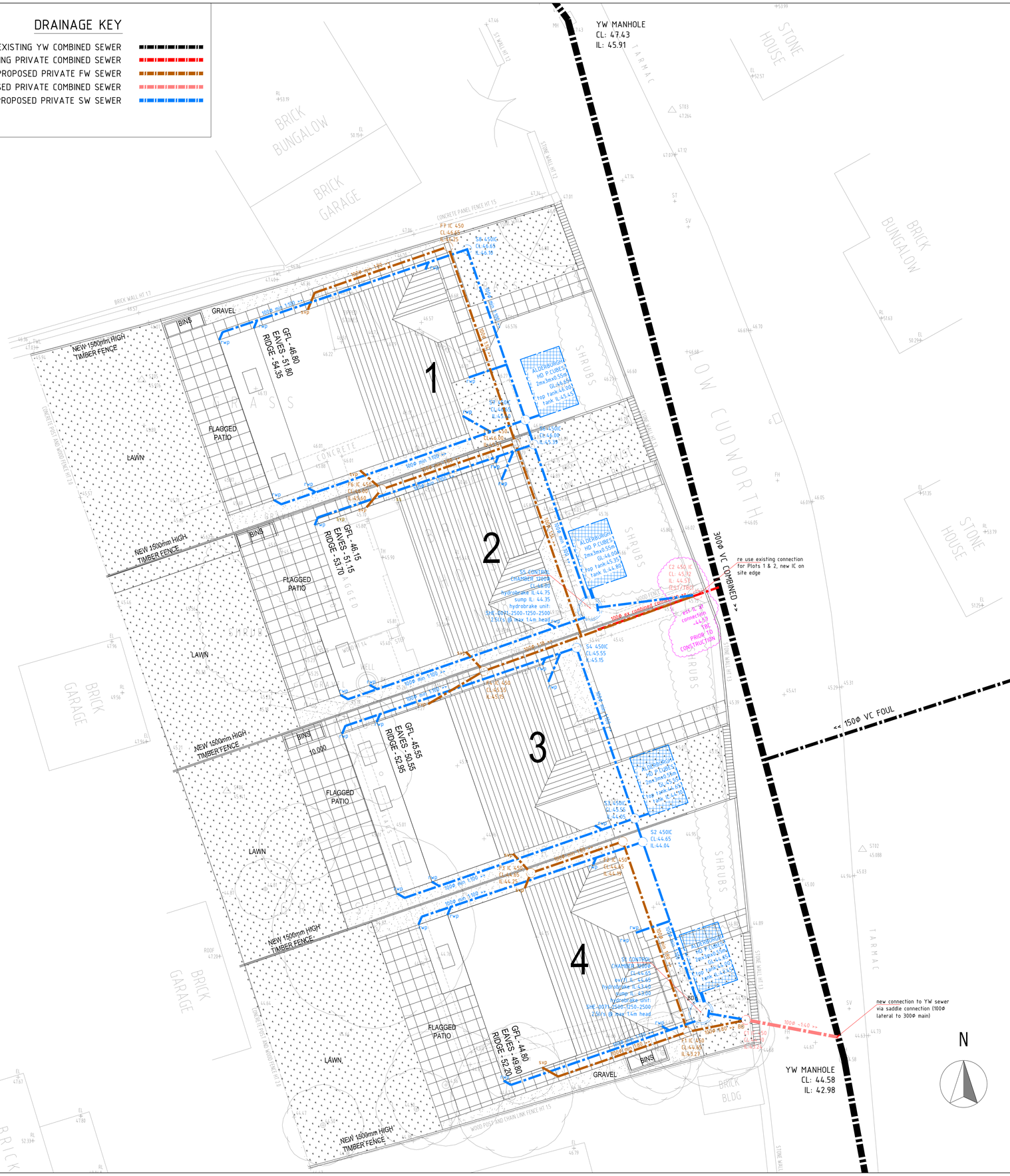
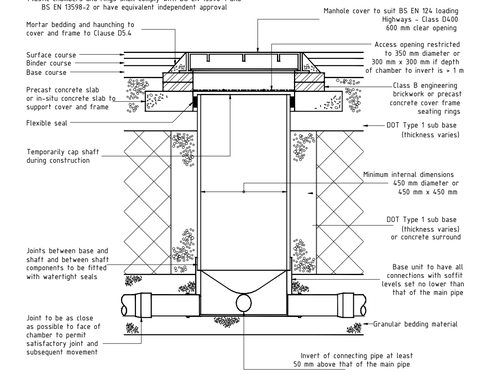
DRAINAGE KEY

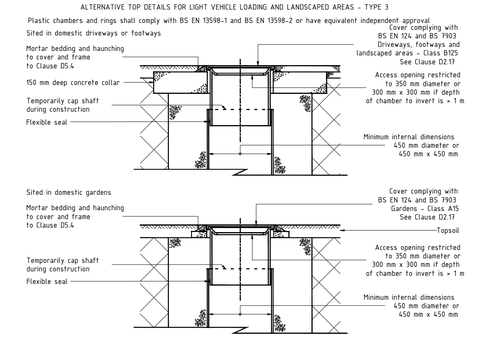
EXISTING YW COMBINED SEWER
EXISTING PRIVATE COMBINED SEWER
PROPOSED PRIVATE FW SEWER
PROPOSED PRIVATE COMBINED SEWER
PROPOSED PRIVATE SW SEWER



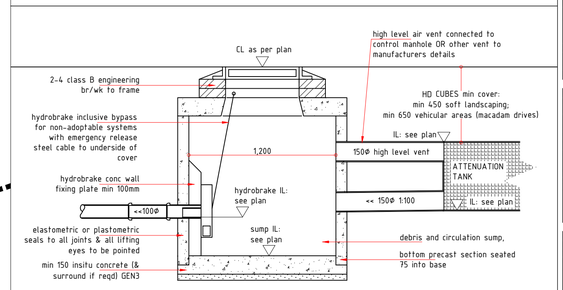
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (Flexible material detail)



ALTERNATIVE TOP DETAILS FOR LIGHT VEHICLE LOADING AND LANDSCAPED AREAS - TYPE 3



INSPECTION CHAMBER TYPICAL DETAILS (NTS)



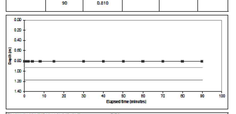
CONTROL CHAMBER TYPICAL DETAIL (1:25)

Rogers Geotechnical Services L

Soakaway Test

Trial Pit No:	TP01	Test No:		Date:	16/05/2023
Length (m):	2.500	Datum Height:			0.00 m agl
Width (m):	0.700	Granular infill:	None		
Depth (m):	1.20	Porosity of infill:	1	(assumed)	

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	0.810		
1	0.810		
2	0.810		
4	0.810		
8	0.810		
15	0.810		
30	0.810		
45	0.810		
60	0.810		
90	0.810		
120	0.810		



Start water depth for analysis (mbgl):	0.81		
75% effective depth (mbgl):	1.05	Elapsed time (mins):	#N/A
50% effective depth (mbgl):	1.05		
25% effective depth (mbgl):	1.17	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.39		
Volume outflow between 75% and 25% effective depth (m³):		2.40	
Mean surface area of outflow (m²):			
(semi area at 50% effective depth + base area)			
Time for outflow between 75% and 25% effective depth (mins):			

Soil Infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
Remarks	Results processed following BRE 365 (2007). No movement in the water - practically impermeable.

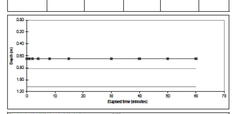
Client:	Smart Developments (West Yorkshire) Ltd	Job No:	
Site:	28 Low Cudworth Green, Cudworth, Barnsley, S72 8EF		23124216/5406

Rogers Geotechnical Services L

Soakaway Test

Trial Pit No:	TP02	Test No:		Date:	16/05/2023
Length (m):	2.500	Datum Height:			0.00 m agl
Width (m):	0.700	Granular infill:	None		
Depth (m):	1.20	Porosity of infill:	1	(assumed)	

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	0.650		
1	0.650		
2	0.650		
4	0.650		
8	0.650		
15	0.650		
30	0.650		
45	0.650		
60	0.650		
90	0.650		
120	0.650		



Start water depth for analysis (mbgl):	0.65		
75% effective depth (mbgl):	0.89	Elapsed time (mins):	#N/A
50% effective depth (mbgl):	0.97		
25% effective depth (mbgl):	1.12	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.38		
Volume outflow between 75% and 25% effective depth (m³):		2.39	
Mean surface area of outflow (m²):			
(semi area at 50% effective depth + base area)			
Time for outflow between 75% and 25% effective depth (mins):			

Soil Infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
Remarks	Results processed following BRE 365 (2007). No movement in the water - practically impermeable.

Client:	Smart Developments (West Yorkshire) Ltd	Job No:	
Site:	28 Low Cudworth Green, Cudworth, Barnsley, S72 8EF		23124216/5406

ROGERS GEOTECHNICAL SOAKAWAY RESULTS EXCERPT (NTS)

GENERAL NOTES
0.0 THIS DRAWING IS COPYRIGHT & IS SENT TO YOU IN CONFIDENCE IT MUST NOT BE COPIED, USED OR DISCLOSED, IN WHOLE OR IN PART, TO THIRD PARTIES WITHOUT WRITTEN PERMISSION. IT REMAINS THE PROPERTY OF TJBA AND MUST BE RETURNED ON REQUEST
0.1 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTUAL DOCUMENTS.
0.2 All dims in mm unless o/w stated.
0.3 All levels to SITE DATUM.
0.4 Refer to architects details for SBM.
0.5 Contractor to confirm SOP/SOL's prior to ordering material/ construction.
0.6 Do not scale, the contractor must verify all dims prior to commencing shop drawings or work on site.
0.7 All work to be carried out in accordance with CDM 2015.
1.0 HIGHWAYS/ACCESS ROADS & PRIVATE DRIVES.
1.1 N/A.
2.0 DRAINAGE.
2.1 To be read in conjunction with T J Booth Associates drainage Microdrainage calculations & associated Rogers Geotechnical Ltd Soakway Letter Report (results excerpts on dwg).
2.2 Manhole cover levels indicative only, to be adjusted to suit final finish site levels.
2.3 Sewers/manholes to be constructed in accordance with the water authorities SFA (edition as applicable), B. Regs. Approved Doc. H, and BS EN 752-4.
2.4 Class S granular bed and surround to all new sewers.
2.5 Sewers must have min 150th concrete surround if:
-adoptable assets with less than 1.2m of cover under highways or driveways;
-private assets with less than 900mm of cover under private riveways.
2.6 All conc including pipes and manholes to be sulphate resisting unless otherwise agreed in writing by eng.
2.7 Foul water must be to the following gradients in accordance with bregs and Sewers For Adoption:
-100Ø at gradients not less than 1:80 where at least 1 WC is connected and not less than 1:40 where no WC is connected.
-150Ø foul gradients to be not less than 1:150 with at least 5 WCs connected.
2.8 Surface water must be to the following gradients in accordance with bregs:
-100Ø at gradients not less than 1:100.
-150Ø foul gradients to be not less than 1:150.
2.8 Adoptable surface water must be to the following gradients in accordance with Sewers for Adoption:
-100Ø at gradients not less than 1:60.
-150Ø foul gradients to be not less than 1:100.
2.9 Work on Yorkshire Water network including S106 connections only to be undertaken once approved by the undertaker, and in strict accordance with Yorkshire Water details.
3.0 MANHOLES
3.1 Manhole diameters to be in accordance with SFA clause 2.9.3, and according to largest manhole pipe diameter:

Pipe dia	MH dia
<375	1200;
375-700	1500;
750-900	1800.

3.2 Rocker pipes (clause 5.6.6.2) to be the following lengths:

150-600Ø:	0.6m;
>600-700Ø:	1.0m;
>750Ø:	1.25m.

3.2 Inspection chambers/manholes to have min 150granular surround in soft landscaping areas and not less than 150 conc surround to driveways/car parks.
3.3 Manhole covers and frames shall comply with the relevant provisions of bs. en 124 and shall be of non-rocking design which does not rely on the use of cushion inserts.
3.4 Cover sizes to be in strict accordance with adoptive undertakers standard requirements.
3.5 Cover strength (clause 5.7.1.1) comprising minimum strength for location as follows:

Roads/Highways	D400 Vehicle Impact;
Car Parks	C250 Light Vehicle loading;
Footway/Driveway	B125 Occasional vehicle loading;
Gardens	A15 Pedestrian & cyclist ONLY.

3.6 All manhole covers shall be the non-venting type (unless indicated otherwise) and shall have closed keyways.
3.7 Manhole frames (clause 5.6.7) to be set to level, bedded and haunched externally over the base and sides of the frame in mortar, in accordance with the manufacturers instructions. The frame shall be seated on not less than 2 courses of class B engineering brick, on precast concrete masonry units or on precast concrete cover frame seating rings to regulate the distance between the top of the cover and the top rung to no greater than 675mm. A mortar fillet shall be provided where the corners to an opening in a slab are chamfered and the brickwork is not flush with the edges of the opening.

NPPF HIERARCHY OF SURFACE WATER DISCHARGE OPTIONS		
DISCHARGE TYPE	METHOD ADOPTED	REASONING
1. into the ground (infiltration)	NO	Site investigations undertaken by Rogers Geotechnical Ltd, and confirmed site sunsoil comprises impermeable clay. Refer to separate "Soakaway Letter Report", ref: C3124/23/ET/5408
2. to a surface water body	NO	Not identified locally.
3. to a SW sewer, highway drain, or another drainage system	NO	Not identified locally.
4. to a combined sewer	YES	Combined sewers available on site.

IMPLEMENTATION SCHEDULE FOR DRAINAGE SYSTEMS & ATTENUATION STORAGE TANKS		
DRAINAGE SYSTEM	IMPLEMENTATION/ COMPLETION	REASON
General SITE drainage pipes & manholes installed but gullies either covered or connections capped to isolate from construction SW flows.	Construction phase	To ensure drainage connections are available for individual plots when finished but to ensure construction debris does not enter the system where construction is ongoing.
General PLOT drainage pipes, manholes & gullies to completed parts of the site only & not subject to further construction flows & debris.	Pre-habitation Phase	To ensure adequate drainage of finished parts of the Site.
Site attenuation tank, control chamber & hydrobrake.	Post Construction Phase ONLY	To ensure protection of the attenuation tank & hydrobrake, and to ensure they are not subject to SW flow overloaded with silt/debris which could damage or reduce long term storage capacity.

CIRIA C753 TABLE 21.3 OPERATION & MAINTENANCE REQUIREMENTS FOR ATTENUATION STORAGE TANKS		
MAINTENANCE SCHEDULE	REQUIRED ACTION	TYPICAL FREQUENCY
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

LOCATION PLAN 1:1250

PLANNING
NOT FOR CONSTRUCTION

T J BOOTH ASSOCIATES
CONSULTING CIVIL & GEOTECHNICAL ENGINEERS
20A Eastgate Street
Rochdale
Lancashire
OL16 1DH
Tel:01706 868288

AMENDMENTS/ ISSUES			
0	planning	jun 2023	cs
0-draft	original for survey	apr 2023	cs
REVISION	REASON/ CHANGE	DATE	BY

Myra / 28 Low Cudworth, Barnsley

PROPOSED DRAINAGE PLAN & DETAILS

FILE NAME: dwg-tjba-myra-28 low cudworth-290323

SCALE: 1 : 100 & as indicated @ A1