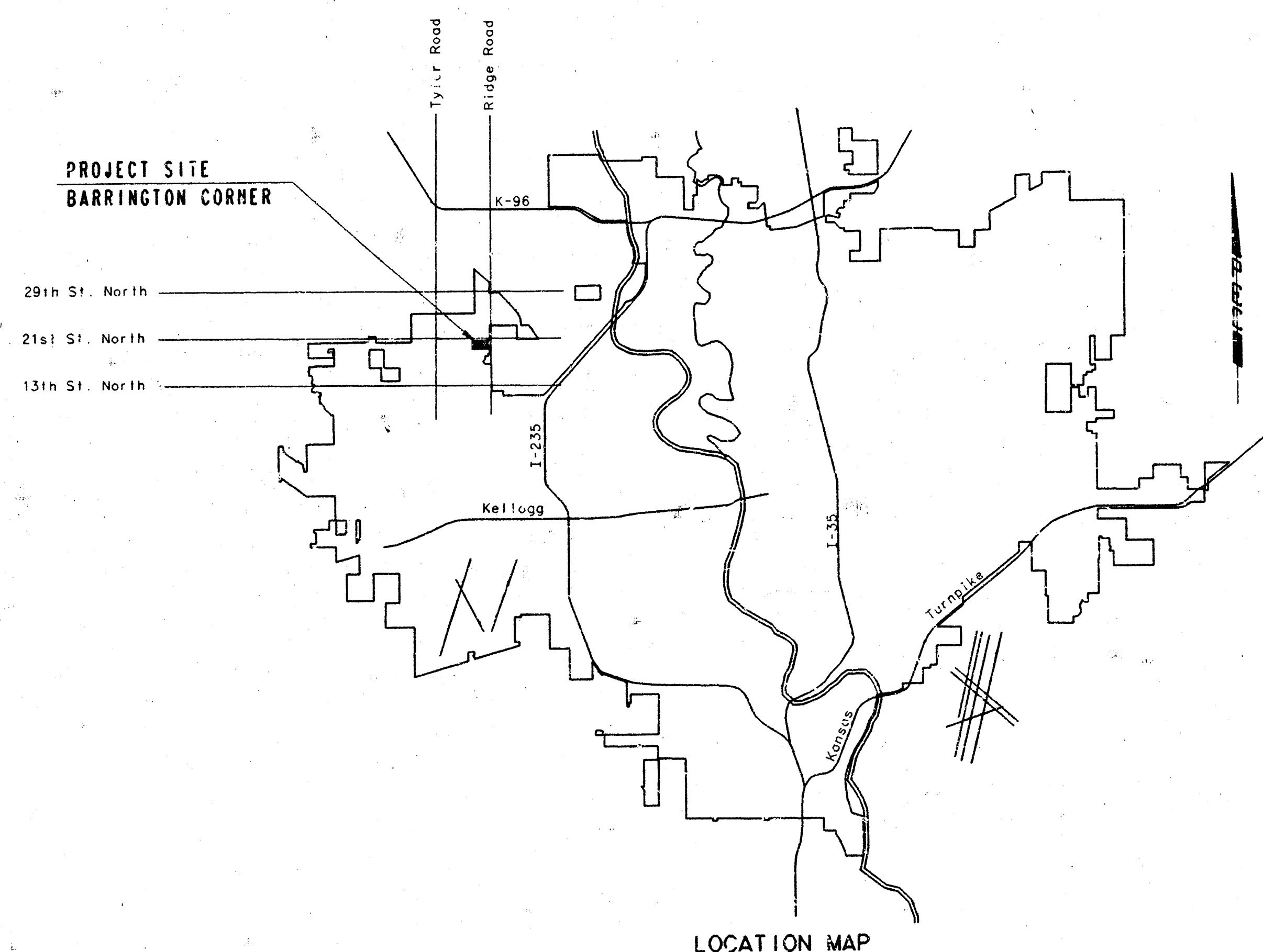


CONSTRUCTION PLANS FOR
LATERAL 13, MAIN 15
 OF THE
SOUTHWEST INTERCEPTOR SEWER
 IN
THE CITY OF WICHITA,
 SEDGWICK COUNTY, KANSAS
 MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER



INDEX OF SHEETS

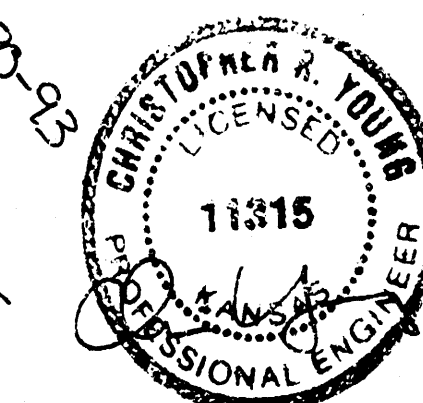
SHEET NO. 1	TITLE SHEET
SHEET NO. 2	KEY MAP AND GENERAL NOTES
SHEET NO. 3	PLAN
SHEET NO. 4	PLAN/PROFILE
SHEET NO. 5	TYPE P MH DETAILS
SHEET NO. 6	TYPE C MH DETAILS
SHEET NO. 7	TYPE D MH DETAILS
SHEET NO. 8	FRAME AND COVER DETAILS
SHEET NO. 9	RISER DETAILS

INDEX CODE 741397
 CITY OF WICHITA PROJECT NO. 468-76-245-81908-000-000-001

JANUARY, 1993

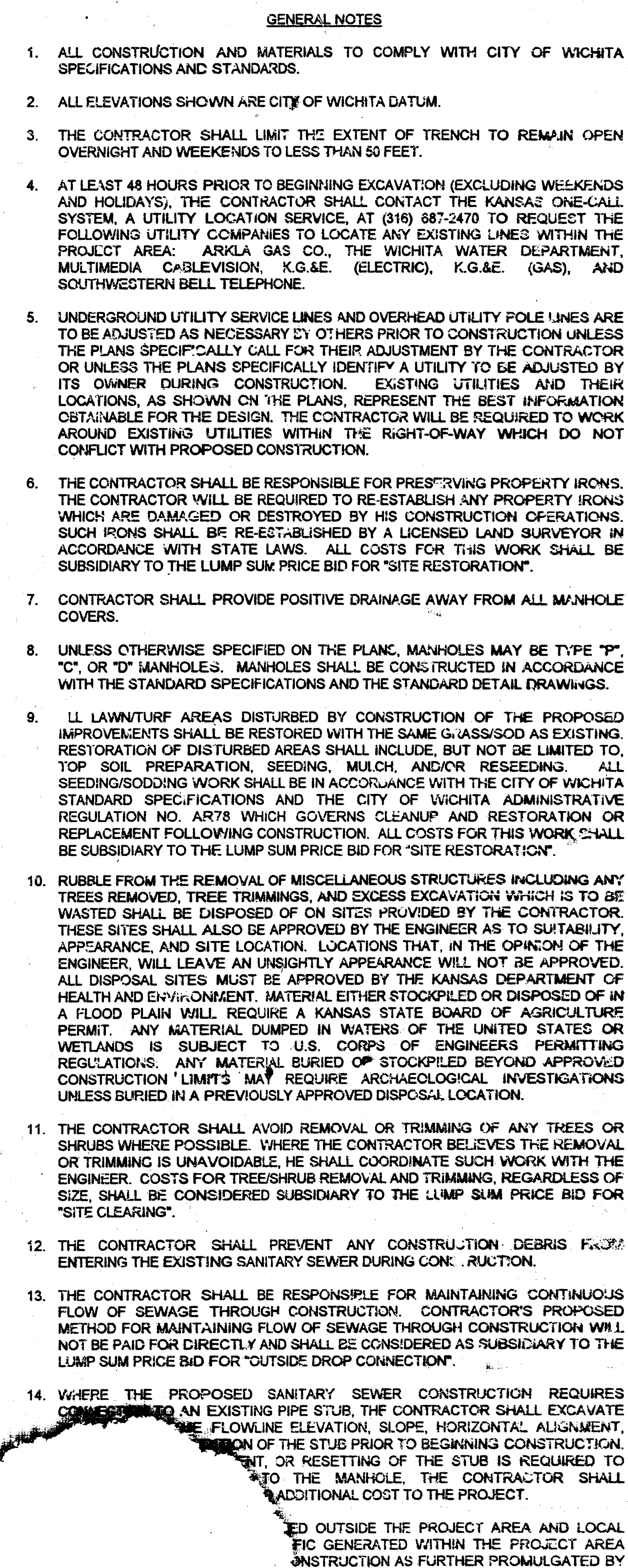
PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Booked 6-30-93
 From As Built
 JKB

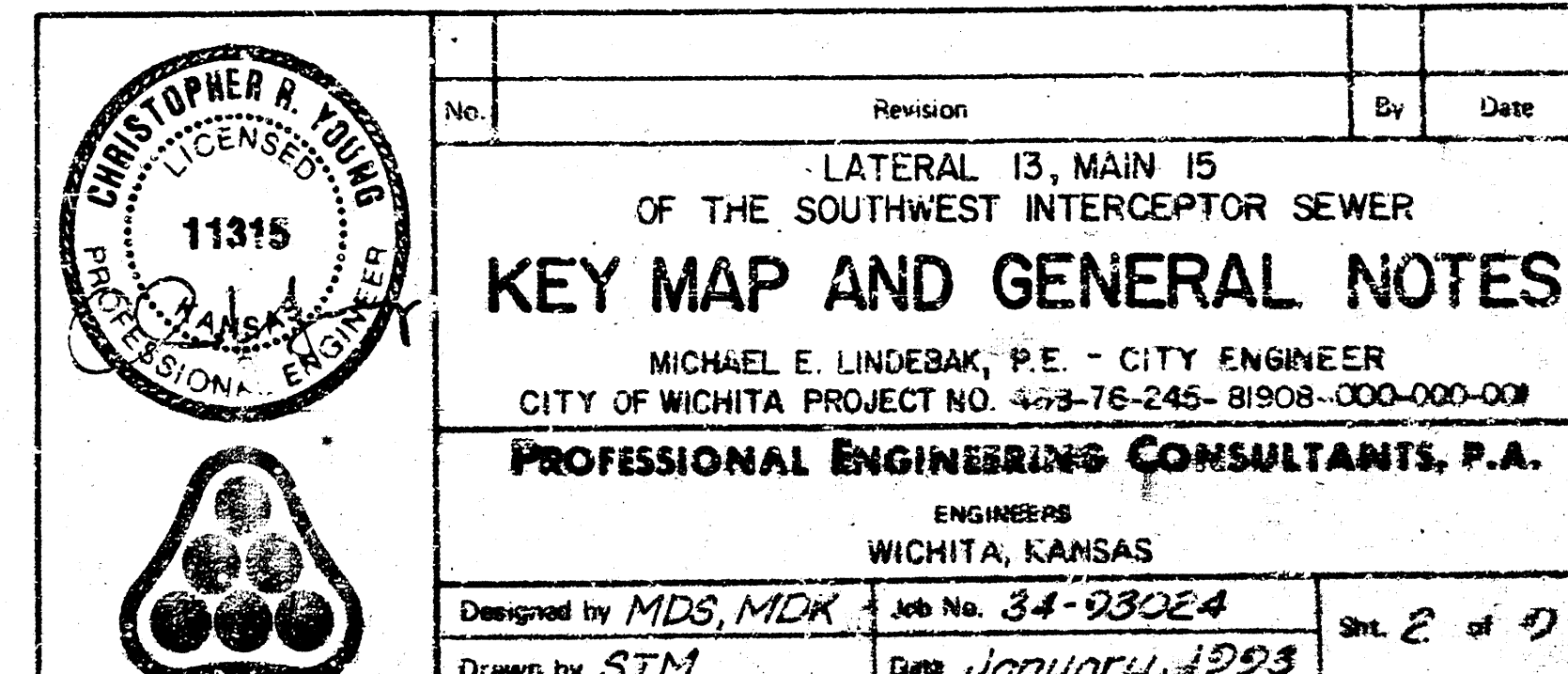


RECORD DRAWING

MDK 6/11/93
[Signature]

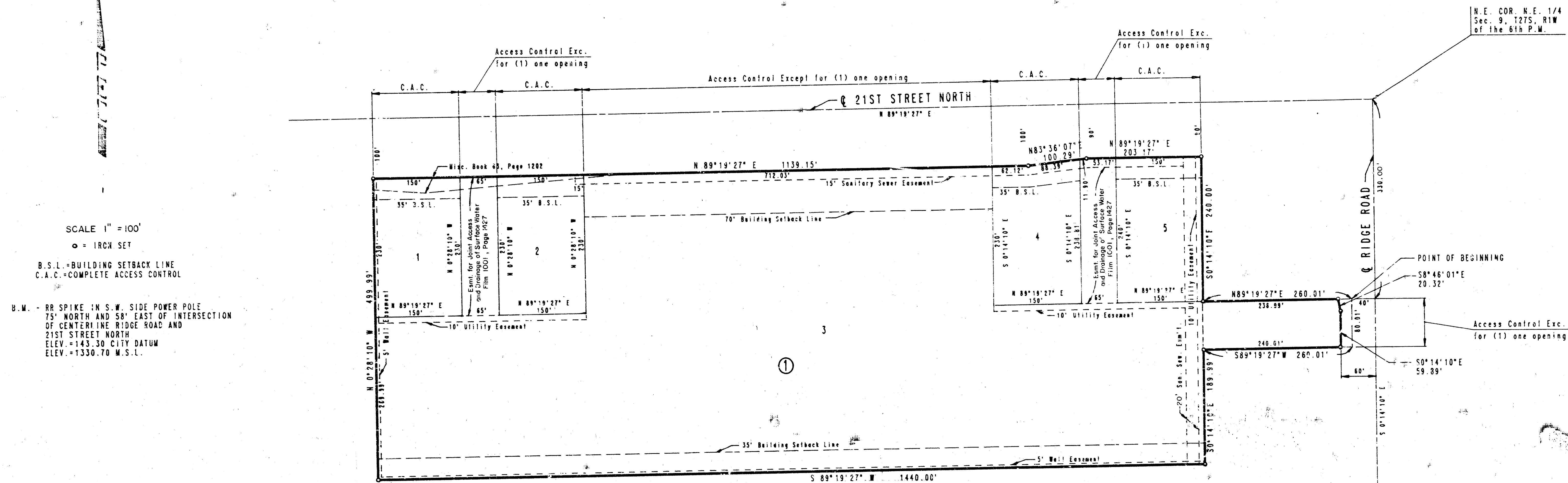


MDK, 6/11/93
S. Valerie Pate



BARRINGTON CORNER

AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS



RECORD DRAWING

MDK 10/1/93

R. W. Linn

STATE OF KANSAS)
COUNTY OF SEDGWICK) SS

I, R. W. LINN, A REGISTERED LAND SURVEYOR IN AFORESAID STATE AND COUNTY, DO HEREBY CERTIFY THAT ON THIS 21ST DAY OF OCTOBER 1988, I HAVE BEEN IN RESPONSIBLE CHARGE OF SURVEYING AND PLATTING OF BARRINGTON CORNER AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS, INTO LOTS, AND A BLOCK, BEING A TRACT OF LAND IN THE NE 1/4 OF SECTION 9, T27S, R1W OF THE 6TH P.M. DESCRIBED AS COMMENCING AT THE NE CORNER OF THE NE 1/4 OF SECTION 9, TOWNSHIP 27 SOUTH, RANGE 1 WEST OF THE 6TH P.M.; THENCE BEARING S0°14'10"E ALONG THE EAST LINE OF SAID NE 1/4 A DISTANCE OF 330.00 FEET; THENCE BEARING S89°19'27"W A DISTANCE OF 40.00 FEET TO THE POINT OF BEGINNING; THENCE BEARING S0°14'10"E PARALLEL TO AND 40.00 FEET WEST OF THE EAST LINE OF SAID NE 1/4 A DISTANCE OF 80.01 FEET; THENCE BEARING S89°19'27"W A DISTANCE OF 260.01 FEET; THENCE BEARING S0°14'10"E A DISTANCE OF 189.99 FEET; THENCE BEARING S89°19'27"W A DISTANCE OF 1440.00 FEET; THENCE BEARING N0°28'10"W A DISTANCE OF 499.99 FEET; THENCE BEARING N89°19'27"E PARALLEL TO AND 100.00 FEET SOUTH OF THE NORTH LINE OF SAID NE 1/4 A DISTANCE OF 1139.15 FEET; THENCE BEARING N83°36'07"E A DISTANCE OF 100.29 FEET; THENCE BEARING N89°19'27"E A DISTANCE OF 203.17 FEET; THENCE BEARING S0°14'10"E A DISTANCE OF 240.01 FEET TO THE POINT OF BEGINNING. CONTAINING 17.066 ACRES MORE OR LESS.

R. W. Linn
R. W. LINN, P.E., LIC. NO. 3684 R.L.S. NO. 934
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

KNOW ALL MEN BY THESE PRESENTS THAT WE, THE UNDERSIGNED PROPERTY OWNERS OF THE LAND, AS ABOVE SET FORTH IN THE SURVEYOR'S CERTIFICATE, HAVE CAUSED THE LAND TO BE SURVEYED AND PLATTED INTO LOTS, A BLOCK, AND A STREET THE SAME TO BE KNOWN AS BARRINGTON CORNER AN ADDITION TO WICHITA SEDGWICK COUNTY, KANSAS.

EASEMENTS AS INDICATED FOR THE CONSTRUCTION AND MAINTENANCE OF PUBLIC UTILITIES ARE HEREBY GRANTED. THE STREET IS HEREBY DEDICATED TO AND FOR THE USE OF THE PUBLIC.

A FIVE-FOOT WALL EASEMENT AS SHOWN ALONG THE WEST LINE OF LOTS 1 AND 3 AND THE SOUTH LINE OF LOT 3 IS HEREBY PLATTED FOR THE CONSTRUCTION AND MAINTENANCE OF A PRIVATE WALL. UTILITIES MAY CROSS THE WALL EASEMENT. THAT PORTION OF 21ST STREET NORTH AS DESCRIBED IN MISC. BOOK 63, PAGE 1202 WITHIN THE ABOVE DESCRIBED PLAT IS HEREBY VACATED AND REPLATTED BY VIRTUE OF P.S.A. 12-512(b) AMENDED.

ALL ABUTTERS' RIGHT OF ACCESS TO AND FROM 21ST STREET NORTH AND RIDGE ROAD OVER AND ACROSS THE NORTH LINE OF LOTS 1 THROUGH 5 AND OVER AND ACROSS THE EAST LINE OF LOT 3 ALL IN BLOCK 1 ARE HEREBY GRANTED TO THE CITY OF WICHITA, PROVIDED HOWEVER THAT LOT 3 SHALL HAVE ACCESS TO 21ST STREET AT THREE (3) LOCATIONS, ONE (1) BETWEEN LOTS 1 AND 2, ONE (1) BETWEEN LOTS 2 AND 4, AND ONE (1) BETWEEN LOTS 4 AND 5 AND ACCESS TO RIDGE ROAD AT ONE (1) LOCATION AS DETERMINED BY THE CITY ENGINEER OF THE CITY OF WICHITA.

OWNER: RITCHIE ASSOCIATES, INC.

BY: JACK D. RITCHIE
JACK D. RITCHIE, C.E.O.

STATE OF KANSAS)
COUNTY OF SEDGWICK) SS

BE IT REMEMBERED THAT ON THIS 21ST DAY OF OCTOBER 1988 BEFORE ME, A NOTARY PUBLIC IN AFORESAID STATE AND COUNTY, CAME JACK D. RITCHIE, CHIEF EXECUTIVE OFFICER OF RITCHIE ASSOCIATES, INC. TO ME PERSONALLY KNOWN TO BE THE SAME PERSON WHO EXECUTED THE FOREGOING INSTRUMENT OF WRITING AND DULY ACKNOWLEDGED THE EXECUTION OF SAME FOR AND ON BEHALF AND AS THE VOLUNTARY ACT AND DEED OF SAID CORPORATION, IN TESTIMONY WHEREOF I HAVE HERETO SET MY HAND AND AFFIXED MY NOTARIAL SEAL THE DAY AND YEAR ABOVE WRITTEN.

Louise R. Hansen NOTARY PUBLIC

MY COMMISSION EXPIRES August 25, 1990

WE, ALBAN F. BORN AND JANICE L. BORN HUSBAND AND WIFE; JOHN H. BORN AND MARY JOLENE BORN HUSBAND AND WIFE; AND ARTHUR W. BORST AND AGATHA P. W. BORST HUSBAND AND WIFE, HOLDERS OF A MORTGAGE ON THE ABOVE DESCRIBED PROPERTY, DO HEREBY CONSENT TO THE PLATTING OF BARRINGTON CORNER AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS.

Alban F. Born Janice L. Born
ALBAN F. BORN JANICE L. BORN
John H. Born Mary Joleene Born
JOHN H. BORN MARY JOLENE BORN
Arthur W. Borst Agatha P. W. Borst
ARTHUR W. BORST AGATHA P. W. BORST

STATE OF KANSAS)
COUNTY OF SEDGWICK) SS

BE IT REMEMBERED THAT ON THIS 21ST DAY OF OCTOBER 1988 BEFORE ME, A NOTARY PUBLIC IN AFORESAID STATE AND COUNTY, CAME ALBAN F. BORN AND JANICE L. BORN, HUSBAND AND WIFE; JOHN H. BORN AND MARY JOLENE BORN, HUSBAND AND WIFE; ARTHUR W. BORST AND AGATHA P. W. BORST, HUSBAND AND WIFE, TO ME PERSONALLY KNOWN TO BE THE SAME PERSONS WHO EXECUTED THE FOREGOING INSTRUMENT OF WRITING AND DULY ACKNOWLEDGED THE EXECUTION OF SAME AS THEIR VOLUNTARY ACT AND DEED. IN TESTIMONY WHEREOF, I HAVE HERETO SET MY HAND AND AFFIXED MY NOTARIAL SEAL THE DAY AND YEAR ABOVE WRITTEN.

Louise R. Hansen NOTARY PUBLIC

MY COMMISSION EXPIRES August 25, 1990

THIS PLAT HAS BEEN SUBMITTED TO AND APPROVED BY THE WICHITA-SEGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION, WICHITA, KANSAS, DATED THIS 11TH DAY OF OCTOBER, 1988.

Elton Parsons CHAIRMAN
Marvin S. Krodt SECRETARY

THIS PLAT APPROVED AND ALL DEDICATIONS SHOWN HEREON ARE ACCEPTED BY THE CITY COUNCIL OF THE CITY OF WICHITA, KANSAS, DATED THIS 23RD DAY OF OCTOBER, 1988.

Sheldon Kamen MAYOR
Dale E. Rea DEPUTY CITY CLERK

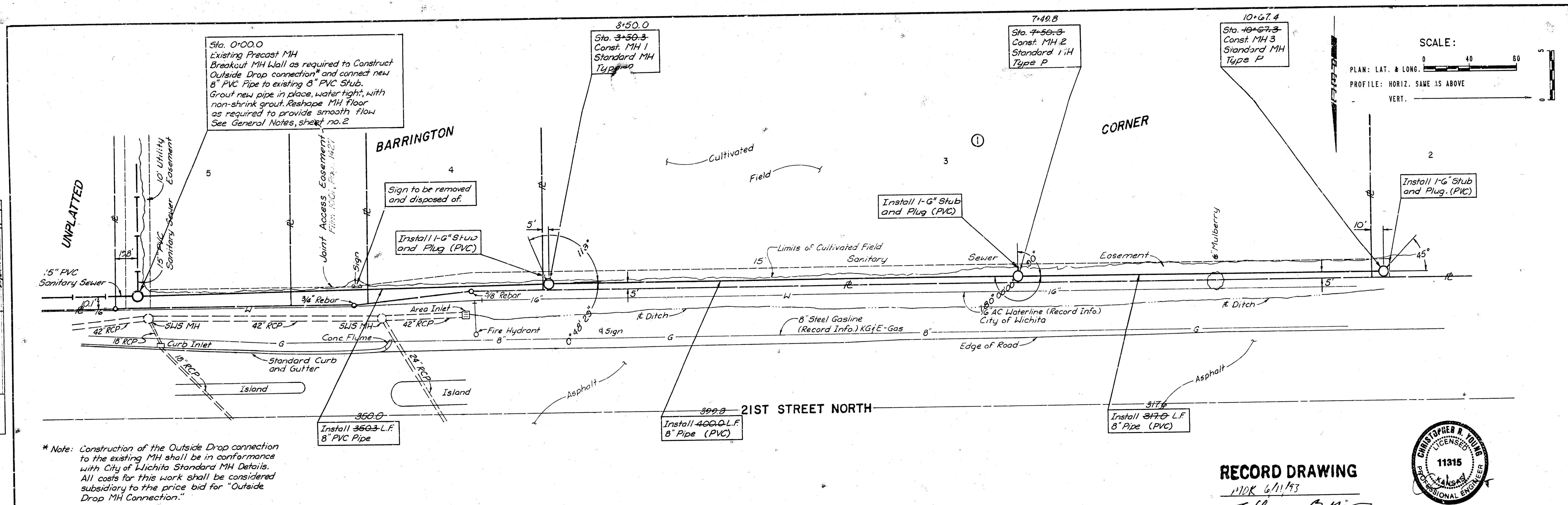
ENTERED ON TRANSFER RECORD, THIS 23RD DAY OF OCTOBER, 1988.
Don Wright COUNTY CLERK

THIS IS TO CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORD IN THE REGISTER OF DEEDS OFFICE AT WICHITA, MO. ON THIS 23RD DAY OF OCTOBER, 1988.

Pat Kettler REGISTER OF DEEDS
Ed Resa DEPUTY

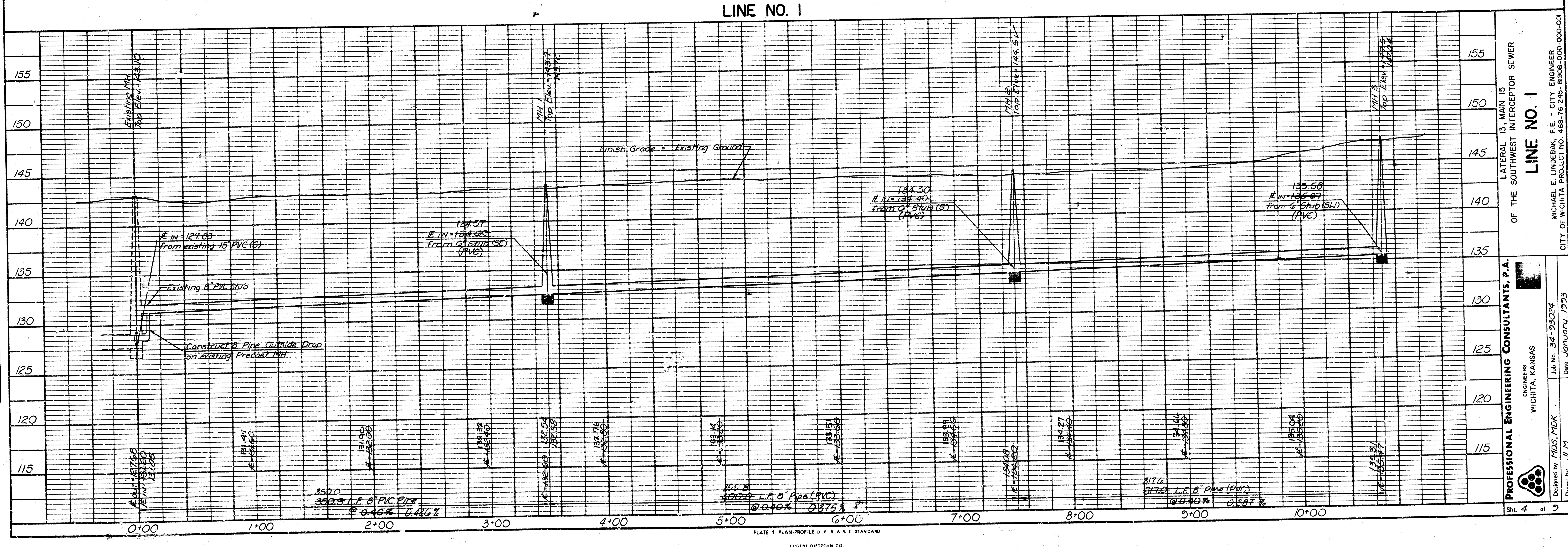
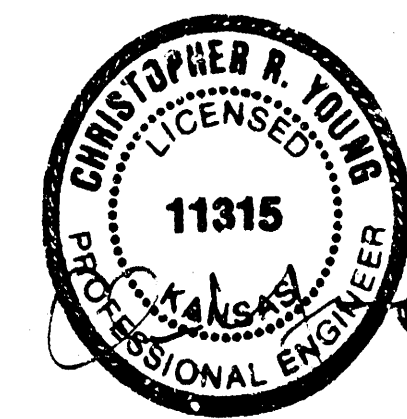
PLAN	DATE	BY	CHKD
SURVEYED			
PLANNED			
NOTED			
NO.			

PROFILE	DATE	BY	CHKD
SURVEYED			
PLANNED			
NOTED			
NO.			



* Note: Construction of the Outside Drop connection to the existing MH shall be in conformance with City of Wichita Standard MH Details. All costs for this work shall be considered subsidiary to the price bid for "Outside Drop MH Connection."

RECORD DRAWING
 110K 6/11/93
[Signature]



LINE NO. 1
 LATERAL 13, MAIN 15
 OF THE SOUTHWEST INTERCEPTOR SEWER

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS

Job No. 34-23024
 Drawn by: MDS, MCK
 Date: January, 1993

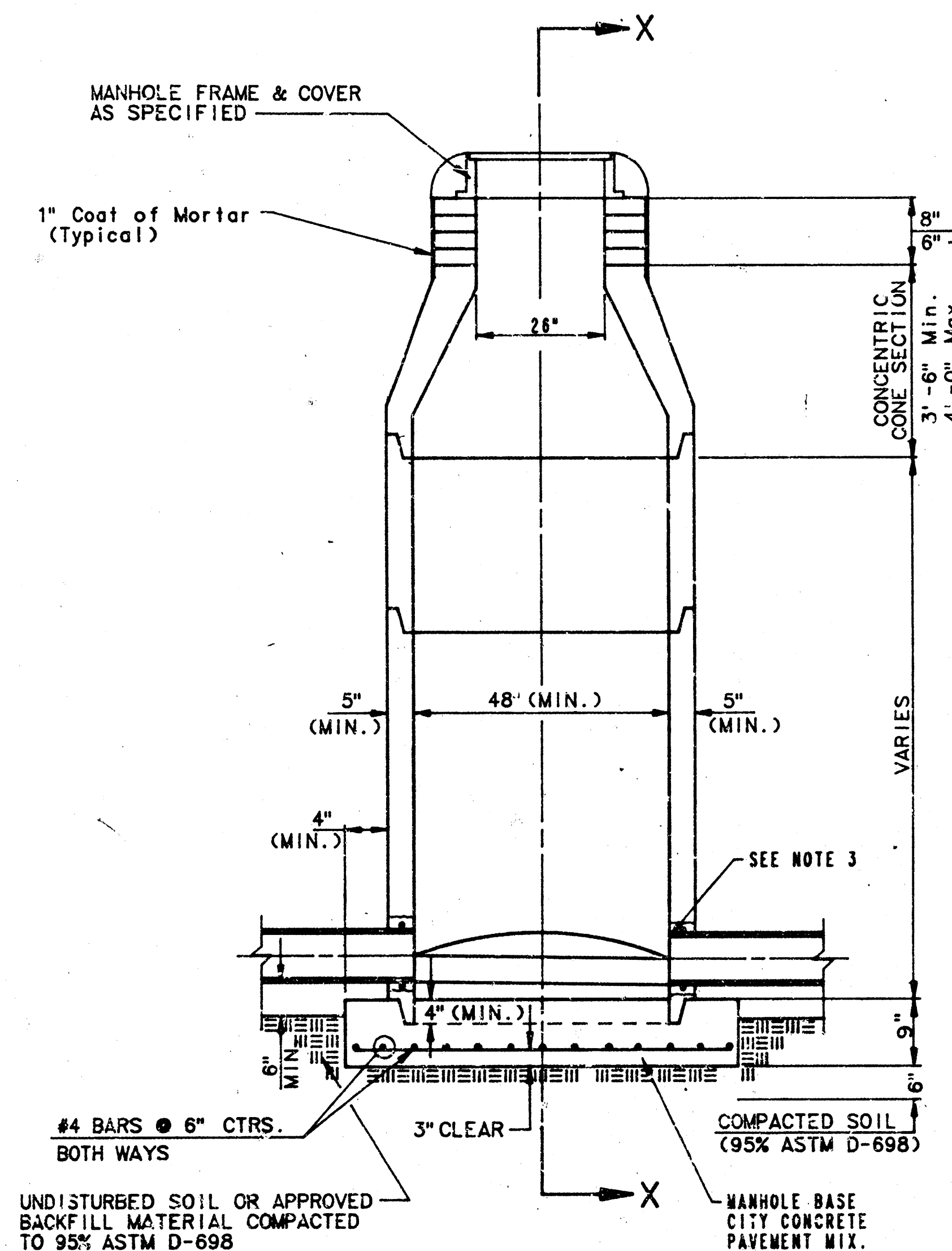
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 468-76-245-8508-000-001

SEWER APPURTENANCES DETAILS

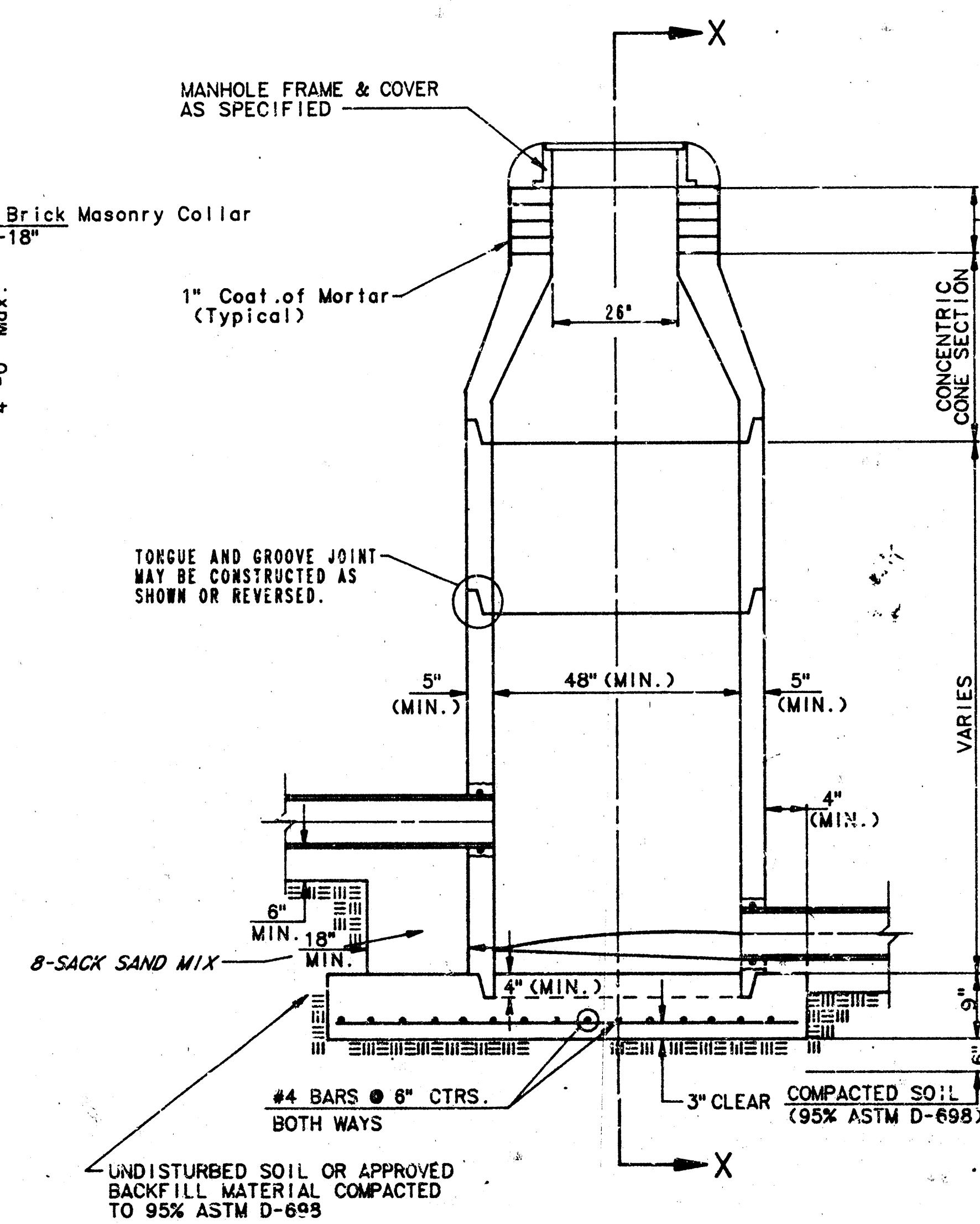
ADOPTED AS STANDARD DESIGN

BY

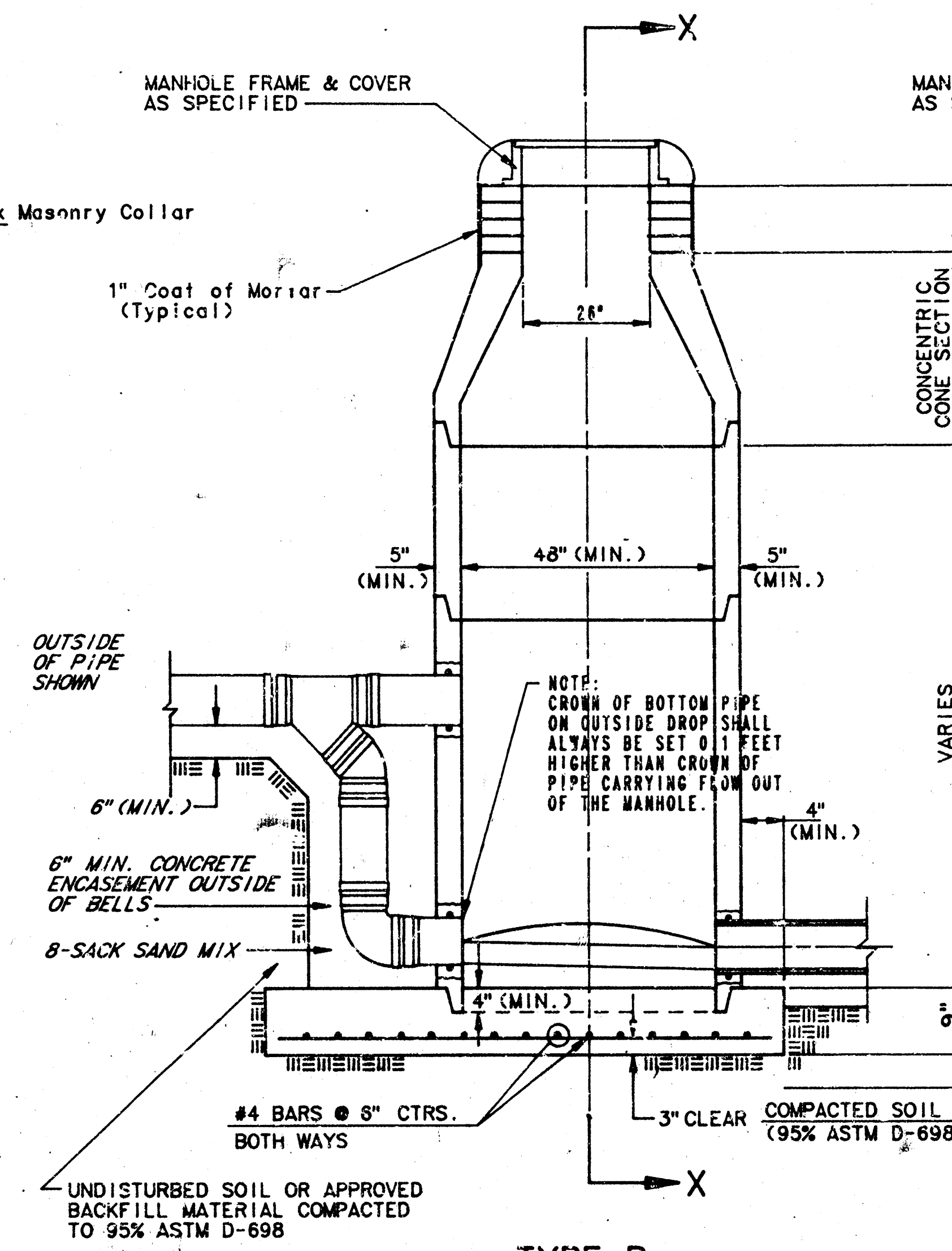
CITY OF WICHITA



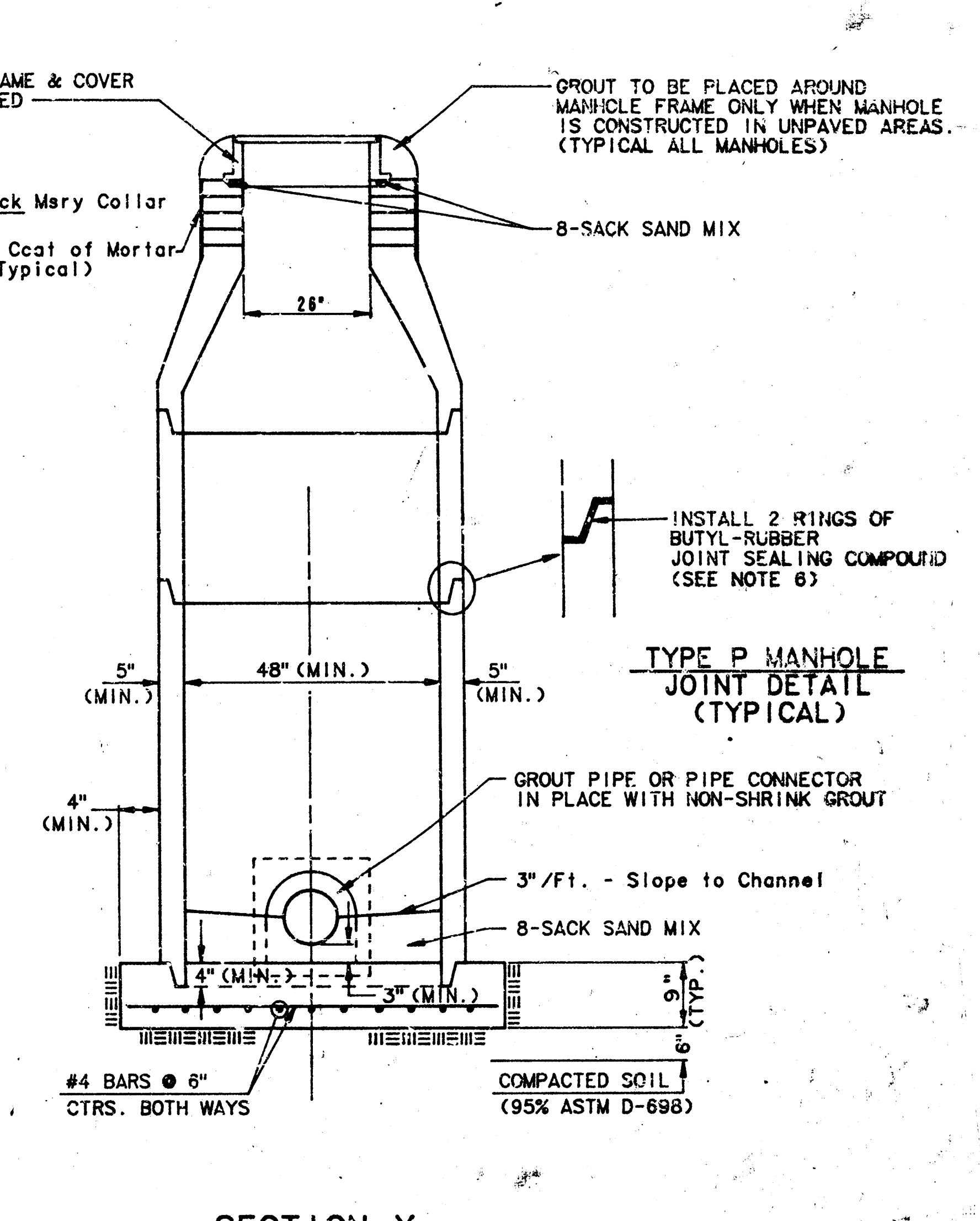
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



SECTION X
(TYPICAL)

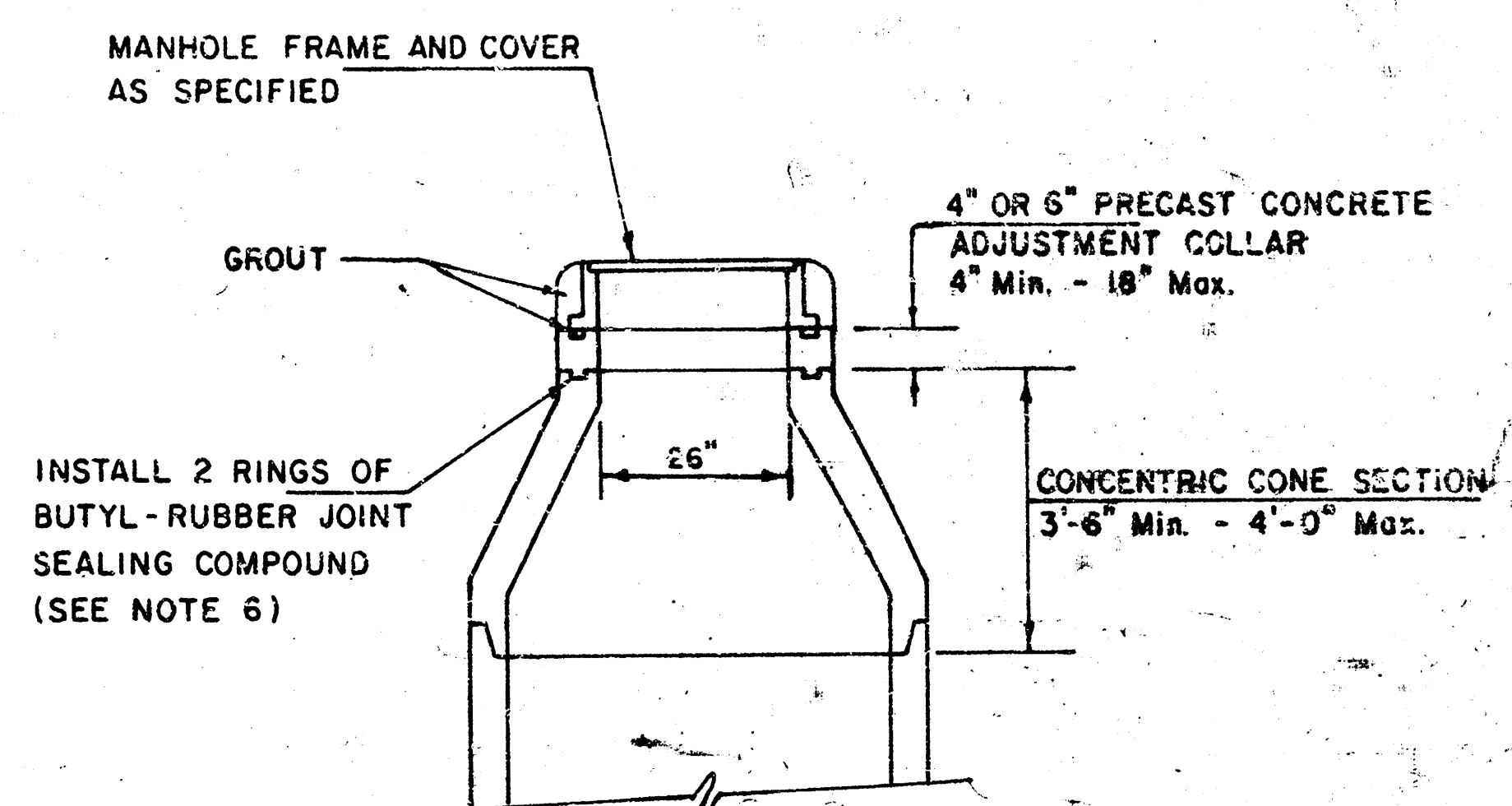
GENERAL NOTES

PRECAST MANHOLE NOTES

- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN L.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASUREMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS THEMEC SERIES 66 HI-BUILD EPOXYLINE, DRY THICKNESS OF 2 MILS (MIN.)
- EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 63 BITUMINOUS COATING.
- JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
- TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
- LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE 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. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4". MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5". 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 AT LEAST 3" 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.
- OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTION ON EXISTING MANHOLE.
- 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 REAR LINES 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 AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
- A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 8" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.



ALTERNATE CONSTRUCTION
IN UNPAVED AREAS

RECORD DRAWING

DATE 4/1/93

Revised 3-21-89

Revised 8-10-88

Revised June 12, 1985

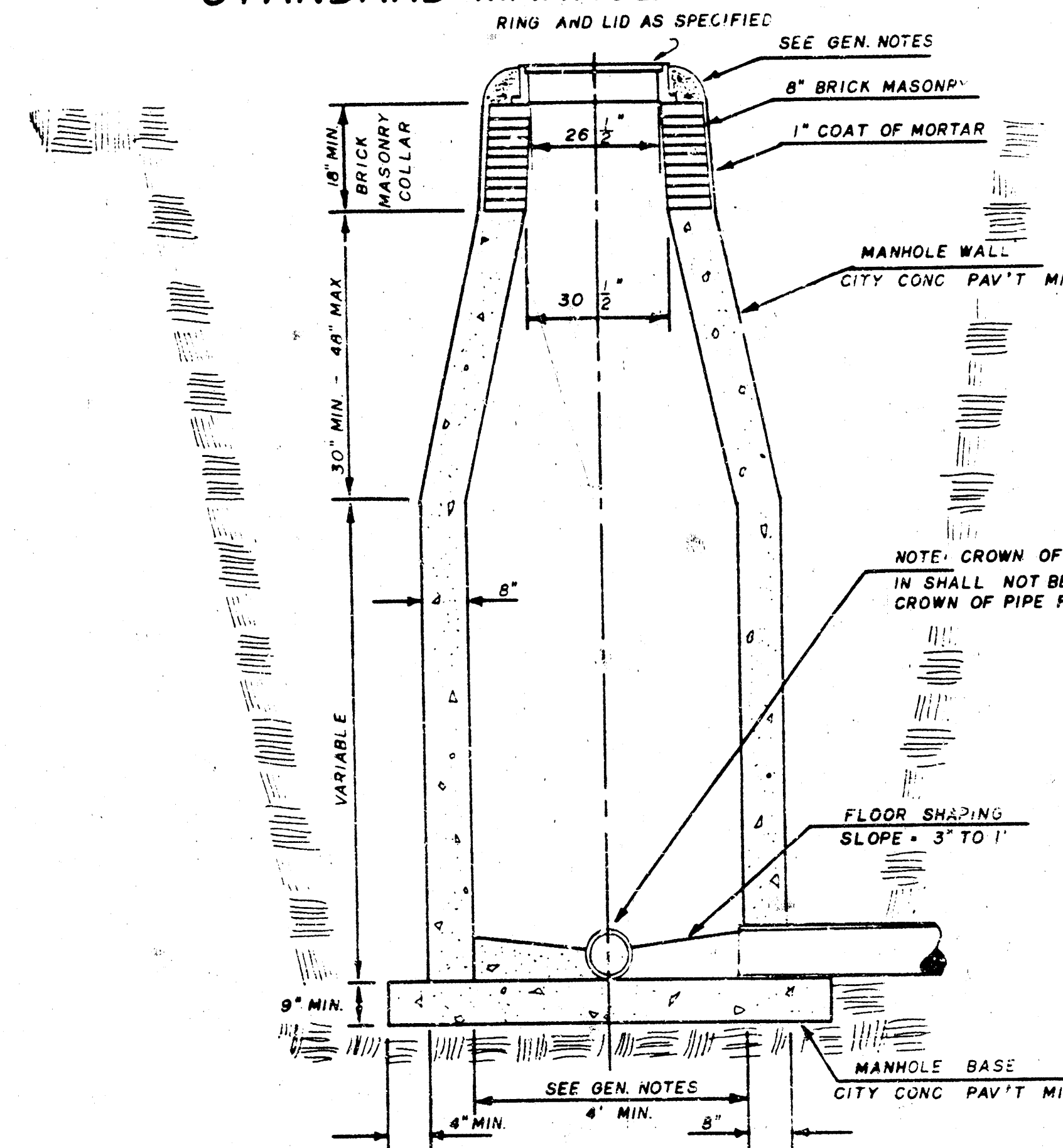
Sheet 50P-D

SEWER APPURTENANCES DETAILS

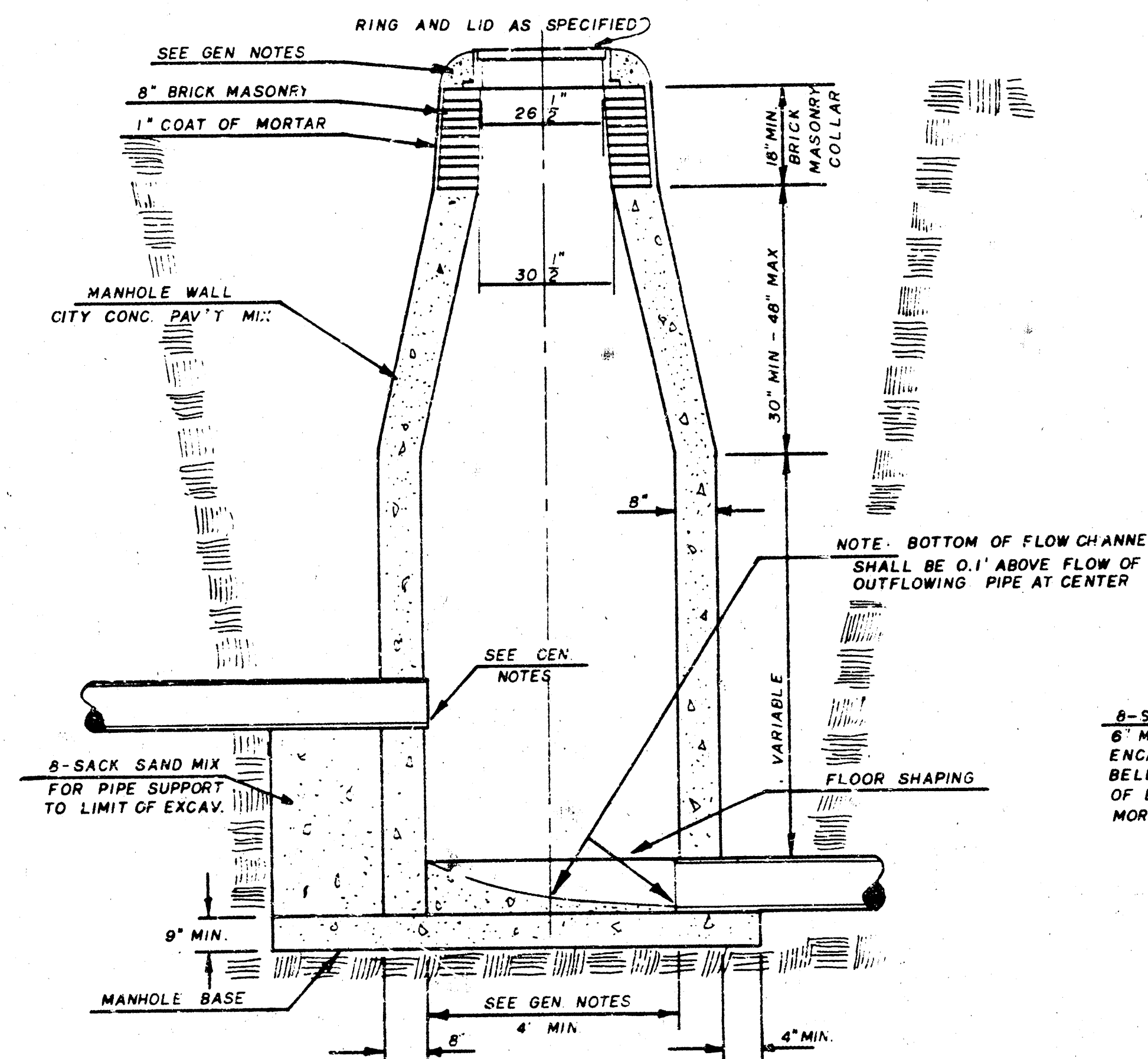
ADOPTED AS STANDARD DESIGN
BY

City of Wichita, Kansas

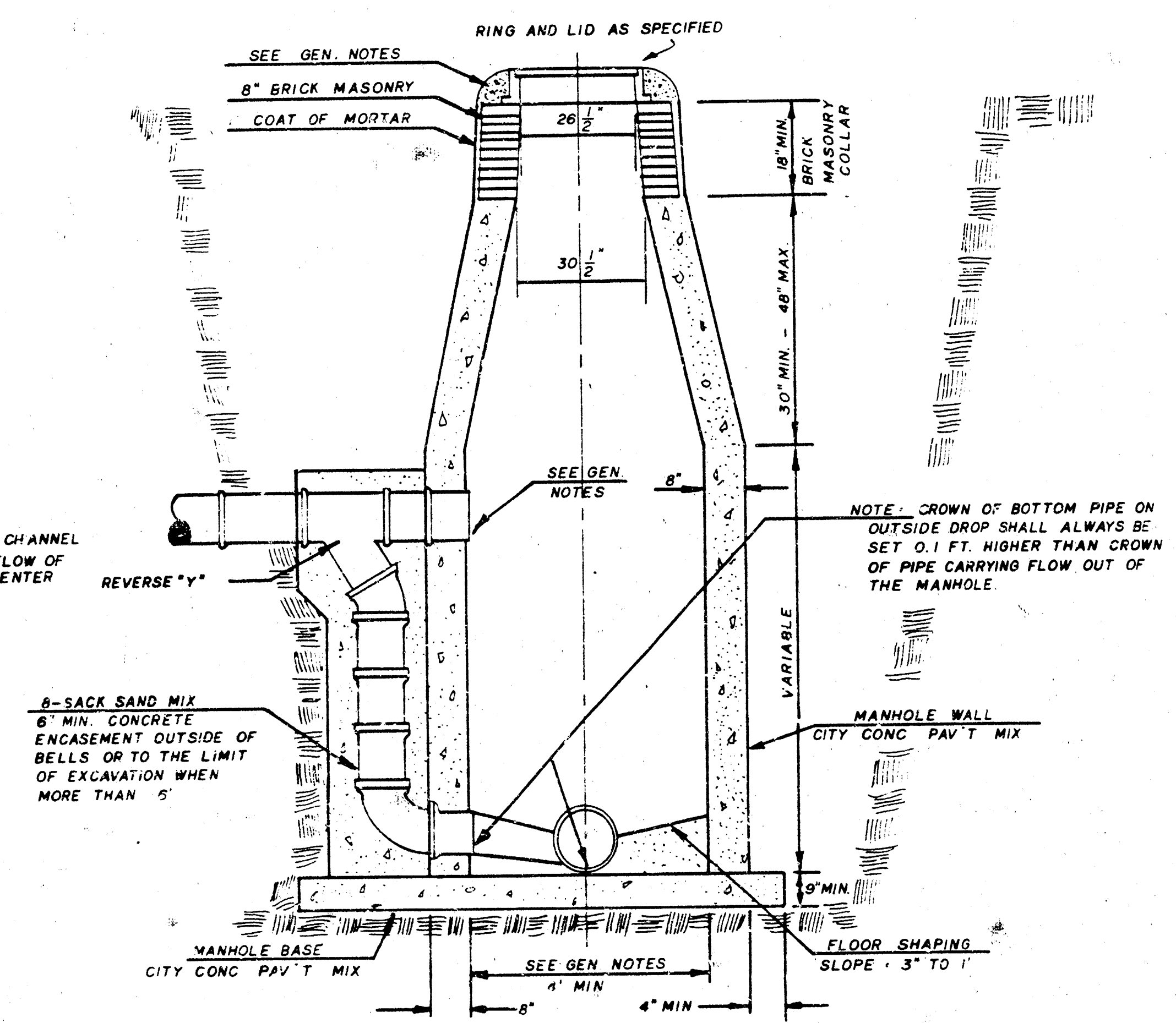
STANDARD MANHOLE TYPE "C"



INSIDE DROP MANHOLE TYPE "C"



OUTSIDE DROP MANHOLE TYPE "C"



GENERAL NOTES

- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 4 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 LINES 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.

RECORD DRAWING

MDK 6/11/93
D. Blum

Sheet 6 of 9

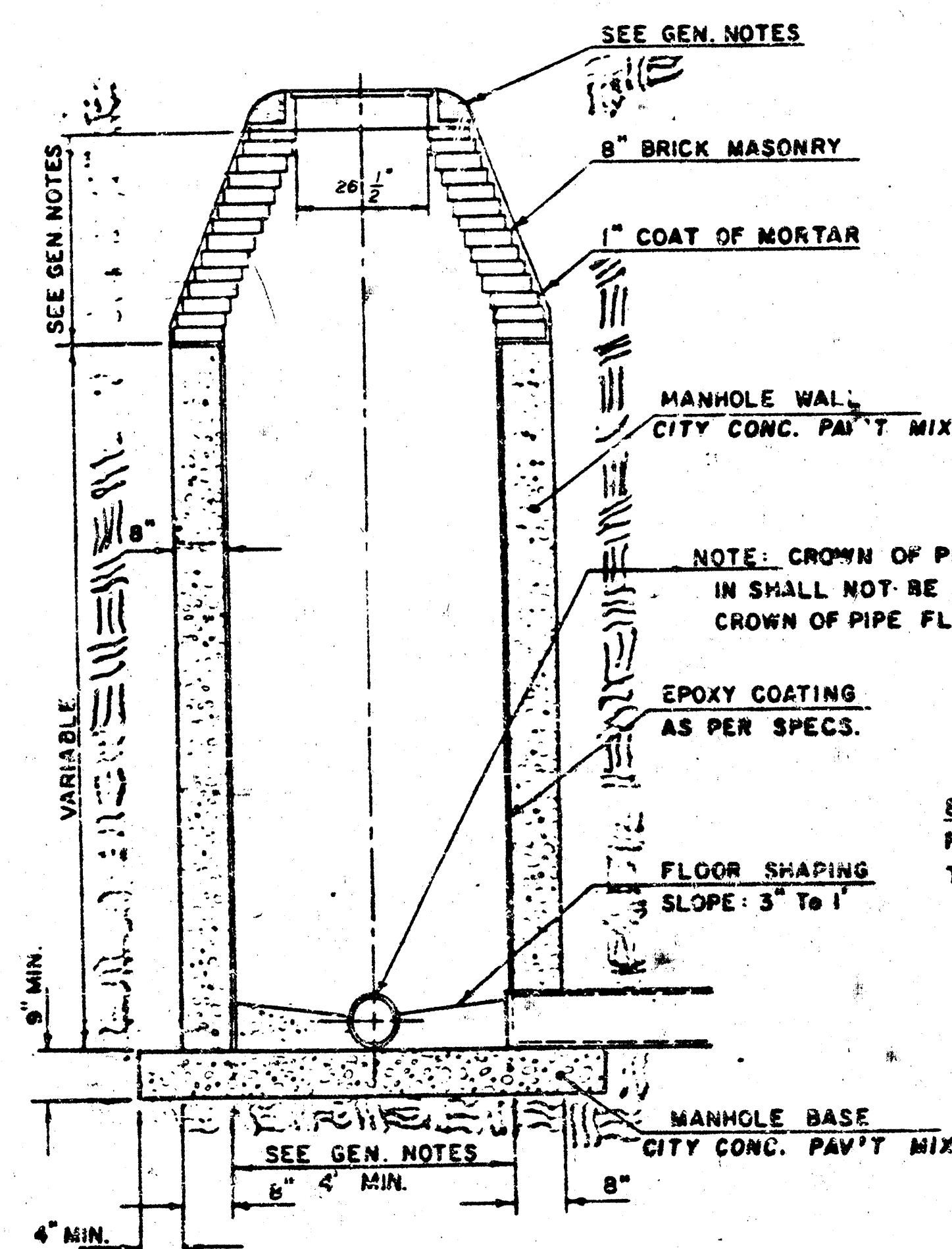
NOTE NO. 7 REVISED JAN. 1991

SEWER APPURTENANCES DETAILS

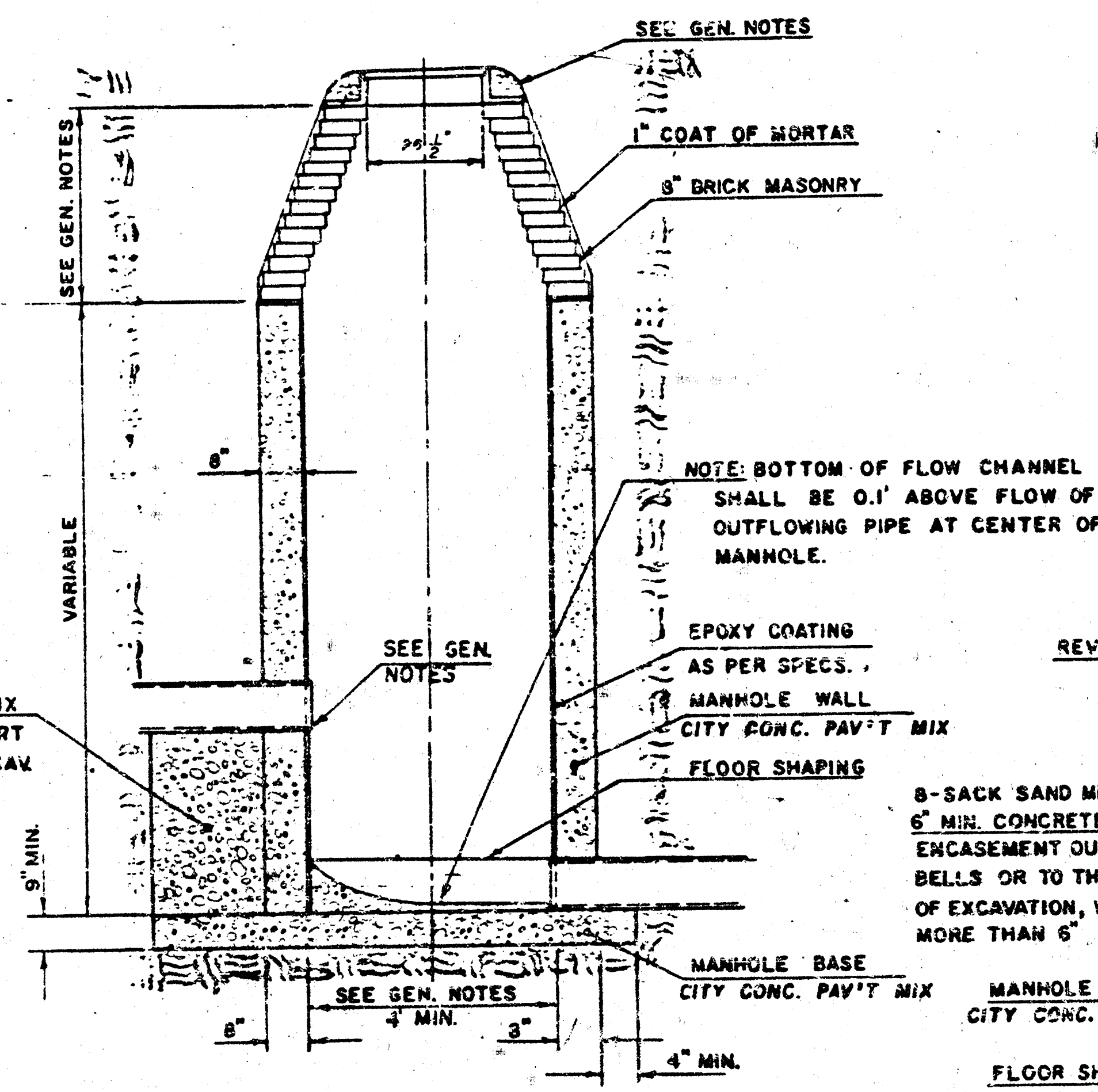
ADOPTED AS STANDARD DESIGN
BY

CITY OF WICHITA, KANSAS

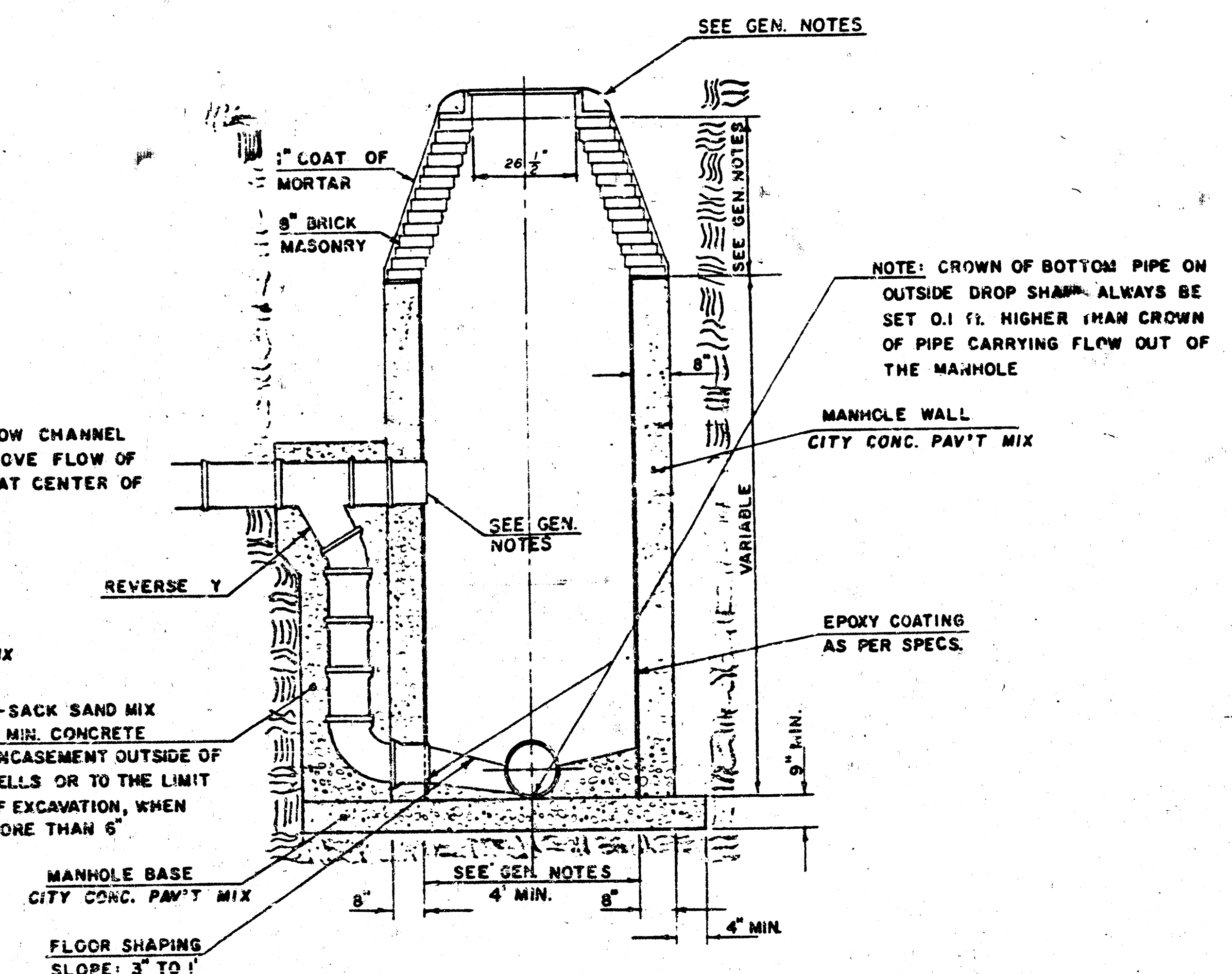
TYPE "D" MANHOLE



TYPE "D" INSIDE DROP MANHOLE



TYPE "D" OUTSIDE DROP MANHOLE



GENERAL NOTES

- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 6 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.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WALL WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE PROTECTED BY AN APPROVED EPOXY COATING. TYPE "D" MANHOLES MAY BE USED ON PIPE SIZES 8" TO 36" WHEN THE MANHOLE DEPTH EXCEEDS THE REQUIRED CORBEL HEIGHT BY 1' PLUS THE OUTSIDE DIAMETER OF THE LARGEST PIPE IN THE MANHOLE.
- MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE A DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE THE PIPE SIZES ARE 24" OR LARGER SHALL HAVE A DIAMETER OF 5'. THE HEIGHT OF THE CORBELS ON 4' DIAMETER MANHOLES SHALL BE 4'. MANHOLES HAVING A DIAMETER OF 5' SHALL HAVE CORBELS 6' IN HEIGHT. 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" FROM 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 INTERIOR PLASTIC LINING SHALL BE SEALED AROUND THE INLET PIPE OPENING IN SUCH A MANNER THAT WILL EFFECTIVELY MAINTAIN THE INTEGRITY OF THE PROTECTIVE PLASTIC LINER.
- 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 REVEAL LINES 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' LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.

STANDARD MANHOLES TYPE "D" AND STANDARD INSIDE DROP MANHOLES TYPE "D" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES TYPE "D" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

NOTE: EPOXY COATING ON INTERIOR CONCRETE SURFACES MAY BE DELETED WHEN TYPE "D" MANHOLES ARE CONSTRUCTED ON SEWERS WITH DIAMETERS SMALLER THAN 10".

RECORD DRAWING

WEEK 2/11/97
J. R. Baker

NOTE NO. 7 REVISED JAN. 1991

APRIL 1997

Sheet 7 of 9

MANHOLE FRAME AND COVER DETAIL

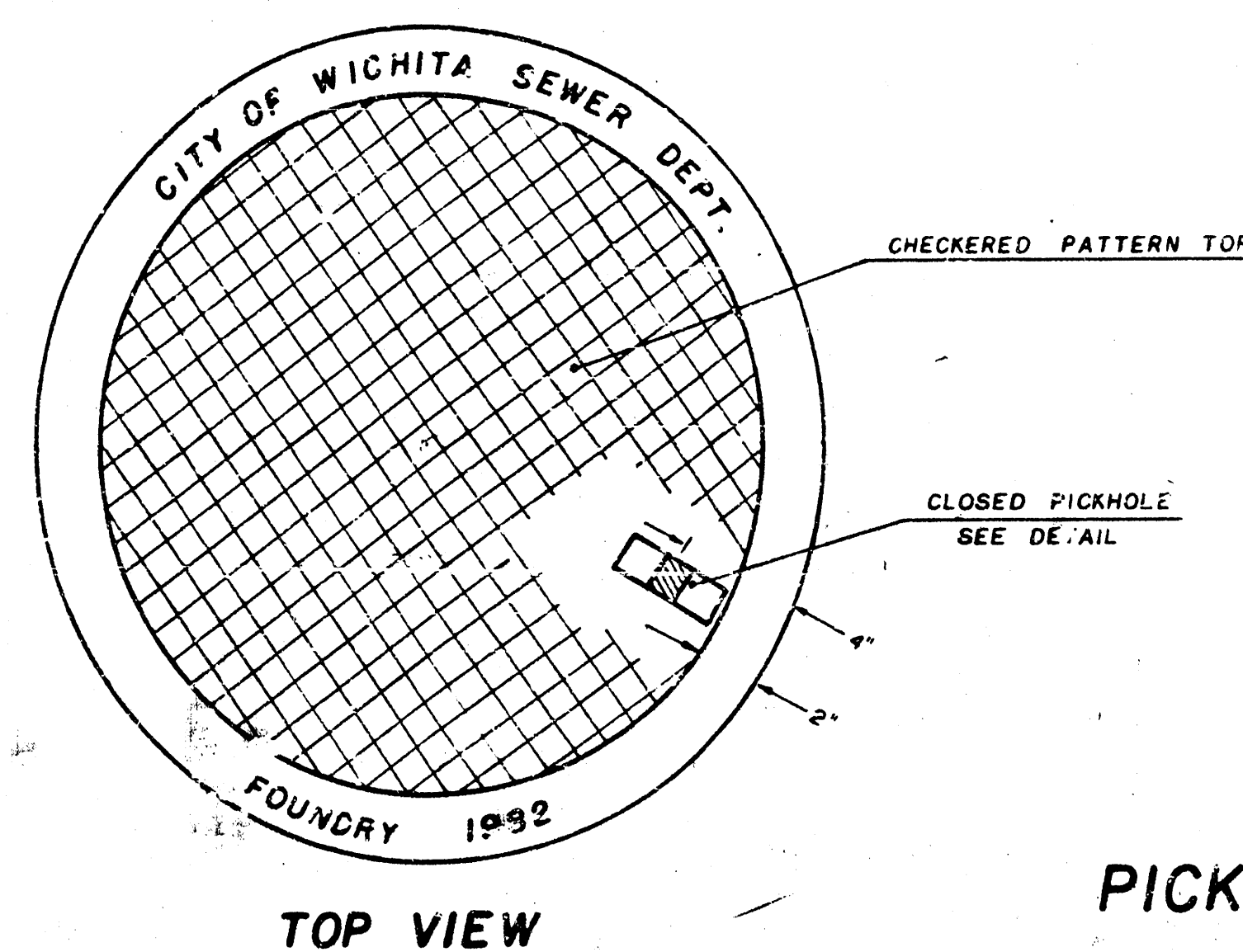
ADOPTED AS STANDARD DESIGN

BY

City of Wichita, Kansas

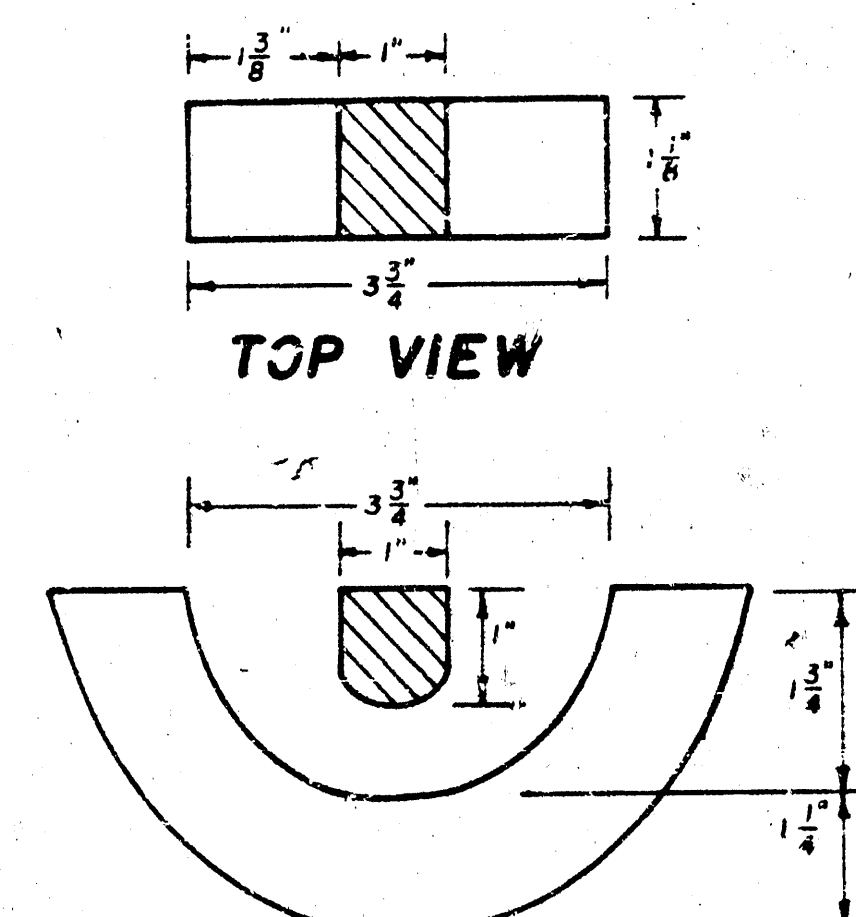
MANHOLE COVER

Weight: 180 Lbs.

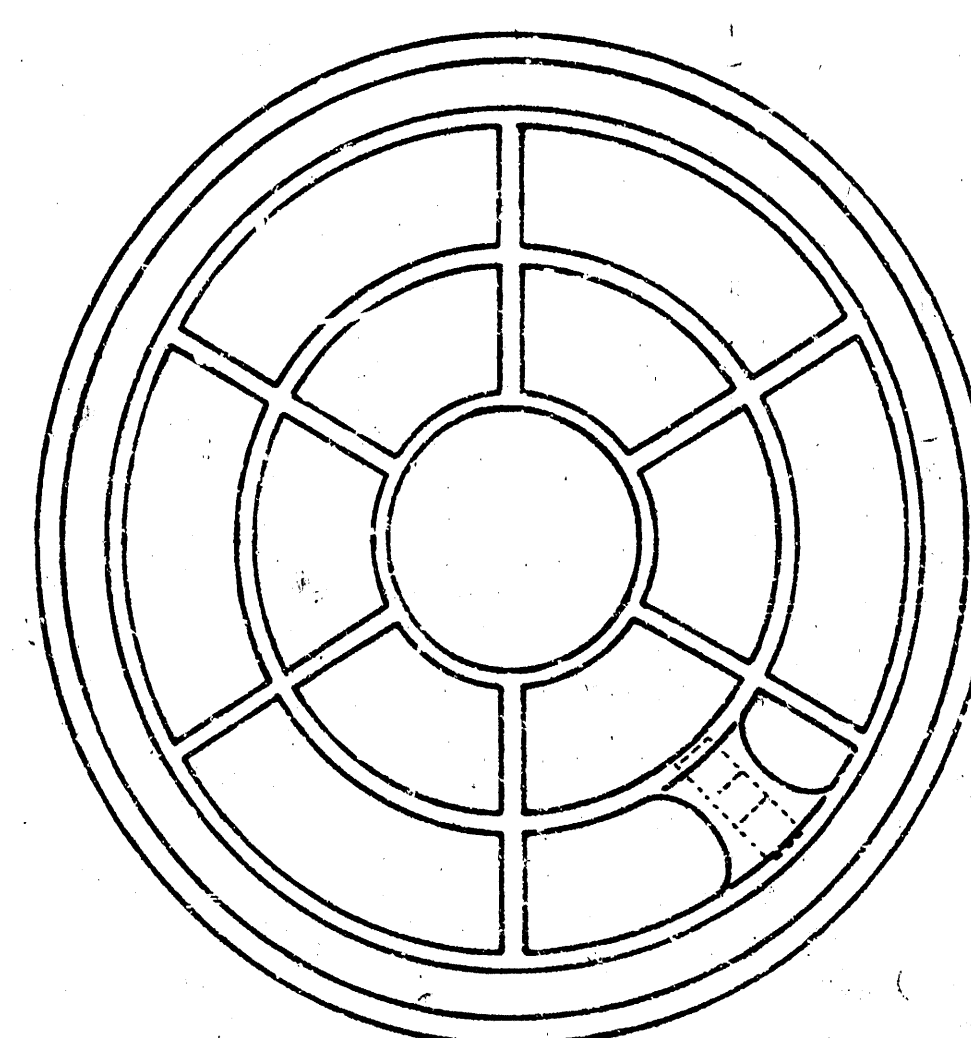


TOP VIEW

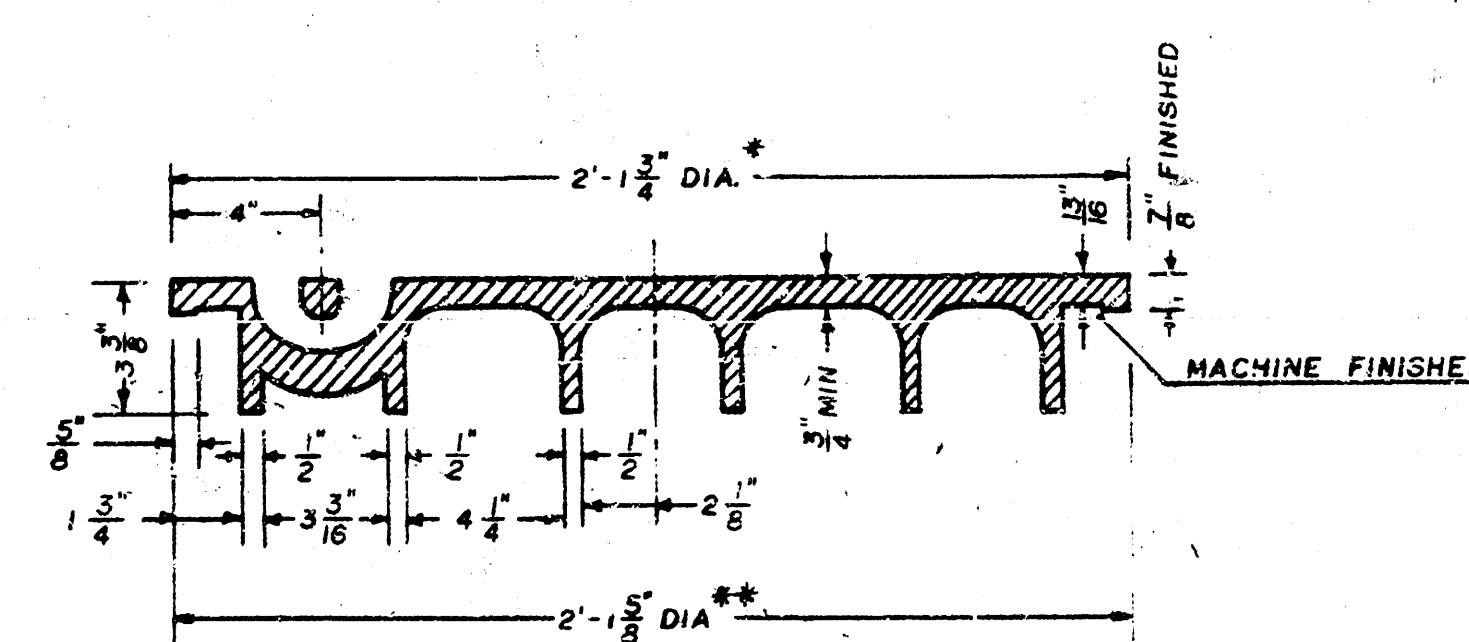
PICKHOLE DETAIL



SECTION VIEW



BOTTOM VIEW

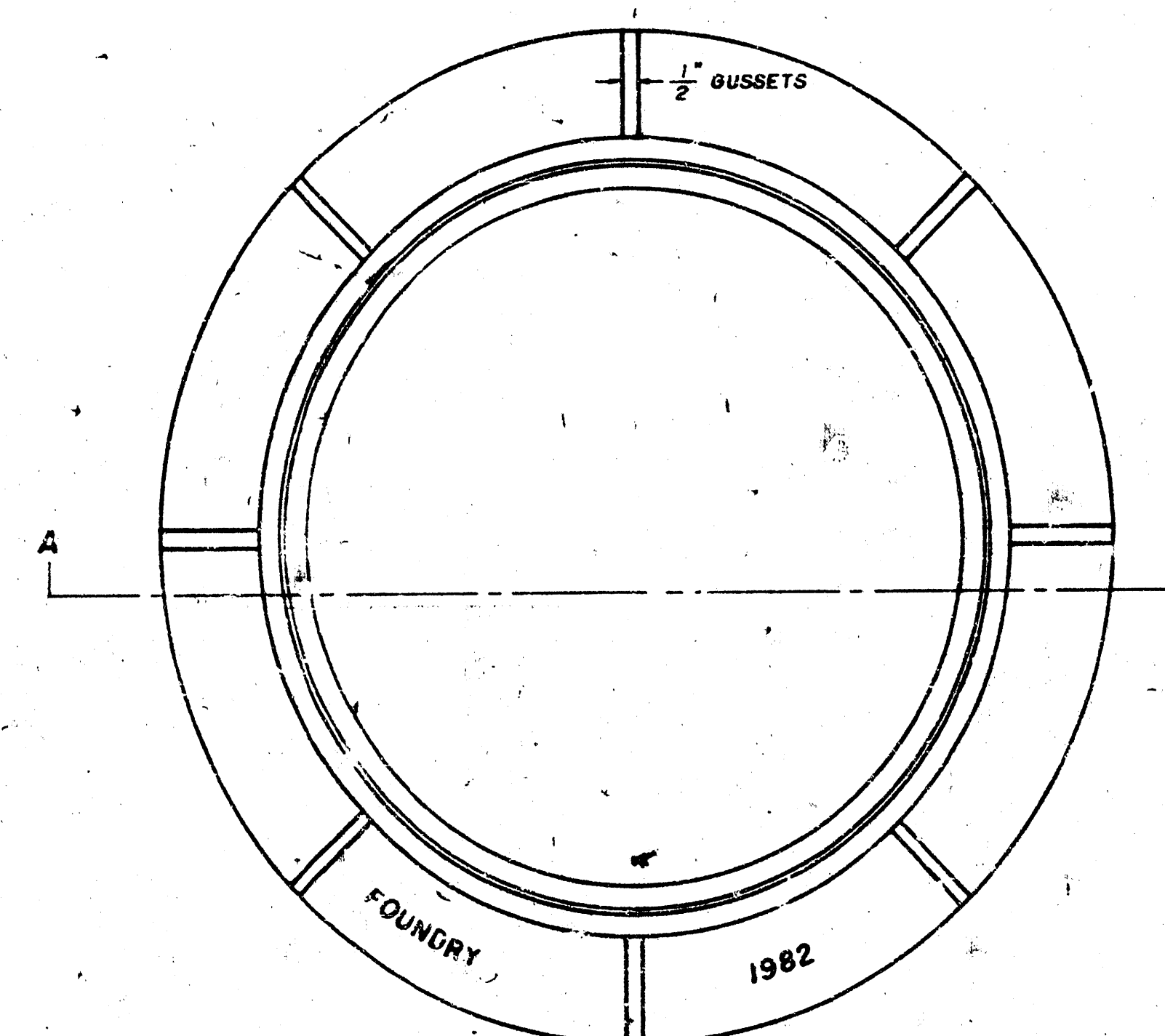


SECTION VIEW

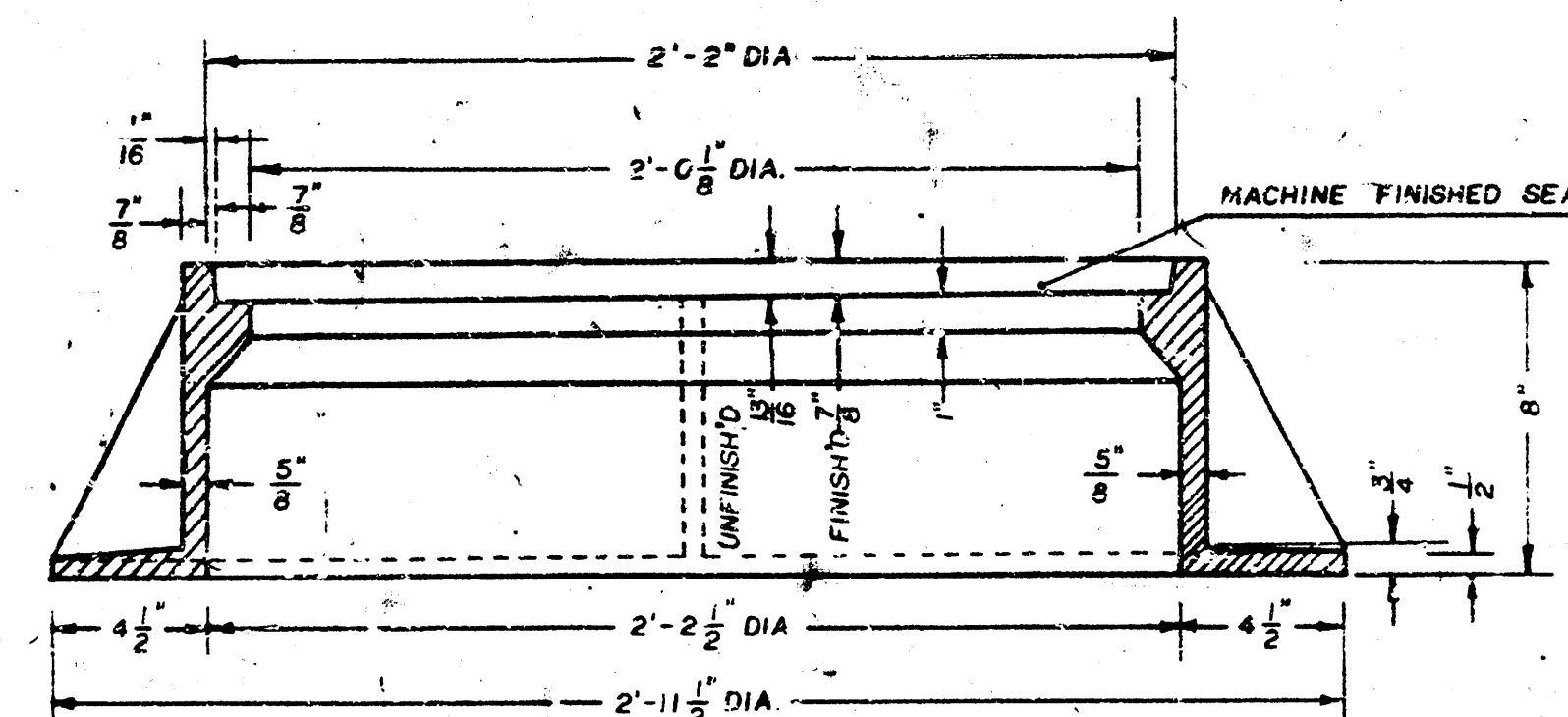
* OUTSIDE DIA. TOP OF COVER
** OUTSIDE DIA. BOTTOM OF COVER

MANHOLE FRAME

Weight: 240 Lbs.



TOP VIEW



SECTION A-A

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 COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.
3. 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.
4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECES 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.
5. 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 BLOCKOUT 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.

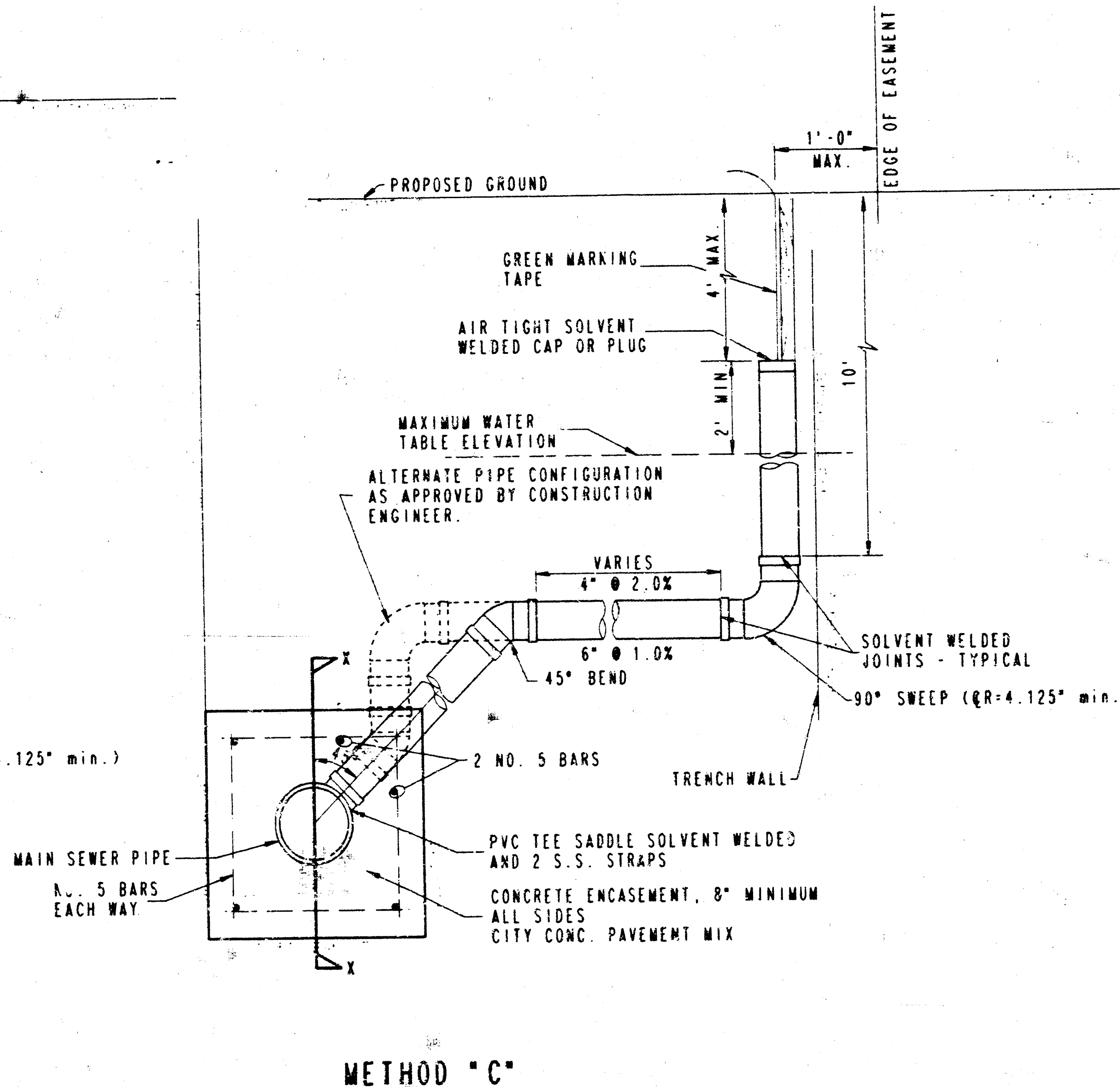
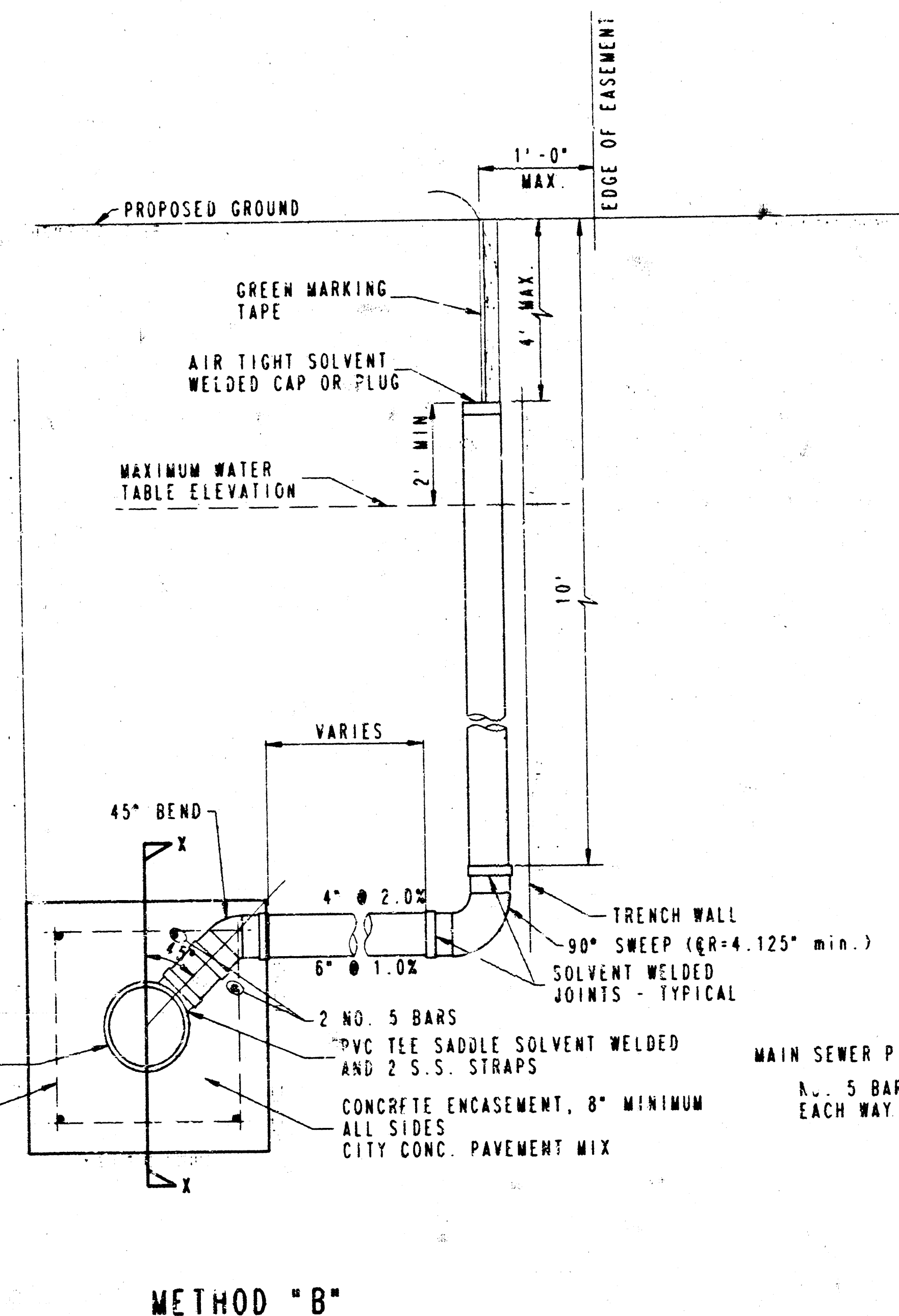
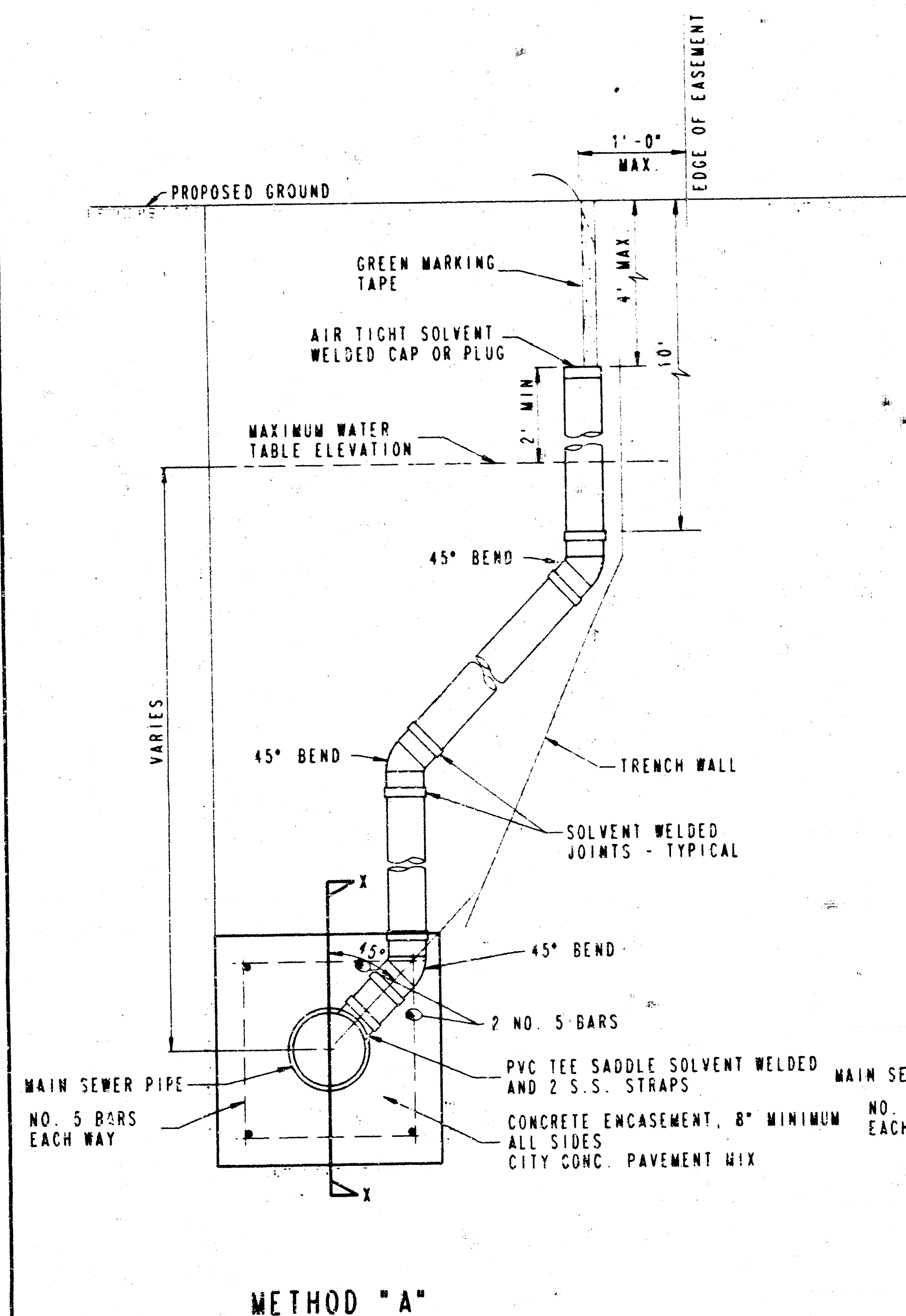
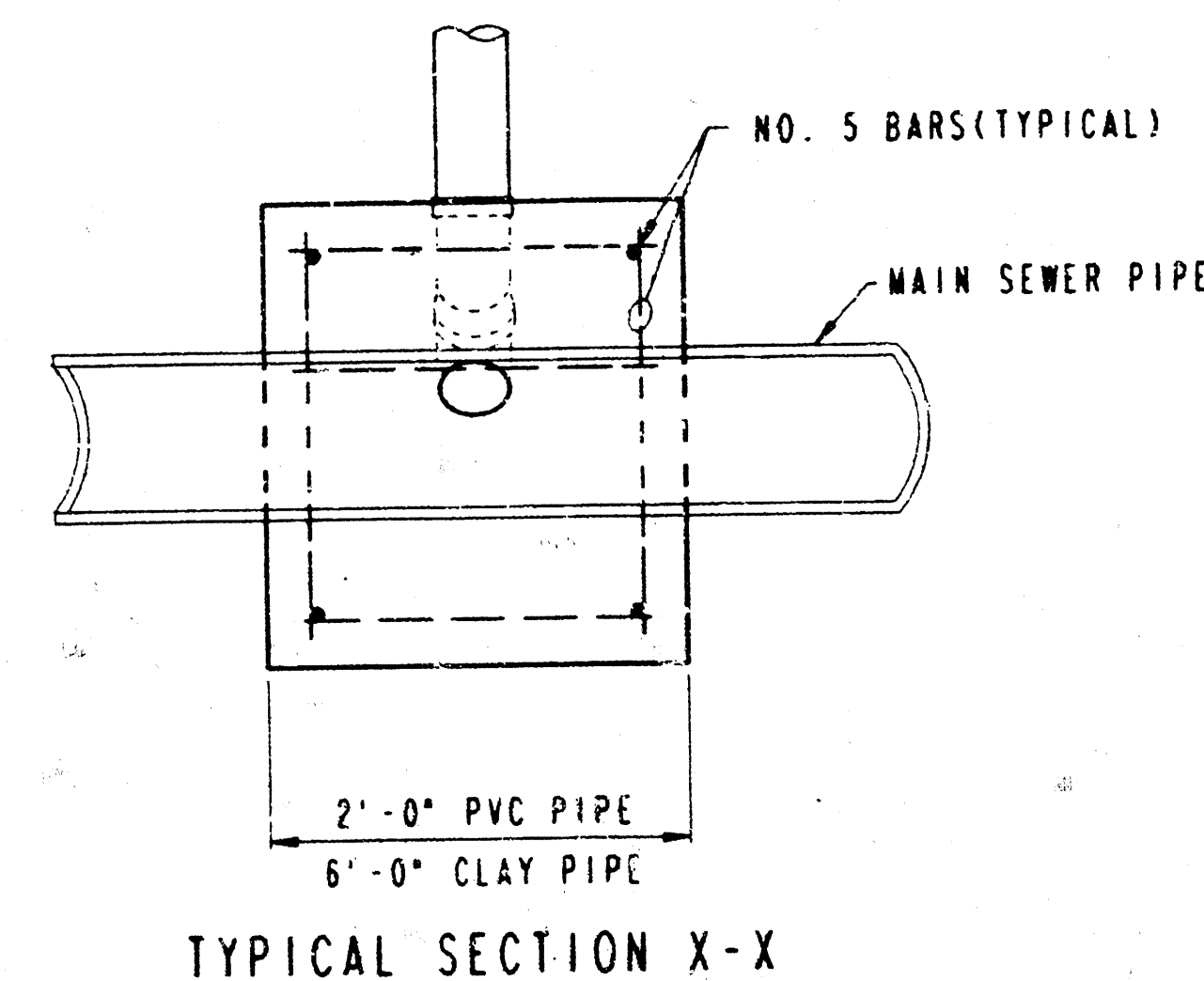
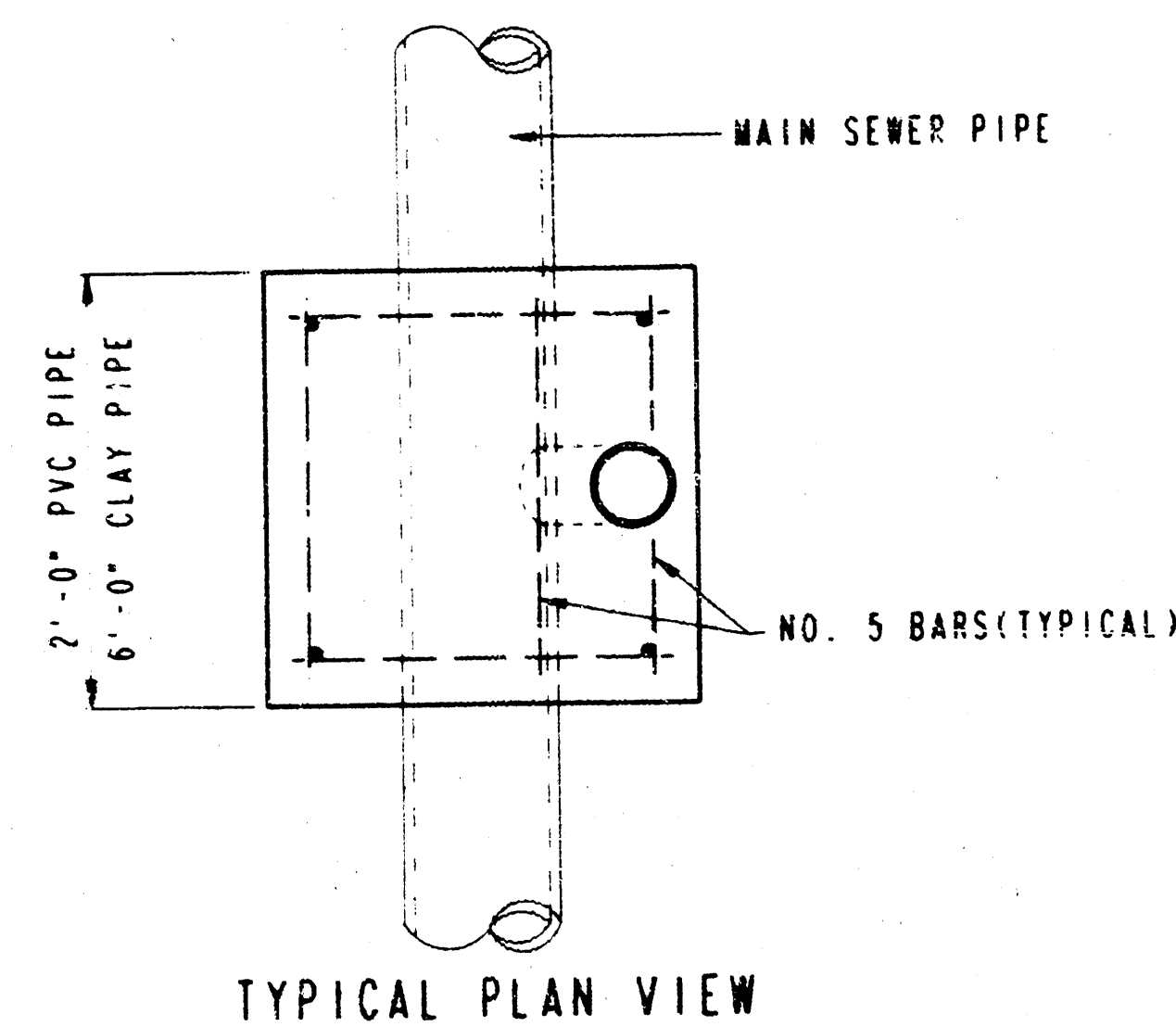
RECORD DRAWING

NOV 6 11 97

E. Allen Babin

Sheet 8 of 9

VERTICAL RISER DETAILS **ADOPTED AS STANDARD DESIGN** **BY** **CITY OF WICHITA, KANSAS** **OCTOBER 1992**



NOTE: RISER PIPE REQUIREMENTS AT MANHOLE STUBS SHALL BE SIMILAR TO THOSE SHOWN ABOVE.

GENERAL NOTES

- RISERS.** Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table. Risers shall also be installed to serve all lots and tracts where the sanitary sewer main depth is greater than 12 feet below the proposed ground elevation. Installation of risers because of field conditions shall be as approved by the Construction Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.
- PIPE STUBS.** Pipe stubs shall be installed in manholes where locations of manholes will provide satisfactory service connection as determined by the Construction Engineer. The vertical distance between the flowline of the manhole pipe stub and the flowline of the sanitary sewer main out of the manhole shall not exceed 2 feet. Risers shall be utilized at manhole pipe stubs as indicated in Note 1. Manhole pipe stubs shall be set such that the top of the stub is not lower than the top of the sanitary sewer main.
- SIZING.** Pipe stubs and risers shall be sized according to the plans and riser table where risers are indicated by the plans. Where risers or pipe stubs are required because of field conditions, the risers and stubs shall be six-inch diameter for commercial or industrial properties and 4" or 6" diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers and stubs shall be approved by the Construction Engineer prior to installation.
- RISER OR STUB MATERIAL.** Risers and stubs shall be constructed of SDR 35 PVC Pipe or Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. All pipe joints shall be solvent welded.
- REINFORCED CONCRETE ENCASUREMENT.** Riser connections to clay pipe sanitary sewers shall be reinforced concrete encased both ways from the riser centerline. The reinforced concrete encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary Sewer mains shall be reinforced concrete encased one foot each way from the riser centerline. The concrete encasement shall be reinforced using reinforcing steel as shown in the appropriate drawing. The concrete shall conform to the City Standard Specifications for concrete pavement.
- BEDDING.** Bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.
- SUPPORT OF RISERS.** Sanitary sewer riser pipe shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and backfilling the riser pipe shall be approved by the Construction Engineer.
- PLUGGING.** The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Caps or plugs shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.
- TOP OF THE RISER PIPE.** The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the risers shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation two feet (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.
- MARKING.** Locations of the ends of the sanitary sewer riser pipe shall be marked by fastening green colored plastic tape to the end of the riser. The tape shall be supported by a length of wooden 2 x 4, extending from the top of the riser pipe to the proposed ground surface. The green tape shall be visible and extend one foot above the proposed ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identification of underground sewers.
- LOCATION MEASURES.** The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicating the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser.
- RISER LOCATION.** The riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.
- PAYMENT.** "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all pipe, fittings, marking tape, length of wooden 2 x 4, reinforced concrete encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.
 "Manhole stubs" shall be paid for at the contract unit price per each, which shall be full compensation for all labor, material, and incidentals necessary to complete the work, including all pipe, fittings, reinforced concrete encasement, and all other items as required and listed for "Sanitary Sewer Risers".

RECORD DRAWING

MDK 6/11/93

E. Blum

18-1-5-8

Sheet 0 of 0

10-1-1-11