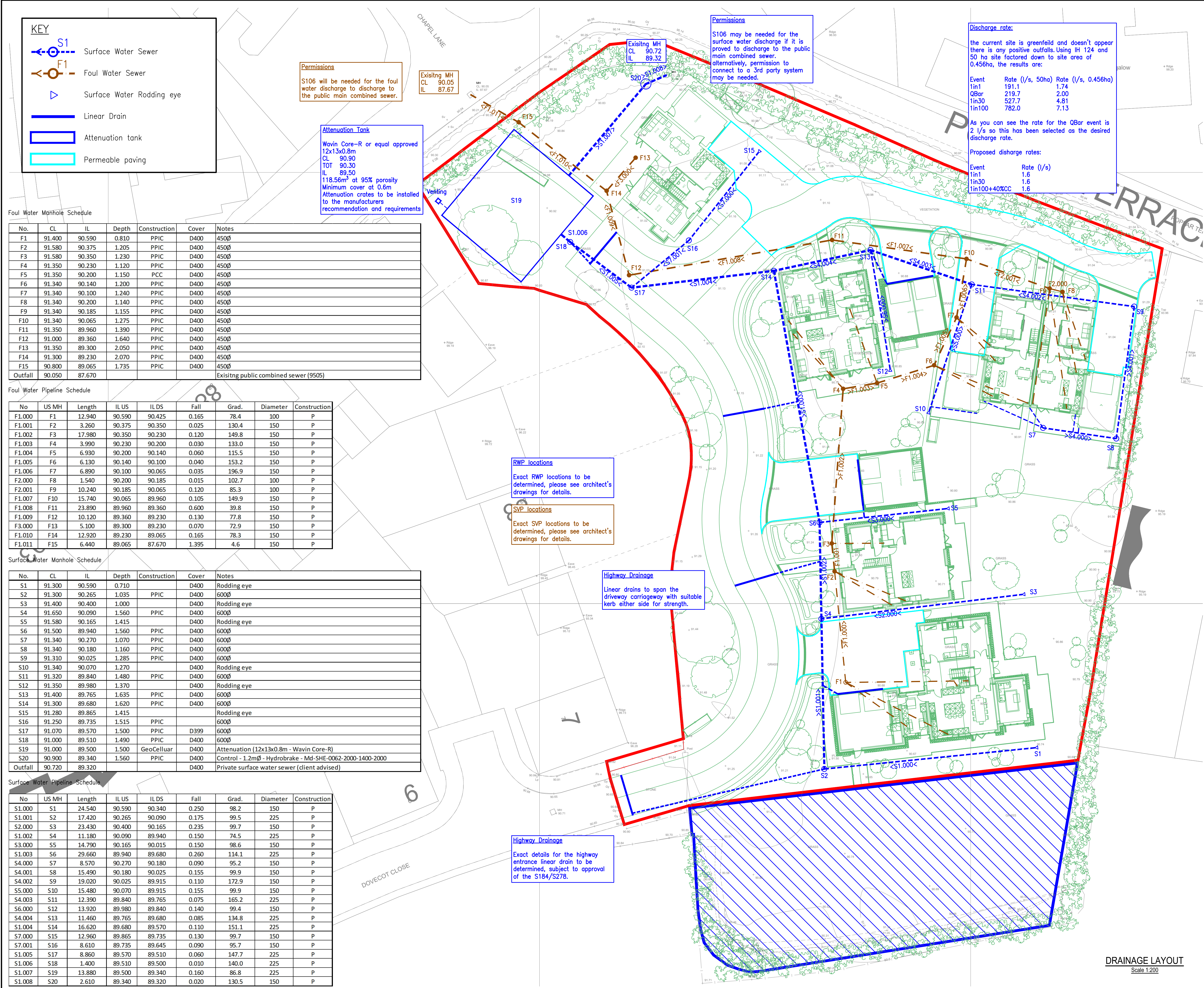




KEY

- Surface Water Sewer
- Foul Water Sewer
- Surface Water Rodding eye
- Linear Drain
- Attenuation tank
- Permeable paving

Permissions

S106 will be needed for the foul water discharge to discharge to the public main combined sewer.

Existing MH
CL 90.05
IL 87.67

Attenuation Tank

Wavin Core-R or equal approved
12x13x0.8m
CL 90.90
TOT 90.30
IL 89.50
118.56m³ at 95% porosity
Minimum cover at 0.6m
Attenuation crates to be installed to the manufacturers recommendation and requirements

Permissions

S106 may be needed for the surface water discharge if it is proved to discharge to the public main combined sewer. alternatively, permission to connect to a 3rd party system may be needed.

Discharge rate:

the current site is greenfield and doesn't appear there is any positive outfalls. Using IH 124 and 50 ha site factored down to site area of 0.456ha, the results are:

Event	Rate (l/s, 50ha)	Rate (l/s, 0.456ha)
1in1	191.1	1.74
QBar	219.7	2.00
1in30	527.7	4.81
1in100	782.0	7.13

As you can see the rate for the QBar event is 2 l/s so this has been selected as the desired discharge rate.

Proposed discharge rates:

Event	Rate (l/s)
1in1	1.6
1in30	1.6
1in100+40%CC	1.6

Foul Water Manhole Schedule

No.	CL	IL	Depth	Construction	Cover	Notes
F1	91.400	90.590	0.810	PPIC	D400	4500
F2	91.580	90.375	1.205	PPIC	D400	4500
F3	91.580	90.350	1.230	PPIC	D400	4500
F4	91.350	90.230	1.120	PPIC	D400	4500
F5	91.350	90.200	1.150	PCC	D400	4500
F6	91.340	90.140	1.200	PPIC	D400	4500
F7	91.340	90.100	1.240	PPIC	D400	4500
F8	91.340	90.200	1.140	PPIC	D400	4500
F9	91.340	90.185	1.155	PPIC	D400	4500
F10	91.340	90.065	1.275	PPIC	D400	4500
F11	91.350	89.960	1.390	PPIC	D400	4500
F12	91.000	89.360	1.640	PPIC	D400	4500
F13	91.350	89.300	2.050	PPIC	D400	4500
F14	91.300	89.230	2.070	PPIC	D400	4500
F15	90.800	89.065	1.735	PPIC	D400	4500
Outfall	90.050	87.670				Existing public combined sewer (9505)

Foul Water Pipeline Schedule

No	US MH	Length	IL US	IL DS	Fall	Grad.	Diameter	Construction
F1.000	F1	12.940	90.590	90.425	0.165	78.4	100	P
F1.001	F2	3.260	90.375	90.350	0.025	130.4	150	P
F1.002	F3	17.980	90.350	90.230	0.120	149.8	150	P
F1.003	F4	3.990	90.230	90.200	0.030	133.0	150	P
F1.004	F5	6.930	90.200	90.140	0.060	115.5	150	P
F1.005	F6	6.130	90.140	90.100	0.040	153.2	150	P
F1.006	F7	6.890	90.100	90.065	0.035	196.9	150	P
F2.000	F8	1.540	90.200	90.185	0.015	102.7	100	P
F2.001	F9	10.240	90.185	90.065	0.120	85.3	100	P
F1.007	F10	15.740	90.065	89.960	0.105	149.9	150	P
F1.008	F11	23.890	89.960	89.360	0.600	39.8	150	P
F1.009	F12	10.120	89.360	89.230	0.130	77.8	150	P
F3.000	F13	5.100	89.300	89.230	0.070	72.9	150	P
F1.010	F14	12.920	89.230	89.065	0.165	78.3	150	P
F1.011	F15	6.440	89.065	87.670	1.395	4.6	150	P

Surface Water Manhole Schedule

No.	CL	IL	Depth	Construction	Cover	Notes
S1	91.300	90.590	0.710	D400		Rodding eye
S2	91.300	90.265	1.035	PPIC	D400	6000
S3	91.400	90.400	1.000	D400		Rodding eye
S4	91.650	90.090	1.560	PPIC	D400	6000
S5	91.580	90.165	1.415	D400		Rodding eye
S6	91.500	89.940	1.560	PPIC	D400	6000
S7	91.340	90.270	1.070	PPIC	D400	6000
S8	91.340	90.180	1.160	PPIC	D400	6000
S9	91.310	90.025	1.285	PPIC	D400	6000
S10	91.340	90.070	1.270	D400		Rodding eye
S11	91.320	89.840	1.480	PPIC	D400	6000
S12	91.350	89.980	1.370	D400		Rodding eye
S13	91.400	89.765	1.635	PPIC	D400	6000
S14	91.300	89.680	1.620	PPIC	D400	6000
S15	91.280	89.865	1.415			Rodding eye
S16	91.250	89.735	1.515	PPIC		6000
S17	91.070	89.570	1.500	PPIC	D399	6000
S18	91.000	89.510	1.490	PPIC	D400	6000
S19	91.000	89.500	1.500	GeoCellular	D400	Attenuation (12x13x0.8m - Wavin Core-R)
S20	90.900	89.340	1.560	PPIC	D400	Control - 1.2mØ - Hydrobrake - Md-SHE-0062-2000-1400-2000
Outfall	90.720	89.320		D400		Private surface water sewer (client advised)

Surface Water Pipeline Schedule

No	US MH	Length	IL US	IL DS	Fall	Grad.	Diameter	Construction
S1.000	S1	24.540	90.590	90.340	0.250	98.2	150	P
S1.001	S2	17.420	90.265	90.090	0.175	99.5	225	P
S2.000	S3	23.430	90.400	90.165	0.235	99.7	150	P
S1.002	S4	11.180	90.090	89.940	0.150	74.5	225	P
S3.000	S5	14.790	90.165	90.015	0.150	98.6	150	P
S1.003	S6	29.660	89.940	89.680	0.260	114.1	225	P
S4.000	S7	8.570	90.270	90.180	0.090	95.2	150	P
S4.001	S8	15.490	90.180	90.025	0.155	99.9	150	P
S4.002	S9	19.020	90.025	89.915	0.110	172.9	150	P
S5.000	S10	15.480	90.070	89.915	0.155	99.9	150	P
S4.003	S11	12.390	89.840	89.765	0.075	165.2	225	P
S6.000	S12	13.920	89.980	89.840	0.140	99.4	150	P
S4.004	S13	11.460	89.765	89.680	0.085	134.8	225	P
S1.004	S14	16.620	89.680	89.570	0.110	151.1	225	P
S7.000	S15	12.960	89.865	89.735	0.130	99.7	150	P
S7.001	S16	8.610	89.735	89.645	0.090	95.7	150	P
S1.005	S17	8.860	89.570	89.510	0.060	147.7	225	P
S1.006	S18	1.400	89.510	89.500	0.010	140.0	225	P
S1.007	S19	13.880	89.500	89.340	0.160	86.8	225	P
S1.008	S20	2.610	89.340	89.320	0.020	130.5	150	P

DO NOT SCALE

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NOTES

1.

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE MANHOLE SCHEDULE AND ALL OTHER RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST CONTRACTORS DETAILS.

2.

THE POSITION, LINE, LEVEL AND DIAMETER OF ALL EXISTING DRAINAGE APPARATUS SHOULD BE CONFIRMED ON SITE PRIOR TO THE COMMENCEMENT OF THE WORKS. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY.

3.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.

4.

THE CONNECTION OF FOUL AND SURFACE WATER DRAINAGE TO THE EXISTING PUBLIC SEWER SYSTEM SHALL BE SUBJECT TO THE APPROVAL OF THE WATER AUTHORITY.

5.

ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT BRITISH STANDARDS, BS CODES OF PRACTICE & BUILDING REGULATIONS.

6.

ALL DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH "WATER UK "SEWERAGE SECTOR GUIDANCE APPENDIX C" VERSION 2 (THE CODE, SFAB) AND "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY (7TH EDITION)".

7.

UPVC PIPES AND FITTINGS TO COMPLY WITH BS EN 1401-1 1998.

8.

CW PIPES AND FITTINGS SHALL COMPLY WITH BS EN 295:1991 PART 1.

9.

RUBBER JOINT RINGS SHALL BE TYPE D TO BS 2494 AND SHALL BE OBTAINED FROM PIPE MANUFACTURER.

10.

DRAINAGE TO BS 8301 WITH PIPES OF APPROVED TYPE ON GRANULAR BED AND SURROUND AND ALL LAD IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.

11.

PIPES UNDER BUILDINGS AND WITH COVER LESS THAN- 600 UNDER PATIENS AND NON-TRAFFICKED AREAS, 900 UNDER CAR PARKING AREAS, 1200 UNDER ROADS- TO HAVE CONCRETE PROTECTION APPLIED.

12.

ALL PIPES ENTERING & EXITING MANHOLES ARE TO BE CONNECTED USING PREFORMED BRANCH CHANNEL BENDS 3/4 SECTION AT HALF MAIN CHANNEL HEIGHT.

13.

FIRST FLEXIBLE JOINT IN PIPES ADJACENT TO A MANHOLE SHALL BE A MAX. 600MM FROM INSIDE FACE OF MANHOLE, CONNECTING TO ROCKER PIPE.

14.

PRECAST CONCRETE MANHOLES, COVER SLAB AND SEATING RINGS TO COMPLY WITH BS 5911 PT200.

15.

BRICK MANHOLES TO BE CONSTRUCTED IN FLUSH POINTED ENGLISH BOND CLASS B SOLID ENGINEERING BRICKS TO BS 3921 IN SAND/CEMENT MORTAR.

16.

MANHOLE STEP IRONS TO COMPLY WITH BS 1247.

17.

MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON HEAVY DUTY GRADE D400 DOUBLE TRIANGULAR TO BS EN 124 IN CARRIAGEWAYS AND HEAVY VEHICULAR TRAFFICKED AREAS (150MM THICK). MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON MEDIUM DUTY GRADE B125 CIRCULAR OR RECTANGULAR TO EN 124 IN NON TRAFFICKED AREAS, UNLESS INDICATED OTHERWISE.

18.

ALL CEMENT USED IN THE CONSTRUCTION OF MANHOLES SHALL BE ORDINARY PORTLAND CEMENT (OPC) TO THE RELEVANT PROVISIONS OF BS 4027 CESWI SPEC CL 2.15.

19.

REFER TO CESWI SPECIFICATION CL 2.20 FOR SAND/CEMENT MORTAR GRADES.

20.

HIGH STRENGTH GRANULITHIC CONCRETE TOPPING TO BENCHING TO BE STEEL TROWELLED TO A DENSE SMOOTH FACE NEATLY SHAPED AND FINISHED TO ALL BRANCH CONNECTIONS IN ACCORDANCE WITH CESWI SPECIFICATION CL 4.30.

21.

PIPES SHALL BE LAID TO THEIR TRUE LINE AND LEVEL BY LASER OR BY BONGING EACH END AND MIDDLE.

22.

ALL SOFT SPOTS WITHIN PIPE TRENCHES SHALL BE REMOVED AND FILLED WITH TYPE 1 MATERIAL.

23.

NO WATER SHALL BE ALLOWED TO ACCUMULATE IN PIPE TRENCHES UNDER CONSTRUCTION.

24.

ALL FILL MATERIAL SHALL BE CONSOLIDATED IN LAYERS NOT EXCEEDING 225MM.

25.

ALL INITU CONCRETE USED IN PIPE PROTECTION TO BE MIN. GRADE C 20P.

26.

COMPRESSIBLE FILLER FOR INTERRUPTION OF CONCRETE PIPE PROTECTION SHALL CONSIST OF BITUMEN IMPREGNATED INSULATING BOARD TO BS1142 PT3 AT EACH PIPE JOINT, THICKNESS IN ACCORDANCE WITH CESWI CLAUSE 2.52.

27.

ANY REDUNDANT DRAINS SHALL BE REMOVED OR CONCRETE SEALED.

28.

WHERE PIPES ARE CROSSING, PLASTIC MEMBRANE IS TO BE USED FOR PROTECTION TO ELIMINATE CHANCES OF CROSS CONTAMINATION.

29.

PIPES OF DIFFERENT DIAMETERS ARE TO ENTER THE MANHOLE AT SOFFIT TO SOFFIT LEVEL UNLESS INDICATED OTHERWISE.

30.

PRECAST CONCRETE MANHOLES ARE NOT TO BE CUT OR CORE DRILLED UNDER ANY CIRCUMSTANCES.

31.

ALL MANHOLE COVERS AND FRAMES ARE TO BE A MINIMUM OF 600mmx600mm TO MAINTAIN A CLEAR OPENING. COVER AND FRAMES TO BE KITE MARKED.

32.

WHERE DEPTH OF MANHOLE IS GREATER THAN 3.00m TO SOFFIT, A VERTICAL GALVANISED MILD STEEL ACCESS LADDER WITH 230mm CLEARANCE TO THE WALL IS REQUIRED. DOUBLE ENCAPSULATED STEP RUNGS ARE TO BE USED IN MANHOLES LESS THAN 3.00M DEEP.

P3 Drainage updated, plot 6 added

P2 Gullies removed and linear drains added

P1 First issue

Ref

Revision

Date

By

Issue

23.05.23

LM

PRELIMINARY

DWS

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Project Title

DOVECOTE CLOSE, CONGERSTONE

Drawn

DW/LM

Engineer

LM

Checked

RAS

Scale at

1:200 @ A1

Date

SEP 2022

Drawing Title

DRAINAGE LAYOUT

Project No.

22-17274

Drawing No.

0-500

Revision

P3

BIM Code

NOT FOR CONSTRUCTION

DRAINAGE LAYOUT

Scale 1:200