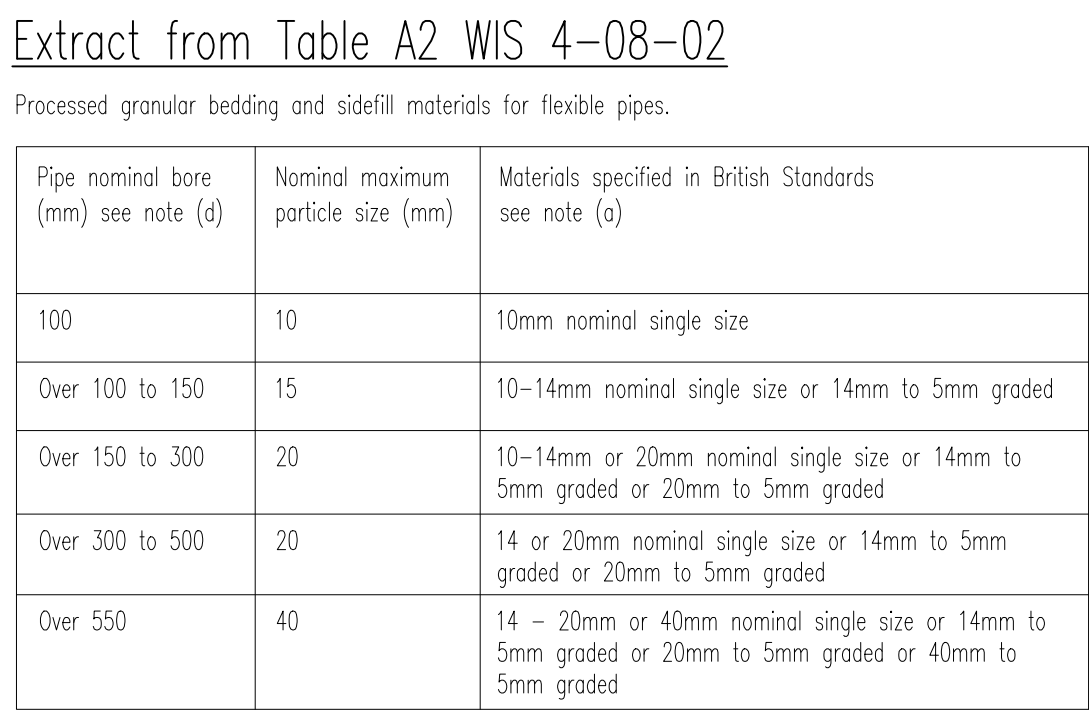


Manufacturer List			
PIPES			
Product Name	Diameter (mm)	Manufacturer	Material
Supersleeve	100 & 150 (I.D.)	Hepworth	Vitrified Clay
Supersseal	150 & 225 (I.D.)	Hepworth	Vitrified Clay
Densileave	100, 150 & 225 (I.D)	Naylor	Vitrified Clay
Denseal	100, 150 & 225 (I.D)	Naylor	Vitrified Clay
Ultra-Drain	110 & 160 (O.D.)	Uponor	uPVC
PlastiDrain	110 & 160 (O.D.)	Hepworth	uPVC
OsmaDrain	110 & 160 (O.D.)	Wavin	uPVC
Osma UltraRib	150 & 225 (I.D.)	Wavin	uPVC
Solid Wall	110 & 160 (O.D.)	Marley	uPVC
Quantum	150 & 225 (I.D.)	Marley	uPVC
Underground Drain	110 & 160 (O.D.)	Polypipe	uPVC
Ridgisewer	150 & 225 (I.D.)	Polypipe	uPVC

Demarcation Chamber				
Manufacturer	Product Name	Material	Max depth	Cover Type
Naylor	Plastic Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Hepworth	PPIIC	Polypropylene	Up to 1200mm	Class B125
Uponor	Inspection Chamber (450mm Ø)	Polypropylene	Up to 1200mm	Class B125
Marshalls	Inspection Chamber To BS 5911 pt 2	Precast concrete	Up to 1000mm	Class B125
Wavin	Osma UltraRib Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Wavin	OsmaDrain Universal Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Wavin	Non Entry Inspection Chamber	Polypropylene	Up to 2000mm	Class B125
Marley	Inspection Chamber (450mm Ø)	Polypropylene	Up to 1200mm	Class B125
PolyPIPE	110 Inspection Chamber (460mm Ø)	Polypropylene	Up to 1200mm	Class B125
PolyPIPE	Non man Entry Deep Inspection Chamber System	Polypropylene	Up to 2000mm	Class B125

Note:
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.



Notes:

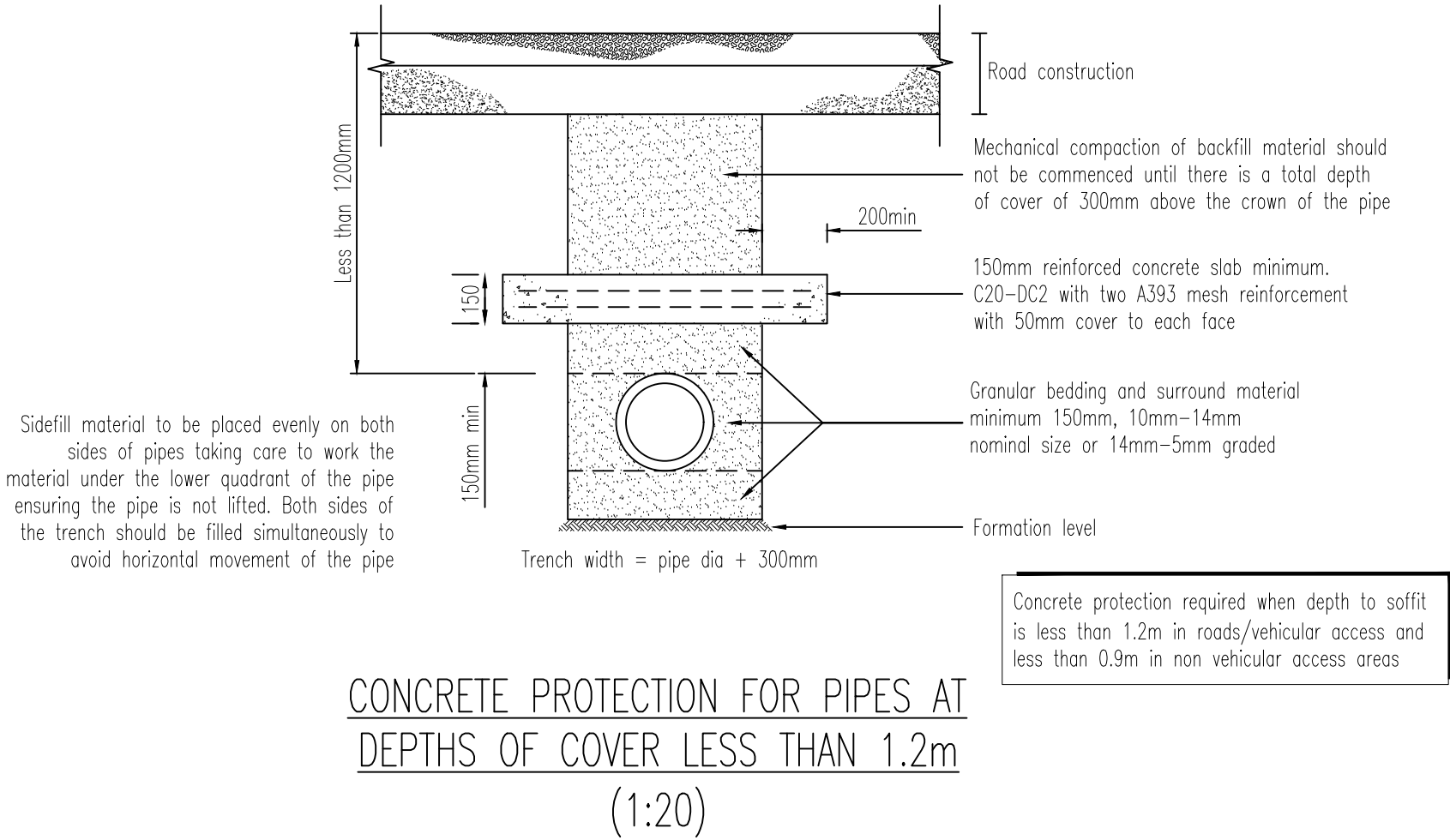
- (a) Processed granular materials to include aggregates to BS 882, air-cooled blast furnace slag to BS1047 and lightweight aggregates to BS 3797
- (b) For the purpose of this table, PE pipe of 630mm O.D. can be regarded as having nominal bores of over 550mm, irrespective of wall thickness.
- (c) Nominal bore is used in preference to DN because of the different nominal size classifications for flexible pipes

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

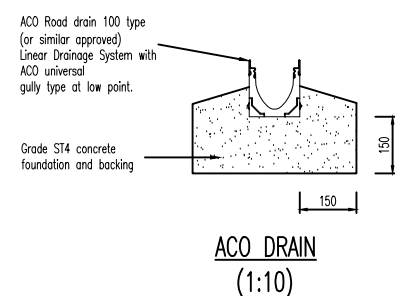
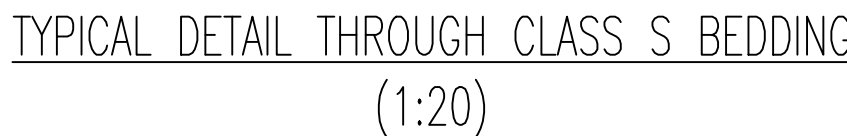
Nominal Pipe Diameter (mm)	150	225	300	375	450	525	600	750	900
Minimum Trench Width (mm)*	450	525	600	750	900	1050	1200	1500	1800

Other assumed values: Depth of cover = 6.0 metres (max)
Traffic Loading = Main Road
Pipe stiffness = SN6

Note. Where the native soil modulus is below 3Mpa or the depth of cover exceeds 6 metres guidance should be sought from the pipe manufacturer regarding structural design and installation details.



CONCRETE PROTECTION FOR PIPES AT
DEPTHS OF COVER LESS THAN 1.2m
(1:20)



SUBJECT TO THE
APPROVAL OF
ALL RELEVANT
AUTHORITIES

N O T E S									
<u>Yorkshire Water notes:</u>									
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 for Kitemarked products.									
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 BS1 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-D02) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.									
7. The adoptable sewers should provide a minimum of 1m and manholes 0.5m from kerb faces and service margins.									
8. Sewers must have 3 metres clearance from trees and hedges.									
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 provide 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 on increment to accommodate the connections and bends.									
12. Yorkshire Water policy is that Type "C" brick manholes and 1000mm dia manhole rings are not preferred. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sized 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/DIN13476). 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 ² , 150mm dia. 40kN/m ² , 225mm dia. 45kN/m ² and 300mm dia. 72kN/m ² . The minimum crushing strength for concrete pipes should be : (Class 120 to EN 1916/BS5911 - 2002). Plastic pipes should conform to WIS 4-35-01 and BS DIN13476.									
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.									
KMC Structures AIP – For MFL chambers of 1500mm diameter and above.									
Technical approval for the design of circular RC cover slabs up to and including 3.0m (internal diameter) will not be required subject to the following conditions:									
1. Proof that the circular RC cover slab units to be used at this site are marked with 'BS EN 1917 & BS 5901-3-R' to confirm that the product represents a manufacturer's declaration that the product meets the requirement of the standards.									
2. Confirmation of Design Chemical Class (DC-Class) of concrete in the cover slab units.									
3. Submission of a satisfactory Design & Check Certificate (Category 0) in compliance with BS07/12- Technical Approval of Highway Structures.									
4. Submission of a satisfactory Construction Compliance Certificate in accordance with BS07/12 upon the completion of works.									
A	MB	04.11.21	REVISED TO SUIT SECTION 104 COMMENTS				RJ	RJ	
/	RJ	13.04.21	PRELIMINARY				MI	MI	
Rev	By	Date	Revision				Chk	Apd	
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ARP Associates is a trading division of ARP Geotechnical Ltd, a company registered in England and Wales with company number 3771811, whose registered office is at 5/6 Northwest Business Park, Servia Hill, Leeds LS6 2QH									
TITLE									
TYPICAL DRAINAGE DETAILS SHEET 2 OF 3									
PROJECT									
PLANE STREET, HUDDERSFIELD									
CLIENT									
UNITY HOUSING ASSOCIATION									
DRAWING STATUS									
APPROVAL									
Scale			Date			Drawn		BHB	
AS SHOWN @ A1			APR 21			Chk.		RJ	
Dwg. No.								Rev	
257/05/07.02								A	