CONSTRUCTION PLANS FOR

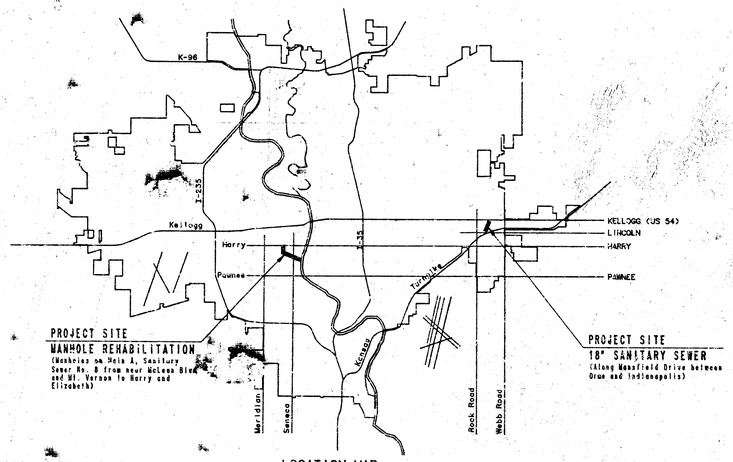
PHASE 4 1988 SEWER RECONSTRUCTION PROGRAM

IN

THE CITY OF WICHITA,

SEDGWICK COUNTY, KANSAS

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



LOCATION MAP

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INDEX CODE 600817

CITY OF WICHITA PROJECT NO. 468-76-245-81886-000-000-001

JANUARY, 1990

PLANS PREPARED BY

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

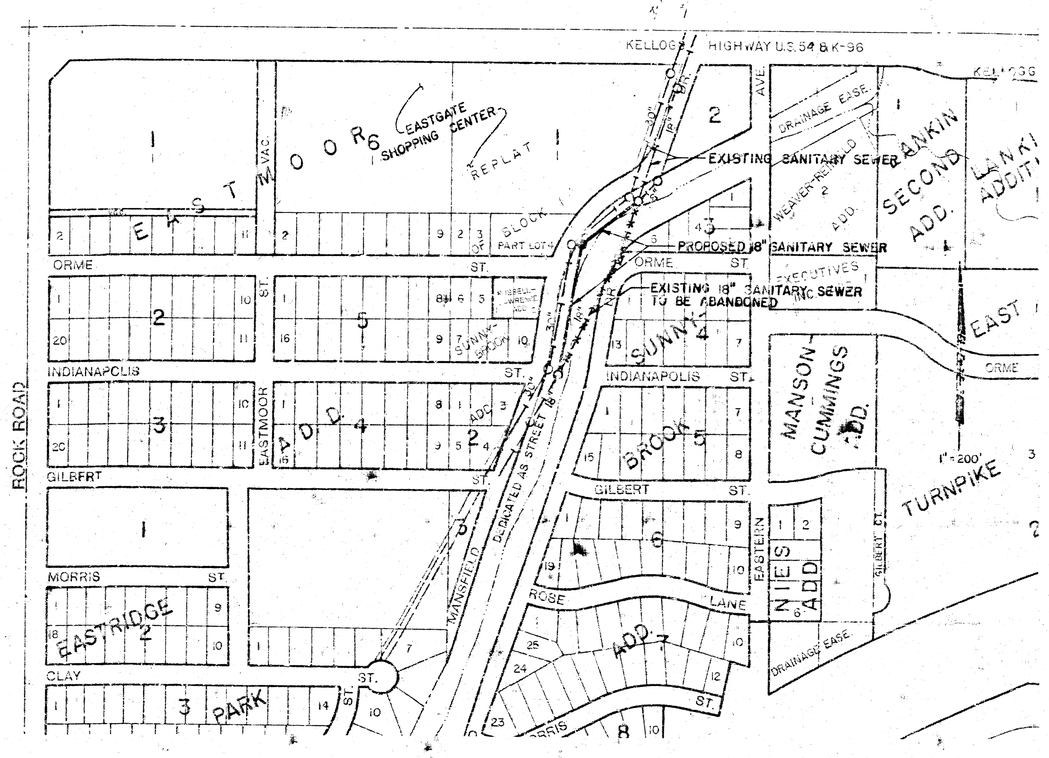
ENGINEERS

WICHITA, KANSAS

DARREL LYNN MOORE LICENSED 9055 KANSAS PROFESSIONAL ENGINEER

As Built 10-90 RDL

Jan. 17, 1990 - 34-81463 M&W SS Title



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. ALL 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. KPL/GAS SERVICE COMPANY, K.G.& E., THE WICHITA WATER DEPARTMENT, AIR CAPITAL CABLEVISION, AND THE TELEPHONE COMPANY.
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 LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES LISTED BELOW TO ASCERTAIN THEIR PROPOSED SCHEDULES FOR RELOCATION WORK.
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 IN ACCORDANCE WITH STATE LAWS. ALL COSTS FOR THIS WORK SHALL BE SUBSIDIARY TO THE OTHER ITEMS OF WORK.
7. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL MANHOLE COVERS.
8. UNLESS OTHERWISE SPECIFIED ON THE PLANS, MANHOLES MAY BE TYPE "A", "C", OR "D" MANHOLES. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS.
9. 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 THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO THE OTHER PAY ITEMS OF WORK.
10. A SAW CUT OF AT LEAST ONE-HALF THE DEPTH OF EXISTING SURFACE COURSES OR ONE-FOURTH THE DEPTH OF THE EXISTING TOTAL PAVEMENT THICKNESS SHALL BE PROVIDED AT LOCATIONS WHERE PROPOSED CONSTRUCTION ABUTS AN EXISTING SURFACE COURSE OR PAVEMENT FOR WHICH PARTIAL REMOVAL OF THAT SURFACE OR PAVEMENT IS REQUIRED. SAWED JOINT TO FACILITATE REMOVAL WITHIN 3 FEET OF EXISTING JOINTS WILL NOT BE PERMITTED AND FOR SUCH INSTANCES THE LIMITS OF REMOVAL SHALL EXTEND TO THE EXISTING JOINT. SUCH SAW CUTS WILL NOT BE PAID FOR DIRECTLY AND THIS COST SHALL BE CONSIDERED AS SUBSIDIARY TO THE REMOVAL OF THE SURFACE OR PAVEMENT.
11. MINIMUM LIMITS OF PAVEMENT REMOVAL AND REPLACEMENT SHALL BE ONE FOOT BEYOND THE LIMITS OF THE EXCAVATION MADE FOR THE SEWER OR THE STRUCTURE, EXCEPT WHEN THE LINES OF REMOVAL ARE WITHIN THREE FEET OF AN EXISTING JOINT, THE LIMITS OF REMOVAL SHALL BE EXTENDED TO THE EXISTING JOINT. REMOVAL AND REPLACEMENT OF EXISTING PAVEMENT SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE CITY OF WICHITA STANDARD SPECIFICATIONS.
12. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES INCLUDING ANY TREES REMOVED AND TREE TRIMMINGS AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL 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.
13. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA AND LOCAL BUSINESS OR RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA ARE TO BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS.
14. AT LEAST ONE WEEK PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MR. ROBERT JENNINGS OF THE CITY OF WICHITA FLOOD CONTROL OFFICE AT 265-3955 AND ADVISE HIM OF THE PROPOSED CONSTRUCTION SCHEDULE.

DANIEL LYNN MOORE LICENSED 9055 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

CITY OF WICHITA
PHASE 4 1988 SEWER RECONSTRUCTION PROGRAM

KEY MAP AND GENERAL NOTES (18" SEWER)

MICHAEL E. LINDEBAK, P.E. CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-81886-000-000-001

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

Designed by DLM, RFJ	Job No. 34-89463	Sht. 2 of 10
Drawn by DMM	Date December, 1989	

BASELINE P.I. TIES

BASELINE STA. 4+00.00 1/2" BAR CAPPED "YSE PW"
B-4008.4822 B-4557.4463
83.29' S, ANGLE AND STRIKE IN WEST FACE TELEPHONE POLE
65.5' +OR, PI IN CHAIN LINK FENCE
14.29' W, CHISELED "+" 4 FEET WEST OF EAST END BURNTH CHAIN INDIANAPOLIS ST.

BASELINE STA. 9+22.87 3/4" BAR
B-4416.9115 B-4656.7279
0.1' S, BENT CHAIN & NO POST ST. ENTRANCE
69.0' NW, SOUTHEAST CORNER EASTGATE SHOPPING CENTER
2.8' S, S45°1'W RADIUS
12.7' W, EAST END MANSFIELD DRIVE

BASELINE STA. 11+38.34 3/4" IRON PIPE CAPPED "YSE PW"
B-4673.9568 B-4961.1868
15.32' SSE CHISELED "+" IN NORTH END MANSFIELD AT WEST END STORM INLET "WP"
58.41' S, CHISELED "+" IN NORTH END MANSFIELD AT EAST LINE SEC.27 T.26S R.1W
65.41' NW, SOUTHEAST CORNER BERRY ADDITION CHISELED "+"

PLAN — SURVEYED — PLOTTED — CHECKED — NOTE BOOK — NO. — DRAWN — TRACED — CHECKED — DATE — BY — REVISIONS

Raise exist. Brick MH top. See special detail Sht. no. 6

Sta ~~3+79.0~~ 4+11.8 Construct MH! Standard MH Type Par 'D' only

Remove concrete rubble. Restore bank. Place 128 S.Y. Heavy Stone Rip Rap with toe walls to limits shown. Toe walls shall be grouted in place along all edges of Rip-Rap per specifications. Do not grout surface of Rip-Rap. See typical Section, sht. no. 6

Raise exist. Brick MH top. Exist. rim elev.=142.79 Proposed rim elev.=144.9 See typ. detail sht. no. 7

SCALE: 0 40 80 — PLAN: HORIZ. & LONG. — PROFILE: HORIZ. SAME AS ABOVE — VERT.

INDIANAPOLIS — RUSSELL-LAWRENCE ADDITION — REPLAT — BLOCK — SUNNY-BROOK ADDITION — ELLSWORTH (U.S. 54)

CAUTION!!! 12" Steel Gas Line K.P.L./Gas Service

10-4" Mimosas — Wd. Barricade — Grandy's

Existing 30" San Sew. — Existing 18" San Sew. — Baseline — Channel — Conc. — Bar. Ditch — Edge of Pvmt. — Curb & Gutter — Fd. Pipe — Fd. Iron Pin — Fd. Nail — Fd. Spike — Fd. Chiseled "+" — Set Nail — Set Spike — Set Chiseled "+" — Set Iron Pin — Set Pipe — Set Concrete Monument — Set Brass Cap — Set Punch Mark — Set Chiseled "X" — Set Iron Pin & Cap — Set Pipe & Cap — Set Concrete Monument & Cap — Set Punch Mark & Cap — Set Chiseled "X" & Cap — Set Iron Pin & Cap — Set Pipe & Cap — Set Concrete Monument & Cap — Set Punch Mark & Cap — Set Chiseled "X" & Cap

Sta. 0+00.0 Break into exist. Brick MH and remove exist. 18" VCP Sanitary Sewer as necessary to install new 18" pipe. Grout new pipe in place with non-shrink grout. Reshape MH floor to provide smooth flow

Install 379.0 L.F. 18" PVC Pipe

Sta 3+02.6 MH Tp 'P'

Sta 3+75.0 Drive 5.00' Lt.

Install 237.5 L.F. 18" PVC Pipe

Construct 45.0 L.F. Reinforced Concrete Encasement

Sta. 4+95.18 27.47' Rt.

Abandoned 18" San Sew.

Construct 1-8" thick Brick Masonry Plug @ Sta. 3+39.10 Rt.

Construct 1-8" thick Brick Masonry Plug @ Sta. 10+28.87 Rt.

Sta. 11+00.86 68.60' Rt.

Sta. ~~16+5~~ 6+11.5 Break into exist. brick MH and remove exist. 18" VCP Sanitary Sewer as necessary to install new 18" Pipe. Grout new pipe in place with non-shrink grout. Reshape MH floor to provide smooth flow.

Remove 150 L.F. 18" VCP

Sand Fill 234 L.F. 18" VCP

Const. 2-8" thick Brick Masonry Plugs

Remove 75 L.F. 18" VCP

Sand Fill 127 L.F. 18" VCP

Sta 9+05.11 Rt. Abandon 1 ea. brick MH in place per specifications

BM - Railroad spike in East face light pole at Southwest corner intersection Orme and Mansfield Drive Elev.=1137.11

MANSFIELD DR. — CRME ST. — SUNNY-BROOK

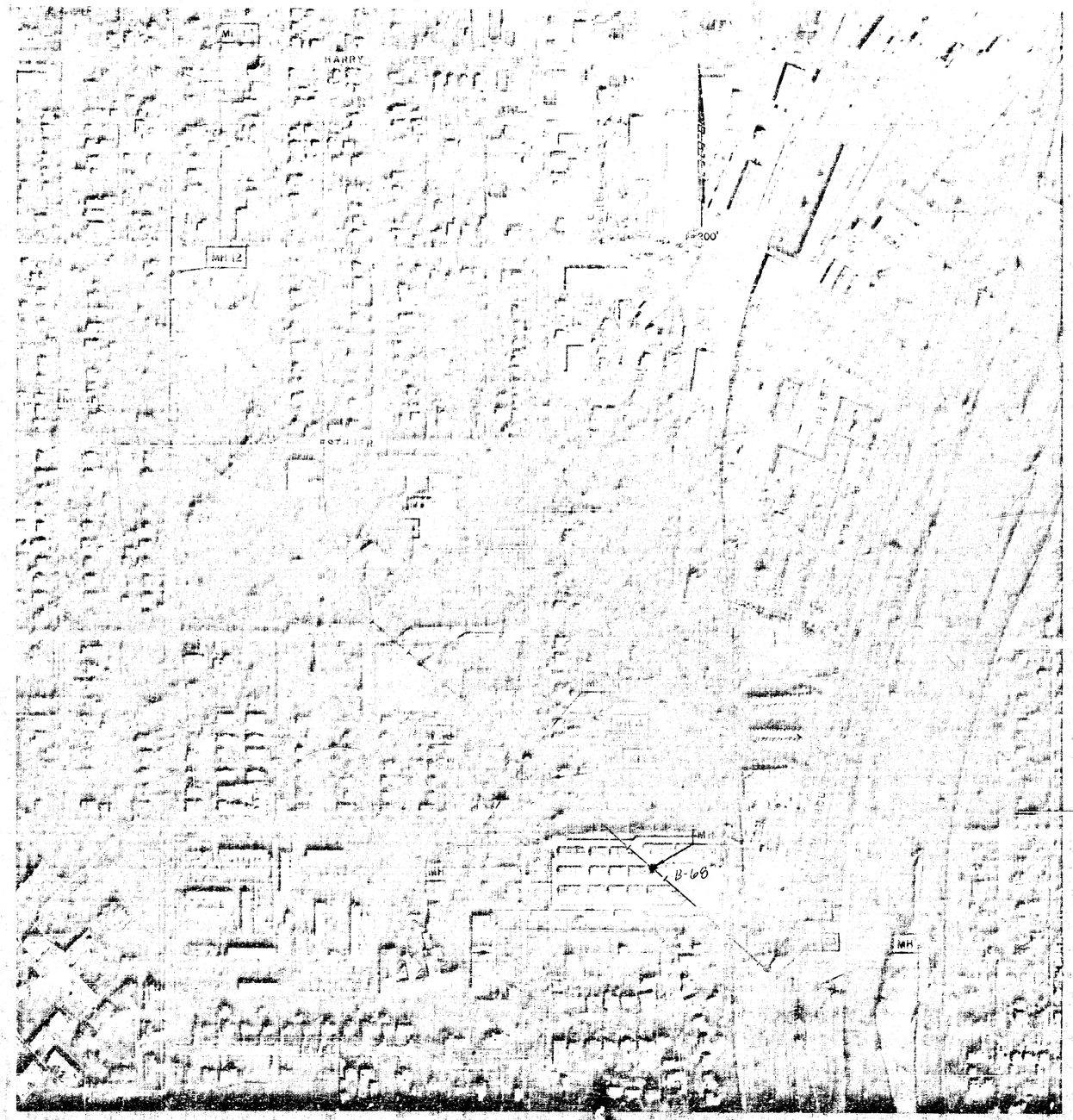
PROFILE

Existing Ground — Proposed

Existing MH Top El. 1137.32 — Existing MH Top El. 1136.96 — Existing MH Top El. 1137.13 — Existing MH Top El. 1136.46

Sta 3+02.6 MH Tp 'P' Inv. El. 1127.68 — Sta 3+75.0 MH Inv. El. 1128.0 — Sta 11+38.34 MH Inv. El. 1128.0

E. Invert = 1126.56 Exist. 18" VCP(W) — E. Invert = 1126.55 Exist. 18" VCP(W) — E. Invert = 1127.68 — E. Invert = 1127.28 — E. Invert = 1127.28 — E. Invert = 1127.48 — E. Invert = 1127.75 — E. Invert = 1127.81 — E. Invert = 1128.0 — E. Invert = 1128.0 — E. Invert = 1128.0



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DARREL LYNN BOONE
LICENSED
9055
KANSAS
PROFESSIONAL ENGINEER

No.	Revision	By	Date

CITY OF WICHITA
PHASE 4 1988 SEWER RECONSTRUCTION PROGRAM
KEY MAP AND GENERAL NOTES (MANHOLE REHABILITATION)
MICHAEL E. LINDEDAK, P.E. CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-81886-000-000-001
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by DLM, RFJ	Job No. 94-80403	Sht 4 of 10
Drawn by TLB	Date December 1989	

MANHOLE NUMBER	LOCATION	ADJUST MANHOLE RIM ELEVATION (± IN FEET)	APPROXIMATE MH DEPTH (AFTER ADJUSTMENTS)	REMOVE AND REPLACE MH FRAME AND COVER (G=GASKETED FRAME; S= STANDARD FRAME)	RESHAPE BENCH (RS=RESHAPE;BU=BUILD UP;C=CONSTRUCT NEW BENCH)	RESHAPE MH FLOW CHANNEL (RS=RESHAPE;F= FORM NEW CHANNEL)	CLEAN MH INTERIOR (INCLUDES REMOVAL OF DEBRIS)	REPOINT INTERIOR MH WALLS	REPLACE MISSING(M); SOFT(S); OR BROKEN/BRITTLE(B) BRICK	TRIM ENDS OF PIPE INSIDE MH (PIPE SIZE)	COAT INTERIOR MH WALLS	REMOVE AND RECONSTRUCT DRAW SECTION OF MH (USE TYPE D MH CONSTRUCTION DETAILS)	REMARKS	MANHOLE NUMBER
Ø	EAST OF MCLEAN BLVD.	YES -4.1'	12'	YES (G)	YES	YES	YES	YES	NO	NO	YES	YES	SIPHON MH, SOUND BRICK, SOFT MORTAR	Ø
ØA	WEST OF MCLEAN BLVD. 42' WEST OF WEST CURB 30' SOUTH OF CONC. DRIVE	YES +0.8'	10.5'	YES (G)	NO	YES (RS)	YES	YES	NO	NO	YES	NO	INSIDE DROP MH @ NB SIDE (36" VCP)	ØA
1	WEST OF MCLEAN BLVD. [illegible] OF WEST CURB 5' SOUTH OF CONC. DRIVE	NO	10'	YES (S)	YES (BU)	NO	YES	YES	YES (S)	NO	YES	NO	30% SOFT BRICK	1
2	ALONG EAST EDGE BLDG. LINE OF 2ND ROW OF BLDGS. FROM EAST SIDE OF SECURITY SELF STORAGE PROP. 2010 S. SENECA	NO	7'	NO	NO	NO	YES	YES	YES (S)	NO	YES	NO	NO ROOM FOR BENCH. 20% SOFT BRICK	2
3	10' EAST OF EAST CURB SENECA, 25' SOUTH OF CREDIT UNION DRIVE ENTRANCE, 1920 S. SENECA	YES +0.5'	5.5'	YES (G)	YES (C)	YES (F)	YES	YES	NO	NO	YES	NO	SOME LOOSE BRICKS, SOFT MORTAR, OLD 30" VCP ON NB SIDE OF MH HAS MASONRY PLUG.	3
4	SOUTH EDGE CREDIT UNION ENTRANCE 1920 S. SENECA. 5' EAST OF EAST CURB SENECA	NO	5'	YES (G)	YES (C)	YES (F)	YES	YES	YES (S)	NO	YES	NO	30% SOFT BRICK	4
5	12' SOUTH OF ℄ NORTH DRIVE 1M TO KIRKS CENTER 1929 S. SENECA. 5' WEST OF WEST CURB SENECA	NO	4.5'	YES (G)	YES (C)	YES (F)	YES	YES	NO	NO	YES	NO	SOME SOFT MORTAR	5
6	20' SOUTH OF ℄ DRIVE INTO DOK KIRK'S CENTER, 1929 S. SENECA. 15' WEST OF WEST CURB SENECA	NO	6.5'	YES (G)	YES (RS)	YES (RS)	YES	YES	NO	NO	YES	YES	SOME LOOSE BRICKS AND SOFT MORTAR	6
6A	IN ASPHALT PARKING LOT, SOUTH OF SENECA BOWL, 1909 S. SENECA. 50' WEST OF WEST CURB SENECA	YES +0.3'	4'	YES (G)	YES (C)	NO	YES	YES	YES (S)	YES (30")	YES	YES	50% SOFT, BROKEN BRICK	6A
6B	IN ASPHALT PARKING LOT, SOUTH OF SENECA BOWL, 1909 S. SENECA. 140' WEST OF WEST CURB SENECA	NO	6.5'	YES (G)	YES (C)	NO	YES	YES	YES (S)	YES (4")	YES	YES	MH HAS TWO FRAMES STACKED AT TOP. REMOVE BOTH, REBUILD DRAW, INSTALL NEW FRAME.	6B
7	179' SOUTH OF ℄ DORA, 26' WEST OF ℄ DODGE	YES +0.5'	6'	YES (G)	YES (C)	NO	YES	YES	YES (S),(B) (M)	YES (30")	YES	NO	50% OF BRICK IS SOFT OR BROKEN. BRICK MISSING UNDER 8" PIPE @ SOUTH WALL. MH RIM TO BE 0.5' BELOW GRADE WHEN FINISHED.	7
8	85' SOUTH OF ℄ DORA, 105' WEST OF ℄ DODGE IN ASPHALT PARKING LOT	NO	8'	YES (G)	YES (RS)	YES (RS)	YES	YES	YES (S)	NO	YES	NO	SOFT BRICKS IN LOWER 1/2 OF MH	8
9	23' SOUTH OF ℄ DORA, 119' EAST OF ℄ EXPOSITION	NO	7'	YES (G)	YES (C)	NO	YES	YES	NO	YES (30")	YES	NO	BRICKS ARE SOUND, SOME BRICKS LOOSE. SOFT MORTAR JOINTS.	9
10	ON PARK PROPERTY (ALLEY PARK). 205'± NORTH OF ℄ DORA, 550'± E. OF ℄ ELIZABETH	NO	9.5'	YES (S)	YES (RS)	YES (RS)	YES	YES	YES (S)	NO	YES	YES	20% SOFT BRICK, DO NOT TRIM 8" PIPE. MH RIM IS 0.5' BELOW GRADE. DO NOT ADJUST ELEVATION.	10
11	6' NORTH OF ℄ ESTHER 10' EAST OF ℄ ELIZABETH	NO	8'	YES (S)	YES (RS)	YES (RS)	YES	YES	YES (S)	NO	YES	YES"	10% SOFT BRICK	11
12	75' SOUTH OF ℄ MERTON 3.5' WEST OF ℄ ELIZABETH	NO	7'	YES (S)	YES (RS)	YES (RS)	YES	YES	YES (S)	NO	YES	YES	40% SOFT BRICK	12
13	38' SOUTH OF ℄ HARRY 8.5' WEST OF ℄ ELIZABETH	YES +0.1'	7.5'	YES (S)	YES (RS)	NO	YES	YES	YES (S),(B)	NO	YES	YES	70% SOFT / BROKEN BRICK, SOFT JOINTS	13
14	SOUTH LANE OF HARRY 9' WEST OF ℄ ELIZABETH	NO	7.5'	YES (S)	YES (C)	YES (F)	YES	YES	YES (S)	NO	YES	YES	LESS THAN 10% SOFT BRICK	14

1. THE INTENT OF THIS SCHEDULE IS TO PROVIDE THE CONTRACTOR WITH INFORMATION REGARDING THE EXTENT OF WORK REQUIRED FOR EACH MANHOLE. THE CONTRACTOR SHALL INSPECT THE MANHOLES TO FORM HIS OWN OPINION OF THE WORK REQUIRED PRIOR TO BIDS. AT LEAST THREE DAYS PRIOR TO THE BID DATE, MR. ROY GRIFFIN OF THE CITY OF WICHITA SEWER MAINTENANCE DIVISION (268-4024) WILL SCHEDULE AN INSPECTION TOUR OF THE MANHOLES. THE CONTRACTOR SHALL CONTACT THE SEWER MAINTENANCE DIVISION TO DETERMINE THE INSPECTION TOUR DATE.

2. DIVERSION OF WASTEWATER FLOWS TO DEWATER MANHOLES AS NECESSARY FOR THE WORK WHILE MAINTAINING SANITARY SEWER SERVICE SHALL BE PERFORMED BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER. COSTS FOR PLUGGING, DIVERTING WASTEWATER, AND MAINTAINING SEWER SERVICE SHALL BE CONSIDERED SUBSIDIARY TO THE UNIT PRICE BID FOR MANHOLE REHABILITATION OR REPAIR.

3. MANHOLE RIM ADJUSTMENT DIMENSIONS ARE APPROXIMATE. FINAL ELEVATIONS OF MANHOLE RIMS SHALL BE AT GRADE IN PAVED AREAS AND AT 0.4' ABOVE GRADE IN ALL OTHER AREAS EXCEPT FOR MANHOLE 7 AND MANHOLE 10. THE RIM ELEVATION OF MANHOLE 7 SHALL BE ADJUSTED TO 0.5' BELOW GRADE AND THE RIM ELEVATION OF MANHOLE 10 SHALL REMAIN AT 0.3' BELOW GRADE.

4. NONE OF THE MANHOLES CONTAIN STEPS.

DEFINITIONS:

GASKETED FRAME - CONTRACTOR SHALL INSTALL NEW MANHOLE FRAME AND COVER WITH GASKETED FRAME PER THE DETAILS. REMOVAL AND RECONSTRUCTION OF MANHOLE DRAW SECTIONS AND WALLS AS REQUIRED TO FIT NEW FRAMES SHALL BE CONSIDERED SUBSIDIARY TO UNIT PRICE BID FOR MANHOLE REHABILITATION OR REPAIR.

STANDARD FRAME - CONTRACTOR SHALL INSTALL EITHER A STANDARD NEW FRAME AND COVER OR A GASKETED FRAME AND COVER PER THE DETAILS. REMOVAL AND RECONSTRUCTION OF MANHOLE DRAW SECTIONS AND WALLS AS REQUIRED TO FIT NEW FRAMES SHALL BE CONSIDERED SUBSIDIARY TO UNIT PRICE BID FOR MANHOLE REHABILITATION OR REPAIR.

RESHAPE BENCH - THE MANHOLE BENCH SHALL BE CLEANED AND RESHAPED WITH EITHER BRICK, 8-SACK SAND MIX, OR OTHER APPROVED CEMENTITIOUS MATERIAL. EXTENSIVE REPAIRS DO NOT APPEAR TO BE NECESSARY.

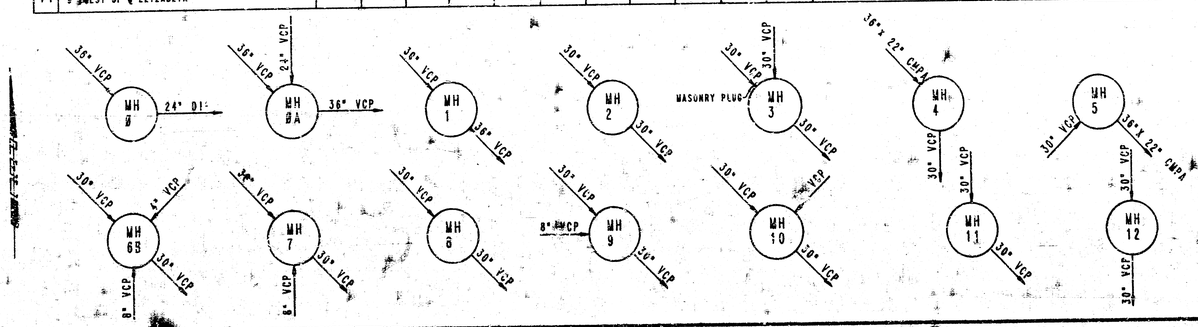
BUILD UP BENCH - THE MANHOLE BENCH IS EITHER LOW OR DAMAGED. THIS INDICATES THAT BENCH REPAIRS REQUIRED MAY NOT BE AS EXTENSIVE AS TOTAL RECONSTRUCTION.

CONSTRUCT NEW BENCH - THE MANHOLE HAS NO BENCH. CONSTRUCT BENCH IN MANHOLE WITH EITHER BRICK, 8-SACK SAND MIX, OR OTHER APPROVED CEMENTITIOUS MATERIAL.

RESHAPE CHANNEL - THE CHANNELS IN MOST OF THE MANHOLES ON THIS PROJECT ARE FORMED OF BRICK. "RESHAPE CHANNEL" INDICATES THAT THERE ARE IRREGULARITIES TO BE CORRECTED. REGET LOOSE AND MISSING BRICK, CLEAN, REPLACE MORTAR, OR CLEAN AND GROUT TO SHAPE SMOOTH CHANNEL.

FORM NEW CHANNEL - THIS INDICATES THE ABSENCE OF CHANNEL SHAPING. DRY AND CLEAN THE MANHOLE BOTTOM AND FORM CHANNEL WITH BRICK OR 8-SACK SAND MIX.

REPLACE MISSING, SOFT, OR BROKEN/BRITTLE BRICK - THE BRICK IN THE MANHOLE WALLS HAS DETERIORATED. THE CONTRACTOR SHALL EITHER REBUILD THE MANHOLE, OR REPAIR BY REPLACING THE DAMAGED BRICK, OR THE WALLS MAY BE BLASTED DOWN TO SOUND BRICK WITH HIGH-PRESSURE WATER SPRAY AND THEN REPAIRED AND COATED WITH APPROVED CEMENTITIOUS MATERIALS PER SPECIFICATIONS.

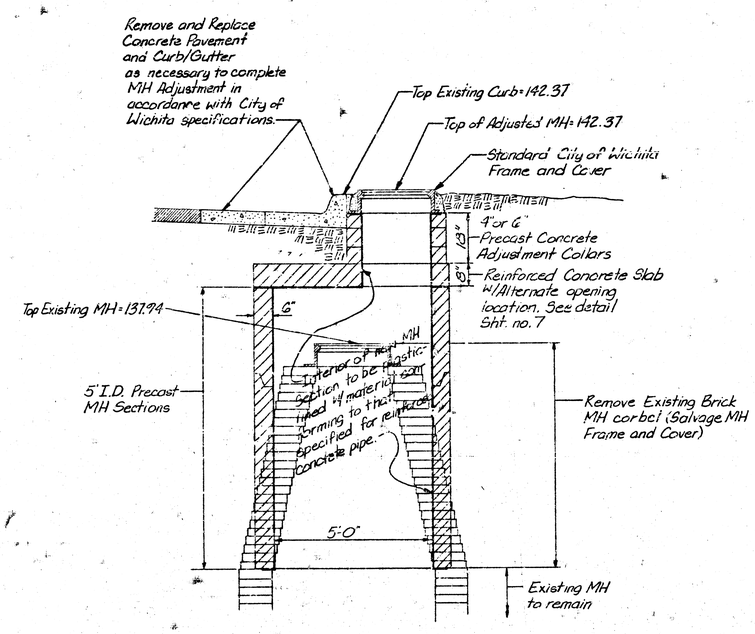


No.	Revision	By	Date

CITY OF WICHITA
PHASE 4 1988 SEWER RECONSTRUCTION PROGRAM
MANHOLE REHABILITATION TASK SCHEDULE
MICHAEL E. LINDEBAK, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-75-245-81886-000-000-001

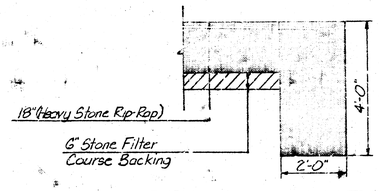
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by DLW, MFJ	Job No. 34-89463	Sht 5 of 5
Drawn by	Date January, 1989	



SPECIAL MANHOLE ADJUSTMENT DETAIL
(BASELINE STA. 8+60.4, 17.2' LEFT)

All costs necessary to complete the work shown above including Pavement Removal and Replacement and all labor, materials, and incidentals shall be considered subsidary to the lump sum price bid for "Special Manhole Adjustment"



TYPICAL SECTION THRU TOEWALL
(NO SCALE)

NOTES

1. All rip-rap for this project shall be natural stone or broken concrete. Neither fabric envelope nor premixed dry packaged concrete bag alternates will be allowed.
2. Toewalls shall be installed along all edges of stone rip rap.
3. Grouting of the surface of the rip-rap shall not be performed, except that grouting of the toewalls shall be performed per city specifications.

DANIEL LYNN MOORE LICENSED 9055 KANSAS PROFESSIONAL ENGINEER

No.	Revision	By	Date

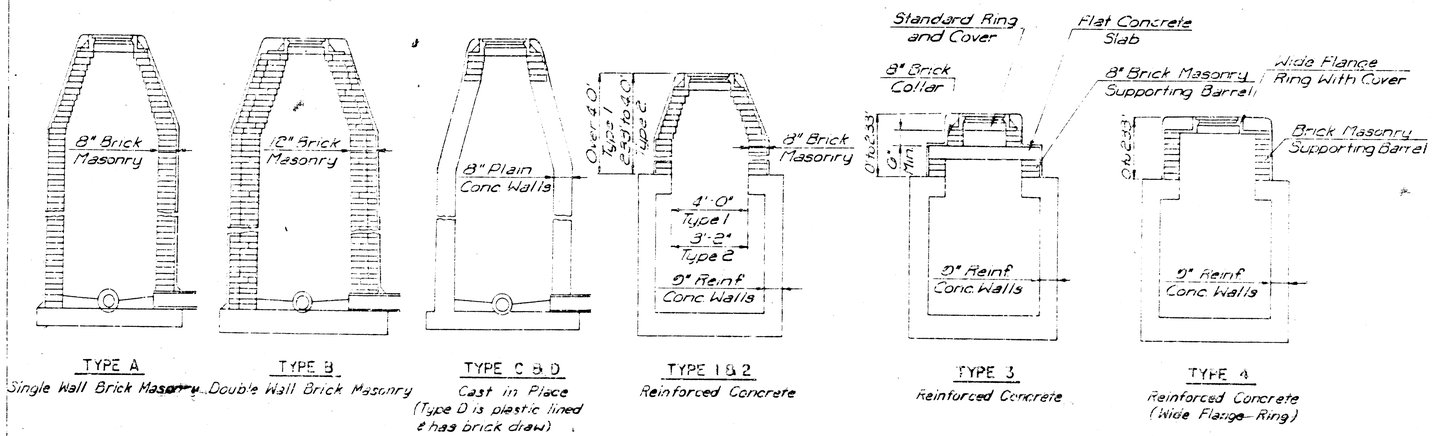
CITY OF WICHITA
PHASE 4 1988 SEWER RECONSTRUCTION PROGRAM

MISCELLANEOUS DETAILS

MICHAEL E. LINDEBAK, P.E. CITY ENGINEER
CITY OF WICHITA PROJECT NO. 468-76-245-81886-000-000-001

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

Designed by DLM, RFJ | Job No. 34-8946G3 | Sht. 6 of 10
Drawn by BAM | Date December 1988



TYPE A — Single Wall Brick Masonry

TYPE B — Double Wall Brick Masonry

TYPE C & D — Cast in Place (Type D is plastic lined & has brick draw)

TYPE 1 & 2 — Reinforced Concrete

TYPE 3 — Reinforced Concrete

TYPE 4 — Reinforced Concrete (Wide Flange Ring)

DEFINITION SKETCHES - CITY OF WICHITA STANDARD MANHOLES

MANHOLES DESIGNATED FOR ADJUSTMENT SHALL BE RAISED OR LOWERED AS NECESSARY SUCH THAT THE CASTING WILL CONFORM TO THE REQUIRED ELEVATION. TOPS OF STORM OR SANITARY SEWER MANHOLES LOCATED IN PAVED AREAS SHALL BE SET FLUSH WITH THE PAVEMENT. TOPS OF SANITARY SEWER MANHOLES LOCATED IN GRASSED AREAS SHALL BE SET FOUR TENTHS OF ONE FOOT (0.40') HIGHER THAN THE FINISHED GRADE. TOPS OF STORM SEWER MANHOLES LOCATED IN GRASSED AREAS SHALL BE SET FLUSH WITH THE FINISHED GRADE. TOPS OF STORM OR SANITARY SEWER MANHOLES LOCATED IN UNPAVED TRAVEL WAYS SHALL BE SET SIX INCHES (6") BELOW FINISHED GRADE.

THE NEW TOP ELEVATION SPECIFIED ON THE PLANS WAS ESTABLISHED BASED ON BEST INFORMATION AVAILABLE AT THE TIME THE PLANS WERE PREPARED. THE NEW TOP ELEVATION SHALL BE VERIFIED OR ESTABLISHED, IN THE FIELD, BY THE ENGINEER OF THE TYPE AND ADJUSTMENT AS SHOWN HEREON. NO ADJUSTMENT SHALL BE MADE FOR A CHANGE IN TOP ELEVATION DEEMED NECESSARY BY THE ENGINEER.

THE ADJUSTMENT OF ALL MANHOLES WHICH ARE TO BE LOWER THAN TWELVE INCHES (12") OR LESS SHALL BE ACCOMPLISHED BY REMOVING THE EXISTING CASTING AND RING AND REMOVING OR ADDING THE APPROPRIATE COURSE(S) OF BRICK AND MORTAR BETWEEN THE RING AND COVER. ALL WORK SHALL BE IN ACCORDANCE WITH NOTES BELOW.

ALL UPWARD OR DOWNWARD ADJUSTMENTS IN EXCESS OF TWELVE INCHES (12") SHALL BE IN ACCORDANCE WITH DETAILS AND NOTES SHOWN ON THIS SHEET.

NEW BRICK USED IN THE ADJUSTMENT OF MANHOLES SHALL CONFORM TO THE REQUIREMENTS SPECIFIED FOR GRADE MS IN A.S.T.M. D 32 TO FOR USE IN THE TYPE OF EXPOSURE. BRICK SHALL HAVE NOMINAL DIMENSIONS WHICH WILL PERMIT THE MORTAR JOINTS TO MATCH THE DIMENSIONS OF THE WALLS OF THE STRUCTURE BEING ADJUSTED. WHERE EXISTING BRICK, SALVAGED AS PART OF EXISTING MANHOLE, SHALL BE USED IN THE PROJECT, MAY BE REDUCED TO COMPLETE THE ADJUSTMENT OF A MANHOLE SHALL BE LAID IN EXISTING MORTAR WHEN IF APPROVED AS TO SERVICEABILITY BY THE ENGINEER.

ALL BRICK SHALL BE LAID WITH SHOVE JOINTS. PORTLAND CEMENT MORTAR, AS SPECIFIED BELOW, SHALL BE USED TO LAYING THE BRICK. THE WET SURFACE OF THE MANHOLE (AS ADJUSTED WITH BRICK) SHALL BE PARGED WITH A MINIMUM OF ONE INCH (1") OF THE CEMENT MORTAR. ALL CONCRETE SURFACES, BRICK MASONRY, FLAT CONCRETE SLABS (IF REQUIRED) AND CAST IRON SURFACES SHALL BE SEALED WITH A LAYER OF THE CEMENT MORTAR. BACKFILL OF EXCAVATIONS SHALL NOT BE ACCOMPLISHED UNTIL THE MORTAR HAS CURED FOR TWENTY-FOUR (24) HOURS.

MORTAR USED IN ADJUSTMENT OF MANHOLES SHALL CONTAIN EIGHT (8) SACKS OF PORTLAND CEMENT PER CUBIC YARD, FINE AGGREGATE, AND SUFFICIENT WATER TO PRODUCE A WORKABLE AND PLASTIC MIX OF SUCH CONSISTENCY AS TO PERFORM SATISFACTORILY THE FUNCTION OF MASONRY CONSTRUCTION.

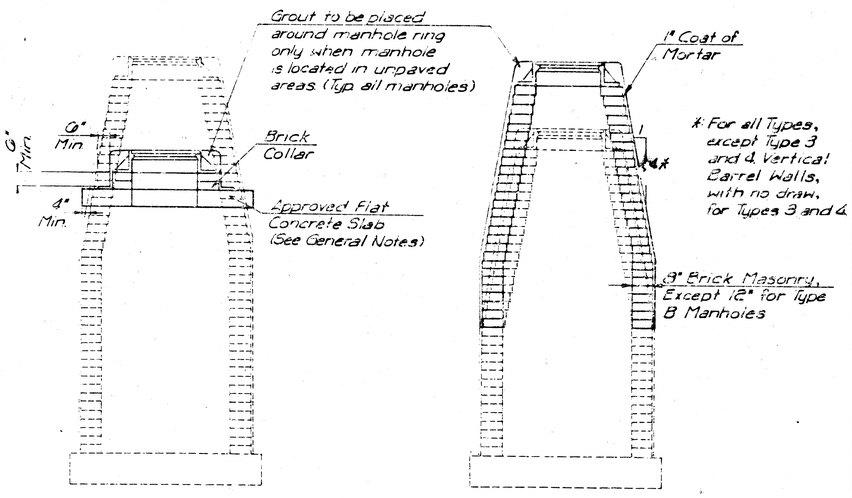
CEMENT USED FOR MORTAR SHALL BE TYPE I COMPLYING WITH THE REQUIREMENTS OF THE LATEST REVISION OF A.S.T.M. DESIGNATION C-150.

FINE AGGREGATE USED FOR MORTAR SHALL MEET THE REQUIREMENTS FOR THIS MATERIAL IN DIVISION 1102, OF THE "STANDARD SPECIFICATIONS FOR STATE ROAD AND BRIDGE CONSTRUCTION," KANSAS DEPARTMENT OF TRANSPORTATION, 1990 EDITION.

WATER USED FOR MORTAR SHALL MEET THE REQUIREMENTS OF DIVISION 1102, OF THE MENTIONED STANDARD SPECIFICATIONS.

AN APPROVED TYPE OF FLAT CONCRETE SLAB, CONFORMING TO THE REQUIREMENTS OF A.S.T.M. C-478, SHALL BE USED TO SUPPORT THE MANHOLE RING AND COVER WHERE IT IS NECESSARY TO LOWER MANHOLES MORE THAN TWELVE INCHES (12"). ALL SURFACES OF THE FLAT CONCRETE SLAB, FOR SANITARY SEWER MANHOLES, WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE PROTECTED BY A PLASTIC LINING. A MINIMUM SIX INCH (6") BRICK COLLAR CONFORMING TO THE SAME TYPE OF CONSTRUCTION AS SPECIFIED ABOVE SHALL BE INSTALLED BETWEEN THE MANHOLE RING AND THE FLAT CONCRETE SLAB TO FACILITATE MINOR ADJUSTMENTS IN ELEVATION.

PLASTIC LINING REQUIRED FOR FLAT CONCRETE SLABS, TO BE PLACED IN CONNECTION WITH THE ADJUSTMENT OF SANITARY SEWER MANHOLES, MAY BE ASPHALT-FREE PLASTIC LINING PLATE, A.P.I. GOODRICH LOK-RIB KORGSEAL, OR AN APPROVED EQUAL. THE PLASTIC LINING MANUFACTURER'S RECOMMENDATIONS FOR INSTALLING, SEALING JOINTS, TESTING AND INSPECTION OF THE LINING SHALL BE CONSIDERED AS INCORPORATED IN AND FORMING A PART OF THESE SPECIFICATIONS. THREE (3) COPIES OF THE PLASTIC LINING MANUFACTURER'S RECOMMENDATIONS FOR LINING INSTALLATION SHALL BE FURNISHED TO THE ENGINEER FOR APPROVAL PRIOR TO THE FABRICATION OF ANY FLAT SLABS REQUIRING PLASTIC LINING.



DOWNWARD ADJUSTMENT (GREATER THAN 12")

All Types

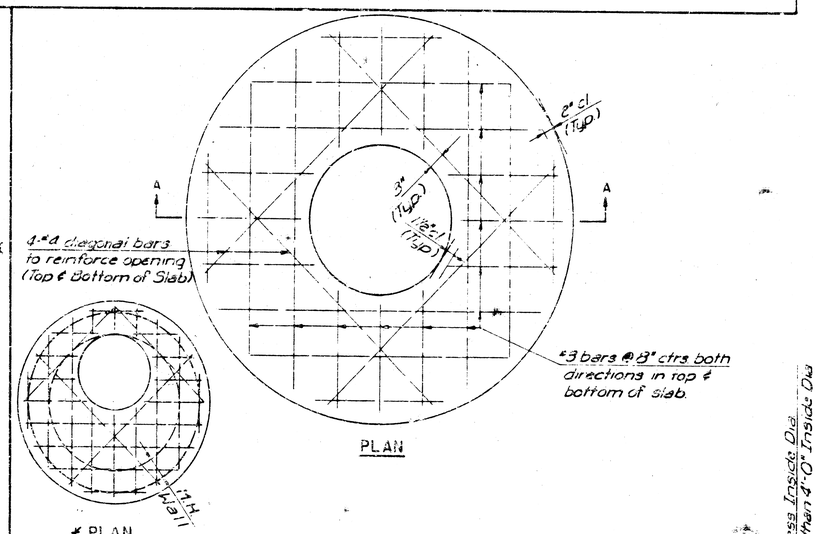
THE APPROPRIATE PORTIONS OF THE DRAW AND BARREL OF TYPE A, B, C, D, 1 AND 2 MANHOLES SHALL BE REMOVED. A FLAT CONCRETE SLAB SHALL BE PLACED AND THE RING AND COVER RESET. ALL WORK AND MATERIALS SHALL CONFORM TO THE DETAILS SHOWN AND THE GENERAL NOTES.

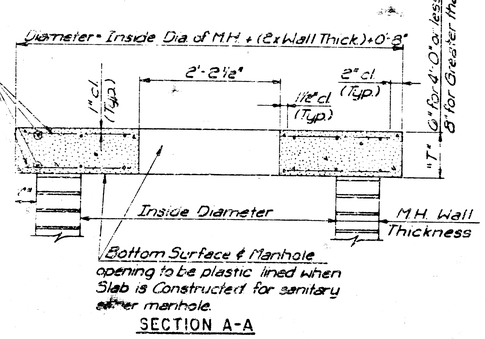
COURSES OF BRICK BARREL SUPPORTING THE WIDE FLANGE RING FOR TYPE 4 MANHOLES AND FLAT CONCRETE SLAB FOR TYPE 3 MANHOLES SHALL BE REMOVED AS NECESSARY PRIOR TO RESETTING THE WIDE FLANGE RING OR FLAT CONCRETE SLAB AND RING. ALL WORK AND MATERIALS SHALL CONFORM TO THE DETAILS SHOWN AND THE GENERAL NOTES.

UPWARD ADJUSTMENT (GREATER THAN 12")

All Types

THE ENTIRE DRAW OF TYPES A, B, C, D, 1 AND 2 MANHOLES SHALL BE REMOVED. THE MANHOLE BARREL RAISED THE APPROPRIATE AMOUNT, A NEW DRAW CONSTRUCTED, AND THE RING AND COVER RESET. THE UPPER PORTION OF TYPE 3 MANHOLES SHALL BE REMOVED TO THE BOTTOM OF THE FLAT CONCRETE SLAB, THE BRICK MASONRY BARREL SUPPORTING THE SLAB SHALL BE RAISED THE APPROPRIATE AMOUNT, AND THE SLAB AND RING AND COVER RESET. THE WIDE FLANGE RING AND COVER OF TYPE 4 MANHOLES SHALL BE REMOVED, THE BRICK MASONRY BARREL SUPPORTING THE RING SHALL BE RAISED THE APPROPRIATE AMOUNT AND THE RING AND COVER RESET. ALL WORK REQUIRED FOR A GREATER THAN TWELVE INCH (12") UPWARD ADJUSTMENT OF ANY MANHOLE SHALL BE ACCOMPLISHED WITH BRICK MASONRY IN ACCORDANCE WITH THE DETAILS SHOWN AND THE GENERAL NOTES.





* To be used only if necessary to keep ring and cover from conflicting with curb or combined curb and gutter. Flat concrete slab shall be rotated on existing manhole to position ring and cover in pavement or behind curb.

FLAT CONCRETE SLAB DETAILS

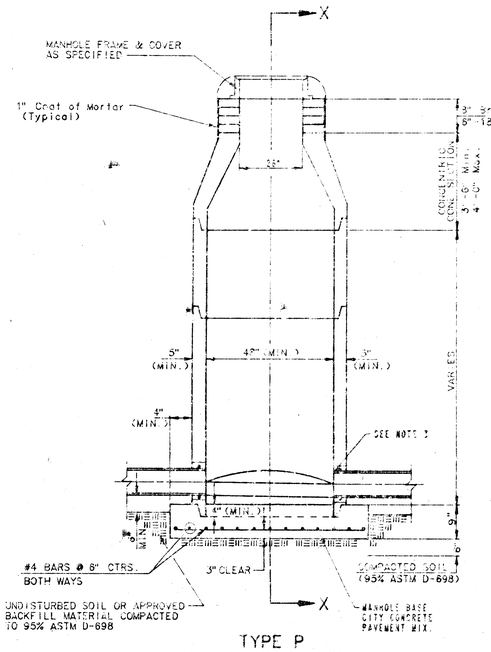
MANHOLE ADJUSTMENT DETAILS

CITY OF WICHITA, KANSAS
M. E. LINDEBAK — CITY ENGINEER

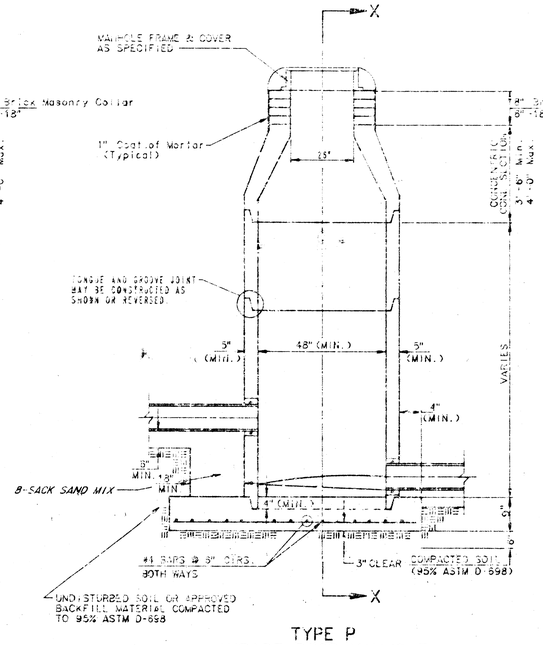
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Drawn by		Date		Job No.

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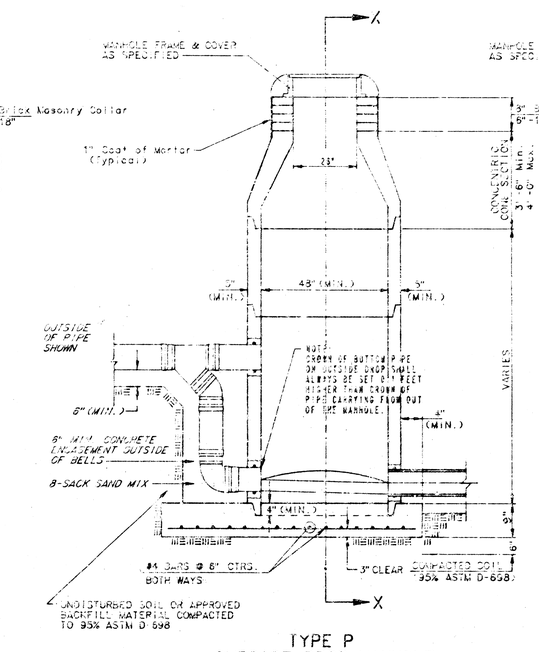
ADOPTED AS STANDARD DESIGN BY CITY OF WICHITA



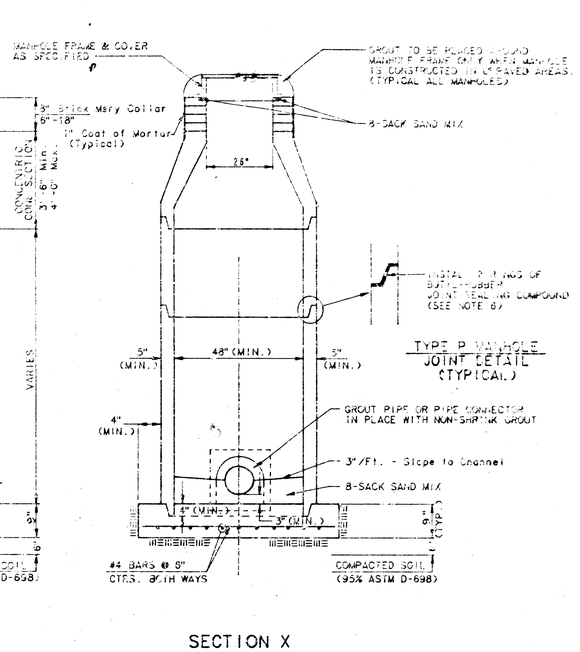
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE

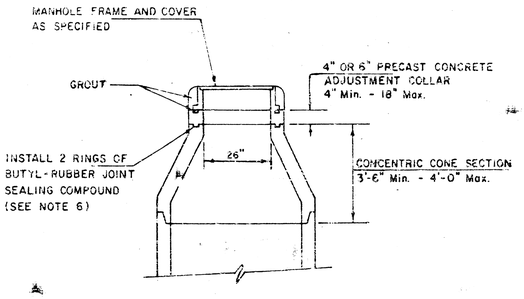


SECTION X
(TYPICAL)

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 PI SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM 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 BITUMIROUS 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 8" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR 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 MEET 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 PI E 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.



ALTERNATE CONSTRUCTION
IN UNPAVED AREAS

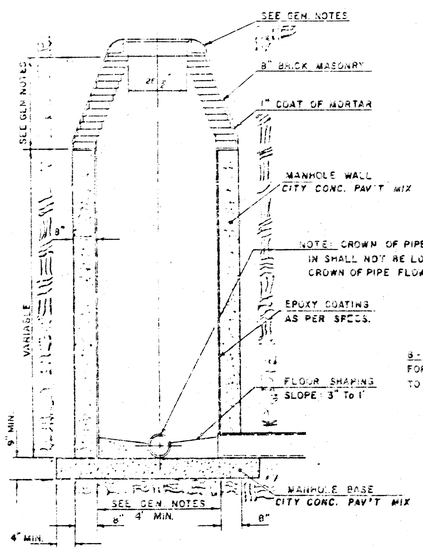
Revised 3-21-89
Revised 8-10-88
Revised: June 12, 1985

SEWER APPURTENANCES DETAILS

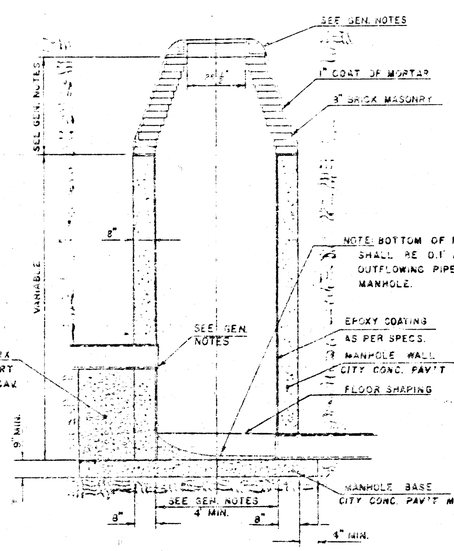
ADOPTED AS STANDARD DESIGN
BY

CITY OF WICHITA, KANSAS

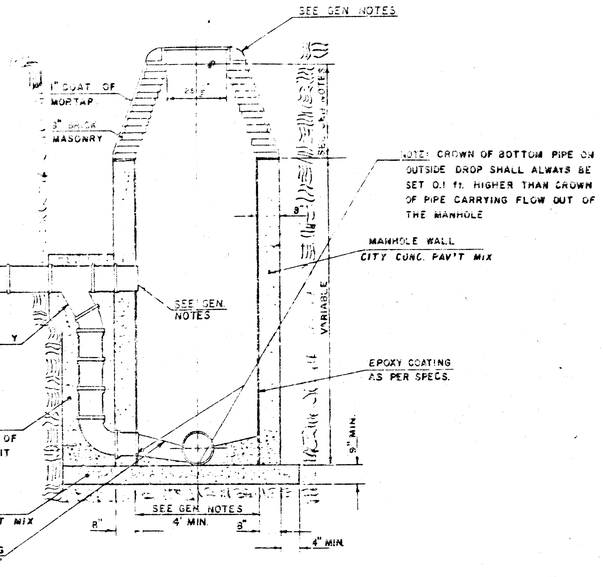
TYPE "D" MANHOLE



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. FORMS 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 48" WHEN THE MANHOLE DEPTH EXCEEDS THE REQUIRED BARREL 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 CONES ON A 4' DIAMETER MANHOLE SHALL BE 4'. MANHOLES HAVING A DIAMETER OF 5' SHALL HAVE CONES 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 5" 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 CHANNEL SHALL BE FLARED 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. [illegible] SHALL HAVE A SLOPE OF 1 INCH PER FOOT IN THE AREAS [illegible] CHANNEL. [illegible] THE FLOW CHANNEL [illegible] SHALL BE [illegible] THE TOP OF THE [illegible] TO ALLOW [illegible] THE BOTTOM OF THE MANHOLE. MANHOLE FLOOR SHALL SLOPE FROM THE WALL TO THE BOTTOM HALF OF THE PIPE WITH FLOWS TO FLOW CHANNEL.

5. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE ENCASED WITH CONCRETE AT THE TIME OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE ENCASEMENT SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CONCRETE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF ENCASEMENT AND 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 "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: EPOXY COATING ON INTERIOR CONCRETE SURFACES MAY BE DELETED WHEN TYPE "D" MANHOLES ARE CONSTRUCTED ON SEWERS WITH DIAMETERS SMALLER THAN 12".

APRIL 1987

MANHOLE FRAME AND COVER DETAIL

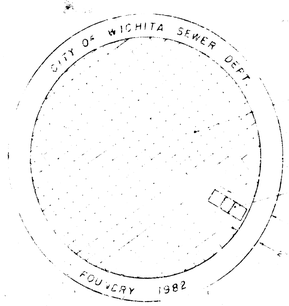
ADOPTED AS STANDARD DESIGN

BY

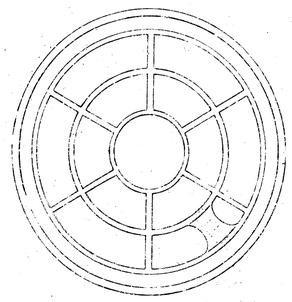
City of Wichita, Kansas

MANHOLE COVER

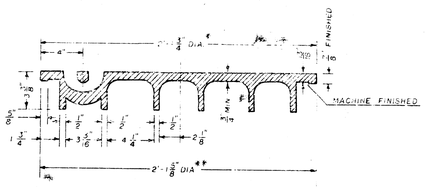
Weight: 130 Lbs.



TOP VIEW



BOTTOM VIEW

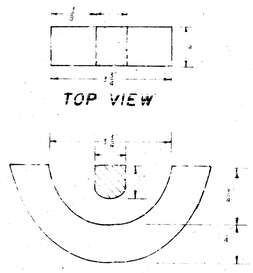


SECTION VIEW

* OUTSIDE DIA TOP OF COVER

** OUTSIDE DIA BOTTOM OF COVER

PICKHOLE DETAIL

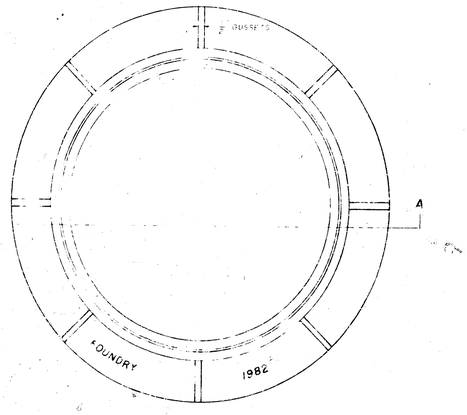


TOP VIEW

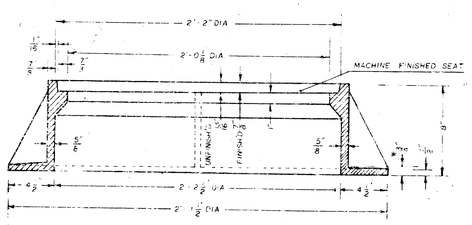
SECTION VIEW

MANHOLE FRAME

Weight: 240 Lbs.



TOP VIEW



SECTION A-A

GENERAL NOTES:

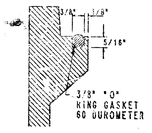
1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AN MINIMUM REQUIREMENTS AND ANY DEVIATION FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE 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.



FRAME GASKETING DETAIL

WHERE SPECIFIED, MANHOLE FRAMES FOR THIS PROJECT SHALL BE FURNISHED WITH AN APPROVED "O" RING GASKET GROOVED INTO THE BEARING SURFACE OF THE MANHOLE FRAME. THE "O" RING GASKET SHALL NOT BE INSTALLED IN THE MANHOLE FRAME UNTIL AFTER FINAL INSPECTION AND ACCEPTANCE OF THE PROJECT BY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE TO THE OWNER ONE REPLACEMENT "O" RING GASKET FOR EACH MANHOLE FRAME INSTALLED.

JNL DEC 1981