

DRAINAGE MAINTENANCE

THE FOUL AND SURFACE WATER DRAINAGE INCLUDING THE ATTENUATION TANK AND FLOW CONTROL MANHOLE ARE ALL TO REMAIN PRIVATE THEREFORE THE RESPONSIBILITY FOR UPKEEP AND MAINTENANCE IS WITH THE LAND OWNER.

IT IS RECOMMENDED THAT THE FOUL AND SURFACE WATER DRAINAGE SHOULD BE VISUALLY INSPECTED ON AN ANNUAL BASIS TO ENSURE ANY POTENTIAL BLOCKAGES ARE REMOVED AND THAT IT IS JET CLEANED EVERY THREE YEARS TO ENSURE UPKEEP.

IN ACCORDANCE WITH THE SUDS MANUAL (C753) THE ATTENUATION TANK SHOULD HAVE ANNUAL INSPECTION AND LITTER REMOVAL, TO BE ABLE TO MANAGEMENT SEDIMENT WITHIN THE ATTENUATION TANK HAS A SILT TRAP UPSTREAM OF THE TANK IN MANHOLE S4 WHICH SHOULD BE VACUUM CLEARED ON AN ANNUAL BASIS.

Manhole Reference	Cover Level (m.A.O.D)	Invert Level (m.A.O.D)	Depth To Invert (m)	Depth To Soffit (m)	Pipe Size Dia (mm)	Manhole Dia (mm)	Manhole Type	Grade Of Cover
S1	124.040	122.690	1.350	1.200	150	600	PPIC	D400
S2	124.040	122.580	1.460	1.310	150	600	PPIC	D400
S3	124.040	122.540	1.500	1.350	150	600	PPIC	D400
S4	124.040	121.940	2.100	1.950	150	600	PPIC	B125
S5	124.040	122.690	1.350	2.130	1.5 X 0.5	600	PPIC	D400
S6	124.040	121.910	2.130	1.980	150	600	PPIC	D400
S7	123.900	121.900	2.000	1.850	150	2400	PCC	D400
C1	123.600	121.850	1.750	1.600	150	600	PPIC	D400
C2	123.500	121.800	1.700	1.550	150	600	PPIC	D400
F1	124.040	122.300	1.740	1.590	150	600	PPIC	D400
F2	124.040	122.050	1.990	1.840	150	600	PPIC	B125

DRAINAGE STRATEGY

SURFACE WATER

THE SITE IS A FORMER PETROL SERVICE STATION, THE AND THEREFORE WE HAVE CALCULATED THE BROWNFIELD RUNOFF FROM THE SITE.

THE EXISTING IMPERMEABLE AREA OF THE SITE IS 685m² (0.0685ha) WHICH PROVIDES AN EXISTING RUNOFF

$2.78 \times 0.0685 \times 50 = 9.5 \text{ l/s}$

THEREFORE THE PROPOSED DISCHARGE RATE SHOULD BE THE EXISTING MINUS 30%

$9.5 \times 0.7 = 6.7 \text{ l/s}$

THE SURFACE WATER DISCHARGE SHOULD BE IN ACCORDANCE WITH THE SUDS HIERARCHY, WHICH SHOULD CONSIDER SOAKAWAY > WATERCOURSE > PUBLIC SEWER

THIS SITE IS NOT CONSIDERED SUITABLE FOR SOAKAWAY DUE TO THE GROUND CONDITIONS, IT IS CONSIDERED POLLUTANTS COULD BE PRESENT DUE TO IT'S PREVIOUS USE. ALSO WITH ITS ELEVATED POSITION THERE ARE SLOPE STABILITY CONCERNS FROM WATER EGRESSING FROM THE BANKING.

THERE IS A WATERCOURSE LOCATED TO THE REAR OF THE SITE AT THE BOTTOM OF THE BANKING BUT AGAIN DUE TO ITS ELEVATED POSITION IT IS CONSIDERED NOT FEASIBLE TO BE ABLE TO DISCHARGE INTO THE WATERCOURSE, THEREFORE IT IS PROPOSED TO DISCHARGE INTO THE PUBLIC SEWER.

IT IS PROPOSED TO RESTRICT THE DISCHARGE RATE TO 6.7 l/s WITH ATTENUATION ON SITE FOR THE 1 in 100 YEAR + 40% CLIMATE CHANGE.

FOUL SEWER

IT IS PROPOSED TO DISCHARGE THE FOUL DRAINAGE FROM THE SITE TO THE EXISTING COMBINED SEWER IN THE PUBLIC HIGHWAY.

DRAINAGE SUBJECT TO LOCAL AUTHORITY APPROVAL

DRAINAGE SUBJECT TO YORKSHIRE WATER APPROVAL

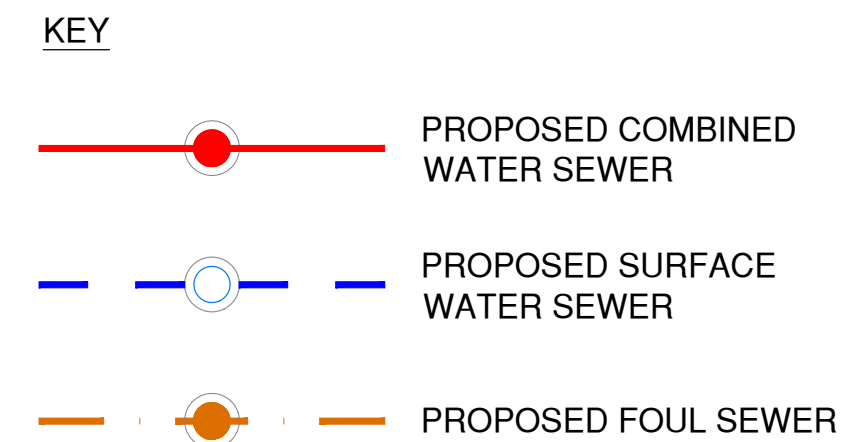
NEW MANHOLE ON EXISTING COMBINED SEWER

INVERT LEVEL OF EXISTING SEWER TO BE CONFIRMED

EXISTING DRAINAGE INFORMATION UNKNOWN, IT IS ASSUMED A GRAVITY CONNECTION CAN BE ACHIEVED AT THIS POINT.

FLOW CONTROL MANHOLE
HEAD=1.9m
FLOW=6.7 l/s

EXISTING DRAINAGE TO BE GRUBBED UP AND ABANDONED



GENERAL NOTES- DRAINAGE WORKS:

- THE DRAINAGE DRAWINGS SHOULD BE READ IN CONJUNCTION WITH DRAINAGE SPECIFICATIONS AND ALL OTHER STRUCTURAL AND ARCHITECTURAL DRAWINGS.
- DO NOT SCALE FROM THIS DRAWING.
- EMPACE CONSULTING STRUCTURES ARE RESPONSIBLE FOR THE DRAINAGE INFRASTRUCTURE INDICATED AS NEW ON THIS DRAWING, OR EXISTING THAT HAS BEEN FULLY SURVEYED BY CCTV. WE DO NOT ACCEPT LIABILITY FOR UNSURVEYED DRAINAGE OR DRAINAGE OUTSIDE THE IMMEDIATE SCOPE OF THIS PROJECT, AND WE RECOMMEND THAT SEPARATE INVESTIGATIONS ARE MADE AS TO THE SUITABILITY OF THE SYSTEM AS A WHOLE
- ALL PROPOSED DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH PART H OF THE BUILDING REGULATIONS.
- ALL EXISTING DRAINAGE TO BE RE-USED TO BE CLEANED AND RE-CCTV SURVEYED PRIOR TO COMMENCEMENT OF WORKS ON SITE. ANY DEFECTIVE LENGTHS TO BE RE-LAID.
- ALL PROPOSED MANHOLE COVER AND INVERT LEVELS TO BE ADVISED ON CONFIRMATION OF PROPOSED FFL AND EXTERNAL LEVELS.
- ALL DRAINAGE RUNS SUBJECT TO REVIEW UPON CONFIRMATION OF THE LOCATION OF ALL SVPS, FOUL OUTLETS AND RWP's BY ARCHITECT.
- ALL CONNECTIONS IN TO THE SYSTEM MAY BE SUBJECT TO APPROVAL BY THE RIVER AUTHORITY
- ALL EXISTING DRAINAGE TO BE ABANDONED TO BE REMOVED OR GROUTED UP.
- KITCHENS OF A NON-DOMESTIC NATURE TO BE FITTED WITH INTERNAL BIOLOGICAL GREASE TRAP.
- ALL CONCRETE AND CONCRETE PRODUCTS BELOW GROUND LEVEL SHALL BE CLASSES BS-1 AND AC-1 SULPHATE RESISTANT IN ACCORDANCE WITH BRE SPECIAL DIGEST 1.
- THE SETTING OUT OF THE DRAINAGE WORKS IS TO BE AGREED BETWEEN THE ENGINEER/ARCHITECT AND CONTRACTOR AT DETAILED DESIGN STAGE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE DRAINAGE WORKS AND EXISTING SEWER FOR THE DURATION OF THE CONTRACT.
- ALL PIPE SIZES STATED ARE NOMINAL INTERNAL DIAMETERS IN MILLIMETERS.
- ALL SOFT SPOTS AND VOIDS SHALL BE REMOVED PRIOR TO CONSTRUCTION AND REPLACED WITH SUITABLE FILL MATERIAL AS AGREED WITH THE ENGINEER.
- APPROVED RESIDUAL WEED KILLER (WHICH DOES NOT INCLUDE ATRAZINE OR SIMAZINE) MUST BE APPLIED TO ALL FOUNDATIONS.
- PRIVATE FOUL WATER AND SURFACE WATER DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING REGULATIONS, BS EN 752 AND RELEVANT AGREEMENT CERTIFICATES.
- DRAINS TO BE CONSTRUCTED USING FLEXIBLY JOINTED VITRIFIED CLAY PIPES TO BS 65 "SUPER STRENGTH" SPECIFICATION BEDDED AND BACKFILLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. ROCKER DETAILS TO BE USED WHENEVER GOING THROUGH STRUCTURE.
- BACKFILLING OF DRAIN TRENCHES ADJACENT TO DWELLINGS OF OTHER STRUCTURES TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS PART H: DIAGRAM 8.
- ALL SOIL VENT PIPE, STUB STACKS, AIR ADMITTANCE VALVES AND RAIN WATER PIPE LOCATIONS ARE INDICATIVE ONLY. ACTUAL LOCATIONS TO BE DETERMINED AND CONFIRMED BY ARCHITECT AT DETAILED DESIGN STAGE.
- DRAINS IN AREAS OF MADE GROUND TO BE CONSTRUCTED BY FIRST MAKING UP THE AREA TO APPROXIMATELY FINISHED LEVEL AND THEN EXCAVATE THROUGH THE FILL MATERIAL INTO UNDISTURBED GROUND. THE DRAIN TRENCH IS THEN TO BE BACKFILLED TO FORMATION LEVEL USING SUITABLE GRANULAR MATERIAL WELL COMPACTED IN LAYERS NOT EXCEEDING 225MM.
- EXISTING DRAINAGE TO BE SURVEYED AND LEVELS VERIFIED AT DETAILED DESIGN STAGE.
- INTERNAL MANHOLE COVERS TO BE RECESSED, BOLTED DOUBLE-SEALED AIR TIGHT
- ALL CHANNEL DRAINS AND FLOOR GULLIES TO BE RODDABLE INSTALLED WITH FOUL AIR TRAPS.
- ALL RAINWATER PIPES WITH CONNECTION TO FOUL/COMBINED SEWER TO BE INSTALLED WITH FOUL AIR TRAPS AT THEIR BASE.
- DRAINAGE POINTS TO BE TRAPPED WHERE THE INCOMING PIPEWORK DOES NOT PERFORM THIS FUNCTION.
- THE CONTRACTOR MUST FAMILIARISE HIMSELF WITH THE DRAINAGE SCHEME AND CONFIRM HIS ACCEPTANCE AND APPROVAL OF THE PROPOSAL.
- ANY DISCREPANCIES BETWEEN THE DRAWINGS AND REGULATIONS ARE TO BE BROUGHT TO THE CONSULTING ENGINEERS ATTENTION PRIOR TO COMMENCEMENT OF DRAINAGE WORKS.
- CONTRACTOR MUST AGREE DRAINAGE PROPOSAL WITH THE BUILDING CONTROL OFFICER PRIOR TO COMMENCEMENT OF WORKS. HE MUST ALLOW A SUITABLE PERIOD OF TIME IN THIS PROGRAM FOR THIS APPROVAL.
- ALL EXTERNAL GULLIES ARE TO BE INSTALLED WITH SILT TRAPS
- ALL NEW COVER LEVELS TO BE CONFIRMED BY CONTRACTOR PRIOR TO ORDERING AND INSTALLING MANHOLE/INSPECTION CHAMBERS
- ANY BENDS IN PIPE RUNS TO BE FORMED IN MAX. 22.5° BENDS
- RODDING POINTS ARE TO BE INSTALLED AT THE BASE OF ALL DOWN PIPES / SVPS

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NORTH ROAD, KIRKBURTON Project: HUDDERSFIELD, HD8 0RL			
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