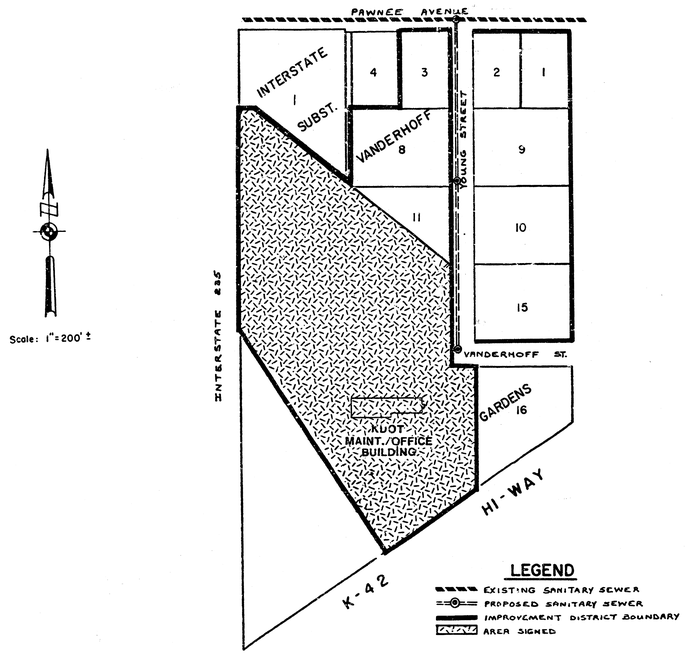
SANITARY SEWER IMPROVEMENTS

LATERAL 2, MAIN 14

S.W. INTERCEPTOR SEWER

CITY OF WICHITA, KANSAS

MICHAEL E. LINDEBAK —— CITY ENGINEER



Scale: 1"=200' ±

INDEX TO DRAWINGS

SHEET NO.	TITLE
1	Title Sheet & Location Map
2-3	Plan & Profile
4	Type 'P' Manhole
5	MH Frame & Cover Details

PROJECT NO.
468-76-245-81542-000-000-001

AS BUILT
9-86
RDL

CARROLL L. NELSON LICENSED 2700 KANSAS PROFESSIONAL ENGINEER

NOTE:
All methods and materials for this project shall conform to the Specifications of the City of Wichita. This project will be constructed under the supervision of the City Engineer.

VanDoren Hazard Stallings
architects engineers planners
topeka • wichita • minneapolis • kansas city

JOB NO. 86-207-A0-W0

1/5

CITY OF WICHITA, KANSAS
468-76-245-81542-000-000-001
LATERAL 2, MAIN 14, SWI

SCALE : 1" = 20'

Ref. P.O.T. Sta. 10+45.00 ℄ - ℄ & ℄ Pawnee Ave.
1. Set 5/8" Iron Bar at Sta.
2. Nail & Tab in W. face of P.P. ____ 29.47 N.N.W.
3. Nail & Tab in Top of Fence Post ____ 43.60 S.W.
4. Nail & Tab in N.E. face of 12" Dia. Elm ____ 67.89 S.E.

30' Utility Easement
R/W
2" Ark-ka Gas
AVENUE
PAWNEE
Small Trees
10" Elm
LOT-2
LOT 2
LOT-9
LOT 3
LOT-10
79'
Sta 0+77.9 Const. MH.
To. 'P'
℄ Sta 10+77.0, 10' Lt.
10" Elm
6" Elm
12" Elm
8" Elm
6" Elm
30" Elm
+54.5
Sta 14+55 Const Std.
MH Type 'P'
℄ Sta 14+55.9, 10 Lt.
℄ 30' Utility Esm't.
YOUNG ST.
50'
5'
11
12
13
14
15
Lateral #2, Sta. 10+00 ℄
= Sta. 31+33.85
℄ S.S. Main # 14
Sta 0+00 Exist. MH.
℄ Sta. 10+00, 2' Rt.
Connect to exist. MH
2" Elm
10" Elm
P.T. CTV
Bed
Shrub
Shrub
30" Elm
8" Cedar
Garden
House
LOT-3
Shrub Row
Row 8" Elm Trees
4" Woven Wire Fence
8' Woven Wire & Wire Roof Game Bird Cages
6" Elm Row
LOT-8
LOT-11
+00 Match Line
10" San. Sewer
32
Bench Mark
St Light
Gravel
2 Mail Boxes
Drive
30'
40'
4" Woven Wire Fence
Well No.
Proposed Vandenhoff Gardens Second Addition
LOT 1

* FENCE REMOVED & REPLACED TO BE INCIDENTAL TO PROJECT.

Bench Mark - 60d Spike Step in N face St. Light Pole
67' Rt., Sta. 10+75 Elev. 106.92

Existing Manhole
Top MH. El. 106.10
2" Ark-ka Gas
+45 @ Pawnee Ave.
0+77.9 MH To 'P' or 'C'
Top MH. Elev. 104.69
+47
Existing Ground Line
4+55.0 MH To 'P' or 'C'
Top MH Elev. 106.23
Connect to Exist. Manhole
Exist. 10" San. Sewer Pipe @ El. 93.15
500 LF 8" San. Sewer Pipe @ 0.4%
96.69
96.66
97.07 Out
96.80
97.23 In
96.89
97.29
97.09
98.09
98.79
98.37
98.89
0+00
1+00
2+00
3+00
4+00
5+00
110
105
100
95
90

2/5

CITY OF WICHITA, KANSAS
468-76-245-815#2-000-000-001
LATERAL 2, MAIN 14, SWI

Ref. P.O.T. Sta. 18+10.69 ℄
1. Set 76" Iron Bar at Sta.
2. 4"x4" R/W Marker ____ 10.00' W.
3. 4"x4" R/W Marker ____ 50.00' E.

Proposed Vanderhoff Gardens Second Addition
LOT 3

LOT - 10 | LOT - 15 | LOT - 16

R/W | R/W Marker | VANDERHOFF ST.

SCALE: 1" = 20'

℄ Sta. 18+32, 10' Lt. Sta 8+~~32.9~~ +33.2
Const. Std. MH Type ~~P~~
6" Stub & Plug (W)

YOUNG ST.

50'
181.5'
10'

15 | 16 | 17 | 18

12" Elm.

R/W Mk. | 42" Chain Link Fence | R/W Mk. & B.M.

Sewer Extended By KDOT

42" Chain Link Fence

40'-0"
44'-0"
30'-0"
57'-0"
10.6
11.0

KDOT BLDG.
Floor El. 1100±

+00 Match Line

LOT 1

LOT - 11

81.95'

Bench Mark – Top of R/W Marker, 10' Rt.
Sta. 18+11 Elev. 107.58

110
105
100
95

Existing Ground Line

105.1 | 105.7 | 105.8 | 105.7 | 105.7 | 105.9 | 106.0 | 106.7 | 105.9

B-32 MH Type Par-C
MH Top Elev. 106.30
108.71

332.9 LF ⌀ ~~C~~ ⌀ @ 0.9%

12" San. Sewer Pipe

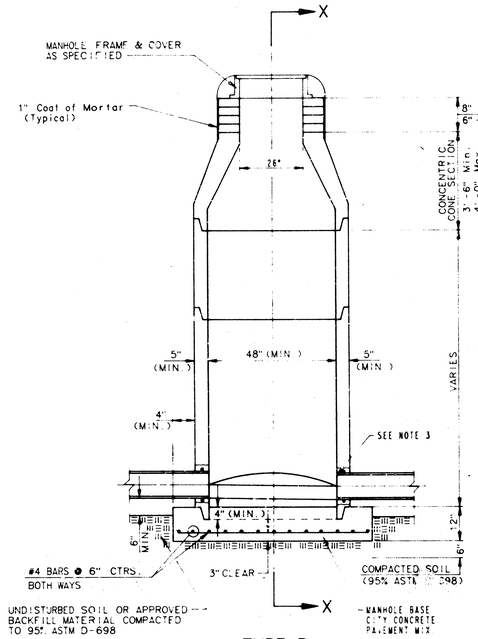
99.49 | 98.89 | 99.29 | 99.66 | 100.07 (N) 100.20 (W)

5+00 | 6+00 | 7+00 | 8+00

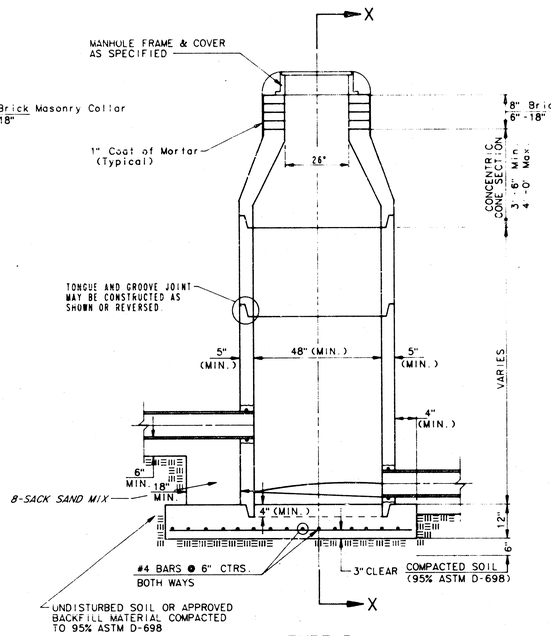
3/5

SEWER APPURTENANCES DETAILS

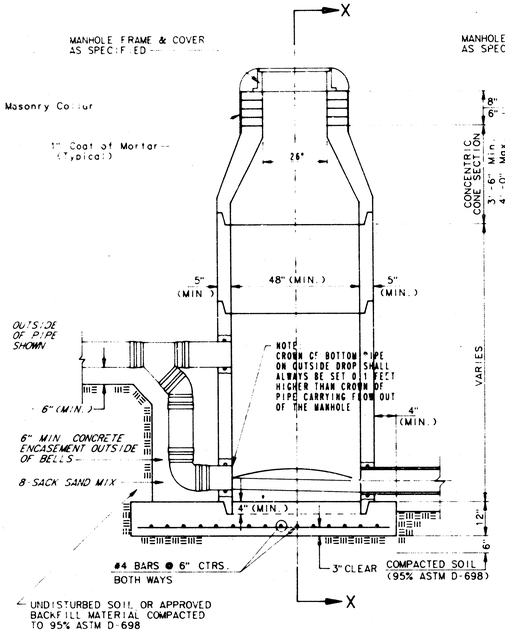
ADOPTED AS STANDARD DESIGN BY CITY OF WICHITA



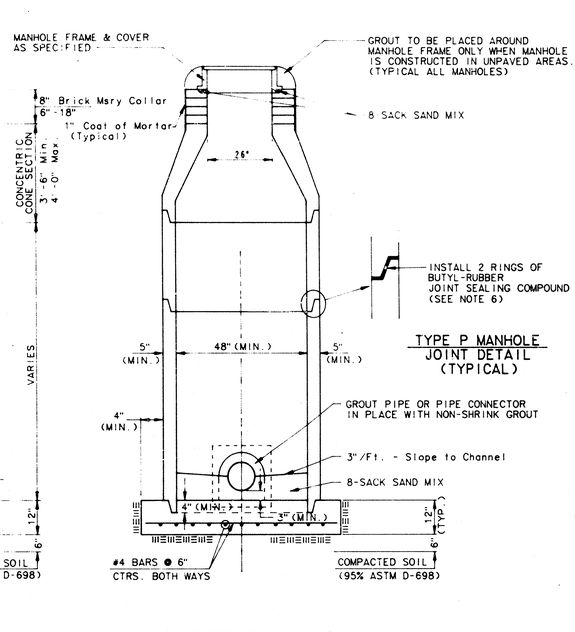
TYPE P
STANDARD MANHOLE



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 OF NEWEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS MIN.
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOB ARMA 633 BITUMINUS 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.

4/5

Revised: June 12, 1986

MANHOLE FRAME AND COVER DETAIL

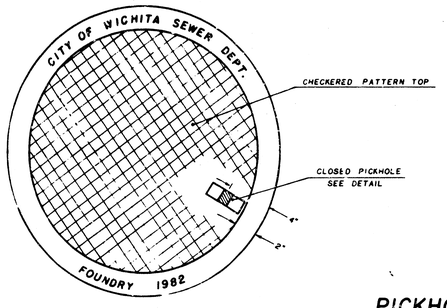
ADOPTED AS STANDARD DESIGN

BY

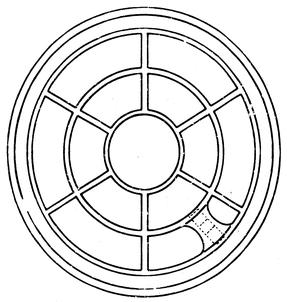
City of Wichita, Kansas

MANHOLE COVER

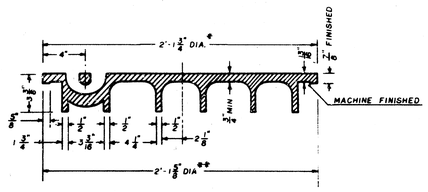
Weight: 180 Lbs.



TOP VIEW



BOTTOM VIEW

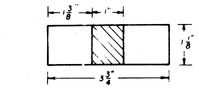


SECTION VIEW

* OUTSIDE DIA. TOP OF COVER

** OUTSIDE DIA. BOTTOM OF COVER

PICKHOLE DETAIL

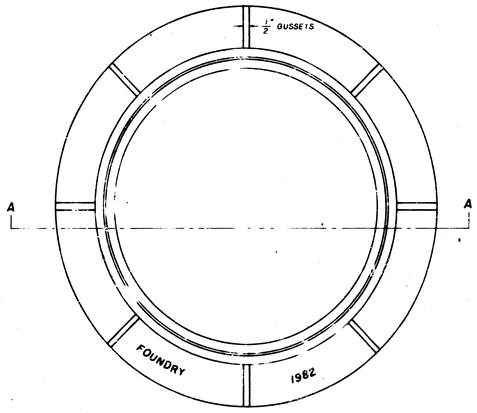


TOP VIEW

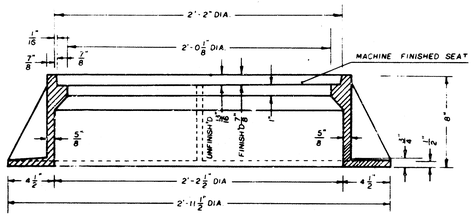
SECTION VIEW

MANHOLE FRAME

Weight: 240 Lbs.



TOP VIEW



SECTION A-A

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

2. MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.

3. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

4. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME 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

5/5

5/5