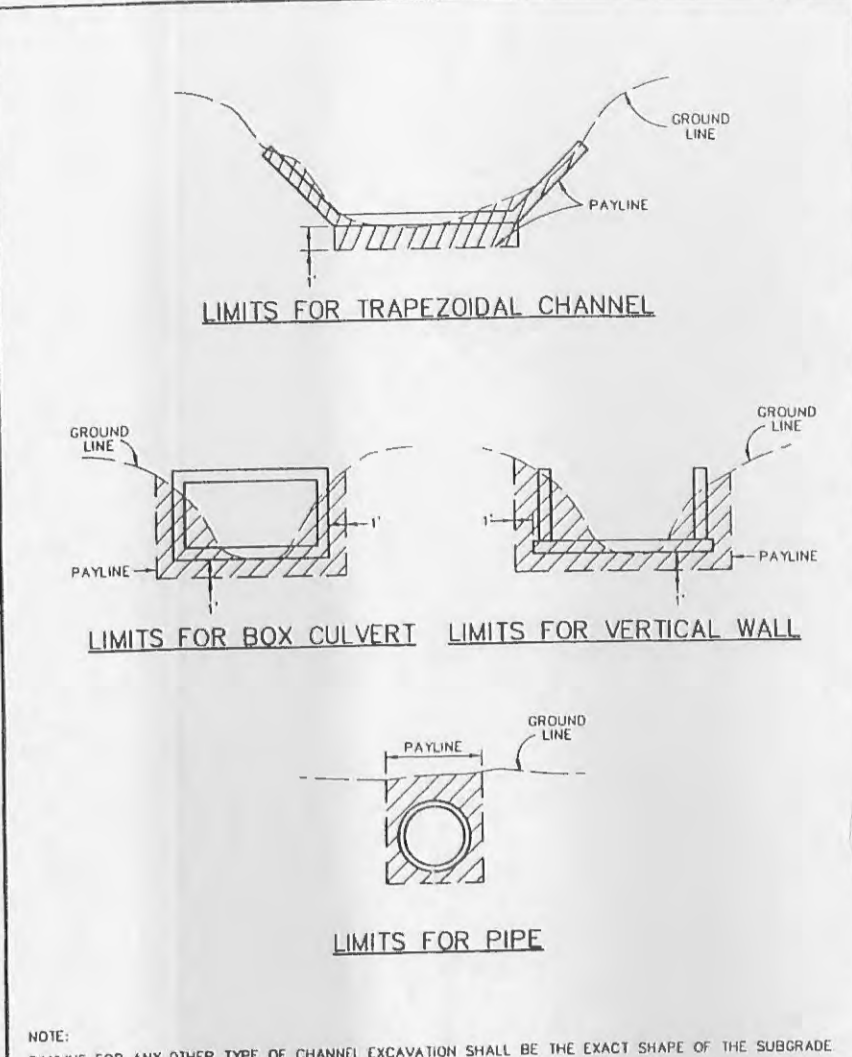


ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
INCHES	INCHES	FEET	CU. FT. PER FT.	INCHES	INCHES	FEET	CU. FT. PER FT.
4	30	2.50	3.28				
6	30	2.50	3.59				
8	30	2.50	3.87				
10	30	2.50	4.08				
12	30	2.50	4.25				
15	36	3.00	5.55				
18	36	3.00	5.77	14 x 23	41	3.42	5.84
21	39	3.25	6.61				
24	42	3.50	7.39	19 x 30	49	4.08	7.88
27	45	3.75	8.18	22 x 34	53	4.42	8.61
30	48	4.00	9.00	24 x 38	58	4.83	9.70
33	49	4.08	10.53	27 x 42	62	5.17	10.71
36	53	4.42	11.43	29 x 45	66	5.50	11.72
39	56	4.57	11.43	32 x 49	71	5.92	13.14
42	63	5.25	13.38	34 x 53	75	6.25	14.05
48	70	5.83	15.67	38 x 60	83	6.82	16.18
54	77	6.42	18.15	42 x 68	92	7.47	18.81
60	84	7.00	20.73	48 x 76	101	8.42	21.59
66	91	7.58	23.45	53 x 83	109	9.08	24.35
72	98	8.17	26.37	58 x 91	118	9.83	27.45
78	105	8.75	29.38	63 x 98	126	10.50	30.50
84	112	9.33	32.57	68 x 106	135	11.25	33.81
90	119	9.92	35.90	72 x 113	143	11.92	36.89
96	126	10.50	39.37	77 x 121	152	12.87	40.69
102	133	11.08	42.99	82 x 128	160	13.33	44.45
108	140	11.67	46.75	87 x 136	168	14.00	47.79
114	147	12.25	50.66	92 x 143	176	14.67	51.70
120	154	12.83	54.72	97 x 151	185	15.42	56.01
126	161	13.42	58.92				
132	168	14.00	63.27	108 x 166	202	16.83	64.48
144	182	15.17	72.40	118 x 180	218	18.17	73.58

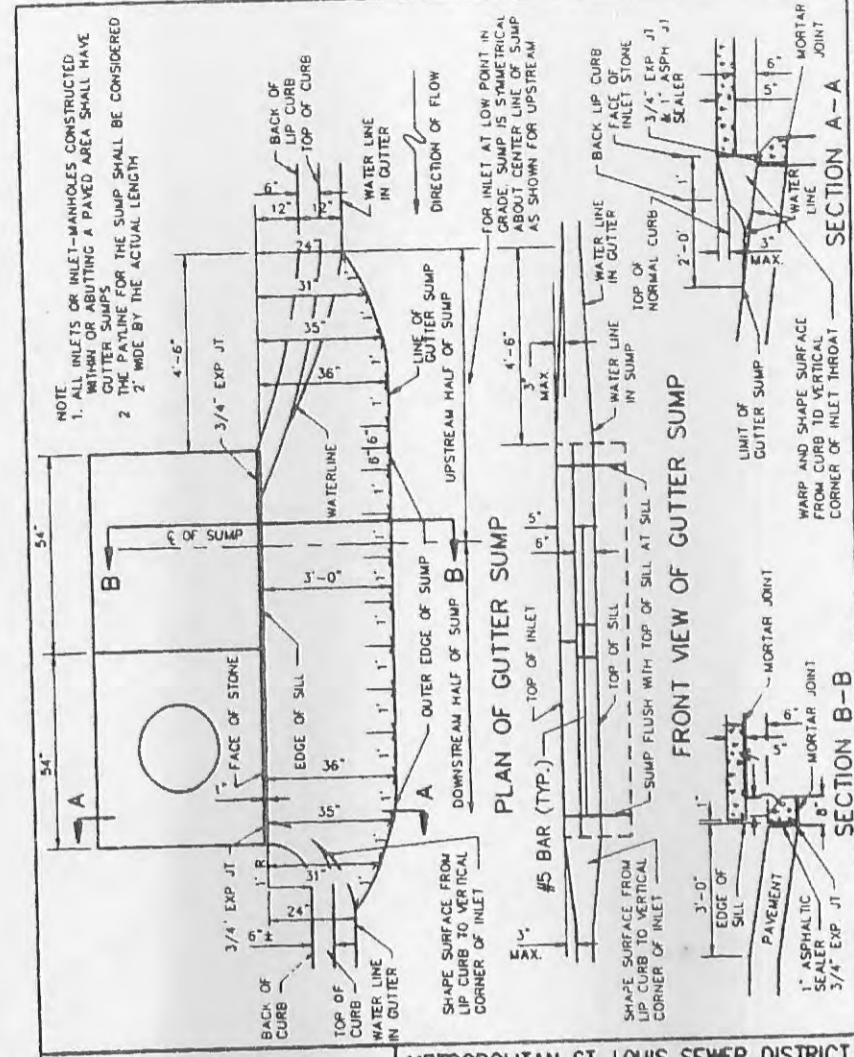
TABLE 1  
PAYLINE WIDTHS OF TRENCH  
AND PAY-QUANTITIES OF  
CONCRETE



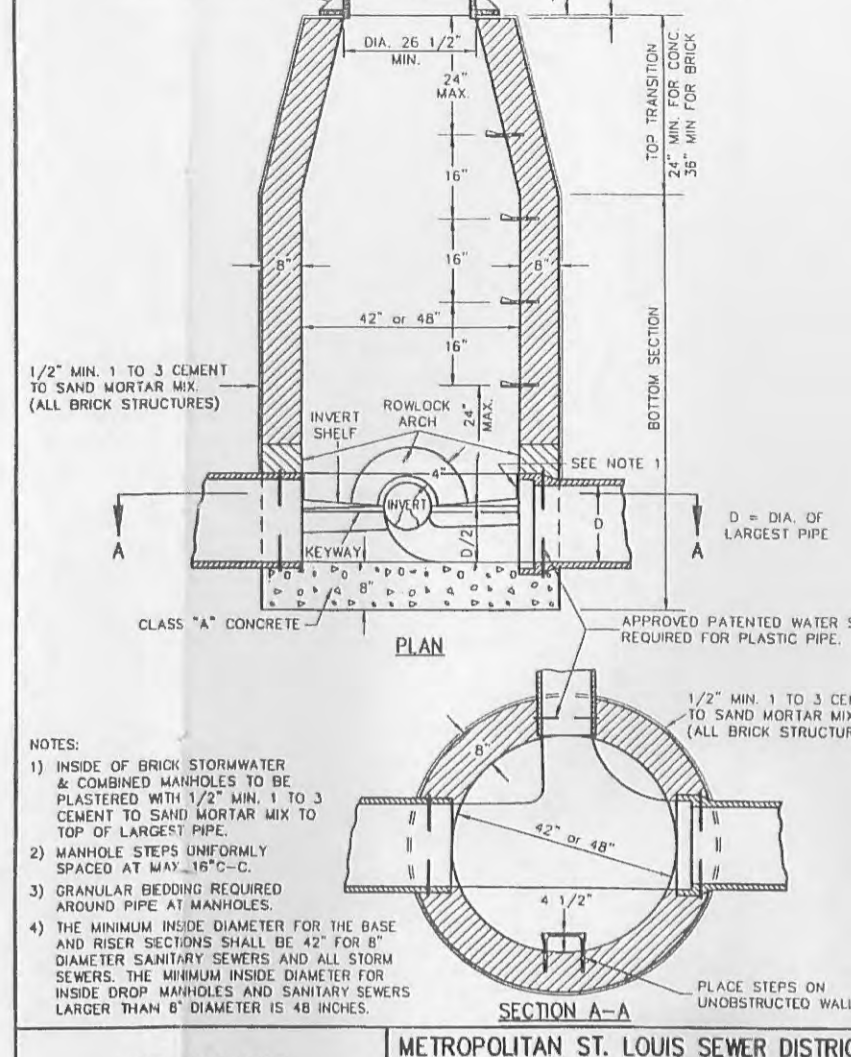
NOTE: PAYLINE FOR ANY OTHER TYPE OF CHANNEL EXCAVATION SHALL BE THE EXACT SHAPE OF THE SUBGRADE.

PAYLINE LIMITS FOR EXCAVATION

METROPOLITAN ST. LOUIS SEWER DISTRICT  
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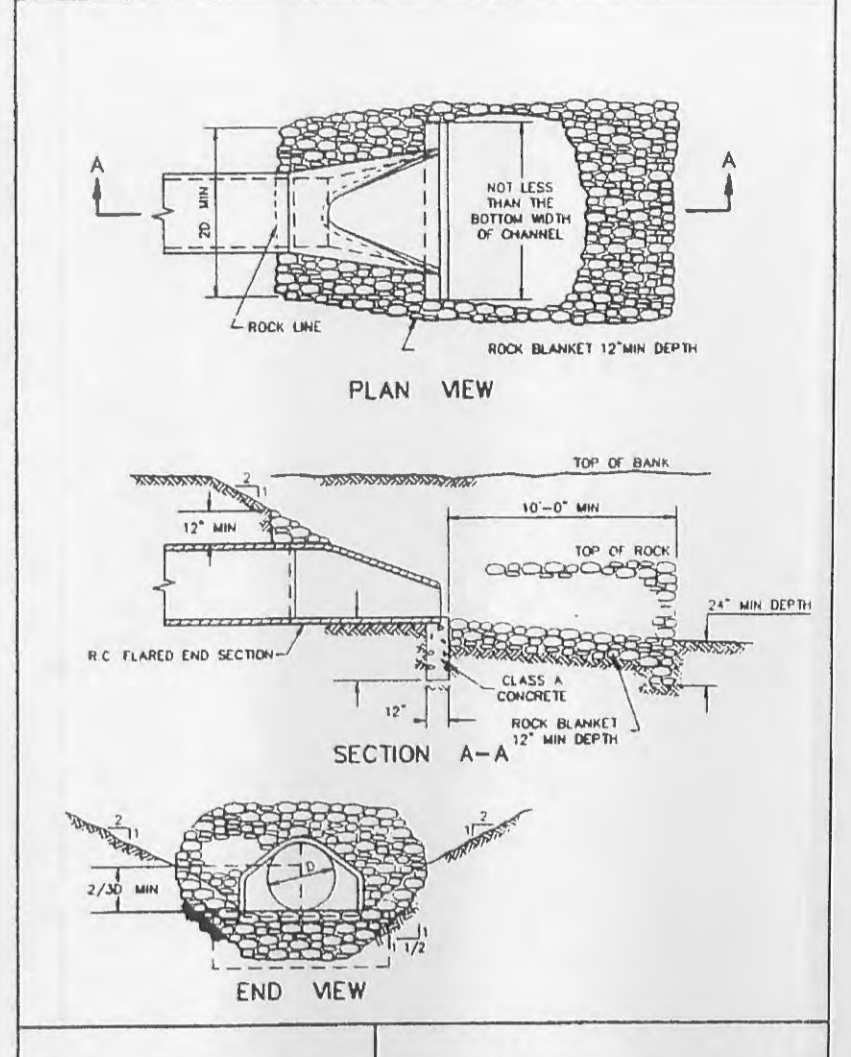


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Standard Details of Sewer Construction  
Dr. R.W.K. Ch. J.C.K. 1992 SHEET 56



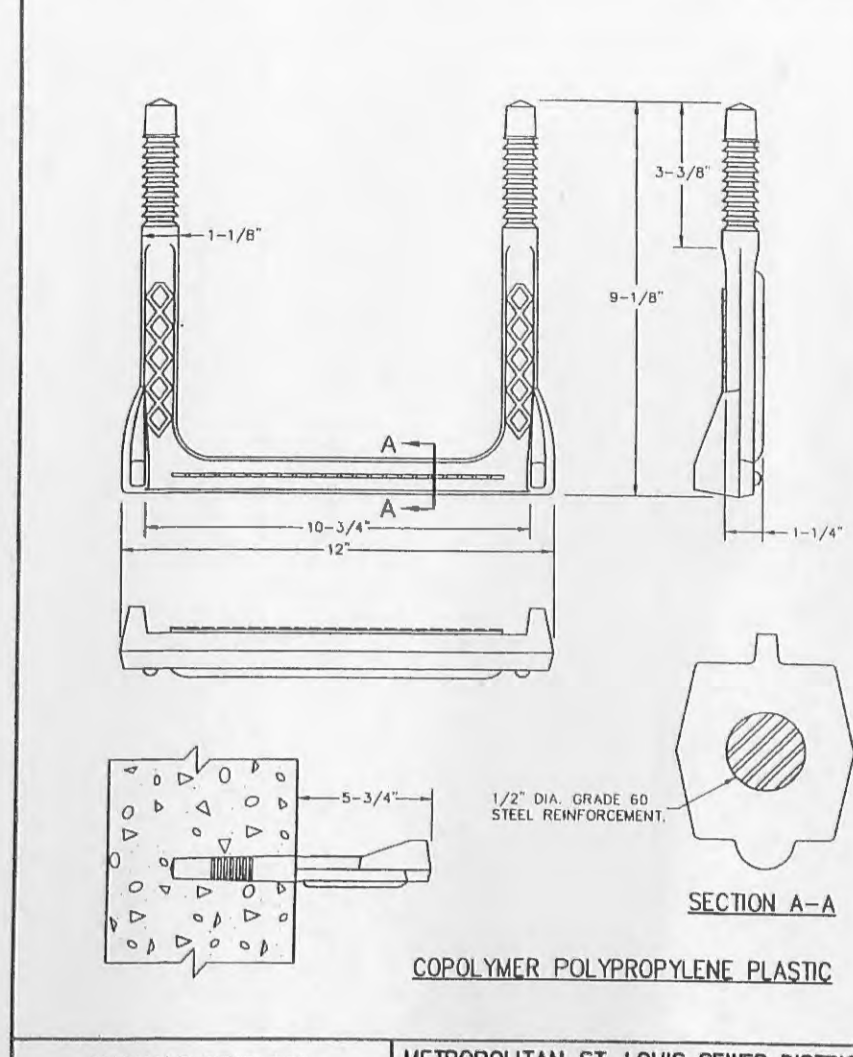
LINE MANHOLE  
PIPE SEWER 8"-24" DIA.

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Standard Details of Sewer Construction  
Dr. W.S.H./G.M. Ch. J.C.K. 2000 SHEET 10



MANHOLE STEP FOR  
PRECAST & CAST-IN-PLACE  
MANHOLE

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Dr. D.A.B. Ch. J.C.K. 2000 SHEET 58



METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction  
Dr. D.A.B. Ch. J.C.K. 2000 SHEET 58

PRECAST CONCRETE STORMWATER STRUCTURES

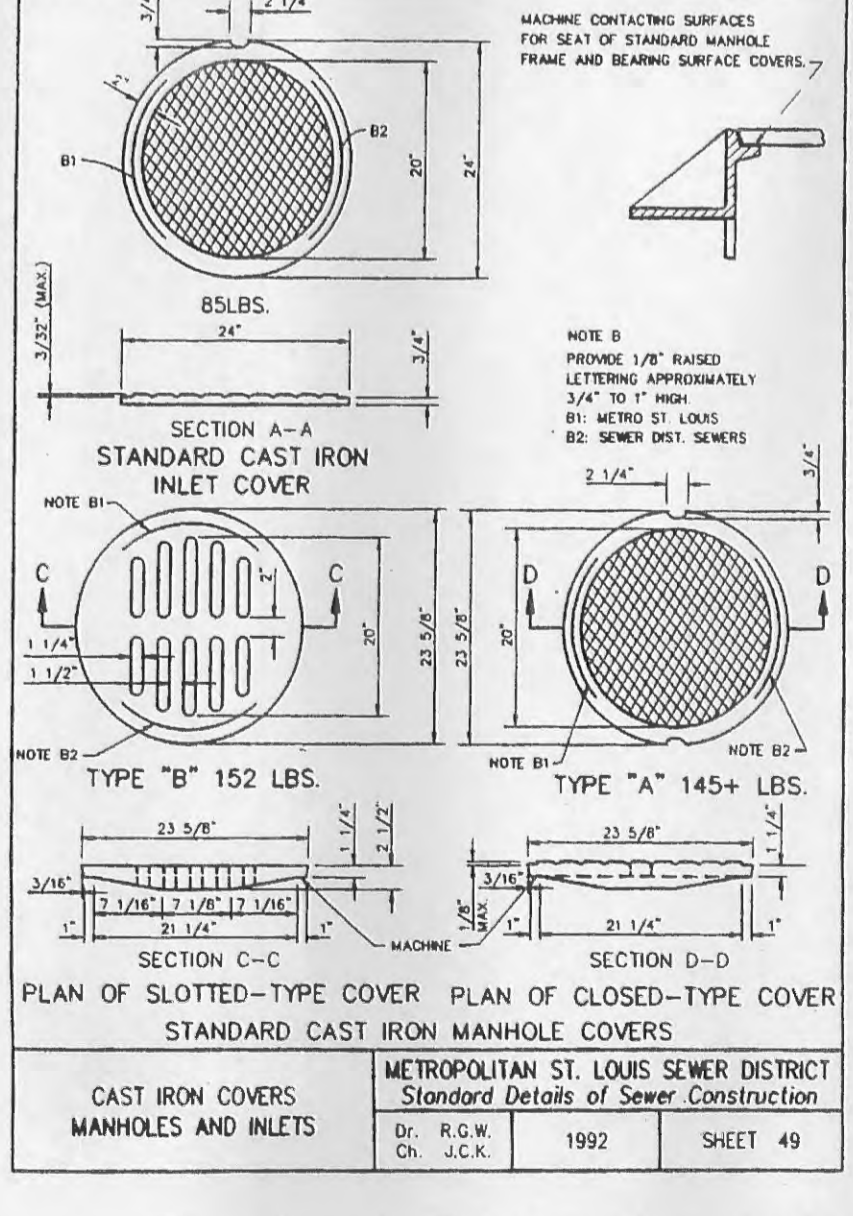
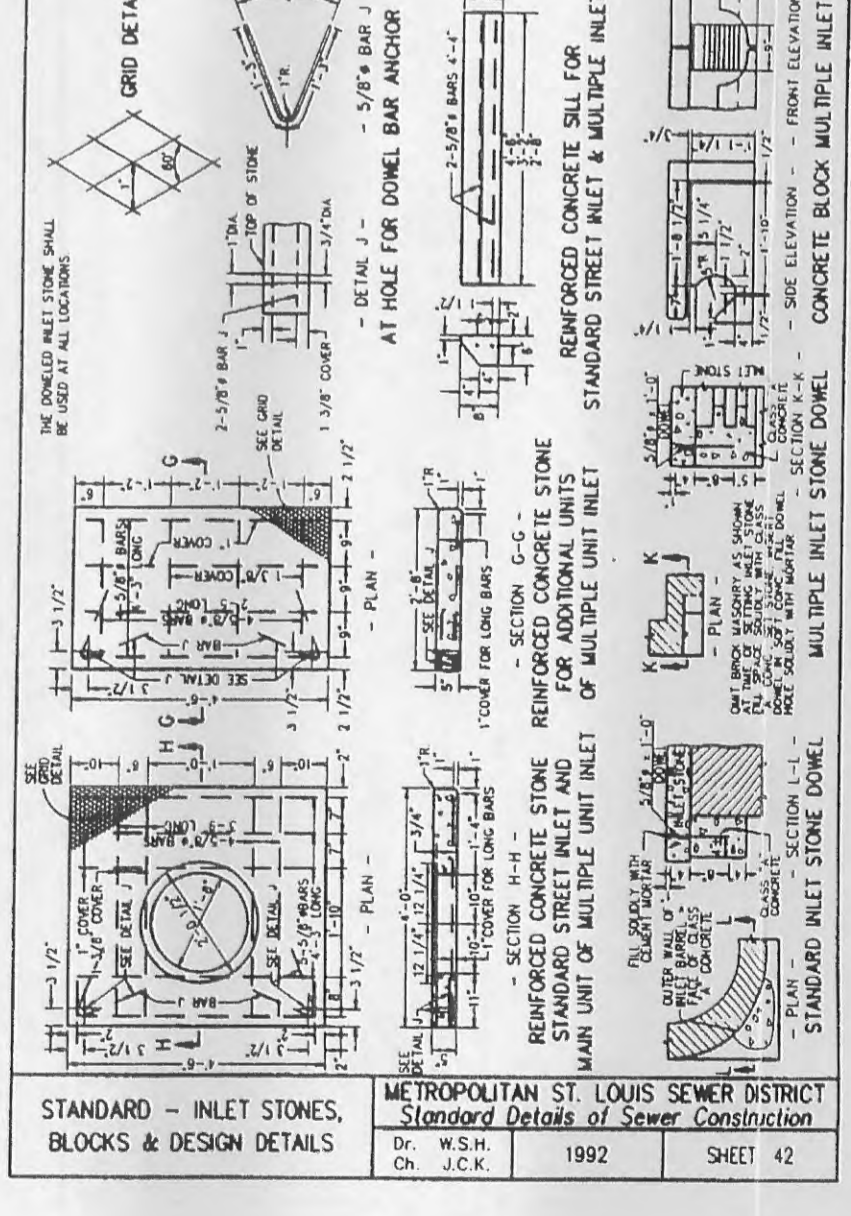
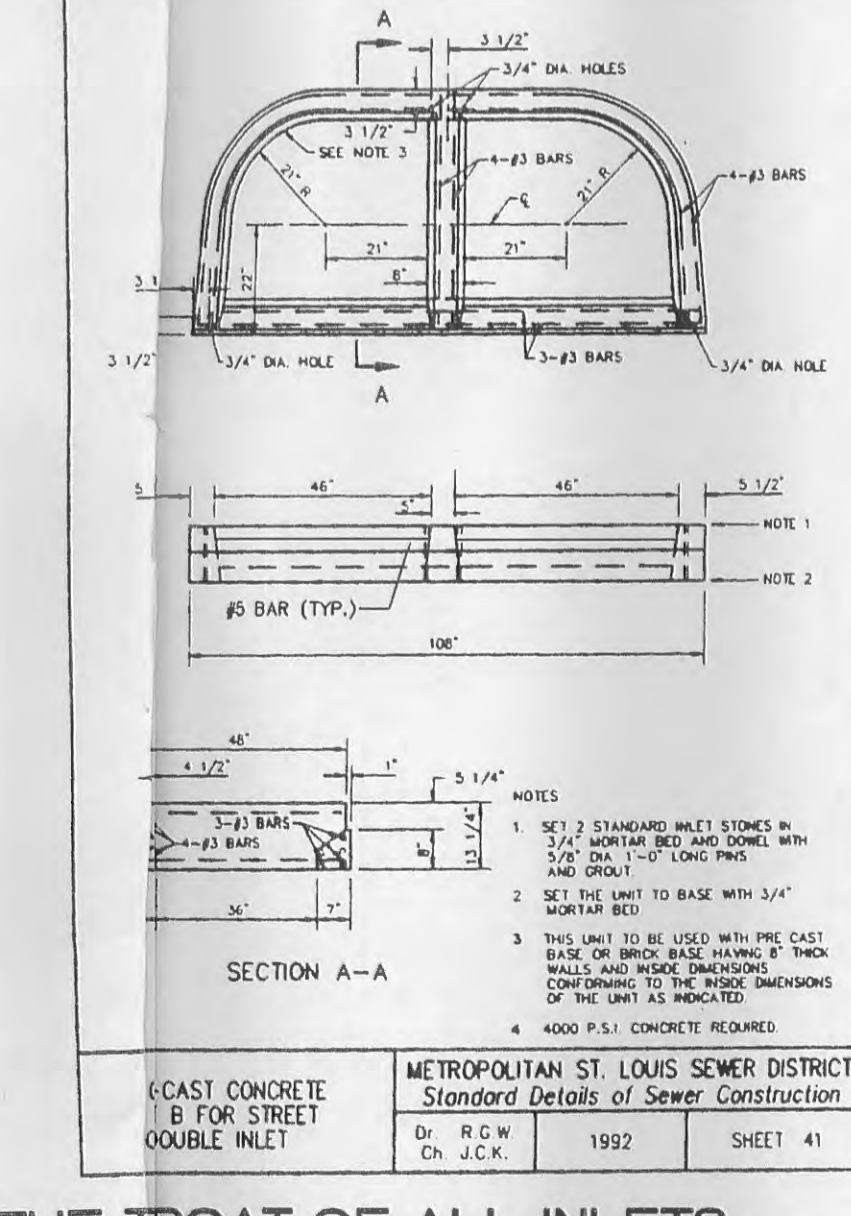
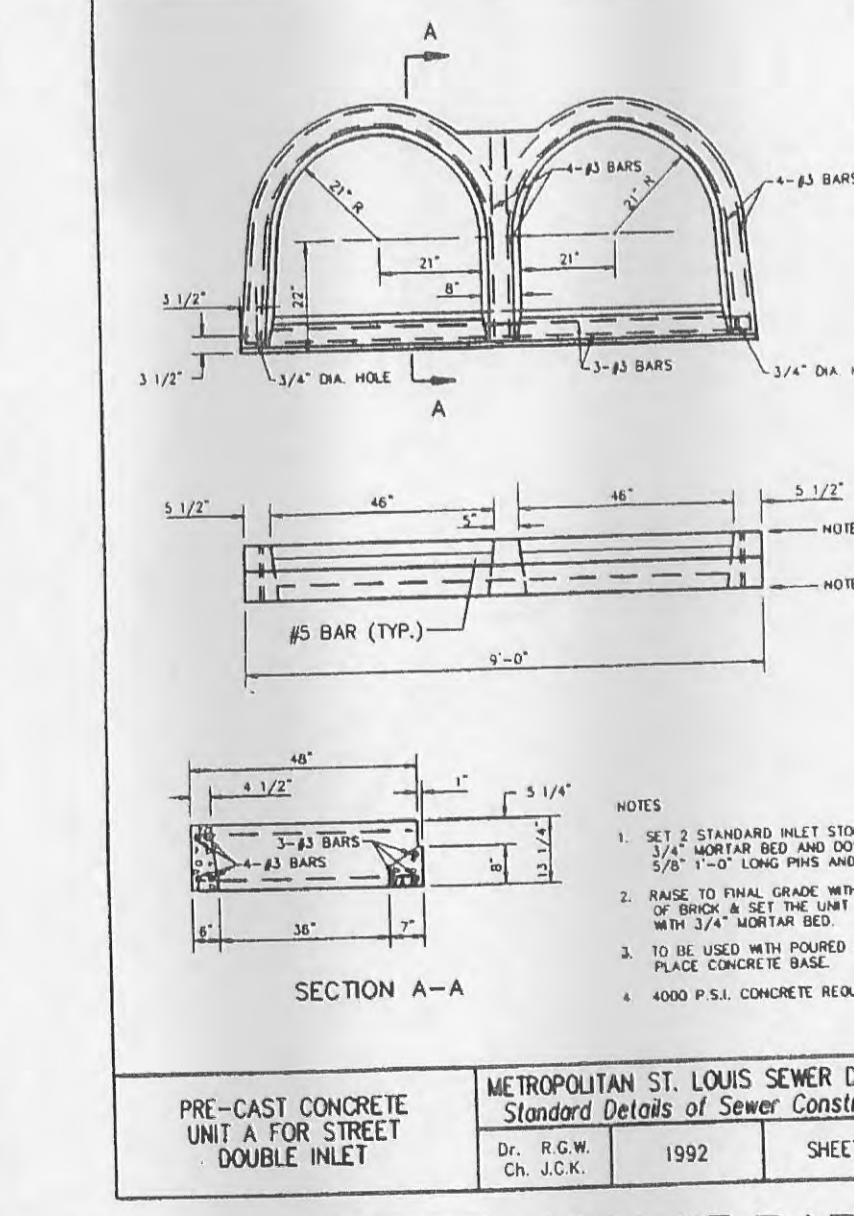
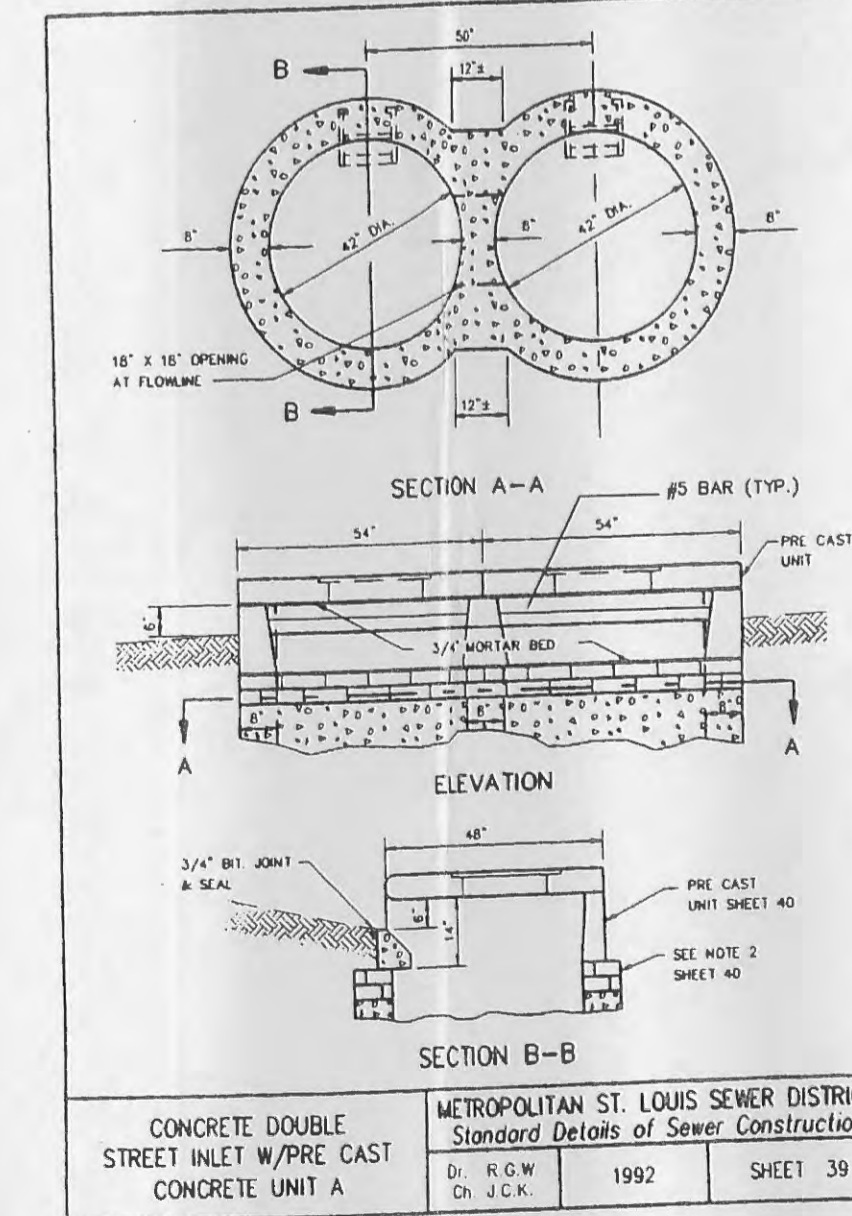
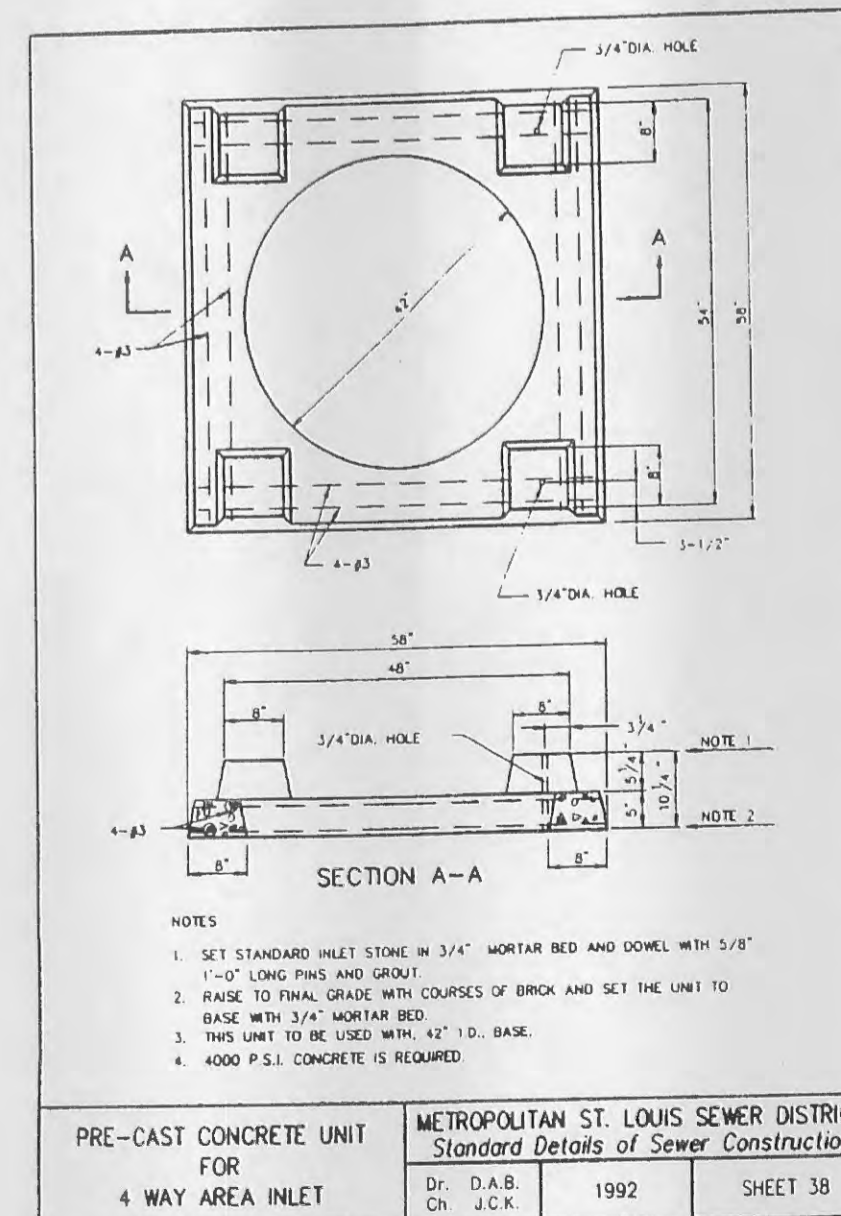
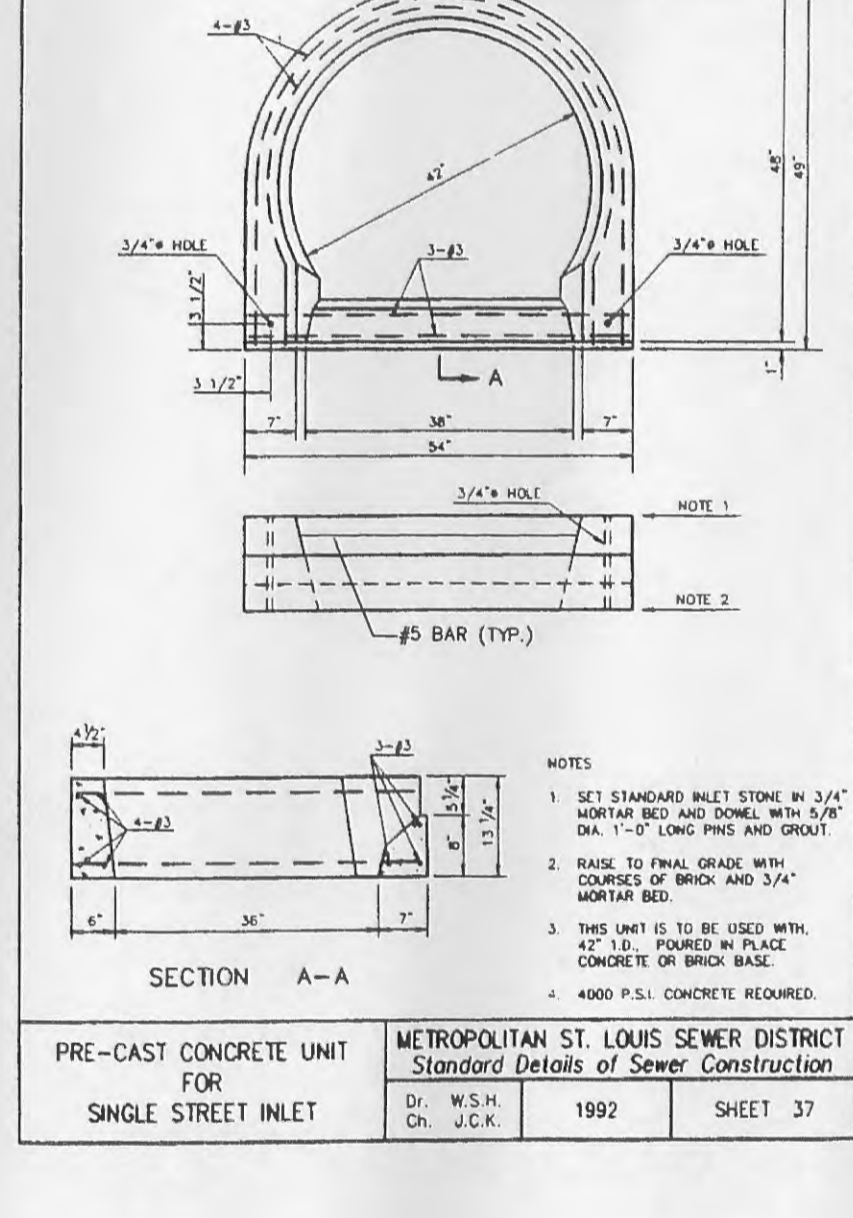
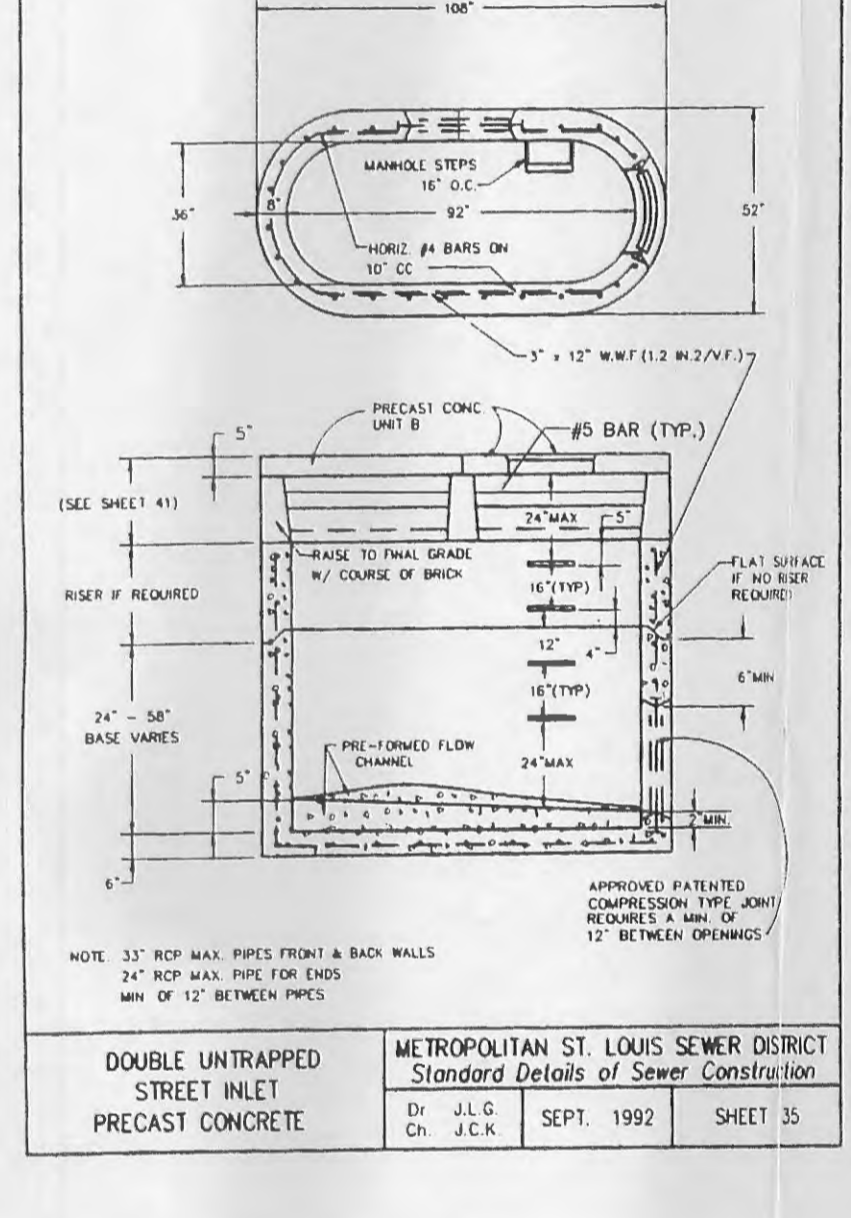
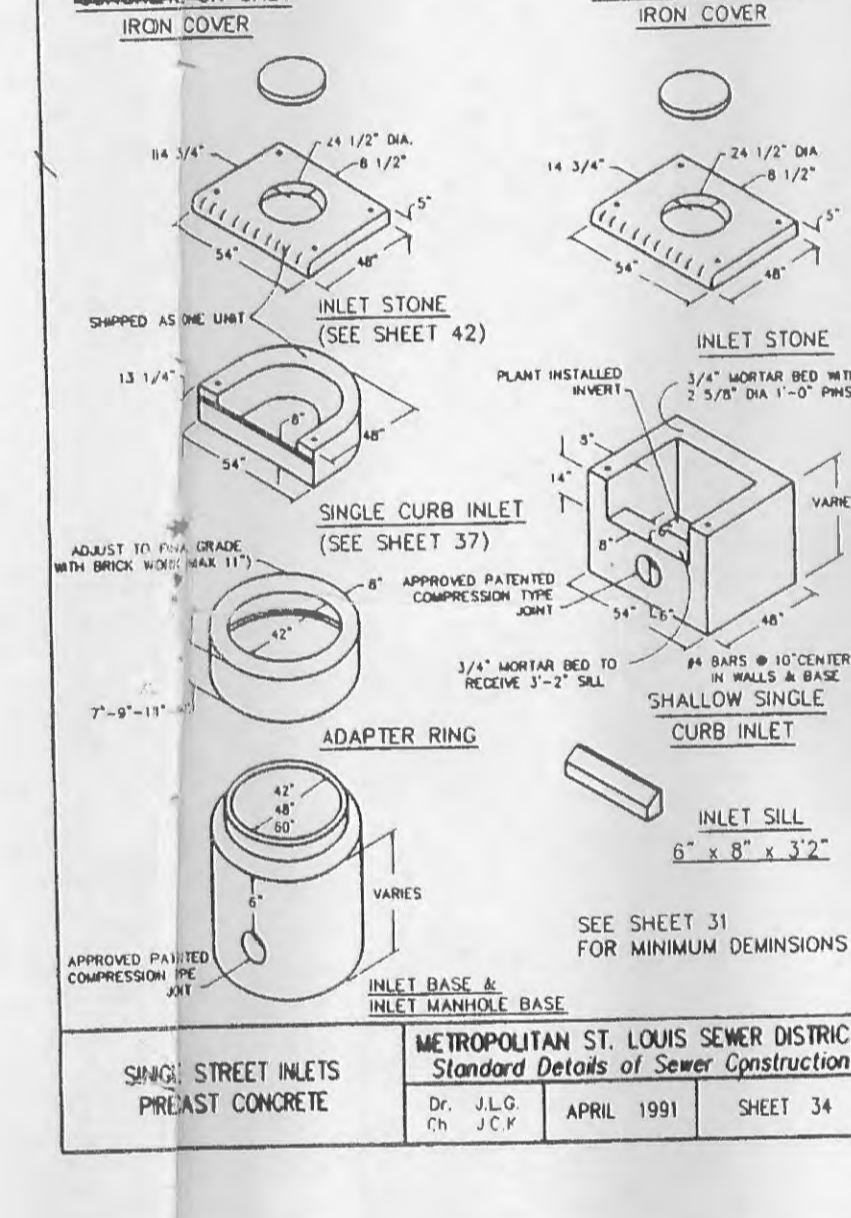
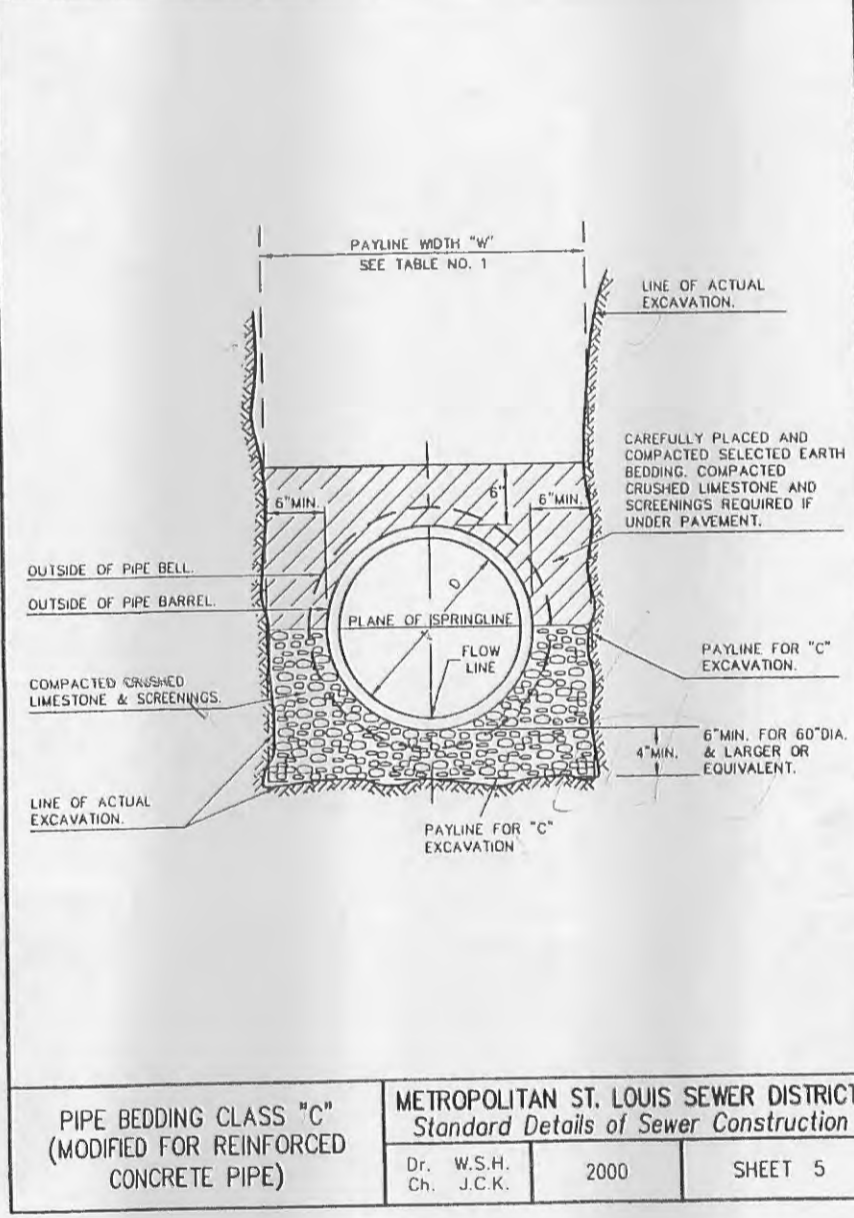
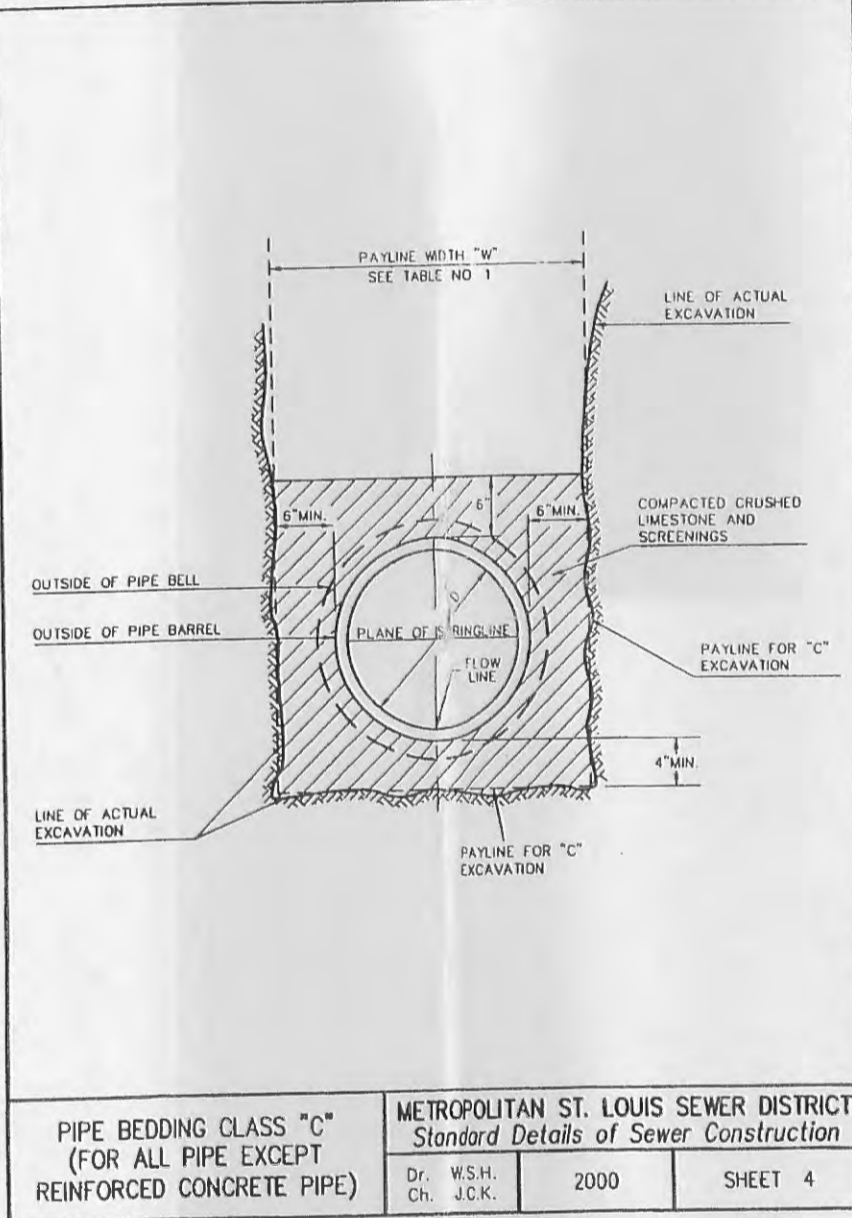
MINIMUM DISTANCE FLOWLINE TO TOP OF STONE OR GRATE

PIPE ID INCHES	AREA INLET CIRCULAR BASE DIA.		2 CURB BELLS CIRCULAR BASE DIA. SQUARE		SHORT STREET INLET CIRCULAR BASE DIA. RECTANGULAR	
	42"	48"	42"	48"	42"	48"
12"	45"	36"	36"	48"	42"	48"
15"	48"	42"	42"	54"	45"	51"
18"	51"	48"	48"	60"	48"	54"
21"	54"	54"	54"	66"	51"	57"
24"	57"	60"	60"	72"	54"	60"
27"	60"	66"	66"	78"	57"	63"
30"	63"	72"	72"	84"	60"	66"
33"	66"	78"	78"	90"	63"	69"

NOTE: 1. 48" DIA. BASE REQUIRES 7" HIGH TRANSITION SECTION TO 42" DIA. SIMILAR TO "ADAPTER RING" SHEET 32.  
2. 60" DIA. BASE REQUIRES 2 1/2" HIGH CONCENTRIC REDUCING TRANSITION TO 42" DIA. SIMILAR TO "ADAPTER RING" SHEET 32.

PRECAST CONCRETE STORMWATER STRUCTURES

METROPOLITAN ST. LOUIS SEWER DISTRICT  
Standard Details of Sewer Construction  
Dr. J.L.G. Ch. J.C.K. SEPT. 1990 SHEET 31



NOTE! ADD #5 BAR TO THE TROAT OF ALL INLETS.

GENERAL DETAILS  
IMPROVEMENT PLANS FOR PHASE  
ONE OF MAGNOLIA COMMERCIAL  
INSTA-CREDIT AUTO MART  
CITY OF O'FALLON

ST. CHARLES ENGINEERING & SURVEYING, INC.  
801 S. FIFTH STREET, SUITE 202  
ST. CHARLES, MO 63801  
TEL: (636) 947-0607 FAX: (636) 947-2448

STATE OF MISSOURI  
REGISTERED PROFESSIONAL ENGINEER  
MICHAEL W. HELL  
MEMBER  
E-0088

ORDER NO. 04-1441  
DATE 9/13/2005