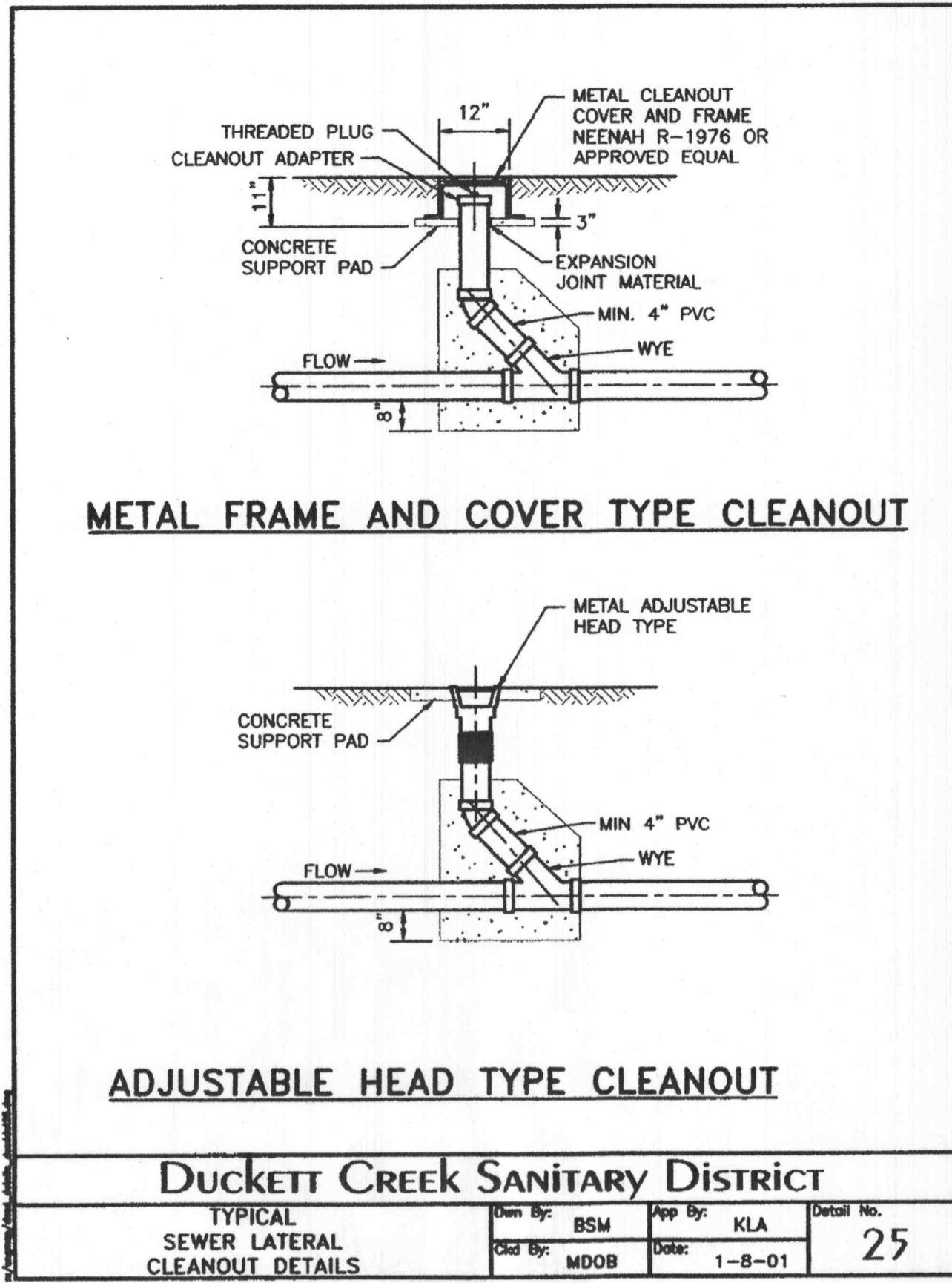


- NOTES:
- GROUTED RIP-RAP IS REQUIRED AT ALL CREEK CROSSINGS WHERE THE EMBANKMENTS CROSSED ARE STEEPER THAN 1 VERTICAL TO 2 HORIZONTAL RATIO SLOPE; AND ALSO WHERE THERE IS 3 FEET OR LESS COVER OVER THE TOP OF THE SEWER MAIN.
 - PLACE RIP-RAP ON LOWER 3/4 OF SLOPE, GRADE UPPER 1/4 OF SLOPE AT 1 VERTICAL TO 2 HORIZONTAL SLOPE FOR SOD OR 1 VERTICAL TO 2.5 HORIZONTAL SLOPE FOR SEED AND STRAW.
 - RIP-RAP TO BE "MSD 5" GRADATION, MINIMUM 12" THICK, GROUTED WITH 8 SACK MIX, SAND-CEMENT SLURRY, BROOM FINISH.
 - INCORPORATE A 3 FEET DEEP TOE WALL ON EMBANKMENT'S UPPER EDGE OF RIP-RAP.
 - TOP SURFACE OF RIP-RAP SHOULD NOT BE HIGHER THAN ADJACENT GROUND SURFACE.
 - IF PIPE HAS LESS THAN 12" COVER, A PAVED CHANNEL MAY BE REQUIRED.
 - 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
	Chd By: MDOB	Date: 1-8-01	

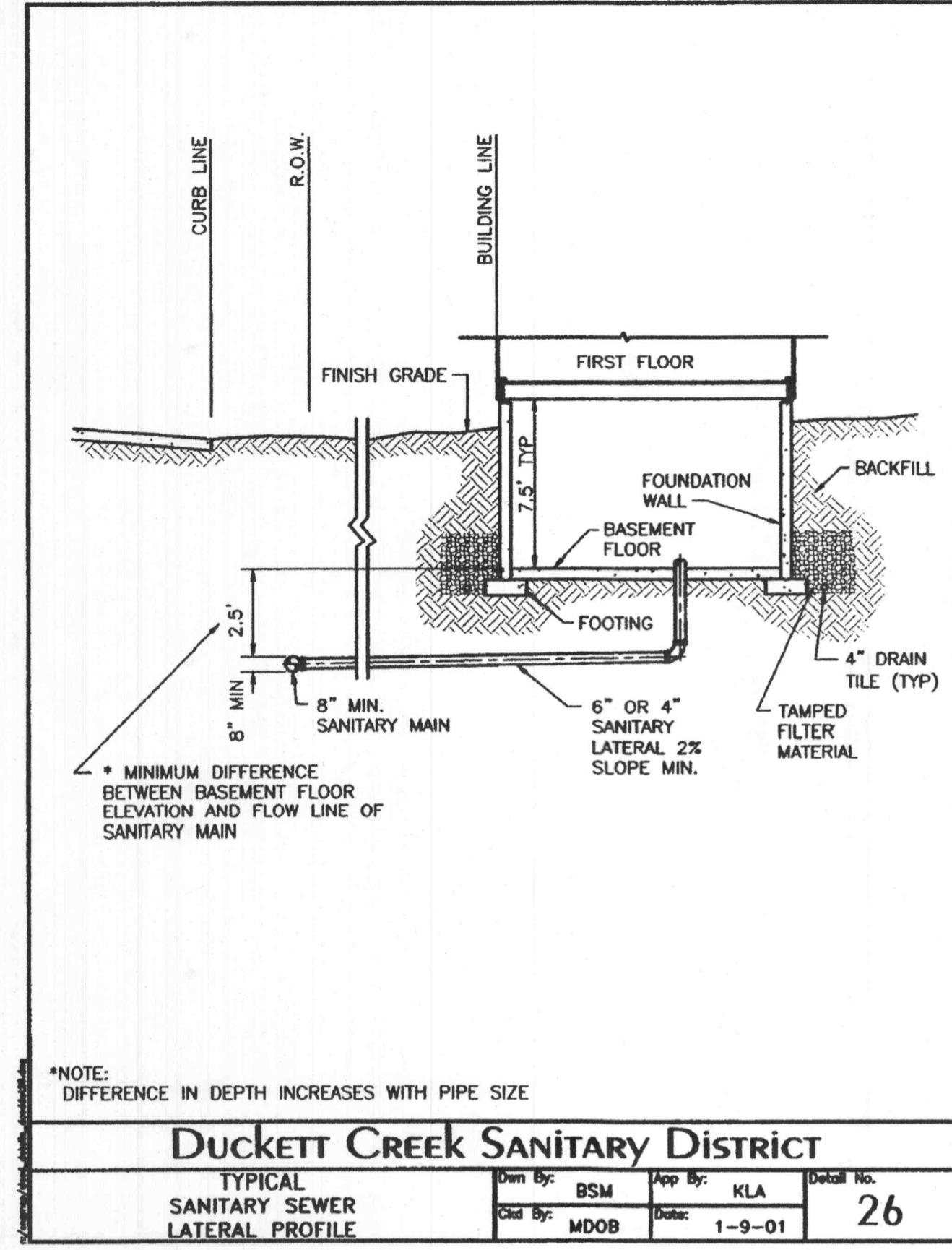


METAL FRAME AND COVER TYPE CLEANOUT

ADJUSTABLE HEAD TYPE CLEANOUT

Duckett Creek Sanitary District

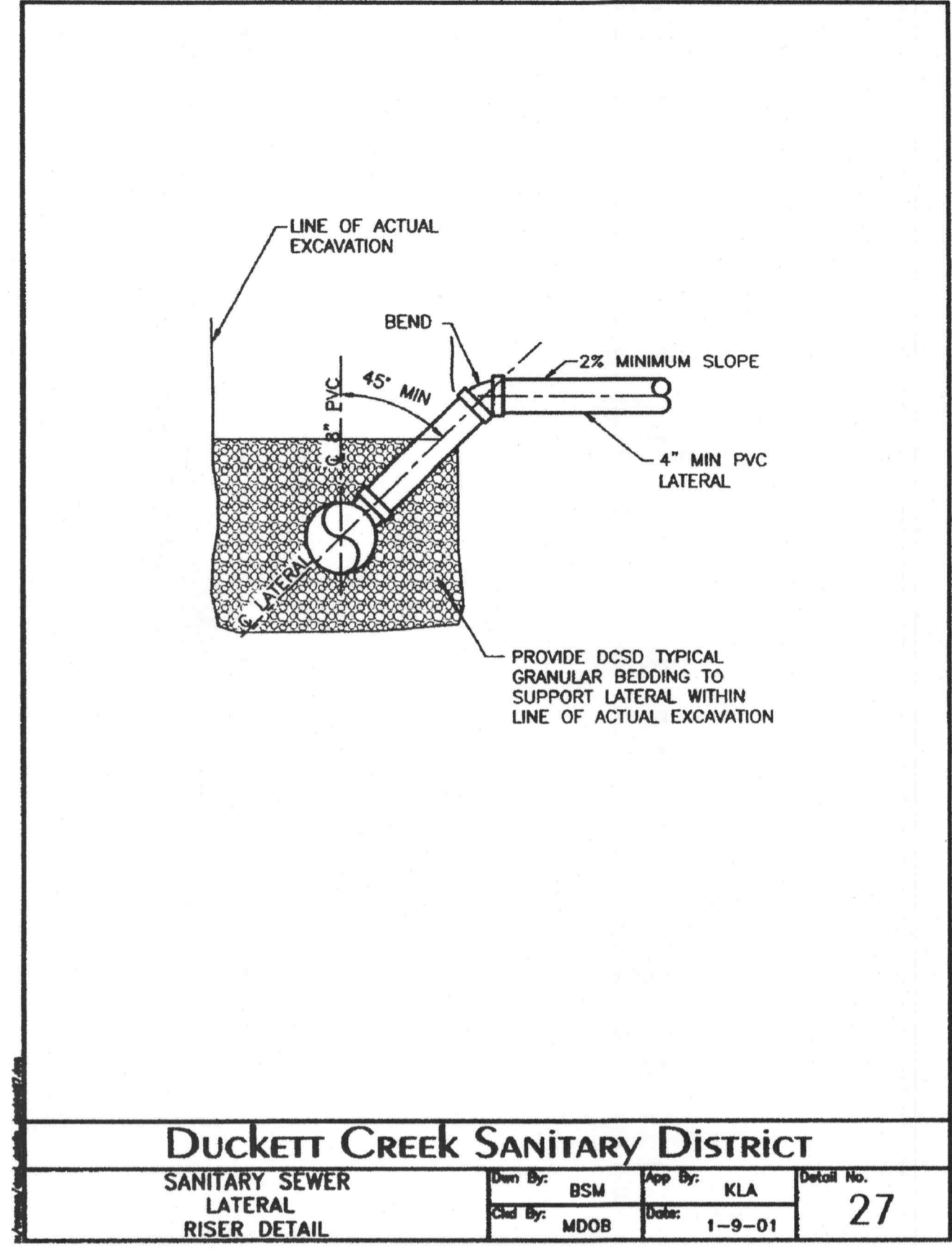
TYPICAL SEWER LATERAL CLEANOUT DETAILS	Des By: BSM	App By: KLA	Detail No. 25
	Chd By: MDOB	Date: 1-8-01	



*NOTE: DIFFERENCE IN DEPTH INCREASES WITH PIPE SIZE

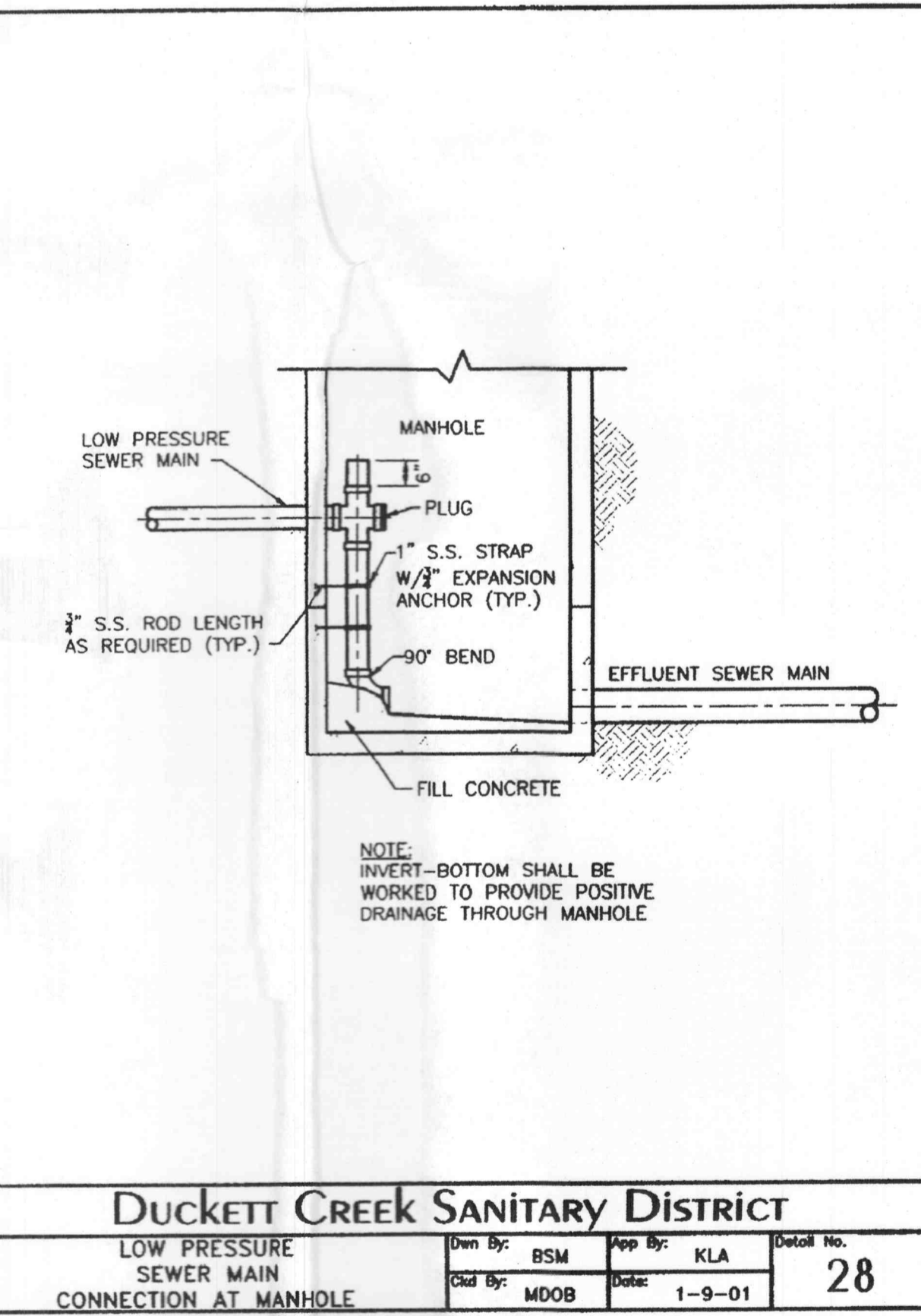
Duckett Creek Sanitary District

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



Duckett Creek Sanitary District

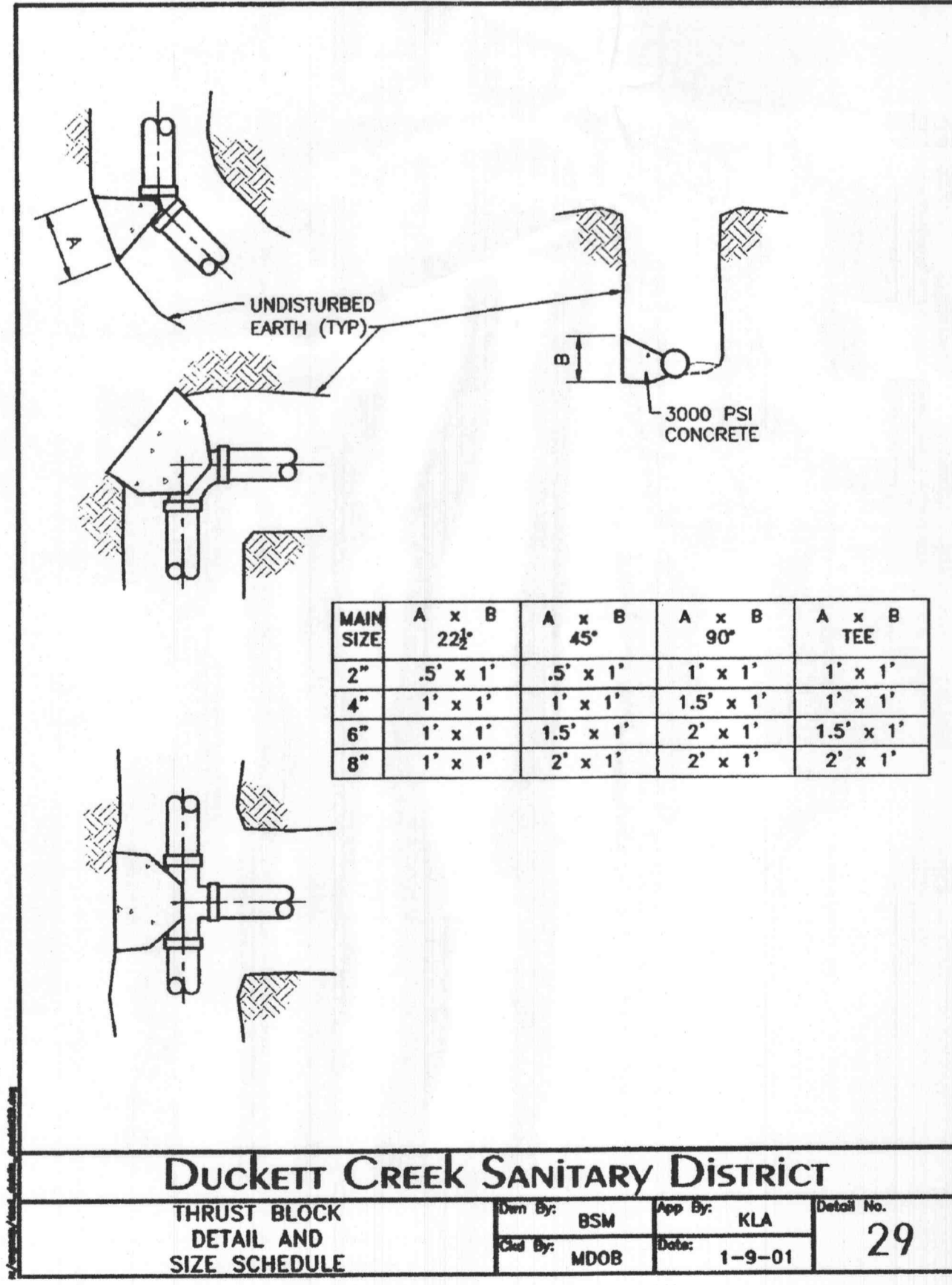
SANITARY SEWER LATERAL RISER DETAIL	Des By: BSM	App By: KLA	Detail No. 27
	Chd By: MDOB	Date: 1-9-01	



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
	Chd By: MDOB	Date: 1-9-01	



Duckett Creek Sanitary District

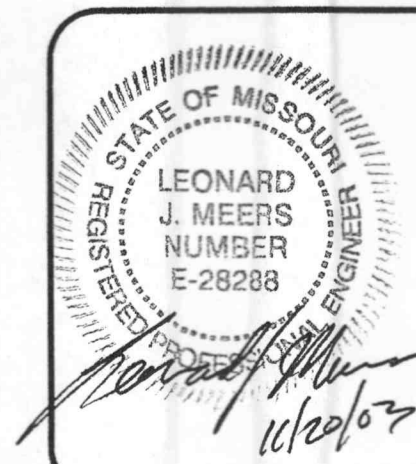
THRUST BLOCK DETAIL AND SIZE SCHEDULE	Des By: BSM	App By: KLA	Detail No. 29
	Chd By: MDOB	Date: 1-9-01	

J:\1132\PLANS\03 THRU C14-SANDET.dwg Thu Nov 20 13:26:08 2003 Greg.S

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 CLAYTON, MO 63117
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11/20/03 PER CITY COMMENTS

PLANNING & ZONING #: 4703



BANK MIDWEST	
SANITARY SEWER DETAILS	
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CONSULTING ENGINEERS, INC.	
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DRAWN BY: GJG	DATE: 10/28/03
CHECKED BY: LJM	DATE: 10/28/03
JOB NUMBER: 1132	SHEET: C13