LATERAL 1 AND LATERAL 43, MAIN 3, SOUTHWEST INTERCEPTOR SEWER

PROJECT NOS.

468-76-245-81800-000-000-001
468-76-245-81803-000-000-001

MICHAEL E. LINDEBAK CITY ENGINEER

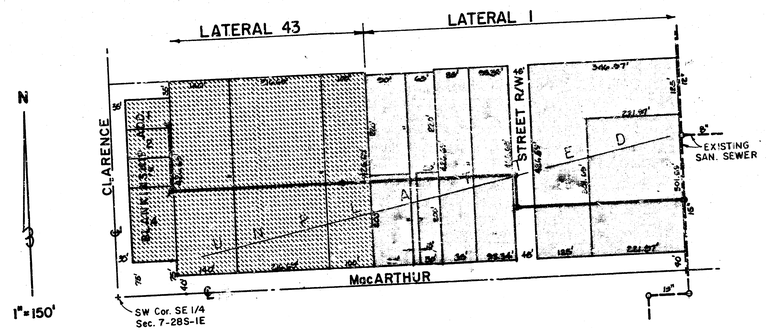
INDEX

1. Title and Improvement Districts
2-3. Plan - Profile
4. Detail Std. Type "D" Manhole
5. Detail Std. Shallow Manhole

BENCH MARKS

City Std. Disc at NW corner of MacArthur Road and Clarence, 84' N. and 42' W. of S.¼ corner; Elevation 93.61

Hex bolt in south side HLP or N. side of MacArthur (6th pole W. of Seneca), 40' N. of centerline; Elevation 92.05



IMPROVEMENT DISTRICTS

LATERAL 1

LATERAL 43

GENERAL NOTES

1. 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.

2. 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.

3. Existing utilities and their locations, as shown on the plans, represent the best information obtainable for design. The Contractor shall be required to work around existing utilities within the easement and right of way which do not conflict with construction.

4. Private utility service lines may exist within the easements. The Contractor shall be required to work around such service lines which do not conflict with construction. Any such lines damaged during construction shall be repaired or replaced at the Contractor's expense. All such repair shall be considered incidental to the project.

5. Trees and shrubs within the permanent easement which are in direct conflict with proposed construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed construction shall be saved and protected from damage.

6. The Contractor shall be responsible for maintaining continous flow of sewage through construction at Sta. 0+00. 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.

7. The Contractor shall contact Linn Blankinship at 1820 W. MacArthur to arrange for access to the west end of the project.

THOMAS CHARLES JENSEN 9021 KANSAS PROFESSIONAL ENGINEER

AS BUILT RMC 11-88

1/5

Revised 8-23-88; raised pipe elevations.

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Design:	Drawn:	Approved:	Date:	Scale:
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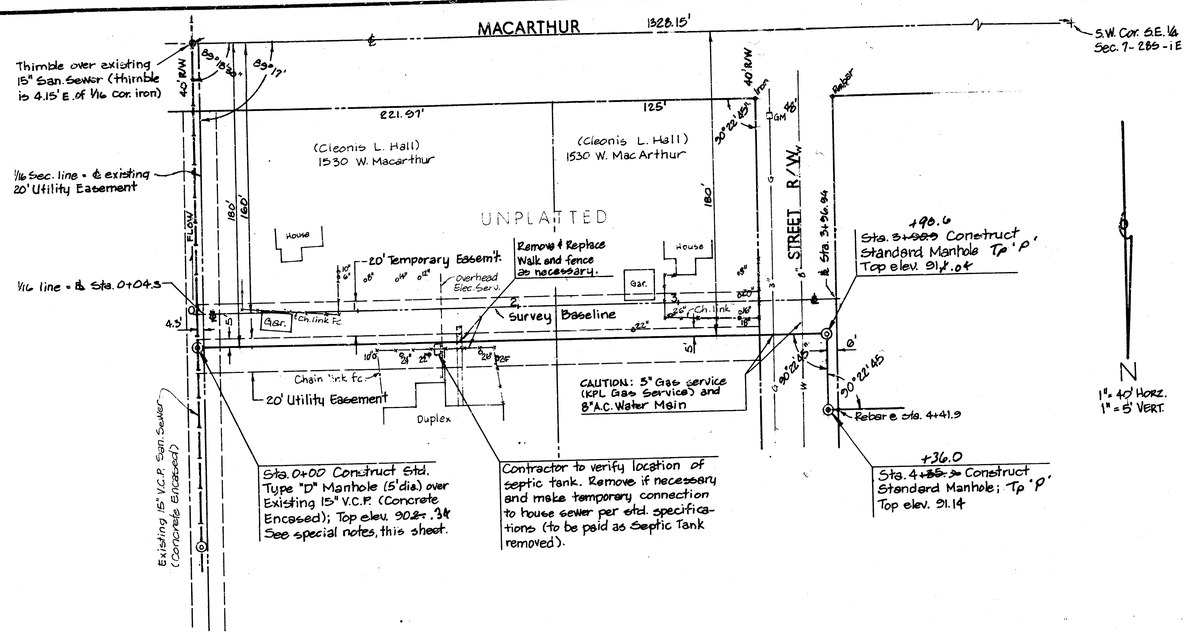
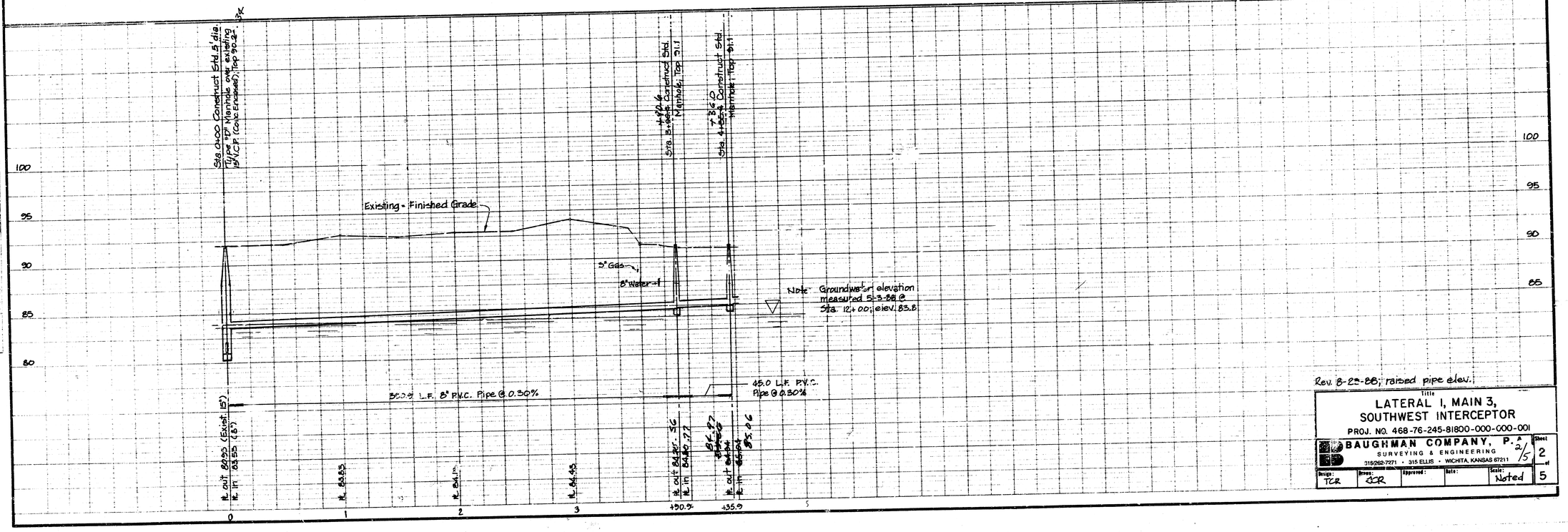


SPECIAL NOTES:
The manhole at Sta. 0+00 shall be constructed as follows, or by other methods with the Engineer's approval:

1. Saw concrete encasement along manhole invert lines.
2. Construct 9" Conc. Manhole base to support encased pipe.
3. After sufficient cure time, break out top half of pipe and encasement. Saw additional neat lines as necessary.
4. Construct manhole wall and slope floor per standard detail.
5. All debris from breaking into pipe shall be removed and prevented from flowing downstream in the sewer.



Rev. 8-23-88; raised pipe elev.

Title
LATERAL I, MAIN 3,
SOUTHWEST INTERCEPTOR
PROJ. NO. 468-76-245-81800-000-000-001

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TCR 4-88
FINAL 8-31-88

330.03' MACARTHUR (Sec. line)

S.W. Cor. ¼ E. ½ Sec. 7-28S-1E

STREET R/W

(Kerry R. Feagan) 1612 W. MacArthur

(Thomas A. Parker) 1916 W. MacArthur

(Jos. Fields) 1841 S. Lorraine

(Duane F. Koehler) 1023 W. 52nd St. S.

(William H. Boren) 1710 W. MacArthur

(Dale L. Gable) 1724 W. MacArthur

(Alvin R. Kidwell) 1810 W. MacArthur

UNPLATTED

UNPLATTED

CLARENCE

BLANKINSHIP ADDITION

Sta. 3+90.9

Sta. 4+35.9 (Sheet 2)

+36.0

Relocate shed (no foundation). Contractor to contact owner to determine new location.

Relocate shed (no foundation). Contractor to contact owner to determine new location.

Remove & Replace Fence as necessary

20' Temporary Easement

4 Yard Hydrant

Wood Fence

Woven Wire Fence

Chain link Fc.

Rebar @ 4+41.9

Stacked Fence

5'&8' Cedars

Woven Wire Fc.

4' Wood Fc.

House

20' Utility Easement

Remove & Replace Fence as necessary per std. specifications (Typical).

(Dorothy F. Poyner) 1634 W. MacArthur

Building

Sta. 7+75.3 End Lateral 1; Begin Lateral 43

Sta. 8+37.0 Construct Standard Manhole; Top ~~94.0~~ 93.92

Remove & Replace Fence as necessary.

10' Utility Easement

+38.5

Sta. 12+~~37.8~~ Construct Standard Shallow Manhole; Top ~~95.5~~; 4" Stub S.W.

93.18

Shallow Tp '0'

6' Wire Fence

SHED

Evergreen Clump

10' Utility Easement

+37.9

Sta. 13+~~87.0~~ Construct Special Shallow Manhole; Tp '0'

Top ~~92.1~~, 4" Stub N.W.

92.20

Woven wire Fence

20' Temporary Easement

105'

N

1" = 40' HORZ.

1" = 5' VERT.

LATERAL 1

LATERAL 43

Existing - Finished Grade

Note: Groundwater elev. measured 5-5-88 (in Well) @ Sta. 12+00, elev. 85.8

Sta. 4+35.4 Construct Standard Manhole; Top 91.1

Sta. 7+75.3 End Lateral 1 Begin Lateral 43

Sta. 8+37.0 Construct Standard Manhole; Top 94.0

Sta. 12+~~37.8~~ Construct Shallow Manhole; Top ~~95.5~~; 4" Stub S.W.

93.18

Sta. 13+~~87.0~~ Construct Special Shallow Manhole; Top ~~92.1~~; 4" Stub N.W.

92.2

401.3 L.F. 8" P.V.C. Pipe @ 0.50%

400.3 L.F. 8" P.V.C. Pipe @ 0.50%

149.7 L.F. 8" P.V.C. Pipe @ 0.50%

Rev. 8-25-88; raised pipe elev.

Title

LATERAL 1 & LATERAL 43, MAIN 3 SOUTHWEST INTERCEPTOR

PROJ. NOS. 468-76-245-81800/81803-000-000-001

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Sheet 3 of 5

Design:	Drawn:	Approved:	Date:	Scale:
TCR	DCR			Noted

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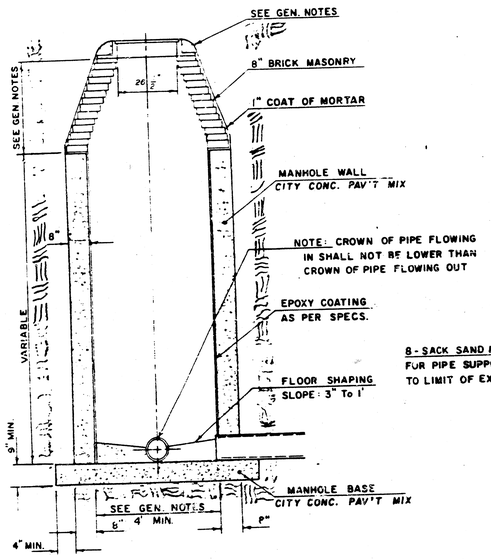
SEWER APPURTENANCES DETAILS

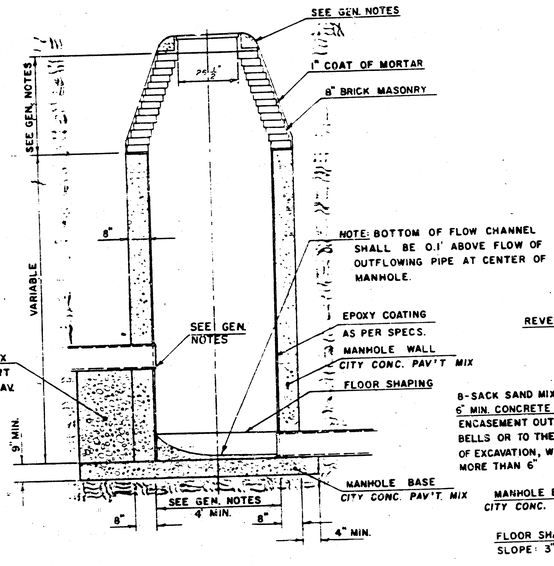
ADOPTED AS STANDARD DESIGN
BY

CITY OF WICHITA, KANSAS

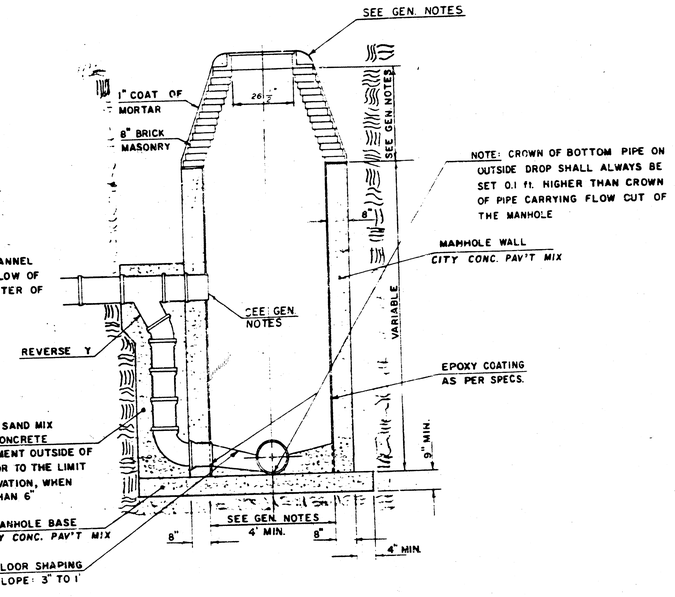
TYPE "D" MANHOLE



TYPE "D" INSIDE DROP MANHOLE



TYPE "D" OUTSIDE DROP MANHOLE



GENERAL NOTES

1. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 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 PIPES 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 DRAWING. MANHOLE FLOOR SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS. SLOPES TOWARD THE FLOW CHANNELS SHALL BE SUCH THAT THE TOP HALF OF THE CHANNEL IS NOT LESS THAN THE FULL INSIDE DIAMETER OF THE MANHOLE. FORMED FLOOR AREAS OUTSIDE THE FLOW CHANNELS SHALL HAVE THE TOP OF THE MANHOLE BENCH NOT LESS THAN SIX INCHES ABOVE THE BOTTOM HALF OF THE PIPE WITHIN FLOW CHANNEL. *(See special note, sheet 2).*

5. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE ENCASED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE ENCASE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE ENCASE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF ENCASE 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 "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 OMITTED WHEN TYPE "D" MANHOLES ARE CONSTRUCTED IN SCRAPS WITH DIAMETERS SMALLER THAN 5'.

STANDARD TYPE 'D' MANHOLE DETAIL
CITY of WICHITA, KANSAS

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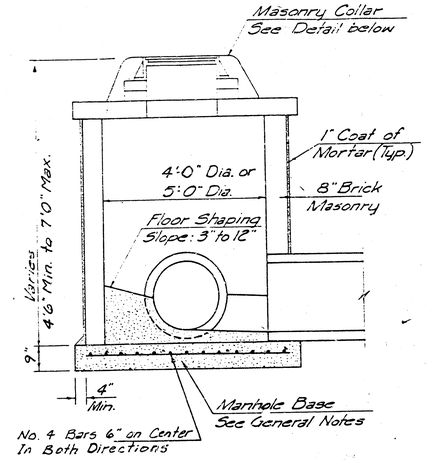
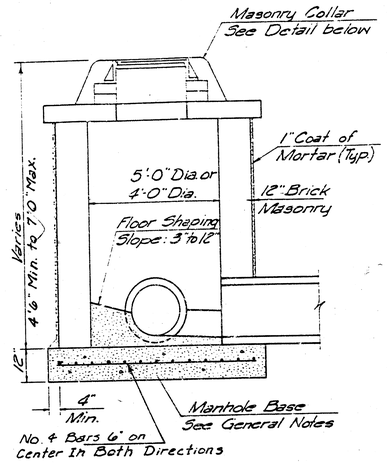
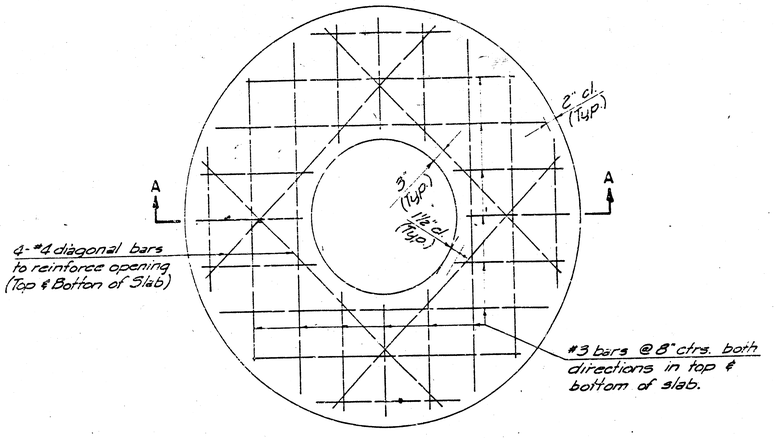


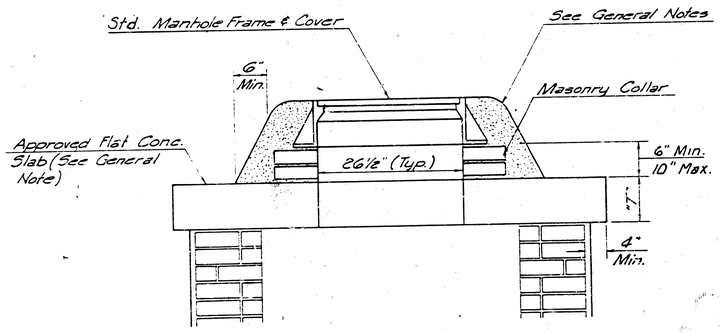
SHALLOW TYPE "A" MANHOLE



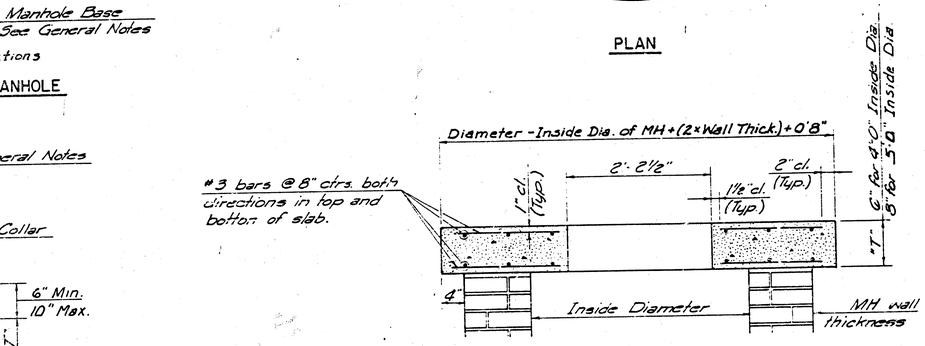
SHALLOW TYPE "B" MANHOLE



PLAN

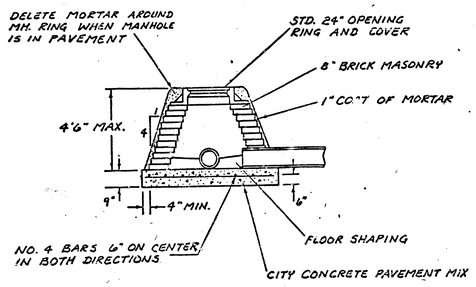


MASONRY COLLAR DETAIL

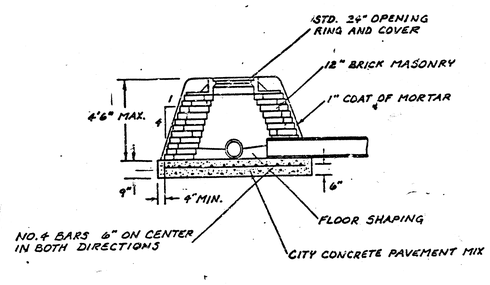


SECTION A-A

FLAT CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE 'A' MANHOLE



SPECIAL SHALLOW TYPE 'B' MANHOLE

GENERAL NOTES

1. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 6 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 CEMENT 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 "A" SHALLOW MANHOLES CAN BE USED ON SEWERS WHEN THE MANHOLE IS NOT LOCATED WITHIN PUBLIC STREET PAVEMENT. 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.

2. 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 6" 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.

3. 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. 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 HEAT 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.

4. 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.

5. 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 DRAWINGS.

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

7. STANDARD SHALLOW MANHOLES TYPE "A" AND "B" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR THE TYPE AND DIAMETER INDICATED. STANDARD SPECIAL SHALLOW MANHOLES TYPE "A" AND "B" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR THE TYPE INDICATED. ALL STANDARD SHALLOW MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

CITY OF WICHITA, KANSAS
STANDARD SHALLOW MANHOLES
TYPE 'A' AND TYPE 'B'

5/5

468-76-245-81803-000-000-001

Designed by		Checked by	5
Drawn by		Date	Job No. 5

10 3 15