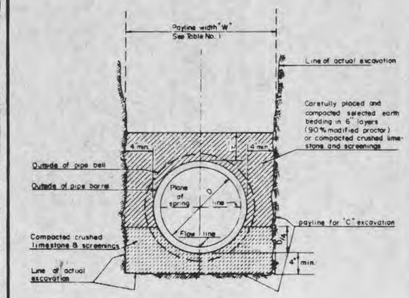
ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
Inside Diameter of Pipe (inches)	"W" Payline Width of Trench (inches)	"W" Payline Width of Trench (Feet)	Pay-volumes cu ft per ft Concrete Encasement	Inside Dimensions of Pipe (inches)	"W" Payline Width of Trench (inches)	"W" Payline Width of Trench (Feet)	Pay-volumes cu ft per ft Concrete Encasement
4	28	2.33	3.20				
6	28	2.33	3.46				
8	28	2.33	3.70				
10	28	2.33	3.86				
12	28	2.33	3.98				
15	32	2.67	4.89				
18	35	2.92	5.63	14 x 23	41	3.42	5.94
21	39	3.25	6.61				
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	9.70
33	53	4.42	10.53	27 x 42	62	5.17	10.71
36	56	4.67	11.43	29 x 45	66	5.50	11.72
39	DISCONTINUED			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	6.92	16.18
54	77	6.42	18.15	43 x 68	92	7.67	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	29.39	63 x 98	126	10.50	30.50
84	112	9.33	32.57	68 x 106	135	11.25	33.91
90	119	9.92	35.90	72 x 113	143	11.92	36.99
96	126	10.50	39.37	77 x 121	152	12.67	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	106 x 166	202	16.83	64.48
144	182	15.17	72.40	116 x 180	218	18.17	73.59

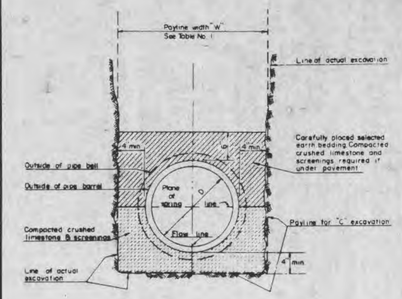
TABLE NO.1
PAYLINE WIDTHS OF TRENCH AND PAY-QUANTITIES OF CONCRETE

DETAIL 1



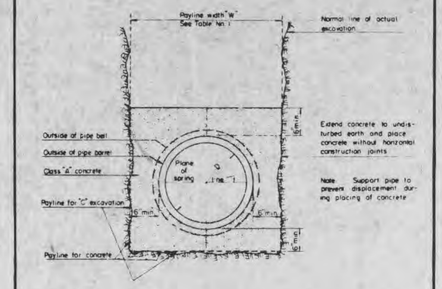
PIPE BEDDING CLASS "C"
(FOR ALL PIPE EXCEPT REINFORCED CONCRETE PIPE)

DETAIL 2



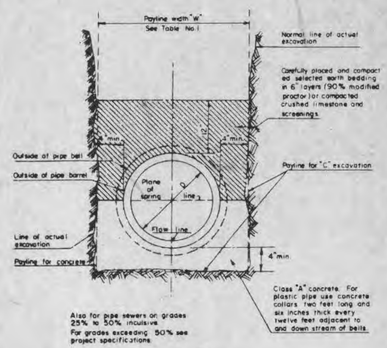
PIPE BEDDING CLASS "C"
(MODIFIED FOR REINFORCED CONCRETE PIPE)

DETAIL 3



CONCRETE ENCASEMENT

DETAIL 4



(CLASS "A" BEDDING)

CONCRETE CRADLE

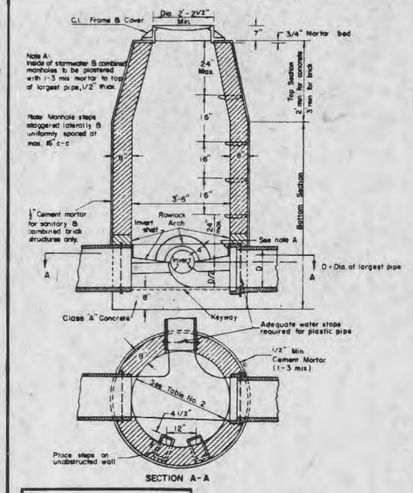
DETAIL 5

CONSTRUCTION DETAILS

Section of Manhole		Dimension
Top Transition	Upper	2'-2½" Dia.
	Lower	3'-6" Dia.
Bottom Section	8" thru 24" Dia. Pipe	3'-6" Dia.
Bottom Section	27" thru 36" Dia. Pipe	3'-6" Square

TABLE NO. 2
STANDARD MANHOLE DIMENSIONS

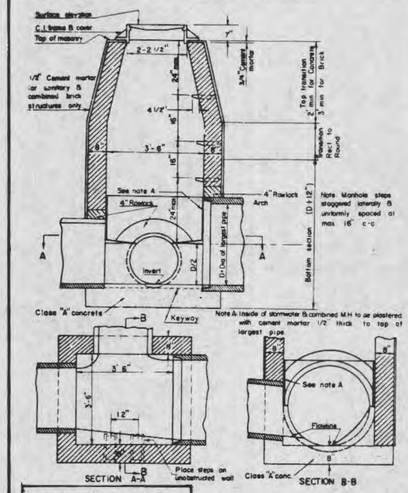
DETAIL 6



SECTION A-A

LINE MANHOLE
PIPE SEWERS 8"-24" DIA.

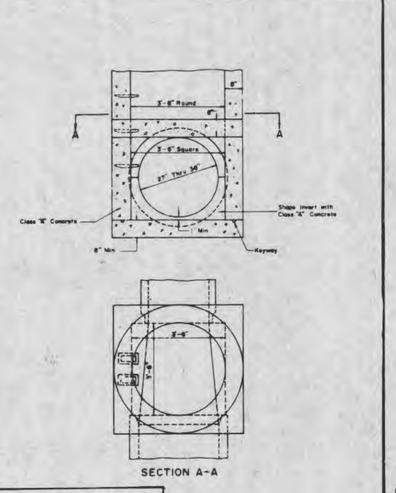
DETAIL 7



SECTION A-A SECTION B-B

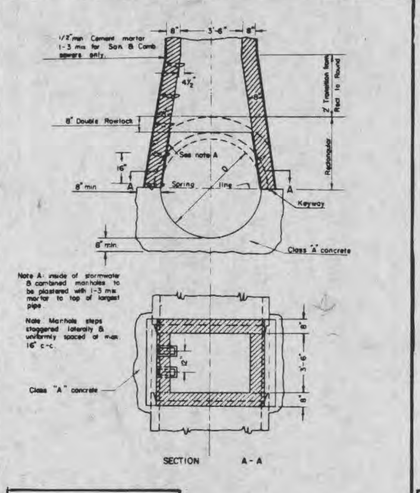
TYPICAL LINE MANHOLE
ON PIPE SEWER 27" THRU 36" IN DIAMETER.

DETAIL 8



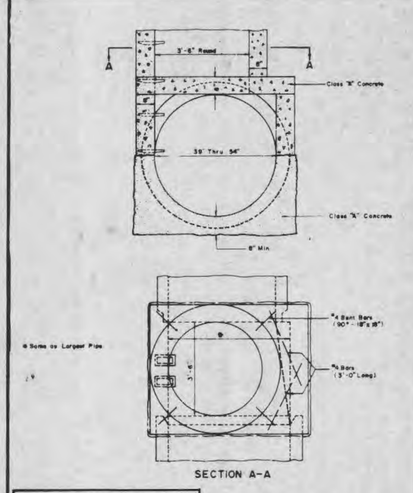
MANHOLE ON PIPE SEWER
27" THRU 36" (ALTERNATE)

DETAIL 9



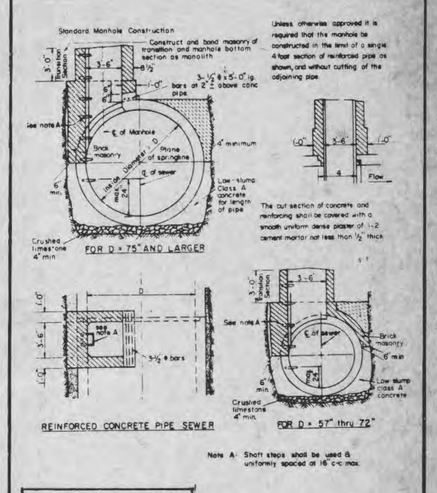
MANHOLE ON CONCRETE PIPE
SEWERS 39" THRU 54" DIAMETER

DETAIL 10



MANHOLE ON CONC. PIPE
39" THRU 54" (ALTERNATE)

DETAIL 11

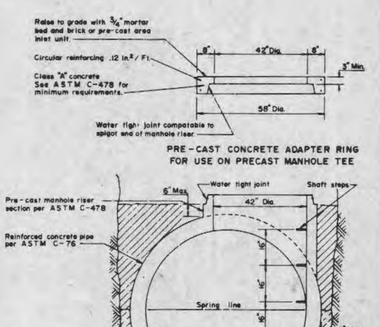


Unless otherwise approved it is required that the manhole be constructed in the limit of a single 4 foot section of reinforced pipe as shown, and without cutting of the adjoining pipe.

The cut section of concrete and reinforcing shall be covered with a smooth uniform dense plaster of 1:2 cement mortar not less than ½" thick

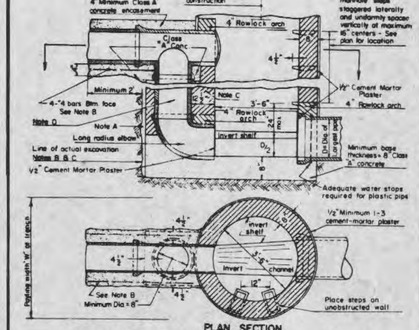
TYPICAL MANHOLE BASE
REINFORCED CONCRETE PIPE
SEWERS 57" AND LARGER
IN DIAMETER

DETAIL 12



TYPICAL PRE-CAST M.H. TEE
FOR REINFORCED CONCRETE
PIPE SEWERS 48" AND
LARGER IN DIAMETER

DETAIL 13



Note A: If line of actual excavation extends beyond line of drop masonry, fill excess excavated space with construction material of drop or pack with low-slump Class 'A' concrete to base of Class "A" concrete encasement

Note B: If encircled space outside of drop pipe masonry exceeds 1 foot, reinforce sewer pipe encasement with a minimum of 4 No. 4 bars for length of encasement.

Note C: Masonry encasement of drop-pipe shall be bonded and placed integrally with manhole masonry.

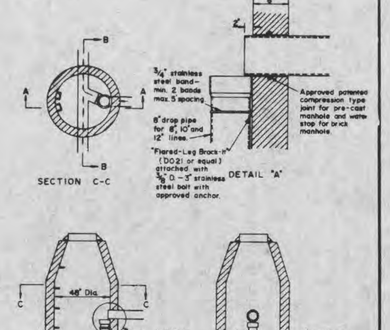
Note D: Diameter of drop pipe for combined sewers and sanitary sewers, is same as incoming 8", 10" or 12" pipe sewer, and 12" for larger combined sewers unless otherwise shown on project plans. For sanitary sewers 15" or larger, a drop is not to be used; connect to manhole at, or within 3" above its flowline.

Note E: New outside drop on existing manhole requires No.4 re-bars spaced vertically at 2'-6" c-c, one on each side of the drop pipe, grouted through 2" dia. holes in M.H. wall. (min. length of bars 18")

Note F: For inside drops, notes A & B shall apply

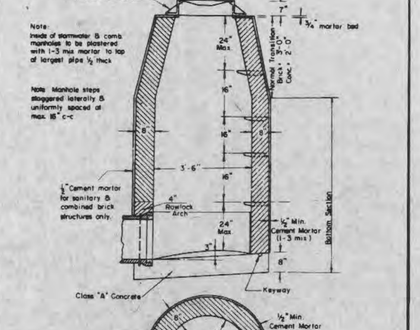
DROP MANHOLE OF BRICK MASONRY ON COMBINED, STORM OR SANITARY SEWERS

DETAIL 14



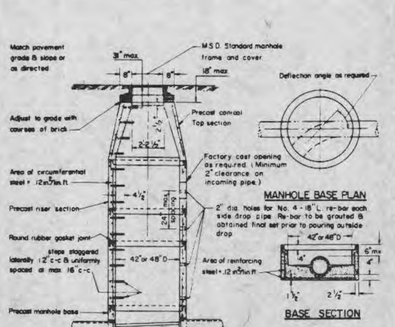
INSIDE DROP MANHOLE
FOR
PLASTIC PIPE

DETAIL 15



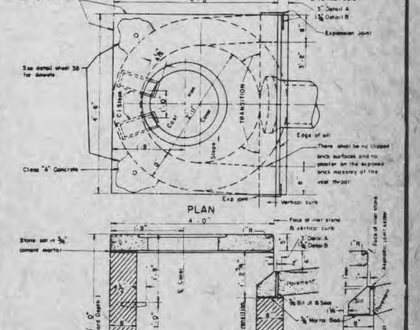
TERMINAL MANHOLE

DETAIL 16



PRE-CAST CONCRETE MANHOLE
FOR SEWERS
8" THROUGH 12"

DETAIL 17



UNTRAPPED STREET INLET
BRICK CONSTRUCTION

DETAIL 18