CONSTRUCTION PLANS FOR

LATERAL 7, MAIN 24

OF THE

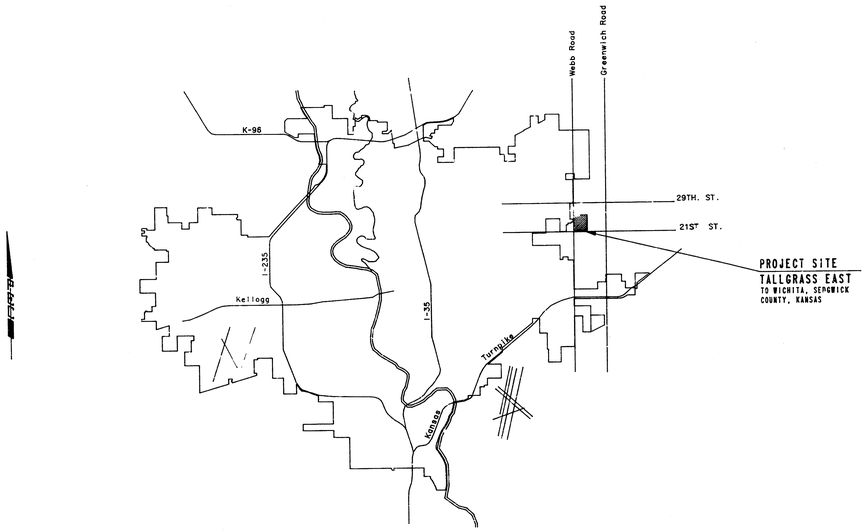
WAR INDUSTRIES SEWER

TO

THE CITY OF WICHITA,

SEDGWICK COUNTY, KANSAS

MICHAEL E. LINDEBAK, P.E. CITY ENGINEER



LOCATION MAP

INDEX OF SHEETS

SHEET NO.	TITLE
1	Title Sheet
2	Key Map
3	Plat
4-9	Plan/Profile
10	Type "P" Manhole Details
11	Type "C" Manhole Details
12	Frame and Cover Details

As BUILT
RDL
12-87

CITY OF WICHITA PROJECT NO. 468-76-245-81663-000-000-001

JANUARY, 1987

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

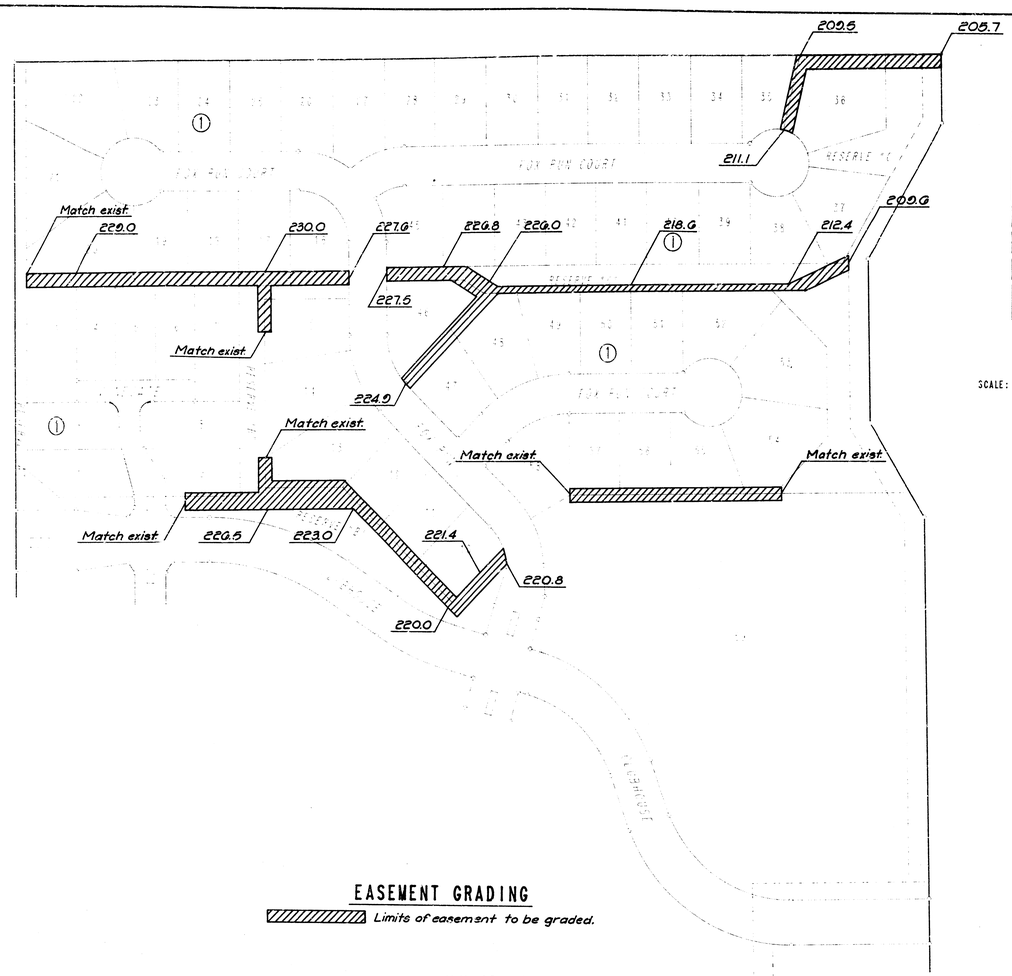
ENGINEERS

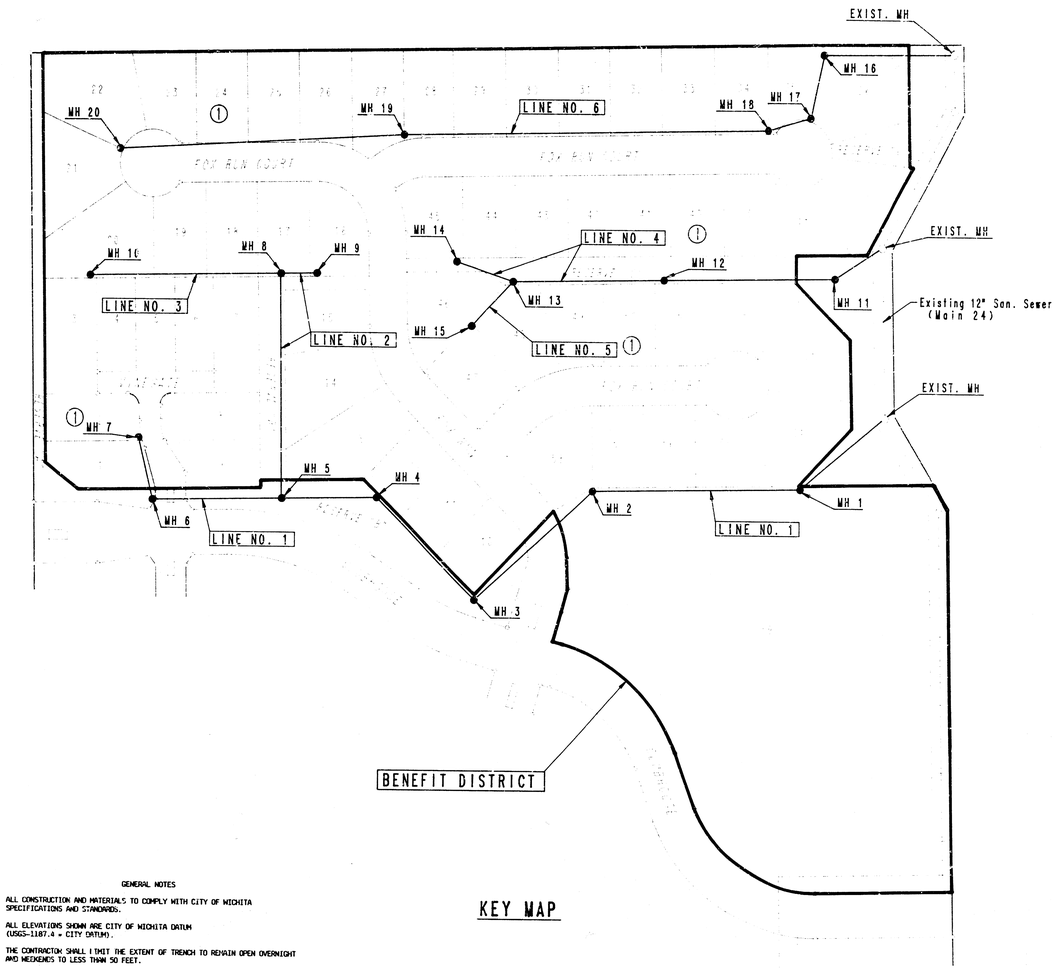
WICHITA, KANSAS

MICHAEL D. SCHOMAKER LICENSED 6778 KANSAS PROFESSIONAL ENGINEER

1/12

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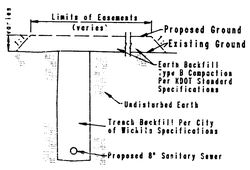




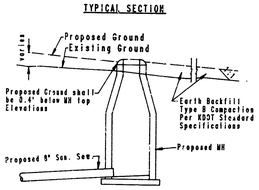
KEY MAP

EASEMENT GRADING

Limits of easement to be graded.

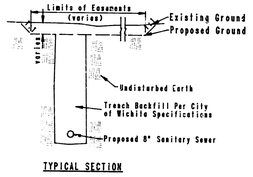


TYPICAL SECTION

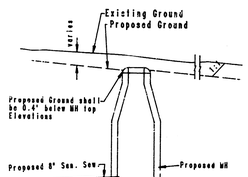


TYPICAL PROFILE

"FILL" SITUATIONS



TYPICAL SECTION



TYPICAL PROFILE

"CUT" SITUATIONS

BENCH MARK LIST

BM-A – (DATUM BM) CITY OF WICHITA DISC, 44' SOUTH AND 48' EAST OF THE CENTERLINE OF WEBB ROAD AND 21ST STREET NORTH.
ELEV. = 205.24

BM-B – CHISELED "X" IN NORTHEAST CORNER OF HEADWALL RCB 1050'± EAST OF WEBB ROAD ON 21ST STREET NORTH.
ELEV. = 202.55

BM-C – CHISELED "X" IN TOP OF CURB AT CENTERLINE EAST END MEDIAN ISLAND AT PLUMTHICKET CIRCLE AND WEBB ROAD.
ELEV. = 228.75

BM-D – CITY OF WICHITA DISC, 32' NORTH AND 28' EAST OF WEST 1/4 CORNER, SECTION 4, T27S, R2E.
ELEV. = 225.05

BM-E – RAILROAD SPIKE IN NORTHEAST FACE OF 12" OSAGE ORANGE, APPROXIMATELY 81.5' NORTH AND 17.5' EAST OF SOUTHEAST CORNER LOT 9, BLOCK 1, TALLGRASS EAST.
ELEV. = 229.92

BM-G – RAILROAD SPIKE IN EAST FACE OF 10" ASH, APPROXIMATELY 12.5' NORTH AND 10' WEST OF NORTHEAST CORNER LOT 9, BLOCK 4, TALLGRASS EAST.
ELEV. = 214.54

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, IF REQUIRED, (EXCLUDING WEEKENDS AND HOLIDAYS), THE CONTRACTOR SHALL CONTACT THE KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2470 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ANY EXISTING LINES WITHIN THE PROJECT AREA: GAS SERVICE COMPANY, K.G.&E., THE WICHITA WATER DEPARTMENT, AIR CAPITAL CABLEVISION, AND THE TELEPHONE COMPANY.
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 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.
7. 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.
8. CONTRACTOR SHALL GRADE THE SANITARY SEWER ALIGNMENT TO THE PROFILE AND ELEVATIONS SHOWN ON THE EASEMENT GRADING PLAN. 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.
9. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
10. PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF THE EXISTING MH'S AT PROPOSED LATERAL CONNECTIONS. THE CONTRACTOR SHALL ALSO FIELD VERIFY THE ELEVATION, SIZE, AND TYPE OF THE EXISTING 8" STUBS. ANY DISCREPANCIES BETWEEN FIELD INFORMATION AND INFORMATION SHOWN IN THESE PLANS SHALL BE REPORTED TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION.

MICHAEL D. SANDWARDEN LICENSED 6778 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

LATERAL 7, MAIN 24 of the
WAR INDUSTRIES SEWER

KEY MAP

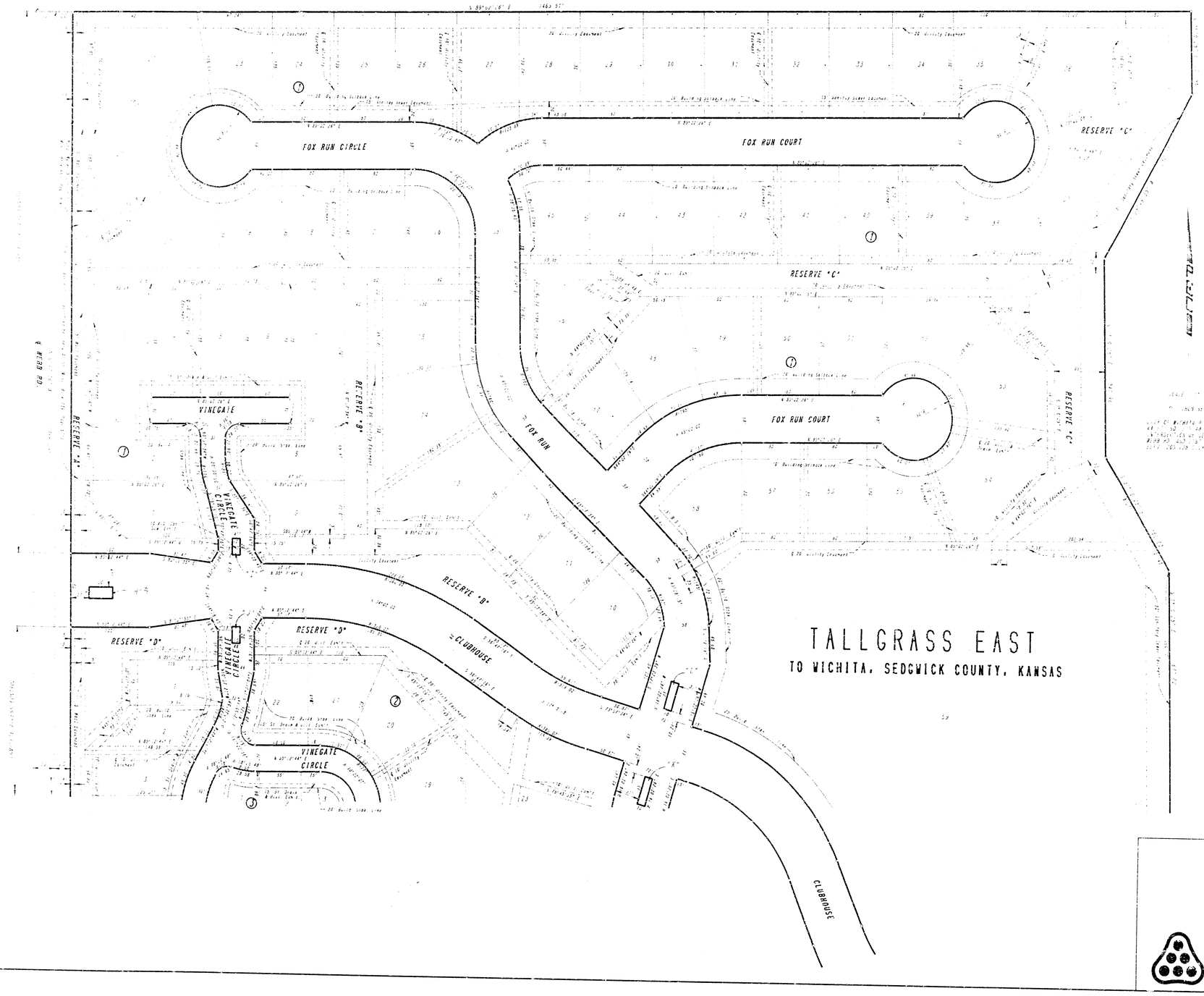
MICHAEL E. LINDEBAK, P.E.-CITY ENGINEER
C.O.W. Proj. No. 468-76-245-81663-000-000-001

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

Designed by WDS, CRY	Job No. 34-86476-7	Sh't. 2 of 12
Drawn by CAL	Date Jan. 1987	

2/12

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By Date

...t 24 of the
...ITIES SEWER

PLAT

MICHAEL E. LINDEBAK, P.E.-CITY ENGINEER
C.O.W. Proj. No. 468-76-245-81683-000-000-001

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

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Drawn by CAL	Date Jan. 1987	

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SCALE

0 40 80

PLAN: Lat. & Long.

PROFILE: Horiz. same as above

Vertical 5 0

Existing MH (Main 24)
Sta. 0+00.0, LINE No. 1
Connect to existing 8" Stub

Sta. 1 +~~66.7~~ +65.9
Const. MH 1
Standard MH
Type ~~R~~ or C

Sta. 4 +~~87.5~~ +86.4
Const. MH 2
Standard MH
Type ~~R~~ or C

Sta. 7 +~~30.6~~ +30.1
Const. MH 3
Standard MH
Type ~~R~~ or C

12"- Main 24, War Industries Sewer

81°53'38"

98°6'22"

38°19'12"

5'

5'

5'

40°35'17"

5'

85°35'17"

5'

3-10" Elms
30" Elm
2-12" Elms
4 Stn. b/w Fc

Install 166.7 L.F. 8" Pipe

Install 320.8 L.F. 8" Pipe

Install 243.1 L.F. 8" Pipe

LINE No. 1
See Sh't. No. 5

MICHAEL D. SCHRAMM
LICENSED
6778
KANSAS
PROFESSIONAL ENGINEER

LINE NO. 1

Existing MH
Top Elev. = 210.50
.56

MH 1
Top Elev. = 212.5
.34

MH 2
Top Elev. = 220.5
.41

MH 3
Top Elev. = 220.4
.37

Proposed Ground

Existing Ground

E out = 193.60 (12")
E in = 197.08
.67

E = 199.67
.67

E out = 200.18
E in = 200.93
.57

E = 202.90
E = 203.60
.59

E = 205.60
.63

E = 207.60
.66

E out = 209.43
E in = 209.85
.42

E = 209.60
.59
.55

E = 210.00
202.78

E = 210.40
.41

E out = 210.80
E in = 210.80
.54
.63

166.7 L.F. 8" Pipe @ 2.00%

320.8 L.F. 8" Pipe @ 2.00%

243.1 L.F. 8" Pipe @ 0.40%

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00

220 215 210 205 200 195 190

LATERAL 7, MAIN 24 OF THE
WAR INDUSTRIES SEWER

LINE NO. 1

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-8163-000-000-001

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
WICHITA, KANSAS

Job No. 34-86476-7

Designed By MDS CRY

Drawn By DYM CHT

Date JANUARY, 1987

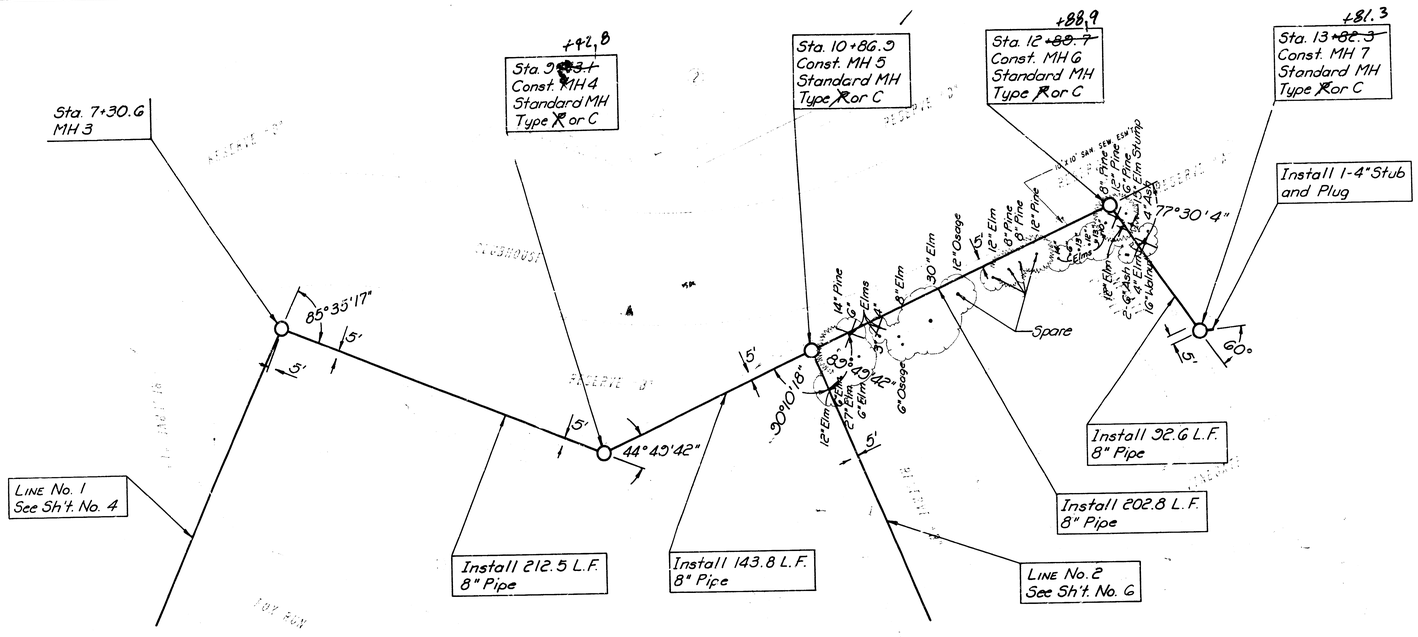
Sheet 4 of 12

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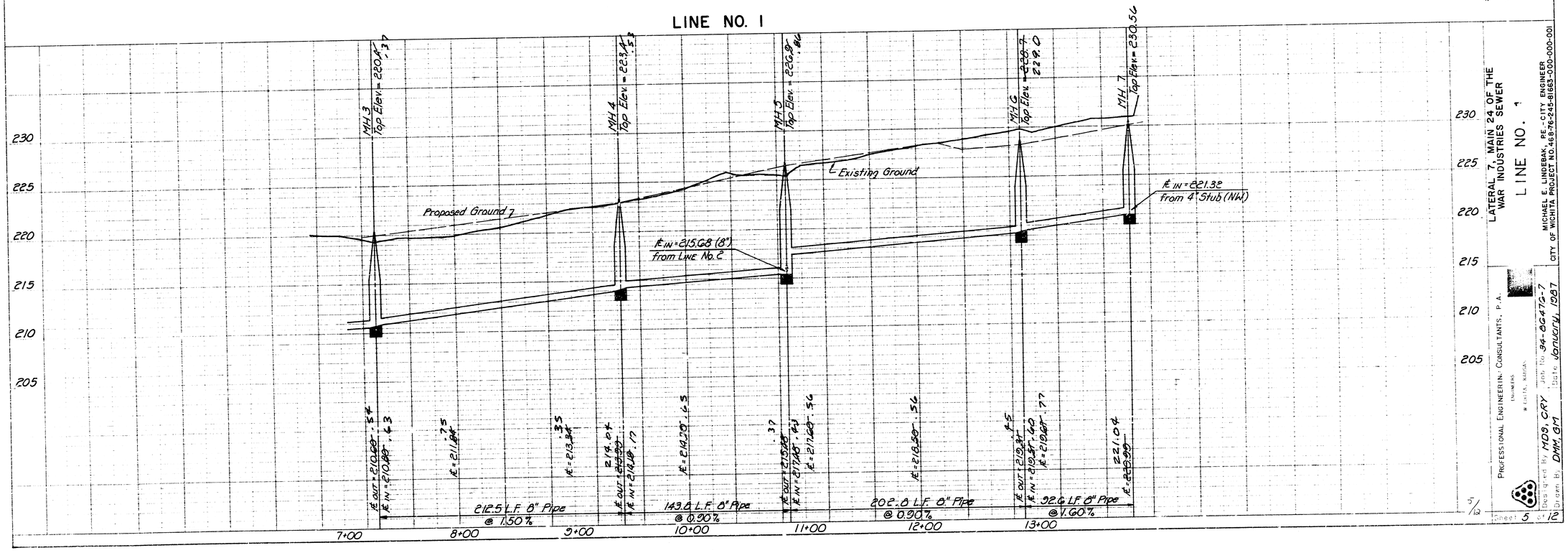
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PROFILE: Horiz. same as above
Vertical 5 0



MICHAEL D. SCHOMAKER
LICENSED
6778
KANSAS
PROFESSIONAL ENGINEER

LINE NO. 1



LATERAL 7, MAIN 24 OF THE
WAR INDUSTRIES SEWER

LINE NO. 1

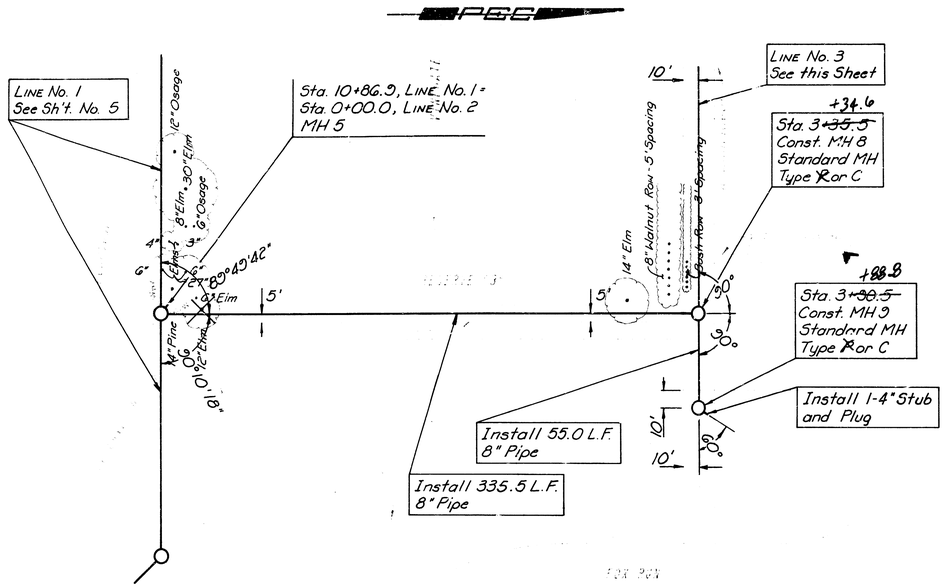
MICHAEL E. LINDEBAK, PE. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-81683-000-000-001

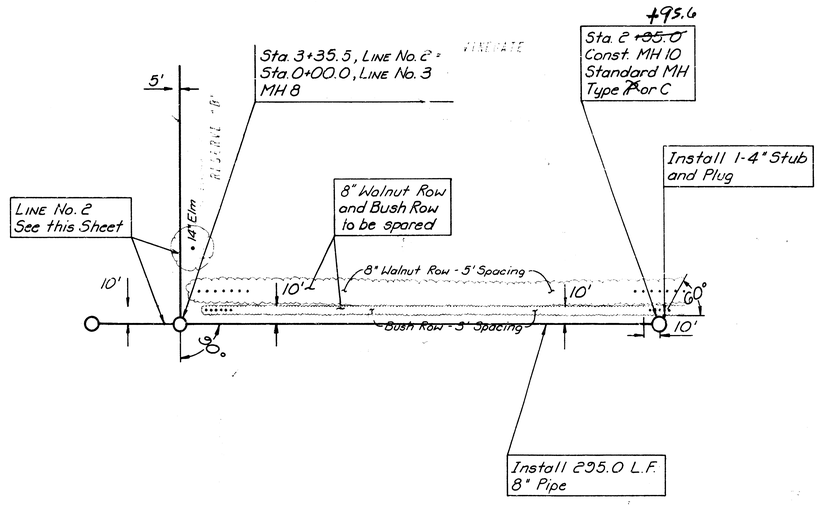
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ENGINEERS
WICHITA, KANSAS

Designed By: MDS, GRY
Drawn By: DMM, GMT
Job No. 34-86472-7
Date: January, 1987

Sheet 5 of 12

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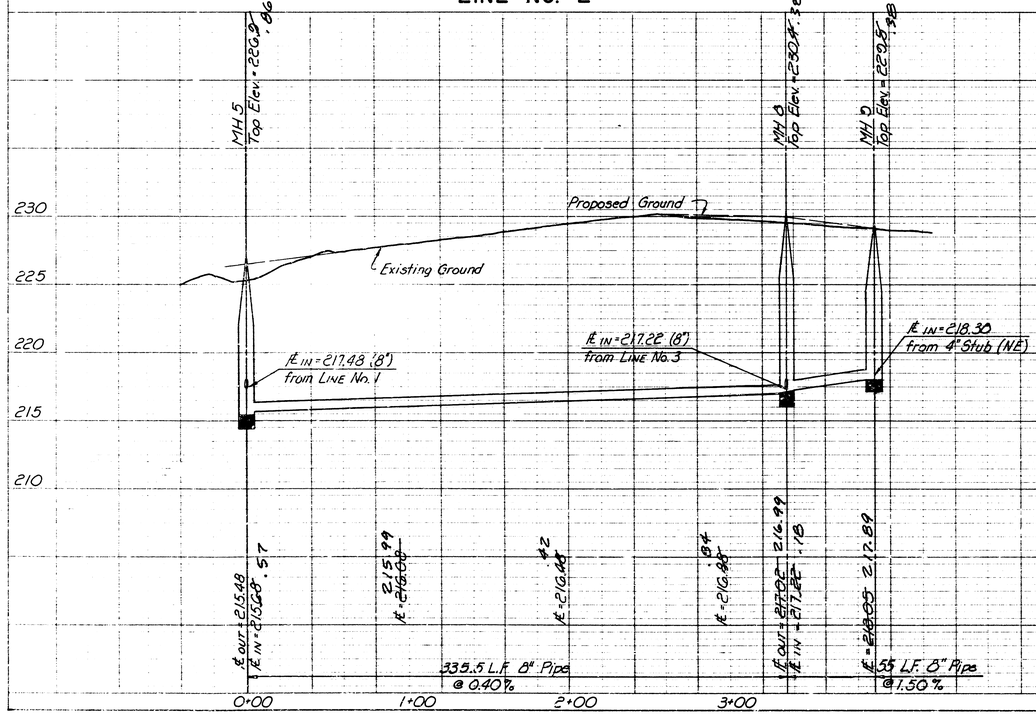
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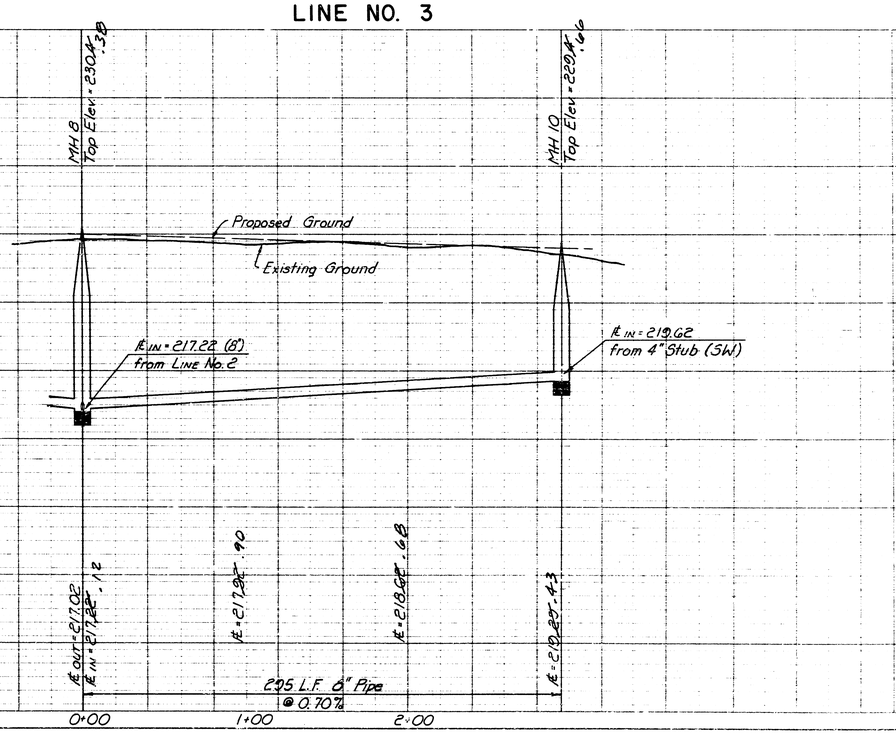
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MICHAEL D. SCHLANKER
LICENSED
6778
KANSAS
PROFESSIONAL ENGINEER

LINE NO. 2



LINE NO. 3



LATERAL 7, MAIN 24 OF THE
WAR INDUSTRIES SEWER

LINE NO. 2 & 3

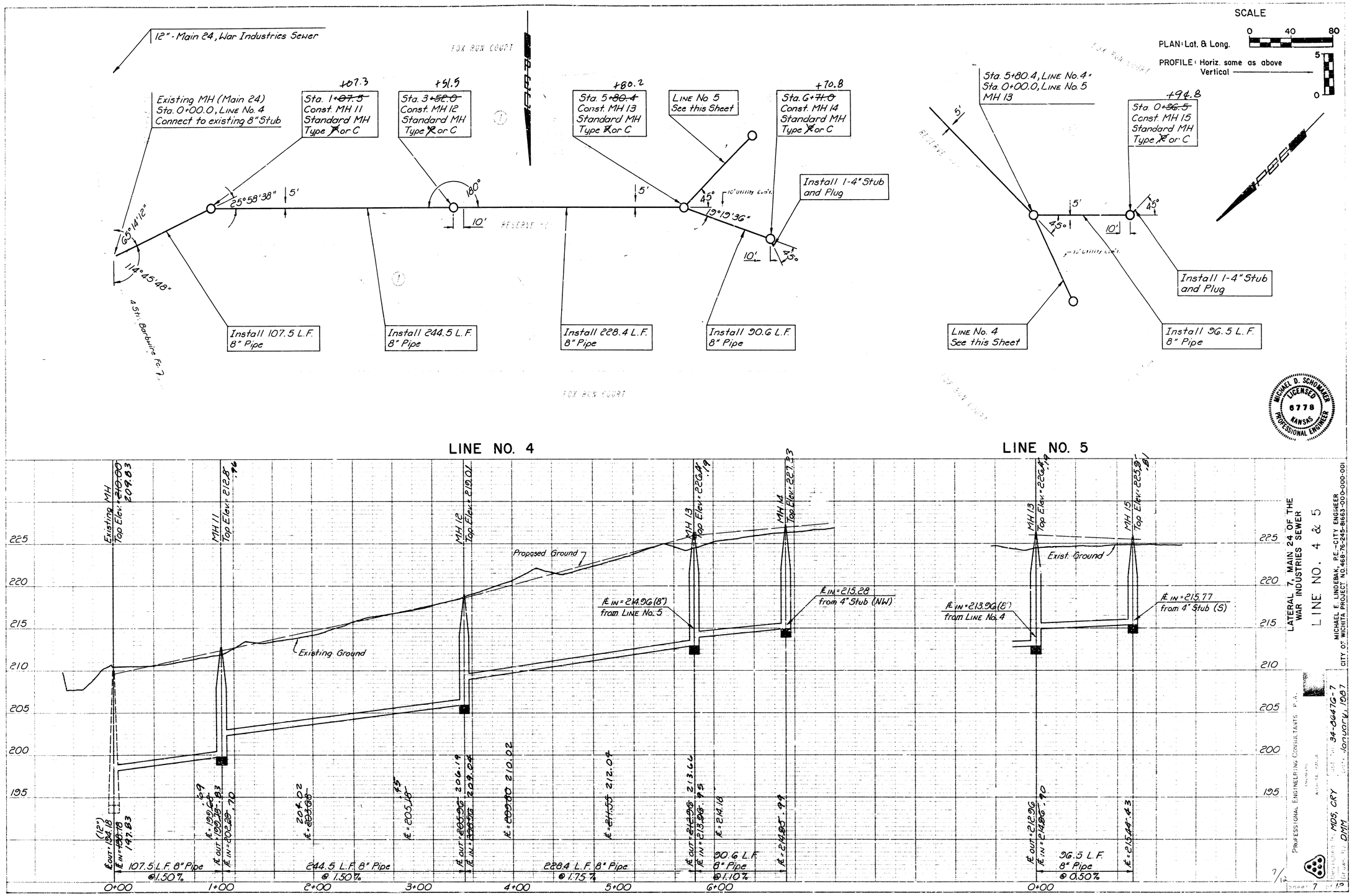
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-81663-000-000-001

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

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Drawn By: DMM, GM
Checked By:
Date: January, 1967
Job No. 34-BG476-7

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LINE NO. 4

LINE NO. 5

LATERAL 7, MAIN 24 OF THE WAR INDUSTRIES SEWER

LINE NO. 4 & 5

MICHAEL E. LINDEBAK, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-81663-000-000-001

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
WICHITA, KANSAS

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Job No. 34-0647G-7
Date: January, 1987

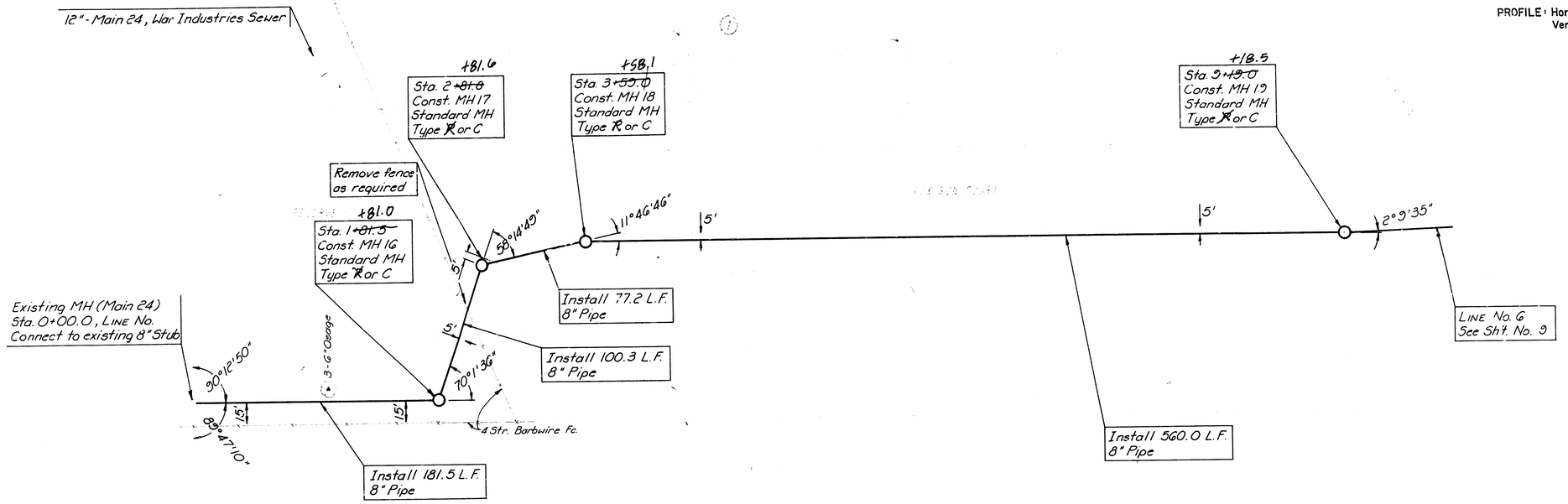
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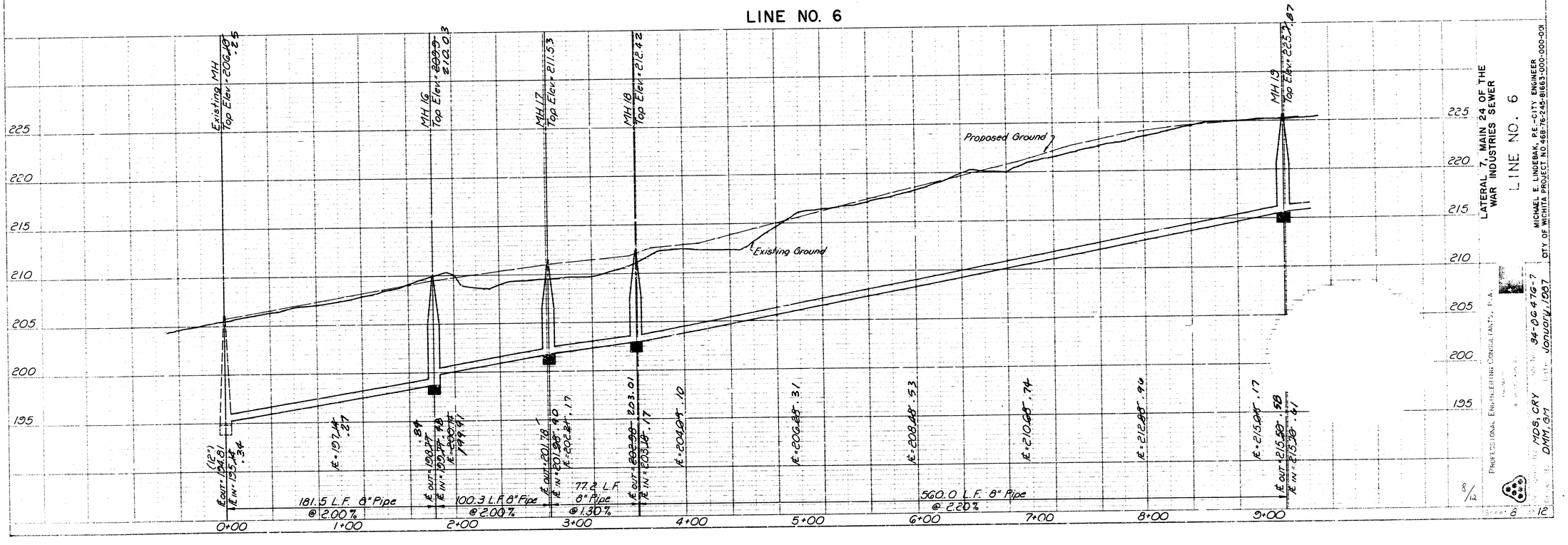
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SCALE

PLAN: Lat. & Long. 0 40 80

PROFILE: Horiz. same as above
Vertical 5 0





LATERAL 7, MAIN 24 OF THE WAR INDUSTRIES SEWER

LINE NO. 6

MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
CITY OF WICHITA PROJECT NO 468-76-245-81663-000-000-001

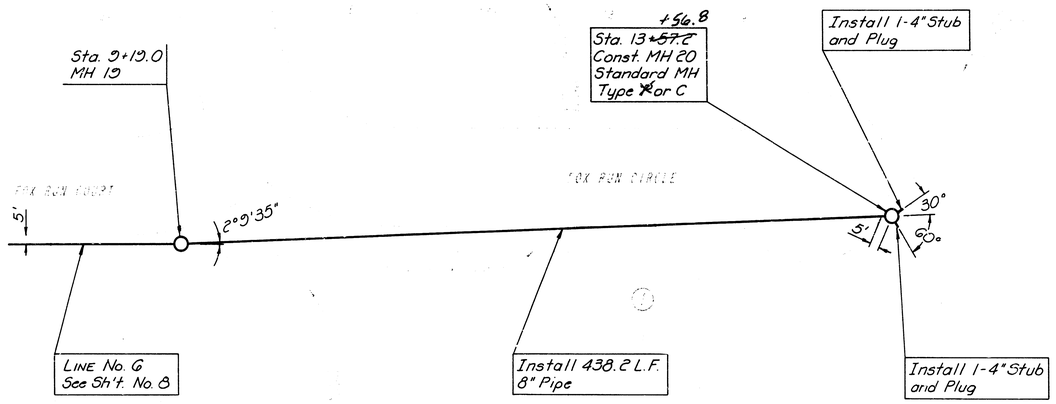
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94-06 476-7
January, 1997
MDS, CRY
DMM, GM

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MICHAEL D. SCHOMAKER LICENSED 6778 KANSAS PROFESSIONAL ENGINEER

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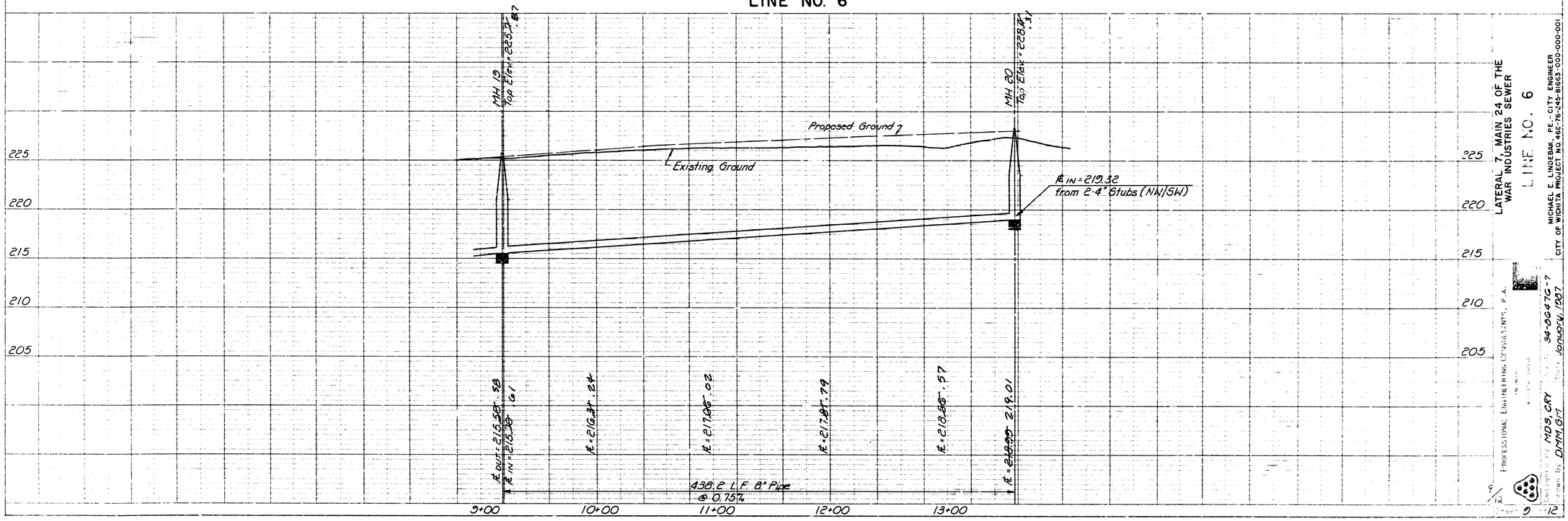


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PLAN: Lat. & Long. 0 40 80

PROFILE: Horiz. same as above
Vertical 5 0

LINE NO. 6



LATERAL 7, MAIN 24 OF THE WAR INDUSTRIES SEWER

LINE NO. 6

MICHAEL E. LINDEBAK, PE. - CITY ENGINEER
CITY OF WICHITA PROJECT NO. 466-76-245-81653-000-000-001

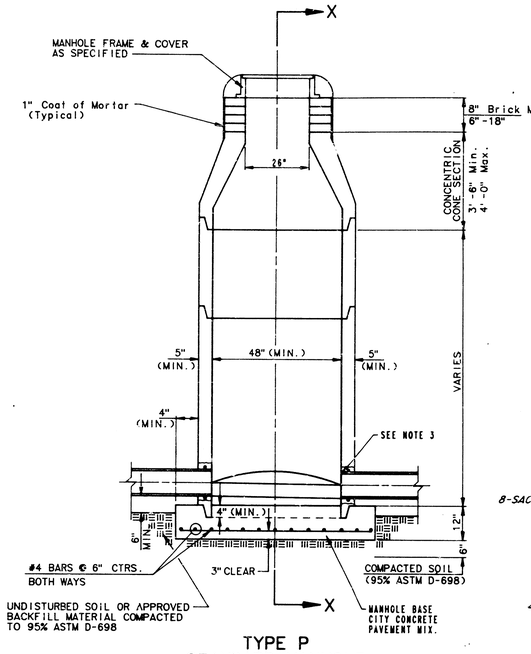
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Date: JANUARY, 1987

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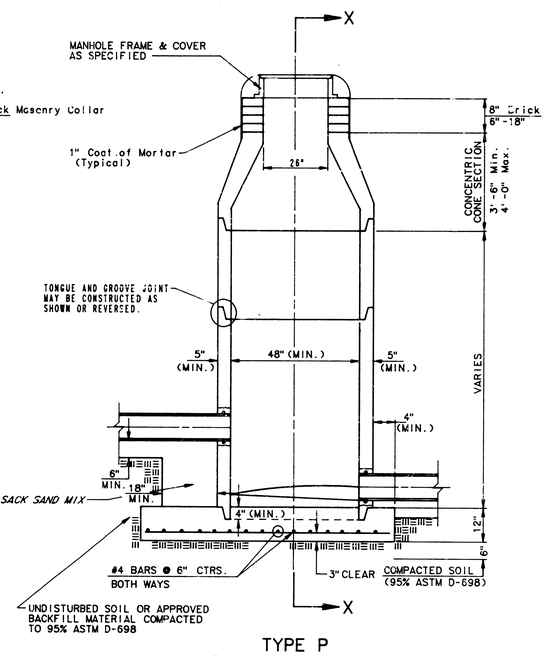
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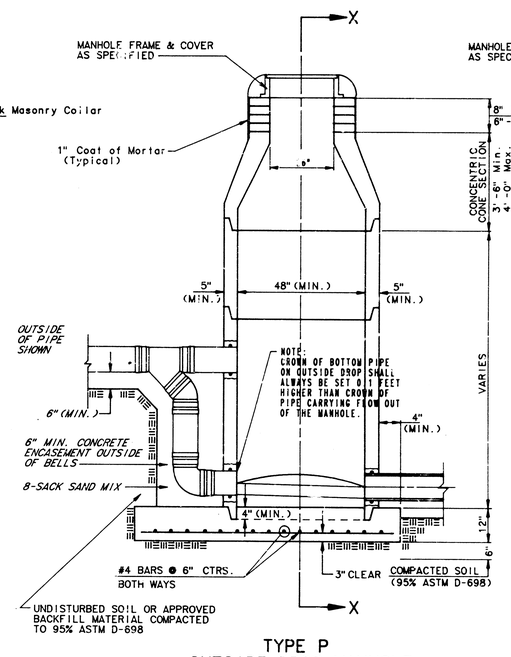
SEWER APPURTENANCES DETAILS
ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA



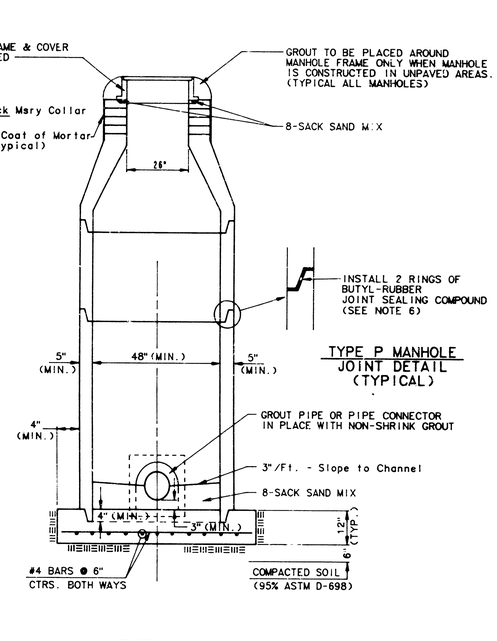
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



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 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 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 ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO 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 DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 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.

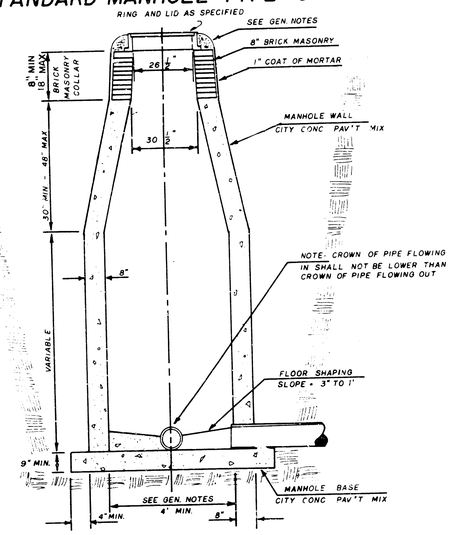
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SEWER APPURTENANCES DETAILS

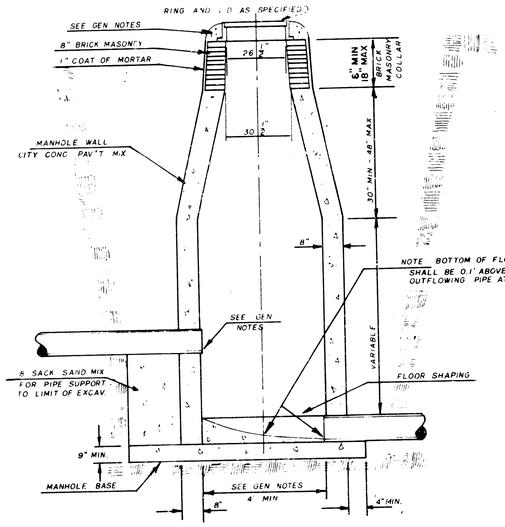
ADOPTED AS STANDARD DESIGN
BY

City of Wichita, Kansas

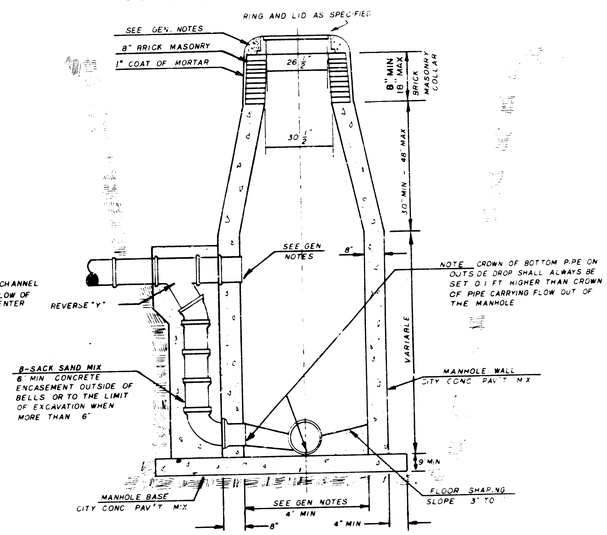
STANDARD MANHOLE TYPE "C"



INSIDE DROP MANHOLE TYPE "C"



OUTSIDE DROP MANHOLE TYPE "C"



GENERAL NOTES

1. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE WALLS AND BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. 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 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.

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 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 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 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.

JNL JAN. 1982

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MANHOLE FRAME AND COVER DETAIL

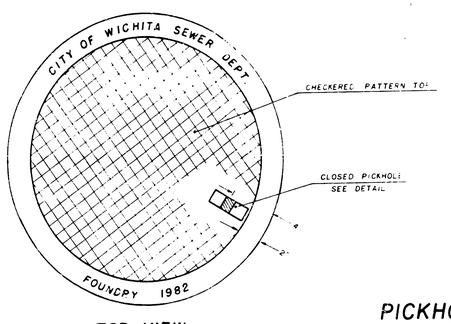
ADOPTED AS STANDARD DESIGN

BY

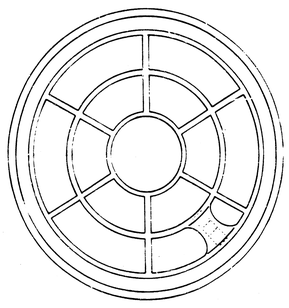
City of Wichita, Kansas

MANHOLE COVER

Weight: 180 Lbs.

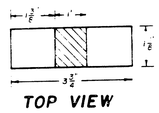


TOP VIEW

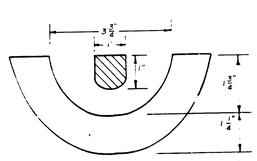


BOTTOM VIEW

PICKHOLE DETAIL



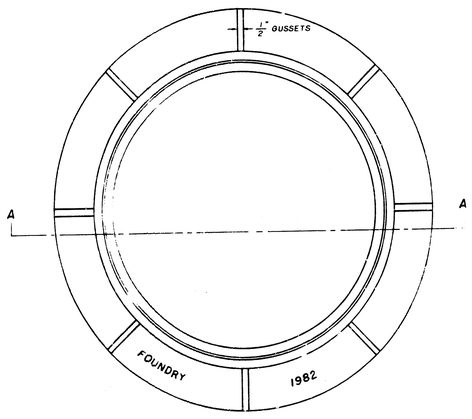
TOP VIEW



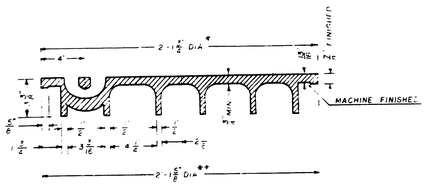
SECTION VIEW

MANHOLE FRAME

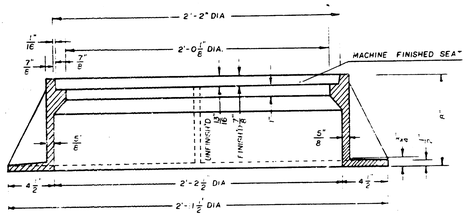
Weight: 240 Lbs.



TOP VIEW



SECTION VIEW



SECTION A-A

* OUTSIDE DIA TOP OF COVER

** OUTSIDE DIA BOTTOM OF COVER

GENERAL NOTE:

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.

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DEC. 1981

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