

A photograph of a stream flowing over a rocky bed, bordered by green grass and vegetation. The text "Surface Water Management Plan" is overlaid in white.

Surface Water Management Plan

Land at Wood Walk, Hoyland For Yelcon Ltd

Report no: 3478/9

Date: November 2023



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Drawing	Revision	Title
3478/2	B	Proposed Site Layout
2351.01	A	Planning Layout
3778/19	-	Surface Water Management Plan

Appendix B – SWMP Inspection sheet

FOREWORD (Surface Water Management Plan)

This report has been prepared for the sole internal use and reliance of the Client named on page 1. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Lithos Consulting Limited (Lithos); such authorisation not to be unreasonably withheld. If any unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill.

This report has been reviewed by a Competent Person, as defined in the National Planning Policy Framework. We ensure that all projects are managed by individuals with necessary experience, relevant qualifications, and current membership of a relevant professional organisation. Records of engineers, project managers and reviewers involved in this project are maintained by us. Lithos QA/QC procedures for all our work forms an integral part of our ISO9001 accreditation and as such is regularly audited.

The report has been written with reference to information provided by the Client regarding the proposed development. Further advice should be sought from Lithos prior to significant revision of the development proposals.

The report should be read in its entirety, including all associated drawings and appendices. Lithos cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

Lithos cannot be responsible for the consequences of changing practices, revisions to legislation etc that may affect the viability of proposed works.

Lithos standard terms and conditions apply to the report, a copy of the terms and conditions is available on request.

**SURFACE WATER
MANAGEMENT PLAN (SWMP)
FOR THE LAND AT WOOD WALK, HOYLAND**

1 INTRODUCTION

1.1 General

- 1.1.1 Lithos Consulting Limited have been commissioned to prepare this Surface Water Management Plan (SWMP) to support Yelcon Ltd and their groundworker during the construction phase of the proposed development.
- 1.1.2 This report has been written for the benefit and use of Yelcon, the Principal Contractor and any other person(s) responsible for management of day-to-day site operations.
- 1.1.3 Lithos has previously issued:
- Geoenvironmental Appraisal (Report ref. 3478/3, dated April 2023)
 - Remediation Statement (Report ref. 3478/4, dated April 2023)
 - Earthworks Specification (Report ref. 3478/5, dated April 2023)
- 1.1.4 The above documents present the site's geoenvironmental setting along with an outline of the construction activities required to make the site suitable for residential development.
- 1.1.5 In addition, a review of 3rd party reports was undertaken by Lithos (Report Ref. 3487-2, dated November 2022).
- 1.1.6 The above Reports should be read in conjunction with this document.
- 1.1.7 The requirement for a construction SWMP is based on the Developer's duty to ensure that surface water quality (and quantity if appropriate) is managed throughout the construction phase to mitigate impacts to key environmental receptors.
- 1.1.8 This report outlines the mitigation measures proposed to protect surface water bodies, (notably the tertiary watercourse which flows south about 40m beyond the southern boundary) and adjacent land and properties (notably residential dwellings and gardens located immediately beyond the south western boundary).
- 1.1.9 This SWMP also includes advice regarding surface water monitoring and emergency mitigation measures, should these be required. Examples of when emergency measures should be considered have also been included for reference, although these are not exhaustive.

1.2 The proposed development

- 1.2.1 A proposed layout has been made available by Yelcon (Drawing ref. 2351.01 Rev. A, dated 26th October 2023, drawn by STEN Architecture Ltd) which is reproduced in Appendix A to this document and shows 83 'traditional' two/three storey domestic dwellings, with associated gardens and adoptable roads and sewers.
- 1.2.2 An area of open space is proposed in the southwest, with a surface water attenuation basin at the southwestern boundary.

1.3 Background

The site

- 1.3.1 The site is located off Wood Walk (to the south) about 5.5km southeast of Barnsley town centre, and is a single parcel of land (c. 3.5 hectares). At the time of writing, site preparatory earthworks were in progress, comprising excavation, screening of arisings and placement of engineered fill across the footprint of a former opencast void.
- 1.3.2 Surface conditions essentially comprise exposed engineered fill (gravelly clay), some stockpiles of excess soil, arisings, fill etc are present across the site. A buffer of vegetation exists along the site's boundaries with the exception of the access road entry point on the southern boundary.
- 1.3.3 Land currently falls to the south west.
- 1.3.4 Access to the development during the construction works is from Wood Walk adjacent to the site's southern boundary.
- 1.3.5 Adjacent properties, including gardens, dwellings and garages, are located immediately beyond the southwestern boundary.
- 1.3.6 Geological maps show ground to comprise Pennine Middle Coal Measures (mudstone, siltstone, sandstone) in the west, and Woolley Edge Rock (sandstone) in the east, with drift soils being absent.
- 1.3.7 Backfilled opencast workings are present in the centre and north of the site. Opencast backfill (gravels and cobbles) extends to 3.0m depth in the west and 25.8m depth in the east.
- 1.3.8 The site lies within a Water Framework Directive (WFD) catchment for the **River Dearne** from Knoll Beck Source to the River Dearne. Environment Agency data indicates that the catchment has a failing chemical quality and a moderate ecological quality.
- 1.3.9 The nearest surface watercourse is a stream located c. 40m south, which flows south to Knoll Beck and ultimately to the River Dearne about 6km to the east.
- 1.3.10 The site is not located in a Groundwater Source Protection Zone.
- 1.3.11 Migration of surface water run-off onto adjacent land could cause a nuisance but could also enter surface water drains. Surface water runoff from site is the key aspect that needs managing.
- 1.3.12 Pooled surface water present at the western and southern boundaries could migrate down the slope towards residential properties in the west and a public highway in the south. However, the presence of a vegetation buffer should limit over land flow.

1.4 Good practice guidance

1.4.1 Whilst this report deals specifically with surface water management, it is recommended that construction phase groundworkers follow good environmental practice to minimise spillage, leakage etc with reference, but not limited, to the following documents:

- CIRIA C502 'Environmental Good Practice on Site'
- EA Pollution Prevention Guidelines:
 - o PPG6 - Working at construction and demolition sites
 - o PPG2 - Above ground oil storage tank
 - o PPG7 – The safe operation of refuelling facilities.
 - o PPG21 – Incident Response Planning

1.4.2 Lithos are aware that some of the EA PPG documents have been withdrawn from the gov.uk website. However, PPGs provided a summary of current UK guidance; the principles are still relevant and provide a useful, concise overview. Lithos would still recommend reference to these in the first instance via the national archive, the relevant links are provided on the new Environment Agency webpages.

2 MANAGEMENT OF SURFACE WATER AND SILT DURING CONSTRUCTION

2.1 Yelcon have provided details of the surface water management scheme that is to be adopted during development; this is summarised below, together with the anticipated order of works.

2.2 The works broadly involve temporary use of the permanent drainage infrastructure (attenuation basin) to provide surface water holding, prior to silt removal and water discharge to off-site surface water drainage infrastructure.

	Action	Remarks
1	Apply for licence to discharge surface water from the site to the off site surface water drainage infrastructure.	Compliance with Yorkshire Water requirements.
2	Install drainage channels and bund (or similar) along with length of the western and southern boundaries. The barrier should be installed leaving a minimum of 2m (ideally 10m) easement from the from the boundary fence.	Precautionary measure to provide protection against silty water escaping site. Daily inspection and maintenance required to sustain capacity.
3	Excavate and install permanent attenuation basin (minimum volume of 964m³) on the site's southwestern boundary. The basin forms the developed site's permanent surface water drainage solution and the construction phase's temporary solution.	The use of development drains should prevent the discharge of silt or contaminated waters and provide holding capacity. However, entry points should be protected by gully bags or similar to prevent silting up.
4	Install inlet drainage connections to the permanent attenuation basin.	The surface water inlet to the attenuation basin should be gravity fed. The entry point should be protected by gully bags or similar to prevent silting up.
5	Excavate and install the main leg of the surface water sewer flowing into the attenuation basin. The drainage system will connect to the attenuation basin and will adopt gravity flow.	The use of development drains should prevent the discharge of silt or contaminated waters and provide holding capacity. All entry points should be protected by gully bags or similar to prevent silting up.
6	Install off site surface water drainage connections to the off site surface water drainage infrastructure.	Approval from Yorkshire Water will be required.

	Action	Remarks
7	Install outlet drainage connections to the permanent attenuation basin.	The exit points should be protected by gully bags or similar to prevent silting up.
8	Excavate and install the outlet leg of the site's surface water drainage system from the attenuation basin into the off site surface water draining infrastructure. Drainage from the attenuation basin will be controlled by a pump.	The exit point should be protected by gully bags or similar to prevent silting up. Frequent visual inspections will be undertaken to prevent pollution entering the off site surface water infrastructure.
9	Pumping and tankering off site of the contents of the attenuation basin will be required prior to connection to the off site surface water drainage infrastructure.	Frequent visual inspections will be undertaken to prevent overflow of the attenuation basin.
10	Temporary pumping of standing water from the boundary drainage channels may be required in low spots or extra drainage channels added.	This will prevent water overflow from the ditch onto adjacent land and across the site and improve working conditions.
11	Temporary pumping of standing water across the site may be required in low spots or extra drainage channels added.	This will prevent standing water across the site and improve working conditions.
12	Complete the daily visual inspection checklist of control measures.	Enable early detection of broken or non-functioning mitigation measures. Provide an early indication if max. holding capacity is neared.
13	Removal of residual silts from the surface water drainage prior to post construction use of the system.	Some silts will settle in the drainage system, to prevent these being mobilise post development the drainage system should be cleaned.

- 2.3 In the event of heavy and sustained rainfall resulting in the attenuation basin not operating appropriately, or operating close to maximum capacity, additional temporary storage will be required and could be achieved by the means of a second attenuation basin/clay bund.
- 2.4 The secondary attenuation basin would ideally be downhill from the primary basin, but if this is not possible pumping will be required.
- 2.5 The exact dimensions of the construction phase attenuation basins should be determined by the Drainage Engineer.

3 MONITORING

3.1 General

- 3.1.1 Monitoring the surface water management system is critical and can provide an early indication of potential problems, allowing these to be addressed before they escalate and result in problems on neighbouring land.
- 3.1.2 Monitoring must include review of the weather forecast and visual inspections, with some active sampling where required to comply with discharge permit conditions. Whilst ultimate responsibility will lie with the Principal Contractor, the role can be delegated, providing the delegate is well briefed with an appropriate toolbox talk and can demonstrate an understanding of the different aspects of this surface water management plan. A record of all appropriate training should be held on site.

3.2 Weather forecasting

- 3.2.1 The Principal Contractor, or alternative delegated personnel, must review a reliable 7 day weather forecast at the start of each week. The meteorological office provide useful short and long term forecasts, based on a network of weather stations, this can be found at <https://www.metoffice.gov.uk/>.
- 3.2.2 A copy of weekly forecasts should be displayed in the site office.
- 3.2.3 Where heavy or persistent rain is forecast, consideration must be given to available capacity in the attenuation basin/s to prevent possible overflowing.
- 3.2.4 If extended periods of rain have already occurred and the capacity in the attenuation basin/s presents a concern, consideration should be given to emergency measures (see Section 4 below).

3.3 Visual inspections

- 3.3.1 The surface water management infrastructure should be visually inspected at the start of each working day and at the end of the last working day of each week. Early identification and repair is critical. Inspection should include, but not be limited to:
- a walk along all boundaries to check for evidence of surface water run off leaving site, damage to the silt fence, or excessive silt build up
 - visual inspection of whole site for areas of standing water
 - visual inspection of the attenuation basin/s to review build-up of silt, clarity of the water and holding capacity
 - visual inspection and photographs of discharge water leaving the site (after passing through the silt trap where necessary)
- 3.3.2 Discharge water from the attenuation basin to the surface water drainage should be clear; i.e. if the discharge is placed in a clear bottle, a label should be easily read when placed behind it (example included in Appendix B). Cloudy water is usually due to suspended solids. Any potentially cloudy water discharge from site is likely to require active sampling (see below) and should be reported to the Principal Contractor. The discharge permit may also include limits on suspended solids. Limits will need to be achieved prior to final discharge from site.
- 3.3.3 Each inspection should be recorded, and a copy held in the site office for a period of two weeks. An electronic copy should be retained for the duration of the project. A suggested record sheet is included in Appendix B to this report.

4 EMERGENCY PROCEDURES

4.1 Maximum capacity of the attenuation basin

- 4.1.1 In the event of heavy and sustained rainfall resulting in the attenuation basin not operating appropriately (i.e. high flow preventing effective settlement of suspended solids), or operating close to maximum capacity, additional temporary storage will be required and could be achieved by the means of a second attenuation basin.
- 4.1.2 The secondary holding area should be situated in a location suitable to allow excess water to be pumped to it for storage.
- 4.1.3 Tankering to remove excess water should only be used when absolutely necessary to prevent build-up of silty waters on site.

4.2 High suspended solids in discharge waters

- 4.2.1 If visual inspection indicates significant amounts of suspended solids in the discharge water from the attenuation basin, some secondary treatment should be considered.
- 4.2.2 Secondary treatment is likely to comprise a further settlement option. Selection of appropriate secondary treatment should be agreed with the manufacturer. Points to consider include:
 - Silt bags are provided with different mesh size. Laboratory data should provide an indication of particle size within the sediment, this information is needed to ensure the silt bag is effective. Silt bags also need to be inspected and changed regularly.
 - Silt 'busters' are mobile settlement tanks, but are highly sensitive to flow rates. The maximum anticipated flow rate should be used to determine the size of unit required.
 - Settlement tanks must be installed on a solid level surface to ensure they operate correctly.

4.3 Spillage of fuel or any potentially hazardous liquid

- 4.3.1 In the event of a significant spill of fuel, or any potentially hazardous liquid, the site should have at least one person who is trained and competent to use spill response equipment. **Significant effort should be made to ensure the spillage does not enter the surface water management system.**
- 4.3.2 The Principal Contractor should ensure that all site personnel are made aware of the content and requirements of the **Spill Response Plan** (SRP).
- 4.3.3 Records to verify that this training has been provided should be retained in the site office for the duration of the project.
- 4.3.4 The following steps should be taken to manage a hazardous material spill on site:
 - Assess release
 - Isolate spilt materials
 - Contain spilt materials
 - Absorb spilt materials
 - Dispose of waste materials
 - Order replacement spill response materials
- 4.3.5 Reference should also be made to the following publication: *Pollution Prevention Guideline: Incident Response Planning: PPG21*.

- 4.3.6 If contamination does enter the surface water sewers, drainage channels, or the attenuation basin, discharge to the surface water outfall should cease immediately and advice should be sought from a suitably qualified geoenvironmental consultant, such as Lithos.
- 4.3.7 Yorkshire Water should be informed immediately. Some tankering and offsite disposal may be required.
- 4.3.8 Once contaminated waters are removed, some cleaning of the attenuation tank(s) may also be required to prevent any future risk of contamination arising in the surface water system, post construction.

APPENDIX A DRAWINGS



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CLIENT

CAMSTEAD
HOMES

JOB TITLE

WOOD WALK,
HOYLAND

DRAWING TITLE

SITE LOCATION
PLAN

DRAWN

ASw

DATE

27 06 19

CHECKED

REG

DATE

27 06 19

STATUS

FOR COMMENT ☐

DRAFT ☐

FOR APPROVAL ☐

FINAL ☒

SCALE

1:25,000

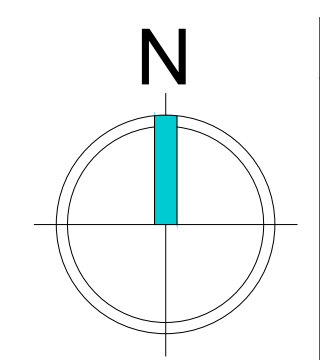
SHEET

A4

DRAWING NO.

3478/1

REVISION



Notes:

This drawing, design and concept are copyright of STEN Architecture.

All Dimensions are to be verified on site before any work commences. If any discrepancies, errors or omissions are noted, these are to be reported to STEN Architecture immediately.

If any other drawings are referenced within this layout, please refer to the specific detailed drawing for design, materials and specific working practices.



- PLANNING LAYOUT KEY:**
- Boundary treatments**
- Masonry wall
 - Acoustic fence
 - Close boarded timber fence
 - Estate Railings
 - Knee height railing
- General**
- BCP Bin collection point (bin collection day only)
 - Indicative electric charging point.
 - Affordable Dwelling
 - Timber cycle store (if separate store not shown, cycle storage to be provided within detached or integral garage of associated plot.
 - Trees/Vegetation - Retained
 - Trees/Vegetation - Removed
 - Root protection area

Accommodation Schedule - Wood Walk, Hoyland						
Private Dwellings						
Name	Floor Area Sq Ft	Beds	No.	Total	% Mix	% Beds
Beamsley	787	2	6	4802	8.0%	8.0%
Lilac	921	3	8	7368	10.7%	
Inglebrough	962	3	16	15382	21.3%	
Whernside	1013	3	4	4052	5.3%	66.7%
Bedale	1042	3	4	4168	5.3%	
Maham	1108	3	10	11080	13.3%	
Acton	1145	3	8	9160	10.7%	
Sandringham	1350	4	3	4050	4.0%	
Chevin	1380	4	4	5440	5.3%	
Winterley	1374	4	4	5496	5.3%	25.3%
Woodale	1378	4	6	8268	8.0%	
Bickden	1422	4	2	2844	2.7%	
Subtotal		76	81920	100.00%		
Private Dwellings						
Name	Floor Area Sq Ft	Beds	No.	Total	% Mix	% Beds
Eastm	690	2	3	2070	3.5%	
Kelham	734	2	3	2202	3.6%	9.6%
Beamsley	767	2	2	1534	2.4%	
Subtotal		8	5808	9.84%		
Grand total		83	87726			
Average private house type				1057		
	m2	hectares	acres			
Approx gross area	36057.00	3.61	8.91			
Usable open space	5348.00	0.53	1.32			
Woodland	2498.00	0.25	0.62			
Attenuation Basin	2806.00	0.28	0.72			
Total PCS	10753.00	1.08	2.66	29.8%		
Approx Private Net Area	22889.00	2.29	5.66			
Coverage	Units P/H =	36.26	15509.98			

A	Minor amendments to boundary treatment positions inline with boundary treatment plan.	TS	27.10.23
REV:	DESCRIPTION:	BY:	DATE:

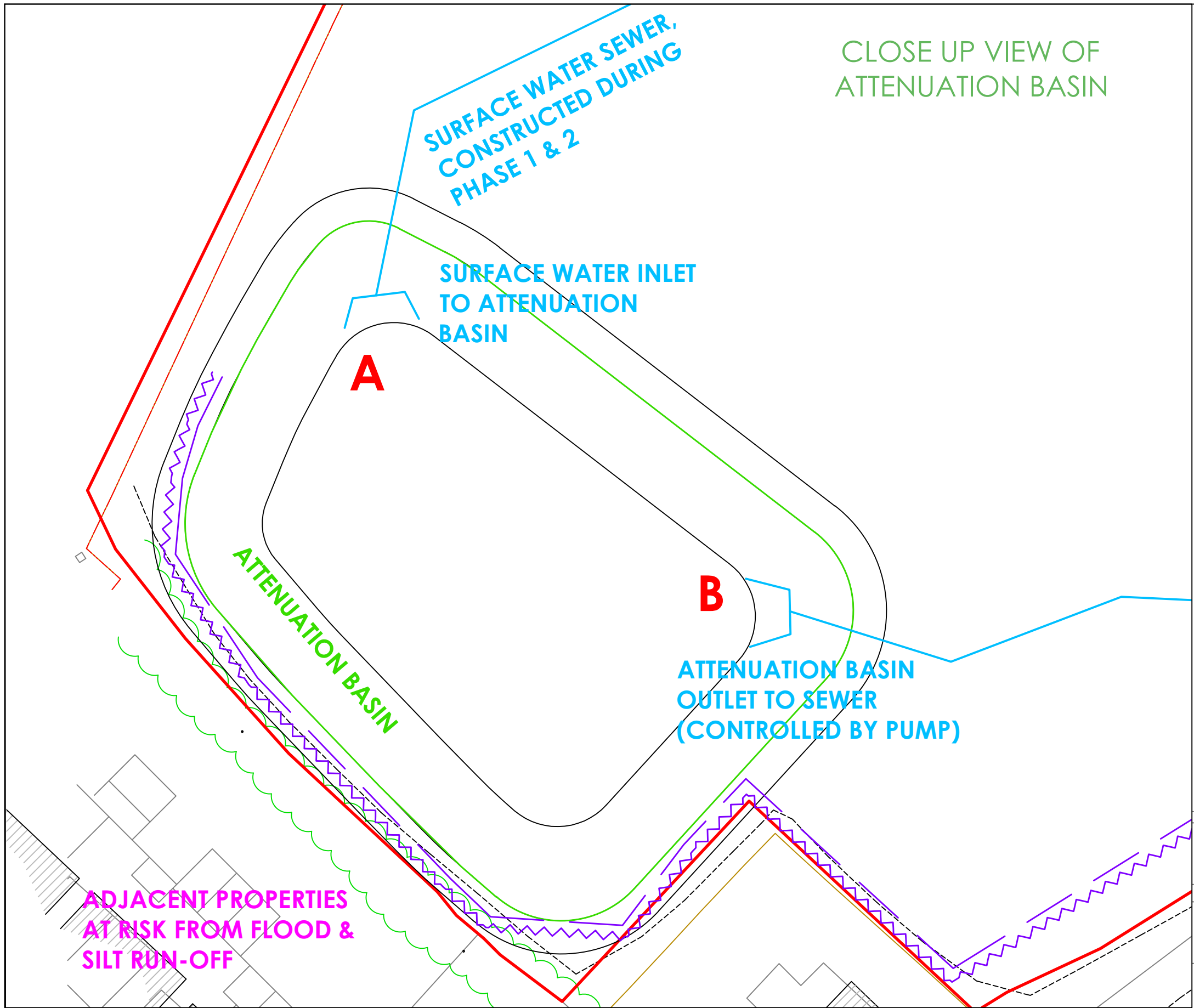
STEN

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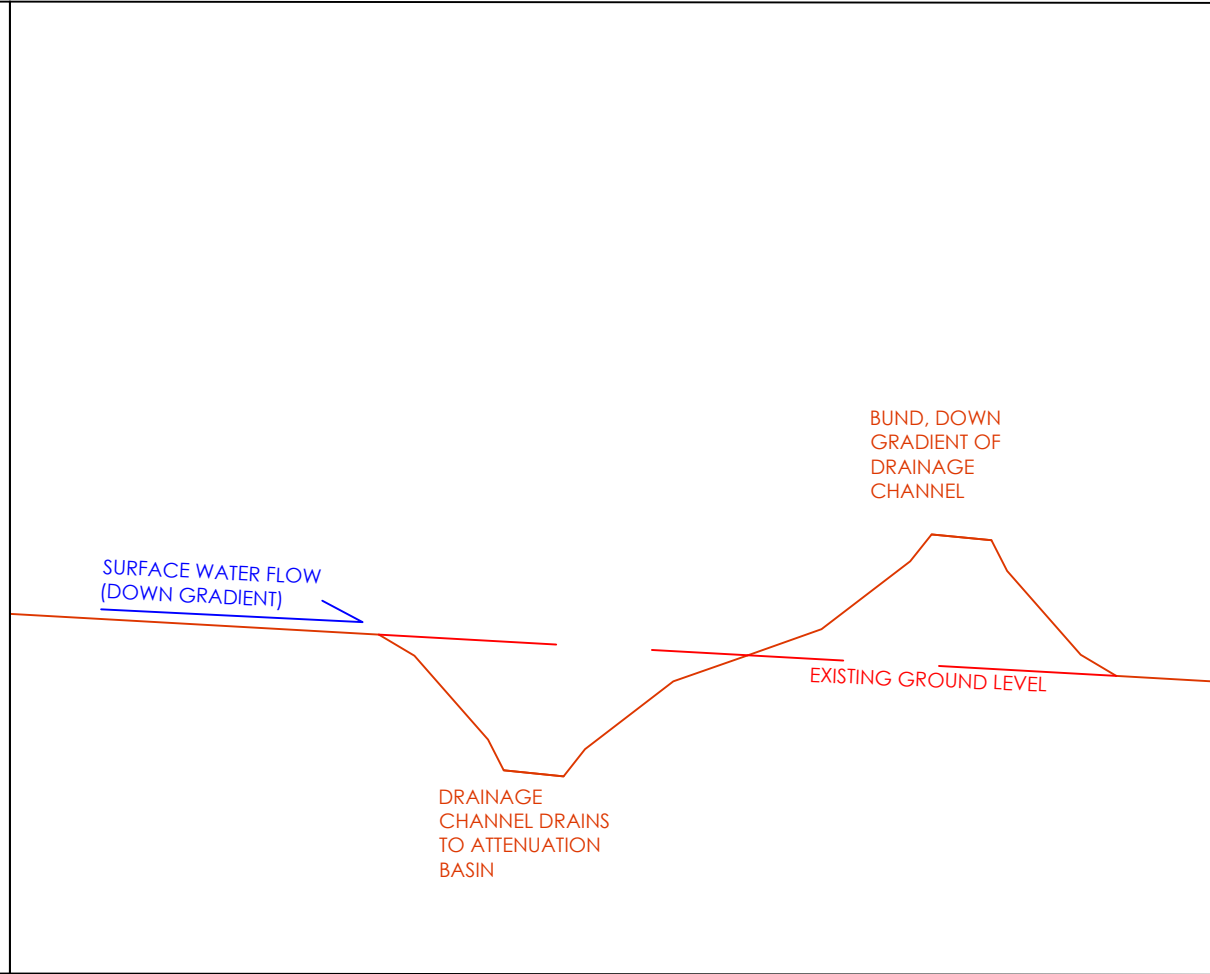
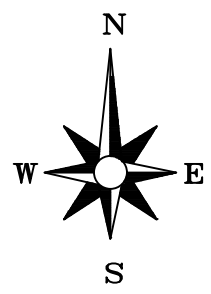
CLIENT:	Camstead Homes 3 The Gateway North Marsh Lane Leeds LS9 8AX		
SITE:	Wood Walk Hoyland		
TITLE:	Planning Layout		
SCALE AT A1:	1:500	DATE:	26.10.23
PROJECT NO:	2351	DRAWING NO:	2351.01
REVISION:		CHECKED:	SL
		BY:	TS
		DATE:	27.10.23



ILLUSTRATIVE PHOTOGRAPH OF DRAINAGE CHANNEL & BUND



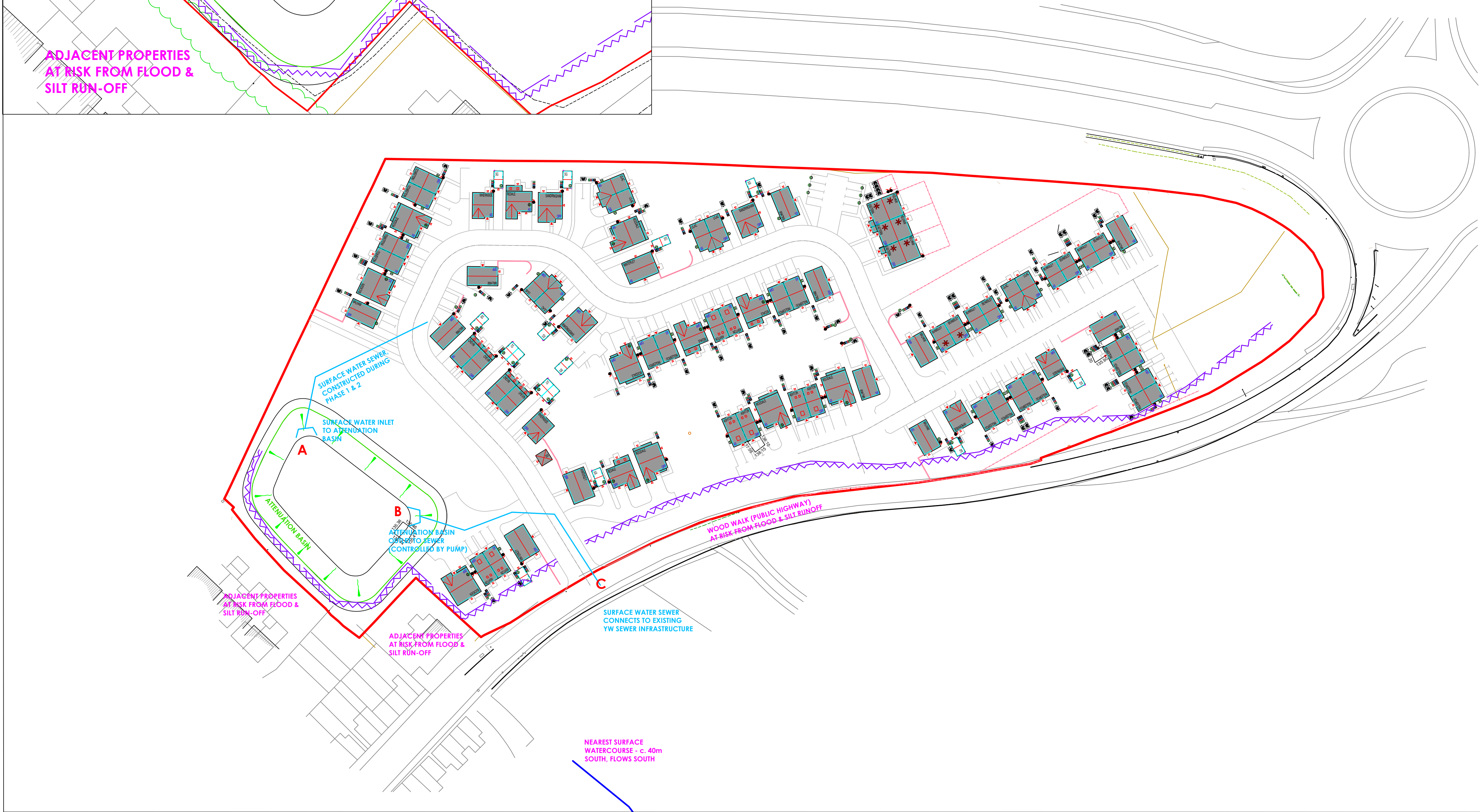
ILLUSTRATIVE CROSS SECTION OF DRAINAGE CHANNEL & BUND



NOTES

- SURFACE WATER SEWER
- ATTENUATION BASIN
- KEY RECEPTOR
- DRAINAGE CHANNEL & BUND
- APPROXIMATE SITE BOUNDARY

REPRODUCED FROM STEN ARCHITECTURE LTD'S DRAWING 'WOOD WALK, HOYLAND - PLANNING LAYOUT' REF. 2351.01 REV. A, DATED 26/10/2023



REV.	DESCRIPTION	DATE



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CLIENT

YELCON LTD

DRAWING TITLE

WOOD WALK, HOYLAND

SURFACE WATER MANAGEMENT PLAN

DRAWN	GLM	DATE	17/11/2023	STATUS	FOR COMMENT ☐
CHECKED	JR	DATE	17/11/2023	FOR APPROVAL	☐
SCALE	1: 750	SHEET	A1	DRAFT	☒
DRAWING NO.	3478/19	REVISION			

APPENDIX B
SURFACE WATER MANAGEMENT INSPECTION SHEET

SURFACE WATER MANAGEMENT INSPECTION SHEET

Job Reference and Phase		Site:	Wood Walk, Hoyland
Inspection completed by:		Principal Contractor:	
Date		Time	

Action	Remarks	Yes	No
Visual inspection of discharge water from site	Was water flowing?		
	Was water clear?		
	Was water discoloured?		
	Was water cloudy?		
	Photograph taken?		
Visual inspection of discharge into and out of attenuation pond	Was water flowing?		
	Was water clear?		
	Was water discoloured?		
	Was water cloudy?		
	Was attenuation pond over half full?		
Visual inspection of pump at outlet of attenuation pond	Photograph taken?		
	Was any damage evident?		
	Was pump working?		
Visual inspection of drainage channels	Was water flowing?		
	Was water clear?		
	Was water discoloured?		
	Was water cloudy?		
	Was channel over half full?		
	Photograph taken?		
Any standing water on site?	Photograph taken?		

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