Extract from Table A2 WIS 4-08-02

Processed granular bedding and sidefill material for flexible pipes

Pipe nominal bore (mm) se note (d)	Nominal maximum particle size (mm)	Material specified in British Standards see note (a)
100	10	10mm nominal single size
Over 100 to 150	14	10 or 14mm nominal single size or 14mm to 5mm graded
Over 150 to 300	20	10-14 or 20mm nominal single size or 14mm to 5mm graded or 20mm to 5mm graded
Over 300 to 500	20	14 or 20mm nominal single size or 14mm to 5mm graded or 20mm to 5mm graded
Over 550	40	14-20 or 40mm nominal single size or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded

Notes:

(a) Proposed granular material to include aggregates to BS 882, air-cooled blast furnace slag to BS1047 and lightweight aggregates BS3797

(c) For the purpose of this table, PE pipe of 630mm O.D. can be regarded as having a nominal bore of over 550mm irrespective of wall thickness

(d) Nominal bore is used in preference to DN because of the different nominal size classifications for flexible pipes

ALL ADOPTABLE SEWER WORK AND MATERIAL TO BE IN ACCORDANCE WITH SEWER FOR ADOPTION 6th EDITION, THE RELEVANT BRITISH / EUROPEAN AND YORKSHIRE WATER STANDARD / REQUIREMENTS / ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED

SEWERS TO BE LAID IN CLASS 'S' BEDDING 150mm GRANULAR BED AND SURROUND

THE CLEARANCE OF THE CROSSOVER POINTS (MIN 300MM) BETWEEN THE SURFACE WATER, FOUL SEWERS, RISING MAIN AND OTHER SERVICES SHOULD BE SUFFICIENT CLEARANCE TO PROVIDE 150MM GRANULAR BED AND SURROUND AROUND BOTH PIPES

Minimum recommended trench widths for structural wall pipes in poor ground conditions

Native Soil Modulus between 3 and 4 Mpa
Typical Soil Classifications: Very loose gravel, loose sand, medium dense clayey silty sand, firm clay

Nominal Pipe Diameter (mm)	150	225	300	375	450	525	600	750	900
Minimum Trench Width (mm)*	450	525	600	750	900	1050	1200	1500	1800

* A vertical trench face has been assumed to allow a modulus of 7 Mpa to be achieved for the pipe bedding and sidefill material

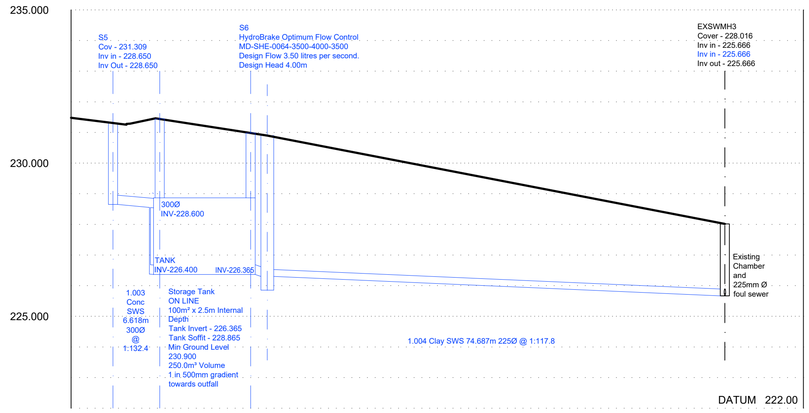
Other Assumed Values: Depth of cover = 6.00 meter max.
Traffic Loading = Main Road
Pipe Stiffness = SNB

Note: Where the native soil modulus is below 3Mpa or the depth of cover exceeds 6.0m guidance should be sought from the pipe manufacturer regarding structural design and installation details

Pipe Diameter (mm)	Minimum Crushing Strength Clay Pipes
150	40KN/m
225	45KN/m
300	72KN/m
375 Concrete	45KN/m
1200 Concrete	144KN/m
1500 Concrete	180KN/m

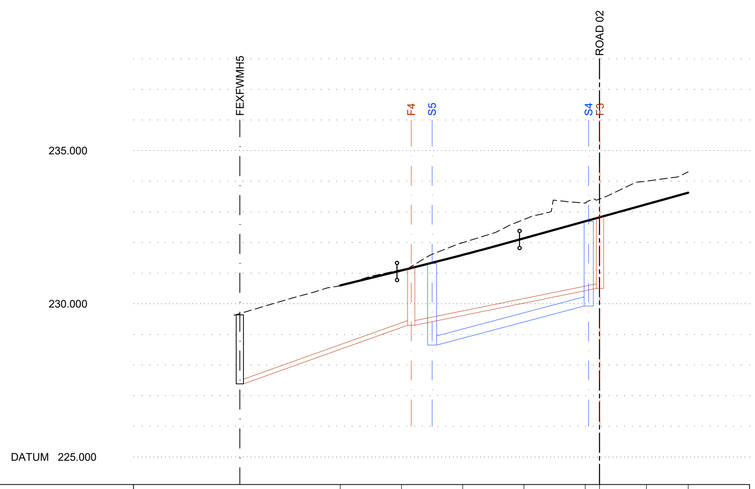
Concrete ,minimum crushing strength should conform to class 120 EN1916/BS5911-1:2002

Nominal Bore of Pipe (mm)	Alternative Aggregate Sizes Single Sized	(mm) Graded (Where directed)
100 - 125	10	-
150 - 200	10 or 14	14 - 5
225 - 300	10, 14 or 20	14-5 or 20-5
375 - 500	14 or 20	14-5 or 20-5
Exceed 500	14, 20 or 40	14-5 or 20-5 or 40-5



S5 to EXSWMH3

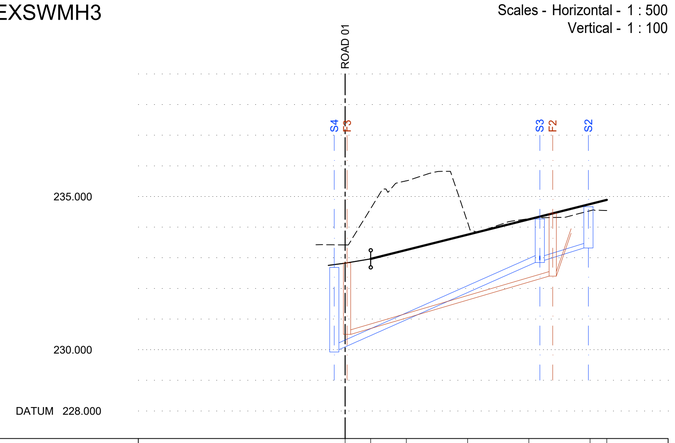
Scales - Horizontal - 1 : 500
Vertical - 1 : 100



CHAINAGE	0.000	10.000	20.000	30.000	40.000	42.334	50.000	56.818
EXISTING GROUND LEVEL	230.584	231.102	231.996	232.752	233.287		234.004	234.306
ALIGNMENT LEVEL	230.600	231.082 231.084	231.596	232.096 232.098	232.692		233.248	233.627
VERTICAL ALIGNMENT	G= 4.881% 1: 20.5		KF= 29.65836 L= 20.000		G= 5.556% 1: 18.0			
HORIZONTAL ALIGNMENT	R= 1.000	R= 1.000	R= 1.000					
STORMWATER COVER LEVEL		CL231.309 IL228.650			CL232.720 IL229.926			
STORMWATER DETAILS			Pipe 1.002 Dia 300 Circular CLAY 1 in 20.4 26.063					
FOULWATER COVER LEVEL	CL229.637 IL227.387	CL231.168 IL229.300	IL229.300		CL232.870 IL230.500			
FOULWATER DETAILS	Pipe 1.003 Dia 150 Circular CLAY 1 in 15 28.404		Pipe 1.002 Dia 150 Circular CLAY 1 in 26.3 31.518					

ROAD 01

Scales - Horizontal - 1 : 500
Vertical - 1 : 100



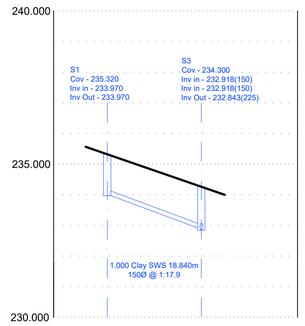
CHAINAGE	0.000	4.181	10.000	20.000	30.000	40.000	42.726
EXISTING GROUND LEVEL	233.420		235.510	234.157	234.276	234.536	234.541
ALIGNMENT LEVEL		232.962	233.253	233.753	234.253	234.753	234.890
VERTICAL ALIGNMENT			G= 5.000% 1: 20.0				
HORIZONTAL ALIGNMENT							
STORMWATER COVER LEVEL		CL232.720 IL230.001			CL234.3009 IL232.943	CL234.667 IL233.317 IL232.918	
STORMWATER DETAILS			Pipe 1.001 Dia 225 Circular CLAY 1 in 12 33.553		Pipe 2.000 Dia 150 Circular CLAY 1 in 19. 7.936		
FOULWATER COVER LEVEL		CL232.870 IL230.500			CL234.490 IL232.400		
FOULWATER DETAILS			Pipe 1.001 Dia 150 Circular CLAY 1 in 18 33.571				

ROAD 02

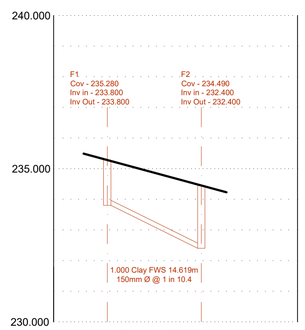
Scales - Horizontal - 1 : 500
Vertical - 1 : 100

YORKSHIRE WATER NOTES:

1. All adoptable sewer works and material to be in accordance with "Code for Adoption". The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked".
2. Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
3. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
4. Yorkshire Water is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.
5. Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), "Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.
6. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
7. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
8. "Sewers must have 5 metres clearance from trees and hedges or the width of the canopy at mature height.
9. Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provided above granular bed and surround.
10. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
11. The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
12. Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.
13. 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 lengths. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
14. The minimum crushing strength for clay pipes should be as follows: 100mm dia. 40KN/m, 150mm dia. 40KN/m, 225mm dia. 45KN/m and 300mm dia. 72KN/m. The minimum crushing strength for concrete pipes should be - (Class 120 to EN 1916/BS5911-1 2002). Plastic pipes should conform to WIS 4-35-01 and BS EN13476.
15. Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.
16. There should be enough clearance at crossovers to accommodate bedding to both pipes, approx. 300mm : if crossover is near the rocker then the clearance needed may be increased".



S1 to S3



F1 to F2

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Rev:	Date:	Amendment:	DRN	CHK	APR
B	16.01.24	Revision made due to updated architects layout	IE		
A	13.11.23	Revision made due to updated architects layout	IE		

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Client: Jones Homes (Yorkshire) Limited

Status:

Scale: As Shown
Size: A1 - 841 x 594
Drawn: IE
Chkd: NB
Appvd:

Project: Residential Development Swallow Lane, Golcar, Phase 2

Title: Longsections

Drawing No: 22/278/500/001
Revision: B
Job No: 22-278
Date: 24.06.22

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