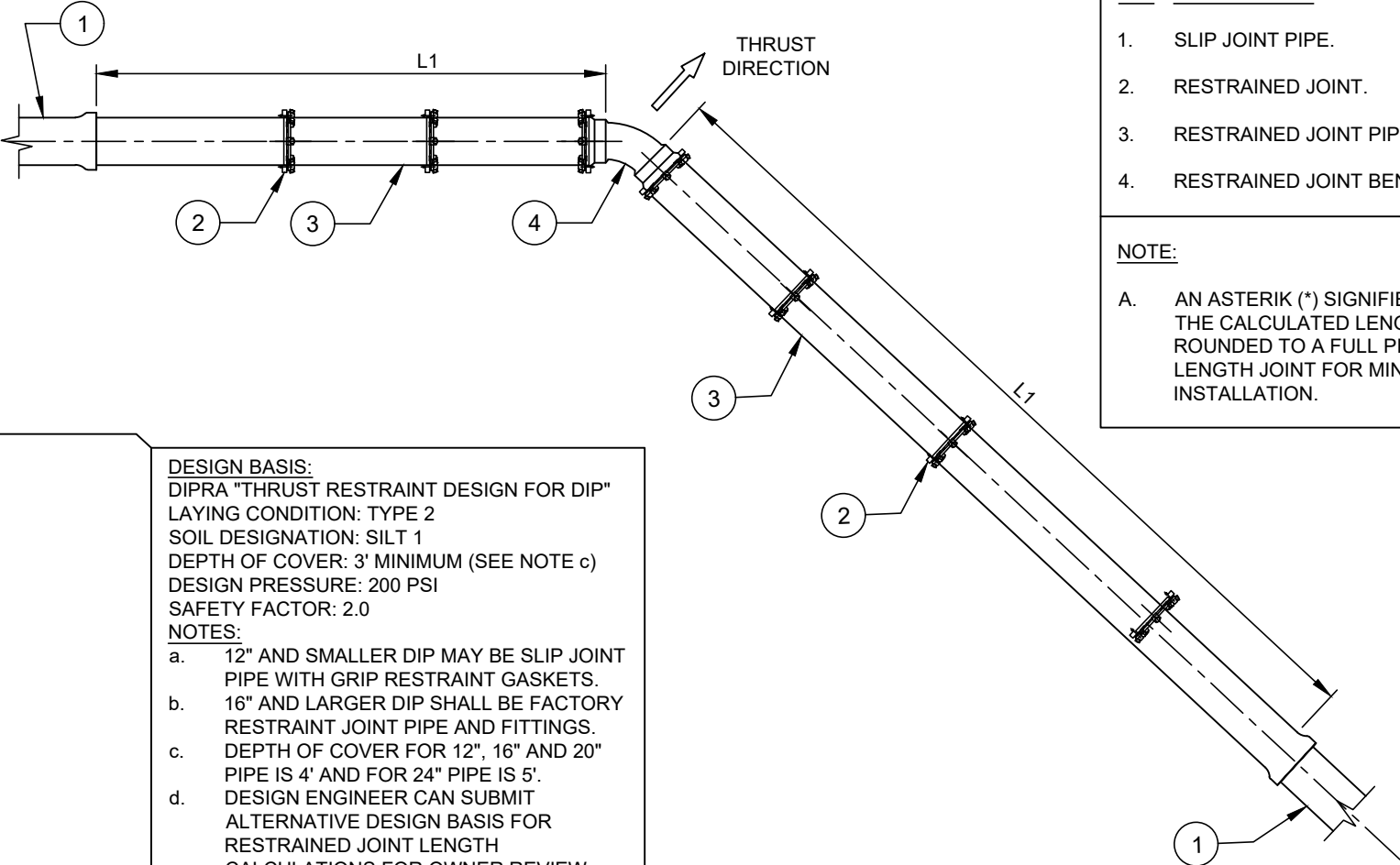


VERTICAL BEND DOWN (TOP BEND) - L1 (FEET)								
DIP	DIAMETER							
	BEND ANGLE	6"	8"	10"	12"	16"	20"	24"
	45	70	91	109	99	128	154	150
	22.5	36*	54*	54*	54*	61	74	72
	11.25	18*	36*	36*	36*	36*	54*	36*

VERTICAL BEND DOWN (TOP BEND) - L1 (FEET)								
POLYWRAPPED DIP/PVC	DIAMETER							
	BEND ANGLE	6"	8"	10"	12"	16"	20"	24"
	45	100	129	156	142	182	221	214
	22.5	54*	62	75	68	88	106	103
	11.25	36*	36*	54*	36*	54*	54*	54*

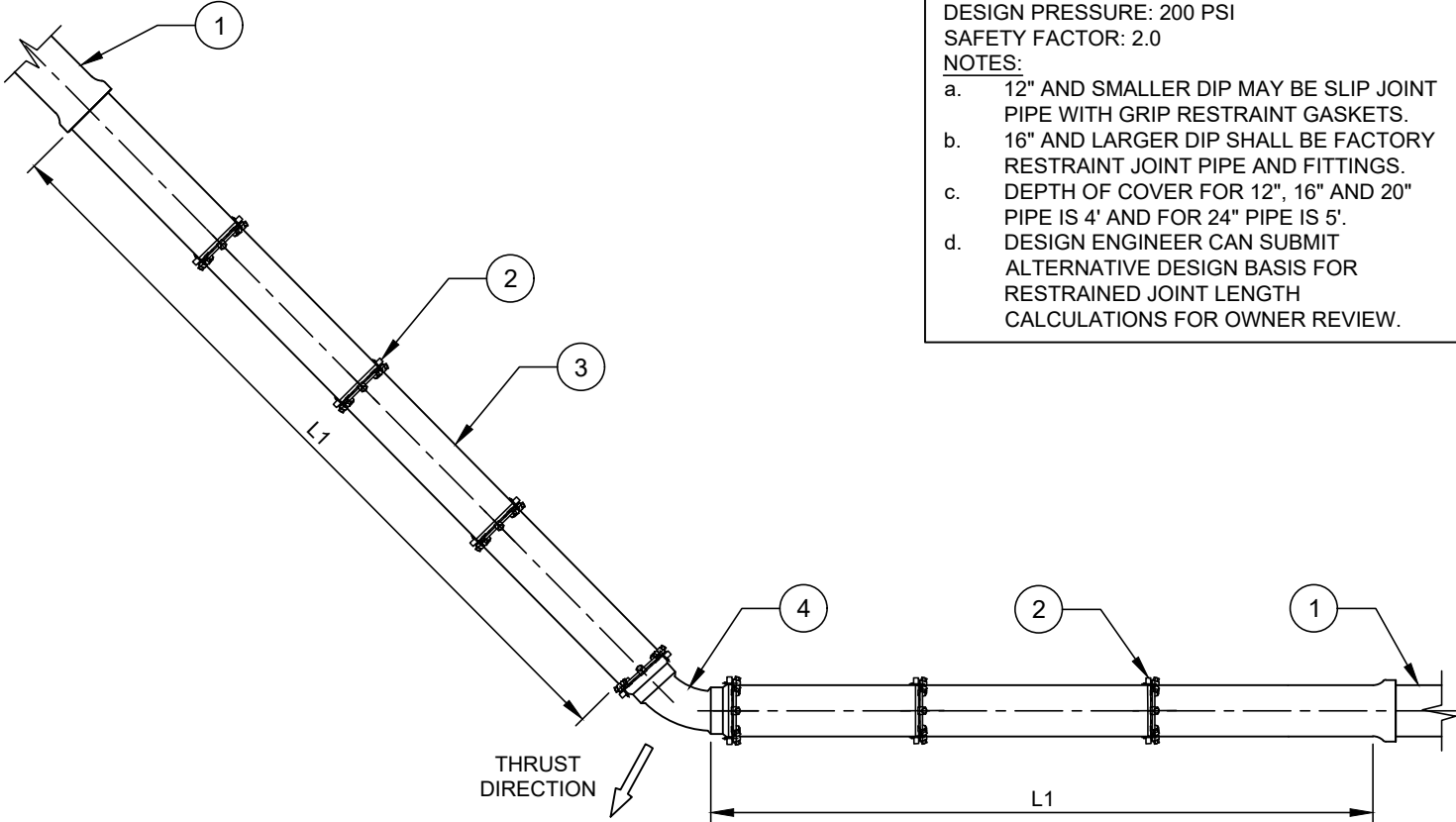


- NO. DESCRIPTION:
- SLIP JOINT PIPE.
  - RESTRAINED JOINT.
  - RESTRAINED JOINT PIPE.
  - RESTRAINED JOINT BEND.

NOTE:

A. AN ASTERIK (\*) SIGNIFIES THAT THE CALCULATED LENGTH WAS ROUNDED TO A FULL PIPE LENGTH JOINT FOR MINIMUM INSTALLATION.

DESIGN BASIS:  
 DIPRA "THRUST RESTRAINT DESIGN FOR DIP"  
 LAYING CONDITION: TYPE 2  
 SOIL DESIGNATION: SILT 1  
 DEPTH OF COVER: 3' MINIMUM (SEE NOTE c)  
 DESIGN PRESSURE: 200 PSI  
 SAFETY FACTOR: 2.0  
 NOTES:  
 a. 12" AND SMALLER DIP MAY BE SLIP JOINT PIPE WITH GRIP RESTRAINT GASKETS.  
 b. 16" AND LARGER DIP SHALL BE FACTORY RESTRAINT JOINT PIPE AND FITTINGS.  
 c. DEPTH OF COVER FOR 12", 16" AND 20" PIPE IS 4' AND FOR 24" PIPE IS 5'.  
 d. DESIGN ENGINEER CAN SUBMIT ALTERNATIVE DESIGN BASIS FOR RESTRAINED JOINT LENGTH CALCULATIONS FOR OWNER REVIEW.



VERTICAL BEND UP (BOTTOM BEND) - L1 (FEET)								
DIP	DIAMETER							
	BEND ANGLE	6"	8"	10"	12"	16"	20"	24"
	45	54*	58	70	63	81	98	94
	22.5	36*	36*	36*	36*	54*	54*	54*
	11.25	18*	18*	18*	18*	36*	36*	36*

VERTICAL BEND UP (BOTTOM BEND) - L1 (FEET)								
POLYWRAPPED DIP/PVC	DIAMETER							
	BEND ANGLE	6"	8"	10"	12"	16"	20"	24"
	45	56	72	86	78	100	120	116
	22.5	36*	36*	54*	54*	54*	58	56
	11.25	18*	18*	36*	36*	36*	36*	36*

# RESTRAINT LENGTH - VERTICAL BEND DOWN AND VERTICAL BEND UP