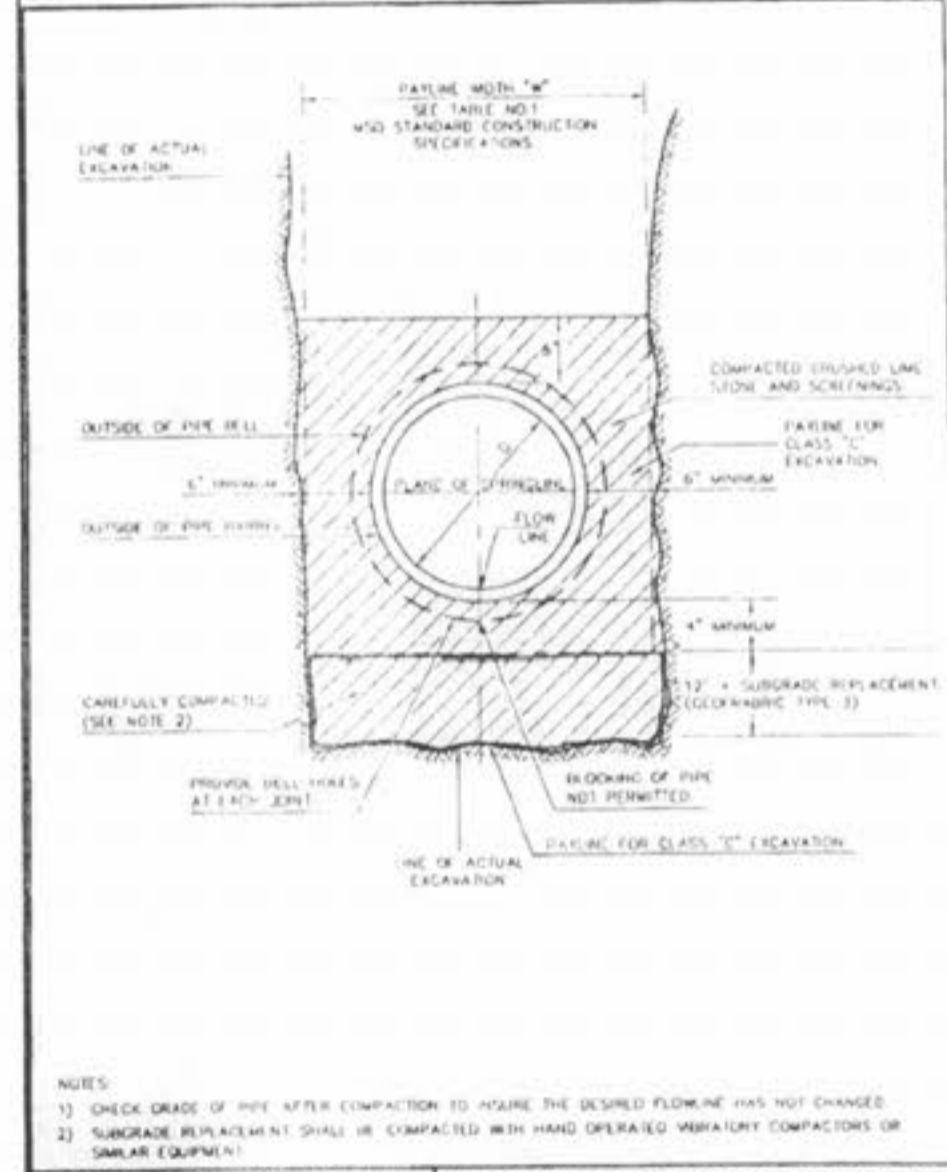


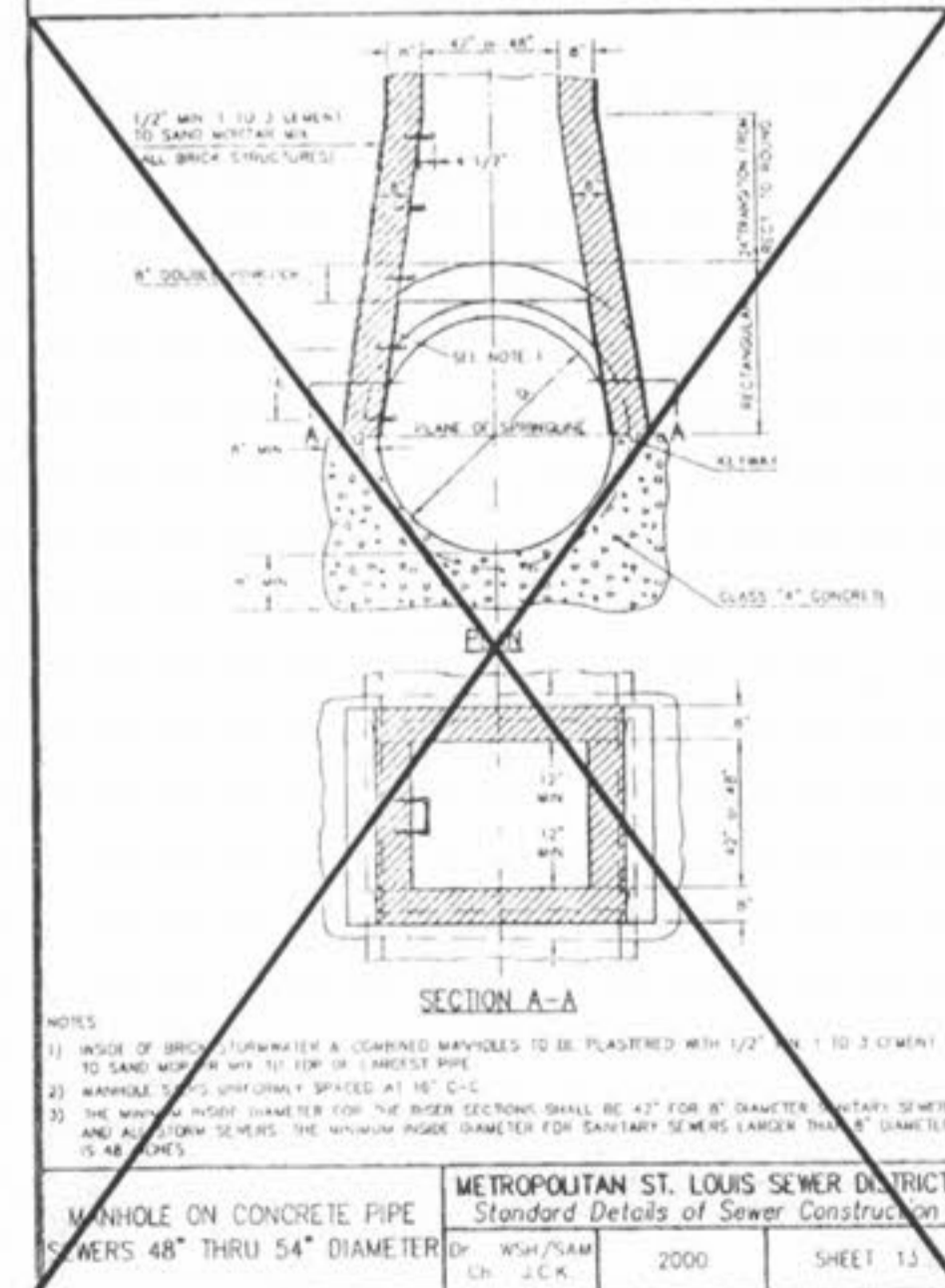
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ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
INSIDE DIAMETER OF PIPE (INCHES)	TYP. PAYLINE WIDTH OF TRENCH (INCHES)	TYP. PAYLINE WIDTH OF TRENCH (FEET)	TYP. VOLUMES OF CONCRETE ENCASUREMENT (CY)	INSIDE DIMENSIONS OF PIPE (INCHES)	TYP. PAYLINE WIDTH OF TRENCH (INCHES)	TYP. PAYLINE WIDTH OF TRENCH (FEET)	TYP. VOLUMES OF CONCRETE ENCASUREMENT (CY)
4	30	2.50	3.28				
6	30	2.50	3.58				
8	30	2.50	3.87				
10	30	2.50	4.28				
12	30	2.50	4.25				
15	36	3.00	5.50				
18	38	3.17	5.71	14 x 23	41	3.42	3.94
21	38	3.17	5.87				
24	42	3.50	7.39	19 x 30	49	4.08	7.68
27	45	3.75	8.18	22 x 34	53	4.42	8.61
30	49	4.08	9.30	24 x 38	58	4.83	9.72
33	53	4.42	10.51	27 x 42	63	5.17	10.71
36	56	4.67	11.43	29 x 45	68	5.50	11.72
39	60	5.00	12.43	32 x 48	73	5.82	12.74
42	63	5.25	13.54	34 x 53	75	6.25	14.05
44	70	5.83	15.63	38 x 60	83	6.92	16.16
54	77	6.42	18.15	43 x 68	92	7.67	18.81
60	84	7.00	20.71	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	27.42
78	105	8.76	29.38	63 x 98	126	10.50	30.50
84	112	9.35	32.57	68 x 106	135	11.25	33.91
90	119	9.93	35.80	72 x 113	143	11.92	36.94
96	126	10.52	39.17	77 x 121	152	12.67	40.54
102	133	11.08	42.93	82 x 129	160	13.33	44.45
108	140	11.67	46.75	87 x 136	169	14.06	48.70
114	147	12.25	50.80	92 x 143	178	14.77	53.30
120	154	12.84	55.17	97 x 151	187	15.47	58.19
126	161	13.42	59.82	102 x 159	196	16.17	63.38
132	168	14.00	64.77	106 x 166	205	16.83	68.88
144	180	15.11	74.40	116 x 180	218	18.17	77.58

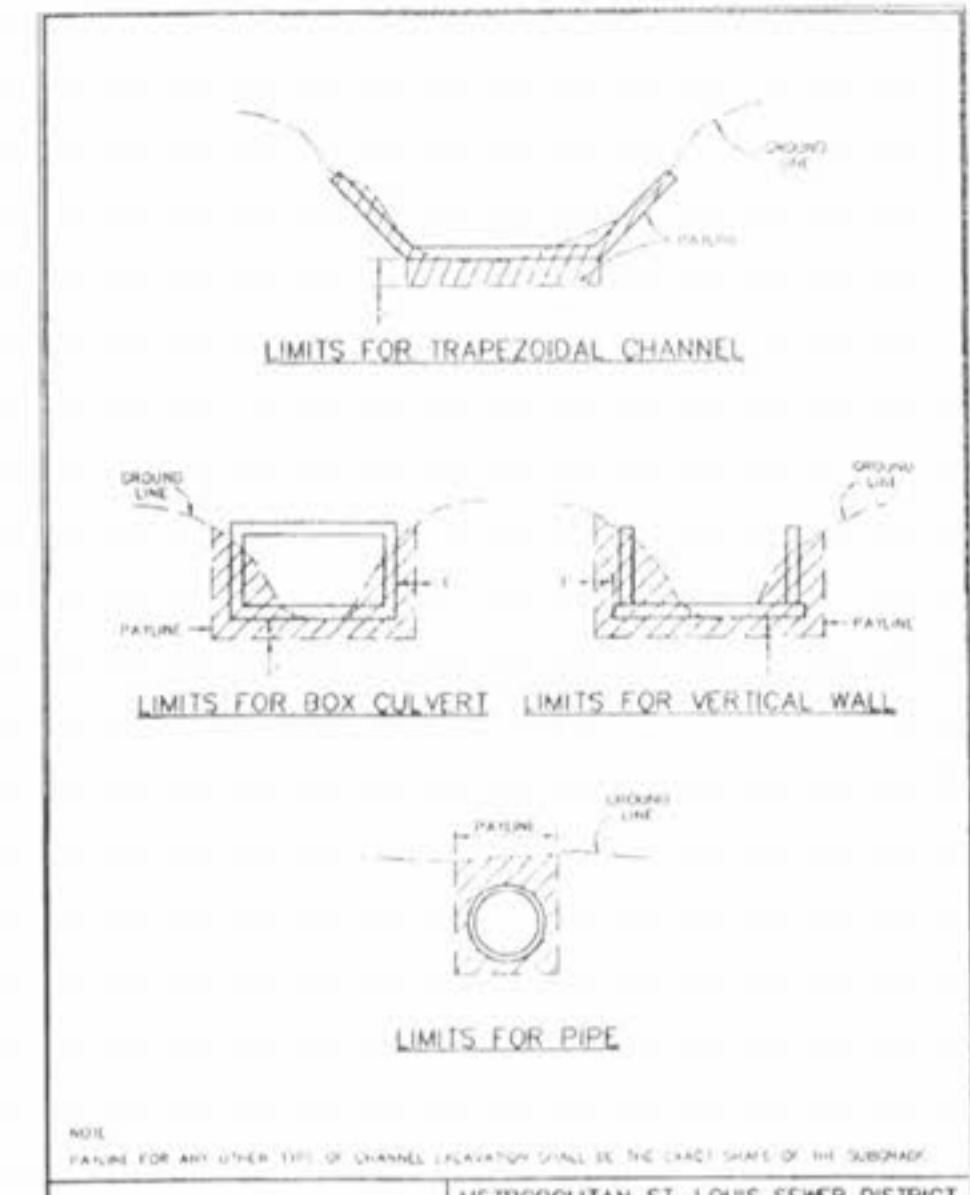
TABLE 1
PAYLINE WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. B.E.R. 2000 SHEET 1
Ch. J.C.K.



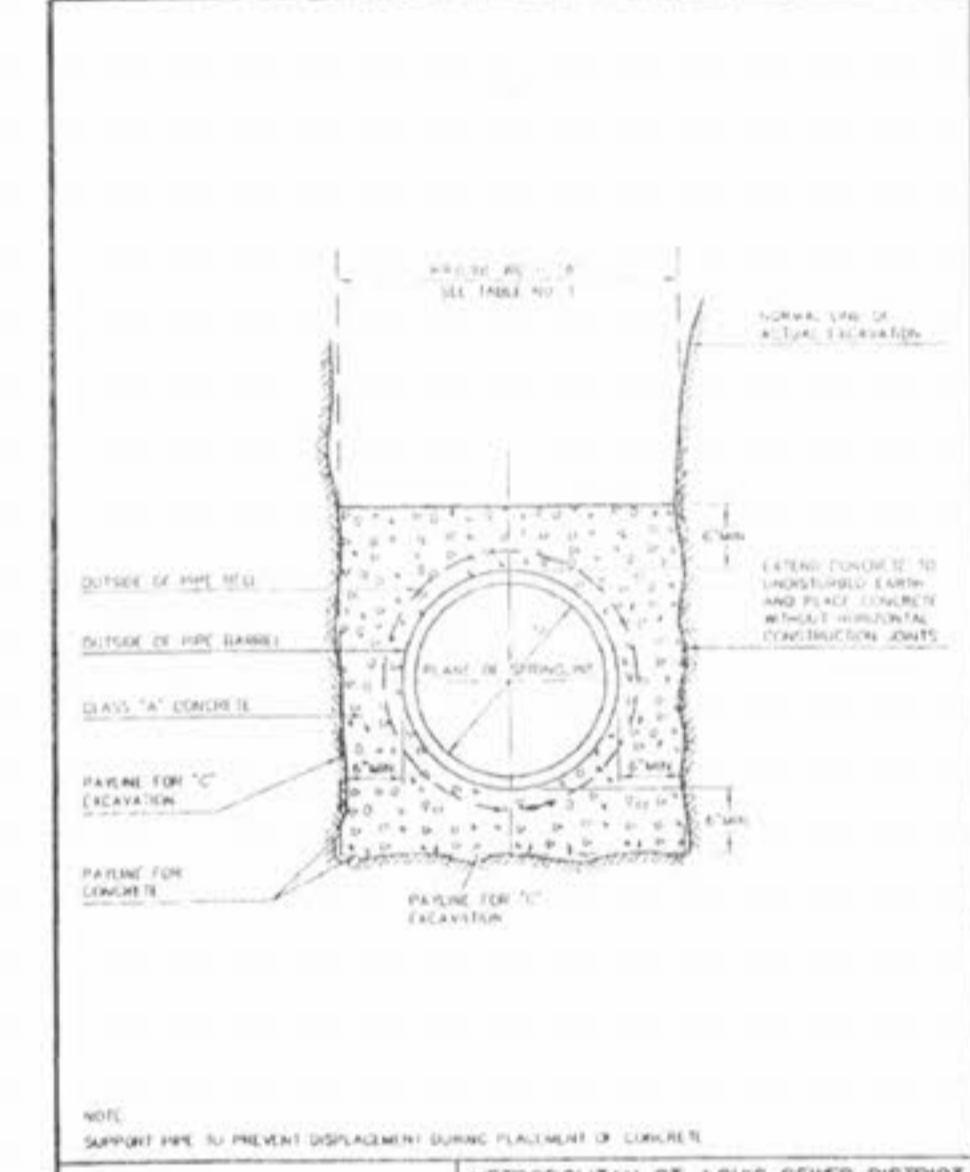
SPECIAL PIPE BEDDING DETAIL FOR SUBGRADE REPLACEMENT 12" DEPTH OR MORE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. S.A.M. 2000 SHEET 7
Ch. P.W.S.



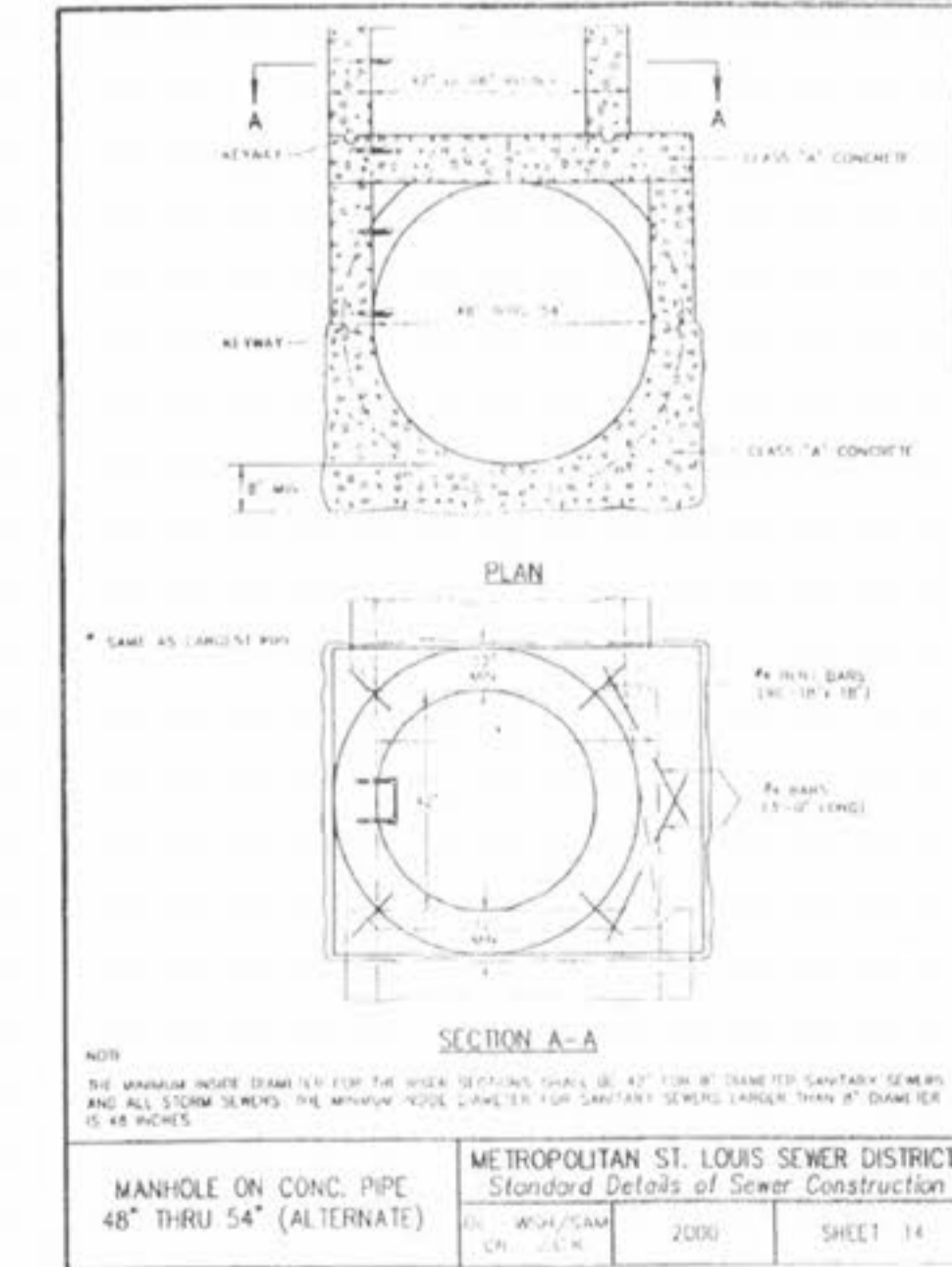
MANHOLE ON CONCRETE PIPE SEWERS 48" THRU 54" DIAMETER
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H./S.A.M. 2000 SHEET 13
Ch. J.C.K.



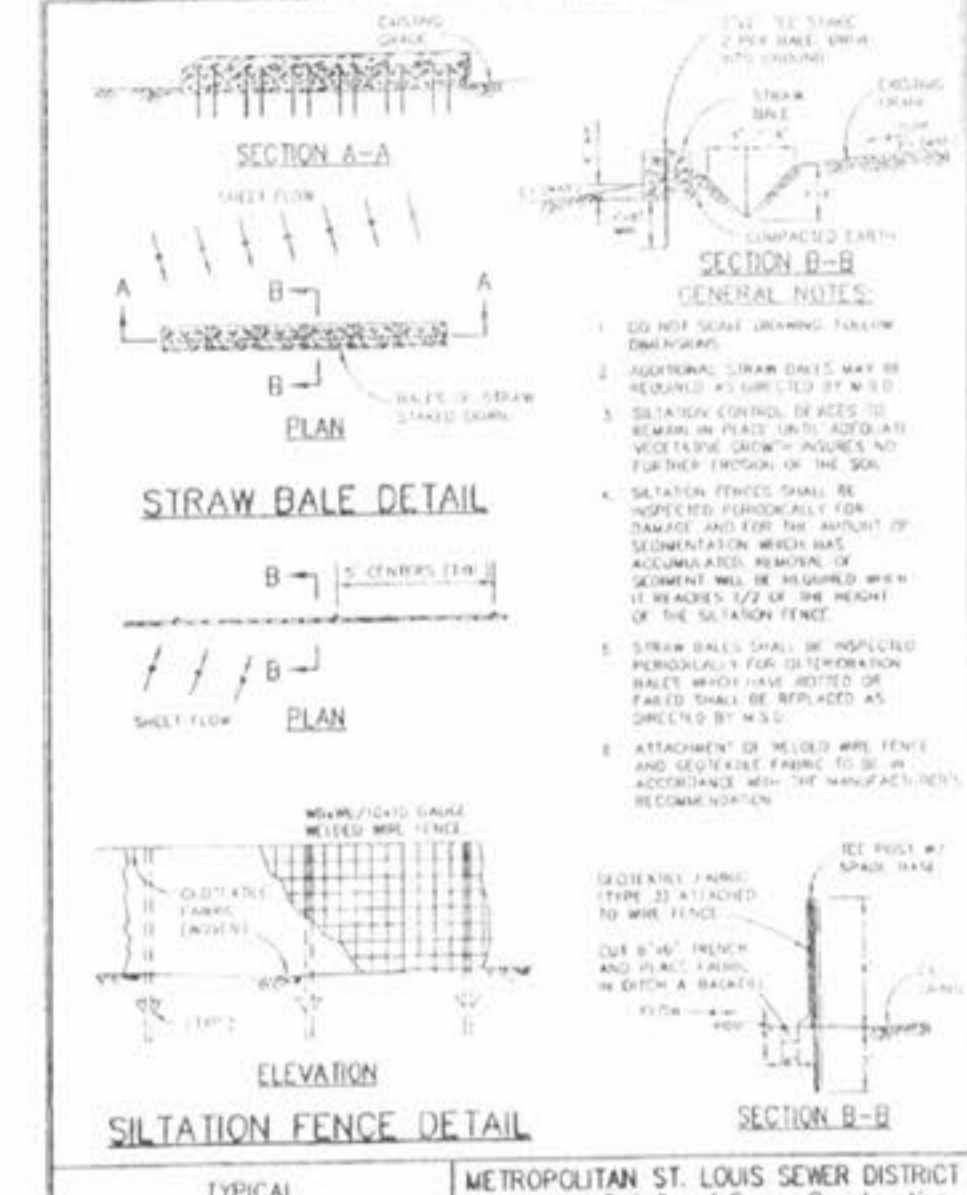
PAYLINE LIMITS FOR EXCAVATION
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H. 2000 SHEET 2
Ch. J.C.K.



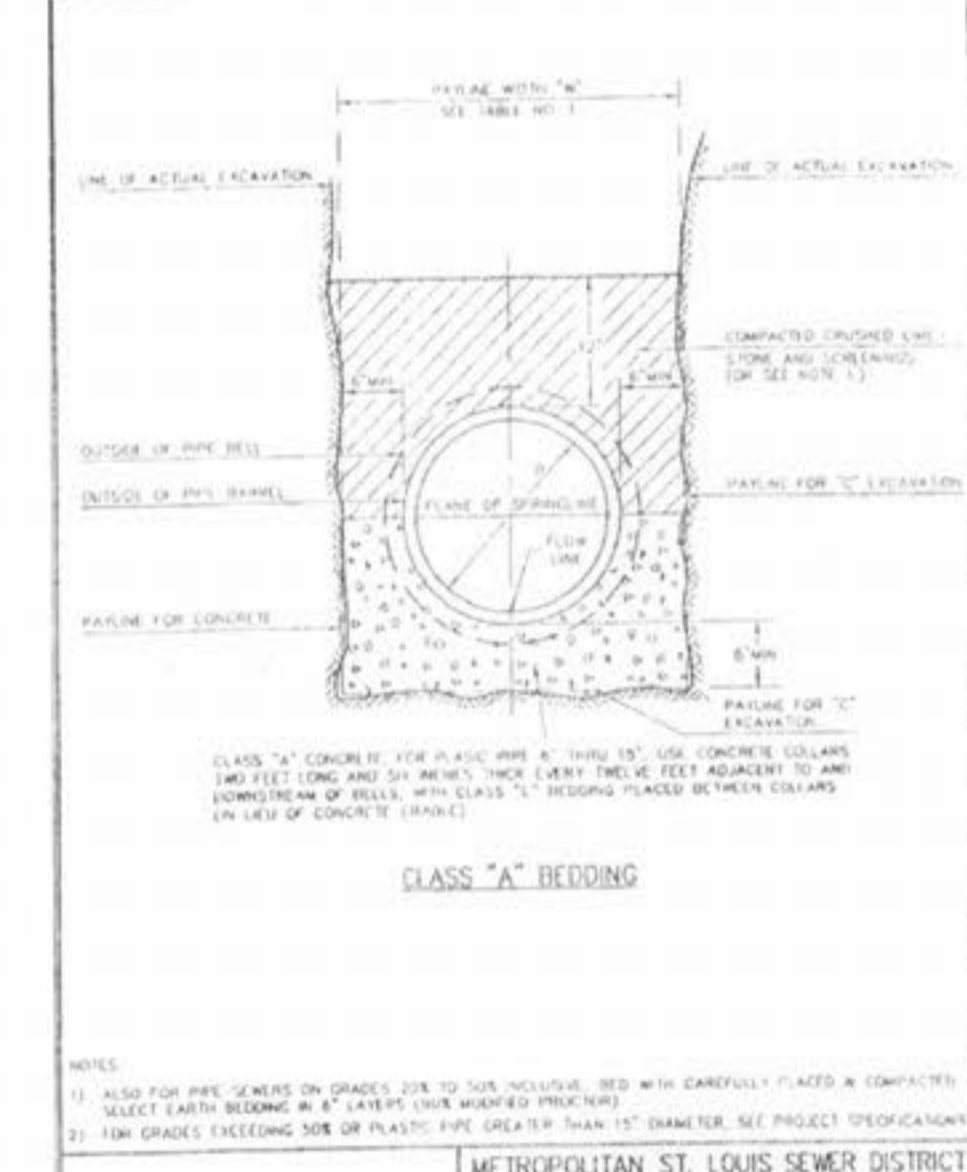
CONCRETE ENCASUREMENT
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H. 2000 SHEET 8
Ch. J.C.K.



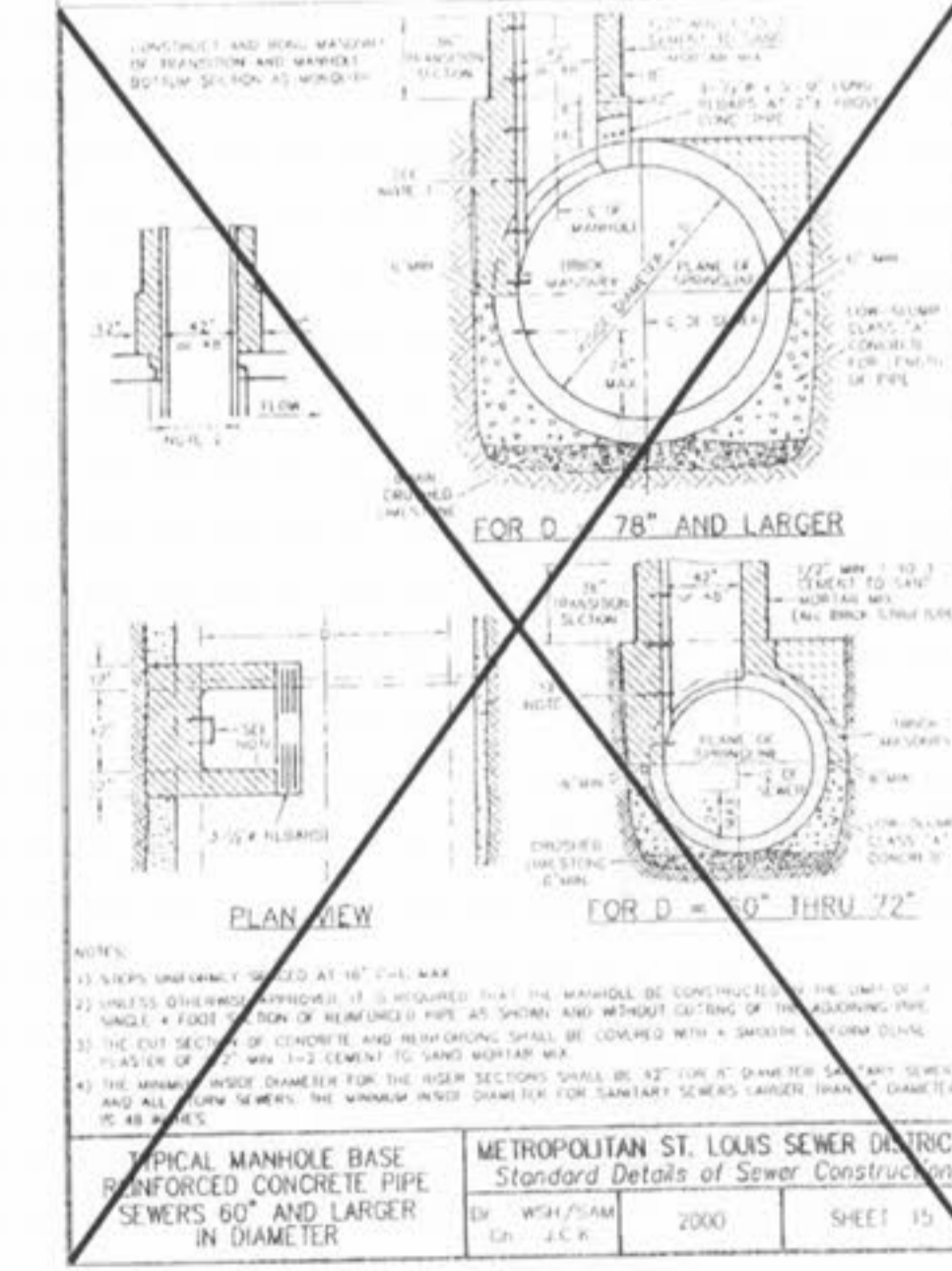
MANHOLE ON CONC. PIPE 48" THRU 54" (ALTERNATE)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H./S.A.M. 2000 SHEET 14
Ch. J.C.K.



TYPICAL SILTATION CONTROL DEVICES
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. A.L.S./S.A.M. 2000 SHEET 3
Ch. P.E.K.



CONCRETE CRADLE
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H./S.A.M. 2000 SHEET 5
Ch. J.C.K.

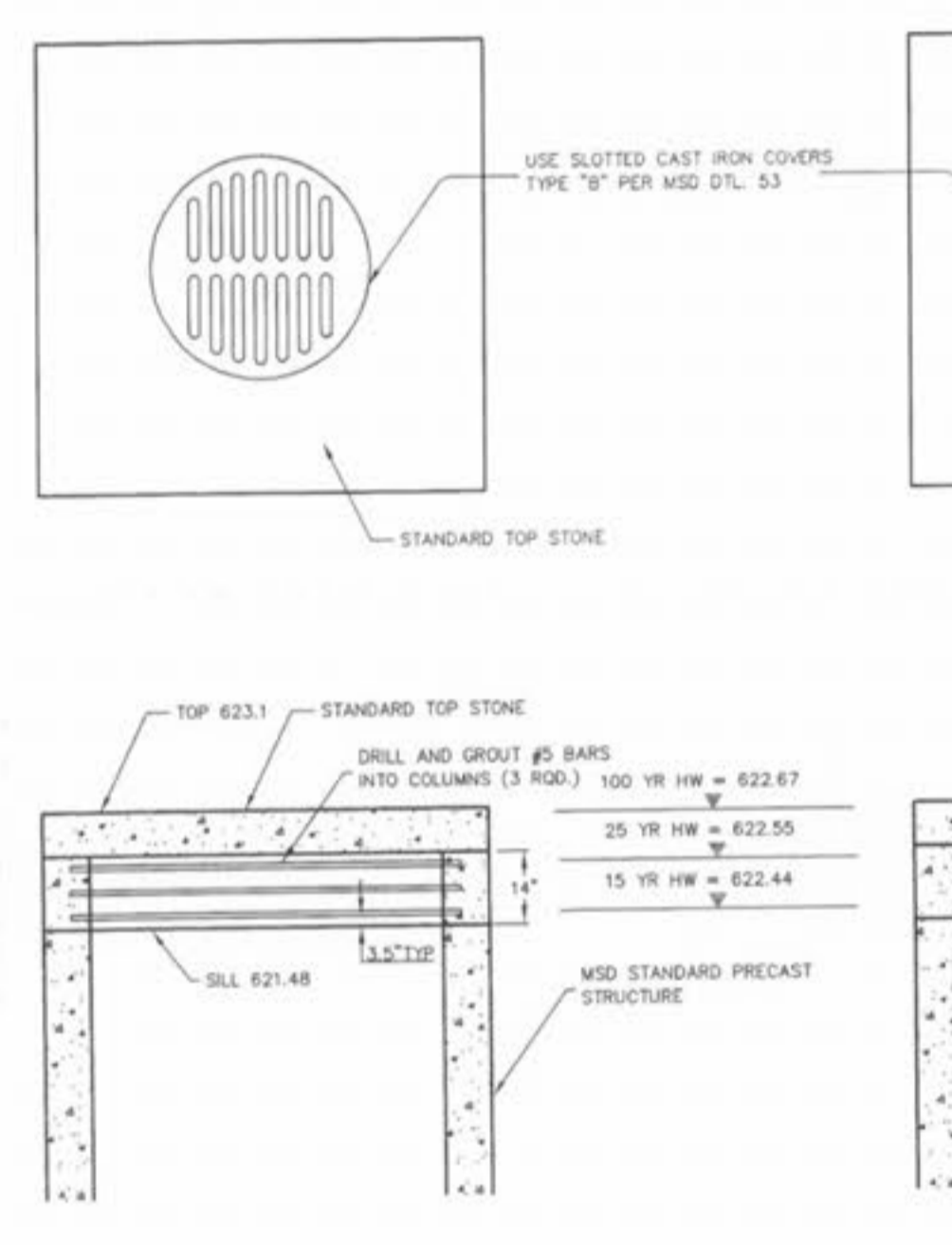


TYPICAL MANHOLE BASE REINFORCED CONCRETE PIPE SEWERS 60" AND LARGER IN DIAMETER
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H./S.A.M. 2000 SHEET 15
Ch. J.C.K.

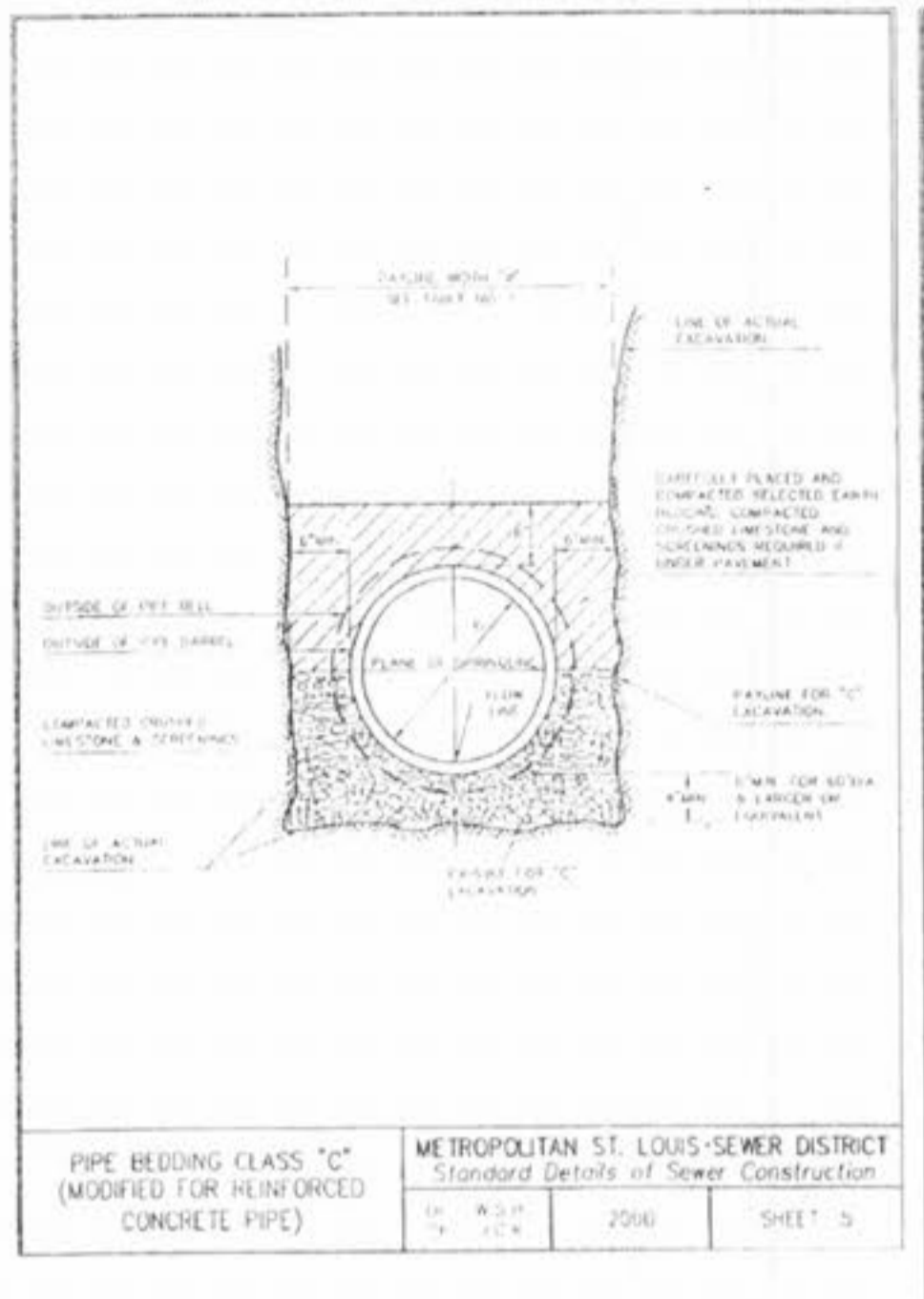
15 YEAR 20 MINUTE STORM HIGH WATER (WEIR EQUATION)
Q = 96.12
C = 3.32
L = 31.00
 $H = (Q/CL)^{2/3} = (96.12 / 3.32 \times 31)^{2/3} = 0.96$
H.W. = 621.48 + 0.96 = 622.44
15 YEAR 20 MIN. HIGH WATER = 622.44

25 YEAR 20 MINUTE STORM HIGH WATER (WEIR EQUATION)
Q = 113.42
C = 3.32
L = 31.00
 $H = (Q/CL)^{2/3} = (113.42 / 3.32 \times 31)^{2/3} = 1.07$
H.W. = 621.48 + 1.07 = 622.55
25 YEAR 20 MIN. HIGH WATER = 622.55

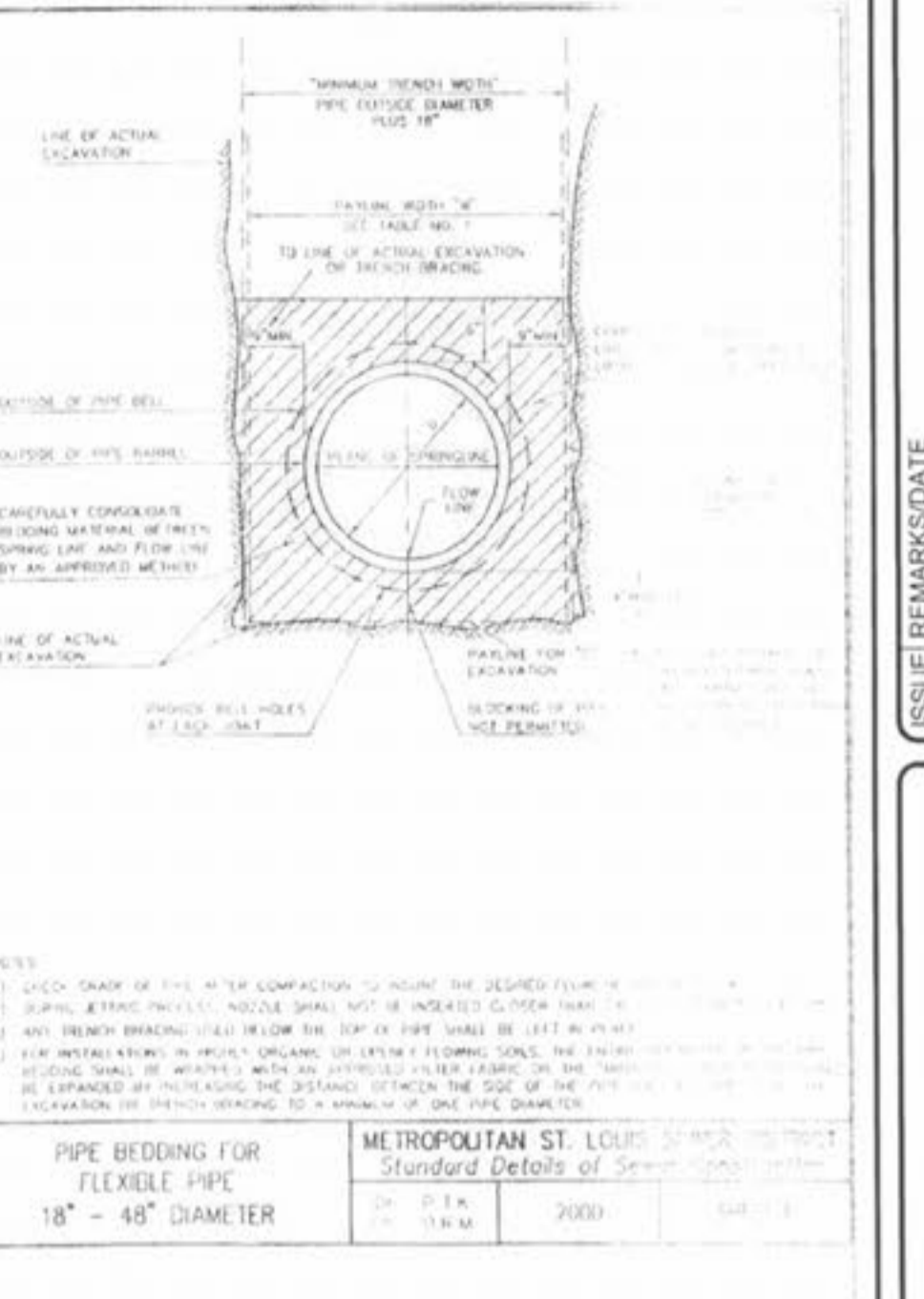
100 YEAR 20 MINUTE STORM HIGH WATER (WEIR EQUATION)
Q = 133.61
C = 3.32
L = 31.00
 $H = (Q/CL)^{2/3} = (133.61 / 3.32 \times 31)^{2/3} = 1.19$
H.W. = 621.48 + 1.19 = 622.67
100 YEAR 20 MIN. HIGH WATER = 622.67



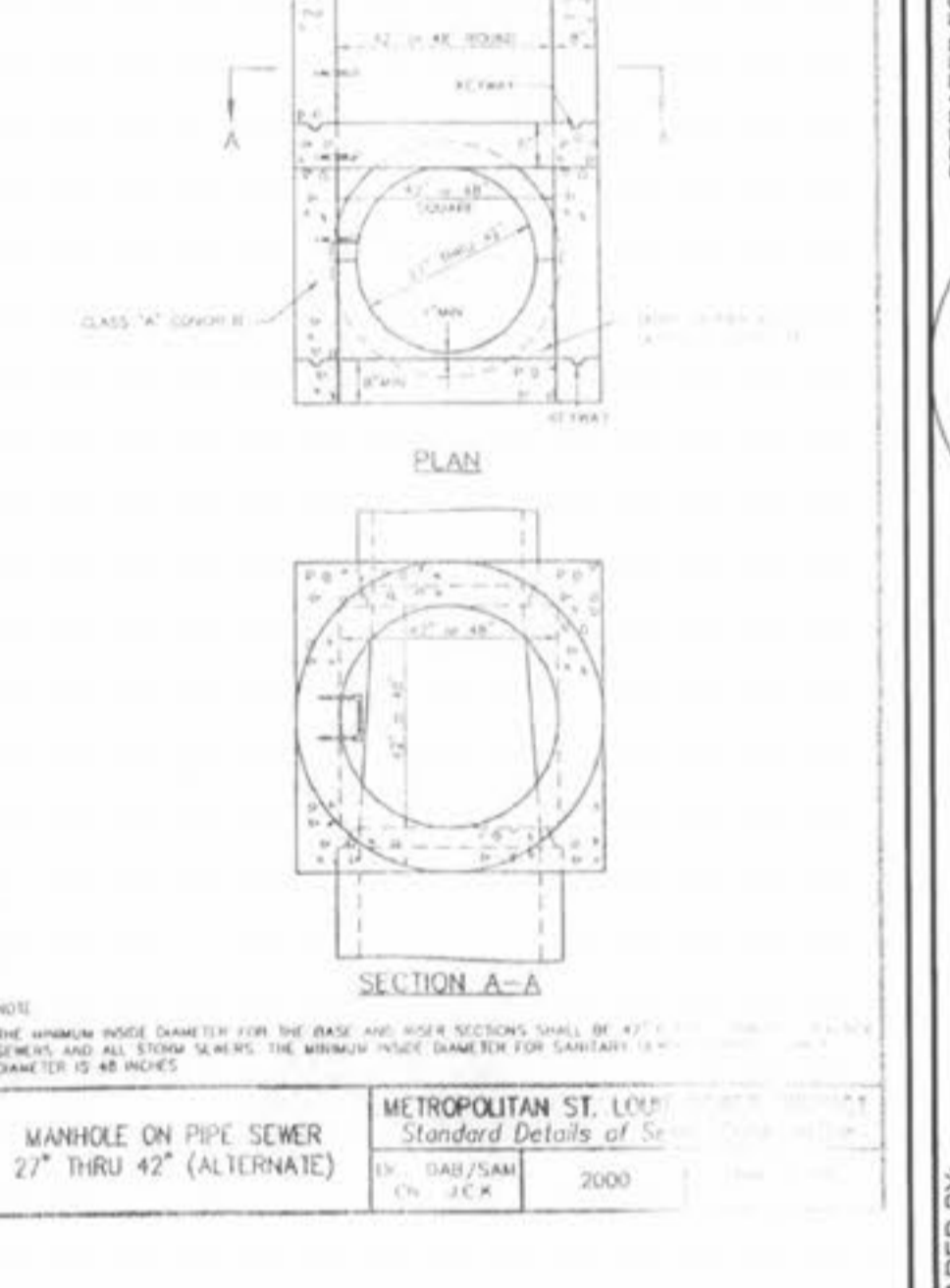
SINGLE AREA INLET 209.1
OPEN ALL SIDES
DOUBLE AREA INLET 209
OPEN ALL SIDES
SPECIAL STRUCTURES "209 & 209.1"
N.T.S.



PIPE BEDDING CLASS "C" (MODIFIED FOR REINFORCED CONCRETE PIPE)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H. 2000 SHEET 5
Ch. J.C.K.



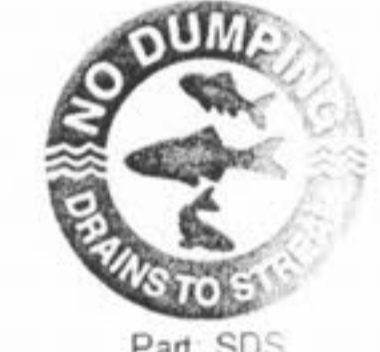
MANHOLE ON PIPE SEWER 18" - 48" DIAMETER
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. P.E.K. 2000 SHEET 10
Ch. J.C.K.



MANHOLE ON PIPE SEWER 27" THRU 42" (ALTERNATE)
METROPOLITAN ST. LOUIS SEWER DISTRICT
Standard Details of Sewer Construction
Dr. W.H./S.A.M. 2000 SHEET 11
Ch. J.C.K.



ACP International
Style: Crystal Cap
www.acpinternational.com



DAS Manufacturing, Inc.
Style: Standard Style
www.dasmanufacturing.com

The City will allow these storm sewer markers and adhesive procedures as shown on these two websites. Other markers and adhesive procedures may be allowed if approved by the City of O'Fallon.

STORM SEWER MARKING DETAIL
NOT TO SCALE

ISSUE/REMARKS/DATE

10	CITY COMMENTS 02/03/06
11	CITY COMMENTS 02/03/06
3	DCSD COMMENTS 05/09/06
4	DCSD COMMENTS 05/09/06
5	DCSD AND CITY COMMENTS 01/11/06
6	CITY COMMENTS 01/22/06
7	CITY COMMENTS 01/22/06
8	WATER DISTRICT #2 COMMENTS 01/17/06
9	DEVELOPER REVISIONS 01/24/06

PREPARED FOR:
CMB RHODES, L.L.C.
5091 NEW BAUMGARTNER ROAD
ST. LOUIS, MISSOURI 63129
(314) 487-6717

PREPARED BY:
THE STERLING CO.
ENGINEERS & SURVEYORS
5055 NEW BAUMGARTNER ROAD
ST. LOUIS, MISSOURI 63129
(314) 637-0400 FAX 469-4699
E-Mail: Sterling@sterling-engr.com

DRAWN: LG
DESIGNED: JCM
CHECKED: JMT
PROJECT: COUNTRYSHIRE
SHEET TITLE: MSD CONSTRUCTION DETAILS

NO.	02	12	311
M.S.D.	P#	SHEET	CD4
DIGITAL FILE LOCATION	SEARCH=STERLING-2		
OF			

BASE MAP