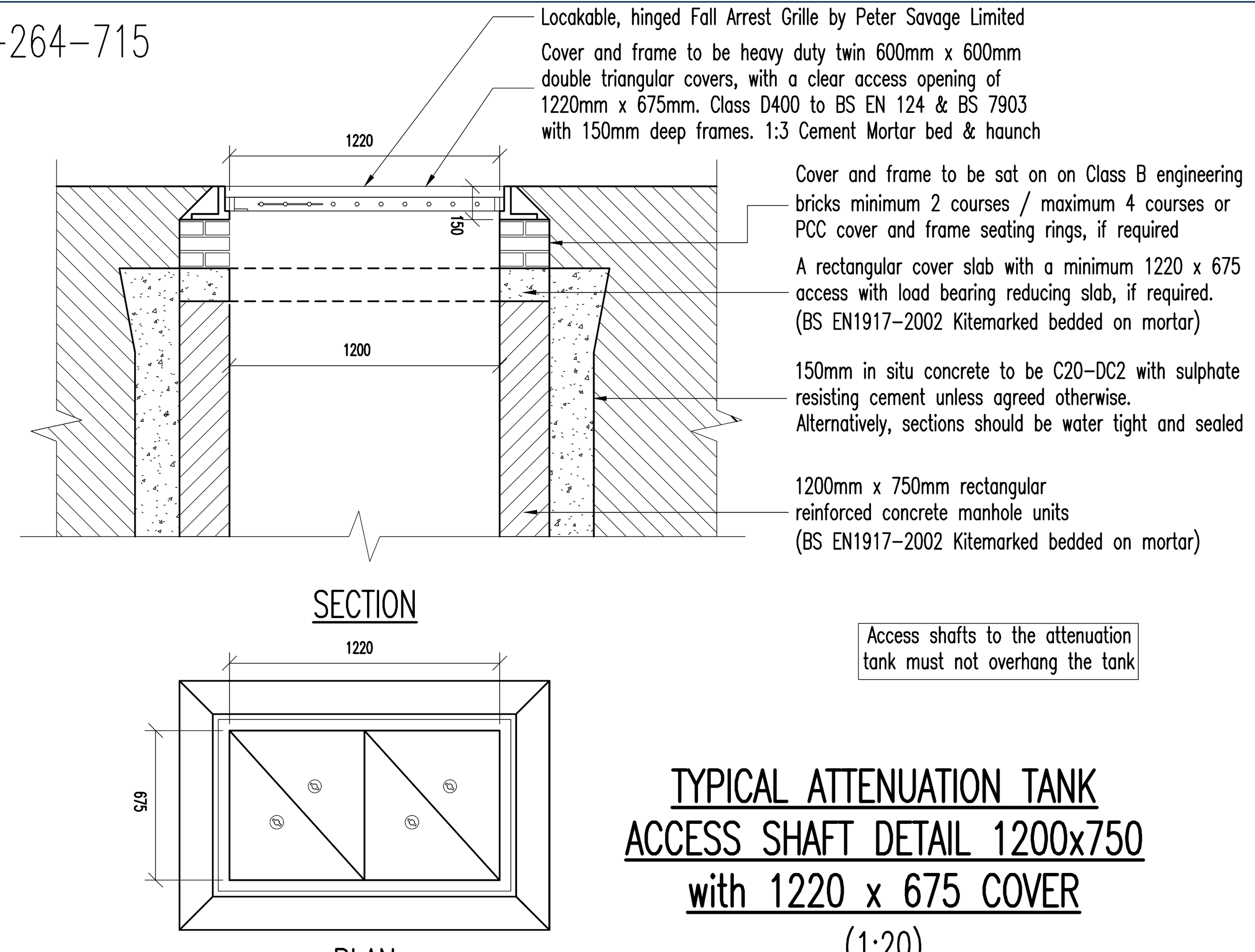
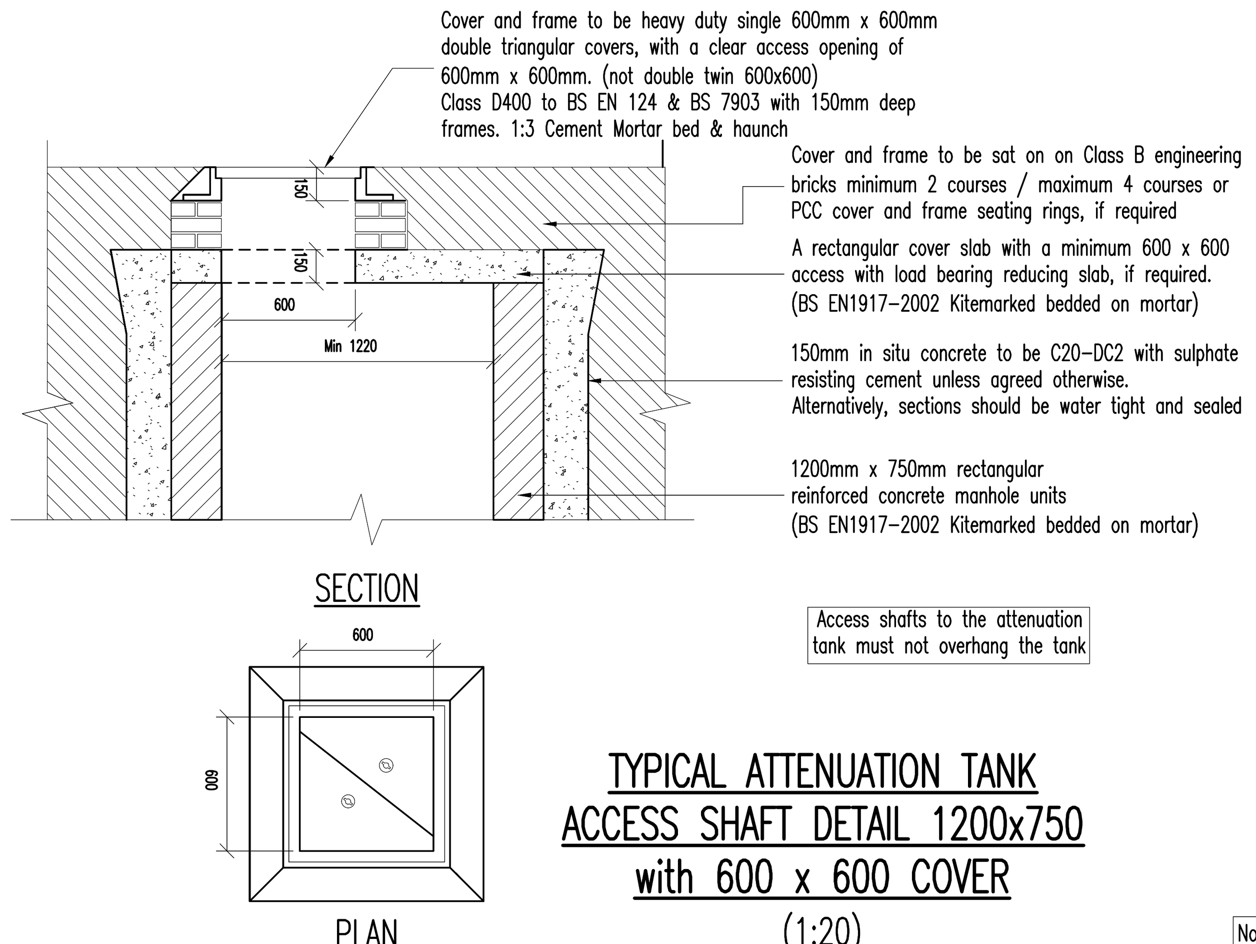
H-3-264-715



Access shafts to the attenuation tank must not overhang the tank

TYPICAL ATTENUATION TANK ACCESS SHAFT DETAIL 1200x750 with 1220 x 675 COVER

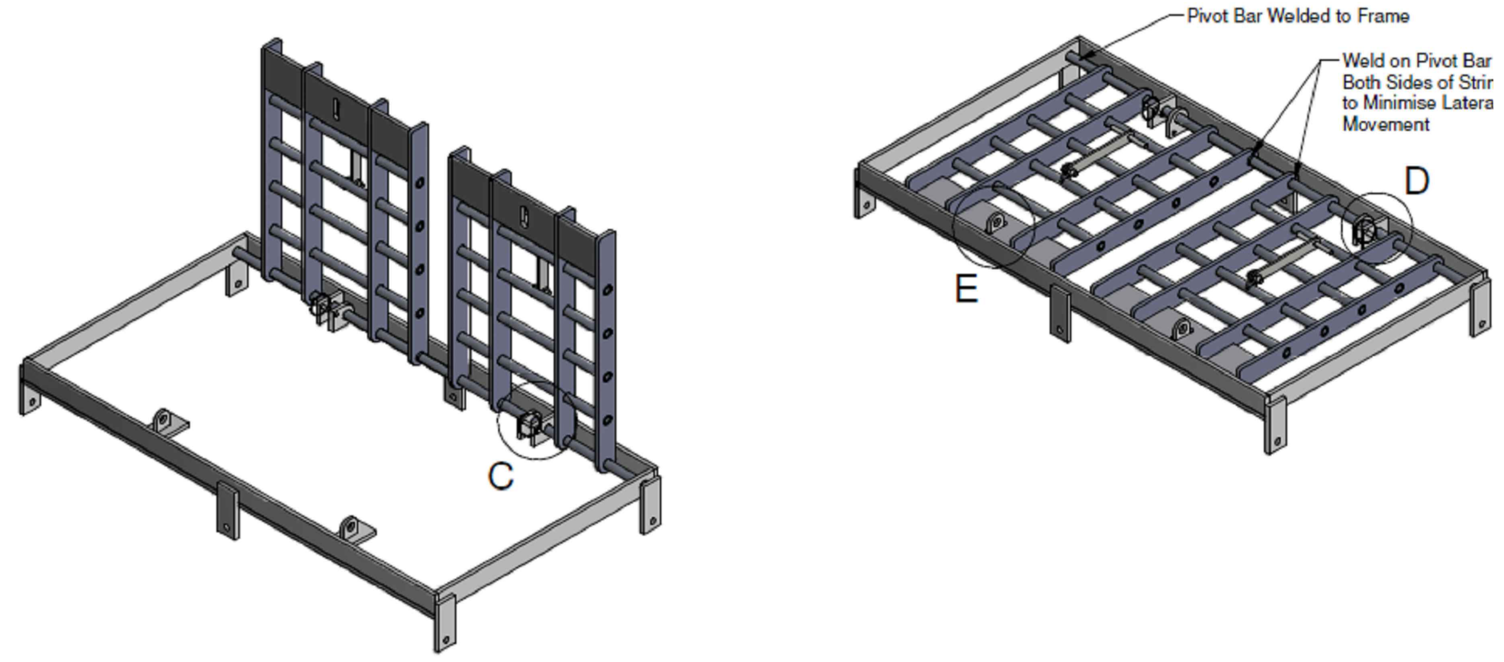
(1:20)



Access shafts to the attenuation tank must not overhang the tank

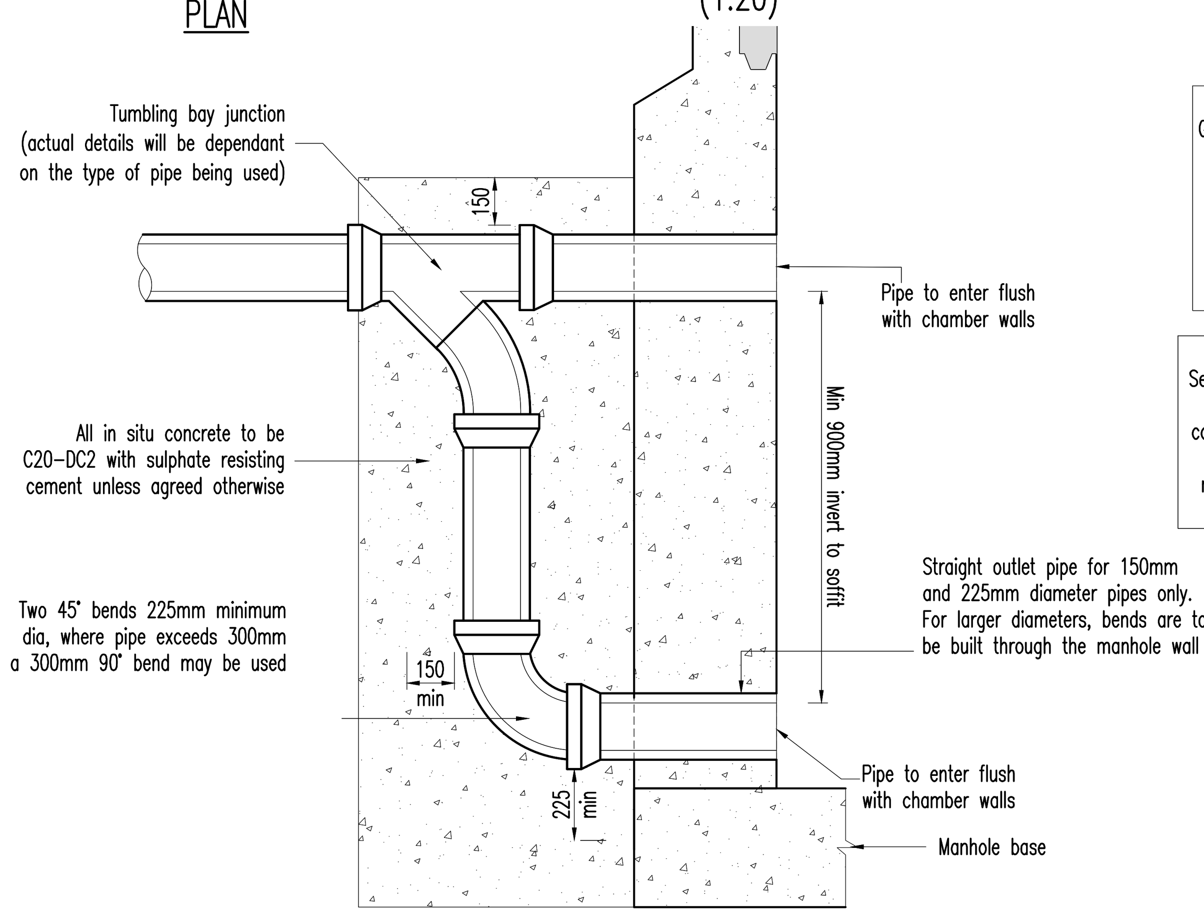
TYPICAL ATTENUATION TANK ACCESS SHAFT DETAIL 1200x750 with 600 x 600 COVER

(1:20)



TYPICAL FALL ARREST GRILLE DETAIL (BY PETER SAVAGE LIMITED)

(NTS)



TYPICAL BACKDROP DETAIL

(1:20)

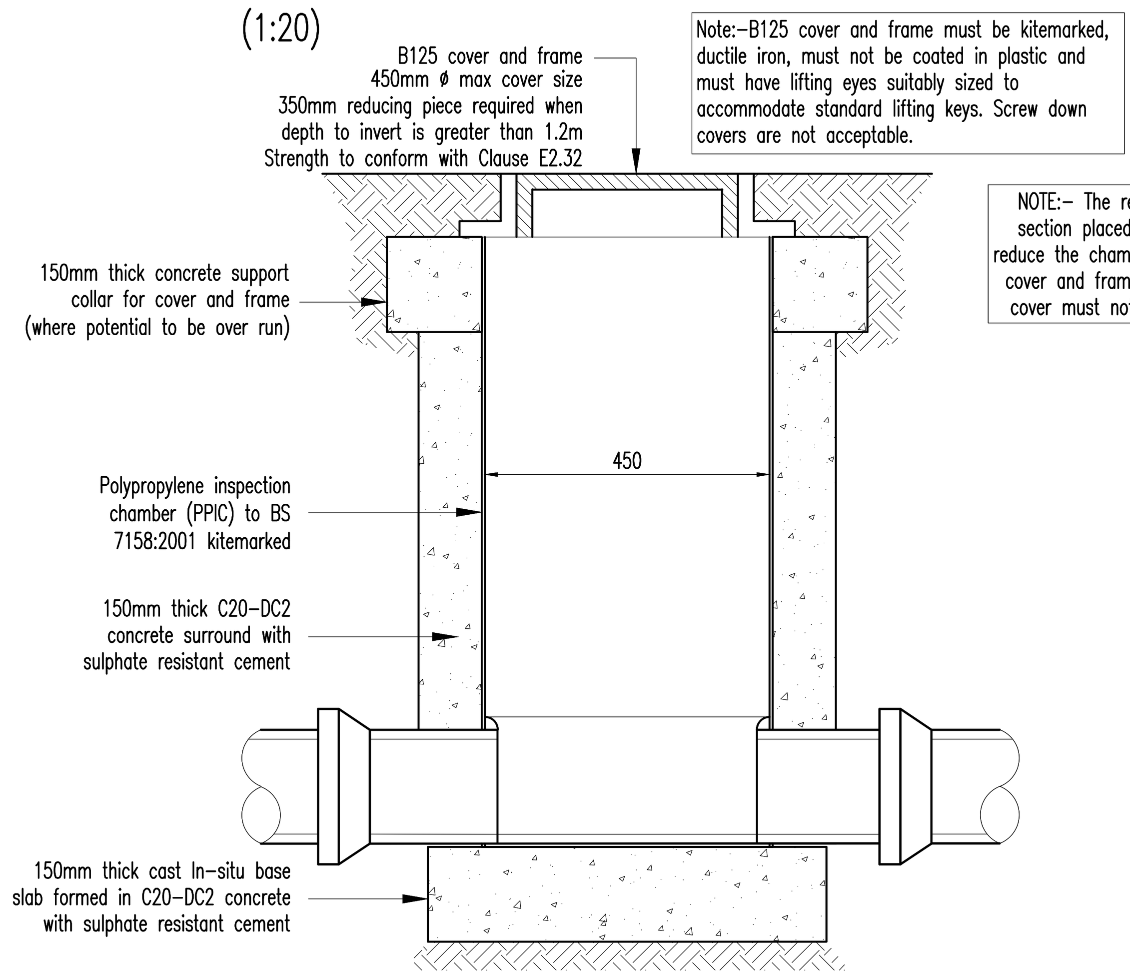
NOTE:- General Backfill
General backfill to drainage trenches in vehicular trafficked areas above the pipe bedding shall be suitably selected material (in accordance with BS 8301 clause 5.7.6.1.) and be placed in layers not exceeding 225mm, each layer compacted to form a stable trench backfill, should the material be unsuitable or weather conditions affect the materials stability, then a hard granular material shall be used up to formation level.

NOTE: Selected Backfill
Selected fill material shall consist of uniform soil, free from stones larger than 40mm, clay lumps larger than 75mm, tree roots, contaminated material. Selected backfill material is to be placed in layers not exceeding 150mm thickness. Should the excavated material be unsuitable or weather conditions affect the materials stability, then a suitable hard granular material shall be used.

Mechanical compaction of fill material shall not be permitted until there is a total depth of cover of 300mm above barrel/crown of the pipe

Sidefill material to be placed evenly on both sides of pipes taking care to work the material under the lower quadrant of the pipe ensuring the pipe is not lifted. Both sides of the trench should be filled simultaneously to avoid horizontal movement of the pipe

Any trench box/sheeting to terminate 150mm above crown of pipe to prevent displacement of granular material. Boxing/sheeting to be removed progressively during placement of main backfill



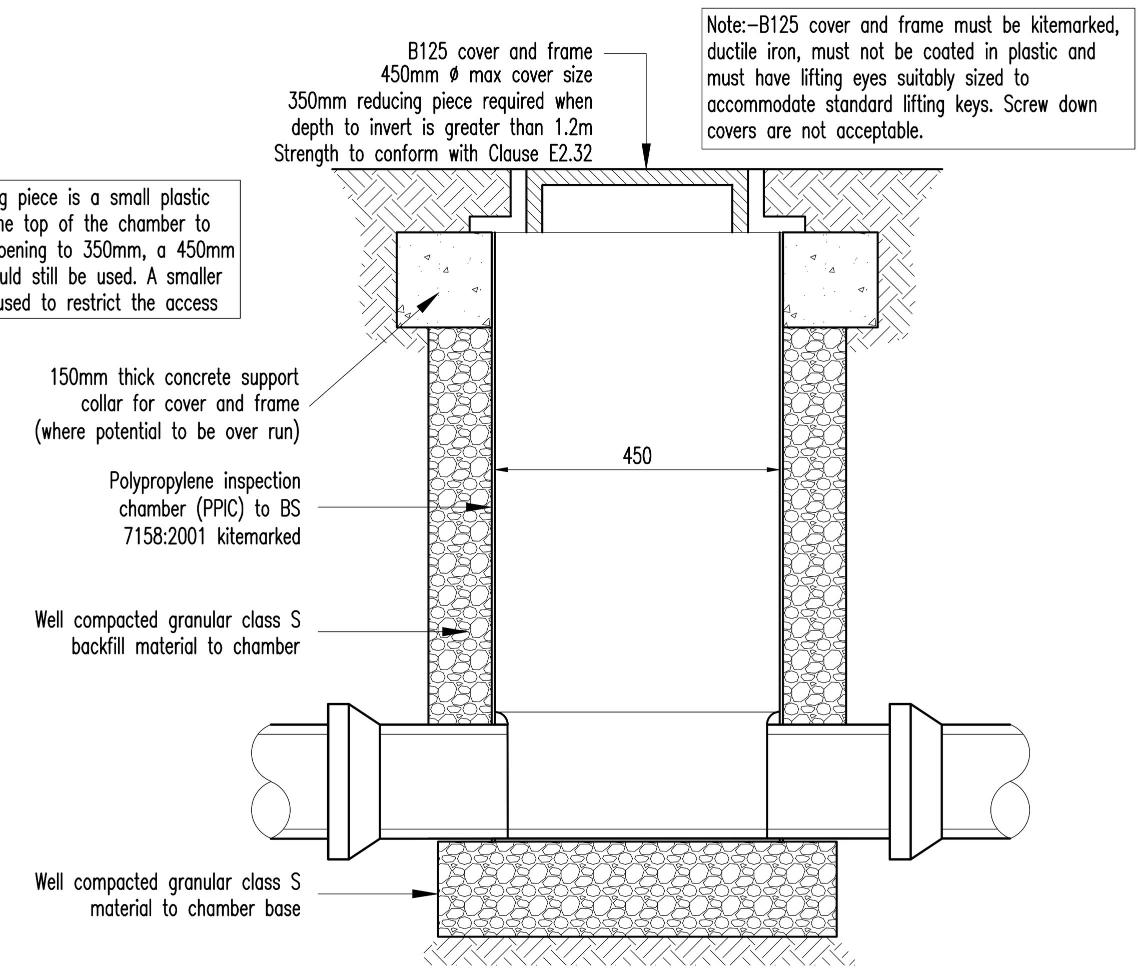
Note:-B125 cover and frame must be kitemarked, ductile iron, must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.

NOTE:- The reducing piece is a small plastic section placed at the top of the chamber to reduce the chamber opening to 350mm, a 450mm cover and frame should still be used. A smaller cover must not be used to restrict the access

TYPICAL (PPIC) POLYPROPYLENE DEMARCATION CHAMBER

(DRIVEWAYS, MAX 2m DEEP)

(1:10)

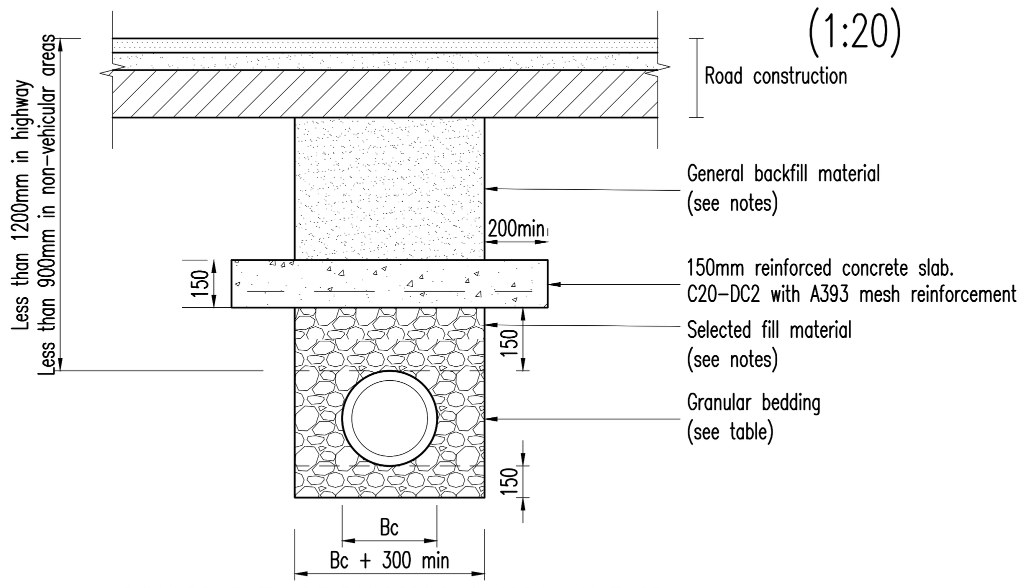


Note:-B125 cover and frame must be kitemarked, ductile iron, must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.

TYPICAL (PPIC) POLYPROPYLENE DEMARCATION CHAMBER

(GARDEN AREAS, MAX 2m DEEP)

(1:10)



CONCRETE PROTECTION FOR PIPES

(1:20)

PIPE NOMINAL SIZE (mm)	NOMINAL MAXIMUM PARTICLE SIZE (mm)	MATERIALS SPECIFIED IN BRITISH STANDARDS
100	10	10mm nominal single size
110 to 150	16	10-14mm nominal single size or 14mm to 5mm graded
160 to 300	20	10-14mm or 20mm nominal single size or 14mm to 5mm graded or 20mm to 5mm graded
310 to 500	20	14 or 20mm nominal single size or 14mm to 5mm graded or 20mm to 5mm graded
Over 550	40	14 - 20mm or 40mm nominal single size or 14mm to 5mm graded or 20mm to 5mm graded or 40mm to 5mm graded

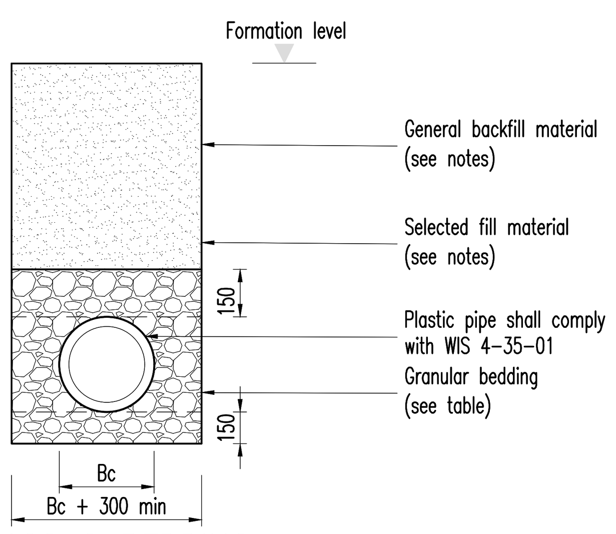
Notes:

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

GRANULAR BEDDING MATERIAL
EXTRACT FROM TABLE A2 WIS-4-08-02



CLASS S BEDDING

(1:20)

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

Notes:

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

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

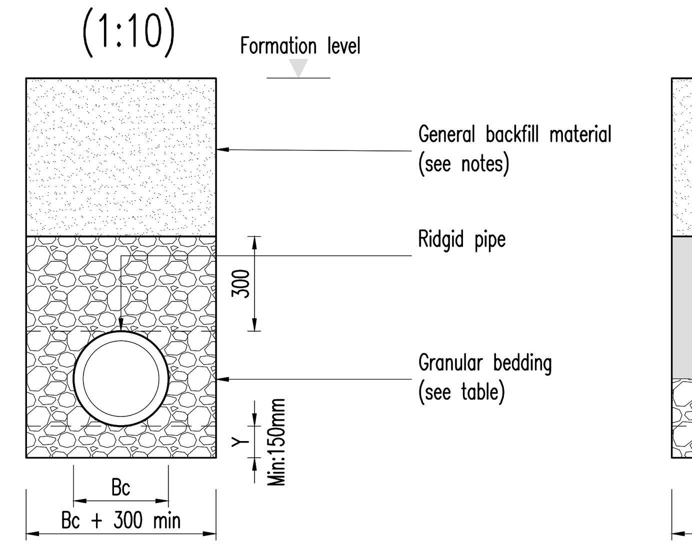
Other assumed values: Depth of cover = 6.0 metres (max)
Traffic Loading = Main Road
Pipe stiffness = SNB

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.

PLASTIC PIPE (UPVC) TRENCH BEDDING DETAILS

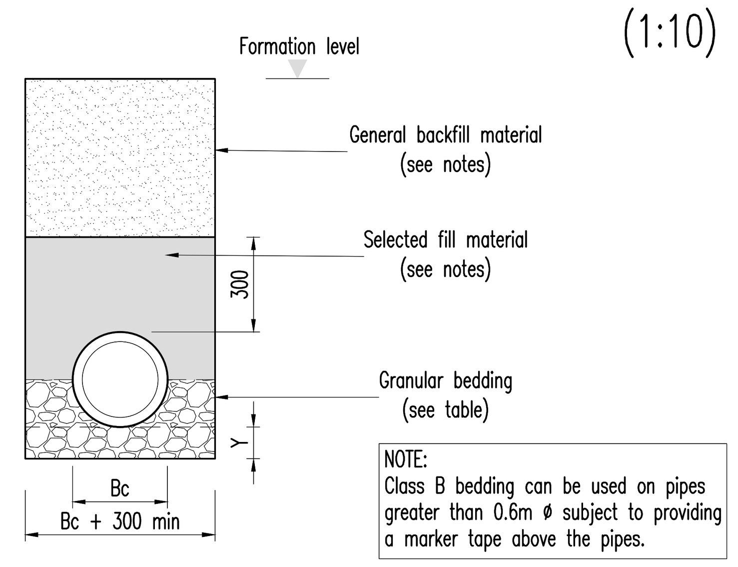
(1:20)

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



CLASS S BEDDING

(1:20)



NOTE:
Class B bedding can be used on pipes greater than 0.6m ø subject to providing a marker tape above the pipes.

CLASS B BEDDING

(1:20)

(mm) 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)

Notes
A) Bc = outside diameter of pipe barrel.
B) Y = for uniform soils:
Sleeve jointed pipes, min. 150mm or 1/6Bc, whichever is the greater. Socketed pipe, min. 150mm 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.
C) Class B Bedding is acceptable for pipe diameters 600mm and greater. Subject to a marker tape being provided and permissible ground conditions

RIDGID PIPE TRENCH BEDDING DETAILS

(1:20)

N O T E S

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES

DO NOT SCALE | ORIGINAL DRAWING SIZE A1

Yorkshire Water General Notes

1. This drawing is to be read in conjunction with all relevant OEC Consulting Engineers and Architects drawings and project specifications.
2. All adoptable sewer works and material to be in accordance with "the Code" Version 2.1 2021, the relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and be Kitemarked.
3. The location, size and depth of all existing drains/sewers and services shall be established by the contractor prior to commencement of works on site. Any discrepancies from the information indicated on these drawings shall immediately be brought to the attention of the engineers.
4. 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.
5. Sewers must have 5 metres clearance from trees and hedges.
6. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
7. All connections to public sewers to be a minimum of 150mm ø via a 45° junction.
8. 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 the granular bed and surround.
9. Yorkshire Water policy is not to accept Type "C" brick manhole 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.
10. 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.
11. 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.
12. Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sizes to accommodate standard lifting keys. Screw down covers are not acceptable.
13. Cover slabs must carry the BSI Kitemark or will be rejected by the 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 600x600mm for the Yorkshire Water specified cover size. Please refer to the Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued autumn 2004 for kitemarked cover slab opening sizes.
14. Maximum depth of demarcation chamber to be 2m, where depth exceeds 2m, manhole to be constructed as type B manhole.
15. Demarcation chambers to be a min. 450mmø chambers for 100mmø foul & 150mmø surface water pipes up to 1.2m deep. For depths greater than 1.2m, restricted access opening to 350mm is required for safety reasons.
16. 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.
17. Where plastic pipes are installed into the ground prior to getting full technical approval, the developer must provide a CCTV survey of the prospectively adoptable sewers and a deformation test (Light-Line test) of the plastic pipes.
18. If plastic pipes are to be used then the following should apply:-
   a) All adoptable sewers to be BSI Kitemark (certified to WIS 4-35-01).
   b) Bedding and backfill material to conform to the requirements of the Water Industry Specification 4-08-02 (Table A2)
19. 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 clayware is preferable. Plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.

13. Filled ground or soft spots must be excavated, backfilled and consolidated under the supervision, and to the satisfaction of Yorkshire Water before any sewer works are carried out.
14. Sulphate resisting cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
15. The minimum crushing strength of vitrified clay pipes (if used) should be as follows: 100ø 40KN/m, 150ø 40KN/m, 225ø 45KN/m and 300ø 75KN/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.
16. Surface water and foul rising mains to be provided with marker tape above the rising mains.
17. Yorkshire Water is 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 have to liaise with the Land Drainage Authority/Land Drainage Section with regard to the disposal of the filter drain/land drainage runoff.
18. 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 stanks across trenches and/or at manhole locations at 25m intervals to restrict water movement along the excavation shall be provided.
19. 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.
20. The contractor must allow for any fee's required for road and sewer opening permits, sewer connections and make the appropriate applications.
21. Where there are double road gullies, the gully leads shall be connected onto separate pipe lengths.

Rev	By	Date	Description	Chk
/	CG	03.03.23	Issued for approval	WW

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Client
YORKSHIRE CHOICE HOMES

Project
WESTFIELD LANE,
WYKE

Title
TYPICAL DRAINAGE DETAILS
SHEET 2 OF 2

Scale	Drawn	Checked	Date
1:20	ZA	WW	MARCH.23

Drawing Status
APPROVAL

Job No.	Drawing No.	Revision
124.008	07.02	/