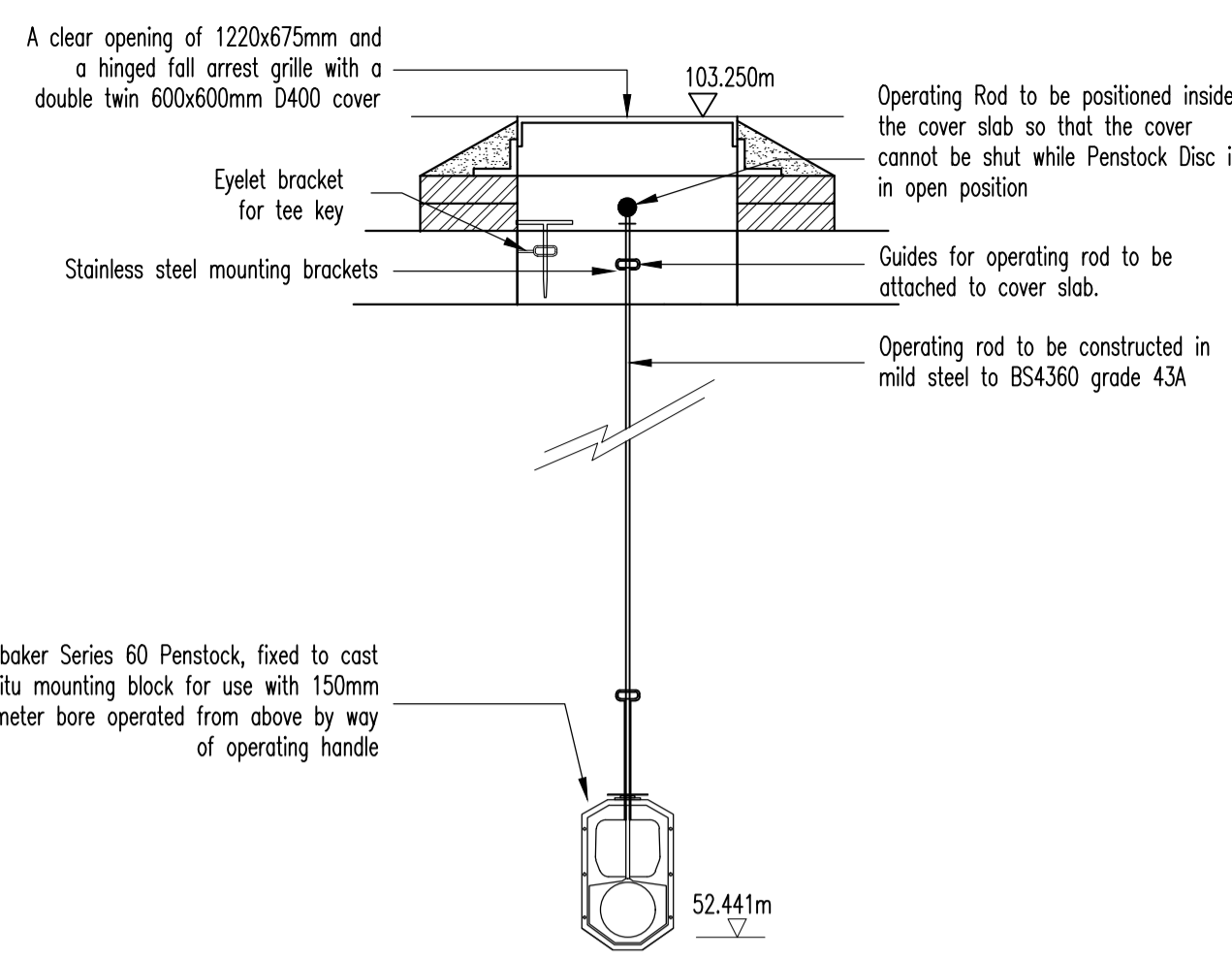
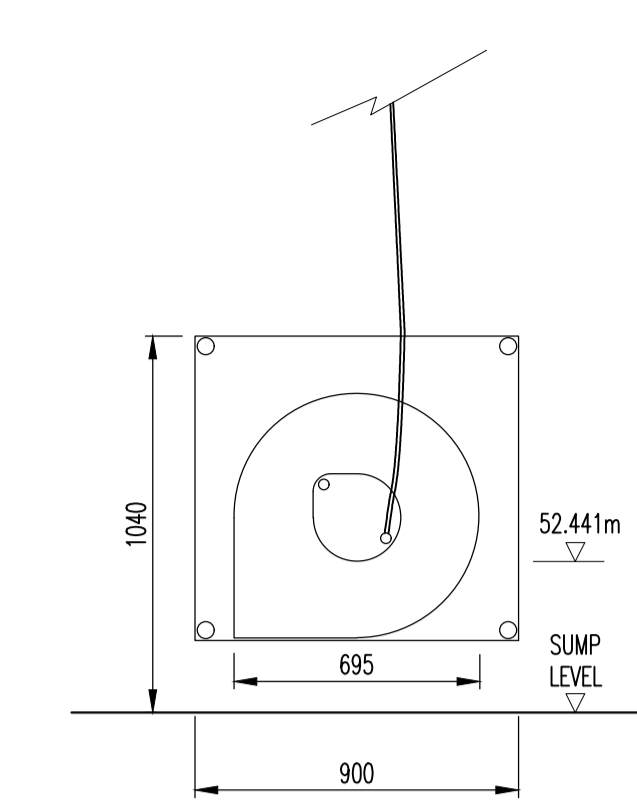


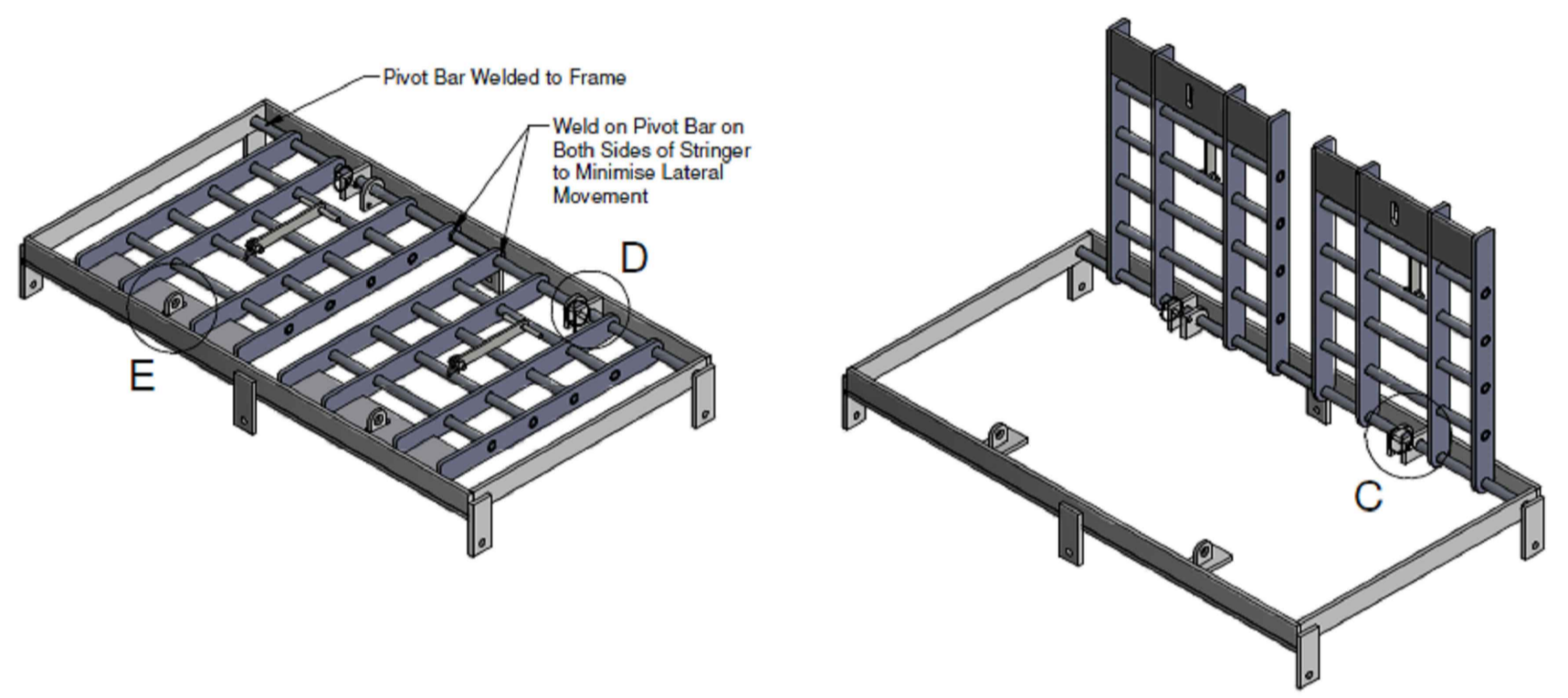
SECTION A-A THROUGH MANHOLE S17 (1:20)



ELEVATION ON PENSTOCK (1:20)

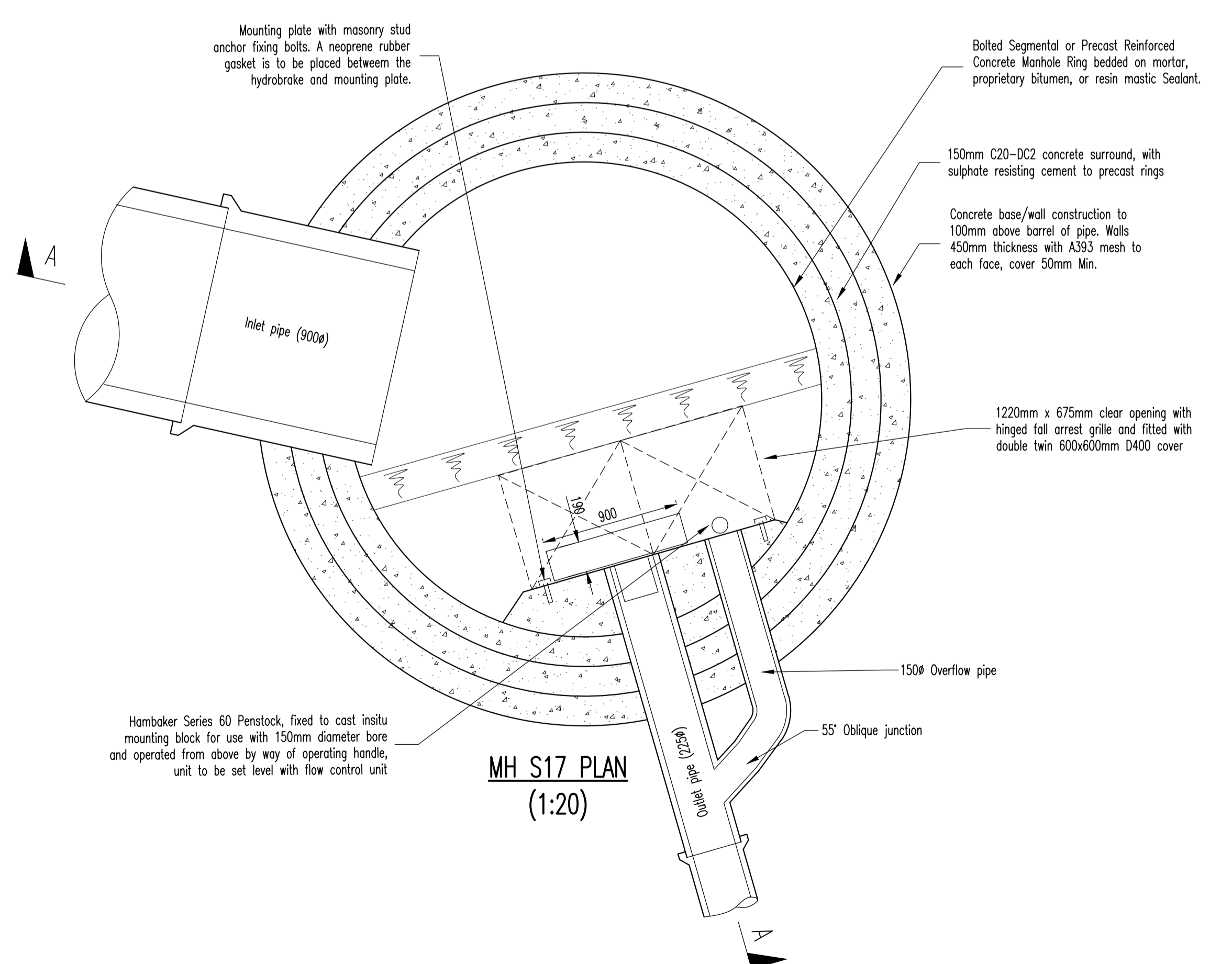


FLOW CONTROL FACE-ON VIEW (NTS)



Peter Savage Ltd KD19 RETRO FIT - PRISON GRILLE 1220x675mm clear opening with hinged fall arrest by Yorkshire Water Material: Mill Steel to BSEN ISO 1461:1999

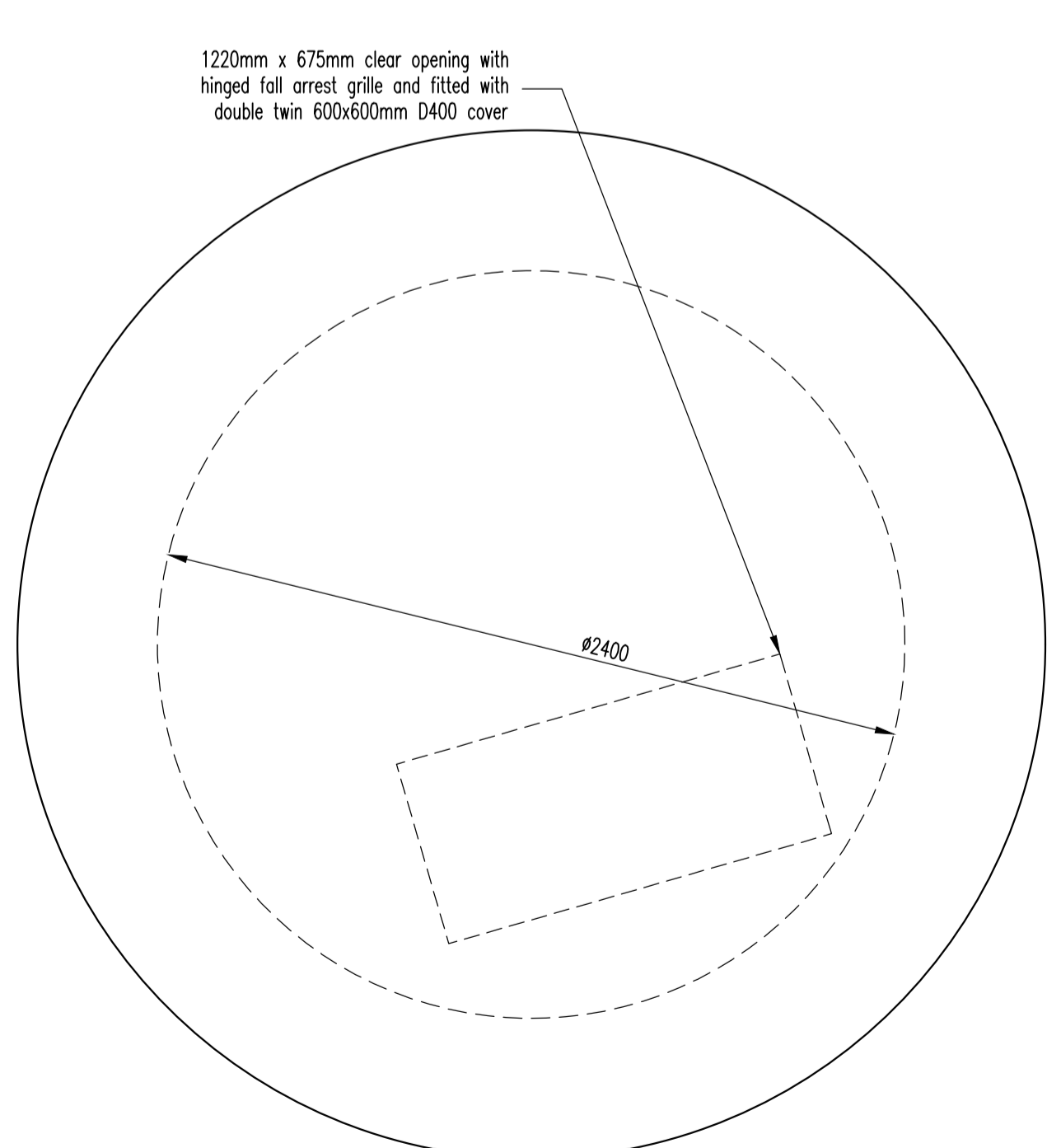
LOCKABLE FALL ARREST GRILLE (1:20)



MH S17 PLAN (1:20)

All custom built ironwork to be hot-dipped galvanised prior to final fixing

Section A-A is an idealised section and is shown for clarity.



COVER SLAB PLAN (1:20)

- Yorkshire Water General Notes
- The relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.
- 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.
- Filled ground must be filled and consolidated under the supervision, and to the satisfaction, of Yorkshire Water before any sewer works are carried out.
- 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.
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
- Sewers must have 5 metres clearance from trees and hedges, (please also refer to Figure 2.3 on page 33 in 'Sewers for Adoption' 6th Edition for restrictions on tree planting adjacent to Sewers).
- 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.
- Adoptable plastic sewer pipes to be BSI Kitemarked (Certified to WS 4-35-01 and BS/EN13476). Adoptable 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 and a satisfactory finish cannot be obtained on the bedding.
- 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.
- 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.
- Surface water and foul rising mains to be provided with marker tape above the rising mains.
- If plastic pipes are to be used then the following should apply:
  - All adoptable sewers to be BSI Kitemark (certified to WS 4-35-01).
  - Bedding and backfill material to conform to the requirements of Water Industry Specification 4-08-02 (Table A2)
- 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.
- 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.
- Demarcation chambers to be a min. 450mm chamber for 100mm foul & 150mm surface water pipes up to 1.2m deep. For depths greater than 1.2m, restricted access opening to 350mm is required for safety reasons.
- Maximum depth of demarcation chamber to be 2m, where depth exceeds 2m, manhole to be constructed as type B manhole.
- 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.
- 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 is required.
- Sulphate resisting cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
- 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 WS 4-35-01 and BS EN13476.
- All levels of existing drainage to be confirmed prior to work commencing on site.
- The contractor must allow for any fee's required for road and sewer opening permits, sewer connections and make the appropriate applications.
- Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).

S17 FLOW CONTROL DATA

MANUFACTURER	HYDRO INTERNATIONAL
TELEPHONE	01275 878371
TYPE	HYDRO-BRAKE OPTIMUM
FLOW/HEAD	16.5 l/s @ 1.100m
HYDRO REF	SHE-0181-1650-1100-1650

To be installed in accordance with manufacturers specifications and recommendations before the manhole cover slab is installed

Rev	By	Date	Revision	Chk	Apvd
/	DJG	25.01.23	Issued for approval	MI	MI

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ARP Associates is a trading division of ARP Geotechnical Ltd, a company registered in England and Wales with company number 377333, whose registered office is at 5/6 Northwest Business Park, Servia Hill, Leeds LS6 2QH

TITLE  
**FLOW CONTROL MANHOLE & DETAILS FOR S17**

PROJECT  
**BLEACHCROFT WAY**

CLIENT  
**HARRON HOMES**

DRAWING STATUS  
**PRELIMINARY**

Scale  
**As shown @ A1**

Date  
**JAN 23**

Drawn  
**DJG**

Chk.  
**MI**

Org. No.  
**0873/82/12.01**

Rev  
**/**

APPROVED FOR CONSTRUCTION BY  
KEEPMOAT HOMES  
YORKSHIRE

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES