AVISON YOUNG

Flood Risk Assessment & Outline Drainage Strategy

New House Farm, Drigg, Holmrook, CA19 1XG

NDA Properties Ltd

November 2023

Preface

Site Address:	New House Farm, Drigg, Holmrook, CA19 1XG
NGR:	E: 306580 N: 499020
Site Use:	Land is used for agricultural purposes.
Proposed Use	Demolition of existing structures and construction of two modern agricultural buildings along with a new farmhouse.
Site Area:	0.77 ha
Date of Inspection:	21 September 2023
Avison Young Contact:	Geraldine Horner
	DD: Email:
Instruction Number:	O1C300824

Report Control:

Status:	**Date:**
Version 1	November 2023

Prepared By:	Geraldine Horner BEng CEng MICE Associate Director
Prepared By:	Umer Bano BEng GMICE Graduate Engineer
Checked By:	Gareth Condy BSc MSc PIEMA Director
Authorised By:	Paul Nixon BSc MSc LLM Director

For and on behalf of Avison Young (UK) Limited

Contents

Appendices

1. Scope of Instruction and Brief

Objectives

1.1 Instructions were received from NDA Properties Ltd (the Client) to undertake a Flood Risk Assessment and Outline Drainage Strategy to support an outline planning application for the demolition of existing buildings and replacement with a new build farmhouse and two modern agricultural sheds.

Data Sources

1.2 This report is based upon a detailed review of the following readily available documentation:

- Copeland Borough Council, Strategic Flood Risk Assessment, August 2007;
- Cumbria, Surface Water Management Plan, November 2012;
- Cumbria County Council, Sustainable Drainage Systems Design Guide, November 2017; and
- Cumbria County Council, Local Flood Risk Management Strategy, March 2022.

1.3 The findings and opinions conveyed in this report are based on information obtained from a variety of sources as detailed in the report and which Avison Young assumes to be reliable, but has not been independently confirmed. Therefore, Avison Young cannot and does not guarantee the authenticity or reliability of third party information it has relied upon.

Report Preparation

1.5 The Government's National Planning Policy Framework (NPPF) requires a Flood Risk Assessment to be submitted in support of planning applications in areas with elevated risk of flooding and/or for sites greater than 1 hectare in area.

1.6 Therefore, this report has been prepared to assess the requirements of the NPPF through:

- Assessing whether the proposed development is likely to be affected by flooding;
- Assessing whether the proposed development is appropriate in the suggested location; and
- Proposing measures to mitigate any flood risk identified, to confirm that the proposed development and occupants would be safe, whilst ensuring that flood risk would not be increased elsewhere.

2. Site Location

2.1 The following site location plan and table provides a summary of the site's location and surrounding land uses.

Item	Description	
Site Location	The application site is situated at the junction of Station Road and the B5344 road. Access to the site is via Station Road. The West Sea shoreline (Drigg Sand Dunes and Beach) is located approximately 2km west of the site boundary. Site location and layout plans are provided below.	
Surrounding Land Uses	North	The B5344 road with open fields and woodland beyond
	East	Residential dwellings, a farm and associated farm buildings with open fields beyond
	South	Open fields with rail tracks to the Drigg to Seascale railway line beyond
	West	Open fields, with Old Shore Road and a farm with associated farm buildings beyond

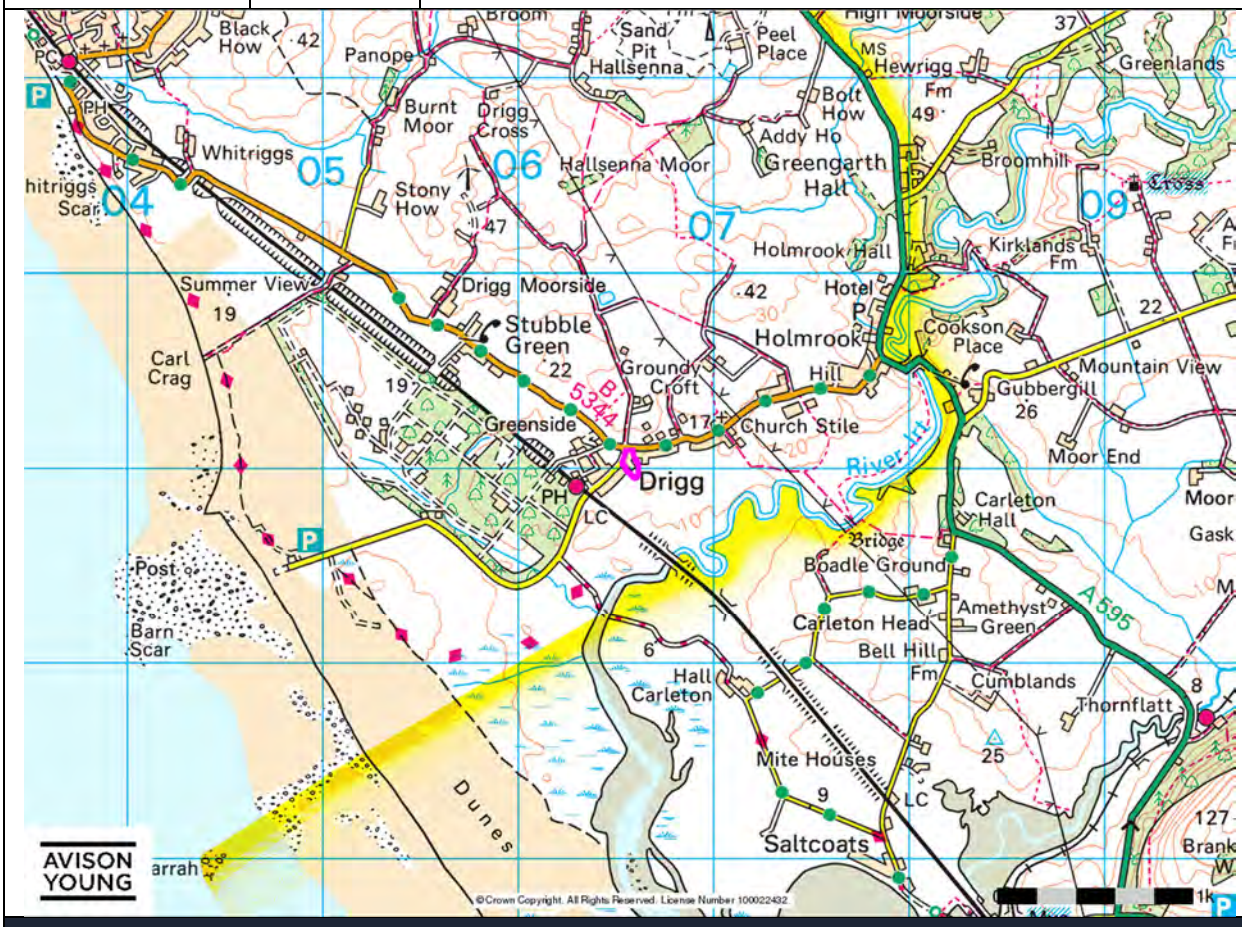


Figure 1: Site Location Plan (boundaries shown are indicative only)

3. Site Setting

3.1 The following site layout plan and table provides a summary of the site's condition and setting.

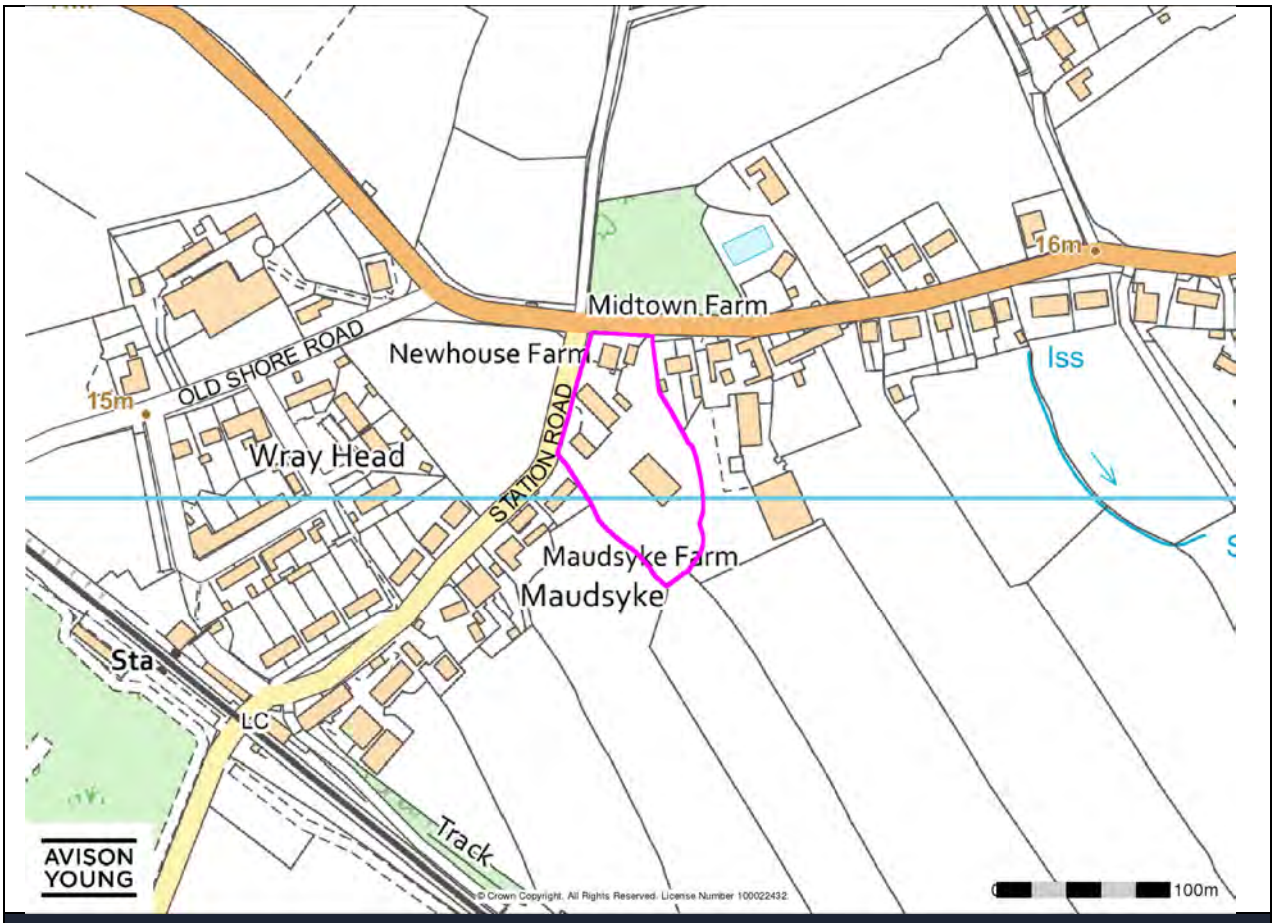


Figure 2: Site Layout Plan (boundaries shown are indicative only)

Item	Description
General Description	The subject site is roughly rectangular in extent and comprises of a farmhouse, farm buildings and barns. The site occupies an area of approximately 0.77Ha. The eastern and southern boundaries are fenced with wooden bar and wire stock proof fencing. The northern and western boundaries are bound by brick walls with two access gates in the western boundary. The ground cover comprises a combination of concrete hardstanding in good condition and grassed areas.

Item	Description
Topography	In the absence of topographical survey data, Environment Agency LiDAR (Light Detection and Ranging) data has been reviewed. This data indicates that the western part of the site slopes from west to east. The northern part slopes from north to south. The southern part slopes towards northeast. The eastern part of the site sits at the lowest elevation. The highest portion of the site is located towards the south at a point midway along the southern boundary of the site at approximately 17.98m Above Ordnance Datum (AOD). The lowest portion of the site is located close to the eastern boundary at an approximate ground level of 15.13m AOD. A copy of the LiDAR data is attached at **Appendix I.**
Geological Conditions	From a review of the British Geological Survey (BGS) map for Bridlington (Sheet 065) at a scale of 1:50,000 together with the online BGS GeoIndex, the site is shown to be underlain by superficial deposits of the Diamicton Devensian Stage. Bedrock deposits of the Sellafield Member – Sandstone, are found below the superficial deposits. This bedrock strata comprises red-brown, weathered to orange-brown, fine-grained, well-sorted sandstone with well-rounded grains of aeolian origin. It is commonly cross-bedded. The BGS does not indicate the presence of any artificial deposits within the site area, but localised deposits of Made Ground may still be present given the site use. During the site walkover heavily trafficked grassed areas were noted to be muddy after recent rainfall and the site owner made us aware of flooding that occurs, after heavy rainfall in the eastern part of the site in the vicinity of the lowest portion of the site. The underlying clay is likely to have poor infiltration rates.
Catchment Hydrology	The closest Main River to the development site is the River Irt which is located approximately 0.5km to the east of the site. There is a ditch located approximately 220m to the south of the site. This feature is understood to flow in an easterly direction and is understood to outfall directly into the River Irt. The River Irt flows in a southerly direction and then outfalls into the sea at the town of Ravenglass, approximately 3.5km southeast of the site.

Item	Description
Catchment Hydrogeology	The superficial Diamicton deposits of the Devensian Stage are designated as Secondary Undifferentiated Aquifer, and may contain layers with varying permeability. The Environment Agency has encountered challenges in assigning either a Secondary A or B Aquifer classification to this formation. The bedrock deposits of the Sellafield Member are primarily composed of Sandstone and are exposed throughout the majority of the site. The Environment Agency classifies this as a Principal Aquifer due to its high intergranular and/or fracture permeability. This rock unit contributes significantly to water storage and base flow in rivers at a strategic scale, making it an important water resource for the area. The site is presently not situated within a Groundwater Source Protection Zone (SPZ).
Existing Site Drainage	The site is currently drained by a positive surface water drainage system; therefore, it is considered a brownfield site in drainage terms. Based on our observations during the site visit, it is understood that surface water runoff from the existing farmhouse, driveway, barns, and areas of hardstanding discharges into a land drain which runs from off site to the north, along the eastern boundary through the site and eventually flows into a ditch located in the fields to the south of the site. The ditch ultimately outfalls into the River Irt. As mentioned in the Geological Conditions section above, during the site inspection, it was noted that the eastern part of the site experiences flooding following heavy rainfall. At present, the farmhouse, farm buildings and barns are all drained by high level rainwater gutters connected to downpipes. The downpipes then connect to a filter drain and gully. The areas of hardstanding are served by road gullies. The filter drains on site also collect water from the surrounding grassed areas where they slope towards the main barn. The gullies and filter drains ultimately connect to the land drain, which then discharges into a ditch described above. During a site inspection, it was discovered that the land drain running from the north to the south of the site also collects surface water from the fields to the north, neighbouring residential dwellings and barns. The diameter of the land drain is 150mm. A drawing showing the Existing Drainage Layout is attached at **Appendix II**. Foul water drains to a septic tank, which is located on the eastern side of the site. We understand that the septic tank overflows to the land drain. Sewer records obtained from United Utilities indicate that there are no public sewers within the site. The closest public sewer, a combined sewer, is situated to the far west of the site. A copy of United Utilities plan is attached at **Appendix III**.

Site Photographs

3.2 A selection of site photographs taken on 21st September 2023 is presented below.

Photo 1: Main site entrance

Photo 2: The site 2nd entrance

Photo 3: Existing Newhouse farm

Photo 4: View along the southern side of the farmhouse

Photo 5: Existing Dutch Barn

Photo 6: Existing Cattle Shed

Photo 7: Existing Stone Barn

Photo 8: Lowest point of the site looking south west

Photo 9: Existing septic tank

Photo 10: Looking north from the southern corner of the site

Photo 11: Exiting covered overflow pipe on land drain

Photo 12: Looking west towards the existing farmhouse

4. Development Proposals

4.1 The proposed development is to demolish all the existing buildings and replace them with a new build farmhouse and two modern agricultural sheds. New foul and surface water drainage systems will be installed, and a new standpipe will be provided to serve the farm buildings.

4.2 The proposals will result in a total impermeable area of approximately 0.21Ha of the total development site area of 0.77Ha. The remainder of the site will be permeable surfacing, predominantly consisting of grassland with some areas of low level shrub planting.

4.3 A copy of the proposed Masterplan is provided in Figure 3 below and detailed site plans can be found in **Appendix IV**.

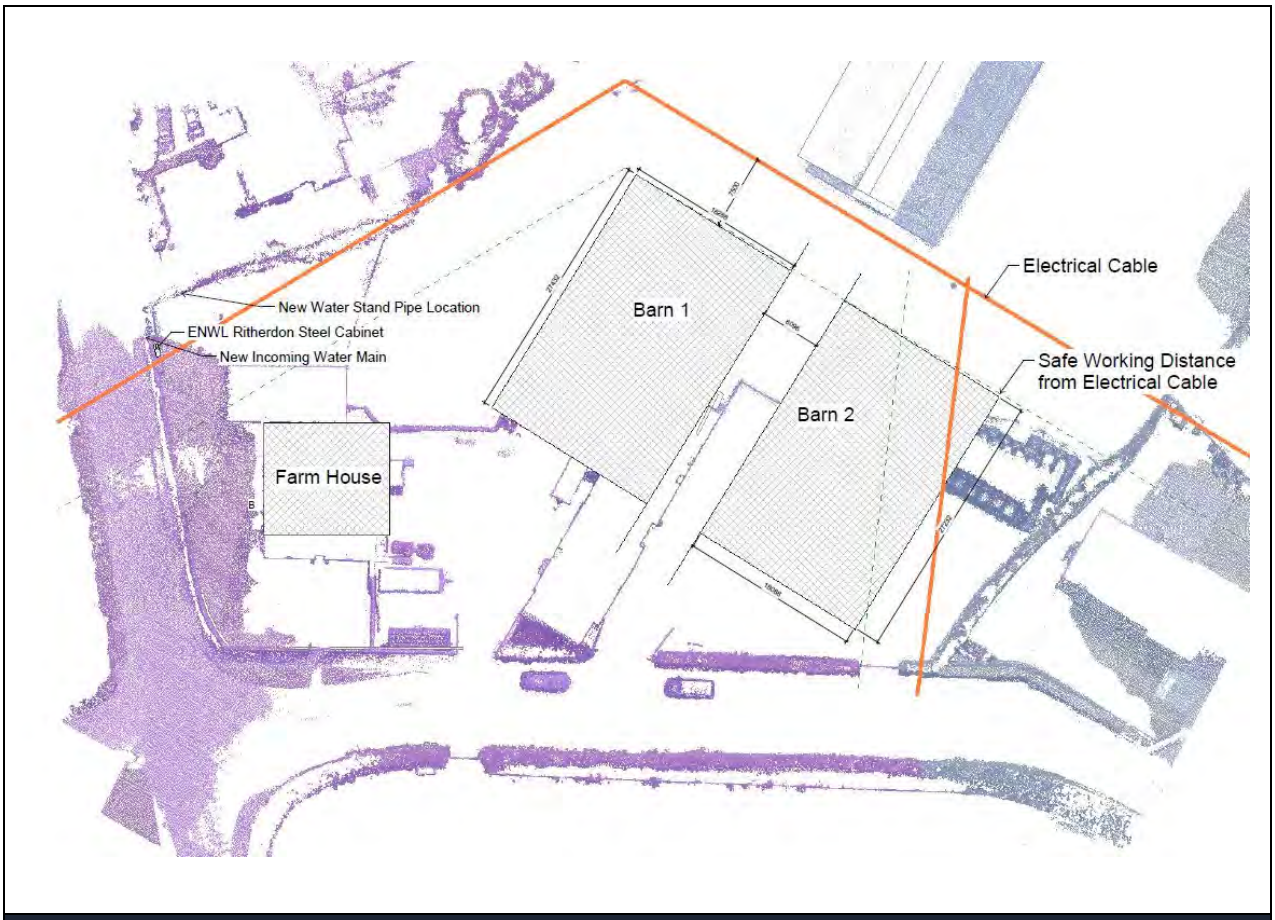


Figure 3: Proposed Site Plan

5. Flood Risk

5.1 This section identifies what potential sources of flooding could affect the site and includes further details on how flooding might occur.

Fluvial

5.2 According to the publically available Environment Agency Flood Map for Planning, the entire site is located within Environment Agency Flood Zone 1 (land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding in any year).

Figure 4: Environment Agency Flood Map for Planning

5.3 The risk of flooding from fluvial sources is considered to be **'very low'.**

Surface Water

5.4 According to the Environment Agency Surface Water Flood Map, the northern, western and southern parts of the development site are all at 'very low' risk of surface water flooding (land assessed as having a chance of flooding of less than 1 in 1,000 (0.1%)).

5.5 As shown in Figure 4 below there is an area of 'low' risk of flooding (land assessed as having a chance of flooding between 1 in 100 and 1 in 1,000 (0.1% and 1%) located along the central eastern boundary. This coincides with a topographical low point on the site and is located away from and at a lower elevation than the proposed farmhouse and new barns. he central and southern boundary of the existing building.

Figure 4: Environment Agency Surface Water Risk

5.6 The risk of surface water flooding to the site is considered as **'low'**.

Groundwater

5.7 From a review of the British Geological Survey's Susceptibility to Groundwater flooding information, we understand that the development area is in an area where there is limited potential for groundwater flooding to occur. Therefore, the site is at a low risk of groundwater flooding.

5.8 Enquiries made on site have not identified any issues relating to the emergence of groundwater at the surface.

5.9 The risk of groundwater flooding is considered to be **'low'**.

Sewer

5.10 There are no public sewers located on site, the closest public sewer to the site is located approximately 50m from north west corner of the site.

5.11 The risk of sewer flooding to the site is considered to be **'low'**.

Reservoirs

5.12 The Environment Agency Reservoir Flood Map shows that the site is not at risk from reservoir flooding.

5.13 The risk of flooding from reservoirs is considered to be **'low'**.

Artificial Sources

5.14 There are no canals in close proximity (1km) to the subject site.

5.15 The risk of flooding from artificial sources is considered to be **'low'.**

6. Flood Risk Classification

6.1 This section identifies if the site is suitable for development in line with the National Planning Policy Framework, revised in September 2023.

Sequential Test

6.2 The risk based sequential test is a planning tool found within the National Planning Policy Framework. It is used to steer new development to areas at the lowest probability of flooding, known as Flood Zone 1 (1 in 1,000 annual probability of river or sea flooding). The Flood Zones are the starting point for the sequential test is summarised below.

Flood Zone	Associated Flood Risk
Zone 1	This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding in any year.
Zone 2	This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding or between 1 in 200 and 1 in 1,000 annual probability of sea flooding in any year.
Zone 3a	This zone comprises land assessed as having a 1 in 100 or greater probability of river flooding or a 1 in 200 or greater probability of flooding from the sea in any year.
Zone 3b	This zone comprises of the functional floodplain. This land comprises land where water has to flow or be stored in times of flood.

6.3 According to the Environment Agency flood maps the site is located within **Flood Zone 1.**

Vulnerability Table

6.4 National Planning Policy Framework groups development types into different vulnerability classifications:

- Essential Infrastructure such as essential utility infrastructure;
- Highly Vulnerable such as residential caravans and basement dwellings;
- More Vulnerable such as dwelling houses, short stay holiday caravans and educational establishments;
- Less Vulnerable such as offices, shops, restaurants and cafes; and

- Water Compatible such as water treatment plants and amenity open space.

6.5 Residential dwellings are classed as **'More Vulnerable'**.

6.6 For each Flood Zone within the Technical Guidance, the table below sets out whether development of the various different vulnerability classifications is appropriate.

Flood Zone	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	×	×	×	✓
✓ Development is appropriate × Development is not appropriate					

6.7 The site is located within Flood Zone 1 and in accordance with the National Planning Policy, development is deemed appropriate.

Exception Test

6.8 The Exception Test, as set out in paragraph 164 of the National Planning Policy Framework, is a method to demonstrate and help ensure that flood risk to people and property will be managed satisfactorily, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

6.9 In accordance with National Planning Policy Framework, an Exception Test is not required for the proposed site.

7. Surface Water Drainage Strategy

7.1 An outline surface water drainage strategy has been prepared following the local and national guidance on sustainable drainage systems (SuDS).

7.2 In summary, the strategy proposes:

- A positive discharge into an existing land drain, mimicking the existing drainage strategy;
- On-site below ground surface water attenuation in the form of attenuation crates to limit peak discharge rates from the new drainage scheme; and
- The drainage scheme incorporates a combination of traditional drainage and SuDS features.

Guidance

7.3 This outline drainage strategy has been developed in accordance with the following national standards for guidance:

- Building Regulations 2010, Part H, Drainage and Waste Disposal;
- CIRIA C753, The Sustainable Drainage Systems (SuDS) Manual, 2015;
- Defra, Sustainable Drainage Systems, Non-statutory technical standards for sustainable drainage system, March 2015 (this document is regarded as the National Standards for SuDS); and
- Environment Agency, Report – SC030219, Rainfall runoff management for developments, 2013.

7.4 In addition, the SuDS requirements set out in the Cumbria Development Design Guide (Chapter N) have been taken into consideration while developing the outline drainage strategy for the proposed development.

SuDS Design Criteria

Water Quantity

7.5 The National Standards for SuDS considers that any proposed surface water drainage system should consider flood risk to the development in the following flood events:

- The 1 in 30 year event – water should be stored in areas designated to hold and/or convey water;
- The 1 in 100 year event - flooding should not occur within any part of a building or utility plant susceptible to water unless in an area designated to hold and/or convey water; and

- Exceedance flow – events exceeding the 1 in 100 year event – so far as is reasonably practicable, flows are managed in exceedance routes that minimise the risks to people and property.

Discharge Hierarchy

7.6 The proposed surface water drainage system should follow the 'discharge hierarchy' as stated in the Buildings Regulations (Part H). The surface run-off should be disposed of as high up the hierarchy as is reasonably practicable:

- Infiltration and reuse
- Surface water body
- Surface water sewer, highway drain, or another drainage system
- Combined sewer

Water Quality

7.7 In order to improve the water quality of the discharges from the site it will be necessary to incorporate a robust primary treatment system to remove silt and sediment from stormwaters from entering the drainage system.

7.8 The pollution indices approach for discharge to surface water as outlined in Chapter 26 of the CIRIA SuDS Manual (C753) has been used to select suitable SuDS components to ensure water quality of the surface water discharge effluents.

7.9 Based on the Table 26.2 CIRIA SuDS Manual (C753), the pollution hazard indices for the residential dwellings and shed roofs is 'low' and for the access roads and driveways are also considered as 'low' (see table below).

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Residential dwellings and shed roofs	**Low**	0.3	0.2	0.05
Individual property driveways, general access roads	**Low**	0.5	0.4	0.4

7.10 Based on the above, the recommendations included in the Table 26.3 in Chapter 26 of the CIRIA SuDS Manual (C753), the following SuDS components are considered suitable to ensure water quality of the surface water run-off from the roads:

- Swale/vegetated channels;
- Bio-retention system;
- Permeable pavement;
- Detention basin;
- Pond; and
- Wetland.

Amenity and Biodiversity

7.11 Any SuDS scheme should be integrated with the landscape plan of the development to enhance amenity value. In addition, SuDS should be designed to improve biodiversity whenever possible.

Basis of Design

7.12 The strategy has been designed taking into account the following:

Permeable / Impermeable Areas

7.13 The total site area is 0.77Ha. The existing impermeable area is 0.15 Ha which represents approximately 19% of the total site area. The proposals will introduce an impermeable area that is approximately 27% of the site area of approximately 0.21Ha.

7.14 The proposal will increase both the rate and volume of surface water runoff compared with the sites existing conditions. This additional surface water needs to be managed through the use of SuDs, so that it does not exacerbate or create new flood risk elsewhere during the intended lifetime of the development.

Overland Flow Risk

7.15 The elevated topography of the site generally restricts overland flow entering into the site as it is generally at a higher elevation than surrounding areas to the north, west and south. Station Road and the B5344 road are drained by highway drains. Therefore, the drainage strategy has been developed to manage surface water generated from the proposed development only.

Preferred Option for Surface Water Discharge

7.16 No ground investigation or soakaway tests have been carried out at this outline stage to confirm the soil permeability rates. However, as discussed in Section 3 - Geological Conditions above, the site is likely to be underlain by superficial deposits of the Diamicton Formation which has low infiltration rates and is not considered suitable for the use of soakaways.

7.17 Positive discharge into the existing land drain described in Section 3 – Existing Drainage, is the preferred surface water discharge option for the proposed development. This mimics the existing surface water drainage strategy.

Estimation of Peak Discharge Rates

7.18 An estimate using InfoDrainage design software based on Interim Code of Practice (ICP) SuDS has calculated a mean annual greenfield peak flow rate (Qbar) of 1.6l/s. This value has been used to calculate the surface water attenuation volume.

7.19 A copy of the InfoDrainage greenfield run-off calculation is included in **Appendix V.**

Proposed Surface Water Drainage System

7.20 The table below considers the recommended surface water drainage hierarchy to identify the preferred option for surface water discharge:

Method of surface water discharge	Option feasible	Comment
Infiltration	No	Given the existing geological conditions on site, infiltration has been ruled out as a drainage option.
Discharge to watercourse	No	There are no watercourses located on or in the vicinity of the site to which a new, direct outfall could be created. A new direct discharge to a watercourse has been ruled out as a drainage option.
Discharge to existing land drain.	**Yes**	The existing land drain that runs along the eastern site boundary enjoys an existing point of discharge to the ditch located to the south of the site. We propose that this connection should continue to be the method of disposal.
Discharge to surface water sewer, highway drain, or another drainage system	No	There are no surface water sewers, highway drains or other drainage systems located within the vicinity of the site. This option is rule out.

Method of surface water discharge	Option feasible	Comment
Discharge to combined sewer	No	There are no combined sewers within the vicinity of the site. This option is ruled out.

7.21 The proposed surface water system comprises a combination of a traditional pipe network and various SuDS features to ensure surface water run-off from the impermeable areas of the development is properly managed.

7.22 Rainwater that falls on the roof of the proposed New House Farm will be initially collected in high level rainwater gutters and then drain to downpipes. The downpipes will discharge into a new main underground carrier drain.

7.23 Half of the roof area of the two barns will be drained by high level rainwater gutters which will connect to downpipes that will in turn connect to filter drains. A perforated pipe set in the filter drains will connect to an inspection chamber.

7.24 Rainwater that falls on the other half of the roof area of the barns will also be initially collected in high level rainwater gutters and then drain to downpipes. The downpipes will discharge into a new main underground carrier drain.

7.25 The hardstanding area of the site will be drained by yard gullies. The yard gullies will be connected to the main underground carrier drains.

7.26 Surface water attenuation in the form of below ground attenuation crates will be provided in the grassed areas of the site to limit peak discharge rates to the agreed rate.

7.27 A flow control device in the form of a Hydrobrake or similar vortex flow control device will be installed in a flow control chamber to limit peak discharge flow from site to the agreed rate prior to finally discharging into the existing land drain.

7.28 It is recommended that rainwater harvesting in the form of water butts should be installed on the new farmhouse.

7.29 The full length of the existing land drain, where it runs from the north of the site down to where it discharges to the ditch to the south, should be fully investigated using CCTV to confirm that it is in a suitable condition to receive the new site surface water runoff. If it is shown to be in poor condition it should be replaced or repaired accordingly.

7.30 A copy of the Outline Drainage Strategy drawing has been attached at **Appendix VI**.

Network Performance and Attenuation Requirements

7.31 The proposed surface water drainage networks have both been modelled using InfoDrainage drainage design software. A climate change allowance of 40% for peak rainfall intensity has been used for estimating surface water attenuation for the 1 in 100 year storm event. This is based on the recommendation available online. [1]

7.32 In accordance with the National Standards for SuDS, the InfoDrainage model confirms that the proposed surface water drainage;

- Does not surcharge during a 1 year storm;
- No surface flooding occurs during a 30 year storm event; and
- Flood water is contained in the attenuation structures during a 100 year storm event plus 40% allowance for climate change.

7.33 The InfoDrainage model shows that approximately 129m^3 of surface water attenuation will be required during a 100 year plus 40% allowance for climate change event.

7.34 The InfoDrainage output, attached at **Appendix VII**, shows flooding occurs at the following locations, and has been assessed accordingly to ensure it does not affect people or property:

- S103 for the 100 year plus 40%, Winter, 480 minute event – 0.909m^3 will flow down towards the topographical low point of the site away from people and property and is considered a minimal volume of water – this is deemed acceptable; and
- S103 for the 100 year plus 40%, Winter, 960 minute event – 5.026m^3 will flow down towards the topographical low point of the site away from people and property and will create a depth of flooding of approximately 10mm – this is deemed acceptable;

7.35 The flow control unit manhole (S103) shows surcharge occurrences for some 1 year events. InfoDrainage simulations have indicated that this is a usual occurrence given that the very nature of a flow control unit is to slow down the flow of water and therefore a surcharge occurrence is to be expected, regardless of the storm event. However, the maximum surcharge depth (for the 1 year, Winter, 480 minute event) is 264mm and this will be easily accommodated within Manhole S103.

[1] https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances

Design for Exceedance

7.36 The surface water drainage strategy has taken into consideration the potential for 'exceedance flows' in its formulation. Flood events up to the 100 year plus 40% climate change event will be drained by the proposed drainage system thereby reducing the hazard to people and risk of property flooding.

7.37 Should exceedance of the drainage system occur in an event greater than the design envisaged or in the case of a blockage, the finished ground levels will be carefully designed to route overland flows away from the proposed farmhouse and barns towards the topographical low point of the site located along the eastern site boundary. From here water will be able to either slowly soak away or enter the land drain.

7.38 In the event of an exceedance due to a blockage in the drainage system, water will be redirected towards the filter drain, thereby preventing flooding in the lowest point of the site. Additionally, a naturally occurring swale located in the southeast of the site will aid in channelling water, allowing it to either exit the site and enter the ditch, or remain within the site where it can naturally infiltrate the ground. Alternatively, water can flow into an attenuation tank via the permeable layer on the top.

7.39 The exceedance flow routes are shown in the proposed Outline Drainage Strategy drawing attached at **Appendix VI**.

Water Quality - SuDS Treatment Train

7.40 The pollution potential from residential development is low. This level of pollution potential has been applied to this development.

7.41 Sediment and silt that accumulate in the surface water runoff will be collected in the filter drains, below ground attenuation crates and the deep trapped yard gullies prior to discharge to the existing land drain and ultimately entering the ditch off site.

Amenity and Biodiversity

7.42 The proposed SuDS drainage scheme has been designed to sit within the Architect's scheme so as to maximise amenity. The introduction of an area to which exceedance flow may be directed could create an opportunity for wildlife to visit and become established.

SuDS Maintenance Requirements

7.43 The new surface water drainage system has been designed to reduce the need for maintenance as far as is reasonably practicable. To facilitate maintenance and repair of drainage features, consideration has been given to the provision of appropriate access routes for maintenance plant and equipment.

7.44 The surface water drainage system will remain private throughout the lifetime of the development and the following maintenance regime should be implemented to ensure the system continues to function at maximum efficiency:

- Gutters, rainwater pipes, outlets and gullies should be inspected and thoroughly cleaned once a year;
- All manholes should be inspected once a year and where necessary cleaned out at the same time. Any defects to the brickworks or benching, and to the cover and frame should be made good. Attention should be made to the Confined Spaces Regulations 1997 and the provisions contained therein for access to confined spaces. Details for entering manholes are contained in the above legislation;
- The attenuation crates should be inspected annually and cleaned as required;
- The surface water flow control system should be inspected annually and cleaned as required; and
- The area set aside for exceedance flow in extreme events should be inspected regularly and kept weed free to ensure it can function at maximum capacity at all times.

Health and Safety Requirements

7.45 The new surface water drainage system should been designed with consideration to minimise health and safety risk to the public and to maintenance staff.

7.46 All access points to the below ground drainage structures, sewers, inlet, outlets and outfalls will be designed to be easily accessible and in accordance with the relevant standards to minimise risks to the public and the maintenance personnel.

8. Foul Water Drainage Strategy

Assessment of Existing Foul Drainage System

8.1 Foul water from the existing farmhouse discharges to a septic tank (dimensions unknown). We understand that this tank has an overflow that discharges to the land drain that runs along the eastern boundary of the site.

8.2 The General Binding Rules for the treatment of small sewage discharges were updated in June 2015 and have recently been further updated in October 2023. According to this updated guidance, the existing septic tank does not meet the current requirements as it discharges to a land drain and it should be draining to a drainage field.

8.3 A drainage field is an area of ground set aside specifically for the treatment of foul effluent from a septic tank and typically consists of a system of sub-surface irrigation pipes which allow the effluent to percolate into the surrounding soil. The design and installation of a drainage field should meet the requirements set out in the Building Regulations 2010: Part H – Drainage and Waste Disposal. A drainage field is NOT a soakaway. A drainage field is designed and used specifically to treat foul effluent.

8.4 The existing land drain should be investigated prior to construction to check it's structural integrity and confirm that it is not formed from ribbed, coiled pipe. It is possible for any small solid particles from treatment plants to collect in the base of the ribs, and / or at low points that can occur in coiled pipes, and build up over time to form a blockage in the pipe.

Proposed Foul Drainage System

8.5 In order to comply with the current General Binding Rules, the new farmhouse and farm standpipe could either:

- Continue to connect to the existing septic tank or a newly installed septic tank, but either the new or the existing septic tank would then have to discharge to a newly created drainage field. To operate without any form of EA licence, flows from the septic tank would need to be limited to 2000 litres per day. Should flows exceed this volume a licence would be required. The licence would be applied for from and granted by the EA; or

- A new private foul treatment plant could be installed and connected to the existing land drain. The licence would be applied for from and granted by the EA. To operate without any form of EA licence, flow from such a treatment plant would need to be limited to 5,000 litre per day.

8.6 A new private foul treatment plant or a replacement septic tank could be located where the existing septic tank is currently. The existing tank should be removed and disposed of by an approved Contractor should either of these options be pursued.

8.7 If the existing land drain is formed from ribbed, coiled pipe this should be replaced with a suitable plastic drain pipes.

Estimate of Peak Flow

8.8 The proposed farmhouse represents a population equivalent of 4 persons (average 4 persons per residential dwelling). An assessment based on per capita average water usage of 150 litres for residential dwelling (as recommended in the British Water Code of Practice, Flows and Loads – 4, Sizing Criteria, treatment Capacity for Sewage Treatment Systems) indicates that the proposed development will generate a peak foul water discharge rate of 0.003l/s (equivalent to 3 Dry Weather Flow). The estimated volume of wastewater is approximately 0.26m^3/day.

8.9 The proposed outline foul water drainage scheme is shown on the Drainage Layout attached at **Appendix VI.**

Health and Safety Requirements

8.10 The new foul water drainage system should be designed with consideration to minimise health and safety risk to the public and to maintenance staff.

8.11 All access points to the below ground drainage structures/sewers shall be designed to be easily accessible and in accordance with the relevant standards to minimise risks to the public and the operation personnel.

9. Conclusion

9.1 Instructions were received from NDA Properties Ltd (the Client) to undertake a Flood Risk Assessment and Outline Drainage Strategy to support an outline planning application for the demolition of existing buildings and replacement with a new farmhouse and two modern agricultural sheds.

9.2 The Flood Risk Assessment and Drainage Strategy has been prepared in accordance with the National Planning Policy Framework and national and local policies on SuDS in respect of the proposed scheme of development.

Flood Risk

9.3 Following the completion of this assessment, the following conclusions can be drawn:

- The Environment Agency Flood Maps show that the entire site is located within Flood Zone 1;
- In accordance with National Planning Policy Framework 'more vulnerable' development types are deemed appropriate within Flood Zone 1;
- In terms of other forms of flooding there is a low or very low flood risk to the whole site from surface water, groundwater, sewer, reservoirs and artificial sources of flooding; and
- The overall flood risk to the site is assessed as low.

Surface Water Drainage Strategy

9.4 The surface water drainage strategy proposes a separate surface water drainage system that discharges to an existing land drain. This land drain discharges to a ditch located to the south of the site. The ditch ultimately outfalls to the River Irt.

9.5 The proposed surface water drainage system comprises a combination of traditional underground piped network and various SuDS features to ensure surface water runoff from the impermeable areas of the development is properly managed and treated.

9.6 It is considered that the proposed surface water drainage scheme will not result in an increase in flood risk to the development and surrounding properties.

Foul Water Drainage Strategy

9.7 The foul water drainage strategy proposes a new separate foul water drainage network.

9.8 As the existing septic tank does not meet the guidance set out in the General Binding Rules 2015, updated October 2023, the following options are available to deal with foul water drainage from the new farmhouse:

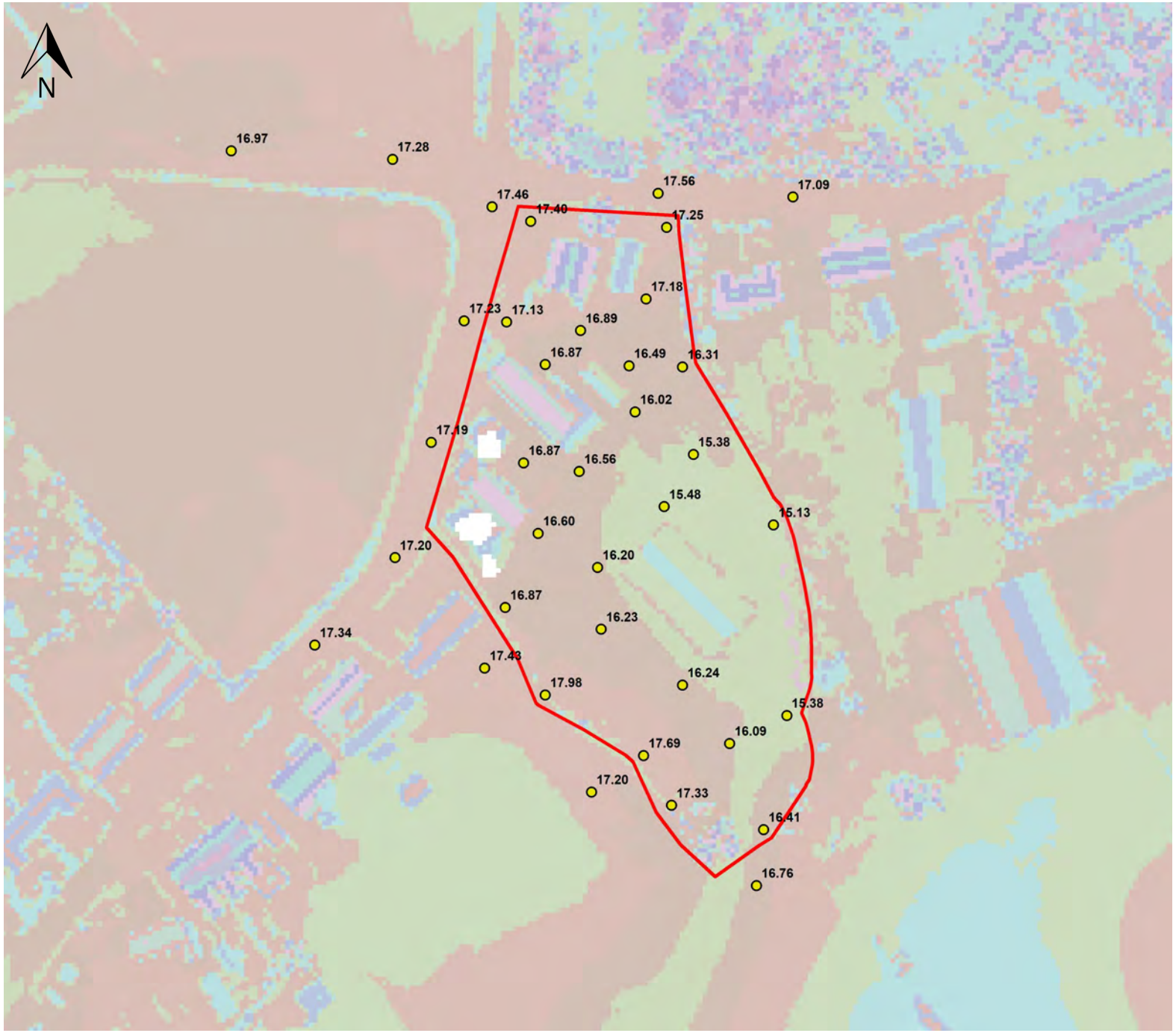
- To continue to use the septic tank a new drainage field will have to be installed and any connection to the existing land drain should be removed, this would ensure the existing septic tank meets the current guidance;
- The existing septic tank could be replaced with a new septic tank and a new drainage field installed to serve the new tank. There should be no connection to the land drain from a new septic tank; or
- A new private foul water treatment plant could be installed, and this could then connect to the existing land drain.

NOTE: the land drain should be investigated to confirm its integrity. The land drain pipe should be replaced if it is currently formed by ribbed, coiled pipe – this is to ensure that small solid particles from treated foul water cannot settle and build up in the ribs or low points of a coiled pipe run.

9.9 The new foul water treatment system (septic tank or private foul water treatment plant) should be designed and installed to meet the General Binding Rules 2015, updated October 2023 and the Building Regulations 2010: Part H – Drainage and Waste Disposal.

9.10 It is considered that the proposed foul drainage scheme could be installed to meet the current guidance.

Appendix I
LiDAR Data



KEY:

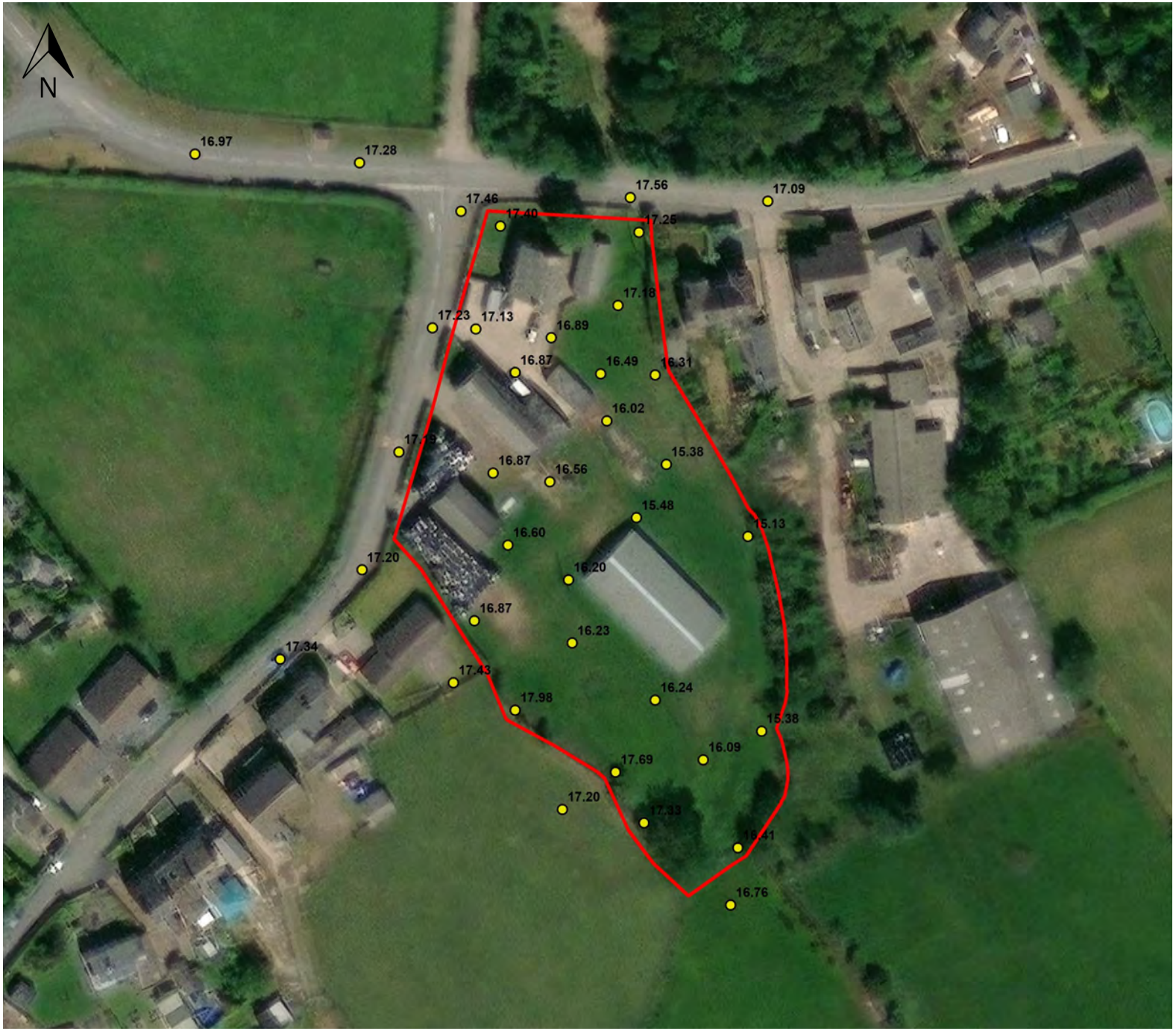
- Lidar_Points
- Site_Boundary
- Lidar_DSM_1m (mAOD)

Site Details:

New House Farm, Drigg, Cumbria, CA19 1XG

Drawing Title:	Lidar DSM 1m
Client:	NDA Limited
Job Number:	SPEC: New House
Date:	27.09.2023
Drawing Ref:	001
Issued By:	DH
Scale:	N/A

Avison Young



KEY:

- Lidar_Points
- Site_Boundary

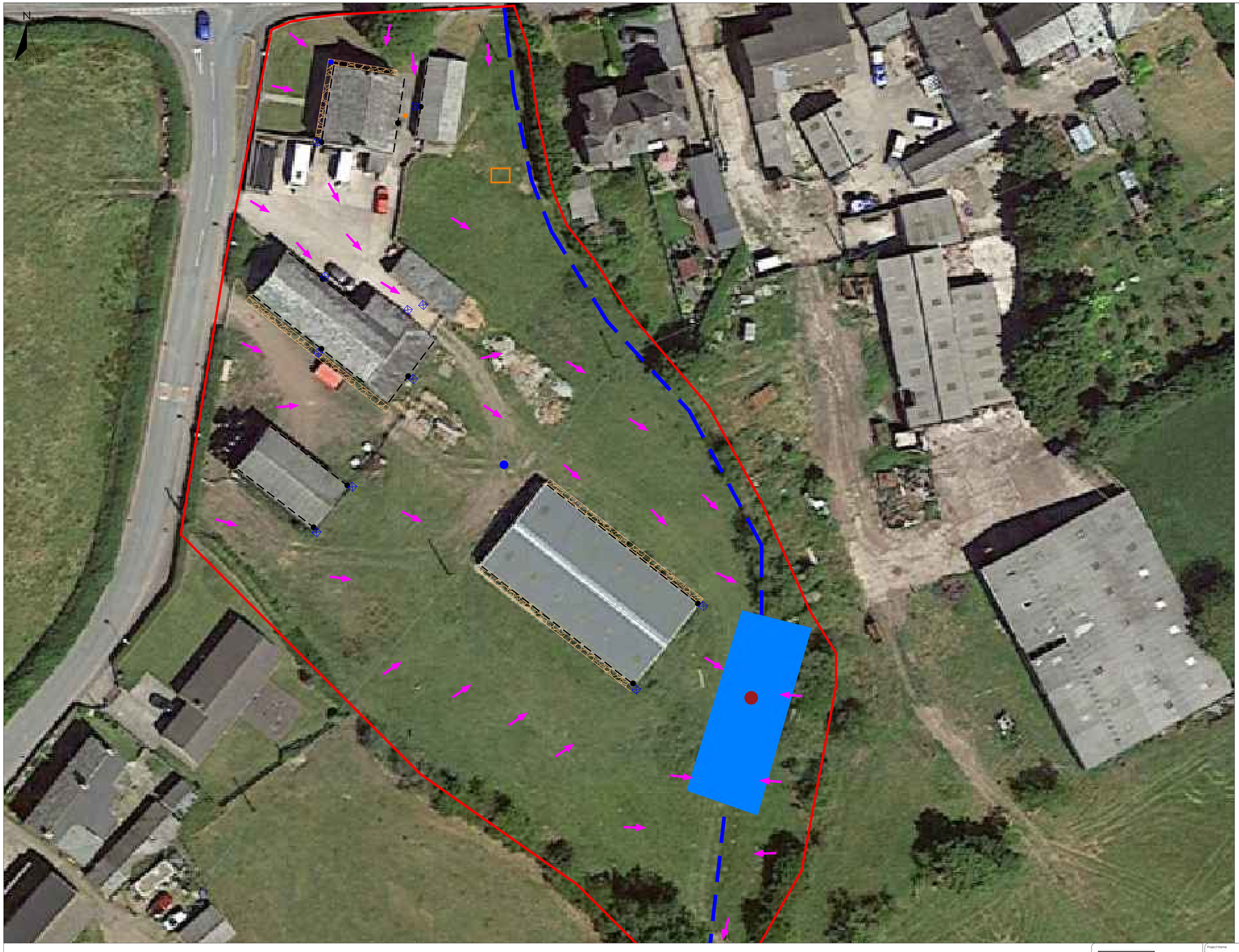
Site Details:

New House Farm, Drigg, Cumbria, CA19 1XG

Drawing Title:	Lidar DSM 1m
Client:	NDA Limited
Job Number:	SPEC: New House
Date:	27.09.2023
Drawing Ref:	002
Issued By:	DH
Scale:	N/A

Avison Young

Appendix II
Existing Drainage Layout



KEY

- SITE REDLINE BOUNDARY
- GULLY
- SEPTIC TANK
- FILTER DRAIN
- RAIN GUTTER
- RAINWATER DOWN PIPES
- SURFACE WATER INSPECTION CHAMBER
- FOUL WATER INSPECTION CHAMBER
- FLOODING AREA
- OVERFLOW PIPE
- LAND DRAIN
- EXISTING FLOWPATH OF WATER

Do not scale this drawing.
All dimensions to be checked on site. Drawing to be read in conjunction with any specifications, schedules and Consultants drawings and details.

Rev	Revision Details	By	Chk'd	Date
...	...	...	...	...

AVISON YOUNG
3 Brindleyplace, Birmingham, B1 2JB
www.avisonyoung.com
08449 02 03 04

Project Name	New House Farm, Drigg, Cumbria, CA19 1XG
Scale @ A1	1:250
Drawn	UB
Checked	GH
Date	31.10.2023
Client	Nuclear Decommissioning Authority
Project No.	01C300824
Drawing Title	Existing Site Drainage
Drawing No.	001
Rev.	-

A1

Appendix III
United Utilities Asset Plans

Water for the North West

How to contact us:

United Utilities Water Limited
Property Searches
Haweswater House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP

Telephone: 0370 7510101

E-mail: propertysearches@uuplc.co.uk

National One Call

1
Mill Place, Mill Road Ind Est
Linlithgow Bridge, West Lothian
EH49 7TL

FAO:

Your Ref: NOC/TEYIN590
Our Ref: UUPS-ORD-318357
Date: 23/08/2021

Dear Sirs

Location: NEW HOUSE FARM, DRIGG, HOLMROOK, CA19 1XG

I acknowledge with thanks your request dated 18/08/2021 for information on the location of our services.

Please find enclosed plans showing the approximate position of United Utilities' apparatus known to be in the vicinity of this site.

The enclosed plans are being provided to you subject to the United Utilities terms and conditions for both the wastewater and water distribution plans which are shown attached.

If you are planning works anywhere in the North West, please read United Utilities' access statement before you start work to check how it will affect our network. http://www.unitedutilities.com/work-near-asset.aspx .

I trust the above meets with your requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please contact us .

Yours Faithfully,

Karen McCormack
Property Searches Manager

United Utilities Water Limited
Registered In England & Wales No. 2366678
Registered Office Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP

Water for the North West

TERMS AND CONDITIONS - WASTEWATER AND WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUWL apparatus) of United Utilities Water Limited "(UUWL)".

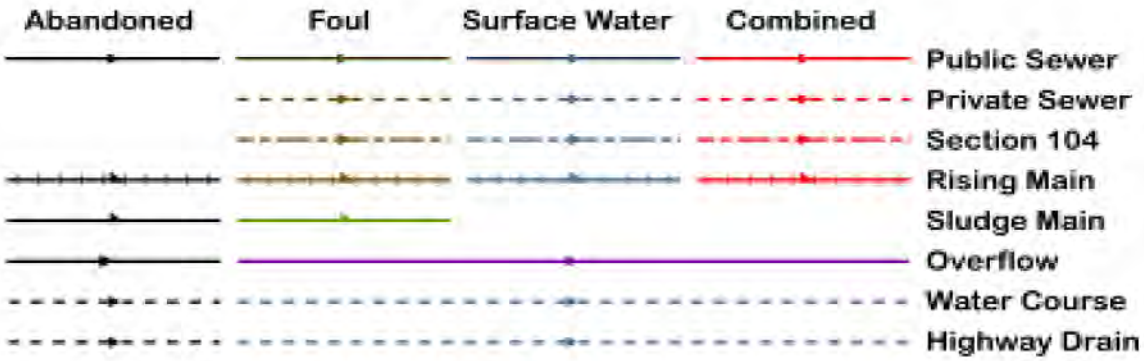
TERMS AND CONDITIONS:

- This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.
- This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.
- In particular, the position and depth of any UUWL apparatus shown on the Map are approximate only. UUWL strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUWL apparatus. The exact location, positions and depths should be obtained by excavation trial holes.
- The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.
- The position and depth of UUWL apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.
- This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUWL apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.
- No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUWL apparatus by reason of the actual position and/or depths of UUWL apparatus being different from those shown on the Map and any information supplied with it.
- If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.
- This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUWL from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

United Utilities Water Limited
Registered In England & Wales No. 2366678
Registered Office Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington, WA5 3LP

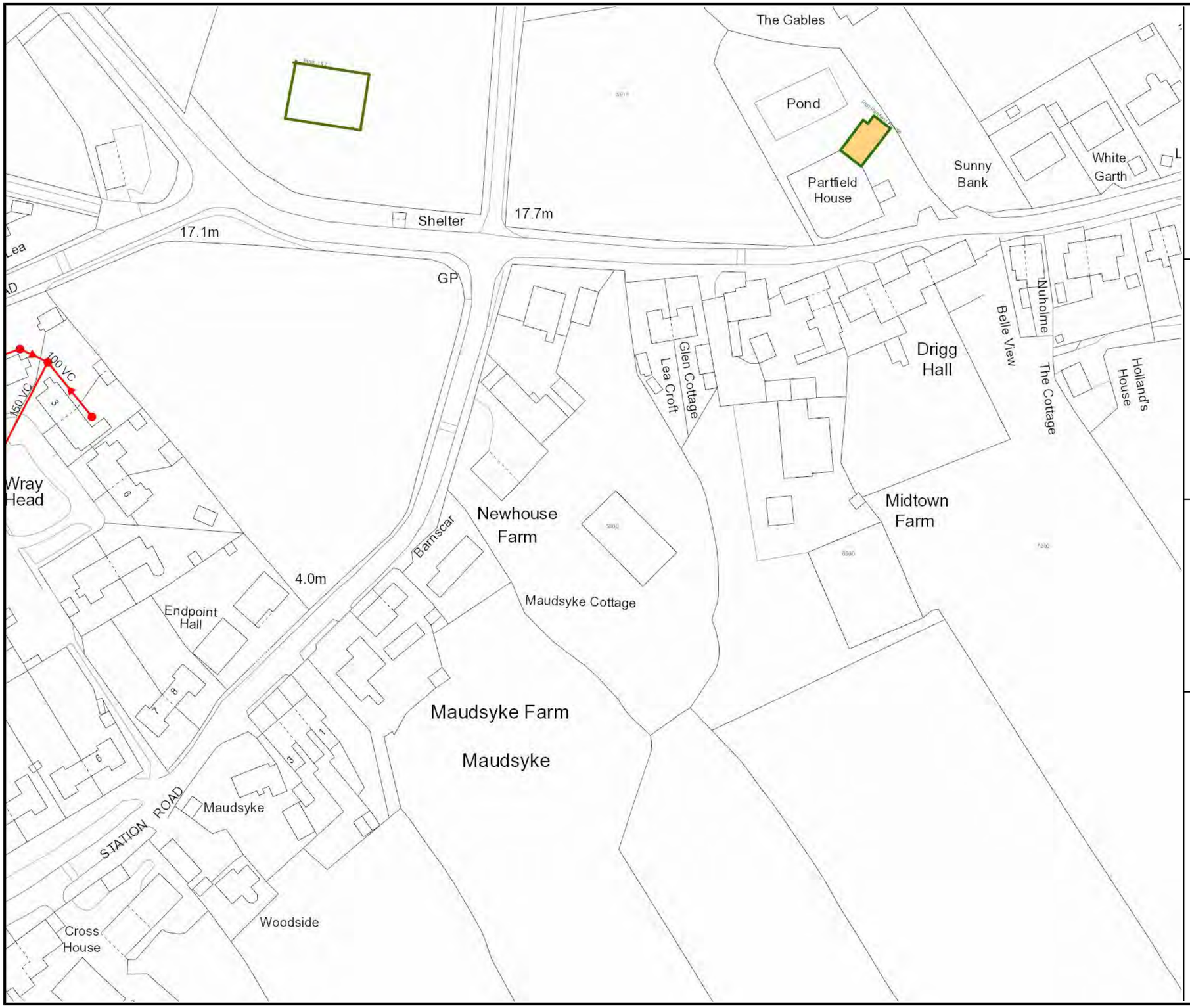
United Utilities
Water for the North West

Wastewater Symbology



All point assets follow the standard colour convention: red – combined, brown - foul, blue – surface water, purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- Change of Characteristic



United Utilities

Water for the North West

SEWER RECORDS

Address or Site Reference

NEW HOUSE FARM,
DRIGG,
HOLMROOK,
CA19 1XG

Scale: 1:1250

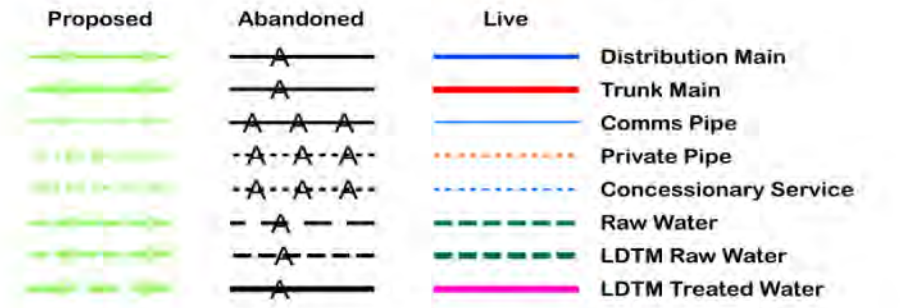
Date: 23/08/2021

Printed by: Property Searches

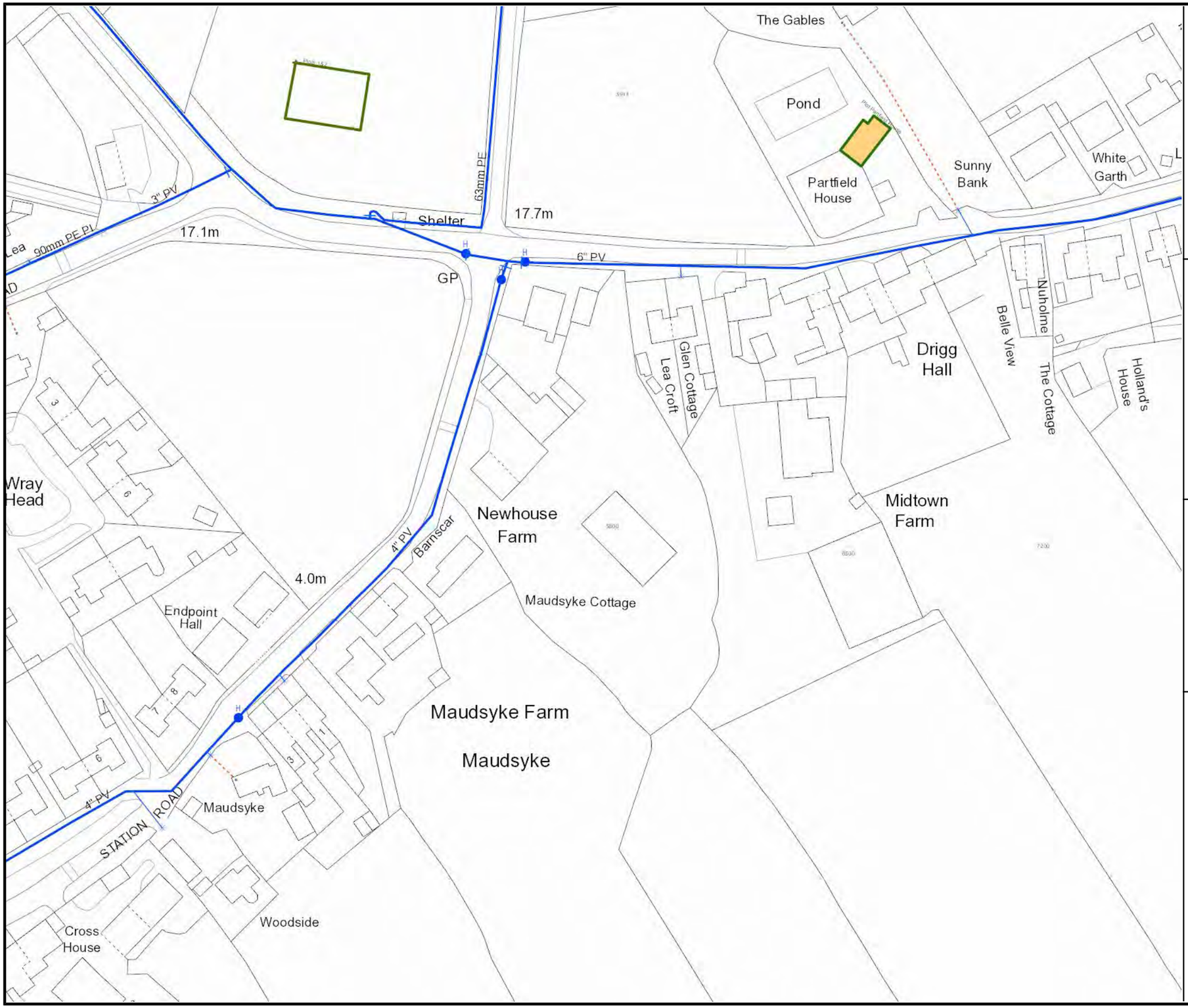
The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

United Utilities
Water for the North West

Clean Water Symbology



Symbology for proposed assets is the same as above, but shown in green
Symbology for abandoned assets is the same as above, but shown in black



United Utilities

Water for the North West

WATER MAIN RECORDS

Address or Site Reference

NEW HOUSE FARM,
DRIGG,
HOLMROOK,
CA19 1XG

Scale: 1:1250
Date: 23/08/2021

Printed by: Property Searches

The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

Appendix IV
Masterplan

1 **Proposed Block Plan**
1 : 200

AVISON YOUNG

Notes

Rev	Description	Date
A	Moved Building Positions	16/10/23

PROJECT
New House Farm Drigg

TITLE
Proposed Block Plan

CLIENT
NDA

DRAWN BY		DATE
SWB		21/08/23

SCALE (@A0)	PROJECT NUMBER
1 : 200	144-15-1

DRAWNING NUMBER	REV
A106	A

Appendix V
Greenfield Runoff Rates

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Title: UK and Ireland Rural Runoff Calculator	Company Address: 3 Brindley Place Birmingham B1 2JB		

AVISON YOUNG

ICP SUDS / IH 124

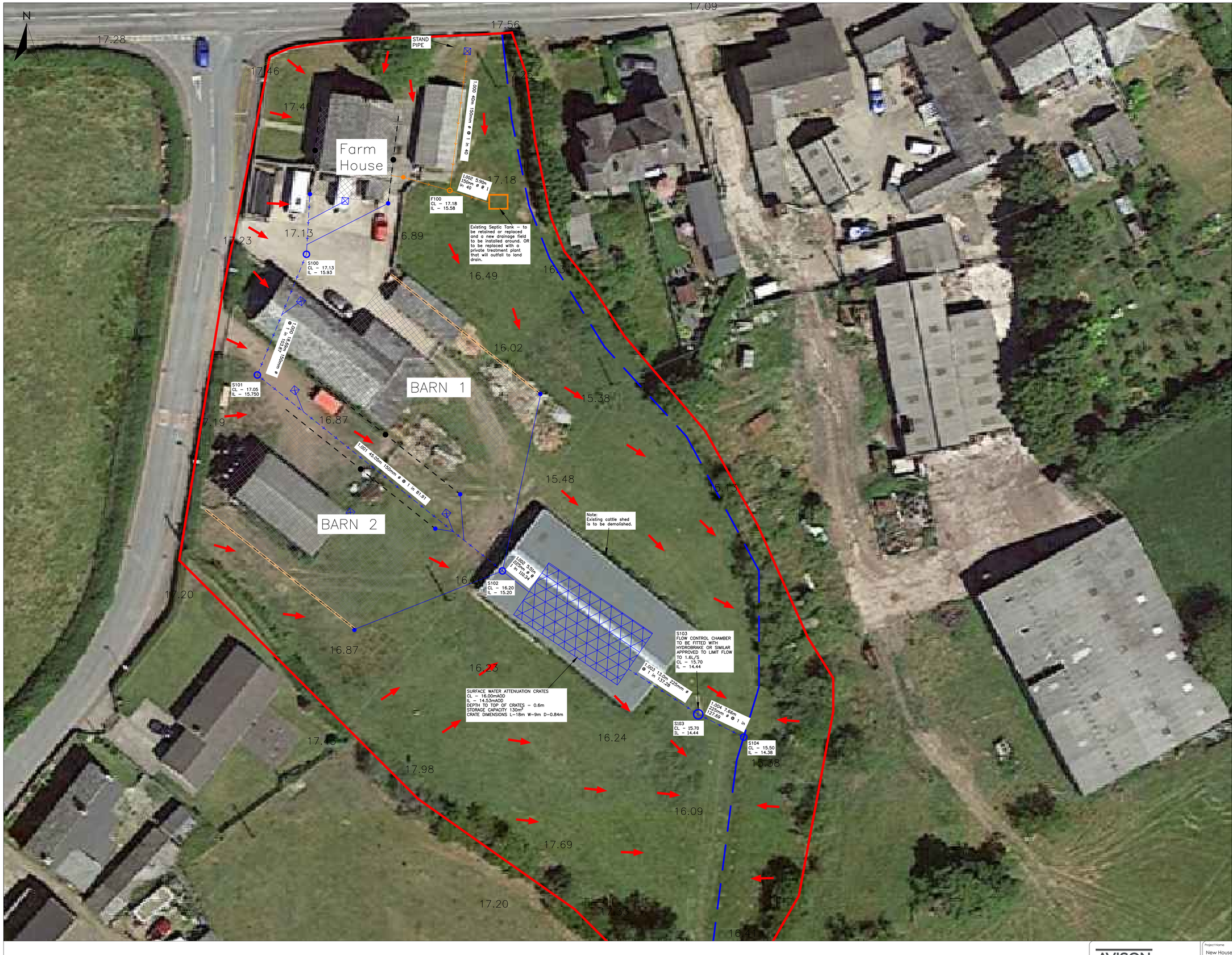
Details

Method	ICP SUDS
Area (ha)	0.213
SAAR (mm)	1046.0
Soil	0.47
Region	Region 10
Urban	0
Return Period (years)	0

Results

Region	QBAR Rural (L/s)	QBAR Urban (L/s)	Q 1 (years) (L/s)	Q 30 (years) (L/s)	Q 100 (years) (L/s)
Region 10	1.6	1.6	1.4	2.8	3.4

Appendix VI
Drainage Drawings



KEY

- SITE REDLINE BOUNDARY
- GULLY
- SEPTIC TANK
- FILTER DRAIN
- RAIN GUTTER
- RAINWATER DOWN PIPES
- SURFACE WATER INSPECTION CHAMBER
- FOUL WATER INSPECTION CHAMBER
- SURFACE WATER MANHOLE
- SURFACE WATER SEWER
- LAND DRAIN
- EXISTING FLOWPATH OF WATER
- FOUL WATER SEWER
- FOUL WATER MANHOLE
- BELOW GROUND ATTENUATION CRATES
- FLOW CONTROL MANHOLE

NOTES

DO NOT SCALE FROM THIS DRAWING. IF IN DOUBT CONTACT AVISON YOUNG.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

ALL LEVELS ARE IN mAOD.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS RELATING TO THIS PROJECT.

THIS DRAWING HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF THE COMMISSIONING PARTY AND UNLESS AGREED IN WRITING BY AVISON YOUNG NO OTHER PARTY MAY USE OR RELY ON ITS CONTENTS. NO LIABILITY IS ACCEPTED BY AVISON YOUNG FOR ANY USE OTHER THAN FOR THE PURPOSE FOR WHAT IT WAS ORIGINALLY PREPARED.

IT SHOULD BE NOTED THAT THIS DRAWING MAY INCLUDE DATA PROVIDED BY THIRD PARTIES. NO LIABILITY IS ACCEPTED BY AVISON YOUNG AS TO THE ACCURACY OF THIS DATA

THIS DRAWING SHALL NOT BE REPRODUCED IN ANY WAY WITHOUT WRITTEN PERMISSION OF AVISON YOUNG.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH GENERAL ARRANGEMENT, LANDSCAPING AND OTHER DRAWINGS IN RELATION TO THE PROPOSED DEVELOPMENT.

Rev	Revision Details	By	Chk'd	Date

AVISON YOUNG
3 Brindleyplace, Birmingham, B1 2JB
www.avisonyoung.com
08449 02 03 04

Project Name	New House Farm, Drigg, Cumbria, CA19 1XG
Scale @ A1	1:250
Drawn	UB
Checked	GH
Date	31.10.2023
Client	Nuclear Decommissioning Authority
Project No.	01C300824
Drawing Title	Proposed Drainage Layout
Drawing No.	001
Rev.	-

A1

Appendix VII
InfoDrainage Output

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Stormwater Controls Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Infiltration Trench

Type : Infiltration Trench

Dimensions

Exceedance Level (m)	16.300
Depth (m)	1.000
Base Level (m)	15.300
Freeboard (mm)	150
Porosity (%)	30
Length (m)	27.436
Long. Slope (1:X)	1000.00
Width (m)	0.300
Total Volume (m³)	2.438

Under Drain

Height Above Base (m)	0.100
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.075
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area (5)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	2.000
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	1.0

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Stormwater Controls Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Infiltration Trench (1)

Type : Infiltration Trench

Dimensions

Exceedance Level (m)	16.300
Depth (m)	1.000
Base Level (m)	15.300
Freeboard (mm)	150
Porosity (%)	30
Length (m)	27.203
Long. Slope (1:X)	1000.00
Width (m)	0.300
Total Volume (m³)	2.418

Under Drain

Height Above Base (m)	0.100
Diameter (mm)	150
No. of Barrels	1
Release Height (m)	0.075
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area (3)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	3.000
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	1.0

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Stormwater Controls Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	16.000
Depth (m)	0.840
Base Level (m)	14.560
Number of Crates Long	15
Number of Crates Wide	15
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	1.2
Crate Width (m)	0.6
Crate Height (m)	0.42
Total Volume (m³)	129.876

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1.002
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

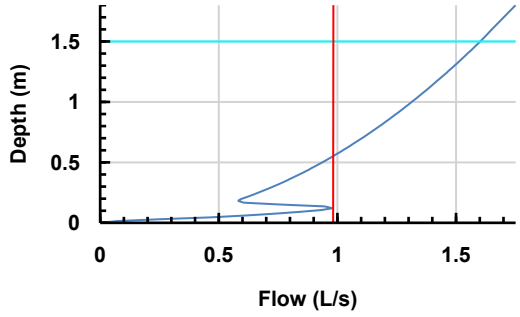
Outgoing Connection	1.003
Outlet Type	Free Discharge

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Junctions Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S100	Outlet	1.000	Free Discharge
S101	Outlet	1.001	Free Discharge
S102	Outlet	1.002	Free Discharge
S103	Outlet	1.004	Hydro-Brake®

Invert Level (m)	14.460
Design Depth (m)	1.500
Design Flow (L/s)	1.6
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐
Unit Reference	CHE-0052-1600-1500-1600



Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Network Design Criteria Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

1 in 1 Year

Type: FSR

Return Period (years)	1.0
Region	England And Wales
M5-60 (mm)	17.4
Ratio R	0.285

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Manhole Options

Apply Offset	☐

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Title:	Company Address:		
Rainfall Analysis Criteria	3 Brindley Place Birmingham B1 2JB		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	17.4
Ratio R	0.285
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000
30.0	0.000
100.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
240	480
360	720
480	960
960	1920
1440	2880

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Junctions Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for S100: Rank By: Max. Flooded Volume

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 1 years: +0 %: 15 mins: Summer	17.130	15.930	15.992	0.062	6.2	0.070	0.000	5.9	2.690	OK
FSR: 1 years: +0 %: 15 mins: Winter	17.130	15.930	15.994	0.064	6.5	0.073	0.000	6.3	3.014	OK
FSR: 1 years: +0 %: 30 mins: Summer	17.130	15.930	15.981	0.051	4.3	0.058	0.000	4.3	3.680	OK
FSR: 1 years: +0 %: 30 mins: Winter	17.130	15.930	15.982	0.052	4.5	0.059	0.000	4.5	4.124	OK
FSR: 1 years: +0 %: 60 mins: Summer	17.130	15.930	15.979	0.049	3.9	0.055	0.000	3.9	4.917	OK
FSR: 1 years: +0 %: 60 mins: Winter	17.130	15.930	15.976	0.046	3.5	0.052	0.000	3.6	5.518	OK
FSR: 1 years: +0 %: 120 mins: Summer	17.130	15.930	15.973	0.043	3.1	0.048	0.000	3.1	6.515	OK
FSR: 1 years: +0 %: 120 mins: Winter	17.130	15.930	15.968	0.038	2.5	0.043	0.000	2.5	7.289	OK
FSR: 1 years: +0 %: 240 mins: Summer	17.130	15.930	15.966	0.036	2.2	0.041	0.000	2.2	8.579	OK
FSR: 1 years: +0 %: 240 mins: Winter	17.130	15.930	15.961	0.031	1.7	0.036	0.000	1.7	9.599	OK
FSR: 1 years: +0 %: 360 mins: Summer	17.130	15.930	15.962	0.032	1.8	0.037	0.000	1.8	10.001	OK
FSR: 1 years: +0 %: 360 mins: Winter	17.130	15.930	15.958	0.028	1.3	0.032	0.000	1.3	11.201	OK
FSR: 1 years: +0 %: 480 mins: Summer	17.130	15.930	15.960	0.030	1.5	0.034	0.000	1.5	11.117	OK
FSR: 1 years: +0 %: 480 mins: Winter	17.130	15.930	15.956	0.026	1.1	0.029	0.000	1.1	12.431	OK
FSR: 1 years: +0 %: 960 mins: Summer	17.130	15.930	15.954	0.024	1.0	0.027	0.000	1.0	14.334	OK
FSR: 1 years: +0 %: 960 mins: Winter	17.130	15.930	15.951	0.021	0.7	0.024	0.000	0.7	16.067	OK
FSR: 1 years: +0 %: 1440 mins: Summer	17.130	15.930	15.952	0.022	0.8	0.024	0.000	0.8	16.667	OK
FSR: 1 years: +0 %: 1440 mins: Winter	17.130	15.930	15.948	0.018	0.6	0.021	0.000	0.6	18.780	OK
FSR: 30 years: +0 %: 15 mins: Summer	17.130	15.930	16.043	0.113	15.1	0.128	0.000	12.6	6.555	OK
FSR: 30 years: +0 %: 15 mins: Winter	17.130	15.930	16.090	0.160	15.9	0.181	0.000	11.8	7.338	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	17.130	15.930	16.017	0.087	10.4	0.098	0.000	10.5	9.047	OK
FSR: 30 years: +0 %: 30 mins: Winter	17.130	15.930	16.019	0.089	11.0	0.101	0.000	11.0	10.139	OK
FSR: 30 years: +0 %: 60 mins: Summer	17.130	15.930	16.012	0.082	9.6	0.093	0.000	9.6	12.002	OK
FSR: 30 years: +0 %: 60 mins: Winter	17.130	15.930	16.007	0.077	8.7	0.087	0.000	8.7	13.436	OK
FSR: 30 years: +0 %: 120 mins: Summer	17.130	15.930	16.000	0.070	7.3	0.079	0.000	7.3	15.460	OK
FSR: 30 years: +0 %: 120 mins: Winter	17.130	15.930	15.991	0.061	5.9	0.069	0.000	5.9	17.314	OK
FSR: 30 years: +0 %: 240 mins: Summer	17.130	15.930	15.986	0.056	5.0	0.063	0.000	5.0	19.403	OK

FSR: 30 years: +0 %: 240 mins: Winter	17.130	15.930	15.978	0.048	3.8	0.054	0.000	3.8	21.737	OK
FSR: 30 years: +0 %: 360 mins: Summer	17.130	15.930	15.978	0.048	3.9	0.055	0.000	3.9	22.001	OK
FSR: 30 years: +0 %: 360 mins: Winter	17.130	15.930	15.971	0.041	2.9	0.047	0.000	2.9	24.623	OK
FSR: 30 years: +0 %: 480 mins: Summer	17.130	15.930	15.974	0.044	3.3	0.050	0.000	3.3	23.969	OK
FSR: 30 years: +0 %: 480 mins: Winter	17.130	15.930	15.967	0.037	2.4	0.042	0.000	2.4	26.855	OK
FSR: 30 years: +0 %: 960 mins: Summer	17.130	15.930	15.965	0.035	2.0	0.039	0.000	2.0	29.501	OK
FSR: 30 years: +0 %: 960 mins: Winter	17.130	15.930	15.959	0.029	1.4	0.033	0.000	1.5	33.048	OK
FSR: 30 years: +0 %: 1440 mins: Summer	17.130	15.930	15.960	0.030	1.5	0.034	0.000	1.5	33.149	OK
FSR: 30 years: +0 %: 1440 mins: Winter	17.130	15.930	15.956	0.026	1.1	0.029	0.000	1.1	37.157	OK
FSR: 100 years: +40 %: 15 mins: Summer	17.130	15.930	16.905	0.975	26.8	1.103	0.000	18.3	11.862	Flood Risk
FSR: 100 years: +40 %: 15 mins: Winter	17.130	15.930	17.063	1.133	28.2	1.282	0.000	19.4	13.228	Flood Risk
FSR: 100 years: +40 %: 30 mins: Summer	17.130	15.930	16.941	1.011	19.0	1.143	0.000	18.0	16.517	Flood Risk
FSR: 100 years: +40 %: 30 mins: Winter	17.130	15.930	17.079	1.149	20.0	1.299	0.000	19.0	18.485	Flood Risk
FSR: 100 years: +40 %: 60 mins: Summer	17.130	15.930	16.768	0.838	17.6	0.948	0.000	16.9	22.048	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	17.130	15.930	16.555	0.625	15.9	0.707	0.000	15.4	24.675	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	17.130	15.930	16.231	0.301	13.5	0.340	0.000	13.2	28.457	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	17.130	15.930	16.019	0.089	10.9	0.100	0.000	10.9	31.876	OK
FSR: 100 years: +40 %: 240 mins: Summer	17.130	15.930	16.010	0.080	9.2	0.091	0.000	9.2	35.494	OK
FSR: 100 years: +40 %: 240 mins: Winter	17.130	15.930	15.998	0.068	6.9	0.076	0.000	6.9	39.767	OK
FSR: 100 years: +40 %: 360 mins: Summer	17.130	15.930	15.998	0.068	7.1	0.077	0.000	7.1	39.845	OK
FSR: 100 years: +40 %: 360 mins: Winter	17.130	15.930	15.987	0.057	5.2	0.065	0.000	5.2	44.657	OK
FSR: 100 years: +40 %: 480 mins: Summer	17.130	15.930	15.991	0.061	5.9	0.069	0.000	5.9	43.271	OK
FSR: 100 years: +40 %: 480 mins: Winter	17.130	15.930	15.981	0.051	4.3	0.058	0.000	4.3	48.460	OK
FSR: 100 years: +40 %: 960 mins: Summer	17.130	15.930	15.976	0.046	3.6	0.052	0.000	3.6	52.349	OK

FSR: 100 years: +40 %: 960 mins: Winter	17.130	15.930	15.969	0.039	2.6	0.044	0.000	2.6	58.625	OK
FSR: 100 years: +40 %: 1440 mins: Summer	17.130	15.930	15.970	0.040	2.6	0.045	0.000	2.6	58.331	OK
FSR: 100 years: +40 %: 1440 mins: Winter	17.130	15.930	15.964	0.034	1.9	0.038	0.000	1.9	65.333	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Junctions Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for S101: Rank By: Max. Flooded Volume

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 1 years: +0 %: 15 mins: Summer	17.050	15.750	15.823	0.073	10.1	0.083	0.000	9.4	4.496	OK
FSR: 1 years: +0 %: 15 mins: Winter	17.050	15.750	15.826	0.076	10.6	0.086	0.000	9.9	5.039	OK
FSR: 1 years: +0 %: 30 mins: Summer	17.050	15.750	15.813	0.063	7.1	0.071	0.000	7.1	6.156	OK
FSR: 1 years: +0 %: 30 mins: Winter	17.050	15.750	15.814	0.064	7.5	0.073	0.000	7.5	6.899	OK
FSR: 1 years: +0 %: 60 mins: Summer	17.050	15.750	15.810	0.060	6.6	0.068	0.000	6.6	8.229	OK
FSR: 1 years: +0 %: 60 mins: Winter	17.050	15.750	15.807	0.057	5.9	0.064	0.000	5.9	9.225	OK
FSR: 1 years: +0 %: 120 mins: Summer	17.050	15.750	15.803	0.053	5.2	0.060	0.000	5.2	10.895	OK
FSR: 1 years: +0 %: 120 mins: Winter	17.050	15.750	15.797	0.047	4.2	0.053	0.000	4.2	12.197	OK
FSR: 1 years: +0 %: 240 mins: Summer	17.050	15.750	15.794	0.044	3.7	0.050	0.000	3.7	14.339	OK
FSR: 1 years: +0 %: 240 mins: Winter	17.050	15.750	15.788	0.038	2.8	0.043	0.000	2.8	16.062	OK
FSR: 1 years: +0 %: 360 mins: Summer	17.050	15.750	15.789	0.039	3.0	0.045	0.000	3.0	16.734	OK
FSR: 1 years: +0 %: 360 mins: Winter	17.050	15.750	15.784	0.034	2.2	0.038	0.000	2.2	18.738	OK
FSR: 1 years: +0 %: 480 mins: Summer	17.050	15.750	15.786	0.036	2.5	0.041	0.000	2.5	18.594	OK
FSR: 1 years: +0 %: 480 mins: Winter	17.050	15.750	15.781	0.031	1.8	0.035	0.000	1.8	20.802	OK
FSR: 1 years: +0 %: 960 mins: Summer	17.050	15.750	15.779	0.029	1.6	0.033	0.000	1.6	24.006	OK
FSR: 1 years: +0 %: 960 mins: Winter	17.050	15.750	15.775	0.025	1.2	0.028	0.000	1.2	26.880	OK
FSR: 1 years: +0 %: 1440 mins: Summer	17.050	15.750	15.776	0.026	1.3	0.029	0.000	1.3	27.930	OK
FSR: 1 years: +0 %: 1440 mins: Winter	17.050	15.750	15.772	0.022	0.9	0.025	0.000	0.9	31.332	OK
FSR: 30 years: +0 %: 15 mins: Summer	17.050	15.750	15.962	0.212	22.8	0.240	0.000	19.9	10.969	Surcharged
FSR: 30 years: +0 %: 15 mins: Winter	17.050	15.750	15.995	0.245	22.5	0.277	0.000	20.4	12.290	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	17.050	15.750	15.861	0.111	17.5	0.126	0.000	17.5	15.129	OK
FSR: 30 years: +0 %: 30 mins: Winter	17.050	15.750	15.866	0.116	18.4	0.132	0.000	18.4	16.953	OK
FSR: 30 years: +0 %: 60 mins: Summer	17.050	15.750	15.854	0.104	16.1	0.117	0.000	16.1	20.074	OK
FSR: 30 years: +0 %: 60 mins: Winter	17.050	15.750	15.846	0.096	14.5	0.109	0.000	14.5	22.482	OK
FSR: 30 years: +0 %: 120 mins: Summer	17.050	15.750	15.836	0.086	12.3	0.098	0.000	12.3	25.874	OK
FSR: 30 years: +0 %: 120 mins: Winter	17.050	15.750	15.826	0.076	9.9	0.085	0.000	9.9	28.954	OK
FSR: 30 years: +0 %: 240 mins: Summer	17.050	15.750	15.819	0.069	8.4	0.078	0.000	8.4	32.446	OK

FSR: 30 years: +0 %: 240 mins: Winter	17.050	15.750	15.809	0.059	6.3	0.067	0.000	6.3	36.371	OK
FSR: 30 years: +0 %: 360 mins: Summer	17.050	15.750	15.810	0.060	6.5	0.067	0.000	6.5	36.773	OK
FSR: 30 years: +0 %: 360 mins: Winter	17.050	15.750	15.801	0.051	4.8	0.057	0.000	4.8	41.184	OK
FSR: 30 years: +0 %: 480 mins: Summer	17.050	15.750	15.804	0.054	5.4	0.061	0.000	5.4	40.097	OK
FSR: 30 years: +0 %: 480 mins: Winter	17.050	15.750	15.796	0.046	3.9	0.052	0.000	3.9	44.916	OK
FSR: 30 years: +0 %: 960 mins: Summer	17.050	15.750	15.792	0.042	3.4	0.048	0.000	3.4	49.326	OK
FSR: 30 years: +0 %: 960 mins: Winter	17.050	15.750	15.786	0.036	2.4	0.040	0.000	2.4	55.230	OK
FSR: 30 years: +0 %: 1440 mins: Summer	17.050	15.750	15.786	0.036	2.5	0.041	0.000	2.5	55.512	OK
FSR: 30 years: +0 %: 1440 mins: Winter	17.050	15.750	15.781	0.031	1.8	0.035	0.000	1.8	62.142	OK
FSR: 100 years: +40 %: 15 mins: Summer	17.050	15.750	16.699	0.949	36.4	1.074	0.000	28.9	19.888	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	17.050	15.750	16.839	1.089	38.4	1.231	0.000	30.8	22.196	Flood Risk
FSR: 100 years: +40 %: 30 mins: Summer	17.050	15.750	16.748	0.998	30.8	1.128	0.000	29.9	27.671	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	17.050	15.750	16.870	1.120	32.4	1.267	0.000	31.5	30.968	Flood Risk
FSR: 100 years: +40 %: 60 mins: Summer	17.050	15.750	16.595	0.845	28.7	0.955	0.000	28.1	36.914	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	17.050	15.750	16.406	0.656	26.1	0.742	0.000	25.7	41.293	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	17.050	15.750	16.115	0.365	22.3	0.413	0.000	22.0	47.631	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	17.050	15.750	15.865	0.115	18.2	0.131	0.000	18.2	53.335	OK
FSR: 100 years: +40 %: 240 mins: Summer	17.050	15.750	15.850	0.100	15.4	0.114	0.000	15.4	59.392	OK
FSR: 100 years: +40 %: 240 mins: Winter	17.050	15.750	15.833	0.083	11.6	0.094	0.000	11.6	66.539	OK
FSR: 100 years: +40 %: 360 mins: Summer	17.050	15.750	15.834	0.084	11.8	0.095	0.000	11.8	66.672	OK
FSR: 100 years: +40 %: 360 mins: Winter	17.050	15.750	15.820	0.070	8.7	0.079	0.000	8.7	74.704	OK
FSR: 100 years: +40 %: 480 mins: Summer	17.050	15.750	15.825	0.075	9.8	0.085	0.000	9.8	72.369	OK
FSR: 100 years: +40 %: 480 mins: Winter	17.050	15.750	15.813	0.063	7.1	0.071	0.000	7.1	81.017	OK
FSR: 100 years: +40 %: 960 mins: Summer	17.050	15.750	15.807	0.057	6.0	0.064	0.000	6.0	87.594	OK

FSR: 100 years: +40 %: 960 mins: Winter	17.050	15.750	15.798	0.048	4.3	0.054	0.000	4.3	98.071	OK
FSR: 100 years: +40 %: 1440 mins: Summer	17.050	15.750	15.799	0.049	4.4	0.055	0.000	4.4	97.594	OK
FSR: 100 years: +40 %: 1440 mins: Winter	17.050	15.750	15.791	0.041	3.2	0.046	0.000	3.2	109.292	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Junctions Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for S102: Rank By: Max. Flooded Volume

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 1 years: +0 %: 15 mins: Summer	16.200	15.200	15.286	0.086	14.1	0.097	0.000	12.6	8.059	OK
FSR: 1 years: +0 %: 15 mins: Winter	16.200	15.200	15.291	0.091	17.4	0.103	0.000	13.8	9.156	OK
FSR: 1 years: +0 %: 30 mins: Summer	16.200	15.200	15.292	0.092	14.4	0.104	0.000	14.4	11.460	OK
FSR: 1 years: +0 %: 30 mins: Winter	16.200	15.200	15.295	0.095	15.2	0.107	0.000	15.2	12.966	OK
FSR: 1 years: +0 %: 60 mins: Summer	16.200	15.200	15.288	0.088	13.4	0.100	0.000	13.4	15.721	OK
FSR: 1 years: +0 %: 60 mins: Winter	16.200	15.200	15.283	0.083	12.0	0.094	0.000	12.0	17.723	OK
FSR: 1 years: +0 %: 120 mins: Summer	16.200	15.200	15.277	0.077	10.5	0.087	0.000	10.5	21.203	OK
FSR: 1 years: +0 %: 120 mins: Winter	16.200	15.200	15.268	0.068	8.4	0.077	0.000	8.4	23.869	OK
FSR: 1 years: +0 %: 240 mins: Summer	16.200	15.200	15.264	0.064	7.5	0.073	0.000	7.5	28.397	OK
FSR: 1 years: +0 %: 240 mins: Winter	16.200	15.200	15.255	0.055	5.7	0.062	0.000	5.7	31.877	OK
FSR: 1 years: +0 %: 360 mins: Summer	16.200	15.200	15.257	0.057	6.0	0.064	0.000	6.0	33.400	OK
FSR: 1 years: +0 %: 360 mins: Winter	16.200	15.200	15.248	0.048	4.4	0.055	0.000	4.4	37.423	OK
FSR: 1 years: +0 %: 480 mins: Summer	16.200	15.200	15.252	0.052	5.1	0.059	0.000	5.1	37.375	OK
FSR: 1 years: +0 %: 480 mins: Winter	16.200	15.200	15.244	0.044	3.7	0.050	0.000	3.7	41.861	OK
FSR: 1 years: +0 %: 960 mins: Summer	16.200	15.200	15.242	0.042	3.3	0.047	0.000	3.3	49.391	OK
FSR: 1 years: +0 %: 960 mins: Winter	16.200	15.200	15.235	0.035	2.4	0.040	0.000	2.4	55.099	OK
FSR: 1 years: +0 %: 1440 mins: Summer	16.200	15.200	15.237	0.037	2.6	0.041	0.000	2.6	58.394	OK
FSR: 1 years: +0 %: 1440 mins: Winter	16.200	15.200	15.231	0.031	1.9	0.035	0.000	1.9	65.346	OK
FSR: 30 years: +0 %: 15 mins: Summer	16.200	15.200	15.386	0.186	43.8	0.210	0.000	42.1	21.171	OK
FSR: 30 years: +0 %: 15 mins: Winter	16.200	15.200	15.395	0.195	45.6	0.220	0.000	44.0	23.840	OK
FSR: 30 years: +0 %: 30 mins: Summer	16.200	15.200	15.362	0.162	35.4	0.183	0.000	35.4	29.657	OK
FSR: 30 years: +0 %: 30 mins: Winter	16.200	15.200	15.368	0.168	37.3	0.190	0.000	37.3	33.343	OK
FSR: 30 years: +0 %: 60 mins: Summer	16.200	15.200	15.352	0.152	32.6	0.172	0.000	32.6	39.711	OK
FSR: 30 years: +0 %: 60 mins: Winter	16.200	15.200	15.342	0.142	29.3	0.161	0.000	29.3	44.609	OK
FSR: 30 years: +0 %: 120 mins: Summer	16.200	15.200	15.328	0.128	24.9	0.145	0.000	24.9	51.580	OK
FSR: 30 years: +0 %: 120 mins: Winter	16.200	15.200	15.312	0.112	20.1	0.127	0.000	20.1	57.811	OK
FSR: 30 years: +0 %: 240 mins: Summer	16.200	15.200	15.302	0.102	17.1	0.115	0.000	17.1	65.102	OK

FSR: 30 years: +0 %: 240 mins: Winter	16.200	15.200	15.286	0.086	12.8	0.098	0.000	12.8	73.035	OK
FSR: 30 years: +0 %: 360 mins: Summer	16.200	15.200	15.288	0.088	13.2	0.099	0.000	13.2	73.979	OK
FSR: 30 years: +0 %: 360 mins: Winter	16.200	15.200	15.274	0.074	9.7	0.084	0.000	9.7	82.928	OK
FSR: 30 years: +0 %: 480 mins: Summer	16.200	15.200	15.279	0.079	11.0	0.090	0.000	11.0	80.960	OK
FSR: 30 years: +0 %: 480 mins: Winter	16.200	15.200	15.266	0.066	8.0	0.075	0.000	8.0	90.740	OK
FSR: 30 years: +0 %: 960 mins: Summer	16.200	15.200	15.261	0.061	6.8	0.069	0.000	6.8	100.369	OK
FSR: 30 years: +0 %: 960 mins: Winter	16.200	15.200	15.251	0.051	4.9	0.058	0.000	4.9	112.295	OK
FSR: 30 years: +0 %: 1440 mins: Summer	16.200	15.200	15.252	0.052	5.1	0.059	0.000	5.1	113.678	OK
FSR: 30 years: +0 %: 1440 mins: Winter	16.200	15.200	15.244	0.044	3.7	0.050	0.000	3.7	127.204	OK
FSR: 100 years: +40 %: 15 mins: Summer	16.200	15.200	15.520	0.320	65.9	0.362	0.000	65.1	38.717	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	16.200	15.200	15.534	0.334	68.6	0.378	0.000	68.0	42.089	Surcharged
FSR: 100 years: +40 %: 30 mins: Summer	16.200	15.200	15.506	0.306	62.2	0.346	0.000	62.2	55.002	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	16.200	15.200	15.513	0.313	63.5	0.354	0.000	63.7	60.531	Surcharged
FSR: 100 years: +40 %: 60 mins: Summer	16.200	15.200	15.487	0.287	58.1	0.325	0.000	58.0	73.798	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	16.200	15.200	15.462	0.262	52.7	0.297	0.000	52.6	82.732	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	16.200	15.200	15.400	0.200	45.2	0.226	0.000	45.1	95.637	OK
FSR: 100 years: +40 %: 120 mins: Winter	16.200	15.200	15.367	0.167	36.9	0.189	0.000	36.9	107.228	OK
FSR: 100 years: +40 %: 240 mins: Summer	16.200	15.200	15.348	0.148	31.2	0.167	0.000	31.2	119.634	OK
FSR: 100 years: +40 %: 240 mins: Winter	16.200	15.200	15.332	0.132	23.5	0.149	0.000	23.5	133.920	OK
FSR: 100 years: +40 %: 360 mins: Summer	16.200	15.200	15.325	0.125	23.9	0.141	0.000	23.9	134.559	OK
FSR: 100 years: +40 %: 360 mins: Winter	16.200	15.200	15.392	0.192	17.7	0.217	0.000	17.7	150.596	OK
FSR: 100 years: +40 %: 480 mins: Summer	16.200	15.200	15.320	0.120	19.9	0.136	0.000	19.9	146.239	OK
FSR: 100 years: +40 %: 480 mins: Winter	16.200	15.200	15.701	0.501	14.4	0.567	0.000	14.4	163.967	Surcharged
FSR: 100 years: +40 %: 960 mins: Summer	16.200	15.200	15.342	0.142	12.1	0.161	0.000	12.1	177.815	OK

FSR: 100 years: +40 %: 960 mins: Winter	16.200	15.200	15.706	0.506	8.7	0.572	0.000	8.7	199.861	Surcharged
FSR: 100 years: +40 %: 1440 mins: Summer	16.200	15.200	15.331	0.131	9.0	0.148	0.000	9.0	198.793	OK
FSR: 100 years: +40 %: 1440 mins: Winter	16.200	15.200	15.704	0.504	6.5	0.570	0.000	6.5	222.005	Surcharged

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Junctions Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for S103: Rank By: Max. Flooded Volume

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 1 years: +0 %: 15 mins: Summer	15.700	14.460	14.605	0.145	1.5	0.164	0.000	1.0	1.014	OK
FSR: 1 years: +0 %: 15 mins: Winter	15.700	14.460	14.611	0.151	1.0	0.171	0.000	1.0	1.036	OK
FSR: 1 years: +0 %: 30 mins: Summer	15.700	14.460	14.624	0.164	2.6	0.185	0.000	1.0	2.331	OK
FSR: 1 years: +0 %: 30 mins: Winter	15.700	14.460	14.634	0.174	1.4	0.197	0.000	1.0	2.072	OK
FSR: 1 years: +0 %: 60 mins: Summer	15.700	14.460	14.647	0.187	1.2	0.212	0.000	1.0	3.757	OK
FSR: 1 years: +0 %: 60 mins: Winter	15.700	14.460	14.660	0.200	2.0	0.226	0.000	1.0	3.588	OK
FSR: 1 years: +0 %: 120 mins: Summer	15.700	14.460	14.672	0.212	1.5	0.239	0.000	1.0	7.256	OK
FSR: 1 years: +0 %: 120 mins: Winter	15.700	14.460	14.687	0.227	1.5	0.257	0.000	1.0	7.562	Surcharged
FSR: 1 years: +0 %: 240 mins: Summer	15.700	14.460	14.692	0.232	1.1	0.263	0.000	1.0	15.421	Surcharged
FSR: 1 years: +0 %: 240 mins: Winter	15.700	14.460	14.713	0.253	1.1	0.286	0.000	1.0	16.120	Surcharged
FSR: 1 years: +0 %: 360 mins: Summer	15.700	14.460	14.700	0.240	1.0	0.271	0.000	1.0	24.961	Surcharged
FSR: 1 years: +0 %: 360 mins: Winter	15.700	14.460	14.722	0.262	1.0	0.296	0.000	1.0	24.735	Surcharged
FSR: 1 years: +0 %: 480 mins: Summer	15.700	14.460	14.703	0.243	1.0	0.275	0.000	1.0	35.104	Surcharged
FSR: 1 years: +0 %: 480 mins: Winter	15.700	14.460	14.724	0.264	1.0	0.299	0.000	1.0	35.134	Surcharged
FSR: 1 years: +0 %: 960 mins: Summer	15.700	14.460	14.703	0.243	1.0	0.275	0.000	1.0	48.714	Surcharged
FSR: 1 years: +0 %: 960 mins: Winter	15.700	14.460	14.720	0.260	1.0	0.294	0.000	1.0	54.419	Surcharged
FSR: 1 years: +0 %: 1440 mins: Summer	15.700	14.460	14.696	0.236	1.0	0.267	0.000	1.0	57.726	Surcharged
FSR: 1 years: +0 %: 1440 mins: Winter	15.700	14.460	14.704	0.244	1.0	0.277	0.000	1.0	64.679	Surcharged
FSR: 30 years: +0 %: 15 mins: Summer	15.700	14.460	14.690	0.230	3.5	0.260	0.000	0.6	0.809	Surcharged
FSR: 30 years: +0 %: 15 mins: Winter	15.700	14.460	14.707	0.247	4.8	0.279	0.000	0.9	0.842	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	15.700	14.460	14.741	0.281	3.2	0.318	0.000	0.8	1.918	Surcharged
FSR: 30 years: +0 %: 30 mins: Winter	15.700	14.460	14.764	0.304	2.7	0.344	0.000	1.0	2.007	Surcharged
FSR: 30 years: +0 %: 60 mins: Summer	15.700	14.460	14.798	0.338	1.2	0.382	0.000	1.0	4.464	Surcharged
FSR: 30 years: +0 %: 60 mins: Winter	15.700	14.460	14.829	0.369	1.2	0.418	0.000	1.0	4.668	Surcharged
FSR: 30 years: +0 %: 120 mins: Summer	15.700	14.460	14.858	0.398	1.1	0.450	0.000	1.0	10.070	Surcharged
FSR: 30 years: +0 %: 120 mins: Winter	15.700	14.460	14.898	0.438	1.2	0.495	0.000	1.0	10.476	Surcharged
FSR: 30 years: +0 %: 240 mins: Summer	15.700	14.460	14.909	0.449	1.1	0.508	0.000	1.0	21.682	Surcharged

FSR: 30 years: +0 %: 240 mins: Winter	15.700	14.460	14.960	0.500	1.2	0.566	0.000	1.0	22.592	Surcharged
FSR: 30 years: +0 %: 360 mins: Summer	15.700	14.460	14.930	0.470	1.0	0.532	0.000	1.0	33.214	Surcharged
FSR: 30 years: +0 %: 360 mins: Winter	15.700	14.460	14.987	0.527	1.0	0.596	0.000	1.0	34.698	Surcharged
FSR: 30 years: +0 %: 480 mins: Summer	15.700	14.460	14.938	0.478	1.0	0.541	0.000	1.0	44.421	Surcharged
FSR: 30 years: +0 %: 480 mins: Winter	15.700	14.460	15.001	0.541	1.0	0.612	0.000	1.0	46.564	Surcharged
FSR: 30 years: +0 %: 960 mins: Summer	15.700	14.460	14.940	0.480	1.0	0.543	0.000	1.0	84.046	Surcharged
FSR: 30 years: +0 %: 960 mins: Winter	15.700	14.460	15.004	0.544	1.0	0.615	0.000	1.0	89.318	Surcharged
FSR: 30 years: +0 %: 1440 mins: Summer	15.700	14.460	14.932	0.472	1.0	0.534	0.000	1.0	112.926	Surcharged
FSR: 30 years: +0 %: 1440 mins: Winter	15.700	14.460	14.992	0.532	1.0	0.601	0.000	1.0	125.911	Surcharged
FSR: 100 years: +40 %: 15 mins: Summer	15.700	14.460	14.802	0.342	1.1	0.386	0.000	0.8	0.971	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	15.700	14.460	14.823	0.363	2.9	0.411	0.000	0.8	1.012	Surcharged
FSR: 100 years: +40 %: 30 mins: Summer	15.700	14.460	14.902	0.442	1.2	0.500	0.000	0.9	2.420	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	15.700	14.460	14.937	0.477	1.9	0.540	0.000	0.9	2.524	Surcharged
FSR: 100 years: +40 %: 60 mins: Summer	15.700	14.460	15.014	0.554	1.4	0.626	0.000	1.0	5.758	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	15.700	14.460	15.071	0.611	1.5	0.691	0.000	1.0	5.995	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	15.700	14.460	15.134	0.674	1.6	0.762	0.000	1.1	13.005	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	15.700	14.460	15.208	0.748	1.2	0.846	0.000	1.1	13.534	Surcharged
FSR: 100 years: +40 %: 240 mins: Summer	15.700	14.460	15.244	0.784	1.2	0.887	0.000	1.2	28.160	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	15.700	14.460	15.332	0.872	1.3	0.986	0.000	1.2	29.348	Surcharged
FSR: 100 years: +40 %: 360 mins: Summer	15.700	14.460	15.292	0.832	1.2	0.941	0.000	1.2	43.421	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	15.700	14.460	15.392	0.932	1.3	1.054	0.000	1.2	45.279	Surcharged
FSR: 100 years: +40 %: 480 mins: Summer	15.700	14.460	15.320	0.860	1.2	0.973	0.000	1.2	58.588	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	15.700	14.460	15.701	1.241	2.4	2.312	0.909	1.4	62.030	Flood
FSR: 100 years: +40 %: 960 mins: Summer	15.700	14.460	15.342	0.882	1.2	0.998	0.000	1.2	115.763	Surcharged

FSR: 100 years: +40 %: 960 mins: Winter	15.700	14.460	15.705	1.245	3.3	6.428	5.026	1.4	124.714	Flood
FSR: 100 years: +40 %: 1440 mins: Summer	15.700	14.460	15.330	0.870	1.2	0.984	0.000	1.2	164.436	Surcharged
FSR: 100 years: +40 %: 1440 mins: Winter	15.700	14.460	15.704	1.244	2.5	5.140	3.737	1.4	177.215	Flood

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Junctions Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for S104: Rank By: Max. Flooded Volume

Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
FSR: 1 years: +0 %: 15 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	0.986	OK
FSR: 1 years: +0 %: 15 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	1.009	OK
FSR: 1 years: +0 %: 30 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	2.304	OK
FSR: 1 years: +0 %: 30 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	2.047	OK
FSR: 1 years: +0 %: 60 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	3.734	OK
FSR: 1 years: +0 %: 60 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	3.567	OK
FSR: 1 years: +0 %: 120 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	7.234	OK
FSR: 1 years: +0 %: 120 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	7.541	OK
FSR: 1 years: +0 %: 240 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	15.398	OK
FSR: 1 years: +0 %: 240 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	16.099	OK
FSR: 1 years: +0 %: 360 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	24.934	OK
FSR: 1 years: +0 %: 360 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	24.712	OK
FSR: 1 years: +0 %: 480 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	35.086	OK
FSR: 1 years: +0 %: 480 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	35.107	OK
FSR: 1 years: +0 %: 960 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	48.709	OK
FSR: 1 years: +0 %: 960 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	54.414	OK
FSR: 1 years: +0 %: 1440 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	57.721	OK
FSR: 1 years: +0 %: 1440 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	64.674	OK
FSR: 30 years: +0 %: 15 mins: Summer	15.500	14.400	14.418	0.018	0.6	0.000	0.000	0.6	0.773	OK
FSR: 30 years: +0 %: 15 mins: Winter	15.500	14.400	14.419	0.019	0.7	0.000	0.000	0.7	0.810	OK
FSR: 30 years: +0 %: 30 mins: Summer	15.500	14.400	14.419	0.019	0.7	0.000	0.000	0.7	1.896	OK
FSR: 30 years: +0 %: 30 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	1.983	OK
FSR: 30 years: +0 %: 60 mins: Summer	15.500	14.400	14.422	0.022	0.9	0.000	0.000	0.9	4.441	OK
FSR: 30 years: +0 %: 60 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	4.643	OK
FSR: 30 years: +0 %: 120 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	10.046	OK
FSR: 30 years: +0 %: 120 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	10.451	OK
FSR: 30 years: +0 %: 240 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	21.657	OK

FSR: 30 years: +0 %: 240 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	22.567	OK
FSR: 30 years: +0 %: 360 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	33.190	OK
FSR: 30 years: +0 %: 360 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	34.673	OK
FSR: 30 years: +0 %: 480 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	44.397	OK
FSR: 30 years: +0 %: 480 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	46.540	OK
FSR: 30 years: +0 %: 960 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	84.024	OK
FSR: 30 years: +0 %: 960 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	89.296	OK
FSR: 30 years: +0 %: 1440 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	112.920	OK
FSR: 30 years: +0 %: 1440 mins: Winter	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	125.901	OK
FSR: 100 years: +40 %: 15 mins: Summer	15.500	14.400	14.420	0.020	0.8	0.000	0.000	0.8	0.945	OK
FSR: 100 years: +40 %: 15 mins: Winter	15.500	14.400	14.420	0.020	0.8	0.000	0.000	0.8	0.986	OK
FSR: 100 years: +40 %: 30 mins: Summer	15.500	14.400	14.421	0.021	0.9	0.000	0.000	0.9	2.394	OK
FSR: 100 years: +40 %: 30 mins: Winter	15.500	14.400	14.421	0.021	0.9	0.000	0.000	0.9	2.498	OK
FSR: 100 years: +40 %: 60 mins: Summer	15.500	14.400	14.422	0.022	1.0	0.000	0.000	1.0	5.731	OK
FSR: 100 years: +40 %: 60 mins: Winter	15.500	14.400	14.423	0.023	1.0	0.000	0.000	1.0	5.967	OK
FSR: 100 years: +40 %: 120 mins: Summer	15.500	14.400	14.423	0.023	1.1	0.000	0.000	1.1	12.977	OK
FSR: 100 years: +40 %: 120 mins: Winter	15.500	14.400	14.424	0.024	1.1	0.000	0.000	1.1	13.506	OK
FSR: 100 years: +40 %: 240 mins: Summer	15.500	14.400	14.424	0.024	1.2	0.000	0.000	1.2	28.131	OK
FSR: 100 years: +40 %: 240 mins: Winter	15.500	14.400	14.425	0.025	1.2	0.000	0.000	1.2	29.319	OK
FSR: 100 years: +40 %: 360 mins: Summer	15.500	14.400	14.425	0.025	1.2	0.000	0.000	1.2	43.393	OK
FSR: 100 years: +40 %: 360 mins: Winter	15.500	14.400	14.425	0.025	1.2	0.000	0.000	1.2	45.249	OK
FSR: 100 years: +40 %: 480 mins: Summer	15.500	14.400	14.425	0.025	1.2	0.000	0.000	1.2	58.559	OK
FSR: 100 years: +40 %: 480 mins: Winter	15.500	14.400	14.427	0.027	1.4	0.000	0.000	1.4	61.996	OK
FSR: 100 years: +40 %: 960 mins: Summer	15.500	14.400	14.425	0.025	1.2	0.000	0.000	1.2	115.737	OK

FSR: 100 years: +40 %: 960 mins: Winter	15.500	14.400	14.427	0.027	1.4	0.000	0.000	1.4	124.409	OK
FSR: 100 years: +40 %: 1440 mins: Summer	15.500	14.400	14.425	0.025	1.2	0.000	0.000	1.2	164.413	OK
FSR: 100 years: +40 %: 1440 mins: Winter	15.500	14.400	14.427	0.027	1.4	0.000	0.000	1.4	177.190	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Stormwater Controls Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for Infiltration Trench: Rank By: Max. Resident Volume

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FSR: 1 years: +0 %: 15 mins: Summer	15.539	15.524	0.211	0.224	3.0	0.535	0.000	0.000	2.4	0.901	78.077	OK
FSR: 1 years: +0 %: 15 mins: Winter	15.544	15.528	0.217	0.228	3.2	0.547	0.000	0.000	2.7	1.057	77.550	OK
FSR: 1 years: +0 %: 30 mins: Summer	15.528	15.519	0.201	0.219	2.1	0.518	0.000	0.000	2.1	1.391	78.746	OK
FSR: 1 years: +0 %: 30 mins: Winter	15.530	15.521	0.203	0.221	2.2	0.522	0.000	0.000	2.2	1.607	78.576	OK
FSR: 1 years: +0 %: 60 mins: Summer	15.525	15.517	0.198	0.217	1.9	0.512	0.000	0.000	1.9	2.024	79.004	OK
FSR: 1 years: +0 %: 60 mins: Winter	15.522	15.514	0.194	0.214	1.7	0.504	0.000	0.000	1.7	2.303	79.338	OK
FSR: 1 years: +0 %: 120 mins: Summer	15.517	15.511	0.189	0.211	1.5	0.494	0.000	0.000	1.5	2.830	79.756	OK
FSR: 1 years: +0 %: 120 mins: Winter	15.511	15.506	0.183	0.206	1.2	0.480	0.000	0.000	1.2	3.224	80.308	OK
FSR: 1 years: +0 %: 240 mins: Summer	15.508	15.504	0.180	0.204	1.1	0.474	0.000	0.000	1.1	3.930	80.567	OK
FSR: 1 years: +0 %: 240 mins: Winter	15.502	15.499	0.174	0.199	0.8	0.460	0.000	0.000	0.8	4.408	81.114	OK
FSR: 1 years: +0 %: 360 mins: Summer	15.503	15.500	0.176	0.200	0.9	0.463	0.000	0.000	0.9	4.720	81.006	OK
FSR: 1 years: +0 %: 360 mins: Winter	15.497	15.495	0.170	0.195	0.6	0.451	0.000	0.000	0.6	5.257	81.522	OK
FSR: 1 years: +0 %: 480 mins: Summer	15.500	15.497	0.173	0.197	0.7	0.456	0.000	0.000	0.7	5.334	81.292	OK
FSR: 1 years: +0 %: 480 mins: Winter	15.495	15.493	0.167	0.193	0.5	0.445	0.000	0.000	0.5	5.963	81.763	OK
FSR: 1 years: +0 %: 960 mins: Summer	15.493	15.492	0.166	0.192	0.5	0.441	0.000	0.000	0.5	7.410	81.913	OK
FSR: 1 years: +0 %: 960 mins: Winter	15.490	15.488	0.162	0.188	0.3	0.433	0.000	0.000	0.3	8.182	82.260	OK

FSR: 1 years: +0 %: 1440 mins: Summer	15.490	15.489	0.163	0.189	0.4	0.435	0.000	0.000	0.4	9.086	82.177	OK
FSR: 1 years: +0 %: 1440 mins: Winter	15.487	15.486	0.160	0.186	0.3	0.428	0.000	0.000	0.3	10.166	82.463	OK
FSR: 30 years: +0 %: 15 mins: Summer	15.640	15.569	0.313	0.269	7.3	0.716	0.000	0.000	6.4	2.769	70.654	OK
FSR: 30 years: +0 %: 15 mins: Winter	15.651	15.573	0.324	0.273	7.7	0.734	0.000	0.000	6.8	3.153	69.904	OK
FSR: 30 years: +0 %: 30 mins: Summer	15.595	15.555	0.267	0.255	5.1	0.646	0.000	0.000	5.0	3.981	73.522	OK
FSR: 30 years: +0 %: 30 mins: Winter	15.601	15.558	0.274	0.258	5.3	0.657	0.000	0.000	5.3	4.516	73.055	OK
FSR: 30 years: +0 %: 60 mins: Summer	15.585	15.551	0.257	0.251	4.6	0.628	0.000	0.000	4.6	5.427	74.248	OK
FSR: 30 years: +0 %: 60 mins: Winter	15.570	15.546	0.243	0.246	4.2	0.604	0.000	0.000	4.2	6.130	75.240	OK
FSR: 30 years: +0 %: 120 mins: Summer	15.557	15.539	0.229	0.239	3.6	0.577	0.000	0.000	3.5	7.164	76.316	OK
FSR: 30 years: +0 %: 120 mins: Winter	15.543	15.530	0.216	0.230	2.9	0.550	0.000	0.000	2.9	8.045	77.425	OK
FSR: 30 years: +0 %: 240 mins: Summer	15.535	15.524	0.208	0.224	2.4	0.533	0.000	0.000	2.4	9.160	78.125	OK
FSR: 30 years: +0 %: 240 mins: Winter	15.524	15.516	0.196	0.216	1.8	0.509	0.000	0.000	1.8	10.283	79.144	OK
FSR: 30 years: +0 %: 360 mins: Summer	15.525	15.517	0.197	0.217	1.9	0.511	0.000	0.000	1.9	10.474	79.056	OK
FSR: 30 years: +0 %: 360 mins: Winter	15.515	15.509	0.187	0.209	1.4	0.489	0.000	0.000	1.4	11.766	79.943	OK
FSR: 30 years: +0 %: 480 mins: Summer	15.519	15.512	0.191	0.212	1.6	0.497	0.000	0.000	1.6	11.540	79.609	OK
FSR: 30 years: +0 %: 480 mins: Winter	15.509	15.505	0.182	0.205	1.1	0.477	0.000	0.000	1.1	12.930	80.427	OK
FSR: 30 years: +0 %: 960 mins: Summer	15.506	15.502	0.178	0.202	1.0	0.469	0.000	0.000	1.0	14.539	80.773	OK

FSR: 30 years: +0 %: 960 mins: Winter	15.499	15.497	0.172	0.197	0.7	0.454	0.000	0.000	0.7	16.235	81.360	OK
FSR: 30 years: +0 %: 1440 mins: Summer	15.500	15.497	0.173	0.197	0.7	0.456	0.000	0.000	0.7	16.701	81.292	OK
FSR: 30 years: +0 %: 1440 mins: Winter	15.495	15.493	0.167	0.193	0.5	0.445	0.000	0.000	0.5	18.661	81.763	OK
FSR: 100 years: +40 %: 15 mins: Summer	15.830	15.632	0.503	0.332	13.0	1.030	0.000	0.000	9.8	5.164	57.742	OK
FSR: 100 years: +40 %: 15 mins: Winter	15.855	15.676	0.528	0.376	13.6	1.117	0.000	0.000	6.3	5.053	54.192	OK
FSR: 100 years: +40 %: 30 mins: Summer	15.749	15.620	0.421	0.320	9.2	0.914	0.000	0.000	9.1	7.590	62.510	OK
FSR: 100 years: +40 %: 30 mins: Winter	15.753	15.649	0.426	0.349	9.7	0.959	0.000	0.000	9.9	8.205	60.661	OK
FSR: 100 years: +40 %: 60 mins: Summer	15.713	15.603	0.386	0.303	8.5	0.850	0.000	0.000	8.5	10.286	65.142	OK
FSR: 100 years: +40 %: 60 mins: Winter	15.673	15.585	0.346	0.285	7.7	0.778	0.000	0.000	7.6	11.571	68.092	OK
FSR: 100 years: +40 %: 120 mins: Summer	15.634	15.570	0.307	0.270	6.5	0.713	0.000	0.000	6.5	13.436	70.769	OK
FSR: 100 years: +40 %: 120 mins: Winter	15.600	15.558	0.273	0.258	5.3	0.655	0.000	0.000	5.3	15.091	73.127	OK
FSR: 100 years: +40 %: 240 mins: Summer	15.580	15.549	0.253	0.249	4.5	0.619	0.000	0.000	4.4	16.917	74.595	OK
FSR: 100 years: +40 %: 240 mins: Winter	15.553	15.536	0.225	0.236	3.4	0.570	0.000	0.000	3.3	18.958	76.638	OK
FSR: 100 years: +40 %: 360 mins: Summer	15.554	15.537	0.226	0.237	3.4	0.572	0.000	0.000	3.4	19.100	76.542	OK
FSR: 100 years: +40 %: 360 mins: Winter	15.537	15.526	0.210	0.226	2.5	0.537	0.000	0.000	2.5	21.411	77.977	OK
FSR: 100 years: +40 %: 480 mins: Summer	15.543	15.530	0.216	0.230	2.8	0.550	0.000	0.000	2.8	20.823	77.457	OK
FSR: 100 years: +40 %: 480 mins: Winter	15.704	15.704	0.376	0.404	2.1	0.961	0.000	0.000	2.1	23.286	60.566	OK

FSR: 100 years: +40 %: 960 mins: Summer	15.522	15.514	0.194	0.214	1.7	0.504	0.000	0.000	1.7	25.568	79.338	OK
FSR: 100 years: +40 %: 960 mins: Winter	15.709	15.710	0.382	0.410	1.9	0.974	0.000	0.000	1.8	28.024	60.050	OK
FSR: 100 years: +40 %: 1440 mins: Summer	15.513	15.507	0.185	0.207	1.3	0.484	0.000	0.000	1.3	28.763	80.153	OK
FSR: 100 years: +40 %: 1440 mins: Winter	15.708	15.708	0.381	0.408	2.0	0.971	0.000	0.000	2.4	31.542	60.190	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Stormwater Controls Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for Infiltration Trench (1): Rank By: Max. Resident Volume

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FSR: 1 years: +0 %: 15 mins: Summer	15.538	15.523	0.210	0.223	3.0	0.528	0.000	0.000	2.3	0.887	78.141	OK
FSR: 1 years: +0 %: 15 mins: Winter	15.543	15.528	0.216	0.228	3.1	0.541	0.000	0.000	2.7	1.039	77.624	OK
FSR: 1 years: +0 %: 30 mins: Summer	15.527	15.519	0.200	0.219	2.0	0.513	0.000	0.000	2.0	1.370	78.799	OK
FSR: 1 years: +0 %: 30 mins: Winter	15.529	15.520	0.202	0.220	2.1	0.517	0.000	0.000	2.1	1.581	78.629	OK
FSR: 1 years: +0 %: 60 mins: Summer	15.524	15.517	0.197	0.217	1.9	0.506	0.000	0.000	1.9	1.986	79.058	OK
FSR: 1 years: +0 %: 60 mins: Winter	15.521	15.514	0.194	0.214	1.7	0.498	0.000	0.000	1.7	2.268	79.394	OK
FSR: 1 years: +0 %: 120 mins: Summer	15.516	15.510	0.189	0.210	1.5	0.488	0.000	0.000	1.5	2.788	79.795	OK
FSR: 1 years: +0 %: 120 mins: Winter	15.510	15.506	0.183	0.206	1.2	0.476	0.000	0.000	1.2	3.157	80.329	OK
FSR: 1 years: +0 %: 240 mins: Summer	15.507	15.503	0.180	0.203	1.1	0.469	0.000	0.000	1.1	3.885	80.589	OK
FSR: 1 years: +0 %: 240 mins: Winter	15.501	15.499	0.174	0.199	0.8	0.456	0.000	0.000	0.8	4.354	81.137	OK
FSR: 1 years: +0 %: 360 mins: Summer	15.502	15.499	0.175	0.199	0.8	0.458	0.000	0.000	0.8	4.623	81.049	OK
FSR: 1 years: +0 %: 360 mins: Winter	15.497	15.495	0.170	0.195	0.6	0.446	0.000	0.000	0.6	5.198	81.546	OK
FSR: 1 years: +0 %: 480 mins: Summer	15.499	15.497	0.172	0.197	0.7	0.452	0.000	0.000	0.7	5.263	81.315	OK
FSR: 1 years: +0 %: 480 mins: Winter	15.494	15.493	0.167	0.193	0.5	0.440	0.000	0.000	0.5	5.882	81.787	OK
FSR: 1 years: +0 %: 960 mins: Summer	15.493	15.492	0.166	0.192	0.5	0.437	0.000	0.000	0.5	7.334	81.913	OK
FSR: 1 years: +0 %: 960 mins: Winter	15.489	15.488	0.162	0.188	0.3	0.429	0.000	0.000	0.3	8.121	82.260	OK

FSR: 1 years: +0 %: 1440 mins: Summer	15.490	15.489	0.163	0.189	0.4	0.430	0.000	0.000	0.4	8.973	82.205	OK
FSR: 1 years: +0 %: 1440 mins: Winter	15.487	15.486	0.160	0.186	0.3	0.423	0.000	0.000	0.3	9.953	82.493	OK
FSR: 30 years: +0 %: 15 mins: Summer	15.637	15.569	0.310	0.269	7.2	0.705	0.000	0.000	6.3	2.725	70.836	OK
FSR: 30 years: +0 %: 15 mins: Winter	15.648	15.572	0.321	0.272	7.6	0.723	0.000	0.000	6.7	3.099	70.110	OK
FSR: 30 years: +0 %: 30 mins: Summer	15.593	15.555	0.265	0.255	5.0	0.637	0.000	0.000	5.0	3.928	73.661	OK
FSR: 30 years: +0 %: 30 mins: Winter	15.599	15.557	0.271	0.257	5.2	0.648	0.000	0.000	5.2	4.441	73.215	OK
FSR: 30 years: +0 %: 60 mins: Summer	15.583	15.550	0.256	0.250	4.6	0.620	0.000	0.000	4.6	5.355	74.366	OK
FSR: 30 years: +0 %: 60 mins: Winter	15.568	15.545	0.241	0.245	4.1	0.596	0.000	0.000	4.1	6.044	75.361	OK
FSR: 30 years: +0 %: 120 mins: Summer	15.555	15.538	0.228	0.238	3.5	0.570	0.000	0.000	3.5	7.056	76.403	OK
FSR: 30 years: +0 %: 120 mins: Winter	15.542	15.530	0.215	0.230	2.8	0.544	0.000	0.000	2.8	7.926	77.494	OK
FSR: 30 years: +0 %: 240 mins: Summer	15.534	15.524	0.207	0.224	2.4	0.528	0.000	0.000	2.4	9.018	78.178	OK
FSR: 30 years: +0 %: 240 mins: Winter	15.523	15.515	0.196	0.215	1.8	0.503	0.000	0.000	1.8	10.117	79.198	OK
FSR: 30 years: +0 %: 360 mins: Summer	15.524	15.516	0.197	0.216	1.9	0.505	0.000	0.000	1.8	10.320	79.111	OK
FSR: 30 years: +0 %: 360 mins: Winter	15.514	15.509	0.187	0.209	1.4	0.484	0.000	0.000	1.4	11.572	79.982	OK
FSR: 30 years: +0 %: 480 mins: Summer	15.518	15.512	0.191	0.212	1.6	0.492	0.000	0.000	1.5	11.364	79.647	OK
FSR: 30 years: +0 %: 480 mins: Winter	15.509	15.504	0.182	0.204	1.1	0.472	0.000	0.000	1.1	12.768	80.468	OK
FSR: 30 years: +0 %: 960 mins: Summer	15.505	15.502	0.178	0.202	1.0	0.464	0.000	0.000	1.0	14.394	80.794	OK

FSR: 30 years: +0 %: 960 mins: Winter	15.499	15.496	0.172	0.196	0.7	0.450	0.000	0.000	0.7	16.012	81.383	OK
FSR: 30 years: +0 %: 1440 mins: Summer	15.499	15.497	0.172	0.197	0.7	0.452	0.000	0.000	0.7	16.510	81.315	OK
FSR: 30 years: +0 %: 1440 mins: Winter	15.494	15.493	0.167	0.193	0.5	0.440	0.000	0.000	0.5	18.373	81.787	OK
FSR: 100 years: +40 %: 15 mins: Summer	15.824	15.632	0.496	0.332	12.8	1.016	0.000	0.000	9.3	5.112	57.992	OK
FSR: 100 years: +40 %: 15 mins: Winter	15.865	15.650	0.538	0.350	13.4	1.088	0.000	0.000	9.6	5.417	55.006	OK
FSR: 100 years: +40 %: 30 mins: Summer	15.746	15.623	0.419	0.323	9.1	0.907	0.000	0.000	8.9	7.485	62.464	OK
FSR: 100 years: +40 %: 30 mins: Winter	15.764	15.621	0.437	0.321	9.5	0.928	0.000	0.000	10.0	7.911	61.616	OK
FSR: 100 years: +40 %: 60 mins: Summer	15.711	15.605	0.383	0.305	8.4	0.841	0.000	0.000	8.3	10.144	65.197	OK
FSR: 100 years: +40 %: 60 mins: Winter	15.670	15.585	0.343	0.285	7.6	0.768	0.000	0.000	7.5	11.394	68.232	OK
FSR: 100 years: +40 %: 120 mins: Summer	15.631	15.570	0.304	0.270	6.4	0.702	0.000	0.000	6.4	13.239	70.969	OK
FSR: 100 years: +40 %: 120 mins: Winter	15.598	15.557	0.270	0.257	5.2	0.646	0.000	0.000	5.2	14.857	73.287	OK
FSR: 100 years: +40 %: 240 mins: Summer	15.577	15.548	0.250	0.248	4.4	0.609	0.000	0.000	4.4	16.654	74.795	OK
FSR: 100 years: +40 %: 240 mins: Winter	15.551	15.536	0.224	0.236	3.3	0.563	0.000	0.000	3.3	18.711	76.724	OK
FSR: 100 years: +40 %: 360 mins: Summer	15.553	15.536	0.225	0.236	3.4	0.565	0.000	0.000	3.4	18.819	76.628	OK
FSR: 100 years: +40 %: 360 mins: Winter	15.536	15.525	0.209	0.225	2.5	0.531	0.000	0.000	2.5	21.095	78.046	OK
FSR: 100 years: +40 %: 480 mins: Summer	15.542	15.529	0.215	0.229	2.8	0.543	0.000	0.000	2.8	20.519	77.526	OK
FSR: 100 years: +40 %: 480 mins: Winter	15.707	15.705	0.380	0.405	2.0	0.957	0.000	0.000	2.0	22.994	60.426	OK

FSR: 100 years: +40 %: 960 mins: Summer	15.521	15.514	0.194	0.214	1.7	0.499	0.000	0.000	1.7	25.173	79.376	OK
FSR: 100 years: +40 %: 960 mins: Winter	15.710	15.709	0.383	0.409	1.2	0.967	0.000	0.000	2.5	27.778	60.007	OK
FSR: 100 years: +40 %: 1440 mins: Summer	15.512	15.507	0.185	0.207	1.3	0.479	0.000	0.000	1.3	28.407	80.192	OK
FSR: 100 years: +40 %: 1440 mins: Winter	15.708	15.706	0.380	0.406	2.4	0.961	0.000	0.000	2.2	31.056	60.243	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Stormwater Controls Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for Cellular Storage: Rank By: Max. Resident Volume

Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
FSR: 1 years: +0 %: 15 mins: Summer	14.606	14.606	0.046	0.046	12.6	7.006	0.000	0.000	1.5	1.353	94.606	OK
FSR: 1 years: +0 %: 15 mins: Winter	14.612	14.612	0.052	0.052	13.8	8.017	0.000	0.000	1.0	1.395	93.828	OK
FSR: 1 years: +0 %: 30 mins: Summer	14.624	14.624	0.064	0.064	14.4	9.881	0.000	0.000	2.6	2.706	92.392	OK
FSR: 1 years: +0 %: 30 mins: Winter	14.634	14.634	0.074	0.074	15.2	11.377	0.000	0.000	1.4	2.476	91.240	OK
FSR: 1 years: +0 %: 60 mins: Summer	14.647	14.647	0.087	0.087	13.4	13.404	0.000	0.000	1.2	4.178	89.680	OK
FSR: 1 years: +0 %: 60 mins: Winter	14.660	14.660	0.100	0.100	12.0	15.362	0.000	0.000	2.0	4.043	88.172	OK
FSR: 1 years: +0 %: 120 mins: Summer	14.672	14.672	0.112	0.112	10.5	17.180	0.000	0.000	1.5	7.706	86.772	OK
FSR: 1 years: +0 %: 120 mins: Winter	14.687	14.687	0.127	0.127	8.4	19.598	0.000	0.000	1.5	8.049	84.910	OK
FSR: 1 years: +0 %: 240 mins: Summer	14.692	14.692	0.132	0.132	7.5	20.389	0.000	0.000	1.1	15.855	84.302	OK
FSR: 1 years: +0 %: 240 mins: Winter	14.713	14.713	0.153	0.153	5.7	23.500	0.000	0.000	1.1	16.598	81.906	OK
FSR: 1 years: +0 %: 360 mins: Summer	14.700	14.700	0.140	0.140	6.0	21.489	0.000	0.000	1.0	25.319	83.455	OK
FSR: 1 years: +0 %: 360 mins: Winter	14.722	14.722	0.162	0.162	4.4	24.873	0.000	0.000	1.0	25.165	80.849	OK
FSR: 1 years: +0 %: 480 mins: Summer	14.703	14.703	0.143	0.143	5.1	21.973	0.000	0.000	1.0	35.216	83.081	OK
FSR: 1 years: +0 %: 480 mins: Winter	14.724	14.724	0.164	0.164	3.7	25.254	0.000	0.000	1.0	35.463	80.556	OK
FSR: 1 years: +0 %: 960 mins: Summer	14.703	14.703	0.143	0.143	3.3	22.050	0.000	0.000	1.0	48.733	83.022	OK
FSR: 1 years: +0 %: 960 mins: Winter	14.720	14.720	0.160	0.160	2.4	24.631	0.000	0.000	1.0	54.438	81.035	OK

FSR: 1 years: +0 %: 1440 mins: Summer	14.696	14.696	0.136	0.136	2.6	20.934	0.000	0.000	1.0	57.744	83.882	OK
FSR: 1 years: +0 %: 1440 mins: Winter	14.705	14.705	0.145	0.145	1.9	22.243	0.000	0.000	1.0	64.696	82.874	OK
FSR: 30 years: +0 %: 15 mins: Summer	14.690	14.690	0.130	0.130	42.1	19.956	0.000	0.000	3.5	1.357	84.634	OK
FSR: 30 years: +0 %: 15 mins: Winter	14.707	14.707	0.147	0.147	44.0	22.563	0.000	0.000	4.8	1.421	82.627	OK
FSR: 30 years: +0 %: 30 mins: Summer	14.741	14.741	0.181	0.181	35.4	27.838	0.000	0.000	3.2	2.544	78.566	OK
FSR: 30 years: +0 %: 30 mins: Winter	14.764	14.764	0.204	0.204	37.3	31.435	0.000	0.000	2.7	2.663	75.796	OK
FSR: 30 years: +0 %: 60 mins: Summer	14.798	14.798	0.238	0.238	32.6	36.654	0.000	0.000	1.2	5.150	71.778	OK
FSR: 30 years: +0 %: 60 mins: Winter	14.829	14.829	0.269	0.269	29.3	41.439	0.000	0.000	1.2	5.391	68.094	OK
FSR: 30 years: +0 %: 120 mins: Summer	14.858	14.858	0.298	0.298	24.9	45.866	0.000	0.000	1.1	10.804	64.685	OK
FSR: 30 years: +0 %: 120 mins: Winter	14.898	14.898	0.338	0.338	20.1	51.982	0.000	0.000	1.2	11.254	59.975	OK
FSR: 30 years: +0 %: 240 mins: Summer	14.910	14.910	0.350	0.350	17.1	53.797	0.000	0.000	1.1	22.429	58.578	OK
FSR: 30 years: +0 %: 240 mins: Winter	14.960	14.960	0.400	0.400	12.8	61.598	0.000	0.000	1.2	23.392	52.572	OK
FSR: 30 years: +0 %: 360 mins: Summer	14.930	14.930	0.370	0.370	13.2	56.953	0.000	0.000	1.0	33.941	56.148	OK
FSR: 30 years: +0 %: 360 mins: Winter	14.987	14.987	0.427	0.427	9.7	65.781	0.000	0.000	1.0	35.481	49.351	OK
FSR: 30 years: +0 %: 480 mins: Summer	14.938	14.938	0.378	0.378	11.0	58.239	0.000	0.000	1.0	45.115	55.158	OK
FSR: 30 years: +0 %: 480 mins: Winter	15.001	15.001	0.441	0.441	8.0	67.886	0.000	0.000	1.0	47.317	47.730	OK
FSR: 30 years: +0 %: 960 mins: Summer	14.940	14.940	0.380	0.380	6.8	58.488	0.000	0.000	1.0	84.531	54.966	OK

FSR: 30 years: +0 %: 960 mins: Winter	15.004	15.004	0.444	0.444	4.9	68.281	0.000	0.000	1.0	89.889	47.426	OK
FSR: 30 years: +0 %: 1440 mins: Summer	14.932	14.932	0.372	0.372	5.1	57.319	0.000	0.000	1.0	112.952	55.866	OK
FSR: 30 years: +0 %: 1440 mins: Winter	14.992	14.992	0.432	0.432	3.7	66.457	0.000	0.000	1.0	125.961	48.830	OK
FSR: 100 years: +40 %: 15 mins: Summer	14.802	14.802	0.242	0.242	65.2	37.202	0.000	0.000	1.1	1.666	71.356	OK
FSR: 100 years: +40 %: 15 mins: Winter	14.823	14.823	0.263	0.263	68.0	40.504	0.000	0.000	2.9	1.731	68.813	OK
FSR: 100 years: +40 %: 30 mins: Summer	14.902	14.902	0.342	0.342	62.2	52.692	0.000	0.000	1.2	3.238	59.429	OK
FSR: 100 years: +40 %: 30 mins: Winter	14.938	14.938	0.378	0.378	63.7	58.103	0.000	0.000	1.9	3.386	55.263	OK
FSR: 100 years: +40 %: 60 mins: Summer	15.014	15.014	0.454	0.454	58.0	69.818	0.000	0.000	1.4	6.693	46.243	OK
FSR: 100 years: +40 %: 60 mins: Winter	15.071	15.071	0.511	0.511	52.6	78.616	0.000	0.000	1.5	6.997	39.468	OK
FSR: 100 years: +40 %: 120 mins: Summer	15.134	15.134	0.574	0.574	45.1	88.323	0.000	0.000	1.6	14.049	31.994	OK
FSR: 100 years: +40 %: 120 mins: Winter	15.208	15.208	0.648	0.648	36.9	99.782	0.000	0.000	1.2	14.662	23.172	OK
FSR: 100 years: +40 %: 240 mins: Summer	15.244	15.244	0.684	0.684	31.2	105.278	0.000	0.000	1.2	29.269	18.940	OK
FSR: 100 years: +40 %: 240 mins: Winter	15.332	15.332	0.772	0.772	23.5	118.801	0.000	0.000	1.3	30.557	8.528	OK
FSR: 100 years: +40 %: 360 mins: Summer	15.292	15.292	0.732	0.732	23.9	112.718	0.000	0.000	1.2	44.528	13.211	OK
FSR: 100 years: +40 %: 360 mins: Winter	15.392	15.392	0.832	0.832	17.7	128.067	0.000	0.000	1.3	46.493	1.393	OK
FSR: 100 years: +40 %: 480 mins: Summer	15.320	15.320	0.760	0.760	19.9	116.987	0.000	0.000	1.2	59.668	9.924	OK
FSR: 100 years: +40 %: 480 mins: Winter	15.701	15.701	1.141	1.141	14.4	129.617	0.000	0.000	2.4	63.227	0.200	OK

FSR: 100 years: +40 %: 960 mins: Summer	15.342	15.342	0.782	0.782	12.1	120.410	0.000	0.000	1.2	116.650	7.288	OK
FSR: 100 years: +40 %: 960 mins: Winter	15.706	15.706	1.146	1.146	8.7	129.621	0.000	0.000	3.3	125.909	0.196	OK
FSR: 100 years: +40 %: 1440 mins: Summer	15.331	15.331	0.771	0.771	9.0	118.587	0.000	0.000	1.2	165.112	8.692	OK
FSR: 100 years: +40 %: 1440 mins: Winter	15.704	15.704	1.144	1.144	6.5	129.620	0.000	0.000	2.5	177.917	0.197	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Connections Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for 1.000: Rank By: Max. Velocity

Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 1 years: +0 %: 15 mins: Summer	Pipe	S100	S101	17.130	15.992	0.068	2.690	0.8	0.34	5.9	OK
FSR: 1 years: +0 %: 15 mins: Winter	Pipe	S100	S101	17.130	15.994	0.070	3.014	0.8	0.36	6.3	OK
FSR: 1 years: +0 %: 30 mins: Summer	Pipe	S100	S101	17.130	15.981	0.057	3.680	0.7	0.24	4.3	OK
FSR: 1 years: +0 %: 30 mins: Winter	Pipe	S100	S101	17.130	15.982	0.058	4.124	0.7	0.26	4.5	OK
FSR: 1 years: +0 %: 60 mins: Summer	Pipe	S100	S101	17.130	15.979	0.054	4.917	0.7	0.23	3.9	OK
FSR: 1 years: +0 %: 60 mins: Winter	Pipe	S100	S101	17.130	15.976	0.051	5.518	0.7	0.2	3.6	OK
FSR: 1 years: +0 %: 120 mins: Summer	Pipe	S100	S101	17.130	15.973	0.048	6.515	0.6	0.18	3.1	OK
FSR: 1 years: +0 %: 120 mins: Winter	Pipe	S100	S101	17.130	15.968	0.043	7.289	0.6	0.14	2.5	OK
FSR: 1 years: +0 %: 240 mins: Summer	Pipe	S100	S101	17.130	15.966	0.040	8.579	0.6	0.13	2.2	OK
FSR: 1 years: +0 %: 240 mins: Winter	Pipe	S100	S101	17.130	15.961	0.035	9.599	0.5	0.1	1.7	OK
FSR: 1 years: +0 %: 360 mins: Summer	Pipe	S100	S101	17.130	15.962	0.036	10.001	0.5	0.1	1.8	OK
FSR: 1 years: +0 %: 360 mins: Winter	Pipe	S100	S101	17.130	15.958	0.031	11.201	0.5	0.08	1.3	OK
FSR: 1 years: +0 %: 480 mins: Summer	Pipe	S100	S101	17.130	15.960	0.033	11.117	0.5	0.09	1.5	OK
FSR: 1 years: +0 %: 480 mins: Winter	Pipe	S100	S101	17.130	15.956	0.028	12.431	0.5	0.06	1.1	OK
FSR: 1 years: +0 %: 960 mins: Summer	Pipe	S100	S101	17.130	15.954	0.027	14.334	0.5	0.06	1.0	OK
FSR: 1 years: +0 %: 960 mins: Winter	Pipe	S100	S101	17.130	15.951	0.023	16.067	0.4	0.04	0.7	OK
FSR: 1 years: +0 %: 1440 mins: Summer	Pipe	S100	S101	17.130	15.952	0.024	16.667	0.4	0.04	0.8	OK
FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	S100	S101	17.130	15.948	0.020	18.780	0.4	0.03	0.6	OK
FSR: 30 years: +0 %: 15 mins: Summer	Pipe	S100	S101	17.130	16.043	0.150	6.555	0.7	0.73	12.6	OK
FSR: 30 years: +0 %: 15 mins: Winter	Pipe	S100	S101	17.130	16.090	0.150	7.338	0.7	0.68	11.8	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	Pipe	S100	S101	17.130	16.017	0.099	9.047	0.9	0.6	10.5	OK
FSR: 30 years: +0 %: 30 mins: Winter	Pipe	S100	S101	17.130	16.019	0.103	10.139	0.9	0.63	11.0	OK
FSR: 30 years: +0 %: 60 mins: Summer	Pipe	S100	S101	17.130	16.012	0.093	12.002	0.8	0.55	9.6	OK
FSR: 30 years: +0 %: 60 mins: Winter	Pipe	S100	S101	17.130	16.007	0.087	13.436	0.8	0.5	8.7	OK
FSR: 30 years: +0 %: 120 mins: Summer	Pipe	S100	S101	17.130	16.000	0.078	15.460	0.8	0.42	7.3	OK
FSR: 30 years: +0 %: 120 mins: Winter	Pipe	S100	S101	17.130	15.991	0.068	17.314	0.8	0.34	5.9	OK
FSR: 30 years: +0 %: 240 mins: Summer	Pipe	S100	S101	17.130	15.986	0.062	19.403	0.7	0.29	5.0	OK
FSR: 30 years: +0 %: 240 mins: Winter	Pipe	S100	S101	17.130	15.978	0.053	21.737	0.7	0.22	3.8	OK

FSR: 30 years: +0 %: 360 mins: Summer	Pipe	S100	S101	17.130	15.978	0.054	22.001	0.7	0.22	3.9	OK
FSR: 30 years: +0 %: 360 mins: Winter	Pipe	S100	S101	17.130	15.971	0.046	24.623	0.6	0.16	2.9	OK
FSR: 30 years: +0 %: 480 mins: Summer	Pipe	S100	S101	17.130	15.974	0.049	23.969	0.6	0.19	3.3	OK
FSR: 30 years: +0 %: 480 mins: Winter	Pipe	S100	S101	17.130	15.967	0.042	26.855	0.6	0.14	2.4	OK
FSR: 30 years: +0 %: 960 mins: Summer	Pipe	S100	S101	17.130	15.965	0.038	29.501	0.6	0.12	2.0	OK
FSR: 30 years: +0 %: 960 mins: Winter	Pipe	S100	S101	17.130	15.959	0.033	33.048	0.5	0.08	1.5	OK
FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	S100	S101	17.130	15.960	0.033	33.149	0.5	0.09	1.5	OK
FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	S100	S101	17.130	15.956	0.028	37.157	0.5	0.06	1.1	OK
FSR: 100 years: +40 %: 15 mins: Summer	Pipe	S100	S101	17.130	16.905	0.150	11.862	1.0	1.05	18.3	Flood Risk
FSR: 100 years: +40 %: 15 mins: Winter	Pipe	S100	S101	17.130	17.063	0.150	13.228	1.1	1.12	19.4	Flood Risk
FSR: 100 years: +40 %: 30 mins: Summer	Pipe	S100	S101	17.130	16.941	0.150	16.517	1.0	1.04	18.0	Flood Risk
FSR: 100 years: +40 %: 30 mins: Winter	Pipe	S100	S101	17.130	17.079	0.150	18.485	1.1	1.09	19.0	Flood Risk
FSR: 100 years: +40 %: 60 mins: Summer	Pipe	S100	S101	17.130	16.768	0.150	22.048	1.0	0.97	16.9	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	Pipe	S100	S101	17.130	16.555	0.150	24.675	0.9	0.88	15.4	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	Pipe	S100	S101	17.130	16.231	0.150	28.457	0.8	0.76	13.2	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	Pipe	S100	S101	17.130	16.019	0.102	31.876	0.9	0.63	10.9	OK
FSR: 100 years: +40 %: 240 mins: Summer	Pipe	S100	S101	17.130	16.010	0.090	35.494	0.8	0.53	9.2	OK
FSR: 100 years: +40 %: 240 mins: Winter	Pipe	S100	S101	17.130	15.998	0.075	39.767	0.8	0.4	6.9	OK
FSR: 100 years: +40 %: 360 mins: Summer	Pipe	S100	S101	17.130	15.998	0.076	39.845	0.8	0.41	7.1	OK
FSR: 100 years: +40 %: 360 mins: Winter	Pipe	S100	S101	17.130	15.987	0.064	44.657	0.7	0.3	5.2	OK
FSR: 100 years: +40 %: 480 mins: Summer	Pipe	S100	S101	17.130	15.991	0.068	43.271	0.8	0.34	5.9	OK
FSR: 100 years: +40 %: 480 mins: Winter	Pipe	S100	S101	17.130	15.981	0.057	48.460	0.7	0.24	4.3	OK
FSR: 100 years: +40 %: 960 mins: Summer	Pipe	S100	S101	17.130	15.976	0.052	52.349	0.7	0.2	3.6	OK
FSR: 100 years: +40 %: 960 mins: Winter	Pipe	S100	S101	17.130	15.969	0.044	58.625	0.6	0.15	2.6	OK
FSR: 100 years: +40 %: 1440 mins: Summer	Pipe	S100	S101	17.130	15.970	0.044	58.331	0.6	0.15	2.6	OK
FSR: 100 years: +40 %: 1440 mins: Winter	Pipe	S100	S101	17.130	15.964	0.037	65.333	0.6	0.11	1.9	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Connections Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for 1.001: Rank By: Max. Velocity

Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 1 years: +0 %: 15 mins: Summer	Pipe	S101	S102	17.050	15.823	0.080	4.496	1.0	0.48	9.4	OK
FSR: 1 years: +0 %: 15 mins: Winter	Pipe	S101	S102	17.050	15.826	0.083	5.039	1.0	0.51	9.9	OK
FSR: 1 years: +0 %: 30 mins: Summer	Pipe	S101	S102	17.050	15.813	0.077	6.156	0.9	0.36	7.1	OK
FSR: 1 years: +0 %: 30 mins: Winter	Pipe	S101	S102	17.050	15.814	0.080	6.899	0.9	0.38	7.5	OK
FSR: 1 years: +0 %: 60 mins: Summer	Pipe	S101	S102	17.050	15.810	0.074	8.229	0.8	0.34	6.6	OK
FSR: 1 years: +0 %: 60 mins: Winter	Pipe	S101	S102	17.050	15.807	0.070	9.225	0.7	0.3	5.9	OK
FSR: 1 years: +0 %: 120 mins: Summer	Pipe	S101	S102	17.050	15.803	0.065	10.895	0.7	0.26	5.2	OK
FSR: 1 years: +0 %: 120 mins: Winter	Pipe	S101	S102	17.050	15.797	0.058	12.197	0.7	0.21	4.2	OK
FSR: 1 years: +0 %: 240 mins: Summer	Pipe	S101	S102	17.050	15.794	0.054	14.339	0.6	0.19	3.7	OK
FSR: 1 years: +0 %: 240 mins: Winter	Pipe	S101	S102	17.050	15.788	0.047	16.062	0.6	0.14	2.8	OK
FSR: 1 years: +0 %: 360 mins: Summer	Pipe	S101	S102	17.050	15.789	0.048	16.734	0.6	0.15	3.0	OK
FSR: 1 years: +0 %: 360 mins: Winter	Pipe	S101	S102	17.050	15.784	0.041	18.738	0.6	0.11	2.2	OK
FSR: 1 years: +0 %: 480 mins: Summer	Pipe	S101	S102	17.050	15.786	0.044	18.594	0.6	0.13	2.5	OK
FSR: 1 years: +0 %: 480 mins: Winter	Pipe	S101	S102	17.050	15.781	0.038	20.802	0.5	0.09	1.8	OK
FSR: 1 years: +0 %: 960 mins: Summer	Pipe	S101	S102	17.050	15.779	0.036	24.006	0.5	0.08	1.6	OK
FSR: 1 years: +0 %: 960 mins: Winter	Pipe	S101	S102	17.050	15.775	0.030	26.880	0.5	0.06	1.2	OK
FSR: 1 years: +0 %: 1440 mins: Summer	Pipe	S101	S102	17.050	15.776	0.031	27.930	0.5	0.06	1.3	OK
FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	S101	S102	17.050	15.772	0.027	31.332	0.4	0.05	0.9	OK
FSR: 30 years: +0 %: 15 mins: Summer	Pipe	S101	S102	17.050	15.962	0.150	10.969	1.1	1.02	19.9	Surcharged
FSR: 30 years: +0 %: 15 mins: Winter	Pipe	S101	S102	17.050	15.995	0.150	12.290	1.2	1.04	20.4	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	Pipe	S101	S102	17.050	15.861	0.136	15.129	1.0	0.89	17.5	OK
FSR: 30 years: +0 %: 30 mins: Winter	Pipe	S101	S102	17.050	15.866	0.142	16.953	1.1	0.94	18.4	OK
FSR: 30 years: +0 %: 60 mins: Summer	Pipe	S101	S102	17.050	15.854	0.128	20.074	1.0	0.82	16.1	OK
FSR: 30 years: +0 %: 60 mins: Winter	Pipe	S101	S102	17.050	15.846	0.119	22.482	1.0	0.74	14.5	OK
FSR: 30 years: +0 %: 120 mins: Summer	Pipe	S101	S102	17.050	15.836	0.107	25.874	0.9	0.63	12.3	OK
FSR: 30 years: +0 %: 120 mins: Winter	Pipe	S101	S102	17.050	15.826	0.094	28.954	0.9	0.5	9.9	OK
FSR: 30 years: +0 %: 240 mins: Summer	Pipe	S101	S102	17.050	15.819	0.085	32.446	0.8	0.43	8.4	OK
FSR: 30 years: +0 %: 240 mins: Winter	Pipe	S101	S102	17.050	15.809	0.073	36.371	0.7	0.32	6.3	OK

FSR: 30 years: +0 %: 360 mins: Summer	Pipe	S101	S102	17.050	15.810	0.074	36.773	0.8	0.33	6.5	OK
FSR: 30 years: +0 %: 360 mins: Winter	Pipe	S101	S102	17.050	15.801	0.062	41.184	0.7	0.24	4.8	OK
FSR: 30 years: +0 %: 480 mins: Summer	Pipe	S101	S102	17.050	15.804	0.067	40.097	0.7	0.28	5.4	OK
FSR: 30 years: +0 %: 480 mins: Winter	Pipe	S101	S102	17.050	15.796	0.056	44.916	0.7	0.2	3.9	OK
FSR: 30 years: +0 %: 960 mins: Summer	Pipe	S101	S102	17.050	15.792	0.051	49.326	0.6	0.17	3.4	OK
FSR: 30 years: +0 %: 960 mins: Winter	Pipe	S101	S102	17.050	15.786	0.043	55.230	0.6	0.12	2.4	OK
FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	S101	S102	17.050	15.786	0.044	55.512	0.6	0.13	2.5	OK
FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	S101	S102	17.050	15.781	0.038	62.142	0.5	0.09	1.8	OK
FSR: 100 years: +40 %: 15 mins: Summer	Pipe	S101	S102	17.050	16.699	0.150	19.888	1.6	1.47	28.9	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	Pipe	S101	S102	17.050	16.839	0.150	22.196	1.7	1.57	30.8	Flood Risk
FSR: 100 years: +40 %: 30 mins: Summer	Pipe	S101	S102	17.050	16.748	0.150	27.671	1.7	1.52	29.9	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	Pipe	S101	S102	17.050	16.870	0.150	30.968	1.8	1.6	31.5	Flood Risk
FSR: 100 years: +40 %: 60 mins: Summer	Pipe	S101	S102	17.050	16.595	0.150	36.914	1.6	1.43	28.1	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	Pipe	S101	S102	17.050	16.406	0.150	41.293	1.5	1.31	25.7	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	Pipe	S101	S102	17.050	16.115	0.150	47.631	1.2	1.12	22.0	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	Pipe	S101	S102	17.050	15.865	0.141	53.335	1.1	0.93	18.2	OK
FSR: 100 years: +40 %: 240 mins: Summer	Pipe	S101	S102	17.050	15.850	0.124	59.392	1.0	0.78	15.4	OK
FSR: 100 years: +40 %: 240 mins: Winter	Pipe	S101	S102	17.050	15.833	0.103	66.539	0.9	0.59	11.6	OK
FSR: 100 years: +40 %: 360 mins: Summer	Pipe	S101	S102	17.050	15.834	0.104	66.672	0.9	0.6	11.8	OK
FSR: 100 years: +40 %: 360 mins: Winter	Pipe	S101	S102	17.050	15.820	0.107	74.704	0.8	0.44	8.7	OK
FSR: 100 years: +40 %: 480 mins: Summer	Pipe	S101	S102	17.050	15.825	0.093	72.369	0.8	0.5	9.8	OK
FSR: 100 years: +40 %: 480 mins: Winter	Pipe	S101	S102	17.050	15.813	0.150	81.017	0.8	0.36	7.1	OK
FSR: 100 years: +40 %: 960 mins: Summer	Pipe	S101	S102	17.050	15.807	0.080	87.594	0.7	0.3	6.0	OK
FSR: 100 years: +40 %: 960 mins: Winter	Pipe	S101	S102	17.050	15.798	0.150	98.071	0.7	0.22	4.3	OK
FSR: 100 years: +40 %: 1440 mins: Summer	Pipe	S101	S102	17.050	15.799	0.074	97.594	0.7	0.23	4.4	OK
FSR: 100 years: +40 %: 1440 mins: Winter	Pipe	S101	S102	17.050	15.791	0.150	109.292	0.6	0.16	3.2	OK

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Connections Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for 1.004: Rank By: Max. Velocity

Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 1 years: +0 %: 15 mins: Summer	Pipe	S103	S104	15.700	14.605	0.023	0.986	0.5	0.02	1.0	OK
FSR: 1 years: +0 %: 15 mins: Winter	Pipe	S103	S104	15.700	14.611	0.023	1.009	0.5	0.02	1.0	OK
FSR: 1 years: +0 %: 30 mins: Summer	Pipe	S103	S104	15.700	14.624	0.023	2.304	0.5	0.02	1.0	OK
FSR: 1 years: +0 %: 30 mins: Winter	Pipe	S103	S104	15.700	14.634	0.023	2.047	0.5	0.02	1.0	OK
FSR: 1 years: +0 %: 60 mins: Summer	Pipe	S103	S104	15.700	14.647	0.023	3.734	0.5	0.02	1.0	OK
FSR: 1 years: +0 %: 60 mins: Winter	Pipe	S103	S104	15.700	14.660	0.023	3.567	0.5	0.02	1.0	OK
FSR: 1 years: +0 %: 120 mins: Summer	Pipe	S103	S104	15.700	14.672	0.023	7.234	0.5	0.02	1.0	OK
FSR: 1 years: +0 %: 120 mins: Winter	Pipe	S103	S104	15.700	14.687	0.023	7.541	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 240 mins: Summer	Pipe	S103	S104	15.700	14.692	0.023	15.398	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 240 mins: Winter	Pipe	S103	S104	15.700	14.713	0.023	16.099	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 360 mins: Summer	Pipe	S103	S104	15.700	14.700	0.023	24.934	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 360 mins: Winter	Pipe	S103	S104	15.700	14.722	0.023	24.712	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 480 mins: Summer	Pipe	S103	S104	15.700	14.703	0.023	35.086	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 480 mins: Winter	Pipe	S103	S104	15.700	14.724	0.023	35.107	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 960 mins: Summer	Pipe	S103	S104	15.700	14.703	0.023	48.709	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 960 mins: Winter	Pipe	S103	S104	15.700	14.720	0.023	54.414	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 1440 mins: Summer	Pipe	S103	S104	15.700	14.696	0.023	57.721	0.5	0.02	1.0	Surcharged
FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	S103	S104	15.700	14.704	0.023	64.674	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 15 mins: Summer	Pipe	S103	S104	15.700	14.690	0.018	0.773	0.4	0.01	0.6	Surcharged
FSR: 30 years: +0 %: 15 mins: Winter	Pipe	S103	S104	15.700	14.707	0.020	0.810	0.4	0.02	0.7	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	Pipe	S103	S104	15.700	14.741	0.019	1.896	0.4	0.01	0.7	Surcharged
FSR: 30 years: +0 %: 30 mins: Winter	Pipe	S103	S104	15.700	14.764	0.023	1.983	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 60 mins: Summer	Pipe	S103	S104	15.700	14.798	0.023	4.441	0.5	0.02	0.9	Surcharged
FSR: 30 years: +0 %: 60 mins: Winter	Pipe	S103	S104	15.700	14.829	0.023	4.643	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 120 mins: Summer	Pipe	S103	S104	15.700	14.858	0.023	10.046	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 120 mins: Winter	Pipe	S103	S104	15.700	14.898	0.023	10.451	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 240 mins: Summer	Pipe	S103	S104	15.700	14.909	0.023	21.657	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 240 mins: Winter	Pipe	S103	S104	15.700	14.960	0.023	22.567	0.5	0.02	1.0	Surcharged

FSR: 30 years: +0 %: 360 mins: Summer	Pipe	S103	S104	15.700	14.930	0.023	33.190	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 360 mins: Winter	Pipe	S103	S104	15.700	14.987	0.023	34.673	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 480 mins: Summer	Pipe	S103	S104	15.700	14.938	0.023	44.397	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 480 mins: Winter	Pipe	S103	S104	15.700	15.001	0.023	46.540	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 960 mins: Summer	Pipe	S103	S104	15.700	14.940	0.023	84.024	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 960 mins: Winter	Pipe	S103	S104	15.700	15.004	0.023	89.296	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	S103	S104	15.700	14.932	0.023	112.920	0.5	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	S103	S104	15.700	14.992	0.023	125.901	0.5	0.02	1.0	Surcharged
FSR: 100 years: +40 %: 15 mins: Summer	Pipe	S103	S104	15.700	14.802	0.020	0.945	0.4	0.02	0.8	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	Pipe	S103	S104	15.700	14.823	0.020	0.986	0.4	0.02	0.8	Surcharged
FSR: 100 years: +40 %: 30 mins: Summer	Pipe	S103	S104	15.700	14.902	0.021	2.394	0.4	0.02	0.9	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	Pipe	S103	S104	15.700	14.937	0.022	2.498	0.4	0.02	0.9	Surcharged
FSR: 100 years: +40 %: 60 mins: Summer	Pipe	S103	S104	15.700	15.014	0.023	5.731	0.5	0.02	1.0	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	Pipe	S103	S104	15.700	15.071	0.023	5.967	0.5	0.02	1.0	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	Pipe	S103	S104	15.700	15.134	0.024	12.977	0.5	0.02	1.1	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	Pipe	S103	S104	15.700	15.208	0.024	13.506	0.5	0.02	1.1	Surcharged
FSR: 100 years: +40 %: 240 mins: Summer	Pipe	S103	S104	15.700	15.244	0.025	28.131	0.5	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	Pipe	S103	S104	15.700	15.332	0.025	29.319	0.5	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 360 mins: Summer	Pipe	S103	S104	15.700	15.292	0.025	43.393	0.5	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	Pipe	S103	S104	15.700	15.392	0.026	45.249	0.5	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 480 mins: Summer	Pipe	S103	S104	15.700	15.320	0.025	58.559	0.5	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	Pipe	S103	S104	15.700	15.701	0.028	61.996	0.5	0.03	1.4	Flood
FSR: 100 years: +40 %: 960 mins: Summer	Pipe	S103	S104	15.700	15.342	0.025	115.737	0.5	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 960 mins: Winter	Pipe	S103	S104	15.700	15.705	0.028	124.409	0.5	0.03	1.4	Flood
FSR: 100 years: +40 %: 1440 mins: Summer	Pipe	S103	S104	15.700	15.330	0.025	164.413	0.5	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 1440 mins: Winter	Pipe	S103	S104	15.700	15.704	0.028	177.190	0.5	0.03	1.4	Flood

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Connections Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for 2.000: Rank By: Max. Velocity

Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 1 years: +0 %: 15 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.517	0.048	0.778	0.2	0.07	1.2	OK
FSR: 1 years: +0 %: 15 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.522	0.060	0.934	0.2	0.09	1.5	OK
FSR: 1 years: +0 %: 30 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.510	0.064	1.269	0.3	0.12	2.1	OK
FSR: 1 years: +0 %: 30 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.512	0.065	1.485	0.3	0.13	2.2	OK
FSR: 1 years: +0 %: 60 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.507	0.061	1.903	0.3	0.12	1.9	OK
FSR: 1 years: +0 %: 60 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.504	0.058	2.182	0.3	0.1	1.7	OK
FSR: 1 years: +0 %: 120 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.500	0.053	2.709	0.3	0.09	1.5	OK
FSR: 1 years: +0 %: 120 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.494	0.048	3.102	0.2	0.07	1.2	OK
FSR: 1 years: +0 %: 240 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.492	0.045	3.808	0.2	0.06	1.1	OK
FSR: 1 years: +0 %: 240 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.486	0.039	4.286	0.2	0.05	0.8	OK
FSR: 1 years: +0 %: 360 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.488	0.040	4.598	0.2	0.05	0.9	OK
FSR: 1 years: +0 %: 360 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.482	0.034	5.134	0.2	0.04	0.6	OK
FSR: 1 years: +0 %: 480 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.485	0.037	5.211	0.2	0.04	0.7	OK
FSR: 1 years: +0 %: 480 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.480	0.031	5.841	0.2	0.03	0.5	OK
FSR: 1 years: +0 %: 960 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.479	0.029	7.278	0.2	0.03	0.5	OK
FSR: 1 years: +0 %: 960 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.475	0.025	8.051	0.2	0.02	0.3	OK
FSR: 1 years: +0 %: 1440 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.476	0.026	8.943	0.2	0.02	0.4	OK
FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.473	0.022	10.023	0.2	0.02	0.3	OK
FSR: 30 years: +0 %: 15 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.590	0.125	2.645	0.4	0.38	6.2	Surcharged
FSR: 30 years: +0 %: 15 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.598	0.130	3.028	0.4	0.4	6.6	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.561	0.109	3.859	0.4	0.31	5.0	Surcharged
FSR: 30 years: +0 %: 30 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.566	0.113	4.394	0.4	0.32	5.3	Surcharged
FSR: 30 years: +0 %: 60 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.554	0.103	5.306	0.4	0.28	4.6	Surcharged
FSR: 30 years: +0 %: 60 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.544	0.096	6.009	0.3	0.25	4.2	OK
FSR: 30 years: +0 %: 120 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.534	0.087	7.043	0.3	0.21	3.5	OK
FSR: 30 years: +0 %: 120 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.523	0.077	7.924	0.3	0.17	2.9	OK
FSR: 30 years: +0 %: 240 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.516	0.070	9.038	0.3	0.15	2.4	OK
FSR: 30 years: +0 %: 240 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.506	0.060	10.161	0.3	0.11	1.8	OK

FSR: 30 years: +0 %: 360 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.507	0.060	10.353	0.3	0.11	1.9	OK
FSR: 30 years: +0 %: 360 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.498	0.051	11.644	0.3	0.08	1.4	OK
FSR: 30 years: +0 %: 480 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.501	0.055	11.417	0.3	0.1	1.6	OK
FSR: 30 years: +0 %: 480 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.493	0.046	12.807	0.2	0.07	1.1	OK
FSR: 30 years: +0 %: 960 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.490	0.042	14.413	0.2	0.06	1.0	OK
FSR: 30 years: +0 %: 960 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.484	0.036	16.110	0.2	0.04	0.7	OK
FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.485	0.037	16.569	0.2	0.04	0.7	OK
FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.480	0.031	18.532	0.2	0.03	0.5	OK
FSR: 100 years: +40 %: 15 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.717	0.150	4.885	0.5	0.51	8.4	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.752	0.150	4.856	0.5	0.51	8.4	Surcharged
FSR: 100 years: +40 %: 30 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.671	0.150	7.471	0.5	0.54	9.0	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.688	0.150	7.981	0.5	0.55	9.0	Surcharged
FSR: 100 years: +40 %: 60 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.644	0.150	10.166	0.5	0.51	8.4	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.615	0.150	11.449	0.4	0.46	7.5	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.589	0.132	13.314	0.4	0.4	6.5	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.565	0.112	14.971	0.4	0.32	5.3	Surcharged
FSR: 100 years: +40 %: 240 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.551	0.100	16.796	0.4	0.27	4.4	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.531	0.084	18.838	0.3	0.2	3.3	OK
FSR: 100 years: +40 %: 360 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.532	0.085	18.980	0.3	0.21	3.4	OK
FSR: 100 years: +40 %: 360 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.517	0.103	21.291	0.3	0.15	2.5	OK
FSR: 100 years: +40 %: 480 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.523	0.076	20.702	0.3	0.17	2.8	OK
FSR: 100 years: +40 %: 480 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.689	0.150	23.015	0.3	0.12	2.1	Surcharged
FSR: 100 years: +40 %: 960 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.504	0.076	25.445	0.3	0.1	1.7	OK
FSR: 100 years: +40 %: 960 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.695	0.150	28.124	0.3	0.08	1.2	Surcharged
FSR: 100 years: +40 %: 1440 mins: Summer	Pipe	Infiltration Trench	S102	16.327	15.496	0.070	28.639	0.3	0.08	1.3	OK
FSR: 100 years: +40 %: 1440 mins: Winter	Pipe	Infiltration Trench	S102	16.327	15.693	0.150	31.506	0.2	0.06	0.9	Surcharged

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Connections Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for 3.000: Rank By: Max. Velocity

Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 1 years: +0 %: 15 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.516	0.049	0.761	0.2	0.08	1.2	OK
FSR: 1 years: +0 %: 15 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.521	0.059	0.914	0.2	0.09	1.3	OK
FSR: 1 years: +0 %: 30 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.509	0.064	1.245	0.3	0.13	2.0	OK
FSR: 1 years: +0 %: 30 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.511	0.066	1.457	0.3	0.14	2.1	OK
FSR: 1 years: +0 %: 60 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.507	0.062	1.864	0.3	0.12	1.9	OK
FSR: 1 years: +0 %: 60 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.503	0.058	2.145	0.3	0.11	1.7	OK
FSR: 1 years: +0 %: 120 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.499	0.054	2.666	0.3	0.1	1.5	OK
FSR: 1 years: +0 %: 120 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.494	0.048	3.036	0.2	0.08	1.2	OK
FSR: 1 years: +0 %: 240 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.492	0.045	3.763	0.2	0.07	1.1	OK
FSR: 1 years: +0 %: 240 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.486	0.039	4.232	0.2	0.05	0.8	OK
FSR: 1 years: +0 %: 360 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.487	0.040	4.500	0.2	0.06	0.8	OK
FSR: 1 years: +0 %: 360 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.482	0.034	5.076	0.2	0.04	0.6	OK
FSR: 1 years: +0 %: 480 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.484	0.037	5.139	0.2	0.05	0.7	OK
FSR: 1 years: +0 %: 480 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.480	0.031	5.759	0.2	0.03	0.5	OK
FSR: 1 years: +0 %: 960 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.479	0.030	7.200	0.2	0.03	0.5	OK
FSR: 1 years: +0 %: 960 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.475	0.025	7.989	0.2	0.02	0.3	OK
FSR: 1 years: +0 %: 1440 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.476	0.026	8.831	0.2	0.02	0.4	OK
FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.473	0.022	9.812	0.2	0.02	0.3	OK
FSR: 30 years: +0 %: 15 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.588	0.126	2.597	0.4	0.4	6.1	Surcharged

FSR: 30 years: +0 %: 15 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.596	0.131	2.971	0.4	0.43	6.5	Surcharged
FSR: 30 years: +0 %: 30 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.560	0.110	3.803	0.4	0.33	5.0	Surcharged
FSR: 30 years: +0 %: 30 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.564	0.114	4.316	0.4	0.34	5.2	Surcharged
FSR: 30 years: +0 %: 60 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.553	0.104	5.232	0.4	0.3	4.6	Surcharged
FSR: 30 years: +0 %: 60 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.543	0.097	5.922	0.3	0.27	4.1	OK
FSR: 30 years: +0 %: 120 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.533	0.088	6.935	0.3	0.23	3.5	OK
FSR: 30 years: +0 %: 120 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.522	0.077	7.805	0.3	0.19	2.8	OK
FSR: 30 years: +0 %: 240 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.515	0.070	8.896	0.3	0.16	2.4	OK
FSR: 30 years: +0 %: 240 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.505	0.060	9.995	0.3	0.12	1.8	OK
FSR: 30 years: +0 %: 360 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.506	0.061	10.197	0.3	0.12	1.8	OK
FSR: 30 years: +0 %: 360 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.498	0.052	11.450	0.3	0.09	1.4	OK
FSR: 30 years: +0 %: 480 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.501	0.055	11.241	0.3	0.1	1.5	OK
FSR: 30 years: +0 %: 480 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.493	0.047	12.645	0.2	0.07	1.1	OK
FSR: 30 years: +0 %: 960 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.490	0.043	14.268	0.2	0.06	1.0	OK
FSR: 30 years: +0 %: 960 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.484	0.036	15.887	0.2	0.05	0.7	OK
FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.484	0.037	16.378	0.2	0.05	0.7	OK
FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.480	0.031	18.243	0.2	0.03	0.5	OK
FSR: 100 years: +40 %: 15 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.715	0.150	4.971	0.5	0.54	8.2	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.744	0.150	4.973	0.5	0.54	8.2	Surcharged
FSR: 100 years: +40 %: 30 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.671	0.150	7.364	0.5	0.58	8.8	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.679	0.150	7.568	0.4	0.51	7.8	Surcharged
FSR: 100 years: +40 %: 60 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.644	0.150	10.022	0.5	0.54	8.2	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.614	0.150	11.269	0.4	0.49	7.4	Surcharged

FSR: 100 years: +40 %: 120 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.587	0.134	13.116	0.4	0.42	6.4	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.564	0.113	14.735	0.4	0.34	5.2	Surcharged
FSR: 100 years: +40 %: 240 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.549	0.101	16.533	0.3	0.29	4.4	OK
FSR: 100 years: +40 %: 240 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.530	0.085	18.593	0.3	0.22	3.3	OK
FSR: 100 years: +40 %: 360 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.531	0.086	18.700	0.3	0.22	3.4	OK
FSR: 100 years: +40 %: 360 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.517	0.103	20.977	0.3	0.16	2.5	OK
FSR: 100 years: +40 %: 480 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.522	0.077	20.400	0.3	0.18	2.8	OK
FSR: 100 years: +40 %: 480 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.691	0.150	22.792	0.3	0.13	2.0	Surcharged
FSR: 100 years: +40 %: 960 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.504	0.076	25.052	0.3	0.11	1.7	OK
FSR: 100 years: +40 %: 960 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.695	0.150	27.757	0.2	0.08	1.2	Surcharged
FSR: 100 years: +40 %: 1440 mins: Summer	Pipe	Infiltration Trench (1)	S102	16.327	15.496	0.071	28.283	0.2	0.08	1.3	OK
FSR: 100 years: +40 %: 1440 mins: Winter	Pipe	Infiltration Trench (1)	S102	16.327	15.692	0.150	31.010	0.2	0.06	0.9	Surcharged

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023 Designed by: UB	Checked by: GH	Approved By: GH
Report Details: Type: Connections Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for 1.002: Rank By: Max. Velocity

Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 1 years: +0 %: 15 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.286	0.081	8.059	1.0	0.25	12.6	OK
FSR: 1 years: +0 %: 15 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.291	0.086	9.156	1.0	0.28	13.8	OK
FSR: 1 years: +0 %: 30 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.292	0.088	11.460	1.0	0.29	14.4	OK
FSR: 1 years: +0 %: 30 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.295	0.090	12.966	1.0	0.31	15.2	OK
FSR: 1 years: +0 %: 60 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.288	0.084	15.721	1.0	0.27	13.4	OK
FSR: 1 years: +0 %: 60 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.283	0.079	17.723	1.0	0.24	12.0	OK
FSR: 1 years: +0 %: 120 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.277	0.073	21.203	0.9	0.21	10.5	OK
FSR: 1 years: +0 %: 120 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.268	0.065	23.869	0.9	0.17	8.4	OK
FSR: 1 years: +0 %: 240 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.264	0.062	28.397	0.9	0.15	7.5	OK
FSR: 1 years: +0 %: 240 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.255	0.053	31.877	0.8	0.11	5.7	OK
FSR: 1 years: +0 %: 360 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.257	0.055	33.400	0.8	0.12	6.0	OK
FSR: 1 years: +0 %: 360 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.248	0.047	37.423	0.7	0.09	4.4	OK
FSR: 1 years: +0 %: 480 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.252	0.050	37.375	0.8	0.1	5.1	OK
FSR: 1 years: +0 %: 480 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.244	0.043	41.861	0.7	0.07	3.7	OK
FSR: 1 years: +0 %: 960 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.242	0.040	49.391	0.7	0.07	3.3	OK
FSR: 1 years: +0 %: 960 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.235	0.034	55.099	0.6	0.05	2.4	OK
FSR: 1 years: +0 %: 1440 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.237	0.036	58.394	0.6	0.05	2.6	OK
FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.231	0.030	65.346	0.6	0.04	1.9	OK
FSR: 30 years: +0 %: 15 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.386	0.172	21.171	1.3	0.85	42.1	OK
FSR: 30 years: +0 %: 15 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.395	0.179	23.840	1.3	0.89	44.0	OK
FSR: 30 years: +0 %: 30 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.362	0.151	29.657	1.3	0.72	35.4	OK
FSR: 30 years: +0 %: 30 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.368	0.156	33.343	1.3	0.75	37.3	OK
FSR: 30 years: +0 %: 60 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.352	0.142	39.711	1.2	0.66	32.6	OK
FSR: 30 years: +0 %: 60 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.342	0.133	44.609	1.2	0.59	29.3	OK
FSR: 30 years: +0 %: 120 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.328	0.120	51.580	1.2	0.5	24.9	OK
FSR: 30 years: +0 %: 120 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.312	0.106	57.811	1.1	0.41	20.1	OK
FSR: 30 years: +0 %: 240 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.302	0.096	65.102	1.1	0.34	17.1	OK
FSR: 30 years: +0 %: 240 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.286	0.082	73.035	1.0	0.26	12.8	OK

FSR: 30 years: +0 %: 360 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.288	0.083	73.979	1.0	0.27	13.2	OK
FSR: 30 years: +0 %: 360 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.274	0.071	82.928	0.9	0.2	9.7	OK
FSR: 30 years: +0 %: 480 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.279	0.076	80.960	0.9	0.22	11.0	OK
FSR: 30 years: +0 %: 480 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.266	0.064	90.740	0.9	0.16	8.0	OK
FSR: 30 years: +0 %: 960 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.261	0.058	100.369	0.8	0.14	6.8	OK
FSR: 30 years: +0 %: 960 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.251	0.049	112.295	0.8	0.1	4.9	OK
FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.252	0.050	113.678	0.8	0.1	5.1	OK
FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.244	0.043	127.204	0.7	0.07	3.7	OK
FSR: 100 years: +40 %: 15 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.520	0.225	38.717	1.6	1.32	65.1	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.534	0.225	42.089	1.7	1.37	68.0	Surcharged
FSR: 100 years: +40 %: 30 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.506	0.225	55.002	1.6	1.26	62.2	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.513	0.225	60.531	1.6	1.29	63.7	Surcharged
FSR: 100 years: +40 %: 60 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.487	0.225	73.798	1.5	1.17	58.0	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.462	0.225	82.732	1.3	1.06	52.6	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.400	0.184	95.637	1.3	0.91	45.1	OK
FSR: 100 years: +40 %: 120 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.367	0.155	107.228	1.3	0.75	36.9	OK
FSR: 100 years: +40 %: 240 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.348	0.138	119.634	1.2	0.63	31.2	OK
FSR: 100 years: +40 %: 240 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.332	0.157	133.920	1.1	0.47	23.5	OK
FSR: 100 years: +40 %: 360 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.325	0.117	134.559	1.1	0.48	23.9	OK
FSR: 100 years: +40 %: 360 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.392	0.217	150.596	1.1	0.36	17.7	OK
FSR: 100 years: +40 %: 480 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.320	0.145	146.239	1.1	0.4	19.9	OK
FSR: 100 years: +40 %: 480 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.701	0.225	163.545	1.0	0.29	14.4	Surcharged
FSR: 100 years: +40 %: 960 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.342	0.167	177.815	1.0	0.24	12.1	OK
FSR: 100 years: +40 %: 960 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.706	0.225	198.441	0.9	0.18	8.7	Surcharged
FSR: 100 years: +40 %: 1440 mins: Summer	Pipe	S102	Cellular Storage	16.200	15.331	0.156	198.793	0.9	0.18	9.0	OK
FSR: 100 years: +40 %: 1440 mins: Winter	Pipe	S102	Cellular Storage	16.200	15.704	0.225	221.289	0.8	0.13	6.5	Surcharged

Project:	Date:		
New House Farm Drigg, Cumbria CA19 1XG	31/10/2023		
	Designed by:	Checked by:	Approved By:
	UB	GH	GH
Report Details: Type: Connections Summary Storm Phase: Attenuation	Company Address: 3 Brindley Place Birmingham B1 2JB		

Summary Results for 1.003: Rank By: Max. Velocity

Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
FSR: 1 years: +0 %: 15 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.606	0.095	1.353	0.4	0.03	1.5	OK
FSR: 1 years: +0 %: 15 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.612	0.102	1.395	0.4	0.02	1.0	OK
FSR: 1 years: +0 %: 30 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.624	0.114	2.706	0.3	0.06	2.6	OK
FSR: 1 years: +0 %: 30 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.634	0.124	2.476	0.3	0.03	1.4	OK
FSR: 1 years: +0 %: 60 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.647	0.137	4.178	0.2	0.03	1.2	OK
FSR: 1 years: +0 %: 60 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.660	0.150	4.043	0.2	0.04	2.0	OK
FSR: 1 years: +0 %: 120 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.672	0.162	7.706	0.2	0.03	1.5	OK
FSR: 1 years: +0 %: 120 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.687	0.177	8.049	0.2	0.03	1.5	OK
FSR: 1 years: +0 %: 240 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.692	0.182	15.855	0.2	0.02	1.1	OK
FSR: 1 years: +0 %: 240 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.713	0.203	16.598	0.2	0.02	1.1	OK
FSR: 1 years: +0 %: 360 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.700	0.190	25.319	0.2	0.02	1.0	OK
FSR: 1 years: +0 %: 360 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.722	0.212	25.165	0.2	0.02	1.0	OK
FSR: 1 years: +0 %: 480 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.703	0.193	35.216	0.2	0.02	1.0	OK
FSR: 1 years: +0 %: 480 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.724	0.214	35.463	0.2	0.02	1.0	OK
FSR: 1 years: +0 %: 960 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.703	0.193	48.733	0.1	0.02	1.0	OK
FSR: 1 years: +0 %: 960 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.720	0.210	54.438	0.1	0.02	1.0	OK
FSR: 1 years: +0 %: 1440 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.696	0.186	57.744	0.1	0.02	1.0	OK
FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.705	0.195	64.696	0.1	0.02	1.0	OK
FSR: 30 years: +0 %: 15 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.690	0.180	1.343	0.4	0.08	3.5	OK
FSR: 30 years: +0 %: 15 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.707	0.197	1.412	0.4	0.11	4.8	OK
FSR: 30 years: +0 %: 30 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.741	0.225	2.544	0.3	0.07	3.2	OK
FSR: 30 years: +0 %: 30 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.764	0.225	2.663	0.3	0.06	2.7	OK
FSR: 30 years: +0 %: 60 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.798	0.225	5.150	0.2	0.03	1.2	Surcharged
FSR: 30 years: +0 %: 60 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.829	0.225	5.391	0.2	0.03	1.2	Surcharged
FSR: 30 years: +0 %: 120 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.858	0.225	10.804	0.2	0.03	1.1	Surcharged
FSR: 30 years: +0 %: 120 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.898	0.225	11.254	0.2	0.03	1.2	Surcharged
FSR: 30 years: +0 %: 240 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.910	0.225	22.429	0.2	0.03	1.1	Surcharged
FSR: 30 years: +0 %: 240 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.960	0.225	23.392	0.2	0.03	1.2	Surcharged

FSR: 30 years: +0 %: 360 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.930	0.225	33.941	0.2	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 360 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.987	0.225	35.481	0.2	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 480 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.938	0.225	45.115	0.2	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 480 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.001	0.225	47.317	0.2	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 960 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.940	0.225	84.531	0.2	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 960 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.004	0.225	89.889	0.2	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 1440 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.932	0.225	112.952	0.1	0.02	1.0	Surcharged
FSR: 30 years: +0 %: 1440 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.992	0.225	125.961	0.2	0.02	1.0	Surcharged
FSR: 100 years: +40 %: 15 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.802	0.225	1.663	0.3	0.02	1.1	Surcharged
FSR: 100 years: +40 %: 15 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.823	0.225	1.729	0.4	0.07	2.9	Surcharged
FSR: 100 years: +40 %: 30 mins: Summer	Pipe	Cellular Storage	S103	16.000	14.902	0.225	3.238	0.3	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 30 mins: Winter	Pipe	Cellular Storage	S103	16.000	14.938	0.225	3.386	0.3	0.04	1.9	Surcharged
FSR: 100 years: +40 %: 60 mins: Summer	Pipe	Cellular Storage	S103	16.000	15.014	0.225	6.693	0.3	0.03	1.4	Surcharged
FSR: 100 years: +40 %: 60 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.071	0.225	6.997	0.3	0.03	1.5	Surcharged
FSR: 100 years: +40 %: 120 mins: Summer	Pipe	Cellular Storage	S103	16.000	15.134	0.225	14.049	0.2	0.04	1.6	Surcharged
FSR: 100 years: +40 %: 120 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.208	0.225	14.662	0.2	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 240 mins: Summer	Pipe	Cellular Storage	S103	16.000	15.244	0.225	29.269	0.2	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 240 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.332	0.225	30.557	0.2	0.03	1.3	Surcharged
FSR: 100 years: +40 %: 360 mins: Summer	Pipe	Cellular Storage	S103	16.000	15.292	0.225	44.528	0.2	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 360 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.392	0.225	46.493	0.2	0.03	1.3	Surcharged
FSR: 100 years: +40 %: 480 mins: Summer	Pipe	Cellular Storage	S103	16.000	15.320	0.225	59.668	0.2	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 480 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.701	0.225	63.209	0.2	0.05	2.4	Surcharged
FSR: 100 years: +40 %: 960 mins: Summer	Pipe	Cellular Storage	S103	16.000	15.342	0.225	116.650	0.2	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 960 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.706	0.225	125.373	0.2	0.07	3.3	Surcharged
FSR: 100 years: +40 %: 1440 mins: Summer	Pipe	Cellular Storage	S103	16.000	15.331	0.225	165.112	0.2	0.03	1.2	Surcharged
FSR: 100 years: +40 %: 1440 mins: Winter	Pipe	Cellular Storage	S103	16.000	15.704	0.225	177.917	0.2	0.06	2.5	Surcharged

Contact Details

Enquiries
Paul Nixon BSc MSc LLM - Director

Visit us online
avisonyoung.co.uk