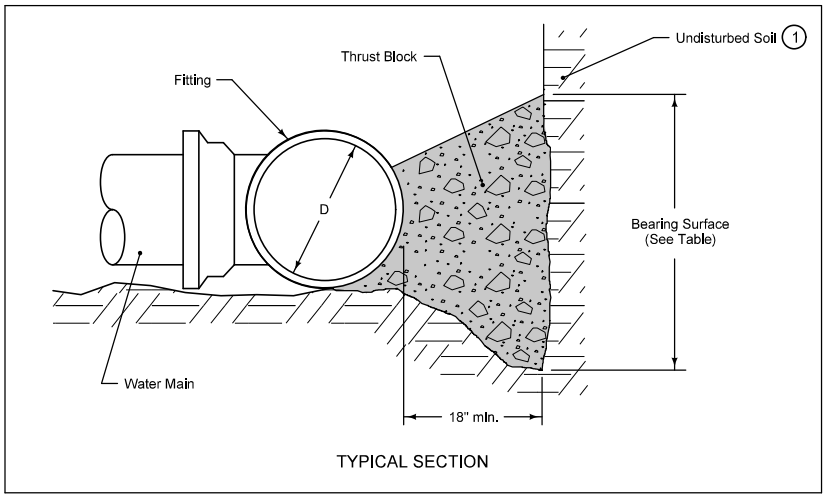
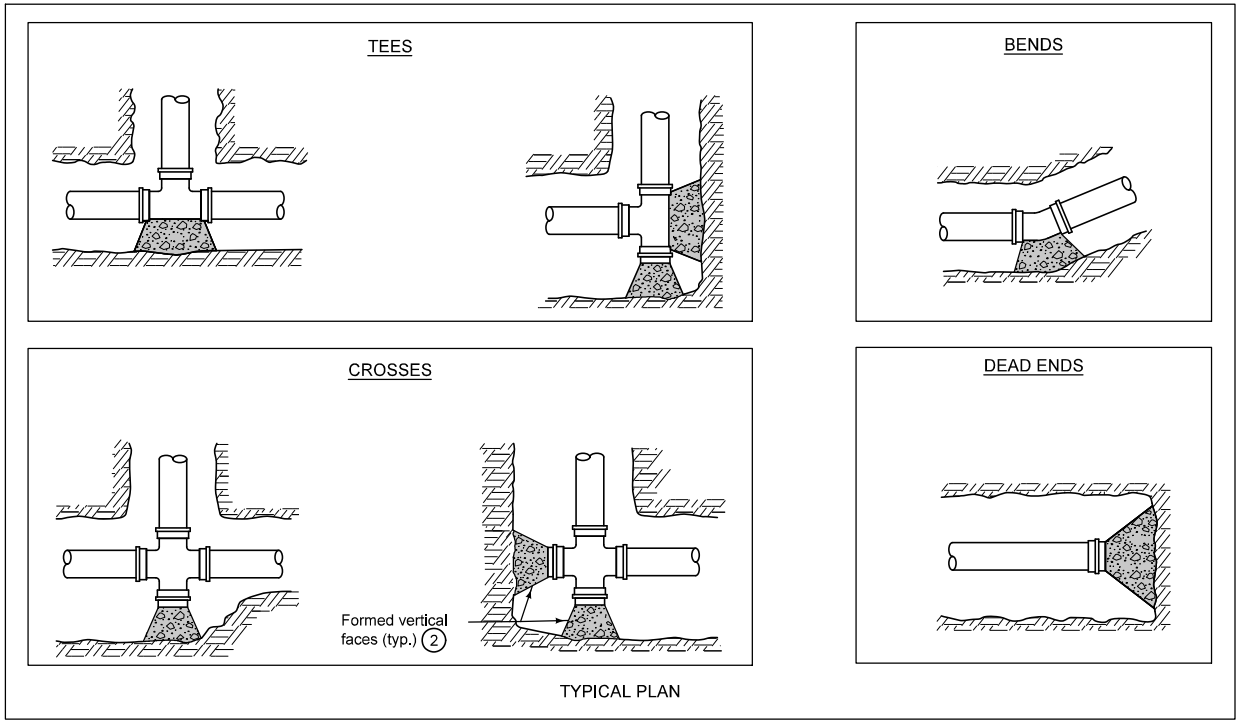


TYPICAL SECTION

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

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

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



TYPICAL PLAN

Diameter of Pipe, D (inches)	MINIMUM BEARING SURFACE (sf)				
	Bends				Tees and Dead Ends
	11¼°	22½°	45°	90°	
4	1	2	3	4	3
6	2	3	5	8	6
8	2	4	8	14	10
10	3	6	12	21	15
12	5	9	16	30	21
14	6	11	22	40	28
16	7	14	28	51	36
18	9	18	35	64	45
20	11	22	42	78	55
24	16	31	61	111	79
30	24	48	93	171	121
36	34	68	133	245	173

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

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REVISION 2 04-21-26

FIGURE 5010.101 | STANDARD ROAD PLAN

WM-101

SHEET 1 of 2

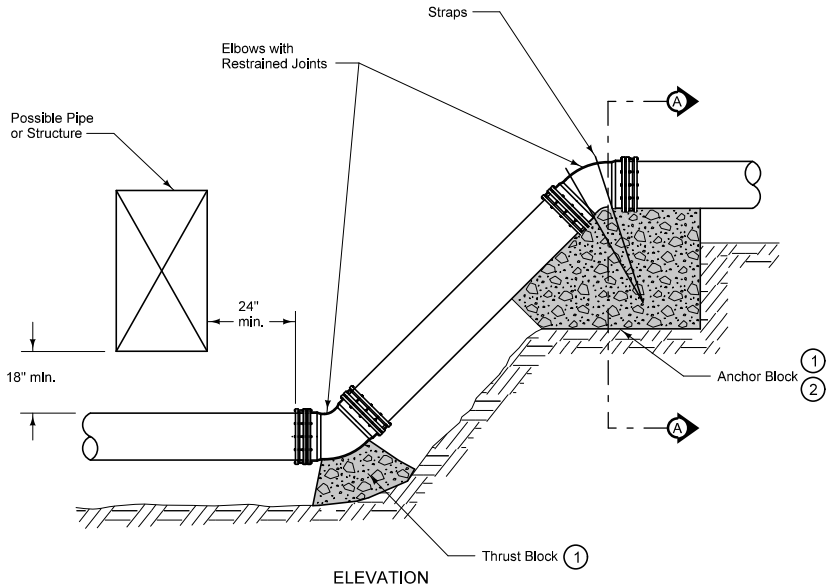
REVISIONS: Updated bearing surface table.

SUDAS DIRECTOR | DESIGN METHODS ENGINEER

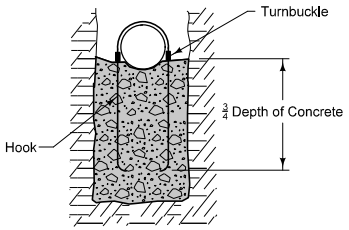
THRUST BLOCKS

FIGURE 5010.101 | SHEET 1 OF 2

CHANGES IN PIPE DEPTH



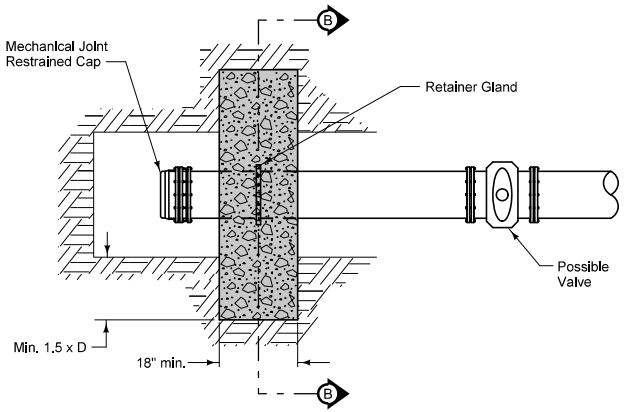
ELEVATION



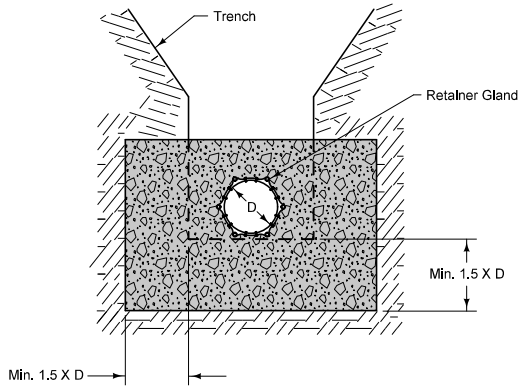
SECTION A-A

DEAD ENDS (ALTERNATE METHOD)

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



PLAN



SECTION B-B

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

1. Fittings are shown with both restrained joints and thrust/anchor blocks. These methods can be used independently or in conjunction with each other. Install as specified.
2. Anchor block sizes and shapes are detailed on individual plan sheets.

SUDAS	IOWA DOT	REVISION 2 04-21-26
FIGURE 5010.101	STANDARD ROAD PLAN	WM-101
		SHEET 2 of 2

REVISIONS: Clarified use of restrained joints and thrust blocks for changes in pipe depth.

SUDAS DIRECTOR — DESIGN METHODS ENGINEER

THRUST BLOCKS

FIGURE 5010.101 | SHEET 2 OF 2