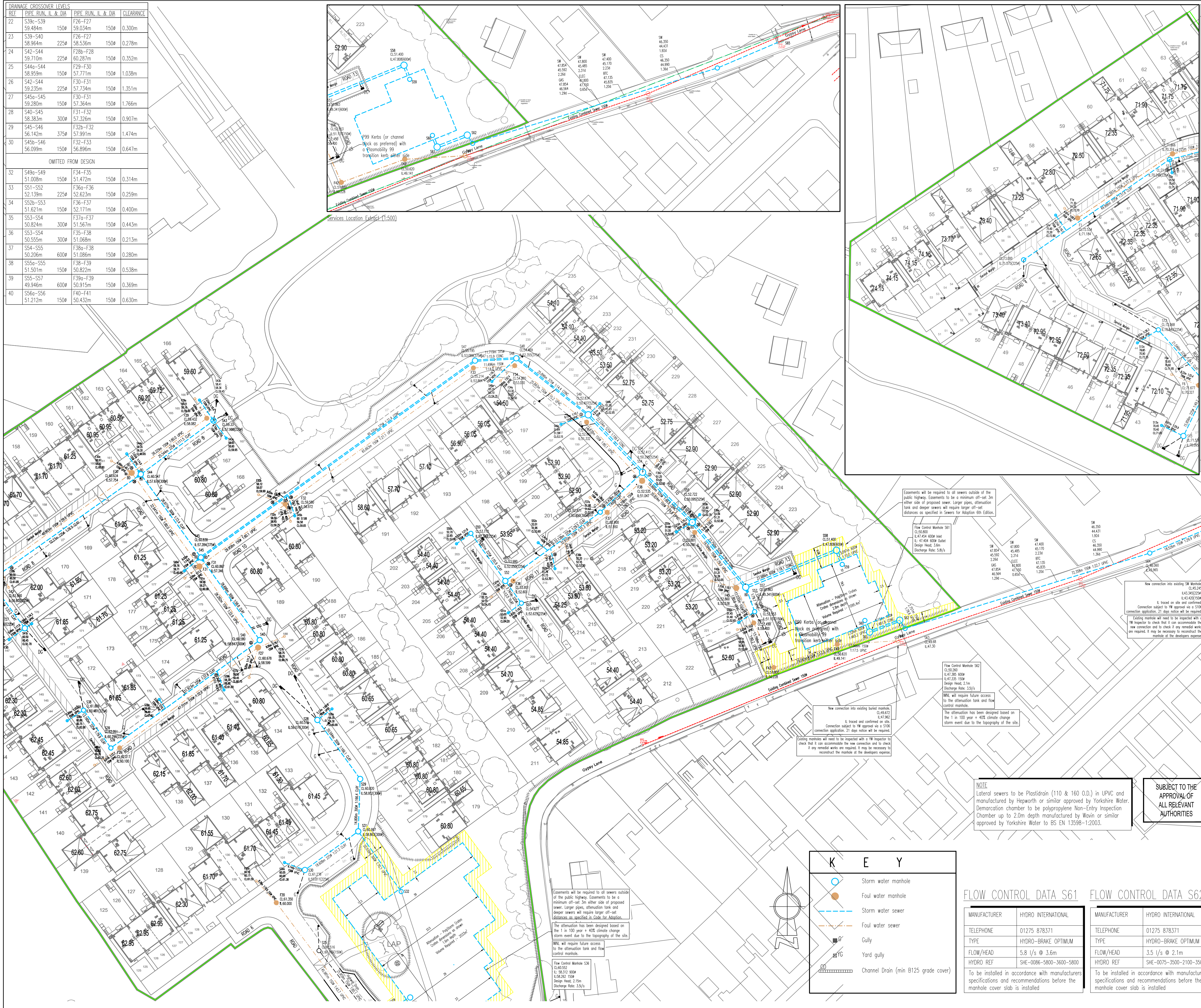


DRAINAGE CROSSOVER LEVELS						
REF	PIPE RUN, I.L. & D.	PIPE RUN, I.L. & D.	PIPE RUN, I.L. & D.	CLEARANCE		
22	S36-S39 59.48m	1500	F26-F27 59.034m	1500	0.300m	
23	S39-S40 58.96m	2250	F26-F27 58.356m	1500	0.278m	
24	S42-S44 59.710m	2250	F280-F28 60.287m	1500	0.352m	
25	S444-S45 58.959m	1500	F29-F30 57.771m	1500	1.038m	
26	S42-S44 59.235m	2250	F30-F31 57.734m	1500	1.351m	
27	S45-S45 59.280m	1500	F30-F31 57.354m	1500	1.766m	
28	S40-S45 58.383m	3000	F37-F36 57.326m	1500	0.907m	
29	S45-S46 56.142m	3750	F320-F32 57.991m	1500	1.474m	
30	S45-S46 56.099m	1500	F32-F33 56.896m	1500	0.647m	
OMITTED FROM DESIGN						
32	S490-S49 51.008m	1500	F34-F35 51.472m	1500	0.314m	
33	S51-S52 52.139m	2250	F360-F36 52.623m	1500	0.259m	
34	S520-S53 51.621m	1500	F36-F37 52.171m	1500	0.400m	
35	S53-S54 50.824m	3000	F370-F37 51.567m	1500	0.443m	
36	S53-S55 50.155m	3000	F35-F38 50.155m	1500	0.213m	
37	S54-S55 50.206m	6000	F380-F38 51.068m	1500	0.280m	
38	S550-S55 51.530m	1500	F38-F39 50.802m	1500		
39	S55-S57 49.946m	6000	F390-F39 50.915m	1500	0.389m	
40	S56-S56 51.212m	1500	F40-F41 50.432m	1500	0.630m	



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				

1. For longitudinal sections refer to drawing 0425/87/06.
2. No services are to be sited directly over, within 1m of, an adoptable sewer or manhole.
3. Private drainage connections to adoptable sewers to be via 45° junction.
4. Off site manholes already built must have invert levels checked prior to connection to the off site drainage.
5. Any connections to existing sewers/manholes are to be supervised by Yorkshire Water.
6. All connections to proposed public sewers to be minimum 150mmØ.
7. Any land drain or water course on site to be diverted as not to pass under proposed buildings. Diversion to be approved and inspected on site by the Local Authority.

IWNL General Notes

1. All manhole covers and works material to be in accordance with INWL requirements.
2. Adoptable sewer shall must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
3. Filled ground must be filled and consolidated under the supervision, and to the satisfaction, of INWL before any sewer is put out of service.
4. Cover slabs must carry the BS1 Kitemark or will be rejected by the INWL inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600x600mm for the INWL specified cover size. Please refer to the Concrete Pipe Systems in Manholes (CPSA), "Technical Bulletin" issued autumn 2004 for Kitemarked cover slab opening sizes.
5. The adoptable sewers should be a minimum of 1 m and manholes 0.5m from kerb faces and service margins.
6. Sewers must have 5 metres clearance from trees and hedgways, (please also refer to Figure 2.3 on page 33 in "Sewers for London" 6th Edition for restrictions on tree planting adjacent to "sewers").
7. Bedding to be laid in 3% bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in non vehicular access areas) then a concrete slab should be provided above the granular bed and surround.
8. Adoptable plastic sewer pipes to be BSI Kitemarked (Certified to WIS 4-35-01 and BS/EN13476). Adoptable sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer.
9. Plastic pipe joint sections in manholes are not acceptable and clayware is preferable. Plastic channels are difficult to set to concrete and a satisfactory finish cannot be obtained on the benching.
10. The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
11. INWL will not accept any manhole with a 150mm deep manhole and 150mm dia manhole rings. Instead it is preferred that you use a type "b" manhole with 1200mm dia or 1500mm dia. rings, with the opening sized to the chamber where depth of cover to pipe is less than 1.5-1.8m.
12. Surface water and foot rising manholes to be provided with marker tape above the rising manhole.
13. If plastic pipes are to be used then the following should apply:-
 - a. All adoptable sewers to be BSI Kitemark (certified to WIS-4-35-01).
 - b. Bedding and backfill material to conform to the requirements of Water Industry Specification 4-08-02 (Table A2)
14. Where plastic pipes are proposed for adoptable sewers, structural calculations for the plastic pipes and a site investigation report to prove that the ground condition is suitable for plastic pipes to be adopted must be produced.
15. Where plastic pipes are installed into the ground prior to getting full technical approval, the developer must provide a CCTV survey of the prospectively adoptable sewer and a deformation test (Light-Line test) of the plastic pipes.
16. Demarcation chambers to be a min. 450mmx4mm for 1000mm foul & 150mmx150mm for 150mm foul. They must be made of concrete with 1.2m, restricted access opening to 350mm is required for safety reasons.
17. Maximum depth of demarcation chamber to be 2m, where depth exceeds 2m, manhole to be constructed as type B manhole.
18. Where a B125 cover and frame has been approved, this must not be coated in plastic, resin or any other material. The cover slab(s) to accommodate standard lifting keys. Screw down covers are not acceptable.
19. INWL is not obliged to accept filter drain/land drainage runoff into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage runoff will therefore be required and you will have to liaise with the Land Drainage Authority/Land Drainage Section with regard to the disposal of the filter drain/land drainage runoff is required.
20. All concrete rising and/or falling pipes and all precast concrete products must be tested at a laboratory report provided proving that such preclusions are not necessary.
21. Strength of vitrified clay pipes (if used) to be 40KN/m for 1000, 40KN/m for 1500, 45KN/m for 2250 and 72KN/m for 3000. All concrete pipes to be Class 120 concrete to EN 1916/BS 5911-2:2002.
22. All levels of existing drainage to be confirmed prior to work commencing on site.
23. The contractor must allow for any fee's required for road and sewer opening permits, sewer and water utility charges and the appropriate approvals.
24. There should be enough clearance to accommodate the bedding for both pipes, approx 300mm: If crossover is near rocker then the clearance needed may be increased.

J	CR	10.07.23	Gullies amended as per S38 comments	RJ	MI
J	JMC	15.05.23	S61/S62 updated to latest drainage design	RJ	MI
H	RJ	07.03.23	Manholes amended to suit service positions	RJ	MI
H	RJ	07.03.23	S46, S62-S64 Manholes amended	RJ	MI
F	RJ	01.02.23	M6 co-ordinates amended	RJ	MI
E	RJ	23.12.22	Revised to new planning layout 11.10.22	RJ	MI
B	RJ	23.12.22	Revised to new planning layout 11.10.22	RJ	MI
C	JMC	09.11.22	Drainage updated to avoid services & new outfall levels		MI
A	JMC	08.07.22	Updated for IWW submission		MI
B	JMC	27.06.22	Revised to Millers Layout		MI
J	JMC	27.05.22	Issued for approval	DUG	MI
Rev	By	Date	Revision	Chk	Appvd

 ARP ASSOCIATES
Chartered Consulting Engineers

Northwest House ● 5 & 6 Northwest Business Park ● Servia Hill, Leeds ● LS6 2QH
☎ 0113 245 8498 ● 0113 244 3864 ● 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 3771811, whose registered office is at 5/6 Northwest Business Park, Servia Hill, Leeds LS6 2QH

TITLE

SECTION 104 LAYOUT
SHEET 2 OF 2

PROJECT

GYPSY LANE,
WOMBWELL

CLIENT

MILLER HOMES
(YORKSHIRE) LTD

DRAWING STATUS	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

APPROVED

Scale 1:500 @ A1	Date MAY 22	Drawn DJG
		Chk. MI
Dwg. No. 0425/87/03.02		Rev K