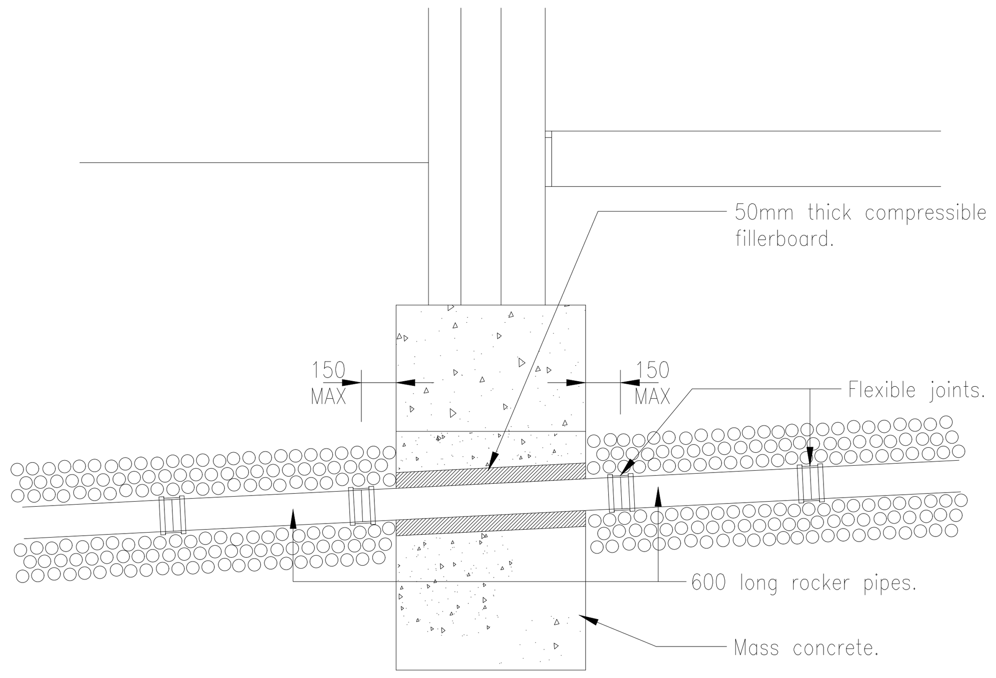
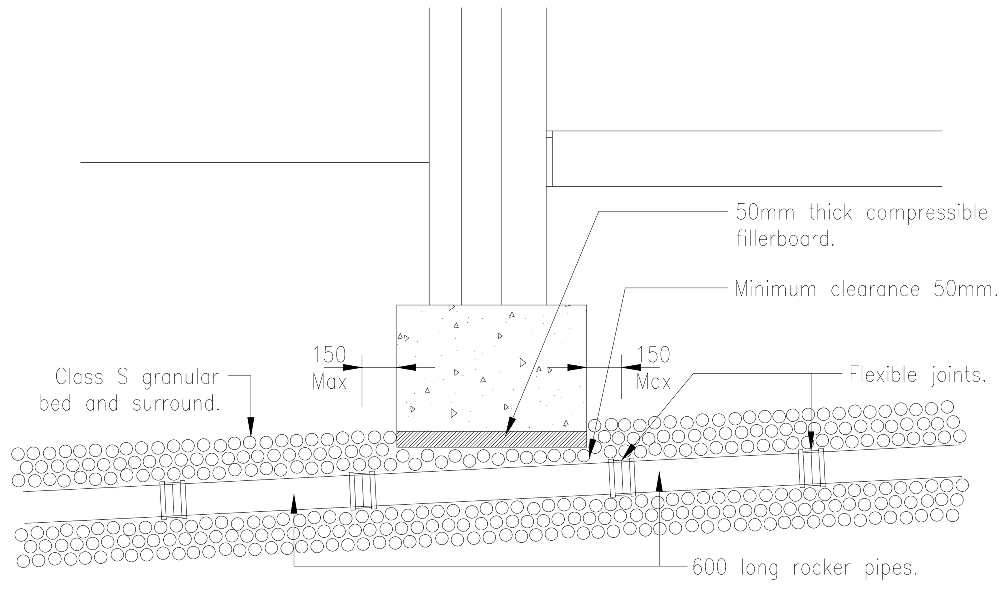
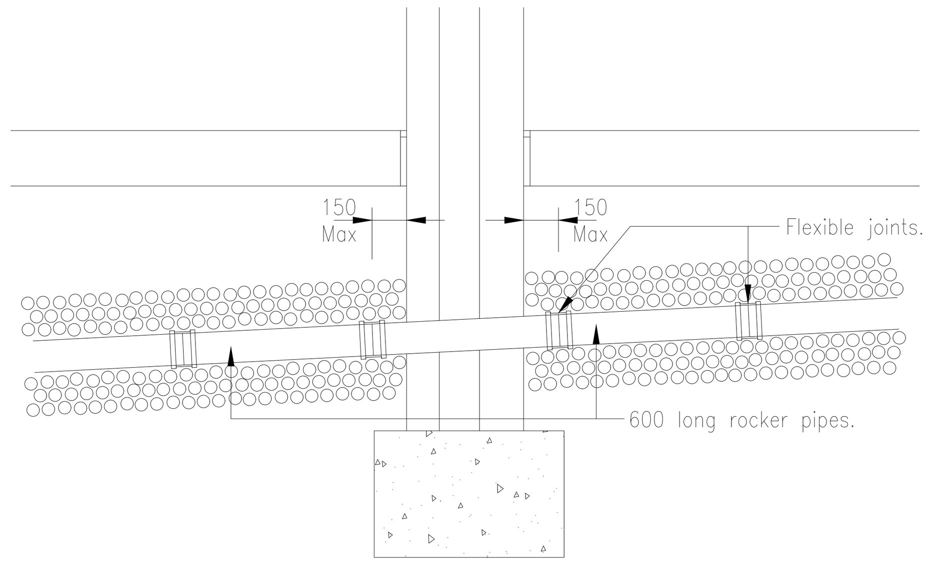


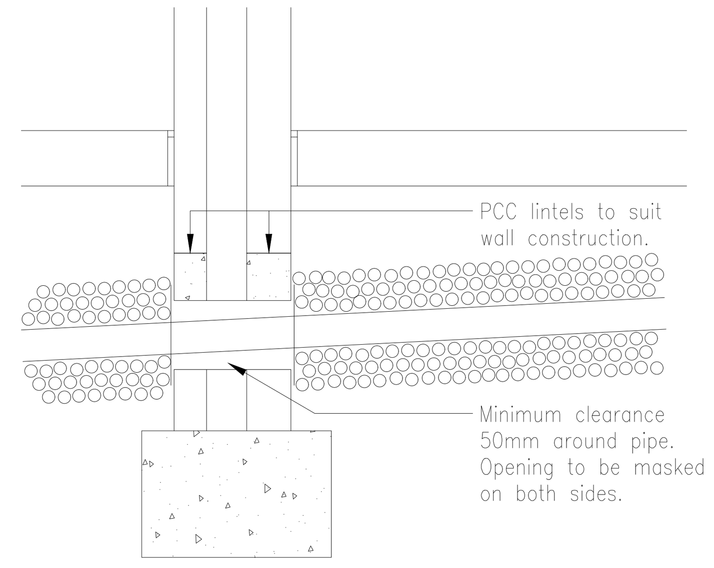
DRAIN PASSING UNDER FOUNDATION
THROUGH MASS CONCRETE FILL



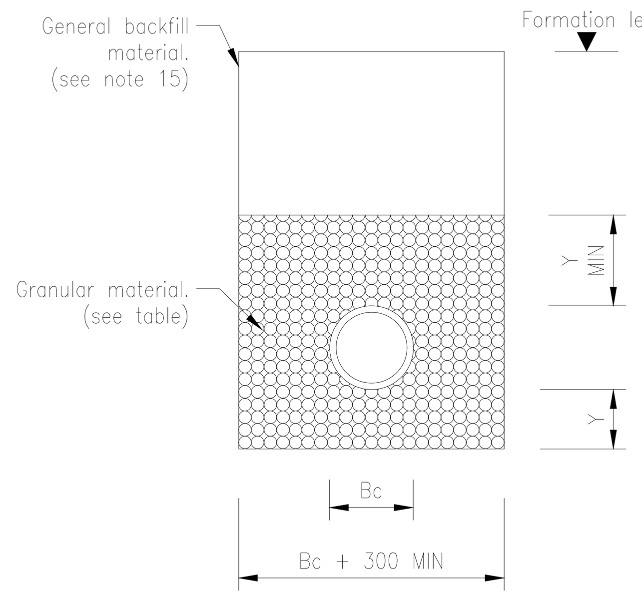
DRAIN PASSING UNDER FOUNDATION
FILLERBOARD PROTECTION DETAIL



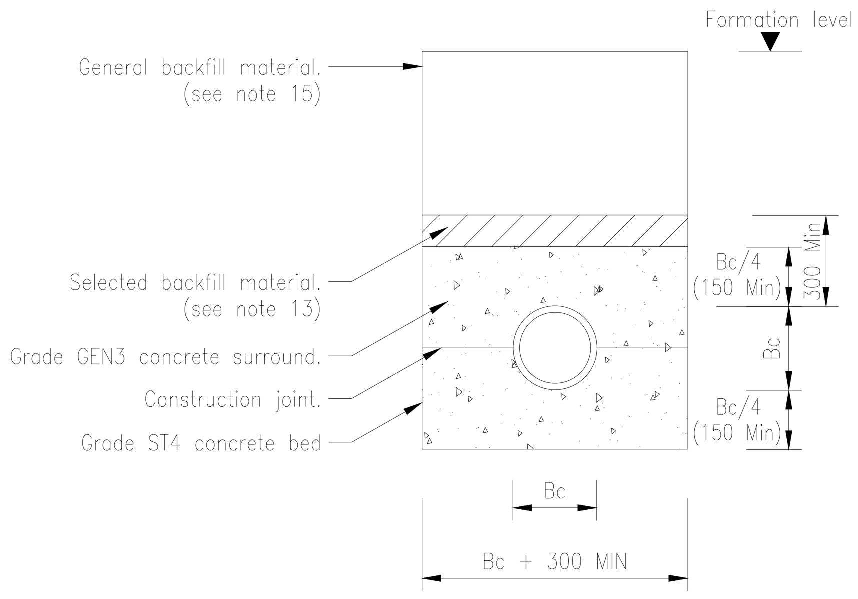
DRAIN PASSING THROUGH WALL
BUILT IN DETAIL



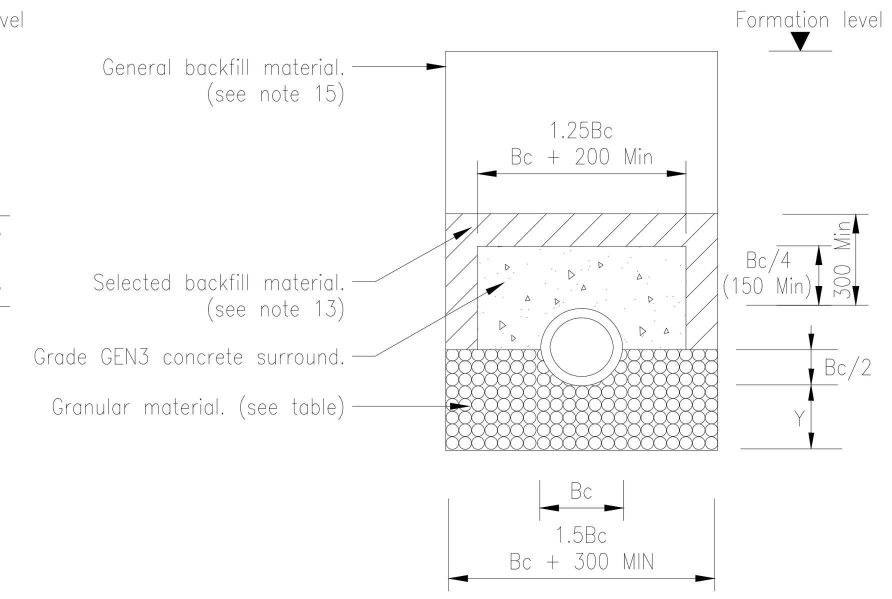
DRAIN PASSING THROUGH WALL
NOT BUILT IN DETAIL



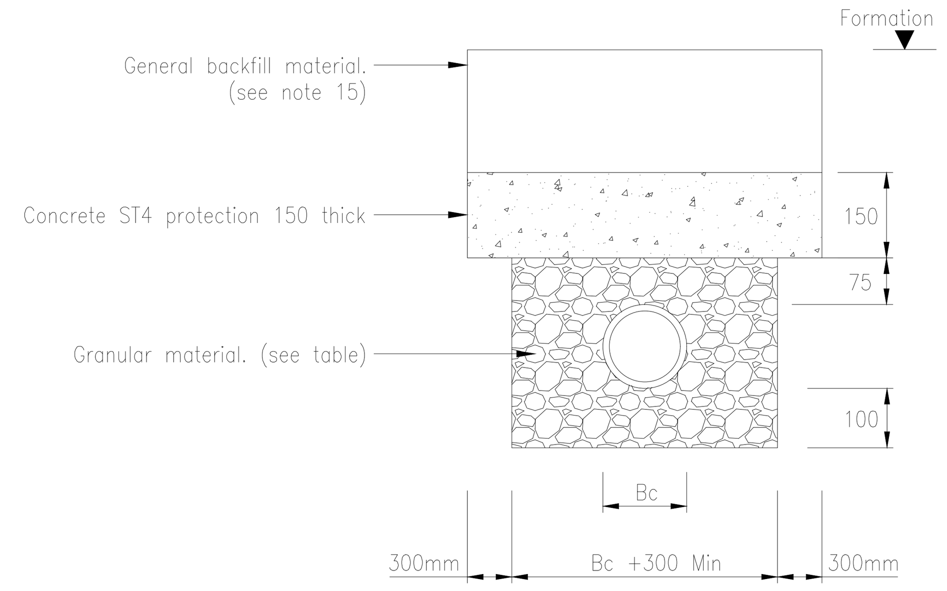
CLASS S DETAIL (see notes 13 & 15)



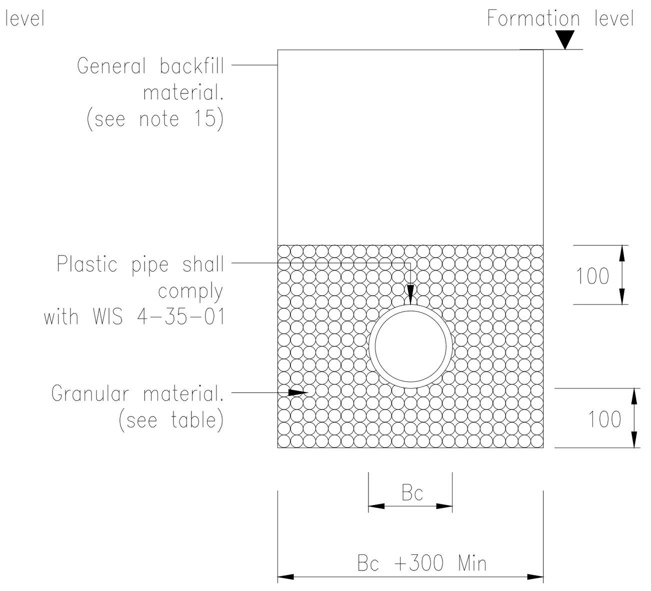
CLASS Z DETAIL (see notes 11, 13 & 15)



CLASS A DETAIL (see notes 11, 13 & 15)



CLASS Q DETAIL
(where cover to pipe less than 1.2m)



CLASS T DETAIL

(plastic pipes shall comply with WIS 4-35-01 and shall be kitemarked)

TRENCH WIDTHS	
PIPE I.D	OVERALL TRENCH WIDTH
100	550
150	600
225	700
300	850
375	1050
450	1150
525	1200
600	1350
675	1450
750	1500
825	1600
900	1900
1050	2100
1200	2300
1350	2500
1500	2700
1800	3100

NOMINAL PIPE DIA (mm)	SINGLE SIZED (mm)	GRADED (mm)
150	10 or 14	14 to 5
200 to 300	10, 14 or 20	14 to 5 ot 20 TO 5
375 to 525	14 or 20	14 to 5 ot 20 to 5
Greater than 525	14, 20 or 40	14 to 5, 20 to 5 or 40 to 5

GRANULAR BEDDING MATERIAL

(all aggregates to table 4 of BS 882 :1983)

NOMINAL PIPE DIA (mm)	THICKNESS OF COMPRESSIBLE FILLER (mm)
Less than 450	18
450 to 1200	36
Greater than 1200	54

COMPRESSIBLE FILLER TABLE

(bitumen impregnated insulating board to BS 1142: Part 3)

Notes
A) Bc = outside diameter of pipe barrel.
B) Y = for uniform soils:
Sleeve jointed pipes, min. 50mm or 1/6Bc, whichever is the greater.
Socketed pipe, min. 100mm or 1/6Bc, whichever is the greater under barrels and not less than 50mm under sockets. For rock or mixed soils containing rock bands, boulders, stones or other irregular hard spots:
Sleeve jointed pipes, min. 150mm or 1/4Bc, whichever is the greater.
Socketed pipe, min. 200mm or 1/4Bc, whichever is the greater under barrels and not less than 150mm under sockets.

RIGID PIPE TRENCH BEDDING DETAILS

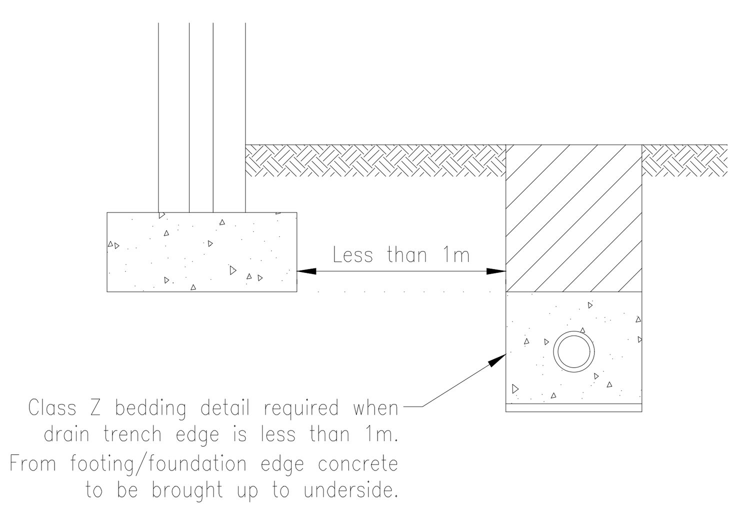
THE FOLLOWING UPVC PIPES ARE ACCEPTABLE FOR USE	
UPONOR ULTRA DRAIN	110 & 160 (O.D.)
HEPWORTH PLASTIDRAIN	110 & 160 (O.D.)
WAVIN OSMA DRAIN	110 & 160 (O.D.)
WAVIN OSMA ULTRA RIB	150 & 225 (I.D.)
MARLEY SOLID WALL	110 & 160 (O.D.)
MARLEY QUANTUM	150 & 225 (I.D.)
POLYPIPE RIDGISEWER	150 & 225 (I.D.)
POLYPIPE UNDERGROUND DRAIN	110 & 160 (O.D.)

NOMINAL PIPE DIA (mm)	SINGLE SIZED (mm)	GRADED (mm)
100	10	Not permitted
110 to 150	10 or 14	14 to 5 graded
160 to 300	10, 14 or 20	Either 20 to 5 graded or 14 to 5 graded
310 to 500	14 or 20	Either 20 to 5 graded or 14 to 5 graded
Over 550	14, 20 or 40	Either 40 to 5 graded or 20 to 5 graded or 14 to 5 graded

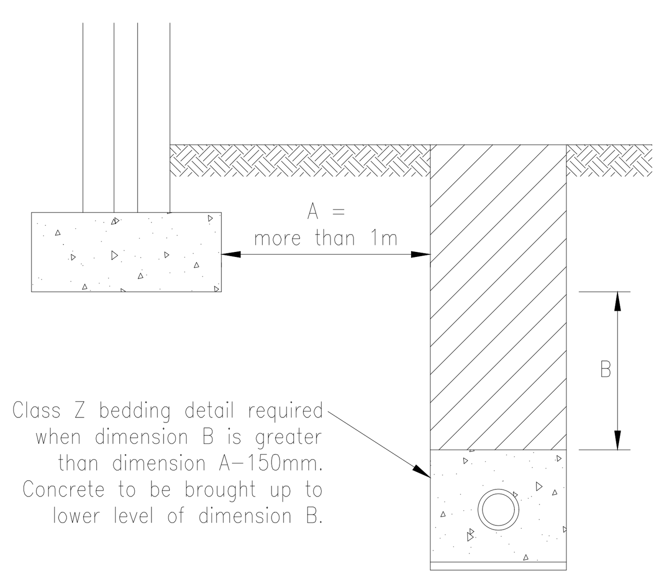
GRANULAR BEDDING MATERIAL
Extract from Table A2 WIS 4-08-02
(all aggregates to table 4 of bs 882 :1983)

MINIMUM RECOMMENDED TRENCH WIDTHS FOR PIPES IN POOR GROUND CONDITIONS	
NOM PIPE DIA (mm)	MIN TRENCH WIDTH (mm)
150	450
225	525
300 And above	Two times nom. diameter

PLASTIC PIPE (u-PVC) TRENCH BEDDING DETAILS

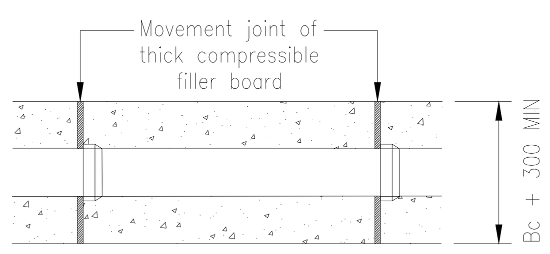


DRAIN TRENCH EDGE LESS THAN 1m.
FROM FOOTING/FOUNDATION EDGE



DRAIN TRENCH EDGE MORE THAN 1m.
FROM FOOTING/FOUNDATION EDGE

BEDDING DETAIL IN VICINITY OF FOOTINGS/FOUNDATIONS
NOTE:- THIS IS A TYPICAL DETAIL TO BE CROSS REFERENCED
WITH 3E STRUCTURAL DRAWINGS



JOINTS FOR CONCRETE ENCASED PIPES

NOTES

1. ALL ADOPTABLE SER WORKS AND MATERIALS TO BE IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION GUIDELINES FOR FOUL AND SURFACE WATER OFFERED FOR ADOPTION, THE RELEVANT BRITISH/EUROPEAN AND NORTHUMBRIAN WATERS STANDARD/REQUIREMENTS..
2. CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES 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 WORKS.
5. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DE WATERING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
6. PIPES UP TO AND INCLUDING 300mmØ TO BE TWIN WALLED PLASTIC PIPES. PIPES 375mmØ AND GREATER TO BE CONCRETE CLASS H.
7. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1m AND MANHOLES 0.5m FROM KERBS FACES AND SERVICE MARGINS.
8. SEWERS MUST HAVE 5 METERS CLEARANCE FROM TREES AND HEDGES
9. ALL PIPE WORK TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE.
10. COVER SLABS MUST CARRY THE BSI KITE MARK OR WILL BE REJECTED BY DRAINAGE INSPECTOR. WHERE THE CLEAR OPENING OF THE KITE MARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME A LOAD BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO 675mmx675mm FOR THE NORTHUMBRIAN WATER SPECIFIED COVER SIZE. PLEAS REFER TO CONCRETE PIPE SYSTEMS ASSOCIATIONS TECHNICAL BULLETIN ISSUED AUTUMN 2004 FOR KITE MARKED COVER SLAB OPENING SIZES.
11. SULPHATE RESISTING CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ARE NOT NECESSARY..
12. 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 KITE MARKED. 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.
13. SEWERS TO BE LAID IN CLASS 'S' BEDDING (150MM GRANULAR BED AND SURROUND WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THA1.2m IN HIGHWAYS AND VERGES 9OR LESS THAN 0.9M IN NONE VEHICULAR ACCESS AREAS) THEN A CONCRETE SLAB SHALL BE PROVIDED ABOVE THE GRANULAR BED AND SURROUND
14. BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE TYPE 1 GRANULAR MATERIAL 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" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
15. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF WATER INDUSTRY SPECIFICATION 4-08-02(TABLE A2)
16. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES. ALL GULLY LEADS TO BE 150mm DIAMETER.
17. ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
18. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
19. 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.
20. 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.
21. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.
22. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.

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Issue Status

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Managing and building homes

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THIRTEEN GROUP

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SHEET 2

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