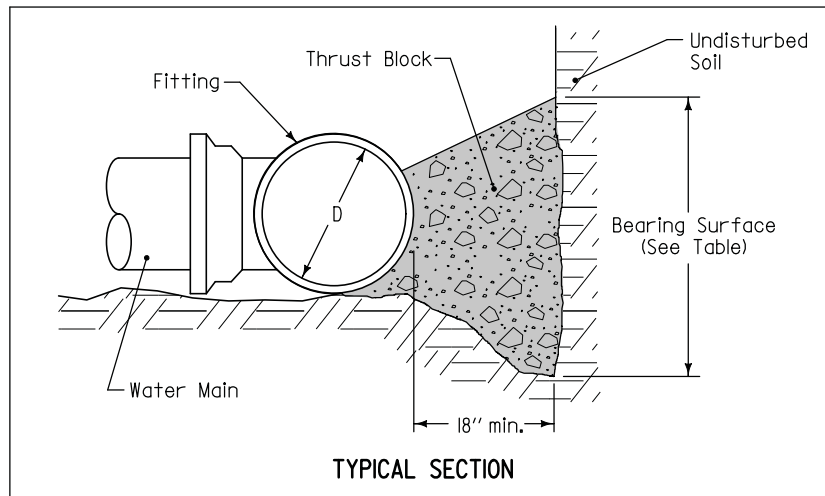




Extend thrust blocks to undisturbed soil. Excavation into trench wall may be necessary.

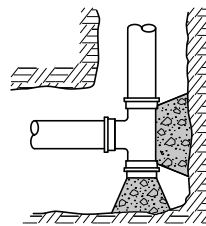
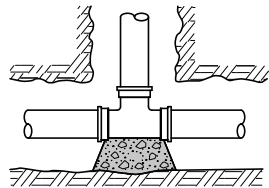
Form vertical surfaces of poured concrete thrust blocks except on bearing surface.

Encase all fittings in polyethylene wrap. Do not allow concrete to directly contact joints or fitting bolts.

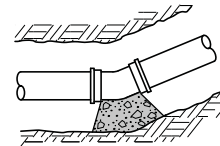
Diameter of Pipe, D (inches)	MINIMUM BEARING SURFACE (sf)				
	Bends				Tees and Dead Ends
	11¼°	22½°	45°	90°	
4	1	1	2	4	3
6	1	2	4	8	6
8	2	4	7	14	10
10	3	6	11	21	15
12	4	8	16	29	21
14	5	11	21	39	28
16	7	14	27	50	36
18	9	17	34	63	45
20	11	21	42	78	55
24	15	31	60	111	78
30	24	47	92	171	120
36	34	67	132	244	173

Minimum surface area based on water pressure of 150 psi and allowable soil pressure of 1,000 psf.

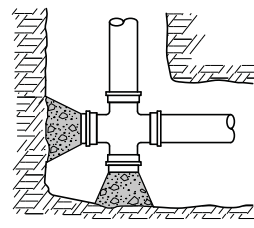
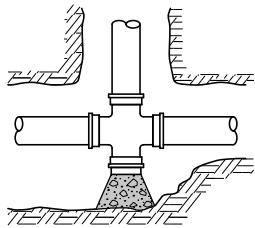
TEES



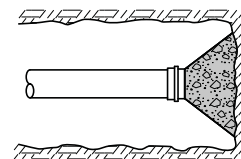
BENDS



CROSSES



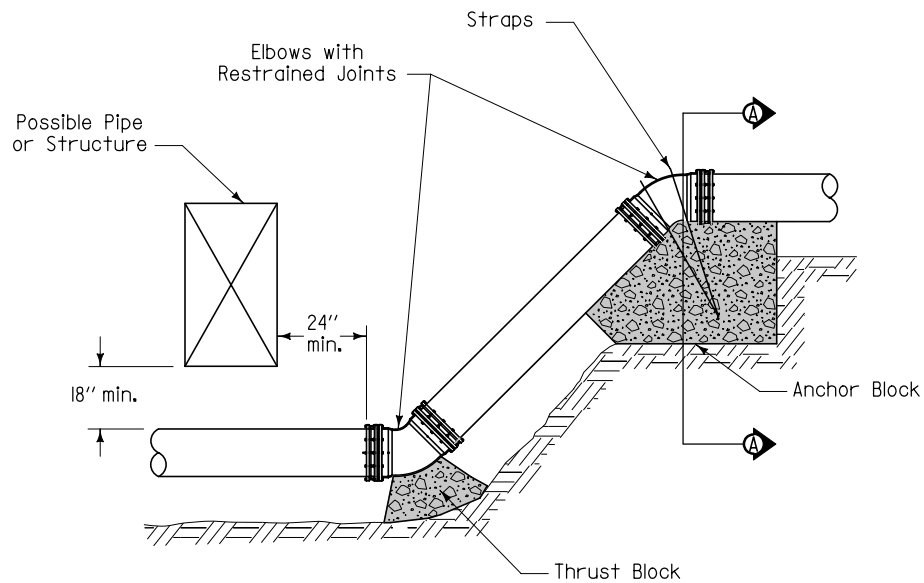
DEAD ENDS



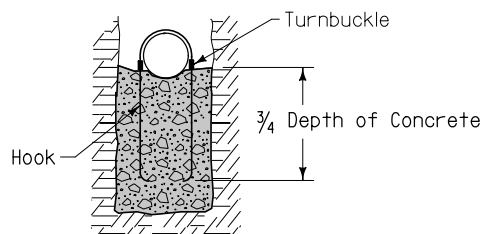
TYPICAL PLAN

SUDAS	Iowa Department of Transportation	REVISION	
		NEW	04-21-09
		WM-101	
		SHEET 1 of 2	
FIGURE 5010.101 STANDARD ROAD PLAN			
REVISIONS: New. Replaces SUDAS Figure 5010.1			
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
THRUST BLOCKS			

CHANGES IN PIPE DEPTH



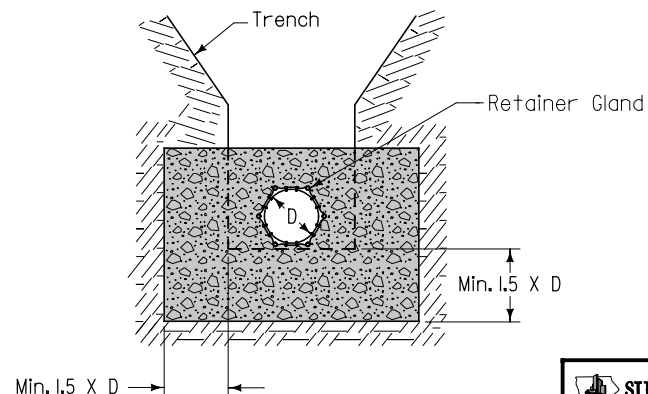
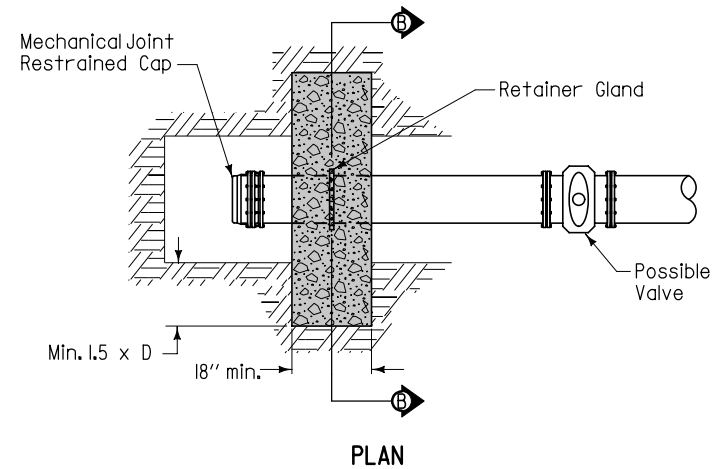
ELEVATION



SECTION A-A

DEAD ENDS (ALTERNATE METHOD)

Use only when allowed by the Engineer, or when specified in the contract documents.



SECTION B-B

 SUDAS	 Iowa Department of Transportation	REVISION	
		NEW	04-21-09
		WM-101	
		SHEET 2 of 2	
FIGURE 5010.101	STANDARD ROAD PLAN		
REVISIONS: New. Replaces SUDAS Figure 5010.1.			
 SUDAS DIRECTOR		 DESIGN METHODS ENGINEER	
THRUST BLOCKS			