FOUL WATER MANHOLE SCHEDULE

MH REFERENCE	INVERT LEVELS	COVER LEVELS	DEPTH TO INVERT	TYPE	SIZE	COVER TYPE	COORDINATES
FWMH01	100Ø - 13.100	14.136	1.036	PPIC	0.450	D400	E436452.676 N566736.736
FWMH03	100Ø - 12.600 150Ø - 12.600	14.128	1.528	PPIC	0.450	D400	E436461.229 N566721.821
FWMH04	150Ø - 12.200 150Ø - 12.200	13.579	1.379	B1	1.350	D400	E436479.699 N566725.623
FWMH05	100Ø - 12.350	13.331	0.981	PPIC	0.450	D400	E436490.653 N566744.295
FWMH06	100Ø - 12.225 100Ø - 12.225	13.331	1.106	PPIC	0.450	D400	E436496.257 N566734.927
FWMH07	100Ø - 12.164 100Ø - 12.164	13.331	1.167	PPIC	0.450	D400	E436498.613 N566730.988
FWMH08	100Ø - 11.990 100Ø - 11.990	13.328	1.338	PPIC	0.450	D400	E436505.300 N566719.810
FWMH09	100Ø - 11.760 150Ø - 11.760	13.464	1.704	PPIC	0.450	D400	E436492.976 N566712.432
FWMH10	150Ø - 11.685 150Ø - 11.685 150Ø - 11.685	13.093	1.408	B1	1.350	D400	E436483.416 N566708.578

NOTES:

1. MANHOLE TYPE B1 TO HAVE DOUBLE COVER.
2. REFER TO DRAINAGE CONSTRUCTION DETAILS D701 FOR FURTHER INFORMATION REGARDING MANHOLE TYPES.
3. FOR FULL FIXING INFORMATION REFER TO MANUFACTURERS INSTALLATION GUIDELINES.

COMBINED WATER MANHOLE SCHEDULE

MH REFERENCE	INVERT LEVELS	COVER LEVELS	DEPTH TO INVERT	TYPE	SIZE	COVER TYPE	COORDINATES
CW01	150Ø - 10.053	13.088	3.035	B	1.500	D400	E436480.913 N566707.323

NOTES:

1. MANHOLE TYPE B1 TO HAVE DOUBLE COVER.
2. REFER TO DRAINAGE CONSTRUCTION DETAILS D701 FOR FURTHER INFORMATION REGARDING MANHOLE TYPES.
3. FOR FULL FIXING INFORMATION REFER TO MANUFACTURERS INSTALLATION GUIDELINES.

SURFACE WATER MANHOLE SCHEDULE

MH REFERENCE	INVERT LEVELS	COVER LEVELS	DEPTH TO INVERT	TYPE	SIZE	COVER TYPE	COORDINATES
SWMH01	100Ø - 13.250	14.063	0.813	PPIC	0.450	D400	E436442.825 N566734.221
SWMH02	100Ø - 13.105 100Ø - 13.105	14.134	1.029	PPIC	0.450	D400	E436451.778 N566739.604
SWMH03	100Ø - 13.240	14.079	0.839	PPIC	0.450	D400	E436455.019 N566713.671
SWMH04	100Ø - 12.755 100Ø - 12.755 150Ø - 12.755	14.111	1.356	PPIC	0.450	D400	E436464.232 N566719.032
SWMH05	150Ø - 12.550 150Ø - 12.550	13.906	1.356	PPIC	0.450	D400	E436470.568 N566722.453
SWMH06	150Ø - 12.200	13.565	1.365	B1	1.350	D400	E436473.335 N566737.144
SWMH07	150Ø - 12.000 225Ø - 11.925	13.644	1.719	B1	1.350	D400	E436477.830 N566718.691
SWMH08	150Ø - 12.550	13.314	0.764	PPIC	0.450	D400	E436490.659 N566745.508
SWMH09	150Ø - 12.350 150Ø - 12.350	13.308	0.958	PPIC	0.450	D400	E436506.078 N566719.805
SWMH10	150Ø - 12.050 150Ø - 12.050	13.412	1.362	PPIC	0.450	D400	E436492.064 N566711.286
SWMH11	150Ø - 11.825 150Ø - 11.825 225Ø - 11.750 300Ø - 11.675	13.559	1.884	B	1.200	D400	E436475.826 N566713.054
SWMH12	150Ø - 12.500	13.456	0.956	PPIC	0.450	D400	E436455.408 N566704.700
SWMH13	150Ø - 12.200 150Ø - 12.200	12.852	0.652	PPIC	0.450	D400	E436471.393 N566701.177
SWMH14	150Ø - 12.150 150Ø - 12.150	13.036	0.886	PPIC	0.450	D400	E436475.247 N566703.438
SWMH15	450Ø - 10.155 150Ø - 10.105	13.346	3.241	FLOW CONTROL	1.500	D400	E436476.884 N566710.175

NOTES:

1. MANHOLE TYPE B1 TO HAVE DOUBLE COVER.
2. REFER TO DRAINAGE CONSTRUCTION DETAILS D701 FOR FURTHER INFORMATION REGARDING MANHOLE TYPES.
3. FOR FULL FIXING INFORMATION REFER TO MANUFACTURERS INSTALLATION GUIDELINES.

GENERAL SAFETY NOTES:

1. WHERE THE BASE (ROAD BASE) HAS BEEN USED AS A TEMPORARY RUNNING SURFACE DURING THE CONTRACT IT SHALL BE THOROUGHLY CLEANED AND POWER WASHED AS NECESSARY. AFTER DRYING AND IMMEDIATELY BEFORE THE BINDER COURSE IS LAID A TACK COAT OF BITUMEN EMULSION CLASS A1-40 OR K1-40 TO BS434 SHALL BE APPLIED AT A RATE OF 0.35-0.55 LITRES/SQ METER.
2. ALL RADIUS KERBS WITH A RADIUS OF 12m OR LESS SHALL BE FORMED WITH PROPRIETARY RADIUS KERBS.

HEALTH & SAFETY:

1. CONTRACTOR SHOULD BE AWARE OF GENERAL CONSTRUCTION RISKS TO PREVENT SLIPS, TRIPS AND FALLS AND TAKE NECESSARY PRECAUTIONS WITHOUT SPECIAL INSTRUCTION.

ROADS & DRAINAGE

2. CONTRACTOR TO PROVIDE TRENCH SUPPORTS AS APPROPRIATE AND ENSURE THAT PLANT REMAINS A SAFE DISTANCE FROM TRENCHES PRIOR TO INSTALLING DRAINAGE
3. THE TIME THAT EXCAVATIONS ARE OPEN ON SITE SHOULD BE KEPT TO A MINIMUM AND ALL TRENCHES SHOULD BE SURROUNDED BY A BARRIER.
4. CONNECTIONS TO EXISTING SEWERS TO BE MADE BY APPROVED CONTRACTOR ONLY.
5. CONTRACTOR TO MAKE OPERATIVES AWARE OF ASSOCIATED DANGERS TO HEALTH SUCH AS LEPTOSPIROSIS (WELS DISEASE) AND RECOMMENDED PRECAUTIONS. ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING TO BE PROVIDED AS REQUIRED.
6. UNFINISHED MANHOLES MUST BE COVERED WITH LOAD BEARING MATERIALS AND SURROUNDED WITH BARRIER.

PIPES & CABLES

7. CONTRACTOR TO OBTAIN ALL SERVICE RECORDS PRIOR TO WORKS COMMENCING.
8. SERVICE RECORDS TO BE REFERRED TO PRIOR TO WORK COMMENCING. CONTRACTOR TO PROCEED WITH CAUTION AND SERVICES TO BE LOCATED BY HAND DIG AND PROTECTED ACCORDINGLY.

EXCAVATION/FILL

9. CONTRACTOR TO ENSURE RELEVANT MEASURES ARE TAKEN TO KEEP PLANT AND PEOPLE A SAFE DISTANCE FROM STEEP SLOPES DURING THE WORKS.
10. CONTRACTOR TO ENSURE THAT PROCEDURES ARE IN PLACE TO KEEP PEOPLE A SAFE DISTANCE FROM WORKING PLANT WHERE NECESSARY.
11. CONTRACTOR TO REFER TO GROUND INVESTIGATION REPORT FOR CONTAMINATION TESTS AND TO PROVIDE ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING AS REQUIRED.

DRAINAGE NOTES

1. ALL ADOPTABLE DRAINAGE WORKS AND MATERIALS TO BE IN ACCORDANCE WITH "CODE FOR ADOPTION", THE RELEVANT BRITISH/EUROPEAN AND NORTHUMBRIAN WATER'S STANDARDS/REQUIREMENTS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
2. MANHOLE COVERS 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 NORTHUMBRIAN WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. ALL ADOPTABLE SEWERS TO BE KITEMARKED (CERTIFIED TO WIS 4-35-01 AND BS/EN13476).
5. PLASTIC CHANNEL SECTIONS IS NOT ACCEPTABLE AND THE WATER AUTHORITY PREFER CLAYWARE CHANNEL IN MANHOLES. PLASTIC CHANNELS ARE DIFFICULT TO SET IN CONCRETE BECAUSE THEY FLOAT AND A SATISFACTORY FINISH CANNOT BE OBTAINED ON THE BENCHING.
6. SULPHATE RESISTANT CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
7. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.5M FROM KERB FACES AND SERVICE MARGINS.
8. SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES.
9. SEWERS TO BE LAID IN CLASS "S" 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 NONE VEHICULAR ACCESS AREAS) THEN A CLASS 'Z' BEDDING(CONCRETE SURROUND) SHOULD BE PROVIDED.
10. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (TABLE A2).
11. 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.
12. ALL PRIVATE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH BUILDING REGULATIONS 2010 EDITION.
13. CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES PRIOR TO COMMENCEMENT ON SITE.
14. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
15. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
16. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DEWATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
17. FOR PIPE SPECIFICATION PLEASE REFER TO ADDITIONAL NOTES.
18. VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN295 AND BS 65 RESPECTIVELY AND BE KITEMARKED. ALL PIPES SHALL BE EXTRA STRENGTH TO BS 65 OR EQUIVALENT BS EN295 PIPE CRUSHING STRENGTH.
19. STRUCTURED WALL PLASTIC PIPES TO WIS 4-35-01 MAY BE USED FOR FOUL & SURFACE WATER DRAINAGE, SUBJECT TO ADOPTING AUTHORITY APPROVAL.
20. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. CONCRETE PIPES TO BE CLASS 120 UNLESS NOTED OTHERWISE.
21. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 FOR ROADS AND SERVICE YARD AREAS. CLASS C250 TO BE USED IN CAR PARKING AREAS.
22. BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR, IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS OF "THE STREET WORKS REGULATIONS 1992" AND RELEVANT PROVISIONS OF H.A.U.C. "SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
23. ALL TRADITIONAL RAINWATER PIPE DOWN COMERS TO DISCHARGE TO TRAPPED GULLIES.
24. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
25. ALL GULLY LEADS TO BE 150mm DIAMETER.
26. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
27. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
28. THE CONTRACTOR MUST ENSURE THAT ANY OF THE EXISTING DRAINAGE WHICH IS LIVE IS KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.
29. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
30. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.
31. ADOPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3m LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
32. WHERE PLASTIC PIPES ARE INSTALLED PRIOR TO GETTING APPROVAL THEN A LIGHT LINE CCTV SURVEY AND REPORT ARE REQUIRED PRIOR TO APPROVAL.
33. WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUITABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.
34. THERE SHOULD BE ENOUGH CLEARANCE TO ACCOMMODATE THE BEDDING FOR BOTH PIPES, APPROX 300MM - IF CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY BE INCREASED
35. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS : 100MM DIA. 40KN/M. 150MM DIA. 40KN/M, 225MM DIA. 45KN/M AND 300MM DIA. 72KN/M. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - (CLASS 120 TO EN 1916/BS5911-1 2002). PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN13476.

DRAINAGE SUMMARY:
TOTAL SITE AREA: 0.287Ha

- HARD PAVED CONTRIBUTING TO COMBINED SEWER :0.260Ha
- DISCHARGE RATE BASED ON MINIMUM DISCHARGE RATE FROM 75mm ORIFICE = 3.5 L/SEC. (SUBJECT TO AGREEMENT FROM LOCAL AUTHORITY.
- SITE INVESTIGATION WORKS FOUND THE EXISTING SITE TO COMPRISE OF MADE GROUND FOUNDED ON CLAY. IT IS UNLIKELY DRAINAGE VIA INFILTRATION WILL BE SUITABLE FOR THIS SITE HOWEVER SOAKWAY TESTING TO BRE 356 WILL BE REQUIRED TO CONFIRM THIS.
- THE 100 YEAR +45% CLIMATE CHANGE RAINFALL EVENT HAS BEEN CATERED FOR WITHIN THE SYSTEM DUE TO GROUND LEVELS FALLING TOWARDS THE EXISTING HIGHWAY.

FOUL WATER

- FOUL WATER WILL OUTFALL INTO THE EXISTING COMBINED SEWER PASSING THROUGH THE SITE AT OUTFALL POINT FROM DEVELOPMENT

Date	Revisions	Drawn	Checked	Rev
08.04.2025	SITE LAYOUT UPDATED. DRAINAGE AND SCHEDULE AMENDED TO SUIT.	JS	RWO	5
11.03.2025	SWMH01, SWMH02 AND SWMH03 RELOCATED. SCHEDULE UPDATED TO SUIT.	JS	AM	4
05.03.2025	FWMH02 OMITTED. FWMH01 RELOCATED. SCHEDULE UPDATED TO SUIT.	JS	AM	3
03.03.2025	CHAMBERS RENUMBERED. SCHEDULE UPDATED TO SUIT.	JS	AM	2
24.02.2025	FIRST ISSUE	JS	RO	1

Dwg Status: CONSTRUCTION

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CONSULTING ENGINEERS

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Client: MODO BLOCK LTD.

Project: CROSSGATE
CLAYPATH LANE, SHOUTH SHIELDS

Title: DRAINAGE MANHOLE SCHEDULE

DO NOT SCALE	Scale @ A1: N.T.S.	Drawn JS	Checked RO	Date 24.02.2025
Job No 22123		Dwg No D201		Rev 5