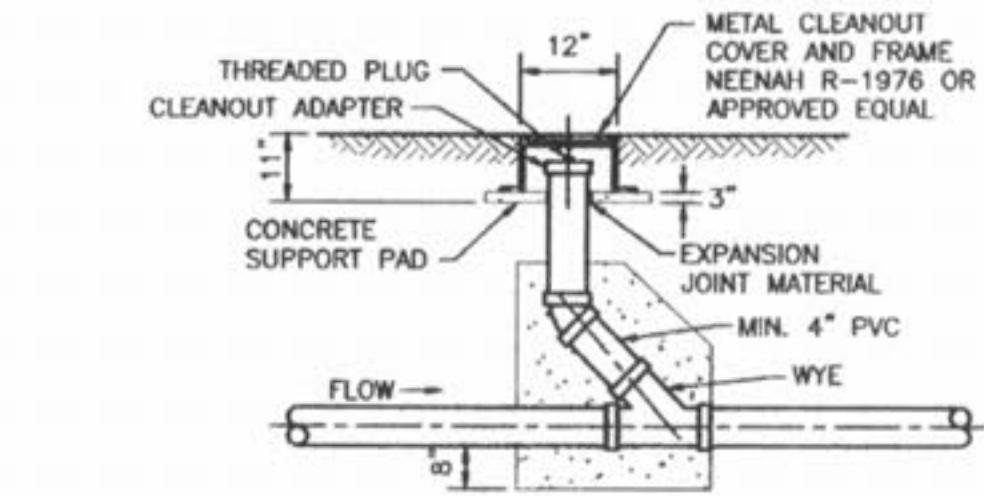


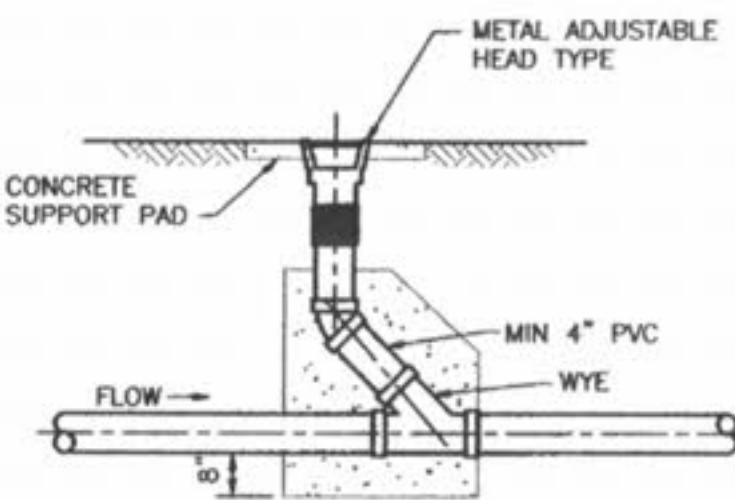
- NOTES:
1. GRouted RIP-RAP IS REQUIRED AT ALL CREEK CROSSINGS WHERE THE EMBANKMENTS CROSSED ARE STEEPER THAN 1 VERTICAL TO 2 HORIZONTAL RATIO SLOPE; AND ALSO WHERE THERE IS 3 FEET OR LESS COVER OVER THE TOP OF THE SEWER MAIN.
 2. PLACE RIP-RAP ON LOWER 3/4 OF SLOPE, GRADE UPPER 1/4 OF SLOPE AT 1 VERTICAL TO 2 HORIZONTAL SLOPE FOR SOD OR 1 VERTICAL TO 2.5 HORIZONTAL SLOPE FOR SEED AND STRAW.
 3. RIP-RAP TO BE "MSD 5" GRADATION, MINIMUM 12" THICK, GROUTED WITH 8 SACK MIX, SAND-CEMENT SLURRY, BROOM FINISH.
 4. INCORPORATE A 3 FEET DEEP TOE WALL ON EMBANKMENT'S UPPER EDGE OF RIP-RAP.
 5. TOP SURFACE OF RIP-RAP SHOULD NOT BE HIGHER THAN ADJACENT GROUND SURFACE.
 6. IF PIPE HAS LESS THAN 12" COVER, A PAVED CHANNEL MAY BE REQUIRED.
 7. DUCTILE IRON PIPE IS REQUIRED WITHIN THE CREEK LIMITS.

DUCKETT CREEK SANITARY DISTRICT

TYPICAL CREEK CROSSING	Des. By: BSM	App. By: KLA	Detail No. 24
	Chk. By: MDOB	Date: 1-8-01	



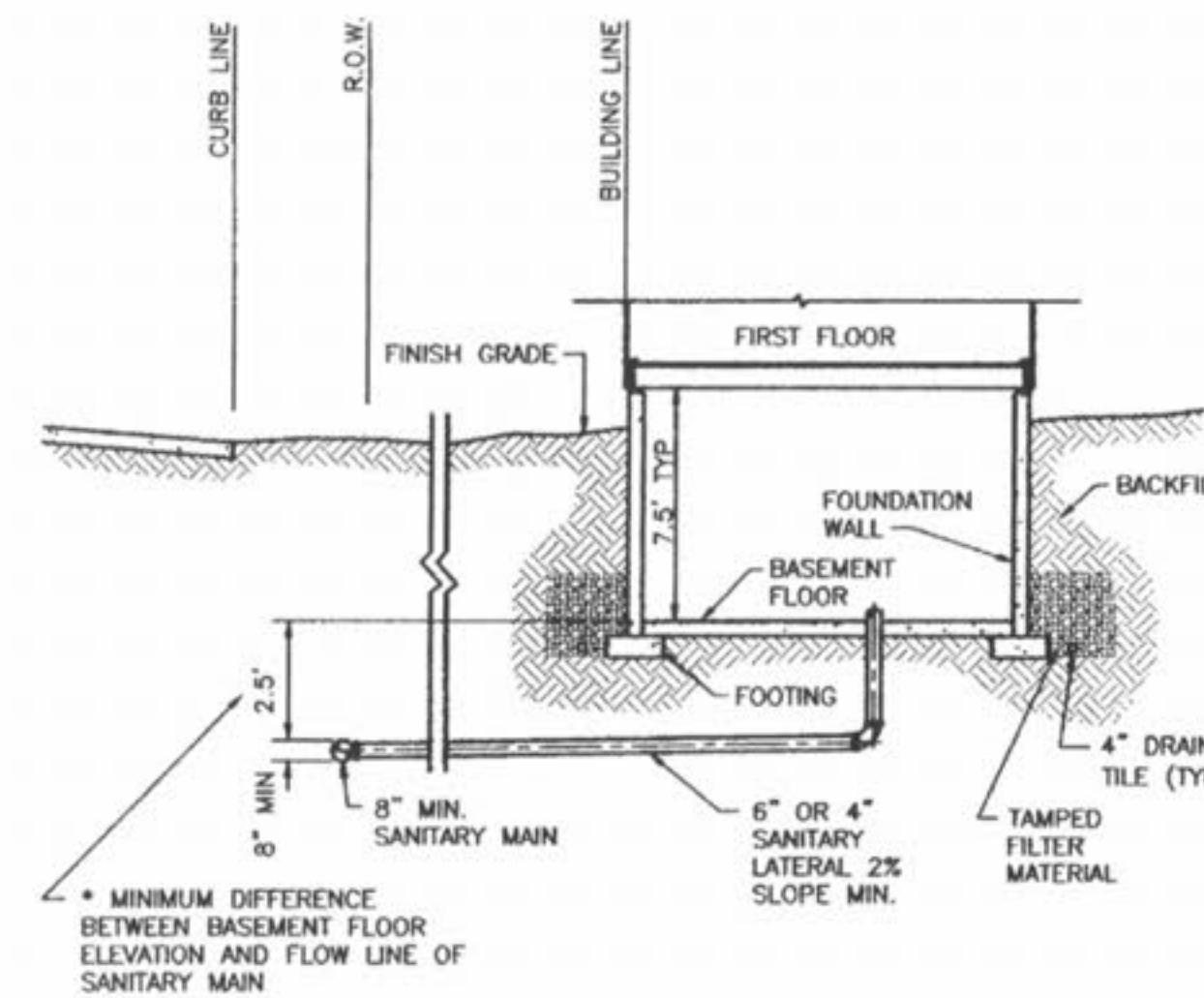
METAL FRAME AND COVER TYPE CLEANOUT



ADJUSTABLE HEAD TYPE CLEANOUT

DUCKETT CREEK SANITARY DISTRICT

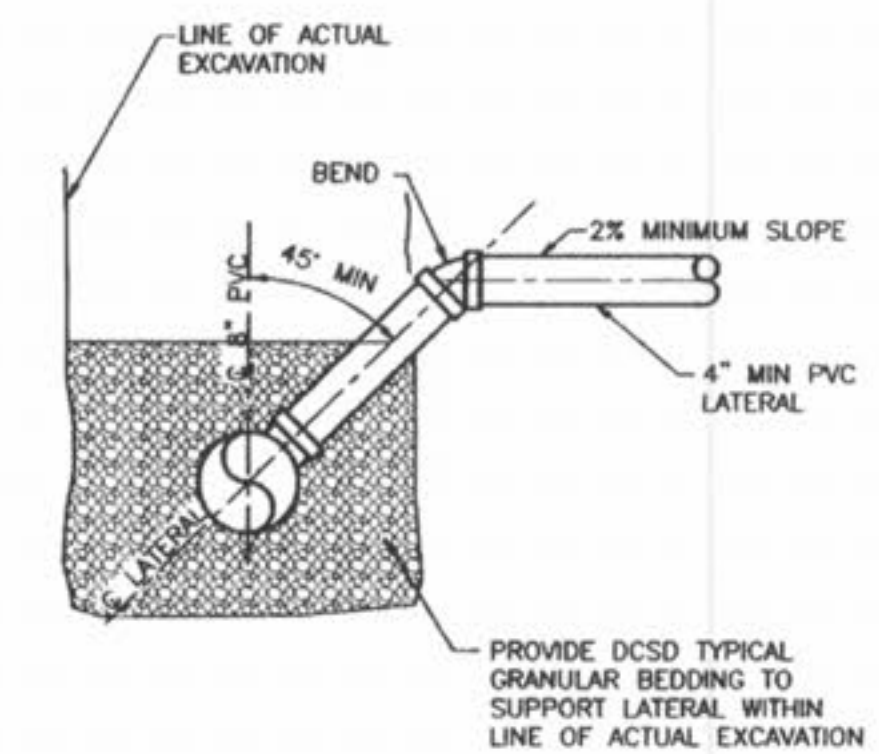
TYPICAL SEWER LATERAL CLEANOUT DETAILS	Des. By: BSM	App. By: KLA	Detail No. 25
	Chk. By: MDOB	Date: 1-8-01	



*NOTE: DIFFERENCE IN DEPTH INCREASES WITH PIPE SIZE

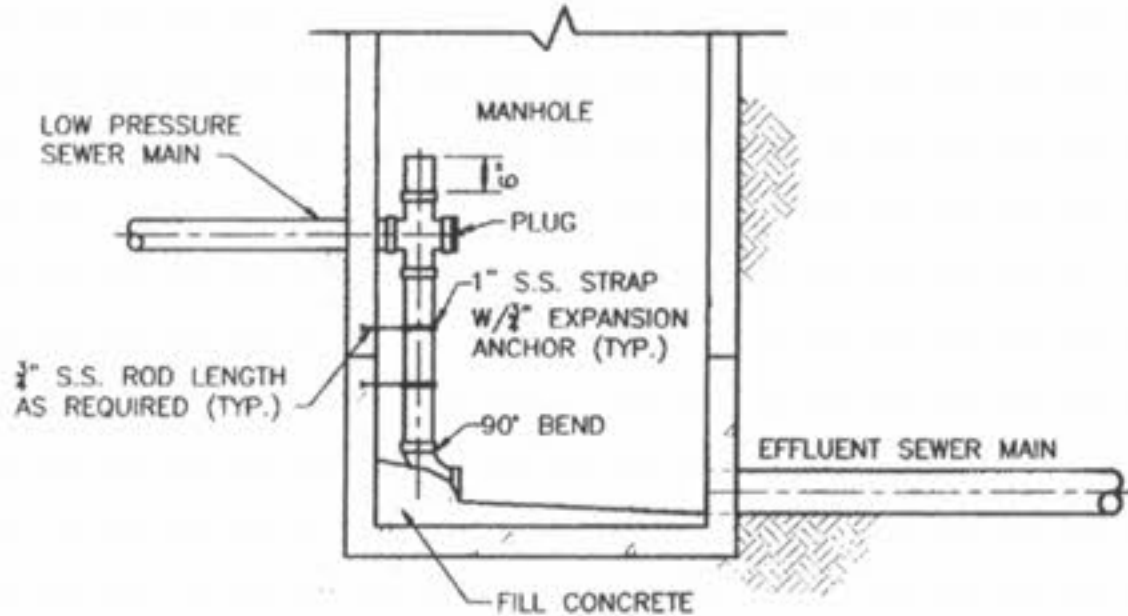
DUCKETT CREEK SANITARY DISTRICT

TYPICAL SANITARY SEWER LATERAL PROFILE	Des. By: BSM	App. By: KLA	Detail No. 26
	Chk. By: MDOB	Date: 1-9-01	



DUCKETT CREEK SANITARY DISTRICT

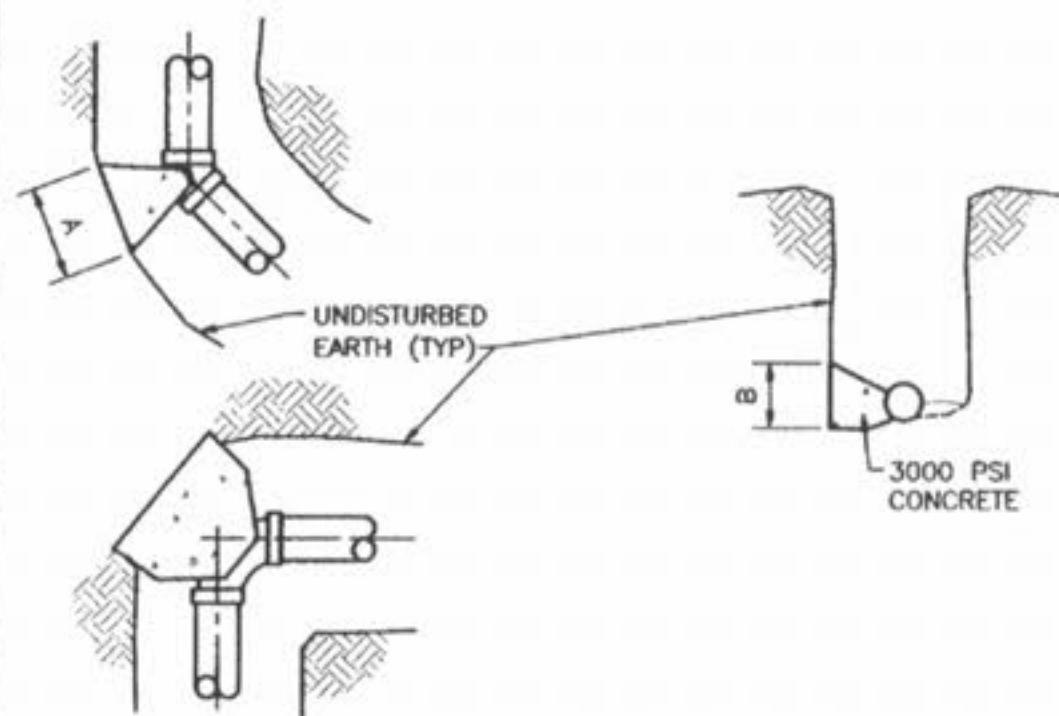
SANITARY SEWER LATERAL RISER DETAIL	Des. By: BSM	App. By: KLA	Detail No. 27
	Chk. By: MDOB	Date: 1-9-01	



NOTE: INVERT-BOTTOM SHALL BE WORKED TO PROVIDE POSITIVE DRAINAGE THROUGH MANHOLE

DUCKETT CREEK SANITARY DISTRICT

LOW PRESSURE SEWER MAIN CONNECTION AT MANHOLE	Des. By: BSM	App. By: KLA	Detail No. 28
	Chk. By: MDOB	Date: 1-9-01	

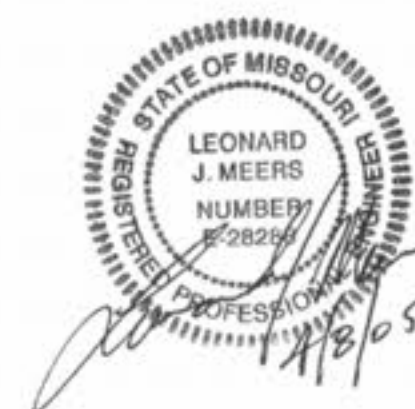


MAIN SIZE	A x B	A x B	A x B	A x B
	22 1/2"	45"	90"	TEE
2"	.5' x 1'	.5' x 1'	1' x 1'	1' x 1'
4"	1' x 1'	1' x 1'	1.5' x 1'	1' x 1'
6"	1' x 1'	1.5' x 1'	2' x 1'	1.5' x 1'
8"	1' x 1'	2' x 1'	2' x 1'	2' x 1'

DUCKETT CREEK SANITARY DISTRICT

THRUST BLOCK DETAIL AND SIZE SCHEDULE	Des. By: BSM	App. By: KLA	Detail No. 29
	Chk. By: MDOB	Date: 1-9-01	

PREPARED FOR:
BRINKMANN CONSTRUCTORS
 CONTACT: KEVIN JACOBSMEYER
 16650 CHESTERFIELD GROVE RD, SUITE 100
 CHESTERFIELD, MO 63005
 PH: (636) 537-9700
 FAX: (636) 537-9880



O'FALLON AUTO MALL			
SANITARY SEWER DETAILS			
J. R. GRIMES		CONSULTING ENGINEERS, INC.	
12300 OLD TESSON ROAD SUITE 3000 ST. LOUIS, MO. 63128 PH. (314) 849-6100 FAX (314) 849-6010			
DRAWN BY: JLW	DATE: 04/08/05	CHECKED BY: LJM	DATE: 04/08/05
		JOB NUMBER: 675N	SHEET: C23