

GENERAL

- THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT PROJECT DOCUMENTATION.
- OVERALL SETTING OUT DIMENSIONS AND LEVEL DATUMS TO BE CONFIRMED BY THE ARCHITECT.
- ANY DISCREPANCIES BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWINGS SHOULD IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACT ADMINISTRATOR, ARCHITECT & ENGINEER.
- UNLESS NOTED OTHERWISE, ALL DIMENSIONS ON DRAWINGS ARE IN MILLIMETRES, LEVELS ARE IN METRES.
- DO NOT SCALE OFF DRAWING. ONLY WRITTEN OR CALCULATED DIMENSIONS MUST BE USED FOR THE PURPOSE OF CONSTRUCTION.
- ALL DETAILS AND DIMENSIONS, PARTICULARLY THOSE RELATING TO EXISTING STRUCTURES, ARE TO BE CHECKED OR VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION OR FABRICATION AND ANY DISCREPANCIES REPORTED TO THE CONTRACT ADMINISTRATOR, ARCHITECT & ENGINEER.
- MATERIALS AND WORKMANSHIP MUST COMPLY WITH ALL RELEVANT NBS SPECIFICATIONS, NATIONAL/EU CODES OF PRACTICE AND LOCAL AUTHORITY & STATUTORY APPROVALS.
- ANY NAMED PROPRIETARY PRODUCT OR MATERIAL IS PROVIDED AS A REFERENCE ONLY. CONTRACTORS MAY PROPOSE AN ALTERNATIVE PROVIDED THAT THE PRODUCT OR MATERIAL IS OF EQUIVALENT STANDARD SUBJECT TO THE AGREEMENT OF THE ENGINEER.
- ALL PROPRIETARY PRODUCTS ARE TO BE USED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S DETAILS AND REQUIREMENTS. CONTRACTORS MUST IDENTIFY IN THEIR TENDER SUBMISSION, ANY PRODUCTS THAT HAVE LONG LEAD-IN PERIODS FOR WHICH THE MATERIALS WOULD NEED TO BE PRE-ORDERED PRIOR TO THE AWARD OF THIS CONTRACT.

DRAINAGE

- ALL DRAINAGE WORKS TO BE CONSTRUCTED FROM THE OUTFALL TOWARDS THE HEAD OF RUN TO ENSURE THE OUTFALL CAN BE ACHIEVED.
- ALL EXISTING DRAINS & SERVICES (LINE & LEVELS) TO BE CHECKED & CONFIRMED BY THE CONTRACTOR. PRIOR COMMENCEMENT OF ANY ON SITE DRAINAGE WORKS, ANY DISCREPANCY IN LEVELS IS TO BE REPORTED IMMEDIATELY TO APP.
- CCTV SURVEY TO BE CARRIED OUT TO VERIFY CONDITION OF ANY EXISTING DRAINAGE TO BE RE-USED.
- ALL DRAINAGE WORK TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS, BS EN 752 & TO THE SATISFACTION OF THE BUILDING INSPECTOR.
- IN ADDITION, ALL SEWERS INDICATED FOR ADOPTION TO BE BUILT IN ACCORDANCE WITH SEWERAGE SECTOR GUIDANCE PUBLISHED BY THE WATER SERVICES ASSOCIATION. SEE SEPARATE NOTES.
- ALL PROPRIETARY ITEMS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S DETAILS, INSTRUCTIONS & SPECIFICATIONS.
- ALL COVER LEVELS ARE APPROXIMATE. EXACT LEVELS TO BE DETERMINED FROM THE EXTERNAL WORKS LAYOUT.
- INVERT LEVELS QUOTED AT MANHOLES & INSPECTION CHAMBERS ARE THOSE OF THE LARGEST CONNECTED PIPE DIAMETER. PIPES AT CHAMBERS TO BE LAID WITH SLOPE LEVELS ARE NOT ACCEPTED.
- PIPE GRADIENTS WHERE STATED ARE APPROXIMATE - LEVELS AT THE CHAMBERS TAKE PRECEDENCE.
- REFER TO ARCHITECT'S DRAWINGS FOR PRECISE LOCATION OF ALL GULLIES, RAINWATER PIPES, SOIL PIPES ETC.
- ALL SURFACE WATER GULLIES & RAINWATER PIPES ARE TO BE TRAPPED WHERE CONNECTING TO COMBINED DRAINS/SEWERS.
- ALL CONNECTIONS ARE TO HAVE AN ABOVE-GROUND OR FLOOR ACCESS POINT TO ENABLE FUTURE ACCESS FOR MAINTENANCE.
- PIPES & FITTINGS TO BE:
 - CONCRETE PIPES & ANCILLARY PRODUCTS TO BS 5911:2022 & BS EN 1916:2002.
 - VITRIFIED CLAY PIPES & FITTINGS TO BS EN 295:2013
 - DUCTILE IRON TO BS EN 598:2007 & BS ISO 4179:2005.
 - PERFORATED VITRIFIED CLAY PIPES FOR LAND DRAINAGE TO BS 1196.
 - PLASTIC PIPES FOR LAND DRAINAGE TO BS 4962:1982.
 - PLASTIC PIPING SYSTEMS FOR NON-PRESSURE UNDERGROUND DRAINAGE & SEWAGE TO BS EN 1401 & BS 4690 - SOLID WALL ONLY. STRUCTURED WALL PIPES ARE NOT ACCEPTED FOR USE IN DRAINAGE SYSTEMS UNLESS AGREED.
 - PRECAST CONCRETE MANHOLE UNITS TO BS EN 1917:2002.
 - PLASTIC INSPECTION CHAMBERS FOR DRAINS & SEWERS TO BS EN 13598:2010.
 - GULLY & MANHOLE TOPS FOR VEHICULAR & PEDESTRIAN AREAS TO BS EN 124:1994.
 - DRAINAGE CHANNELS FOR VEHICULAR & PEDESTRIAN AREAS TO BS EN 1433:2002.
- ALL MANHOLE COVERS, ROAD GULLY COVERS & FRAMES TO COMPLY WITH BS EN 124 NON ROCKING TYPE.

UNLESS NOTED OTHERWISE USE CLASS:

A15 FOR USE IN PEDESTRIAN AREAS WHERE VEHICLES HAVE NO ACCESS.

B125 FOR USE IN CAR PARKS & PEDESTRIAN AREAS WHERE INFREQUENT LIGHT VEHICLE ACCESS IS LIKELY (INCLUDING DRIVEWAYS).

C250 FOR ACCESS COVERS & GULLY GRATINGS IN AREAS OF SLOW MOVING, HEAVY TRAFFIC. ALSO FOR GULLY GRATINGS IN CARRIAGEWAY WITHIN 500mm OF KERB & UP TO 200mm INTO THE FOOTWAY.

D400 FOR USE IN CARRIAGEWAYS OF ROADS & PARKING AREAS ACCESSED BY ALL TYPES OF VEHICLES.

E600 FOR USE IN AREAS WHERE HIGH WHEEL LOADS ARE PRESENT.

F900 FOR USE IN AREAS WHERE EXTREMELY HIGH WHEEL LOADS ARE PRESENT SUCH AS AIRCRAFT PAVEMENTS, DOCKS, HEAVY INDUSTRIAL SITES. THE INTEGRITY OF ANY REMAINING EXISTING MANHOLE COVERS, ROAD GULLY COVERS & FRAMES WITHIN THE SITE ARE TO BE CHECKED BY THE CONTRACTOR IN TERMS OF CONDITION AND COMPLIANCE WITH THESE REQUIREMENTS. REPAIR OR REPLACE AS NECESSARY, ADJUSTING FRAME LEVELS TO ACCOMMODATE ANY CHANGES REQUIRED TO SITE LEVELS.
- MANHOLES IN INTERNAL AREAS REQUIRE DOUBLE SEALED COVERS WITH LOCKING SCREWS, RECESSED WHERE REQUIRED TO ACCOMMODATE FLOOR FINISHES TO ARCHITECT'S SPECIFICATION.
- PIPE BEDDING

USE CLASS S BEDDING UNLESS NOTED OTHERWISE. NB PROTECT AGAINST CONSTRUCTION TRAFFIC AS NECESSARY

USE CLASS Z CONCRETE BED & SURROUND OR CONCRETE SLAB PROTECTION AS FOLLOWS:

 - CLASS 120 CLAYWARE OR CLASS M CONCRETE (100 - 6000 PIPES)
 - LANDSCAPING - LESS THAN 600mm COVER TO CROWN.
 - HARDSTANDING - LESS THAN 1200mm COVER TO CROWN.
 - PLASTIC (100 - 3000 PIPES)
 - LANDSCAPING - LESS THAN 600mm COVER TO CROWN.
 - HARDSTANDING - LESS THAN 900mm COVER TO CROWN.
- PIPES BELOW CONCRETE GROUND FLOOR SLABS:

WHERE THE CROWN OF THE PIPE IS WITHIN 300mm OF THE UNDERSIDE OF SLAB, SPECIAL PROTECTION TO BE PROVIDED IN ACCORDANCE WITH BUILDING REGULATIONS H1 2.44 OR 150mm GENS CONCRETE BED & SURROUND CAST INTEGRALLY WITH SLAB, OTHERWISE USE CLASS S BEDDING.
- MAIN BACKFILL TO BE WELL COMPACTED IN 150mm LAYERS OF:

SELECTED BACKFILL MATERIAL IN ALL SOFT LANDSCAPED AREAS

TYPE 1 GRANULAR MATERIAL IN ALL HARDSTANDING AREAS OR PUBLIC HIGHWAYS
- BACKFILL TO DRAINS NEAR FOUNDATIONS TO BE IN ACCORDANCE WITH BUILDING REGULATIONS H1 DIAGRAMS 8 & 12.

Notes

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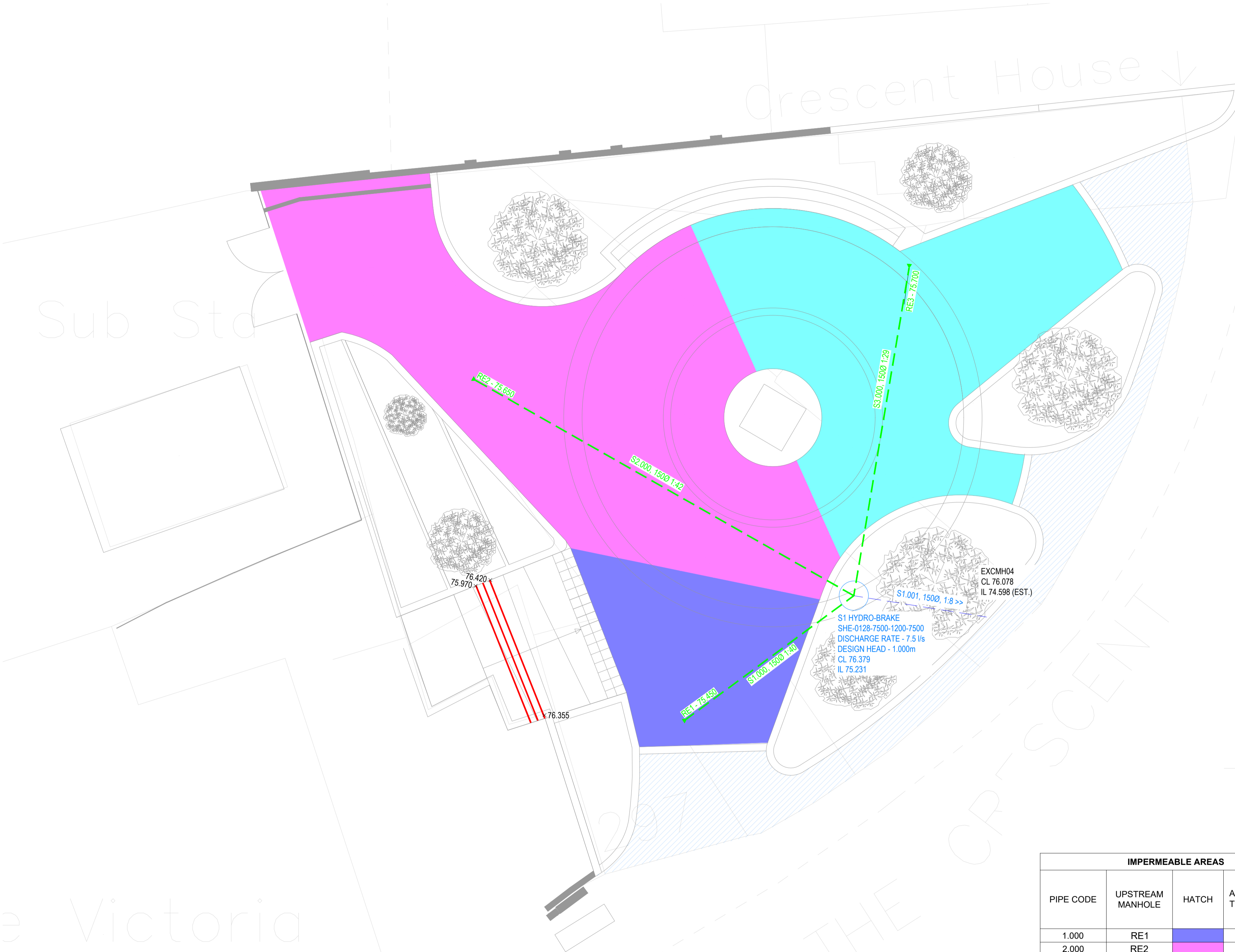
ADOPTABLE DRAINAGE

THE FOLLOWING NOTES APPLY TO ALL DRAINAGE BEING OFFERED FOR ADOPTION, IN ADDITION TO THE DRAINAGE NOTES:

- NO WORK SHOULD COMMENCE ON SITE UNTIL WRITTEN APPROVAL IS RECEIVED FROM THE ADOPTING HIGHWAY AUTHORITY, ADOPTING SEWERAGE UNDERTAKERS, ENVIRONMENT AGENCY AND/OR ANY OTHER RELEVANT AUTHORITY. WORKS UNDERTAKEN PRIOR TO APPROVAL ARE AT THE DEVELOPER'S RISK AND ALIGN WILL NOT BE HELD RESPONSIBLE FOR SUBSEQUENT DELAYS IN APPROVALS, REMEDIAL COSTS OR SITE DELAYS.
- ALL ADOPTABLE DRAINAGE TO BE BUILT IN ACCORDANCE WITH:
 - SEWERAGE SECTOR GUIDANCE APPENDIX C 'DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWERS OFFERED FOR ADOPTION UNDER THE CODE FOR ADOPTION AGREEMENT FOR WATER AND SEWERAGE COMPANIES OPERATING WHOLLY OR MAINLY IN ENGLAND' (THE CODE); APPROVED VERSION 2.1 MAY 2021.
 - ADOPTING SEWERAGE UNDERTAKERS LATEST REQUIREMENTS & STANDARD DETAILS.
 - IN THE EVENT OF CONFLICTING DETAIL, THE ADOPTING SEWERAGE UNDERTAKERS REQUIREMENTS TAKE PRECEDENCE IN ALL CASES.
- SUSTAINABLE DRAINAGE IS DESIGNED IN ACCORDANCE WITH CIRIA C753 'THE SUDS MANUAL', BUILDING REGULATIONS, NATIONAL PLANNING POLICY AND LOCAL LEAD FLOOD AUTHORITY GUIDELINES.
- PROPERTY LEVEL SUDS (I.E. WATER BUTTS, PERMEABLE PAVING, RAIN GARDENS ETC.) ARE NOT PART OF THE ADOPTABLE ELEMENT. THESE REMAIN PRIVATE.
- SEWERS ARE TO BE OFFERED FOR ADOPTION VIA A SECTION 104 AGREEMENT.
- IN ADDITION TO THE S104 AGREEMENT SUBMISSION, A SEPARATE SECTION 106 CONNECTION APPLICATION MUST BE MADE WHICH ALLOWS THE SEWERAGE UNDERTAKER TO REVIEW CONSTRUCTION METHODS, HEALTH AND SAFETY REQUIREMENTS AND INSPECT THE WORKS DURING PHYSICAL CONNECTION.
- LATERAL CONNECTIONS FROM DEMARCATON CHAMBER TO MAIN SEWERS TO BE 1000 MINIMUM UNLESS NOTED OTHERWISE.

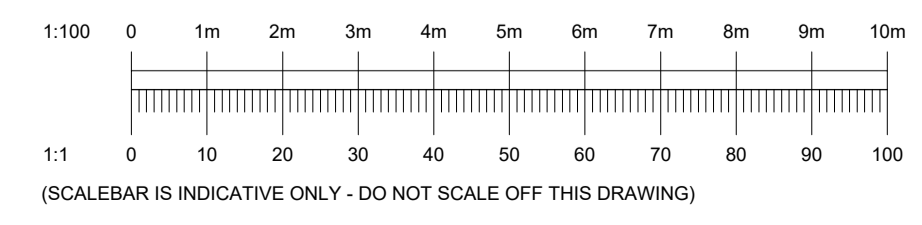
ABANDONED/REDUNDANT DRAINAGE

- CONTRACTORS MUST UNDERTAKE A CCTV SURVEY OF THE DRAINS TO BE ABANDONED TO CONFIRM THAT THERE ARE NO LIVE CONNECTIONS REMAINING.
- ALL ABANDONED DRAINAGE PIPES MUST BE EITHER GRUBBED OUT OR FILLED WITH A GROUT CONSISTING OF ONE OF THE FOLLOWING:
 - CLASS G3 GROUT TO CONSIST OF 1:10 CEMENT SAND - MIXED WITH THE MINIMUM AMOUNT OF WATER TO ENSURE FLUIDITY.
 - CLASS G4 GROUT TO CONSIST OF 1:10 CEMENT:PPFA - MIXED WITH THE MINIMUM AMOUNT OF WATER TO ENSURE FLUIDITY.
- GROUT TO BE PUMPED UNDER PRESSURE FROM THE HIGHER END OF THE PIPE BEING FILLED ENSURING THAT NO LENGTH OF PIPE IS FILLED UNTIL ALL UPSTREAM CONNECTING LENGTHS HAVE BEEN COMPLETED.
- SEALS AT THE LOWER END OF EACH PIPE LENGTH TO BE FITTED WITH A FLEXIBLE BREATHER PIPE, FIXED AT THE PIPE SOFFIT AND TURNED VERTICALLY UPWARDS TO A HEIGHT OF 600mm ABOVE THE SOFFIT OF THE HIGHER END OF THE PIPE.
- THE HEAD OF EXISTING PIPE LENGTHS 'CUT-OFF' AND EXPOSED DURING EXCAVATIONS FOR NEW WORKS SHALL BE SUITABLY SEALED AND A 150mm FLEXIBLE INJECTION PIPE CONSTRUCTED THROUGH THE SEAL AT THE PIPE SOFFIT. THIS SHALL BE TURNED VERTICALLY AND EXTENDED UPWARDS FOR AT LEAST 1m.
- ON COMPLETION OF GROUTING OPERATIONS, THE INJECTION PIPE SHALL BE SEALED WITH A PLUG OF CONCRETE AT LEAST 150mm DEEP AND HAVING 150mm BEARING OUTSIDE THE INJECTION PIPE.
- SURPLUS WATER SHALL BE DISPOSED OF WITHOUT CAUSING A NUISANCE.
- SHAFTS OF ABANDONED/REDUNDANT MANHOLES ARE TO BE BROKEN DOWN TO A LEVEL OF 1m BELOW FINISHED GROUND LEVEL AND THE REMAINING VOID FILLED WITH GENS CONCRETE.



IMPERMEABLE AREAS			
PIPE CODE	UPSTREAM MANHOLE	HATCH	IMPERMEABLE AREA NOT PRONE TO URBAN CREEP (m ²)
1.000	RE1	[Pink Hatch]	52.62
2.000	RE2	[Blue Hatch]	184.88
3.000	RE3	[Green Hatch]	132.239
		TOTAL	369.73

- KEY**
- NEW ADOPTABLE STORM INSPECTION CHAMBER (SIZE VARIES), TO BE CONSTRUCTED IN ACCORDANCE WITH SSG APPENDIX C, DCG
 - NEW PRIVATE STORM DRAIN
 - NEW PRIVATE PREFORATED PIPE WITHIN PERMEABLE AREAS (PIPE TO BE STANDARD CONSTRUCTION OUTSIDE PERMEABLE AREAS)



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align PROPERTY SERVICES

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Client: **BARNESLEY METROPOLITAN BOROUGH COUNCIL**

Project Name: **THE CRESCENT, CUDWORTH DEMOLITION & CREATION OF URBAN PARK**

Drawing Title: **IMPERMEABLE AREAS PLAN**

Purpose: **PRELIMINARY**

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1:100	JSM	ZS	LF
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