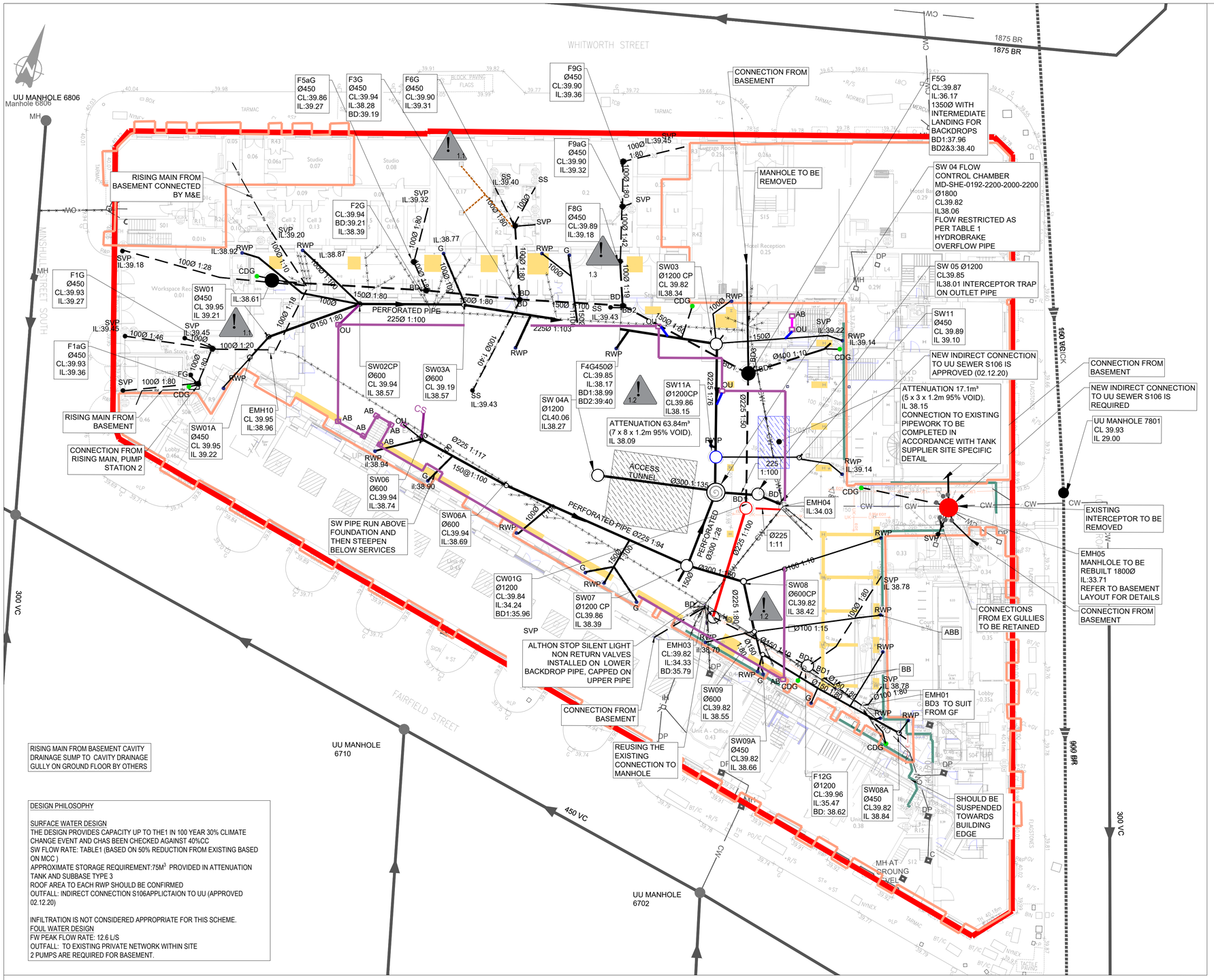


RISING MAIN FROM BASEMENT CAVITY DRAINAGE SUMP TO CAVITY DRAINAGE GULLY ON GROUND FLOOR BY OTHERS

DESIGN PHILOSOPHY

SURFACE WATER DESIGN
THE DESIGN PROVIDES CAPACITY UP TO THE1 IN 100 YEAR 30% CLIMATE CHANGE EVENT AND CHAS BEEN CHECKED AGAINST 40%CC
SW FLOW RATE: TABLE1 (BASED ON 50% REDUCTION FROM EXISTING BASED ON MCC)
APPROXIMATE STORAGE REQUIREMENT:75M^3 PROVIDED IN ATTENUATION TANK AND SUBBASE TYPE 3
ROOF AREA TO EACH RWP SHOULD BE CONFIRMED
OUTFALL: INDIRECT CONNECTION S106APPLICTAION TO UU (APPROVED 02.12.20)

INFILTRATION IS NOT CONSIDERED APPROPRIATE FOR THIS SCHEME.
FOUL WATER DESIGN
FW PEAK FLOW RATE: 12.6 L/S
OUTFALL: TO EXISTING PRIVATE NETWORK WITHIN SITE
2 PUMPS ARE REQUIRED FOR BASEMENT.

- EXISTING CAPACITY HAVE BEEN CHECKED FOR FLOWS PROVIDED BY M&E DRAWINGS
- EXISTING MANHOLE COVERS WILL REQUIRE TO BE ADJUST TO PROPOSED LEVELS

ATTENUATION	
ATTENUATION TANK	63.84 m³
SUBBASE TYPE 3	400m² x 0.15m x 0.30 = 18m³
TOTAL	75 m³

TABLE 1					
SITE	IMPERMEABLE AREA (HA)	FLOW RATE 1:1 YEAR (L/S)	FLOW RATES 1 :2 YEAR L/S	FLOW RATE 1:30 YEAR (L/S)	FLOW RATE 1:100 YEAR (L/S)
EXISTING SITE	0.33	43.5	56.2	122.3	151
		INCLUDING A 50% REDUCTION, IN ACCORDANCE WITH MCC			
PROPOSED SITE	0.33	22	28	61	76
UNITED UTILITIES REQUESTED MAX 1 IN 2 YEAR STORM EVENT					
FLOW LIMITED TO 22 L/S FOR EACH STORM EVENT UP TO 1 IN 100+40 CC TO MEET MCC AND UU REQUIRENTS					

HYDROBRAKE TYPE MD-SHE-01492-2200-2000-2200

RESIDUAL HAZARD REGISTER

HAZARDS THAT SHOULD BE OBVIOUS TO A COMPETENT CONTRACTOR HAVE NOT BEEN INDICATED ON THIS DRAWING.
SHOULD ANY ADDITIONAL HAZARDS BE IDENTIFIED, THE CONTRACTOR SHOULD NOTIFY ALL RELEVANT PROJECT TEAM MEMBERS.

HAZARD REF No.	ITEM (FEATURE, ELEMENT OR ACTIVITY)	RESIDUAL HAZARD
5.5	EXISTING FOUNDATION	EXCAVATION NEAR OR THROUGH EXISTING FOUNDATION TO INSTALL PROPOSED DRAINAGE
3.1	SERVICES	EXCAVATION NEAR EXISTING SERVICES AND EXISTING DRAINAGE
5.1	DEEP EXCAVATION	DEEP EXCAVATION ABOVE >3M REFER TO MH SCHEDULE FOR MORE DETAILS

REQUIRED INFORMATION:
PROPOSED LEVELS AND CHANNEL LOCATIONS FOR THE COURTYARD
FOUNDATION FOR THE COURTYARD BAR

DRAWING BASED ON:

GPR SURVEY: LOCATE SURVEYS LTD, LSL:17499:200:1:1#
CCTV SURVEY LAYER SURVEY 01.06.20
ARCHITECT LAYOUT: LRFS-PUR-01-00-DR-A-2003 REV 21.11.03
LRFS-PUR-01-ZZ-DR-A-4120 - Proposed Courtyard REV 10
FOUNDATION RECEIVED 03.09.21
POPUP LOCATION 647-M-(52)-00-01 T5
DISCHARGE UNITS CONSOLUX 26.05.22

EXTERNAL SERVICES 119.07.21
647-M-(54)-00-01 - Gas Services Layout T2

FOR PIPES WHICH SHOULD BE ABANDONED REFER TO 060270-CUR-00-XX-DR-C-92502 EXISTING DRAINAGE

POPUP LOCATIONS BASED ON M&E DRAWINGS, CONSTRUCTION SETTING OUT HAS NOT BEEN PROVIDED

KEY - GROUND FLOOR

- SITE BOUNDARY (APPROXIMATE)
- EXTENT OF BASEMENT
- PUBLIC SURFACE WATER SEWER (APPROXIMATE)
- PUBLIC COMBINED SEWER (APPROXIMATE)
- EXISTING PRIVATE COMBINED DRAINAGE
- EXISTING FOUL WATER DRAINAGE
- EXISTING SURFACE WATER DRAINAGE
- EXISTING COMBINED WATER DRAINAGE
- EXISTING RISING MAIN FROM BASEMENT PUMP STATION
- EXISTING DRAINAGE TO BE ABANDONED
- PROPOSED GATIC 225 CHANNEL B125
- CONNECTION FROM OUTLET BOX TO TYPE 3 SUB BASE
- SERVICES - GAS
- SERVICES - ELECTRIC
- AS-BUILT FLOW CONTROL CHAMBER
- EXISTING SURFACE WATER ATTENUATION (SEE NOTE FOR DETAILS)
- TYPE 3 SUBBASE
- RWP RAINWATER PIPES
- G WALKWAY GULLY
- CDG CAVITY DRAINAGE GULLY (TRAPPED)
- SVP SOLVENT PIPE
- FG FLOOR GULLY (TRAPPED)
- BD BACK DROP
- ABB ABOVE BEAM
- BB BELOW BEAM
- PROPOSED FOUNDATION
- PROPOSED SURFACE WATER ATTENUATION (SEE NOTE FOR DETAILS)
- PROPOSED SURFACE WATER MANHOLE

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. ALL PRIVATE DRAINAGE WORKS TO BE IN ACCORDANCE WITH CURTINS DRAINAGE SPECIFICATION, "CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY 7th EDITION", BS EN 752 2017 'DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS' AND THE BUILDING REGULATIONS APPROVED 'DOCUMENT H'.
3. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
4. DESIGN BASED ON TOPOGRAPHICAL SURVEY AND CCTV SURVEY INFORMATION AVAILABLE AT THE TIME OF THE DESIGN.
5. OUTFALL CONNECTION(S) SUBJECT TO AGREEMENT WITH THE APPROVING AUTHORITY.
6. ALL DIMENSIONS ARE IN METRES AND LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE NOTED.
7. COVER LEVELS, GULLY POSITIONS, AND BUILDINGS LOCATION ARE APPROXIMATE AND SHALL BE CONFIRMED BY ARCHITECT/ LANDSCAPE ARCHITECT. CONTRACTOR TO ALLOW FOR ADJUSTMENT TO SUIT AGREED POSITIONS AND FINISHED LEVELS, AND CONFIRM ALL COVER LEVELS ON SITE.
8. ALL INTERNAL DRAINAGE CONNECTIONS ARE PROVIDED TO THE PENETRATION POSITIONS SHOWN ON ARCHITECT AND M&E DRAWINGS. REFER TO DIMENSIONED LOCATIONS AND DIAMETERS ON ARCHITECT'S GROUND FLOOR SETTING-OUT PLANS.
9. ALL UNDERGROUND FOUL DRAINAGE SHOULD BE SUITABLY VENTED AT OR NEAR TO THE HEAD OF RUNS.
10. ALL ACCESS FITTINGS, STACKS, RWP'S AND GULLIES TO BE RODDABLE. ALL TO HAVE LOW LEVEL RODDING ACCESS PLATES UNLESS AN ALTERNATIVE MEANS OF ACCESS IS AGREED. ACCESS POINT TO BE ABOVE ANY GROUND FLOOR CONNECTED APPLIANCE SPILL LEVEL.
11. LARGE ACCESS FITTING REQUIRED ABOVE GROUND WHERE GREATER THAN 12M UP TO 22M TO A JUNCTION. SMALL ACCESS FITTING REQUIRED UP TO 12M TO A JUNCTION.
12. ALL GULLY AND CHANNEL DRAIN OUTLETS AND TERMINATION POINTS TO BE TRAPPED AND RODDABLE. INTERNAL GULLIES AND CHANNEL DRAINS TO BE SPECIFIED BY OTHERS.
13. WHERE NO WC'S ARE CONNECTED UPSTREAM, UNDERSLAB FW DRAINAGE TO BE LAID AT 1:40 MIN. AFTER THE CONNECTION OF AT LEAST 1NO WC, A MIN. FALL OF 1:80 APPLIES.
14. ALL CONNECTIONS FROM POP-UPS TO BE LAID AT A CONSTANT GRADIENT TO JUNCTION/ INSPECTION CHAMBER/ MANHOLE UNLESS NOTED OTHERWISE. ANY ISSUES RELATING TO CLASHES WITH FOUNDATIONS ARE TO BE FORWARDED TO THE ENGINEER, ALLOWING SUFFICIENT TIME FOR AN ALTERNATIVE SOLUTION TO BE PROPOSED.
15. INVERT LEVELS AT MANHOLES/ INSPECTION CHAMBERS TO BE USED TO SET OUT PIPEWORK. PIPE GRADIENTS ARE SHOWN INDICATIVELY ONLY.
16. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.
17. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE:
    - 100mm to 300mm DIA TO BE VITRIFIED CLAY.
    - 375mm DIA AND GREATER TO BE CLASS 120 CONCRETE PIPES.
19. AS AN ALTERNATIVE THE CONTRACTOR MAY USE AN APPROVED UNPLASTICISED POLYVINYL CHLORIDE (PVCU) WITH APPROVAL FROM THE ENGINEER.
20. SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS.
21. THE FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.
22. ALL NEW CONNECTIONS INTO EXISTING MANHOLES (OR INTO EXISTING SEWERS) TO BE 'SOFFITS LEVEL' UNLESS OTHERWISE NOTED.
23. ALL PRIVATE DRAINAGE PIPES WITH A COVER OF LESS THAN 600mm IN NON-TRAFFICKED AREAS AND LESS THAN 1200mm IN TRAFFICKED AREAS TO BE BEDDED AND SURROUNDED IN CONCRETE (CLASS Z). COMPRESSIBLE MATERIAL SHALL BE PROVIDED AT EVERY PIPE JOINT. WHERE COVER EXCEEDS THIS DEPTH, PIPES ARE TYPICALLY BEDDED AND SURROUNDED IN CLASS S. REFER TO PIPE EMBEDMENT DETAILS DRAWING FOR SPECIFIC TYPES.
24. WHERE DRAINAGE PIPES ARE LESS THAN 300mm BELOW THE UNDERSIDE OF THE GROUND FLOOR SLAB, CONCRETE ENCASEMENT IS REQUIRED (CLASS Z). COMPRESSIBLE JOINTS ARE TO BE PROVIDED AT EVERY PIPE JOINT WITHIN THE CONCRETE.
25. WHERE PIPES ARE MORE THAN 300mm BELOW THE UNDERSIDE OF THE SLAB, CLASS S BEDDING IS ACCEPTABLE.
26. WHERE FOUL SEWERS RUN ABOVE SURFACE SEWERS, CONCRETE PROTECTION MAY BE REQUIRED AT CROSSOVERS TO PREVENT ANY POTENTIAL CONTAMINATION.
27. ALL CONNECTIONS PASSING THROUGH BASES OR EDGE BEAMS TO BE IN SEALED SLEEVES. ALTERNATIVELY CONNECTIONS MAY BE CAST-IN WITH FLEXIBLE JOINTS NOT GREATER THAN 150MM FROM FACE OF CONCRETE.
28. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED TO ACCOMMODATE THE CONNECTIONS AND BENDS.
29. ALL MANHOLE COVERS IN BLOCK/SLAB AND EXTERNAL PAVING AREAS TO HAVE RECESSED COVERS OF THE APPROPRIATE GRADE TO ACCEPT ARCHITECT'S PAVING PROPOSAL.
30. ALL INTERNAL COVERS TO HAVE MECHANICALLY JOINTED CORNERS AND DOUBLE SEALED WITH RECESSED TRAY TO ALLOW FOR FINISHES.
31. UNLESS NOTED OTHERWISE IN THE MANHOLE SCHEDULE, ALL MANHOLE, GULLY AND CHANNEL COVERS (IRONWORK) SHOULD BE THE FOLLOWING SPECIFICATION:
    - B125 LOAD CLASS IN PEDESTRIAN AREAS
    - D400 LOAD CLASS IN VEHICULAR AREAS.
35. ALL PROPRIETARY PRODUCTS TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.
36. GREASE TRAPS SHOULD BE PROVIDED ABOVE GROUND WITHIN AN ENZYME TREATMENT SYSTEM, BY APPROPRIATE SPECIALIST DESIGNER.
37. THE DESIGN IS BASED ON A GRAVITY RAINWATER SYSTEM.

Rev:	Description:	Date:	By:	Chkd:
C08	UPDATED TO SUIT DRAINAGE CALCULATIONS	07.04.25	CS	CS
C07	UPDATED POP-UP CONNECTIONS	16.12.24	KS	CS
C06	UPDATED TO SUIT COMMENTS RECEIVED 16.09.24	24.09.24	CS	CS
C05	UPDATED BASE LAYOUT	04.09.24	CS	AR
C04	UPDATED POPUPS LOCATION FOR BAR	01.11.22	TH	MW
C03	UPDATES FOLLOWING MEETING	19.08.22	MW	MW
C02	UPDATES TO TQ'S	16.08.22	LK	MW
C01	CONSTRUCTION ISSUE	24.06.22	LK	MW
P08	UPDATED TO COMMENTS	19.01.22	LK	MW
P07	RWP AND GULLY LOCATIONS UPDATED	16.11.21	MW	MW
P06	WWG CONNECTIONS ADDED	15.09.21	ATL	MW
P05	UPDATES TO STAGE 4	19.08.21	MW	MW
P04	S106 APPROVAL, TEAMS COMMENTS	13.10.20	MW	MW

curtins
Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG
0161 236 2394
manchester@curtins.com
www.curtins.com
Civils & Structures • Transport Planning • Environmental • Infrastructure • Geotechnical • Conservation & Heritage • Principal Designer
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Status: STAGE 5

Project: LONDON ROAD FIRE STATION

Drg Title: DRAINAGE STRATEGY GROUND FLOOR

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	22/11/19	TM	CG	CG
Scale: 1:200				

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
060270	CUR	00	XX	DR	C	92501	C08

\\ma-fs-1\Projects\060200 - 060300\060270 - London Road Fire Station, Manchester\E - Drawings\CU\170 Drainage\