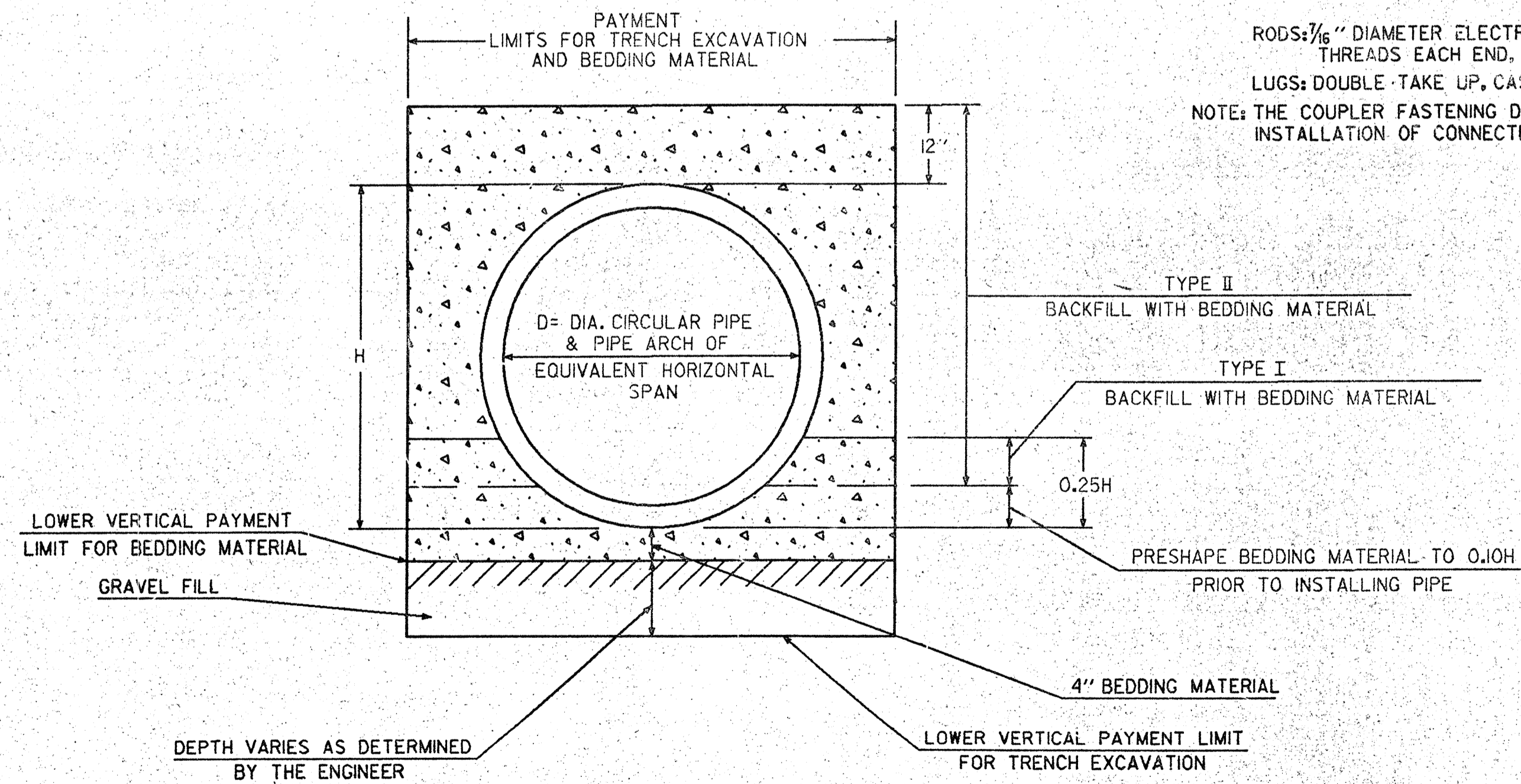
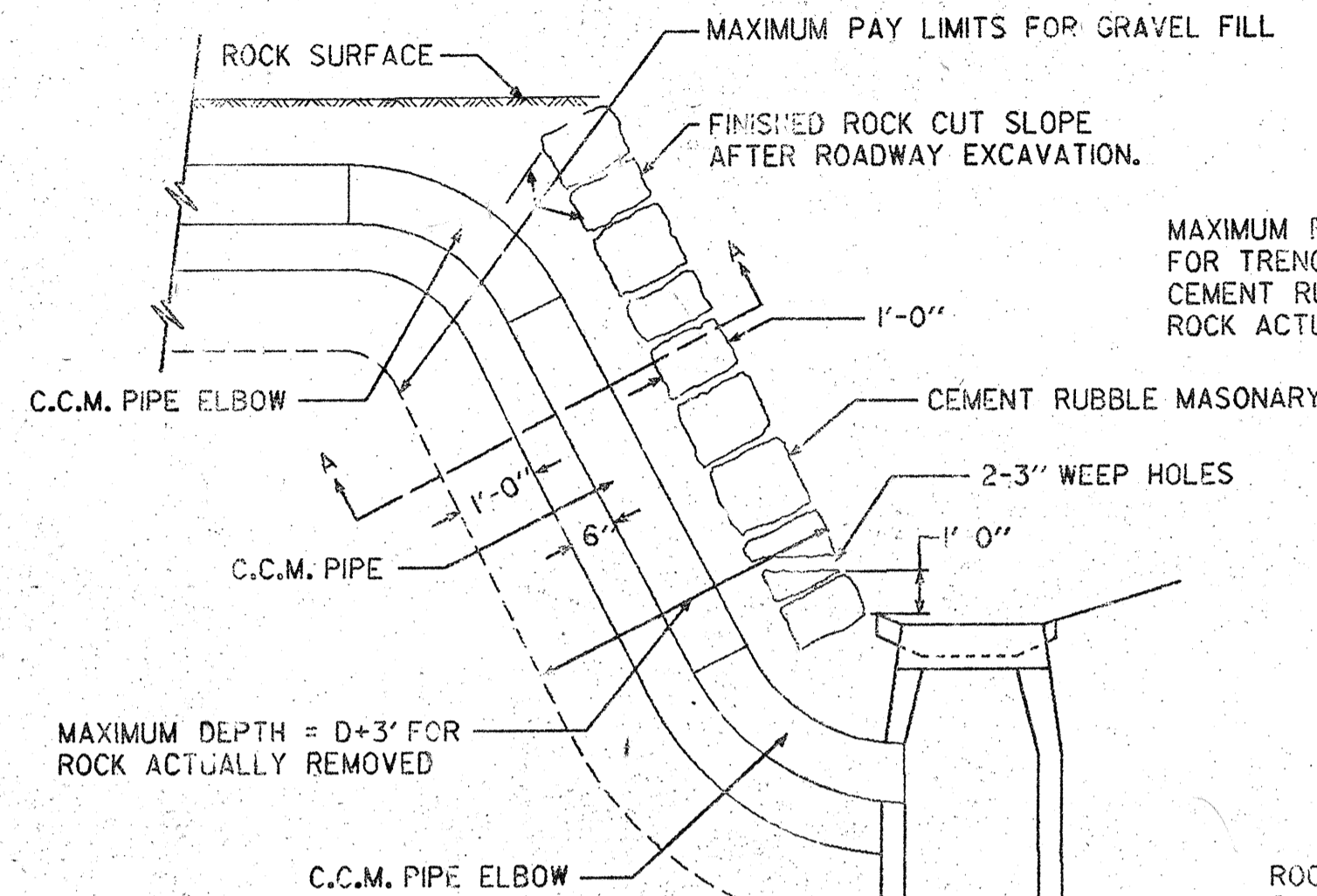


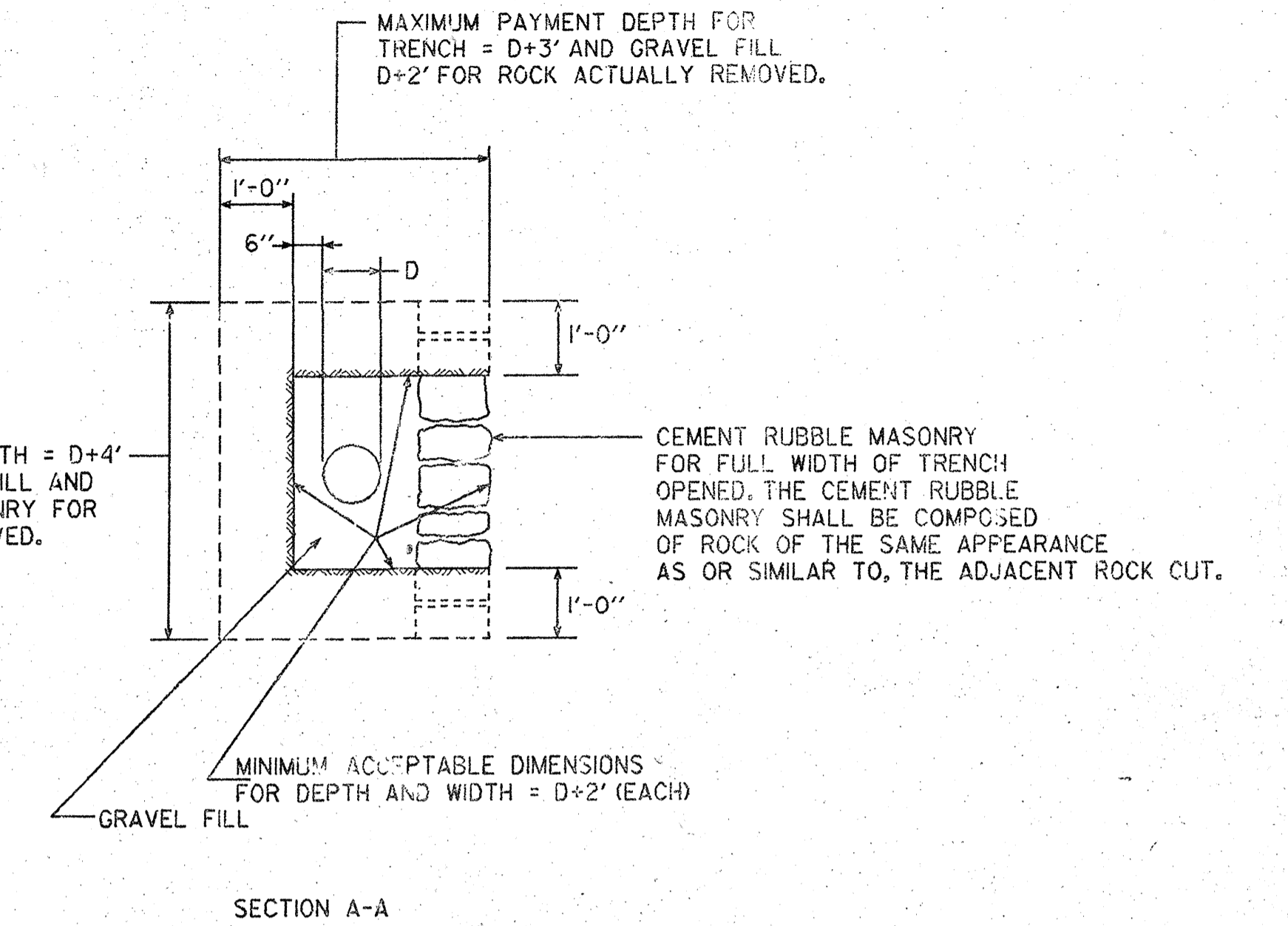
INSTALLATION WHERE GRAVEL FILL NOT USED



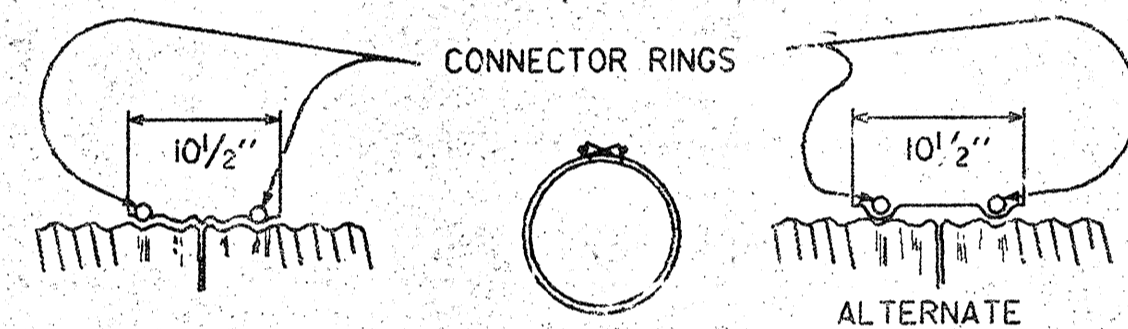
INSTALLATION WHERE GRAVEL FILL IS USED BEDDING FOR CULVERTS



TYPICAL C.C.M.P. PIPE INSTALLATIONS IN ROCK SLOPE



ROCK REMOVED BEYOND THE MAXIMUM PAYMENT LIMITS SHOWN ABOVE SHALL BE REPLACED WITH CEMENT RUBBLE MASONRY AND GRAVEL. FILL AS REQUIRED TO CLOSE THE OPENING AS SHOWN ON THE PLANS AT THE CONTRACTOR'S EXPENSE. HOWEVER, THE PAYMENT LINES MAY BE MODIFIED TO COINCIDE WITH NATURAL FAULTS OR FISSURES OF THE ROCK AS THE ENGINEER MAY DETERMINE.

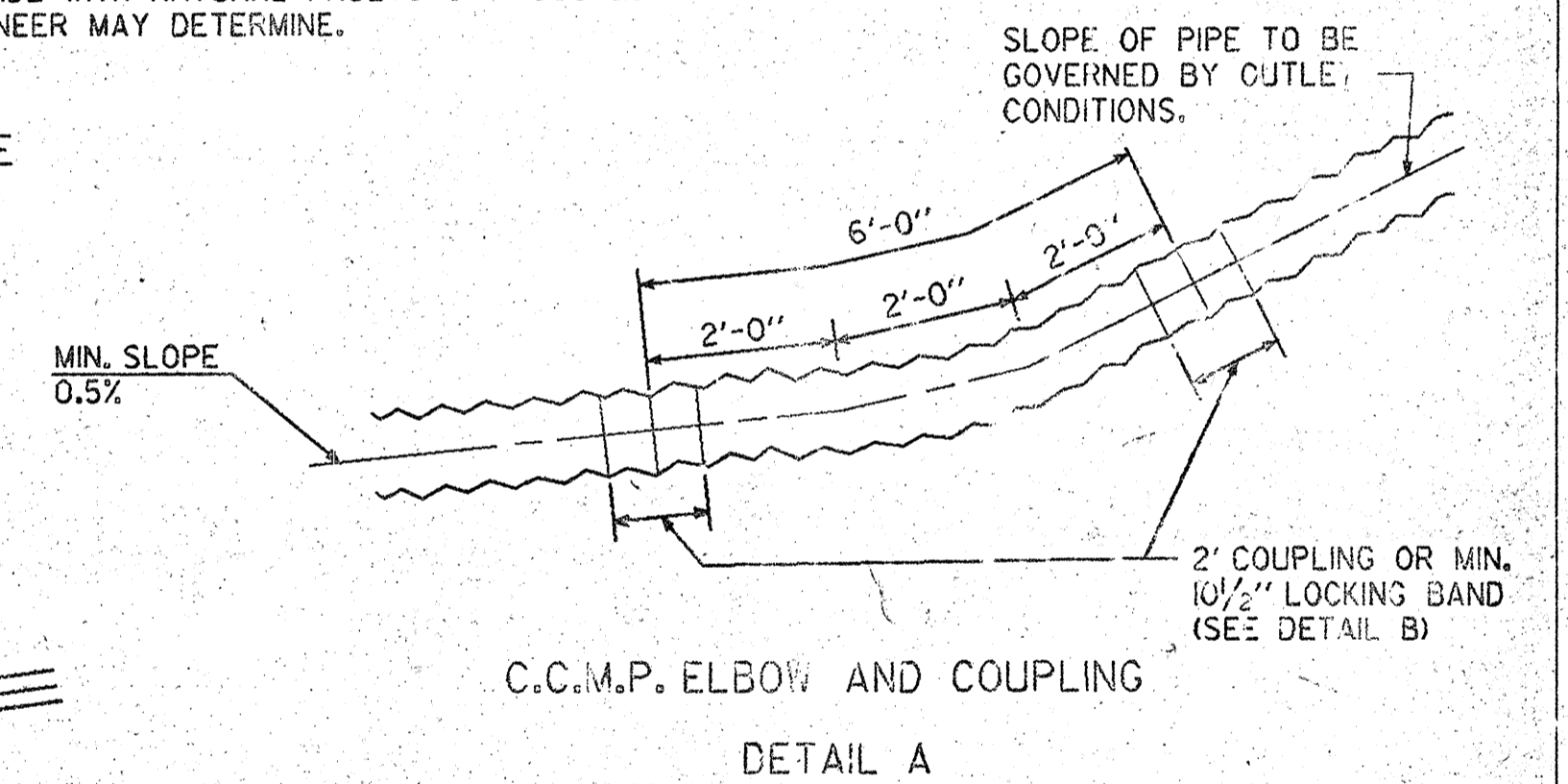


DETAIL "B"

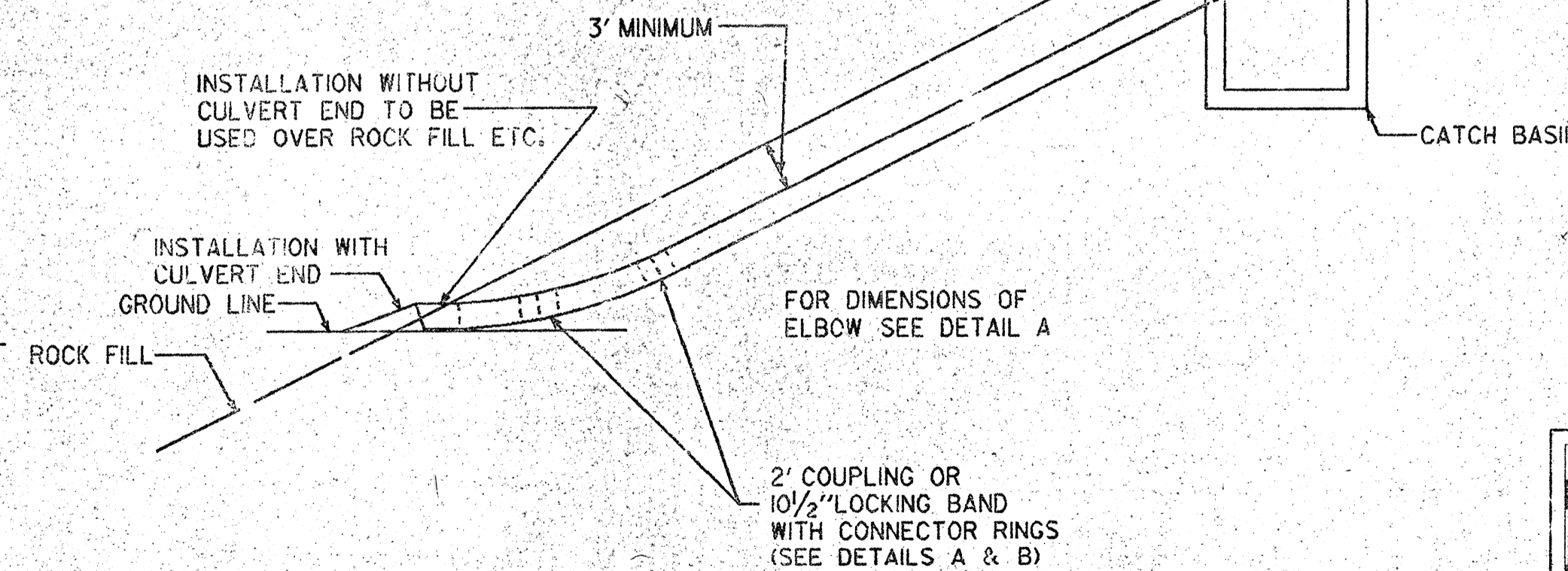
RODS:  $\frac{3}{16}$ " DIAMETER ELECTRO-GALVANIZED WITH 6" LENGTH OF  $\frac{1}{2}$ " ROLLED THREADS EACH END, FURNISHED CURVED, TO FIT PIPE. SEE TABLE "A"  
LUGS: DOUBLE TAKE UP, CAST IRON, ELECTRO-GALVANIZED.  
NOTE: THE COUPLER FASTENING DEVICE SHALL NOT INTERFERE WITH INSTALLATION OF CONNECTER RINGS.

TABLE "A"  
CONNECTOR RINGS

PIPE DIAMETER	LENGTH OF RING
12"	52"
15"	61"
18"	71"
21"	80"
24"	90"
30"	108"
36"	128"
42"	147"
48"	166"



C.C.M.P. ELBOW AND COUPLING  
DETAIL A

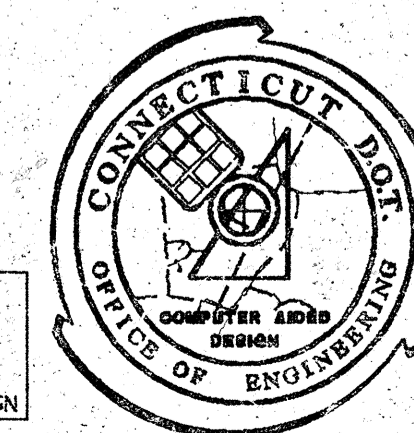


TYPICAL APPLICATIONS OF C.C.M.P. ELBOW ON HIGH FILL

REVISIONS		SPECIAL STUDIES	
NO.	DATE	DESCRIPTION	
			Designed by: GLENN L. ARZT Date: 10/15/88
			Drafted by: TOM McMAHON Date: 11/7/88
			Reviewed by: JOSEPH OBARA Date: 11/23/88
			Approval Recd: Date: 5/13/91
			Approved: Date: 5-15-91
			F.H.W.A. Approval: Date: 8-26-91

Scale: NOT TO SCALE

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