NOTE

- THIS DRAWING HAS BEEN PRODUCED FOR THE PURPOSE OF BLOCKS 1, 2, 3, 4, 5, 6, 7, 8, 9 & 11 STAGE 5 PROPOSED DRAINAGE DESIGN.
- PROPOSED LINEAR DRAINS LOCATIONS ARE SUBJECT TO CHANGE UPON CONFIRMATION OF FINAL EXTERNAL LEVELS DESIGN.

SHEET 1

SHEET 2

SHEET LAYOUT
(SCALE 1:2000)

DRAINAGE LAYOUT
(SCALE 1:250)

PROPOSED CONNECTION TO EXISTING COMBINED WATER DRAINAGE. FLOW RATE AND CONNECTION SUBJECT TO AGREEMENT WITH UNITED UTILITIES.

SURVEY OF EXISTING CONNECTION TO SEWER TO BE CARRIED OUT TO FINALISE CONNECTION DETAILS.

ABOVE GROUND DRAINAGE CONNECTION FLOW TBC BY THE M&E ENGINEER.

ABOVE GROUND DRAINAGE CONNECTION FLOW TBC BY THE M&E ENGINEER

ABOVE GROUND DRAINAGE CONNECTION FLOW TBC BY THE M&E ENGINEER.

ABOVE GROUND DRAINAGE CONNECTION FLOW TBC BY THE M&E ENGINEER

ABOVE GROUND DRAINAGE CONNECTION FLOW TBC BY THE M&E ENGINEER

ABOVE GROUND DRAINAGE CONNECTION FLOW TBC BY THE M&E ENGINEER

DRY BASIN 1 TO PROVIDE APPROXIMATELY 30m³ ATTENUATION
CL 43.16
IL 42.66
SIDE SLOPE 1in4

EXISTING DRAINAGE PIPE TO BE RELINED.

PROPOSED CONNECTION TO EXISTING COMBINED WATER DRAINAGE. FLOW RATE AND CONNECTION SUBJECT TO AGREEMENT WITH UNITED UTILITIES AND MANCHESTER CITY COUNCIL.

EXISTING CHAMBER ACCESS STEPS TO BE REPLACED.

EXISTING CHAMBER ACCESS STEPS TO BE REPLACED.

EXISTING CHAMBER ACCESS STEPS TO BE REPLACED.

PROPOSED LINEAR DRAIN AROUND ACCESS HATCH

PROPOSED LINEAR DRAIN AROUND ACCESS HATCH
FOR SPRINKLER TANK
FLOW RATE: 6.7 l/s
DESIGN HEAD: 1.6m
UNIT REF: SHE-0112-6700-1600-6700

TEMPORARY PHASE 1 CONNECTION TO EXISTING COMBINED WATER SYSTEM. FLOW RATE AND CONNECTION SUBJECT TO AGREEMENT WITH UNITED UTILITIES AND MANCHESTER CITY COUNCIL

TANK 1

GEOCELLULAR ATTENUATION TANK
ATTENUATION VOLUME = 334.43m³
BASED ON A 96% POROSITY.

TANK 2

GEOCELLULAR ATTENUATION TANK
ATTENUATION VOLUME = 60.94m³
BASED ON A 96% POROSITY.

TANK 3

DRY BASIN 2 TO PROVIDE APPROXIMATELY 73.1m³ ATTENUATION
CL 43.50
IL 43.00
SIDE SLOPE 1in4

GEOCELLULAR ATTENUATION TANK
ATTENUATION VOLUME = 365.40m³
BASED ON A 96% POROSITY.

INSPECTION CHAMBER ADDED TO SUIT TANK LAYOUT AMENDMENTS DUE TO TREE PROTECTION.

THIS SECTION OF POROUS PAVING IS ASSUMED TO ATTENUATE A MINIMUM OF 195.88m² OF SURFACE WATER.
ANY REDUCTION IN THIS ATTENUATION VOLUME WILL LEAD TO AN INCREASE IN BASIN OR TANK SIZE.

EXISTING GAS ASSUMED ROUTE

NOTE:
EXISTING GAS AND WATER MAIN ARE SHOWN INDICATIVELY DUE TO VARIATION IN OTHER CONDUCTED SURVEYS SHOWING CONFLICTING INFORMATION.

KEY

- EXISTING COMBINED WATER SEWER
- EXISTING COMBINED WATER DRAIN
- PROPOSED SURFACE WATER DRAIN
- PROPOSED FOUL WATER DRAIN
- PROPOSED SUMP MANHOLE
- PROPOSED FLOW CONTROL
- PROPOSED POLYPROPYLENE INSPECTION CHAMBER
- PROPOSED POROUS PAVING
- PROPOSED GEOCELLULAR ATTENUATION TANK
- PROPOSED LANDSCAPED ATTENUATION DRY BASIN
- PROPOSED BACKDROP
- PROPOSED PITCHED STONE HEADWALL
- PROPOSED ALTON HEADWALL
- PROPOSED GULLY
- PROPOSED RAINWATER PIPE
- PROPOSED FOUL CONNECTION TO DRAIN
- PROPOSED LINEAR DRAIN (* ALL LINEAR DRAINS TO BE ACO M100D, REFER TO DRAWING FOR SPECIFIC ACO DRAIN SIZE)
- PROPOSED FILTER DRAIN
- PROPOSED FIN DRAIN
- ABANDONED DRAINAGE
- EXISTING GULLY
- DRAINAGE DESIGN IN ABEYANCE
- THE LIMES EXISTING GAS TAKEN FROM BURO HAPPOLD ENGINEERING DRAWING NO. 00_00_(50)_Z0_M_805_2
- THE LIMES EXISTING WATER MAIN TAKEN FROM BURO HAPPOLD ENGINEERING DRAWING NO. 00_00_(50)_Z0_M_806_2

NOTES

1. TO BE READ IN CONJUNCTION WITH ALL RELEVANT KENNEDY REDFORD DRAWINGS AND SPECIFICATIONS.
2. TO BE READ IN CONJUNCTION WITH EXTERNAL ARCHITECTURAL, MEP, AND LANDSCAPE DESIGN DRAWINGS.
3. ALL DIMENSIONS ARE IN m UNLESS STATED OTHERWISE.
4. ANY DISCREPANCIES IN THE DESIGN INFORMATION OR CONDITIONS FOUND ON SITE SHOULD BE RAISED TO THE ENGINEER IMMEDIATELY.
5. REFER TO THE MANUFACTURER'S INSTALLATION GUIDANCE FOR ALL SPECIFIED PRODUCTS.
6. SHOULD THIS DRAWING BE NEEDED FOR COSTING YOU MUST CONTACT KENNEDY REDFORD IN THE FIRST INSTANCE TO DISCUSS UNKNOWNS AND ASSUMPTIONS MADE AT THIS STAGE.
7. THIS DRAWING IS BASED ON THE LANDSCAPE ARCHITECT'S PROPOSED LANDSCAPE GA, DRAWING NO. UMRF-LAP-XX-00-DR-L00002, REV P11.
8. ALL EXISTING SERVICES TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY DRAINAGE WORKS WHERE NECESSARY PROTECTION OR DIVERSIONS TO BE UNDERTAKEN TO AVOID CONFLICT WITH THE PROPOSED WORKS.
9. THE ENTIRE PROPOSED DRAINAGE SYSTEM AND ANY PART OF THE EXISTING DRAINAGE SYSTEM TO BE RETAINED AS PART OF THE NEW SCHEME SHALL BE CLEANED AND INSPECTED. ANY STRUCTURAL DEFECTS SHALL BE REPAIRED USING APPROPRIATE AND APPROVED MEANS.CONTRACTOR TO ARRANGE ALL SEWERS AND DRAINS TO BE FLUSHED OUT BEFORE FINAL CCTV SURVEY IS CARRIED OUT ON COMPLETION OF WORKS.
10. NO CONNECTION TO BE MADE TO THE PUBLIC SEWER UNTIL APPROVAL HAS BEEN RECEIVED FROM THE UNITED UTILITIES AND MANCHESTER CITY COUNCIL.
11. EXISTING SEWER AND DRAINAGE LOCATIONS, LEVELS AND DIMENSIONS TO BE CONFIRMED BY CONTRACTOR ON SITE, PRIOR TO WORK COMMENCING. DRAINAGE LAYOUT AND LEVELS SUBJECT TO CHANGE UNTIL EXISTING SEWERS/DRAINAGE HAVE BEEN SURVEYED.
12. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
13. ANY EXISTING DRAINAGE WHICH BECOMES UNDER TRAFFICKED AREAS IN THE NEW SCHEME SHOULD BE SUBJECT TO THE FOLLOWING REMEDIAL MEASURES WHERE DEPTH OF COVER IS LESS THAN 1200mm, THE EXISTING PIPEWORK SHALL BE EXPOSED & SURROUNDED WITH 150mm CONCRETE SURROUND, WHERE THE EXISTING MANHOLE COVER & FRAME IS NOT AS MANHOLE DETAIL A OR B, OR TO BS497 GRADE A, OR EN124 CLASS D, THEN IT SHOULD BE CHANGED FOR SUCH.
14. EXISTING CHAMBERS BEING CONNECTED INTO SHALL BE INSPECTED BY CONTRACTOR. CHAMBER BENCHING/ACCESS TO BE MODIFIED TO PROVIDE SAFE ACCESS. NEW CHAMBER WILL BE REQUIRED IF THERE IS INSUFFICIENT ROOM FOR NEW CONNECTION.
15. PRIVATE DRAINS TO BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS PART H, BS EN 16933 AND BS EN 752.
16. ALL MANHOLE LEVELS ARE APPROXIMATE ONLY AND MAY NEED TO BE ADJUSTED TO TIE IN TO SURROUNDING LEVELS.
17. ROCKER PIPES ARE REQUIRED AT ALL CONNECTIONS WITH STRUCTURES.
18. ALL MANHOLE AND PIPE POSITIONS ARE APPROXIMATE.
19. ALL MANHOLE SIZES ARE 1200Ø UNLESS INDICATED OTHERWISE.
20. ALL INSPECTION CHAMBER SIZES ARE 450Ø UNLESS INDICATED OTHERWISE.
21. ALL PPICS MORE THAN 1.2m DEEP TO BE FITTED WITH A REDUCER RING.
22. ALL PIPES TO BE LAID SOFFIT TO SOFFIT UNLESS INDICATED OTHERWISE.
23. PROPOSED PIPEWORK WITH LESS THAN THE FOLLOWING DEPTHS TO SOFFIT REQUIRES A CONCRETE SURROUND:
    - -1.2m IN ROADS AND OTHER TRAFFICKED AREAS
    - -0.9m UNDER LIGHTLY TRAFFICKED FOOTPATHS
    - -0.6m IN LANDSCAPE AREAS
24. RECYCLED MATERIAL MAY BE USED AS REPLACEMENT BACKFILL MATERIAL WITHIN PIPE TRENCHES PROVIDED IT IS SUITABLY SCREENED, GRADED AND CRUSHED, TO SHW SERIES 600.
25. PIPE TRENCHES TO HAVE SELECTED BACKFILL AS DUG MATERIAL FREE FROM VEGETABLE MATTER, RUBBISH, FROZEN SOIL & MATERIAL RETAINED ON 40mm SIEVE. TO BE COMPACTED IN 100mm LAYERS BY HAND.
26. WHERE PROPOSED DRAINS ARE WITHIN THE LOADING ZONE OF INFLUENCE OF PROPOSED FOUNDATIONS, THE FOUNDATIONS SHALL BE TAKEN DEEPER TO BELOW THE DRAINS OR THE DRAIN SHOULD BE PROTECTED WITH A FULL CONCRETE SURROUND.
27. ALL BENDS IN PIPEWORK SHALL BE LONG RADIUS AND BEDDED IN CONCRETE.
28. SETTING OUT OF RAINWATER PIPES, WASTEWATER CONNECTIONS AND POPUP POSITIONS OF ABOVE GROUND DRAINAGE BY OTHERS.
29. ALL UNDERSLAB FOUL PIPES TO BE 100mmØ LAID AT 1:40 GRADIENT OR STEEPER U.N.O.
30. AT LEAST ONE SOIL PIPE AT THE HEAD OF EACH FOUL RUN SHALL VENT TO THE ATMOSPHERE.
31. REFER TO THE MAINTENANCE SCHEDULE FOR THE ONGOING MAINTENANCE REQUIREMENTS AND FREQUENCY ON THE DRAINAGE SYSTEM.
32. SURFACE WATER ATTENUATION PROVIDED WITHIN POROUS PAVING CONSTRUCTION. IN THE EVENT POROUS PAVING IS REMOVED, ALTERNATIVE ATTENUATION MUST BE PROVIDED.
33. ALL PROPOSED TREES TO HAVE APPROPRIATE TREE BARRIERS TO ENSURE ROOTS ARE DIRECTED AWAY FROM DRAINAGE.
34. A SEWER OR LATERAL DRAIN SHOULD NOT BE LOCATED CLOSER TO TREES/BUSHES/SHRUBS THAN THE CANOPY WIDTH AT MATURE HEIGHT, EXCEPT WHERE SPECIAL PROTECTION MEASURES ARE PROVIDED. A TREE SHOULD NOT BE PLANTED DIRECTLY OVER SEWERS OR WHERE EXCAVATION ONTO THE SEWER WOULD REQUIRE REMOVAL OF THE TREE.
35. MANHOLE COVERS AND FRAMES SHALL BE TO BS EN 124 AND SHALL BE KITEMARKED. COVERS AND FRAMES SHALL BE HEAVY DUTY D400 IN CARRIAGEWAYS AND VEHICULAR AREAS AND MEDIUM DUTY B125 IN FOOTWAYS AND SOFT LANDSCAPING. IN BLOCKED/CONCRETE PAVED AREAS COVERS SHALL BE RECESSED FABRICATED STEEL. ALL RECESSED COVERS SHALL IN ACCORDANCE WITH THE FACTA ASSOCIATION GRADINGS.
36. MANHOLE COVERS IN PAVED AREAS TO HAVE COVER & FRAME ORIENTATED 'SQUARE' WITH PAVING TO MINIMISE CUT SLABS OR BLOCKS.
37. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124, HAVE MINIMUM 600 X 600 CLEAR OPENINGS OR LARGER AS SPECIFIED IN APPROVED DOCUMENT PART H OR SEWERAGE SECTOR GUIDANCE.
38. PIPE CONNECTIONS NOT TO INSPECTION CHAMBERS SHALL BE VIA PREFORMED OBLIQUE JUNCTIONS SWEPT IN THE DIRECTION OF FLOW.
39. ALL FOUL WATER COVERS TO BE SEALED.
40. LINEAR DRAIN AND GULLY LOCATIONS ARE SHOWN INDICATIVELY.
41. ALL CHANNEL DRAINAGE TO HAVE SILT BUCKETS ON OUTLETS.
42. * ALL LINEAR DRAINS TO BE ACO M100D, REFER TO DRAWING FOR SPECIFIC ACO DRAIN SIZE.
43. ALL ROAD GULLIES ARE TO BE TRAPPED AND RODDABLE.
44. ALL GULLY LEADS TO BE 150mm DIAMETER.
45. 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 REGULARLY CARRYING FAST MOVING HEAVY VEHICLES. CLASS C250 TO BE USED IN LESSER TRAFFICKED AREAS EG. ESTATE ROADS, CUL-DE-SACS, RESIDENTIAL CAR PARKING AREAS ETC.
46. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.
47. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
48. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY WORKS AND CONSTRUCTION PROCEDURES.
49. CONTRACTOR TO INCLUDE FLEXIBLE JOINTS & LINTELS WHERE DRAINAGE IS CROSSING FOUNDATIONS.

REV	DATE	DESCRIPTION	DRN	CHK	APP
C16	29.04.26	SW604 CHAMBER DIAMETER CHANGED TO 600DIA.	N.R	J.H	P.V
C15	09.04.26	TANK 2 LOCATION MOVED TO AVOID TREE PROTECTION	N.R	J.H	J.H
C14	31.03.26	SW305 MOVED TO AVOID UTILITIES CLASHES	N.R	J.H	P.V
C13	24.03.26	TANKS 1, 2 & 3 LAYOUTS UPDATED, SW012a ADDED & CANOPIES RWP ADDED TO BLOCKS 1, 2 & 6	N.R	J.H	P.V
C12	19.03.26	BLOCKS 3 & 5 CANOPIES RWP ADDED & DRAINAGE UPDATED TO AVOID UTILITIES CLASHES	N.R	J.H	P.V
C11	13.03.26	BLOCKS 4 & 8 DRAINAGE & TANK 3 LAYOUT UPDATED	N.R	J.H	P.V
C10	10.03.26	BLOCK 10 DRAINAGE UPDATED	N.R	J.H	P.V
C09	02.03.26	BLOCKS 1&2 POP-UPS UPDATED	N.R	J.H	P.V
C08	26.02.26	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V
C07	20.02.26	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V
C06	23.01.26	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V
C05	16.01.26	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V
C04	18.12.25	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V
C03	05.12.25	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V
C02	21.11.25	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V
C01	07.11.25	BLOCKS 1 & 2 CONSTRUCTION ISSUE	N.R	J.H	P.V
P09	31.10.25	DRAINAGE LAYOUT UPDATED	N.R	J.H	P.V

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Kennedy Redford MANAGING VISION

CLIENT

GRAHAM

PROJECT NAME
UoM RESIDENCES DBFO

DRAWING TITLE
PROPOSED DRAINAGE LAYOUT SHEET 1 OF 2

DATE	SCALE	SHEET SIZE	REV
08.03.24	1:250	A0	C16

DRAWING STATUS
FOR CONSTRUCTION

DRAWING NUMBER
UMRF - KRD - XX - XX - DR - C - 00501