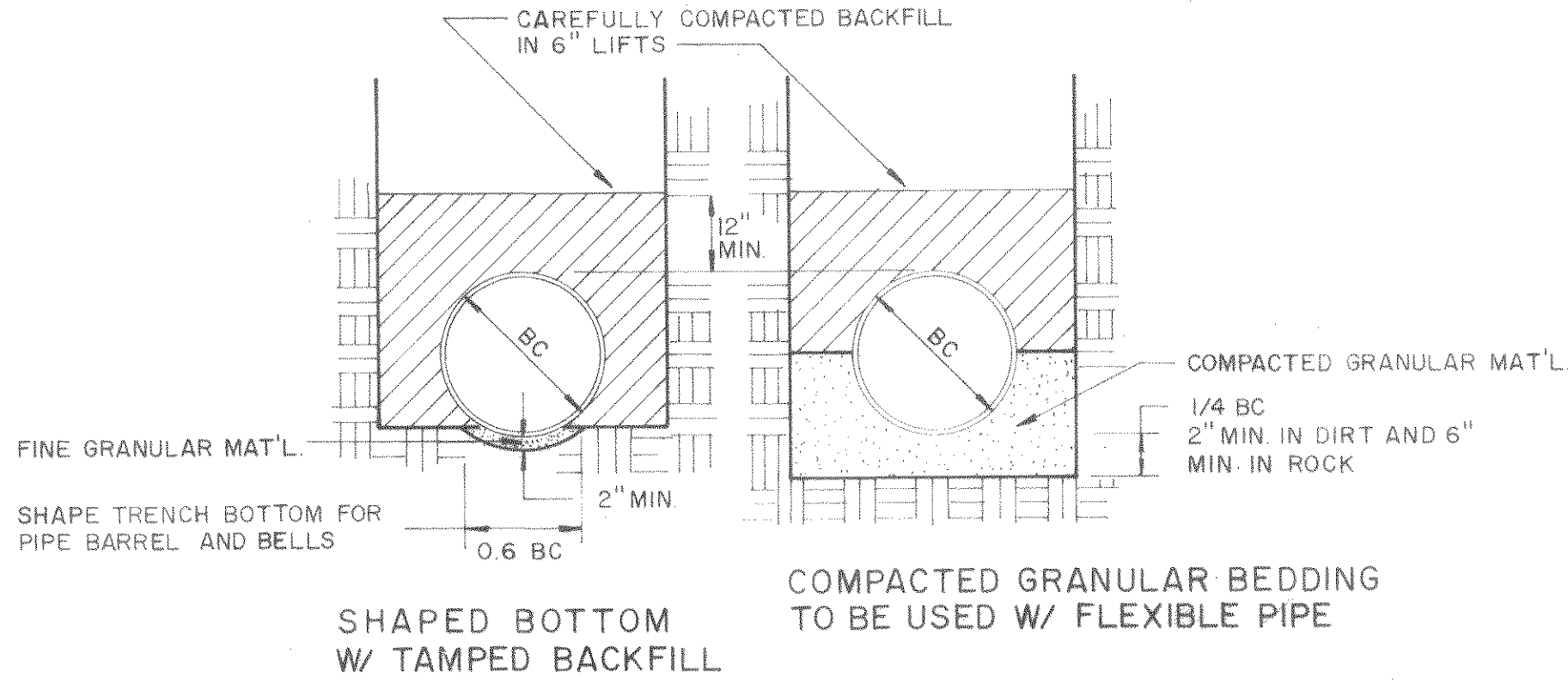
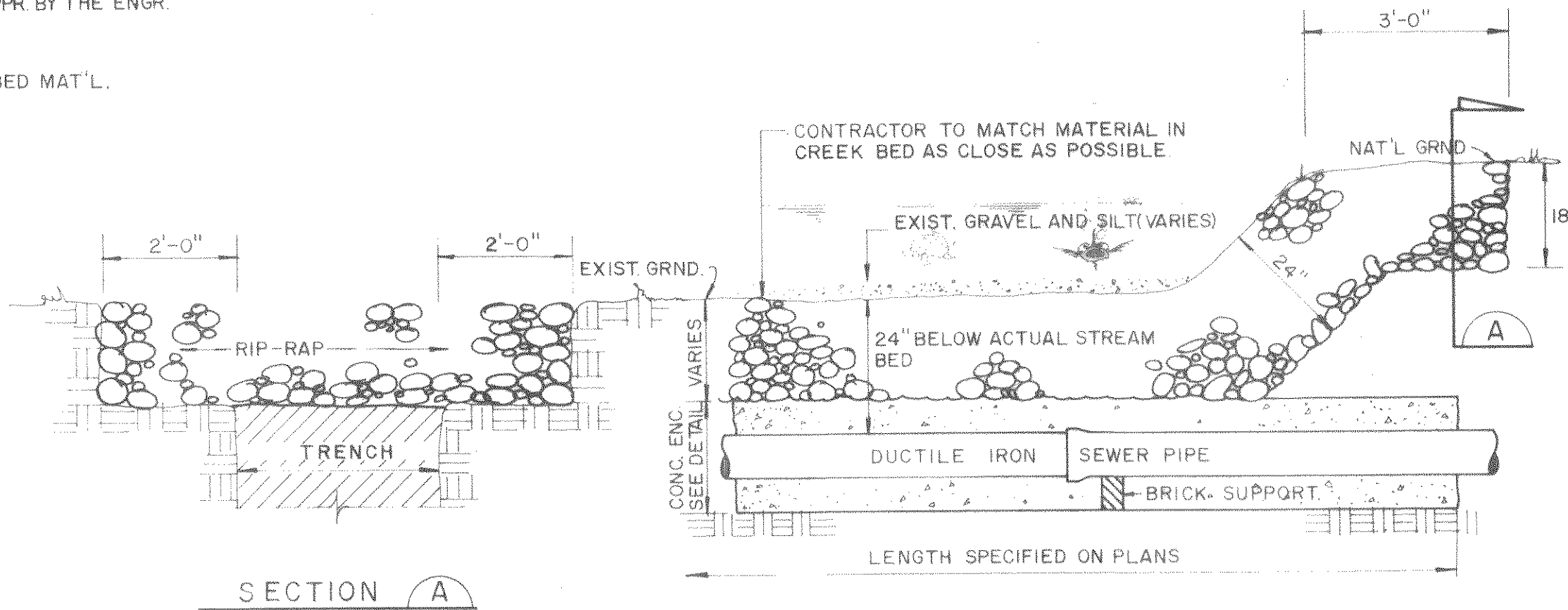


PRECAST ECCENTRIC MANHOLE



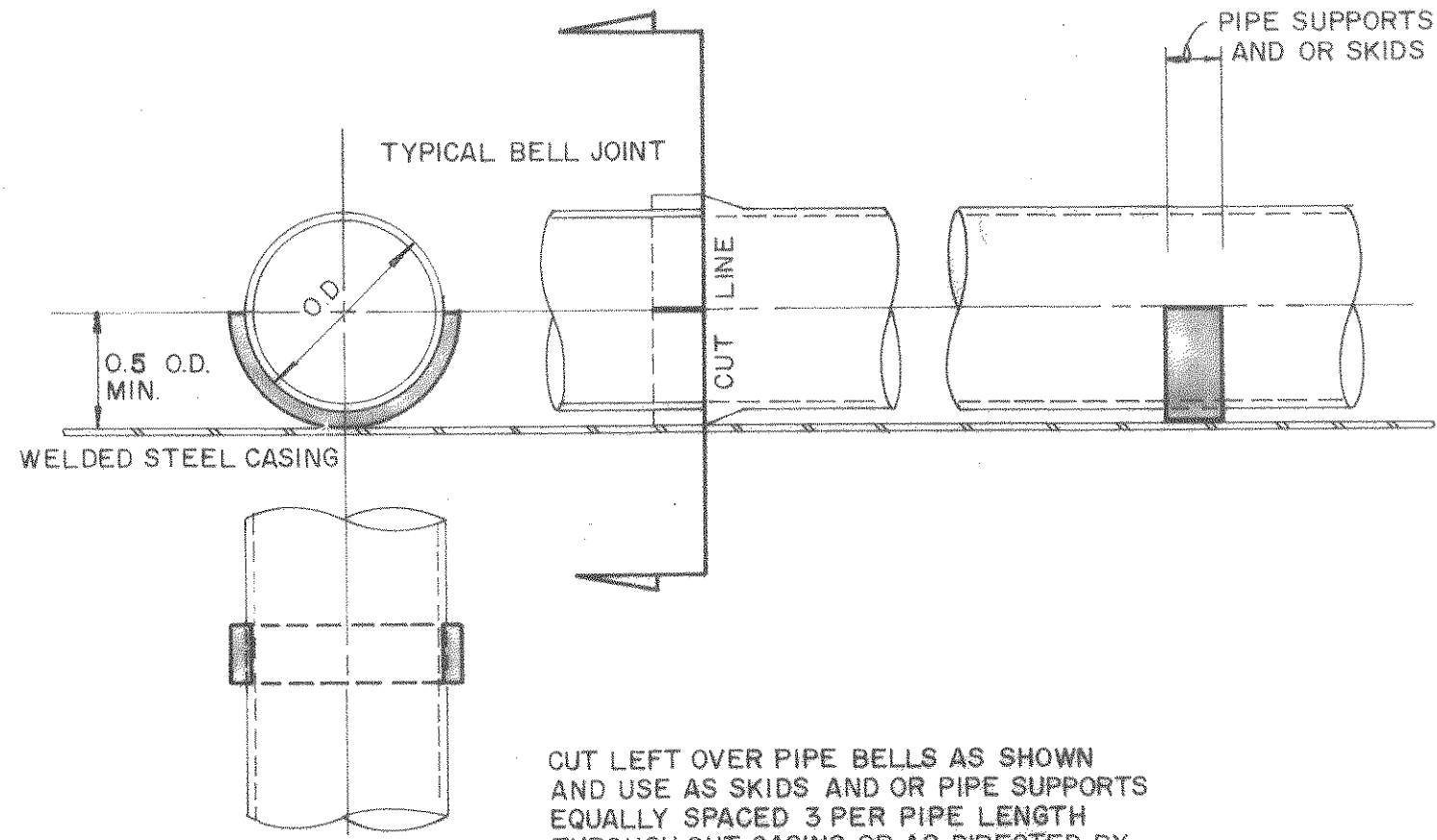
BEDDING DETAIL
FIRST CLASS—CLASS B BEDDING

THE CONTRACTOR SHALL CHOOSE ONE OF THESE METHODS OF PIPE BEDDING UNLESS OTHERWISE DIRECTED BY THE ENGINEER



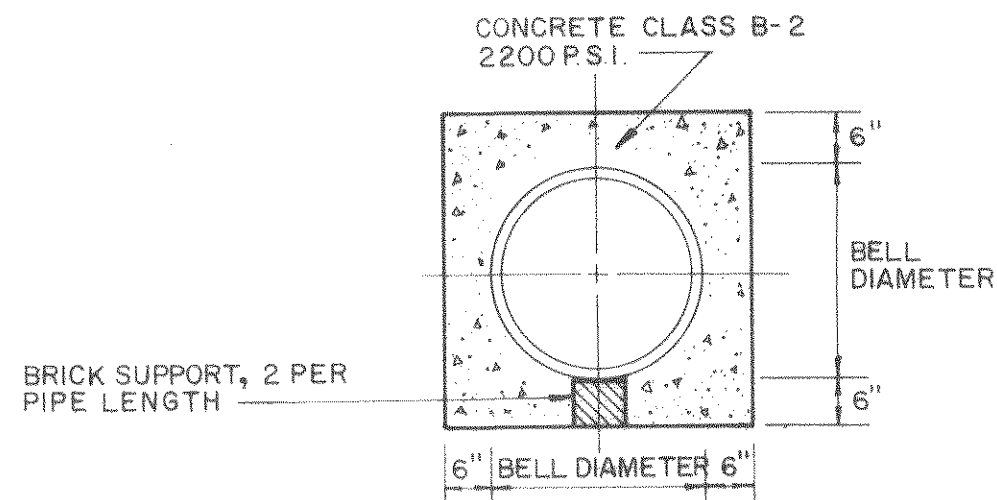
TYPICAL CREEK CROSSING AND BANK PROTECTION

NOTE: AFTER CONSTR OF EACH CREEK CROSSING THE LINES SHALL BE TESTED FOR INFILTRATION IN ACCORDANCE WITH THE SPECIFICATIONS WITH ZERO INFILTRATION. SHOULD INFILTRATION BE PRESENT, THE CONTRACTOR SHALL RECONSTRUCT THE CROSSING UNTIL ZERO INFILTRATION IS OBTAINED.

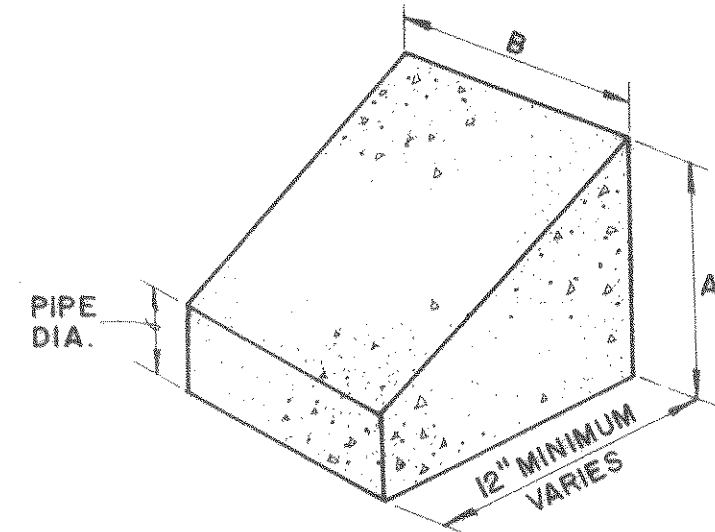


SKID DETAIL

CUT LEFT OVER PIPE BELLS AS SHOWN AND USE AS SKIDS AND OR PIPE SUPPORTS EQUALLY SPACED 3 PER PIPE LENGTH THROUGH OUT CASING OR AS DIRECTED BY THE ENGINEER. THE BELL ENDS OF DUCTILE IRON PIPES USED AS SKIDS SHALL BE SPOT WELDED TO PIPE. P.V.C. PIPES TO BE GLUED.



CONCRETE ENCASED PIPE



THRUST BLOCK SIZES

PIPE DIAMETER	TEE, CROSS, 90°		45° WYE		22 1/2°	
	A	B	A	B	A	B
4"	12"	12"	12"	12"	12"	12"
6"	15"	24"	18"	18"	18"	18"
8"	18"	30"	24"	24"	24"	24"
10"	24"	36"	30"	30"	30"	30"
12"	30"	42"	36"	36"	36"	36"

NOTE:

PLANS WERE PREPARED BASED ON:

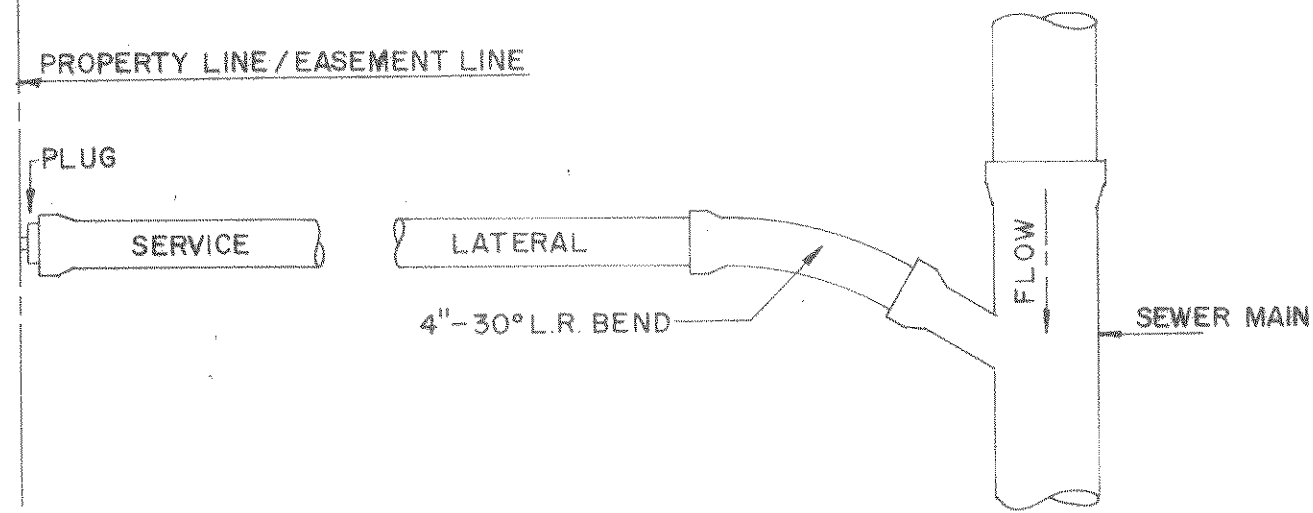
AERIAL TOPOGRAPHY MAPPING PREPARED BY UNIVERSAL ENGINEERING, ROCKVILLE, MARYLAND FLOWN AND MAPPED 1979, AS CONTRACTED BY THE BOTETOURT COUNTY SERVICE AUTHORITY AND SUPPLIED TO CLEAN WATER ENGINEERS, INC.

HORIZONTAL AND VERTICAL GROUND CONTROL BY CHARLES R. MCMURRAY, C.L.S., 1979, AS CONTRACTED BY THE BOTETOURT COUNTY SERVICE AUTHORITY AND SUPPLIED TO CLEAN WATER ENGINEERS, INC.

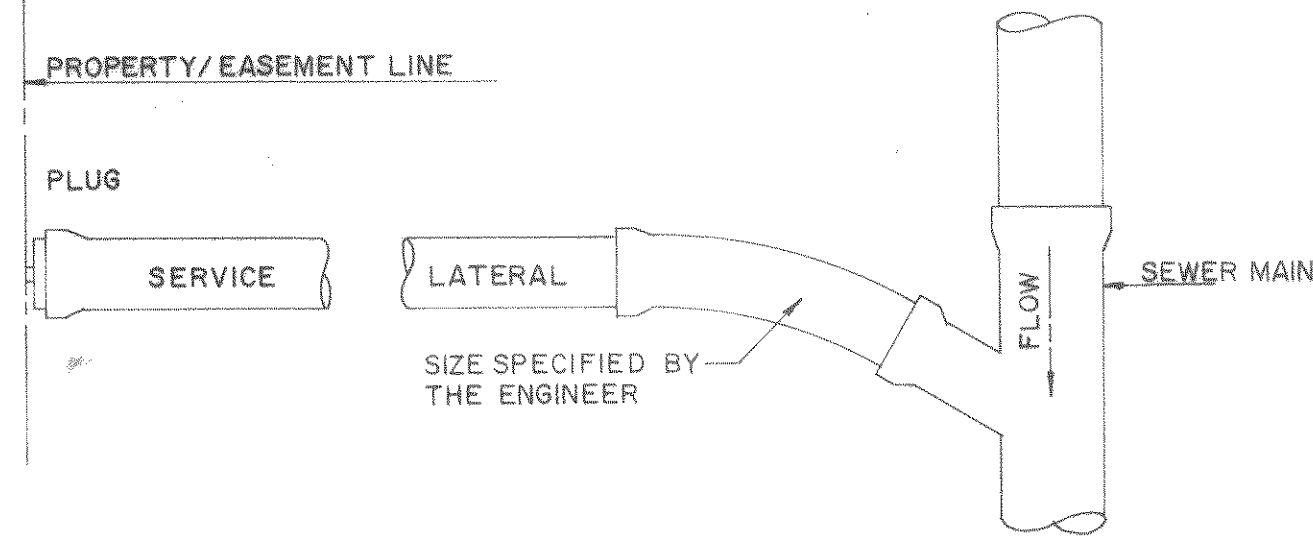
AS-BUILT INFORMATION WAS BASED ON EXISTING GROUND CONDITIONS AT COMPLETION OF CONSTRUCTION

PLAN VIEWS, SEWERLINE GRADES, MANHOLE INVERTS ARE ALL CORRECT BASED ON APPROVED "CUT-SHEET" DATA AS SUPPLIED TO CLEAN WATER ENGINEERS, INC. BY THE CONTRACTOR. THE GROUND PROFILE WAS NOT ADJUSTED TO REFLECT AS-BUILT CONDITIONS THEREFORE THE PROFILES MAY NOT BE TO SCALE HORIZONTALLY OR VERTICALLY. REFER TO THE NUMERICAL NOTES FOR HORIZONTAL DISTANCE AND SEWERLINE GRADES, DO NOT SCALE.

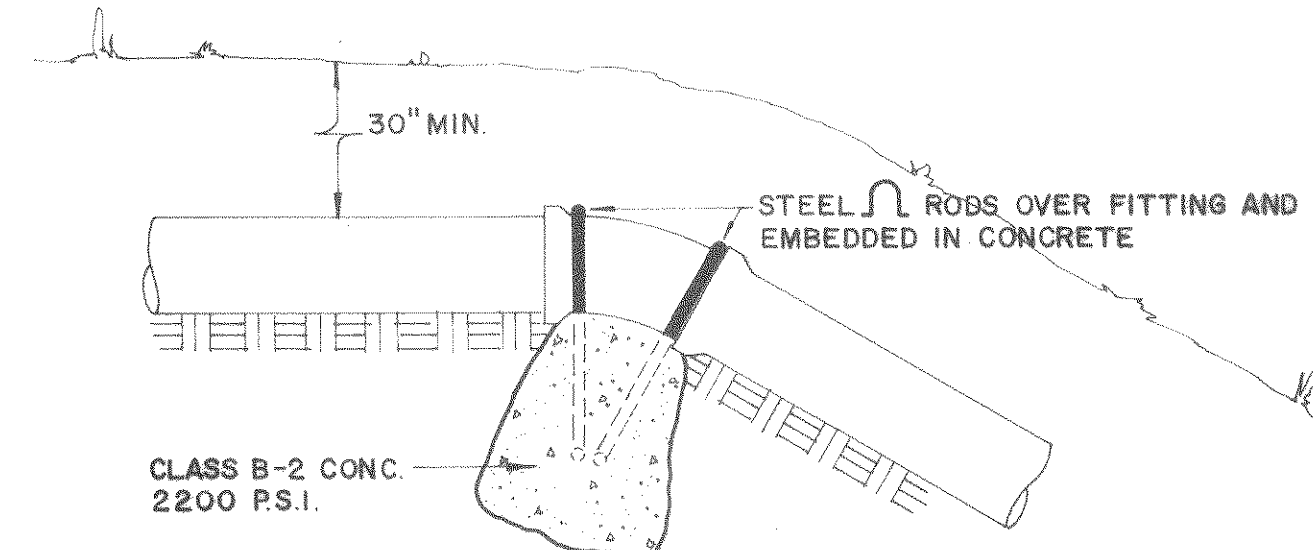
REVISED 5-21-81



RESIDENTIAL SERVICE CONNECTION



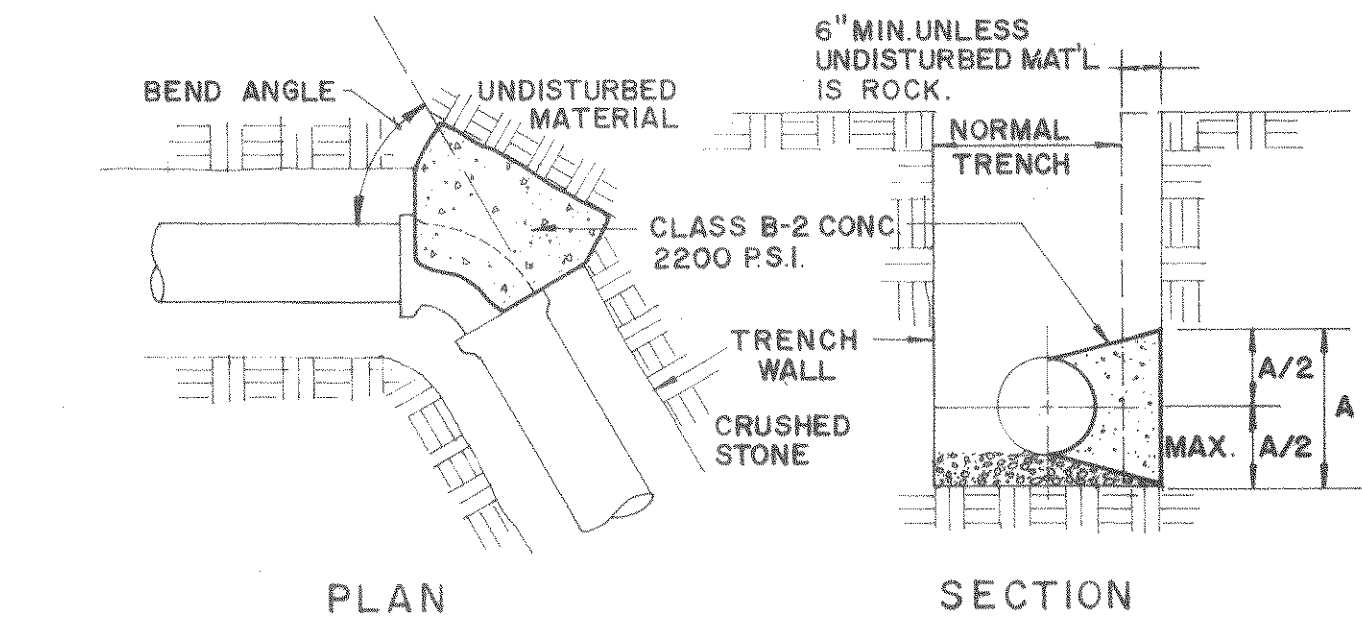
COMMERCIAL SERVICE CONNECTION



FITTING SIZE	PROFILE		EMBEDMENT	
	ROD SIZE	NO. OF RODS	24"	
4"-6"-8"	No. 4	2	24"	
10"-12"	" 6	"	24"	
FITTING SIZE	VOLUME OF THRUST BLOCK IN CUBIC YARDS		EMBEDMENT	
	90°	45°	22 1/2°	11 1/4°
4	0.25	0.15	0.1	0.1
6	0.5	0.35	0.25	0.2
8	0.9	0.65	0.5	0.35
10	1.4	1.0	0.8	0.55
12	2.0	1.4	1.0	0.7

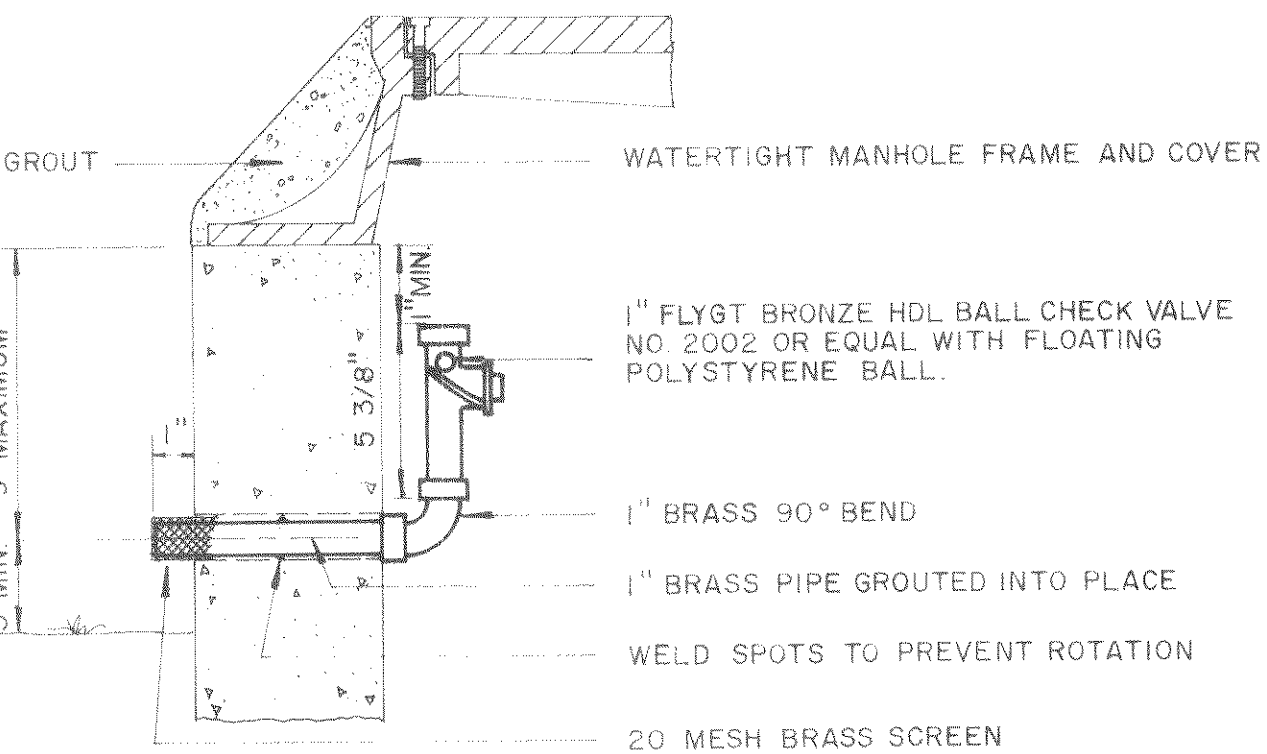
- KEEP CONC CLEAR OF JOINT AND JOINT ACCESSORIES.
- THRUST BLOCKS FOR VERTICAL UP BENDS SHALL BE THE SAME VOLUME AS FOR HORIZONTAL BENDS.

VERTICAL THRUST BLOCK DETAIL

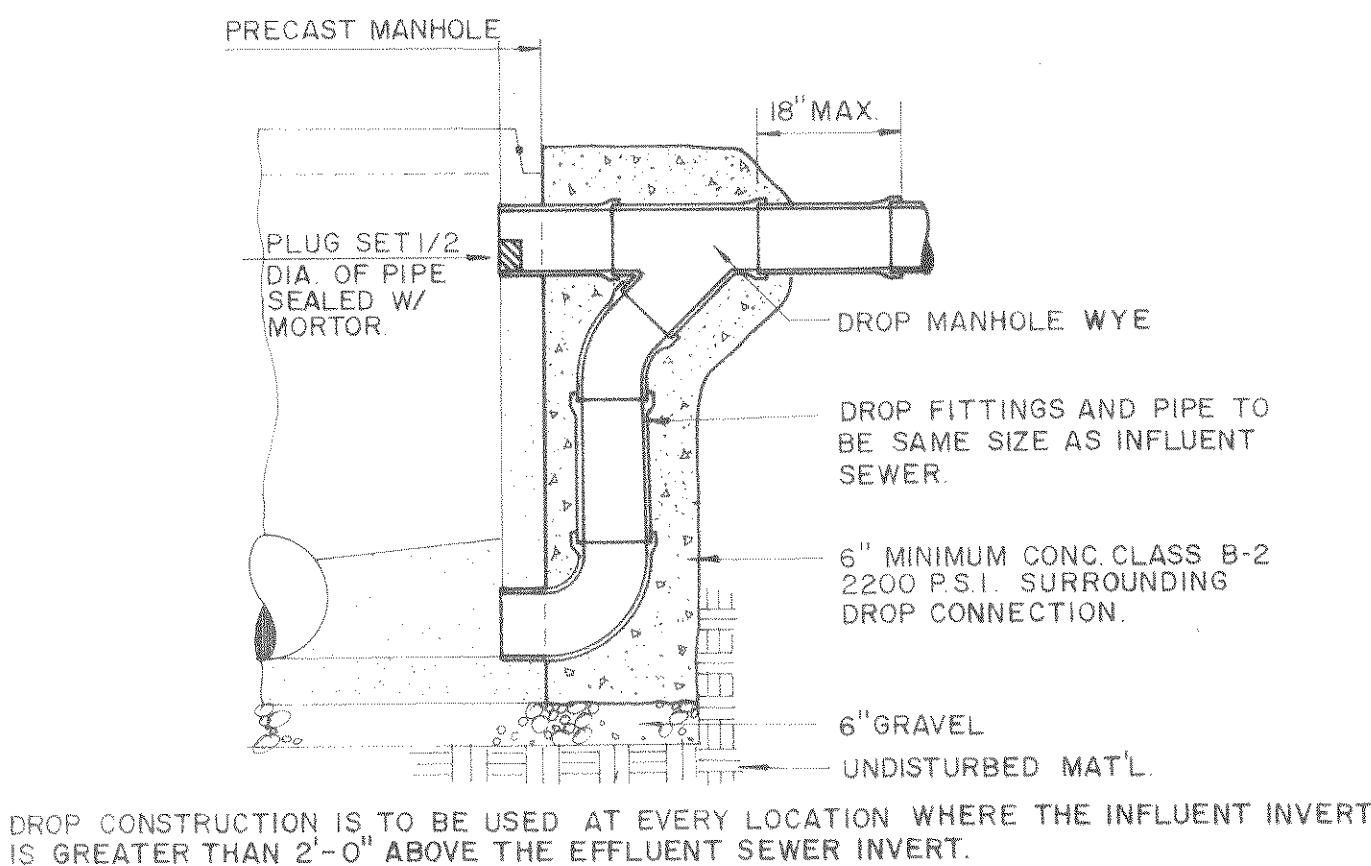


- NOTES:
- AREA OF THRUST BLOCK BASED ON 1500 P.S.F. LATERAL BEARING PRESSURE AND A TEST PRESSURE WITHIN PIPE OF 150 P.S.I., VELOCITY OF 10 F.P.S.
 - THRUST BLOCKS ARE REQUIRED AT ALL BENDS OF MORE THAN 10°.
 - BEARING SURFACE OF THRUST BLOCKS MUST BE NORMAL TO RESULTANT THRUST OF BEND AND BEAR ON SUITABLE UNDISTURBED MATERIAL.
 - KEEP CONCRETE CLEAR OF JOINT AND JOINT ACCESSORIES.

HORIZONTAL THRUST BLOCK DETAIL

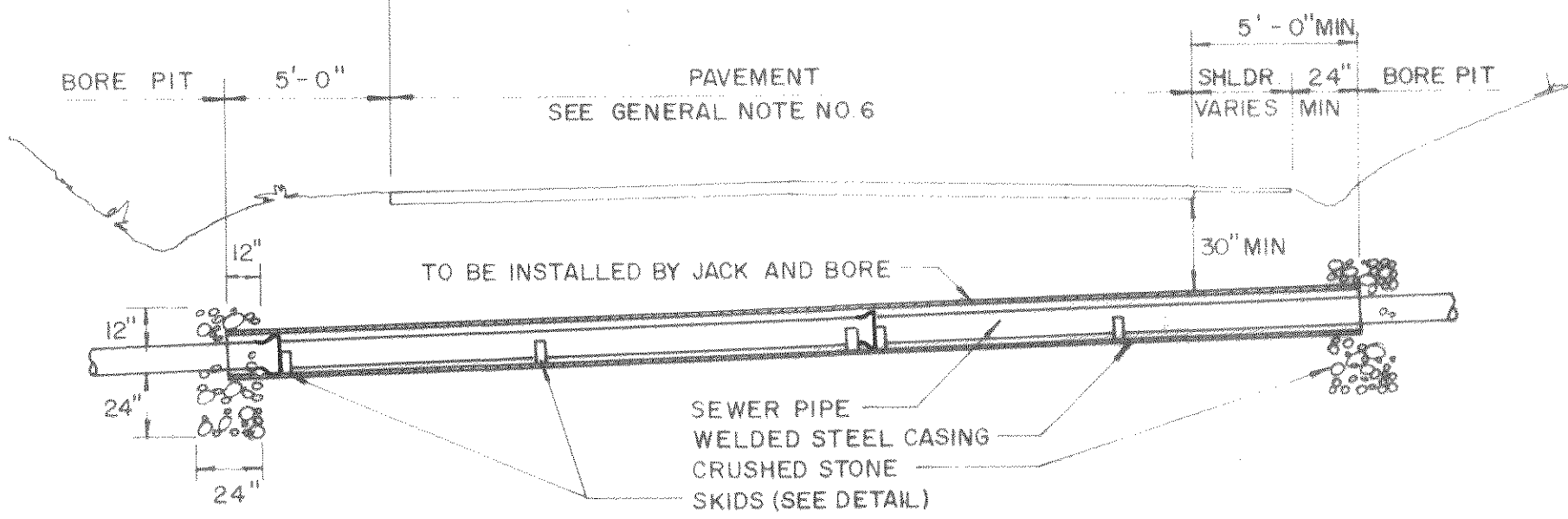


WATERTIGHT MANHOLE VENT DETAIL



DROP CONSTRUCTION IS TO BE USED AT EVERY LOCATION WHERE THE INFLUENT INVERT IS GREATER THAN 2'-0" ABOVE THE EFFLUENT SEWER INVERT.

DROP CONSTRUCTION AT STANDARD MANHOLE



PRIMARY AND SECONDARY ROAD CROSSING

Clean Water Engineers, Inc.
Fincastle, Virginia

TINKER CREEK INTERCEPTOR
FOR
BOTETOURT COUNTY SERVICE AUTHORITY

DAVID J. RIGBY
DAVID J. RIGBY
DAVID J. RIGBY

Sheet: 18 of 18
Scale: NONE
Date: 9-28-79
Project: 7930

Designed: DJR CEP
Drafted: CEP
Checked: DJR
Approved: DJR