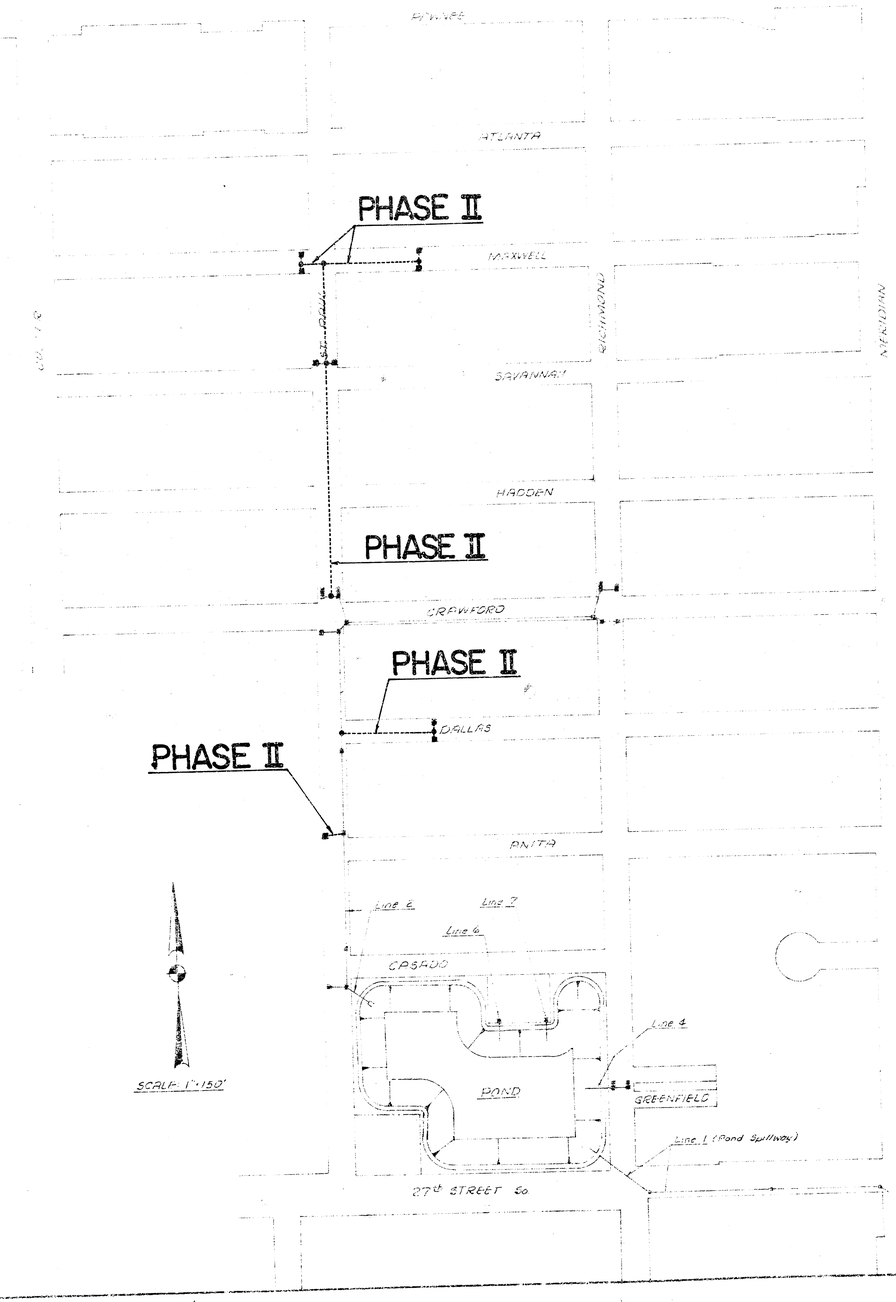
STORM WATER SEWER NO. 194, PHASE II



R. W. BRUGGEMAN, DIRECTOR OF ENGINEERING

CITY OF WICHITA, KANSAS

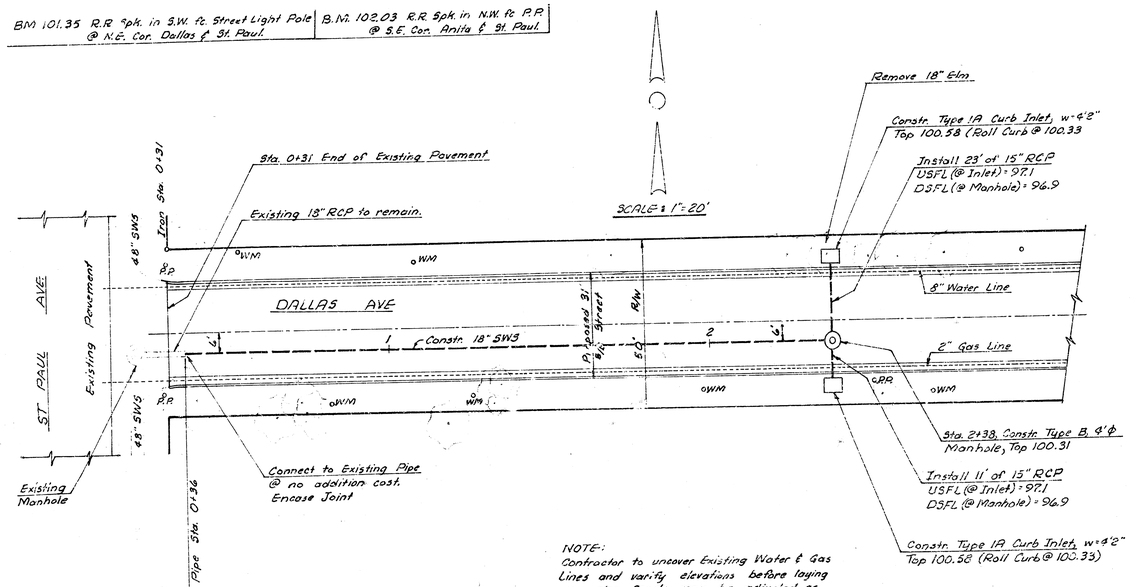
PROJECT NO. 468-76-246-80962-000-000-001

DATE: _____

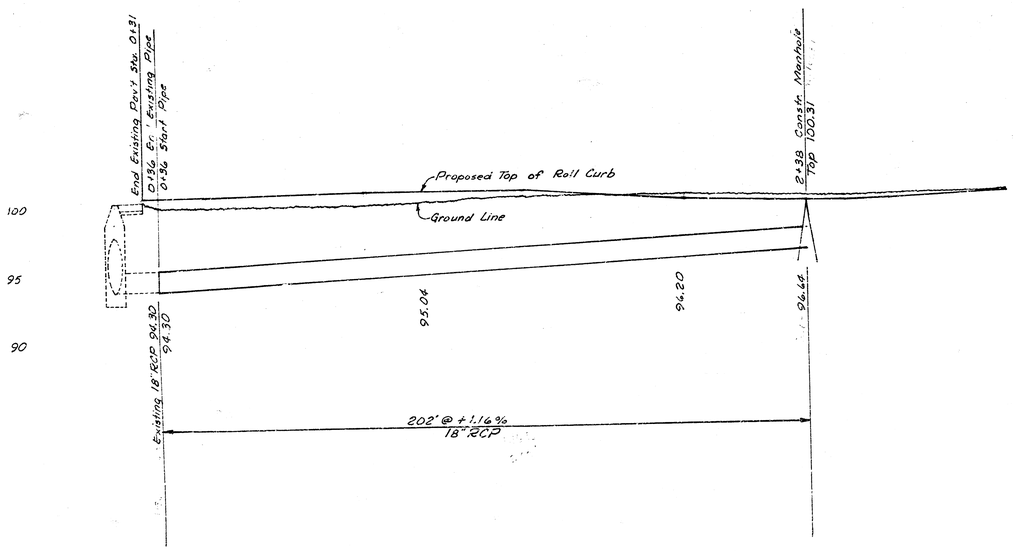
STORM WATER SEWER #194, PHASE II

BM 101.35 R.R. Spk. in S.W. ft. Street Light Pole @ N.E. Cor. Dallas & St. Paul

B.M. 102.03 R.R. Spk. in N.W. ft. P.P. @ S.E. Cor. Anita & St. Paul



NOTE:
Contractor to uncover Existing Water & Gas Lines and verify elevations before laying any pipe. Grade may be adjusted as required to eliminate conflicts.



BM 101.78 R.R. Spk. W-ft. Street Light Pole SE Cor. Casado & St. Paul

See Paving Plan to verify locations and elevations

PROJECT DESCRIPTION
SWS 194, Phase II

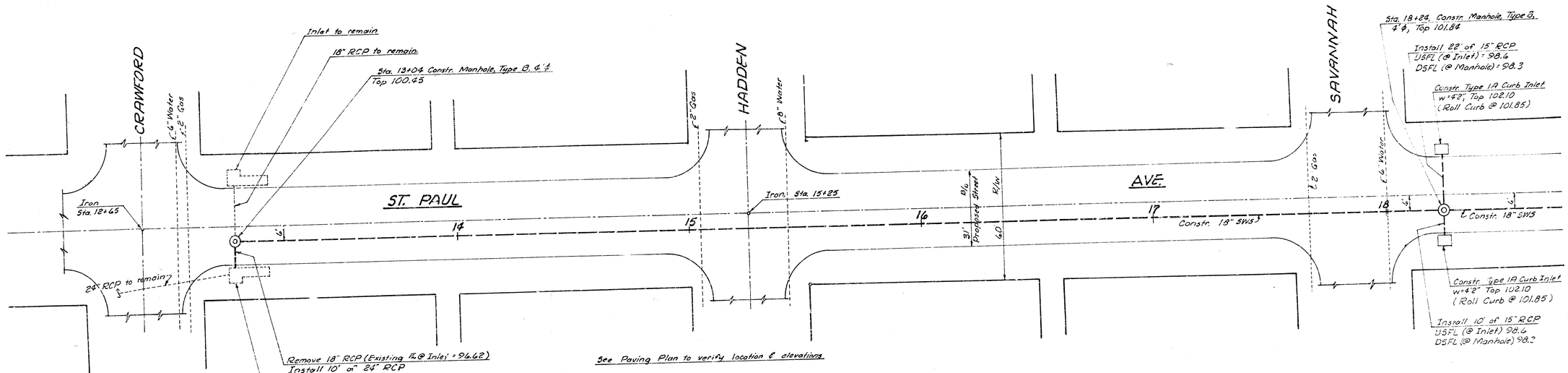
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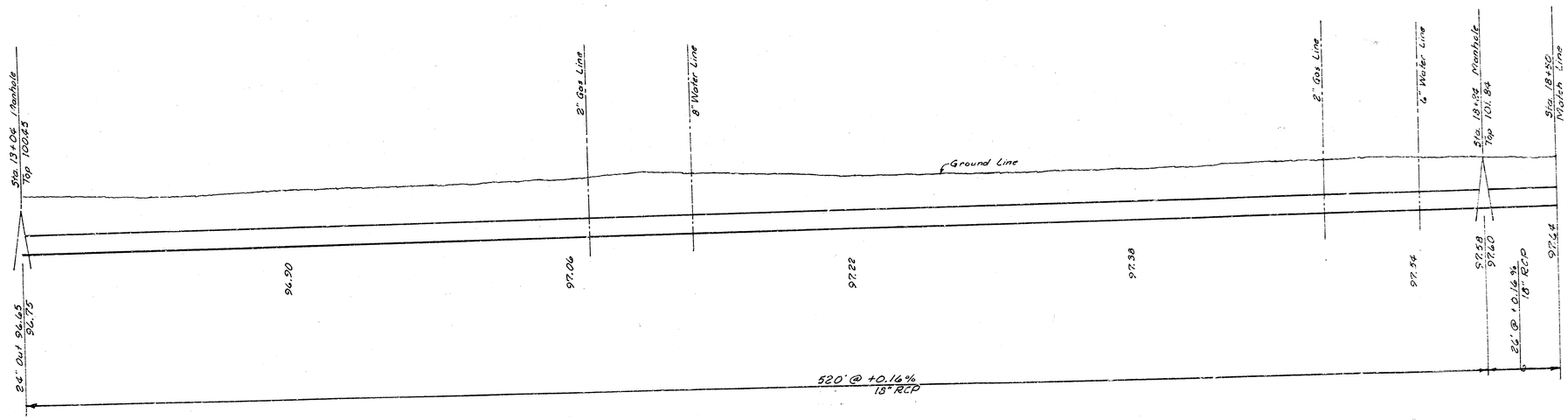
Sheet 2 of 6

0 1 2 3

BM 102.38 RR Spk. W-ft PP, SE Cor. St. Paul & Crawford

SCALE: 1"=20'





PROJECT DESCRIPTION

SWS 194, Phase II

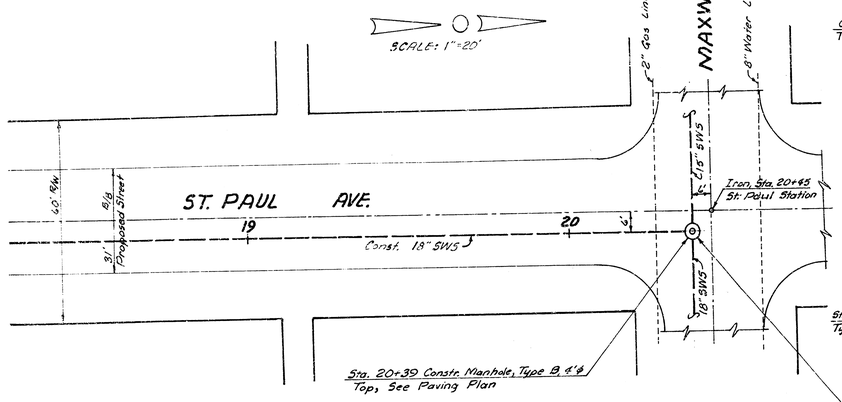
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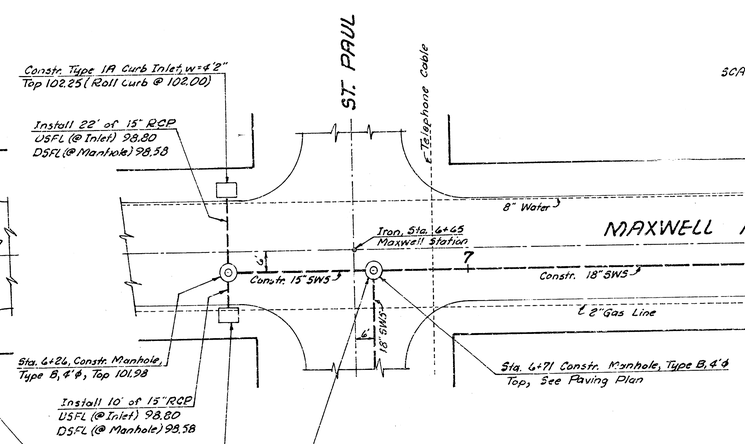
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Sheet 3/6 6

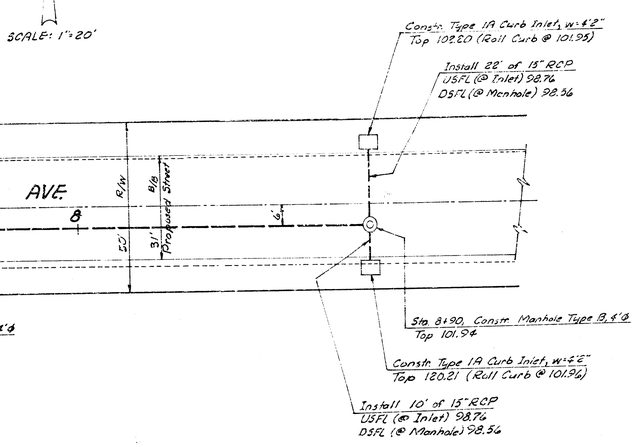
BM 101.42 RR Spk E-Q B.P., SW Cor. Crawford & Richmond

SCALE: 1"=20'

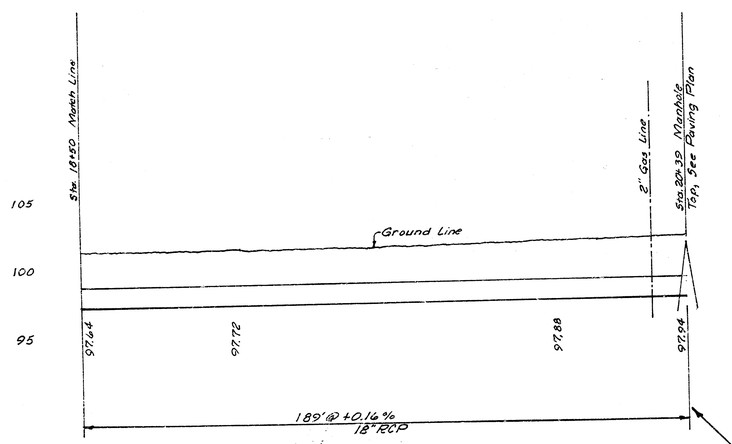


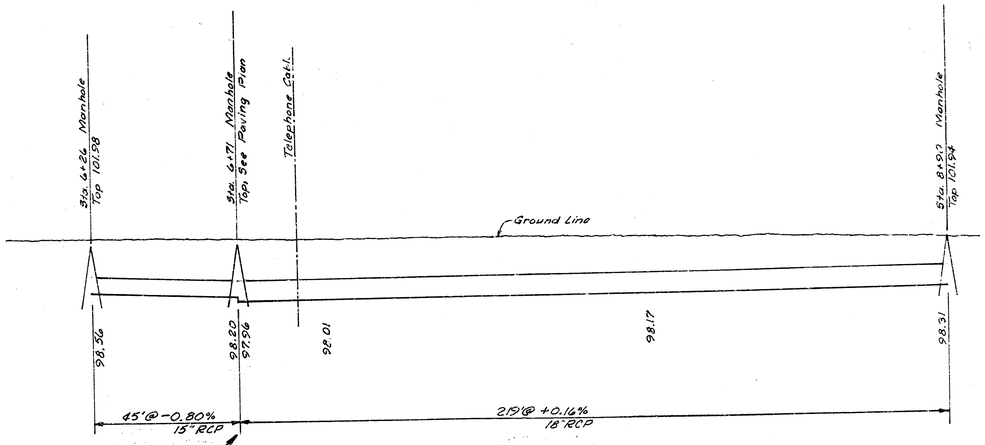


SCALE: 1"=20'



See Paving Plan to verify location & elevations





IDENTICAL MANHOLE

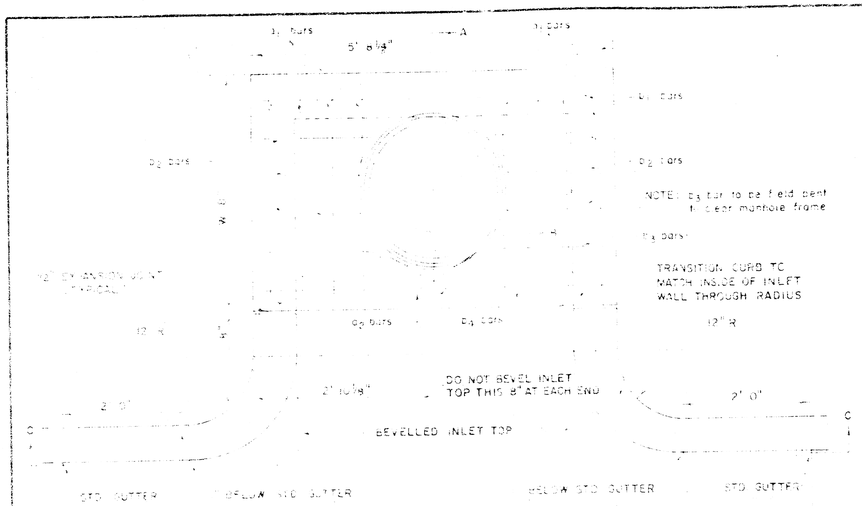
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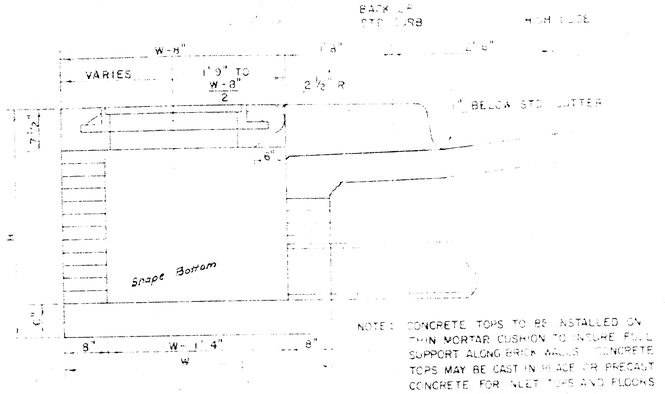
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SWS 194, Phase II

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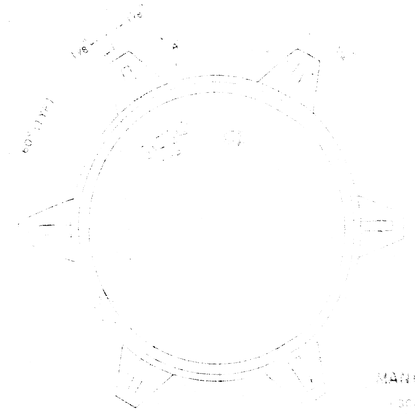
Sheet 6/6

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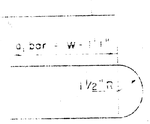




SECTION A-A
(SCALE 1" = 1'0")



PLAN (SCALE 1" = 1'0")



BENDING DIAGRAM

STEEL SCHEDULE

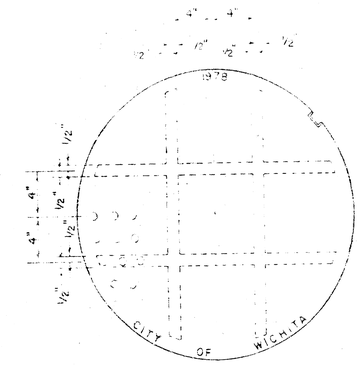
BAR	B_1	B_2 *	D_1 W=2'	W=5'	W=6'	W=7'	W=8'	D_2	D_3	D_4	AT LOC.
NUMBER	8	2	3	3	3	3	3	6	3	3	
SIZE	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	
W=2' 0"	5'8"	3'4"	5'5"	–	–	–	–	1'5"	5'6"	5'5"	60 #
W=5' 0"	8' 1"	4'4"	–	5'5"	–	–	–	1'5"	5'6"	5'5"	77 #
W=6' 0"	10' 1"	5'4"	–	–	5'5"	–	–	1'5"	5'6"	5'5"	97 #
W=7' 0"	11' 1"	6'4"	–	–	–	5'5"	–	1'5"	5'6"	5'5"	111 #
W=8' 0"	12' 1"	7'4"	–	–	–	–	5'5"	1'5"	5'6"	5'5"	124 #

LENGTH

* NOTE: B_2 BARS TO BE PLACED APPROX. 2" BELOW TOP OF INLET COVER

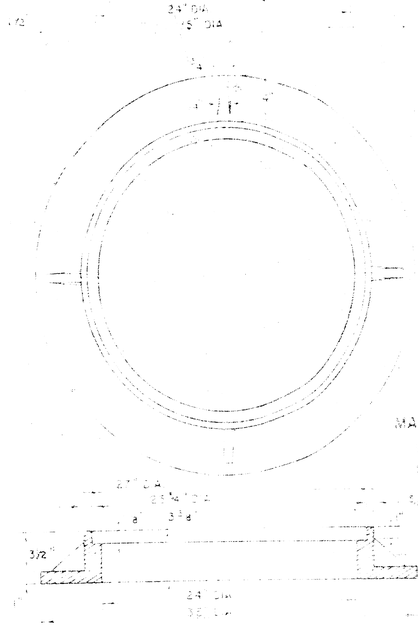
STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU.YD. CONC.
4' 2"	36"x5'8 1/4"x7 1/2"	21" & SMALLER	0.46 *
5' 0"	44"x5'8 1/4"x7 1/2"	24" & 30"	0.57 *
6' 0"	54"x5'8 1/4"x7 1/2"	36" & 42"	0.71 *
7' 0"	64"x5'8 1/4"x7 1/2"	48" & 54"	0.84 *
8' 0"	74"x5'8 1/4"x7 1/2"	60" & 66"	0.97 *

* GROSS VOLUME

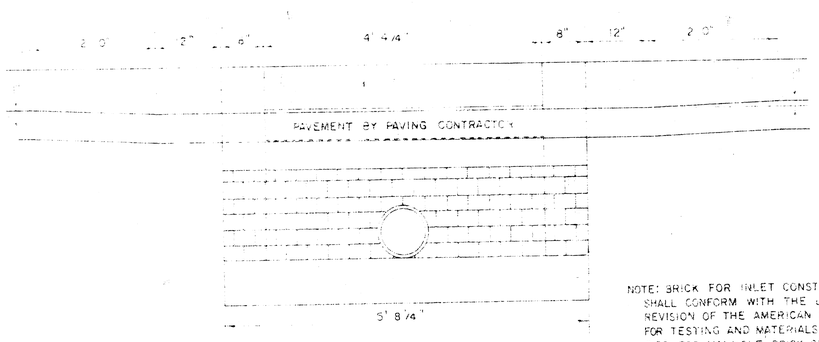


MANHOLE COVER
(SCALE 1" = 6")
WEIGHT = 170 LBS



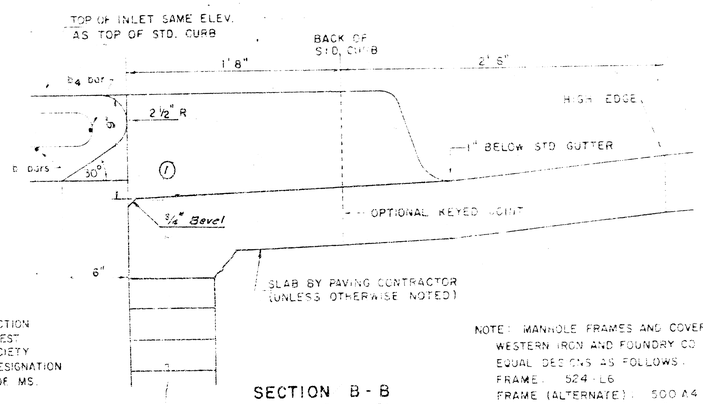


MANHOLE FRAME (ALTERNATE)
SCALE 1" = 6"
WEIGHT = 80 LBS.



SECTION C-C
(SCALE 1" = 1'0")

NOTE: BRICK FOR INLET CONSTRUCTION SHALL CONFORM WITH THE LATEST REVISION OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS DESIGNATION C-32 FOR MANHOLE BRICK GRADE MS.



SECTION B-B
(SCALE 1" = 6")

NOTE: MANHOLE FRAMES AND COVER ARE WESTERN IRON AND FOUNDRY CO. INC. OR EQUAL DESIGNS AS FOLLOWS:
FRAME: 524-L6
FRAME (ALTERNATE): 500 A4
COVER: 222 S4 "NOBBY"

1 Rev. 5-13-81

DETAIL STANDARD TYPE 1A CURB INLET

CITY OF WICHITA, KANSAS

R.W. BRUGGEMAN, DIRECTOR OF ENGINEERING/ CITY ENGINEER

JUNE, 1981

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FAS 194 Phase II

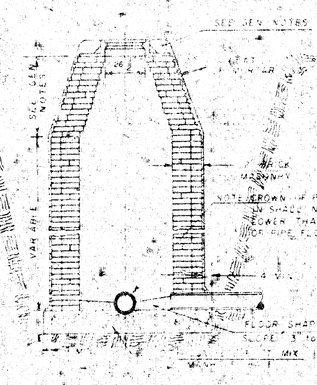
SEWER APPURTENANCES DETAILS

REVISED MAY 1981

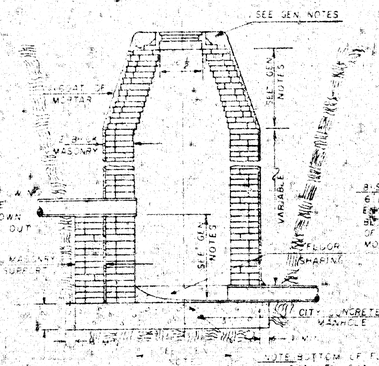
ADOPTED AS STANDARD DESIGN
BY

City of Wichita, Kansas

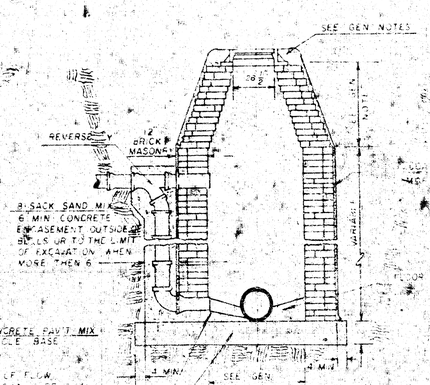
TYPE "B" MANHOLE



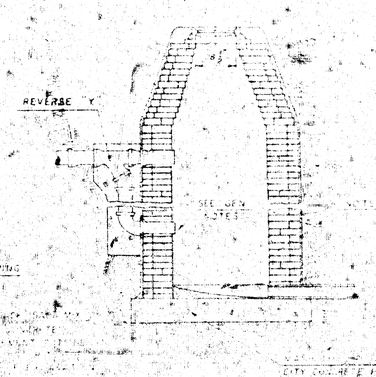
TYPE "B" INSIDE DROP MANHOLE



TYPE "B" OUTSIDE DROP MANHOLE



DETAIL OF OUTSIDE DROP CONSTRUCTED ON EXISTING MANHOLE



GENERAL NOTES

1. 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. "TYPE "B" MANHOLES CAN BE USED ON SEWERS HAVING DEPTHS GREATER THAN 16' OR WHEN THE MANHOLE IS LOCATED IN 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'. 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 BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 9" 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. 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. THE VERTICAL DROP FROM THE LOWER PIPE ON SUCH OUTSIDE DROP CONNECTIONS SHALL NOT EXCEED 4' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES SIZED LARGER THAN 12", EXCEPT THE CROWN OF THE LOWER PIPE SHALL NEVER BE SET BELOW THE CROWN OF ANY LARGER OUTFLOWING PIPE. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.

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 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.

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 "B" AND STANDARD INSIDE DROP MANHOLES TYPE "B" SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES TYPE "B" SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE I.D. UNLESS INDICATED OTHERWISE.

SWS #194 Phase II Sheet 4 of 4

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