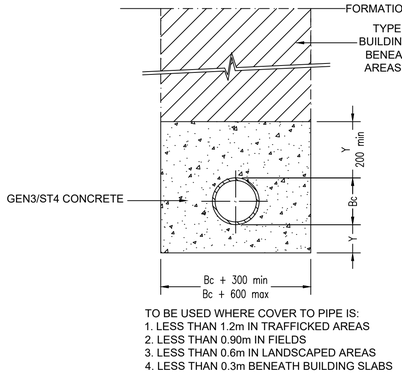
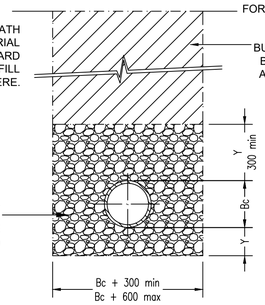


TO BE USED WHERE COVER TO PIPE IS:
1. LESS THAN 1.2m IN TRAFFICKED AREAS
2. LESS THAN 0.90m IN FIELDS
3. LESS THAN 0.6m IN LANDSCAPED AREAS
4. LESS THAN 0.3m BENEATH BUILDING SLABS

CLASS Z BEDDING DETAIL

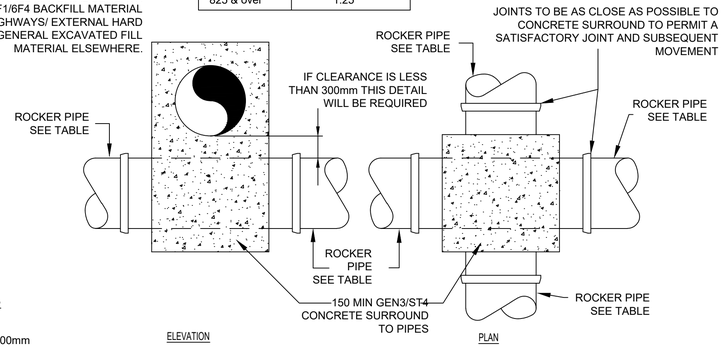
Y VALUE:
HARD SPOTS/IRREGULAR TRENCH BOTTOM BC/4 (200mm MIN)
EVEN TRENCH BOTTOM BC/6 (100mm MIN)
BC = OUTSIDE PIPE DIAMETER



CLASS S BEDDING DETAIL

Y VALUE:
HARD SPOTS/IRREGULAR TRENCH BOTTOM BC/4 (200mm MIN)
EVEN TRENCH BOTTOM BC/6 (100mm MIN)
BC = OUTSIDE PIPE DIAMETER

NOMINAL DIA. (mm)	EFFECTIVE LENGTH (m)
150 to 600	0.6
675 to 750	1.0
825 & over	1.25



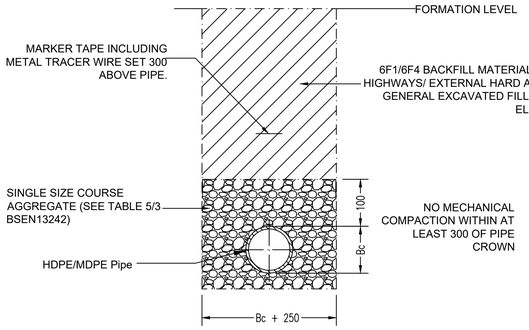
SPECIAL PIPE CROSSOVER DETAIL

REQUIRED IF CLEARANCE BETWEEN PIPES CROSSING EACH OTHER IS LESS THAN 300mm

BS EN 1610:1998 ANNEX B TABLE B.15 COARSE AGGREGATE - PIPE BEDDING							
SIEVE SIZE (mm)	PERCENTAGE BY MASS PASSING BS SIEVES FOR NOMINAL SIZES						
	GRADED AGGREGATE (mm)			SINGLE-SIZED AGGREGATE (mm)			
	40 to 5	20 to 5	14 to 5	40	20	14	10
50.0	100	-----	-----	100	-----	-----	-----
37.5	90 - 100	100	-----	85 - 100	100	-----	-----
20.0	35 - 70	90 - 100	100	0 - 25	85 - 100	100	-----
14.0	-----	-----	90 - 100	-----	-----	85 - 100	100
10.0	10 - 40	30 - 60	50 - 85	0 - 5	0 - 25	0 - 50	85 - 100
5.0	0 - 5	0 - 10	0 - 10	-----	0 - 5	0 - 10	0 - 25
2.36	-----	-----	-----	-----	-----	-----	0 - 5

RIGID PIPES BEDDING GRADING

FOR RIGID PIPES THE BEDDING SHOULD BE SINGLE SIZE MATERIAL OR GRADED MATERIAL FROM 5mm UP TO A MAX SIZE OF 10mm FOR 100mm PIPES; 14mm FOR 150mm PIPES; 20mm FOR 225mm TO 600mm PIPES; 40mm FOR OVER 600mm PIPES



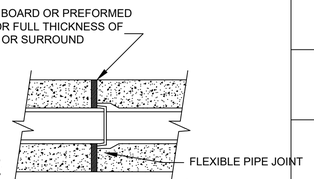
RISING MAIN BEDDING DETAIL

(For HDPE/MDPE PIPES WITH 1.2m MIN. COVER IN VEHICULAR TRAFFICKED AREAS AND 0.9m ELSEWHERE)

PIPE Ø	JOINT THICKNESS
< 450	18mm
450 - 1200	36mm
>1200	54mm

COMPRESSIBLE FILLER TABLE

(BITUMEN IMPREGNATED INSULATING BOARD TO BS EN 622-1 AND BS EN 622-4)



JOINTS FOR CONCRETE SURROUND TO PIPES

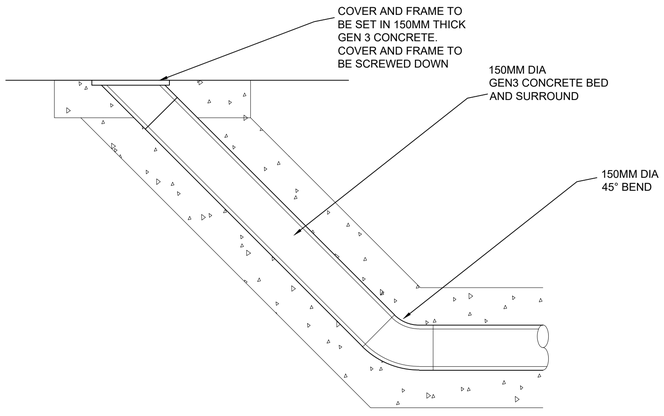
(AT EACH PIPE JOINT)

TRENCH WIDTHS

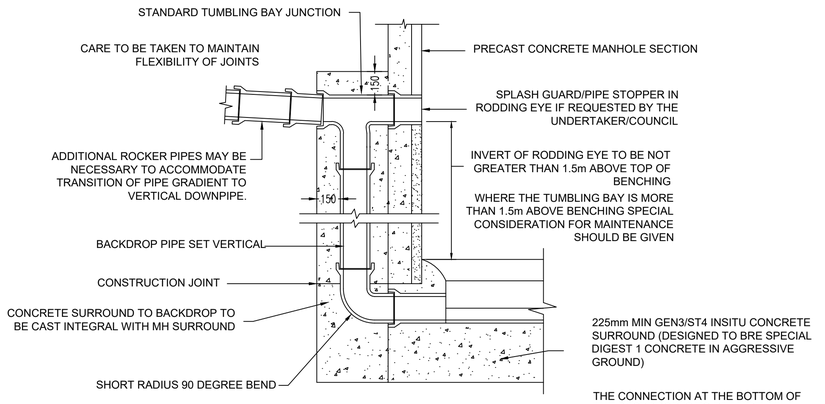
PIPE I.D	OVERALL TRENCH WIDTH
100	550
150	600
225	700
300	850
375	1050
450	1150
525	1200
600	1350
675	1450
750	1500
825	1600
900	1900
1050	2100
1200	2300
1350	2500
1500	2700
1800	3100

BS EN 13242, COARSE AGGREGATE (CLAUSE 4.3.2)		
CATEGORY FOR GENERAL GRADING REQUIREMENTS	Gc80-20	
CATEGORY FOR TOLERANCES AT MID-SIZE	GTnr (NO REQUIREMENTS)	
SIEVES CATEGORY PF MAXIMUM VALUES OF FINES CONTENTS	GRAVEL - F1.5 CRUSHED ROCK, RECYCLED AGGREGATE - F4	
NOMINAL PIPE DIAMETER, mm	AGGREGATE SIZE, mm	
	GRADED	SINGLE SIZED
NOT EXCEEDING 140	-	4/10
EXCEEDING 140 BUT NOT EXCEEDING 400	2/14 or 4/20	4/10, 6/14 or 10/20
EXCEEDING 400	2/14, 4/20 or 4/40	4/10, 6/14, 10/20 or 20/40

FLEXIBLE PIPE BEDDING, HAUNCHING AND SURROUND MATERIAL



TYPICAL RODDING ACCESS DETAIL



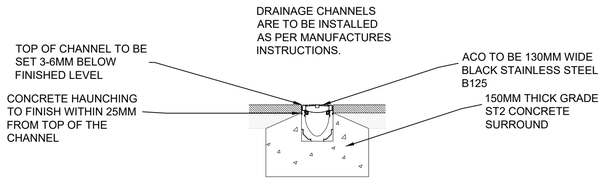
THE CONNECTION AT THE BOTTOM OF THE BACKDROP IS TO BE MADE AT SOFFIT LEVEL IN MANHOLES MAX. PIPE SIZE 825mm AND AT SPRINGING LEVEL IN MANHOLES PIPE SIZE 900 TO 1500mm VERTICAL RODDING EYE MAY BE REQUIRED IN SITUATIONS WHERE BLOCKAGES ARE HIGH RISK.
THE TUMBLING BAY SHALL BE BUILT INTO THE MANHOLE CHAMBER BELOW ANY REUCING SLAB

SEWER DIAMETER (mm)	DROP SHAFT DIAMETER (mm)
225-300	225
375	300
450	375
525-600	450
675	525
750-900	600

MINIMUM DIMENSIONS REQUIRED TO CONSTRUCT BACKDROP	
PIPE DIA. (mm)	MIN DIMENSION (mm)
100	530
150	630
225	915
300	1170

TYPICAL VERTICAL BACKDROP DETAIL

NOTE : WHERE THE DROP IS NOT EXCESSIVE A 45° DROP PIPE MAY BE USED



TYPICAL ACO CHANNEL DETAIL

NOTES
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ALL LEVELS AND DIMENSIONS SHALL BE VERIFIED ON SITE PRIOR TO COMMENCEMENT OF ANY WORKS. ANY DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEERS.
WHERE PLASTIC PIPES ARE PROPOSED FOR ADOPTABLE SEWERS, STRUCTURAL CALCULATIONS FOR THE PLASTIC PIPES AND A SITE INVESTIGATION REPORT TO PROVE THAT THE GROUND CONDITION IS SUITABLE FOR THE PLASTIC PIPES ARE TO BE PRODUCED.
THERE SHOULD BE ENOUGH CLEARANCE TO ACCOMMODATE THE BEDDING FOR BOTH PIPES, APPROX 300MM. IF THE CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY BE INCREASED.
IF PLASTIC PIPES ARE TO BE USED THEN THE FOLLOWING SHOULD APPLY:-
I ADOPTABLE SEWERS TO BE BSI KITEMORK (CERTIFIED TO WIS 4-35-01 & BS EN13476 B) BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENTS OF THE WATER INDUSTRY SPECIFICATION 4-0B-02 (TOBIE IV.)
ADOPTABLE PLASTIC SEWER PIPES TO BE BSI KITEMARKED (CERTIFIED TO WIS 4-35-01 AND BS/EN13476). ADOPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER.
FILLED GROUND OR SOFT SPOTS MUST BE EXCAVATED, BACKFILLED AND CONSOLIDATED UNDER THE
SUPERVISION, AND TO THE SATISFACTION, OF IWNL BEFORE ANY SEWER WORKS ARE CARRIED OUT.
SULPHATE RESISTING CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ORE NOT NECESSARY.
SULPHATE RESISTING CEMENT (C20-DC2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECAUTIONS ORE NOT NECESSARY.
WHERE THERE ARE DOUBLE ROAD GULLIES,THE GULLY LEADS SHALL BE CONNECTED ONTO SEPARATE PIPE LENGTHS.
SURFACE WATER AND FOUL RISING MAINS
MAINS TO BE PROVIDED WITH MARKER TAPE ABOVE THE RISING JOINT TO BE AS CLOSE AS POSSIBLE TO FACE OF MANHOLE TO PERMIT SATISFACTORY JOINT 225MM TO BARREL OF PIPE. SEE TABLE FOR ROCKER PIPE DETAILS. JOINT TO BE AS CLOSE OS POSSIBLE TO FACE OF MANHOLE TO PERMIT SATISFACTORY JOINT AND SUBSEQUENT MOVEMENT PIPE. JOINT TO BE LOCATED MIN 100MM INSIDE FACE OF MANHOLE SEE TABLE FOR ROCKER PIPE DETAILS PIPE JOINT TO BE LOCATED MIN 100MM INSIDE FACE OF MANHOLE MINIMUM WIDTH OF BENCHING TO BE 500MM ALL CHANNELS IN MANHOLES TO BE CLAYWARE MINIMUM WIDTH OF BENCHING TO BE 225MM
IWNL/YW/ICOSA NOT OBLIGED TO ACCEPT FILTER DRAIN/LAND DRAINAGE RUNOFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR IN-DIRECTLY). AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUNOFF WILL THEREFORE BE REQUIRED AND YOU WILL HOVE TO LIAISE WITH THE LAND DRAINAGE AUTHORITY/LAND DRAINAGE SECTION WITH REGARD TO THE DISPOSAL OF THE FILTER DRAIN/LAND DRAINAGE RUNOFF IS REQUIRED.
ALL EXCAVATIONS IN AREAS OF HIGH WATER TABLES AND GRANULAR MATERIALS WITH HIGH SAND/SILT CONTENTS SHALL BE WRAPPED WITH A SUITABLE GEOTEXTILE FILTER MEMBRANE TO PREVENT MIGRATION OF SANDS/SILTS. FULL HEIGHT CLAY TANKS ACROSS TRENCHES AND/OR AT MANHOLE LOCATIONS AT 25M INTERVALS TO RESTRICT WATER MOVEMENT ALONG THE EXCAVATION SHALL BE PROVIDED.
ALL WORKS WITHIN THE PUBLIC HIGHWAY TO BE REINSTATED TO THE HIGHWAY AUTHORITY REQUIREMENTS. ALL DRAINAGE CONNECTIONS ONTO ADOPTABLE DRAINAGE SYSTEMS SHALL BE CARRIED OUT TO THE WATER AUTHORITY'S APPROVAL.

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status: FOR APPROVAL

project: WAKEFIELD ROAD, DESBURY

title: DRAINAGE CONSTRUCTION DETAILS - SHEET 2

date: 02.04.2025

scale @ A1 NTS

job no: 411 drg no: 003 #