



Earth Environmental
& Geotechnical

Land at Broad Oak Copse Lane, Hayling Island

Flood Risk Assessment

June 2025
Revision B



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1. Introduction

Earth Environmental and Geotechnical Ltd have prepared this flood risk assessment in support of an application for a new Shepherd's hut and associated facilities at Land at Broad Oak, Copse Lane, Hayling Island (hereafter referred to as 'the Site').

This report provides a detailed overview of the proposed development and an assessment of it in relation to the flood risk, and how the proposals have been developed in relation to current flood map data and current planning policy and requirements, including:

- National Planning Policy Framework (NPPF), December 2024, Paragraphs 161-163 and 170-182;
- National Planning Practice Guidance (NPPG) ('Flood Risk and Coastal Change' section), released in March 2014 and updated in August 2022;
- Environment Agency and Department for Environment, Food and Rural Affairs guidance;
- Environment Agency and JBA Consulting via Landmark Envirocheck data service.

And local policies including:

- Partnership for South Hampshire Level 1 Strategic Flood Risk Assessment;
- Hampshire County Council Preliminary Flood Risk Assessment (April 2011);
- Havant Borough Core Strategy (March 2011) Local Development Framework;
- Havant Borough Council – Flood Risk in Development: Overview of Information Sources for Applicants;
- Havant Borough Council – Flood Risk Sequential Test and Exception Test – Policy Guidance for Applicants and Planning Officers (March 2023).

Havant Borough Council need to be satisfied that the proposed development design principles will address the risk of flooding to the Site, and that the proposals will not in turn increase the risk of flooding to neighbouring land and property.

This FRA has therefore been prepared to identify and evaluate the various possible sources of flood risk, to which the Site might be subjected to, and identify any mitigation, protection, or compensation measures deemed necessary or feasible.

2. National Policy and Water Management Guidance

2.1. National Planning Policy Framework (NPPF) and National Planning Practice Guidance (NPPG)

The NPPF (December 2024) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. This document is used to form this surface water management report, with particular attention to Paragraphs 161-163 (Planning for Climate Change) and 170-182 (Planning and Flood Risk).

NPPF Paragraphs 170-182 provide guidance for planning and flood risk, where plans should apply a sequential, risk-based approach to the location of development taking into account current and future impacts of climate change; to ensure that flood risk is not increased elsewhere due to the development; and to incorporate sustainable drainage systems.

NPPG, Paragraph 020 (Reference ID: 7-020-20220825), outlines that the objectives of this FRA are to establish whether a 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; whether there is evidence for the local planning authority to apply (if necessary) the Sequential Test; and whether the development will be safe and pass the Exception Test, if applicable.

2.2. Havant Borough Core Strategy (March 2011) Local Development Framework

Relevant Sections of Policy CPS15 Flood and Coastal Erosion Risk, state:

'Development in areas at risk of flooding now and in the future as identified on the latest Environment Agency flood risk maps and Strategic Flood Risk Assessment climate change maps will only be permitted where:

- 1. It meets the sequential and exception test (where required) in relation to PPS25.*
- 2. The site is located in a low hazard area as defined in the Strategic Flood Risk Assessment.*
- 3. A site-specific flood risk assessment demonstrates that the development will be safe, including the access, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.*
- 4. The scheme incorporates flood protection, flood resilience and resistance measures appropriate to the character and biodiversity of the area and the specific requirements of the site.*
- 5. Appropriate flood warning and evacuation plans are in place.*
- 6. New site drainage systems are designed taking account of events which exceed the normal design standard.*

All development will be required to ensure that there is no net increase in surface water runoff. Priority should be given to incorporating Sustainable Drainage Systems (SuDS) to manage surface water drainage, unless it is proven that SuDS are not appropriate. Where SuDS are provided arrangements must be put in place for their whole life management and maintenance'.

3. Site Setting and Description

3.1. Site Location

The Site is in a rural / residential area of Fleet, Hayling Island which is approximately 10 km east of Portsmouth city centre. As detailed on the location plan in Appendix A, the Site is bound residential gardens and agricultural fields to the north, residential dwellings to the east and west, and Copse Lane to the south.

The nearest postcode to the Site is PO11 0QB, with the co-ordinates to the centre of the Site being – E: 472560, N: 101930.

3.2. Existing Site and Topography

As detailed in Appendix B, the Site, in a pre-development state, is undeveloped grassland with a static caravan and concrete base to the north, hedgerows along the eastern boundary, and trees along the western boundary.

In terms of topography, the Site has a general fall in a southerly direction towards Copse Lane.

3.3. Proposed Development

As detailed in Appendix C, the Site, in a post development state, will consist of the static caravan and 2No. plots for a new shepherd's hut that can be moved between the winter and summer seasons. The existing concrete base is to remain, with a car park to the south, and access road with soft-landscaping through the centre.

3.4. Waterbody / Rivers / Canals / Reservoirs

The nearest waterbody, river, canal or reservoir to the Site, is the coastline (named Mill Rithe) approximately 250m to the south, and an unnamed watercourse / drain approximately 100m to the south-west. Refer to the OS Water Network Lines Map in Appendix D for location details.

3.5. Ground Conditions

The ground conditions for the Site can be determined via the British Geological Survey (BGS) website, where borehole logs at locations within the vicinity of the site can be sourced.

A Borehole logs taken approximately 10m to the south of the Site (Copse Lane), shows that the ground predominantly consists of clay. See Appendix E for BGS borehole data.

3.6. On-Site Drainage and Public Sewers

There are no known drainage networks within the Site, as the Site currently consists of undeveloped grassland with a static caravan and concrete base to the north only. There are road gullies and manhole covers shown in Copse Lane (south of the Site), and therefore it is assumed there is a surface water sewer and/or drain below the road.

The road falls in a westerly direction, and therefore it is also believed that this network discharges the surface water to the watercourse / drain approximately 100m to the south-west of the Site.

4. Potential Sources of Existing Flooding

In accordance with the NPPF, flood risk must be assessed for all sources of flooding and development of the Site should be carried out in such a way as to mitigate any potential flood risk to both the Site and third parties and their property. This section identifies all possible sources of flooding.

4.1. Fluvial Flooding

Fluvial flooding results from watercourses / rivers surcharging and flooding the surrounding areas.

4.2. Coastal Flooding

Coastal flooding results from high tides from the sea.

4.3. Pluvial Flooding

'Pluvial' flooding is that which results from rainfall generated overland flow before the run-off enters any watercourse, drain or sewer. It is more often linked to high intensity rainfall events (typically in excess of 30mm per hour). However, it can also result from lower intensity rainfall or melting snow where the ground is saturated, frozen, developed or has low permeability. This results in overland flow and ponding in depressions in the topography. In urban areas 'pluvial' flows are likely to follow the routes of highways and other surface connectivity to low spots where flooding can occur. In some cases, it can deviate from this route into adjacent developments via dropped kerbs (either for access to driveways or disability access).

4.4. Groundwater Flooding

Groundwater flooding is caused by the emergence of water from sub-surface permeable strata. Fluctuations in the groundwater table can cause flooding should the table rise above the existing ground level. Groundwater flooding events tend to have long durations, lasting days, or weeks.

4.5. Flooding from Drains and Sewers

Flooding from drains and sewers is caused when the capacity of the drains and sewers is exceeded, and will result in flooding from the manholes.

4.6. Canals, Reservoirs and Other Artificial Sources

Flood is caused by canals, reservoirs and artificial sources is caused when the capacity of the sources is exceeded, or if there is an infrastructure failure.

5. Flood Risk Assessment – Sourced Data

Data from the Environment Agency and information from other parties are to be studied to establish which sources of flooding are at the Site.

5.1. Environment Agency Flood Maps for Planning (March 2025)

The fluvial flood zone map (Risk of Flooding from Rivers and Sea) on the EA website (see Figure 1 below), identifies that the Site is in Flood Zone 1 (low probability - less than 1 in 1000 annual probability of river flooding in any year).



Figure 1 – EA Fluvial Flood Zone Map

The EA fluvial flood extent map shown in Figure 2 indicates that the Site is **outside** the **present-day** fluvial flood extent area in the **1 in 30 annual likelihood event**.



Figure 2 – EA Fluvial Flood Extent – Present Day - 1 in 30

The EA fluvial flood extent map shown in Figure 3 indicates that the Site is **outside** the **present-day** fluvial flood extent area in the **1 in 200 (Sea) annual likelihood event**.



Figure 3 – EA Fluvial Flood Extent – Present Day - 1 in 200 (Sea)

The EA fluvial flood extent map shown in Figure 3 indicates that the Site is **outside** the **present-day** fluvial flood extent area in the **1 in 1000 annual likelihood event**.



Figure 4 – EA Fluvial Flood Extent – Present Day - 1 in 1000

The EA fluvial flood extent map shown in Figure 5 indicates that the Site is **within** the **future climate change** fluvial flood extent area in the **1 in 30 annual likelihood event**.

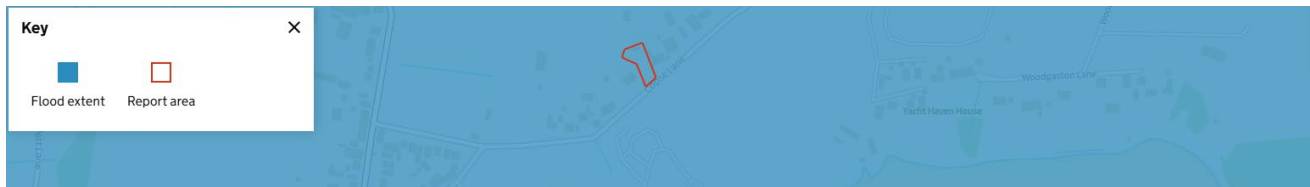


Figure 5 – EA Fluvial Flood Extent – Future Climate Change - 1 in 30

The EA fluvial flood extent map shown in Figure 6 indicates that the Site is **within** the **future climate change** fluvial flood extent area in the **1 in 200 (Sea) annual likelihood event**.

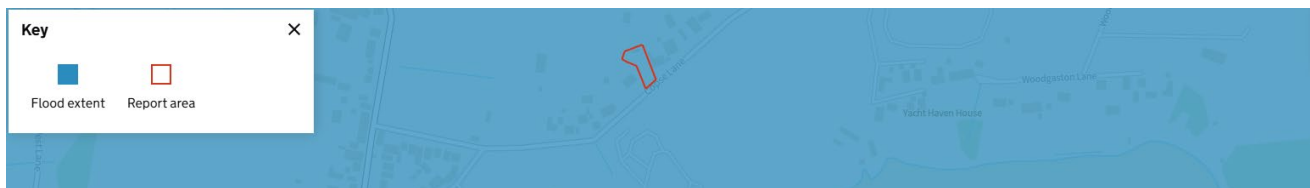


Figure 6 – EA Fluvial Flood Extent – Future Climate Change - 1 in 200 (Sea)

The EA fluvial flood extent map shown in Figure 7 indicates that the Site is **within** the **future climate change** fluvial flood extent area in the **1 in 1000 annual likelihood event**.

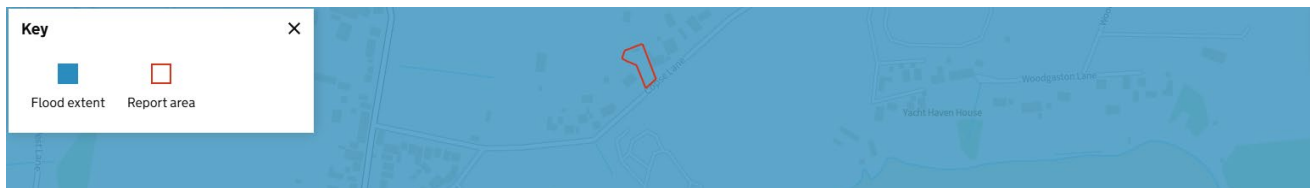


Figure 7 – EA Fluvial Flood Extent – Future Climate Change - 1 in 1000

The EA surface water / pluvial extent map shown in Figure 8 indicates that the Site is **outside** the surface water / pluvial flood extent area in the **1 in 100 annual likelihood event**.

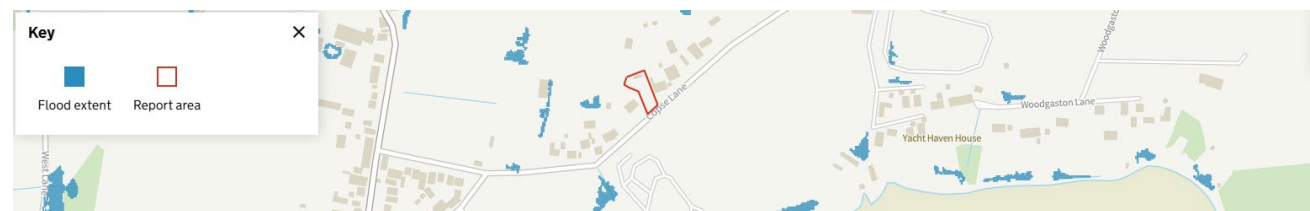


Figure 8 – EA Surface Water / Pluvial Flood Extent - 1 in 100

The EA **surface water / pluvial** extent map shown in Figure 9 indicates that the Site is **outside** the surface water / pluvial flood extent area in the **1 in 1000 annual likelihood event**.

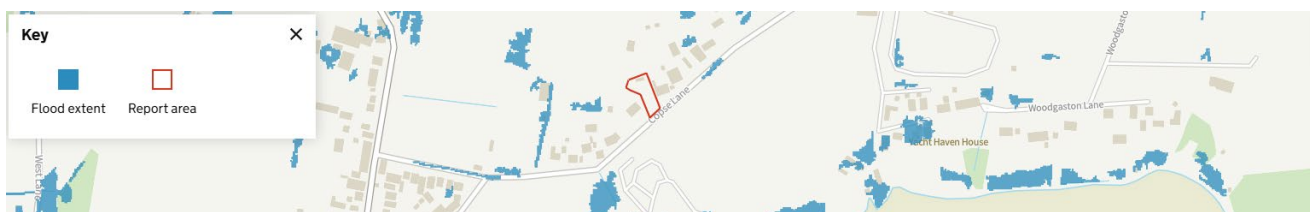


Figure 9 – EA Surface Water / Pluvial Flood Extent - 1 in 1000

5.2. Landmark Envirocheck Data Maps

Refer to Appendix D for Landmark Envirocheck flood map data. The data shown on the maps have been sourced from studies by JBA Consulting, the EA and NRW. The summary of each of the maps are as follows:

5.2.1. Flood Zone Map

The EA/NRW flood data map also identifies that the Site is in Flood Zone 1 (low probability - less than 1 in 1000 annual probability of river flooding in any year).

5.2.2. JBA Flood Maps (Fluvial, Pluvial and Coastal)

The Envirocheck (EA/NRW) 75-year return period flood map indicates that there is no pluvial fluvial or coastal flooding at the Site.

The Envirocheck (EA/NRW) 100-year return period flood map indicates that there is no fluvial or coastal flooding at the Site.

The Envirocheck (EA/NRW) 200-year return period flood map indicates that there is no pluvial fluvial or coastal flooding at the Site.

The Envirocheck (EA/NRW) 1000-year return period flood map indicates that there is no pluvial fluvial or coastal flooding at the Site.

5.2.3. EA / NRW Flood Map (Surface Water / Pluvial Flooding)

The EA 30-year return period flood map indicates that there is no surface water / pluvial flooding in the Site.

The EA 100-year return period flood map indicates that there is no surface water / pluvial flooding in the Site.

The EA 1000-year return period flood map indicates that there is no surface water / pluvial flooding in the Site.

5.2.4. Ground Water

The BGS flood data map indicates that there is potential for groundwater flooding to occur at the surface within the Site.

The ESI groundwater flood map indicates that there is a low to negligible risk of ground water flooding at the Site.

5.2.5. Canal Failure

The Envirocheck (JBA) canal failure map indicates that the Site is not in the canal flood coverage, and is not in an area of flooding in the event of a canal failure.

5.2.6. Historic Flood Map

The Envirocheck historic flood map indicates that there has been no flooding at the Site from any source.

6. Probability of Flooding

6.1. Fluvial Flooding Probability: Current – LOW / Future – HIGH

The EA flood zone maps indicate that the Site is in Flood Zone 1.

The EA fluvial flood extent map shows that the Site is outside the present-day fluvial flood extent area in the 1 in 30 to 1 in 1000 annual likelihood events.

The JBA maps indicate that there is no flooding at the Site from pluvial or coastal sources for all return periods up to the 1000-year return period.

Therefore, based this data, the Site currently has a low probability of fluvial flooding.

However, the EA fluvial flood extent map shows that the Site is within the future climate change fluvial flood extent area in the 1 in 30 to 1 in 1000 annual likelihood events.

Therefore, the Site in the future will have a high probability of fluvial (tidal) flooding.

6.2. Pluvial Flooding Probability: Current – LOW / Future - LOW

The EA surface water / pluvial extent maps indicate that the Site is outside the surface water / pluvial flood extent area in the 1 in 100 and 1 in 1000 annual likelihood events.

The Envirocheck (EA/NRW/JBA) 30-year to 1000-year return period flood map indicates that there is no surface water / rainfall flood depth within the Site.

Therefore, based on the current data, the risk of pluvial flooding at the Site is deemed to be low.

6.3. Ground Water Flooding Probability: Current – LOW / Future - LOW

The BGS flood data map indicates that there is potential for groundwater flooding to occur at the Site.

The ESI groundwater flood map indicates that there is a low to negligible risk of ground water flooding at the Site.

Due to the topography, groundwater flooding is likely to occur south of the Site (lower levels) and therefore will not flow towards the shepherd's hut.

BGS data also identifies the ground to predominantly consist of clay, which is known to have exceptionally low or no percolation value. Therefore, it is unlikely that ground water would penetrate the clay strata to the surface.

Based on the topography of the Site and the presence of clay, here will be a low probability of groundwater flooding.

6.4. Canals, Reservoirs and Other Artificial Sources Probability: Current – LOW / Future - LOW

The Envirocheck (JBA) canal failure map indicates that the Site is not in the canal flood coverage, and is not in an area of flooding in the event of a canal failure.

There are no other artificial sources near the Site, and therefore, the risk of flooding is deemed to be low.

6.5. Flooding from Drains and Sewers Probability: Current – LOW / Future - LOW

There are no known drainage networks within the Site. There is believed to be a surface water sewer and/r drain in Copse Lane (south of the Site)

Copse Lane is lower than the Site, and therefore flood water from the existing network wouldn't flow into the Site but would flow in a westerly direction towards the unnamed watercourse / drain.

7. Flood Risk and Vulnerability

The NPPG Paragraphs 077 to 078 set out the flood risk for the Site by assessing the flood zones, flood risk vulnerability classification, and flood risk vulnerability and flood zone 'compatibility'.

7.1. Flood Zones

NPPG Paragraph 077, Table 1 indicates that the flood zones are:

Flood Zones	
Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 Medium Probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% 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)
Flood Zone 3b The Functional Flood Plain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). 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)

The assessed flood map data identifies the Site to be in **Flood Zone 1**.

7.2. Flood Risk Vulnerability Classification

NPPG Paragraph 077, refers to NPPF Annex 3 where it states the flood risk vulnerability classifications as:

Flood Risk Vulnerability Classification
Essential Infrastructure Essential transport infrastructure (including mass evacuation routes) which should cross the area at risk; Essential utility infrastructure which must be in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood; Wind turbines.
Highly Vulnerable Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding; Emergency dispersal points; Basement dwellings; Caravans, mobile homes and park homes intended for permanent residential use; Installations requiring hazardous substances consent.
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 caravans and camping, subject to a specific warning and evacuation plan.
Less Vulnerable Police, ambulance and fire stations which are not required to be operational during flooding; Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'More Vulnerable' class; and assembly and leisure; Land and buildings used for agriculture and forestry; Waste treatment (except landfill* and hazardous waste facilities); Minerals working and processing (except for sand and gravel working); Water treatment works which do not need to remain operational during times of flood.
Water Compatible Development Flood control infrastructure; Water transmission infrastructure and pumping stations; Sewage transmission infrastructure and pumping stations; Sand and gravel working; Docks, marinas and wharves; Navigation facilities; Ministry of Defence installations; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms; Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

The Site is deemed to be '**Highly Vulnerable**' as a shepherd's hut is to be on the Site.

7.3. Flood Risk Vulnerability and Flood Zone ‘Compatibility’

NPPG Paragraph 078 Table 2, gives guidance on flood risk vulnerability compared with flood zone, to determine the compatibility.

Flood Risk Vulnerability and Flood Zone ‘Compatibility’					
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	✗	✗	✗	✓*

“†” In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

“*” In Flood Zone 3b (functional floodplain) essential infrastructure that has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

The development is deemed to be ‘Highly Vulnerable’. However, as the relevant flood maps show the Site is in Flood Zone 1, Table 2 of the NPPG states that the Site is appropriate for development, with no requirement for an exception test.

However, there is a high probability of fluvial (tidal) flooding at the Site in the future climate change event. If the sequential test is not passed, an exception test will still be required.

8. The Sequential Test

8.1. Guidance

The Sequential Test is based on guidance set out in Paragraph 175 AND 176 of the NPPF (December 2024), which state:

‘175. The sequential test should be used in areas known to be at risk now or in the future from any form of flooding, except in situations where a site-specific flood risk assessment demonstrates that no built development within the site boundary, including access or escape routes, land raising or other potentially vulnerable elements, would be located on an area that would be at risk of flooding from any source, now and in the future (having regard to potential changes in flood risk).

176. Applications for some minor development and changes of use⁶² should also not be subject to the sequential test, nor the exception test set out below, but should still meet the requirements for site-specific flood risk assessments set out in footnote 63

Footnote 63: A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use’.

8.2. The Test

The Site has a low probability of flooding from all sources including fluvial / tidal flooding in a present-day event. However, the flood map data shows the Site to be in the fluvial / tidal flood extent during a future climate change event.

The Site is owned by the current occupiers and currently consists of a static caravan used for similar purposes to the proposed site, falling into the same flood risk vulnerability category.

The occupiers propose changing the use of the land to rent out a new shepherd's hut, which involves relatively low expenses.

The proximity of the land to the coastline is expected to attract visitors, making the rental of the shepherd's hut a viable business. According to EA flood map data, all land within the same distance to the coastline as the site shares the same future climate change flood risk.

Only areas located significantly further from the coastline have a lower future climate change flood risk. There are no known areas of land available for purchase in these regions suitable for this type of business.

Therefore, since the site cannot be relocated to an area with a lower risk of flooding due to current land ownership, viable business location, and unavailable land, the site has failed the sequential test, as the flood risk will remain.

Consequently, since the sequential test has failed, the site must pass the exception test by ensuring that it remains safe for its lifetime for all occupants and does not increase flood risk elsewhere.

9. Exception Test - Safe Development over Lifetime

The design principles to be incorporated in the design and general management of the Site, to ensure it is safe for its lifetime including its users, will include:

- Flood warning to the Site owners and occupants of the shepherd's hut;
- Safe procedure for the Site owners and occupants of the shepherd's hut;
- Safe egress from the Site prior to coastal / tidal flood event;
- Ensuring no flood flows are displaced to areas outside the site area and increasing flood risk;
- Ensuring surface water run-off from the Site will not increase flood risk elsewhere.

9.1. Flood Warning

Coastal / tidal flooding at the Site should only occur during an exceedance event beyond the design capacity of the flood defences, or in the event of a failure of the flood defences during future climate change event.

Predictability

The risk of flooding from coastal / tidal sources is dependent on the prediction of high tides in combination with atmospheric conditions generating a surge event.

Given the very predictable nature of such events potentially coinciding, flood warnings can be issued within a sufficient timeframe to allow the owners / managers to the Site to prepare for flooding, to protect vulnerable items within the Site (i.e. items such as gas or pollutants) and evacuate occupants of the shepherd's hut.

Warnings

The EA and Met Office provide flood warnings up to five days in advance. These warnings can be coupled with specific on-site systems to provide a useful system of escalation tide to specific actions.

All future owners of the new dwelling are to sign up to Flood Warnings Direct (FWD) from the EA and to Weather Alerts from the Meteorological Office and to act upon the guidance provided.

The owners and managers of the Site are to sign up for the flood warnings, and to fully understand what the flood warnings mean.

The EA operate a Flood Forecasting and Warning Service in areas at risk of flooding from the sea, which relies on direct measurements of rainfall, river levels, tide levels, in-house predictive models, rainfall radar data and information from the Met Office. This service operates 24 hours a day, 365 days a year.

Flood Warnings Direct (FWD)

Floodline Warnings Direct is a free service operated by the EA that provides flood warnings direct to you by telephone, mobile, email, SMS text message and fax. Sign up for Floodline Warnings Direct by calling Floodline on 0845 988 1188 or going online and using the link: Home page - Sign up for flood warnings - GOV.UK (environment-agency.gov.uk)

Estimated Flood Warning Time

It is important to determine the estimated lead time between the EA sending out the warning and the time flooding might occur, and depending on the cause / type of flooding the estimated duration of the flood.

The owners / managers of the new Site will take necessary action when the type of warning and timing is known.

Alarm

An alarm in the form of telephone calls, mobile calls, emails, or SMS text messages will be raised when a specific warning or trigger is received. The flood warning code sent in the alarm from the EA will be as set out in Figure 10.

This alarm will be obvious to the owners / managers of the Site, and they will be clear on how to respond. Alarms will also take into account those with sensory or mobility impairment.

ONLINE FLOOD RISK FORECAST

Meaning

Be aware.

Keep an eye on the weather situation.

General advice

- Check weather conditions.
- Check for updated flood forecasts on the Environment Agency website.



FLOOD ALERT

Meaning

Flooding is possible

Be prepared.

General advice

- 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.



FLOOD WARNING

Meaning

Flooding is expected.

Immediate action required.

General advice

- 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.



SEVERE FLOOD WARNING

Meaning

Severe flooding.

Danger to life.

General advice

- Stay in a safe place with a means of escape.
- Be ready should you need to evacuate.
- Co-operate with the emergency services.
- Call 999 if you are in immediate danger.

WARNING NO LONGER IN FORCE

Meaning

No further flooding is currently expected in your area.

General advice

- Be careful. Flood water may still be around for several days.
- If you've been flooded, ring your insurance company as soon as possible.

Figure 10 – Environment Agency Flood Warning Codes

9.2. Safe Procedures

The owners / managers of the Site will produce an emergency plan in the event of the flood warning. Note that there will be no occupants at the Site during a flood event, as all flood warnings will be adhered to.

Unoccupied Site

If the Site is currently unoccupied when the flood warning is received, the owners / managers are to close the Site, and inform the future occupants of the shepherd's hut that the Site cannot be occupied until the flood water has retreated, or until there are no further flood warning in place.

If there are occupants at the Site, but are not present at the Site during the flood warning, they are to be contacted immediately and told that their stay in the shepherd's hut cannot continue, and that they have to collect belongings and leave the Site.

Occupied Site

If a flood warning is received whilst the shepherd's hut is occupied, the owners / managers of the Site are to act on a flood plan and created site map, which will include:

- Notifying the shepherd's hut occupants of the flood warnings on arrival as part of their welcome pack;
- Informing the shepherd's hut occupants of evacuation procedures in the event of flooding warning, which will mean leaving the site until the flood water has retreated or until there are no further flood warnings in place;
- Switching off the gas and electricity to serving the shepherd's hut once the occupants have left the Site.

9.3. Staff Training

All staff members will know:

- how to act if the flood warning is received (procedures as above);
- their roles and responsibilities during a flood and / or receiving a flood warning;
- how to communicate effectively during a flood;
- how often the flood plan is reviewed, updated and tested.

9.4. Flood Warning and Weather Displays

Flood warning advice is to be clear in the reception area and in the shepherd's hut, so that the occupants are fully aware of the risk and what to do and where to go if there is a flood warning.

Daily weather information is to be displayed in recreation areas also, so that the occupants of the shepherd's hut are aware of any potential flood events.

9.5. Flood Flows and Water Displacement

The flood water in the Site will be from coastal / tidal sources only. Also, the structure on the Site is a shepherd's hut which is raised off the ground. Therefore, the Site:

- will not displace surface water to other areas outside the site boundary,
- will not increase the flood levels in areas outside the site boundary,
- and subsequently will not increase flood risk to any areas outside the site boundary.

9.6. Safe Egress

The risk of flooding from coastal / tidal sources is dependent on the prediction of high tides in combination with atmospheric conditions generating a surge event.

Given the very predictable nature of such events potentially coinciding, flood warnings can be issued within a sufficient timeframe to allow the owners / managers to the Site to prepare for flooding, to protect vulnerable items within the Site (i.e. items such as gas or pollutants) and evacuate occupants of the shepherd's hut.

If a flood warning is received, the owners / managers of the Site are to act on a flood plan and created site map, which will include informing the occupants of evacuation procedures in the event of flooding warning, which will mean leaving the Site until the flood water has retreated or until there are no further flood warning in place.

Therefore, due to the predictability of the fluvial / tidal flood and the flood warning producers of the site owners / managers, safe egress from the Site can be made by the occupants of the Shepherd's hut.

9.7. Surface Water Management

The proposed development is for a new shepherd's hut, car park and access routes through the Site.

The shepherd's hut is raised above the existing undeveloped ground, with surface water run-off discharging onto the undeveloped ground and off the site at a natural / greenfield rate.

Car park and access areas are to be formed of granular material over existing natural / undeveloped areas, where the surface water will percolate through the granular material to the ground at a natural / greenfield rate.

Therefore, surface water run-off from the Site will not increase, and therefore the risk of flooding will not increase elsewhere.

9.8. Sequential Test Summary

With the flood warning, procedures and staff training in place, the occupants of the shepherd's hut will be safe, as appropriate action will be taken by the owners / managers of the Site.

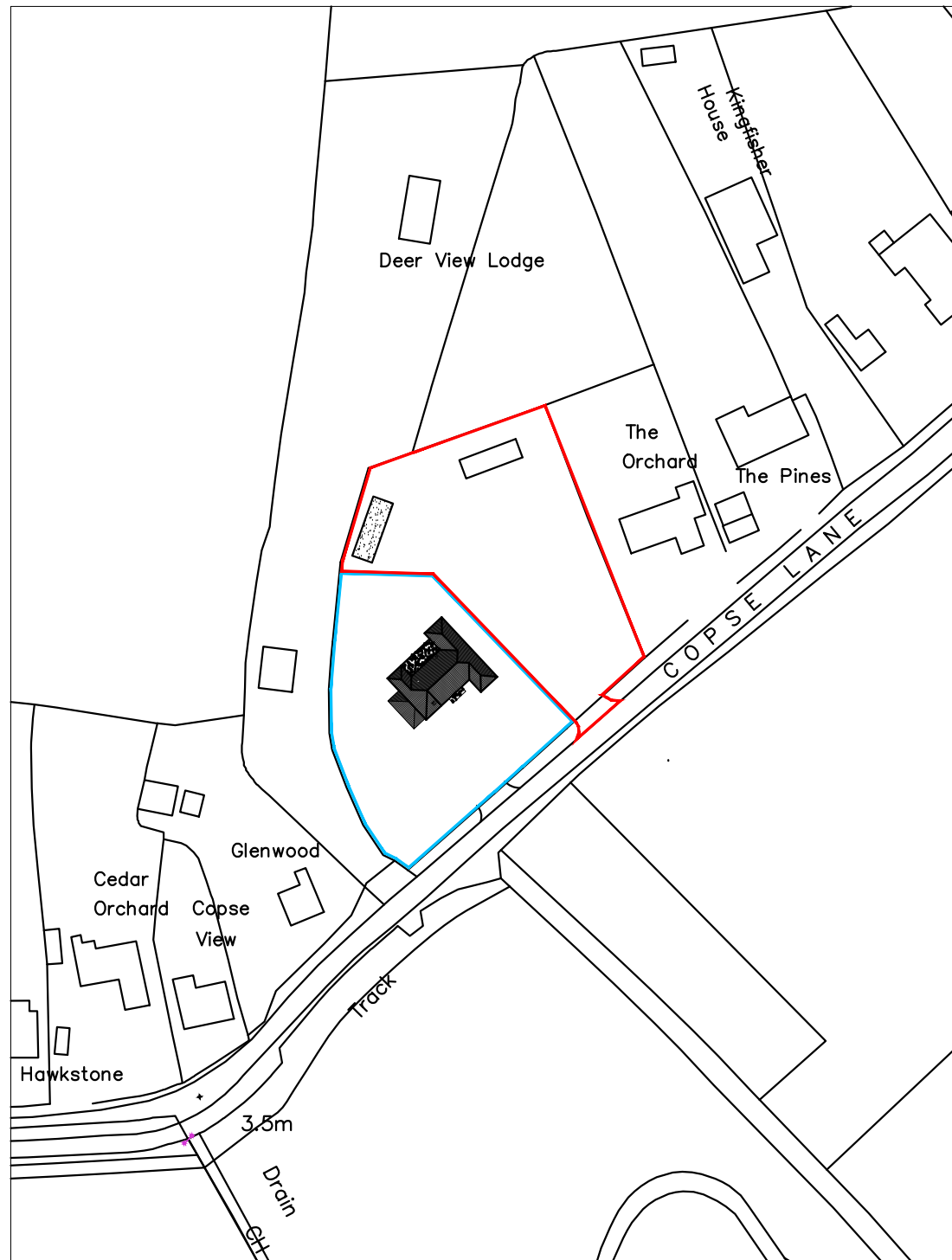
The Site will not displace surface water to other areas outside the site boundary, will not increase the flood levels in areas outside the site boundary, and subsequently will not increase flood risk to any areas outside the site boundary.

Due to the predictability of the fluvial / tidal flood and the flood warning producers of the site owners / managers, safe egress from the Site can be made by the occupants of the Shepherd's hut.

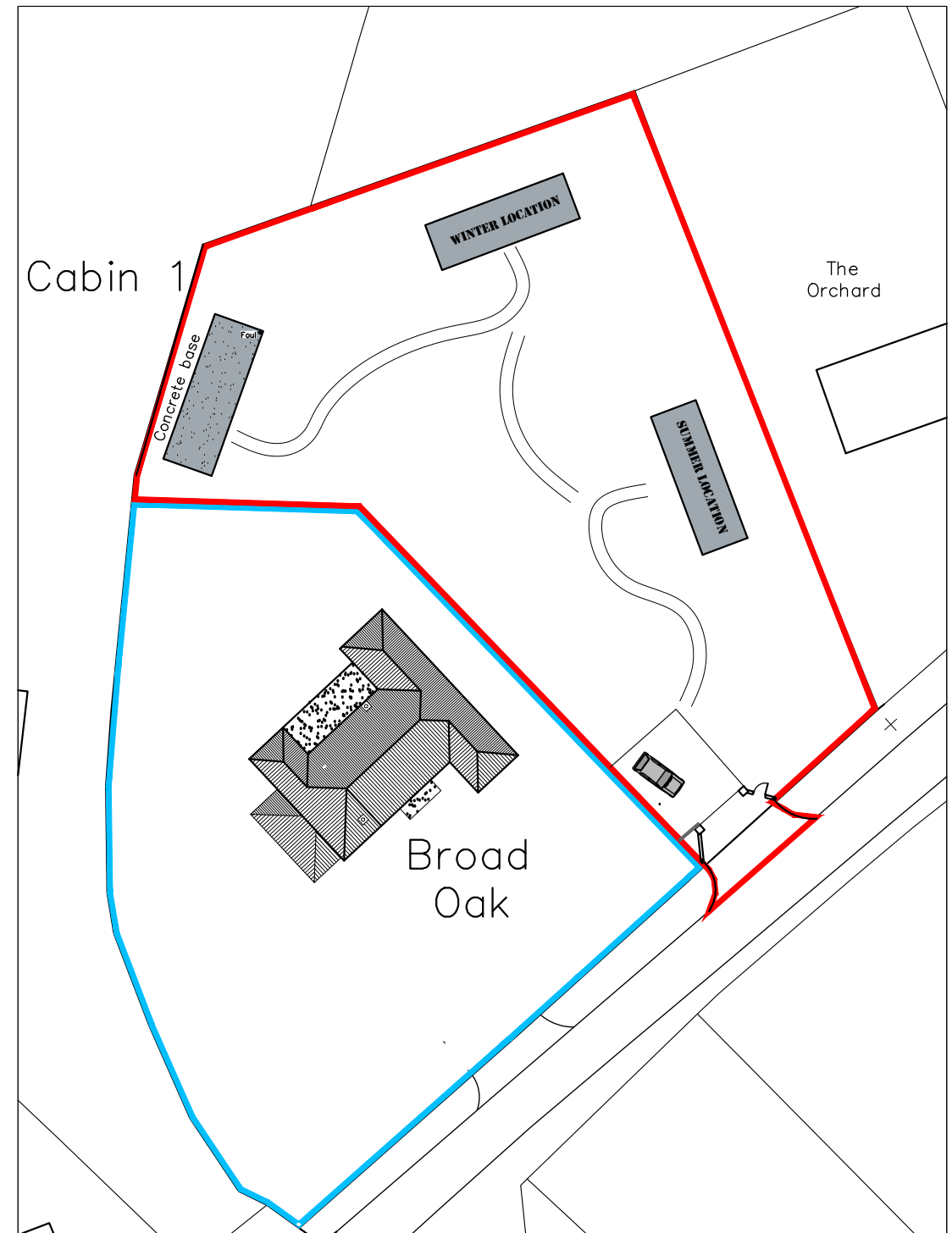
Surface water run-off from the Site will not increase, and therefore the risk of flooding will not increase elsewhere.

Appendix A

Site Location Plan



Location Plan: 1:1250



Block Plan: 1:500

Broad Oak,
Copse Lane,
Hayling Island,
Hampshire,
PO11 0QB

LOCATION PLANS

Revisions a) Plan revisions/28.02.25/SAR
b)
c)

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CAAD

Critchley Architecture And Design Ltd.

Contact: 02392 474 919 | info@caad.online

The Old Brewery, 15E South Street, Havant, PO9 1BU



Scale A3 = As Shown
Drawn OS
Date 14/11/23

23019-106^A

0m 10m 20m 30m 40m 50m

0m 10m 20m 30m 40m 50m

Appendix B Existing Site Plans



Broad Oak, Copse Lane, Hayling Island, Hampshire, PO11 0QB	EXISTING SITE PLAN		 Critchley Architecture And Design Ltd. Contact: 02392 474 919 info@caad.online The Old Bakery, 34 North Street, Havant, PO9 1PT		Scale A3 = 1:500 Drawn OS/MHC Date 23/05/2023
	Revisions	a) Tree positions plotted. 12/07/23 MHC b) Updated tree plan. 28.02.25 SAR c) d)			23019-203 ^B
50m 100m 150m 200m					

Appendix C

Proposed Site Plans

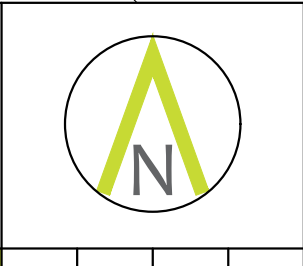


Broad Oak,
Copse Lane,
Hayling Island,
Hampshire,
PO11 0QB

PROPOSED SITE PLAN	
Revisions	a) Post Pre-App Amendments/21.01.2025/SR b) c) d)

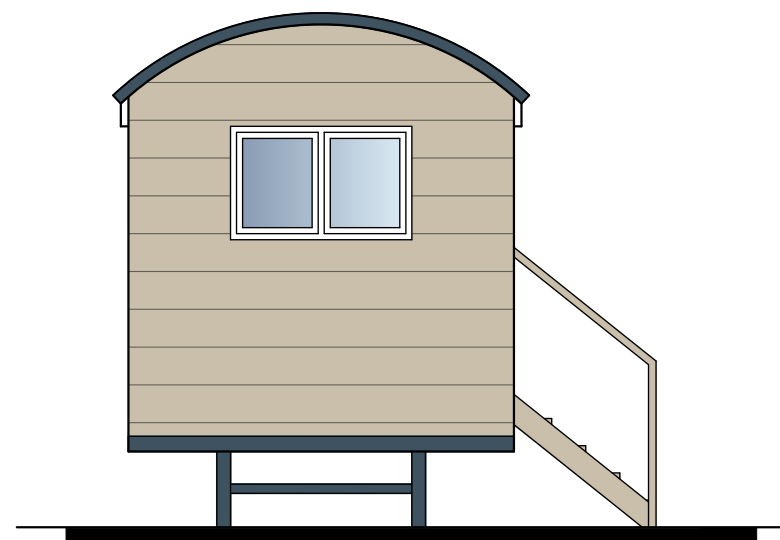
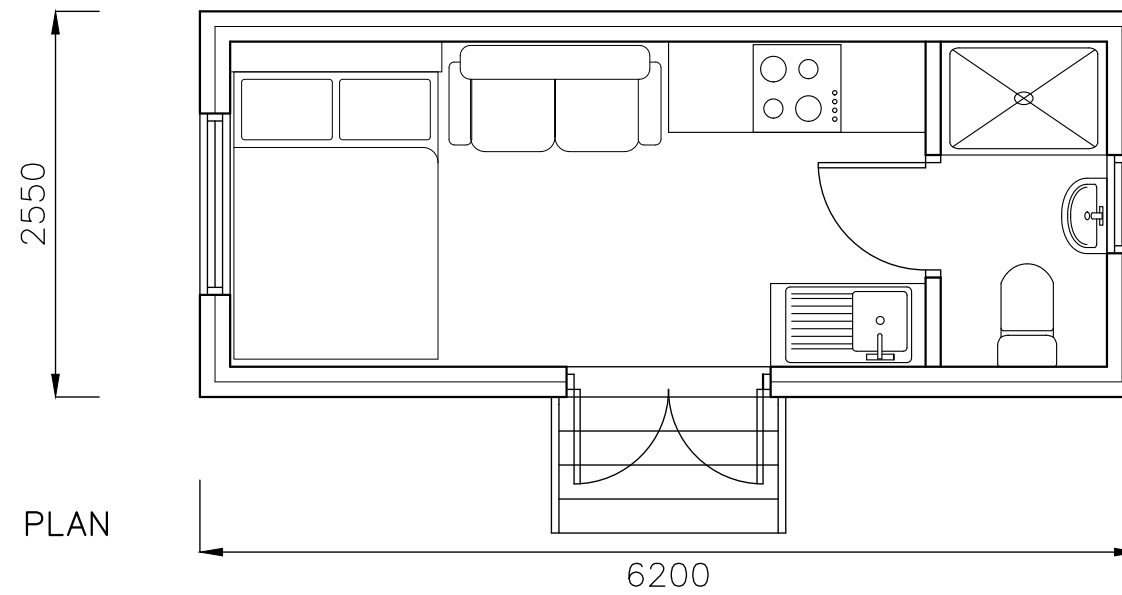
CAD

Critchley Architecture And Design Ltd.
Contact: 02392 474 919 | info@caad.online
The Old Bakery, 34 North Street, Havant, PO9 1PT

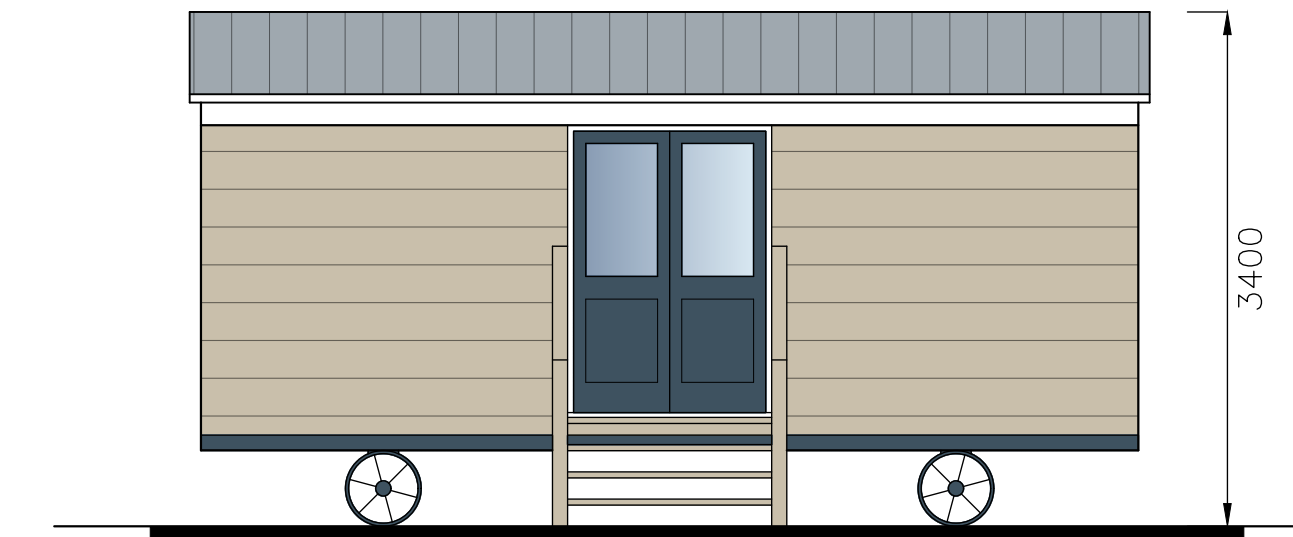


Scale A3 = 1:500
Drawn SAR
Date 23/05/17
23019-407^A

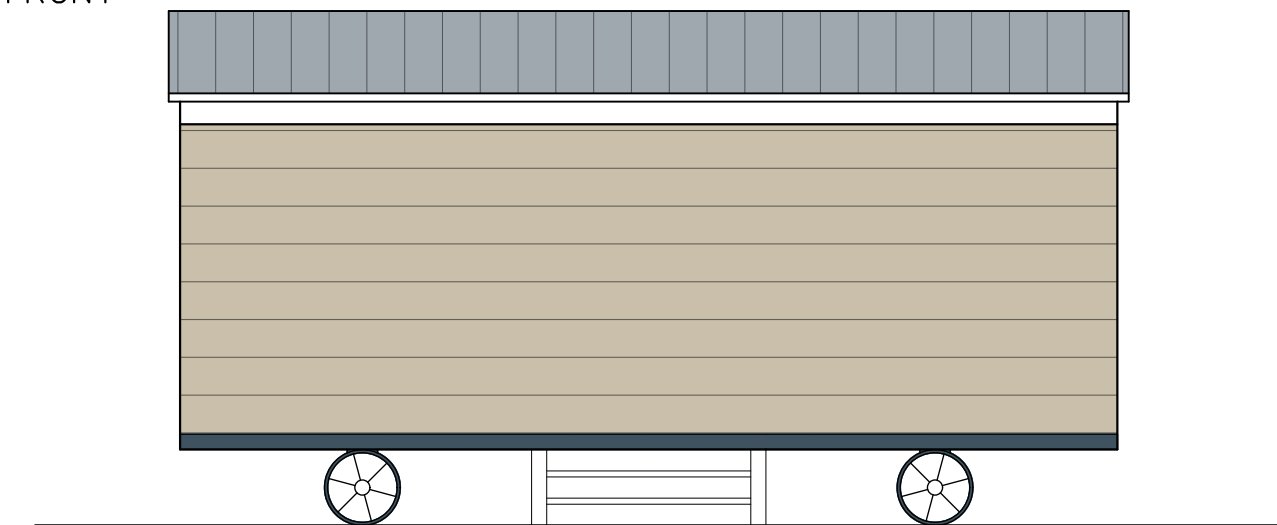




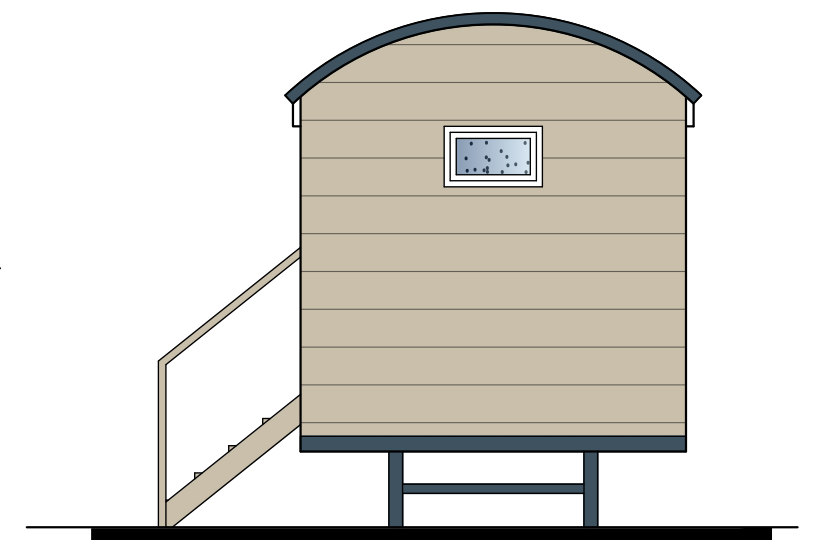
SIDE



FRONT



REAR



SIDE

CAD

Critchley Architecture And Design Ltd.
Contact: 02392 474 919 | info@caad.online
The Old Bakery, 34 North Street, Havant, PO9 1PT

PROPOSED SHEPHERD'S HUT

Revisions

a)	Note/Date/Initial
b)	
c)	
d)	

Scale A1=1:25, A3=1:50
Drawn JHL
Date 25/03/2022

22016-408⁰

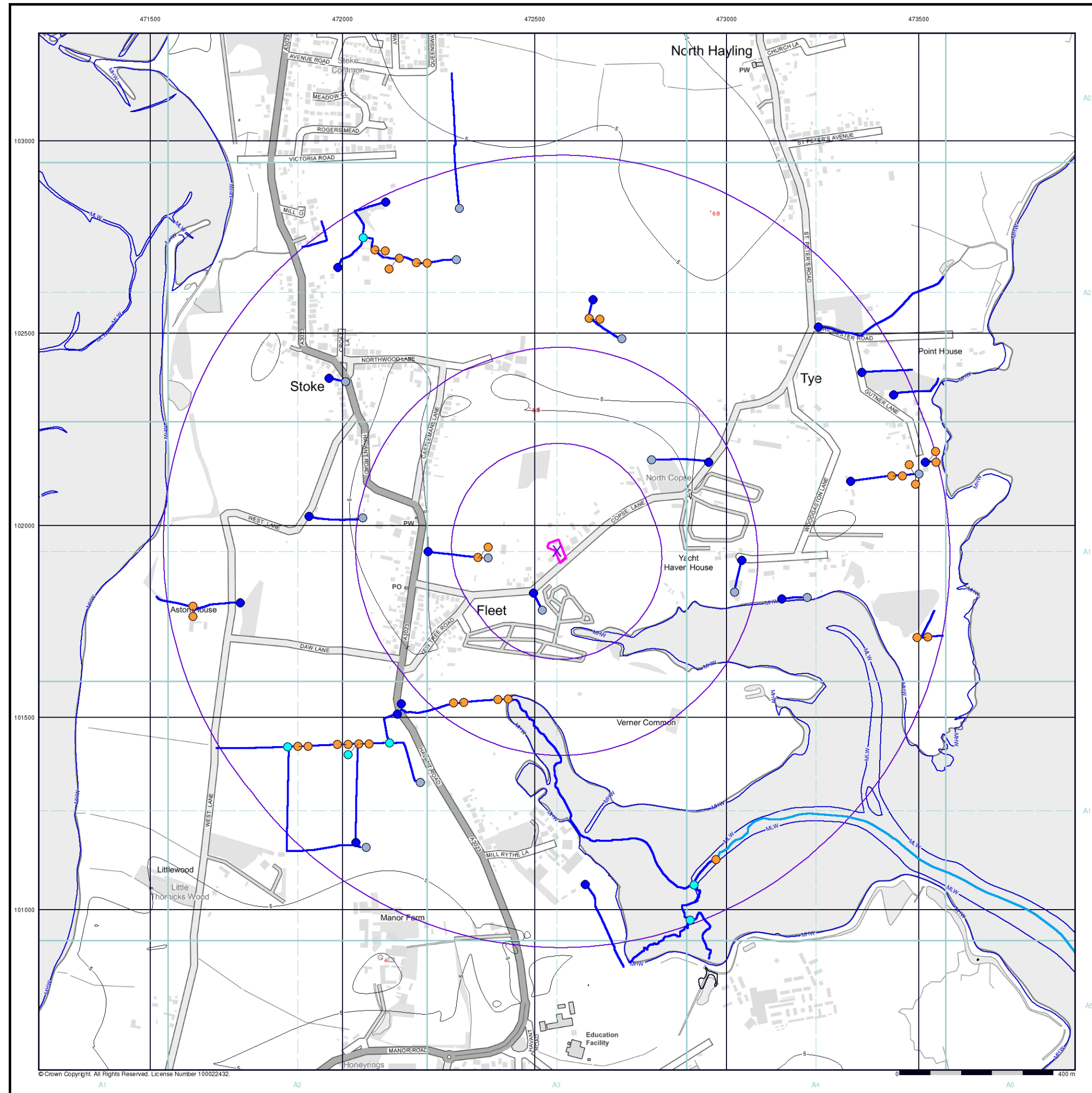
5m

10m

15m

20m

Appendix D OS Water Network Lines Map



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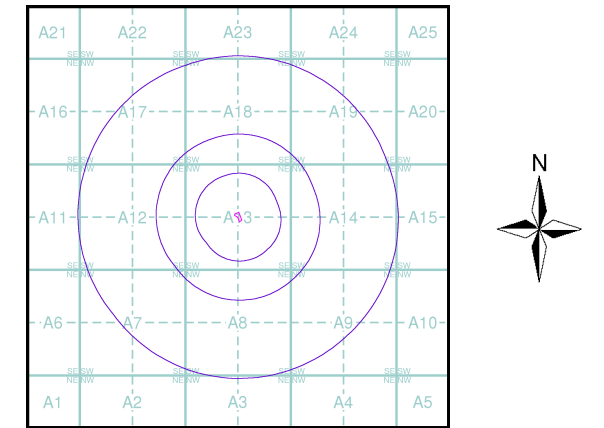
OS Water Network Lines Map (1:10,000)

- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point

- OS Water Network Data**
- | | |
|--------------|-------------------------|
| Canal | Drain |
| Reservoir | Other |
| Foreshore | Lake |
| Marsh | Transfer |
| Tidal River | Lock Or Flight Of Locks |
| Inland River | Sea |
| Junction | Source |
| Outlet | Other |
| Pseudo | |

- Contours (height in meters)**
- Standard Contour 105 100 95
- Master Contour
- Spot Height 167.3
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



- Order Details**
- Order Number: 358555980_1_1
- Customer Ref: 1082
- National Grid Reference: 472560, 101930
- Slice: A
- Site Area (Ha): 0.13
- Search Buffer (m): 1000

- Site Details**
- Broadoak, Copse Lane, HAYLING ISLAND, PO11 0QB

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Appendix E British Geological Survey Data



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BOREHOLE LOG

SU 70 SW/77

7261. 0193

1 in 331

LOCATION : Hayling Island

BOREHOLE No. : 61

BOREHOLE DIA. : 3"

GROUND LEVEL :

DATE (Start) : 6.6.62.

WATER LEVEL : —

Dates	Description	Thickness	Depth	Sample	Remarks
	Made ground (rubble).	3'-0"	0'-0" (0.91m) 3'-0"		Made Ground
	Soft brown clayey sand	2'-6"	(1.68m) 5'-6"	1	Brickwork
	Red/brown sand & gravel	1'-0"	6'-6" (1.98m)	2	Raised Beach
	Stiff red/grey clay	3'-6"	10'-0" (3.05m)	3	WRB
					End of borehole.
					R.T.W. 27.10.83

BOREHOLE SCALE : 1" = 5' • : DISTURBED SAMPLE I : UNDISTURBED SAMPLE + STANDARD PENETRATION TEST



FOUNDATION ENGINEERING
Ltd.

BOREHOLE LOG

SU 70 SW/85

7234. 0184

1 in 331

LOCATION : *Hayling Island*

BOREHOLE No. : 70.

BOREHOLE DIA. : 8"

GROUND LEVEL :

DATE (Start) : 5.6.62.

WATER LEVEL : 4'-6"

Dates	Description	Thickness	Depth		Sample	Remarks
	<i>Topsoil</i>	<i>1'-0"</i>	<i>0'-0"</i>			
			<i>1'-0"</i>			
			<i>(0.30m)</i>			
	<i>Soft brown clay & gravel (f).</i>	<i>4'-6"</i>				<i>Brick earth</i>
			<i>(1.68m)</i>			
	<i>Firm brown sandy clay</i>	<i>1'-6"</i>	<i>5'-6"</i>		1	} <i>BE or WRB?</i>
			<i>7'-0"</i>		2	
			<i>(2.13m)</i>			
					3	
	<i>Hard red/grey clay</i>	<i>10'-0"</i>				<i>WRB</i>
					4	
					5	
			<i>17'-0"</i>			<i>End of borehole.</i>
			<i>(5.18m)</i>			

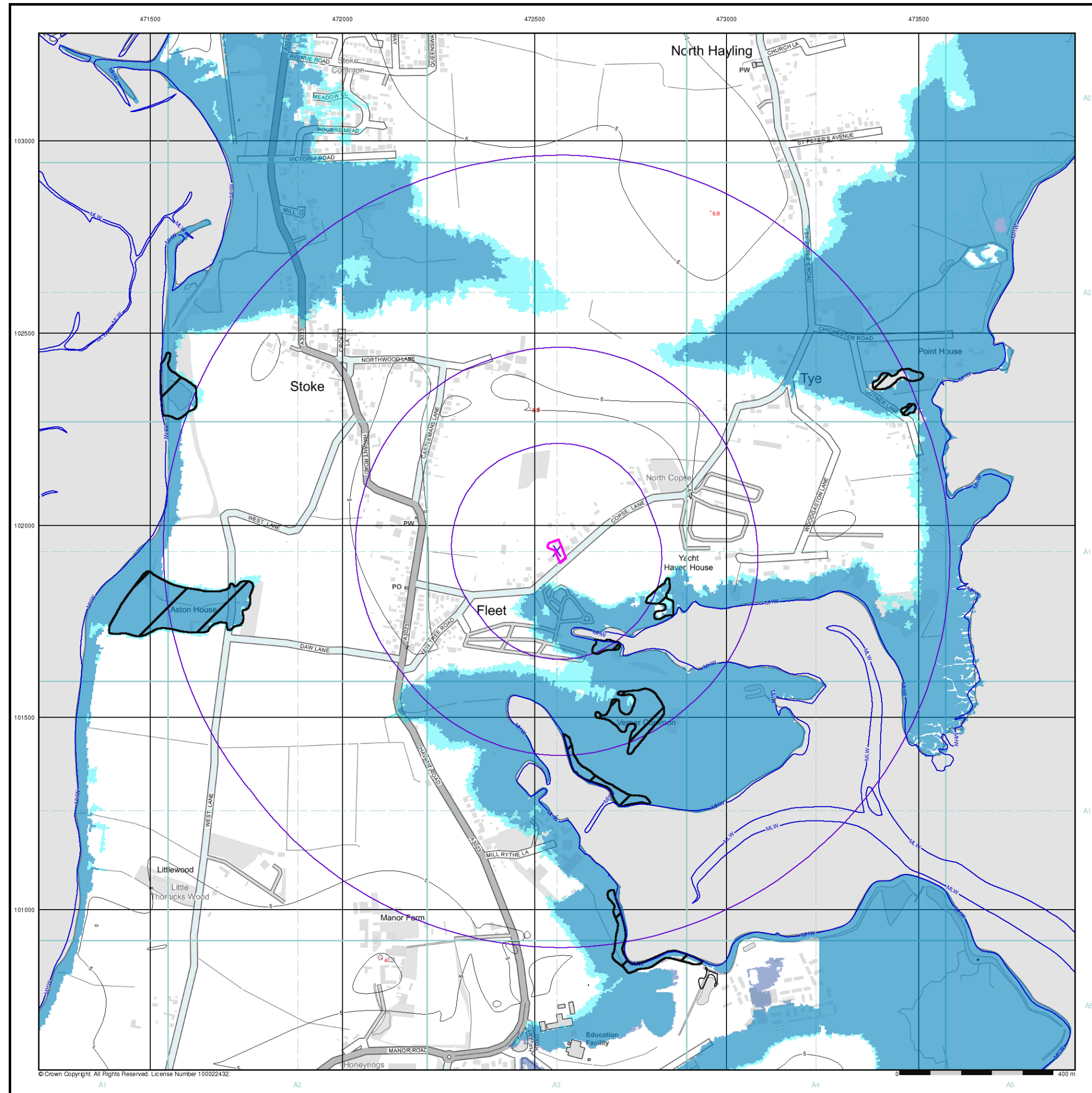
R. F. W.

27.10.83

BOREHOLE SCALE : 1"=5' • : DISTURBED SAMPLE I : UNDISTURBED SAMPLE + STANDARD PENETRATION TEST

Appendix F

Landmark EnviroCheck Flood Map Data



EA/NRW Flood Data Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

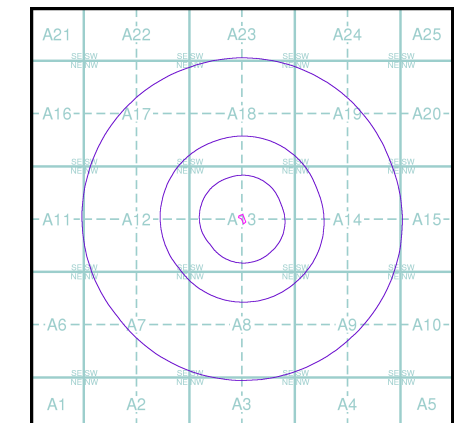
Flood Data

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Contours (height in metres)

- Standard Contour 105 100 95
- Master Contour
- Spot Height 167.8
- MLW Mean Low Water
- MHW Mean High Water

EA/NRW Flood Data Map - Slice A

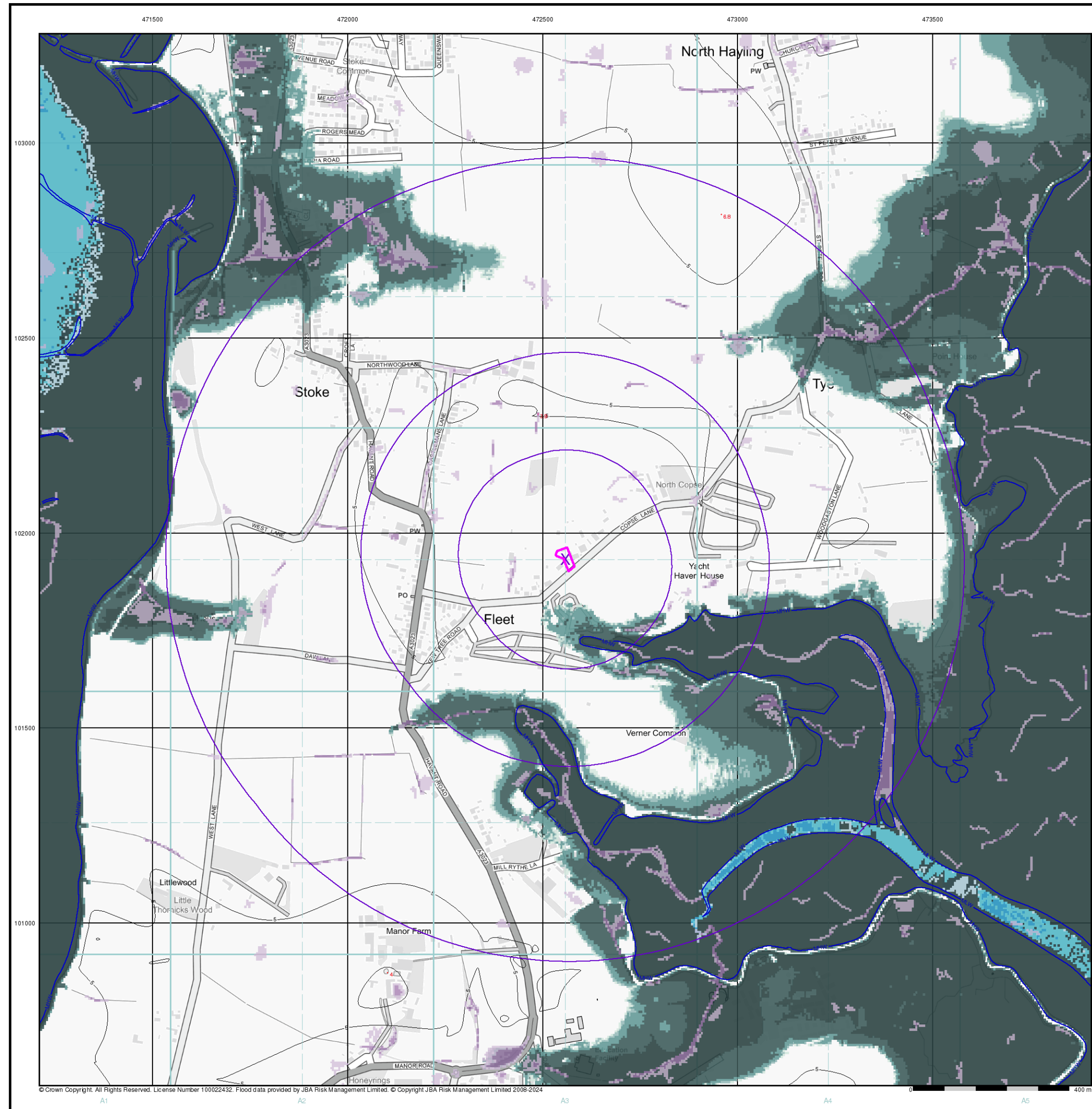


Order Details

Order Number: 358555980_1_1
 Customer Ref: 1082
 National Grid Reference: 472560, 101930
 Slice: A
 Site Area (Ha): 0.13
 Search Buffer (m): 1000

Site Details

Broadoak, Copse Lane, HAYLING ISLAND, PO11 0QB



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JBA 75 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Modelled Flood Depth

Pluvial Depth	Fluvial Depth	Coastal Depth
0.1m	0.01m - 0.05m	0.01m - 0.05m
0.1m - 0.3m	0.05m - 0.1m	0.05m - 0.1m
0.3m - 1m	0.1m - 0.3m	0.1m - 0.3m
>1m	0.3m - 1m	0.3m - 1m
	>1m	>1m

Contours (height in metres)

Standard Contour: 105, 100, 95

Master Contour: 105, 100, 95

Spot Height: 167.8

MLW: Mean Low Water

MHW: Mean High Water

JBA 75 Year Return Flood Map (Undefended) - Slice A

Order Details

Order Number: 358555980_1_1

Customer Ref: 1082

National Grid Reference: 472560, 101930

Slice: A

Site Area (Ha): 0.13

Search Buffer (m): 1000

Site Details

Broadoak, Copse Lane, HAYLING ISLAND, PO11 0QB

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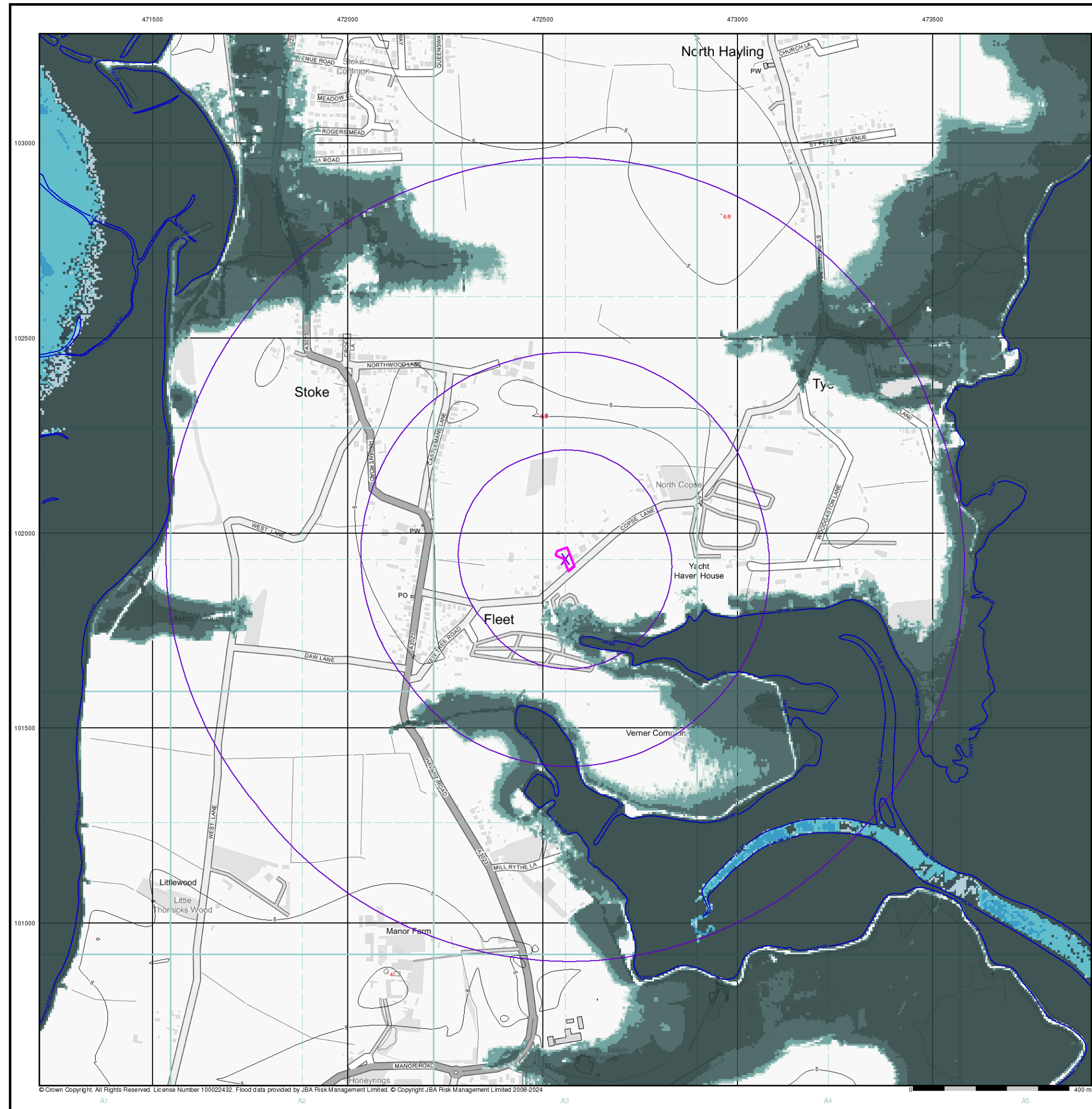
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JBA 100 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Modelled Flood Depth

Fluvial Depth	Coastal Depth
0.01m - 0.05m	0.01m - 0.05m
0.05m - 0.1m	0.05m - 0.1m
0.1m - 0.3m	0.1m - 0.3m
0.3m - 1m	0.3m - 1m
>1m	>1m

Contours (height in metres)

Standard Contour: 105, 100, 95

Master Contour: 100, 95

Spot Height: 167.8

MLW: Mean Low Water

MHW: Mean High Water

JBA 100 Year Return Flood Map (Undefended) - Slice A

Order Details

Order Number: 358555980_1_1

Customer Ref: 1082

National Grid Reference: 472560, 101930

Slice: A

Site Area (Ha): 0.13

Search Buffer (m): 1000

Site Details

Broadoak, Copse Lane, HAYLING ISLAND, PO11 0QB

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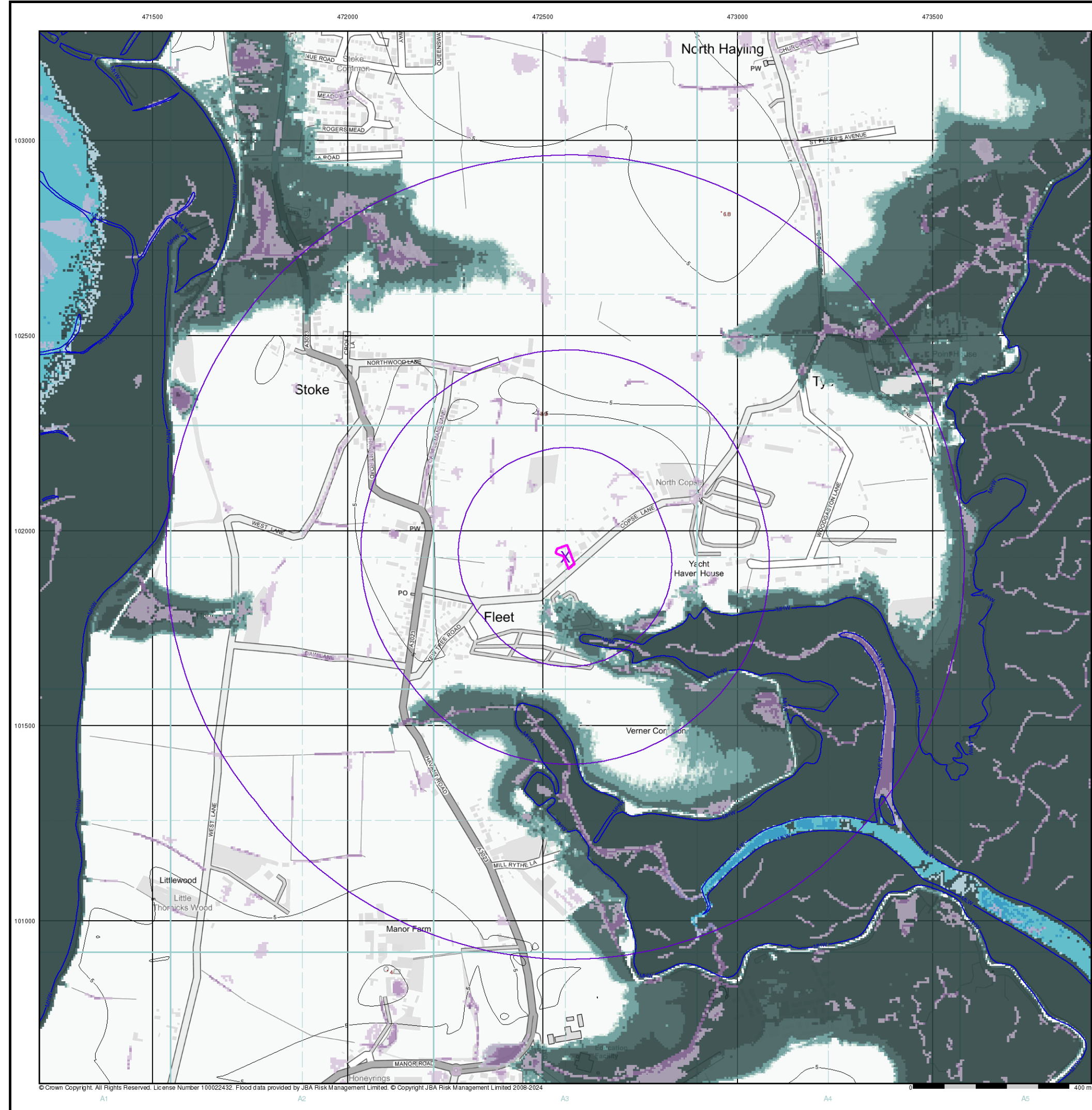
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JBA 200 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

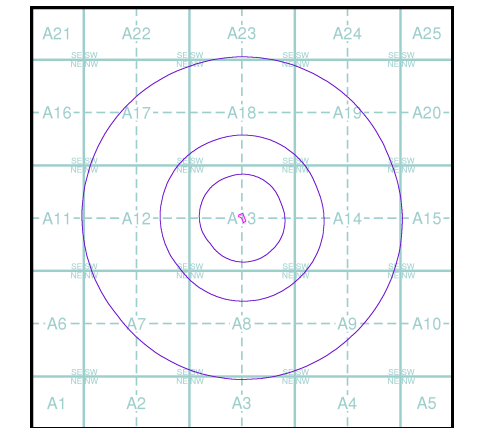
Modelled Flood Depth

Pluvial Depth	Fluvial Depth	Coastal Depth
0.1m	0.01m - 0.05m	0.01m - 0.05m
0.1m - 0.3m	0.05m - 0.1m	0.05m - 0.1m
0.3m - 1m	0.1m - 0.3m	0.1m - 0.3m
>1m	0.3m - 1m	0.3m - 1m
	>1m	>1m

Contours (height in metres)

- Standard Contour: 105, 100, 95
- Master Contour: 105, 100, 95
- Spot Height: 167.8
- MLW: Mean Low Water
- MHW: Mean High Water

JBA 200 Year Return Flood Map (Undefended) - Slice A

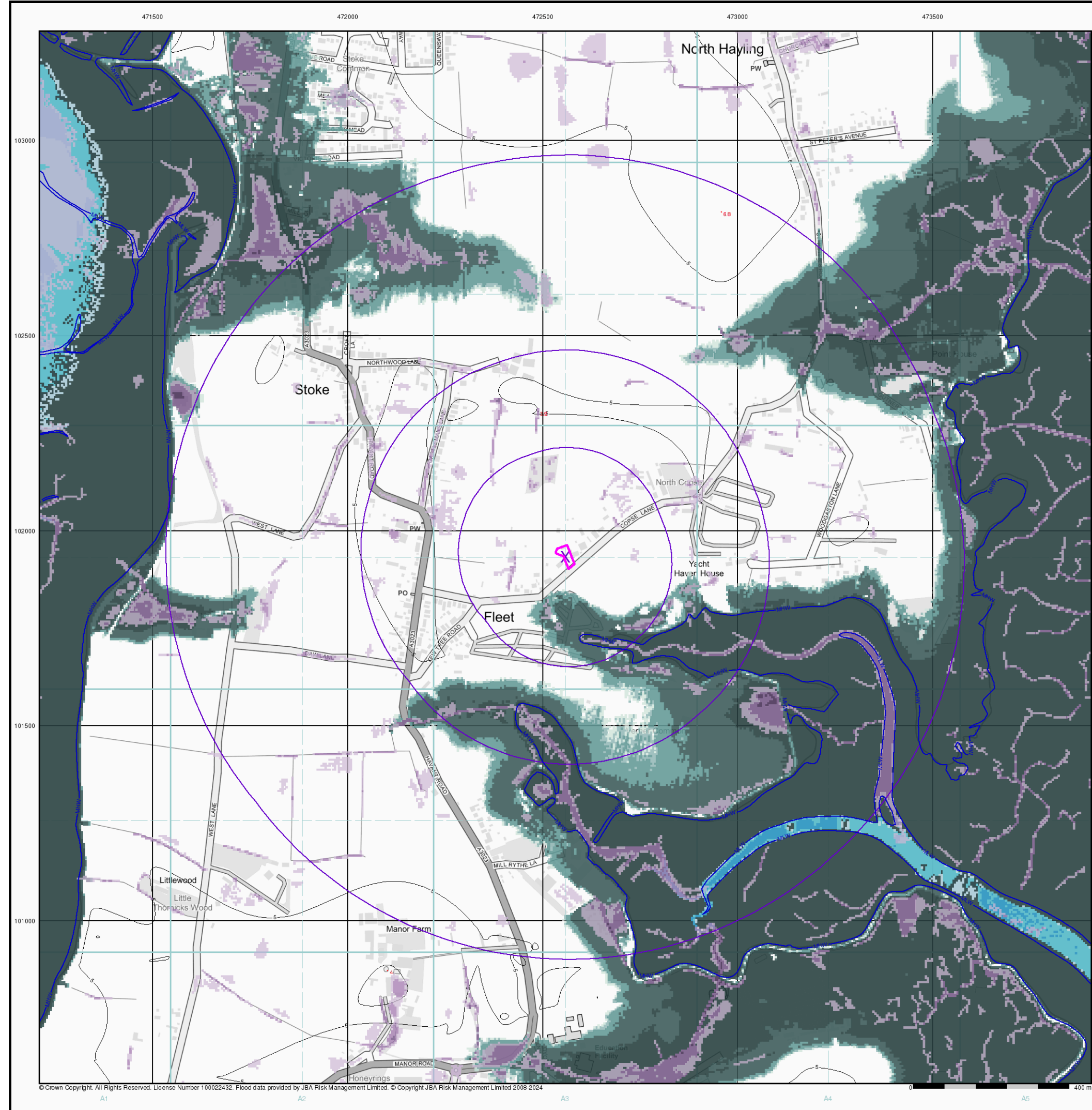


Order Details

Order Number: 358555980_1_1
Customer Ref: 1082
National Grid Reference: 472560, 101930
Slice: A
Site Area (Ha): 0.13
Search Buffer (m): 1000

Site Details

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JBA 1000 Year Return Flood Map (Undefended) (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Modelled Flood Depth

Pluvial Depth	Fluvial Depth	Coastal Depth
0.1m	0.01m - 0.05m	0.01m - 0.05m
0.1m - 0.3m	0.05m - 0.1m	0.05m - 0.1m
0.3m - 1m	0.1m - 0.3m	0.1m - 0.3m
>1m	0.3m - 1m	0.3m - 1m
	>1m	>1m

Contours (height in metres)

Standard Contour: 105, 100, 95

Master Contour: 105, 100, 95

Spot Height: 167.8

MLW: Mean Low Water

MHW: Mean High Water

JBA 1000 Year Return Flood Map (Undefended) - Slice A

Order Details

Order Number: 358555980_1_1
Customer Ref: 1082
National Grid Reference: 472560, 101930
Slice: A
Site Area (Ha): 0.13
Search Buffer (m): 1000

Site Details

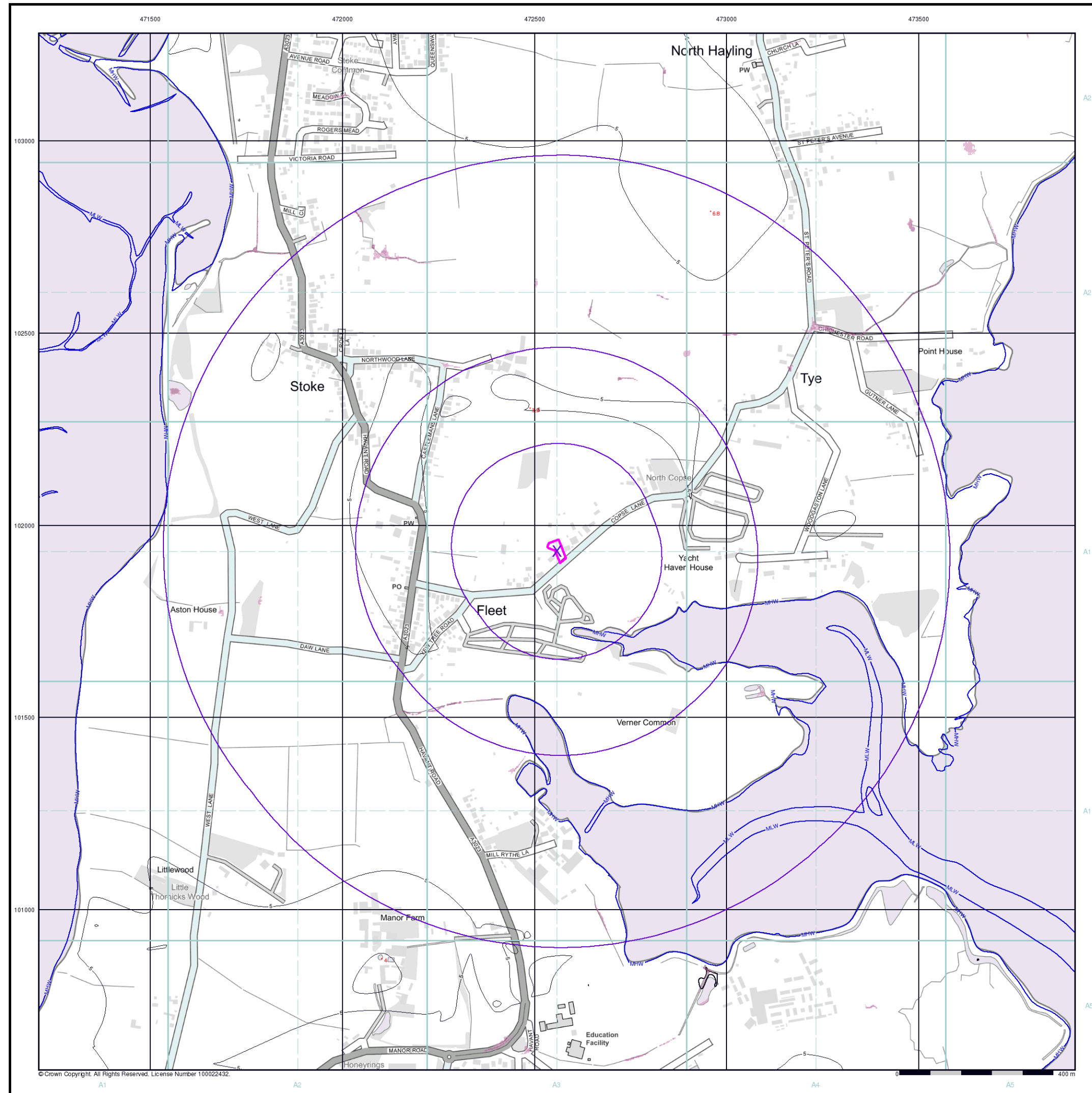
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EA/NRW Surface Water 30 Year Return Depth Map (1:10,000)

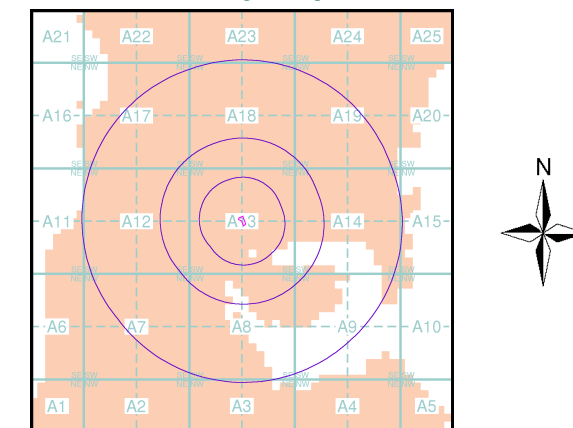
General
Specified Site Specified Buffer(s) Bearing Reference Point

Surface Water Depth
0 - 0.15m
0.15 - 0.30m
0.30 - 0.60m
0.60 - 0.90m
0.90 - 1.20m
> 1.20m

Contours (height in metres)
Standard Contour 105 100 95
Master Contour 100 95
Spot Height 167.8
MLW Mean Low Water
MHW Mean High Water

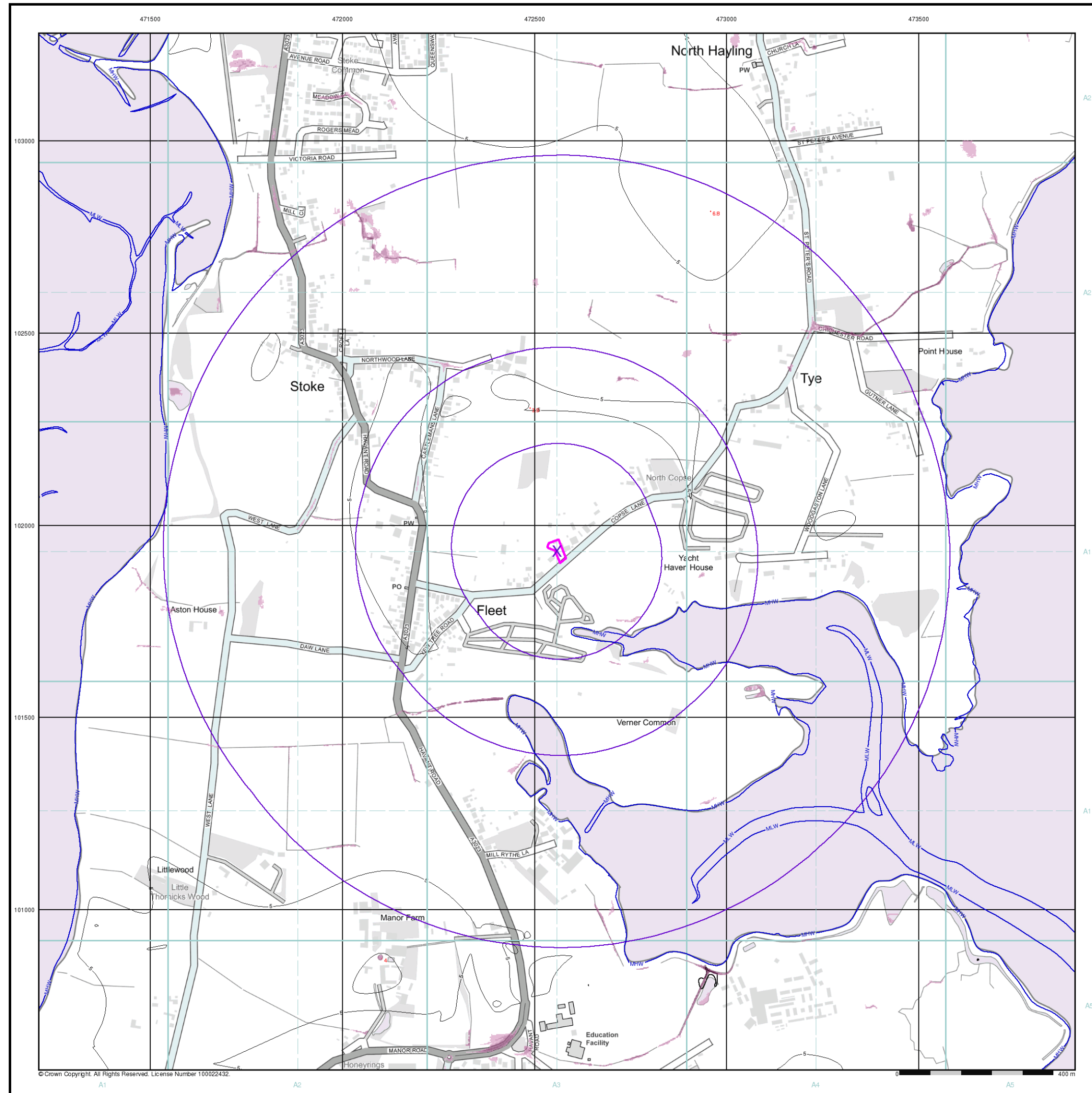
Suitability
See the suitability map below
National to county
County to town
Town to street
Street to parcels of land
Property

EA/NRW Suitability Map - Slice A



Order Details
Order Number: 358555980_1_1
Customer Ref: 1082
National Grid Reference: 472560, 101930
Slice: A
Site Area (Ha): 0.13
Search Buffer (m): 1000

Site Details
Broad oak, Copse Lane, HAYLING ISLAND, PO11 0QB



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EA/NRW Surface Water 100 Year Return Depth Map

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Surface Water Depth

	0 - 0.15m
	0.15 - 0.30m
	0.30 - 0.60m
	0.60 - 0.90m
	0.90 - 1.20m
	> 1.20m

Contours (height in metres)

Standard Contour: 105, 100, 95

Master Contour: 100

Spot Height: *167.8

MLW

Mean Low Water

MHW

Mean High Water

Suitability

See the suitability map below

National to county	Street to parcels of land
County to town	Property
Town to street	

EA/NRW Suitability Map - Slice A

N

Order Details

Order Number:	358555980_1_1
Customer Ref:	1082
National Grid Reference:	472560, 101930
Slice:	A
Site Area (Ha):	0.13
Search Buffer (m):	1000

Site Details

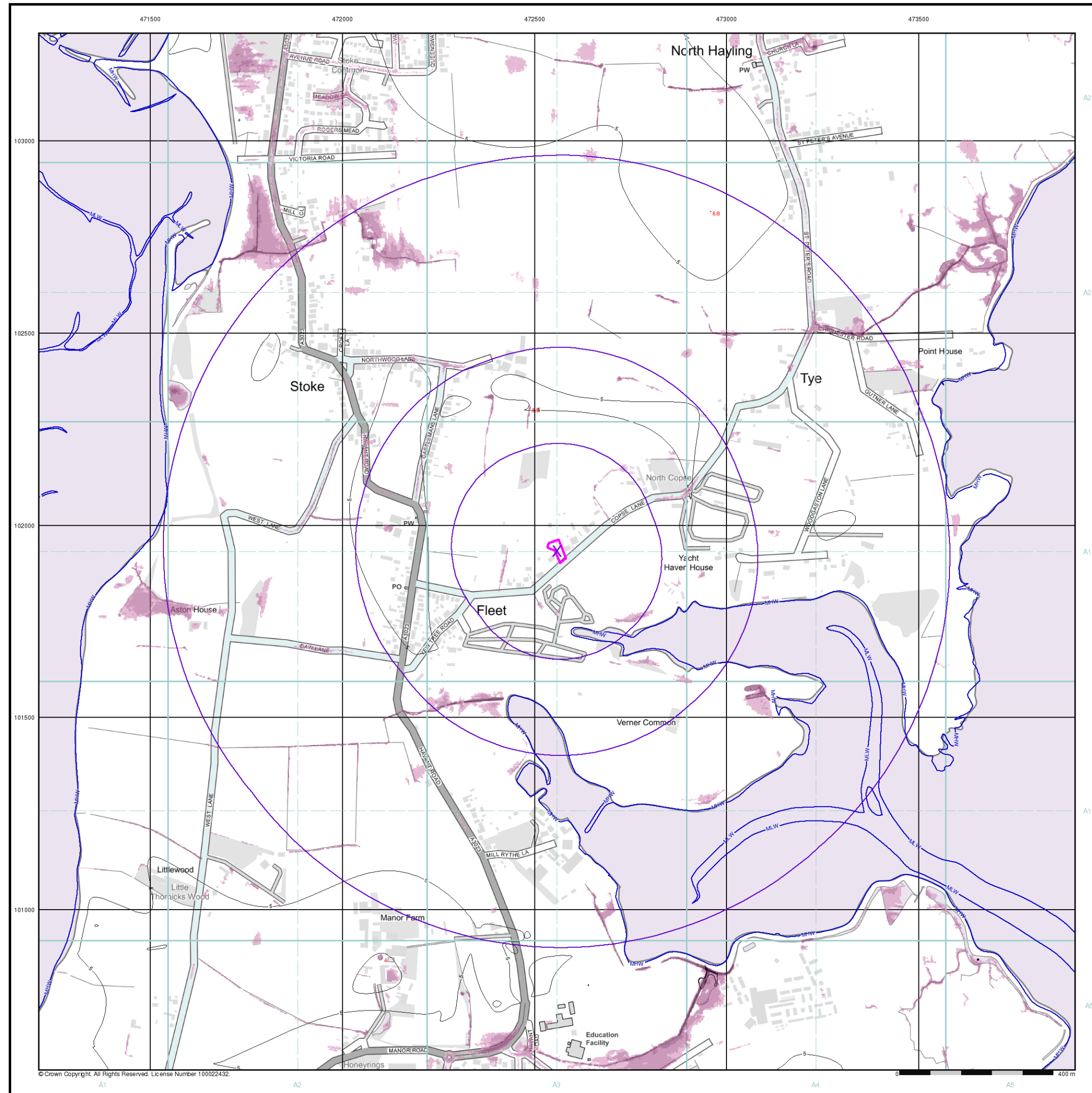
Broadoak, Copse Lane, HAYLING ISLAND, PO11 0QB

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EA/NRW Surface Water 1000 Year Return Depth Map (1:10,000)

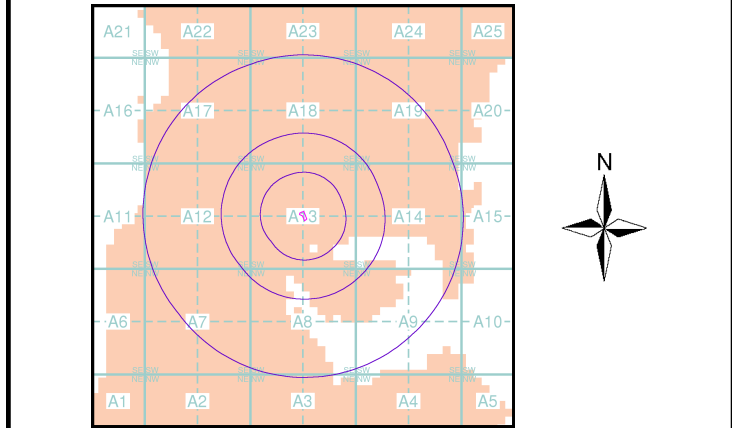
General
Specified Site Specified Buffer(s) Bearing Reference Point

Surface Water Depth
0 - 0.15m
0.15 - 0.30m
0.30 - 0.60m
0.60 - 0.90m
0.90 - 1.20m
> 1.20m

Contours (height in metres)
Standard Contour 105 100 95
Master Contour 100 95
Spot Height *167.8
MLW Mean Low Water
MHW Mean High Water

Suitability
See the suitability map below
National to county
County to town
Town to street
Street to parcels of land
Property

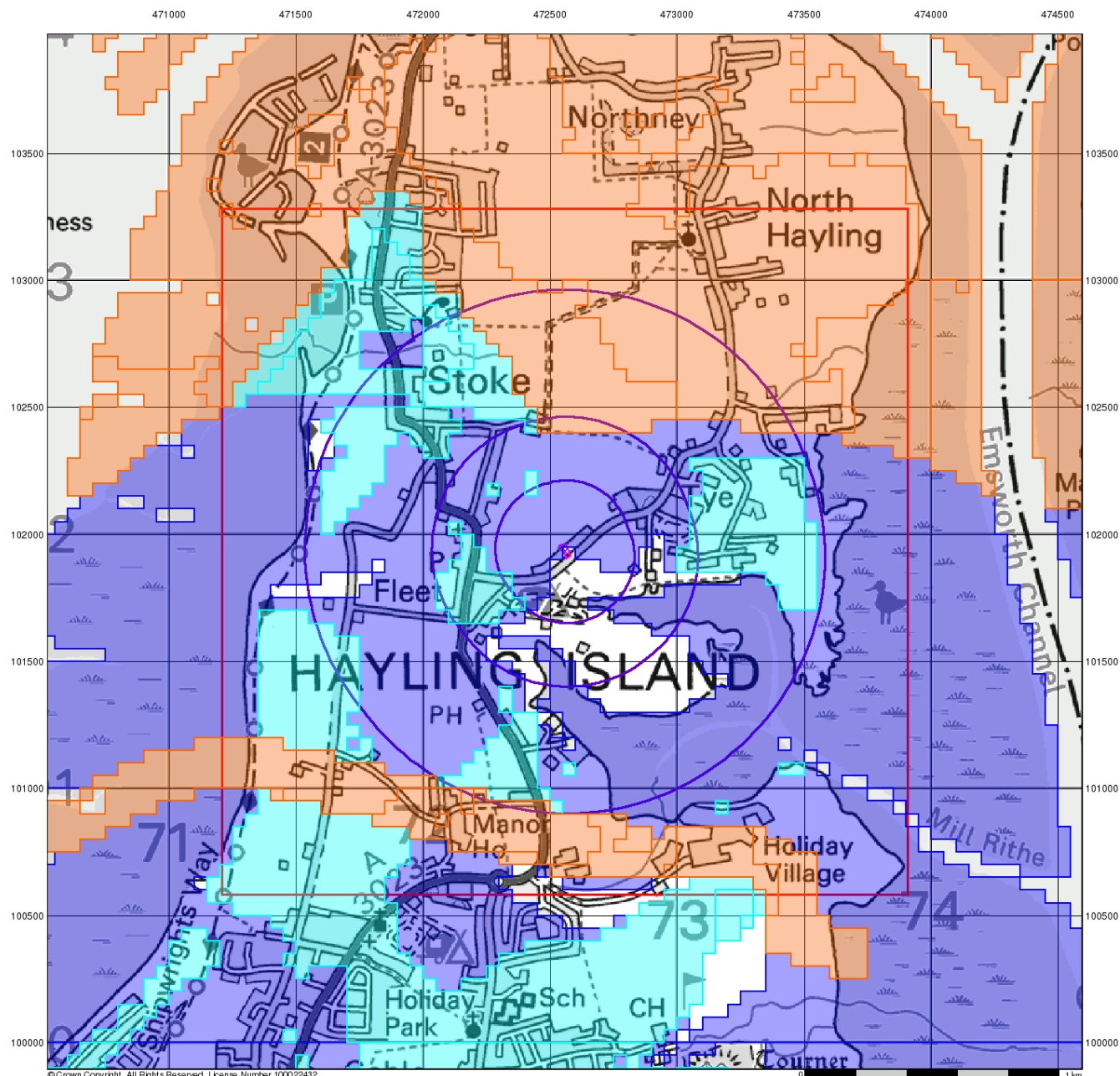
EA/NRW Suitability Map - Slice A



Order Details
Order Number: 358555980_1_1
Customer Ref: 1082
National Grid Reference: 472560, 101930
Slice: A
Site Area (Ha): 0.13
Search Buffer (m): 1000

Site Details
Broadoak, Copse Lane, HAYLING ISLAND, PO11 0QB

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BGS Flood Data (1:50,000)

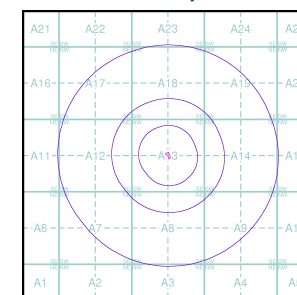
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

BGS Groundwater Flooding Susceptibility

- Potential for Groundwater Flooding to Occur at Surface
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Limited Potential for Groundwater Flooding to Occur

BGS Flood Data Map - Slice A



Order Details

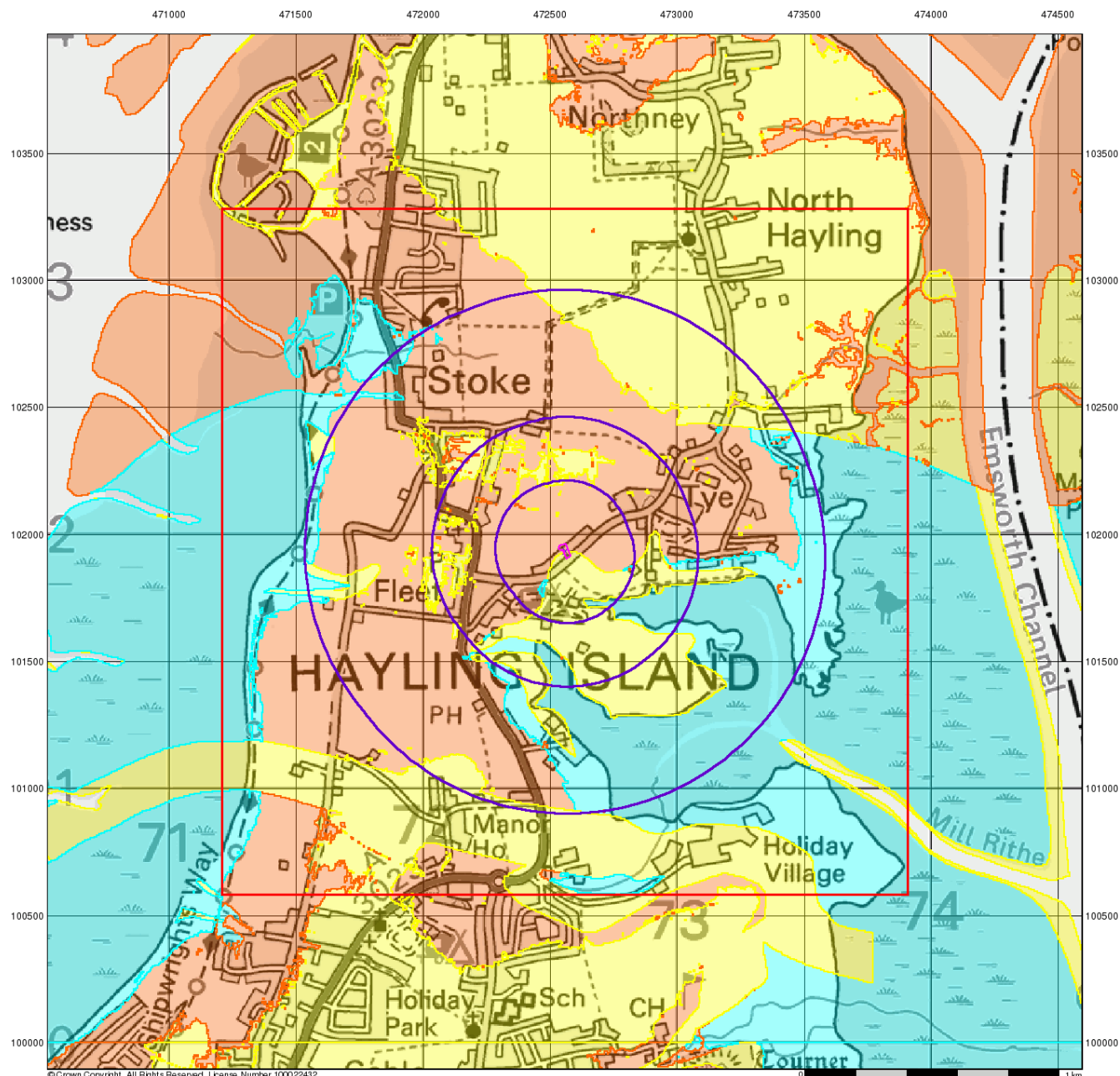
Order Number: 358555980_1_1
 Customer Ref: 1082
 National Grid Reference: 472560, 101930
 Slice: A
 Site Area (Ha): 0.13
 Search Buffer (m): 1000

Site Details

Broad Oak, Copse Lane, HAYLING ISLAND, PO11 0QB

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GeoSmart Information Groundwater Flood Map (1:50,000)

General

Specified Site Specified Buffer(s) Bearing Reference Point

Slice

GeoSmart Information Groundwater Flooding Risk

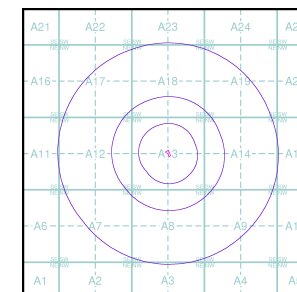
High Risk

Moderate Risk

Low Risk

Negligible Risk

GeoSmart Information Groundwater Flood Map - Slice A



Order Details

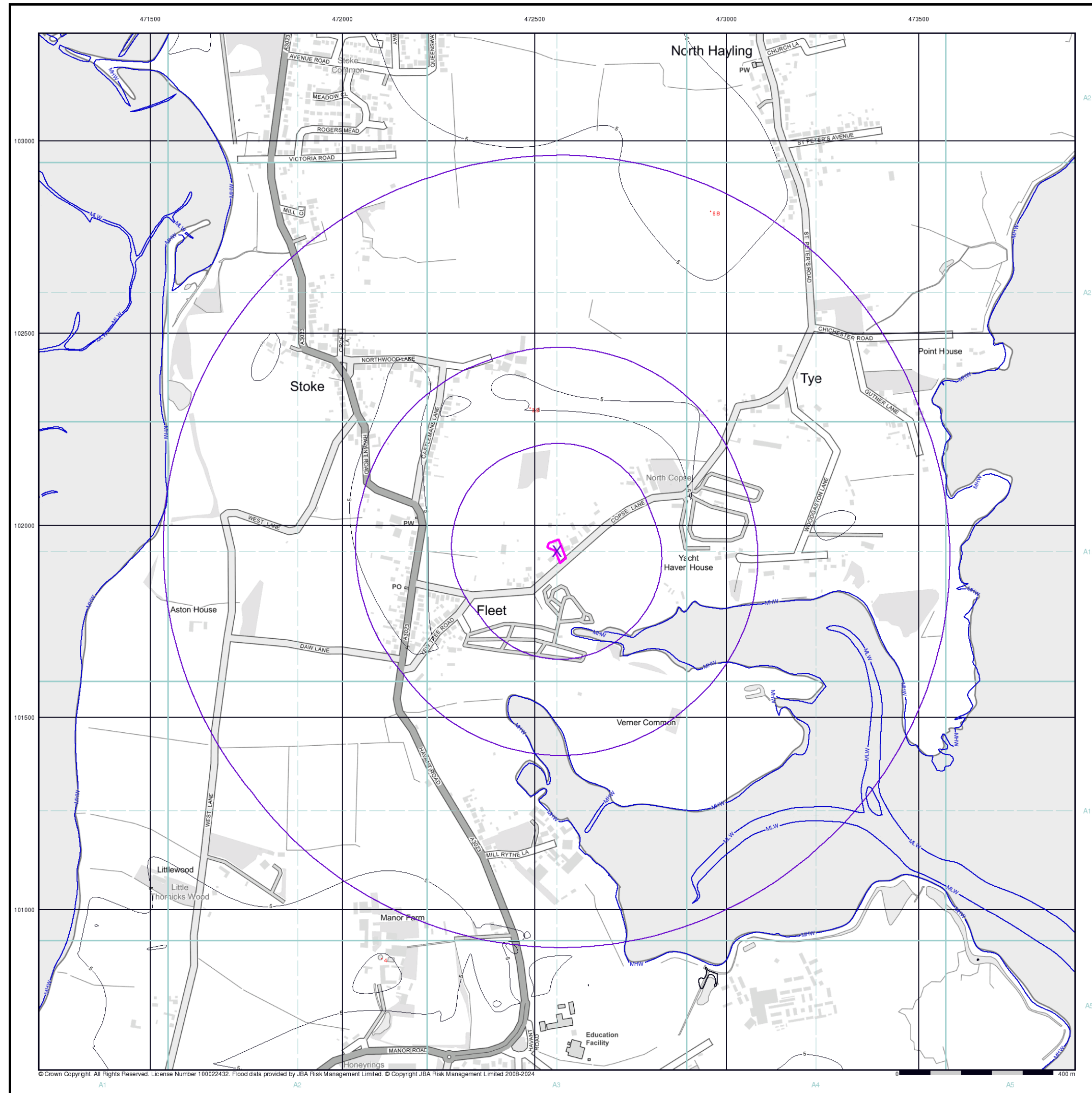
Order Number: 358555980_1_1
Customer Ref: 1082
National Grid Reference: 472560, 101930
Slice: A
Site Area (Ha): 0.13
Search Buffer (m): 1000

Site Details

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JBA Canal Failure Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

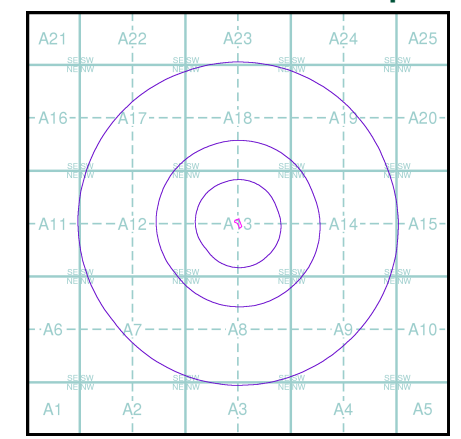
Flood Data

- Canal Failure
- Coverage

Contours (height in metres)

- Standard Contour
- Master Contour
- Spot Height
- MLW Mean Low Water
- MHW Mean High Water

JBA Canal Failure Flood Map - Slice A



Order Details

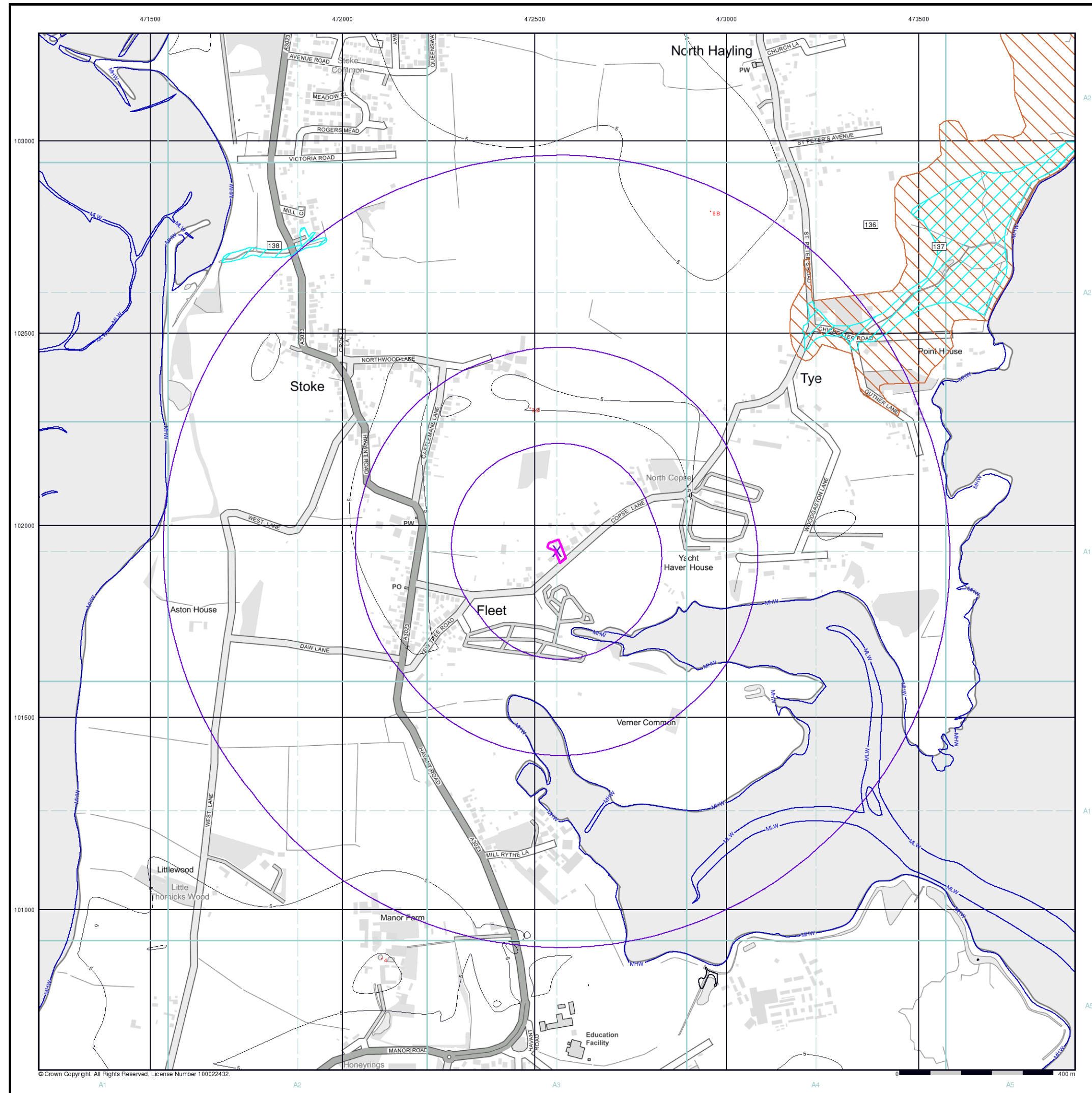
- Order Number: 35855980_1_1
- Customer Ref: 1082
- National Grid Reference: 472560, 101930
- Slice: A
- Site Area (Ha): 0.13
- Search Buffer (m): 1000

Site Details

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EA/NRW Historic Flood Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID

Historic Flood Events Data

Channel Capacity Exceeded (no raised defences)	Obstruction/Blockage - Culvert
Channel Capacity Exceeded /Surface Water	Obstruction/Blockage - Debris Screen
Groundwater/High Water Table	Operational Failure/ Breach of Defence
Local Drainage/Surface Water	Other
Mechanical Failure	Overtopping of Defences
Obstruction/Blockage - Bridge	Surface Water
Obstruction/Blockage - Channel	Unknown
Historical Flood Liabilities	

Contours (height in metres)

Standard Contour 105 100 95

Master Contour

Spot Height 167.8

MLW Mean Low Water

MHW Mean High Water

EA/NRW Historic Flood Map - Slice A

Order Details

Order Number: 358555980_1_1
Customer Ref: 1082
National Grid Reference: 472560, 101930
Slice: A
Site Area (Ha): 0.13
Search Buffer (m): 1000

Site Details

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