

# STORM SEWER PLANS FOR SHANNON WOODS AT TALLGRASS S.W.S. NO. 316 PROJECT NO.

**468-76-245-81607-000-000-001**

CITY OF WICHITA, KANSAS  
MICHAEL E. LINDEBAK, CITY ENGINEER

JUNE 1989

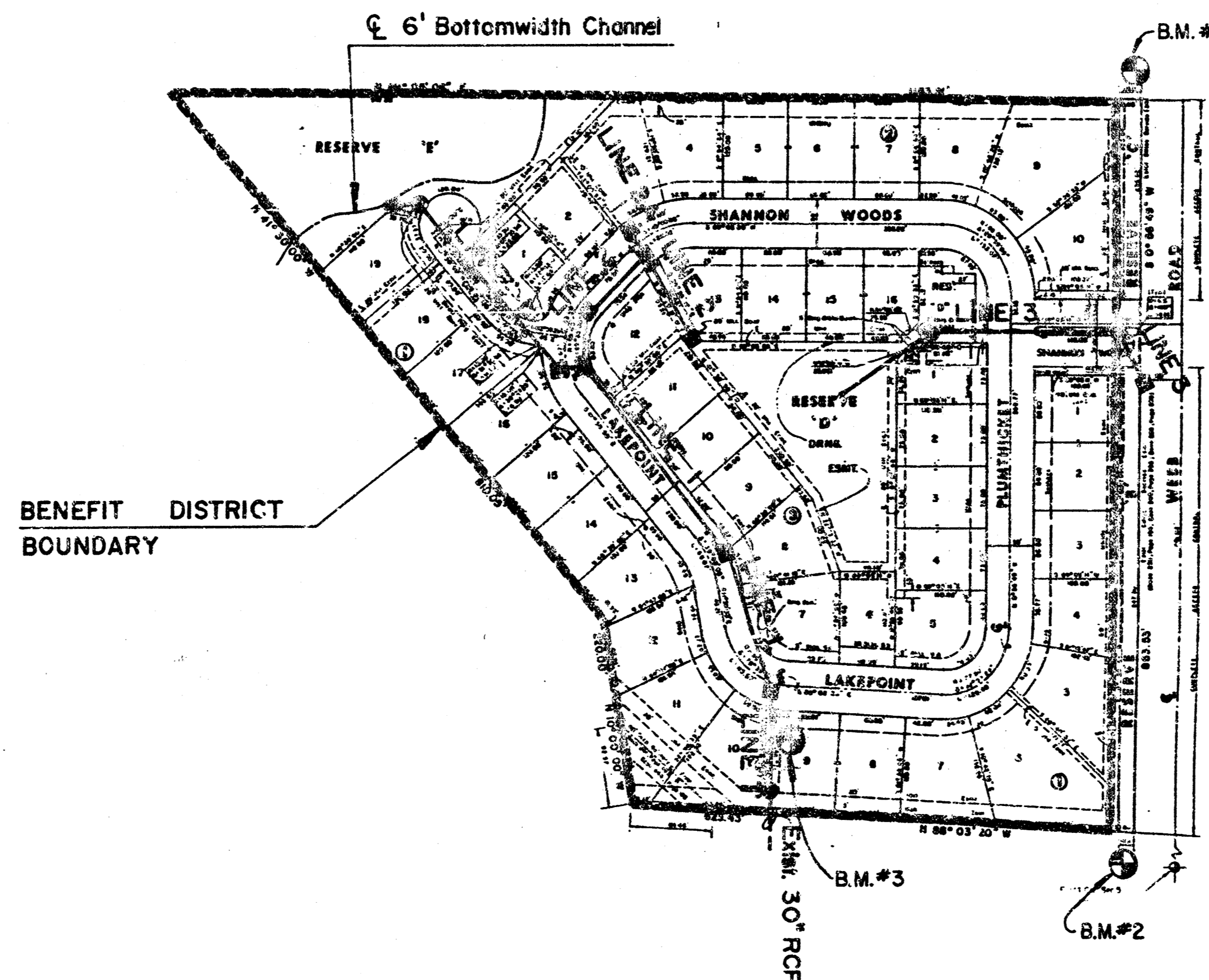
INDEX NO. 750026

### GENERAL NOTES

1. 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.
  2. THE TOPS OF INLET AND MANHOLE AS NOTED ON THE PLANS MAY VARY AS TO MEET PROPOSED TOP OF CURB ELEVATIONS OR PAVEMENT ELEVATIONS. THE FIELD ENGINEER SHALL LOCATE INLETS AND MANHOLES WITH REFERENCE TO PROPOSED PAVING PLANS OF THE PERTINENT STREETS. INLET DEPRESSIONS NEED TO BE TIED TO CURB, GUTTER, AND PAVING.
  3. ALL CONCRETE SHALL BE STANDARD PAVING MIX UNLESS OTHERWISE NOTED.
  4. 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. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT OF WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
- NOTE: NOTIFY THE FOLLOWING COMPANIES PRIOR TO ANY EXCAVATION:
- |                                   |                      |
|-----------------------------------|----------------------|
| KANSAS ONE-CALL                   | 1-800-344-7233       |
| BELL TELEPHONE COMPANY            | 1-571-2611           |
| CABLEVISION                       | 262-4270 or 262-0669 |
| KPL GAS SERVICE COMPANY           | 263-7511             |
| KANSAS GAS & ELECTRIC             | 264-1141             |
| CITY OF WICHITA WATER DEPARTMENT  | 268-4908             |
| CITY OF WICHITA SEWER MAINTENANCE | 268-4071             |
| WILLIAMS NATURAL GAS PIPELINE     | 524-3501             |
| PARMLAND INDUSTRIES COOP PIPELINE | 1-918-333-4111       |
| KANEB PIPELINE                    | 262-1408             |
5. TREES TO BE REMOVED ARE MARKED WITH 'X'. ALL TREES WHICH IN THE OPINION OF THE FIELD ENGINEER CAN BE SAVED, SHALL BE SAVED. DEVELOPER WANTS TO SAVE AS MANY TREES AS POSSIBLE.
  6. THE CHANNEL AND ALL AREAS DISTURBED BY EXCAVATION OF THE CHANNEL ABOVE WATER SHALL BE SEEDED, FERTILIZED, AND MULCHED PER CITY OF WICHITA SPECIFICATIONS.
  7. THE INLET DETAIL SHEETS IN THIS SET OF PLANS REFLECT THE RECENT MODIFICATIONS WHICH HAVE BEEN MADE TO THE STANDARD CITY OF WICHITA TYPE I-A CURB INLETS. THESE DETAIL SHEETS NEED TO BE REVIEWED BY CONTRACTOR.

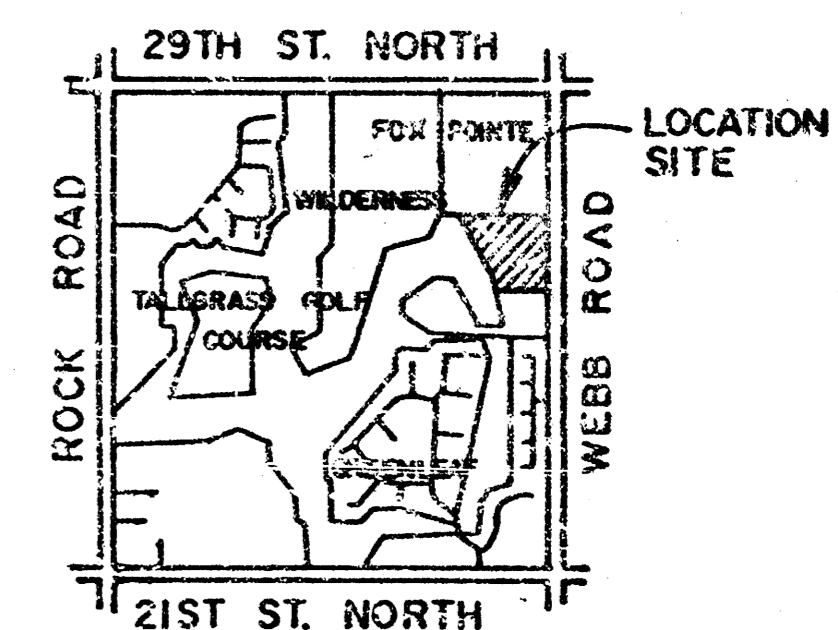
### BENCH MARKS

- B.M. #1: Top of "U" Post 4.5' N & 2' W of the NE cor. of Res. "C" Shannon Woods At Tallgrass  
ELEV. = 222.20'
- B.M. #2: RR spike in W face Hedge tree 185' N of C.L. Entrance to Woodsprings and 30' W of Webb.  
ELEV. = 225.20'
- B.M. #3: T-post 3' S of P.C. on Lot 9, Blk. 1, Shannon Woods At Tallgrass  
ELEV. = 218.41'



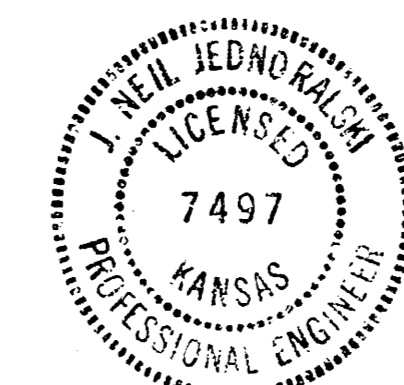
### INDEX TO DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN & PROFILE, CHANNEL
3,4	PLAN & PROFILE, LINE 1
5	PLAN & PROFILE, LINE 2 & 2A
6	PLAN & PROFILE, LINE 3
7	LAKE GRADING
8	STD. SHALLOW MANHOLE DETAIL
9	NEW TYPE I-A CURB INLET DETAIL (5-FT. OPENING)
10	NEW TYPE I-A CURB INLET DETAIL (10-FT. OPENING)
11	DROP INLET DETAIL
12-13	CHANNEL CROSS-SECTIONS
14	FINAL PLAN
ADD 8A	STD. TYPE 'B' MANHOLE DETAIL



### LOCATION MAP

REVISION 7-31-89 (CHANGE ON SHEET 6) JNJ  
REVISION 7-27-89 (ADD SHEET 8A; CHANGE ON SHEET 6) JNJ



<b>SHANNON WOODS AT TALLGRASS</b>	<b>STORM WATER SEWER PLANS</b>	Drawn by JNJ Checked by KSN Date JUNE 1989 Job No.
	MID-KANSAS ENGINEERING CONSULTANTS PA 3500 NORTH ROCK ROAD BUILDING 1800 WICHITA, KANSAS 67226	636-5566 Sheet 1 of 14

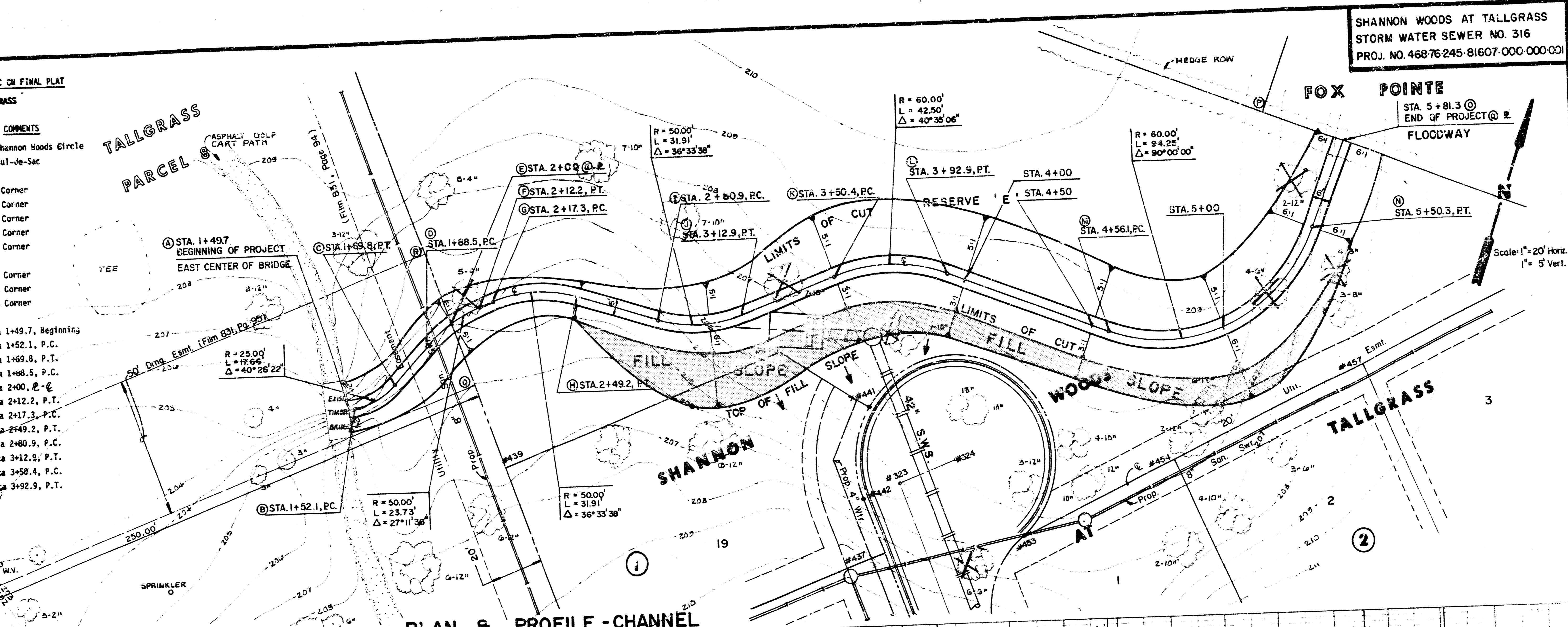
MNEC Proj. # 88-2643-D  
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SHANNON WOODS AT TALLGRASS  
 STORM WATER SEWER NO. 316  
 PROJ. NO. 468-76-245-81607-000-000-001

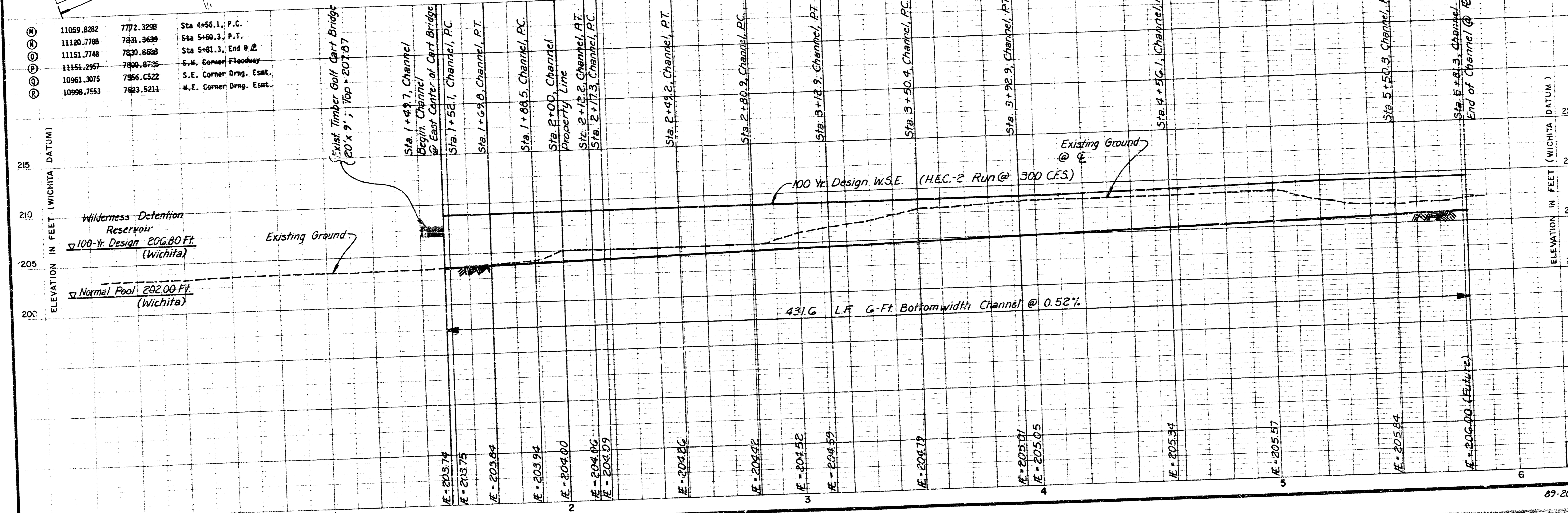
COORDINATE SYSTEM AS USED BY MKEC ON FINAL PLAT  
 SHANNON WOODS AT TALLGRASS

POINT #	NORTH COORDINATE	EAST COORDINATE	COMMENTS
323	10981.9267	7717.3256	Shannon Woods Circle
324	10997.1669	7734.5516	Cul-ve-Sac
437	10957.2563	7720.4593	Lot Corner
439	10937.6584	7577.5751	Lot Corner
440	11010.5466	7659.9602	Lot Corner
441	11003.6995	7698.1328	Lot Corner
442	10972.6500	7706.8402	Lot Corner
453	10979.5410	7767.0635	Lot Corner
454	11024.6159	7810.7410	Lot Corner
457	11079.8925	7864.2795	Lot Corner
(A)	10937.2589	7515.3276	Sta 1+49.7, Beginning
(B)	10938.3828	7517.4219	Sta 1+52.1, P.C.
(C)	10951.3271	7528.8914	Sta 1+69.8, P.T.
(D)	10968.7648	7535.6925	Sta 1+88.5, P.C.
(E)	10978.9196	7541.0735	Sta 2+00, P.T.
(F)	10988.0445	7549.1435	Sta 2+12.2, P.T.
(G)	10991.4244	7552.9642	Sta 2+17.3, P.C.
(H)	11003.7910	7581.7901	Sta 2+49.2, P.T.
(I)	11006.5227	7613.3990	Sta 2+80.9, P.C.
(J)	11018.8892	7642.2249	Sta 3+12.9, P.T.
(K)	11043.7638	7670.3405	Sta 3+58.4, P.C.
(L)	11058.8188	7709.1395	Sta 3+92.9, P.T.

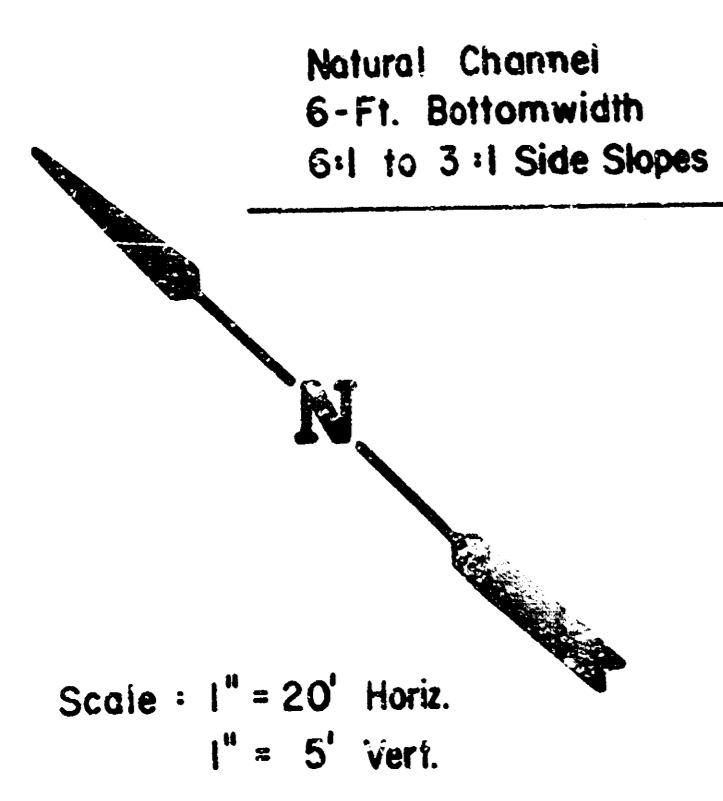
Wilderness Detention Reservoir  
 Normal Pool 202.00 Ft. (Wichita)  
 100-Yr. Design W.S.E. 206.80 Ft. (Wichita)  
 19 May 1989 - 201.84 Ft. (Wichita)



PLAN & PROFILE - CHANNEL



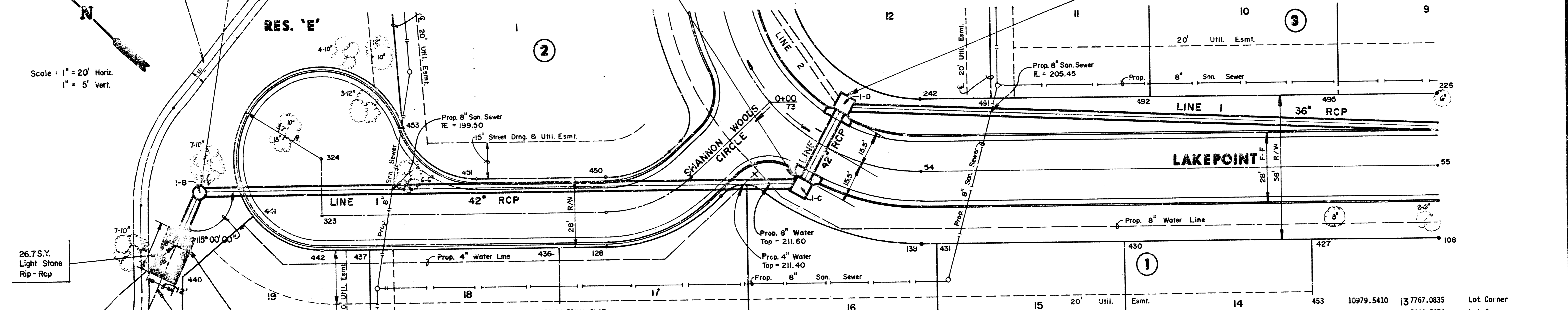
2/14  
 MKEC  
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Sta. 0 + 25.0, Line 1  
Const. Shallow Type 'B' Manhole  
Dia. = 5-Ft.  
Manhole Top = 212.00

Sta. 2 + 81.0, Line 1  
Const. Std. Type I-A Curb Inlet (Sump)  
W = 8' - 4", L = 6' - 4"  
Inlet Top = 215.26  
St. Sta. 0 + 28.29, Lakepoint  
15.5 Ft. Rt. (to Front Exterior Wall)

Sta. 3 + 19.8, Line 1 =  
Sta. 0 + 00, Line 2  
Const. Std. Type I-A Curb Inlet (Sump)  
W = 7' - 4", L = 6' - 4"  
Inlet Top = 215.26  
St. Sta. 0 + 28.29, Lakepoint  
15.5 Ft. Lft. (to Front Exterior Wall)



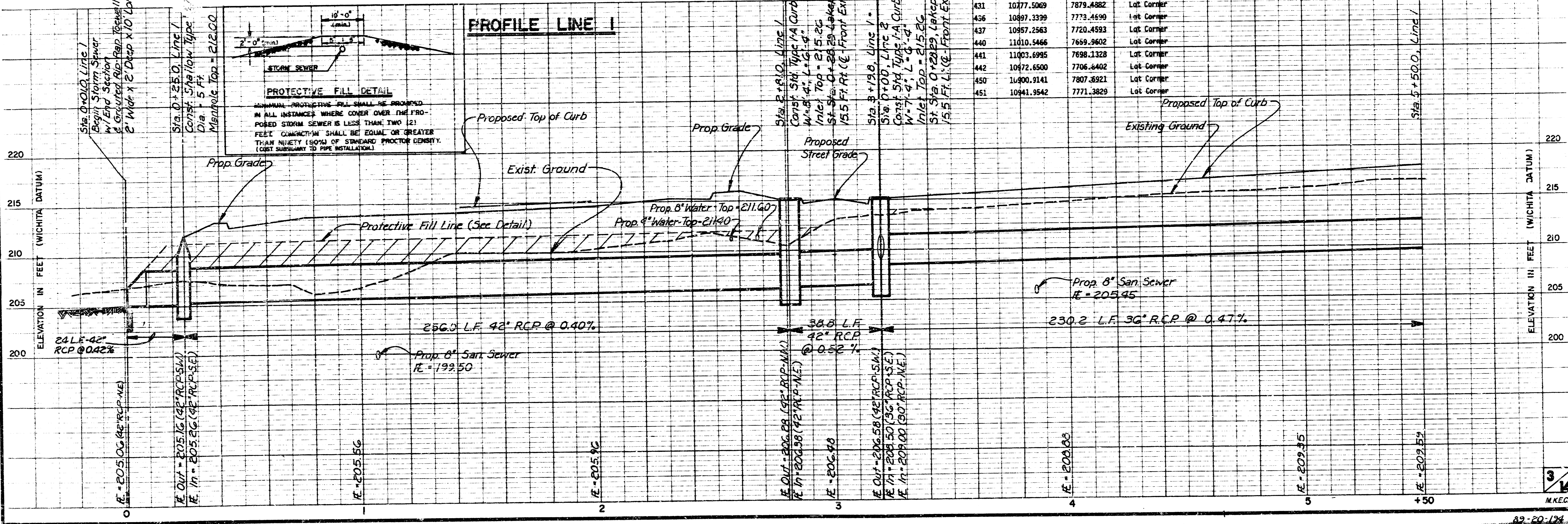
COORDINATED SYSTEM AS USED BY MKEC ON FINAL FLAT

SHANNON WOODS AT TALLGRASS

POINT #	NORTH COORDINATE	EAST COORDINATE	COMMENTS
54	10801.2880	7897.1690	0+71.97, Lakepoint CL
55	10636.5177	8042.9455	2+91.97, Lakepoint CL
73	10867.9858	7876.4659	0+00, Lakepoint CL
108	10617.3018	8021.2257	Lot Corner

PLAN LINE 1

PROFILE LINE 1



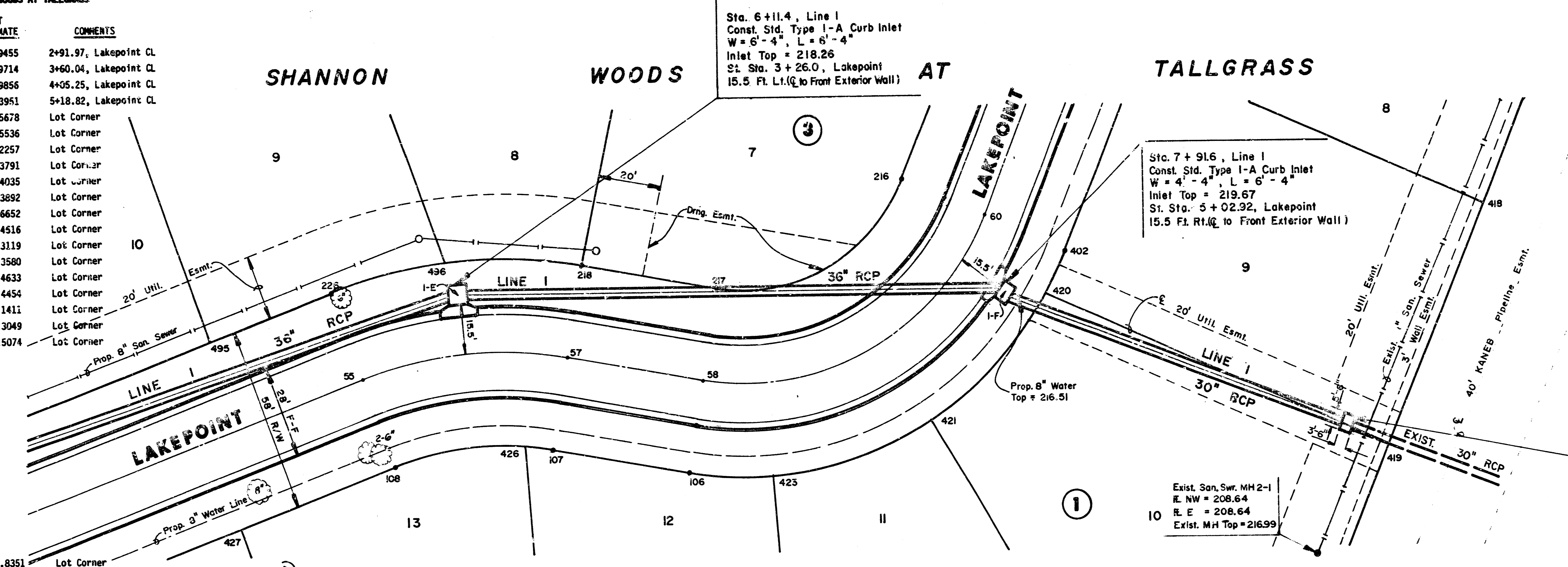
128	10882.3608	7786.7214	Lot Corner
138	10782.0720	7875.4493	Lot Corner
226	10655.7337	8064.6552	Lot Corner
242	10820.5040	7918.8888	Lot Corner
323	10981.9267	7717.3256	2+05.50, Shannon Woods Circle CL
324	10997.1669	7734.5516	2+28.50, Shannon Woods Circle CL
427	10657.6740	7985.5074	Lot Corner
430	10717.5905	7932.4978	Lot Corner
431	10777.5069	7879.4882	Lot Corner
436	10497.3339	7773.4590	Lot Corner
437	10957.2563	7720.4593	Lot Corner
440	11010.5466	7659.9602	Lot Corner
441	11003.6995	7698.1328	Lot Corner
442	10472.6500	7706.6402	Lot Corner
450	10400.9141	7807.5921	Lot Corner
451	10941.9542	7771.3829	Lot Corner

SHANNON WOODS AT TALLGRASS  
STORM WATER SEWER NO. 316  
PROJ. NO. 468-76-245-61607-000-00000

COORDINATE SYSTEM AS USED BY MKEC ON FINAL PLAT  
SHANNON WOODS AT TALLGRASS

POINT #	NORTH COORDINATE	EAST COORDINATE	COMMENTS
55	10636.5177	8042.9455	2+91.97, Lakepoint CL
57	10576.2950	8072.9714	3+60.04, Lakepoint CL
58	10531.9886	8081.9856	4+05.25, Lakepoint CL
60	10463.9839	8162.3951	5+18.82, Lakepoint CL
106	10526.2070	8053.5678	Lot Corner
107	10570.5133	8044.5536	Lot Corner
108	10617.3618	8021.2257	Lot Corner
216	10492.9672	8163.3791	Lot Corner
217	10537.7703	8110.4035	Lot Corner
218	10582.0766	8101.3892	Lot Corner
226	10655.7337	8064.6652	Lot Corner
402	10837.2311	8558.4516	Lot Corner
418	10312.8638	8222.3119	Lot Corner
419	10315.5783	8142.3580	Lot Corner
420	10436.4984	8146.4633	Lot Corner
421	10458.0619	8096.4454	Lot Corner
423	10500.3703	8062.1411	Lot Corner
426	10579.4551	8042.3049	Lot Corner
427	10657.6740	7985.5074	Lot Corner

495	10687.1399	8036.8351	Lot Corner
496	10624.2203	8086.3938	Lot Corner
1-E	10616.7173	8078.6291	6+11.4 CL Inlet
1-F	10448.7576	8142.7928	7+91.6 CL Inlet

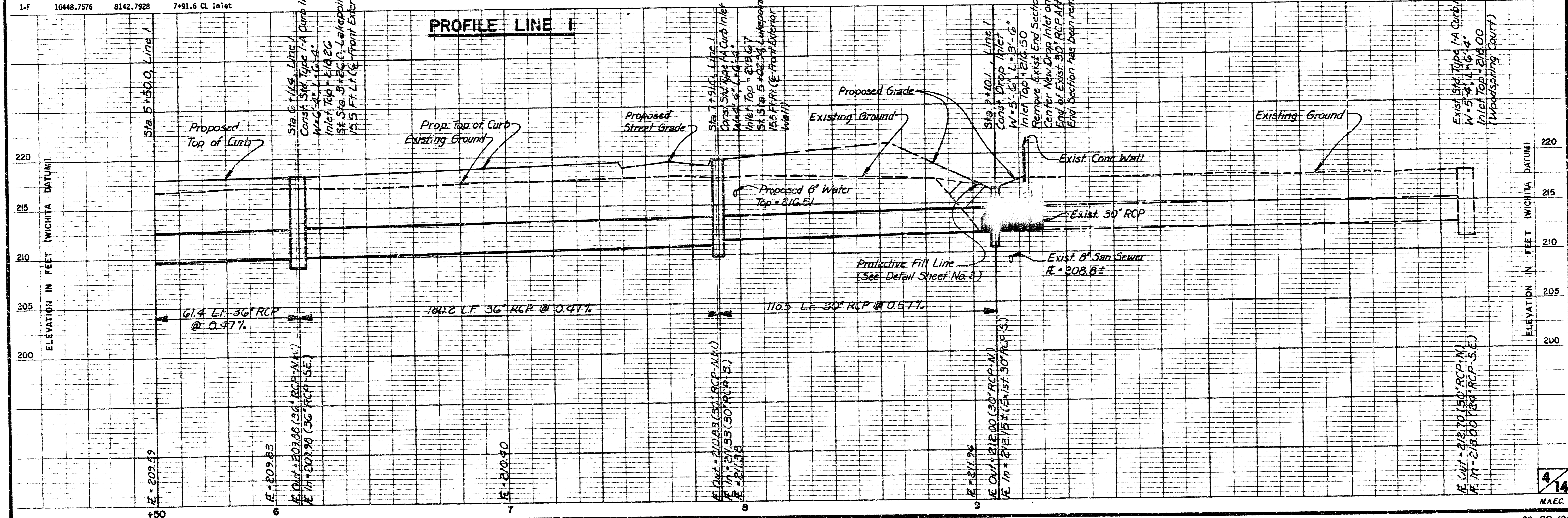


Scale: 1" = 20' Horiz.  
1" = 5' Vert.

ADDITION

PLAN LINE I

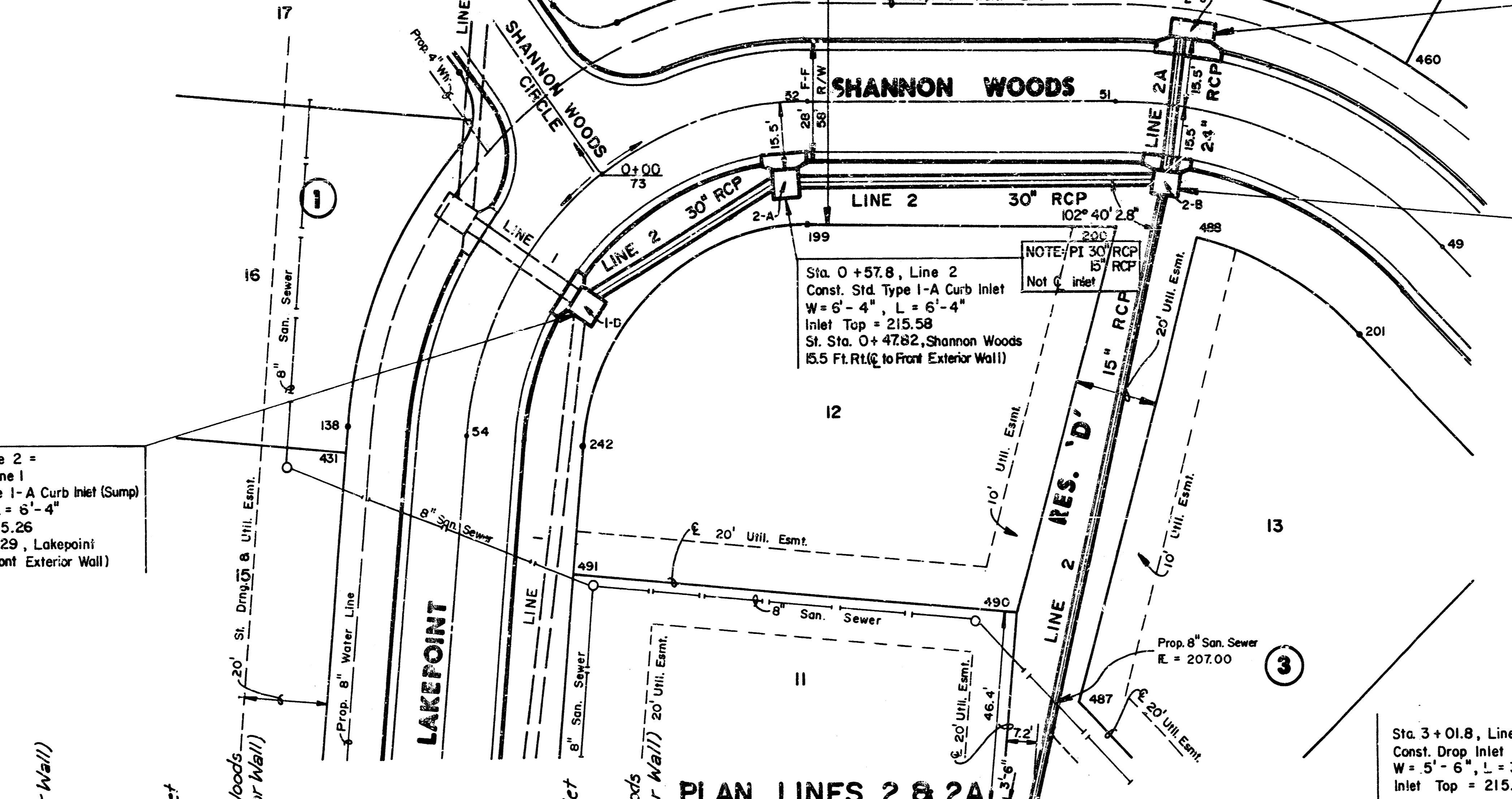
PROFILE LINE I



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COORDINATE SYSTEM AS USED BY MKEC ON FINAL PLAT  
SHANNON WOODS AT TALLGRASS

POINT #	NORTH COORDINATE	EAST COORDINATE	COMMENTS
45	11005.9861	8033.0984	2+20.96, Shannon Woods CL
51	10971.0089	7952.3295	1+30.54, Shannon Woods CL
52	10916.7472	7899.7739	0+55.00, Shannon Woods CL
54	10801.2880	7897.1690	0+71.97, Lakepoint CL
73	10867.9858	7876.4658	0+00, Shannon Woods CL
138	10792.0720	7875.4493	Lot Corner
160	10936.9231	7878.9429	Lot Corner
162	10991.1849	7931.4985	Lot Corner
199	10896.5712	7920.6049	Lot Corner
200	10950.8330	7973.1605	Lot Corner
201	10976.9898	8033.5616	Lot Corner
242	10820.5040	7918.8888	Lot Corner
431	10777.5069	7879.4882	Lot Corner
455	10948.0863	7889.7551	Lot Corner
456	10997.8513	7938.4003	Lot Corner
460	11029.5356	7995.6400	Lot Corner
487	10867.1661	8046.7269	Lot Corner
488	10963.5960	7988.8257	Lot Corner
490	10670.9235	8021.1525	Lot Corner
491	10798.0353	7938.7674	Lot Corner



Sta. 0 + 35.8, Line 2 A  
Const. Std. Type I-A Curb Inlet  
W = 4'-4", L = 11'-4"  
Inlet Top = 216.08  
St. Sta. 1 + 47.43, Shannon Woods  
15.5 Ft. Lt. (to Front Exterior Wall)

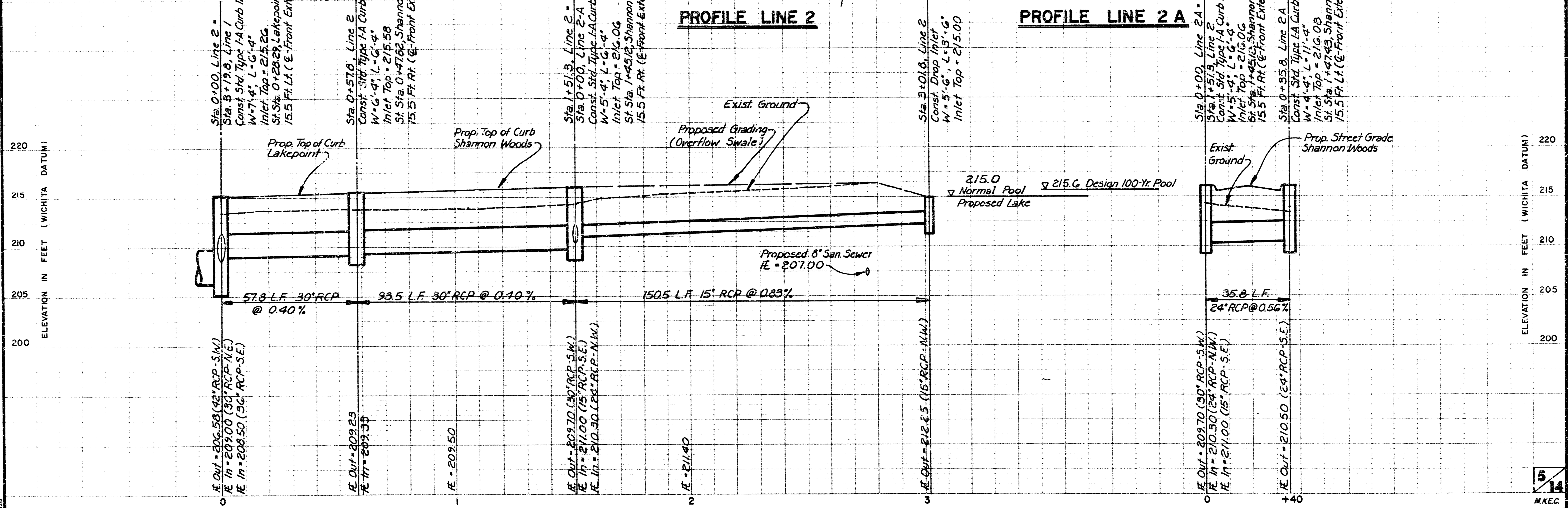
Sta. 1 + 51.3, Line 2 =  
Sta. 0 + 00, Line 2 A  
Const. Std. Type I-A Curb Inlet  
W = 5'-4", L = 6'-4"  
Inlet Top = 216.06  
St. Sta. 1 + 45.12, Shannon Woods  
15.5 Ft. Lt. (to Front Exterior Wall)

Sta. 3 + 01.8, Line 2  
Const. Drop Inlet  
W = 5'-6", L = 3'-6"  
Inlet Top = 215.00

PLAN LINES 2 & 2A

PROFILE LINE 2

PROFILE LINE 2 A



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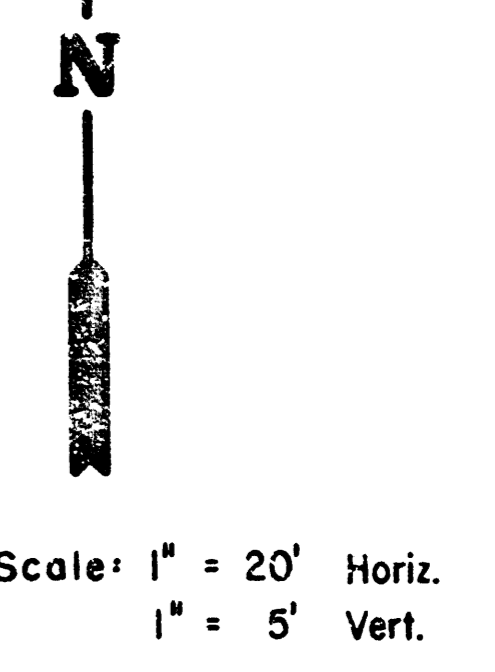
SHANNON WOODS AT TALLGRASS  
 STORM WATER SEWER NO. 316  
 PROJ. NO. 46876-245-81607-000-000-001

COORDINATE SYSTEM AS USED BY MKEC ON FINAL PLAT

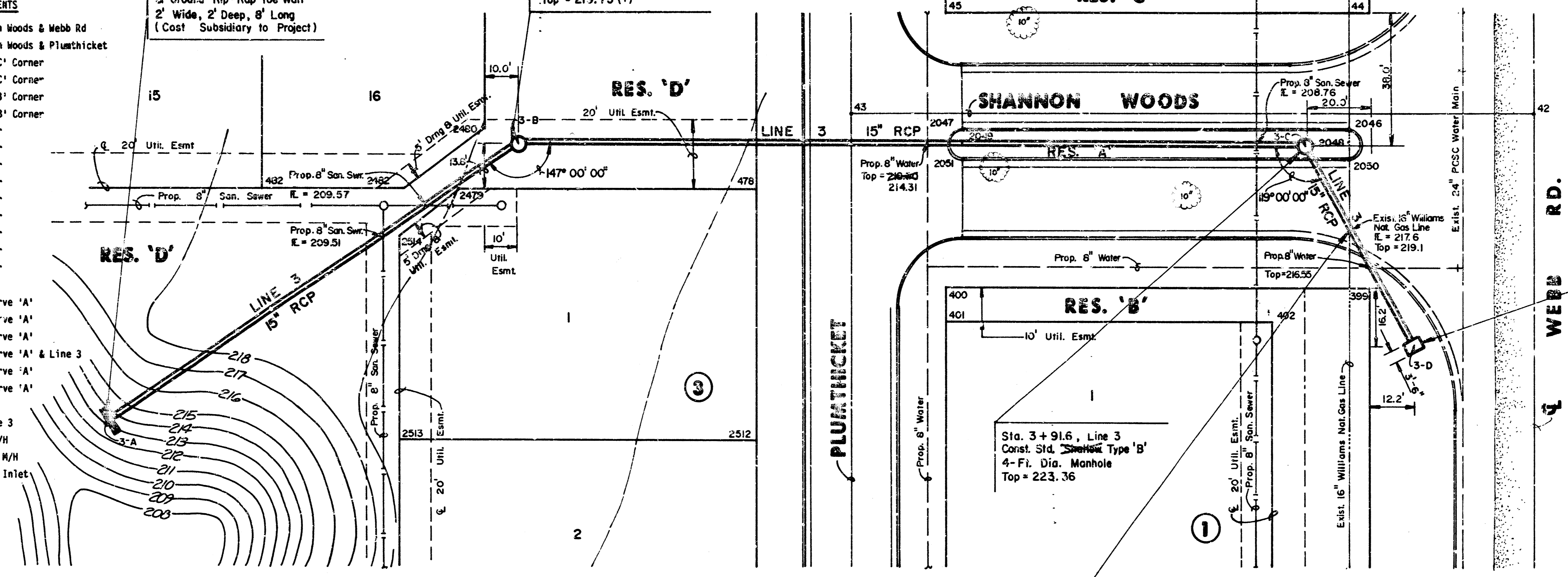
POINT #	NORTH COORDINATE	EAST COORDINATE	COMMENTS
42	10899.5448	8632.4426	CL Shannon Woods & Webb Rd
43	10896.0910	8423.4712	CL Shannon Woods & Plumthicket
44	10927.7146	8581.9702	Reserve 'C' Corner
45	10925.5663	8451.9680	Reserve 'C' Corner
399	10847.7255	8583.2923	Reserve 'B' Corner
400	10845.5772	8453.3100	Reserve 'B' Corner
401	10835.5786	8453.4753	Lot Corner
402	10837.2311	8553.4616	Lot Corner
478	10872.7468	8394.8530	Lot Corner
482	10870.3259	8243.2919	Lot Corner
2479	10871.2908	8303.7046	Lot Corner
2450	10888.9397	8311.0032	Lot Corner
2482	10871.0126	8286.2864	Lot Corner
2512	10799.7568	8396.0594	Lot Corner
2513	10797.9390	8286.0744	Lot Corner
2045	10694.1035	8575.5248	PC - Reserve 'A'
2047	10692.1535	8457.5409	PC - Reserve 'A'
2048	10889.6041	8575.5991	CL - Reserve 'A'
2049	10887.6541	8457.6152	CL - Reserve 'A' & Line 3
2050	10885.1047	8575.6735	PC - Reserve 'A'
2051	10683.1547	8457.6896	PC - Reserve 'A'
3-A	10801.6336	8196.6277	0+00, Line 3
3-B	10885.3972	8321.0611	1+50 CL M/H
3-C	10899.3893	8562.6009	3+91.6 CL M/H
3-D	10831.7678	8595.7975	4+58.1 CL Inlet

Sta. 0+00, Line 3  
 Begin 15" RCP Storm Sewer  
 w/ End Section  
 9' Grouted Rip-Rap Toe Wall  
 2' Wide, 2' Deep, 8' Long  
 (Cost Subsidiary to Project)

Sta. 1+50, Line 3  
 Const. Std. Shallow Type 'A'  
 4'-Fl. Dia. Manhole  
 Top = 219.75 (+)

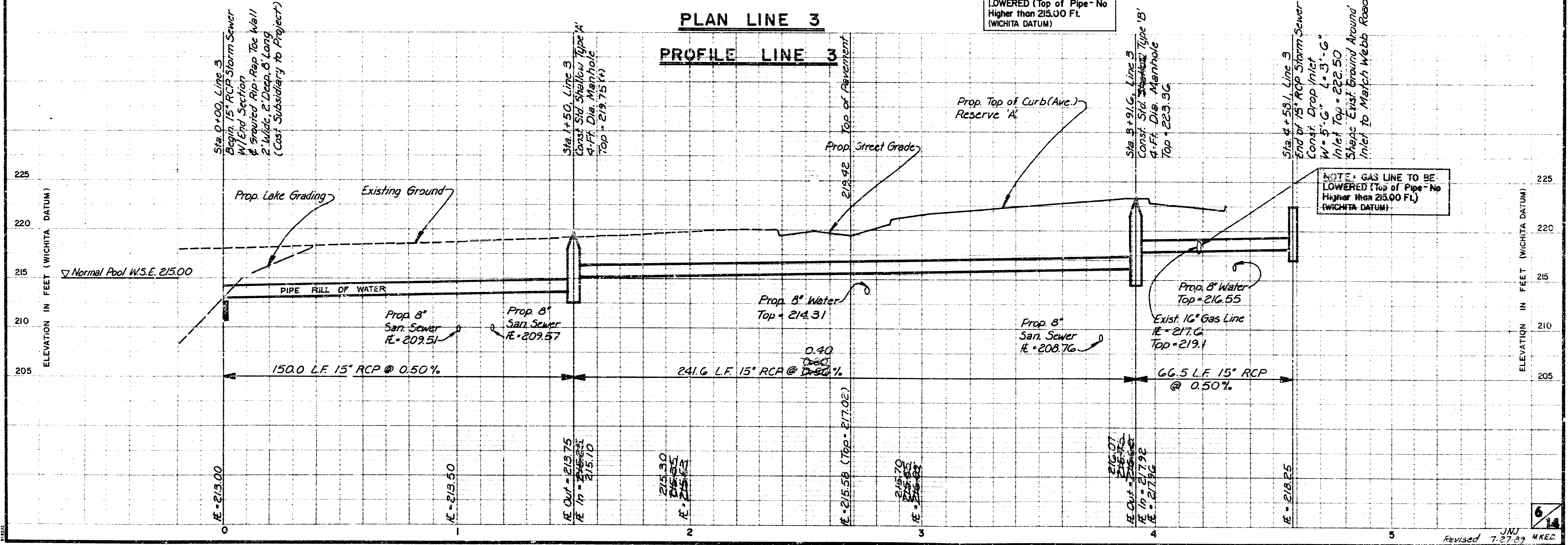


Sta. 4+58.1, Line 3  
 End of 15" RCP Storm Sewer  
 Const. Drop Inlet  
 W = 5'-6" L = 3'-6"  
 Inlet Top = 222.50  
 Shape Exist. Ground Around  
 Inlet to Match Webb Road Ditch  
 (Cost Subsidiary to Project)



PLAN LINE 3

PROFILE LINE 3

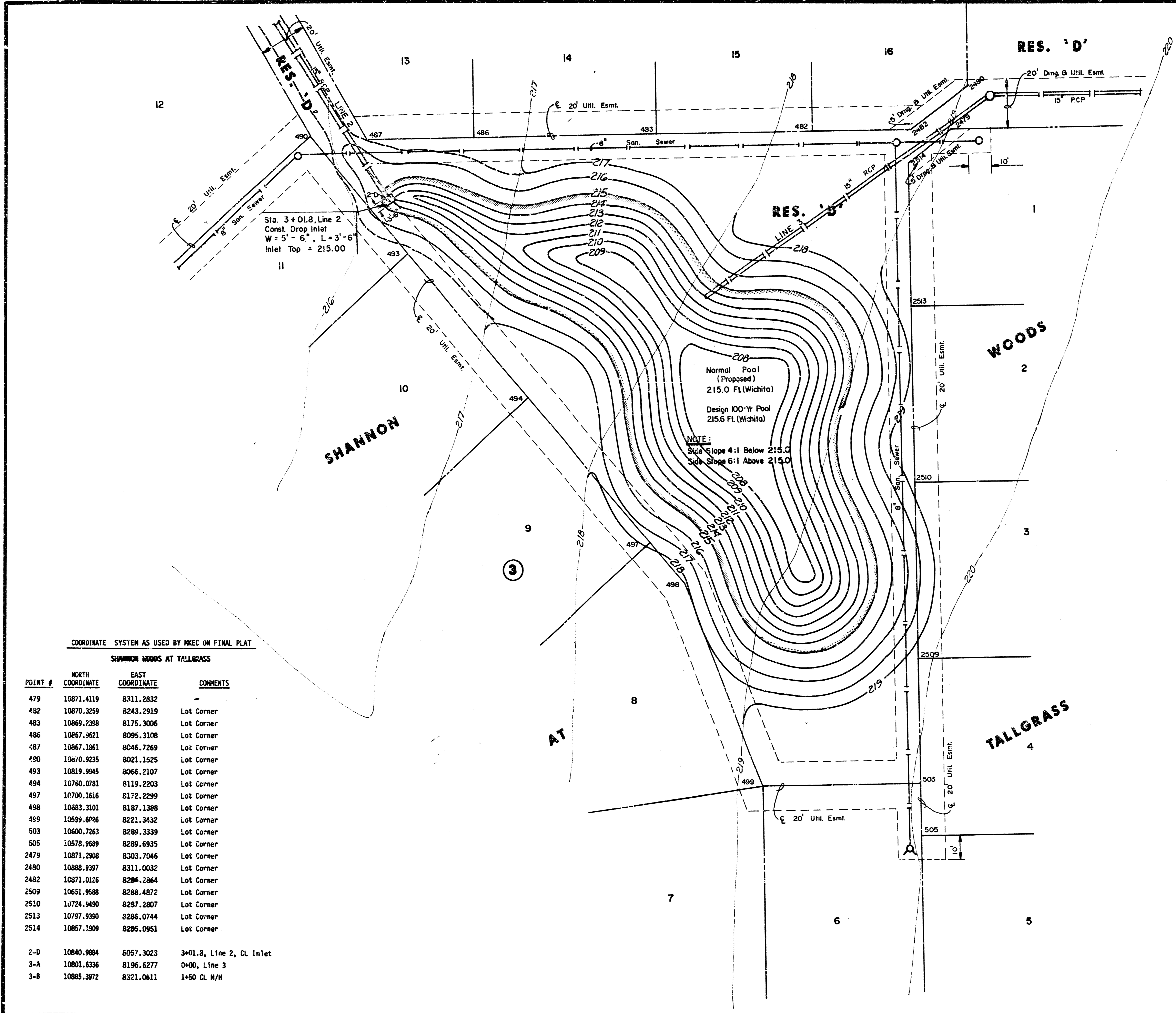


NOTE: GAS LINE TO BE LOWERED (Top of Pipe - No Higher than 215.00 Ft. (WICHITA DATUM))

NOTE: GAS LINE TO BE LOWERED (Top of Pipe - No Higher than 215.00 Ft. (WICHITA DATUM))

Revised 7-27-99 MKEC

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SCALE: 1" = 20'

- NOTE: EXCAVATE LAKE AFTER STORM WATER SEWER PIPES ARE IN PLACE
- NOTE: EXCAVATED MATERIAL MAY BE STOCK-PILED ALONG E OF LOTS FOR LATER COMPACTION DURING STREET CONSTRUCTION OR COMPACTED TO 95% STANDARD PROCTOR ALONG STREET CENTERLINE.

SHANNON WOODS AT TALLGRASS LAKE EXCAVATION - CALCULATIONS

ELEV.	AREA (FT <sup>2</sup> )	AVE. (FT <sup>2</sup> )	DEPTH	FT <sup>3</sup>
208	2287.8	3114.9	1	3114.9
209	3942.0	4801.6	1	4801.6
210	5661.2	6595.8	1	6595.8
211	7530.5	8569.0	1	8569.0
212	9607.5	10781.2	1	10781.2
213	11954.9	13181.2	1	13181.2
214	14407.6	15676.8	1	15676.8
215	16945.9	19126.4	1	19126.4
216	21307.0	21912.1	1	21912.1
217	22517.2	20543.1	1	20543.1
218	18569.0	13044.8	1	13044.8
219	7520.6	3760.3	1	3760.3
220	0			
				181107.2 FT <sup>3</sup>
				5226 Y.D. <sup>3</sup>
				Use 5250 Y.D. <sup>3</sup>

NOTE: Mid-Kansas Engineering Consultants will stake Lake.

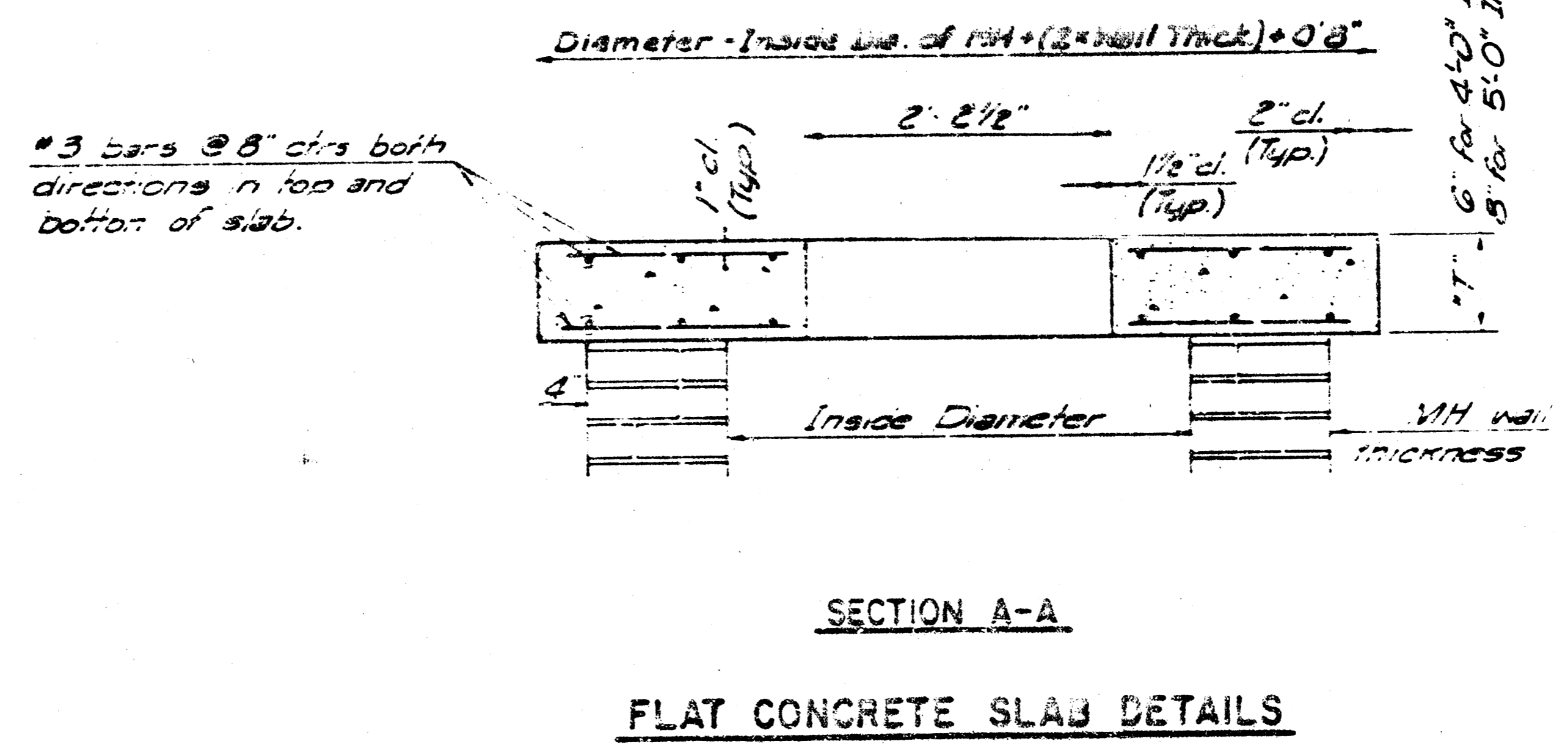
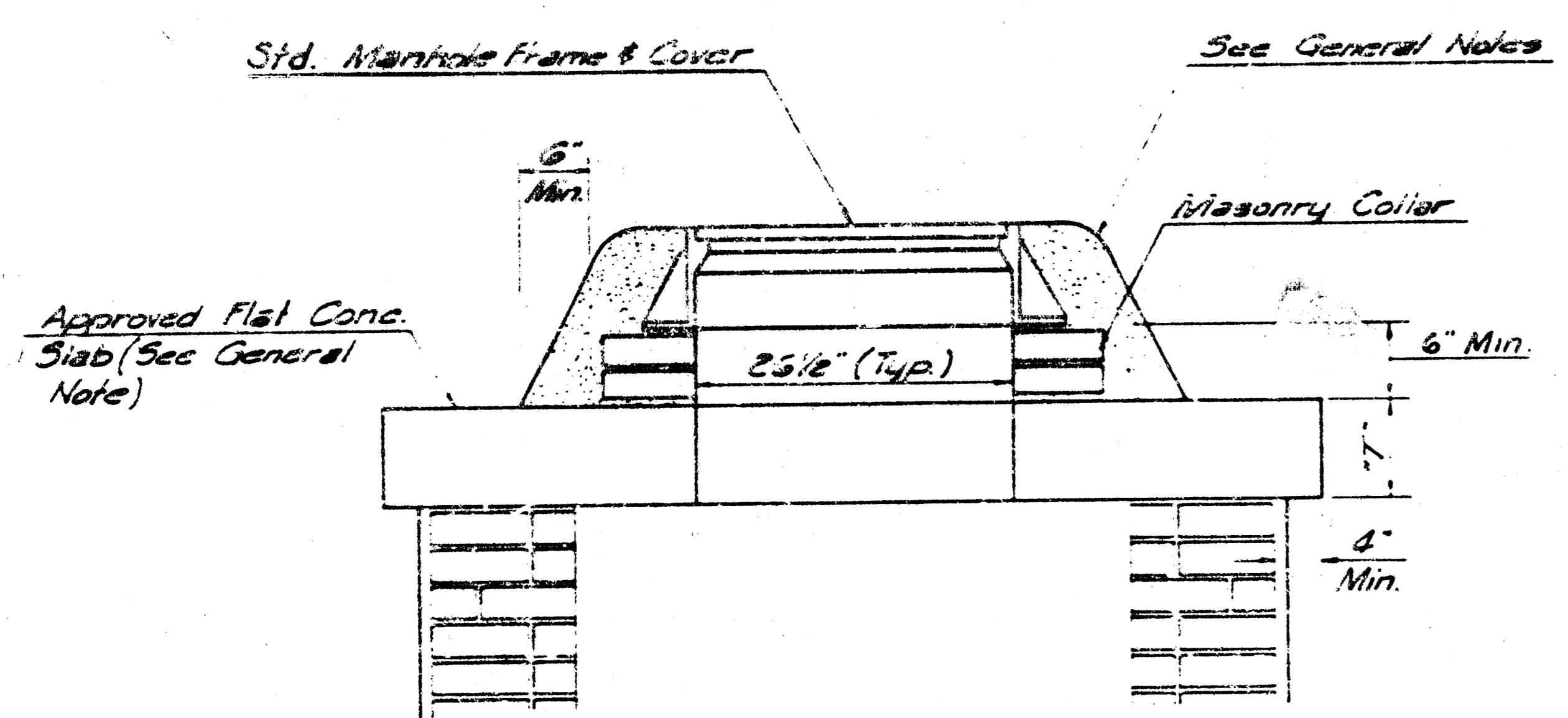
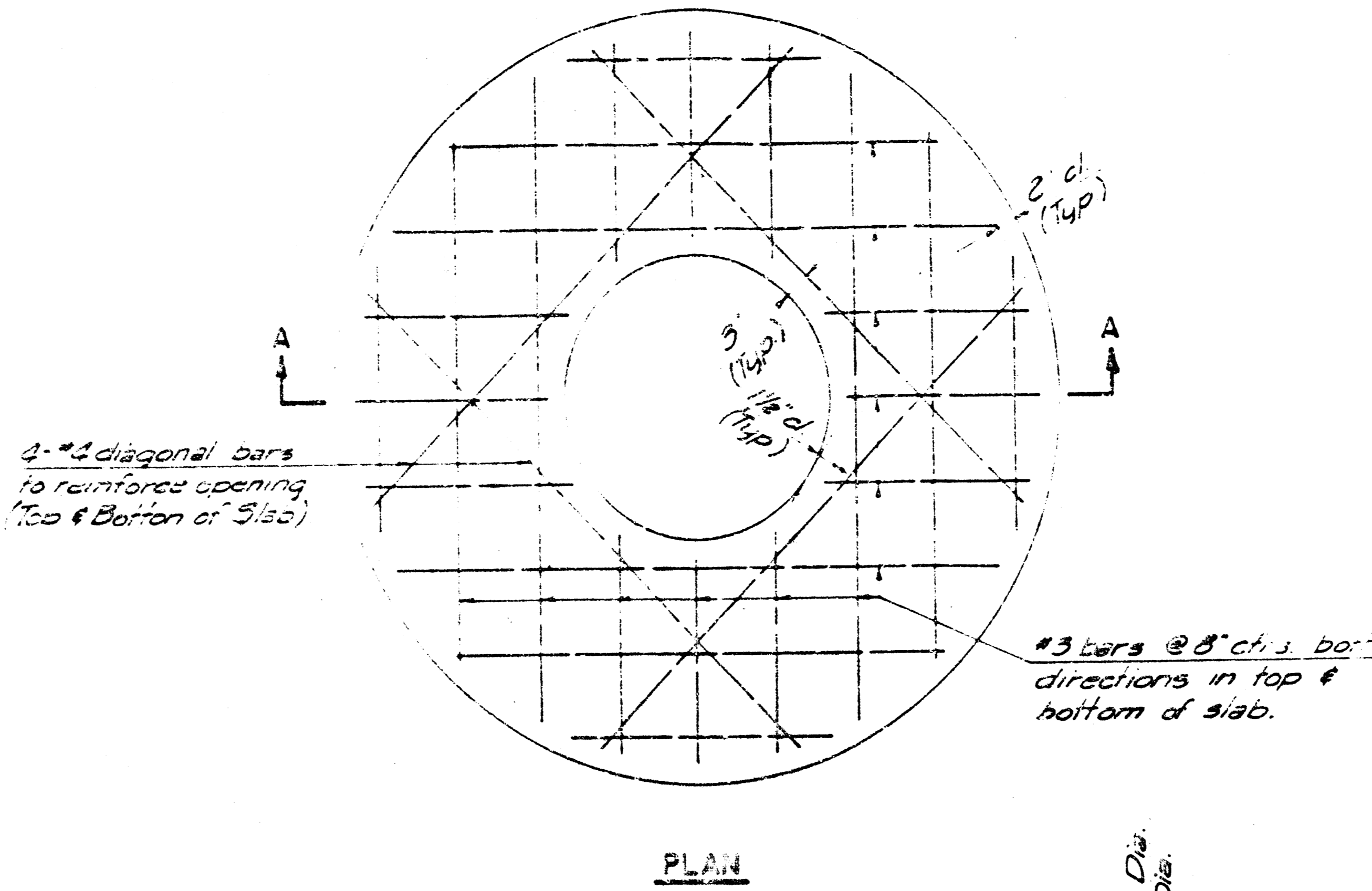
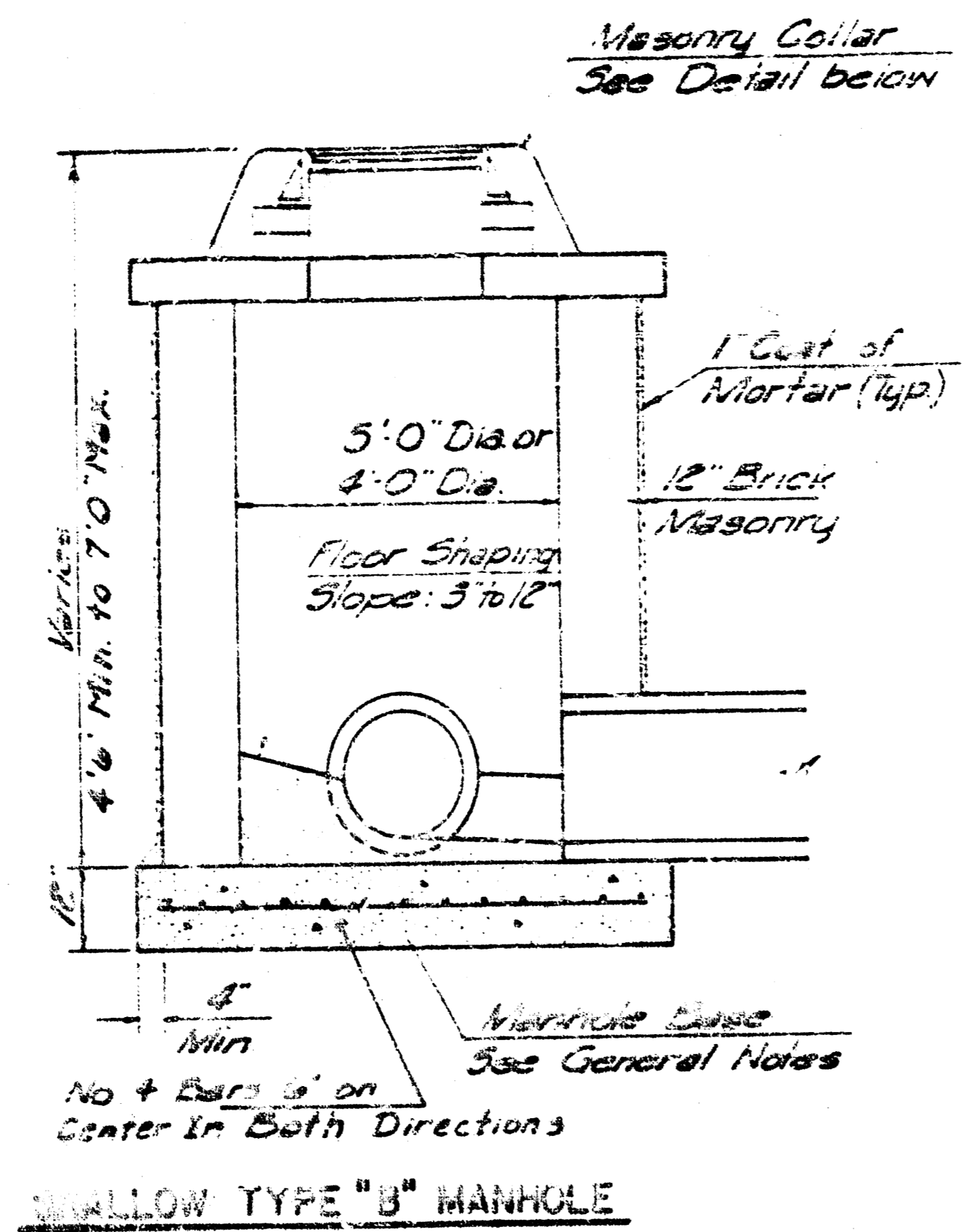
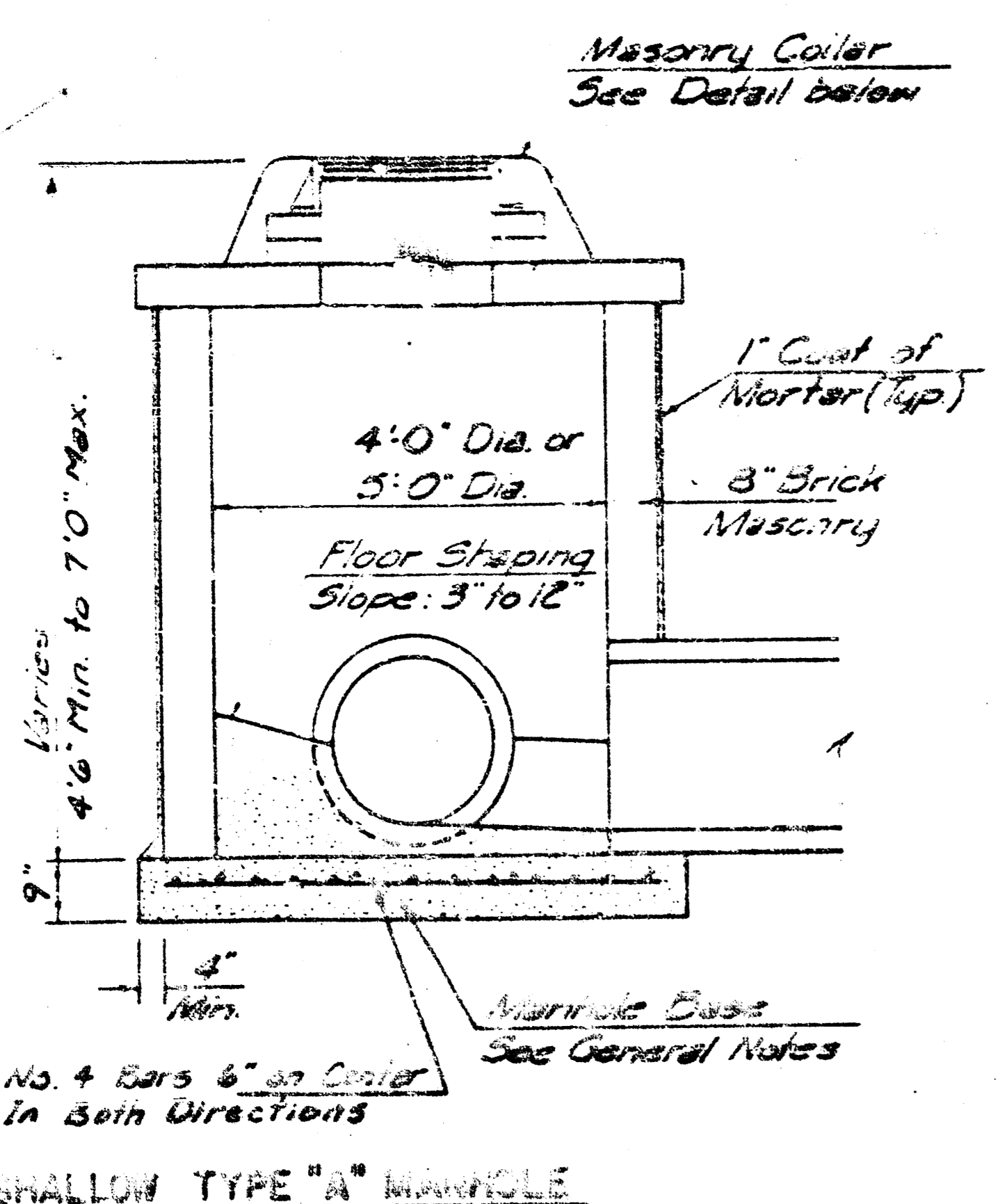
COORDINATE SYSTEM AS USED BY MKEC ON FINAL PLAT

SHANNON WOODS AT TALLGRASS

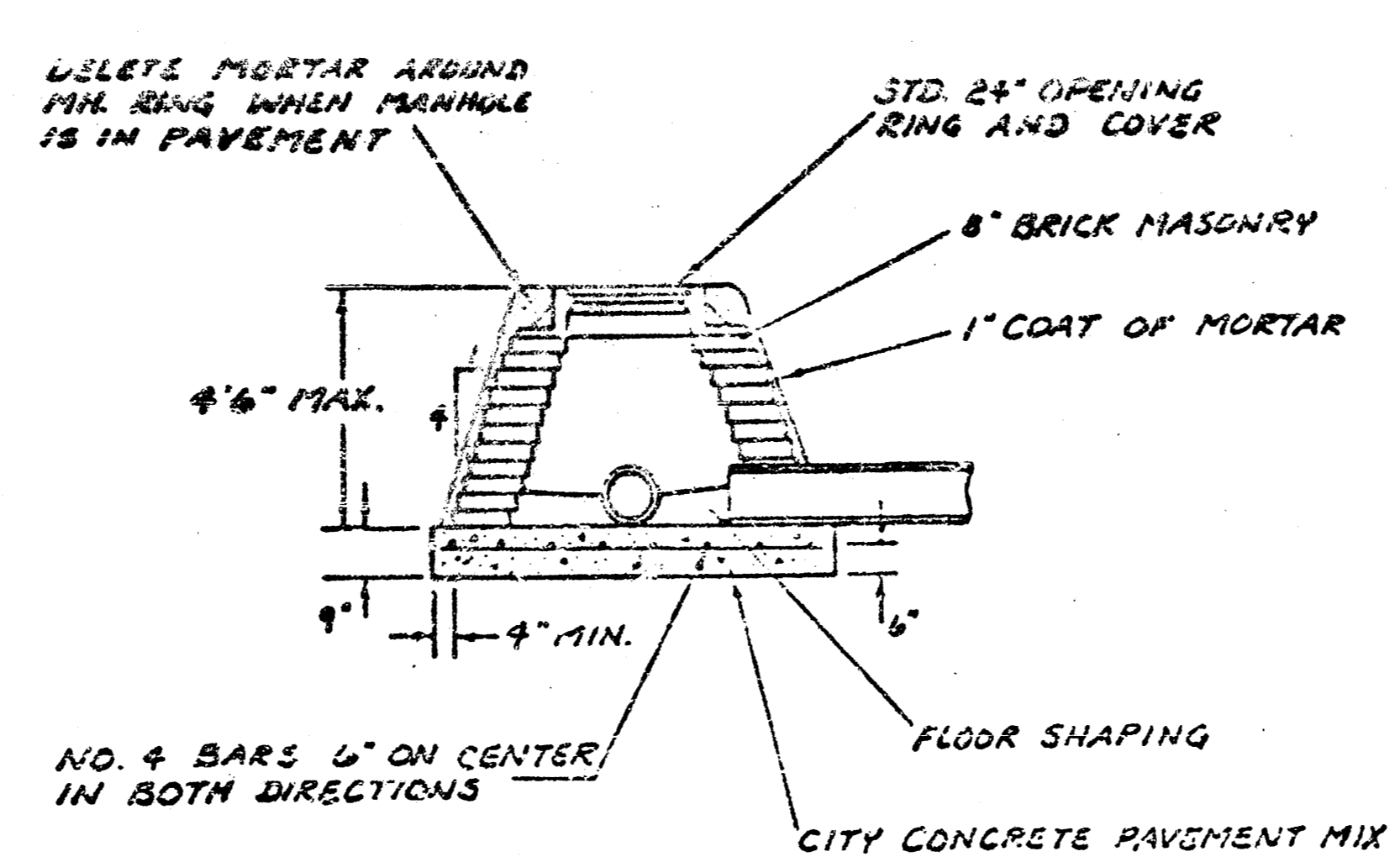
POINT #	NORTH COORDINATE	EAST COORDINATE	COMMENTS
479	10871.4119	8311.2832	-
482	10870.3259	8243.2919	Lot Corner
483	10869.2398	8175.3006	Lot Corner
486	10867.9621	8095.3108	Lot Corner
487	10867.1861	8046.7269	Lot Corner
490	10860.9235	8021.1525	Lot Corner
493	10819.9945	8066.2107	Lot Corner
494	10790.0781	8119.2203	Lot Corner
497	10700.1616	8172.2299	Lot Corner
498	10683.3101	8187.1388	Lot Corner
499	10599.6996	8221.3432	Lot Corner
503	10600.7263	8289.3339	Lot Corner
505	10578.9689	8289.6935	Lot Corner
2479	10871.2908	8303.7046	Lot Corner
2480	10888.9397	8311.0032	Lot Corner
2482	10871.0126	8286.2864	Lot Corner
2509	10651.9588	8288.4872	Lot Corner
2510	10724.9490	8287.2807	Lot Corner
2513	10797.9390	8286.0744	Lot Corner
2514	10857.1909	8285.0951	Lot Corner
2-D	10840.9884	8057.3023	3+01.8, Line 2, CL Inlet
3-A	10801.6336	8196.6277	0+00, Line 3
3-B	10885.3972	8321.0611	1+50 CL W/H

	<b>SHANNON WOODS AT TALLGRASS</b>	Design JNJ
	<b>LAKE GRADING PLAN</b>	Drawn by KSM
MID-KANSAS ENGINEERING CONSULTANTS PA 3500 NORTH ROCK ROAD BUILDING 1800 WICHITA, KANSAS 67226		Checked by Date JUNE 1989 Job no.
636-5666		Sheet 7 of 14

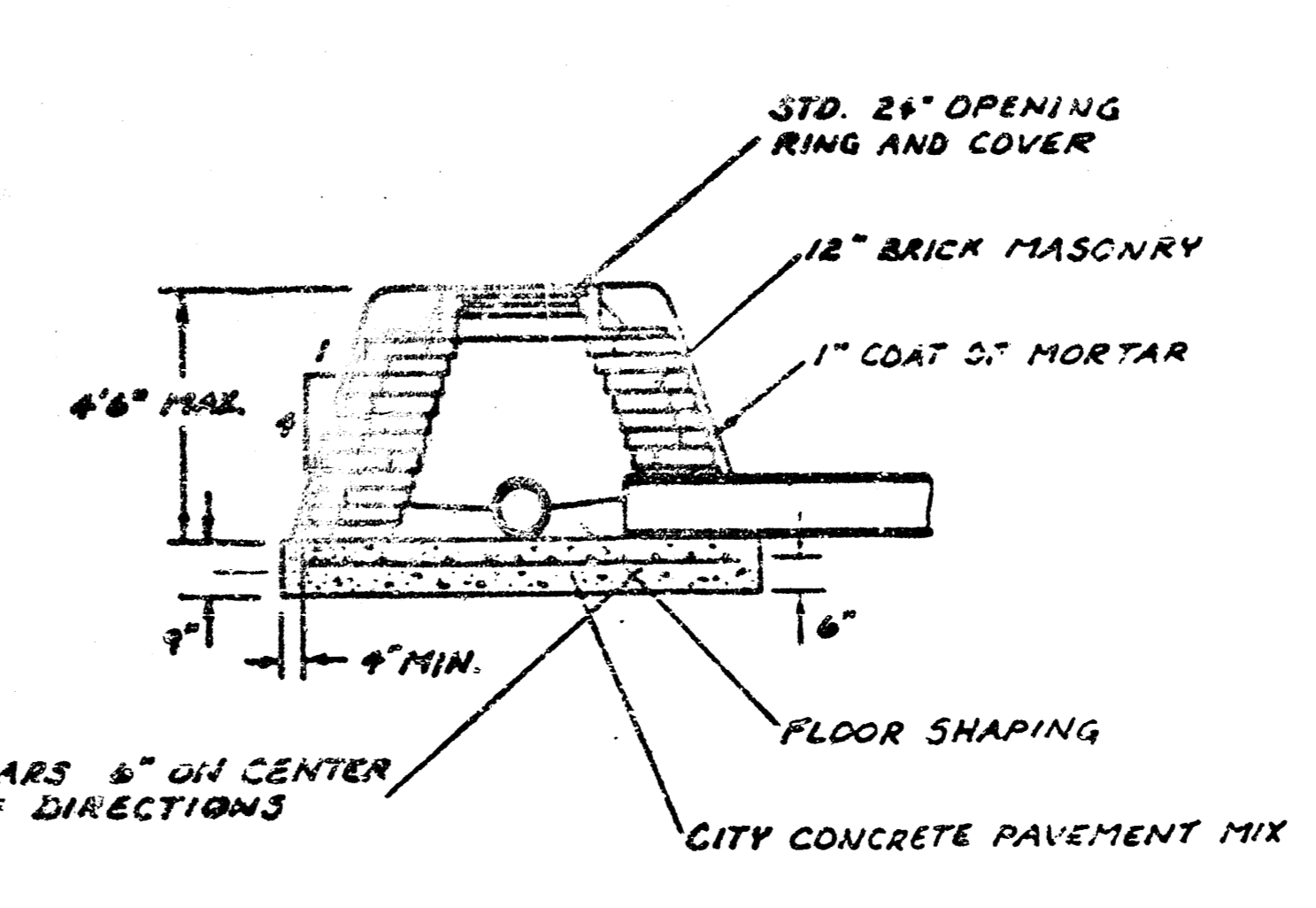
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MASONRY COLLAR DETAIL



SPECIAL SHALLOW TYPE 'A' MANHOLE



SPECIAL SHALLOW TYPE 'B' MANHOLE

- GENERAL NOTES
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 BAGS OF PORTLAND 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 DESIGN MIX WITHOUT AIR ENTRAINING AD MIXTURE. 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 IN AREAS WHERE 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.
  - 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.
  - 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 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 ROUNDED 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.
  - PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE GRADED WITH CONCRETE TO THE LEVELS OF THE MANHOLE OPENING. WHEN CLAY PIPE IS USED, THE CHANNEL SHALL BE GRADED TO THE POINT OF THE MANHOLE. THE CHANNEL SHALL BE REINFORCED AT THE POINT OF THE MANHOLE WITH A NUMBER WHICH WILL MAINTAIN THE FEASIBILITY OF THE CHANNEL. ALL COSTS FOR CHANNEL WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
  - 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.
  - THE CRIMBS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CRIMB OF THE OUTFLOWING PIPE.
  - 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 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'

Designed by	Checked by	Date	Job No.
			8 14
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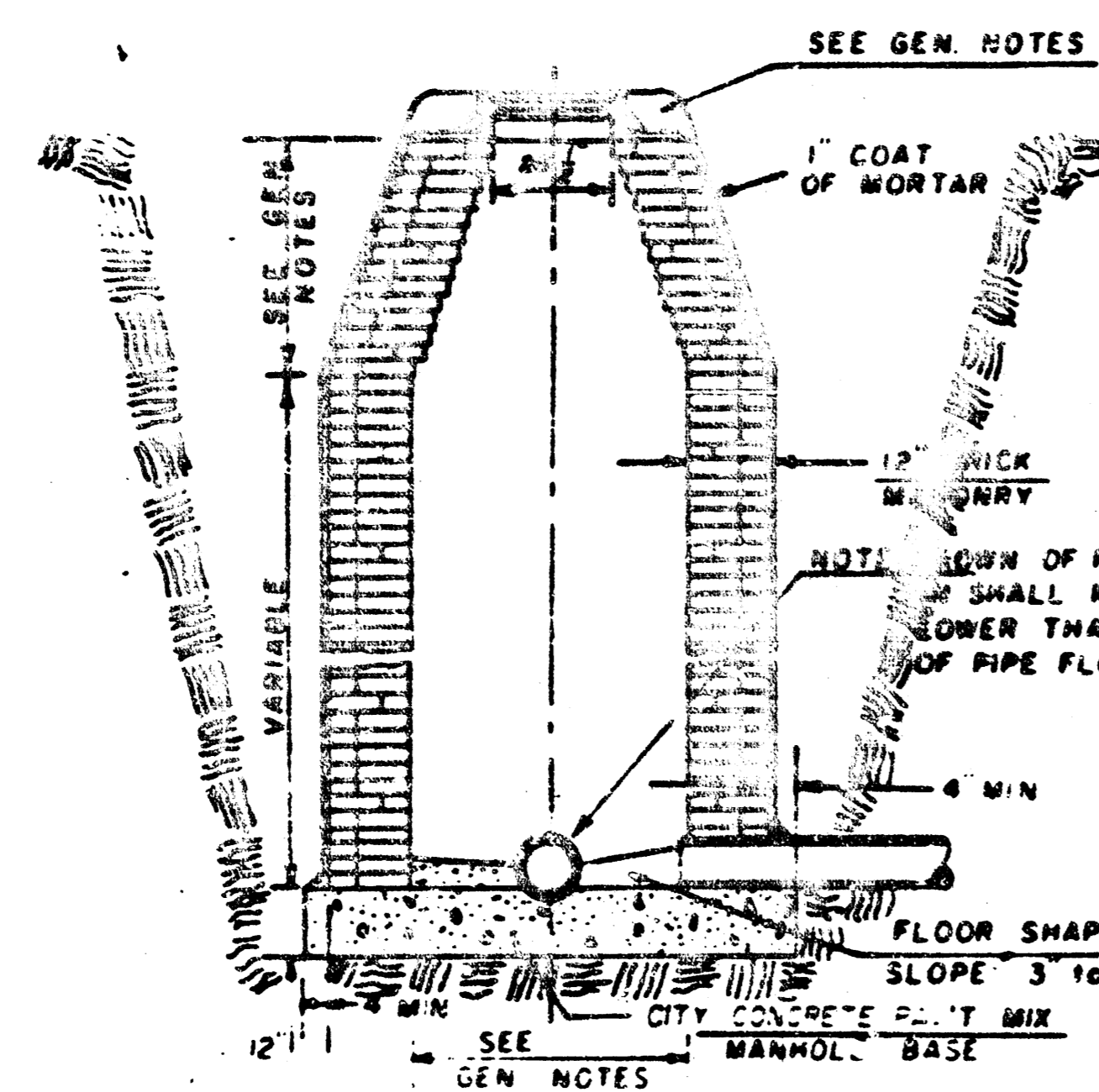
# SEWER APPURTENANCES DETAILS

REVISED MAY 1981  
REVISED JAN. 1982

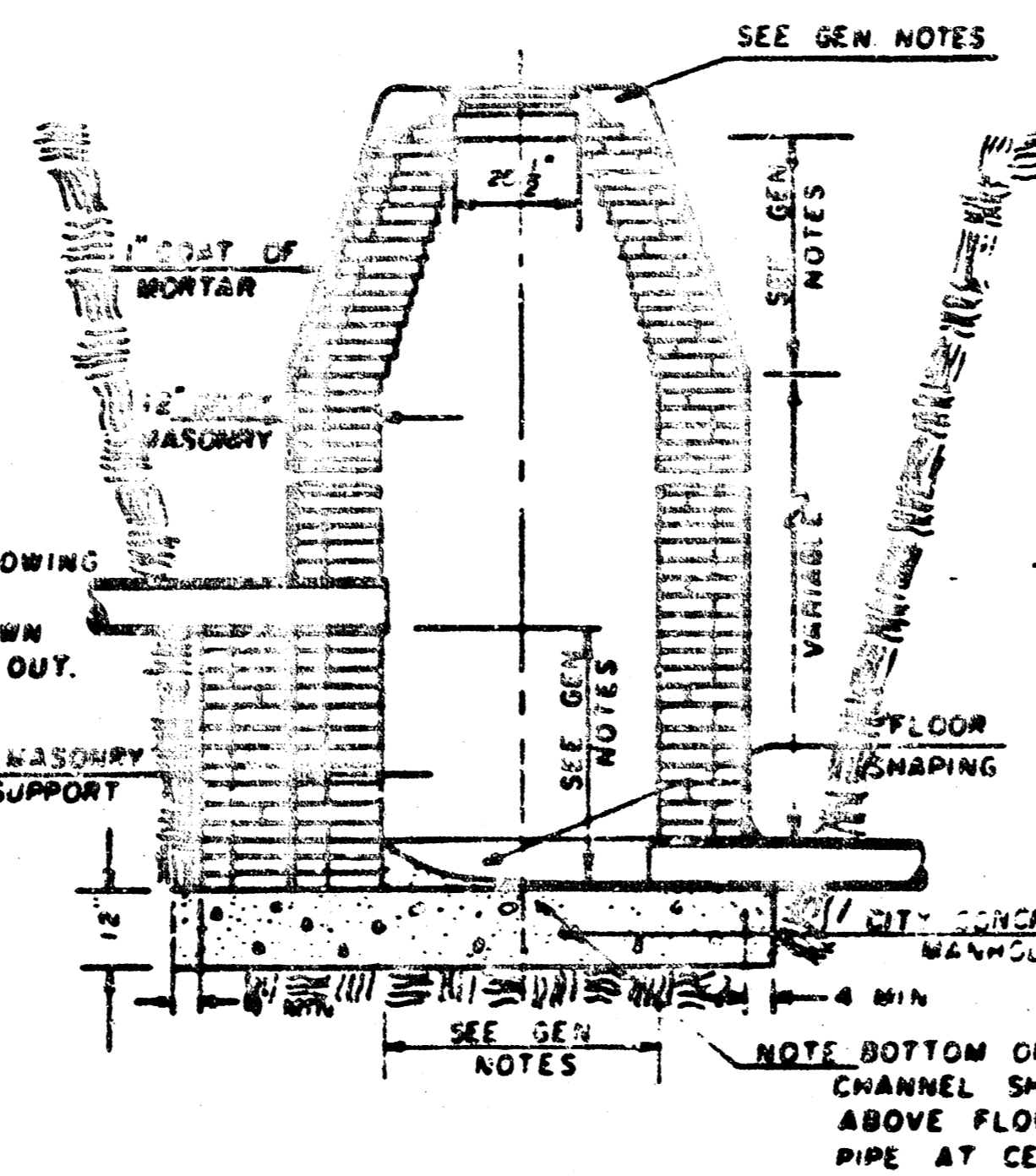
ADOPTED AS STANDARD DESIGN  
BY

City of Wichita, Kansas

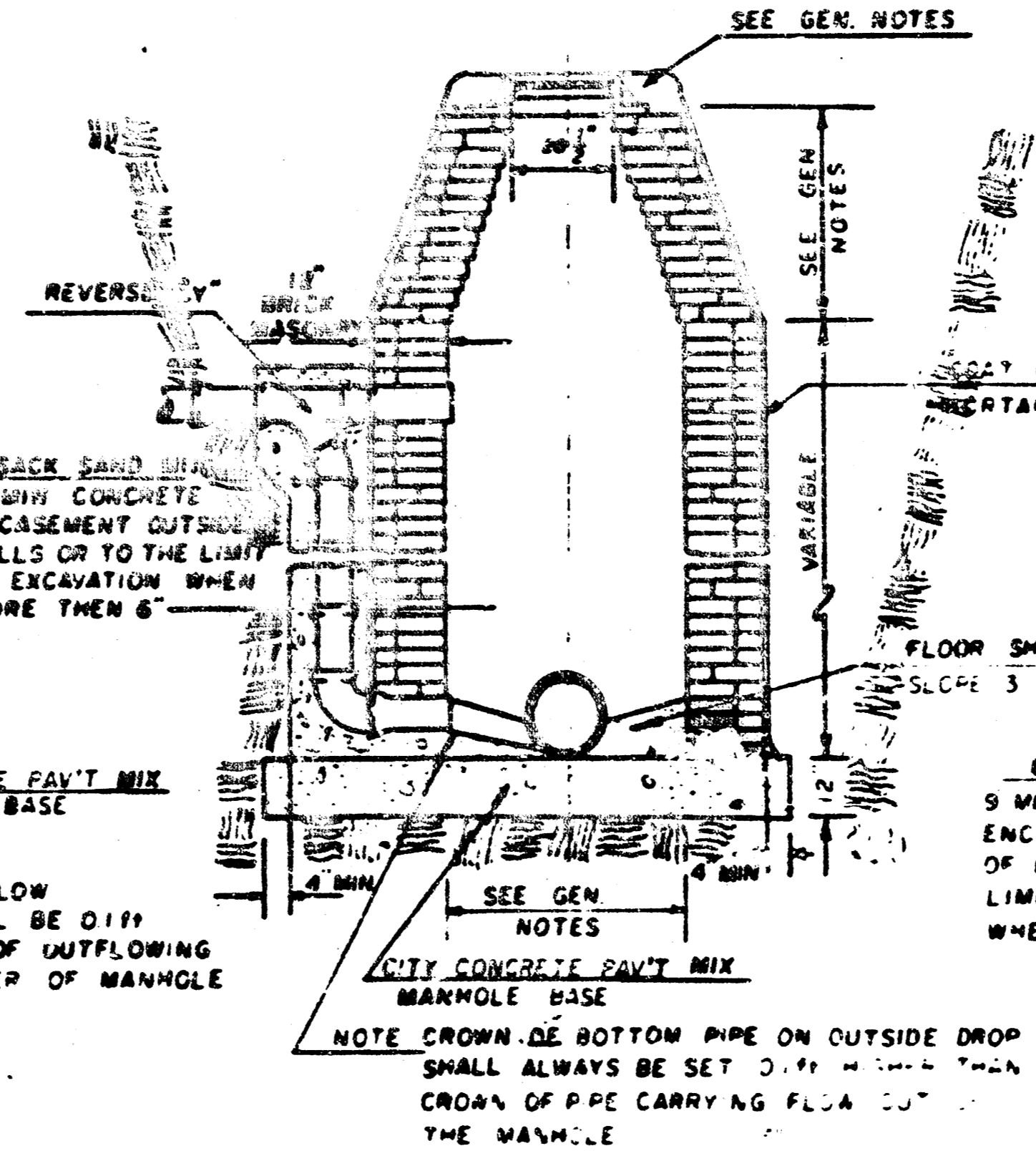
TYPE "B" MANHOLE



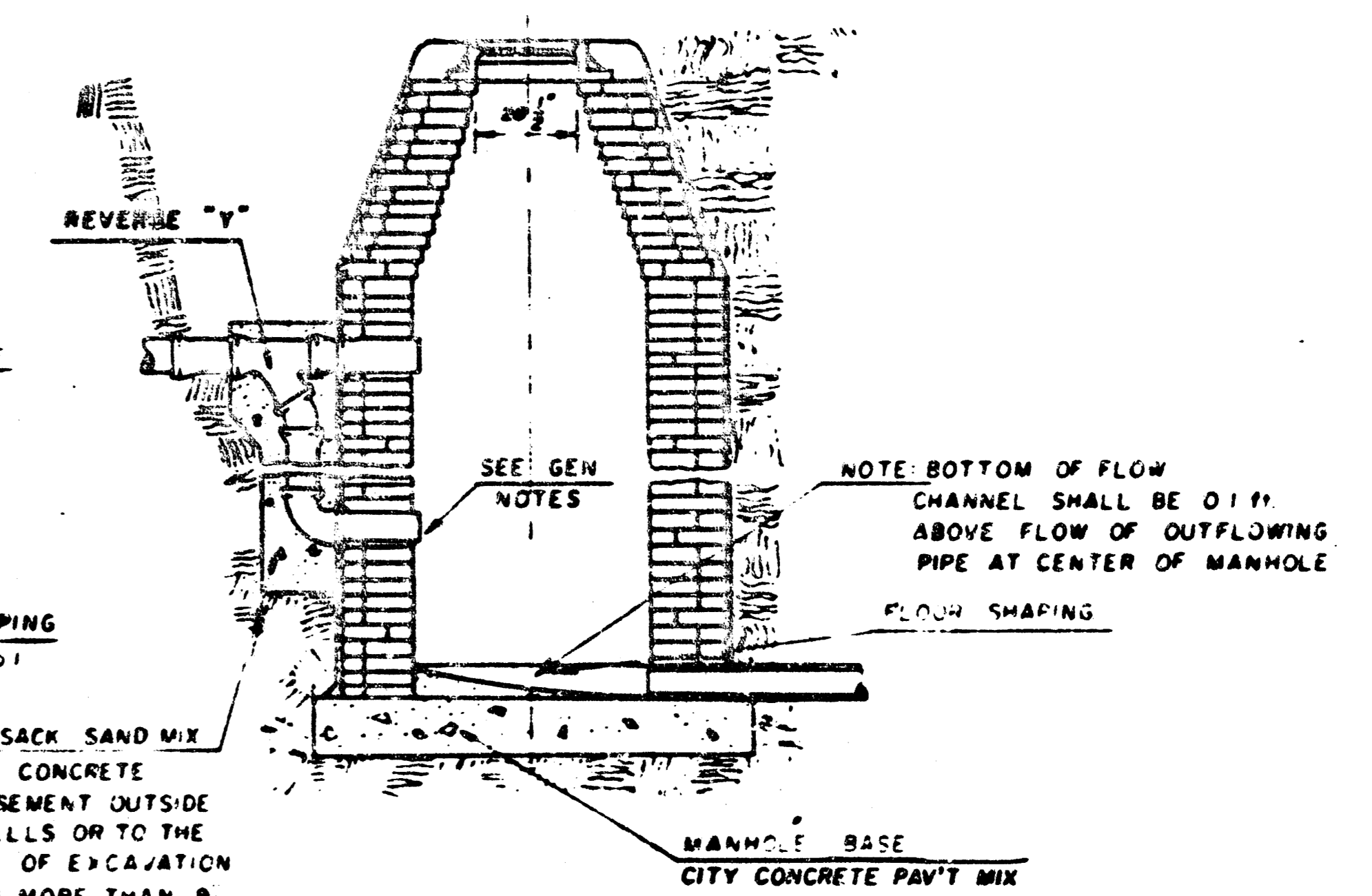
TYPE "B" INSIDE DROP MANHOLE



TYPE "B" OUTSIDE DROP MANHOLE



DETAIL OF OUTSIDE DROP  
CONSTRUCTED ON EXISTING MANHOLE



GENERAL NOTES

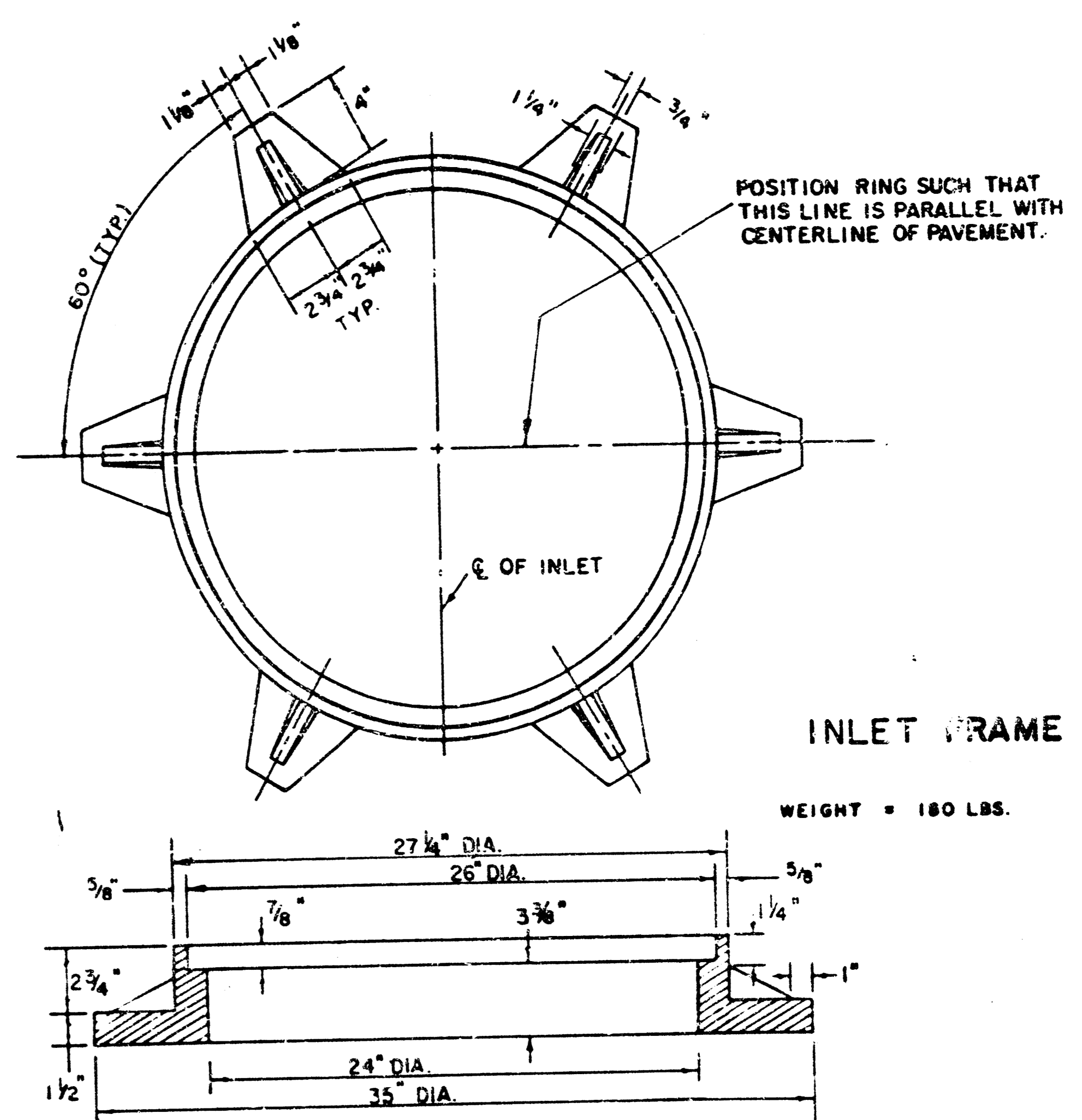
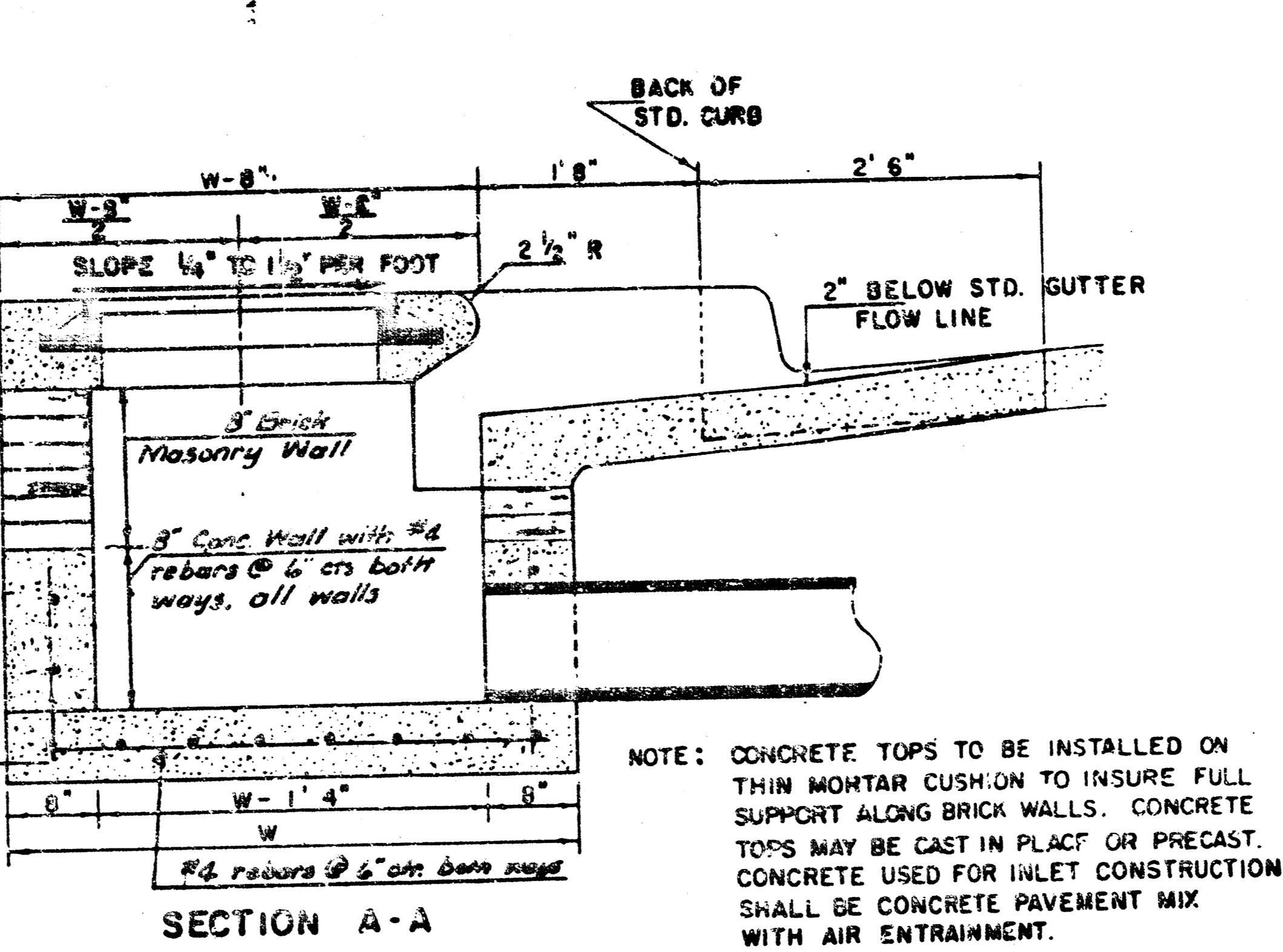
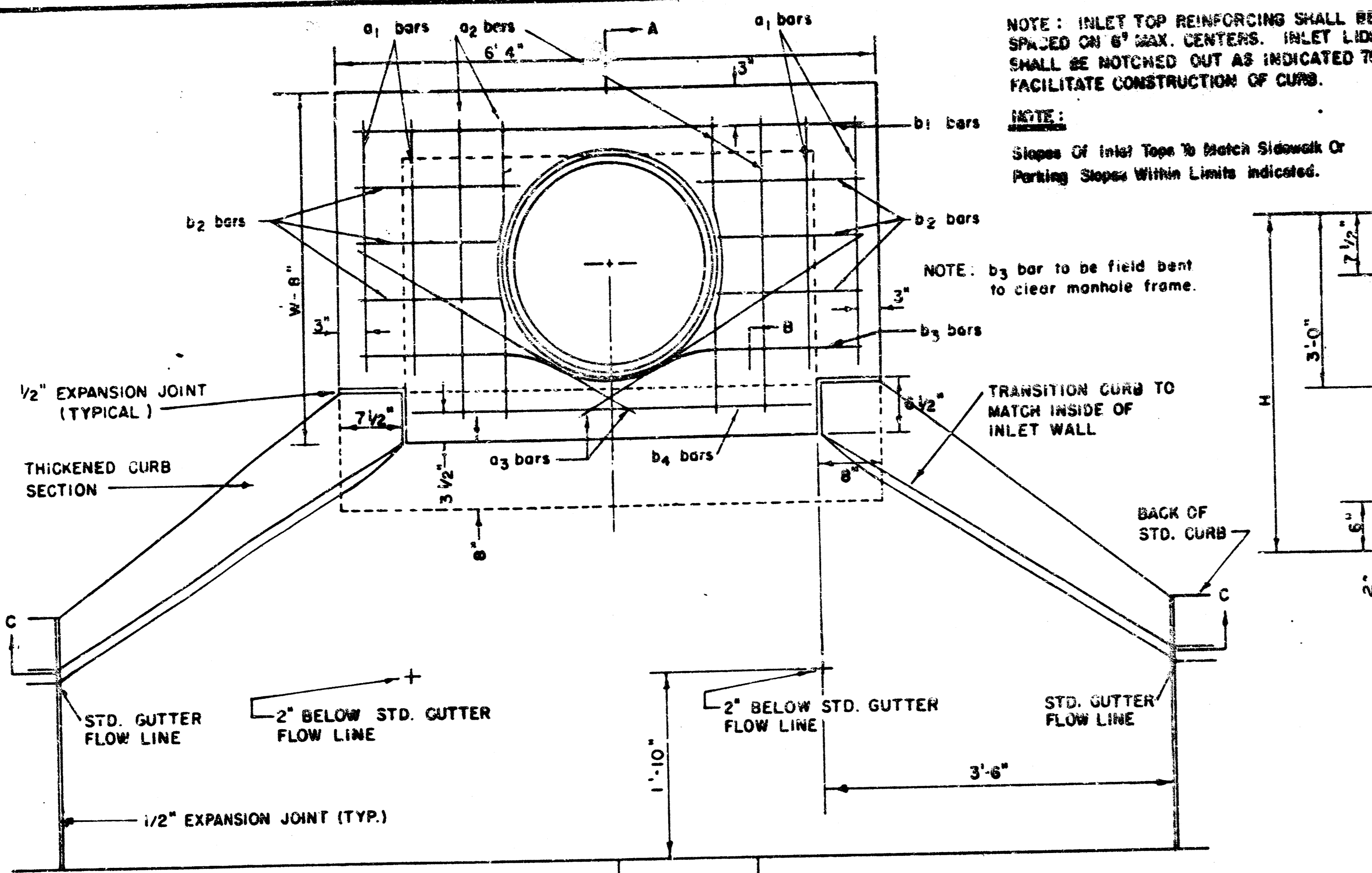
- MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 3 BAGS OF COLETT PER CUBIC YARD. CONCRETE USED IN MANHOLE BARS SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD SPECIFICATIONS BEING CITY CONCRETE PAVEMENT MIX WITH 4% AIR ENTRAINING 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.
- REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE RINGS 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.
- 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 CROWING 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 CROWED INTO THE OPENING USING AN APPROVED ROPESTRICK CROWER FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMENOUS 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.
- 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 TRAPPED AS SOLIDS FLOW 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 ON 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 REEL 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.
- 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 CRADLES WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
- 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.
- 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.
- 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 4' UNLESS INDICATED OTHERWISE.

ADD. 7-27-81 JMT

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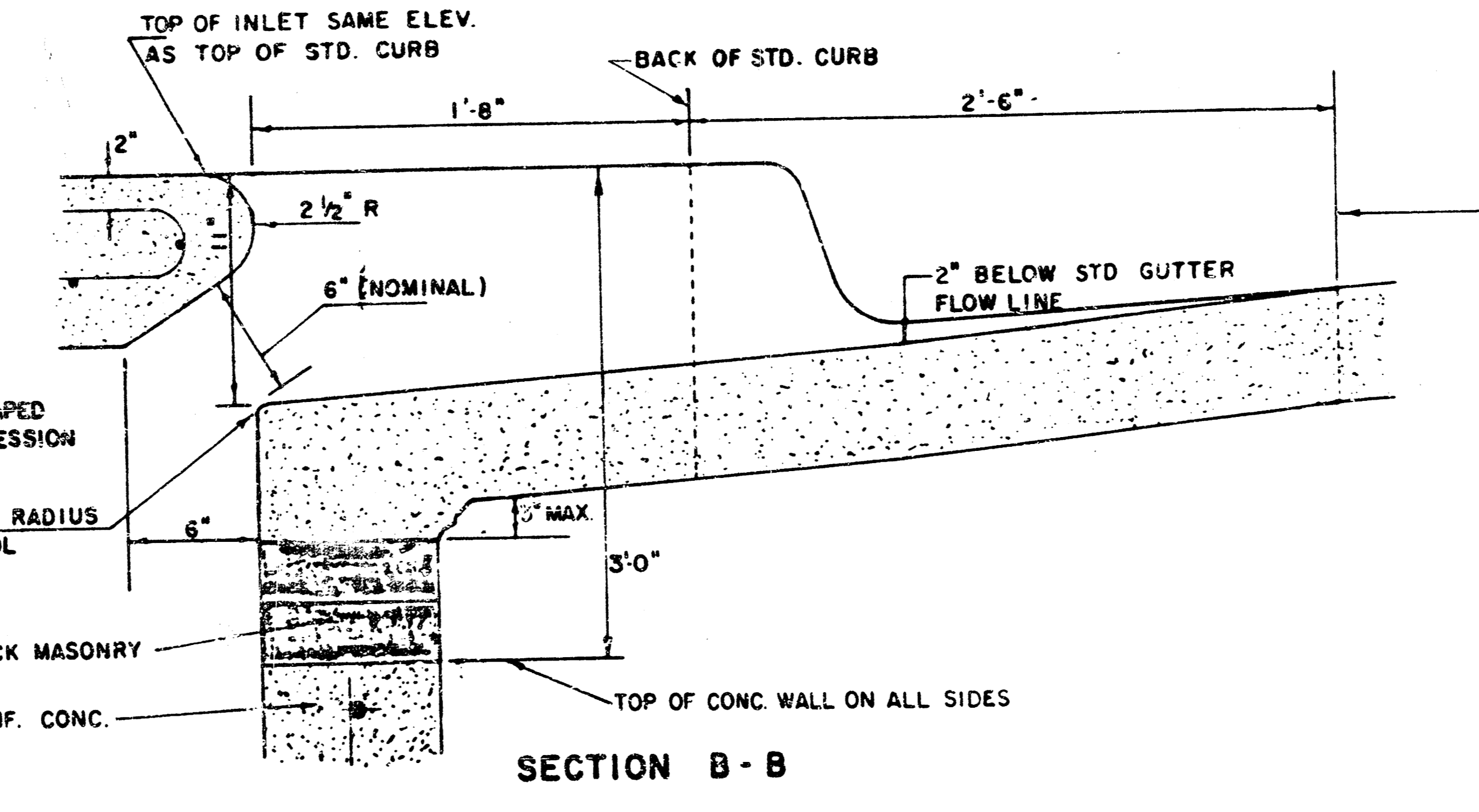
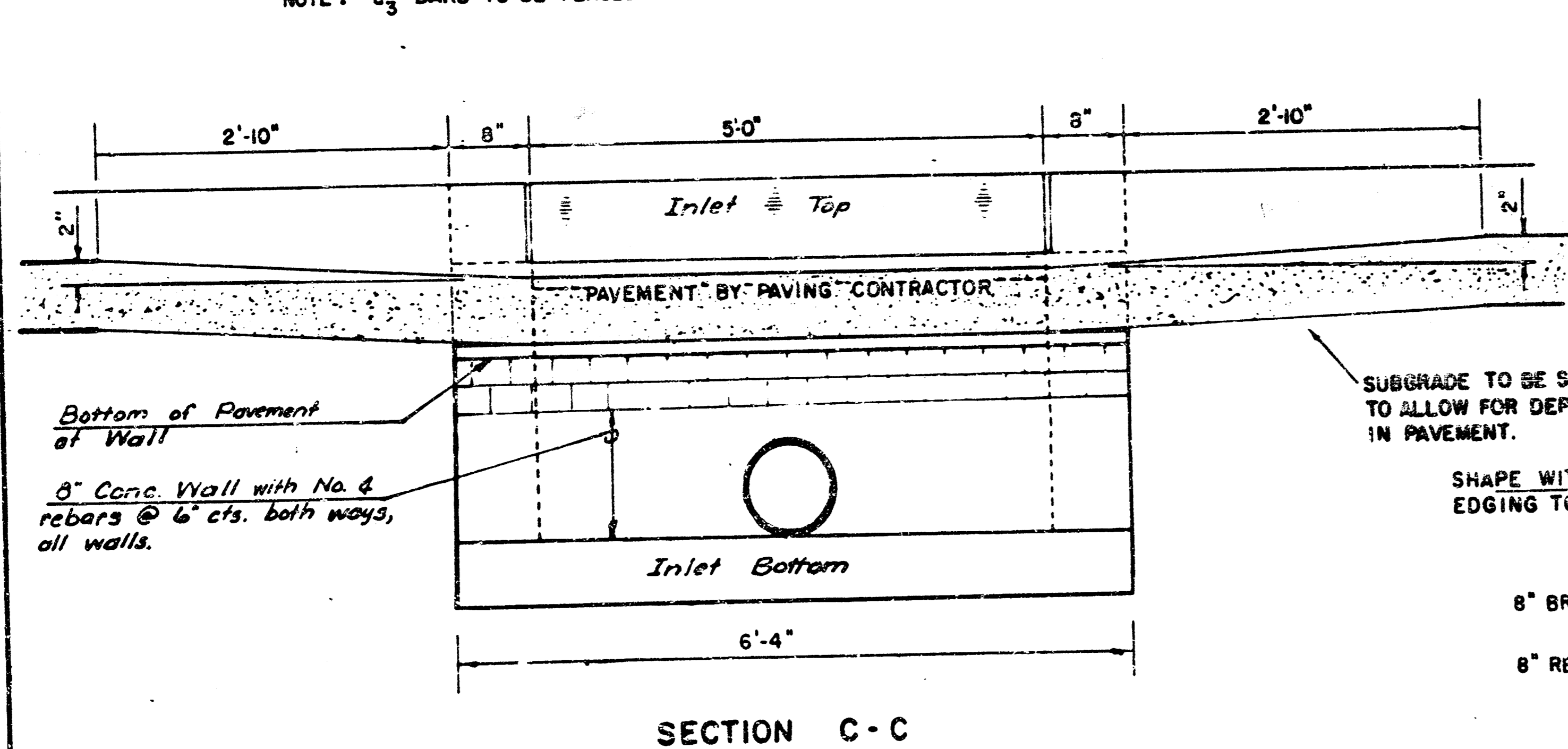
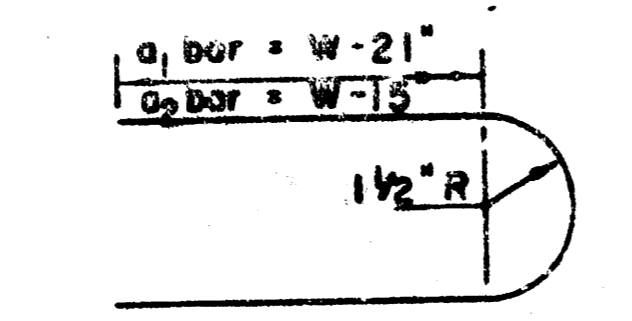
STEEL SCHEDULE

BAR NUMBER	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	b <sub>1</sub>	b <sub>2</sub>	b <sub>3</sub>	b <sub>4</sub>	WT. LBS.
4	4	2	1	3	5	7	9	6
SIZE	#4	#4	#4	#4	#4	#4	#4	#6
W=4'4"	5'7"	6'7"	4'0"	6'1"	-	-	-	60±
W=5'4"	7'7"	8'7"	5'0"	6'1"	-	-	1'9"	81±
W=6'4"	9'7"	10'7"	6'0"	-	6'1"	-	1'9"	101±
W=7'4"	11'7"	12'7"	7'0"	-	-	6'1"	1'9"	121±
W=8'4"	13'7"	14'7"	8'0"	-	-	-	6'1"	141±

\* NOTE: a<sub>3</sub> 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' 4"	5' 8" x 6' 4" x 7 1/2"	21" & SMALLER	0.38 ±
5' 4"	6' 8" x 6' 4" x 7 1/2"	24" & 30"	0.51 ±
6' 4"	7' 8" x 6' 4" x 7 1/2"	36" & 42"	0.64 ±
7' 4"	8' 8" x 6' 4" x 7 1/2"	48" & 54"	0.77 ±
8' 4"	9' 8" x 6' 4" x 7 1/2"	60" & 66"	0.90 ±



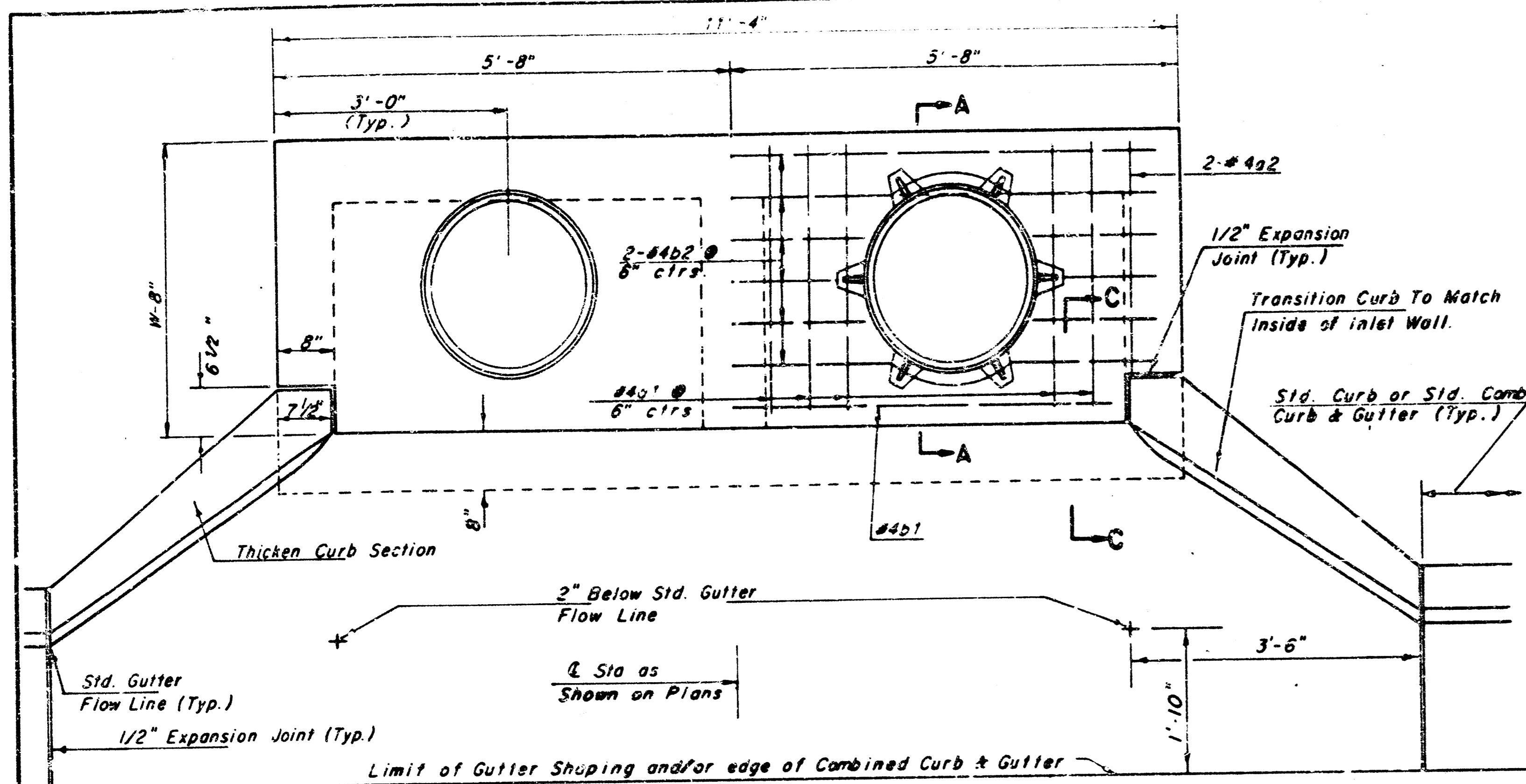
REVISED 11-30-1988  
 REVISED 12-21-1984

**DETAIL STANDARD TYPE IA CURB INLET**  
 CITY OF WICHITA, KANSAS  
 INLET OPENING = 6" x 5' 0"

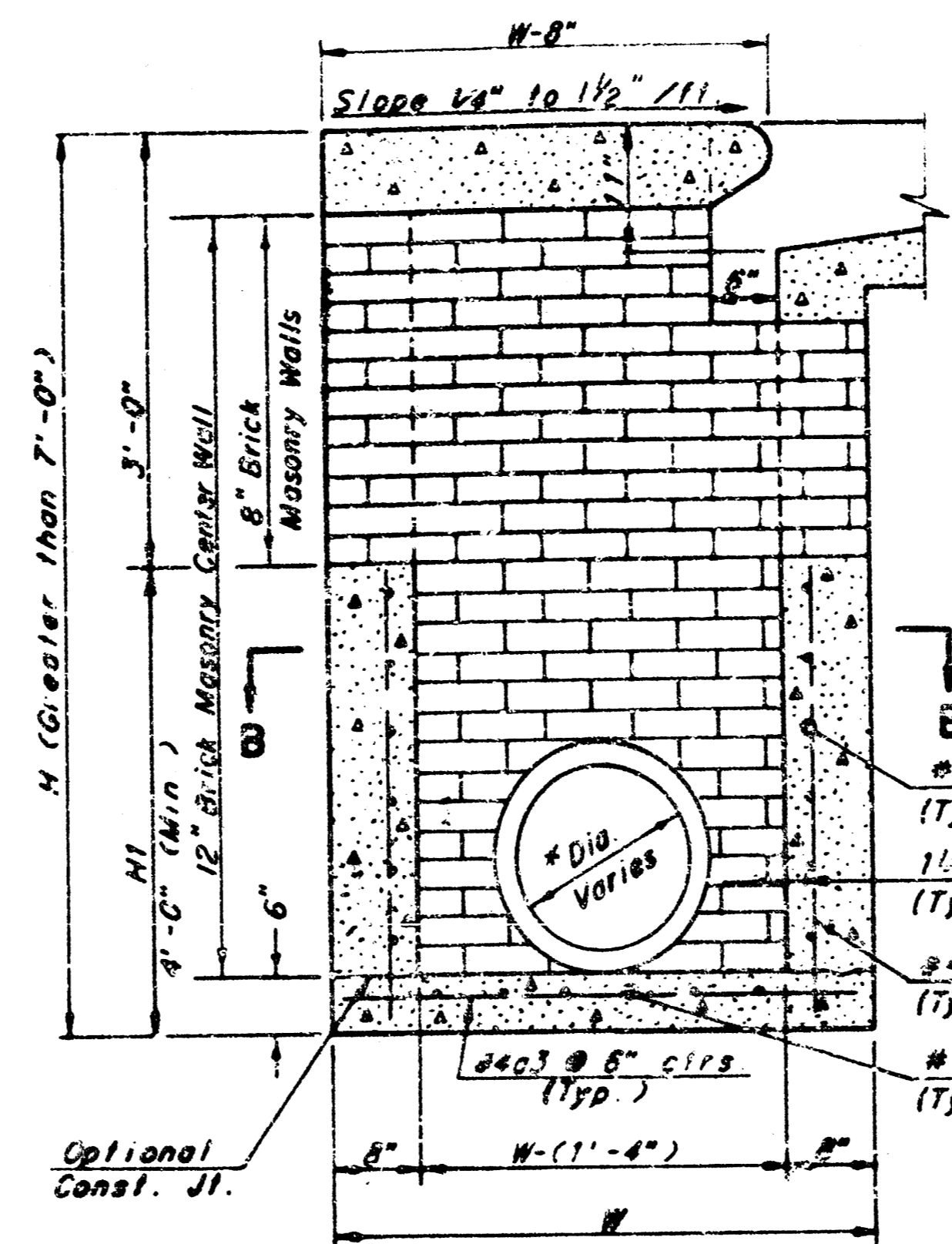
JUNE 1984

89-20-194 D

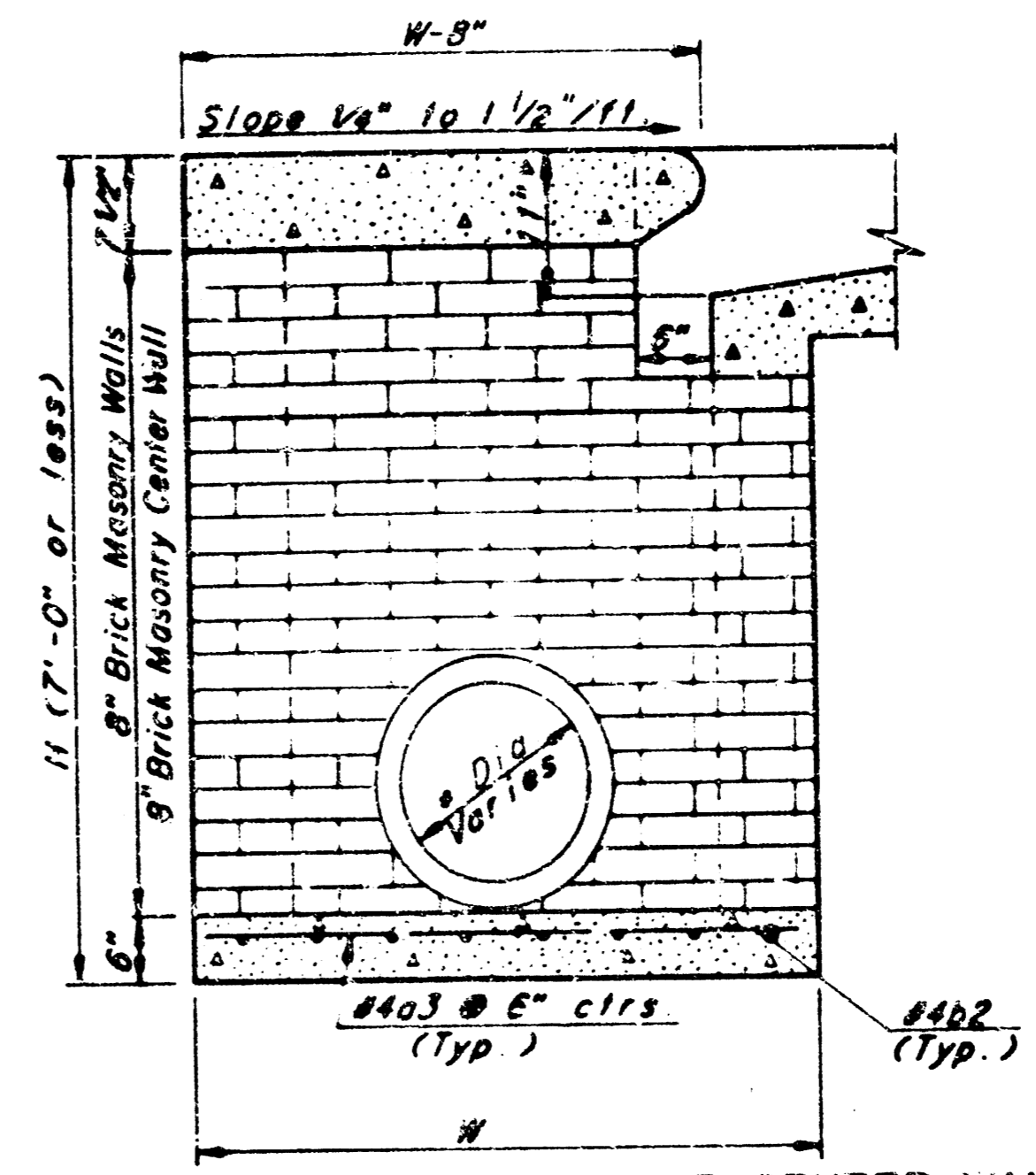
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SLAB REINFORCING NOT SHOWN SHOWING SLAB REINFORCING NOTE Expansion Joint only in Curb Area with Conc. Pavement.

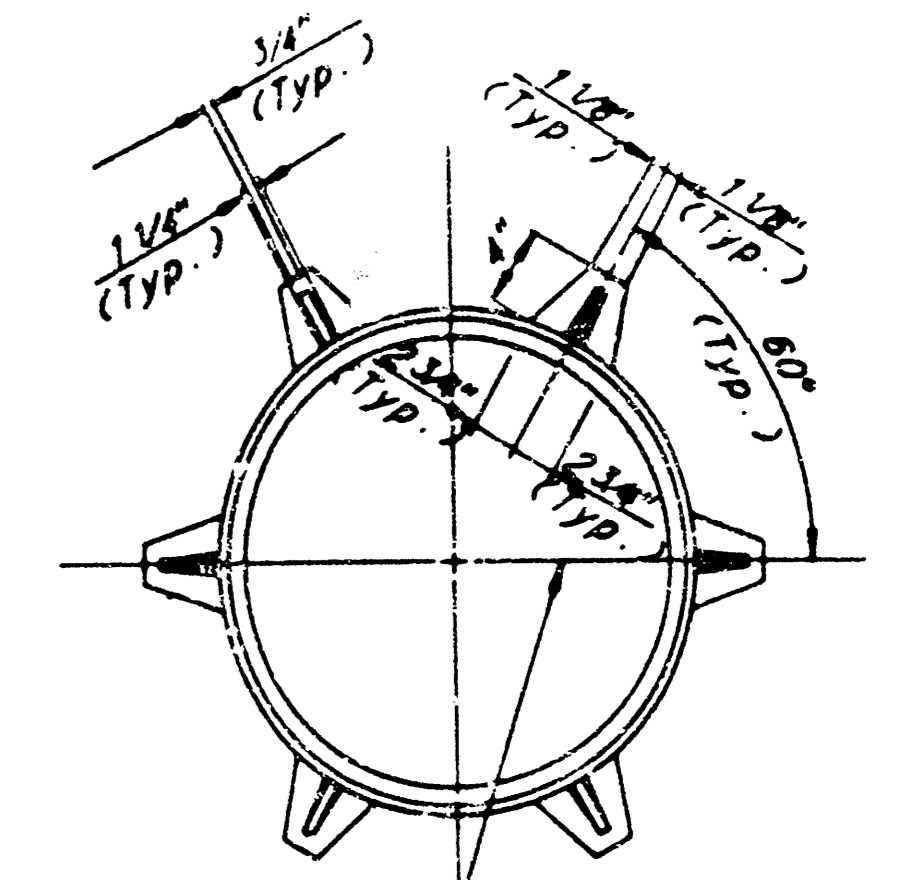


TYPICAL INLET SECTION AT CENTER WALL (REINFORCED CONCRETE WALLS)

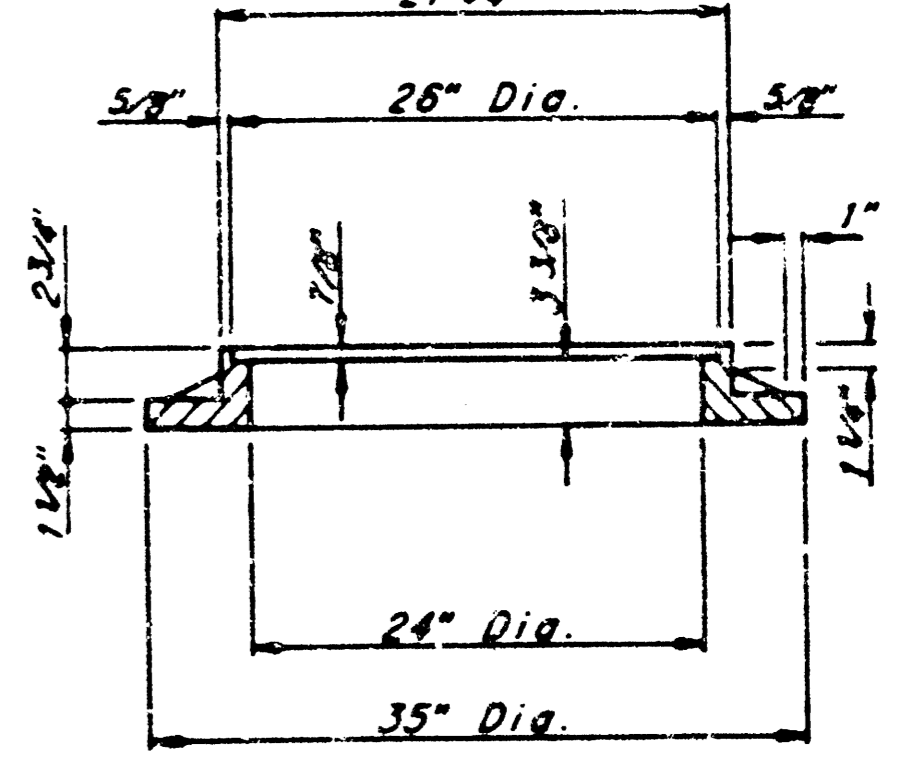


TYPICAL INLET SECTION AT CENTER WALL (MASONRY WALLS)

A center wall opening shall be provided by means of a section of reinforced concrete pipe. See Case I and Case II Below.

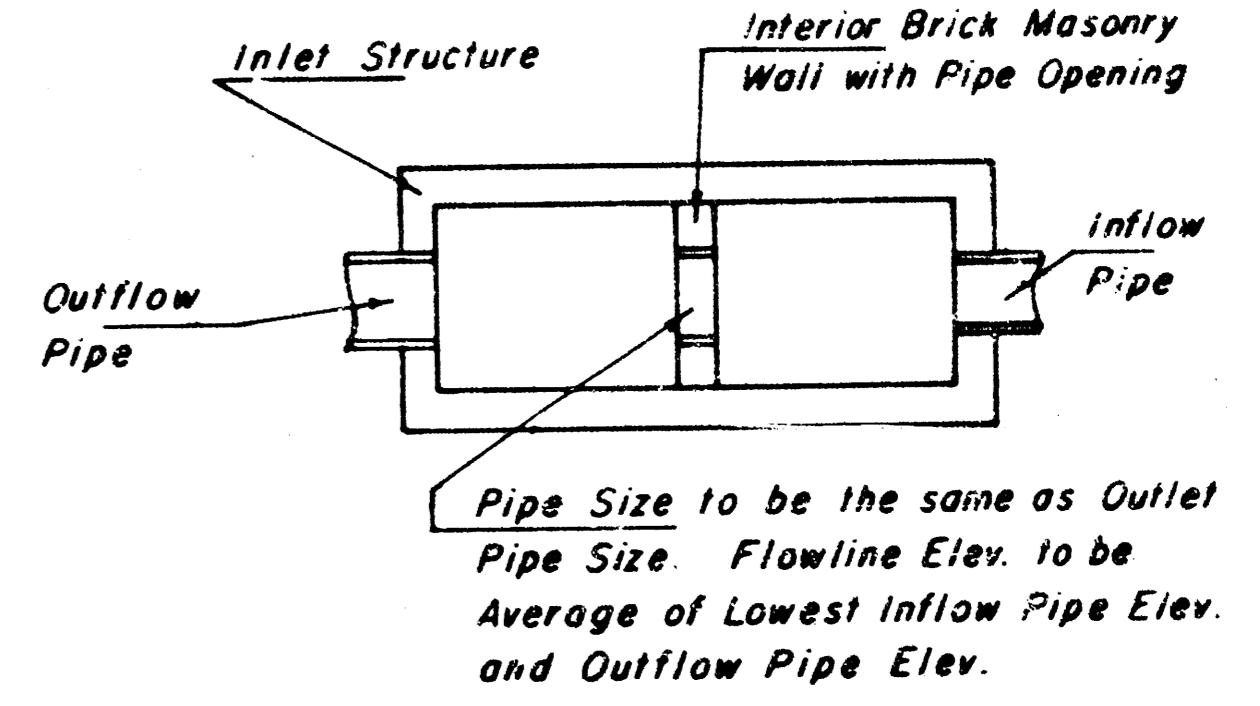


CAST IRON INLET RING Wt. = 180 lbs.

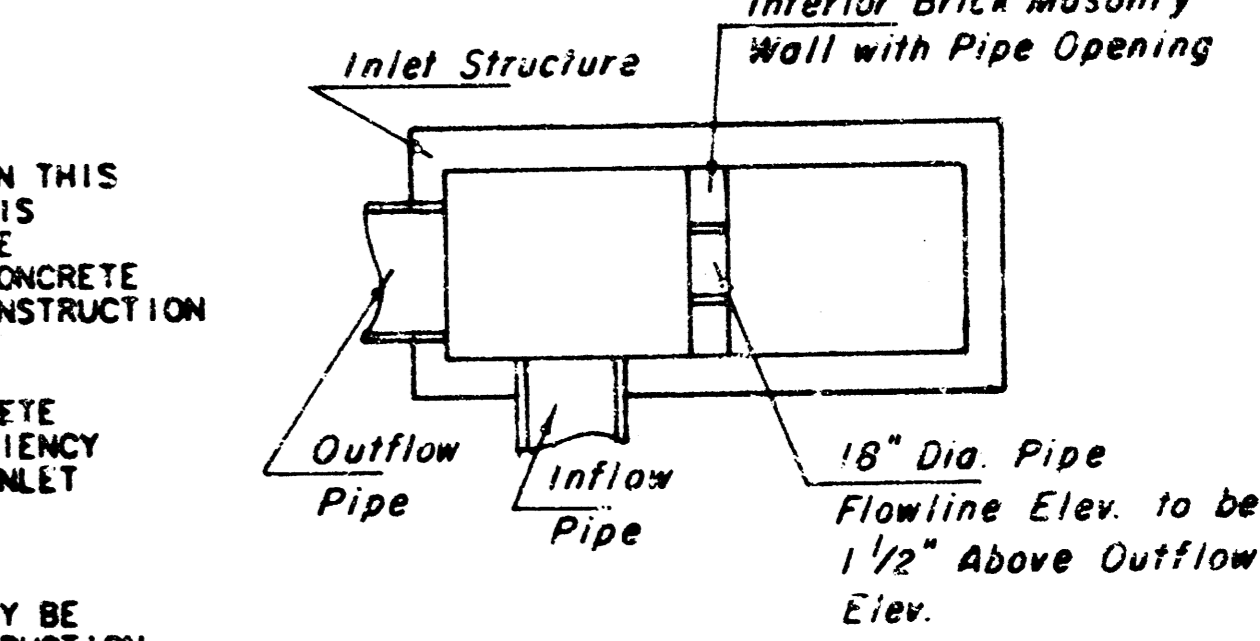


CAST IRON INLET RING

See City of Wichita Standard Manhole Frame and Cover Detail Sheet for Cover Details to be used with Inlet Frame.



CASE I



CASE II

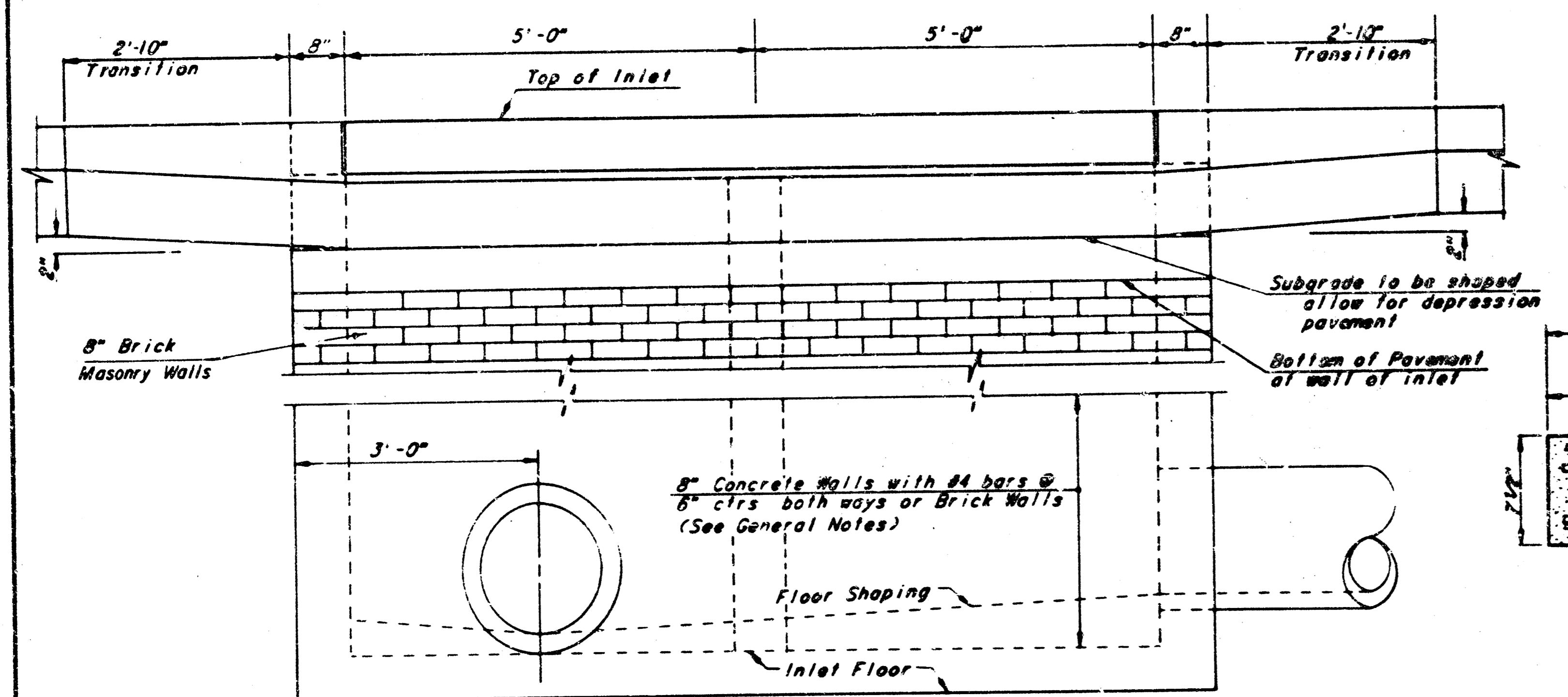
NOTE Center Wall Pipe Size shall be as Specified in Inlet Construction Note on the Plan/Profile Sheets for those Cases not shown here.

STANDARD TYPE 1A CURB INLET

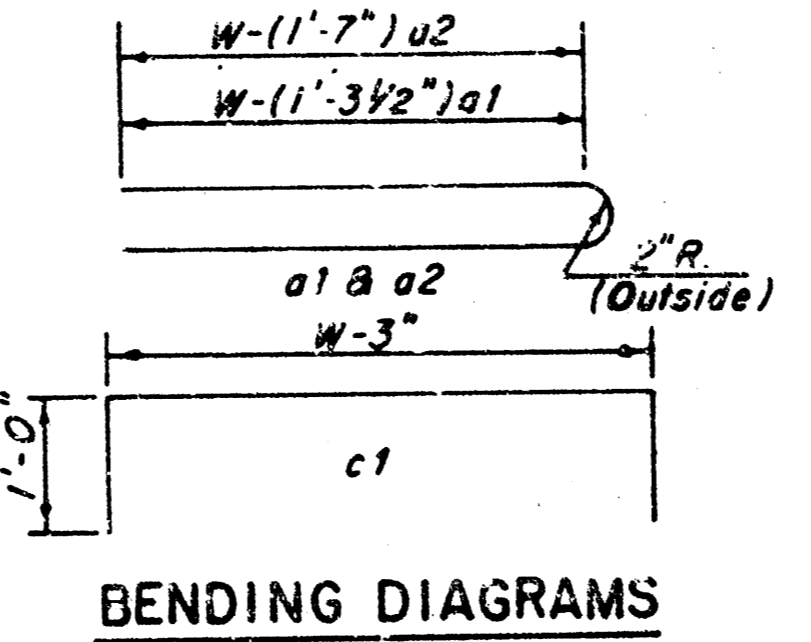
INLET OPENING = 6" x 10" - 0"

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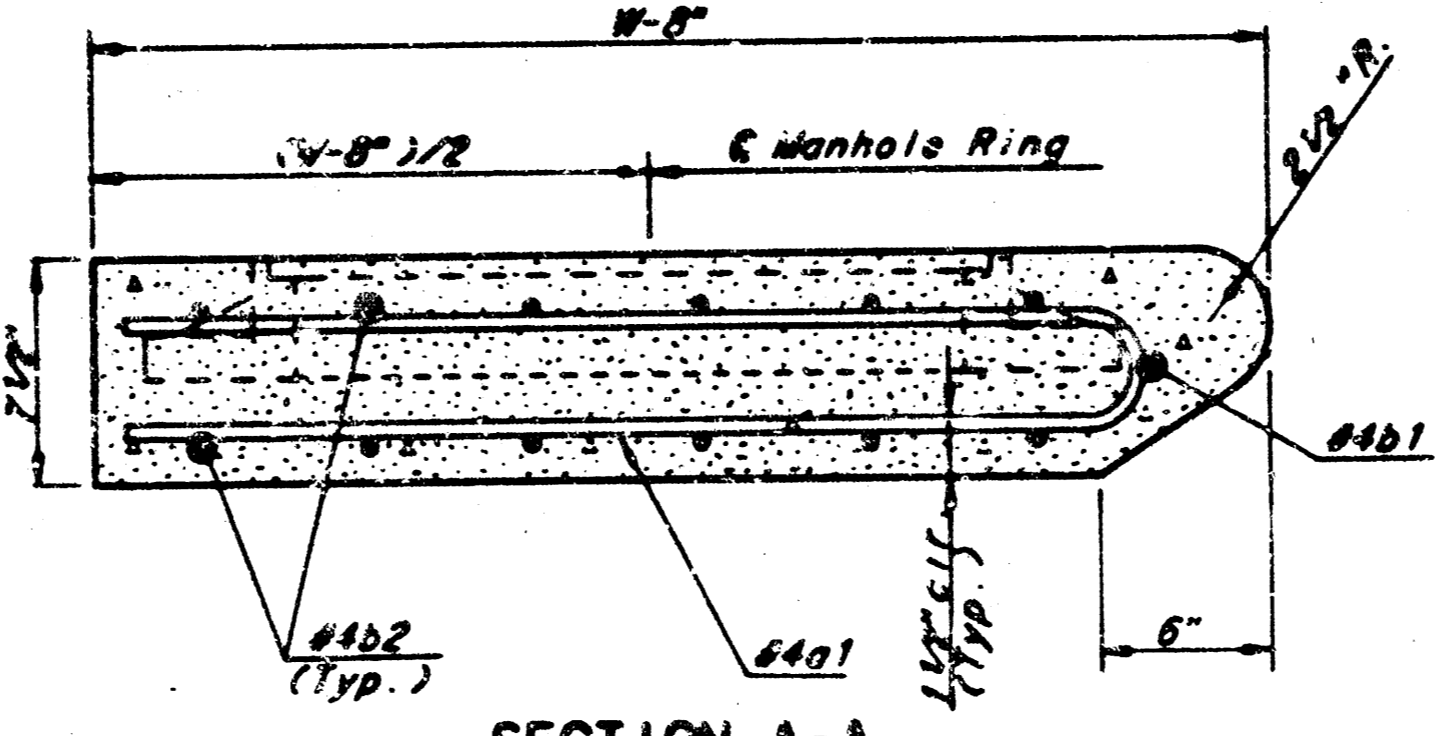
WICHITA, KANSAS  
Designed by JCR, KJS, AMB  
Checked by AMB  
Drawn by JOP  
Date Nov. 1964  
Job No.



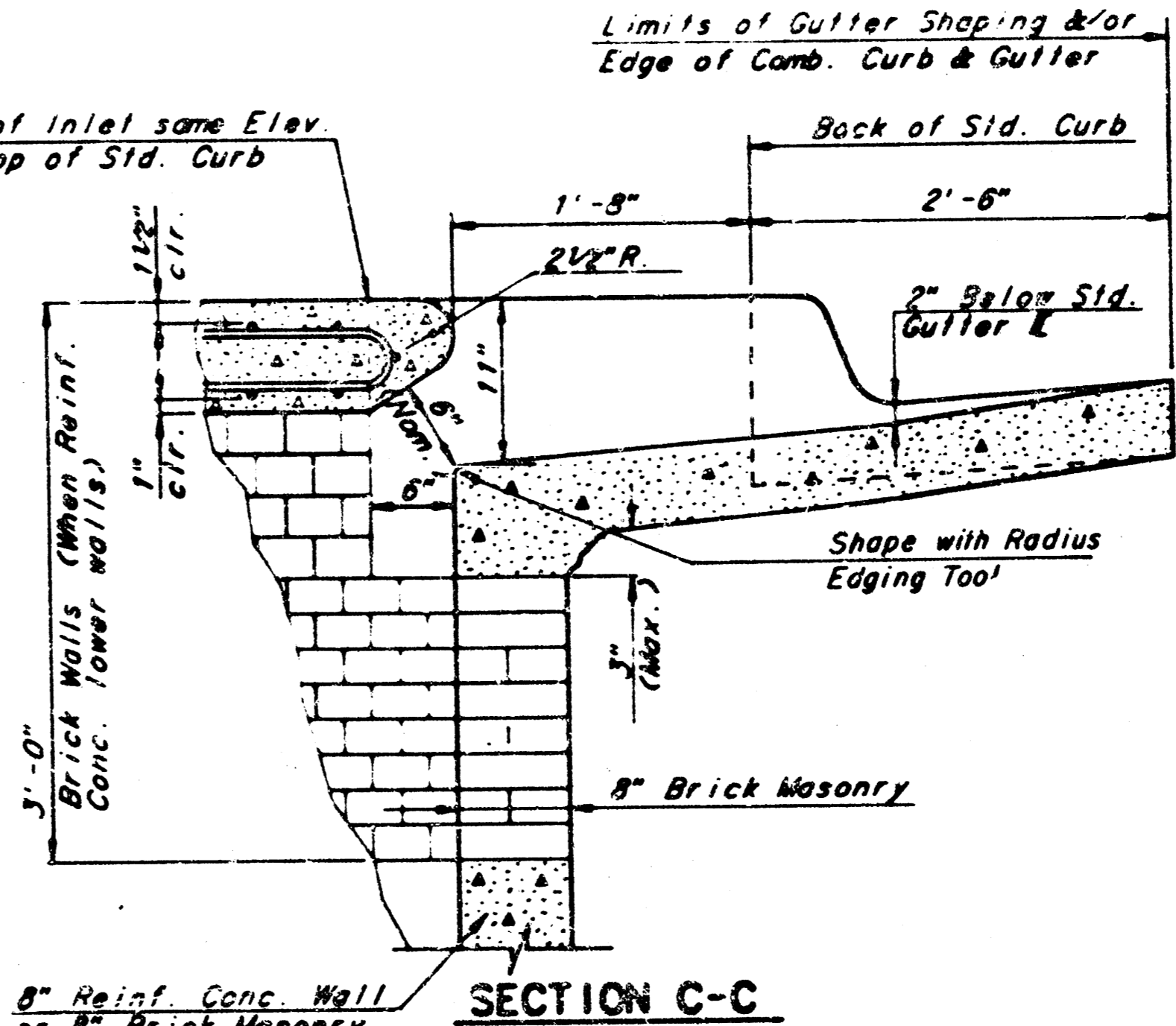
ELEVATION



BENDING DIAGRAMS



SECTION A-A



SECTION C-C

GENERAL NOTES

- THE CONTRACTOR SHALL BE REQUIRED TO CONSTRUCT 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN W IS 4" OR LESS AND H IS 7'-0" OR LESS. WHEN W IS GREATER THAN 4" AND H IS LESS THAN 7'-0" THE OUTSIDE INLET WALLS BELOW THE BRICK STACK SHALL BE REINFORCED CONCRETE CONSTRUCTION AND THE CENTER WALL SHALL BE OF MASONRY CONSTRUCTION AS SHOWN FOR THE MASONRY WALL OPTION.
- INLET INVERT SHALL BE SHAPED WITH A SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
- CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL BE CONCRETE PAVEMENT MIX.
- INLET TOP REINFORCING SHALL BE SPACED ON 8" MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB BARS IN INLET TOP TO BE FIELD BENT OR CUT TO CLEAR MANHOLE RING.
- THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.

SLAB AND FLOOR REINFORCING

MARK	SIZE	W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
a1	#4	13	6'-7 1/4"	13	8'-7 1/4"	13	10'-7 1/4"	13	12'-7 1/4"	13	14'-7 1/4"
a2	#4	2	6'-0"	2	8'-0"	2	10'-0"	2	12'-0"	2	14'-0"
a3	#4	20	4'-1"	20	5'-1"	20	6'-1"	20	7'-1"	20	8'-1"
b1	#4	1	9'-8"	1	9'-8"	1	9'-8"	1	9'-8"	1	9'-8"
b2	#4	18	11'-1"	24	11'-1"	30	11'-1"	36	11'-1"	42	11'-1"

WALL REINFORCING

MARK	SIZE	W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
c1	#6	4	6'-1"	4	7'-1"	4	8'-1"	4	9'-1"	4	10'-1"
w1	#4	1	11'-1"	1	11'-1"	1	11'-1"	1	11'-1"	1	11'-1"
w2	#4	1	4'-1"	1	5'-1"	1	6'-1"	1	7'-1"	1	8'-1"
w3	#4	2	3"	2	3"	2	3"	2	3"	2	3"

\* Field bend or cut Reinforcing as required for clearance  
 ① (H1-6") x 4 (H1-6") Rounded down to nearest 0.5"  
 ② 40 x 6 (W - 16") ③ H1 (9")

W	PRE-CAST TOP SIZE	SIDE OR INTERIOR WALL PIPE SIZE	CU. YD. CONC.
4'-4"	3'-8" x 11'-4" x 7 1/2"	21" B SMALLER	0.83 ±
5'-4"	4'-8" x 11'-4" x 7 1/2"	24" B 30"	1.09 ±
6'-4"	5'-8" x 11'-4" x 7 1/2"	36" B 42"	1.35 ±
7'-4"	6'-8" x 11'-4" x 7 1/2"	48" B 54"	1.61 ±
8'-4"	7'-8" x 11'-4" x 7 1/2"	60" B 66"	1.87 ±

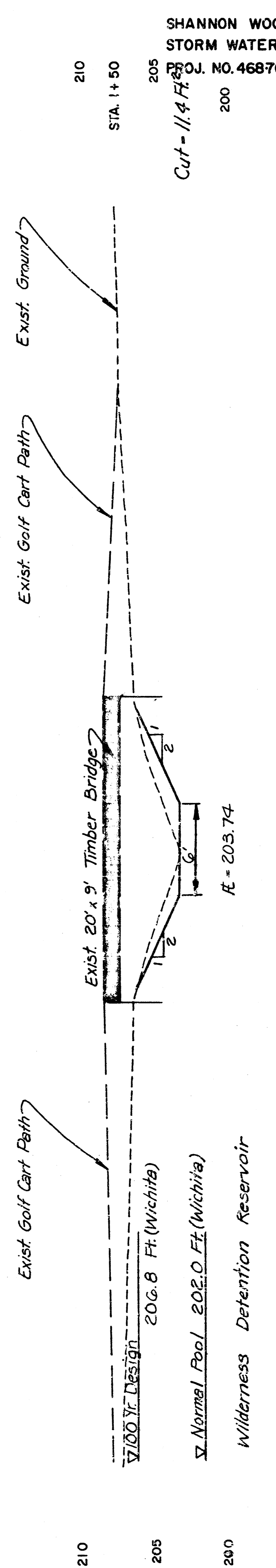
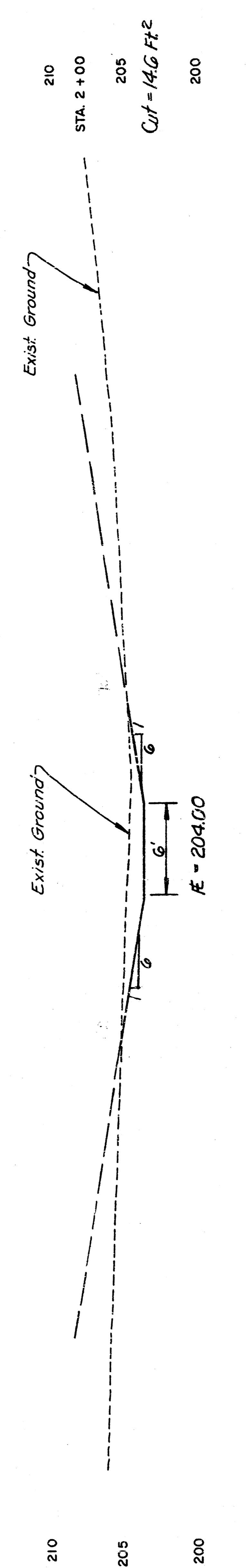
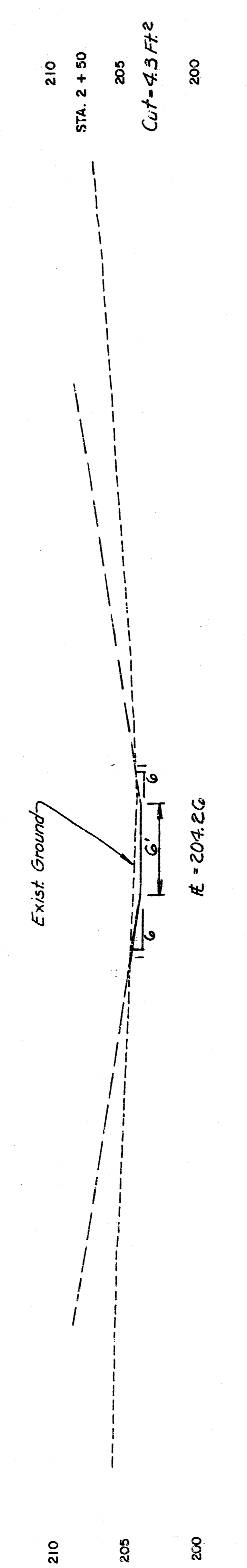
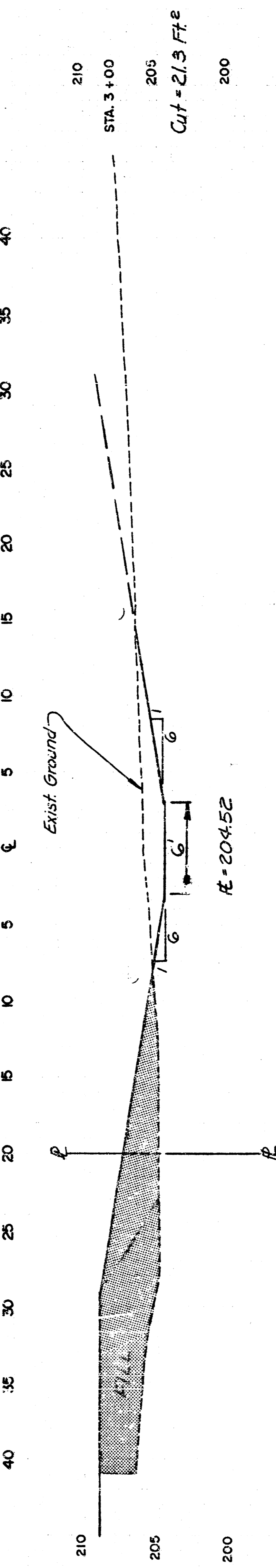
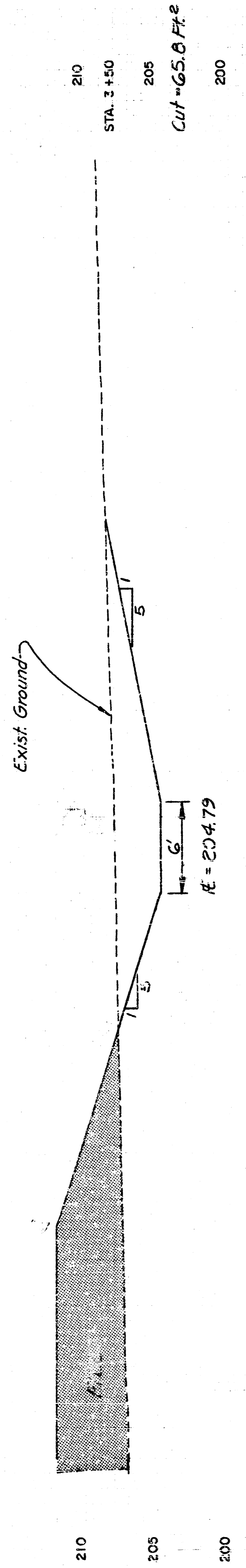
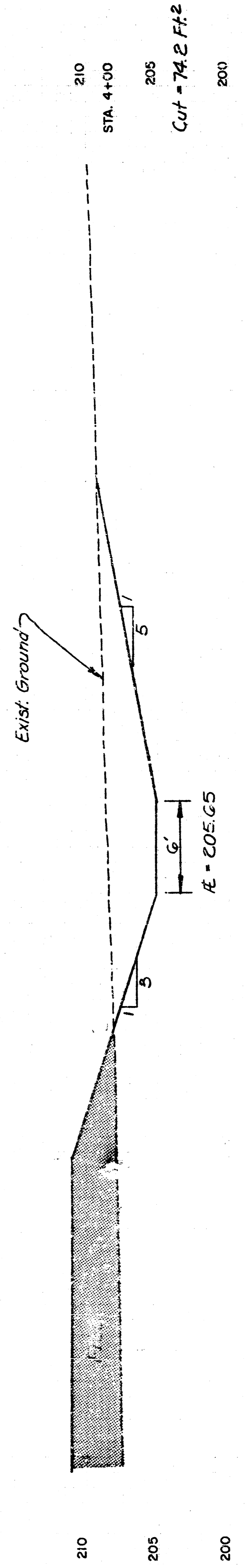
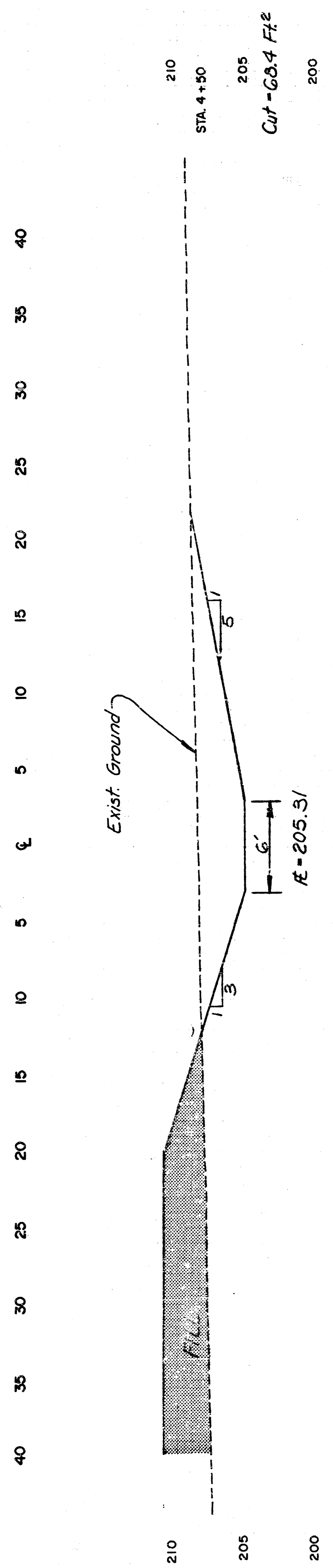
REVISED 12-5-88

REVISED 12-21-84

89-20-194 D

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SHANNON WOODS AT TALLGRASS  
STORM WATER SEWER NO. 316  
PROJ. NO. 46876-245-81607-000-000-001

12/14

09-20-194-D

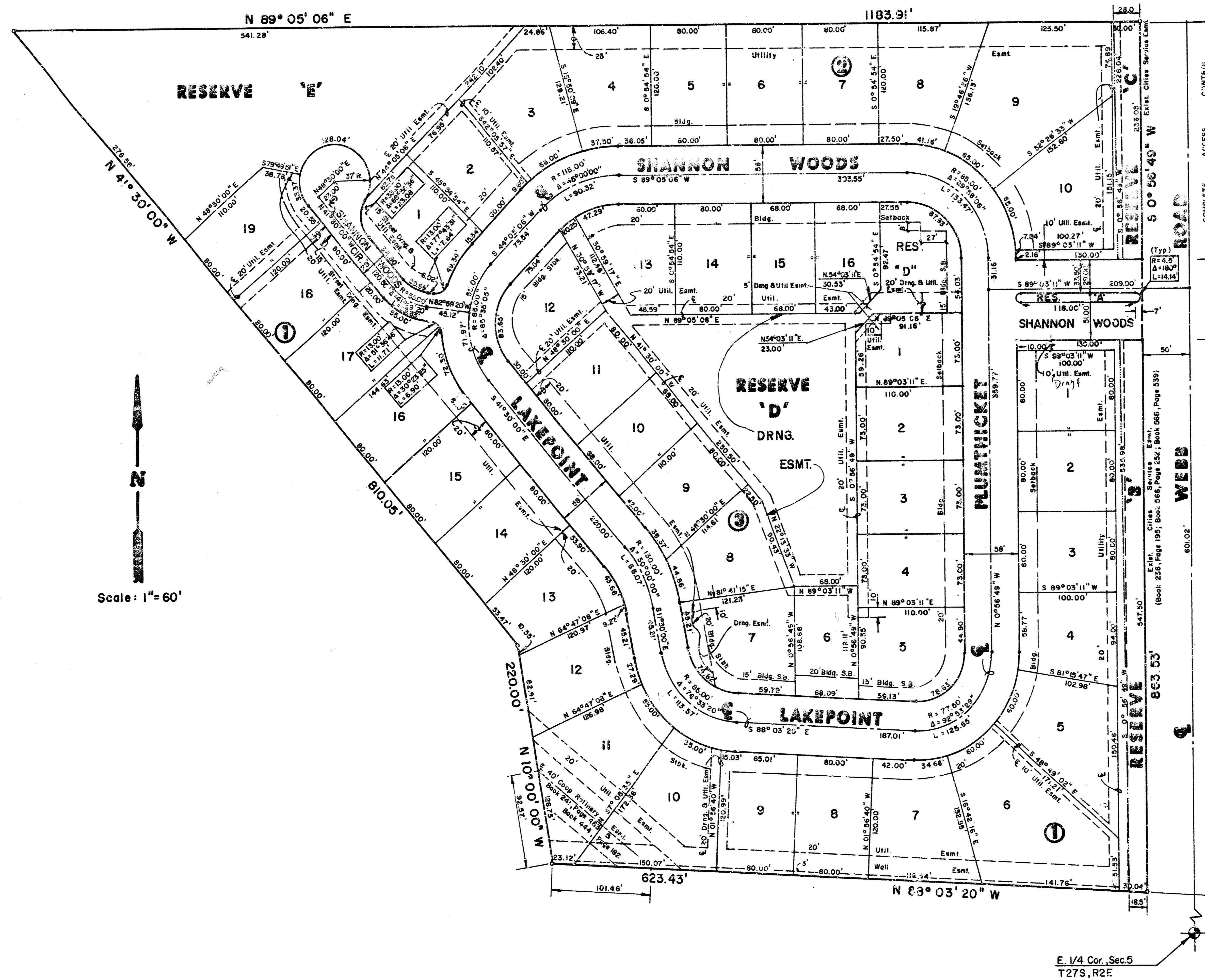
Looking Downstream

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# FINAL PLAT OF SHANNON WOODS AT TALLGRASS

AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS



I, Kenneth H. Bengtson, a Civil Engineer and Registered Land Surveyor in Kansas, do hereby certify that I have been in responsible charge of surveying and platting of "Shannon Woods at Tallgrass" an addition to Wichita, Sedgwick County, Kansas, into Lots, Blocks, Streets and Reserves, the same being accurately set forth in the accompanying plat and described herein.

A replat of DEER RUN, an addition to Wichita, Sedgwick County, Kansas.

All Lots, Blocks, Streets (except Webb Road right of way), Easements and Building setbacks are hereby vacated and replatted by virtue of K.S.A. 12-512(b).

I hereby certify that the details of this plat are correct to the best of my knowledge and belief this \_\_\_ day of \_\_\_, 1989.

Kenneth H. Bengtson, P.E.  
Wichita-Kansas Engineering Consultants, P.A.  
3500 N. Rock Road, Building #800  
Wichita, KS 67226

Know all men by these presents that we the undersigned property owners of the land as above set forth in the Civil Engineer's and Registered Land Surveyor's Certificate, have caused the same to be surveyed and platted into Lots, Blocks, Reserves, and Streets, the same to be known as Shannon Woods at Tallgrass, an addition to Wichita, Sedgwick County, Kansas. The streets are hereby dedicated to and for the use of the public. Reserves A, B, C, and E are platted for the construction and maintenance of drainage. Reserves A, B, and C, are also platted for walls, entry monuments, irrigation systems, and landscaping. Reserve D is platted for drainage, landscaping, walks, gazebos, swimming pools and related structures, and irrigation systems. The Reserves shall be owned and maintained by the Homeowners Association. Easements for the construction and maintenance of public utilities, drainage and streets as indicated on the accompanying plat, are hereby granted. The 3.00 foot wall easements, as indicated on the accompanying plat, are granted for the purpose of construction and maintenance of a private wall. All abutters rights of access to and from Webb Road over and across the East lines of Reserves B and C are hereby granted to the City of Wichita, Kansas.

B.B.B.R. CORPORATION

By: Jay M. Russell

STATE OF KANSAS )  
SEDGWICK COUNTY ) ss:

Be it remembered that on this \_\_\_ day of \_\_\_, 1989, before me a Notary Public in and for said State and County, came Jay M. Russell for B.B.B.R. Corporation to me personally known to be the same person who executed the foregoing instrument of writing and duly acknowledged the execution of the same. In testimony whereof I have hereunto set my hand and affixed my notarial seal the day and year above written.

\_\_\_\_\_, Notary Public

My Appointment Expires: \_\_\_\_\_

This plat of "Shannon Woods at Tallgrass" has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this \_\_\_ day of \_\_\_, 1989.

WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION

\_\_\_\_\_, Chairman  
Sue L. Crockett

\_\_\_\_\_, Secretary  
Marvin S. Krout

This plat approved and all dedications shown hereon, if any, accepted by the City Commission of the City of Wichita, Kansas, this \_\_\_ day of \_\_\_, 1989.

\_\_\_\_\_, Mayor  
Robert G. Knight

\_\_\_\_\_, City Clerk  
John Moir

Entered on transfer record this \_\_\_ day of \_\_\_, 1989.

\_\_\_\_\_, County Clerk  
Don Wright

STATE OF KANSAS )  
SEDGWICK COUNTY ) ss:

This is to certify that this instrument was filed for record in the Register of Deeds office this \_\_\_ day of \_\_\_, 1989.

\_\_\_\_\_, Register of Deeds  
Pat Kettler

\_\_\_\_\_, Deputy  
Ed Resa