

FLOOD RISK ASSESSMENT

Proposed Extension to Touring Caravan Site

Lowgate Grange

Lowgate

Fleet

Holbeach

Spalding

PE12 8LN



RM ASSOCIATES

10 Main Street
Thorpe on the Hill
Lincoln
LN6 9BG
Tel 01522 681728
Mobile 07967 304737
Email :
ray.rmassociates@gmail.com
January 2022 Version 1

RMA

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Flood Risk Assessment Proposed Extension to Touring Caravan Site Lowgate Grange, Lowgate, Fleet, Holbeach, Spalding. PE12 8LN.

INTRODUCTION

The Government has placed increasing priority on the need to take full account of the risk associated with flooding at all stages of the planning and development process. This seeks to reduce the future damage to property and the risk to life from incidents of flooding. Their expectations relating to flooding are contained in the National Planning Policy Framework Feb 2021, (NPPF), which identifies how the issue of flooding is dealt with in the drafting of planning policy and the consideration of planning applications by avoiding inappropriate development in areas at risk from flooding and to direct development away from areas at highest risk.

The NPPF provides that development in areas at risk of flooding should be avoided and seeks to direct development away from areas at highest risk. There is a sequential, risk-based approach to the location of development avoiding where possible, flood risk to people and property managing any residual risk and taking account of the impacts of climate change.

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APPLICATION SITE

The site is located on land at Lowgate, Fleet Hargate, Holbeach, Spalding PE12 8LN, within the administrative area of South Holland District Council. The National Grid Reference is TF39496 25573. **Plan 1**

This flood risk assessment has been prepared to extend the existing touring caravan site with 56 No additional pitches, toilet/shower block and for the change of use and extension of an existing agricultural barn to form a Reception Building and café. **Plans 2, 3 & 4**

The existing site known as the "Lawns & Lakes Camping and Caravanning Site" was granted planning permission for up to 30 caravans 8 November 2011, Ref H05-0651-11, Planning permission was granted 13th December 2012, Ref H05-0843-12 with a condition that touring caravans shall only be allowed on site between 15th March

and 31st October in any one year or the following Sunday if the 31st does not fall on a Sunday.

The National Planning Policy Framework Guidance NPPG defines three levels of flood risk depending upon the annual probability of fluvial flooding occurring.

Zone 1 – Low Probability (<0.1%)

Zone 2 – Medium Probability (0.1 – 1.0%)

Zone 3 – High Probability (>1.0%)

The proposed development site is shown to be within Flood Zone 3 'High Probability', as detailed on the Environment Agency's Flood Zone Maps **without defences**. Table 1: Flood Zones Definition

Table 1: Flood Zones Definition

Flood Zone 3- High Probability
Definition Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. The water-compatible and less vulnerable uses of land are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable and essential infrastructure uses should only be permitted in this zone if the Exception Test is passed. Essential Infrastructure permitted in this zone should be designed and constructed to remain operational and safe for uses in times of flood Flood Risk Assessments requirements All proposals in this zone should be accompanied by a Flood Risk Assessment. Policy aims Developers and local authorities should seek opportunities to: • reduce the overall level of flood risk in the area through the layout and form of the development and the appropriate application of sustainable drainage techniques. • relocate existing development to land with a lower probability of flooding. • create space for flooding to occur by allocating and safeguarding open space for flood storage.

Applying the Flood Risk Vulnerability Classification in Table 2 of NPPG, the proposed development use for holiday or short-let caravan and camping the site is considered to be 'More Vulnerable' use. Table 2 of NPPG states that such uses are permitted in these zones subject to a specific warning and evacuation plan, the reception building/café and toilet/shower block are considered to be 'Less Vulnerable' use.

Table 2: Flood Risk Vulnerability Classification

More Vulnerable
• Hospitals • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels • Non-residential uses for health services, nurseries, and educational establishments • Landfill and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravan and camping, subject to a specific warning and Evacuation Plan.

Less Vulnerable

- Police ambulance and fire stations that are not required to be operational during flooding
- Buildings used for shops, financial, professional, and other services, restaurants and cafes, hot food takeaways, offices, general industry, storage and distribution, non-residential institutions not included in “more vulnerable” and assembly and leisure.
- Land and buildings used for agricultural and forestry.
- Waste treatment (except land fill and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works that do not need to remain operational during times of flood.
- Sewage treatment works (if adequate measures to control pollution and manage sewage during flood events are in place).

Site Levels

From the original topographical survey, the site is reasonably level, land levels for the Woodpecker site (22 pitches) are circa 2.70mODN and for the Fleetside site (34 pitches) between 2.75 – 2.47mODN, the levels around the existing barn are 2.80mODN and at the site of the proposed Toilet/shower block 2.70mODN. **Plan 5**

DRAINAGE AUTHORITIES

Environment Agency

The Environment Agency has permissive powers for reducing the risk of flooding from designated main rivers and from the sea.

The following potential sources of flooding affecting the development site has been identified as:

- The Wash
- South Holland Internal Drainage Board system

Flood Zones

The Flood Zone Map indicates the area at risk of flooding, **assuming no flood defences exist**, for a flood event 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 event with a 0.1% chance of occurring in any year, or the highest recorded historic extent if greater. In some locations, there are many kilometres of raised flood defences. To meet the requirements of the National Planning Policy Framework, these defences are removed in their entirety to produce the Flood Map for Planning (Rivers and Sea). The map therefore shows the full extent of areas that would be at risk of flooding if no defences existed, and water could spread out across the floodplain.

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 represents areas at risk of flooding for present day only and does not take account of climate change. In this area the main risk of flooding is from a breach to the tidal defences along the coastline that could affect the site. These maps show that the majority of the proposed development site is considered at no risk from flooding as it is all located within an area zoned as Flood Zone 1. **Map 1**

Risk of Flooding from Rivers & Sea

The Risk of Flooding from Rivers and Sea Map shows that the site for the proposed building is at Low risk of flooding. Low means that each year, this area has a chance of flooding of between 0.1% and 1.0% . This takes into account the effect of any flood defences that may be in this area. Flood defences reduce, but do not completely stop the chance of flooding as they can be overtopped or fail. **Map 2**

River Nene, & River Welland.

With the River Nene lying some 10.07Km to the south of the site, and the River Welland some 9.6Km to the north, these flooding sources have been discounted as they are too distant to affect the site.

The main risk is therefore from a breach to the Wash tidal defences which are some 9.3Km to the east of the site at Gedney Drove End.

The Wash, Tidal defences

In this particular area, the main risk of flooding is from a breach to the Wash tidal defences along the coastline that could affect the site, and these are approximately 9.3km to the east of the site.

Coastal flooding may be caused by seasonal high tides such as those driven by the spring neap tide cycle, storm surges and where increase in water level above the astronomical tide level is created by strong on shore winds or by storm driven wave action and a deep atmospheric low pressure. Extreme conditions leading to coastal flooding are most commonly a result of a combination of two or more of these mechanisms.

The area is not affected by any flooding from a Fluvial main River and therefore would only be affected by tidal flooding from the Wash. The Wash Banks constitute the first line of defence against any tidal flooding. These consist of earth embankments along the shores of the Wash and are invariably behind an area of intertidal salt marsh which protects them against damage from wave action, though in the relatively sheltered environment of the Wash this is less of a hazard than the North Sea coastline.

The defences 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. The Environment Agency inspect these defences routinely to ensure potential defects are identified.

Breach Analysis to Wash Tidal Defences

From Lincolnshire & Northamptonshire Area Tidal Modal Analysis, levels for East Coast and Wash: Immingham to the West Lighthouse have an assessment date of 2017, which should be used in any consideration of future increases due to climate change. **Map 3**

Peak tide levels (2017) for the 1 in 200-year 50% confidence bound tide level is 5.82mODN at West Lighthouse Peak tide levels (2120) tide level a is 5.82mODN plus Higher Central climate change of 1025mm would be 6.85mODN.

Taking the precautionary approach, the Hazard Rating following a breach which in Flood Risk Assessment (FD 2320) Guidance for New Development Phase 2 R& D Technical Report these are classified as low <0.75, moderate 0.75-1.25, significant 1.25-2.50 and extreme >2.50 based upon an empirical measure of velocity and depth.

$$HR = d \times (v + 0.5) + DF$$

Where V = Flood flow velocity (m/sec) D = Flood depth (m)

DF = A debris factor included to represent the greater damage, or risk of injury to people, that can occur if debris is swept along with the water. = 0.5 for depths <0.25 or 1.0 for depths.

For the degree of Flood Hazard to be classified as low HR must be <0.75

Flood Hazard			Description
	<0.75	Low	Caution – Flood Zone with shallow flowing water or deep standing water.
	0.75 – 1.25	Moderate	Danger for Some - (i.e. children) Danger Flood Zone with deep or fast flowing water.
	1.25 – 2.0	Significant	Danger for Most – Danger Flood Zone with deep fast flowing water.
	>2.0	Extreme	Danger for All – Extreme Danger Flood Zone with deep fast flowing water.

The 2017 Update to SHDC, SFRA has carried out a Tidal & Fluvial Hazard Mapping, for the district, following a breach to the defences. The present-day Residual Flood Hazard, Depth and Velocity District – present day 1% fluvial and 0.5% Tidal Event Probability Maps show that the site where the proposed development is to be located is within an area of no hazard. **Map 4**

With climate change the 1% fluvial and 0.5% Tidal Event Probability Maps for Hazard, Velocity and Depth, shows that the site is within a hazard area between 1.25 – 2.0 (Danger for Most), max depth of flooding 0.5 – 1.0m and velocity 0 – 0.3m/sec. **Maps 5, 6 & 7.**

The Environment Agency standing advice recommends that for “Less Vulnerable” developments in Flood Zone 3, the floor level of buildings should be raised as high as practicable, minimum 300mm.

Floor levels

Touring caravans by virtue of their design have a floor level at least 500mm above the ground level.

It is proposed that the ground floor level for the proposed reception, café and toilet/shower block be set 300mm above the existing ground level.

Evidence shows that the period November to March carries the highest risk of tidal flood events, caravans are classed as more vulnerable development and mitigation is not sufficient during an event to ensure reduced risk. Therefore, all caravan sites in the in the high-risk areas will only be supported with an occupancy condition.

With the site being at risk from tidal breach flood events and that touring caravans are classed as “More Vulnerable” development for which appropriate mitigation measures cannot be provided, which is sufficient, during an event, to ensure reduced risk. Therefore, it is proposed to prevent the loss of life, that the touring caravan pitches hereby permitted shall only be occupied between the 15th of March and the 31st of October (or the first Sunday in November if half terms falls in November) in any year. This accords with the Cell D5 Southeast Lincolnshire Standing Advice Matrix and also the current planning approval for the site.

However, due to the potential flood risk and danger posed of the development becoming isolated by surrounding flood waters at this site, a flood warning and evacuation plan will be prepared for the development in order to address the residual risks of flooding at the site and to confirm the approach that will be taken for safe evacuation of the area.

SOUTH HOLLAND INTERNAL DRAINAGE BOARD

The proposed development site is located within the catchment area of South Holland Internal Drainage Board. The Board is responsible to operate and maintain the arterial fluvial system.

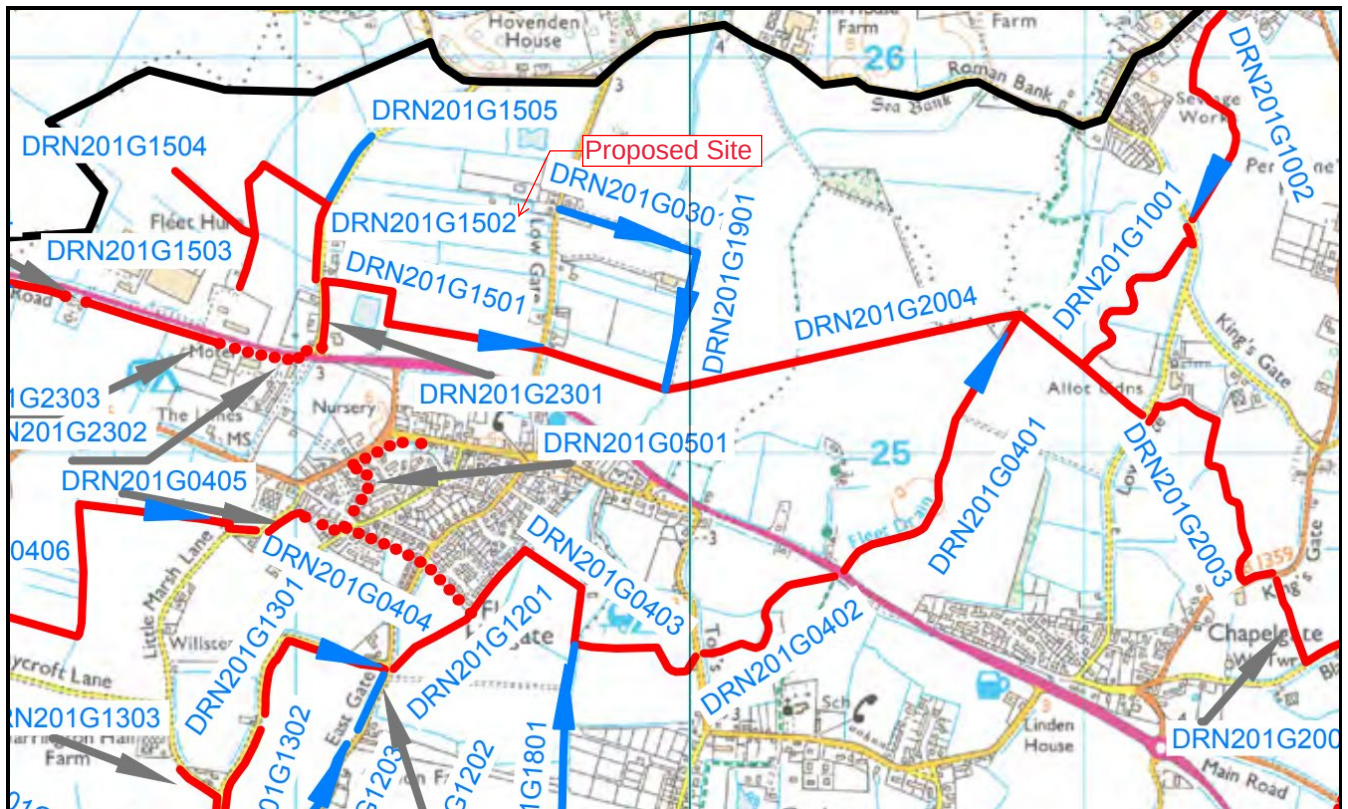
The site is within Board’s catchment Fleet Haven and the nearest watercourse to the site is Drain No DRN201G0301, located to the east of the site and DRN201G1502, located to the west of the site.

The Board’s prior written consent will be required for any of the following works:

- No person without the previous consent of the Board shall erect any building or structure, whether temporary or permanent, or plant any tree, shrub, willow or other similar growth within 9 metres of the landward toe of the bank where there is an embankment or wall or within 9 metres of the top of the batter where there is no embankment or wall, or where the watercourse is enclosed within 9 metres of the enclosing structure.
- No person shall, without the previous consent of the Board, for any purpose, by means of any channel, siphon, pipeline or sluice or by any other means whatsoever, introduce any water into the District or,

whether directly or indirectly, increase the flow or volume of water in any watercourse in the District.

- The erection or alteration of any mill dam, weir or other like obstruction to the flow, or erection or alteration of any culvert within the channel of a riparian watercourse.



South Holland IDB Drainage Map

SOUTH HOLLAND DISTRICT COUNCIL

In order to inform the process of risk assessment and site selection the District Council commissioned Haskoning UK Ltd Consultants to prepare a Strategic Flood Risk Assessment in December 2002. They have carried out an update of this report and this report was published in January 2010, and this was further updated in February 2017.

This Flood Risk Assessment has taken the results of the (2017) updated South Holland Strategic Flood Risk Assessment (SHSFRA) into account in its findings.

The whole of the tidal flooding information has been replaced by the mapping from the latest Environment Agency Tidal Hazard mapping. Where the mapping for an area contains both fluvial and tidal components, the more severe of the two has been presented

FLOODING FROM OTHER SOURCES

Flooding is a natural process and can happen at any time from sources other than watercourses and the sea.

- Flooding from land can occur from intense rainfall, often over short duration of time that is unable to soak into the ground or enter the drainage system. However, with the natural topographic nature of the ground having no high ground around the site. With the proposed ground floor levels being set 300mm above the existing ground floor level this will not cause any rapid inundation of the site.
- The area is not known to suffer from any groundwater problems.
- Flooding from sewers can occur from overloading from heavy rainfall caused by blockages or having inadequate capacity. There are no public sewers in the proximity of the site.
- Non-natural or artificial sources of flooding such as reservoirs, lakes, or canals where water is stored above natural ground level could cause flooding if the structure fails or is over topped. There are no known sources within the vicinity of the site.

SURFACE WATER FLOODING

The majority of the site for the proposed units is not shown on the Low-Risk scenario Surface Water flood maps, for the 1 in 1000-year event, to be affected from surface water flooding. This type of flooding is usually short lived and associated with heavy downpours of rain, thunderstorms etc. **Map 8**

The maps for surface water and revised maps for river and sea flooding define the risk as High, Medium, Low and Very Low. The chance of flooding for the area defined in any given year is shown below:

- **High:** greater than 1 in 30 (3.3%).
- **Medium:** between 1 in 100 (1%) and 1 in 30 (3.3%).
- **Low:** between 1 in 1000 (0.1%) and 1 in 100 (1%).
- **Very Low:** less than 1 in 1000 (0.1%)

Unlike the fluvial mapping, which is based on a detailed hydraulic model, this mapping is based purely on applying rainfall to a digital terrain model. As such this mapping serves to represent a worst-case scenario which may well overstate the actual probability of flooding in this area.

There is a caveat on the Defra Data website, as to the use of these maps and that they are not to be used to identify that an individual property will flood. Because of the way they have been produced and the fact that they are indicative, these maps are not appropriate to act as the sole evidence for any specific planning or regulatory decision or assessment of risk in relation to flooding at any scale without further supporting studies or evidence.

The Environment Agency and the Lead Local Flood Authority (custodians of the surface water flood risk dataset) have subsequently confirmed that the published high-level data should not be used on a site-specific basis and that mapping is only suitable for National to County Scale use

SEQUENTIAL APPROACH

When applying the sequential approach for flood risk in accordance NPPF the site would fall into Zone 3 (High Probability) as shown on the Environment Agency's Flood Map without defences in place.

The Environment Agency categorise land into one of three Flood Zones.

- Flood Zone 1 is 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)
- Flood Zone 2 is 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)
- Flood Zone 3a is 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)

Applying the Flood Risk Vulnerability Classification in Table 2 of NPPG, the proposed use is classified as both "More Vulnerability" and "Less Vulnerable" use, Table 1 of NPPG states that such uses are appropriate in this zone (as summarised in Table 3 NPPG).

TABLE 3: Flood Risk Vulnerability and Flood Zones 'Compatibility'

Flood Risk Vulnerability Classification		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Flood Zone 1	✓	✓	✓	✓	✓
	Flood Zone 2	✓	✓	Exception Test Required	✓	✓
	Flood Zone 3a	Exception Test Required	✓	✗	Exception Test Required	✓
	Flood Zone 3b Functional Floodplain	Exception Test Required	✓	✗	✗	✗

Sequential & Exception Test

NPPF Guidance Paragraphs 159 - 169 requires development within high areas of flood risk be determined using a sequential risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account the impacts of climate change.

The aim of the Sequential Test is to steer new development to areas with the lowest probability of flooding. The NPPF states that development should not be permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower probability of flooding. It is important to note that the Sequential Test does not specifically mean that sites such as this cannot be developed, rather that sites at less risk should be

developed first. The whole of the surrounding area is shown on the Flood Map for Planning to be in Flood Zone 3 and there are no other sites in a lower flood zone.

Planning Practice Guidance states: - When applying the Sequential Test, a pragmatic approach on the availability of alternatives should be taken. For example, in considering planning applications for extensions to existing business premises it might be impractical to suggest that there are more suitable alternative locations for that development elsewhere.

The proposal is for an extension to a well-established touring caravan site and also the change of use of an agricultural barn to form a reception and café building. As set out in the National Planning Policy Framework Technical Guidance (para.168), change of use should not be subject to the sequential and exception tests but will still need to meet the requirements of a site-specific flood risk assessment.

There will also be positive economic impacts for the area that tourism brings to the local area. It is therefore considered that the Sequential & Exception Tests has been satisfied.

As the Sequential Test has been satisfied then development must pass the Exceptions Test to demonstrate that it provides wider community benefit to meet the overall requirements of sustainable development for this site.

Tourist facilities can offer benefits to local communities directly through employment, and indirectly, such as by supporting local food producers, local shops, pubs and restaurants. Locating most new visitor-related development, such as, some small-scale tourist facilities such as fishing lakes, equine development and caravan sites, small scale offices or other small scale rural development, may be more appropriately located outside a settlement boundary provided that there is a clear link to an established rural enterprise and the quality of the design ensures no adverse impacts upon landscape, heritage or biodiversity.

In economic terms, the proposal would provide employment at construction stage and may support local businesses and the local economy both during construction and when the lodges are occupied.

In socio-economic terms, this development will provide wider sustainability benefits to the local community in helping the existing local facilities long term viability.

It is therefore concluded that the development would meet the requirements of the first part of the Exception Test and would be in accordance with the NPPF.

This FRA in support of the development and indicates that the second part of the Exceptions test is satisfied, and that the development would be safe for the lifetime of the development (100 years) and not increase flood risk elsewhere.

There will also be positive economic impacts for the area that tourism brings to the local area. It is therefore considered that the Sequential & Exception Tests has been satisfied.

DRAINAGE STATMENT

Applications for developments where the proposals will result in the increase the amount of surface water run-off require that an appropriate drainage strategy to be undertaken to ensure that the surface water discharge mimics the existing pre-development regime.

Surface Water Drainage

In accordance with recognised guidance, Part H of the Building Regulations 2010 and National Planning Policy Framework, there is a hierarchy of where surface water should discharge. This hierarchy should be followed where practicable, and is as follows:

- 1) Infiltration
- 2) Watercourse
- 3) Public sewer

Infiltration

The roof water from the reception /café building and toilet/shower building will be connected into soakaways designed in accordance with BRE 365, with a high-level overflow into the fishing lake. Any new access roads will be constructed with permeable materials comprising hardcore with gravel surfacing.

The rainwater from the roofs of the touring caravans will fall directly to the ground where it will be infiltrated away as naturally occurs.

Watercourses & Public Sewers

There are no proposals to discharge any surface water to a watercourse or a public sewer.

Foul Water Drainage

Touring caravans usually have their own toilet facilities, but there are on site existing chemical disposal facilities.

The proposed toilet and shower block and the reception/café building will be connected into a package treatment unit.

As there is a positive drainage system capable of receiving flows from the development there is no likely impact on neighbouring property.

CLIMATE CHANGE

Global warming is now recognised that it is likely to affect the frequency and severity of extreme events as both tidal and fluvial flooding. The Climate change allowances in the NPPF Guidance was updated on the 20th of July 2021.

Peak River Flow Allowances

For flood risk assessments use the Management Catchment Climate Changes for the peak river flow map. Management catchments are sub-catchments of River Basin Districts.

The site is located within the Nene Management Catchment within the Anglian River Basin District, for sites within Flood Zone 2 or 3a and for “More Vulnerable” land uses, the Central allowances figures, in the Table below, should be used.

Peak River flow allowances within the Management Catchment Allowances				
River Basin District /Management Catchment	Allowance category	Total potential change anticipated for '2020s' (2015 to2039)	Total potential change anticipated for '2050s' (2040 to2069)	Total potential change anticipated for '2080s' (2070 to2115)
Anglian/ Welland	Upper End	4%	13%	36%
	Higher Central	-7%	0%	17%
	Central	-2%	-7%	18%

The effect of global warming on peak rainfall allowances is given in Table 1.

Table 1 Peak Rainfall Intensity

Table 1 Peak rainfall intensity allowance in small and urban catchments (1961 to1990 baseline)			
Applies across all of England	Total potential change anticipated for 2010 to 2039	Total potential change anticipated for 2040 to 2059	Total potential change anticipated for 2060 to 2115
Upper End	10%	20%	40%
Central	5%	10%	20%

The annual sea rise due to climate change is given in NPPF and the recommended contingency allowances are stated in Table 2.

Table 2 Peak Sea Level Rise

Table 2 Peak Sea level allowance for each epoch in (mm) per year with cumulative sea level rise for each epoch in brackets (use 1981to 2000 baseline)						
Area of England) (Use River Basin	Allowance	2000 to 2035	2036 to 2065	2066 to 2095	2096 to 2125	Cumulative Rise 2000 to 2125 (m)
Anglian	Higher Central	5.8 (203mm)	8.7 (261mm)	11.6 (348mm)	13 (390mm)	1.20m
Anglian	Upper End	7 (245mm)	11.3 (339mm)	15.8 (474mm)	18.1 (543mm)	1.6m

FLOOD PROTECTION

Any impact of damage to the properties can be foreseen and mitigated against by relatively simple design and construction techniques. There are two forms of flood protection works: -

- **Flood-resistance or proofing works:** - these try to reduce the amount of water entering a building.
- **Flood-resilient works:** - these reduce the amount of damage caused by water entering the building.

The proposed amenity building will have the following resilient measures incorporated in the construction in accordance with “Improving the flood performance of new buildings” CLG (2007).

- The ground floor level for the reception /café building and toilet/shower building is to be raised 300mm above the existing ground level.
- Water, electricity, and gas meters: should be located above the predicted flood level. Electrical services: electrical sockets, heating systems: boiler units and ancillary devices should be installed at least 500mm above the habitable floor level to minimise damage to electrical services Electric ring mains should be installed at high level with drops to ground floor sockets and switches.
- The ground floor to be constructed with a solid concrete floor with no voids beneath and no low-level wall vents.
- Avoid the use of mineral fibre insulation to the ground floor level (walls & floor) and use a rigid closed cell material as these retain integrity and have low moisture take-up.
- Where possible, all service entries should be sealed (e.g., with expanding foam or similar closed cell material). Closed cell insulation should be used for pipes which are below the predicted flood level.
- Use standard gypsum plasterboard up to the predicted flood level (plus freeboard of 50mm) as a sacrificial material fixed horizontally for easy removal and replacement.
- As this site is in an area that is capable of receiving flood warnings from the Environment Agency Floodline Warning Direct system. It is recommended that the property Owner contact the Environment Agency's Floodline on 0845 988 1188 to register the property to receive advance warning of flooding by telephone, mobile, fax, SMS text, email or pager. The Environment Agency aim to issue a 'severe flood warning' approximately 2 hours before existing defences are overtopped.

CONCLUSION

- The site does have the protection of tidal flood defences which are well maintained by the Environment Agency.
- The proposed site or the additional building is shown to be within Flood Zone 3 'High Probability' as detailed on the Environment Agency's Flood Zone Maps **without defences**.
- The 2017 Update to SHDC, SFRA Tidal & Fluvial Hazard Mapping, for District following a breach to the defences, show that the site where the proposed development is to be located is within an area of no hazard, for the present day and for climate change the 1% fluvial and 0.5% Tidal Event Probability Maps for Hazard, Velocity and Depth, shows that the site is within a hazard area between 1.25 – 2.0 (Danger for Most), max depth of flooding 0.5 – 1.0m and velocity 0 – 0.3m/sec

- The Flood Risk Vulnerability Classification in Table 2 of NPPG the proposed buildings use is classified as “Less Vulnerable”, with Table 1 of NPPG stating that such uses are appropriate in this zone.
- Any impact of damage to the property can be foreseen and mitigated against by relatively simple design and construction techniques. They will be constructed using materials which are flood resilient construction as outlined in the report.
- Flooding from other sources is unlikely to affect the site.
- With the site being at risk from tidal breach flood events and that touring caravans are classed as “More Vulnerable” development for which appropriate mitigation measures cannot be provided, which is sufficient, during an event, to ensure reduced risk. Therefore, it is proposed to prevent the loss of life, that the touring caravan pitches hereby permitted shall only be occupied between the 15th of March and the 31st of October (or the first Sunday in November if half terms falls in November) in any year. This accords with the Cell D5 Southeast Lincolnshire Standing Advice Matrix and also the current planning approval for the site.
- The current site has an approved Flood Warning and Evacuation Plan in place, this will be updated to include the additional units.
- No obvious constraints have been identified that may impact the proposed development and the type of mitigation measures that can be used to reduce the flood risk, there is no increase in the flood risk to others. Following the guidelines contained within the NPPF, the proposed development is considered to be suitable assuming appropriate mitigation is maintained for the lifetime of the development.
- It is therefore concluded that the proposed development can be constructed, safely and sustainably, to meet the requirements of NPPF.

Flood map for planning

Your reference
Fleet Hargate

Location (easting/northing)
539501/325551

Created
13 Oct 2021 10:44

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2021 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>

Flood map for planning

Your reference
Fleet Hargate

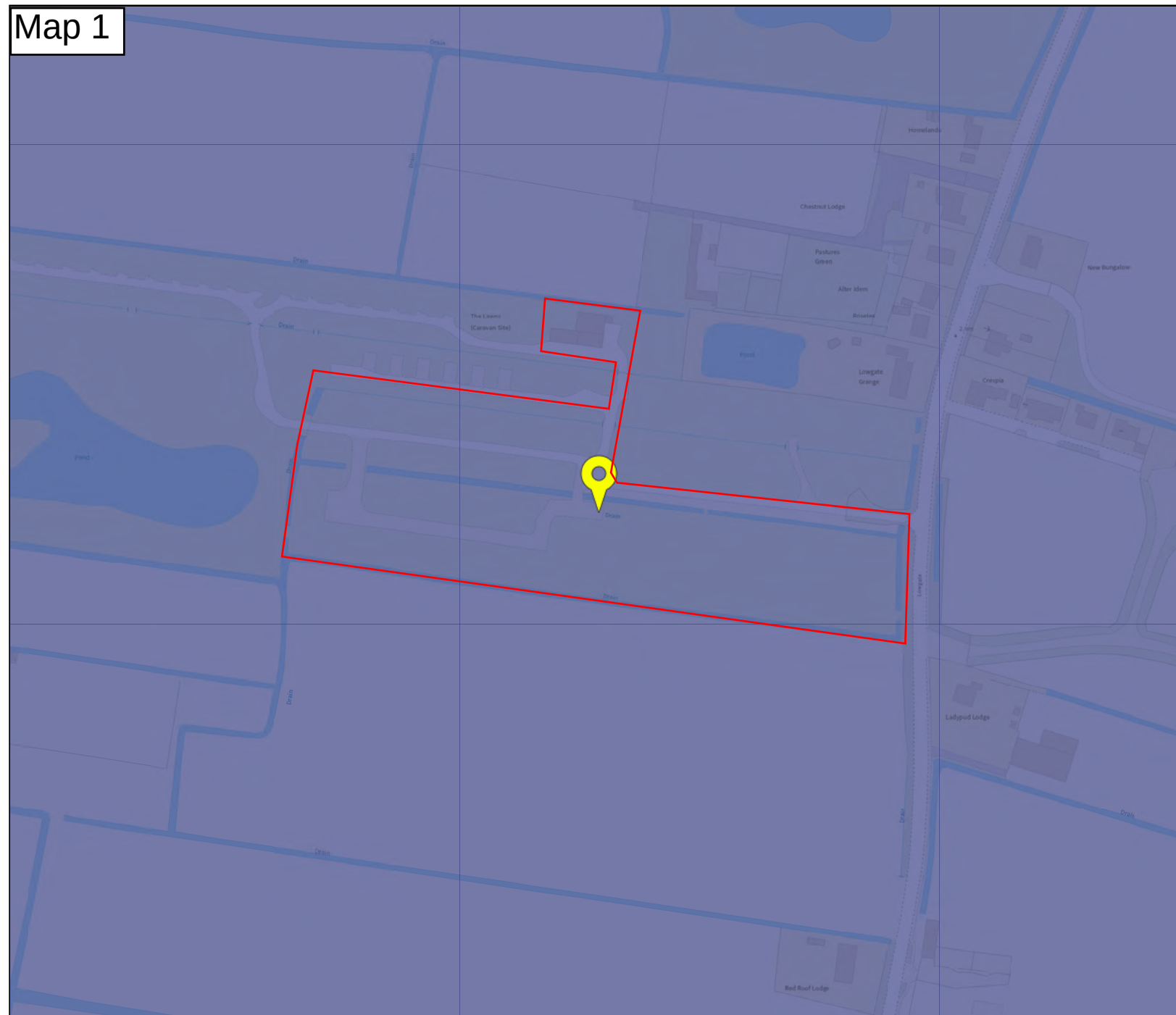
Location (easting/northing)
539501/325551

Scale
1:2500

Created
13 Oct 2021 10:44

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefitting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area

0 20 40 60m



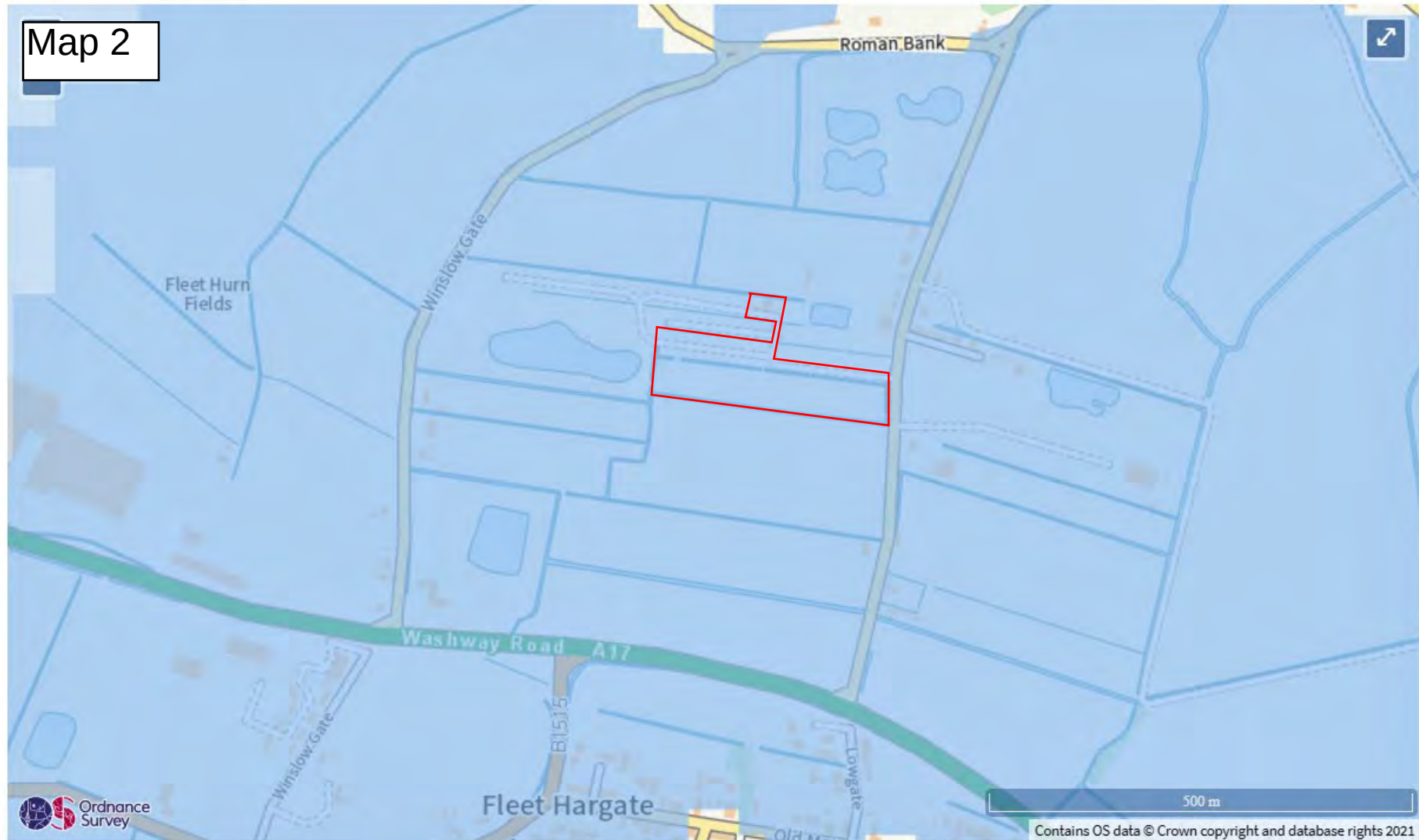
Flood risk

Location

Extent of flooding

Fleet Hargate

Map 2



Extent of flooding from rivers or the sea

High Medium Low Very low

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

Key Node Points



Scale 1:550,000



▲ East Coast and Wash

See separate 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-a-Doublet	527200	299287	-	3.67	-	-	4.00	-	-	4.22	-	-	4.32	-	-	4.42	-	-	-	-	-	-	-		

See next page for notes

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://deframetadadata.com/geonetwork/srv/eng/catalog.search#/metadata/84a5c7c0-d465-11e4-b0bd-f0def148f590>

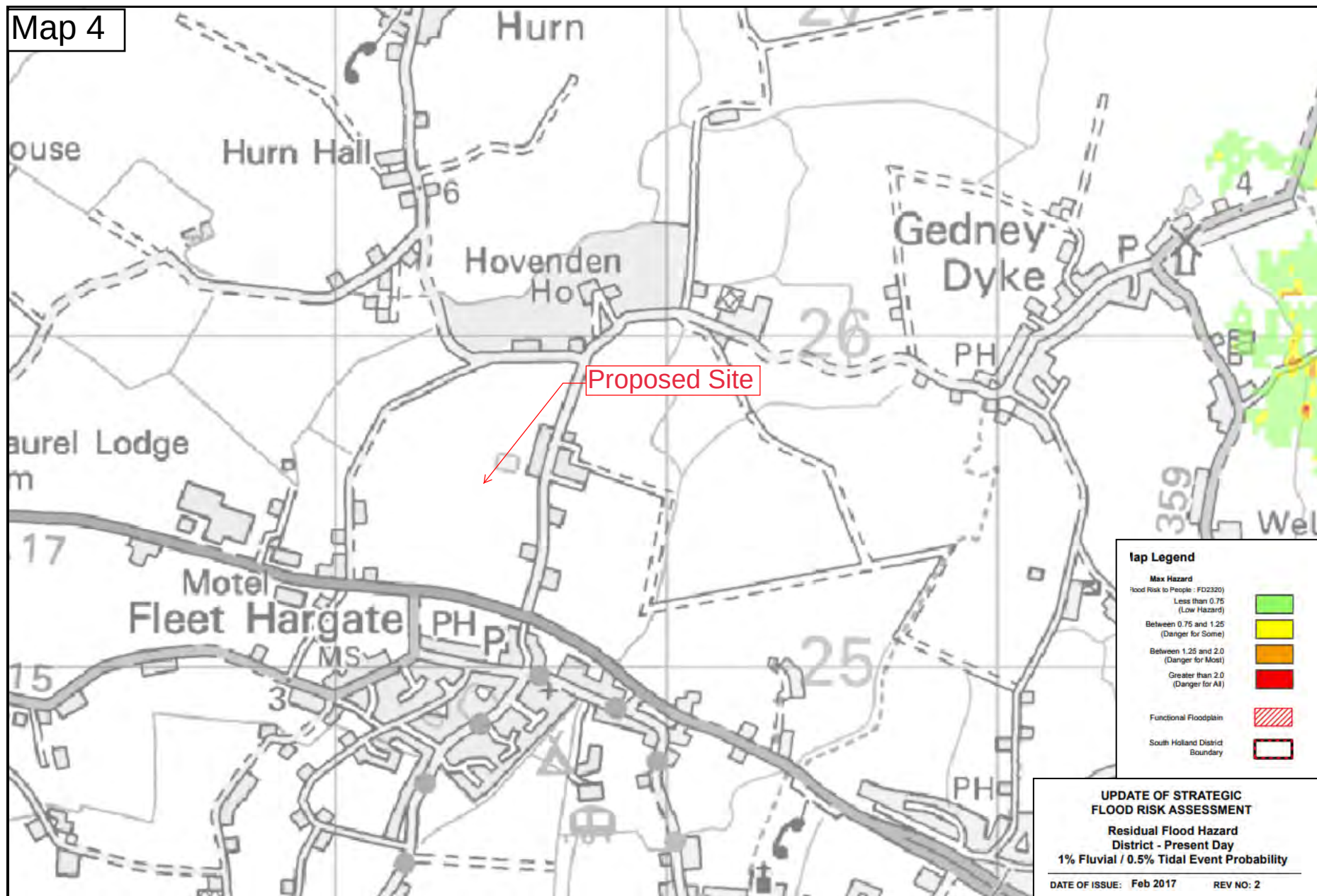
The following notes apply to all Marsh Road, Wisbech, Dog-in-a-Doublet

- 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.

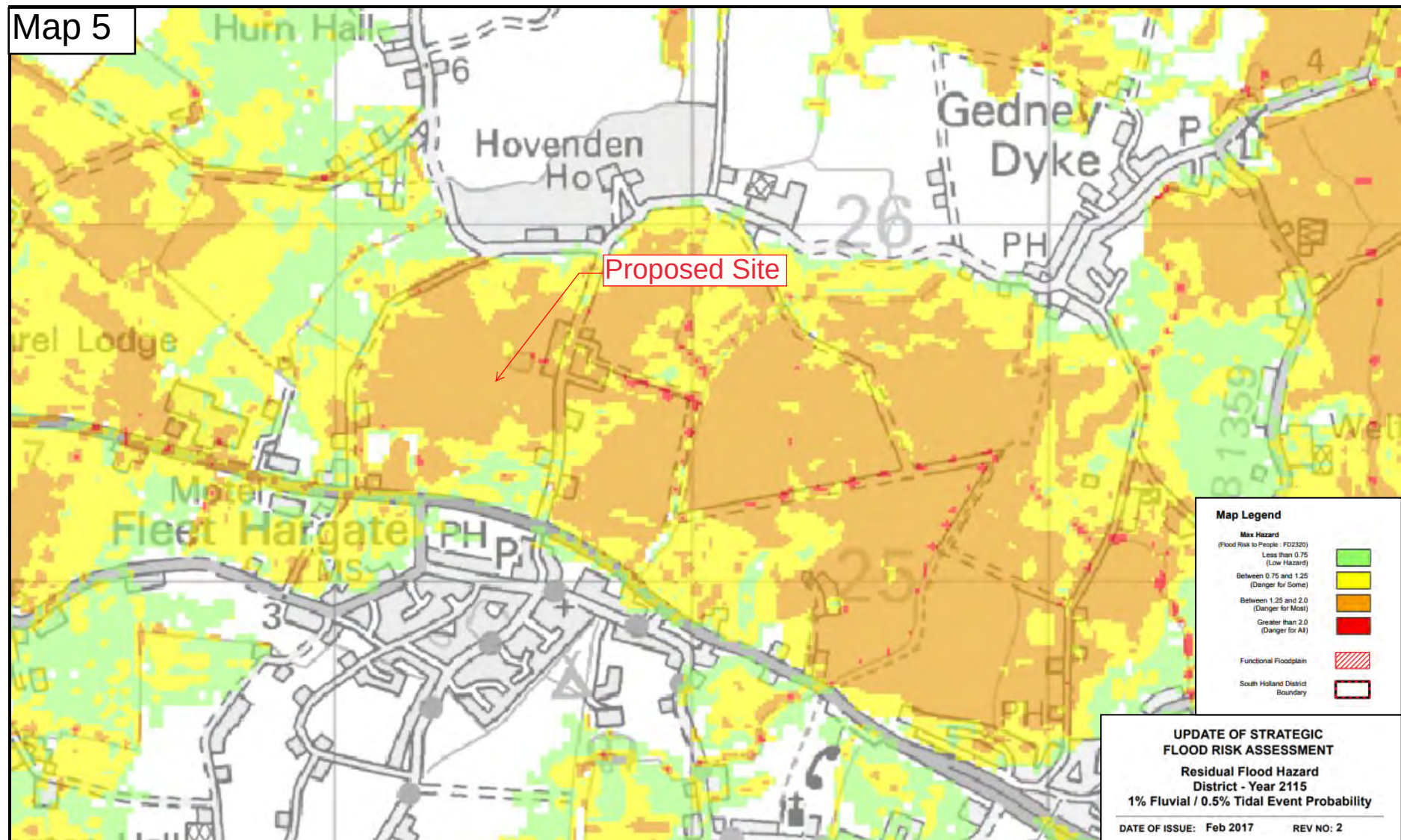
The following notes apply to Grand Sluice

- 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://deframetadadata.com/geonetwork/srv/eng/catalog.search#/metadata/84a5c7c0-d465-11e4-b0bd-f0def148f590>

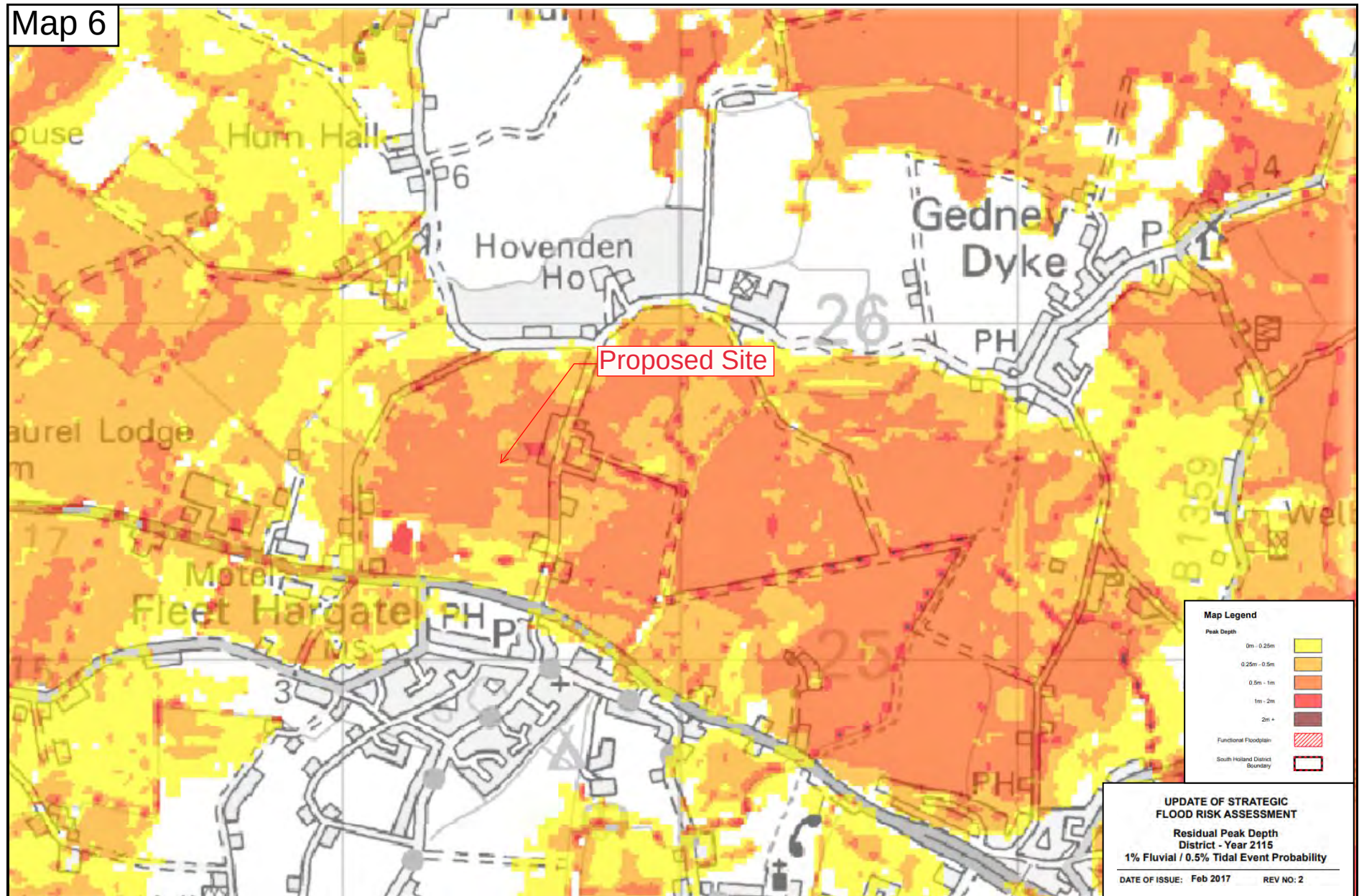
Map 4



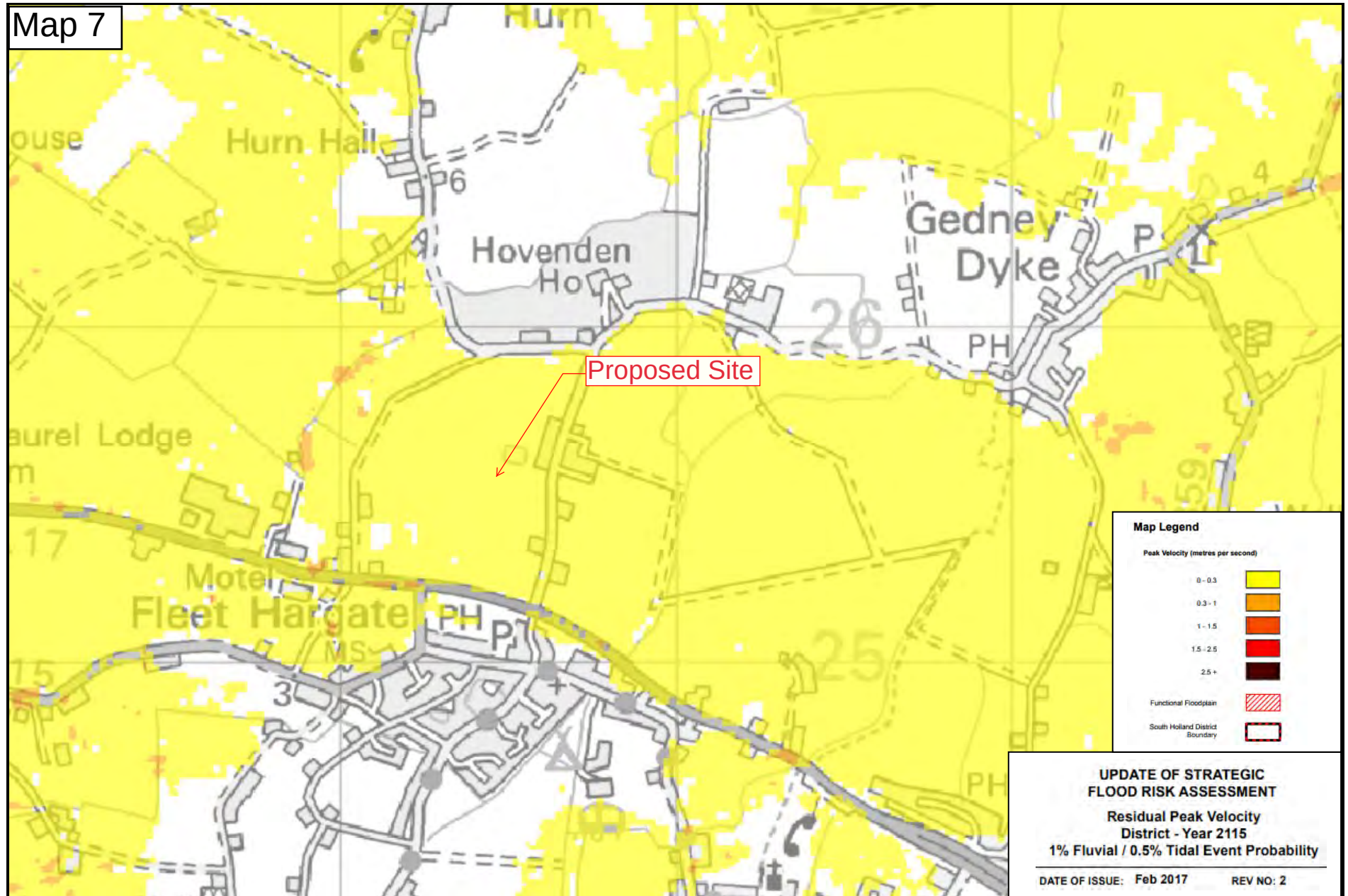
Map 5



Map 6



Map 7



Flood risk

Low risk: depth

Location

Fleet Hargate

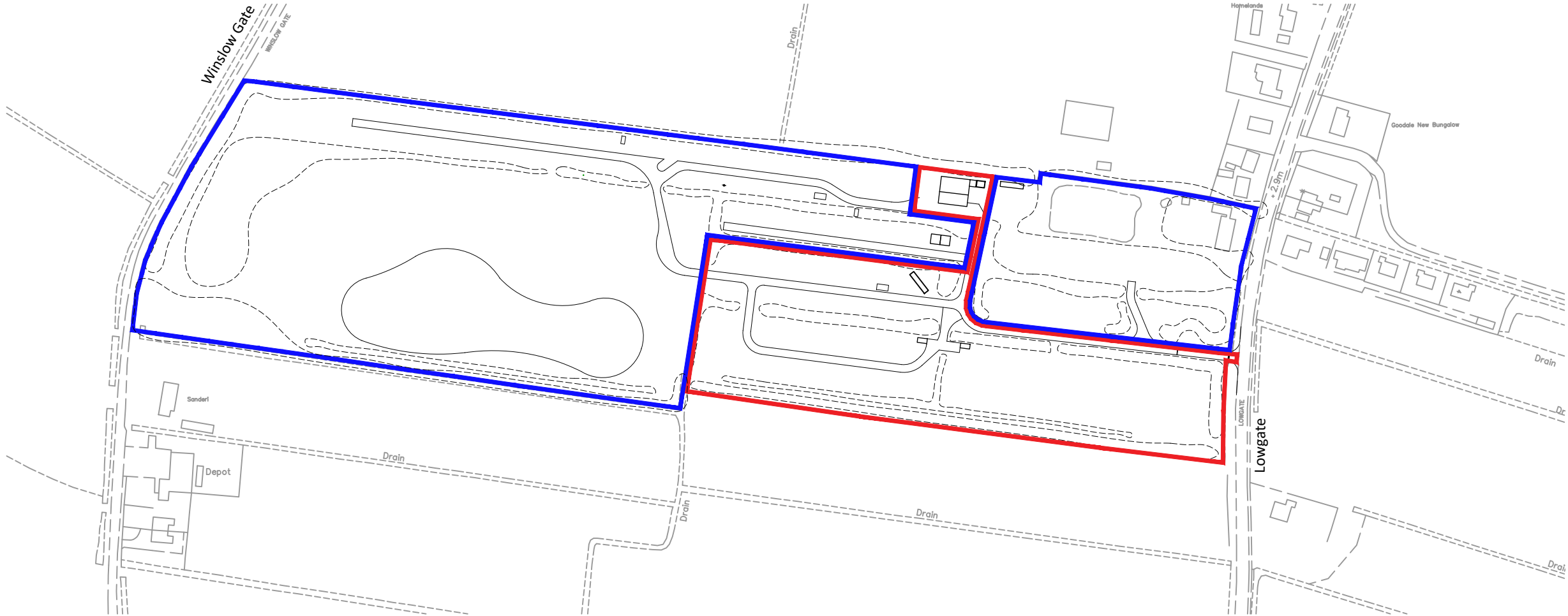
Map 8



Surface water flood risk: water depth in a low risk scenario

Flood depth (millimetres)

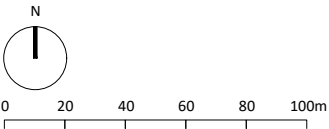
Over 900mm 300 to 900mm Below 300mm



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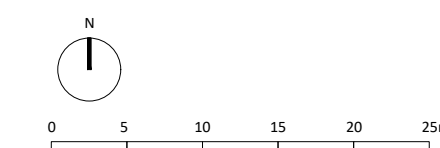
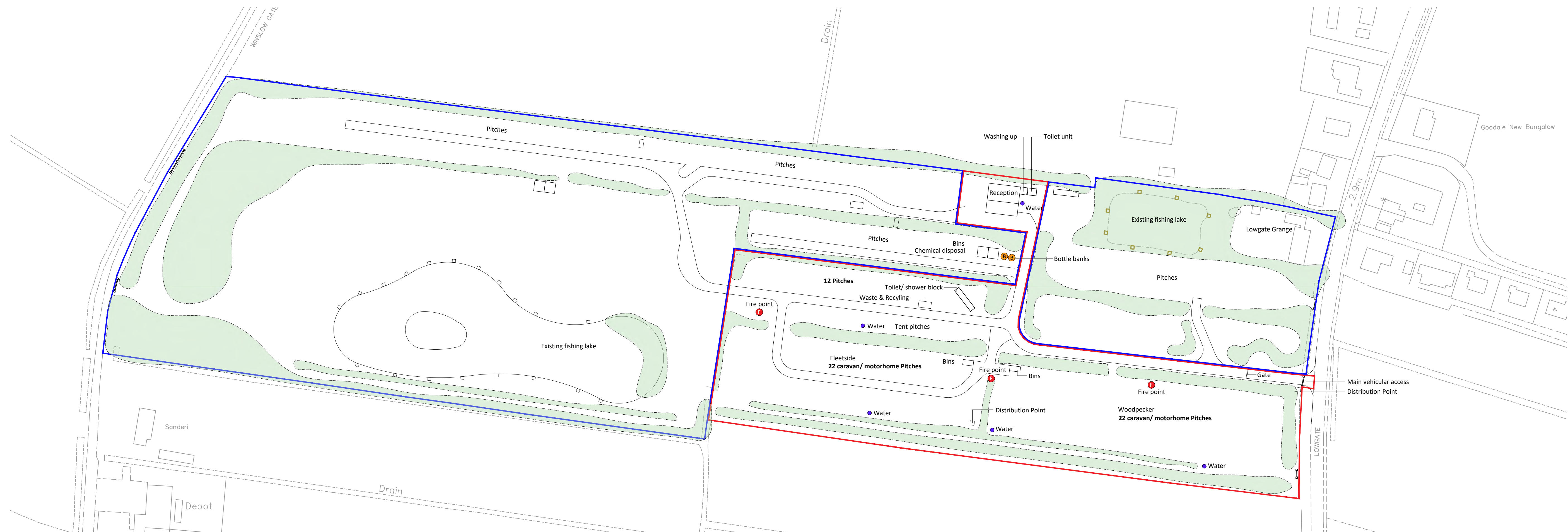
Client
Mr & Mrs N Pickett

Project
Lowgate Grange
Lowgate, Spalding

Drawing
Location Plan

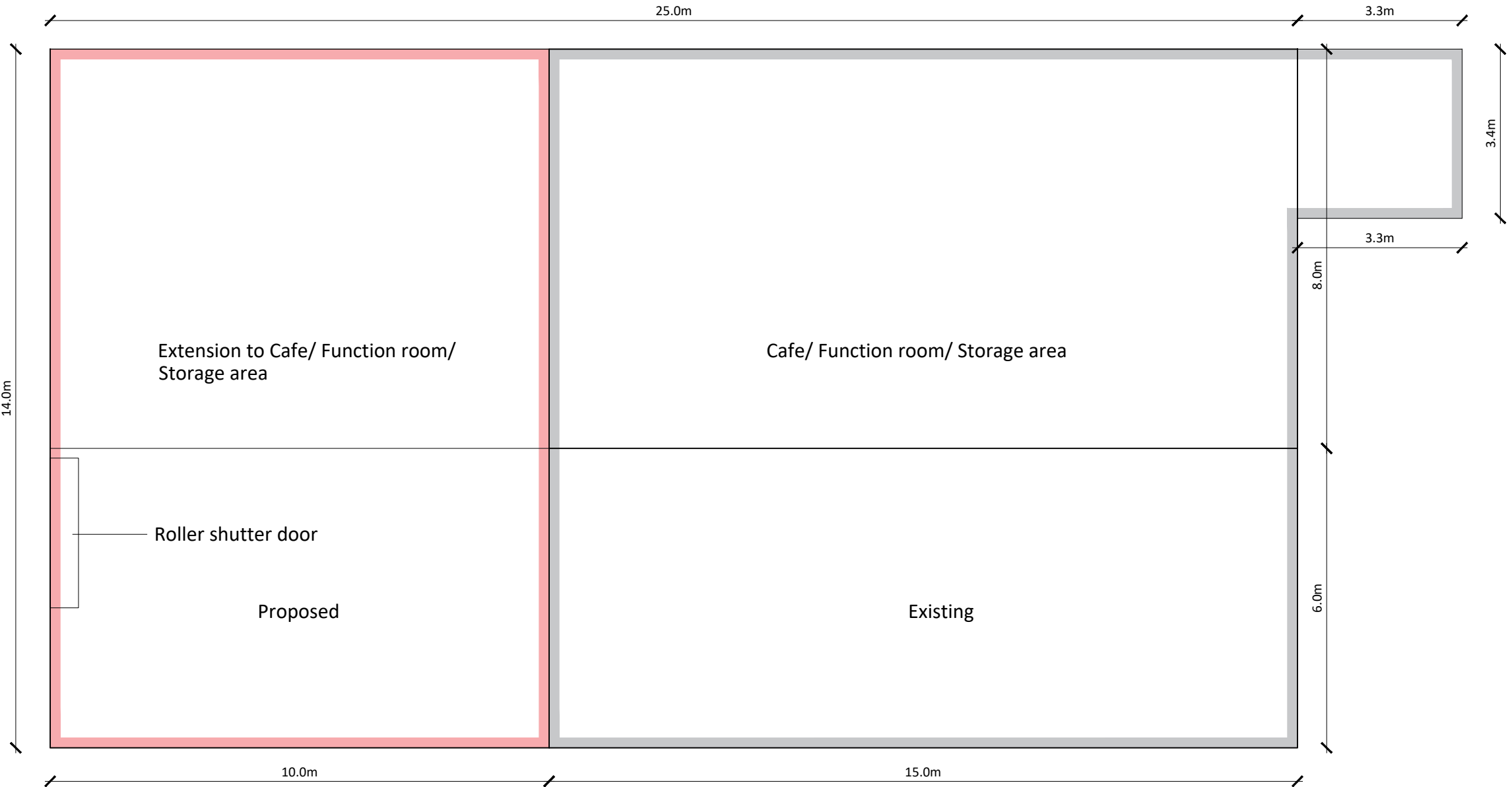
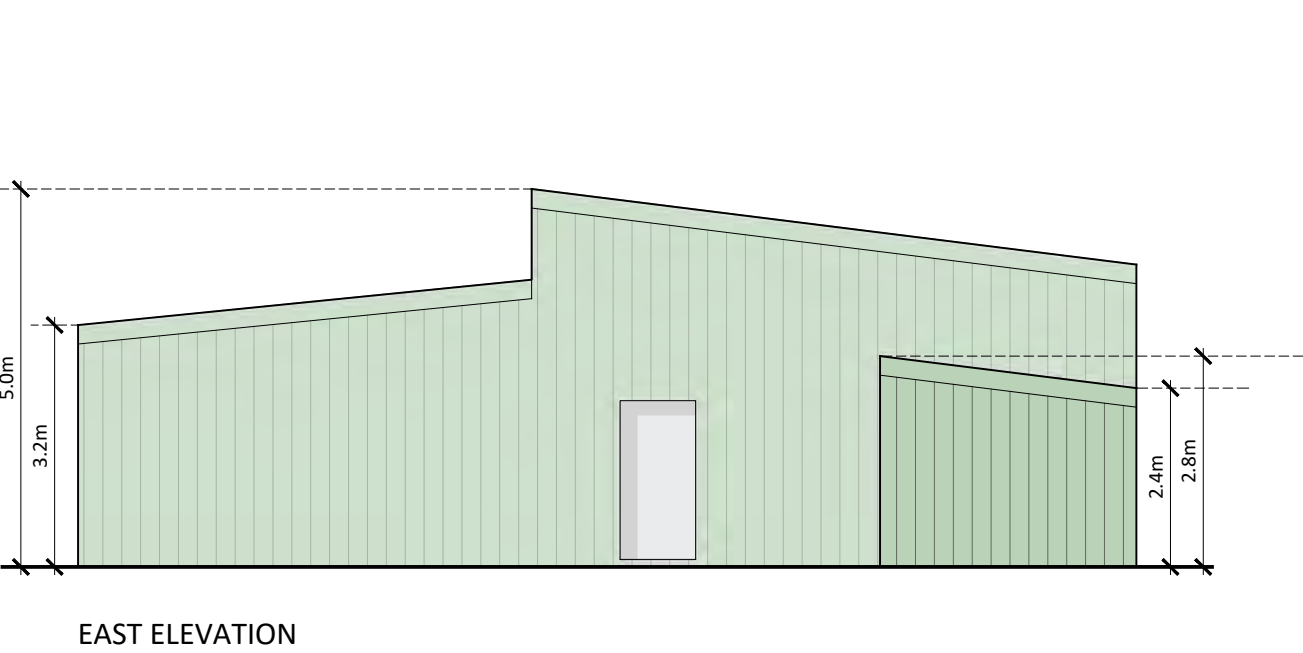
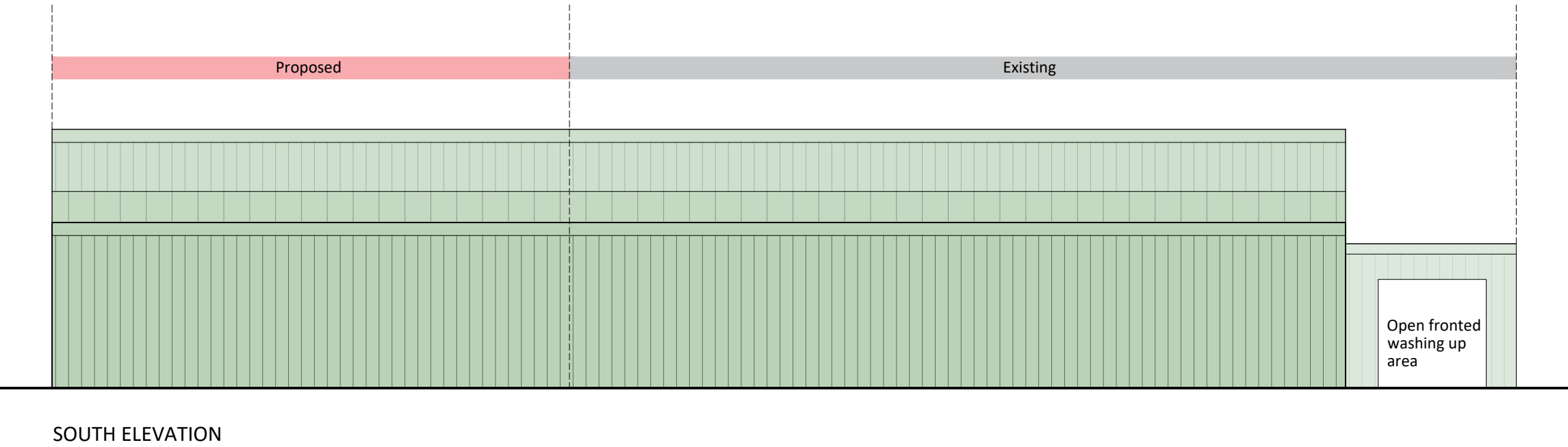
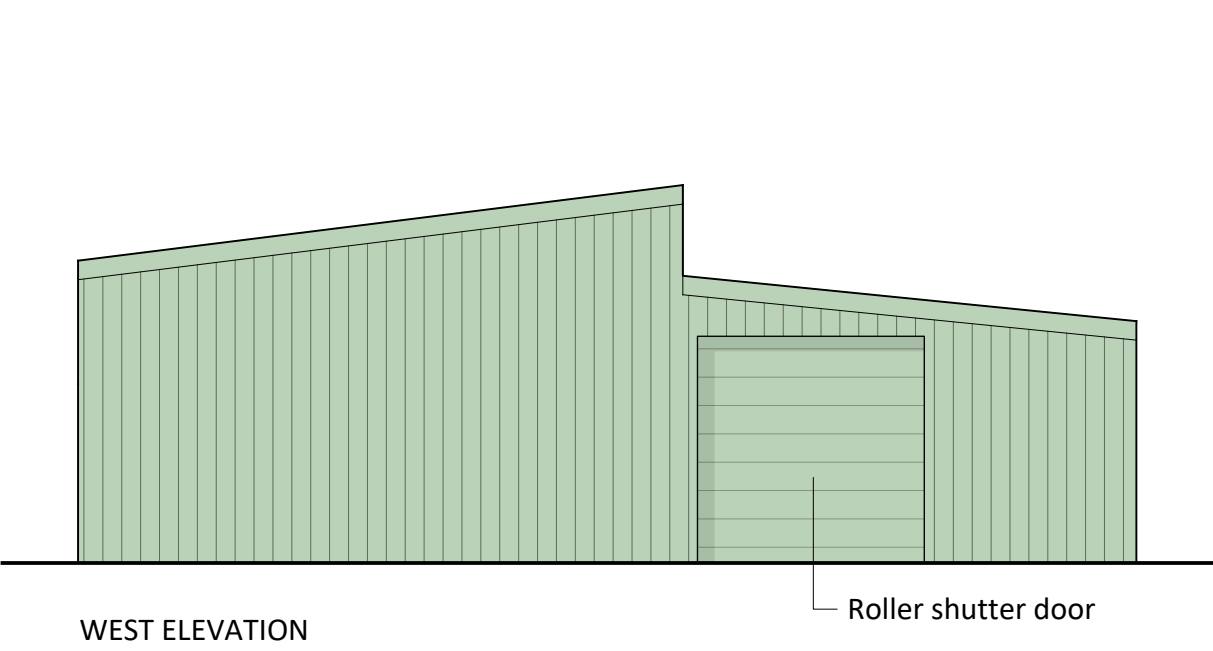
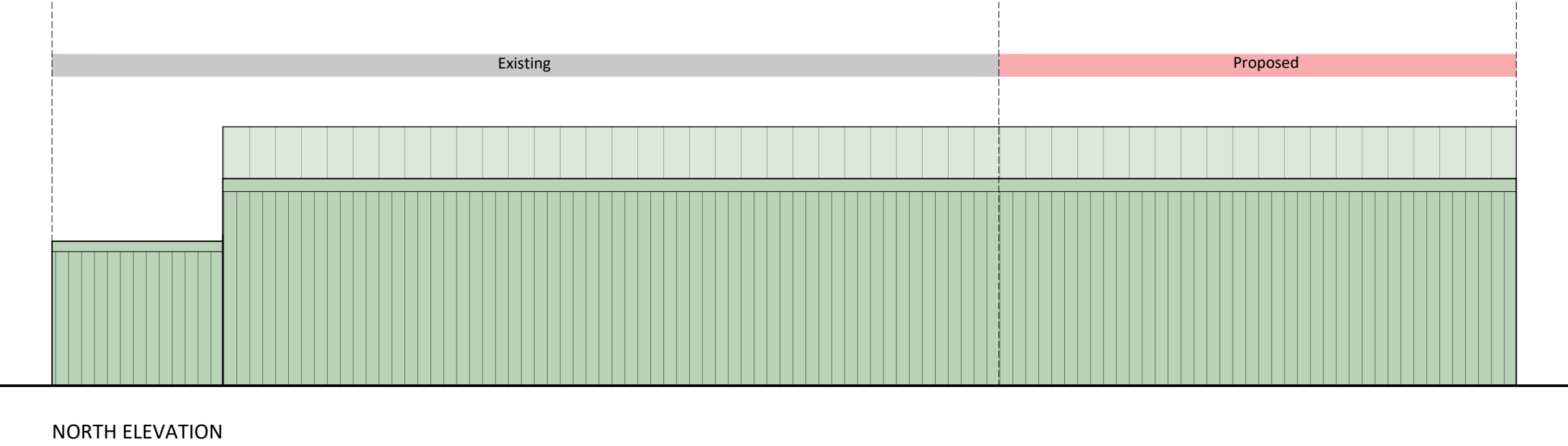
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Drawn By WW		Checked By LMS
Job Number 1008-5	Status PL	Purpose of Issue Planning

Drawing No. 1008-5_PL_LP01	Rev -
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Client Mr & Mrs N Pickett			
Project Lowgate Grange Lowgate, Spalding			
Drawing Existing Site Plan			
Scale @ A1 1: 500		Date 04/01/22	
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Job Number 1008-5	Status PL	Purpose of Issue Planning	
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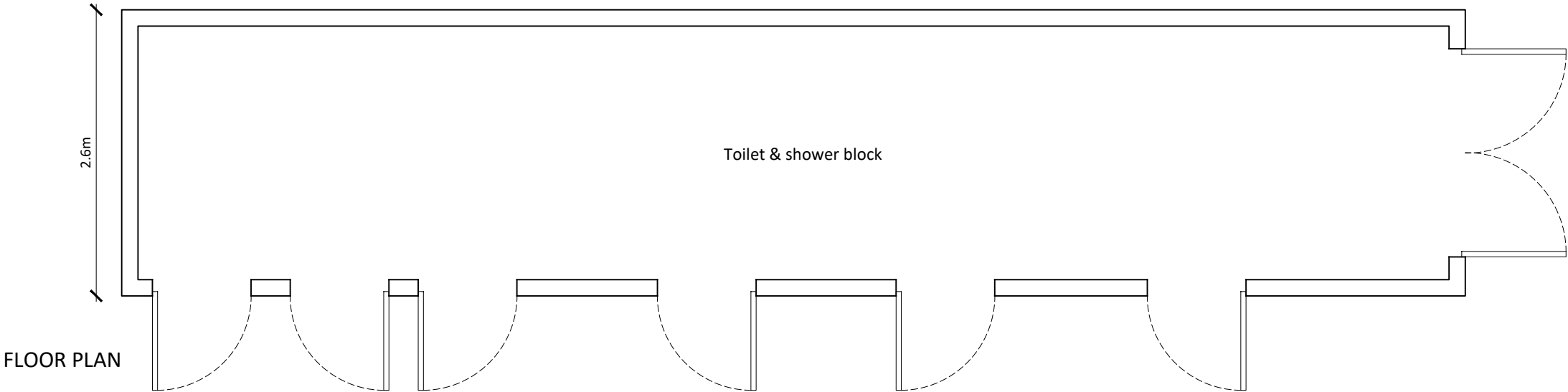
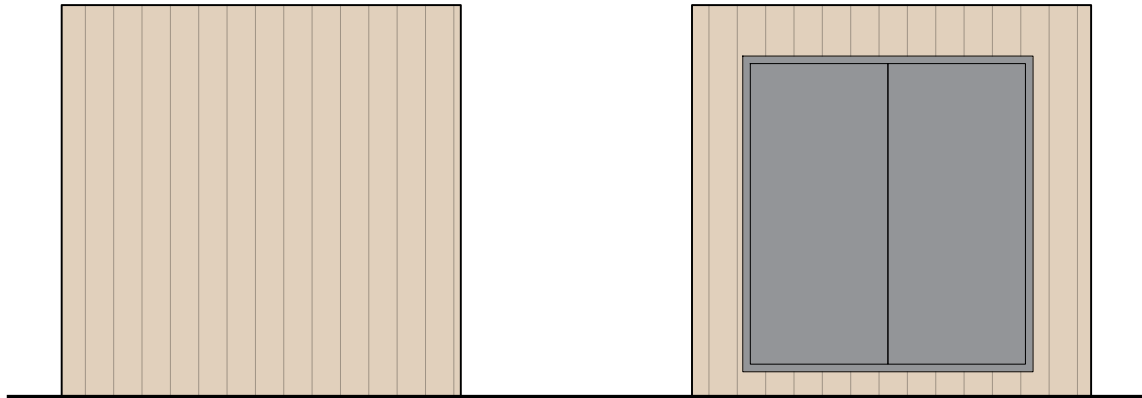
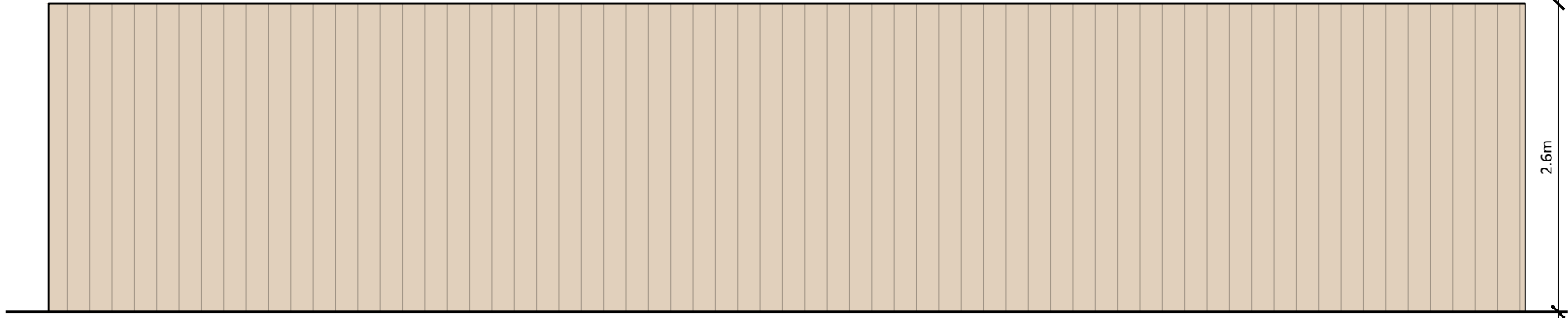
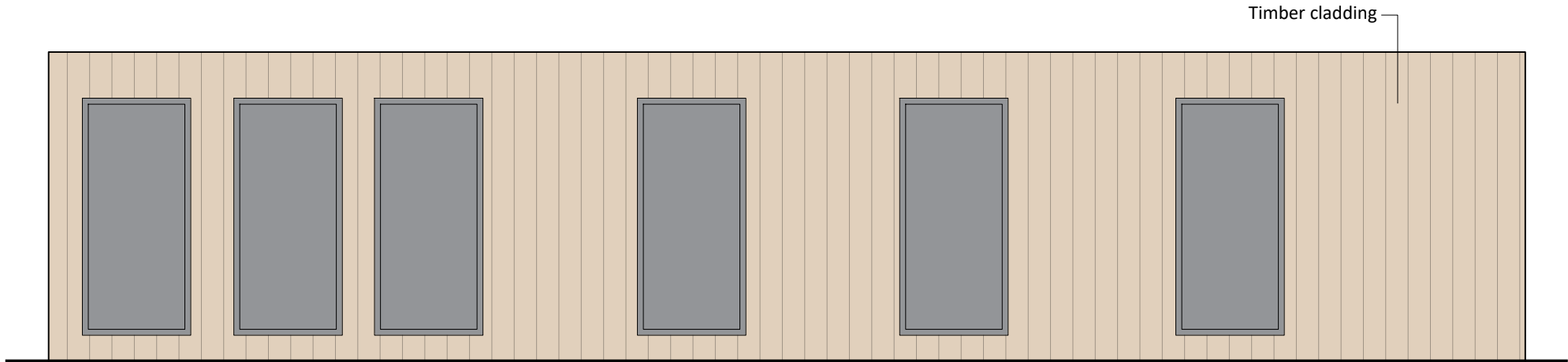
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Project Lowgate Grange Lowgate, Spalding		
Drawing Building plans & elevations		
Scale @ A2 1: 100		Date 04/01/22
Drawn By WW		Checked By LMS
Job Number 1008-5	Status PL	Purpose of Issue Planning
Drawing No. 1008-5_PL_GA01		Rev -

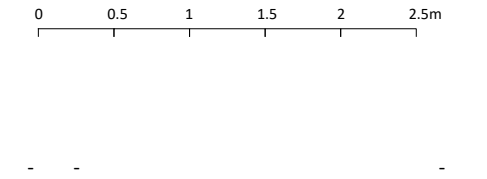


Notes

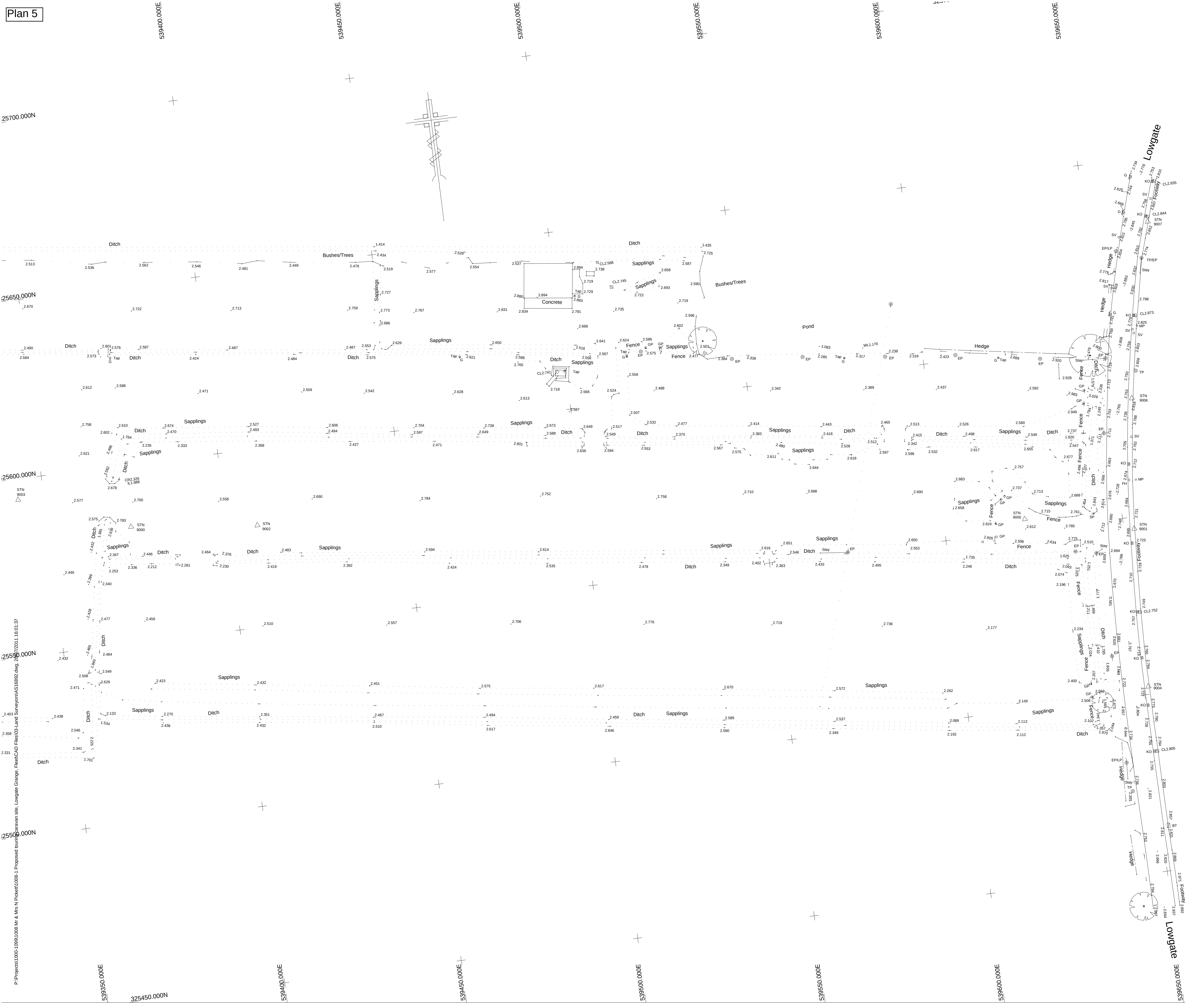
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Drawing Toilet & shower block plans & elevations		
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KEY:	
—————	BUILDING
- - - - -	FENCE
- - - - -	HEDGE
- - - - -	OVERHEAD ELECTRIC
-----	UNDERGROUND ELECTRIC
-----	BANK EDGE
-----	STORM DRAINAGE
-----	FOUL DRAINAGE
-----	TELECOM LINE
-----	GAS LINE
-----	CHANNEL
- - - - -	WALL
- - - - -	CABLE TV
- - - - -	WATER MAIN
IL INVERT LEVEL	□ GP GATE POST
CL COVER LEVEL	○ POST
WM WATER LEVEL	○ B BOLLARD
SPOT LEVEL	□ X AN MANHOLE
☉ TREE	■ G GULLY
☉ BOREHOLE	■ K KEROFFLET
☉ CONTROL STATION	■ SV STOP VALVE
☉ BENCHMARK	■ WM WATER METER
☉ BATTER SYMBOL	■ FH FIRE HYDRANT
	■ MP MARKER POST
	■ GA GAS VALVE
	⊗ EL ELECTRIC BOX
	⊗ EP ELECTRIC POLE
	⊗ TP TELEPHONE POLE
	⊗ BT BRITISH TELECOM
	⊗ LT LAMP POST

NOTES:	
1.	Survey plotted to OS National Grid.
2.	All levels related to OS Datum.

[illegible]

Rev:	Amendments:	Date:

Client:

Project Title:

Drawing Title:

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Drawn By: D.J.SMITH	

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