

### MINIMUM DIMENSIONS FOR MANHOLES

TYPE	SIZE OF LARGEST PIPE (DN)	INTERNAL DIMENSIONS (MINIMUM) (1)		MINIMUM CLEAR OPENING SIZE (2)		TYPE OF COVER & FRAME
		LENGTH x WIDTH	CIRCULAR DIA.	LENGTH x WIDTH	CIRCULAR DIA.	
<1.5m TO SOFFIT	150mm 225mm 300mm >300mm	750mm x 675mm (2) 1200mm x 675mm 1200mm x 750mm 1800mm x (DN+450mm)	1000mm (3) 1200mm 1200mm THE LARGER OF 1800mm OR (DN+450mm)	750mm x 675mm (4) 1200mm x 675mm (4)	N/A (5)	SEE NOTE 1 i), ii), iii) & iv)
>1.5m TO SOFFIT	225mm 300mm 375mm-450mm >450mm	1200mm x 1000mm 1200mm x 1075mm 1350mm x 1225mm 1800mm x (DN+775mm)	1200mm 1200mm 1200mm THE LARGER OF 1800mm OR (DN+775mm)	600mm x 600mm	N/A	SEE NOTE 1 i) & ii)
MANHOLE SHAFT (6) >3.0m DEEP TO SOFFIT OF PIPE	STEPS (8)	1050mm x 800mm	1050mm	600mm x 600mm	600mm	SEE NOTE 1 i) & ii)
	LADDER (9)	1050mm x 800mm	1200mm			
	WINCH (10)	900mm x 800mm	900mm	600mm x 600mm	600mm	

- NOTES**
- LARGER SIZES MAY BE REQUIRED FOR MANHOLES ON BENDS OR WHERE THERE ARE JUNCTIONS.
  - MAY BE REDUCED TO 600mm x 600mm WHERE REQUIRED BY HIGHWAY LOADING CONSIDERATIONS, SUBJECT TO SAFE SYSTEM OF WORK BEING SPECIFIED.
  - NOT APPLICABLE DUE TO WORKING SPACE NEEDED.
  - MINIMUM HEIGHT OF CHAMBER IN SHAFTED MANHOLE - 2.0m FROM BENCHING TO UNDERSIDE OF REDUCING SLAB.
  - MINIMUM CLEAR SPACE BETWEEN LADDER OR STEPS AND THE OPPOSITE FACE OF THE SHAFT SHOULD BE APPROXIMATELY 900mm.
  - WINCH ONLY - NO STEPS OR LADDERS, PERMANENT OR REMOVABLE.
  - THE MINIMUM SIZE OF ANY MANHOLE SERVING A SEWER (i.e. ANY DRAIN SERVING MORE THAN ONE PROPERTY) SHOULD BE 1200mm x 675mm RECTANGULAR OR 1200mm DIA.

### TABLE OF PROTECTION REQUIREMENTS RELATIVE TO COVER

LOCATION	GARDENS (NO TRAFFIC LOADING)		PAVED OR HARD SURFACES (LIGHT TRAFFIC LOADING)		ROADS (CARRIAGEWAYS & FOOTWAYS)		
	COVER [FROM BARREL OF PIPE]	LESS THAN 600mm	MORE THAN 600mm	LESS THAN 900mm	MORE THAN 900mm	LESS THAN 900mm	MORE THAN 900mm
TYPE OF PROTECTION REQUIRED	REINFORCED CONC. OR PAVING SLAB BRIDGING	NONE	REINFORCED CONC. OR PAVING SLAB BRIDGING	NONE	CONCRETE SURROUND	NONE	

NOTWITHSTANDING THESE REQUIREMENTS THE CONTRACTOR IS TO GIVE FURTHER CONSIDERATION TO THE PROTECTION OF DRAINAGE ITEMS FROM CONSTRUCTION TRAFFIC AND BUILDING WORKS.

### MINIMUM DIMENSIONS FOR ACCESS FITTINGS AND INSPECTION CHAMBERS

TYPE	DEPTH TO INVERT FROM COVER LEVEL	INTERNAL DIMENSIONS		COVER DIMENSIONS	
		LENGTH x WIDTH	CIRCULAR DIA.	LENGTH x WIDTH	CIRCULAR DIA.
RODDING EYE		AS DRAIN, 100mm (MIN.)			SAME SIZE AS PIPEWORK (1)
ACCESS FITTING: SMALL 150mm DIA. 150mm x 100mm LARGE 225mm x 100mm	600mm OR LESS, EXCEPT WHERE SITUATED IN A CHAMBER	150mm x 100mm 225mm x 100mm	150mm 225mm	150mm x 100mm (2) 225mm x 100mm (2)	SAME SIZE AS ACCESS FITTING
INSPECTION CHAMBER: SHALLOW DEEP	600mm OR LESS 1200mm OR LESS >1200mm	225mm x 100mm 450mm x 450mm 450mm x 450mm	190mm (3) 450mm 450mm	- MIN. 430mm x 430mm MAX. 300mm x 300mm (4)	190mm (3) 430mm ACCESS RESTRICTED TO 350mm MAX. (4)

- NOTES**
- THE CLEAR OPENING MAY BE REDUCED BY 20mm IN ORDER TO PROVIDE PROPER SUPPORT FOR THE COVER AND FRAME.
  - DRAINS UP TO 150mm.
  - A LARGER CLEAR OPENING COVER MAY BE USED IN CONJUNCTION WITH A RESTRICTED ACCESS. THE SIZE IS RESTRICTED FOR HEALTH AND SAFETY REASONS TO DETER ENTRY.

### MATERIALS FOR ACCESS POINTS

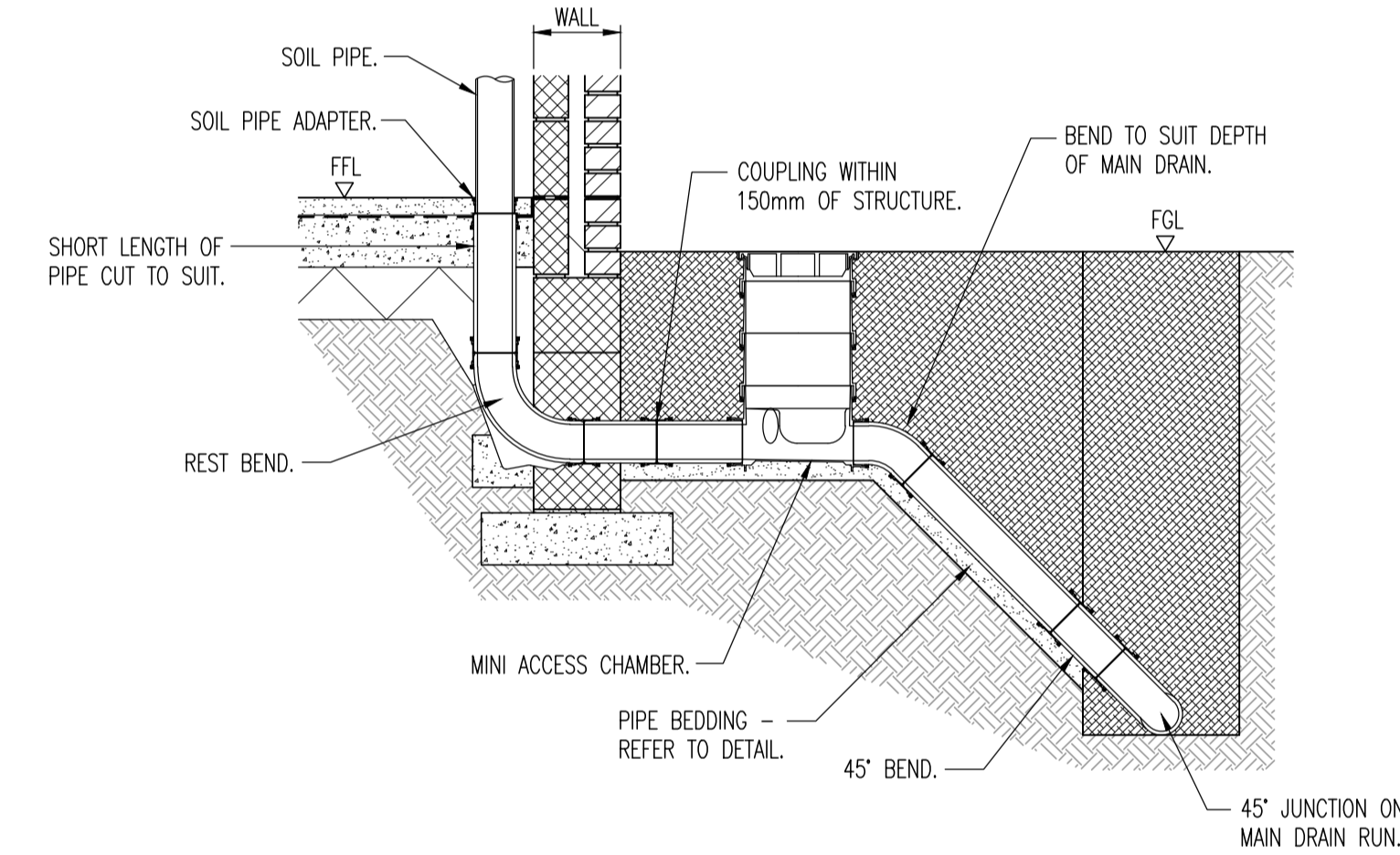
MATERIAL	BRITISH STANDARD
1. INSPECTION CHAMBERS AND MANHOLES: CLAY BRICK & BLOCKS VITRIFIED CLAY CONCRETE-PRECAST CONCRETE-IN SITU PLASTICS	BS 3921 BS EN 295, BS 65 BS 5911 BS 8110 BS 7158
2. RODDING EYES AND ACCESS FITTINGS (EXCLUDES COVERS AND FRAMES)	AS PIPES REFER TO MATERIALS FOR BELOW GROUND DRAINAGE

### MATERIALS FOR BELOW GROUND DRAINAGE

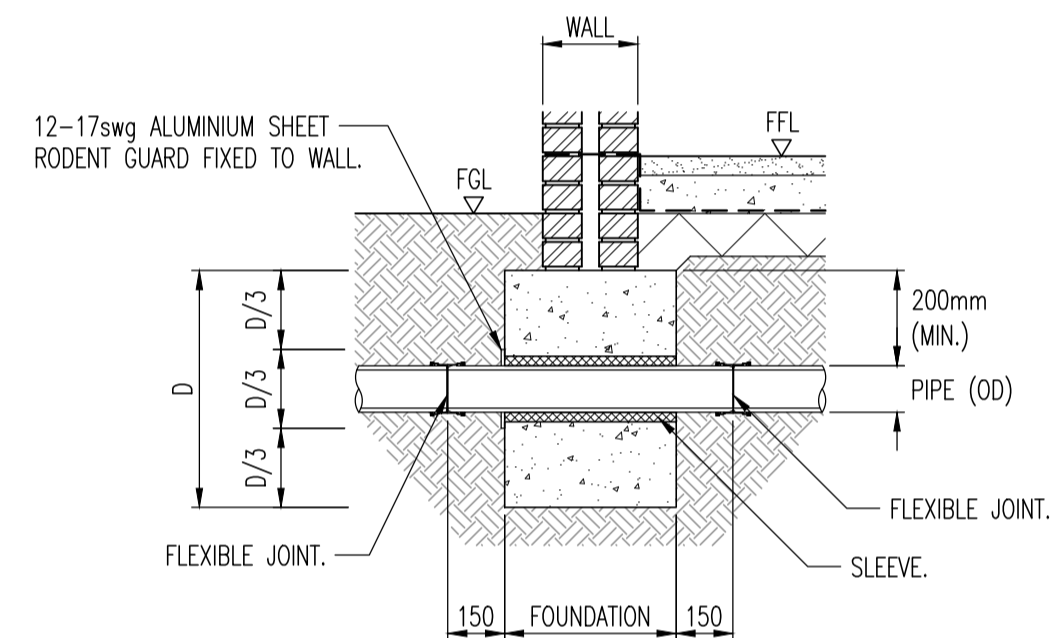
MATERIAL	BRITISH STANDARD
1. RIGID PIPES: VITRIFIED CLAY CONCRETE GREY IRON DUCTILE IRON	BS 65, BS EN 295 BS 5911 BS 437 BS EN 598
2. FLEXIBLE PIPES: UPVC PP STRUCTURE WALLED PLASTIC PIPES	BS EN 1401 • BS EN 1852 • BS EN 13476

\* APPLICATION AREA CODE UD SHOULD NORMALLY BE SPECIFIED.  
NOTE: SOME OF THESE MATERIALS MAY NOT BE SUITABLE FOR CONVEYING TRADE EFFLUENT.

- GENERAL**
- DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED. ANY DISCREPANCIES ARE TO BE RECORDED AND REPORTED TO THE ENGINEERS IMMEDIATELY.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERS AND ARCHITECTS DRAWINGS AND THE SPECIFICATION.
  - ALL WORK IS TO BE TO THE SATISFACTION OF THE ENGINEER AND LOCAL AUTHORITY BUILDING CONTROL.
  - THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF THE WORKS AT ALL TIMES DURING CONSTRUCTION.
  - ALL WORKMANSHIP AND MATERIALS ARE TO BE TO CURRENT BRITISH STANDARDS.
  - ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.
  - ANY EXISTING DETAILS WHICH ARE SHOWN ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY VARIATIONS ARE TO BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.
  - DURING CONSTRUCTION WORKS ON SITE, ALL ROADS AND FOOTPATHS ARE TO BE SWEEPED AND KEPT CLEAR OF OBSTRUCTIONS, THIS IS TO INCLUDE EXISTING HIGHWAYS AS APPROPRIATE TO ENSURE SAFE PASSAGE OF ALL ROAD USERS.
  - ALL SEWER WORKS ARE TO BE IN ACCORDANCE WITH 'SEWERS FOR ADOPTION 6th EDITION'.
  - REFER TO FACTORY YARD DETAILS FOR CONSTRUCTION OF DRAINAGE WITHIN YARD AREAS.

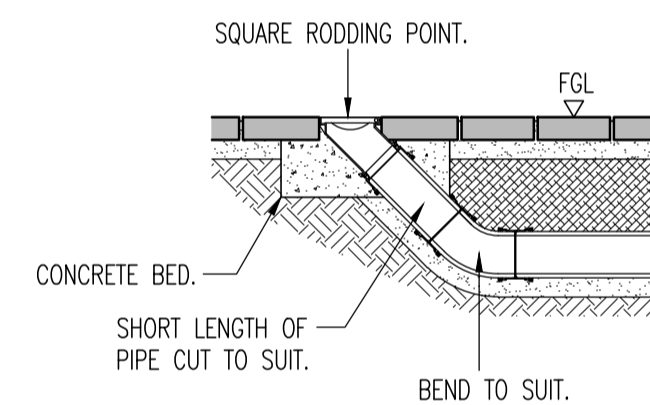


ACCESS CHAMBER CONNECTION TO MAIN DRAIN RUN  
SCALE 1:20

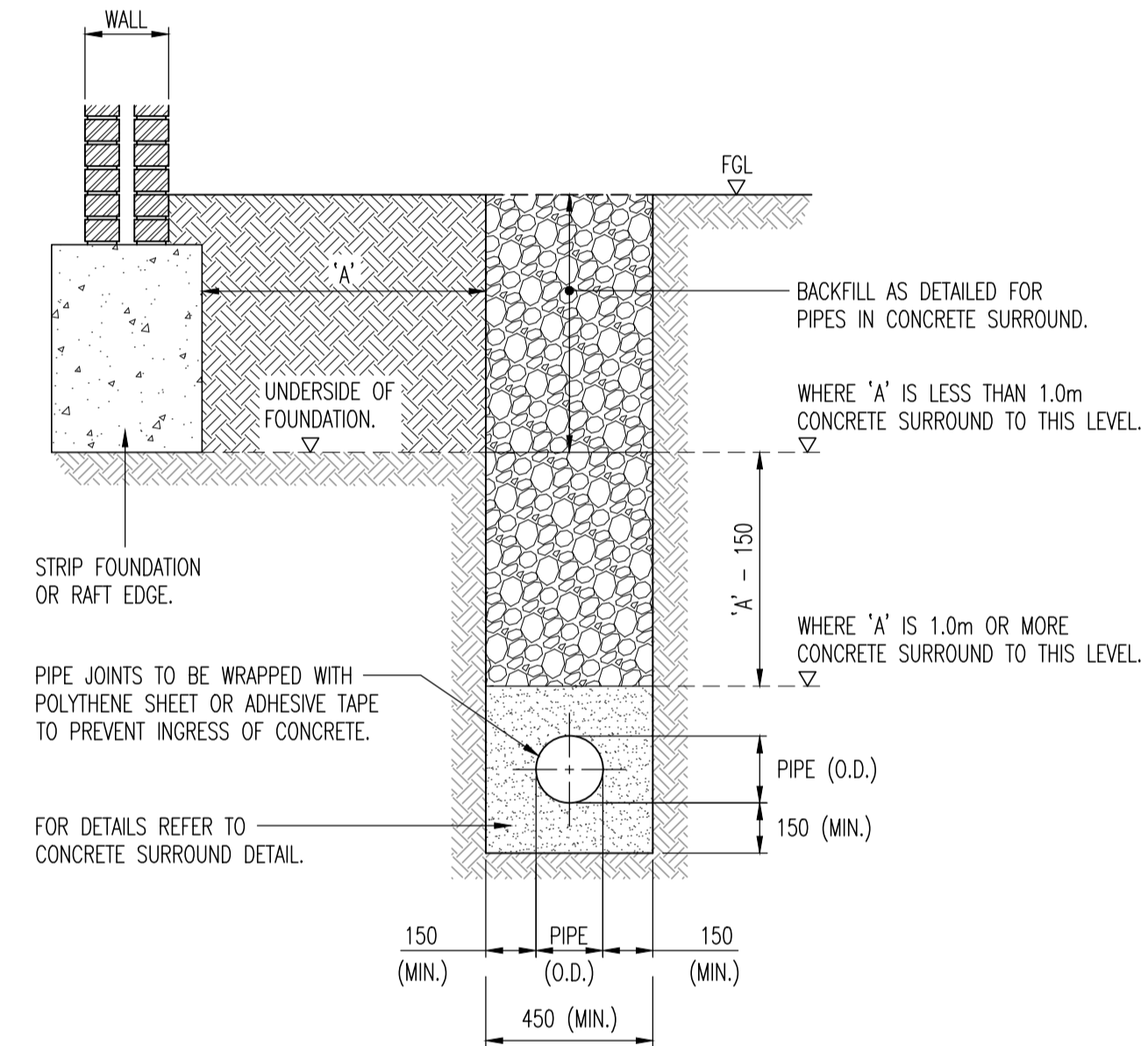


NOTE: DRAIN SLEEVE/DUCT TO BE LOCATED WHOLLY WITHIN THE MIDDLE THIRD OF THE FOUNDATION DEPTH (D). THE ENGINEER IS TO BE ADVISED IF THIS IS NOT POSSIBLE. IN NORMAL, SOIL CONDITIONS THE SLEEVE/DUCT IS TO GIVE A 25mm CLEARANCE ALL ROUND THE OUTSIDE OF THE DRAIN PIPE (THIS MAY BE ACHIEVED BY LIGHTLY PACKING THE SPACE WITH FLEXIBLE MATERIAL) MAXIMUM SLEEVE SIZE TO BE 300mm WITHOUT REFERENCE TO THE ENGINEER.

DRAINAGE THROUGH STRIP FOUNDATIONS  
SCALE 1:20

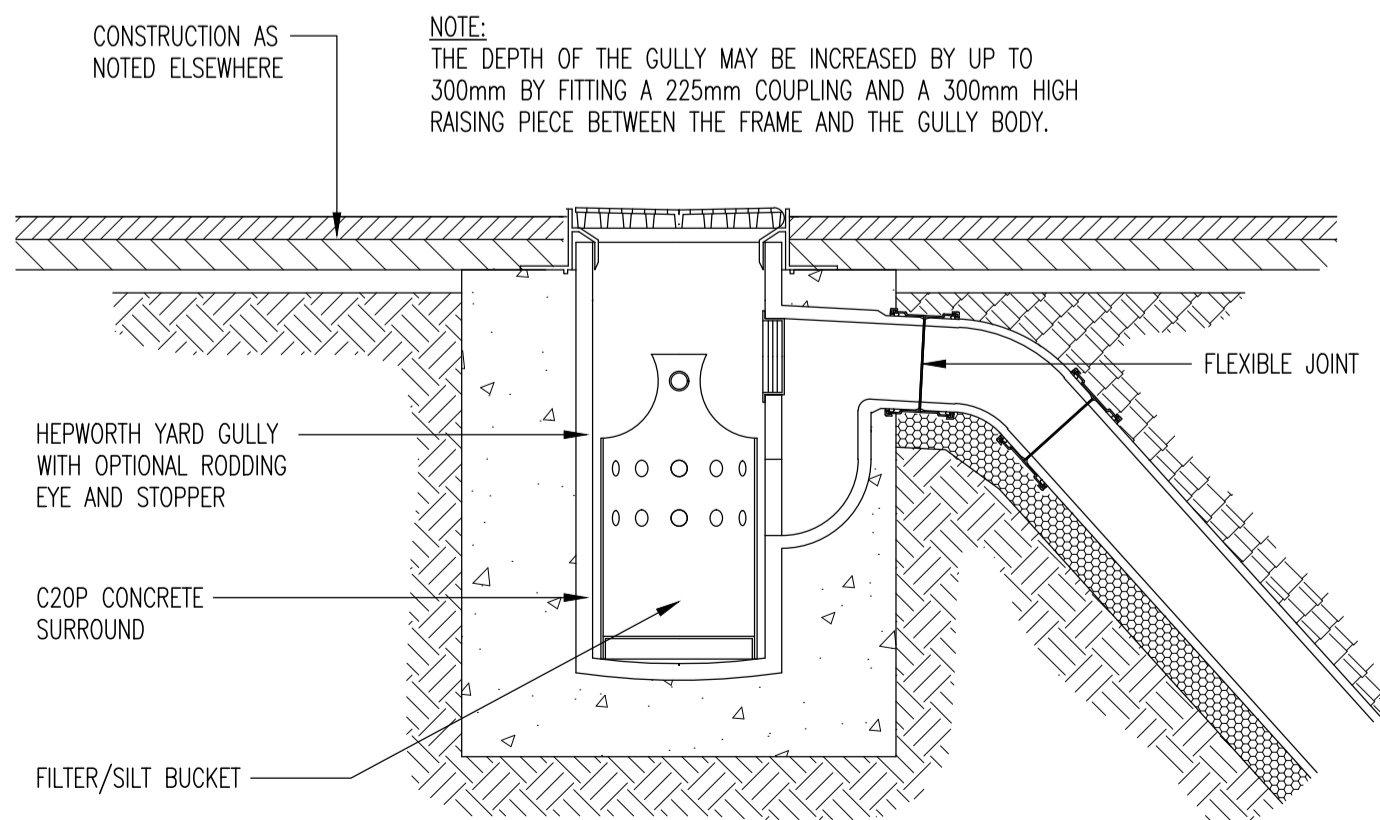


RODDING POINT  
SCALE 1:20

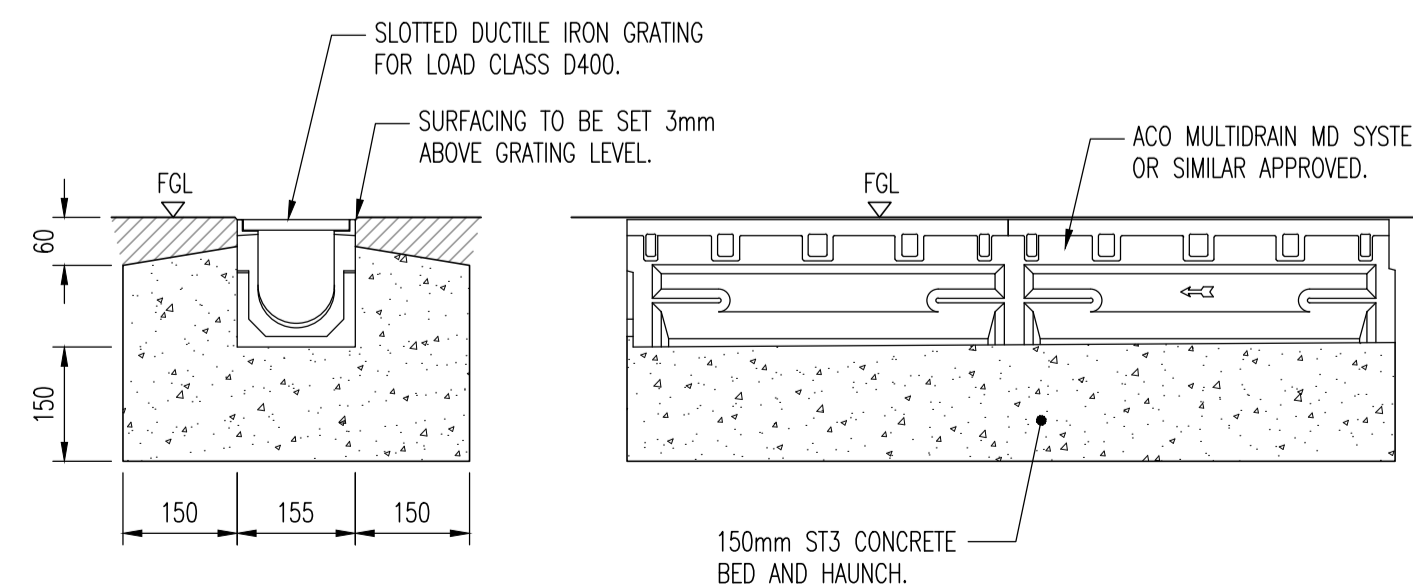


FLEXIBLE JOINTS REQUIRED THROUGHOUT FULL DEPTH OF CONCRETE.

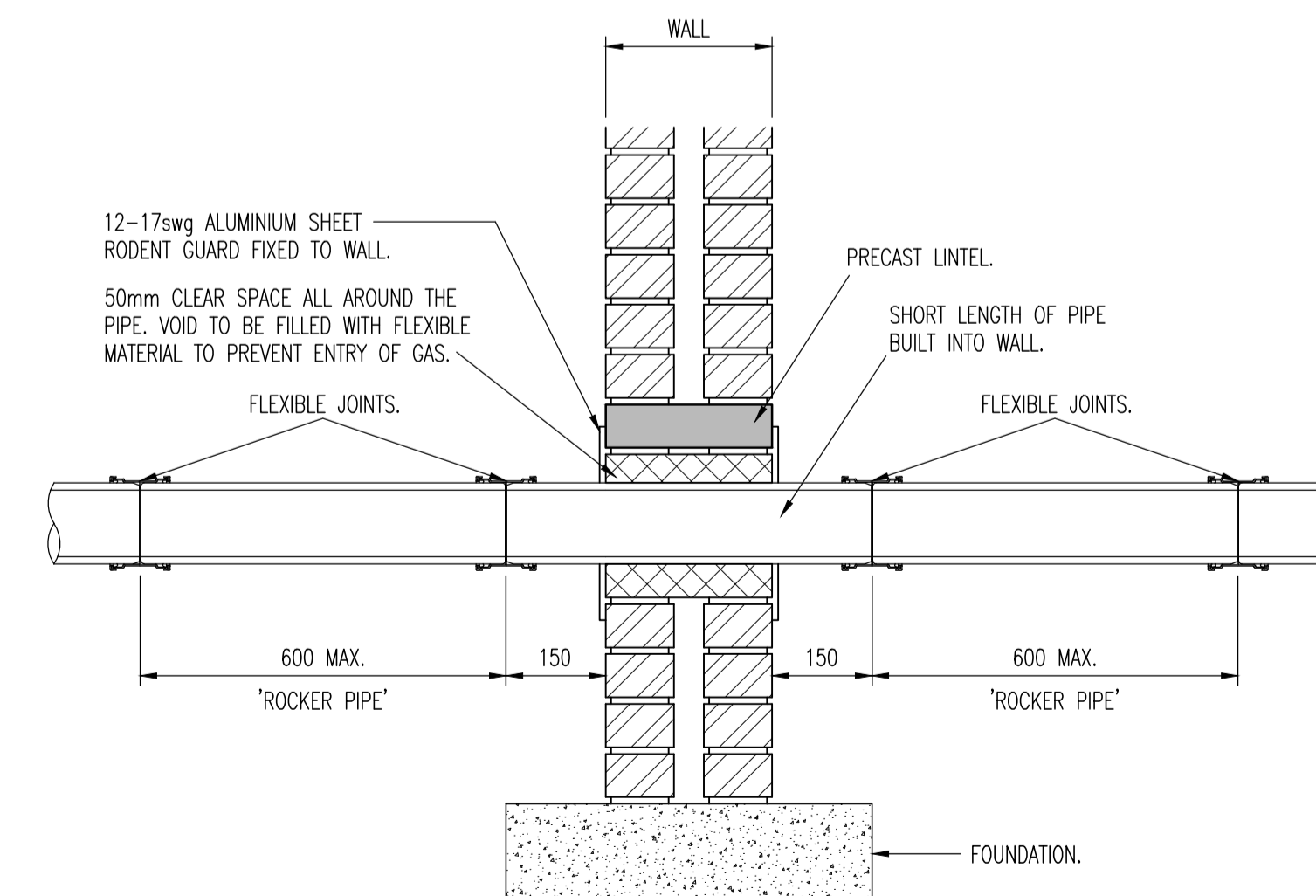
PIPE RUNS NEAR BUILDINGS  
SCALE 1:20



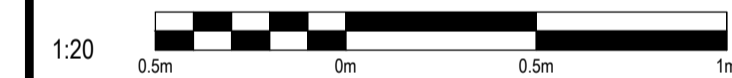
YARD GULLY DETAIL  
SCALE 1:10



ACO CHANNEL DRAIN DETAIL  
SCALE 1:10



DRAINAGE THROUGH WALLS  
SCALE 1:10



PRELIMINARY

Rev	Amendments	Drawn	Approved	Date

**superstructures**  
structural engineering and design

IN ASSOCIATION WITH: **INGENT**  
CONSULTING ENGINEERS

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Project  
NEW ARTS CENTRE  
FINBOROUGH SCHOOL, FINBOROUGH

Drawing Title  
DRAINAGE CONSTRUCTION DETAILS  
GENERAL BUILDING DRAINAGE  
SHEET 2

Client  
FINBOROUGH SCHOOL

Drawn by  
GJC

Designed by  
SJM

Approved by  
RCW

Checked by  
KK

Scale  
AS SHOWN

Date  
OCT 2022

Drawing No.  
1912-405-006

Rev.  
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