FLOOD RISK ASSESSMENT FOR PROPOSED COMMERCIAL DEVELOPMENT AT LAND OFF BLAZEGATE, LUTTON, SPALDING, LINCS.

FINAL REPORT

GEOFF BEEL CONSULTANCY

OCTOBER 2024

GCB/STATUS DESIGN

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1.0 INTRODUCTION

1.1 A retrospective planning application is to be made by Status Design for proposed commercial development on behalf of Mr & Mrs E Harris at land off Blazegate, Lutton, Spalding, Lincs.

1.2 A Flood Risk Assessment is required before the permitted development may commence and meet the requirements and general conditions contained in the Planning Practice Guidance to the National Planning Policy Framework (NPPF) for approval by the Environment Agency.

The site, as situated, is located within Flood Zone 3, of the Environment Agency's Flood Map for Planning. The latest Agency Flood Maps have been created as a tool to raise awareness of flood risk with the public and our partner organisations, such as Local Authorities, Emergency Services and Drainage Authorities. The Maps do not take into account any flood defences.

The site is also shown not in any present day Hazard Zone of the South East Lincs. Strategic Flood Risk Assessment Maps (2016). The site is also located in the South Holland IDB drainage district.

1.3 Geoff Beel Consultancy was appointed on 26th September 2024 to undertake a Flood Risk Assessment.

2.0 LOCATION

2.1 The development site is located at land south of Blazegate, Lutton. The National Grid Reference of the central point of the development is TF 42622450

2.2 The position and extent of the site is shown on Fig 1 – Location Plan at the end of the document.

2.3 The site, located within the South Holland Internal Drainage Board district is shown within Flood Zone 3 as detailed on the Environment Agency Flood Map for Planning but not in any present day Hazard Zone of the Council's Strategic Flood Risk Assessment Map (2016).

3.0 THE SITE AND SEQUENTIAL TEST

3.1 The site is part of a redundant transport yard

3.2 The area of development is approximately 200 sq. metres.

3.3 The proposed site layout consists the repair and reroofing of existing building and a new timber building

3.4 The Sequential Test and Exception Test will require to be applided but the development may be permitted as the site is protected against both the 1 in 200 year return period tidal event and the 1 in 100 year return period fluvial event and not located in any present day Hazard Zone of the Council's Strategic Flood Risk Assessment Map (2016). Hence the Sequential Test is met.

4.0 EXISTING FLOOD ALLEVIATION MEASURES

4.1 The site is within a defended floodplain, as defined in Appendix 1 of the Environment Agency's 'Policy for the Protection of Floodplains' and is considered to be passive until such time as a flood greater than that for which the defences were designed occurs. The likelihood of flooding due to overtopping or failure of a flood defence embankment is considered to be small.

The South Holland Internal Drainage Board is protected by a combination of the River Welland tidal defences downstream of Spalding, the River Welland fluvial embankments as well as the River Nene tidal defences downstream of Foul Anchor.

4.2 The site and the surrounding land drains by gravity to a Board drain and hence to the Lutton Leam and Lutton Leam Outfall to the tidal River Nene downstream of the West Lighthouse.

4.3 The existing standard of drainage for the South Holland Internal Drainage Board is 1 in 50 years return period, compatible with the Department of the Environment, Food and Rural Affairs target level of service for rural drainage and flood defence works. Freeboard of 900mm is provided to the lowest land levels.

4.4 Current maintenance standards within the South Holland Internal Drainage Board and of the Environment Agency defences are generally very good.

During the operation and maintenance of its pumping stations, associated structures and channel systems, particularly those that could affect property, the Board 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. However, bank slips, blocked culverts etc may occur from time to time and these matters are usually dealt with promptly.

5.0 POTENTIAL SOURCES OF FLOODING

5.1 Three potential sources of flooding have been identified as a result of this assessment:

a) local blockages to IDB main drain system.
b) storm return period of 1 in 50 years being exceeded
c) overtopping and breaching of defences of the tidal River Nene

5.2 The probability of flooding from source a) is low due to the maintenance standards already achieved and managed by the IDB.

The probability of flooding from b) is also low due to the South Holland IDB main drain design standard incorporating a minimum 900mm freeboard to the lowest land level which provides adequate storage in events greater than 1 in 50 years.

Previous historic rainfall events of 1968 and 1978, estimated to be greater than 1 in 100 year events, caused no flooding to any residential properties at the time and the Boards policy is to provide a standard of drainage which satisfies NPPF requirements of a 1 in 100 year return period for fluvial protection inclusive of the effects of climate change and developments to the arterial system enables a flexible approach to be adopted and meet the criteria for "sustainable urban drainage".

5.3 The flood embankments to the fluvial River Welland provide a 1 in 100 year return period level of protection in combination with the Crowland and Cowbit Washes. The flood embankments to the tidal River Welland and tidal River Nene provide a 1 in 200 year return period level of protection.

5.4 Soakaway drainage to BRE365 design requirements and Building Regulation approval will be installed.

5.5 More recent Tidal Hazard Mapping produced by the Environment Agency is now included in the South East Lincs. Strategic Flood Risk Assessment Flood Maps. (2016). The site whilst shown in Flood Zone 3 of the Environment Agency Flood Map for Planning is shown unaffected by any present day flood waters.

Finished floor levels have been raised 300mm above existing ground level and the development is only intended for commercial storage i.e. low risk period for flooding to occur.

5.6 The developer should ensure that the occupiers of the commercial storage are sufficiently aware of the risk of flooding and the standard of the existing defences. The Environment Agency provides a Flood Warnings Service which includes Flood Warning Codes and uses direct warning methods where the risks and impacts of flooding are high. Indirect warnings are provided to all flood risk areas, even those a low risk of flooding. The main method is media broadcasts via local radio and also by television.

In addition to direct ad indirect food warnings, the Environment Agency operates a 24 hour a day Floodline Service providing advice and information on flooding by contacting 0345 988 1188 and the occupiers of the commercial storage should register with the Floodline Direct Warnings Service to receive any future flood warnings.

6.0 EXTENT OF KNOWN FLOODING

6.1 During the preparation of this assessment, no evidence was discovered of the site being flooded or of any adjoining properties.

7.0 PROBABILITIES AND TRENDS OF FLOODING

7.1 The probability of this development flooding from localised drainage systems is very low.

7.2 The probability of the site flooding with water from any South Holland IDB main drain is less than 1% because of the standards of the existing flood defence systems, storage within existing drainage channels and the location of the site.

7.3 The probability of the site flooding with fluvial waters from any main river system is less than 1% because of the standards of the existing flood defences and the location of the site.

7.4 If under very extreme events, levels of floodwater from the South Holland IDB main drains or arterial systems rose to such an extent that the site was affected, the situation would not be sudden. It is very probable that sufficient time would be available to take precautionary actions to limit the extent and potential impact of flooding.

7.5 The water levels in the drainage channels will tend to rise as a result of the impacts of climate change. However the existing systems and defences together with the proposed floor levels above existing ground level will be appropriate for the design life of the development (i.e. 60 years).

8.0 IMPACTS OF FLOODING

8.1 No significant impacts of flooding are anticipated.

8.2 Floor levels of the development will be 300mm above existing ground level which together with the commercial storage offering protection against impacts arising from any extreme short duration, localised events.

8.3 The general location of the site within the catchment is such that if flooding occurred from any of the South Holland IDB main drain systems, then probably 2 to 3 days warning time would be available.

8.4 No displacement of water from the site will affect any adjoining properties. It is intended to provide soakaway drainage to BRE365 design requirement and Building Regulations approval.

8.5 Safe and dry access/egress is available to the site from Blazegate in a southerly direction to Long Sutton.

9.0 RESIDUAL RISK – EXTREME EVENTS

9.1 The residual risk from extreme events is very low on this site, because of its location, within the South Holland IDB area and its location 5.00kms from the Wash and River Nene tidal defences.

9.2 The site is not within any present day Hazard Zone according to NPPF classification with a very low risk of flooding due to the current standards of drainage and flood defence and land levels. The site is not located within a Functional Flood Plain of any 'main river' or 'main drain'. The Environment Agency Flood Map for Planning has been produced irrespective of existing flood defences and standards of protection.

9.3 South Holland District Council and Boston Borough Council in conjunction with the Environment Agency and the local IDB's within the Council's area have carried out a Strategic Flood Risk Assessment of the whole District by appointed Consulting Engineers.

The South East Lincs. Strategic Flood Risk Assessment has produced more definitive Flood Risk Maps than those published by the Environment Agency and at the same time has analysed flood return periods of all tidal and fluvial defences for years 2002 and 2116 to account for the effects of climate change.

Breach scenarios of embankments failing and/or being overtopped have also been carried out to establish Flood Risk Zones.

9.4 As a result of the South East Lincs. Strategic Flood Risk Assessment; the South Holland Main Drain and associated IDB main drains together with the tidal River Nene have been determined as providing protection against a 1 in 100 year return period event both in years 2002 and 2116.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 As a result of the assessment, the following conclusions have been reached:-

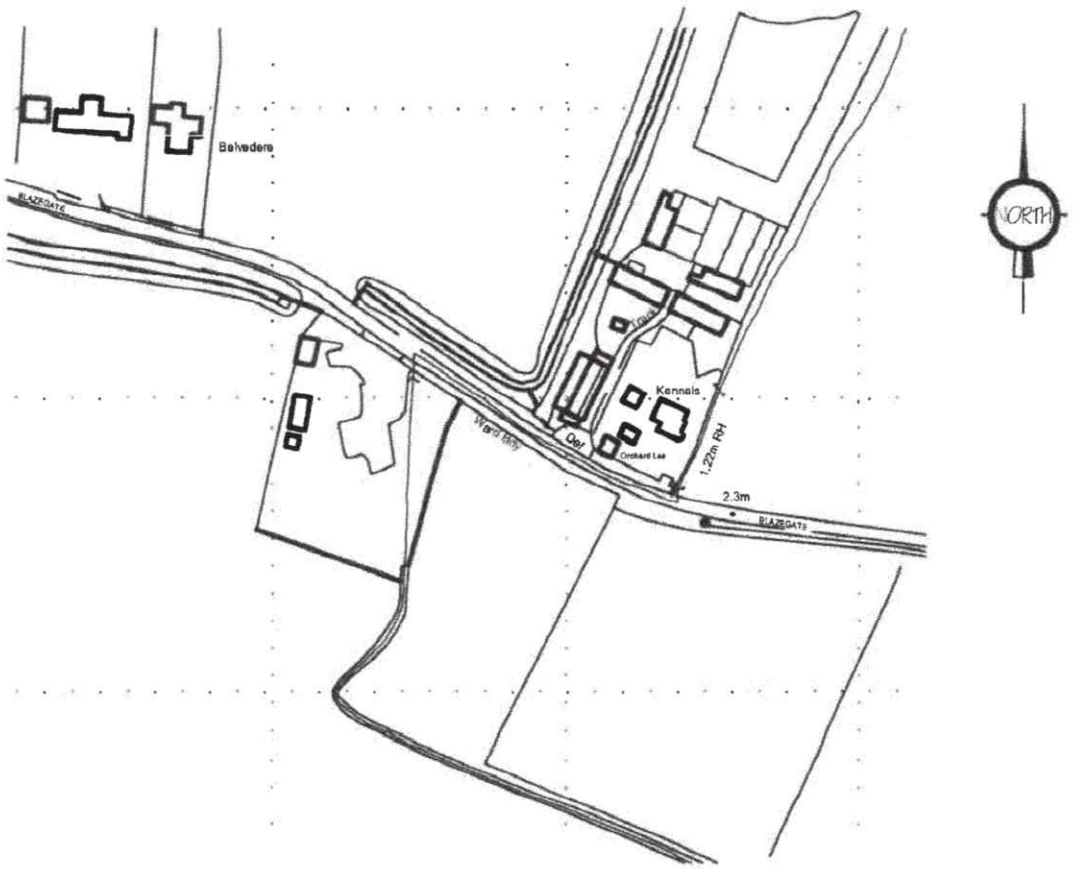
- The proposed development is not in a Functional Floodplain. It is located in the Passive Floodplain protected by The Wash and River Nene tidal defences to a 1 in 200 year return period, (0.5%)

- The site is not in any present day Hazard Zone with the actual risk of site flooding from any Environment Agency river system being very low (less than 0.5%).

- Although the site is located within an Internal Drainage District with a minimum standard of drainage of 1 in 50 years, this accords with Defra guidelines for rural development. Freeboard to design water level of 900mm to lowest land level is available for events greater than 1 in 50 years providing further storage within the drainage channels.

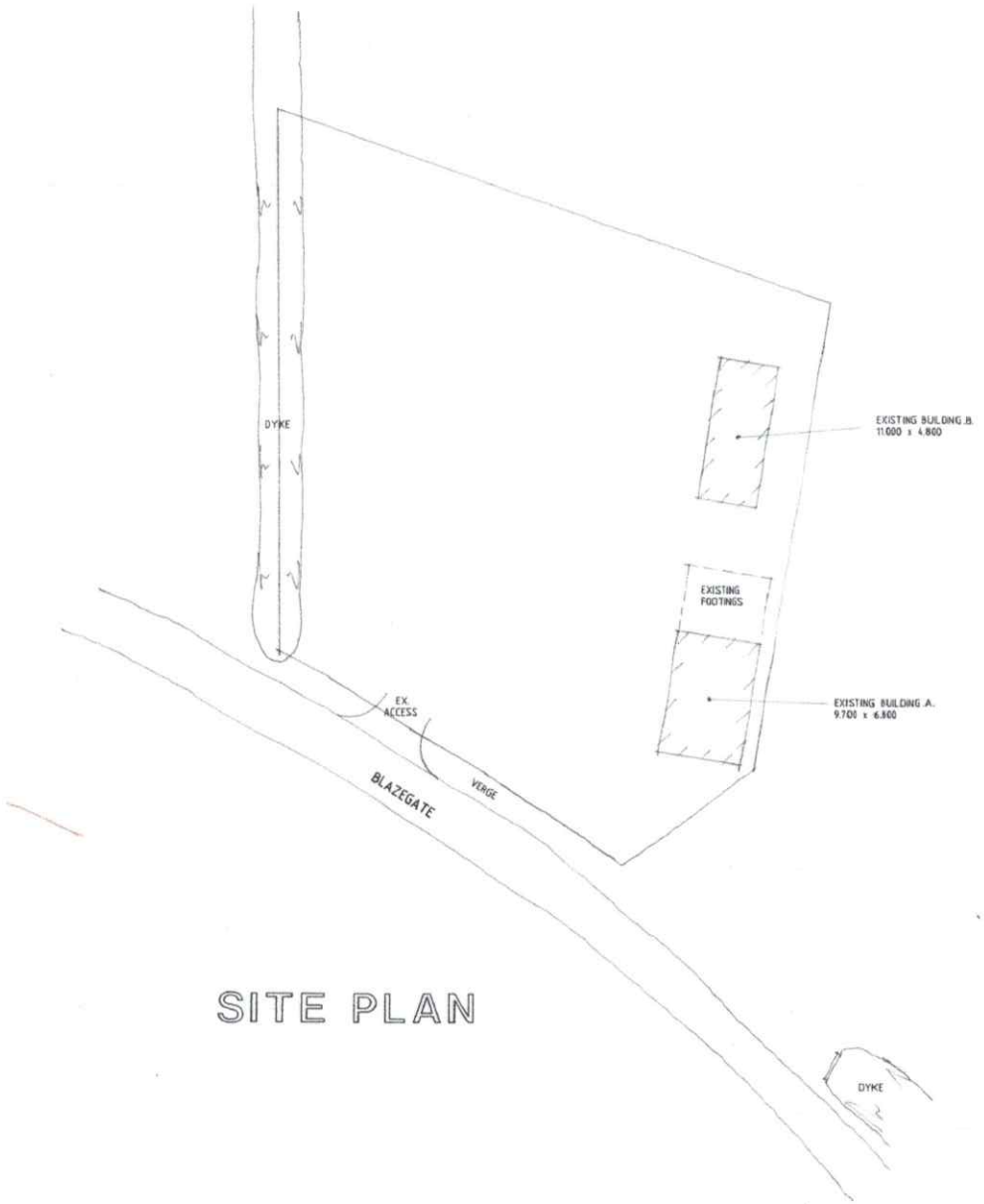
- On site rainwater from the development will be discharged via soakaways to BRE 365 design requirement and Building Regulations approval.

- Finished floor levels of the commercial storage will be raised 300mm above existing ground level.



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LOCATION PLAN 1:2500



SITE PLAN

THIS DRG. TO BE READ IN CONJUNCTION WITH SD24-031/2

A - INF. ADDED - 19.9.24

Status DESIGN
CONSULTANTS IN ARCHITECTURE & PLANNING

REPAIRS & RE-ROOFING ON EXISTING BUILDING, NEW TIMBER FRAMED BUILDING - RETROSPECTIVE AT BLAZEGATE, LUTTON FOR

MR. E. HARRIS.

SITE PLAN

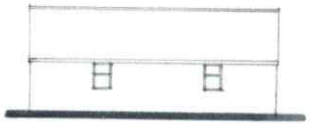
1:200	SD24-031/1
AUG-24	B.GILHAM

2 Telford Yard, Wash Holbeach, Spalding, Lincs PE12 7AP
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SD24-031/1



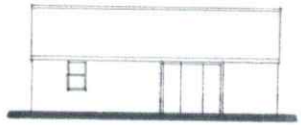
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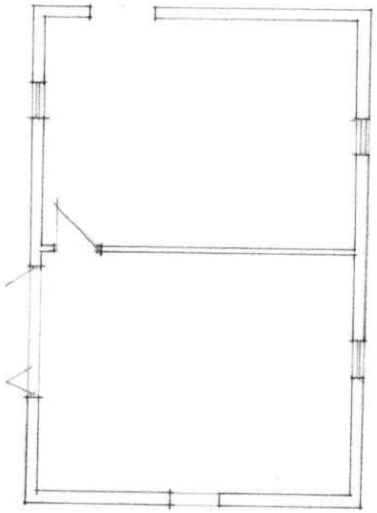
SIDE



FRONT

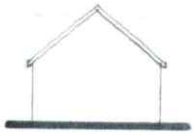


SIDE



FLOOR PLAN

BUILDING .A.



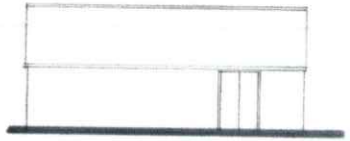
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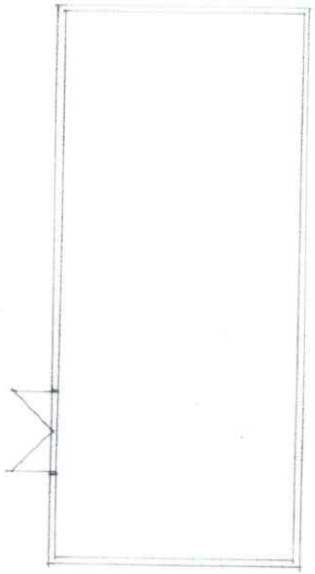
SIDE



REAR



SIDE



FLOOR PLAN

BUILDING .B.

Status
DESIGN
CONSULTANTS IN ARCHITECTURE & PLANNING

REPAIRS & RE-ROOFING ON EXISTING BUILDING, NEW TIMBER FRAMED BUILDING - RETROSPECTIVE AT BLAZEGATE, LUTTON FOR

MR. E. HARRIS.

BUILDINGS

1:50	1:100	SD24-031/2
SEPT-24		B.GILHAM.

2 Edinburgh Mews, Holbeach, Spalding, Lincs. PE12 7AP
Tel: 01406 426361 Fax: 01406 426361



Environment Agency

Flood map for planning

Your reference
Blazegate Lut

Location (easting/northing)
542615/324496

Scale
1:2500

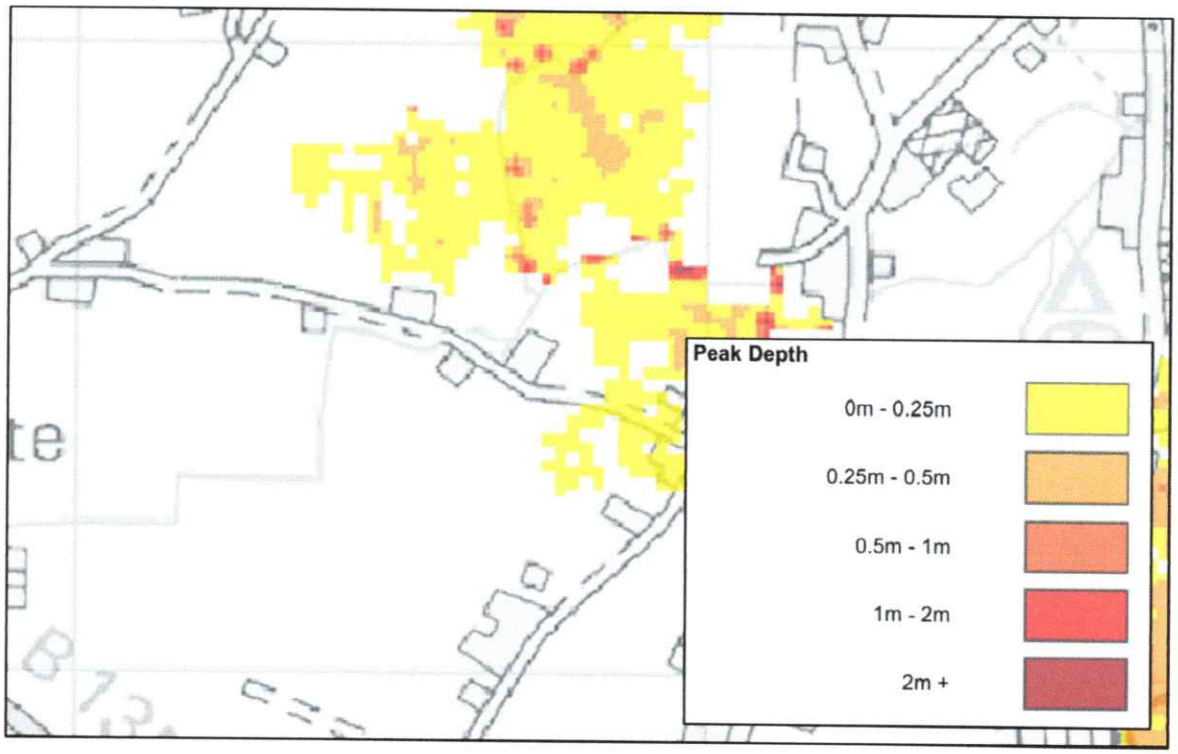
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- Selected area
- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

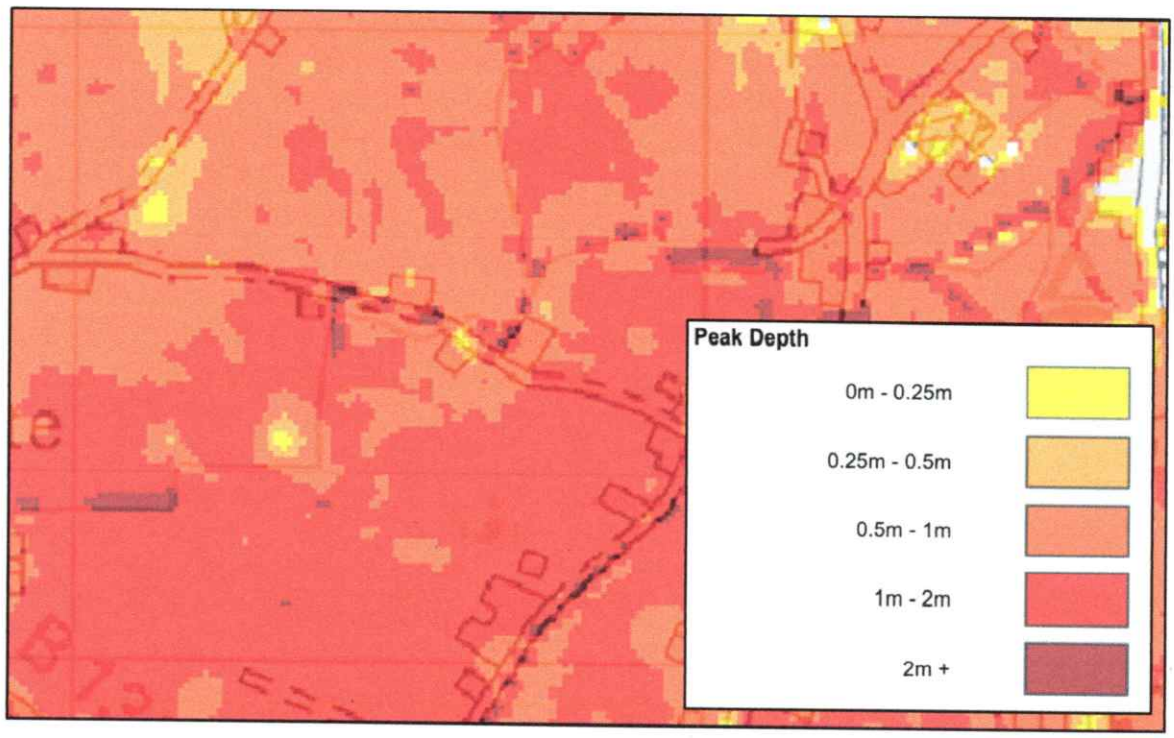
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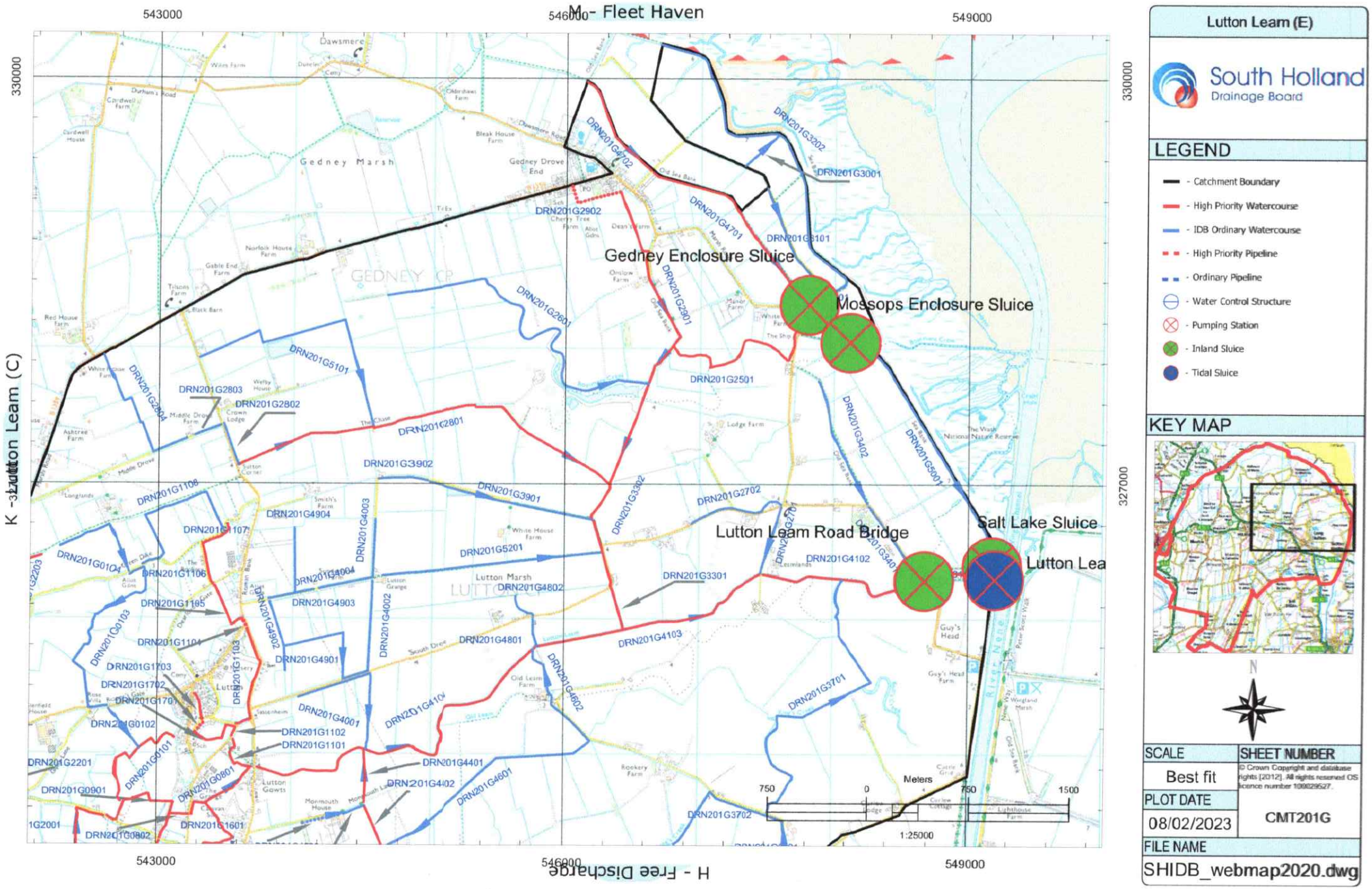
Residual Flood Depth – Blazegate, PE12 9HJ



Present Day 1% Fluvial 0.5% Tidal



2115 1% Fluvial 0.5% tidal



Lutton Leam (E)

South Holland Drainage Board

LEGEND

- Catchment Boundary
- High Priority Watercourse
- IDB Ordinary Watercourse
- High Priority Pipeline
- Ordinary Pipeline
- Water Control Structure
- Pumping Station
- Inland Sluice
- Tidal Sluice

KEY MAP

N

SCALE	SHEET NUMBER
Best fit	CMT201G
PLOT DATE	
08/02/2023	
FILE NAME	
SHIDB_webmap2020.dwg	

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