THIS TABLE APPLIES TO HIGH STRENGTH VITRIFIED CLAY PIPE (VCP)

DEPTHS LISTED BELOW = DEPTH OF COVER (IN FEET) TO TOP OF PIPE

NARROW DITCH CONDITION ("Y")

Y= MAXIMUM EXCAVATED WIDTH	SEWER PIPE I.D.	CLASSIFICATION OF BEDDING △1					
		A	D	C	B	BB	A
2'-6"	8"	0-4	4-12	12-17	17-50	*	*
2'-6"	10"	0-4	4-11	11-21	21-50	*	*
2'-9"	12"	0-4	4-10	10-19	19-50	*	*
3'-6"	15"	0-4	4-8	8-13	13-20	20-27	*
4'-0"	18"	0-4	4-8	8-13	13-18	18-25	*
4'-3"	21"	0-4	4-9	9-14	14-20	20-27	*
4'-6"	24"	0-4	4-10	10-15	15-23	23-30	*
4'-9"	27"	0-4	4-10	10-15	15-22	22-30	*
5'-0"	30"	0-4	4-10	10-15	15-22	22-29	29-50
5'-3"	33"	0-4	4-10	10-15	15-21	21-27	27-44
5'-6"	36"	0-4	4-10	10-15	15-22	22-28	28-45
6'-0"	39"	0-4	4-9	9-14	14-20	20-25	25-36
6'-3"	42"	0-4	4-10	10-15	15-20	20-25	25-36

WIDE TRENCH CONDITION ("X")

X= TRANSITION WIDTH	SEWER PIPE I.D.	CLASSIFICATION OF BEDDING						
		A	D	C	B	BB	A	AA
3'-2"	8"	0-4	4-12	12-17	17-19	19-21	21-23	23-50
3'-7"	10"	0-4	4-11	11-15	15-19	19-20	20-22	22-44
4'-0"	12"	0-4	4-10	10-14	14-17	17-19	19-20	20-33
4'-7"	15"	0-4	4-9	9-13	13-16	16-18	18-19	19-29
5'-1"	18"	0-4	4-9	9-13	13-16	16-18	18-19	19-29
5'-7"	21"	0-4	4-9	9-12	12-16	16-18	18-20	20-29
6'-4"	24"	0-4	4-9	9-12	12-16	16-18	18-19	19-27
6'-7"	27"	0-4	4-9	9-12	12-15	15-18	18-20	20-28
7'-1"	30"	0-4	4-8	8-12	12-15	15-17	17-19	19-26
7'-6"	33"	0-4	4-8	8-11	11-14	14-16	16-18	18-25
7'-11"	36"	0-4	4-8	8-11	11-14	14-16	16-19	19-25
8'-5"	39"	0-4	4-8	8-11	11-14	14-16	16-18	18-25
8'-10"	42"	0-4	4-8	8-10	10-13	13-15	15-18	18-24

INTERMEDIATE DITCH CONDITION ("Y")

Y=	SEWER PIPE I.D.	CLASSIFICATION OF BEDDING		
		BB	A	AA
2'-9"	8"	21-25	25-50	*
3'-0"	10"	19-27	27-50	*
3'-3"	12"	18-25	25-50	*
3'-9"	15"	16-21	21-37	37-50
4'-3"	18"	16-20	20-32	32-50
4'-6"	21"	18-23	23-37	37-50
5'-2"	24"	16-21	21-30	30-50
5'-5"	27"	17-21	21-30	30-50
5'-9"	30"	16-20	20-29	29-49
6'-2"	33"	15-19	19-27	27-42
6'-6"	36"	16-19	19-27	27-41
6'-11"	39"	15-19	19-26	26-38
7'-5"	42"	15-18	18-24	24-35

NOTE: FOR DEPTHS NOT LISTED ON INTERMEDIATE DITCH CONDITION SEE WIDE TRENCH CONDITION

VCP PIPE	EMWD CLASS	BEDDING MATERIAL	LOAD FACT.	1990 NCPI CLASS
	D	SELECT NATIVE MATERIAL	1.1	MOD. D
	C	CRUSHED ROCK PAD	1.5	C
	B	CRUSHED ROCK BED	1.9	B
	BB	CRUSHED ROCK ENVELOPE	2.2	-
	A	CONCRETE SIDE CRADLE	2.7	A-III
	AA	REINFORCED CONCRETE ARCH	3.4	A-II

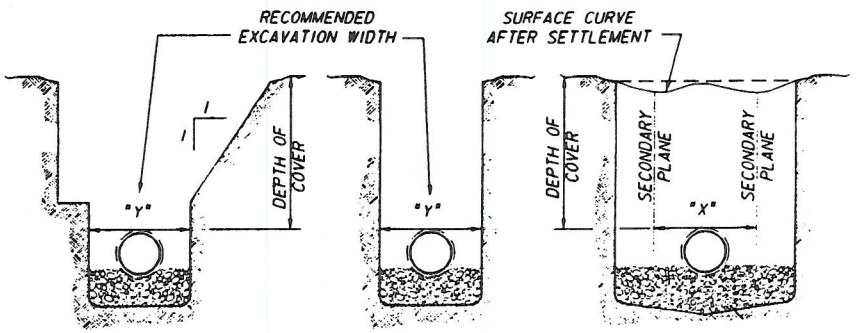
NOTES

1. *- DEPTHS OF COVER GREATER THAN THOSE LISTED IN THE BEDDING CHARTS REQUIRE A SOILS INVESTIGATION AND ANALYSIS BY THE ENGINEER.
2. X - DENOTES TRANSITION WIDTH WHICH IS THE THE DISTANCE AT WHICH THE TRENCH WIDTH MAY BE INCREASED WITHOUT ADDING TO THE WEIGHT ON THE PIPE.
3. DETERMINATION OF BEDDING TYPES BASED ON CONSTANT TRENCH WIDTH, 1.25 FACTOR OF SAFETY, AND A SOIL WEIGHT - WET CLAY = 130 LBS/CUBIC FOOT PER NCPI MANUAL.
4. REFERENCE NCPI TRENCH DESIGN, HIGH STRENGTH, COMPUTER PROGRAM, VERSION 5.1 WR, COPYRIGHT 1989, GREGG G. GIESLER, AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK) 1991 EDITION. TO EXECUTE TYPE NCPI THEN HS.
5. BEDDING CLASS SHALL EQUAL OR EXCEED THAT GIVEN IN THE APPLICABLE BEDDING TABLES.

THIS TABLE APPLIES TO PLASTIC PIPE

ABS SOLID WALL PIPE (SDR 35) & PVC SOLID WALL (SDR 35) 4" TO 15" DIA		ABS COMPOSITE PIPE (TRUSS) - 8" TO 15" DIA PVC COMPOSITE PIPE (TRUSS) - 8" TO 15" DIA ABS SOLID WALL (SDR 23.5) - 4" & 6" DIA	
DEPTH OF COVER TO TOP OF PIPE △5	CLASSIFICATION OF BEDDING △5	DEPTH OF COVER TO TOP OF PIPE	CLASSIFICATION OF BEDDING
0' TO 20'	CLASS "BB"	LESS THAN 4'	ENCASEMENT NO. 2
GREATER THAN 20'	SPECIAL DESIGN *	4' TO 9'	CLASS "D"
		9' TO 20'	CLASS "B"
		20'-30'	ENCASEMENT NO. 2
		GREATER THAN 30'	SPECIAL DESIGN

△5 * SPECIAL DESIGN:
ENGINEER TO SUBMIT SPECIAL BEDDING DESIGN FOR EMWD APPROVAL PRIOR TO START OF CONSTRUCTION



FOR BEDDING REQUIREMENTS REFER TO STD DWG SB-157

CONSTRUCTION EXCAVATION CONDITIONS

REVISIONS					
NO.	DATE	INITIAL	DESCRIPTION	APP'D	DATE
△1	7/11/95	KER	REVISED BEDDING CLASS & WIDTH REQUIREMENT	VJB	7/13/95
△2	2/20/97	KER	REDRAWN TO INCLUDE ALL PREVIOUS REVISIONS	VJB	7/28/97
△3	6/4/99	KER	REVISED BEDDING CLASS & DEPTHS FOR SDR 35	CR	6/4/99
△4	1/6/00	CR	REVISED BEDDING CLASS & DEPTHS FOR SDR 35	VJB	1/26/00
△5	6/2/00	KER	DEFINE SPECIAL DESIGN CRITERIA	VJB	6/2/00

APPROVALS	INITIAL	DATE
DESIGN		
CONSTRUCTION		
INSPECTION		
OPERATIONS		
SUBMITTED	VJB	3/1/93

EASTERN MUNICIPAL WATER DISTRICT

EASTERN MUNICIPAL WATER DISTRICT
STANDARD DRAWING

CLASSIFICATION OF PIPE ZONE BEDDING FOR SEWER PIPE

REFERENCES: SUPERCEDES SB-76
FILE I.D.: D_STANDARDS/SB159.DGN
SCALE: NONE
DRAWN BY KER

RECOMMENDED Joseph D. Van Sickle, DIRECTOR OF ENGINEERING 3/3/93 DATE

APPROVED William E. Plummer, CHIEF ENGINEER 3/8/93 DATE

SB-159 △5