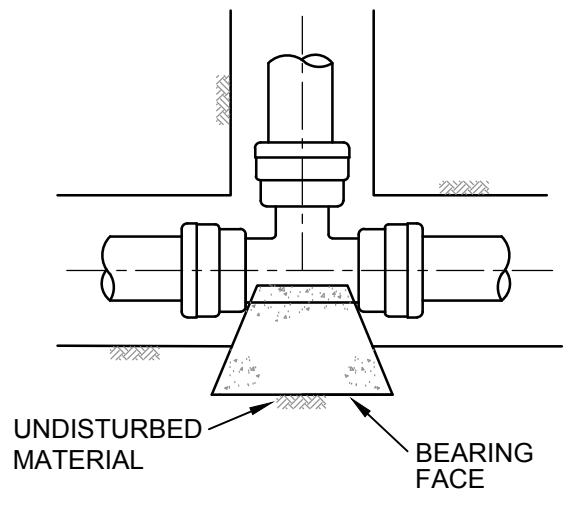
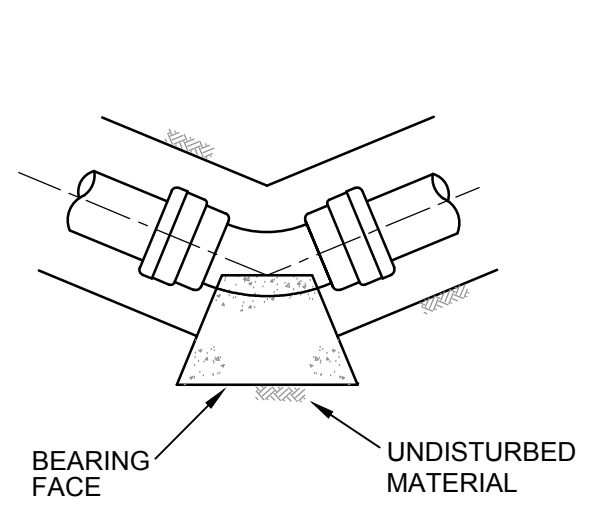


ELEVATION OF STOP VALVE THRUST BLOCK DETAIL REFER TO STOP VALVE THRUST BLOCK TABLE FOR DIMENSIONS



PLAN OF TEE FITTING THRUST BLOCK DETAIL REFER TO TEE FITTING THRUST BLOCK TABLE FOR DIMENSIONS



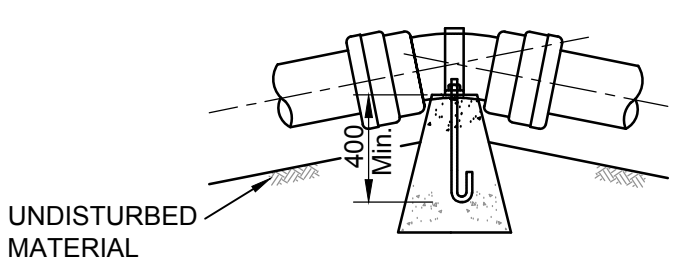
PLAN OF HORIZONTAL AND ELEVATION OF CONCAVE VERTICAL THRUST BLOCK DETAIL REFER TO BEND THRUST BLOCK TABLE FOR DIMENSIONS

STOP VALVE, DEAD END & TEE THRUST BLOCK TABLE

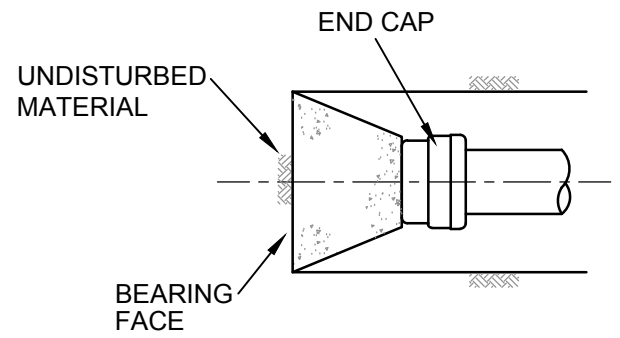
FITTING NOM. SIZE	THRUST (kN)	BEARING FACE AREA (m <sup>2</sup> )
100	13.75	0.275
150	29.05	0.581
200	49.86	0.997
225	62.03	1.241
250	75.58	1.512
300	110.23	2.203

BEND THRUST BLOCK TABLE

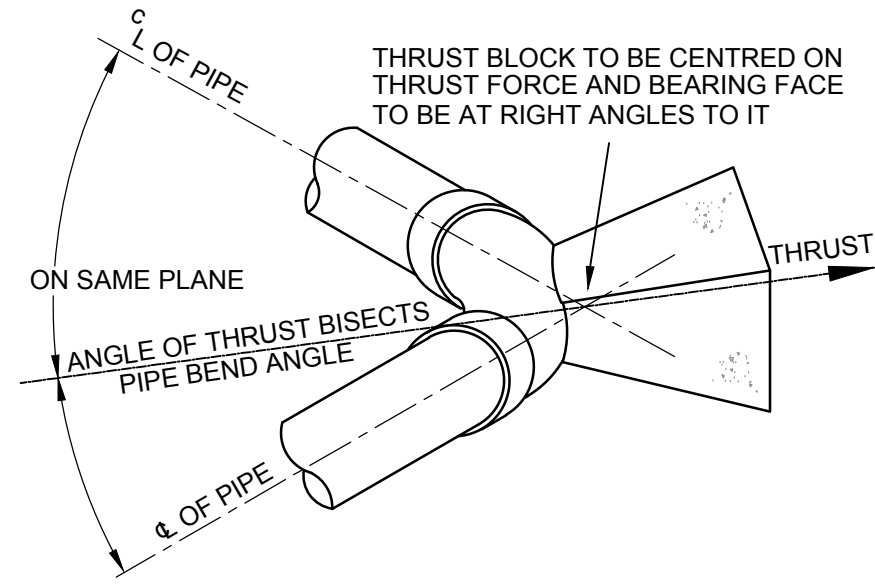
HORIZ. DEFL.	BEND NOM. DIA.	THRUST (kN)	BEARING FACE AREA (m <sup>2</sup> )
UP TO 11 1/4°	100	2.70	0.054
	150	5.69	0.114
	200	9.77	0.195
	225	12.16	0.243
	250	14.83	0.297
UP TO 22 1/2°	300	21.62	0.432
	100	5.37	0.107
	150	11.34	0.227
	200	19.45	0.389
	225	24.22	0.484
UP TO 45°	250	29.51	0.590
	300	43.04	0.861
	100	10.52	0.210
	150	22.25	0.445
	200	38.16	0.763
UP TO 90°	225	47.51	0.950
	250	57.88	1.158
	300	84.42	1.688
	100	19.43	0.389
	150	41.10	0.822
UP TO 11 1/4°	200	70.50	1.410
	225	87.78	1.756
	250	106.96	2.139
	300	156.00	3.120



ELEVATION OF CONVEX VERTICAL BEND ANCHOR BLOCK DETAIL REFER TO CONVEX VERTICAL ANCHOR BLOCK TABLE FOR DIMENSIONS



PLAN OF DEAD END THRUST BLOCK DETAIL REFER TO DEAD END THRUST BLOCK TABLE FOR DIMENSIONS



DETAIL SHOWING TYPICAL THRUST FORCE AND THRUST BLOCK

CONVEX VERTICAL BEND ANCHOR BLOCK TABLE

HORIZ. DEFL.	BEND NOM. DIA.	THRUST (kN)	BLOCK VOLUME (m <sup>3</sup> )
UP TO 11 1/4°	100	2.70	0.115
	150	5.69	0.242
	200	9.77	0.415
	225	12.16	0.517
	250	14.83	0.630
UP TO 22 1/2°	300	21.62	0.918
	100	5.37	0.228
	150	11.34	0.482
	200	19.45	0.826
	225	24.22	1.029
UP TO 45°	250	29.51	1.254
	300	43.04	1.828
	100	10.52	0.448
	150	22.25	0.945
	200	38.16	1.621
UP TO 90°	225	47.51	2.018
	250	57.88	2.459
	300	84.42	3.586

**NOTES**  
 SAND BEDDING AND SAND SURROUND NOT SHOWN ON VIEWS FOR SAKE OF CLARITY.  
 BEARING FACE OF THRUST BLOCKS TO BE CAST AGAINST UNDISTURBED MATERIAL. BEARING FACE OF UNDISTURBED MATERIAL TO BE TRIMMED SQUARE TO THE DIRECTION OF THRUST AND ALL LOOSE MATERIAL REMOVED.  
 AN ALLOWABLE SOIL BEARING CAPACITY OF 50kPa HAS BEEN ASSUMED FOR THRUST BLOCK DIMENSIONING. THIS CAPACITY IS TYPICAL FOR SOFT CLAY. TO VARY BEARING AREA FOR DIFFERENT MATERIAL, CONSULT THE DESIGN ENGINEER.  
 ALL CONCRETE TO BE 20MPa.  
 VALVE OR FITTING TO HAVE ONE LAYER OF PETROLATUM COMPOUND OR BITUMEN IMPREGNATED TAPE PLACED BETWEEN STRAP AND VALVE OR FITTING.  
 VALVE OR FITTING TO HAVE A BOND BREAKING LAYER PLACED BETWEEN THE VALVE OR FITTING AND THE CONCRETE BLOCK.  
 BOLTS ARE TO BE GRADE 230R HOT DIP GALVANISED ROUND BAR, THREADED AT ONE END FOR SUFFICIENT LENGTH TO ALLOW GALVANISED WASHER AND NUT TO BE ATTACHED.  
 BOLTS TO BE BENT WITH A STANDARD COG OR HOOK FOR THAT DIAMETER BAR.  
 BOLTS MUST NOT BE FULLY TIGHTENED UNTIL CONCRETE HAS AT LEAST ONE DAYS CURING STRENGTH AND BOLTS MUST NOT BE OVER TIGHTENED.

ANCHOR DETAILS

BEND OR FITTING NOM. DIA.	BOLT, NUT & WASHER SIZE	No. BOLTS REQUIRED	STRAP SIZE	No. STRAPS
100	M20	2	50x8	1
150	M20	2	50x8	1
200	M20	4	50x8	2
225	M20	4	50x8	2
250	M20	4	50x8	2
300	M24	4	50x10	2

<b>Armidale</b> Dept of Public Regional Council <b>Infrastructure</b>	SCALES NTS	APPROVED D. MAUNDER MANAGER ENGINEERING AND STANDARDS SUPPORT 31/08/2016 DATE	SHEET 1 OF 1
	<b>WATERMAIN THRUST BLOCK DETAILS</b>	DRWN JB	AS SHEET SIZE <b>A3</b>
DES CIM/PJN		DRAWING No <b>020-046</b>	AMDT No
CHKD MW		CADFILE 020-046.dwg	DATE 31/08/2016