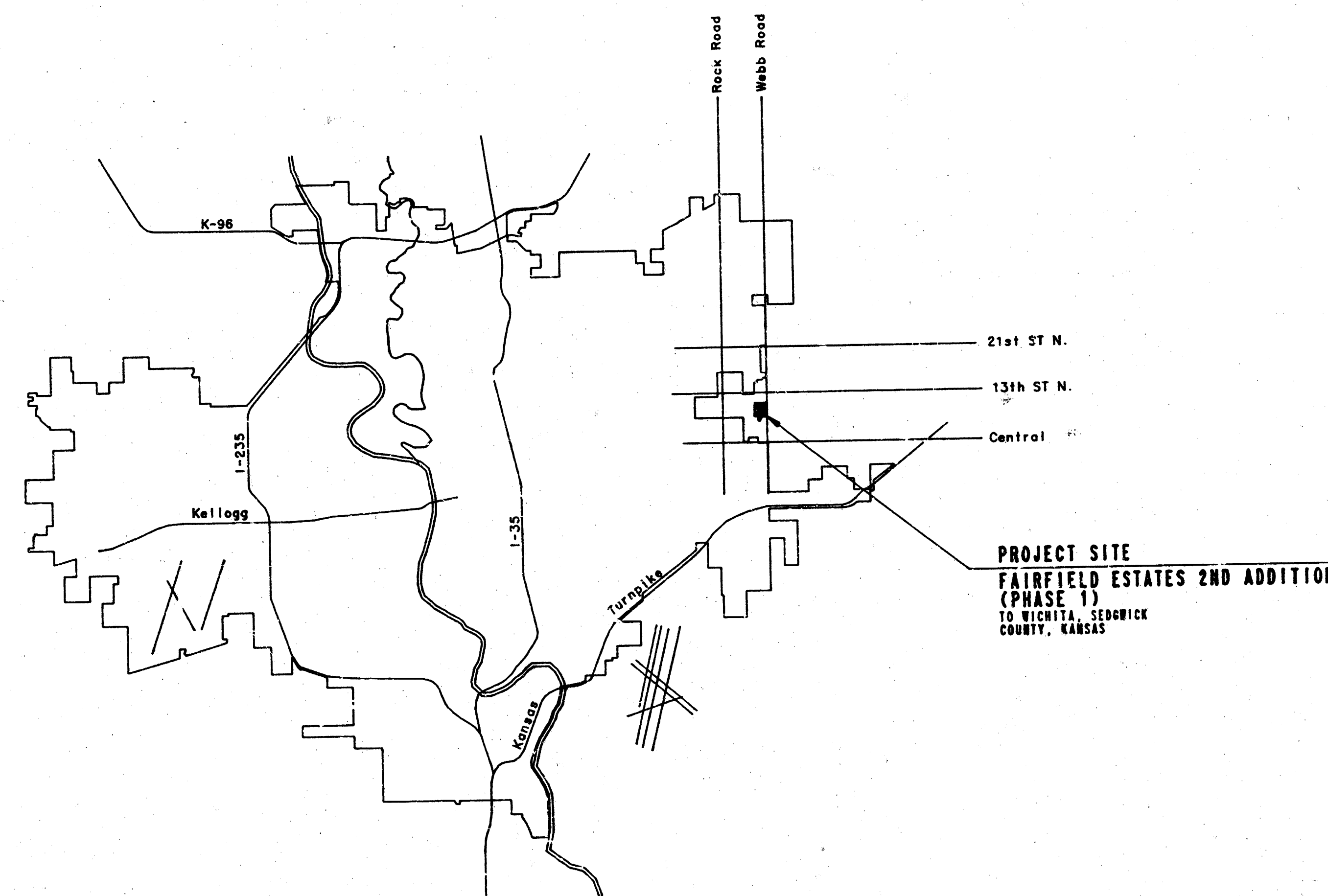


CONSTRUCTION PLANS FOR
LATERAL 87
 OF THE
WAR INDUSTRIES SEWER
 IN
THE CITY OF WICHITA,
 SEDGWICK COUNTY, KANSAS
 MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER



LOCATION MAP

INDEX OF SHEETS

SHEET NO. 1	TITLE SHEET
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SHEET NO. 6	TYPE "D" MANHOLE DETAILS
SHEET NO. 7	TYPE "P" MANHOLE DETAILS
SHEET NO. 8	TYPE "C" MANHOLE DETAILS
SHEET NO. 9	FRAME & COVER DETAIL

PROJECT SITE
 FAIRFIELD ESTATES 2ND ADDITION
 (PHASE 1)
 TO WICHITA, SEDGWICK
 COUNTY, KANSAS

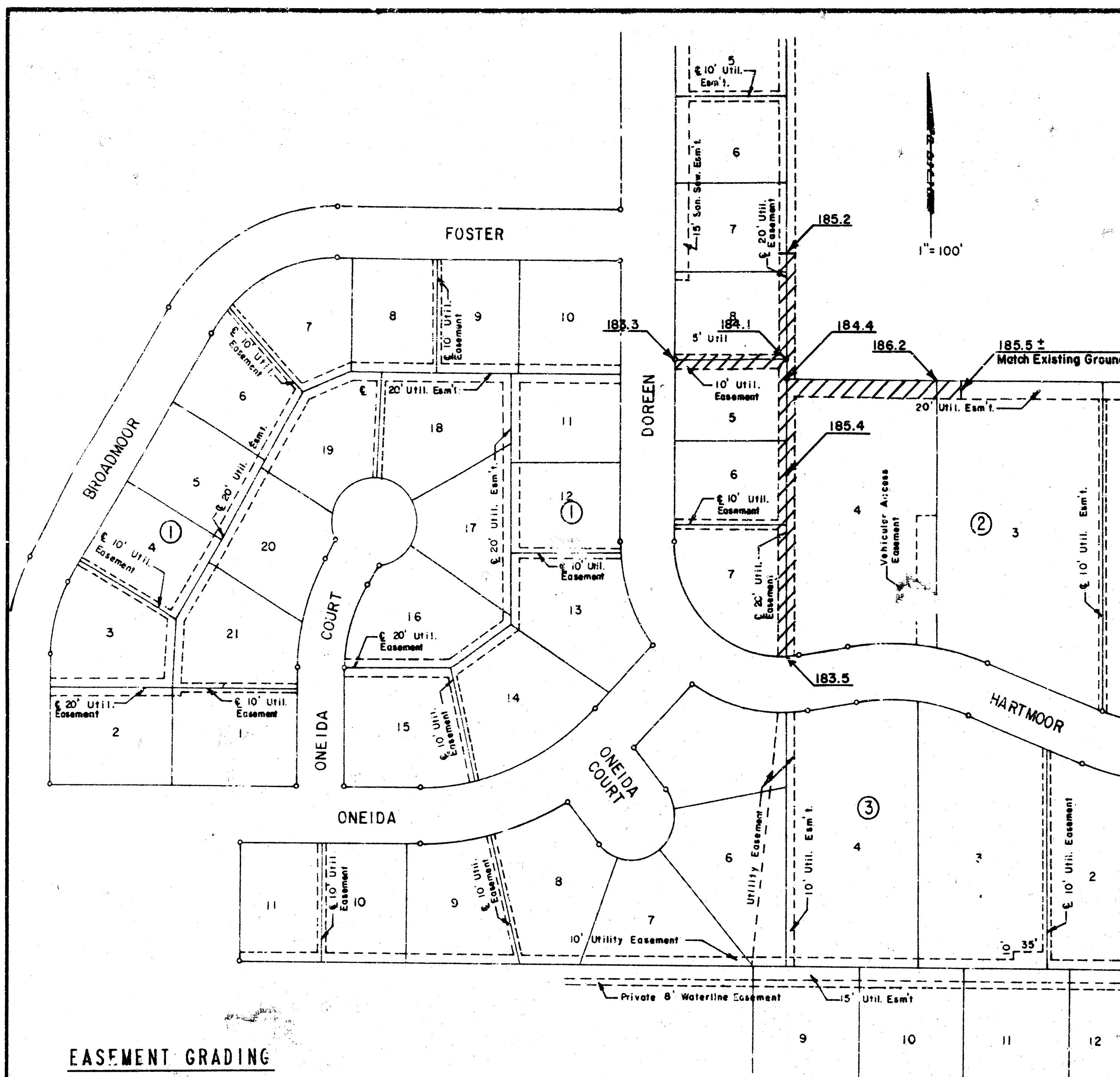
CITY OF WICHITA PROJECT NO. 468-76-245-81534-000-000-001

JANUARY, 1988

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

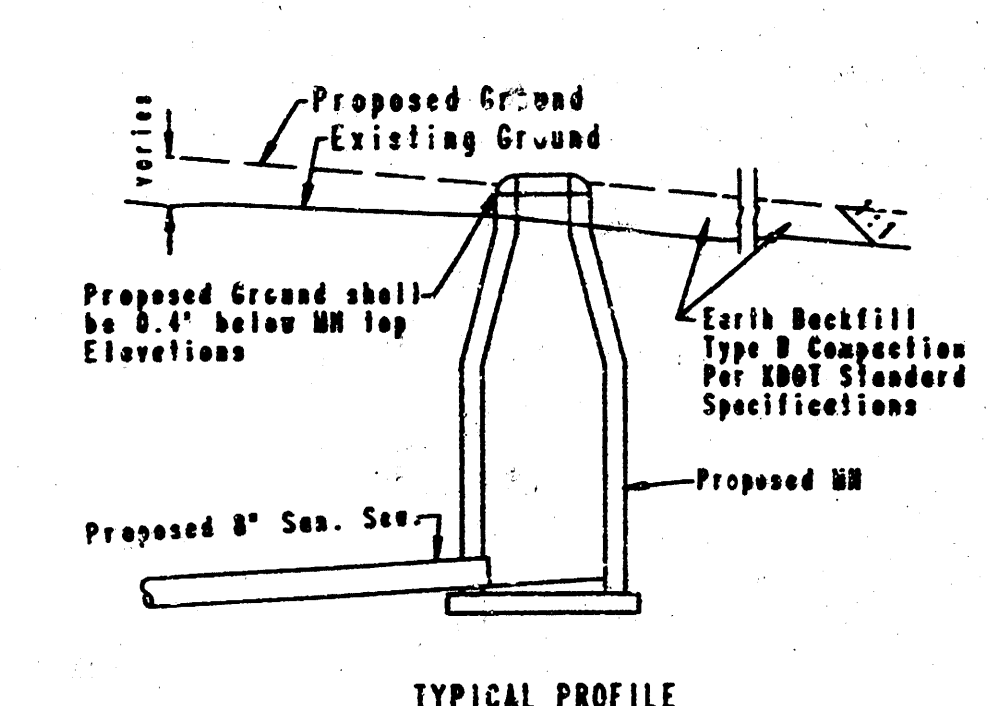


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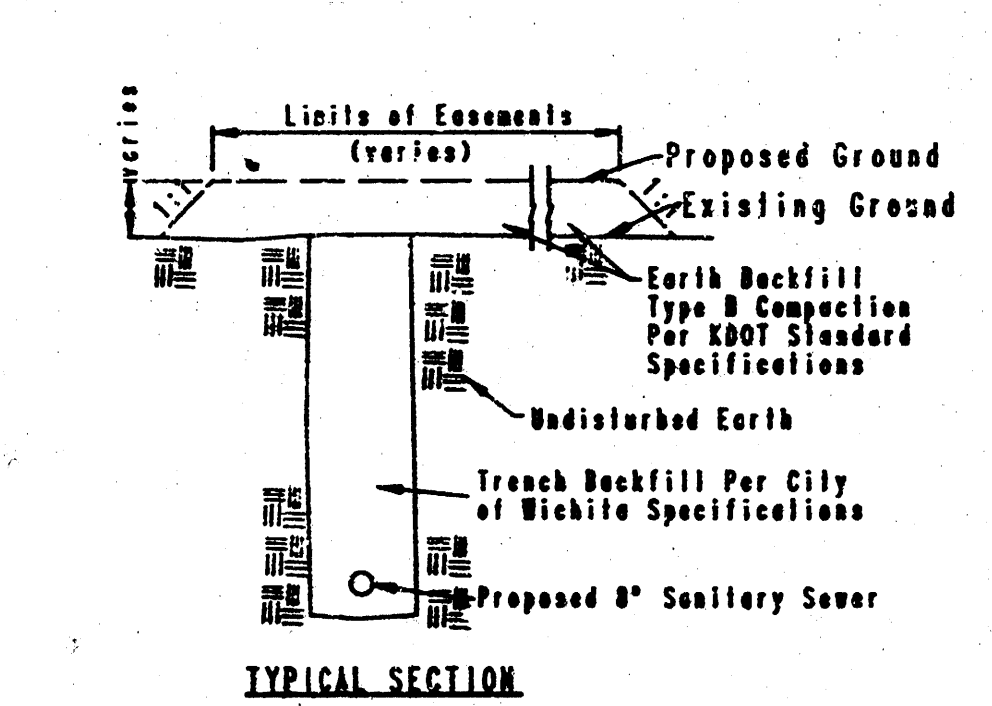


EASEMENT GRADING

Limits of Area to be Graded

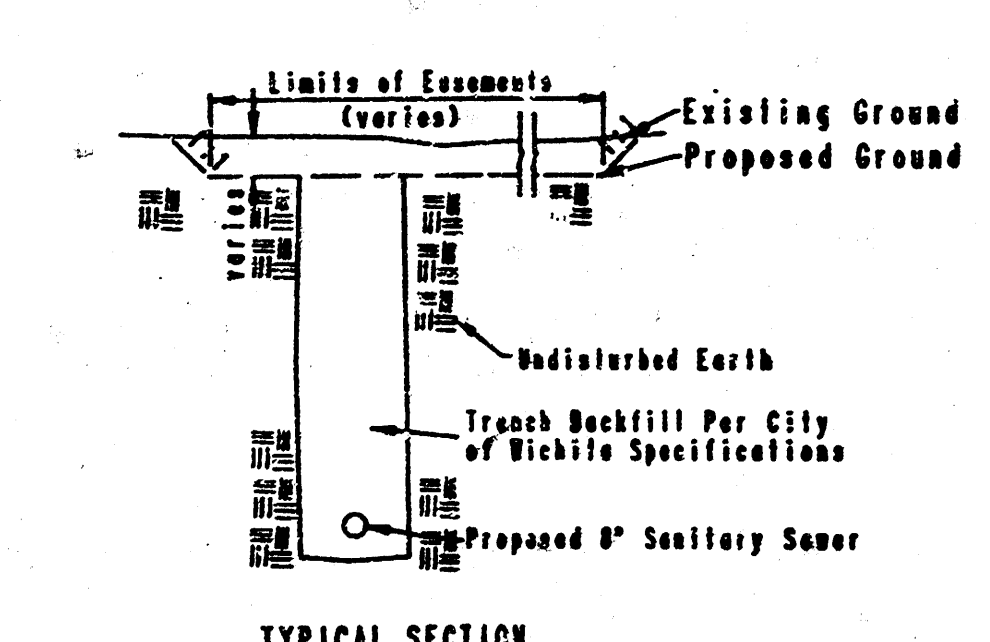


TYPICAL PROFILE

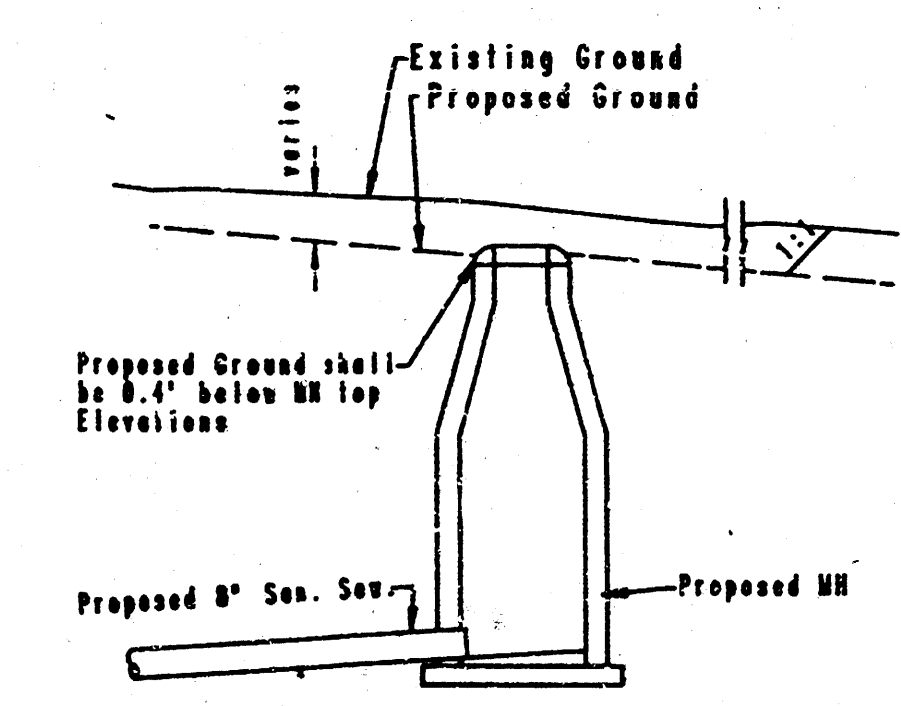


TYPICAL SECTION

"FILL" SITUATIONS



TYPICAL SECTION

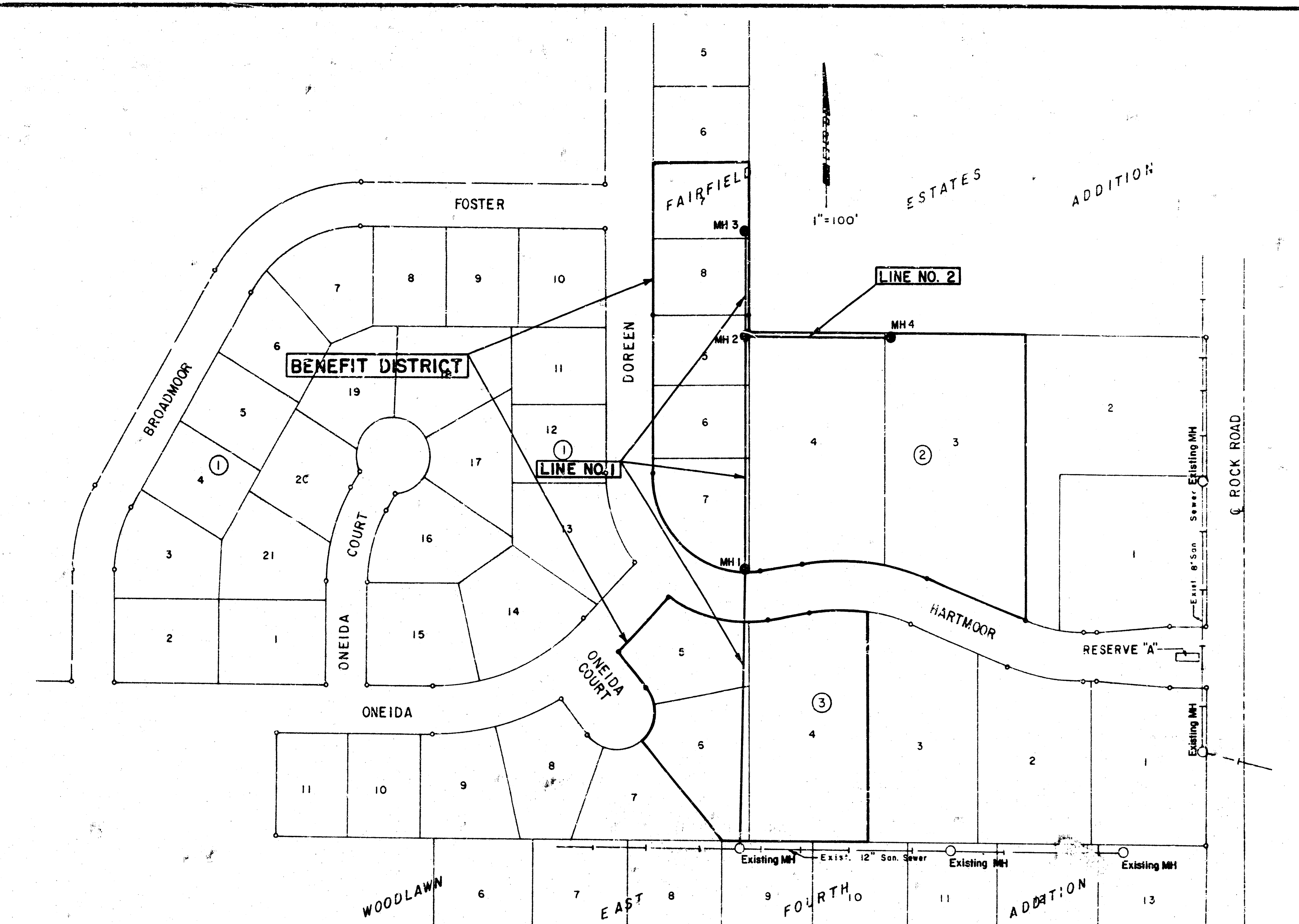


TYPICAL PROFILE

"CUT" SITUATIONS

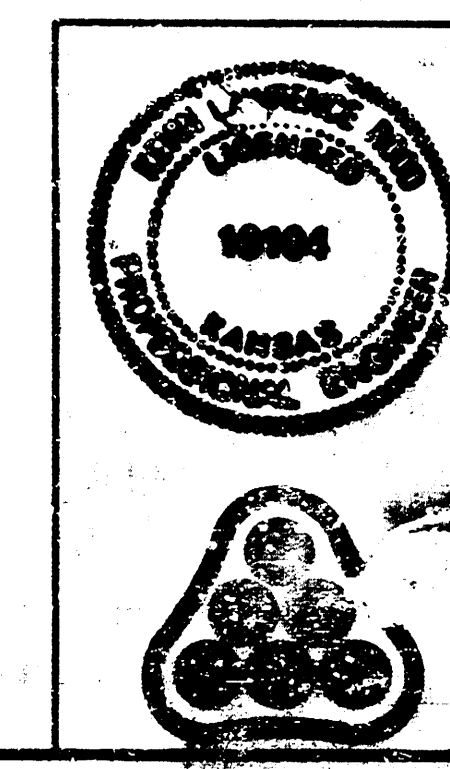
BENCH MARKS

- BM - R.R. Spike in 42" Elm, 1.0' above ground, located in Lot 4, Block 3, Fairfield Estates 2nd Addition, (Sanitary Sewer Station 1+90.5, 63' Right, Line No. 1). Elev. = 184.39 City Datum
- BM - R.R. Spike in 38" Elm, East of the SE corner of Lot 8, Block 2, Fairfield Estates 2nd Addition, (S.S. Sta. 7+00, 33.5' Right, Line No. 1). Elev. = 186.59 City Datum
- BM - Chisled "o" on top of curb W. side Doreen St. Approx. 2.6' N. of S. end of curb (street sta. 48+88) Elev. = 183.61 City Datum.



GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.
- ALL ELEVATIONS SHOWN ARE CITY OF WICHITA DATUM (USGS-1187.4 = CITY DATUM).
- THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
- AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION, IF REQUIRED, (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA: GAS SERVICE COMPANY, K.C.B.E., THE WICHITA WATER DEPARTMENT, AIR CAPITAL CABLEVISION, AND THE TELEPHONE COMPANY.
- UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATION ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE OTHER ITEMS OF WORK.
- CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
- CONTRACTOR SHALL GRADE THE SANITARY SEWER ALIGNMENT TO THE PROFILE AND ELEVATIONS SHOWN ON THE EASEMENT GRADING PLAN TO THE EXTENT THAT DIRT GENERATED BY THIS PROJECT WILL ALLOW. THE CONTRACTOR SHALL NOT BE REQUIRED TO FURNISH ADDITIONAL DIRT TO ACCOMPLISH THIS GRADING. ALL COSTS FOR GRADING SHALL BE SUBSIDIARY TO THE PROJECT.
- UNLESS OTHERWISE SPECIFIED ON THE PLANS, MANHOLES MAY BE TYPE "P", "C", OR "O" MANHOLES. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS.
- THE CONTRACTOR SHALL AVOID TRIMMING OF ANY TREES NOT MARKED FOR REMOVAL WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES TRIMMING IS UNAVOIDABLE HE SHALL COORDINATE SUCH WORK WITH THE ENGINEER.



No.		Revision		By	Date
LATERAL 87 OF THE WAR INDUSTRIES SEWER KEY MAP AND EASEMENT GRADING MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER CITY OF WICHITA PROJECT NO. 458-78-249-B1534-000-001 PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS Designed by KLR Job No. 34-27615-3 Sht. 2 of 9 Drawn by FLS Date January 1999					

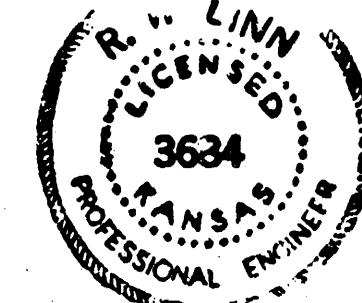
FAIRFIELD ESTATES 2ND ADDITION

ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS

STATE OF KANSAS }
COUNTY OF SEDGWICK }

I, R. W. LINN, A PROFESSIONAL ENGINEER IN AFORESAID STATE AND COUNTY, DO HEREBY CERTIFY THAT ON THIS 22nd DAY OF December, 1987, I HAVE BEEN IN RESPONSIBLE CHARGE OF SURVEYING AND PLATTING OF FAIRFIELD ESTATES 2ND ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS, INTO LOTS, BLOCKS, STREETS, AND A RESERVE, THE SAME BEING A TRACT OF LAND IN THE W.E. 1/4 OF SECTION 18, TOWNSHIP 27 SOUTH, RANGE 2 EAST OF THE 6TH P.M. AND DESCRIBED AS: A REPLAT OF LOTS 24, 25 AND 26, IN BLOCK 2; ALL OF BLOCK 9; LOTS 9 THROUGH 17 IN BLOCK 10; ALL IN FAIRFIELD ESTATES, WICHITA, SEDGWICK COUNTY, KANSAS, ALSO IN THIS REPLAT ARE INCLUDED BOTH DOREEN COURTS, ONEIDA CIRCLE, DOREEN STREET BETWEEN THE EXTENSIONS OF THE EAST LINE OF LOT 23, BLOCK 2 AND THE SOUTH LINE OF LOT 8, BLOCK 10; THE EAST 6.00 FEET OF BROADMOOR STREET AND THE SOUTH 6.00 FEET OF FOSTER STREET ALL IN SAID FAIRFIELD ESTATES.

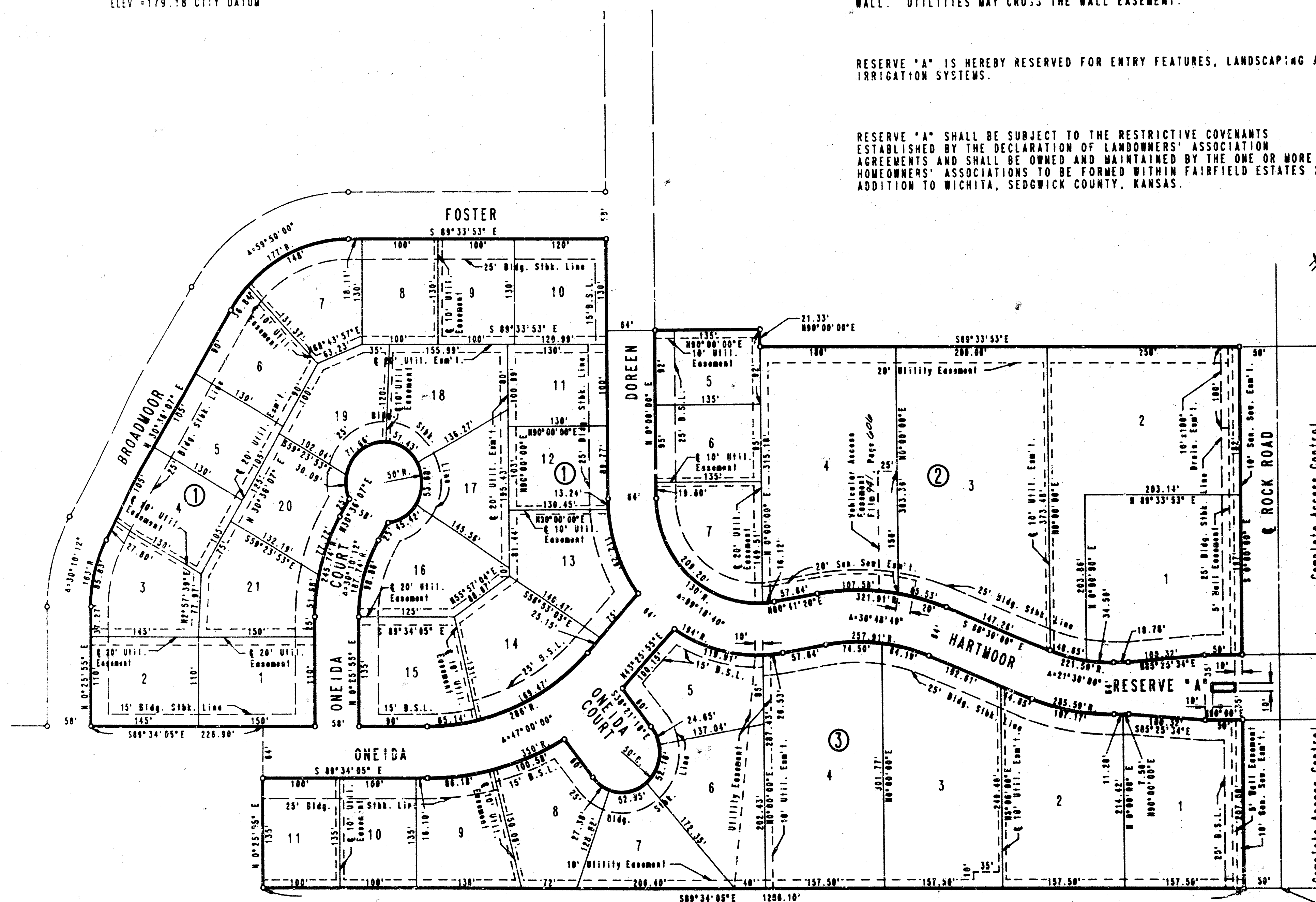
R. W. LINN, P.E., L.I.C. NO. 3684, R.L.S. NO. 934
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.



KNOW ALL MEN BY THESE PRESENTS THAT WE, THE UNDERSIGNED PROPERTY OWNERS OF THE LAND, AS ABOVE SET FORTH IN THE ENGINEER'S CERTIFICATE, HAVE CAUSED THE LAND TO BE SURVEYED AND PLATTED INTO LOTS, BLOCKS, STREETS, AND A RESERVE. THE SAME TO BE KNOWN AS FAIRFIELD ESTATES 2ND ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS. EASEMENTS AS INDICATED FOR THE CONSTRUCTION AND MAINTENANCE OF PUBLIC UTILITIES AND DRAINAGE ARE HEREBY GRANTED. STREETS ARE HEREBY DEDICATED TO AND FOR THE USE OF THE PUBLIC. THE 5.0 FOOT WALL EASEMENT, AS SHOWN IN THE EAST SIDE OF BLOCK 2 AND 3, IS HEREBY RESERVED FOR THE CONSTRUCTION AND MAINTENANCE OF A PRIVATE WALL. UTILITIES MAY CROSS THE WALL EASEMENT.

RESERVE "A" IS HEREBY RESERVED FOR ENTRY FEATURES, LANDSCAPING AND IRRIGATION SYSTEMS.

RESERVE "A" SHALL BE SUBJECT TO THE RESTRICTIVE COVENANTS ESTABLISHED BY THE DECLARATION OF LANDOWNERS' ASSOCIATION AGREEMENTS AND SHALL BE OWNED AND MAINTAINED BY THE ONE OR MORE HOMEOWNERS' ASSOCIATIONS TO BE FORMED WITHIN FAIRFIELD ESTATES 2ND ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS.



ALL ABUTTERS' RIGHT OF ACCESS TO AND FROM ROCK ROAD OVER AND ACROSS THE EAST LINE OF LOTS 1 AND 2, BLOCK 2, AND EAST LINE OF LOT 1, BLOCK 3 ARE HEREBY GRANTED TO THE CITY OF WICHITA. ALL PORTIONS OF FAIRFIELD ESTATES, WICHITA, SEDGWICK COUNTY, KANSAS, WITHIN THE ABOVE DESCRIBED TRACT OF LAND ARE HEREBY VACATED BY VIRTUE OF K.S.A. 12-512(b), AMENDED.

OWNERS:
Robert D. Taylor
RALPH AND
KATHLEEN A. TAYLOR

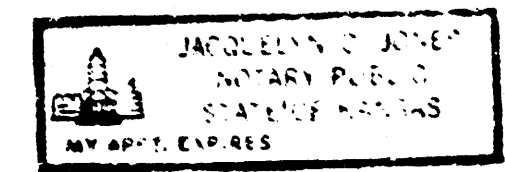
Kathleen A. Taylor
KATHLEEN A. TAYLOR

WE, BANK IV, IN WICHITA, KANSAS, HOLDER OF A MORTGAGE ON PART OF THE ABOVE DESCRIBED PROPERTY, DO HEREBY CONSENT TO THE PLATTING OF FAIRFIELD ESTATES 2ND ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS.

STATE OF KANSAS }
COUNTY OF SEDGWICK }

BE IT REMEMBERED THAT ON THIS 22 DAY OF December, 1987, BEFORE ME, A NOTARY PUBLIC IN AND FOR SAID STATE AND COUNTY, CAME Robert D. Taylor OF BANK IV IN WICHITA, KANSAS, TO ME PERSONALLY KNOWN TO BE THE SAME PERSON WHO EXECUTED THE FOREGOING INSTRUMENT OF WRITING AND DULY ACKNOWLEDGED THE EXECUTION OF THE SAME FOR AND ON BEHALF AND AS THE ACT AND DEED OF SAID BANK, IN TESTIMONY WHEREOF I HAVE HEREUNTO SET MY HAND AND AFFIXED MY NOTARIAL SEAL THE DAY AND YEAR ABOVE WRITTEN.

Joseph C. Jones, NOTARY PUBLIC
MY APPOINTMENT EXPIRES: December 14, 1990

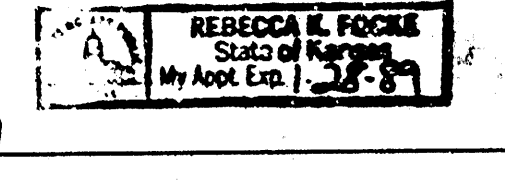


WE, KANSAS STATE BANK AND TRUST COMPANY, IN WICHITA, KANSAS, HOLDER OF A MORTGAGE ON A PART OF THE ABOVE DESCRIBED PROPERTY, DO HEREBY CONSENT TO THE PLATTING OF FAIRFIELD ESTATES 2ND ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS.

STATE OF KANSAS }
COUNTY OF SEDGWICK }

BE IT REMEMBERED THAT ON THIS 22nd DAY OF December, 1987, BEFORE ME, A NOTARY PUBLIC IN AND FOR SAID STATE AND COUNTY, CAME Robert M. Pestinger OF KANSAS STATE BANK AND TRUST COMPANY IN WICHITA, KANSAS, TO ME PERSONALLY KNOWN TO BE THE SAME PERSON WHO EXECUTED THE FOREGOING INSTRUMENT OF WRITING AND DULY ACKNOWLEDGED THE EXECUTION OF THE SAME FOR AND ON BEHALF AND AS THE ACT AND DEED OF SAID BANK, IN TESTIMONY WHEREOF I HAVE HEREUNTO SET MY HAND AND AFFIXED MY NOTARIAL SEAL THE DAY AND YEAR ABOVE WRITTEN.

Robert M. Pestinger, NOTARY PUBLIC
MY APPOINTMENT EXPIRES: January 28, 1989



THIS PLAT HAS BEEN SUBMITTED TO AND APPROVED BY THE WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION, WICHITA, KANSAS, DATED THIS 10th DAY OF December, 1987.

Elton Parsons, CHAIRMAN
Harvin S. Kroul, SECRETARY

THIS PLAT APPROVED AND ALL DEDICATIONS SHOWN HEREON ARE ACCEPTED BY THE CITY COUNCIL OF THE CITY OF WICHITA, KANSAS, DATED THIS 5 DAY OF January, 1988.

Robert G. Knight, MAYOR
Dale E. Rea, DEPUTY CITY CLERK

ENTERED ON TRANSFER RECORD, THIS 24 DAY OF Feb, 1988.
Don Wright, COUNTY CLERK

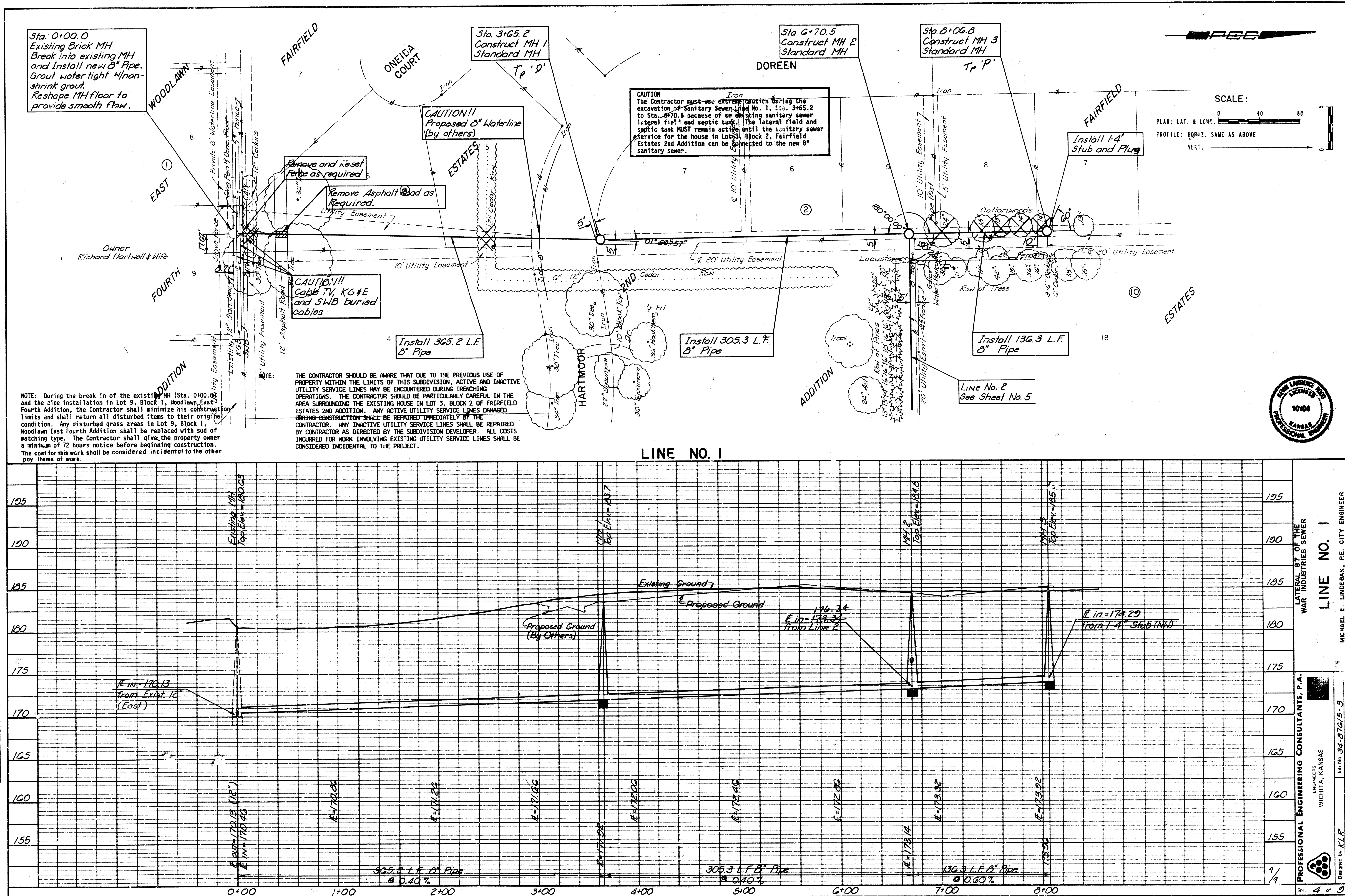
THIS IS TO CERTIFY THAT THE INSTRUMENT WAS FILED FOR RECORD IN THE REGISTER OF DEEDS OFFICE AT 2:30 P.M., ON THIS 24th DAY OF February, 1988.

Pat Kettler, REGISTER OF DEEDS
Ed Resa, DEPUTY

Sheet 3 of 9

PLAN	DATE	BY
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CONV. TO PLOT NOTE BOOK NO. 10		

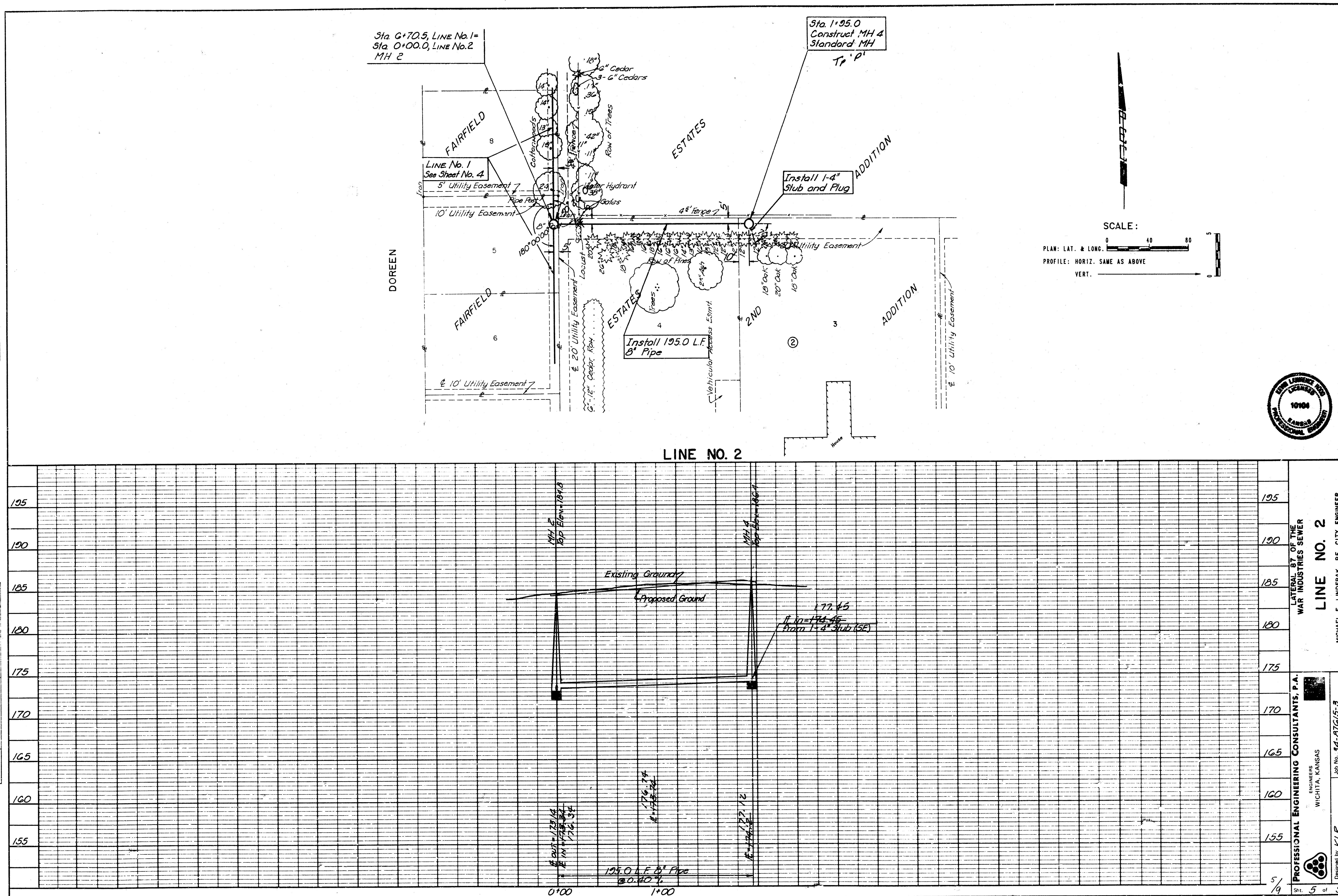
PROFILE	DATE	BY
CONV. TO PLOT NOTE BOOK NO. 10		
CONV. TO PLOT NOTE BOOK NO. 10		



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PLAN	DATE	BY
	NO.	NO.
NOTE: BOON ALIGNMENT CHECKED. RT. OF WAY CHECKED.		

PROFILE	DATE	BY
	NO.	NO.
NOTE: BOON GRADES CHECKED. STANDARD GRADES CHECKED.		



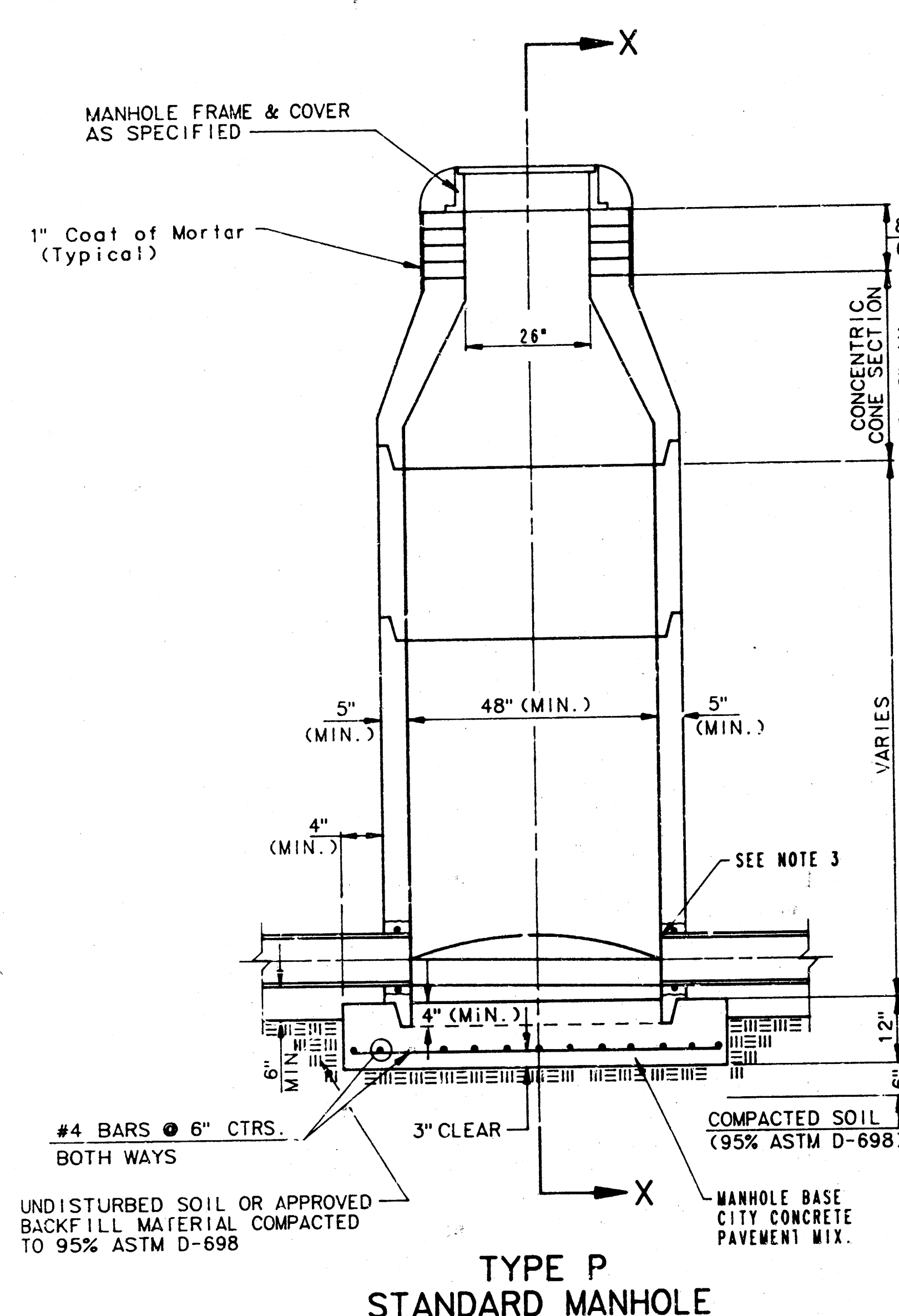
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SEWER APPURTENANCES DETAILS

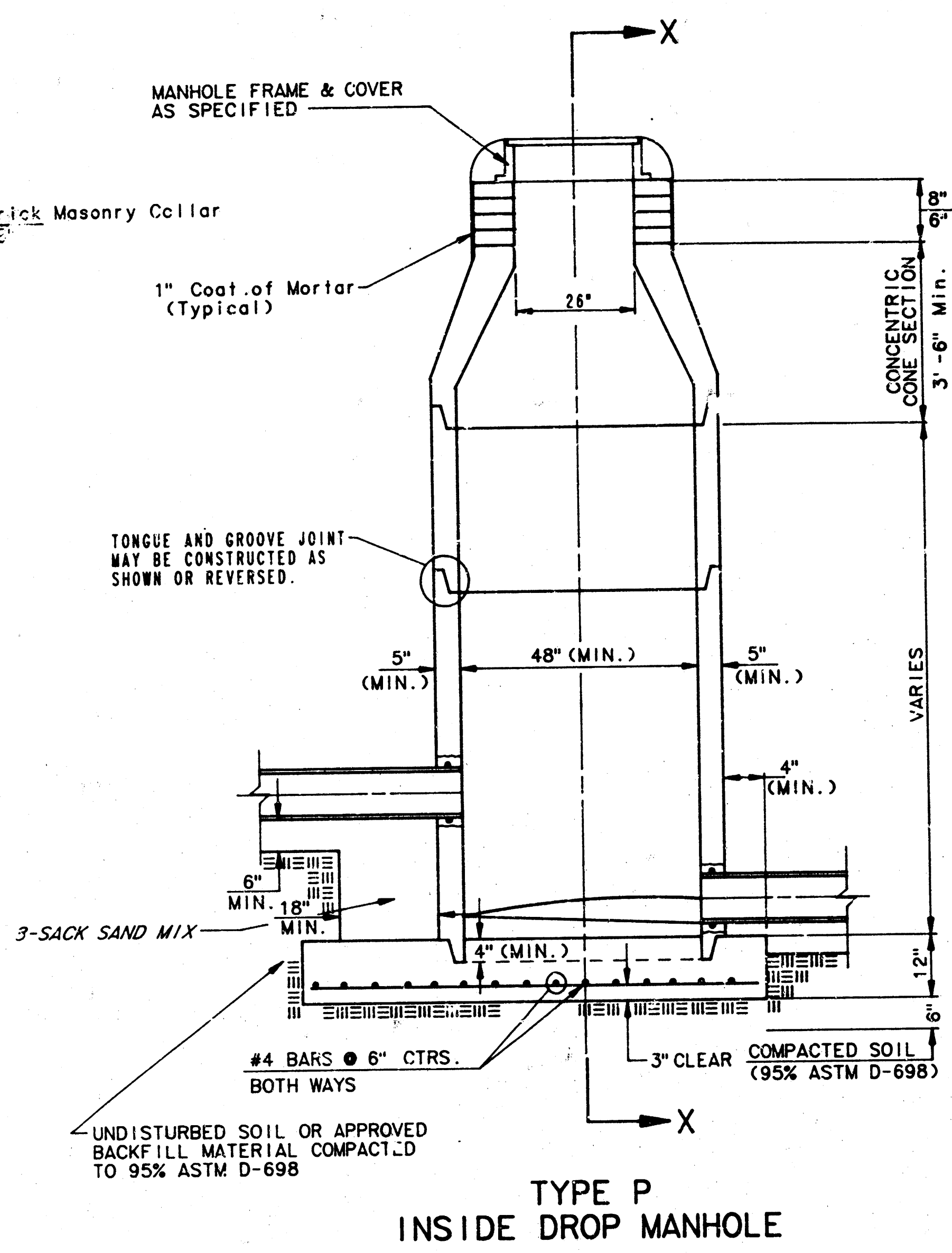
ADOPTED AS STANDARD DESIGN

BY

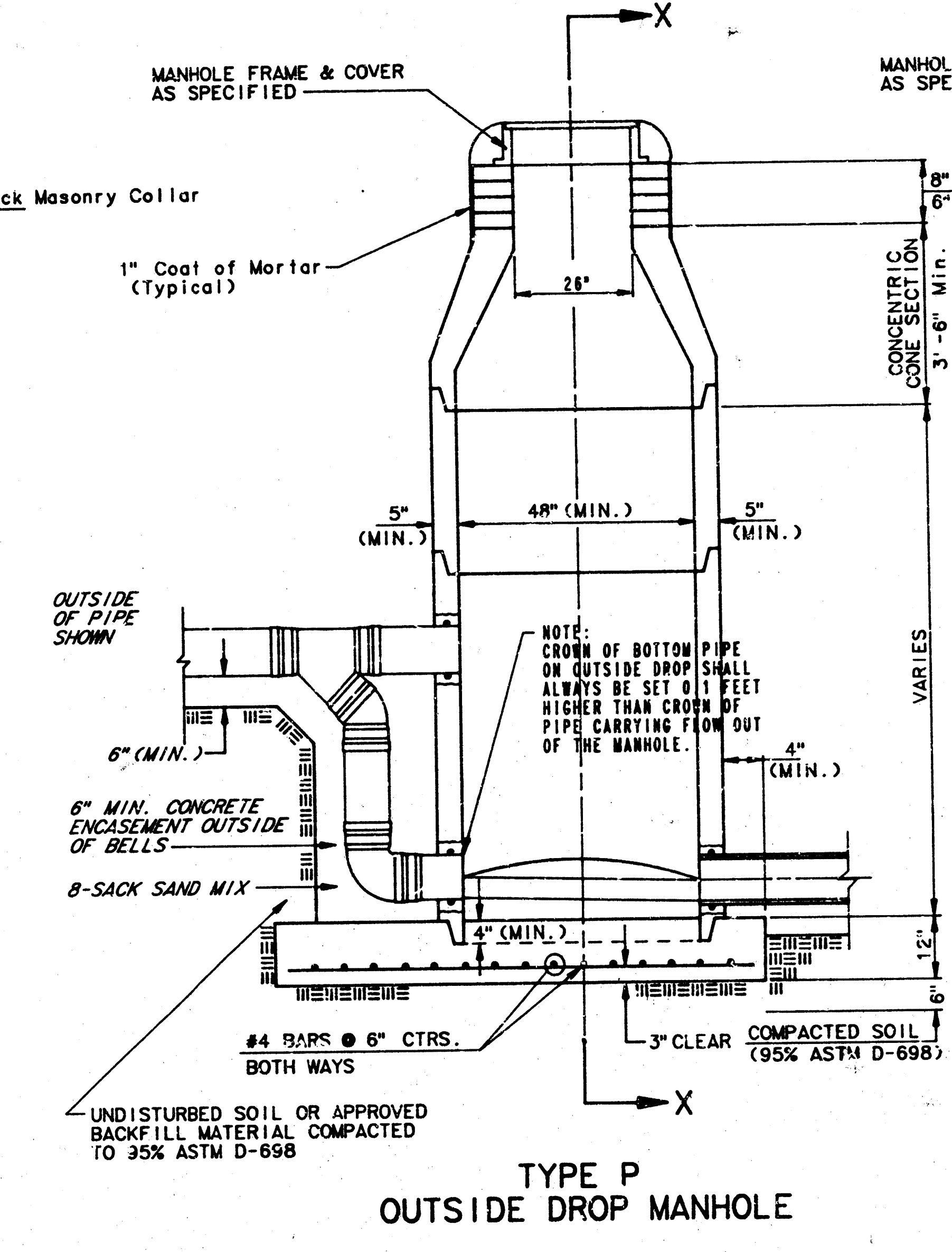
CITY OF WICHITA



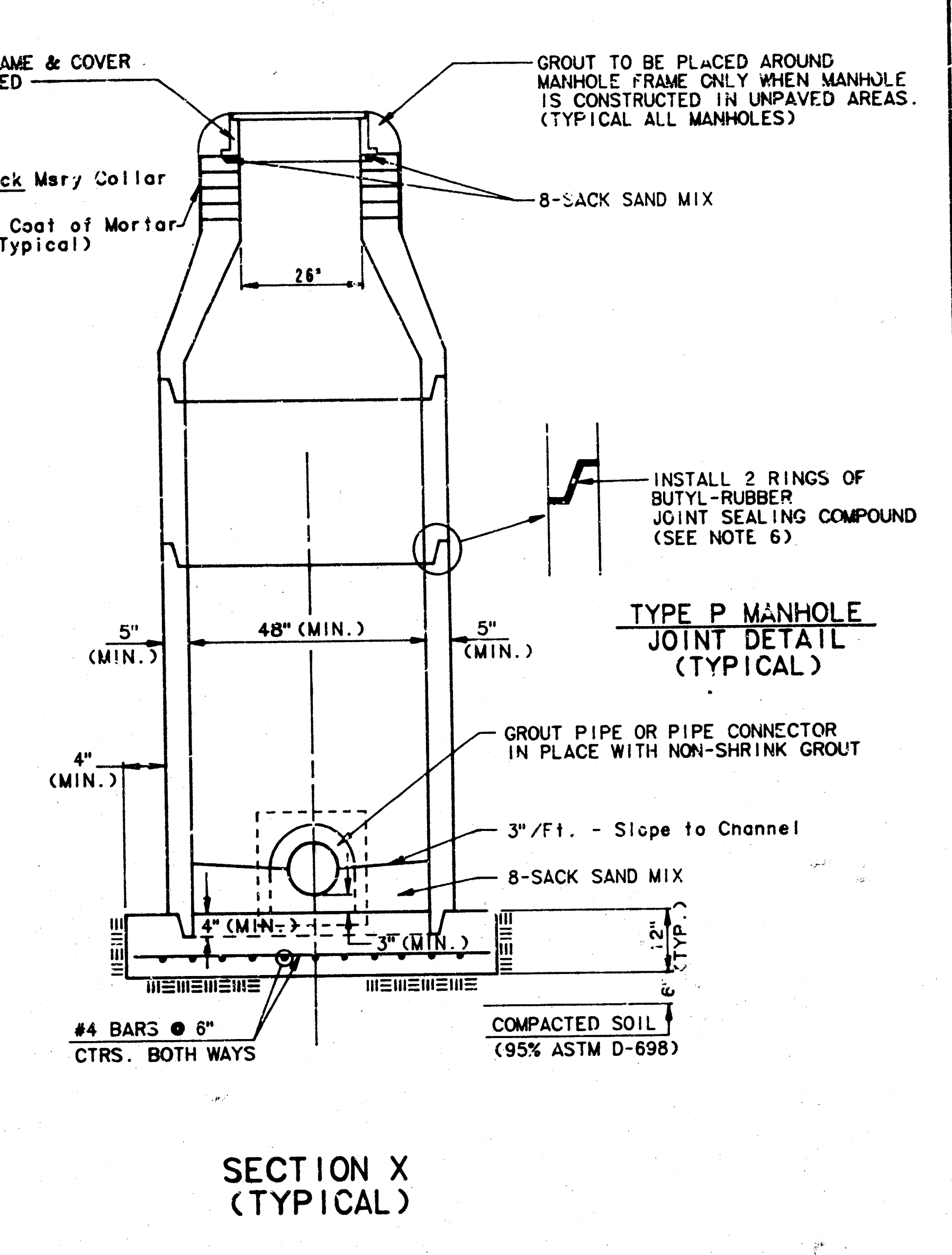
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.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 ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS INMUC SERIES 66 H-BUILD EPOXYLINE, DRY THICKNESS OF 8 MILS (MIN.).
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. 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 SLAB INVERT.
9. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. 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 AD MIXTURE. 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.

11. 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.
12. 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 CONSTRUCTED ON EXISTING MANHOLE.
13. 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 BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. 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.

15. 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.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4" FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2" FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. 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.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 6" WALLS AND A VERTICAL HEIGHT OF 8" MINIMUM AND 10" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.

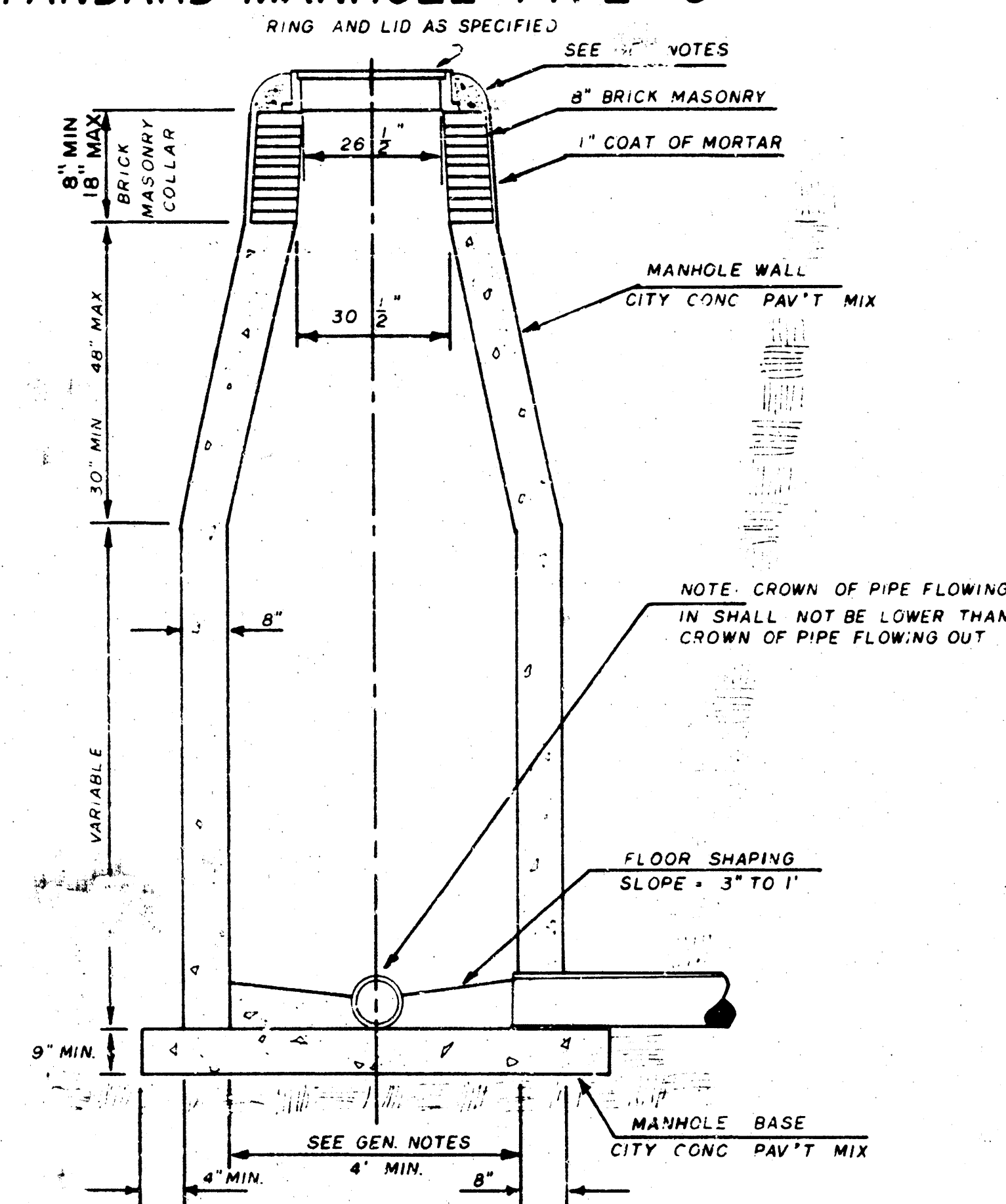
SEWER APPURTENANCES DETAILS

ADOPTED AS STANDARD DESIGN

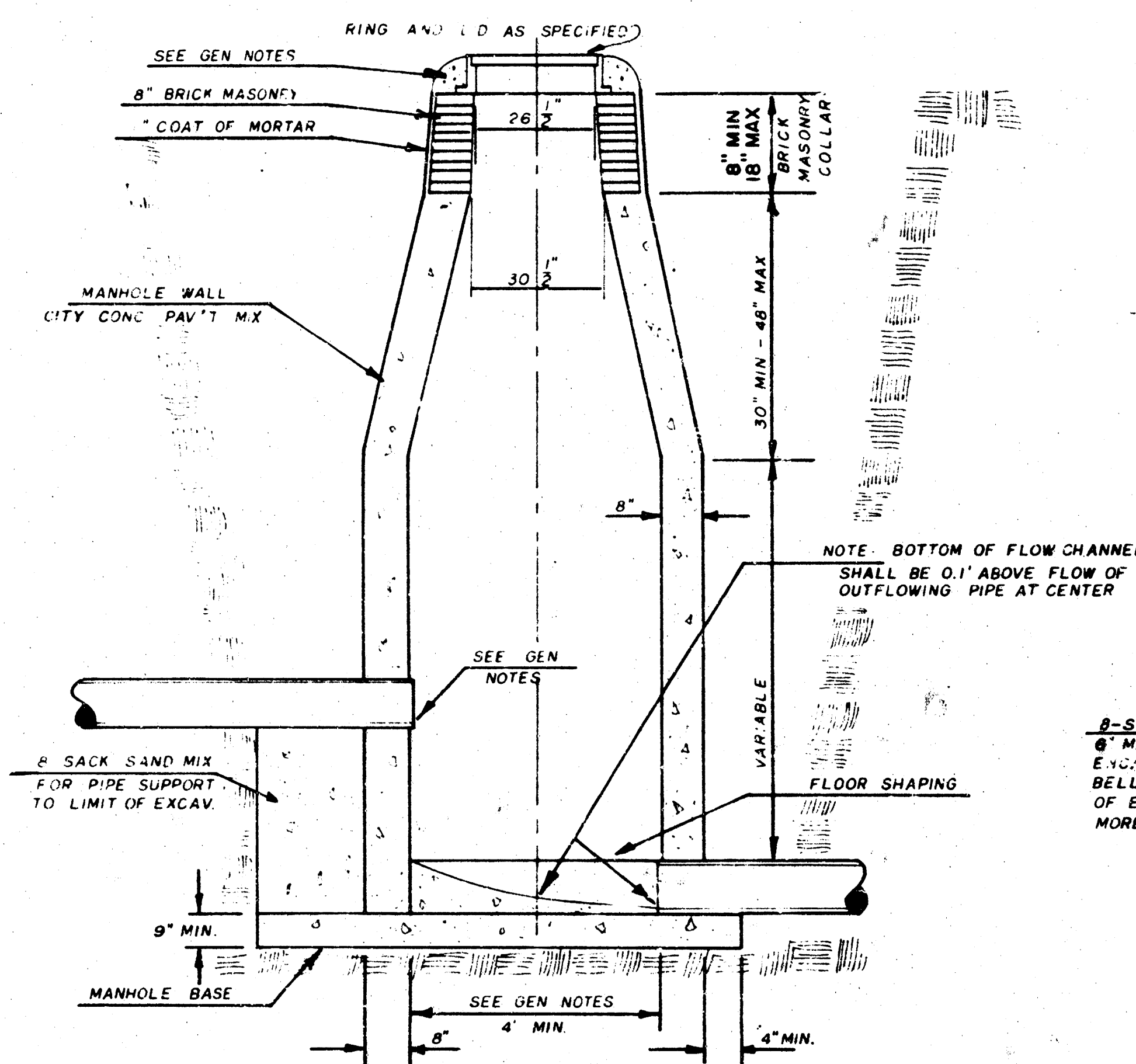
BY

City of Wichita, Kansas

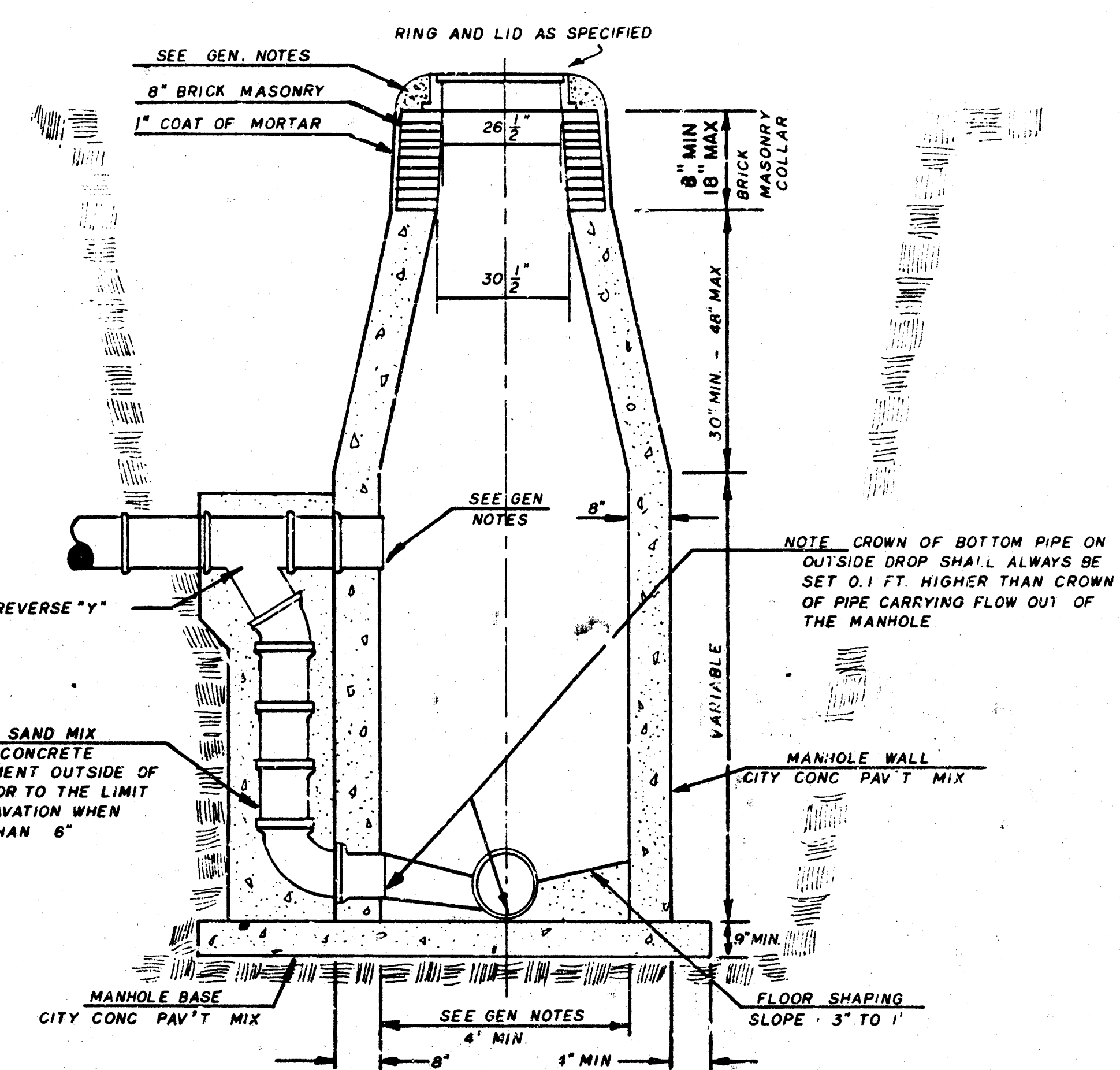
STANDARD MANHOLE TYPE "C"



INSIDE DROP MANHOLE TYPE "C"



OUTSIDE DROP MANHOLE TYPE "C"



GENERAL NOTES

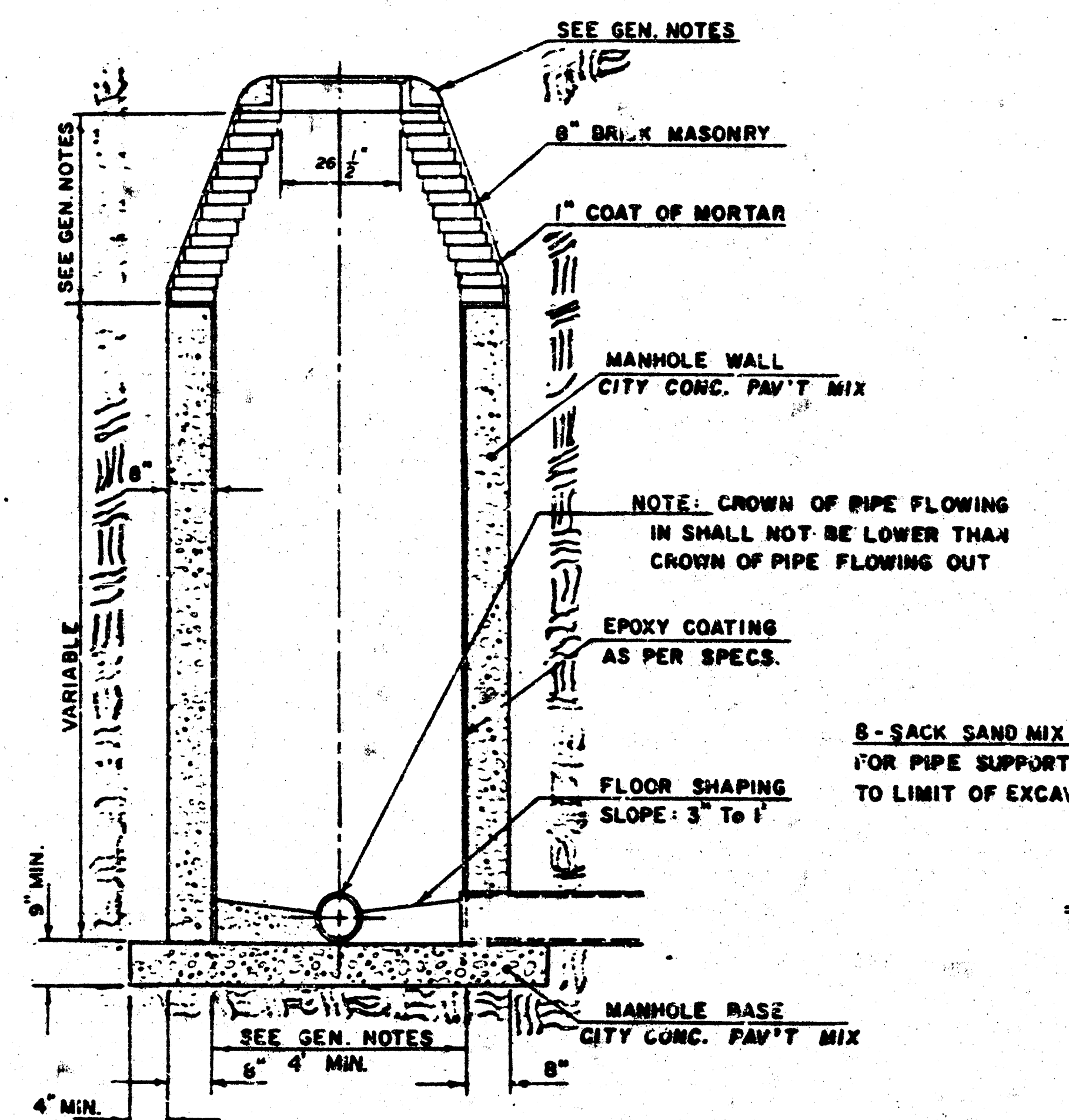
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT 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 MANHOLE 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 DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". 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.

SEWER APPURTENANCES DETAILS

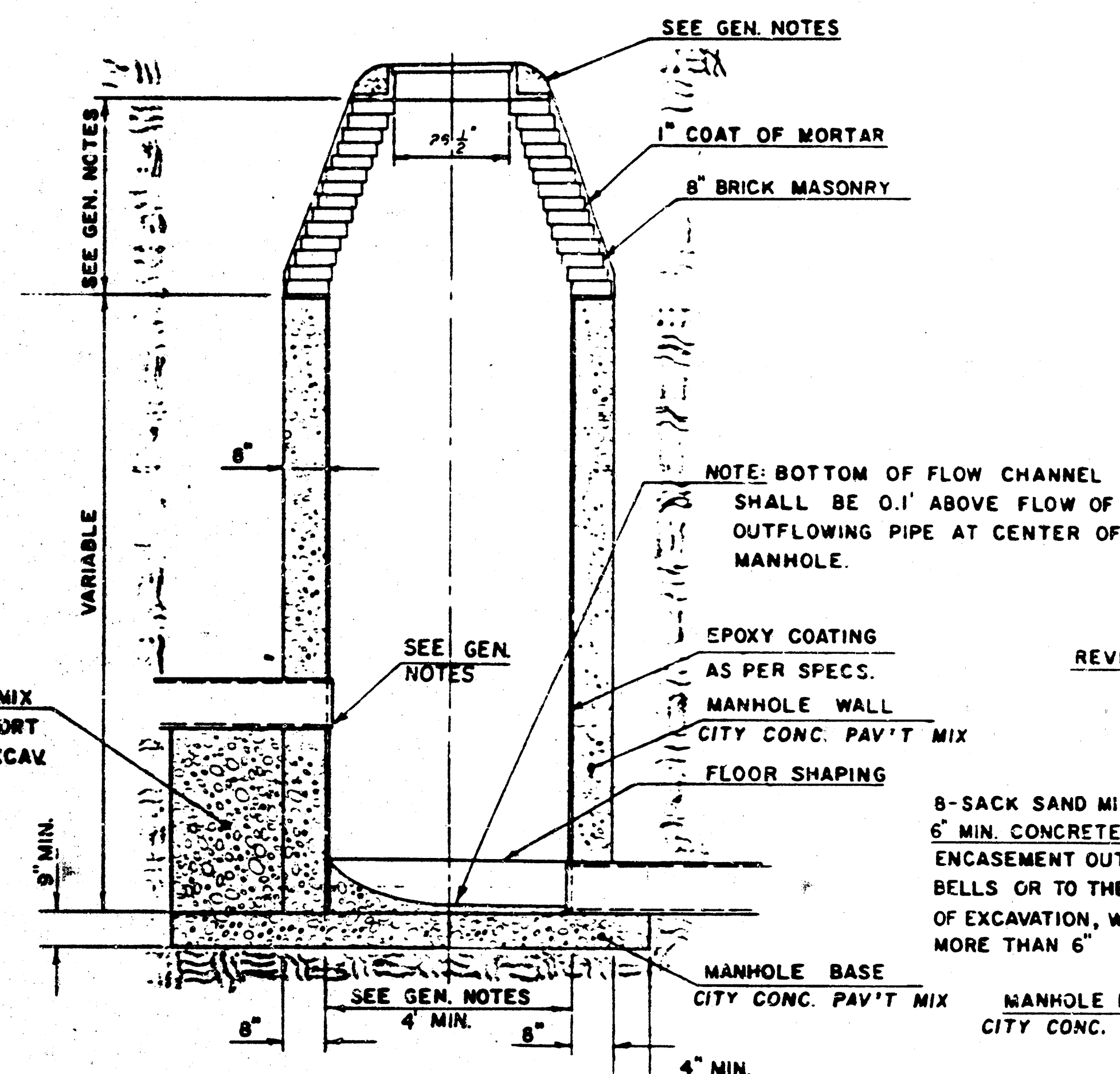
ADOPTED AS STANDARD DESIGN
BY

CITY OF WICHITA, KANSAS

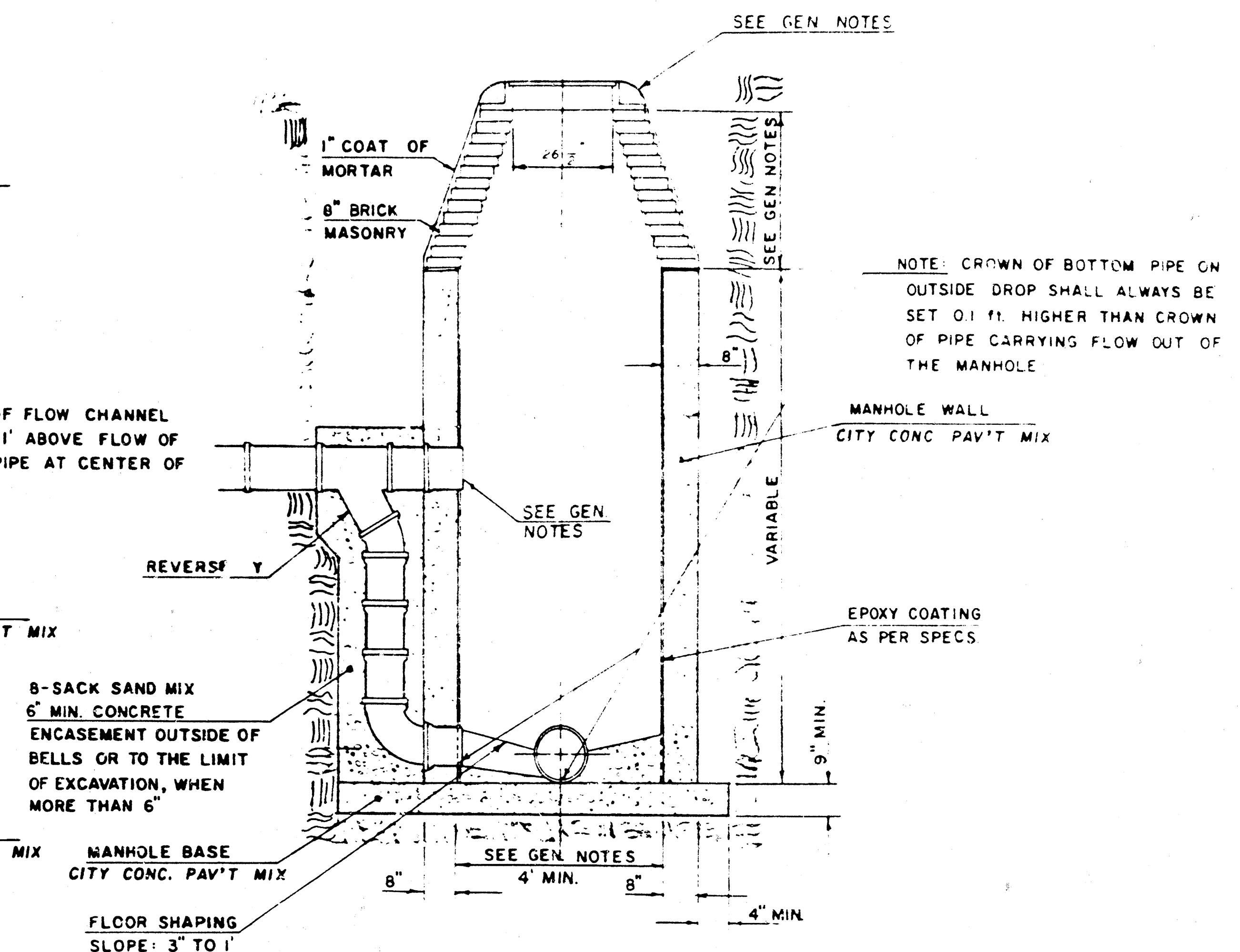
TYPE "D" MANHOLE



TYPE "D" INSIDE DROP MANHOLE



TYPE "D" OUTSIDE DROP MANHOLE



GENERAL NOTES

1. 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.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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

1. 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 SHALL BE INSTALLED WITHIN THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE JOINT SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE JOINT SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE PERMEABILITY OF THE JOINT. COST OF GRADE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
2. PIPES INSTALLED WITHIN THE EXCAVATION SHALL BE GRADED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE JOINT SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE JOINT SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE PERMEABILITY OF THE JOINT. COST OF GRADE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
3. 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.
4. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 1' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
5. 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.

MANHOLE FRAME AND COVER DETAIL

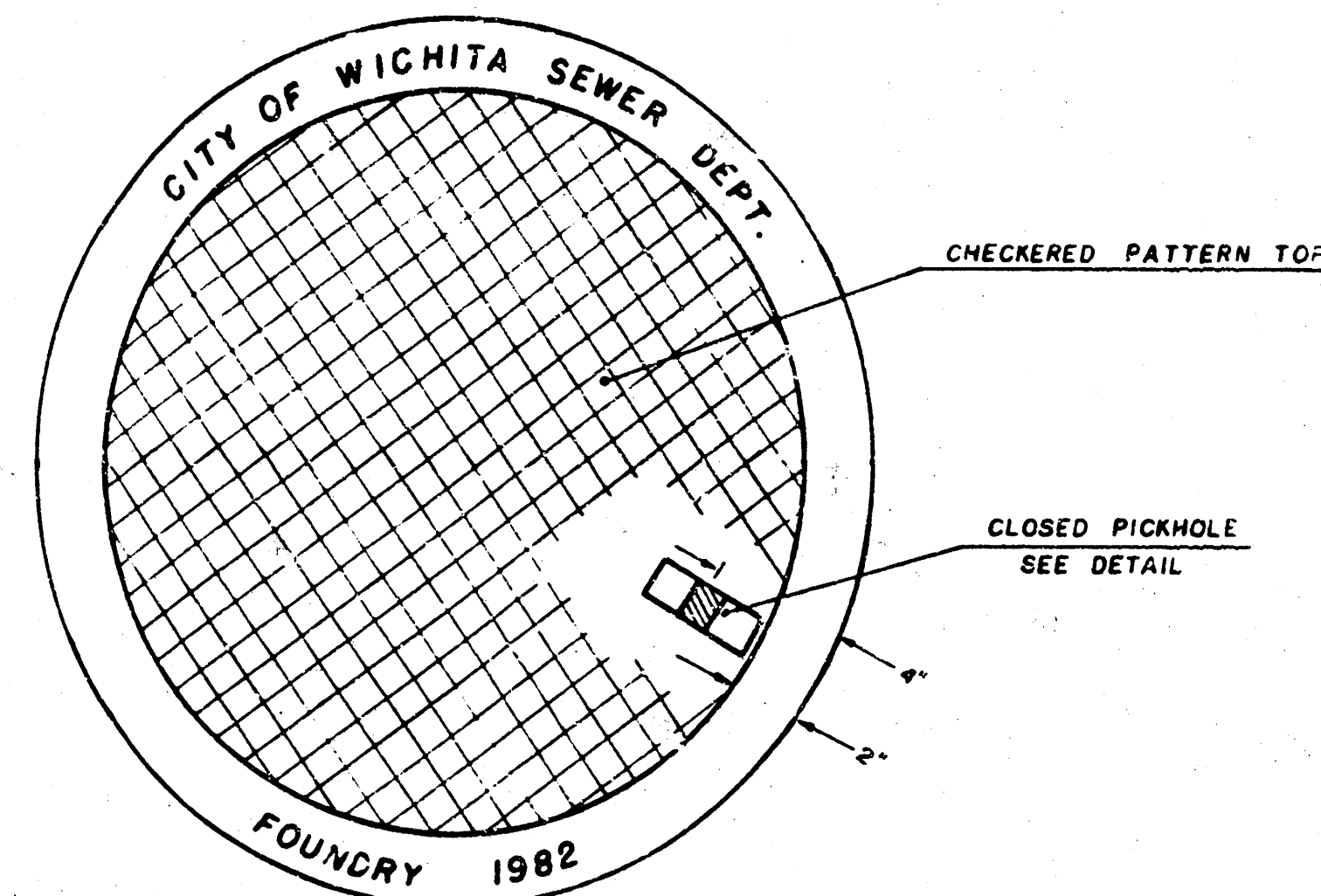
ADOPTED AS STANDARD DESIGN

BY

City of Wichita, Kansas

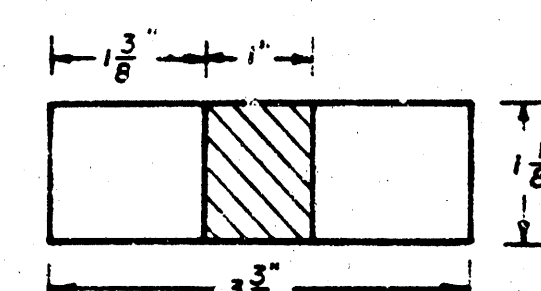
MANHOLE COVER

Weight: 180 Lbs.

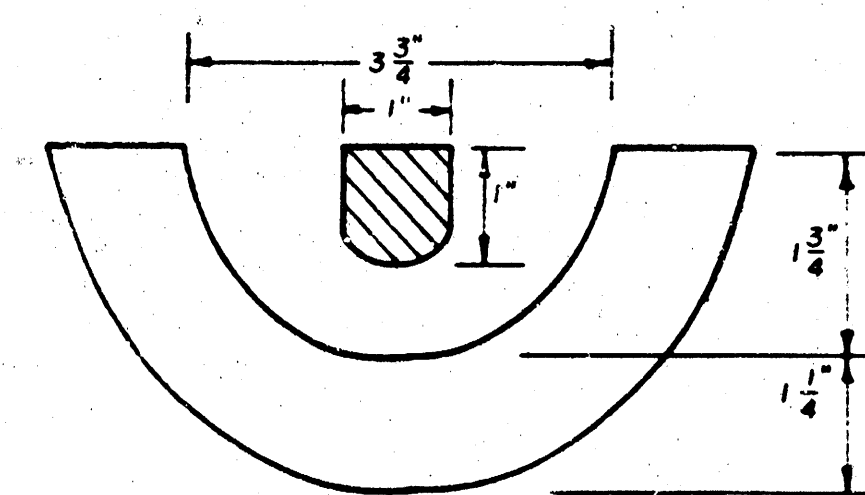


TOP VIEW

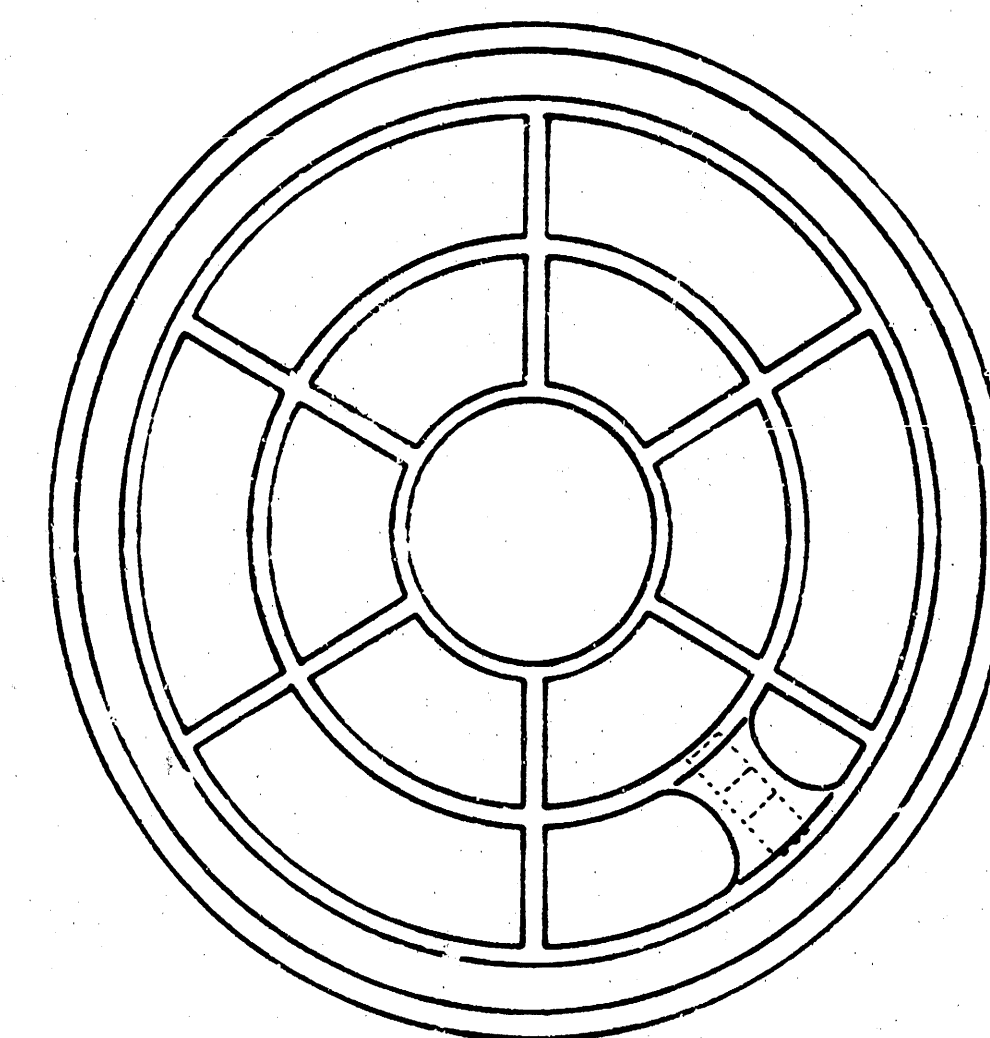
PICKHOLE DETAIL



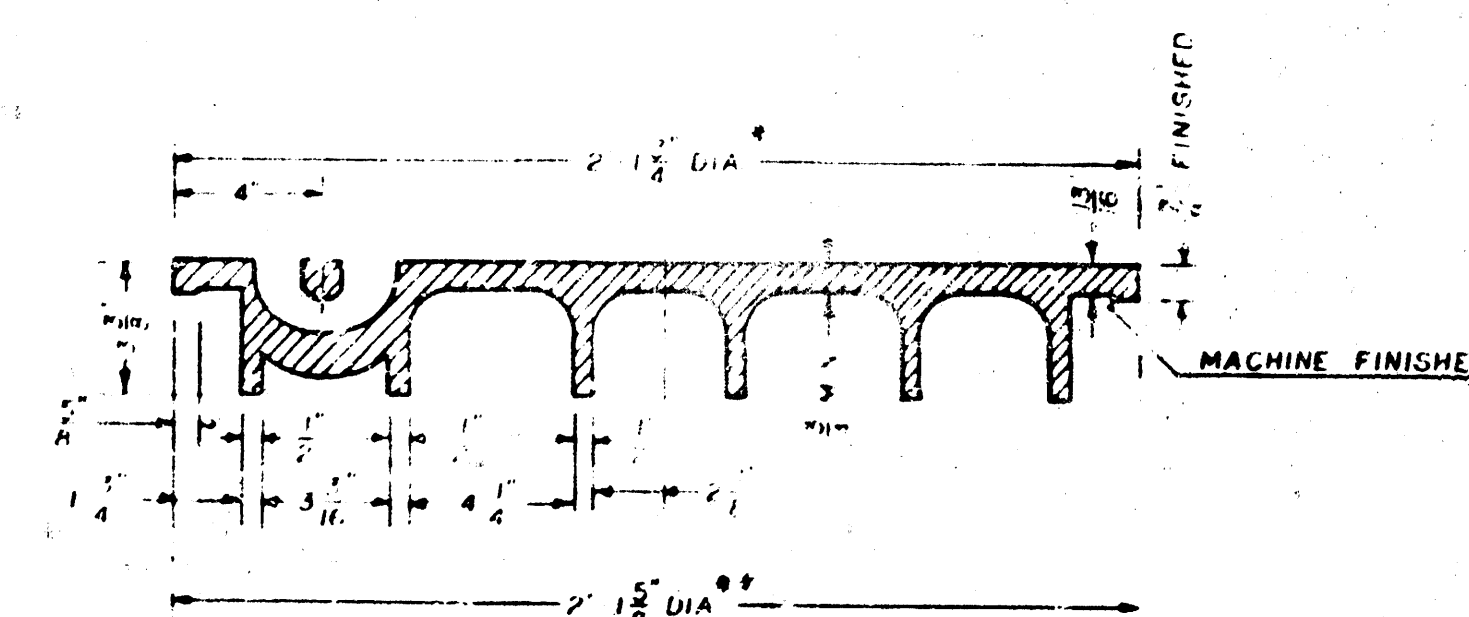
TOP VIEW



SECTION VIEW



BOTTOM VIEW

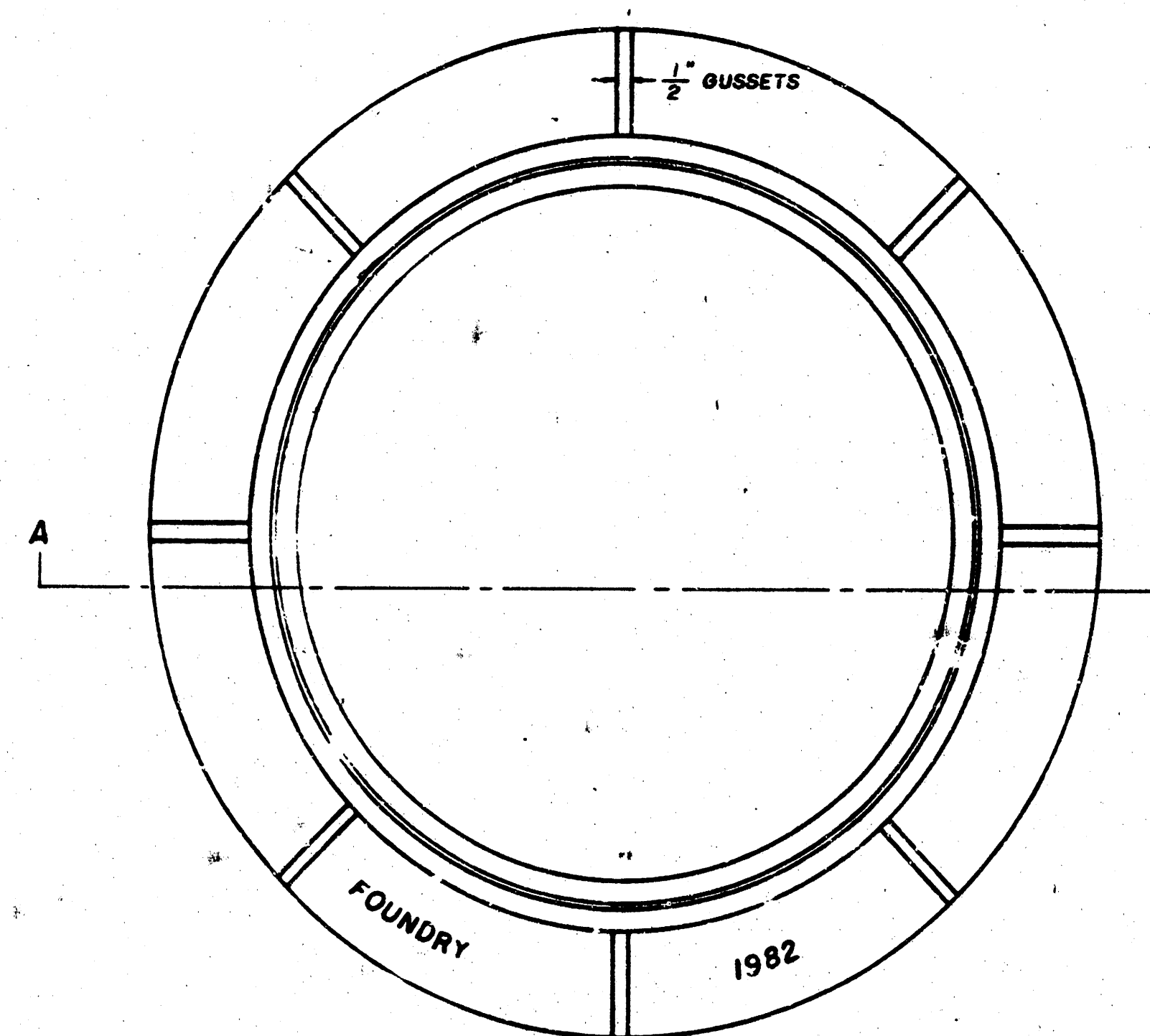


SECTION VIEW

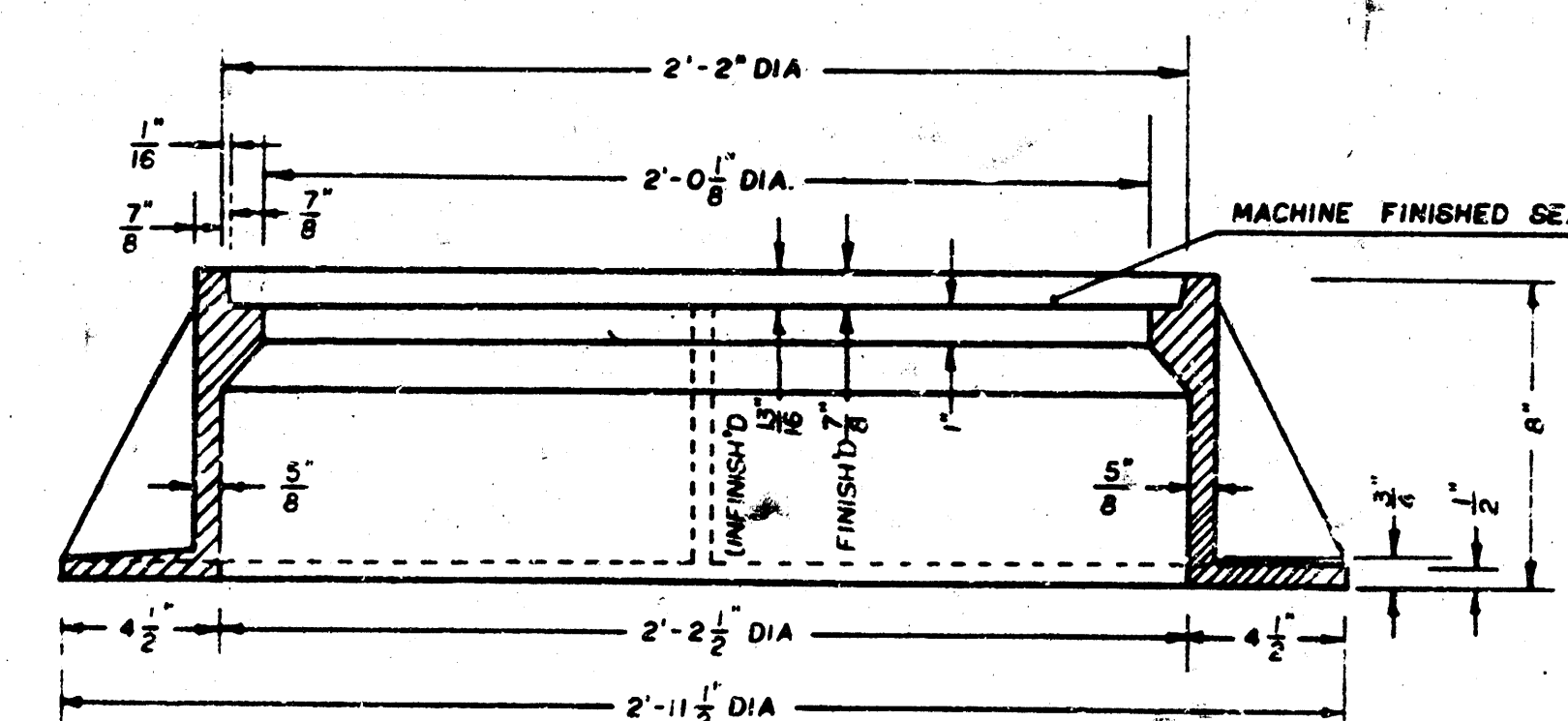
* OUTSIDE DIA TOP OF COVER
** OUTSIDE DIA BOTTOM OF COVER

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 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.
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.