FLOOD RISK ASSESSMENT
FOR RESIDENTIAL DEVELOPMENT AT
KING JOHN BANK, WALPOLE ST ANDREW

FINAL REPORT

ECL1797/GR MERCHANT LTD

DATE MARCH 2026

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1.0 INTRODUCTION

This Flood Risk Assessment has been prepared in accordance with National Planning Policy Framework (NPPF) and supporting planning practice guidance (PPG) on Flood Risk and Coastal Change.

In areas at risk of flooding or for sites of 1 hectare or more, developers are required to undertake a site-specific Flood Risk Assessment to accompany an application for planning permission. This Flood Risk Assessment has been produced on behalf of GR Merchant Ltd in respect of two residential dwellings at King John Bank, Walpole St Andrew.

A planning application for the proposed development is to be submitted by GR Merchant Ltd.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is situated on land adjacent to Rose Cottage, King John Bank, Walpole St Andrew, Wisbech, PE14 7JS. The National Grid Reference of the site is 54887/31879.

The location of the site is shown in Figure 1.

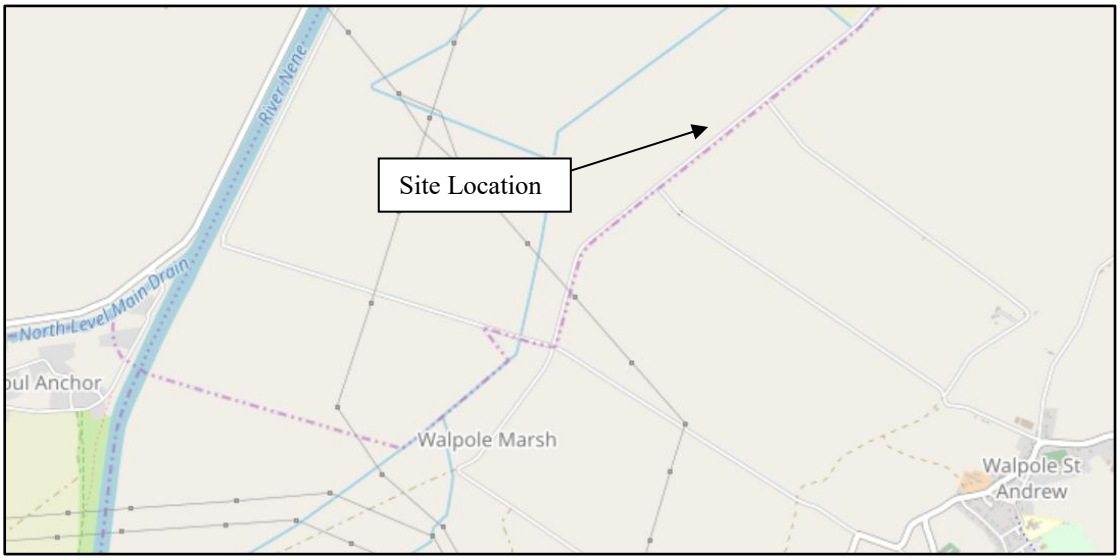


Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the north western side of King John Bank. The site is an undeveloped area of agricultural land. There are dwellings to the north and south of the site and agricultural land to the west. The area of development is approximately 0.35 hectares.

Environment Agency LiDAR data shows that the site is flat with ground levels typically between +3.3m OD and +3.4m OD. The carriageway level of King John Bank adjacent to the site is +3.9m OD.

The site is in the King's Lynn Internal Drainage Board's (IDB) area. Surface water at the site drains naturally through soakaway and hence to the IDB drain system. There are riparian drains on the field boundaries close to the site and the nearest IDB Drain, Wingland Drain, is approximately 350m north west of the site.

The online British Geological Survey maps indicate that the site is likely to be underlain by the Ampthill Clay Formation mudstone. The bedrock is shown to be overlain with superficial deposits of clay and silt.

2.3 Proposed Development

The proposed development consists of two self-build residential dwellings. Details of the proposed development are provided in Attachment 1.

2.4 Local Development Documents

The South East Lincolnshire Local Plan 2011 – 2036, adopted in March 2019, is the Local Plan for the district. Policy 4: Approach to Flood Risk states the requirements for flood risk reduction.

The South East Lincolnshire Level 1 and Level 2 Strategic Flood Risk Assessment (SFRA) was prepared in June 2017.

The Joint Lincolnshire Flood Risk and Drainage Management Strategy has been prepared by Lincolnshire County Council as the Lead Local Flood Authority. The purpose of the Strategy is to increase the safety of people across Lincolnshire by reducing the number of people at risk of flooding, increasing the resilience of local communities, and reducing the impact of flooding.

2.5 Available Flood Risk Information

An extract from the Environment Agency Flood Map for Planning is shown in Figure 2. The site is located within Flood Zone 3, an area with a high probability of flooding.

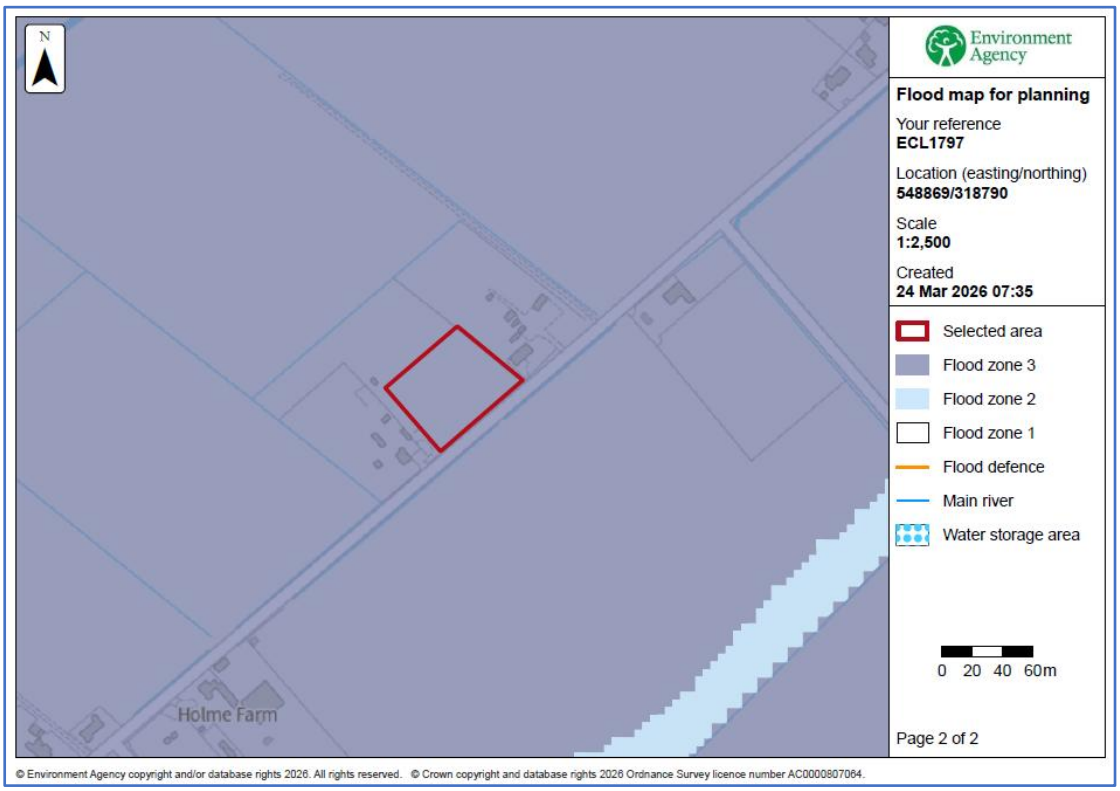


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps provide an indication of the risk from the primary sources of flooding. The details provided with these maps are summarised in Table 1. The depth of flooding identified is the maximum depth that occurs during a low chance (between 0.1% and 1% chance each year) event.

	Present Day		2050 Epoch	
	Chance of Flooding	**Depth (Low chance)**	**Chance of Flooding**	**Depth (Low chance)**
Rivers and the Sea	The site has a medium chance (between 1% and 3.3% chance each year)	No data available	No data available	No data available
Surface Water	Parts of the site have a low chance (between 0.1% and 1% chance each year)	Below 0.2m	Parts of the site have a low chance (between 0.1% and 1% chance each year)	Below 0.2m
Reservoir	The site is not within an area at risk of reservoir flooding.			

Table 1 – Environment Agency Long Term Flood Risk Maps

Table 2 shows the level of risk at the site within the South East Lincolnshire SFRA.

SFRA Map	Present Day	Year 2116
Residual Flood Hazard Map for the 1% fluvial and 0.5% tidal event	The site is in the 'Danger for Some' area	The site is in the 'Danger for All' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal	The peak flood depth is between 0.5m and 0.1m	The peak flood depth is greater than 2.0m

Table 2 – Flood Risk within SFRA Maps

3.0 FLOOD RISK VULNERABILITY

3.1 The Sequential and Exception Test

The NPPF requires the application of a Sequential Test to ensure that new development is in areas with the lowest probability of flooding.

The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

3.2 Vulnerability Classification

Table 2 of the PPG Flood Risk and Coastal Change categorises different types of uses and development according to their vulnerability to flood risk. The proposed development is covered by the description of buildings used for dwellings and is classified as 'More Vulnerable'.

Table 3 of the PPG Flood Risk and Coastal Change sets out Flood Risk Vulnerability and flood zone 'compatibility'. The site is in Flood Zone 3 and the development is 'More Vulnerable' therefore it is necessary to complete the Exception Test.

PPG Flood Risk and Coastal Change defines that the lifetime of the development in terms of flood risk and coastal change is 100 years.

3.3 Application of the Sequential Test and Exception Test

It is for the Local Planning Authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider whether an application passes the Sequential Test.

Large parts of the South Holland district that are near the River Nene lie within Flood Zone 3. As such, the opportunities to undertake the development at an alternative site with a lower flood risk are limited. At this location it is not possible to position the development on higher ground within the proposed site.

The River Nene has defences that provide protection during the 0.5% annual probability (1 in 200 chance each year) event including climate change. Therefore the 'actual risk' of flooding at the site is low and the site could be considered to pass the Sequential Test.

The Exception Test requires consideration of the wider sustainability benefits of a development and that the development would be safe and residual risks managed.

The site is considered to provide the following sustainability benefits.

- The Local Plan has a target of a net increase of at least 11,681 dwellings in South Holland over the 25-year local plan period. The Plan considers this new

housing is required to ensure the sustainability of the Local Plan area. The proposed development will contribute to this target.

- The flood risk mitigation measures incorporate climate change allowances and therefore provide a solution that is sustainable for the next 100 years.

Section 5 of this Flood Risk Assessment describes the flood mitigation measures and the management of the residual risks, demonstrating that this development will be safe and not increase flood risk elsewhere. The measures proposed to mitigate this residual risk are in accordance with the Local Authorities Standing Advice. In summary the site is protected to the appropriate standard and the residual risk is mitigated. The development is considered to pass the Exception Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The site is approximately 1.5km from the River Nene. The site is protected by tidal defences on the River Nene. The site is approximately 8km from the tidal defences to the Wash. These defences are the responsibility of the Environment Agency.

There is a long-term strategy for the maintenance of the Environment Agency defences which is reviewed and updated periodically.

There is an extensive local drainage network managed by King's Lynn IDB. The nearest IDB drain is 350m north west of the site. The site and surrounding land are part of the Chalk Lane catchment which drains by gravity to Chalk Lane Sluice and discharges to the tidal River Nene at Sutton Bridge.

During the operation and maintenance of its pumping stations, associated structures, and channel systems, the IDB seeks to maintain a general standard capable of providing flood protection to its district. A routine maintenance programme is in place to ensure that the Board's assets are commensurate with the standard of protection that is sought.

Current maintenance standards of the King's Lynn IDB's and the Environment Agency's defences are generally good.

4.2 Sources of Flooding

A summary of the sources of flooding is provided in Table 3.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	Based upon the EA maps the risk is very low.
Fluvial Flooding	The risk is assessed in Section 4.3 and Section 4.5.
Tidal Flooding	The risk is assessed in Section 4.3 and Section 4.5.
Reservoir Flooding	Based upon the EA Maps the site is not at risk of reservoir flooding.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 3 – Sources of Flooding

4.3 Probability of Flooding

The probability of flooding associated with blockages in the King's Lynn IDB drainage system is low due to the maintenance standards achieved and managed by the IDB.

Failure of Chalk Lane Sluice could lead to an increased level of flood risk within the IDB catchment.

Through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 years and 1 in 100 years, respectively. The risk associated with flood events that exceed the standard of protection provided is lowered due to the King's Lynn IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

The site benefits from defences on the River Nene that provide protection during an event with a 0.5% annual probability (1 in 200 chance each year). The River Nene tidal defences between Sutton Bridge and Wisbech were improved after the 1978 tidal surge event to a level of 7.00m AOD. The highest recorded tide level at Wisbech during the 1978 event was 5.60m AOD and during the event of 5 December 2013 a level of 6.1m AOD was recorded.

4.4 Historic Flooding

During the preparation of this assessment, no evidence was discovered of the site being flooded.

4.5 Climate Change

Climate change is likely to impact the site through increased rainfall intensity and duration affecting the local drainage network and increased flood levels in the River Nene.

The River Nene tidal defences have been designed to include an allowance for climate change. In summary the site is not at risk for the design life of the development (i.e., 100 years).

4.6 Residual Risk

In areas close to the River Nene there is a residual risk should a breach of the tidal defences occur.

The SFRA maps indicate that the site is at risk should a breach occur in the tidal defences. The Environment Agency Hazard Mapping indicates the maximum flood depths in the event of a combined breach during the 0.5% annual probability (1 in 200 chance each year) event with climate change. The maximum flood depth around the replacement dwelling during the 0.5% annual probability (1 in 200 chance each year) event with climate change and combined breaches is greater than 2.0m as shown in Figure 3.

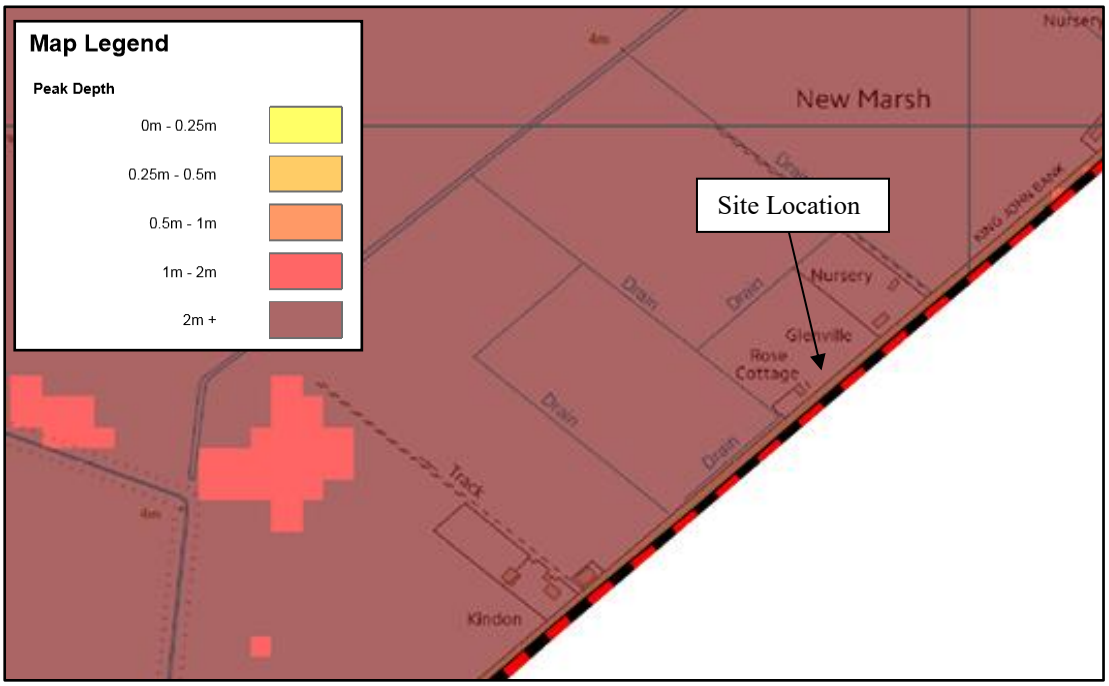


Figure 3 – SFRA 2115 Residual Peak Depth Map (0.5% annual probability)

Figure 3 identifies an area approximately 500m west of the site that has flood depths between 1m and 2m. LiDAR shows that ground levels within this area are greater than +3.7m OD. A flood level of +5.7m OD can therefore be estimated. The maximum depth of flooding at the site is 2.4m.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of the Chalk Lane Sluice would increase the level of risk at the site.

Due to the standards of the defences the probability of the site flooding from any Environment Agency system is less than 1% annual probability (1 in 100 chance each year) for a fluvial event and less than 0.5% annual probability (1 in 200 chance each year) for a tidal event. Over time there will be a gradual increase in risk to the site due to climate change.

There is a residual risk associated with a breach of the tidal defences. In the event of multiple breaches, a flood depth up to 2.4m could be anticipated around the dwellings.

The proposed development increases the impermeable area and therefore has the potential to increase the rate of surface water runoff from the site.

5.2 Mitigation Measures

Based upon the information available during the preparation of this flood risk assessment, it is recommended that dwellings are a minimum of two storeys, there is no habitable accommodation on the ground floor, and first floor is 2.4m above surrounding ground level.

The developer should ensure that the eventual occupiers of the dwellings are sufficiently aware of the risk of flooding, and the standard of the existing defences. The Environment Agency operates a flood warning system for properties at risk of flooding to enable householders to protect life or take actions to manage the effect of flooding on property. Floodline Warnings Service is a national system run by the Environment Agency for broadcasting flooding warnings. The occupiers of the dwellings should register to receive flood warnings.

During an extreme event it is anticipated that sufficient time would be available to take precautionary actions to limit the potential impact of flooding. The proposed dwellings will be two storey and in the case of an exceedance event there is a safe refuge on the first floor. Safe egress and access are available on King John Bank in a southerly direction to Walpole St Peter which is in Flood Zone 1.

Failure of Chalk Lane Sluice may occur due to mechanical breakdown or power supply being disrupted. However, in these circumstances, if conditions were such to put properties and land at risk of flooding, the IDB would take emergency action to maintain the drainage level of service by using temporary pumping equipment.

It is recommended that surface water run-off is managed so that stormwater from the development will not affect any adjoining properties or increase the flood risk elsewhere.

6.0 CONCLUSIONS

As a result of this assessment, the following conclusions have been reached.

- The proposed development consists two self-build dwellings on land adjacent to Rose Cottage, King John Bank, Walpole St Andrew.

- The site is located within an Internal Drainage Board catchment and through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 and 1 in 100 years, respectively.

- The proposed development is in Flood Zone 3. The site benefits from defences on the tidal River Nene which provide protection against the 0.5% annual probability (1 in 200 chance each year) event.

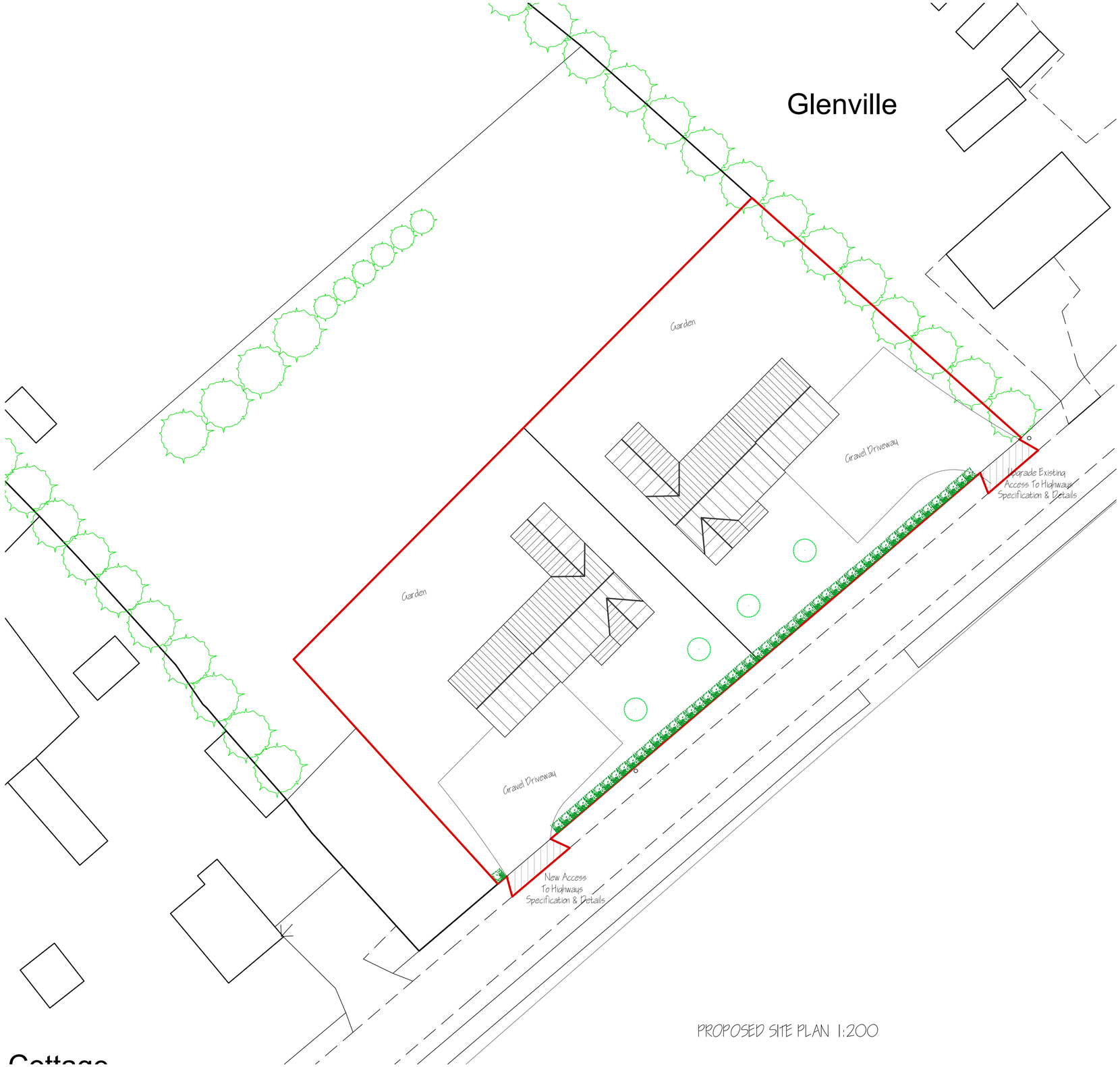
- The maximum breach depth during the 0.5% annual probability (1 in 200 chance each year) tidal event in 2115 is estimated to be 2.4m.

- It is recommended that dwellings are a minimum of two storeys, there is no habitable accommodation on the ground floor, and first floor is 2.4m above surrounding ground level.

- The development passes the Sequential Test and Exception Test is therefore suitable for the proposed location.

ATTACHMENT 1

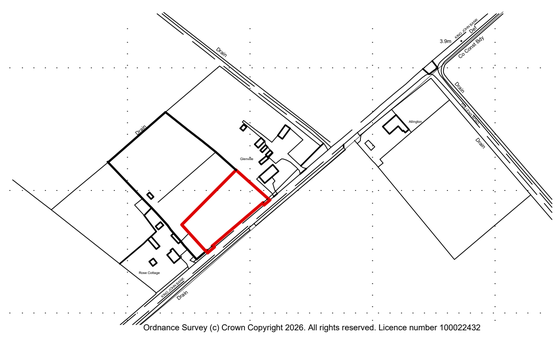
SITE & LOCATION PLANS
(DWG 4470-26-01A)



PROPOSED SITE PLAN 1:200



EXISTING SITE PLAN 1:500



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LOCATION PLAN 1:2500

A	RED LINE REDUCED.	MAR' 2026
ref:	revision	date

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Project
PROPOSED 2 NO SELF-BUILD DWELLINGS
ADJACENT ROSE COTTAGE
KING JOHN BANK, WALPOLE ST ANDREW
PE14 7JS

Client
MR & MRS J TAYLOR

Drawing
SITE & LOCATION PLANS

Job Ref.	Drawing No.
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Date	**Drawn**
MARCH 2026.	SLD

Scales
(AS STATED).

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