

Environmental Statement

Appendix 12.1: Flood Risk Assessment

Gundrys Farm Caravan Park

On behalf of Royale Parks (Dorset) Limited

March 2026





NPPF: Flood Risk Assessment & Drainage Strategy

Gundry's Farm Caravan and Camping Site, Wimborne

Laister Planning Ltd

SHF.284.013.HY.R.001.C



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Gundry's Farm Caravan and Camping Site, Wimborne

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Executive Summary

This report presents a Flood Risk Assessment in accordance with the National Planning Policy Framework and National Planning Practice Guidance: Flood Risk and Coastal Change ID: 7 guidance¹, for a touring caravan development located on land at Gundrys Farm Caravan & Camping, Wimborne. The report has been written in support of addressing an enforcement notice issued by Dorset Council on 4th October 2022 (ENF/17/0094).

The report assesses the flood risk and how this could be managed. The FRA also includes an assessment of the surface water and foul drainage requirements.

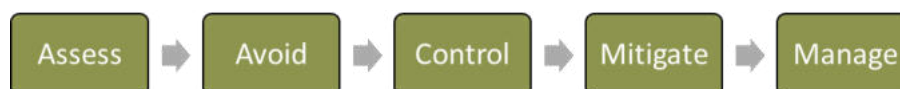
A summary of the baseline Site condition is included below:

- The 6.6-hectare (ha) Site is comprised of grassland used for touring holiday caravans, a disused donkey paddock with concrete base, a disused porta-cabin style facilities block, and a shed housing a water supply tank.
- There is a watercourse along the northern Site boundary.

The risk of flooding is assessed as follows:

- The risk of fluvial flooding is assessed as negligible. There is, however, a residual risk of fluvial flooding from the bounding watercourse.
- The risk of groundwater flooding is assessed as low, though there is recorded shallow groundwater.
- The risk of surface water flooding is assessed as negligible for most of the Site, with small areas of low to high-risk surface water ponding.
- Flood risk from all other sources is assessed as negligible.

Flood risk from identified sources can be reduced to a negligible and acceptable level through the following approach:



No avoidance measures are necessary, and the Sequential Test is not required:

The FRA has explored control, mitigation and management measures:

- The touring caravans by design have floor levels above external levels.
- Provide a 4m easement free from any new development along the bounding watercourse. This applies to any future development. This easement would provide access for inspection and maintenance purposes, including vehicle access.
- Adoption of a surface water management strategy for roofed areas (see Section 6).
- Undertake maintenance activities to keep the watercourse clear from debris and overgrown vegetation to maintain the conveyance of the channels.
- Fit outfalls of any installed drainage with backflow prevention and provide a high level overflow.
- Caravans affected by residual and localised surface water flooding events should be relocated or evacuated from site.

¹ <https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities>

The touring caravan use is classified as more vulnerable. More vulnerable uses are considered acceptable in terms of flood risk in Flood Zone 1 (low risk). There is, however, a risk of flooding from other sources. Subject to the implementation of the above avoidance measures, the Sequential Test would be passed, and the Exception Test would not be required.

Source of Flooding	Risk of Flooding	Risk Without Measures	Recommended Measures	Risk to Development with Measures
Fluvial – Watercourse 1	Residual	Residual	Avoid	Negligible
Tidal – none identified	Negligible	Negligible	N/A	Negligible
Groundwater – shallow groundwater	Low	Low	Avoid	Negligible
Surface Water – Site topography	Negligible for most of the Site, with small areas of low to high risk surface water ponding.	Negligible to High	Manage	Negligible
Sewers and Mains – none identified	Negligible	Negligible	N/A	Negligible
Infrastructure Failure – none identified	Negligible	Negligible	N/A	Negligible

- The FRA has considered the potential impact of the development on surface water runoff rates, given the increase in impermeable areas post-development for the facilities buildings only. These rates have been calculated, and it has been demonstrated that surface water can be managed, such that flood risk to and from the Site following development will not increase. This will be achieved through restricted discharge rates (i.e. calculated greenfield [1 l/s]) and appropriately sized attenuation (filter drains), with outfalls to the bounding watercourse to the north.
- While there is a possibility of utilising an existing septic tank on site or cesspool arrangement, for surety should it be required, we have demonstrated that foul flows can discharge to the Ø225mm foul sewer along Ringwood Road, to the north of the Site. Due to the distance to the sewer beneath Ringwood Road, a pumped connection may be required.
- A cesspool has been proposed for the chemical toilets. The cesspool would need to be monitored by alarm and emptied at regular intervals by a licensed contractor.

The FRA demonstrates the development would be operated with minimal risk from flooding and would not increase flood risk elsewhere. The development should therefore not be precluded on the grounds of flood risk, as well as surface water and foul drainage.

1.0 Introduction

1.1 Background

- 1.1.1 Enzygo Ltd was commissioned by Laister Planning Ltd to carry out a site-specific Flood Risk Assessment (FRA), including a surface water and foul drainage strategy, in support of addressing an enforcement notice for a touring caravan development. The Site is located on land at Gundry's Farm Caravan & Camping, Wimborne (the 'Site').
- 1.1.2 The development is 232 touring caravan pitches, with associated facilities buildings (ablutions building, foul septic tank, animal shelter and permeable access tracks on the 6.6-hectare (ha) Site. A copy of the layout is included in Appendix 1.
- 1.1.3 A site-specific FRA assesses the current and future flood risk to and from a development site. It demonstrates how flood risk will be managed now and over the development's lifetime, taking climate change, drainage, and the vulnerability of its intended users into account.
- 1.1.4 The objectives of a site-specific FRA are to:
- Assess whether a proposed development is likely to be affected by current or future flooding from a range of sources.
 - Assess whether the development will increase flood risk elsewhere.
 - Decide on measures to deal with these effects and risks and assess their appropriateness.
 - Provide enough evidence for the local planning authority to apply (if necessary) the Sequential Test.
 - Decide whether the development will be safe and will pass the Exception Test if applicable.
- 1.1.5 In England, planning applications for development need an FRA² for most developments including:
- In Flood Zones 2 and 3 including minor development and change of use.
 - Sites of 1ha or larger in Flood Zone 1.
 - Sites of less than 1ha in Flood Zone 1, including change of use to a more vulnerable class (for example from commercial to residential), and where they could be affected by sources of flooding other than rivers and the sea.
 - Land in Flood Zone 1 in a Critical Drainage Area (CDA) as notified by the Environment Agency (EA).
 - Land in Flood Zone 1 identified in a Strategic Flood Risk Assessment (SFRA) as being at increased flood risk in future.
- 1.1.6 An FRA is required for this development, as initial screening using EA online indicative flood mapping shows the Site is in Flood Zone 1 (low risk) but is more than 1ha.
- 1.1.7 The purpose of this FRA is to assess the risk of flooding to the development and where possible recommend measures to demonstrate that future users of the development would remain

² Department for Environment, Food & Rural Affairs and Environment Agency (published March 2014 and update February 2017). Flood Risk Assessments if You're Applying for Planning Permission [<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>].

safe throughout its lifetime, that the development would not increase flood risk on Site and elsewhere and, where practicable, would reduce flood risk overall.

1.2 Scope

- 1.2.1 Government policy on development and flood risk is set out in the National Planning Policy Framework (NPPF)³ and is supported by National Planning Practice Guidance: Flood Risk and Coastal Change [NPPG ID7]⁴.
- 1.2.2 NPPF paragraphs 161-186 set out the need for an appropriate assessment of flood risk at all levels of the planning process and require the application of a sequential risk-based approach to assess the suitability of land for development in flood risk areas⁵.
- 1.2.3 The FRA should also make allowances for climate change⁶ to minimise vulnerability and provide resilience to flooding and coastal change in the future. The allowances are predictions of anticipated change in:
 - Peak river flow by river basin district.
 - Peak rainfall intensity.
 - Sea level rise.
 - Offshore wind speed and extreme wave height.
- 1.2.4 The allowances are based on climate change projections and different scenarios of carbon dioxide emissions to the atmosphere. There are different allowances for different periods of time over the next century.
- 1.2.5 Site-specific FRAs are categorised according to level⁷. Simple Level 1 Screening studies give a general indication of the potential flood risk to a site and identify whether more detailed Level 2 assessment is required or not. A Level 2 assessment is a qualitative appraisal to develop understanding of flood risk to a site and the effects of the site on flooding elsewhere including recommended measures (see Section 5 - Avoid, Control, Mitigate, Manage). Level 3 assessments are more detailed quantitative studies, for example modelling to establish flood levels at a site in the absence of EA or other data or providing detailed outline drainage designs.
- 1.2.6 This report is a Level 2 qualitative FRA, which includes a Level 3 assessment of the surface water and foul drainage requirements for the development.

1.3 Aims

- 1.3.1 This FRA aims to provide enough flood risk information to satisfy the requirements of the NPPF, PPG ID7 and regional/local government plans and policies. It describes the potential for the Site to be impacted by flooding, the impacts of the development on flooding elsewhere

³ Ministry of Housing, Communities & Local Government (published March 2012 and updated December 2024). National Planning Policy Framework [<https://www.gov.uk/government/publications/national-planning-policy-framework--2>].

⁴ Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government (published March 2014 and updated September 2025). Planning Practice Guidance ID7; Flood Risk & Coastal Change [<https://www.gov.uk/guidance/flood-risk-and-coastal-change>].

⁵ <https://www.gov.uk/guidance/national-planning-policy-framework/14-meeting-the-challenge-of-climate-change-flooding-and-coastal-change#footnote63>

⁶ Environment Agency (published February 2016 and updated May 2022). Flood Risk Assessments: Climate Change Allowances [<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>].

⁷ CIRIA (October 2004) CIRIA C624 - Part C, Chapter 6, Section 6.1 to 6.3.

near the Site, and the recommended measures that could be incorporated into the development to manage the identified risks.

1.4 Planning Context

National Policy

- 1.4.1 The FRA was prepared in accordance with the NPPF and NPPG ID7.

Regional/Local Policy

- 1.4.2 The FRA considers the following policies within the Christchurch and East Dorset Local Plan Part 1 – Core Strategy (2014 to 2028)⁸:

- Policy ME3 – Sustainable Development Standards for New Development
- Policy ME6 – Flood Management, Mitigation and Defence

Strategic Flood Risk Assessment (SFRA)

- 1.4.3 The FRA has reviewed the guidance within the East Dorset Strategic Flood Risk Assessment (SFRA) (Level 1) report⁹ and associated mapping (Appendix 2).

1.5 Report Structure

- 1.5.1 This report is structured as follows:

- Section 2 identifies the sources of information that were consulted.
- Section 3 describes the existing Site.
- Section 4 outlines the baseline flood risk from all sources.
- Section 5 details the recommended measures against identified flood risk sources.
- Section 6 assesses the surface water drainage requirements of the development.
- Section 7 assesses the foul drainage requirements of the development.
- Section 8 presents a summary and conclusions.

⁸ <https://www.dorsetcouncil.gov.uk/w/east-dorset-and-christchurch-adopted-local-plan>

⁹ <https://www.dorsetcouncil.gov.uk/w/east-dorset-strategic-flood-risk-assessment-level-1>

2.0 Sources of Information

2.1 Sources of Information

2.1.1 The following information was consulted:

- Ordnance Survey mapping (Drawings 0001 and 0002).
- Detailed topographic survey (Appendix 3).
- EA online mapping (Flood Map for Planning¹⁰, Long Term Flood Risk Assessment for Locations in England¹¹, Catchment Data Explorer¹² and Main River Map¹³).
- EA Reduction in Risk of Flooding from Rivers and Sea online mapping¹⁴.
- Online mapping for Climate Change Allowances for Peak River Flow and Peak Rainfall in England online mapping¹⁵.
- National Soils Resources Institute (NSRI): Soilsdscapes online mapping¹⁶.
- British Geological Survey [BGS] Geology Viewer online mapping¹⁷.
- British Geological Survey [BGS] Borehole Records online mapping¹⁸.
- Landmark's Promap: Flood Data package (see Drawings).
- Geosmart 1 in 100-year groundwater flood risk map (see Drawings).
- DEFRA's Magic Map for identifying Designated Sites¹⁹.
- River Levels UK for identifying Flood Alert and Flood Warning areas²⁰.

2.2 Consultation and Discussion with Regulators

2.2.1 Consultation and discussions were undertaken with the relevant water regulators.

Environment Agency

2.2.2 The Environment Agency (EA) is a statutory consultee on flood risk and planning and is directly responsible for the prevention, mitigation, and remediation of flood damage for main rivers and coastal areas; and it has a strategic overview for all forms of flooding.

2.2.3 EA Standing Advice²¹ and the NPPF/PPG ID: 7 was consulted and reviewed.

¹⁰ <https://flood-map-for-planning.service.gov.uk/>

¹¹ <https://flood-warning-information.service.gov.uk/long-term-flood-risk/>

¹² <http://environment.data.gov.uk/catchment-planning/>

¹³ <https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=17cd53dfc524433980cc333726a56386>

¹⁴ [ArcGIS - My Map](#)

¹⁵ <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

¹⁶ <https://www.landis.org.uk/soilsdscapes/>

¹⁷ <https://www.bgs.ac.uk/map-viewers/bgs-geology-viewer/>

¹⁸ <https://www.bgs.ac.uk/information-hub/borehole-records/>

¹⁹ <https://magic.defra.gov.uk/magicmap.aspx>

²⁰ <https://riverlevels.uk/flood-map#.XclKwPn7RPZ>

²¹ Environment Agency and Department for Environment, Food & Rural Affairs (published April 2012 and updated August 2025). Preparing a Flood Risk Assessment: Standing Advice [<https://www.gov.uk/guidance/flood-risk-assessment-standing-advice>].

- 2.2.4 The EA were contacted in relation to the Site, but a response was not received at the time of writing this report.

Lead Local Flood Authority

- 2.2.5 Dorset Council as the Lead Local Flood Authority (LLFA) is responsible for local flood risk management in their area and for maintaining a register of flood risk assets. They also have lead responsibility for managing the risk of flooding from surface water, groundwater, and ordinary watercourses.
- 2.2.6 A predevelopment enquiry was undertaken with the LLFA, and correspondence is included in Appendix 5.

Water Utility

- 2.2.7 Drainage and sewerage services in the UK are provided by a number of water and sewerage companies. Wessex Water is responsible for sewerage within the area of the Site.
- 2.2.8 All sewerage undertakers maintain the 'DG5 register' of properties and external areas (such as gardens, highways, open spaces) which have suffered flooding from public foul/combined sewers. It does not include flooding caused by blockages.
- 2.2.9 Wessex Water asset plans and pre-development enquiry response is included in Appendix 6.

2.3 Site Walkover

- 2.3.1 Enzygo staff carried out a walkover of the Site during October 2025. Observations made were used to inform the Site description.

3.0 Site Location and Description

3.1 Location

- 3.1.1 The Site is located on land at Gundry's Farm Caravan & Camping, School Lane, Three Legged Cross, Wimborne, BH21 6RU.
- 3.1.2 The Site is centred on National Grid Reference (NGR) 408639, 105148.
- 3.1.3 The 6.6ha Site location is shown in Drawing 0001 and in more detail in Drawing 0002.

3.2 Land Use

- 3.2.1 The land use is comprised of grassland used for touring holiday caravans, a disused donkey paddock with concrete base, a disused porta-cabin style facilities block, and a shed housing a water supply tank (Figures 3.1 and 3.2).
- 3.2.2 The Site is bounded by a commercial development and a grassed area to the north; the wider caravan park and farm buildings to the east; an access road with commercial areas to the south; and grassed areas to the west.
- 3.2.3 Vehicle access is currently from School Lane.

Figure 3.1: Images of the Site



Left: Shed housing water supply tank in the central north of the Site (previously a facilities building). Right: Derelict facilities building in the northwest of the Site.



Left: Derelict donkey paddock. Right: View looking west across the Site.

Figure 3.2: Aerial Photograph of the Site

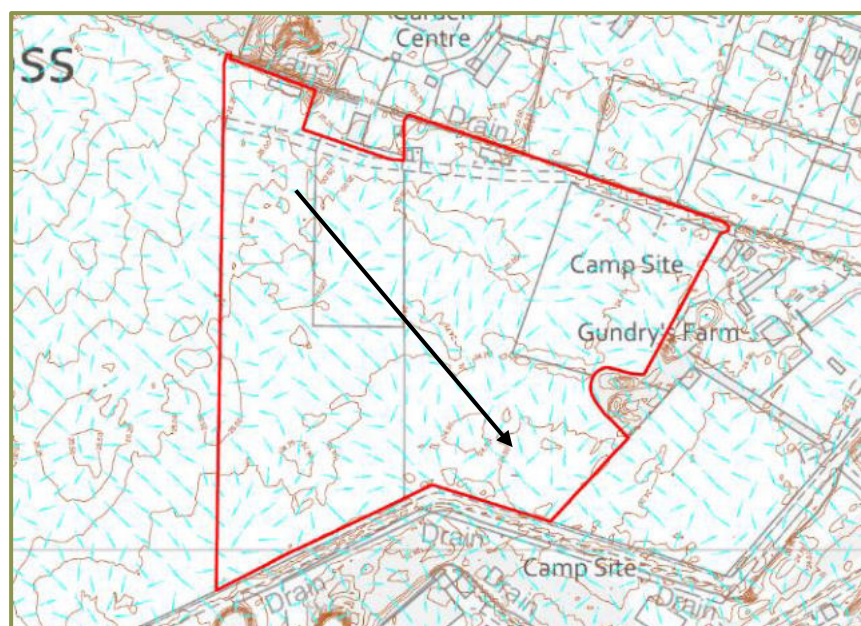


Image © 2025 Digital Globe.

3.3 Topographic Information

- 3.3.1 A detailed topographic survey was carried out during October 2025 and a copy is included in Appendix 3.
- 3.3.2 Flow pathway analysis was undertaken in KeyTERRA-FIRMA (KTF) software to understand watershed catchments (Drawing 0007). A summary of the Site topography is included in Figure 3.3 and described below.
- 3.3.3 The Site falls southeast from 25.33 metres Above Ordnance Datum (m AOD) in the northwest corner to 24.18m AOD in the southeast corner. The fall of 1.15m over 310m gives a gradient of 1:270.

Figure 3.3: Summary of Site Topography

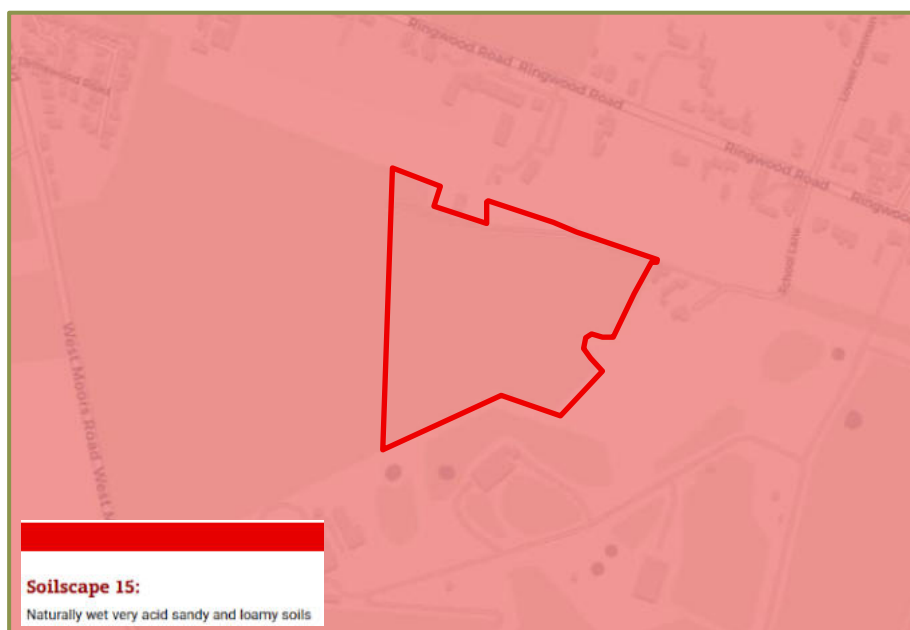


3.4 Soils and Geology

Soils Mapping

- 3.4.1 The online NSRI Soilscales mapping (Figure 3.4) shows the Site is underlain by naturally wet, very acid sandy and loamy soils.

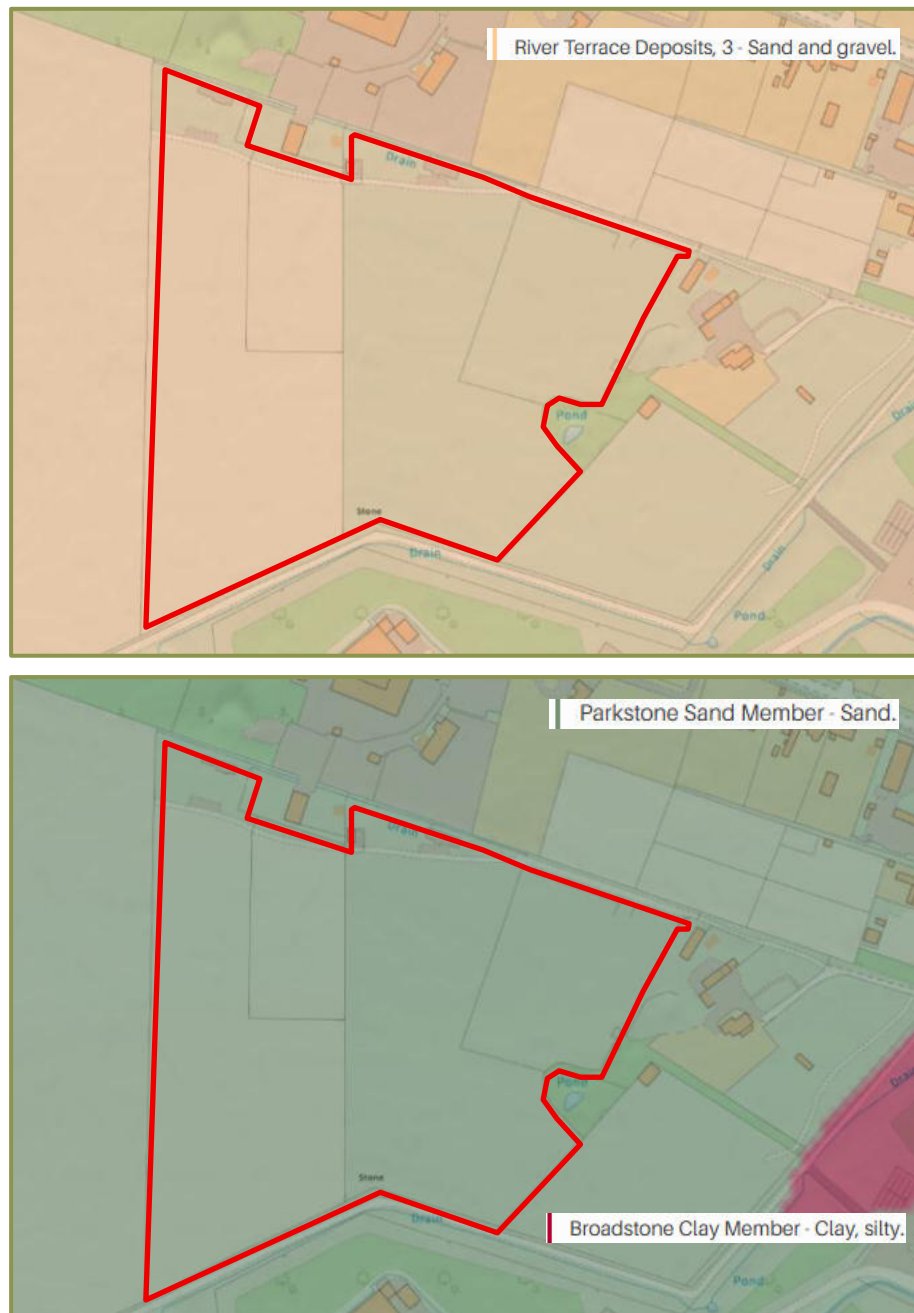
Figure 3.4: Soils Mapping



Soils Data © Cranfield University (NSRI) and for the Controller of HMSO [2025].

Geology Mapping

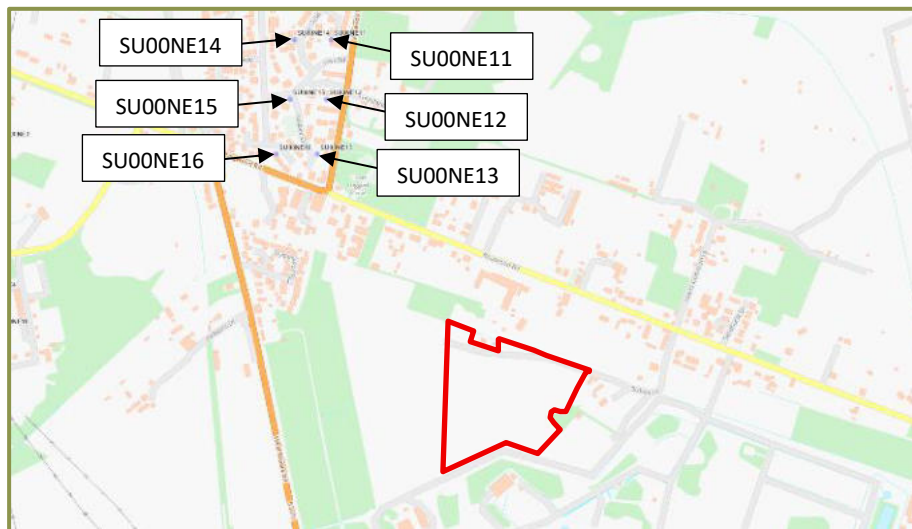
- 3.4.2 The online BGS Geology Viewer (Figure 3.5) shows the Site is underlain by River Terrace (superficial deposits).
- 3.4.3 The bedrock beneath the Site is Parkstone Sand Member - Sand.

Figure 3.5: Geology Mapping

Top: Superficial deposits. Bottom: Bedrock geology. Contains British Geological Survey materials © NERC [2025].

BGS Borehole Records

- 3.4.4 The BGS Borehole Records online mapping (Figure 3.6) shows six boreholes located within 1km of the northwest of the Site (SU00NE11 to SU00NE16) (Appendix 7). The borehole records confirm shallow groundwater at 2.7m bgl and the presence of sand and gravel superficial deposits. Clay was also encountered below 2m bgl, which is representative of the bedrock beneath the Site.

Figure 3.6: Borehole Mapping

Contains British Geological Survey materials © NERC [2025].

Soakaway Testing

- 3.4.5 Soakaway testing was undertaken by Ground Consultants Ltd in the north of the Site, in accordance with DG365 'Soakaway Design' methodology guidance, during October 2025 (Figure 3.7). A copy of the Soakaway Testing Results is included in Appendix 8.
- 3.4.6 TP01 was dug to 2.30m bgl and TP02 was dug to 1.25m bgl. Both pits were abandoned at these levels due to groundwater ingress.
- 3.4.7 TP03 to TP05 were dug to 1.00m to 1.10m bgl and shallow soakaway testing was undertaken in the pits. The pits demonstrated low infiltration potential and were therefore abandoned before three tests were undertaken.
- 3.4.8 The borehole records confirm the presence of sand and gravel geology as depicted by the soils and superficial geology mapping.

Figure 3.7: Trial Pit Location Plan

3.5 Hydrogeology

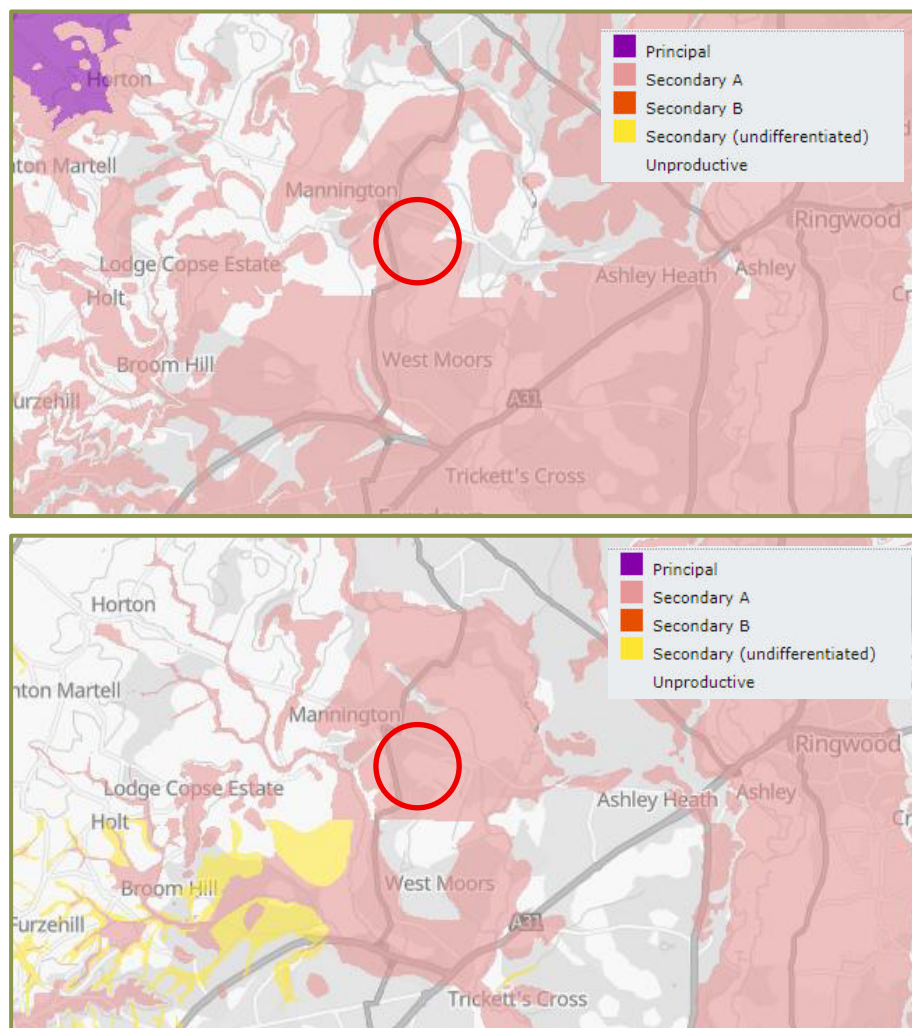
Infiltration Potential

- 3.5.1 The SuDS Infiltration Potential Mapping (Drawing 0005) shows the Site is in the mapped extent indicative of high potential, which is likely to be associated with the underlying superficial deposits. However, soakaway testing demonstrated low infiltration potential. Shallow groundwater was also encountered.
- 3.5.2 Groundwater ingress was encountered at 2.7m bgl in the nearby borehole logs.

Defra Magic Map

- 3.5.3 The online Defra Magic Map mapping shows the Site is not located in a groundwater Source Protection Zone (SPZ).
- 3.5.4 The Site located above a Secondary A bedrock and superficial aquifer (Figure 3.8).

Figure 3.8: Aquifer Designation Map



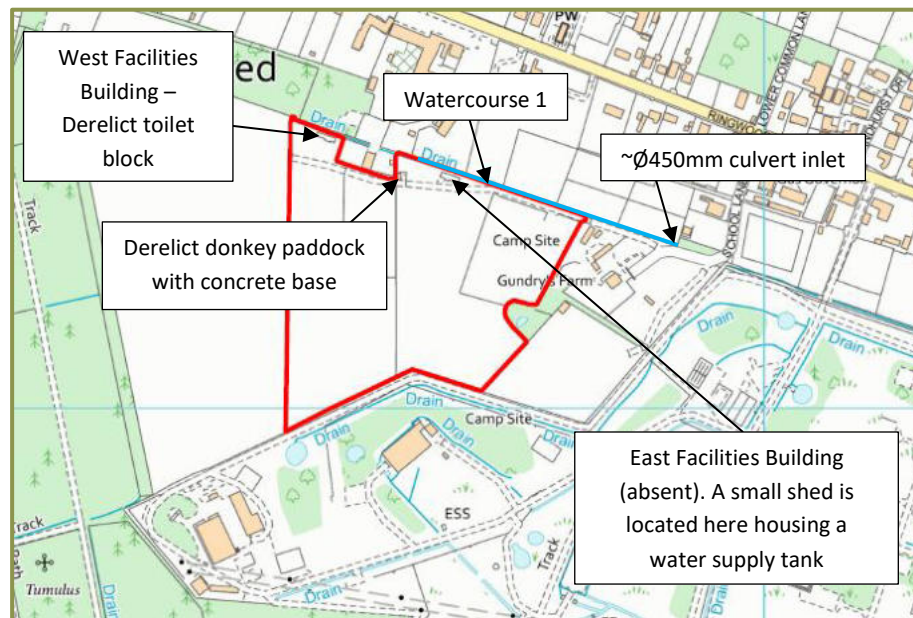
Top: Aquifer Designation (superficial deposits). Bottom: Aquifer Designation (bedrock). From Magic Map. Contains EA information © EA and database right [2025].

3.6 Catchment Hydrology

OS Mapping and Site Walkover Observations

- 3.6.1 OS mapping (Figure 3.9) shows an unnamed watercourse ('Watercourse 1') located along the northern Site boundary.

Figure 3.9: Map of Watercourses and Site Features



Watercourse 1

- 3.6.2 The Site walkover observed Watercourse 1 to stretch further east than mapped, as shown on Figure 3.9. The watercourse is drained by a ~Ø450mm culvert beneath the access to the Site (Figure 3.10). This culvert is presumed to link to the mapped watercourses east of the Site within the West Moors Defence Facility.

Figure 3.10: Watercourse 1 and Culvert

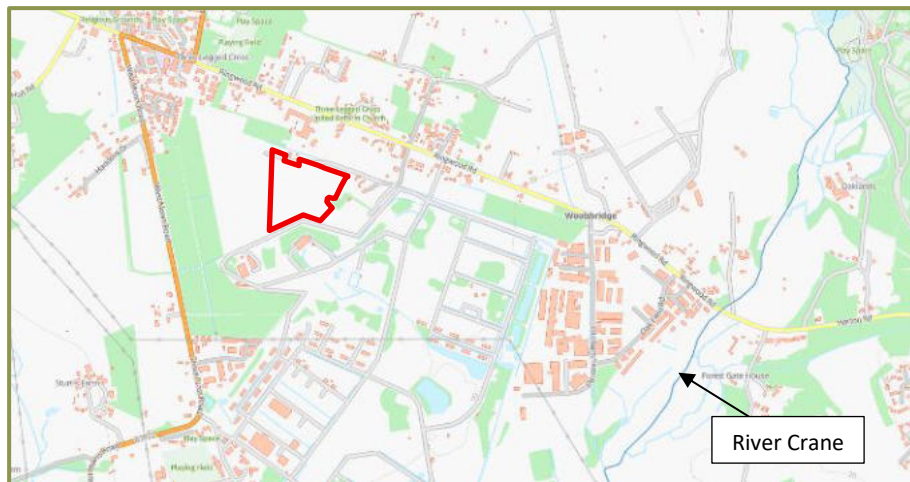


Left: Watercourse 1. Right: Culvert.

Main River Map

- 3.6.3 The EA online main river map (Figure 3.11) identifies the River Crane as a 'main river', which is a watercourse where flood risk work is carried out by the EA. The River Crane is located 1.6km east of the Site.
- 3.6.4 Watercourse 1 is classified as 'an ordinary watercourse', where flood risk work is carried out by the local drainage authority/riparian landowner.

Figure 3.11: Main River Map

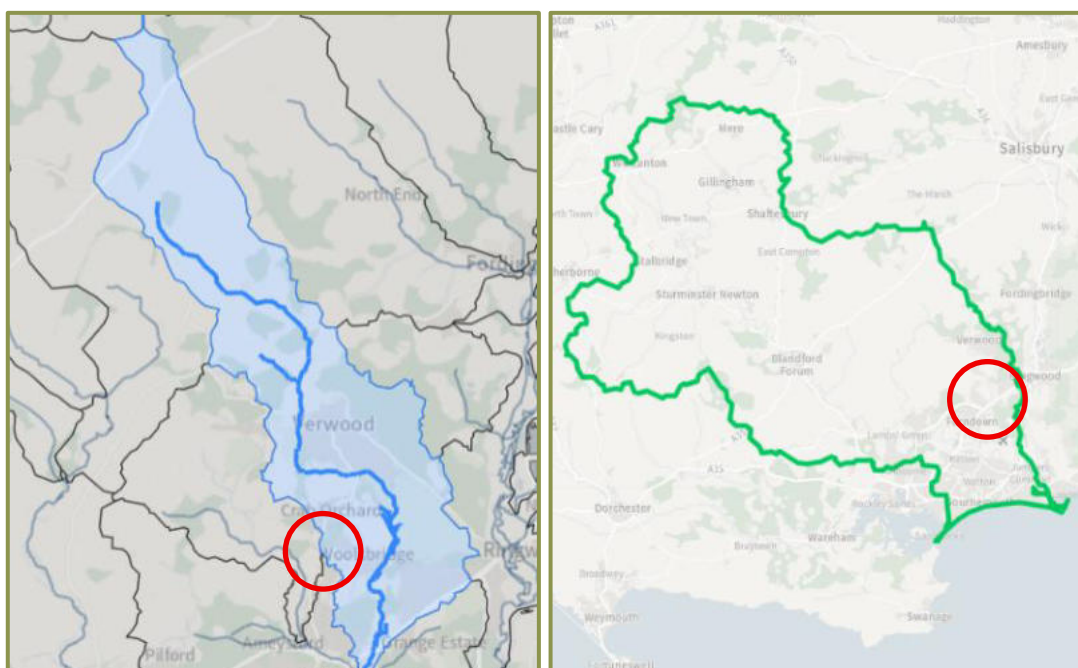


Contains EA information © EA and database right [2025].

EA Catchment Data Explorer Mapping

- 3.6.5 The Site resides within the Crane (Dorset) Water Body Catchment (Figure 3.12), which is in the Stour Dorset Operational Catchment, Dorset Management Catchment, and South West River Basin District.

Figure 3.12: Catchment Data Explorer (continues over page)





Top Left: Crane (Dorset) Water Body Catchment. Top Right: Stour Dorset Operational Catchment. Bottom Left: Dorset Management Catchment. Bottom Right: South West River Basin District. Contains EA information © EA and database right [2025].

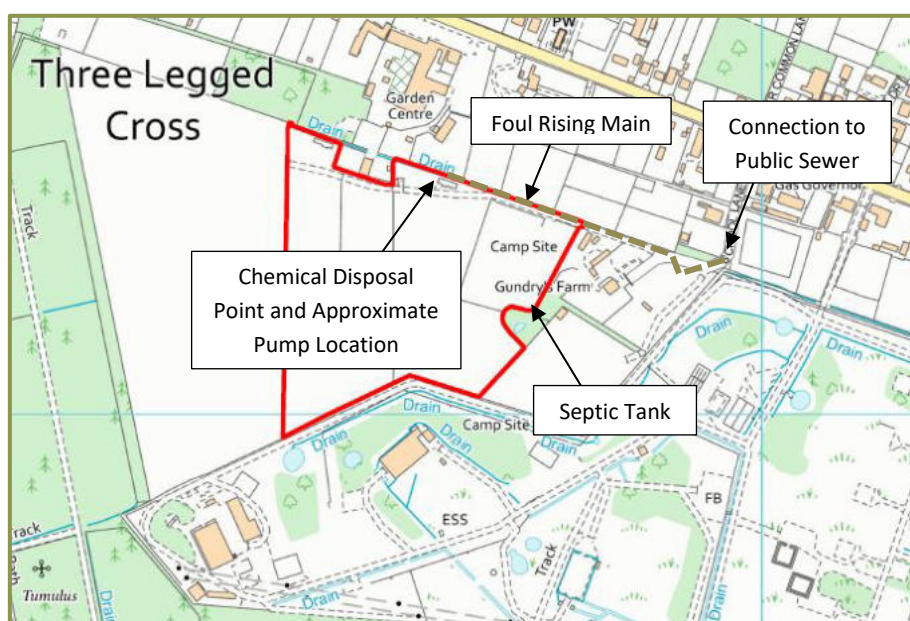
3.7 Sewerage Assets

Public Assets

- 3.7.1 Wessex Water asset plans (Appendix 6) show there is a foul public Ø150mm sewer orientated south to north beneath School Lane to the east of the Site (along the access road). There is also a foul public Ø225mm sewer orientated west to east beneath Ringwood Road, where School Lane meets the main road. In this area, there are also highway assets.

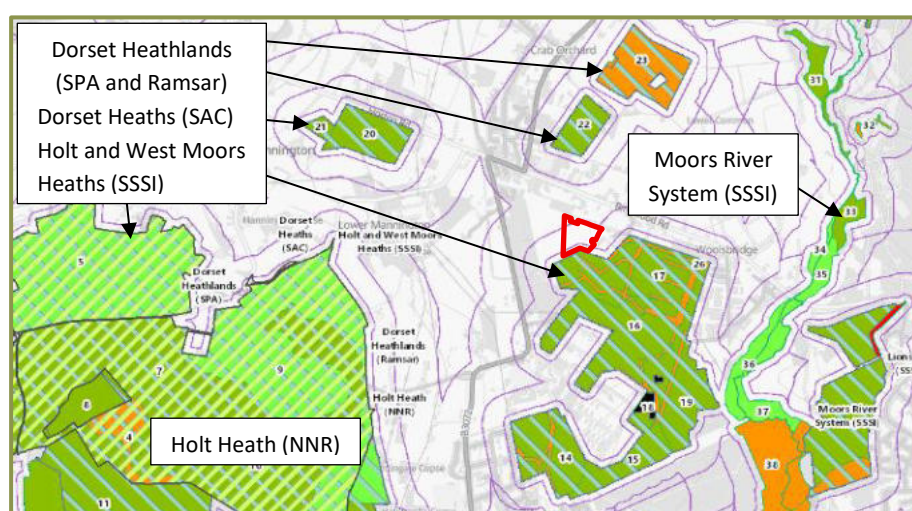
Private Assets

- 3.7.2 During the Site walkover, an existing chemical disposal point was noted, located to the west of the shed housing the water supply tanks (Figure 3.13).
- 3.7.3 Furthermore, as evidenced in the topographic survey (Appendix 3), a septic tank system (condition, capacity and permit validity to be confirmed) is located on the central eastern boundary of the enforcement boundary.
- 3.7.4 In addition to this, the Site owner indicated that there is a foul rising main along the route of the northern bank of Watercourse 1. The rising main crosses Watercourse 1 and discharges into a compound area, which then has a gravity connection into the public sewer. It is not known the condition of the rising main, and therefore potential discharge into the rising main is subject to further investigation.

Figure 3.13: Private Drainage Assets

3.8 Designated Sites

- 3.8.1 The online Defra Magic Map mapping (Figure 3.14) shows there are many designated Sites within 2km of the Site. The southeast of the Site is bound by Dorset Heathlands (Special Protection Area [SPA] and Ramsar), Dorset Heaths (Special Area of Conservation [SAC]) and Holt and West Moors Heaths (Site of Special Scientific Interest [SSSI]). Holt Heath (National Nature Reserve [NNR]) is located 1.4km west of the Site and Moors River System (SSSI) is located 1.4km east of the Site. The designated sites to the east are hydrologically connected to the Site from a flood risk and drainage perspective. Consequently, it is proposed that surface water quality is improved through the utilisation of SuDS features (see Section 6).

Figure 3.14: Designated Sites

From Magic Map. Contains EA information © EA and database right [2025].

4.0 Assessment of Flood Risk Sources

4.1 Potential Sources of Flooding

- 4.1.1 A summary of the potential sources of flooding and source is summarised in Table 4.1. Each source of flooding and level of risk is then assessed in further detail below.

Table 4.1: Potential Risk Posed by Flooding Sources

Flooding Source	Potential Flood Risk at Application Site (Yes/No)	Potential Source	Data Sources
Fluvial	Yes	Watercourse 1	EA Flood Zone mapping (Drawing 0003), EA correspondence (Appendix 4), LLFA correspondence (Appendix 5) and SFRA mapping (Appendix 2).
Tidal	No	None identified	EA Flood Zone mapping (Drawing 0003).
Groundwater	Yes	Shallow groundwater	Geosmart Groundwater (Drawing 0004), BGS Borehole Records (Appendix 7), Soakaway Test Results (Appendix 8) and LLFA correspondence (Appendix 5).
Surface Water	Yes	Site topography	EA Surface Water Flood Mapping (Drawings 0006.1 to 0006.2).
Sewers and Mains	No	None identified	Wessex Water asset plans (Appendix 6) and SFRA mapping (Appendix 2).
Infrastructure Failure	No	None identified	EA online mapping: Long Term Flood Risk Assessment for Locations in England.

4.2 Historical Flooding

SFRA Mapping

- 4.2.1 SFRA mapping (Appendix 2) shows there are no instances of recorded historical flooding where the Site is located.

LLFA Correspondence

- 4.2.2 The LLFA have no records of flooding relating to the Site from any sources (Appendix 5).

4.3 Fluvial Flooding

EA Flood Zone Mapping

- 4.3.1 The EA Flood Zones are the current best information on the extent of the extremes of flooding from rivers or the sea that would occur without the presence of flood defences, since these can be breached, overtopped and may not be in existence for the lifetime of a development.

- 4.3.2 The EA Flood Zone mapping (Drawing 0003) shows the Site is in Flood Zone 1, which is land outside the 1 in 1000-year 0.1% Annual Exceedance Probability [AEP]) extent of fluvial (river) flooding, at 'low' risk.

EA and LLFA Correspondence

- 4.3.3 The EA and LLFA confirmed that the Site is located in Flood Zone 1 (Appendix 4 and 5).

SFRA Mapping

- 4.3.4 SFRA mapping (Appendix 2) confirms the Site is located in Flood Zone 1.

Flood Risk Summary

- 4.3.5 The risk of fluvial flooding is assessed as negligible. There is, however, a residual risk of fluvial flooding from the bounding watercourse.
- 4.3.6 Measures required for fluvial flooding are discussed in Section 5.

4.4 Tidal Flooding

EA Flood Zone Mapping

- 4.4.1 The EA Flood Zone mapping (Drawing 0003) shows the Site is in Flood Zone 1, which is land outside the 1 in 1000-year 0.1% Annual Exceedance Probability [AEP]) extent of tidal (sea) flooding, at 'low' risk.

Flood Risk Summary

- 4.4.2 The risk of tidal flooding is assessed as negligible.

4.5 Groundwater Flooding

Introduction

- 4.5.1 Groundwater flooding occurs when subsurface water emerges either at surface or in made ground or in subsurface structures such as basements and services ducts. It occurs as diffuse seepage, emergence from new point source springs or an increase in flow from existing springs. It results from aquifer recharge from infiltrating rainfall, from sinking streams entering aquifers from adjacent non-aquifers, or from high river levels or tides driving water through near surface deposits. It tends to occur with a delay following rainfall and can last for several weeks or months. Groundwater flooding or shallow water tables also prevent or reduce infiltration and so can worsen surface water flooding.

Geosmart Groundwater Flood Risk Map

- 4.5.2 The Geosmart 1 in 100-year groundwater flood risk map (Drawing 0004) shows the Site is at negligible risk of groundwater flooding and falls within Risk Class 4 (Table 4.2).
- 4.5.3 Mapped classes combine understanding of likelihood, model and data uncertainty, and possible severity. Likelihood is ranked according to whether we expect groundwater flooding at a site due to extreme elevated groundwater levels with an annual probability of occurrence greater than 1%, considering model and data uncertainty. Severity relates to expectations of the amount of property damage or other harm that groundwater flooding at that location might cause (Table 4.2).

Table 4.2: Groundwater Flood Risk Classification

Risk Class	Probability of Groundwater Flooding	Effect
4: Negligible	Annual probability less than 1%.	Negligible unless unusually sensitive use.
3: Low	Annual probability greater than 1%.	Remote possibility of damage to property or harm to sensitive receptors. Flooding likely to be limited to seepages and waterlogged ground, damage to basements and subsurface infrastructure, and should pose no significant risk to life. Surface water flooding may be worsened.
2: Moderate	Annual probability greater than 1%.	Significant possibility of damage to property or harm to other sensitive receptors at or near this location. Flooding is likely to be in the form of shallow pools or streams. Surface water flooding and failure of drainage systems may be worsened when groundwater levels are high.
1: High	Annual probability greater than 1%.	Groundwater flooding will occur which could lead to damage to property or harm to other sensitive receptors at or near this location. Flooding may result in damage to property, road, or rail closures and, in exceptional cases, may pose a risk to life. Surface water flooding and failure of drainage systems may be worsened when groundwater levels are high.

Borehole Records and Soakaway Testing Results

- 4.5.1 BGS online borehole mapping recorded groundwater ingress at depths of 2.7m bgl.
- 4.5.2 Soakaway testing encountered groundwater ingress at depths between 1.25 to 2.30m bgl.
- 4.5.3 The borehole records and soakaway testing support the presence of shallow groundwater beneath the Site. The LLFA's JBA data also confirms that there is shallow groundwater in the area (Appendix 5).

Flood Risk Summary

- 4.5.4 The risk of groundwater flooding is assessed as low, noting the presence of shallow groundwater.

4.6 Surface Water Flooding*Introduction*

- 4.6.1 Surface water flooding occurs following rainfall on ground where infiltration rates are less than the rainfall precipitation rate. This can occur when either:
- Soils or ground materials are naturally of low permeability or have been compacted (infiltration excess runoff).

- Soils or ground materials are saturated from previous rainfall either directly or from upslope (saturation excess runoff and return flow) or from high groundwater levels.

EA Surface Water Flood Mapping

- 4.6.2 The EA Surface Water Flood Mapping (Drawings 0006.1 to 0006.2) shows there are small areas of low to high-risk ponding across the Site. The flooding likely represents the localised topographical lows across the Site.

Flood Risk Summary

- 4.6.3 The risk of surface water flooding is assessed as negligible for most of the Site, with small areas of low to high-risk surface water ponding.
- 4.6.4 Measures required for surface water flooding are discussed in Section 5.

4.7 Sewer Flooding

Introduction

- 4.7.1 Sewer flooding occurs when urban drainage networks become overwhelmed after heavy or prolonged rainfall due to restrictions or blockage in the sewer network or if the volume of water draining into the system exceeds the sewer design capacity.
- 4.7.2 New adoptable sewers are built to have a minimum design standard up to and including the 1 in 30-year rainfall event. Older sewers were not designed to any standard. Modern sewer systems will only surcharge during rainstorm events with a return period greater than 1 in 30-years (e.g. 1 in 100-years).

Asset Plans

- 4.7.3 Wessex Water asset plans (Appendix 6) show there are no sewers located within the Site boundary.

SFRA Mapping

- 4.7.4 SFRA mapping (Appendix 2) shows there are no Wessex Water records of flooded properties within the vicinity of the Site.

Flood Risk Summary

- 4.7.5 The risk of flooding from sewers is assessed as negligible.

4.8 Flooding from Infrastructure Failure

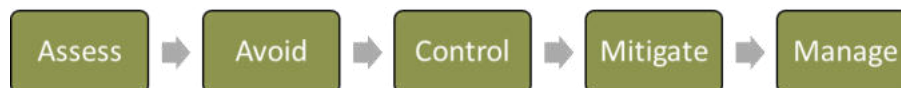
Reservoir Failure

- 4.8.1 The EA online flood mapping shows the Site is outside the extent of flooding sourced from reservoirs. The risk of flooding from reservoirs is assessed as negligible.

5.0 Planning and Flood Risk

5.1 Introduction

5.1.1 The main steps to be followed in addressing flood risk are set out below:



5.2 Assess

5.2.1 As per Paragraph: 003 Reference ID: 7-003-20220825 (Revision date: 25 08 2022) of NPPG ID7, we have prepared a site-specific FRA to assess flood risk from all sources to the Development. A summary is included below:

- The risk of fluvial flooding is assessed as negligible. There is however a residual risk of fluvial flooding from the bounding watercourse.
- The risk of groundwater flooding is assessed as low, with consideration of the presence of shallow groundwater.
- The risk of surface water flooding is assessed as negligible for most of the Site, with small areas of low to high-risk surface water ponding.
- Flood risk from all other sources is assessed as negligible.

5.3 Decision Making Process

5.3.1 As per Paragraph: 004 Reference ID: 7-004-20220825 (Revision date: 25 08 2022) of NPPG ID7, where an assessment shows that flood risk is a consideration for a plan or development proposal, the process is set out below:

Avoid

5.3.2 The approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding.

5.3.3 As per the National flood risk standing advice for local planning authorities ('*When development is exempt from the sequential test*')²²,

"A development is exempt from the sequential test if it is a:

- *Householder development like residential extensions, conservatories or loft conversions*
- *Small non-domestic extensions with a footprint of less than 250 square metres*
- *Change of use (except changes of use to a caravan, camping or chalet site, or to a mobile home or park home site)*

A development is also exempt from the sequential test if it is a development on a site allocated in the development plan through the sequential test and:

²² <https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities#:~:text=A%20development%20is%20exempt%20from,extensions%2C%20conservatories%20or%20loft%20conversions>

- *The proposal is consistent with site's allocated use*
- *There have been no significant changes to the known level of flood risk to the site, now or in the future, which would have affected the outcome of the test*

You may not need a sequential test if development can be laid out so that only elements such as public open space, biodiversity and amenity areas are located in areas at risk of any source of current or future flooding."

5.3.4 Subject to the below avoidance measure, the Sequential Test is not required:

- The touring caravans by design have floor levels above external levels.

5.3.5 Further to the above, the following measures are recommended in line with statutory requirements / following best practice:

- Provide a 4m easement free from any new development along the bounding watercourse. This applies to any future development. This easement would provide access for inspection and maintenance purposes, including vehicle access.

Control

5.3.6 We recommend the following control measures to manage the risk of flooding to and from the development:

- Adoption of a surface water management strategy for roofed areas (see Section 6).
- Undertake maintenance activities to keep the watercourse clear from debris and overgrown vegetation to maintain the conveyance of the channels.
- Fit the outfalls of any installed drainage with backflow prevention and provide a high level overflow.

Mitigate

5.3.7 Based on the above avoidance measures, no mitigation measures are proposed.

Manage Residual Risk

5.3.8 The below measures are recommended to manage the identified residual flood risk:

- Caravans affected by localised surface water flooding events should be relocated or evacuated from site.

5.4 Summary

5.4.1 Table 5.1 summarises the risk of flooding, both without and with recommended measures.

Table 5.1: Risk of Flooding and Recommended Measures

Source of Flooding	Risk of Flooding	Risk Without Measures	Recommended Measures	Risk to Development with Measures
Fluvial – Watercourse 1	Residual	Residual	Avoid	Negligible
Tidal – none identified	Negligible	Negligible	N/A	Negligible
Groundwater – shallow groundwater	Low	Low	Avoid	Negligible
Surface Water – Site topography	Negligible for most of the Site, with small areas of low to high risk surface water ponding.	Negligible to High	Manage	Negligible
Sewers and Mains – none identified	Negligible	Negligible	N/A	Negligible
Infrastructure Failure – none identified	Negligible	Negligible	N/A	Negligible

Key: Green - Negligible, Yellow - Low, Orange - Medium and Red - High; based on risk with without/with recommended measures from each flooding source.

5.5 Flood Guidance and Sequential Test

- 5.5.1 The proposal is for a touring caravan development. The PPG ID: 7 (not included in this report) classifies the use as 'more vulnerable'.
- 5.5.2 The EA Flood Zones and acceptable development types are listed in Table 5.2. All development types (including more vulnerable uses) are acceptable in Flood Zone 1 (low risk). Subject to the above measures, the Sequential Test and Exception Test would not be required as indicated in Table 5.3.

Table 5.2: EA Flood Zones and Appropriate Land Use

Flood Zone	Probability	Explanation	Appropriate Land use
Zone 1	Low	Less than 1 in 1000 annual probability of river or sea flooding in any year (<0.1%).	All development types generally acceptable.
Zone 2	Medium	Between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5% - 0.1%) in any year.	Most development type are generally acceptable.
Zone 3a	High	A 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.	Some development types not acceptable.
Zone 3b	'Functional Floodplain'	Land where water must flow or be stored in times of flood. SFRAs should identify this zone (land which would flood with an annual probability of 1 in 30 (3.33%) or greater in any year or is designed to flood in an extreme (0.1% flood, or at another probability to be agreed between the LPA and the EA, including water conveyance routes).	Some development types not acceptable.

Note: The Flood Zones are the current best information on the extent of the extreme flood from rivers or the sea that would occur without the presence of flood defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development. The identified risk of fluvial flooding is highlighted green.

Table 5.3: Vulnerability and Flood Zone 'Compatibility' as Identified in Table 2 of PPG ID: 7

Flood Risk Vulnerability classification (see Table 1 of PPG ID: 7)	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	Yes	Yes	Yes	Yes	Yes
Zone 2	Yes	Yes	Exception test required	Yes	Yes
Zone 3a	Exception test required	Yes	No	Exception test required	Yes
Zone 3b 'Functional Floodplain'	Exception test required	Yes	No	No	No

Key: Yes: Development is appropriate, No: Development should not be permitted. The identified risk of fluvial flooding is highlighted green.

6.0 Surface Water Drainage

6.1 Introduction

- 6.1.1 Consideration of flood issues is not confined to the floodplain. This is recognised in the NPPF and associated guidance where all proposed development of 1ha or more in Flood Zone 1 and so outside the floodplain nevertheless requires an FRA. The alteration of natural surface water flow patterns through development can lead to problems elsewhere in a catchment, particularly flooding downstream, and the replacement of permeable vegetated areas by low-permeability roofs, roads and other paved surfaces will increase the speed, volume, and peak flow of surface water runoff. So, the NPPF and associated guidance require an FRA for all proposed development of 1ha or more outside the floodplain in Flood Zone 1.
- 6.1.2 A surface water management strategy for the development is proposed to manage and reduce the flood risk posed by surface water runoff from the Site. The developer will be required to ensure that any scheme for surface water management should build in enough capacity for the entire Site.
- 6.1.3 The surface water drainage arrangements for any development Site should be such that the volume and peak flow rates of surface water leaving a developed Site are no greater than the rates prior to the development unless specific off-Site arrangements are made and result in the same net effect.
- 6.1.4 An assessment of the surface water runoff rates was undertaken to determine the surface water options and attenuation requirements for the Site.

6.2 Existing Drainage System

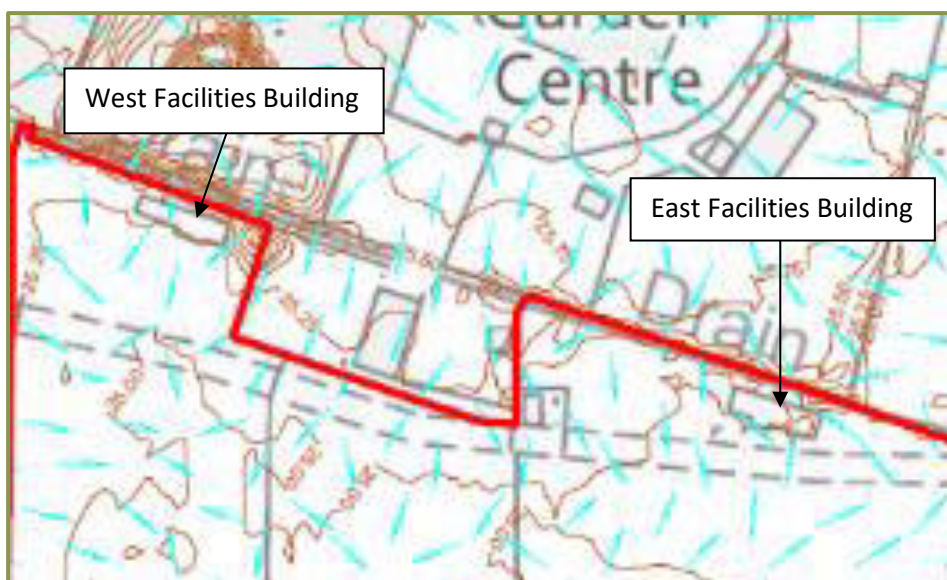
- 6.2.1 The land use is comprised of grassland used for touring holiday caravans, a disused donkey paddock with concrete base, a disused porta-cabin style facilities block, and a shed housing a water supply tank. These features discharge direct to surrounding permeable ground.
- 6.2.2 Foul flows historically were connected to an onsite septic tank. Whether there is an extant permit for operation of this foul system is unknown. The capacity of the system is also unknown. Details may be established to demonstrate adequate capacity and permit compliance on this system which show it is suitable for use in the future.
- 6.2.3 In addition to this, the Site owner indicated that there is a foul rising main along the route of the northern bank of Watercourse 1. The rising main crosses Watercourse 1 and discharges into a compound area, which then has a gravity connection into the public sewer. It is not known the condition of the rising main, and therefore potential discharge into the rising main is subject to further investigation.
- 6.2.4 Therefore, this assessment assumes that none of the existing assets would provide capacity and could not be permitted and demonstrates how foul flows can connect to public sewer should this be the ultimate requirement to demonstrate with certainty the scheme is deliverable.

6.3 Developable and Impermeable Areas

- 6.3.1 Touring caravan pitches remain permeable grass thus do not require formal drainage.
- 6.3.2 The animal shelter is an agricultural building and would not require formal drainage.

- 6.3.3 For the purposes of the enforcement appeal, only formal drainage is required assuming the presence of facilities buildings located in the east and west of the Site.
- 6.3.4 For the west and east facilities buildings (Figure 6.1), such development would increase the area of impermeable surfaces and therefore increase the amount of runoff.

Figure 6.1: Building Locations



6.4 Greenfield Runoff Rates

- 6.4.1 An assessment of greenfield runoff rates was undertaken to determine the attenuation requirements for the east and west facilities buildings.
- 6.4.2 The runoff rates were calculated using the HRWallingford UKSuDS online tool, with FEH method inputs (descriptors obtained from the FEH webservice²³). This is a recommended methodology for Sites up to 50ha in area and the approach is in line with the current 'industry best practice' guidelines as outlined in the Interim Code of Practice for SuDS²⁴, and EA Report SC030219 - Rainfall runoff management for developments.
- 6.4.3 The following parameters were used in the runoff calculations:
- Developable Area: 0.027ha
 - Average Annual Rainfall (SAAR): 902mm/year
 - Region No.: 7
 - BFIHOST19: 0.706
- 6.4.4 BFIHOST was updated to BFIHOST19 (November 2019) since a number of issues were identified with BFIHOST, which including a tendency to underestimate BFI in clay-dominated catchments.
- 6.4.5 BFIHOST19 is the baseflow index developed using the Hydrology of Soil Types (HOST) classification and is the baseflow proportion of the flow on average. It is estimated based on the daily mean flow data. Baseflow comprises water entering the watercourse through

²³ Centre for Ecology and Hydrology, Flood Estimation Handbook Web Service [<https://fehweb.ceh.ac.uk/>].

²⁴ Office of the Deputy Prime Minister, National SuDS Working Group (July 2004) Interim Code of Practice for Sustainable Drainage Systems [https://www.susdrain.org/files/resources/other-guidance/nswg_icop_for_suds_0704.pdf].

shallow subsurface flow and groundwater flow (mechanisms other than direct surface runoff); hence permeable soils and geology tend to yield a higher baseflow.

- 6.4.6 BFIHOST19 value assigned by the FEH webservice is considered to replicate on-site conditions.
- 6.4.7 Table 6.1 shows the calculated greenfield runoff rates. Runoff calculations are included in Appendix 9.
- 6.4.8 This Site drainage needs to take into account the Dorset Management Catchment peak rainfall allowances²⁵. For the 1% annual exceedance rainfall event, using the upper end allowance for the 2070s approach, climate change is 45%. The 45% climate change allowance was confirmed by the LLFA (Appendix 5).

Table 6.1: Greenfield Runoff Rates

Annual Probability (Return Period, Years)	Greenfield Runoff (l/s)
QBAR	0.1
100% (1)	0.1
3.33% (30)	0.1
1% (100)	0.2
1% Plus Climate Change	0.3

Note: 45% climate change added. The 1 in 1-year, 30-year and 100-year annual probability events are of importance to the Water Companies and the EA when looking at sewage discharge and flood risk.

- 6.4.9 The LLFA discussed that QBAR should be used for discharge offsite, however there is no maximum rate for solely onsite discharge (Appendix 5).
- 6.4.10 Due to the low greenfield rate, a minimum practicable of 1l/s has been used for each area.

6.5 Surface Water Management Strategy

Hierarchy of Discharge

- 6.5.1 In accordance with requirement H3 of the Building Regulations 2010²⁶ rainwater runoff must discharge to one of the following, listed in order of priority:
- 1. An adequate soakaway or some other adequate infiltration system:** The use of infiltration-based SuDS is not feasible due to low infiltration potential and shallow groundwater, as demonstrated during soakaway testing.
 - 2. A watercourse:** There is a watercourse located along the northern Site boundary, which has wider connectivity.
 - 3. A sewer:** There are no public surface water sewers located within the immediate vicinity of the Site.
- 6.5.2 The potential route to discharge surface water from the development will be by outfall to the bounding watercourse.

²⁵ <https://environment.data.gov.uk/hydrology/climate-change-allowances/rainfall>

²⁶ Office of the Deputy Prime Minister, The Building Regulations 2010, amended 2021

[\[https://www.gov.uk/government/publications/drainage-and-waste-disposal-approved-document-h\]](https://www.gov.uk/government/publications/drainage-and-waste-disposal-approved-document-h)

6.6 Sustainable Drainage Options (SuDS)

Choice of SuDS Options

- 6.6.1 Sustainable water management measures should be used to control the surface water runoff from the development Site, thereby managing the flood risk to the Site and surrounding areas from surface water runoff. These measures will also improve the quality of water discharged from the Site.
- 6.6.2 Current guidance promotes sustainable water management using SuDS. Options applicable to this Site are identified in Table 6.2.

Table 6.2: SuDS Options

Green roofs	Infiltration basins
Water butts	Detention basins
Permeable paving	Oversized pipes
Rainwater harvesting	Brown roofs
Filter drain	Swales
Wetland Areas	Cellular Storage

Note: SuDS appropriate to the development are highlighted green.

- 6.6.3 A hierarchy of SuDS techniques is identified²⁷:
- 1. Prevention** - the use of good Site design and housekeeping measures on individual Sites to prevent runoff and pollution (e.g. minimise areas of hard standing).
 - 2. Source Control** - control of runoff at or very near its source (such as the use of rainwater harvesting).
 - 3. Site Control** - management of water from several sub-catchments (including routing water from roofs and car parks to one/several large soakaways for the whole Site).
 - 4. Regional Control** - management of runoff from several Sites, typically in a detention pond or wetland.
- 6.6.4 Using SuDS as opposed to conventional drainage systems provides several benefits by:
- Reducing peak flows to watercourses or sewers and potentially reducing the risk of flooding downstream.
 - Reducing the volumes and frequency of water flowing directly to watercourses or sewers from developed Sites.
 - Improving water quality over conventional surface water sewers by removing pollutants from diffuse pollutant sources.
 - Reducing potable water demand through rainwater harvesting.
 - Improving amenity through the provision of public open spaces and wildlife habitat.

²⁷ CIRIA (2004) Report C609, Sustainable Drainage Systems – Hydraulic, Structural and Water Quality advice.

- Replicating natural drainage patterns, including the recharge of groundwater so that base flows are maintained.

SuDS Maintenance

- 6.6.5 Filter Drains will form the main attenuation feature for both buildings positioned east and west.
- 6.6.6 Maintenance of the SuDS features would be in line with the SuDS Manual (CIRIA C753, 2015), as detailed in Figure 6.2. The park operator will assume responsibility for the maintenance and management of any installed SuDS features. If the park owner goes into administration, or the site is sold, the Site will be contracted to the new Site owner, which will ensure maintenance throughout the lifetime of the development.
- 6.6.7 The level of detail provided within this FRA should be sufficient to demonstrate that SuDS would be deliverable.
- 6.6.8 An indicative maintenance and management plan is included in Section 7. Details would be considered further at detailed design when a detailed layout has been produced. The level of detailed provided within this FRA should be sufficient at outline stage to demonstrate that SuDS would be deliverable.

Figure 6.2: Filter Drain Operation and Maintenance Requirements (Table 22.1 of the SuDS Manual)

TABLE 16.1 Operation and maintenance requirements for filter drains			
	Maintenance schedule	Required action	Typical frequency
	Regular maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly (or as required)
		Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
		Inspect pre-treatment systems, inlets and perforated pipework for silt accumulation, and establish appropriate silt removal frequencies	Six monthly
		Remove sediment from pre-treatment devices	Six monthly, or as required
	Occasional maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG, 2007 or BS 3998:2010)	As required
		At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
		Clear perforated pipework of blockages	As required

Drainage Design Summary

- 6.6.9 Surface water runoff for both east and west facilities buildings would be directed to the drainage system through drainage via guttering discharging to the upper surface of the proposed filter drains.
- 6.6.10 The filter drains will be positioned to achieve a gravity fed connection to the northern ditch.

- 6.6.11 A surface water drainage layout covering both the east and west facilities buildings is in Drawing SHF284013-ENZ-XX-XX-DR-D-001.

Attenuation Requirements

- 6.6.12 Attenuation storage is required to reduce the post-application surface water runoff from the Site to calculated greenfield runoff rates, up to and including the 1 in 100-year (+45%CC) rainfall event, assuming no infiltration losses.
- 6.6.13 The following input parameters were assumed in the calculations:
- Impermeable Area: 0.027ha;
 - Cv (proportion of rainfall forming surface water runoff): 100% summer, 100% winter;
 - With outfall: 1l/s (both East and West Facilities Buildings)
- 6.6.14 The attenuation volume for the 1 in 100-year event (plus climate change) is 1.6m³ (West Facilities Building) and 4.4m³ (East Facilities Building)
- 6.6.15 Attenuation calculations are included in Appendix 9. The calculated runoff rates and attenuation volumes will be reviewed at detailed design stage.

6.7 Exceedance Routes

- 6.7.1 The filter drain will be designed with a capacity up to a 1 in 100-year (plus 45% climate change) event, based on the 1l/s restricted discharge rate. This provides a betterment (reduction) in runoff when compared to existing undeveloped conditions, where runoff is uncontrolled across all return periods.
- 6.7.2 A storm event in excess of this design standard would be extreme and would cause the filter drain to overtop (with no sudden deluge) and would then shed overland following the topography (southeast) as per existing conditions.
- 6.7.3 Finished floor levels of the facilities will be set above external levels, which will manage the residual risk of overtopping.

6.8 Water Quality

- 6.8.1 Water quality improvements are achieved by decreasing flow rates, which in turn traps silt, sediment, and pollutants before discharging to Watercourse 1.
- 6.8.2 The online Simple Index Approach [SIA] Tool²⁸ has been used to demonstrate the effectiveness of the proposed strategy to manage surface water discharging to the northern ditch.
- 6.8.3 'Residential Roofing has been used for the runoff area land use description as a worst-case scenario.
- 6.8.4 The use of filter drains would provide a sufficient level of treatment. A copy of the calculations is included in Appendix 10, and a summary of the results are included in Table 6.3.

²⁸ https://www.susdrain.org/resources/SuDS_Manual.html

Table 6.3: Simple Index Approach Results Summary

	Total Suspended Solids	Metals	Hydrocarbons
Pollution Hazard Score	0.2	0.2	0.05
Pollution Mitigation Score	0.4	0.4	0.4
Sufficiency of SuDS	Sufficient	Sufficient	Sufficient

7.0 Foul Drainage Strategy

7.1 Existing Drainage Strategy

- 7.1.1 During the Site walkover, the only assets found at the Site was an existing chemical disposal point. The point was located to the west of the shed housing the water supply tanks.

7.2 Proposed Strategy

- 7.2.1 In the pre-development response, Wessex Water discussed that the Ø150mm foul sewer along School Lane would not be large enough to take the flows from the development. Therefore, they requested that this development is connected to the Ø225mm foul sewer along Horton Road, to the north of the Site.
- 7.2.2 Due to the distance to the sewer beneath Horton Road, a pumped connection may be required. An outline foul drainage layout is in Drawing SHF284013-ENZ-XX-XX-DR-D-002.
- 7.2.3 In accordance with the Flows and Loads (4th edition) document, peak foul water discharge from a touring holiday caravan development is 300 litres per touring caravan per day, with an estimated average of three people per unit. Using this method, peak foul flows are estimated to average 0.8 l/s from the 232-unit development. The calculated foul flow rate/pumped flow rate will be reviewed at detailed design stage.
- 7.2.4 The above calculations assume that waste from chemical toilets do not enter the system, and therefore a tank would be proposed for this purpose. Assuming a worst-case where every pitch is occupied has the fully assumed occupancy and the maximum waste production (the Flows and Loads calculations typically include greywater production which would separately discharge to the foul system), a tank for chemical toilet waste would need to be up to 70m³ and emptied daily during such occupancy.

8.0 Summary and Conclusions

8.1 Introduction

- 8.1.1 A site-specific Flood Risk Assessment (FRA) has been undertaken in support of addressing an enforcement notice for a touring caravan development (consisting of 232 pitches, facilities buildings, animal shelter and septic tank), located on a 6.6ha Site on land at Gundrys Farm Caravan & Camping, Wimborne.

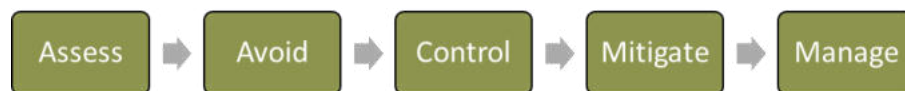
8.2 Flood Risk

- 8.2.1 The risk of flooding is assessed as follows:

- The risk of fluvial flooding is assessed as negligible. There is however a residual risk of fluvial flooding from the bounding watercourse.
- The risk of groundwater flooding is assessed as low, due to the presence of shallow groundwater.
- The risk of surface water flooding is assessed as negligible for most of the Site, with small areas of low to high risk surface water ponding.
- Flood risk from all other sources is assessed as negligible.

8.3 Measures

- 8.3.1 Flood risk from identified sources can be reduced to a negligible and acceptable level through the following approach:



- 8.3.2 No avoidance measures are proposed and the Sequential Test and Exception Test is not required.
- 8.3.3 The FRA has explored control, mitigation and management measures:

- The touring caravans by design have floor levels above external levels.
- Provide a 4m easement free from any new development along the bounding watercourse. This applies to any future development. This easement would provide access for inspection and maintenance purposes, including vehicle access.
- Adoption of a surface water management strategy for roofed areas (see Section 6).
- Undertake maintenance activities to keep the watercourse clear from debris and overgrown vegetation to maintain the conveyance of the channels.
- Fit outfalls of any installed drainage with backflow prevention and provide a high level overflow.
- Caravans affected by residual and localised surface water flooding events should be relocated or evacuated from site.

8.4 Flood Guidance

- 8.4.1 The touring caravan use is classified as more vulnerable. More vulnerable uses are considered acceptable in terms of flood risk in Flood Zone 1 (low risk). There is however a risk of flooding from other sources. Subject to the implementation of the above measures, the Sequential Test would be passed, and the Exception Test would not be required.

8.5 Site Drainage

Surface Water

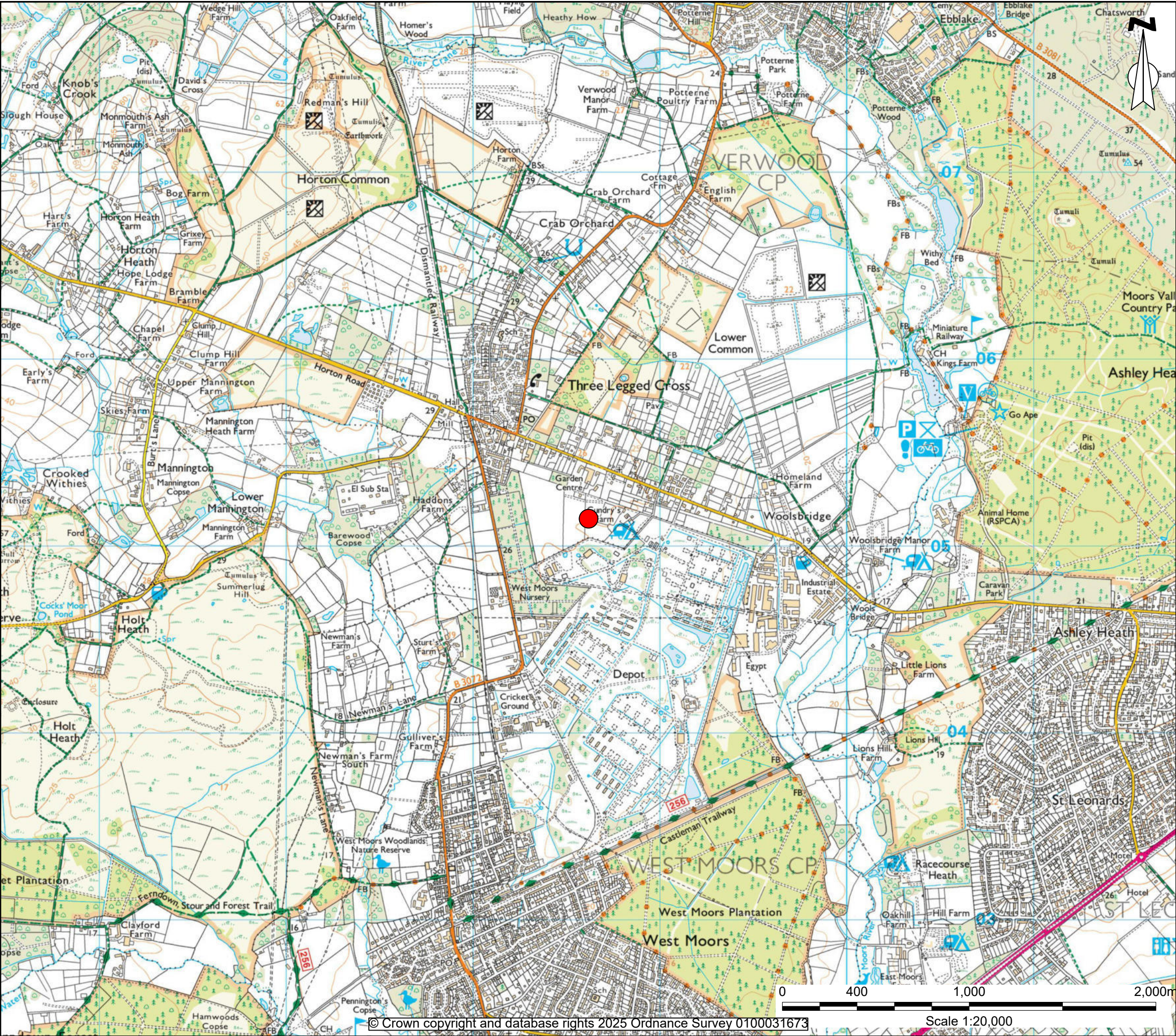
- 8.5.1 The development has increased the area of impermeable surfaces and therefore has increased the amount of runoff.
- 8.5.2 Surface water runoff from the Site will be restricted to lowest practical rate which offers a betterment to existing conditions with uncontrolled runoff across all return periods.
- 8.5.3 Surface water runoff from the development would be attenuated on-site up to and including the 1 in 100-year event, plus 45% climate change.
- 8.5.4 A SuDS drainage scheme is proposed to manage excess runoff from the development, comprising a filter designed to maintain runoff at pre-development rates, with an outfall to the northern ditch.
- 8.5.5 A maintenance and management ensure the effectiveness of the drainage strategy during the operation phase.

Foul Water

- 8.5.6 It is proposed that foul flows will discharge to the Ø225mm foul sewer along Ringwood Road, to the north of the Site. Due to the distance to the sewer beneath Horton Road, a pumped connection may be required.

8.6 Conclusion

- 8.6.1 This FRA demonstrates the development would be operated with minimal risk from flooding, would not increase flood risk elsewhere and is compliant with the requirements of national policy and guidance.
- 8.6.2 The development should therefore not be precluded on the grounds of flood risk, as well as surface water and foul drainage.



KEY:

Site Location

P01	23/10/25	Issued for comment / approval	LW	CW	CW
Rev	Date	Description	DRA	CHK	APP

Project
Gundry's Farm, Caravan & Camping, Wimborne

Client
Laister Planning Limited

Drawing Title
Site Location Plan

Scale 1:20,000@A3	Date 23/10/25	Status Preliminary
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DWG No. SHF284013-ENZ-XX-XX-DR-Y-0001	Revision P01
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Sheffield
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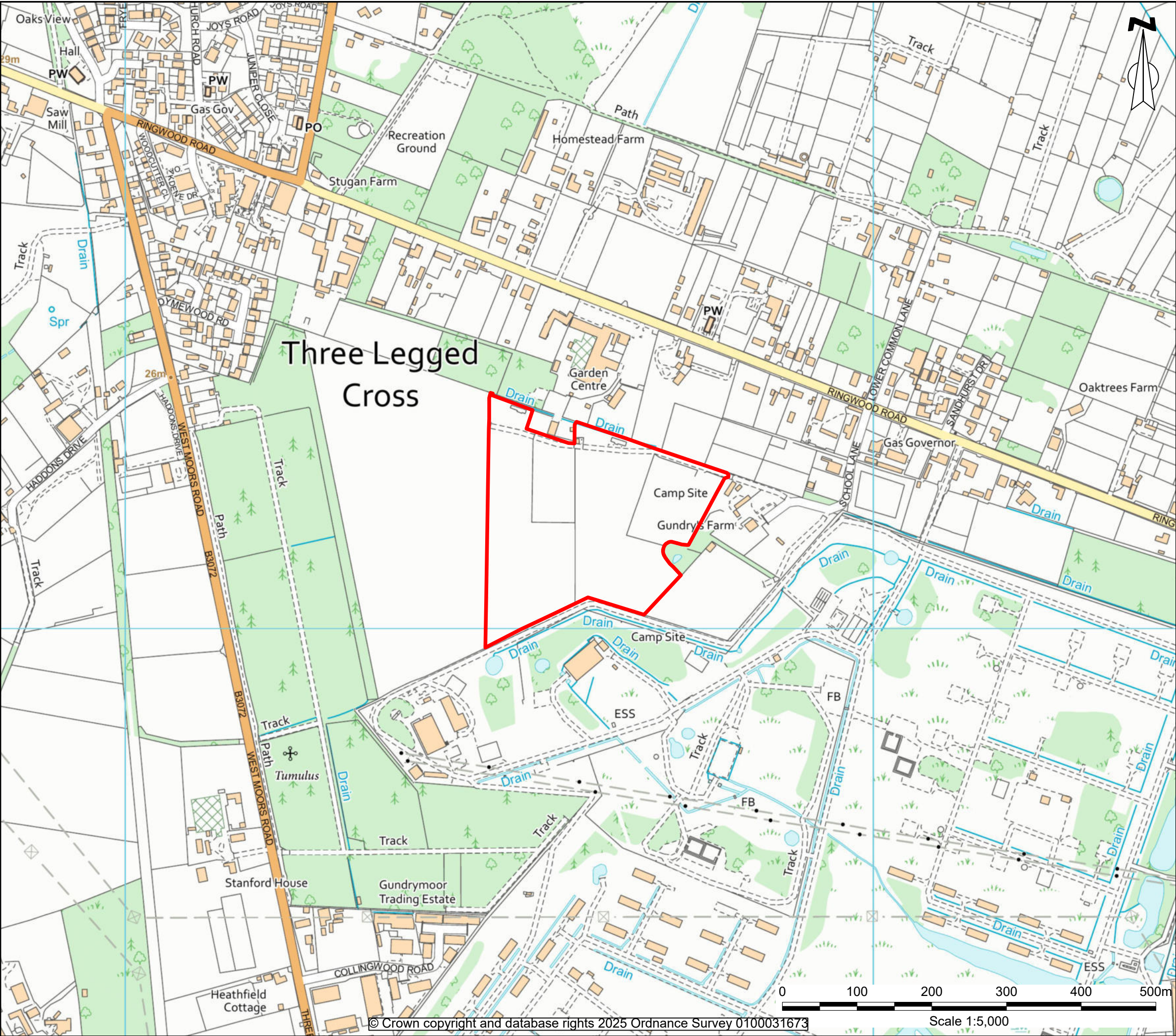
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KEY:

Site Boundary

Surface Water Features

P01	23/10/25	Issued for comment / approval	LW	CW	CW
Rev	Date	Description	DRA	CHK	APP

Project

Gundry's Farm, Caravan & Camping, Wimborne

Client

Laister Planning Limited

Drawing Title

Surface Water Features

Scale 1:5000@A3	Date 23/10/25	Status Preliminary
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DWG No. SHF284013-ENZ-XX-XX-DR-Y-0002	Revision P01
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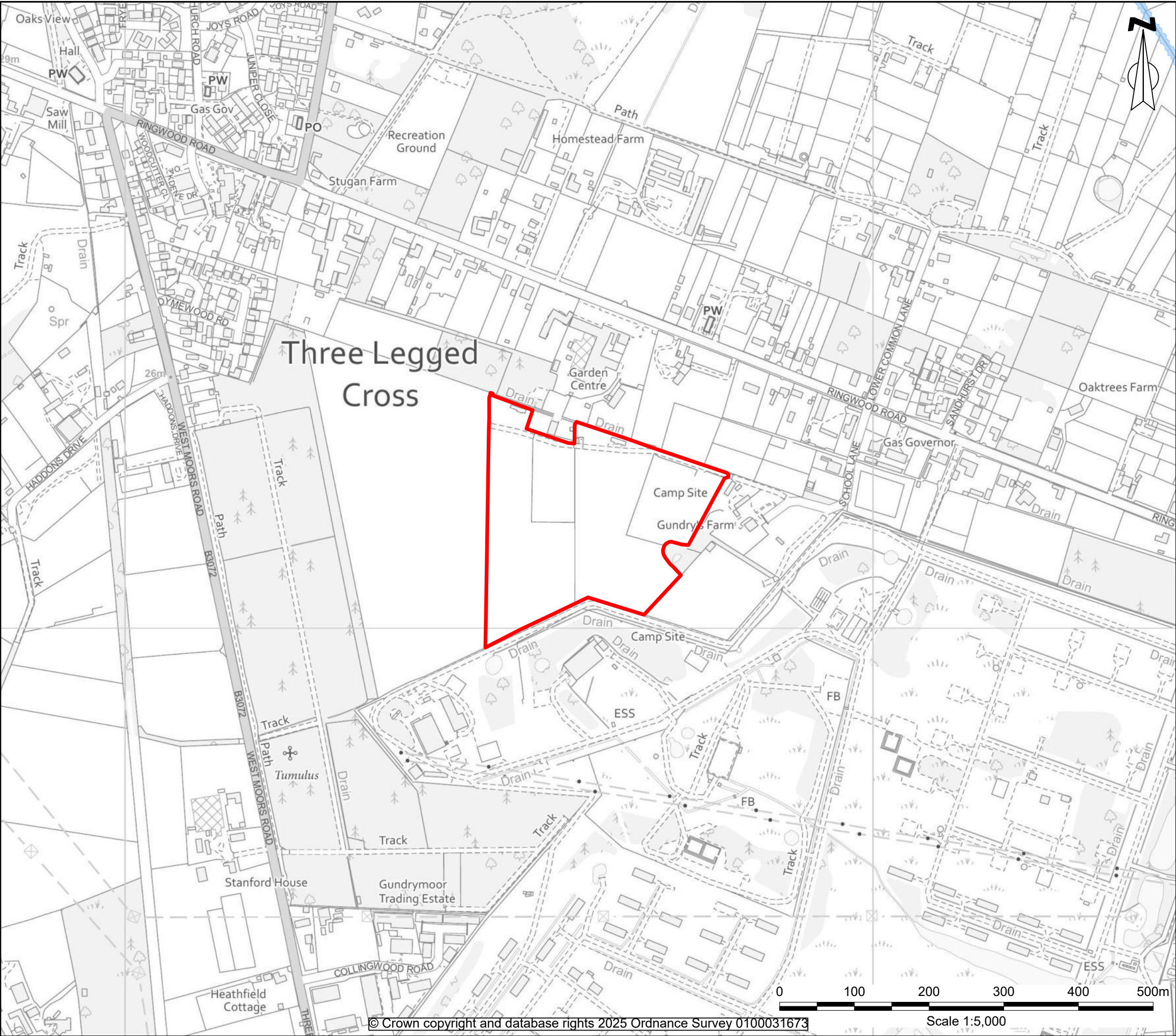
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Scale 1:5,000



KEY:

- Site Boundary
- Flood Zone 3
- Flood Zone 2
- Flood Zone 1

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Rev	Date	Description	DRA	CHK	APP

Project

Gundry's Farm, Caravan & Camping, Wimborne

Client

Laister Planning Limited

Drawing Title

EA Flood Zones

Scale 1:5000@A3	Date 23/10/25	Status Preliminary
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DWG No. SHF284013-ENZ-XX-XX-DR-Y-0003	Revision P01
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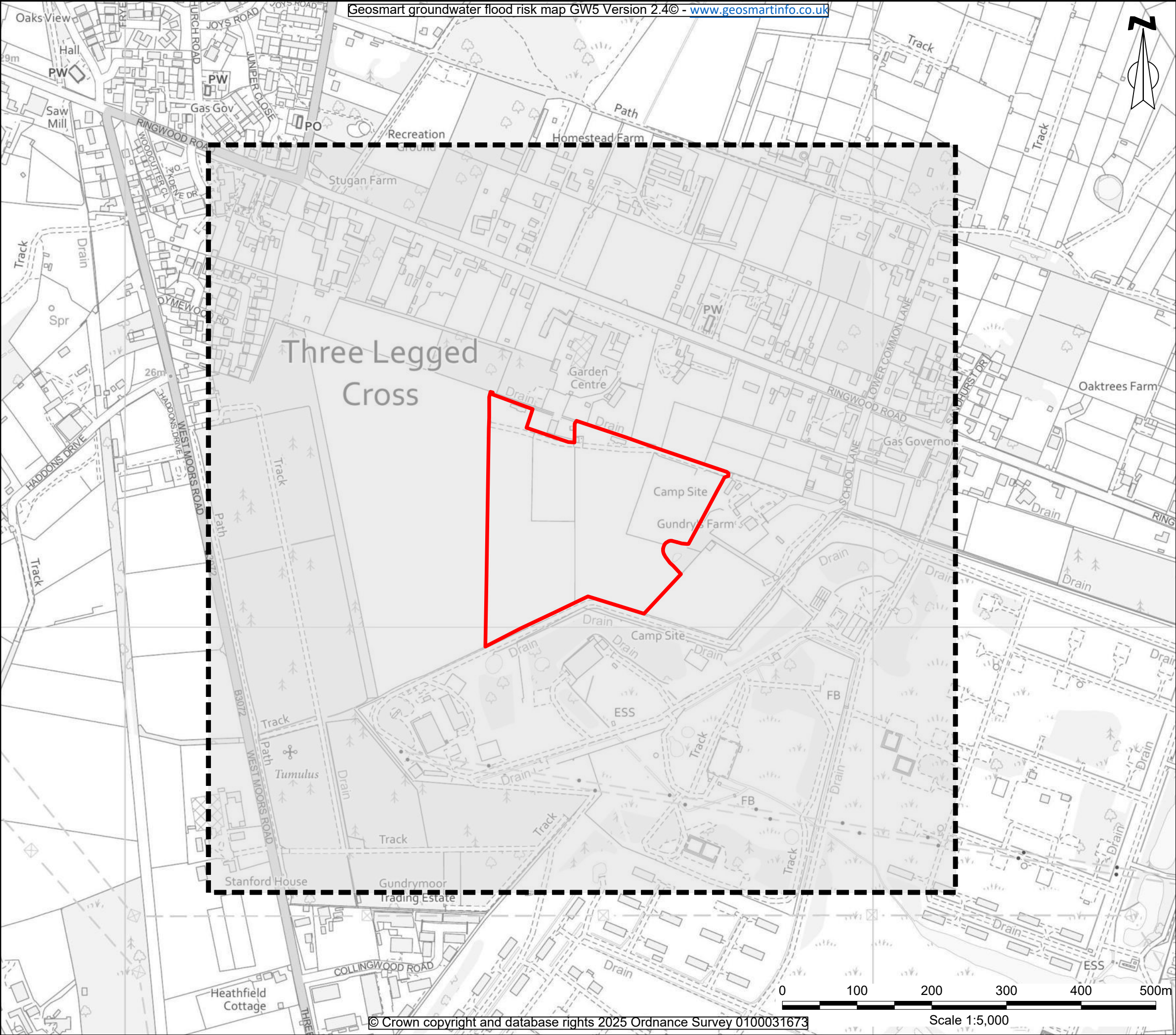
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KEY:

- Site Boundary
- Class 1 - High Risk
- Class 2 - Moderate Risk
- Class 3 - Low Risk
- Class 4 - Negligible Risk
- Search Extent

Rev	Date	Description	DRA	CHK	APP
P01	23/10/25	Issued for comment / approval	LW	CW	CW

Project
Gundry's Farm, Caravan & Camping, Wimborne

Client
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Drawing Title
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Scale	Date	Status
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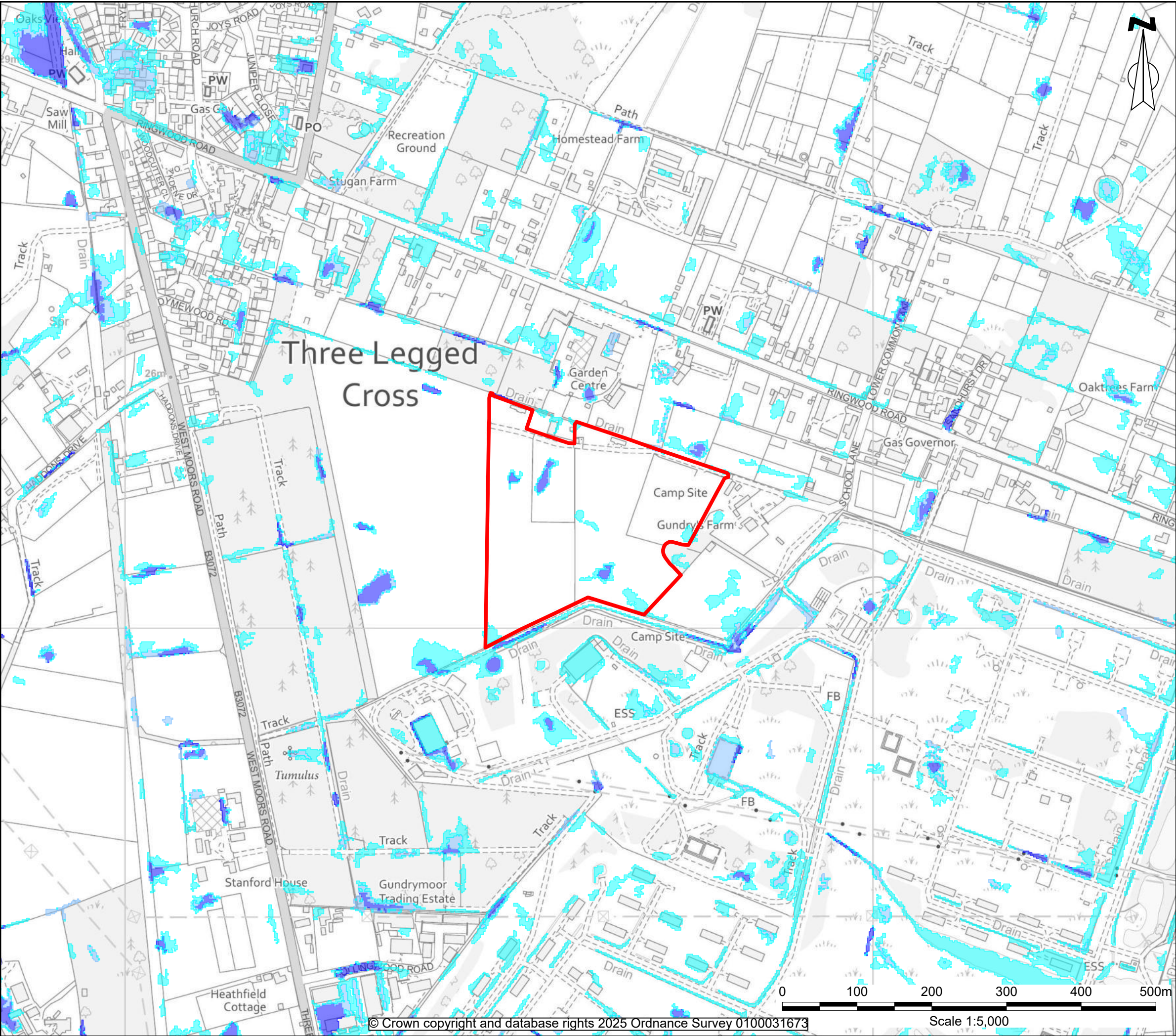
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KEY:

- Site Boundary
- High Risk
- Moderate Risk
- Low Risk

P01	23/10/25	Issued for comment / approval	LW	CW	CW
Rev	Date	Description	DRA	CHK	APP

Project
Gundry's Farm, Caravan & Camping, Wimborne

Client
Laister Planning Limited

Drawing Title
EA Risk of Flooding from Surface Water

Scale 1:5000@A3	Date 23/10/25	Status Preliminary
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DWG No.
SHF284013-ENZ-XX-XX-DR-Y-0006.1

Revision
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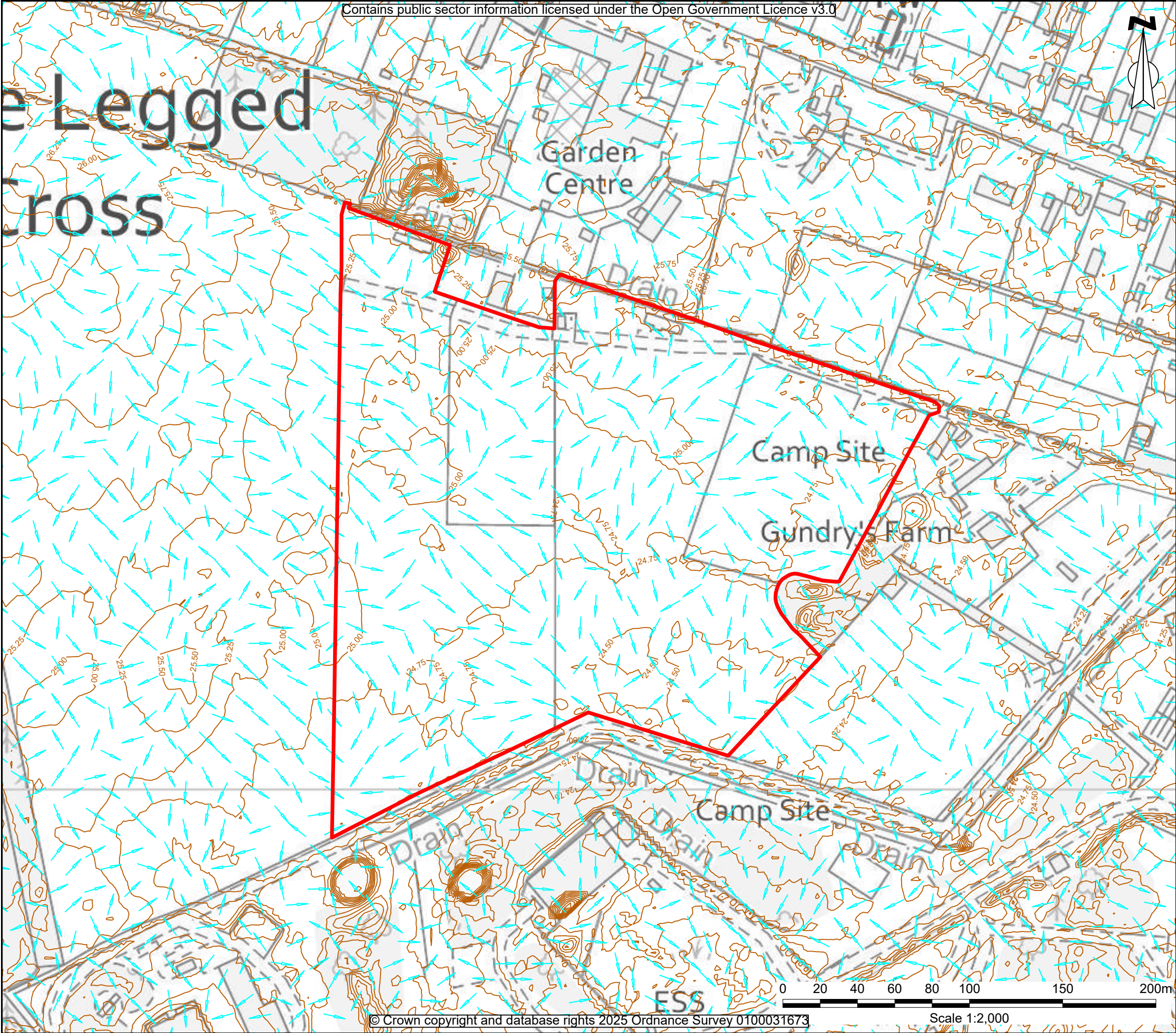
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KEY:

Site Boundary

Contours

Surface Water Flow Path

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Rev	Date	Description	DRA	CHK	APP

Project

Gundry's Farm, Caravan & Camping, Wimborne

Client

Laister Planning Limited

Drawing Title

Flow Pathway Analysis

Scale 1:2000@A3	Date 23/10/25	Status Preliminary
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DWG No. SHF284013-ENZ-XX-XX-DR-Y-0007	Revision P01
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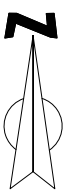
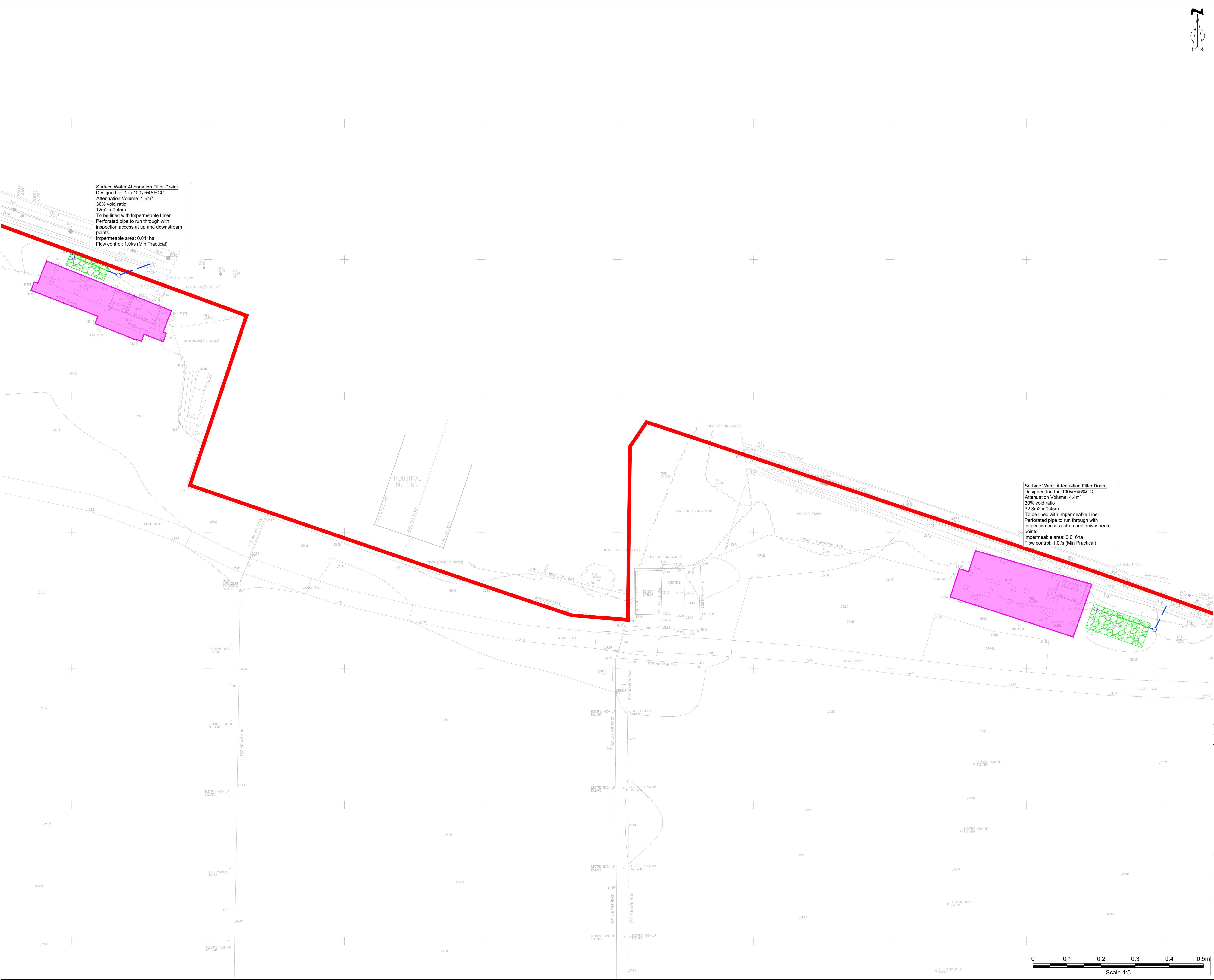
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Scale 1:2,000



- KEY:**
- Surface Water Sewer
 - Surface Water Manhole/Inspection Chamber
 - Site Boundary
 - Developable Area
 - Indicative Filter Drain

P01	19/12/25	Issued for comment / approval	TB	SD	SD
Rev	Date	Description	DRA	CHK	APP

Project
Gundry's Farm Caravan and Camping Site

Client
Laister Planning Ltd

Drawing Title
Preliminary Surface Water Drainage Layout

Scale 1:250@A1	Date 19/12/25	Status Preliminary
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DWG No.
SHF.284.013-ENZ-DR-D-0001

Revision
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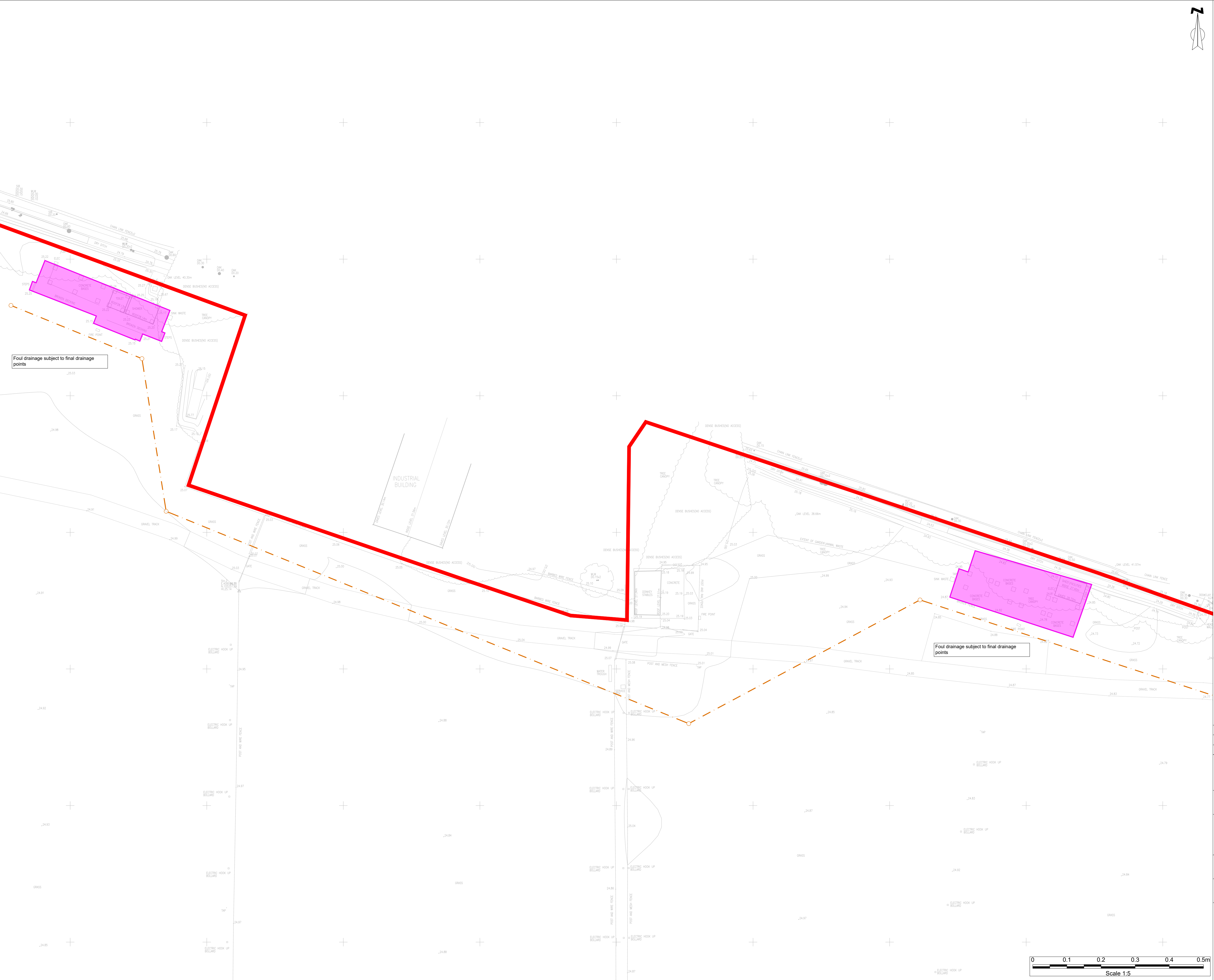
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KEY:

- Site Boundary
- Developable Area
- Proposed Foul Water Pipe
- Proposed Foul Water Manhole

P01	19/12/25	Issued for comment / approval			TB	SD	SD
Rev	Date	Description			DRA	CHK	APP

Project
Gundry's Farm Caravan and Camping Site

Client
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Drawing Title
Preliminary Foul Water Drainage Layout

Scale 1:250@A1	Date 19/12/25	Status Preliminary
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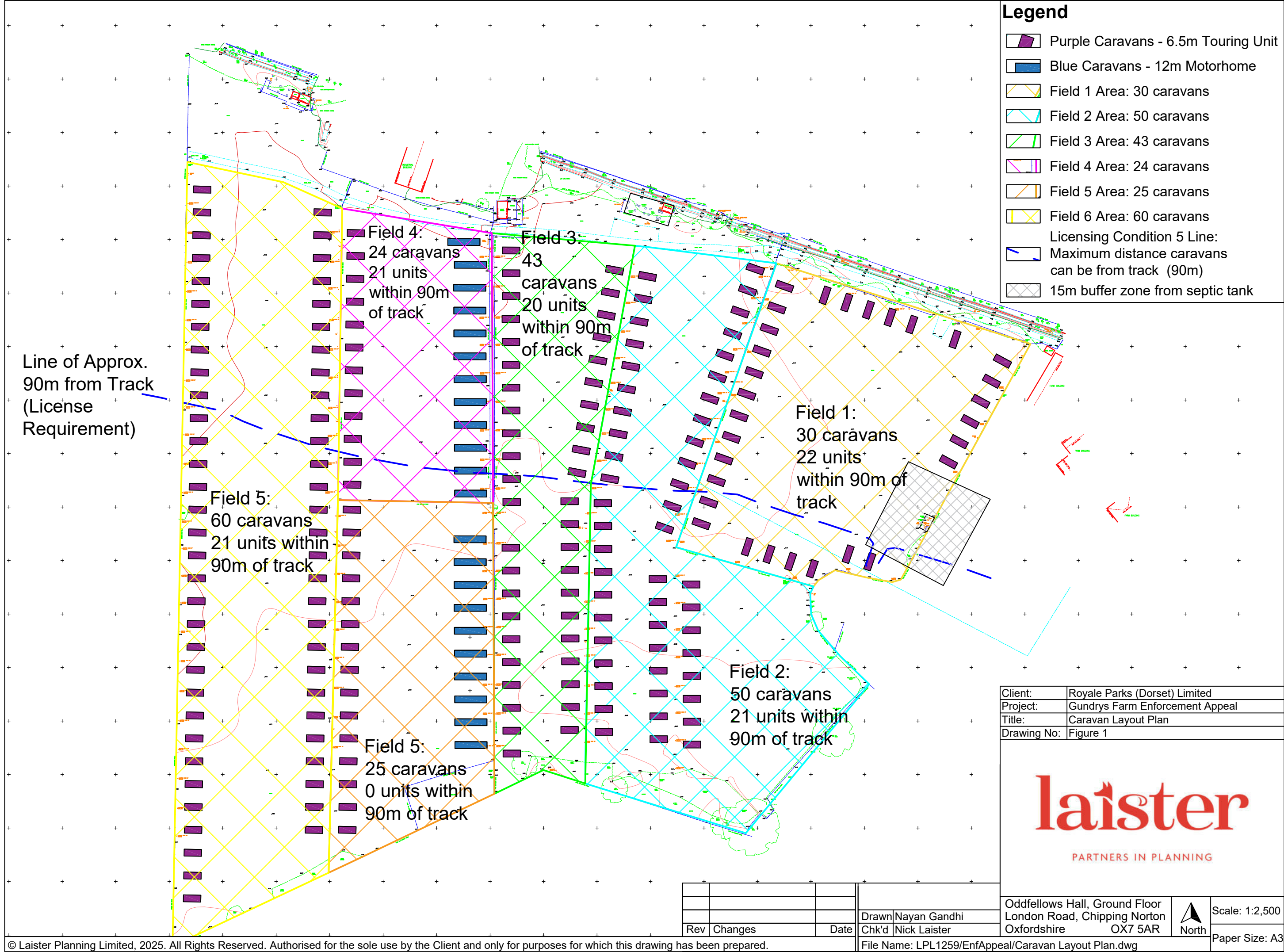
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Appendix 2 – SFRA Mapping
