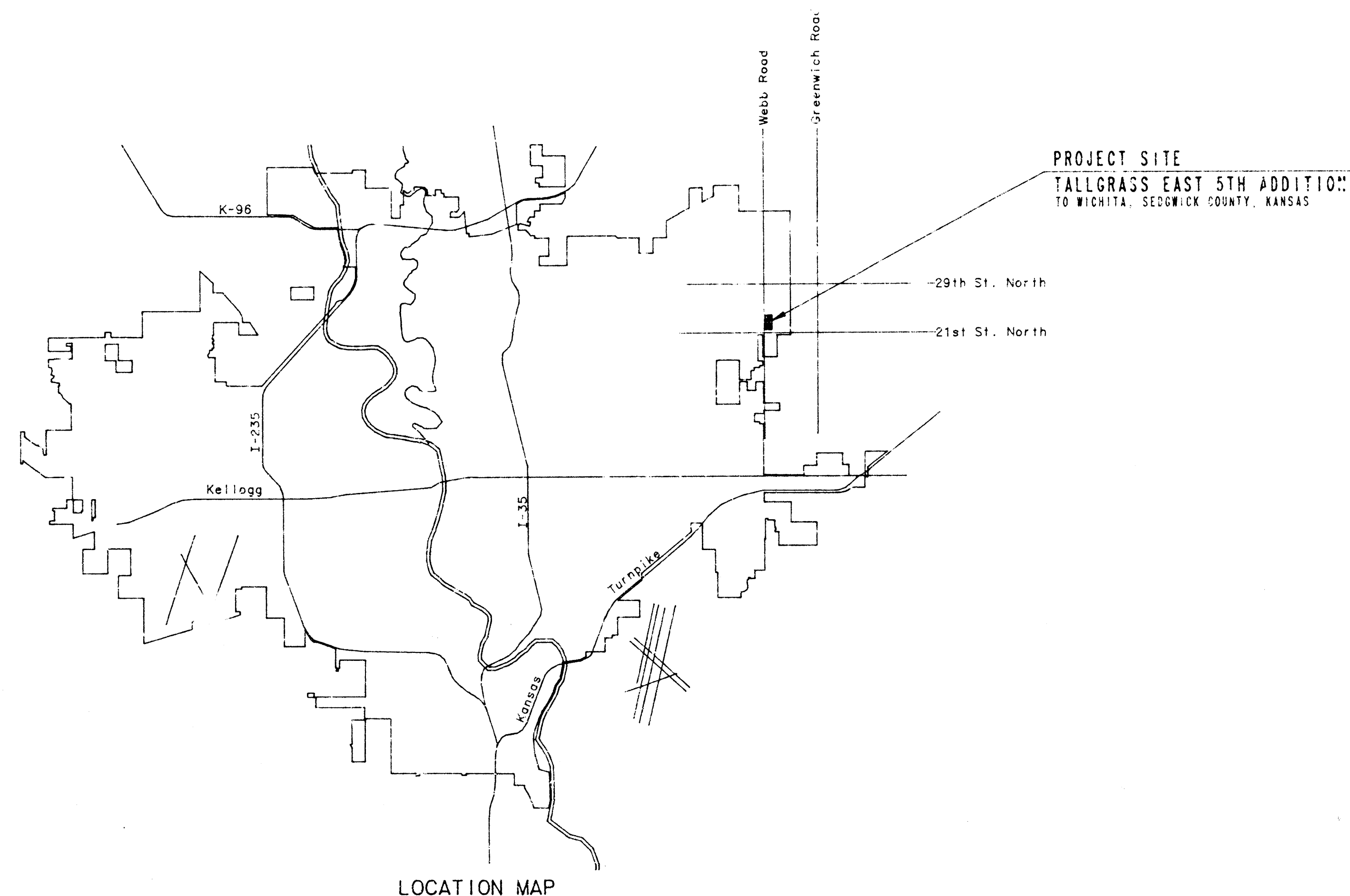


CONSTRUCTION PLANS FOR
LATERAL 23, MAIN 24
 OF THE
WAR INDUSTRIES SEWER
 IN
THE CITY OF WICHITA,
 SEDGWICK COUNTY, KANSAS
 MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER



INDEX OF SHEETS

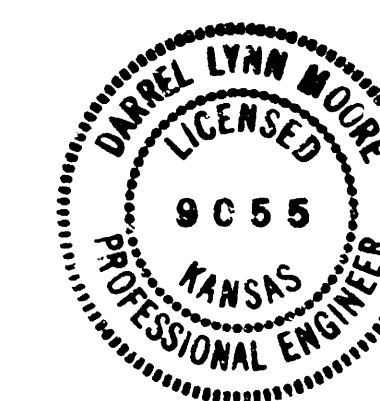
SHEET NO. 1	TITLE SHEET
SHEET NO. 2	KEY MAP AND GENERAL NOTES
SHEET NO. 3	SEWER LAYOUT PLAN
SHEET NO. 4	PLAN
SHEET NO. 5-7	P. & P. / PROFILES
SHEET NO. 8	TYPE "A" MANHOLE DETAILS
SHEET NO. 9	TYPE "B" MANHOLE DETAILS
SHEET NO. 10	TYPE "C" MANHOLE DETAILS
SHEET NO. 11	FRAME & COVER DETAILS
SHEET NO. 12	RISER DETAILS

LOCATION MAP

INDEX CODE 740753
 CITY OF WICHITA PROJECT NO. 468-76-245-82113-000-000-001

APRIL, 1991

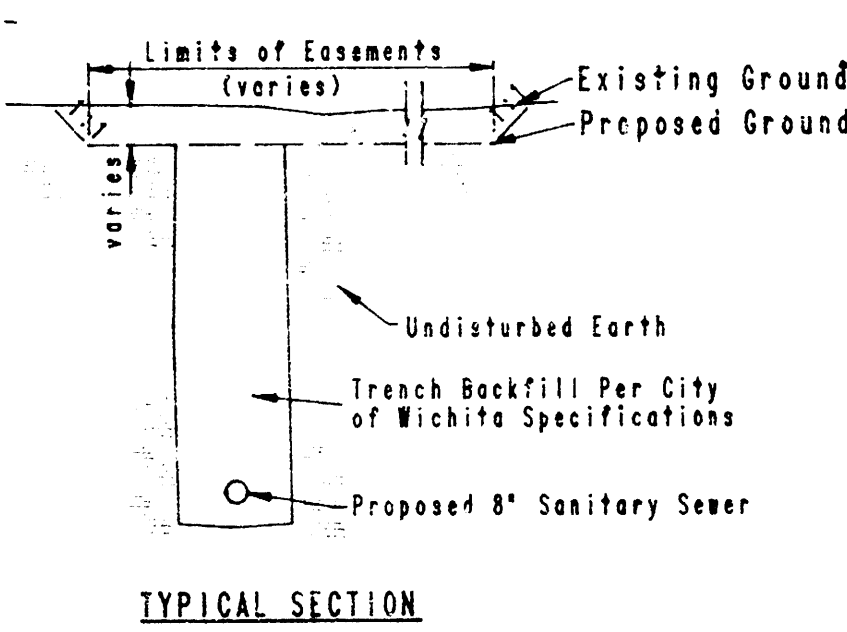
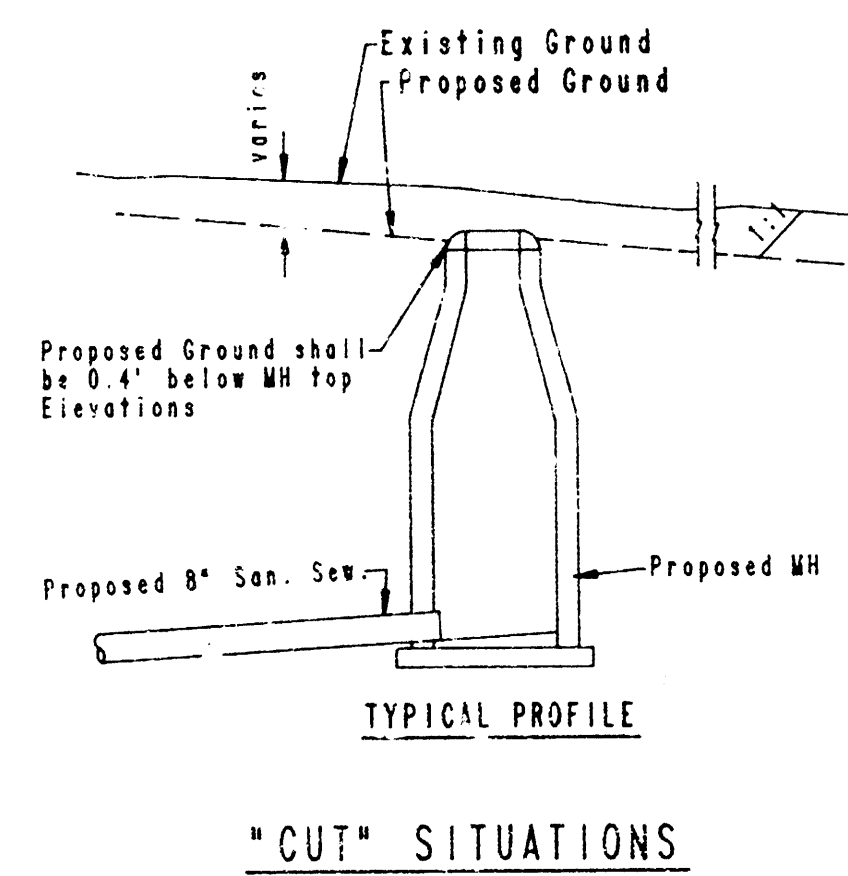
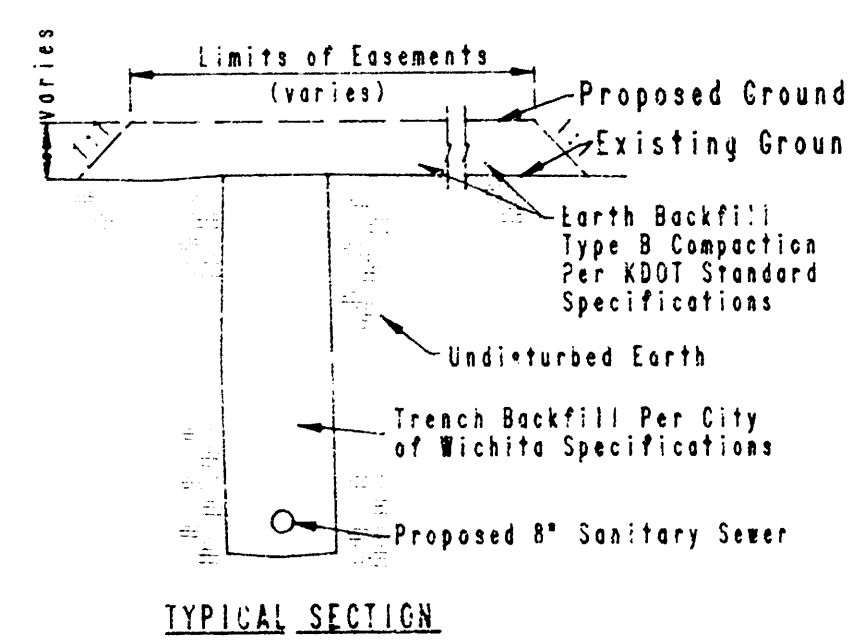
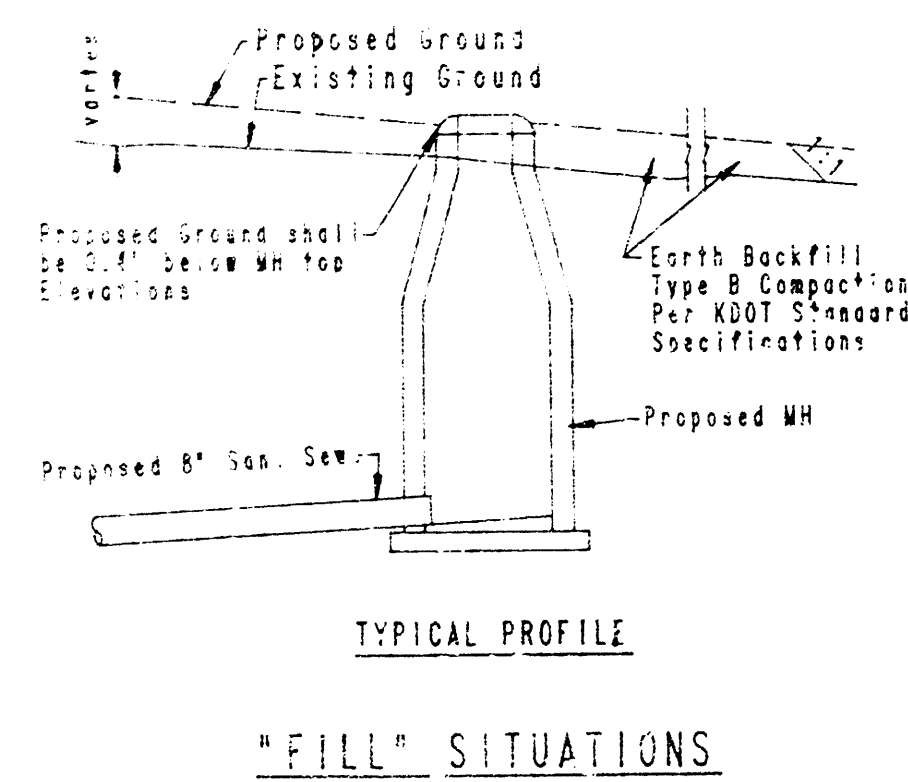
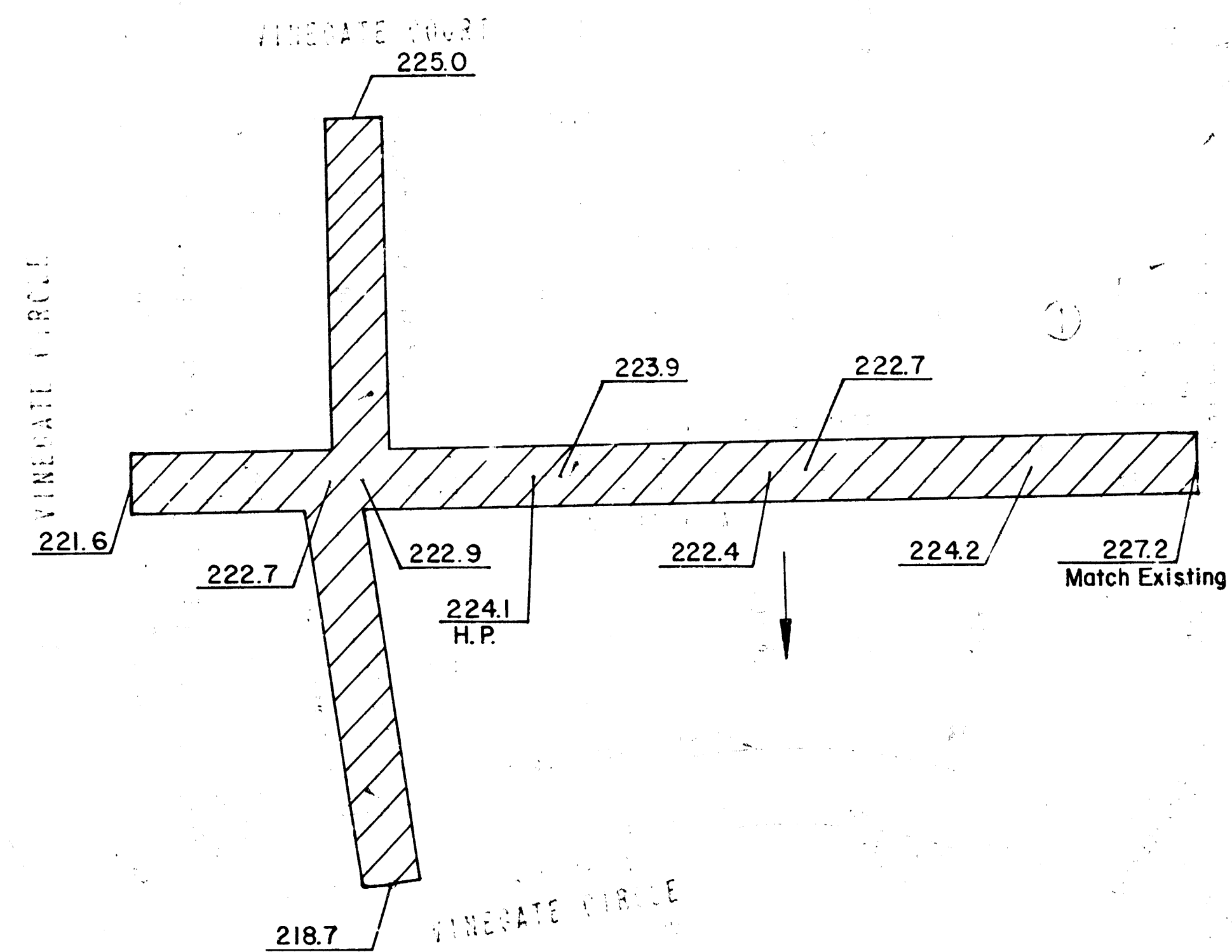
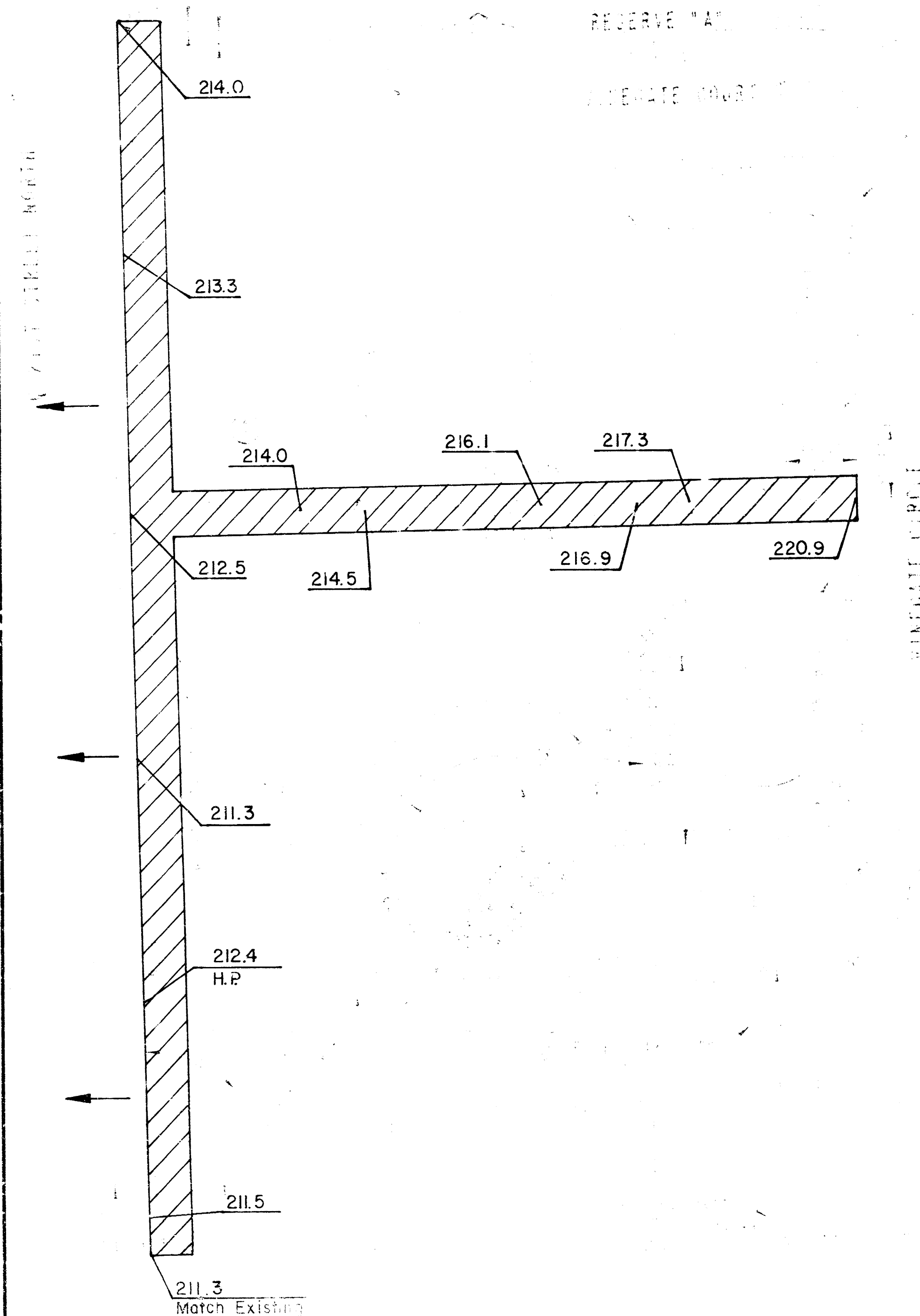
PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 ENGINEERS
 WICHITA, KANSAS



*Build per plan
 P.O.
 10-91*

DRAWING NAME: 24 SIXTYX Y16 SS TITLE
 DRAWING NUMBER: 24 SIXTYX Y16 SS
 CENTER COORDINATES: 24 SIXTYX Y16 SS
 ROTATION ANGLE: 0
 DATE LAST WORKED ON: APR. 05, 1991
 SPECIAL INSTRUCTIONS:

TO WICHITA, SEDGWICK COUNTY, KANSAS



EASEMENT GRADING

= AREAS TO BE GRADED

= Location where surface drainage will be directed along the side lot lines from the rear yard easements to the front of the lot. This grading will be "by others".

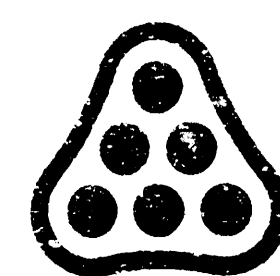
H.P. = HIGH POINT

	No. _____		Revision _____		By _____		Date _____	
	LATERAL 23 MAIN 24 OF THE WAR INDUSTRIES EASEMENT GRADING PLAN MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER CITY OF WICHITA PROJECT NO. 468-76-245-82113-000-000-001 PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS							
	Designed by DLM, RFJ		Job No. 34-71128-1		Sht. 3 of 11			
	Drawn by TDS		Date March, 1991					

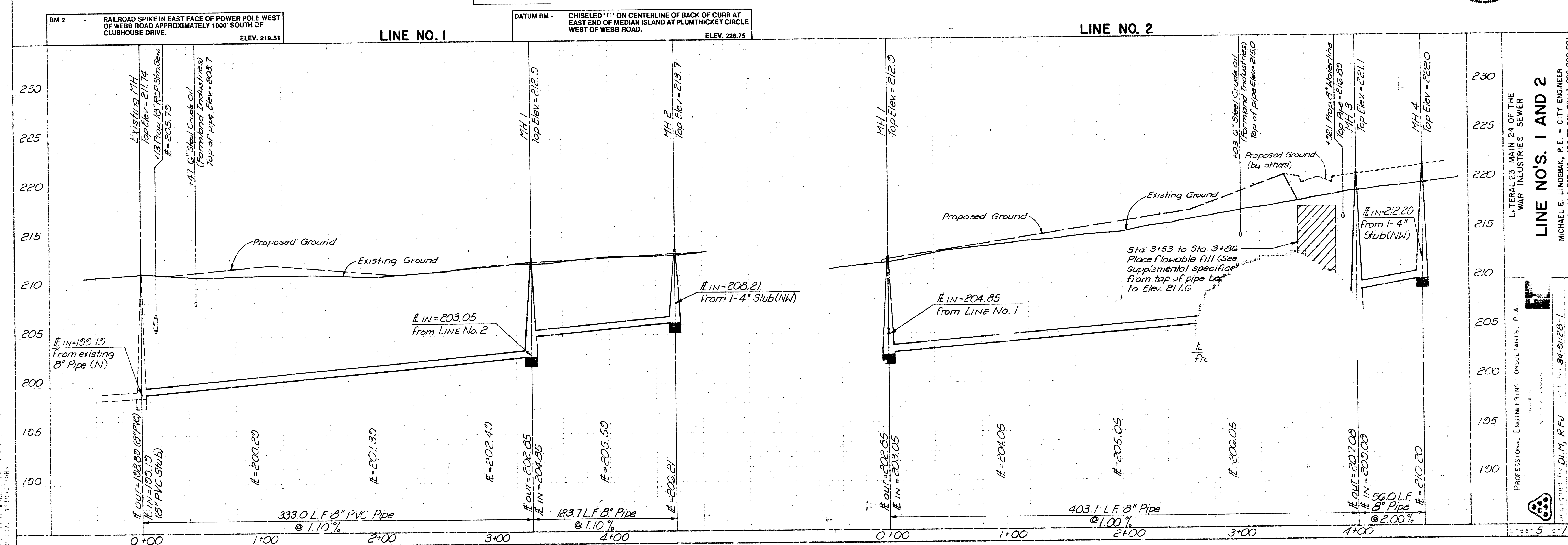
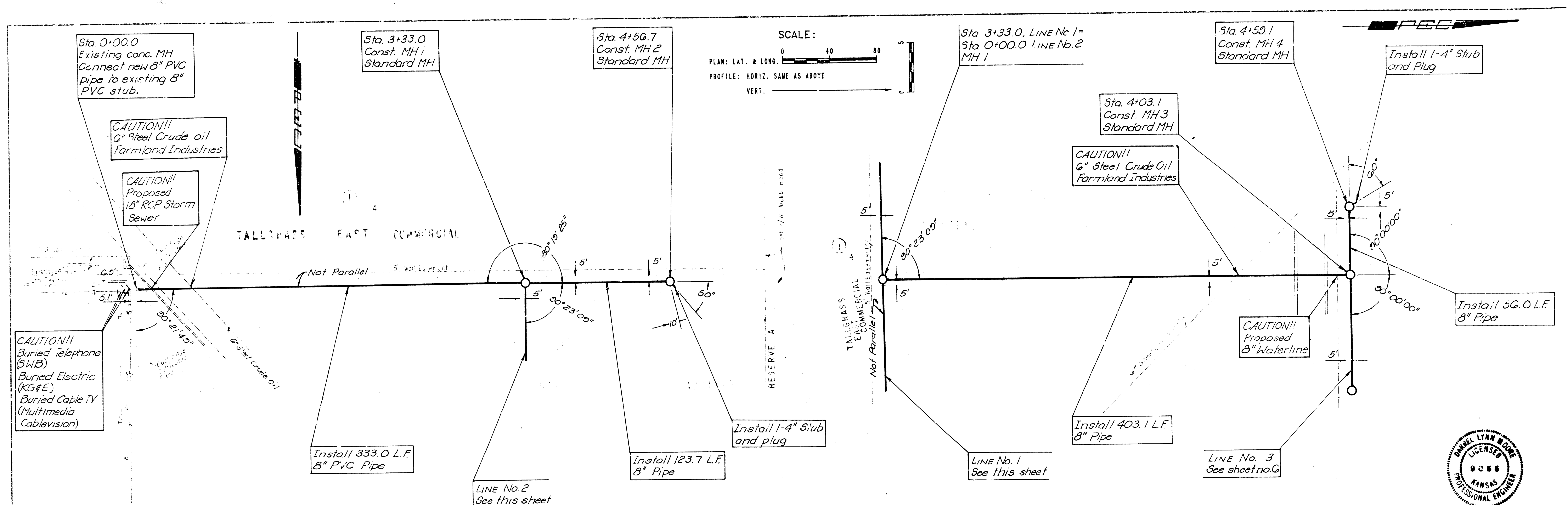
DRAWING NAME: 34-71128-2 T.C. SS Plot
 LOCATION: SITE NO. 04 DWG. 4 OF 6
 CENTER COORDINATES:
 DATE: 03/01/91
 SPECIAL INSTRUCTIONS:

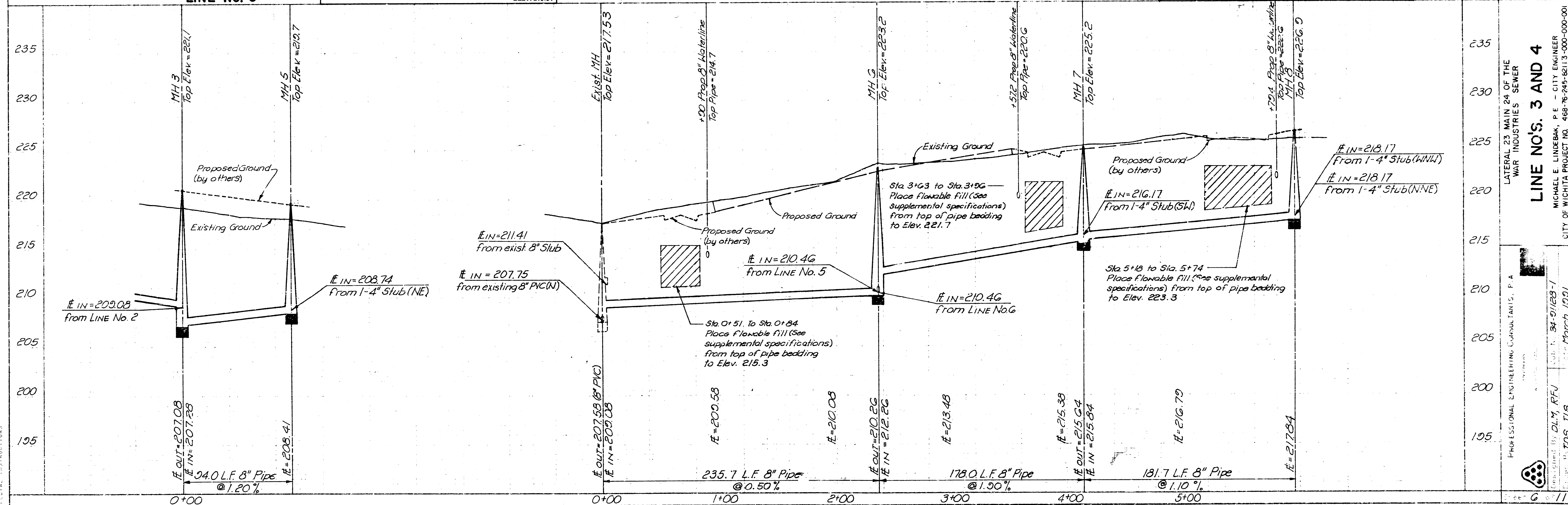
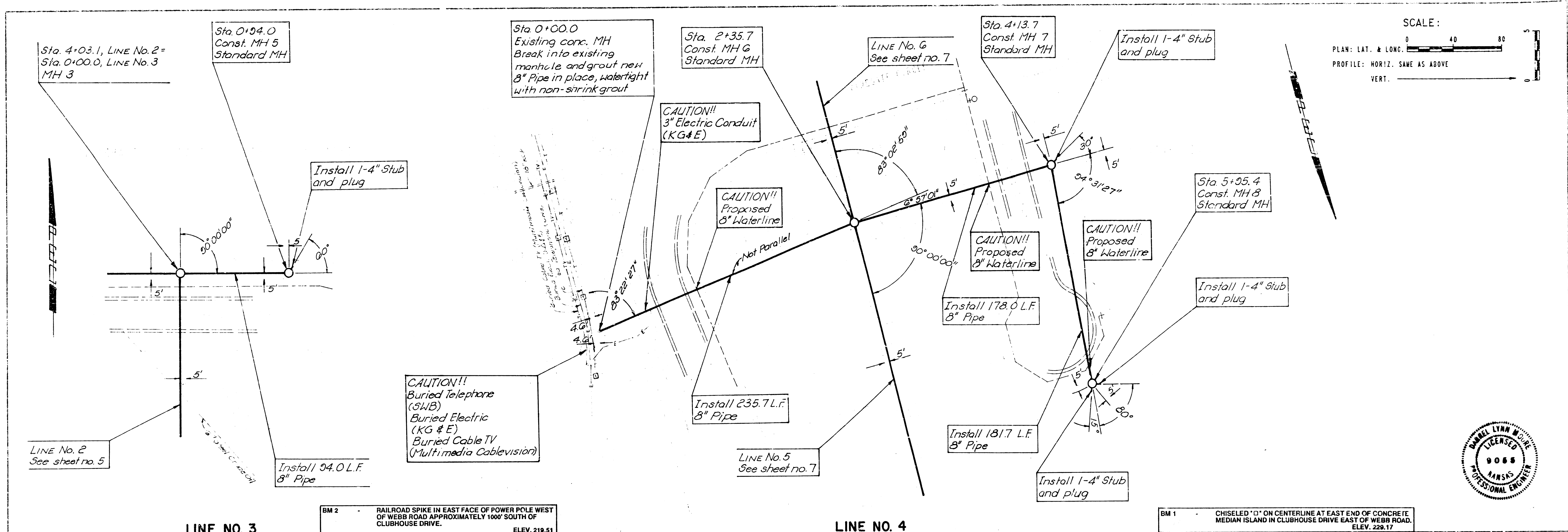
[illegible]

CITY OF WICHITA BENCH MARK DISC
44' SOUTH AND 48' EAST OF INTERSECTION
OF CENTERLINES OF WEBB ROAD AND
21ST STREET NORTH.
ELEV.=205.238 CITY DATUM
ELEV.=1392.638 M.S.L.



No	Revision	3	Date
LATERAL 23 MAIN 24 OF THE WAR INDUSTRIES SEWER PLAT MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER CITY OF WICHITA PROJECT NO. 468-76-245-82113-000-000-001			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
Designed by DLM, RFJ	Job No. 34-91128-1	Sht. 4 of 11	
Drawn by TDS	Date March, 1991		





DRAWING NO. 14-11128-2 10-15-12
 LOCATION: SEMI DA DRG #250
 DATE: 10-15-12
 SPECIAL INSTRUCTIONS

LINE NO'S. 3 AND 4

LATERAL 23 MAIN 24 OF THE WAR INDUSTRIES SEWER

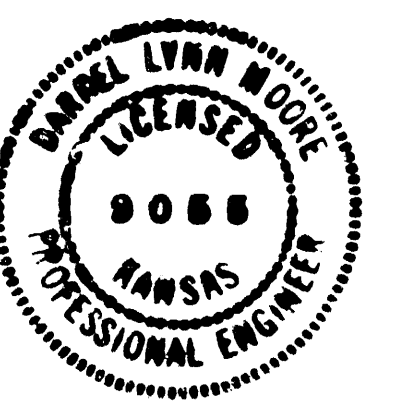
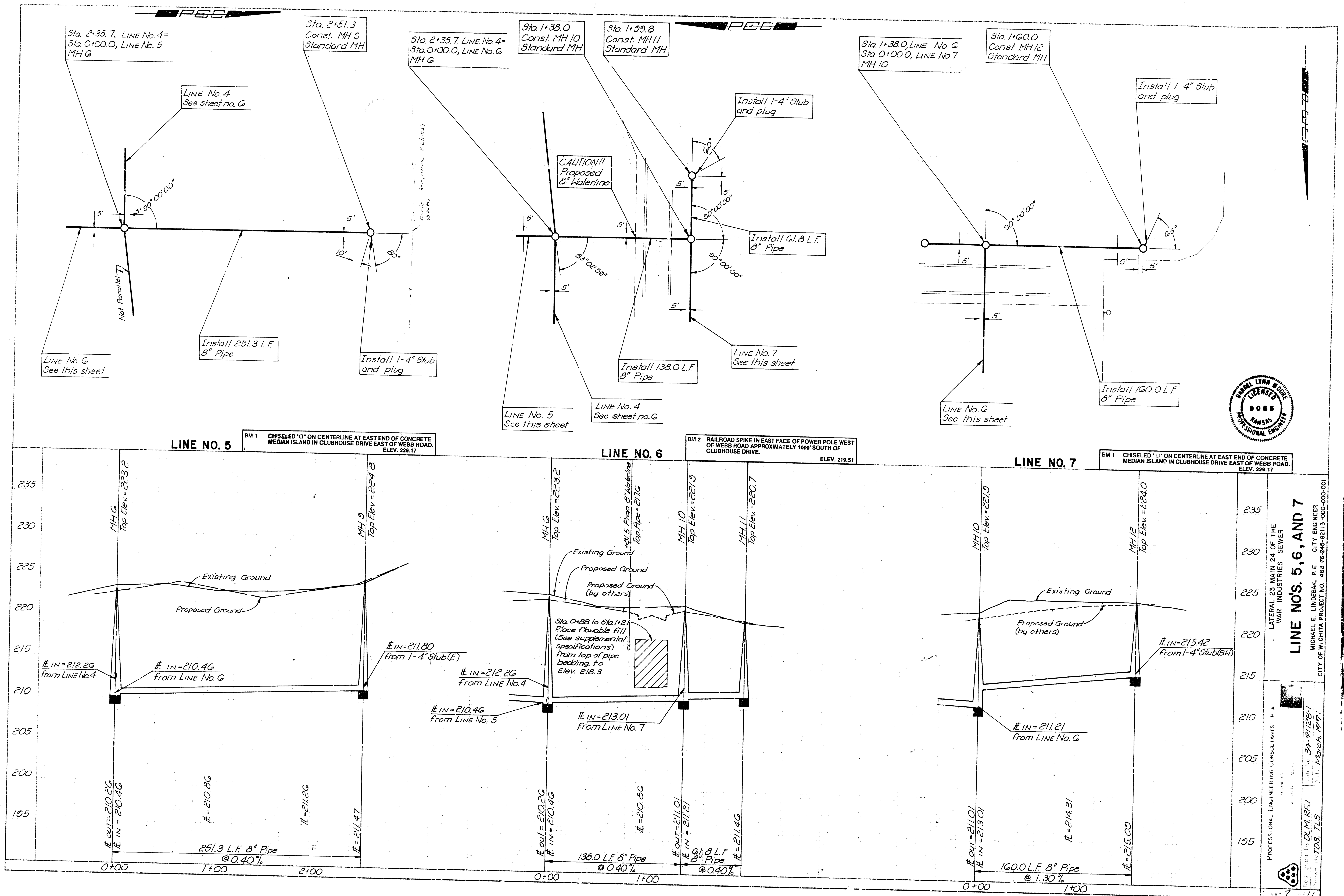
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

Michael E. Lindebak, P.E. - CITY ENGINEER

CITY OF WICHITA PROJECT NO. 458-76-245-6213-000-000-00

DATE: 10-15-12

105, 115



LINE NOS. 5, 6, AND 7
 MICHAEL E. LINDEBAK, P.E. CITY ENGINEER
 CITY OF WICHITA PROJECT NO. 46876-245-9213-000-000-001

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 1101 N. 10th St., Suite 200
 Wichita, KS 67202
 316-261-1111

Drawn by DLM, RFU
 Checked by TDS, TJS
 Date: 11/12/91

[illegible]

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 TERACRE SERIES 66 HI-BUILD EPOXYLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILANNA 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 SHAPED 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 PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE 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 C 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 8" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR CASTING AND FINISHING OF THE BASE AND THE 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 INSTALLED 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.R.S. COMPOSITE PIPE. THE PIPE SHALL BE OF THE SAME SIZE AND SPECIFICATIONS AS THE APPROVED WORKSHRINK 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 WEATHER TIGHT. THE FLOW CHANNELS SHALL BE SHOWN IN THE DRAWING. THE FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOORS, 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 ACCUMULATE. THE FLOORS SHALL BE SHAPED TO FORM 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 WHERE THE OUTSIDE OF THE MANHOLE FLOORS ARE SHOWN TO BE FLAT. MANHOLE FLOORS SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE DIRECTION OF THE OUTSIDE OF THE FLOW CHANNELS. FLOORS FORMED TO THE CHANNELS. PIPES LEAD THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO LEAVE LINES FOR THE FLOW INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN 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 CADDIED WITH CONCRETE TO THE LIGHTS OF THE MANHOLE. THE EXCAVATION SHALL BE BACKFILLED WITH CONCRETE TO THE TOP EXCEPT TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CABLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. THE COST OF CADDYING WITHIN THE EXCAVATION AND THE JOINTS SHALL BE INCLUDED IN THE UNIT PRICE 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 FREE FALL DROP INSIDE MANHOLES SHALL NOT EXCEED 2'. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWNS OF THE OUTFLOWING PIPE.
17. AS STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL 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 CONCRETE CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL JOINT. THE JOINT AND THE MAIN BODY OF THE COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.

-
- MANHOLE FRAME AND COVER
AS SPECIFIED
- GROUT
- 4" OR 6" PRECAST CONCRETE
ADJUSTMENT COLLAR
4" Min. - 18" Max.
- 26"
- INSTALL 2 RINGS OF
BUTYL-RUBBER JOINT
SEALING COMPOUND
(SEE NOTE 5)
- CONCENTRIC CONE SECTION
3'-6" Min. - 4'-0" Max.

NOTE NO. 16 REVISED JAN. 1991
Revised 3-21-89
Revised 8-10-88
Revised June 12, 1986

Sht. 8 of 11

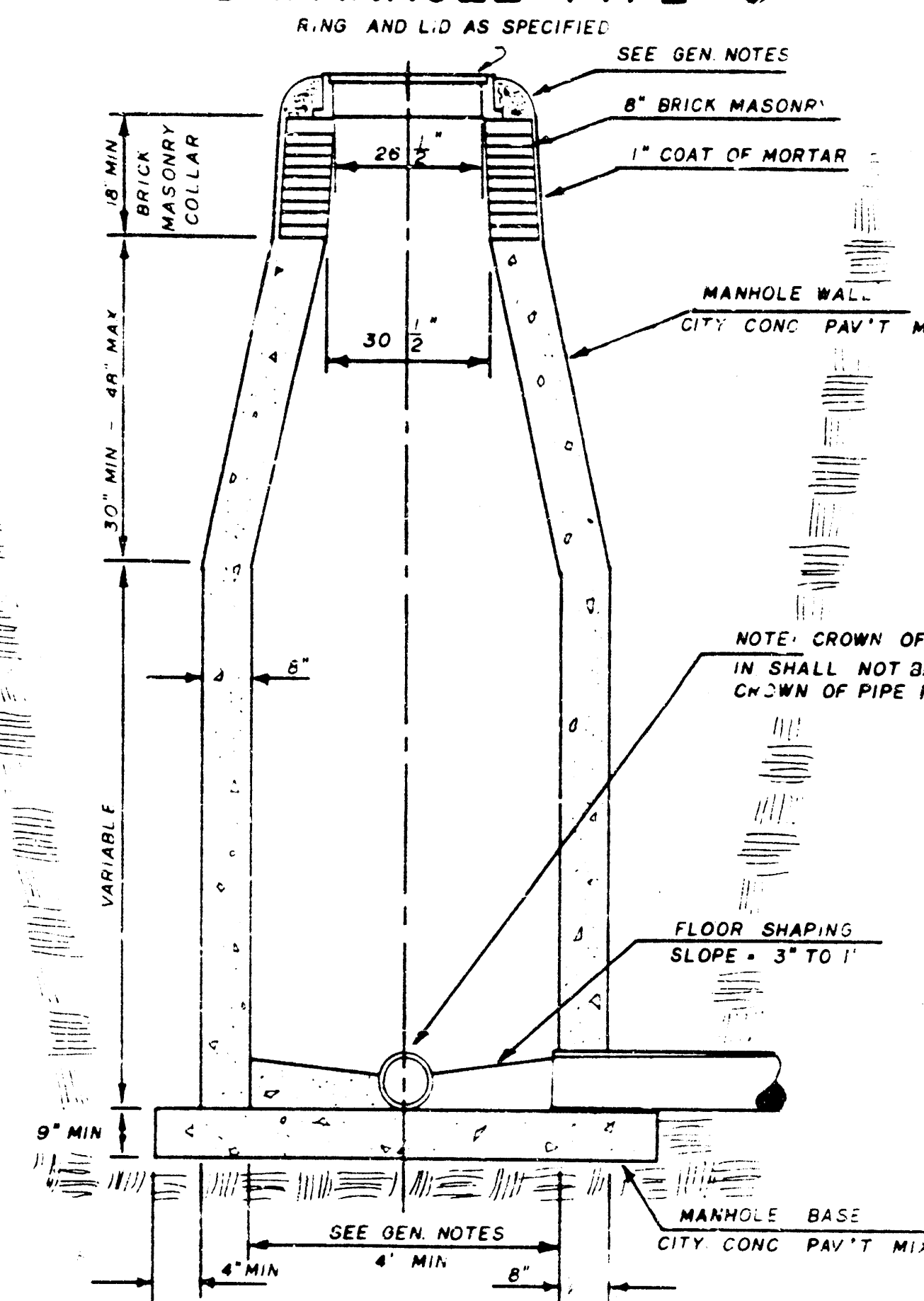
SEWER APPURTENANCES DETAILS

ADOPTED AS STANDARD DESIGN

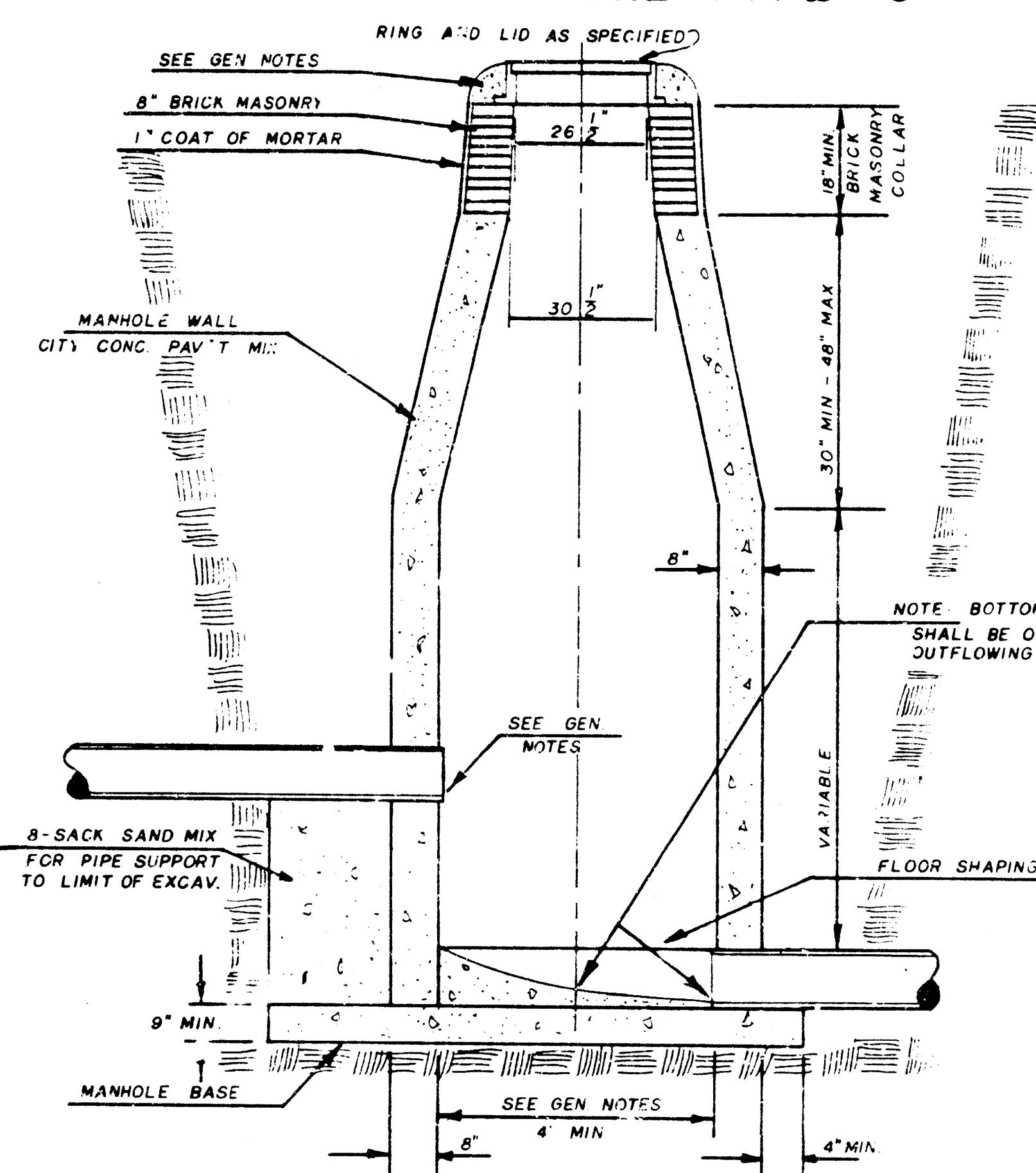
BY

City of Wichita, Kansas

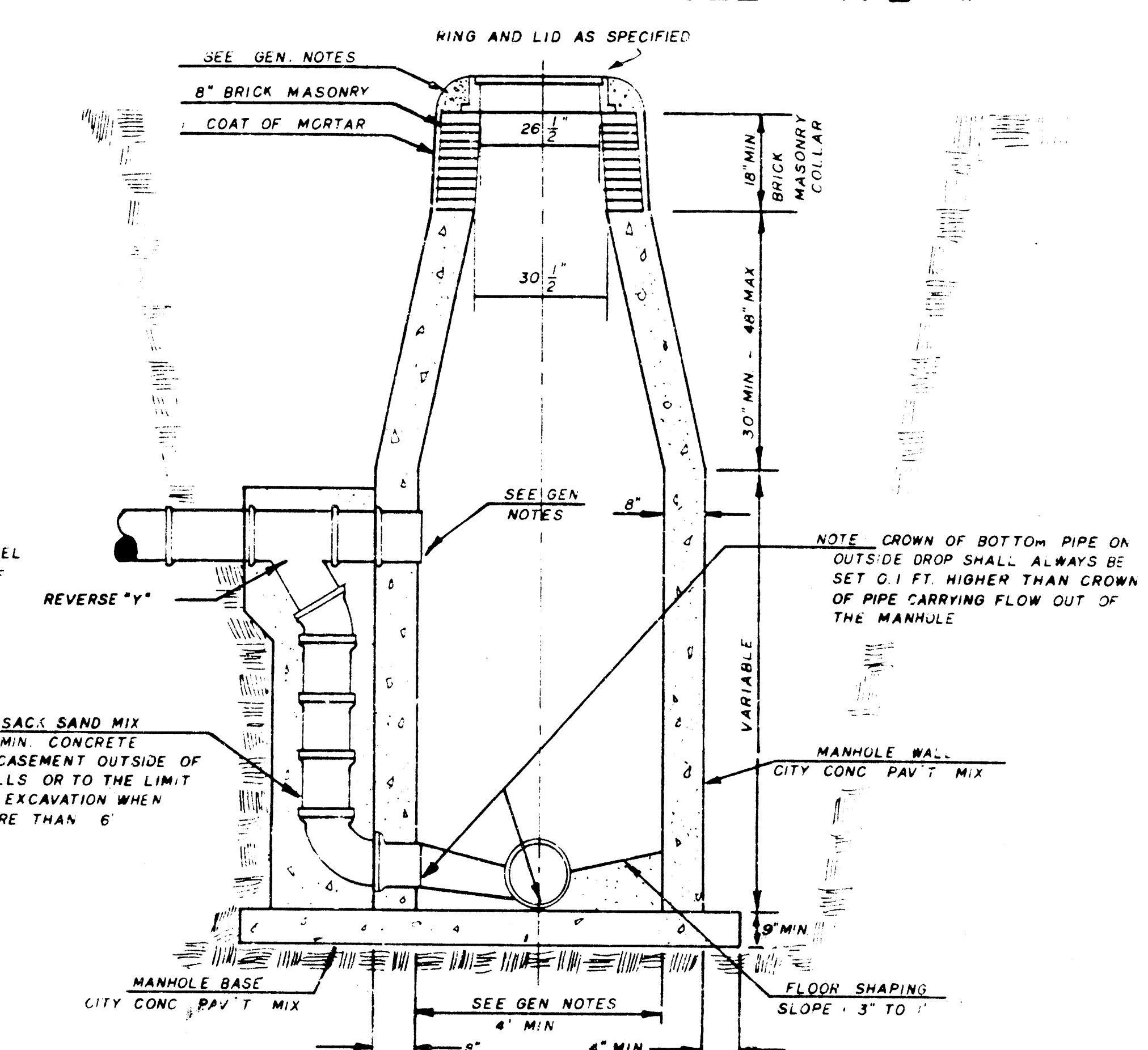
STANDARD MANHOLE TYPE "C"



INSIDE DROP MANHOLE TYPE "C"



OUTSIDE DROP MANHOLE TYPE "C"

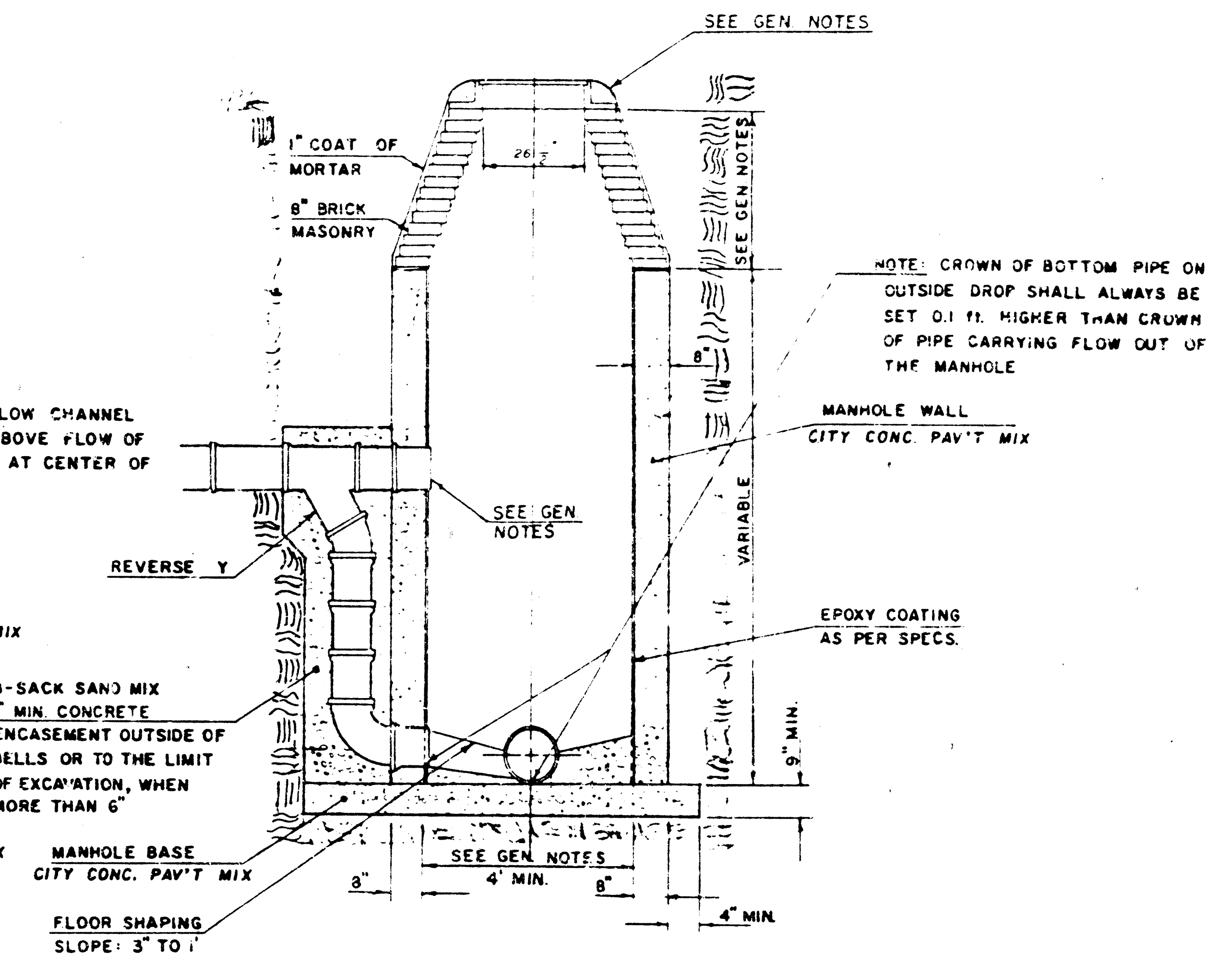


GENERAL NOTES

- 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 GROUDED INTO THIS OPENING WITH RUN-SPRING GROUT. THE EXTERIOR OF THIS COMPLETE 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 ON THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWINGS. 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 GRADED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE GRADE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE GRADE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY 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.
- 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 DRAWINGS.
- THE VERTICAL FREE FALL DROP INSIDE MANHOLE SHALL NOT EXCEED 2'. THE CROWN 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.

CITY OF WICHITA, KANSAS

TYPE "D" OUTSIDE DROP MANHOLE



NOTE NO. 7 REVISED JAN. 1991
APRIL 1987 *Sht. 10 of 11*

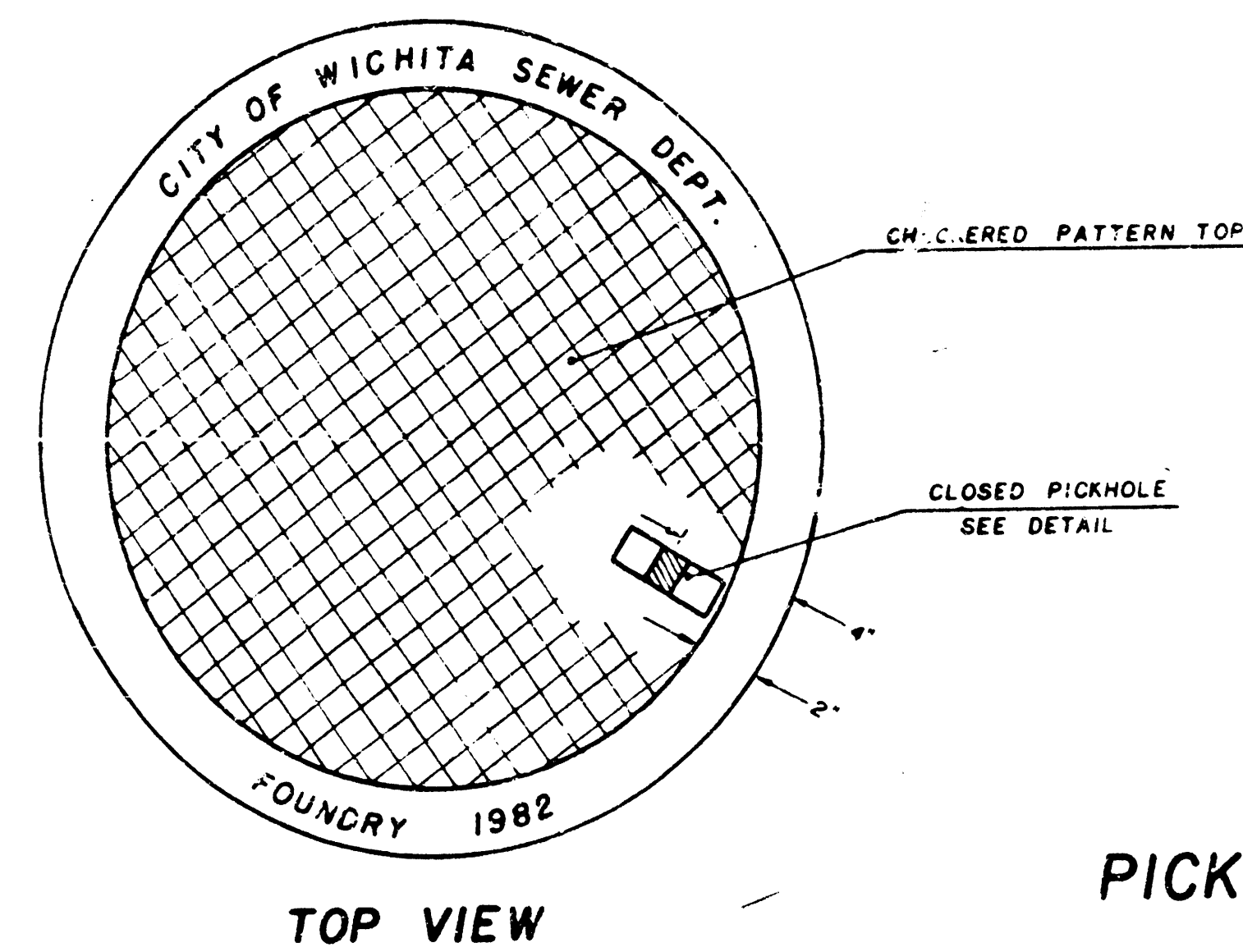
MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN

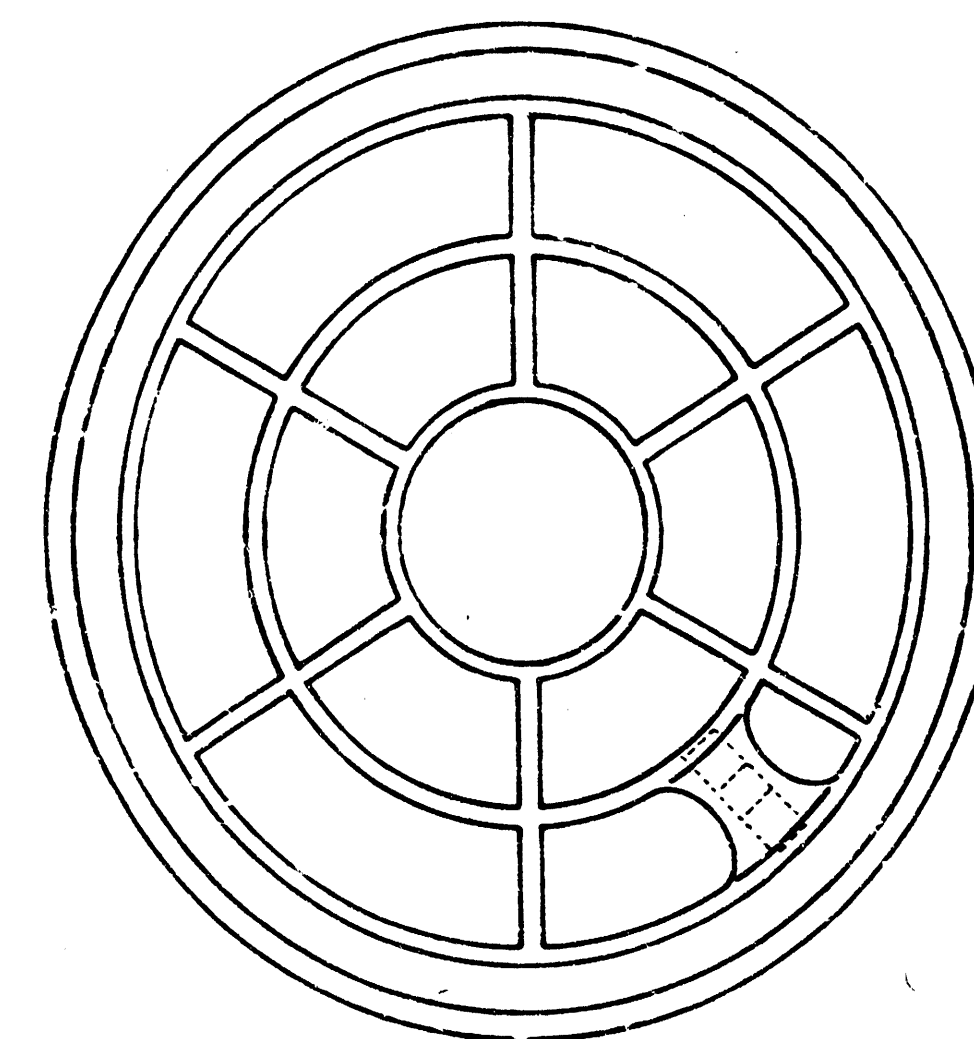
BY

City of Wichita, Kansas

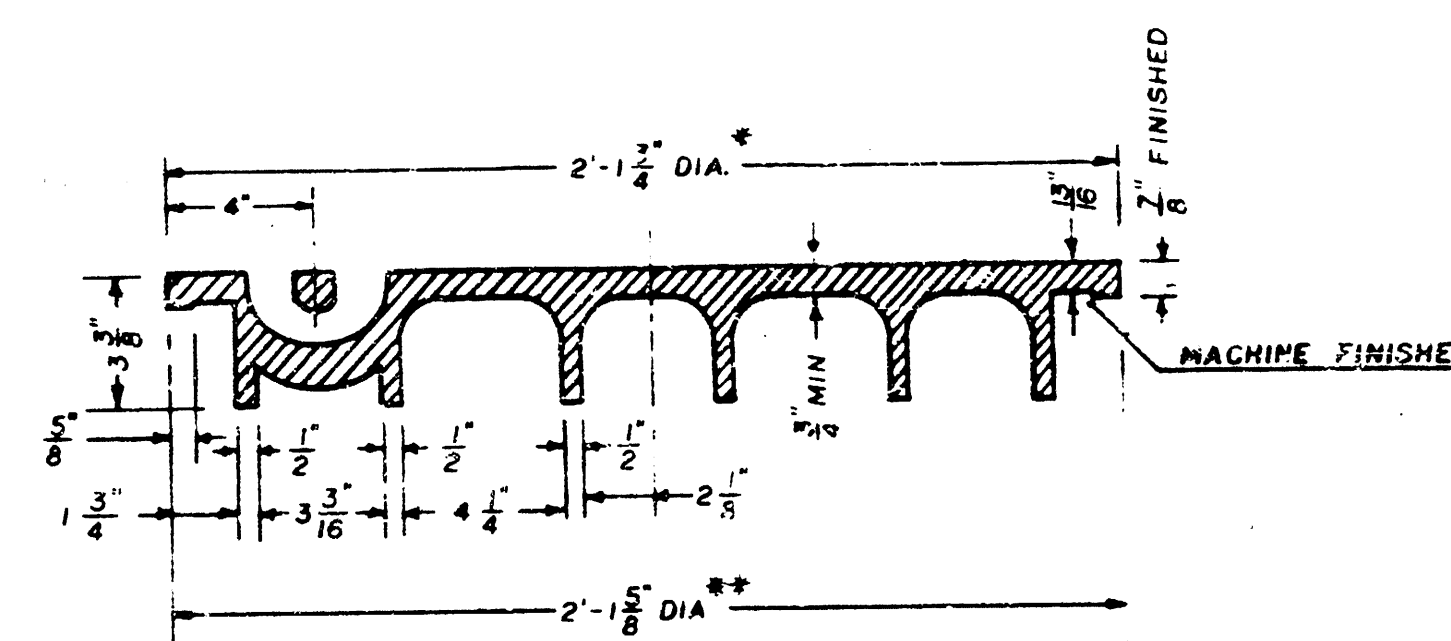
MANHOLE COVER
Weight: 180 Lbs.



TOP VIEW



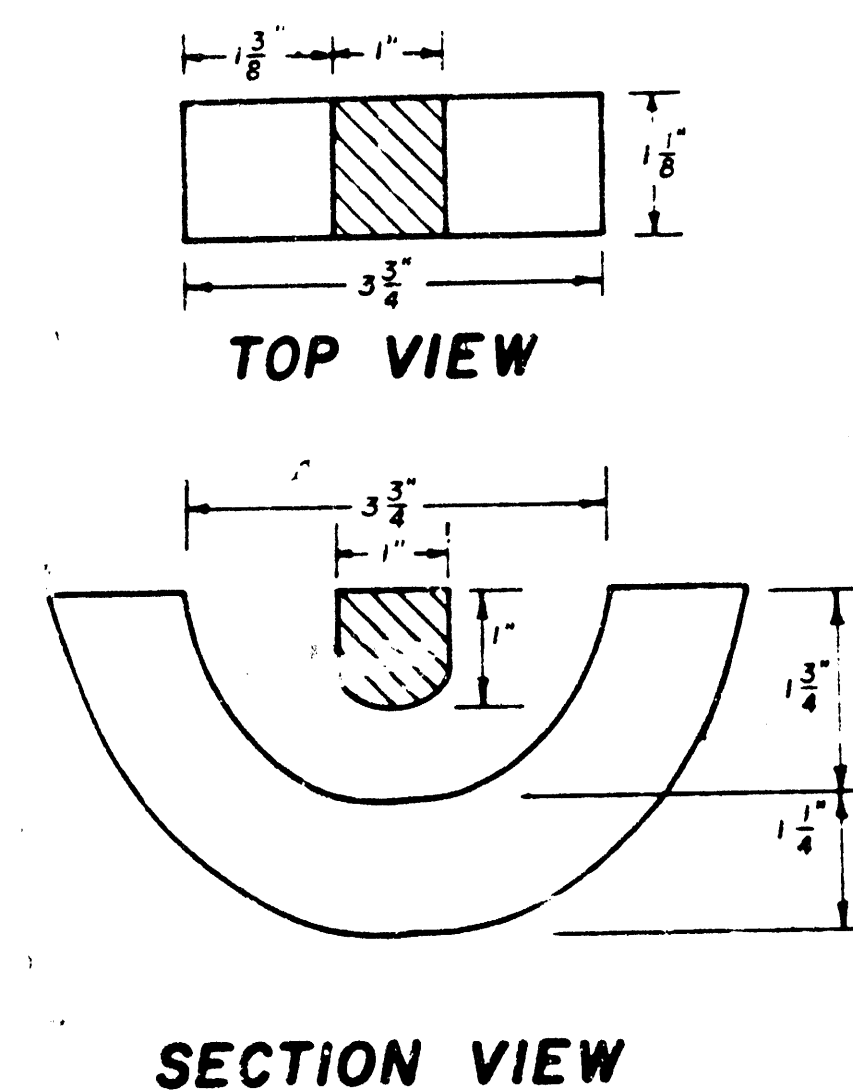
BOTTOM VIEW



SECTION VIEW

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

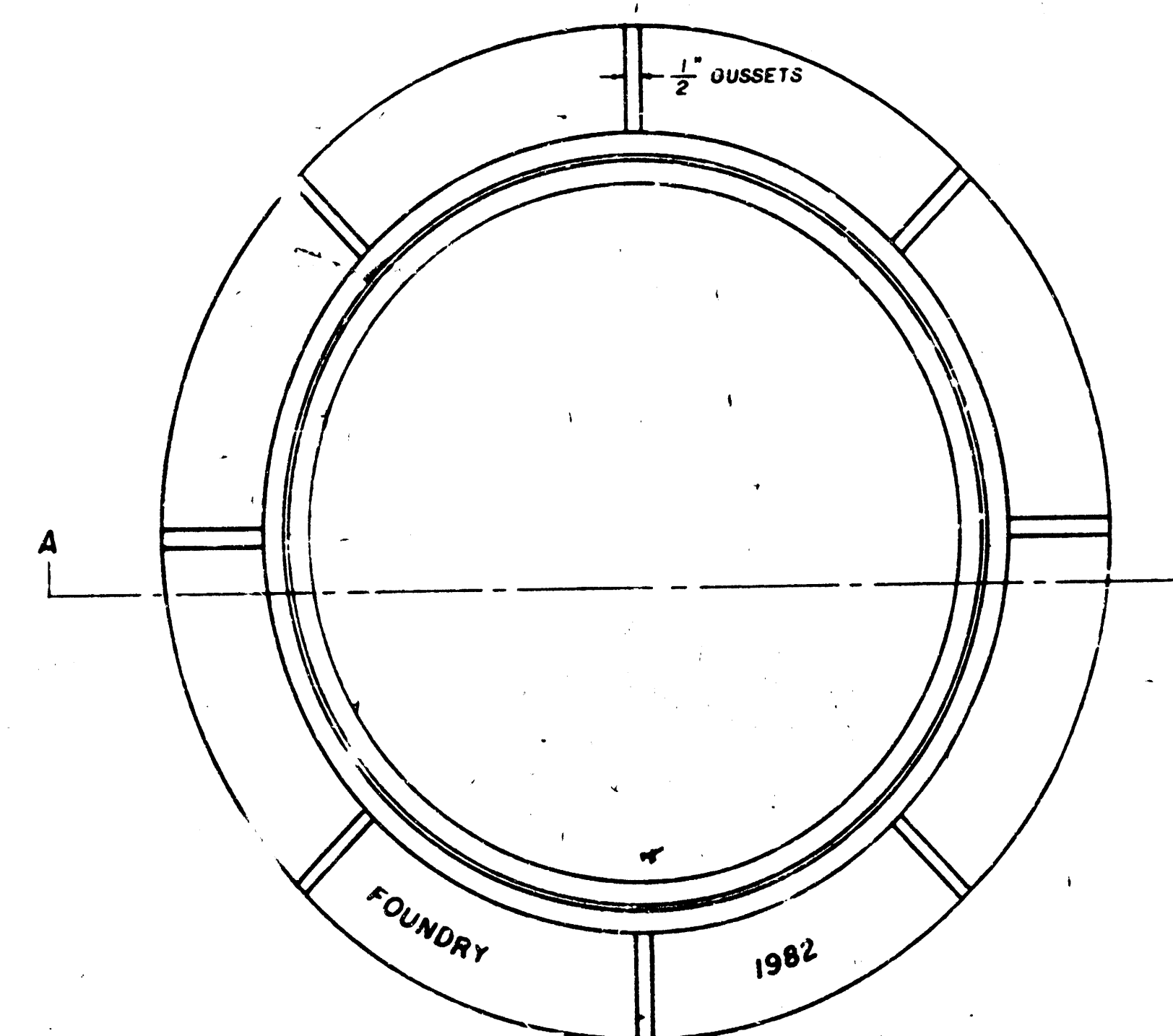
PICKHOLE DETAIL



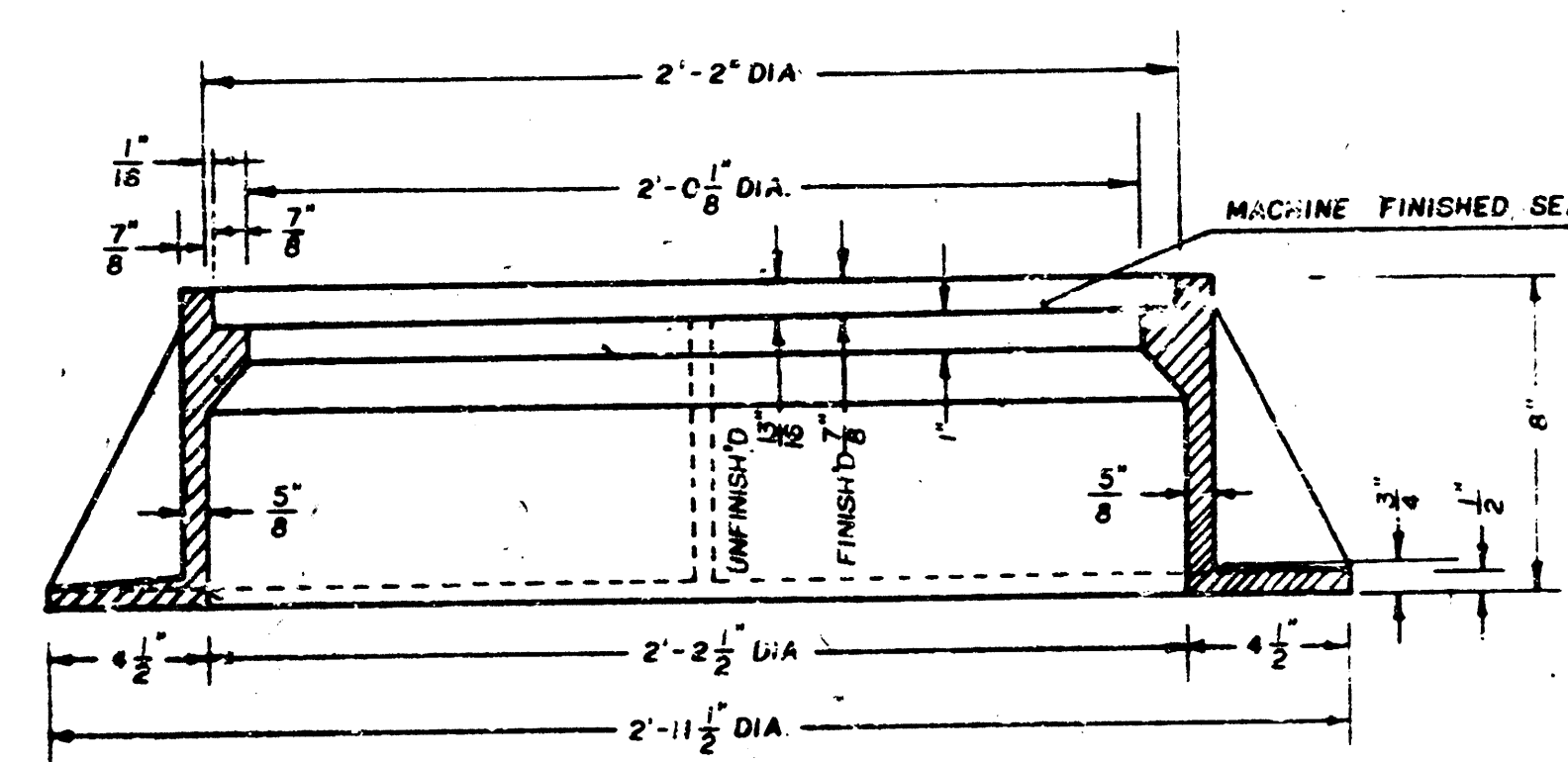
SECTION VIEW

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.