BETTS HYDRO
CONSULTING ENGINEERS

FORMER GLEN DIMPLEX
STONEY LANE
WHISTON

FLOOD RISK ASSESSMENT

For

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Taylor Wimpey

DECEMBER 2025

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EXECUTIVE SUMMARY

This Flood Risk Assessment was commissioned by Taylor Wimpey, referred to hereafter as 'the client'. This report has been prepared to support a planning application for the construction of 204no. residential dwellings at the Former Glen Dimplex, Stoney Lane, Whiston site. The proposals are classified as 'More Vulnerable' in Annex 3: Flood Risk Vulnerability Classification, within the National Planning Practice Framework. The Planning Practice Guidance confirms that more vulnerable development is appropriate when located within Flood Zone 1, providing there is no increase in flood risk elsewhere due to the proposals.

Consultation with the Environment Agency, United Utilities and Knowsley Metropolitan Borough Council have been undertaken. A response from Knowsley Metropolitan Borough Council is currently outstanding. The Environment Agency have not identified any historic flooding at or near to site, however United Utilities have identified modelled flood risk nearby.

The nearest Main River to the site is Whiston Brook which is located 130m south of the site. As the site is elevated relative to the Main River, it is understood that the fluvial flood risk is 'low'. Online mapping shows there to be an unnamed culverted watercourse which runs beneath the site, running from north to south. The Ordinary Watercourse leaves the southern boundary and is diverted around the adjacent St Edmunds Arrowsmith School, before discharging beneath the railway, into Whiston Brook.

The client has investigated the culverted watercourse crossing the site to its outfall into Whiston Brook. A review of onsite manhole MH1 (cover level 59.120mAOD, invert level 56.730mAOD, available depth 2.39m) confirms sufficient freeboard between the incoming pipe and cover level. Even under complete culvert blockage, water levels at the inlet would remain well below the manhole cover, resulting in no significant risk of manhole surcharge or surface water flooding at MH1. Any residual exceedance flows at MH1 would, given surrounding ground levels, route south and ultimately reconnect with the open channel section of Whiston Brook.

At present the site is at low risk of surface water flooding. There are isolated areas of medium and high probability, but these correspond with existing low-lying areas where ponding naturally occurs. To mitigate any potential residual flood risks, it is advised that external levels fall away from the proposed dwellings, to minimise the flood risk associated with overland flows. By keeping the Finished Floor Levels elevated relative to the externals (typically 150mm to 300mm), this should help create safe overland flood flow routes in the event of any source of flooding including fluvial, surface water and groundwater.

Post development, there would be the chance of increased risk associated with surface water unless appropriate management is implemented. A separate Drainage Management Strategy has been prepared, which will detail the drainage proposals. To summarise, the proposals are at 'low' flood risk from the key flood sources reviewed as part of this assessment and appropriate mitigation will be put in place to ensure that there is no increase in flood risk because of the proposals. This assessment has been prepared in consultation with the relevant interested parties. The report is commensurate with the scale and nature of the proposals and is appropriate with the Planning Practice Guidance.

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Specialist Software

- MicroDrainage WinDES (v.2020.1.3) – Calculation of Greenfield run-off volumes, rates of rainfall and stormwater storage estimates.

Abbreviations & Acronyms

AEP	Annual Exceedance Probability
CC	Climate Change
EA	Environment Agency
FRA	Flood Risk Assessment
KMBC	Knowsley Metropolitan Borough Council
LLFA	Lead Local Flood Authority
LPA	Local Planning Authority
mAOD	Metres Above Ordnance Datum
NPPF	National Planning Policy Framework
PFRA	Preliminary Flood Risk Assessment
PPG	Planning Practice Guidance
SFRA	Strategic Flood Risk Assessment
TWL	Top Water Level
UU	United Utilities

1.0 INTRODUCTION

1.1 Planning Policy Context

1.1.1 All forms of flooding and their impact on the natural and built environment are material planning considerations. The revised National Planning Policy Framework (NPPF) sets out the Government's objectives for the planning system, and how planning should facilitate and promote sustainable patterns of development, avoiding flood risk and accommodating the impacts of climate change.

1.1.2 Government policy with respect to development in flood risk areas is contained within the revised NPPF and the supporting Planning Practice Guidance (PPG) (refer to extracts in **Appendix A**). A Flood Risk Assessment (FRA) has been completed in accordance with the revised NPPF and the PPG to review all sources of flood risk both to and from the proposed development.

1.1.3 The proposals are classified as 'More Vulnerable' in Annex 3: Flood Risk Vulnerability Classification, within the National Planning Practice Framework. The PPG confirms that this type of land-use is appropriate for Flood Zone 1, providing there is no increase in flood risk elsewhere due to the proposals.

Sequential Testing

1.1.4 Updates to the NPPF (December 2024), along with recent appeal decisions have identified the requirement for focus on sequential testing future development sites in terms of the flood risks identified. *Paragraph 175 (NPPF, 2024)* states that:

> *"The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk)."*

1.1.5 Whilst the Local Planning Authority's/Lead Local Flood Authority's Strategic Flood Risk Assessment provides a starting point in terms of strategic assessment, where there is more up to date mapping which considers current and future flood risks, then this should also be assessed to steer future development to the most appropriate locations.

1.1.6 Recent updates to the PPG (September 2025), have noted that whilst the sequential testing is required for new development where flood risk potential is deemed high, there is a relaxation to the requirement for such being triggered, when it can be demonstrated that there will be no harm (through appropriate mitigation) because of the proposals. Paragraph 027 (PPG, 2025) states that:

> *"In applying paragraph 175 a proportionate approach should be taken. Where a site-specific flood risk assessment demonstrates clearly that the proposed layout, design, and mitigation measures would ensure that occupiers and users would remain safe from current and future surface water flood risk for the lifetime of the development (therefore addressing the risks*

identified e.g. by Environment Agency flood risk mapping), without increasing flood risk elsewhere, then the sequential test need not be applied."

1.1.7 In terms of the updated PPG (2025), there are two aspects to the revised PPG in terms of surface water triggering the Sequential Test. In principle most sites, where there are small areas of ponding generated by small catchments contained within the development site itself; then these will inherently be resolved by developing the site and considered appropriately through mitigation. Developing these sites and ensuring appropriate mitigation is in place, would in turn result in a reduction in flood risk to others, due to the formal drainage and attenuated runoff onsite.

1.1.8 It can also be acknowledged that where there are significant surface water flood-flow routes through sites, then whilst it is relatively easy to mitigate the risk onsite through levels design; the likelihood for is displacement in these circumstances would be greater. This would therefore have the potential to increase flood risk to others, as those flows would not be captured by the proposed site drainage system. In these cases, there is likely to be a requirement for a more detailed assessment to take place considering overland flows and how best to capture these within the future design, to evidence to the satisfaction of the EA/LLFA that there will be no adverse impact.

1.2 Site Context

1.2.1 This FRA has been prepared to support a planning application for the construction of 204no. residential dwellings. The proposals will be complete with access, car parking, external works, boundary fencing, external services, and drainage.

1.3 Consultation

1.3.1 The NPPF advises that Knowsley Metropolitan Borough Council (KMBC) as the Local Planning Authority (LPA) should consult with the EA who will provide advice and guidance on flood issues at a strategic level, and the Lead Local Flood Authority (LLFA) in relation to planning applications.

1.3.2 The preparation of this report has been undertaken in consultation with the Environment Agency (EA), United Utilities (UU) & Knowsley Metropolitan Borough Council (KMBC). The consultation responses can be seen in **Appendix B**, **C**, **D** respectively.

2.0 EXISTING SITE LOCATION

2.1 Location

2.1.1 The site is located off Stoney Lane in Rainhill, in Prescot. The nearest Ordnance Survey National Grid Reference is E: 347921, N: 391590 and the nearest postcode is L35 2XW (see Location Plan in **Appendix E**). The whole site covers 5.815ha and is edged in red in **Figure 1**.

2.1.2 In terms of the surrounding land-use, the site is bounded to the north by Whiston Hospital and Whiston Ambulance Station, with residential properties located off Stoney Lane, Cartmel Drive, Kendal Drive and Newby Avenue. To the east of the site is Elis (Laundry Centre). To the south lies St Edmund Arrowsmith Catholic Academy with associated playgrounds and grass fields, together with residential development off Cumber Lane. The west of the site is bounded by further residential development. This is illustrated in **Figure 1** below.

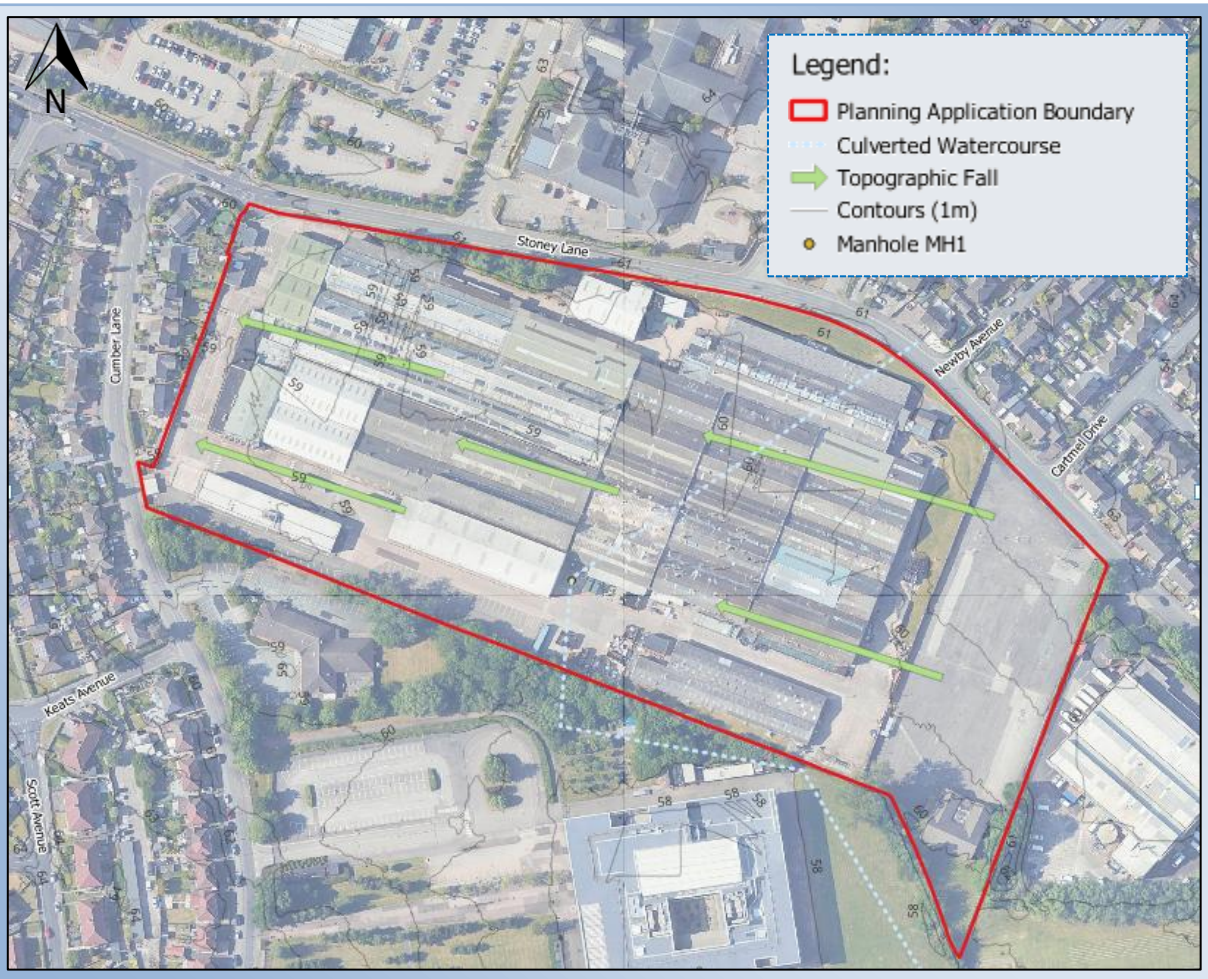

Figure 1: Existing Features Plan (Google Maps, 2025)

2.2 Existing and Historical Land Use

2.2.1 The site currently consists of industrial and manufacturing premises formerly occupied by Glen Dimplex. No other historic uses have been identified during the preparation of this report.

2.3 Topography

2.3.1 A topographic survey has been undertaken and is included in **Appendix F** for completeness. To summarise, the site falls from a high point of 62.82mAOD in the north-eastern corner, located adjacent to Stoney Lane to a low point of 58.40mAOD in the south-western corner. Generally, the levels onsite fall from the east towards the western boundary of the site. The arrows shown in **Figure 1** indicate the general fall across the site.

3.0 DEVELOPMENT PROPOSALS

3.1 Nature of the Development

3.1.1 This planning application is for the construction of 204no. residential dwellings. The proposals will be complete with access, footpaths, car parking, external works, landscaping, boundary fencing, and drainage. The Appraisal Site Layout is included in **Figure 2** (see full plan in **Appendix G**).

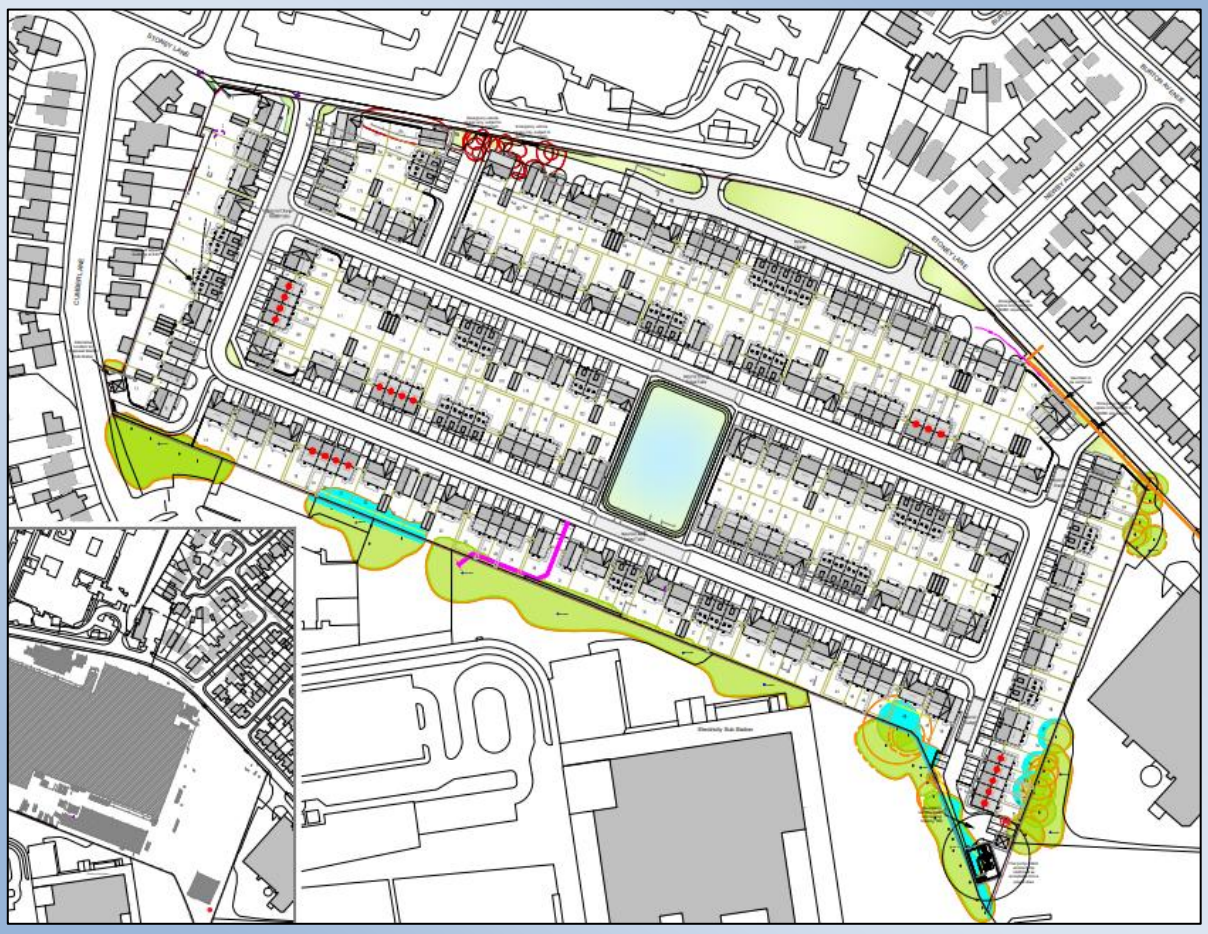

Figure 2: Proposed Site Layout (Banners Gate, 2025)

3.1.2 To satisfy NPPF guidance, it would be recommended that the proposed residential development avoids medium and high-risk of flooding areas where practical. Where residential development is required within these medium and high locations, then the Sequential test may be required, especially where sites have not been allocated as part of the local plan.

3.1.3 Based on the current planning proposals there will be some overlap between development and areas at medium and high risk (see overlay subsequently). It is however understood that surface water run-off currently impacting these locations would ultimately be generated within the development site itself. Developing the site and ensuring appropriate mitigation is in place, would inherently resolve this and in turn result in a reduction in flood risk to others, due to the formal drainage and attenuated run-off onsite.

3.1.4 Review of the United Utilities sewer records has identified an existing combined sewer, foul water sewer and surface water sewer located within the south-western corner of the site. There is a requirement to provide maintenance offsets from the public sewers, where they are located onsite. The specific offset needs to be discussed with UU as they vary depending on the size of the infrastructure and the depth at which it is laid. Should diversion be required to facilitate the development proposals, then early discussion with UU will identify where this is considered acceptable.

3.1.5 The LLFA may require a 4-6m offset to be maintained from the top of bank of the onsite Culverted Watercourse. It is recommended that this watercourse is retained where at all possible post-development, and where required maintenance is undertaken to ensure these are suitable for continued use post-development. Based on the planning layout, a 6m offset will be maintained post-development

3.1.6 The total site covers 5.648ha and is understood to be 100% impermeable at present. Based upon the planning layout, the impermeable area will decrease because of the change in use to 2.940ha. Betterment in the form of permeable surfaces as opposed to external hardstanding should also be considered to reduce the surface water run-off. Opportunities to provide soft landscaping on the site would provide added benefits to water quality and ecology.

3.1.7 National and local policy identifies that SUDS should be incorporated into new development where feasible to manage surface water run-off generated. A separate Drainage Management Strategy is being prepared to support the planning application which will detail the drainage strategy proposed (refer to HYD1128_GLEN.DIMPLEX _DMS).

4.0 SOURCES OF FLOOD RISK

4.1 Fluvial Flood Risk

4.1.1 Information relating to flood risk at the site has been obtained from the Environment Agency and the Gov.uk website. The Environment Agency Flood Map for Planning indicates that the site is located within Flood Zone 1 (Rivers). This is reiterated within the October 2012 Knowsley Metropolitan Borough Council Level 2 Strategic Flood Risk Assessment (Figure B2-2 Environment Agency Flood Zones).

4.1.2 Flood Zone 1 is an area considered to be at little or no flood risk from rivers and/or the sea (as defined by the EA). Flood Zone 2 is an area at 'low' to 'medium' risk of flooding from fluvial/tidal sources (at risk in the undefended 1 in 1000yr return period event). Flood Zone 3 is an area at 'medium' to 'high' flood risk (at risk in the undefended 1 in 100yr fluvial return period event or the undefended 1 in 200yr tidal event).

4.1.3 Recent updates to the Flood Map for Planning mapping now also shows a projection for climate change up to 2070-2125, this includes the Flood Zones plus climate change data (indicated in orange on mapping). This new climate change projection shows how the combined extent of Flood Zones 2 and 3 could increase with climate change over the next century, ignoring any existing flood defences. The Flood Map for Planning (Climate Change 2070 - 2125). The site remains outside these Flood Zones.

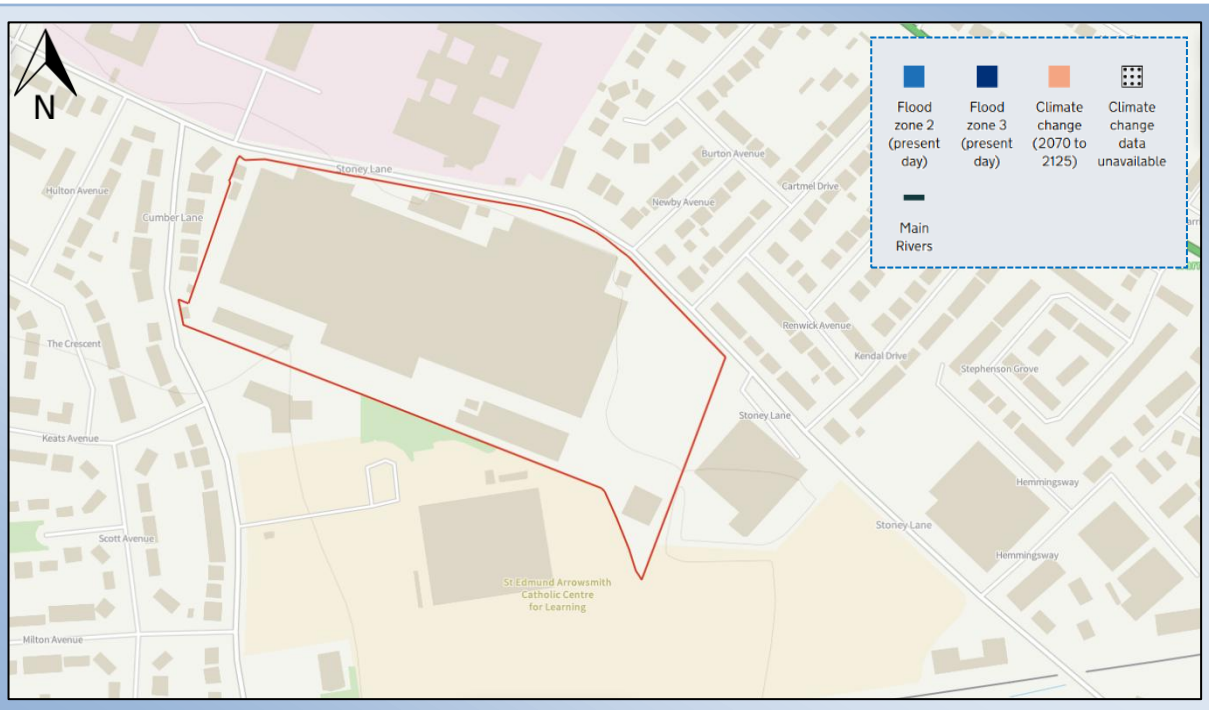

Figure 3: Fluvial/Tidal Flood Zone Map for Planning Extract (GOV.UK, 2025)

Main Rivers

4.1.4 The nearest Main River to the site is Whiston Brook, which is located 130m south of the site. As the site is elevated relative to the Main River, it is understood that the fluvial flood risk is 'low' from this source.

4.1.5 This is supported by the Flood Map for Planning, which demonstrates that the development proposals are located wholly within Flood Zone 1. The Long-Term Risk of Flooding from Rivers and Sea mapping also supports this by showing the site is at little/no fluvial risk (see **Appendix B**).

Ordinary Watercourses

4.1.6 The online mapping shows there to be an unnamed Ordinary Watercourse which runs beneath the site within a culverted pipe network. The Ordinary Watercourse runs from north though site, before leaving via the southern boundary. It is diverted around the adjacent St Edmunds Arrowsmith School to the south, before discharging beneath the railway, into Whiston Brook.

4.1.7 Watercourses with catchments greater than 2km^2 are typically considered as part of the national flood mapping. Due to catchment size of the Ordinary Watercourse, the potential flood risks associated will not have been accurately quantified by the EA or LLFA. Therefore, a qualitative assessment has been undertaken to determine the potential risks associated with possible blockage and exceedance in this instance.

4.1.8 The client has undertaken an investigation of the culverted watercourse within the site and towards the outfall (refer to **Appendix I**). We have considered as part of the qualitative assessment the potential for residual flooding associated with blockage culvert along its routing through the site; the most likely locations for exceedance to occur would be at manhole/inspection chambers through the site given its culverted nature.

4.1.9 Should a blockage occur within the culvert onsite then the most likely location for exceedance would be Manhole ref: MH1. At Ref:MH1, the existing cover level is 59.761mAOD and the invert level of the incoming pipe is 56.730mAOD, giving an available depth within the chamber of 3.03m. There is sufficient freeboard above the incoming and outgoing pipes that as a result, in a blockage scenario, the manhole itself would provide a substantial depth of flooding internally before the chamber is exceeded. The risk from manhole surcharge in this instance because of culvert blockage would be minimal.

4.1.10 In terms of the residual risk associated with exceedance at this point Manhole ref:MH1, given the ground levels, any exceedance flows would continue to route in a south ultimately reconnecting with the open channel section of Whiston Brook away from the proposed development.

4.2 Tidal Flood Risk

4.2.1 The Mersey Estuary is located around 10km south of the site. The tidal flood risks associated are therefore 'low'. This is supported by the EA's Flood Map for Planning and Risk of Flooding from Rivers and Sea mapping datasets, which show the site in Flood Zone 1 and at little/no risk from tidal sources.

4.3 Flood Risk Vulnerability Classification and Flood Zone Compatibility

4.3.1 The proposals are classified as 'More Vulnerable' in Annex 3: Flood Risk Vulnerability Classification within the National Planning Policy Framework. The Planning Practice Guidance confirms that this type of land-use is appropriate for Flood Zone 1, providing there is no increase in flood risk elsewhere due to the proposals.

4.4 Surface Water Flood Risk

4.4.1 Surface water flooding occurs when rainwater is unable to drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. The updated Flood Map for Planning (FMfP) data (25th March 2025), includes new published information relating to surface water flooding. The Surface Water Flood Map for Planning data includes present-day chance of flooding and does not currently show climate change scenarios for surface water.

4.4.2 Considering the surface water Flood Map for Planning, the chance of surface water flooding could be more than 3.3% AEP (1 in 30) each year towards the north of the site, northeast and south of the site associated with low-lying areas of hardstanding (see mapping snapshots in **Appendix B**).

4.4.3 The updated FMfP mapping also shows that there are parts of the site to have a chance of flooding equal to the 1% AEP (1 in 100yr) chance of flooding each year. This is considered to represent the medium risk scenario, and the areas again are located to the north of the site, north-east and south of the site, with new areas of surface water flooding located along the access with Stoney Lane and to the south-west of site (see **Figure 4**). There are also significant areas onsite shown to be at risk within the 0.1% AEP (1 in 1000yr) chance of flooding each year (low risk) with coverage around the existing build infrastructure onsite.

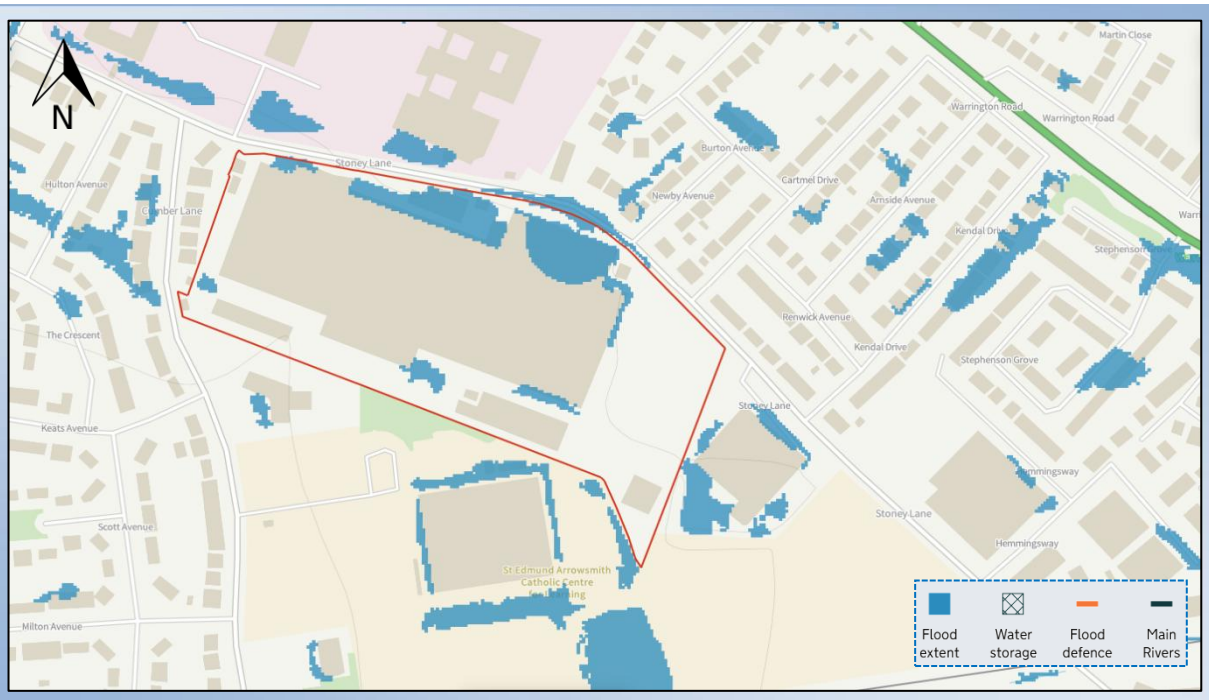

Figure 4: FMfP Surface Water 1 in 100yr Annual likelihood of Flooding (EA, 2025)

4.4.4 Any run-off conveying through the site at present should be catered for through continued routing in an appropriate manner (whether that be above ground via overland flow routes or below ground through appropriate interception and routing), this will ensure no increased run-off elsewhere because of the proposals.

4.4.5 The EA also provide further information in terms of surface water flooding in the form of the Long-Term Risk of Flooding from Surface Water (RoFSW) mapping, extracts from which have been included subsequently and discussed (**Figure 5** & **Figure 6**). Whilst this data is not intended for use in planning, the guidance does say that it can be used as part of initial risk assessment works.

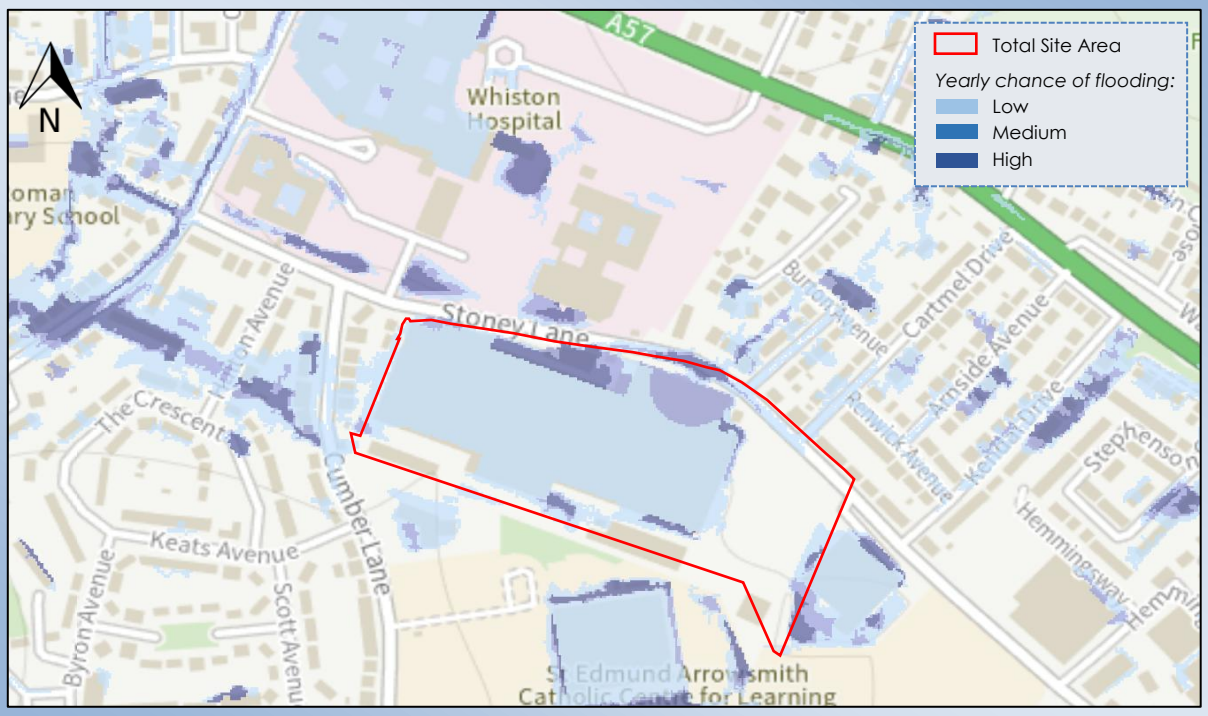

Figure 5: Long-Term 'Current' Surface Water Flood Risk Map Extract (GOV.UK, 2025)

4.4.6 The EA RoFSW dataset shows the current present-day risk from surface water, represented on a 2m resolution grid. The risk is displayed as one of three likelihood categories:

- High (greater than or equal to 1 in 30 or 3.3% chance of flooding for any given year);
- Medium (less than 1 in 30 or 3.3%, but greater than or equal to 1 in 100 or 1% chance of flooding in any given year), and;
- Low (less than 1 in 100 or 1% chance of flooding, but greater than or equal to 1 in 1000 or 0.1% chance of flooding in any given year).

4.4.7 As indicated in **Figure 5**, the site is at predominantly low chance of surface water flooding. There is however an area towards the north, north-east and south is shown to have medium to high chance of surface water flooding. These extents mimic that shown on the Surface Water Flood Map for Planning noted previously.

4.4.8 Along with current chance of surface water flooding, future climate chance scenarios have also been provided as part of the recently updated and published EA mapping. This updated future scenario indicates the predicted impacts of climate change on future flood risk.

4.4.9 The climate change allowances are based on the latest UK Climate Projections (UKCP18) from the Met Office, using the Representative Concentration Pathway (RCP) 8.5. A near-term epoch (2040 – 2060 "2050s" epoch) and central allowances are used.

4.4.10 As indicated in **Figure 6**; areas of low chance are present within the centre of the site. There are also areas of medium and high chance of surface water food risk located within the site boundary. The possible flood extents considering climate change are slightly greater than those indicated by the current scenario (**Figure 5** previously).

4.4.11 Depths of flooding during the Long-Term 'Future' Surface Water Flood Risk are typically to a depth of 300mm, with depths of flooding within the northern extents of the site occurring to depths of 900mm.

4.4.12 In terms of safeguarding any residual risks onsite post-development, it is advised that external levels fall away from the proposed dwellings, to minimise the flood risk from a variety of sources. By keeping the Finished Floor Levels elevated relative to the externals (typically 150mm-300mm to conform to Building Regs), this should help create safe overland flood flow routing in the event of flooding that could lead to overland flows.

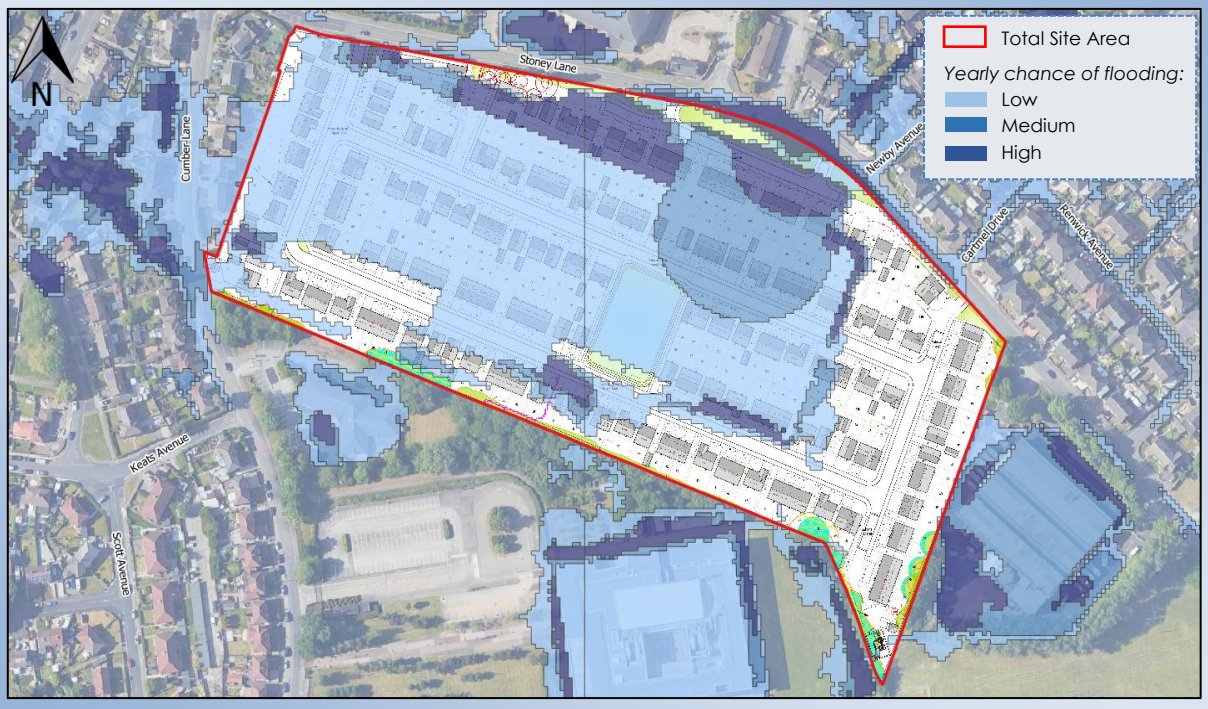

Figure 6: Long-Term 'Future' Surface Water Flood Risk Map (GOV.UK, 2025)

4.4.13 Any run-off conveying through the site at present should be catered for through continued routing in an appropriate manner, this will ensure no increased run-off elsewhere because of the proposals.

4.4.14 Potential residual flood risk from surface water will be managed, post-development through the implementation of a sustainable surface water management regime, to manage surface water run-off generated by the proposed development in a sustainable and efficient manner.

Critical Drainage Areas

4.4.15 The Town and Country Planning (General Permitted Development) (England) Order 2015 introduces the concept of Critical Drainage Areas (CDAs) as:

"An area within Flood Zone 1 which has critical drainage problems, and which has been notified to the local planning authority by the Environment Agency"

4.4.16 In effect, land within a Critical Drainage Area either contributes to flooding at a critical location or acts as a pathway for the water that contributes to that flooding. Measures taken to manage flood risk within a CDA, such as to promote infiltration-based SuDS or reduce surface water runoff to Greenfield rates, would therefore contribute towards a reduction in flood risk in that location.

4.4.17 A review of the October 2012 Knowsley Metropolitan Borough Council Level 2 Strategic Flood Risk Assessment has identified Prescot (where the site is located) as being located within a Critical Drainage Area.

4.4.18 Development within a Critical Drainage Area (CDA) is subject to significantly stricter water management requirements than standard national standards. The overriding aim is to ensure that the proposals do not increase flood risk either on-site or elsewhere and, where possible, achieves a net reduction.

Pluvial (Overland run-off) Flood Risk

4.4.19 Intense rainfall that is unable to soak into the ground or enter drainage systems can run-off land and result in flooding. Local topography and the land-use can have a strong influence on the direction and depth of flow.

4.4.20 To the north of the site is bounded by residential dwellings on Stoney Lane, Newby Avenue and Cartmel Avenue as well as emergency service areas such as Whiston Ambulance Station and Whiston Hospital. These developed areas are likely to be served by formal drainage infrastructure, thus reducing the risk to the site from pluvial run-off.

4.4.21 Furthermore, the site is bounded to the north by a boundary wall, with levels ranging from circa. 59.87mAOD in the north-west to 62.61mAOD towards the north-east. Site levels generally fall towards the south by 1-2m. Therefore, any existing surface water flooding is restricted from entering the site from the north, and any surface water flooding within the site is similarly prevented from draining northwards.

4.4.22 To the east of the site is Elis (Laundry Centre). The ground levels for the areas surrounding this development are circa. 300mm lower than the western boundary of the site in this instance and is also understood to be served by drainage infrastructure. Therefore, pluvial run-off towards the site is unlikely to occur.

4.4.23 To the south of the site lies St Edmund's Arrowsmith Catholic Academy. Ground levels surrounding this are circa. 1m below the southern boundary extents and therefore any pluvial run-off will be routed away and not impinge on the site in this instance.

4.4.24 The proposals will likely come with changes in existing ground levels and undoubtedly the inclusion of a new drainage system; these will sufficiently mitigate against pluvial risk onsite.

4.4.25 The volume and rate of overland flow from land can be exacerbated if development increases the percentage of impermeable areas. Any overland flows generated by the development must be carefully controlled; safe avenues directing overland flow away from adjacent development are advised.

4.4.26 An appropriate surface water management regime will be implemented post-development, to cater for impermeable areas on the site, meaning a reduction in the overland flows generated on the site.

Sewer Flood Risk

4.4.27 In urban areas, rainwater is frequently drained into surface water sewers or sewers containing both surface and wastewater known as 'combined sewers'. Foul water flooding often occurs in areas prone to overland flow and can result when the sewer is overwhelmed by heavy rainfall and will continue until the water drains away.

4.4.28 Consultation with United Utilities has been undertaken and has identified there is modelled flood risk within the vicinity of the proposed development. UU records show a combined, foul and surface water sewer located within the south-west of site (see **Appendix C** for correspondence and sewer records).

4.4.29 Regardless, it is advised that external levels fall away from the proposed developments to minimise the flood risk from a variety of sources. By keeping the Finished Floor Levels elevated relative to the externals, this should help create an overland flood flow route in the event of a breach or any other source of overland flooding.

4.5 Groundwater Flood Risk

4.5.1 High groundwater levels are usually the key source of groundwater flooding, which occurs when excess water emerges at the grounds surface (or within manmade underground structures such as basements). Groundwater flooding is often more insistent than surface water flooding and would typically last for weeks/months rather than days meaning the result to property is often more severe.

4.5.2 In general terms groundwater flooding can occur from three main sources:

- If groundwater levels are naturally close to the surface, then this can present a flood risk during times of intense rainfall.
- Seepage and percolation occur were embankments above ground level hold water. In these cases, water travels through the embankment material and emerges on the opposite side of the embankment.
- Groundwater recovery/rebound occurs where the water table has been artificially depressed by abstraction. When the abstraction stops the water table makes a recovery to its original level. There is the potential for groundwater flooding in low

lying areas where groundwater levels have been depressed below their pre-pumping conditions, where these were at or close to ground level.

4.5.3 The mapping data for groundwater shows that the site is underlain by a Principal Aquifer, meaning that the rock layers in this area may support water supplies and/or river base flow on a strategic scale. The BGS mapping goes on to state that the site is also underlain with Secondary (undifferentiated) superficial deposits (this refers to rock deposits with variable permeability and storage properties).

4.5.4 The online BGS mapping also provides information on Groundwater Vulnerability, this mapping illustrates the vulnerability of the groundwater to a pollutant discharged at ground level. The mapping uses hydrological, geological, hydrogeological and soil properties within a one-kilometre, square grid. In this case, the site area is shown to be located primarily within a medium-risk area, which means that it is in an area with a medium likelihood of a pollutant reaching the groundwater source (i.e., the vulnerability).

4.5.5 The Knowsley Metropolitan Borough Council Level 2 Strategic Flood Risk Assessment (SFRA) (2012) and does not have any detailed groundwater information and susceptibility to groundwater flooding is not included within the online maps (mapping extracts in **Appendix H**).

4.5.6 No historical flooding at or within proximity of the site due to groundwater related sources has however been identified as part of this assessment, including review of The Knowsley Metropolitan Borough Council Level 2 Strategic Flood Risk Assessment (SFRA) (2012) and Knowsley Metropolitan Borough Council Local Flood Risk Management Strategy (2017 (see mapping extracts in **Appendix H**).

4.5.7 Irrespective, it is advised that external levels fall away from the proposed developments to minimise the flood risk from a variety of sources. By keeping the Finished Floor Levels elevated relative to the externals, this should help create an overland flood flow route in the event of any source of overland flow impacting the site.

Groundwater Source Protection Zones

4.5.8 In addition to the aquifer bedrock designations, mapping is available that shows the extent of groundwater Source Protection Zones (SPZs). The SPZs show the risk of contamination from any activities that might cause pollution in the area. Sources include wells, boreholes, and springs.

4.5.9 The maps show the extents of three main zones: the inner shown in red (SPZ1), outer shown in green (SPZ2) and total catchment shown in blue (SPZ3). The mapping (see extract in **Figure 7**) shows that the whole site is located within SPZ3, which is defined as the total area needed to support the abstraction or discharge from the protected groundwater source.

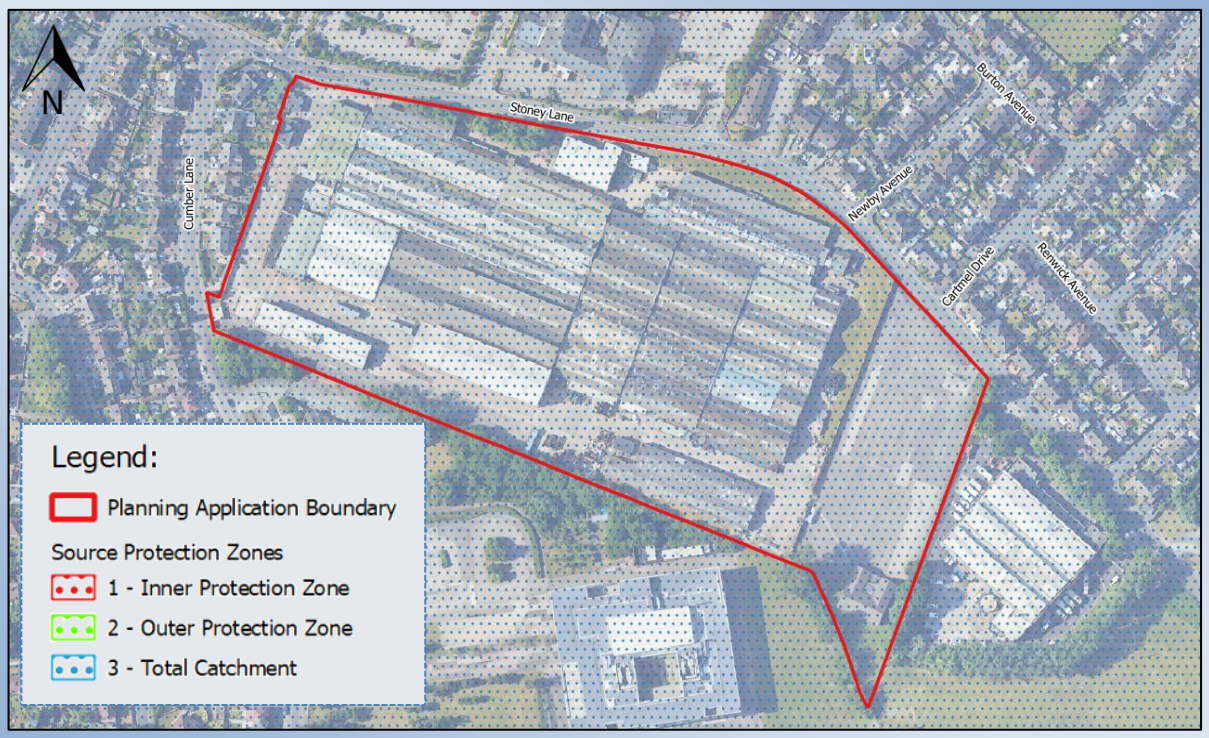

Figure 7: Groundwater Source Protection Zones Map Extract (Betts Hydro, 2025)

4.5.10 In terms of sites located within Groundwater Source Protection Zones, a key consideration is water quality and ensuring any run-off discharging from the site into the ground (either directly or via surface water bodies), is to the highest possible standard. Using Sustainable Drainage Systems (SuDS) that provide water quality improvements for areas of development that potentially act as a source of contamination, can help control any adverse impact on water quality.

4.5.11 In terms of the proposed access and car parking areas, these are likely to have a higher possibility of contaminants in comparison to the roof areas, but the use of a suitable SuDS treatment train would reduce the potential contaminants in any run-off generated and ultimately discharging in this location. A separate Drainage Statement has been prepared (*Refer to HYD1128_GLEN.DIMPLEX_DMS*) to support the proposals, which details the means and methods for managing surface water run-off generated by the proposed development to ensure that it does not increase flood risk elsewhere.

4.6 Artificial Sources of Flood Risk

4.6.1 National policy states that an FRA should consider the potential risks from a variety of other flood sources including artificial sources (such as risks from reservoirs and canals).

Reservoirs

4.6.2 The Environment Agency recognises reservoirs as bodies of water over 25,000cu.m and the long-term flood mapping is included in **Appendix B**. The mapping shows that the site is not susceptible to flooding should a failure occur in a nearby reservoir.

4.6.3 Irrespective, it is advised that external levels fall away from the proposed dwellings, to minimise the flood risk from a variety of sources. By keeping the Finished Floor Levels elevated relative to the external site levels, this should help create an overland flow route in the event of a breach or any source of reservoir flooding.

Canals

4.6.4 There are no canals located within proximity of the site (the closest being the Sankey (St Helens Canal over 7km north-east of the site), therefore the flood risk to the site from canals is 'very low'.

4.6.5 Irrespective, it is advised that external levels fall away from the proposed developments, to minimise the flood risk from a variety of sources. By keeping the Finished Floor Levels elevated relative to the externals, this should help create an overland flood flow route in the event of a breach or any other source of canal flooding.

4.7 Historical and Anecdotal Flooding Information

4.7.1 Consultation with Knowsley Metropolitan Borough Council (KMBC) has been undertaken. At this time of writing A response is currently outstanding.

4.7.2 Consultation with the Environment Agency (EA) & United Utilities (UU) has also been carried out for this application. The Environment Agency have not identified any historic flooding at or near the site, however United Utilities have identified modelled flood risk within the vicinity of the proposed development. The consultation responses can be seen in **Appendix B** & **C** respectively.

4.8 Flood Risk Mitigation Measures & Residual Risks

4.8.1 The development area is located wholly within Flood Zone 1 and is at little risk of fluvial/tidal flooding. To observe a conservative approach however, mitigation measures have been proposed below to safeguard against other potential residual sources of flood risk. The mitigation measures also consider the uncertainties of climate change in accordance with the revised NPPF and PPG.

Mitigation Measures

4.8.2 It is advised that external levels fall away from the proposed development, to minimise the flood risk from a variety of sources. By keeping the Finished Floor Levels elevated relative to the externals (typically 150 to 300mm where practical), should help create a safe overland flood flow route externally in the event of a flooding associated with a variety of sources.

4.8.3 The LLFA may require a 4-6m offset to be maintained from the top of bank of the onsite Culverted Watercourse. It is recommended that this watercourse is retained where at all possible post-development, and where required maintenance is undertaken to ensure these are suitable for continued use post-development. Based on the planning layout, a 6m offset is not currently maintained post-development.

4.8.4 Any run-off conveying through the site at present should be catered for through continued routing in an appropriate manner, this will ensure no increased run-off

elsewhere because of the proposals. Safe avenues directing overland flow away from any existing/proposed buildings is advised.

4.8.5 There is a requirement to provide maintenance offsets from the public sewers, where they are located onsite. The specific offset needs to be discussed with UU as they vary depending on the size of the infrastructure and the depth at which it is laid. Should diversion be required to facilitate the development proposals, then early discussion with UU will identify where this is considered acceptable.

4.8.6 To minimise the flood risk to neighbouring properties, it is recommended that the surface water run-off generated by the proposals be managed effectively with the peak rates of run-off being restricted to the equivalent of the pre-development situation (with betterment where required).

4.8.7 The proposed onsite surface water drainage system will need to be sized to contain exceedance from storm events up to and including the 1 in 100yr return period storm event with a 45% allowance for climate change being contained onsite. A separate Drainage Management Strategy has been prepared which will detail the drainage proposals (refer to *HYD1128_GLEN.DIMPLEX _DMS_CON*).

4.8.8 As with any drainage system, blockages within either the foul or surface water system have the potential to cause flooding or disruption. It is important that should any drainage systems not be offered for adoption then an appropriate maintenance regime should be scheduled with a suitably qualified management company for these private drainage systems.

Residual Risks

4.8.9 If an extreme rainfall event exceeds the design criteria for the drainage system it is likely that there will be some overland flows that are unable to enter the system, it is important that these potential overland flows are catered for within the development site if the capacity of the drainage system is exceeded, or in the event of a system failure.

5.0 SUMMARY AND CONCLUSIONS

5.1 The proposals are classified as 'More Vulnerable' in Annex 3: Flood Risk Vulnerability Classification, within the National Planning Practice Framework. The Planning Practice Guidance confirms that more vulnerable development is appropriate when located within Flood Zone 1 providing there is no increase in flood risk elsewhere due to the proposals.

5.2 Consultation with the Environment Agency, United Utilities and Knowsley Metropolitan Borough Council has been undertaken. Consultation with Knowsley Metropolitan Borough Council (KMBC) is currently outstanding at the time of writing. Consultation with the Environment Agency (EA) & United Utilities (UU) has also been carried out for this application. The Environment Agency have not identified any historic flooding at or near the site, however United Utilities have identified modelled flood risk within the vicinity of the proposed development

5.3 This report has reviewed all sources of flood risk both to and resulting from the proposed development site. The nearest Main River to the site is which is located 130m south of the site. As the site is elevated relative to the Main River, it is understood that the fluvial flood risk is 'low' from this source. The online mapping shows there to be an unnamed Ordinary Watercourse which runs beneath the site within a culverted pipe network. The Ordinary Watercourse runs from north though site, before leaving via the southern boundary. It is diverted around the adjacent St Edmunds Arrowsmith School to the south, before discharging beneath the railway, into Whiston Brook.

5.4 The client has undertaken an investigation of the culverted watercourse within the site and towards the outfall. We have considered as part of the qualitative assessment the potential for residual flooding associated with blockage culvert along its routing through the site; the most likely locations for exceedance to occur would be at manhole/inspection chambers through the site given its culverted nature.

5.5 Should a blockage occur within the culvert onsite then the most likely location for exceedance would be Manhole ref: MH1. At Ref:MH1, the existing cover level is 59.761mAOD and the invert level of the incoming pipe is 56.730mAOD, giving an available depth within the chamber of 3.03m. There is sufficient freeboard above the incoming and outgoing pipes that as a result, in a blockage scenario, the manhole itself would provide a substantial depth of flooding internally before the chamber is exceeded. The risk from manhole surcharge in this instance because of culvert blockage would be minimal.

5.6 In terms of the residual risk associated with exceedance at this point Manhole ref:MH1, given the ground levels, any exceedance flows would continue to route in a south ultimately reconnecting with the open channel section of Whiston Brook away from the proposed development.

5.7 At present, the site is at predominantly low chance of surface water flooding. There is however an area towards the north, north-east and south is shown to have medium to high chance of surface water flooding. Post development, there would be the chance

of increased risk associated with surface water unless appropriate management is implemented. A separate Drainage Management Strategy has been prepared, which will detail the drainage proposals (refer to HYD1128_GLEN.DIMPLEX_DMS).

5.6 To mitigate any potential residual flood risks, it is advised that external levels fall away from the proposed dwellings, to minimise the flood risk associated with overland flows. By keeping the Finished Floor Levels elevated relative to the externals (typically 150mm to 300mm), this should help create safe overland flood flow routes in the event of any source of flooding including fluvial, surface water and groundwater.

5.7 To summarise, the proposals are at 'low' flood risk from the key flood sources reviewed as part of this assessment and appropriate mitigation will be put in place to ensure that there is no increase in flood risk because of the proposals. This assessment has been prepared in consultation with the relevant interested parties. The report is commensurate with the scale and nature of the proposals and is appropriate with the Planning Practice Guidance.

6.0 RECOMMENDATIONS

6.1 It is advised that external levels fall away from the proposed development, to minimise the flood risk from a variety of sources. By keeping the Finished Floor Levels elevated relative to the externals (typically 150 to 300mm where practical), should help create a safe overland flood flow route externally in the event of a flooding associated with a variety of sources.

6.2 Any run-off conveying through the site at present should be catered for through continued routing in an appropriate manner, this will ensure no increased run-off elsewhere because of the proposals. Safe avenues directing overland flow away from any existing/proposed buildings is advised

6.3 To minimise the flood risk to the neighbouring properties it is recommended that the surface water run-off generated by the proposals be managed effectively with the peak rates of run-off being restricted to the equivalent of the pre-development situation (with betterment where required). A separate Drainage Management Strategy will be prepared in due course to support the planning application which will detail the preliminary drainage strategy (refer to HYD1128_GLEN.DIMPLEX_DMS).

6.4 The proposed onsite surface water drainage system will need to be sized to contain exceedance from storm events up to and including the 1 in 100yr return period storm event with a 45% allowance for climate change being contained onsite. A separate Drainage Management Strategy has been prepared which will detail the drainage proposals (refer to HYD1128_GLEN.DIMPLEX _DMS_CON)

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APPENDIX A: NPPF & PPG EXTRACTS

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14. Meeting the challenge of climate change, flooding and coastal change

161. The planning system should support the transition to net zero by 2050 and take full account of all climate impacts including overheating, water scarcity, storm and flood risks and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the conversion of existing buildings; and support renewable and low carbon energy and associated infrastructure.

Planning for climate change

162. Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating and drought from rising temperatures[61]. Policies should support appropriate measures to ensure the future health and resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.

163. The need to mitigate and adapt to climate change should also be considered in preparing and assessing planning applications, taking into account the full range of potential climate change impacts.

164. New development should be planned for in ways that:

    a) avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through incorporating green infrastructure and sustainable drainage systems; and

    b) help to reduce greenhouse gas emissions, such as through its location, orientation and design. Any local requirements for the sustainability of buildings in plans should reflect the Government's policy for national technical standards.

165. To help increase the use and supply of renewable and low carbon energy and heat, plans should:

    a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, and their future re-powering and life extension, while ensuring that adverse impacts are addressed appropriately (including cumulative landscape and visual impacts);

[61] In line with the objectives and provisions of the Climate Change Act 2008.

b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and

c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.

166. In determining planning applications, local planning authorities should expect new development to:

a) comply with any development plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and

b) take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

167. Local planning authorities should also give significant weight to the need to support energy efficiency and low carbon heating improvements to existing buildings, both domestic and non-domestic (including through installation of heat pumps and solar panels where these do not already benefit from permitted development rights). Where the proposals would affect conservation areas, listed buildings or other relevant designated heritage assets, local planning authorities should also apply the policies set out in chapter 16 of this Framework.

168. When determining planning applications for all forms of renewable and low carbon energy developments and their associated infrastructure, local planning authorities should:

a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and give significant weight to the benefits associated with renewable and low carbon energy generation and the proposal's contribution to a net zero future;

b) recognise that small-scale and community-led projects provide a valuable contribution to cutting greenhouse gas emissions;

c) in the case of applications for the repowering and life-extension of existing renewable sites, give significant weight to the benefits of utilising an established site.

169. Once suitable areas for renewable and low carbon energy have been identified in plans, local planning authorities should expect subsequent applications for commercial scale projects outside these areas to demonstrate that the proposed location meets the criteria used in identifying suitable areas.

Planning and flood risk

170. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where

development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.

171. Strategic policies should be informed by a strategic flood risk assessment, and should manage flood risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding, and take account of advice from the Environment Agency and other relevant flood risk management authorities, such as lead local flood authorities and internal drainage boards.

172. All plans should apply a sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change – so as to avoid, where possible, flood risk to people and property. They should do this, and manage any residual risk, by:

a) applying the sequential test and then, if necessary, the exception test as set out below;

b) safeguarding land from development that is required, or likely to be required, for current or future flood management;

c) using opportunities provided by new development and improvements in green and other infrastructure to reduce the causes and impacts of flooding, (making as much use as possible of natural flood management techniques as part of an integrated approach to flood risk management); and

d) where climate change is expected to increase flood risk so that some existing development may not be sustainable in the long-term, seeking opportunities to relocate development, including housing, to more sustainable locations.

173. A sequential risk-based approach should also be taken to individual applications in areas known to be at risk now or in future from any form of flooding, by following the steps set out below.

174. Within this context the aim of the sequential test is to steer new development to areas with the lowest risk of flooding from any source. Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding. The strategic flood risk assessment will provide the basis for applying this test.

175. The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk).

176. Applications for some minor development and changes of use[62] should also not be subject to the sequential test, nor the exception test set out below, but should still meet the requirements for site-specific flood risk assessments set out in footnote 63.

[62] This includes householder development, small non-residential extensions (with a footprint of less than 250m^2) and changes of use; except for changes of use to a caravan, camping or chalet site, or to a mobile home or park

177. Having applied the sequential test, if it is not possible for development to be located in areas with a lower risk of flooding (taking into account wider sustainable development objectives), the exception test may have to be applied. The need for the exception test will depend on the potential vulnerability of the site and of the development proposed, in line with the Flood Risk Vulnerability Classification set out in Annex 3.

178. The application of the exception test should be informed by a strategic or site-specific flood risk assessment, depending on whether it is being applied during plan production or at the application stage. To pass the exception test it should be demonstrated that:

a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; and

b) the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

179. Both elements of the exception test should be satisfied for development to be allocated or permitted.

180. Where planning applications come forward on sites allocated in the development plan through the sequential test, applicants need not apply the sequential test again. However, the exception test may need to be reapplied if relevant aspects of the proposal had not been considered when the test was applied at the plan-making stage, or if more recent information about existing or potential flood risk should be taken into account.

181. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment[63]. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) it can be demonstrated that:

a) within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;

b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;

c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;

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home site, where the sequential and exception tests should be applied as appropriate.

[63] A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

d) any residual risk can be safely managed; and

e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

182. Applications which could affect drainage on or around the site should incorporate sustainable drainage systems to control flow rates and reduce volumes of runoff, and which are proportionate to the nature and scale of the proposal. These should provide multifunctional benefits wherever possible, through facilitating improvements in water quality and biodiversity, as well as benefits for amenity. Sustainable drainage systems provided as part of proposals for major development should:

a) take account of advice from the Lead Local Flood Authority;

b) have appropriate proposed minimum operational standards; and

c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development.

Coastal change

183. In coastal areas, planning policies and decisions should take account of the UK Marine Policy Statement and marine plans. Integrated Coastal Zone Management should be pursued across local authority and land/sea boundaries, to ensure effective alignment of the terrestrial and marine planning regimes.

184. Plans should reduce risk from coastal change by avoiding inappropriate development in vulnerable areas and not exacerbating the impacts of physical changes to the coast. They should identify as a Coastal Change Management Area any area likely to be affected by physical changes to the coast, and:

a) be clear as to what development will be appropriate in such areas and in what circumstances; and

b) make provision for development and infrastructure that needs to be relocated away from Coastal Change Management Areas.

185. Development in a Coastal Change Management Area will be appropriate only where it is demonstrated that:

a) it will be safe over its planned lifetime and not have an unacceptable impact on coastal change;

b) the character of the coast including designations is not compromised;

c) the development provides wider sustainability benefits; and

d) the development does not hinder the creation and maintenance of a continuous signed and managed route around the coast[64].

[64] As required by the Marine and Coastal Access Act 2009.

186. Local planning authorities should limit the planned lifetime of development in a Coastal Change Management Area through temporary permission and restoration conditions, where this is necessary to reduce a potentially unacceptable level of future risk to people and the development.

How can neighbourhood plans and neighbourhood development/community right to build orders take account of coastal change?

In any instance where a Neighbourhood Area is proposed in a Coastal Change Management Area, careful attention should be paid to the guidance on what development would be appropriate in such an area, including whether time-limiting planning permissions are needed. The local planning authority will need to be consulted about existing and anticipated levels of risk, and the types of development that may or may not be appropriate.

See related policy in paragraphs 170 to 173 of the National Planning Policy Framework (https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change).

Paragraph: 076 Reference ID: 7-076-20220825

Revision date: 25 08 2022

Flood Zone and flood risk tables

- Table 1: Flood Zones
- National Planning Policy Framework Annex 3 - Flood risk vulnerability classification (https://www.gov.uk/guidance/national-planning-policy-framework/annex-3-flood-risk-vulnerability-classification)
- Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Paragraph: 077 Reference ID: 7-077-20220825

Revision date: 25 08 2022

Table 1: Flood Zones

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 Medium Probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)

Flood Zone	Definition
Zone 3a High Probability	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding. Reference should therefore also be made to the Strategic Flood Risk Assessment (https://www.gov.uk/guidance/local-planning-authorities-strategic-flood-risk-assessment) when considering location and potential future flood risks to developments and land uses.

Paragraph: 078 Reference ID: 7-078-20220825

Revision date: 25 08 2022

Table 2: Flood risk vulnerability and flood zone 'incompatibility'

Flood Zones	**Flood Risk Vulnerability Classification**				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	**X**	Exception Test required	✓	✓
Zone 3b *	Exception Test required *	**X**	**X**	**X**	✓ *

Key:

✓ Exception test is not required

X Development should not be permitted

Notes to table 2:

- This table does not show the application of the Sequential Test which should be applied first to guide development to the lowest flood risk areas; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and Exception Tests do not need to be applied to those developments set out in National Planning Policy Framework footnote 56 (https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change). The Sequential and Exception Tests should be applied to 'major' and 'non major' development;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

"†" In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

APPENDIX B: EA INFORMATION & CORRESPONDENCE

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Liam Davies

From: Liam Davies
Sent: 24 October 2025 10:13
To: inforequests.gmmc@environment-agency.gov.uk
Subject: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Flood Risk Information Request – Products 4, 5, 6, & 7 [Filed 24 Oct 2025 10:12]
Attachments: Location Plan.pdf

Categories: Filed by Mail Manager

To whom it may concern,

Former Glen Dimplex, Stoney Lane, Whiston

Please could you confirm whether you have any information (where available, Products 4, 5, 6, & 7) that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached), including details of historical flooding and specific drainage requirements; this would be greatly appreciated. If there are any other specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind regards

Liam Davies BA MSc
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

liamdavies@betts-associates.co.uk
www.betts-associates.co.uk

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SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL

Liam Davies

From: Greater Manchester, Merseyside and Cheshire Enquiries <inforequests.gmmc@environment-agency.gov.uk>
Sent: 31 October 2025 08:05
To: Liam Davies
Subject: Request for information - Ref: EIR2025/37531 [Filed 31 Oct 2025 08:23]
Attachments: MRC2GJC18N48.pdf

Categories: Filed by Mail Manager

Dear Liam Davies,

I am writing in response to your request for information, received 24 October 2025, regarding Request for Flood risk assessment data (product 4). Customer request reference MRC2GJC18N48.

We respond to requests for information under the Freedom of Information Act 2000 (FOI) and Environmental Information Regulations 2004 (EIR).

There is no detailed modelling for this site, we have provided a detailed flood map.

We hold no record of flooding in this area.

However, this does not mean flooding has not occurred in the past or that it will not flood in future.

There are no flood defences in the vicinity of the site.

There are no 2D levels available for this site.

We recommend that you also contact United Utilities and Lead Local Flood Authority Knowsley Council,

who may hold additional information (the former especially in relation to sewer flooding.

Lead Local Flood Authority Knowsley Council is responsible for issues relating to surface water and hold information on surface water flooding.

For further surface information: Surface water map - Check your long term flood risk - GOV.UK

For further information on your property's flood risk, visit:

Check Your Long Term Flood Risk: Check the long term flood risk for an area in England - GOV.UK

Check for Flooding: Check for flooding in England - GOV.UK

Sign up for flood warnings: Sign up for flood warnings - GOV.UK

Flood Map for Planning: https://flood-map-for-planning.service.gov.uk/

For additional flood risk information, advice and support in your area, please visit: https://thefloodhub.co.uk/

For more information on how the rivers and see dataset is used and its limitations, we recommend you visit How to use rivers and sea data - Flood map for planning - GOV.UK

Please refer to the Open Government Licence which explains the permitted use of this information.

Rights of appeal

If you are not satisfied with our decision, you can contact us within two calendar months to ask for the decision to be reviewed. We will then conduct an internal review of our response to your request and give you our decision in writing within 40 working days.

If you are not satisfied with the outcome of the internal review, you can then make an appeal to the Information Commissioner Office, the statutory regulator for EIR and FOI. The address is: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire. SK9 5AF.

Tel: 0303 123 1113 (local rate) or 01625 545 745 (national rate) | Fax: 01625 524 510 Email: casework@ico.org.uk | Website: www.ico.org.uk

Yours sincerely,

Lauren Blackley

GMMC Area Customers and Engagement Team

Environment Agency

Please tell us how we did

To help improve your experience as a customer we are currently gathering feedback. If you would like to take part in a short customer satisfaction survey, please click the link below:

Environment Agency FOI Customer Satisfaction Survey

Liam Davies

From:	Get flood risk information for planning <get.flood.risk.information.for.planning@notifications.service.gov.uk>
Sent:	24 October 2025 10:10
To:	Liam Davies
Subject:	Confirmation of request for flood risk data. Your reference number MRC2GJC18N48 [Filed 24 Oct 2025 10:10]
Categories:	Filed by Mail Manager

GOV·UK

Dear Liam Davies,

Thank you for ordering flood risk data.

Location data requested for: 348024,391523 easting and northing coordinates.

Your reference number is: MRC2GJC18N48.

You should receive your flood risk data by email within 20 working days.

You should not submit another request for data for the same location after you have placed an order. We will not action a request for the same location if the email address is the same. If you request the same data twice, it will not speed up your order. If you have any questions about your order, please use the contact details below.

Contact us

Do not reply to this email. This inbox is not checked regularly.

If you have any questions about your order, or no longer need the data, contact the Greater Manchester Merseyside and Cheshire Environment Agency team at

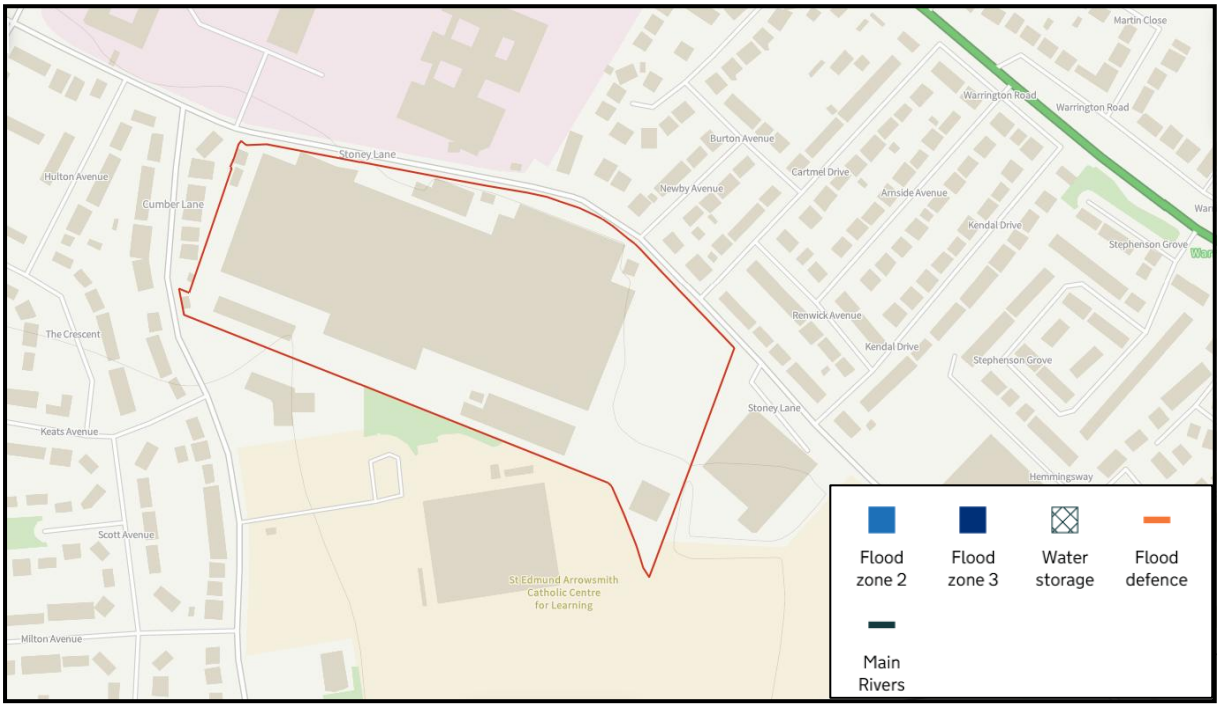
inforequests.gmmc@environment-agency.gov.uk. Make sure you include your reference number.

Regards,

Flood map for planning service
Environment Agency
https://flood-map-for-planning.service.gov.uk/

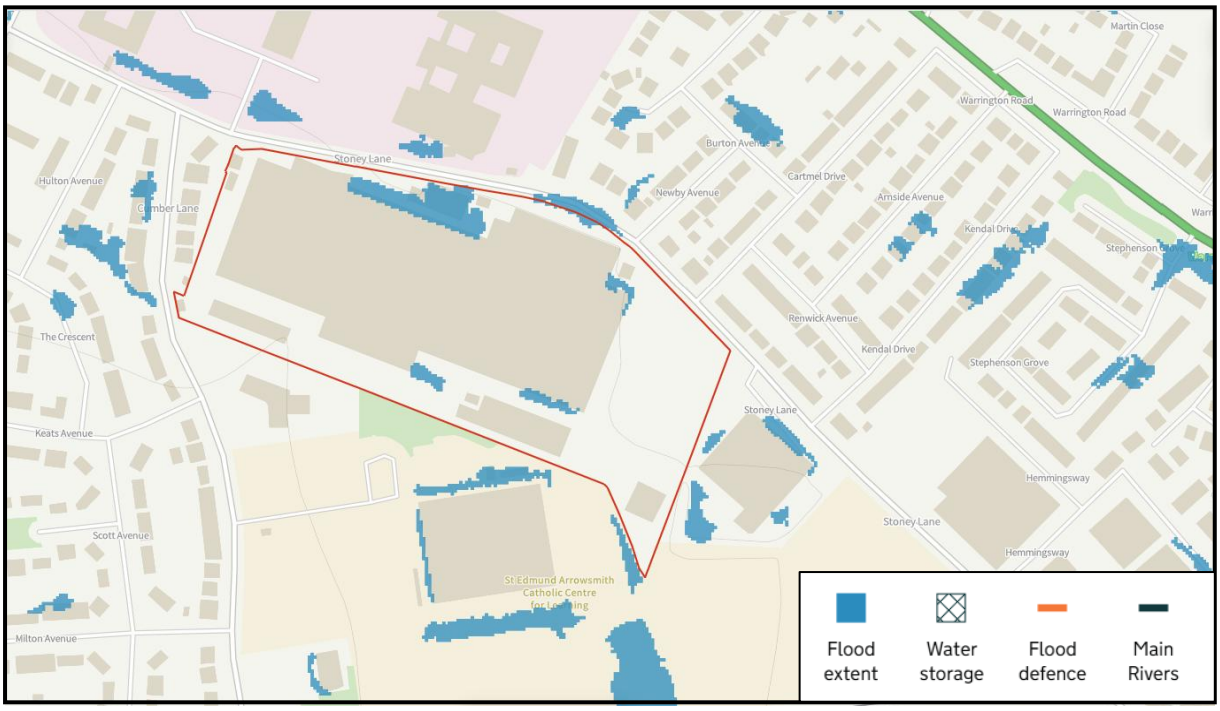
FLOOD MAP FOR PLANNING

Flood Zones – Present Day

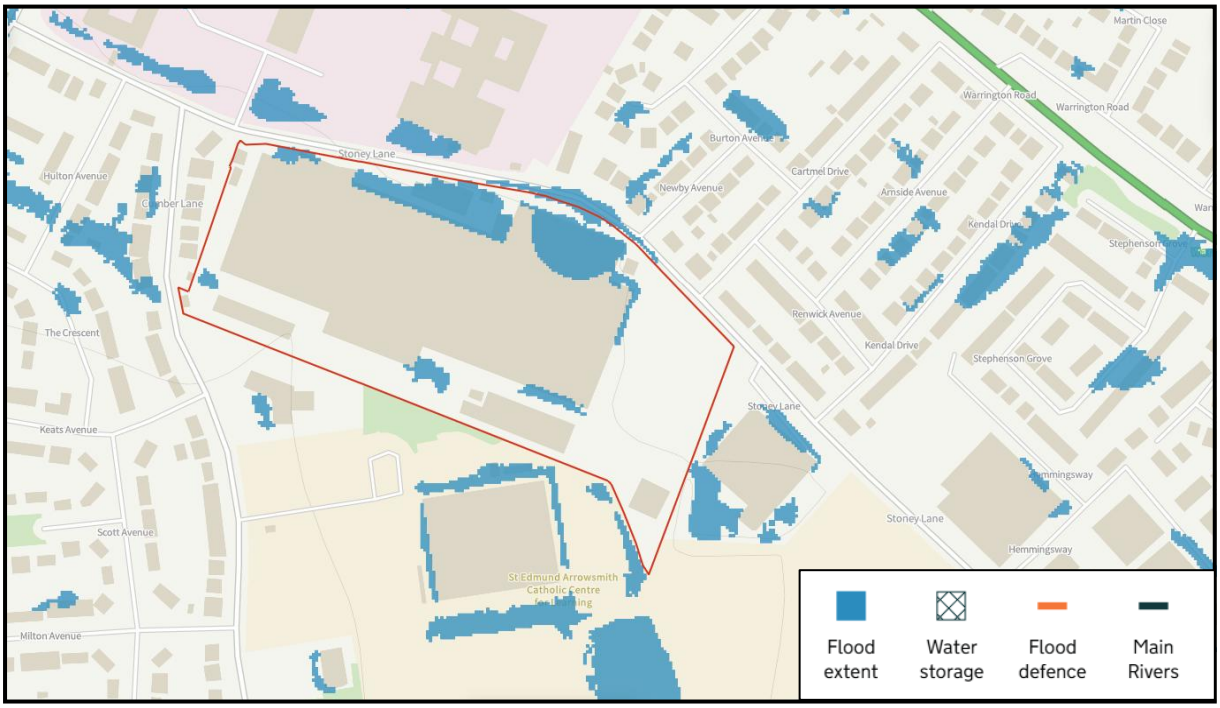


Flood Zones – Future

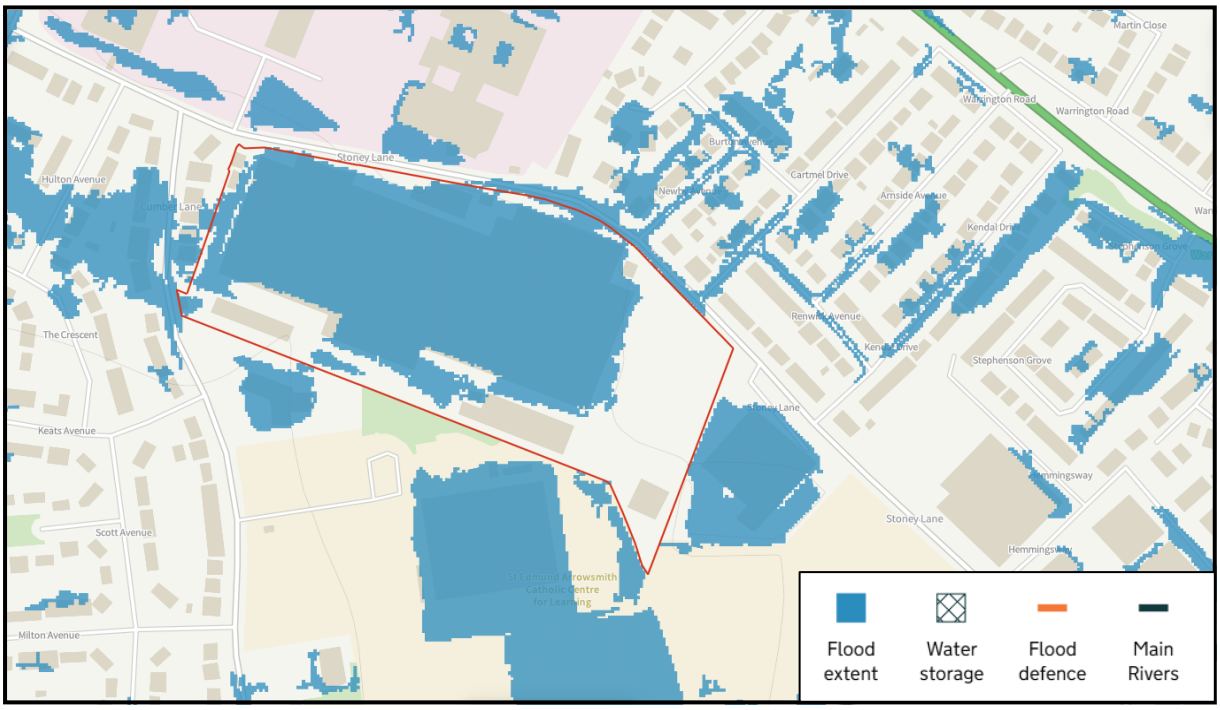
Surface Water Annual Likelihood of Flooding – 1 in 30yr



Surface Water Annual Likelihood of Flooding – 1 in 100yr



Surface Water Annual Likelihood of Flooding – 1 in 1000yr

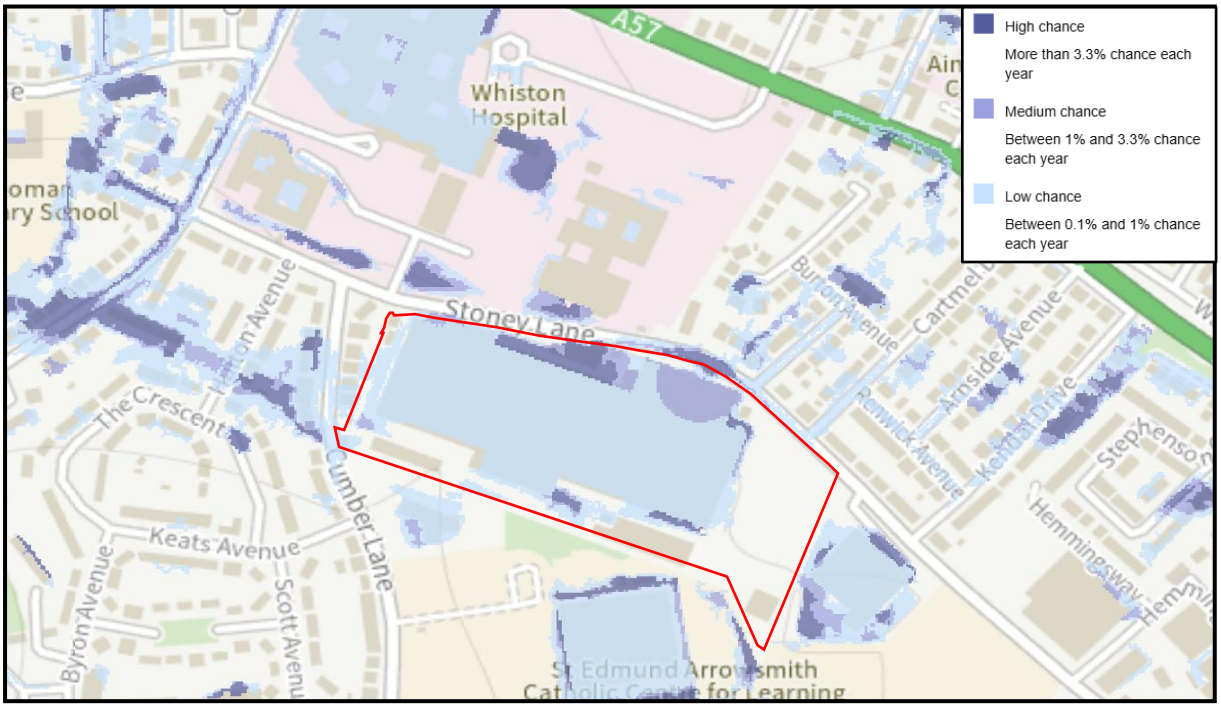


LONG TERM RISK OF FLOODING MAPPING

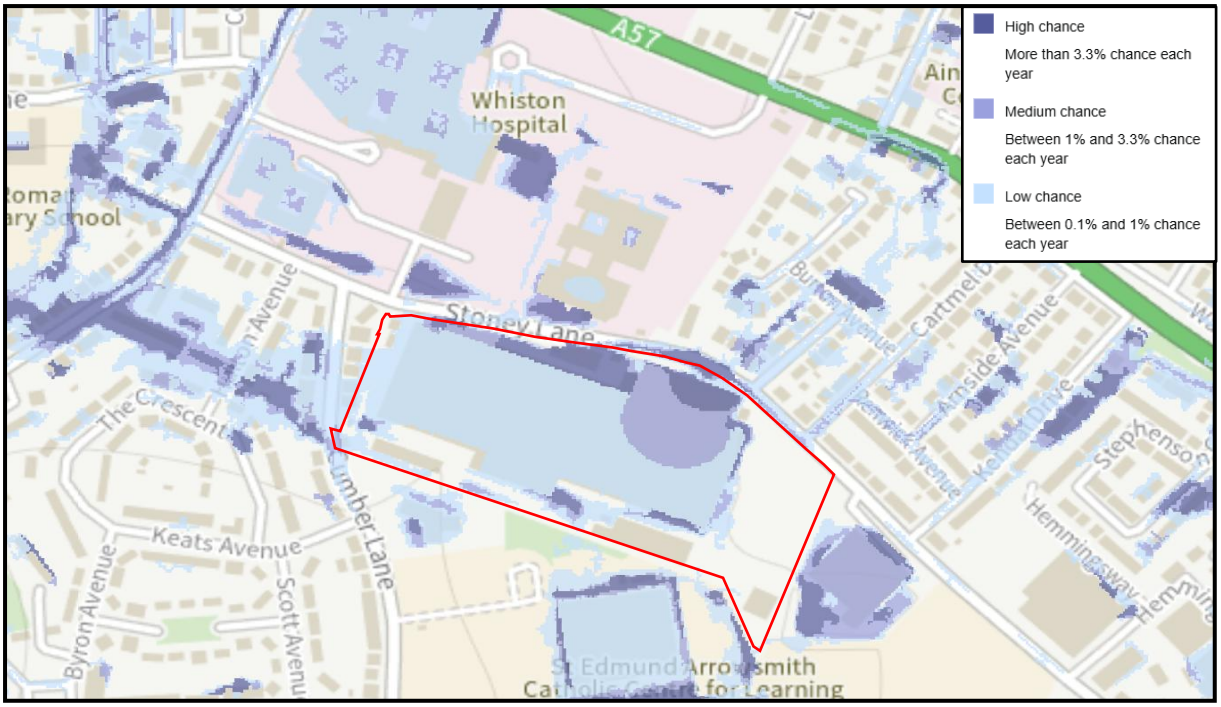
Rivers or Sea – Current

Rivers or Sea – Future (2036-2069)

Surface Water – Current



Future (2040-2060)



Long Term Flood Risk - Reservoirs

APPENDIX C: UU CORRESPONDENCE

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Liam Davies

From: wastewaterdeveloperservices@uuplc.co.uk
Sent: 03 November 2025 10:25
To: Liam Davies
Subject: RE: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Sewer Flood Risk Information Request [Filed 03 Nov 2025 10:26]

Categories: Filed by Mail Manager

Good Morning Liam,

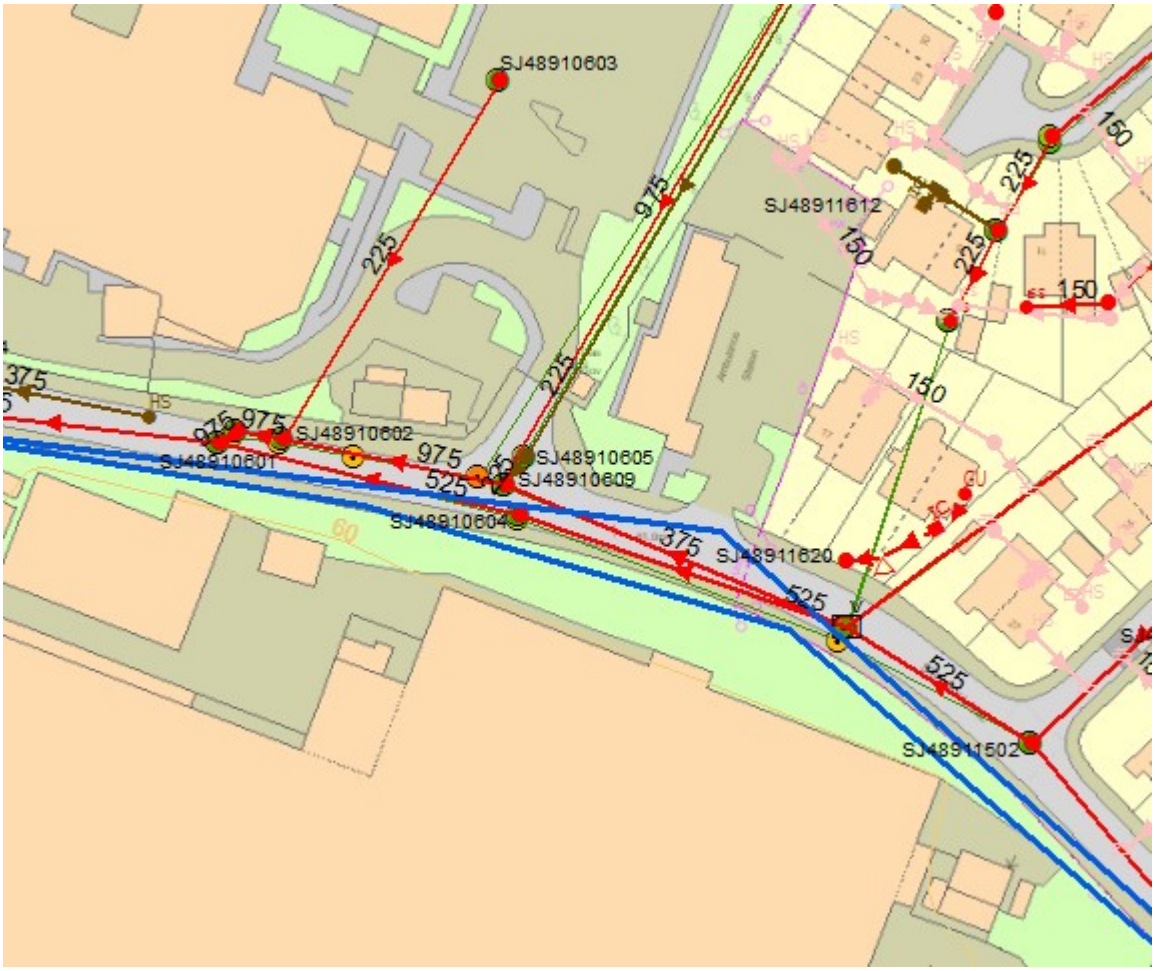
I can confirm that we have modelled flood risk within the vicinity of the proposed development.

Please note that our modelling data is indicative, and only representative of the 1:100year storm event.

United Utilities Water Limited (UUW) can only record and check flooding events which are reported to us, and we must comply with our Regulators instructions on the qualification of flooding events.

Our response does not include:

- any sewer flooding events caused by blockages or collapses which are the result of third-party actions, natural events, or other actions over which UUW has no control and not a facet of sewer capacity; or
- any historical sewer flooding events that have been resolved from investment in our infrastructure.



Thanks

Shoaib Tauqeer
Developer Engineer
Developer Services & Metering
M: 01925 429087
unitedutilities.com

If you have received a great service today why not tell us?
Visit: unitedutilities.com/wow

---------- Original Message ----------
From: wastewaterdeveloperservices@uuplc.co.uk [wastewaterdeveloperservices@uuplc.co.uk]
Sent: 24/10/2025 10:22
To: liamdavies@betts-associates.co.uk
Subject: RE: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Sewer Flood Risk Information Request

Good Morning,

Your enquiry has been logged and sent to our engineer Shoaib Tauqeer and his contact number is 01925 429087. Our service Level agreement is to respond to you within 5 working days.

Many thanks

Laura Owens
Customer Advisor Advanced
Developer Services & Metering
Customer Services
T: 0345 026 8989 option 4
unitedutilities.com

If you feel you have received a good service from myself, please can you take two minutes to fill in the survey below. This will be much appreciated

Visit: *https://unitedutilities.thewowawards.co.uk/nominate*

---------- Original Message ----------
From: Liam Davies [liamdavies@betts-associates.co.uk]
Sent: 24/10/2025 10:17
To: wastewaterdeveloperservices@uuplc.co.uk
Subject: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Sewer Flood Risk Information Request

To whom it may concern,

Former Glen Dimplex, Stoney Lane, Whiston

We have recently been instructed to prepare a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached). Please could you confirm whether you have any record of sewer flooding impacting on or within proximity of the site?

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind regards

Liam Davies BA MSc

Graduate Flood Risk Analyst

BETTS HYDRO

Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY

Chester +44 (0)1244 289041

liamdavies@betts-associates.co.uk

www.betts-associates.co.uk

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Registered in England and Wales. Registered No 6559020

www.unitedutilities.com
www.unitedutilities.com/subsidiaries

Liam Davies

From: Liam Davies
Sent: 24 October 2025 10:18
To: 'wastewaterdeveloperservices@uuplc.co.uk'
Subject: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Sewer Flood Risk Information Request [Filed 24 Oct 2025 10:18]
Attachments: Location Plan.pdf

Categories: Filed by Mail Manager

To whom it may concern,

Former Glen Dimplex, Stoney Lane, Whiston

We have recently been instructed to prepare a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached). Please could you confirm whether you have any record of sewer flooding impacting on or within proximity of the site?

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind regards

Liam Davies BA MSc
Graduate Flood Risk Analyst

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liamdavies@betts-associates.co.uk
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APPENDIX D: LPA/LLFA CORRESPONDENCE

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Liam Davies

From: Liam Davies
Sent: 17 November 2025 14:51
To: 'LLFA@knowsley.gov.uk'
Subject: RE: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Historic Flood Risk and Drainage Information Request [Filed 17 Nov 2025 14:50]

Importance: High

Categories: Filed by Mail Manager

Good Afternoon,

Apologies if I am mistaken, but I believe I am still awaiting a response to my request for Flood Risk and Drainage Information Request submitted on 24th October 2025 for the above-named site.

Please can you inform me when I can expect to receive a response, and I hope to hear from you in due course!

Kind regards

Liam Davies BA MSc
Graduate Flood Risk Analyst

BETTS HYDRO
Consulting Engineers

Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire, CH5 2LY
Chester +44 (0)1244 289041

liamdavies@betts-associates.co.uk
www.betts-associates.co.uk

CIVIL | STRUCTURAL | GEO-ENVIRONMENTAL | HYDROLOGY | FLOOD RISK MANAGEMENT
SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL

From: Liam Davies
Sent: Friday, October 24, 2025 10:15 AM
To: LLFA@knowsley.gov.uk
Subject: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Historic Flood Risk and Drainage Information Request [Filed 24 Oct 2025 10:15]

To whom it may concern,

Former Glen Dimplex, Stoney Lane, Whiston

Please could you confirm whether you have any information that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached), including details of historical flooding and specific drainage requirements; this would be greatly appreciated. If there are any other specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind regards

Liam Davies BA MSc
Graduate Flood Risk Analyst

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Chester +44 (0)1244 289041

liamdavies@betts-associates.co.uk
www.betts-associates.co.uk

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SUDS | STRUCTURAL SURVEYS | PARTY WALL DUTIES | INFILTRATION | GEOTECHNICAL

Liam Davies

From: Liam Davies
Sent: 24 October 2025 10:16
To: 'LLFA@knowsley.gov.uk'
Subject: HYD1128 Former Glen Dimplex, Stoney Lane, Whiston - Historic Flood Risk and Drainage Information Request [Filed 24 Oct 2025 10:15]
Attachments: Location Plan.pdf

Categories: Filed by Mail Manager

To whom it may concern,

Former Glen Dimplex, Stoney Lane, Whiston

Please could you confirm whether you have any information that you feel would be valuable to a Flood Risk Assessment and Drainage Management Strategy for the above site (location plan attached), including details of historical flooding and specific drainage requirements; this would be greatly appreciated. If there are any other specific requirements that you require in a scope of works for this site, please can you advise at this stage so that it can be fully incorporated into the proposals at an early stage.

Please do not hesitate to contact me on the details below to discuss further should you require additional information or clarification.

Kind regards

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APPENDIX E: LOCATION PLAN

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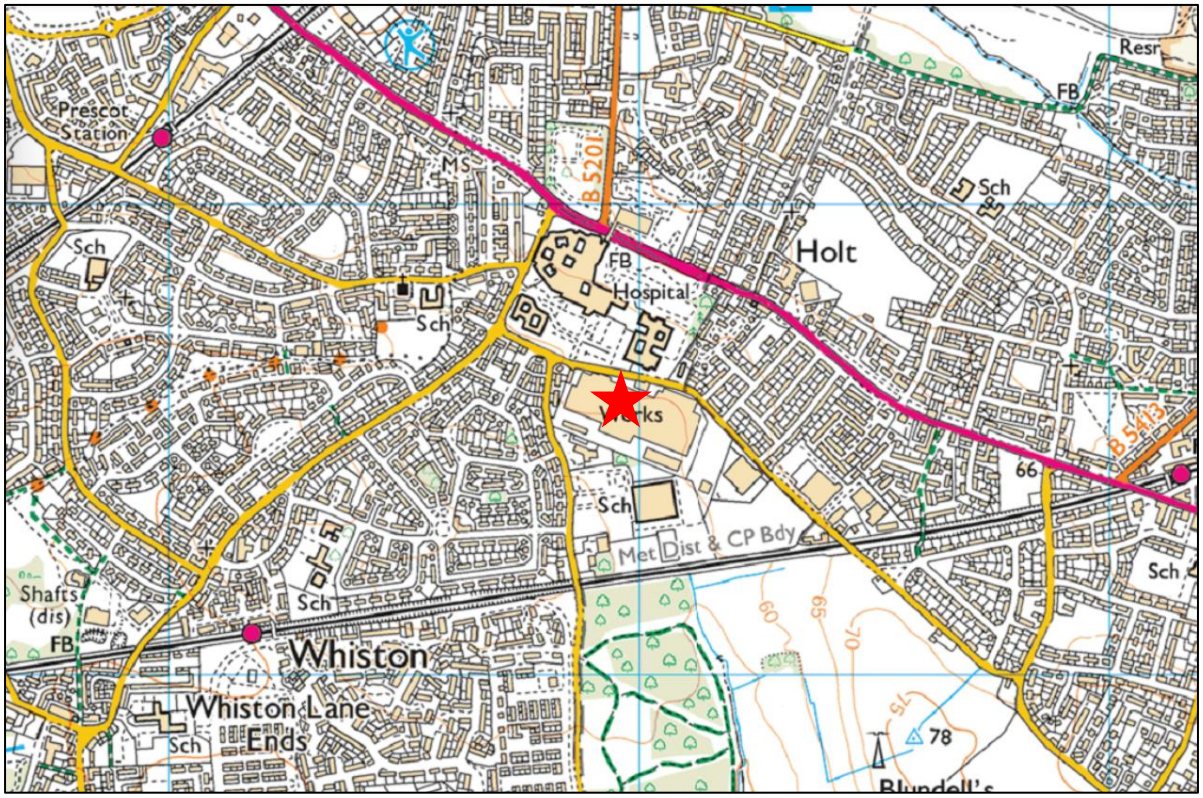
LOCATION PLAN

Former Glen Dimplex, Stoney Lane, Whiston



OS X (Eastings) 347921
OS Y (Northings) 391590
Nat Grid SJ479915 / SJ4792191590
Nearest Post Code L35 2XW
Lat (WGS84) N53:25:07 (53.41852684321607)
Long (WGS84) W2:47:06 (-2.785068353974353)
Lat,Long (WGS84) 53.41852684321607,-2.785068353974353
Lat (OSGB36) N53:25:06 (53.41827891888551)
Long (OSGB36) W2:47:01 (-2.783696832357844)
Lat,Long (OSGB36) 53.41827891888551,-2.783696832357844

APPENDIX F: TOPOGRAPHIC SURVEY

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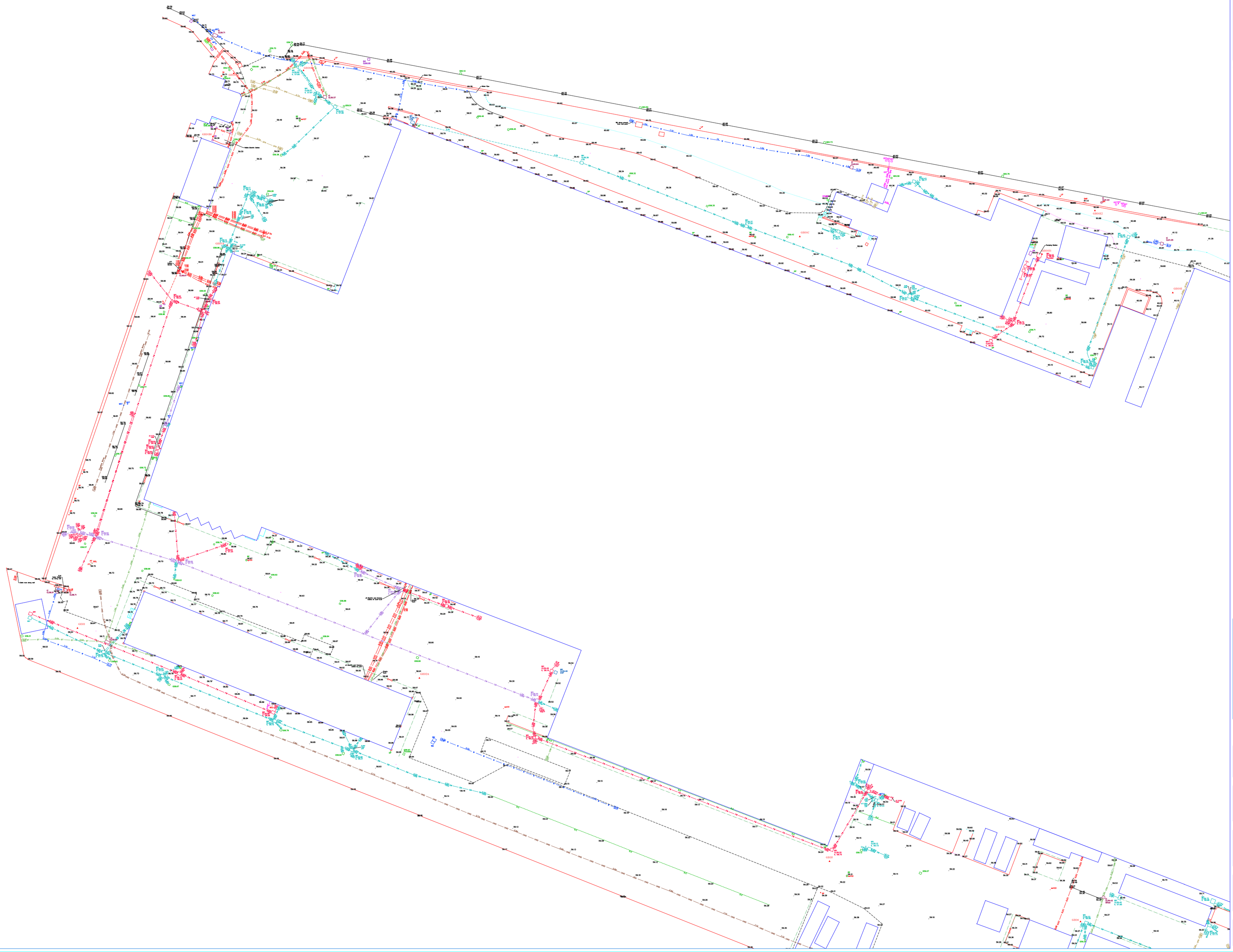

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N

PLAN GRID NORTH

File name: TA7143 - Stoney Lane, Prescot Topographical and Utility Survey.dwg

LEGEND

AV	AIR VALVE
BI	BT INSPECTION COVER
BT	BT PHONE BOX
CCTV	CCTV CAMERA POST
COM	COMMUNICATIONS COVER
CP	CATHODIC PIPE
Cu	CABLE TV DUCT
DI	DRAINAGE CHANNEL
DP	DOWN PIPE
DR	DRAIN
EI	ELECTRIC INSPECTION COVER
EB	ELECTRIC BOX
EP	ELECTRIC POLE
EF	ELECTRICITY PIPE
FFL	FINISHED FLOOR LEVEL
FH	FIRE HYDRANT
G	GULLY
GLT	GROUND LIGHT
GM	GAS METER
GOV	GAS VALVE
IC	INSPECTION COVER
IL	INVERT LEVEL
KO	KERB OUTLET
MH	MANHOLE
MKR	MARKER
MP	METAL PIPE
PN	PYLON
PU	PETROL PUMP
RP	RAINWATER PIPE
SHP	SUNKEN HYD. PIPE
SL	STREET LIGHT
SV	STOP VALVE
TB	TELEPHONE BALL BOX
TL	TRAFFIC LIGHT
TLB	TRAFFIC LIGHT BOX
TP	TELEPHONE POLE
WB	WATER METER
WO	WATER OUTLET
WSC	WATER STOP TAP
WSV	WATER STOP VALVE
EOT	END OF TRACE
UTA	UNABLE TO ACCESS AREA
UTL	UNABLE TO LOCATE
UTS	UNABLE TO SENCE
SLT	SIGNAL TRAFFIC
S.S.	SIGNAL SIGN
NFN	NO FURTHER
NFN	NO FURTHER GPR CONTACTS
RIP	RIGID PIPE
RW	RECTANGULAR WELL
TJP	TOP OF PIPE
TOP	TOP OF POLE
UTS	UNABLE TO SENCE
LOR	LOSS OF REFLECTION

BT	CABLE DUCT
Cu	CABLE TV
CCTV	CCTV
TELECOMS	TELECOMS
ELEC	ELECTRIC
FUEL	FUEL LINE
FUEL	FUEL LINE
GAS	GAS
WATER	WATER
SEWER	SEWER
SEWER	SEWER
UNIDENTIFIED CABLE	UNIDENTIFIED CABLE
UNIDENTIFIED PIPE	UNIDENTIFIED PIPE
UNIDENTIFIED CABLE	UNIDENTIFIED CABLE
UNIDENTIFIED PIPE	UNIDENTIFIED PIPE
VEHICLE DETECTION CABLE	VEHICLE DETECTION CABLE
FENCE	FENCE
SURVEY BOUNDARY	SURVEY BOUNDARY

FROM STATUTORY AUTHORITY PLANS

BT	BT
CABLE DUCT	CABLE DUCT
CATV	CATV
CCTV	CCTV
TELECOMS	TELECOMS
ELECTRIC	ELECTRIC
MAINS GAS	MAINS GAS
MAINS WATER	MAINS WATER
SEWER CW	SEWER CW
SEWER FW	SEWER FW
SEWER GM	SEWER GM
FIBRE-OPTICS	FIBRE-OPTICS

NOTES

All levels relate to O.S. (Newlyn) Datum, Established using network RTK.
Survey plotted on a plane local grid, orientated to National Grid.

Services shown as 'From Statutory Authority Plans' line styles are taken from Statutory Records plans supplied by the relevant regional authority. Such services were not located and are shown for indicative purposes only.

Survey Control Markers established for Mapping purposes only and should not be used for Construction without the written approval of GEO UK LTD.

TYPICAL FIELD PAINT DEPTH INDICATORS

ELECTROMAGNETIC DETECTOR	STANDARD DYNAL 3000 PIPE	100mm DYNAL TRACING RADAR
CABLE/PIPE GPPO	DYNAL 3000 PIPE 100mm	DYNAL 100mm TRACING RADAR

DISCLAIMER:

At GEO UK LTD we use skilled and experienced staff, modern up to date techniques and top of the range electromagnetic and radar technology to locate and trace sub-surface utilities. However the performance of the equipment employed in non-invasive surveys can be adversely affected by factors outside the control of GEO UK LTD.. Therefore GEO UK LTD cannot guarantee that all utilities present on site have been located. It is the responsibility of the Client to consult regional authority records and undertake trial digs where appropriate.

Where similar services run in close proximity it may be impossible to separately trace individual services as the trace signal can experience interference. In such cases, services will be shown as a single, annotated line. The displayed depth will refer to the shallowest detected utility.

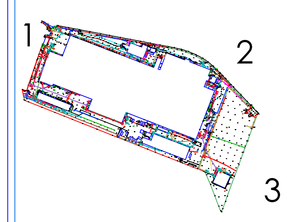
Successful tracing of non-conductive materials may be limited. Drainage gullies are also tested where possible to prove connectivity but it is not always possible to introduce the sonde due to narrow pipe sizes and/or accumulated silt.

Depth information of underground services/features are generally accurate to within +/-10% (i.e. a pipe at 3m deep may be accurate to +/-300mm) but can be affected by many factors. Depths are usually refer to the top of the service. Gravity sewer and drain depths are usually to invert (base of drainage channel) unless otherwise stated.

Some above ground features may have been obscured at time of survey. It is not always possible to operate the Ground Penetrating Radar in areas including, but not limited to, dense vegetation, rubble, debris and/or rough/uneven ground.

Existing record information that was made available to GEO UK LTD by the Client or by the statutory utility provider should be regarded only as an indication and cannot be guaranteed.

Excavation in the vicinity of services shown should be carried out with due diligence (Ref. HSG47).



SHEET LAYOUT

0 2.5m 5m 10m 15m 20m

SCALE BAR

REV	DATE	DESCRIPTION

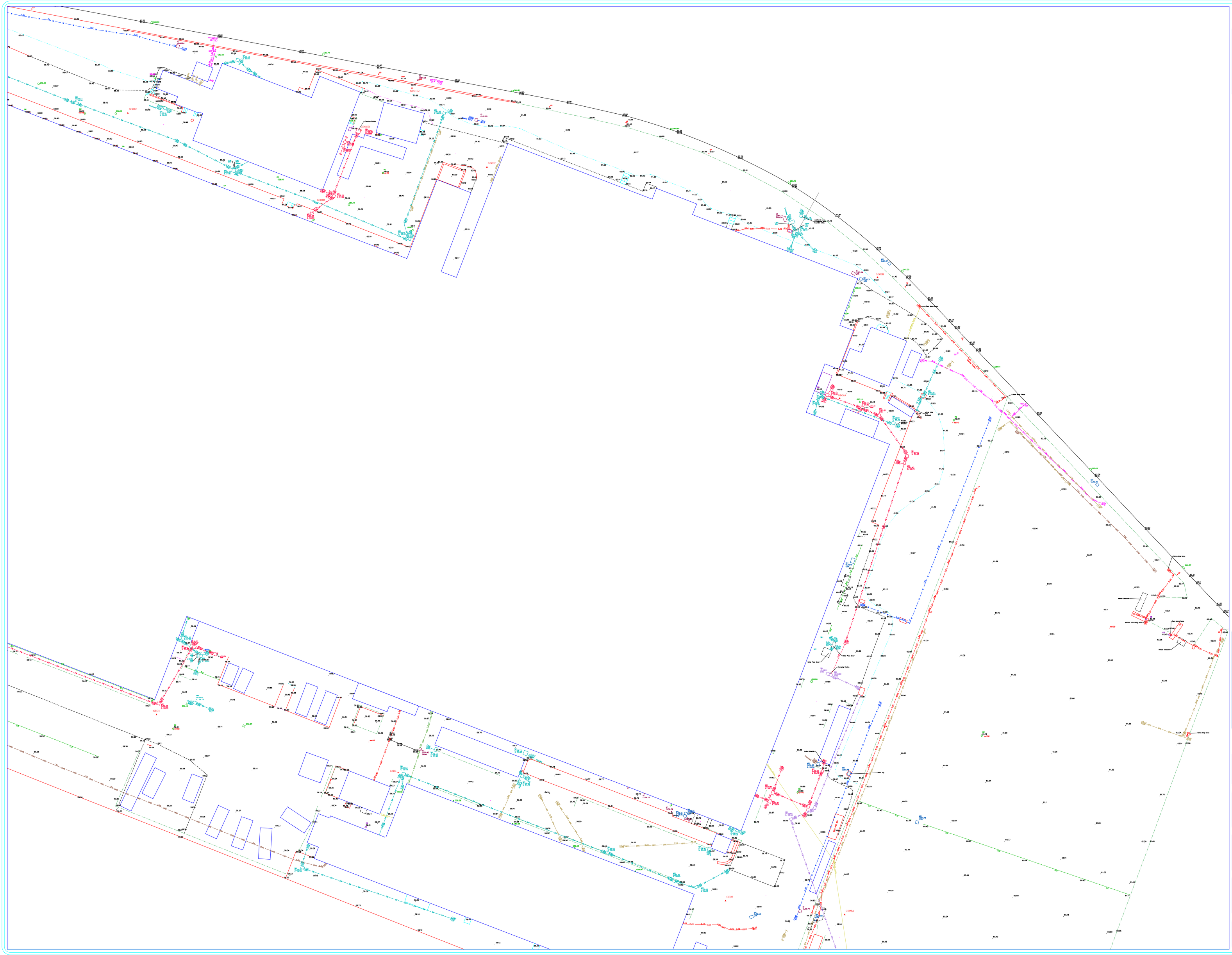
GEO
Geographical Engineering Operations

Client
E3P
Taylor Road
Urmston
Manchester
M41 7JQ

Project Title
Utility Survey of Land at:
Stoney Lane
Whiston Cross
Whiston
Knowsley
L35 9JU

Surveyed	Drawn	Checked
CT	JAS	GEO UK LTD

Scale	Date	Drawing Ref.	No.	Size	Rev
1:250	MAR 24	G24104	01	A0	--



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PLAN GRID NORTH

File name: TA7143 - Stoney Lane, Prescot Topographical and Utility Survey.dwg

LEGEND

AV	AIR VALVE
BT	BT INSPECTION COVER
CAB	CABLE TV BOX
CCTV	CCTV CAMERA POST
COM	COMMUNICATIONS COVER
CP	CATHODIC PIPE
Cu	CABLE TO CUBICLE
CD	DRAINAGE CHANNEL
DO	DRAIN OUTLET
DR	DRAIN
DI	DRAIN INSPECTION COVER
ELB	ELECTRIC BOX
EP	ELECTRIC POST
LP	ELECTRICITY POLE
FFL	FINISHED FLOOR LEVEL
FH	FIRE HYDRANT
G	GULLY
GLT	GROUND LIGHT
GM	GAS METER
GOV	GAS VALVE
IC	INSPECTION COVER
IL	INVERT LEVEL
KO	KERB OUTLET
LD	LAND DRAIN
MK	MARKER
MKR	MARKERS
PIPE	PIPE/CABLE PIPE
PN	PYLON
PP	PETROL PUMP
RP	RAINWATER PIPE
SWP	SUBWATER PIPE
SP	SIGN POST
SV	STOP VALVE
TB	TELEPHONE WALL BOX
TL	TRAFFIC LIGHT
TLB	TRAFFIC LIGHT BOX
TP	TELEPHONE POLE
WB	WATER METER
WO	WATER OUTLET
WP	WATER POLE TAP
WSV	WATER STOP VALVE
EOT	END OF TRACE
UTA	UNABLE TO ACCESS AREA
UTL	UNABLE TO LOCATE
UTS	UNABLE TO SENCE
S.C.	SIGNAL CABINET
S.L.	SIGNAL LIGHT
S.P.	SIGNAL POST
NFN	NO FURTHER GPR CONTACTS
RVP	RODDING VENT PIPE
RW	RAINWATER PIPE
TUP	TOP OF PIPE
UP	UNDER PIPE
UTS	UNABLE TO SENCE
LOR	LOSS OF REFLECTION

BT	BT
CABLE DUCT	DUCT
CABLE TV	CABLE TV
CCTV	CCTV
TELECOMS	COM
ELECTRIC STRIP	ELEC
ELECTRIC	ELEC
FUEL	FL
FUEL LINE	FL
GAS PIPELINE/GAS LINE	GAS
GAS	GAS
MAINS WATER	W
WATER	W
SEWER FW	FW
SEWER CW	CW
UNIDENTIFIED CABLE	UNID
UNIDENTIFIED PIPE	UNID
UNIDENTIFIED CABLE	UP
UNIDENTIFIED PIPE	UP
VEHICLE DETECTION CABLE	VDC
VEHICLE	VEH
TOP OF BANK	TOB
TOE OF BANK	TOE
SURVEY BOUNDARY	

FROM STATUTORY AUTHORITY PLANS

BT	BT
CABLE DUCT	DUCT
CATV	CATV
CCTV	CCTV
TELECOMS	COM
ELECTRIC	ELEC
MAINS GAS	GAS
MAINS WATER	W
SEWER CW	CW
SEWER FW	FW
SEWER GM	GM
PIPE-OPTICS	FO

NOTES

All levels relate to O.S (Newlyn) Datum, Established using network RTK.
Survey plotted on a plane local grid, orientated to National Grid.

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Survey Control Markers established for Mapping purposes only and should not be used for Construction without the written approval of GEO UK LTD.

TYPICAL FIELD PLANE DEPTH ANNOTATION

ELECTRICAL/GAS/ TELECOMS	TELECOMS/ FIBRE OPTICS	WATER/ FIBRE OPTICS
0.600m CABLE DEPTH	0.600m CABLE DEPTH	0.600m PIPE DEPTH

DISCLAIMER:

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Where similar services run in close proximity it may be impossible to separately trace individual services as the trace signal can experience interference. In such cases, services will be shown as a single, annotated line. The displayed depth will refer to the shallowest detected utility.

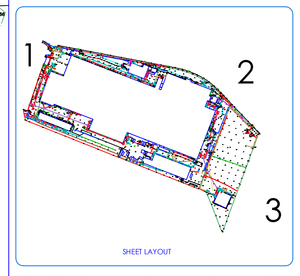
Successful tracing of non-conductive materials may be limited. Drainage gulleys are due tested where possible to prove connectivity but it is not always possible to introduce the sonde due to narrow pipe sizes and/or accumulated silt.

Depth information of underground services/features are generally accurate to within +/- 10% (i.e. a pipe at 2m deep may be accurate to +/-200mm) but this cannot be guaranteed. Depths shown usually refer to the top of the service. (Gravity sewer and drain depths are usually to invert (base of drainage channel) unless otherwise stated.

Some above ground features may have been obscured at time of survey. It is not always possible to operate the Ground Penetrating Radar in areas including, but not limited to, dense vegetation, rubble, debris and/or rough/uneven ground.

Existing record information that was made available to GEO UK LTD by the Client or by the statutory utility provider should be regarded only as an indication and cannot be guaranteed.

Excavation in the vicinity of services shown should be carried out with due diligence (Ref. HSG47).



SHEET LAYOUT

0 2.5m 5m 10m 15m 20m

SCALE BAR

REV	DATE	DESCRIPTION

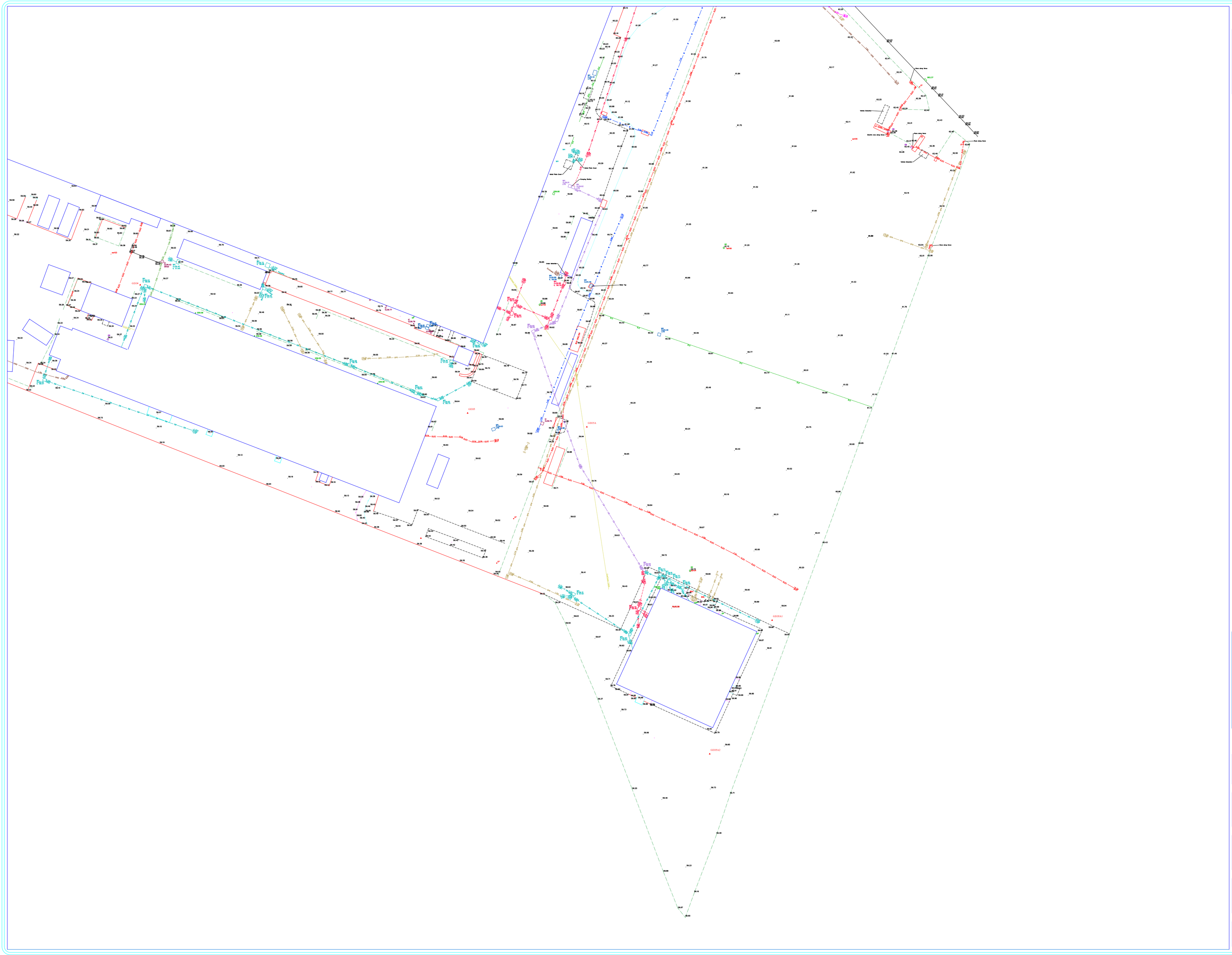
Geographical Engineering Operations

Client
E3P
Taylor Road
Urmston
Manchester
M41 7JQ

Project Title
Utility Survey of Land at:
Stoney Lane
Whiston Cross
Whiston
Knowsley
L35 9JJ

Surveyed	Drawn	Checked
CT	JAS	GEO UK LTD

Scale	Date	Drawing Ref.	No.	Size	Rev
1:250	MAR 24	G24104	02	A0	--



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PLAN GRID NORTH

File name: TA7143 - Stoney Lane, Prescot Topographical and Utility Survey.dwg

LEGEND

AV	AIR VALVE	BT	BT
BI	BT INSPECTION COVER	CABLE DUCT	DUCT
BX	BT JOINT BOX	CATV	CATV
CCTV	CCTV CAMERA POST	CCTV	CCTV
COM	COMMUNICATIONS COVER	TELECOMS	COM
CP	CATHODIC PROT.	ELECTRIC STRIP	ELEC
Cu	CABLE TO CLEAR	ELECTRIC	ELEC
DC	DRAINAGE CHANNEL	FIBRE OPTIC	FO
DI	DRAIN INSP.	FUEL LINE	FL
DO	DRAIN	GAS PIPELINE/GAS LINE	GAS
EI	ELECTRIC INSPECTION COVER	GAS	GAS
ELB	ELECTRIC BOX	MAINS WATER	W
EP	ELECTRIC POLE	SEWER FM	FM
GP	GATEPOST/ POLE	SEWER CW	CW
FFL	FINISHED FLOOR LEVEL	SEWER CW	CW
GI	GULLY INSPECT	UNIDENTIFIED CABLE	UNID
GUL	GULLY	UNIDENTIFIED TRACE	UNID
OLT	GROUND LIGHT	UNIDENTIFIED CABLE	UID
GV	GAS VALVE	UNIDENTIFIED TRACE	UID
GOV	GAS VALVE	VEHICLE DETECTION CABLE	VDC
IC	INSPECTION COVER	VDC	VDC
		SURVEY CONTROL	SC
		SURVEY CONTROL	SC
		SURVEY BOUNDARY	

IL	INVERT LEVEL
KO	KERB OUTLET
MO	MAIN OUTLET
MK	MARKER
MKR	MARKER
PIPE	PIPE/ PIPE
PN	PYLON
PP	PETROL PUMP
PT	PETROL TANK
RMP	RUMMETER PIPE
SP	SIGNAL POST
SV	STOP VALVE
TB	TRAFFIC SIGNAL BOX
TL	TRAFFIC LIGHT
TLB	TRAFFIC LIGHT BOX
TP	TELEPHONE POLE
WB	WATER METER
WO	WATER OUTLET
WSP	WATER STOP TAP
WSV	WATER STOP VALVE
EOT	END OF TRACE
UTA	UNABLE TO ACCESS AREA
UTL	UNABLE TO LOCATE
UTS	UNABLE TO SENSE
S.L.	SIGNAL LOSS
S.S.	SIGNAL STRIP
S.W.	SIGNAL WEAK
NFN	NO FURTHER SPR CONTACTS
RPP	RODDING POINT
RIP	INVISIBLE PIPE
TUP	TOP OF PIPE
UNI	UNIDENTIFIED
UTC	UNABLE TO TRACE
LOR	LOSS OF REFLECTION

FROM STATUTORY AUTHORITY PLANS

BT	BT
CABLE DUCT	DUCT
CATV	CATV
CCTV	CCTV
TELECOMS	COM
ELECTRIC	ELEC
FIBRE-OPTICS	FO
FUEL LINE	FL
GAS PIPELINE	GAS
MAINS WATER	W
SEWER FM	FM
SEWER CW	CW
UNIDENTIFIED CABLE	UID
UNIDENTIFIED TRACE	UID
VEHICLE DETECTION CABLE	VDC

NOTES

All levels relate to O.S (Newlyn) Datum, Established using network RTK.
Survey plotted on a plane local grid, orientated to National Grid.

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Survey Control Markers established for Mapping purposes only and should not be used for Construction without the written approval of GEO UK LTD.

TYPICAL FIXTURE DEPTH INDICATORS		
ELECTRICAL/GAS/ TELECOM/ FIBRE OPTIC	TELECOM/ FIBRE OPTIC/ CATV/ CCTV/ ELECTRICAL	WATER/ GAS/ TELECOM/ SEWER
CABLE/FIBRE OPTIC	CABLE/ FIBRE OPTIC/ TELECOM	WATER/ GAS/ TELECOM/ SEWER

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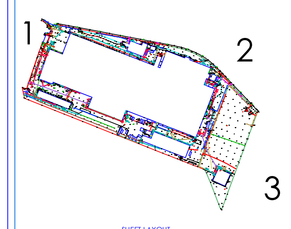

SHEET LAYOUT

0 2.5m 5m 10m 15m 20m

SCALE BAR

REV	DATE	DESCRIPTION

Geographical Engineering Operations

Client
E3P
Taylor Road
Urmston
Manchester
M41 7JQ

Project Title
Utility Survey of Land at:
Stoney Lane
Whiston Cross
Whiston
Knowsley
L35 9JU

Surveyed	Drawn	Checked
CT	JAS	GEO UK LTD

Scale	Date	Drawing Ref.	No.	Size	Rev
1:250	MAR 24	G24104	03	A0	--

APPENDIX G: PLANNING LAYOUT

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FORMER GLEN DIMPLEX | LAND SOUTH OF STONEY LANE

0 5 10 15 25m
1:500

N

The Contractor is to check and verify in conjunction with the Architects details all setting out dimensions, levels and all existing dimensions and levels before commencement of any work and ensure that they are fully conversant with the content and the requirements of the Site Investigation Report before work starts.
The Contractor is to comply in all respects with current building legislation, British and European Standard specifications, Building Regulations, Robust Details etc., whether or not specifically stated on this drawing.

This drawing is not intended to show details of ground conditions or ground contaminants. Each area of ground relied upon to support any structure depicted (including drainage) must be investigated by the Contractor. Any areas of formation for said structures which do not accord with the anticipated conditions as described in the Site Investigation Report are to be immediately reported to the Engineer. Unsuitable material encountered in the formation of structural fill or within the ground should be further investigated by a suitable expert. Any earthworks shown indicate typical slopes for guidance only and should be investigated further by a suitable geotechnical expert.

Where existing trees are shown to be retained they should be subject to a full arboricultural survey and root protection zones (RPZ) should be established in accordance with current guidelines 4 metres from buildings and 2 metres from drainage and services, where applicable. A foundation is to be provided to accommodate the proposed tree planting, where applicable.

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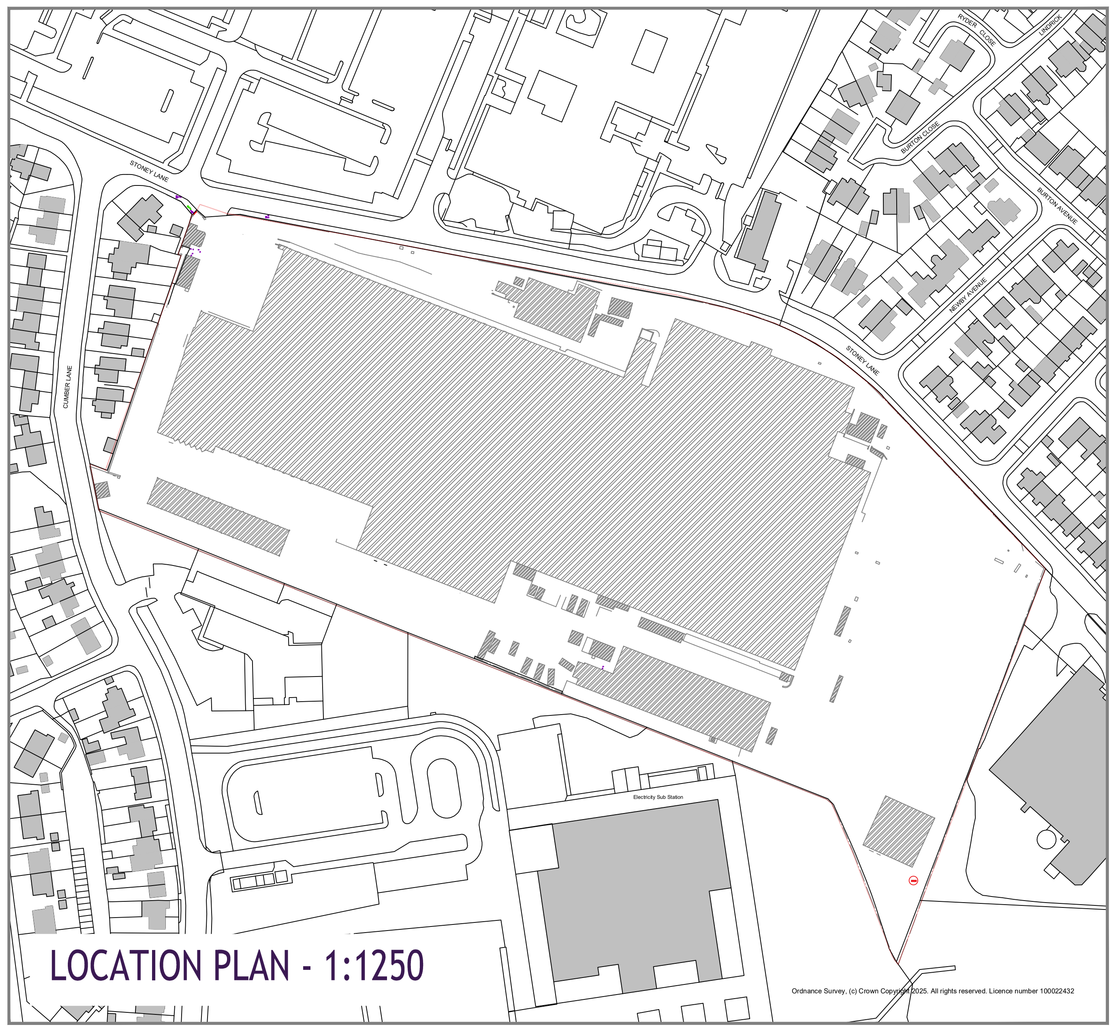
Drawing Status:

- [X] FOR COMMENT
- [ ] PRELIMINARY ISSUE
- [ ] TENDER ISSUE
- [ ] CONSTRUCTION ISSUE
- [ ] AS BUILT

Notes:

ACCOMMODATION SCHEDULE

Name	Ref	TW ref	Bed	Storey	Unit No's	Unit ft²	ft² Total
Open Market Dwellings (184)							
Beaford Mid	BEA	EMA22	2 Bed	2	14	778	10892
Beaford Semi	BEA	EMA22	2 Bed	2	1	778	778
Brambleford Mid	BRA	EMA32	3 Bed	2	2	907	1814
Brambleford Semi	BRA	EMA33	3 Bed	2	29	907	26303
Aynesdale Semi	AYN	EMT31	3 Bed	2	9	1058	9522
Aynesdale Semi	AYN	EMT31	3 Bed	2	4	1058	4232
Tetford Det	TET	EMA35	3 Bed	2	5	1021	5105
Tetford Semi	TET	EMA35	3 Bed	2	11	1021	11231
Harrton Mid	HAR	EMB31	3 Bed	2.5	13	1140	14820
Harrton End	HAR	EMB31	3 Bed	2.5	30	1140	34200
Ayleford Semi	AYL	EMA41	4 Bed	2	10	1101	11010
Ayleford Det	AYL	EMA41	4 Bed	2	12	1101	13212
Corkham	COR	EMG42	4 Bed	2	24	1347	32328
Henford	HEN	EMA44	4 Bed	2	12	1359	16308
Wansdale	WAN	EMT45	4 Bed	2	8	1450	11600
Sub Total:			184 Units				203355 ft²
Affordable Dwellings @ 10% (20)							
Beaford Mid	BEA	EMA22	2 Bed	2	10	778	7780
Beaford Semi	BEA	EMA22	2 Bed	2	6	778	4668
Eynsford Mid	EYN	EMA33	3 Bed	2	4	972	3888
Sub Total:			20 Units				16336 ft²
Grand Total:			**204 Units**				**219691 ft²**
Net Site Area:			**5.147713**				**12.7200**
Net Coverage:			**3964.86 m²/ha**				**17271.31 ft²/ac**



LOCATION PLAN - 1:1250

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SITE PLAN - 1:500

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Key

- TW Red line / Legal Ownership
- Fencing - rear/side boundaries
- Fencing - plot boundaries
- Brick Screenwall
- Knee Rail Fence
- Paladin Mesh Fencing
- POS / SUDS Area
- POS and buffers
- Proposed Tree Planting
- Existing Tree / Vegetation to be retained
- Existing Tree / Vegetation to be cut back
- Existing Tree / Vegetation to be removed
- Affordable house types

Rev V 07-11-2025
Schedule amended OM Beaford end to mid. Rear paths, gates and car bay numbers indicated.

Rev U 31-10-2025
Garage shown to Plot 204.

Rev T 30-10-2025
Client amendments. Schedule updated.

Rev S 29-10-2025
Plots 1-13, 71, 86-87, 119-125, 138-139, 169-175,181-204 repositioned. Schedule updated.

Rev R 23-10-2025
Plots 62-65, 71, 13-139 repositioned. Schedule updated.

Rev P 22-10-2025
Plots 6-9, 36-39, 82-86, 103-110, 124-129, 169-175, 180-204 amended and repositioned. Parking to plots 50-51 amended.

Rev N 09-10-2025
Amend parking bay locations and drive lengths.

Rev M 08-10-2025
Partial layout redesign in accordance with clients sketch design.

Rev L 03-10-2025
Partial layout redesign.

Rev K 26-09-2025
General amendments to layout

Rev J 27-08-2025
Parking bay nos updated. Schedules updated. Net dev and POS areas updated.

Rev H 26-08-2025 (TW)
Entrance pod re-designed and two plots removed to accommodate POS and Sales Centre car park, two plots plotted to central POS to re-balance mix and POS.

Rev G 14-08-2025
Net dev area updated to suit TW Site /Contract boundary.

Rev F 13-08-2025
TW Site /Contract boundary indicated.

Rev E 11-08-2025
Plots 169-170 house type substitution from Brambleford to Teford. Plots 2-3 house type substitution from Beaford to Brambleford.

Rev D 08-08-2025
Parking bays plots 172-175 corrected to 5.0m length.
Plots 177-181 repositioned by 0.1m. Plots 171-175 repositioned by 0.4m.
Plots 169-170 house type substitution from Teford to Brambleford.

Rev C 28-05-2025
Plot 14-33, 62-70 & 181 repositioned by 1m.

Rev B 12-05-2025
Amended in accordance with TW comments.

Rev A 11-04-2025
Amended in accordance with TW comments.

Client:

Taylor Wimpey
Taylor Wimpey North West

Project:

Former Glen Dimplex
Land South of Stoney Lane

Title:

Plannning Layout

BANNERS GATE
CIVIL, STRUCTURAL & ARCHITECTURAL DESIGN SERVICES
Cavendish House, 10-11 Birmingham Street, Halesowen, West Midlands B63 3HN
Tel: 0121 687 1500 Fax: 0121 687 1501
E-mail: mail@bannersgate.com

Scale:	Plot size:	Drawn:	Check:	Date:
1:500	A0L	BGA	BGA	NOV 2025

CAD Ref.:
U:\Land Yeadon\Jobs\ - Live\Land Opportunities\Glen Dimplex, Whitehall_Planning\2.1 Planning Drawings\Layouts\CAD\25053-1000V Site Layout_2025-10-30

Project no.:	Drawing no.:
25053	1000V

APPENDIX H: PFRA/SFRA PLANNING EXTRACTS

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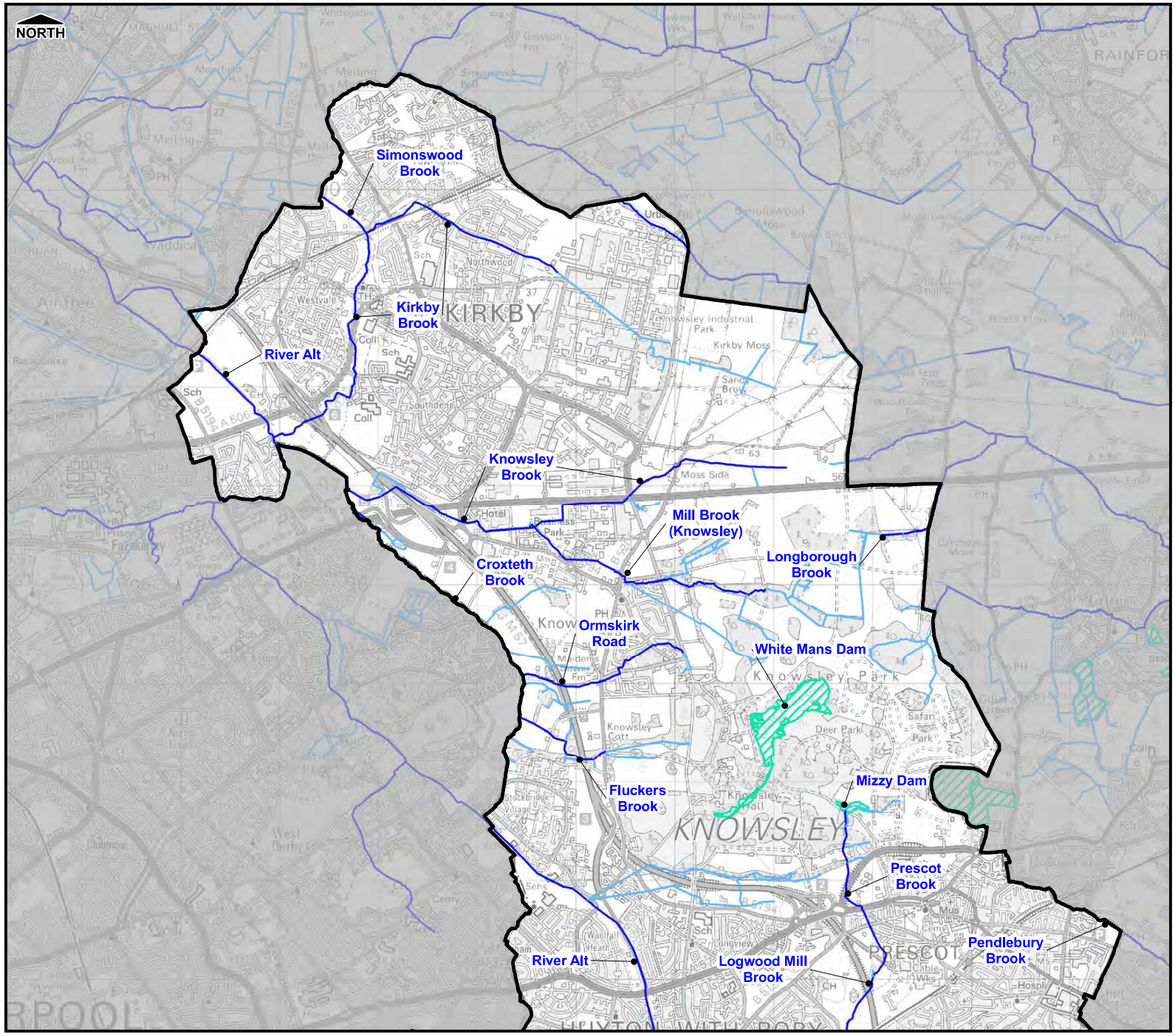

Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Lakes/Reservoirs

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DRAWN BY	DATE	CHECKED BY	PASSED BY
S.Turnbull	30/05/2012	L.Tattersall	P.Raynor

SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

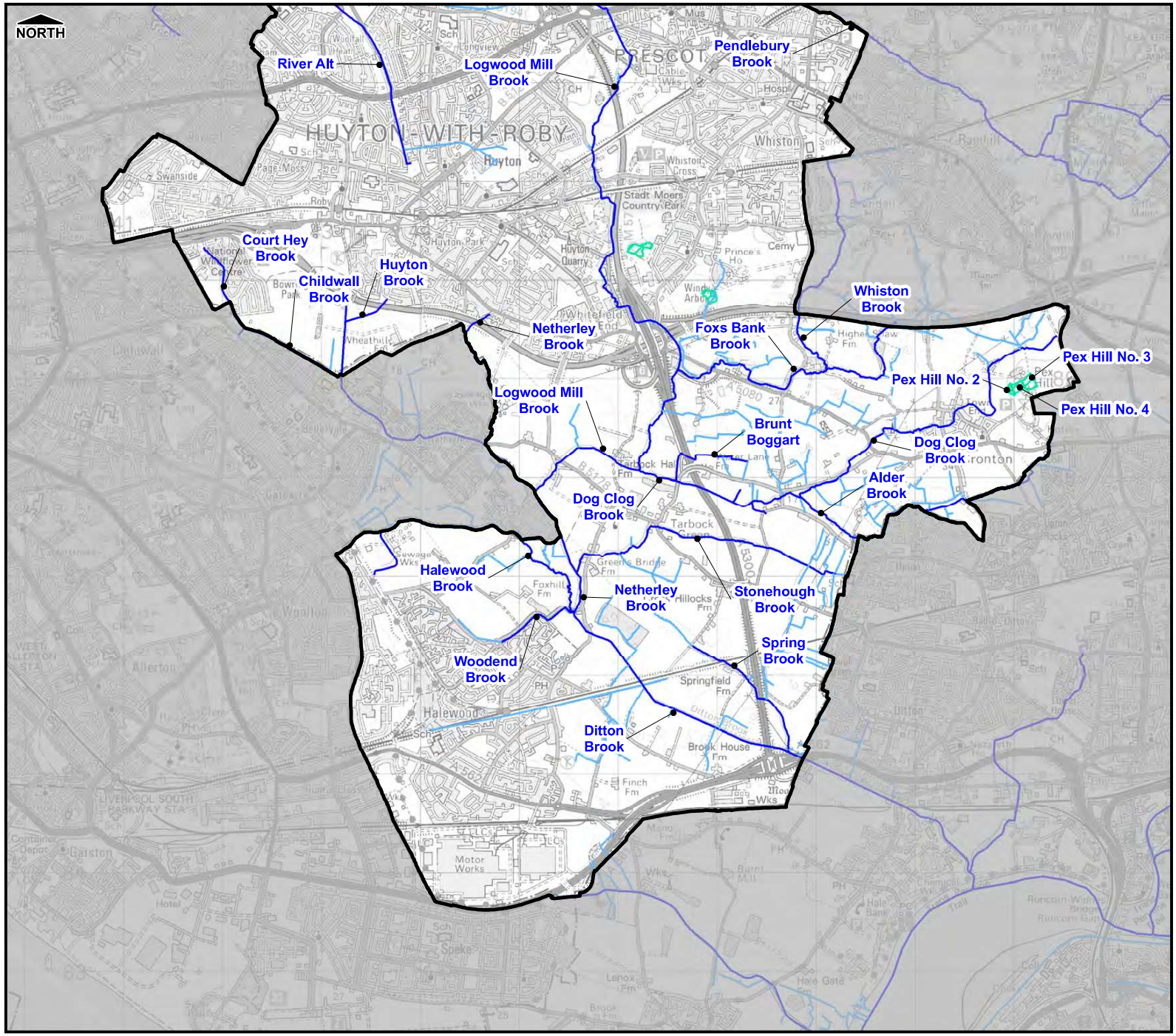
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B1-1-1
Catchment Overview

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B1-1-1	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Lakes/Reservoirs

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S.Turnbull	30/05/2012	L.Tattersall	P.Raynor

SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

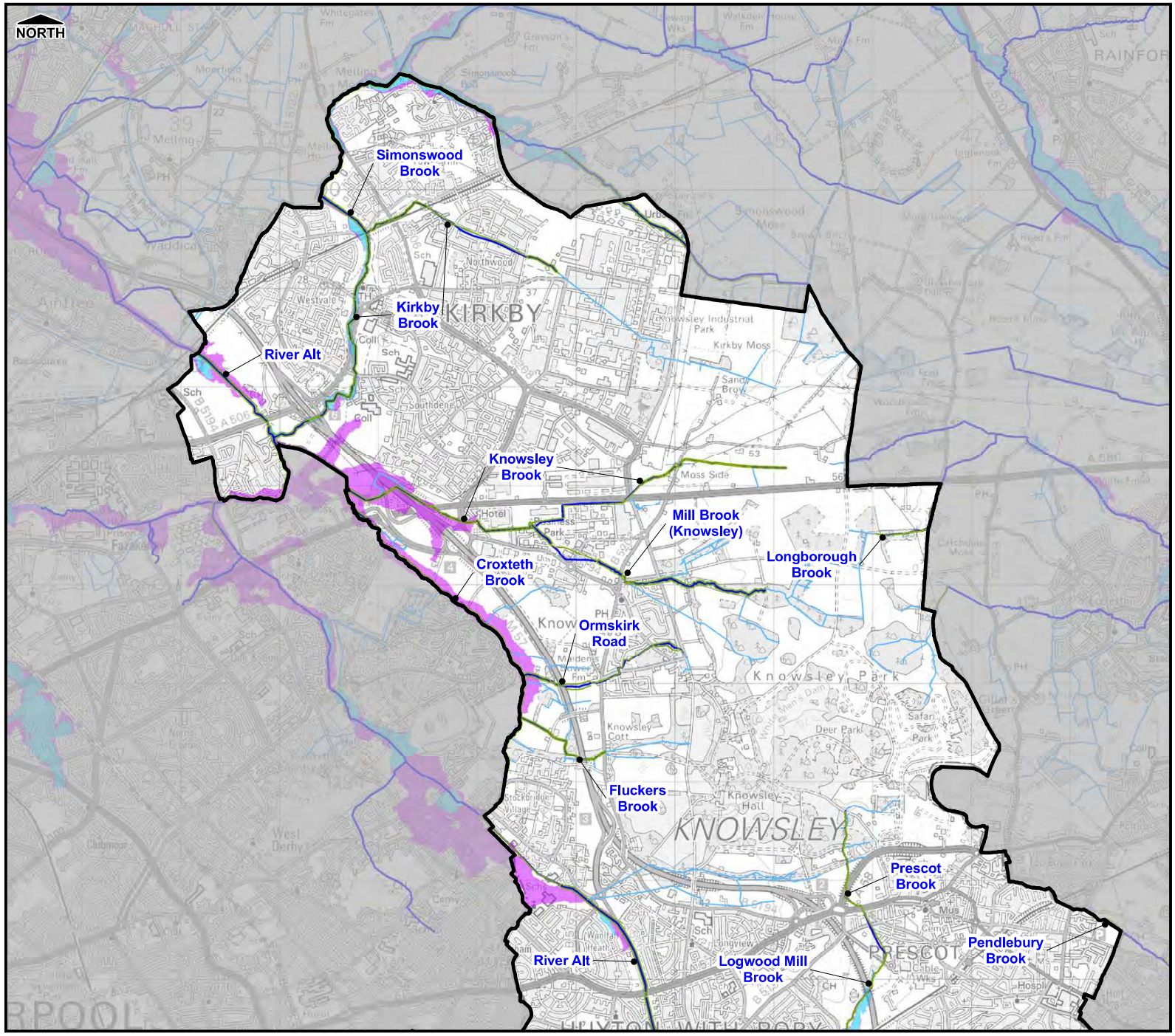
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B1-1-2
Catchment Overview

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B1-1-2	-



Legend

- Borough Administrative Boundary
- Defences
- Main River
- Ordinary Watercourse
- Flood Zone 2 Fluvial and Tidal
- Flood Zone 2 Tidal
- Flood Zone 3a Fluvial and Tidal
- Flood Zone 3a Tidal
- Flood Zone 2 Fluvial
- Flood Zone 3a Fluvial

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SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

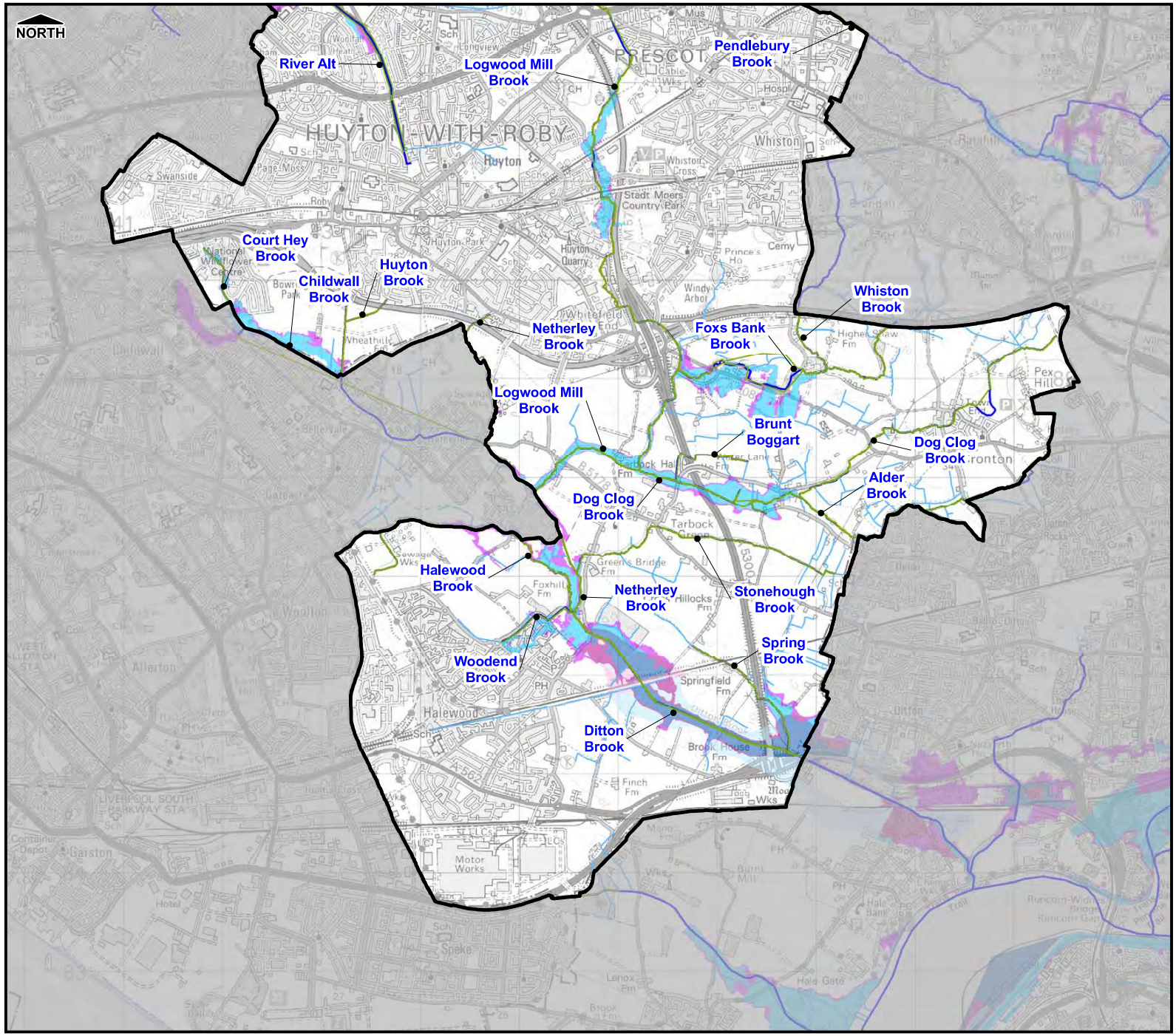
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B2-1
Environment Agency Flood Zones

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B2-1	-



Legend

- Borough Administrative Boundary
- Defences
- Main River
- Ordinary Watercourse
- Flood Zone 2 Fluvial and Tidal
- Flood Zone 2 Tidal
- Flood Zone 3a Fluvial and Tidal
- Flood Zone 3a Tidal
- Flood Zone 2 Fluvial
- Flood Zone 3a Fluvial

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DRAWN BY	DATE	CHECKED BY	PASSED BY
S.Turnbull	30/05/2012	L.Tattersall	P.Raynor

SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

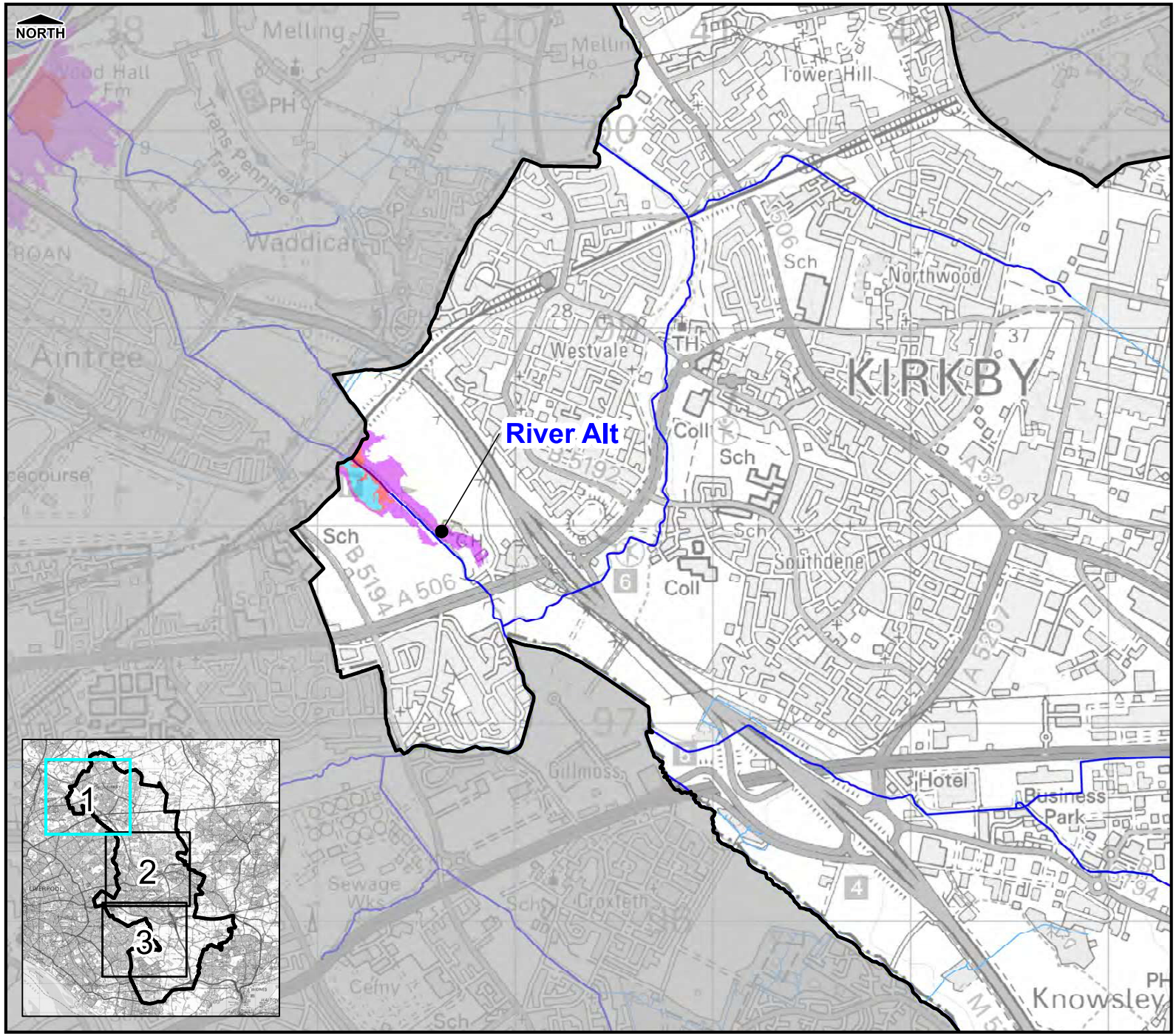
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B2-2
Environment Agency Flood Zones

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B2-2	-



Legend

- Borough Administrative Boundary
- 5% AEP Flood Extent
- 1% AEP Flood Extent
- 1%+CC AEP Flood Extent
- 0.1% AEP Flood Extent
- Main River
- Ordinary Watercourse

NOTES:

The flood extents are taken from the Logwood Mill Brook (2012), Netherley and Halewood (2012), Childwall Brook (2008) and Lower Alt (2010) studies and take into account the presence of existing defences

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SCALE @ A3	ISSUING OFFICE
1:20,000	Sheffield

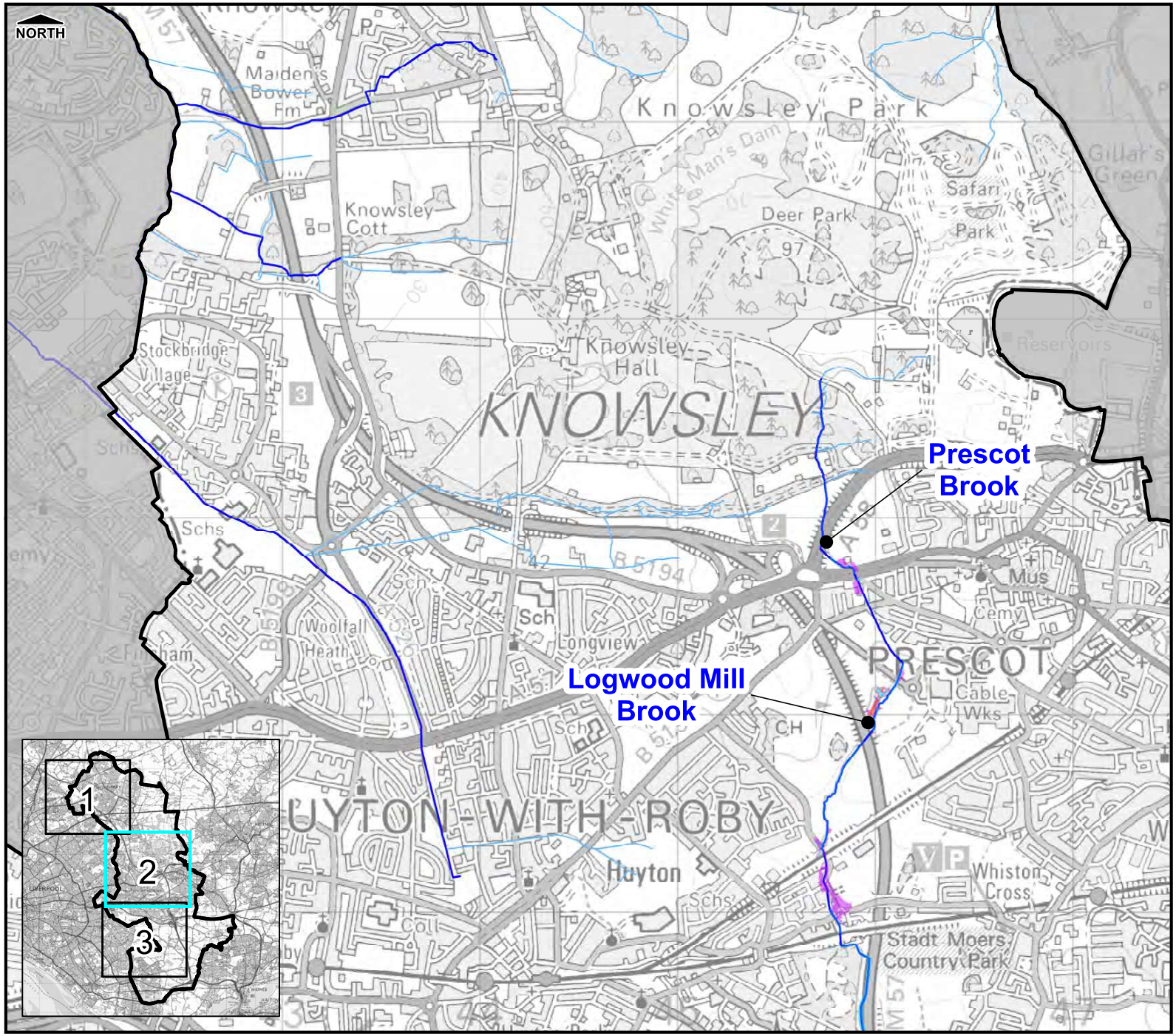
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B3-A-1
Actual Risk
Flood Extent

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B3-A-1	-



Legend

- Borough Administrative Boundary
- 5% AEP Flood Extent
- 1% AEP Flood Extent
- 1%+CC AEP Flood Extent
- 0.1% AEP Flood Extent
- Main River
- Ordinary Watercourse

NOTES:

The flood extents are taken from the Logwood Mill Brook (2012), Netherley and Halewood (2012), Childwall Brook (2008) and Lower Alt (2010) studies and take into account the presence of existing defences

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1:20,000	Sheffield

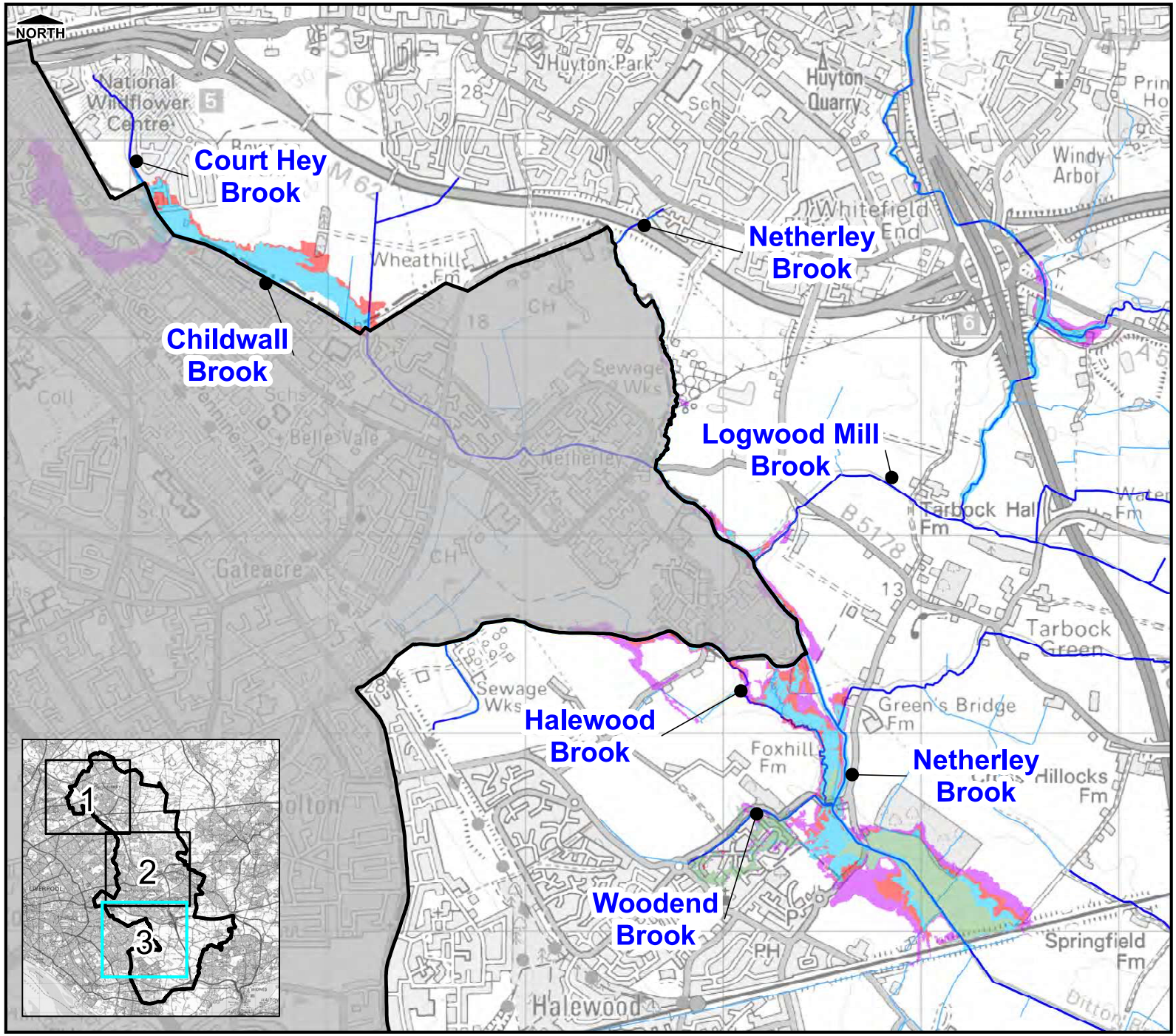
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B3-A-2
Actual Risk
Flood Extent

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B3-A-2	-



Legend

- Borough Administrative Boundary
- 5% AEP Flood Extent
- 1% AEP Flood Extent
- 1%+CC AEP Flood Extent
- 0.1% AEP Flood Extent
- Main River
- Ordinary Watercourse

NOTES:

The flood extents are taken from the Logwood Mill Brook (2012), Netherley and Halewood (2012), Childwall Brook (2008) and Lower Alt (2010) studies and take into account the presence of existing defences

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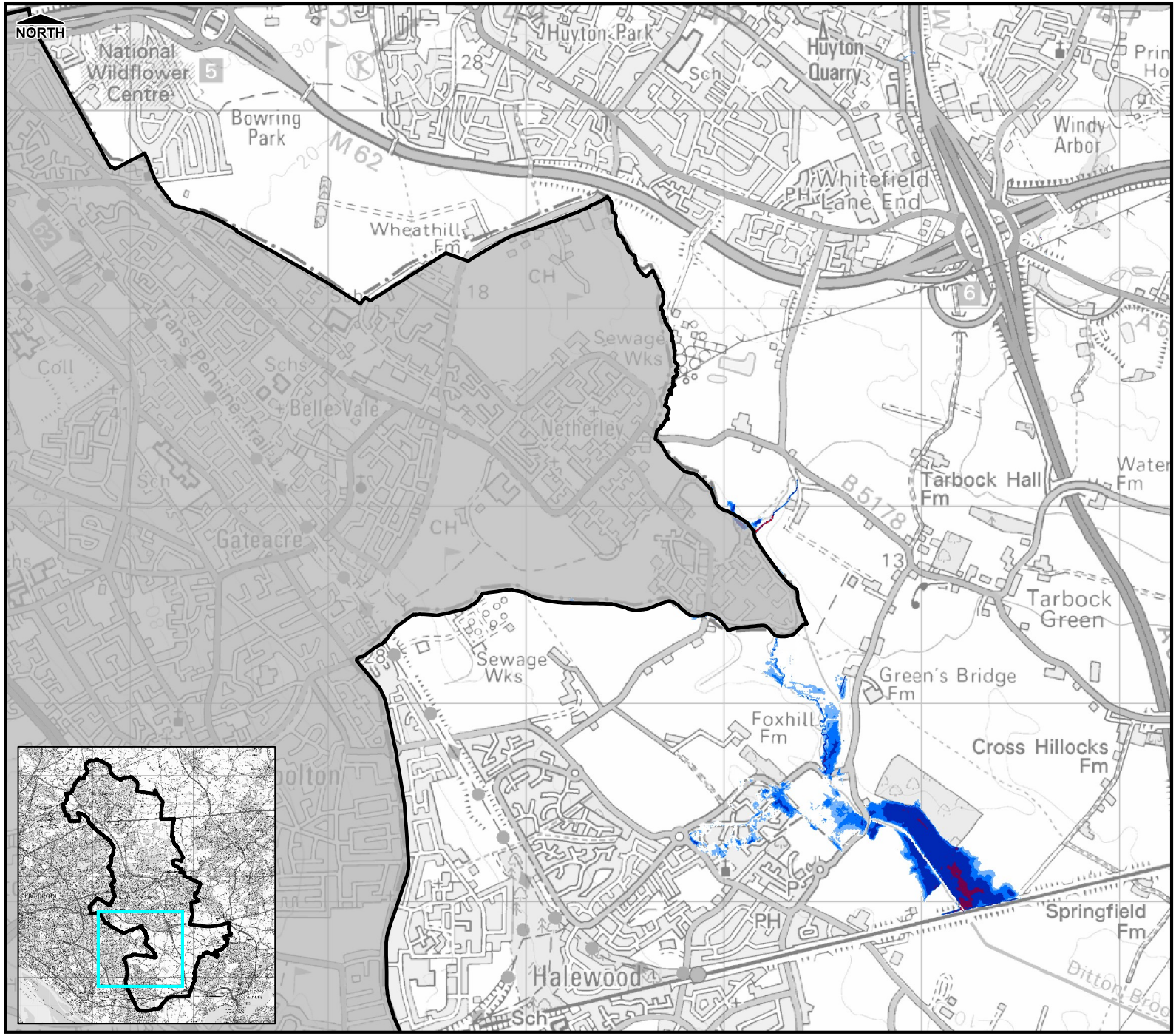
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B3-A-3
Actual Risk
Flood Extent

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B3-A-3	-



Legend

- Borough Administrative Boundary

Flood Depth (1% AEP Event)

- < 0.1m
- 0.1m to 0.25m
- 0.25 to 0.5m
- 0.5 to 1.0m
- 1.0m to 1.5m
- > 1.5m

NOTES:

The outputs are from the River Netherley and Halewood (2011) and the Logwood Mill Brook (2012) Flood Risk Mapping Studies)

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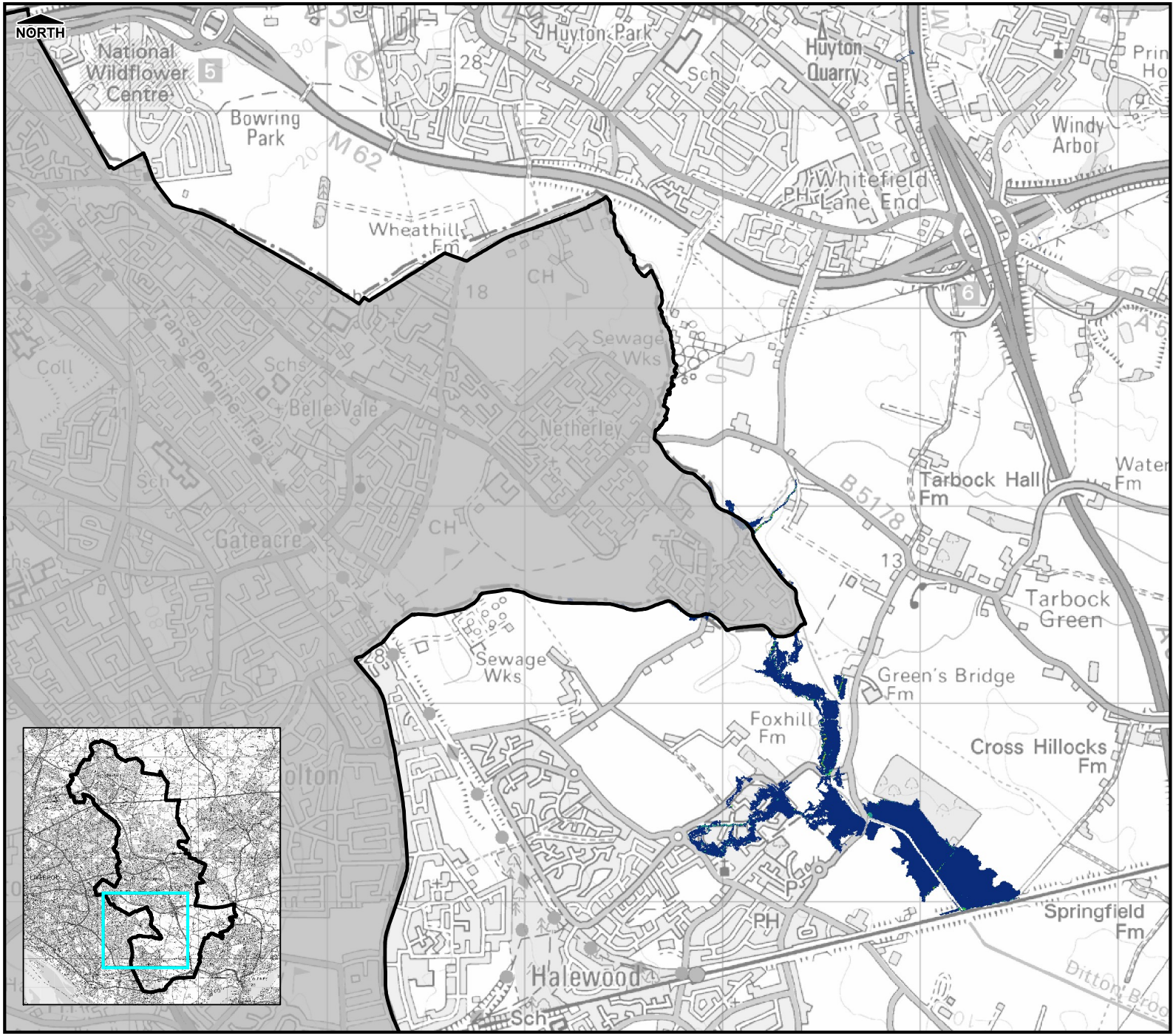
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B3-B-1
Actual Risk
Flood Depth

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B3-B-1	-



Legend

Borough Administrative Boundary

Water Velocity (1% AEP Event)

- < 0.5m/s
- 0.5m/s to 1.0m/s
- 1.0m/s to 1.5m/s
- 1.5m/s to 2.0m/s
- 2.0m/s to 5.0m/s
- > 5.0m/s

NOTES:

The outputs are from the River Netherley and Halewood (2011) and the Logwood Mill Brook (2012) Flood Risk Mapping Studies

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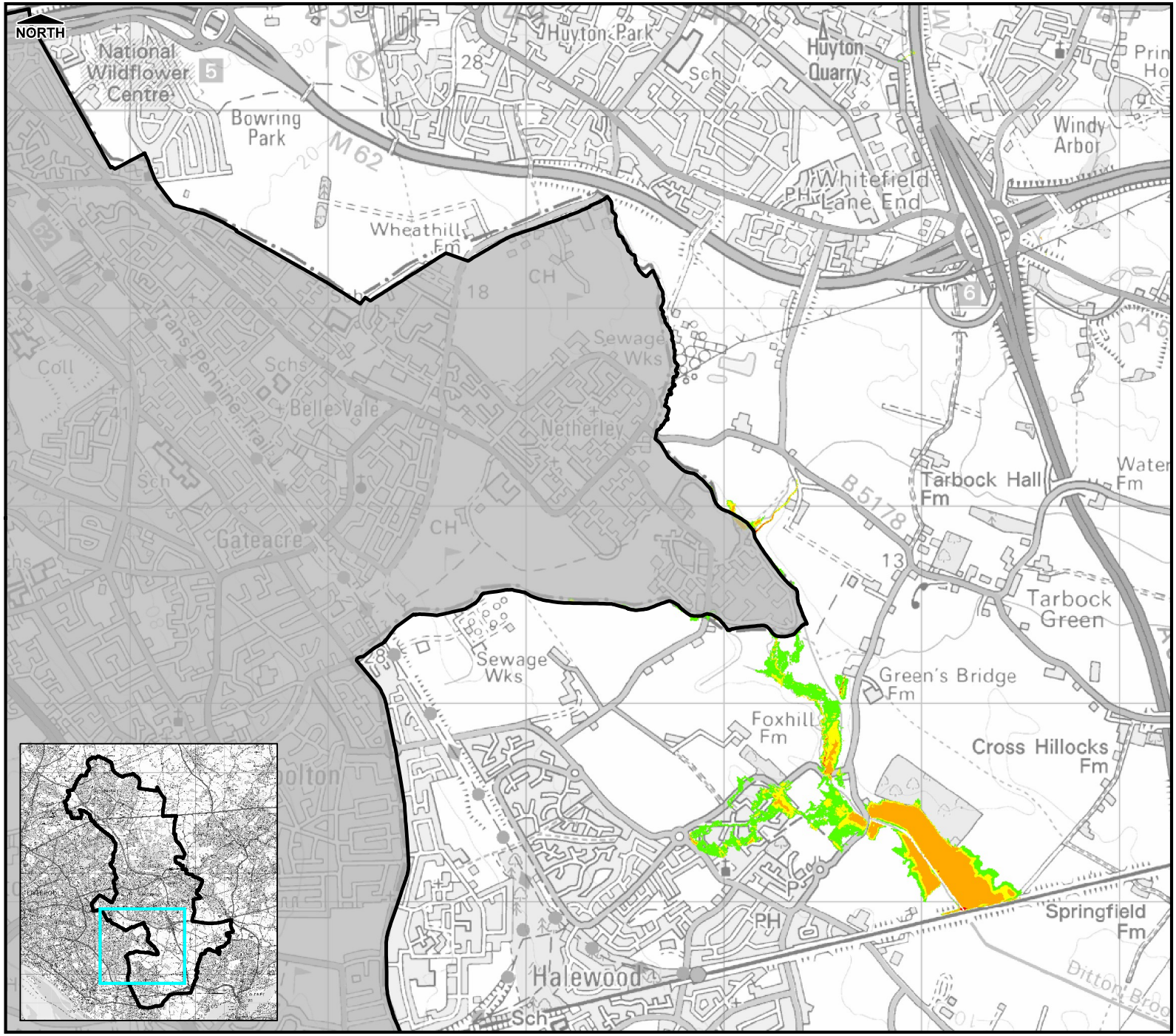
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B3-C-1
Actual Risk
Flood Velocity

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B3-C-1	-



Legend

- Borough Administrative Boundary

Flood Hazard Rating (1% AEP Event)

- < 0.75 (Low)
- 0.75 to 1.25 (Moderate)
- 1.25 to 2.0 (Significant)
- > 2.0 (Extreme)

NOTES:

The outputs are from the River Netherley and Halewood (2011) and the Logwood Mill Brook (2012) Flood Risk Mapping Studies

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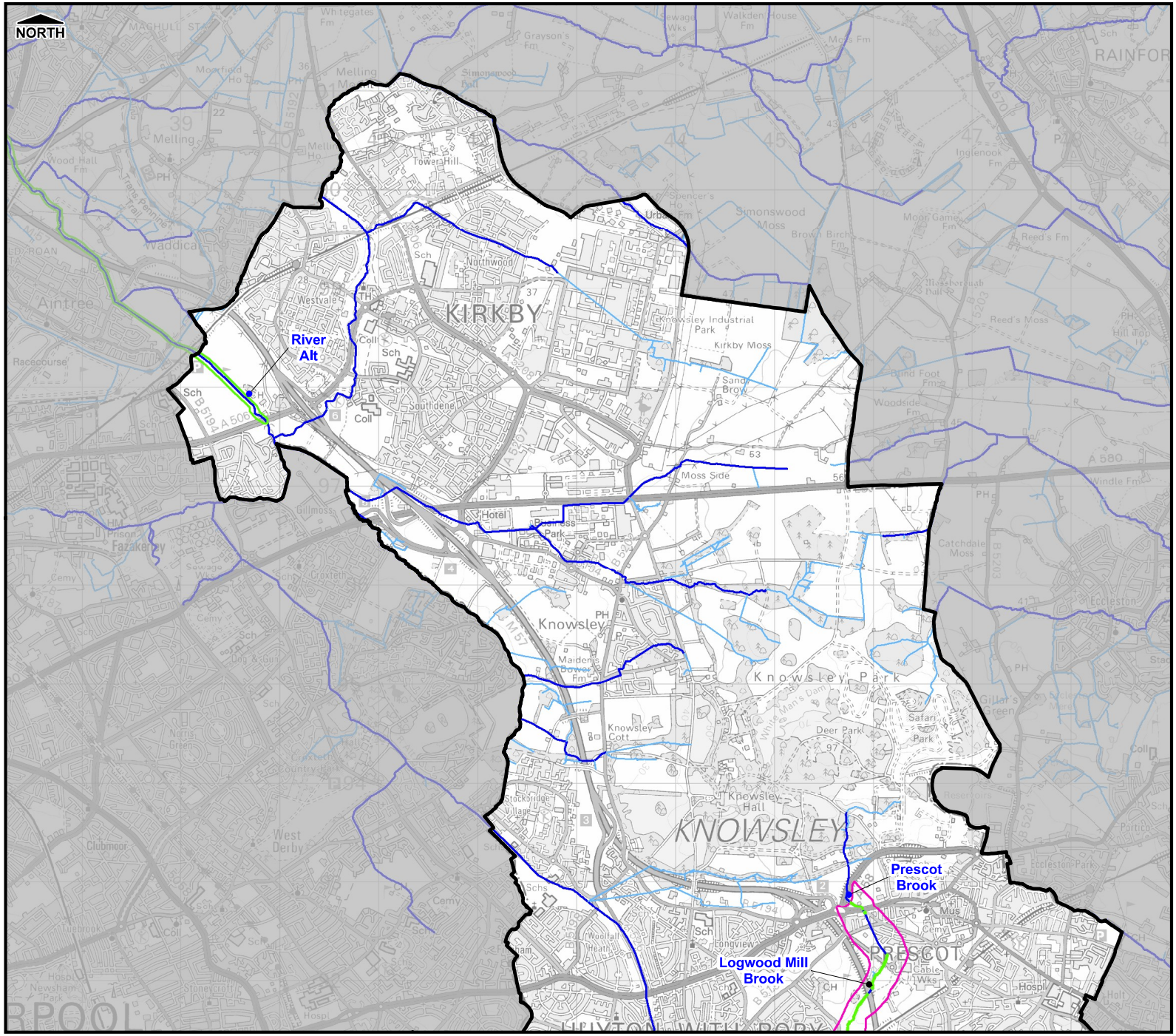
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B3-D-1
Actual Risk
Flood Hazard

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B3-D-1	-



Legend

- Borough Administrative Boundary
- 1D Model Boundary
- 2D Model Boundary
- Main River
- Ordinary Watercourse

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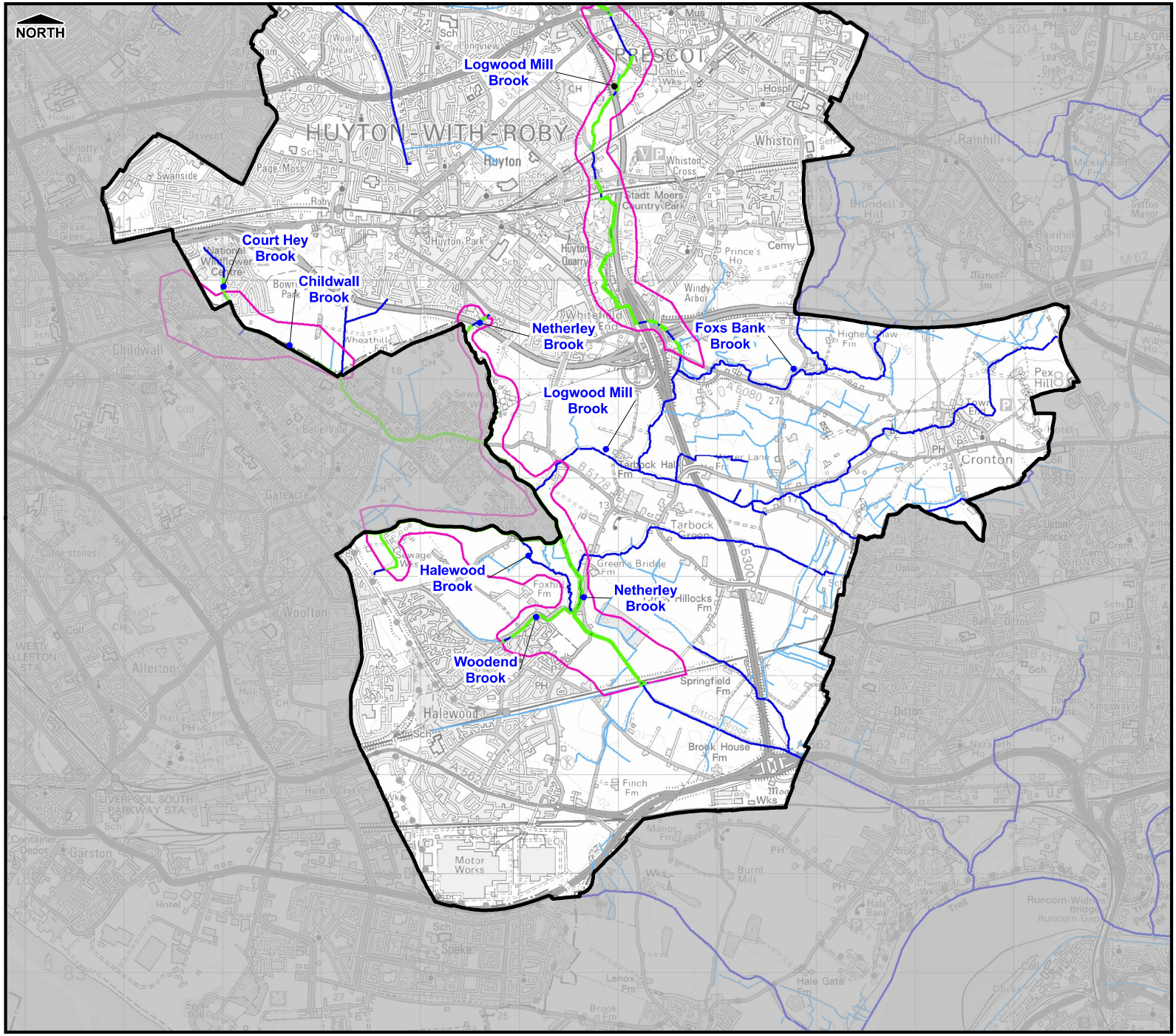
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B4-1
Modelled Watercourses

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B4-1	-



Legend

- Borough Administrative Boundary
- 1D Model Boundary
- 2D Model Boundary
- Main River
- Ordinary Watercourse

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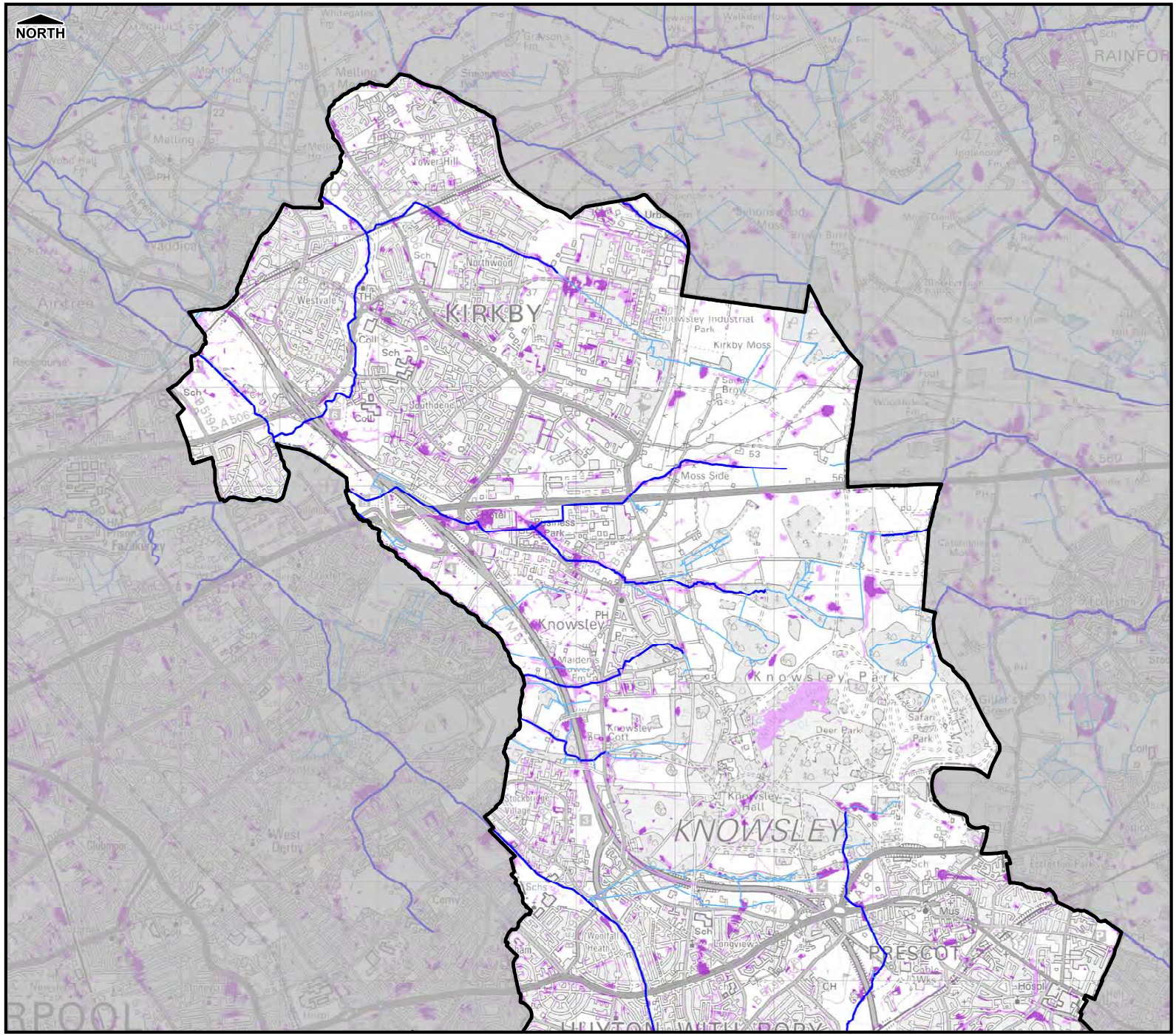
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B4-2
Modelled Watercourses

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B4-2	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- 200yr Surface Water Event (Deep)
- 200yr Surface Water Event (Shallow)

DISCLAIMER:

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

NOTES:

The outputs are from the Environment Agency Flood Map for Surface Water Data Set (2010).

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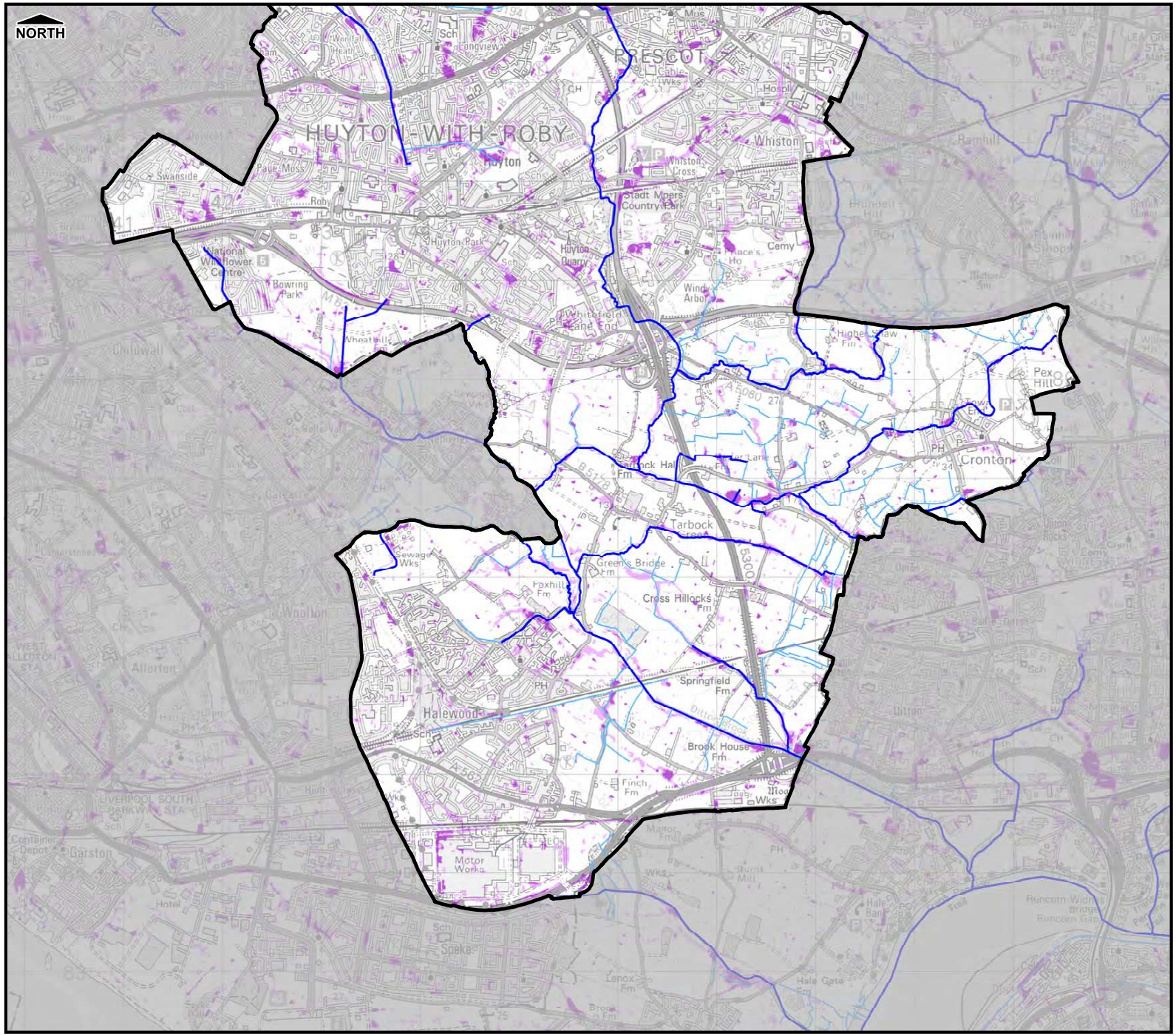
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B5-1
Environment Agency Flood Map for Surface Water

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B5-1	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- 200yr Surface Water Event (Deep)
- 200yr Surface Water Event (Shallow)

DISCLAIMER:

This map gives an indication of the broad areas likely to be at risk of surface water flooding. It is not suitable for use at an individual property scale due to the method used.

NOTES:

The outputs are from the Environment Agency Flood Map for Surface Water Data Set (2010).

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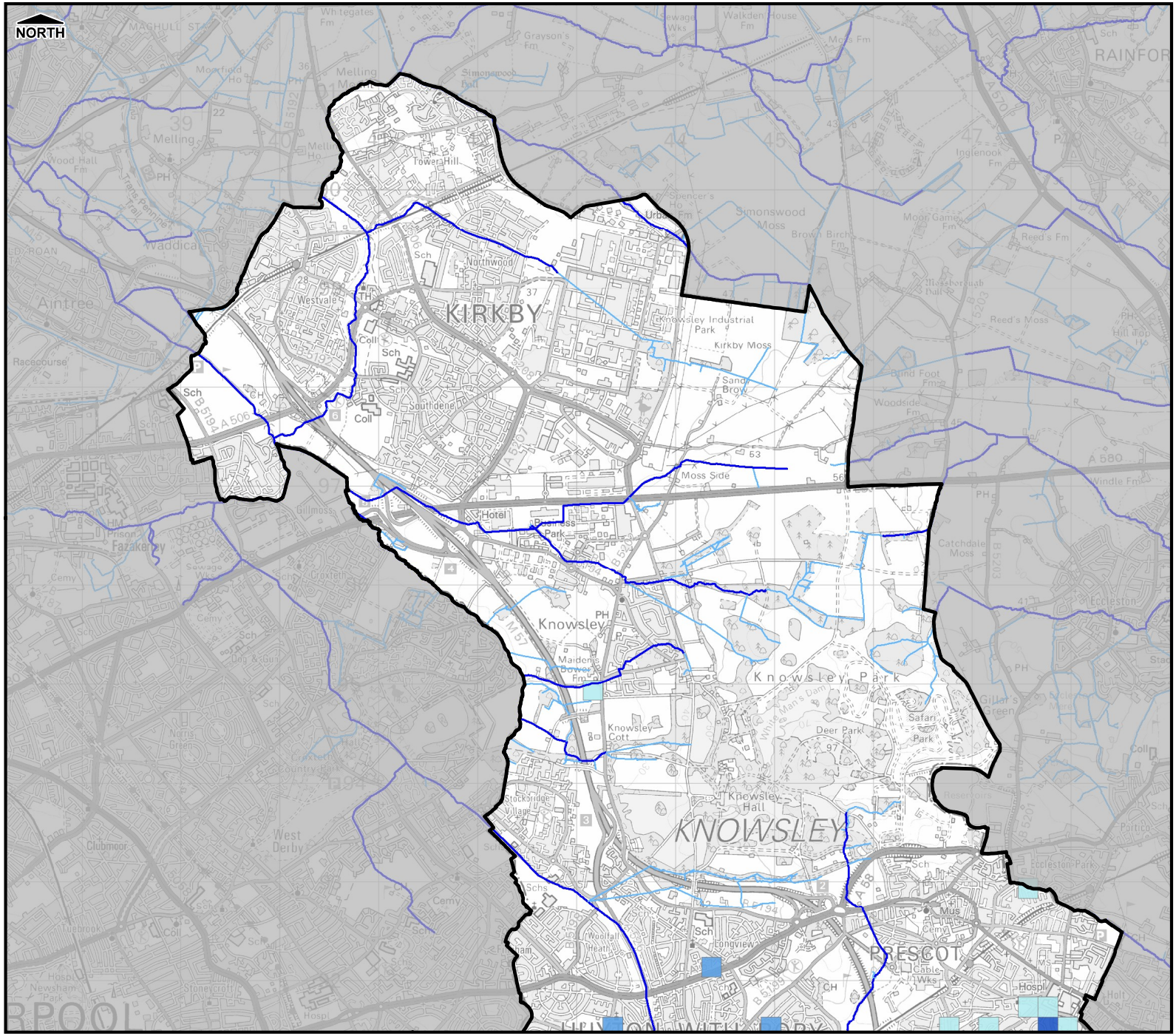
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B5-2
Environment Agency Flood Map for Surface Water

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B5-2	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse

Flooding incidents from 1st April 2008 - 3rd May 2012:

- 1 - 2
- 3 - 5
- 6 - 9
- > 10

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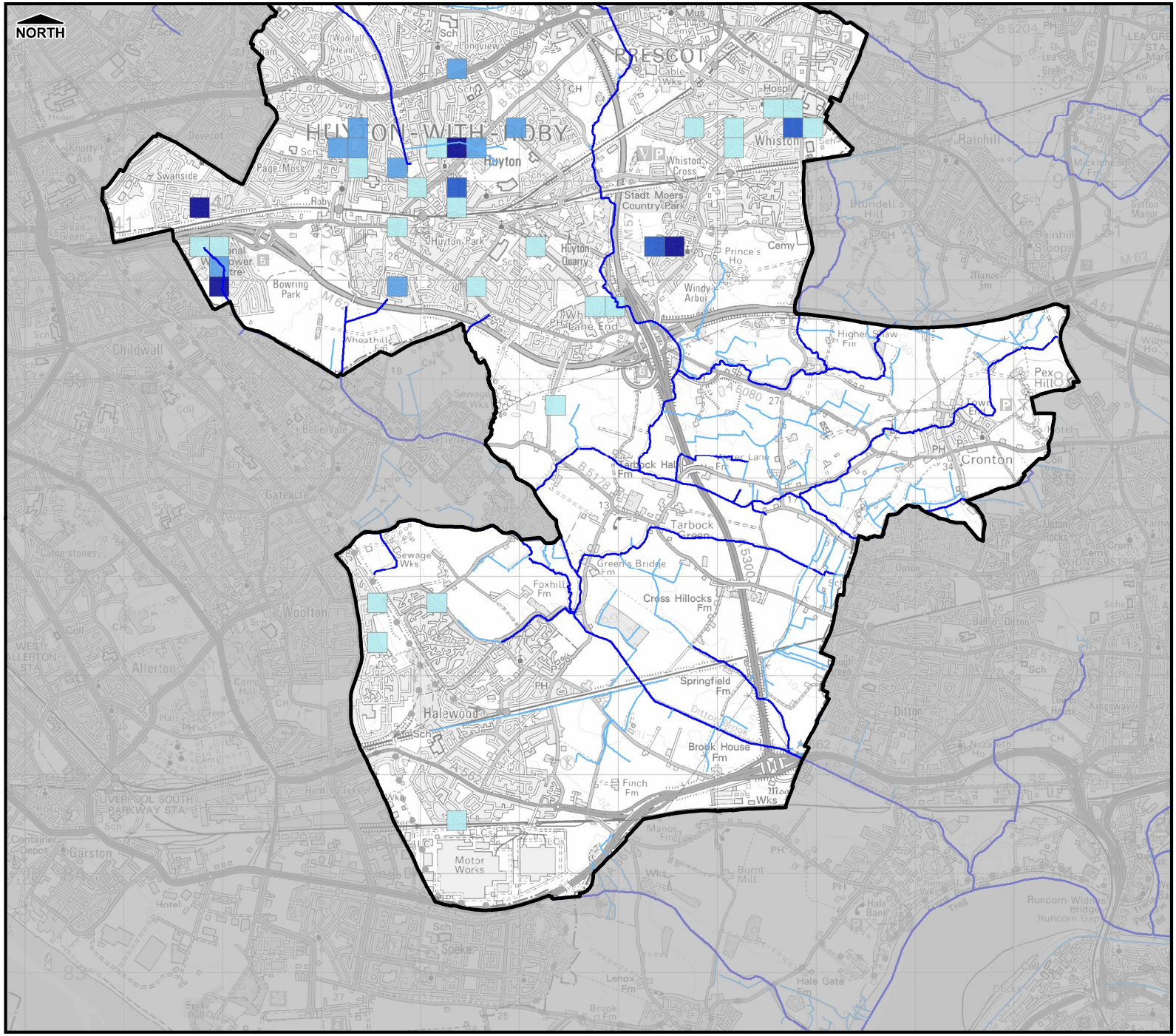
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B6-1
Number of Sewer Related Surface Water Flooding Incidents

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B6-1	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse

Flooding incidents from 1st April 2008 - 3rd May 2012:

- 1 - 2
- 3 - 5
- 6 - 9
- > 10

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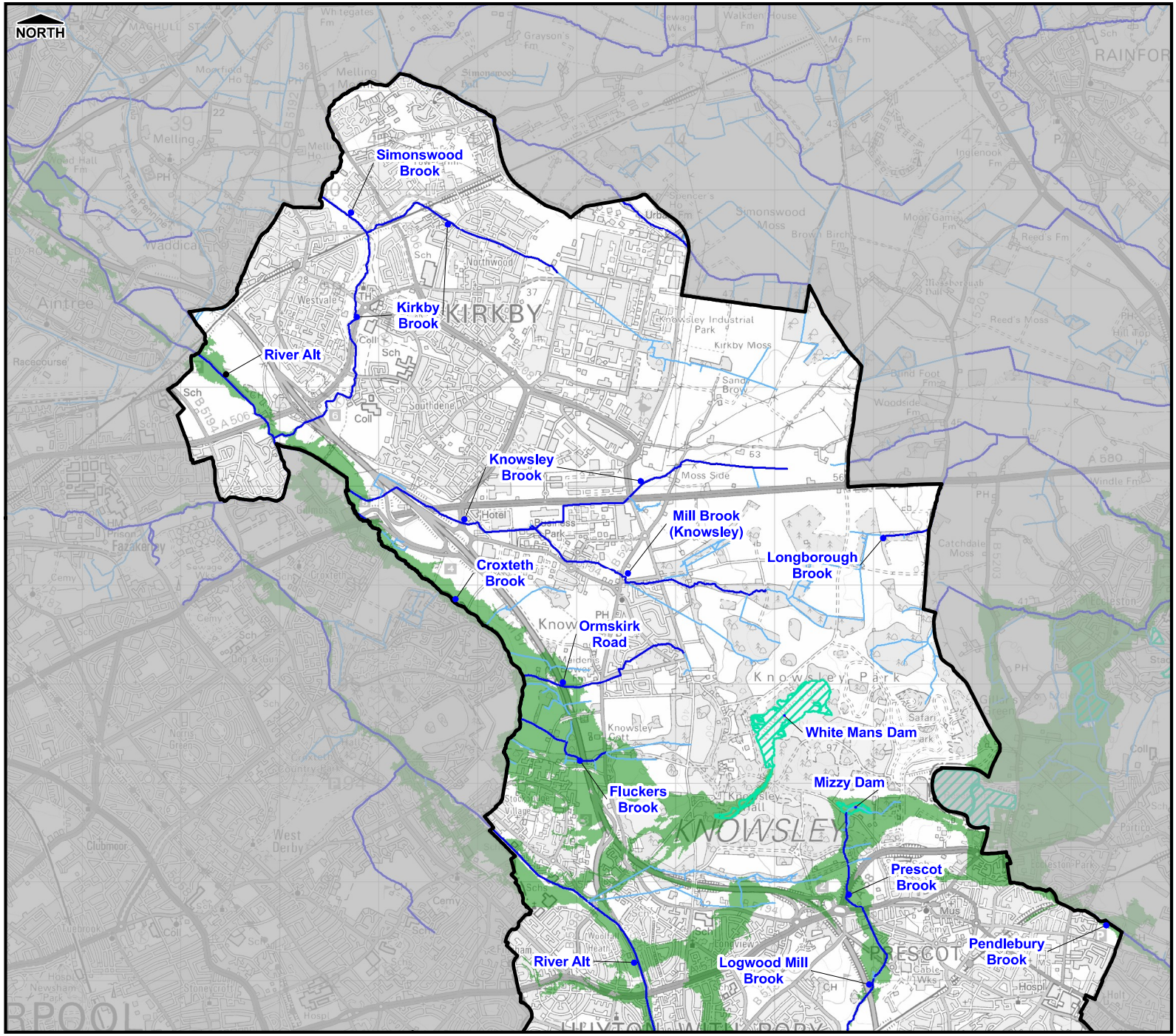
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B6-2
Number of Sewer Related Surface Water Flooding Incidents

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B6-2	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Lakes/Reservoirs
- Maximum Extent of Resevoir Flooding

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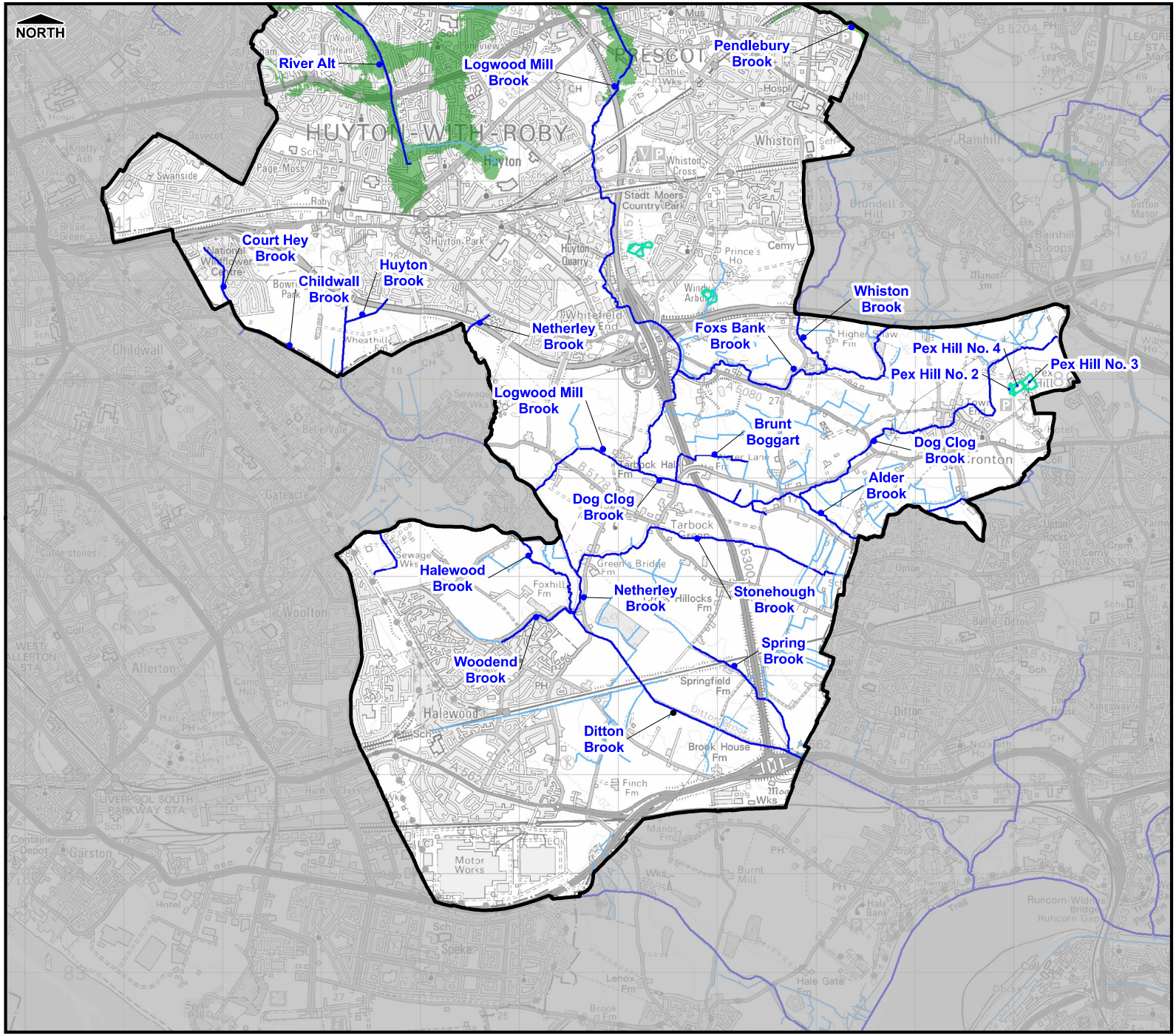
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B7-1
Reservoir Flooding

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B7-1	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Lakes/Reservoirs
- Maximum Extent of Resevoir Flooding

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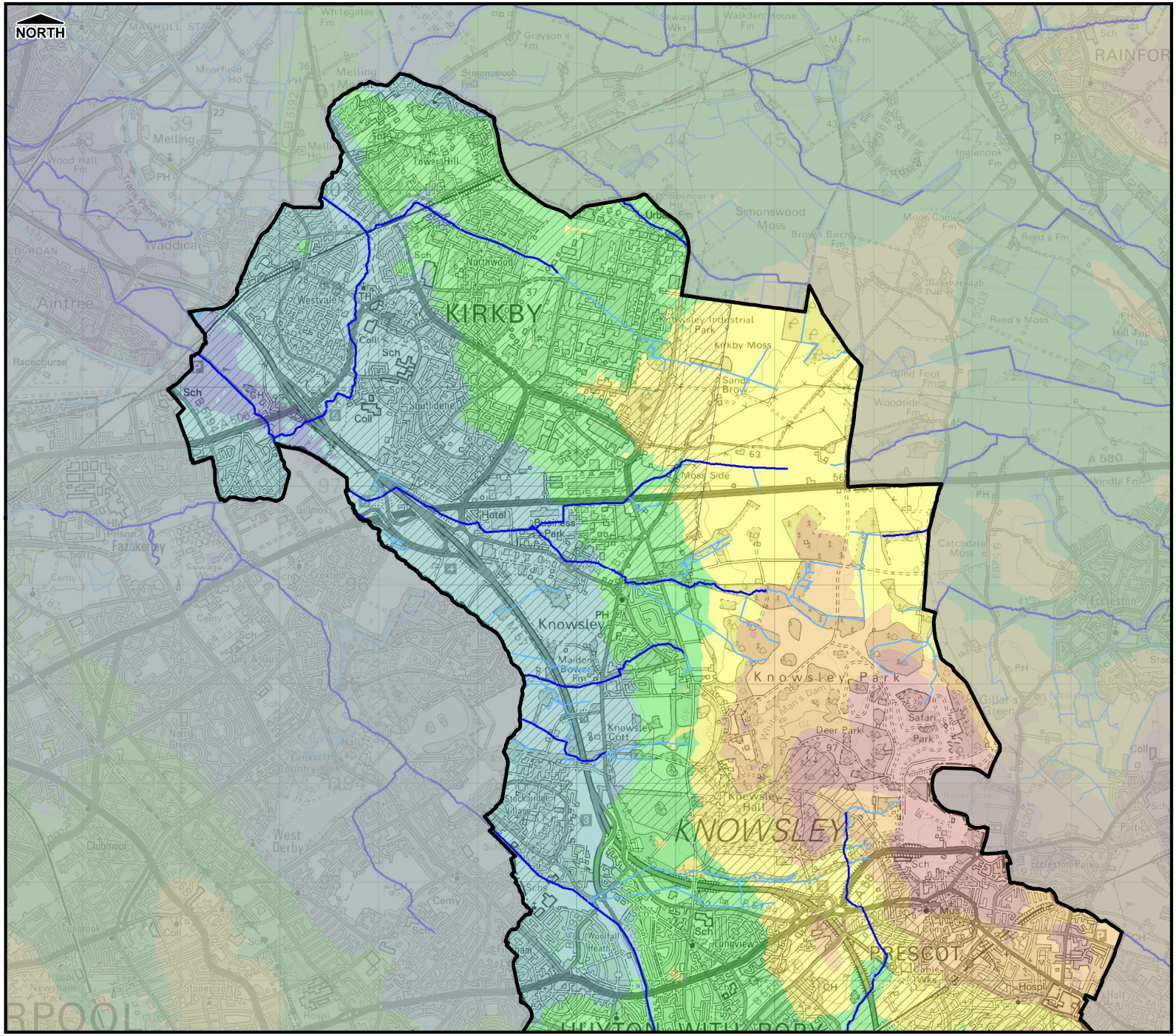
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B7-2
Reservoir Flooding

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B7-2	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- LiDAR Coverage (remainder SAR data)

Terrain Height (mAOD)

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 75
- >75

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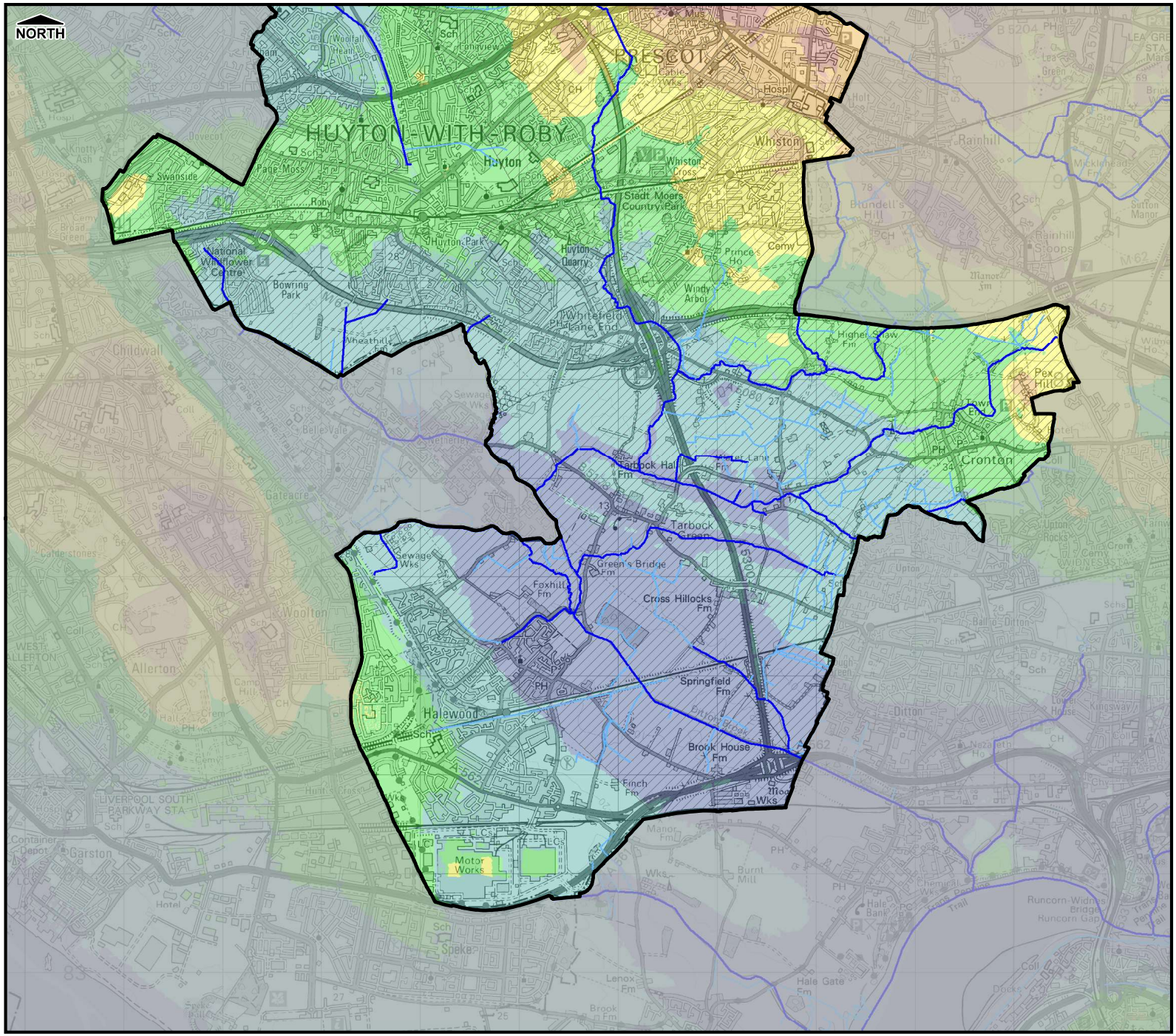
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B8-1
LiDAR

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B8-1	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- LiDAR Coverage (remainder SAR data)

Terrain Height (mAOD)

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 75
- >75

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DRAWN BY	DATE	CHECKED BY	PASSED BY
S.Turnbull	30/05/2012	L.Tattersall	P.Raynor

SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

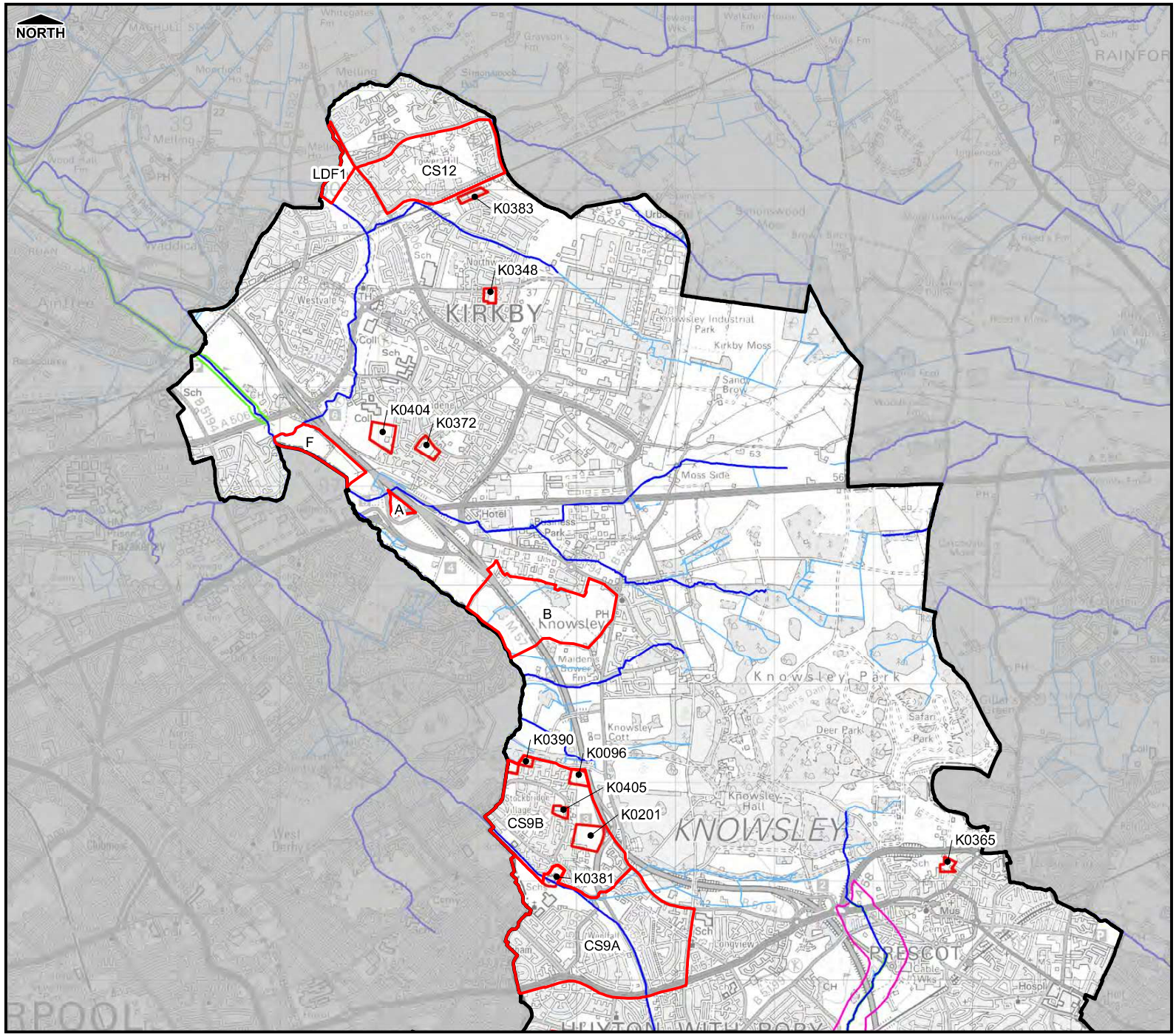
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B8-2
LiDAR

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B8-2	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Site under consideration
- 1D Model Boundary
- 2D Model Boundary

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1:40,000	Sheffield

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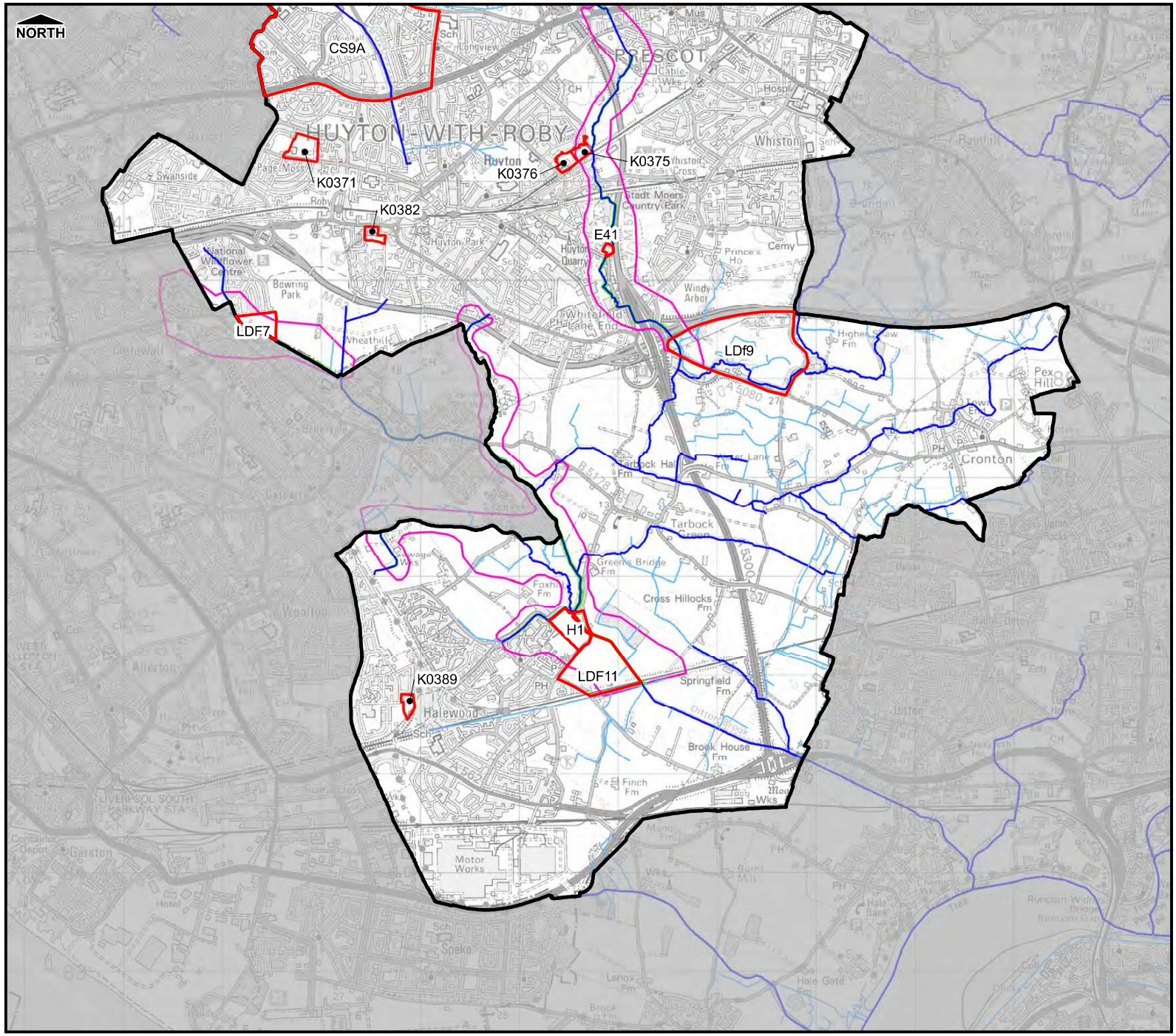
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B9-1
Sites considered as part of the Study and Model Extents

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B9-1	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse
- Site under consideration
- 1D Model Boundary
- 2D Model Boundary

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SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

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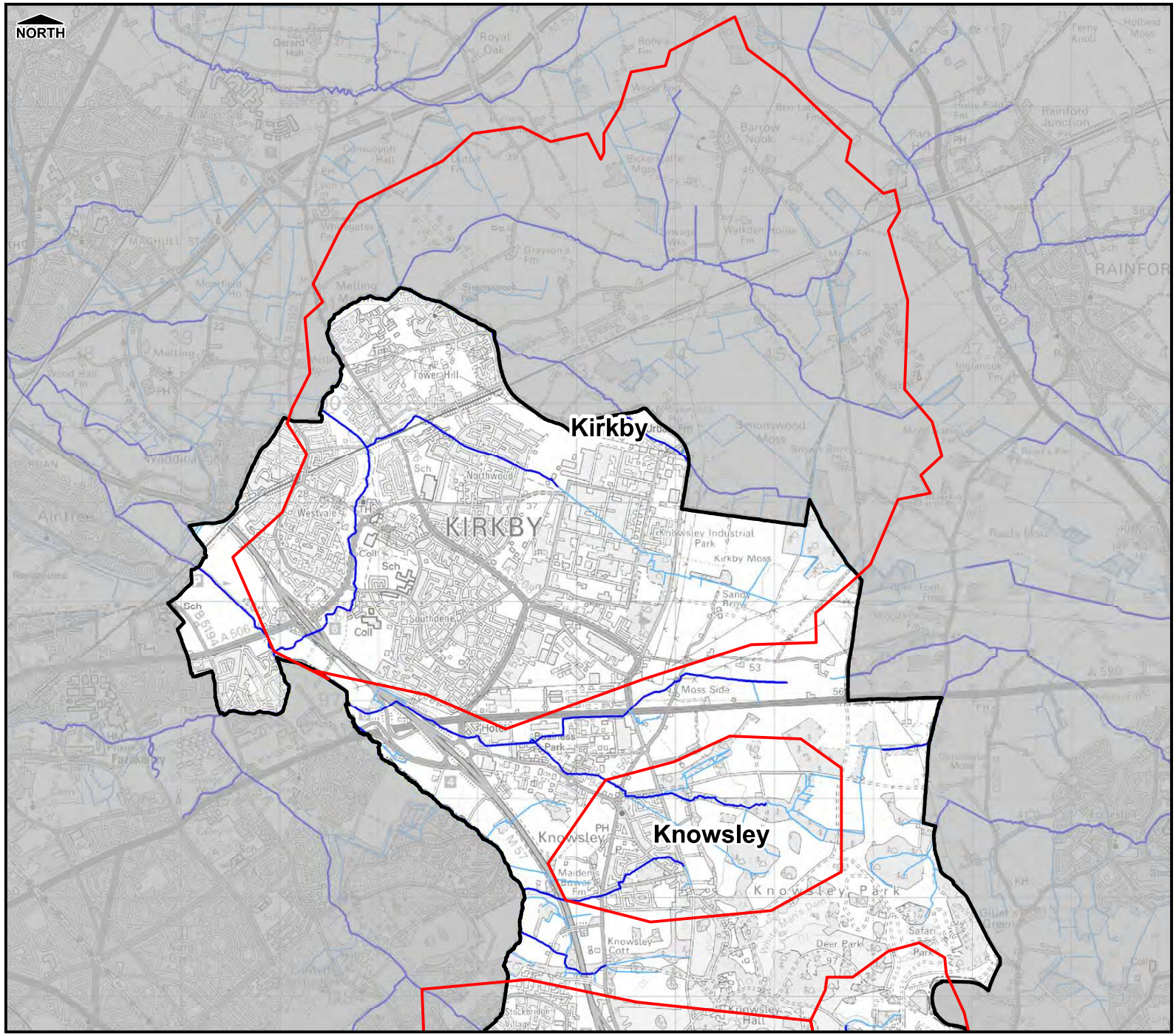
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B9-2
Sites considered as part of the Study and Model Extents

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B9-2	-



Legend

- Critical Drainage Areas
- Borough Administrative Boundary
- Main River
- Ordinary Watercourse

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1:40,000	Sheffield

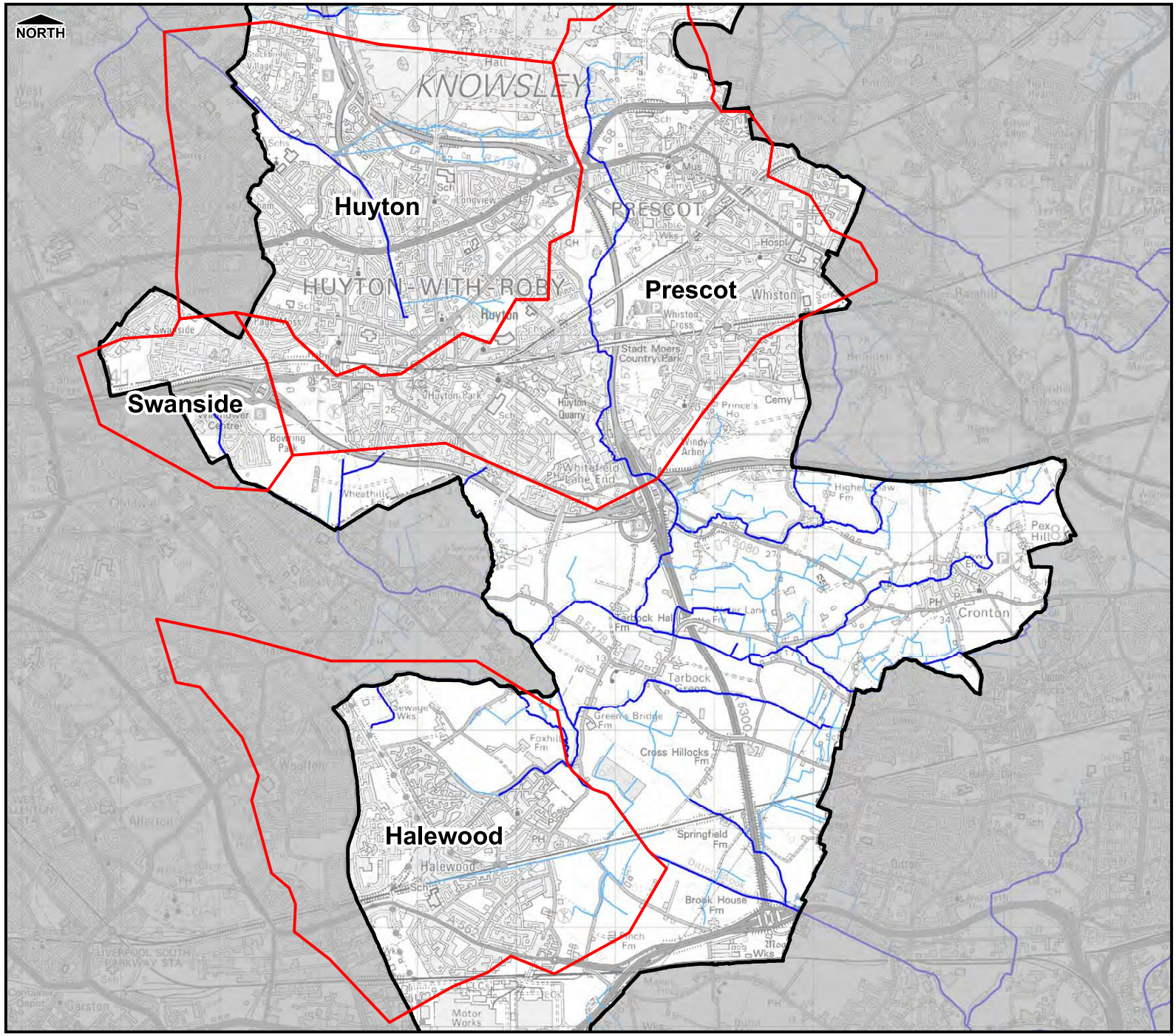
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B10-1
Critical Drainage Areas

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B10-1	-



Legend

- Critical Drainage Areas
- Borough Administrative Boundary
- Main River
- Ordinary Watercourse

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DRAWN BY	DATE	CHECKED BY	PASSED BY
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SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

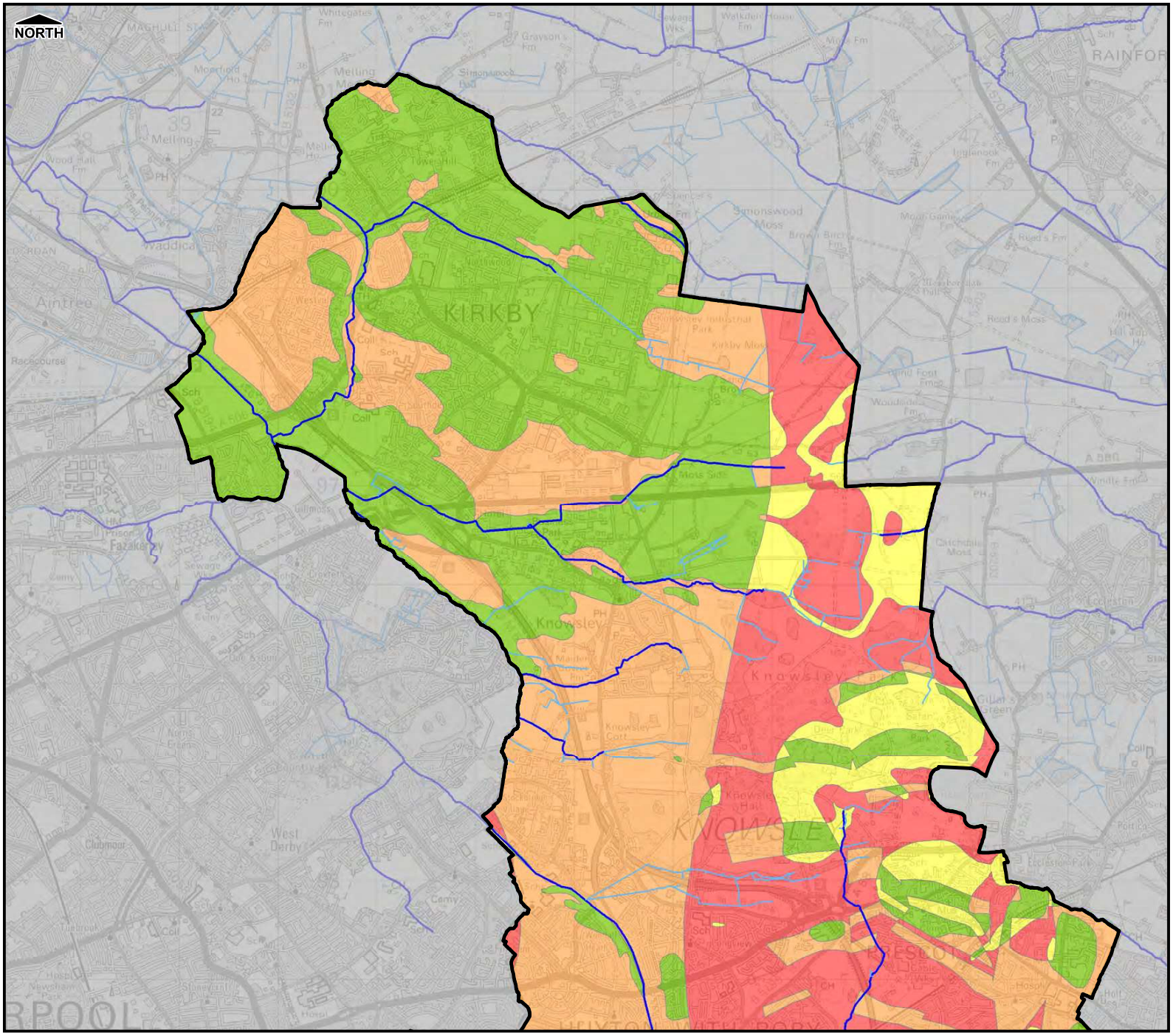
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B10-2
Critical Drainage Areas

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B10-2	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse

Potential Suitability for SuDS

- High
- Medium 1
- Medium 2
- Low

Notes

Areas identified as High Probability are those that combine a permeable drift (or no drift) above a Sandstone solid geology. The Medium Probability (1) class consists of those that are permeable drift above Coal Measures, whilst the Medium Probability Class (2) consists of impermeable/other types of drift above Sandstone solid geology. The Low Probability Class consists of impermeable/other types of drift above Coal Measures.

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SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

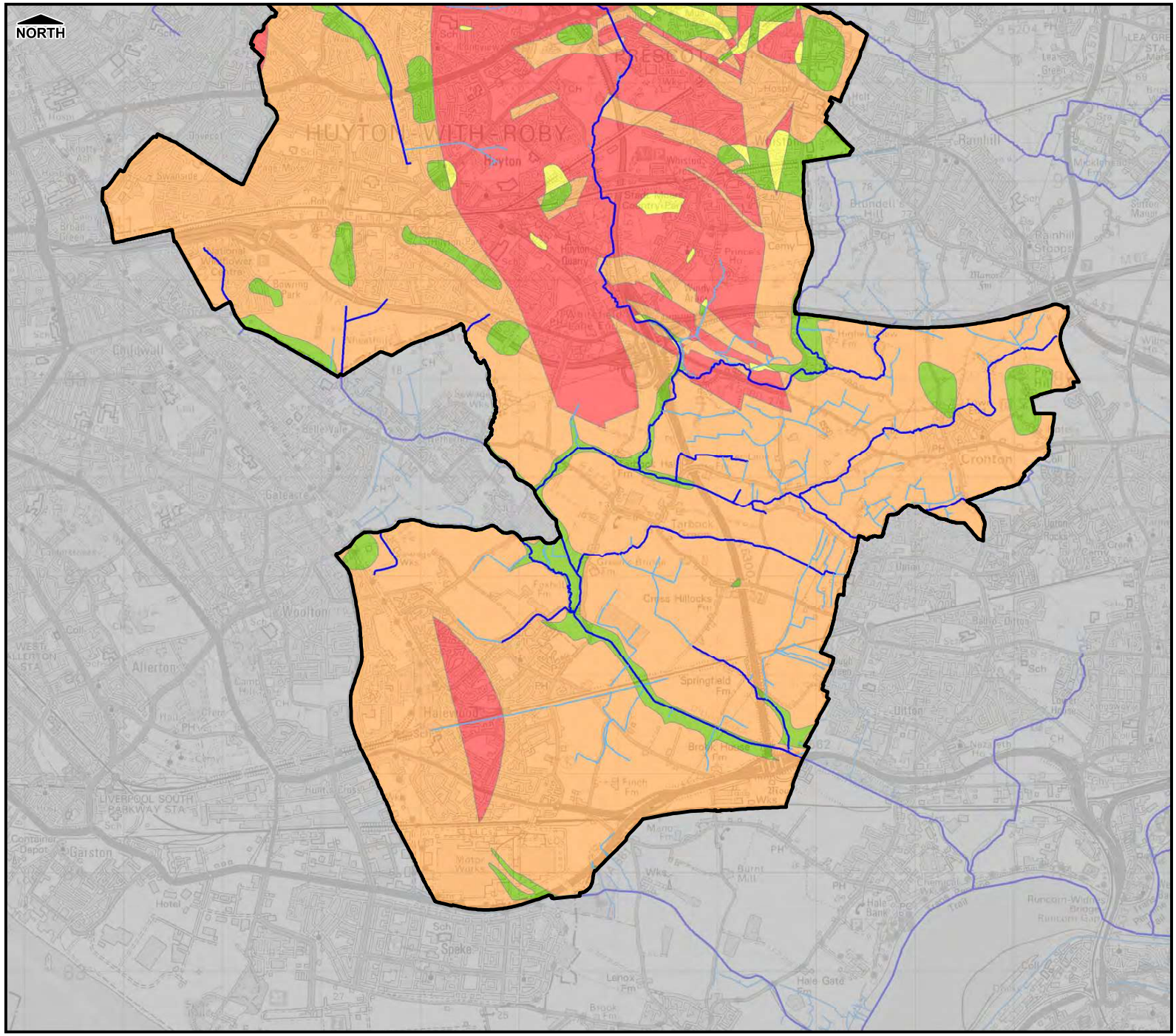
KNOWSLEY METROPOLITAN BOROUGH COUNCIL
LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B11-1
Potential Suitability for SuDS

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B11-1	-



Legend

- Borough Administrative Boundary
- Main River
- Ordinary Watercourse

Potential Suitability for SuDS

- High
- Medium 1
- Medium 2
- Low

Notes

Areas identified as High Probability are those that combine a permeable drift (or no drift) above a Sandstone solid geology. The Medium Probability (1) class consists of those that are permeable drift above Coal Measures, whilst the Medium Probability Class (2) consists of impermeable/other types of drift above Sandstone solid geology. The Low Probability Class consists of impermeable/other types of drift above Coal Measures.

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SCALE @ A3	ISSUING OFFICE
1:40,000	Sheffield

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LEVEL 2 STRATEGIC FLOOD RISK ASSESSMENT

Figure B11-2
Potential Suitability for SuDS

Knowsley Council

CAPITA SYMONDS

DRAWING NUMBER	REV
CS056421/B11-2	-

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APPENDIX I: CULVERT INVESTIGATION

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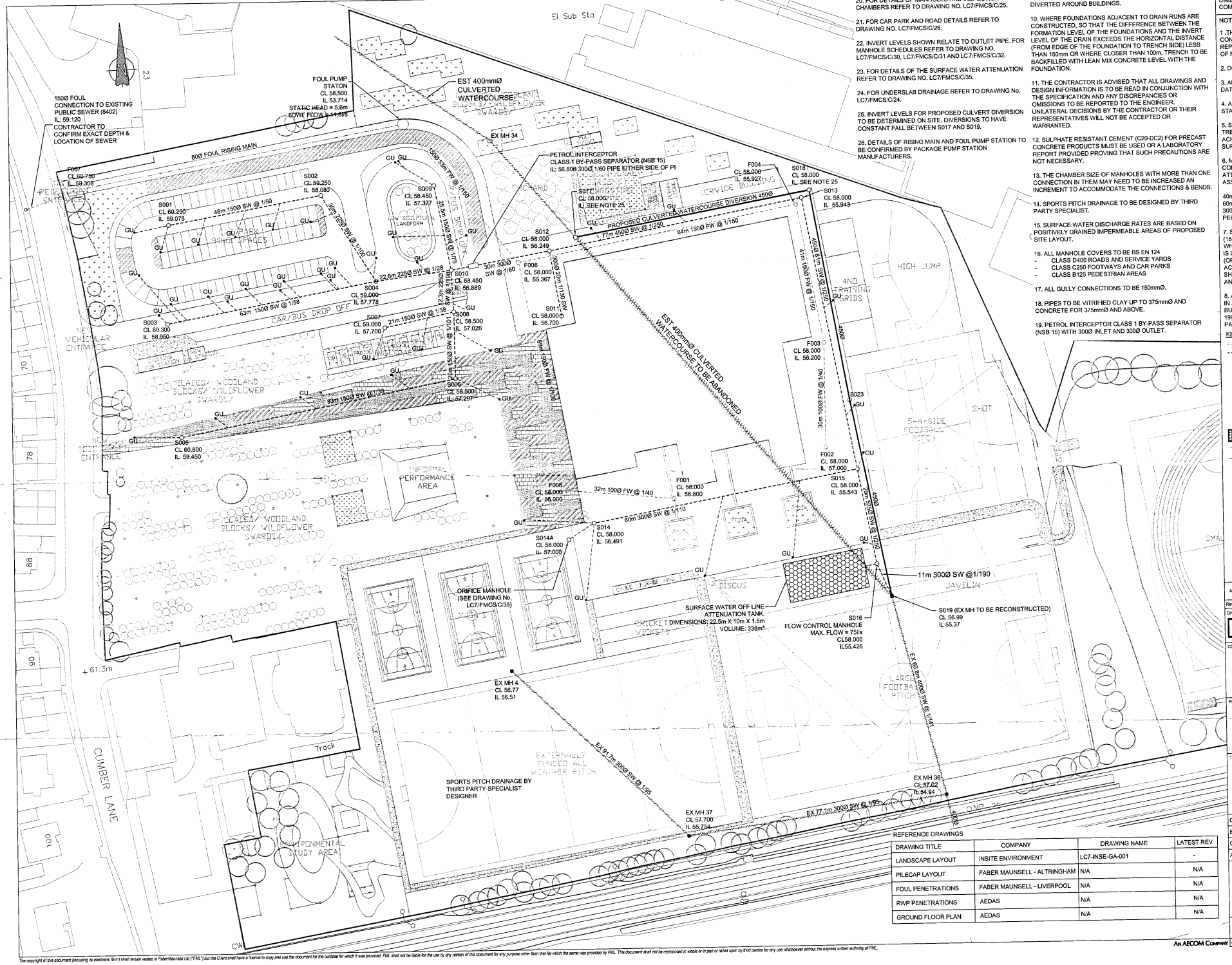

20. FOR DETAILS OF MANHOLES AND INSPECTION CHAMBERS REFER TO DRAWING NO. LC7/FMCS/C/25.

21. FOR CAR PARK AND ROAD DETAILS REFER TO DRAWING NO. LC7/FMCS/C/26.

22. INVERT LEVELS SHOWN RELATE TO OUTLET PIPE. FOR MANHOLE SCHEDULES REFER TO DRAWING NO. LC7/FMCS/C/30, LC7/FMCS/C/31 AND LC7/FMCS/C/32.

23. FOR DETAILS OF THE SURFACE WATER ATTENUATION REFER TO DRAWING NO. LC7/FMCS/C/35.

24. FOR UNDERSLAB DRAINAGE REFER TO DRAWING No. LC7/FMCS/C/24.

25. INVERT LEVELS FOR PROPOSED CULVERT DIVERSION TO BE DETERMINED ON SITE. DIVERSIONS TO HAVE CONSTANT FALL BETWEEN S017 AND S019.

26. DETAILS OF RISING MAIN AND FOUL PUMP STATION TO BE CONFIRMED BY PACKAGE PUMP STATION MANUFACTURERS.

9. ALL EXISTING LAND DRAINS ENCOUNTERED TO BE DIVERTED AROUND BUILDINGS.

10. WHERE FOUNDATIONS ADJACENT TO DRAIN RUNS ARE CONSTRUCTED, SO THAT THE DIFFERENCE BETWEEN THE FORMATION LEVEL OF THE FOUNDATIONS AND THE INVERT LEVEL OF THE DRAIN EXCEEDS THE HORIZONTAL DISTANCE (FROM EDGE OF THE FOUNDATION TO TRENCH SIDE) LESS THAN 150mm OR WHERE CLOSER THAN 100m, TRENCH TO BE BACKFILLED WITH LEAN MIX CONCRETE LEVEL WITH THE FOUNDATION.

11. THE CONTRACTOR IS ADVISED THAT ALL DRAWINGS AND DESIGN INFORMATION IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION AND ANY DISCREPANCIES OR OMISSIONS TO BE REPORTED TO THE ENGINEER. UNILATERAL DECISIONS BY THE CONTRACTOR OR THEIR REPRESENTATIVES WILL NOT BE ACCEPTED OR WARRANTED.

12. SULPHATE RESISTANT CEMENT (C20-DC2) FOR PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.

13. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS & BENDS.

14. SPORTS PITCH DRAINAGE TO BE DESIGNED BY THIRD PARTY SPECIALIST.

15. SURFACE WATER DISCHARGE RATES ARE BASED ON POSITIVELY DRAINED IMPERMEABLE AREAS OF PROPOSED SITE LAYOUT.

16. ALL MANHOLE COVERS TO BE BS EN 124
- CLASS D400 ROADS AND SERVICE YARDS
- CLASS C250 FOOTWAYS AND CAR PARKS
- CLASS B125 PEDESTRIAN AREAS

17. ALL GULLY CONNECTIONS TO BE 150mmØ.

18. PIPES TO BE VITRIFIED CLAY UP TO 375mmØ AND CONCRETE FOR 375mmØ AND ABOVE.

19. PETROL INTERCEPTOR CLASS 1 BY-PASS SEPARATOR (NSB 15) WITH 300Ø INLET AND 300Ø OUTLET.

NOTE:- CONTRACTOR TO CONFIRM ALL SITE DIMENSIONS/SETTING OUT PRIOR TO COMMENCEMENT OF WORK

NOTES

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2. DO NOT SCALE FROM THIS DRAWING.

3. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM.

4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.

5. SEWERS MUST HAVE 5m CLEARANCE FROM TREES & HEDGES. WHERE IT IS NOT POSSIBLE TO ACHIEVE THIS CLEARANCE, CONCRETE BED & SURROUND IS REQUIRED.

6. MUGA'S TO BE DESIGNED BY SPECIALIST CONTRACTOR. MUGA'S TO BE USED AS SW ATTENUATION. DESIGN OF SW DRAINAGE ASSUMES THE FOLLOWING:

40mm PERMEABLE WEARING COURSE
60mm SAND LAYER
300mm SINGLE SIZE GRAVEL (POROSITY 0.35)
PERFORATED PIPES AT 10m CENTRES

7. SEWERS TO BE LAID IN CLASS 'S' BEDDING (150mm GRANULAR BED AND SURROUND). WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 900mm IN NONE VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.

8. ALL PRIVATE DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH PART H OF THE CURRENT BUILDING REGULATIONS AND BS EN 752 PART 1 1996, PART 2 1997, PART 3 1997, PART 4 1998, PART 5 1998, PART 6 1998 AND PART 7 1998.

KEY

- PROPOSED FOUL SEWER
- PROPOSED SW SEWER
- IL INVERT LEVEL
- CL COVER LEVEL
- FOUL MANHOLE
- FOUL INSPECTION CHAMBER
- SW MANHOLE
- SW INSPECTION CHAMBER
- GU GULLY
- SW ATTENUATION
- EXISTING COMBINED SEWER
- EXISTING SW SEWER

Rev	Date	Detail	Made	Ckd	App
A	18/02/08	ISSUED FOR COMMENT	JCR	SCL	CJO

Drawing Status:

FOR COMMENT

Client:

BALFOUR BEATTY CONSTRUCTION

Project:

KNOWSLEY BSF
LC7 - KNOWSLEY CENTRAL RC LEARNING CENTRE

Title:

PROPOSED DRAINAGE LAYOUT

CAD Ref:

Engineer	WJ			Made	WJ
C'k'd	M -	E -	PH SJK	STR -	Date 16/01/07
App.	SJK			Scale	1/500 @ A1

REFERENCE DRAWINGS

DRAWING TITLE	COMPANY	DRAWING NAME	LATEST REV
LANDSCAPE LAYOUT	INSITE ENVIRONMENT	LC7-INSE-GA-001	-
PILECAP LAYOUT	FABER MAUNSELL - ALTRINGHAM	N/A	N/A
FOUL PENETRATIONS	FABER MAUNSELL - LIVERPOOL	N/A	N/A
RWP PENETRATIONS	AEDAS	N/A	N/A
GROUND FLOOR PLAN	AEDAS	N/A	N/A

FABER MAUNSELL AECOM
5th Floor
2 City Walk,
Leeds. LS11 9AR
T +44(0) 113 391 6800
F +44(0) 113 391 6999
www.fabermaunsell.com

No. LC7/FMCS/C/23 Rev A

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A1

Key:

- Existing culverted watercourse requiring lining (CCTV completed)
- Culverted watercourse diversion within St Edmunds Arrowsmith (CCTV completed)
- Existing culverted watercourse within St Edmunds Arrowsmith (CCTV unavailable)
- Buried Manholes. Locations confirmed by probing.

Ex MH33

225Ø VC

225Ø Line Require Lining

225Ø VC

375Ø VC

Ex MH34
C.L.58.62m
I.L.56.96m

450Ø Concrete

450Ø Concrete

SW18
Buried Under Grass
G.L.58.23m

Partially exposed SW18 buried in grass. Unable to access

CCTV showing new 450Ø concrete pipe - culverted watercourse diversion

450Ø Concrete

450Ø Concrete

SW19
Buried Under Grass

450Ø Concrete

Exposed SW20 buried in grass

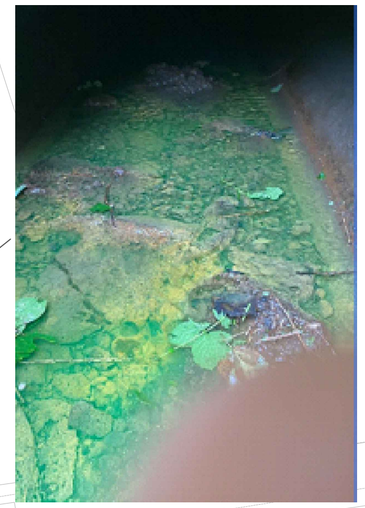
SW20 Buried under grass but exposed

450Ø Concrete

SW21
Buried Under Grass. Line Comes in on T not bend so can not CCTV to outfall.

Pin showing location of buried SW21. Unable to access

Dye in Whiston Brook from MH33 in Glen Dimplex



Outfall discharges under railway into Whiston Brook confirmed via dye test.

Rev	Description	Date	Initial

Revisions

Taylor Wimpey

Taylor Wimpey North West
Washington House, Birchwood Park,
Warrington, Cheshire WA3 6GR
Tel 01925 849 500 Fax 01925 849 501
www.taylorwimpey.com

DRAWING TITLE:

GLEN DIMPLEX

RAINHILL
CULVERTED WATERCOURSE DIVERSION INVESTIGATION

DRAWING STATUS: PRELIMINARY

DWG SCALE	DATE	DRAWN	CHECKED BY
NTS @ A1	03/09/25	CP	-

DRAWING NUMBER

SITE CODE	DRAWING CODE	DRAWING NO	REVISION
GLEN DIM	100	01	-

N.B. NEW MAINS TO BE TAKEN FROM EXISTING 6" MAINS IN DRAGON LANE ABOUT 1900 FEET WEST OF NEW STOP-COCKS AT 'A'

WHISTON INFIRMARY

CUMBER LANE

STONEY LANE

SHED No 2

SHED No 1

1971 LAND DRAIN

BRICK TRANSFORMER HOUSE

9 STRAND B.W. FENCE

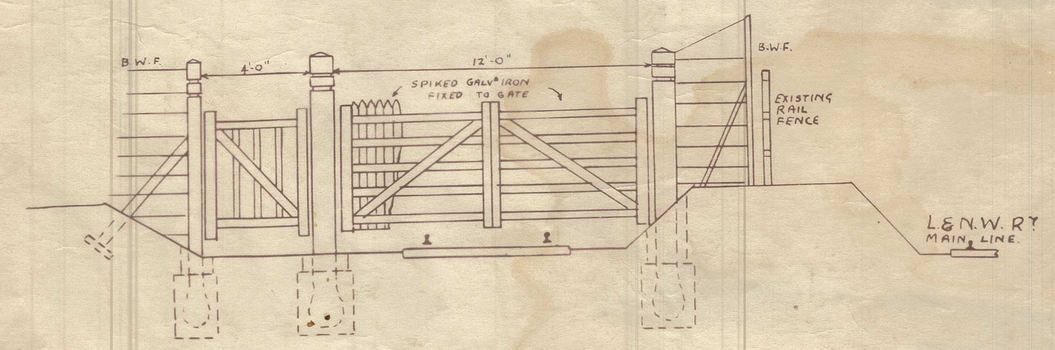
L.&N.W. RY MAIN LINE TO LIVERPOOL TO MANCHESTER

TO LIVERPOOL

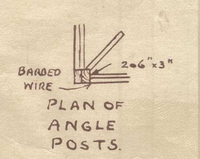
DESCRIPTION

GAS MAINS MARKED THUS
WATER MAINS "
ELECTRIC MAINS "
SEWER (EXISTING) "
NEW DRAINS "
SURFACE WATER DRAINS "
LAND DRAINS "
SLIDING DOORS "
SKYLIGHTS "
LEVELS

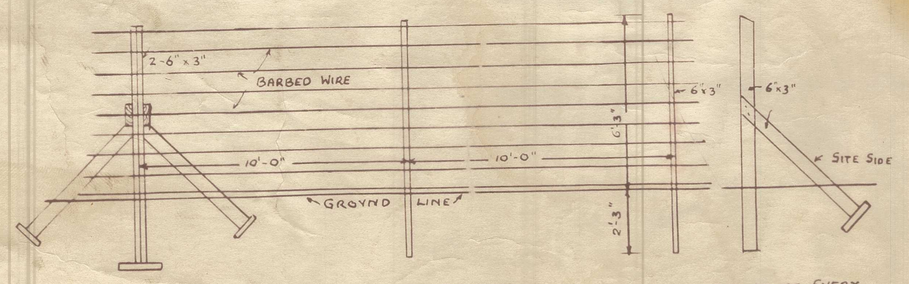
N.B. LEVELS TAKEN AS BEING ABOVE DATUM WHICH IS 40'-0" BELOW THE SIGNAL BOX GROUND LEVEL AT 'A'.



DETAIL OF GATES OVER RAILWAY



PLAN OF ANGLE POSTS.



STRAINING POST

DETAILS OF FENCING SCALE 1/4" = 1 FOOT.

DETAIL OF EVERY 5TH POST.

WHISTON RAINHILL : NR. LIVERPOOL.

MUNITION STORE SITE PLAN.

SCALE OF 56 FEET TO AN INCH.

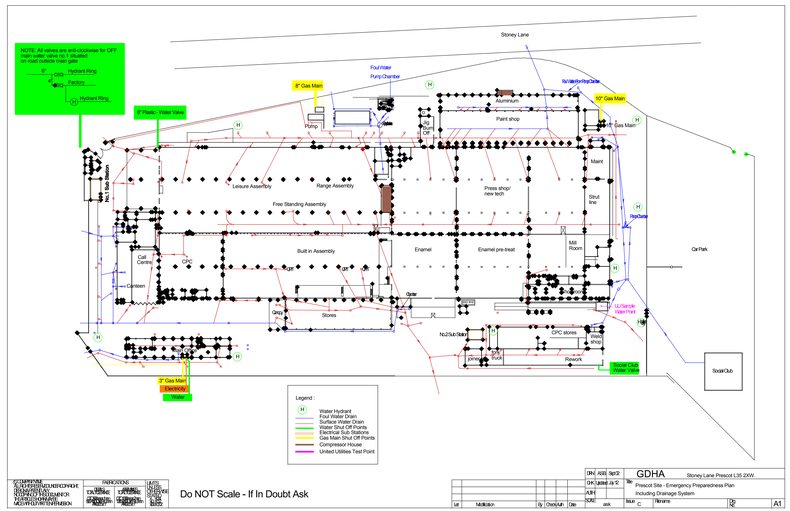
COPIED FROM DRG. No 1 H.M. OFFICE OF WORKS. STORE YS GATE WESTMINSTER S.W.1

STOVES LIMITED RAINHILL

PLAN OF WORKS

TRACED BY W.K.M.

CHECKED W.



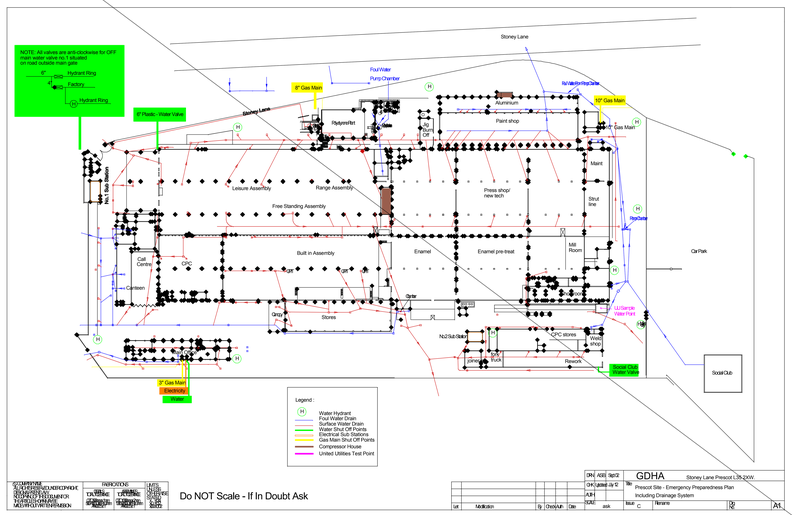
Do NOT Scale - If In Doubt Ask

Lvl	Modification	By	Chkd/App	Date			

DR: A3B Sep'22
CH: Latest Issue G
APP:
SCALE: ask
Issue: C
Filename:
Dr: A1

GDHA
Stoney Lane Prescot L35 2XW.

Title: Prescot Site - Emergency Preparedness Plan
Including Drainage System



Do NOT Scale - If In Doubt Ask

Lvl	Modification	By	Chkd/App	Date			

DR: A3B Sep'22
CH: Latest Issue G
APP:
SCALE: ask
Issue: C
Filename:
Dr: A1

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Stoney Lane Prescot L35 2XW.

Title: Prescot Site - Emergency Preparedness Plan
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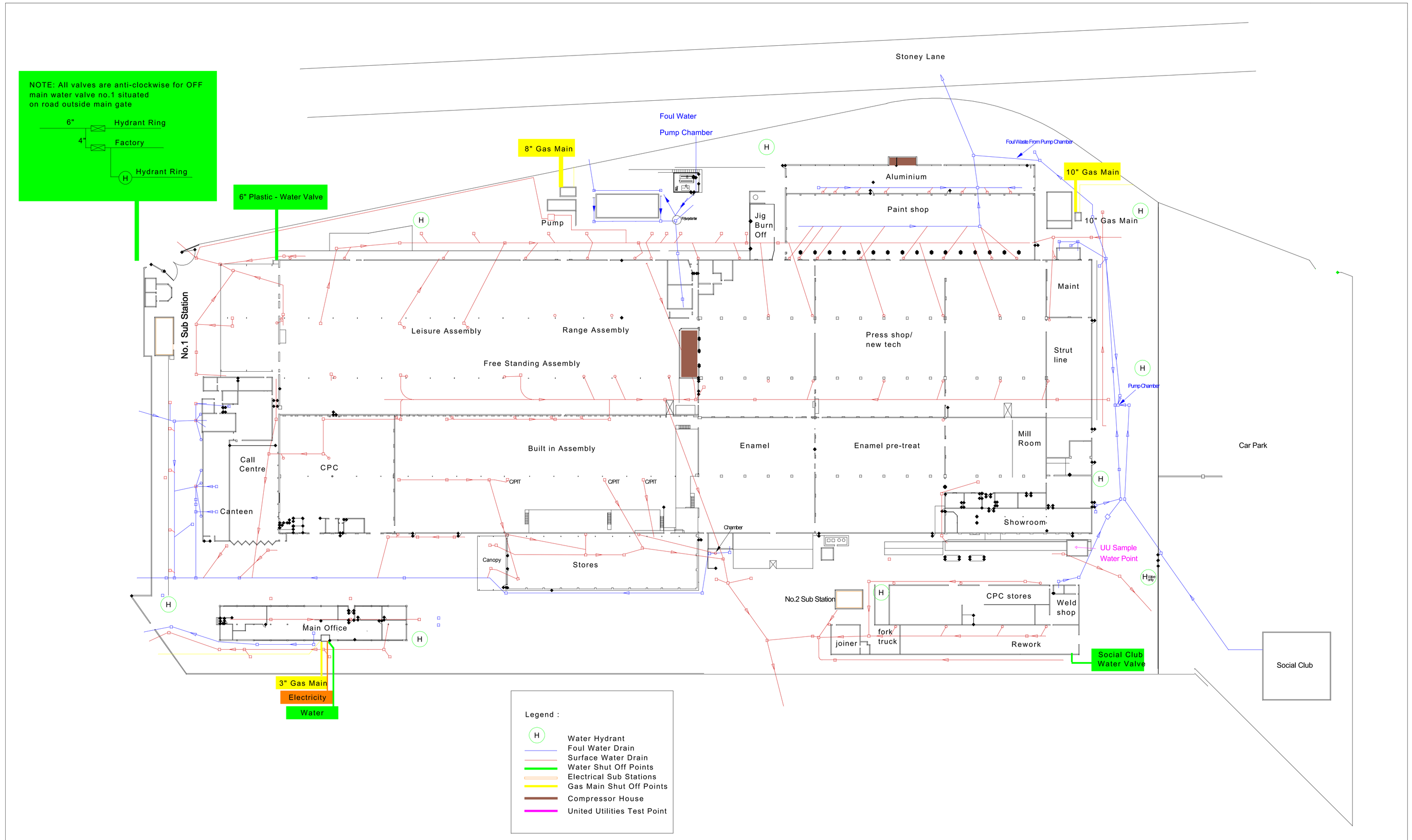

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FABRICATIONS		LIMITS UNLESS OTHERWISE STATED
DETAILS TOTAL TOLERANCE	ASSEMBLIES TOTAL TOLERANCE	
0 TO 500mm ± 1mm 500 AND OVER ± 3mm ANGLES ± 1°	0 TO 1000mm ± 2mm 1000 AND OVER ± 3mm ANGLES ± 1°	x. ± 0.4 x.0 ± 0.2 x.00 ± 0.02

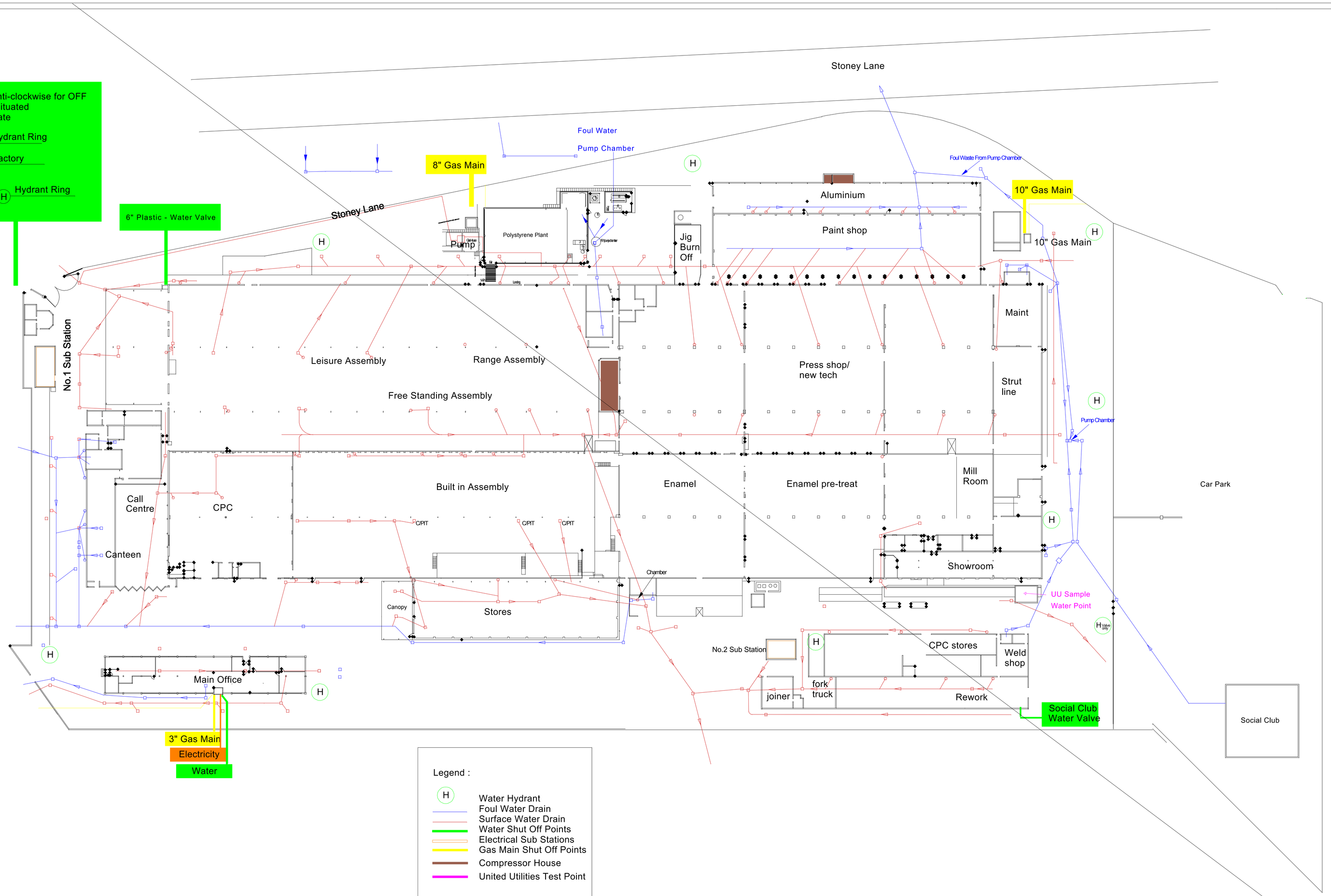
Do NOT Scale - If In Doubt Ask

Let	Modification	By	Check	Auth	Date

DRN	A.S.B.	Sept 02	GDHA Stoney Lane Prescot L35 2XW.
CHK	Updated	July 12	Title: Prescot Site - Emergency Preparedness Plan Including Drainage System
AUTH			
SCALE ask	Issue C	Filename	Drg No. A1

NOTE: All valves are anti-clockwise for OFF
main water valve no.1 situated
on road outside main gate

6" Hydrant Ring
4" Factory
Hydrant Ring



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FABRICATIONS		LIMITS UNLESS OTHERWISE STATED
DETAILS TOTAL TOLERANCE	ASSEMBLIES TOTAL TOLERANCE	
0 TO 500mm ± 1mm	0 TO 1000mm ± 2mm	x ± 0.4
500 AND OVER ± 3mm	1000 AND OVER ± 3mm	x.0 ± 0.2
ANGLES ± 1°	ANGLES ± 1°	x.00 ± 0.02

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DRN	A.S.B.	Sept 02
CHK	Updated	July 12
AUTH		
SCALE	ask	

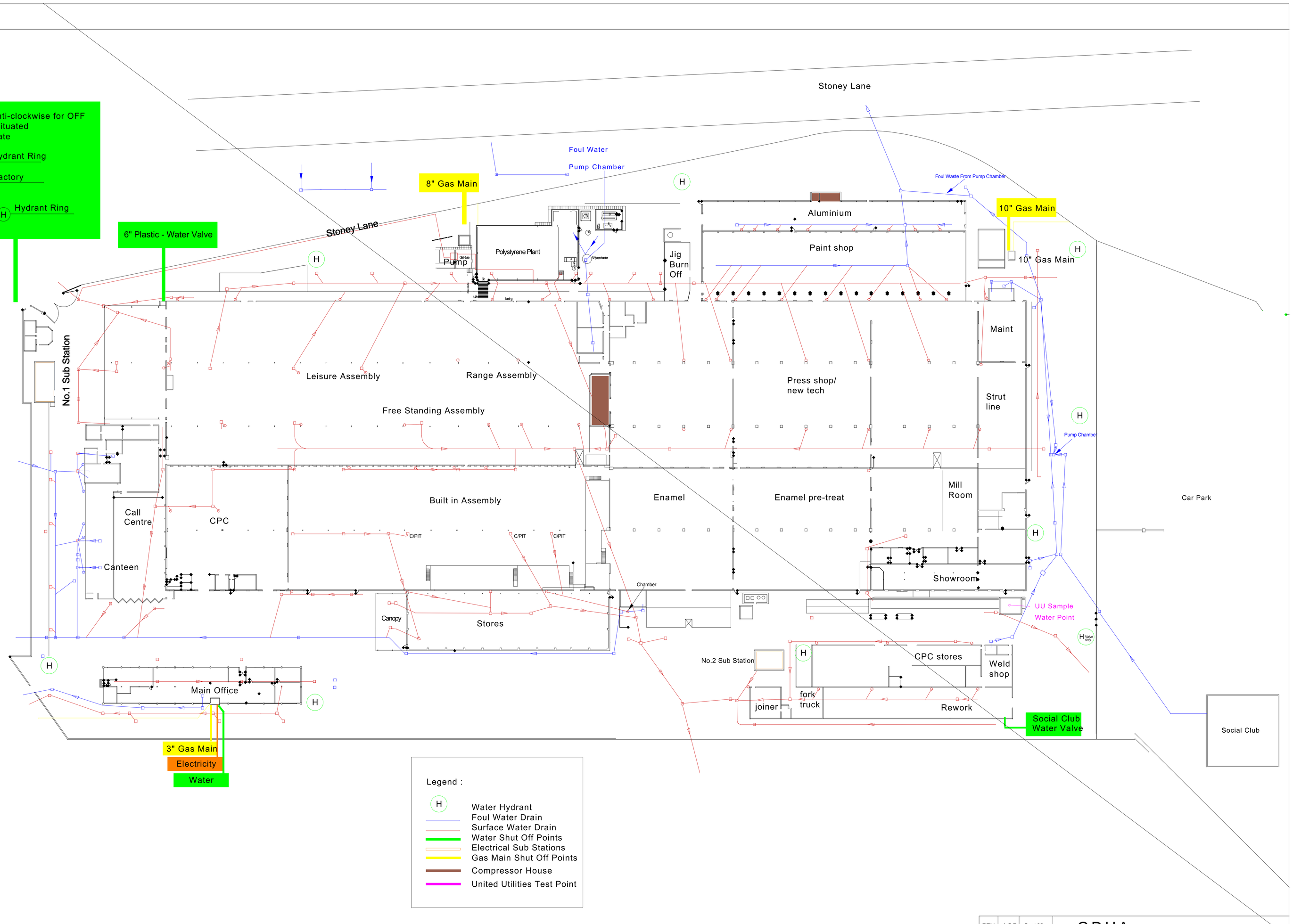
GDHA Stoney Lane Prescot L35 2XW.

Title: Prescot Site - Emergency Preparedness Plan
Including Drainage System

Issue C | Filename | Drg No. | A1

NOTE: All valves are anti-clockwise for OFF
main water valve no.1 situated
on road outside main gate

6" — Hydrant Ring
4" — Factory
H — Hydrant Ring



Legend :

- H — Water Hydrant
- Foul Water Drain
- Surface Water Drain
- Water Shut Off Points
- Electrical Sub Stations
- Gas Main Shut Off Points
- Compressor House
- United Utilities Test Point

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FABRICATIONS		LIMITS UNLESS OTHERWISE STATED
DETAILS TOTAL TOLERANCE	ASSEMBLIES TOTAL TOLERANCE	

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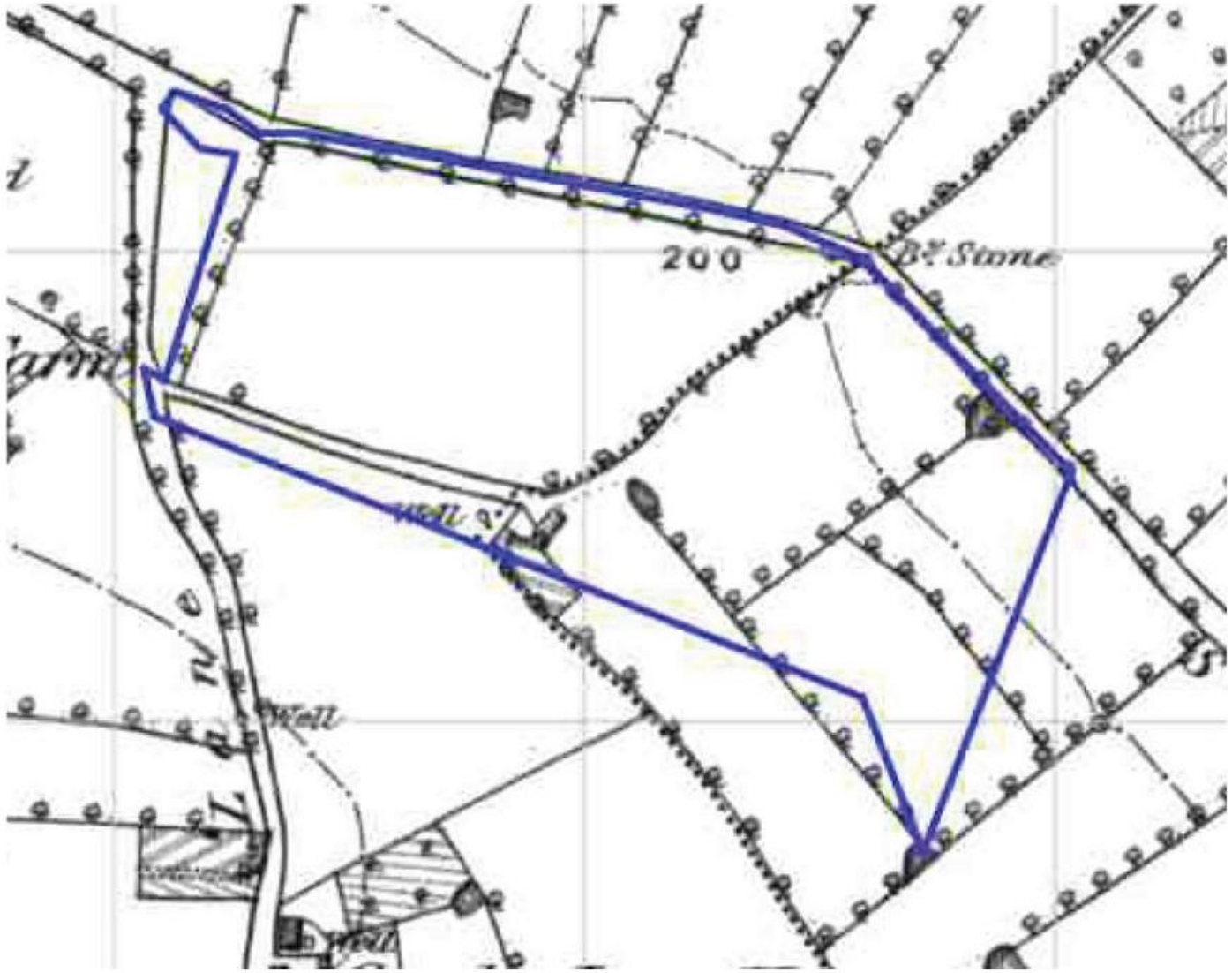
AUTH			

On-site historical development of Glen Dimplex

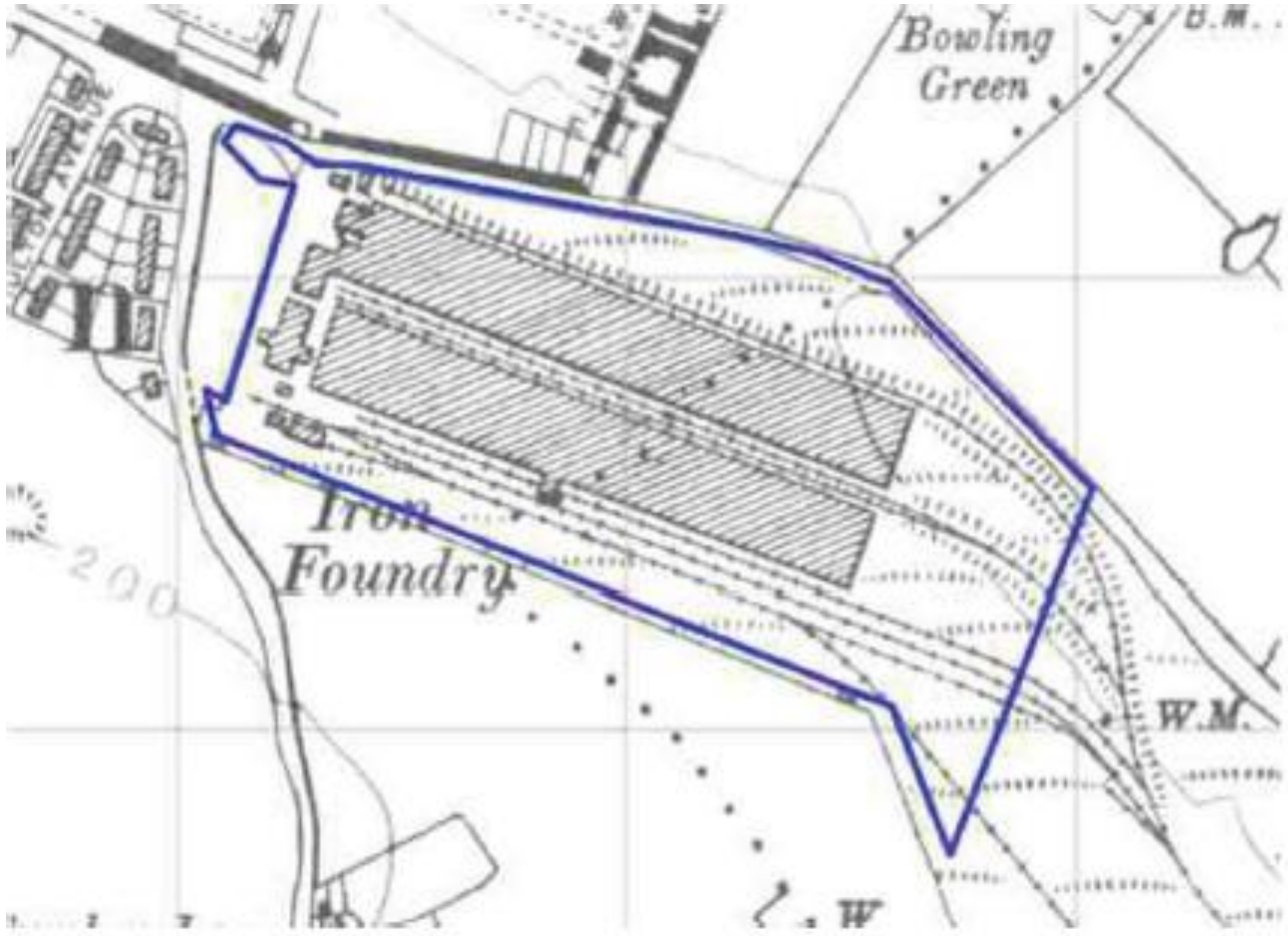
1850 – Several segmenting field boundaries are present, with the site comprising seven smaller fields



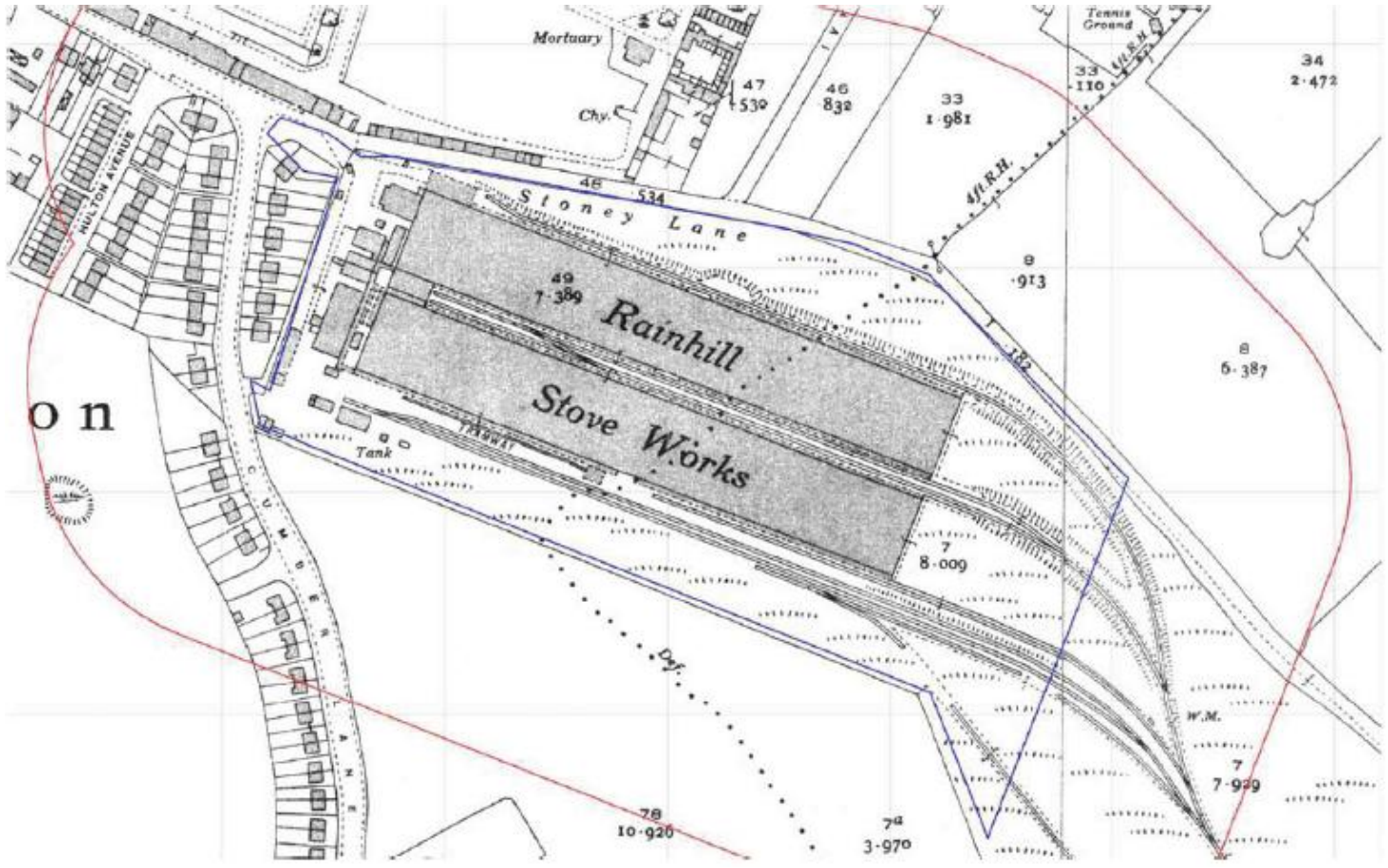
1892 – Majority of field boundaries removed and field boundary traversing through the centre of the site is now noted as a small hedge-lined road traversing from the south towards the northeast, continuing off site.

1907-1925 – Historical mapping unavailable but records held by Heritage Gateway indicates a factory had been developed used as munitions works.

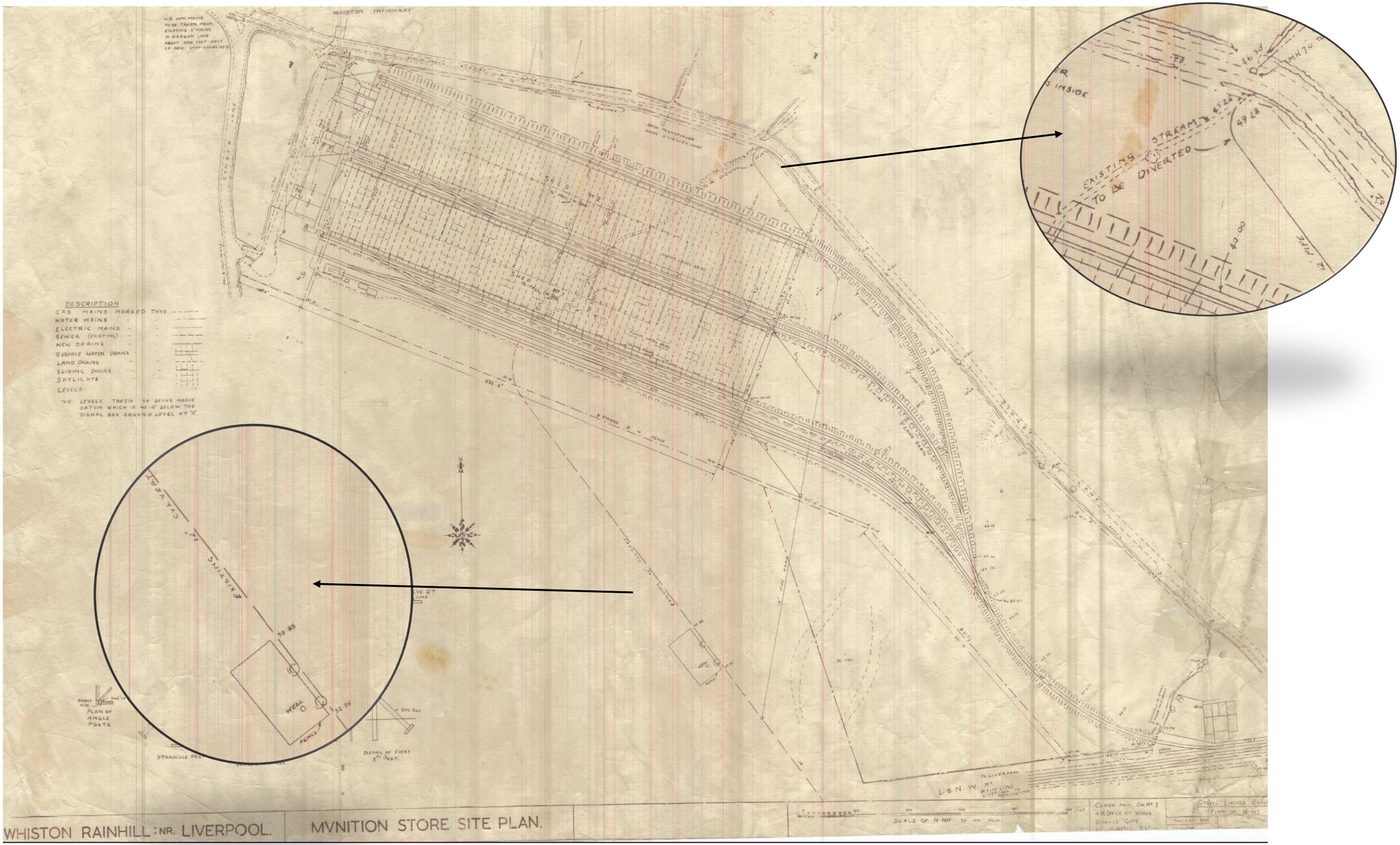
1925 – Site redeveloped and comprises an iron foundry with associated railway sidings



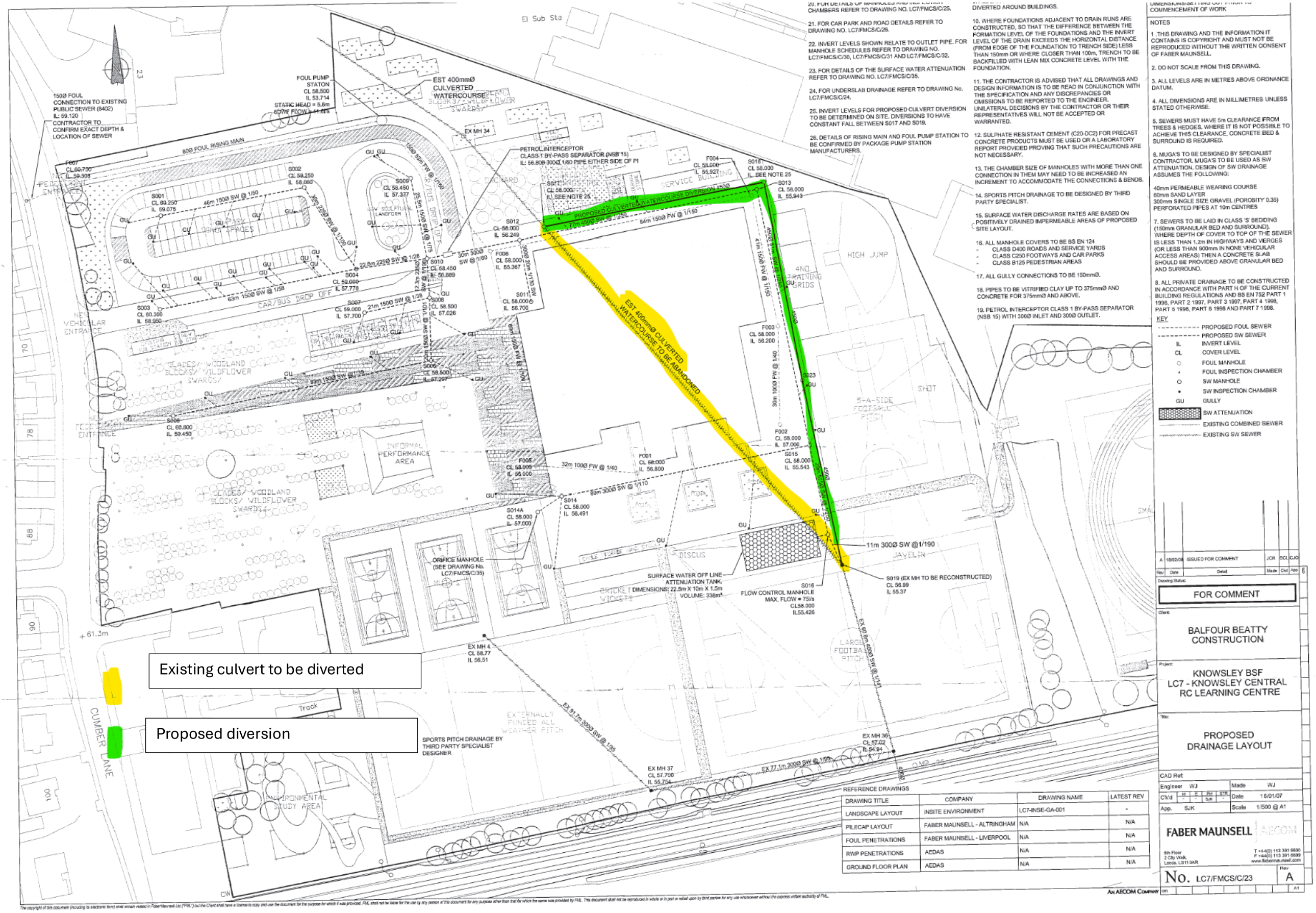
1937 – Site now renamed as Stove Works



1955 – Historical map shows existing stream traversing along route of field boundary to be diverted to east of development into 12'' pipe (location and condition of eastern culverted watercourse still to be confirmed). Plan also references existing 12'' culvert to south of site

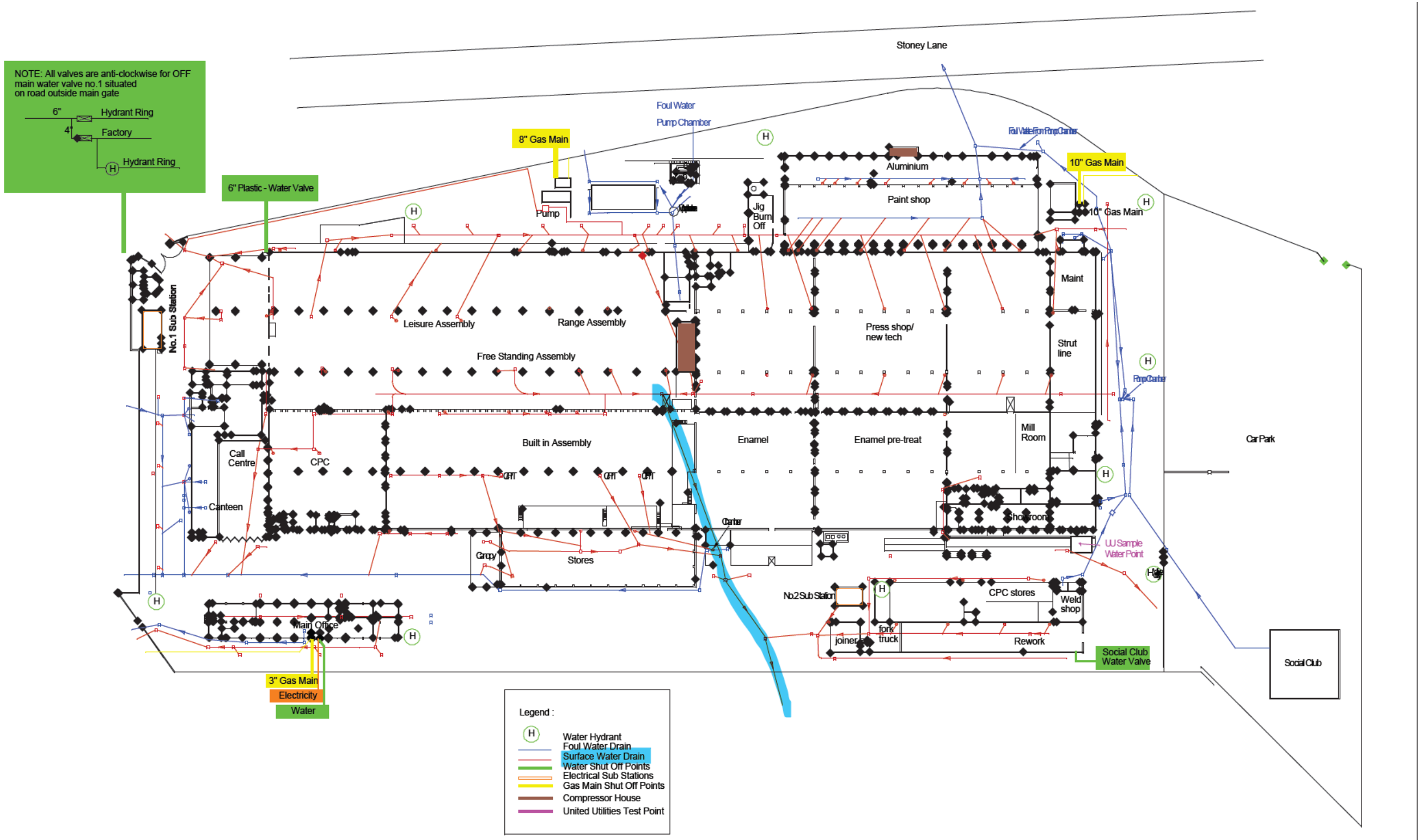


2007 – Revision A Faber Maunsell plans showing existing route of 400mm culverted watercourse to be abandoned downstream from MH34 and diverted as 450mm around new school building downstream to existing manhole S019.



2009 – Revision 11 of the Faber Maunsell proposed drainage diversion plan provided by St Edmunds Arrowsmith showing diversion directly from MH34.

2012 – Glen Dimplex emergency preparedness plan including drainage system showing surface water factory drains connecting into culverted watercourse to south.



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FABRICATIONS

DEALS TOLERANCE	ASSEMBLIES TOLERANCE	LIMITS UNLESS OTHERWISE STATED
[illegible]	[illegible]	[illegible]

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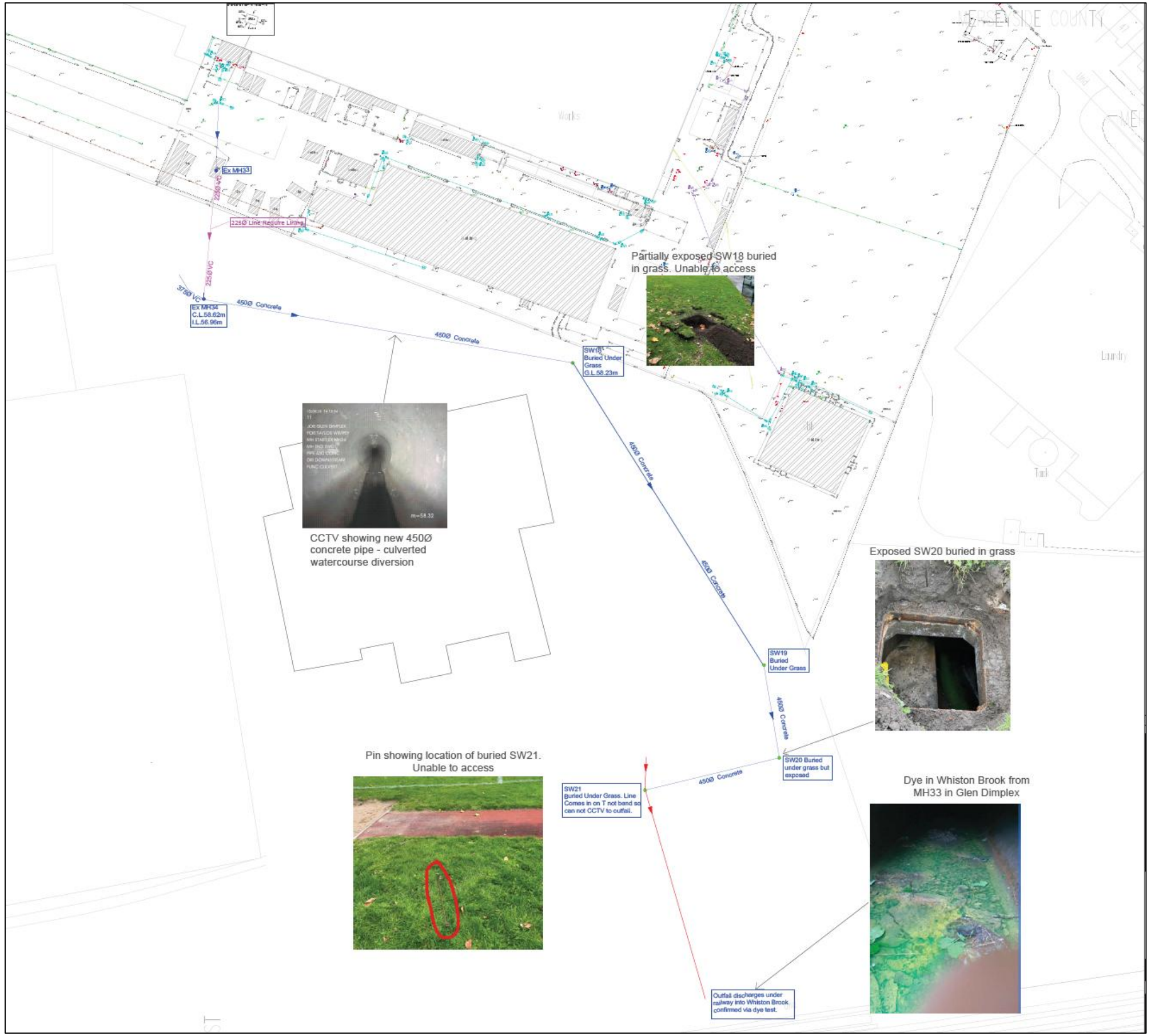
Issue C | Filename | Dig No. | A1

2025 – CCTV investigation confirms the route of the culverted watercourse through St Edmunds Arrowsmith is in line with the Rev 11 Faber Maunsell plan provided by the school.



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APPENDIX J: NOTES OF LIMITATIONS

The data essentially comprised a study of available documented information from various sources together with discussions with relevant authorities and other interested parties. There may also be circumstances at the site that are not documented. The information reviewed is not exhaustive and has been accepted in good faith as providing representative and true data pertaining to site conditions. If additional information becomes available which might impact our conclusions, we request the opportunity to review the information, reassess the potential concerns and modify our opinion if warranted.

It should be noted that any risks identified in this report are perceived risks based on the available information.

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