

Manhole Number	Cover Level		Pipe		Diam	Type	
	Depth to Surface	Inverts	Diams	Length Gradient		Cover	Manhole
PF01	172.35	170.25	150	L= 6.00	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.95						
PF02	171.70	169.85	150	5.00	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.80						
PF03	171.20	168.55	150	L= 4.70	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.70						
PF04	170.30	168.55	150	L= 10.80	1200	B125	Type B Manhole
	3.60						
PF05	169.05	167.20	150	L= 7.50	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.95						
PF06	168.95	166.85	150	L= 9.30	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.80						
PF07	167.70	166.10	150	L= 6.50	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.50						
PF08	167.30	166.10	150	L= 8.50	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.05						

Manhole Number	Cover Level		Pipe		Diam	Type	
	Depth to Surface	Inverts	Diams	Length Gradient		Cover	Manhole
PS01	172.30	170.25	150	L= 4.50	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.50						
PS02	171.80	169.65	150	L= 2.80	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.40						
PS03	171.15	167.45	150	L= 5.00	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.35						
PS04	168.80	166.85	150	L= 4.80	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.20						
PS05	170.30	167.25	150	L= 3.00	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.45						
PS06	169.05	167.75	150	L= 5.10	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.65						
PS07	168.80	166.00	150	L= 7.70	450	B125	Polypropylene Inspection Chamber (PPIC)
	0.90						
PS08	167.90	165.20	150	L= 8.00	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.75						
PS09	167.25	165.20	150	L= 3.50	450	B125	Polypropylene Inspection Chamber (PPIC)
	1.90						

Adoptable Connection (Laterals) - Pipes.

Vitrified Clay Pipes to BS EN 295 kitemarked.

Unplasticised PVC pipes to BS 4650:2000 & BS EN 1401-1 kitemarked.

Structured Wall Unplasticised PVC pipes to WIS 4-35-01 kitemarked.

Product Name	Diameter (mm)	Manufacturer	Material
SuperSteve	100 & 150 (I.D.)	Hepworth	Vitrified Clay
Superseal	150 (I.D.)	Hepworth	Vitrified Clay
Denseave	100, 150 (I.D.)	Naylor	Vitrified Clay
Denseal	100, 150 (I.D.)	Naylor	Vitrified Clay
Ultra Fortis	150 to 300	Upponor	uPVC
Ultra-Drain	110 & 160 (O.D.)	Upponor	uPVC
Plastidrain	110 & 160 (O.D.)	Hepworth	uPVC
OsmoDrain	110 & 160 (O.D.)	Wavin	uPVC
Osmo UltraRb	150 (I.D.)	Wavin	uPVC
Solid Wall	110 & 160 (O.D.)	Marley	uPVC
Quantum	150 (I.D.)	Marley	uPVC
Underground Drain	110 & 160 (O.D.)	Polypipe	uPVC
Ridgisewer	150 (I.D.)	Polypipe	uPVC

Adoptable Connection (Laterals) - Pipe Bedding.

Pipes shall be provided with single size full granular bed and surround (class S). Pipes in highway with less than 1.2 metres cover shall not be plastic and shall be protected by reinforced concrete slab placed above.

Adoptable Connection (Laterals) - Size and Gradients.

- Four:
- 100mm less than 10 properties min gradient 1:30
 - 150mm greater than 10 properties min gradient 1:150
- Combined:
- 150mm less than 10 properties min gradient 1:100
 - 150mm greater than 10 properties min gradient 1:150
- Surface Water:
- Minimum diameter is 150mm at min gradient 1:150

Manufacturer	Product Name	Material	Max. Depth	Cover Type
Naylor	Plastic Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Hepworth	PPIC	Polypropylene	Up to 1200mm	Class B125
Upponor	Inspection Chamber (450mm Ø)	Polypropylene	Up to 1200mm	Class B125
Marshalls	Inspection Chamber To BS5911 pt 2	Precast Concrete	Up to 1000mm	Class B125
Wavin	Osmo UltraRb Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Wavin	OsmoDrain 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	110mm Inspection Chamber (460mm Ø)	Polypropylene	Up to 1200mm	Class B125
Polypipe	Non Man Entry Deep Inspection Chamber System	Polypropylene	Up to 2000mm	Class B125

Concrete surround shall be provided to demarcation chamber where subject to vehicle loading (e.g. driveways). For depths in excess of 1.2m a restricted access opening 350mm diameter (or 300x300mm) shall be used.

Alternatively, pre-cast concrete ring manhole to Sewers for Adoption 6th Edition Specification may be used as demarcation chamber. Chamber covers shall be ductile iron and appropriate strength for area situated (minimum classification B125).

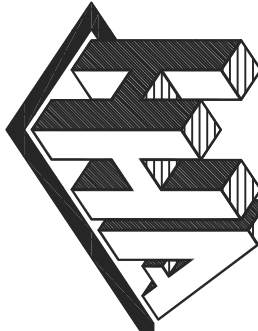
1. ALL ADAPTABLE SEWER WORKS AND MATERIAL, TO BE IN ACCORDANCE WITH 'SEWERS FOR ADOPTION' 6th EDITION. THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATERS ADAPTABLE SPECIFICATIONS SHALL BE USED. THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATERS KITEMARKED, ALL ADAPTABLE SEWERS TO BE BS1 KITEMARK, CERTIFIED TO MS 4-5-01
2. MANHOLE COVERS SHALL MUST HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D40 TO BS EN 124 WITH 100mm DEEP FRAMES IN HIGHWAYS OR CLASS B 125 IN FOOTWAYS, PEDESTRIAN
3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION OUT, TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. YORKSHIRE WATERS IS NOT OBLIGED TO ACCEPT FILTER DRAIN, LAND DRAINAGE RUNOFF INTO THE DRAINAGE SYSTEM, BUT WILL BE RESPONSIBLE FOR THE PROVISION OF A DRAINAGE RUNOFF WATER ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUNOFF WATER. 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 RUNOFF 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 600/600mm FOR THE YORKSHIRE WATER SPECIFIED COVER SIZE. PLEASE REFER TO THE YORKSHIRE WATER SPECIFICATION FOR THE TECHNICAL BULLETIN ISSUED AUTUMN 2004 FOR KITEMARKED COVER SLAB OPENING SIZES.
5. ALL PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECASTS ARE NOT NECESSARY.
6. SEWERS MUST HAVE 5mm CLEARANCE FROM TREES AND HEDGES (PLEASE ALSO REFER TO FIGURE 8.2 ON PAGE 39 IN 'SEWERS FOR ADOPTION' 6th EDITION FOR RESTRICTIONS ON TREE PLANTING
7. BEDDING AND BACKFILL MATERIAL, TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 448-02 (TABLE A2).
8. ALL PIPEWORK 300mm DIA. OR LESS TO BE VITRIFIED CLAY COMPARING WITH BS 65. MINIMUM 100mm DIA. 400mm DIA. OR GREATER TO BE AS FOLLOWS: 100mm DIA 400mm, 225mm DIA 450mm and 300mm DIA 475mm.
9. ALL PIPEWORK 375mm DIA. OR GREATER TO BE CONCRETE CLASS 120, 54kN/m MINIMUM CRUSHING STRENGTH.
10. ALL SEWER MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENDS.
11. 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. TO PIPE SOFFIT IS 1-1.5m.
12. ALL SEWER MANHOLES WITH THE OPENING SIGHTED OVER THE CHANNEL WHERE DEPTH OF COVER TO PIPE SOFFIT IS 1-1.5m.
13. ALL HIGHWAY WORKS AND MATERIAL TO CONFORM WITH NIKELKEES COUNCIL SPECIFICATION.
14. ALL COVER AND FRAMES SHALL BE C250 DUCTILE IRON AND COMPLY WITH EUROPEAN STANDARD EN 12440.
15. GULLY COVER AND FRAMES SHALL BE C250 DUCTILE IRON AND COMPLY WITH EUROPEAN STANDARD EN 12440.
16. SULPHATE RESISTANT CEMENT (C20-D2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED PROVING THAT SUCH PRECASTS ARE NOT NECESSARY.
17. ALL SEWER MANHOLES MUST BE 1000mm DIA. UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY IN LONGER LENGTHS.
18. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTED BY YORKSHIRE WATER AND CLAYWARE CHANNELS ARE TO BE USED.

ITEM	LEVEL OF RISK	SUGGESTED ACTION
DEEP EXCAVATIONS ASSOCIATED WITH NEW DRAINAGE WORKS	HIGH	ENGINE ALL EXCAVATIONS HAVE ADOPTIVE TRINCH SUPPORTS
WORKING LARGE DIAMETER MANHOLES RINGS AND CIRCULAR PIPES	HIGH	ADDITIONAL SUPPORTS TO BE PROVIDED TO THE EXCAVATION AND THE EXCAVATION SHALL BE PROTECTED BY A PROTECTIVE SHIELD
CONTACT WITH SEWER	MED	OPERATIVES TO USE CORRECT TECHNIQUE TO MAKE CORRECT PIPE
WORKS	MED	OPERATIVES TO USE CORRECT EAM PROTECTIVE CORRECT PIPE
DRAINAGE EXCAVATION ADJACENT EXISTING ROAD/RAIL STRUCTURES	HIGH	ENGINE CORRECT SUPPORTS ARE PROVIDED TO THE EXCAVATION AND THE EXCAVATION SHALL BE PROTECTED BY A PROTECTIVE SHIELD
DRAINAGE EXCAVATION IN PUBLIC HIGHWAY	HIGH	ENGINE CORRECT SUPPORTS ARE PROVIDED TO THE EXCAVATION AND THE EXCAVATION SHALL BE PROTECTED BY A PROTECTIVE SHIELD
ADJACENT ACCESS TO ADJACENT PROPERTIES AND OCCUPANTS	HIGH	ENGINE CORRECT SUPPORTS ARE PROVIDED TO THE EXCAVATION AND THE EXCAVATION SHALL BE PROTECTED BY A PROTECTIVE SHIELD
WORKING IN CONFINED SPACES, WORKING IN DRENDS AND MANHOLES	HIGH	ENGINE CORRECT SUPPORTS ARE PROVIDED TO THE EXCAVATION AND THE EXCAVATION SHALL BE PROTECTED BY A PROTECTIVE SHIELD
WORKING IN HIGHWAYS/ RIGGS FROM VEHICLE AND PLANT	HIGH	ENGINE CORRECT SUPPORTS ARE PROVIDED TO THE EXCAVATION AND THE EXCAVATION SHALL BE PROTECTED BY A PROTECTIVE SHIELD
ROAD AND DRAINAGE CONSTRUCTION	HIGH	ENGINE CORRECT SUPPORTS ARE PROVIDED TO THE EXCAVATION AND THE EXCAVATION SHALL BE PROTECTED BY A PROTECTIVE SHIELD

IT IS ASSUMED THAT A PERSON ASSOCIATED WITH THE DESIGN OR CONSTRUCTION OF A PERSON OR PERSONS WHO ARE COMPETENT AND HAVE THE REQUIRED LEVEL OF EXPERIENCE AND SKILLING

Rev B: Updated to suit latest MR&S.

Rev A: Schedule updated to suit latest drainage design.



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PERSIMMON HOMES LEEDS

BARNSELEY ROAD, FLOCKTON

LATERAL CONNECTION SCHEDULE

Detail	Dwn	Chkd	Dat	Scale	Dwg No.
	LM		AUG 15	NTS@A1	E161610008B

03.10.17 LM

23.04.17 LM