

This Drawing shows proposed drainage only, for details of culvert diversions, flood routing and further drainage investigation refer to Drawing 906/09/SK7

N O T E S

ATTENTION IS DRAWN TO THE REQUIREMENTS OF THE CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS 2015 AND THE DUTIES AND RESPONSIBILITIES CONTAINED THEREIN

KEY

- Storm water manhole
- Foul water manhole
- Storm water sewer
- Foul water sewer
- Existing Combined sewer
- Diverted Culverted Watercourse
- Existing Culverted Watercourse
- Existing Foul water sewer
- Easement
- Site Boundary

DRAINAGE STRATEGY NOTES

- All proposals are subject to detailed investigation to prove the route, size, depth and structural condition of any culverted watercourse.
- All proposals are subject to the approval of all regulatory bodies.
- Survey is based on a 2016 topographic survey before demolition. Contours within the site are approximate only and need to be resurveyed.

APPRAISAL NOTES

SURFACE WATER DRAINAGE

- This appraisal assumes that infiltration drainage has been discounted as a viable option.
- Allowable discharge rate for the main site has been calculated as 7.2 l/sec based on the Kirklees MDC consultation that a restricted rate of 5 l/s/ha should be applied. Discharge from the small site has been assumed unrestricted to balance the greenfield rate applied to the Main site. The connection from the Cockley Hill site is limited to greenfield and is shown in detail on separate 0906-05 drawings.
- Surface water attenuation is up to and including all storms for 1 in 100 year return period + 30% allowance for climate change. An urban creep factor of 10% has been added for storms up to 30 years.
- Storage requirements are met by a tank structure with a plan area 224m² and a height of 1.8m. Exact details are subject to detailed design and outcome of drainage surveys. The storage tank has been shown will require an easement of 2m around the tank.
- Due to the topography of the site, it is thought that an underground tank to accommodate the 1 in 100 year + 30% storm events would be a preferred option in lieu of a pond or detention basin. (THIS IS SUBJECT TO THE APPROVAL OF ALL PARTIES)
- The Outfall from the Cockley Hill Lane Site is proposed to connect into the drainage system and thence discharge into the culvert watercourses.
- Level and exact location of outfall to watercourse within the Shop Lane site is unknown but assumed to be 1000mm deep. The exact route, level and structural condition upstream and downstream will need to be determined before detailed design can be carried out.

FOUL DRAINAGE

- The foul flows from the Cockley Hill Lane site will discharge to the new drainage system and thence into the Combined sewer in Shop Lane.
- The connection to the existing combined sewer may be outside of the site boundary, if so then the adjacent landowner will have to be part to the Section 104 Agreement or Grant a Deed of Easement. Alternatively the off site element of the works can be requisitioned under Section 98 of the Water Industry Act 1991.
- Unless shown otherwise all foul sewers are 150mm ϕ .
- The Outfall is proposed to connect into the culvert watercourses in the Shop Lane Site.
- The exact route, level and structural condition upstream and downstream of sewers and culverts will need to be determined before detailed design can be carried out.

EXISTING SEWERS

- There are existing 150mm ϕ and 225mm ϕ combined sewers within the site boundary. These may require diverting to suit the proposed retaining wall layout for which a sewer diversion agreement under Section 185 of the Water Industry Act 1991 will be required. A CCTV survey of the existing drainage will be required to prove connections to the sewer which will have to be accommodated into the diversion works.
- A CCTV survey of the existing drainage will be required to prove connections to the sewer which will have to be accommodated into the diversion works.

GENERAL NOTES

- Easements will be required to all sewers outside of adoptable highways. Easement to be 3m either side of pipes or 2m from the edge of the storage tank. (SUBJECT TO YORKSHIRE WATER APPROVAL)

C	AT	23.03.21	existing culvert info added.		
B	AT	02.03.21	Levels updated, culvert moved		
A	AT	04.02.21	Levels updated, existing culvert		
/	AT	22.01.21	Issued for information	MI	
Rev	By	Date	Revision	Chk	Appd

ARP ASSOCIATES
Chartered Consulting Engineers

Northwest House • 5 & 6 Northwest Business Park • Servia Hill, Leeds, LS6 2QH
0113 245 6498 | 0113 244 3804 | leeds@arpassociates.co.uk | www.arpassociates.co.uk

ARP Associates is a trading division of ARP Geotechnical Ltd, a company registered in England and Wales with company number 377833, whose registered office is at 5/6 Northwest Business Park, Servia Hill, Leeds LS6 2QH

TITLE		DRAINAGE FEASIBILITY	
PROJECT		SHOP LANE, KIRKHEATON	
CLIENT		HARTLEY PROPERTIES	
DRAWING STATUS		PRELIMINARY	
Scale	Date	Drawn	AT
1:500 @ A1	JAN 21	Chk.	MI
Drg. No.	0906/09/SK5		Rev C

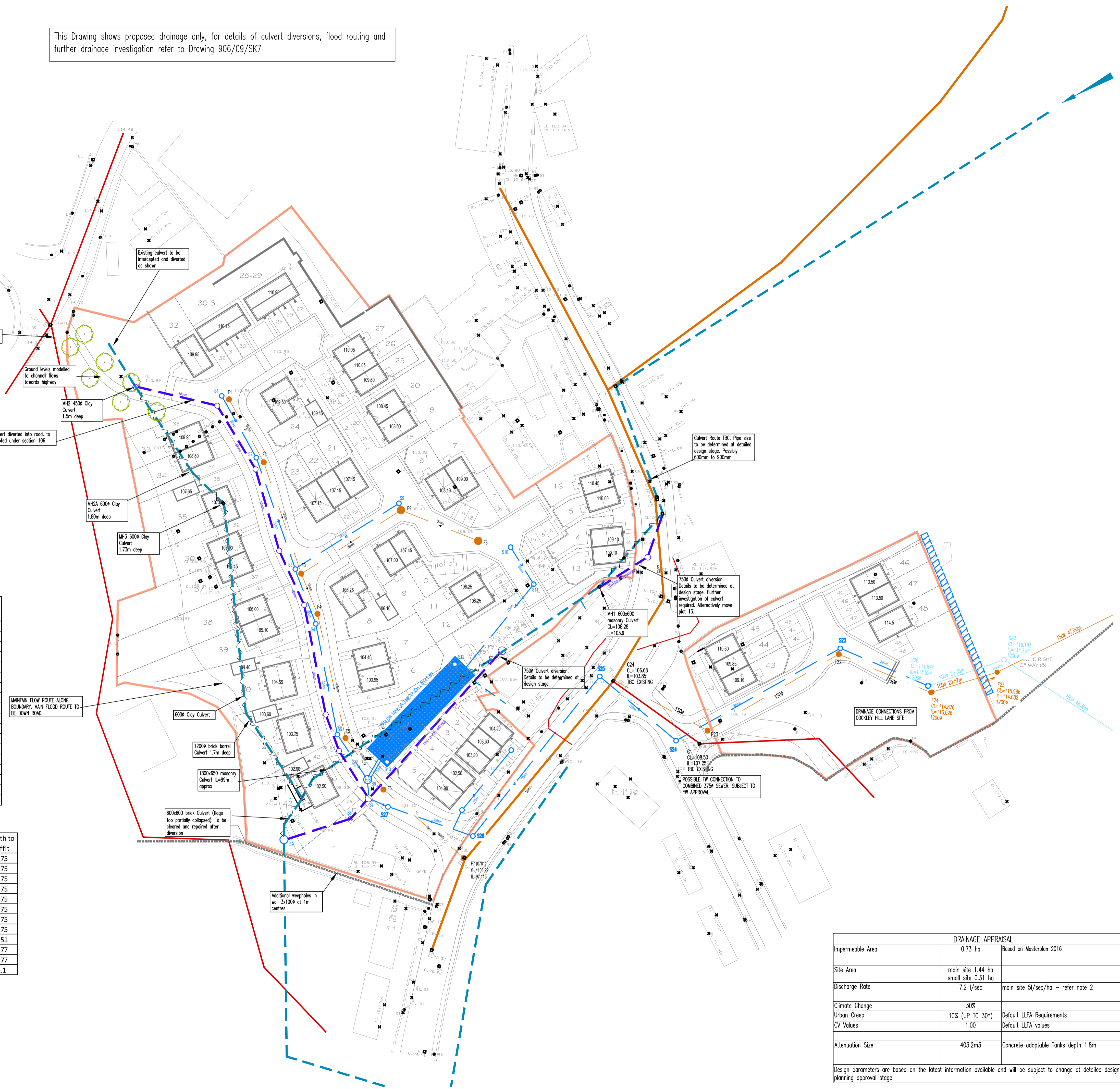
Surface Water Network

US/MH Name	US/CL (m)	US/IL (m)	Pipe Size	Depth to soffit
1	109.1	107.6	225	1.3
2	107.9	106.5	225	1.2
3	105.8	103.9	300	1.6
4	104.8	103.2	300	1.4
5	102.9	101.3	300	1.2
6	101.8	99.2	750	1.8
7	101.1	99.2	225	1.7
9	107.3	105.2	225	1.8
10	108.2	106.5	225	1.5
11	108.1	106.4	225	1.5
12	107.2	99.3	1800	6.1
13	102.5	99.3	750	2.5
22	114.3	113.0	225	1.1
23	112.0	110.6	225	1.2
24	108.3	106.8	225	1.2
25	106.5	105.1	225	1.2
26	101.0	99.5	225	1.3
27	101.4	99.4	300	1.7

Foul Network

US/MH Name	US/CL (m)	US/IL (m)	Pipe Size	Depth to soffit
1	109.035	107.135	150	1.75
2	107.781	105.881	150	1.75
3	105.739	103.839	150	1.75
4	105.002	103.102	150	1.75
5	102.788	100.888	150	1.75
6	101.667	99.767	150	1.75
8	108.159	106.259	150	1.75
9	107.076	105.176	150	1.75
21	114.520	112.860	150	1.51
22	112.050	110.125	150	1.77
23	108.224	107.300	150	0.77
24	108.500	107.250	150	1.1

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES



DRAINAGE APPRAISAL		
Impermeable Area	0.73 ha	Based on Masterplan 2016
Site Area	main site 1.44 ha small site 0.31 ha	
Discharge Rate	7.2 l/sec	main site SI/sec/ha - refer note 2
Climate Change	30%	
Urban Creep	10% (UP TO 30Y)	Default LLFA Requirements
CV Values	1.00	Default LLFA values
Attenuation Size	403.2m ³	Concrete adoptable Tanks depth 1.8m
Design parameters are based on the latest information available and will be subject to change at detailed design / planning approval stage		