



Flood Risk Assessment for Planning

Prepared for:

Lydia Lavender

Location:

Lavender Corner
King John Bank
Walpole St Andrew
Wisbech
PE14 7JT

October 2023

Our reference:

93504-Lavendar-KingJohnBank



Document Issue Record

Project: Flood Risk Assessment for Planning

Client: Lydia Lavender

Application: Retrospective application conversion of Personal Office space into a Dwellinghouse

Location: Lavender Corner, King John Bank, Walpole St Andrew, Wisbech PE14 7JT

Our reference: 93504-Lavendar-KingJohnBank

Version: v1.0 251023

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1. Key Facts

1.1 Flood Risk Posed:

- The site is situated within Flood Zone 2 when using the Environment Agency Flood Map for Planning (Rivers and Sea)
- Risk would appear to be fluvial/tidal from various sources. The River Nene tidal is located 2km to the west of the site.
- Product 4 modelled flood levels and extents have been requested from the Environment Agency.
- According to the EA, the site is not considered to be at risk of flooding from main rivers. The site may be at risk from local ordinary watercourses for which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.
- No EA Flood Storage Areas located in close proximity to the site.
- No Environment Agency maintained raised defences that defend the site directly
- According to the Environment Agency they hold no records of historical flood events at the site or the surrounding area. In addition, according to the Lincolnshire County Council Section 19 online map there are no on-going or complete flood investigations at the site or in the surrounding area.
- The site is located within the King's Lynn Internal Drainage board area.
- EA Risk of Flooding from Surface Water Map suggests that the site lies in an area of "Very Low" risk of flooding from surface water
- No further information has been provided to suggest that the site has flooded previously from groundwater, sewer surcharge or reservoir flooding

1.2 Flood Risk Mitigation:

- The development is located above any expected flood levels – first floor development only.
- The applicant has confirmed that the annexe will remain part of the main property (extension of the existing property) and will not be able to be sold or rented as a separate dwelling for the lifetime of the development.
- No additional residential units will be created as part of the development.
- Post development, there will be no increase in the built footprint on site.
- The applicant will register with the Environment Agency Floodline Alert/Warnings Direct service.

- Safe escape will be provided by a flood warning and evacuation plan, which will be prepared in liaison with the Council's Emergency Planners and tied in with the existing emergency plans for the area.
- Due to the nature of the development, existing drainage arrangements will be retained.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

2. Introduction

Unda Consulting Limited have been appointed by Lydia Lavender (hereinafter referred to as “the applicant”) to undertake a Flood Risk Assessment for the proposed development at Lavender Corner, King John Bank, Walpole St Andrew, Wisbech PE14 7JT hereinafter referred to as “the site”). The FRA has been undertaken in accordance with the National Planning Policy Framework (NPPF) and the associated technical guidance.

The purpose of the study is to support a planning application for the proposed development.

The site appears to be partially located within Flood Zone 2 as defined by the Environment Agency (EA) on their Flood Map for Planning. Under the National Planning Policy Framework (NPPF), a FRA is required if a proposed development:

- includes building or engineering works in Flood Zone 2 or 3;
- includes building or engineering works on land classified by the Environment Agency as having critical drainage problem;
- changes the use of land or buildings in a location at risk of flooding from rivers or the sea, or with critical drainage problems;
- changes the use of land or buildings in a way that increases the flood vulnerability of the development where it may be subject to other sources of flooding;
- is larger than 1 hectare.

The assessment should demonstrate to the Local Planning Authority (LPA) and EA how flood risk will be managed now and over the development’s lifetime, taking climate change into account, and with regard to the vulnerability of its potential users.

- whether the proposed development is likely to be affected by current or future flooding from any source;
- whether it will increase flood risk elsewhere;
- whether the measures proposed to deal with these effects and risks are appropriate.

3. Existing Situation

3.1 Site Usage:

The site comprises of a Personal Office building.

The existing plans are provided in the report Appendix.



Figure 1: Aerial photograph of site and surrounding area (Source: Google Earth)



Figure 2: Site frontage (Source: Google Earth)

3.2 Topography:

Environment Agency LiDAR has been used to assess the topography across the site and wider area. Light Detection and Ranging (LIDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground surface. Up to 100,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated at high spatial resolutions. The EA's LIDAR data archive contains digital elevation data derived from surveys carried out by the EA's specialist remote sensing team. Accurate elevation data is available for over 70% of England. The LiDAR technique records an elevation accurate to +0.3m every 1m. This dataset is derived from a combination of our full dataset which has been merged and re-sampled to give the best possible coverage. The dataset can be supplied as a Digital Surface Model (DSM) produced from the signal returned to the LIDAR (which includes heights of objects, such as vehicles, buildings and vegetation, as well as the terrain surface) or as a Digital Terrain Model (DTM) produced by removing objects from the Digital Surface Model.

1m horizontal resolution LiDAR remotely sensed digital elevation data suggests that the ground topography on site ranges from 3.8m AOD to 5.0m AOD.

3.3 Geology & Soil:

The British Geological Survey (BGS) Map indicates that the bedrock underlying the site is Ampthill Clay Formation – Mudstone with superficial deposits of Tidal flat deposits – Clay and Silt.

The soil type taken from the UK Soil Observatory Website are relatively deep soils from Prequaternary Marine/Estuarine Clay and Silt soil parent material, with a clayey loam to silty loam soil texture.

4. Development Proposal

The proposed application is for the retrospective application for the conversion of Personal Office space into a Dwellinghouse. Only the first floor of the building will be converted as part of the application into an annex which is to be used as residential accommodation, ancillary to the existing main dwelling.

It is understood that the groundfloor will be retained for its current use.

The proposed plans are provided in the report Appendix.

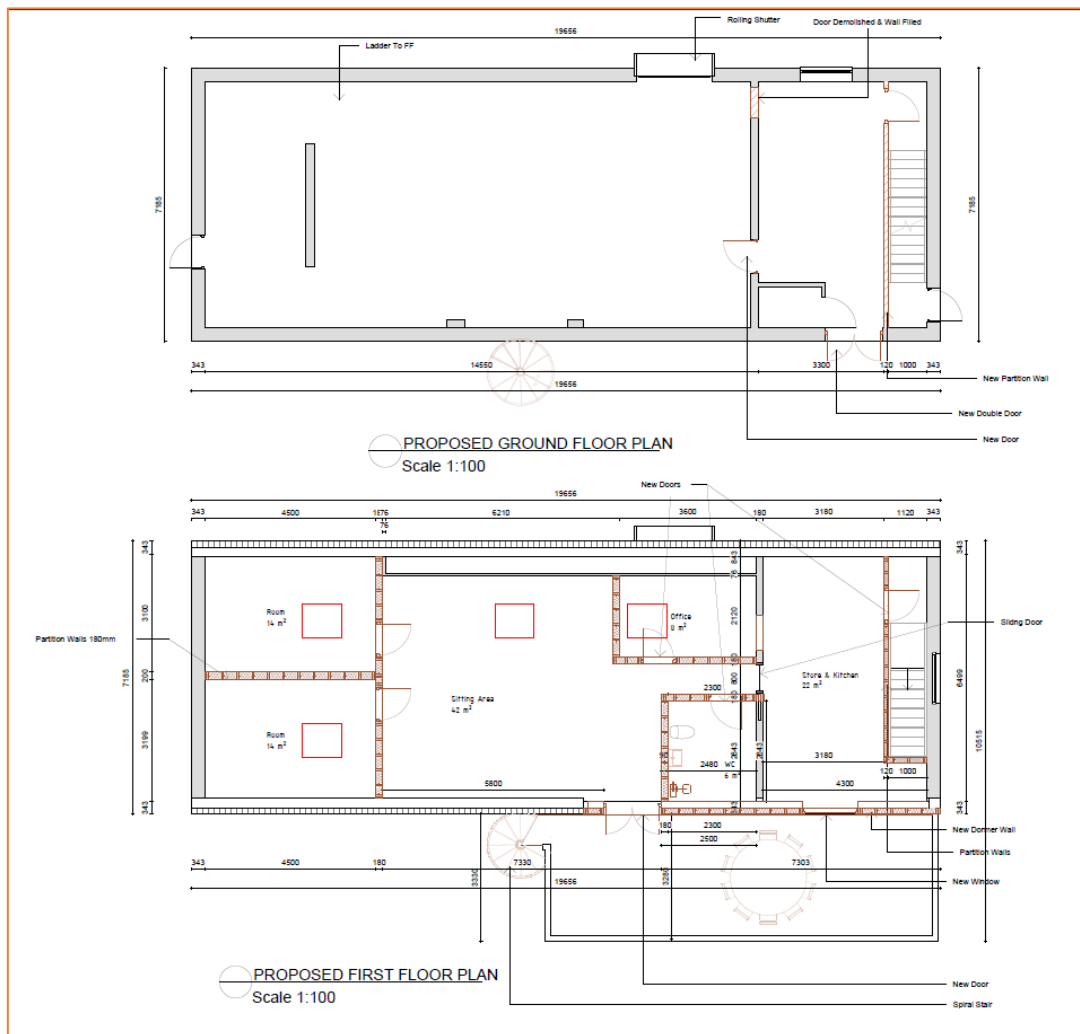


Figure 3: Proposed floor plans (Source: Design and Build)

5. Assessment of Flood Risk

5.1 Flood Zones:

Within planning, Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's website.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Table 1: Flood Zones

The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

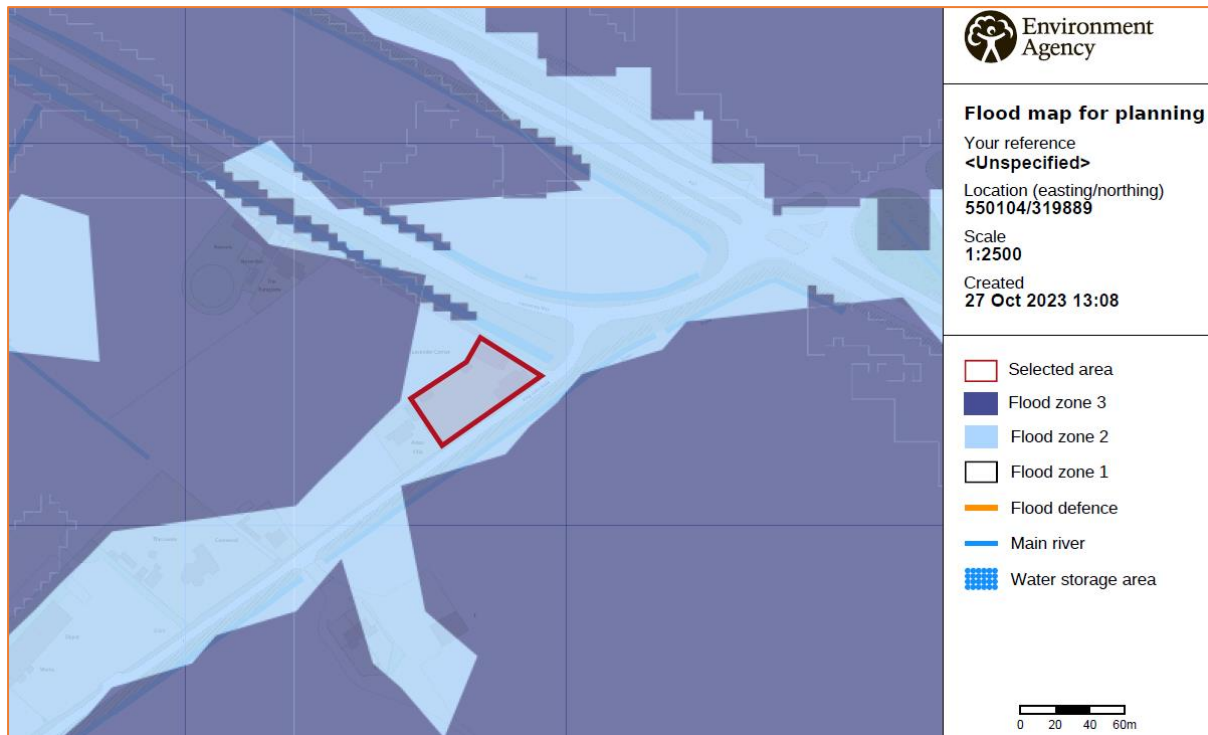


Figure 4: Environment Agency Flood Map for Planning (Rivers and Sea) (Source: EA)

The site is located within Flood Zone 2 (Medium Probability), which means it is defined as land having between a 1 in 100 and 1 in 1,000 annual probability of river and sea flooding.

The risk would appear to be fluvial/tidal from various sources. The River Nene tidal is located 2km to the west of the site.

5.2 Fluvial/Tidal (River Nene / various sources):

Due to the low laying nature of the surrounding topography the site could potentially be at risk from a number of sources: tidal and fluvial.

5.2.1 Modelled flood levels and events:

Product 4 modelled flood levels and extents have been requested from the Environment Agency for use within this report. A copy is provided in the report Appendix.

According to the EA, the site is not considered to be at risk of flooding from main rivers. The site may be at risk from local ordinary watercourses for which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.

5.2.2 Flood Storage Areas:

Flood Storage Areas are areas that act as a balancing reservoir, storage basin or balancing pond. Their purpose is to attenuate an incoming flood peak to a flow level that can be accepted by the

downstream channel. It may also delay the timing of a flood peak so that its volume is discharged over a longer time interval. Flood storage areas do not completely remove the chance of flooding and can be overtopped or fail in extreme weather conditions.

According to Environment Agency data, there are no Flood Storage Areas located in close proximity to the site.

5.2.3 Flood Defences:

A flood defence or EA Asset is any man-made or natural feature – such as a raised defence, retaining structure, channel, pumping station or culvert – that performs a flood defence or land drainage function.

According to the EA there are no Environment Agency maintained raised defences that defend the site directly.

5.2.4 Residual risk (breach or overtopping of flood defences):

Breaching of flood defences can cause rapid inundation of areas behind flood defences as flow in the river channel discharges through the breach. A breach can occur with little or no warning, although they are much more likely to concur with extreme river levels or tides when the stresses on flood defences are highest. Flood water flowing through a breach will normally discharge at a high velocity, rapidly filling up the areas behind the defences, resulting in significant damage to buildings and a high risk of loss of life. Breaches are most likely to occur in soft defences such as earth embankments although poorly maintained hard defences can also be a potential source of breach.

Overtopping of flood defences occurs when water levels exceed the protection level of raised flood defences. The worst case occurs when the fluvial or tidal levels exceed the defence level as this can lead to prolonged flooding. Less severe overtopping can occur when flood levels are below defence levels, but wave action causes cyclic overtopping, with intermittent discharge over the crest level of the defence. Flood defences are commonly designed with a freeboard to provide protection against overtopping from waves. The risk from overtopping due to exceedance of the flood defence level is much more significant than the risk posed by wave overtopping. Exceedance of the flood defence level can lead to prolonged and rapid flooding with properties immediately behind the defences at highest risk.

5.2.5 Historical flood events:

According to the Environment Agency they hold no records of historical flood events at the site or the surrounding area. In addition, according to the Lincolnshire County Council Section 19 online map there are no on-going or complete flood investigations at the site or in the surrounding area.

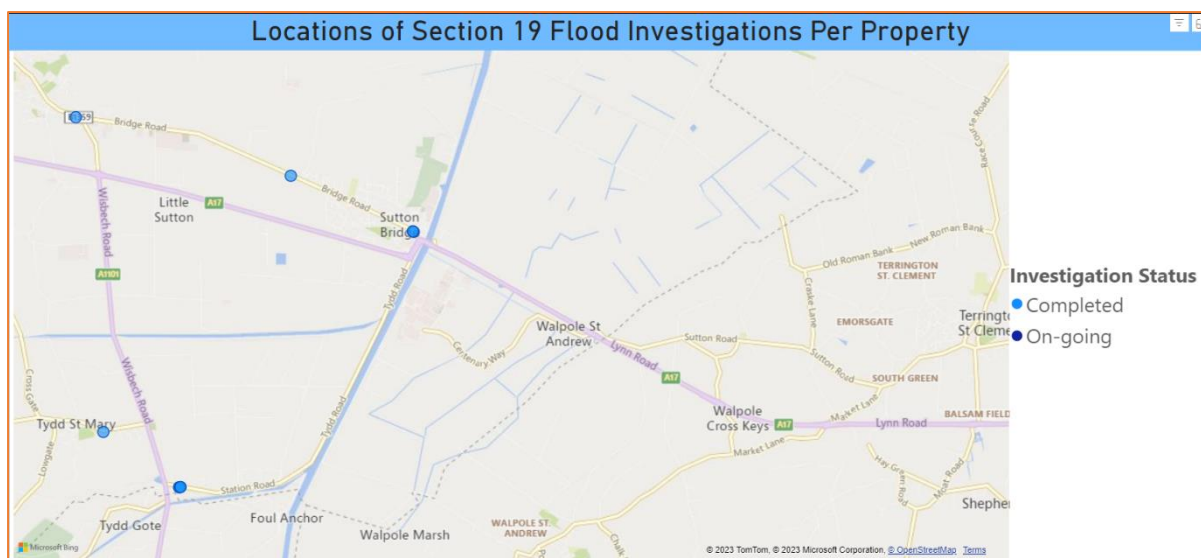


Figure 5: Locations of Section 19 Flood Investigations Per Property (Source: <https://www.lincolnshire.gov.uk/flood-risk-management/flood-investigations>)

5.2.6 Internal Drainage Boards:

Each internal drainage board (IDB) is a public body that manage water levels in an area, known as an internal drainage district, where there is a special need for drainage. The Board maintains many miles of watercourses, rivers and associated infrastructure such as pumping stations and other structures. IDBs undertake works to reduce flood risk to people and property, and manage water levels for agricultural and environmental needs within their district.

The site is located within the King's Lynn Internal Drainage board area.

5.3 Pluvial (Surface Water):

Pluvial (surface water) flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

In 2013 the EA, working with Lead Local Flood Authorities (LLFAs), produced an updated Flood Map for Surface Water. It is considered to represent a significant improvement on the previous surface water flood maps available, both in terms of method and representation of the risk of flooding. The modelling techniques and data used are considerably improved, and also incorporated locally produced mapping where this is available to represent features best modelled at a local scale.

The Flood Map for Surface Water assesses flooding scenarios as a result of rainfall with the following chance of occurring in any given year (annual probability of flooding is shown in brackets):

High:	Greater than or equal to 3.3% (1 in 30) chance in any given year
Medium:	Less than 3.3% (1 in 30) but greater than or equal to 1% (1 in 100) chance in any given year

Low: Less than 1% (1 in 100) but greater than or equal to 0.1% (1 in 1,000) chance in any given year

Very Low: Less than 0.1% (1 in 1,000) chance in any given year

Please note that the EA to not consider this information suitable to be used to identify the risk to individual properties or sites. It is useful to raise awareness in areas which may be at risk and may require additional investigation.

The EA Risk of Flooding from Surface Water Map suggests that the site lies in an area of “Very Low” to risk of flooding from surface water.

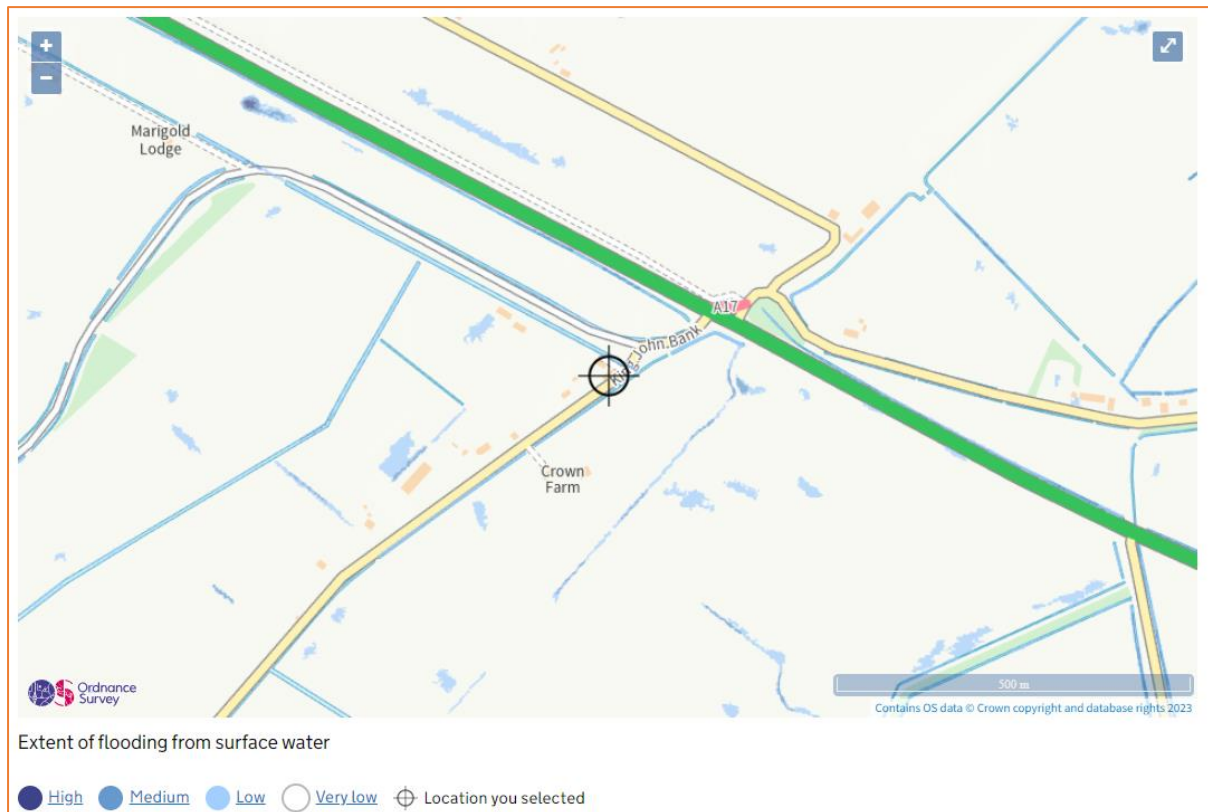


Figure 6: Extract from Environment Agency Surface Water Flood Map centred on postcode (Source: EA)

5.4 Groundwater:

Groundwater flooding occurs as a result of water rising up from the underlying rocks or from water flowing from abnormal springs. This tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

Groundwater flooding is most likely to occur in low-lying areas underlain by permeable rocks (aquifers). These may be extensive, regional aquifers, such as chalk or sandstone, or may be localised sands or river gravels in valley bottoms underlain by less permeable rocks. Groundwater

flooding takes longer to dissipate because groundwater moves much more slowly than surface water and will take time to flow away underground.

According to the EA flooding from groundwater is unlikely in this area. No records have been provided to suggest that the site has flooded from this source previously.

5.5 Sewer Surcharge:

Sewer flooding occurs when the sewer network cannot cope with the volume of water that is entering it. It is often experienced during times of heavy rainfall when large amounts of surface water overwhelm the sewer network causing flooding. Temporary problems such as blockages, siltation, collapses and equipment or operational failures can also result in sewer flooding.

All Water Companies have a statutory obligation to maintain a register of properties/areas which have reported records of flooding from the public sewerage system, and this is shown on the DG5 Flood Register. This includes records of flooding from foul sewers, combined sewers and surface water sewers which are deemed to be public and therefore maintained by the Water Company. The DG5 register records of flood incidents resulting in both internal property flooding and external flooding incidents. Once a property is identified on the DG5 register, water companies can typically put funding in place to address the issues and hence enable the property to be removed from the register. It should be noted that flooding from land drainage, highway drainage, rivers/watercourses and private sewers is not recorded within the register.

No information has been provided to suggest that the site or surrounding area is susceptible to sewer surcharge flooding.

5.6 Other Sources:

Reservoirs with an impounded volume in excess of 25,000 cubic metres (measured above natural ground level) are governed by the Reservoirs Act and are listed on a register held by the Environment Agency. The site lies outside the maximum inundation extent on the EA Reservoir Inundation Map. The EA also advise on their website that reservoir flooding is extremely unlikely. There has been no loss of life in the UK from reservoir flooding since 1925. All major reservoirs have to be inspected by specialist dam and reservoir Engineers. In accordance with the Reservoirs Act 1975 in England, these inspections are monitored and enforced by the EA themselves. The risk to the site from reservoir flooding is therefore minimal and is far lower than that relating to the potential for fluvial / tidal flooding to occur. The Environment Agency Reservoir Flood Map illustrated below, illustrates the largest area that might be flooded if the storage area were to fail and release the water it is designed to hold during a flood event.

Records of flooding from reservoirs and canals are erratic as there is no requirement for the Environment Agency to provide information on historic flooding from canals and raised reservoirs on plans. In particular, the NPPF does not require flood risk from canals and raised reservoirs to be shown on the Environment Agency flood zones.

Overflows from canals can be common as they are often fed by land drainage, and often do not have controlled overflow spillways. Occasionally, major bank breaches also occur, leading to rapid and deep flooding of adjacent land.

6. Flood Risk Management

6.1 Vulnerability to flooding:

The NPPF classifies property usage by vulnerability to flooding.

Post development, the site will become “more vulnerable”, as the application is for the retrospective application conversion of Personal Office space into a Dwellinghouse.

The applicant has confirmed that the annexe will remain part of the main property (extension of the existing property) ,and will not be able to be sold or rented as a separate dwelling for the lifetime of the development.

Accordingly, it is considered that the vulnerability of the site as a whole has not increased post development.

6.2 EA Standing Advice:

The EA Standing Advice guidance is for domestic extensions and non-domestic extensions where the additional footprint created by the development does not exceed 250m². It should not be applied if an additional dwelling is being created, e.g. a self-contained annexe or additional commercial unit.

The applicant has confirmed that the annexe will remain part of the main property (extension of the existing property) and will not be able to be sold or rented as a separate dwelling for the lifetime of the development.

No additional residential units will be created as part of the development.

6.3 Physical Design Measures:

The NPPF requires new residential floor levels be set at least 300mm above suitable modelled 1:100 year plus allowance for climate change flood levels.

Due to the nature of the proposed development which applies to the first floor only, this is above any expected flood levels.

6.4 Safe Escape and Flood Action Plan:

The NPPF requires a route of safe escape for all residents and users to be provided from new residential properties in Flood Zone 3. Safe escape is usually defined as being through slow moving flood water no deeper than 25cm.

The site is situated within Flood Zone 2 when using the Environment Agency Flood Map for Planning (Rivers and Sea). As such safe escape will be provided by a formal flood warning and evacuation plan which will need to be prepared in liaison with the Council's Emergency Planners,

and tied in with the existing emergency plans for the area. The applicant has agreed to implement a flood warning and evacuation plan post development, and subscribe to the EA's flood warning service.

In the case of an extreme flood event without warning, the occupants and users should seek refuge on the first floor of the building.

6.5 Flood Warning:

The EA is responsible for issuing flood warnings. Flood warnings are issued to the emergency services and local authorities. Both private individuals and organisations can sign-up to receive warnings via phone, text or email. This system of receiving warnings is currently voluntary.

Advice regarding severe flood warnings will generally be given during weather forecasts on local radio and TV. In the case of extreme events, warnings can also be disseminated via door to door visits by the police or locally appointed flood wardens.

The EA issue flood warnings/alerts to specific areas when flooding is expected. It is recommended that the applicant registers online with the free Environment Agency Floodline Warnings/Alert Direct service at www.gov.uk/sign-up-for-flood-warnings to receive flood warnings by phone, text or email.

The applicant has agreed to subscribe to the EA's flood alert/warning service.

The flood warning service has three types of warnings that will help you prepare for flooding and take action:

Flood Warning	Flood Alert	Flood Warning	Severe Flood Warning
			
What it means?	Flooding is possible. Be prepared.	Flooding is expected. Immediate action required.	Severe flooding. Danger to life.
When it's used?	Two hours to two days in advance of flooding.	Half an hour to one day in advance of flooding.	When flooding poses a significant threat to life.
What to do?	Be prepared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.	Stay in a safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.

Table 2: EA Flood Warning Service

6.6 Flood Plan:

It is recommended that the applicant and future owners, occupiers and Landlords of the property prepare a flood plan to protect life and property during a flood event:

Before a flood:

- Prepare and keep a list of all your important contacts to hand or save them on your mobile phone.
- Think about what items you can move now and what you would want to move to safety during a flood.
- Know how to turn off electricity and water supplies to the site.
- Prepare a flood kit of essential items and keep it handy. It can include copies of important documents, a torch, a battery-powered or wind-up radio, blankets and warm clothing, waterproofs, rubber gloves and a first aid kit including all essential medication.

During a flood:

- Activate the evacuation plan and evacuate the site.
- Remove cars from the site if there is sufficient warning and the water levels are not rising rapidly.
- Switch off water and electricity for the site.
- Tune into your local radio station on a battery or wind-up radio.

- Listen to the advice of the emergency service and evacuate if told to do so.
- Avoid walking or driving through flood water. Six inches of fast-flowing water can knock over an adult and two feet of water can move a car.

After a flood:

- If you have flooded, contact your insurance company as soon as possible.
- Take photographs and videos of your damaged property as a record for your insurance company.
- If you don't have insurance, contact your local authority for information on grants and charities that may help you.
- Flood water can contain sewage, chemicals and animal waste. Always wear waterproof outerwear, including gloves, wellington boots and a face mask.
- Have your electrics and water checked by qualified engineers before switching them back on.

6.7 Off-Site Impacts:**6.7.1 Fluvial floodplain storage:**

The NPPF requires that where development is proposed in undefended areas of floodplain, which lie outside of the functional floodplain, the implications of ground raising operations for flood risk elsewhere needs to be considered. Raising existing ground levels may reduce the capacity of the floodplain to accommodate floodwater and increase the risk of flooding by either increasing the depth of flooding to existing properties at risk or by extending the floodplain to cover properties normally outside of the floodplain. Flood storage capacity can be maintained by lowering ground levels either within the curtilage of the development or elsewhere in the floodplain, in order to maintain at least the same volume of flood storage capacity within the floodplain.

In undefended tidal areas, raising ground levels is unlikely to impact on maximum tidal levels so the provision of compensatory storage should not be necessary.

For development in a defended flood risk area, the impact on residual flood risk to other properties needs to be considered. New development behind flood defences can increase the residual risk of flooding if the flood defences are breached or overtopped by changing the conveyance of the flow paths or by displacing flood water elsewhere. If the potential impact on residual risk is unacceptable then mitigation should be provided.

The site is partially situated within Flood Zone 2 when using the Environment Agency Flood Map for Planning (Rivers and Sea). but the application is for a change of use with no increase in the footprint of the original building, and therefore no loss of floodplain storage or increase in run-off from the site.

6.7.2 Surface Water Drainage:

The development will utilise Sustainable Urban Drainage (SuDs) design in accordance with the NPPF for Planning Applications hierarchy as follows:

1. Store rainwater for later use;

2. Infiltration techniques;
3. Attenuate rainwater by storing in tanks for gradual release;
4. Discharge rainwater direct into watercourse;
5. Discharge rainwater into surface water sewer;
6. Discharge rainwater into a combined sewer;
7. Attenuation of rainwater in ponds or open water features with controlled discharge into the local watercourse.

All surface water runoff generated by the proposed development up to 1:100 year rainfall event (plus climate change) will be stored on site, prior to being discharged.

However, given the proposed development is for a change of use with no increase in built footprint a full Surface Water Drainage Strategy is not required at this stage of planning and the proposed development will utilise the existing drainage arrangements on site.

7. Sequential and Exception Test

The Sequential Test is applied to developments in areas identified as being at risk of any source of flooding now or in the future. The Sequential Test ensures that a sequential, risk-based approach is followed to steer new development to areas with the lowest risk of flooding, taking all sources of flood risk and climate change into account.

The sequential approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in current and future medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding. Other forms of flooding need to be treated consistently with river and tidal flooding in mapping probability and assessing vulnerability, so that the sequential approach can be applied across all areas of flood risk

The site is situated within Flood Zone 2 when using the Environment Agency Flood Map for Planning (Rivers and Sea). Post development, the site will become “more vulnerable”, as the application is for the change of use to a single residential dwelling.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	✗	Exception Test required	✓	✓
Zone 3b	Exception Test required	✗	✗	✗	✓

Table 3: Flood risk vulnerability and flood zone ‘compatibility’

Using the table above, the proposed application is considered to be suitable within Flood Zone 2. The Sequential and Exception Tests do not need to be applied to minor developments and changes of use (such as this application).

8. Conclusions

Unda Consulting Limited have been appointed by Lydia Lavender (hereinafter referred to as “the applicant”) to undertake a Flood Risk Assessment for the proposed development Lavender Corner, King John Bank, Walpole St Andrew, Wisbech PE14 7JT. The FRA has been undertaken in accordance with the National Planning Policy Framework (NPPF) and the associated technical guidance.

The purpose of the study is to support a planning application for the proposed development.

Post development, the site will become “more vulnerable”, as the application is for the retrospective application conversion of Personal Office space into a Dwellinghouse. Accordingly, it is considered that the vulnerability of the site as a whole will be increased post development (introduction of a new residential unit).

The site is located within Flood Zone 2 (Medium Probability), which means it is defined as land having between a 1 in 100 and 1 in 1,000 annual probability of river and sea flooding.

The risk would appear to be fluvial/tidal from various sources. The River Nene tidal is located 2km to the west of the site.

Product 4 modelled flood levels and extents have been requested from the Environment Agency for use within this report.

According to the EA, the site is not considered to be at risk of flooding from main rivers. The site may be at risk from local ordinary watercourses for which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.

According to Environment Agency data, there are no Flood Storage Areas located in close proximity to the site.

According to the EA there are no Environment Agency maintained raised defences that defend the site directly.

According to the Environment Agency they hold no records of historical flood events at the site or the surrounding area. In addition, according to the Lincolnshire County Council Section 19 online map there are no on-going or complete flood investigations at the site or in the surrounding area.

The site is located within the King’s Lynn Internal Drainage board area.

The EA Risk of Flooding from Surface Water Map suggests that the site lies in an area of “Very Low” to risk of flooding from surface water.

No information has been provided to suggest that the site or surrounding area is susceptible to groundwater, sewer surcharge or reservoir flooding.

Safe escape will be provided by a formal flood warning and evacuation plan which will need to be prepared in liaison with the Council’s Emergency Planners, and tied in with the existing emergency plans for the area. The applicant has agreed to implement a flood warning and evacuation plan post development, and subscribe to the EA’s flood warning service.

The applicant has confirmed that:

- The development is located above any expected flood levels – first floor development only.
- The applicant has confirmed that the annexe will remain part of the main property (extension of the existing property) and will not be able to be sold or rented as a separate dwelling for the lifetime of the development.
- No additional residential units will be created as part of the development.
- Post development, there will be no increase in the built footprint on site.
- The applicant will register with the Environment Agency Floodline Alert/Warnings Direct service.
- Safe escape will be provided by a flood warning and evacuation plan, which will be prepared in liaison with the Council's Emergency Planners and tied in with the existing emergency plans for the area.
- Due to the nature of the development, existing drainage arrangements will be retained.

Assuming accordance with these flood risk management measures, Unda Consulting Limited consider the proposed application to be suitable in flood risk terms.

Appendix

- Existing and proposed plans
- Environment Agency Flood Map for Planning
- EA product 4 data request

General Notes

- All drawings to be read in conjunction with all relevant specifications, architect's drawings and services engineer's drawings.
- For setting out refer to architect's drawings.
- All dimensions are in millimetres unless noted otherwise.
- Do not scale from the drawings or the computer digital data. Only figured dimensions to be used.
- For all waterproofing details - see architect's drawings.
- The contractor is to provide any temporary bracing necessary to maintain structural stability during construction.

- The works have been designed and shall be constructed in accordance with the following codes. This list is not exhaustive and is only intended to list the principal codes:

- BS EN 1991-1-1:2002, BS EN 1991-1-7:2006: Code of practice for dead and imposed loads.
- BS EN 1991-1-4:2005+A1:2010: Code of practice for wind loads.
- BS EN 1991-1-3:2003: Code of practice for imposed roof loads.
- BS EN 1997-1:2004 : Code of practice for foundations.
- BS EN 1992-1-1:2004: Structural use of concrete.
- BS EN 1993-1-1:2005, BS EN 1993-1-5:2006, BS EN 1993-1-10:2005, BS EN 1993-5:2007, BS EN 1993-6:2007, BS EN 1993-1-8:2005: Structural use of steelwork in buildings.
- PD 6697:2010, BS EN 1996-3:2006, BS EN 1996-2:2006, BS EN 1996-1-1:2005+A1:2012: Structural use of un-reinforced masonry.
- BS EN 1995-1-1:2004+A1:2008: Structural use of timber.

- The works have been designed for the finish state. The following superimposed loads have been used in the design:
Floor loads - See structural engineer's calculations.
Roof loads - See structural engineer's calculations.
- All works shall comply with the Building Regulations and other relevant statutory notices e.g. Health and Safety Bylaws, COSHH etc
- The client / appointed contractor must take their own assurances on:
 - Soil conditions on site and the gradient of land;
 - Suitability / existing methods of storm water drainage;
 - Trees (existing or removed) and their affect on foundations;
 - Position and condition of main sewer.

- Extensions/alterations to existing structures are subject to revision depending upon such being fully exposed. The client/thier contractor must take their own assurances that any structure designated for demolition/removal are not load bearing or that alternative methods of permanent support are put in place prior to removal. Existing walls, lintels and foundations that are intended to take additional loads, must first be fully exposed and checked for adequacy prior to the commencement of works.

Foundations

- The depth of the proposed foundations are subject to ground conditions and building control approval. These are to be minimum 1000mm deep subject to be founding in good ground of minimum 100kN/m2 bearing stratum (based on London Clay).
- The excavations should be free from any mature tree roots. If there are

- large trees in the vicinity then the foundations depth is to be in accordance with NHBC standards guidelines for building near trees.
- Where new foundations are to abut existing foundations, a soft joint of 75mm is to be formed using 'Claymaster' or similar approved unless noted otherwise on the drawings.
 - Any foundations deeper than 1.5m should have suspended floors to avoid any heave. Where the foundations are cast within highly shrinkable soils, then anti-heave precautions such as compressible materials or void formers are to be applied to the foundations.

Notes for Timber

- These notes are to be read in conjunction with relevant architect's and services engineer's drawings and specification.
- All timber-work shall comply with BS EN 1995-1-1:2004+A1:2008.
- Roof area:
 - Roof joists shall be grade C24. Evidence of grading shall be provided before work commences;
 - Blocking and battens shall be grade C24 softwood;
 - The sizes shown on the drawings are finished sizes;
 - In joint zones waness, shakes and knots are not permitted;
 - Timber to be carefully cut and planed to ensure tight fit and continuous bearing against metalwork;
 - All gaps between timber and metalwork to be resin-grouted, to the approval of the engineer.
- All connectors, bolts, nails etc. shall be galvanised to BS 729.
- Adhesive shall be to BS1204: Part 1: 1970, Type WBP.
- All timber to be treated in accordance with the British Wood Preservative and Damp-proofing Association Commodity Specification C8 for 40 years desired service life.

Notes for Fire Resistance

- These notes are to be read in conjunction with relevant architect's services engineer's drawings and specifications.
- All habitable doors to stairs enclosure and the kitchen to be filled with self-closing devices.
- Any glazing within the stair enclosure, including glazing to doors, to be fire-resisting.
- Mains powered interconnected smoke alarms to be provided to entrance lobby and all stairs landings.
- Class 1 flame spread to be provided to all new walls and ceilings.

Notes for Masonry

- These notes are to be read in conjunction with relevant architect's services engineer's drawings and specifications.
- All brickwork shall comply with PD 6697:2010, BS EN 1996-3:2006, BS EN 1996-2:2006, BS EN 1996-1-1:2005+A1:2012 .
- All bricks shall have a minimum crushing strength of 20N/mm².

- Blockwork shall have a minimum crushing strength of 7N/mm².
- Mortar shall be a Class (ii) cement: lime putty: sand mix (1:1/2:4), unless indicated otherwise.
- All vertical joints shall be completely filled. Bricks shall be laid frog up. The voids in perforated bricks shall be filled.
- Fissured bricks or bricks with voids shall not be used.
- Horizontal chases are prohibited. Vertical chases and builderswork holes shall be agreed with the architect.

Notes for Structural Steelwork

- These notes are to be read in conjunction with relevant architect's and services engineer's drawings and specifications.
- All steelwork shall comply with BS EN 1993-1-1:2005, BS EN 1993-1-5:2006, BS EN 1993-1-10:2005, BS EN 1993-5:2007, BS EN 1993-6:2007, BS EN 1993-1-8:2005.
- Unless noted otherwise stipulated structural steelwork shall confirm to BS EN: Weldable structural steels.
- Unless noted otherwise all steel shall be grade S355. Steel grade shall conform with EC-3.
- Unless noted otherwise all butt welds shall be full penetration.
- Unless noted otherwise all fillet welds shall be full profile with a minimum leg length of 6mm.
- Unless noted otherwise all ordinary bolt assemblies shall be Grade 8.8.
- Unless noted otherwise all bolts shall be M16.
- Unless noted otherwise all holding down bolts shall be M16 Grade 8.8 anchored a minimum of 200mm depth into the supporting concrete with a 100 x 100 x 8 thick washer plate at the embedded head of the bolt.
- The clearance of base plates from supporting concrete shall be a minimum of 20mm and on completion of erection this shall be grouted solid under the full area of the base plate with 1:2 sand: cement grout.
- Corrosion protection:
 - Surface protection - blast clean to SA 2.5 quality BS EN ISO 8501-1.
 - Prefabricator primer - epoxy zinc phosphate hb: 50 microns (DFT).
 - Finishing coat - see arch's spec.
 - See arch's specification for details on colour and texture.

- Fire protection:
 - 30min - One layer of plasterboard and skim coat or intumescent paint to manufacturer's specification.
 - 60min - Two layers of plasterboard with joints staggered and skim coat or intumescent paint to manufacturer's specification.
- Weather protection: Any steelwork exposed to external weather is either to be galvanized or stainless steel UNO.
- All steel beams carrying load-bearing masonry walls wider than their flanges are to have 12mm thick top/bottom flange plates continuously welded along the length to suit the wall width UNO.



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DRAWN BY	MZ
DRAWING NO.	Arch - A101
TITLE	GENERAL NOTES
DATE	28-09-2023
LEGEND	EXISTING STRUCTURE STRUCTURE TO BE DEMOLISHED PROPOSED STRUCTURE SHARED WALL

No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: N.T.S





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DRAWING NO.

Arch - A102

TITLE

EXISTING PLANS

DATE

28-09-2023

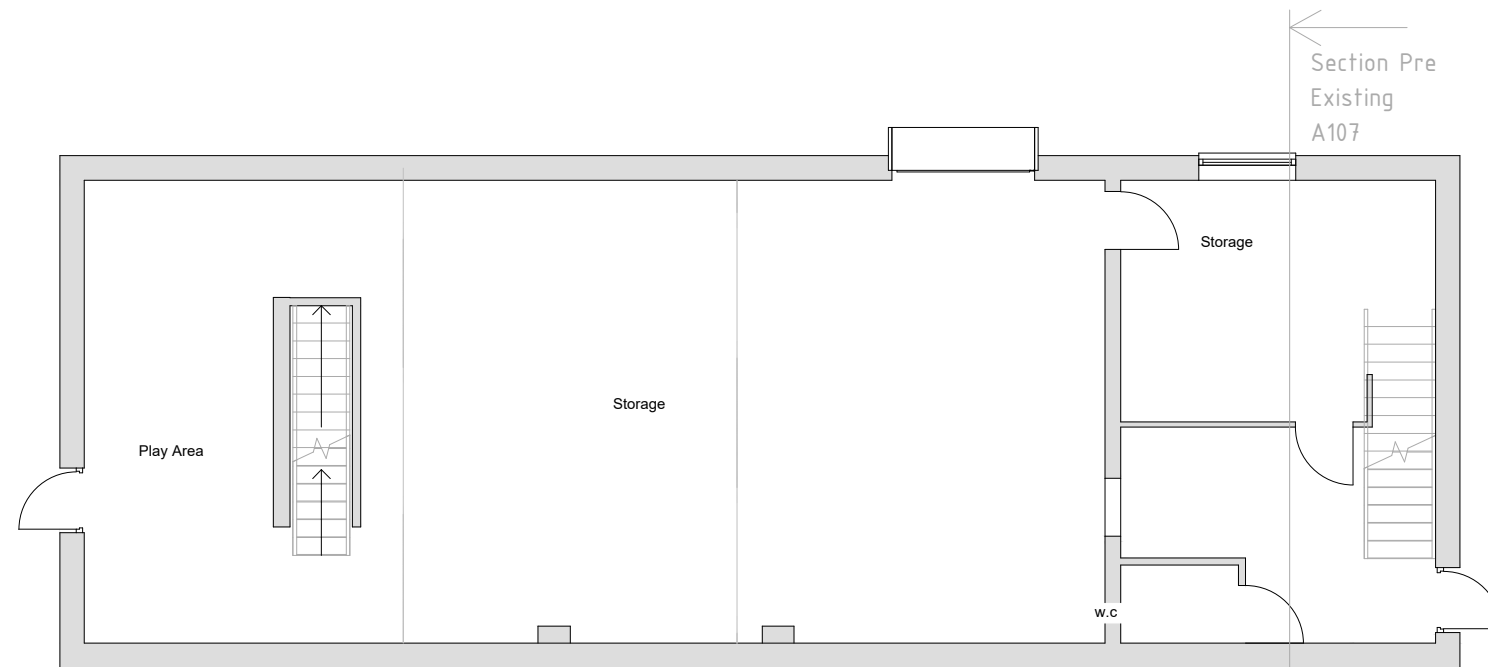
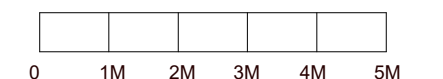
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- STRUCTURE TO BE DEMOLISHED
- PROPOSED STRUCTURE
- SHARED WALL

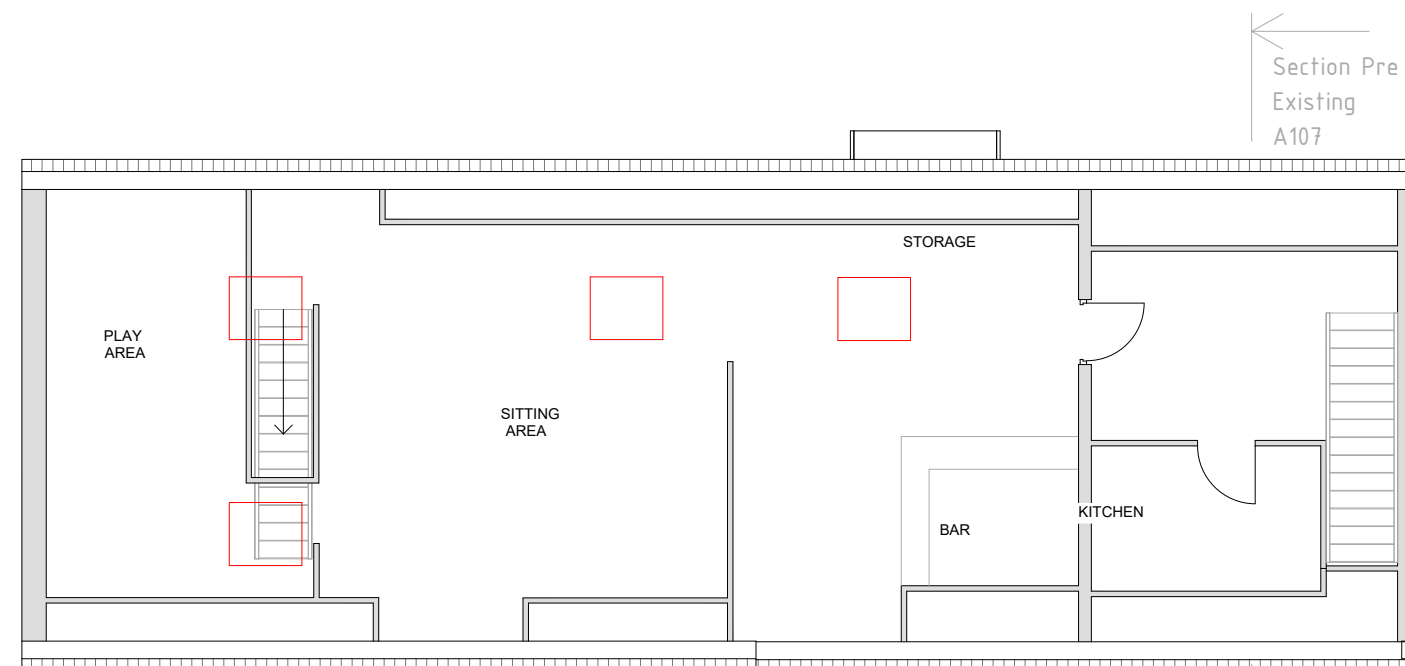
No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: 1:100 @ A3



EXISTING GROUND FLOOR PLAN
Scale 1:100



EXISTING FIRST FLOOR PLAN
Scale 1:100



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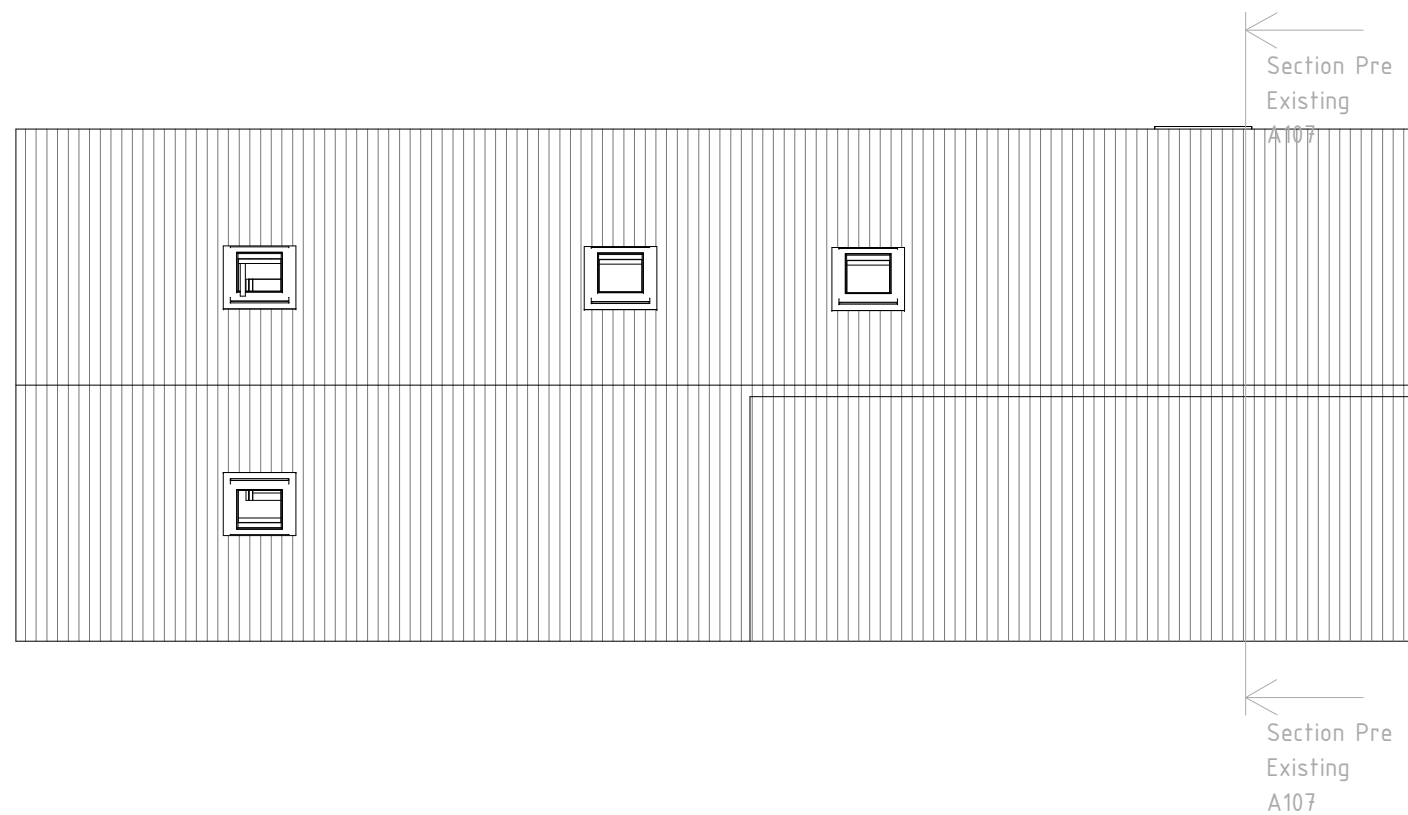
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DRAWN BY	MZ
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TITLE	EXISTING PLAN
DATE	28-09-2023
LEGEND	EXISTING STRUCTURE
	STRUCTURE TO BE DEMOLISHED
	PROPOSED STRUCTURE
	SHARED WALL

No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
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SCALE: 1:100 @ A3



 **EXISTING ROOF PLAN**
Scale 1:100



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MZ

DRAWING NO.
Arch - A104

TITLE
EXISTING
ELEVATIONS

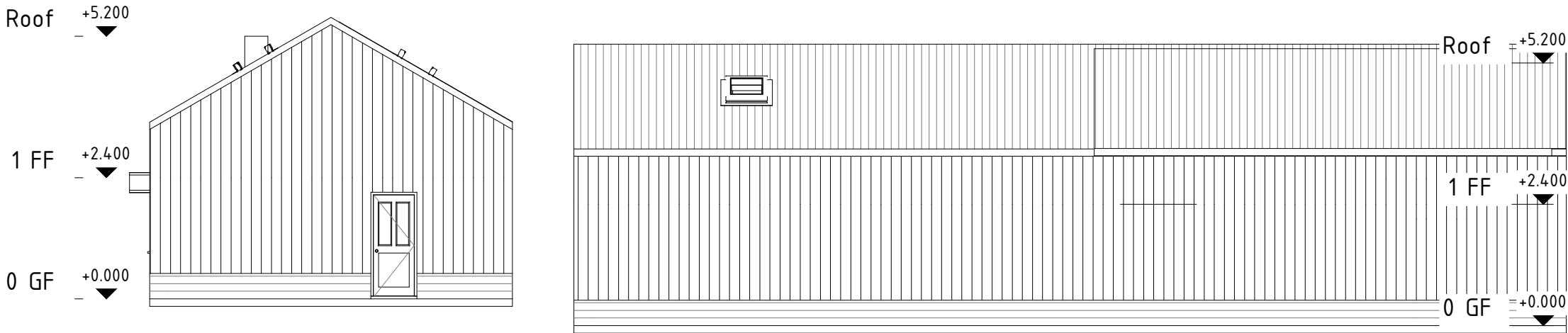
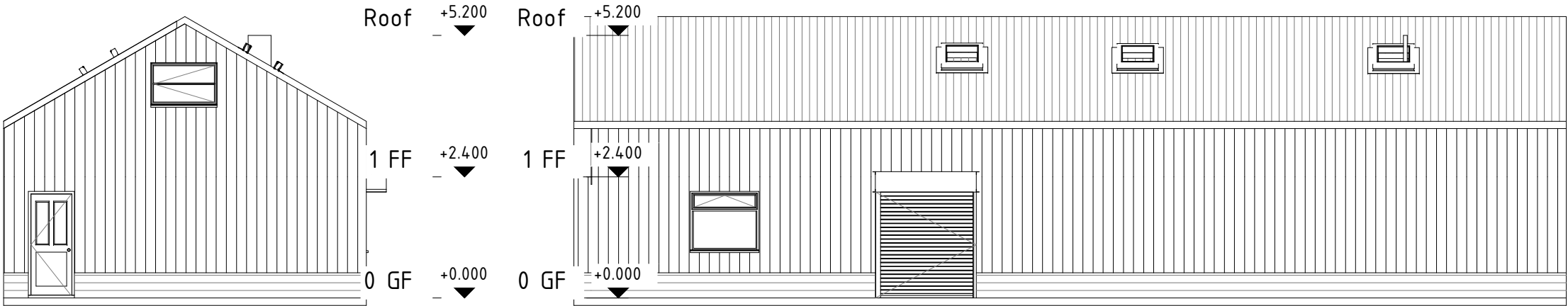
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28-09-2023

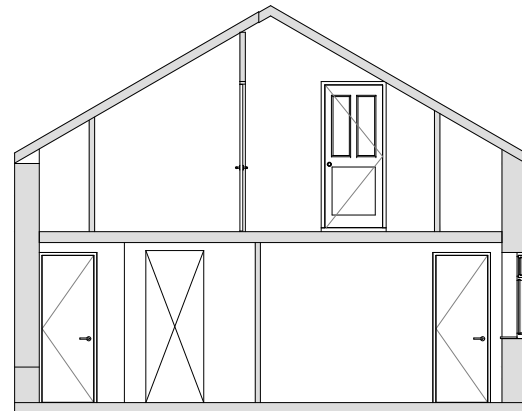
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- EXISTING STRUCTURE
 - STRUCTURE TO BE DEMOLISHED
 - PROPOSED STRUCTURE
 - SHARED WALL

No.	Revision Description	Date

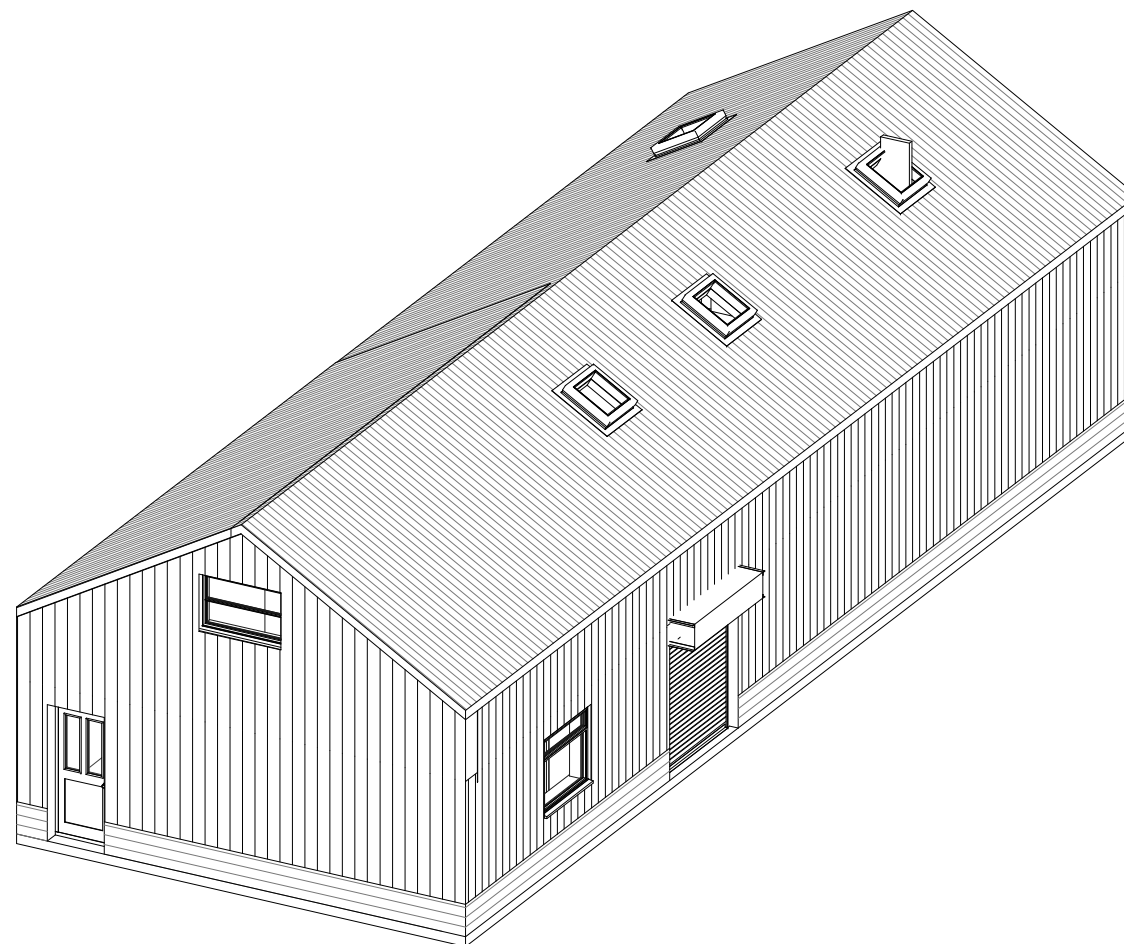
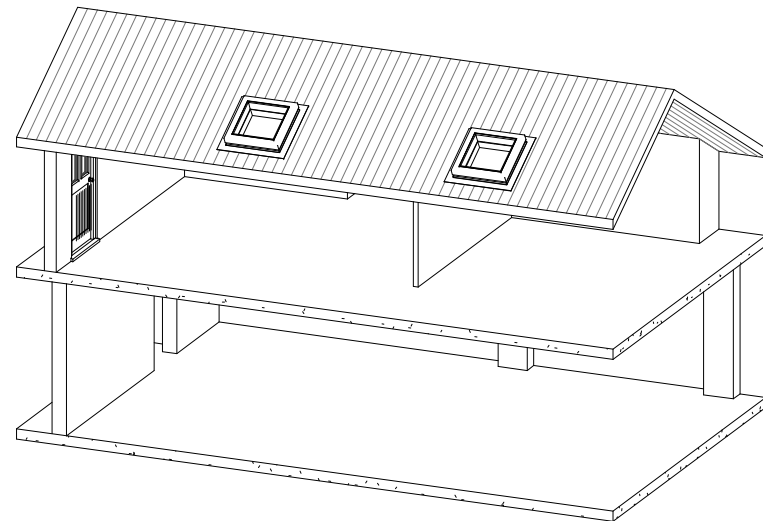
- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: 1:100 @ A3





EXISTING SECTION A
Scale 1:100



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DRAWING NO.

Arch - A105

TITLE

EXISTING
SECTION & 3D VIEW

DATE

28-09-2023

LEGEND		EXISTING STRUCTURE
		STRUCTURE TO BE DEMOLISHED
		PROPOSED STRUCTURE
		SHARED WALL

No.	Revision Description	Date

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SCALE: 1:100 @ A3





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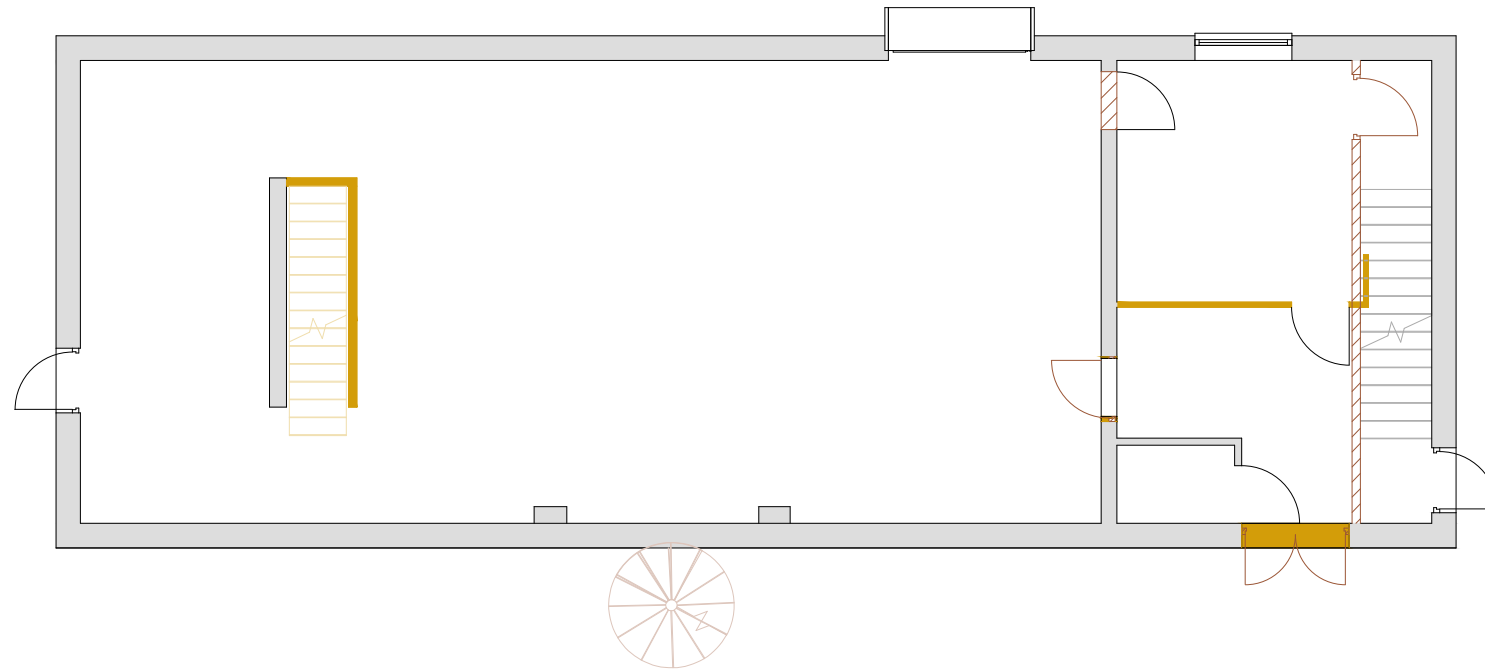
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DATE	28-09-2023
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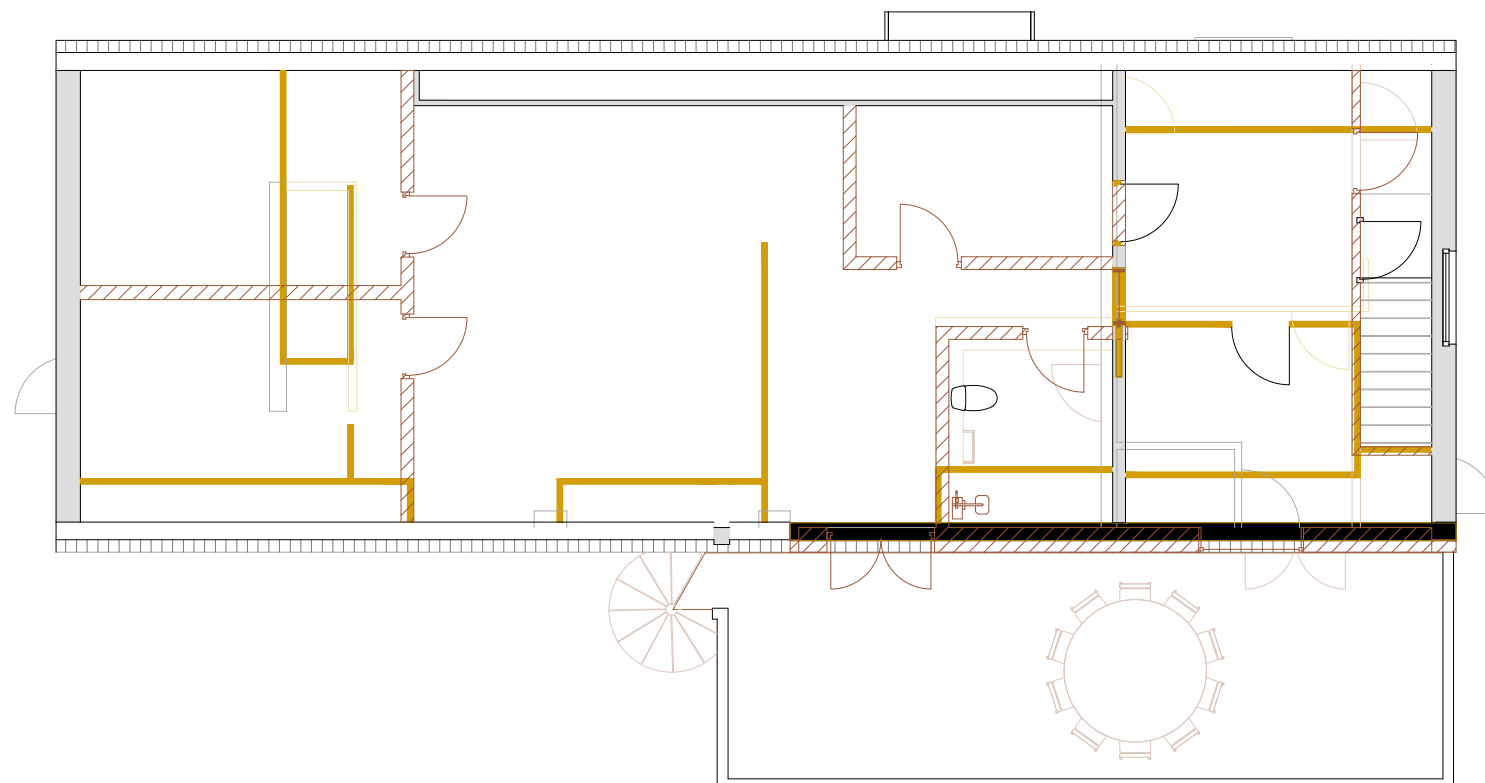
No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

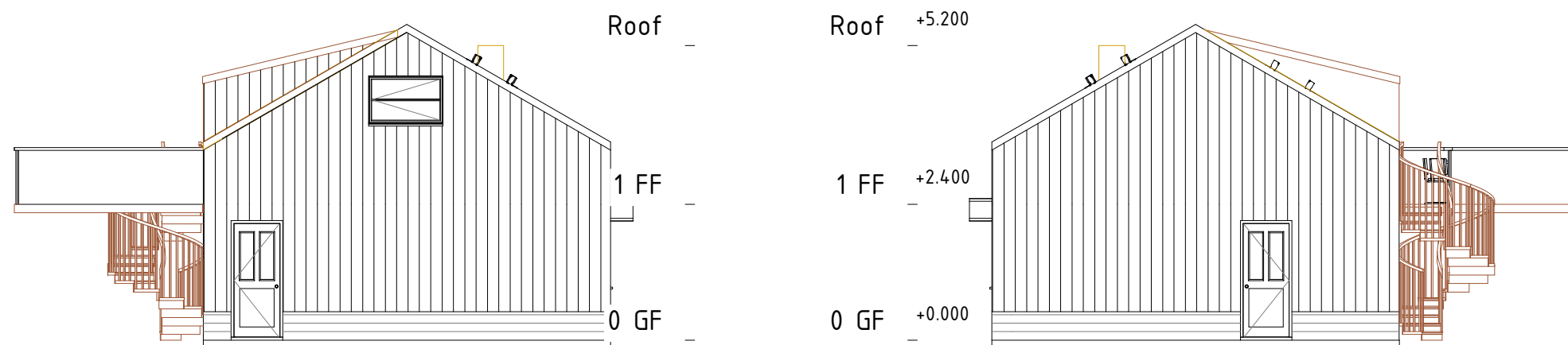
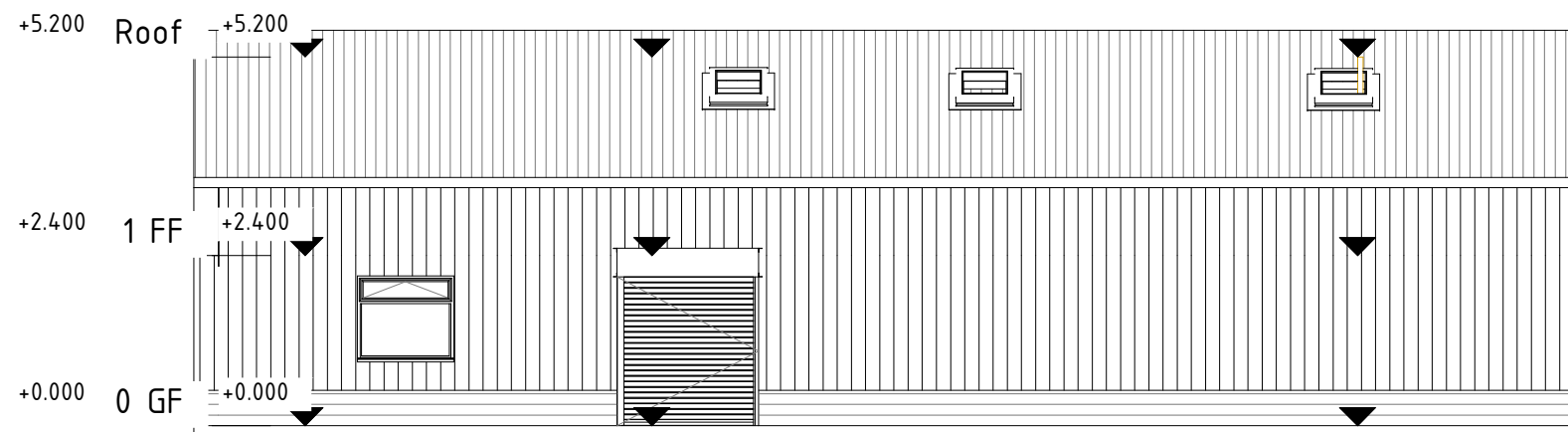
SCALE: 1:100 @ A3



DEMO GROUND FLOOR PLAN
Scale 1:100



DEMO FIRST FLOOR PLAN
Scale 1:100



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DRAWING NO. Arch - A107

TITLE
DEMO
ELEVATIONS

DATE 28-09-2023

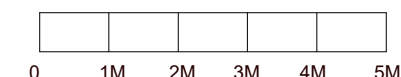
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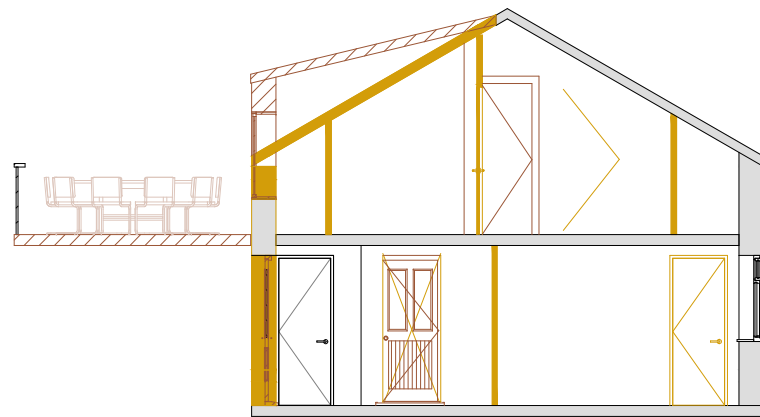
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- STRUCTURE TO BE DEMOLISHED
- PROPOSED STRUCTURE
- SHARED WALL

No.	Revision Description	Date

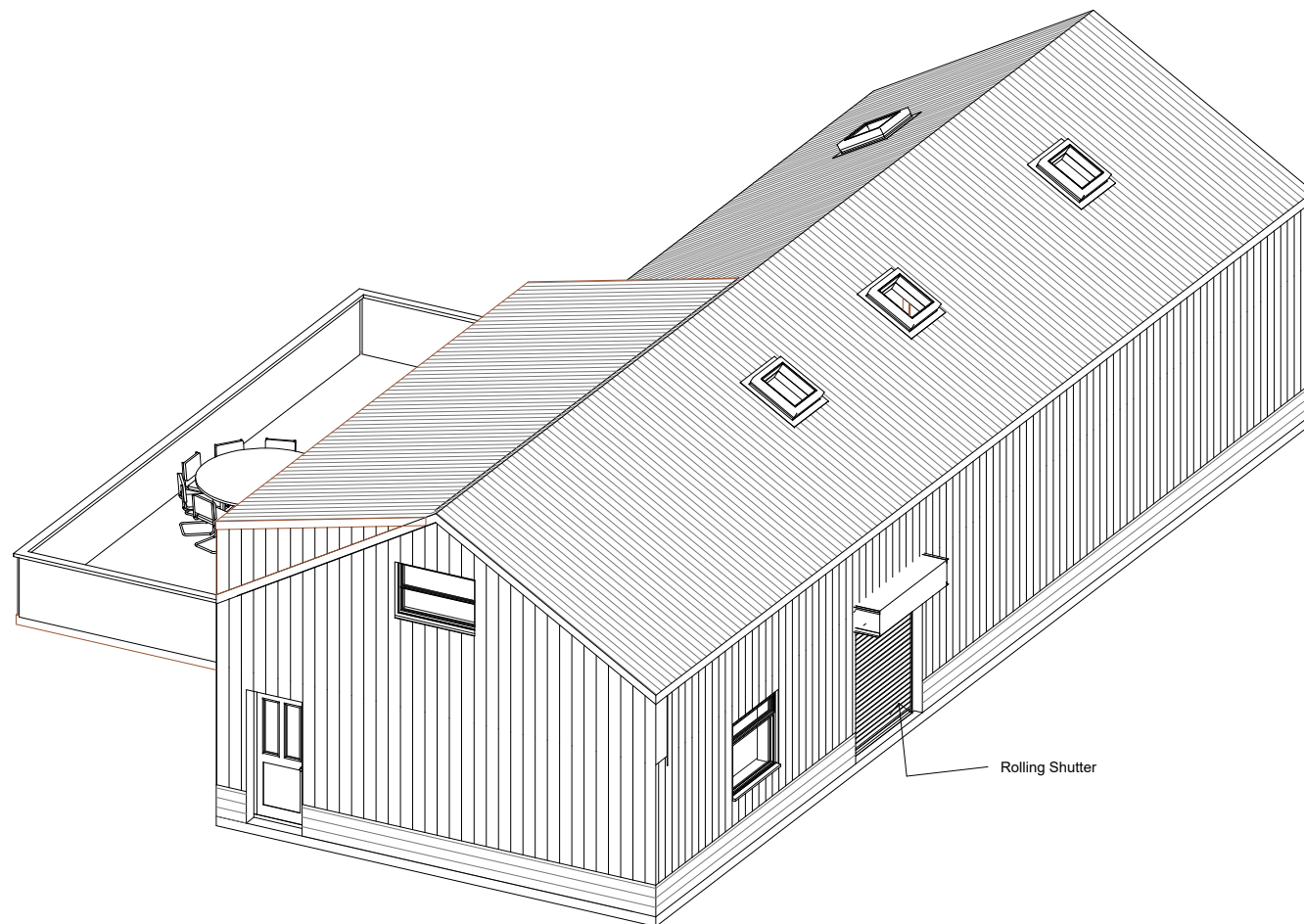
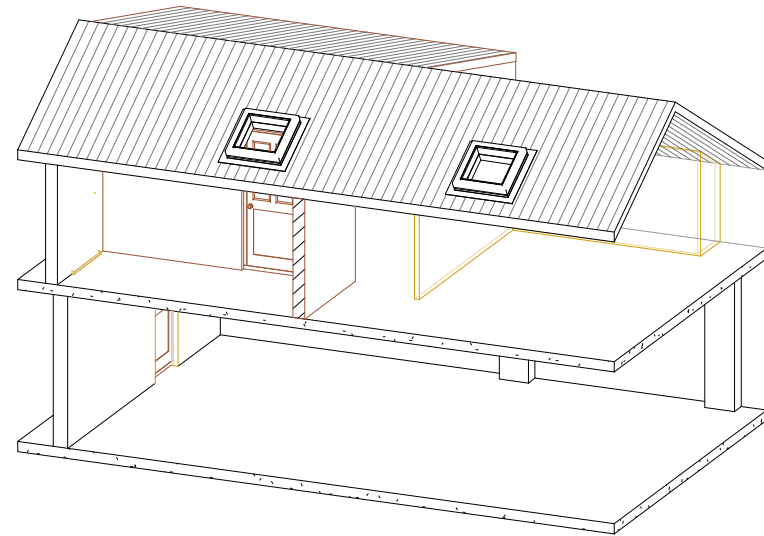
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SCALE: 1:100 @ A3





DEMO SECTION A
Scale 1:100



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Arch - A108

TITLE

DEMO
SECTION & 3D VIEW

DATE

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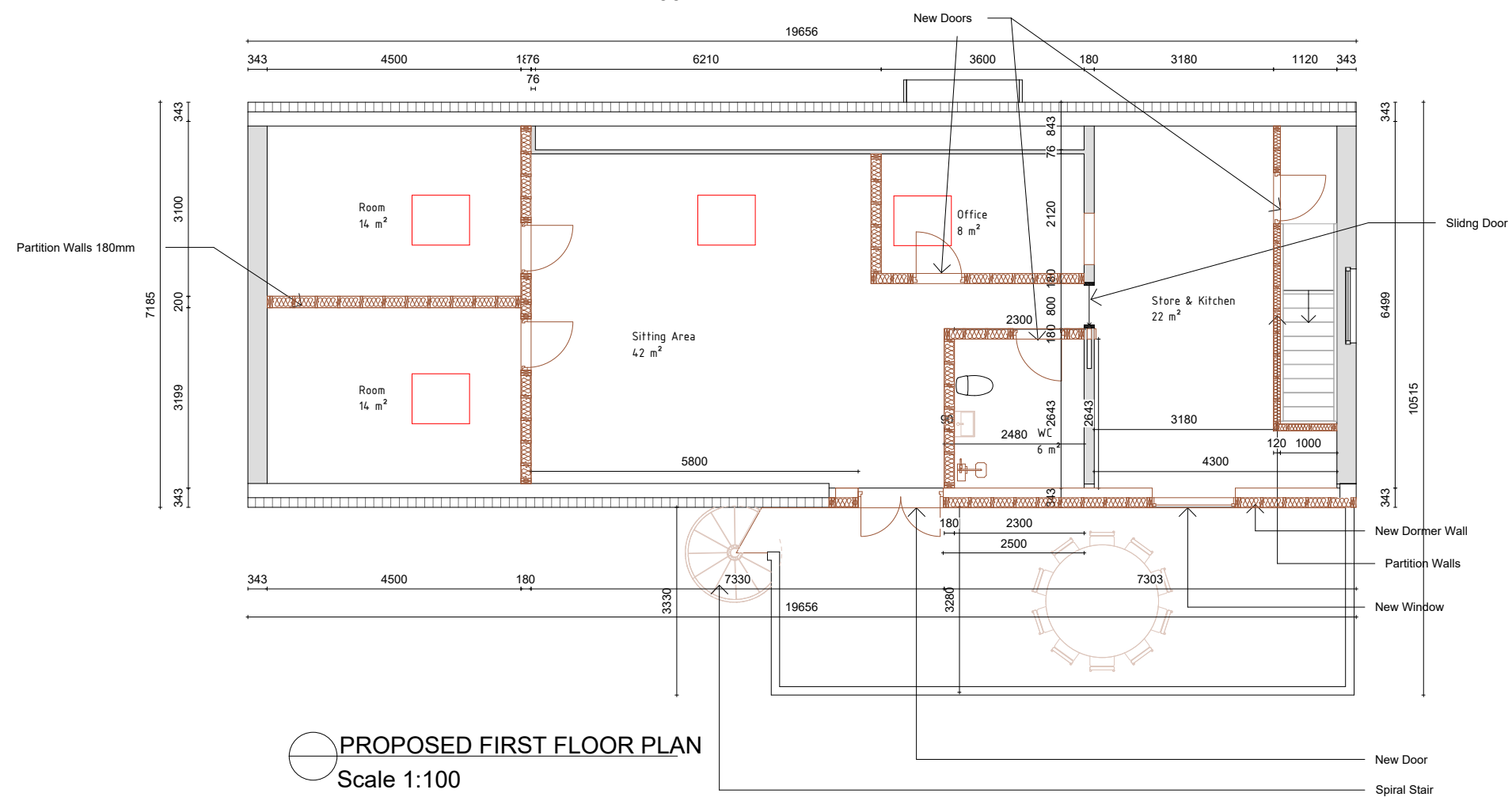
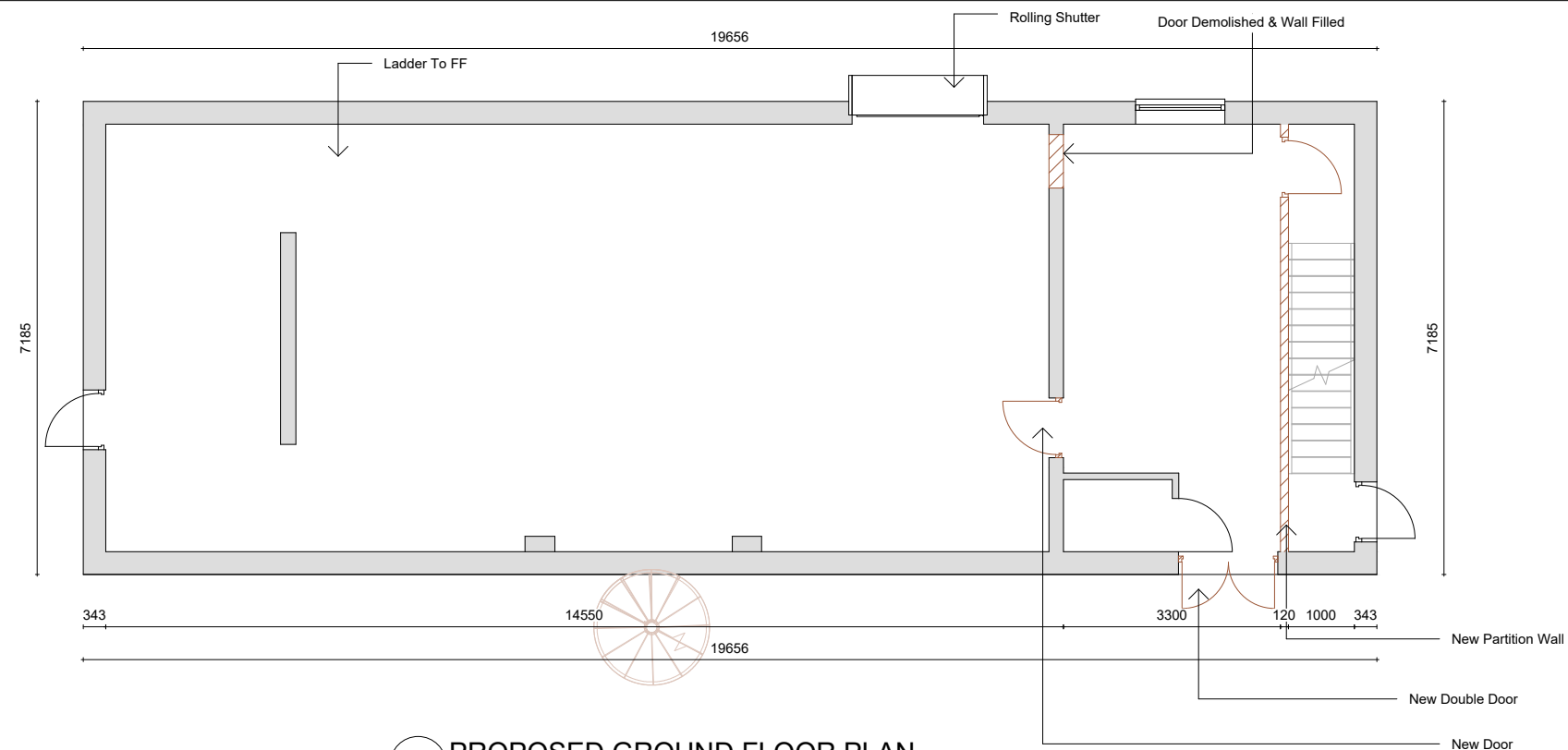
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		PROPOSED STRUCTURE
		SHARED WALL

No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
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SCALE: 1:100 @ A3





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Arch - A109

TITLE

PROPOSED PLANS

DATE

28-09-2023

LEGEND

 EXISTING STRUCTURE

 STRUCTURE TO BE DEMOLISHED

 PROPOSED
STRUCTURE SHARED WALL[illegible]

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
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SCALE: 1:100 @ A3





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DRAWING NO. Arch - A110

TITLE PROPOSED PLAN

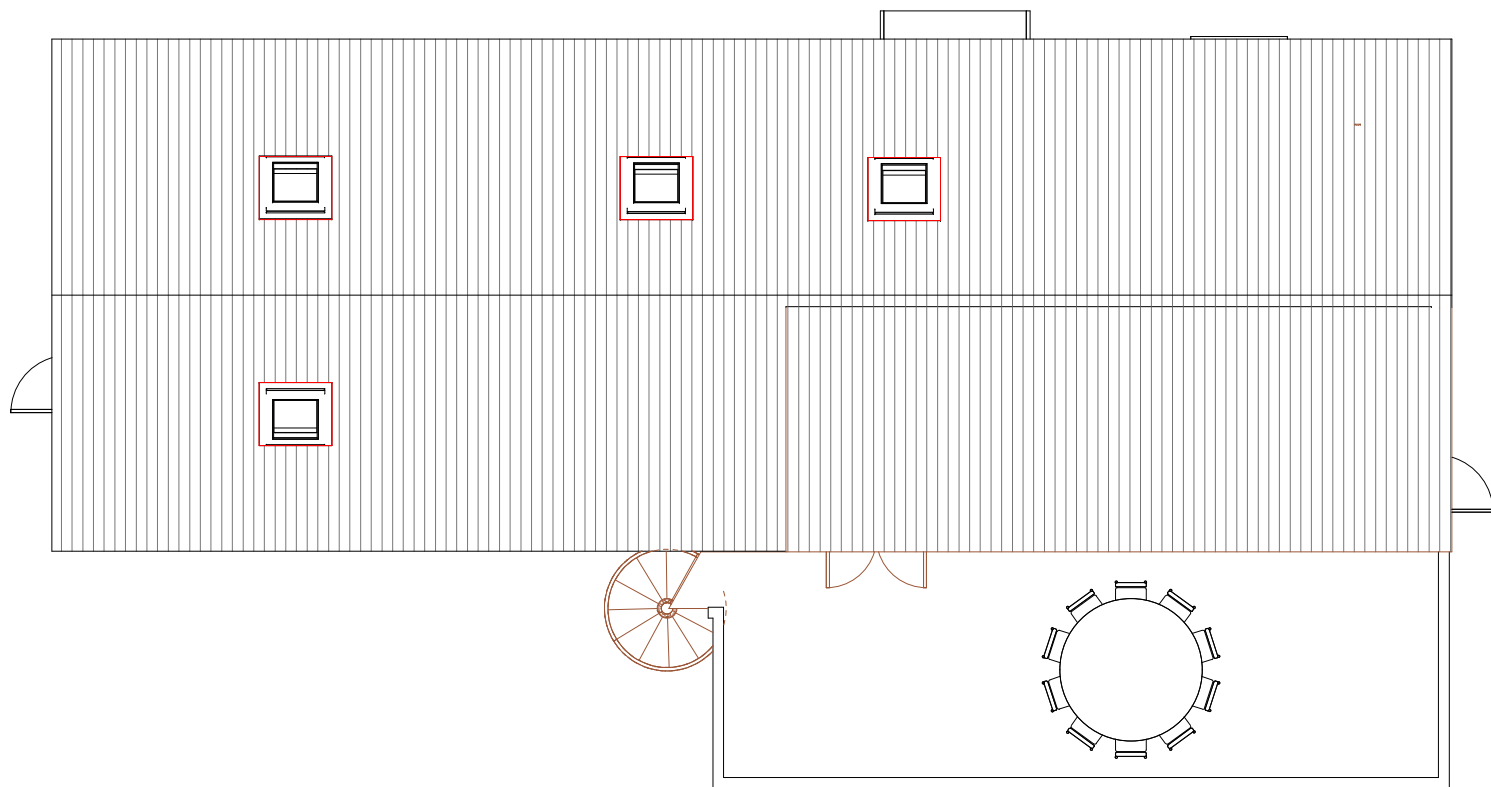
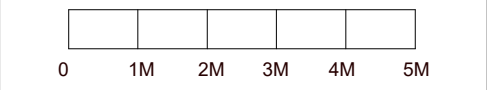
DATE 28-09-2023

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		PROPOSED STRUCTURE
		SHARED WALL

No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
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SCALE: 1:100 @ A3



 **PROPOSED ROOF PLAN**
Scale 1:100



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Arch - A111

TITLE

**PROPOSED
ELEVATIONS**

DATE

28-09-2023

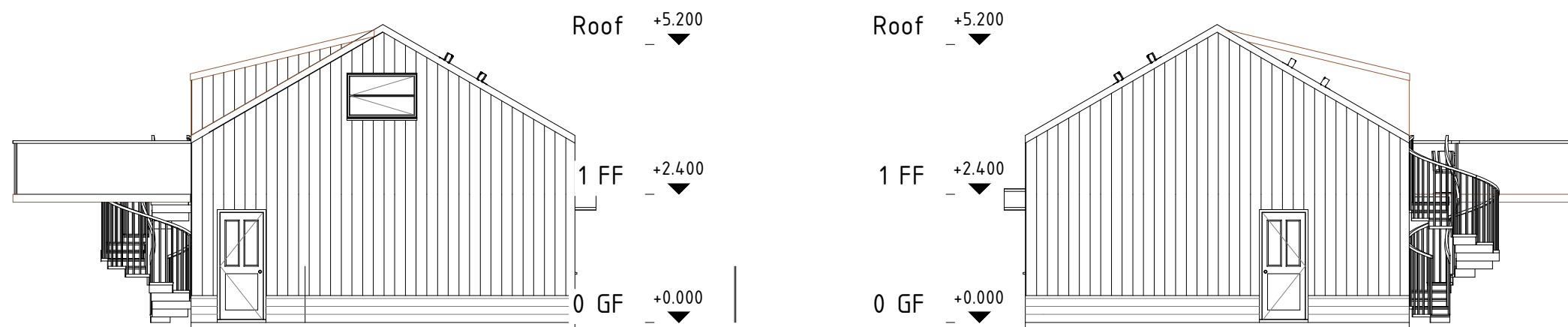
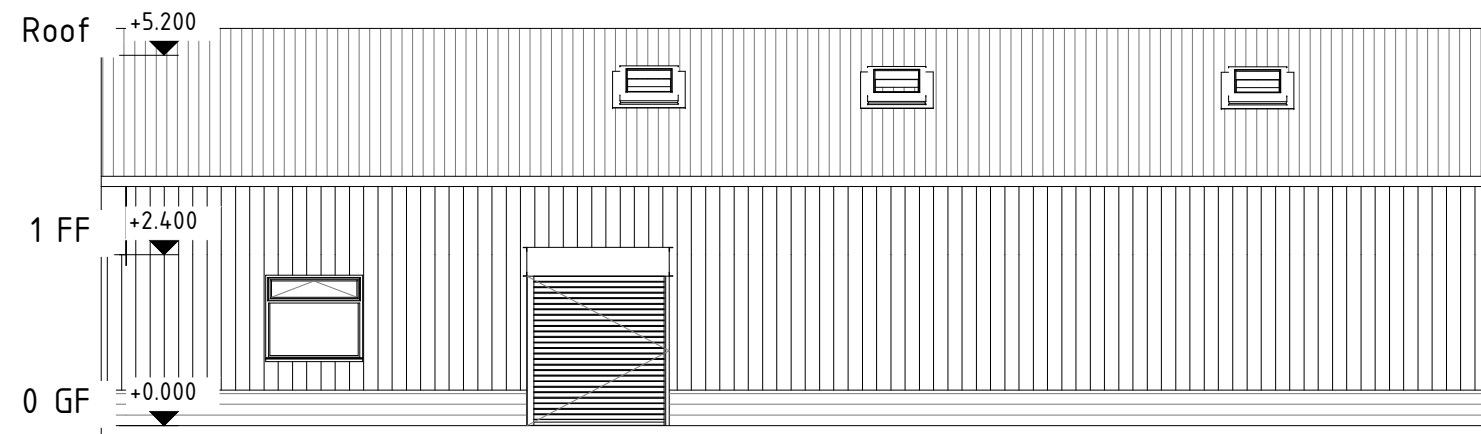
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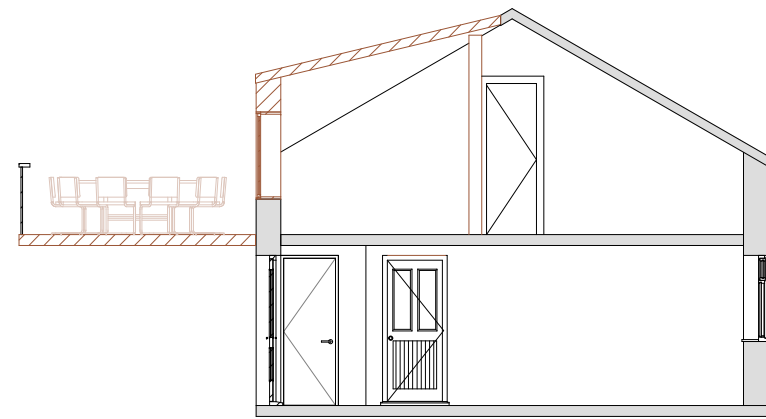
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- STRUCTURE TO BE
DEMOLISHED
- PROPOSED
STRUCTURE
- SHARED WALL

No.	Revision Description	Date

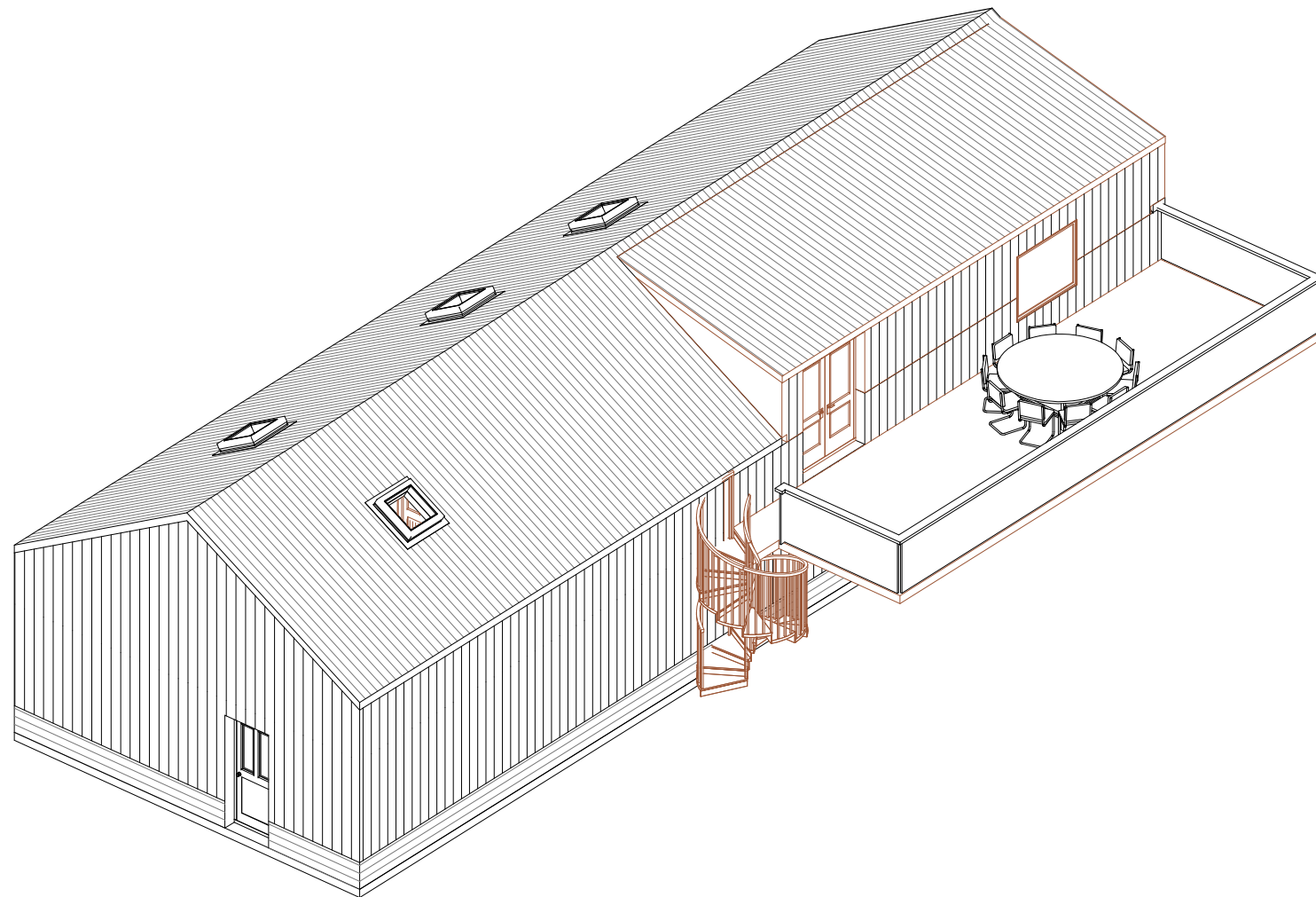
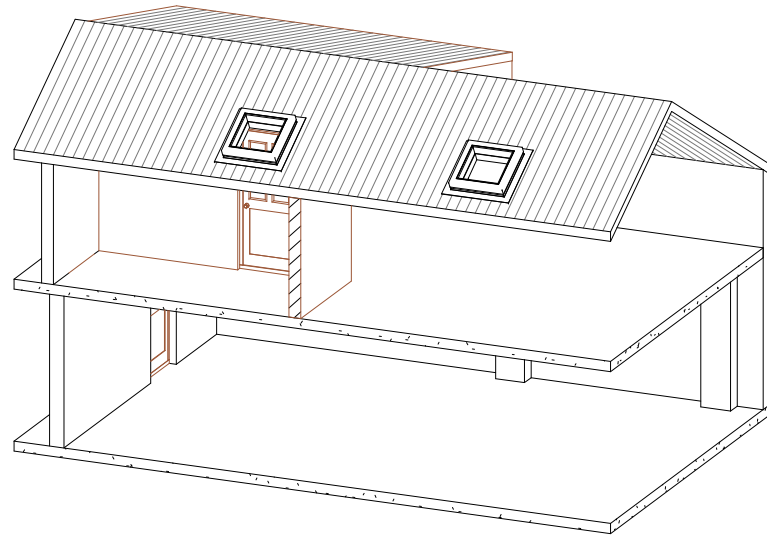
- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: 1:100 @ A3





PROPOSED SECTION A
Scale 1:100



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Arch - A112

TITLE

**PROPOSED
SECTION & 3D VIEW**

DATE

28-09-2023

LEGEND		EXISTING STRUCTURE
		STRUCTURE TO BE DEMOLISHED
		PROPOSED STRUCTURE
		SHARED WALL

No.	Revision Description	Date

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SCALE: 1:100 @ A3





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DRAWING NO. Arch - A113

TITLE STRUCTURAL PLANS

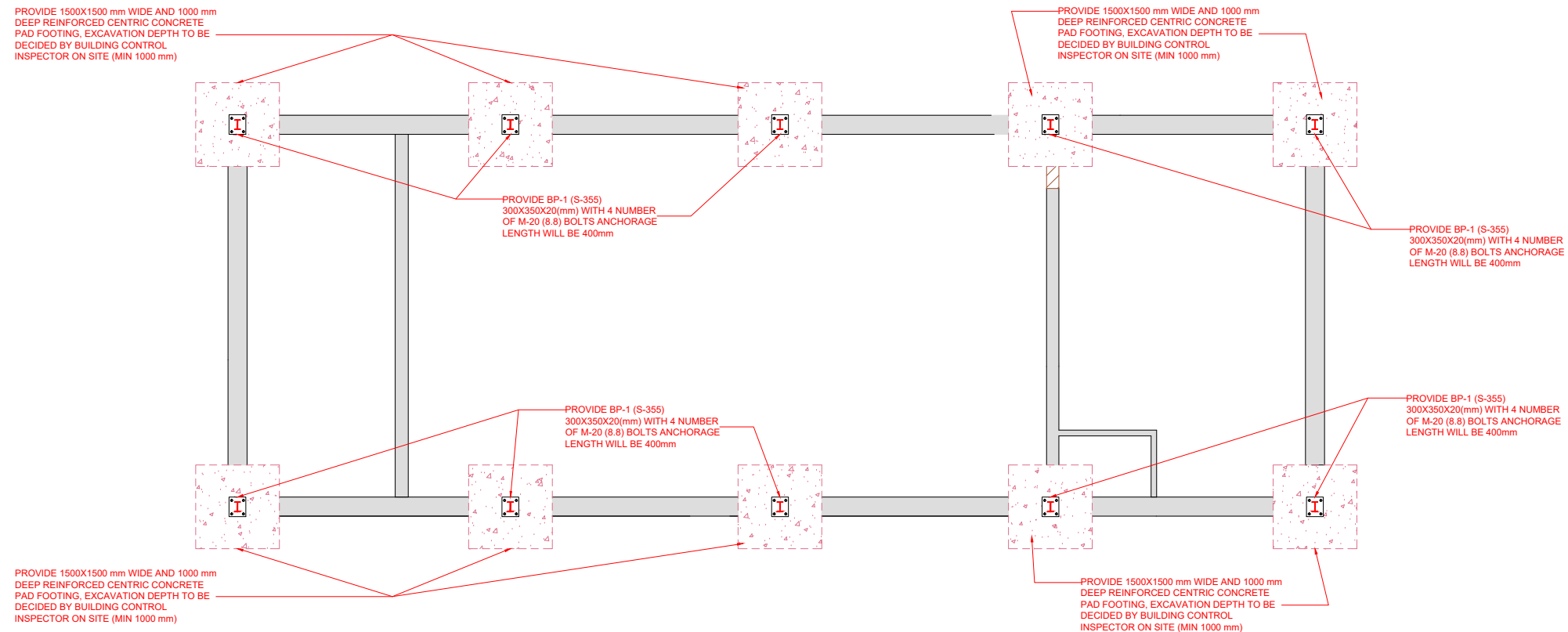
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		PROPOSED STRUCTURE
		SHARED WALL

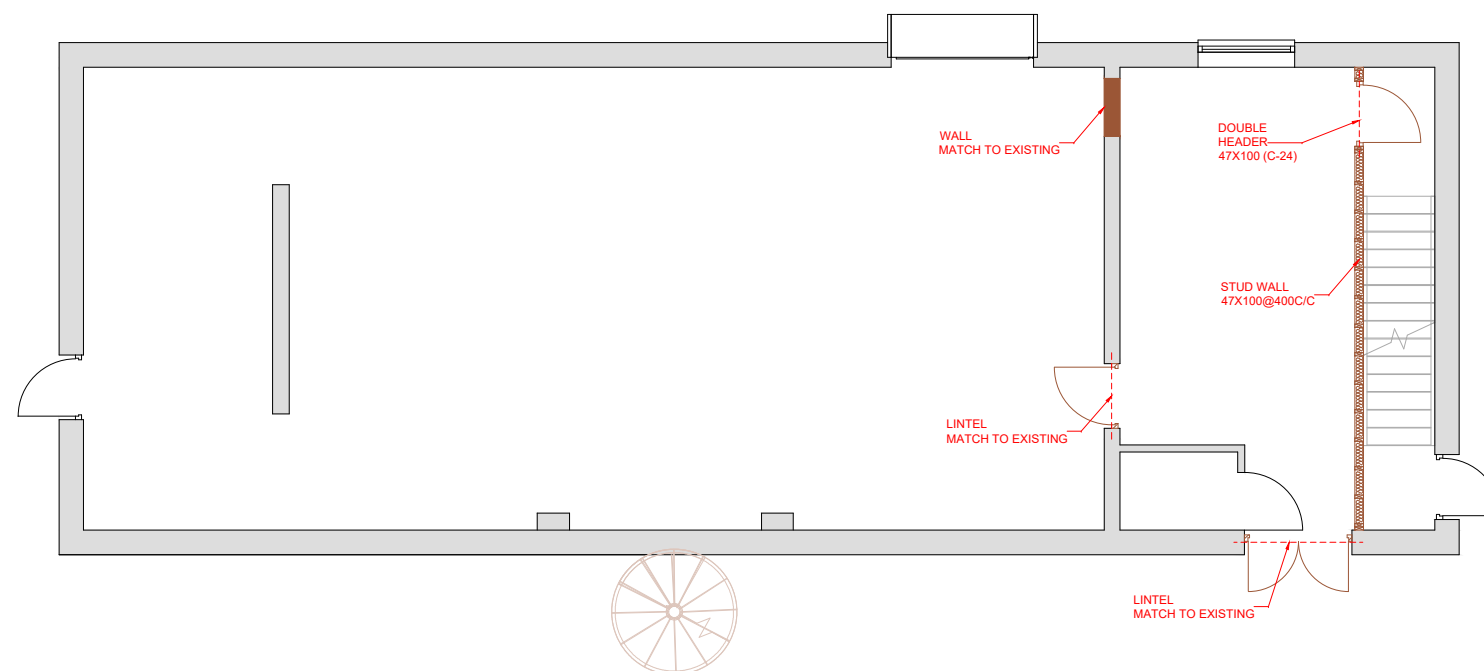
No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: 1:100 @ A3



GROUND FLOOR FOUNDATION PLAN
Scale 1:100



GROUND FLOOR WALL & LINTEL PLAN
Scale 1:100



1 STOP DESIGN & BUILD
128 CITY ROAD, LONDON
EC1V 2NX, UK
Email: info@1stopdesignandbuild.co.uk
Website: www.1stopdesignandbuild.co.uk
Phone no.: 0208 0512780

CLIENT:
James Lavender

ADDRESS:
Lavender Corner, King John
Bank, Walpole St Andrew,
Wisbech, Lincolnshire PE14 7JT

DRAWN BY MZ

DRAWING NO. Arch - A114

TITLE STRUCTURAL PLANS

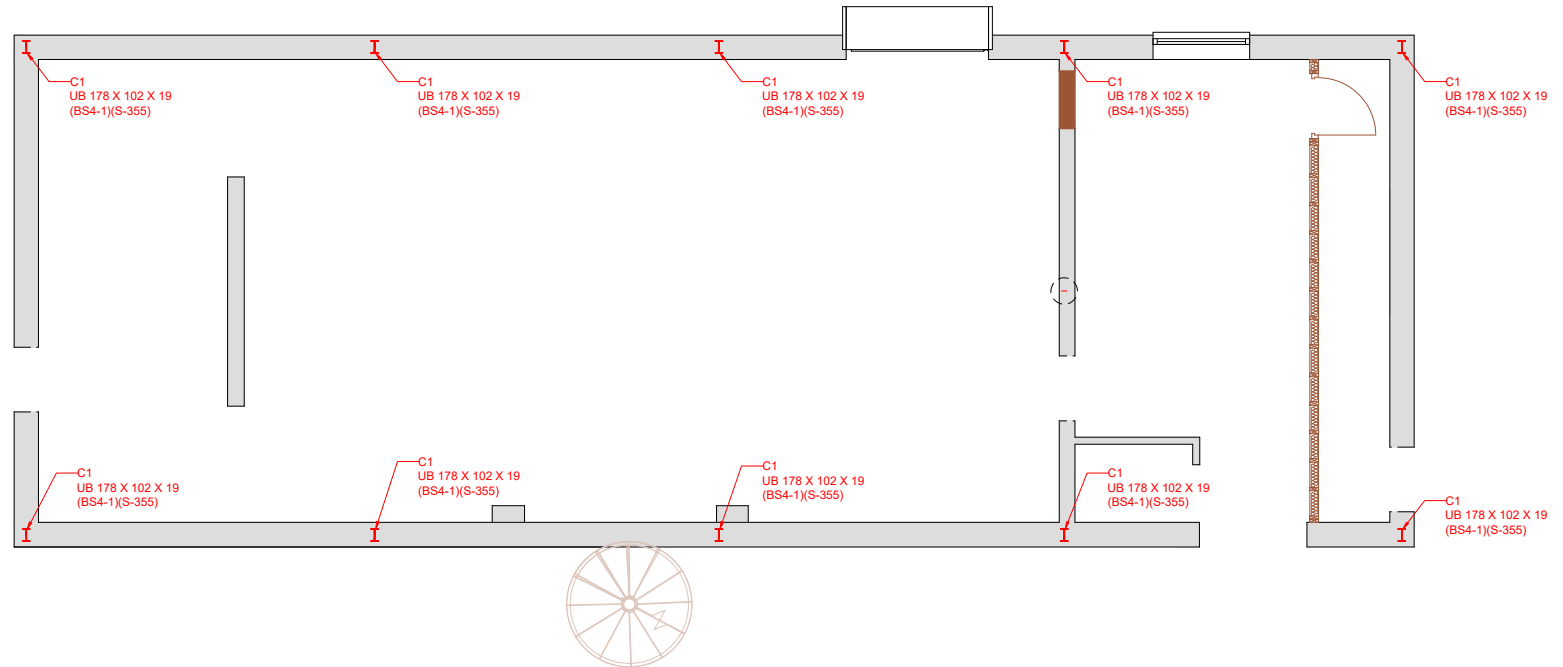
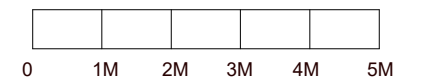
DATE 28-09-2023

LEGEND		EXISTING STRUCTURE
		STRUCTURE TO BE DEMOLISHED
		PROPOSED STRUCTURE
		SHARED WALL

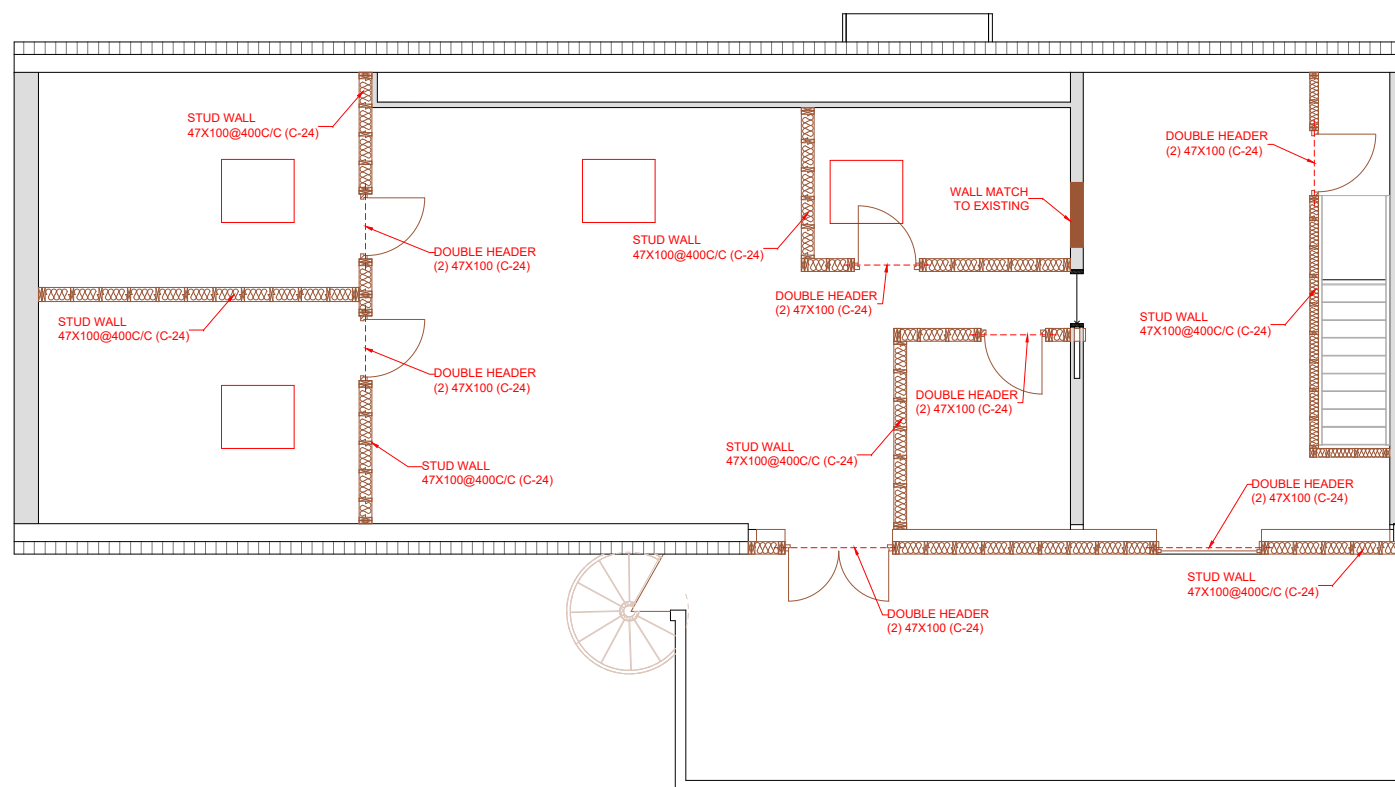
No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
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SCALE: 1:100 @ A3



GROUND FLOOR COLUMN PLAN
Scale 1:100



FIRST FLOOR WALL & LINTEL PLAN
Scale 1:100



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CLIENT:

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Wisbech, Lincolnshire PE14 7JT

DRAWN BY

MZ

DRAWING NO.

Arch - A115

TITLE

STRUCTURAL PLANS

DATE

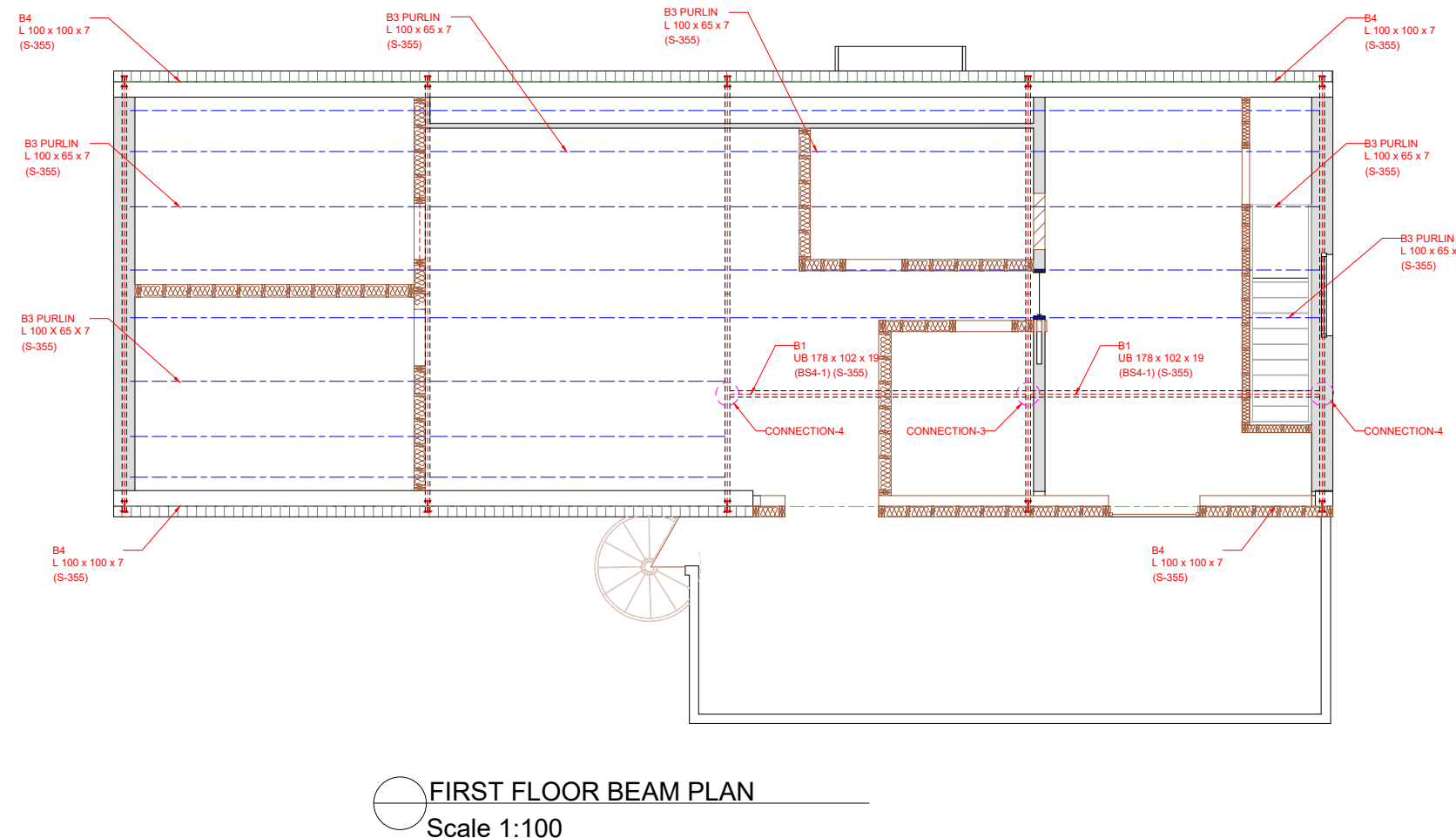
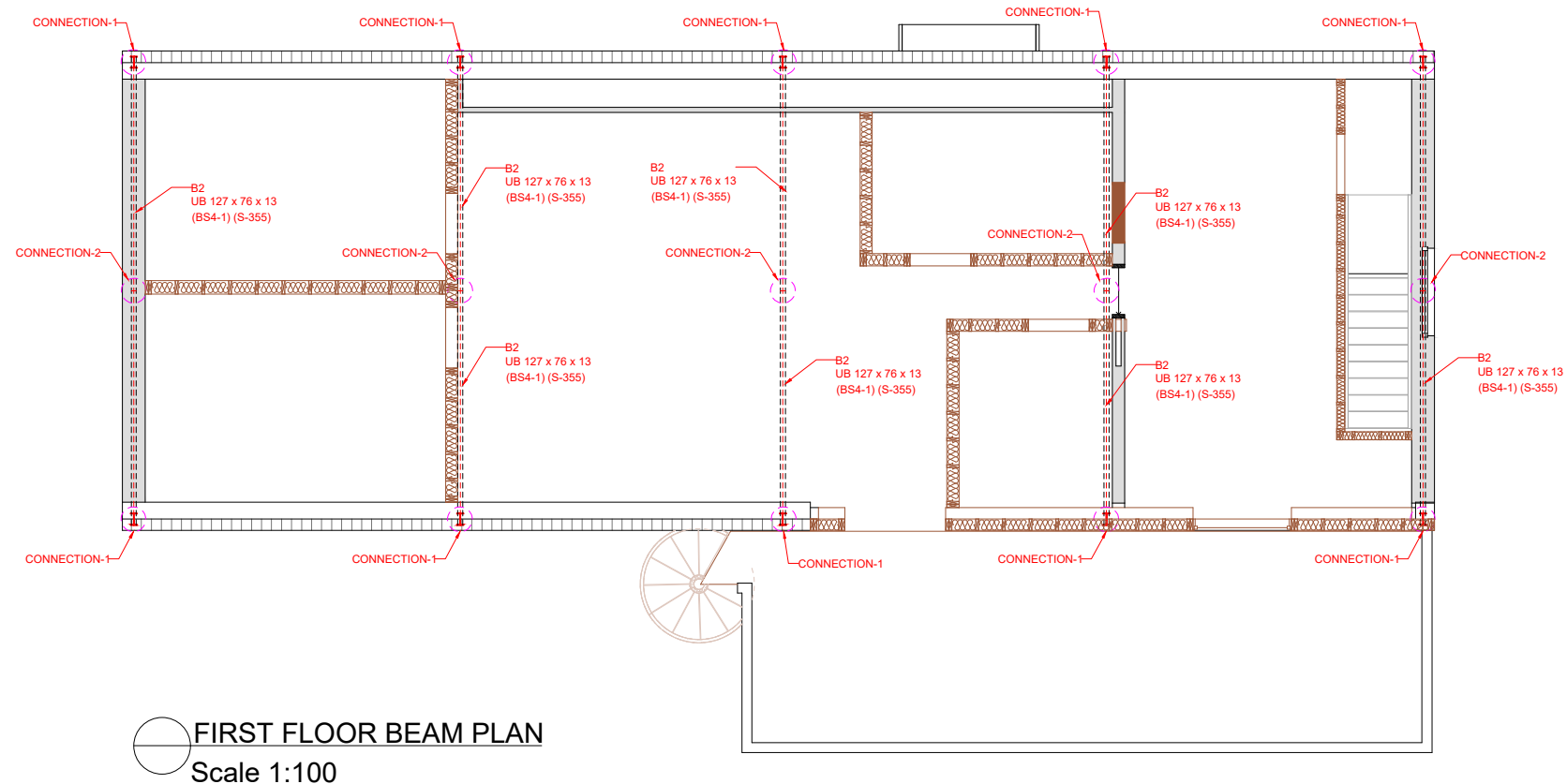
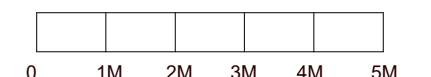
28-09-2023

LEGEND		EXISTING STRUCTURE
		STRUCTURE TO BE DEMOLISHED
		PROPOSED STRUCTURE
		SHARED WALL

No.	Revision Description	Date

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SCALE: 1:100 @ A3





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DRAWN BY MZ

DRAWING NO. Arch - A116

TITLE STRUCTURAL PLANS

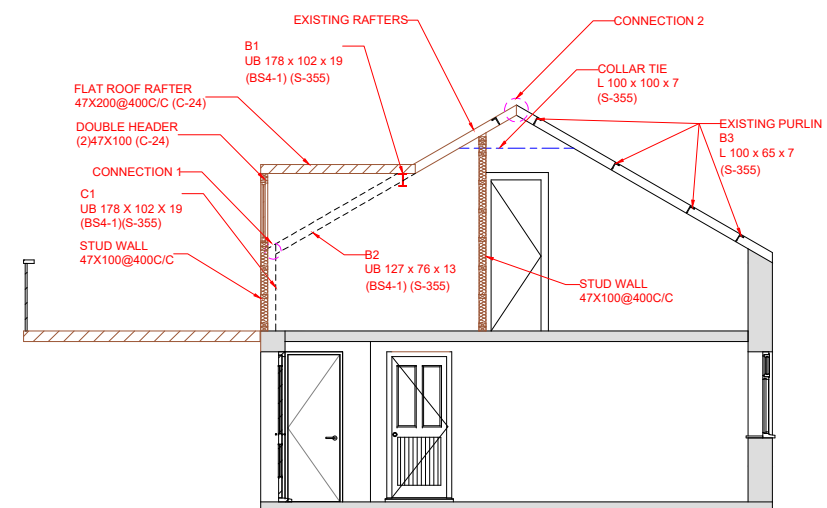
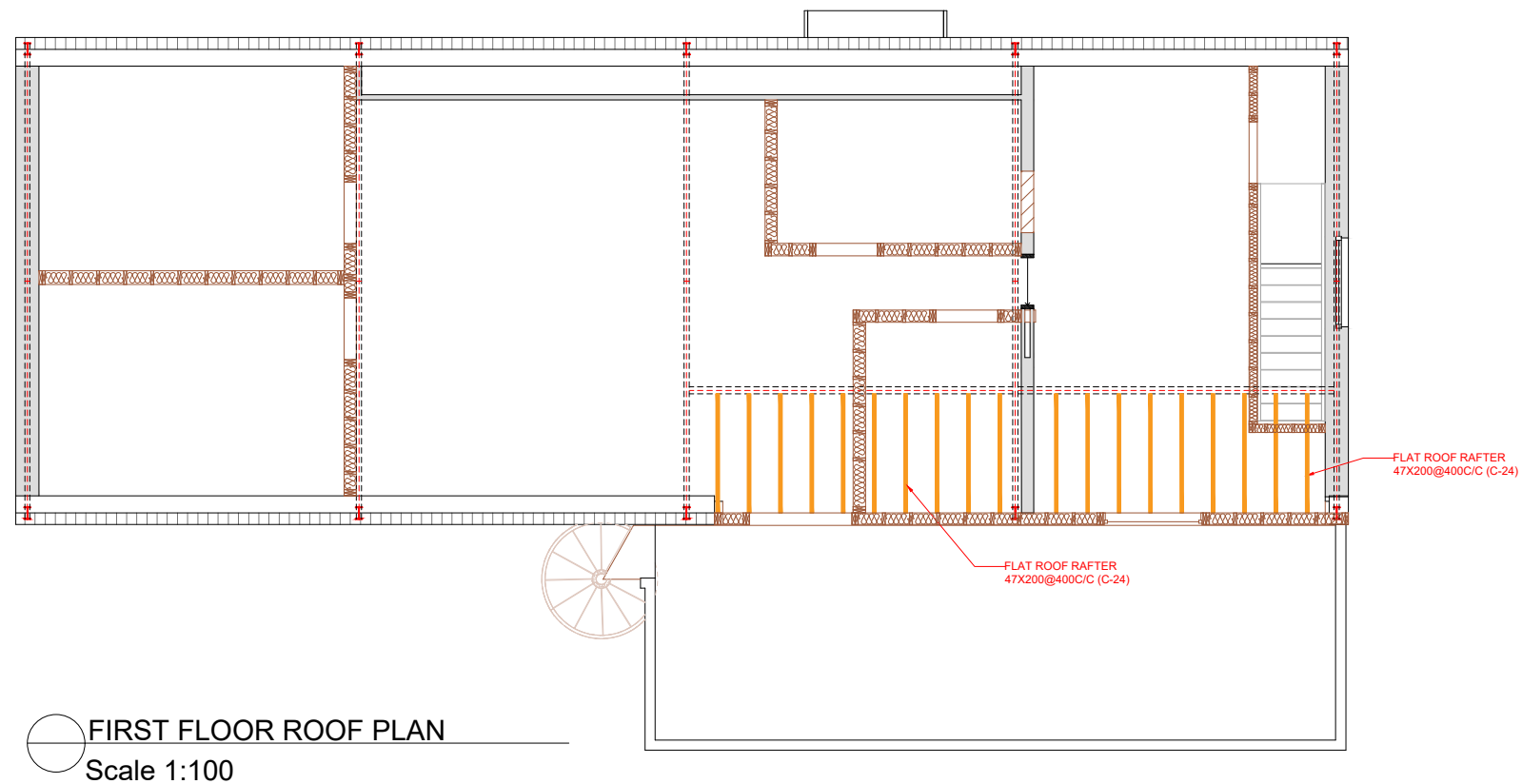
DATE 28-09-2023

LEGEND		EXISTING STRUCTURE
		STRUCTURE TO BE DEMOLISHED
		PROPOSED STRUCTURE
		SHARED WALL

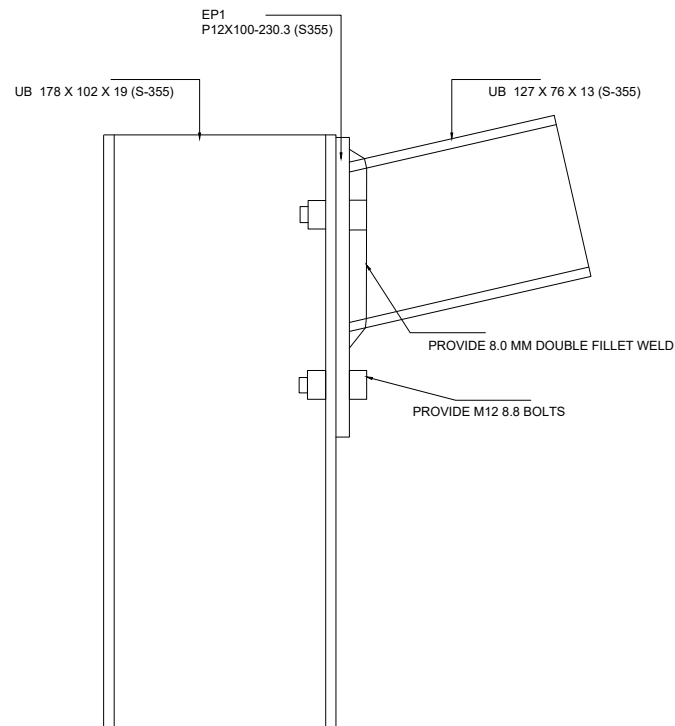
No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

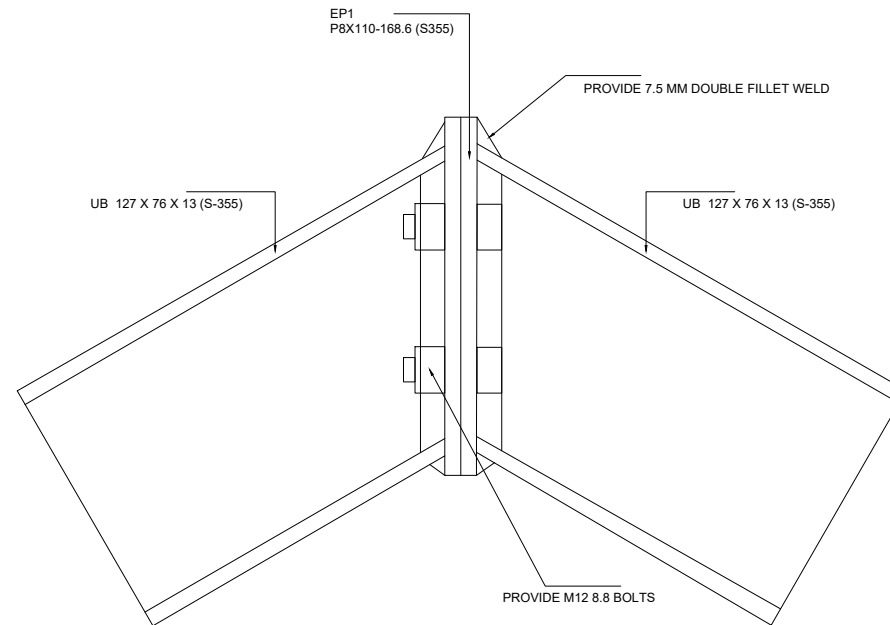
SCALE: 1:100 @ A3



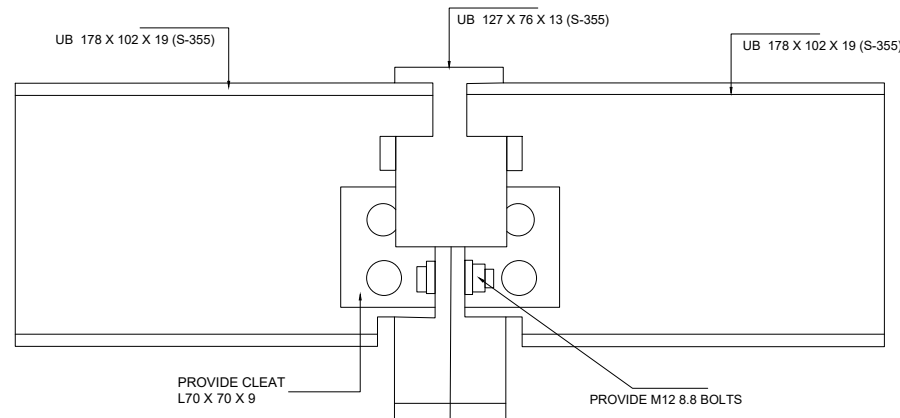
STRUCTURAL SECTION A
Scale 1:100



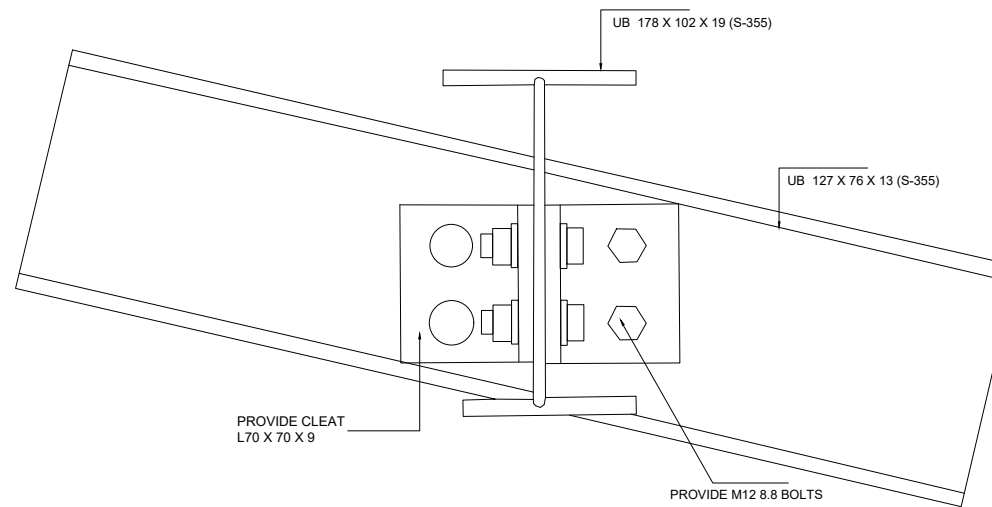
CONNECTION-1



CONNECTION-2



CONNECTION-3



CONNECTION-4

NOTE
FOR
CONNECTION
FABRICATION
DETAIL SEE
STRUCTURE
REPORT.



1 STOP DESIGN & BUILD
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Wisbech, Lincolnshire PE14 7JT

DRAWN BY	MZ
DRAWING NO.	Arch - A117
TITLE	STRUCTURAL DETAILS
DATE	28-09-2023
LEGEND	EXISTING STRUCTURE STRUCTURE TO BE DEMOLISHED PROPOSED STRUCTURE SHARED WALL

No.	Revision Description	Date

- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: N/A





1 STOP DESIGN & BUILD
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Phone no.: 0208 0512780

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Wisbech, Lincolnshire PE14 7JT

DRAWN BY MZ

DRAWING NO. Arch - A118

TITLE STRUCTURAL
DETAILS

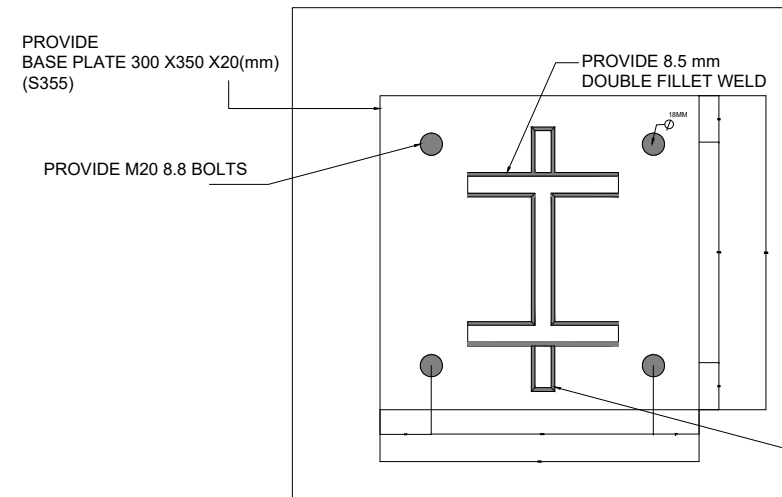
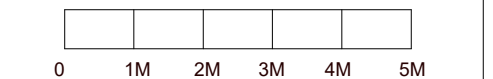
DATE 28-09-2023

LEGEND		EXISTING STRUCTURE
		STRUCTURE TO BE DEMOLISHED
		PROPOSED STRUCTURE
		SHARED WALL

No.	Revision Description	Date

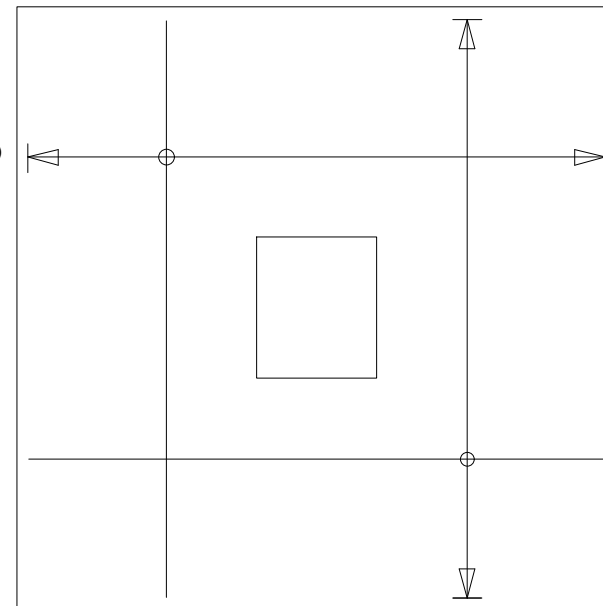
- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: N/A

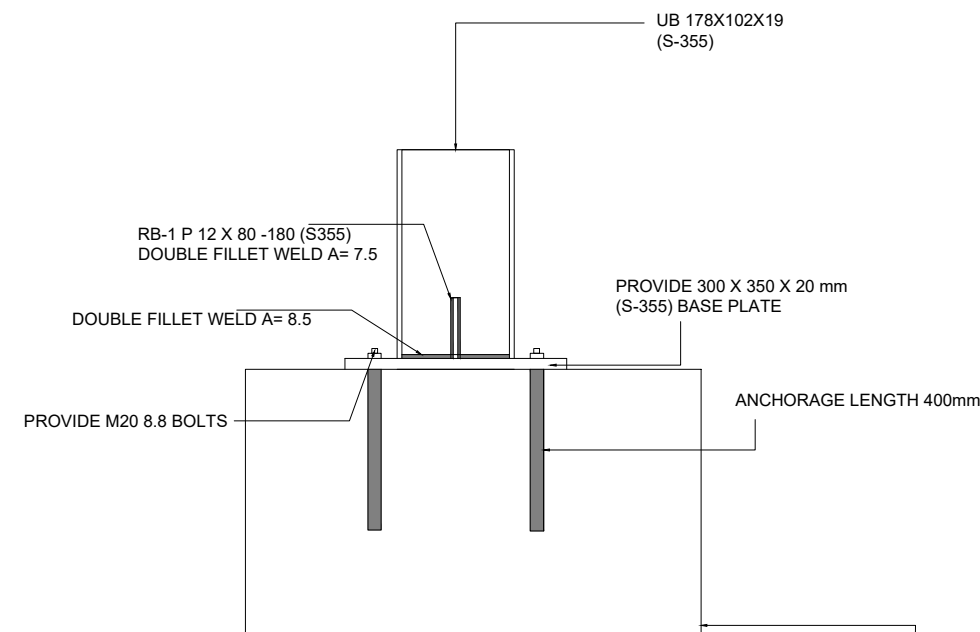


CONNECTION BP-1

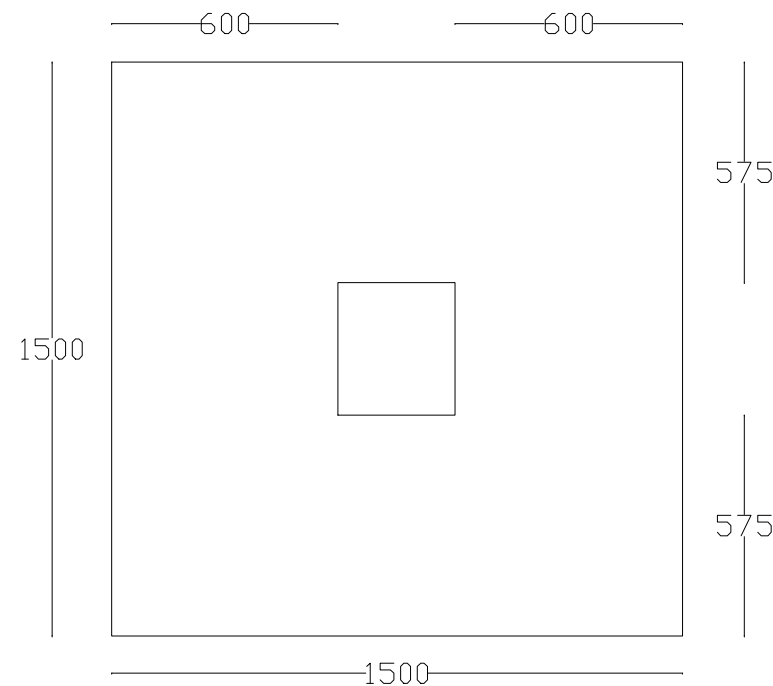
10 NO. 16 DIA. BARS BTM (150 C/C)



10 NO. 16 DIA. BARS BTM (150 C/C)



PROVIDE 1500LX1500W mm AND 1000 mm DEEP
REINFORCED CONCRETE
PAD FOOTING. EXCAVATION DEPTH
TO BE DECIDED BY BUILDING CONTROL INSPECTOR
ON SITE (MIN. 1000mm)



REINFORCED CONCRETE PAD FOOTING

NOTE
FOR
CONNECTION
FABRICATION
DETAIL SEE
STRUCTURE
REPORT.



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CLIENT:
James Lavender

ADDRESS:
Lavender Corner, King John
Bank, Walpole St Andrew,
Wisbech, Lincolnshire PE14 7JT

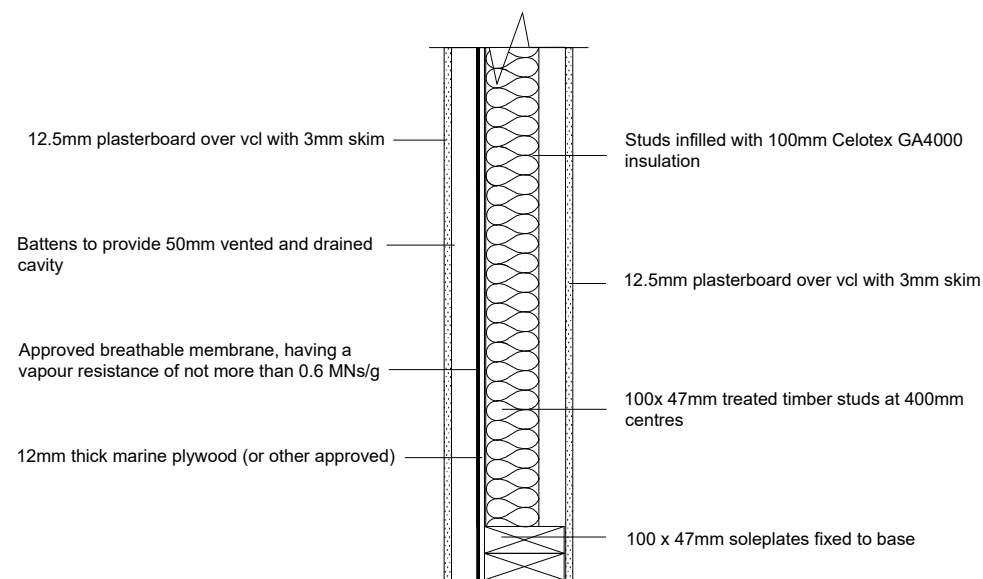
DRAWN BY	MZ
DRAWING NO.	Arch - A119
TITLE	STRUCTURAL DETAILS
DATE	28-09-2023
LEGEND	EXISTING STRUCTURE STRUCTURE TO BE DEMOLISHED PROPOSED STRUCTURE SHARED WALL

No.	Revision Description	Date

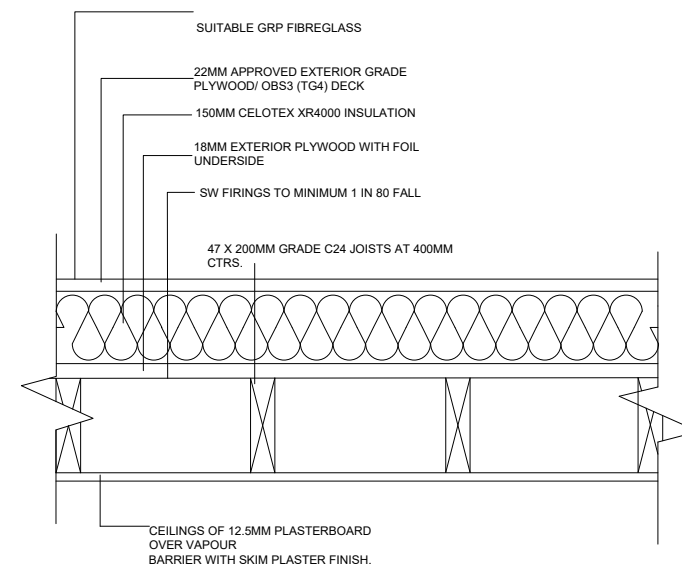
- All material and workmanship must fully comply with all relevant current British Standards and Codes of Practice.
- Drawings not to be scaled for construction.
- Contractor to check all dimensions before ordering any steel work.

SCALE: N/A

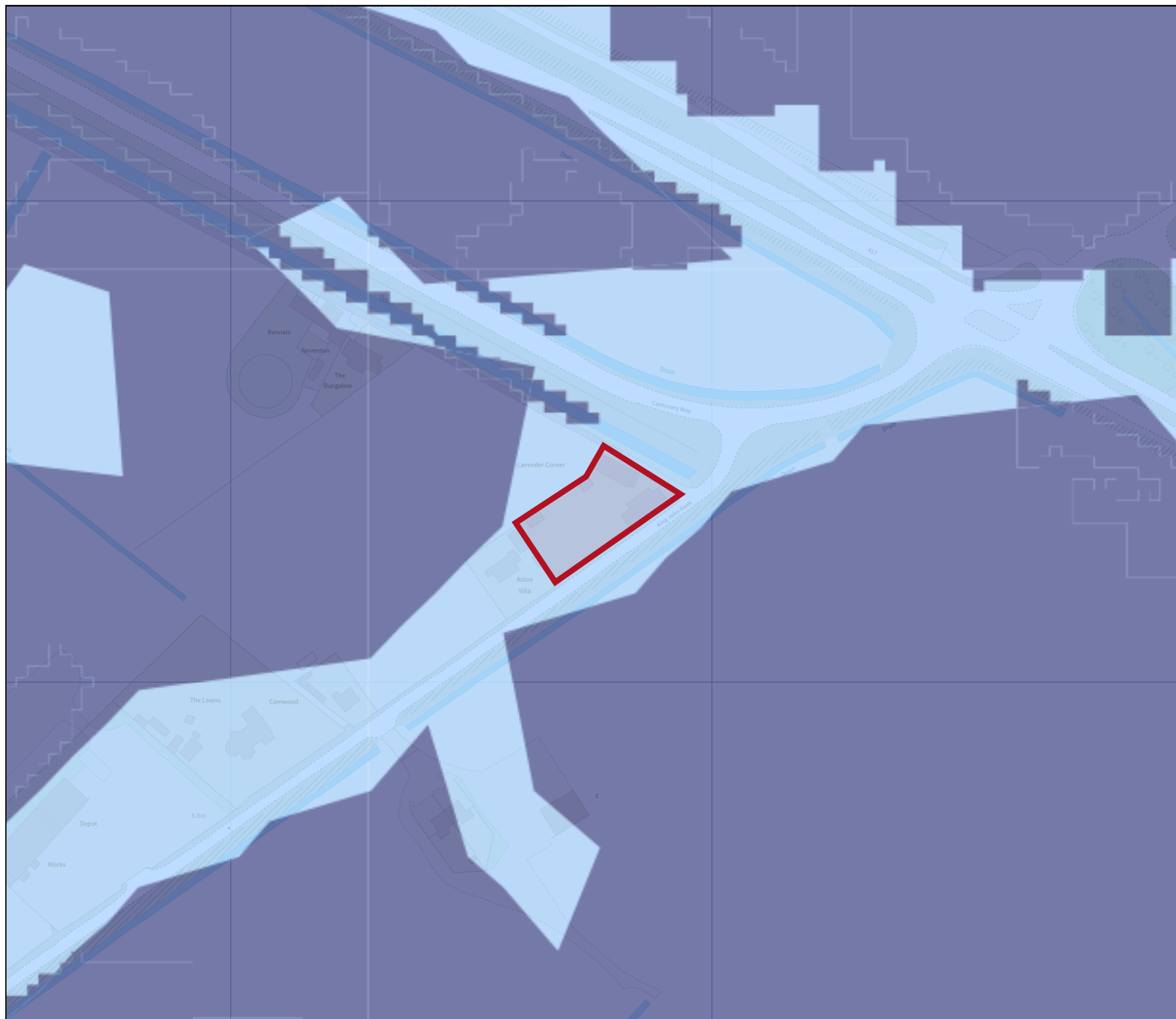
01M2M3M4M5M



STUD WALL
U-value 0.18 W/m²k



WARM FLAT ROOF
U-value 0.15 W/m²k



Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
550104/319889

Scale
1:2500

Created
27 Oct 2023 13:08

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

0 20 40 60m

Lydia
lydialavender@hotmail.com

Our ref: CCN-2023-328851

Date: 09/10/2023

Dear Lydia,

Provision of Flood Risk Information for King John Bank, Sutton Bridge

Thank you for your request for our flood risk information for the above site. The information is set out below and attached. It is important you read any contextual notes on the maps provided.

If you are preparing a Flood Risk Assessment (FRA) for this site, please note this information may not be sufficient by itself to produce an adequate FRA to demonstrate the development is safe over its lifetime. Additional information may be required to carry out an appropriate assessment of all risk, such as consequence of a breach in defences.

We aim to review our information on a regular basis, so if you are using this data more than twelve months from the date of this letter, please contact us again to check it is still valid.

Please read the letter in full as the information covered has been updated in **June 2023**.

1. Flood Map for Planning

The attached map includes the current Flood Map for Planning for your area. The map indicates the area at risk of flooding, **assuming no flood defences exist**, for a flood with a 0.5% chance of occurring in any year for flooding from the sea, or a 1% chance of occurring for fluvial (river) flooding. It also shows the extent of the Extreme Flood Outline which represents the extent of a flood with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater.

In some locations, such as around the fens and the large coastal floodplains, showing the area at risk of flooding assuming no defences may give a slightly misleading picture in that if there were no flood defences, water would spread out across these large floodplains. This flooding could cover large areas of land but to relatively shallow depths and could leave pockets of locally slightly higher land as isolated dry islands. It is important to understand the actual risk of the flooding to these dry islands, particularly in the event of defence failure.

The Flood Map for Planning also shows the location of formal raised flood defences and flood storage reservoirs. It represents areas at risk of flooding for present day only and does not take account of climate change.

The Flood Map for Planning only indicates the extent and likelihood of flooding from rivers or the sea. It should also be remembered flooding may occur from other sources such as surface water sewers, road drainage, etc.

2. Recorded Flood Outlines

With regards to the history of flooding I can advise we do not have any records of flooding in this area. It is possible recent flooding may have occurred which we are currently investigating, therefore this information may be subject to change. It is possible other flooding may have occurred which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.

3. Schemes in the area

There are no ongoing capital projects to reduce or sustain the current flood risk to this site.

4. Fluvial Flood Risk Information

This site is not considered to be at risk of flooding from main rivers.

The site may be at risk from local ordinary watercourses for which other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist) have responsibility.

5. Tidal Flood Risk Information

This site is considered to be at risk from tidal flooding.

5.1 Tidal Defence Information

The existing tidal defences protecting this site consist of earth embankments.

They are in fair condition and reduce the risk of flooding (at the defence) to a 0.67% (1 in 150) chance of occurring in any year. We inspect these defences routinely to ensure potential defects are identified.

Refer to paragraph 3 for details of any ongoing capital projects to reduce the flood risk to this site.

5.2 Tidal Flood Levels

The attached data sheets show our current best estimate for extreme tide levels.

Please read the information notes on the data sheets.

5.3 Tidal Hazard Mapping

For certain locations we have carried out modelling to map the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from overtopping and / or breaching of defences at specific locations for a number of scenarios.

At present this information is available along the full coastal / tidal floodplain, except the tidal Witham Haven in Boston (upstream of Hobhole) where only breaching and not overtopping has been modelled and the tidal River Welland upstream of Fosdyke Bridge where neither breaching nor overtopping are available.

The number of locations we have this information for is expected to increase in time.

The attached maps show the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from breaching of the defences at specific locations for the scenarios below. For some locations the breach mapping also includes flooding from overtopping if this is expected in that scenario. The location of modelled tidal breaches is shown on a separate attached map.

5.3.1 Tidal Hazard Mapping – Breaches

- Year 2006 0.5% (1 in 200) chance
- Year 2006 0.1% (1 in 1000) chance
- Year 2115 0.5% (1 in 200) chance
- Year 2115 0.1% (1 in 1000) chance

5.3.2 Tidal Hazard Mapping - Overtopping

The attached maps show the maximum values of flood depth, velocity and hazard rating (danger to people) resulting from simulated overtopping of defences for the following scenarios:

- Year 2006 0.5% (1 in 200) chance
- Year 2006 0.1% (1 in 1000) chance
- Year 2115 0.5% (1 in 200) chance
- Year 2115 0.1% (1 in 1000) chance

Your site is not affected by overtopping of the defences for the present day (2011) scenarios.

6. Development Planning

If you would like local guidance on preparing a flood risk assessment for a planning application, please contact our Sustainable Places team at LNplanning@environmentagency.gov.uk. It will help if you mention this data request and attach your site location plan.

We provide free preliminary advice; additional/detailed advice, review of draft FRAs and meetings are chargeable at a rate set to cover our costs, currently £100 (plus VAT) per hour of staff time. Further details are available on our website at <https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planningproposals>.

General advice on flood risk assessment for planning applications can be found on GOV.UK at <https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

Climate change will increase flood risk due to overtopping of defences. Please note, unless specified otherwise, the climate change data included has an allowance for 20% increase in flow. Updated guidance on how climate change could affect flood risk to new development - 'Flood risk assessments: climate change allowances' was published on GOV.UK in **July 2021**. The appropriate updated climate change allowance should be applied in a Flood Risk Assessment.

You should also consult the Strategic Flood Risk Assessment produced by your local planning authority.

7. Data Licence and Other Supporting Information

We respond to requests for recorded information we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

This information is provided in accordance with the Open Government Licence which can be found here: <http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Further information on flood risk can be found on the GOV.UK website at: <https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>

8. Other Flood Risk Management Authorities

The information provided with this letter relates to flood risk from main river or the sea. The Flood Map for Surface Water can be viewed at <https://www.gov.uk/check-long-term-flood-risk>

Additional information may be available from other risk management authorities, such as the Lead Local Flood Authority (ie top tier council) or Internal Drainage Board (where they exist).

I hope we have correctly interpreted your request. If you have any queries or would like to discuss the content of this letter further please contact Alexander Tan using the email address below and quoting our CCN reference number above.

Yours sincerely,

Ceres House, Searby Road, Lincoln, LN2 4DW

Calls to 03 numbers cost the same as calls to

Customer services line: 03708 506 506 standard geographic (ie numbers beginning with 01 Email: enquiries@environment-agency.gov.uk or 02) www.gov.uk/environment-agency



for Alastair Windler Welland and Nene Partnerships and Strategic Overview
Team Leader e-mail PSOWN@environment-agency.gov.uk

Enc.

Flood Map for Planning

Tidal Level Data Sheets - Map and Tables

Tidal Breach Points – Locations Map Hazard

Mapping – Breaching

Hazard Mapping – Overtopping

Ceres House, Searby Road, Lincoln, LN2 4DW

Calls to 03 numbers cost the same as calls to

Customer services line: 03708 506 506 standard geographic (ie numbers beginning with 01 Email:
enquiries@environment-agency.gov.uk or 02) www.gov.uk/environment-agency

Flood Map centred on TF 50111 19891 - created October 2023 [Ref: CCN-2023-328851]



Scale 1:10,000



- Legend**
- Main Rivers
 - Raised Defences
 - Flood Storage Areas
 - Areas at Risk of Flooding from Rivers or the Sea
 - Extreme Flood Outline

Dark blue shows the area that could be affected by flooding, either from rivers or the sea, if there were no flood defences. This area could be flooded:

- from the sea by a flood that has a 0.5% (1 in 200) or greater chance of happening each year.
- or from a river by a flood that has a 1% (1 in 100) or greater chance of happening each year.

Light blue shows the extent of the Extreme Flood Outline, which represents the extent of a flood event with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater.

These two colours show the extent of the natural floodplain if there were no flood defences or certain other manmade structures and channel improvements. Sites outside the two extents, but behind raised defences, may be affected by flooding if the defences are overtopped or fail.

Created by the Partnerships and Strategic Overview Team, Kettering

East Coast and Wash - 2018 Coastal Flood Boundary [CFB] Dataset

Key Node Points



Scale 1:550,000

East Coast and Wash

See seperate data sheet for predicted flood levels

Created by the Partnerships and Strategic Overview Team, Lincoln

East Coast and Wash: Immingham to the West Lighthouse

2018 Coastal Flood Boundary Extreme Sea Levels

CFB REF	LOCATION	EASTING	NORTHING	ANNUAL CHANCE (1 IN X) OF TIDE LEVEL IN METRES ODN																						
				1			10			50			100			200			300			1000				
				Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound			Confidence Bound				
				2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%	97.5%	2.5%	50%
3888	Immingham	520440	417625	4.16	4.17	4.19	4.50	4.53	4.62	4.73	4.80	5.00	4.83	4.93	5.19	4.93	5.06	5.41	4.98	5.14	5.55	5.15	5.38	6.01		
3890	Haborough Marsh	522100	416512	4.14	4.15	4.17	4.48	4.51	4.60	4.70	4.77	4.97	4.80	4.90	5.16	4.90	5.03	5.38	4.94	5.10	5.51	5.11	5.34	5.97		
3898	Grimsby	529295	413162	3.98	3.99	4.01	4.31	4.34	4.43	4.53	4.60	4.80	4.61	4.71	4.97	4.71	4.84	5.19	4.74	4.90	5.31	4.88	5.11	5.74		
3906	Buck Beck	534709	407369	3.87	3.88	3.90	4.19	4.23	4.31	4.41	4.50	4.68	4.50	4.61	4.86	4.61	4.75	5.10	4.64	4.82	5.22	4.80	5.05	5.66		
3910	Tetney	538035	405537	3.85	3.86	3.89	4.17	4.22	4.30	4.40	4.50	4.67	4.49	4.61	4.86	4.60	4.75	5.10	4.63	4.82	5.21	4.80	5.06	5.66		
3918	Donna Nook	544641	401997	3.82	3.83	3.86	4.14	4.19	4.27	4.38	4.48	4.65	4.47	4.60	4.85	4.58	4.74	5.10	4.63	4.82	5.22	4.81	5.08	5.68		
3928	Saltfleet	549131	393360	3.78	3.79	3.82	4.11	4.16	4.26	4.36	4.46	4.64	4.47	4.59	4.86	4.57	4.74	5.11	4.63	4.83	5.25	4.83	5.11	5.74		
3942	Boygrift	555131	380860	3.72	3.74	3.77	4.06	4.11	4.22	4.33	4.43	4.65	4.43	4.57	4.87	4.56	4.73	5.13	4.62	4.83	5.28	4.85	5.15	5.82		
3968	Gibraltar Point	557652	356181	4.16	4.17	4.20	4.51	4.56	4.67	4.76	4.85	5.08	4.85	4.97	5.27	4.94	5.10	5.49	4.99	5.18	5.63	5.14	5.41	6.09		
3992_14	Hobhole	535990	340116	4.96	4.97	5.01	5.40	5.44	5.56	5.66	5.76	5.98	5.78	5.90	6.20	5.88	6.04	6.44	5.92	6.11	6.57	6.03	6.31	6.99		
	Grand Sluice*	532366	344510	4.93	4.94	4.98	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3		
3992_9	Boston Barrier	532754	342852	4.93	4.94	4.98	5.41	5.45	5.57	5.73	5.83	6.05	5.85	5.97	6.27	5.93	6.09	6.49	5.94	6.13	6.59	5.98	6.26	6.94		
3992_5	Fosdyke Bridge	531886	332234	4.87	4.88	4.92	5.31	5.35	5.47	5.58	5.68	5.90	5.71	5.83	6.13	5.82	5.98	6.38	5.87	6.06	6.52	6.01	6.29	6.97		
4008	West Lighthouse	550094	329971	4.87	4.88	4.91	5.21	5.26	5.37	5.46	5.56	5.78	5.56	5.68	5.98	5.66	5.82	6.21	5.71	5.90	6.35	5.86	6.14	6.81		
-	Marsh Road	525988	324065	-	5.04	-	-	5.44	-	-	5.73	-	-	5.85	-	-	5.98	-	-	-	-	-	-	-		
-	Wisbech	546110	309940	-	4.83	-	-	5.25	-	-	5.53	-	-	5.66	-	-	5.78	-	-	-	-	-	-	-		

-	Dog-in-aDoublet	527200	299287	-	3.67	-	-	4.00	-	-	4.22	-	-	4.32	-	-	4.42	-	-	-	-	-	-
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See next page for notes

Customer services line: 03708 506 506
Calls to 03 numbers cost the same as calls to standard geographic numbers
(i.e. numbers beginning with 01 or 02)

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East Coast and Wash: Immingham to the West Lighthouse

2018 Coastal Flood Boundary Extreme Sea Levels

NOTES:

The following notes apply to all CFB sites (ie all on table excluding Marsh Road, Wisbech, Dog-in-a-Doublet)

- The base date for the data is 2017.
- The levels are still water levels. Depending on the use of the data it may be necessary to consider wave heights and / or joint probability analysis of water level and other variables.
- Levels for other annual chance probabilities are available if required.
- For additional information relating to the 2018 Coastal Flood Boundary Extreme Sea Levels or to access the full dataset for the above sites or intermediate locations refer to the Defra Metadata Catalogue at <https://deframetadata.com/geonetwork/srv/eng/catalog.search#/metadata/84a5c7c0-d465-11e4-b0bd-f0def148f590>

The following notes apply to all Marsh Road, Wisbech, Dog-in-a-Doublet

- The base date for the data is 2006
- The levels are still water levels. Depending on the use of the data it may be necessary to consider wave heights and / or joint probability analysis of water level and other variables.
- Levels for other annual chance probabilities are available if required.
- These levels will be updated as their respective tidal river models are updated.

The following notes apply to Grand Sluice

- The data is based on CFB 2018 data for Boston Barrier site, capped at 5.3mAOD to reflect use of the barrier.
- The base date for the data is 2017
- The levels are still water levels. Depending on the use of the data it may be necessary to consider wave heights and / or joint probability analysis of water level and other variables.
- For additional information relating to the 2018 Coastal Flood Boundary Extreme Sea Levels or to access the full dataset for the above sites or intermediate locations refer to the Defra Metadata Catalogue at <https://deframetadata.com/geonetwork/srv/eng/catalog.search#/metadata/84a5c7c0-d465-11e4-b0bd-f0def148f590>

Customer services line: 03708 506 506

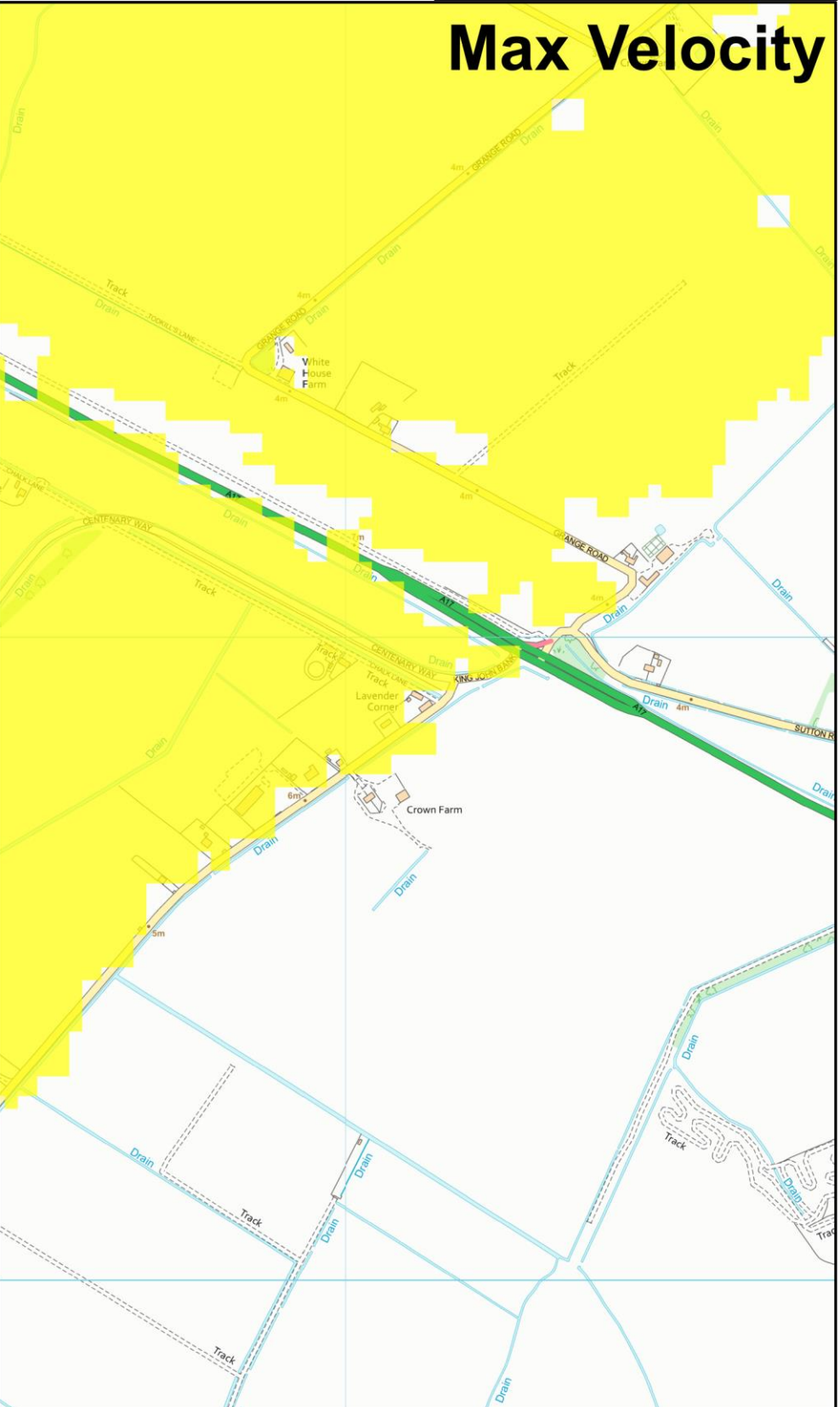
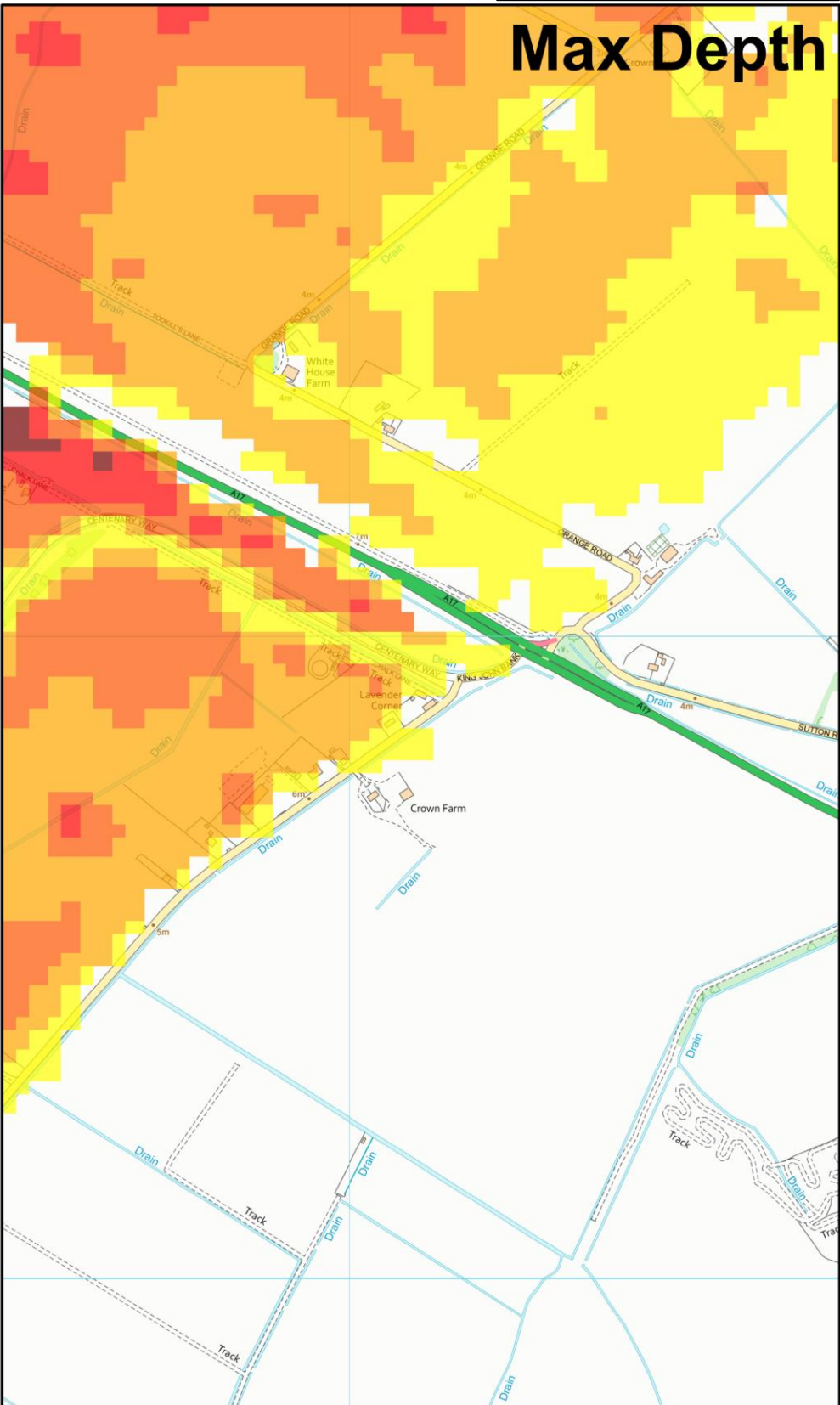
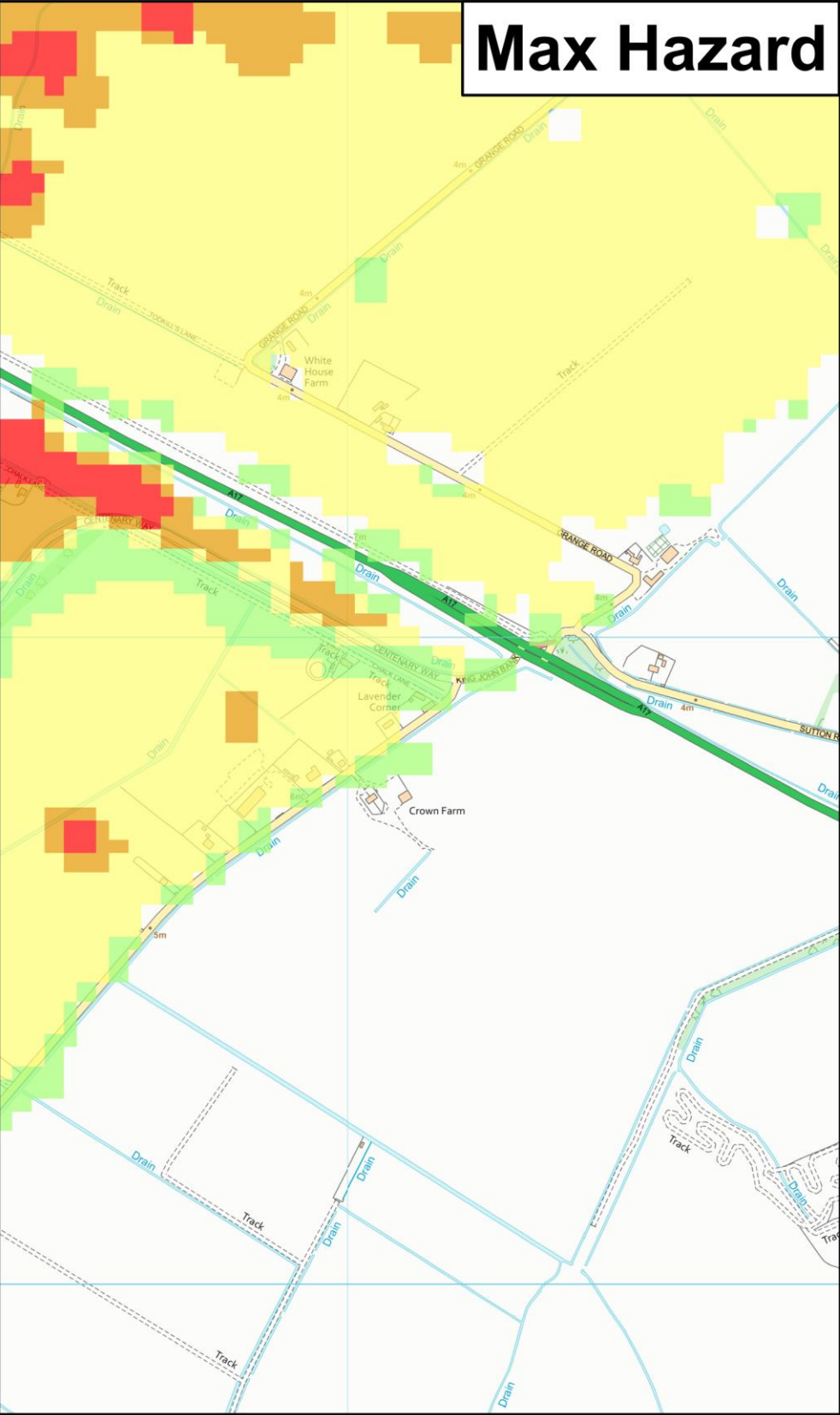
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^ Modelled Breach Locations 03.5714 Kilometers	This map idicates the location of where we have modelled the consequence of breaches in the defences along the coastline and tidal rivers. We have mapped the maximum values of Hazard Rating (Danger to People), Depth and Velocity. We have not assumed that all breaches occur at the same time, but have modelled each breach individually and overlaid the results to find the maximum values. Our modelling only considers the consequences of a breach, it does not make any assumption about the likelihood of a breach occurring. Our defences generally provide a good standard of flood defence but a risk of breaching remains. Please contact the Environment Agency for information on how these maps are used in the management of flood risk. General Enquiries No: 03708 506 506. Weekday calls cost 5p plus up to 6ppm from BT Weekend Unlimited. Mobile and other providers charges may vary.	Produced by the Partnership and Strategic Overview Team, Lincoln  Environment Agency General Enquiries No: 03708 506 506 Northern Area Tidal Hazard Mapping Location of Modelled Breaches This map is reproduced by permission of Ordnance Survey on behalf of The Controller of His Majesty's Stationary Office. Crown copyright. All rights reserved. Environment Agency 100024198, 2023 Unauthorized reproduction infringes Crown copyright and may lead to prosecution and/or proceedings.
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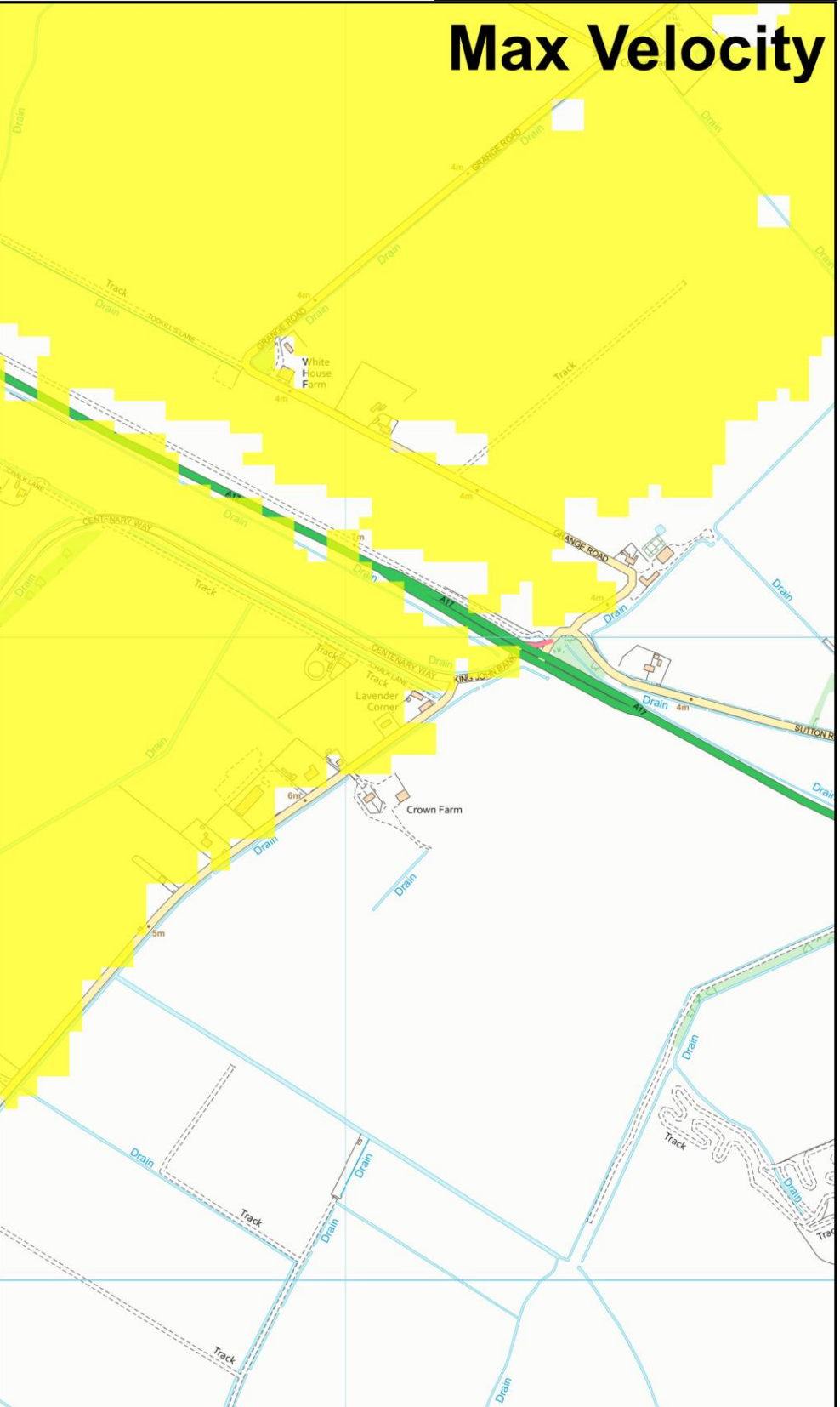
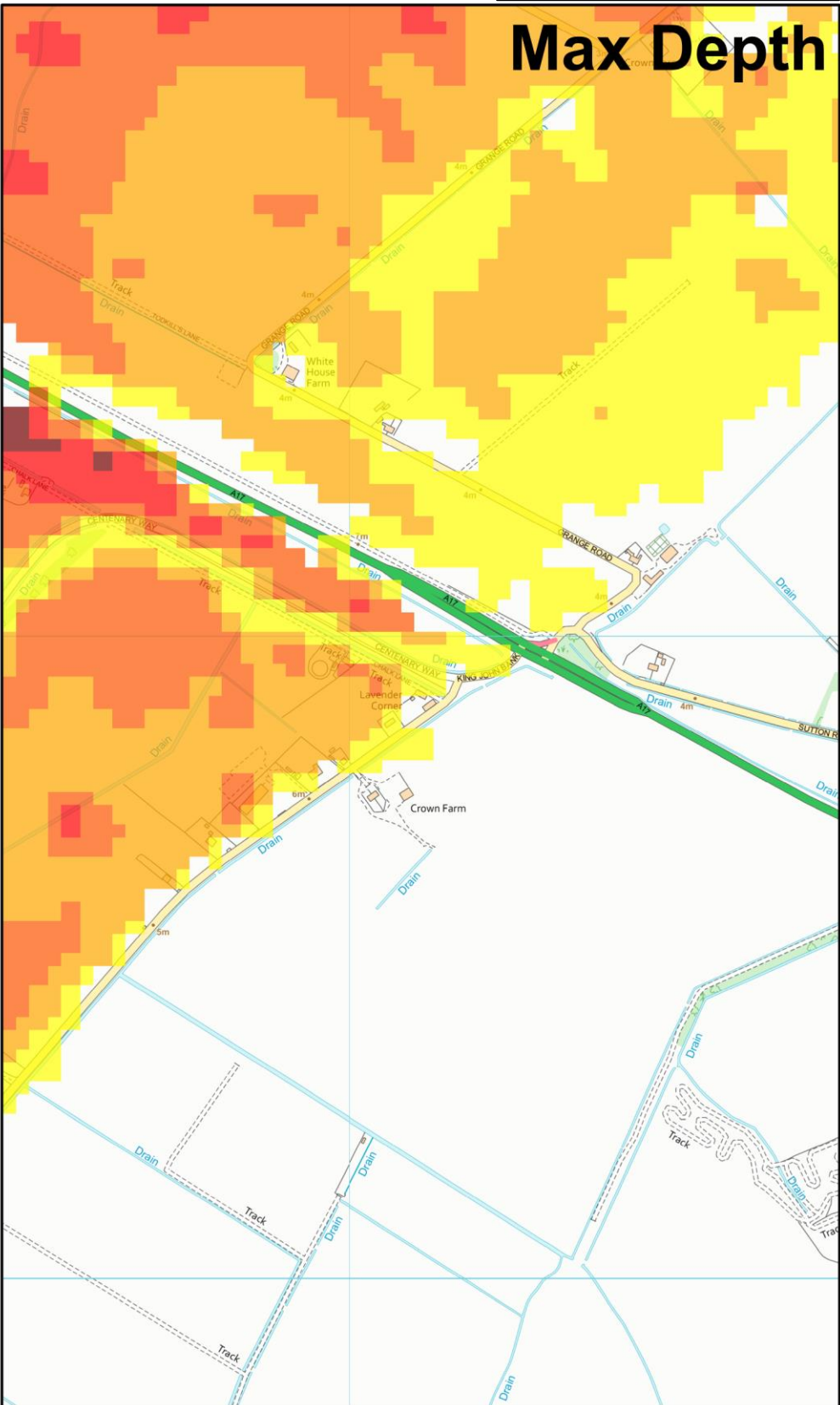
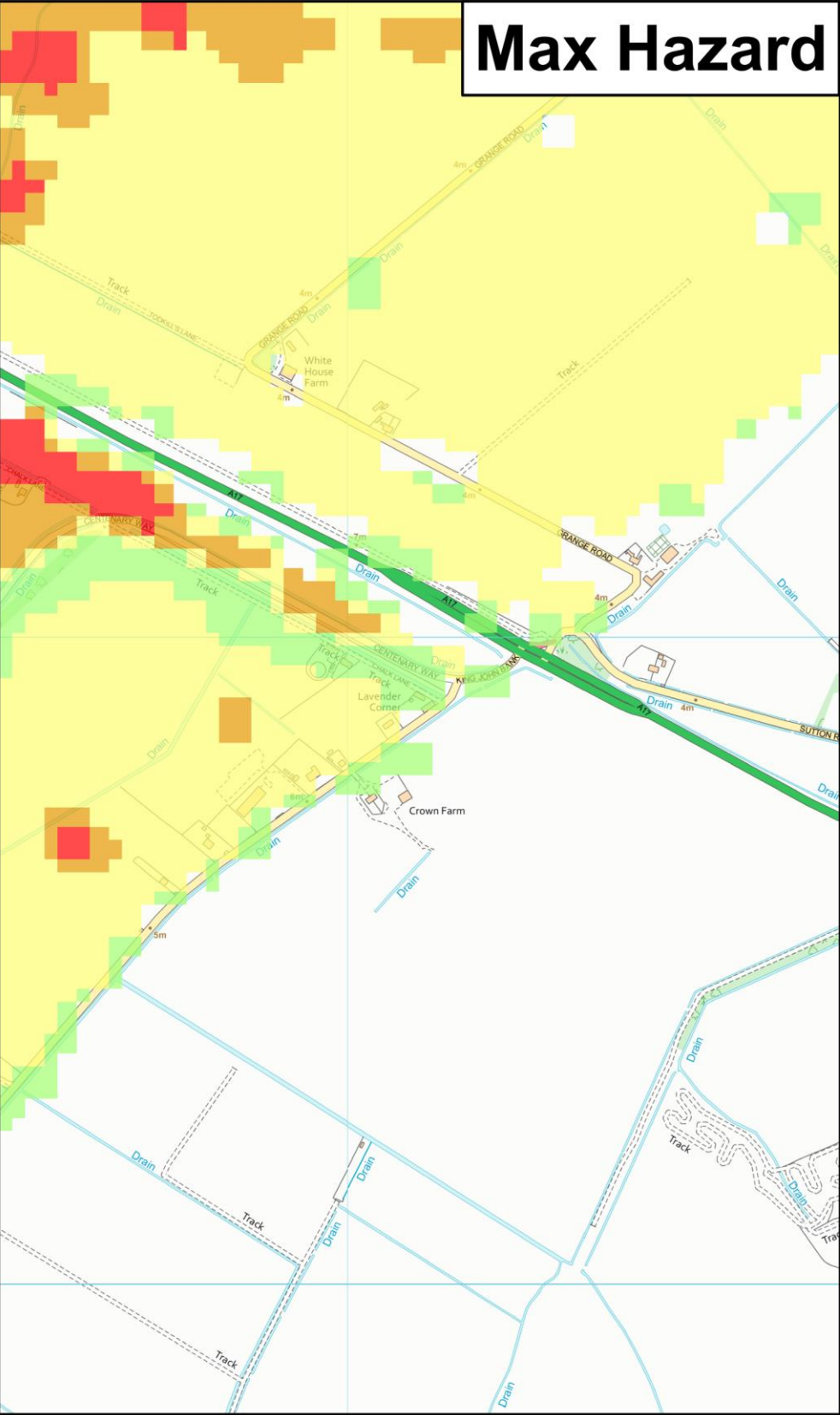


^ Modelled Breach Locations - see also the accompanying plan "Location of Modelled Breaches"		
Max Hazard	Max Depth (m)	Max Velocity (m/s)

Date Printed		Scenario year		Scenario Annual Chance		CCN Number					

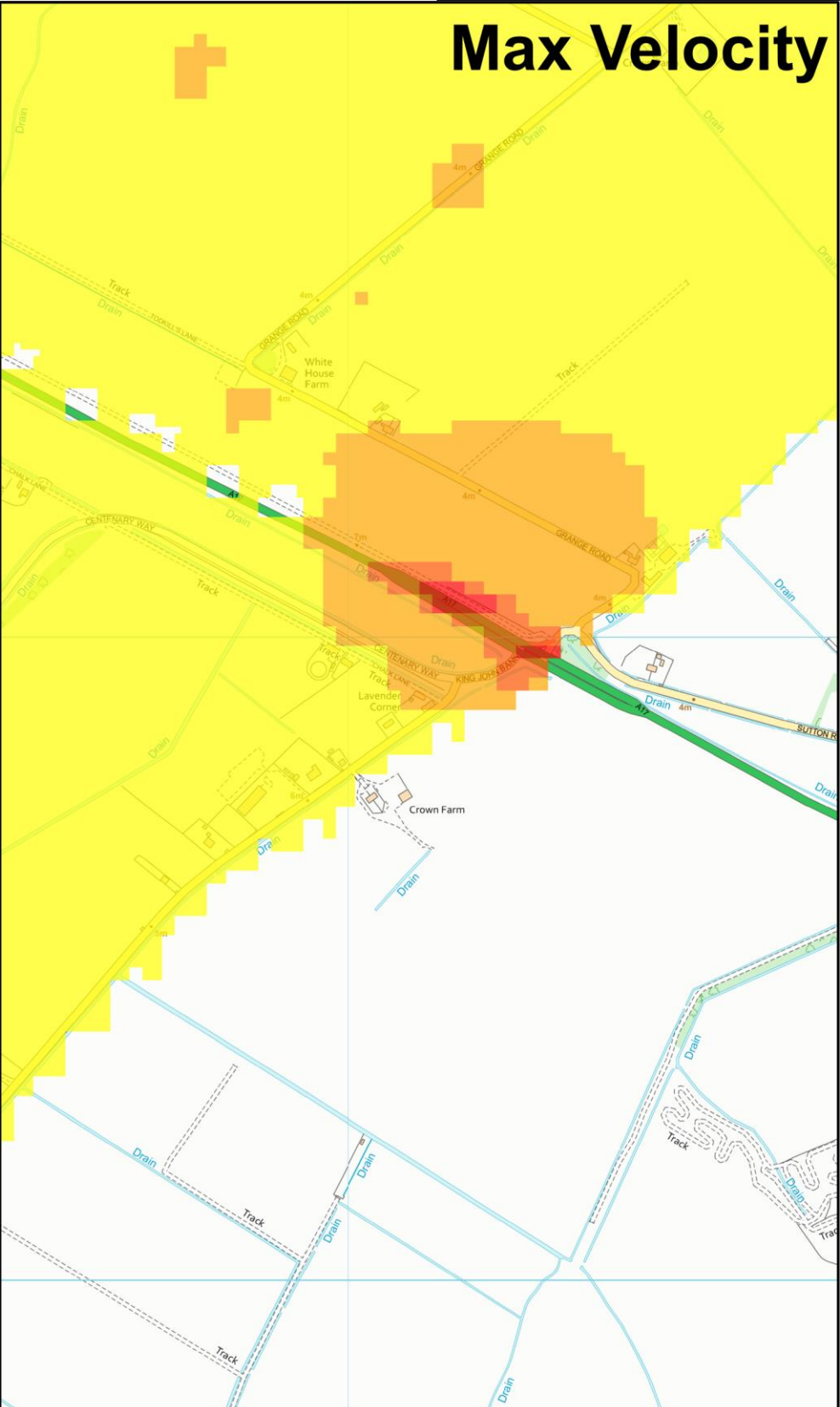
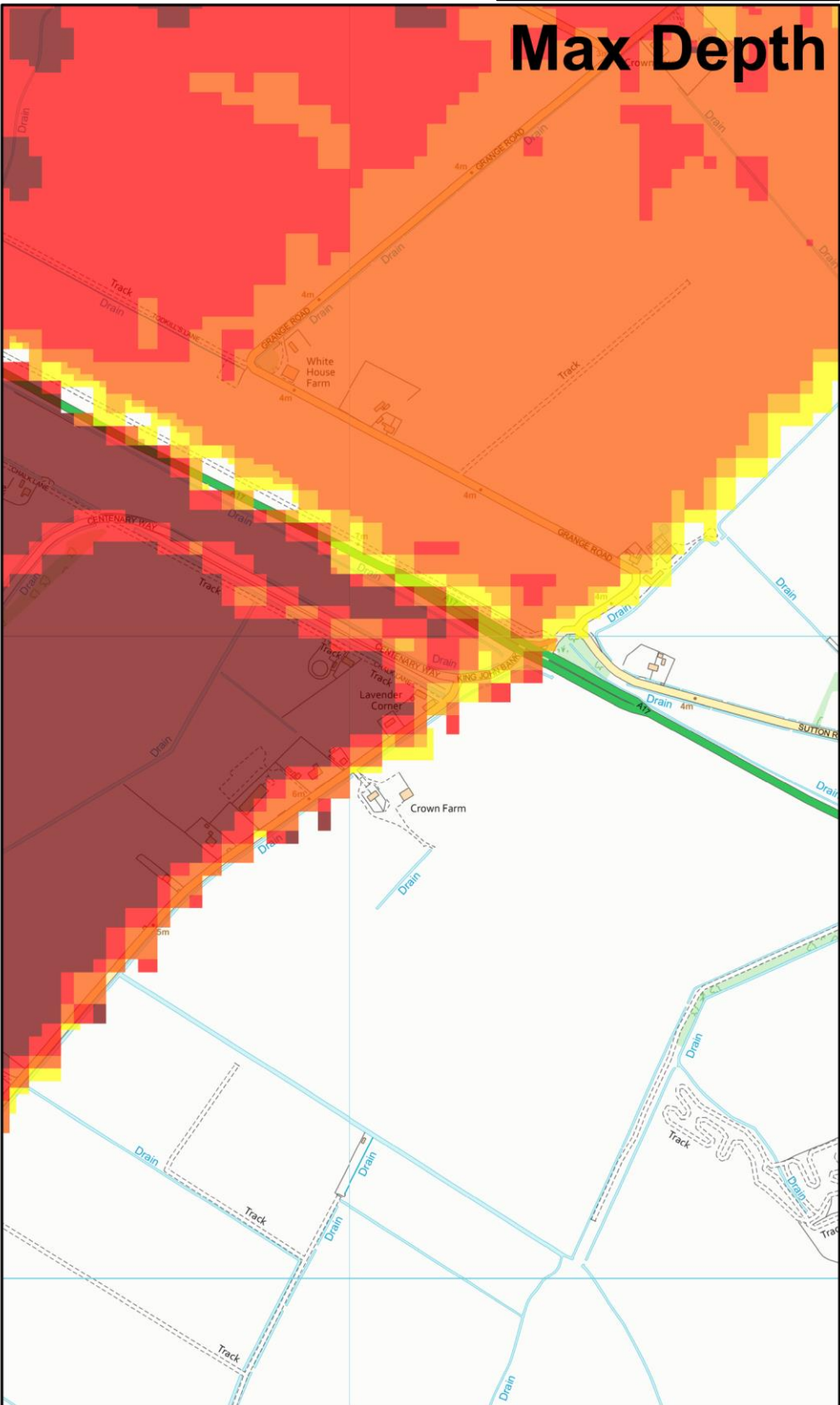
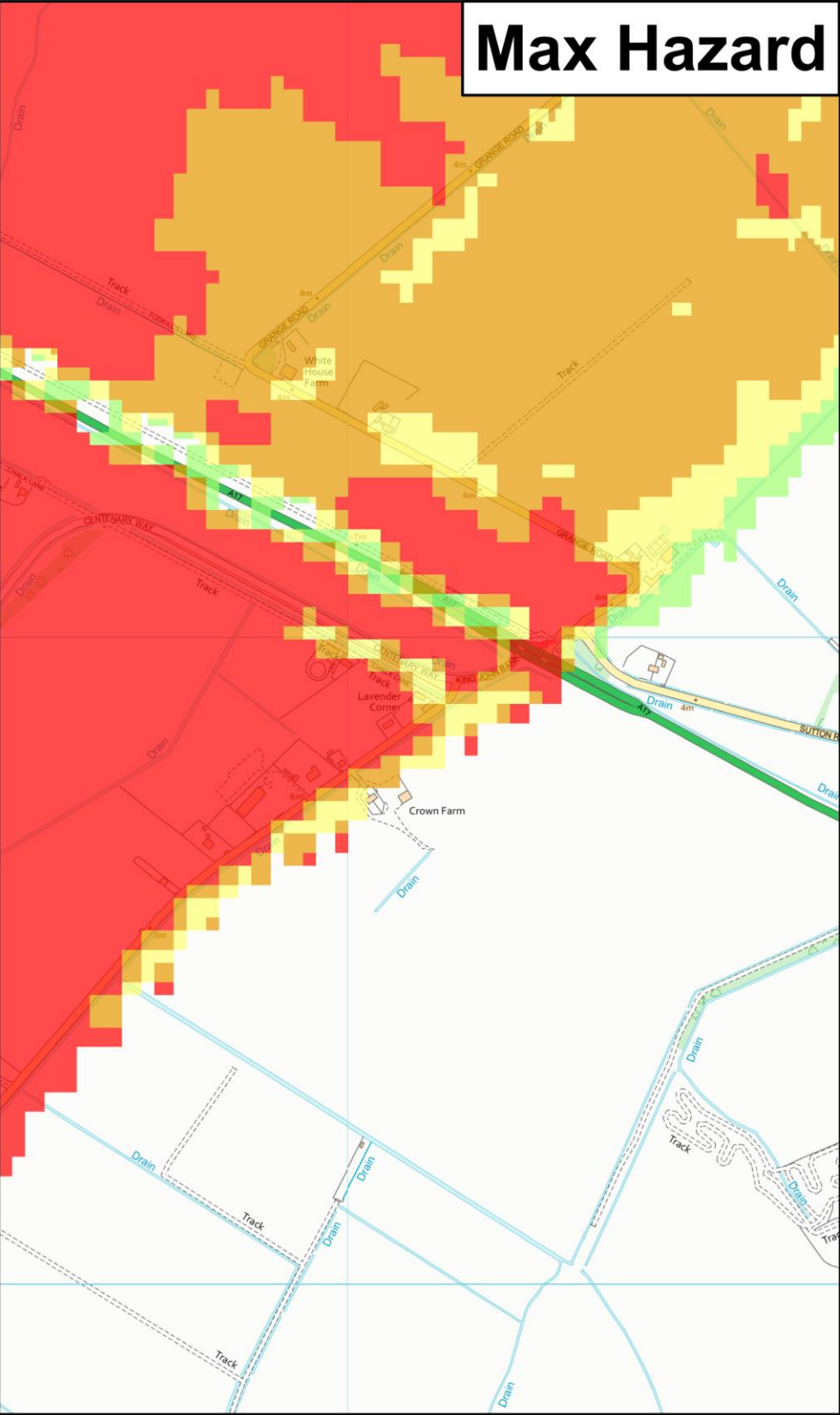
Lincolnshire and Northamptonshire

Tidal Breaching Hazard Mapping

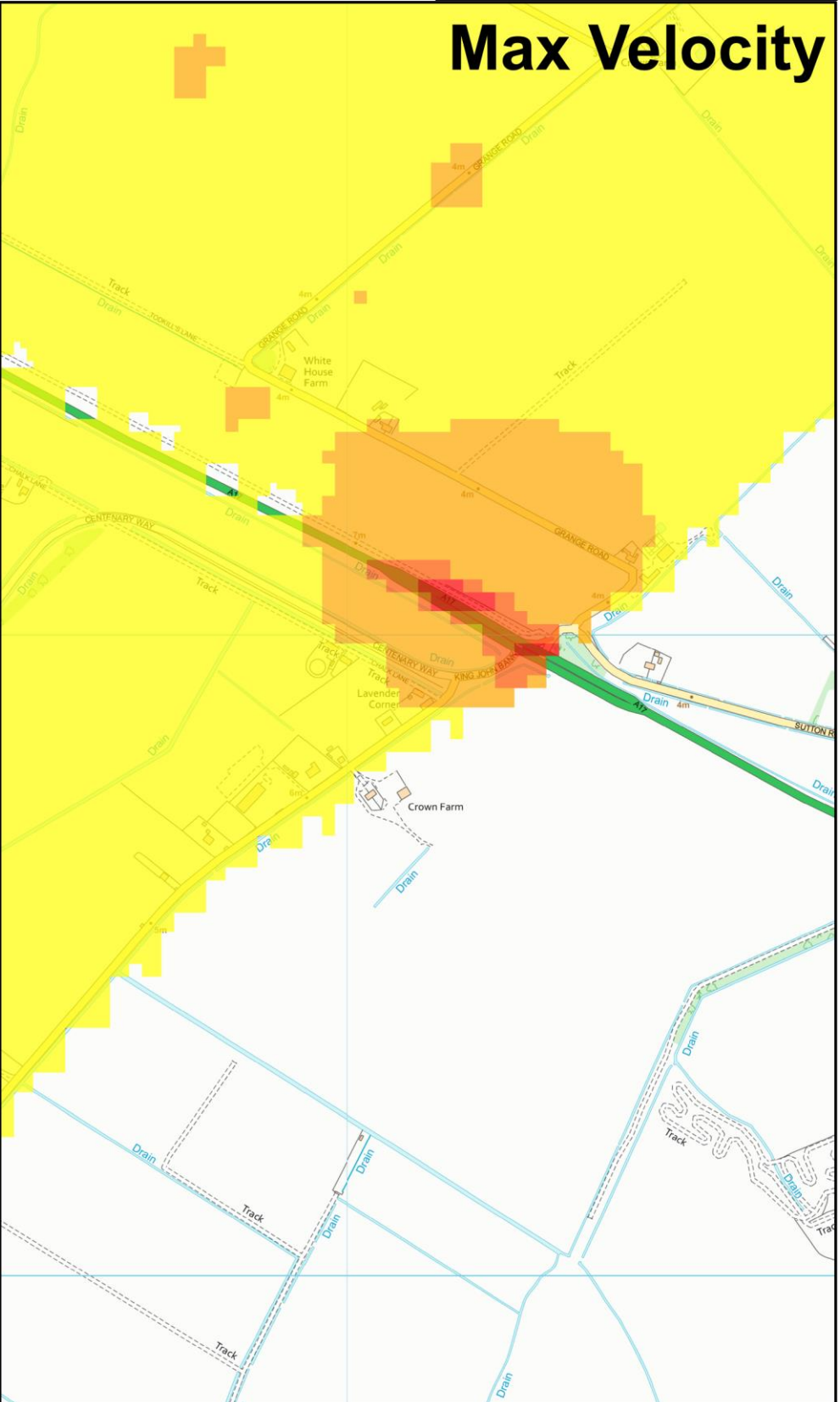
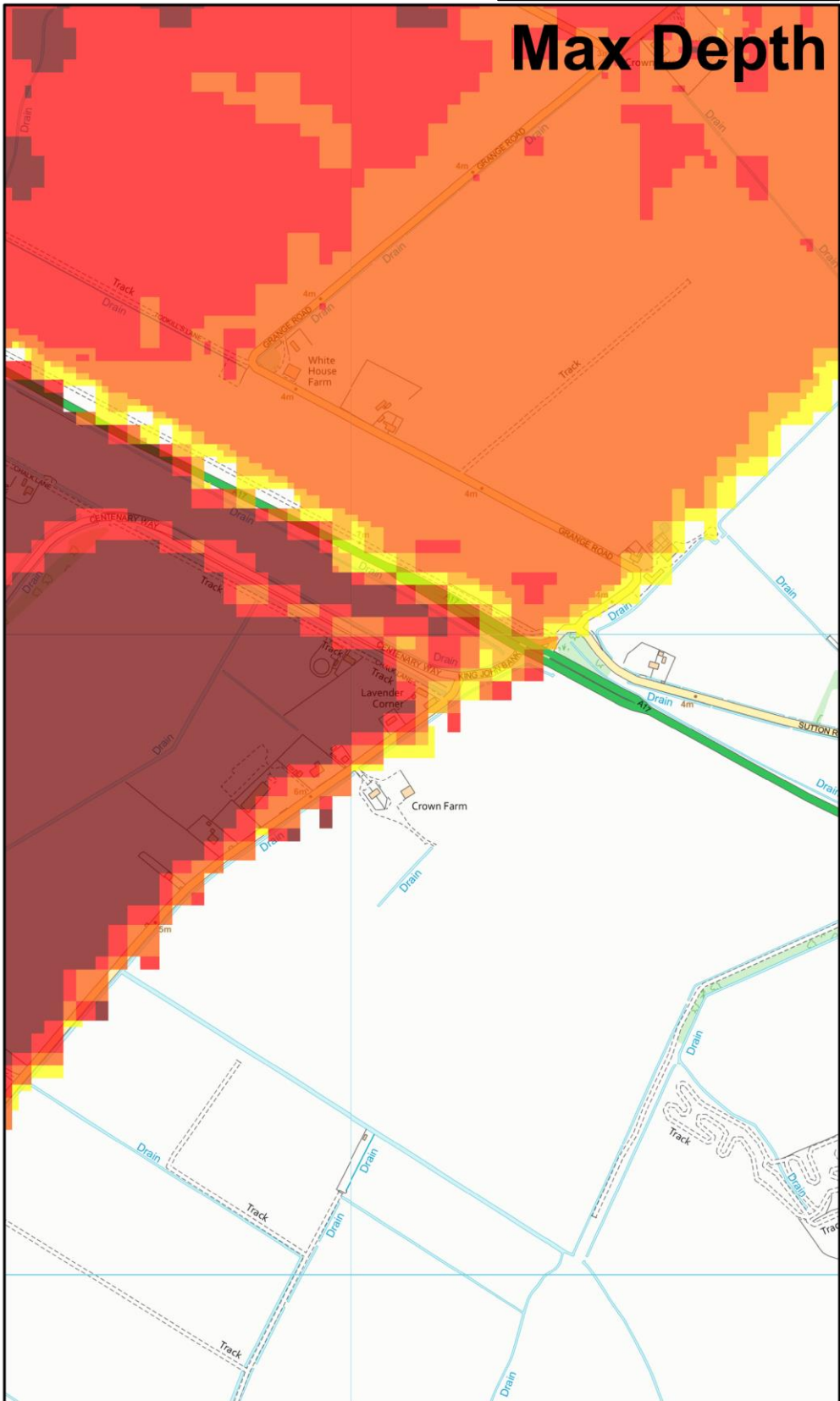
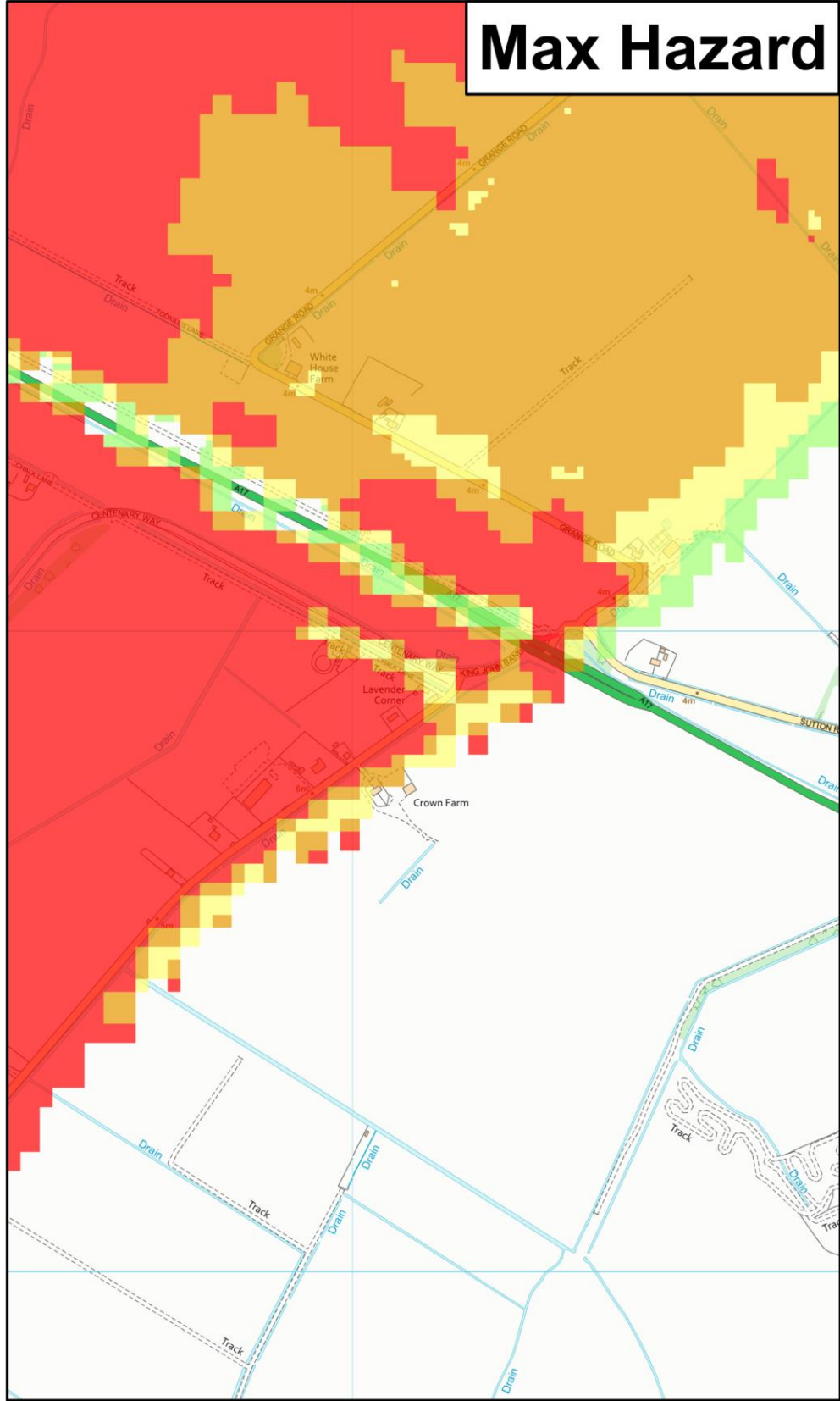


^ Modelled Breach Locations - see also the accompanying plan "Location of Modelled Breaches"		
Max Hazard	Max Depth (m)	Max Velocity (m/s)

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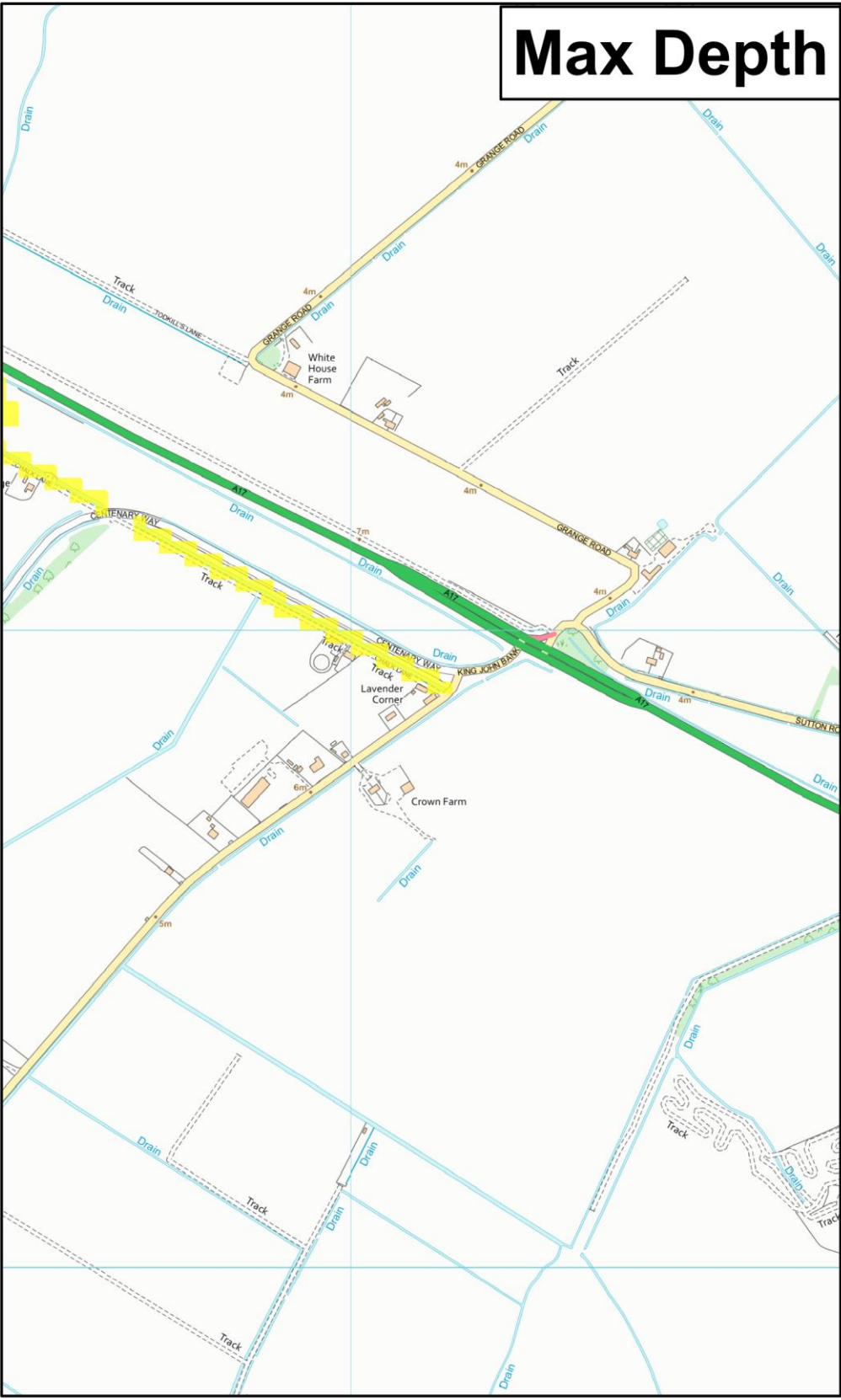
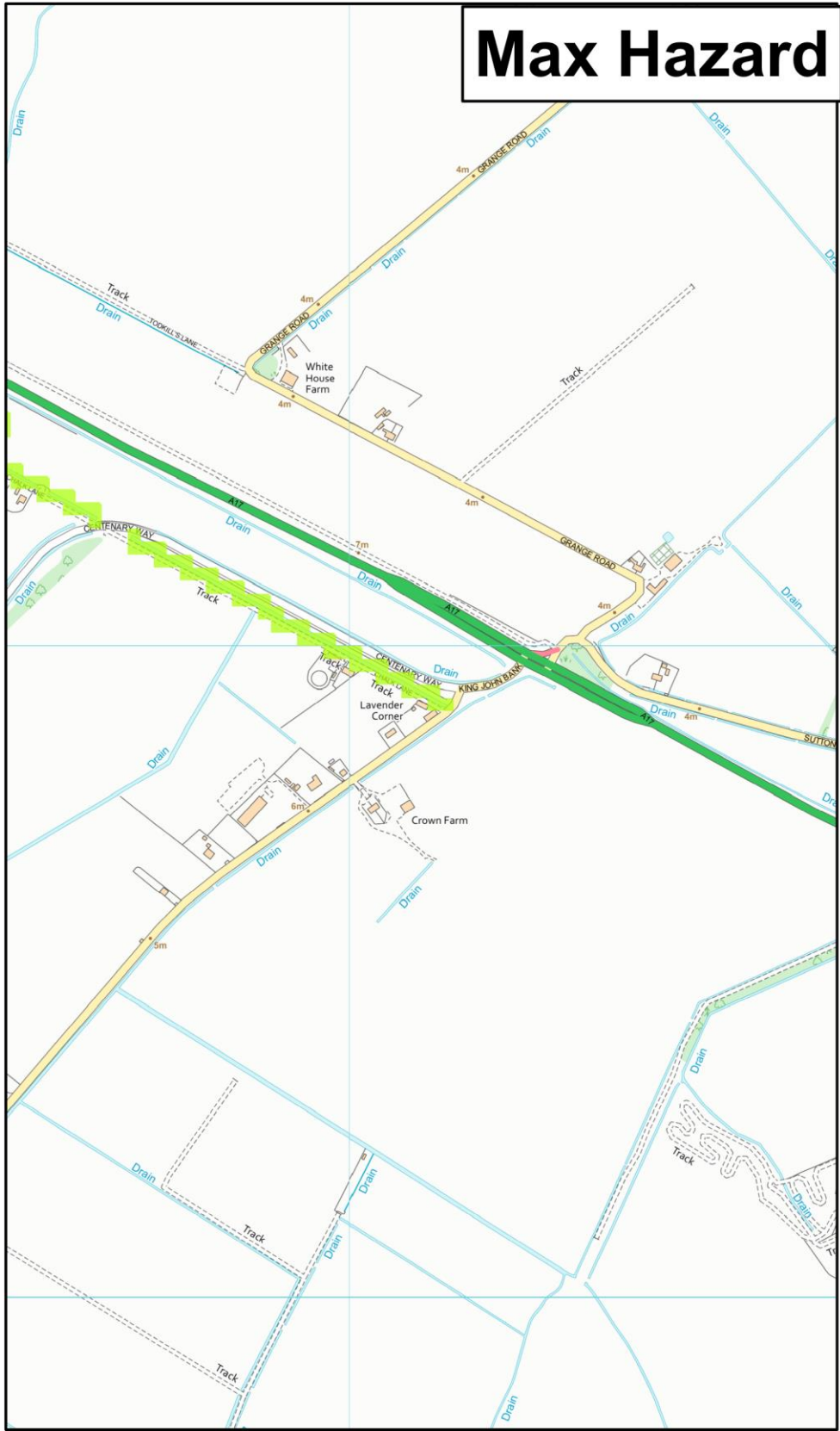


^ Modelled Breach Locations - see also the accompanying plan "Location of Modelled Breaches"		
Max Hazard	Max Depth (m)	Max Velocity (m/s)



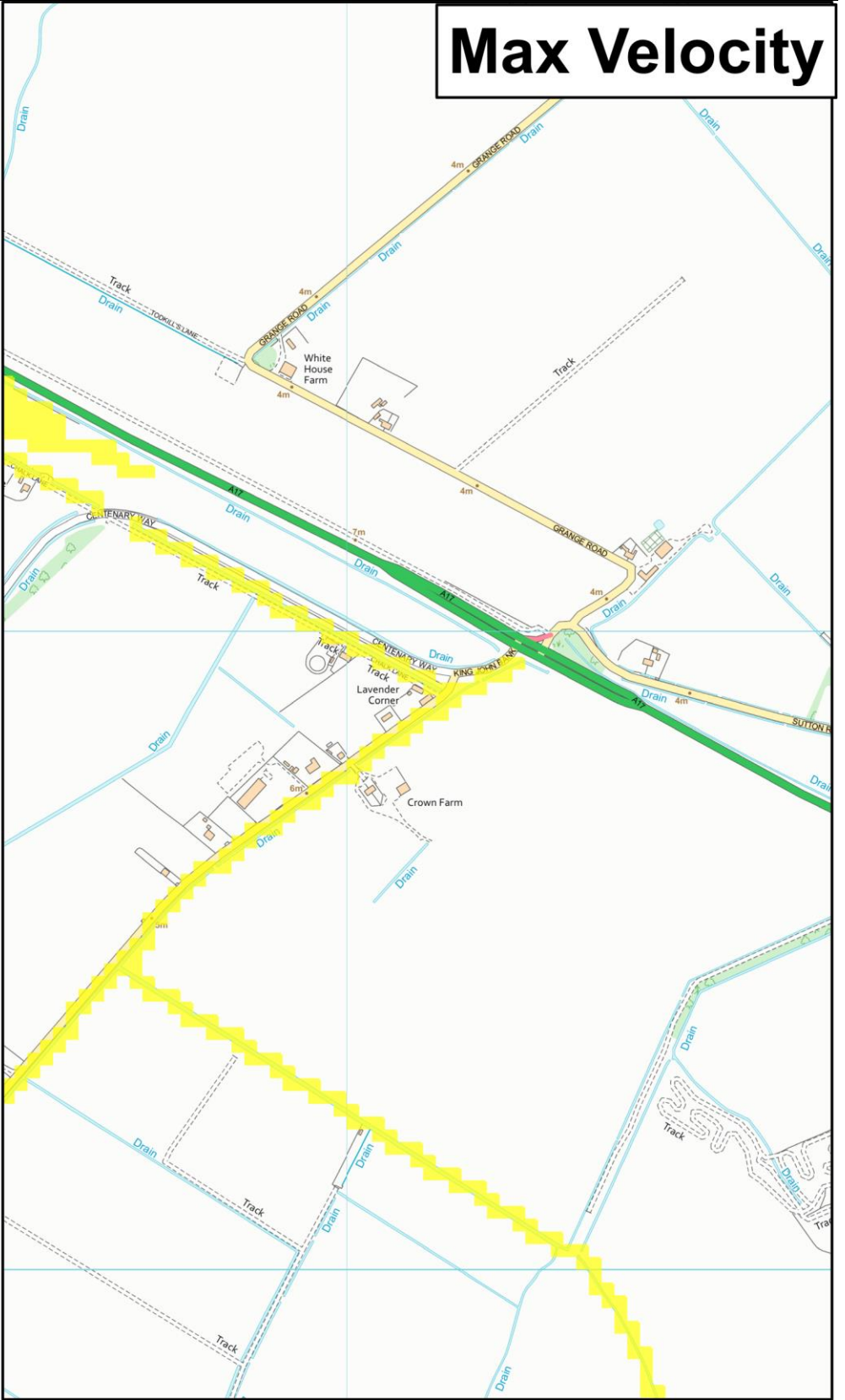
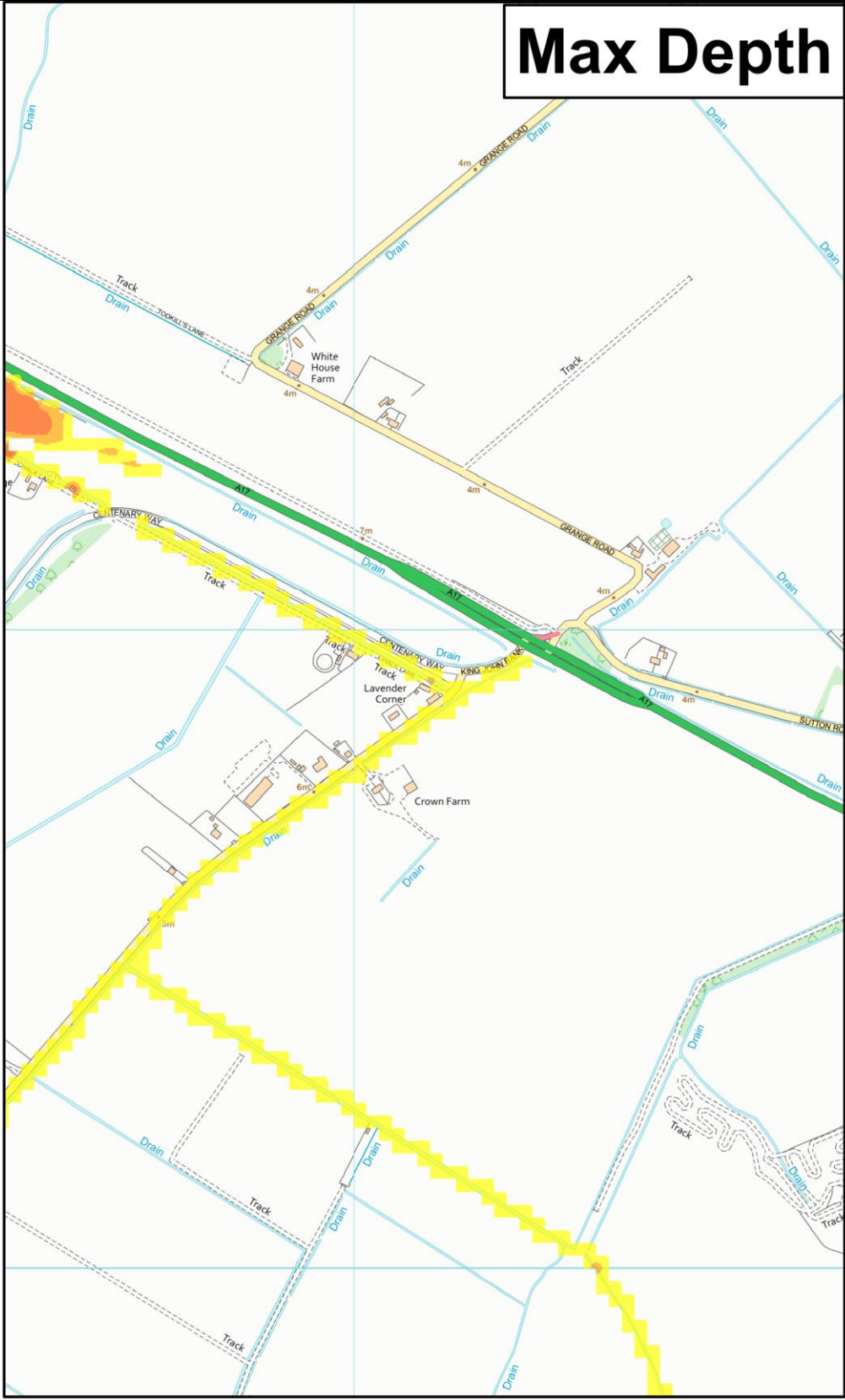
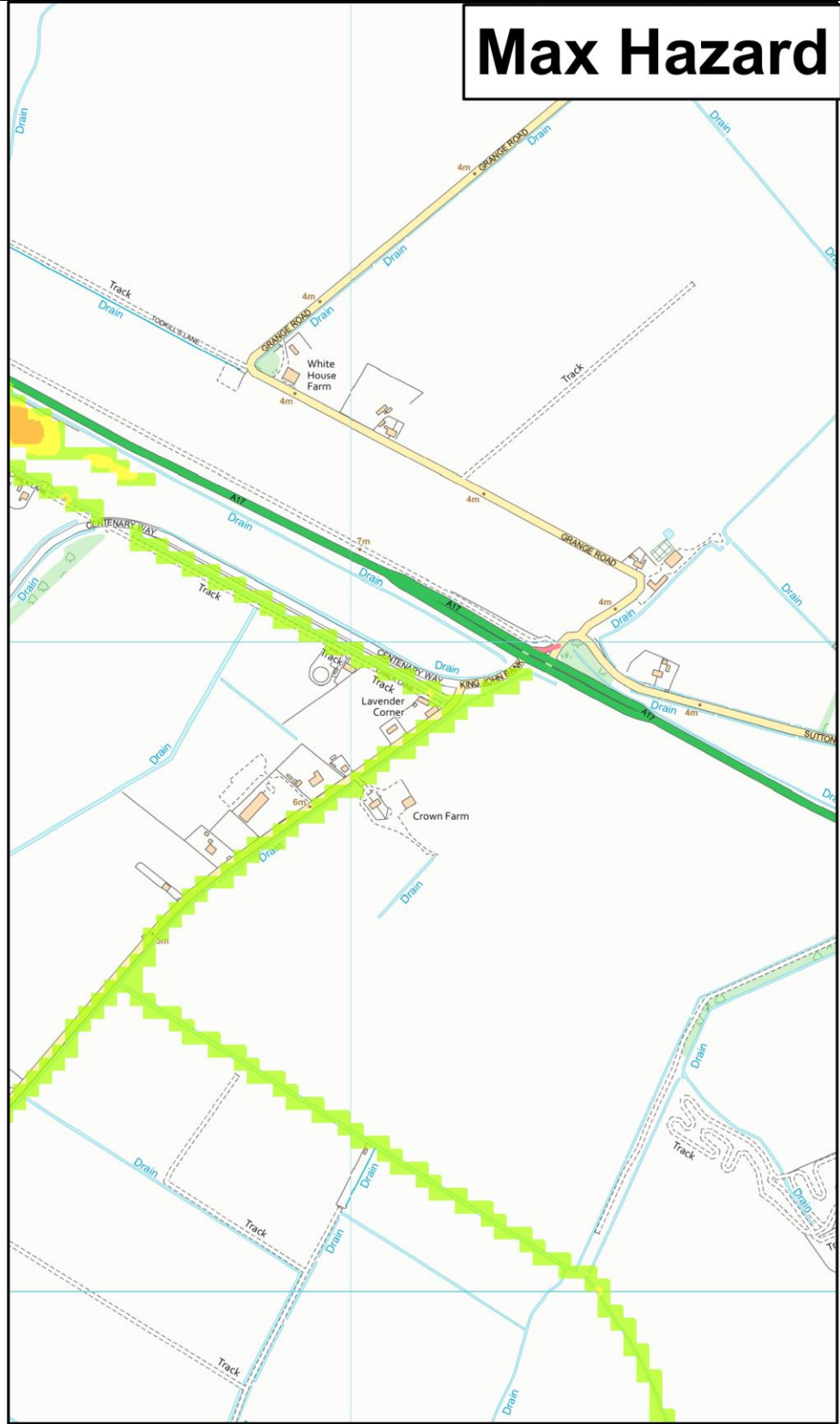
^ Modelled Breach Locations - see also the accompanying plan "Location of Modelled Breaches"		
Max Hazard	Max Depth (m)	Max Velocity (m/s)

[illegible]



Max Hazard	Max Depth (m)	Max Velocity (m/s)	 Environment Agency
			

Date Printed		Scenario year		Scenario Annual Chance		CCN Number					



Max Hazard			Max Depth (m)			Max Velocity (m/s)						Environment Agency		
												Lincolnshire and Northamptonshire Tidal Overtopping Hazard Mapping		
Date Printed		Scenario year		Scenario Annual Chance		CCN Number								