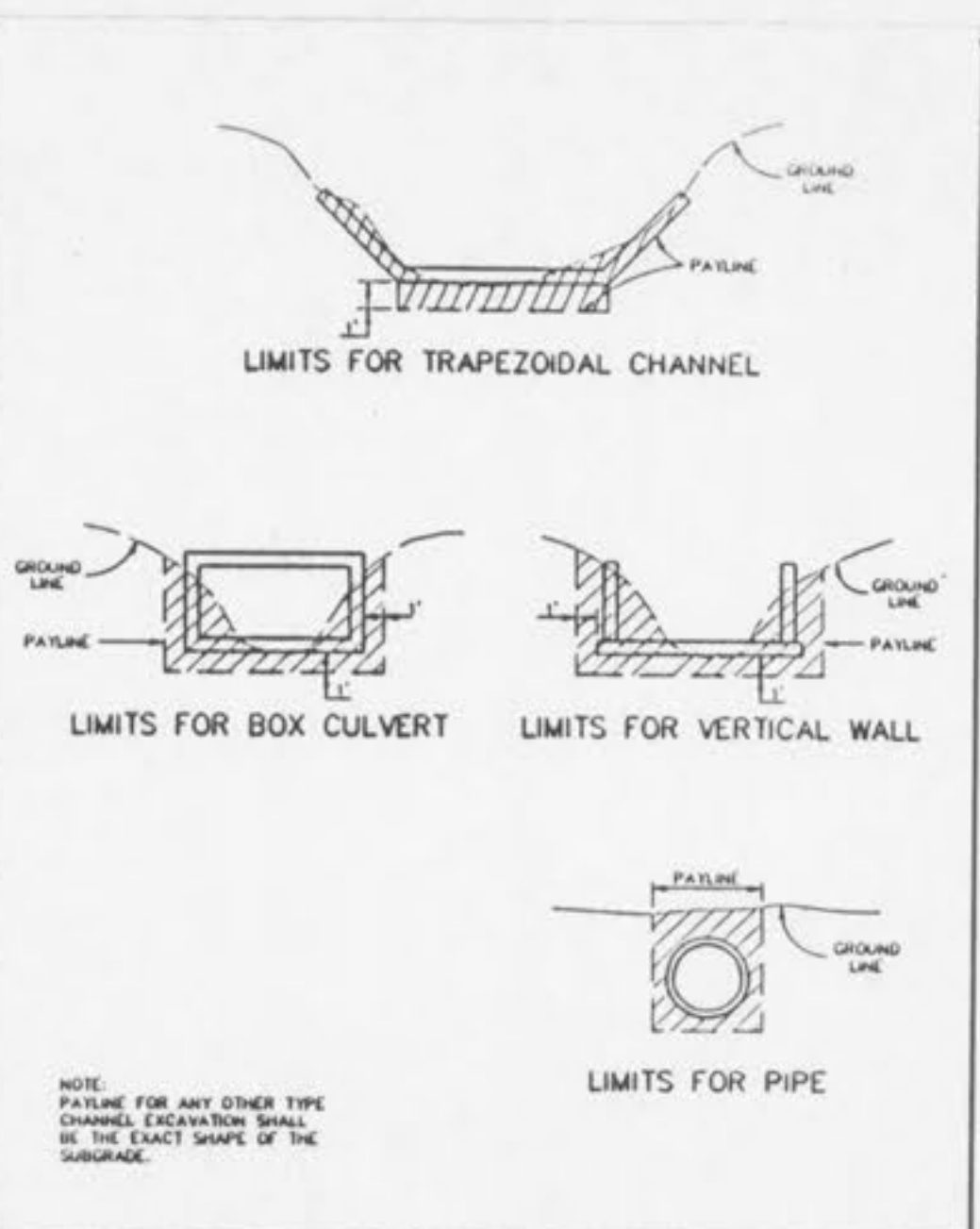
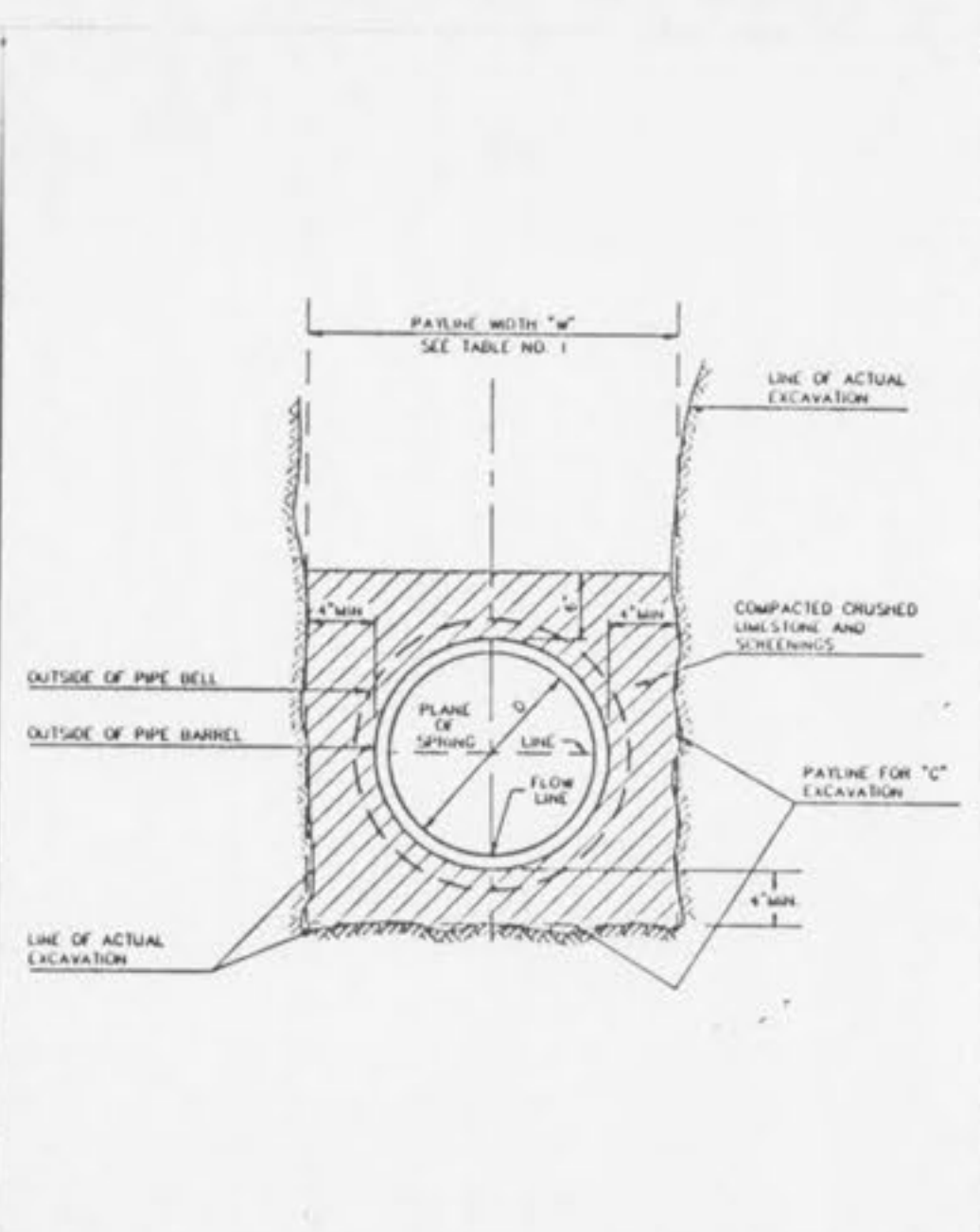


ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
PIPE DIAMETER (INCHES)	PAYLINE WIDTH OF TRENCH (INCHES)	PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES (CU FT PER FT)	PIPE DIMENSIONS (INCHES)	PAYLINE WIDTH OF TRENCH (INCHES)	PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES (CU FT PER FT)
4	30	2.50	3.28				
6	30	2.50	3.59				
8	30	2.50	3.87				
10	30	2.50	4.09				
12	30	2.50	4.25				
15	36	3.00	5.55				
18	36	3.00	5.77	14 x 23	41	3.42	5.94
21	39	3.25	6.81				
24	42	3.50	7.39	19 x 30	49	4.08	7.88
27	45	3.75	8.18	22 x 34	53	4.42	8.81
30	48	4.00	9.30	24 x 38	58	4.83	9.70
33	53	4.42	10.53	27 x 42	62	5.17	10.71
36	58	4.83	11.43	29 x 45	66	5.50	11.72
39	63	5.25	13.38	32 x 49	71	5.92	13.14
42	70	5.83	15.87	36 x 60	83	6.92	16.18
45	77	6.42	18.15	43 x 68	93	7.87	18.81
48	84	7.00	20.73	48 x 78	101	8.42	21.58
51	91	7.58	23.45	53 x 83	108	9.08	24.39
54	98	8.17	26.37	58 x 91	116	9.83	27.43
57	105	8.75	29.38	63 x 98	124	10.50	30.50
60	112	9.33	32.57	68 x 106	135	11.25	33.91
63	119	9.92	35.90	72 x 113	143	11.82	36.99
66	126	10.50	39.37	77 x 121	152	12.67	40.69
69	133	11.08	42.99	82 x 128	160	13.33	44.45
72	140	11.67	46.75	87 x 136	168	14.00	47.79
75	147	12.25	50.66	92 x 143	176	14.87	51.70
78	154	12.83	54.72	97 x 151	185	15.42	56.01
81	161	13.42	58.92				
84	168	14.00	63.27	106 x 166	202	16.83	64.48
87	175	14.57	67.80	116 x 180	218	18.17	73.59

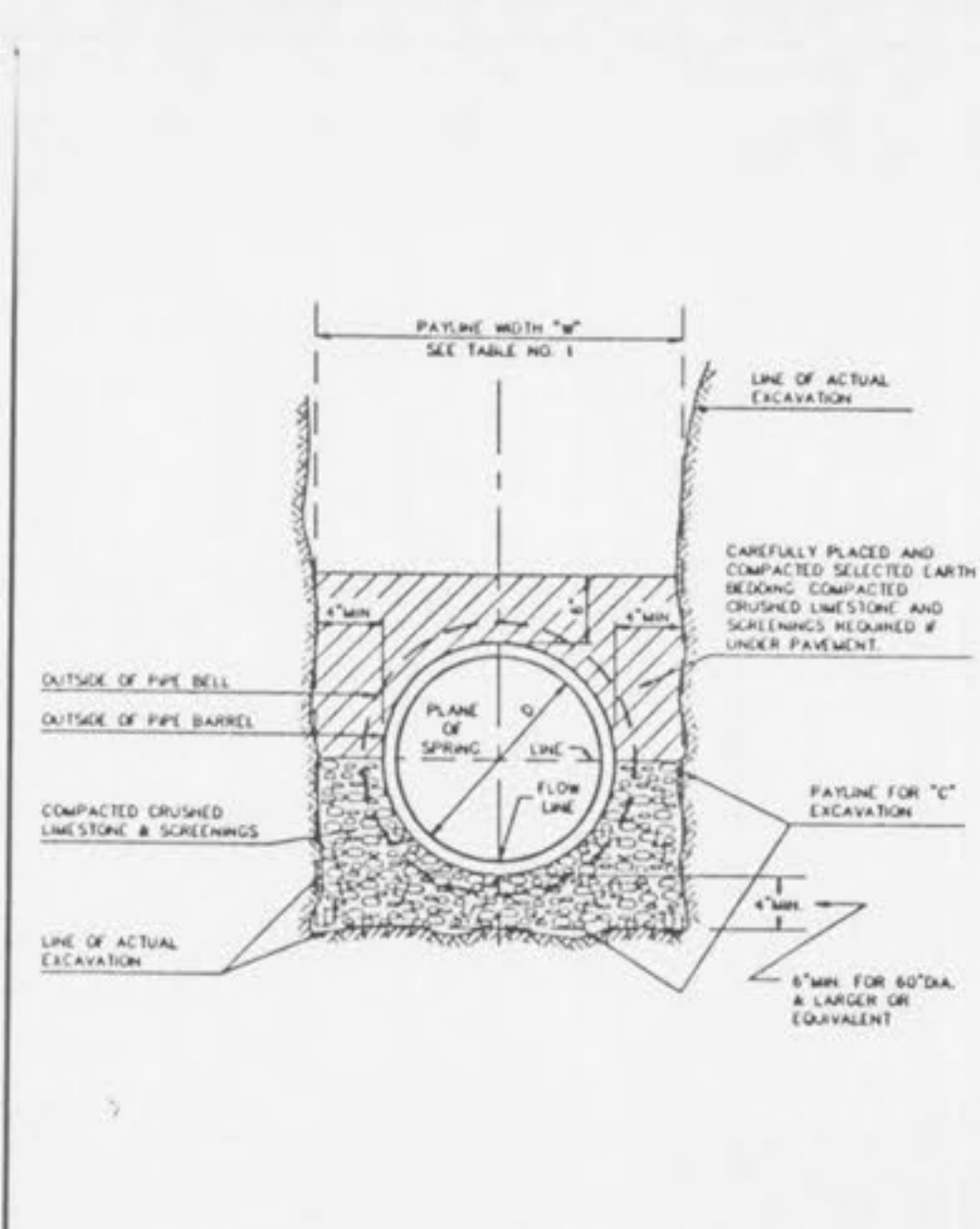
TABLE 1
PAYLINE WIDTHS OF TRENCH AND PAY-VOLUMES OF CONCRETE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. B.E.B. Ch. J.C.K. 1992 SHEET 1



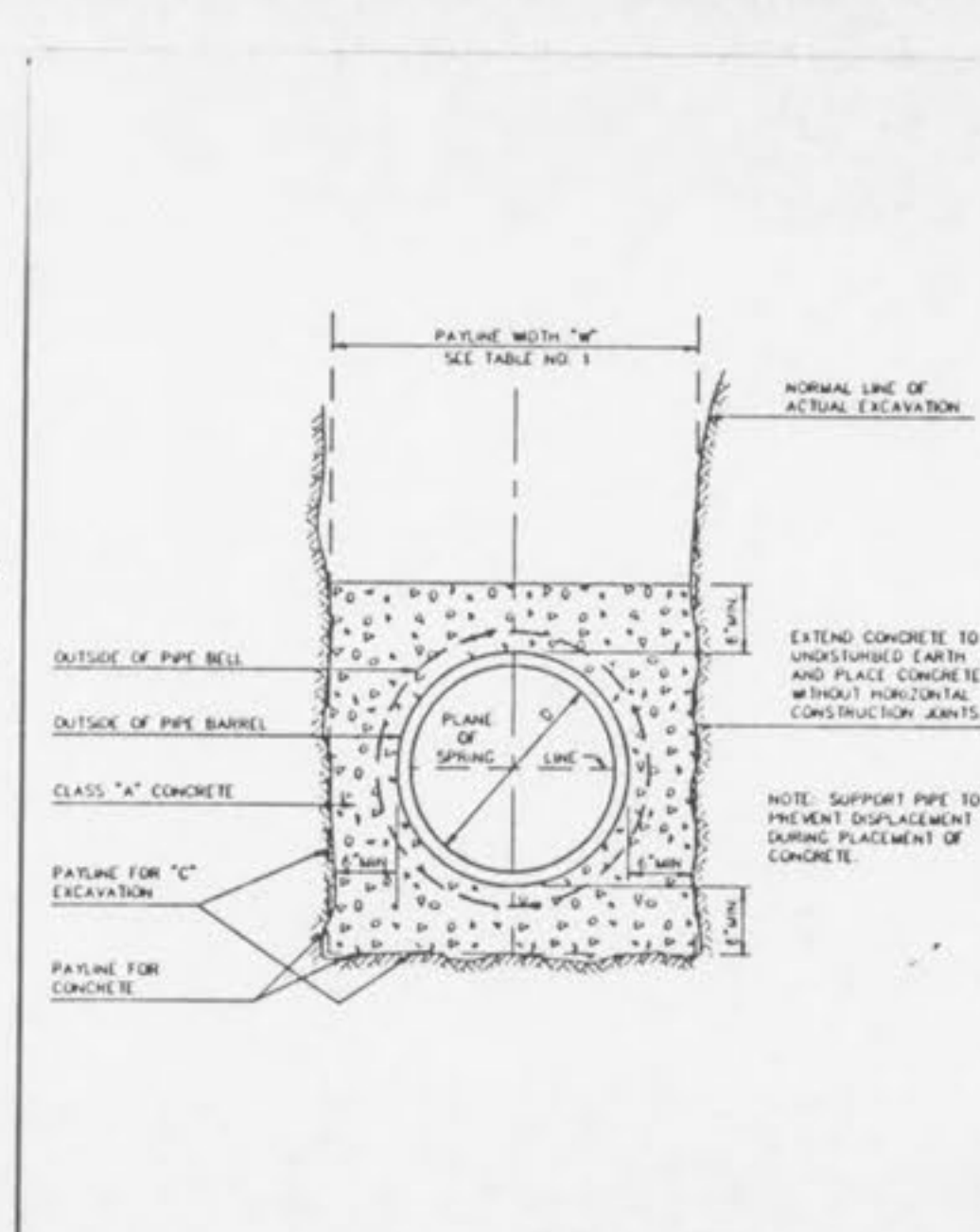
PAYLINE LIMITS FOR EXCAVATION
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 2



PIPE BEDDING CLASS "C" (FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 3



CONCRETE ENCASUREMENT
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 5



CONCRETE CRADLE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 6

SECTION OF MANHOLE	DIMENSION
TOP	26 1/2" DIA.
TRANSITION	42" DIA.
BOTTOM SECTION	8" THRU 24" DIA. PIPE
BOTTOM SECTION	27" THRU 36" DIA. PIPE
BOTTOM SECTION	42" SQUARE

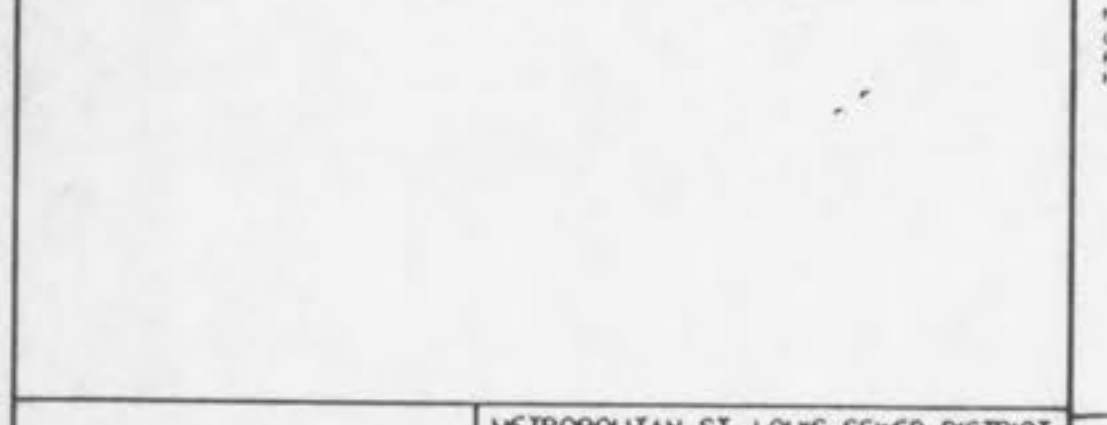
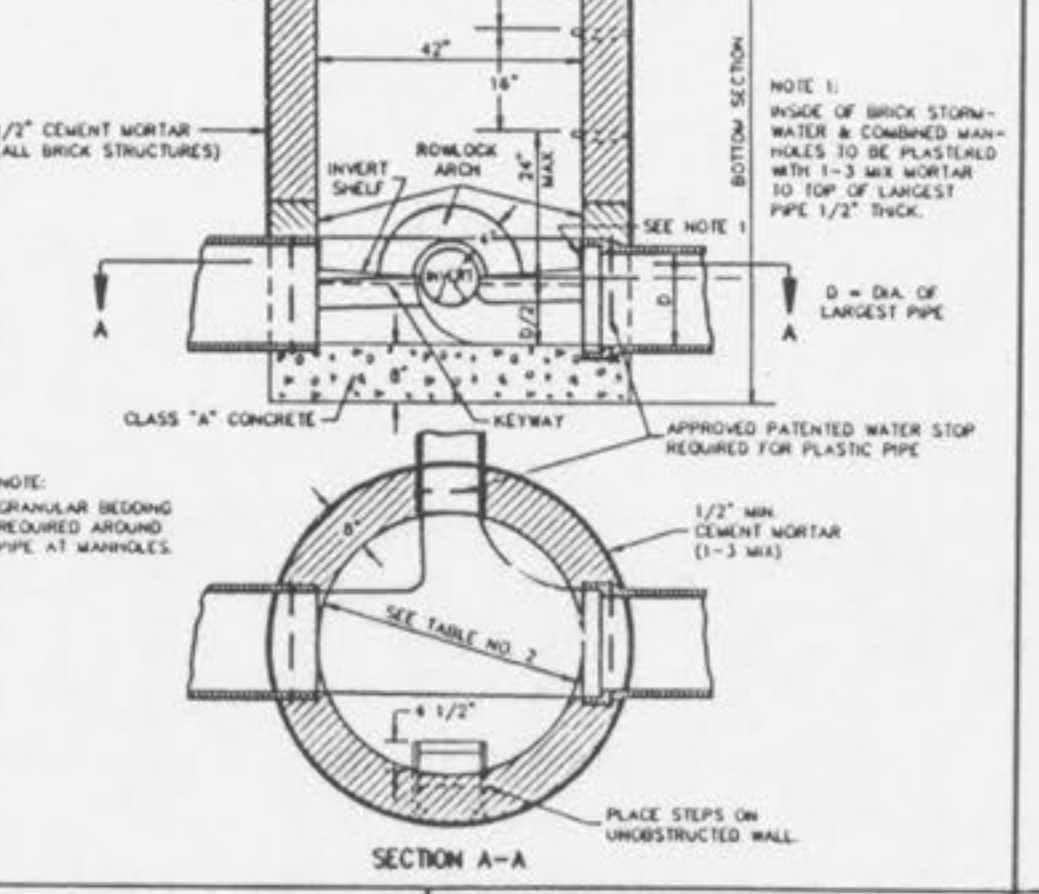
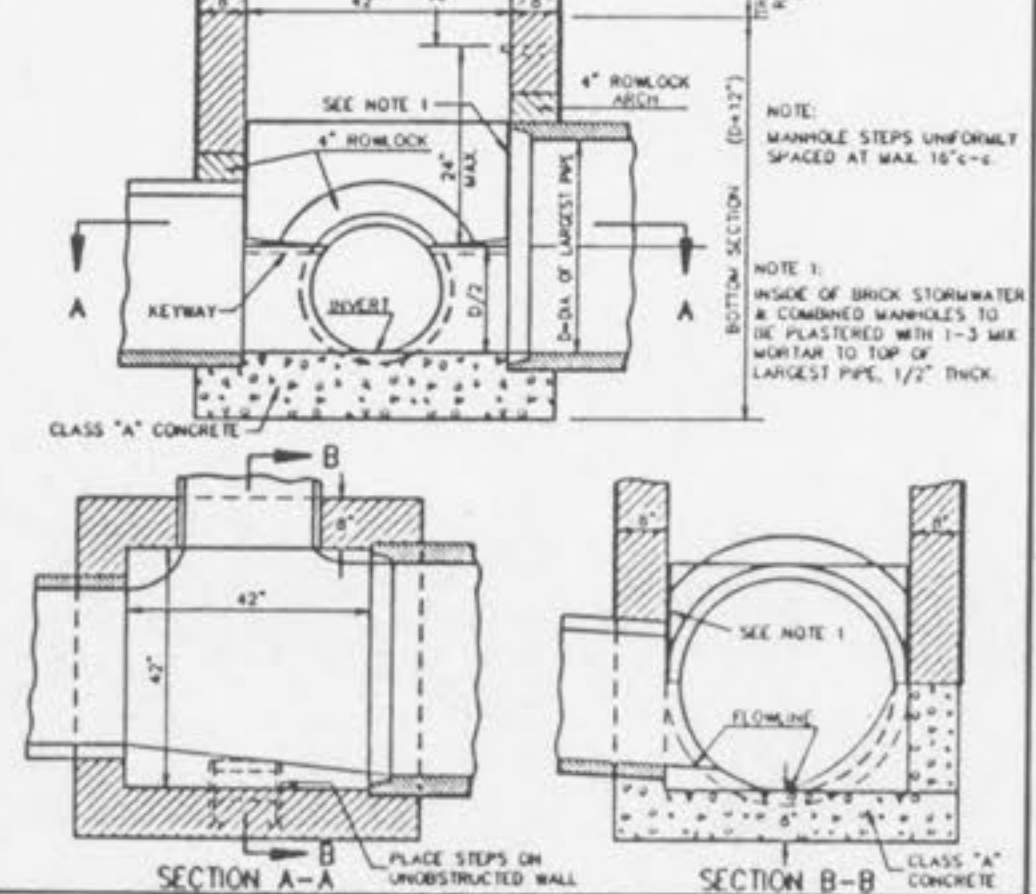


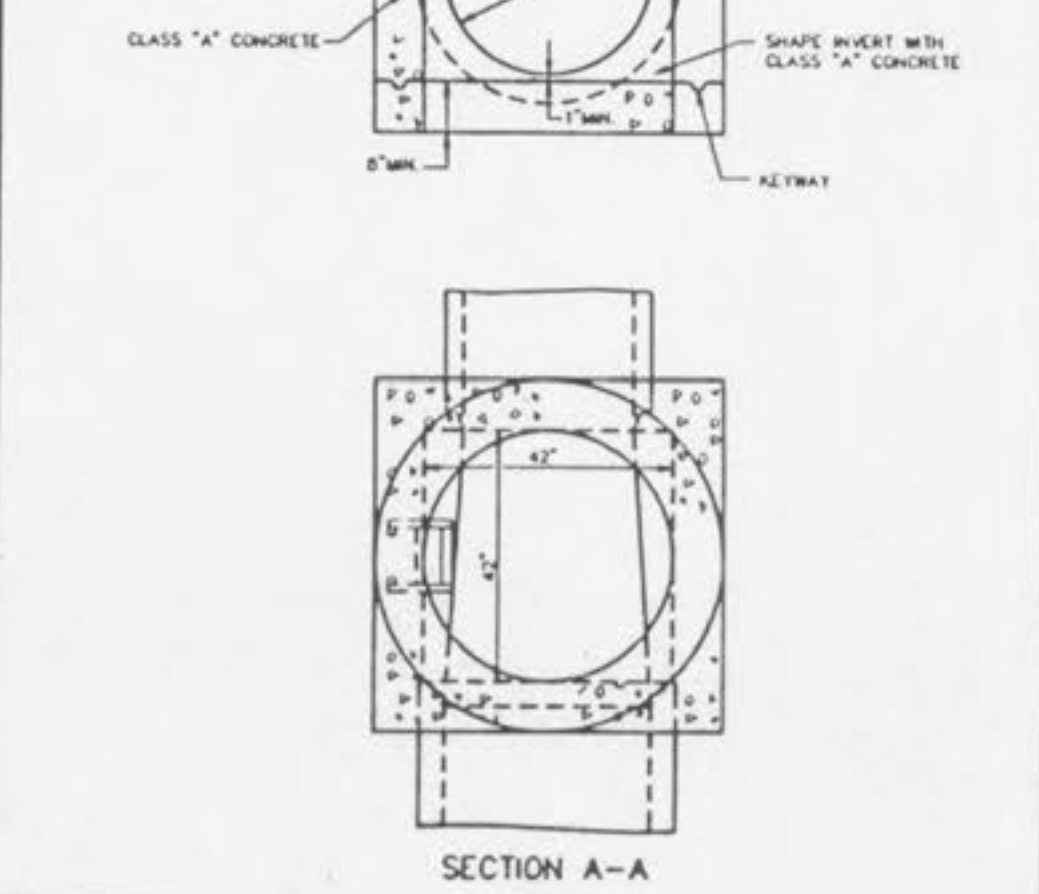
TABLE NO. 2
STANDARD MANHOLE DIMENSIONS
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. R.G.W. Ch. J.C.K. 1992 SHEET 7



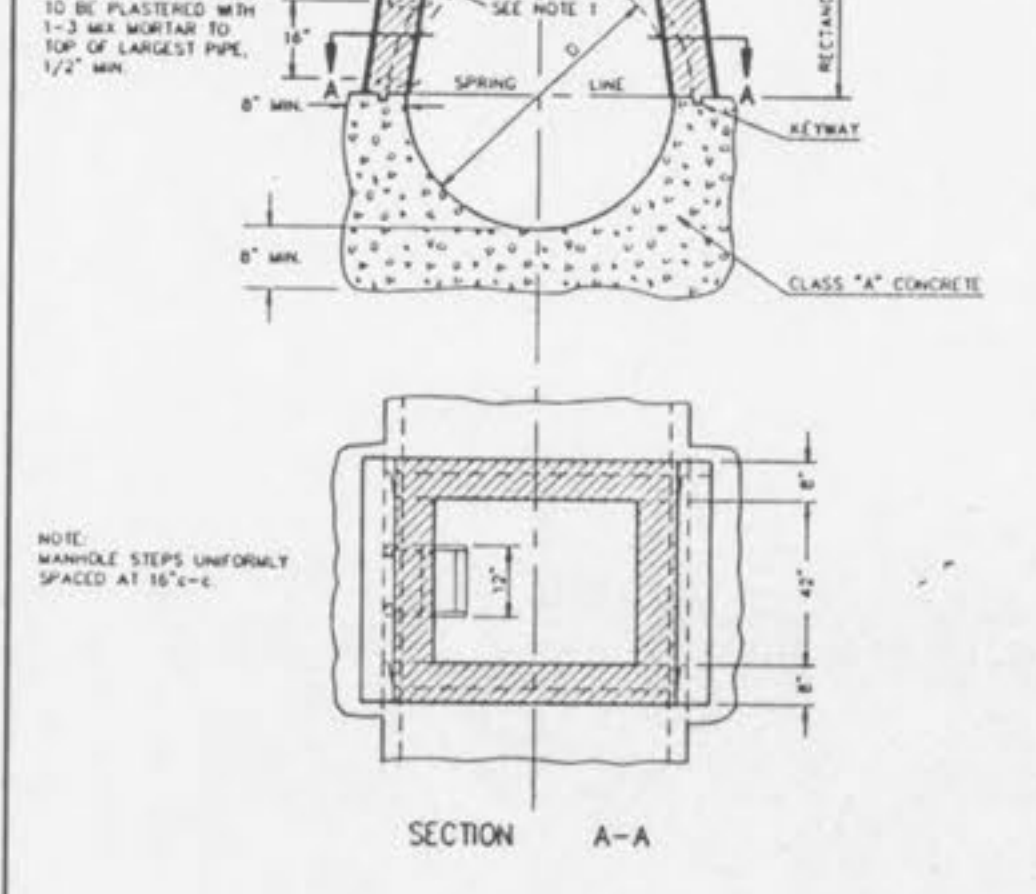
LINE MANHOLE PIPE SEWERS 8"-24" DIA.
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 8



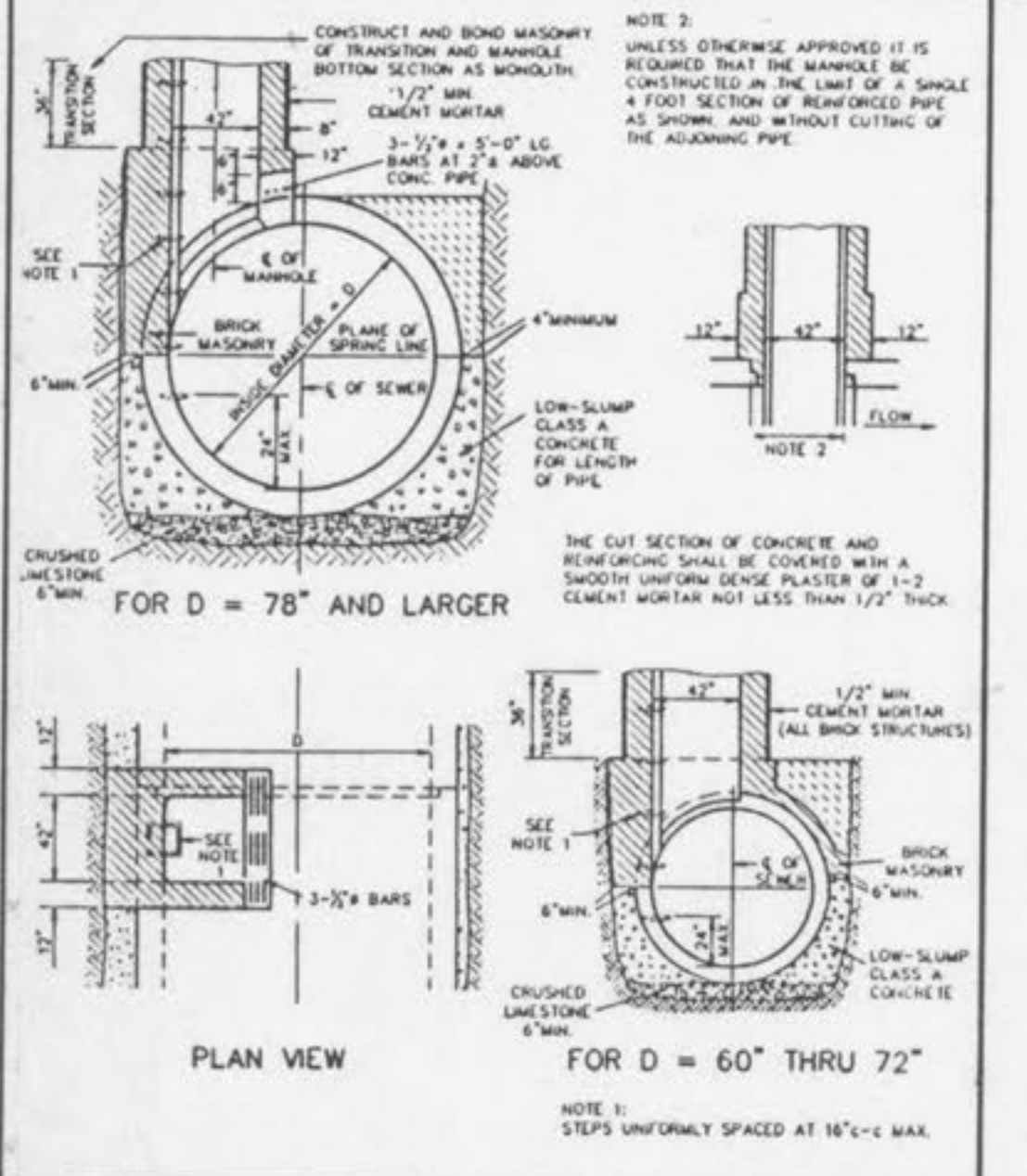
MANHOLE ON PIPE SEWER 27" THRU 36" (ALTERNATE)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. D.A.B. Ch. J.C.K. 1992 SHEET 10



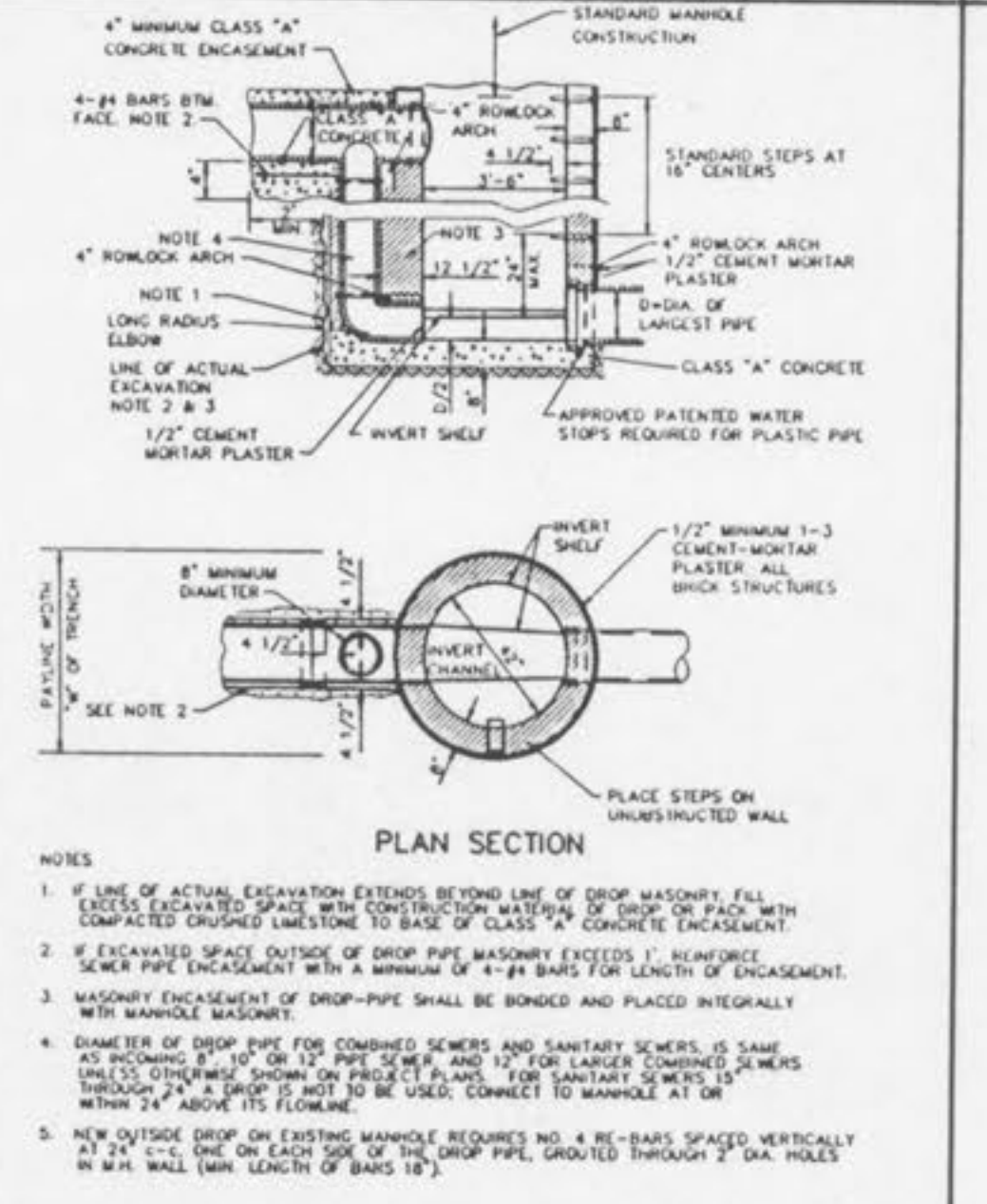
MANHOLE ON CONCRETE PIPE SEWERS 39" THRU 54" DIAMETER
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 11



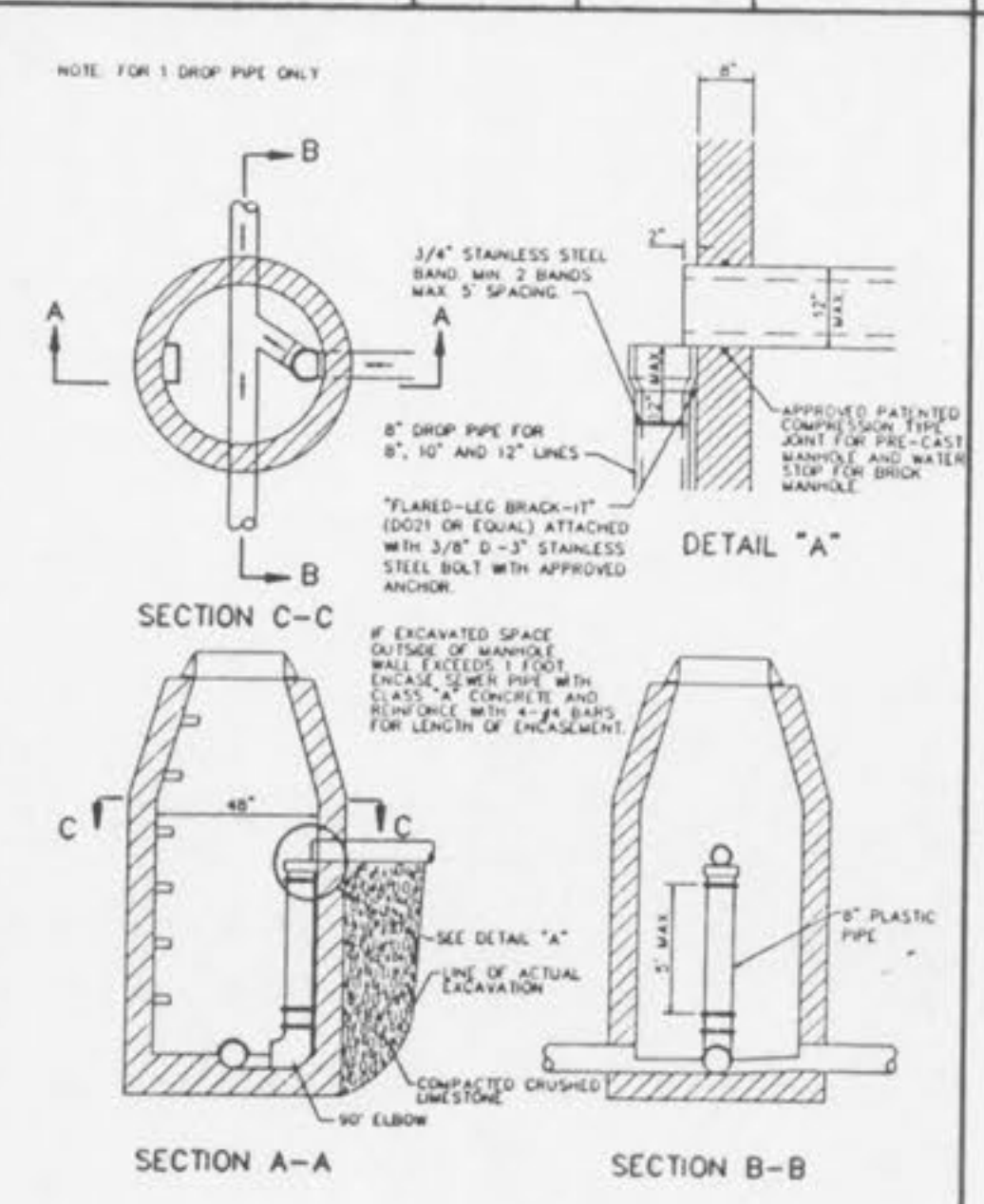
MANHOLE ON CONCRETE PIPE SEWERS 39" THRU 54" (ALTERNATE)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 12



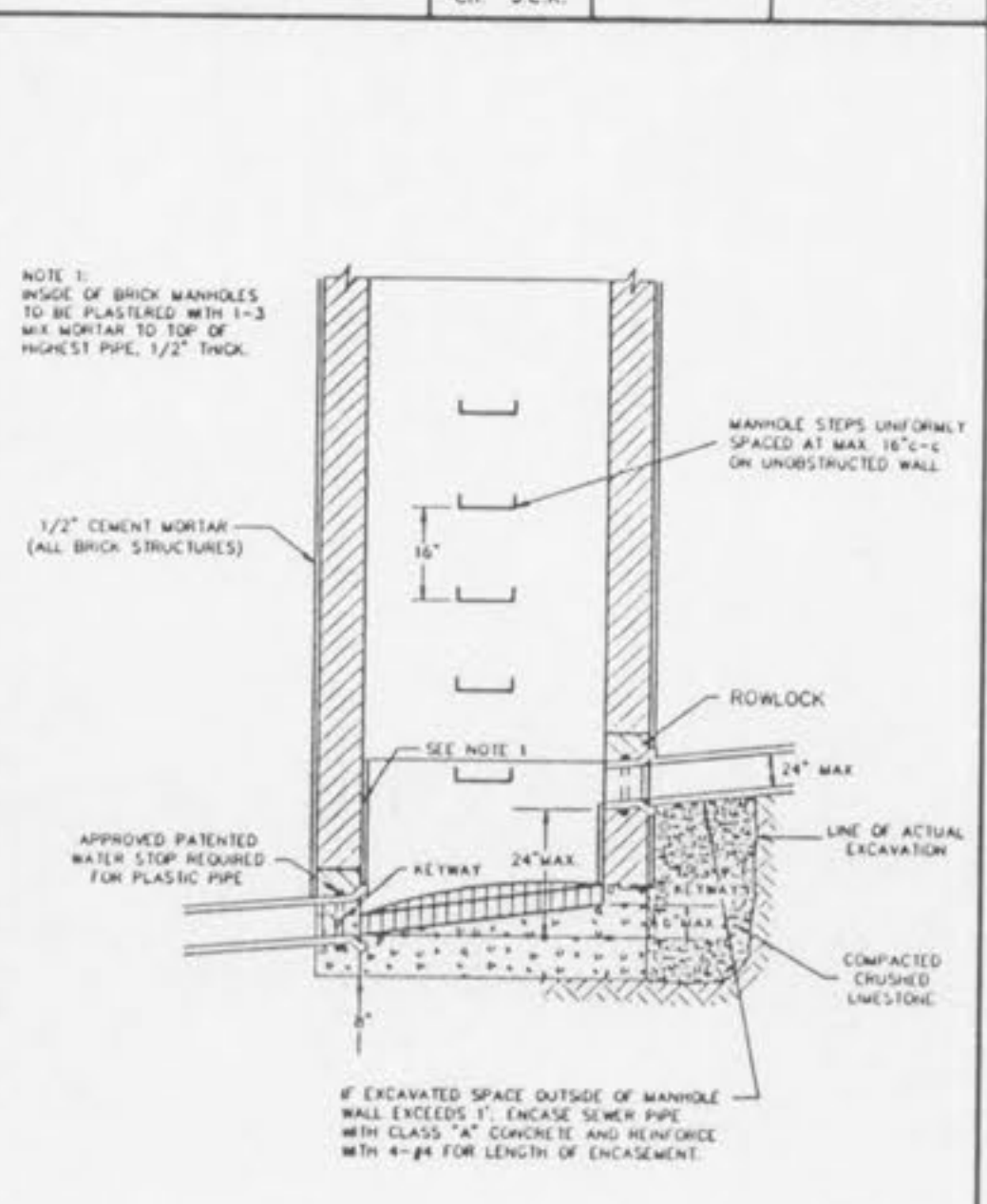
TYPICAL MANHOLE BASE REINFORCED CONCRETE PIPE SEWERS 60" AND LARGER IN DIAMETER
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 13



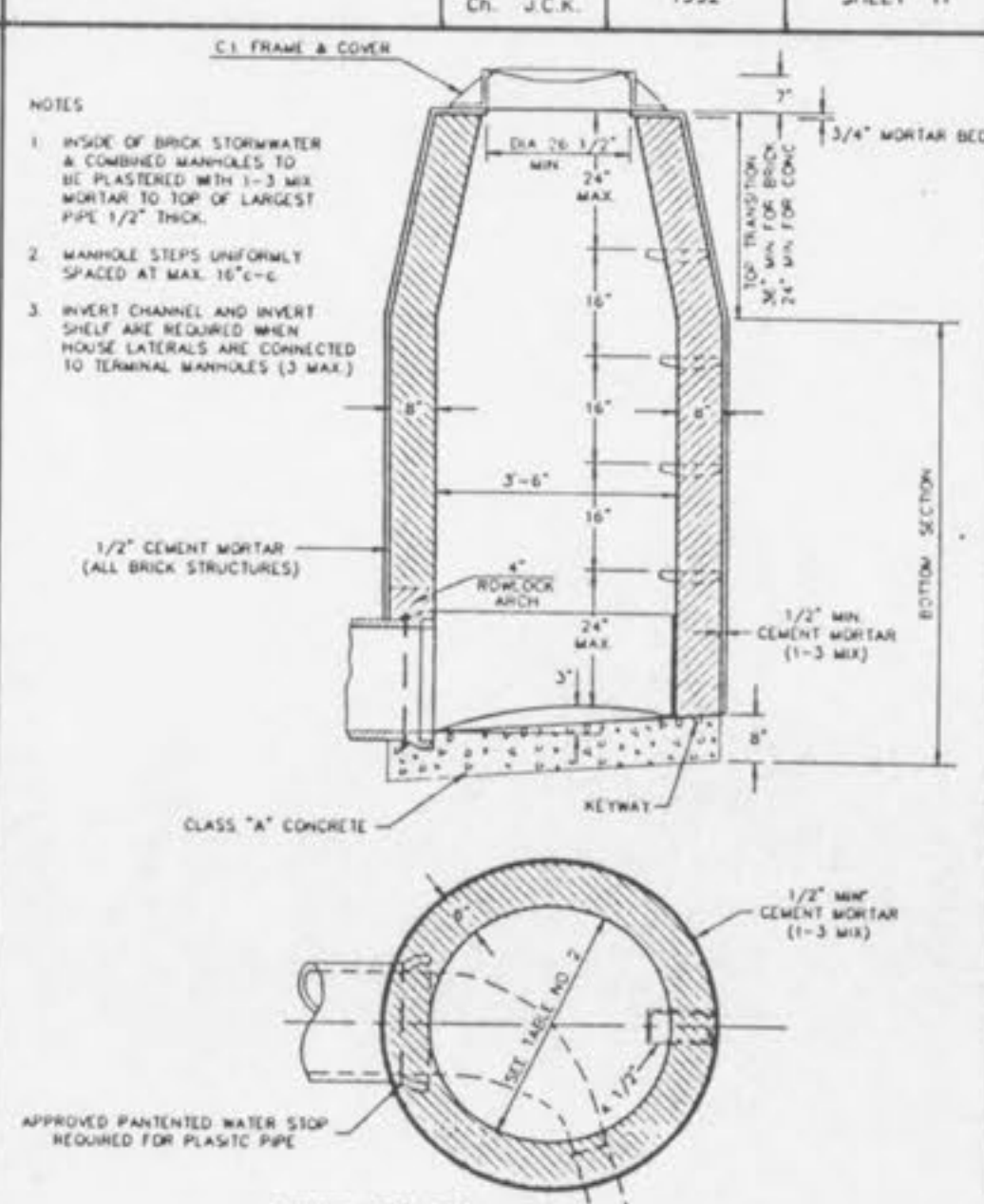
OUTSIDE FOULWATER DROP MANHOLE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. R.G.W. Ch. J.C.K. 1992 SHEET 14



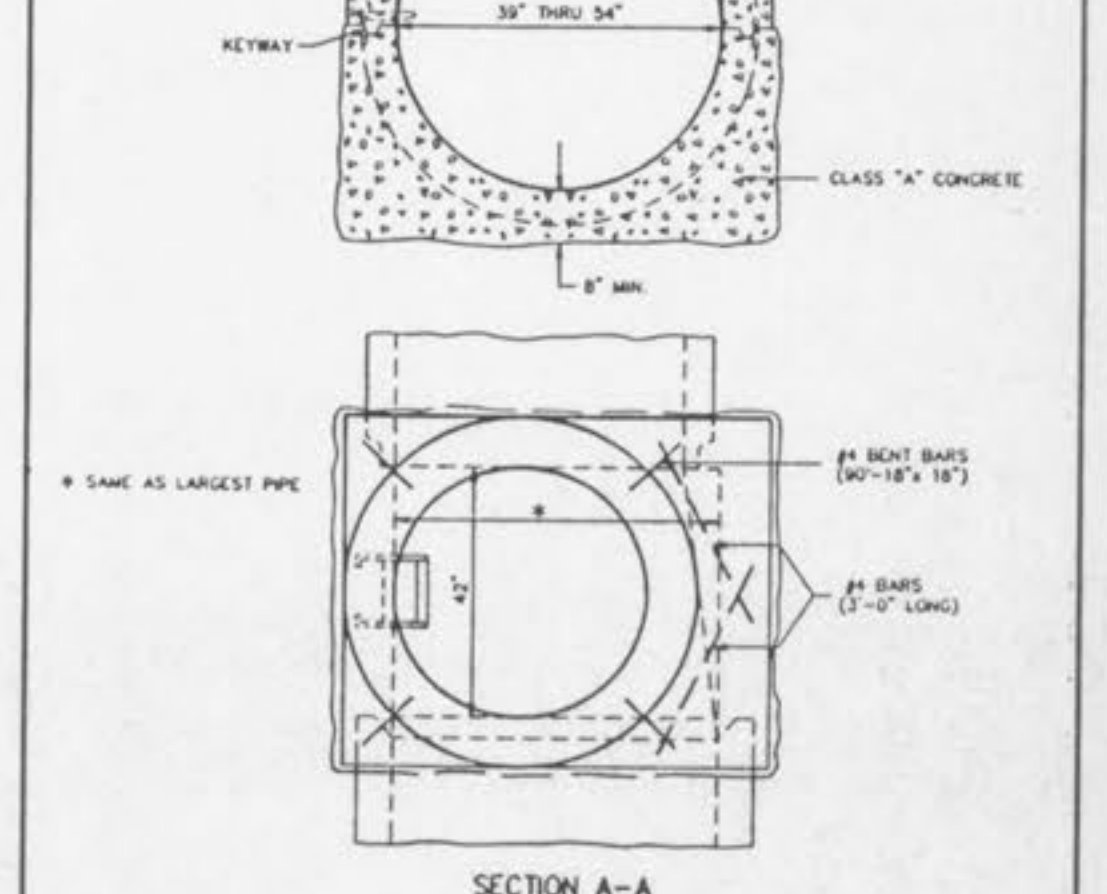
INSIDE FOULWATER DROP MANHOLE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. R.G.W. Ch. J.C.K. 1992 SHEET 15



INSIDE FOULWATER DROP MANHOLE (FOR FREE-FALL)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 16



TERMINAL MANHOLE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 17



PRE-CAST CONCRETE MANHOLE FOR SEWERS 8" THROUGH 18"
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.S.H. Ch. J.C.K. 1992 SHEET 18

CONSTRUCTION DETAILS
AVONDALE HEIGHTS
PHASE TWO
7-21-97
95-72300