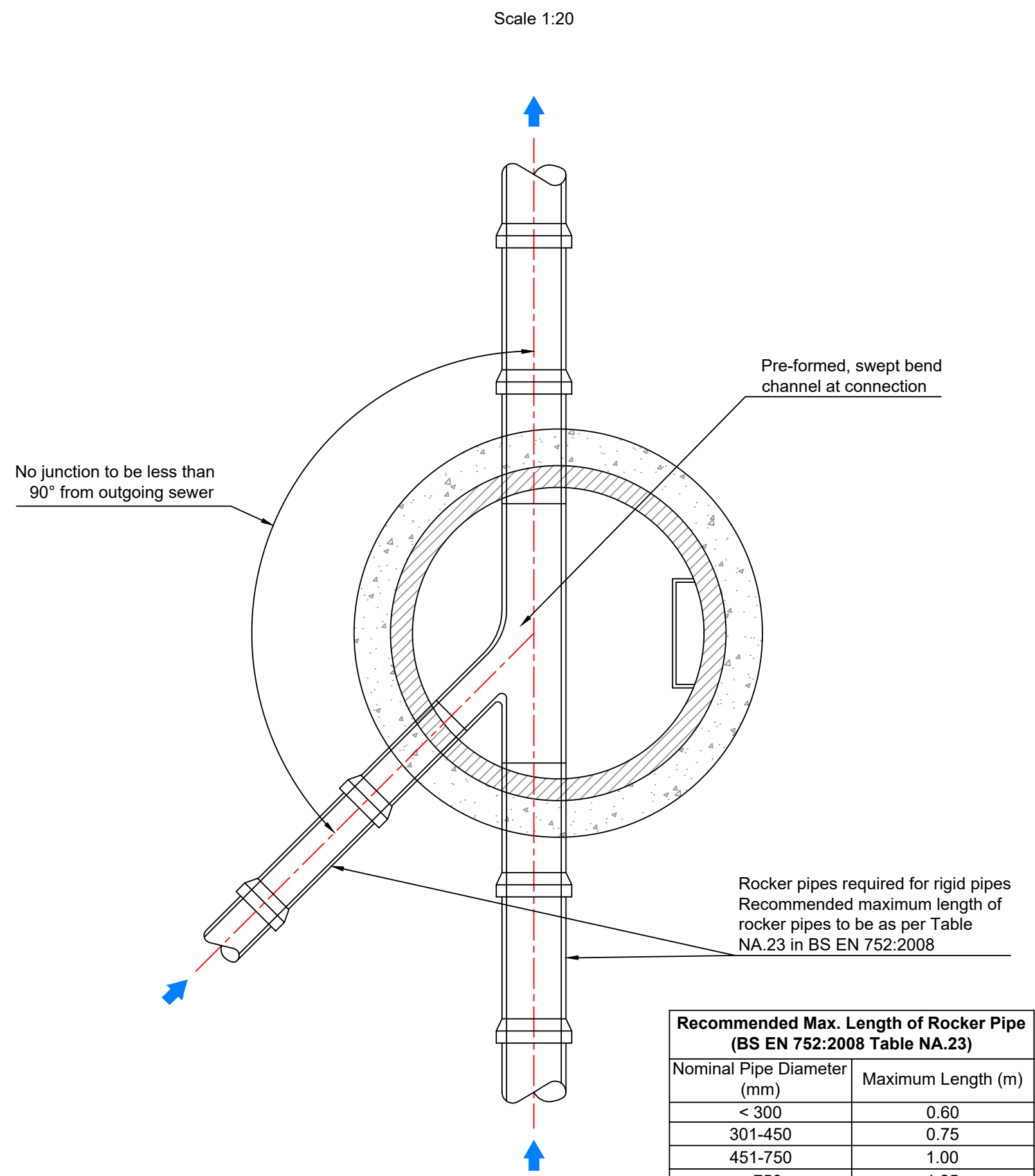
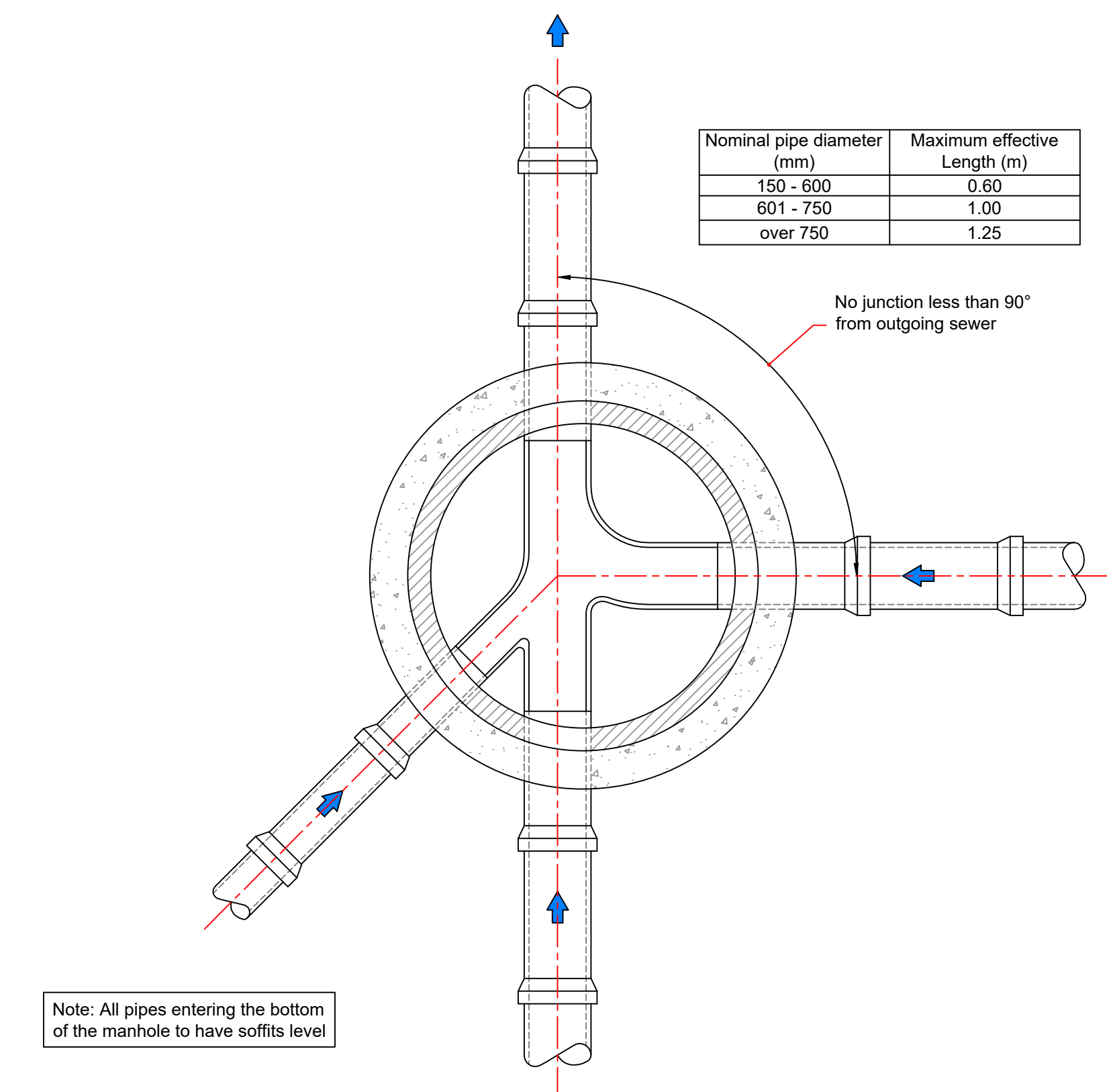


## TYPICAL ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES

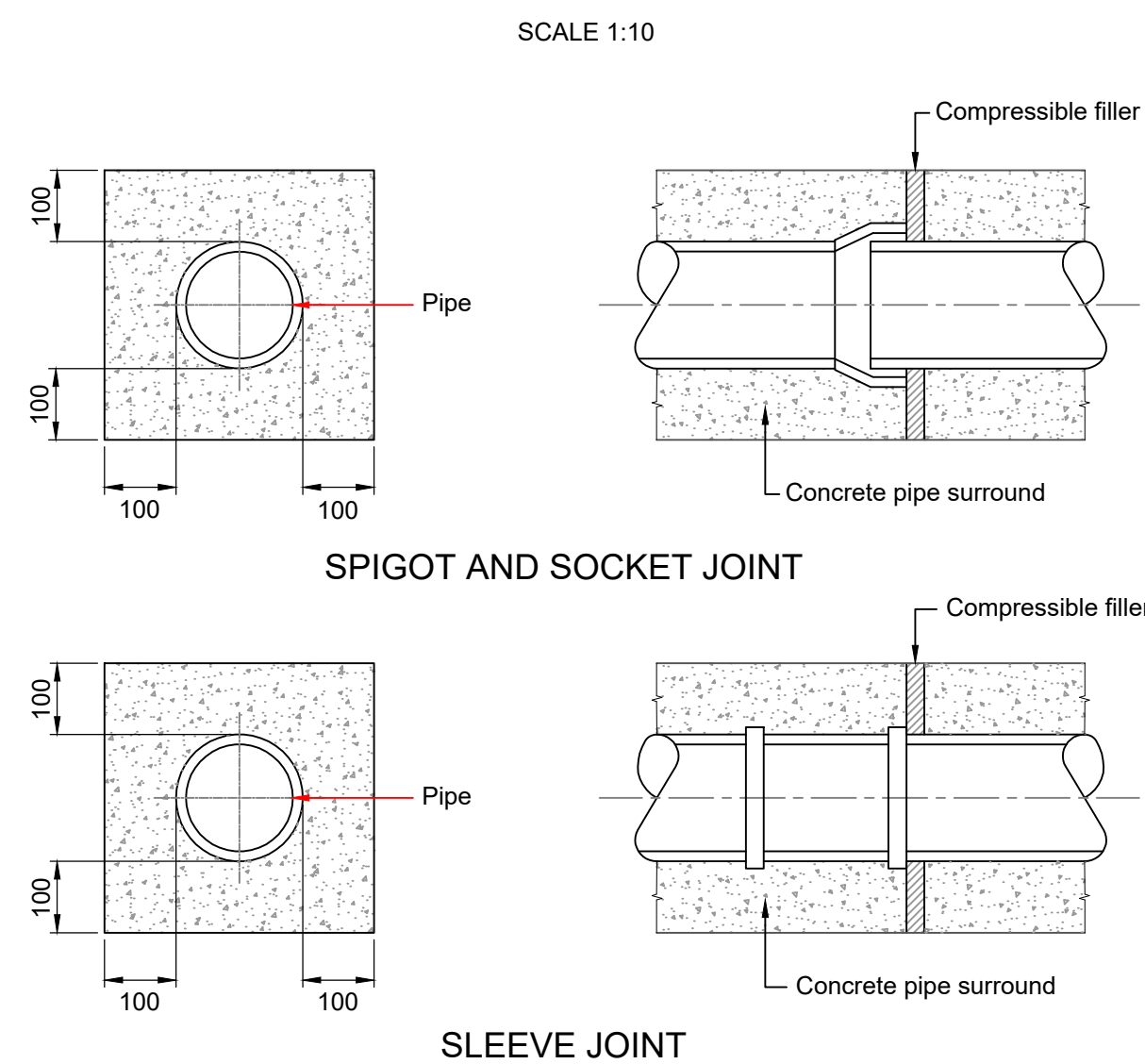


2 NO. INCOMING PIPES

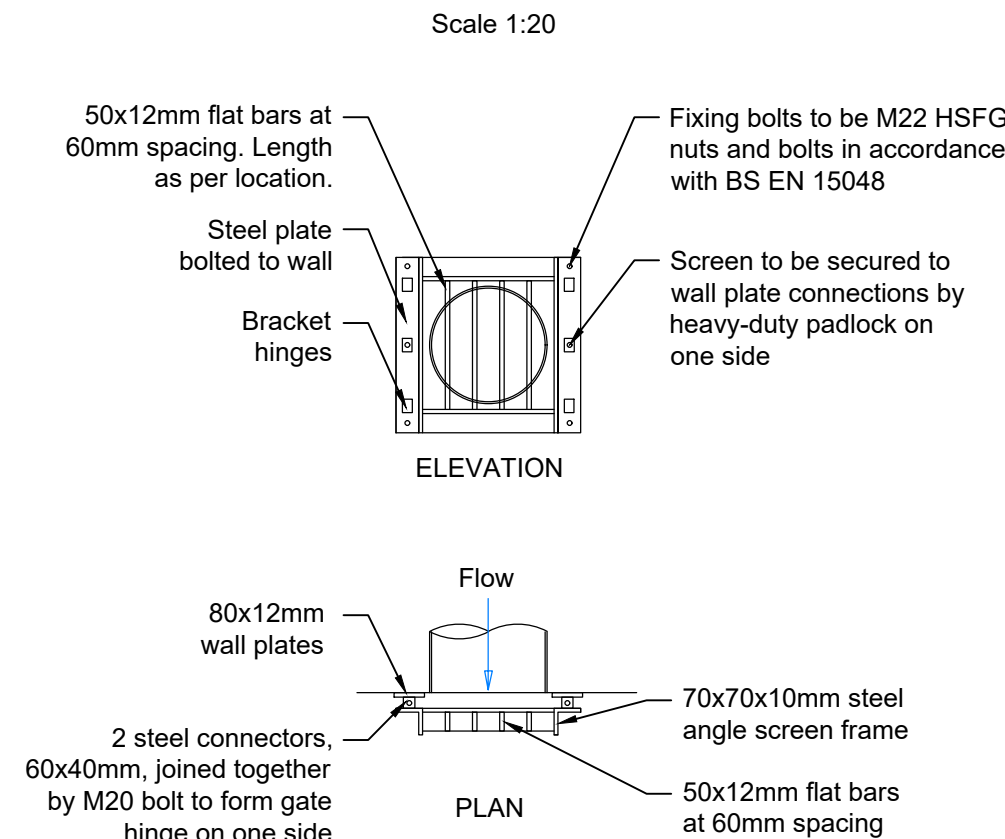


3 NO. INCOMING PIPES

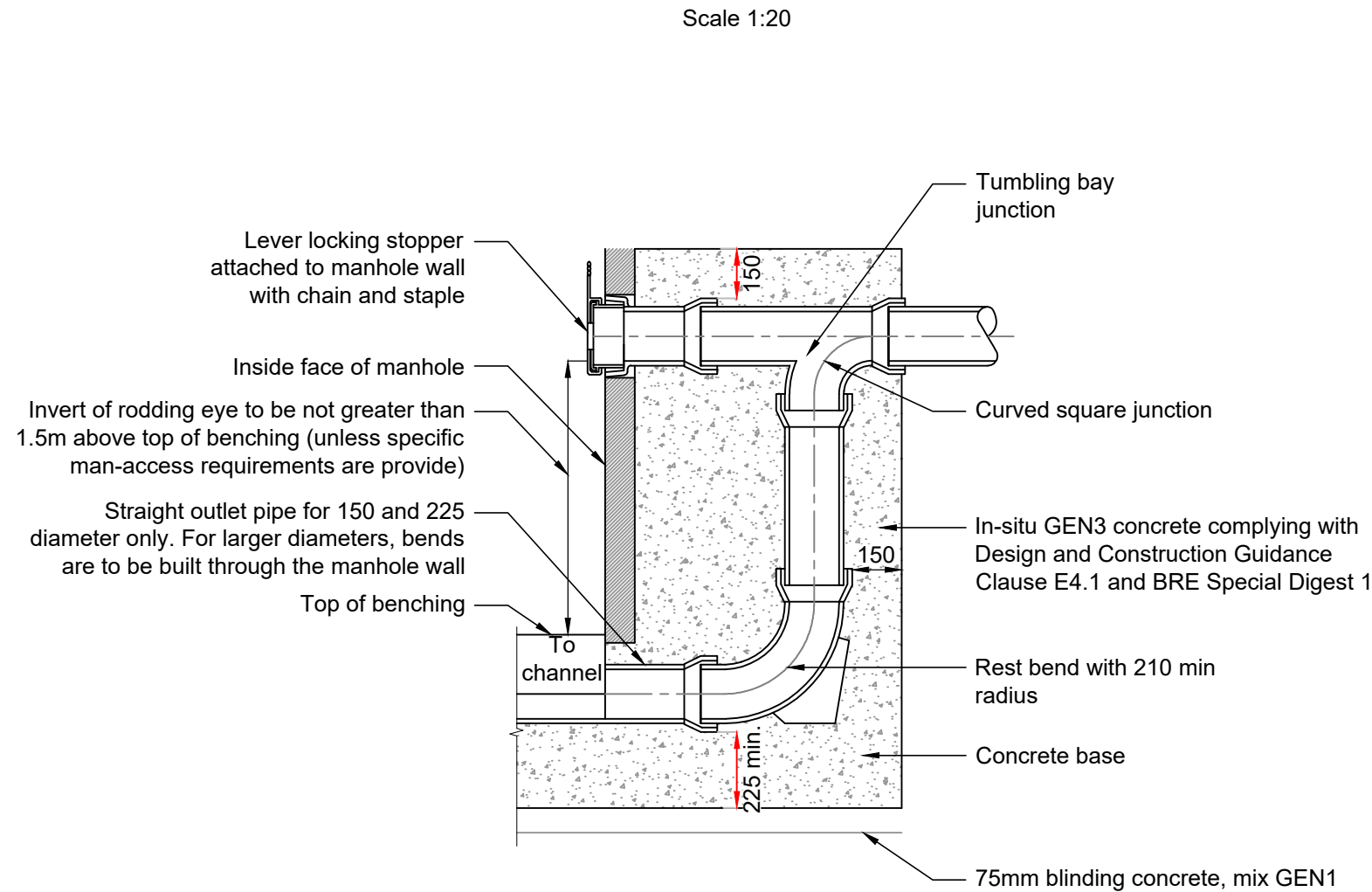
## JOINT DETAILS FOR ENCASED PIPES



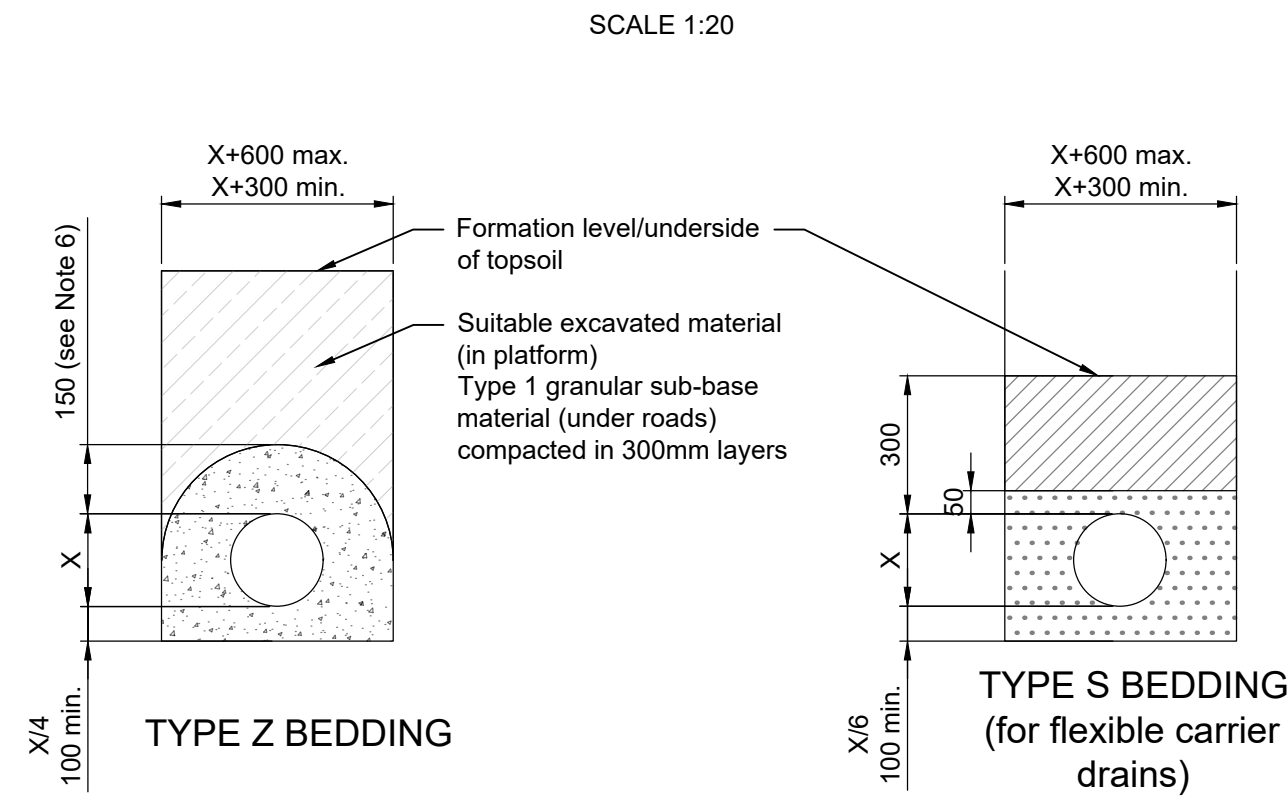
## TYPICAL DETAIL OF SAFETY GRILLE TO BE INSTALLED IN OUTFALLS AND INTAKES FOR PIPES ABOVE Ø300mm



## TYPICAL EXTERNAL BACKDROP DETAIL FOR MANHOLES



## SURFACE WATER DRAINS TRENCH AND BEDDING DETAILS AS PER MCHW HCD, SERIES F, DRAWING F1

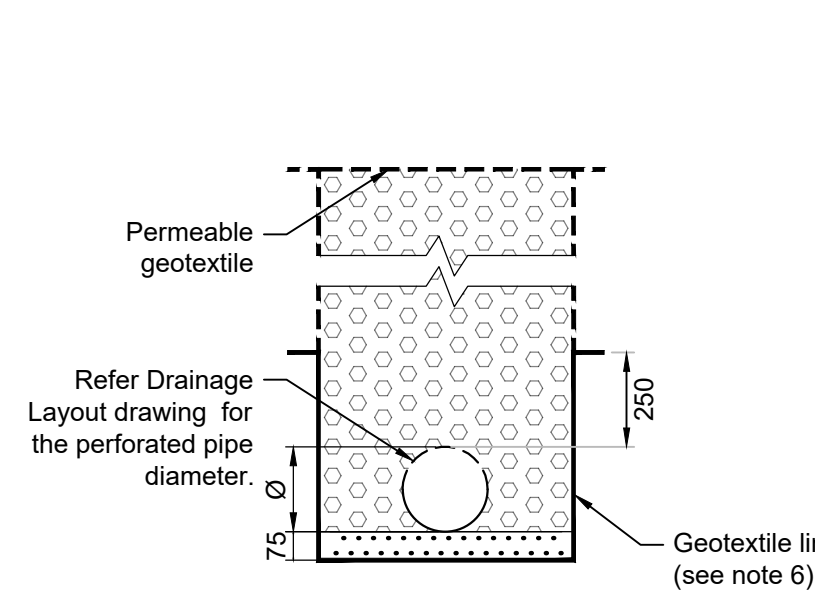


- KEY**
- Granular material to SHW Clause 503.3 (i).
  - Concrete to SHW Clause 503.3 (iii).
  - Class 8 material to SHW Clause 503.3 (iv).

- NOTES**
- ALL DIMENSIONS ARE IN MILLIMETRES.
  - This drawing is to be read in conjunction with Appendix 5/1.
  - Dimension X is the external diameter of the pipe.
  - The minimum or maximum width of the trench applies on and below a line 300mm above the outside top of the pipe. Above the 300mm line the trench backfill material shall be as described in Clause 505 of SHW.
  - The concrete bed or surround may extend to the sides of the trench or be of minimum width. Class 8 material is to be used to fill any voids so formed.
  - For Type Z trench, the concrete cover may be formed to a radius batter or horizontal surface. Minimum cover of concrete shall be 150.

## FILTER DRAIN TRENCH AND BEDDING DETAILS ALONGSIDE ROADS, WITHIN THE PERMEABLE PLATFORM OR IN THE LANDSCAPE AREAS

SCALE 1:20



- KEY**
- Type A or C filter material to SHW Clause 505 or granular material to SHW Clause 503.3 (i).
  - Type B filter material to SHW Clause 505.

- NOTES**
- ALL DIMENSIONS ARE IN MILLIMETRES.
  - This drawing is to be read in conjunction with Appendix 5/1.
  - Pipes shall comply with the requirements for filter drains in Table 5/1 of the SHW.
  - Pipes are to be laid with slots or perforations upwards where a concrete bed is used. For other beds the slots shall be orientated as described in Appendix 5/1.
  - For drains exceeding 1.5m cover below finished level, the drain width considered is equal to pipe dia. +450mm.
  - Geotextile liner wrapping the base and laterals of filter drain up to 250mm above soffit of pipe to be impermeable where there are cables in proximity of less than 2m. Liner to be permeable otherwise, Terram or similar.

SCALE 1:20

0 400mm 800mm 1200mm 1600mm 2000mm

### NOTES:

- Do not scale from this drawing.
- All dimensions are in millimetres and levels in metres AOD (relative to Ordnance Datum Newlyn) unless otherwise stated.
- This drawing is to be read in conjunction with all relevant documents and drawings.
- Installation of all proprietary products as per the Suppliers Manufacturer Guidelines and Recommendations.
- All SuDS (drainage systems including detention basins, Basins, swales etc.) are to be constructed in accordance with Ciria 753, the SuDS Manual 2015.
- All carrier drains under the platform with cover depth of less than 0.9m below the finished floor level to the soffit of the pipe shall have Type Z bedding (concrete surround).
- All trench and bedding details to follow the Highways Construction Details Volume 3 Section 1.

FOR INFORMATION ONLY

NOT FOR CONSTRUCTION

00 03/06/25 IB BR KS APPROVED FOR ISSUE

REV: DATE: DRWN: CHKD: APPVD: DESCRIPTION:

STATUS: PRELIMINARY DESIGN ONLY

CLIENT:

**Scottish & Southern**  
Electricity Networks  
TRANSMISSION

PROJECT:  
LOCH NA CATHRACH

PROJECT NUMBER: LT000325

LOCATION: KNOCKNAGAE

TITLE:

**KNOCKNAGAE SUBSTATION EXTENSION  
DRAINAGE DETAILS**

DRAWN: I.BIN

ENG CHECK: B.RENTON

DESIGNER: SSENT

COORDINATION:

SCALE: 1:20

APPROVED: K.SMITH

DATE OF FIRST ISSUE: 03/06/2025

SECURITY: INTERNAL

ORIGINATOR DRAWING NUMBER:  
LT325-KNOC2-0804-DR-0006

SHEET No:  
01 of 01

CLIENT DRAWING NUMBER:

REV. No:  
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