

CIRCULAR CONCRETE PIPE
EMBANKMENT FILL HEIGHT IN FEET
MEASURED FROM TOP OF PIPE IN FEET, 120 PCF SOIL DENSITY

PIPE CLASS PIPE DIA. (IN.)	CLASS II			CLASS III			CLASS IV			CLASS V		
	BEDDING A	B	C	A	B	C	A	B	C	A	B	C
12	16	10	8	21	13	11	31	19	16	*	29	24
15	16	10	8	21	13	11	32	19	16	*	30	25
18	16	10	8	21	13	11	32	20	17	*	30	25
21	16	10	8	22	14	12	33	20	17	*	31	25
24	17	10	9	22	14	12	33	21	17	*	31	26
27	17	10	9	22	14	12	33	21	18	*	31	26
30	17	10	9	23	14	12	33	21	18	*	31	26
33	17	11	9	23	14	12	33	21	18	*	31	26
36	17	11	9	23	14	12	34	22	18	*	32	27
42	17	11	9	24	15	12	34	22	18	*	32	27
48	18	11	9	24	15	13	34	22	18	*	32	27
54	18	11	10	24	15	13	35	22	18	*	32	27
60	18	11	10	25	15	13	35	22	18	*	33	27
66	18	11	10	25	15	13	35	22	19	*	33	27
72	19	12	11	25	15	13	35	22	19	*	33	27
78	19	12	11	25	15	13	36	22	19	*	33	27
84	19	12	11	25	15	13	36	22	19	*	33	28
90	19	12	11	25	15	13	36	22	19	*	33	28
96	19	12	11	25	15	13	36	22	19	*	33	28
102	19	13	12	25	15	14	36	22	19	*	33	28
108	19	13	12	25	16	15	36	22	19	*	33	28

FILL HEIGHTS ARE BASED ON A 0.7 SETTLEMENT RATIO
PROJECTION RATIOS

A = 0.7

B = 0.5

C = 0.7

* = FILL HEIGHT GREATER THAN 45', D-LOAD EQUATION MUST BE USED

B = FIRST CLASS BEDDING, MINIMUM OF 6" GRANULAR BEDDING ACCURATELY SHAPED FOR MIN. 60% OF THE PIPE AND 80% FOR ARCH. INITIAL EXCAVATION IS APPROXIMATELY 15% OF THE OUTSIDE DIA. OR RISE OF THE PIPE ABOVE THE ESTABLISHED GRADE FOR THE BOTTOM OF THE PIPE.

C = ORDINARY BEDDING, CAREFULLY SHAPE THE FOUNDATION SOIL TO FIT THE LOWER PART OF THE PIPE EXTERIOR TO A DEPTH OF AT LEAST 15% OF THE OUTSIDE DIA. FOR CIRCULAR PIPES, AND AT LEAST 50% OF THE HEIGHT OF ARCH PIPE.

MINNEAPOLIS DESIGN REFERENCE
MNDOT DRAINAGE MANUAL
SECTION 2.5; AUGUST 30, 2000
NOT TO SCALE



DRW: DCD

DATE: 12/02

APP: HRS

DATE: 1/07

EMBANKMENT FILL HEIGHT
FOR CONCRETE PIPE

STANDARD
PLATE
NO.
SEWR-6004