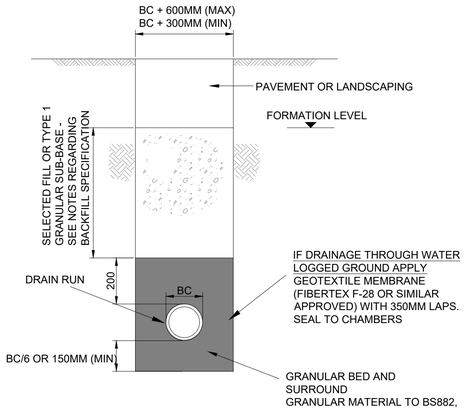
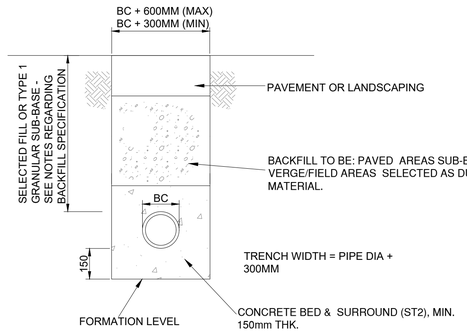
PIPE BEDDING CLASSIFICATIONS

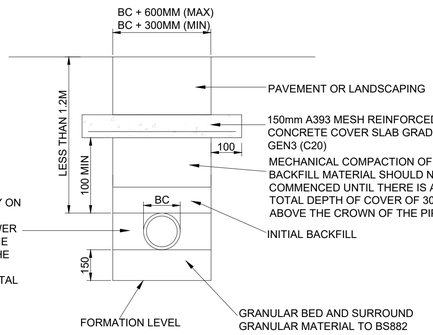


CLASS S BED AND SURROUND
SCALE 1:10



CLASS Z BED AND SURROUND FOR PIPE DEPTHS LESS THAN 1.2m
SCALE 1:10

SIDE MATERIAL TO BE PLACED EVENLY ON BOTH SIDES OF PIPE TAKING CARE TO WORK THE MATERIAL UNDER THE LOWER QUADRANT OF THE PIPE ENSURING THE PIPE IS NOT FILLED. BOTH SIDES OF THE TRENCH SHOULD BE FILLED SIMULTANEOUSLY TO AVOID HORIZONTAL MOVEMENT OF THE PIPE.



CLASS Z BED AND SURROUND FOR PRIVATE PIPE DEPTHS LESS THAN 1.2m
SCALE 1:10

COMPRESSIBLE FILLER AND PACKING FOR PIPELINES

NOMINAL DIAMETER OF PIPE (mm)	THICKNESS OF COMPRESSIBLE FILLER (mm)
LESS THAN 450	18
450 - 1200	36
EXCEEDING 1200	54

1. MATERIAL DESIGNATED TYPE 'A' SHALL CONSIST OF ANGULAR GRAVEL OR CRUSHED ROCK GRADED IN ACCORDANCE WITH BS 882, OR AIR COOLED BLAST FURNACE SLAG TO BS 1047, OR SINTERED PULVERISED FUEL ASH TO BS 3797, SELECTED ACCORDING TO PIPE SIZE AS FOLLOWS:-
2. MATERIAL DESIGNATED TYPE 'B' USED UNDER GARDENS AND VERGES SHALL CONSIST OF UNIFORM READILY COMPACTABLE MATERIAL, FREE FROM TREE ROOTS, VEGETABLE MATTER, BUILDING RUBBISH AND FROZEN SOIL, AND EXCLUDING CLAY LUMPS RETAINED ON A 75mm SIEVE AND STONES LARGER THAN 37mm. BEDDING TO BE COMPACTED IN 225mm LAYERS.
3. MATERIAL DESIGNATED TYPE 'B' USED UNDER ROADS AND FOOTPATHS SHALL CONSIST OF GRANULAR MATERIAL AS USED FOR CARRIAGEWAY SUB-BASE CONSTRUCTION.
4. CLASS S BEDDING TO BE USED ON ALL PLOT DRAINAGE AND ANY PIPES WITH A DEPTH GREATER THAN 1.2m IN ROADWAYS OR 0.9m ELSEWHERE.

NOTES:

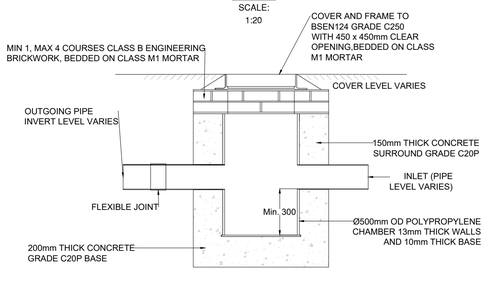
1. ALL DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE WATER UK DESIGN AND CONSTRUCTION GUIDANCE AND ADOPTING WATER AUTHORITY/SEWERAGE AGENCY REQUIREMENTS AND SPECIFICATIONS. ALL PRIVATE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH CURRENT BUILDING REGULATIONS.
2. POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES SHALL BE ESTABLISHED BY MAIN CONTRACTOR PRIOR TO COMMENCEMENT ON SITE.
3. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
4. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER NETWORKS.
5. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DEWATERING AS APPROPRIATE THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
6. PIPES UPTO AND INCLUDING 225mmø TO BE EXTRA STRENGTH V.CLAY OR UNPLASTICISED PVC.VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLYWITH THE RELEVANT PROVISIONS OF BS EN295 AND BS 65 RESPECTIVELY. PIPES 300mmø AND GREATER TO BE CONCRETE CLASS H.
7. VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN295 AND BS 65 RESPECTIVELY AND BE KITEMARKED. ALL PIPES SHALL BE EXTRA STRENGTH TO BS 65 OR EQUIVALENT BS EN 295 PIPE CRUSHING STRENGTH.
8. INSITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND CEMENT TO BS 4027, UNLESS AGREED OTHERWISE WITH THE ADOPTING AUTHORITY.
9. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. CONCRETE PIPES TO BE CLASS H UNLESS NOTED OTHERWISE.
10. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124, HAVE MINIMUM 675x675 CLEAR OPENINGS WITH 150 DEEP FRAMES UNLESS OTHERWISE SPECIFIED. MANHOLE COVERS AND FRAMES TO BE NON-ROCKING DESIGN WITHOUT CUSHION INSERTS AND BE KITEMARKED. LOAD CLASS D400 IN VEHICULAR TRAFFICKED AREAS AND LOAD CLASS B125 IN FOOTWAYS AND PEDESTRIAN AREAS.
11. 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.
12. CLASS Z BEDDING DETAIL SHALL BE PROVIDED WHERE COVER TO THE PIPE BARREL IS LESS THAN 1.2m IN VEHICULAR TRAFFICKED AREAS AND 0.9m ELSEWHERE. TO ALL ROAD GULLY CONNECTIONS AND WITHIN AREAS OF DEEP ROOTING VEGETATION.
13. WHERE CLASS Z TRENCH BEDDING DETAIL IS USED, THE CONCRETE BED AND SURROUND SHALL BE DISCOUNTED AT EACH PIPE JOINT OVER THE FULL CROSS SECTION BY MEANS OF A SHAPED COMPRESSIBLE FILLER.
14. SELECTED BACKFILL MATERIAL SHALL CONSIST OF UNIFORMED MATERIAL FREE FROM STONES LARGER THAN 40mm. CLAY LUMPS LARGER THAN 75mm, TREE ROOTS ORGANIC MATTER AND FROZEN SOIL. SELECTED BACKFILL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 225mm, EACH LAYER COMPACTED TO FORM A STABLE TRENCH BACKFILL.
15. GENERAL BACKFILL MATERIAL TO BE FREE FROM STONES LARGER THAN 40mm. GENERAL BACKFILL MATERIAL IS TO BE PLACED IN LAYERS NOT EXCEEDING 150mm THICKNESS AND EACH LAYER COMPACTED BY HAND. NO MECHANICAL COMPACTION OF FILL MATERIAL SHALL BE PERMITTED WITHIN 300mm ABOVE THE CROWN/BARREL OF THE PIPE.
16. BACK FILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR, IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS OF 'THE STREET WORKS REGULATIONS 1992' AND RELEVANT PROVISIONS OF H.A.U.C 'SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS' JUNE1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
17. BACKFILL TO DRAINAGE TRENCHES IN HARD PAVED AREAS SHALL BE G.S.B TYPE 1.
18. ALL RW DOWNCOMERS TO DISCHARGE TO TRAPPED GULLIES.
19. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
20. ALL GULLY LEADS TO BE 150mm DIAMETER.
21. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
22. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
23. ANY EXISTING DRAINAGE WHICH BECOMES UNDER TRAFFICKED AREAS IN THE NEW SCHEME SHOULD BE SUBJECT TO THE FOLLOWING REMIDIAL/REVISIONS. WHERE DEPTH OF COVER IS LESS THAN 1200mm, THE EXISTING PIPEWORK SHALL BE EXPOSED & SURROUNDED WITH 150mm CONCRETE AS CLASS 'X' BEDDING. 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.
24. THE CONTRACTOR MUST ENSURE THAT ANY OF THE EXISTING DRAINAGE WHICH IS LIVE IS KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.
25. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
26. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.

HEALTH & SAFETY
1. CONTRACTOR SHOULD BE AWARE OF GENERAL CONSTRUCTION RISKS TO PREVENT SLIPS, TRIPS AND FALLS AND TAKE NECESSARY PRECAUTIONS WIT SPECIAL INSTRUCTION.

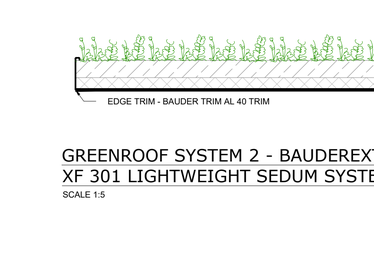
ROADS & DRAINAGE
2. CONTRACTOR TO PROVIDE TRENCH SUPPORTS AS APPROPRIATE AND ENS THAT PLANT REMAINS A SAFE DISTANCE FROM TRENCHES PRIOR TO INSTALL DRAINAGE.
3. THE TIME THAT EXCAVATIONS ARE OPEN ON SITE SHOULD BE KEPT TO A M AND ALL TRENCHES SHOULD BE SURROUNDED BY A BARRIER.
4. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RE TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQU
5. CONNECTIONS TO EXISTING SEWERS TO BE MADE BY NWL APPROVED CONTRACTOR ONLY.
6. CONTRACTOR TO MAKE OPERATIVES AWARE OF ASSOCIATED DANGERS T HEALTH SUCH AS LEPTOSPIROSIS (WEILS DISEASE) AND RECOMMENDED PRECAUTIONS. ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING PROVIDED AS REQUIRED.
7. UNFINISHED MANHOLES MUST BE COVERED WITH LOAD BEARING MATERIA SURROUNDED WITH A BARRIER.

PIPES & CABLES
8. SERVICE RECORDS TO BE REFERRED TO PRIOR TO WORK COMMENCING. CONTRACTOR TO PROCEED WITH CAUTION AND SERVICES TO BE LOCATED E HAND DIG AND PROTECTED ACCORDINGLY.

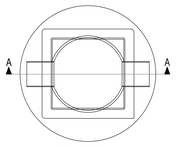
EXCAVATION/FILL
9. CONTRACTOR TO ENSURE RELEVANT MEASURES ARE TAKEN TO KEEP PLA AND PEOPLE A SAFE DISTANCE FROM STEEP SLOPES DURING THE WORKS.
10. CONTRACTOR TO ENSURE THAT PROCEDURES ARE IN PLACE TO KEEP PE SAFE DISTANCE FROM WORKING PLANT WHERE NECESSARY.
11. CONTRACTOR TO REFER TO GROUND INVESTIGATION AND REPORT FOR CONTAMINATION TESTS AND TO PROVIDE ADEQUATE WELFARE FACILITIES A PROTECTIVE CLOTHING AS REQUIRED.



TYPICAL SOIL & VENT PIPE / STUB STACK / W.C DETAIL
SCALE: 1:20



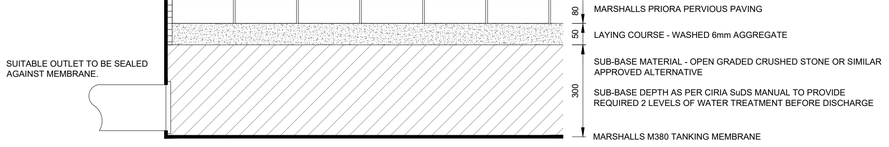
TYPICAL TOP INLET GULLY
SCALE: 1:20



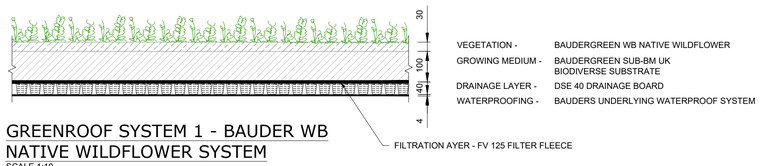
PLAN
SCALE: 1:20

SECTION
SCALE: 1:20

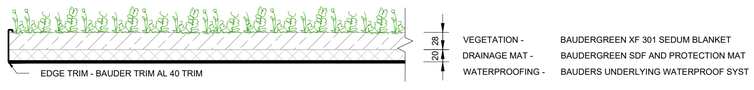
Ø450mm CATCHPIT INSPECTION CHAMBER
SCALE: 1:20



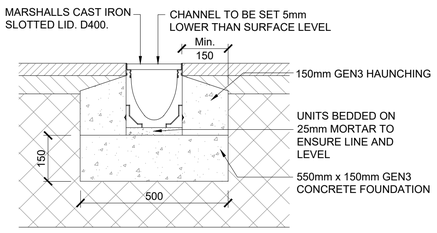
NON ADOPTABLE PERVIOUS PAVING
SCALE 1:10



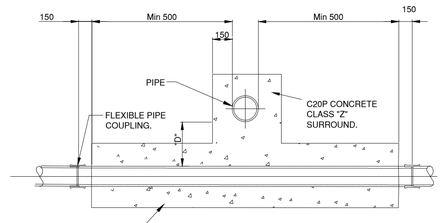
GREENROOF SYSTEM 1 - BAUDER WB NATIVE WILDFLOWER SYSTEM
SCALE 1:10



GREENROOF SYSTEM 2 - BAUDEREXTENSIVE XF 301 LIGHTWEIGHT SEDUM SYSTEM
SCALE 1:5



TYPICAL ACO MULTIDRAIN MD WITH M150D 0.0 CHANNEL (OR SIMILAR APPROVED)
SCALE 1:10



TYPICAL PROTECTION TO PIPES CROSSING WHERE DISTANCE APART IS LESS THAN 300mm.
SCALE 1:20

REV	DESCRIPTION	DRAWN	CKD	DATE
C01	CONSTRUCTION ISSUE	AT	AS	13.03.26

DRAWING STATUS: CONSTRUCTION

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CLIENT: BDP CONSTRUCTION LTD.

PROJECT: RENSHAW HOUSE MANCHESTER

DRAWING TITLE: PROPOSED DRAINAGE DETAILS (SHEET 2/2)

SCALE:	DRAWN:	CKD:	DATE:
AS SHOWN	AT	AS	13.03.26

JOB NUMBER:	DRAWING NUMBER:	REV:	SIZE:
JCC26-007	C-DR-111	C01	A1