

43103 - 40675	Map Name: SE300NE	Title
	Yorkshire Water, PO Box 500, Hawthorpe Road, Bradford BD6 3JZ Contract Name: YorkMap Advisor C ROBERTS Contract Tel : 87 2582	Notes
		Partial Key Fall Sewer - 10 Combined Sewer - 10 Surface Water Sewer - 10 Road Sewer - 10 Public Sewer - 10
		This plan is intended as a guide only and does not constitute a contract. It is subject to the conditions of sale of the plan. The plan is not to be used for any purpose other than that for which it is intended. No liability is accepted for any loss or damage arising from its use.
		Date Issued : 03/02/2021, 09:19:09 Date Gen : 03/02/2021, 09:21:07 Scale : Sewer Network Enquiry

## Appendix 5 – Lead Local Flood Authority



# 4848 – Barnsley West Drainage Strategy Meeting with LLFA

## Meeting Agenda

---

**Date:** 11.01.2021

**Time:** 13.00 – 15.00

**Location:** Teams

---

### Attendees

Wayne Atkins – BMBC – LLFA

Jonathan Millar – JPG – Infrastructure Associate

### Points of Discussion - Notes from Meeting in Red

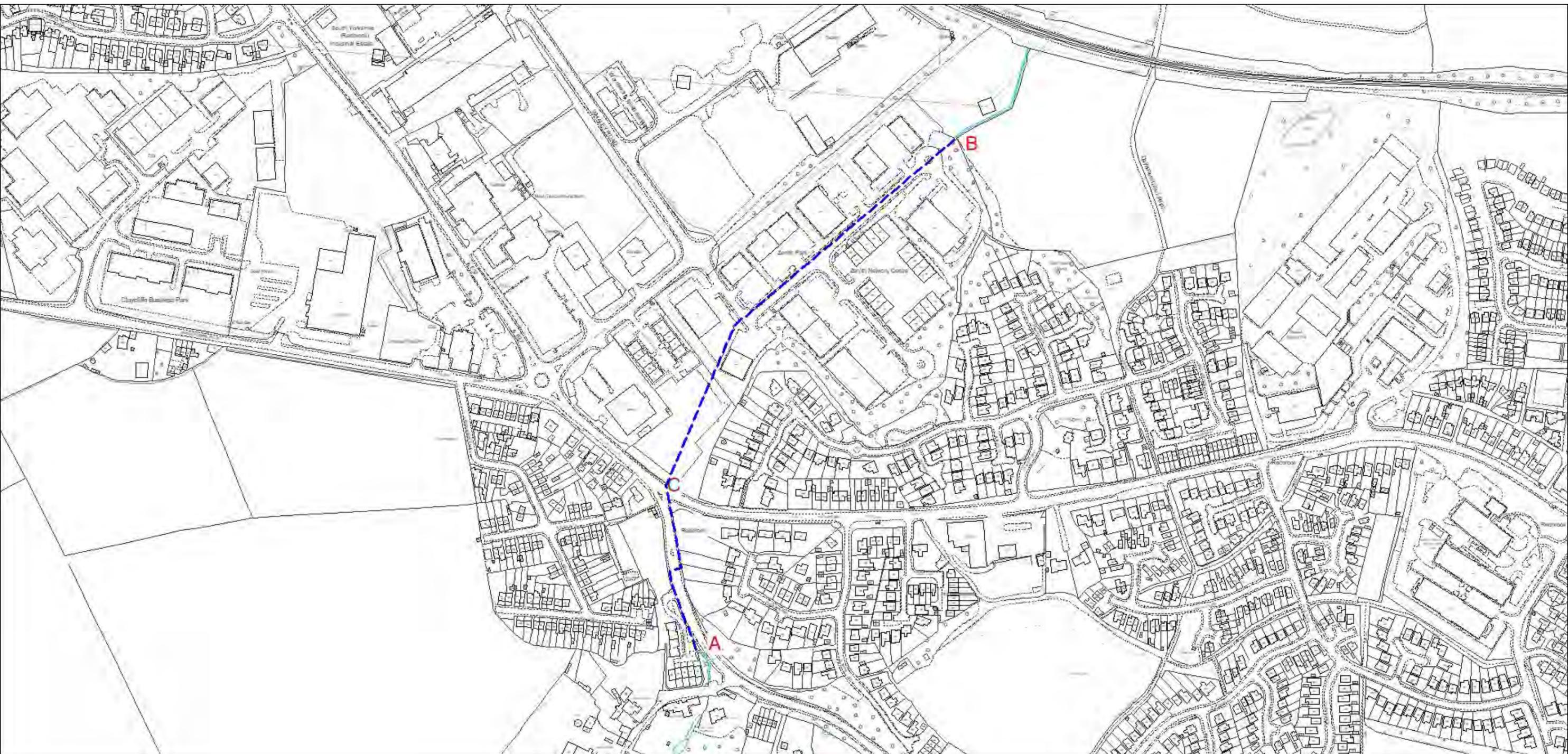
1. Discuss and agree discharge rates and/or method of calculation. Assumed greenfield run off rates preliminary calculation provided for information. **Greenfield run off from the plots can be calculated using a recognised method i.e., ICPSUDs or IH124 for example.**
2. BMBC historic information on the existing drainage network i.e., issues with flooding and operational problem downstream off the site etc. We have walked the open section as far as the weirs near Redbrook Road. However downstream of this it is unclear where the network then goes to get into the river. We are assuming that it is culverted for some or most of the route. **BMBC confirmed that there are capacity and structural issues with the culvert downstream of Redbrook Road and where the culvert runs beneath Zenith Park Industrial Estate. BMBC confirmed that there is major flooding here and as such direct connection into the on-site water courses for the development runoff even at greenfield rates would not be acceptable. This was communicated to Strata in a pass a planning strategy meeting. As such the restricted discharge from the site would need to connect into the open ditch section to the north east of Zenith Park Industrial Estate. BMBC accept that the section from the new roundabout on BGR to the open ditch section would need to be culverted/piped.**
3. Can you provide details of any highway drainage infrastructure in the public highway road network within and around the site and advise on outfall locations, capacities, and any issues? **There is a known highway drain in Baugh Green Road located in the northern footway. This has limited capacity. The proposed roundabout is to connect into this as per previous discussion with BMBC. This ultimately discharges into the water course to the west of Aldi and then running approximately north and is culverted beyond Aldi. Here there is also major flooding beyond Aldi. As agreed, as part of the previous submission by JPG that drainage from the new roundabout on Higham Common Road to connect into the existing highway drain in this location.**



4. Discuss and agree principles and points of discharge? High level strategy drawing provided detailing proposed location for attenuation basins and anticipated flows. **Points of discharge refer to item 2 comments. The principle of attenuation basins for the storage of surface water is acceptable to BMBC. However, they have concerns over the siting of Basin F been next to and higher than the existing housing. They have requested for the developer to look at relocating this basin further away from the boundary or relocating this somewhere else. Relocation of the basin to the northern end of the site may address this but you would then be adjacent to the new housing proposed adjacent to BGR. Design team to review.**
5. Discuss the proposed location of attenuation basins and exceedance design criteria. What designing criteria should we be working to in terms of volumes and exceedance events? **BMBC confirmed there have no knowledge of any official guidance national or local that we would be expected to adhere too. However, principle discussed for an exceedance event would be that the basins would be required to retain the 1 in 100 YSE plus 40% CC and a minimum free board of 0.500m would be required above this level. Water level above this would be allowed to discharge back into the existing water course system in a controlled manor. JPG to provide calculation to confirm what storm event could be held in the basin up to the top of free board. Some form of control to allow water to spill above this level would be required. Maybe short section of weir to limit run off. Discharge back into the existing water courses would be to avoid scour of the existing watercourse.**
6. Discuss and agree how exceedance flows would be dealt with from the development. **See comment in item 6 above.**
7. Discuss and agree requirements for attenuation basins and other SuDs features if not to SuDs manual criteria? **Any SuDs features should be design as a minimum to SuDs manual criteria and requirements.**
8. Discuss options for adoption/maintenance of the basins and other SuDs features. Infiltration is not going to be feasible. Potential issues with YW taking these as the design criteria is onerous and as such developer would like to try and avoid this route if possible. Would the likes of BMBC, or private management company or some other body like a wildlife trust for example be acceptable to be responsible for these subject to negotiations? Incorporation of SuDs should be first option, but issue as always is who will maintain these. **BMBC confirmed that they would not take on the operation and maintenance of the basins. There acknowledged the issues we would likely have with YW and this was also discussed in the planning strategy meeting which YW attended who were non-committal on the adoption of SuDs in general even though this is now part of the CODES guidance document. BMBC do not like private management companies due to past issues on other schemes. But is there was no other option then this route would be acceptable. However, they would need to see from the developer how this would work, how this would monitor and that maintenance etc was been carried out and who would ultimately be liable if the management company went bust for example. BMBC are very nerves because of the location of basin F and adjoining existing houses. If the pond overtopped and the cause was due to lack of maintenance where would everyone stand in terms of liability?**



9. Discuss and agree principles for dealing with the runoff from existing land drainage, we know there are some springs on the site and others may be located during the earthworks (discharge rates and methodology for dealing with these etc.). **BMBC confirmed that the principle of redirecting any existing land drainage what needed to be dealt with after the earthworks and connecting this back into the existing watercourse was acceptable. Run off from this would unrestricted via suitable SuDs features i.e., ditches and filter drains etc. However, to minimise scour the existing land drainage run off should be discharged where possible evenly into the water course. A large outfall collecting big areas would not be acceptable.**
10. Discuss and agree principles for dealing with the runoff from the landscaped areas and large embankments which will be created as part of the earthworks exercise (discharge rates and methodology for dealing with this). **BMBC confirmed that the principle of redirecting any runoff generated from the proposed banks and connecting this back into the existing watercourse was acceptable. Run off from this would be restricted to greenfield run off or equivalent run off from embankments. BMBC said that they recall they used to be a calculation in DMRB to work out run off from slopes and embankments. JPG to review this and advise. It is likely that item 9 and 10 would be a combined system in some of all the locations.**
11. Discuss and agree principles for dealing with temporary drainage once the development platforms have been formed and prior to any houses or commercial buildings been constructed. **BMBC agreed that control of run off from the development platforms prior to construction of the dwellings and commercial units needed to be considered. Whether it was possible to produce a design to cover the entire site at this stage was debatable, and it was likely this would be a moving target. However, principles could be agreed on methodology what could be implemented by the contractor and to suit their phasing and programme. Things like mounds, ditches, filter drains to direct and collect run off and stilling/silt basins, silt fencing around stockpiles to control silt and bunding to fuel storage areas etc could be incorporated up stream of any discharge into the basins to control run off. The two main objectives would be to minimise silt getting into the attenuation basins and controlling the runoff as best possible.**
12. Any other information that we need to consider and not mentioned in the above points.  
**Non discussed.**
13. AOB. **Non.**



## Appendix 6 – Proposed Run-off Destination



## Appendix 7 – Drainage Strategy

THIS DRAWING SHOWS THE PROPOSED DETENTION BASINS, MAIN STORM SEWERS SERVING AND FOUL DRAINAGE

GREENFIELD RUN-OFF RATE ARE DETERMINED FROM THE HR WALLINGFORD GREENFIELD RUN-OFF RATE ESTIMATOR FOR SITES

SUDS EARTHWORK PROFILE

PROPOSED SW DRAINAGE

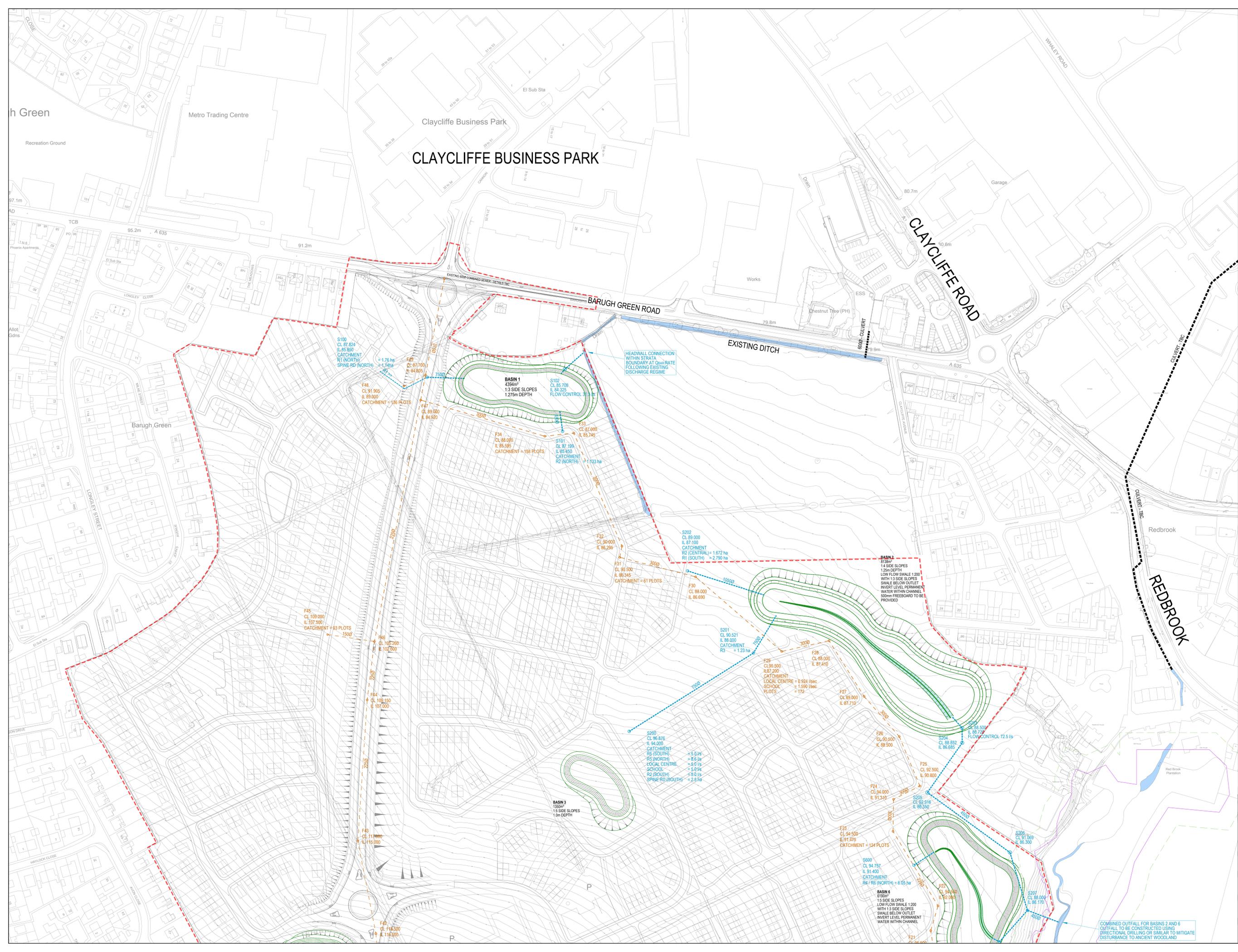
PROPOSED FW DRAINAGE

RISING MAIN

ANCIENT WOODLAND

ANCIENT WOODLAND STANDOFF

REFER TO DRAWINGS:  
QD2088-00-100  
QD2088-00-101  
QD2088-00-102  
FOR PRE-DEVELOPMENT RUN-OFF RATES AND ALLOCATION OF POST DEVELOPMENT RATES



# CLAYCLIFFE BUSINESS PARK

## CLAYCLIFFE ROAD

### BARUGH GREEN ROAD

## REDBROOK

**BASIN 1**  
4394m<sup>2</sup>  
1:3 SIDE SLOPES  
1.275m DEPTH

**BASIN 2**  
8139m<sup>2</sup>  
1:4 SIDE SLOPES  
1.52m DEPTH  
LOW FLOW SWALE 1:200  
WITH 1:3 SIDE SLOPES  
SWALE BELOW OUTLET  
INVERT LEVEL PERMANENT  
WATER WITHIN CHANNEL  
500mm FREEBOARD TO BE  
PROVIDED

**BASIN 3**  
1500m<sup>2</sup>  
1:5 SIDE SLOPES  
1.0m DEPTH

**BASIN 6**  
8190m<sup>2</sup>  
1:5 SIDE SLOPES  
LOW FLOW SWALE 1:200  
WITH 1:3 SIDE SLOPES  
SWALE BELOW OUTLET  
INVERT LEVEL PERMANENT  
WATER WITHIN CHANNEL

S100  
CL 87.824  
IL 85.850  
CATCHMENT  
R1 (NORTH)  
SPINE RD (NORTH)  
= 1.75 ha  
= 1.14 ha

S101  
CL 87.194  
IL 85.450  
CATCHMENT  
R2 (NORTH)  
= 1.133 ha

S202  
CL 89.000  
IL 87.100  
CATCHMENT  
R2 (CENTRAL)  
R1 (SOUTH)  
= 1.672 ha  
= 2.730 ha

S201  
CL 90.521  
IL 88.000  
CATCHMENT  
R3  
= 1.23 ha

F45  
CL 109.000  
IL 107.500  
CATCHMENT = 83 PLOTS

F29  
CL 90.500  
IL 87.200  
CATCHMENT  
LOCAL CENTRE = 0.924 hsec  
SCHOOL  
= 1.590 hsec  
PLOTS = 172

S200  
CL 96.876  
IL 94.000  
CATCHMENT  
R6 (SOUTH)  
R6 (NORTH)  
LOCAL CENTRE  
SCHOOL  
R2 (SOUTH)  
SPINE RD (SOUTH)  
= 5.0 ha  
= 2.5 ha

F26  
CL 88.000  
IL 87.410

F25  
CL 92.500  
IL 90.800

F23  
CL 94.500  
IL 91.475  
CATCHMENT = 124 PLOTS

S205  
CL 92.516  
IL 86.550

S207  
CL 88.000  
IL 85.170

COMBINED OUTFALL FOR BASINS 2 AND 6  
OUTFALL TO BE CONSTRUCTED USING  
DIRECTIONAL DRILLING OR SIMILAR TO MITIGATE  
DISTURBANCE TO ANCIENT WOODLAND

Rev	Date	Revision Details	Drawn	Checked
1	05/10/23	FIRST ISSUE		

© This drawing is the property of Queensberry Design Limited and the information can only be reproduced with their prior permission.  
**QUEENSBERRY DESIGN**  
AN ARCHITECTURAL, INFRASTRUCTURE & ENVIRONMENTAL CONSULTING FIRM  
10 NORTH EAST DRIVE  
CANTONMENT, TRINIDAD AND TOBAGO  
WWW.QUEENSBERRYDESIGN.CO.UK

STRATA STERLING BARNSELY WEST LTD

BARNSELY WEST MASTERPLAN

MAIN INFRASTRUCTURE DRAINAGE STRATEGY SHEET 1

Drawn	ND	Checked	AL	Date	05.06.2023
Drawn Number	QD2088-00-400				
Drawing Status	FEASIBILITY				
Scale	1:1000 - A0				