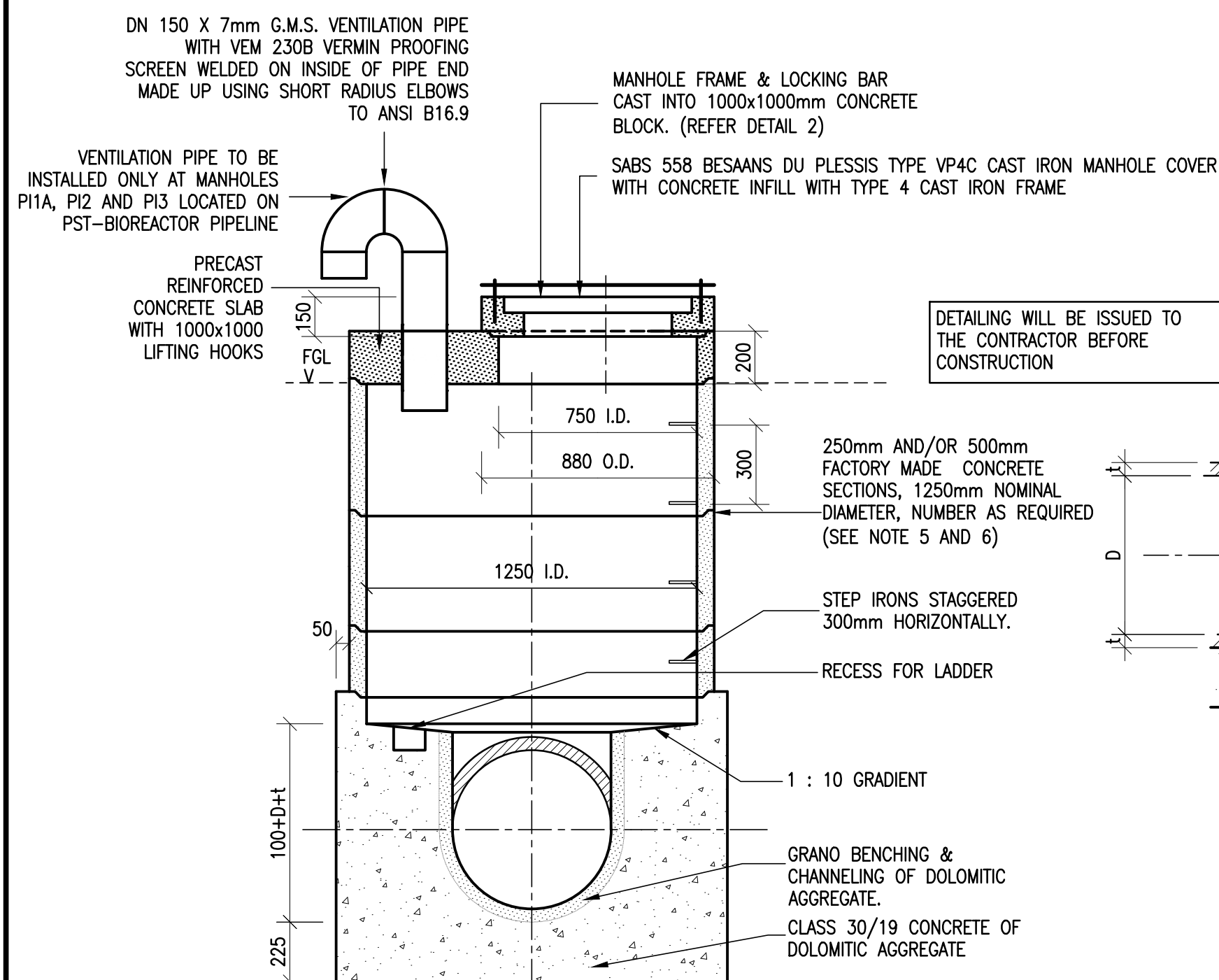
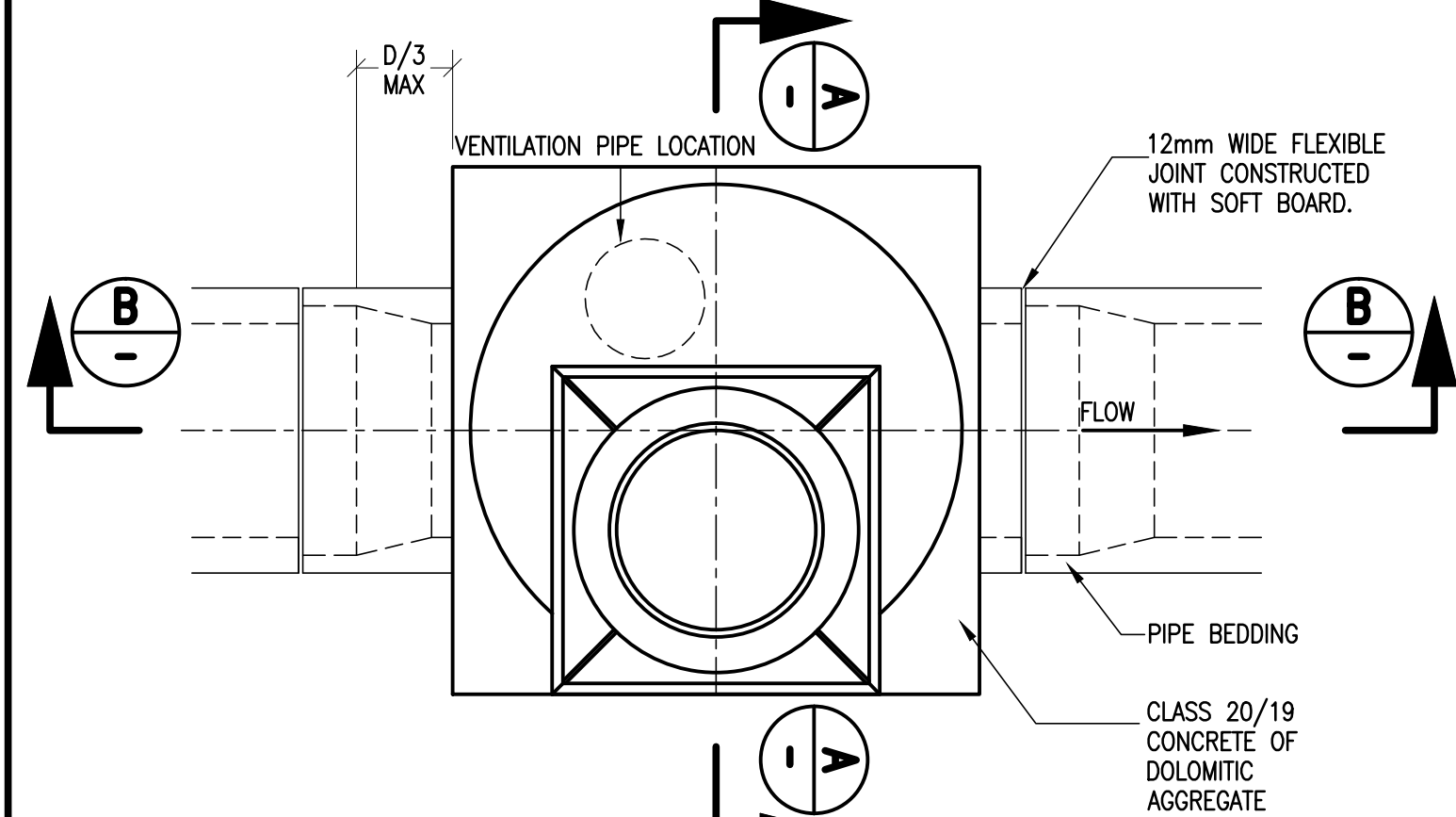
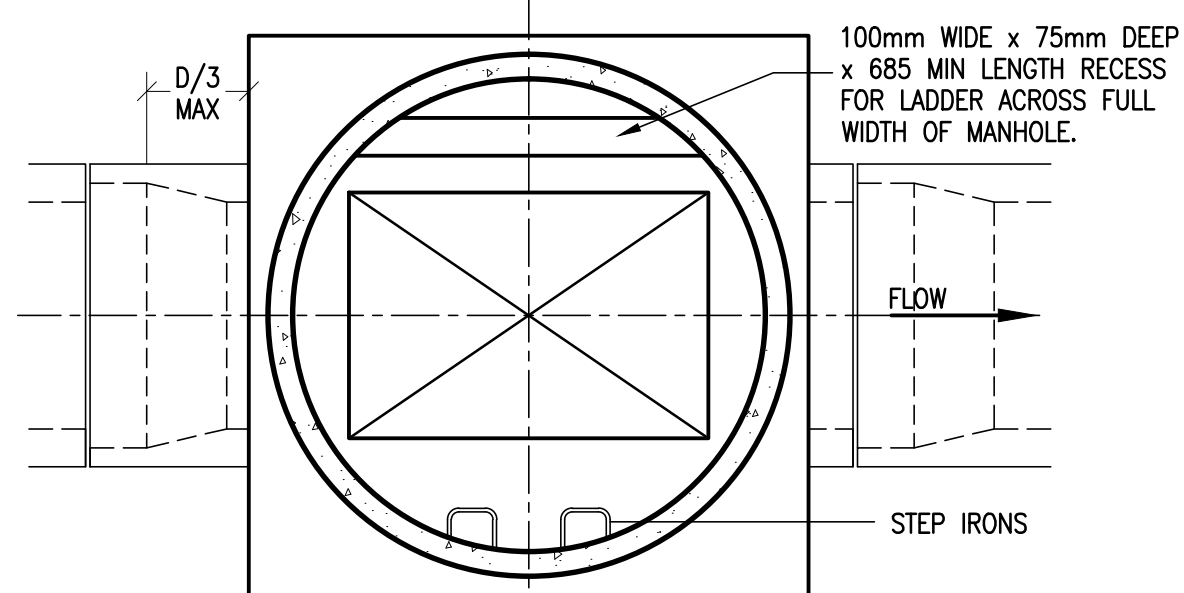




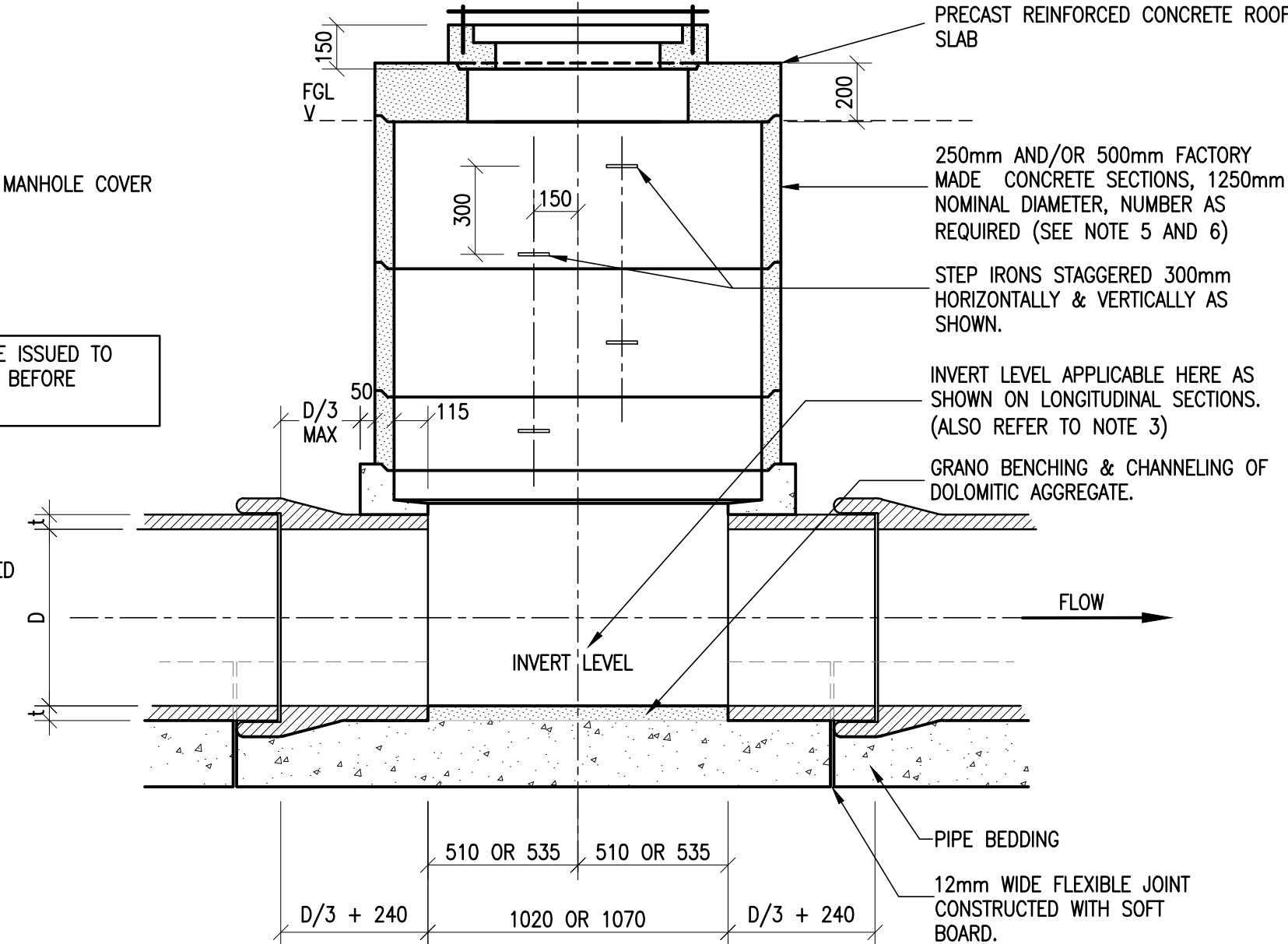
SECTION A
SCALE E



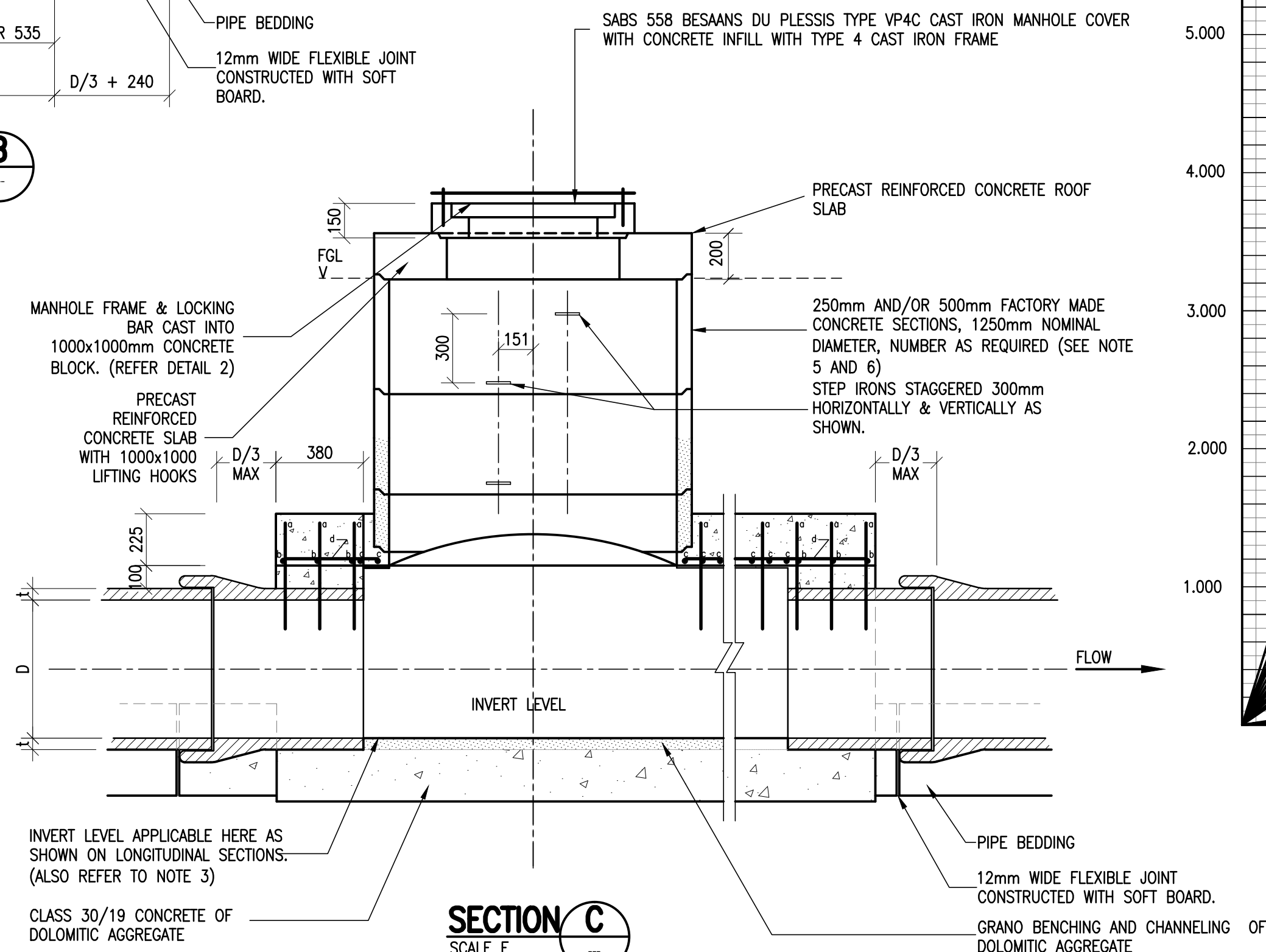
PLAN - SHOWING MANHOLE COVER & FRAME
SCALE E



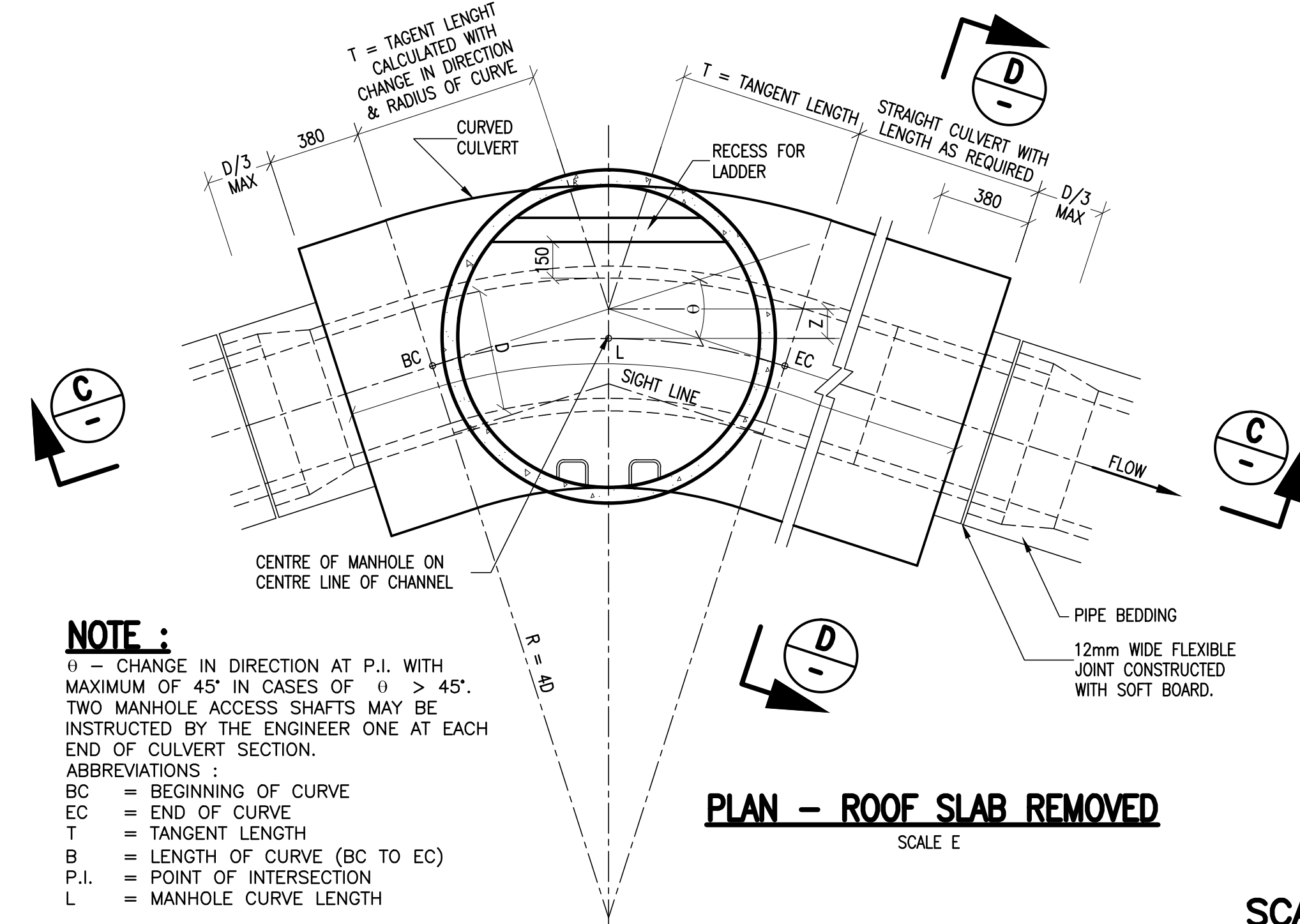
PLAN - ROOF SLAB REMOVED
SCALE E



SECTION B
SCALE E



SECTION C
SCALE E



PLAN - ROOF SLAB REMOVED
SCALE E

NOTE :
θ = CHANGE IN DIRECTION AT P.I. WITH MAXIMUM OF 45° IN CASES OF θ > 45°. TWO MANHOLE ACCESS SHAFTS MAY BE INSTRUCTED BY THE ENGINEER ONE AT EACH END OF CULVERT SECTION.

ABBREVIATIONS :

BC = BEGINNING OF CURVE

EC = END OF CURVE

T = TANGENT LENGTH

B = LENGTH OF CURVE (BC TO EC)

P.I. = POINT OF INTERSECTION

L = MANHOLE CURVE LENGTH

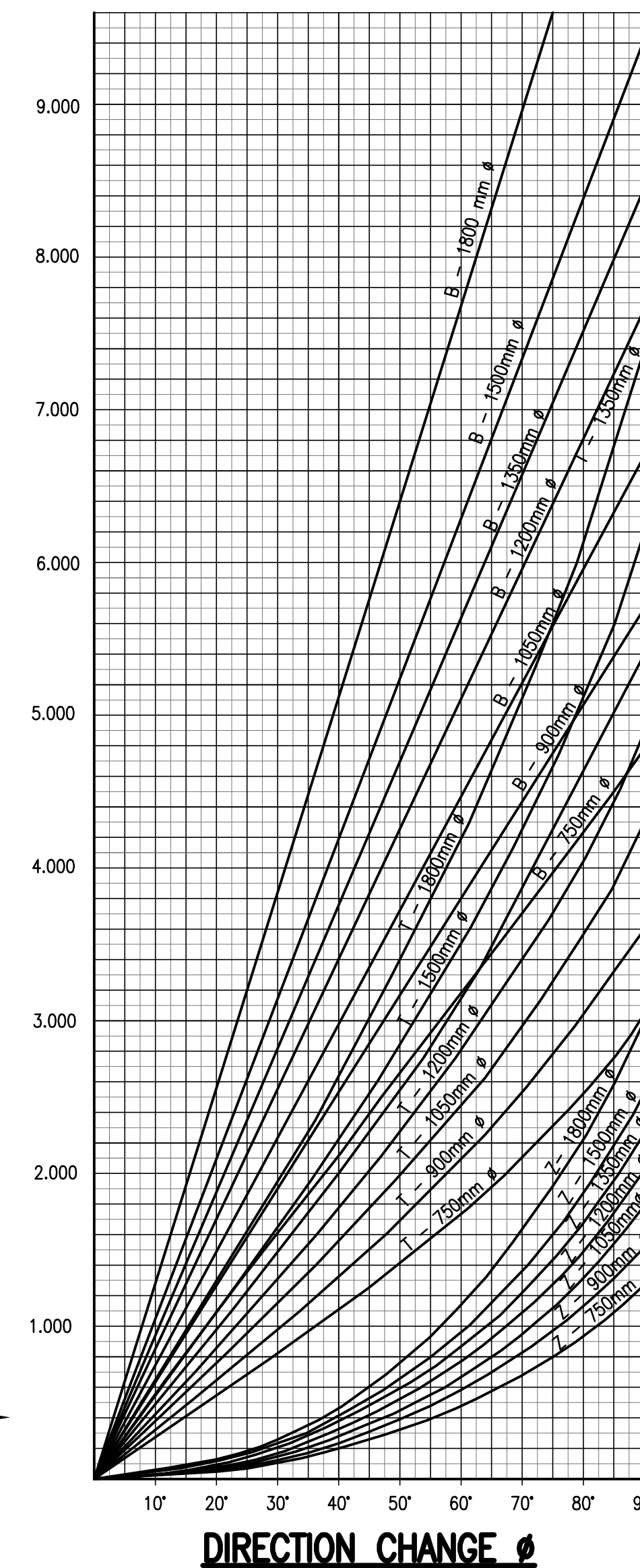
VALUES OF B, T & Z AGAINST θ

FORMULAE :

$$T = R \tan \theta/2$$

$$Z = R (\sec \theta/2 - 1)$$

$$B = 11R\theta/180 \quad (\theta \text{ in degree})$$



NOTES:

- CONCRETE FOR MANHOLES TO BE OF DOLOMITIC ORIGIN.
- CHANNELING AND BENCHING IN MANHOLES AND CULVERT SECTIONS TO BE OF GRANULITIC CONCRETE AND MUST BE CONSTRUCTED WITH A FINAL THICKNESS OF 25mm FOR CHANNELING AND 50mm FOR BENCHING.
- THE INVERT LEVELS AS SHOWN ON LONGITUDINAL SECTIONS REFER TO THE BC AND EC OF THE CURVED CULVERT SECTION.
- CONCRETE COVER TO ALL REINFORCING TO BE 40mm MIN.
- CONCRETE SHAFT MUST BE FIXED WITH AN EPOXY AND SILICA POWDER (WHICH HAS BEEN APPROVED BY THE ENGINEER).
- FACTORY MADE MANHOLE SECTIONS TO BE IN ACCORDANCE WITH SANS 1294 - 1981.
- NO PART OF THE MANHOLE MAY BE FINISHED OFF WITH CEMENT-WASH OR MORTAR.

SCALE E 0 0,5 1 1,5 2 4 m

LEGEND:

01 SECTION No
21 DRAWING No

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
- ALL THE JOINTS SHOWN ARE "DESIGNATED JOINTS"

No	DATE	BY	DESCRIPTION
2	12-01-2015	K.W.	VENTILATION PIPE ADDED
1	27-11-2013	W.G.J.	FOR CONSTRUCTION

REVISIONS

CLIENT:



DESIGNED BY:

aurecon
Leading. Vibrant. Global.
www.aurecongroup.com

PROJECT TITLE:

**SEBOKENG WWTW EXTENSIONS
MODULE 6**

DRAWING TITLE:

**MANHOLE FOR SEWERS
EXCEEDING 450 MM**

SCALE AS SHOWN	DESIGNED M. FERREIRA
SHEET SIZE A1	DRAWN M. FERREIRA
	CHECKED J. MULDER

AS SHOWN

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APPROVAL

THE MASTER HELD AT AURECON,
TSHWANE WATER UNIT
BEARS THE ORIGINAL SIGNATURE OF APPROVAL.

NAME SIGNATURE DATE

Aurecon CAD FILE NAME:
106681-1-C6-021 MANHOLE FOR SEWER EXCEEDING 450mm.dwg

DRAWING NUMBER: REVISION

106681-1-C6-021

2