Ashwood Homes Ltd

Land East of Chaffinch Way, Holbeach – 9 Dwellings
Flood Risk Assessment & Drainage Strategy

April 2021



Revision Schedule

Land East of Chaffinch Way, Holbeach – 9 Dwellings

Flood Risk Assessment & Drainage Strategy

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1 INTRODUCTION

1.1 Instructions

1.1.1 This report is prepared in accordance with instructions from Ashwood Homes Ltd to support a planning application to South Holland District Council (SHDC) for a 9 dwelling residential development on Land East of Chaffinch Way, Holbeach, PE12 7FG.

1.1.2 The purpose of the report is to assess flood risk in accordance with the National Planning Policy Framework (NPPF) and other current guidelines and determine a drainage strategy for the site. It does not purport to be a drainage design for construction purposes.

1.2 Planning Background

1.2.1 Planning permission was granted by SHDC on 21 February 2018 under Ref. H09-0288-15 for 36 dwellings at Chaffinch Way. With respect to flood risk, Condition 5 of the permission contained the following requirements:

- *Finished floor levels shall be set no lower than 3.6m AOD;*
- *All dwellings shall be a minimum of two storeys;*
- *Flood resilient construction shall be incorporated throughout the development.*

1.2.2 The granting of the Chaffinch Way planning permission demonstrated the acceptability of raising floor levels at this site in line with the flood depths shown on the SFRA hazard mapping and a similar approach has been taken in the preparation of this FRA for the land east of Chaffinch Way.

1.2.3 Planning application Ref. H09-0288-15 was originally submitted in March 2015 for a total of 48 dwellings on the Chaffinch Way site. The application was supported by a Flood Risk Assessment by Geoff Beel Consultancy, dated January 2015, for 47 dwellings based on an earlier layout. Subsequently, an area of 'Agricultural Right of Way' was excised from the site and the number of dwellings consequently reduced to 36.

1.2.4 The matter of the right of way has now been resolved and it is planned to erect a further 9 dwellings on that area of the site making a total of 45, 3 fewer than the original application and 2 fewer than the number covered by the FRA.

1.2.5 The approved FRA, available on the SHDC Planning Portal under Ref. H09-0288-15, is referred to throughout this report and should be read in conjunction with it.

1.3 Technical Information

National Planning Policy Framework

1.3.1 The National Planning Policy Framework and associated Planning Practice Guidance explains how flood risk should be taken into consideration during the planning and development process. It categorises flood risk by *flood zone* and defines the types of development *appropriate* to each flood zone according to *vulnerability*. The flood zones are defined as:

- Zone 1: Areas with a Low Probability of flooding (annual probability less than 0.1% or 1 in 1000 years).
- Zone 2: Areas with a Medium Probability of flooding (annual probability between 0.1% (1 in 1000 years) and 1.0% (1in 100 years) for rivers, 0.1 – 0.5% (1 in 1000 to 1 in 200 years) for coastal areas.
- Zone 3a: Areas with a High Probability of flooding (annual probability greater than 1.0% (1 in 100 years) for rivers, 0.5% (1 in 200 years) for coastal areas).
- Zone 3b: The Functional Floodplain (probability as Zone 3a).

Environment Agency Flood Maps

1.3.2 The Environment Agency (EA) predicts the likelihood of flooding via a national series of indicative flood maps, available via the GOV.UK website.

1.3.3 The *Flood Map for Planning* shows the flood zones, described above, coloured in different shades of blue. In areas protected by flood defences, this flood map deliberately neglects their presence so as to present a worst-case scenario. Although it does not represent realistic risk, the *Flood Map for Planning* is the authoritative guidance on flood risk for use in the preparation of flood risk assessments for planning applications.

1.3.4 The *Long Term Flood Risk* maps cover the following topics:

- *Flood Risk from Rivers and the Sea*. This map (previously known as the NaFRA map) shows the risk of fluvial and tidal flooding in a similar manner to the *Flood Map for Planning*, except that, where they exist, defences are recognised. The resulting realistic risk presentation provides useful data for insurance assessors.

- *Flood Risk from Surface Water.* This map shows potential overland flow routes and accumulation of runoff resulting from rainstorm events based on topography, divided into low, medium and high risk scenarios.

- *Flood Risk from Reservoirs*. This map shows areas which may be subject to flooding from the failure of reservoirs and other water retaining infrastructure, the risk of which is very low.

South Holland District Council Strategic Flood Risk Assessment

1.3.5 Local planning authorities are required to produce a Strategic Flood Risk Assessment (SFRA) which sets the scene for flood risk in their areas. South Holland District Council published its original SFRA, now superseded, in January 2010.

South East Lincolnshire Local Plan

1.3.6 The South East Lincolnshire Local Plan, prepared jointly by South Holland District Council, Boston Borough Council and Lincolnshire County Council, was adopted in March 2019. The South East Lincolnshire SFRA and the 2016 Update of the South Holland District Council SFRA, which includes Holbeach, form part of this Local Plan.

Lincolnshire County Council Preliminary Flood Risk Assessment

1.3.7 Lead Local Flood Authorities (LLFAs) are required to produce a Preliminary Flood Risk Assessment (PFRA) to identify areas where there is significant flood risk from ordinary watercourses and surface water run-off, but not from main rivers or the sea, or from sewers. Lincolnshire County Council, as the LLFA, published its PFRA in June 2011.

South Holland Internal Drainage Board

1.3.8 Drainage of the site and surrounding area is administered by the South Holland IDB. The local drain serving the site is High Priority Watercourse Reference No. DRN206G1404, as shown on the SHIDB map extract at Appendix 3.

2 SITE INFORMATION

2.1 Existing Site

Location

2.1.1 The site comprises an area of land excised from the original plan for 48 dwellings, subsequently reduced to 36, to the north-west of Foxes Low Road and north-east of the newly constructed Chaffinch Way, some 120m wide by 25m deep, an area of about 0.3 ha. Holbeach town centre lies about 1.5 km to the west. The site location is shown on the attached Drawing No AHL-1534-01-GA-001 *Location Plan*.

Watercourses

2.1.2 The site and the land around, including the Chaffinch Way development, are drained by the South Holland IDB High Priority Watercourse DRN206G1404 which runs in a northerly direction along Foxes Low Road at the eastern site boundary and forms part of the Catchment 206G – Holbeach River (South) system.

2.1.3 The Catchment 206G system flows to the north to Holbeach Bank Pumping Station where the water is lifted to the River Whaplode which joins the River Welland close to The Wash.

Topography

2.1.4 The site comprises generally disused agricultural land. The ground levels vary between +2.6m AOD at Foxes Low Road and +3.9m AOD at Chaffinch Way, a range of 1.3m. Topographical details are shown on the attached Drawings No AHL-1534-01-TS-001 *Topographical Survey Extract* and 1280/9/003 *Preliminary Planning Layout*.

Ground Conditions

2.1.5 According to BGS data, the site is located on Tidal Flat Deposits, superficial deposits of Clay and Silt, overlying the Ampthill Clay Mudstone Formation.

2.1.6 The *Combined Phase 1 Desk Study and Phase 2 Exploratory Investigation* by Geodyne in July 2015 reported:

- Made Ground including Topsoil to depths between 0.4m and 2.5m.
- Sandy Silt (Tidal Flat Deposits) beneath the Made Ground.
- Soakaway test infiltration rates between 1 x 10^{-5} and 1 x 10^{-6} at depths up to 1.4m in Sandy Silt (Tidal Flat Deposits).

2.2 Proposed Development

2.2.1 It is proposed to develop the site for residential use with 9 No 2-storey dwellings, as shown on Drawing No 1280/9/003 *Preliminary Planning Layout.* There will be no sleeping or vulnerable living accommodation on the ground floor.

2.2.2 The ground floor level (FFL) of the new dwelling houses will be set at +3.6m AOD, up to 1.0m higher than the existing ground levels.

2.2.3 Flood resilient construction will be incorporated up to a minimum level of 300mm above the FFL throughout.

2.2.4 About 0.12 ha (40% of the total site area) will comprise impermeable roofs, drives and access road. The remaining 0.18 ha (60% of the total site area) will comprise private gardens.

3 FLOODING INFORMATION

3.1 Flood Data

3.1.2 The EA *Flood Map for Planning* is attached at Appendix 1. Except for a small 'island' at Holbeach town centre, this map shows Flood Zone 3 at the site and extending for several kilometres in all directions.

3.1.3 *Long Term Flood Risk* maps, including *Flood Risk from Rivers or the Sea* and *Flood Risk from Surface Water* are also attached at Appendix 1.

3.1.4 The *Residual Peak Depth - District 1% Fluvial/0.5% Tidal Event Probability* map for 2116 from the South Holland SFRA 2016 Update is attached at Appendix 2. *Residual Risk Extent, Residual Flood Hazard* and *Residual Peak Velocity Maps* have also been examined.

3.2 Flood History

3.2.1 According to the EA *Historic Flood Map*, there have been no flood events recorded at the site.

3.2.2 Neither the South Holland SFRA nor the Lincolnshireshire County Council PFRA, make any reference to flood history at the site.

3.3 Potential for Tidal or Fluvial Flooding

EA Flood Map for Planning

3.3.1 The *Flood Map for Planning,* which assumes that no flood defences exist, shows the site to be entirely located in Flood Zone 3 (High Probability) associated with the potential failure of tidal defences.

EA Long Term Flood Map – Flood Risk from Rivers or the Sea

3.3.2 The *Flood Risk from Rivers or the Sea* map, which acknowledges the presence of flood defences, shows the site to be located in an area of Medium flood risk, the equivalent of Flood Zone 3.

3.3.3 The nearest Flood Zone 1 (Low Probability) is in High Street, Holbeach, about 1 km to the west where the ground level is about +5m AOD.

South East Lincolnshire SFRA

3.3.4 As can be seen from the attached *Flood Map for Planning*, almost the entire area of South East Lincolnshire is in Flood Zone 3. Strict adherence to the guidelines would consequently result in no development being permitted across a very large area, which is clearly impracticable. The South East Lincolnshire SFRA has therefore

been developed to ensure that there is a consistent evidence base against which to take development decisions, particularly with respect to mitigation requirements.

3.3.5 The guidance on finished floor levels (FFLs) provided by Appendix C of the SFRA is as follows:

- Flood depth 0 to 0.25m – FFL 0.3m above GL
- Flood depth 0.25 to 0.5m – FFL 0.5m above GL
- Flood depth 0.5 to 1.0m – FFL 1.0m above GL

South Holland SFRA 2016 Update Maps

3.3.6 Whereas the *Flood Map for Planning* simply assumes that defences are non-existent, the SFRA 2016 Update maps are based on modelling a theoretical series of breaches in the tidal defences. The map generally referred to in assessing development applications is the *Residual Peak Depth - District 2115 1% Fluvial/0.5% Tidal Event Probability* map which not only forecasts the consequences of a defences breach but also the effect of climate change over the next 100 years. This map shows flood depths at the site in the ranges 0 – 0.25m (yellow), 0.25m – 0.5m (light orange) and 0.5m -1.0m (dark orange) across the site for this conjectured event – see Appendix 2.

3.4 Potential for Surface Water Flooding

EA Flood Risk from Surface Water Map

3.4.1 The EA *Flood Risk from Surface Water* map shows no significant risk of surface water flooding at the site.

Lincolnshire County Council PFRA

3.4.2 There is no specific mention of flood risk at the site in the LCC *Preliminary Flood Risk Assessment* (PFRA).

South Holland IDB

3.4.3 The site and surrounding land are well drained by the system of South Holland IDB maintained drains, thereby preventing surface water flooding.

3.5 Potential for Flooding from Reservoirs

3.5.1 The EA *Flood Risk from Reservoirs* map shows no risk of reservoir flooding at or near the site.

3.6 Potential for Flooding from Groundwater or Sewers

3.6.1 Flood risk from other sources such as groundwater or sewers is considered to be negligible in comparison with that for tidal at this site. It is considered that the ground raising proposed for the latter will address flood risk from these sources which, consequently, are not addressed further in this assessment.

4 FLOOD RISK ASSESSMENT

4.1 Approach to Development

4.1.1 As can be seen from the *Flood Map for Planning* at Appendix 1, the area around Holbeach is situated in Flood Zone 3. This means that the town can only expand by permitting development in Flood Zone 3, as supported by the SFRA, using suitable mitigation measures.

4.1.2 Such development has been in progress during the past several years; planning permission Ref H09-0288-15, as described in Section 1.2 above, being a typical example. In permitting residential development on such sites, the authorities generally consider the contingency scenario represented by the *Residual Peak Depth - District 2115 1% Fluvial/0.5% Tidal Event Probability* map from the SFRA to be an appropriate guideline and typically require that finished floor levels (FFLs) be set in accordance with the guidance provided in Appendix C of the SFRA.

4.1.3 In terms of existing ground levels and flood risk, the proposed development on the land east of Chaffinch Way is very similar to that approved at Chaffinch Way by planning permission Ref H09-0288-15.

4.2 Tidal Flooding

Predicted Flood Levels

4.2.1 The South Holland SFRA maps are based on modelling the theoretical breaching of the coastal defences; however, based on historical records, the chances of this happening in the foreseeable future must be regarded as extremely low.

4.2.2 The reference SFRA map, *Residual Peak Depth - District 2115 1% Fluvial/0.5% Tidal Event Probability* – see Appendix 2 - shows the central area of the site having flood depths of 0 – 0.25m (yellow), the western area having depths of 0.25m - 0.5m (light orange) and the eastern area having depths of 0.5m to 1m (dark orange).

4.2.3 As shown on the attached Drawings No AHL-1534-01-TS-001 *Topographical Survey Extract* and 1280/9/003 *Preliminary Planning Layout,* the site ground levels lie in the range +2.6m to +3.9m AOD.

4.2.4 By way of background, the approved FRA for Chaffinch Way (Ref H09-0288-15) followed the same guidance as that in Appendix C of the SFRA, although the SFRA and the Flood Depth maps have been updated since then. The methodology was:

- Ground levels range from +3.1m to +4.1m.
- Flood depths are shown as 0.25 to 0.5m (light orange zone).
- FFL set 0.5m above GL the lowest GL of +3.1, therefore FFL = +3.6m.

4.2.5 At the land east of Chaffinch Way, there are three flood depth zones, as follows:

- Central area – GLs 3.3 to 3.9m. Flood depths 0 to 0.25m (yellow) – FFL set 0.3m above GL the lowest GL of +3.3, therefore FFL = +3.6m.
- Western area - GLs 3.1 to 3.4m. Flood depths 0.25 to 0.5m (light orange) – FFL set 0.5m above GL the lowest GL of +3.1, therefore FFL = +3.6m.
- Eastern area - GLs 2.6 to 3.6m. Flood depths 0.5 to 1.0m (dark orange) – FFL set 1.0m above GL the lowest GL of +2.6, therefore FFL = +3.6m.

4.2.6 While the FFLs will be set at +3.6m AOD, the gardens and driveways around the buildings will be set lower as appropriate. As it would remain possible that some areas between the buildings might flood, it would be prudent for the occupants of the dwellings to operate a flood management plan so as to assure their safety in an extreme event – see Section 5 below.

4.2.7 As the Flood Zone 3 area indicated at the site extends as far as the coast without a break – see attached *Flood Map for Planning* - raising ground levels at the site will not occupy flood storage volume. Consequently, no floodplain compensation is required and there will be no increase in flood risk elsewhere as a result of the development.

4.3 Surface Water Flooding

4.3.1 As stated in 3.4.1 above, there is no significant risk of surface water flooding at the site. This is because the site and surrounding land are well drained by the system of South Holland IDB maintained drains, thereby preventing surface water flooding.

4.3.2 Although the impermeable area of the proposed development will be increased by the introduction of roofs, drives and access road, the corresponding increase in surface water flood risk will be fully mitigated by the SuDS-based surface water drainage system described in Section 6 below.

5 FLOOD MANAGEMENT

5.1 Flood Management

5.1.1 As the site is at risk of flooding in a residual risk breach event, even though there is a very low risk of floodwater entering the buildings, a Flood Management Plan containing the following robust flood management provisions will be prepared and implemented.

5.2 Warnings and Evacuation

5.2.1 The occupants of the new dwellings will register for the EA's *Floodline Warnings Direct* service which is available for the site (*Holbeach, Fleet, Gedney and Surrounding Areas* Alert Area Map). Should a flood warning be received or a flood event otherwise predicted, occupants will evacuate in good time before any local flooding occurs to dry ground either at Holbeach town centre, about 1 km to the west, or other location clear of the flood zones.

5.2.2 Alternatively, residents might remain in their houses and ascend to safe refuge on the upper floors so as to remain well clear of flooding outside the buildings or even of any floodwater entering at ground floor level. In the event of a need for evacuation of any personnel, e.g. for medical reasons, attendance by the emergency services would not be precluded by the depth of the floodwater in the access roads.

5.2.3 In neither case would the occupants be exposed to any danger.

5.3 Sequential Test

5.3.1 The finished floor levels (FFLs) of the new buildings will be set at +3.6m AOD by raising ground levels to above predicted residual risk flood levels. This will effectively place the development in Flood Zone 1 where the Sequential Test is not required to be addressed.

5.3.2 Furthermore, as there are no sites available outside the flood zones in Holbeach or the surrounding area, there is no alternative but to build in the flood zones, as recognised by the South Holland SFRA. This has been the case for some years and the established practice is to mitigate the flood risk by raising ground levels so as to lift new developments out of the floodplain.

5.3.3 Consequently, the Sequential Test is considered to be satisfied.

5.4 Exception Test

5.4.1 Notwithstanding the above, in order to ensure the safety of the occupants it is necessary to satisfy the NPPF Exception Test. The following points are relevant:

5.4.2 The development of new housing with easy access to the existing urban facilities will provide significant sustainability benefits to the east side of Holbeach.

5.4.3 The proposed buildings will be made safe by raising the ground floor level above the residual risk flood levels and adopting of a Flood Management Plan which includes early warning from the EA *Floodline Warnings Direct* service and the options of evacuation, either to dry ground in Holbeach or further afield or safe refuge on the upper floors. Attendance by the emergency services would not be precluded by the presence of floodwater.

5.4.4 As the Flood Zone 3 area indicated at the site extends as far as the coast without a break, raising ground levels at the site will not occupy flood storage volume. Consequently, no floodplain compensation is required and there will be no increase in tidal or fluvial flood risk elsewhere as a result of the development.

5.4.5 Similarly, as a result of the SuDS-based site drainage scheme, there will be no increase in surface water flood risk elsewhere as a result of the development

5.4.6 Consequently, the Exception Test is considered to be satisfied.

5.5 Flood Resilience

5.5.1 Appendix C of the SFRA requires *flood resilient construction to a height of 300mm above the predicted flood depth* which is equivalent to the FFL at the lowest areas of the site.

5.5.2 In line with this requirement and as stated in the approved FRA for Chaffinch Way, flood resilient construction will be incorporated up to a minimum level of 300mm above the FFL throughout.

6 DRAINAGE STRATEGY

6.1 Surface Water Drainage

Existing Site Drainage

6.1.1 The site currently drains by infiltration to the topsoil and by evapotranspiration from the undergrowth vegetation. Any excess runoff flows towards the IDB Drain at the eastern boundary.

6.1.2 As proposed by the approved FRA and shown on Drawing No AHL-1534-01-DR-001 *Drainage Strategy*, the private plots on the recently constructed Chaffinch Way development are drained by infiltration directly to the ground via Type A permeable paving in the car parking spaces and private drives. The adopted access road, where infiltration is not practicable, is drained via oversized attenuation storage pipes and flow control to the South Holland IDB High Priority Watercourse DRN206G1404.

Sustainable Urban Drainage Systems (SuDS)

6.1.3 As shown on Drawing No AHL-1534-01-DR-001, the surface water drainage system for the land east of Chaffinch Way will replicate that already approved and constructed for Chaffinch Way. The system will be similarly based on SuDS principles for the attenuation and treatment of the surface water run-off and the SuDS hierarchy in the Building Regulations Part H3(3), as described below.

6.1.4 The first consideration in the SuDS hierarchy is infiltration to ground. The *Combined Phase 1 Desk Study and Phase 2 Exploratory Investigation* by Geodyne in July 2015 reported soakaway test infiltration rates between 1 x 10-5 and 1 x 10-6 which were established by the approvals for Chaffinch Way as adequate for the use of Type A permeable paving in the car parking spaces and private drives.

6.1.5 The second consideration in the SuDS hierarchy is discharge to watercourse. The nearest receiving watercourse is the South Holland IDB High Priority Watercourse DRN206G1404, located at the eastern site boundary, to which the Chaffinch Way adopted access road drains. As the land east of Chaffinch Way will have no additional adoptable access road, this arrangement will remain as existing.

6.1.6 The use of existing and proposed Type A permeable paving and the presence of the watercourse which receives existing highway attenuated runoff, makes it unnecessary to consider the third consideration in the SuDS hierarchy, discharge to sewer.

6.1.7 The permeable area of the site will comprise private gardens and therefore offer a measure of bioretention through shallow infiltration into topsoil and the evapo-transpiration of the vegetation.

6.1.8 The capacity of the drainage system will be sufficient to accommodate the 1 in 100 year rainfall event with 40% climate change allowance in accordance with the EA Guidance *Flood Risk Assessments: Climate Change Allowances*, July 2020, and a suitable allowance for urban creep in accordance with BS 8582:2013 *Code of practice for surface water management for development sites*.

Treatment

6.1.9 Treatment of runoff will be provided by the use of Type A permeable paving in the private drives.

Exceedance Flows

6.1.10 In order to protect against the risk of flooding, it will be necessary to raise the ground levels over most of the site area with the depth of fill varying between zero and 1.0m. These levels will be sufficient to cater for the predicted residual risk flood with breach conditions in 2115 and will also create adequate falls to facilitate drainage.

6.1.11 Finished floor levels will be set at a minimum of +3.6m AOD with finished ground levels 150-200mm lower so as to reduce the risk of surface water flooding at the dwelling houses. Any exceedance flows in an extreme rainfall event will be directed away from the properties along the existing access road.

Long Term Maintenance

6.1.12 The drainage system and SuDS features in the private plots will be maintained in the long term by individual householders and/or a private management company.

6.1.13 An operation and maintenance manual for the SuDS elements will be prepared and administered.

Surface Water Approvals

6.1.14 All relevant authorities will be kept fully informed regarding the detailed design of the surface water drainage system. It is normal practice for detailed surface water drainage design to be subject to the approval of the local planning authority subsequent to the grant of planning permission and, if necessary, this will be sought from South Holland District Council at the appropriate time.

6.2 Foul Sewerage

Existing Foul Sewerage

6.2.1 There is no foul sewerage currently serving the land east of Chaffinch Way.

6.2.2 As shown on Drawing No AHL-1534-01-DR-001 *Drainage Strategy*, the private plots on the recently constructed Chaffinch Way development are connected to the public sewerage system.

Proposed Foul Sewerage

6.2.3 As shown on Drawing No AHL-1534-01-DR-001, the foul drainage system for the land east of Chaffinch Way will replicate that already approved and constructed for Chaffinch Way. A foul sewer running along the rear gardens will pick up the flows from the dwellings and connect to the existing MH F20 at the western end of the site.

Foul Sewerage Approvals

6.2.4 At the detailed design stage, application will be made to Anglian Water under the Water Industry Act 1991 for consent to discharge foul sewage from the proposed development into the public sewerage system.

6.2.5 All relevant authorities will be kept fully informed regarding the detailed design of the foul sewerage system. It is normal practice for detailed foul water drainage design to be subject to the approval of the local planning authority subsequent to the grant of planning permission and, if necessary, this will be sought from South Holland District Council at the appropriate time.

7 CONCLUSIONS

7.1.1 The EA *Flood Map for Planning* shows the site to located in Flood Zone 3, High Probability of flooding.

7.1.2 The SFRA map *Residual Peak Depth – District 2115 1% Fluvial/0.5% Tidal Event Probability* map, which forecasts the consequences of a defences breach and the effect of climate change over the next 100 years, shows depths in the ranges 0 – 0.25m (yellow), 0.25m – 0.5m (light orange) and 0.5m -1.0m (dark orange).

7.1.3 In accordance with the guidance in Appendix C of the SFRA, finished floor levels (FFLs) of the buildings will be set at +3.6m AOD. This methodology, which will involve raising ground levels, is consistent with the approved FRA for Chaffinch Way (Ref H09-0288-15).

7.1.4 In accordance with the guidance in Appendix C of the SFRA, flood resilient construction will be incorporated up to a minimum level of 300mm above the FFL throughout.

7.1.5 As the Flood Zone 3 area indicated at the site extends as far as the coast without a break, raising ground levels at the site will not occupy flood storage volume.

7.1.6 The EA *Flood Risk from Surface Water* map shows no significant risk of surface water flooding at the site. The new impermeable areas of the site will be drained using SuDS techniques, including permeable paving, which will reduce flood risk and provide treatment to improve water quality.

7.1.7 Climate change allowance will be made in accordance with the latest EA guidelines.

7.1.8 In order to address the risk of flooding, a Flood Management Plan will be prepared for the safety of occupants, involving early warning and either evacuation to dry ground or refuge on an upper floor, as required.

7.1.9 As the raising of levels effectively places the development in Flood Zone 1, the NPPF Sequential Test is considered to be satisfied. Level raising is the normally acceptable mitigation practice for similar developments in the Holbeach area and supported by the South Holland SFRA.

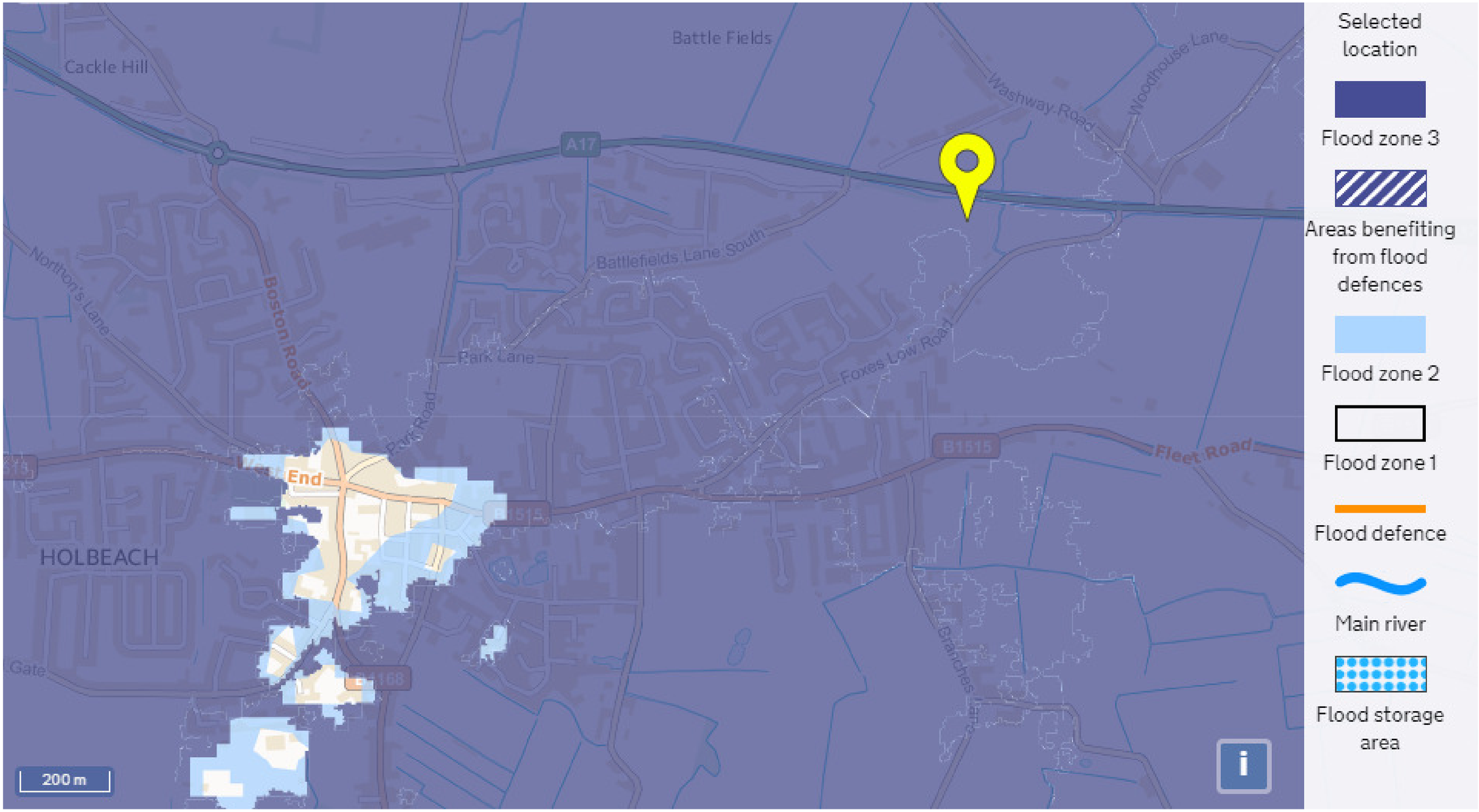
7.1.10 As the proposed buildings will be made safe by raising the finished floor levels in accordance with the guidance and adopting of a Flood Management Plan which includes early warning from the EA and options of evacuation, the NPPF Exception Test is considered to be satisfied.

7.1.11 Foul sewerage will be connected to the public sewerage system.

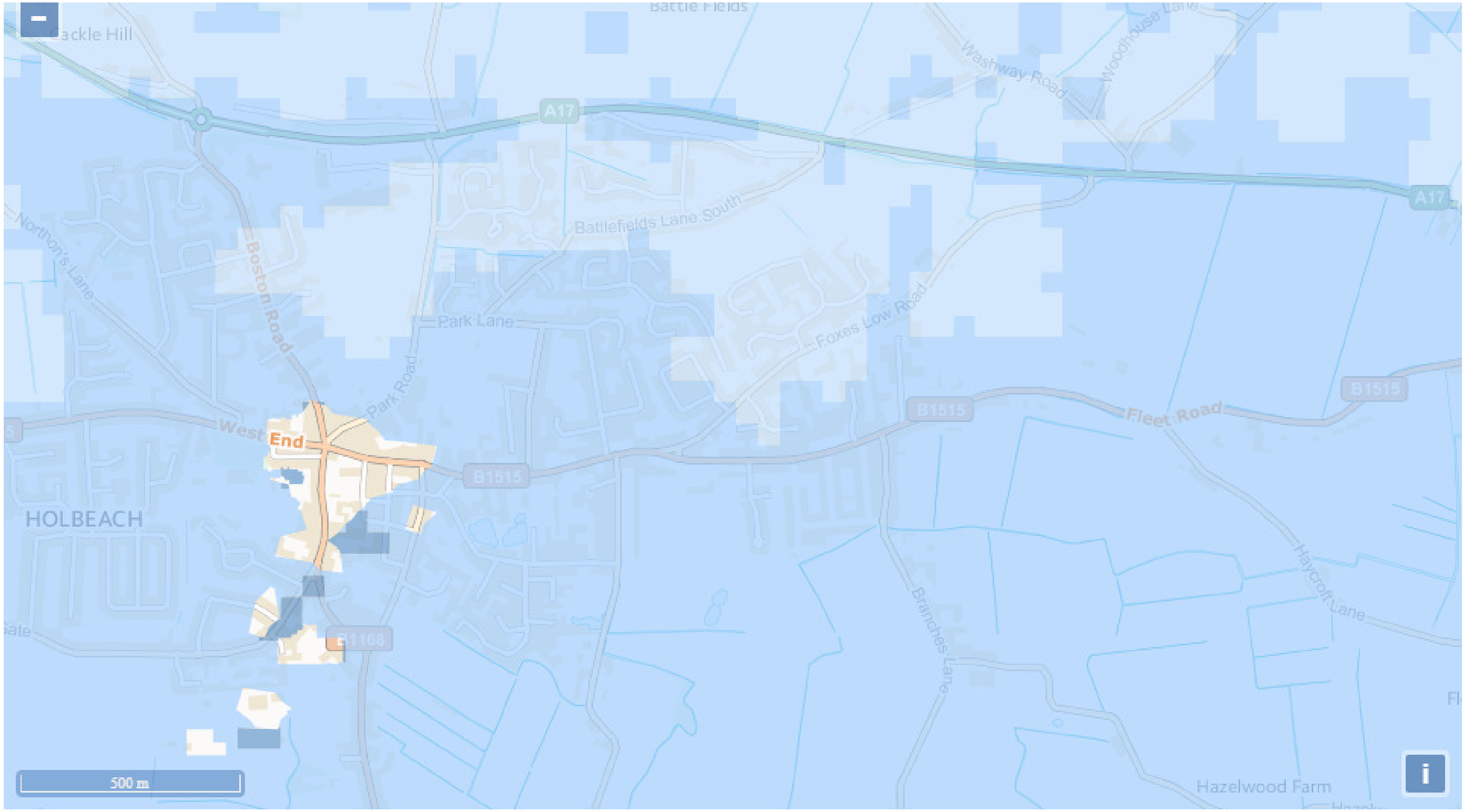
7.1.11 With regard to flood risk and drainage, therefore, the site is suitable for the proposed use. The development may be occupied safely and adequately drained without increasing flood risk elsewhere.

APPENDIX 1

EA FLOOD MAPS



Flood Map for Planning



Extent of flooding from rivers or the sea

High Medium Low Very low

Flood Risk from Rivers or the Sea



Extent of flooding from surface water

High Medium Low Very low

Flood Risk from Surface Water

APPENDIX 2

SOUTH HOLLAND SFRA FLOOD DEPTH MAP

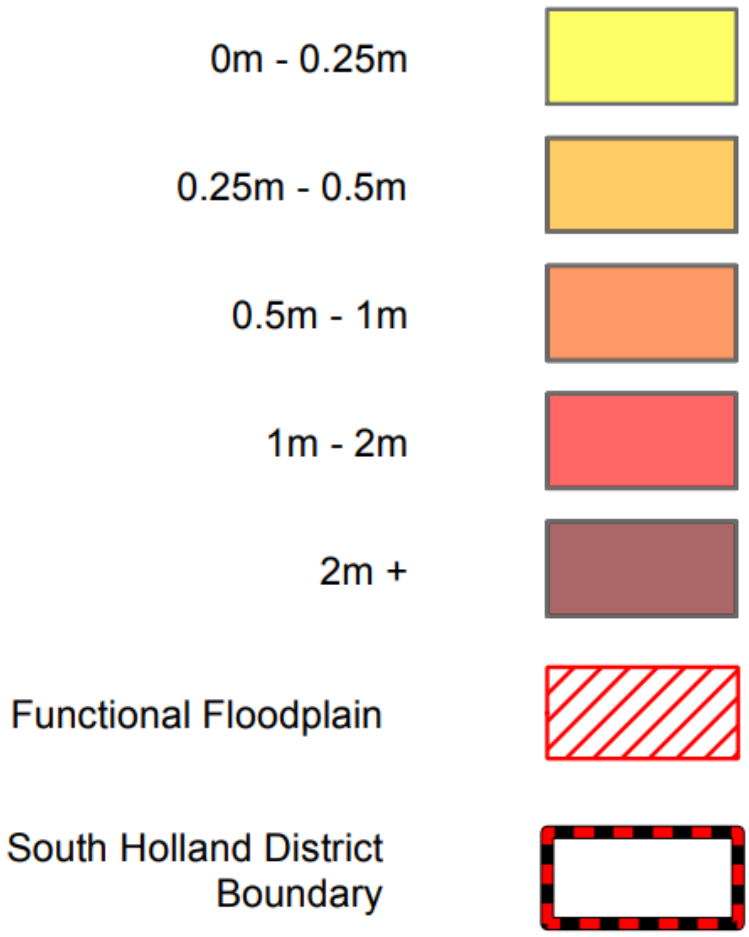
South Holland SFRA 2016 Update

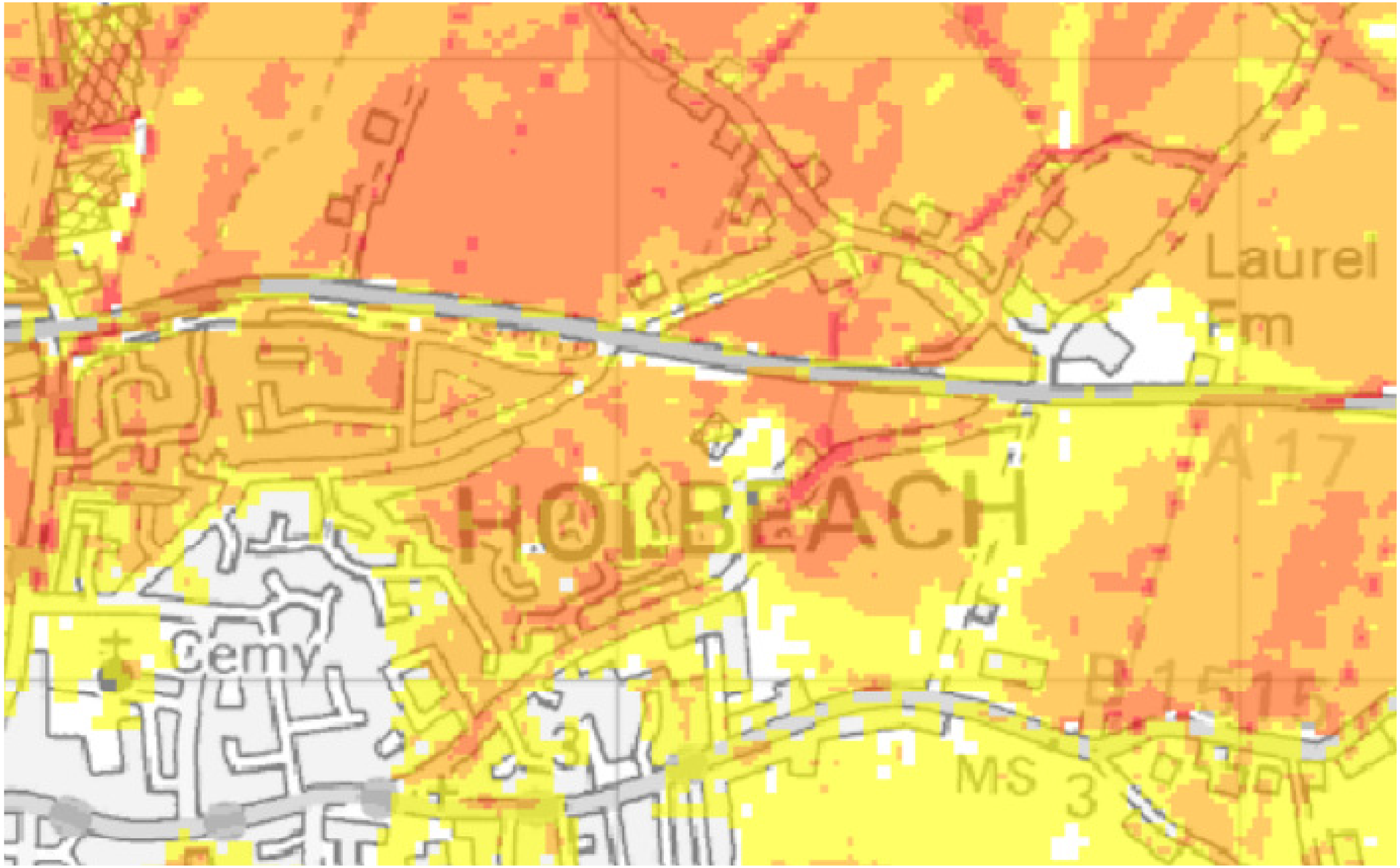
Residual Peak Flood Depth 2116

1% Fluvial/0.5% Tidal Event Probability

Map Legend

Peak Depth



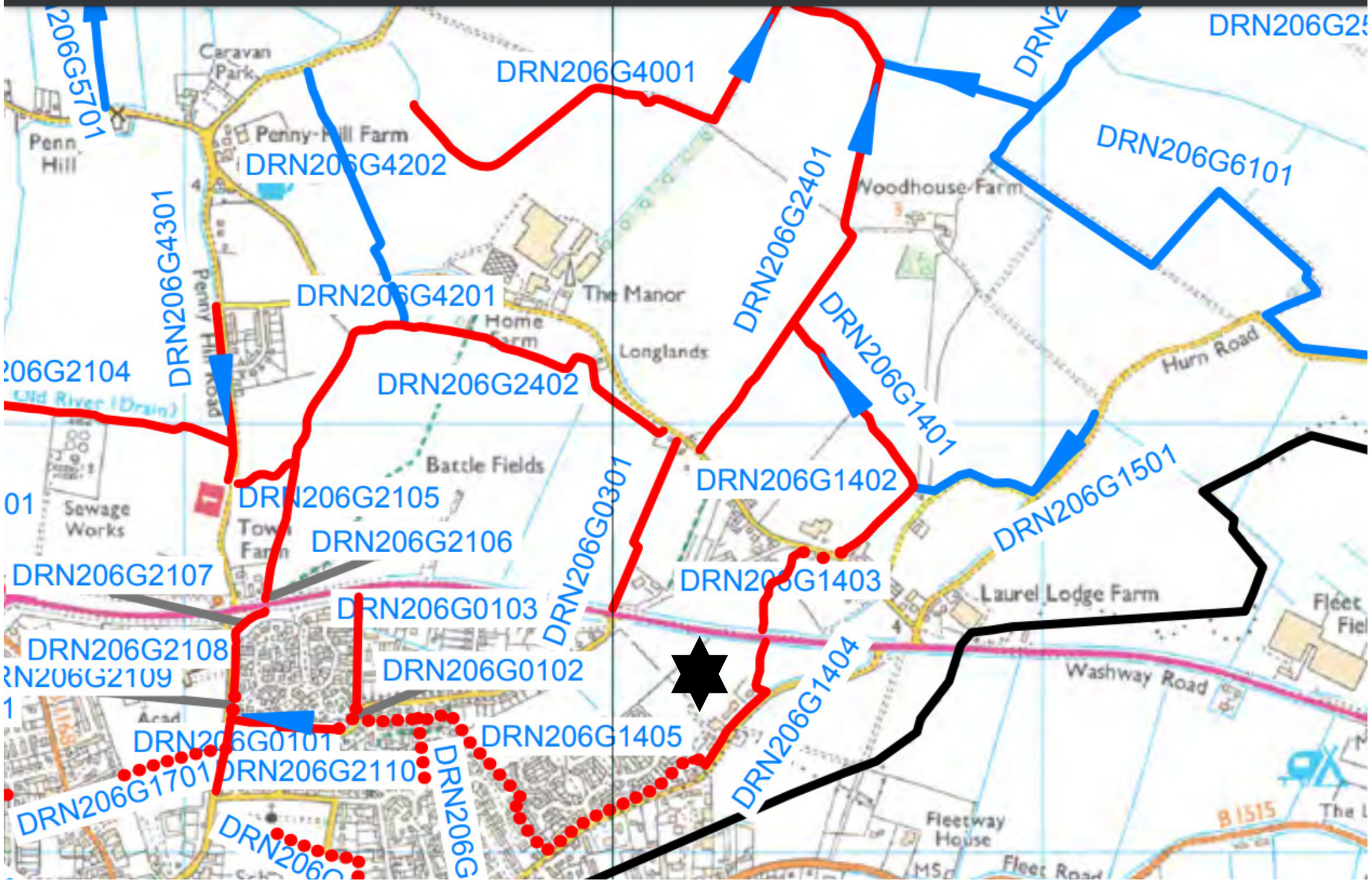


South Holland SFRA 2016 Update – Residual Peak Flood Depths 2116 – 1% Fluvial/0.5% Tidal

APPENDIX 3

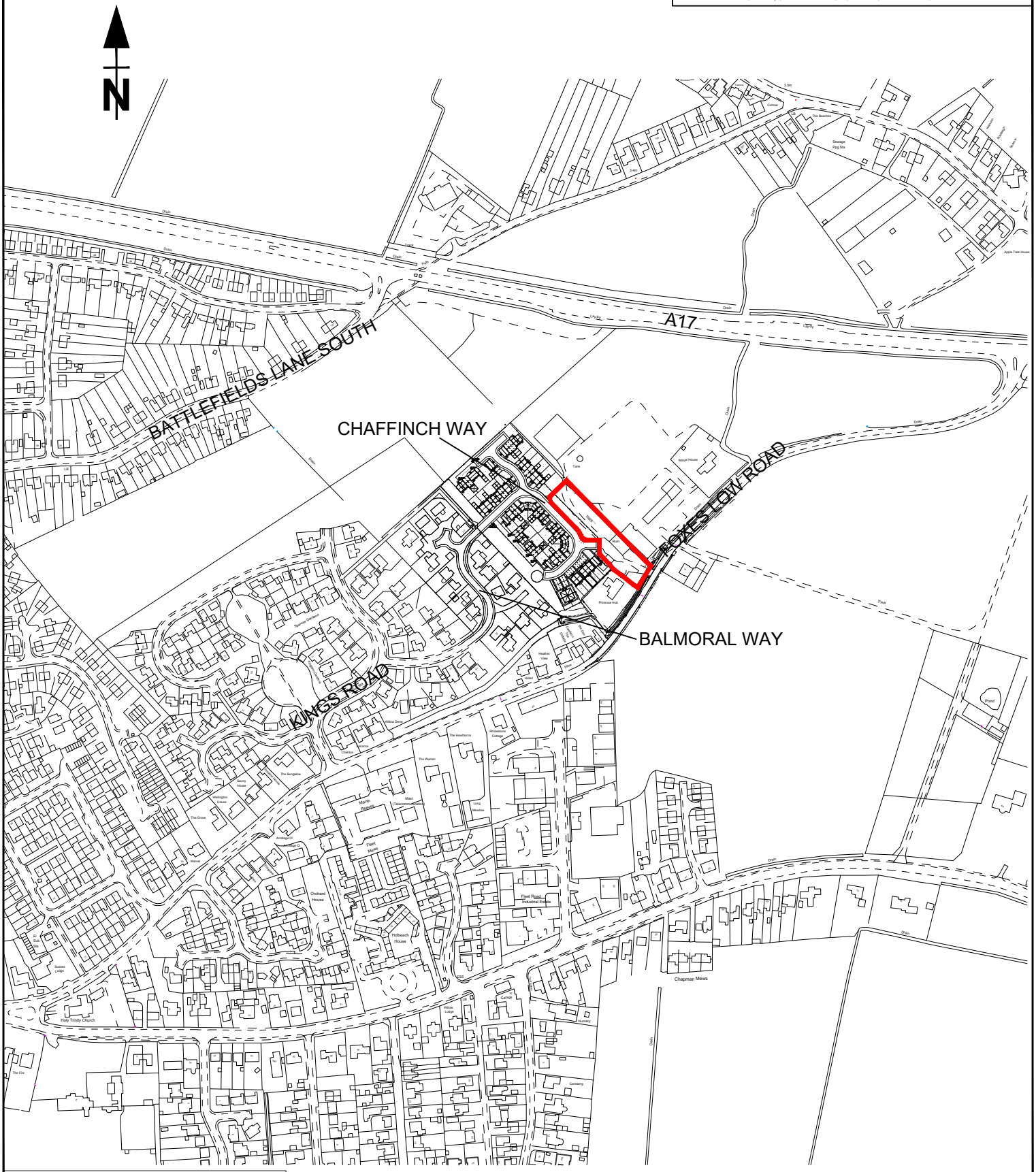
SOUTH HOLLAND IDB DRAIN MAP

SHIDB: Catchment 206G - Holbeach River (S) 1 / 1 300%



DRAWINGS

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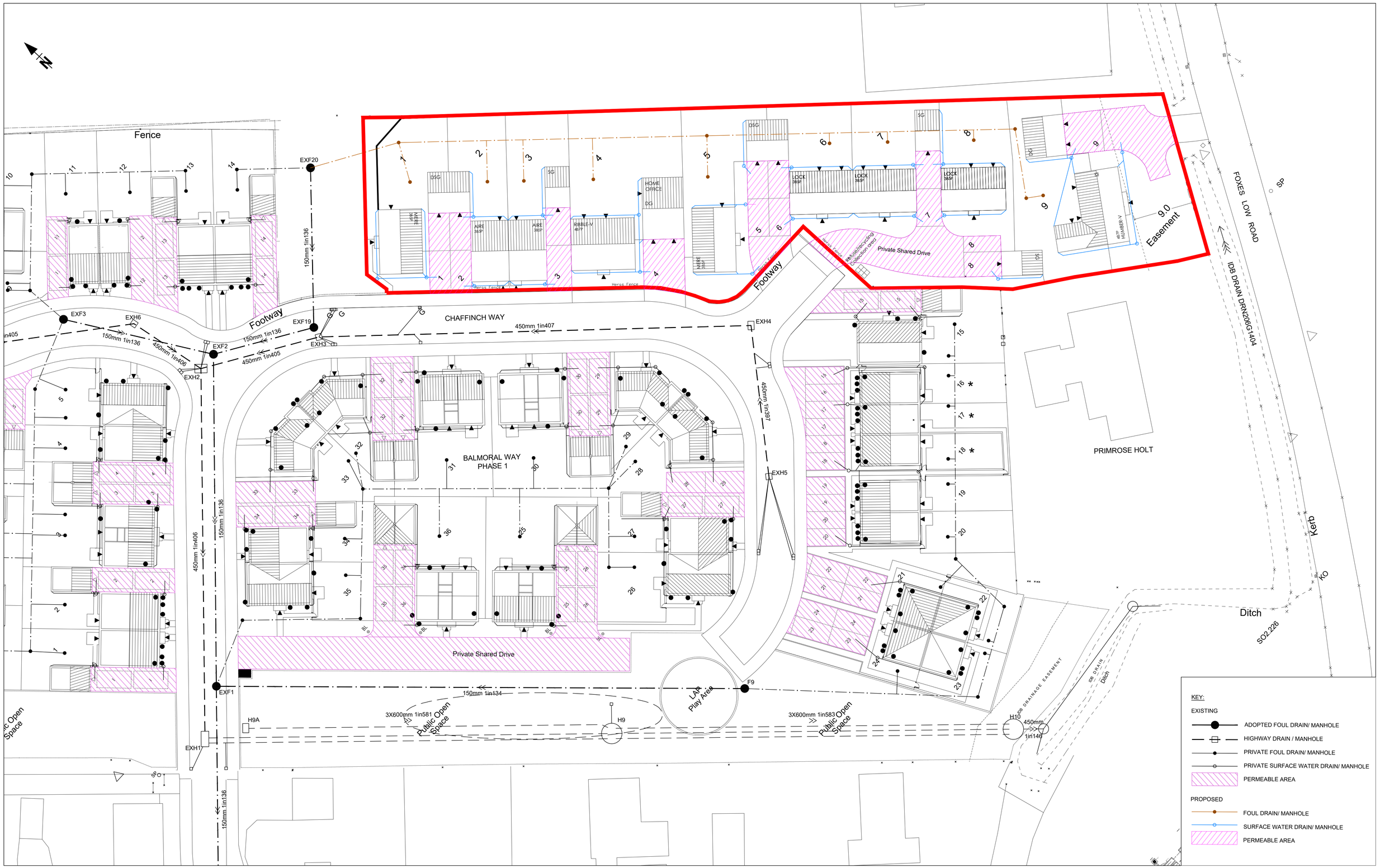


KEY

SITE BOUNDARY

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DATE: 13/04/21	DRAWING TITLE: LOCATION PLAN		REV	DATE	NAME	CHECK	NOTES
DRAWN: NGP								
CHECKED: SR			DRAWING STATUS: FOR INFORMATION					
APPROVED: SR	PROJECT: LAND TO EAST OF CHAFFINCH WAY, HOLBEACH - 9 DWELLINGS	CLIENT: ASHWOOD HOMES LTD						
SCALE @ A4: 1:5000			DRAWING No: AHL-1534-01-GA-001				REVISION No:	



REV	DATE	NAME	CHECK	NOTE

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CLIENT: ASHWOOD HOMES LTD

PROJECT: LAND TO EAST OF CHAFFINCH WAY, HOLBEACH - 9 DWELLINGS

DRAWING TITLE: DRAINAGE STRATEGY

DRAWING STATUS: FOR APPROVAL

DRAWN:	CHECKED:	APPROVED:
NGP	SR	SR

DATE: 14 April 2021

SCALE @ A1: 1:250

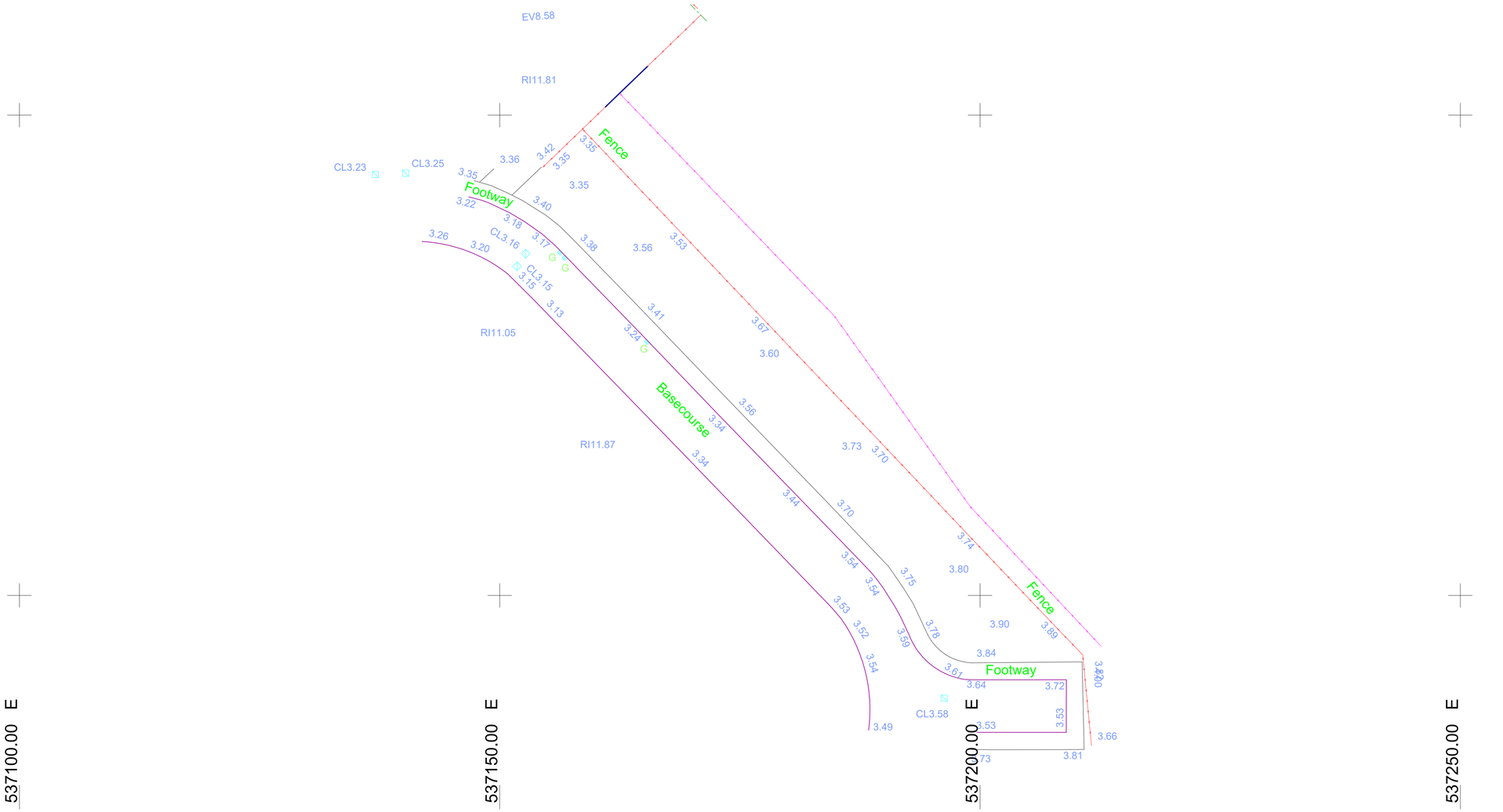
DRAWING No.: AHL-1534-01-DR-001

REVISION No.:

N

NOTES:

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL MEASUREMENTS ARE IN METERS UNLESS OTHERWISE STATED.
3. DRAWING NOT ISSUED FOR CONSTRUCTION.
4. SURVEY DATA EXTRACT FROM AXIS SURVEY LTD DRAWING AS2517/1 FEB 2021.



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REV	DATE	NAME	CHECK	NOTE

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CLIENT: ASHWOOD HOMES LTD

PROJECT: LAND TO EAST OF CHAFFINCH WAY, HOLBEACH - 9 DWELLINGS

DRAWING TITLE: TOPOGRAPHICAL SURVEY EXTRACT

DRAWING STATUS: FOR APPROVAL

DATE: 15 April 2021

SCALE @ A1: 1:250

DRAWN:	CHECKED:	APPROVED:
AJS	AJS	CR

DRAWING No.: AHL-1534-01-TS-001

REVISION No.:

KEY:

SITE BOUNDARY:

1800mm Facing Brick wall:
(brick to match
adjacent property)

Bin Collection Areas:

Refuse/recycling
Collection area

SCHEDULE:

Unit	Beds	Storey	SqFt	Parking	No
Aire	3	2	870	sg	2
Lock	3	2	1,079	sg	3
Mere	3	2	1,079	sg	2
Ribble	4	2	1,283	dg	1
Humber	4	2	1,578	dg	1
				Sub-Tot	**9**

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PROJECT Land off BALMORAL WAY, HOLBEACH
9 PLOTS

TITLE PRELIMINARY PLANNING LAYOUT

CLIENT
ASHWOOD HOMES
1 GOODISON ROAD, LINCS GATEWAY BUSINESS PARK
SPALDING, LINCOLNSHIRE
PE12 6 FY 01406 490590

PRELIMINARY

SCALE	DATE	DRAWN
1:500 @ A3	APRIL 2021	NkW

DRAWING NUMBER 1280/9/003

REVISION

Primrose Holt