197 and the B197 through Graveley, the site access onto North Road and much of the urban environment of Stevenage to the south of the site.

Baseline Traffic Flows

7.2 The baseline traffic flows have been derived from two sources. For junctions and roads within the urban area of Stevenage, the baseline data will be extracted from the Stevenage S-Paramics model which has been supplied by Hertfordshire County Council (HCC) for a base year of 2019.

7.3 Manual classified count traffic surveys were undertaken during the hours of 07:00 – 10:00 and 15:00 – 19:00 on Thursday 28th June 2018 at the following junctions:

- High Street, North Road, Graveley Road – 3-arm Priority Junction;
- B197 (North and South), Graveley Lane – 3-arm Priority Junction;
- B197, A505 – Left-in left-out Priority Junction;
- A1(M), Graveley Road, A602, Stevenage Road – 6-arm Partially Signalised Roundabout;
- A602, Coreys Mill Lane, Ingleside Drive – 4-arm Roundabout;
- North Road, Chancellors Road, Coreys Mill Lane – Double Mini-roundabout; and
- A602, Martins Way, Gunnels Wood Road – 4-arm Part Time Signalised Roundabout.

7.4 In addition, automatic traffic count surveys were collected at the following locations over a period of 7 days between 26th June and 2nd July 2018:

- On the B197 through Graveley Village; and
- On the A603 Hitchin Road, south of the Sainsbury's access junction.

Receptor Locations

7.5 The receptor locations identified for the assessment are shown in the following plan. In addition, the following routes have been identified to determine the impact of the proposed development:

- Route 1: Broadhall Road to Junction 7 A1 (M);
- Route 2: Six Hills Way from St Georges Way to Gunnels Wood Road;
- Route 3: Fairlands Way from St Georges Way to Gunnels Wood Road;
- Route 4: Gunnels Wood Road;
- Route 5: London Road to Fairlands Way along Monkswood Road and St Georges Way;
- Route 6: North Road from Graveley Road to A602 Gyratary;
- Route 7: London Road to Junction 8 A1 (M) via London Road and A602; and
- Route 8: A1 (M).

Pedestrian Access

- 7.6 There is an adjacent footway to the site, provided on the eastern side of North Road and is generally of good width and quality, with intermittent street lighting.
- 7.7 There are currently no pedestrian facilities on the south-western side of North Road.
- 7.8 To the north of the junction of North Road/High Street/Graveley Road, a footway is provided on the eastern side of High Street and provides connections from the site towards the village of Graveley. To the south of the junction, a footway is provided on North Road on the southern side of the carriageway which provides connection to the nearby Wyevale Garden Centre. The Garden Centre car park is known for informal parking location for staff/visitors to Lister Hospital.
- 7.9 With regard to secondary schools, access to the Thomas Alleyne Academy is directly south along North Road, and eastwards along The Grange. The Barclay Academy is accessed along Walkern Road from North Road. The John Henry Newman School can be achieved via the shared footway/cycle tracks on either side of Coreys Mill Lane and the segregated footway/cycle tracks adjacent to Hitch Road respectively.

Cycling Access

- 7.10 There is no specific cycling infrastructure along North Road but it is considered to be currently capable of accommodating more experienced cyclists.
- 7.11 The National Cycle Route 12 is accessible approximately 800m to the west of the site, off the northern side of Graveley Road. Within Stevenage, the route affords predominantly

off-carriageway connections toward Stevenage High Street, Stevenage Town Centre and local employment areas.

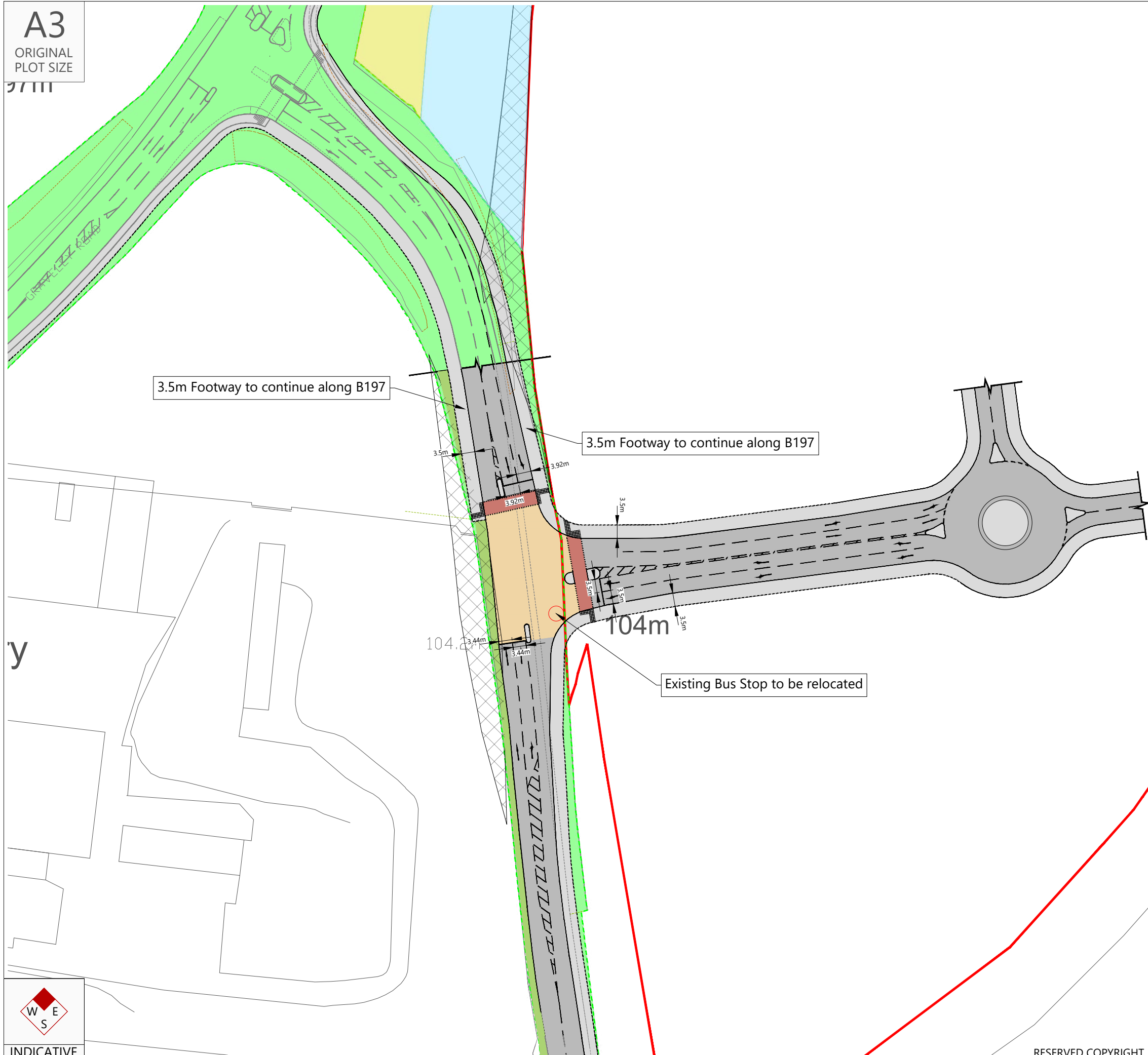
7.12 The following plans are enclosed for information:

- North Road Proposed Northern Access 3 Arm Roundabout
- Existing Layout Ownership Boundaries
- Proposed pedestrian/cycle route audits
- Traffic Survey Locations
- Extent of Paramics Model
- Paramics Routes and Queue Locations
- Overall Study Area
- AADT Receptor Locations
- Principal Trip Attractors

A3

ORIGINAL
PLOT SIZE

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NOTES:

1. Subject to topographical survey.

KEY

- Indicative Site Boundary.
- Highway Boundary maintainable at public expense.
- Private and HCC Owned Boundary.
- Stopped Up Land.
- HCC Ownership from Terrier Plotting.

| Rev | Date | Details | Drawn by | Checked by | Approved by |
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| - | - | - | - | - | - |

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CLIENT:

Croudace Homes Limited

PROJECT:

North Stevenage
ITT

TITLE:

North Road,
Proposed Northern Access
3 Arm Roundabout

STATUS:

FEASIBILITY

| | | | | |
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| SCALE: 1:1,000 | DATE: 21.06.21 | DRAWN: JA | CHECKED: IB | APPROVED: IB |
| JOB NO: 1803-60 | DRAWING NO: SK07 | REVISION: - | | |

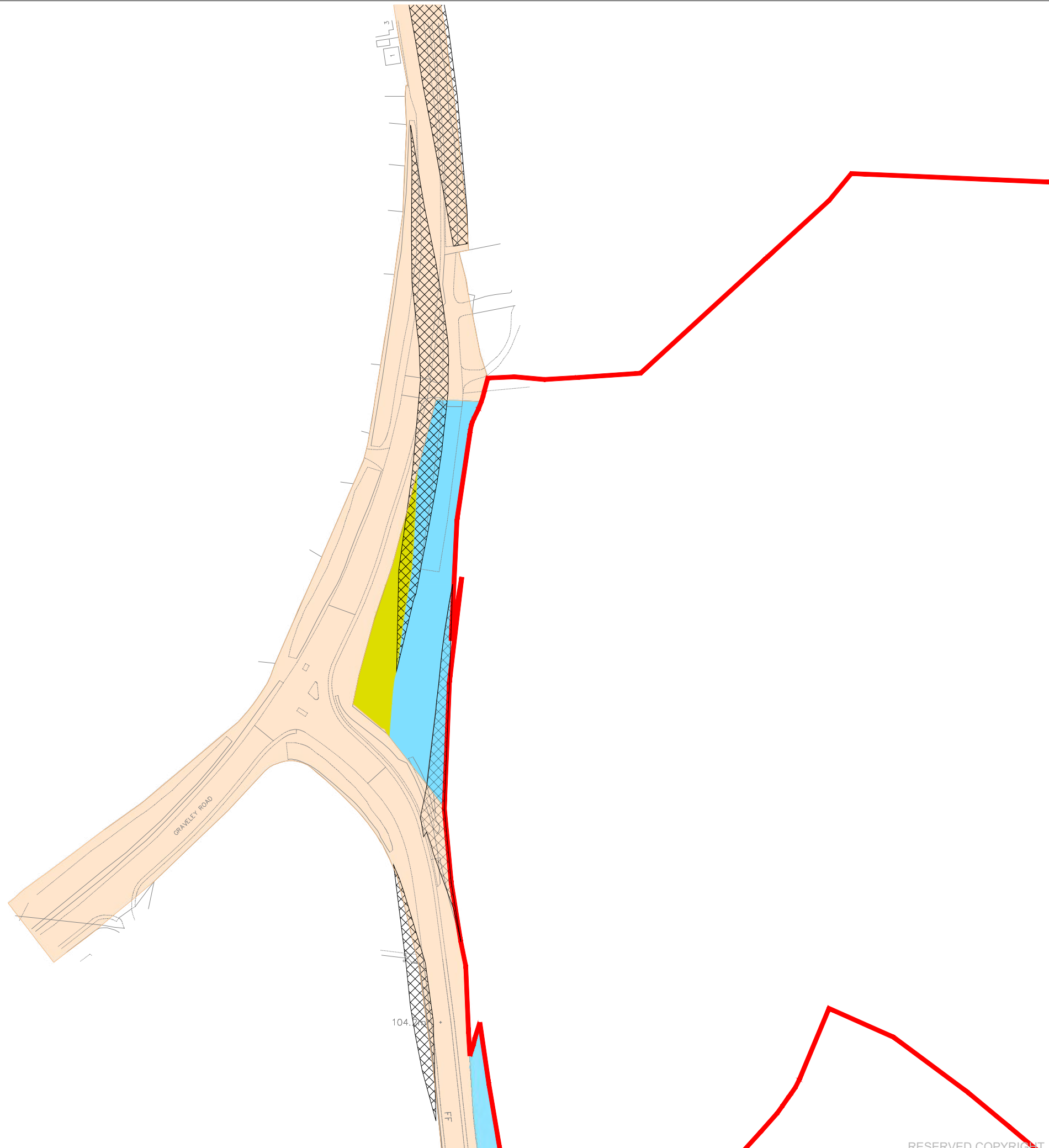


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- NOTES:
1. Based on OS Mapping Data.
 2. Subject to topographical survey.

KEY

-  - Indicative Site Boundary.
-  - Highway Boundary maintainable at public expense.
-  - Private and HCC Owned Boundary
-  - Stopped Up Land
-  - HCC Ownership from Terrier Plotting

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| B | 02.07.21 | Key updated / client name change | JA | IB | IB |
| A | 02.07.18 | Added boundary | GW | IB | IB |

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 Ownership Boundaries**

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| | | | | |
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| SCALE: 1:2,000 | DATE: 30.05.18 | DRAWN: GW | CHECKED: IB | APPROVED: IB |
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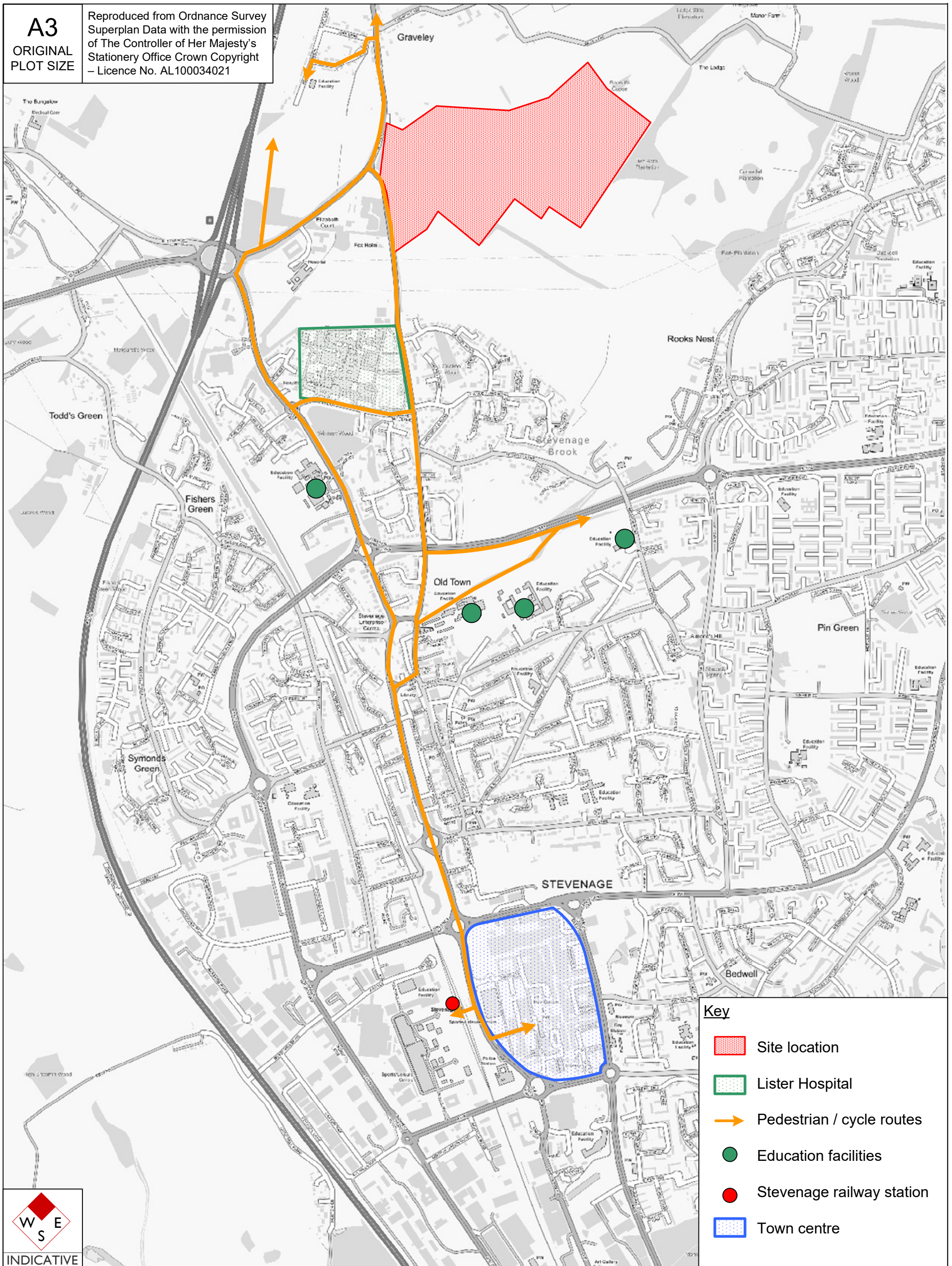


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Key

-  Site location
-  Lister Hospital
-  Pedestrian / cycle routes
-  Education facilities
-  Stevenage railway station
-  Town centre



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Proposed pedestrian / cycle audit routes

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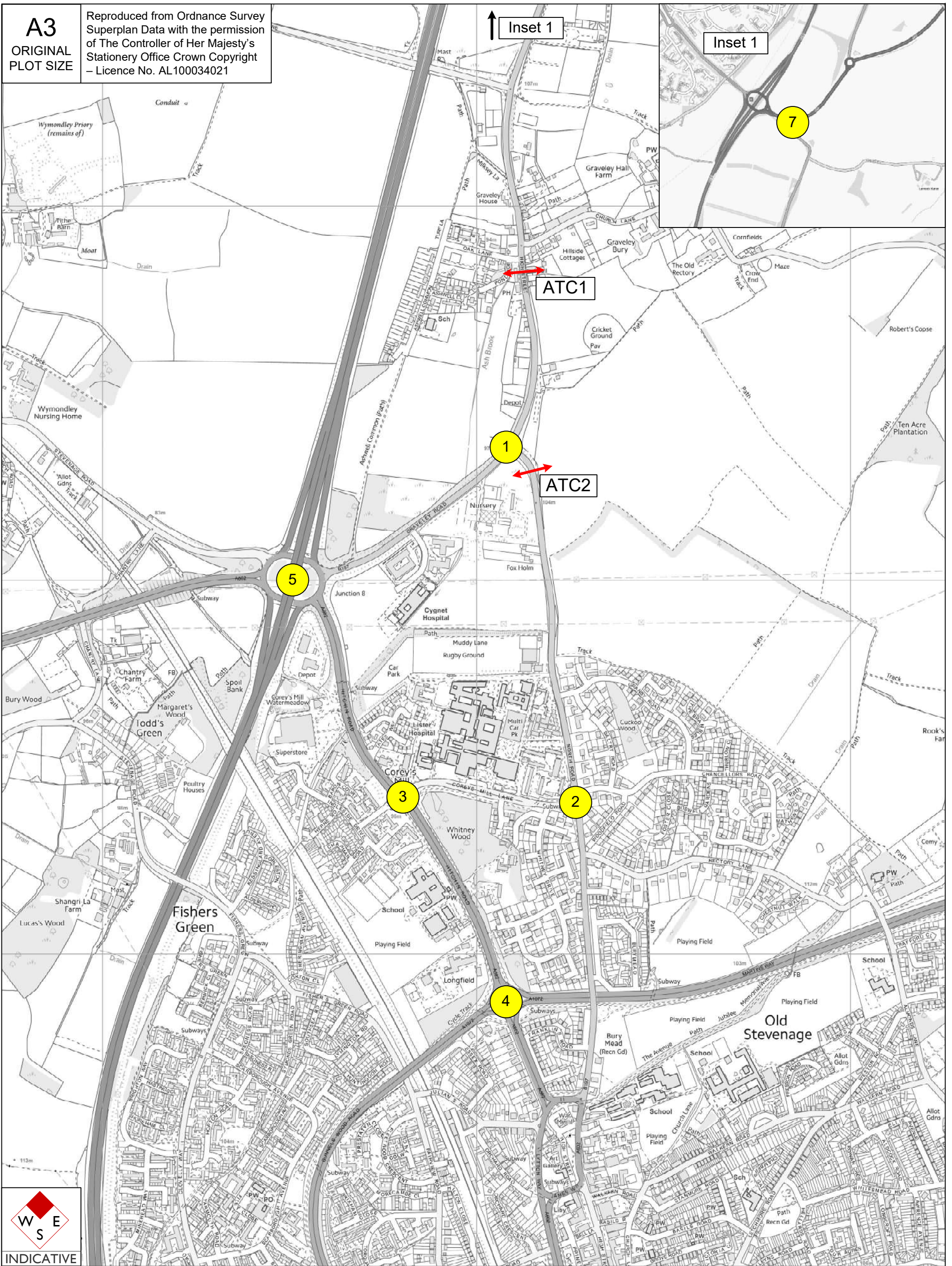
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| 1803-60 | Figure 3.1 | JUNE '21 | |

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Traffic Survey Locations

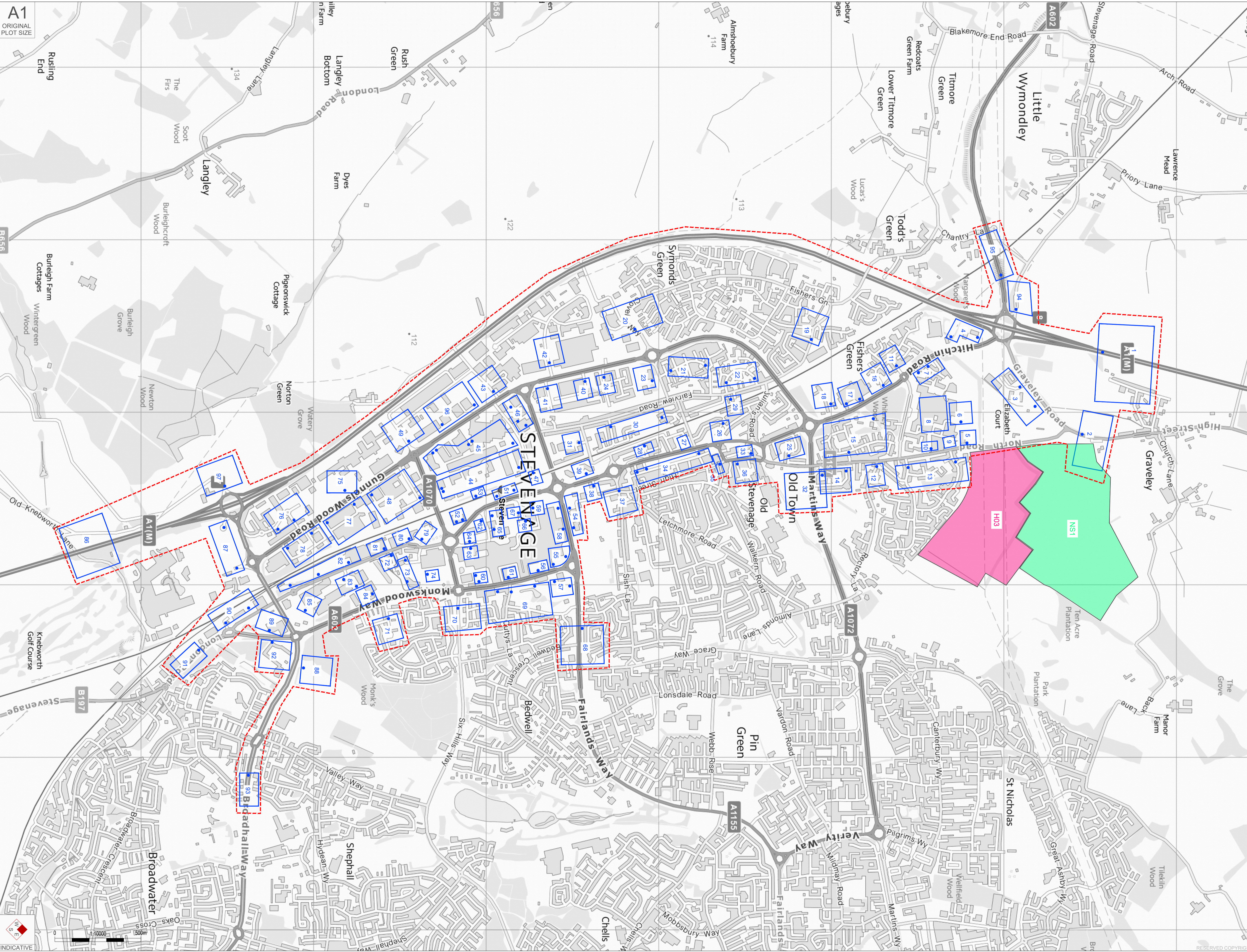
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| 1803-60 | 4.1 | JUNE '21 | |

- NOTES:
1. Indicative un-surveyed existing road markings.
 2. Based on Hertfordshire SHP files.
 3. Subject to confirmation of Highway Boundary.
 4. Subject to topographical survey.

KEY

- HO2 North of Stevenage
- NS1 Development
- Paramics Zones
- Zone Access Points
- Extent of Paramics Model



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PROJECT:
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TITLE:
Extent of Paramics Model

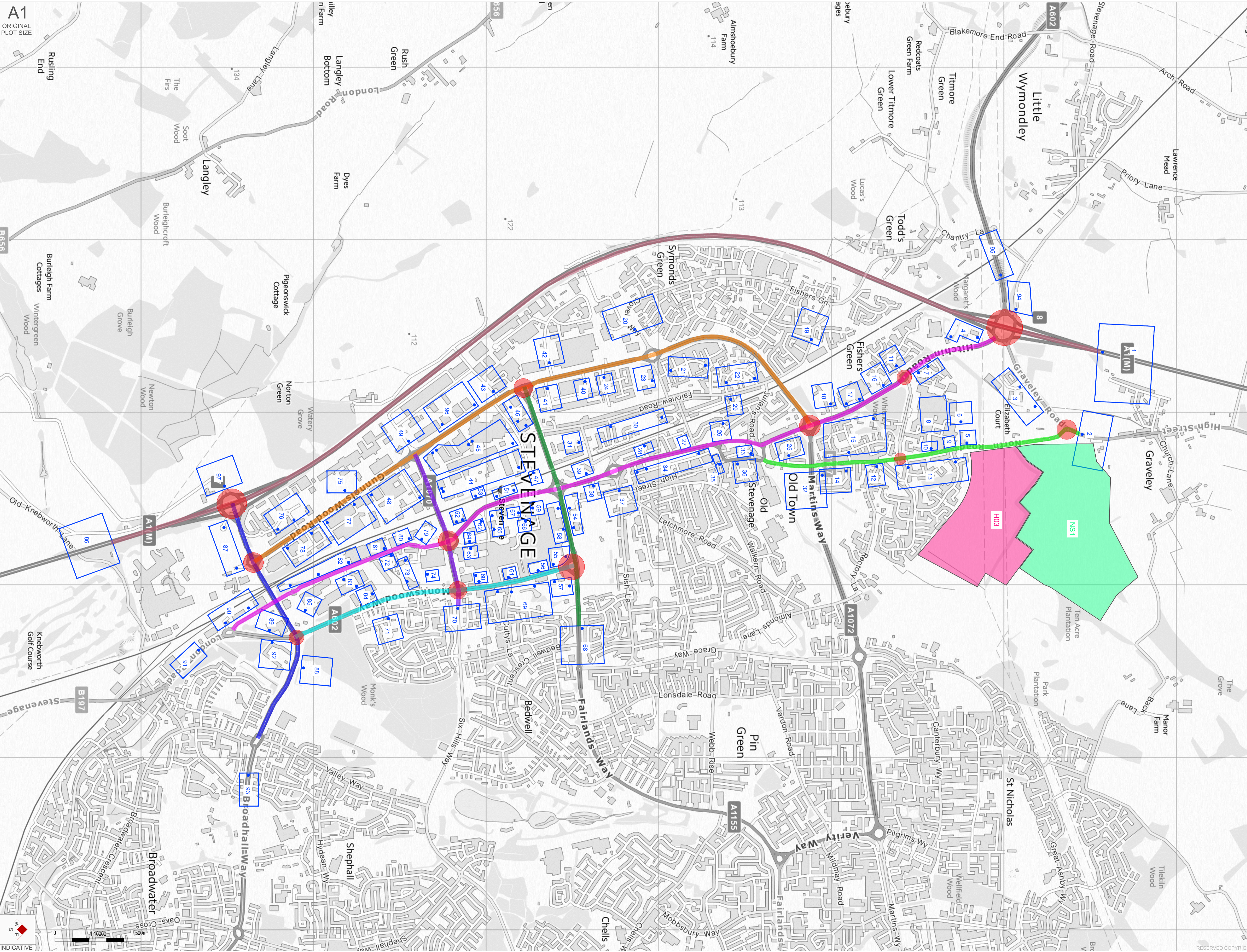
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| 1803-60 | Figure 5.1 | - | | |

- NOTES:
1. Indicate un-surveyed existing road markings.
 2. Based on Hertfordshire SAP files.
 3. Subject to confirmation of Highway Boundary.
 4. Subject to topographical survey.

KEY

- H03 North of Stevenage
- NS1 Development
- Paramic Zones
- Zone Access Points
- Queue Locations
- Route 1
- Route 2
- Route 3
- Route 4
- Route 5
- Route 6
- Route 7
- Route 8



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PROJECT:
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TITLE:
Paramics Routes and Queue Locations


STATUS:
FOR INFORMATION

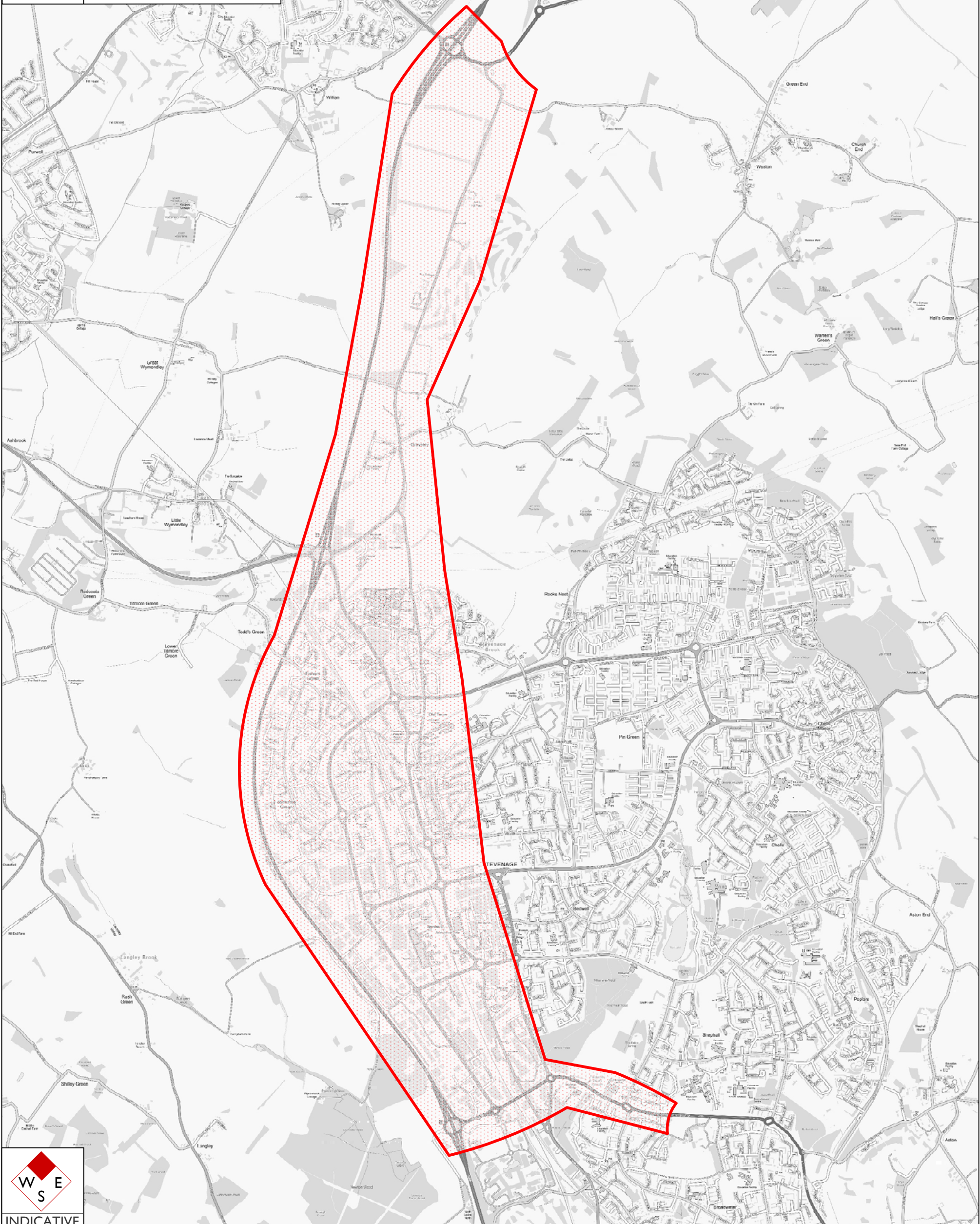
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| 1803-60 | Figure 5.2 | - | | |

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Key

 **Study Area**



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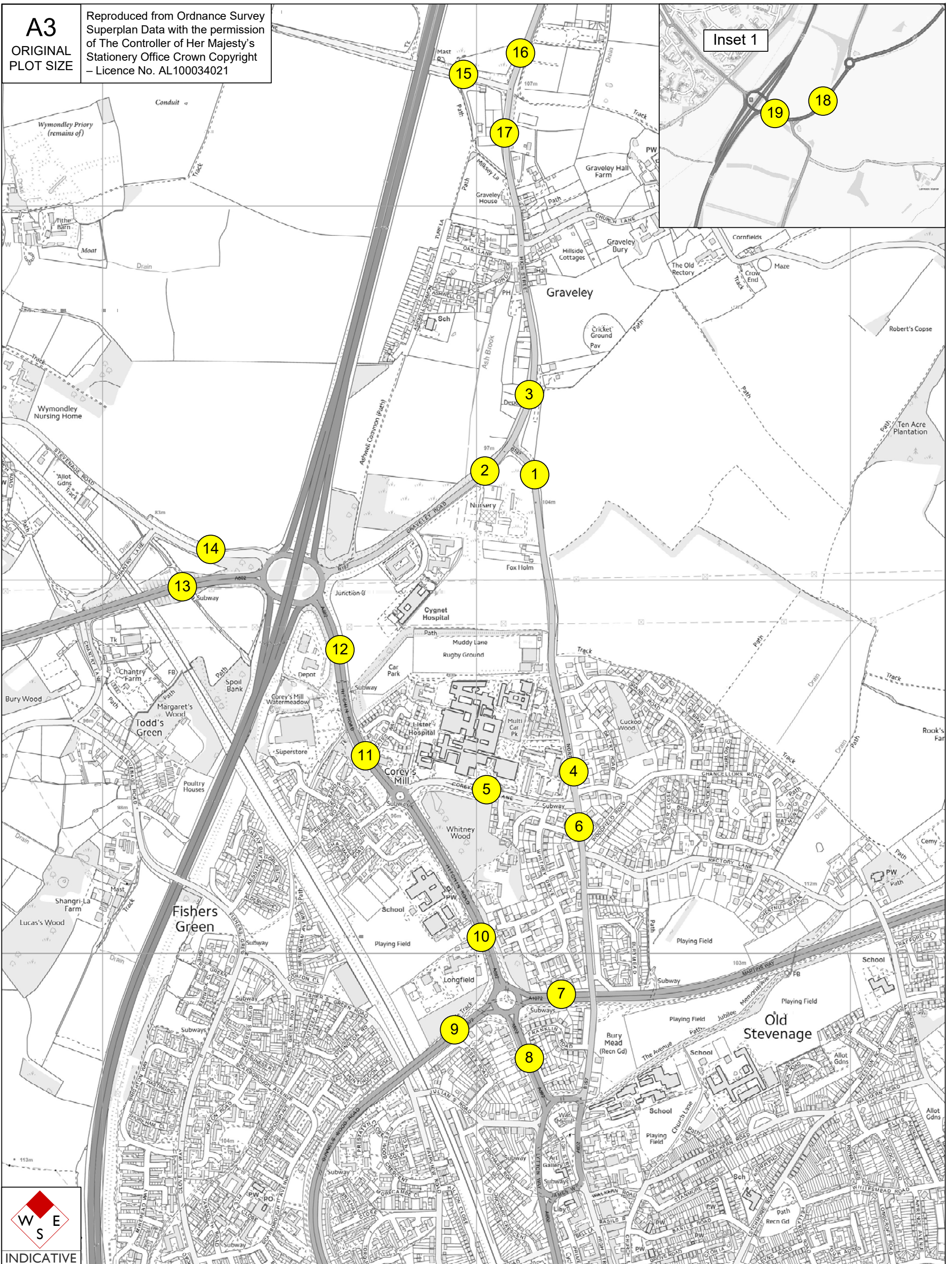
Overall Study Area

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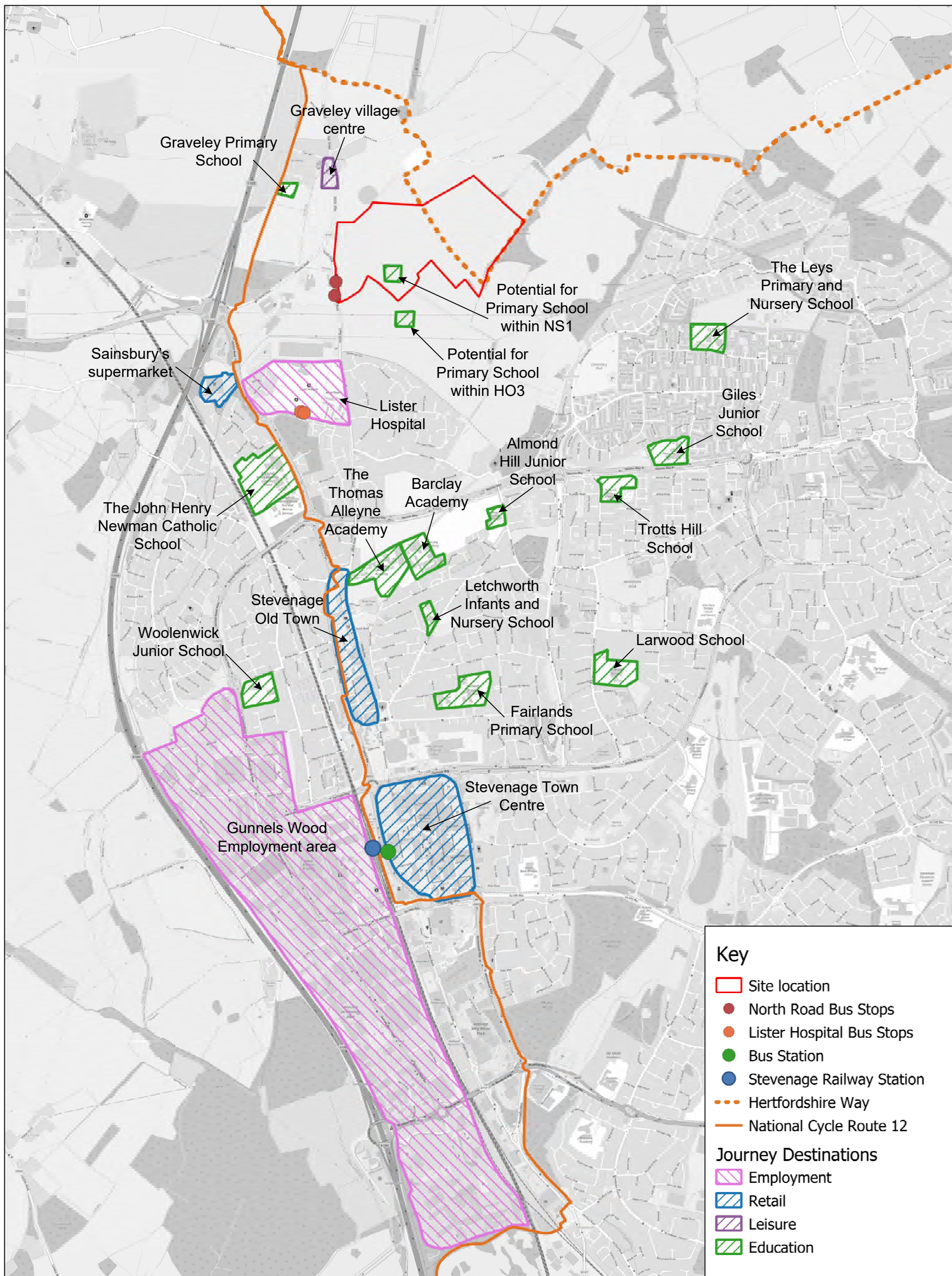
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AADT Receptor locations

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| 1803-60 | Figure 10.3 | JUNE '21 | |



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Principal Trip Attractors

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8.0 LANDSCAPE AND VISUAL ASSESSMENT

8.1 A desktop review of the site and surrounding area was undertaken, including a review of published landscape character information and relevant landscape and visual policy, and analysis of landscape context, landform, landscape features and landscape designations. A computer-generated Zone of Theoretical Visibility (ZTV) was undertaken to determine the anticipated visual envelope (the area in which the Site and Development are potentially visible) and subsequently, establish the extent of the Study Area. Two site visits were undertaken in 2018 (April and October) and then a third was undertaken in June 2021 to check for any changes in the baseline conditions recorded in 2018.

Designations

8.2 Rook's Nest House and the 'Area known as Forster Country' is mentioned in the distinctive features of this character area. E.M. Forster was a 20th century English writer famous for novels such as Howard's End. In some of his works, he describes the landscape around his childhood home in northern Hertfordshire.

8.3 The exact extent of Forster Country is difficult to define and has changed over time. During Forster's childhood, Rook's Nest House was in the middle of the countryside. Since then, Stevenage has expanded, and lines of high voltage pylons now run across the landscape. The designation of the St Nicholas/ Rectory CA includes important open spaces such as the fields west of Rooks Nest Farm which are to become a new Country Park.

8.4 The Site includes Public Rights of Way (PRoW), some of which form part of a circular 'Forster Country Walk' around the eastern part of the Site and along Back Lane to the east. The Walk continues along footpaths in the St Nicholas/ Rectory Lane CA landscape adjacent to Rook's Nest House.

8.5 There are no relevant landscape or planning designations covering the site or the study area. The nearest Area of Outstanding Natural Beauty is the Chilterns, located over 10km from the site. Historic photographs are set out within the Heritage Impact Assessment chapter below.

The Site

8.6 The characteristics of the landscape of the Site and its surrounds, broadly reflect the published wider district-level character areas described above and these have been

further divided and incorporated into landscape character areas, which form more local landscape receptors.

- 8.7 The Site comprises two large agricultural fields without internal trees or vegetation. It does not extend to all the field boundaries. It rises from a low area in the west and north to the highest point in the southeast near Chesfield Park.
- 8.8 Just outside of, and to the north of the Site, there are some older existing field boundary hedgerows with sizable oak trees and a more recent planting mix of trees near to this field. Other vegetation to the south and to the southwest of the Site within Stevenage Borough includes some shelter belt planting, involving a similar incongruous mix of native species, such as oak, ash, cherry, larch and pine. A thin hedgerow runs along or near the eastern Site boundary, with Robert's Copse to the east just outside the Site.
- 8.9 The trees of the Ten Acre Plantation provide enclosure to the southeast of the Site, as do the outgrown hedgerow along the B197 to the west of the site, and the hedgerow between the Site and the Graveley Cricket Pitch to the north of the Site. Within this vegetation just outside the Site boundary are some high-quality trees and tree groups, the roots and canopies of which may need protection. For locations of the vegetation and quality of the trees refer to the Arboriculture Survey. The containment is mostly of the lower land within the site near the boundaries. However, while the higher land to the south and east of the Site is contained by shrubs and trees to the south, it remains open to views from the north.

National & Landscape Character Areas

- 8.10 The study area includes three National Character Areas (NCAs) and the site lies within two of these, namely; NCA 86 South Suffolk and North Essex Clayland to the east and NCA 87 East Anglian Chalk to the west. Further south-west within the study area is NCA 110 The Chilterns, however this is not considered relevant to the assessment due to the distance.
- 8.11 There are two local scale published Landscape Character Areas (LCAs) that include part of the site; Area 216 'Arlesey – Great Wymondley' within the western area and Area 219 'Baldock Gap' within the eastern area. Area 216 is considered to be low sensitivity, where as Area 219 is considered to have a moderate to high sensitivity.

Local Landscape Character and Landscape Context

8.12 The Site slopes in general in two directions and the slopes undulate creating minor ridges and troughs across the Site. Broadly speaking, as shown in LVIA Figure 7.5 Landscape Receptors and Slope Analysis in the plan set below, there is:

- a west facing slope with low point to the west and viewed from a nearby east facing slope from the west. Further west the land is lower than the Site, often sloping away from the Site and sits within treed road corridors;
- a northwest facing slope with low points to the north, higher land to the south and viewed from higher land to the north east;
- The trees and fields associated with the settlement of Graveley from the low point to the north (Graveley village sits in the lower land);
- The higher land near the south-eastern boundary associated with Chesfield Park; and,
- The Stevenage urban edge to include the fields adjacent to the Site, which are to be developed for residential use. This development site slopes down from the southern Site boundary towards the previous urban edge of Stevenage. This area also encompasses the Lister Hospital buildings to the west

8.13 The characteristics set out above can be grouped as local landscape character areas or local landscape receptors (LRs) – features or attributes of an area that taken together define the landscape character and which may be impacted by a development. For the purposes of this assessment, these LRs as shown in figure 7.5 are defined as:

LR1 - Large chalk agricultural fields on urban edge with tree lined transport routes

8.14 This landscape receptor comprises a west facing slope continuing beyond the proposed Site through to the lower lying landscape to the west beyond the motorway. The LR is mostly agricultural but includes parts of small settlements, Great and Little Wymondley, connected by narrow lanes. It also prominently contains, or is framed by, several discordant features within the landscape including the A1(M) motorway and motorway junction, and the main road network connecting through to Stevenage and Graveley.

8.15 Despite these character detractors, LR1 does include a range of local landscape assets which contribute positively to landscape character, including hedges, hedgerow trees and occasional small pockets of woodland plantation. Within the site, LR 1 comprises a large,

open arable field, bounded to the west by highway vegetation alongside North Road and Graveley Road, and to the south by plantation trees within a shelter belt.

- 8.16 Within the Site, there is a subtle transition in the landscape character of LR1, influenced by its proximity to the village of Graveley as well as the change in elevation. To the eastern edge of LR1, on higher ground, the character is notably more open. A gentle ridgeline running northwest towards Graveley provides a subtle transition towards the adjacent character area and its northern aspect. Within LR1, this higher ground is locally devoid of landscape features although the Forster Country Walk/ Hertfordshire Way National Trail follows the character area boundary.
- 8.17 To the south, the character of LR1 becomes influenced by woodland plantation situated beyond the site boundary. The plantation is of moderate arboricultural quality mixed species including Blackthorn, Cherry, Aspen, Goat Willow, Oak, hawthorn, Hazel, Elm, Beech, Ash, Sycamore, Larch and Pine species. This plantation provides a sense of increasing enclosure heading south within LR1, particularly as the topography falls away towards the highway vegetation alongside North Road. Here the existing vegetation comprises a mixture of Hawthorn, Field Maple, Ash, Elder, Norway Maple, and Hornbeam of moderate arboricultural condition. It also includes several dead elm trees.
- 8.18 Further south, beyond the plantation belt at the southern boundary, the character area will become framed by a new settlement edge as a result of the residential development proposed through an approved application within Stevenage Borough Council (17/00862/OPM).
- 8.19 To the northern of the site, LR1 becomes influenced by the existing settlement edge of the village of Graveley. Here, the site is bounded by a hawthorn hedge and sycamore tree forming the boundaries of a small number of private gardens and the Graveley Cricket Club. This boundary provides an abrupt transition to the adjoining local character area to the north (LR3).

LR2 - Clayland agricultural landscape on rural edge with small woods

- 8.20 This local landscape receptor comprises a rolling arable landscape sandwiched between parkland landscapes to the southeast and the Chesfield Downs Golf and Country Club to the northwest. LR2 rises to a height of approximately 140m AoD in the northwest, dipping to 100m AoD as the terrain folds in towards the edge of Graveley before rising again through and beyond the Site's eastern boundary to a height of approximately 135m AoD.

- 8.21 Within the site, this rolling landscape provides a northwest facing slope running from the edge of Ten Acre Plantation and Chesfield Park down to Back Lane and the eastern part of the settlement of Graveley to the north. The slope has a close relationship to the opposing slopes to the north, both of which are formed of arable fields, partially framed by remnant hedges and occasional small, wooded areas.
- 8.22 The rolling terrain results in generally smaller fields than are found in adjoining character areas, orientated in line with the contours of the hillside. This trait becomes less distinctive to the south (within the Site) where the slope is gentler. Here, the character is reminiscent of local parts of LR1, which is distinguished primarily by the subtle influence of a local ridgeline running northwest towards Graveley, lending a different aspect to LR2. The ridgeline is followed by the Forster Country Way/ Hertfordshire Way National trail.
- 8.23 Within the eastern part of the Site, LR2 plateaus somewhat alongside Ten Acre Plantation, which lies immediately outside the Site and character area but forms a distinctive boundary feature. The plantation comprises a dense mixture of Ash, Larch, Pine, Oak, Sycamore, Field Maple, Hawthorn, Hazel, and Beech. It includes many dead trees but overall, positively influences the character of the adjoining LR2 area locally within the Site.
- 8.24 The arable field running down the slope within the Site towards Back Lane, is framed by a short section of poorly maintained hawthorn hedgerow with occasional Elm. This forms the eastern boundary of the Site.

LR3 - The settlement of Graveley townscape and garden fields

- 8.25 LR3 lies adjacent to the north of the Site. It includes the settlement of Graveley and its associated fields and vegetation. The village contains several Listed buildings including the Grade I listed Church of St Mary, and the Grade II Listed buildings at Crow End on the eastern side of the historic settlement. Collectively the village itself is designated as a Conservation Area, although additional related open spaces to the west of the village and to the south (Graveley Cricket Club) are also included within this receptor area. LR3 lies to the north of the proposed Site.

LR4 - The Parkland landscapes: Chesfield Park, Ten Acre Plantation & fields near EM Forster's childhood home in the St Nicholas Rectory Conservation Area landscape

- 8.26 LR4 sits to the southeast of the Site and is contiguous with the Site boundary. It comprises the parkland landscapes of Chesfield Park, and fields near Rook's Nest House (E.M.

Forster's childhood home), which are part of Forster Country, and included in the St Nicholas/ Rectory Lane Conservation Area landscape. Much of the latter is to become a Country Park, delivered through the proposed residential development within Stevenage Borough Council. This Country Park will be sited to the southeast of the Site being assessed.

- 8.27 Chesfield Park itself is well-enclosed by plantation woodland along its boundaries. To the southwest, this includes 'Park Plantation' and to the northwest, the estate is framed by Ten Acre Plantation. Details of the composition of this feature are set out in LR2 above. Ten Acre Plantation follows a local ridge line running in a south westerly direction towards Stevenage. This focuses Chesfield Park on a south-easterly aspect, with the house located centrally within the Park and locally set within mature trees. North of Chesfield Park, Back Lane cuts across the hilltop plateau, giving way to Manor Farm beyond and its complex of Grade II and Grade II* Listed buildings. Once more, these buildings and their landscape settings are well enclosed by mature vegetation, including Ledge Side Plantation to the northeast, Harbourclose Wood to the north and Roundwood to the east.

LR5 - North western urban edge of Stevenage to include the residential area, the tall Lister Hospital and the fields facing the north western edge of Stevenage

- 8.28 LR5 falls to the southwest of the Site and comprises the existing built urban edge of Stevenage, including the existing residential area of Stevenage as well as the proposed new residential development beyond. The parameters for this new residential development permit housing, a Local Centre and areas of public space throughout the existing fields between the Site and the existing settlement edge. A new Country Park, will cover the easternmost existing field, stretching beyond this receptor area across 'Forster Country' to Rook's Nest House.
- 8.29 LR5 also encompasses Lister Hospital and various brownfield uses such as the nursery to the west of the Site. The far eastern field is located within the St Nicholas/ Rectory Lane Conservation Area landscape.
- 8.30 The character of this receptor area is strongly influenced by the existing and proposed urban edge, and by the prevalence and dominance of discordant features including Lister Hospital buildings and large overhead pylons and cables which traverse the fields south of the Site. It is noted that the northernmost cable route is to be undergrounded, in part, by the proposed residential development. Nonetheless, these remain notable detractors on the landscape. Positive landscape features include the plantation woodland forming

the southern boundary of the Site, the proposed Country Park to the east, and the framework of new public open spaces within the proposed Stevenage Borough Council residential development.

Description of the Core Visual Envelope

8.31 The Visual Envelope (VE) is restricted by intervening landform and vegetation. For the extent of the core VE refer to Figure 7.10 below. It extends:

- to the west over the busy B197 to the western edge of Ashwell Common, adjacent to the A1(M);
- to the far west, the Chilterns are visible as hills in the distance from the higher areas of the Site. However, given the distance and the intervening visual 'noise', are scoped out and not considered further;
- to the north west to the hedgerow adjacent to and south of the cricket grounds.
- to the north west from higher ground within the Site, views to the north west include views to and from the golf course, the car boot field and from a section of the recreational trail, the Hertfordshire Way
- to the north, to a hedgerow with characterful hedgerow oaks and further north the views are obscured by an outgrown hedgerow and vegetation within the garden curtilage of the Old Rectory, old people's home, near the eastern end of the Graveley CA. Views to and from the Crow End cluster of listed buildings, also within the eastern end of the CA, are filtered by intervening vegetation;
- to the north east, a well-used public right of way, bridleway 5, runs up the elevated farmed landscape. Although at lower levels to the west, views from this bridleway are prevented by adjacent contiguous hedgerows, at a higher level, along a length of this footpath, there are uninterrupted sequential views of the higher land to the east and south of the Site to include the pylons, the Lister buildings and in the far distance the spire of St Nicholas. The VE extends further up this field;
- to the east and south east, vegetation includes a low sparse hedgerow along the eastern Site boundary just outside the Site, adjacent to the small woodland, Robert's Copse, Further east there is roadside vegetation as Back Lane rises to meet Ledge Plantation and the vegetation of Chesfield Park.
- to the south, views are curtailed by the Ten Acre Plantation at the top of the ridge. and then (depending on the Development, views may be prevented) by a hedgerow to the west of Ten Acre Plantation near the top of the ridge. This hedgerow marks the northern edge of the St Nicholas/ Rectory Lane CA, an area of landscape near Rook's Nest House with Forster Country Walks running through it, along the

PRoWs. A gap between the western end of this hedgerow and the North Stevenage shelter belt allows views into and out of the Site, extending the visual envelope to the south east. Views from this orientation include sequential near views from footpath 23 near where it joins footpath 17 and moves up to the Site boundary. Very limited middle-distance views are possible from Rook's Nest House, filtered by both the 2m high, beech, garden hedge and the treed boundary of the adjoining paddock.

- Further south the core VE extends towards Weston Road Cemetery and the southern end of Footpath 23, 18, and 22. It continues around St Nicholas/ Rectory Lane CA where views of the Development are possible from Weston Road Cemetery. Otherwise, views from the southern end of Footpath 23 as it moves north towards the Site along lower land before turning west to join Footpath 17, are largely curtailed by landform and intervening vegetation. Views from even further south, such as those afforded to visitors to Grade 1 listed St Nicholas Church are prevented by intervening vegetation. The steeple although widely visible is not publicly accessible and so the church is scoped out of this assessment.
- to the south views, such as from the residences and the Bridleway 105 and Footpath 22 on the northern urban edge of Stevenage are largely interrupted by the shelter belt in the Stevenage Borough. A small gap in the belt would allow some visibility.
- to the south west, a break in the Site boundary hedgerow allows views into the Site from the B197 and from Lister Close near the Nursery and the Lister Hospital buildings;
- The routes of the Hertfordshire Way, Forster Country (circular) Walk are along the PRoW footpaths 6, 7 and 8, which run around the periphery or traverse the Site, allowing internal views: and along Footpaths 17, and 23, which are just south of the Site within Stevenage Borough. The Forster Country Walks also runs along Back Lane, from which sequential or filtered views of the Site are available in certain locations.

8.32 Overall, the site currently exhibits varying levels of containment. The skyline to the south-east, with the woods of Ten Acre Plantation and Chesfield Park is currently undeveloped and forms an important feature. Whilst the edge of Stevenage and the pylons running across the fields to the south are visually intrusive from more elevated views from the landscape to the west. The extent of the visibility of the site from the surrounding landscape is reduced by built form by the substantial trees of the settlement of Graveley and by existing vegetation adjacent to the field boundaries external to the site.

8.33 The above limits the core VE mainly to:

- views from the landscape to the north east,
- views from the south from Footpath 23 (for locations of numbered footpaths refer to LVIA Figure 7.10) with partial views from Weston Road Cemetery and very limited, filtered views from Rook's Nest House,
- views from the northern urban edge of Stevenage,
- views from Ashwell Common with filtered views from the B197 to the west, and
- filtered views from the B197, Graveley car boot fields, a section of the recreational trail the Hertfordshire Way and the golf course to the north west.

8.34 The Environmental Statement will seek to break these into further sub-categories as set out below:

VRG1 – Viewers in residential areas

- VRG 1a - Viewers on the northern urban edge of Stevenage to include the Lister Hospital buildings.
- VRG 1b - Viewers in the residences on the north western edge of Stevenage near (but outside of) the St Nicholas/ Rectory Lane CA boundary.)

VRG 2 – Viewers in Conservation Areas (Heritage) (CA)s

- VRG 2a - Viewers from within the Graveley CA
- VRG 2b – Viewers from the St Nicholas/ Rectory Lane CA including the Grade 1 listed building: Rooks Nest House excluding users of the PRoWs and Weston Road Cemetery - see below. Note: St Nicholas Church has been scoped out.

VRG 3 – Viewers using the road network

- VRG 3a - Viewers travelling along rural single lane roads such as Back Lane
- VRG 3b – Viewers from the B197
- VRG 3c – Viewers travelling along the motorway A1 (M)

VRG 4 – Viewers using the PRoW and permissive path network

- VRG 4a - Viewers users the PRoWs such as the Hertfordshire Way, which traverses the Site
- VRG 4b – Viewers from the PRoWs and recreational routes such as the Forster Country Walk.

- VRG 4c – Viewers from the PRowS such as Bridleway 5, traversing the higher agricultural land to the north of the Site
- VRG 4d – Viewers from the PRowS such as Footpath 6 a stretch of which runs within the north west boundary of the Site and Footpath 22 which runs to the south of the site adjacent to the northern boundary of the North Stevenage built up area.
- VRG 4e – Viewers using permissive paths such as that across Ashwell Common

VRG 5 – Recreational viewers involved in recreational activities other than walking

- VRG 5 - Viewers visiting the golf course, the fruit farm or the car boot sale involved in recreational activities, such as golf or visiting the car boot sale.

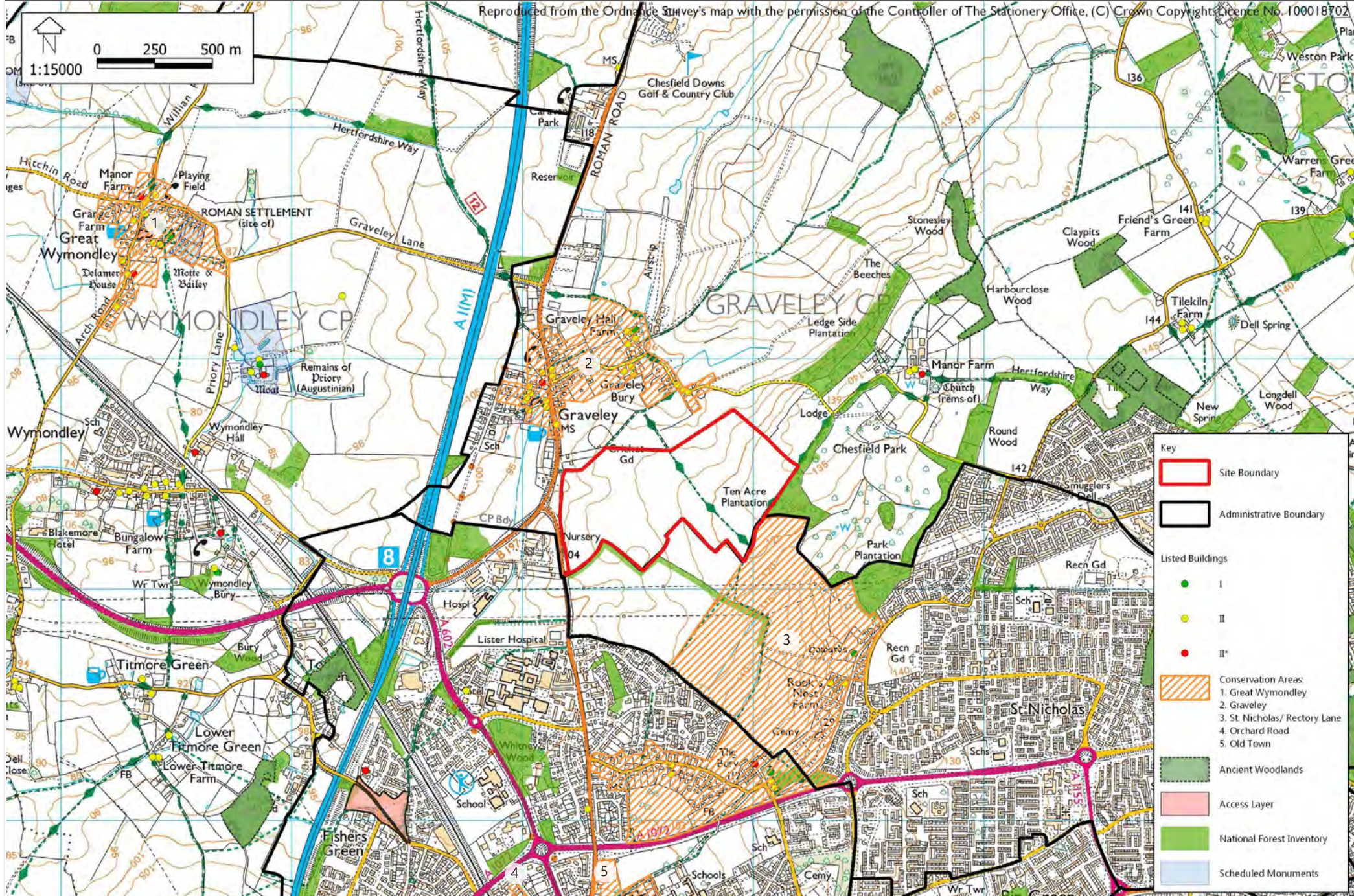
VRG 6 – Viewers visiting the cemetery within the St Nicholas/ Rectory Lane CA boundary

- VRG 6 - Viewers visiting Weston Road Cemetery.

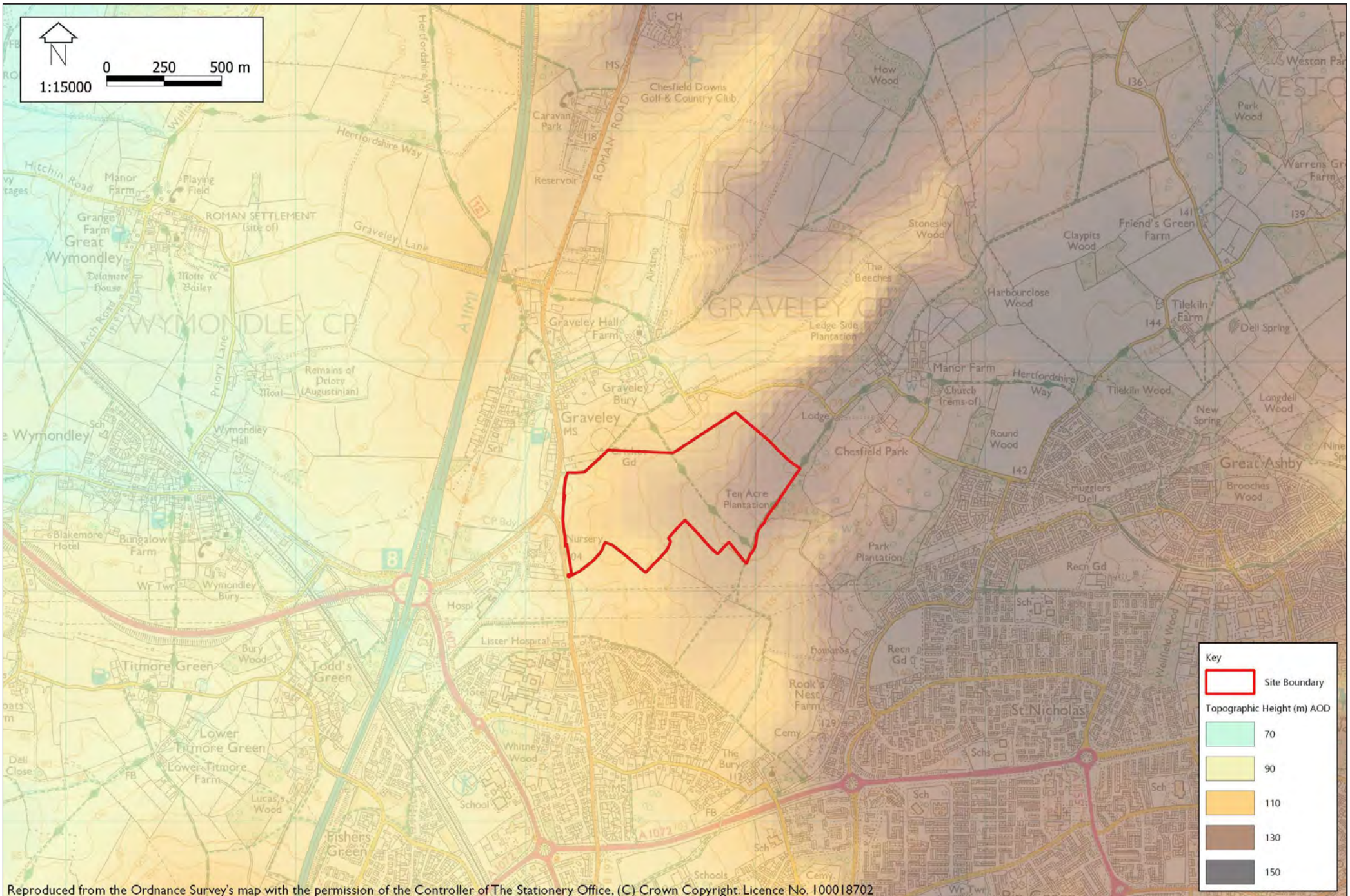
8.35 A ZTV has been created and six visual receptor groups in which 18 viewpoints have been identified for assessment purposes. Receptors include those in residential areas, those in the conservation areas, road users, users of the public rights of way (PRow), those involved in recreational activities excluding those using the footpaths/PRow and those visiting the Weston Road cemetery.

8.36 The following plans are included within this document:

- Landscape Designations Plan
- Topographical Context Plan
- National and District Landscape Character Areas
- Landscape Receptors and Slope Analysis
- Landscape Receptors – Character Photographs
- Zone of Theoretical Visibility
- Visual Receptor Group Plan
- Representative Viewpoint Locations, Public Rights of Way and Core Visual Envelope

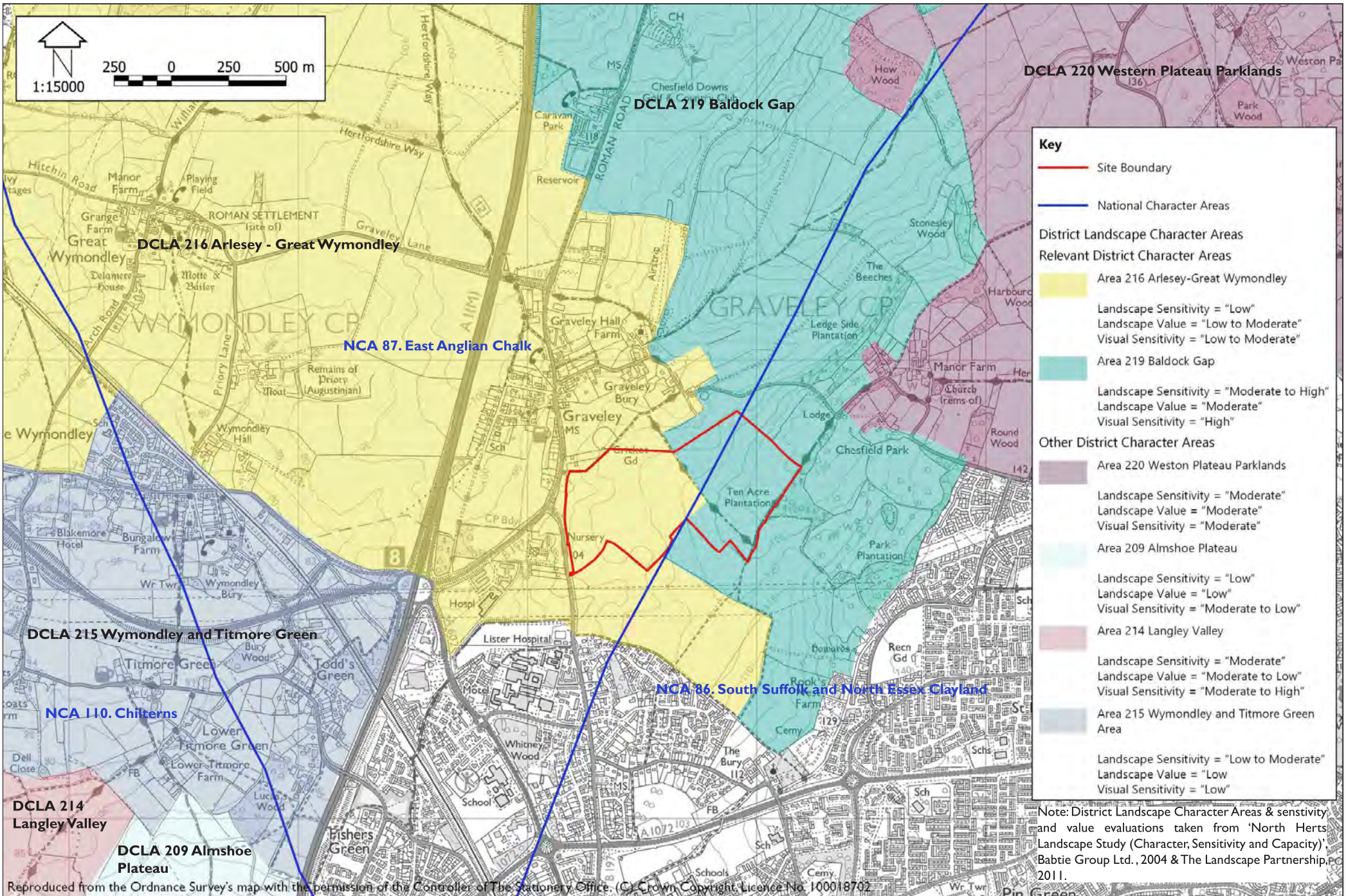


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|---------------|---------------------|----------|--------------------|------------|------------------------|
| PROJECT NO: | 11005 CRO | CLIENT: | CRUODACE HOMES LTD | FIGURE NO: | 7.2 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | Landscape Designations |
| ISSUE STATUS: | PRE-PLANNING | | | | |



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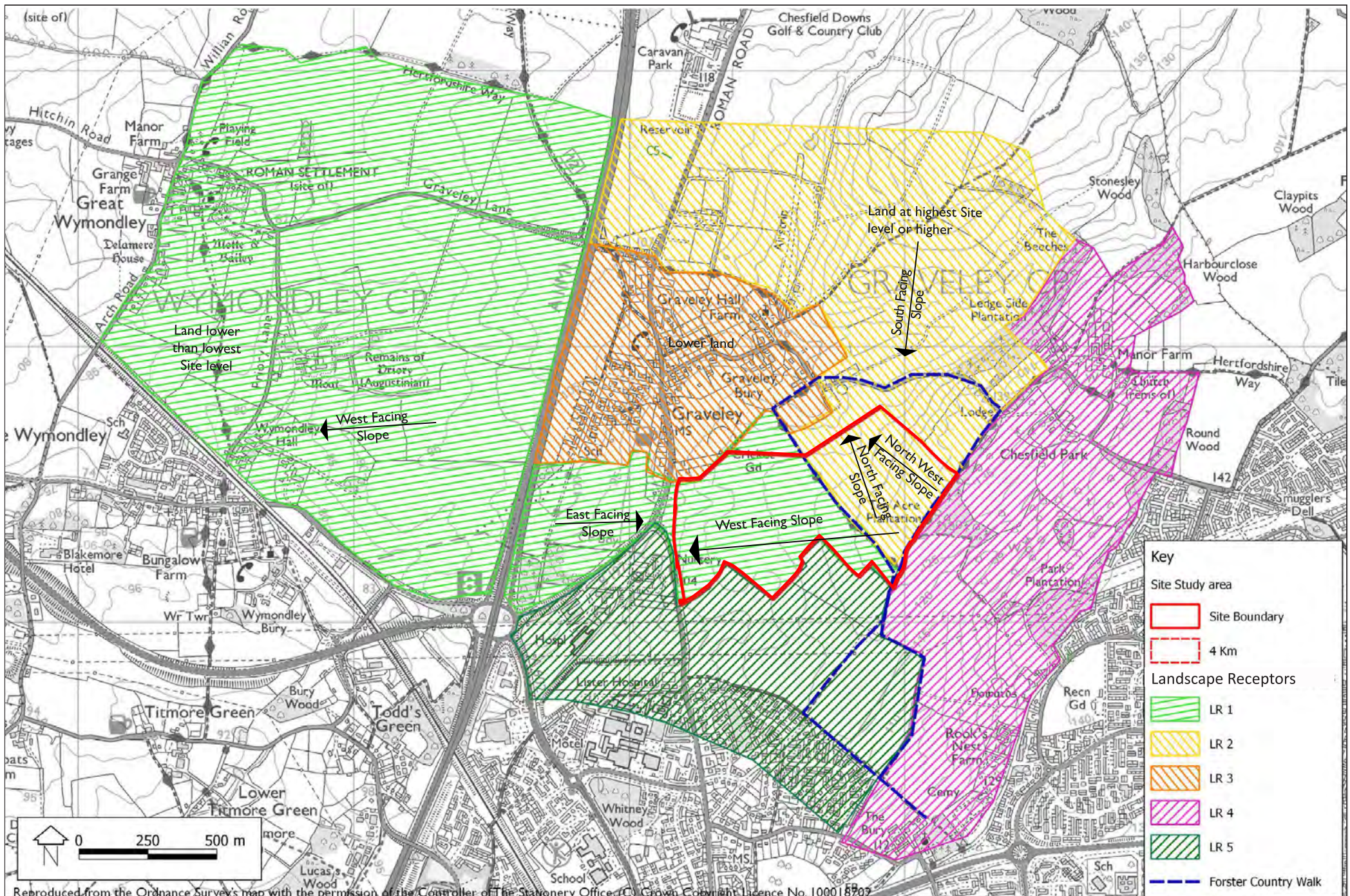
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| PROJECT NO: | 11005 CRO | CLIENT: | CROUDACE HOMES LTD | FIGURE NO: | 7.3 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | Topographical Context |
| ISSUE STATUS: | PRE-PLANNING | | | | |



Note: District Landscape Character Areas & sensitivity and value evaluations taken from 'North Herts Landscape Study (Character, Sensitivity and Capacity)', Babbie Group Ltd., 2004 & The Landscape Partnership, 2011.

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| PROJECT NO: | 11005 CRO | CLIENT: | CROUDACE HOMES LTD | FIGURE NO: | 7.4 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | National and District Landscape Character Areas |
| ISSUE STATUS: | PRE-PLANNING | | | | |



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| PROJECT NO: | 11005 CRO | CLIENT: | CROUDACE HOMES LTD | FIGURE NO: | 7.5 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | Landscape Receptors and Slope Analysis |
| ISSUE STATUS: | PRE-PLANNING | | | | |

LR1 Large chalk agricultural fields on urban edge with tree lined transport routes



1. LR1 Ashwell Common to the west of the site



2. LR1 Ashwell Common to the west of the site



3. LR1 Scrubby landscape along road B197 to the western edge of the Site in District local Character Area - 216 'Arlesey - Great Wymondley'

LR2 Graveley Village townscape and garden fields



4. LR2 Southern and south eastern edge of Graveley fields near northern edge of the Site



5. LR2 Edge of Graveley Conservation Area - Southern edge of Graveley fields near northern edge of the Site



6. LR2 Southern and south eastern edge of Graveley fields near northern edge of the Site

LR2 Graveley Village townscape and garden fields



7. LR2 Southern edge of Graveley fields near northern edge of the Site- misty day



8. LR2 Southern edge of Graveley fields near northern edge of the Site -clear day



9. LR2 South eastern edge of Graveley, Crow End near the north eastern edge of the Site.

| | | | | | |
|---------------|---------------------|----------|--------------------|------------|---|
| PROJECT NO: | 11005 CRO | CLIENT: | CRoudACE HOMES LTD | FIGURE NO: | 7.6 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | Landscape Receptors - Character Photographs |
| ISSUE STATUS: | PRE-PLANNING | | | | |

LR3 -Clayland agricultural landscape on rural edge



9. LR3 Landscape of the site from near Back Lane in the mist illustrates land form



12. LR3 Back Lane through more open landscape east of the site



10. LR3 Back Lane through woodland to south east of site near Chesfield Park



13. LR3 Route along Bridleway 5 through fields leading to bench vantage point over the site



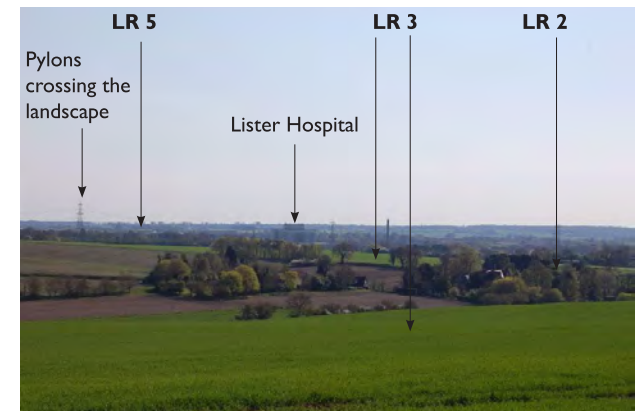
11. LR3 The Site in context of District Local Landscape Character Area 214 - Baldock Gap

LR4 -Parkland Landscapes - Chesfield Park & Forster Country



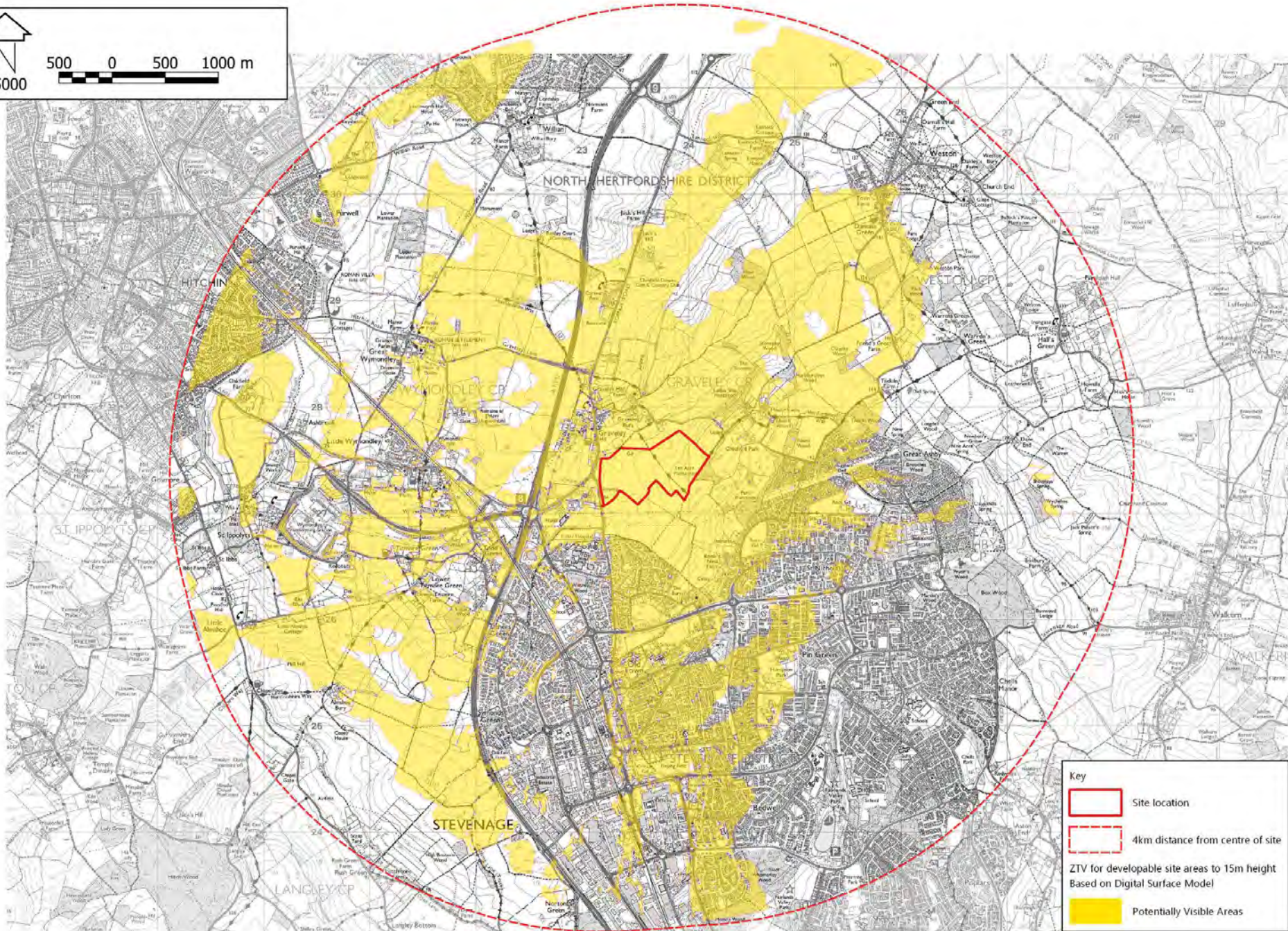
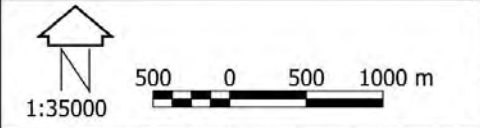
14. LR4 Part of Forster Country near Rook's Nest House

LR5 -Urban edge fields with Lister Hospital and North Stevenage



15. LR5 Lister Hospital and Stevenage urban edge.

| | | | | | |
|---------------|---------------------|----------|--------------------|------------|---|
| PROJECT NO: | 11005 CRO | CLIENT: | CROUDACE HOMES LTD | FIGURE NO: | 7.7 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | Landscape Receptors - Character Photographs |
| ISSUE STATUS: | PRE-PLANNING | | | | |



Key

- Site location
- 4km distance from centre of site

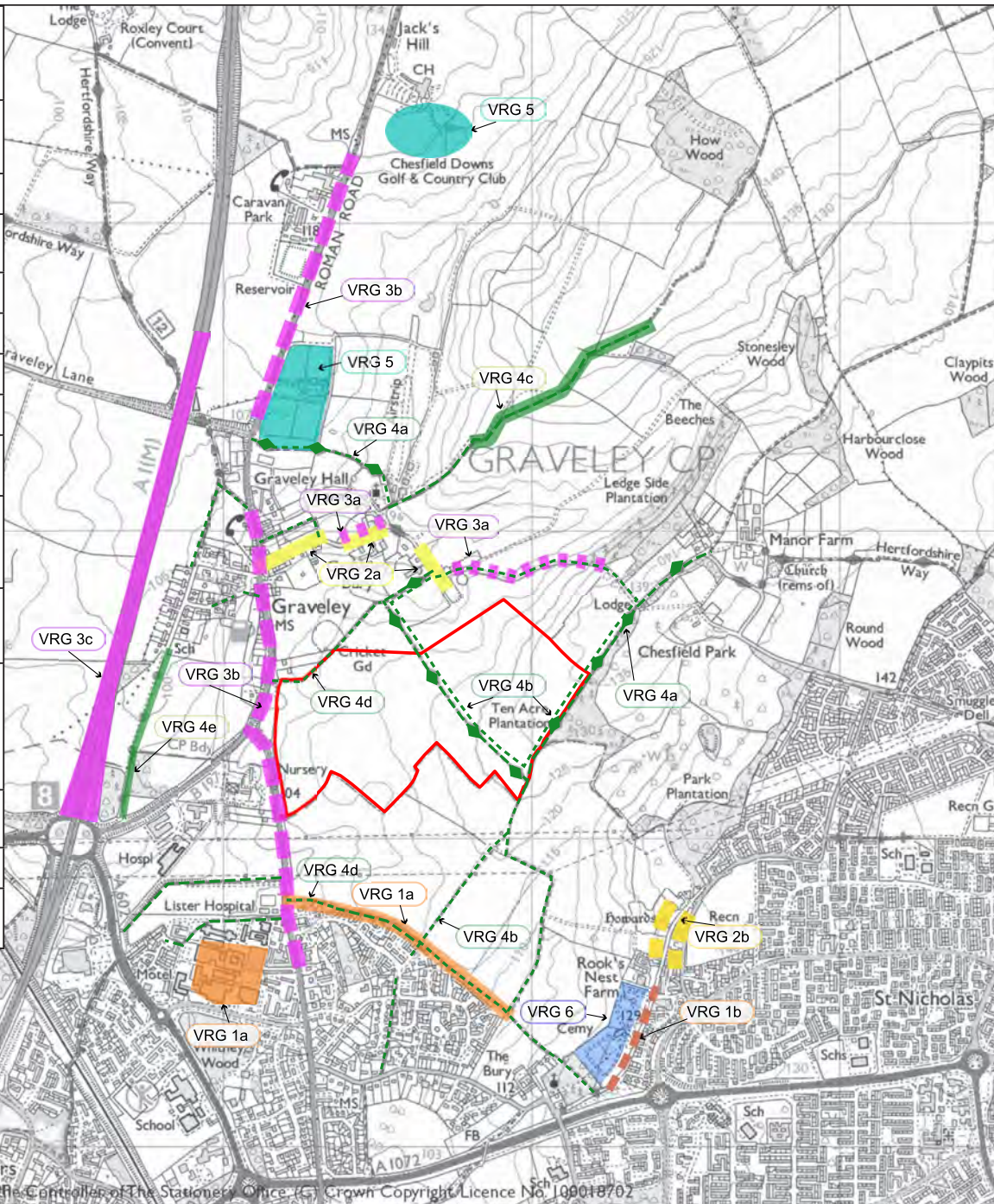
ZTV for developable site areas to 15m height
Based on Digital Surface Model

- Potentially Visible Areas

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| PROJECT NO: | 11005 CRO | CLIENT: | CROUDACE HOMES LTD | FIGURE NO: | 7.8 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | ZTV |
| ISSUE STATUS: | PRE-PLANNING | | | | |

| | | | |
|-------|--|--|--|
| VRG 1 | Viewers in residential areas / residences | VRG 1a - Viewers in the residences on the nearby northern edge of Stevenage to include the Lister Hospital buildings VRG 1b - Viewers in residences on the north western edge of Stevenage | RV12, RV16 RV14 |
| VRG 2 | Viewers in Conservation Areas (Heritage) | VRG 2a - Viewers from the Graveley CA south VRG 2b - Viewers / Residents from within the St Nicholas/ Rectory CA | RV3, RV4, RV5 RV9 |
| VRG 3 | Road users | VRG 3a - Viewers travelling along rural single lane roads such as Back Lane VRG 3b - Viewers from the B197 VRG 3c - Viewers travelling along the motorway A1 (M) | RV4, RV7 RV12, RV18 RV1 |
| VRG 4 | Users of public rights of way and permissive paths | VRG 4a - Viewers users the PRowS such as the Hertfordshire Way, which traverses the Site VRG 4b - Viewers from the PRowS including routes such as the Forster Country Walk VRG 4c - Viewers from the PRowS such as Bridleway 5 traversing the higher agricultural land to the north of the Site VRG 4d - Viewers from the PRowS such as Footpath 6 a stretch of which runs within the north west boundary of the Site and Footpath 22 which runs to the south of the site adjacent to the northern boundary of the North Stevenage built up area. VRG 4e - Viewers using permissive paths such as that across Ashwell Common | RV5, RV4, RV3, RV11, RV10, RV8, RV4, RV3, RV11, RV10, RV8, RV13, RV15 RV2, RV6, RV2 RV 1 |
| VRG 5 | Recreational viewers | VRG 5 - Golfers, fruit farm visitors and car boot sale sellers and buyers | RV 5, RV17 |
| VRG 6 | Viewers visiting Weston Road Cemetery | VRG 6 - Viewers visiting the Weston Road Cemetery, the cemetery within the St Nicholas/ Rectory CA boundary | RV14 |



Key

- Site Boundary

Residents

- VRG 1a
- VRG 1b

Viewers in Conservation Areas

- VRG 2a
- VRG 2b

Road Users

- VRG 3a
- VRG 3b
- VRG 3c

Footpath Users

- VRG 4a
- VRG 4b
- VRG 4d
- VRG 4c
- VRG 4e

Recreational Users

- VRG 5

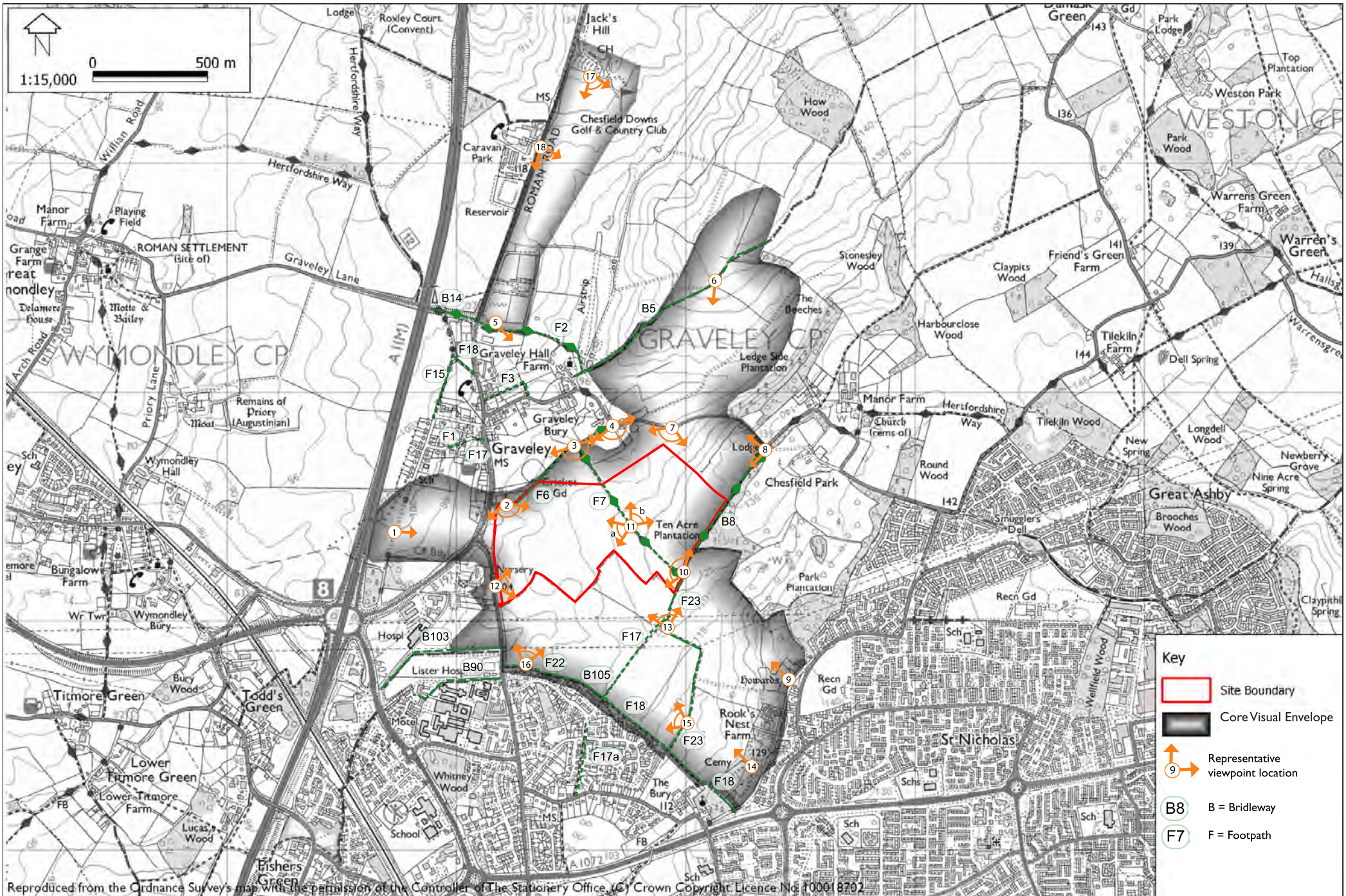
Cemetery Users

- VRG 6

1:15,000
0 250 500 m

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| PROJECT NO: | 11005 CRO | CLIENT: | CROUDACE HOMES LTD | FIGURE NO: | 7.9 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | Visual Receptor Group (VRG) Plan |
| ISSUE STATUS: | PRE-PLANNING | | | | |



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| PROJECT NO: | 11005 CRO | CLIENT: | CRUODACE HOMES LTD | FIGURE NO: | 7.10 |
| DATE: | October 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | Representative Viewpoint Locations, Public Rights of Way and Core Visual Envelope |
| ISSUE STATUS: | PRE-PLANNING | | | | 10 |

9.0 PHASE 1 EXTENDED HABITAT REPORT / PHASE II SURVEYS

9.1 There are no statutory designations within the site or within 2km of the site. There are 20 non-statutory sites within 2km of the site, all of which are designated as Local Wildlife Sites (LWS). The closest being the Ledgeside Plantation LWS located 250m east of the site.

On-site Habitats

9.2 At the time of the survey, the majority of the site was under intensive arable cultivation, with wheat being the main crop. No hedgerows exist within the site itself, however the fields are surrounded by mature trees and hedgerows in places, with an area of woodland bounding the site to the east (Ten Acre Plantation). The Phase 1 Habitat Survey included the site and surrounding habitats which identified the following types of habitats (shown at Appendix 6 Habitat Plan):

- Arable;
- Hedgerows and scattered trees;
- Broadland semi-natural woodland;
- Broadleaved plantation woodland;
- Dry ditch; and
- Scrub.

Species

9.3 Records of legally protected or otherwise notable species of flora and fauna within 2km of the site were provided by Hertfordshire Environmental Records Centre. The Phase 1 habitat survey subsequently confirmed that the site has the potential to support birds, bats, badger and great crested newts.

9.4 The breeding bird surveys are currently ongoing and due to be completed by the end of July, where results will be in August. Previous surveys have identified bird species including Grey Partridge, Common Skylark, Song Thrush, Yellow Wagtail and Common Linnet, all of which are Red status.

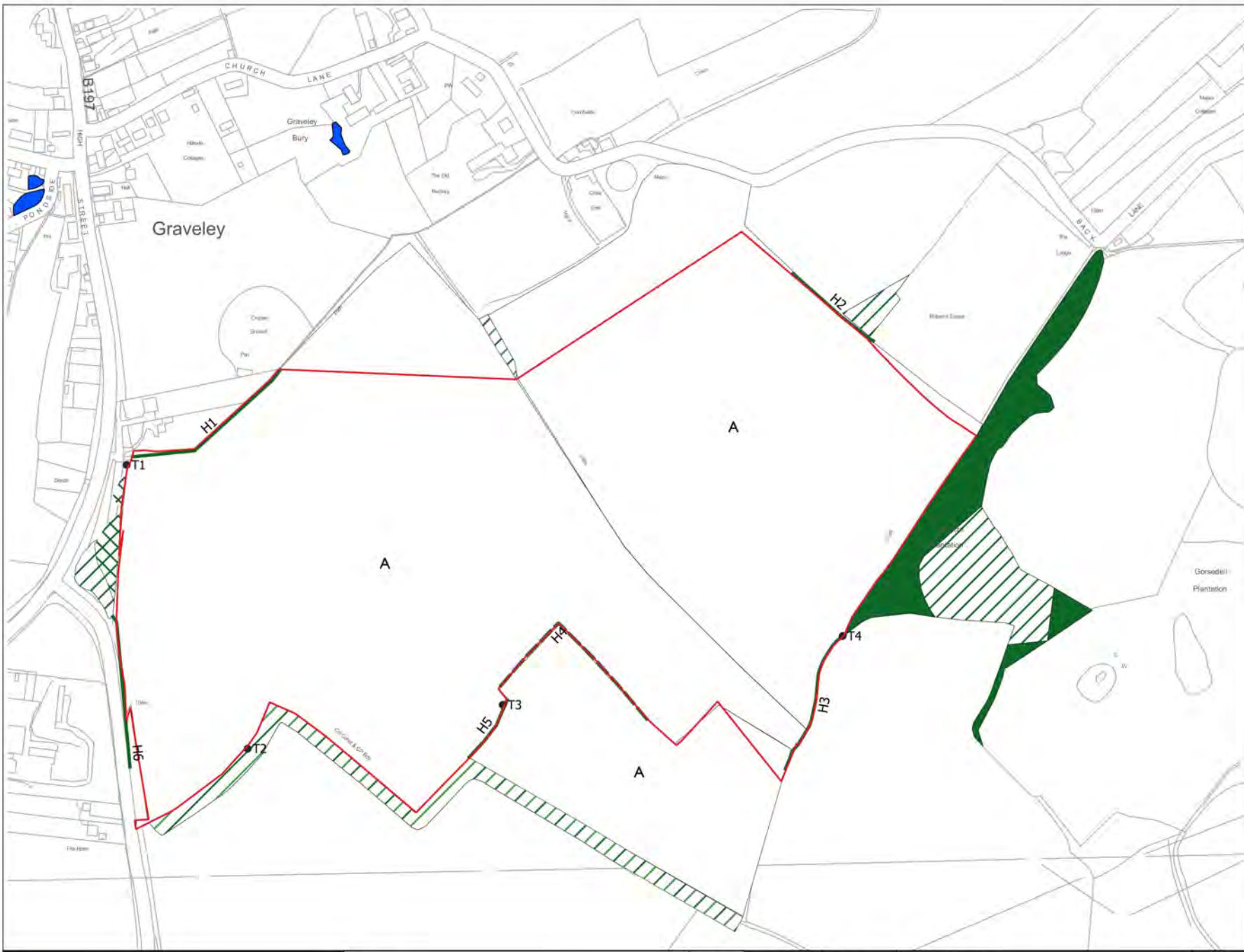
9.5 The bat surveys are currently ongoing and due to be completed by the end of September, where results will be available from October. There are four trees across the boundaries of the site which were previously found to have features suitable to support roosting bats.

The previous transect surveys identified low levels of bat activity across the site, with common pipistrelle *Pipistrellus pipistrellus* being the most common species encountered. In addition, the following other species have been recorded for occasional appearances across the site; serotine *Epitesicus serotinus*, soprano pipistrelle *Pipistrellus pygmaeus*, *Myotis* sp., noctule *Nyctalus noctule*, and brown long-eared *Plecotus auritus*.

9.6 <<redacted>>

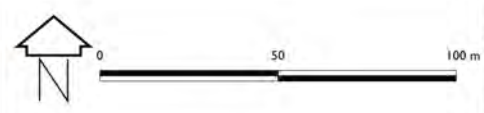
9.7 Two ponds were surveyed for great crested newts using eDNA; the 'Graveley Bury Farm' pond and the 'Pondside Road' pond. The results of the eDNA analysis returned negative for the presence of great crested newts.

9.8 The first plan below confirms land uses and show planting areas in and around the site. The second plan shows the opportunities available from an ecological perspective to inform the wider masterplanning exercise.

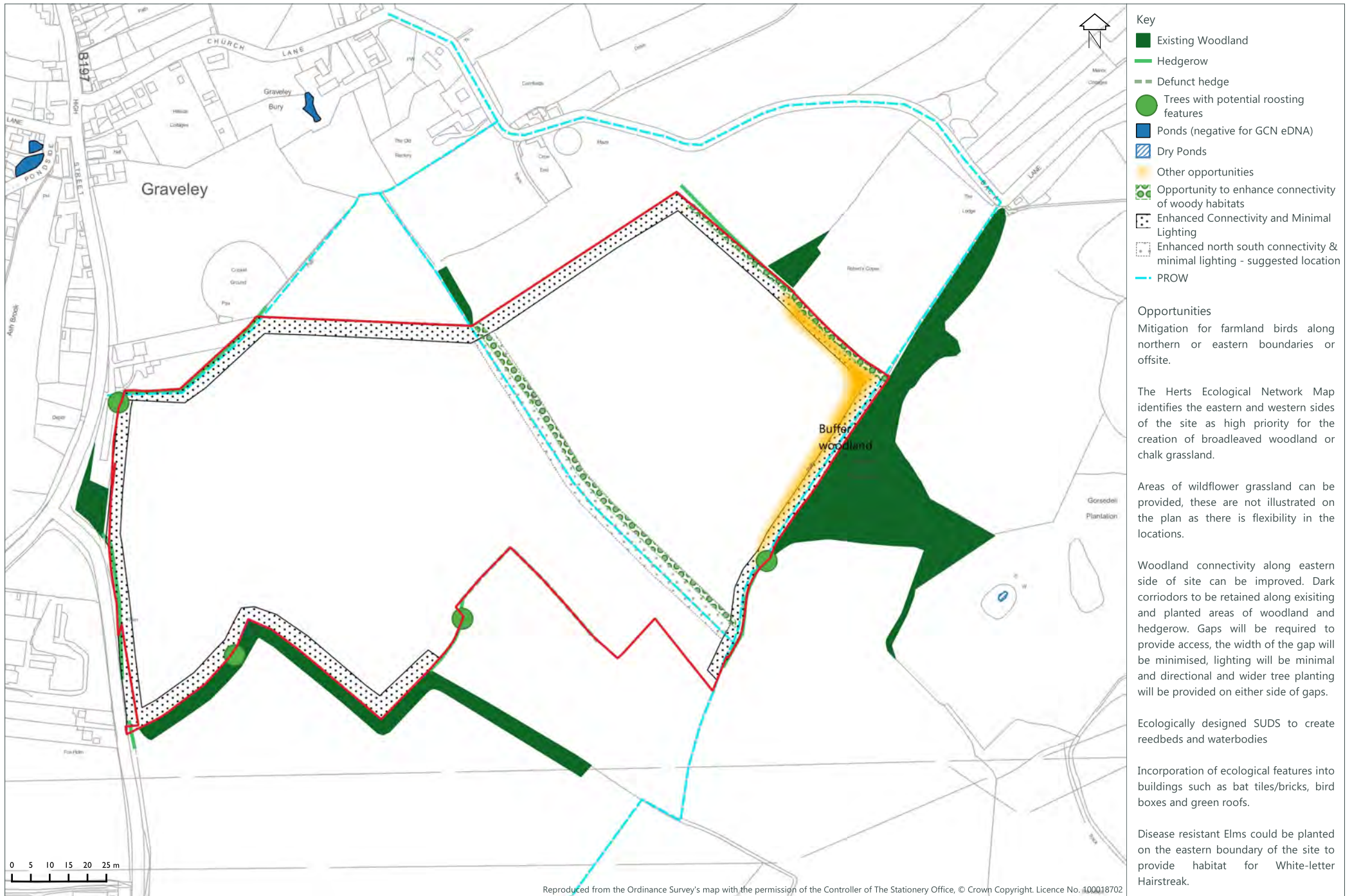


- Key**
- Trees with BRP
 - Site Boundary
 - Intact hedge - species-poor
 - Defunct hedge - species-poor
 - A Cultivated/disturbed land - arable
 - Broadleaved woodland - semi-natural
 - ▨ Broadleaved woodland - plantation
 - ▧ Mixed woodland - plantation
 - × Scrub - dense/ continuous
 - Pond

NICHOLAS PEARSON ASSOCIATES



| | | | | | |
|-------------|----------|----------|-----------------|------------|---------------------------------|
| PROJECT NO: | 11005CRO | CLIENT: | CROUDACE HOMES | FIGURE NO: | 9.1 |
| DATE: | Oct 2021 | PROJECT: | NORTH STEVENAGE | TITLE: | EXTENDED PHASE I HABITAT SURVEY |
| DRAWN BY: | AI | | | | |



10.0 BIODIVERSITY NET GAIN CALCULATION

- 10.1 Initial biodiversity net-gain calculations have been undertaken on early iterations of the Land Use Parameter Plan and Illustrative Masterplan, as well as a series of assumptions using Defra's Biodiversity Net Gain 3.0 metric calculator. At this early stage in the design evolution, the indicative design of the proposed development can achieve a 10.53% net gain in biodiversity units.
- 10.2 As part of achieving biodiversity net-gain, it is envisaged that the project will create new woody habitats to improve woodland connectivity across and along the eastern side of the Site. New areas of wildflower grassland and scrub will provide benefits for invertebrates and species which depend upon them.

11.0 TREE SURVEY

- 11.1 A tree survey has been undertaken by Hayden's Arboricultural Consultants dated May 2021. The survey shows there are no trees within the central areas of the site, but there are clusters of trees and hedgerows along the site boundaries. The survey has involved examination and classification of individual trees and shows their calculated Root Protection Areas.
- 11.2 There are no trees within the development site that would preclude development, although the masterplan will respect root protection areas accordingly. There are trees in the area of the proposed access point that would need to be removed. Removal will however be kept to a minimum with replacement trees planting within the proposed development to mitigate such loss.

SCHEDULE OF TREES

Land East of North Road (Site NS1 North Stevenage), Graveley, Stevenage,
Hertfordshire

Surveyed By: Alex Garnham Date: 18/05/2021
Managed By: Alex Garnham

| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority | |
|-------------|--|------|----------|-----------------------|-----------|-----------------------------------|---|--------|---|----------|---------------|
| | | | Min Dist | Crown Base | | | | | | | Lowest Branch |
| | | | On site | RPA (m ²) | Aspect | Aspect | | | | | SULE |
| A001 | Cherry, Ash, Beech, | 350 | 12 | | High | N5, E5, S5, W5 | May 2021: Attractive feature in good condition and with good future potential. | B2 | No work required. | 4 | |
| | Sycamore, Hazel, | 4.2 | 0-2m | | SM | High | Apr 2018: Large area of trees which form a small woodland separating two fields, boundary feature providing screening, trees are mostly semi mature to early mature, young specimens throughout which have stakes and rabbit guards around the stems, species include, Cherry, Ash, Beech, Sycamore, Hazel, Blackthorn, Norway Maple, Hawthorn, Elm, Poplar and Larch specimens are present running through the middle of the feature, undermining of some specimens is evident, some dead and dying specimens which should be removed over pathways, some specimens have failed and lay on the ground however this has low influence and provides good ecological value, dense understorey, some understorey specimens have been coppiced in the past, debris located in some parts, trees have been planted in straight line formation. | | | | |
| Yes | Blackthorn, Norway Maple, Hawthorn, Elm, Poplar, Larch | 55.4 | | | 40+ years | Bare earth, Grass | | | | | |
| A002 | Blackthorn, Cherry, Aspen, Goat Willow, Oak, Hawthorn, | 350 | 13 | | High | N5, E5, S5, W5 | May 2021: No significant change since previous survey. | B2 | No work required. | 4 | |
| | Hazel, Elm, Beech, Ash, Sycamore, Larch, Pine | 4.2 | 0-2m | | SM | High | Apr 2018: Large area of trees which form a small woodland separating two fields, boundary feature providing screening, trees are mostly semi mature to early mature, young specimens, Blackthorn, Cherry, Aspen and Goat Willow, some stems are very contorted, area is used by dog walkers. Oak, Hawthorn and Hazel have very dense understorey, Elm, Beech, Ash, Sycamore, Larch and Pine, dead and dying specimens throughout, undermining present, under storey has high ecological value, some Hawthorn specimens are contorted, old tree guards are broken and fallen apart and have been left in a pile, especially in eastern side of area, some edge specimens have great growth potential and should be retained, trees in the middle have been planted in a straight line formation. | | | | |
| Yes | | 55.4 | | | 40+ years | Bare earth, Grass, Woodland floor | | | | | |
| A003 | Hawthorn, Blackthorn, Field Maple, Ash | 350 | 9 | | Moderate | N4, E4, S4, W4 | May 2021: Crowns managed clear of arable fields. | C2 | Continue annual maintenance. | 3 | |
| | | 4.2 | 0-2m | | EM | High | Apr 2018: Area of trees and lapsed hedgerow, specimens appear sporadically, animal dens/sets are present, this has caused undermining to the trees, Hawthorn, Blackthorn, Field Maple and Ash, provides very limited screening, dead and dying stems present, these should be removed if within falling distance of path. | | | | |
| Yes | | 55.4 | | | 10+ years | Bare earth, Grass | | | | | |
| A004 | Hawthorn, Field Maple, Elm, Ash, Elder, Norway Maple, Hornbeam | 300 | 7.5 | | High | N3, E3, S3, W3 | May 2021: No significant change since previous survey. | B2 | Continue annual maintenance. Remove dead Elm. | 3 | |
| | | 3.6 | 0-2m | | SM | High | Apr 2018: Field boundary area of Hawthorn, Field Maple, Elm, Ash, Elder, Norway Maple and Hornbeam. Lower canopy managed close to boundary fence to give clearance to arable field. Established screen of high visual amenity. Some dead specimens of Elm within. | | | | |
| Yes | | 40.7 | | | 20+ years | Bare earth | | | | | |

| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority |
|-------------|--|-----------------------|------------|---------------|------------|------------------------|--|--------|---|----------|
| | | Min Dist | Crown Base | Lowest Branch | Age | Water Demand | | | | |
| | | RPA (m ²) | Aspect | Aspect | SULE | Ground Cover | | | | |
| A005 | Hawthorn, Ash, Field Maple, Elder, Cherry Plum | 250 | 6.5 | | Low | N3.5, E3.5, S3.5, W3.5 | May 2021: No significant change since previous survey. | C2 | No work required | 4 |
| | | 3 | 0-2m | | SM | High | Apr 2018: Fairly sparsely populated area of trees including Hawthorn, Ash, Field Maple, Elder and Cherry Plum. Some sections are open and dominated by nettle and bramble cover. The northern section features a hard surfaced track and piles of aggregate. No trees of high individual quality and the feature as a whole is of limited merit. | | | |
| Yes | | 28.3 | | | 10+ years | Dense undergrowth | | | | |
| G002 | Field Maple | 300 | 6 | | Moderate | N3, E3, S3, W3 | May 2021: No significant change since previous survey. | C2 | No work required. | 4 |
| | | 3.6 | 0-2m | | EM | Moderate | Apr 2018: Two previously coppiced trees, forms a homogenous canopy, dense crowns, branches at ground level, no access to main stems, DBH estimated. | | | |
| Yes | | 40.7 | | | 10+ years | Bare earth, Grass | | | | |
| G003 | Field Maple, Hazel, Cherry | 120 | 5.5 | | Moderate | N3, E3, S3, W3 | May 2021: Continuing to grow from previous coppice works. Breath managed clear of arable fields either side. Unremarkable trees of limited merit. | C2 | No work required. | 4 |
| | | 1.44 | 0-2m | | SM | Moderate | Apr 2018: Previously coppiced Field Maple, Hazel, Cherry. Provides limited screening. Branches at ground level. | | | |
| Yes | | 6.5 | | | 10+ years | Bare earth, Grass | | | | |
| G004 | Common Ash | 700 | 16 | | Moderate | N7, E7, S7, W7 | May 2021: Both trees are in a poor condition. One is seriously structurally unsound with hollowing and cracking up the main stem. The other is in poor physiological condition. | U | Fell to ground level or monolith. | 1 |
| | | 8.4 | 2.1-4m | | M | Moderate | Apr 2018: 2x trees, one located three metres from boundary, one located six, major deadwood and stubs in both trees, both trees have exposed large roots, minor bark necrosis at base of stems, this should be monitored, spreading crowns, crowns form one canopy. | | | |
| Yes | | 221.7 | | | <10 years | Dense undergrowth | | | | |
| G005 | Common Ash | 700 | 20 | | Moderate | N8, E8, S8, W8 | May 2021: Both trees which are closest to the new barbed wire fence are in a poor unsound condition. The smaller central tree still appears in a fair condition however. | U | Fell two larger trees closest to the new barbed wire fence. | 2 |
| | | 8.4 | 4.1-6m | | M | Moderate | Apr 2018: 3x trees which have been picked up for safety reasons, all three trees grow in very close proximity to each other, no access to main stems due to dense bramble, DBH estimated, all three specimens show signs of suspected Inonotus hispidus due to sunken patches and cavities. No fungal bodies were found at time of inspection, trees are adjacent to path so could cause harm if they were to fail. At least one specimen should be removed, due to the disease. | | | |
| Yes | | 221.7 | | | <10 years | Dense undergrowth | | | | |
| G006 | Ash, Field Maple | 480 | 18 | | Moderate | N7, E7, S7, W7 | May 2021: The Field Maple is in a poor condition with a distorted main stem and dead flaking bark. The Ash appears in a fair condition. | C2 | Pollard Field Maple to 4 metres. | 3 |
| | | 5.76 | 2.1-4m | | M | High | Apr 2018: Three trees directly adjacent to each other forming a homogenous canopy, northern specimen is an Ash which shows indicators of Inonotus hispidus but no fungal bodies were found. | | | |
| Yes | | 104.2 | | | 10 + years | Dense undergrowth | | | | |

| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority |
|-------------|---------------------------------------|-----------------------|------------|---------------|------------|------------------------|---|--------|------------------------------|----------|
| | | Min Dist | Crown Base | Lowest Branch | Age | Water Demand | | | | |
| | | RPA (m ²) | Aspect | Aspect | SULE | Ground Cover | | | | |
| G007 | Hawthorn x3, Sycamore x3 | 230 | 8 | | Moderate | N2.5, E2.5, S2.5, W2.5 | May 2021: No significant change since previous survey. | C2 | No work required. | 4 |
| | | 2.76 | 0-2m | | SM | High | Apr 2018: 3x Hawthorn and 3x Sycamore located on the southern edge of a wider off-site tree feature. Each specimen is somewhat etiolated owing to limited growth space but otherwise in fair condition. One Hawthorn is engulfed in Ivy which is suppressing the crown. Unremarkable trees of limited merit. | | | |
| Yes | | 23.9 | | | 10 + years | Dense undergrowth | | | | |
| H001 | Hazel, Hawthorn, Elm, Blackthorn | 140 | 5 | | Low | N2, E2, S2, W2 | May 2021 - No change since previous inspection. | C2 | Remove dead specimen. | 3 |
| | | 1.68 | 0-2m | | Y | High | Apr 2018: Hazel, Hawthorn, Elm, Blackthorn. Lapsed hedgerow, one specimen is located further away than rest of hedgerow. | | | |
| Yes | | 8.9 | | | 10 + years | Bare earth, Grass | | | | |
| H002 | Hawthorn, Blackthorn, Elder, Elm, Ash | 190 | 5 | | High | N2.5, E2.5, S2.5, W2.5 | May 2021: Established agricultural hedge between arable fields, connected to a woodland on the north side. | C2 | Continue annual maintenance. | 3 |
| | | 2.28 | 0-2m | | SM | High | Apr 2018: The end of the woodland which has formed a hedge, mostly Hawthorn, other species include Blackthorn, Elder, Elm, Ash, boundary feature between fields, some screening, deadwood present in hedge. | | | |
| Yes | | 16.3 | | | 10 + years | Bare earth, Grass | | | | |
| H003 | Elm, Hawthorn | 100 | 2 | | High | N2, E2, S2, W2 | May 2021: No significant change since previous survey. | C2 | No work required. | 4 |
| | | 1.2 | 0-2m | | SM | Moderate | Apr 2018: Elm, Hawthorn, boundary hedge, unmanaged. | | | |
| Yes | | 4.5 | | | 10 + years | Bare earth, Grass | | | | |
| H004 | Hawthorn | 170 | 7 | | Moderate | N2, E2, S2, W2 | May 2021: No significant change since previous survey. | C2 | No work required. | 4 |
| | | 2.04 | 0-2m | | EM | High | Apr 2018: Hawthorn boundary hedgerow providing a screen. | | | |
| Yes | | 13.1 | | | 10 + years | | | | | |
| H005 | Hawthorn, Blackthorn, Elm | 160 | 7 | | High | N2, E2, S2, W2 | May 2021: Lengthy hedgerow of Hawthorn, Blackthorn and Elm between arable field and highway. Majority of feature routinely managed however some trees within have taken form as individuals dotted periodically along the feature. Good visual amenity and in good condition, though there are some Elms to the southern terminus of the feature in poor condition where Dutch Elm Disease appears to be present. | B2 | Continue annual maintenance. | 3 |
| | | 1.92 | 0-2m | | EM | High | Apr 2018: Lengthy hedgerow of Hawthorn, Blackthorn and Elm between arable field and highway. Majority of feature routinely managed however some trees within have taken form as individuals dotted periodically along the feature. Good visual amenity and in good condition, though there are some Elms to the southern terminus of the feature in poor condition where Dutch Elm disease appears to be present. | | | |
| Yes | | 11.6 | | | 10+ years | Light undergrowth | | | | |

| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority |
|-------------|-------------|-----------------------|------------|---------------|------------|-----------------------------------|--|--------|-------------------------|----------|
| | | Min Dist | Crown Base | Lowest Branch | Age | Water Demand | | | | |
| | | RPA (m ²) | Aspect | Aspect | SULE | Ground Cover | | | | |
| T003 | English Oak | 720 | 11 | | Moderate | N6, E5, S5, W6 | May 2021: No significant change since previous survey. | A3 | No work required. | 4 |
| | | 8.64 | 0-2m | | M | High | Apr 2018: Mature Oak situated on area boundary, specimen appears to be of good form and condition, shows some defects however this is typical for species and would not be a serious issue, some major deadwood, very dense crown, good foliage cover and quality, some undermining present at base of stem, no significant issues at present. Tree should be retained and left to grow away from any harm or damage, good growth potential and will provide great ecological value in the future once it starts to decline and become veteran. | | | |
| Yes | | 234.5 | | | 40 + years | Bare earth, Grass, Woodland floor | | | | |
| T004 | English Oak | 690 | 11 | | Moderate | N7, E6, S6.5, W5 | May 2021: No significant change since previous survey. | C2 | No work required. | 4 |
| | | 8.28 | 0-2m | | EM | High | Apr 2018: Tree multi-stemmed at base, major deadwood, dense crown. DBH: 1x280, 1x300, 1x380, 1x400. Major deadwood although low influence area at present. Dense crown. No significant indicators of decay or disease can be seen at time of survey. | | | |
| Yes | | 215.4 | | | 10 + years | Bare earth, Grass | | | | |
| T005 | Common Ash | 430 | 9 | | Moderate | N4, E3, S4, W4 | May 2021: No significant change since previous survey. | C1 | No work required. | 4 |
| | | 5.16 | 0-2m | | EM | Moderate | Apr 2018: Historically coppiced Ash located on bund. DBH: 1x120, 3x160, 3x180. Minor deadwood, dense crown, no significant indicators of decay or disease can be seen at time of survey. | | | |
| Yes | | 83.6 | | | 10 + years | Bare earth, Grass | | | | |
| T006 | English Oak | 520 | 7 | | Moderate | N5, E3, S4, W4 | May 2021: Lower crown managed over fields. Physiologically healthy. | C1 | No work required. | 4 |
| | | 6.24 | 0-2m | | EM | High | Apr 2018: Tree multi-stemmed at base, at least four stems, very contorted form, crossing and rubbing branches, dense crown, branches grow at ground level, minor deadwood, overall poor form. DBH: 2x300, 1x280, 1x100. | | | |
| Yes | | 122.3 | | | 10 + years | Bare earth, Grass | | | | |
| T007 | Common Ash | 1000 | 15 | | High | N9.5, E9, S10, W9 | May 2021: Inonotus brackets in crown. | U | Monolith at 4m maximum. | 3 |
| | | 12 | 0 | | M | Moderate | Apr 2018: Tree bifurcating at approximately 0.75m, cavities can be seen in lower stem, large cavity measuring approximately 2m in length can be seen on eastern aspect of tree, this reveals hollowing below, large hollow cavities located on numerous locations of the stem, epicormic growth present, major deadwood, crown is very sparse and tree is in decline. It is recommended this tree is made into a habitat pole and fenced off from the public to decline naturally and provide great ecological value. Stem sounds resonant when hit, overall poor form and condition, very broad spreading crown. DBH: 650, 630. | | | |
| Yes | | 452.4 | | | <10 years | Bare earth, Grass | | | | |

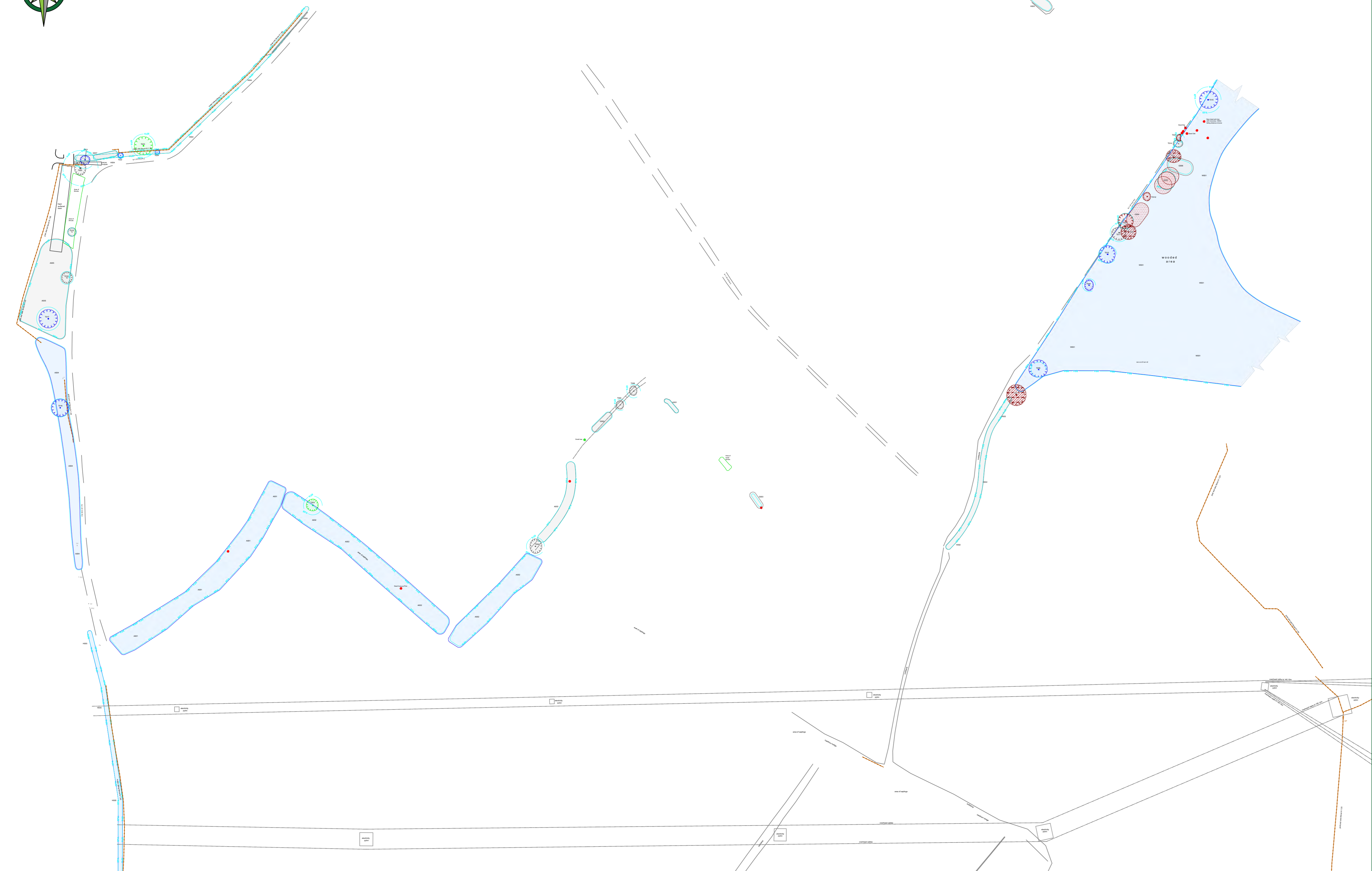
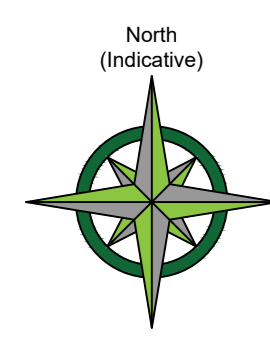
| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority |
|-------------|----------------|-----------------------|------------|---------------|------------|--------------------------------------|--|--------|---|----------|
| | | Min Dist | Crown Base | Lowest Branch | Age | Water Demand | | | | |
| | | RPA (m ²) | Aspect | Aspect | SULE | Ground Cover | | | | |
| T008 | English Oak | 580 | 14 | | Moderate | N9, E8, S7, W9 | May 2021: No significant change since previous survey. | B3 | Remove Ivy to ensure not masking major faults. Remove major deadwood. Re-inspect. | 3 |
| | | 6.96 | 0-2m | | M | High | Apr 2018: Tree located within woodland and surrounded by dense undergrowth, some dimensions have been estimated due to under story, Ivy heavily covers stem with hindered full health assessment, this should be removed and tree re-inspected, broad spreading crown, major deadwood typical for species, dense crown, no visual defects can be seen in crown at time of inspection, tree has good growth potential and should be retained, overall good form and condition can be seen. BS provisional. | | | |
| Yes | | 152.2 | | | 40 + years | Bare earth, Grass, Dense undergrowth | | | | |
| T009 | European Larch | 500 | 16 | | Moderate | N5, E4, S5, W4 | May 2021: No significant change since previous survey. | B2 | No work required. | 4 |
| | | 6 | 4.1-6m | | M | Moderate | Apr 2018: Tree within woodland, location has been estimated, no access to main stem due to dense under growth and under story, dimensions have been estimated on this occasion, tall tree which is prominent on this side of the woodland, health appears good from point of survey although this cannot be confirmed due to no access therefore BS is provisional, some deadwood in crown, otherwise dense. | | | |
| Yes | | 113.1 | | | 20+ years | Woodland floor, Dense undergrowth | | | | |
| T010 | English Oak | 690 | 16 | | Moderate | N8, E7, S8, W8 | May 2021: No bark necrosis could be found at this inspection. Otherwise no significant change since previous survey. | B2 | No work required. | 4 |
| | | 8.28 | 0-2m | | M | High | Apr 2018: Location has been estimate, approximately 6m from woodland edge, extended limb on northern aspect, crown is very dense, some deadwood although low influence area at present, previous surgery works have resulted in some contorted growth, no significant indicators of decay or disease can be seen at time of survey, overall fair form and good condition. However, slight bark necrosis can be seen on eastern aspect of stem, cause unknown this should be checked. BS category provisional. | | | |
| Yes | | 215.4 | | | 40+ years | Woodland floor, Dense undergrowth | | | | |
| T011 | Common Ash | 700 | 16 | | Moderate | N5, E6, S7, W7 | May 2021: Tree has poor physiological condition and is also showing signs of basal decay possibly caused by Honey Fungus. Tree doe not yet appear to be of such poor condition to warrant removal but tree should be inspected annually for any signs of deterioration. | C2 | Reinspect in one year for further signs of deterioration. | 3 |
| | | 8.4 | 0-2m | | M | Moderate | Apr 2018: Location estimated. Approximately 3m from boundary, Ivy covers some of stem hindering full stem health assessment, crown appears very sparse, cause is unknown however some decay can be seen at base and black lesions up stem, tree sounds slightly resonant upon testing. It is recommended that this is further inspected as tree could fail onto pathway if decay is detected. Overall fair form although fair to poor condition. Tree has been reduced in the past which has resulted in contorted regrowth. | | | |
| Yes | | 221.7 | | | <10 years | Woodland floor | | | | |

| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority |
|--------|--------------|-----------------------|------------|---------------|-----------|-----------------------------------|---|--------|---|----------|
| | | Min Dist | Crown Base | Lowest Branch | Age | Water Demand | | | | |
| | | RPA (m ²) | Aspect | Aspect | SULE | Ground Cover | | | | |
| T012 | Common Ash | 520 | 18 | | Moderate | N4, E3, S4, W4 | May 2021: No significant change since previous survey. | U | Fell to ground level. | 2 |
| | | 6.24 | 2.1-4m | | EM | Moderate | Apr 2018: Tree has been picked up for safety reasons, large increment strips up stem, large cavities, splits in stem, low vigour, tree is in decline. Contorted growth throughout crown. | | | |
| Yes | | 122.3 | | | <10 years | Dense undergrowth | | | | |
| T013 | Common Ash | 660 | 20 | | Moderate | N7, E7, S5, W7 | May 2021: No significant change since previous survey. | U | Monolith. | 2 |
| | | 7.92 | 2.1-4m | | M | Moderate | Apr 2018: Location has been estimated, tree picked up for safety, tree sounds resonant when hit, large buttress roots, extensive decay can be seen at a cavity on the south western aspect of the tree, this measures a metre, sunken patches present on stem, bark necrosis, small and sparse crown, tree not deemed safe for long term retention, crown spread may be inaccurate due to under storey. | | | |
| Yes | | 197.1 | | | <10 years | Dense undergrowth | | | | |
| T014 | Common Ash | 300 | 14 | | Moderate | N4, E4, S3, W5 | May 2021: No significant change since previous survey. | C2 | Remove Ivy to ensure not masking major faults and bramble. Remove major deadwood. Re-inspect. | 2 |
| | | 3.6 | 2.1-4m | | EM | Moderate | Apr 2018: Tree on edge of woodland, heavily covered in Ivy and bramble preventing inspection, dimensions estimated, bark necrosis at base of stem, significant amounts of major deadwood in crown. | | | |
| Yes | | 40.7 | | | 10+ years | Dense undergrowth | | | | |
| T015 | Common Beech | 990 | 17 | | Moderate | N8, E9, S8, W8 | May 2021: No sign of Kretschmaria could be found at the base of the tree but some resonance could be detected using the sounding mallet. The crown has a normal vigorous growth. | B2 | Undertake further decay analysis using PICUS or Micro Drill. | 2 |
| | | 11.88 | 0 | | M | Moderate | Apr 2018: Tree requiring further investigation, Kretschmaria is present on south western aspect of the stem, tree appears to be of good form and condition, very dense crown, however in closer inspection bark necrosis can be seen on main stem, deadwood in crown and stubs in crown, tree is sound when hit although it could be in the early stages of decay, unfortunately this tree is not deemed safe for long term retention although it may be necessary to pollard the tree and leave as a wildlife pole eventually. Due to the early stages of decay, some occluded pruning wounds. Some crown spreads estimated. | | | |
| Yes | | 443.4 | | | 20+ years | Woodland floor, Dense undergrowth | | | | |
| T016 | Field Maple | 710 | 9.5 | | Moderate | N8, E8, S8, W8 | May 2021: Good physiological condition. Overhangs field boundary by 4.5 metres. | B1 | No work required. | 4 |
| | | 8.52 | 2.1-4m | | EM | Moderate | Apr 2018: Field Maple located on steep embankment grading down to the footpath and highway on the western aspect. Comprises of approximately 8 stems, each carrying a small portion of a coalescing crown. Overhangs field boundary by 3.5 metres. | | | |
| Yes | | 228 | | | 20+ years | Dense undergrowth | | | | |

| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority |
|--------|----------------|-----------------------|------------|---------------|-----------|------------------------|--|--------|-----------------------------|----------|
| | | Min Dist | Crown Base | Lowest Branch | Age | Water Demand | | | | |
| | | RPA (m ²) | Aspect | Aspect | SULE | Ground Cover | | | | |
| T017 | Common Ash | 900 | 17.5 | | High | N8.5, E8.5, S8.5, W8.5 | May 2021: No change since previous inspection. | B1 | No work required. | 4 |
| | | 10.8 | 4.1-6m | | M | Moderate | Apr 2018: DBH: 3x 430 2x 360. Ash of ostensibly good condition and visual amenity. Closer inspection reveals the tree comprises of five individual stems from ground level, one of which further bifurcates with a tight union. No indicators of disease, decay or fungi observed. Well balanced crown in good vigour. Level changes around the root zone - appears to be located at the bottom of a wet ditch. | | | |
| Yes | | 366.4 | | | 20+ years | Dense undergrowth | | | | |
| T018 | Cherry Plum | 500 | 8 | | Moderate | N5.5, E5, S5, W5 | May 2021: Dead northern limb has been removed or has broken off. No other change since previous inspection. | C1 | No work required. | 4 |
| | | 6 | 0-2m | | M | Moderate | Apr 2018: DBH:400 and 300. Mature Cherry Plum located adjacent to field edge track. Good overall condition for age. Northern limb is dead but otherwise crown in good vigour. | | | |
| Yes | | 113.1 | | | 10+ years | Light undergrowth | | | | |
| T019 | Cherry Plum | 320 | 6.5 | | Low | N4, E4, S4, W4 | May 2021: No change since previous inspection. | C1 | Remove aggregate from base. | 3 |
| | | 3.84 | 0-2m | | SM | Moderate | Apr 2018: Cherry Plum of good form and condition though little wider landscape consequence. The base of the tree has been buried in stone aggregate. | | | |
| Yes | | 46.3 | | | 10+ years | Gravel | | | | |
| T020 | Common Ash | 1350 | 10.5 | | High | N6, E5, S6.5, W5.5 | May 2021: No significant change since previous survey. | C3 | No work required. | 4 |
| | | 15 | 2.1-4m | | V | Moderate | Apr 2018: Ash which has veteranised after surviving an apparent lightening strike which has resulted in a large open vertical split on the eastern aspect. The stem is quite hollow however there is strong occlusion growth at the edges of the split. The crown maintains quite good vigour. Located in a vegetative area away from the field edge but close to a public right of way to the north and north west. No indicators of disease or fungi at the time of inspection. Potential habitat value. | | | |
| Yes | | 706.9 | | | 10+ years | Light undergrowth | | | | |
| T021 | Horse Chestnut | 680 | 13 | | Moderate | N4, E4.5, S4.5, W4.5 | May 2021: No significant change since previous survey. | B1 | No work required. | 4 |
| | | 8.16 | 2.1-4m | | EM | Moderate | Apr 2018: DBH:2x 400 1x 370. Ownership unknown. Located in dense area of undergrowth, limiting access. Three stems from ground level but well sheltered and of well balanced form. Crown overhangs public right of way footpath on the southern aspect. Good vigour. Limited access prevents full assessment. | | | |
| Yes | | 209.2 | | | 20+ years | Dense undergrowth | | | | |
| T022 | Common Ash | 230 | 6 | | Low | N2.5, E2.5, S2.5, W2.5 | May 2021: No significant change since previous survey. | B1 | No work required. | 4 |
| | | 2.76 | 0-2m | | SM | Moderate | Apr 2018: DBH:2x 160. Young to semi mature Ash of good form and condition with good future potential. Located at the edge of an area of trees. | | | |
| Yes | | 23.9 | | | 40+ years | Dense undergrowth | | | | |

| TreeNo | Species | DBH | Height | | Visual | Crown Spread | Problems / Comments | BS Cat | Work Required | Priority |
|-------------|--|-----------------------|------------|---------------|-----------|---|---|--------|--|----------|
| | | Min Dist | Crown Base | Lowest Branch | Age | Water Demand | | | | |
| | | RPA (m ²) | Aspect | Aspect | SULE | Ground Cover | | | | |
| T023 | Sycamore | 900 | 16.5 | | Moderate | N8.5, E8.5, S8.5, W8.5 | May 2021: No significant change since previous survey. | A1 | No work required. | 4 |
| | | 10.8 | 4.1-6m | | M | Moderate | Apr 2018: Off-site mature Sycamore. Limited access prevents full assessment and all comments based on that which could be observed from site. Appears to be of fine structural form and physiological condition with a well balanced and vigorous crown. A significant skyline specimen of high visual amenity. Overhangs site by approximately 3 metres. | | | |
| No | | 366.4 | | | 40+ years | Grass | | | | |
| T024 | Sycamore | 170 | 6 | | Low | N2.5, E2.5, S2, W2 | May 2021: No significant change since previous survey. | B1 | No work required. | 4 |
| | | 2.04 | 0-2m | | SM | Moderate | Apr 2018: Young to semi mature Sycamore of good form, condition and future potential. | | | |
| Yes | | 13.1 | | | 40+ years | Bare earth | | | | |
| T025 | Ash | 500 | 16 | | Moderate | N7, E7, S7, W7 | May 2021: Tree has lots of Innonotus on the main stem. Tree in poor condition and has lost its top. | U | Fell to ground level or monolith. | 2 |
| | | 6 | 4 | | M | Moderate | | | | |
| Yes | | 113.1 | | | <10 years | Dense undergrowth | | | | |
| T026 | Ash | 600 | 16 | | Moderate | N7, E7, S7, W7 | May 2021: Tree which has poor physiological condition and signs of Innonotus. Tree should be reinspected annually for further deterioration. | U | Reinspect in one year to check for further deterioration. | 3 |
| | | 7.2 | 4 | | M | Moderate | | | | |
| Yes | | 162.9 | | | <10 years | Dense undergrowth | | | | |
| T027 | English Oak | 320 | 8.5 | | Low | N3.5, E0.5, S3, W3.5 | May 2021: Semi mature Oak on west side of barbed wire fence. Specimen has 'hockey stick' growth, bending sound then north. There is a large open split on the north side which is decaying. The stem and crown bend to the north then west towards the public bridleway. Recommend pollarding at 2 metres or felling. | U | Pollard at 2 metres or fell. | 3 |
| | | 3.84 | 1.5 | | SM | High | | | | |
| Yes | | 46.3 | | | <10 years | Woodland floor | | | | |
| W001 | Ash, Larch, Pine, Oak, Sycamore, Field Maple, Hawthorn, Hazel, Beech | 700 | 20 | | High | N8, E8, S8, W8 | May 2021 - No change from previous inspection. Any trees requiring works have been identified individually/seperately. | B2 | Remove dead trees within falling distance of paths. Remove Ivy to ensure not masking major faults off specimens adjacent to path. Remove major deadwood over paths. Monitor annually; fungal pathogens presumed in area. | 2 |
| | | 8.4 | 0-2m | | EM | High | Apr 2018: Woodland which extends further than shown however only the part of immediate influence to development has been plotted. Ash, Larch, Pine, Oak, Sycamore, Field Maple, Hawthorn, Hazel and Beech, very dense woodland which provides excellent screening, amenity value and ecological value. Many dead trees are located within woodland providing habitat, dead and dying trees and deadwood should be removed over paths and within influence of paths. Many failed and fallen trees present. It is recommended that this woodland is managed. Dense understory of Hawthorn, Blackthorn, Holly, dense undergrowth. Overall a good feature with mostly good trees. | | | |
| Yes | | 221.7 | | | 20+ years | Grass, Woodland floor, Ivy, Dense undergrowth | | | | |

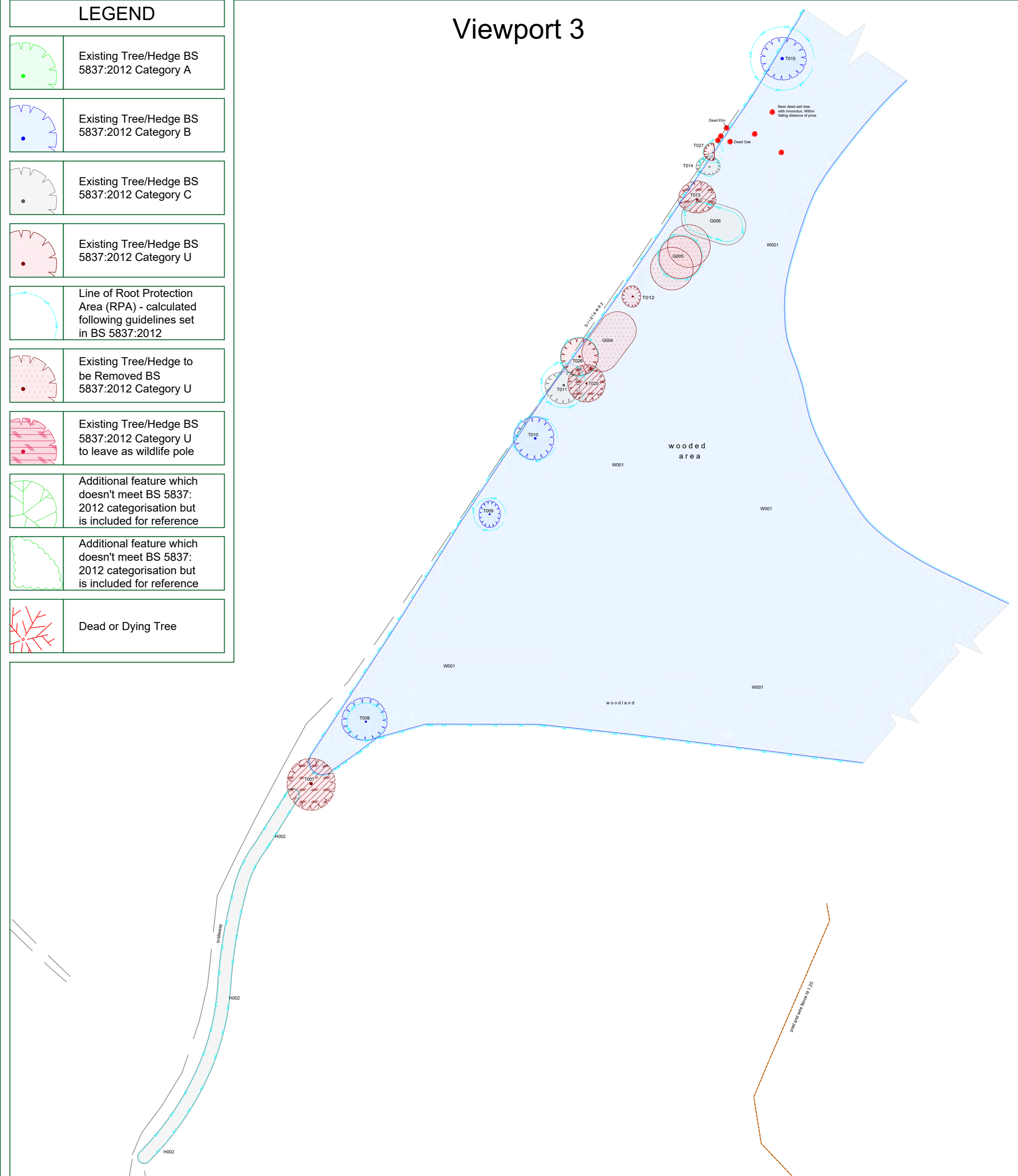
Existing Site Plan - 1:2000



LEGEND

| | |
|--|---|
| | Existing Tree/Hedge BS 5837:2012 Category A |
| | Existing Tree/Hedge BS 5837:2012 Category B |
| | Existing Tree/Hedge BS 5837:2012 Category C |
| | Existing Tree/Hedge BS 5837:2012 Category U |
| | Line of Root Protection Area (RPA) - calculated following guidelines set in BS 5837:2012 |
| | Existing Tree/Hedge to be Removed BS 5837:2012 Category U |
| | Existing Tree/Hedge BS 5837:2012 Category U to leave as wildlife pole |
| | Additional feature which doesn't meet BS 5837:2012 categorisation but is included for reference |
| | Additional feature which doesn't meet BS 5837:2012 categorisation but is included for reference |
| | Dead or Dying Tree |

Viewport 3



CATEGORY AND DEFINITION

| Trees unsuitable for retention | |
|--------------------------------------|--|
| Category U | Those in such condition that they cannot realistically be retained as living trees in the current land use for longer than 10 years |
| Trees to be considered for retention | |
| Category A | Trees of high quality with an estimated remaining life expectancy of at least 40 years |
| Category B | Trees of moderate quality with an estimated remaining life expectancy of at least 20 years |
| Category C | Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 100mm |

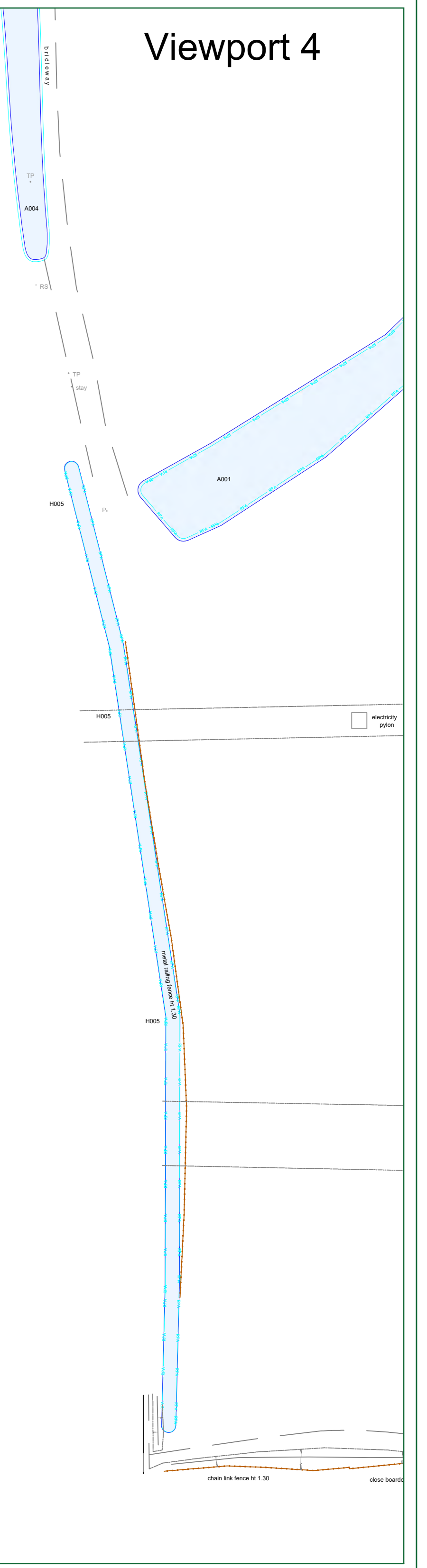
NOTE:

Hayden's Arboricultural Consultants were provided with a Topographical Survey but these do not always show the positions of all the trees/features on site. The locations of any additional features have been fixed using GPS. As such the position of the trees/landscape features should not be taken as exact but gives a fair distribution of their locations on site.

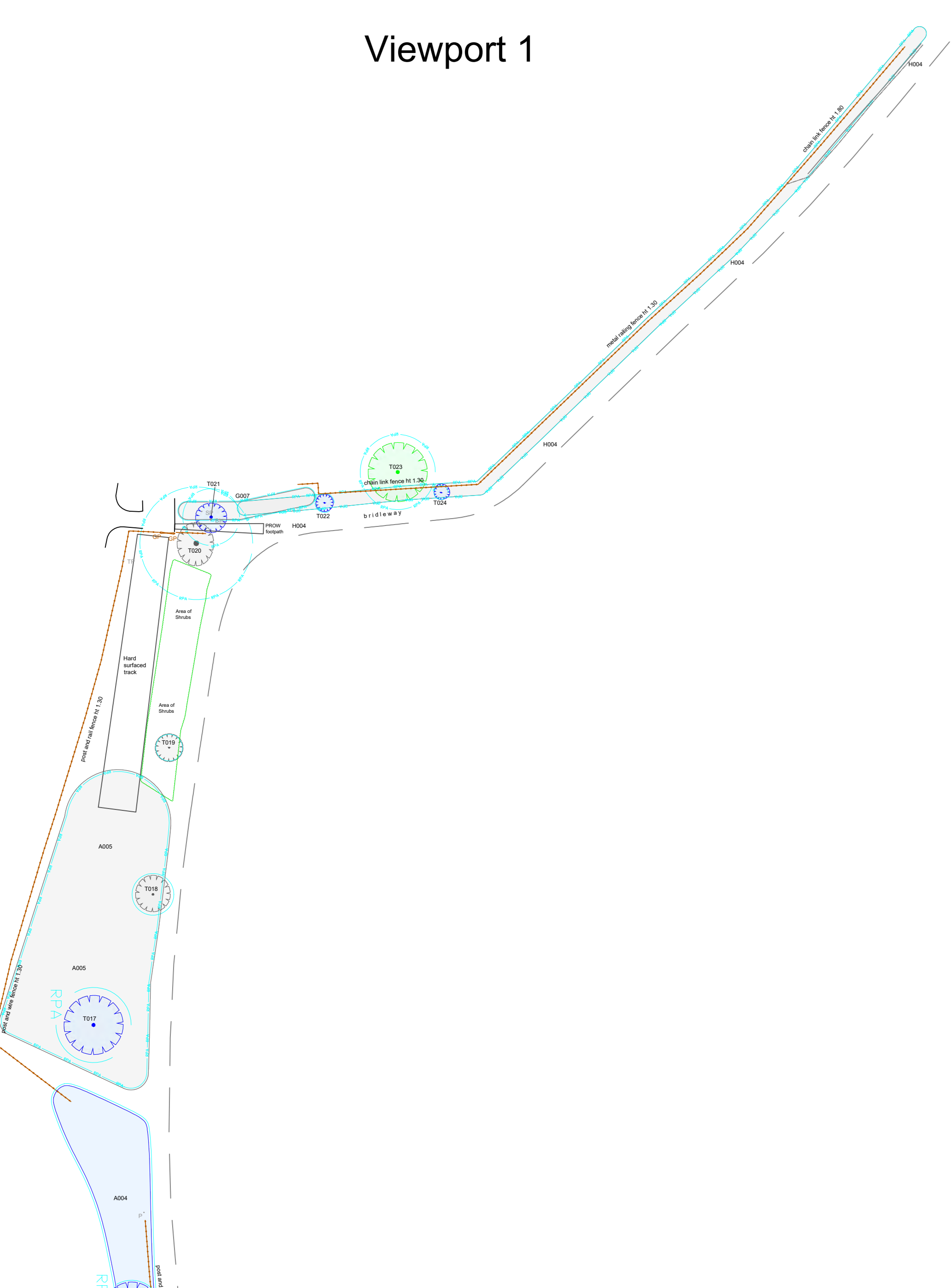
CP NOTE:

This document details the constraints created by the trees on the site and should be used as a design tool to inform the layout of the proposed development. This document is not sufficient for planning submission purposes.

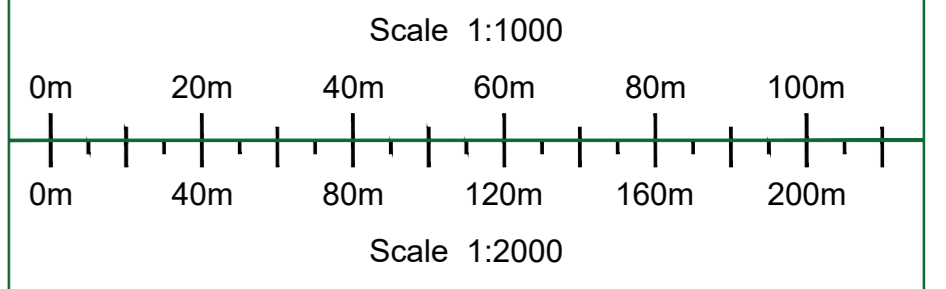
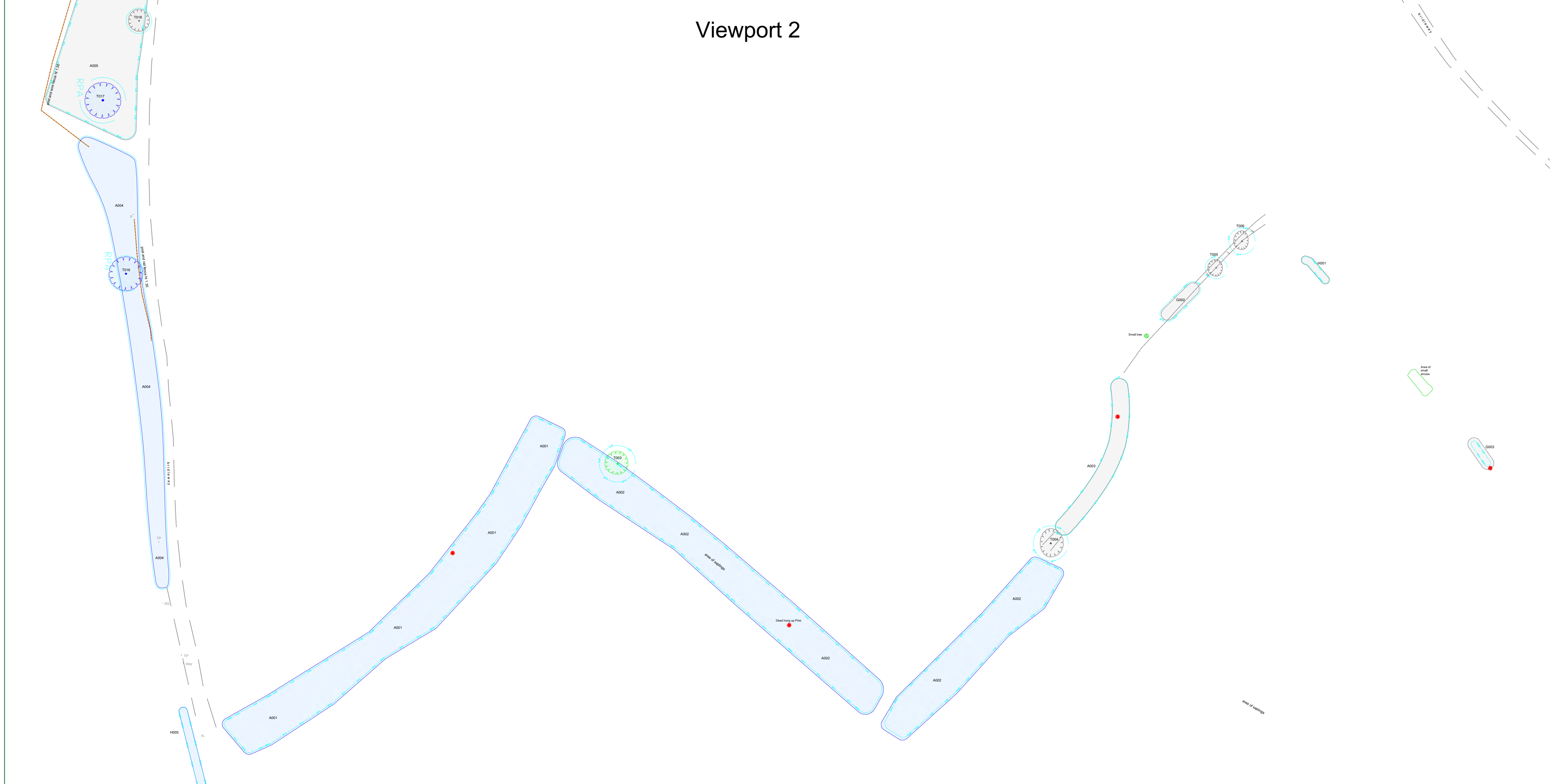
Viewport 4



Viewport 1



Viewport 2



26/05/21 KFJ Based on Terrain Surveys Ltd drawing no. TS06-117A1-2 Rev 0
 The position, condition, and dimensions of the trees are based on a site survey undertaken on 18/05/21
 "The original of this drawing was produced in colour - a monochrome copy should not be relied upon"



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| | | | |
|---------|---|----------------|--------------------------------|
| Client: | Barton Willmore | Drawing Title: | Tree Survey & Constraints Plan |
| Site: | Land East of North Road (Site NS1 North Stevenage) Graveley, Stevenage, Hertfordshire, SG1 4AH | | |
| Date: | 26/05/21 | Drawn By: | KFJ |
| Scale: | 1:1000 (A0) | Checked By: | AG/SHO |
| | | Drawing No: | 8840-D-CP |

12.0 HEDGEROW ASSESSMENT

- 12.1 The Tree Survey also highlights the hedgerows in situ in and around the site. There is boundary planting at the western part of the site, the western part of the southern boundary, and along the eastern boundary. A lot of this planting sits outside of the application site.
- 12.2 Subject to removal of planting to create the access, none of the remaining hedgerows around the site will be impacted by the development. Future masterplanning work will be informed by further assessment of the hedgerows and what clearances are needed to ensure the hedgerow itself and its function (i.e bat corridor) would be unaffected by the proposed development. For this reason, hedgerows are shown on the wider opportunities plan.

13.0 HERITAGE IMPACT ASSESSMENT

- 13.1 A Built Heritage Baseline Report has been prepared in June 2021 to inform the Cultural Heritage ES Chapter. A study area of 1km from the site was agreed through the EIA Scoping process and is considered to be appropriate and proportionate to identify designated and non-designated heritage receptors.

Historic Background and Maps

- 13.2 The following sets out historical maps of the site, which will be expanded upon within the Strategic Framework Plan.



1884 Ordnance Survey Map, 1:10,560

- 13.3 The first Ordnance Survey (OS) Map published in 1884 depicts the Site as enclosed fields. A track running north-west to south-east is present.



1899 Ordnance Survey Map, 1:10,560

- 13.4 The OS Map of 1899 shows little change to the Site itself in comparison to the 1884 OS map. There is also limited change to the surrounding area, with some infill of built form along 'Baldock Road', today known as 'North Road', both to the immediate south of Graveley and further south near the crossroads to St Nicholas's Church.



1924-25 Ordnance Survey Map, 1:10,560

- 13.5 The 1924-5 OS Map depicts an amalgamation of some of the fields within the Site from the previous map, creating larger expanses of enclosed fields.



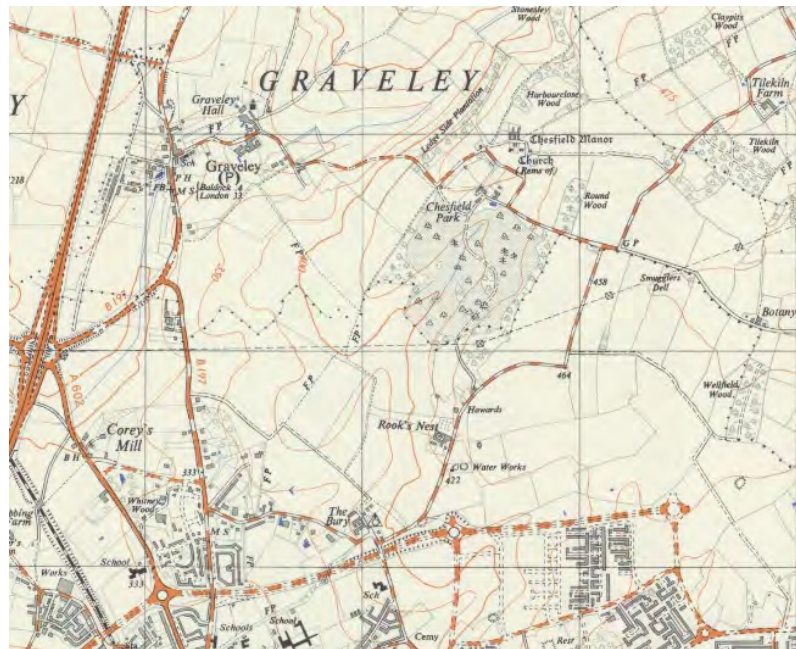
1948 Ordnance Survey Map, 1:25000

- 13.6 The 1948 OS Map depicts no change to the Site from the previous OS Map. There is further residential development visible to the north and east of Stevenage which encroaches on the enclosed fields separating Stevenage from the St Nicolas groups. There is also some expansion to Stevenage with terraced housing visible to the north-east of the main town following the line of the railway.



1964 Ordnance Survey Map (partial), 1:10,560

- 13.7 The 1964 OS Map depicts no change to the Site itself from the previous map. It does, however, depict the further expansion of Stevenage to the east, south of the Site. This time also depicts the construction of the A1 to the west of the map, which encroaches on agricultural land, altering the wider rural setting.



1968 Ordnance Survey Map (partial), 1:25,000

- 13.8 The 1968 OS Map continues to show no change to the Site itself from the previous map. The extension of the A1 is visible to the west of the Site. Martin's Way is also depicted running east to west, to the south of the Site, further altering the agricultural landscape to the south and west, particularly altering the setting of the St Nicolas group of receptors to which it is located directly to the south. The road also travels through some of the agricultural land associated to the Rook's Nest Group, altering their setting.

Heritage Assets

- 13.9 The site is located within proximity to a number of designated heritage assets. The conservation of heritage assets in a manner appropriate to their significance is a core land-use planning principle as set out in the National Planning Policy Framework (NPPF) (2021). This is reflected in the emerging Local Plan Policy SP16 which includes criteria requiring sensitive consideration of heritage assets including: Graveley village and Conservation Area; the St Nicholas and Rectory Lane Conservation Area; Chesfield Park Proposed Conservation Area; the Church of St Etheldreda; and Manor Farm. The significance of listed buildings and conservation areas is also protected in statute through the provisions of the Planning (Listed Buildings and Conservation Areas) Act 1990.

13.10 This assessment has been prepared following desk-top research and fieldwork, a review of the work prepared in 2018 and a second site visit made on 21 May 2021. The findings have fed into the emerging design work which seeks to establish the basic parameters within which the Development will be delivered. This is at an early stage; it is recognised that as the scheme progresses towards the submission of an outline application, a full assessment of heritage significance and impact will be required to satisfy emerging local plan policy, paragraph 194 of the NPPF and the requirements of the Environmental Impact Assessment. It will therefore be important that development on this site sustains the heritage significance of any designated and non-designated assets with potential to be affected through high quality master-planning, design and use of appropriate mitigation measures as far as is practicably possible, and that any residual harm is demonstrably outweighed by the public benefits delivered (NPPF paragraphs 199-202).

13.11 This has been informed by the relevant available documentation including:

- Graveley Conservation Area Character Statement, February 2020.
- St. Nicholas / Rectory Lane Conservation Area Appraisal, 2009.
- St. Nicholas/Rectory Lane Conservation Area Management Plan Supplementary Planning Document, July 2012.
- Chesfield Conservation Area Designation Assessment, January 2022.

13.12 There are no extant built heritage assets within the site. The following designated and non-designated heritage receptors have been identified as they have the potential to be affected by the proposed development. Their location in context to the site are shown on the Heritage Asset Plan at Appendix 5. These have been grouped relating to their area and historic connections:

Graveley Conservation Area

13.13 As a conservation area, Graveley Conservation Area is considered to be of moderate sensitivity. The conservation area has two character areas which are set out below and their key sensitivities.

1. Character Area 1 St Mary's Church and Graveley Hall

13.14 The following assets are located within this character area of the conservation area:

- Church of St Mary — Grade I listed (high sensitivity)
- Graveley Hall — Grade II listed (moderate sensitivity)

- Wall next Churchyard and Gateway at Graveley Hall — Grade II listed (moderate sensitivity)
- 2 Barns and Linking Lower Building 70 metres to southeast of Graveley Hall Farmhouse — Grade II listed (moderate sensitivity)
- East Range of Farm Buildings at Graveley Hall Farm backing onto Churchyard — Grade II listed (moderate sensitivity)
- The Cottage — Grade II listed (moderate sensitivity)
- West View Cottage and Kate's Cottage — Grade II listed (moderate sensitivity)
- Crow End — Grade II listed (moderate sensitivity)
- Graveley Bury — Grade II listed (moderate sensitivity)
- East Range of Barns at Graveley Bury — Grade II listed (moderate sensitivity)
- South Barn at Graveley Bury Farm — Grade II listed (moderate sensitivity)
- Old School, Church Lane – non-designated asset (low sensitivity)
- Ley Cottage, Church Lane – non-designated asset (low sensitivity)
- Barn opposite Ley Cottage, Church Lane – non-designated asset (low sensitivity)
- Flint Barn, Church Lane – non-designated asset (low sensitivity)
- Barn south of Flint Barn, Church Lane – non-designated asset (low sensitivity)
- Barn immediately north of Flint Barn, Church Lane – non-designated asset (low sensitivity)

13.15 The key sensitivity within Graveley village is identified to be the southern portion of the conservation area from Graveley Bury eastwards. This eastern portion of the conservation area has a rural character with a concentration of listed buildings and positive buildings within the conservation area (non-designated heritage assets). Its setting is characterised by open, rolling farmland which complements the vernacular character of the historic built form.

13.16 Development within the site to the north of the highest contour will be visible in views south outwards from the conservation area, including views through the cluster of Grade II listed buildings at Graveley Bury. Views are particularly open at the south-eastern spur where the conservation area boundary extends to take in three modest vernacular Grade II listed buildings (Crow End, The Cottage and West View Cottage and Kate's Cottage). The Church of St Mary (Grade I listed), Graveley Hall and associated farm buildings (all Grade II listed) and non-designated heritage assets sit within a cluster to the north of Church Lane, such that any visual impacts will be reduced.

2. *Character Area 2: High Street*

13.17 The following assets are located within this character area of the conservation area:

- Milestone Opposite Number 9 (Mushroom Cottage) — Grade II listed (moderate sensitivity)
- George and Dragon Public House — Grade II listed (moderate sensitivity)
- Waggon and Horses Public House — Grade II listed (moderate sensitivity)
- Ponside Cottage — Grade II listed (moderate sensitivity)
- Waters Edge and Number 4 — Grade II listed (moderate sensitivity)
- Gothic House — Grade II listed (moderate sensitivity)
- 4 and 5, Oak Lane — Grade II listed
- Public Pump on verge in front of Number 10 (Holt Lodge) — Grade II listed (moderate sensitivity)
- The Grange — Grade II* listed (high sensitivity)
- Fife House and linked outbuildings to north — Grade II listed (moderate sensitivity)
- The White House — Grade II listed (moderate sensitivity)
- 24, 26 and 28, High Street — Grade II listed (moderate sensitivity)
- 1 Ponside – non-designated asset (low sensitivity)
- 1 Oak Lane – non-designated asset (low sensitivity)
- The Coach House, Oak Lane – non-designated asset (low sensitivity)
- 10 Oak Lane – non-designated asset (low sensitivity)
- Graveley House, High Street – non-designated asset (low sensitivity)
- 48 High Street – non-designated asset (low sensitivity)
- 14-16 High Street – non-designated asset (low sensitivity)

13.18 The Site is located c.300m to the south of character area 2. There is little intervening built form between the receptors and the Site. Despite this open aspect, there is limited intervisibility between the Site and this part of the conservation area. The bank bordering the east side of the road prevents long distance views from street level. The Site also has no associative or functional relationship with these assets or portion of the conservation area. As such the Site contributes very little to how this portion of the conservation area is experienced, simply forming part of its agricultural surroundings.

13.19 The listed buildings, non-designated heritage assets and section of the conservation area orientated around the High Street to the west has a less rural character and shares a lesser visual relationship with the Site. For this reason, they are considered to be less sensitive to the proposed development.

13.20 Consideration should be given to the following design principles to sustain the heritage significance of Graveley Conservation Area and the listed buildings and non-designated assets within its boundary:

- Land in the less sensitive western portion of the site should be optimised to provide flexibility for mitigation through design in the eastern section;
- Careful consideration of the scale, form and density of development along the northern edge of the north-eastern quadrant of the site to create a rural edge that shares a positive relationship with the built form that characterises the eastern portion of Graveley village;
- This should include the retention of a buffer zone to provide scope for high quality landscaping to 'green' the northern edge and further soften the visual impacts of built form;
- A consideration of the retention of a green backdrop in the view through the listed complex at Graveley Bury. This would also alleviate impacts on the setting of the conservation area;
- Careful consideration of the view southwards from the cluster of listed buildings around Crow End. The form of development and associated landscaping will be important in alleviating any suburbanising impacts within the setting of this historic cluster of vernacular buildings; and
- Consideration given to restoring historic field boundaries to strengthen the mitigation landscaping and restore lost landscape features where practically possible.

Chesfield Park Conservation Area and Manor Farm Group

13.21 The Chesfield and Manor Farm Group are located to the north-east of the site and comprise:

- Church of St Etheldreda/ Chesfield Church — Grade II* listed/ Scheduled Ancient Monument (high sensitivity)
- Manor Farmhouse — Grade II listed (moderate sensitivity)
- Boundary Wall and gate piers to garden on southwest and West of Manor Farmhouse — Grade II listed (moderate sensitivity)
- Chesfield Park — Proposed Conservation Area (moderate sensitivity)

13.22 At its nearest point, the Site is located c.700m from this group of receptors, at some distance to the southwest with rolling topography and tree cover preventing

intervisibility. The Site forms part of the wider agricultural hinterland but has no associative or functional relationship with them. This combined with the intervening distance, existing topography and landscape features means that the Site makes no contribution to the way in which the Manor Farmhouse or the church is experienced.

13.23 The cluster of heritage assets around Manor Farm is generally well screened from the site by the topography and planting as well as being set some distance away, with the historic landscape of Chesfield Park providing a buffer. Chesfield Park is a non-designated heritage asset which abuts the eastern site boundary but is visually well screened by Ten Acre Plantation. Nevertheless, the site provides an open setting to the historic landscape.

13.24 There is unlikely to be any visual impact on the designated heritage assets at Manor Farm and the Church of St Etheldreda.

13.25 Design considerations that will be important to mitigating any adverse impact on the setting of Chesfield Park could include the following:

- Retention of a high-quality landscaped edge along the eastern and northern site boundaries to alleviate the suburbanising impacts of the proposed development in closest proximity to the asset and on the approach from the west.
- Careful consideration of the scale, form and density of development in the north-eastern quadrant of the site to create a more rural character.

St Nicholas/ Rectory Lane Conservation Area

13.26 As a conservation area, St Nicholas/Rectory Lane Conservation Area is considered to be of moderate sensitivity. The conservation area has two character areas which are set out below and their key sensitivities

1. Character Area 1: Rectory Lane

13.27 The following listed buildings are located within this character area of the conservation area:

- The Priory — Grade II listed (moderate sensitivity)
- Priory Cottage — Grade II listed (moderate sensitivity)

13.28 The cluster around Rectory Lane / the Priory is located some distance from the Site, with the intervening environment comprising modern residential development. The Site is located c.850m to the north of Rectory Lane. As a result of the distance and intervening built form, there is limited visibility between the Site and the receptors. There is also no associative or functional relationship between the receptors and the Site. This combined with the intervening distance, existing topography and landscape features means that the Site makes no contribution to the way in which the Manor Farmhouse or the church is experienced.

13.29 At this distance and given the intervening topography and planting, the scale of any impact is likely to be low. There is not considered likely to be any material adverse impact on the significance of the Rectory Lane character area and its listed buildings.

2. Character Area 2: Weston Road

13.30 The following listed buildings are located within this character area of the conservation area:

- Church of St Nicholas — Grade I listed (high sensitivity)
- The Old Bury — Grade II* listed (high sensitivity)
- Moonhill — Grade II listed (moderate sensitivity)
- Dominic Cottage — Grade II listed (moderate sensitivity)
- Rooks Nest House — Grade I listed (high sensitivity)
- Rooks Nest Farmhouse — Grade II listed (moderate sensitivity)
- L-Shaped Outbuilding west of Rooks Nest Farmhouse— Grade II listed (moderate sensitivity)
- Corey's Cottage — Grade II listed (moderate sensitivity)

13.31 The cluster around the Church of St Nicholas is located some distance from the Site. Despite the open nature of views northwards, the church is not a prominent feature from the site and vice versa. At this distance and given the intervening topography and planting, the scale of any impact is likely to be low. There is not considered likely to be any material adverse impact on the significance of The Old Bury, Moonhill or Dominic Cottage.

13.32 Rooks Nest House is located some distance from the site with intervening open space. Views to the listed building from the site can be obtained from the south-east corner and

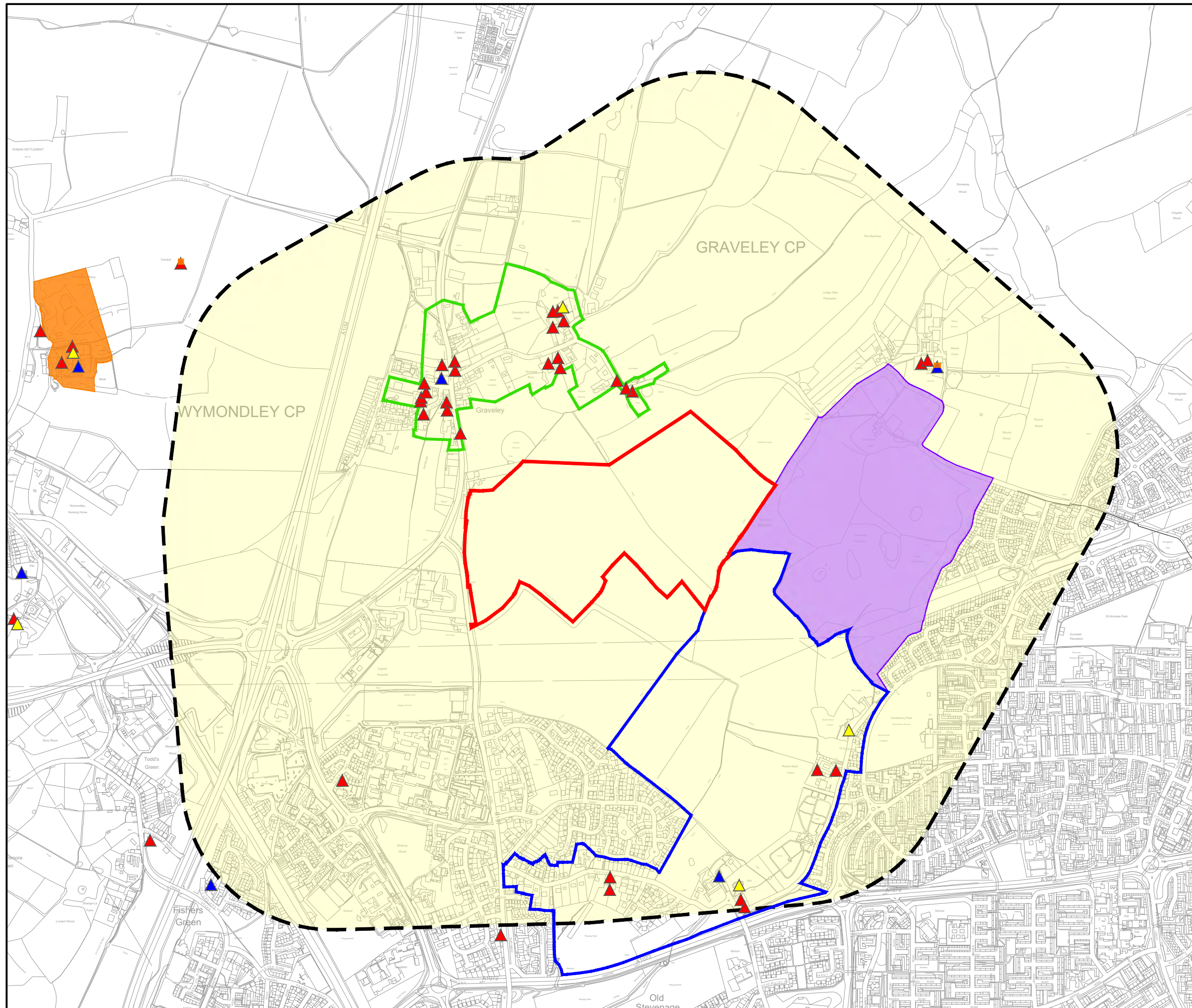
from higher ground, albeit the house is not a prominent feature in the landscape. Any impact is likely to be limited given this spatial relationship with the site.

13.33 Whilst Forster Country is not considered to be a designated or non-designated heritage asset in its own right, it forms part of the landscape setting of both the St Nicholas & Rectory Lane Conservation Area and Rook's Nest assets and is integral to the significance of the listed building (Rooks Nest House) and forms part of the St Nicholas and Rectory Lane Conservation Area which abuts the eastern boundary of the Site. Development has potential to erode the open quality of longer distance views northwards across the Conservation Area and its landscape setting at the boundary. In these longer views from Rectory Lane and Weston Road, the Development would be seen at considerable distance across open space, such that any impact would be likely to be minimal.

13.34 Design principles that will help to further reduce the potential scale of impact include:










- Maintaining and reinforcing the green edge to the eastern site boundary, including extending this south of Ten Acre Plantation to the southern site boundary; and
- Integrating high quality landscaping throughout, but with particular reference to the eastern section of the site to soften the impact of built form in longer views outwards from the conservation area. A less dense form of development within the eastern section of the site would facilitate this.

13.35 A plan of the heritage assets and their relationship with the site can be viewed in the appendix.



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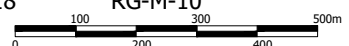
-  Site Boundary
-  1km Buffer
-  Grade I Listed Building
-  Grade II* Listed Building
-  Grade II Listed Building
-  Scheduled Monuments
-  Chesfield Park Unregistered Park & Garden
-  Graveley Conservation Area
-  St Nicholas / Rectory Lane Conservation Area

Project
NORTH STEVENAGE

Drawing Title
HERITAGE ASSET PLAN

Date: 28.05.21 Scale: 1:12,500@A3 Drawn by: S.M. Check by: E.H.

Project No: 28718 Drawing No: RG-M-10 Revision: -

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14.0 ARCHAEOLOGICAL DESK-BASED ASSESSMENT, GEO-PHYSICAL SURVEY AND FIELD EVALUATION

- 14.1 An Archaeological Desk-Based Assessment (DBA) (updated June 2021), Geophysical Survey (June 2018) and Archaeological Evaluation (February 2019) including a summary of the Trial Trenching undertaken have all been undertaken and their findings written up in supporting technical reports to the ES Chapter. Hertfordshire County Council has confirmed that *'the report meets the requirements of this office, and recommend that it, along with the geophysical survey report, be submitted by your client to support any planning application'*.
- 14.2 The DBA identified that there were no recorded designated heritage assets of archaeological interest within the site. Due to intervening residential built form, topographical variations and mature vegetation, the proposed development will not alter any elements of the setting of any designated heritage assets of archaeological interest in the wider surrounding area.
- 14.3 Archaeological investigations undertaken immediately to the south of the site (17/00862/OPM) identified archaeological remains of Iron Age and Roman date. The Geophysical Survey and subsequent Trial Trenching of the site indicates that these remains extend into the south-western extent of the site. The results of the DBA, Geophysical Survey and Trial Trenching suggest that much of the site formed part of the agricultural hinterland associated with the Iron Age – Roman settlement and the medieval and later settlement of Graveley.
- 14.4 The Archaeological DBA and Geophysical Survey were sent to the Historic Environment Advisor at HCC in August 2018, following the EIA Scoping process and prior to the Trial Trenching that was undertaken in October and November 2018. Through this consultation it was agreed that a 2.5% sample to the west of the north-west/south-east orientated pathway bisecting the site and 1.5% to the east of this would be sufficient for the pre-determination stage of the application. This is on the basis that HCC will request for more trenching post consent, to increase the sample percentage, regardless of the results of the pre-determination evaluation.
- 14.5 Historic cartographic sources record the site partially forming common land for neighbouring parishes and partially comprising cultivated land in the 19th century, a system of land management that is likely to have its origins in the medieval period. The

Geophysical Survey and Trial Trenching have identified buried features associated with cultivation practices.

15.0 FLOODING AND SUSTAINABILITY DRAINAGE ASSESSMENT

- 15.1 The site is located within Flood Zone 1 and is therefore at low risk of flooding from fluvial and tidal sources (less than 1 in 1000 year annual probability). The risk of groundwater flooding is considered 'low' and the risk of flooding from sewers has been assessed as being 'low'. As such, no mitigation measures will be required.
- 15.2 According to the ES Surface Water Flood Map, there is a small area of surface water flooding in the north-west corner of the site. This will be taken into consideration at the detailed design and it is proposed that this area will be used as an attenuation basin. As such, flooding from surface water is considered to be low risk. Preliminary work undertaken by the Applicant's Flood Risk consultant has identified that the size of this basin would be approximately 13,360m³ (subject to change). In addition, another attenuation basin is proposed for the north/north-eastern extent of the site, at an approximate size of 5,340m³. This attenuation basin would aid the green edge to the north of the site to soften and screen the views of the site. There is scope to increase the sizes if necessary, or ensure appropriate landscaping if reduced.
- 15.3 In terms of drainage, the site is made up of greenfield land. There is no specific surface water drainage strategy existing on the site. Therefore, it is considered that the existing surface water from the site infiltrates to the subgrade through the undeveloped land and arable land. The nearest surface water sewer to the site is approximately 370m from the south-west boundary. Further testing will take place to inform the future strategy.
- 15.4 As the site is greenfield, there are no existing foul flows. The topographic survey for the site did not record any foul sewers within the site. The nearest foul water sewer is approximately 300m south-west of the site, by the Lister Close junction along North Road.

16.0 GREEN INFRASTRUCTURE AUDIT

16.1 The site benefits from proximity to a network of accessible green open spaces of varying typology, function, and character within walking distance of the site. An assessment of strategic and local green infrastructure provided within 1200m (an approximate 15-minute walk) of the site demonstrates provision of the following open space typologies.

16.2 Please note that this assessment has been informed by the Fields in Trust Guidance for Outdoor Sport and Play England and takes into consideration green infrastructure provided as part of the adjacent development (planning application reference 170862/OPM), located immediately south of the site.

- Formal outdoor sports provision including playing pitches:
 - Graveley Cricket Pitch borders the northern part of the site boundary, less than 5 minutes' (400m) walk from the centre of the site.
 - Stevenage Town Rugby Club and Lister Tennis Club are both within an approximate 10 minute (800m) walk distance of the site.
 - Chesfield Downs Golf and Country Club is located north of Graveley Village, approximately 15 minutes' walk of the site (1200m).
- Formal green spaces:
 - Other formal green spaces close to the site include a country park forming part of the adjacent development (ref: 17/00862/OPM), which is easily accessible by foot within 5 minutes. A green corridor forming part of this scheme is also accessible by foot within 5-10 minutes' walk from the centre of the site.
 - Chesfield Park and Gardens, an open landscape surrounding Chesfield Park House, is separated from the site by belts of trees. These tree belts, single specimen trees and a walled garden add to the formal character of the park. However, Chesfield Park is not open to the public
- Equipped play areas:
 - Two equipped play areas are located within 15 minutes' walking distance from the centre of the site, including a play area within the local centre forming part of planning application reference 17/00862/OPM. Other play areas can be reached by foot within a 20-25 minute walk from the site.
- Allotments:
 - A community orchard is located adjacent to the country park (ref: 17/00862/OPM).

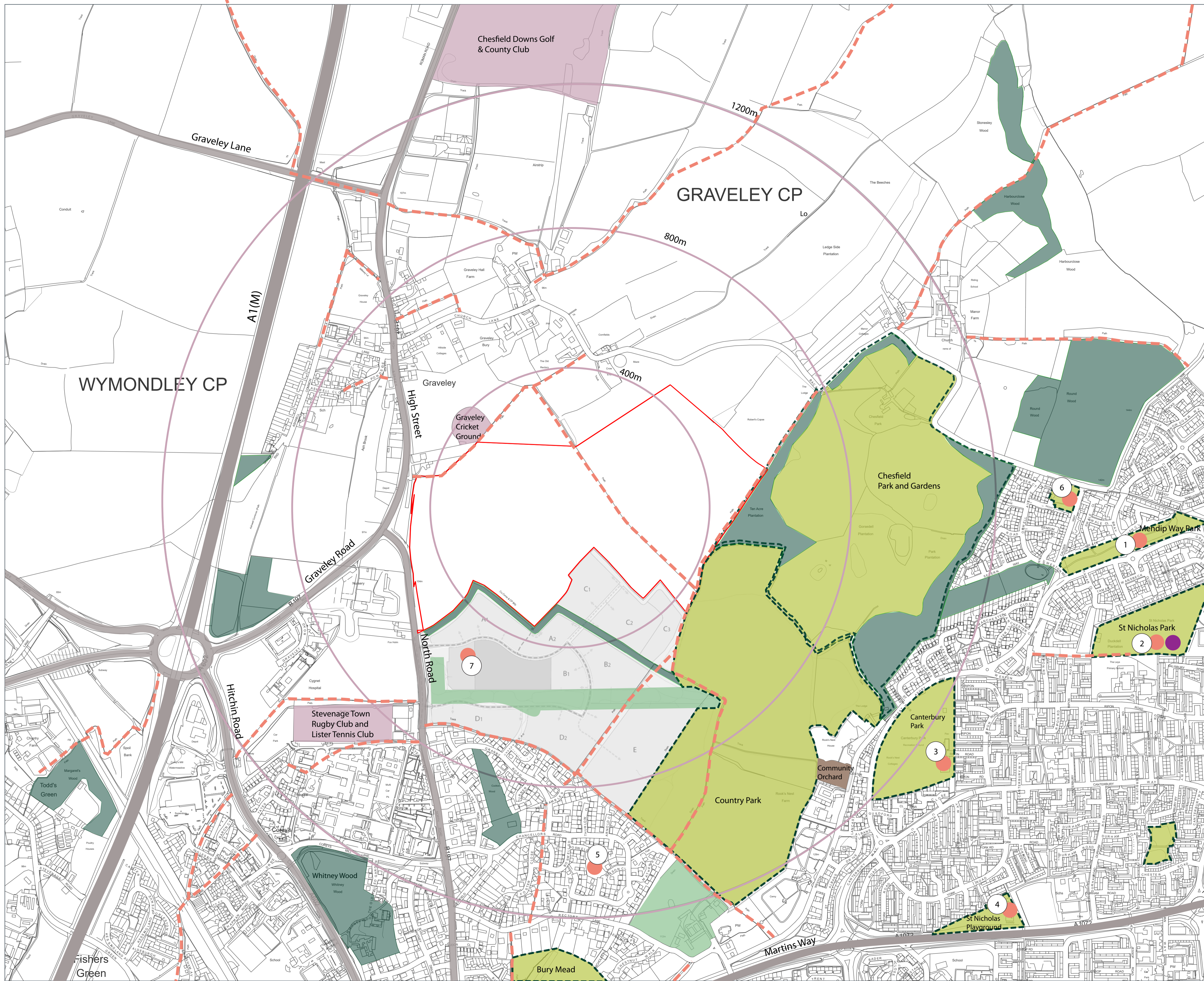
- Natural / Semi-Natural spaces:
 - The site benefits from proximity to a number of woodlands of varying quality and accessibility. A tree belt extending along the southwestern boundary of the site provides an attractive walking route through the adjacent scheme connecting with the country park (ref: 17/00862/OPM) and wider public rights of way network.
 - 10 Acre Plantation adjacent to the eastern corner of the site screens the development when viewed from Chesfield Park House

16.3 In addition to the above, the wider area benefits from a varied provision of green infrastructure which can be reached by foot, bike, bus, or car, including several recreation grounds, allotments, Multi Use Games Areas (MUGAs), and playing pitches. The opportunity exists to further enhance this provision on the site at North Stevenage through the delivery of good a quality green infrastructure network that meets needs of the new and existing community, in accordance with policy requirements.

16.4 The table below summarises the equipped play area provision in the vicinity. It is recognised that the distances extend beyond the FIT standards. However, this informs which open space typologies may be suitable on the site itself:

| | Name & Location of Equipped Play Area | Distance from site | Walking/ Cycle Distance | Description |
|---|---|---------------------------|------------------------------------|--|
| 1 | Mendip Way Park Accessed via Mendip Way or Cromdale Walk | 2.8km | Walk: 33mins Cycle: 8mins | LEAP Approx. 20m x 20m enclosed playground comprising play equipment for toddlers and juniors including swings, slide etc. |
| 2 | St Nicholas Park Main access via Pilgrims Way | 2.9km | Walk: 34mins Cycle: 9mins | LEAP and MUGA Located adjacent to St Nicholas Play Centre. Equipment to a range of ages including toddlers, juniors and teenagers. MUGA includes a large BMX track and gym equipment. St Nicholas park also includes a pavilion, football pitches, basketball hoop and kick wall. |

| | | | | |
|---|---|-------|---|--|
| 3 | <p>Canterbury Park</p> <p>Adjacent to Great Ashby Way. Pedestrian access via footpath off of Great Ashby Way. Car park and main access via Ripon Road</p> | 2.8km | <p>Walk: 34mins Cycle: 8mins</p> | <p>Small, enclosed play area (LAP? Or small LEAP?) designed for toddlers and juniors, including swings, slide etc. The park also has football pitches.</p> |
| 4 | <p>St Nicholas Playground</p> <p>North of Martins Way (A1072) and immediately west of Giles Nursery and Infants School and Junior School. Pedestrian / cyclist access via York Road</p> | 3.2km | <p>Walk: 38mins Cycle: 10mins</p> | <p>LEAP & NEAP situated either side of pedestrian footpath</p> |
| 5 | <p>Chancellor's Playground</p> <p>Located between Chancellor's Road and Rectory Lane. Pedestrian access via Wilson Close and Chancellor's Road</p> | 2.9km | <p>Walk: 35mins Cycle: 10mins</p> | <p>LAP designed for young children with small amount of play equipment.</p> |
| 6 | <p>North Shore Open Space Park.</p> <p>Accessed via Calder Way and Riccat Lane</p> | 1.9km | <p>Walk: 25mins Cycle: 9mins</p> | <p>LAP with equipment for toddlers and juniors including swings and slide.</p> |
| 7 | <p>St Nicholas' Meadows</p> <p>Play area located within park proposed as part of planning application 17/00862/OPM immediately south of the site</p> | | | <p>Equipped play area proposed as part of planning application 17/00862/OPM.</p> |



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| Revision | Date | Drn | Ckd |
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| H | 21.01.22 | SP | BW/PD |

- Site Boundary
- Public Rights of Way
- Main Roads
- Formal Outdoor Sports Provision
- Natural and Semi-natural Spaces including Woodland & Scrubland
- Parks and Gardens
- Allotments and Community Orchards
- Amenity Green Space
- Other Outdoor Provision (MUGAs, skate parks etc)
- Equipped Play Areas

- 1 Mendip Way Park LEAP - enclosed playground comprising play equipment for toddlers & juniors
- 2 St Nicholas Park LEAP & MUGA - equipment to a range of ages including toddlers, juniors and teenagers
MUGA includes a large BMX track and gym equipment
- 3 Canterbury Way Park Small, enclosed play area designed for toddlers & juniors
- 4 St Nicholas Playground LEAP & NEAP
- 5 Chancellor's Playground LAP - designed for young children with a small amount of play equipment
- 6 North Shore Open Space Park LAP - equipment for toddlers and juniors
- 7 St Nicholas' Meadows Equipped play area proposed as part of site allocation HO3 (planning application reference: 17/00862/OPM)



PROJECT
28718 North Stevenage

DRAWING TITLE
Green Infrastructure Audit

DATE
09.11.21

SCALE
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LP

CHECK BY
BW

PROJECT NO
28718

DRAWING NO
AI-BL-M-20H

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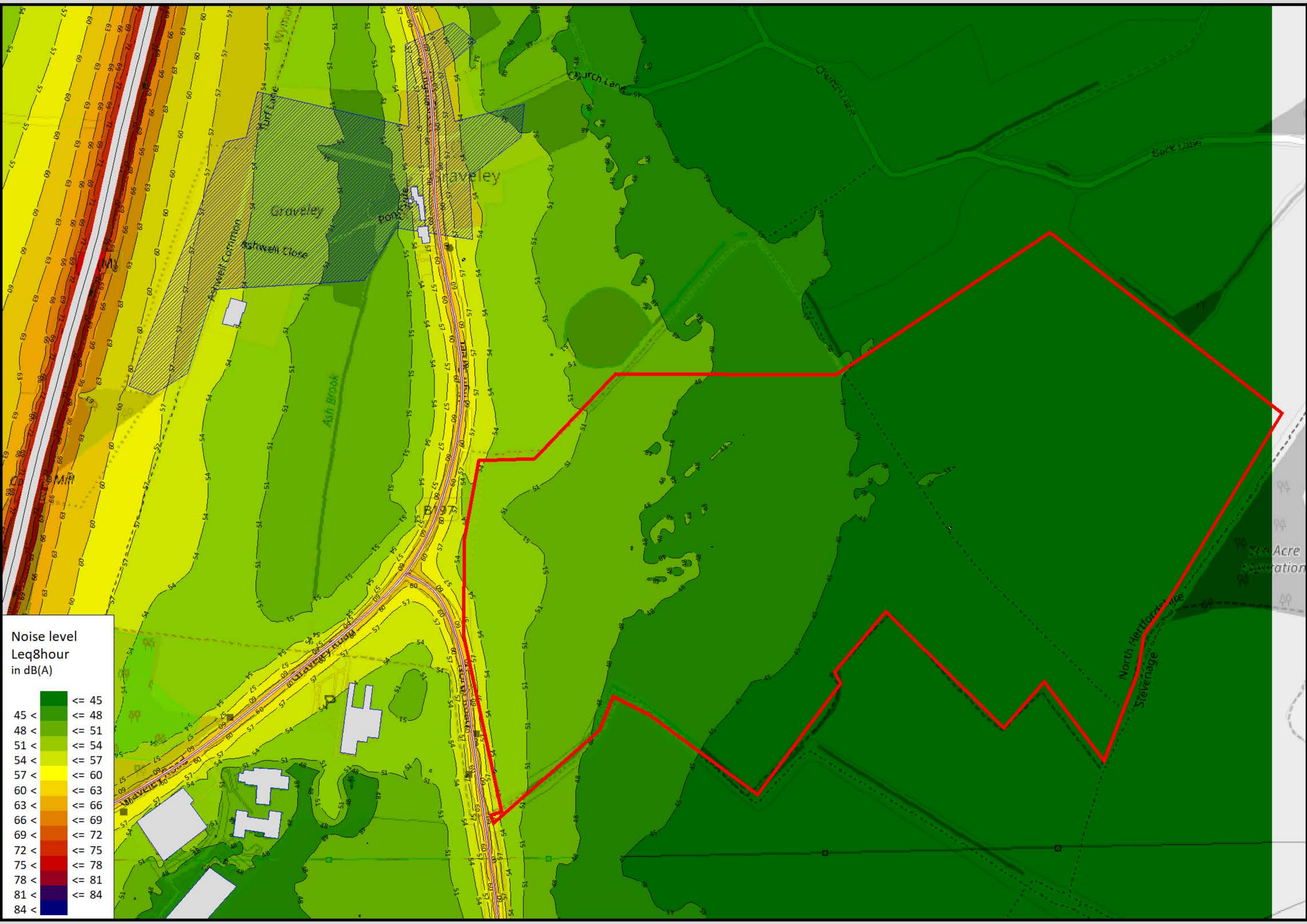
17.0 NOISE ASSESSMENT

- 17.1 A baseline model has been created using the SoundPLAN noise modelling software. The baseline model has been validated by short-term noise measurements at appropriate locations. The noise contours for day and night that represent the noise environment dictated by the A1 and B197 (Graveley High Street and North Road) are shown on the accompanying plan. The western and southern extent of the site experiences higher levels of noise than the northern and eastern extent of the site.
- 17.2 The site is located approximately 12km north-east of London Luton Airport and aircraft on approach and/or departure routes from the airport pass in the vicinity. These aircrafts are generally at altitudes in excess of 1,000m at this point. The noise contours for Luton Airport have been reviewed and although aircraft is audible on occasion (including higher level aircraft on arrival and departure routes from Stansted Airport), aircraft noise does not have a significant effect on the baseline noise environment for the site.



Noise level
Leq16hour
in dB(A)

| | |
|------|------|
| 45 < | ≤ 45 |
| 48 < | ≤ 48 |
| 51 < | ≤ 51 |
| 54 < | ≤ 54 |
| 57 < | ≤ 57 |
| 60 < | ≤ 60 |
| 63 < | ≤ 63 |
| 66 < | ≤ 66 |
| 69 < | ≤ 69 |
| 72 < | ≤ 72 |
| 75 < | ≤ 75 |
| 78 < | ≤ 78 |
| 81 < | ≤ 81 |
| 84 < | ≤ 84 |



Noise level
Leq8hour
in dB(A)

| | |
|------|------|
| 45 < | ≤ 45 |
| 45 < | ≤ 48 |
| 48 < | ≤ 51 |
| 51 < | ≤ 54 |
| 54 < | ≤ 57 |
| 57 < | ≤ 60 |
| 60 < | ≤ 63 |
| 63 < | ≤ 66 |
| 66 < | ≤ 69 |
| 69 < | ≤ 72 |
| 72 < | ≤ 75 |
| 75 < | ≤ 78 |
| 78 < | ≤ 81 |
| 81 < | ≤ 84 |

18.0 AIR QUALITY ASSESSMENT

- 18.1 NHDC has declared an Air Quality Management Area (AQMA) on Stevenage Road within Hitchin for exceedances of the annual mean nitrogen dioxide objective. This is the closest AQMA to the site (approximately 4km west of the site). In addition, an AQMA has been declared at the Paynes Park Roundabout, also for exceedances of the annual mean nitrogen dioxide objective.
- 18.2 The automatic monitoring locations within NHDC have recorded no exceedances of the objectives for PM₁₀ or PM_{2.5} in the past 5 years.
- 18.3 The following plan shows the location of the declared AQMA's and local monitoring stations, which are not considered to be impact upon proposed development. Air quality will be included within the Environmental Impact Assessment.

Legend

-  Declared AQMAs
-  Site

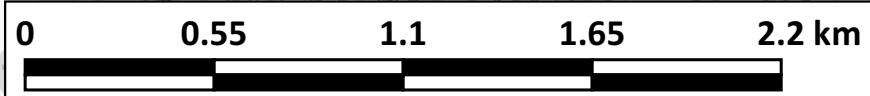
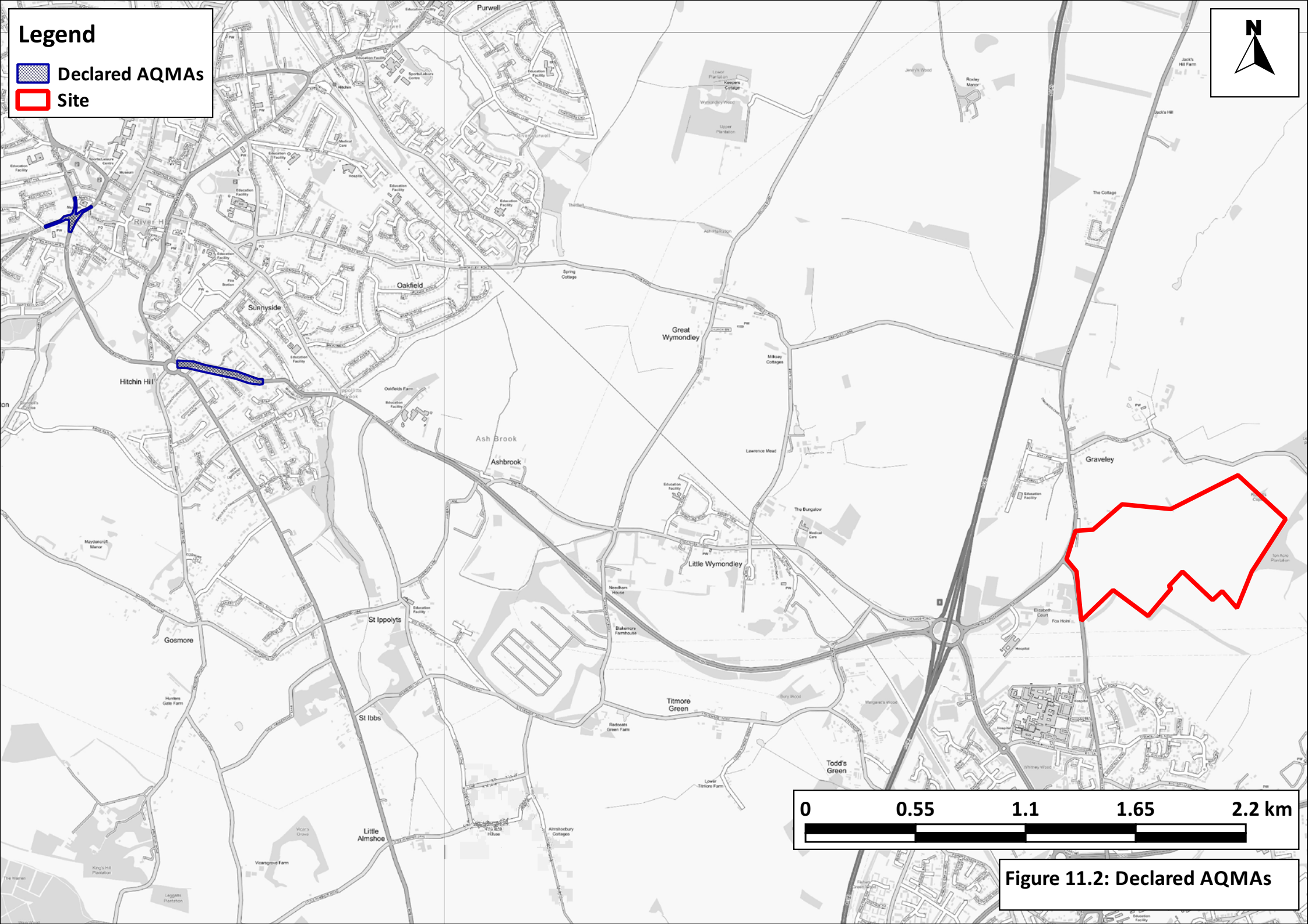


Figure 11.2: Declared AQMAs

19.0 SUSTAINABILITY AND ENERGY

19.1 A Baseline Review of suitable sustainable energy options has been undertaken by Scotch Partners. The Baseline Conditions are identified in the table below:

| Factor | Baseline Condition | Opportunities/Positives | Constraints/Negatives |
|------------------|---|--|--|
| Local geography | <p>A largely semi-rural environment on the outskirts of a large town.</p> <p>Nearby hospital – Lister Hospital as part of the East and North Hertfordshire NHS Trust.</p> | <p>Potential land availability from adjacent fields/sites for 'offsite' renewables (such as solar farm or medium/community scale wind turbine) to supply power to the site.</p> <p>Potential heat supply from the nearby Lister Hospital who have a gas CHP energy centre.</p> | <p>Requires leasing agreements with adjacent landowners and a separate planning application.</p> <p>May be insufficient spare capacity from the hospital energy centre to serve the Croudace site (although potentially enough to serve a portion of the site?).</p> <p>Would require a primary heat network to be installed from the hospital energy centre to the Site energy centre. Only financially viable if the spare capacity is sufficient to serve a large proportion of the Site.</p> |
| Local topography | <p>The land on the development site has a slight incline from North West to South East, please refer to Figure 2.</p> | <p>Site could potentially be suitable for medium /community scale wind turbine(s) due to limited disruption to wind flow from the low incline across the site.</p> | <p>Average wind speed on the site may limit the ability to successfully use wind turbines.</p> <p>If there is insufficient space within the red line boundary to safely accommodate a wind turbine this would require leasing agreements with adjacent landowners and a separate planning application.</p> |

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| Local geology | <p>The local geological maps suggest that the underlying soil is “freely draining slightly acid but base-rich soils” which suggests that infiltration drainage may be possible.</p> <p>Site development land previously used as agricultural land. There are no water features or watercourses within the application boundary and according to the Environment Agency’s Indicative Flood Map, the site is located within a low risk Flood Zone 1 which classifies it as comprising of land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year.</p> | <p>Geological conditions are likely appropriate for a ground source heat pump (GSHP) system.</p> <p>The hydrological site conditions and flooding will be determined by assessing maps and other published information regarding topography, soils, geology and hydrology. Should further investigation determine a high water table, there may be potential to explore water source heat pumps. Low flood risk enables technologies to be located at ground level.</p> | <p>Vertical GSHP i.e. boreholes can have high upfront costs for exploration and given there is unlikely to be piling as part of the development, installation costs would also be high.</p> <p>Horizontal GSHP i.e. slinkies would require a large surface area to be efficient and cost-effective. This could be possible should there be a large area of public open space proposed as part of the scheme.</p> <p>Due to there being no water courses on site, hydro power is discounted for this scheme.</p> |
| Local utilities - gas | Currently unknown – awaiting information on local provision | To be updated | To be updated |
| Local utilities – power | Currently unknown – awaiting information on local provision | To be updated | To be updated |

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| Accessibility | Accessibility via minor roads, closely located to major roads. B197 to the West of the site boundary leading swiftly onto A602. | Proximity of major roads means that Biomass energy could be considered on site due to ease of fuel delivery. | Regular delivery access and fuel storage is required. This could have detrimental impact on local residents due to air pollution and noise from the delivery vehicles. Brexit may create uncertainty with regards to fuel supply. |
| Environmental conditions: Air Quality | Good air quality, with concentrations below the air quality objectives away from major roads. | Natural ventilation i.e. openable windows, will be viable for the Croudace Homes due to the good air quality on site. | The proposed development will generate additional traffic on the local road network, which could impact on air quality at existing and proposed properties. Whilst biomass could be considered as a viable option for the energy strategy, there are air quality implications associated with this technology. |
| Environmental conditions: Noise | The site is large and relatively unaffected by significant noise sources, apart from local road traffic and the more distant A1, in excess of 500 metres to the west. Baseline conditions are likely to be reflective of a largely semi-rural environment on the | Natural ventilation i.e. openable windows, will be viable for the Croudace Homes due to the low noise impact on site. | The change in noise levels resulting from additional traffic flows associated with the proposed development (this will be predicted using SoundPLAN environmental noise modelling software). Consideration will be required in terms of potential noise emitted from the chosen energy technologies. |

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| | outskirts of a large town. | | |
| Environmental conditions: Wind | Wind conditions around the site commonly fall between 10-20kmph throughout the year, with higher wind speeds in winter months. | Consideration of implementation of a community-scale wind turbine on site or on surrounding arable land. | Average wind speed on the site may limit the ability to successfully use wind turbines. May require leasing agreements with adjacent landowners and a separate planning application. |
| Environmental conditions: Daylight, sunlight and overshadowing | The solar map displays an average annual PV output for this region of 950 kWh/kWp. Baseline conditions are not impacted by surrounding developments due to the rural nature of the site. No high rise buildings/structures obstruct daylight on the sight. | The scale and massing of the proposed development will not cause changes to daylight or sunlight availability or cause overshadowing of residents or amenity space. Use of solar PV appears to provide good opportunity for this site. This could be considered on a building-by-building scale or potentially large scale i.e. solar farm through use of neighbouring land if onsite space unavailable. Solar thermal should also be considered due to favourable environmental conditions. | May require leasing agreements with adjacent landowners and a separate planning application |
| Proposed Site | The proposed development includes up to 900 dwellings, with associated open space and infrastructure | Sufficient space is potentially available for centralised heating plant, i.e. site wide energy centre or multiple smaller energy centres per phase. This could include large scale | Constraints of ASHP include the noise of the plant which could affect residents. Attenuation measures would be required. High power demand would be required for ASHP. This |

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| | providing a strategic scale site in terms of area. | air source heat pumps (ASHP). An alternative option could be a gas led heating system. | may increase the number/size of onsite sub stations (this will be determined once the utilities information is available). Gas would go against the future homes standard which seeks for all new homes to be fossil fuel free by 2025. Additionally, it is currently unknown whether there is a gas supply to the site. |
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19.2 Building on this baseline information, various sustainable options have been assessed for their potential use on the site. These are summarised below:

- Ground Source Heat Pump (GSHP) - GSHPs harvest solar heat absorbed by the ground, taking advantage of the moderate temperatures in the ground to boost efficiency and reduce the operational costs of heating and cooling systems. The GSHP could be installed on site, providing renewable energy. Whilst installation is invasive, maintenance is low once installation is completed. For the ground loop to be installed, the ground needs to be suitable for digging a trench or borehole (if installing vertically rather than horizontally due to space availability) and it must be accessible to digging machinery.

There is potential for GSHPs to be included as part of a hybrid energy strategy, subject to further investigation on ground conditions.
- Water Source Heat Pumps (WSHP) - WSHPs work in a similar respect to GSHP, however, instead of harvesting heat from the ground, they harvest the natural heat that is present in water sources such as lakes, ponds, rivers, springs, wells or boreholes. Dependent on the water source used, the temperature can fluctuate fairly dramatically from season to season, impacting the reliability of a WSHP. Should further investigation determine a high water table, there may be potential to explore water source heat pumps as part of a hybrid energy strategy for the development site.
- Biomass - Biomass is a renewable energy source generated from burning wood, plants and other organic matter including household waste. A stove is used to burn

logs or pellets and this can also be fitted with a back boiler for water heating. The pellets (most commonly used) can be delivered across mainland Britain, whereas supply of logs is more variable. To qualify for the UK Government's Renewable Heat Incentive, the biomass fuel must come from the Biomass Supplier List. Storage of the fuel consumes a large amount of space and dedicated delivery areas are required. This space must also be easily accessible. There are environmental implications related to biomass; both through the transport of fuel and the onsite combustion of fuel. These make biomass a less desirable technology.

- Air Source Heat Pumps (ASHP) - ASHPs absorb heat from the outside air. They have the ability to extract heat when temperatures are as low as -15°C; however, they are subject to fluctuating air temperatures and use more electricity to produce heat in the cooler months. Average temperatures in the region range from 9.5°C to just over 10°C, with this average dropping to between 6-8°C in winter months. This is still well within the range for use of an ASHP. In the UK the type of ASHP used would be an air-to-water heat pump, which transfers the heat from the outside air to water, allowing heat distribution through a central heating system which works more efficiently than a boiler would at lower temperatures. Use of air-to-water ASHPs could create eligibility to be provided with income through the UK Government's Renewable Heat Incentive. The ASHPs would need to be fitted to outside walls or placed on the ground.
- Wind Turbine - A wind turbine could be located on site or in nearby arable land to create green energy for the development. A minimum wind speed of roughly 5m/s (18kmph) is necessary for viable use of a wind turbine. According to the average wind speeds across the site boundary in Stevenage, the necessary wind speed has been reached in only two months over the past year and only seven months in the past 3 years. There are now options for new generation wind turbines which are built to start turning at lower wind speeds of just over 3m/s, however, these are more costly and do not generate as much energy. They are also more susceptible to damage at higher wind ranges. Use of wind turbines would also have to take into account impact upon the landscape.
- Solar Photovoltaics - North Stevenage is located in an area with an average of 2.85 kWh/kWp of daily solar energy. This is on the upper end of the UK average. As such, the site has the potential to use solar PV as a source of renewable power. These could be located either on individual roofs, or as part of a larger array at ground level.
- Solar Thermal - Solar thermal hot water supply works via absorption of solar energy from a flat-plate collector. Heat-transfer fluid is pumped from a hot water storage tank/ heat exchanger to a horizontal pipe at the bottom of the flat-plate

collector, it then travels up the risers, collecting heat from the absorber fins and then exits the collector out of the top horizontal pipe. Solar thermal has minimal running costs and they are a viable option at the development site due to the solar power in the site area. However, they are weather dependent and would not generate enough heat for the Croudace Homes development without assistance from another energy supply.

20.0 UTILITIES ASSESSMENT

- 20.1 The Utilities Assessment undertaken at the site has shown no utilities within the site except for cabling around the access point. North Road is currently served by an existing potable water main, an electricity cable, Openreach and Virgin routes, and a low-pressure gas main. The closest foul water sewer serves the dwellings adjacent the northwest boundary of the site.
- 20.2 The Utilities Assessment has not identified any concerns that would preclude development at the site.

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Notes

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake their own investigation where the presence of any existing sewers, services, plant or apparatus may affect their operations.

1. ABANDONED SERVICES MAY NOT BE SHOWN ON THIS PLAN.
2. TRUE POSITION OF THE SERVICES MAY BE DIFFERENT TO THAT SHOWN ON THIS PLAN, WHICH IS INTENDED FOR GENERAL GUIDANCE ONLY. NO GUARANTEES CAN BE GIVEN TO ITS ACCURACY AND IT SHOULD NOT BE RELIED UPON WHEN EXCAVATING IN THE VICINITY.
3. THESE SERVICES MAY NOT RUN IN A STRAIGHT LINE EITHER HORIZONTALLY OR VERTICALLY BECAUSE OF GROUND CONDITIONS, OBSTACLES AND OTHER REASONS.
4. BURIED SERVICES MAY EXIST AT VARIOUS DEPTHS AS GROUND LEVEL MAY HAVE BEEN ALTERED SINCE THE UTILITY APPARATUS WAS LAID.
5. UTILITY COMPANIES ASSET RECORDS (ASSETS, LOCATION AND DETAILS) ARE VALID FOR UP TO 3 MONTHS. IF WORKS DO NOT COMMENCE WITHIN THIS TIME PERIOD, ASSET RECORDS WILL NEED TO BE REFRESHED BEFORE ANY WORK COMMENCES ON OR NEAR SITE.

BEFORE EXCAVATING OR GROUND WORKS

6. ANY SITE INVESTIGATION OR GROUND PENETRATING ACTIVITY SHALL COMPLY WITH THE REQUIREMENTS OF HSE GUIDANCE DOCUMENT HS(G) 47 "AVOIDING DANGER FROM UNDERGROUND SERVICES"
7. ALL UNDERGROUND SERVICES i.e. CABLES, PIPES, DUCTS SHOULD BE LOCATED USING THE FOLLOWING TECHNIQUES:
 - a. REFERENCE TO DETAILED LARGER SCALE DRAWINGS AND CABLE ROUTE PROFILES. THESE WILL NEED TO BE REQUESTED FROM THE SERVICE PROVIDER AND REFERRED TO DURING THE DESIGN STAGE AND MADE AVAILABLE ON SITE TO SITE OPERATIVES PRIOR TO THE COMMENCEMENT OF ANY GROUNDWORKS.
 - b. SUITABLE INSTRUMENTS i.e. GROUND PENETRATING RADAR, CABLE LOCATING DEVICES WILL NEED TO BE USED TO DETERMINE THE LOCATION AND PRESENCE OF UNDERGROUND SERVICES/OBSTRUCTIONS BEFORE EXCAVATION WORKS PROCEED.
 - c. SAFE DIGGING TECHNIQUES (HAND EXCAVATION) AS DETAILED IN HS(G) 47 WILL BE NECESSARY TO DETERMINE THE EXACT POSITION OF BURIED SERVICES AND OBSTRUCTIONS BEFORE WORK CAN PROCEED.
 - d. ALL APPARATUS FOUND SHOULD BE CROSS REFERENCED WITH THE DETAILED RECORD PLANS. ANY ABNORMALITIES SHOULD BE REPORTED TO THE PROJECT MANAGER.
8. INFORMATION CONCERNING THE POSITION OF EXISTING UTILITY INFRASTRUCTURE HAS BEEN EXTRACTED FROM UTILITIES SURVEY RESULTS PROVIDED BY NTP REF NTP2007-001 AND RECORD MAPPING INFORMATION FROM UTILITIES STATUTORY UNDERTAKERS PROVIDED BY CLIENT:

| STATUTORY UNDERTAKER | MAPPING RECEIVED |
|----------------------|------------------|
| UKPN | 18/06/2021 |
| CADENT | 22/06/2021 |
| ANGLIAN WATER | 22/06/2021 |
| OPENREACH | 23/06/2021 |
| VIRGIN MEDIA | 30/06/2021 |

| P01 - FIRST ISSUE | SV | AD | 2021.08.05 |
|-------------------|-----|------|------------|
| Issued/Revision | By | Appd | YYYY.MM.DD |
| | SV | SV | 2021.08.05 |
| | Dwn | Dsgn | Chkd |
| | | | YYYY.MM.DD |

Issue Status

FOR INFORMATION

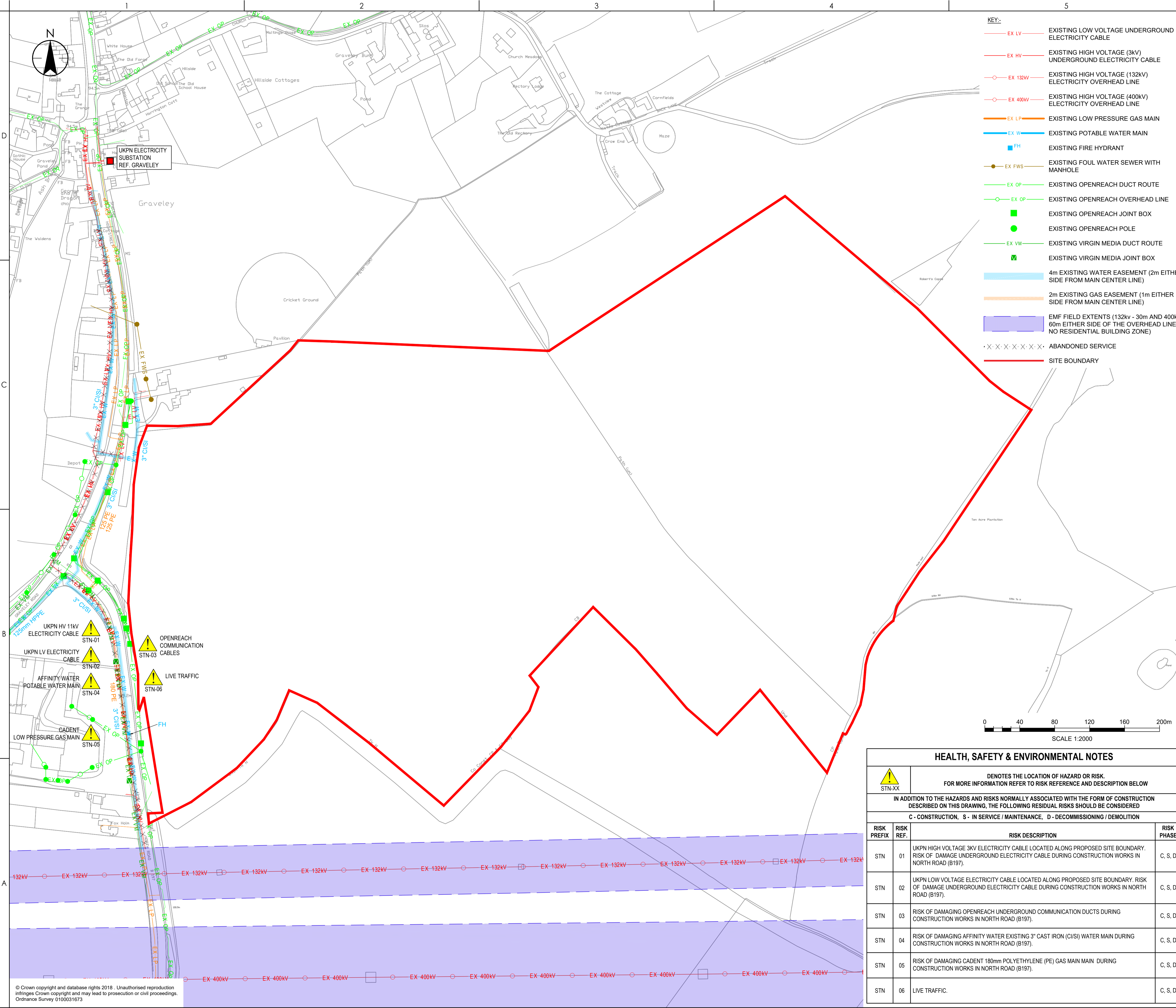
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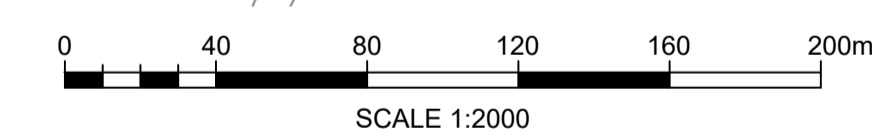
Client/Project
CROUDACE HOMES LIMITED
 NORTH STEVENAGE 61

Title
EXISTING UTILITIES CONSTRAINTS PLAN

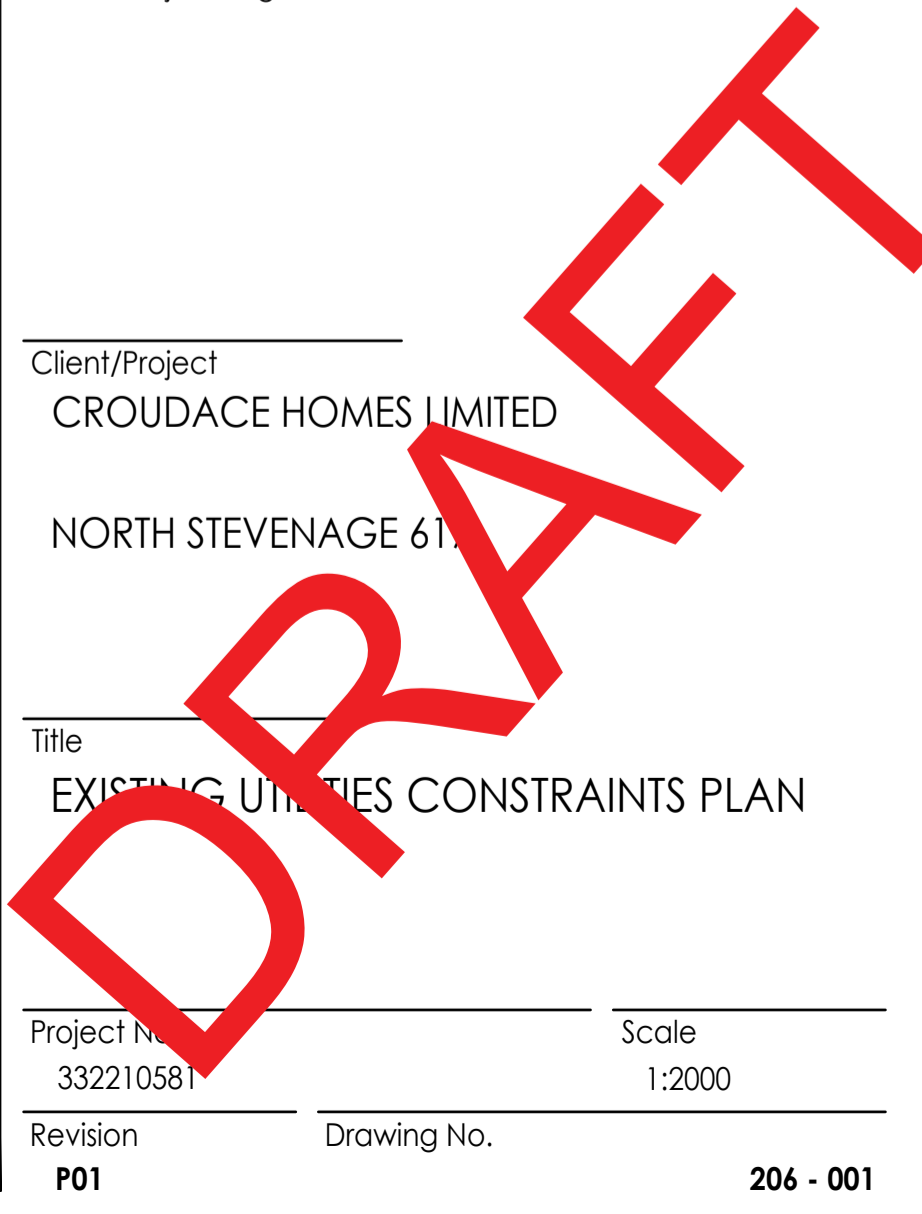
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| Project No. | Scale |
| 332210581 | 1:2000 |
| Revision | Drawing No. |
| P01 | |



- KEY:-**
- EX LV - EXISTING LOW VOLTAGE UNDERGROUND ELECTRICITY CABLE
 - EX HV - EXISTING HIGH VOLTAGE (3kV) UNDERGROUND ELECTRICITY CABLE
 - EX 132kV - EXISTING HIGH VOLTAGE (132kV) ELECTRICITY OVERHEAD LINE
 - EX 400kV - EXISTING HIGH VOLTAGE (400kV) ELECTRICITY OVERHEAD LINE
 - EX LP - EXISTING LOW PRESSURE GAS MAIN
 - EX W - EXISTING POTABLE WATER MAIN
 - FH - EXISTING FIRE HYDRANT
 - EX FWS - EXISTING FOUL WATER SEWER WITH MANHOLE
 - EX OP - EXISTING OPENREACH DUCT ROUTE
 - EX OP - EXISTING OPENREACH OVERHEAD LINE
 - EXISTING OPENREACH JOINT BOX
 - EXISTING OPENREACH POLE
 - EX VM - EXISTING VIRGIN MEDIA DUCT ROUTE
 - EXISTING VIRGIN MEDIA JOINT BOX
 - 4m EXISTING WATER EASEMENT (2m EITHER SIDE FROM MAIN CENTER LINE)
 - 2m EXISTING GAS EASEMENT (1m EITHER SIDE FROM MAIN CENTER LINE)
 - EMF FIELD EXTENTS (132kv - 30m AND 400kV 60m EITHER SIDE OF THE OVERHEAD LINE, NO RESIDENTIAL BUILDING ZONE)
 - ABANDONED SERVICE
 - SITE BOUNDARY



| HEALTH, SAFETY & ENVIRONMENTAL NOTES | | | |
|---|-----------|--|------------|
| DENOTES THE LOCATION OF HAZARD OR RISK. FOR MORE INFORMATION REFER TO RISK REFERENCE AND DESCRIPTION BELOW | | | |
| IN ADDITION TO THE HAZARDS AND RISKS NORMALLY ASSOCIATED WITH THE FORM OF CONSTRUCTION DESCRIBED ON THIS DRAWING, THE FOLLOWING RESIDUAL RISKS SHOULD BE CONSIDERED | | | |
| C - CONSTRUCTION, S - IN SERVICE / MAINTENANCE, D - DECOMMISSIONING / DEMOLITION | | | |
| RISK PREFIX | RISK REF. | RISK DESCRIPTION | RISK PHASE |
| STN | 01 | UKPN HIGH VOLTAGE 3KV ELECTRICITY CABLE LOCATED ALONG PROPOSED SITE BOUNDARY. RISK OF DAMAGE UNDERGROUND ELECTRICITY CABLE DURING CONSTRUCTION WORKS IN NORTH ROAD (B197). | C, S, D |
| STN | 02 | UKPN LOW VOLTAGE ELECTRICITY CABLE LOCATED ALONG PROPOSED SITE BOUNDARY. RISK OF DAMAGE UNDERGROUND ELECTRICITY CABLE DURING CONSTRUCTION WORKS IN NORTH ROAD (B197). | C, S, D |
| STN | 03 | RISK OF DAMAGING OPENREACH UNDERGROUND COMMUNICATION DUCTS DURING CONSTRUCTION WORKS IN NORTH ROAD (B197). | C, S, D |
| STN | 04 | RISK OF DAMAGING AFFINITY WATER EXISTING 3" CAST IRON (C/ISI) WATER MAIN DURING CONSTRUCTION WORKS IN NORTH ROAD (B197). | C, S, D |
| STN | 05 | RISK OF DAMAGING CADENT 180mm POLYETHYLENE (PE) GAS MAIN MAIN DURING CONSTRUCTION WORKS IN NORTH ROAD (B197). | C, S, D |
| STN | 06 | LIVE TRAFFIC. | C, S, D |



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