PLANS

FOR

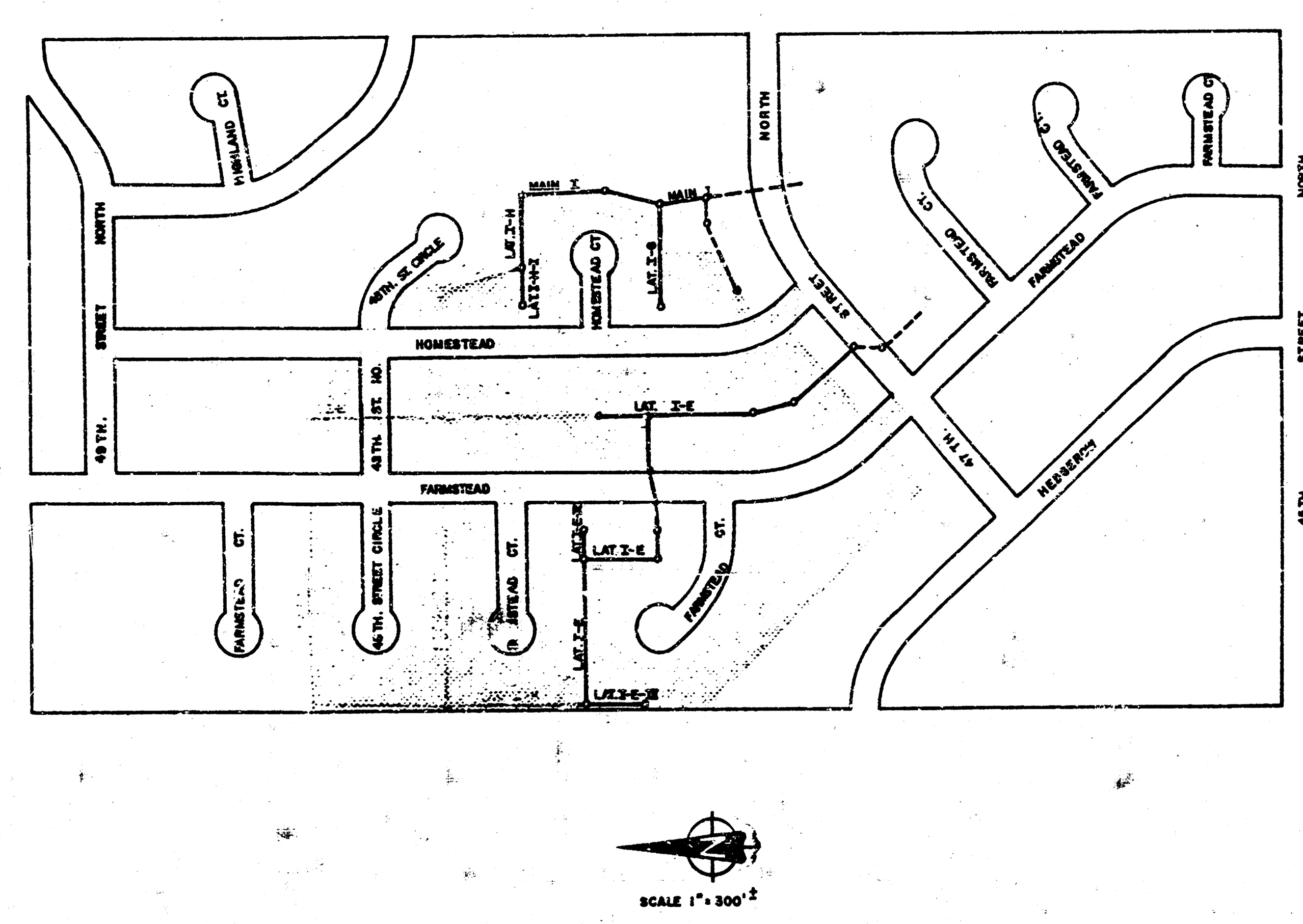
SANITARY SEWER EXTENSIONS

KAPPELMAN'S BEL AIRE HEIGHTS

PHASE II

PROJECT NO. 468-76-245-80001-000-000-057

1986



APPROVED AS NOTED
By CITY ENGINEER OF WICHITA

Sanitary Sewers _[signature]_ 3/12/86
Storm Sewers ______
Driveway Approaches ______
Water Mains ______
Paving ______

NOTE TO CONTRACTOR

This project will be constructed under the supervision of the CITY ENGINEER and conforming to the SPECIFICATIONS of the CITY OF WICHITA. The CONTRACTOR will pay the City of Wichita for all costs of plan review, inspection and booking per contract.

CHARLES H. GOODNESS
LICENSED
27331
KANSAS
PROFESSIONAL ENGINEER

Charles H. Goodness

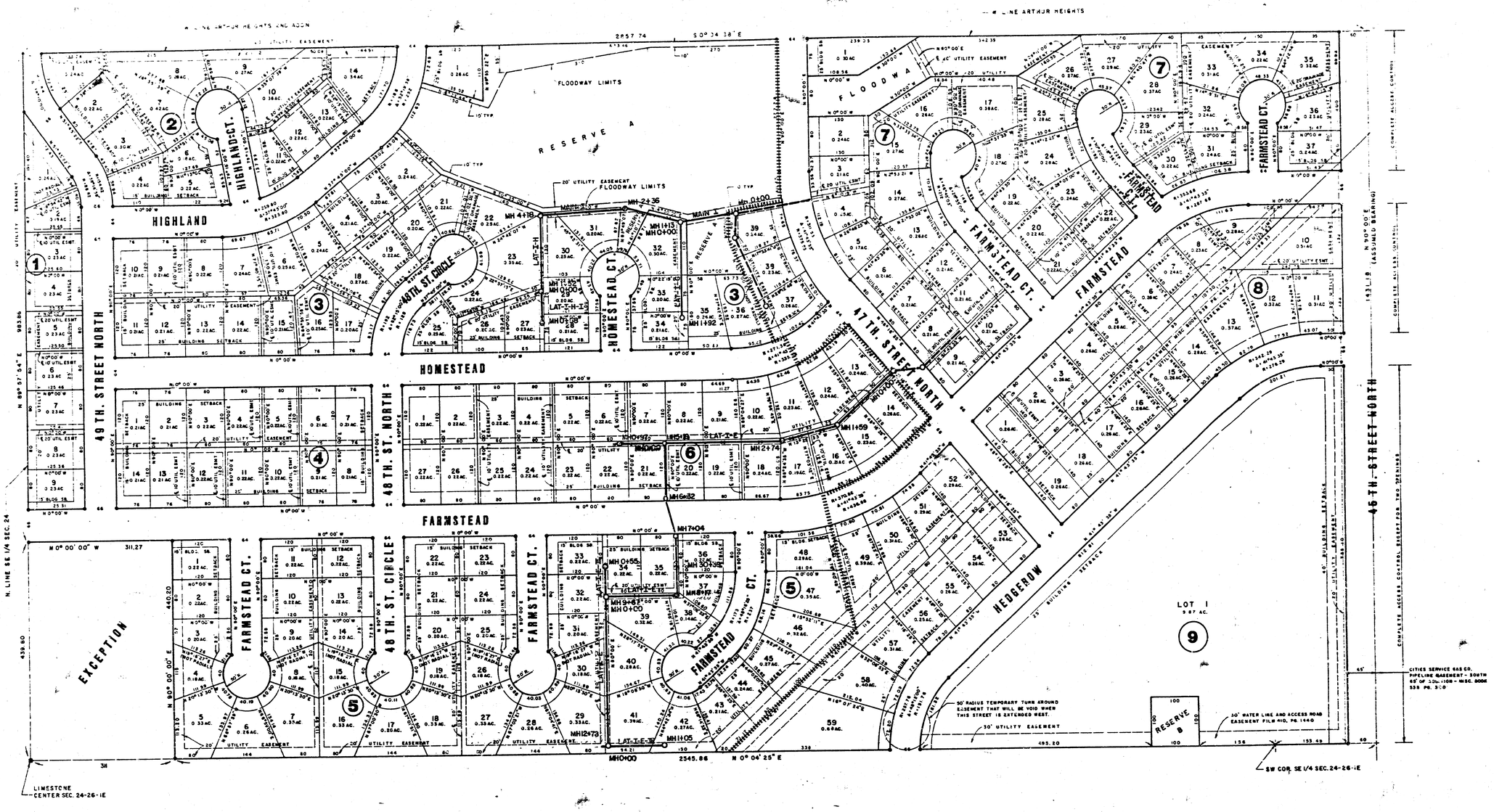
AS CONSTRUCTED

JUNE-1986

REISS & GOODNESS ENGINEERS
1150 WEST 21st STREET
WICHITA, KANSAS 67203
(316) 532-0213

1/11

FILMED FROM THE BEST



NORTH

SCALE: 1" = 100'

KAPPELMAN'S BEL AIRE HEIGHTS

PHASE II

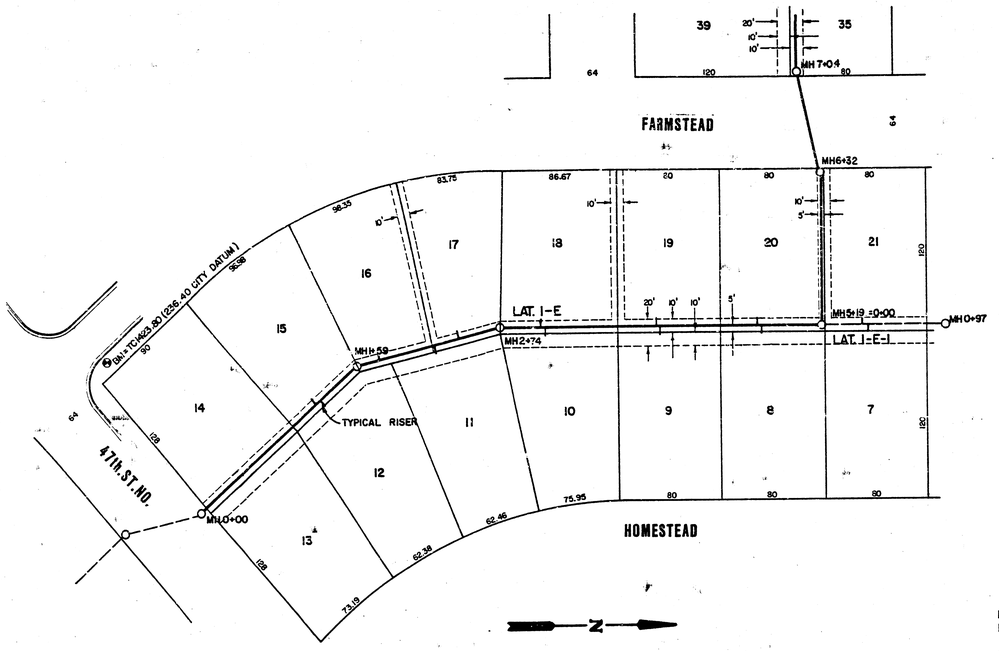
LEGEND
3/4" IRON PIPE •

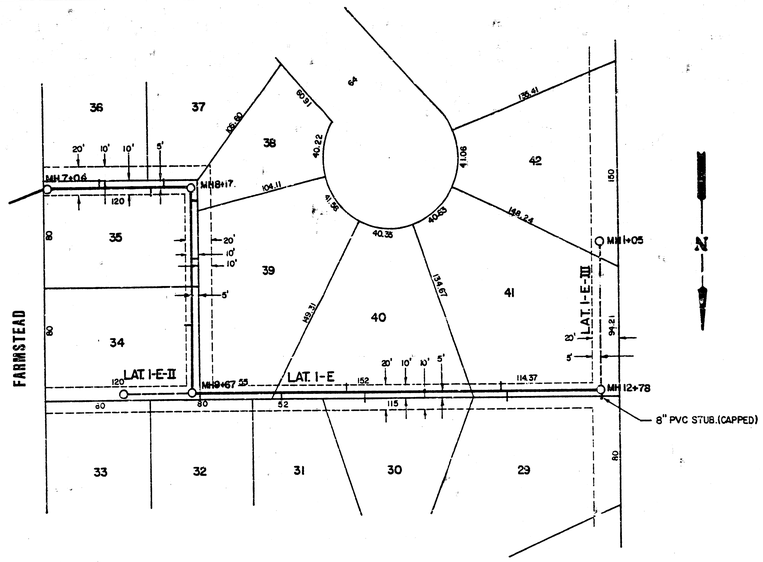
AS CONSTRUCTED

Reiss and Goodness Engineers

2/11

FILMED FROM THE BEST AVAILABLE COPY



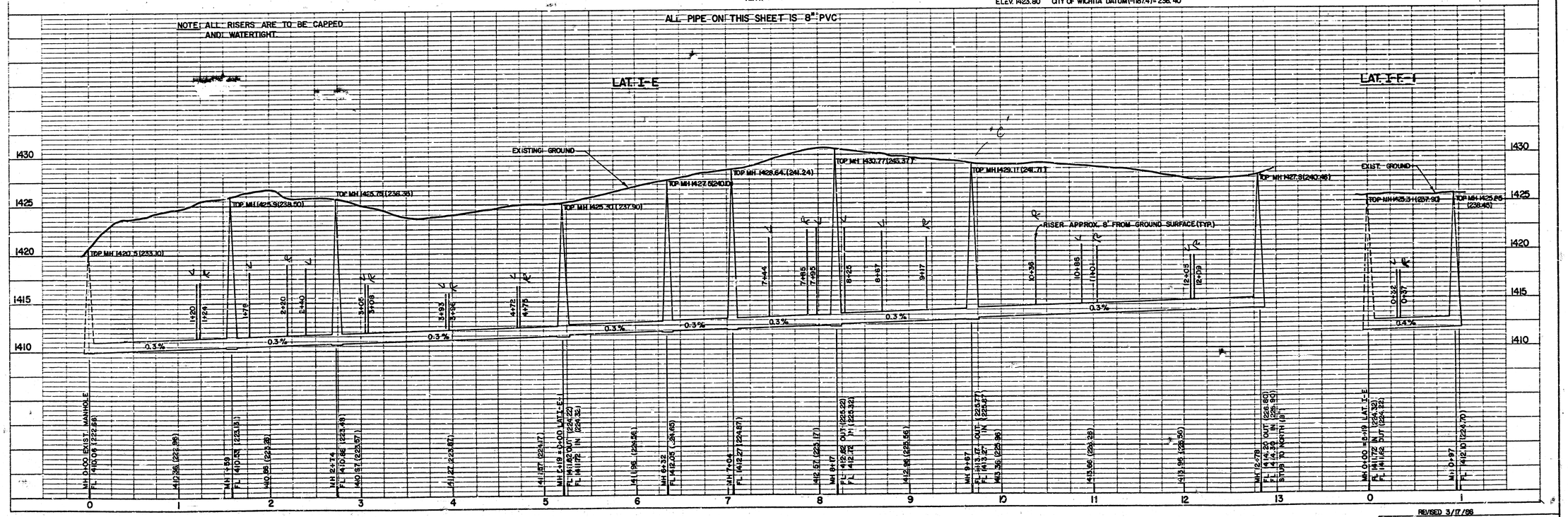


SCALE
PLAN 1"=50'
PROFILE
HORIZ. 1"=50'
VERT. 1"= 5'

TOP OF CURB, SE COR. 47th. ST. NO. AND FARMSTEAD
ELEV. 1423.80 CITY OF WICHITA DATUM(-187.4)= 236.40

NOTE: ALL RISERS ARE TO BE CAPPED AND WATERTIGHT.

ALL PIPE ON THIS SHEET IS 8" PVC



REVISED 3/17/88

REISS & GOODNESS ENGINEERS
2160 WEST 21st STREET
WICHITA, KANSAS 67203
(316) 832-0233

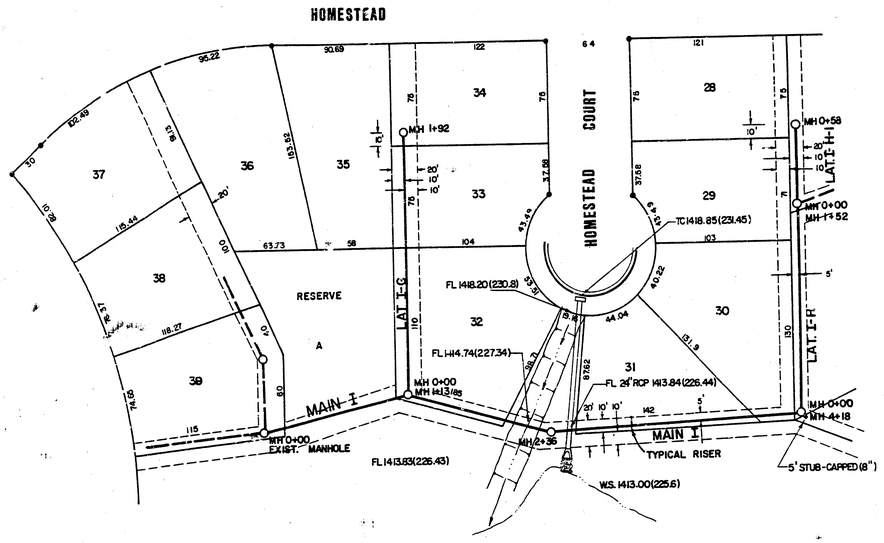
3/11

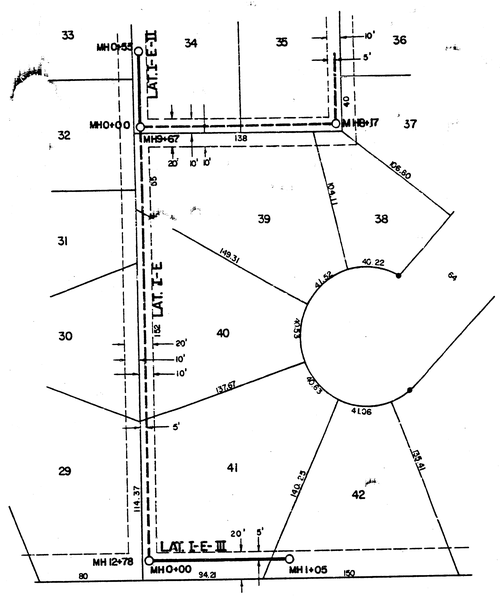
AS CONSTRUCTED

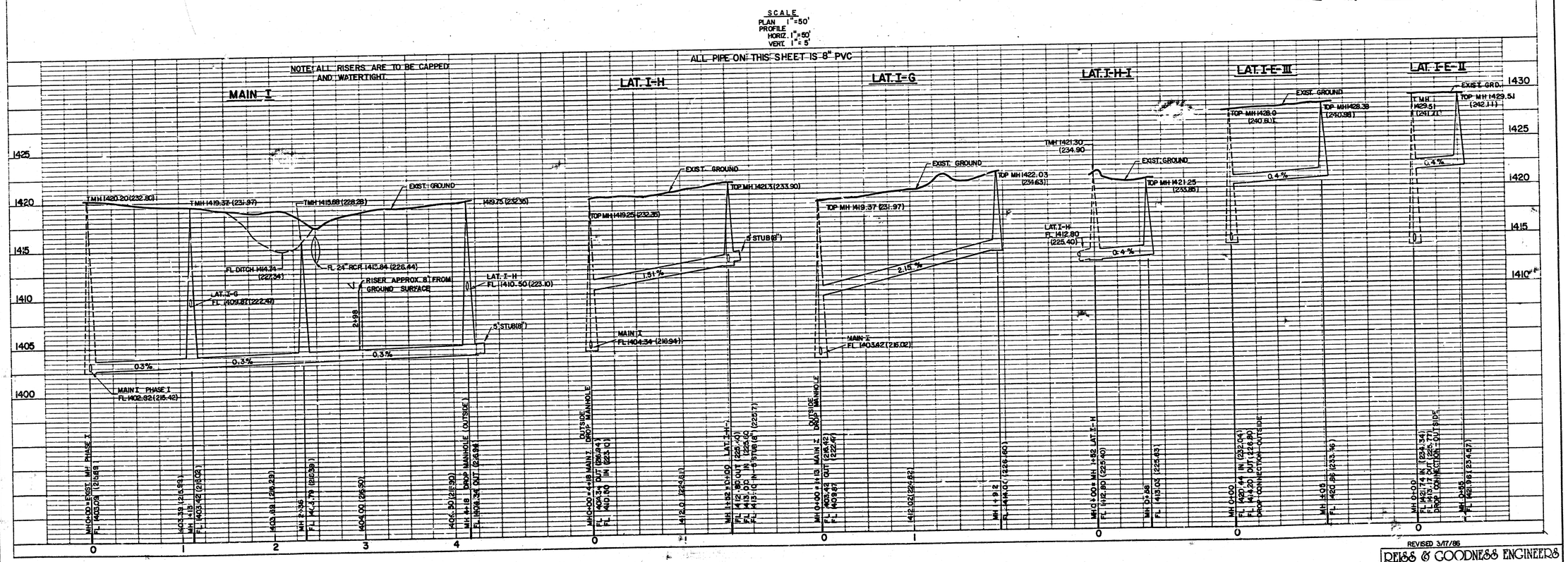
REVISION		DRAWN BY		CKED BY	DESIGNED BY	PROJECT	CUSTOMER	SCALE NOTED	PROJECT NO. SE 1880
								DATE 1/31/88	SHEET 3 OF 7

SANITARY SEWER EXTENSIONS — **KAPPELMANS-PHASE II-BEL AIRE, KANSAS**

FILMED FROM THE BEST







REVISED 3/17/86

AS CONSTRUCTED

REISS & GOODNESS ENGINEERS
2160 WEST 21ST STREET
WICHITA, KANSAS 67203
(316) 832-0213

SANITARY SEWER EXTENSIONS

CUSTOMER: KAPPELMANS-PHASE II-BEL AIRE, KANSAS

SCALE: NOTED
DATE: 1/31/86
PROJECT NO. 82-1880
SHEET 4 OF 11

PLANS

FOR

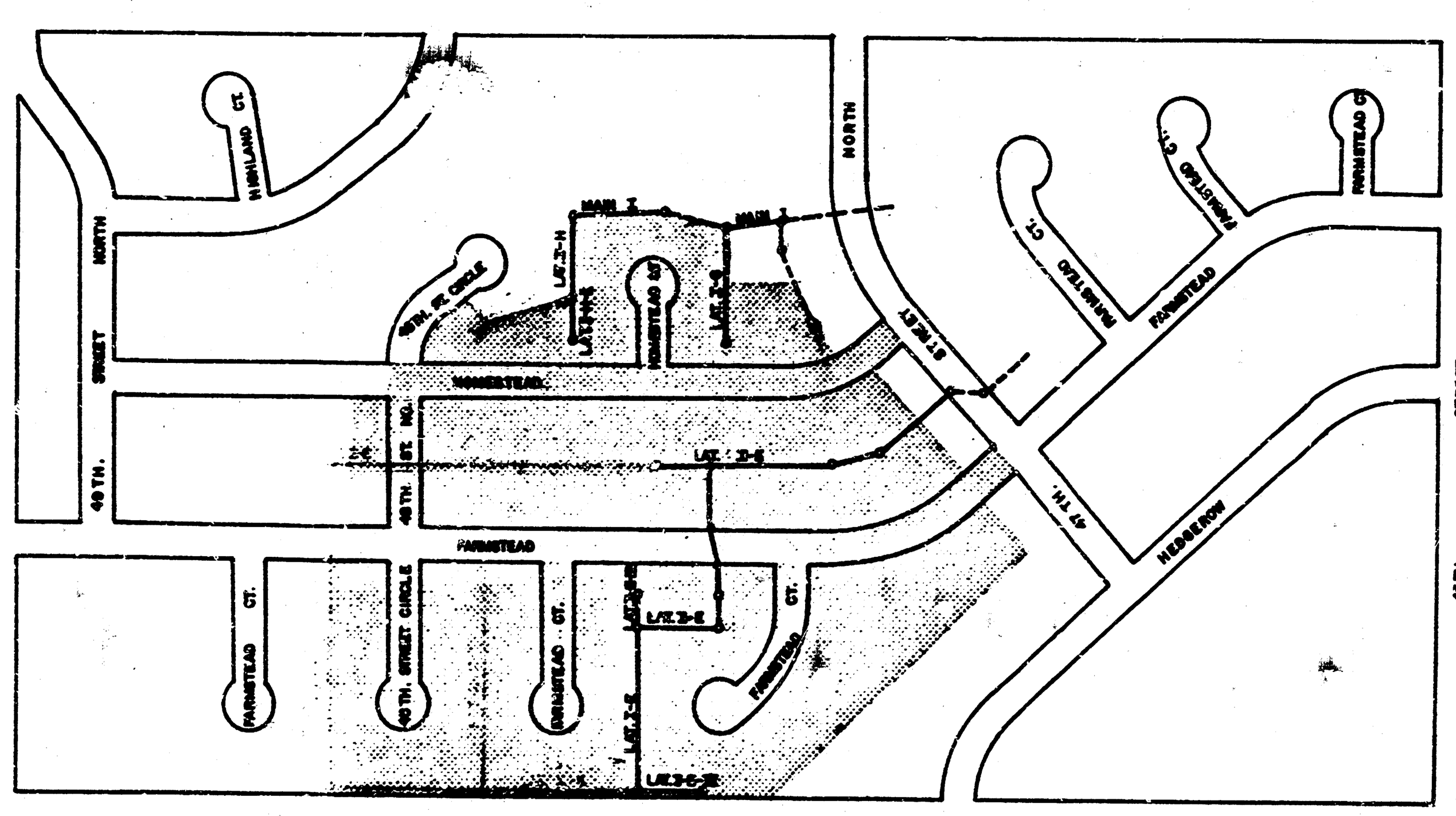
SANITARY SEWER EXTENSIONS

KAPPELMAN'S BEL AIRE HEIGHTS

PHASE II

PROJECT NO. 468-76-245-80001-000-000-057

1986



SCALE 1" = 300'±

APPROVED AS NOTED
By CITY ENGINEER OF WICHITA

Sanitary Sewers _CDB 3/10/86_

Storm Sewers ____________

Driveway Approaches ____________

Water Mains ____________

Paving ____________

NOTE TO CONTRACTOR

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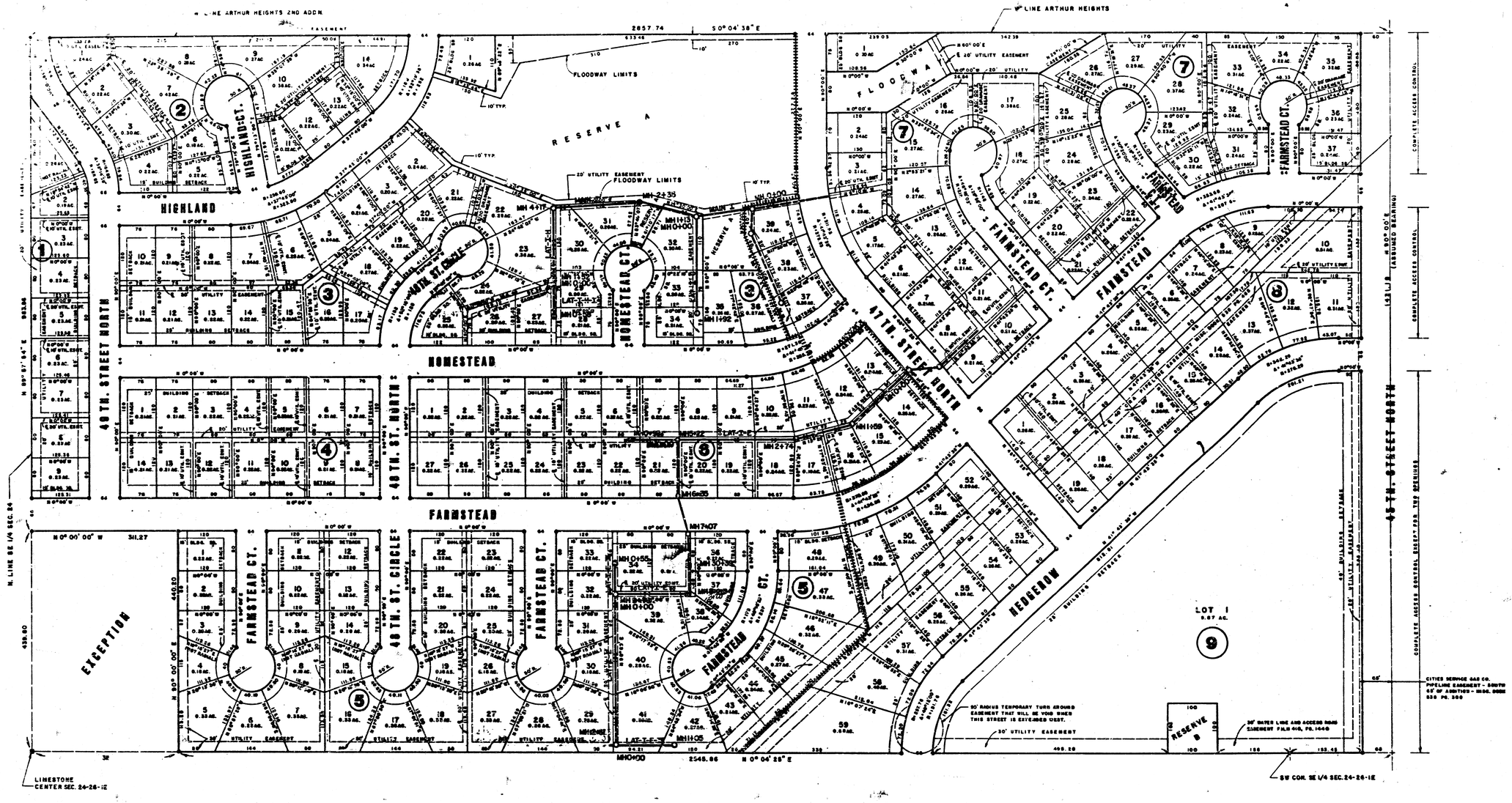
CHARLES M. GOODNESS LICENSED 2731 KANSAS PROFESSIONAL ENGINEER

REISS & GOODNESS ENGINEERS
2100 WEST 21ST STREET
WICHITA, KANSAS

5/11



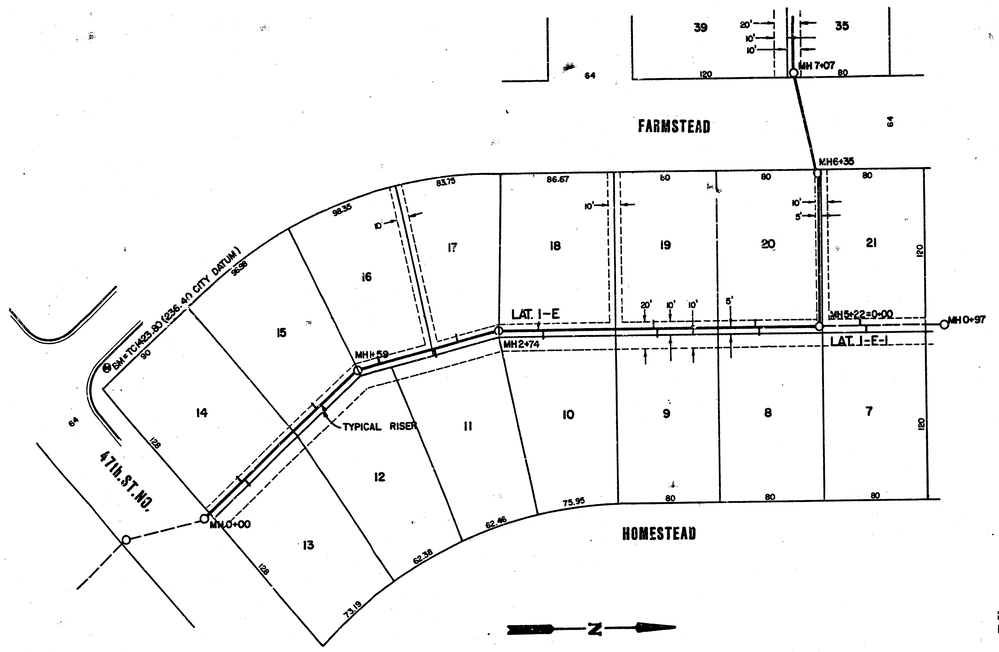
KAPPELMAN'S
BEL AIRE HEIGHTS

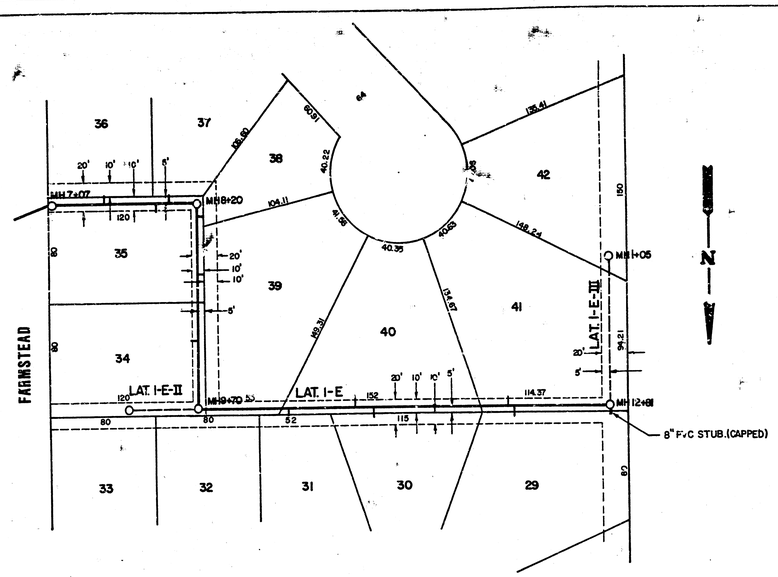
PHASE II

SCALE: 1" = 100'

LEGEND
3/4" IRON PIPE ●

Reiss and Goodness Engineers



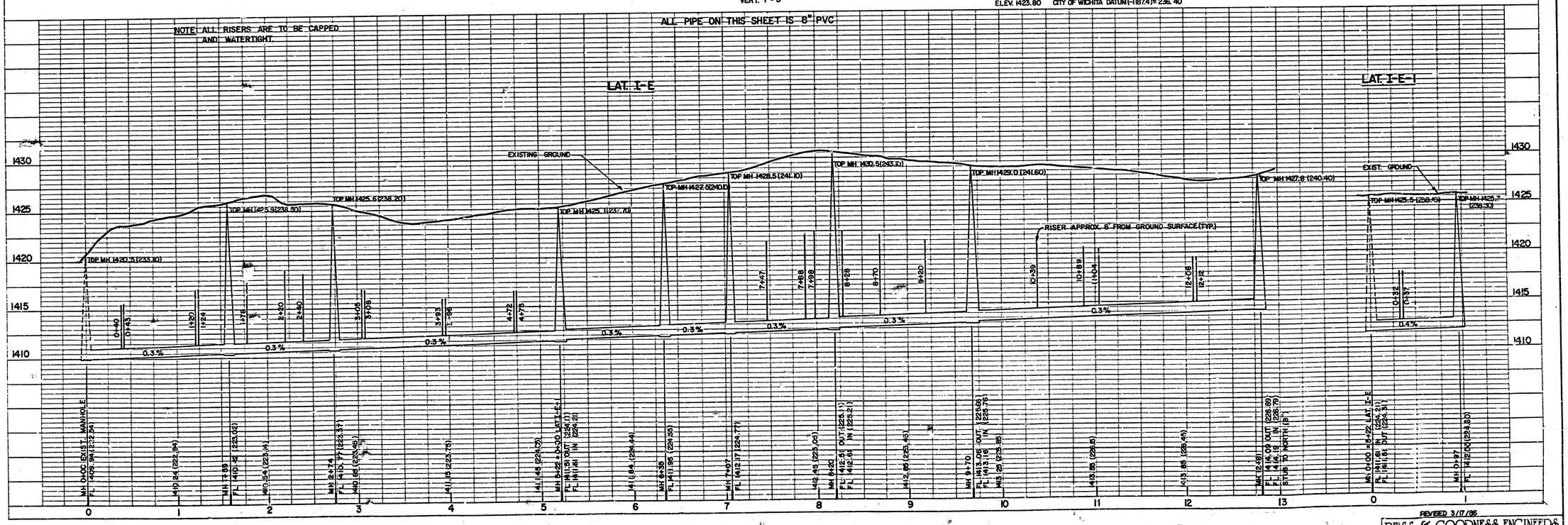


SCALE
PLAN 1"=50'
PROFILE
HORIZ. 1"=50'
VERT. 1"=5'

BM
TOP OF CURB, SE COR. 47th. ST. NO. AND FARMSTEAD
ELEV. 1423.80 CITY OF WICHITA DATUM (-1187.4) = 236.40

NOTE ALL RISERS ARE TO BE CAPPED AND WATERTIGHT.

ALL PIPE ON THIS SHEET IS 8" PVC

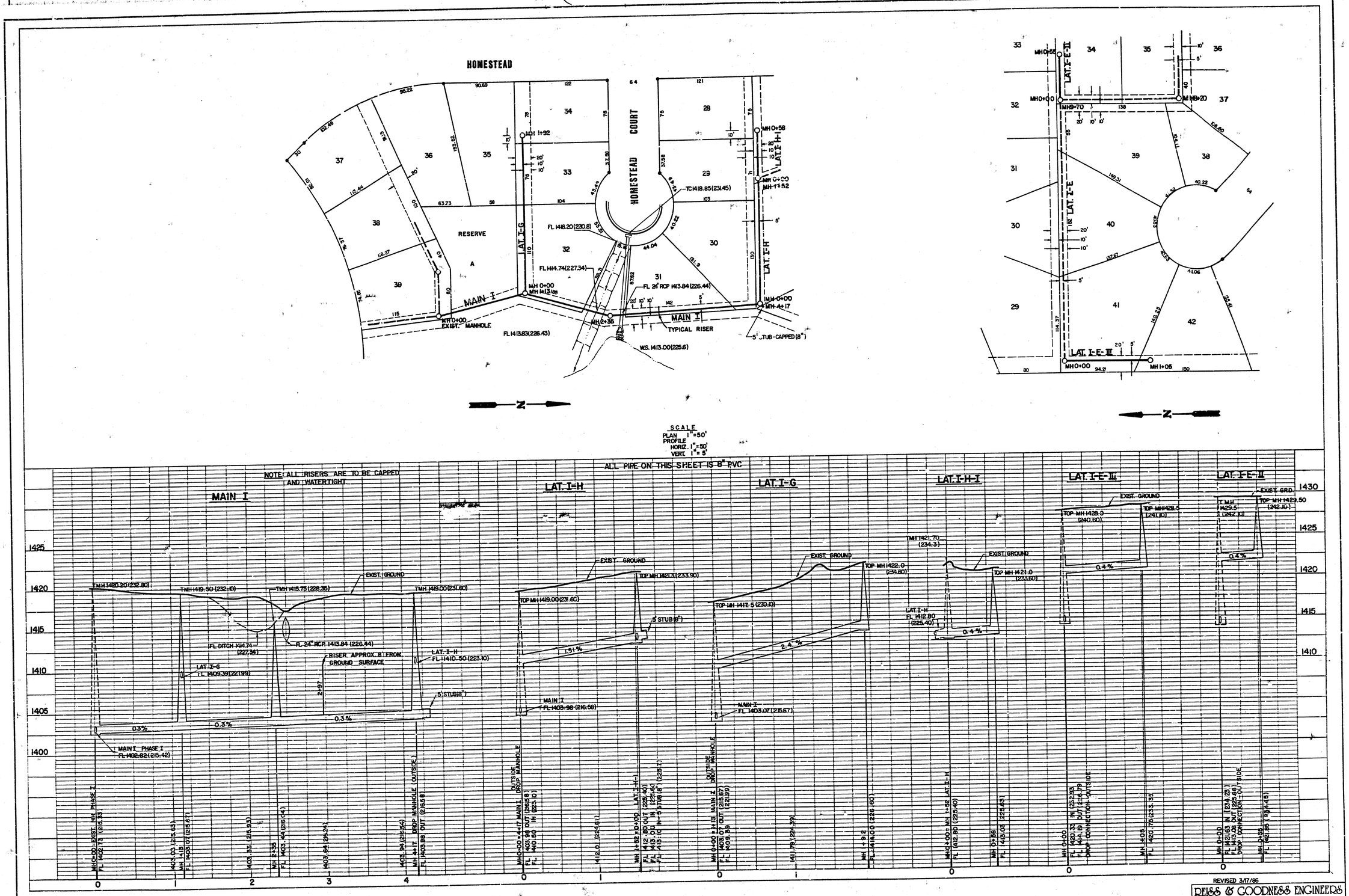


REVISED 3/17/86

REISS & GOODNESS ENGINEERS
2100 WEST 21ST STREET
WICHITA, KANSAS 67203
(316) 832-0223

REVISION	DRAWN BY	CHECKED BY	DESIGNED BY	PROJECT
				SANITARY SEWER EXTENSIONS

CUSTOMER	KAPPELMANS-PHASE II-BEL AIRE, KANSAS	SCALE NOTED	PROJECT NO. SE 1860



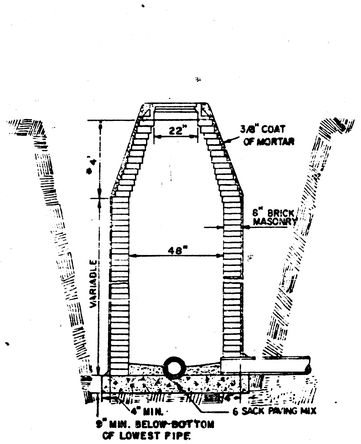
REVISED 3/17/86

REISS & GOODNESS ENGINEERS
2160 WEST 21st STREET
WICHITA, KANSAS 67203
(316) 832-0213

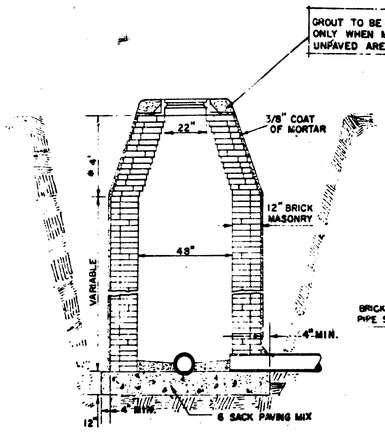
8/11

REVISION	DRAWN BY	CHECKED BY	DESIGNED BY	PROJECT	SANITARY SEWER EXTENSIONS	CUSTOMER	KAPPELMANS-PHASE II-BEL AIRE, KANSAS	SCALE NOTED	PROJECT NO. SE 1880
								DATE 1/31/86	SHEET 8 OF 8

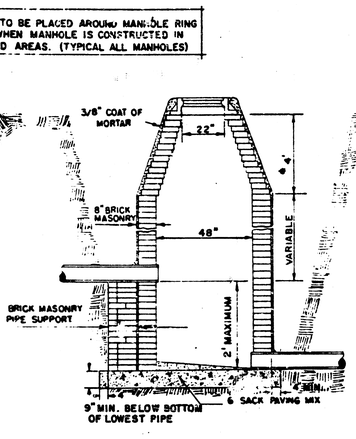
FILMED FROM THE BEST



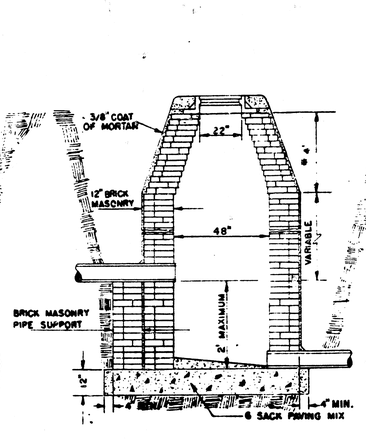
STANDARD MANHOLE TYPE "A"



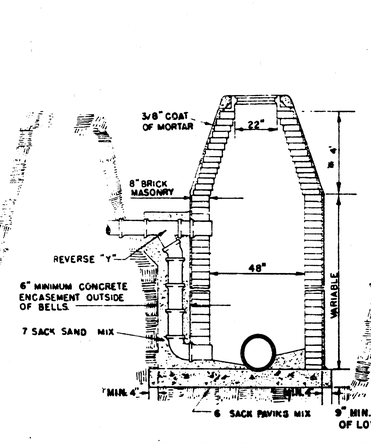
STANDARD MANHOLE TYPE "B"



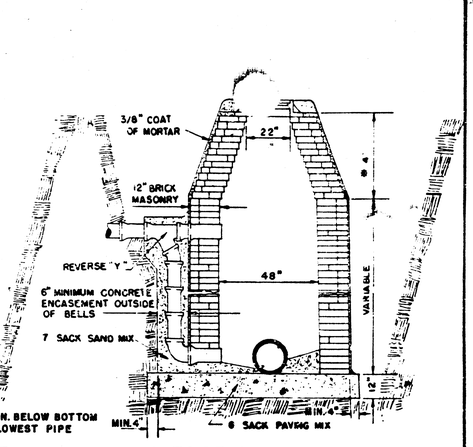
DROP MANHOLE TYPE "A"



DROP MANHOLE TYPE "B"



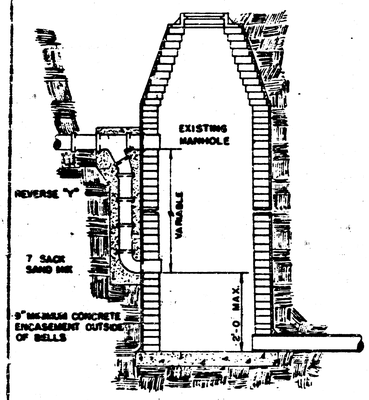
OUTSIDE DROP MANHOLE TYPE "A"



OUTSIDE DROP MANHOLE TYPE "B"

* DRAW = 6' ON 5' DIA. M.H.

NOTE : REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES 6" ABOVE THE BOTTOM. REINFORCING STEEL SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE COST OF REINFORCING STEEL IS TO BE INCLUDED IN THE PRICE BID FOR THE MANHOLE.

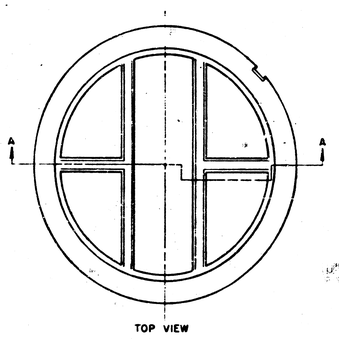


DETAIL OF DROP STACK

FOR EXISTING MANHOLES IN GROUND WATER

GENERAL NOTES

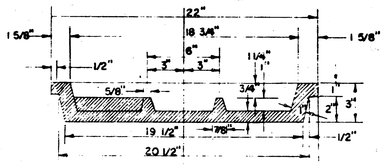
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD.
- STANDARD MANHOLES TYPE 'A' OR TYPE 'B' AND STANDARD DROP MANHOLES TYPE 'A' OR TYPE 'B' SHALL BE BID PER LINEAR FOOT OF MANHOLES CONSTRUCTED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE. MANHOLES WITH PIPE SIZES LARGER THAN 24" SHALL BE 5' DIAMETER.
- THE FLOORS OF ALL MANHOLES SHALL BE SHAPED TO INCREASE HYDRAULIC EFFICIENCY USING 8 SACK SAND MIX CONCRETE.
- PIPE INSTALLED WITHIN THE MANHOLE EXCAVATION SHALL BE ENCASED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. COST OF CRADLE WITHIN MANHOLE EXCAVATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR MANHOLES CONSTRUCTED. CRADLE SHALL EXTEND TO FIRST JOINT OUTSIDE OF MANHOLE WHEN CLAY PIPE IS USED.



TOP VIEW

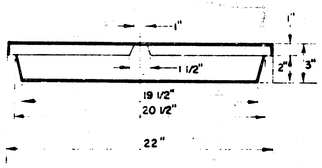
MANHOLE COVER

WEIGHT 110 LBS.



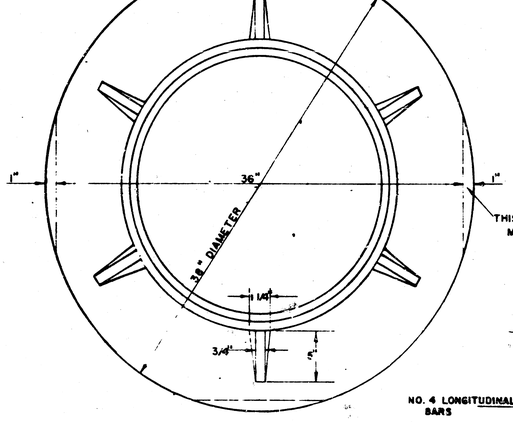
SECTION A-A

MANHOLE COVER



SIDE VIEW

MANHOLE COVER



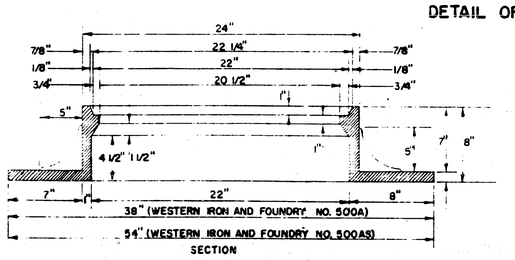
THIS PORTION OF FLANGE MAY BE OMITTED

TOP VIEW

MANHOLE RING

WEIGHT 325 LBS. RING NO. 500A

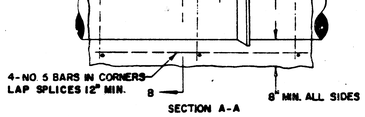
WEIGHT 800 LBS. RING NO. 500AS



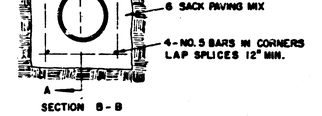
SECTION

MANHOLE RING

OUTSIDE CIRCUMFERENCE OF COVER AND THE INNER FACE AND SEAT OF RING TO BE MACHINE FIT.



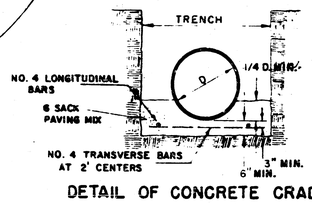
SECTION A-A



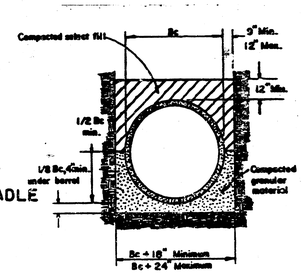
SECTION B-B

REINFORCED CONCRETE ENCASEMENT

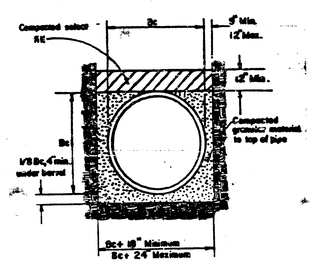
NOTE : CONCRETE ENCASEMENT AND CONCRETE CRADLE SHALL BEGIN AND END AT A JOINT WHEN CLAY PIPE IS USED. MINIMUM CONCRETE COVERAGE OF REBAR TO BE 3".



DETAIL OF CONCRETE CRADLE



A.B.S. PIPE BEDDING DETAIL



P.V.C. PIPE BEDDING DETAIL

DETAILS OF

SEWER APPURTENANCES

ADOPTED AS STANDARD DESIGN

BY

ENGINEERING DIVISION

CITY OF WICHITA, KANSAS

R. W. LINN CITY ENGINEER

KAPPELMAN'S BEL AIRE HEIGHTS

SANITARY SEWER EXTENSIONS

DATE 12-28-60

PROJECT NO. SE 1960

SHEET 9 OF 9

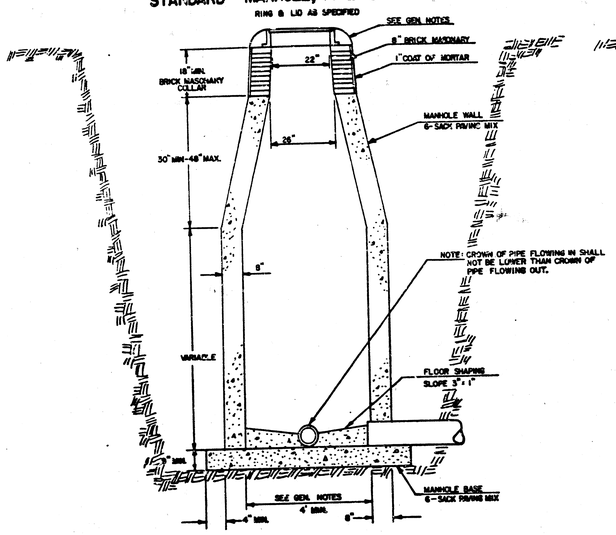
DOSS & GOODNESS ENGINEERS

3300 WEST 29th STREET

WICHITA, KANSAS 67204

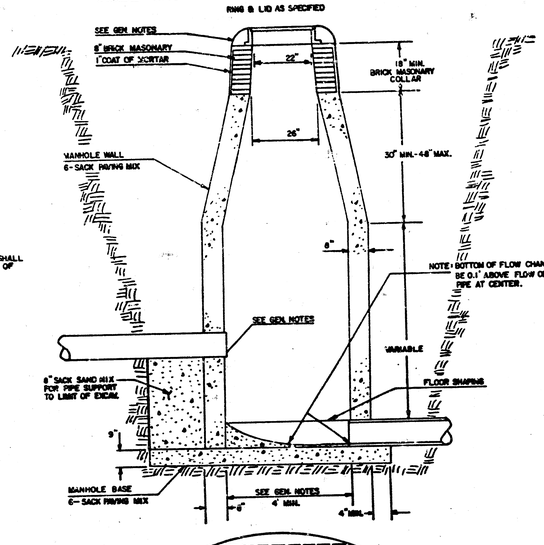
STANDARD MANHOLE, TYPE "C"

RING & LID AS SPECIFIED



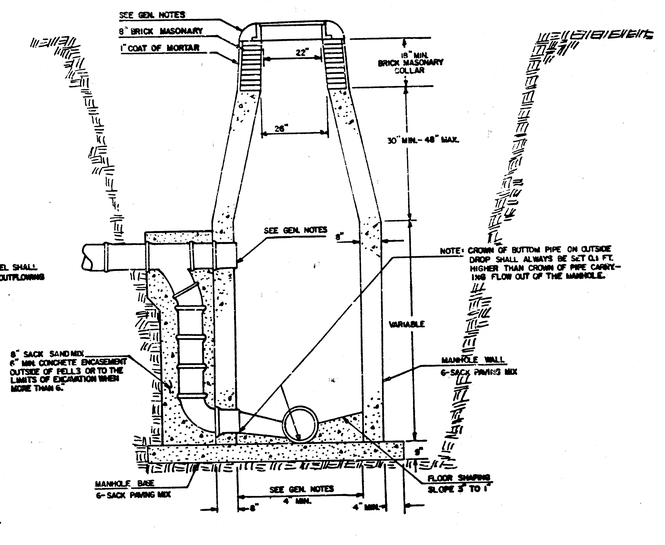
INSIDE DROP MANHOLE, TYPE "C"

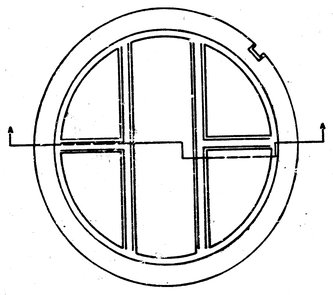
RING & LID AS SPECIFIED



OUTSIDE DROP MANHOLE, TYPE "C"

RING & LID AS SPECIFIED

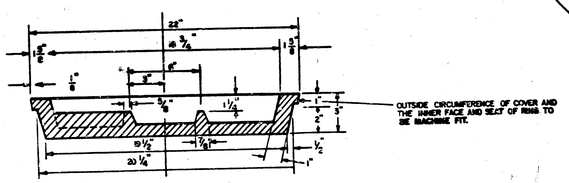




TOP VIEW

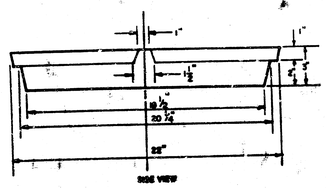
MANHOLE COVER

WEIGHT 90 LBS.



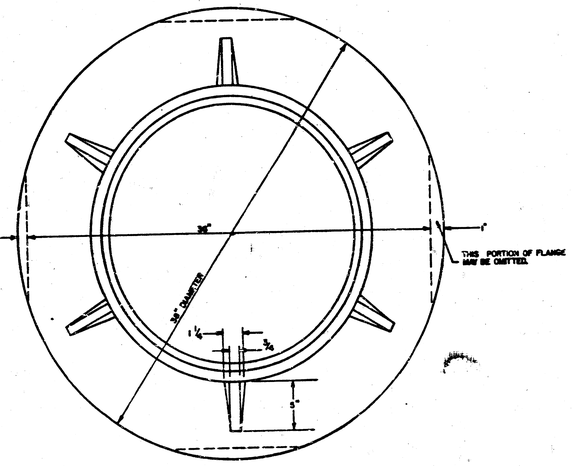
SEC. A-A

MANHOLE COVER



SIDE VIEW

MANHOLE COVER

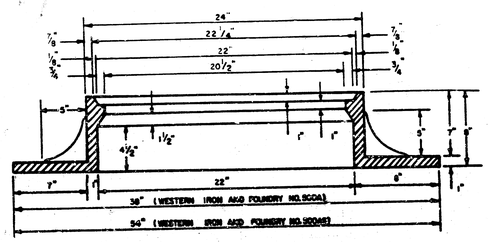


TOP VIEW

MANHOLE RING

325 LBS. RING NO. 500A

WEIGHT 600 LBS. RING NO. 500AS



MANHOLE RING

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 6 SACKS OF CEMENT PER CUBIC YARD WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL 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.

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 BOTTOM OF THE MANHOLE BASE. COST OF FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR MANHOLES CONSTRUCTED.

3. 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.

4. 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.

5. 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 MANHOLES CONSTRUCTED.

6. THE OUTSIDE CIRCUMFERENCE OF MANHOLE COVERS, THE INSIDE CIRCUMFERENCE OF MANHOLE RINGS, AND THE SEATING FACES BETWEEN THE COVER AND THE RING SHALL BE MACHINED TO THE DIMENSIONS INDICATED SO THE MANHOLE COVER WILL FIT INTO THE RING SUCH THAT THE CLEARANCE BETWEEN THE COVER AND THE RING WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE RING AND COVER SHALL BE MACHINED SUCH THAT THESE SURFACES WILL MAKE CONTACT FOR THEIR FULL CIRCUMFERENCE WITHOUT ROCKING. A PICK HOLE SHALL BE FABRICATED AT ONE LOCATION IN THE OUTER CIRCUMFERENCE OF THE COVER TO FACILITATE REMOVAL OF THE COVER. THE PICK HOLE SHALL BE FABRICATED IN SUCH A MANNER THAT WILL PRECLUDE AN OPENING THROUGH WHICH STORM WATER COULD ENTER INTO THE MANHOLE.

7. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' 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.

SANITARY SEWER EXTENSIONS
KAPPELMAN'S BEL AIRE HEIGHTS

NO.	REVISION	BY	DATE
12-3-80	10-10-80		

SEDGWICK COUNTY DEPARTMENT OF PUBLIC WORKS

CONCRETE MANHOLE DETAILS
(TYPE C MANHOLES)

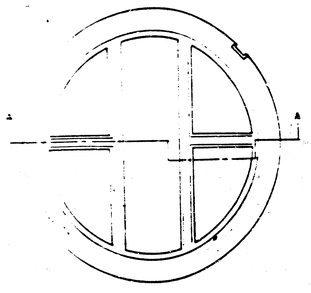
REISS & GOODNESS ENGINEERS
2180 WEST 21ST STREET
WICHITA, KANSAS 67204
(316) 681-0283

DESIGNED BY CITY OF WICHITA | JOB NO. SE 1880 | SHEET 6 OF 7 SHEETS

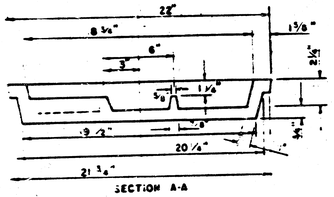
DRAWN BY CA | DATE 1/31/80

FILMED FROM THE BEST

SEWER APPURTENANCES DETAILS

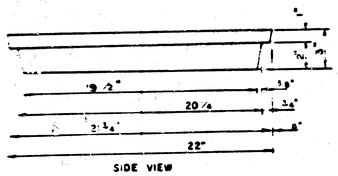


TOP VIEW



SECTION A-A

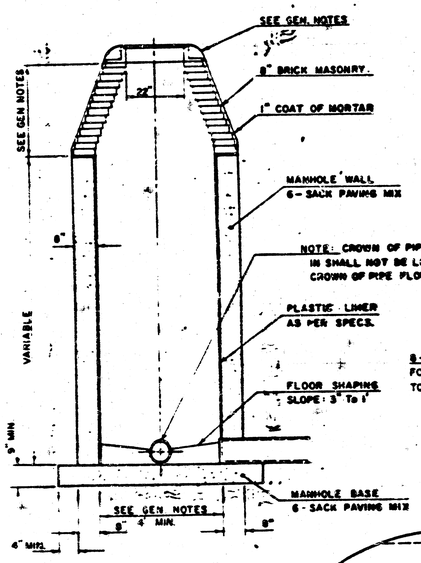
MANHOLE COVER



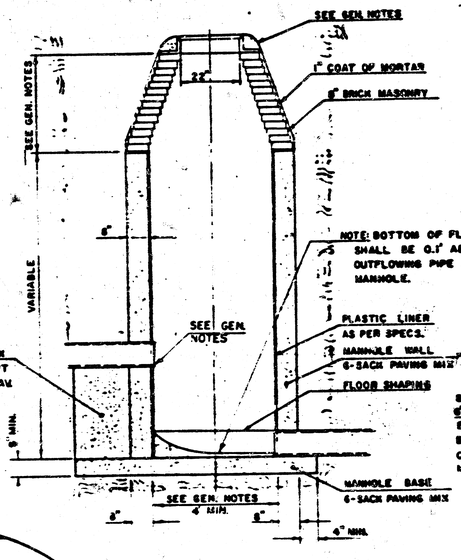
SIDE VIEW

WEIGHT OF MANHOLE COVER = 150 lbs

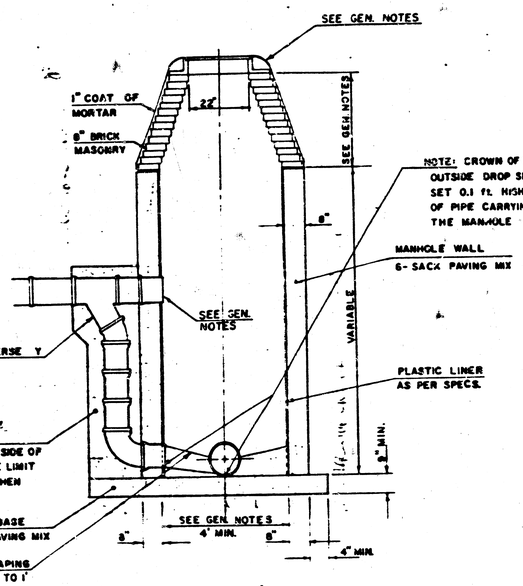
TYPE "D" MANHOLE

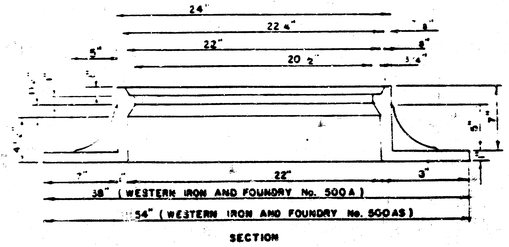


TYPE "D" INSIDE DROP MANHOLE



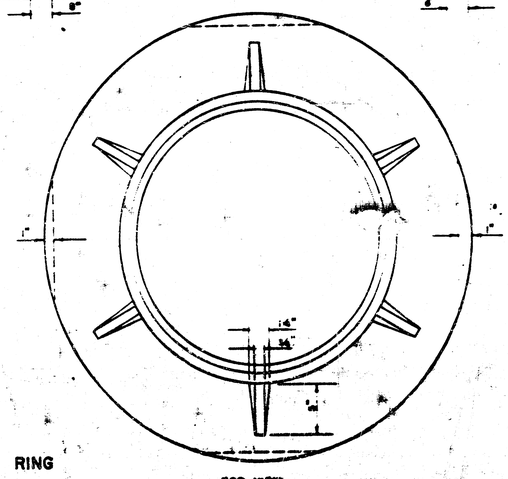
TYPE "D" OUTSIDE DROP MANHOLE





SECTION

WEIGHT OF MANHOLE RING NO 500A = 325 lbs
WEIGHT OF MANHOLE RING NO 500AS = 400 lbs



TOP VIEW

MANHOLE RING

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 6 SACKS OF CEMENT PER CUBIC YARD WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. PLASTIC LINING INSIDE THE MANHOLE SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN THE STANDARD SPECIFICATIONS FOR PLASTIC LINING FOR REINFORCED CONCRETE PIPE FOR SANITARY SEWER CONSTRUCTION. ALL INSIDE SURFACES OF THE MANHOLE WALL WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE PROTECTED BY THE PLASTIC LINING. TYPE D MANHOLES MAY BE USED ON PIPE SIZES 10" 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.

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 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. COST OF FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLES CONSTRUCTED.

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4. 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.

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8. 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.

9. PLASTIC LINING SHALL BE AMERON-PLASE, T-LOCK, OR APPROVED EQUAL.