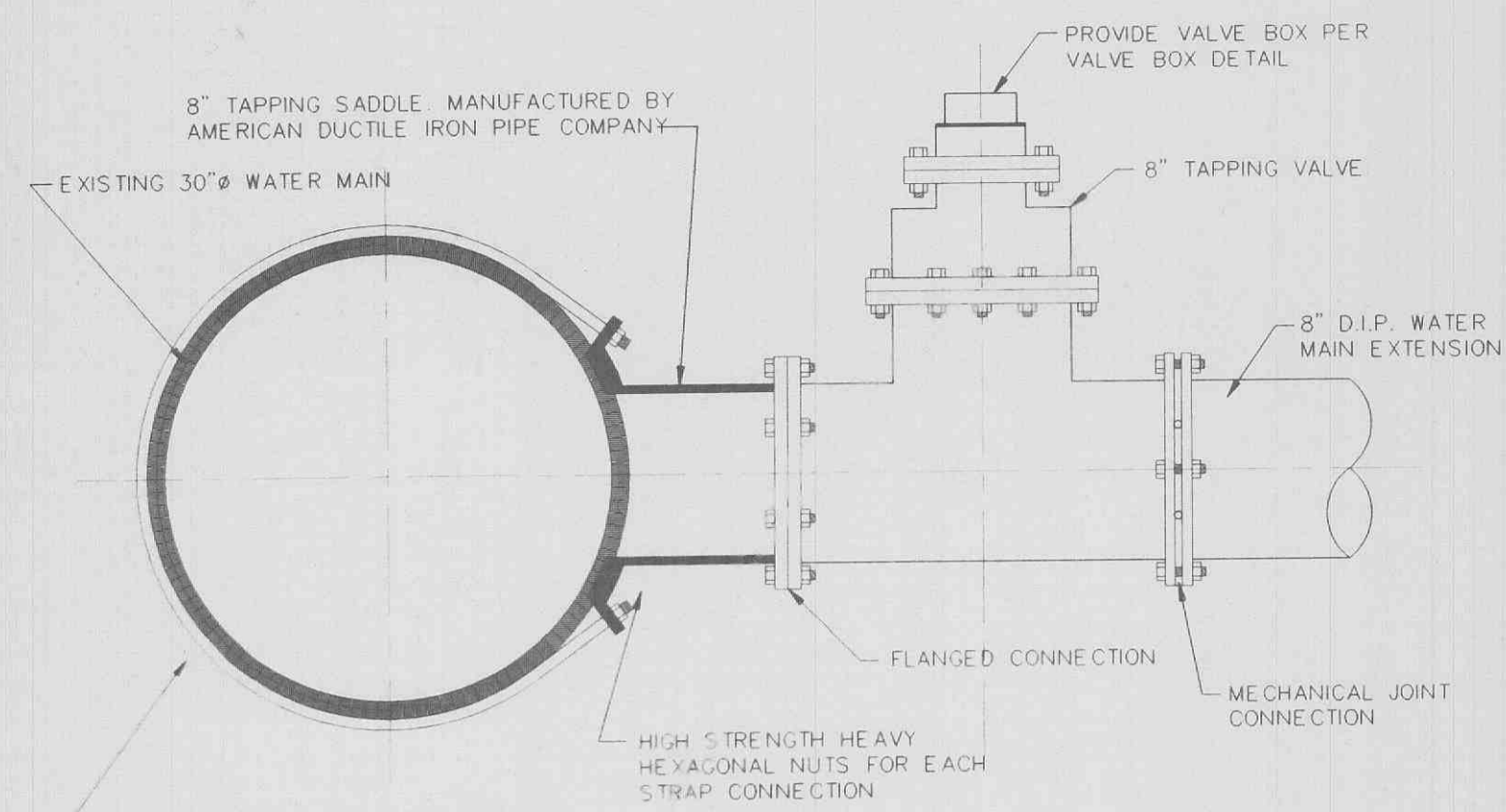


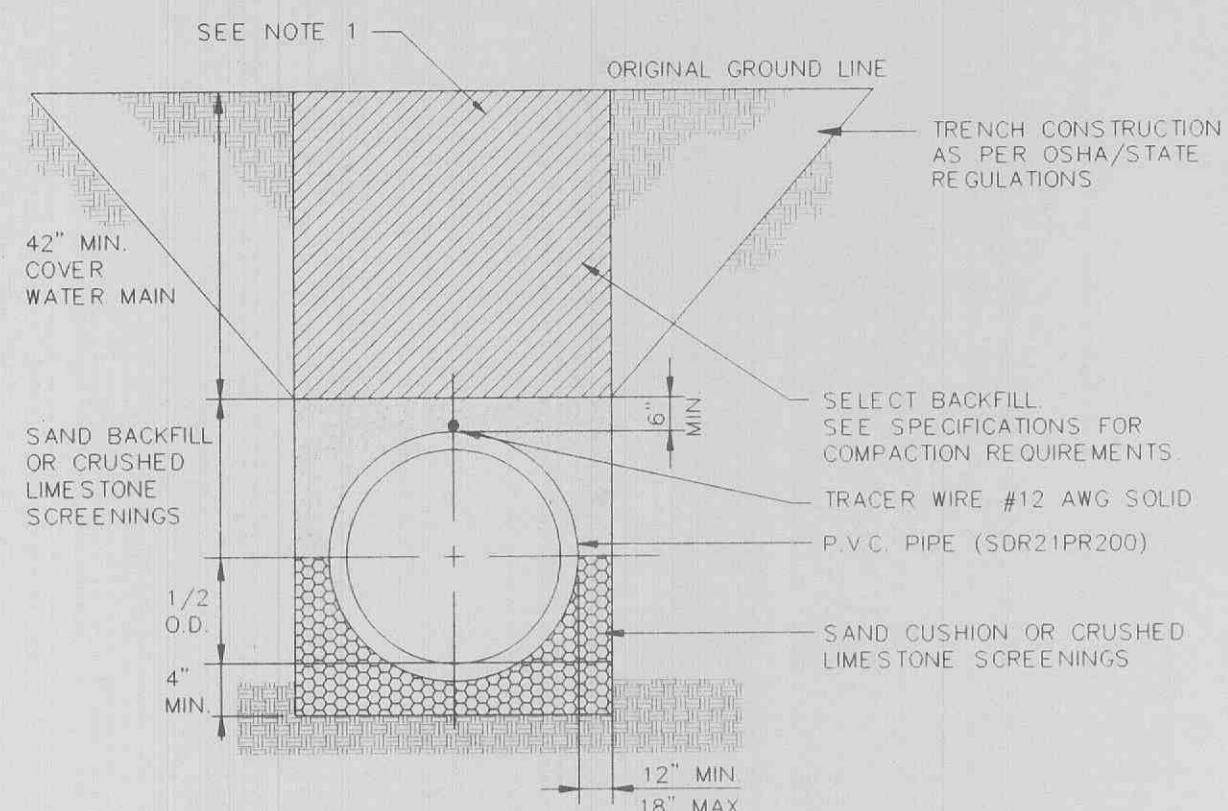
NOTES:
 1. CONCRETE IS EXTENSION TEST REQUIRED FOR ALL POURED IN PLACE CONCRETE.
 2. ALL VALVES MUST BE RATED AT A WORKING PRESSURE OF 200 PSI. ALL TESTS AT A PRESSURE OF 200 PSI. THIS HYDRANT MUST BE INSTALLED IN A WATER MAIN. THE HYDRANT SHALL BE INSTALLED IN A WATER MAIN. THE HYDRANT SHALL BE INSTALLED IN A WATER MAIN. THE HYDRANT SHALL BE INSTALLED IN A WATER MAIN.

FIRE HYDRANT DETAIL
 NO SCALE CUI2

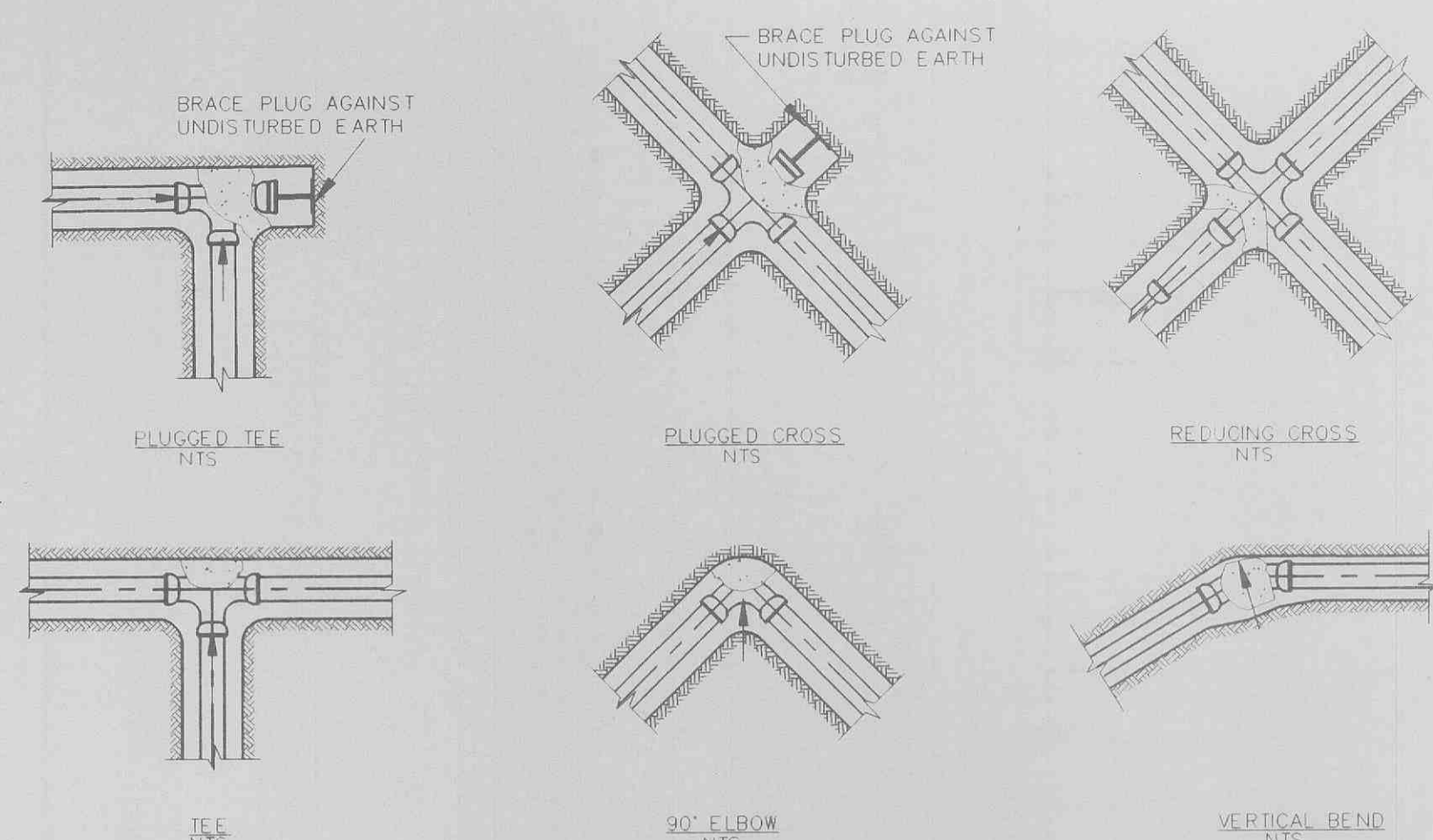


WATER MAIN TAPPING SADDLE DETAIL
 NTS. CUI12

NOTE:
 1. CITY WATERLINES LOCATED UNDER PAVED AREAS SHALL BE COMPACTED WITH GRANULAR BACKFILL PER CITY SPECIFICATIONS TO THE BASE OF THE PAVEMENT.
 PRIVATE WATERLINES LOCATED UNDER PAVED AREAS SHALL BE BACKFILLED PER DETAIL SHOWN. SEE SHEET C-3 FOR LOCATIONS OF CITY AND PRIVATE WATERLINES.



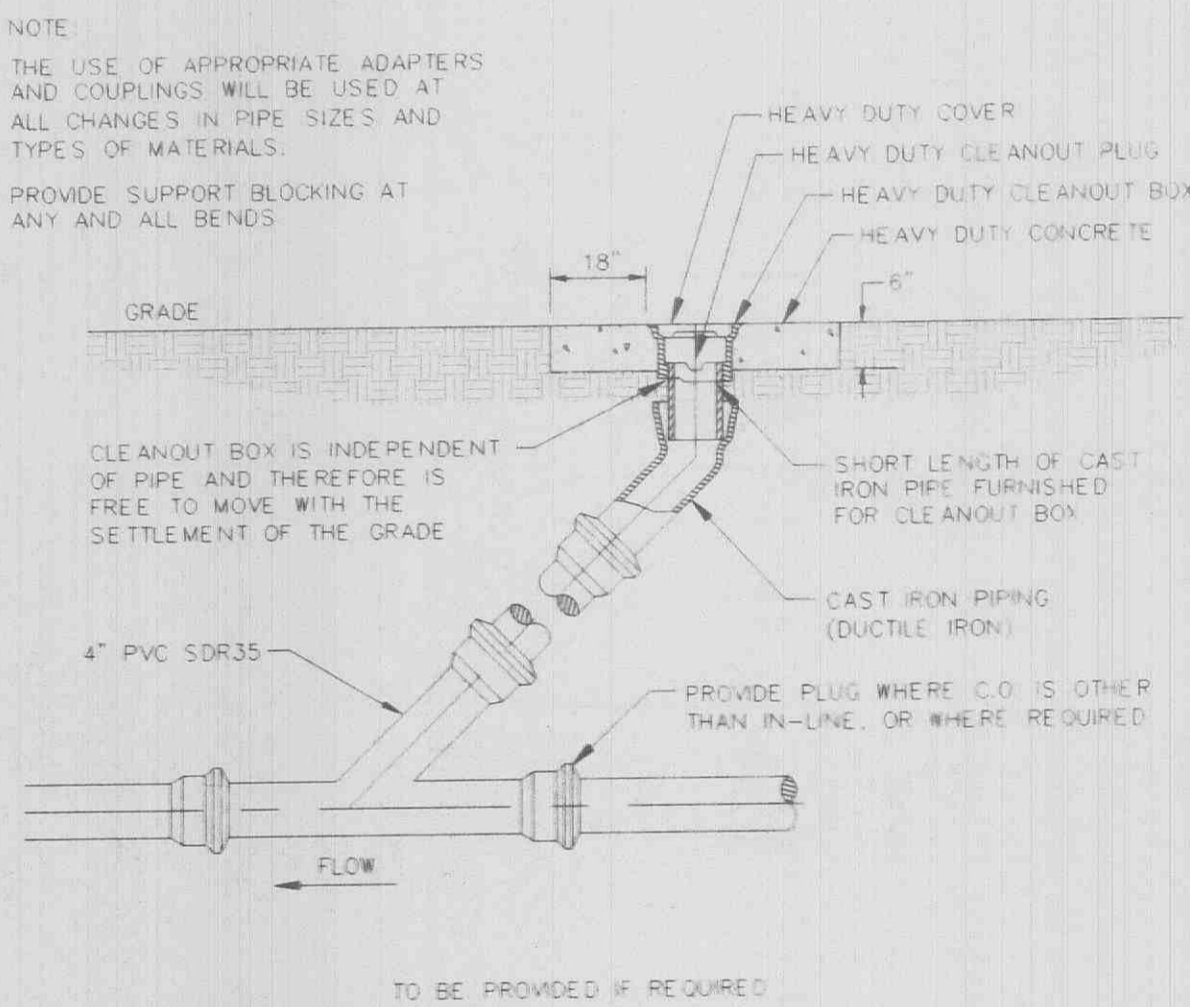
WATER MAIN TRENCHING & BEDDING
 NO SCALE



PROVIDE MINIMUM BEARING AREA IN S.F. AS FOLLOWS BASED ON 150 PSI TEST PRESSURE AND 2000 PSI S.O.H. BEARING (UNLESS OTHERWISE DETAIL):

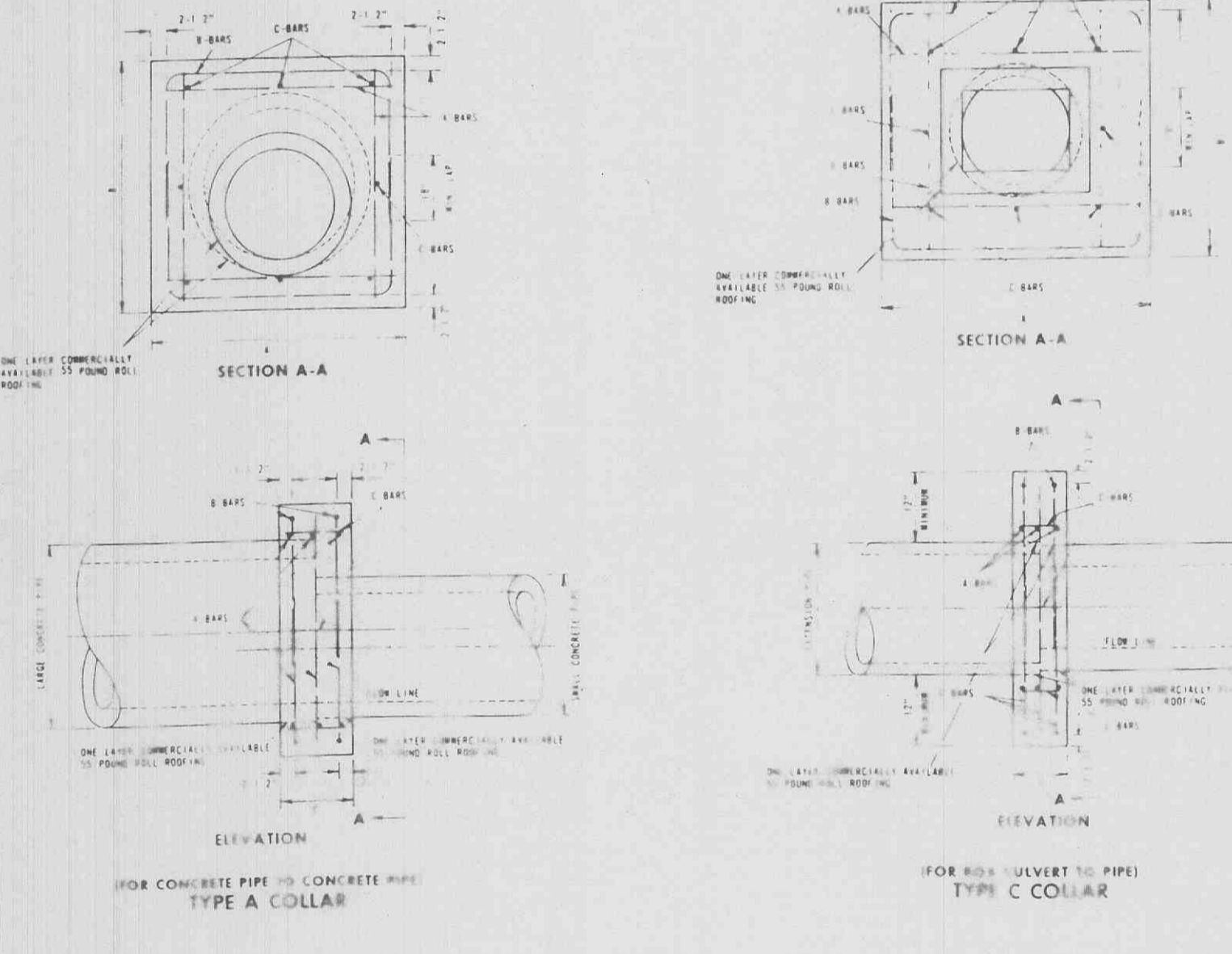
PIPE SIZE	TELE. DEADENDS	11 1/4" BEND	22 1/2" BEND	45° BEND	90° BEND
4"	1.0	0.5	0.5	0.8	1.3
6"	2.2	0.8	0.8	1.5	3.0
8"	3.8	0.8	1.5	2.0	5.3
10"	6.0	1.2	2.3	4.5	8.4
12"	8.5	1.7	3.3	6.5	12.1
14"	11.5	2.3	4.5	8.9	16.4
16"	15.2	3.0	5.5	11.5	21.4

THRUST BLOCK DETAILS
 NO SCALE CUI12

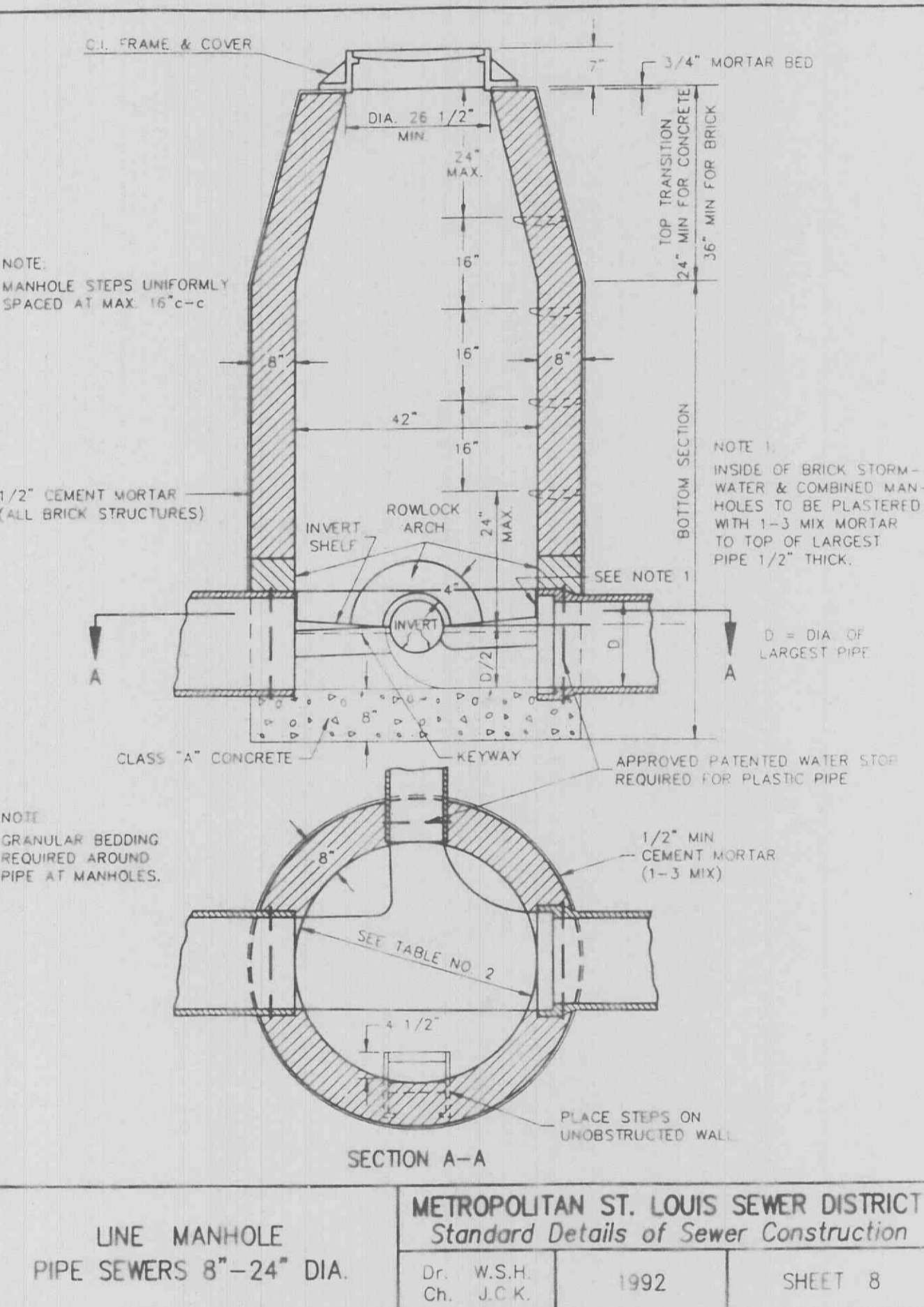


EXTERIOR CLEANOUT DETAIL
 NO SCALE CUI2

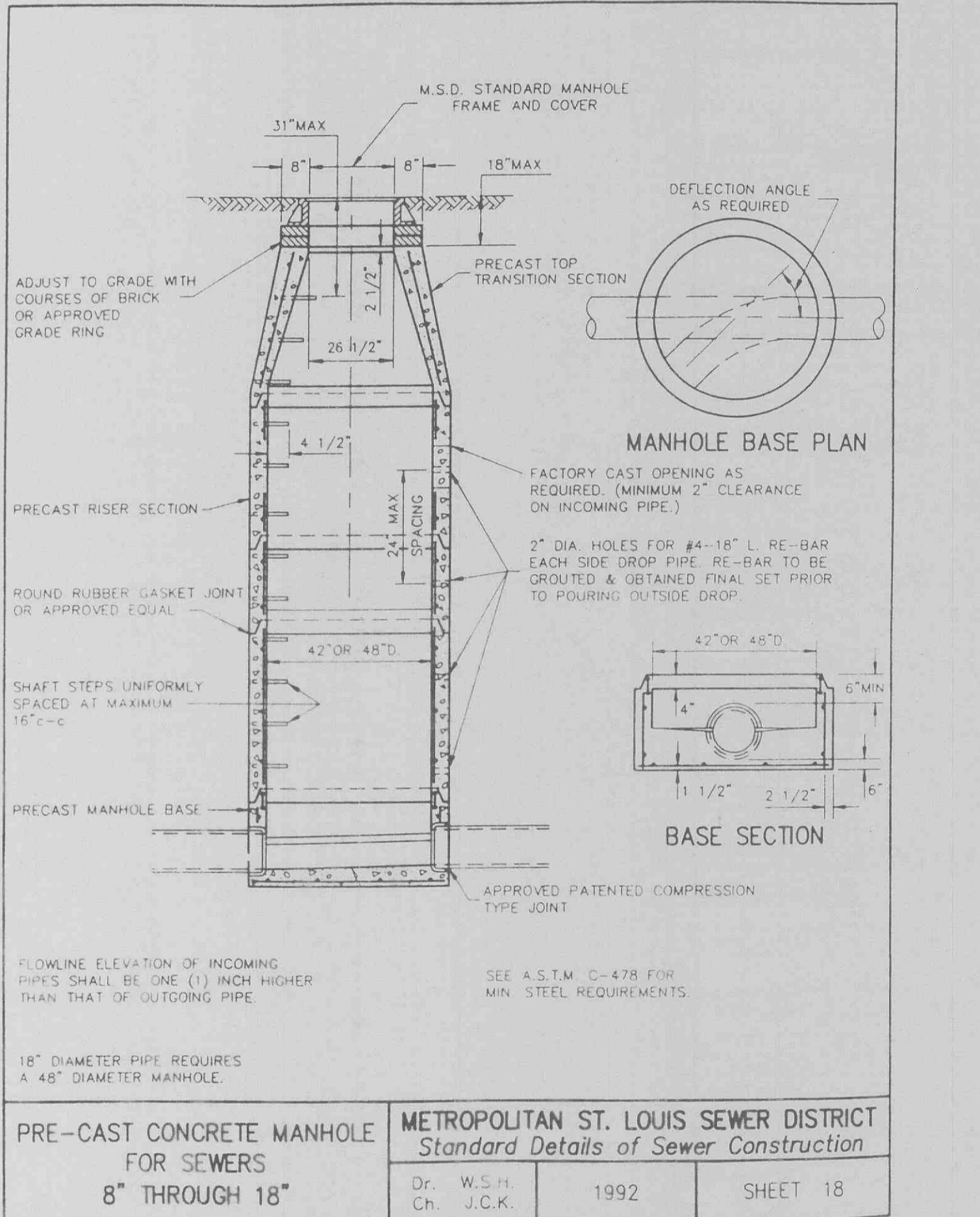
TABLE OF DIMENSIONS		TABLE OF DIMENSIONS	
PIPE DIA.	COVER DIA.	PIPE DIA.	COVER DIA.
4"	18"	12"	24"
6"	24"	14"	26"
8"	30"	16"	28"
10"	36"	18"	30"
12"	42"	20"	32"
14"	48"	22"	34"
16"	54"	24"	36"



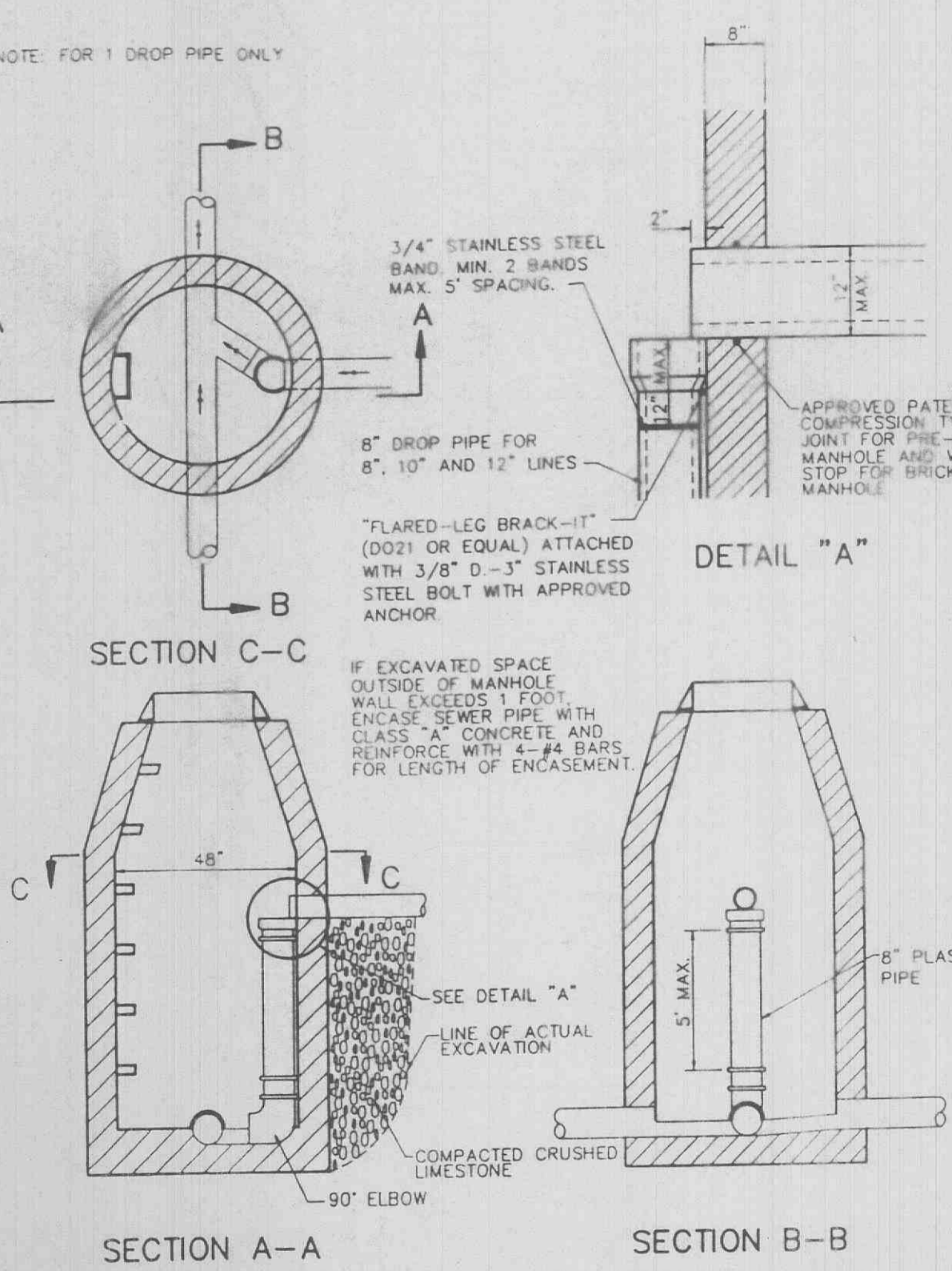
PIPE COLLARS
 MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION
 DRAWING NO. 4.40E
 SHEET 1 OF 1



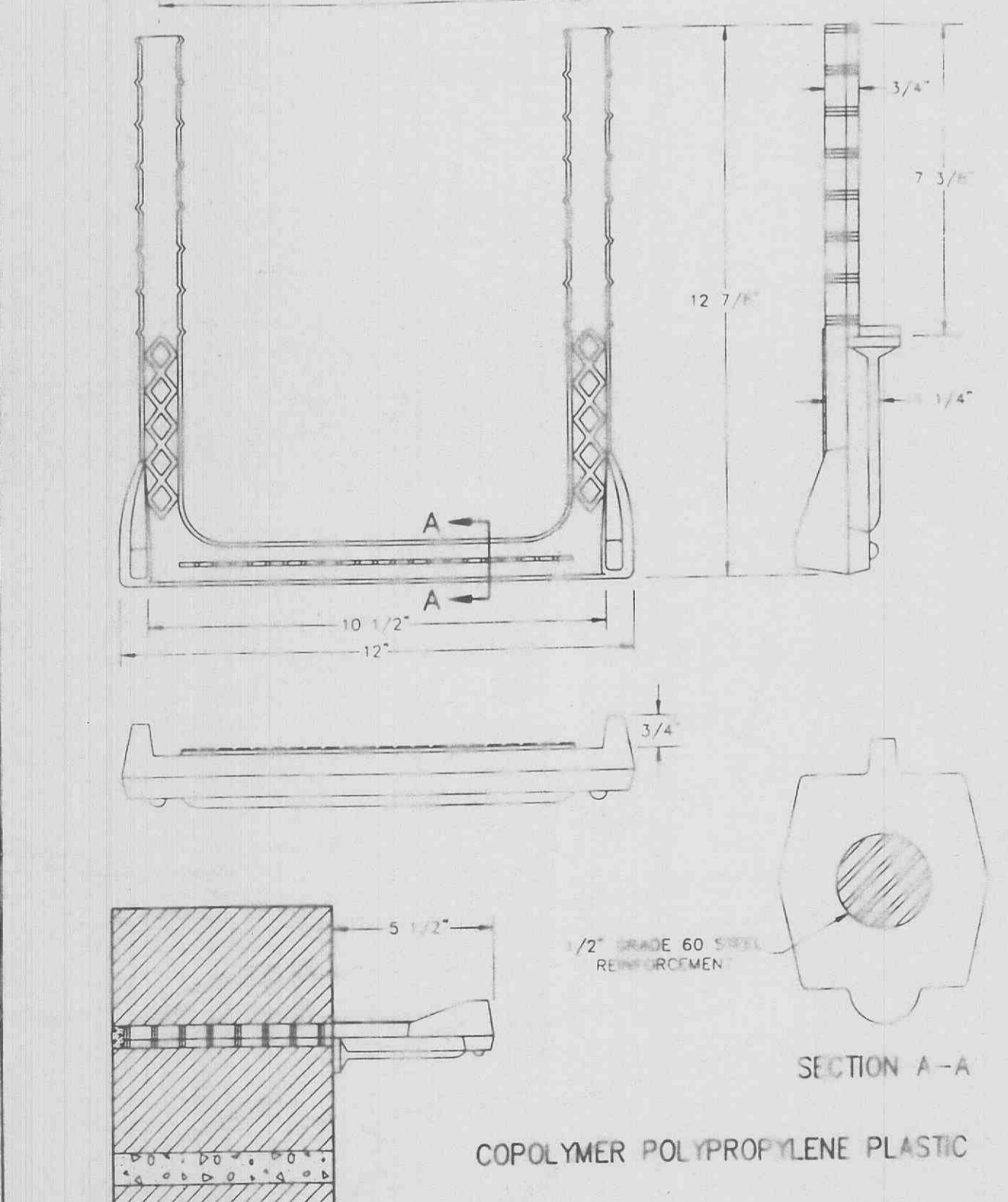
LINE MANHOLE
 PIPE SEWERS 8" - 24" DIA.
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 8



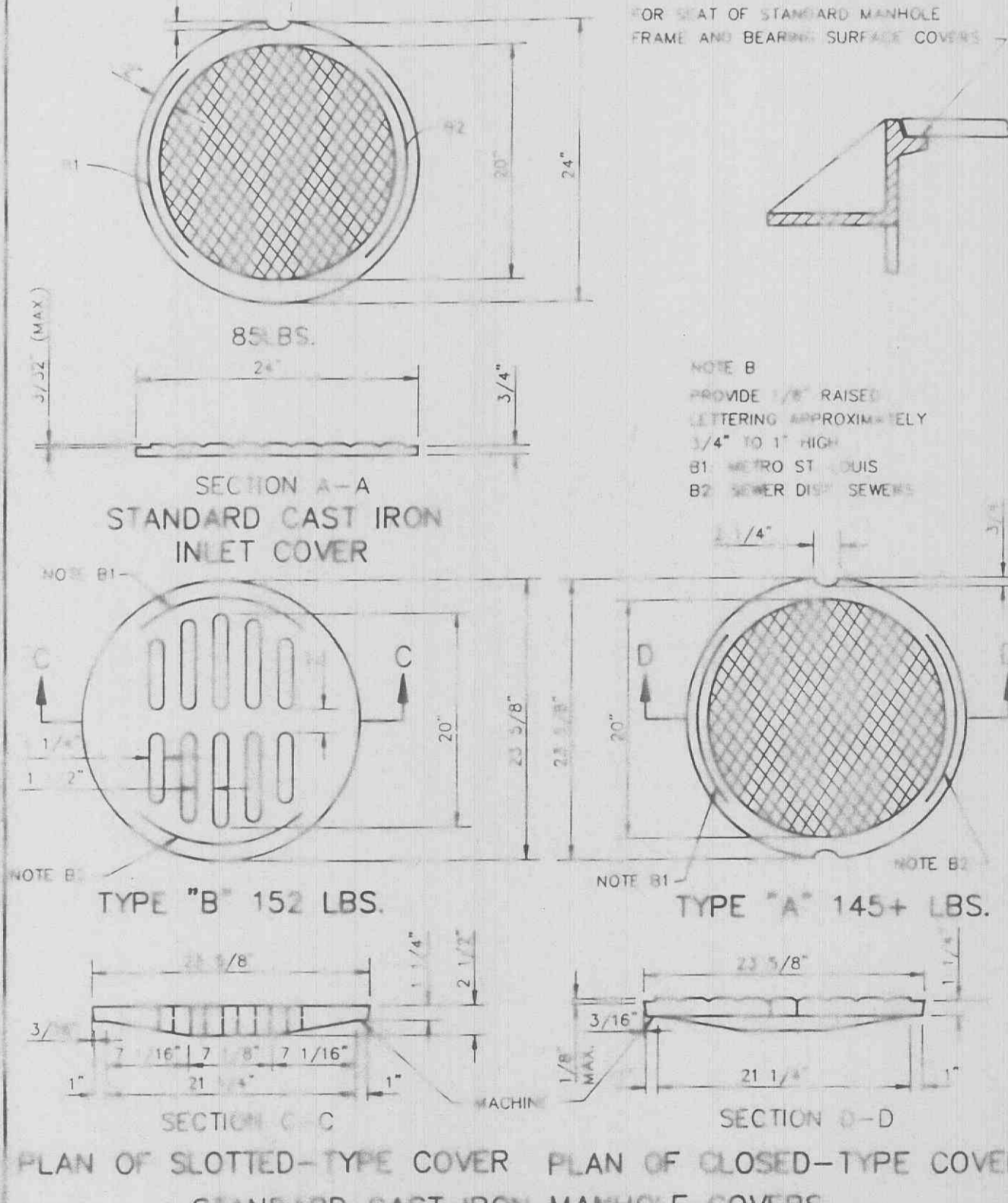
PRE-CAST CONCRETE MANHOLE
 FOR SEWERS
 8" THROUGH 18"
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 18



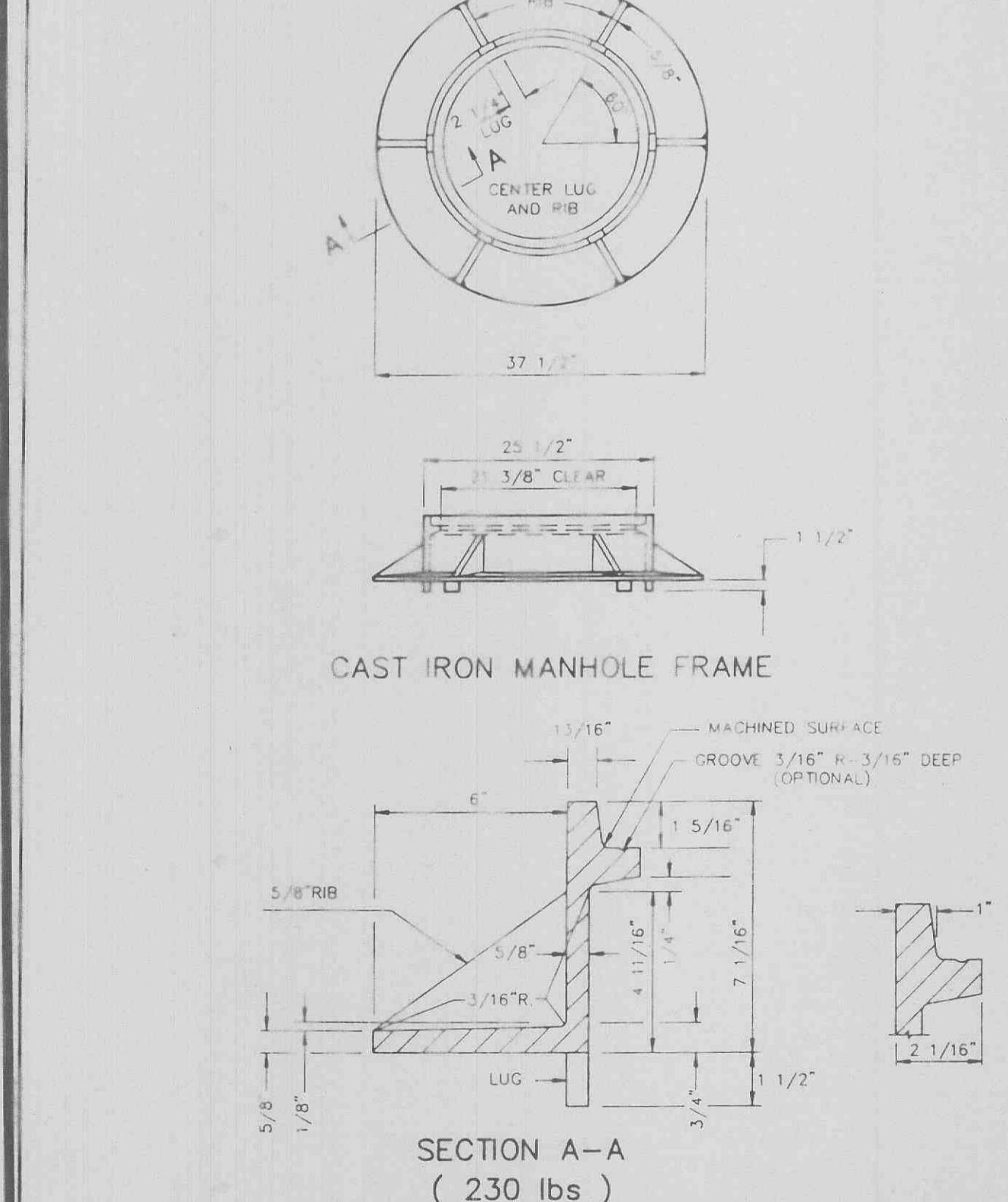
INSIDE FOULWATER DROP MANHOLE
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 15



PS1-B MANHOLE STEP INTO JOINT
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. W.S.H. Ch. J.C.K. 1992 SHEET 53



CAST IRON COVERS MANHOLES AND INLETS
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 49



CAST IRON MANHOLE FRAME
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. D.A.B. Ch. J.C.K. 1992 SHEET 48

SECTION OF MANHOLE		DIMENSION
TOP TRANSITION	UPPER	26 1/2" DIA.
	LOWER	42" DIA.
BOTTOM SECTION	8" THRU 24" DIA. PIPE	42" DIA.
	27" THRU 36" DIA. PIPE	42" SQUARE

TABLE NO. 2 STANDARD MANHOLE DIMENSIONS
 METROPOLITAN ST. LOUIS SEWER DISTRICT
 Standard Details of Sewer Construction
 Dr. R.G.W. Ch. J.C.K. 1992 SHEET 7

REVISED

WOLVERTON & ASSOCIATES, INC.
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 770 447-8989 PHONE / 770 447-9070 FAX



PROPOSED COMMERCIAL DEVELOPMENT
 O'FALLON, MISSOURI
 THF-ONTARIO DEVELOPMENT, L.L.C.
 ST. LOUIS, MISSOURI

DRAWN
 WBE
 CHECKED
 JCW
 DATE
 4-22-97
 SCALE
 NO SCALE
 JOB No.
 96-157
 SHEET

C-12
 OF SHEETS

96137C12.DWG