FLOOD RISK ASSESSMENT
FOR RESIDENTIAL DEVELOPMENT ON
POSTLAND ROAD, CROWLAND

FINAL REPORT

ECL1487c/SEAGATE HOMES

DATE DECEMBER 2025

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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 Seagate Homes Ltd in respect of a development that consists of nine residential dwellings on Postland Road, Crowland.

A planning application for the proposed development is to be submitted by Seagate Homes Ltd.

This Flood Risk Assessment has been updated to reflect the comments made by the Environment Agency in their letter of 5 November 2025.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located on land at Postland Road, Crowland, Lincolnshire, PE6 0JB. The National Grid Reference of the site is 52476/31092.

The location of the site is shown in Figure 1.

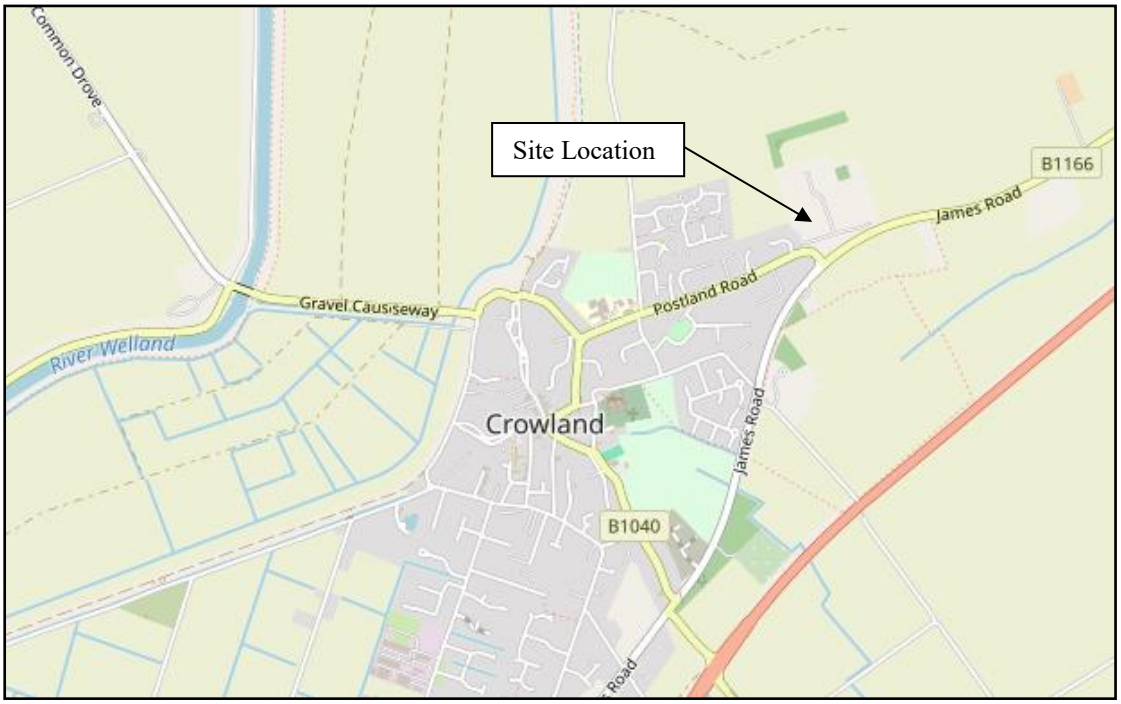


Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the northern side of Postland Road and immediately north of an access road to a garden centre. The site is an undeveloped plot situated between residential dwellings to the west and the garden centre to the east. The area of development is approximately 1.2 hectares.

A topographic survey of the site is provided in Attachment 1. Ground levels are typically between +1.1m OD and +1.2m OD. Within the site there are areas where stockpiled material elevates ground levels significantly above the typical site level.

The site is in the North Level Internal Drainage Board (IDB) district. Surface water at the site would naturally drain through soakaway and hence to the riparian and IDB drainage system. The nearest IDB Main Drain is Brickfield Drain approximately 300m north of the site.

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

2.3 Proposed Development

The proposed development consists of nine dwellings. The dwellings will have two storeys. Ground levels within the site will be raised as part of the development. A Site Plan is 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 Flood Zones

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.

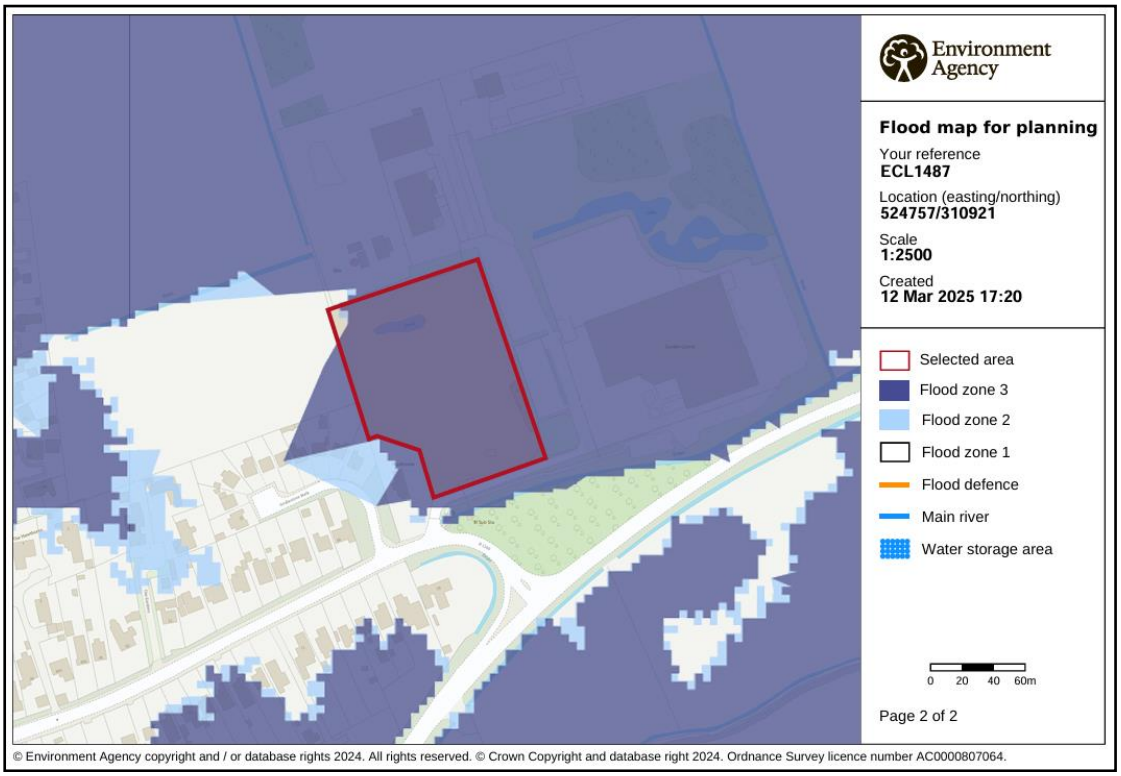


Figure 2 – Environment Agency Flood Map for Planning

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 fluvial design flood to be considered within a Flood Risk Assessment is the 1% annual probability event. As such the depths 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	
	Risk of Flooding	**Depth (Low chance)**	**Risk of Flooding**	**Depth (Low chance)**
Rivers and the Sea	The site has a very low chance (between less than 0.1% chance each year)	No data available	No data available	No data available
Surface Water	Isolated areas of the site have a low chance (between 0.1% and 1% chance each year)	During low risk events depths are up to 0.2m	Isolated areas of the site have a low chance (between 0.1% and 1% chance each year) or medium chance (between 1% and 3.3% chance each year)	During low risk events depths are up to 0.2m
Reservoir	At risk when river levels are normal			

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	2116
Residual Flood Hazard Map for the 1% fluvial event	The site is predominantly in the 'Danger for Some' area	The site is in the 'Danger for All' area
Residual Peak Depth Map for the 1% fluvial event	The peak flood depth is between 1.0m and 2.0m.	The peak flood depth is between 1.0m and 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.

Supplementary information to support the Sequential Test has been provided within a separate document. In comparison to alternative sites when the suitability of the site for a similar development is considered then the proposed development can be shown 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 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.

Whilst it is acknowledged that the site is outside of the settlement development boundary it is not considered to be within open countryside. There is built development to the east and north of the site and therefore the proposed dwellings will not extend the edge of the built development on the eastern side of Crowland.

Furthermore, development of Housing Allocation site Cro050 will see the development site entirely surrounded by built development.

The scheme provides wider sustainability benefits by delivering larger, high-quality executive homes currently lacking in Crowland, broadening local housing choice and supporting the town's economic and social vitality.

The proposed development incorporates appropriate flood mitigation, including raised site levels and a French drain system designed to intercept and redirect surface water away from neighbouring properties, ensuring the site will be safe for its lifetime without increasing flood risk elsewhere. 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 1.7km east of the River Welland. Crowland Washes provides floodplain storage for the River Welland. The village of Crowland is protected from the River Welland by the Corporation Bank approximately 800m west of the site.

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 North Level Internal Drainage Board. There nearest IDB Main Drain, Brickfield Drain, is approximately 300m north of the site. The site is within the Postland Catchment which discharges to the River Welland via the Postland Pumping Station.

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 Boards assets are commensurate with the standard of protection that is sought.

Current maintenance standards of the North Level Internal Drainage Board and the Environment Agency 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 low.
Fluvial Flooding	The risk is assessed in Section 4.3 and Section 4.5.
Tidal Flooding	The site is not at risk of tidal flooding.
Reservoir Flooding	The residual risk of a breach of defences is assessed in section 4.6.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 3 – Sources of Flooding

The proposed ground raising within the site represents a potential risk to the adjacent land.

4.3 Probability of Flooding

The probability of flooding associated with blockages in the North Level IDB drainage system is low due to the maintenance standards achieved and managed by the IDB. 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 North Level IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

The Corporation Bank provides protection against the 1% annual probability (1 in 100 chance each year) event. The defence falls within the Reservoirs Act 1975 legislation. As such it is inspected annually by a Supervising Engineer who will assess its structural integrity to provide protection to people and property.

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.

The Corporation Bank provides protection against the 1% annual probability (1 in 100 chance each year) event including climate change.

4.6 Residual Risk

There is a residual risk of flooding at the site should a breach occur. The South East Lincolnshire SFRA includes maps demonstrating the impact of a breach in 2116. These show that when the climate change allowances are applied to the combination of a 1% annual probability (1 in 100 chance each year) fluvial event the site is at risk with depths between 1.0m and 2.0m. An extract from this map is shown in Figure 3 below.

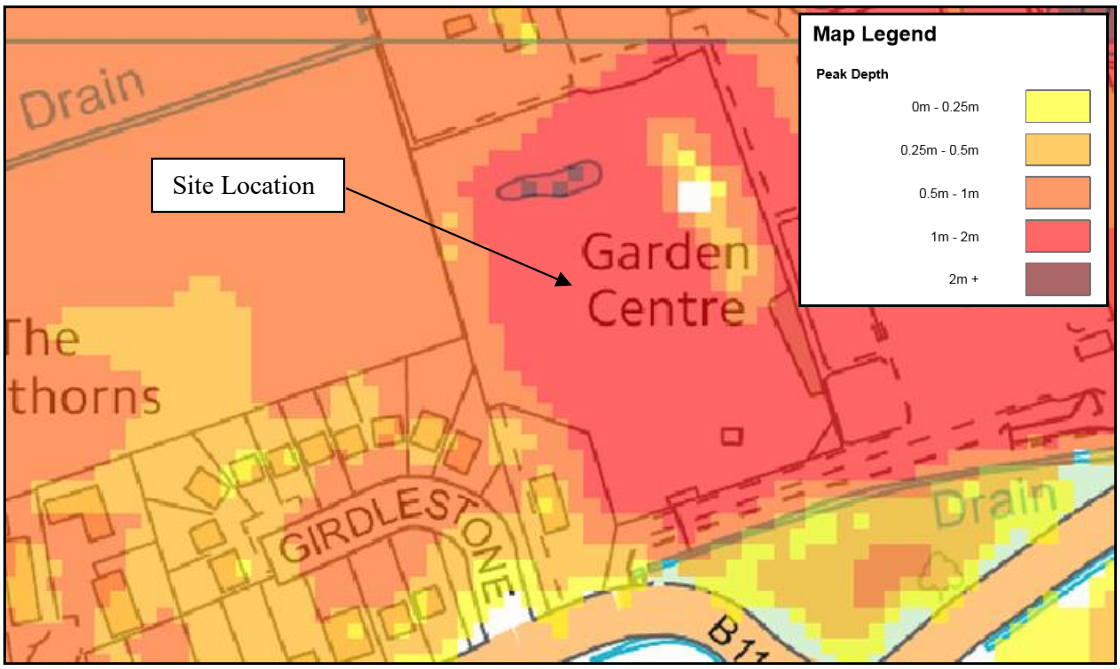


Figure 3 – SFRA 2116 Residual Peak Depth Map

The depth of flooding on the land to the west of the site has an area where breach depths are below 0.5m. Environment Agency LiDAR shows ground levels in the area being in excess of +2.1m OD. A flood level of +2.6m OD can therefore be estimated. This is 1.4m – 1.5m above typical ground levels within the site.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Postland Pumping Station could lead to an increased level of risk at the site.

The probability of the site flooding from any Environment Agency system is less than 1% annual probability (1 in 100 chance each year) because of the standards of the existing flood defences. Over time there will be a gradual increase in risk to the site due to climate change. During the design life of the development it is not anticipated that the site would flood.

The SFRA considers the residual risk associated with a breach in the defences. The residual flood level during a 1% annual probability (1 in 100 chance each year) fluvial event in 2116 is estimated to be +2.6m OD. This is a flood depth of 1.4m to 1.5m within the site.

The proposed ground raising within the site represents a potential risk to the adjacent land.

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 and in accordance with the South East Lincolnshire Standing Advice Matrix it is proposed that:

- the dwellings will have two storeys;
- finished floor level will be a minimum of 1.5m above existing ground levels (equivalent to +2.6m OD); and
- there is flood resilient construction to +2.9m OD.

It is proposed that existing ground levels are raised as part of the development. Any impacts associated with the proposed ground raising will be mitigated by a French drain system designed to intercept and redirect surface water away from neighbouring properties

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.

Should there be a failure of Postland Pumping Station and conditions were such to put properties and land at risk of flooding, the Internal Drainage Board 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 the assessment, the following conclusions have been reached.

- The proposed development consists of nine 2 storey dwellings on land north of Postland Road, Crowland.

- 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 site is in Flood Zone 3. The Corporation Bank provides protection against the 1% annual probability (1 in 100 chance each year) event including climate change in the River Welland.

- During the life of the development, a flood depth estimated to be 1.4m to 1.5m above typical ground level could occur at the site should there be a breach of the Corporation Bank.

- It is proposed that the finished floor level will be a minimum of 1.5m above the existing ground level (equivalent to +2.6m OD) and there is flood resilient construction to +2.9m OD.

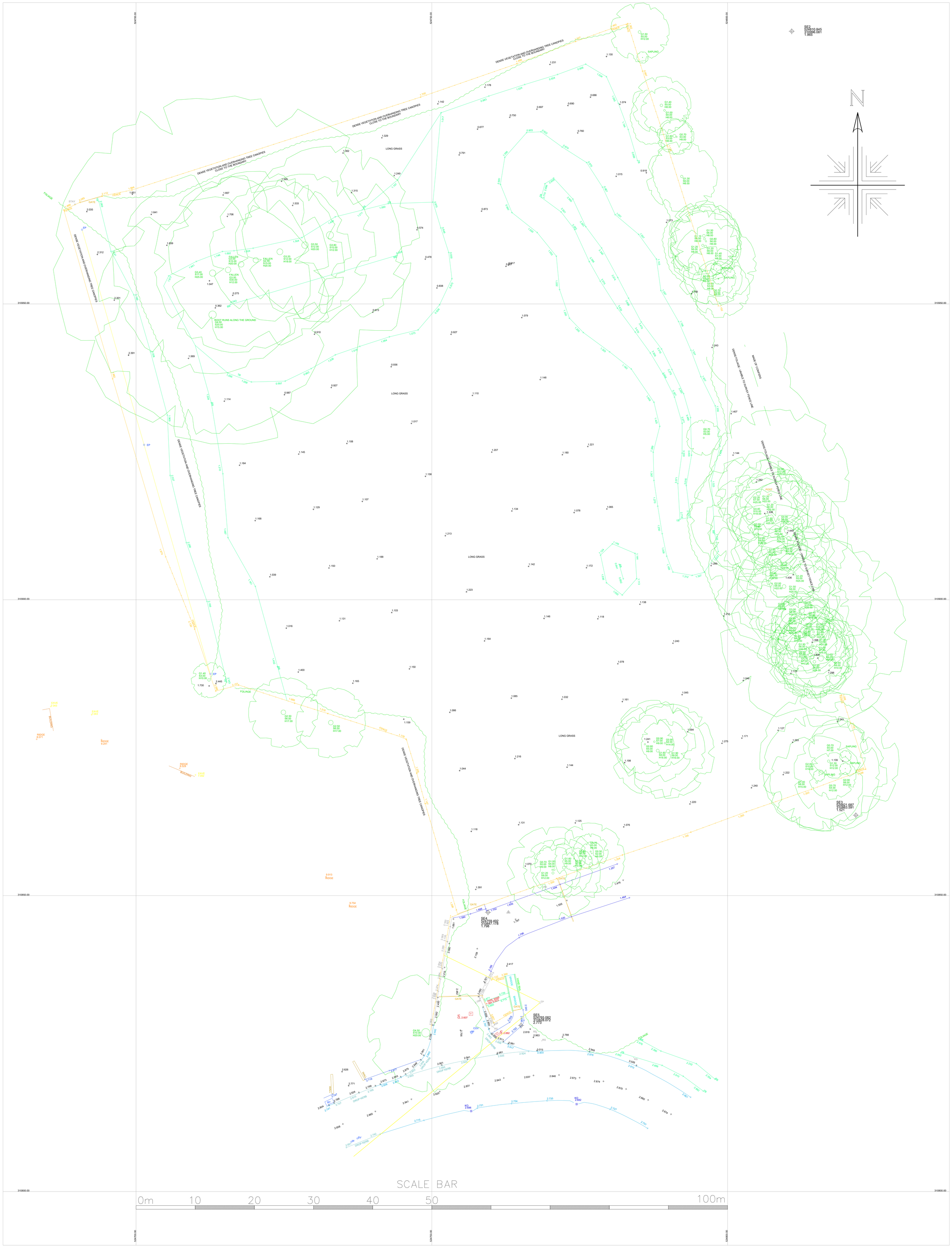
- The development passes the Sequential Test and Exception Test and is therefore suitable for the proposed location.

ATTACHMENT 1

TOPOGRAPHIC SURVEY
(DWG SE-1401-1)

PROPOSED SITE LAYOUT
(DWG PRC SH SL AR 1001B)

DRAINAGE STRATEGY



JOB TITLE **TOPOGRAPHIC SURVEY OF THE LAND OFF JAMES ROAD, CROWLAND**	**SE REF** SE1401-1	**DRAWN BY** AR
CLIENT **SEAGATE HOMES**	**SHEET SIZE & SCALE** A0 @ 1:200	**DATE OF SURVEY** JUNE 2024
	LATEST REVISIONS AND DETAILS	

SE Surveys LIMITED

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AREAS OF VEGETATION OR HEAVY TRAFFIC MAY CAUSE DETAIL TO BE MISSED.

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POSTLAND ROAD, CROWLAND

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IF IN DOUBT ASK !

Key

- Boundary
- Proposed Housing
- Existing Surrounding Buildings
- Private Rear/Front Garden Areas
- Principal Highway / Road
- Private Drives & Car Parking Spaces
- Footpaths
- Housetypes - Point of Access
- Primary Site Access
- Existing Retained Trees & Hedges
- Proposed Tree & Hedge Planting

AS Housetype plotted as per design sheets

OPP Housetype plotted opposite handing to design sheets

BCP Bin Collection Point

Silo
Pond
Potential Road Link
5m Shared Surface
Footpath Link
FB
El Sub Sta
Northolme
1
68
GIRDLESTONE WALK
POSTLAND ROAD
B 1166
B 1166
POSTLAND ROAD
1
2
3
4
5
6
7
8
9
S503 AS
S501 OPP
S418 AS
S418 OPP
S414 OPP
S412 OPP
S415 AS
S416 AS
S408 OPP

Rev	Notes	Date	By
B	- Bin Collection Points updated - Landscaping amended - Plot 6 position amended	05.11.25	DL
A	- AS & OPP handings added to dwellings - Bin Collection Points added - Footpath link added to site entrance	12.08.25	DL

SEAGATE HOMES

Project:
PROPOSED RESIDENTIAL DEVELOPMENT
AT POSTLAND ROAD, CROWLAND

Drawing:
SITE LAYOUT

Drawn: DL
Date: 16.04.25

Status: PLANNING
Scale: 1:500 @ A2

Drawing Number: PRC-SH-SL-AR-1001
Revision: B

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Key

- PS1 — Private Surface Water Drain
- PF1 — Private Foul Drain
- Proposed French Drain
- Existing Foul Sewer
- Existing Surface Water Sewer
- Proposed Channel Drain
- Proposed Permeable Paving

Proposed private package pump station

Proposed foul rising main

Proposed control chamber restricting discharge to 2.4l/s subject to IDB approval

Proposed ACO Channel Drain

Proposed restricted discharge of 2.4l/s subject to IDB approval

Foul connection via new manhole on existing AW sewer subject to S106 approval

Drainage Strategy

Surface water is to discharge to an existing watercourse to the south of the site at a discharge rate of 2.4l/s (subject to IDB approval). Attenuation will be provided in the form of permeable paving, providing sufficient attenuation volumes for both 1 in 30 year storm events, and 1 in 100 year +40% climate change storm events.

Foul water is to discharge to an existing AW sewer in Postland Road. Due to the shallow depth of the existing AW sewer a pumping station will be required. The connection will be subject to AW S106 approval.

Rev	Description	Drn	Vf'd	Date
P6	Foul sewage treatment plant omitted and private package pump station reinstated. French drains added to boundaries to collect any surface water run-off from raised site.	JW	PAE	29/10/25
P5	Foul sewage treatment plant added	JW	PAE	21/08/25
P4	ACO Channel drain relocated	JW	PAE	09/05/25
P3	Strategy revised to suit updated site plan	JW	PAE	06/05/25
P2	Strategy revised to suit updated site plan	JW	PAE	16/04/25
P1	Initial issue.	JW	PAE	28/03/25

As outlined in section 2.3 of the CITB Industry Guidance to Designers, insignificant risks can usually be ignored, as can risks arising from routine construction activities, unless the design compounds or significantly alters these risks. In accordance with CDM Regulations 8, 9 and 11, any significant risks relating to the design features shown on this drawing have been identified and are annotated thus: [!]

☒ No significant risks have been identified.

☐ Significant risks have been identified - refer to notes on drawing for information on residual risks and any control measures to be employed.

Refer to the current Designer's Risk Assessment sheets for further details.

Designer's Signature JW | Date 03/25

Drawing Status: REGULATORY APPROVAL

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Project: Residential Development, Postland Road, Crowland

Client: Seagate Homes (UK) Ltd

Title: Drainage Strategy

WmS Project Ref.	Drawn	Date	Scale
12899	JW	Mar 2025	1:250 @ A1

Drawing/Document Reference

Project	Originator	Zone	Level	Type	Role	Number	Status	Rev.
12899	WMS	ZZ	XX	D	C	39200	S8	P6