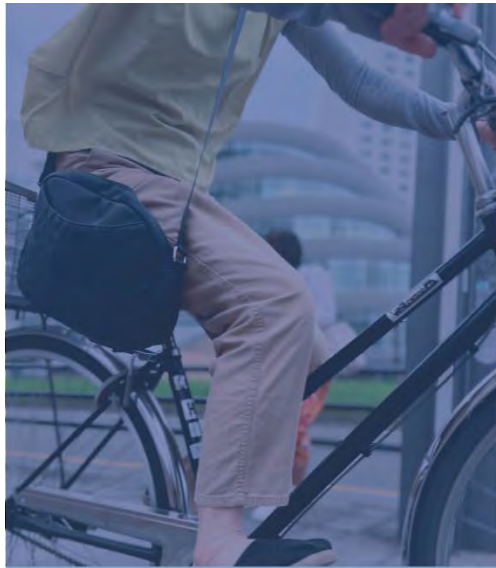


- Infrastructure Design
- Geotechnical & Environmental
- Highways
- Surveying
- Structural Engineering
- Construction Management
- Development Planning



Proposed Artificial Grass Pitch Wick Football Club Coomes Way Wick Littlehampton



Flood Risk Assessment and Drainage Strategy

Revision 0: June 2026
R-FRA-31285-01-0

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Proposed Artificial Grass Pitch
Wick Football Club
Coomes Way
Wick
Littlehampton

Flood Risk Assessment and Drainage Strategy

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0	30 th June 2026	First Issue	Josh Beverly	Katherine Rose

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1.0 Introduction

1.1 Background

1.1.1 This report is a Flood Risk Assessment and Drainage Strategy which has been prepared by JPP Consulting Limited on behalf of S&C Slatter Ltd for a proposed Artificial Grass Pitch (AGP) and associated infrastructure. The benefit of this report is to our instructing client.

1.1.2 The proposed artificial grass pitch is located at Wick Football Club, Coomes Way, Littlehampton, as shown in Figure 1.1 below. Littlehampton is located circa 5km northeast of Middleton on Sea and approximately 8.3km west of Goring By Sea. The National Grid Reference for the site is E503010 N103795. The proposed development has a total drained area of 0.841ha (8,410m²).

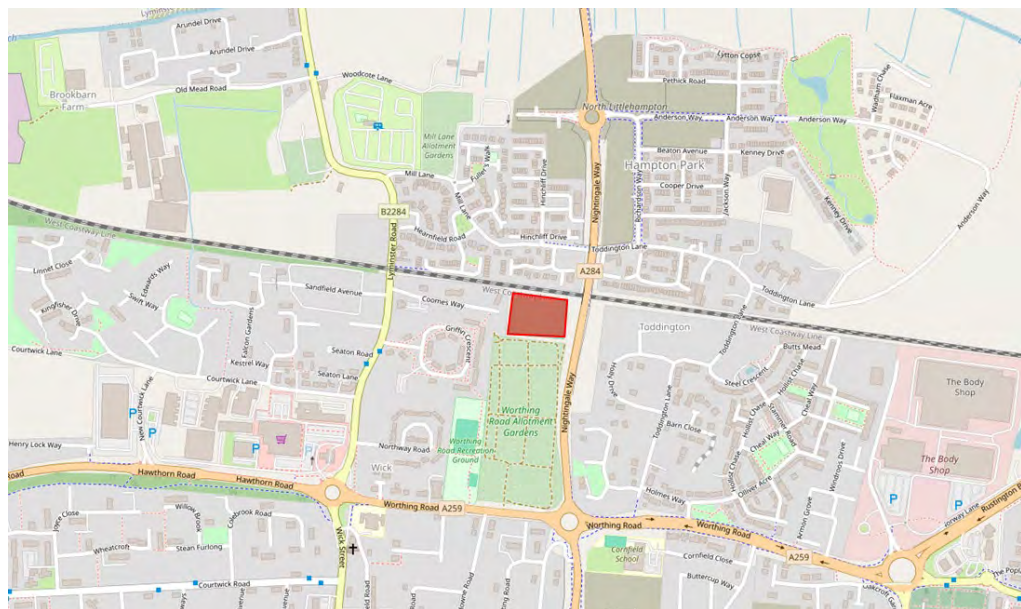


Figure 1.1 Site Location Plan
Source: OpenStreetMap.co.uk – 03/30/2026

1.2 Objectives

1.2.1 The objective of this report is to advise interested parties regarding the potential risk of flooding and the management of surface water run-off arising from the proposals.

1.2.2 This report has been prepared to support a detailed planning application.

2.0 Policy review

2.1 Introduction

- 2.1.1 The following section of the report details key national and local policies relating to flood risk and drainage, which will inform the assessment of the proposed development.

2.2 Reference documents

- 2.2.1 This report has been prepared with reference to the following publications:-
- Department for Environment, Food and Rural Affairs (updated July 2025), National standards for sustainable drainage systems (SuDS)
 - Ministry of Housing, Communities and Local Government (March 2012, updated December 2024), National Planning Policy Framework
 - Ministry of Housing, Communities and Local Government (March 2014, updated September 2025), Planning Practice Guidance 'Flood Risk and Coastal Change'
 - Environment Agency (March 2014, updated April 2025), Planning Practice Guidance 'Flood risk assessments: applying for planning permission'
 - Environment Agency (February 2016, updated May 2022), Planning Practice Guidance 'Flood risk assessments: climate change allowances'
 - Environment Agency (October 2013), Delivering benefits through evidence: Rainfall runoff management for developments
 - HM Government (2010), The Building Regulations (2010), Drainage and Waste Disposal, Approved Document H, The NBS, Newcastle Upon Tyne
 - Wilson, Bray, Cooper (2004), Sustainable drainage systems: Hydraulic, structural and water quality advice, C609, CIRIA, London
 - Woods-Ballard et al (2015), The SUDS Manual, C753, CIRIA, London
 - CIRIA Report C624 Development and flood risk
 - National SUDS Working Group (2004), Interim Code of Practice for Sustainable Drainage Systems,
 - Institute of Hydrology (1999), Flood Estimation Handbook, Institute of Hydrology, Wallingford
 - BS EN 752:2008 Drain and sewer systems outside buildings. Hydraulic design and environmental considerations
 - BS 8533:2011 Assessing and managing flood risk in development – Code of Practice
 - CIRIA Report C635 Designing for exceedance in urban drainage – good practice
 - West Sussex Local Flood Risk Management Strategy 2025-2030
 - Arun District Council Level 1 Strategic Flood Risk Assessment (March 2026)

2.3 National policy

2.3.3 National Planning Policy Framework (NPPF)

2.3.3.1 The revised NPPF was published in December 2024, superseding all previous versions, however the presumption in favour of sustainable development remains as the core objective of the document. The document sets out the Government's planning policies for England and details how they are expected to be applied.

2.3.3.2 The paragraphs of most relevance to flood risk and drainage are captured within Chapter 14: Meeting the challenge of climate change, flooding and coastal change. The paragraphs presented within Chapter 14 are categorised as follows:

- 161: introductory paragraph
- 162 to 169: Planning for climate change
- 170 to 182: Planning and flood risk
- 183 to 186: Coastal

2.3.4 Planning Practice Guidance (PPG)

2.3.4.1 In 2016, the Government published the PPG, which provides further information and guidance to support the NPPF. Sections of the PPG relevant to the preparation of this report include:

- Flood risk assessments: applying for planning permission;
- Flood risk and climate change; and.
- Flood risk assessments: climate change allowances.

2.3.5 National standards for sustainable drainage systems

2.3.5.1 The National standards for sustainable drainage systems (SuDS), as published by DEFRA and updated in July 2025, set out the following Standards:

1. Runoff destinations
2. Management of everyday rainfall (interception)
3. Management of extreme rainfall and flooding
4. Water quality
5. Amenity
6. Biodiversity
7. Design of drainage for construction, operation, maintenance, decommissioning and structural integrity.

2.3.5.2 The above standards are underpinned by eleven principles, categorised as follows:

- Natural approach to managing water (1, 2, 3)
- Early and integrated design (4, 5, 6, 7, 8)
- Links with development planning (9, 10, 11)

2.4 Local policy

2.4.3 West Sussex Local Flood Risk Management Strategy: 2025-2030

2.4.3.1 As the Lead Local Flood Authority (LLFA), West Sussex County Council are responsible for creating and maintaining a strategy to manage local flood risk, in line with the national strategy. The 2025 strategy outlines how West Sussex County Council plan to manage and reduce flood risk across West Sussex. It has been developed through public engagement, formal consultation and working closely with key partners to make sure it reflects the needs and priorities of the communities.

2.4.3.2 The strategy sets out four objectives, developed through stakeholder workshops and consideration of both the national FCERM strategy and local policy and priorities:

- Use a catchment-based approach to understand and manage flood risk.
- Create a common, informed framework for sustainable development that improves safety and resilience for people, property, infrastructure, and the environment through long-term thinking.
- Adopt collaborative approaches to understanding and managing flood risk assets and systems, prioritising the implementation of nature-based solutions.
- Empower the communities to increase their resilience and ability to adapt to flood risk now, and in the future.

3.0 Description and history of the site and development proposals

3.1 Location and description of the site

- 3.1.1 The proposed artificial grass pitch is located at Wick Football Club, Coomes Road, Littlehampton, as shown in Figure 1.1 above. The site is immediately bound by vegetation on all boundaries, with a railway situated beyond to the north, Nightingale Way to the east, allotment gardens to the south and Wick Football Club and the parking for the pitch to the west.

3.2 History of the site

- 3.2.1 The site is currently a grass football pitch, as shown on the topographical survey enclosed in **Appendix A**. We are not aware of any previous development on the site.
- 3.2.2 Aerial imagery dating back to December 2001 is shown in Figure 3.1 below, with the most recent aerial imagery (dated February 2025) shown in Figure 3.2 below. It can be seen that the site has remained comparable during this time.



Figure 3.1 Aerial Imagery dated December 2001
Source: Google Earth Pro – 30/03/2026



*Figure 3.2 Aerial Imagery dated February 2025
Source: Google Earth Pro – 30/03/2026*

3.3 Site topography

- 3.3.1 The topographical survey indicates that site levels generally fall from the north-east corner (at approximately 7.90m) towards the south-west corner (lowest point of approximately 6.71m). The topographical survey is shown on the plan enclosed in **Appendix A**.

3.4 Existing drainage infrastructure

- 3.4.1 Southern Water's asset plan is enclosed in **Appendix B**. The asset plan identifies that there is no adopted drainage within the site boundary or its vicinity. The nearest adopted surface water sewer is identified on Coomes Way circa 80m west of the site. Foul water sewers are also identified to the west of the site.
- 3.4.2 A utilities survey has been undertaken on site, as shown on the plan enclosed in **Appendix C**. The survey identifies possible surface water pipes that pass through the pitch location from the south-west corner, centre and south-east corner of the site. These are taken from records.

3.5 Geology of the site and ground investigation data

- 3.5.1 Inspection of the geological maps show that the superficial deposits at the site are River Terrace Deposits. The bedrock geology which underlies the site is New Put Chalk Formation.

- 3.5.2 JPP Geotechnical & Environmental have completed a geotechnical investigation on the site, see report extract enclosed in **Appendix D**. This investigation included a site visit in April 2026. This investigation found Topsoil, River Terrace Deposits and New Pit Chalk Formation. Details of the encountered ground conditions are summarised in Table 3.1 below.

Summary of Ground Investigation Information							
Ground Conditions	Depth (m)						
	WS01	WS01A	WS02	WS03	WS04	WS05	WS06
Topsoil	0.20	0.25	0.20	0.30	0.40	0.30	0.20
River Terrace Deposits	5.00	1.00	4.80	4.80	1.90	3.20	4.40
New Pit Chalk Formation	5.45	N/A	5.45	5.45	5.29	5.45	5.45

Table 3.1 Ground Investigation Information

- 3.5.3 During the site investigation, no groundwater was encountered.

- 3.5.4 The GI notes the following with regards to infiltration:

“WS01 was drilled in the southwestern corner of the existing grass pitch to a depth of 4.5m bgl. A full cycle was completed, producing an indicative infiltration rate of 3.08×10^{-6} m/s. The result suggests there is potential permeability within the underlying granular River Terrace Deposits as such soakaways may be considered a viable solution for drainage. It should be noted that this is indicative testing due to being carried out in a borehole. Should soakaways be considered, then further testing would be necessary in machine excavated trial pits to be compliant with BRE 365 Soakaway Design, to assess the viability and derive rates for design.”

- 3.5.5 The report concludes that it may be possible to utilise deep borehole soakaways drilled down sufficiently into chalk at depth, however, due to site constraints and chalk dissolution it is recommended that soakaways are deemed unviable as a method of surface water discharge for the site.

3.6 Proposed development

- 3.6.1 The proposed development will comprise of an artificial grass pitch (AGP). The proposed development layout is shown on the plan enclosed in **Appendix E**.

4.0 Flood risk

4.1 Fluvial / Tidal flooding

- 4.1.1 An extract of the Environment Agency's Flood Map for Planning (Flood Zones) is provided below in Figure 4.1. The flood map was extracted from the GOV.UK website on 9th June 2026. The approximate application site boundary is shown in red. The map indicates that the development site is located within Flood Zone 1 (Low Probability) and as such, the report considers the development to be in Flood Zone 1 and at a low risk of flooding from rivers or the sea.



Figure 4.1 Flood Map for Planning (Flood Zones)

Source: GOV.UK website – 09/06/2026

- 4.1.2 The latest mapping also includes an allowance for climate change (2070 to 2125), as shown in Figure 4.2 below. As demonstrated, the site remains in Flood Zone 1 with the allowance of climate change, however, an area to the south-west is identified within the climate change extent, located beyond the site boundary.



Figure 4.2 Flood Map for Planning (Flood Zones – 2070 to 2125)
Source: GOV.UK website – 09/06/2026

4.1.3 Table 4.1 below is a copy of Table 1 from Planning Practice Guidance for 'Flood Risk and Coastal Change' to the National Planning Policy Framework which defines Flood Zones. The proposed development, which is located within Flood Zone 1, is defined as having a less than 1 in 1,000 annual probability of river or sea flooding in any year.

Flood Zone Definitions	
Flood Zone	Definition
Zone 1: Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding.
Zone 2: Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a: High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b: The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.

Source: Planning Practice Guidance - 2022

Table 4.1 Flood Zone Definitions

4.2 Flooding from surface water

4.2.1 Environment Agency mapping of the likelihood of surface water flooding (Annual likelihood of flooding) is provided. This identifies the 1 in 30, 1 in 100 and 1 in 1000 year scenarios. The approximate application site boundary is shown in red in each figure. Climate change mapping is also provided for each scenario.

- 4.2.2 An extract of the 1 in 1000 year (low 0.1% chance) annual likelihood of flooding is provided below in Figure 4.3. This identifies that a small portion of the south-west corner of the pitch is located in an area at low chance of annual likelihood of flooding from surface water.



Figure 4.3 Long Term Flood Risk (Surface Water / 1 in 1000 year)
Source: GOV.UK website – 09/06/2026

- 4.2.3 An allowance for climate change (2061 to 2125), as shown in Figure 4.4, is also provided. The extent of the 1 in 1000 yearly likelihood of flooding is comparable to the non-climate change scenario.



Figure 4.4 Long Term Flood Risk (Surface Water / 1 in 1000 year – 2061 to 2125)
Source: GOV.UK website – 09/06/2026

- 4.2.4 An extract of the 1 in 100 year (medium 1% chance) annual likelihood of flooding is provided below in Figure 4.5. This continues to identify a small area in the south-west corner of the pitch at a medium likelihood of flooding. This is of a low depth.



Figure 4.5 Long Term Flood Risk (Surface Water / 1 in 100 year)
Source: GOV.UK website – 09/06/2026

- 4.2.5 An allowance for climate change (2061 to 2125), as shown in Figure 4.6, is also provided. The extent of the 1 in 100 year likelihood of flooding is comparable to the non-climate change scenario.



Figure 4.6 Long Term Risk (Surface Water / 1 in 100 year – 2061 to 2125)
Source: GOV.UK website – 09/06/2026

- 4.2.7 An extract of the 1 in 30 year (high 3.3% chance) annual likelihood of flooding is provided below in Figure 4.7. This continues to identify a small area in the south-west corner of the pitch at a high likelihood of flooding. This is of a low depth.



Figure 4.7 Long Term Flood Risk (Surface Water / 1 in 30 year)
Source: GOV.UK website – 09/06/2026

- 4.2.8 An allowance for climate change (2061 to 2125), as shown in Figure 4.8, is also provided. The extent of the 1 in 30 year likelihood of flooding is comparable to the non-climate change scenario.



Figure 4.8 Long Term Flood Risk (Surface Water / 1 in 30 year – 2061 to 2125)
Source: GOV.UK website – 09/06/2026

- 4.2.9 The areas of low and medium surface water flooding risk are isolated and located entirely within the development site. It is likely these areas are anomalous based on low spots from the ground level data used by the Environment Agency when producing the maps. We therefore consider the risk of surface water flooding to the development to be low.
- 4.2.10 As the proposed development is categorised to be Water Compatible, we believe that this level of flood risk is acceptable for the proposed use of this site.
- 4.2.11 It should be noted that this map is generated using a broad methodology applied at the national scale. The model utilises generalised information on infiltration, sewerage infrastructure, rainfall events and catchment topography to route rainfall over a ground surface model. As such, the analysis does not take account of site-scale factors / characteristics that may exert an influence upon surface water flood depths and extents. The map therefore only provides a guide regarding the areas that may be vulnerable to this source of flooding.

4.3 Flooding from groundwater

- 4.3.1 The Arun District Council Level 1 Strategic Flood Risk Assessment has been reviewed with regards to groundwater flooding. Mapping is included within the SFRA and details 'Groundwater Emergence'. From the scale of the mapping, it is hard to identify the exact location of the site. Wick is generally located in an area where groundwater levels are between 0.025m and 0.5m below the ground surface. This mapping can be found enclosed in **Appendix F**.
- 4.3.2 The ground investigation, completed by JPP Geotechnical & Environmental, did not encounter groundwater during the investigation, which extended to some 5m bgl.
- 4.3.3 The information available at the time of preparing this report, and the nature of the underlying geology, suggests that groundwater emergence at the surface is unlikely, such that groundwater flood risk does not constitute a constraint in this instance.

4.4 Flooding from sewers

- 4.4.1 The Southern Water asset plan, enclosed in **Appendix B**, does not identify any adopted drainage within the site's boundary or its' immediate vicinity.
- 4.4.2 A utilities survey has been undertaken on site, as shown on the plan enclosed in **Appendix C**. The survey identifies possible surface water pipes that pass through the pitch location from the south-west corner, centre and south-east corner of the site. These are taken from records.
- 4.4.3 We do not have any records of sewer flooding within the vicinity of the proposed development.
- 4.4.4 We therefore do not consider the risk of flooding from sewers to be a significant risk to the proposed development.

4.5 Flooding from reservoirs, canals and other artificial sources

- 4.5.1 We are not aware of any canals or artificial water sources that may result in flooding of this site.
- 4.5.2 The EA provides maps (<https://flood-warning-information.service.gov.uk/long-term-flood-risk/>) showing the area that may be affected by flooding as a result of a breach of a large, raised reservoir (i.e. capable of storing over 25,000 cubic metres of water above the natural level of any part of the surrounding land).
- 4.5.3 An extract of the Environment Agency map 'Risk of Flooding from Reservoirs' is provided below in Figure 4.9. It can be seen that the proposed development site, shown in red, is not at a risk of flooding from reservoirs.



Figure 4.9 Risk of Flooding from Reservoirs
Source: GOV.UK website – 09/06/2026

- 4.5.4 It can therefore be concluded that the risk of flooding from reservoirs and other artificial sources is low.

4.6 Historic flooding

- 4.6.1 The Arun District Council Level 1 Strategic Flood Risk Assessment has been reviewed with regards to historic flooding. There is no information that suggests historic flooding has impacted the development.
- 4.6.2 Figure 4.10 below, displays a map that consists of historical flooding events around the site location, as published by the Environment Agency. The mapping shows no recorded flood events within the vicinity of the site.

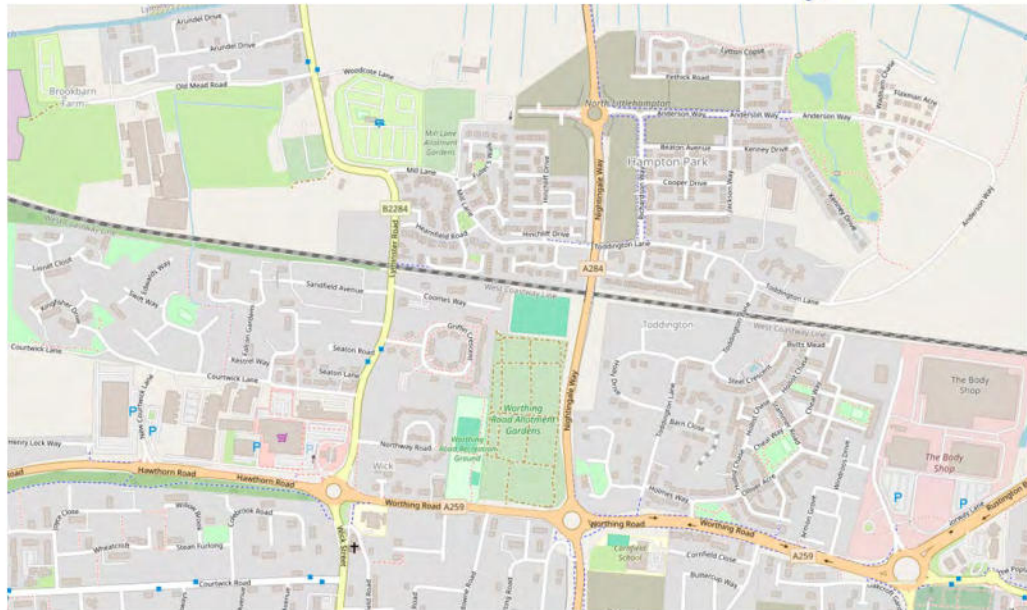


Figure 4.10 Historic Flood Mapping

Source: Historical Flood Map – data.gov.uk (09/06/2026)

4.7 Flood risk vulnerability and flood zone compatibility

4.7.1 Based on the above assessment of the site being located within Flood Zone 1 and classified as a Water Compatible development, and with reference to Table 4.2 below (Planning Practice Guidance for 'Flood Risk and Coastal Change' to the National Planning Policy Framework, Table 2), the proposed development of this site would be considered "appropriate". A copy of Table 2 is presented below highlighting the above.

Table 2 – Flood Risk Vulnerability and Flood Zone Compatibility					
Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatibility	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception test required	✓	✓
Zone 3a	Exception test required	✓	X	Exception test required	✓
Zone 3b	Exception test required	✓	X	X	X
✓ = Development is appropriate			X = Development should not be permitted		
Source: Planning Practice Guidance - 2022					

Table 4.2 Flood Risk Vulnerability and Flood Zone Compatibility

4.8 Flood compensation

- 4.8.1 Flood compensation measures will not be required for this site as it is located within Flood Zone 1.

4.9 Access and egress

- 4.9.1 Access and egress to and from this site in the event of flooding will be via the proposed development's access road which will allow users of the development to move to higher ground.

5.0 Management of surface water

5.1 Current conditions

- 5.1.1 The site is currently a grass playing field. Anecdotal information from the site contact suggests that the pitch is very well draining. It is understood that there are a series of lateral drains crossing across the pitch, however the ultimate outfall is unknown.

5.2 Surface water drainage outfalls

- 5.2.1 It is a requirement of The Building Regulations (2010), Drainage and Waste Disposal, Approved Document H, to dispose of surface water collected by a development in accordance with the following, listed in order of priority:

1. Infiltration systems where ground condition permit
2. To watercourses
3. To sewers

- 5.2.2 Further, Standard 1 of the National standards for SuDS requires runoff to be managed in accordance with the below hierarchy:

- Priority 1: collected for non-potable use
- Priority 2: infiltrated to ground
- Priority 3: discharge to an above ground surface water body
- Priority 4: discharged to a surface water sewer, or another piped surface water drainage system
- Priority 5: discharged to a combined sewer.

- 5.2.3 Each of these is considered separately below:

5.2.4 Non-potable use

- 5.2.4.1 Not considered applicable given the nature of the development proposals.

5.2.5 Infiltration systems

- 5.2.5.1 The geology of the site is described in Section 3.5 above. Due to site constraints, including chalk dissolution risk, infiltration is deemed unviable as a method of surface water discharge from the site.

5.2.6 Watercourses / Main River

- 5.2.6.1 There are no watercourses located within or adjacent to the boundary of the proposed development.

5.2.7 Sewers

- 5.2.7.1 Surface water will outfall to the Southern Water surface water sewer located to the west of the site within Coomes Way. It is proposed that a connection will be made to manhole reference 9850, subject to consultation with Southern Water and confirming details of existing drainage at the site which may facilitate an outfall from the AGP.
- 5.2.7.2 This will be confirmed subject to further observations. The existing on site drainage will provide an outfall for the proposed AGP.

5.3 Surface water drainage strategy

- 5.3.1 Greenfield run-off rates will be calculated to inform the proposed flow restriction from the development proposals.
- 5.3.2 The proposed drainage strategy will centre around the permeable sub-base of the AGP, which will offer interception, treatment and attenuation of surface water.
- 5.3.3 Surface water from the proposed AGP will ultimately discharge into the existing Southern Water surface water sewer network in Coomes Way to the west of the site. Further investigation will confirm if existing on-site drainage outfalls to this location, to be utilised where feasible to facilitate an outfall from the site.
- 5.3.4 An indicative surface water layout plan is enclosed in **Appendix G**. The drawing shows that surface water attenuation can be accommodated on the site and the method of discharge assuming that infiltration techniques are not viable. The detailed design parameters of the drainage are described below.

5.4 SUDS assessment

- 5.4.1 We have considered the suitability of SUDS for use on the development site. The review is set out in below Table 5.1.

SUDS Assessment		
SUDS Technique	Suitability	Justification
Rain Water Harvesting	No	Not applicable for the development type.
Green Roofs	No	Not applicable for the development type.
Infiltration	No	Underlying geology unviable.
Filter Strips / Filter Drains	No	Underlying geology unviable.
Swales	No	Not suitable for the development type.
Bioretention Systems	No	No open spaces.
Trees	No	The development proposals simply comprise the proposed AGP – no new trees will be planted adjacent to the pitch.

Pervious Pavements	Yes	The permeable sub-base of the pitch will provide interception, treatment and attenuation of surface water.
Attenuation Tanks	No	Surface water attenuation will be achieved within the sub-base of the pitch and containment barriers.
Detention Basin	No	Surface water attenuation will be achieved within the sub-base of the pitch and containment barriers.
Ponds and Wetlands	No	Surface water attenuation will be provided within the sub-base for the pitch and containment barriers.
Trapped Drainage	No	Water treatment will be achieved via the permeable sub-base of the proposed AGP.

Table 5.1 SUDS Assessment

5.5 Water quality

- 5.5.1 Chapter 26 of The SuDS Manual 2015 (CIRIA 753) provides guidance on the methods that should be used to design SuDS to meet the water quality design criteria and good practice design standards. Based on the simple index approach, the pollution hazard indices for different land use classifications are listed in Table 26.2, Chapter 26 of the SuDS Manual. Table 5.2 below summarises the pollution hazard indices that are applicable for residential land use development.

Pollution Hazard Indices for Different Land Use Classifications				
Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydro-carbons
Residential Roofs	Very low	0.2	0.2	0.05

Source: Table 26.2 of The SuDS Manual

Table 5.2 Pollution Hazard Indices for Different Land Use Classifications

- 5.5.2 'Residential Roofs' is considered to be the most appropriate category for the proposed pitch due to the minimal pollution hazard associated with the proposed artificial grass pitch, which will have no vehicle movements within its extent.
- 5.5.3 Table 26.3 of The SuDS Manual shows the mitigation indices for a range of SuDS components for discharges to surface waters. An extract of this is provided in Table 5.3 below for the components relevant to the proposed development.

Indicative SuDS Mitigation Indices for Discharges to Surface Waters			
Type of SuDS Component	Mitigation Indices		
	TSS	Metals	Hydro-carbons
Permeable pavement	0.7	0.6	0.7
Source: Table 26.3 of The SuDS Manual			

Table 5.3 Indicative SuDS Mitigation Indices for Discharges to Surface Waters

- 5.5.4 Based on the information and assessment set out above, the proposed SuDS features are considered to provide sufficient water treatment for the development proposals.

5.6 Surface water drainage design and management

- 5.6.1 Proposals are to design the surface water drainage system to accommodate storms up to the 1 in 100 year event plus an allowance of 45% for climate change. The Planning Practice Guidance 'Flood risk assessments: climate change allowances' to the National Planning Policy Framework defines the climate change allowances per catchment area, as set out on DEFRA map of 'climate change allowances for peak rainfall in England'. Table 5.4 below sets out the peak rainfall allowances for the Arun and Western Streams Management Catchment which the site is located within.

Peak Rainfall Intensity Allowance: Arun and Western Streams Management Catchment			
Rainfall Event	Epoch	Central Allowance	Upper End Allowance
3.3%	2050s	+20%	+35%
	2070s	+25%	+40%
1%	2050s	+20%	+45%
	2070s	+25%	+45%
Source: Planning Practice Guidance - 2022			

Table 5.4 Peak Rainfall Intensity Allowance

5.7 Existing run-off rates

- 5.7.1 To reflect the changes in the near surface geology across the site the greenfield run-off rates have been calculated. The method used to calculate the greenfield run off rates is the ICP SUDS and the calculations are presented in **Appendix H**.
- 5.7.2 The greenfield run off rate, for the application site, is:

Soil type	= 0.500 – obtained from the FEH parameters
SAAR	= 730mm – obtained from the FEH parameters
Urban	= 0.000
Region number	= 7
Proposed drained area	= 0.841ha
Q ₁	= 2.6 l/s
Q _{bar}	= 3.0 l/s
Q ₃₀	= 6.8 l/s
Q ₁₀₀	= 9.6 l/s

- 5.7.3 Surface water run-off from the proposed development will be limited to the greenfield equivalent rate of 3.0 l/s via a vortex flow control device.

5.8 Attenuation requirements

- 5.8.1 Surface water will ultimately discharge into the existing Southern Water surface water sewer network in Coomes Way and will be attenuated to a Q_{bar} greenfield run-off rate of 3.0 l/s. To achieve this, surface water will primarily be attenuated within the permeable sub-base of the pitch.

- 5.8.2 The proposed drained area of the development is 8,410m² (0.841ha), as shown on the plan enclosed in **Appendix I**. Based on the proposed drained area and allowable discharge rate of 3.0 l/s, the storage requirement has been calculated utilising the following parameters.

Rainfall profile	= Flood Estimation Handbook
Drained area	= 8,410m ² (0.841ha)
Pitch length	= 106m
Pitch width	= 70m
Fall across pitch (longitudinal)	= 1:400
Depth of permeable sub-base	= 300mm
Porosity of permeable sub-base	= 30 % voids
Control	= Hydrobrake

- 5.8.3 Storage calculations for the 1 in 30 year event have been undertaken based on the parameters set out above and below. Full calculations are enclosed in **Appendix J**. The results confirm that the permeable sub-base of the pitch is sufficient to accommodate all the storage required for the 1 in 30 year event.

Return period	= 1 in 30 year
Climate change	= 0%
Durations	= 60 to 10080 minutes
Max volume of flooding triggered	= 0m ³

- 5.8.4 Storage calculations for the 1 in 100 year event have been undertaken based on the parameters set out above and below. Full calculations are enclosed in **Appendix K**. The results confirm that the permeable sub-base of the pitch is not sufficient to accommodate all the storage required for the 1 in 100 year event.

Return period	= 1 in 100 year
Climate change	= 0%
Durations	= 60 to 10080 minutes
Max volume of flooding triggered	= 33.4m ³

- 5.8.5 Storage calculations for the 1 in 100 year plus 45% climate change event have been undertaken based on the parameters set out above and below. Full calculations are enclosed in **Appendix L**. The results confirm that the permeable sub-base of the pitch is not sufficient to accommodate all the storage required for the 1 in 100 year plus 40% climate change event.

Return period	= 1 in 100 year
Climate change	= 45%
Durations	= 60 to 10080 minutes
Max volume of flooding triggered	= 144.8m ³

5.8.6 Containment barriers will be provided around the pitch, to achieve sufficient above-ground storage for flooding up to and including the 1 in 100 year plus 45% climate change event.

5.8.7 The indicative surface water drainage layout is shown on the plan enclosed in **Appendix G**.

5.9 Overland flows

5.9.1 Proposals are to design the surface water drainage to accommodate the 1 in 100 year storm event taking into account the predicted future effects of climate. Clearly there is a risk of this storm event being exceeded, albeit this risk is considered very low. In such an event the proposed drainage systems will become overwhelmed and overland flows could occur. Overland flows will be directed to follow the path that overland flows currently follow.

5.9.2 Predicted overland flow routes are shown on the plan enclosed in **Appendix M**.

6.0 Foul water drainage strategy

6.1 There is no foul water drainage associated with the proposal.

7.0 Maintenance

7.1 Surface water drainage maintenance

7.1.1 The proposed surface water drainage infrastructure will comprise a private SuDS system which will be maintained accordingly.

7.2 Foul water drainage maintenance

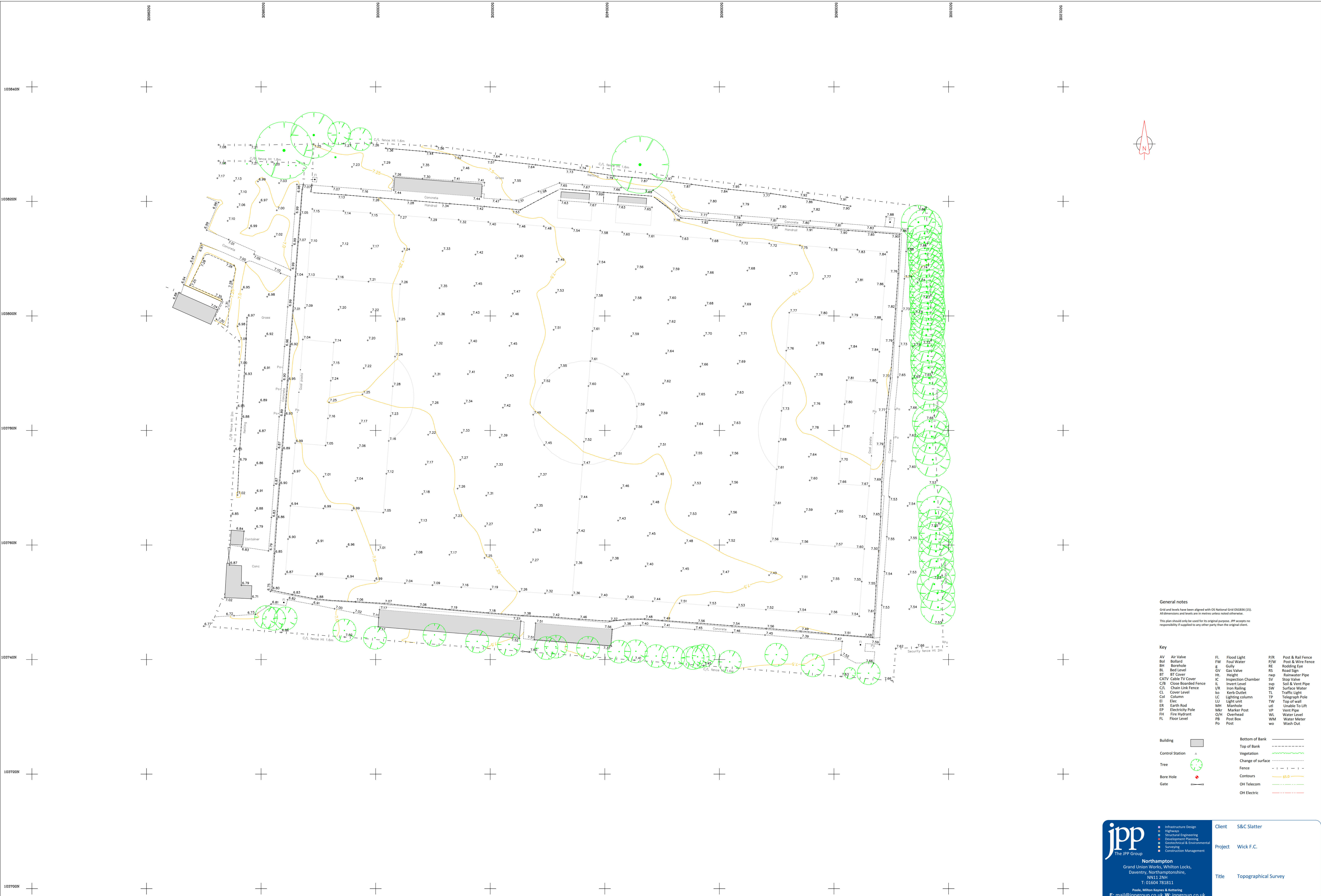
7.2.1 There is no foul water drainage associated with the proposal.

8.0 Summary and conclusions

- 8.1 The proposed artificial grass pitch is located at Wick Football Club, Coomes Road, Littlehampton. The site is immediately bound by vegetation on all boundaries, with a railway situated beyond to north, Nightingale Way to the east, allotment gardens to the south and Wick Football Club and the parking for the pitch to the west.
- 8.2 The proposed development will comprise of an Artificial Grass Pitch (AGP).
- 8.3 JPP Geotechnical & Environmental have completed a geotechnical investigation on the site. This investigation included a site visit in April 2026. This investigation found Topsoil, River Terrace Deposits and New Pit Chalk Formation. The report concludes that due to site constraints and chalk dissolution risk, soakaways are deemed unviable as a method of surface water discharge for the site.
- 8.4 The proposed drainage strategy will centre around the permeable sub-base of the AGP, which will offer interception, treatment and attenuation of surface water. Surface water from the proposed AGP will ultimately outfall to the Southern Water sewer network in Commes Way and will be attenuated to a Q_{bar} greenfield run-off rate of 3.0 l/s. To achieve this, surface water will primarily be attenuated within the permeable sub-base of the pitch. Containment barriers will be provided around the pitch, to achieve sufficient above-ground storage for flooding up to and including the 1 in 100 year plus 45% climate change event.
- 8.5 There is no foul water drainage associated with the proposal.
- 8.6 The proposals for a Synthetic Turf Pitch at Wick Football Club, Wick are therefore fully compliant with policy in respect of development and flood risk, such that flood risk considerations do not constitute a barrier to the granting of planning consent.



Appendix A
Topographical Survey
JPP Surveying drawing no. 31604Y-01



General notes

Grid and levels have been aligned with OS National Grid OSGB36 (15).
All dimensions and levels are in metres unless noted otherwise.

This plan should only be used for its original purpose. JPP accepts no responsibility if supplied to any other party than the original client.

Key

AV	Air Valve	FL	Flood Light	P/R	Post & Rail Fence
Bol	Bollard	FW	Flow Water	P/W	Post & Wire Fence
BH	Borehole	GU	Gully	RE	Redding Eye
BL	Bed Level	GV	Gas Valve	RS	Road Sign
BT	Buttress	HL	Height	RW	Rainwater Pipe
CATV	Cable TV Service	IC	Inspection Chamber	SV	Stop Valve
C/B	Cold Covered Fence	IL	Invert Level	SV	Soft & Vent Pipe
CL	Chain Link Fence	IR	Iron Railing	SW	Surface Water
CL	Column	KB	Keel Outlet	TL	Traffic Light
Co	Cover	LC	Lighting Cabinet	TP	Telephone Pole
CU	Culvert	LU	Light Unit	UP	Up of wall
ER	Earth Road	ML	Manhole	UT	Unable to Lift
EP	Electricity Pole	MK	Marker Post	VP	Vent Pipe
FD	Fire Hydrant	OH	Overhead	WM	Water Meter
FL	Floor Level	PO	Post Box	WM	Water Meter
		Pt	Post	WO	Wash Out

Building		Bottom of Bank	
Control Station		Top of Bank	
Tree		Vegetation	
Bore Hole		Change of surface	
Gate		Fence	
		Contours	
		OH Telecom	
		OH Electric	

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Project Wick F.C.

Title Topographical Survey

Scale at A0	1:200	Drawn by	JG	Checked by	TB	Date	17/3/26
Status	Project ref		Drawing no.		Revision		
	21604X		01				



Appendix B

Southern Water Asset Plan

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

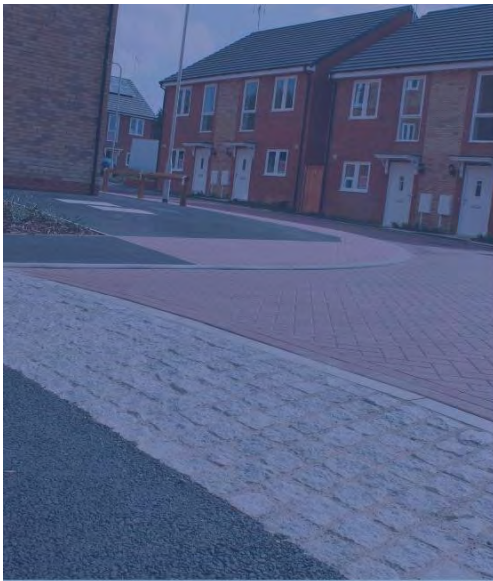


Appendix C
Utility Survey
RSP Underground Service drawing no. RSP2563



Appendix D
Ground Investigation Extract
JPP Geotechnical & Environmental report ref. R-SI-31284-01-01

- Infrastructure Design
- Highways
- Structural Engineering
- Development Planning
- Geotechnical & Environmental
- Surveying
- Construction Management



Proposed Artificial Grass Pitch Wick Football Club Littlehampton BN17 7LP



Site Investigation Report

May 2026
Revision 01
R-SI-31284-01-01

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1.0 Executive Summary

- 1.1.1 The following is provided as an overview and should not be relied upon in isolation to the main report.

Summary Overview

Existing Site	The site currently comprises a grassed stadia football pitch, with four floodlighting columns situated in the corners of the pitch, a car park, clubhouse and patio and food and drinks stand all situated to the west of the pitch. The site is bounded by hedgerows and mature trees to the north, east and south with a railway to the north, Nightingale Way further east and allotments to the south.
Proposals	It is proposed to develop an Artificial Grass Pitch (AGP) and associated infrastructure on the footprint of the existing grass stadia pitch.
History	Historical mapping from the 1830s onwards shows the site remained largely undeveloped open land south of the London, Brighton and South Coast Railway. Surrounding land uses evolved over time, including nearby brick works, nurseries, allotments, and later residential development, particularly between the 1940s and 1970s. Aerial imagery from 2001 shows the site in use as a football ground with a clubhouse, parking, and spectator stands. The surrounding residential areas and allotments were already established. Little changed until 2016, when large-scale housing development began north of the railway line following demolition of former nursery and industrial buildings. By 2022, construction of the A284 bypass was underway, linking to the new housing estate, and by 2025 both the road and residential developments had been completed, alongside the addition of a new football stand to the south of the pitch.
UXO	A moderate risk of encountering UXO was determined by a site-specific risk review and therefore support by a specialist EOD engineer was required for our intrusive investigation and may be necessary during the construction phase. A detailed UXO desk study could be undertaken to refine the preliminary risk assessment, which may determine that supervision during the construction works may not be necessary.
Geology	British Geological Survey mapping shows the site is underlain by superficial River Terrace Deposits (sand, silt and clay). The bedrock geology is recorded to be the New Pit Chalk Formation.
Fieldwork	Our fieldwork comprised 7 No. windowless sampler boreholes to a maximum depth of 5.45m bgl, with 2 No. indicative infiltration tests within WS01A and WS01 at 1.00m and 4.5m bgl, and 5 No. TRL dynamic cone Penetration tests to measure insitu CBR Values. Additional site works were undertaken to investigate the identified feature at WS03 which comprised 5 No. windowless sample boreholes to 5.00m bgl with follow on dynamic probing through the base of the borehole to 7.00m bgl and 1 No. dynamic probe from surface to 7.00m bgl.
Ground Conditions	A shallow covering of topsoil was encountered down to depths of between 0.20m to 0.40m, which was underlain by cohesive River Terrace Deposits to depths of between 1.50m and 2.30m bgl, which comprised a firm brown slightly gravelly sandy Clay with occasional roots and sandy pockets. Beneath the cohesive soils, granular River Terrace Deposits were encountered to depths of between 3.20m and 5.00m bgl, which comprised a slightly silty, slightly gravelly clayey fine to medium Sand with flint gravel and localised iron staining. SPT tests indicated variable densities, ranging from very loose to dense, with evidence of loosening at a depth of 4.0m bgl in several locations. Chalk bedrock was encountered beneath the granular River Terrace Deposits at depths between 3.20m and 5.00m bgl, which comprised a structureless weak to medium dense Chalk within a clay matrix (CIRIA Grade Dm). In one borehole (WS05), a less weathered gravelly Chalk (CIRIA Grade Dc) was encountered from 3.50m bgl.

Summary Overview

WS03 is considered to have been drilled in close proximity to a potential dissolution feature which has been investigated in a second phase of site works detailed below.

Additional Works

Ground conditions at WS07-WS11 recorded similar composition and stratigraphy to WS03.

At the location of WS10 a dark orangish brown slightly clayey silty fine to coarse Sand was recorded beneath the Chalk bedrock from 4.50m bgl to the base of the borehole at 5.00m bgl. The dynamic probe drilled through the base of the borehole recorded low blow (0-1) counts from 5.00m to 5.60m bgl. This is considered to be a potentially infilled dissolution feature. Below 5.6m to the base of the probe at 7.00m bgl, blows counts improved and were considered to be representative of competent bedrock chalk.

Groundwater	No groundwater was encountered during the investigation, although groundwater could be encountered within the permeable River Terrace Deposits during the wetter winter months.
Chalk Dissolution Risk.	There is considered to be a risk of chalk dissolution on site based on the identification of a potentially active dissolution feature around the location of WS03 and the presence of a presumed infilled dissolution feature at the location of WS10. The design of the pitch, foundations and drainage should take into account the risk of chalk dissolution.
Floodlight foundations	Pad foundations are recommended for the proposed floodlights extending a minimum of 0.75m depth bgl (below existing or proposed ground levels where the deepest should apply). Larger size pads are recommended to be cautious with respect to the risk of chalk dissolution, especially around WS03/WS10. Should any unusual features such as voiding or particular loose soils be encountered during construction, we should be consulted to advise the most appropriate course of action.
Concrete Classification	DS-1 ACEC AC-1 for the cohesive and granular River Terrace Deposits.
Pitch Construction	CBR of 4% onto formation of the cohesive River Terrace Deposits for design and reassessed during construction. The pitch construction should take into account the risk of chalk dissolution with a fully sealed pitch base recommended and water directed to a positive drainage outfall or to a soakaway located remote from the pitch, to reduce the potential for uncontrolled percolation of rainwater directly into the underlying sands/gravels and down into the chalk at depth, potentially creating or reactivating any existing dissolution features.
Infiltration potential/ Surface Water Drainage	Indicative infiltration testing suggests that the shallow cohesive River Terrace Deposits are effectively impermeable, whilst the underlying granular soils were observed to provide some permeability and are therefore potentially suitable for the use of shallow soakaways. However, due to the risk of chalk dissolution features occurring beneath the footprint of the pitch and in the immediate surrounding area, and the potential for concentrated ingress into the underlying chalk bedrock to create new dissolution features or reactive pre-existing features, any soakaway should be located remote (at least 20m based on the high risk) from structures including floodlight foundations and remote from the pitch footprint. A fully sealed pitch base is recommended to reduce the potential for uncontrolled water ingress potentially creating or re-activating existing features beneath the pitch footprint and water directed to a positive outfall or soakaway located remote from the pitch. Deep borehole soakaways of sufficient depth into chalk may provide an alternative solution and reduced risk from dissolution features. Direct discharge into the chalk bedrock may however require approval from the Environment Agency due to the chalk being a principal aquifer.

Table 1.1

3.9 Unexploded Ordnance

- 3.9.1 Online mapping indicates the site to be within an area of moderate risk of encountering Unexploded Ordnance (UXO). Consequently, a preliminary site specific UXO risk review has been obtained for the site and is presented within Appendix F.
- 3.9.2 This review determines that the Littlehampton area suffered moderate levels of enemy bombing during WWII with records of HE bombs strikes approximately 600m northwest of the site near Old Mead Road and 650m southwest at Grand Avenue. Reports indicate that the Lyminster area to the northwest and the Poling area to the northeast of the site also suffered enemy bombing during this period, notably at the radar station RAF Poling to the north east of the site on 18th August 1940. Several anti-aircraft gun sites were in operation in the area during WWII including a Heavy Anti-Aircraft Battery approximately 350m northeast of the site at Torrington. The undeveloped nature of the site could increase the potential for munitions to have fallen unrecorded.
- 3.9.3 It is therefore concluded that there is a credible likelihood of encountering buried UXO within the site and is deemed to be a medium risk. As such all-site personnel should be provided with a UXO Safety Awareness Talk before intrusive works commence, and any intrusive work (both site investigation and future construction) should be supported by specialist EOD services to clear working areas as the site is developed. A detailed UXO risk assessment could be carried out to refine the risk which may reduce the risk and thus requirements for the construction phase.

3.10 Coal Mining Risk

- 3.10.1 The site is not located within an area at risk from coal mining.

3.11 Chalk Dissolution Risk

- 3.11.1 A Mining and Ground Stability report has been obtained for the site given the mapped geological sequence being considered to pose a potential risk of encountering chalk solution features. The report is attached in Appendix E for reference.
- 3.11.2 The report indicated there were four opencast clay and shale pits situated between 263m and 563m to the south, southeast and southwest of the site, all recorded as 'ceased'.
- 3.11.3 The database recorded there are no natural cavities, solution features or mining cavities within 1.0km of site.
- 3.11.4 With reference to the report and associated map defining the ground dissolution hazard, the subject site area is recorded as a very low risk of chalk dissolution based on desk-based resources.

3.12 Buried Services

- 3.12.1 Statutory Undertaker's asset records are included within Appendix D. LSBUD identifies ESP Utilities Group, Indigo Networks, SGN and UK Power Networks as affected LSBUD members. These do not include any private services which may be present such as power supplies to the existing floodlights and any pitch drainage which maybe present.
- 3.12.2 With reference to ESP Utilities Group, there are no services mapped on the subject site.
- 3.12.3 With reference to Indigo Network records, there are no services mapped on the subject site. The nearest are recorded in the residential developments along Empress Close, to the north of the railway line.
- 3.12.4 With reference to SGN, there are no services mapped on the subject site. The nearest supply is a 63 PE main terminating at the end of Coomes Way to the west of the site, presumed to enter the site as a private connection.
- 3.12.5 With reference to UK Power Network records, there is a low voltage cable mapped to enter the clubhouse to the west of the pitch. The route of the cable is from Griffen Crescent to the south west and follows the route of a footpath into the site.
- 3.12.6 With reference to BT Openreach records, there is a cable mapped to cross the pitch from north to south into the allotment gardens before re-entering the site and running upto the midpoint of the eastern pitch boundary (extract below). The presence of the cable will need to be clarified with BT Openreach to assess whether the cable is present and still active, or could potentially be a mapping anomaly given that the cable does not connect to anything that existed historically or to the present day.



- 3.12.7 With reference to Southern Water, a 100mm DI water main runs along Coomes Way with a hydrant recorded at the end of Coomes Way. A foul sewer is mapped to the south west of the pitch situated in the rear gardens of properties along the eastern side of Griffin Crescent. A second foul sewer is mapped crossing Coomes Way to the west before crossing through the rear gardens of properties along the northern side of Griffin Crescent. A 150mm VC surface water sewer is also mapped to the west of the site within Coomes Way, which is presumed to flow to the west. The nearest manhole is recorded as 9850, with a cover level of 6.10m AOD and an invert level of 4.71m AOD, which suggests that connection into the surface water sewer could be possible based on the elevation (subject to design and consent).
- 3.12.8 No other public services are recorded within or close to the proposed pitch extent, however private foul, water, irrigation and electricity services associated with the site are likely to be present.
- 3.12.9 A Utilities survey was completed by RSP Underground Services in April 2026 (ref; RSP2563) which is included within Appendix D. The survey records the floodlighting for both the northern and southern floodlighting columns originate from the clubhouse to the west at two locations. The feed to the northern columns exits the northern side of the clubhouse and runs along the northern boundary of the pitch, terminating at the column in the north east corner. The feed to the southern columns exists the southern side of the clubhouse and runs along the western boundary of the pitch in a grass area, crossing the location of the turnstiles before entering the column in the south western corner. The cable then runs along the southern boundary of the pitch, terminating at the column in the south east corner
- 3.12.10 The BT cables that were recorded to cross the pitch were not detected within the GPR survey, which suggests that these may not be present and could be a mapping anomaly. This should be confirmed with BT Openreach in advance of works commencing on site.
- 3.12.11 No evidence of any drainage was noted in the car park or around the clubhouse to the west.
- 3.12.12 Anecdotal information from the site owners, suggests lateral drains were installed crossing the pitch and joining towards the centre circle area. These have been shown on the utility survey as blue lines (TFR – taken from record), although no obvious evidence of the drains was noted in the GPR survey or during our walkover survey.

4.0 Fieldwork

4.1.1 Our fieldwork was carried out on the 9th April 2026 and comprised the following:

- 7 No. windowless sampler boreholes to a maximum depth 5.45m bgl.
- Indicative infiltration testing in 2 No. boreholes to a maximum depth of 4.50m bgl.
- 1 No. dynamic probe through the base of WS06 to a maximum depth of 7.50m bgl.
- 5 No. TRL Dynamic Cone Penetration tests to measure insitu CBR values.

4.1.2 Additional fieldwork was carried out around WS03 on the 11th June 2026 and comprised the following:

- 5 No. windowless sampler boreholes to a maximum depth of 5.00m bgl with follow on dynamic probes to 7.00m bgl.
- 1 No. dynamic probe from surface to 7.00m bgl.

4.1.3 Statutory undertakers' plans and a site-specific utility survey were obtained and reviewed in advance of the ground investigation. Each position was scanned using a cable avoidance tool and signal generator prior to breaking ground. Where buried services were identified or present, exploratory holes were located a safe distance away. The location of each position is shown on the exploratory hole plan (Drawing 01), included within Appendix A.

4.1.4 Due to the medium risk of encountering buried UXO within the site, an EOD specialist engineer was present during our works, clearing each position prior and during the drilling process. The final drilled depth of the dynamic probes was limited by the clearance depth of the magnetometer, which could safely clear in a maximum of 2.0m increments. Where the magnetometer gives a slightly unclear reading, clearance can only be given in 1.0m increments.

4.1.5 The approximate location of each exploratory hole position from the initial ground investigation is shown on the plan (Drawing 01). The approximate location of each exploratory hole position from the additional investigation is shown on the plan (Drawing 02). Both of these drawings are included in Appendix A.

5.0 Ground Conditions

5.1 Soils

Topsoil

- 5.1.1 An initial covering of Topsoil was encountered within each of the borehole locations, positioned outside the marked football pitch. The topsoil was recorded to depths of between 0.20m to 0.40m bgl. The topsoil was consistent across the pitch and was recorded as grass over a brown slightly silty slightly gravelly clayey sandy Topsoil, with abundant roots and rootlets. Gravels generally consisted of fine to medium angular to subrounded flint.

River Terrace Deposits – Cohesive

- 5.1.2 Underlying the Topsoil within each position, cohesive soils considered to be associated with the mapped River Terrace Deposits were encountered to depths of between 1.50m to 2.30m bgl and comprised a firm brown slightly gravelly sandy Clay with occasional roots and rootlets (within WS01 and WS04 only), and occasional fine sandy pockets throughout.
- 5.1.3 Hand pocket penetrometer results converted to kPa within the cohesive River Terrace Deposits ranged from 65kPa to 115kPa, indicating medium to high strength soils. At the location of WS03, locally softened soils were encountered towards the base of the layer, with values of 15kPa to 30kPa recorded at 1.5m and 1.7m bgl respectively.
- 5.1.4 Uncorrected SPT 'N' Values at 1.0m bgl within the cohesive River Terrace Deposits were recorded as variable values of 4 to 15, indicating a degree of variability within the shallow soils across the site.

River Terrace Deposits – Granular

- 5.1.5 Underlying the initial cohesive soils, granular River Terrace Deposits were encountered to depths of between 3.20m to 5.00m bgl and comprised an orange brown slightly silty slightly gravelly clayey fine to medium Sand, with gravels of fine to medium flint and reddish-brown iron staining. The soils were recorded as reddish brown within WS04.
- 5.1.6 With the exception of WS03, where abnormally low SPT values were recorded in comparison to the remainder on the site, uncorrected SPT 'N' values recorded at 2.00m bgl were between 12 and 22 (medium dense) and at 3.00m bgl between 9 and 32 (loose to dense). At WS01 an SPT at 4.0m bgl within a sand layer recorded an N value of 6 (loose), at WS02 an SPT at 4.0m bgl within a recorded an N value of 1 (very loose) and at WS06 an SPT at 4.0m bgl within a recorded an N value of 8 (loose). At WS04, at a depth of 4.0m an N value of 48 was recorded (dense).
- 5.1.7 At the location of WS03 the granular material from 2.0m to 4.6m bgl was recorded to be significantly looser than other areas of the site, with N values of 7 at 2.0m, 3 at 3.0m and 5 at 4.0m bgl recorded.

New Pit Chalk Formation

- 5.1.8 Underlying the granular River Terrace Deposits, bedrock Chalk was encountered from depths of between 3.20m to 5.00m bgl in all locations to the base of each borehole. The chalk bedrock was described as a structureless Chalk composed of a light brownish white slightly sandy silty gravelly Clay, with gravels of weak to medium density chalk (CIRIA Grade Dm).
- 5.1.9 Within WS05, underlying the initial presumed weathered New Pit Chalk Formation, a second layer of bedrock Chalk was encountered from 3.50m bgl, recorded as a structureless Chalk composed of an off white slightly sandy silty fine to medium Gravel, with occasional orange brown iron staining. Gravel consists of weak to medium density chalk (CIRIA Grade Dc).
- 5.1.10 SPT 'N' values recorded in the chalk carried out from depths of between 4.0m to 5.0m were in the range of 4 to 39, generally increasing with depth, with an N value of 50 recorded at WS05 where the borehole refused. At the location of WS03 where low SPT values were recorded in the overlying granular soils, a low SPT value of 4 was recorded in the chalk, indicating that potential softening is also present within the chalk at this location.
- 5.1.11 The results are shown on the borehole logs within Appendix B.

5.2 Dynamic Probes

- 5.2.1 DP1 was drilled through the base of WS06 from 5.50m to 7.50m bgl. Blow counts of between 5 and 10 blows per 100mm were recorded from 5.50m bgl, remaining relatively consistent to 7.5m bgl, where the probe was terminated due to the maximum clearance depth associated with UXO risk.

5.3 Additional Works

- 5.3.1 An additional five windowless sampler boreholes (WS07-WS11) and six dynamic probes (DP02-DP07) were drilled to assess the extent of the identified poor ground conditions at the location of WS03 in the south east corner of the site. The soils recovered were of a similar nature and stratigraphy to those recorded at WS03, comprising Topsoil to depths of between 0.2m to 0.4m bgl overlying River Terrace Deposits, which generally comprised a firm brown slightly sandy silty Clay (1.75m bgl [WS08] to 3.00m bgl [WS10]) overlying a medium dense and locally loose orange brown variably clayey silty gravelly fine to medium Sand to between 3.70m bgl (WS08) to 4.50m bgl (WS09).
- 5.3.2 Beneath the River Terrace Deposits bedrock Chalk was encountered to the base (5.00m bgl) of each borehole. The chalk bedrock was described as a structureless Chalk composed of a light brownish white slightly sandy silty gravelly Clay, with gravels of weak to medium density chalk (CIRIA Grade Dm).
- 5.3.3 Dynamic probes (DP03-DP07) were drilled through the base of WS07-WS11 to a depth of 7.0m bgl to assess the nature of the conditions at depth, where the probe was terminated due to the maximum clearance depth associated with UXO risk.

- 5.3.4 The following table provides a summary of the ground conditions encountered within the additional boreholes and dynamic probes.

Summary of Ground Conditions		
Location	Conditions Encountered	Evidence of Solution Features
WS03	Loose sand and gravel between 1.8m to 4.6m bgl overlying softened bedrock chalk.	Presence of loose sand and gravel overlying softened bedrock chalk.
WS07 and DP03	Medium dense sand and gravel to 3.9m bgl overlying competent bedrock chalk to 7.0m bgl.	None identified.
WS08 and DP04	Medium dense sand and gravel to 3.0m bgl, with loose material recorded to 3.7m bgl, overlying competent bedrock chalk to 7.0m bgl.	None identified.
WS09 and DP05	Medium dense sand and gravel to 4.0m bgl, with loose material recorded to 4.5m bgl, overlying locally softened bedrock chalk to 5.0m bgl over competent bedrock chalk to 7.0m bgl.	None identified.
WS10 and DP06	Medium dense sand and gravel to 3.0m bgl, with loose material recorded to 3.9m bgl, overlying locally softened bedrock chalk to 4.5m bgl. Infill material comprises loose sand encountered to 5.5m bgl, over competent bedrock chalk to 7.0m bgl.	Presence of potential solution pipe within bedrock chalk at a depth of 4.5m to 5.5m bgl.
WS11 and DP07	Medium dense sand and gravel to 3.9m overlying competent bedrock chalk to 7.0m bgl.	None identified.
DP2	Variable ground conditions to 2.0m bgl (presumed cohesive soils) overlying medium dense sand and gravel to 2.7m bgl, with loose sand and gravel recorded to 3.1m bgl, underlain by medium dense sand and gravel to 3.8m bgl. From 3.8m bgl to 4.4m bgl softened bedrock chalk, below which competent bedrock chalk to 7.0m bgl.	None identified.

Table 5.3

- 5.3.5 The additional works have highlighted the presence of a potential solution pipe at the location of WS10, situated to the south west of WS03, with the remaining locations drilled not identifying any evidence of further features, including DP2 and WS11 which were drilled between WS03 and the existing floodlighting column.
- 5.3.6 The identified loosening of the sand and gravel at WS03 may be associated with the washout/loss of fines into the potential solution pipe identified at WS10. Management of surface water disposal for the new AGP will be important in mitigating the future risks posed to the construction of the new AGP.

5.4 Groundwater

- 5.4.1 No groundwater was encountered during either phase of investigation.
- 5.4.2 Water levels can vary season from season, given the potential of bands of more granular soils with the shallow River Terrace Deposits there is potential for limited volumes of perched water to build up in these layers, which may generate perched water strikes in the wetter winter months and during periods of persistent rainfall.

7.0 Engineering Assessment

7.1 Geotechnical Laboratory Results

7.1.1 The results of the laboratory testing are summarised in the following table. The full results can be found in Appendix C.

Summary of plasticity classification results				
Sample reference and depth	Soil type	Plasticity Index %	Modified Plasticity %	Volume Change Potential (Plasticity term)
WS01 0.60m bgl	River Terrace Deposits	17	16	Low (Medium)
WS05 1.50m bgl	River Terrace Deposits	10	8	Non-plastic (Low)

Table 7.1a

7.1.2 The results of the plasticity testing indicate that the cohesive soils of the superficial cohesive River Terrace Deposits should be considered to have a worst-case **Low Volume Change Potential** in accordance with NHBC Standards Chapter 4.2.

Summary of Particle Size Distribution results						
Sample reference and depth	Soil type	Clay %	Silt %	Sand %	Gravel %	Cobbles %
WS03 2.20m bgl	River Terrace Deposits	10	6	74	10	0

Table 7.1b

7.1.3 The results of the Particle Size Distribution (PSD) testing indicates that the deeper granular soils of the River Terrace Deposits comprised primarily of Sand, with variable fines content. Based on the grading analysis the soils are considered to be non-plastic, however the fines content present may impact the permeability of the granular soils of the River Terrace Deposits.

7.2 Chalk Dissolution Hazard

7.2.1 As with all terrain underlain by chalk, there is a possibility of chalk dissolution related subsidence risk. A Mining and Ground Stability report has been obtained for the site given the mapped geological sequence being considered to pose a risk of chalk dissolution. The report is attached in Appendix E for reference.

7.2.2 With reference to the report and associated map defining the ground dissolution hazard, the subject site area is recorded as a low risk of chalk dissolution. During the ground investigation soils associated with the River Terrace Deposits were encountered on site, which initially comprised a cohesive layer to depth of between 1.5m to 2.3m bgl, and was underlain by granular soils.

- 7.2.3 We did not observe any features such as depressions across the site which could suggest the presence of any underlying dissolution features, however this does not preclude the potential for such features to be present at depth.
- 7.2.4 At the location of WS03 the granular River Terrace Deposits from 1.8m to 4.6m bgl were recorded to be significantly looser than other areas of the site, with N values of 7 at 2.0m, 3 at 3.0m and 5 at 4.0m bgl recorded. The underlying chalk at this location was also noted to be softened. **The very loose to loose nature of the soils could be considered indicative of possible effects associated with chalk solution features.**
- 7.2.5 At WS10, drilled to the south west of WS03, a layer of loose slightly clayey silty fine to coarse Sand was recorded beneath the initial bedrock Chalk from 4.50m bgl to 5.00m bgl. This is a notably darker orange brown in colour which is a sign of increased iron oxidation weathering potentially caused by water flow. The dynamic probe at WS10 (DP06) recorded very low blow counts between 0 and 1 from 5.00m bgl to 5.60m bgl. Below 5.60m bgl, blow counts increased to between 7 and 10 blows per 100mm down to the base of the probe at 7.0m bgl. **The presence of loose sand infill beneath the initial bedrock chalk between 4.50m to 5.60m bgl is considered indicative of the presence of a dissolution feature at this location.**
- 7.2.6 At the locations of WS01, WS02, WS06, WS08 and WS09 evidence of loosening of the granular soils above the chalk bedrock was noted, with SPT N values of between 1 to 8 recorded. **The loosening of the base of granular soils directly overlying the chalk bedrock, which is also recorded in some locations to be locally softened, could be associated with the loss of fines into potential dissolution features as identified at WS10.**
- 7.2.7 Although published mapping identifies the site as very low to low regional susceptibility to chalk dissolution, the intrusive investigation identified localised loose granular horizons and softened chalk which may indicate dissolution-related ground disturbance. Accordingly, a higher site-specific geotechnical risk should be assumed locally around WS03/WS10, which will need to be taken into consideration when designing the pitch and floodlight foundations.
- 7.2.8 During construction, should any unusual features such as circular pockets of clay/sand-based soils, voiding or particular loose soils be encountered, we should be consulted to advise the most appropriate course of action.
- 7.2.9 Due to the chalk dissolution risk, it will be prudent to consider constructing larger sized pad foundations than typically designed in order to be capable of accommodating loss of support. Should any loosening of soils be encountered during excavation, this could indicate the presence of a solution feature at depth and further advice should be sought before proceeding.

- 7.2.10 In addition, structures and drainage should be designed to reduce the potential impact of a solution feature/man-made feature being present or occurring in the future. Any requirement for deep foundations that may be close to the chalk geology, if required, should be designed in accordance with CIRIA 574 – ‘Engineering in Chalk’. This would include larger plan size pad foundations to increase the potential for spanning such features, piled foundations and ensuring any drainage (such as soakaways) remote from any existing or proposed structures and boundaries and designed to ensure no concentrated ingress can occur.

7.3 Floodlight Foundations

- 7.3.1 Underlying the Topsoil an initial cohesive deposit was encountered to depths of between 1.50m to 2.30m bgl, which comprised a firm brown slightly sandy slightly gravelly Clay with occasional sandy pockets and occasional roots and rootlets (WS01/WS04). This was underlain by a generally medium dense orange brown slightly silty slightly gravelly clayey fine to medium Sand, with gravels of fine to medium flint.
- 7.3.2 **The granular deposits were variable with depth, with evidence of very loose to loose soils recorded at WS01, WS02, WS06, WS08 and WS09 at depths between 3.0m to 4.0m bgl. Loose soils were also recorded from 1.8m to 4.6m bgl at WS03, and a potentially infilled dissolution feature between 4.5m to 5.5m bgl at WS10, which suggests that the site may potentially be impacted by the presence of unrecorded dissolution features.**
- 7.3.3 Underlying the River Terrace Deposits bedrock chalk was encountered from 3.2m bgl to the base of each borehole, which comprised a structureless Chalk composed of a light brownish white slightly sandy silty gravelly Clay, with gravels of weak to medium density chalk (CIRIA Grade Dm). **Evidence of softening of the chalk was identified at WS01 at 5.0m bgl, WS03 at 5.0m bgl, WS09 at 5.0m bgl and WS10 at 4.5m bgl. There is also a potentially infilled dissolution feature at the southern boundary of the site south west of WS03 at WS10 from 4.50m bgl to 5.60m bgl.**
- 7.3.4 The plasticity index testing results has determined that the cohesive River Terrace Deposits have been classified as low volume change potential and therefore a minimum foundation depth of 0.75m bgl should be allowed for in accordance with NHBC Chapter 4.2 and foundations should be deepened accordingly for the influence of existing or proposed trees and major vegetation where appropriate.
- 7.3.5 For the proposed floodlight foundations, it is recommended that foundations are kept as shallow as possible due to the identified softening/loosening of soils at depth, especially along the southern pitch boundary (WS01 to WS03) and in the north western corner of the pitch (WS06). **Larger size pads are recommended to be cautious with respect to the potential risk of chalk dissolution identified on site.**

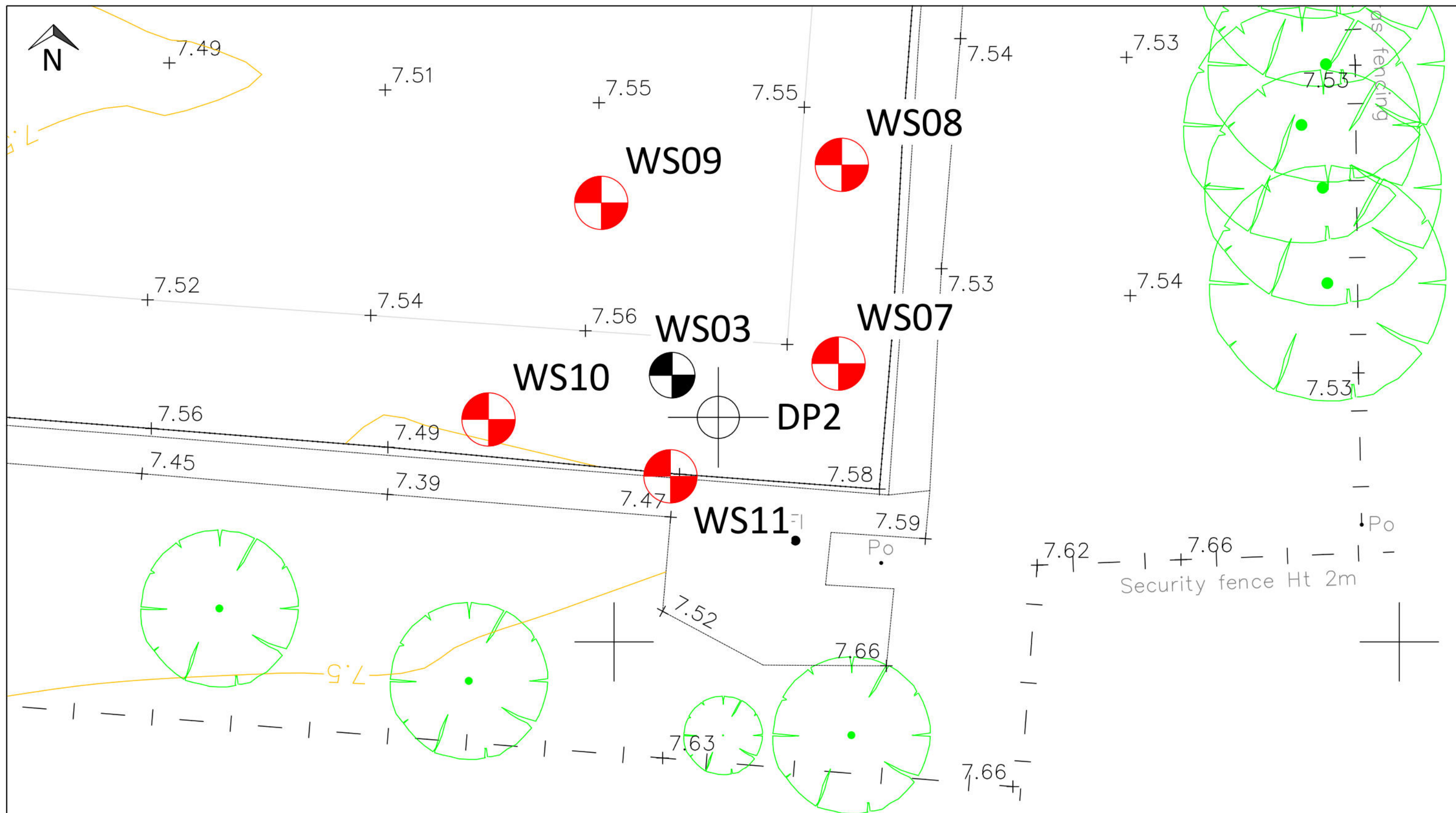
- 7.6.2 Should any Made Ground be encountered at formation level, which are to remain insitu, then a CBR of <2% should be assumed.
- 7.6.3 A TRL Dynamic Cone Penetrometer (TRL-DCP) has also been used to assess the insitu CBR across the proposed court area. The probe comprises a 60° 20mm diameter steel cone which is driven vertically into the ground by the force of an 8kg weight dropped vertically by 575mm height. The depth of penetration is then recorded per blow up to 950mm. The test is aborted if the depth of penetration is less than 2mm per blow. The derived soil strength expressed as mm/blow can be converted to CBR using the equation: $\text{Log}_{10}(\text{CBR}) = 2.48 - 1.057 \times \text{Log}_{10}(\text{mm/blow})$.
- 7.6.4 TRL-DCPs were carried out within 5 positions across the proposed pitch, as indicated on Drawing 01 included within Appendix A. The TRL DCP results are provided in Appendix B. We have discounted the results within the Topsoil which will be stripped from the footprint. Insitu CBR values recorded within the shallow cohesive soils of the River Terrace Deposits ranged from 4.2% to 6.0%.
- 7.6.5 We recommend a precautionary CBR value of 4% should be adopted for design and reassessed during construction. Should any loose or soft spots be encountered during preparation of the formation level, it is recommended that these are excavated and replaced with a suitable compacted fill.
- 7.6.6 There is potential for chalk dissolution features/man-made cavities which could form/be encountered beneath the pitch (as identified at WS10), and this risk should be considered when designing the pitch base and floodlight foundations. Lime/cement stabilisation could also be considered to minimise the potential for percolation of water vertically and reduce the potential for adverse settlement within the reworked soils encountered and from potential dissolution features which could form or be present beneath the pitch. **The pitch construction should take into account the risk of chalk dissolution with a sealed pitch base recommended to reduce the potential for uncontrolled percolation of rainwater directly into the chalk and also potentially causing softening of the formation soils beneath the subbase. Surface water should be directed away from the pitch to a positive outfall or a soakaway located remote from the pitch and floodlights or other structures.**
- 7.6.7 The formation soils are considered to be frost susceptible due to the fines content.
- 7.6.8 All topsoil or organic soils or Made Ground/reworked natural soils, if encountered, should be removed from the footprint of the proposed pitch and any obvious soft or loose spots excavated and backfilled with a suitable fill. Reference should be made to the compaction requirements outlined in Highways England Volume 1: Specification for Highway Works Series 600: Earthworks.

7.7 Infiltration Potential

- 7.7.1 Indicative infiltration testing was completed within WS01A at 1.0m bgl within the initial cohesive superficial deposits, and WS01 at 4.5m bgl within the underlying granular superficial deposit.

- 7.7.2 WS01A was drilled adjacent to WS01 within the south western corner of the existing grassed pitch, at the lowest elevation. After over 300 minutes of monitoring, water levels fell by only 6mm, suggesting the initial cohesive soils, which were encountered to depths of between 1.5m to 2.3m bgl, are effectively impermeable.
- 7.7.3 WS01 was drilled in the southwestern corner of the existing grassed pitch to a depth of 4.5m bgl. A full cycle was completed, producing an indicative infiltration rate of 3.08×10^{-6} m/s. The result suggests there is potential permeability within the underlying granular River Terrace Deposits as such soakaways may be considered a viable solution for drainage. It should be noted that this is indicative testing due to being carried out in a borehole. Should soakaways be considered, then further testing would be necessary in machine excavated trial pits to be compliant with BRE 365 Soakaway Design, to assess the viability and derive rates for design. **Due to the risk of chalk dissolution and the presence of a potential feature at WS10, direct infiltration into the soils beneath the pitch is not recommended as this could promote or activate existing dissolution features. Shallow soakaways should be located remote from the pitch footprint and other structures. A sealed pitch base, as currently formed by the initial layer of cohesive soils, is recommended to reduce the potential for uncontrolled percolation of rainwater directly into the chalk immediately beneath the pitch and instead water directed to an appropriate positive outfall or isolated soakaway (remote from the pitch).**
- 7.7.4 Due to the presence of possible dissolution features on site, it may be possible to utilise deep borehole soakaways drilled down sufficiently into the chalk at depth, if testing determines that they are suitable. This would reduce the risk of dissolution features. If this is considered as an option, then it is recommended that these are located outside of the pitch footprint.
- 7.7.5 Despite the reduced risk associated with deep borehole soakaway solutions, the risk of chalk dissolution will still need to be taken into account for the use of any soakaways into the chalk, with these located remote from structures including floodlights and the pitch footprint. Borehole soakaways could produce concentrated ingress which can therefore produce a higher risk of forming dissolution features. Discharge into chalk, which is a principal aquifer is likely to be subject to approval of any design and pollution prevention controls by the Environment Agency.
- 7.7.6 It should be noted that concentrated ingress of water into the underlying chalk bedrock can create dissolution features and potentially reactivate pre-existing features which may be present on site, so it is important that drainage is sufficiently designed for this not to occur. **With reference to CIRIA 574 'Engineering in Chalk', where the chalk is of low (assumed to be the case for the site in the absence of testing to confirm otherwise), any soakaways/infiltration system into the ground should be sited at least 20m from foundations, structures and boundaries.**

- 7.7.7 It is suggested that drainage should have sealed flexible joints or with concrete bedding and haunching to minimise the risk of future damage resulting in leaks. A sealed pitch base is recommended to reduce the potential for uncontrolled percolation of rainwater directly into the chalk immediately beneath the pitch and instead water directed to an appropriate positive outfall or isolated soakaway, located remote from the pitch. For any soakaway, it is recommended that a suitable reinforcement should be considered at the top and base, with large and level area to increase the surface area and minimise the potential for concentrated ingress. A crate type system would be recommended as opposed to gravel to minimise potential for loss into a dissolution feature.
- 7.7.8 Anecdotal information from the site contact suggests that the pitch is very well draining. It is understood that there are a series of lateral drains crossing across the pitch, however the outfall for these is unknown at this stage and could not be identified by the GPR survey.
- 7.7.9 There are no obvious water courses or drainage ditches in the vicinity of the site. With reference to Southern Water, a 150mm VC surface water sewer is mapped to the west of the site within Coomes Way, which is presumed to flow to the west. The nearest manhole is recorded as '9850', with a cover level of 6.10m AOD and an invert level of 4.71m AOD. This sewer may provide the current outfall for the wider site drainage and may provide a suitable positive outfall for the proposed pitch drainage should soakaways not be considered feasible. Inspection and enquiries are recommended to establish the existing drainage on site, connectivity and ultimate outfall with a view to connecting into for the proposed pitch. Any outfall will be subject to a detailed drainage strategy and seeking necessary approvals.



Notes:

1. All locations are approximate (not surveyed).
2. Not for construction detail.
3. Not to scale, dimensions as shown.
4. Sketch to be viewed digitally and in colour.
5. Base Plan - JPP Topographical Survey (17/3/26)

KEY:

- Windowless Sample Borehole Location (0-5mbgl) with follow on dynamic probing (5-7mbgl)
- Dynamic Probe Location
- Previous works - Windowless Sample Borehole Location



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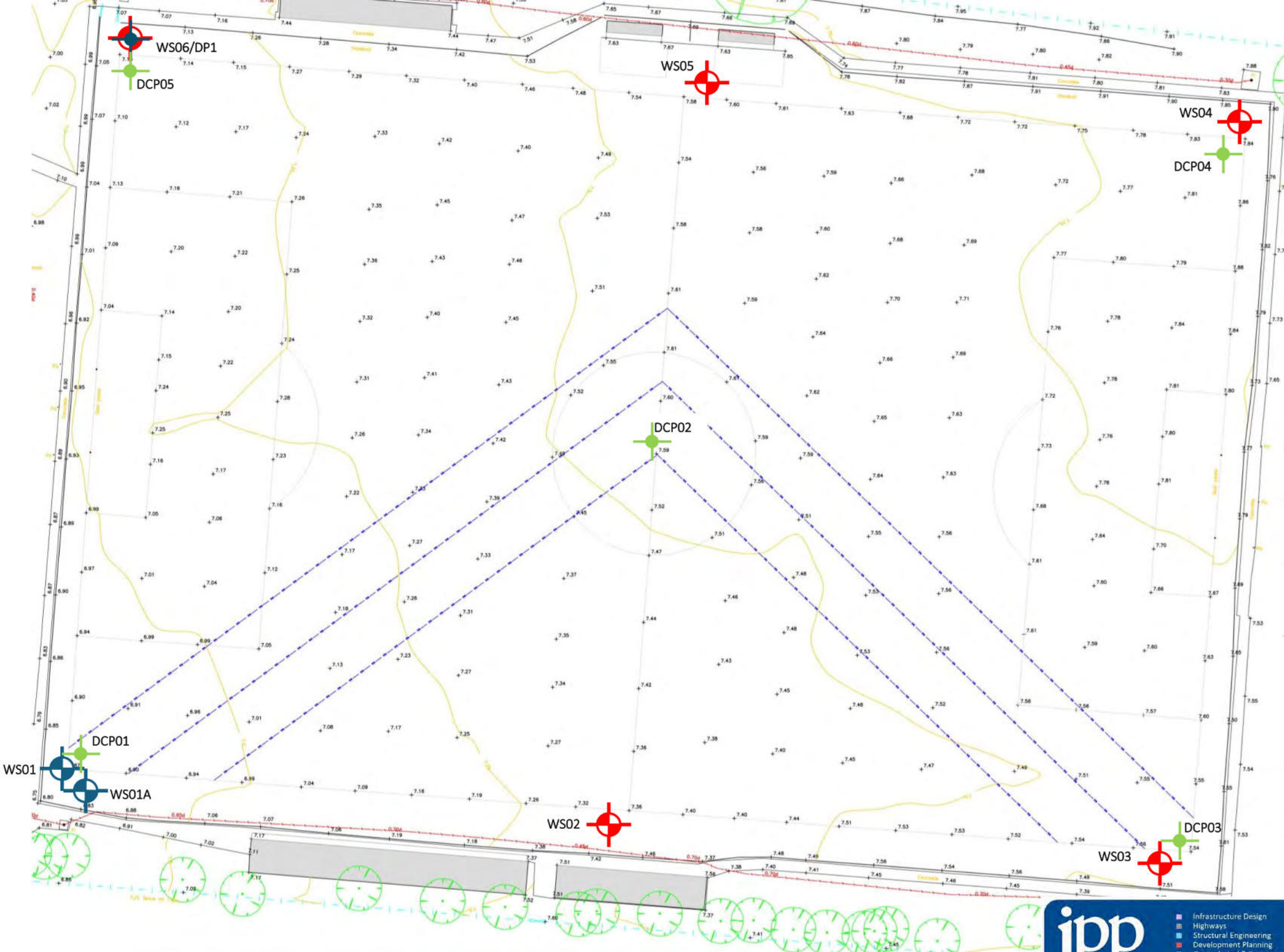
Scale: Not to Scale | Drawn by: RFH | Checked by: DK | Date: 12/06/2026

Status: Draft | Project ref: 31284 | Drawing no: 01 | Revision 0

Client: S&C Slatter

Project: Wick F.C.
Littlehampton

Title: Exploratory Hole Location Plan



Key

-  Approximate window sample borehole location
-  Approximate window sample borehole with indicative infiltration testing location
-  Approximate dynamic probe locations
-  Approximate DCP Location

Notes

- Locations are approximate, not surveyed in.
- Base drawing; Utilities Survey at Wick Football Club by RSP Underground Services Ltd, dated April 2026, drawing number RSP2563.



- Infrastructure Design
- Highways
- Structural Engineering
- Development Planning
- Geotechnical & Environmental
- Surveying
- Construction Management

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Client: S&C Slatter

Project: Wick Football Club, Littlehampton

Title: Approximate exploratory hole plan over Utilities survey.

Scale at A4 Not to Scale	Drawn by LR	Checked by DK	Date 07/04/26
Status Draft	Project ref 31284	Drawing no. 01	Revision -

Key to Exploratory Hole Logs

General

Descriptions for soils and rocks generally following:

BS 5930:2015+A1:2020

BS EN ISO 14688-2:2004

BS EN ISO 14689-1:2003

Sampling

ES	Environmental Sample (taken in appropriate sampling container)
D	Disturbed Sample
B	Bulk Sample
C	Core Sample
U	Undisturbed Sample (number of blows indicated in results column)
UT	Thinwalled Undisturbed (number of blows indicated in results column)
W	Water Sample

In situ Tests

SPT	Standard Penetration Test
SPT (C)	Cone Penetration Test
PID	Photo Ionisation Detector Results (ppm)
PP	Pocket Penetrometer reading converted to shear strength kPa
HV	Converted Shear Vane measurement kPa

Drilling Records

▼	Depth to standing water level
▽	Depth to water strike
TCR	Total Core Recovery (%)
SCR	Solid Core Recovery (%)
RQD	Rock Quality Designation (%)

Backfill Symbols

Arisings	
Concrete	
Blacktop	
Bentonite Seal	
Gravel Filter	
Sand Filter	

Pipe Symbols

Plain Pipe	
Slotted Pipe	
Filter Tip	

Principal Soil Types

Topsoil	
Made Ground	
Clay	
Silt	
Sand	
Gravel	
Peat	

Principal Rock Types

Mudstone	
Siltstone	
Sandstone	
Limestone	
Chalk	

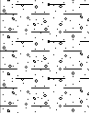
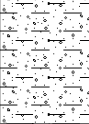
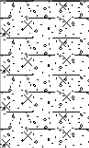
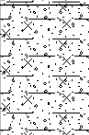
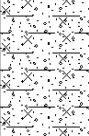
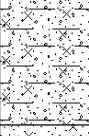
- Infrastructure Design
- Structural Engineering
- Planning Services
- Geotechnical & Environmental
- Surveying
- Professional Advice

Key to Exploratory Hole Logs



Windowless Sampling Borehole Log

Project Name: Wick FC			Client: S&C Slatter			Date: 09/04/2026		
Location: Littlehampton								
Project Number: 31284						Drilling Equipment: Premier 110		
Borehole Number WS01		Hole Type WLS		Logged By LR		Scale 1:35		Page Number Sheet 1 of 1

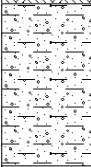
Well	Water Strikes	Sample and In Situ Testing			Depth (m bgl)	(Thickness) (m)	Legend	Stratum Description	Scale
		Depth (m)	Type	Results					
		0.10	ES		0.20	(0.20)		Grass over brown slightly silty slightly gravelly clayey sandy TOPSOIL with abundant roots and rootlets. Sand is fine to medium. Gravel consists of fine to medium angular to subrounded flint.	1
		0.60	D					Firm brown slightly gravelly sandy CLAY with occasional roots and rootlets. Sand is fine to medium. Gravel consists of fine to medium angular to subangular flint.	
		0.60	PP	85 kPa					
		0.80	PP	85 kPa		(1.30)		(RIVER TERRACE DEPOSITS)	2
		1.00	D						
		1.00	PP	85 kPa					
		1.00	SPT	N=5 (1,1/1,1,1,2)					
					1.50				3
		2.00	D			(0.70)		Loose to medium (est) dense orange brown slightly silty slightly gravelly clayey fine to medium SAND with frequent reddish brown iron staining. Gravel consists of fine rounded to subrounded flint.	
		2.00	SPT	N=12 (2,2/2,3,3,4)				(RIVER TERRACE DEPOSITS)	
					2.20				4
		2.50	D					Medium dense reddish brown slightly clayey slightly silty slightly gravelly fine to coarse SAND. Gravel consists of fine to medium angular to subangular flint.	
								(RIVER TERRACE DEPOSITS)	
		3.00	D			(1.80)		Becoming reddish brown with frequent clayey pockets from 2.80m bgl.	5
		3.00	SPT	N=13 (4,4/3,3,4,3)				Colour change to yellowish brown with occasional ironstaining at 3.00m bgl.	
		4.00	D		4.00				6
		4.00	SPT	N=6 (1,2/2,1,1,2)		(1.00)		Loose orange brown slightly silty fine to medium SAND with occasional brown iron staining.	
								(RIVER TERRACE DEPOSITS)	
		5.00	D		5.00				7
		5.00	SPT	N=9 (1,1/1,2,3,3)		(0.45)		Structureless CHALK composed of light brownish white slightly sandy silty gravelly CLAY. Gravel is fine to coarse weak to medium density chalk.	
					5.45			CIRIA Grade Dm.	

(NEW PIT CHALK FORMATION)
End of Borehole at 5.45m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

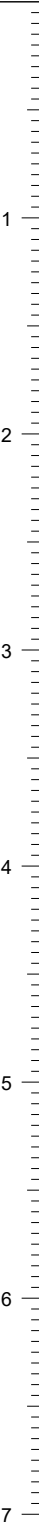
Remarks
Borehole and stable dry during drilling and upon completion.



Project Name: Wick FC				Client: S&C Slatter				Date: 09/04/2026			
Location: Littlehampton											
Project Number: 31284								Drilling Equipment: Premier 110			
Borehole Number WS01A		Hole Type WLS				Logged By LR		Scale 1:35		Page Number Sheet 1 of 1	
Well	Water Strikes	Sample and In Situ Testing			Depth (m bgl)	(Thickness) (m)	Legend	Stratum Description			Scale
		Depth (m)	Type	Results							
					0.25	(0.25)		Grass over slightly silty slightly gravelly clayey sandy TOPSOIL with abundant roots and rootlets. Sand is fine to medium. Gravel consists of fine to medium angular to subrounded flint. Firm brown slightly gravelly sandy CLAY with occasional roots and rootlets. Sand is fine to medium. Gravel consists of fine to medium angular to subangular flint. (RIVER TERRACE DEPOSITS)			1
					1.00	(0.75)					
								End of Borehole at 1.00m			1
											2
											3
											4
											5
											6
											7
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
Remarks											
Borehole dry and stable during drilling and upon completion. Borehole drilled for indicative infiltration testing.											

Windowless Sampling Borehole Log

Project Name: Wick FC			Client: S&C Slatter			Date: 09/04/2026		
Location: Littlehampton								
Project Number: 31284						Drilling Equipment: Premier 110		
Borehole Number WS02		Hole Type WLS		Logged By LR		Scale 1:35		Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m bgl)	(Thickness) (m)	Legend	Stratum Description	Scale
		Depth (m)	Type	Results					
		0.10	ES		0.20	(0.20)		Grass over brown slightly silty slightly gravelly clayey sandy TOPSOIL with abundant roots and rootlets. Sand is fine to medium. Gravel consists of fine to medium angular to subrounded flint.	
		0.50	D					Firm brown slightly gravelly slightly sandy CLAY with occasional sandy pockets. Sand is fine to medium. Gravel consists of fine to medium angular to subangular flint. (RIVER TERRACE DEPOSITS)	
		0.50	PP	75 kPa					
		0.50	SPT	N=6 (1,1/1,2,1,2)					
		0.70	PP	80 kPa					
		0.90	PP	90 kPa					
		1.00	SPT	N=4 (1,2/1,1,1,1)				Colour change to orange brown from 1.00m bgl.	
		1.20	D			(2.10)			
								Very sandy pocket present between 1.39m to 1.50m bgl.	
		1.80	D						
		2.00	D						
		2.00	SPT	N=19 (4,5/6,4,5,4)	2.30				
									
		3.00	SPT	N=28 (5,6/6,8,7,7)		(2.50)		Medium dense becoming loose orange brown slightly silty slightly gravelly clayey fine to medium SAND with frequent reddish brown iron staining. Gravel consists of fine rounded to subrounded flint. (RIVER TERRACE DEPOSITS)	
		3.20	D					Sand becoming fine to coarse from 2.80m bgl.	
									
		4.00	SPT	N=1 (2,1/1,0,0,0)					
		4.20	D					Very loose from 4.0m bgl	
									
					4.80				
		5.00	SPT	N=34 (4,6/9,8,8,9)		(0.65)		Structureless CHALK composed of light brownish white slightly sandy silty gravelly CLAY. Gravel is angular to subangular weak to medium density chalk. CIRIA Grade Dm. (NEW PIT CHALK FORMATION)	
					5.45				
								End of Borehole at 5.45m	
									
									
									
									
									
									
									
									
									
									
									

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Borehole dry and stable during drilling and upon completion.



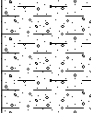
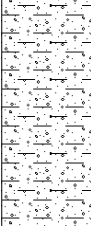
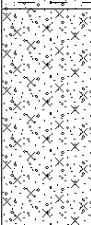
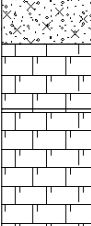
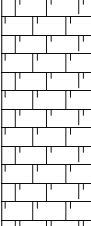
Remarks	
Borehole dry and stable during drilling and upon completion.	



Remarks	
Borehole dry and stable during drilling and upon completion. Borehole refused at 5.29m bgl upon SPT refusal.	

Windowless Sampling Borehole Log

Project Name: Wick FC			Client: S&C Slatter			Date: 09/04/2026		
Location: Littlehampton								
Project Number: 31284						Drilling Equipment: Premier 110		
Borehole Number WS05		Hole Type WLS		Logged By LR		Scale 1:35		Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m bgl)	(Thickness) (m)	Legend	Stratum Description	Scale
		Depth (m)	Type	Results					
		0.10	ES	N=15 (2,3/3,4,4,4)	0.30	(0.30)		Grass over brown slightly silty slightly gravelly clayey sandy TOPSOIL with abundant roots and rootlets. Sand is fine to medium. Gravel consists of fine to medium angular to subrounded flint.	1
		0.60	D			(1.70)	Firm brown slightly gravelly slightly sandy CLAY with occasional sandy pockets. Sand is fine to medium. Gravel consists of fine to medium angular to subangular flint. (RIVER TERRACE DEPOSITS)		
		1.00	D						
		1.00	SPT						
		1.50	D	N=22 (4,4/5,6,5,6)	2.00	(1.20)		Medium dense reddish brown slightly silty slightly gravelly fine to medium SAND. Gravel consists of fine to medium subangular to subrounded flint. (RIVER TERRACE DEPOSITS) Becoming yellowish brown from 2.40m bgl.	2
		2.00	SPT						
		2.10	D						
		2.50	D		N=19 (2,5/4,5,5,5)	3.20	(0.30)		Structureless CHALK composed of light brownish white slightly sandy silty gravelly CLAY. Gravel is angular to subangular weak to medium density chalk. CIRIA Grade Dm. (NEW PIT CHALK FORMATION) Structureless CHALK composed an off white slightly sandy silty fine to medium GRAVEL with occasional orange brown iron staining. Gravel is angular to subangular weak to medium density chalk. CIRIA Grade Dc. (NEW PIT CHALK FORMATION)
		3.00	D						
		3.00	SPT						
		4.00	D	N=39 (11,11/9,10,10,10)		3.50	(1.95)		
		4.00	SPT						
		4.00	D						
		5.00	D		N=45 (10,11/12,11,11,11)	5.45			
5.00		SPT							
							End of Borehole at 5.45m	6	
									7

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Borehole dry and stable during drilling and upon completion.



Remarks	
Borehole dry and stable during drilling and upon completion.	



Remarks	
Borehole dry during drilling and upon completion.	



Remarks
Borehole dry during drilling and upon completion.



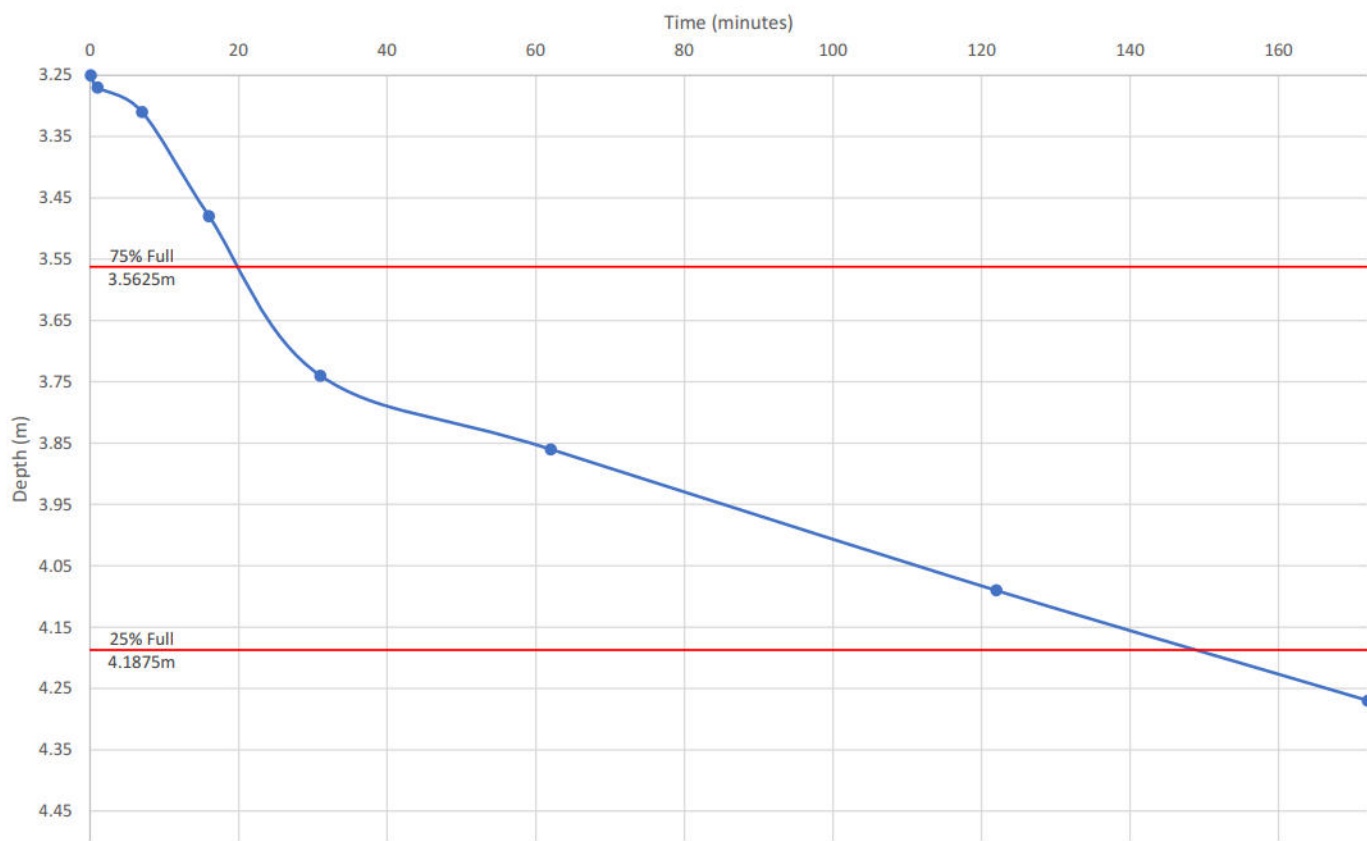
Remarks	
Borehole dry during drilling and upon completion.	

Soakaway Test WS01 Cycle 1

Project: Wick FC
Project Ref: 31244
Date: 09 April 2026
Revision:



T: 01604 781811
E: mail@jppgroup.co.uk
W: www.jppgroup.co.uk



Borehole radius 0.05m
Borehole diameter 0.1m
Borehole depth 4.5m

Soil infiltration rate $f = \frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$

= 3.08E-06 m/s

V_{p75-25} : the effective storage volume of water in the soakage borehole between 75% and 25% effective storage depth
 a_{s50} : the internal surface area of the soakage borehole up to 50% effective storage depth and including base area
 t_{p75-25} : the time for the water level to fall from 75% to 25% effective storage depth



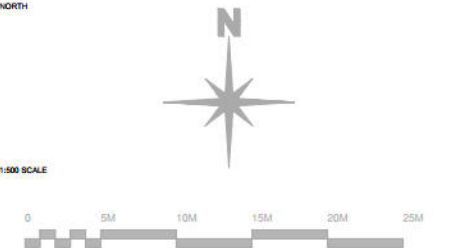
Appendix E
Proposed Facility
S&C Slatter drawing no. P25-0806.01



KEY

NOTES
COPYRITE S&C SLATTER.
© CROWN COPYRIGHT 2026.
LICENCE NUMBER 100022432.
BASE MAP REPRODUCED FROM ORDNANCE SURVEY MAP DATA.
DO NOT SCALE FROM THIS DRAWING UNLESS FOR PLANNING PURPOSES.
ALL MEASUREMENTS ARE IN MILLIMETRES (MM) UNLESS STATED OTHERWISE.

SAFETY HEALTH AND ENVIRONMENTAL (SHE) INFORMATION
ORDINARY HAZARDS AND RISKS COMMONLY ASSOCIATED WITH CONSTRUCTION WORK FOR THIS DESIGN, THAT ARE APPARENT TO COMPETENT CONTRACTORS, ARE NOT HIGHLIGHTED.
OTHER SPECIFIC RISKS HAVE BEEN ELIMINATED SO AS FAR AS IS REASONABLY PRACTICABLE. WHERE IS NOT REASONABLY PRACTICABLE TO REMOVE A RISK, THE HAZARD IS REDUCED SO AS FAR AS IS REASONABLY PRACTICABLE.
RESIDUAL RISKS TO CONSTRUCTION, USE, MAINTENANCE, OR DEMOLITION OF THE SCHEME ARE IDENTIFIED WITH HAZARD TRIANGLES.
RISKS IDENTIFIED HERE ARE NOT EXHAUSTIVE AND WILL BE FURTHER CONSIDERED AND MITIGATED DURING MANUFACTURING, AND CONSTRUCTION STAGES.
INFORMATION RELATING TO USE, MAINTENANCE, AND DEMOLITION WILL BE INCLUDED WITHIN A BUILDING MANUAL AND HEALTH AND SAFETY FILE.



CLIENT
WICK FOOTBALL CLUB
PROJECT
CHANGE OF PLAYING SURFACE FROM
NATURAL GRASS TO ARTIFICIAL GRASS
LOCATION
CRABTREE PARK
COOMES WAY
WICK
LITTLEHAMPTON
WEST SUSSEX
BN17 7LS
TITLE
PROPOSED FACILITY

DRAWING
P25-0806 / DWG / 0003
REVISION
.01
SIZE
A3
SCALE
1:500
CODE
P25-0806
STATUS
STAGE 3 COORDINATED DESIGN

REVISION	DATE	DRAWN	DESCRIPTION
.00	24 04 2026	TB	FIRST ISSUE
.01	08 05 2026	TB	SECOND ISSUE



Appendix F
Groundwater Emergence Mapping
Arun District Council Level 1 SFRA, Figure 4

	In the Burpham parish, groundwater levels are varied with levels between 0.025m and 5m of the ground surface in the west along the River Arun and through Burpham. The remainder of the parish area has ground water levels over 5m from the ground surface or little risk of emergence. Based on the EA's RoFSW dataset, groundwater emerging in this sub-area is likely to flow towards the paths of existing watercourses. The JBA risk of Groundwater Emergence Mapping for the sub-area is shown in Figure 4.
Reservoir inundation risk	Swanbourne Lake is located north of Arundel. In the 'Dry Day' scenario, flood extents remain within the wetlands and the agricultural area south of the lake, which then drain into the River Arun. In the 'Wet Day' scenario, extents are present along the upstream and downstream reaches of the River Arun, and past the eastern banks affecting Crossbush, Warmingcamp, and Burpham.
Historic, recorded flood events	Records provided by Arun District Council show that there was flooding in the Wildfowl Reserve in Arundel in 1993/1994. The EA Recorded flood outlines show that there was fluvial flooding of the River Arun through December 2013 to February 2014. Historic events recorded within the Chronology of British Hydrology Events show that Arundel has recorded flood events from November 1810 ("regular flooding when rainfall is great"), December 1839 and Autumn 1841 ("large rainfall event with the levels inundated, particularly at Arundel"), Winter 1841 and February 1847 flooding from snow melt in Arundel, 1865 (unspecified), fluvial and surface water flooding on 12th November 1913, and flooding (unspecified) in March 1927.

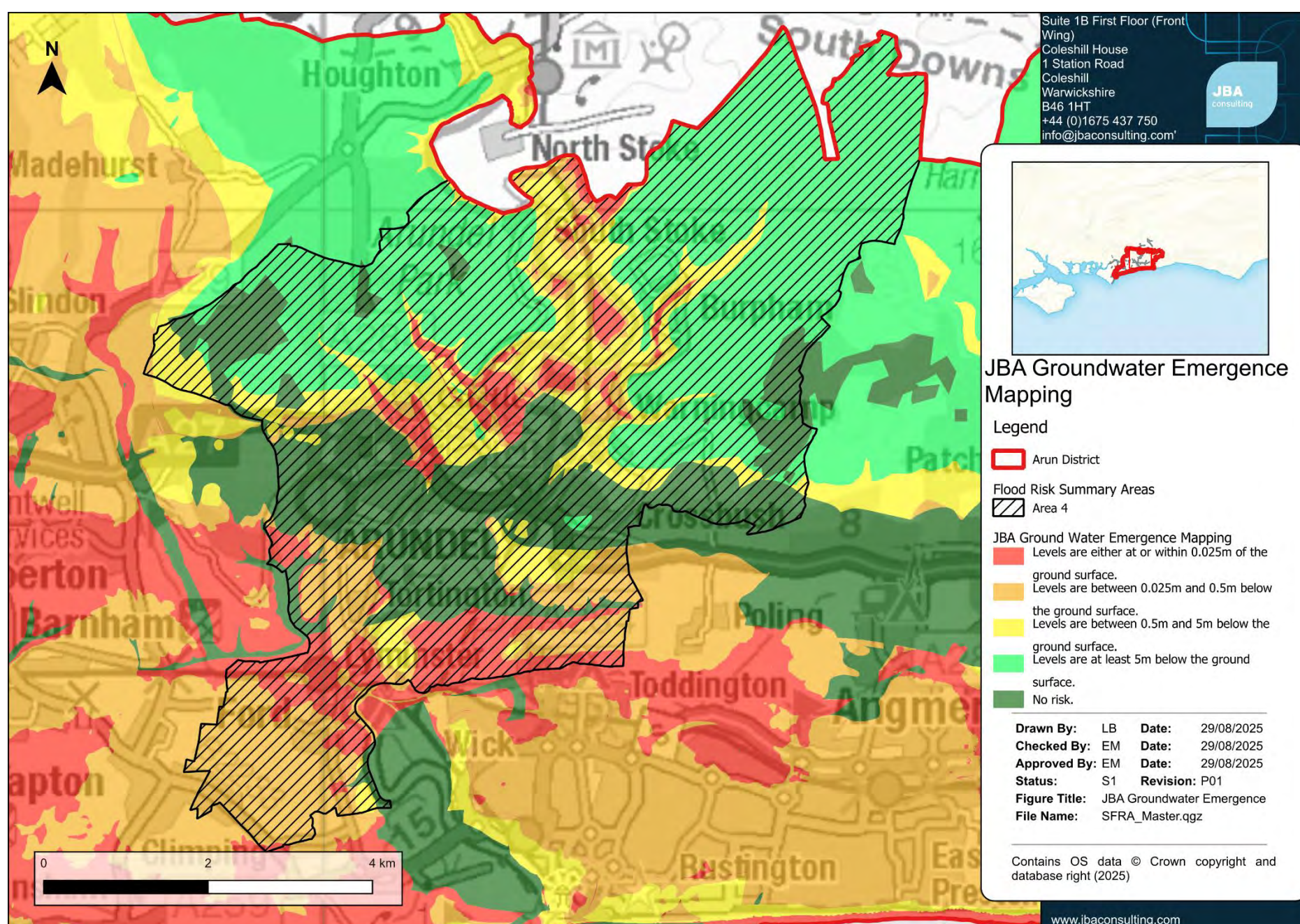
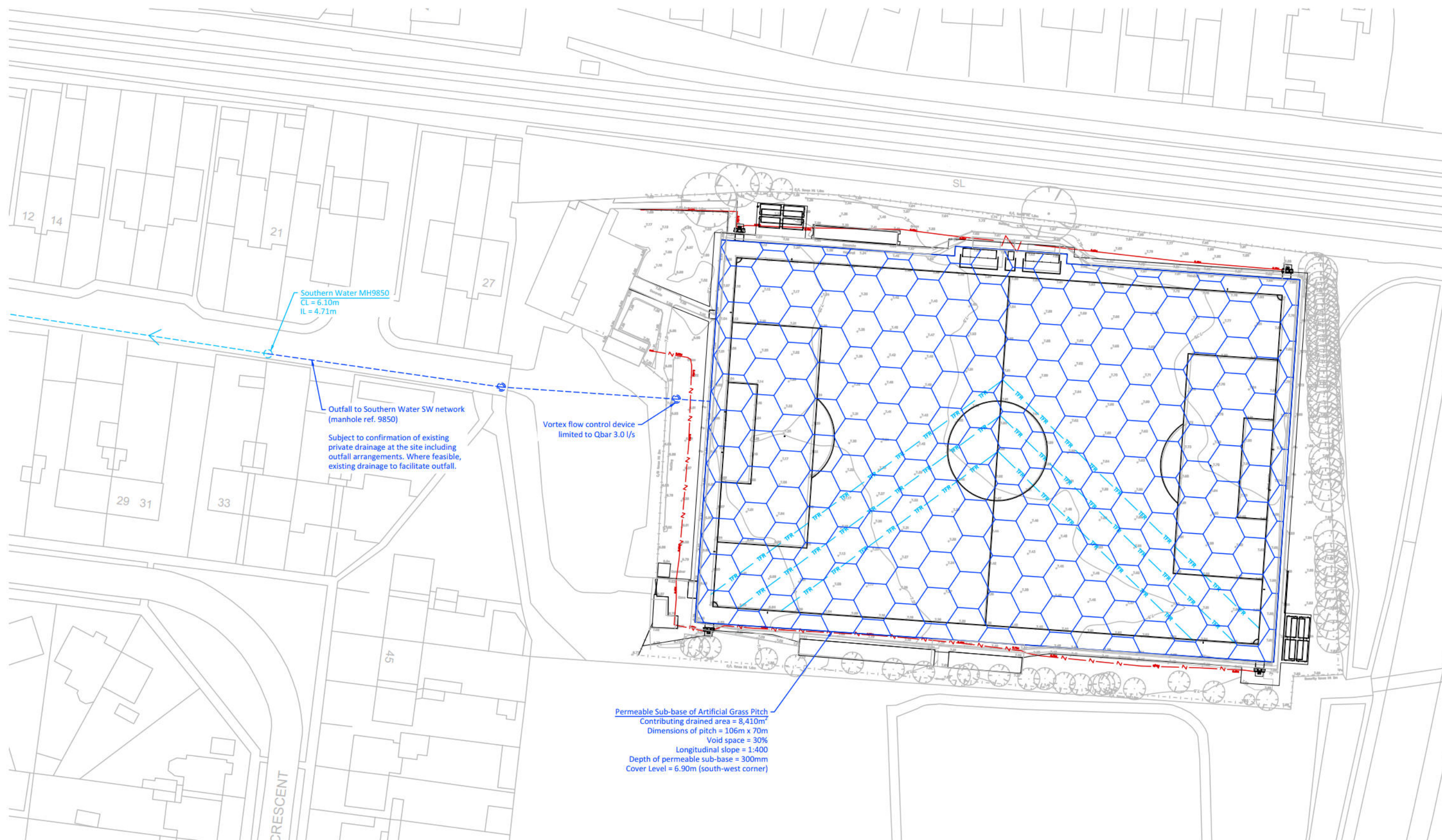


Figure 4: JBA Groundwater Emergence Mapping for sub-area 4



Appendix G
Proposed Drainage Strategy
JPP Consulting drawing no. 31285-FRA03

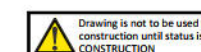


General Notes

1. All dimensions are in metres unless otherwise stated.
2. All levels are in metres.
3. This drawing is to be read in conjunction with all relevant Engineers and Architect's drawings, Specifications, Reports and Engineering Details.
4. Do not scale from this drawing.

Drawing Key

-  Proposed Permeable Sub-base
-  Proposed Surface Water Drainage
-  Existing Surface Water Drainage
-  Existing Electric Cable



jpp The JPP Group		Client	S&C Slatter Ltd	
		Project	Proposed Artificial Grass Pitch, Wick Football Club, Coomes Way, Wick, Littlehampton	
Northampton T: 01604 781811 Poole, Milton Keynes & Kettering E: mail@jppgroup.co.uk W: jppgroup.co.uk		Title	Proposed Drainage Strategy	
Scale at A3 1:750	Drawn by JPB	Checked by KER	Date 29.06.2026	
Status FOR PLANNING	Project ref 31285	Drawing no. FRA03	Revision -	

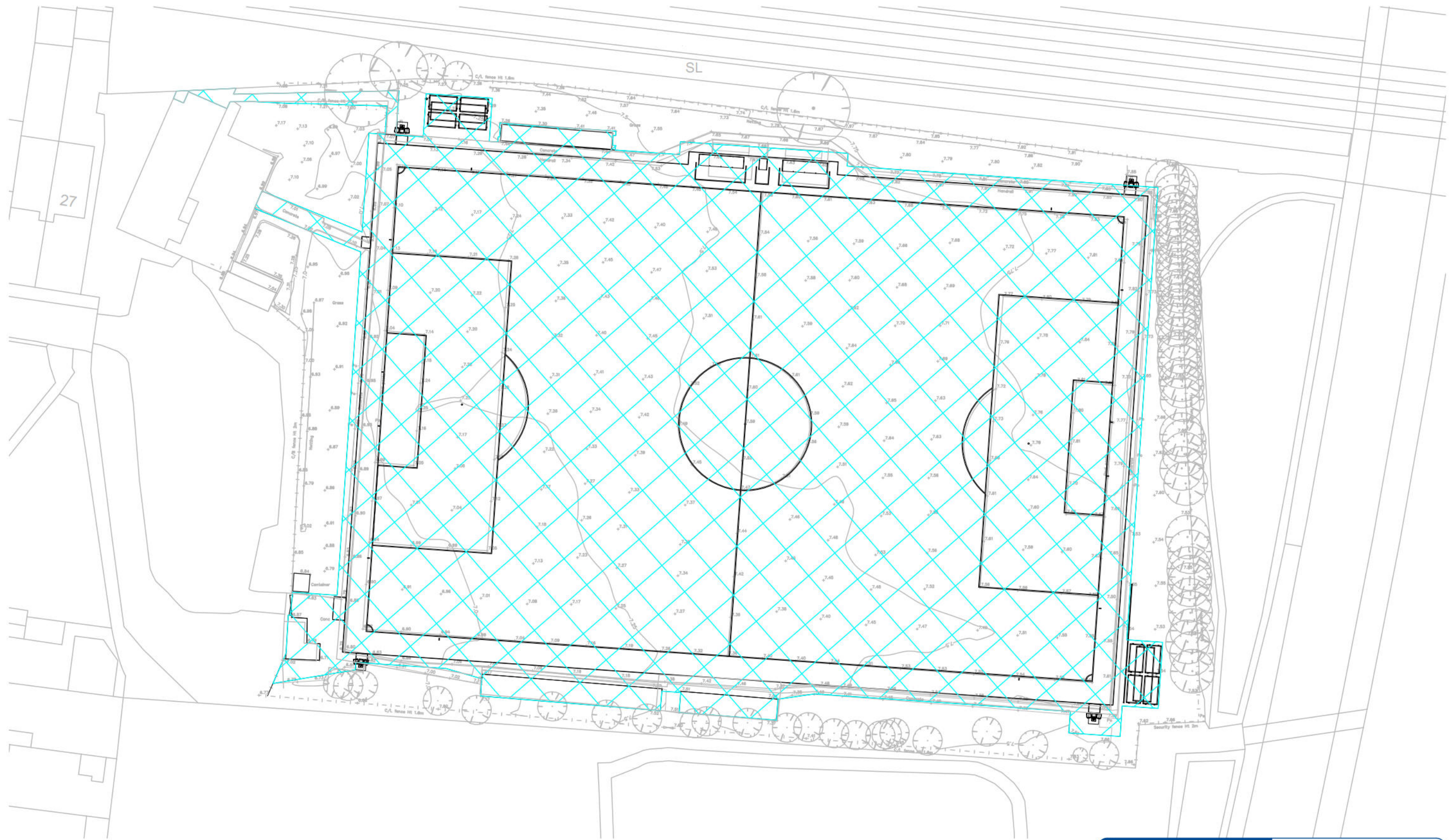


Appendix H Greenfield Calculations

JPP Consulting Ltd		Page 1																								
4, Ironstone Way Brixworth Northampton, NN3 9UD																										
Date 23/06/2026 14:15 File 31285 - ATTENUATION.SRCX	Designed by josh.beverly Checked by																									
Innovyze	Source Control 2019.1																									
<u>ICP SUDS Mean Annual Flood</u> Input <table><tr><td>Return Period (years)</td><td>1</td><td>Soil</td><td>0.400</td></tr><tr><td>Area (ha)</td><td>0.841</td><td>Urban</td><td>0.000</td></tr><tr><td>SAAR (mm)</td><td>730</td><td>Region Number</td><td>Region 7</td></tr></table> Results 1/s <table><tr><td>QBAR Rural</td><td>3.0</td></tr><tr><td>QBAR Urban</td><td>3.0</td></tr><tr><td>Q1 year</td><td>2.6</td></tr><tr><td>Q1 year</td><td>2.6</td></tr><tr><td>Q30 years</td><td>6.8</td></tr><tr><td>Q100 years</td><td>9.6</td></tr></table>			Return Period (years)	1	Soil	0.400	Area (ha)	0.841	Urban	0.000	SAAR (mm)	730	Region Number	Region 7	QBAR Rural	3.0	QBAR Urban	3.0	Q1 year	2.6	Q1 year	2.6	Q30 years	6.8	Q100 years	9.6
Return Period (years)	1	Soil	0.400																							
Area (ha)	0.841	Urban	0.000																							
SAAR (mm)	730	Region Number	Region 7																							
QBAR Rural	3.0																									
QBAR Urban	3.0																									
Q1 year	2.6																									
Q1 year	2.6																									
Q30 years	6.8																									
Q100 years	9.6																									
©1982-2019 Innovyze																										



Appendix I
Proposed Drained Area
JPP Consulting drawing no. 31285-FRA02

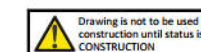


General Notes

1. All dimensions are in metres unless otherwise stated.
2. All levels are in metres.
3. This drawing is to be read in conjunction with all relevant Engineers and Architect's drawings, Specifications, Reports and Engineering Details.
4. Do not scale from this drawing.

Drawing Key

 Proposed Drained Area = 8,410m²



jpp The JPP Group		Client	S&C Slatter Ltd
		Project	Proposed Artificial Grass Pitch, Wick Football Club, Coomes Way, Wick, Littlehampton
Northampton T: 01604 781811 Poole, Milton Keynes & Kettering E: mail@jppgroup.co.uk W: jppgroup.co.uk		Title	Proposed Drained Area
Scale at A3 1:500	Drawn by JPB	Checked by KER	Date 23.06.2026
Status FOR PLANNING	Project ref 31285	Drawing no. FRA02	Revision -



Appendix J

Pitch Calculations – 1 in 30 year

JPP Consulting Ltd		Page 1
4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 30 yr, 3.0 l/s	
Date 25/06/2026 14:14 File 31285 - ATTENUATION.SRCX	Designed by JPB Checked by KER	
Innovyze	Source Control 2019.1	

Summary of Results for 30 year Return Period

Half Drain Time : 1055 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	99.881	0.181	0.0	2.8	2.8	137.2	Flood Risk
30 min Summer	99.914	0.214	0.0	2.9	2.9	192.9	Flood Risk
60 min Summer	99.945	0.245	0.0	2.9	2.9	251.9	Flood Risk
120 min Summer	99.967	0.267	0.0	3.0	3.0	299.0	Flood Risk
180 min Summer	99.978	0.278	0.0	3.0	3.0	324.5	Flood Risk
240 min Summer	99.985	0.285	0.0	3.0	3.0	340.1	Flood Risk
360 min Summer	99.993	0.293	0.0	3.0	3.0	356.3	Flood Risk
480 min Summer	99.995	0.295	0.0	3.0	3.0	362.3	Flood Risk
600 min Summer	99.995	0.295	0.0	3.0	3.0	362.8	Flood Risk
720 min Summer	99.994	0.294	0.0	3.0	3.0	360.3	Flood Risk
960 min Summer	99.990	0.290	0.0	3.0	3.0	349.5	Flood Risk
1440 min Summer	99.980	0.280	0.0	3.0	3.0	329.2	Flood Risk
2160 min Summer	99.969	0.269	0.0	3.0	3.0	304.4	Flood Risk
2880 min Summer	99.961	0.261	0.0	2.9	2.9	286.1	Flood Risk
4320 min Summer	99.948	0.248	0.0	2.9	2.9	257.8	Flood Risk
5760 min Summer	99.937	0.237	0.0	2.9	2.9	235.1	Flood Risk
7200 min Summer	99.927	0.227	0.0	2.9	2.9	217.2	Flood Risk
8640 min Summer	99.919	0.219	0.0	2.9	2.9	201.9	Flood Risk
10080 min Summer	99.912	0.212	0.0	2.9	2.9	188.9	Flood Risk
15 min Winter	99.881	0.181	0.0	2.8	2.8	137.2	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	84.017	0.0	139.3	19
30 min Summer	55.712	0.0	196.7	34
60 min Summer	35.380	0.0	259.5	64
120 min Summer	21.016	0.0	314.6	124
180 min Summer	15.386	0.0	348.2	182
240 min Summer	12.280	0.0	372.1	242
360 min Summer	8.868	0.0	404.8	362
480 min Summer	7.014	0.0	427.5	482
600 min Summer	5.841	0.0	444.7	602
720 min Summer	5.026	0.0	459.0	720
960 min Summer	3.961	0.0	460.9	898
1440 min Summer	2.846	0.0	446.5	1124
2160 min Summer	2.061	0.0	553.6	1512
2880 min Summer	1.652	0.0	585.2	1928
4320 min Summer	1.230	0.0	640.6	2728
5760 min Summer	1.011	0.0	690.1	3568
7200 min Summer	0.879	0.0	739.2	4328
8640 min Summer	0.790	0.0	785.4	5112
10080 min Summer	0.725	0.0	831.6	5944
15 min Winter	84.017	0.0	139.3	19

JPP Consulting Ltd		Page 2
4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 30 yr, 3.0 l/s	
Date 25/06/2026 14:14 File 31285 - ATTENUATION.SRCX	Designed by JPB Checked by KER	
Innovyze	Source Control 2019.1	

Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	99.914	0.214	0.0	2.9	2.9	192.8	Flood Risk
60 min Winter	99.945	0.245	0.0	2.9	2.9	251.6	Flood Risk
120 min Winter	99.967	0.267	0.0	3.0	3.0	298.8	Flood Risk
180 min Winter	99.978	0.278	0.0	3.0	3.0	324.9	Flood Risk
240 min Winter	99.986	0.286	0.0	3.0	3.0	340.7	Flood Risk
360 min Winter	99.993	0.293	0.0	3.0	3.0	357.0	Flood Risk
480 min Winter	99.996	0.296	0.0	3.0	3.0	363.4	Flood Risk
600 min Winter	99.996	0.296	0.0	3.0	3.0	364.5	Flood Risk
720 min Winter	99.995	0.295	0.0	3.0	3.0	362.6	Flood Risk
960 min Winter	99.991	0.291	0.0	3.0	3.0	353.1	Flood Risk
1440 min Winter	99.980	0.280	0.0	3.0	3.0	328.9	Flood Risk
2160 min Winter	99.966	0.266	0.0	3.0	3.0	298.1	Flood Risk
2880 min Winter	99.954	0.254	0.0	2.9	2.9	270.5	Flood Risk
4320 min Winter	99.931	0.231	0.0	2.9	2.9	223.3	Flood Risk
5760 min Winter	99.909	0.209	0.0	2.9	2.9	184.0	Flood Risk
7200 min Winter	99.890	0.190	0.0	2.8	2.8	152.2	Flood Risk
8640 min Winter	99.873	0.173	0.0	2.8	2.8	125.4	Flood Risk
10080 min Winter	99.856	0.156	0.0	2.8	2.8	102.5	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	55.712	0.0	196.7	33
60 min Winter	35.380	0.0	259.5	62
120 min Winter	21.016	0.0	314.3	122
180 min Winter	15.386	0.0	348.2	180
240 min Winter	12.280	0.0	372.2	238
360 min Winter	8.868	0.0	404.9	356
480 min Winter	7.014	0.0	427.4	470
600 min Winter	5.841	0.0	444.8	584
720 min Winter	5.026	0.0	458.8	696
960 min Winter	3.961	0.0	461.0	914
1440 min Winter	2.846	0.0	446.7	1152
2160 min Winter	2.061	0.0	554.0	1600
2880 min Winter	1.652	0.0	585.6	2048
4320 min Winter	1.230	0.0	641.8	2936
5760 min Winter	1.011	0.0	691.7	3752
7200 min Winter	0.879	0.0	740.5	4544
8640 min Winter	0.790	0.0	788.6	5352
10080 min Winter	0.725	0.0	834.2	6056

JPP Consulting Ltd		Page 4
4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 30 yr, 3.0 l/s	
Date 25/06/2026 14:14 File 31285 - ATTENUATION.SRCX	Designed by JPB Checked by KER	
Innovyze	Source Control 2019.1	

Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	70.0
Membrane Percolation (mm/hr)	1000	Length (m)	106.0
Max Percolation (l/s)	2061.1	Slope (1:X)	400.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.700	Membrane Depth (m)	0

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0082-3000-1000-3000
Design Head (m)	1.000
Design Flow (l/s)	3.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	82
Invert Level (m)	99.000
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	3.0
Flush-Flo™	0.297	3.0
Kick-Flo®	0.623	2.4
Mean Flow over Head Range	-	2.6

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.4	1.200	3.3	3.000	5.0	7.000	7.4
0.200	2.9	1.400	3.5	3.500	5.4	7.500	7.7
0.300	3.0	1.600	3.7	4.000	5.7	8.000	7.9
0.400	2.9	1.800	3.9	4.500	6.0	8.500	8.2
0.500	2.8	2.000	4.1	5.000	6.3	9.000	8.4
0.600	2.5	2.200	4.3	5.500	6.6	9.500	8.6
0.800	2.7	2.400	4.5	6.000	6.9		
1.000	3.0	2.600	4.7	6.500	7.2		



Appendix K

Pitch Calculations – 1 in 100 year

JPP Consulting Ltd		Page 1
4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 100 yr, 3.0 l/s	
Date 25/06/2026 14:15 File 31285 - ATTENUATION.SRCX	Designed by JPB Checked by KER	
Innovyze	Source Control 2019.1	

Summary of Results for 100 year Return Period

Half Drain Time : 1341 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	99.909	0.209	0.0	2.9	2.9	183.9	Flood Risk
30 min Summer	99.948	0.248	0.0	2.9	2.9	257.4	Flood Risk
60 min Summer	99.983	0.283	0.0	3.0	3.0	335.0	Flood Risk
120 min Summer	100.005	0.305	0.0	3.0	3.0	388.7	FLOOD
180 min Summer	100.015	0.315	0.0	3.0	3.0	419.4	FLOOD
240 min Summer	100.021	0.321	0.0	3.0	3.0	438.8	FLOOD
360 min Summer	100.028	0.328	0.0	3.0	3.0	459.7	FLOOD
480 min Summer	100.031	0.331	0.0	3.0	3.0	469.0	FLOOD
600 min Summer	100.032	0.332	0.0	3.0	3.0	472.7	FLOOD
720 min Summer	100.032	0.332	0.0	3.0	3.0	472.6	FLOOD
960 min Summer	100.030	0.330	0.0	3.0	3.0	465.2	FLOOD
1440 min Summer	100.022	0.322	0.0	3.0	3.0	441.5	FLOOD
2160 min Summer	100.012	0.312	0.0	3.0	3.0	411.0	FLOOD
2880 min Summer	100.005	0.305	0.0	3.0	3.0	389.3	FLOOD
4320 min Summer	99.993	0.293	0.0	3.0	3.0	356.8	Flood Risk
5760 min Summer	99.981	0.281	0.0	3.0	3.0	330.6	Flood Risk
7200 min Summer	99.972	0.272	0.0	3.0	3.0	309.6	Flood Risk
8640 min Summer	99.963	0.263	0.0	2.9	2.9	291.2	Flood Risk
10080 min Summer	99.956	0.256	0.0	2.9	2.9	275.2	Flood Risk
15 min Winter	99.909	0.209	0.0	2.9	2.9	183.9	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	106.232	0.0	186.0	19
30 min Summer	71.108	0.0	241.9	34
60 min Summer	45.350	0.0	343.4	64
120 min Summer	26.418	5.3	405.3	124
180 min Summer	19.200	14.6	444.4	184
240 min Summer	15.263	20.6	472.7	242
360 min Summer	10.971	28.3	488.6	362
480 min Summer	8.658	30.7	487.9	482
600 min Summer	7.200	32.5	486.1	602
720 min Summer	6.191	32.3	483.7	722
960 min Summer	4.878	29.9	478.1	960
1440 min Summer	3.496	22.2	464.7	1228
2160 min Summer	2.522	11.5	693.5	1600
2880 min Summer	2.013	4.9	731.2	1992
4320 min Summer	1.485	0.0	795.3	2812
5760 min Summer	1.210	0.0	850.8	3632
7200 min Summer	1.042	0.0	903.9	4464
8640 min Summer	0.929	0.0	954.0	5272
10080 min Summer	0.846	0.0	1002.8	6048
15 min Winter	106.232	0.0	186.0	19

JPP Consulting Ltd		Page 2
4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 100 yr, 3.0 l/s	
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Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	99.947	0.247	0.0	2.9	2.9	257.3	Flood Risk
60 min Winter	99.983	0.283	0.0	3.0	3.0	335.0	Flood Risk
120 min Winter	100.005	0.305	0.0	3.0	3.0	388.9	FLOOD
180 min Winter	100.015	0.315	0.0	3.0	3.0	419.8	FLOOD
240 min Winter	100.021	0.321	0.0	3.0	3.0	439.3	FLOOD
360 min Winter	100.028	0.328	0.0	3.0	3.0	460.4	FLOOD
480 min Winter	100.031	0.331	0.0	3.0	3.0	470.3	FLOOD
600 min Winter	100.033	0.333	0.0	3.0	3.0	474.2	FLOOD
720 min Winter	100.033	0.333	0.0	3.0	3.0	474.6	FLOOD
960 min Winter	100.031	0.331	0.0	3.0	3.0	468.7	FLOOD
1440 min Winter	100.023	0.323	0.0	3.0	3.0	444.7	FLOOD
2160 min Winter	100.011	0.311	0.0	3.0	3.0	408.8	FLOOD
2880 min Winter	100.002	0.302	0.0	3.0	3.0	379.6	FLOOD
4320 min Winter	99.980	0.280	0.0	3.0	3.0	328.0	Flood Risk
5760 min Winter	99.960	0.260	0.0	2.9	2.9	283.3	Flood Risk
7200 min Winter	99.942	0.242	0.0	2.9	2.9	245.6	Flood Risk
8640 min Winter	99.925	0.225	0.0	2.9	2.9	212.8	Flood Risk
10080 min Winter	99.909	0.209	0.0	2.9	2.9	184.0	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	71.108	0.0	242.0	33
60 min Winter	45.350	0.0	343.4	64
120 min Winter	26.418	5.5	405.3	122
180 min Winter	19.200	15.0	444.4	180
240 min Winter	15.263	21.0	472.7	240
360 min Winter	10.971	28.1	488.6	356
480 min Winter	8.658	31.9	487.9	472
600 min Winter	7.200	32.9	486.1	588
720 min Winter	6.191	33.4	483.8	702
960 min Winter	4.878	31.4	478.0	924
1440 min Winter	3.496	23.3	464.6	1342
2160 min Winter	2.522	11.4	693.0	1664
2880 min Winter	2.013	1.7	731.5	2128
4320 min Winter	1.485	0.0	795.5	3024
5760 min Winter	1.210	0.0	851.5	3864
7200 min Winter	1.042	0.0	904.9	4688
8640 min Winter	0.929	0.0	955.9	5528
10080 min Winter	0.846	0.0	1005.5	6264

JPP Consulting Ltd	Page 4
4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 100 yr, 3.0 l/s
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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	70.0
Membrane Percolation (mm/hr)	1000	Length (m)	106.0
Max Percolation (l/s)	2061.1	Slope (1:X)	400.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.700	Membrane Depth (m)	0

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0082-3000-1000-3000
Design Head (m)	1.000
Design Flow (l/s)	3.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	82
Invert Level (m)	99.000
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	3.0
Flush-Flo™	0.297	3.0
Kick-Flo®	0.623	2.4
Mean Flow over Head Range	-	2.6

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.4	1.200	3.3	3.000	5.0	7.000	7.4
0.200	2.9	1.400	3.5	3.500	5.4	7.500	7.7
0.300	3.0	1.600	3.7	4.000	5.7	8.000	7.9
0.400	2.9	1.800	3.9	4.500	6.0	8.500	8.2
0.500	2.8	2.000	4.1	5.000	6.3	9.000	8.4
0.600	2.5	2.200	4.3	5.500	6.6	9.500	8.6
0.800	2.7	2.400	4.5	6.000	6.9		
1.000	3.0	2.600	4.7	6.500	7.2		



Appendix L

Pitch Calculations – 1 in 100 year + 45% climate change

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4, Ironstone Way
Brixworth
Northampton, NN3 9UD

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Proposed AGP
Wick Football Club
1 in 100 yr +40% CC, 3.0 l/s

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Checked by KER

Source Control 2019.1

Page 1

Micro Drainage

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 2049 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	99.960	0.260	0.0	2.9	2.9	284.2	Flood Risk
30 min Summer	100.006	0.306	0.0	3.0	3.0	391.6	FLOOD
60 min Summer	100.044	0.344	0.0	3.1	3.1	505.8	FLOOD
120 min Summer	100.073	0.373	0.0	3.1	3.1	587.2	FLOOD
180 min Summer	100.092	0.392	0.0	3.1	3.1	634.9	FLOOD
240 min Summer	100.106	0.406	0.0	3.1	3.1	666.7	FLOOD
360 min Summer	100.122	0.422	0.0	3.2	3.2	704.1	FLOOD
480 min Summer	100.132	0.432	0.0	3.2	3.2	725.2	FLOOD
600 min Summer	100.138	0.438	0.0	3.2	3.2	737.5	FLOOD
720 min Summer	100.141	0.441	0.0	3.2	3.2	744.6	FLOOD
960 min Summer	100.143	0.443	0.0	3.2	3.2	748.3	FLOOD
1440 min Summer	100.137	0.437	0.0	3.2	3.2	735.7	FLOOD
2160 min Summer	100.121	0.421	0.0	3.2	3.2	701.7	FLOOD
2880 min Summer	100.109	0.409	0.0	3.1	3.1	673.8	FLOOD
4320 min Summer	100.094	0.394	0.0	3.1	3.1	639.5	FLOOD
5760 min Summer	100.085	0.385	0.0	3.1	3.1	617.5	FLOOD
7200 min Summer	100.079	0.379	0.0	3.1	3.1	602.8	FLOOD
8640 min Summer	100.075	0.375	0.0	3.1	3.1	591.0	FLOOD
10080 min Summer	100.071	0.371	0.0	3.1	3.1	581.4	FLOOD
15 min Winter	99.960	0.260	0.0	2.9	2.9	284.2	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	154.036	0.0	244.9	19
30 min Summer	103.107	6.0	251.6	34
60 min Summer	65.758	43.6	500.2	64
120 min Summer	38.307	73.9	508.6	124
180 min Summer	27.840	92.4	512.5	184
240 min Summer	22.132	105.4	514.3	244
360 min Summer	15.908	121.9	515.5	362
480 min Summer	12.554	132.0	514.9	482
600 min Summer	10.440	137.7	513.8	602
720 min Summer	8.977	141.1	511.9	722
960 min Summer	7.074	143.2	507.5	962
1440 min Summer	5.069	137.0	496.3	1440
2160 min Summer	3.657	120.7	984.7	1840
2880 min Summer	2.919	108.5	969.5	2220
4320 min Summer	2.153	94.1	914.0	3024
5760 min Summer	1.754	85.4	1289.7	3856
7200 min Summer	1.511	79.9	1376.4	4680
8640 min Summer	1.347	75.3	1460.8	5528
10080 min Summer	1.227	71.3	1541.3	6352
15 min Winter	154.036	0.0	244.9	19

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4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 100 yr +40% CC, 3.0 l/s	
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Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	2013
Site Location	GB 503023 103779 TQ 03023 03779
Data Type	Point
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	1.000
Cv (Winter)	1.000
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.841

Time (mins)	Area
From:	To: (ha)
0	4 0.841

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4, Ironstone Way Brixworth Northampton, NN3 9UD	Proposed AGP Wick Football Club 1 in 100 yr +40% CC, 3.0 l/s	
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Innovyze	Source Control 2019.1	

Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	70.0
Membrane Percolation (mm/hr)	1000	Length (m)	106.0
Max Percolation (l/s)	2061.1	Slope (1:X)	400.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	99.700	Membrane Depth (m)	0

Hydro-Brake® Optimum Outflow Control

Unit Reference	MD-SHE-0082-3000-1000-3000
Design Head (m)	1.000
Design Flow (l/s)	3.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	82
Invert Level (m)	99.000
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

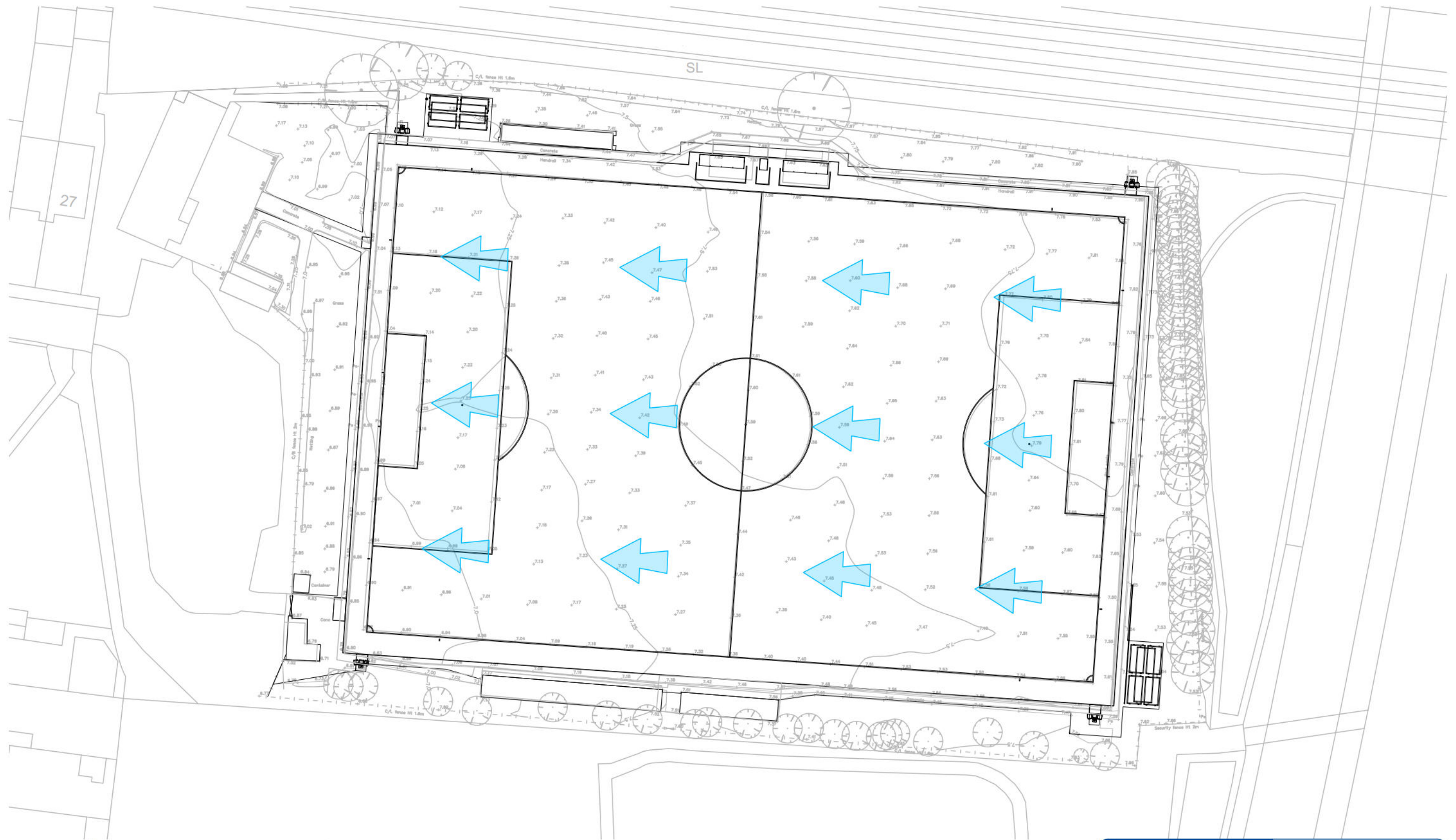
Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	3.0
Flush-Flo™	0.297	3.0
Kick-Flo®	0.623	2.4
Mean Flow over Head Range	-	2.6

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.4	1.200	3.3	3.000	5.0	7.000	7.4
0.200	2.9	1.400	3.5	3.500	5.4	7.500	7.7
0.300	3.0	1.600	3.7	4.000	5.7	8.000	7.9
0.400	2.9	1.800	3.9	4.500	6.0	8.500	8.2
0.500	2.8	2.000	4.1	5.000	6.3	9.000	8.4
0.600	2.5	2.200	4.3	5.500	6.6	9.500	8.6
0.800	2.7	2.400	4.5	6.000	6.9		
1.000	3.0	2.600	4.7	6.500	7.2		



Appendix M
Overland Flows
JPP Consulting drawing no. 31285-FRA04



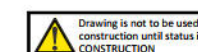
General Notes

1. All dimensions are in metres unless otherwise stated.
2. All levels are in metres.
3. This drawing is to be read in conjunction with all relevant Engineers and Architect's drawings, Specifications, Reports and Engineering Details.
4. Do not scale from this drawing.

Drawing Key



Overland Flows



jpp The JPP Group Northampton T: 01604 781811 Poole, Milton Keynes & Kettering E: mail@jppgroup.co.uk W: jppgroup.co.uk		Client	S&C Slatter Ltd	
		Project	Proposed Artificial Grass Pitch, Wick Football Club, Coomes Way, Wick, Littlehampton	
		Title	Overland Flows	
		Scale at A3	1:500	Drawn by JPB
Status	FOR PLANNING	Project ref	31285	Drawing no. FRA04
Checked by	KER	Date	25.06.2026	Revision