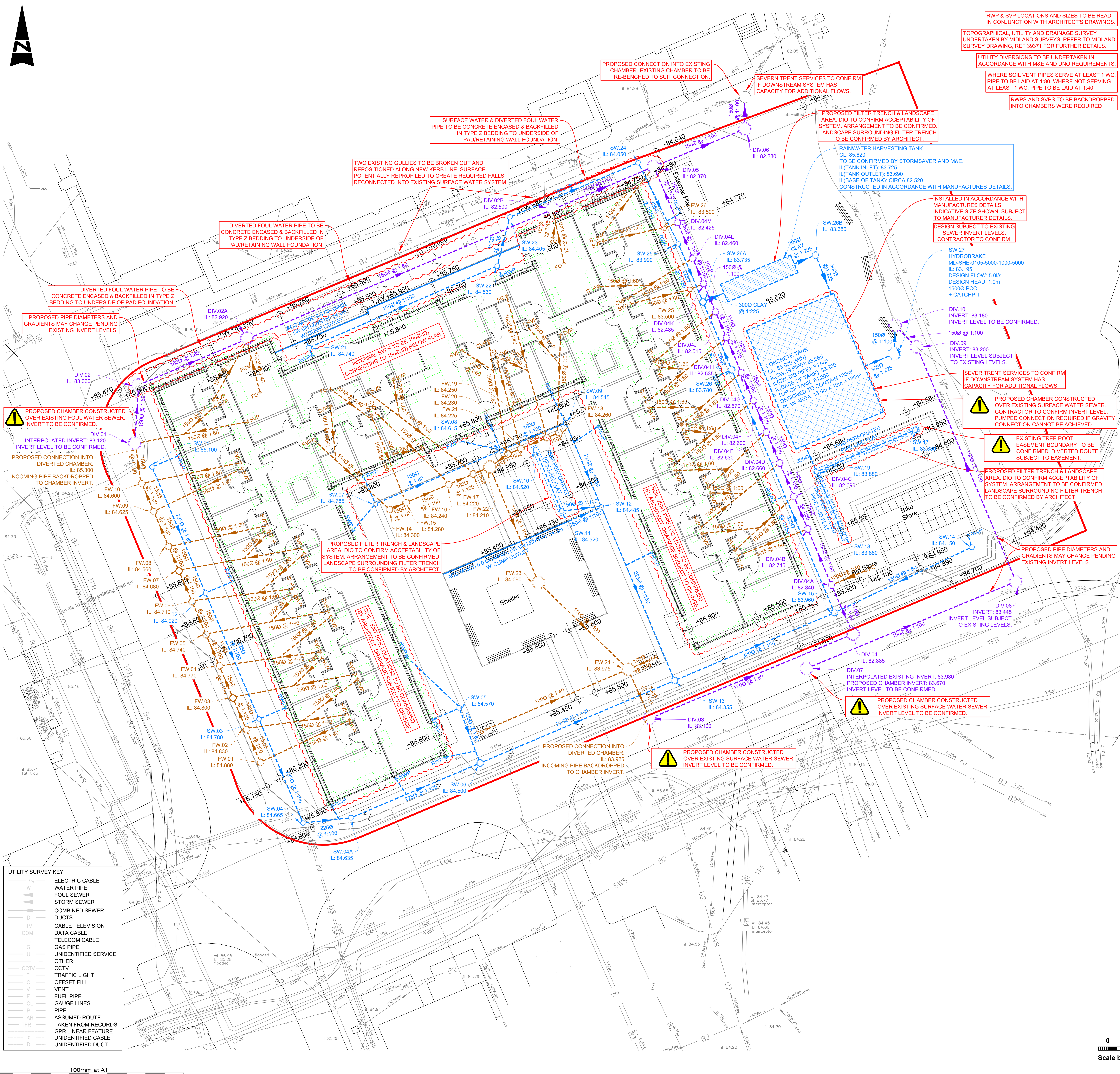

HEALTH & SAFETY RISKS

IN ADDITION TO THE STANDARD HAZARDS AND RISKS NORMALLY ASSOCIATED WITH THE TYPE OF WORK DETAILED ON THIS DRAWING, PLEASE NOTE THE FOLLOWING RESIDUAL HEALTH AND SAFETY RISKS

CONSTRUCTION RISKS

CR 01	BURIED SERVICES - BURIED SERVICES - DAMAGE MAY RESULT IN ELECTROCUTION, GAS LEAK, EXPLOSION, WATER LEAK. OBTAIN ACCURATE LOCATIONS OF UNDERGROUND SERVICES PRIOR TO EXCAVATION.
CR 02	UNKNOWN SERVICES - UNMAPPED CABLES SHOULD BE TREATED AS 'LIVE' UNTIL TESTS AND PROVEN OTHERWISE.
CR 03	UXO - REFER TO RISK ASSESSMENT IN GROUND INVESTIGATION. WORK TO HALT PENDING SPECIALIST REMOVAL.
CR 04	DEEP EXCAVATIONS - RISK OF TRENCH COLLAPSE. LIMIT DEPTH OF EXCAVATIONS WHERE PRACTICAL.
CR 05	UNTREATED/POLLUTED WATER CAN CAUSE ILL HEALTH THROGUH WATERBORNE DISEASES. STAFF WORKING ON OR NEAR SEWERS MUST BE AWARE OF RISK.
CR 06	GROUND AND GROUNDWATER CONDITIONS. RISK OF CONTAMINATION. CONSTRUCTION RUNOFF TO BE MANAGED IN ACCORDANCE WITH CONTRACTOR PLAN.
CR 06	REDUCED DIG TO EXISTING SERVICES - SERVICES SHOULD BE SUFFICIENT COVER IN ACCORDANCE WITH M&E AND DNO REQUIREMENTS.

OPERATION & MAINTENANCE RISKS

MR 01	DRAINAGE TO BE MAINTAINED IN ACCORDANCE WITH ALAN WOOD MAINTENANCE PLAN AND MANUFACTURER MAINTENANCE REQUIREMENTS.

IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING IN ACCORDANCE WITH THE REQUIREMENTS DEFINED IN THE CDM REGULATIONS.

DRAINAGE NOTES:

1. DRAINAGE SYSTEMS TO COMPLY WITH THE FOLLOWING STANDARDS:
   - BS EN 752:2008
   - BUILDING REGULATIONS APPROVED DOCUMENT PART H, 2015 EDITION
   - NHBC STANDARDS CHAPTER 5.3, 2017 EDITION
   - NHBC STANDARDS PLUS, 2017
2. ALL COMPONENTS USED IN DRAINAGE SYSTEMS TO COMPLY WITH THE FOLLOWING: BS EN 476:2011
3. ALL DRAINAGE SYSTEMS AND COMPONENTS TO BE CONSTRUCTED AND TESTED TO THE FULL SATISFACTION OF BOTH BUILDING REGULATIONS AND WARRANTY PROVIDER INSPECTORS
4. ALL DRAINAGE TO BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH BS EN 1610:2015.
5. V.C. DENOTES VITRIFIED CLAY, VITRIFIED CLAY PIPES AND FITTINGS TO COMPLY WITH THE RELEVANT PROVISIONS OF BS EN295-1:2013,-2:2013,-3:2012 AND BS 65 RESPECTIVELY AND BE KITEMARKED. ALL PIPES SHALL BE EXTRA STRENGTH TO BS 65 OR EQUIVALENT BS EN295 PIPE CRUSHING STRENGTH.
6. LATERAL DRAIN CONNECTIONS (PIPES CONNECTING INTO ADOPTABLE SEWERS) TO BE VITRIFIED CLAY. WHERE COVER IS LESS THAN 1.2m TO GROUND LEVEL PIPE PROTECTION IS REQUIRED IN THE FORM OF A CONCRETE COVER SLAB.
7. PVC-U DENOTES UNPLASTISED POLYVINYL CHLORIDE . PVC-U PIPES AND FITTINGS TO COMPLY WITH THE RELEVANT PROVISIONS OF BS EN1401, BS EN13476-2 AND BS4660:1989/2000 RESPECTIVELY AND BE KITEMARKED.
8. PRECAST CONCRETE MANHOLES TO BE IN ACCORDANCE WITH BS EN 1917:2002 AND BS 5911-3:2010,-4:2002 AND TO BE KITEMARKED. PRECAST CONCRETE RINGS AND COVER SLABS TO CONCRETE PIPES TO BE JOINTED WITH CEMENT MORTAR UNLESS NOTED OTHERWISE.
9. INSITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND CEMENT TO BS EN 197-1:2011.
10. POLYPROPYLENE INSPECTION CHAMBERS TO COMPLY WITH BS EN 13598-1:2010,-2:2016 AND BS 7158:2001 AND TO BE KITEMARKED.
11. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015. MANHOLE COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN WITH CUSHION INSERTS AND KITEMARKED. LOAD CLASS A15 COVERS TO BE USED IN AREAS INACCESSIBLE TO VEHICLES; LOAD CLASS B125 COVERS TO BE USED IN FOOTWAYS; LOAD CLASS D400 COVERS TO BE USED IN PRIVATE ROADS. ALL COVERS TO BE BADGED "FW" OR "SW" AS APPROPRIATE. MANHOLE COVER SLABS AND ACCESS TO BE IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION TECHNICAL BULLETIN ISSUED SEPTEMBER 2001.
12. POLYPROPYLENE INSPECTION CHAMBER COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015. COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN WITH CUSHION INSERTS AND KITEMARKED. LOAD CLASS A15 COVERS TO BE USED IN AREAS INACCESSIBLE TO VEHICLES; LOAD CLASS B125 COVERS TO BE USED IN FOOTWAYS; LOAD CLASS D400 COVERS TO BE USED IN PRIVATE ROADS.
13. ROAD GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015 AND BE OF A NON-ROCKING DESIGN WITH LEFT HANDED CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 GRATES TO BE USED IN PRIVATE ROADS. TYPE D400:450 GRATE AND FRAME. MINIMUM AREA OF WATERWAY TO BE 1010cm².
14. DRAINAGE CHANNELS TO BE ACO M100D 0.0 MULTIDRAIN CHANNEL (O.S.A) FITTED WITH SLOTTED DUCTILE IRON GRATING. GRATES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124-1 TO 6:2015 AND BE KITEMARKED. LOAD CLASS A15 GRATES TO BE USED IN AREAS INACCESSIBLE TO VEHICLES; LOAD CLASS B125 GRATES TO BE USED IN FOOTWAYS; LOAD CLASS D400 GRATES TO BE USED IN PRIVATE ROADS. SUMP UNIT AND SILT BUCKET UNITS TO BE USED ON ALL GULLIES.
15. CLASS Z BEDDING DETAIL SHALL BE PROVIDED:
   - WHERE COVER TO PIPE BARREL IS;
     i) <1.2m IN VEHICULAR TRAFFICKED AREAS
     ii) <0.9m IN AREAS INACCESSIBLE TO VEHICLES.
   - AT ALL ROAD GULLY, RWP, SVP AND DRAINAGE CHANNEL BRANCHES.
   - AREAS OF DEEP ROOTING VEGETATION.
   - WHERE TWO PIPES CROSS WITH A CLEAR GAP OF <300mm. CLASS Z SURROUND TO EXTEND A MINIMUM OF 1.0m FROM THE CENTRE OF THE CROSSING POINT & EXTENDED TO WITHIN 150mm OF THE NEAREST FLEXIBLE JOINT, WHERE REQUIRED.
16. CLASS 'Y' BEDDING DETAIL TO BE PROVIDED TO ALL PIPEWORK BENEATH BUILDING FOOTPRINT WITH ROCKER PIPES PROVIDED AS CLOSE AS POSSIBLE TO BUILDING STRUCTURE WHERE PIPE EXITS
17. NO MECHANICAL COMPACTION OF FILL MATERIAL WITHIN 300mm OF THE CROWN OF ANY PIPE.

THE VERSIONS OF BRITISH STANDARDS AND OTHER PUBLICATIONS LISTED ABOVE ARE CURRENT AT THE TIME OF THE DRAWING ISSUE. HOWEVER IF THESE HAVE BEEN REVISED OR UPDATED THEN THE NEWER VERSIONS SHOULD BE USED. ANY DISCREPANCIES SHOULD BE NOTIFIED TO AWP IMMEDIATELY.

100% STAGE 4 SUBMISSION

0 2 4 6 8 10 12 14 16 18 20m

Scale bar 1:200.

NOTES:

1. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS. WHERE CONFLICT OF REQUIREMENTS EXIST THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATION. OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
3. DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THAT THE BUILDING AND ITS COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS WHICH MAY BE NECESSARY, SUCH MATERIAL REMAINING THE THE PROPERTY OF THE CONTRACTOR ON COMPLETION, AND FOR ENSURING THAT THE WORKS AND ANY ADJACENT PROPERTIES ARE SAFE IN THE TEMPORARY CONDITION.

JOB NO: 49046 DRAWING REFERENCE TABLE

THIS DRAWING TO BE READ IN CONJUNCTION WITH THE DRAWINGS LISTED BELOW

ALAN WOOD & PARTNERS	DRAWING REFERENCE
- DRAINAGE LAYOUT	- WTM-AWP-ZZ-XX-DR-C-3300
- MANHOLE SCHEDULE SHEET 1	- WTM-AWP-ZZ-XX-DR-C-3301
- MANHOLE SCHEDULE SHEET 2	- WTM-AWP-ZZ-XX-DR-C-3302
- DRAINAGE SECTIONS SHEET 1	- WTM-AWP-ZZ-XX-DR-C-3600
- DRAINAGE DETAILS	- WTM-AWP-ZZ-XX-DR-C-3601
- SITE HAZARD DRAWING	- WTM-AWP-ZZ-XX-DR-C-4001
- TOPOGRAPHICAL, SERVICES & DRAINAGE	- WTM-AWP-ZZ-XX-DR-C-4300
- ENABLING WORKS & DIVERSIONS	- WTM-AWP-ZZ-XX-DR-C-4301
- CUT & FILL	- WTM-AWP-ZZ-XX-DR-C-4302
- CONSTRUCTION SPECIFICATIONS & KERBING	- WTM-AWP-ZZ-XX-DR-C-4303
DRAWINGS BY OTHERS	DRAWING REFERENCE
- FLOOD RISK ASSESSMENT BY CUNDALL	- Z9A8403Y20-CDL-XX-XX-RP-C-010201
- TOPOGRAPHICAL/UTILITY/DRAINAGE SURVEY BY MIDLAND SURVEY LTD	- 39371

KEY

- DEVELOPMENT BOUNDARY
- PROPOSED AGGREGATE SURROUND
- PROPOSED CONCRETE TANK
- PROPOSED DIVERTED SERVICE
- PROPOSED DIVERTED POTABLE WATER
- PROPOSED SURFACE WATER SEWER
- PROPOSED SURFACE WATER CHAMBER
- PROPOSED SURFACE WATER CHANNEL DRAIN
- PROPOSED RAINWATER PIPE
- PROPOSED FOUL WATER SEWER
- PROPOSED FOUL WATER CHAMBER
- PROPOSED SOIL VENT PIPE
- PROPOSED FLOOR GULLY
- PROPOSED DIVERTED SEWER
- PROPOSED DIVERTED CHAMBER
- DENOTES EXTENTS OF FOUNDATIONS
- PROPOSED RAIN WATER HARVEST

ALL RWP & SVP TO BE ACCESSIBLE AND RODDABLE ABOVE GROUND/INTERNALLY.

Rev	Description	Date	By	Chk	App
P5	DIVERSION ROUTE UPDATED	14.02.24	TG	DC	JAG
P4	DRAINAGE AMENDMENTS	15.01.24	TG	DC	JAG
P3	RAIN WATER HARVEST ADDITION	11.01.24	TG	DC	JAG
P2	DIVERTED SEWER AMENDED	26.10.23	DC	DC	JAG
P1	FIRST ISSUE	22.09.23	DC	DC	JAG

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Project: PROPOSED BARRACKS AT WATTISHAM AIRFIELD, IPSWICH

Client: ESS MODULAR

Drawing: DRAINAGE LAYOUT

Role: CIVIL ENGINEER

Drawing Status: FOR APPROVAL | Suitability Code: S4

Job. no. 49046 | Scale@ A1: 1:200 | Rev. P5

Project	Originator	Volume	Level	Type	Role	Number
Z9A8403Y20	AWP	ZZ	XX	DR	C	00003300