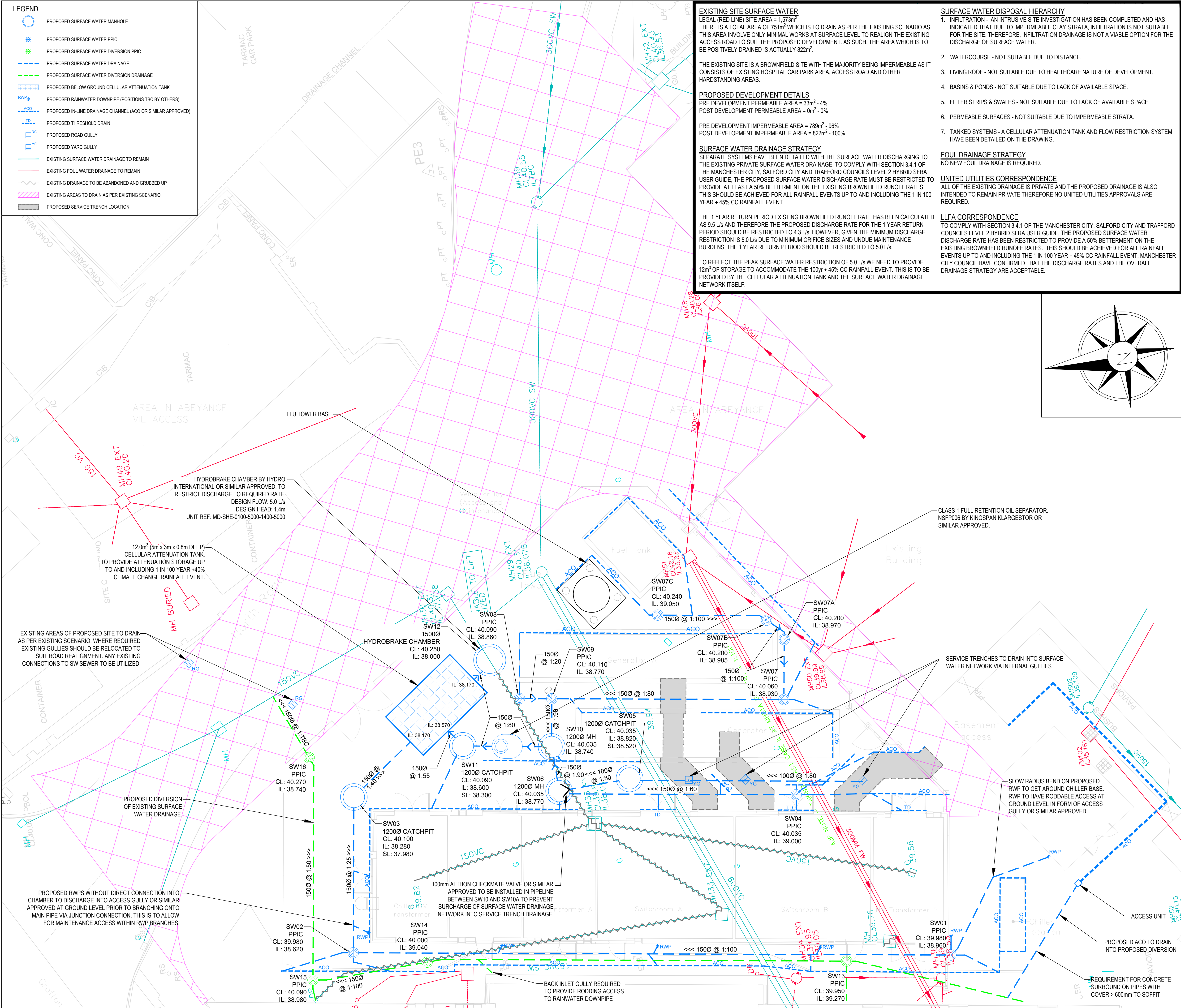


LEGEND

- PROPOSED SURFACE WATER MANHOLE
- PROPOSED SURFACE WATER PPIC
- PROPOSED SURFACE WATER DIVERSION PPIC
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED SURFACE WATER DIVERSION DRAINAGE
- PROPOSED BELOW GROUND CELLULAR ATTENUATION TANK
- PROPOSED RAINWATER DOWNPIPE (POSITIONS TBC BY OTHERS)
- PROPOSED IN-LINE DRAINAGE CHANNEL (ACO OR SIMILAR APPROVED)
- PROPOSED THRESHOLD DRAIN
- PROPOSED ROAD GULLY
- PROPOSED YARD GULLY
- EXISTING SURFACE WATER DRAINAGE TO REMAIN
- EXISTING FOUL WATER DRAINAGE TO REMAIN
- EXISTING DRAINAGE TO BE ABANDONED AND GRUBBED UP
- EXISTING AREAS TO DRAIN AS PER EXISTING SCENARIO
- PROPOSED SERVICE TRENCH LOCATION



EXISTING SITE SURFACE WATER
LEGAL (RED LINE) SITE AREA = 1,573m²
THERE IS A TOTAL AREA OF 751m² WHICH IS TO DRAIN AS PER THE EXISTING SCENARIO AS THIS AREA INVOLVE ONLY MINIMAL WORKS AT SURFACE LEVEL TO REALIGN THE EXISTING ACCESS ROAD TO SUIT THE PROPOSED DEVELOPMENT. AS SUCH, THE AREA WHICH IS TO BE POSITIVELY DRAINED IS ACTUALLY 822m².

PROPOSED DEVELOPMENT DETAILS

PRE DEVELOPMENT PERMEABLE AREA = 33m² - 4%
POST DEVELOPMENT PERMEABLE AREA = 0m² - 0%

PRE DEVELOPMENT IMPERMEABLE AREA = 789m² - 96%
POST DEVELOPMENT IMPERMEABLE AREA = 822m² - 100%

SURFACE WATER DRAINAGE STRATEGY

SEPARATE SYSTEMS HAVE BEEN DETAILED WITH THE SURFACE WATER DISCHARGING TO THE EXISTING PRIVATE SURFACE WATER DRAINAGE. TO COMPLY WITH SECTION 3.4.1 OF THE MANCHESTER CITY, SALFORD CITY AND TRAFFORD COUNCILS LEVEL 2 HYBRID SFRA USER GUIDE, THE PROPOSED SURFACE WATER DISCHARGE RATE MUST BE RESTRICTED TO PROVIDE AT LEAST A 50% BETTERMENT ON THE EXISTING BROWNFIELD RUNOFF RATES. THIS SHOULD BE ACHIEVED FOR ALL RAINFALL EVENTS UP TO AND INCLUDING THE 1 IN 100 YEAR + 45% CC RAINFALL EVENT.

THE 1 YEAR RETURN PERIOD EXISTING BROWNFIELD RUNOFF RATE HAS BEEN CALCULATED AS 9.5 L/s AND THEREFORE THE PROPOSED DISCHARGE RATE FOR THE 1 YEAR RETURN PERIOD SHOULD BE RESTRICTED TO 4.3 L/s. HOWEVER, GIVEN THE MINIMUM DISCHARGE RESTRICTION IS 5.0 L/s DUE TO MINIMUM ORIFICE SIZES AND UNDUE MAINTENANCE BURDENS, THE 1 YEAR RETURN PERIOD SHOULD BE RESTRICTED TO 5.0 L/s.

TO REFLECT THE PEAK SURFACE WATER RESTRICTION OF 5.0 L/s WE NEED TO PROVIDE 12m³ OF STORAGE TO ACCOMMODATE THE 100yr + 45% CC RAINFALL EVENT. THIS IS TO BE PROVIDED BY THE CELLULAR ATTENUATION TANK AND THE SURFACE WATER DRAINAGE NETWORK ITSELF.

SURFACE WATER DISPOSAL HIERARCHY

- INFILTRATION - AN INTRUSIVE SITE INVESTIGATION HAS BEEN COMPLETED AND HAS INDICATED THAT DUE TO IMPERMEABLE CLAY STRATA, INFILTRATION IS NOT SUITABLE FOR THE SITE. THEREFORE, INFILTRATION DRAINAGE IS NOT A VIABLE OPTION FOR THE DISCHARGE OF SURFACE WATER.
- WATERCOURSE - NOT SUITABLE DUE TO DISTANCE.
- LIVING ROOF - NOT SUITABLE DUE TO HEALTHCARE NATURE OF DEVELOPMENT.
- BASINS & PONDS - NOT SUITABLE DUE TO LACK OF AVAILABLE SPACE.
- FILTER STRIPS & SWALES - NOT SUITABLE DUE TO LACK OF AVAILABLE SPACE.
- PERMEABLE SURFACES - NOT SUITABLE DUE TO IMPERMEABLE STRATA.
- TANKED SYSTEMS - A CELLULAR ATTENUATION TANK AND FLOW RESTRICTION SYSTEM HAVE BEEN DETAILED ON THE DRAWING.

FOUL DRAINAGE STRATEGY

NO NEW FOUL DRAINAGE IS REQUIRED.

UNITED UTILITIES CORRESPONDENCE

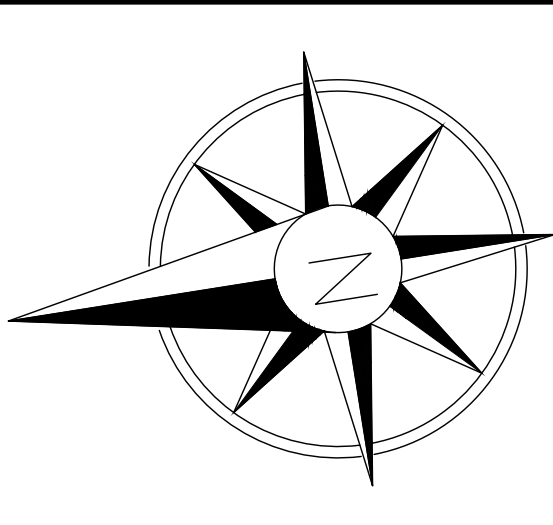
ALL OF THE EXISTING DRAINAGE IS PRIVATE AND THE PROPOSED DRAINAGE IS ALSO INTENDED TO REMAIN PRIVATE THEREFORE NO UNITED UTILITIES APPROVALS ARE REQUIRED.

LLFA CORRESPONDENCE

TO COMPLY WITH SECTION 3.4.1 OF THE MANCHESTER CITY, SALFORD CITY AND TRAFFORD COUNCILS LEVEL 2 HYBRID SFRA USER GUIDE, THE PROPOSED SURFACE WATER DISCHARGE RATE HAS BEEN RESTRICTED TO PROVIDE A 50% BETTERMENT ON THE EXISTING BROWNFIELD RUNOFF RATES. THIS SHOULD BE ACHIEVED FOR ALL RAINFALL EVENTS UP TO AND INCLUDING THE 1 IN 100 YEAR + 45% CC RAINFALL EVENT. MANCHESTER CITY COUNCIL HAVE CONFIRMED THAT THE DISCHARGE RATES AND THE OVERALL DRAINAGE STRATEGY ARE ACCEPTABLE.

IMPORTANT NOTES

- SETTING OUT SHALL BE UNDERTAKEN USING ONLY THE INFORMATION GIVEN. DISTANCES SHOULD NOT BE SCALED FROM THIS DRAWING.
- ALL SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SEWERS FOR ADOPTION 7TH EDITION AND UNITED UTILITIES DETAILS & GUIDELINES.
- THE MINIMUM GRAVITY PIPE DIAMETER UNDER ADOPTABLE HIGHWAYS SHALL BE 150mm.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL INFORMATION GIVEN WITH REGARDS TO EXISTING SERVICES AND DRAINAGE CONNECTIONS ETC. PRIOR TO COMMENCING THE WORKS. THE RATES SHALL INCLUDE FOR HAND DIG AROUND SERVICES WHERE NECESSARY. THE CONTRACTOR SHALL ADHERE TO THE CDM REGULATIONS AT ALL TIMES.
- THE OUTSIDES OF ALL SEWERS SHALL BE A MINIMUM OF 1.0m FROM KERB LINES AND THE OUTSIDE OF MANHOLES SHALL BE A MINIMUM OF 0.5m FROM KERB LINES.
- EXISTING FLOWS IN WATERCOURSES, SEWERS AND LAND DRAINS SHALL BE MAINTAINED AT ALL TIMES.
- ONLY TRAINED PERSONNEL SHALL BE PERMITTED TO ENTER CONFINED SPACES.
- ALL MATERIALS TO BEAR THE RELEVANT B.S. KITEMARK AND COMPLY FULLY WITH THE SPECIFICATIONS. ALL CONCRETE & CONCRETE PRODUCTS MUST USE SULPHATE RESISTANT CEMENT (UNLESS THE SITE INVESTIGATION REPORT PROVES THAT SULPHATE ATTACK FROM SOILS AND GROUNDWATER WILL NOT OCCUR TO WITHSTAND A CLASS.
- ALL OPENING NOTICES ETC. AS REQUIRED UNDER HIGHWAYS ACTS ETC. ARE TO BE OBTAINED PRIOR TO COMMENCEMENT OF WORKS. ALL WORKS ARE TO BE INSPECTED BY L.A., NHBC OR THE NETWORK OPERATOR AS APPLICABLE.
- WHERE "ULTRA RIB" UPVC PIPES (OR SIMILAR APPROVED) ARE USED IN ADOPTABLE DRAINAGE THEY SHALL STILL BE HANDLED AND LAID IN ACCORDANCE WITH THE SPECIFICATION AND GUIDANCE ISSUED BY THE HIGH PERFORMANCE PIPE ASSOCIATION.
- A CLASS S BED AND SURROUND MUST BE USED FOR SUCH PIPES. TRENCH BACKFILL IN HIGHWAYS TO WITHIN 1M OF HIGHWAY SHALL, AS DIRECTED BY THE HIGHWAY AUTHORITY BE A SUITABLE GRANULAR MATERIAL ALL IN ACCORDANCE WITH SEWERS FOR ADOPTION CL. 4.3.4.
- SLAB LEVELS SHALL NOT BE VARIED WITHOUT REFERENCE TO THE ENGINEER FOR GUIDANCE.
- ALL GULLY CONNECTIONS TO BE 150mm VITRIFIED CLAY UNLESS NOTED OTHERWISE.
- ALL MANHOLE COVERS TO BE RECESSED TO ACCEPT FINISH AS DETAILED BY LANDSCAPE ARCHITECT.
- SLOW REST BENDS TO BE USED IN ALL LOCATIONS MADE UP FROM 2No. 45 DEG BENDS (600mm TO INVERT FROM FFL).
- MANHOLE POSITIONS AND ACCESS COVERS TO BE ACCURATELY SET-OUT BY LANDSCAPE ARCHITECT TO SUIT EXTERNAL FINISHES.
- ALL DRAINS CAST THROUGH FOUNDATIONS TO HAVE ROCKER PIPES ON BOTH SIDES OF FOUNDATION.
- ALL POP UP POSITIONS TO BE CONFIRMED SET OUT DIMENSIONS TO BE AGREED & PROVIDED BY OTHERS.
- ALL DISCHARGE RATES TO BE CONFIRMED BY M&E DESIGNER.
- ALL SURFACE WATER COLLECTION FEATURES TO BE CONFIRMED BY THE LANDSCAPE ARCHITECT.
- STORAGE HAS BEEN PROVIDED IN A CELLULAR STORAGE TANK AND UP-SIZED MANHOLES AND PIPES.
- EXISTING SEWER DEPTHS HAVE BEEN APPROXIMATED FROM LIMITED INFORMATION. NEW CONNECTIONS TO BE CONFIRMED PRIOR TO CONSTRUCTION OF ANY DRAINAGE WORKS.
- LANDSCAPE ARCHITECT TO CONFIRM GULLY AND DRAINAGE CHANNEL LOCATIONS TO LANDSCAPED AREAS.
- FOUL NETWORK TO BE CONFIRMED FOLLOWING CONFIRMATION OF BRANCH CONNECTION POINTS FROM BUILDING M&E DESIGNER.
- CCTV SURVEY OF EXISTING SITE DRAINAGE REQUIRED PRIOR TO THE COMMENCEMENT OF ANY WORKS STARTING ON SITE.



C14	20.11.2024	ISSUED FOR CONSTRUCTION INTENT	JJR	JJR	AS
C13	21.10.2024	ADDITIONAL ACO REROUTED	JJR	JJR	AS
C12	09.10.2024	ADDITIONAL ACO CHANNEL ADDED	JJR	JJR	AS
C11	12.07.2024	ACO NEAR RETAINING WALL RELOCATED	JJR	AS	AS
C10	22.05.2024	FOUL DIVERSION REMOVED	JJR	AS	AS
C09	26.01.2024	ACOS ADJUSTED TO SUIT NEW EXTERNAL FALLS	JJR	AS	PB
C08	12.12.2023	ACOS ADJUSTED TO SUIT TRENCH LOCATIONS	JJR	AS	PB
C07	01.12.2023	SW03 RELOCATED TO AVOID PROPOSED SERVICES	JJR	JJR	PB
C06	24.10.2023	UPDATED TO SUIT LATEST COVER SPEC	JJR	PB	PB
C05	18.09.2023	SERVICE TRENCH GULLIES RELOCATED AND FLUE TOWER ADDED	JJR	AS	PB
C04	18.07.2023	UPDATED TO SUIT LATEST LAYOUT INCLUDING CHILLER	JJR	JRS	PB
C03	12.07.2023	GAS STORE ROOM RWP ADDED	JJR	JRS	PB
C02	04.04.2023	UPDATED TO SUIT FOUNDATION ARRANGEMENT	JJR	JRS	PB
C01	17.03.2023	ISSUED FOR CONSTRUCTION	KB	AS	PB
P05	30.01.2023	DRAINAGE DIVERSION UPDATED TO PICK UP ADDITIONAL POP UPS	JJR	AS	PB
P04	22.12.2022	UPDATED TO SUIT SITE COMMENTS	JJR	JRS	PB
P03	17.11.2022	EXISTING FOUL DRAINAGE ADDED	JJR	JRS	PB
P02	16.09.2022	STAGE 4 FOR APPROVAL	JRS	PB	PB
P01	06.05.2022	STAGE 4 ISSUE	JRS	PB	PB
REV	DATE	DESCRIPTION	BY	CHK	APP

DRAWING STATUS:

CONSTRUCTION INTENT

CLIENT: MANCHESTER UNIVERSITY NHS FOUNDATION TRUST

ARCHITECT: DAY ARCHITECTURAL LTD

PROJECT: PROJECT RED
ELECTRICAL INFRASTRUCTURE

TITLE: BELOW GROUND DRAINAGE
DRAINAGE STRATEGY

STATUS:	PROJECT No:	PROJECT	ORIGINATOR	VOL/SYS/LEVEL	TYPE	ROLE	DRAWING No.	REV:
S2	220-096	RED - AJP - 02 - 00 - DR - C - 000901	C14					

SCALE @ A1: 1:100

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	DATE:
JRS	JRS	PB	PB	MAY 2022

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