CONSTRUCTION PLANS FOR

MAIN 17

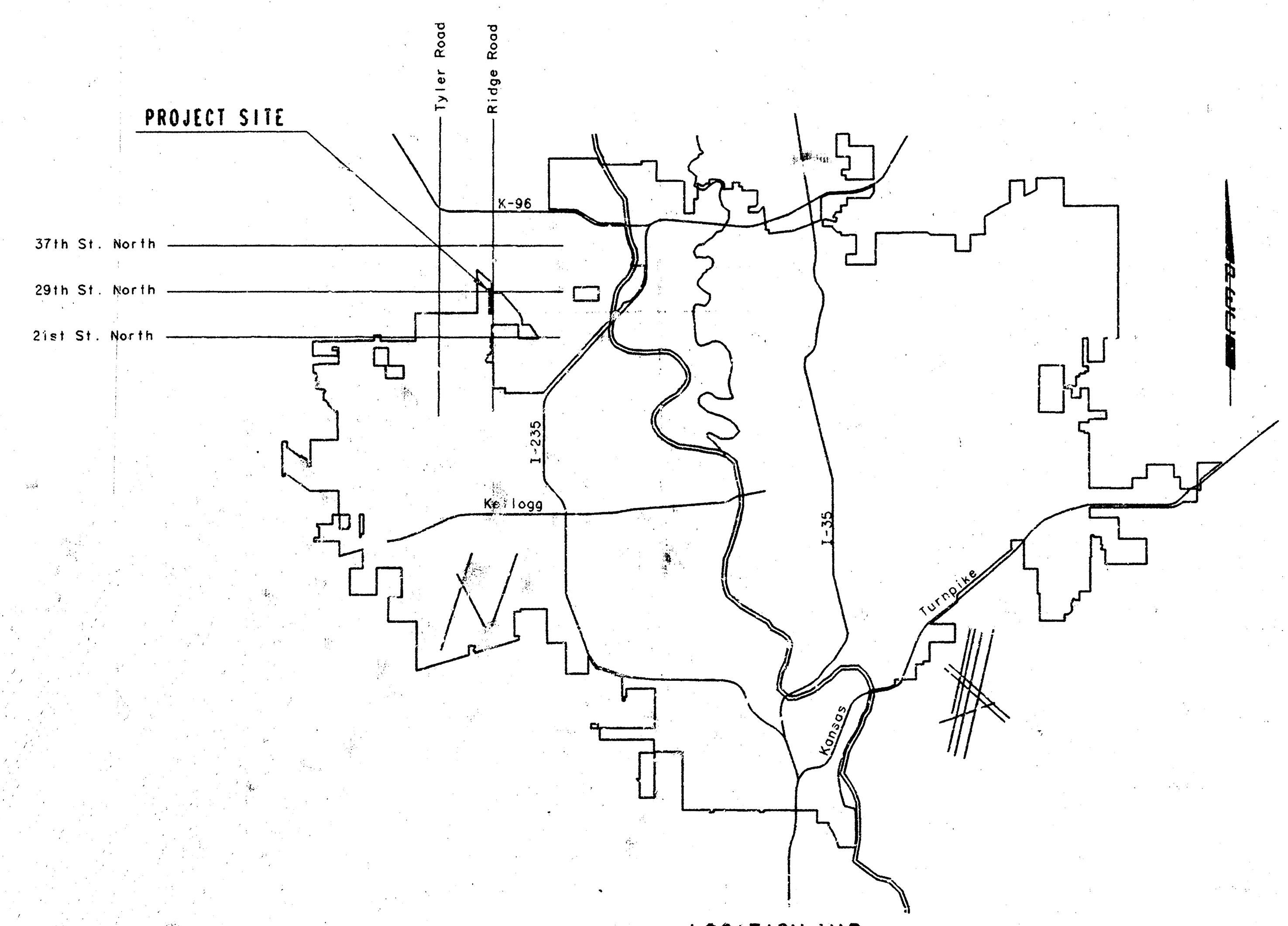
OF THE

SOUTHWEST INTERCEPTOR SEWER

THE CITY OF WICHITA,

SEDGWICK COUNTY, KANSAS

MICHAEL E. LINDEBAK, P.E.-CITY ENGINEER



LOCATION MAP

INDEX OF SHEETS

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Booked 4-21-94 JFB As Per Plan

INDEX CODE 741496

CITY OF WICHITA PROJECT NO. 468-76-245-82298-000-000-001

MAY, 1993

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

ENGINEERS

WICHITA, KANSAS

MICHAEL D. SCHOMA... LICENSED KANSAS PROFESSIONAL ENGINEER 5/21/93

DRAWING NAME: 34-93068-4 FL SS TITLE
LOCATION: E4 #250
CENTER COORDINATES:
ROTATION ANGLE:
DATE LAST WORKED ON: MAY 20, 1993
SPECIAL INSTRUCTIONS:

EN-RFJ

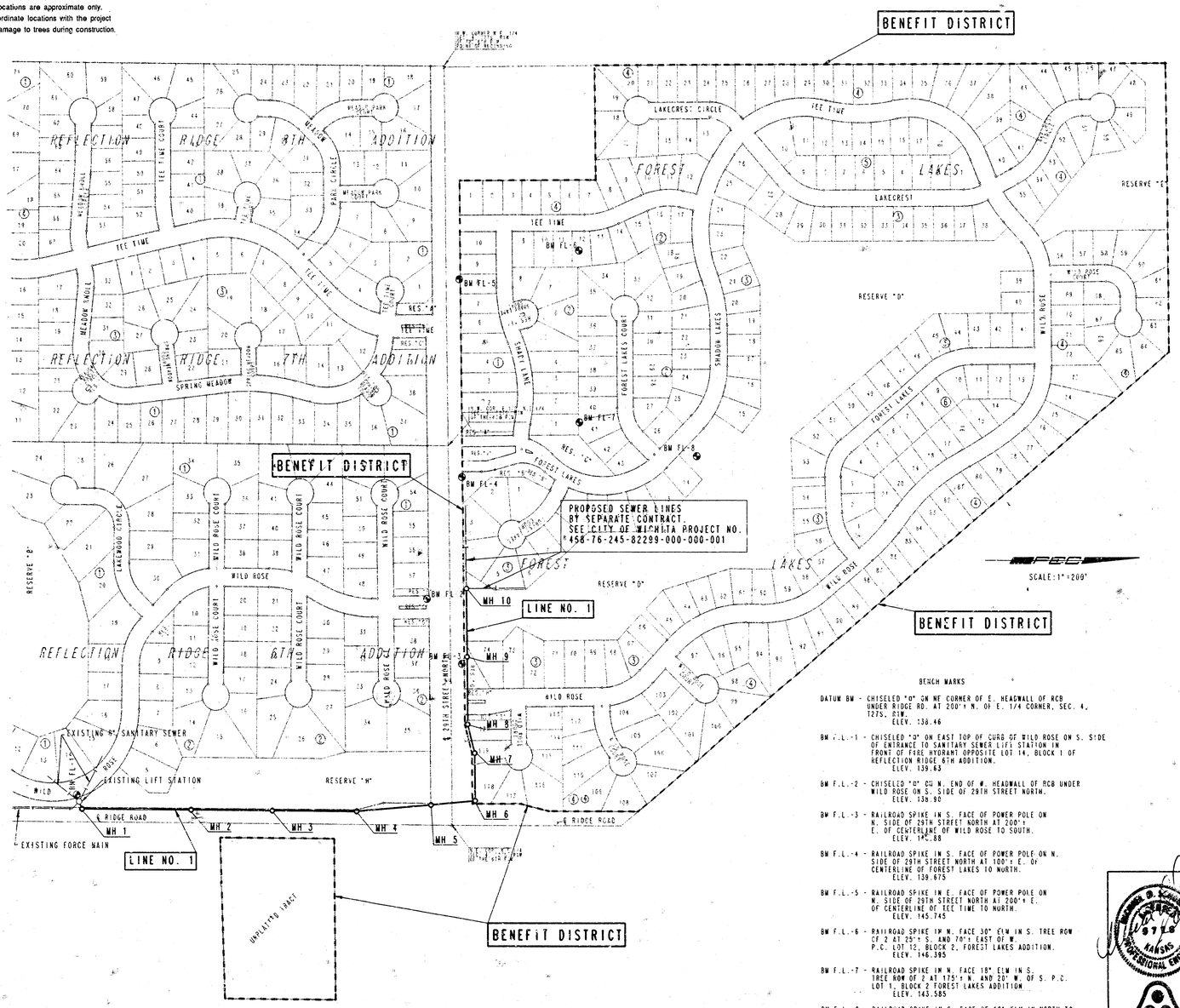
SEWER SERVICE TABLE

(See detail and notes, sheet no. 11)

NO.	SIZE	LOCATION				FOR INFORMATION ONLY		RECORD INFORMATION (To be completed by Project Inspector)		NO.
		BLOCK NO.	LOT NO.	LINE NO.	STATION/ DIRECTION	APPROXIMATE LENGTH 4"PIPE VERTICAL	APPROXIMATE LENGTH 4"PIPE HORIZONTAL	DISTANCE FROM NEAREST MANHOLE UPSTREAM	DISTANCE FROM NEAREST MANHOLE DOWNSTREAM	
1	10"x4"	4	119	1	16+25/Rt.	9.5'	14'			1
2	10"x4"	4	120	1	16+90/Rt.	9.5'	14'			2

Notes:

1. Vertical Riser Pipe shall be extended to 2' minimum above ground water elevation and 4' maximum below finished ground elevation.
2. Service connection locations are approximate only. Contractor shall coordinate locations with the project inspector to avoid damage to trees during construction.



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.
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: ARKLA GAS CO., THE WICHITA WATER DEPARTMENT, MULTIMEDIA CABLEVISION, K.G.&E. (ELECTRIC), AND SOUTHWESTERN BELL TELEPHONE
5. 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 LOCATIONS, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR THE DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL 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 LUMP SUM PRICE BID FOR "SITE RESTORATION".
7. ALL LAWN/TURF AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE RESTORED WITH THE SAME GRASS/SOD AS EXISTING. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCH, AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. AR18 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".
8. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED AND TREE TRIMMINGS SHALL BE DISPOSED OF ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL ALSO BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED. ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN WILL REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS MAY REQUIRE ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED DISPOSAL LOCATION.
9. THE CONTRACTOR SHALL AVOID REMOVAL OR TRIMMING OF ANY TREES OR SHRUBS WHERE POSSIBLE. WHERE THE CONTRACTOR BELIEVES THE REMOVAL OR TRIMMING IS UNAVOIDABLE, HE SHALL OBTAIN THE CONCURRENCE OF THE ENGINEER BEFORE PROCEEDING WITH SUCH WORK. COSTS FOR TREE/SHRUB REMOVAL AND TRIMMING, REGARDLESS OF SIZE, SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM BID FOR "SITE CLEARING".
10. THE CONTRACTOR SHALL PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION.
11. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS' ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
12. THE CONTRACTOR SHALL PROVIDE MOUNDED EARTH AT MANHOLES 1, 2, 3, 5, 9, AND 10 AS SHOWN ON THE PLAN/PROFILE SHEETS. COSTS FOR MOUNDING SHALL BE CONSIDERED SUBSIDIARY TO THE LUMP SUM PRICE BID FOR "SITE RESTORATION".
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW OF SEWAGE THROUGH CONSTRUCTION. CONTRACTOR'S PROPOSED METHOD FOR MAINTAINING SEWAGE FLOW SHALL BE APPROVED BY THE ENGINEER. COST OF MAINTAINING FLOW OF SEWAGE THROUGH CONSTRUCTION WILL NOT BE PAID FOR DIRECTLY AND SHALL BE CONSIDERED AS SUBSIDIARY TO THE 12" PVC PIPE INSTALLED
14. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL BUSINESS OR APARTMENT TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION EXCEPT AS NOTED ON SHEET NO. 6 AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS.

BENCH MARKS

DATUM BM - CHISELED "O" ON NE CORNER OF E. HEADWALL OF RCB UNDER RIDGE RD. AT 200'± N. OF E. 1/4 CORNER, SEC. 4, 27S, 01W. ELEV. 138.46

BM F.L.-1 - CHISELED "O" ON EAST TOP OF CURB OF WILD ROSE ON S. SIDE OF ENTRANCE TO SANITARY SEWER LIFT STATION IN FRONT OF FIRE HYDRANT OPPOSITE LOT 14, BLOCK 1 OF REFLECTION RIDGE 6TH ADDITION. ELEV. 139.63

BM F.L.-2 - CHISELED "O" ON W. END OF W. HEADWALL OF RCB UNDER WILD ROSE ON S. SIDE OF 29TH STREET NORTH. ELEV. 138.90

BM F.L.-3 - RAILROAD SPIKE IN S. FACE OF POWER POLE ON N. SIDE OF 29TH STREET NORTH AT 200'± E. OF CENTERLINE OF WILD ROSE TO SOUTH. ELEV. 140.88

BM F.L.-4 - RAILROAD SPIKE IN S. FACE OF POWER POLE ON N. SIDE OF 29TH STREET NORTH AT 100'± E. OF CENTERLINE OF FOREST LAKES TO NORTH. ELEV. 139.675

BM F.L.-5 - RAILROAD SPIKE IN E. FACE OF POWER POLE ON N. SIDE OF 29TH STREET NORTH AT 200'± E. OF CENTERLINE OF TEE TIME TO NORTH. ELEV. 145.745

BM F.L.-6 - RAILROAD SPIKE IN N. FACE 30" ELM IN S. TREE ROW OF 2 AT 25'± S. AND 70'± EAST OF W. P.C. LOT 12, BLOCK 2, FOREST LAKES ADDITION. ELEV. 146.395

BM F.L.-7 - RAILROAD SPIKE IN N. FACE 18" ELM IN S. TREE ROW OF 2 AT 175'± N. AND 20' W. OF S. P.C. LOT 1, BLOCK 2 FOREST LAKES ADDITION ELEV. 143.585

BM F.L.-8 - RAILROAD SPIKE IN S. FACE OF 18" ELM IN NORTH TO SOUTH TREE ROW AT 25'± E AND 125'± N. OF E. CORNER OF LOT 26, BLOCK 2, FOREST LAKES ADDITION. ELEV. 141.61

PLAN — CHECKED — CHECKED — DATE 5/27/93 — BY MDK

DRAWING NAME: 34-93068-4 FISSMAIN KEY
LOCATION: SEC. 4 T27S R1W
CENTER COORDINATES: N 6250, E 7700
GRID: 1" = 200'
DATE LAST WORKED ON: MAY 20, 1993
SPECIAL INSTRUCTIONS:

No.	Revision	By	Date
3			

MAIN 17 OF THE
SOUTHWEST INTERCEPTOR SEWER

KEY MAP AND GENERAL NOTES

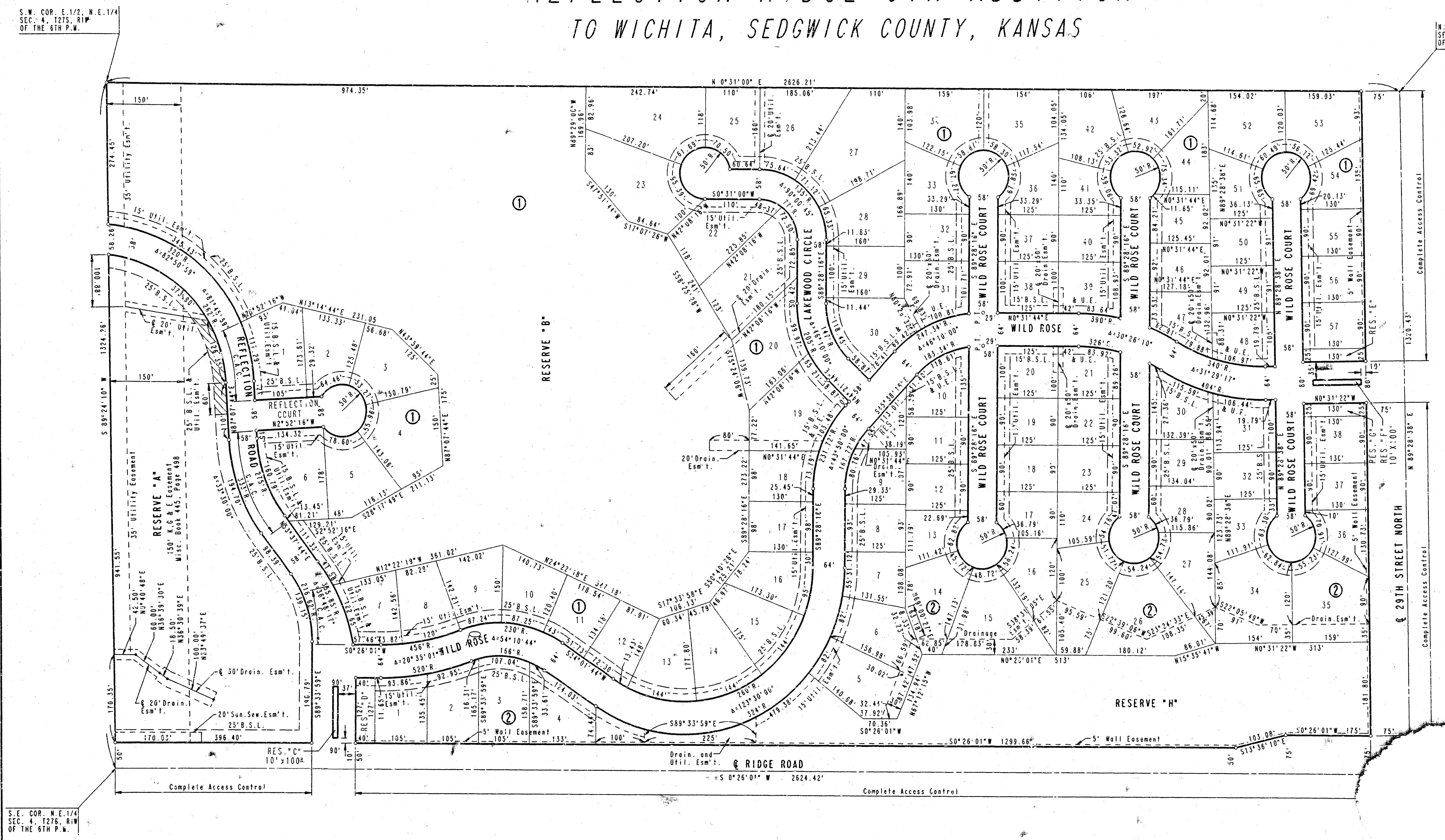
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 458-76-245-88298-000-000-001

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

Designed by MDS, MDK	Job No. 34-93068-4	Sht. 2 of 11
Drawn by TDS	Date April, 1993	

REFLECTION RIDGE 6TH ADDITION

TO WICHITA, SEDGWICK COUNTY, KANSAS



SCALE: 1" = 100'

○ = IRON SET

U.E. = UTILITY EASEMENT
B.S.L. = BUILDING SETBACK LINE
C.A.C. = COMPLETE ACCESS CONTROL

MINIMUM PAD ELEVATIONS (LOWEST OPENING)
ALL LOTS = 1327.5 M.S.L.

DRAWING NAME: 34-93068-4 L.S. PLAT3
LOCATION: ENG: 4692
CENTER COORDINATES:
ROTATION ANGLE:
DATE LAST WORKED ON: 4/20/93
EN-REJ

DATE:
CKD. BY:

No.	Revision	By	Date

MAIN 17 OF THE
SOUTHWEST INTERCEPTOR SEWER

PLAT

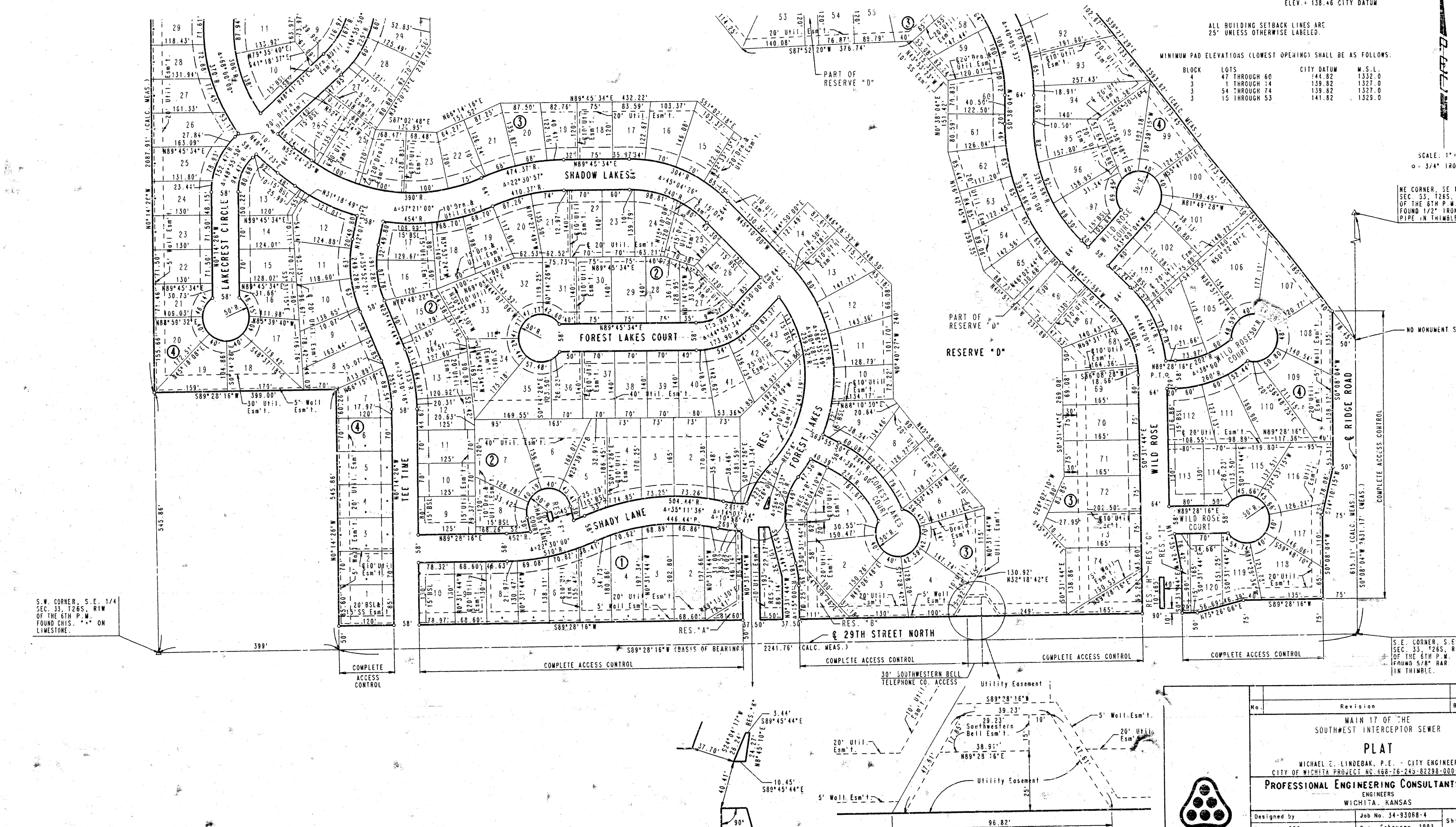
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-82298-000-000-001

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

Designed by		Job No. 34-93068-4	Sht. 3 of 11
Drawn by	DEP	Date February, 1993	

FOREST LAKES

AN ADDITION TO WICHITA, TO SEDGWICK COUNTY, KANSAS



B.M. - CHISELED "□" ON THE N.E. CORNER OF 3-7'x3' RCBB 175' NORTH OF THE S.E. CORNER N.E. 1/4 OF SEC. 4, T27S, R1W.
ELEV.=1325.64 M.S.L.
ELEV.= 138.46 CITY DATUM

ALL BUILDING SETBACK LINES ARE 25' UNLESS OTHERWISE LABELED.

MINIMUM PAD ELEVATIONS (LOWEST OPENING) SHALL BE AS FOLLOWS:

BLOCK	LOTS	CITY DATUM	M.S.L.
4	47 THROUGH 60	144.82	1332.0
3	1 THROUGH 14	139.82	1327.0
3	54 THROUGH 74	139.82	1327.0
3	15 THROUGH 53	141.82	1329.0

No.	Revision	By	Date

MAIN 17 OF THE SOUTHWEST INTERCEPTOR SEWER

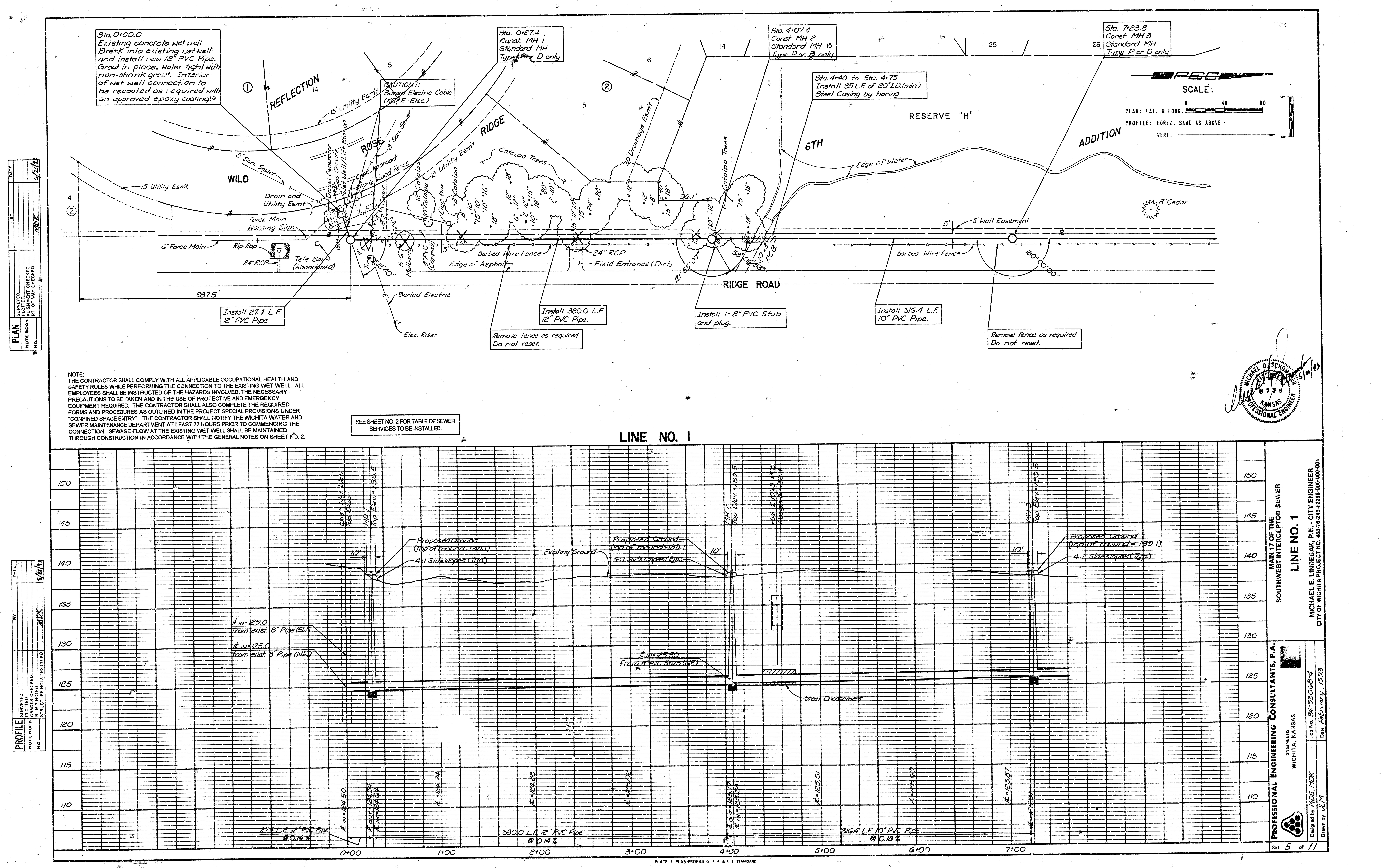
PLAT

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-82298-000-000-001

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

Designed by	Job No. 34-93068-4	Sht. 4 of 11
Drawn by DEP	Date February, 1993	

DRAWING NAME: 34-93068-5 FL SS PLAT1
LOCATION: E4 DWG.#593
CENTER COORDINATES:
ROTATION ANGLE:
DATE LAST WORKED ON: APR. 21, 1993
SPECIAL INSTRUCTIONS:
E - RFJ



NOTE:
THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE OCCUPATIONAL HEALTH AND SAFETY RULES WHILE PERFORMING THE CONNECTION TO THE EXISTING WET WELL. ALL EMPLOYEES SHALL BE INSTRUCTED OF THE HAZARDS INVOLVED, THE NECESSARY PRECAUTIONS TO BE TAKEN AND IN THE USE OF PROTECTIVE AND EMERGENCY EQUIPMENT REQUIRED. THE CONTRACTOR SHALL ALSO COMPLETE THE REQUIRED FORMS AND PROCEDURES AS OUTLINED IN THE PROJECT SPECIAL PROVISIONS UNDER "CONFINED SPACE ENTRY". THE CONTRACTOR SHALL NOTIFY THE WICHITA WATER AND SEWER MAINTENANCE DEPARTMENT AT LEAST 72 HOURS PRIOR TO COMMENCING THE CONNECTION. SEWAGE FLOW AT THE EXISTING WET WELL SHALL BE MAINTAINED THROUGH CONSTRUCTION IN ACCORDANCE WITH THE GENERAL NOTES ON SHEET NO. 2.

SEE SHEET NO. 2 FOR TABLE OF SEWER SERVICES TO BE INSTALLED.

MAIN 17 OF THE SOUTHWEST INTERCEPTOR SEWER

LINE NO. 1

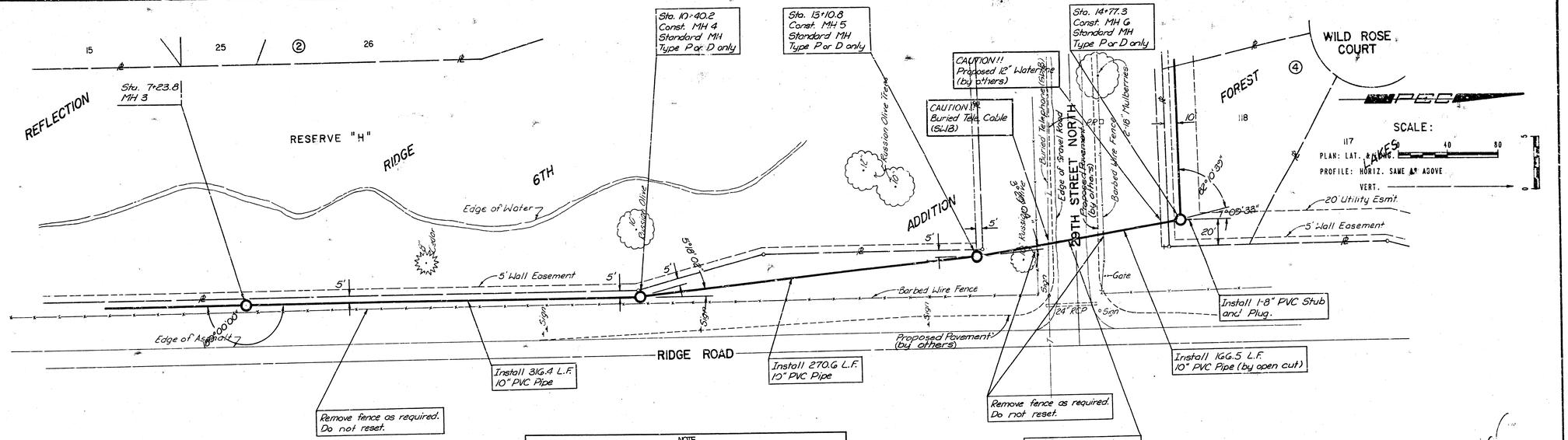
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-16-245-E2298-000-001

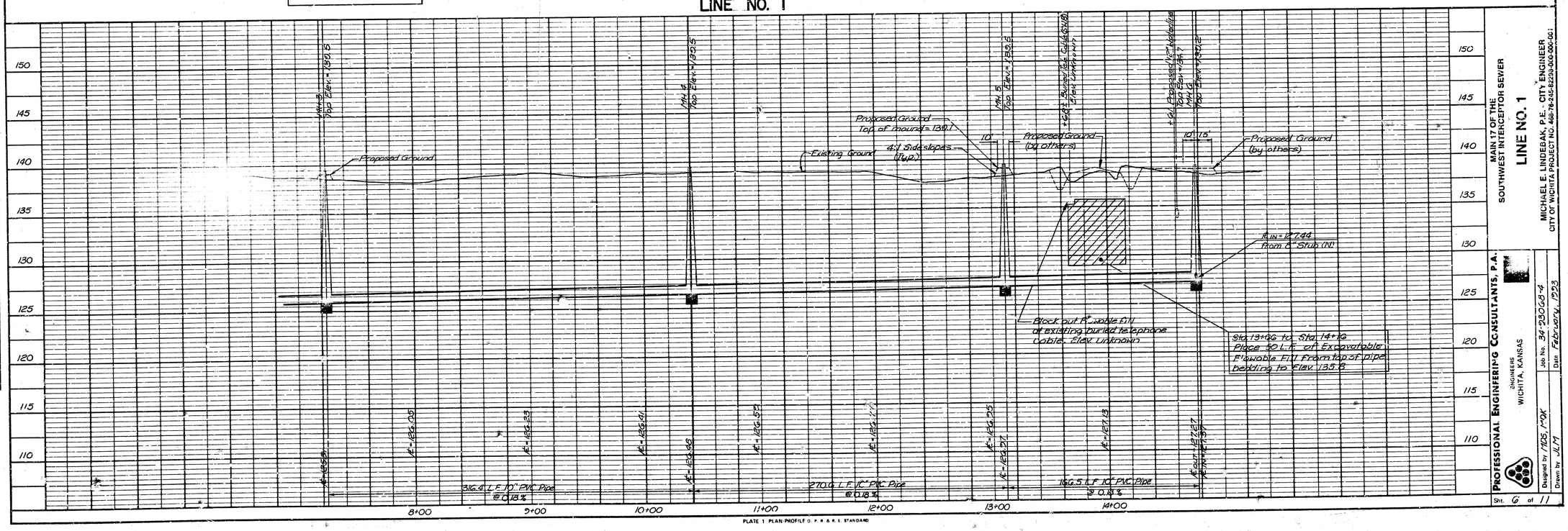
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Job No. 34-93068-4
Date February, 1993
Designed by MDS, MDK
Drawn by JLM

PLATE 1 PLAN-PROFILE D. F. & R. E. STANDARD

EUGENE DIETZGEN CO.





PLAN

NOTE BOOK

NO.

SURVEYED

PLOTTED

ALIGNMENT CHECKED

RT. OF WAY CHECKED

BY: MDK

DATE: 5/21/93

Sta. 7+23.8
MH 3

Sta. 10+40.2
Const. MH 4
Standard MH
Type P or D only

Sta. 13+10.8
Const. MH 5
Standard MH
Type P or D only

Sta. 14+77.3
Const. MH 6
Standard MH
Type P or D only

CAUTION!!
Proposed 12" Waterline
(by others)

CAUTION!!
Buried Tele. Cable
(SWB)

Install 316.4 L.F.
10" PVC Pipe

Install 270.6 L.F.
10" PVC Pipe

Install 166.5 L.F.
10" PVC Pipe (by open cut)

Install 1-8" PVC Stub
and Plug.

Remove fence as required.
Do not reset.

Remove fence as required.
Do not reset.

Remove and Replace
25.0 L.F. Gravel Road.

NOTE

AT LEAST 10 DAYS PRIOR TO BEGINNING CONSTRUCTION OF THE PROPOSED SANITARY SEWER CROSSING AT 29TH STREET NORTH, THE CONTRACTOR SHALL CONTACT MR. MICKEY THULL AT THE CITY OF WICHITA TRAFFIC ENGINEERING DEPARTMENT (268-4501), TO REQUEST A TEMPORARY ROAD CLOSING OF 29TH STREET NORTH AT THE WEST SIDE OF RIDGE ROAD. THE CONTRACTOR SHALL ALSO PROVIDE 10 DAYS ADVANCE NOTICE TO RESIDENTS OF ANY NEARBY PROPERTIES DIRECTLY AFFECTED BY THE WORK. THE CONTRACTOR SHALL EXPEDITE TRENCH AND BACKFILL OPERATIONS THROUGH THIS AREA TO MINIMIZE THE TERM OF THE ROAD CLOSING.

SEE SHEET NO. 2 FOR TABLE OF SEWER SERVICES TO BE INSTALLED.

MICHAEL D. SCHOMAKER
6778
KANSAS
5/21/93

LINE NO. 1

Block out Flowable Fill
of existing buried telephone
cable. Elev. Unknown

Sta. 13+66 to Sta. 14+16
Place 50 L.F. of Excavatable
Flowable Fill from top of pipe
bedding to Elev. 135.8

PROFILE

NOTE BOOK

NO.

SURVEYED

PLOTTED

GRADES CHECKED

B.M. NOTED

STRUCTURE NOTATIONS CHK'D

BY: MDK

DATE: 5/21/93

MAIN 17 OF THE
SOUTHWEST INTERCEPTOR SEWER

LINE NO. 1

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-82293-000-000-001

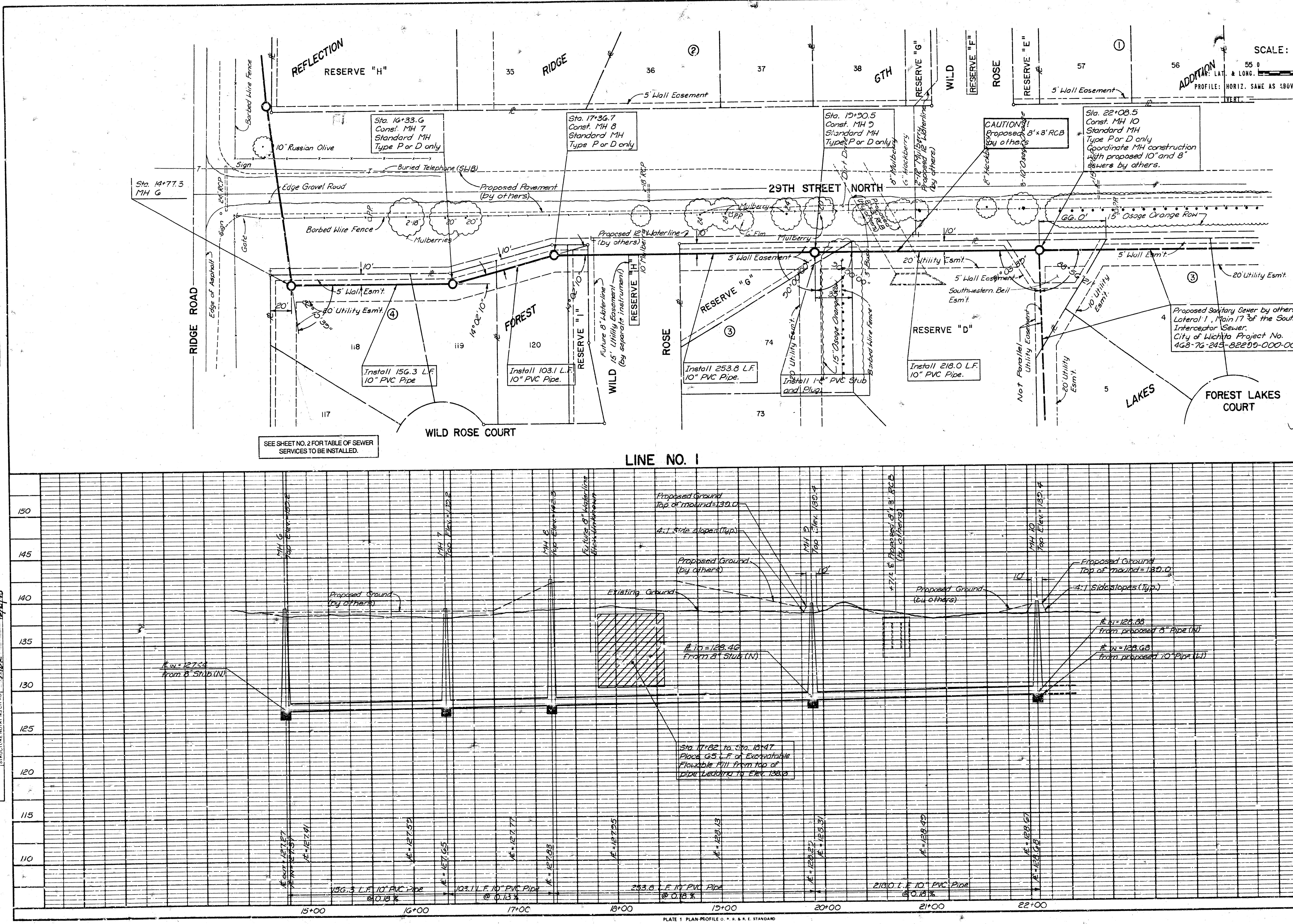
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by MDS, MDK
Job No. 34-93068-4
Drawn by JLM
Date February, 1993

Sht. 6 of 11

PLATE 1 PLAN-PROFILE O. P. R. & R. E. STANDARD

EUGENE DIETZGEN CO.



PLAN — SURVEYED, NOTE BOOK, ALIGNMENT CHECKED, NO., RT. OF WAY CHECKED — BY MDK — DATE 5/21/93

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, B. M. NOTED, NO., STRUCTURE NOTATIONS CHKD — BY MDK — DATE 5/21/93

MAIN 17 OF THE SOUTHWEST INTERCEPTOR SEWER

LINE NO. 1

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-82299-000-000-001

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

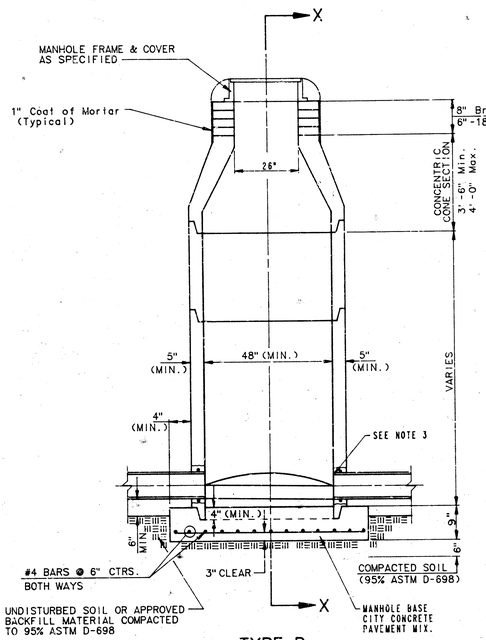
Job No. 34-93068-4
Date February, 1993
Designed by MDS, MDK
Drawn by JLM

Sht. 7 of 11

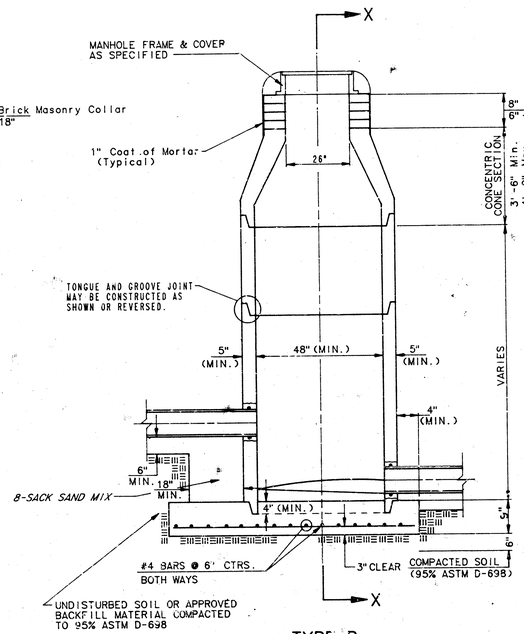
PLATE 1 PLAN-PROFILE C. H. & R. E. STANDARD
EUGENE DIETZGEN CO.

SEWER APPURTENANCES DETAILS

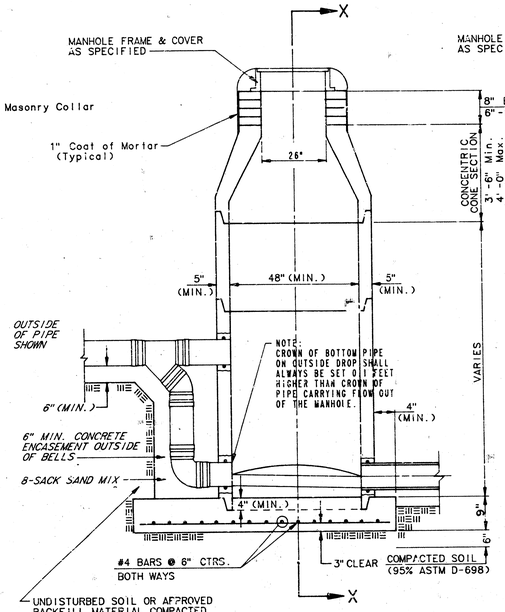
ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA



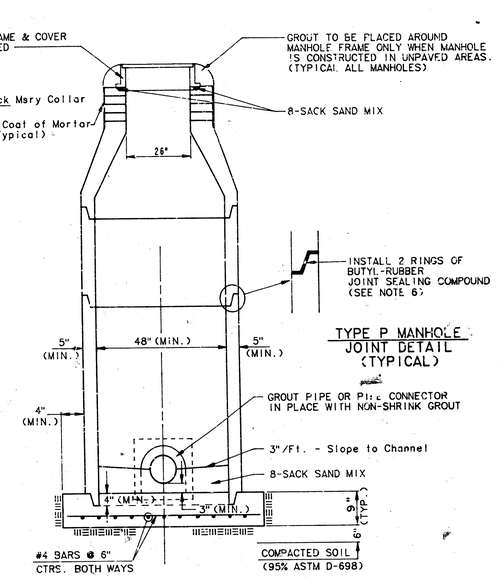
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



TYPE P MANHOLE
JOINT DETAIL
(TYPICAL)

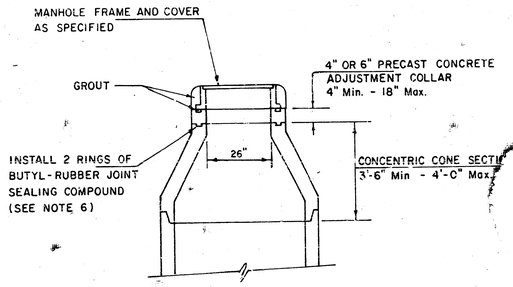
SECTION X
(TYPICAL)

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 TNEMEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL-NG. 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 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
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 OR 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 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.
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 FREE FALL DROP INSIDE MANHOLES SHALL NOT EXCEED 2'.

    THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
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 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR.



ALTERNATE CONSTRUCTION
IN UNPAVED AREAS

Sheet 8 of 11

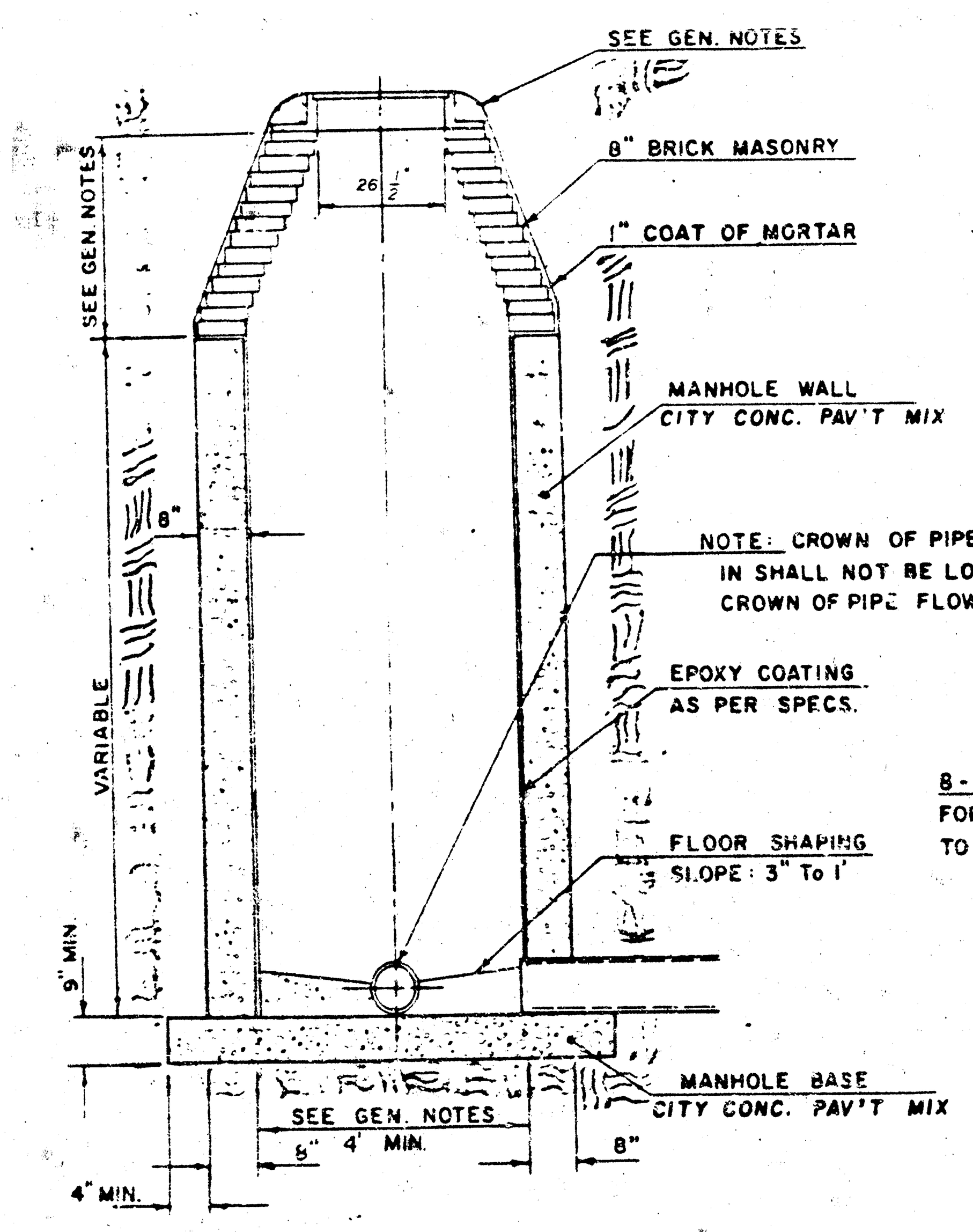
NOTE NO. 16 REVISED JAN. 1991
Revised 3-21-89
Revised 8-10-88
Revised: June 12 1986

SEWER APPURTENANCES DETAILS

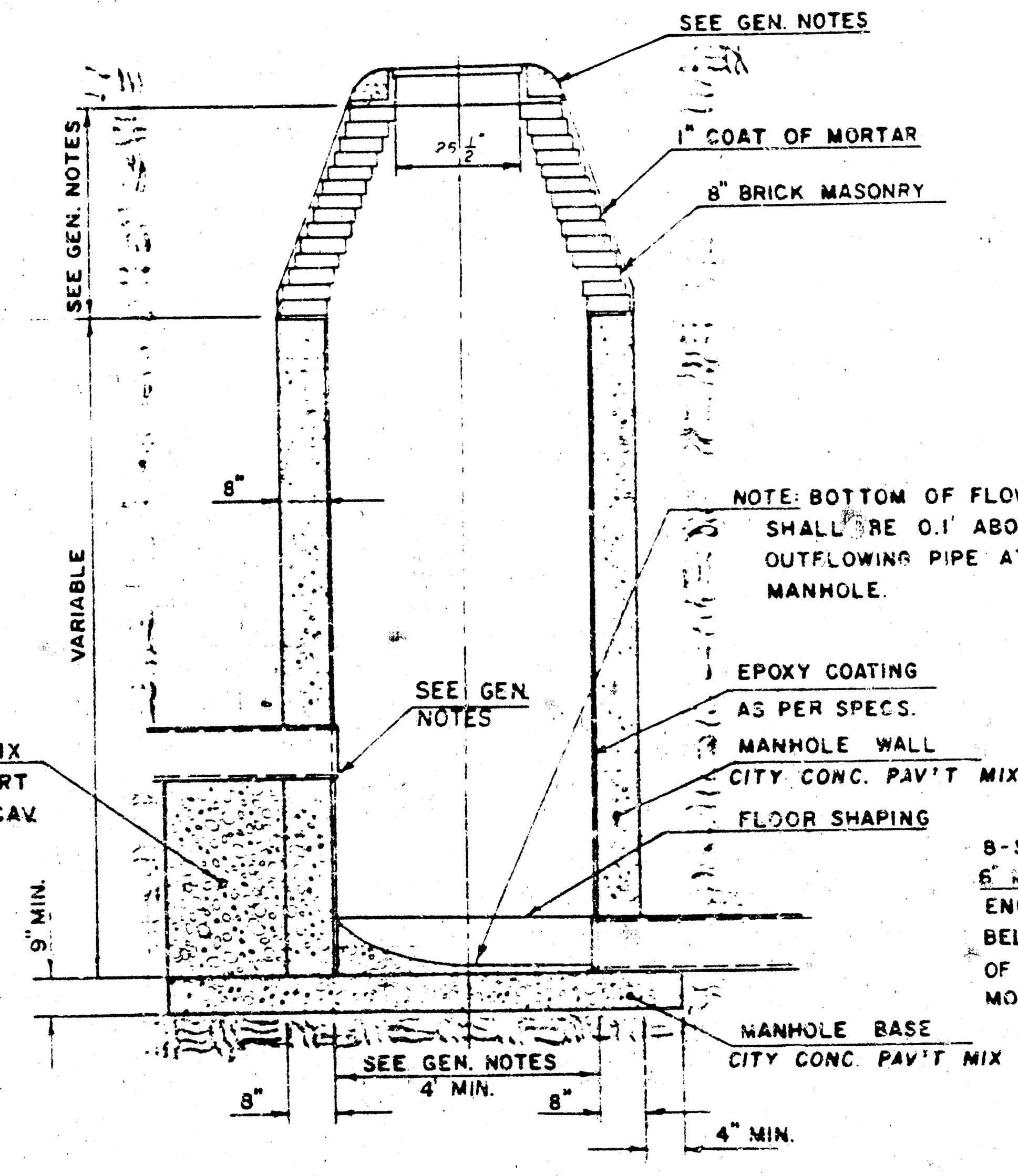
ADOPTED AS STANDARD DESIGN
BY

CITY OF WICHITA, KANSAS

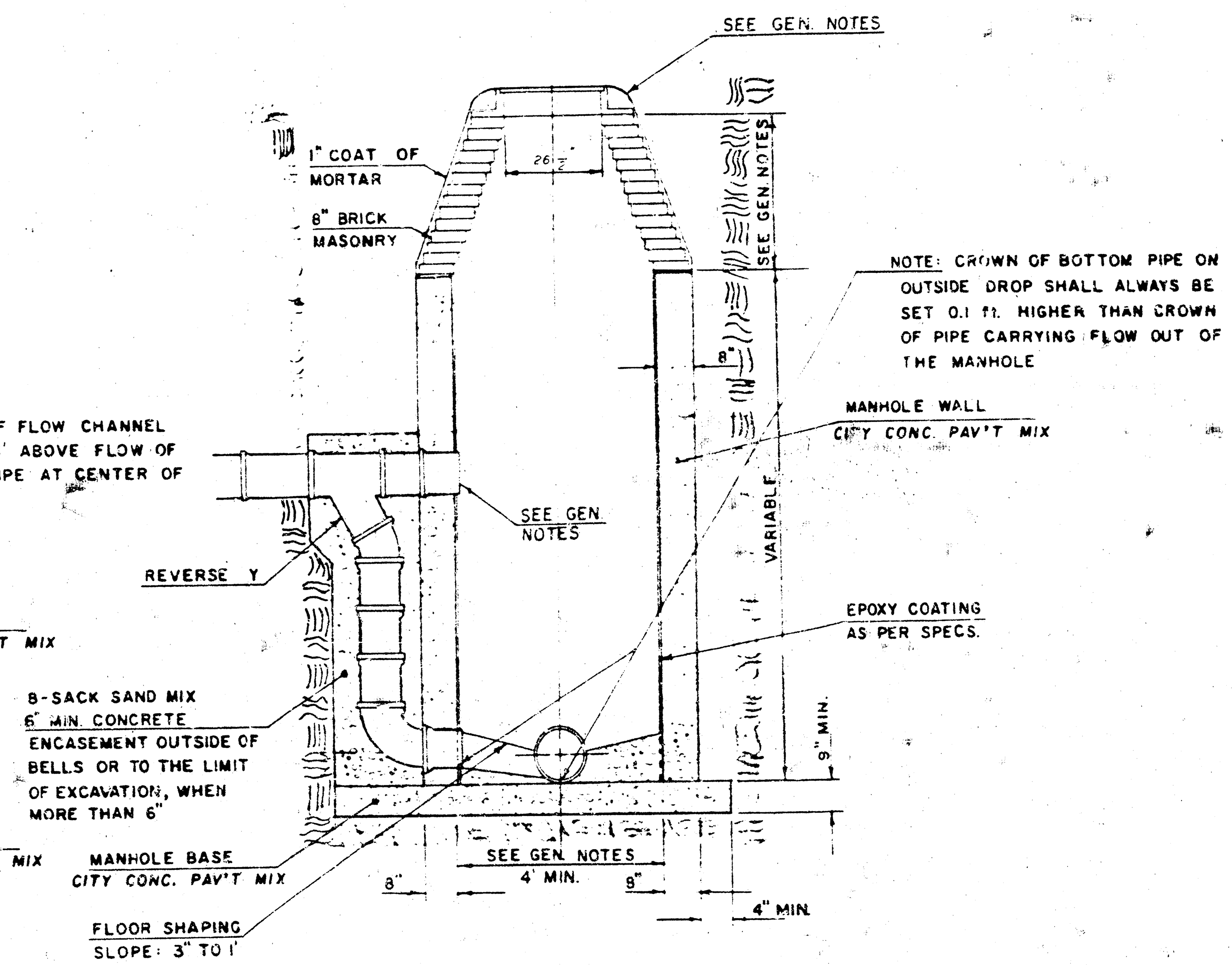
TYPE "D" MANHOLE



TYPE "D" INSIDE DROP MANHOLE



TYPE "D" OUTSIDE DROP MANHOLE



GENERAL NOTES

1. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 6 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS.

   ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WALL WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE PROTECTED BY AN APPROVED EPOXY COATING. TYPE "D" MANHOLES MAY BE USED ON PIPE SIZES 8" TO 36" WHEN THE MANHOLE DEPTH EXCEEDS THE REQUIRED CORBEL HEIGHT BY 1' PLUS THE OUTSIDE DIAMETER OF THE LARGEST PIPE IN THE MANHOLE.

   MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE A DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE THE PIPE SIZES ARE 24" OR LARGER SHALL HAVE A DIAMETER OF 5'. THE HEIGHT OF THE CORBELS ON 4' DIAMETER MANHOLES SHALL BE 4' MANHOLES HAVING A DIAMETER OF 5' SHALL HAVE CORBELS 6' IN HEIGHT. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.

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 THE MANHOLE.

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. 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.

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 DRAWINGS. MANHOLE FLOORS SHALL HAVE A SLOPE OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNEL SLOPED TOWARD THE FLOW CHANNELS. [illegible] THE TOP HALF REMOVED TO [illegible] FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. [illegible] THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.

5. PIPES INSTALLED WITHIN THE EXCAVATION [illegible] 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.

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 FREE FALL DROP INSIDE MANHOLES SHALL NOT EXCEED 2'.

   THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.

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.

NOTE NO. 7 REVISED JAN. 1991

APRIL 1987

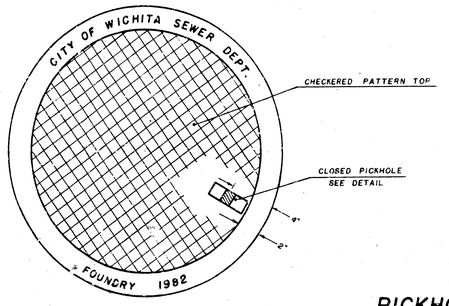
MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY

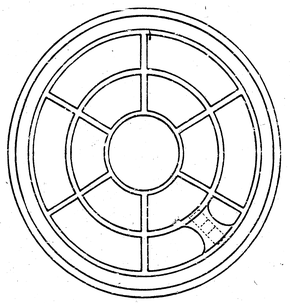
City of Wichita, Kansas

MANHOLE COVER

Weight: 180 Lbs.

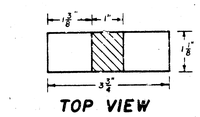


TOP VIEW

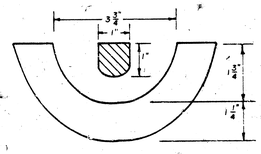


BOTTOM VIEW

PICKHOLE DETAIL



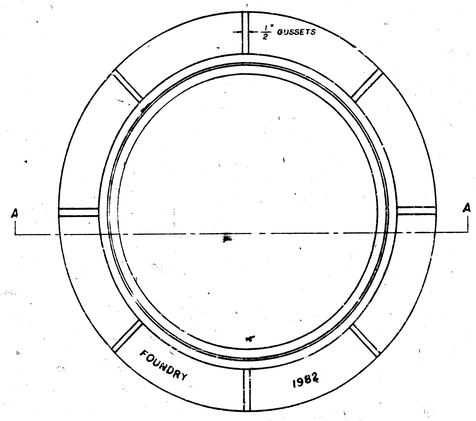
TOP VIEW



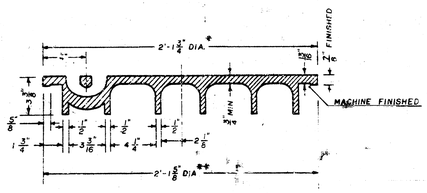
SECTION VIEW

MANHOLE FRAME

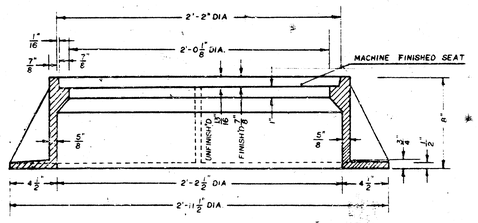
Weight: 240 Lbs.



TOP VIEW



SECTION VIEW



SECTION A-A

* OUTSIDE DIA TOP OF COVER

** OUTSIDE DIA BOTTOM OF COVER

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.

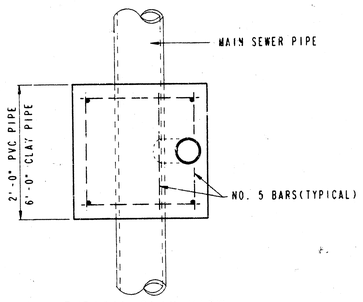
4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING 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.

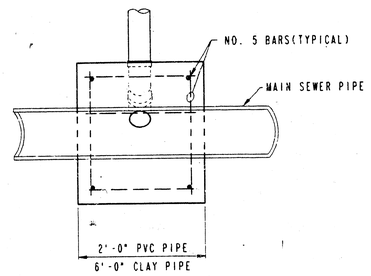
JNL DEC. 1981

VERTICAL RISER DETAILS

ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA, KANSAS
OCTOBER 1992

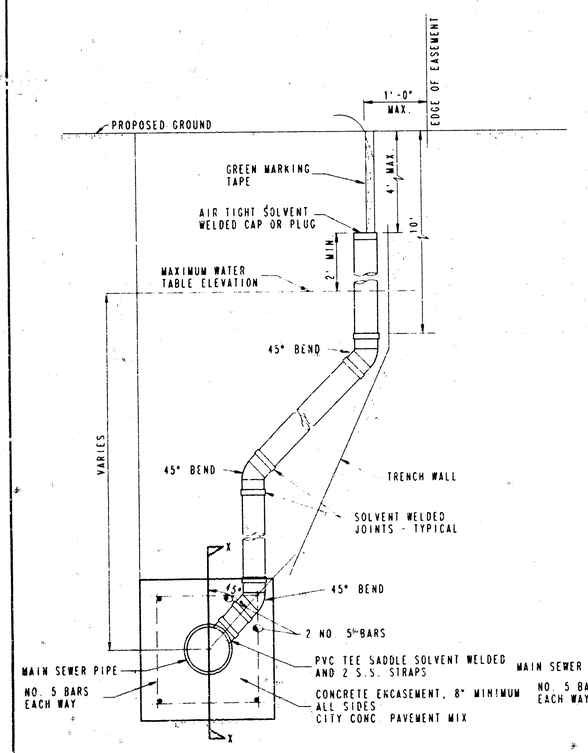


TYPICAL PLAN VIEW

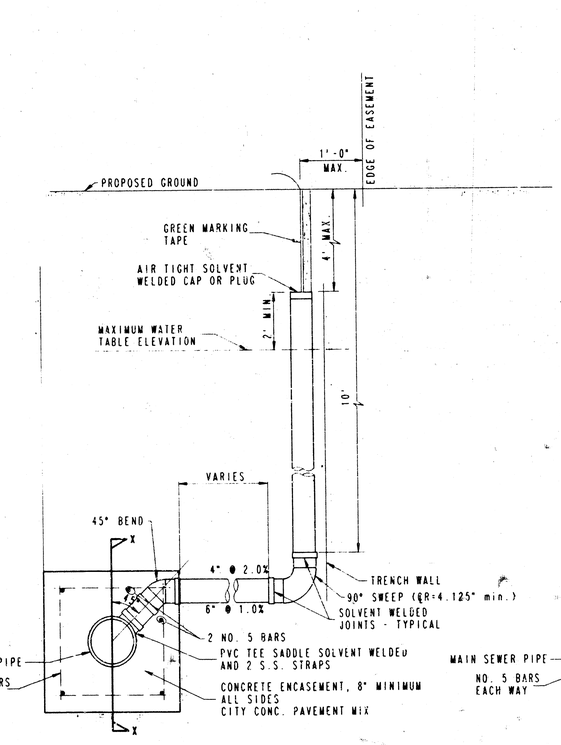


TYPICAL SECTION X-X

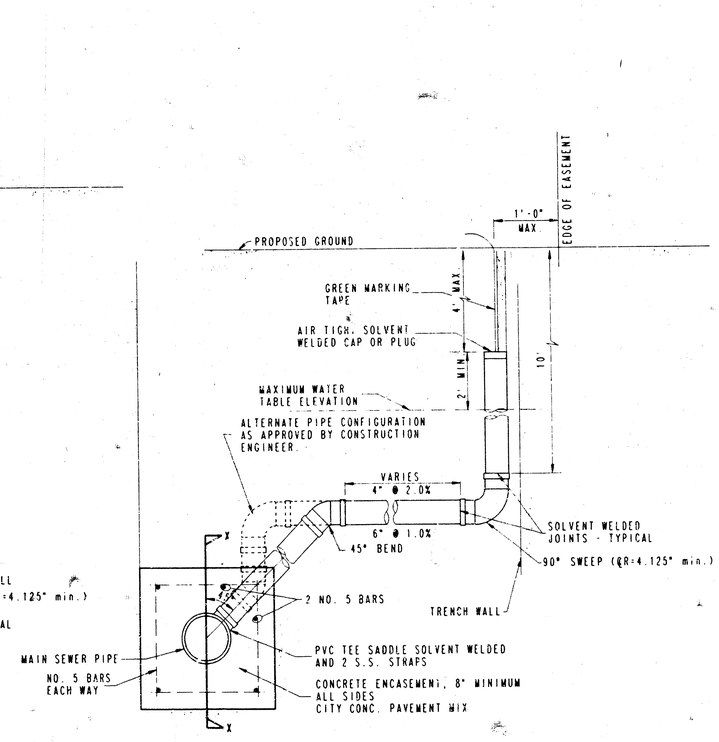
PLAN	CHECKED	DATE
	CHECKED	
	BY	



METHOD "A"



METHOD "B"



METHOD "C"

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

GENERAL NOTES

1. RISERS. Risers shall be installed to serve all lots or tracts where the sanitary sewer main is below the water table. Risers shall also be installed to serve all lots and tracts where the sanitary sewer main depth is greater than 12 feet below the proposed ground elevation. Installation of risers because of field conditions shall be as approved by the Construction Engineer. The location of the risers to serve developed property shall be approved by the property owner and the Construction Engineer.

2. PIPE STUBS. Pipe stubs shall be installed in manholes where locations of manholes will provide satisfactory service connection as determined by the Construction Engineer. The vertical distance between the flowline of the manhole pipe stub and the flowline of the sanitary sewer main out of the manhole shall not exceed 2 feet. Risers shall be utilized at manhole pipe stubs as indicated in Note 1. Manhole pipe stubs shall be set such that the top of the stub is not lower than the top of the sanitary sewer main.

3. SIZING. Pipe stubs and risers shall be sized according to the plans and riser table where risers are indicated by the plans. Where risers or pipe stubs are required because of field conditions, the risers and stubs shall be six-inch diameter for commercial or industrial properties and 4" or 6" diameter for residential properties, based on lot size and sanitary sewer main depth. Sizing of risers and stubs shall be approved by the Construction Engineer prior to installation.

4. RISER OR STUB MATERIAL. Risers and stubs shall be constructed of SDR 35 PVC Pipe or Schedule 40 PVC Pipe, meeting the requirements of the latest revision of A.S.T.M. All pipe joints shall be solvent welded.

5. REINFORCED CONCRETE ENCASEMENT. Riser connections to clay pipe sanitary sewers shall be reinforced concrete encased both ways from the riser centerline. The reinforced concrete encasement shall extend three feet from the riser centerline or stop at the first sanitary sewer pipe joint within three feet of the riser centerline. Riser connections to PVC Sanitary Sewer mains shall be reinforced concrete encased one foot each way from the riser centerline. The concrete encasement shall be reinforced using reinforcing steel as shown in the appropriate drawing. The concrete shall conform to the City Standard Specifications for concrete pavement.

6. BEDDING. Bedding around the sanitary sewer riser shall be compacted Pipe Bedding Type 1 or 2. The bedding shall be placed and compacted from the depth of the sanitary sewer main to the top of the sanitary sewer riser pipe. Compacted Pipe Bedding Type 1 or 2 shall be required for all risers whether constructed in vertical wall or sloped wall trenches. Bedding material and construction practices shall be approved by the Construction Engineer prior to installation.

7. SUPPORT OF RISERS. Sanitary sewer riser pipe shall be supported during trench backfill. The riser pipe shall be held in a vertical position at all times until trench backfill and compaction has been completed. Contractor's methods for supporting and backfilling the riser pipe shall be approved by the Construction Engineer.

8. PLUGGING. The ends of the riser pipes and manhole stubs shall be plugged using an airtight solvent welded cap or plug. Cap or plug fittings shall be approved by the Construction Engineer prior to installation. Caps or plugs which do not provide an airtight seal will not be accepted.

9. TOP OF THE RISER PIPE. The top elevation of the sanitary sewer riser pipe shall be built per plan elevations, unless otherwise directed by the Construction Engineer. Where riser elevations are not shown on the plans, the top of the risers shall be set at an elevation four feet below the proposed ground surface. If ground water is encountered, the top of the riser pipe shall be set at an elevation two feet (min.) above the maximum water table elevation, regardless of the riser elevation shown on the plans.

10. MARKING. Locations of the ends of the sanitary sewer riser pipe shall be marked by fastening green colored plastic tape to the end of the riser. The tape shall be supported by a length of wooden 2 x 4, extending from the top of the riser pipe to the proposed ground surface. The green tape shall be visible and extend one foot above the proposed ground surface. The green tape shall be 4 mil Polyethylene film with a minimum width of three inches, specifically manufactured for the purpose of identification of underground sewers.

11. LOCATION MEASURES. The project inspector shall record and document the location of all risers constructed as measured from the nearest manhole, indicating the direction from the manhole, the direction and distance from the main, riser size, and elevation of the top of the riser.

12. RISER LOCATION. The riser shall be located per plan if shown. If not shown on the plan, the riser shall be located at the center of the lot, within one foot of the property side of the easement for the lot being served. All riser locations shall be approved by the Construction Engineer prior to installation.

13. PAYMENT. "Sanitary sewer risers" shall be paid for at the contract unit price per each, which price shall be full compensation for all pipe, fittings, marking tape, length of wooden 2 x 4, reinforced concrete encasement, support during backfill, backfill, labor, site restoration, and any other items necessary to complete the work.

"Manhole stubs" shall be paid for at the contract unit price per each, which shall be full compensation for all labor, material, and incidentals necessary to complete the work including all pipe, fittings, reinforced concrete encasement, and all other items as required and listed for "Sanitary Sewer Risers"

18-13-1-8

Sheet // of //

11-1-10