FLOOD RISK ASSESSMENT
FOR RESIDENTIAL DEVELOPMENT AT
78 PINCHBECK ROAD, SPALDING

FINAL REPORT

ECL1254/3D PLANNING

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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 Eastfield Guesthouse Ltd in respect of a development that consists of a change of use from residential to hotel at 78 Pinchbeck Road, Spalding.

A planning application for the proposed development is to be submitted by 3D Planning Ltd.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located at 78 Pinchbeck Road, Spalding, Lincolnshire, PE11 1QF. The National Grid Reference of the site is 52476/32333.

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 eastern side of Pinchbeck Road. The site consists of a residential dwelling and the surrounding garden. The dwelling has two storeys. The area of development is approximately 0.05 hectares.

Environment Agency LiDAR shows that ground levels within the site are between +3.4m OD and +3.6m OD. The carriageway level of Pinchbeck Road adjacent to the site is typically +3.8m OD.

The site is in the Welland and Deepings Internal Drainage Board (IDB) District. The site and the surrounding land are within the Urban Spalding catchment and the nearest IDB watercourse, Cemetery Drain, is 250m east 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 clay and silt.

2.3 Proposed Development

The proposed development consists of a change of use of a residential building to a hotel. The hotel will include ground floor bedrooms. 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

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

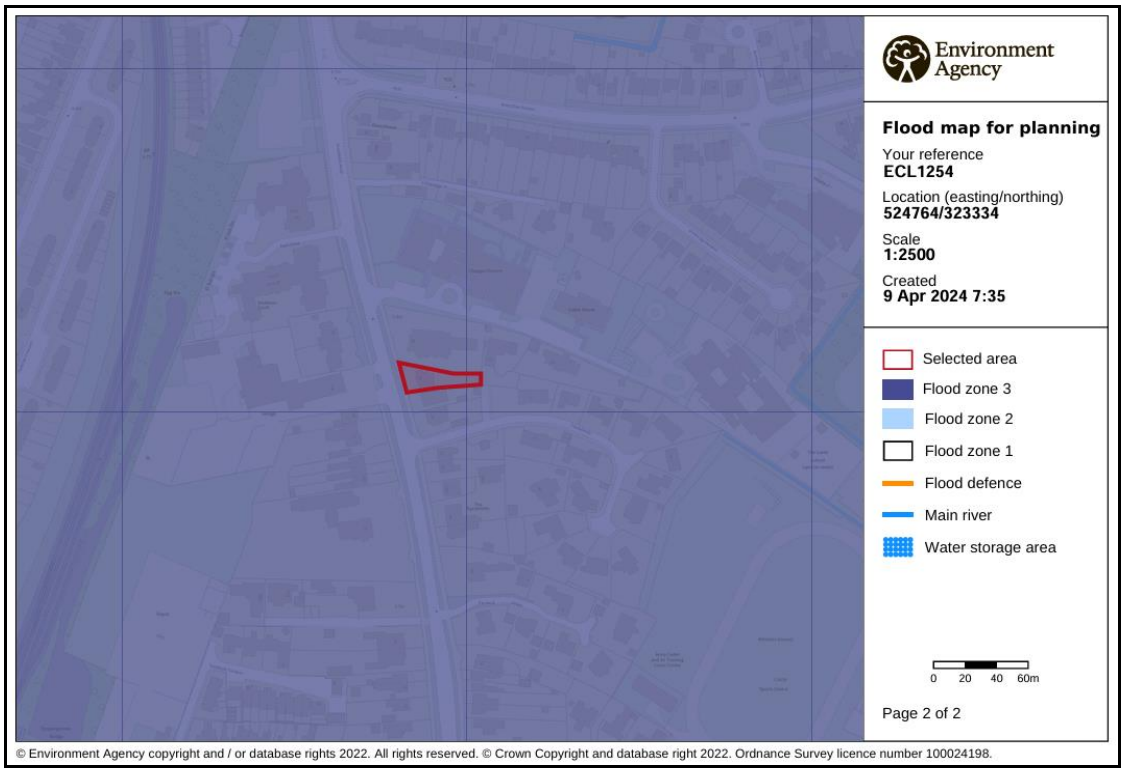


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps show that:

- the site has a medium risk of flooding (annual probability between 1% and 3.3%);
- part of the site around the dwelling has a low risk (annual probability between 0.1% and 1%) of surface water flooding and the remainder of the site has a very low risk of surface water flooding (annual probability less than 0.1%); and
- the site is not within an area at risk of reservoir flooding.

Table 1 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 and 0.5% tidal event	The site is outside of the 'Low Hazard' area	The site is within the 'Danger for Most' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal event	The site is outside of the area at risk of flooding	The site is at risk of flooding with depths between 0.5m and 1.0m

Table 1 – 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 hotels 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 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.

Paragraph 033 of planning practice guidance (PPG) on Flood Risk and Coastal Change states that 'The Sequential Test does not need to be applied for applications for Change of Use (except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site)'.

Paragraph 048 of the PPG states that 'A Change of Use may involve an increase in flood risk if the vulnerability classification of the development is changed. In such cases, the applicant will need to show in their flood risk assessment that future users of the development will not be placed in danger from flood hazards throughout its lifetime.' The mitigation measures proposed in Section 5.2 of this flood risk assessment are such that risks to future users are mitigated.

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 South East Lincolnshire Local Plan recognises that tourism plays a significant role in the local economy. Tourist accommodation can offer benefits to local

communities directly through employment, and indirectly, such as by supporting local food producers, local shops, pubs, and restaurants. The proposed hotel will therefore provide a wider sustainability benefit.

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 development is considered to pass the Exception Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The site is 500m west of the River Welland as it flows through Spalding. The site is 1600m north of the inlet to the Coronation Channel, a bypass channel of the River Welland. The embankments of the Coronation Channel were constructed in the 1950's to convey river flows around Spalding. The Coronation Channel together with the Crowland and Cowbit Washes offer flood reduction to Spalding and the surrounding district.

The River Welland tidal defences are downstream of the confluence of the Coronation Channel and River Welland, however, these defences provide benefit downstream of Spalding and not to the town. The Cowbit Washes, Coronation Channel and River Welland tidal 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 Welland and Deepings IDB. The site and the surrounding land are within the Urban Spalding catchment and drain in a westerly direction to Pode Hole Pumping Station. Pode Hole Pumping Station discharges to Vernatts Drain which flows into the River Welland at Surfleet.

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 Welland and Deepings 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 2.

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 not at risk of fluvial flooding.
Tidal Flooding	The risk is assessed in Section 4.3, 4.5 and 4.6.
Reservoir Flooding	Based upon the EA maps the site is not at risk of flooding from reservoirs.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 2 – Sources of Flooding

4.3 Probability of Flooding

The probability of flooding associated with blockages in the Welland and Deepings 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 Welland and Deepings IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

The Coronation Channel and the Cowbit Washes protect the site from the River Welland. These flood relief measures provide protection during the 1% annual probability (1 in 100 chance each year) fluvial event.

4.4 Historic Flooding

During the preparation of this assessment, no evidence was discovered of the site being flooded. Previous historic rainfall events of 1968 and 1978, estimated to be greater than 1% annual probability (1 in 100 chance each year), caused no flooding to any residential properties.

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 River Welland defences have been designed to include an allowance for climate change.

In summary the existing systems and defences are appropriate for the design life of the development (i.e., 100 years).

4.6 Residual Risk

There is a residual risk of flooding in and around Spalding site should a breach occur in the defences. The South East Lincolnshire SFRA includes maps demonstrating the impact of a breach in 2116. The residual flood hazard map for a breach in 2115 during the 0.5% annual probability (1 in 200 chance each year) event is shown in Figure 3.

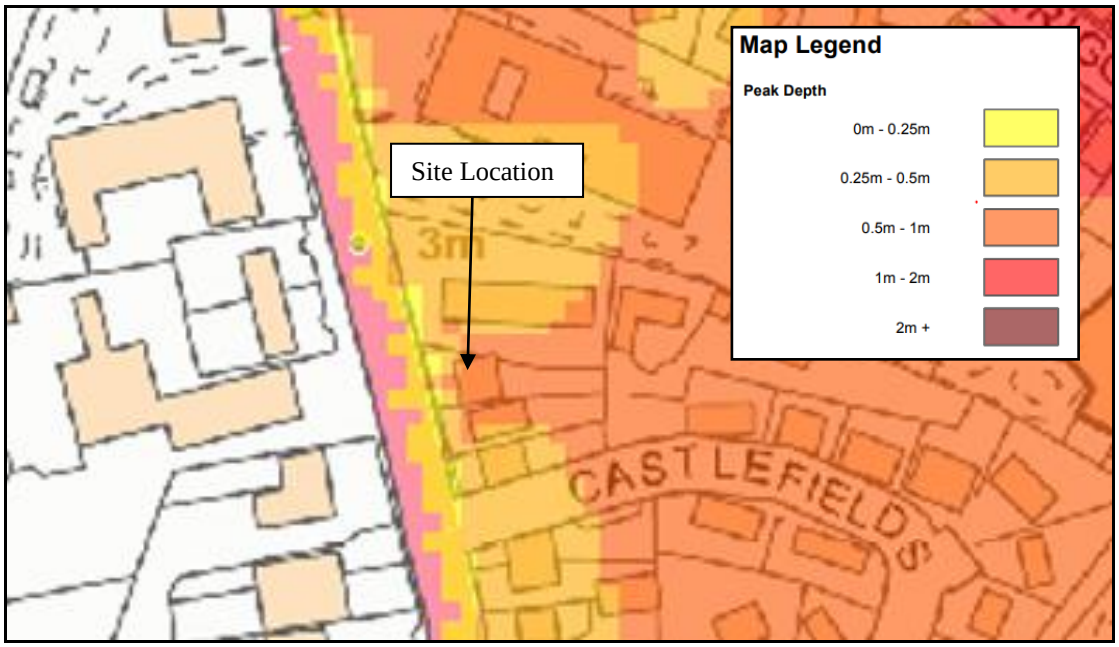


Figure 3 – Residual Flood Hazard Map 2115 0.1% Annual Probability

As shown in Figure 3 the site is at risk during a breach. The breach level can be estimated as Figure 3 shows that flood water does not overtop Pinchbeck Road. The carriageway level of Pinchbeck Road is +3.8m OD and therefore a conservative estimate of the flood level is +3.8m OD. The flood depth around the building is 0.4m.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

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

The site benefits from any Environment Agency defences that provide protection during the 1% annual probability (1 in 100 chance each year) fluvial event and 0.5% annual probability (1 in 200 chance each year) tidal event. 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 site is at risk during a breach with a maximum depth of 0.4m.

Any increase in impermeable area associated with the change of use will be minimal so there is no potential that flood risk will be increased elsewhere due to surface water.

5.2 Mitigation Measures

The site has a low 'actual risk' of flooding. The existing structure constrains the mitigation options as it is not feasible to raise floor levels. The building is two storeys and therefore safe refuge is available above the flood level on the first floor. It is recommended that any refurbishment undertaken as part of the change of use considers flood resilient construction to a depth of 0.5m.

The developer should ensure that the manager of the hotel is 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 manager of the hotel should register to receive flood warnings.

Should there be a failure of Pode Hole 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.

6.0 CONCLUSIONS

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

- The proposed development consists of a change of use of a residential dwelling to a hotel at 78 Pinchbeck Road, Spalding.

- 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 River Welland that provide protection during the 1% annual probability (1 in 100 chance each year) fluvial event and 0.5% annual probability (1 in 200 chance each year) tidal event including climate change. The site is not at risk during a breach of the defences.

- It is recommended that any refurbishment undertaken as part of the change of use considers flood resilient construction to a depth of 0.5m and the manager of the hotel should sign up to received Flood Warnings.

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

ATTACHMENT 1

SITE LOCATION PLAN (DWG 556SD04)

PROPOSED GROUND FLOOR PLAN (DWG 556SK01-3)

PROPOSED FIRST FLOOR PLAN (DWG 556SK01-4)

PROPOSED SITE PLAN (DWG 556SK02B)



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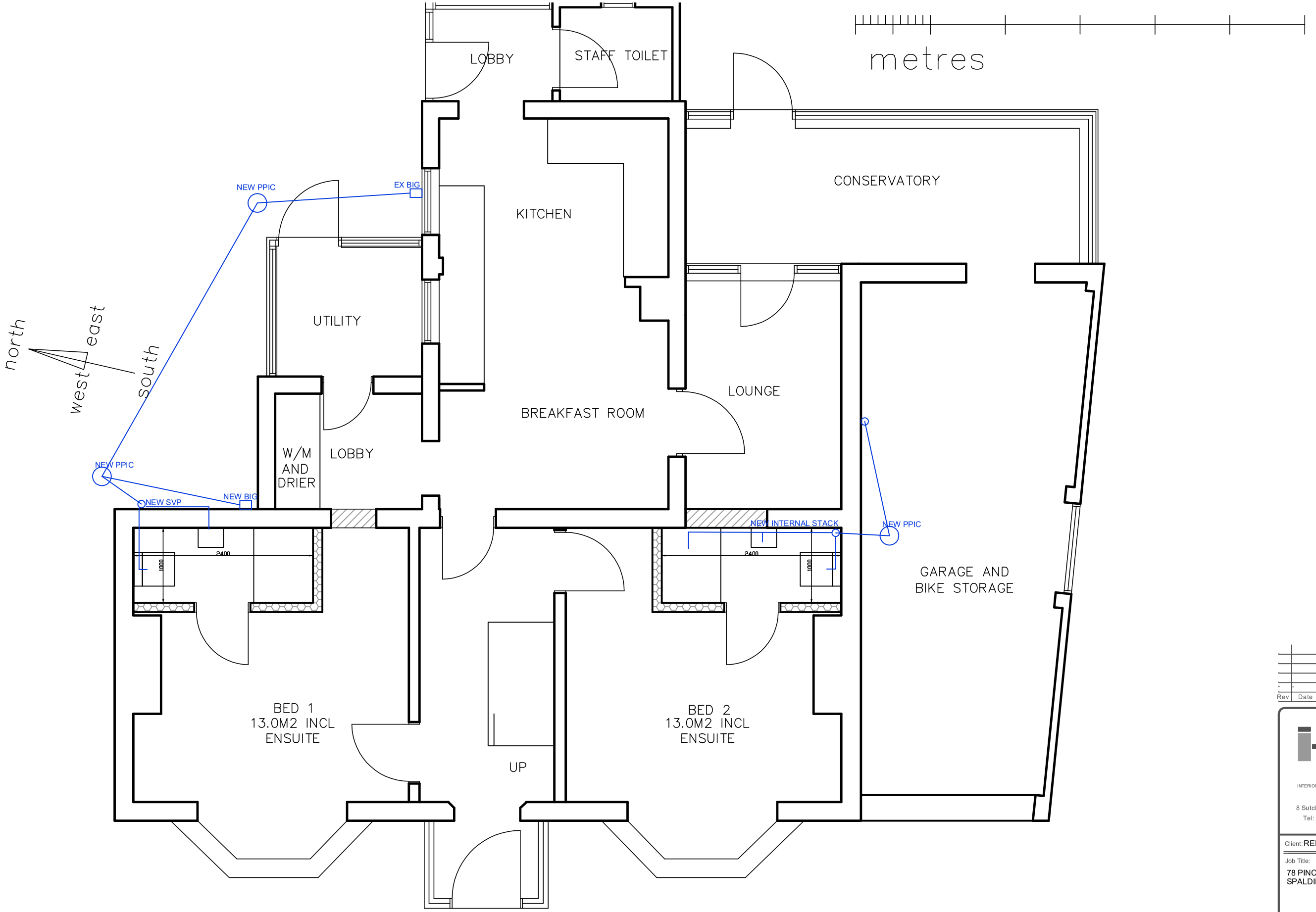
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78 PINCHBECK ROAD
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Drawing Title
SITE LOCATION PLAN

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GROUND FLOOR

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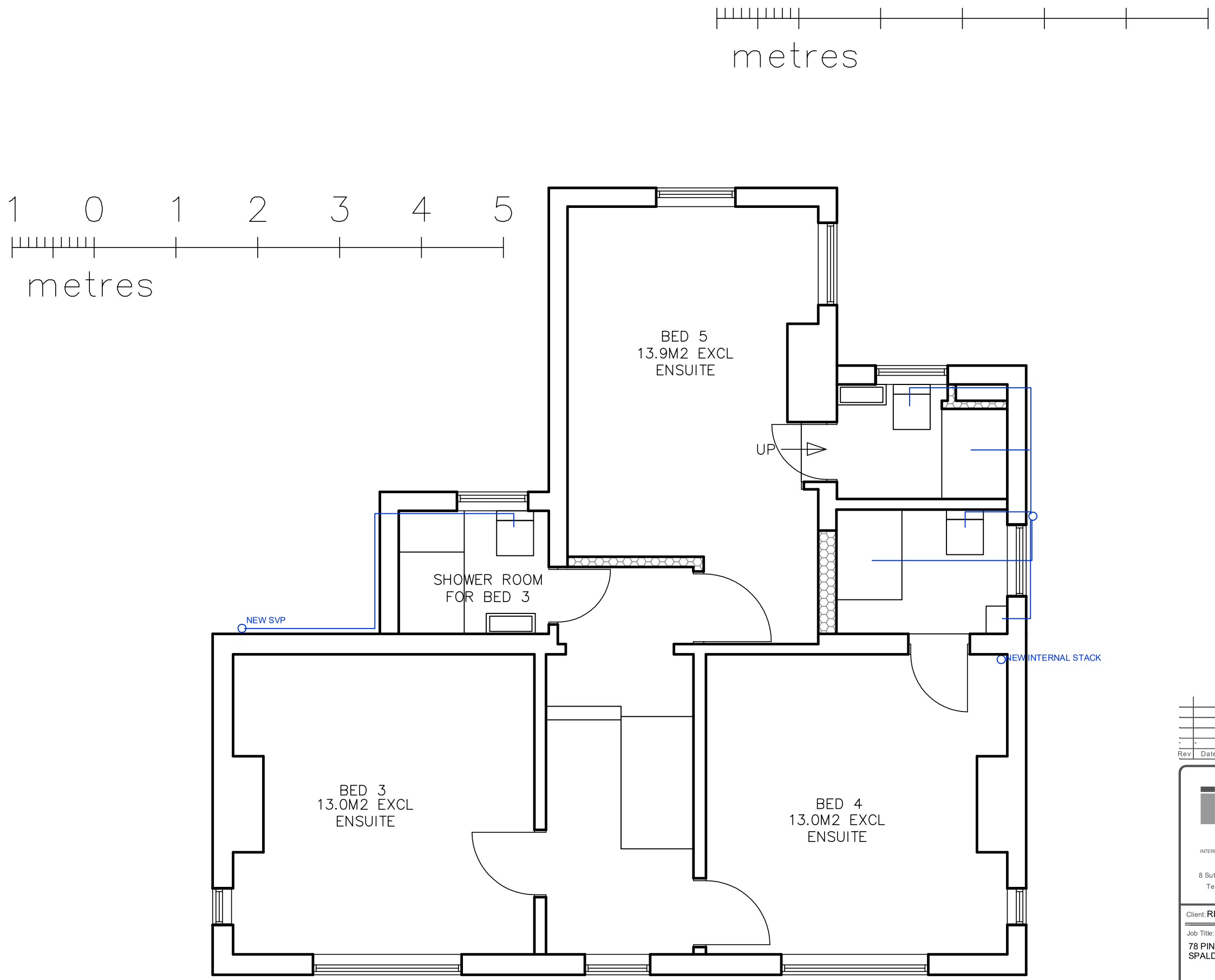
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FIRST FLOOR

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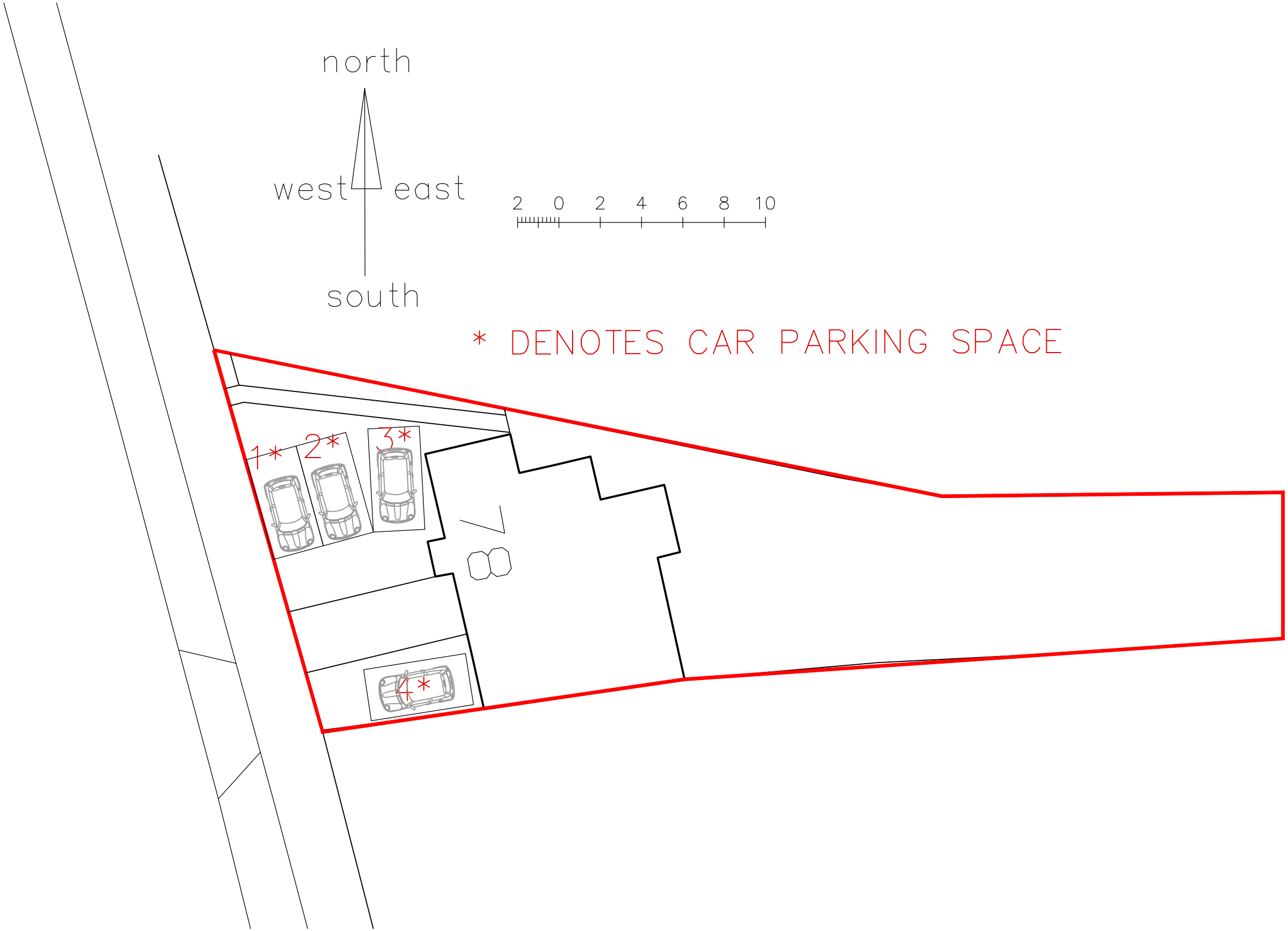
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A	15/03/24	DETAILS AMENDED

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