

**FLOOD RISK ASSESSMENT
FOR COMMERCIAL DEVELOPMENT AT
GRANGE FARM, HOSPITAL ROAD, SUTTON BRIDGE**

FINAL REPORT

ECL1445-2/SWANN EDWARDS ARCHITECTURE

DATE NOVEMBER 2025

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CONTENTS

1.0 INTRODUCTION

2.0 SITE LOCATION AND DESCRIPTION

- 2.1 Site Location
- 2.2 Existing Site
- 2.3 Proposed Development
- 2.4 Local Development Documents
- 2.5 Available Flood Risk Information

3.0 FLOOD RISK VULNERABILITY

- 3.1 The Sequential and Exception Test
- 3.2 Vulnerability Classification
- 3.3 Application of the Sequential Test

4.0 SITE SPECIFIC FLOOD RISK

- 4.1 Local Flood Assets
- 4.2 Sources of Flooding
- 4.3 Probability of Flooding
- 4.4 Historic Flooding
- 4.5 Climate Change
- 4.6 Residual Risks

5.0 FLOOD RISK MITIGATION

- 5.1 Summary of Risks
- 5.2 Mitigation Measures

6.0 CONCLUSIONS

ATTACHMENT 1 - Location and Site Plan (Dwg SE2379 1000)

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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 Mrs M Stone in respect of the conversion and extension of an agricultural building to form dog kennels at 8/9 Grange Farm, Hospital Road, Sutton Bridge.

A planning application for the proposed development is to be submitted by Status Design.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is at 8/9 Grange Farm, Hospital Road, Sutton Bridge, Lincolnshire, PE12 9YR. The National Grid Reference of the site is 55027/32219.

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 Hospital Road. The site comprises an agricultural building and the surrounding land. To the west of the site is 8/9 Grange Farm. There is agricultural land to the north and east. The area of the site is approximately 0.14 hectares.

Environment Agency LiDAR shows that the site is flat with ground levels between +2.8m OD and +3.0m 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 is a riparian drain on the southern side of Hospital Road and the nearest IDB watercourse is 200m east of the site.

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

2.3 Proposed Development

The development consists of the conversion and extension of an agricultural building to form dog kennels. Details of the proposed development are shown 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.

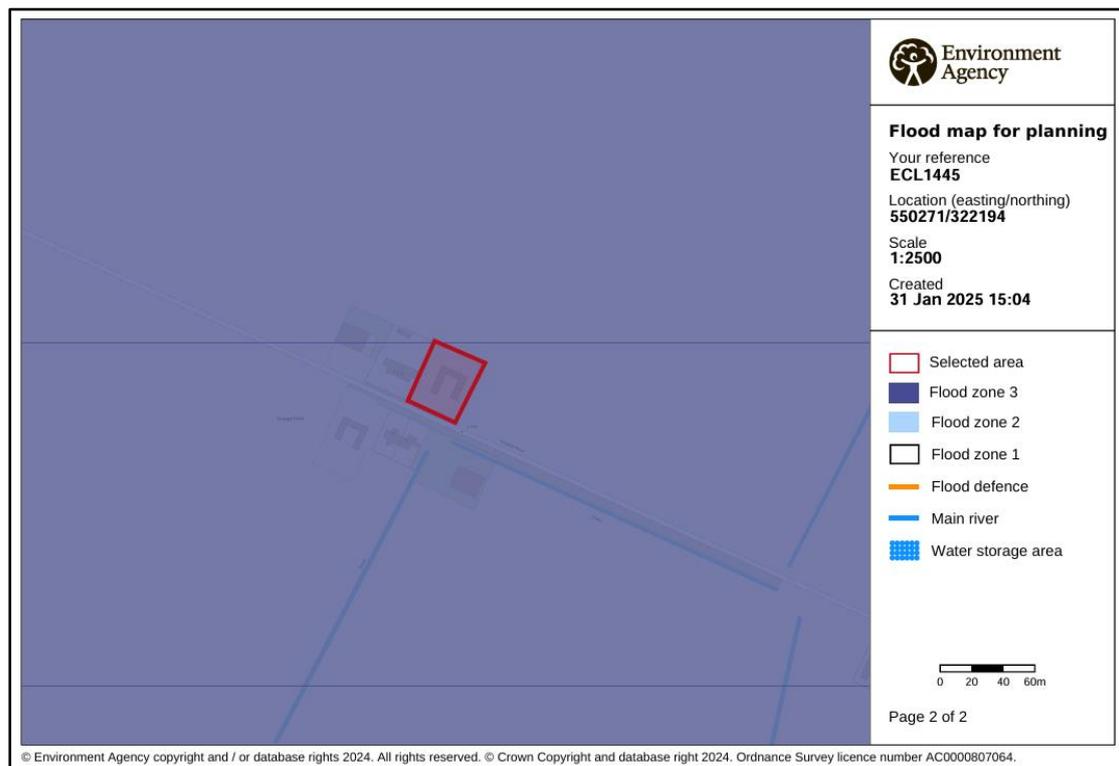


Figure 2 – Environment Agency Flood Map for Planning

The details provided with in the Environment Agency Long Term Flood Risk maps are summarised in Table 1.

	Present Day		2050 Epoch	
	Risk of Flooding	Depth	Risk of Flooding	Depth
Rivers and the Sea	Medium risk (between 1% and 3.3% chance each year)	No data available	No data available	No data available
Surface Water	Outside of the low risk area (between 0.1% and 1% chance each year)	No risk	Outside of the low risk area (between 0.1% and 1% chance each year)	No risk
Reservoir	Outside of the area at risk.			

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 All' 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 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 general industry and is classified as 'Less 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 'Less Vulnerable' therefore it is not 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

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.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The site and surrounding land are protected by the Wash tidal defences along the Terrington Marsh frontage with embankment levels at a minimum of 7.0m OD. The Wash tidal defences are 4.2km from the site. The site is approximately 1.6km from the River Nene. The site is protected by tidal defences on the River Nene.

The defences protecting the site 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. An IDB Watercourse is located approximately 200m east of the site. The site and surrounding land are part of the Main Sluice catchment which drains by gravity to the Main Outfall Sluice which discharges to the River Nene.

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, Middle Level Commissionaires 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.

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 is within an area benefitting from defences. The flood embankments to the Wash and the River Nene tidal defences provide protection during a 0.5% annual probability (1 in 200 chance each year) event. The flood risk from the Wash is lowered further by second line defences and various informal banks constructed during the reclamation of Terrington Marsh.

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 Wash and 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

There is a residual risk of flooding at the site should a breach of the tidal defences occur. The South East Lincolnshire SFRA includes maps demonstrating the residual peak depth in 2115. When climate change allowances are applied to 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 the peak depth at the site from direct overtopping together with breach failure is between 1.0m and 2.0m. An extract from this map is shown in Figure 3 below.

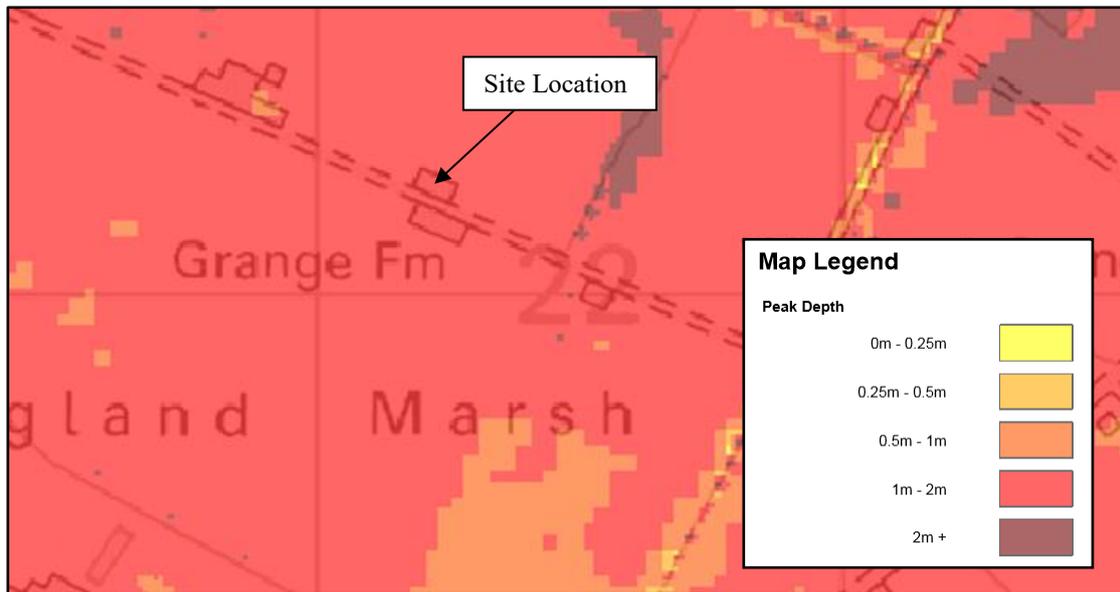


Figure 3 – SFRA 2115 Residual Peak Depth Map (0.5% annual probability)

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 Main Outfall Sluice Station would increase the level of flood risk within the IDB catchment.

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. During the design life of the development the site is not at risk during the 1% annual probability (1 in 100 chance each year) fluvial event or 0.5% annual probability (1 in 200 chance each year) tidal event.

There is a residual risk associated with a breach of the tidal defences. In the event of multiple breaches, the maximum flood depth is between 1m and 2m.

There will be no increase in impermeable area associated with the development so there is no potential that flood risk will be increased elsewhere.

5.2 Mitigation Measures

Based upon the information available during the preparation of this flood risk assessment, to mitigate against the risk of a breach, the following flood resilience measures are recommended:

- there is a water entry strategy allowing flood water to enter the building and drain freely from it;
- the main electrical supply and switchboard are elevated above the flood level;
- the user of the site should register to receive flood warnings from the Environment Agency to reduce the vulnerability of people at the site; and
- the user of the site should identify the actions to be undertaken in the event of receiving a flood warning.

During an extreme event it is anticipated that sufficient time would be available to take precautionary actions to limit the potential impact of flooding.

Should there be a failure of Main Outfall Sluice 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

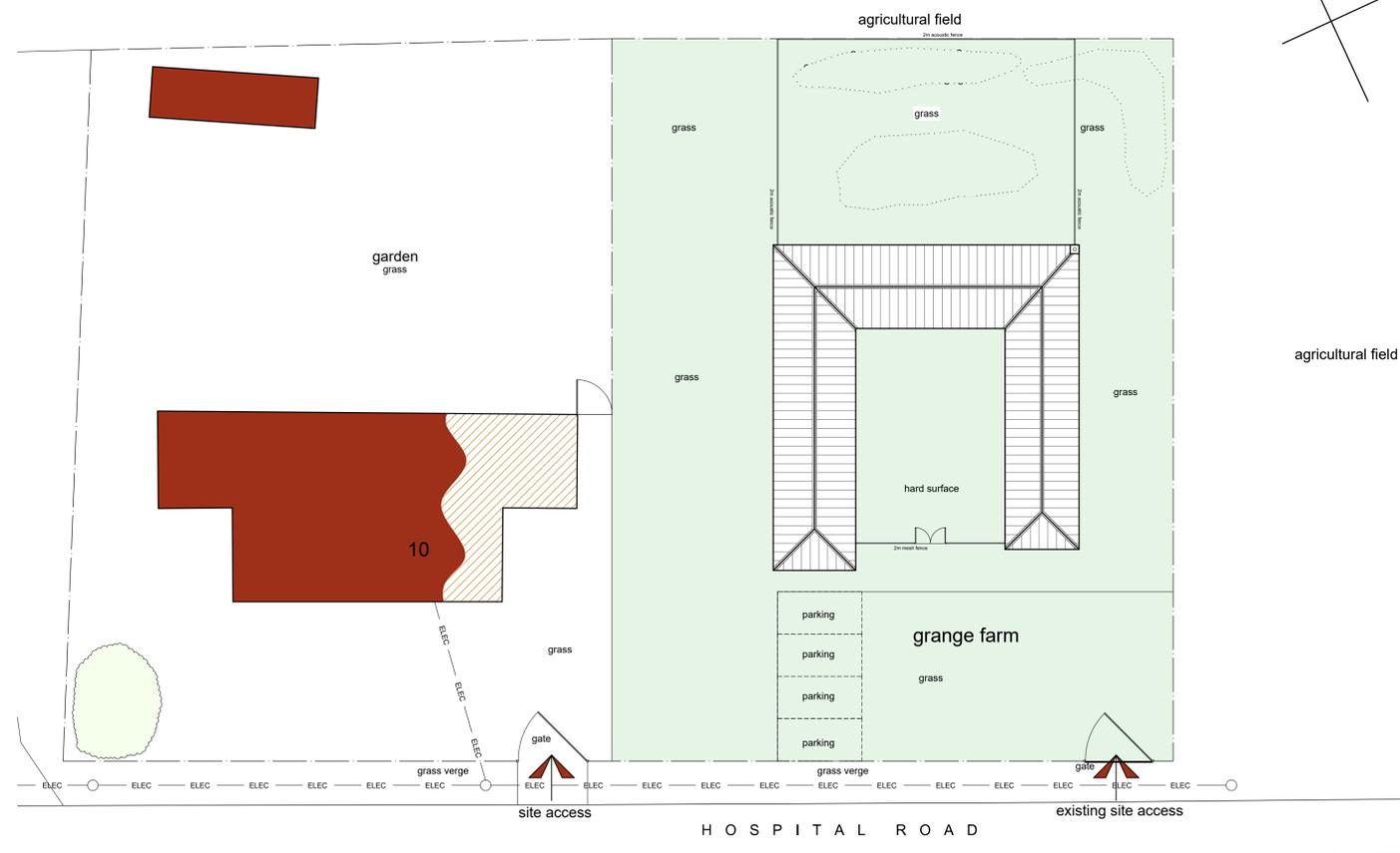
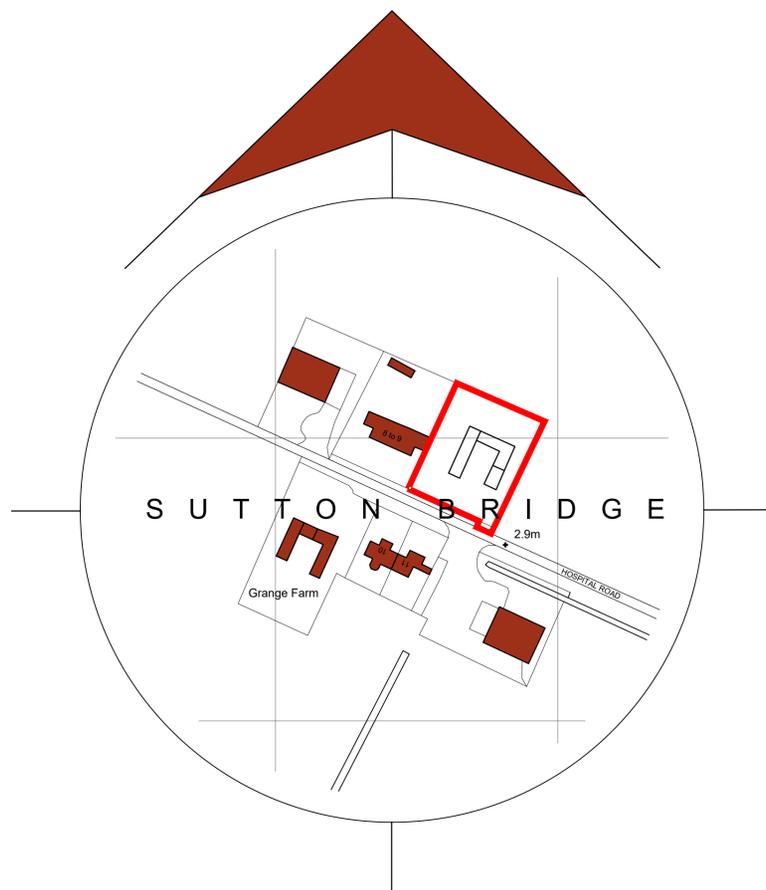
As a result of this assessment, the following conclusions have been reached.

- The development consists of the conversion and extension of an agricultural building to form dog kennels at 8/9 Grange Farm, Hospital Road, Sutton Bridge.
- 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. It is at risk from The Wash and River Nene which have defences to protect against the 0.5% annual probability (1 in 200 chance each year) event including climate change.
- In the event of a breach the maximum flood depth is between 1.0m and 2.0m.
- It is recommended that flood resilience measures are adopted to manage the risk of a breach. These include a water entry strategy, elevating services above the flood level, and reducing vulnerability by receiving flood warnings.
- The development passes the Sequential Test and is therefore suitable for the proposed location.

ATTACHMENT 1

**LOCATION AND SITE PLAN
(DWG SE-2379 1000)**

- General Notes
1. All dimensions are shown in 'mm' unless otherwise stated.
 2. The contractor, sub-contractors and suppliers must verify all dimensions on site prior to the commencement of any work.
 3. This drawing is to be read in conjunction with all relevant engineers and specialist sub-contractors drawings and specifications.
 4. Any discrepancies are to be brought to the designers attention.



SITE PLAN KEY

- Indicates existing surveyed barn
- Indicates existing buildings on site to be retained
- Indicates unsurveyed buildings taken from OS map
- Indicates approximate position of existing rubble to be removed
- Indicates position of existing site access

PLANNING



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Job Title Proposed Barn Conversion at Land Adj. 8-9 Grange Farm, Hospital Road, Sutton Bridge For: M. Stone	Date October 2025	Drawn by AK
	Checked by SP	
Drawing Title Planning Drawing Location and Site Plan	Job No. SE-2379	Sheet Size A1
	Dwg No. 1000	Revision