

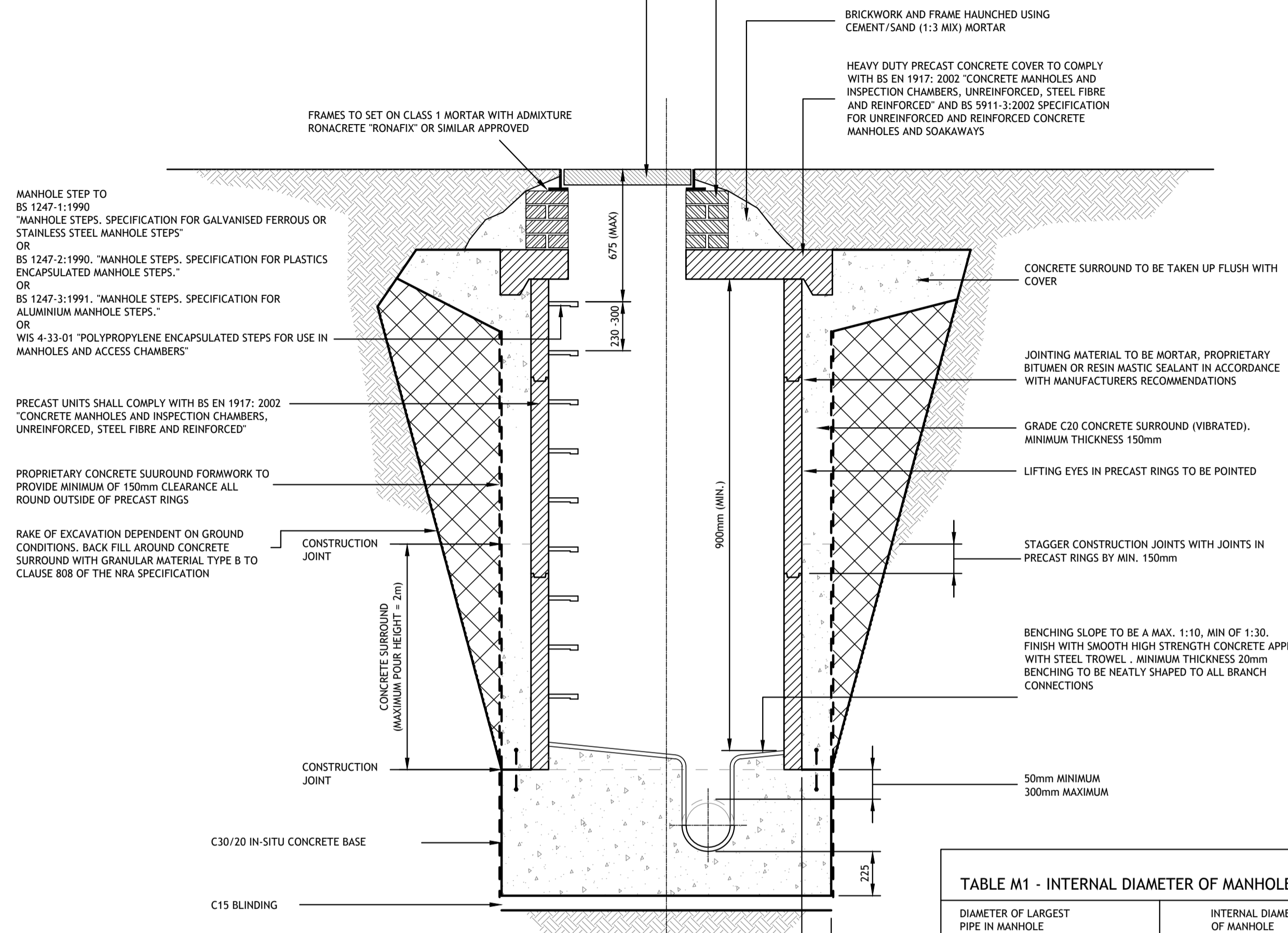
**NOTE :**  
 THE USE OF THIS DETAIL ASSUMES  
 1. THE GROUNDWATER TABLE IS BELOW THE BASE OF THE MANHOLE.  
 CONTRACTOR TO ADVISE ENGINEER WHERE THE WATER TABLE LEVEL IS HIGHER THAN THE BASE OF MANHOLE

MANHOLE STEP TO BS 1247-1:1990 "MANHOLE STEPS. SPECIFICATION FOR GALVANISED FERROUS OR STAINLESS STEEL MANHOLE STEPS" OR BS 1247-2:1990. "MANHOLE STEPS. SPECIFICATION FOR PLASTICS ENCAPSULATED MANHOLE STEPS." OR BS 1247-3:1991. "MANHOLE STEPS. SPECIFICATION FOR ALUMINIUM MANHOLE STEPS." OR WIS 4-33-01 "POLYPROPYLENE ENCAPSULATED STEPS FOR USE IN MANHOLES AND ACCESS CHAMBERS"

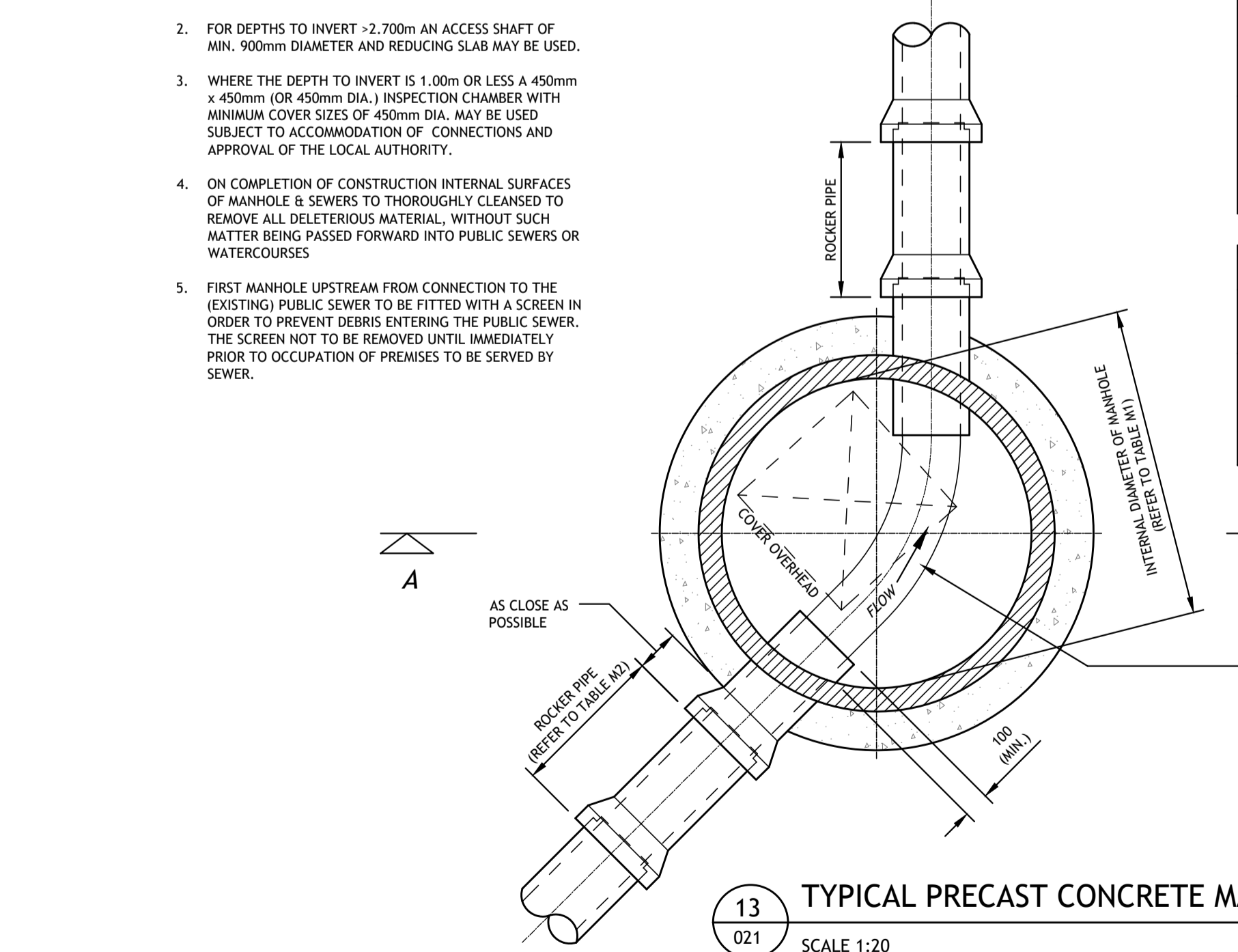
PRECAST UNITS SHALL COMPLY WITH BS EN 1917: 2002 "CONCRETE MANHOLES AND INSPECTION CHAMBERS, UNREINFORCED, STEEL FIBRE AND REINFORCED"

PROPRIETARY CONCRETE SURROUND FORMWORK TO PROVIDE MINIMUM OF 150mm CLEARANCE ALL ROUND OUTSIDE OF PRECAST RINGS

RAKE OF EXCAVATION DEPENDENT ON GROUND CONDITIONS. BACK FILL AROUND CONCRETE SURROUND WITH GRANULAR MATERIAL TYPE B TO CLAUSE 808 OF THE NRA SPECIFICATION



**NOTE :**  
 1. MANHOLES WITH OUTGOING PIPES GREATER THAN 600mm DIA. SHOULD BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES.  
 2. FOR DEPTHS TO INVERT > 2.700m AN ACCESS SHAFT OF MIN. 900mm DIAMETER AND REDUCING SLAB MAY BE USED.  
 3. WHERE THE DEPTH TO INVERT IS 1.00m OR LESS A 450mm x 450mm (OR 450mm DIA.) INSPECTION CHAMBER WITH MINIMUM COVER SIZES OF 450mm DIA. MAY BE USED SUBJECT TO ACCOMMODATION OF CONNECTIONS AND APPROVAL OF THE LOCAL AUTHORITY.  
 4. ON COMPLETION OF CONSTRUCTION INTERNAL SURFACES OF MANHOLE & SEWERS TO THOROUGHLY CLEANSED TO REMOVE ALL DELETERIOUS MATERIAL. WITHOUT SUCH MATTER BEING PASSED FORWARD INTO PUBLIC SEWERS OR WATERCOURSES  
 5. FIRST MANHOLE UPSTREAM FROM CONNECTION TO THE (EXISTING) PUBLIC SEWER TO BE FITTED WITH A SCREEN IN ORDER TO PREVENT DEBRIS ENTERING THE PUBLIC SEWER. THE SCREEN NOT TO BE REMOVED UNTIL IMMEDIATELY PRIOR TO OCCUPATION OF PREMISES TO BE SERVED BY SEWER.



**13**  
 021  
 TYPICAL PRECAST CONCRETE MANHOLE DETAIL  
 SCALE 1:20

**TABLE M1 - INTERNAL DIAMETER OF MANHOLES**

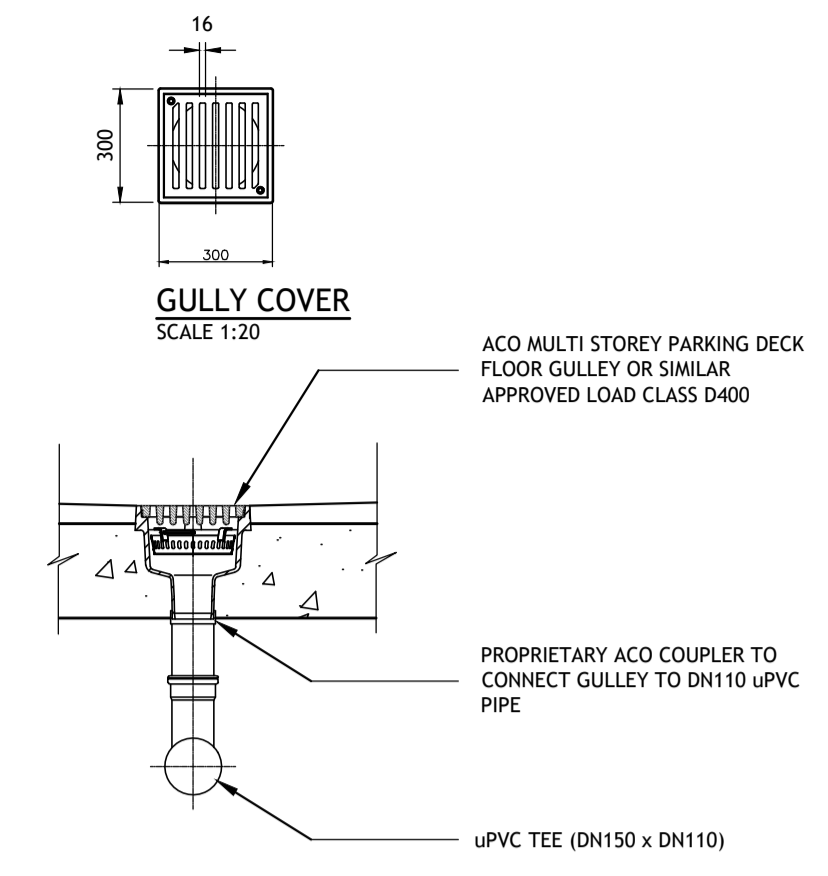
| DIAMETER OF LARGEST PIPE IN MANHOLE (mm) | INTERNAL DIAMETER OF MANHOLE (mm) |
|--|-----------------------------------|
| LESS THAN 375                            | 1200                              |
| 375 - 450                                | 1350                              |
| 450 - 900                                | 1800                              |
| > 900                                    | CONSULT LOCAL AUTHORITY           |

**NOTE :**  
 USE 1050 DIAMETER RINGS FOR PIPES LESS THAN 375mm DIAMETER WHERE DEPTH TO SOFFIT IS 1.35 - 1.5m

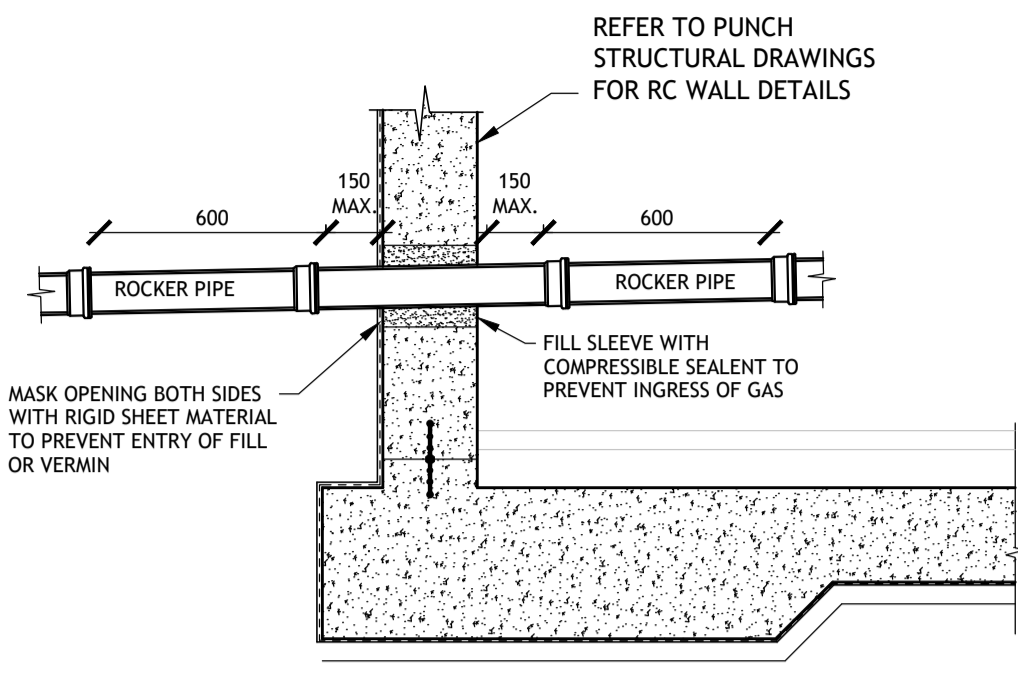
**TABLE M2 - ROCKER PIPE LENGTH**

| NOMINAL PIPE DIAMETER (mm) | EFFECTIVE LENGTH (M) |
|----------------------------|----------------------|
| 150 to 400                 | 0.6                  |
| 450 to 750                 | 1.0                  |
| Over 750                   | 1.2                  |

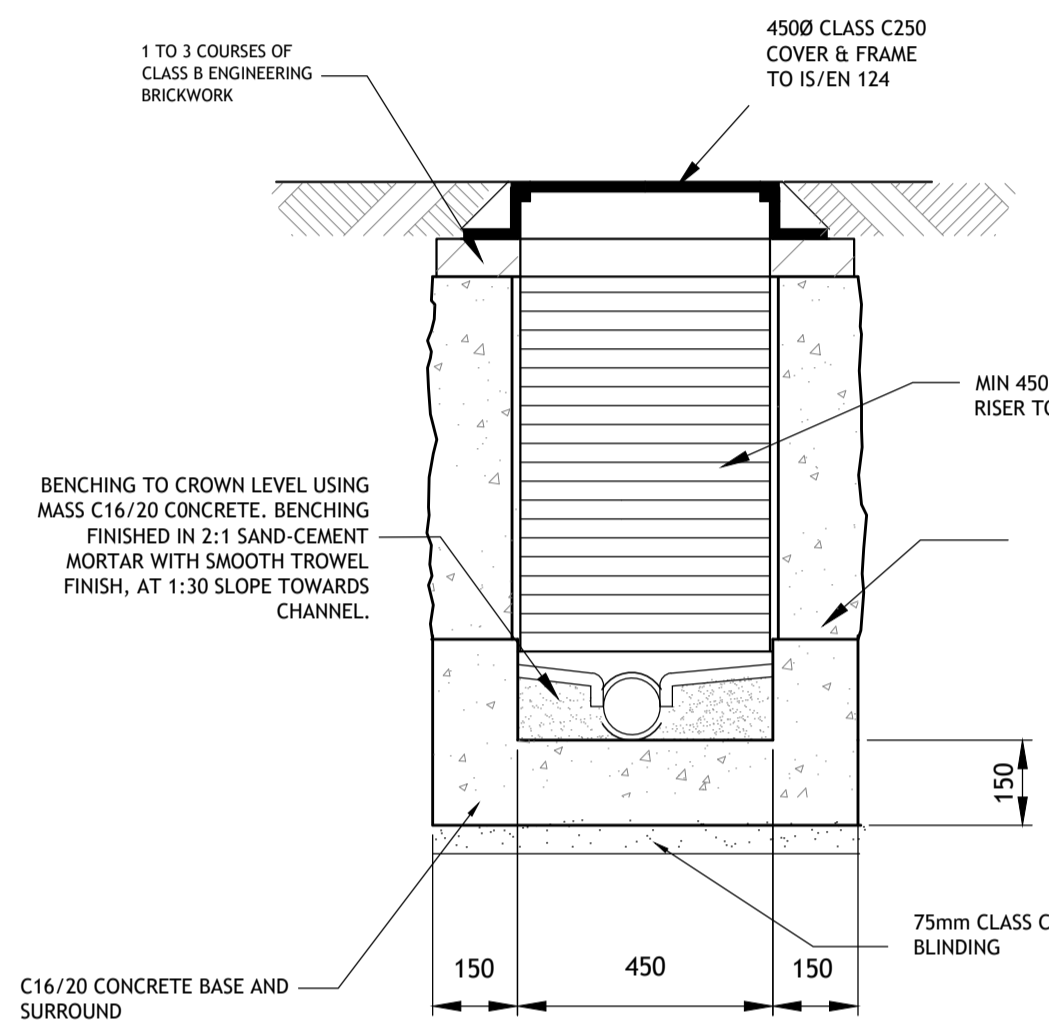
- MANHOLE COVER TO BE HINGED AT RIGHT ANGLES TO KERBLINE SO THAT THEY CLOSE IN DIRECTION OF TRAFFIC.
- MANHOLE COVERS ON ROADS SHOULD BE LOCATED IN THE MIDDLE OF TRAFFICKED LANES INSIDE WHEEL TRACKS
- COVER AND FRAME TO BE INSTALLED SO THAT NO PART OF THE UNIT IS RAISED OR SUNKEN IN A WAY THAT COULD CAUSE A HAZARD TO PEDESTRIAN OR VEHICULAR TRAFFIC



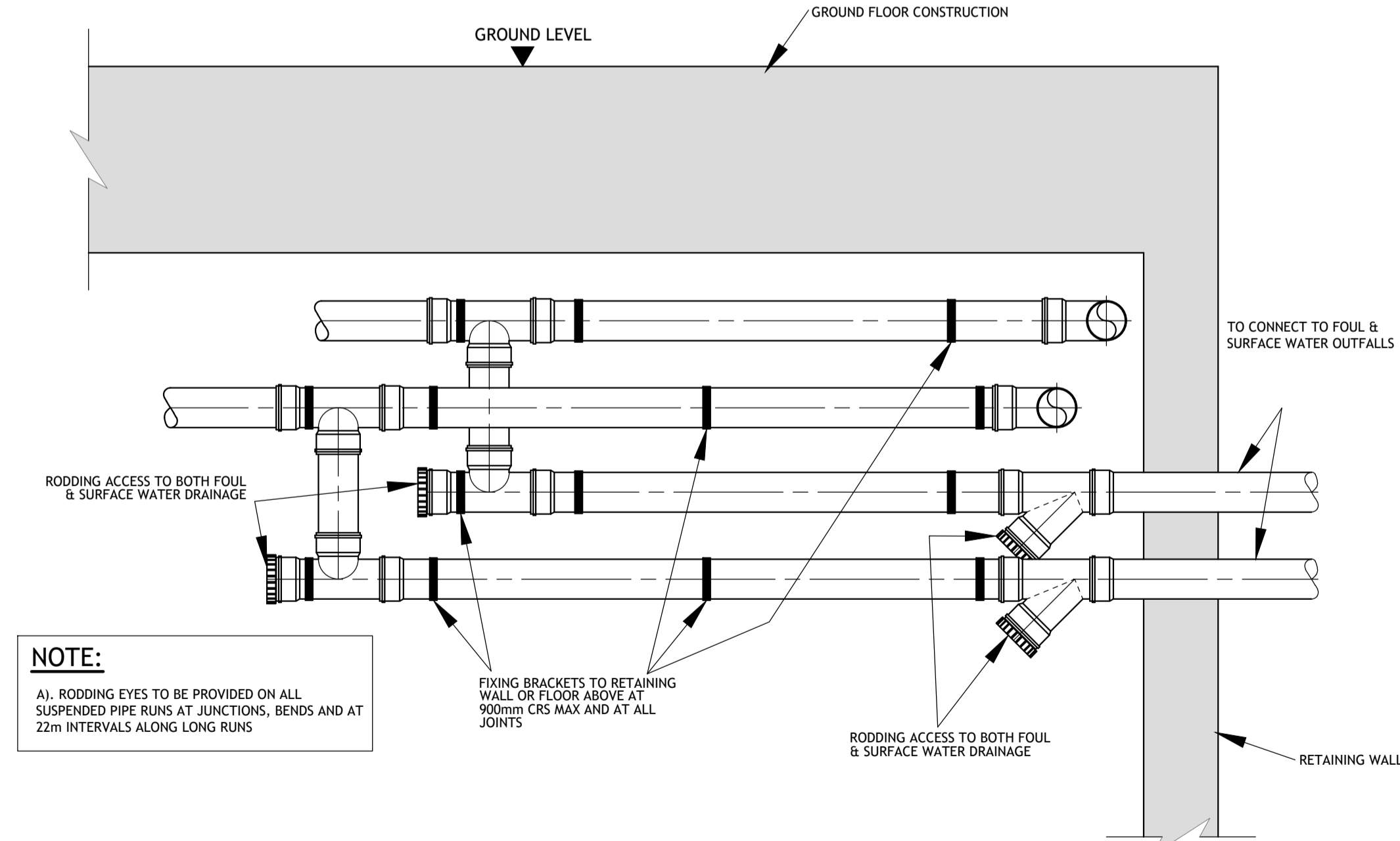
**14**  
 021  
 GULLY IN SLAB DETAIL  
 SCALE 1:20



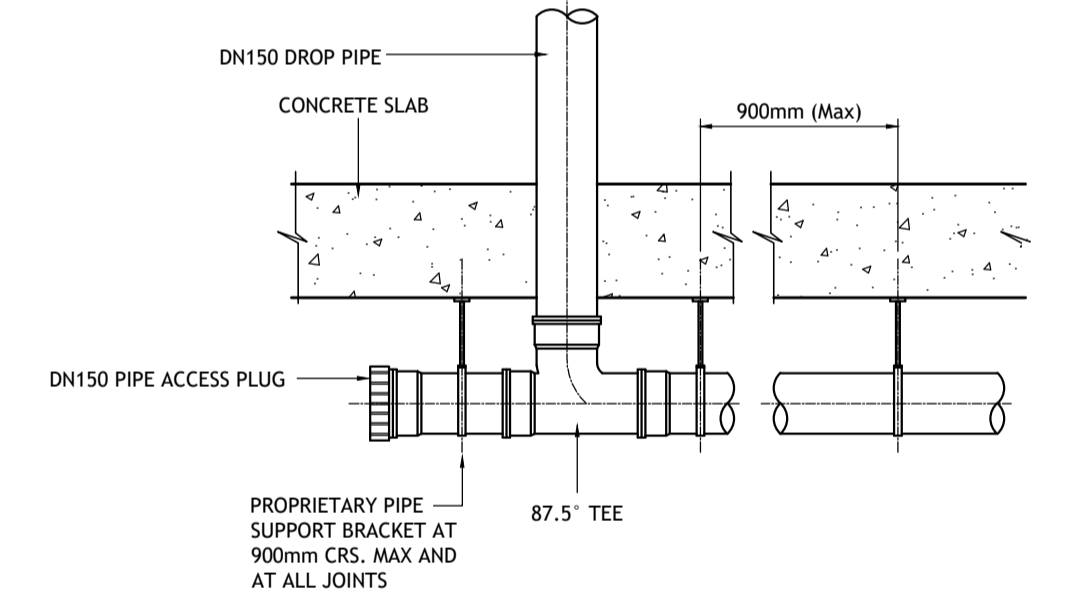
**15**  
 021  
 PIPEWORK PENETRATING RC WALLS  
 SCALE: NOT TO SCALE



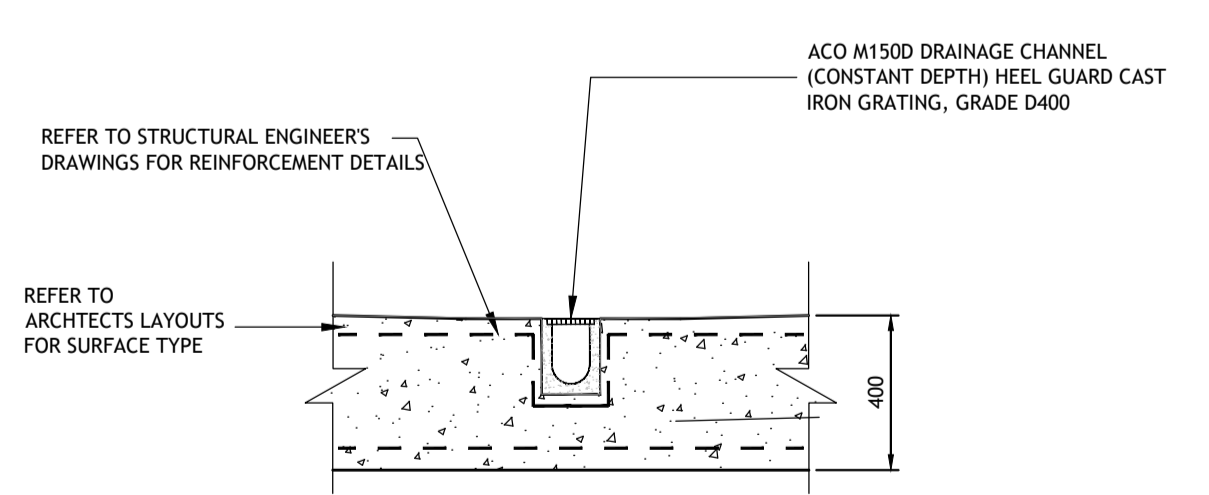
**16**  
 021  
 TYPICAL INSPECTION CHAMBER DETAIL  
 SCALE: NOT TO SCALE



**17**  
 021  
 TYPICAL SUSPENDED DRAINAGE DETAIL  
 SCALE 1:25



**18**  
 021  
 PIPE SUPPORT BRACKET DETAIL  
 SCALE 1:20



**19**  
 021  
 ACO CHANNEL DRAIN DETAIL  
 SCALE 1:20