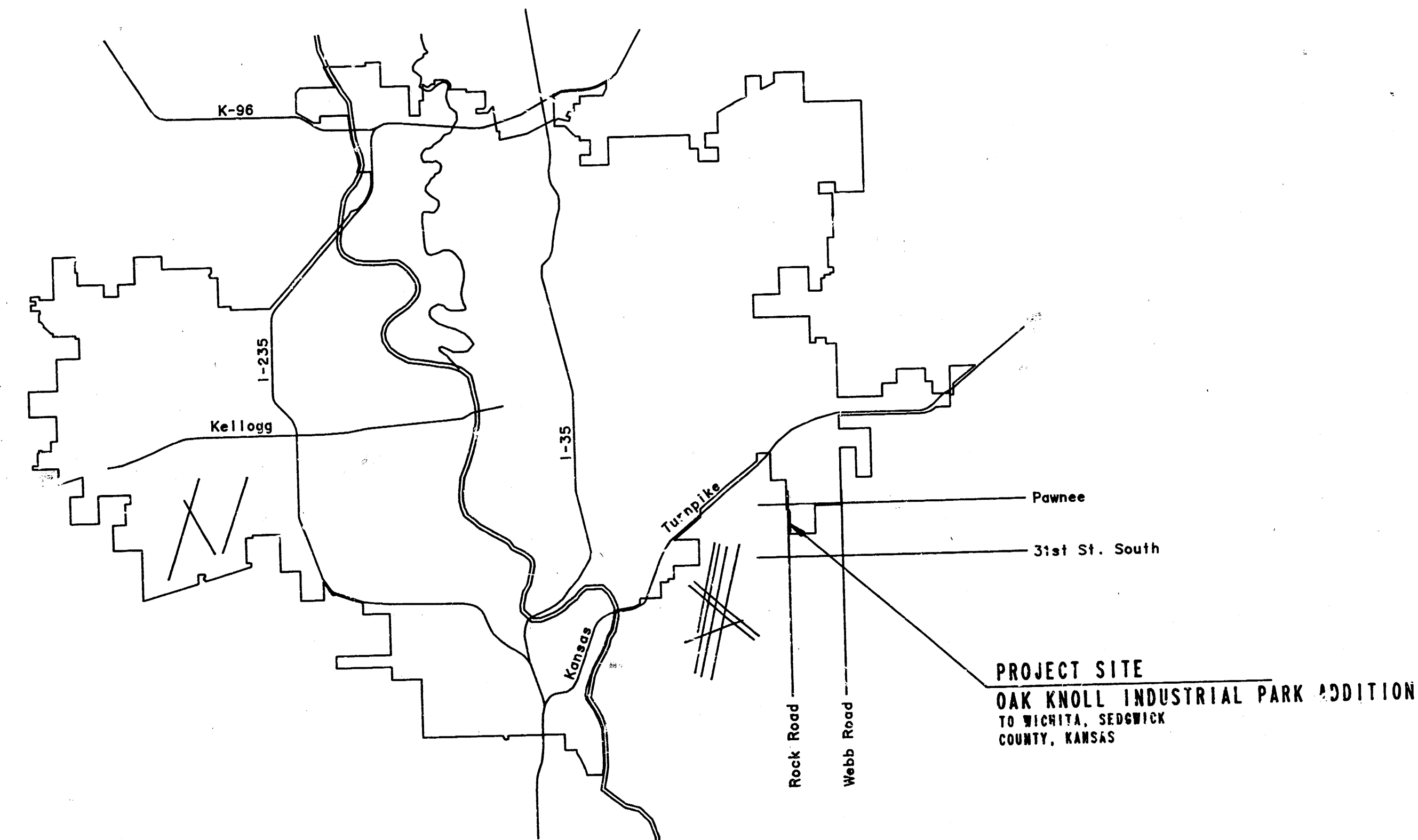


CONSTRUCTION PLANS FOR  
**LATERAL 2, MAIN 23**  
 OF THE  
**WAR INDUSTRIES SEWER**  
 THE CITY OF WICHITA,  
 SEDGWICK COUNTY, KANSAS  
 MICHAEL E. LINDEBAK, P.E. CITY ENGINEER

**INDEX OF SHEETS**

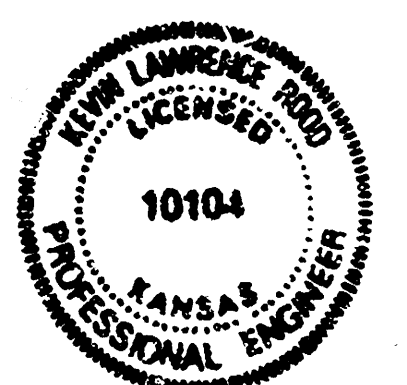
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| SHEET NO. 1   | TITLE SHEET                |
| SHEET NO. 2   | KEY MAP                    |
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| SHEET NO. 7   | MANHOLE DETAIL SHEET       |
| SHEET NO. 8   | FRAME & COVER DETAIL SHEET |

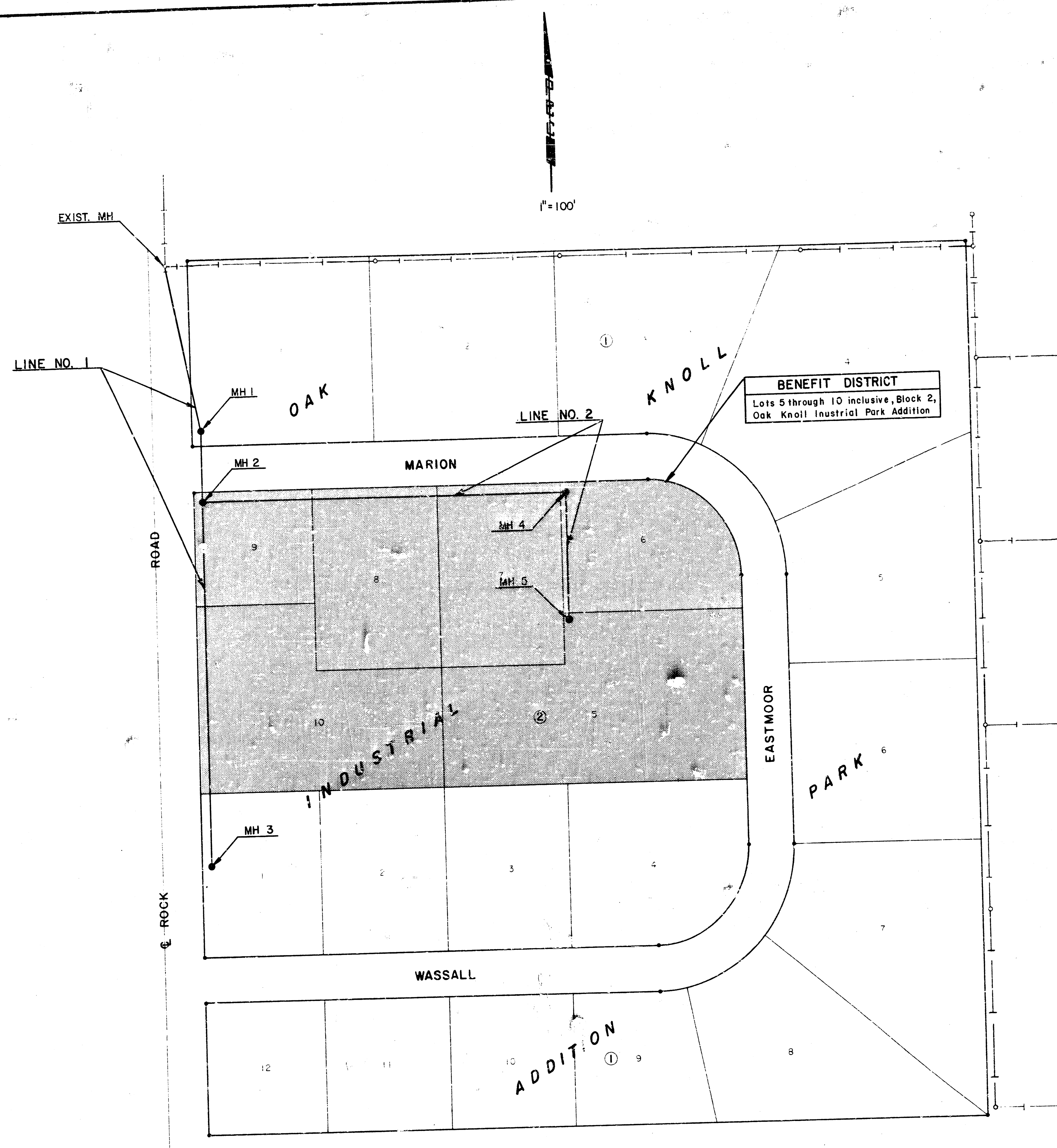


LOCATION MAP

CITY OF WICHITA PROJECT NO. 468-76-245-81142-000-000-001  
**APRIL, 1986**  
 PLANS PREPARED BY  
**PROFESSIONAL ENGINEERING CONSULTANTS, P.A.**  
 ENGINEERS  
 WICHITA, KANSAS

AS BUILT  
 RPL  
 10-87





- GENERAL NOTES
1. ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.
  2. ALL ELEVATIONS SHOWN ARE CITY OF WICHITA DATUM (USGS-1187.4 = CITY DATUM).
  3. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.
  4. AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION, (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: SOUTHWESTERN BELL TELEPHONE CO., GAS SERVICE COMPANY, K.G.S.E., THE WICHITA WATER DEPARTMENT, AND AIR CAPITAL CABLEVISION.
  5. THE BURIED UTILITIES AS LOCATED ON THE PLANS ARE APPROXIMATE LOCATIONS ONLY. IT SHOULD BE NOTED THAT OTHER BURIED LINES AND CABLES MAY EXIST WHICH ARE NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING TRENCHING OPERATIONS TO AVOID DAMAGING THESE LINES. ANY LINES DAMAGED SHALL BE REPLACED OR REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
  6. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES, AND BANK LINES TO THEIR ORIGINAL SLOPES UNLESS SHOWN OTHERWISE ON THE PLANS.
  7. 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 OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH STATE LAWS. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE OTHER ITEMS OF WORK.
  8. ALL EXCESS EXCAVATED MATERIAL FROM THIS PROJECT SHALL BE WASTED AS DIRECTED OR APPROVED BY THE ENGINEER. NO EXCESS MATERIAL SHALL BE PLACED WITHIN STREET RIGHTS-OF-WAY. THE CONTRACTOR SHALL CONTACT THE DEVELOPER FOR INFORMATION PERTAINING TO ACCEPTABLE LOCATIONS FOR THE DISPOSITION OF WASTE MATERIAL ON SITE. WASTE MATERIAL SHALL BE BLADED SMOOTH AND SLOPED TO DRAIN. THIS WORK SHALL BE SUBSIDIARY TO OTHER BID ITEMS.
  9. WHERE SHOWN, THE CONTRACTOR SHALL GRADE ALONG THE SANITARY SEWER ALIGNMENT TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS. THE CONTRACTOR SHOULD VISIT THE SITE TO DETERMINE THE EXTENT OF GRADING PRIOR TO PREPARATION OF HIS BID. ALL COSTS FOR GRADING SHALL BE SUBSIDIARY TO THE PROJECT.
  10. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.

|  |                                                                                                                                                                                                                                                                   |                    |             |      |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------|------|
|  | Revision                                                                                                                                                                                                                                                          |                    | By          | Date |
|  | <b>LATERAL 2, MAIN 23 OF THE WAR INDUSTRIES SEWER</b><br><b>KEY MAP</b><br>MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER<br>CITY OF WICHITA PROJECT NO. 468-76-245-81142-000-001<br><b>PROFESSIONAL ENGINEERING CONSULTANTS, P.A.</b><br>ENGINEERS<br>WICHITA, KANSAS |                    |             |      |
|  | Designed by                                                                                                                                                                                                                                                       | Job No. 34-86117-4 | Sht. 2 of 8 |      |
|  | Drawn by DMM                                                                                                                                                                                                                                                      | Date April, 1986   |             |      |

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# OAK KNOLL INDUSTRIAL PARK ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS

State of Kansas SS  
County of Sedgwick

I, E. W. Linn, a Professional Engineer in aforesaid State and County, do hereby certify that on this 17th day of June, 1981, I have caused to be surveyed and plotted OAK KNOLL INDUSTRIAL PARK ADDITION to Wichita, Sedgwick County, Kansas, into lots, blocks, streets and a floodway described as follows: Beginning of the Southwest Corner of the NW 1/4 of Section 5, Township 28 South, Range 2 East of the 6th P.M., Thence bearing N 0° 01' 36" W along the West Line of said Section 5 a distance of 1334.74 feet to the Northwest Corner of the NW 1/4 of said NW 1/4; Thence bearing S 88° 50' 15" E a distance of 1323.71 feet to Northeast Corner of the SW 1/4 of said NW 1/4; Thence bearing S 0° 03' 49" E along the West Line of Oak Knoll 2nd Addition a distance of 1331.30 feet to the Southeast Corner of the SW 1/4 of said NW 1/4; Thence bearing N 89° 50' 51" W a distance of 1322.23 feet to the point of beginning.

*E. W. Linn*  
E. W. Linn, P.E.  
No. 3684

This plat has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas, this 17th day of June, 1981.



*Alvin J. McNessy, Jr.* Chairman  
Alvin J. McNessy, Jr.  
*Robert A. Lakin* Secretary  
Robert A. Lakin

This plat approved and all dedications shown hereon are accepted by the City Commission of the City of Wichita, Kansas, this 17th day of June, 1981.



*R. C. Brown* Mayor  
R. C. Brown  
*Donald C. Glick* City Clerk  
Donald C. Glick

This plat approved and all dedications shown hereon are accepted by the Board of County Commissioners of Sedgwick County, Kansas, this 27th day of July, 1981.

*Donald E. Grogg* Chairman  
Donald E. Grogg

*Jack Spratt* Commissioner  
Jack Spratt

*Tom Scott* Commissioner  
Tom Scott

Attest *Dorothy R. White*  
Dorothy R. White  
County Clerk

Entered on transfer record this 27th day of July, 1981.

*Dorothy R. White* County Clerk  
Dorothy R. White

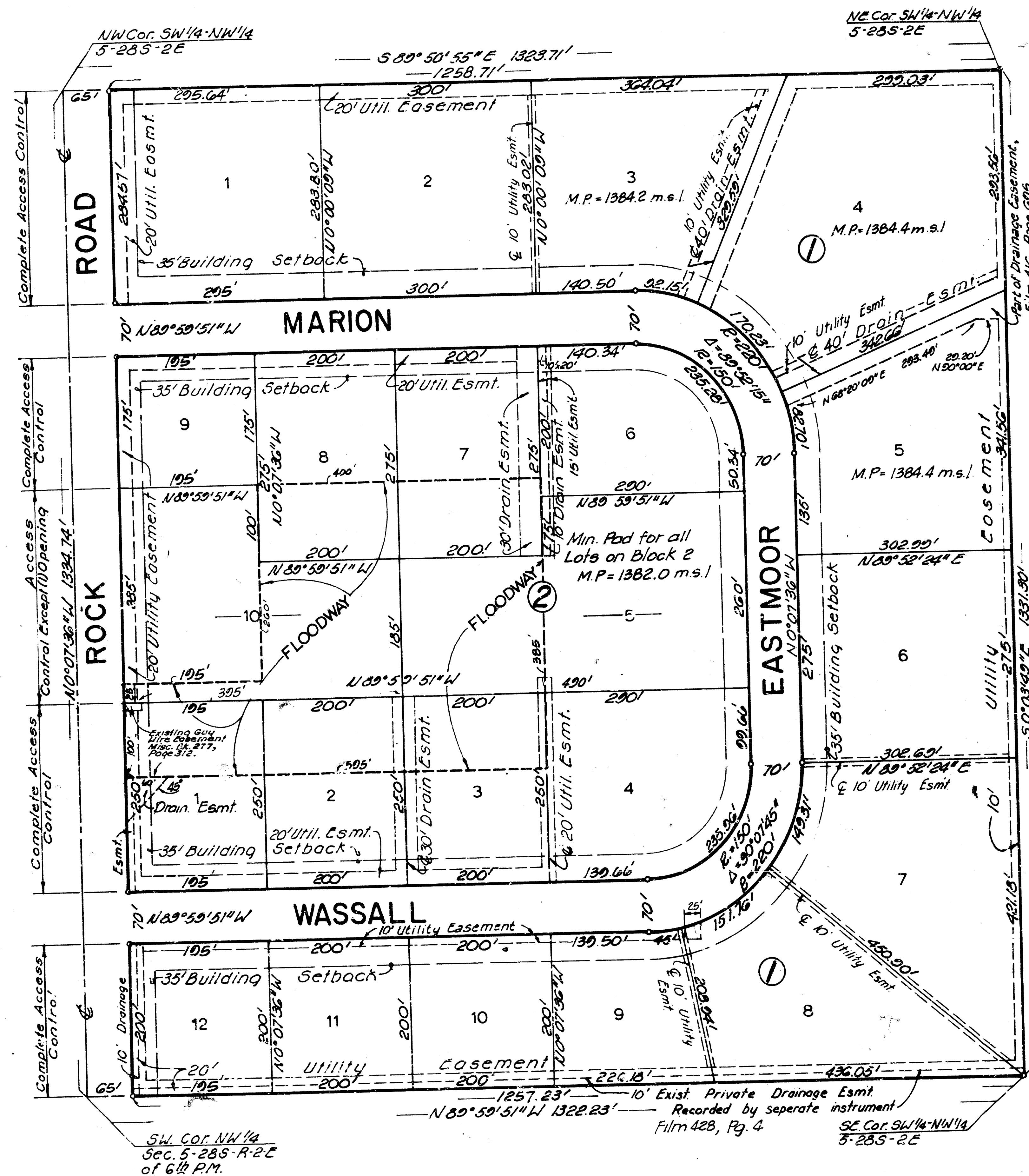
This is to certify that this instrument was filed for record in the Register of Deeds Office at 2:00 P.M. on the 27th day of July, 1981.

*Bette F. McColl* Register of Deeds  
Bette F. McColl

*Pat Kettler* Deputy  
Pat Kettler

Shk. 3 of 8

P-Q 5-28



B.M. Rock Road and Pawnee East, City of Wichita bench mark disc, 62' East and 53' North of center line both. Elev. 125.25  
Min. Pad Elev. as shown on Plat.

Know all men by these presents that we, the undersigned property owners of the land as above set forth in the Engineers Certificate, have caused the land to be surveyed and plotted into lots, blocks, streets and a floodway, same to be known as OAK KNOLL INDUSTRIAL PARK ADDITION to Wichita, Sedgwick County, Kansas. Easements, as indicated for the construction and maintenance of public utilities and drainage, are hereby granted. The streets are hereby dedicated to and for the use of the public. The floodway shall be the responsibility of the owners of the lots on which the floodway is located until such time as the governing body exercising jurisdiction elects to assume the responsibility for maintenance and improvement of the drainage, provided, however, that no building shall be constructed on or within said floodway, nor shall any fill, change of grade, creation of channel or other work be carried on without the permission of the Wichita-Sedgwick County Flood Control Office or their successors in office. All abutters' right of access to and from Rock Road, over and across the West lines of Blocks 1 and 2, are hereby granted to the City of Wichita. Provided however, that Lot 10, Blk. 2 shall have access to Rock Road at one (1) location, as shown, said location to be designated by the City of Wichita, Kansas. Minimum Pad Elevation for all lots in Block 2 shall be 1332.0; for Lot 3, Block 1; 1384.2 & for Lot 4 & 5 Block 1; 1384.4 m.s.l. as shown.

*B. G. Stout, Jr.* President  
B. G. Stout, Jr.  
*Elmina G. Stout* Secretary  
Elmina G. Stout

State of Kansas SS  
County of Sedgwick

Be it remembered that on this 17th day of June, 1981, before me, a Notary Public in aforesaid state and county, came B. G. Stout Jr., President, and Elmina G. Stout, Secretary of American Land Development Company Inc., to me personally known to be the same persons who executed the foregoing instrument of writing and duly acknowledge the execution of same for and on behalf and as the act and deed of said corporation, in testimony whereof I have hereunto set my hand and affixed my notarial seal the day and year above written.

My Commission Expires: \_\_\_\_\_

We, B. G. Stout Jr. and Elmina G. Stout, mortgagors on the above described tract, do hereby consent to the plotting of Oak Knoll Industrial Park Addition to Wichita, Sedgwick County, Kansas.

*B. G. Stout Jr.*  
B. G. Stout Jr.  
*Elmina G. Stout*  
Elmina G. Stout

State of Kansas SS  
County of Sedgwick

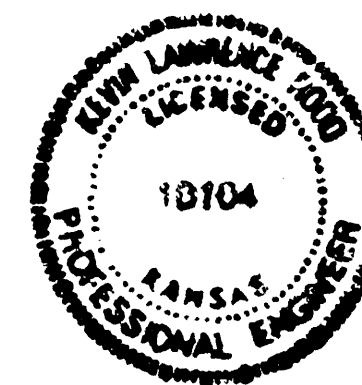
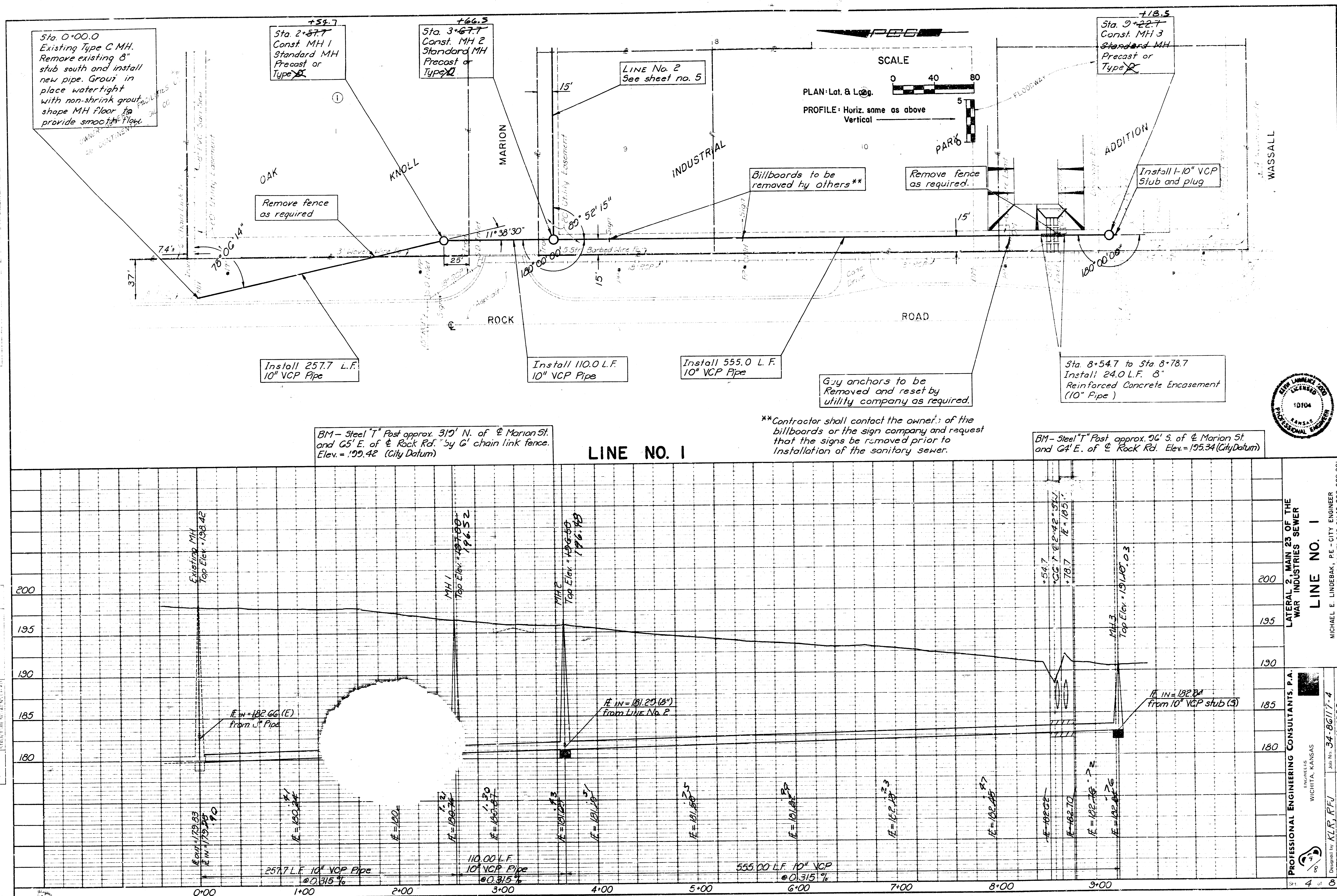
Be it remembered that on this 17th day of June, 1981, before me, a Notary Public in aforesaid state and county, came B. G. Stout Jr. and Elmina G. Stout, to me personally known to be the same persons who executed the foregoing instrument of writing and duly acknowledge the execution of same for and on behalf and as the act and deed of said persons, in testimony whereof I have hereunto set my hand and affixed my notarial seal the day and year above written.

My Commission Expires: \_\_\_\_\_

*Frank F. Rulker* Notary Public  
FRANK F. RULKER

PLAN  
 DATE  
 BY  
 CHECKED  
 NO.

PROFILE  
 DATE  
 BY  
 CHECKED  
 NO.



**LINE NO. 1**

LATERAL 2, MAIN 23 OF THE WAR INDUSTRIES SEWER

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

Designed by KLR, RFL  
 Drawn by DMM, TJS

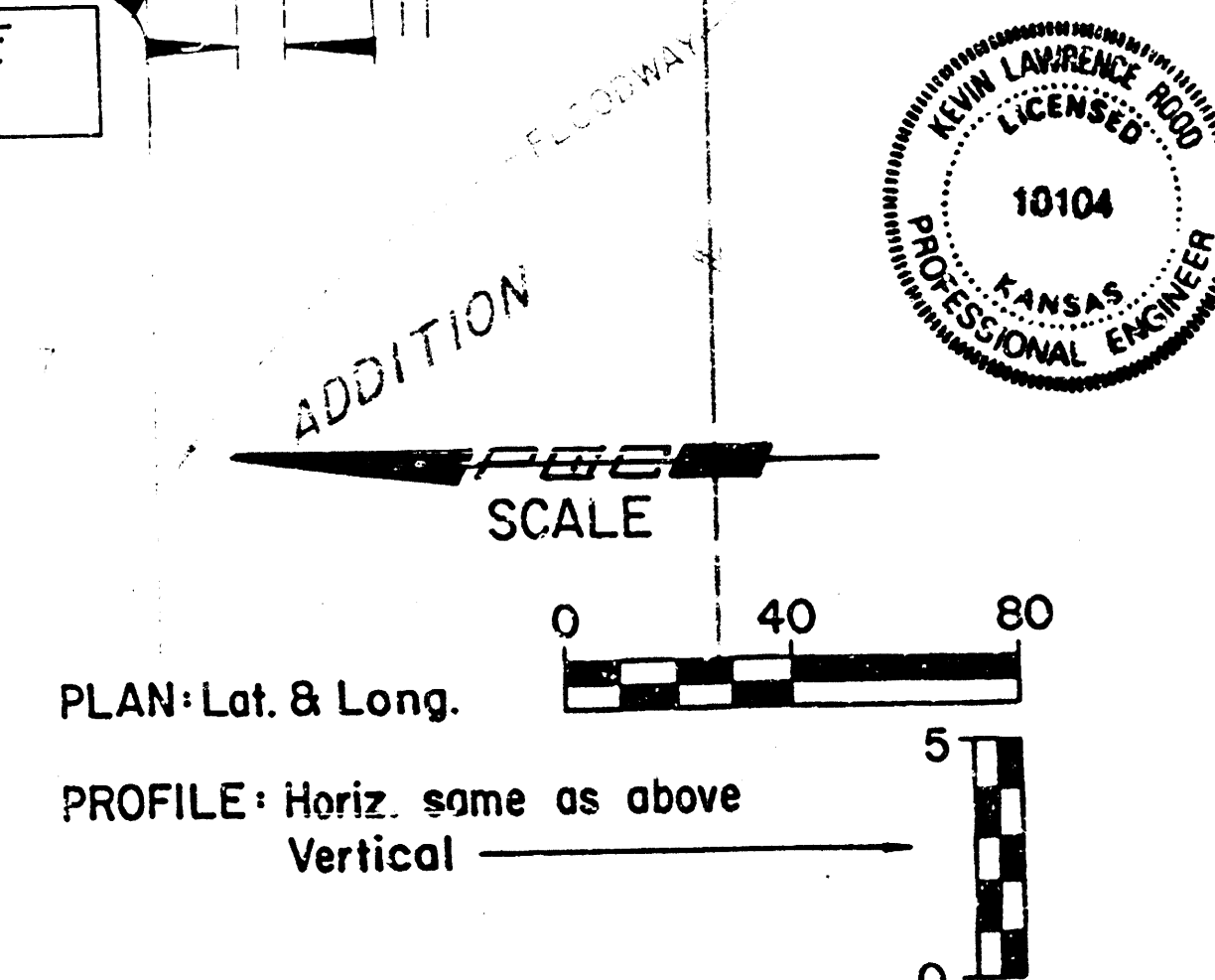
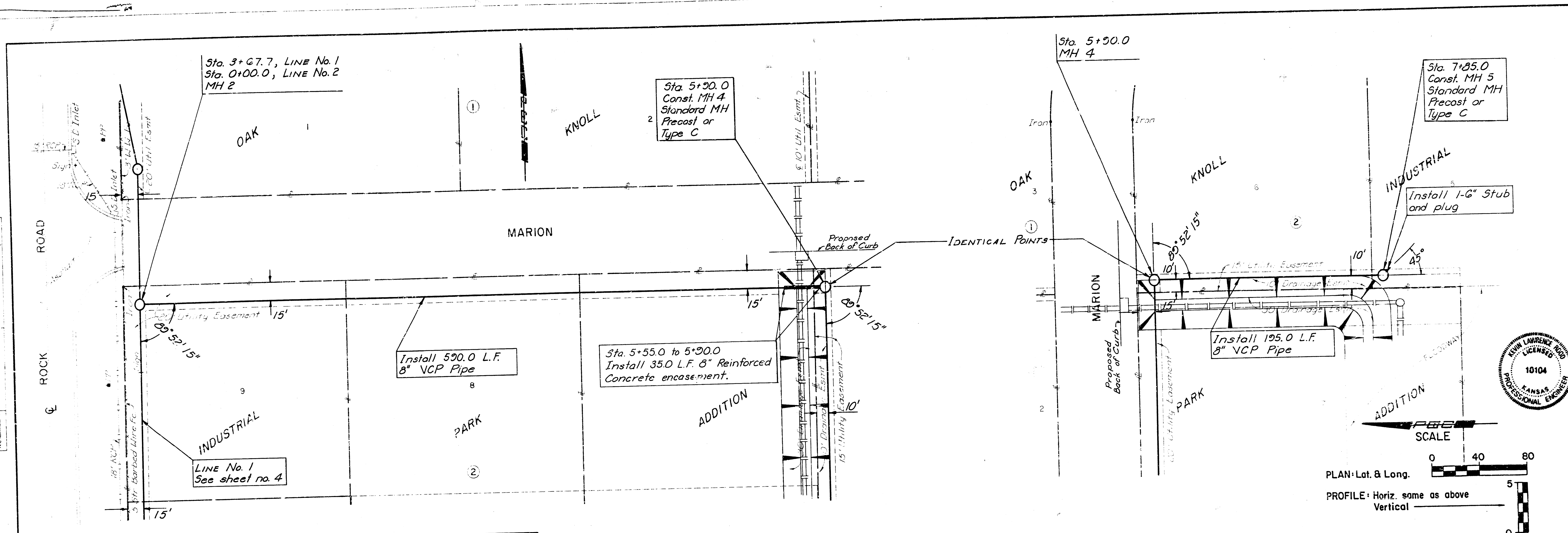
Job No. 34-86117-4  
 Date: April, 1996

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER  
 CITY OF WICHITA PROJECT NO. 46876-245-81142-000-000-001

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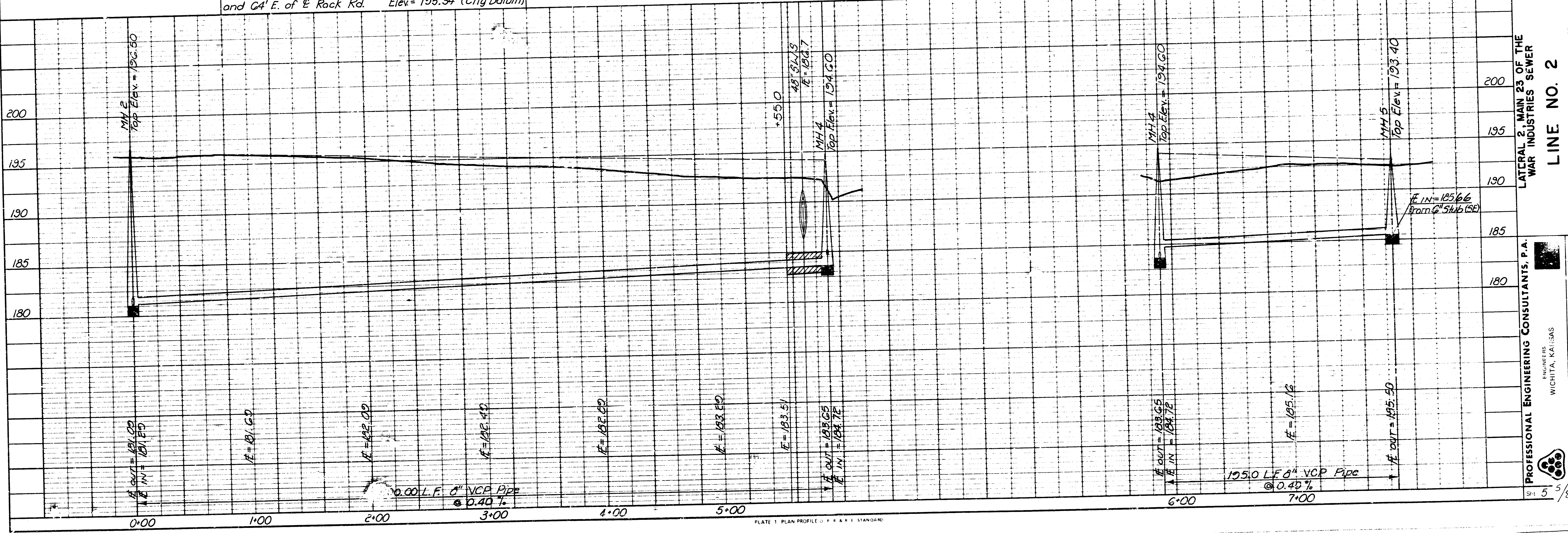
|       |      |
|-------|------|
| PLAN  | DATE |
| NOTES |      |
| NO.   |      |

|         |      |
|---------|------|
| PROFILE | DATE |
| NOTES   |      |
| NO.     |      |



BM- Steel "T" Post approx. 36' S. of E. of Marion St. and 64' E. of E. Rock Rd. Elev. = 195.34 (City Datum)

### LINE NO. 2



LATERAL 2, MAIN 23 OF THE WAR INDUSTRIES SEWER  
**LINE NO. 2**  
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.  
 ENGINEERS  
 WICHITA, KANSAS  
 Job No. 34-8617-4  
 Drawn by KLF, RFJ  
 Date April, 1986  
 MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER  
 CITY OF WICHITA PROJECT NO. 468-76-245-8142-000-001

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City of Wichita, Kansas

Technical drawing of a manhole structure showing dimensions and construction details. The drawing includes the following labels and dimensions:

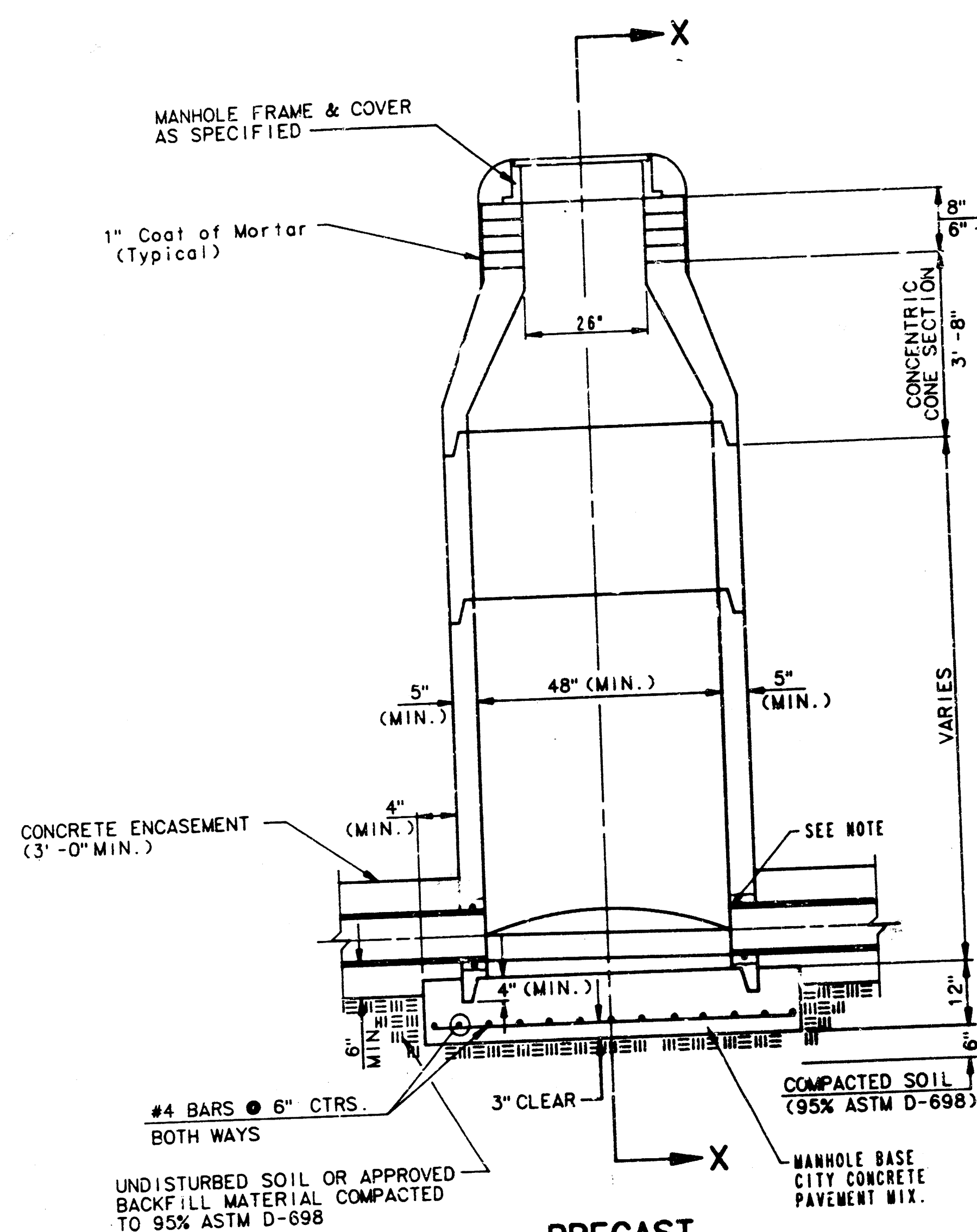
- SEE GEN. NOTES** (top right)
- 8" MIN. - 18" MAX.** (vertical dimension on the left)
- BRICK MASONRY COLLAR** (label on the left)
- 26"** (horizontal dimension at the top)
- 8" BRICK MASONRY** (label on the right)
- 1" COAT OF MORTAR** (label on the right)
- 30"** (horizontal dimension in the middle)
- MANHOLE WALL** (label on the right)
- CITY CONC. PAV'T. MIX.** (label on the right)
- NOTE: CROWN OF FLOOR IN SHALL NOT BE CROWN OF PIPE FL.** (note on the right)
- 8"** (horizontal dimension on the left)
- 30" MIN. - 48" MAX.** (vertical dimension on the left)
- VARIABLE** (vertical dimension on the left)
- FLOOR SHAPING SLOPE - 3" TO 1"** (label on the right)
- 8" MIN.** (horizontal dimension at the bottom left)
- SEE GEN. NOTES** (bottom center)
- 4" MIN.** (horizontal dimension at the bottom left)
- 4" MIN.** (horizontal dimension at the bottom center)
- 8"** (horizontal dimension at the bottom right)
- MANHOLE BASE** (label on the right)
- CITY CONC. PAV'T. MIX.** (label on the right)

1. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 BAGS 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 RINGS AS SHOWN IN THE DRAWINGS WHEN THERE ARE CONDITIONS OF THE MANHOLE RINGS OF 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.
2. 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 REINFORCING MANHOLE BASE. COSTS AND LOSS OF MATERIALS FOR THE REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
3. AN OPENING SHALL BE CUT IN THE MANHOLE WALL FOR THE UPPER INLET PIPE FOR INSIDE AND OUTSIDE DROP MANHOLE. THE UPPER INLET PIPE SHALL BE SET INTO THE 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.
4. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANSING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLES. FANS FOR ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO THE BOTTOM OF THE BOTH INLET AND OUTLET PIPES. 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

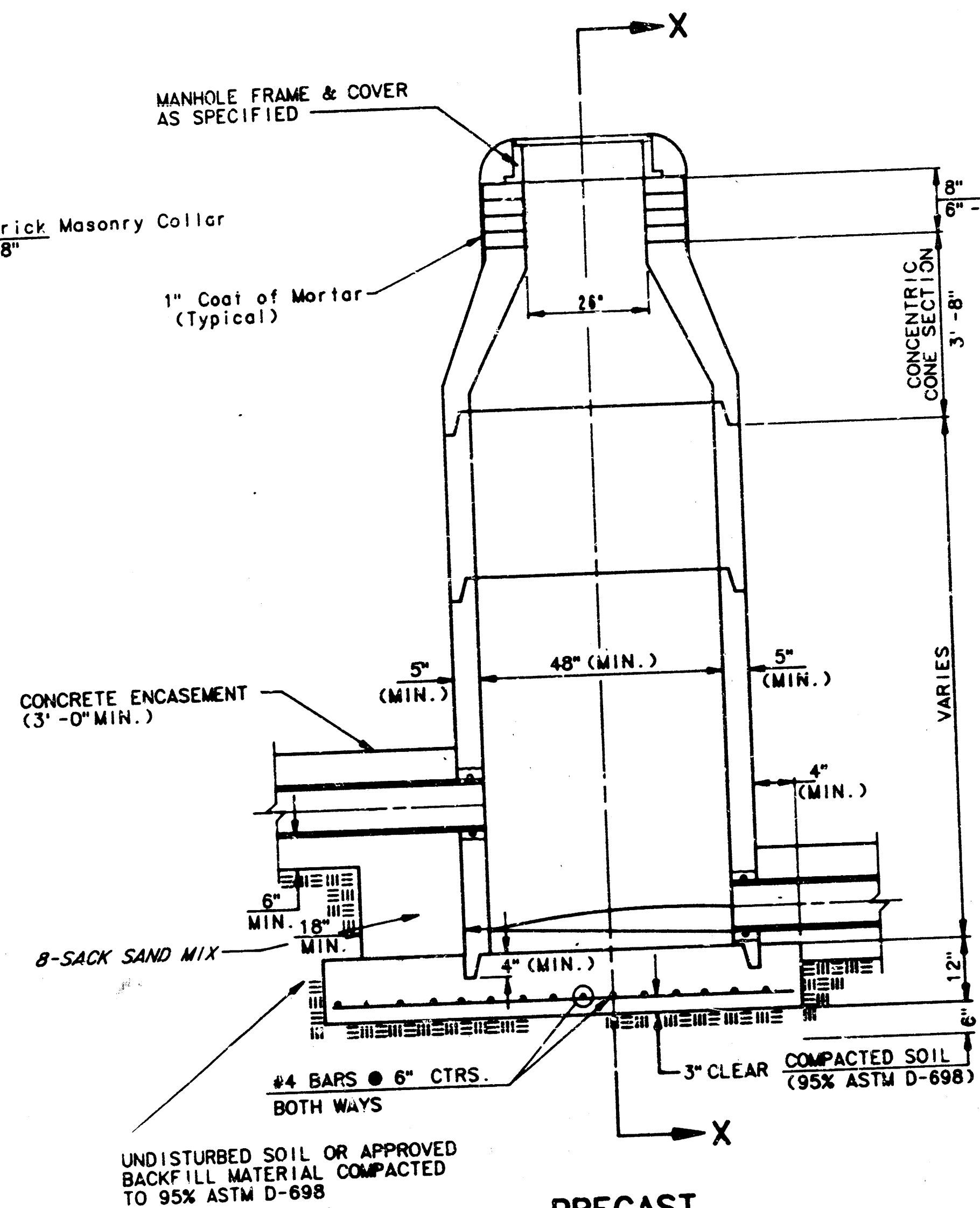
THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAY THROUGH MANHOLE SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.

5. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRODLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRODLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRODLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRODLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
6. 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.
7. 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.
8. 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.

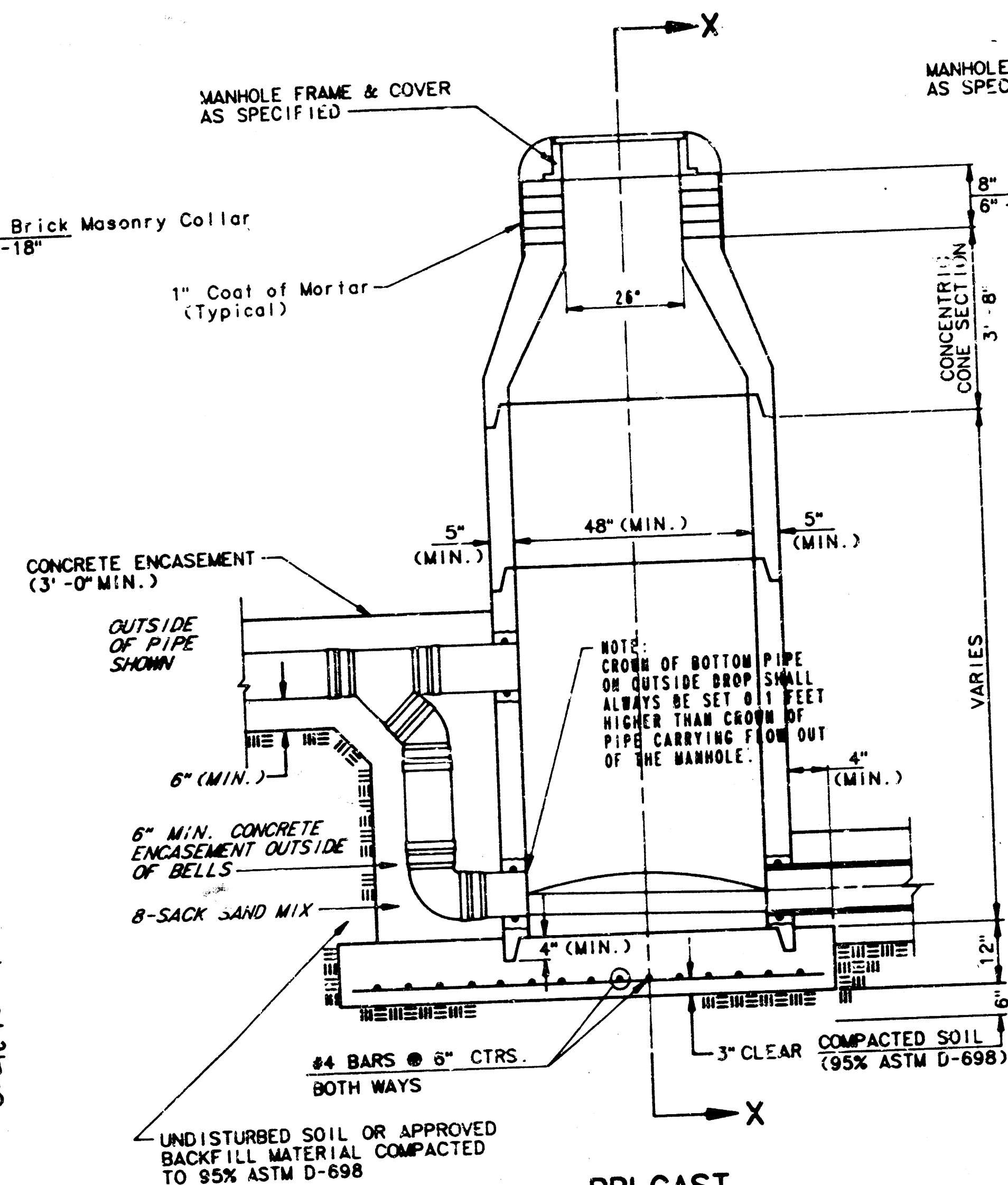
SEWER APPURTENANCES DETAILS  
ADOPTED AS STANDARD DESIGN  
BY  
CITY OF WICHITA



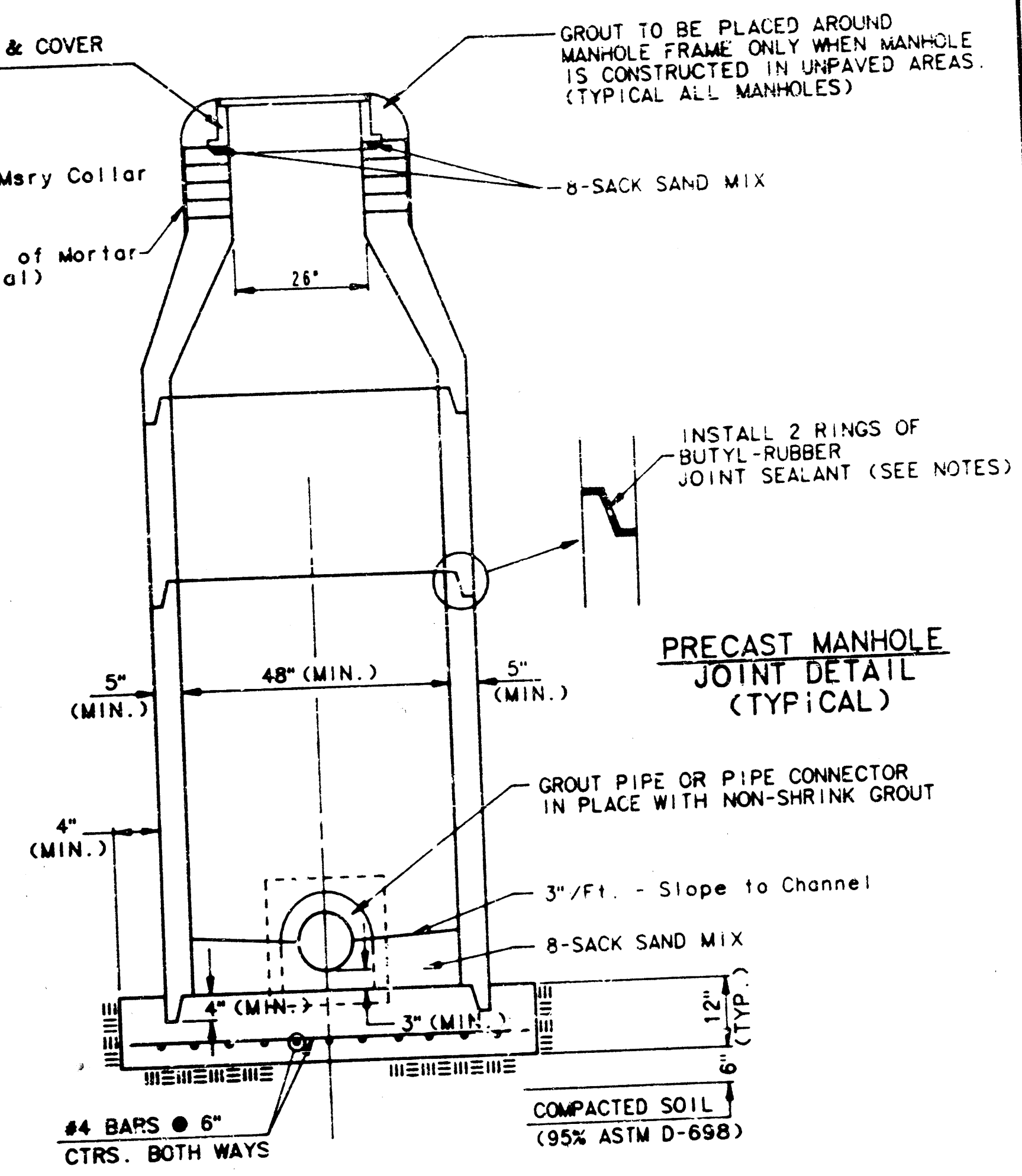
# PRECAST STANDARD MANHOLE



PRECAST  
INSIDE DROP MANHOLE



PRECAST  
OUTSIDE DROP MANHOLE



SECTION X  
(TYPICAL)

GENERAL NOTES  
PRECAST MANHOLE NOTES

1. ALL PRECAST 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 THE SEWER PIPER 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 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.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TWELVE (12) GALS. 66 HI-BUILD-POXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 2 COATS MORIARMA 635 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 SHAPE 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 BAGS 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 PAVEMENT SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADJUTIVE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE THE DIAMETER 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.

- [illegible]

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 WELL AS THE LIFT PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM SLOPE OF THE INFLOW PIPE EXCEPT PIPES AND THE OUTFLOWING PIPE AS SHOWN ON THE DRAWINGS. TRAPS OR OTHER DEVICES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. THE MANHOLE FLOORS SHALL HAVE SLOPES OF ONE INCH PER FOOT TOWARD THE FLOW AREAS OUTSIDE THE MANHOLE. IF THE INLET IS SLOPED TOWARD THE FLOW AREAS OUTSIDE THE MANHOLE, PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO MEET LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. HANDING FLOW LINE WHICH FORMS THE FLOW CHANNEL.

14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CABLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE. THE CABLE SHALL EXTEND TO EXCAVATION. WHEN CLAY PIPE IS USED, THE CABLE SHALL BE TO THE FIRST JOINT OUTSIDE THE CLAY PIPE JOINT. IN A MANNER WHICH WILL TERMINATED AT THAT JOINT. THE JOINT. COST OF CABLE TO BE WITHIN WHATEVER THE FLEXIBILITY OF THE JOINT. COST OF CABLE TO BE 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.

- STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE 81  
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 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.

# MANHOLE FRAME AND COVER DETAIL

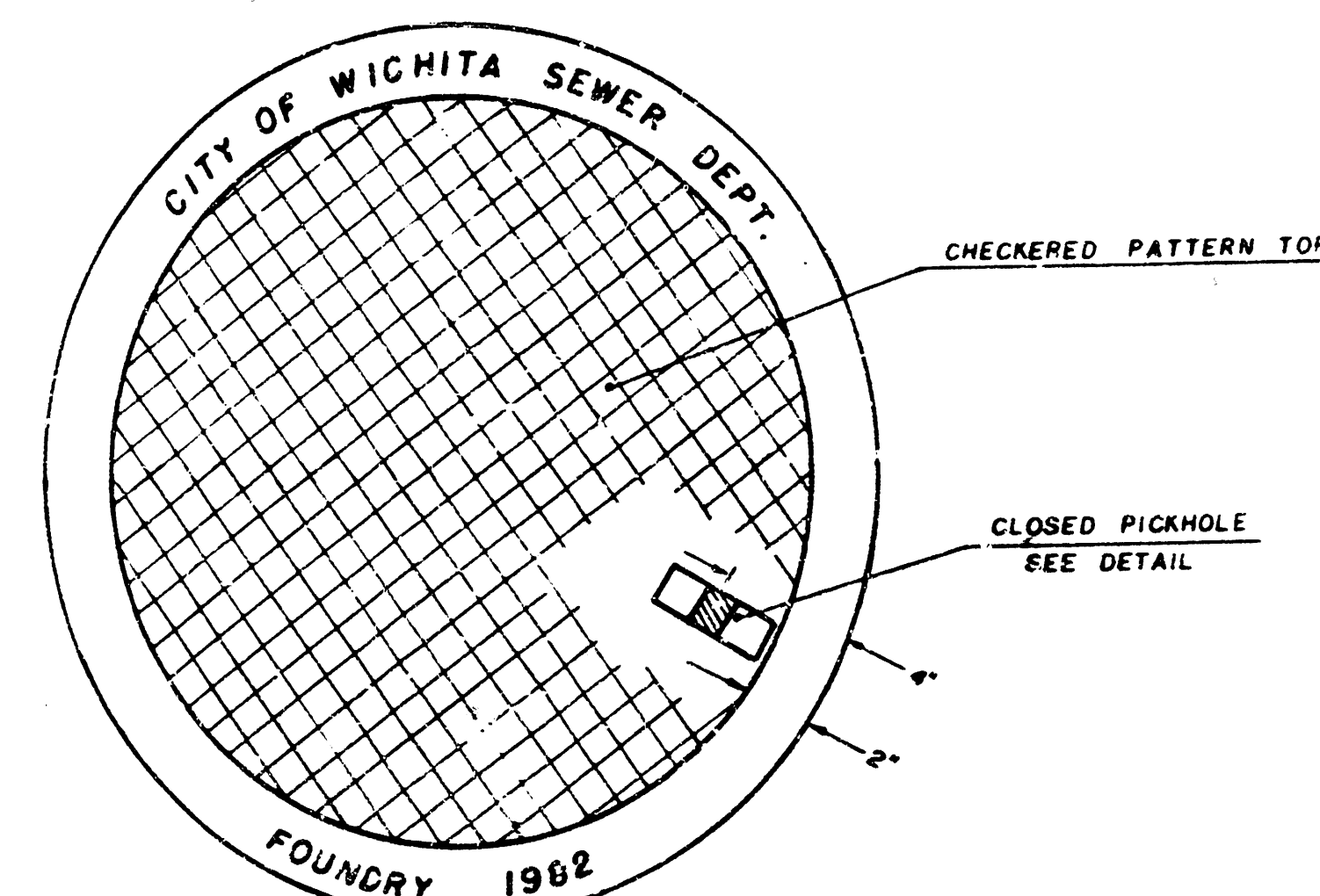
ADOPTED AS STANDARD DESIGN

BY

City of Wichita, Kansas

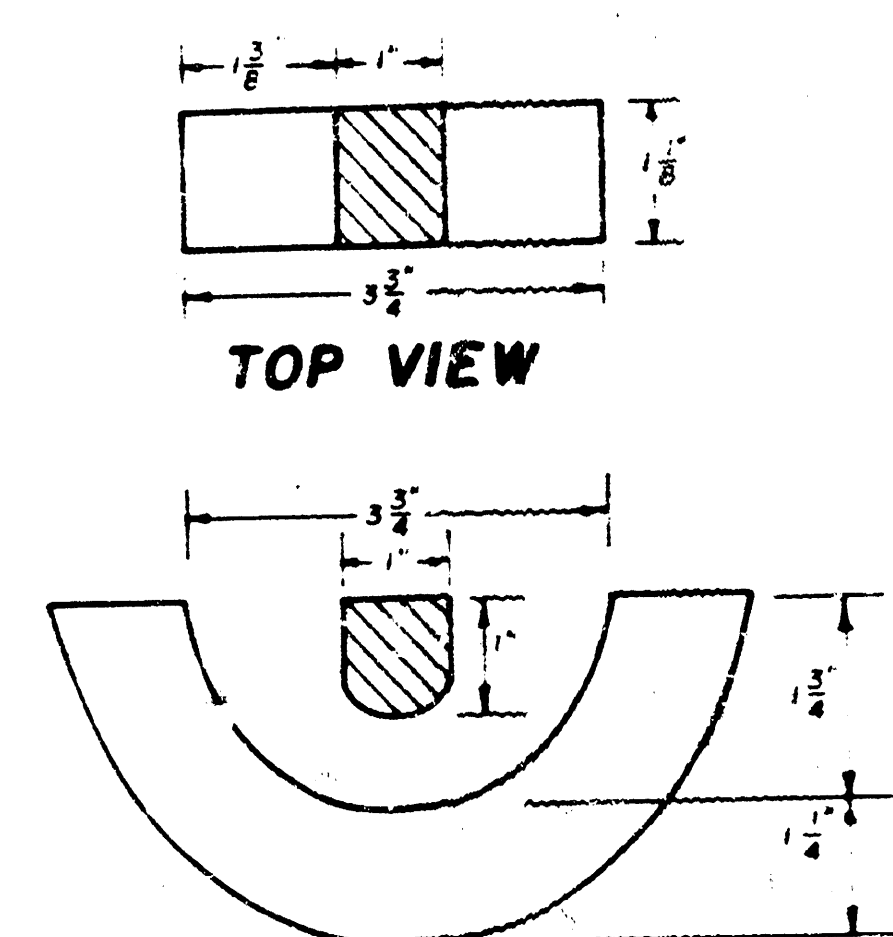
## MANHOLE COVER

Weight: 180 Lbs.

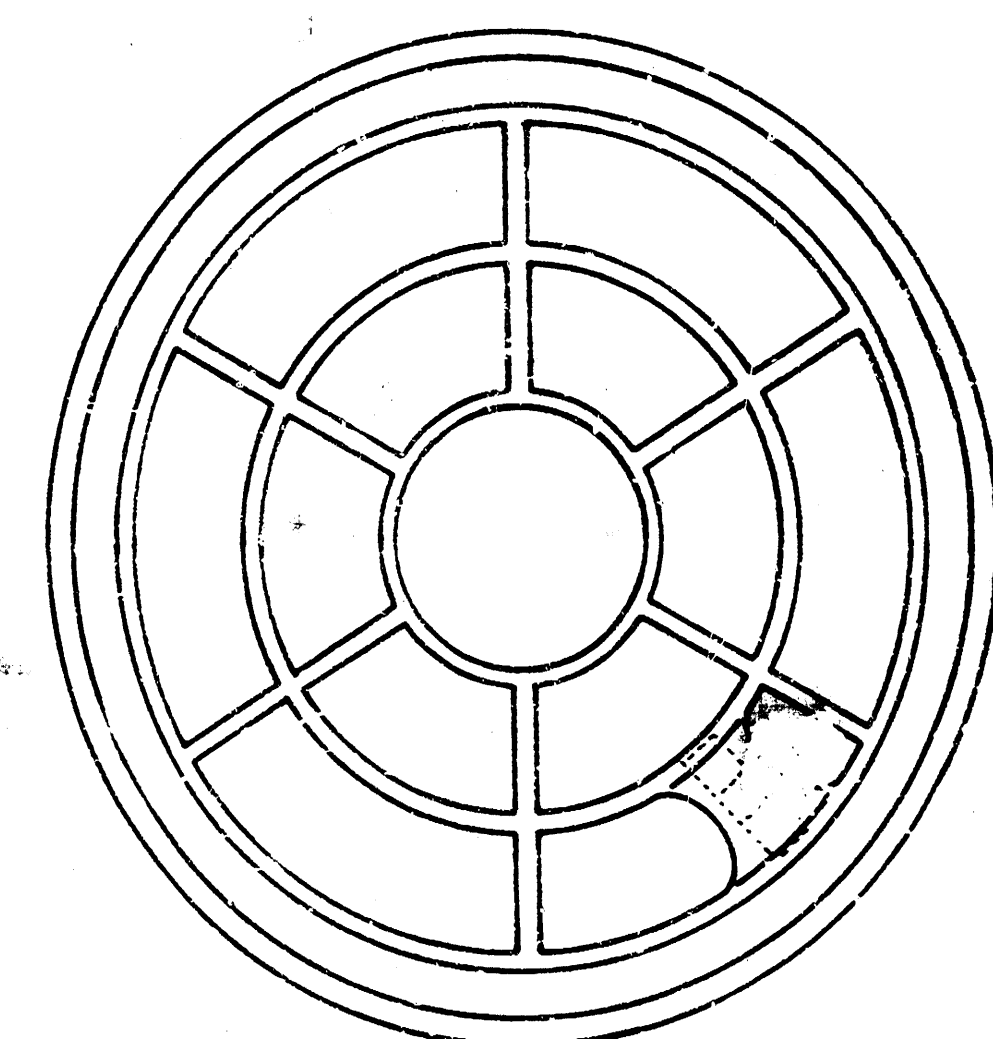


TOP VIEW

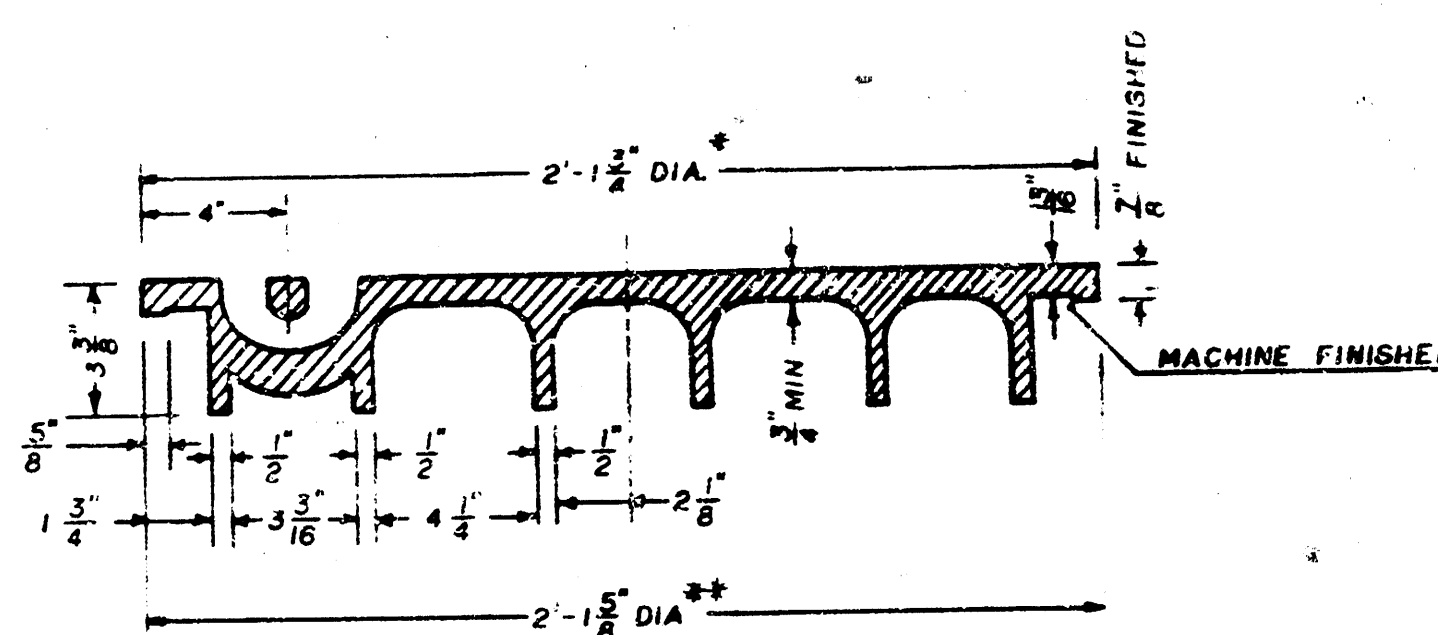
## PICKHOLE DETAIL



SECTION VIEW



BOTTOM VIEW

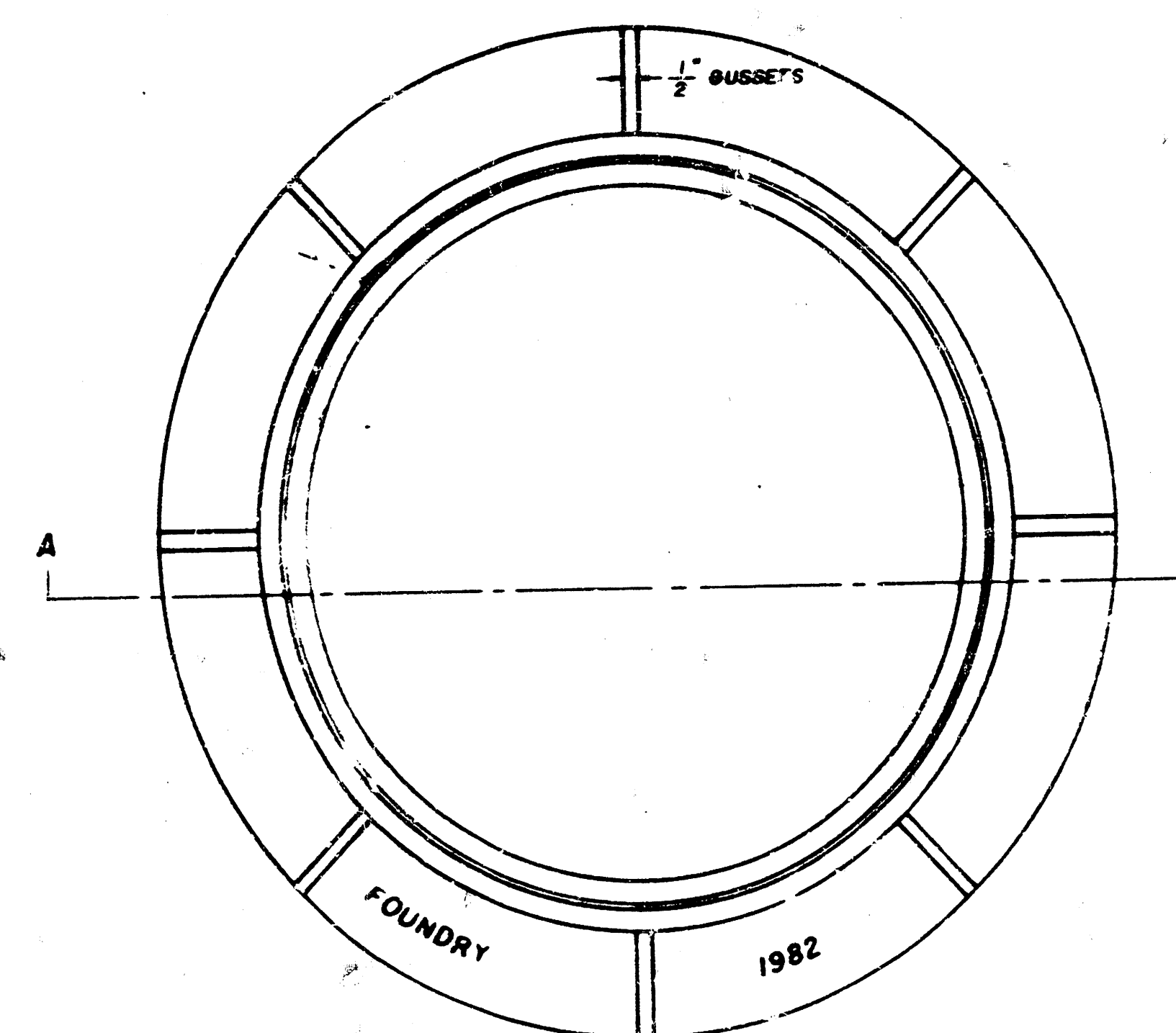


SECTION VIEW

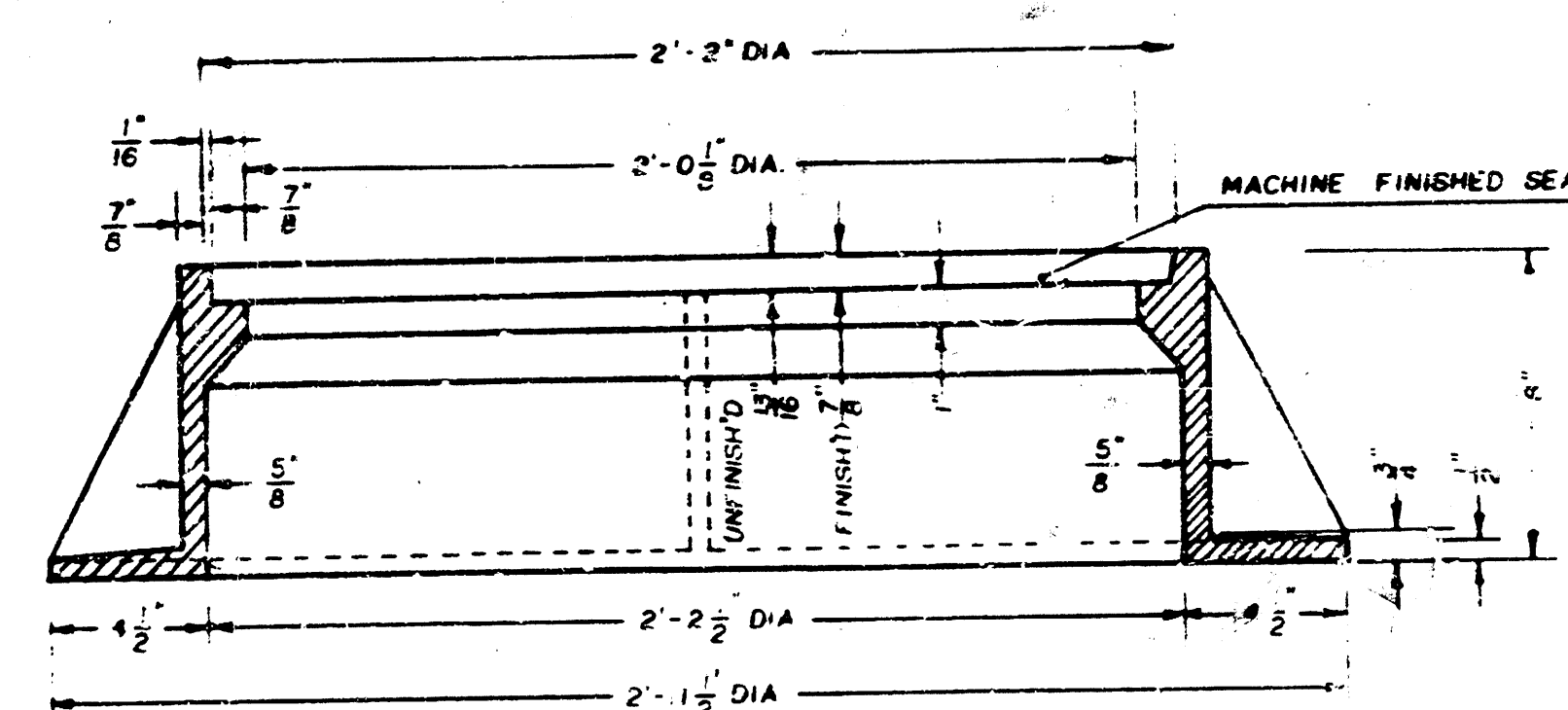
\* OUTSIDE DIA. TOP OF COVER  
\*\* OUTSIDE DIA. BOTTOM OF COVER

## 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 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.