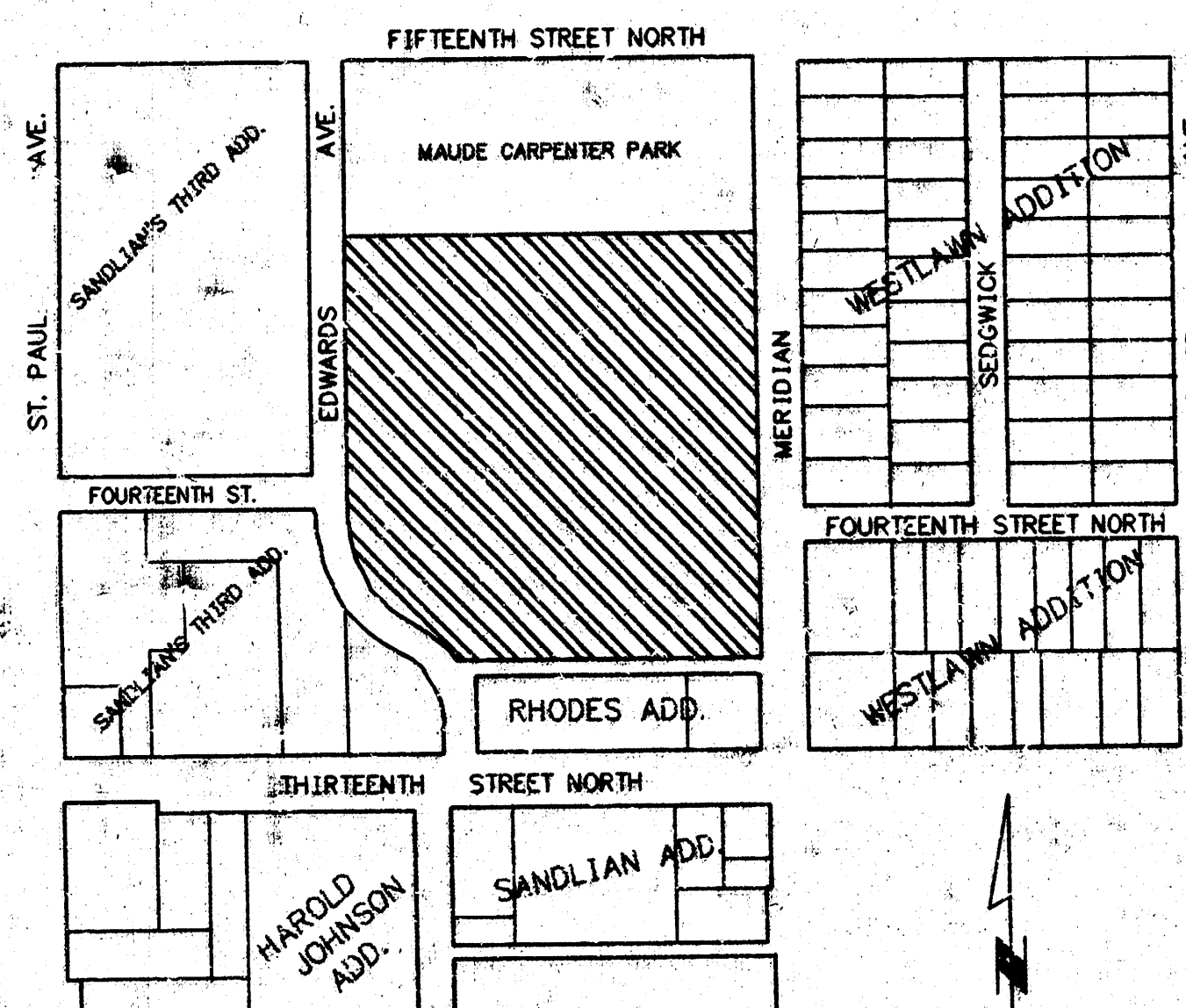


CONSTRUCTION PLANS FOR STORM SEWER & SANITARY SEWER IMPROVEMENTS TO SERVE

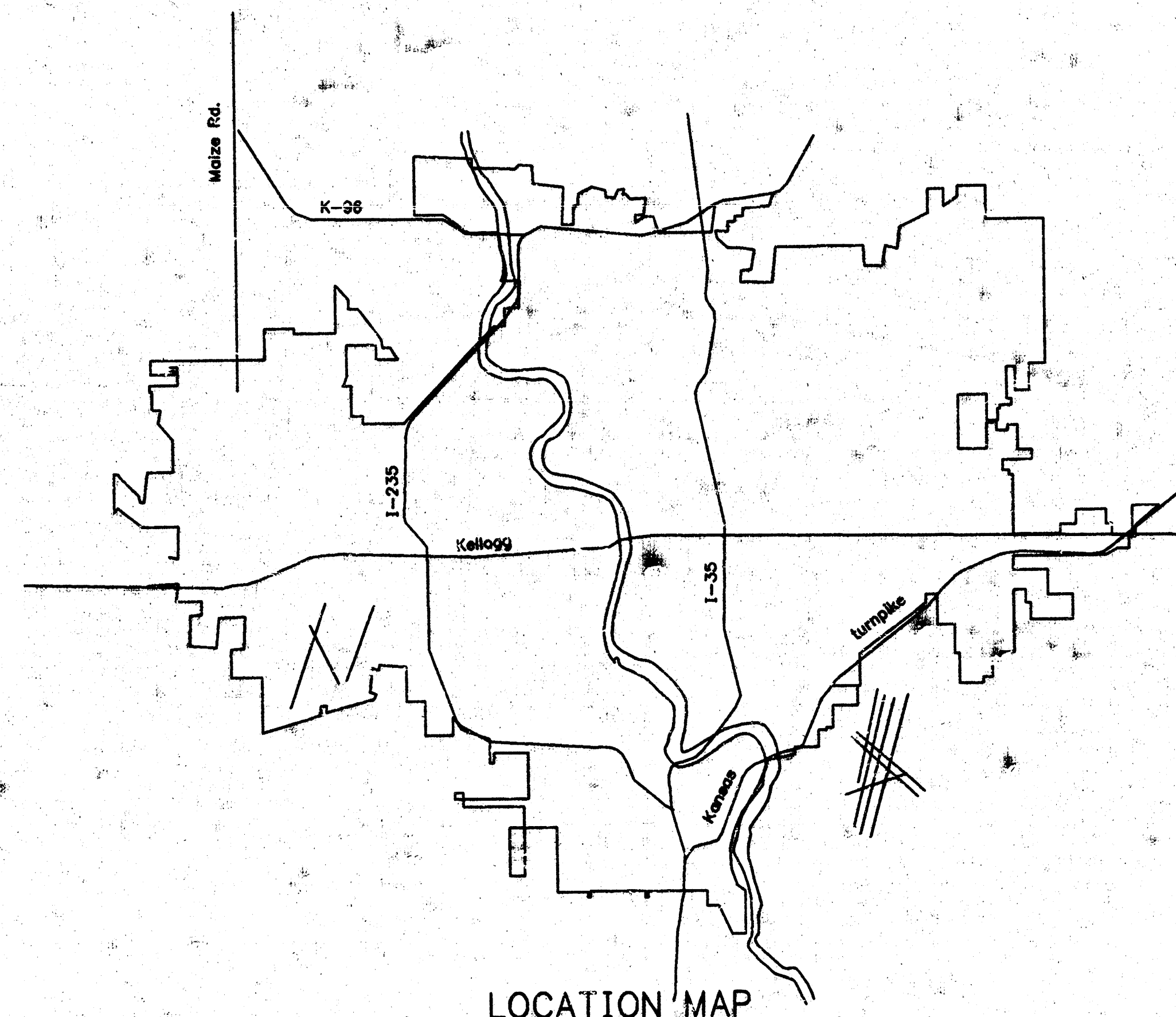
MAUDE CARPENTER FIRST ADDITION

THE CITY OF WICHITA,
SEDGWICK COUNTY, KANSAS

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER



VICINITY MAP
N.T.S.



LOCATION MAP

INDEX OF SHEET

SHEET NO. 1 TITLE SHEET
SHEET NO. 2 STORM SEWER PLAN & PROFILE
SHEET NO. 3 MANHOLE DETAILS
SHEET NO. 4 CURB INLET
SHEET NO. 5 SANITARY SEWER PLAN
SHEET NO. 6 STORM SEWER MANHOLE DETAILS
SHEET NO. 7 MANHOLE RING & LID

APPROVED AS NOTED

By CITY ENGINEER OF WICHITA

Sanitary Sewers Gene Roth
Storm Sewers Gene Roth
Driveway Approaches _____
Water Mains _____
Paving _____

NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR THE PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR WITHOUT SUCH INSPECTION NOR SHALL ANY WORK BE COMMENCED IN DEDICATE EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER.

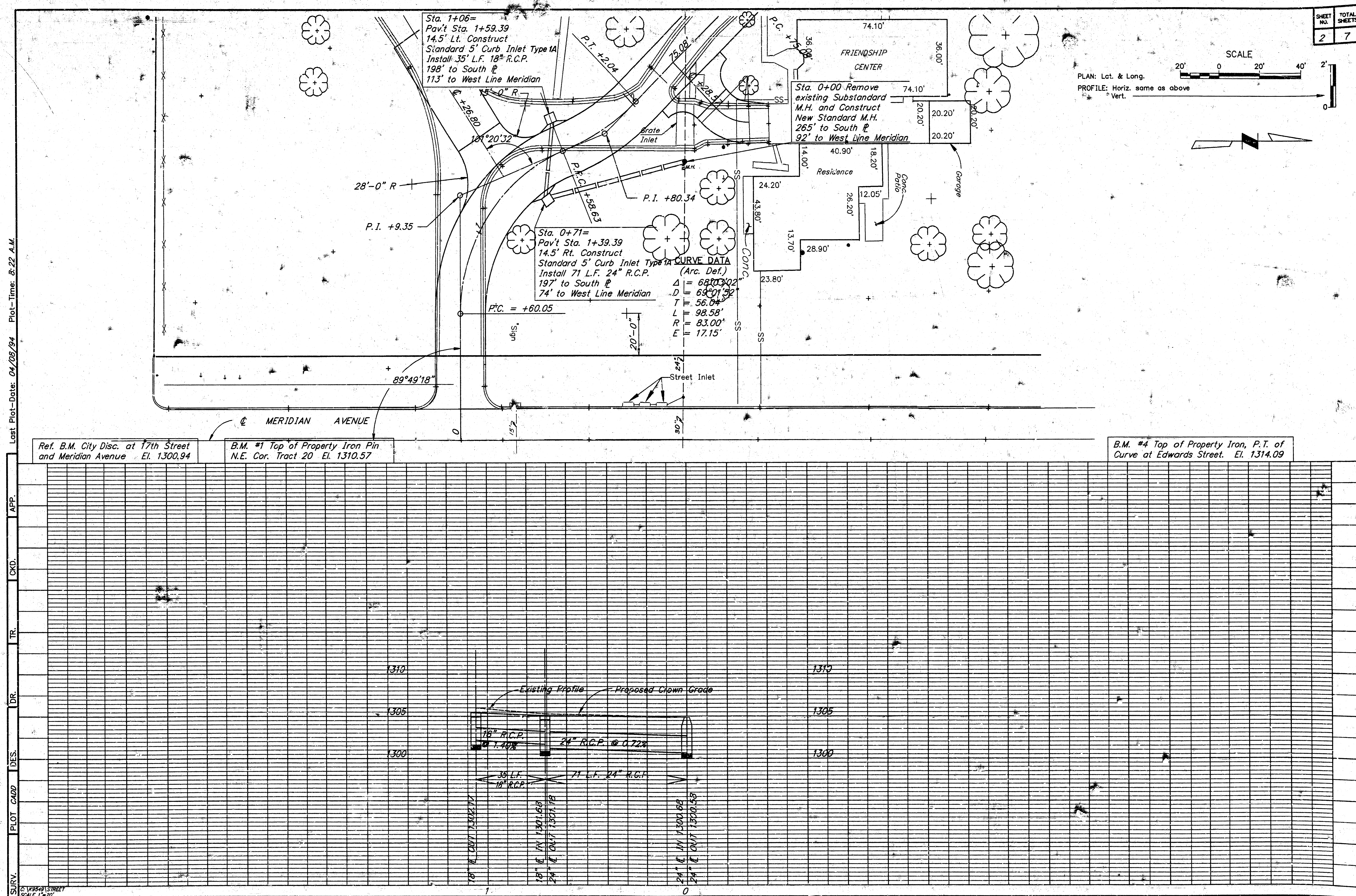
CITY OF WICHITA PROJECT NO. 456PPS (607861)

APRIL, 1994

PLANS PREPARED BY
BOOKER ASSOCIATES, INC. OF KANSAS
WICHITA, KANSAS



CITY OF WICHITA PROJECT NO. 456PPS (607861)

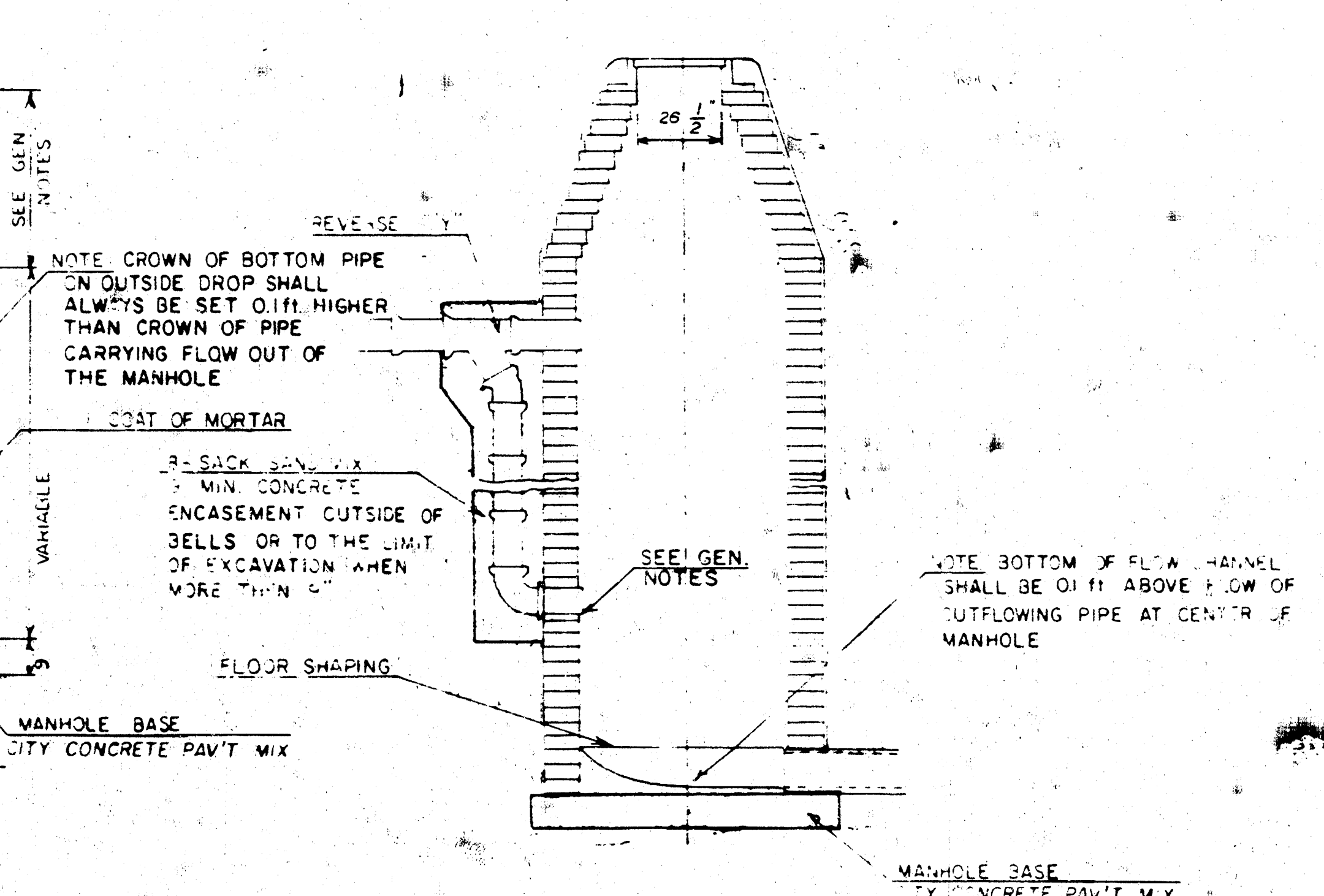


REVISED SEPTEMBER 1980
REVISED DECEMBER 1981

REVISED DECEMBER 981

REVISED DECEMBER 981

DETAIL OF OUTSIDE DROP
CONSTRUCTED ON EXISTING MANHOLE



WATER USED IN MASONRY CONSTRUCTION SHALL BE STORED IN BAKERS OF CEMENT OR IN A PUBLIC YARD. CONCRETE USED IN MANHOLE WALLS SHALL COMPLY WITH THE REQUIREMENTS OF STANDARDS FOR CONCRETE CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE. REPAIRS TO EXISTING MANHOLE WALLS WITHOUT AIR ENTRAINING ADMIXTURE. MANHOLE SHALL BE REPAIRED TO THE ORIGINAL FINISH AS SHOWN IN THE DRAWINGS AND MANHOLES SHALL BE CONSTRUCTED IN UNPAVED AREAS TO A MINIMUM OF 18" DEPTH. MANHOLES SHALL BE LOCATED UP TO 15' IN DEPTH WHEN THE MANHOLE IS NOT LOCATED WITHIN 12" OF THE STREET PAVEMENT. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 24". MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 30". MANHOLES CONSTRUCTED WHERE THE WATER MAINS ARE 30" OR LARGER SHALL HAVE A DIAMETER OF 36". MANHOLES HAVING A DIAMETER OF 36" SHALL HAVE A MINIMUM HEIGHT. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.

REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL
CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE
MANHOLE BASE REINFORCEMENT SHALL BE PLACED 6" ABOVE THE BOTTOM OF THE
MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING
STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.

[illegible]

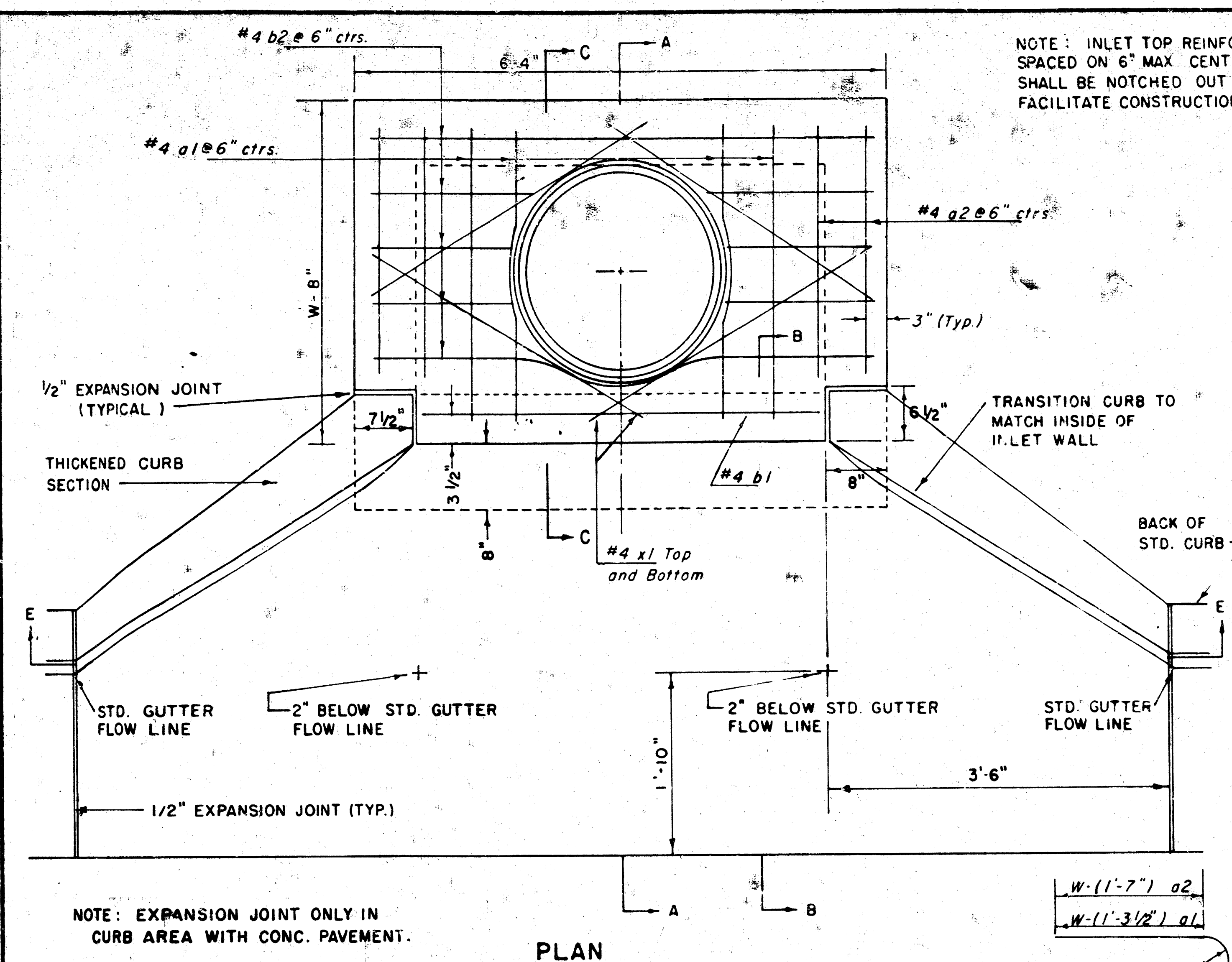
THE FLOORS OF ALL MANHOLES SHALL BE GRADED WITH FLOW MANHOLES SUCH THAT THE MANHOLES WILL BE SELF-CLEANING AND FREE OF AREAS WHERE DEBRIS WOULD BE DEPOSITED TO OBSTRUCT FLOW. IN A MANHOLE FROM WHICH THE PIPES OF THE SEWAGE SYSTEM FLOW, THE FLOOR MANHOLE SHALL BE GRADED TO MATCH THE BOTTOM RAISES OF THE SEWAGE PIPES AND THE OUTFLOWING PIPES SHALL BE GRADED TO MATCH THE FLOOR OF THE MANHOLE. THE FLOOR OF MANHOLES FOR TRUNK AND MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3/8 INCH PER FOOT IN THE DIRECTION OF THE FLOW MANHOLES TOWARD THE FLOW MANHOLES. PIPES ENTERING THROUGH MANHOLES SHALL AND THE TOP SHALL BE GRADED TO MATCH THE FLOOR OF THE INSIDE MANHOLE OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE GRADED TO MATCH THE BOTTOM RAISE OF PIPES WHICH FORMS THE FLOW MANHOLE.

PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE GRADED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN PIPE IS USED, THE GRADE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE GRADE SHALL BE TERMINATED AT THE LAST PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. JOIST GRADE WITHIN MANHOLE EXCAVATION IS TO HAVE PIPE JOINTS ADJACENT TO MANHOLE SHALL BE PROVIDED IN THE MID SPAN AND NOT AT THE MANHOLE.

THE MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.

THE VERTICAL DROP IN CRUISE OR P. MANHOLES SHALL NOT EXCEED 1/4" FOR
OUTFLOWING PIPES SIZED 12" & SMALLER AND 1/8" FOR INFLOWING PIPES
LARGER THAN 12". THE CROWN OF INFLOWING PIPES SHALL NEVER BE SET
LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.

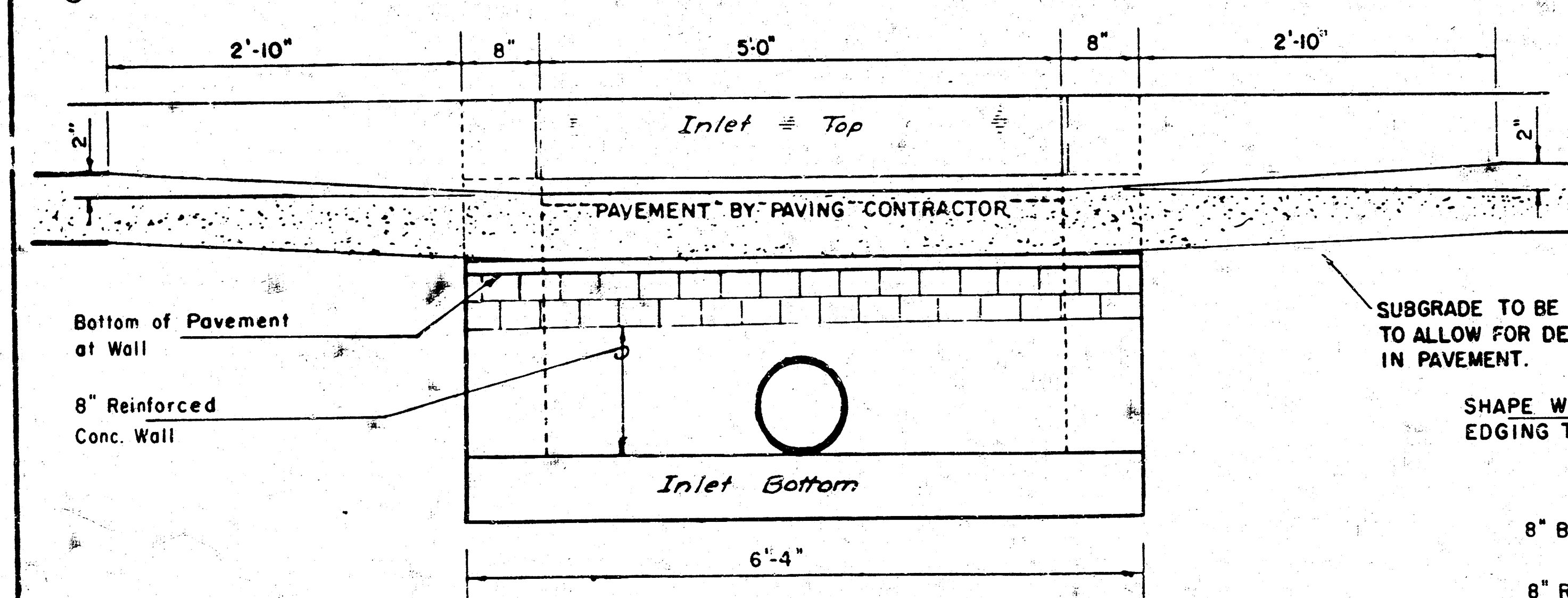
STANDARD MANHOLES TYPE "A" AND STANDARD 48" DIA. 4' DEEP MANHOLES TYPE "B" SHALL BE 48" AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. INSIDE WALL MANHOLES TYPE "B" SHALL BE 48" AS STANDARD INSIDE WALL MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL HOLES DIAMETERS WILL BE 4' UNLESS NOTATED OTHERWISE.



PRECAST SLAB AND FLOOR REINFORCING											
Mark	Size	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
a1	#4	6	6'-7"	6	8'-7"	6	10'-7"	6	12'-7"	6	14'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	13	4'-1"	13	5'-1"	13	6'-1"	13	7'-1"	13	8'-1"
b1	#4	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"
b2	#4	23	6'-1"	29	6'-1"	35	6'-1"	41	6'-1"	47	6'-1"
x1	#4	8	3'-10"	8	4'-2"	8	4'-6"	8	4'-10"	8	5'-2"

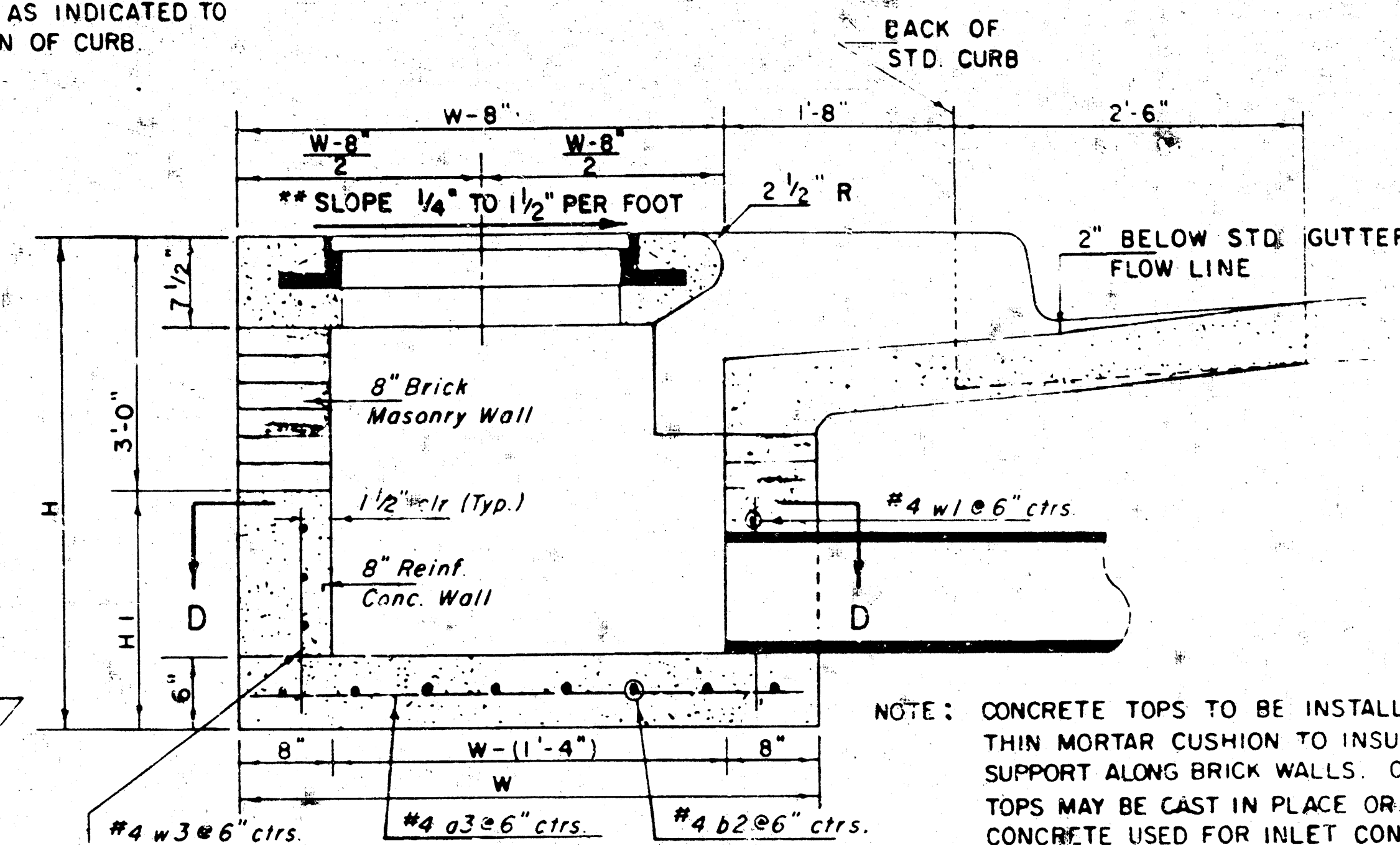
WALL REINFORCING											
Mark	Size	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
w1	#4	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"
w2	#4	1	4'-1"	1	5'-1"	1	6'-1"	1	7'-1"	1	8'-1"
w3	#4	32	2	36	2	40	2	44	2	48	2

* Field bend or cut Reinforcing as required for clearance.
 ① 4(HI-12"); (HI-12") Round down to nearest 0.5'
 ② HI-3"



SECTION E-E

NOTE: INLET TOP REINFORCING SHALL BE SPACED ON 6" MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB.



SECTION A-A

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN W = 6'-4" AND H = 7'-0" OR LESS.

ADDITIONAL CURB AND GUTTER CONSTRUCTION NECESSARY TO CONNECT SET-BACK INLET TO PAVEMENT WILL BE PAID FOR AT THE UNIT PRICE BID FOR EACH INLET HOOKUP.

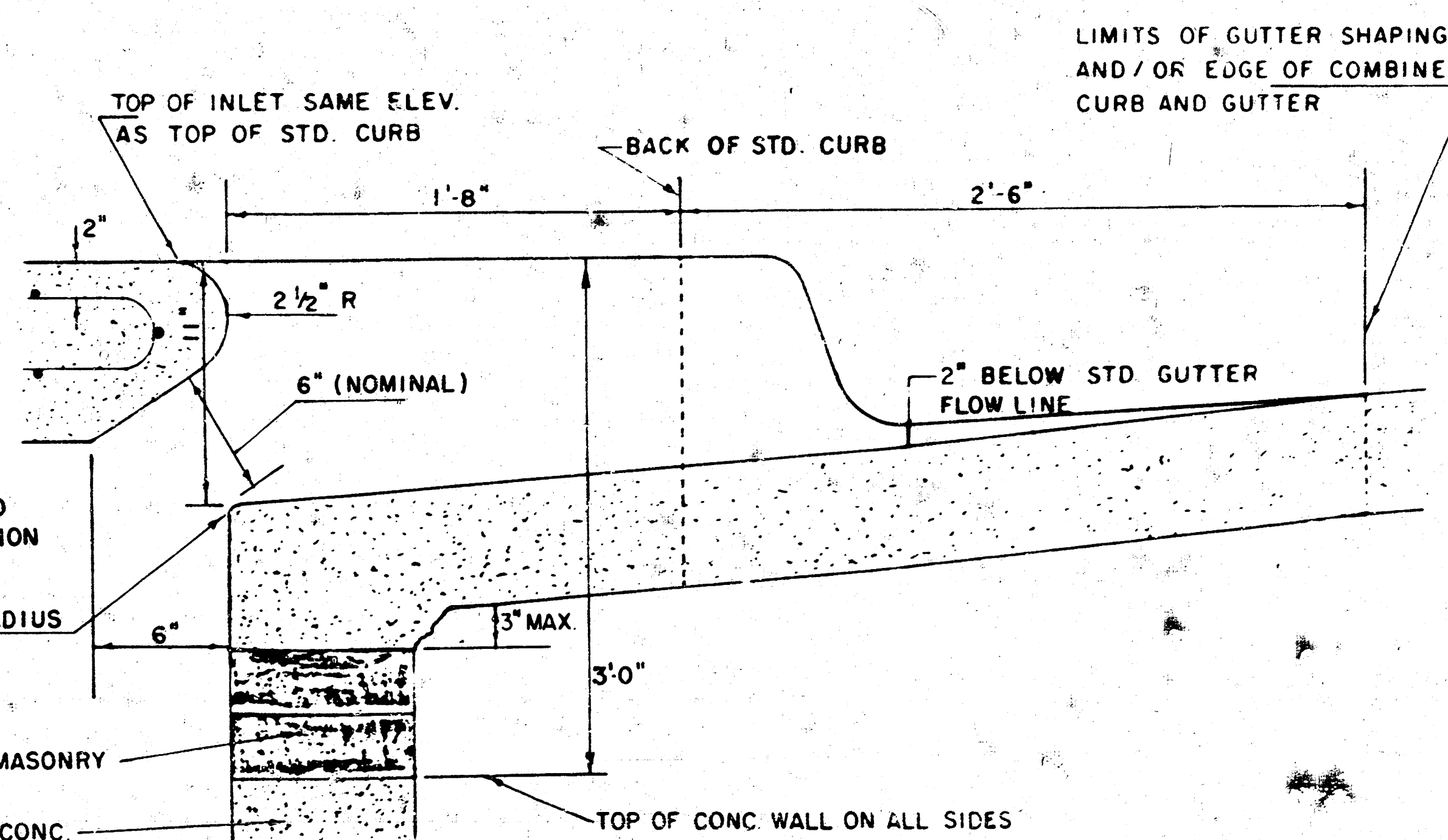
INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF-CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.

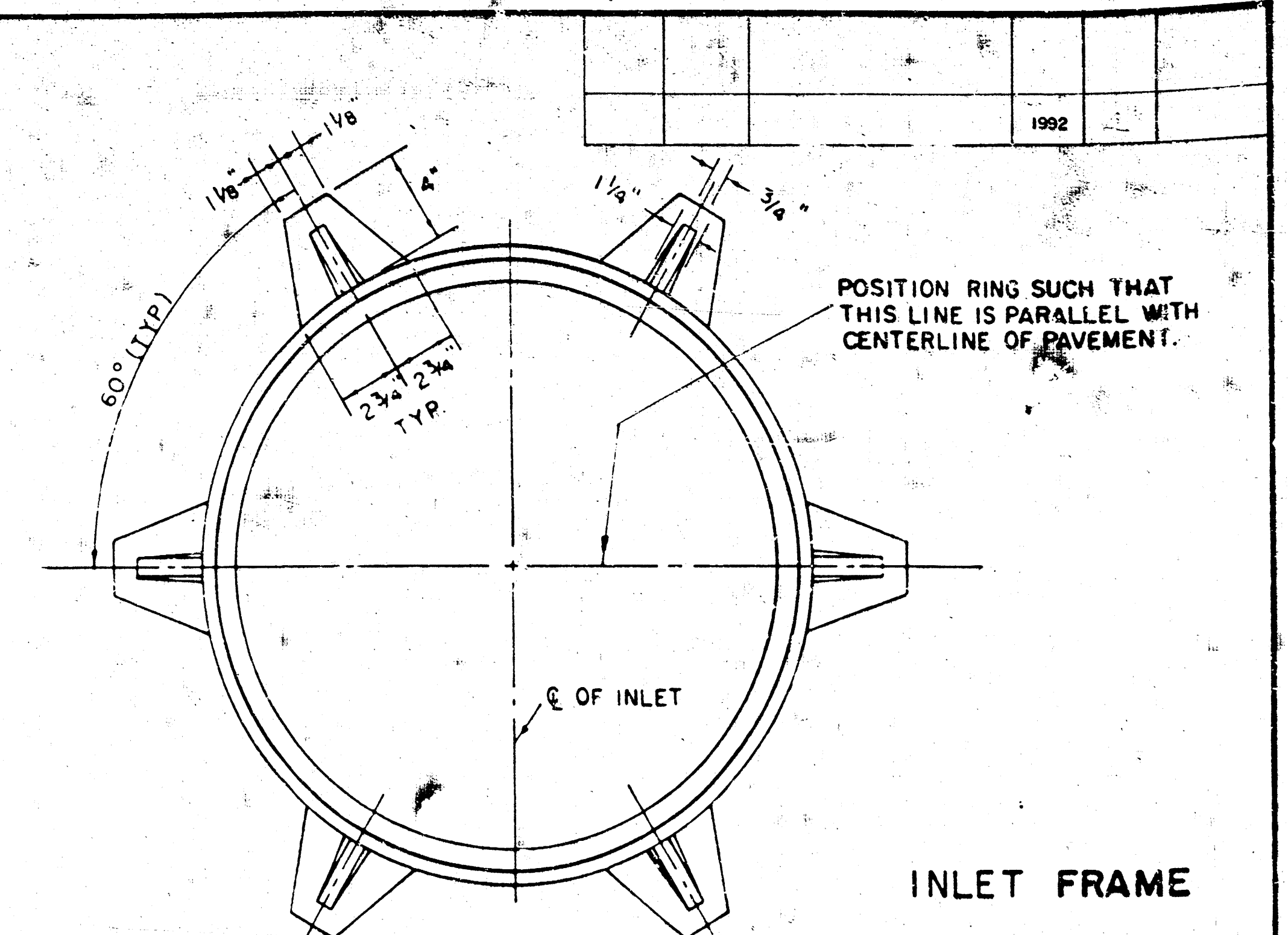
** NOTE: Slope of Inlet Tops to match Sidewalk or Parking Slopes within Limits indicated.

BENDING DIAGRAM

W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 4"	3' 8" x 6' 4" x 7 1/2"	21" B SMALLER	0.38 ±
5' 4"	4' 8" x 6' 4" x 7 1/2"	24" B 30"	0.51 ±
6' 4"	5' 8" x 6' 4" x 7 1/2"	36" B 42"	0.64 ±
7' 4"	6' 8" x 6' 4" x 7 1/2"	48" B 54"	0.77 ±
8' 4"	7' 8" x 6' 4" x 7 1/2"	60" B 66"	0.90 ±

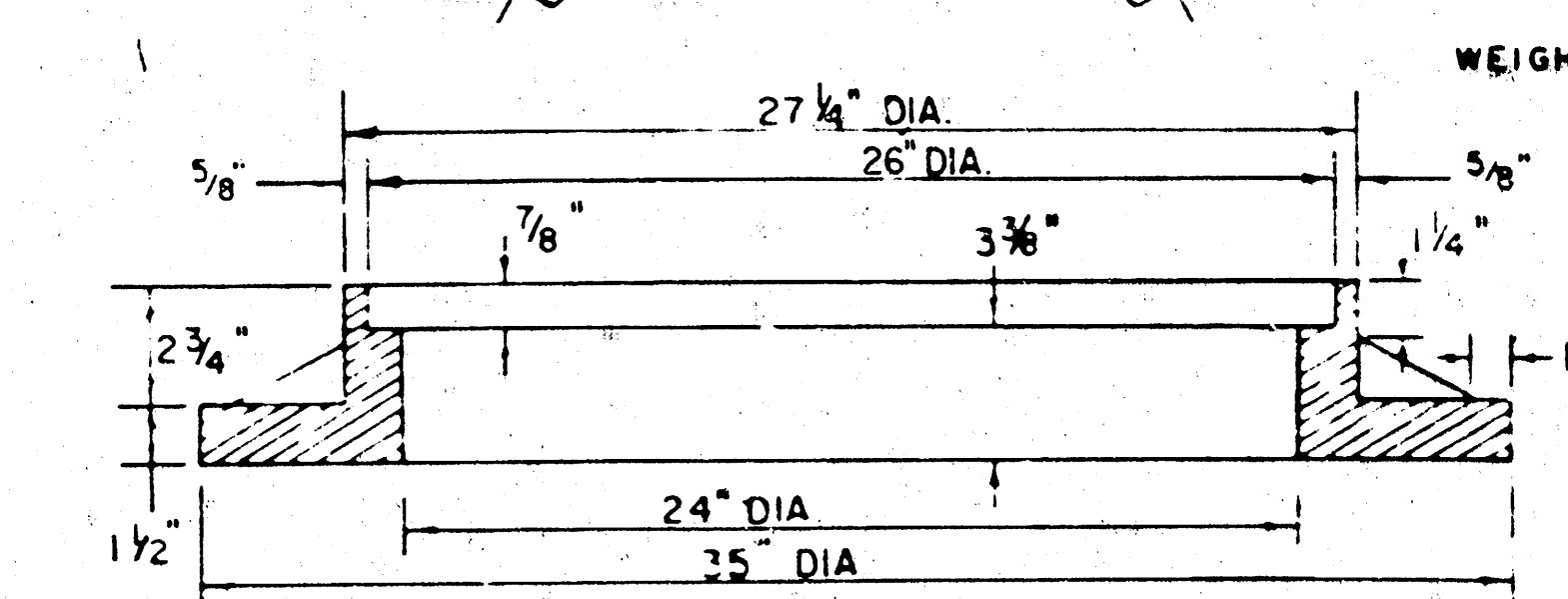


SECTION B-B

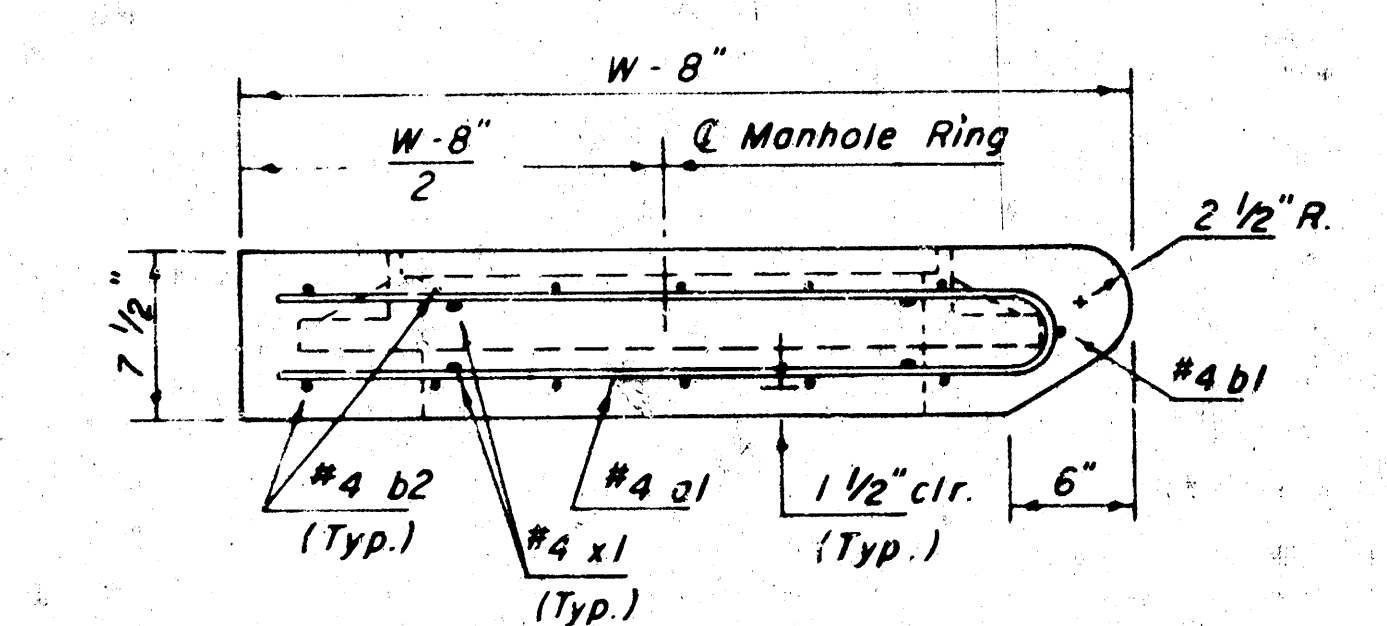


INLET FRAME

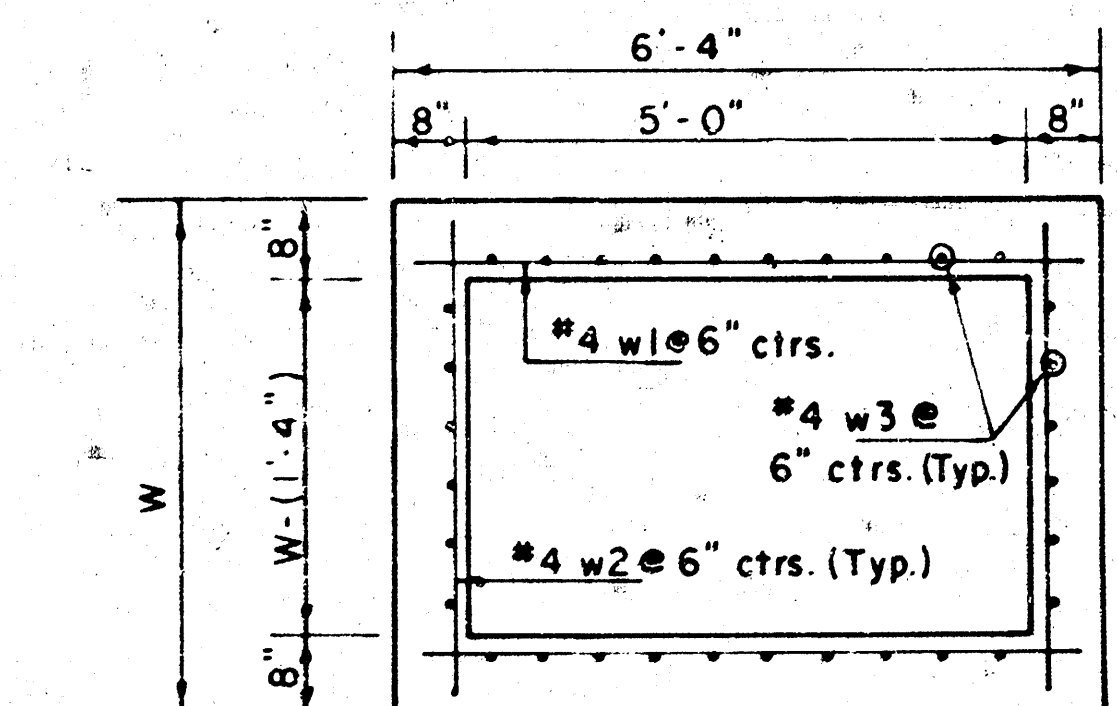
WEIGHT = 180 LBS.



SEE CITY OF WICHITA STANDARD MANHOLE FRAME AND COVER DETAIL SHEET FOR COVER DETAILS TO BE USED WITH INLET FRAME.



SECTION C-C



SECTION D-D

REVISED 11-30-1988
 REVISED 12-21-1984

Revised 2-16-1989

DETAIL STANDARD TYPE IA CURB INLET
 CITY OF WICHITA, KANSAS
 INLET OPENING = 6" x 5' 0"

JUNE 1984

SHEET NO.	TOTAL SHEETS
5	7

STA. 0+00
EXISTING MANHOLE
304' TO SOUTH
362' TO WEST LINE MERIDIAN

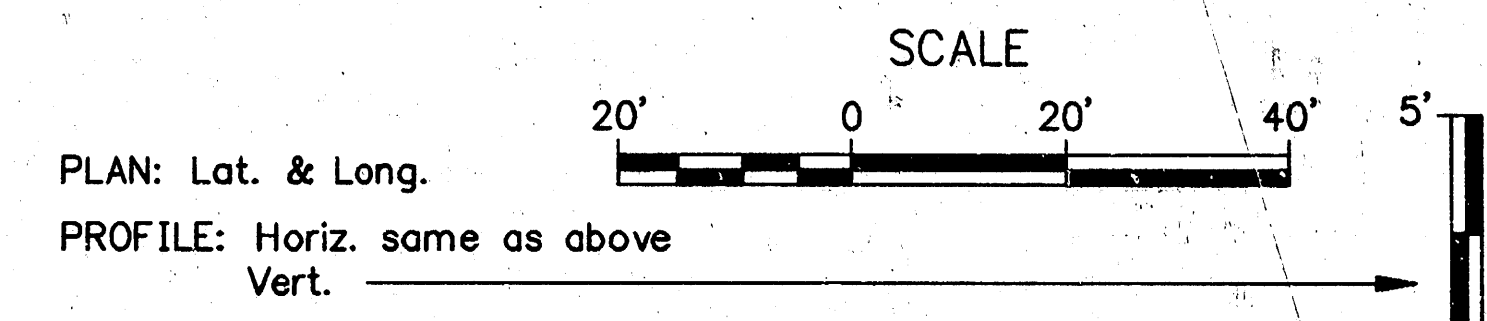
STA. 0+72
CONSTR. TYPE "C" MANHOLE
4' DIA.
PLUG 8" V.C.P. TO NORTH
6" Stub to N.W.

PROPOSED BUILDING

ABANDON 8" V.C.P.

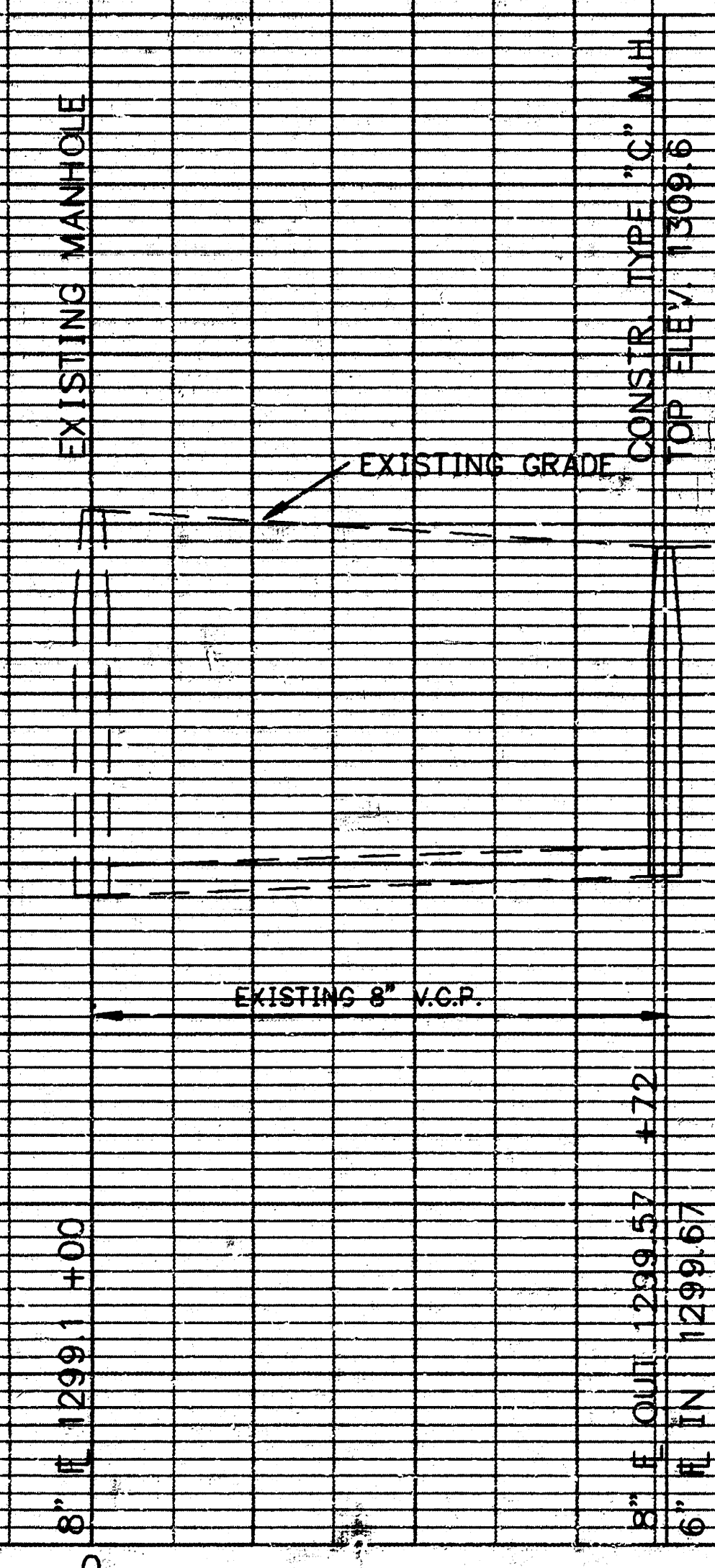
4" SERVICE LINE
SEE MECH. DRAWINGS

MANHOLE BY OTHERS



Lost Plot-Date: 04/28/94 Plot-Time: 6:20 A.M.

SURV. N.R. PLOT C-400 DES. J.W. DR. J.W. TR. CKD. K.M. APP. S.K.B.



4/14/94 K.M.B.

MAUDE CARPENTER CHILDREN CTR.
SANITARY SEWER
EXTENSION

Booker ASSOCIATES INC.
OF KANSAS
Wichita Kansas

SCALE NOTED DATE MARCH 29, 1994 DWG. NO.

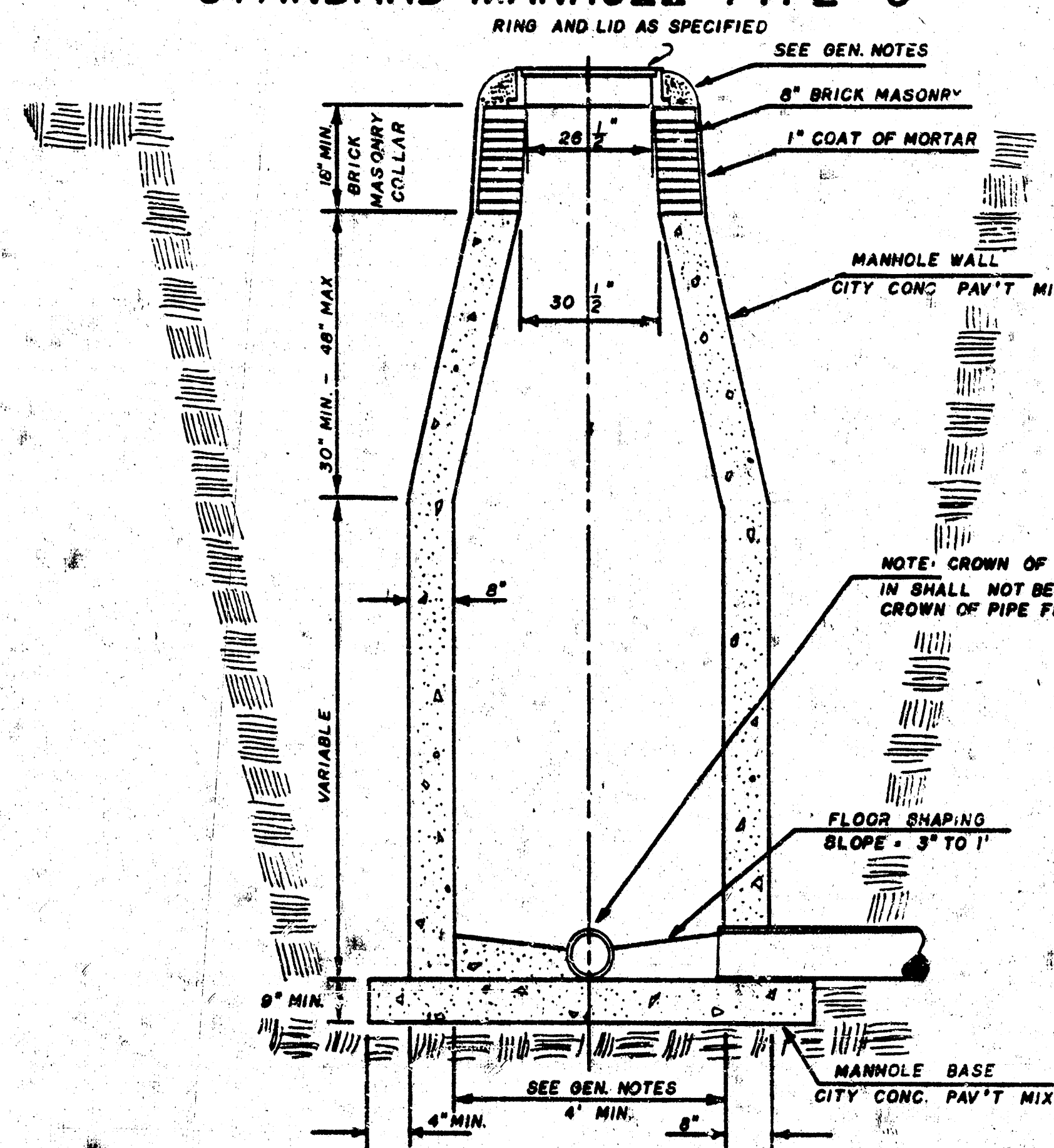
SEWER APPURTENANCES DETAILS

ADOPTED AS STANDARD DESIGN

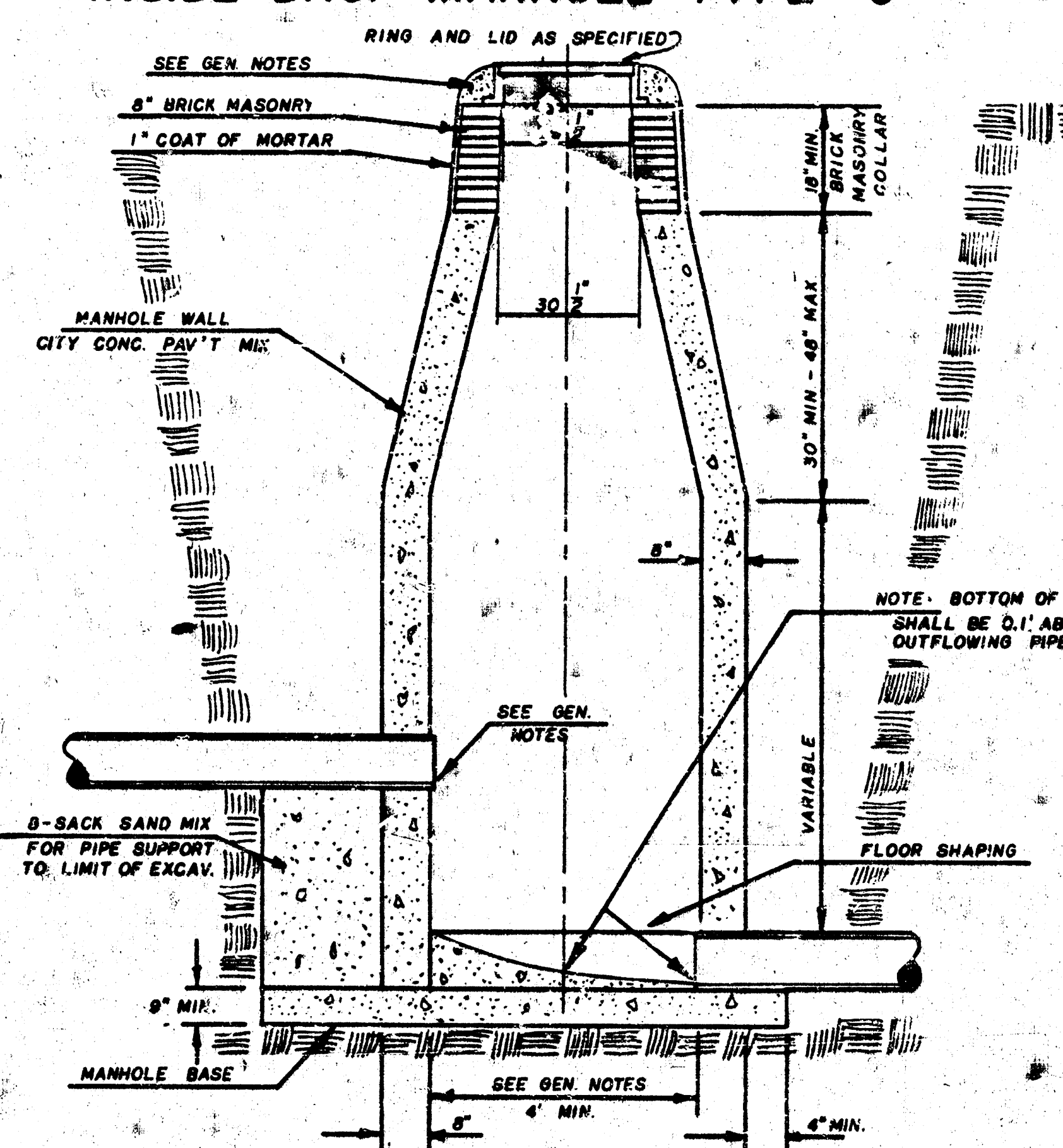
BY

City of Wichita, Kansas

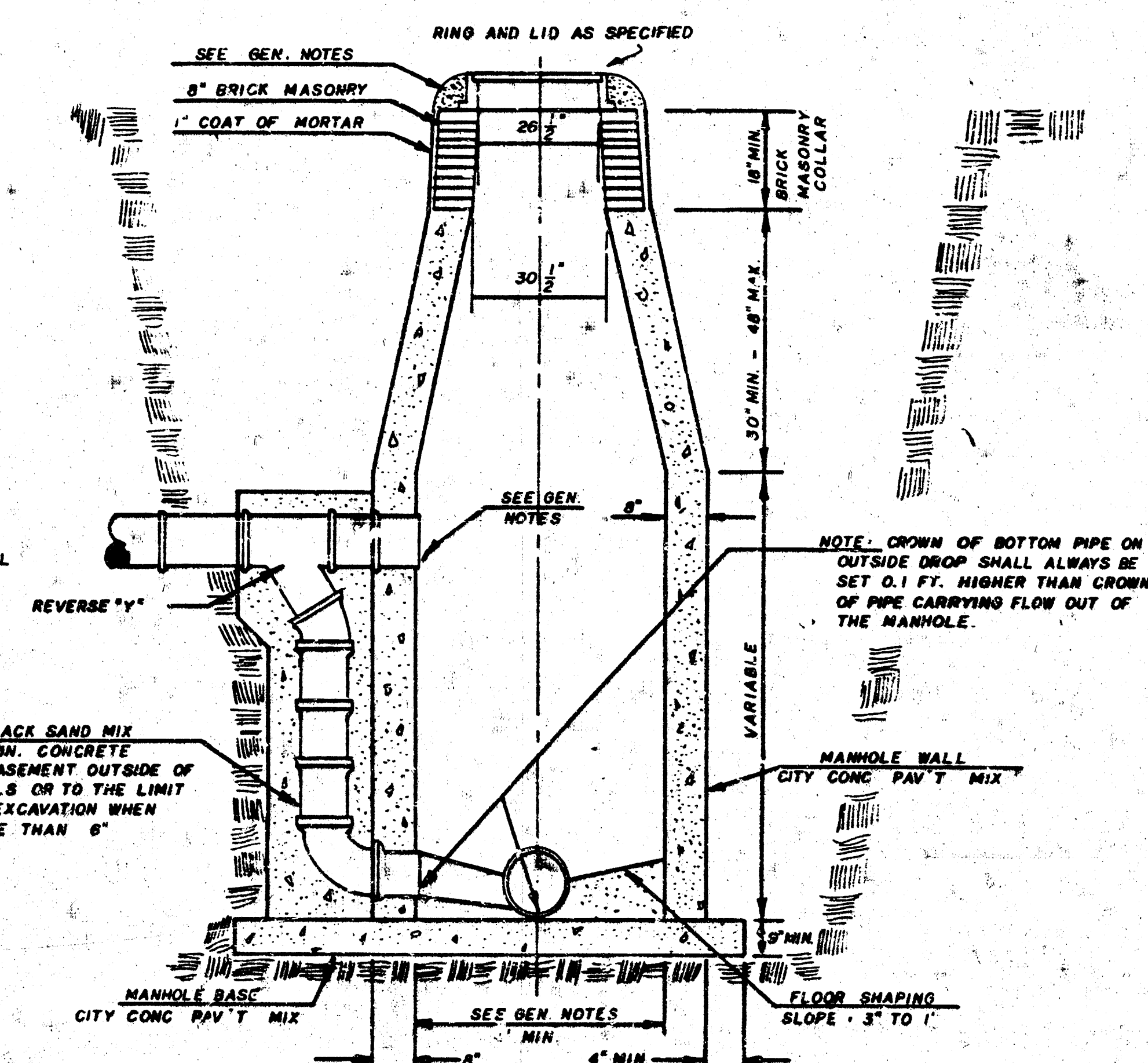
STANDARD MANHOLE TYPE "C"



INSIDE DROP MANHOLE TYPE "C"



OUTSIDE DROP MANHOLE TYPE "C"



GENERAL NOTES

- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. TYPE "C" MANHOLES CAN BE CONSTRUCTED ONLY WHERE PIPE SIZES ARE 8" OR SMALLER. THE INSIDE DIAMETER OF TYPE "C" MANHOLES SHALL BE 4'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASE. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. REINFORCING STEEL SHALL BE PLACED 6" ABOVE THE BOTTOM OF THE MANHOLE BASE. COST OF FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- AN OPENING SHALL BE CUT IN THE MANHOLE WALL FOR THE UPPER INLET PIPE FOR INSIDE AND OUTSIDE DROP MANHOLES. THE UPPER INLET PIPE SHALL BE GROUTED INTO THIS OPENING WITH NON-SHRINK GROUT. THE EXTERIOR OF THIS COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT.
- THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LIMBS FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
- PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
- THE VERTICAL FREE FALL DROP INSIDE MANHOLES SHALL NOT EXCEED 2'. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
- STANDARD MANHOLES TYPE "C" AND STANDARD INSIDE DROP MANHOLES TYPE "C" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES TYPE "C" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

MANHOLE FRAME AND COVER DETAIL

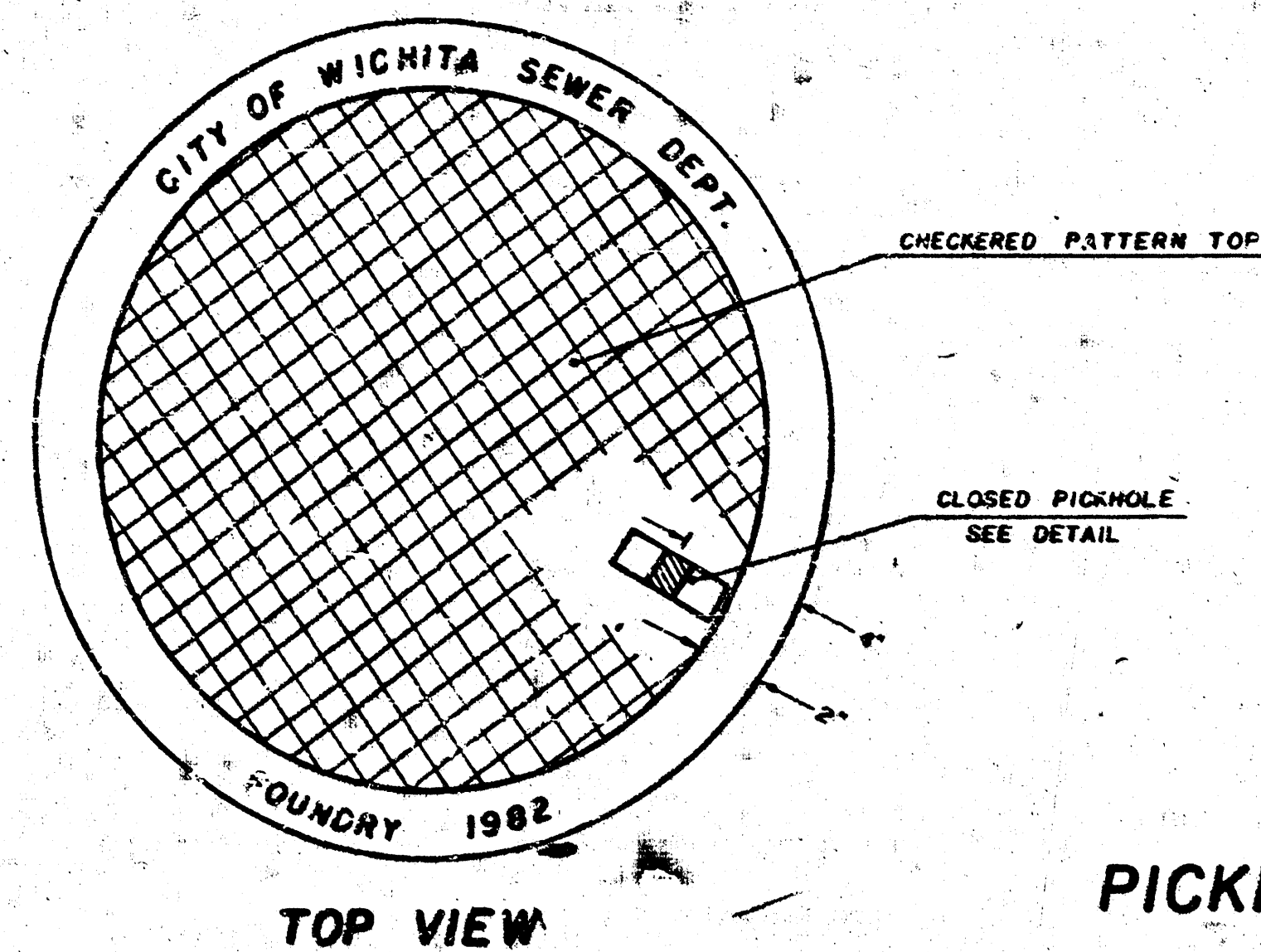
ADOPTED AS STANDARD DESIGN

BY

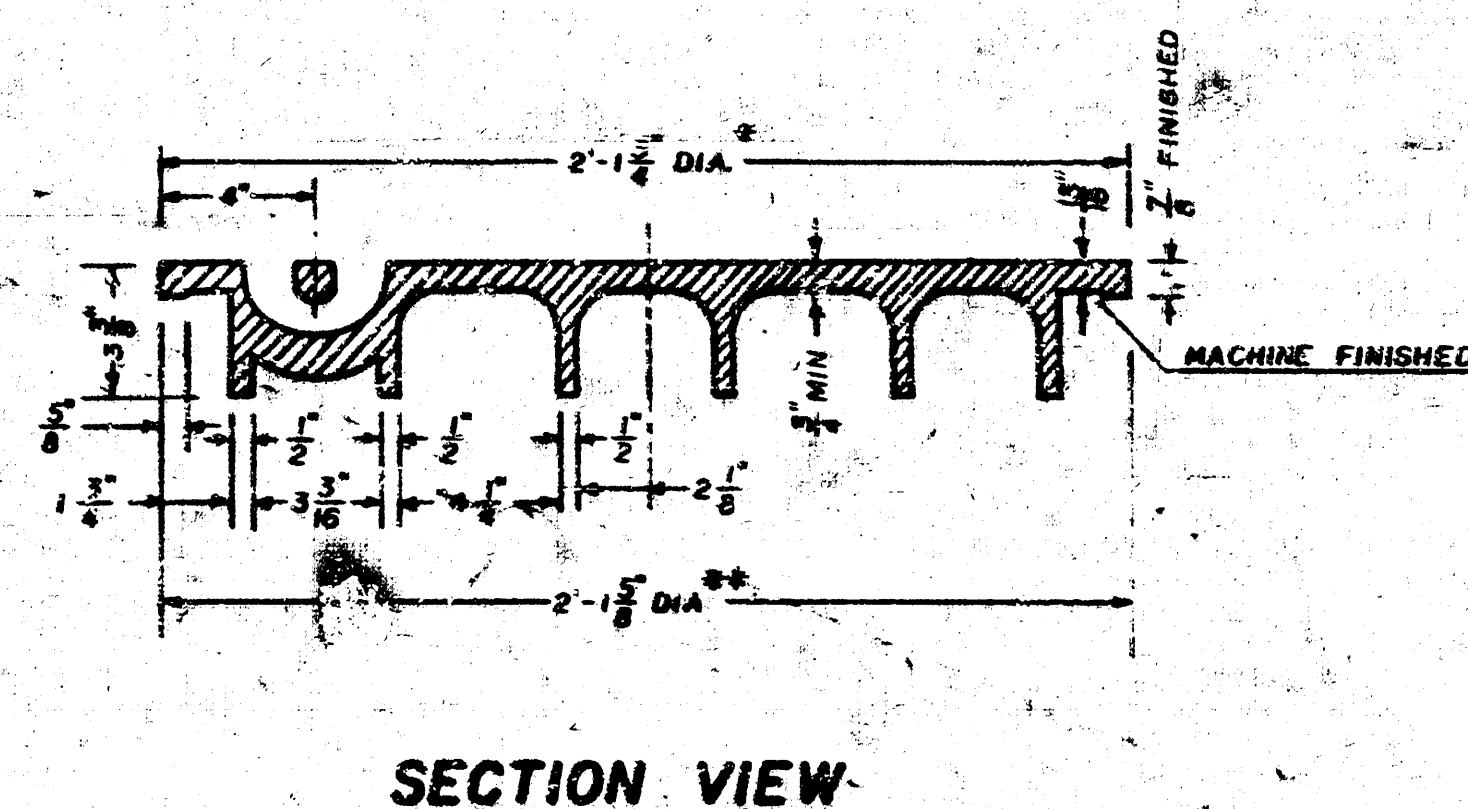
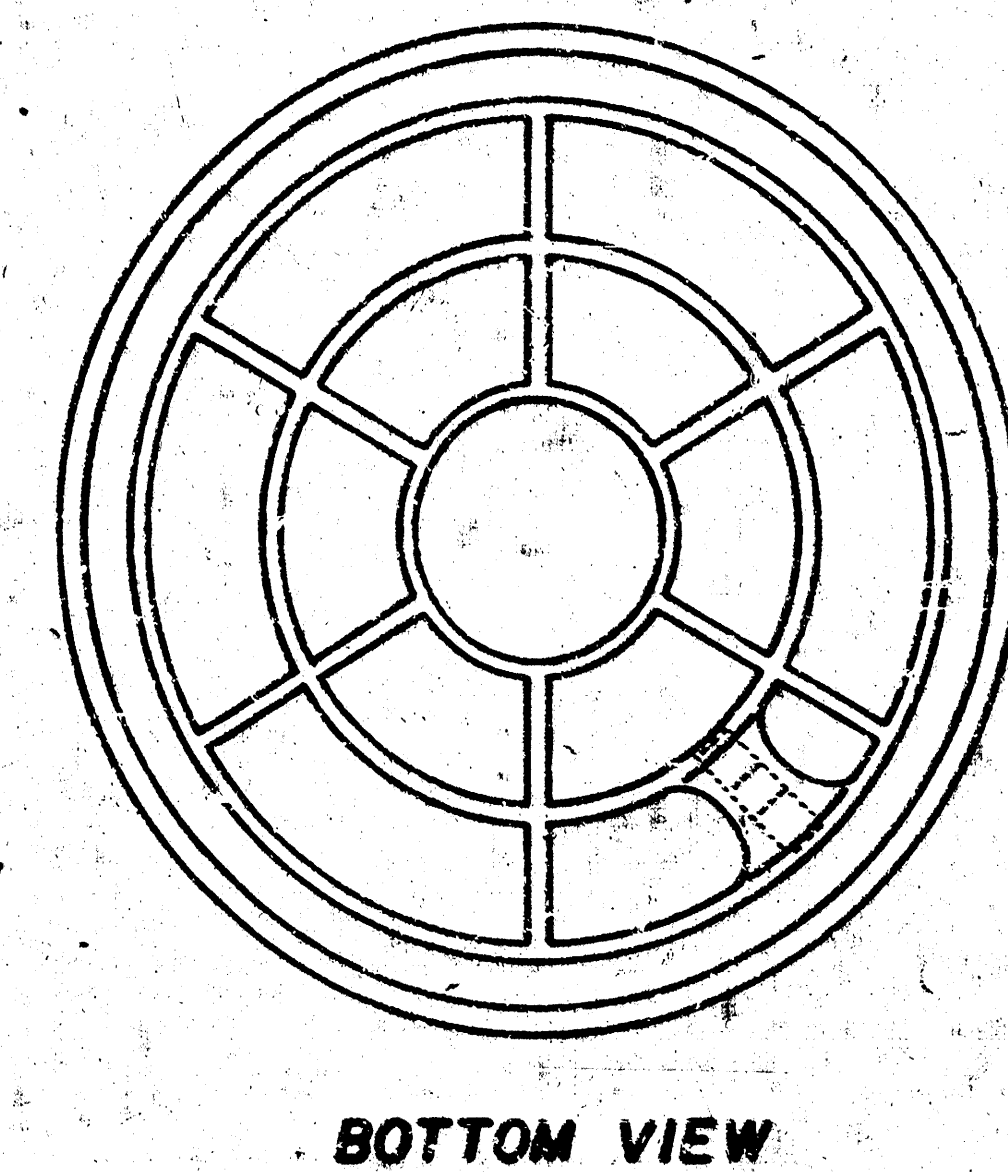
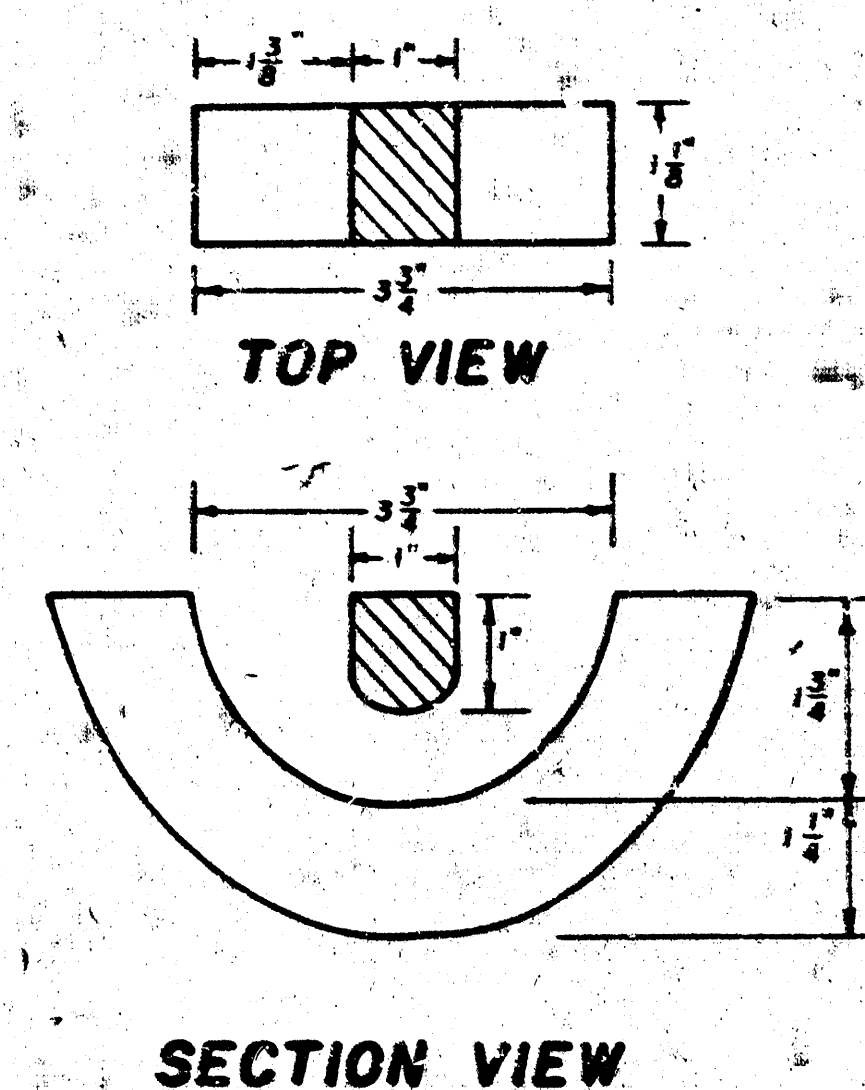
City of Wichita, Kansas

MANHOLE COVER

Weight: 180 Lbs.



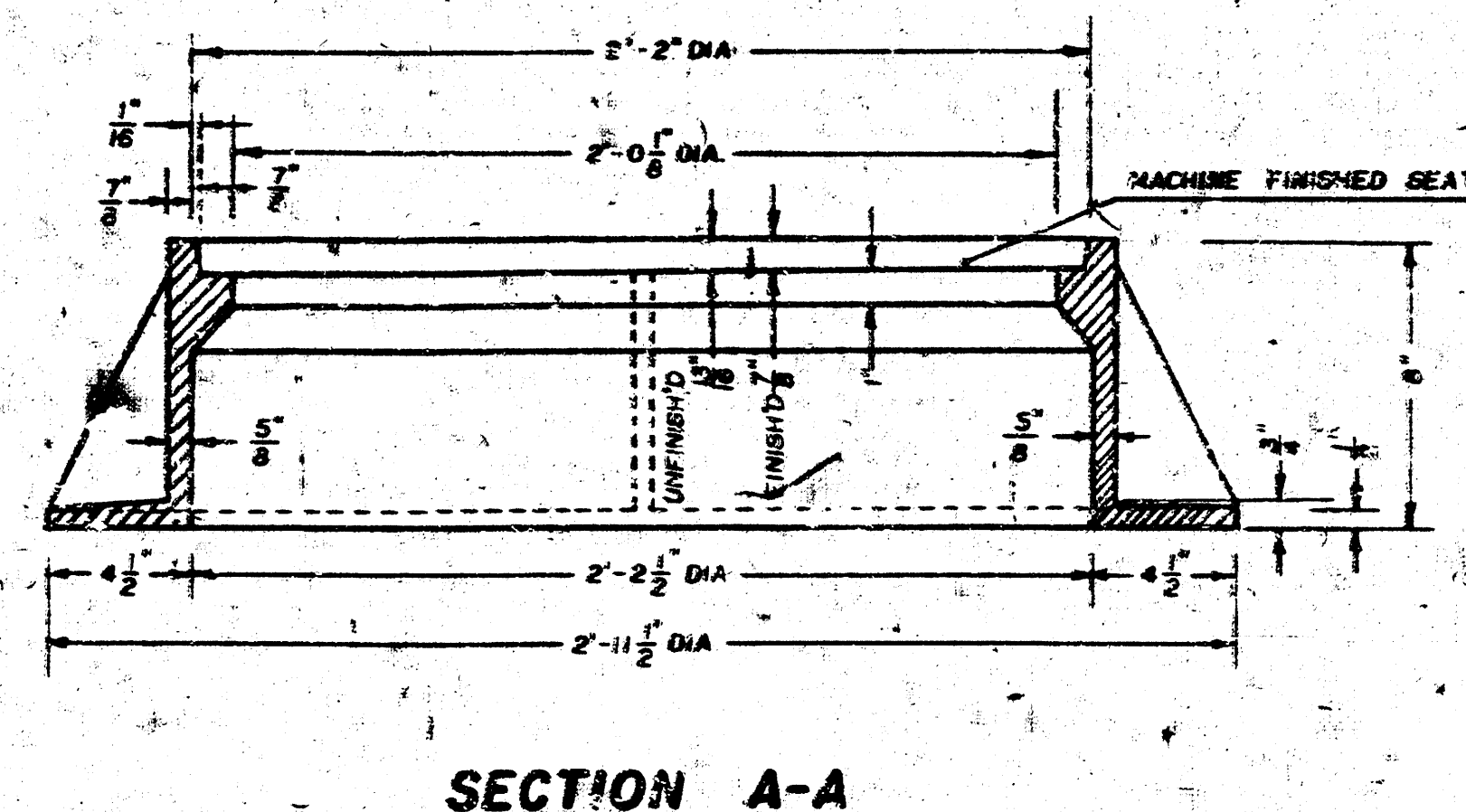
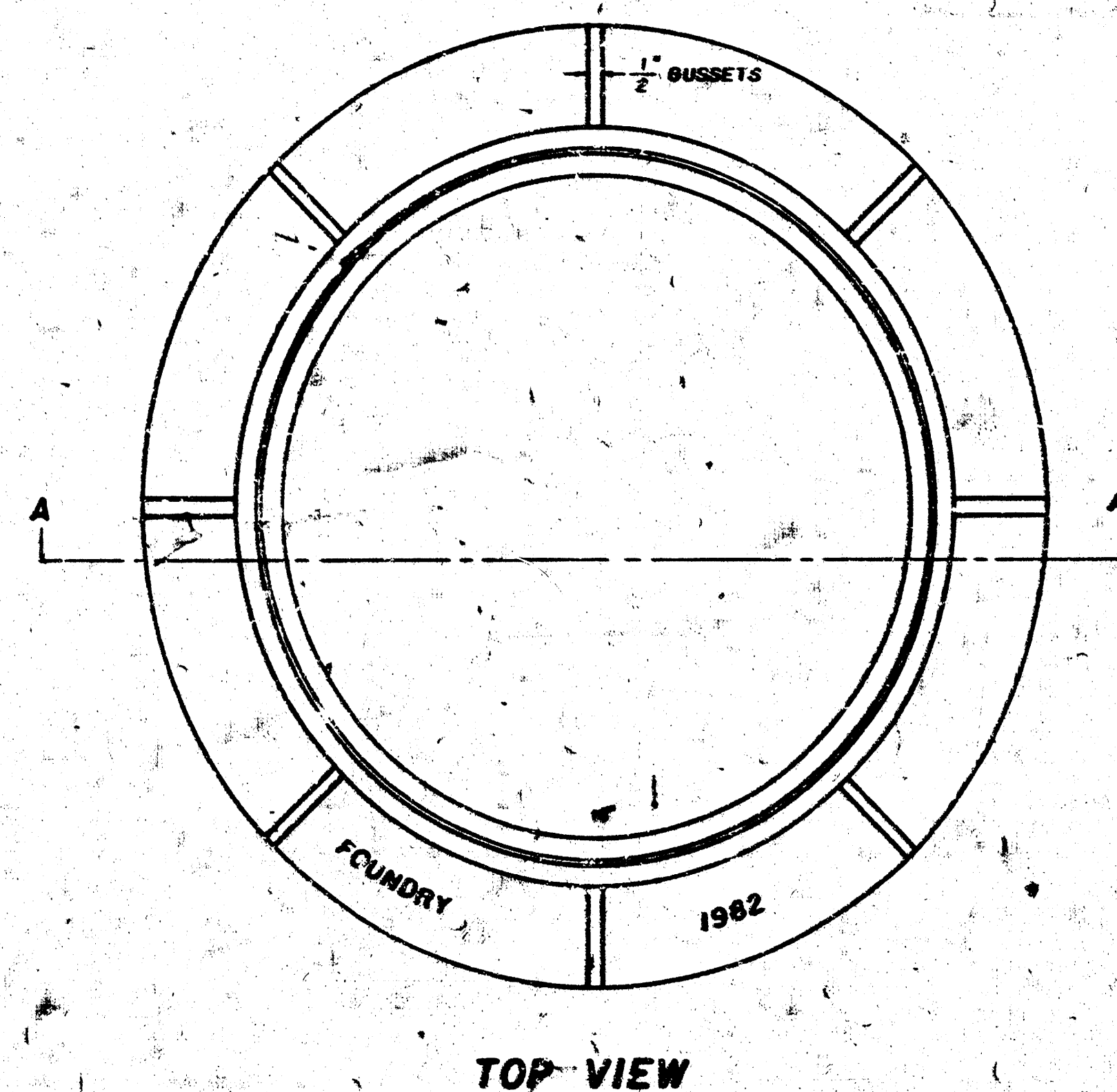
PICKHOLE DETAIL



* OUTSIDE DIA. TOP OF COVER
** OUTSIDE DIA. BOTTOM OF COVER

MANHOLE FRAME

Weight: 240 Lbs.



GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.
2. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.
3. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.
4. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1" IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUTS SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

REVISED MAY 1993

JNL DEC. 1981

10-5-3-11