

# DRAINAGE STATEMENT

Mowbray, North Horsham, West Sussex  
Sub-Phase 2C Primary Road (RMA3)



Prepared for: Legal & General (Strategic Land North Horsham) Limited  
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## 1.0 Introduction

- 1.1 This Drainage Statement has been prepared by Glanville Consultants on behalf of Legal & General (Strategic Land North Horsham) Limited to support an application for the approval of reserved matters for a proposed section of primary road through the area known as Sub-Phase 2C within the Mowbray development, North Horsham, West Sussex.
- 1.2 Outline planning permission was granted in March 2018 for the following development on Land North of Horsham (planning application reference: DC/16/1677):

*"Outline planning application with all matters reserved except access for a mixed use strategic development to include housing (up to 2,750 dwellings), business park (up to 46,450m<sup>2</sup>), retail, community centre, leisure facilities, education facilities, public open space, landscaping and related infrastructure."*

- 1.3 The first section of primary road leading eastwards from Rusper Road (called Bailey Road) was constructed as part of the initial infrastructure works undertaken for Phase 1 of the Mowbray development. The approval of reserved matters was subsequently granted for the extension of Bailey Road eastwards from Phase 1 through into Phase 2 and as far as the western boundary of land known as Sub-Phase 2B (application reference: DC/23/2328).
- 1.4 A full planning application has been submitted for the section of primary road leading north-eastwards from the A264 through the employment land and up to Sub-Phase 2C of the Mowbray development (application reference: DC/25/1543). A decision on this application is currently pending although it is worth noting that West Sussex County Council in its role as both local Highway Authority and Lead Local Flood Authority has confirmed it has no objection to the proposals, subject to conditions.
- 1.5 The approval of reserved matters is now sought for an extension of the primary road, from the eastern end of the employment land road through Sub Phase 2C up to the eastern boundary of land known as Sub-Phase 2B for around 565 metres.
- 1.6 The description of development is as follows:

*"Application for approval of Reserved Matters pursuant to Condition 5 of Outline Planning Permission reference DC/16/1677 for the construction of a primary road through Sub Phase 2C, footpaths and cycleways, foul and surface water drainage including a SUDS basin, landscaping, and associated infrastructure."*

- 1.7 This report provides details of the disposal of surface water run-off generated by road infrastructure subject of this planning application, as well as adjacent residential parcels which will be subject to future separate reserved matters applications. This report also provides details of suitable foul drainage infrastructure to accommodate the disposal of foul effluent generated by these future residential parcels in accordance with Conditions 54 and 55 of the decision notice.
- 1.8 Condition 17 of the outline planning consent (with wording as subsequently amended via a Section 96a application reference: DC/19/0984) related to the site-wide surface water strategy principles and was discharged in 2019 (application reference: DISC/19/0214).

1.9 Condition 54 of the outline approval states:

*"Each Reserved Matters application shall be accompanied by a Detailed Surface Water Strategy demonstrating how the principles established in the approved Site Wide-Surface Water Strategy will be achieved within the area covered by that Reserved Matters Application and shall include details of all Sustainable Drainage Systems (SuDS) and their catchment areas and the location, size and appearance of all features such as ponds, basins and swales, details of critical stormwater storage, details of any surface water sewers, the timing of delivery of the infrastructure necessary to deliver the Detailed Surface Water Strategy and details of long-term management and maintenance of the surface water drainage systems, as well as any temporary measures necessary to facilitate development until the approved surface water drainage strategy is provided in full. The development shall be implemented in accordance with the approved Detailed Surface Water Strategy and thereafter managed and maintained in accordance with the approved details."*

1.10 Condition 55 of the outline approval states:

*"Each Reserved Matters application shall be accompanied by a foul water drainage scheme (including implementation timetable) for that Reserved Matters Area. The approved foul water drainage scheme shall be implemented for each Reserved Matters Area as approved and no development in that Reserved Matters Area shall be occupied until the foul water drainage system has been completed in accordance with the approved details."*

## 2.0 Existing Situation & Proposed Development

### Site Context

- 2.1 The wider Mowbray development at North Horsham is currently under construction with various applications for the approval of reserved matters for individual infrastructure elements and sub-phases, both under consideration and determined. Prior to development, the wider Mowbray site had a mix of uses, including agricultural land and associated buildings, and dwellings.
- 2.2 The application site is located to the north of the A264. A location plan showing the extent of the application site edged in red is provided in Appendix A.
- 2.3 The application site currently comprises previously undeveloped land used in the past for agricultural purposes.

### Existing Drainage Infrastructure

- 2.4 No formal surface water drainage infrastructure exists within the application site boundary. There is an unnamed watercourse that flows through the application site from east to west, as well as Channells Brook which also flows through the application site along its southern boundary. The topographical survey (submitted as part of the outline planning application) confirms that surface water run-off from the undeveloped agricultural land within the application site drains overland to these watercourses.

### Proposed Development

- 2.5 The proposals for which the approval of reserved matters is sought comprise the construction of a primary road on a broadly north to south alignment through residential Sub Phase 2C, to include footpaths and cycleways, foul and surface water drainage including a SUDS basin, landscaping, and associated infrastructure.
- 2.6 Drawings illustrating the proposals are provided as separate planning documents, as follows:

MOW-GLA-RMA3-PH2-1001 – Adoption Plan, Sheet 1 of 2  
MOW-GLA-RMA3-PH2-1002 – Adoption Plan, Sheet 2 of 2  
MOW-GLA-RMA3-PH2-1101 – General Arrangement, Sheet 1 of 2  
MOW-GLA-RMA3-PH2-1102 – General Arrangement, Sheet 2 of 2  
MOW-GLA-RMA3-PH2-1103 – Levels and Long Section, Sheet 1 of 2  
MOW-GLA-RMA3-PH2-1104 – Levels and Long Section, Sheet 2 of 2

### 3.0 Culverted Watercourses

- 3.1 The extension of the primary road will cross Channells Brook and an existing unnamed watercourse at two locations; once at Ordnance Survey (OS) National Grid reference TQ 20142 33528 (herein referred to as the primary culvert) and once at OS reference TQ 20237 33835 (herein referred to as the secondary culvert). The watercourses will be culverted under the proposed road.
- 3.2 The unnamed watercourse is classified as an Ordinary Watercourse and is a tributary of Channells Brook. Channells Brook subsequently flows south-west through Horsham becoming classified as a Main River at Rusper Road, approximately 700m downstream of the site to the south of the A264. Channells Brook enters Warnham Mill Pond, on the Boldings Brook, approximately 2.6km downstream of the site. Downstream of the Warnham Mill Pond, the Bouldings Brook flows south-west and joins the River Arun a short distance upstream of the A24.
- 3.3 Hydraulic modelling has been undertaken to inform the design of the culverts, as well as to assess the impact of the proposed access roads and associated culverts to demonstrate that the proposals are appropriately designed in relation to flood risk and do not increase the risk of flooding elsewhere.
- 3.4 This assessment builds upon previous work that was undertaken for the wider development. In 2015, Stantec (previously PBA) carried out flood risk modelling in support of the original outline planning application. The baseline hydraulic model, covering Channells Brook and tributaries for the area of the site east of Rusper Road, was completed in 2015 with report revision E issued in June 2016 (North of Horsham, Hydraulic Modelling report Revision E, June 2016). A number of updates were subsequently made as follows:
- In 2019 to assess an extension to the existing culvert under the A264 at North Horsham which has now been constructed.
  - In 2022 to assess a proposed road crossing of Channells Brook to access the proposed Sports Hub (which has also now been constructed), as well to include up-to-date climate change allowances (North Horsham Sports Hub Chennell Brook Culvert Hydraulic Assessment 332110006/TN001). This report was submitted under the Reserved Matters application for the Sports Hub (application reference: DC/22/1026), which was approved in December 2022.
  - In 2023 to assess two proposed culverts of unnamed watercourses to facilitate primary and secondary road infrastructure as part of Bailey Road Extension (BRE). This report was submitted under the Reserved Matters application for Bailey Road Extension (application reference: DC/23/2328), which was approved in October 2024.
- 3.5 The 2022 Hydraulic Model was re-run using Flood Modeller version 7.3 and TUFLOW 2025.0.2-iSP-w64. The following events were tested using the model:
- 1 in 100 year;
  - 1 in 100 year +25% climate change;
  - 1 in 100 year +45% climate change;
  - 1 in 100 year +64% climate change; and
  - 1 in 1,000 year.
- 3.6 Condition 54 of the outline planning permission requires that 45% climate change allowance should be assessed in relation to Channells Brook.

- 3.7 A post-development scenario was generated which included both culverts, and outputs were then compared to the pre-development (baseline) model. The primary culvert is proposed to be 2.1m wide x 1.5m high and 32m long. The secondary culvert is proposed to be 2.4m wide x 1.5m high and 22m long. Both culverting proposals also include some minor channel realignment, which has been modelled, and the proposed road vertical alignment was also modelled.
- 3.8 Flood extents for these events in the pre-development and post-development scenario are shown on the drawings in Appendix B. The results for the model nodes immediately upstream and downstream of the primary and secondary culverts are reported in Tables 1 and 2, respectively. Freeboards at the culvert inlets have also been provided for all modelled flood events.

Table 1: Primary Culvert Flood Levels

| Flood Event          | Flood Level (mAOD)     |                          | Freeboard (m)            | Water Level Difference Baseline vs Post-Development (m) |                           |
|----------------------|------------------------|--------------------------|--------------------------|---------------------------------------------------------|---------------------------|
|                      | CHAN01_2640 (Upstream) | CHAN01_2634 (Downstream) | CHAN01_2640** (Upstream) | CHAN01_2640* (Upstream)                                 | CHAN01_2634* (Downstream) |
| 1 in 100 year        | 59.246                 | 59.158                   | 0.179                    | - 0.302                                                 | - 0.007                   |
| 1 in 100 year +25%CC | 59.365                 | 59.233                   | 0.060                    | - 0.213                                                 | 0.001                     |
| 1 in 100 year +45%CC | 59.450                 | 59.292                   | - 0.025                  | - 0.149                                                 | 0.005                     |
| 1 in 100 year +64%CC | 59.513                 | 59.345                   | - 0.088                  | - 0.104                                                 | 0.011                     |
| 1 in 1,000 year      | 59.619                 | 59.453                   | - 0.194                  | - 0.040                                                 | 0.011                     |

\*Notes: Negative values mean a decrease in flood levels during the post-development scenario.

\*\*Notes: Negative values mean flood levels exceeding the soffit level of the culvert inlet.

Table 2: Secondary Culvert Flood Levels

| Flood Event          | Flood Level (mAOD)     |                           | Freeboard (m)          | Water Level Difference Baseline vs Post-Development (m) |                            |
|----------------------|------------------------|---------------------------|------------------------|---------------------------------------------------------|----------------------------|
|                      | TRIB02_1237 (Upstream) | TRIB02_1186i (Downstream) | TRIB02_1237 (Upstream) | TRIB02_1237* (Upstream)                                 | TRIB02_1186i* (Downstream) |
| 1 in 100 year        | 60.489                 | 60.230                    | 0.561                  | - 0.025                                                 | 0.000                      |
| 1 in 100 year +25%CC | 60.622                 | 60.359                    | 0.428                  | - 0.009                                                 | 0.000                      |
| 1 in 100 year +45%CC | 60.713                 | 60.444                    | 0.337                  | 0.001                                                   | - 0.001                    |
| 1 in 100 year +64%CC | 60.782                 | 60.500                    | 0.268                  | 0.013                                                   | 0.000                      |
| 1 in 1,000 year      | 60.890                 | 60.589                    | 0.160                  | 0.033                                                   | 0.000                      |

\*Notes: Negative values mean a decrease in flood levels during the post-development scenario.

- 3.9 The flood levels reported in Tables 1 and 2 and extents shown on the plans included in Appendix B demonstrate that:
- There is a slight increase in flood levels upstream and downstream of both culverts in some return period events, however the mapped extents show that this increase in flood levels is negligible and flooding is contained to areas designated as undeveloped open space. As such there is no risk to future proposed dwellings, and safe access and egress can be provided along the proposed road; and
  - There is no increase in flood risk off-site as a result of the proposed development, culverting of the watercourse or channel realignment.

- 3.10 A 50% blockage sensitivity analysis was also undertaken for the 1 in 100 year event and design climate change events. The results for the model nodes immediately upstream and downstream of the primary and secondary culverts are reported in Tables 3 and 4, respectively. Freeboards at the culvert inlets have also been provided for all modelled flood events. Flood extents for this sensitivity analysis are shown on the plan in Appendix B.

Table 3: Blockage Results - Primary Culvert Flood Levels

| Flood Event          | Flood Level (mAOD)     |                          | Freeboard (m) | Water Level Difference Post-Development vs 50% Blockage (m) |                          |
|----------------------|------------------------|--------------------------|---------------|-------------------------------------------------------------|--------------------------|
|                      | CHAN01_2640 (Upstream) | CHAN01_2634 (Downstream) |               | CHAN01_2640 (Upstream)                                      | CHAN01_2634 (Downstream) |
| 1 in 100 year        | 59.461                 | 59.159                   | - 0.036       | 0.215                                                       | 0.001                    |
| 1 in 100 year +25%CC | 59.537                 | 59.234                   | - 0.112       | 0.172                                                       | 0.001                    |
| 1 in 100 year +45%CC | 59.585                 | 59.293                   | - 0.160       | 0.135                                                       | 0.001                    |

\*Notes: Negative values mean flood levels exceeding the soffit level of the culvert inlet during the sensitivity test.

Table 4: Blockage Results - Secondary Culvert Flood Levels

| Flood Event          | Flood Level (mAOD)     |                           | Freeboard (m) | Water Level Difference Post-Development vs 50% Blockage (m) |                           |
|----------------------|------------------------|---------------------------|---------------|-------------------------------------------------------------|---------------------------|
|                      | TRIB02_1237 (Upstream) | TRIB02_1186i (Downstream) |               | TRIB02_1237 (Upstream)                                      | TRIB02_1186i (Downstream) |
| 1 in 100 year        | 60.684                 | 60.230                    | 0.366         | 0.195                                                       | 0.000                     |
| 1 in 100 year +25%CC | 60.855                 | 60.359                    | 0.195         | 0.233                                                       | 0.000                     |
| 1 in 100 year +45%CC | 60.980                 | 60.444                    | 0.070         | 0.267                                                       | 0.000                     |

- 3.11 During all modelled flood events with a 50% blockage of both culverts, fluvial floods would still be contained within the undeveloped open space without any potential detrimental effects against the future proposed dwellings or ponds. Therefore, the results indicate that in the event of culvert blockage, the residual risk from flooding does not have significant impacts on the proposed development or off-site flood risk, with only minimal and localised impacts shown in the model runs.

## 4.0 Surface Water Drainage

- 4.1 This section provides details of the proposed disposal arrangements for surface water run-off generated by the application site in accordance with Condition 54 of the approval notice. This condition requires each Reserved Matters application to demonstrate the principles set out in the site wide surface water drainage strategy, approved under the discharge of Condition 17 of the outline approval (application reference: DISC/19/0214). As such, this strategy has been prepared with reference to the approved Site-Wide Surface Water Strategy Report (Rev. A, August 2019). The approved strategy drawings are included in Appendix C.

### Site-Wide Principles

#### *Surface Water Outfall*

- 4.2 The site-wide surface water drainage strategy established in accordance with the drainage hierarchy that all discharges from the development will be to the local network of watercourses running through and around the site.
- 4.3 Given the above, it is proposed to discharge surface water run-off generated by the application site to the watercourses running through the site, as per the existing situation.

#### *Discharge Rate Approach*

- 4.4 The site-wide surface water strategy employed a staged discharge approach to restrict discharge from the development to the greenfield run-off rates – Q1 for the 1 in 1 year event and Q100 for the 1 in 100 years plus climate change event. The strategy has been approved and Condition 17 discharged accordingly. A such, a staged discharge approach has been adopted for this application.

#### *Greenfield Run-Off Rates*

- 4.5 The approved site-wide surface water strategy calculated greenfield run-off rates as set out in Table 5 and these rates have been adopted for this application.

Table 5: Greenfield Rates

| Return Period | Greenfield Rate |
|---------------|-----------------|
| QBAR          | 5.2 l/s/ha      |
| Q1            | 4.4 l/s/ha      |
| Q30           | 11.8 l/s/ha     |
| Q100          | 16.5 l/s/ha     |

#### *Long Term Storage*

- 4.6 Given the application of the staged discharge approach, long term storage will be provided to account for the additional volume of surface water discharged post-development. Given the lack of infiltration on-site, the additional volume will be discharged at a rate no greater than 2 l/s/ha.

- 4.7 Discharge rates will therefore be restricted via two flow control devices asset at different heights within the flow control manhole. The lower flow control is designed to restrict the discharge rate to 2 l/s/ha for the given catchment area. The higher flow control is set at a level such that the necessary long-term storage volume can be provided in the proposed basins below this level. This long-term storage volume will therefore be discharged at a maximum rate of 2 l/s/ha, since only the lower flow control will be in use at this time.

#### *Rainfall Data and Climate Change*

- 4.8 The latest FEH 2022 dataset will be adopted.
- 4.9 Condition 17 states each reserved matters application must provide: "details of an overarching scheme to demonstrate safe management of surface water, including critical storm water storage across the site up to the 1 in 100 year storm event, plus 20% climate change allowance, 40% exceedance".
- 4.10 As such, a 20% climate change allowance has been used to assess the surface water drainage system, and a 40% allowance has been modeled as an exceedance event. Outputs from both of these scenarios are discussed later in this section.

#### *Impermeable Areas*

- 4.11 The site-wide surface water drainage strategy calculated impermeable areas based on housing density within each drainage catchment, with an additional allowance for highway infrastructure where appropriate.
- 4.12 The surface water drainage systems that are part of this application will serve a combination of highway infrastructure, which will be approved under this planning application, as well as future housing development areas, which will be approved under future applications.
- 4.13 Given the above, and that detailed proposals for each housing catchment are not available at the time of writing this report, a similar approach is proposed to be adopted for the drainage design for this application.
- 4.14 A further allowance for urban creep has also been included for residential areas. The urban creep allowance is based on development density in each parcel and is calculated in-line with Table 5.2 of WSCC's LLFA Policy for the Management of Surface Water, i.e. with a maximum urban creep allowance of 10% for development densities of 25 dwellings per hectare or less, and a minimum of 2% for development densities of 50 dwellings per hectare or more. Table 6 details the urban creep allowance for each catchment area calculated on this basis. It should be noted that no urban creep has been applied to any catchment areas that solely comprise of road infrastructure, as this only includes the proposed highway area and so will not be subject to the potential for urban creep.

## Surface Water Drainage Strategy

- 4.15 Following the principles set out in the approved site-wide strategy, the proposed surface water drainage strategy will discharge surface water run-off to the existing watercourses utilising a staged discharge approach and on-site attenuation provided by three basins (Pond 9a, 10a and 10b). The proposed surface water drainage strategy is illustrated on the drawing included in Appendix E.
- 4.16 The road infrastructure and future development parcels can be broadly split into two surface water catchments defined as Catchment 9 and Catchment 10. The catchment plans are included in Appendix D.

### *Catchment 9*

- 4.17 Catchment 9 comprises the southern part of the road infrastructure subject of this application, as well as future residential parcels comprising Parcel 16, 17 and 18.
- 4.18 Catchment 9 is served by a single basin (Pond 9a) and discharges to the watercourse within the application site.

### *Catchment 10*

- 4.19 Catchment 10 comprises the northern part of the road infrastructure subject of this application, as well as future residential parcel, Parcel 15.
- 4.20 Catchment 10 is served by two basins (Pond 10a and 10b) and discharges to the watercourse within the application site.
- 4.21 Additional storage is required in addition to the proposed basins. It is therefore proposed that the future development parcel within Catchment 10 will have flow restriction(s) and provide storage within its own parcel area in order to meet the flow rate and storage requirements of the whole catchment. The details of the type and location of the storage features will be detailed under the future Reserved Matters planning application(s) for this parcel, however indicative flow restrictions and storage tanks for each spur are indicated on the Drainage Layout and / or included in the calculations in order to demonstrate for the purposes of this application how this would be achieved. Flow rate restrictions and storage volume requirements within each development parcel may be redistributed once more detailed proposals for each development parcel is available. Any change to the split of rates and volumes will be dealt with under the forementioned future planning application(s), and will demonstrate compliance with the principles outlined in this report.

### *Impermeable Areas*

- 4.22 As discussed previously, the site-wide surface water drainage strategy calculated impermeable areas based on housing density within each drainage catchment, with an additional allowance for the areas of highway infrastructure as appropriate.
- 4.23 By adopting this design approach and including further allowance for urban creep, the impermeable areas detailed within Table 6 have been estimated for each future residential parcel and associated with their respective catchment / sub-catchment and basin.

- 4.24 The impermeable area for the road infrastructure itself has been taken from the general arrangement drawing.

Table 6: Parcel Impermeable Areas

| Catchment | Contributing Parcels | Total Catchment Area (ha) | Impermeable Area (ha) | Impermeable Area incl. Urban Creep (ha) |
|-----------|----------------------|---------------------------|-----------------------|-----------------------------------------|
| 9         | Road                 | 0.414                     | 0.414                 | 0.414                                   |
|           | 16                   | 3.330                     | 2.165                 | 2.348                                   |
|           | 17                   |                           |                       |                                         |
|           | 18                   | 4.304                     | 2.798                 | 3.034                                   |
|           | <b>Total</b>         | <b>8.048</b>              | <b>5.377</b>          | <b>5.796</b>                            |
| 10        | Road                 | 0.363                     | 0.363                 | 0.363                                   |
|           | 15a                  | 0.625                     | 0.406                 | 0.442                                   |
|           | 15b                  | 3.221                     | 2.094                 | 2.277                                   |
|           | <b>Total</b>         | <b>4.209</b>              | <b>2.863</b>          | <b>3.082</b>                            |

#### Discharge Rates and Long-Term Storage

- 4.25 Utilising the impermeable areas calculated for each parcel within Table 6 and the greenfield run-off rates detailed in Table 5, the greenfield run-off rates for the 1 in 1 year, 1 in 30 year, and 1 in 100 year plus climate change event have been determined and applied within the hydraulic model as a staged discharge. The calculated greenfield run-off rates have been included within Table 7 below.

Table 7: Greenfield Run-Off Rates

| Catchment | Pond Ref. | Greenfield Run-Off Rate (l/s) |           |                    |
|-----------|-----------|-------------------------------|-----------|--------------------|
|           |           | 1:2 Year                      | 1:30 Year | 1:100 Year +20% CC |
| 1         | 9a        | 10.8                          | 63.4      | 88.7               |
| 2         | 10a, 10b  | 5.7                           | 33.8      | 47.2               |

- 4.26 Given the staged discharge approach has been applied within the surface water drainage strategy, a suitable long-term storage provision must be included within the basin design. Table 8 below details both the long-term storage volume that is required and that which can be provided within the basins below the first flow control, which confirms the storage volume within the basins exceed the long-term storage requirements. Therefore, sufficient long-term storage can be provided.

Table 8: Long Term Storage Volume and Storage Provided within Basin

| Catchment | Pond Ref. | Greenfield run-off volume (100 year 6 hour event) (m <sup>3</sup> ) | Actual Post-Development Discharge Volume (100 year +CC 6 hour event) (m <sup>3</sup> ) | Long Term Storage Volume Required (m <sup>3</sup> ) | Storage Volume Provided Below First Flow Control (m <sup>3</sup> ) |
|-----------|-----------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------|
| 1         | 9a        | 1399                                                                | 2393                                                                                   | 994                                                 | 2976                                                               |
| 2         | 10a       | 744                                                                 | 1147                                                                                   | 403                                                 | 1386                                                               |

### *Hydraulic Calculations*

- 4.27 InfoDrainage calculations for the proposed basins included in Appendix F demonstrate that the basins have been sized to provide attenuation storage for all storm events up to and including the 1 in 100 year storm event, with a 20% allowance for climate change. This demonstrates that the surface water drainage networks and basins can accommodate the 1 in 100 year plus 20% climate change storm without flooding from surface water.
- 4.28 In the hydraulic calculations for Catchment 10, flow controls are required on future development parcels. As detailed proposals for future development parcels are not available at the time of writing this report, storage in each future development parcel upstream of the proposed flow controls has been modelled as a simple single tank.
- 4.29 It should also be noted that "Surcharge" occurs in the 1 in 2 year event upstream of all flow controls; this is necessary due to water backing up upstream of the flow control.
- 4.30 Further to the aforementioned calculations, the InfoDrainage models have been run with a surcharged outfall in order to represent the condition that the watercourse would be in when in flood. The 1 in 100 year + 45% climate change flood levels have been used (58.119mAOD for Catchment 9 and 59.137mAOD for Catchment 10) and the design 1 in 100 year + 20% climate change event modelled, as detailed in the attached calculations at Appendix G. The following results were found:
- no flooding of the network upstream of the basin(s) occurs;
  - freeboard in the basins reduce, however no flooding occurs;
  - there is no increase in flow rates off-site.

As such, there is no risk to the proposed development in this scenario, and no increase in flood flows off-site.

### **Adoption and Maintenance Measures**

- 4.31 All new surface water infrastructure will be designed and constructed in accordance with the Building Regulations, adoptable standards, and best practice, as appropriate.
- 4.32 The proposed surface water pipe network and associated drainage infrastructure serving the road and future residential parcels will be offered for adoption by the Water and Sewerage Undertaker, while the basins will remain private and be the responsibility of a management company. This follows the approach taken throughout Phase 1 of the development.
- 4.33 Gullies, gully connections and other surface water drainage infrastructure solely serving highway land will be offered for adoption to WSCC as highway authority.
- 4.34 The SuDS Management and Maintenance Plan included in Appendix H outlines typical maintenance tasks for drainage infrastructure constructed as part of Phase 2. This plan will be implemented by the management company upon completion of the related drainage works associated with this application.

### Exceedance Flow Routes

Any surface flooding caused by system failure or during extreme events above the design event which may overload the system will be routed away from the proposed residential parcels. Levels on-site will be designed such that any exceedance flows from drainage infrastructure within the proposed highway will be contained within the highway, with exceedance flows from the proposed basins following the existing topographical falls towards the south-west and the surrounding watercourses. Exceedance flows from the surface water drainage system are shown on the drawing provided in Appendix I.

4.35 In addition, an exceedance event of the 1 in 100 year + 40% climate change event has been run within the InfoDrainage models to determine how the proposed drainage infrastructure operates during exceedance and to validate this assessment. The following results were found:

- no flooding of the network upstream of the basin(s) occurs; and
- freeboard in the basins reduce, however no flooding occurs.

### Summary

4.36 This section demonstrates that a sustainable drainage strategy can be implemented on the site, in accordance with the approved outline surface water drainage strategy.

## 5.0 Foul Water Drainage

### Site-Wide Principles

- 5.1 The site wide foul water drainage strategy, dated August 2016, submitted within the consented outline planning application (application ref. DC/16/1677) generally follows the topography of the site, draining within various natural catchments. This results in five main proposed pump stations (FWPS1 – FWPS5) indicated within the strategy being required due to an inability to gravitate to the existing Southern Water foul network. Further smaller (and some private) pump stations are located within the development, where required, pumping to these five main pump stations.
- 5.2 This planning application does not propose any changes to the principles of the approved site-wide foul water drainage strategy. Whilst this application does not include any buildings or works that generate foul flows, consideration has been given to the flow rates from future development parcels which drain to this site. Foul flow rates have been agreed with Southern Water as part of ongoing discussions and this planning applications does not seek to change the flow rates agreed with Southern Water in February / March 2024.
- 5.3 Southern Water have a statutory duty under Section 94 of the Water Industry Act 1991 to provide off-site sewerage for purposes and to accommodate growth.
- 5.4 As such, off-site network capacity is not an issue nor a reason to prevent or constrain development of the site.

### Foul Water Drainage Strategy

- 5.5 The foul water drainage strategy proposed has been designed such that the foul water sewers have sufficient capacity to accommodate foul effluent generated by the upstream parcels of Phase 2.
- 5.6 The proposed foul water gravity sewers will convey flows generated by the upstream parcels and discharge into a new pumping station, FWPS3, which forms part of a full planning application which has been submitted for the section of primary road leading up to Sub-Phase 2C of the development (application reference: DC/25/1543). Flows from this pumping station will then be pumped via a 921m long rising main to the existing Southern Water network at the Rusper Road / A264 junction.
- 5.7 As part of the proposals to connect into the existing foul network, a Section 106 (Water Industry Act) application was submitted to Southern Water (application reference: PAPER\_19451). The submitted Section 106 application received approval in February 2023 as detailed in the Approval Letter included in Appendix K.
- 5.8 Given the works subject of this application will be completed prior to construction of the adjacent future development parcels, foul drainage spurs will be constructed up to the land parcel boundaries such that each parcel has a point of connection into the principal foul sewerage network.

**Sewer Adoption**

- 5.9 All new foul water infrastructure will be designed in accordance with the Building Regulation Part H, adoptable standards, and best practice, as appropriate.
- 5.10 The proposed foul water pipe network and associated drainage infrastructure will be offered for adoption by the Water and Sewerage Undertaker.

**Summary**

- 5.11 Consideration has been given to the disposal of foul water from both the site and surrounding future development parcels which form part of the wider Mowbray development. This demonstrates that development these proposals will not prejudice or constrain the future development of the wider Mowbray site.
- 5.12 This demonstrates that a suitable foul water solution is possible for the development, and wider allocation, and should therefore not prevent permission being granted.



## 6.0 Summary and Conclusion

### Summary

- 6.1 This Drainage Statement has been prepared to support an application for the approval of reserved matters for the proposed section of primary road through the area known as Sub-Phase 2C within the Mowbray development, North Horsham, West Sussex. The description of development is as follows:

*"Application for approval of Reserved Matters pursuant to Condition 5 of Outline Planning Permission reference DC/16/1677 for the construction of a primary road through Sub Phase 2C, footpaths and cycleways, foul and surface water drainage including a SUDS basin, landscaping, and associated infrastructure."*

- 6.2 This report demonstrates how suitable measures will be implemented to deal with surface and foul water drainage from the application site and surrounding catchments, in compliance with Conditions 54 and 55 of the outline planning consent DC/16/1677.
- 6.3 The culverting of two watercourses to facilitate the proposals will not increase flood risk upstream or downstream of the culverts, either on-site or off-site.
- 6.4 The surface water drainage strategy demonstrates that there will be no flooding for all storm events up to and including the 1 in 100 year storm event, with a 20% allowance for the effects of climate change. Flood risk on-site will therefore not increase either on-site or elsewhere as a result of the development.
- 6.5 Foul effluent generated by the wider development will be conveyed via an adoptable system, which will discharge flows into the foul drainage network and pumping station which will be approved and built out under a separate planning application.

### Conclusion

- 6.6 In conclusion, this report has demonstrated that the proposed works:
- will not increase flood risk elsewhere;
  - will employ a surface water drainage strategy based on the principles of sustainable drainage and the approved site wide drainage strategy; and
  - suitable provision for the disposal of foul effluent generated by the upstream catchments has also been demonstrated to be feasible.
- 6.7 On this basis, the proposals are considered to fully comply with National, Regional and Local planning policy such that the requirements of Conditions 54 and 55 of the outline planning consent are met.

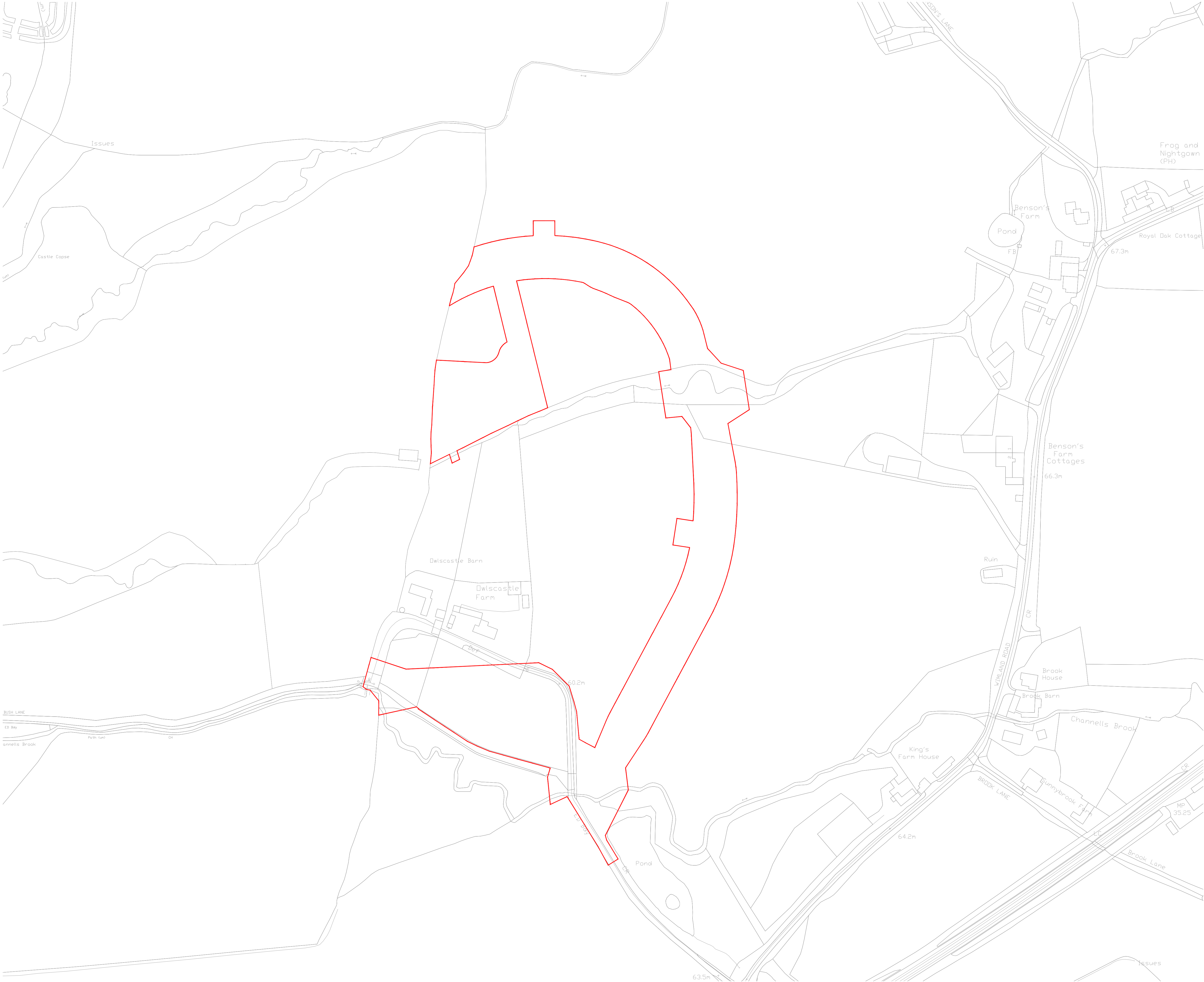
## Appendices





## **Appendix A**

### **Site Location Plan**

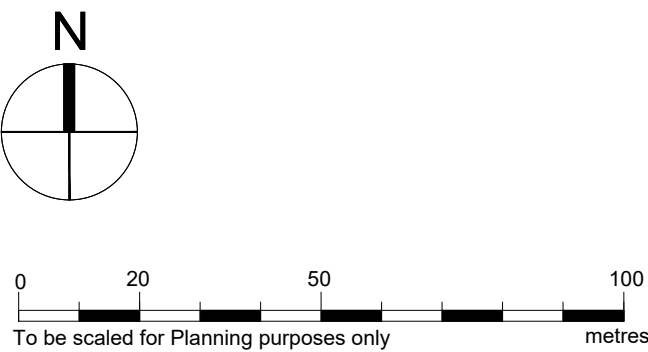


Contractors and consultants are not to scale dimensions from this drawing

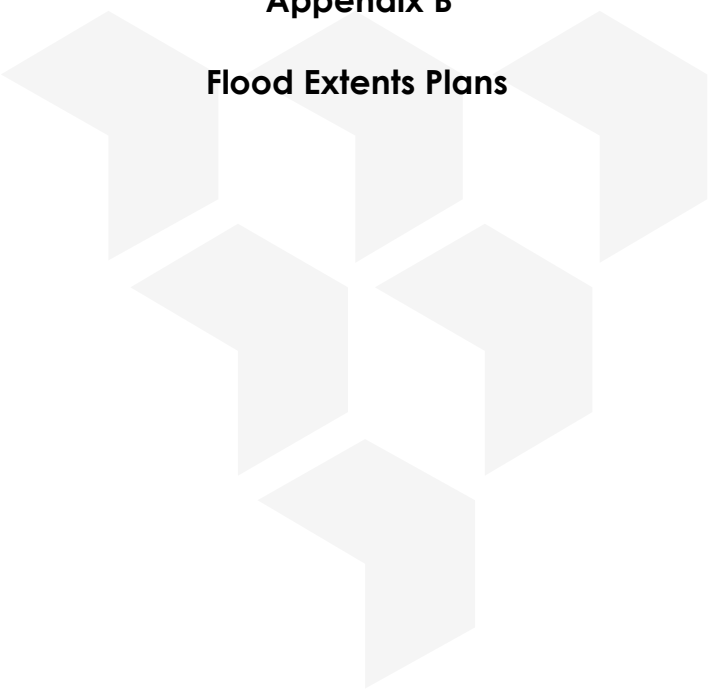
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Key

— RMA3 Boundary

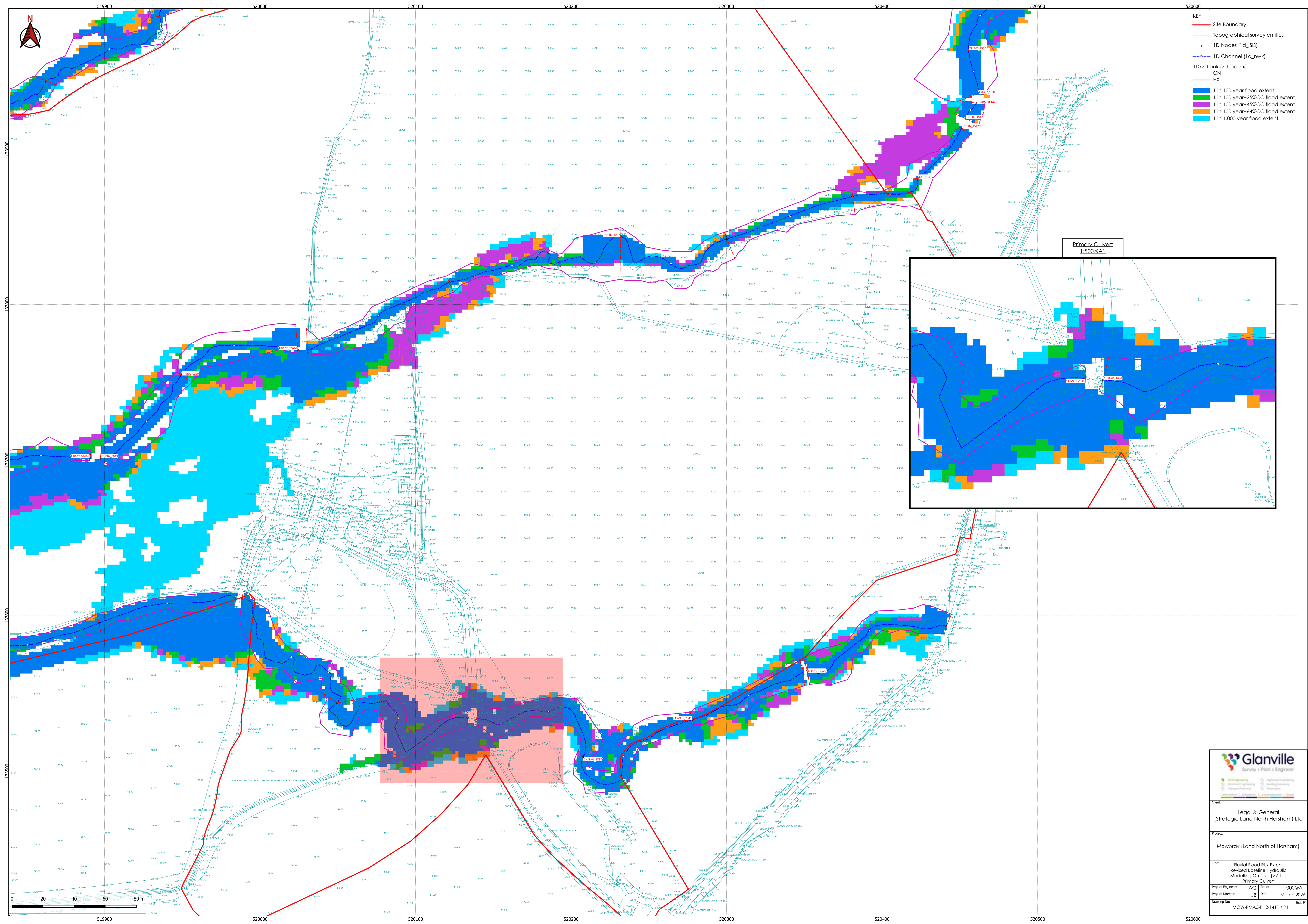


| Revision                                                                                                                  | Date                   | Description             |
|---------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------|
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| Client<br><b>Legal &amp; General</b><br>(Strategic Land North Horsham) Ltd                                                |                        |                         |
| Project<br><b>Mowbray (Land North of Horsham)</b>                                                                         |                        |                         |
| Description<br><b>RMA3</b><br><b>Redline Boundary Plan</b>                                                                |                        |                         |
| Status<br><b>Preliminary</b>                                                                                              |                        |                         |
| Scale<br><b>1:1250@A1</b>                                                                                                 | Drawn By<br><b>AMK</b> | Date<br><b>Mar 2026</b> |
| Drawing Number<br><b>MOW-BM-PH2-RMA3-34854-DR-A-02749</b>                                                                 | Revision<br><b>05</b>  |                         |
| 100mm@A1 Original size Copyright Broadway Malyan Limited                                                                  |                        |                         |



## **Appendix B**

### **Flood Extents Plans**



- KEY
- Site Boundary
  - Topographical survey entities
  - 1D Nodes (1d\_1SIS)
  - 1D Channel (1d\_nwk)
  - 1D/2D Link (2d\_bc\_hx)
  - CN
  - HX
- 1 in 100 year flood extent
- 1 in 100 year+25%CC flood extent
- 1 in 100 year+45%CC flood extent
- 1 in 100 year+64%CC flood extent
- 1 in 1,000 year flood extent

Primary Culvert  
1:500@A1

**Glanville**  
Survey & Plan > Engineer

Grid Engineering  
Topographic Engineering  
Transport Engineering  
Highways Engineering  
Planning Engineering  
Structural Engineering

Client:  
Legal & General  
(Strategic Land North Horsham) Ltd

Project:  
Mowbray (Land North of Horsham)

Title:  
Fluvial Flood Risk Extent  
Revised Baseline Hydraulic  
Modelling Outputs (v2.1.1)  
Primary Culvert

Project Engineer: A.Q. Scale: 1:1000@A1  
Project Director: J.B. Date: March 2026

Drawing No: MOW-RMA3-PH2-1411 / P1 Rev: P1