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 WESTWOOD PROF. SERVICES, INC.  
 7599 ANAGRAM DRIVE  
 EDEN PRAIRIE, MN 55344  
 952-937-5150  
 DAN SJORDAL

SEAL:



**slumberland**  
 RIDGE PLAZA  
 8TH ADDITION  
 LOTS 4 AND 5, BLOCK B  
 444 S EMERSON STREET  
 WICHITA, KS 67209

SHEET TITLE:  
 STORM SEWER  
 COVER SHEET

REVISIONS:

NO.	DATE	BY	REVISIONS
2	05/19/04		NO REVISIONS
3	06/02/04		THIS SHEET
4	06/30/04		NO REVISIONS
5	07/16/04		THIS SHEET
6	08/09/04		NO REVISIONS
7	08/20/04		THIS SHEET

PROJECT NO: 03105-15  
 DRAWING DATE: 08-20-04  
 DRAWN BY: GAV

1  
 SHEET 1 OF 10  
 FILE: 03316 1s

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# STORM WATER SEWER TO SERVE RIDGE PLAZA 8TH ADDITION

LOTS 4 & 5, BLK. B  
 PRIVATE PROJECT NUMBER: 1464 PPS (607861)  
 CITY OF WICHITA, KANSAS  
 JIM ARMOUR, P.E. INTERIM CITY ENGINEER  
 AUGUST 2004

**BENCH MARKS:**  
 CITY OF WICHITA SET SITE BENCHMARK ON CURB  
 ELEV. = 133.46 (CITY DATUM)  
 7' NW OF CENTER OF CURB INLET  
 159' SSE OF NORTHWEST PROPERTY CORNER  
 227' NNW OF SOUTHWEST PROPERTY CORNER

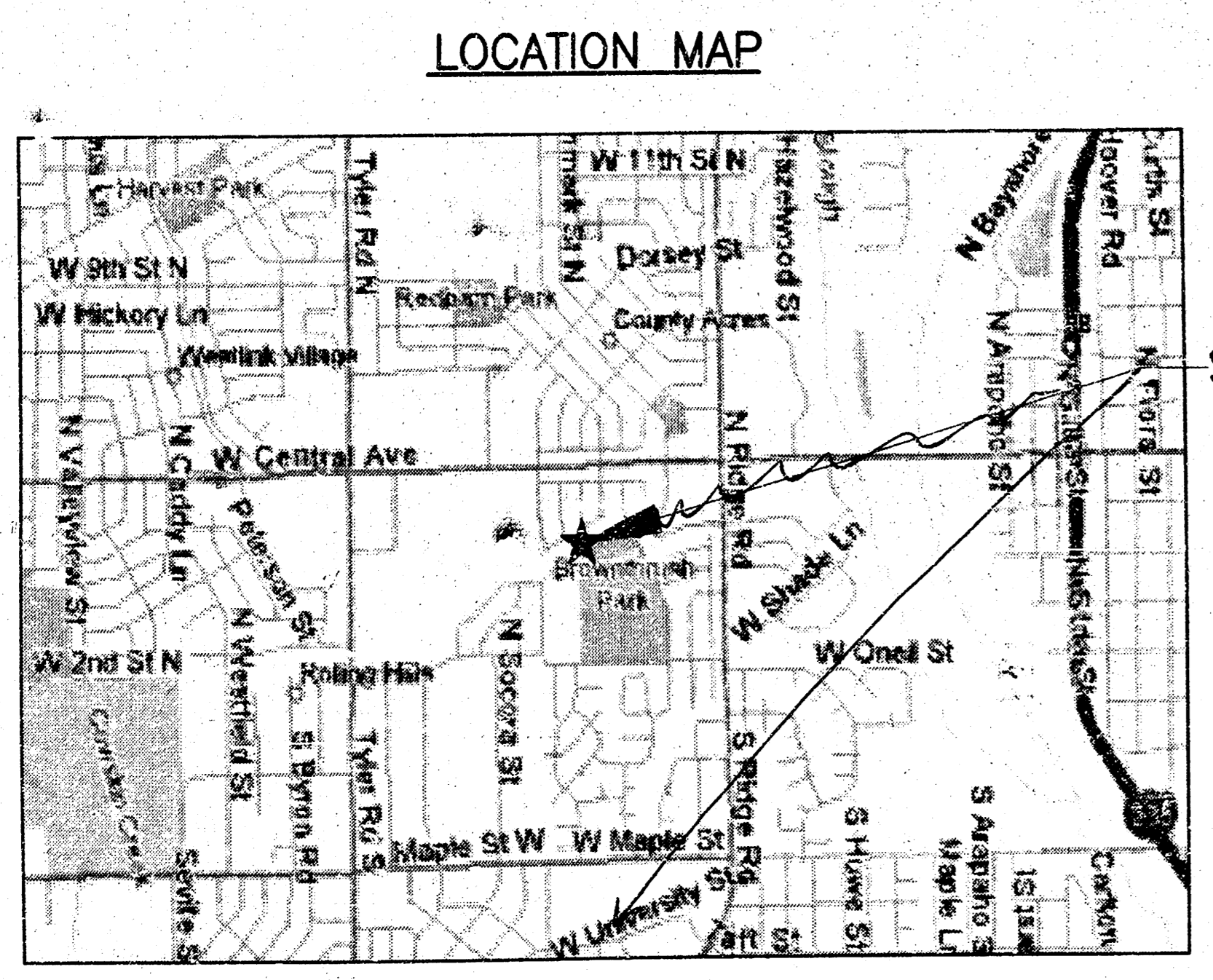
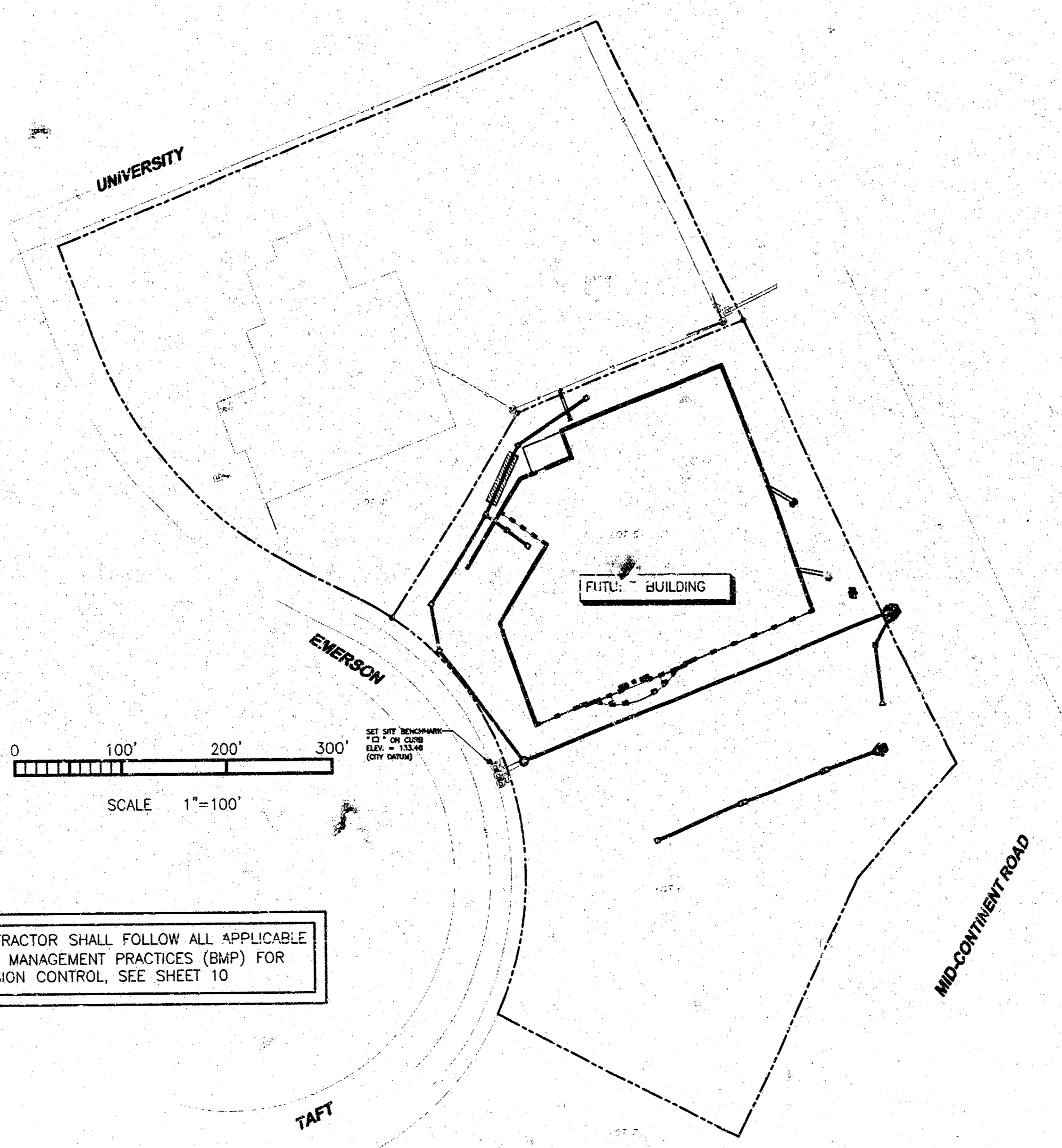
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DETAIL	9
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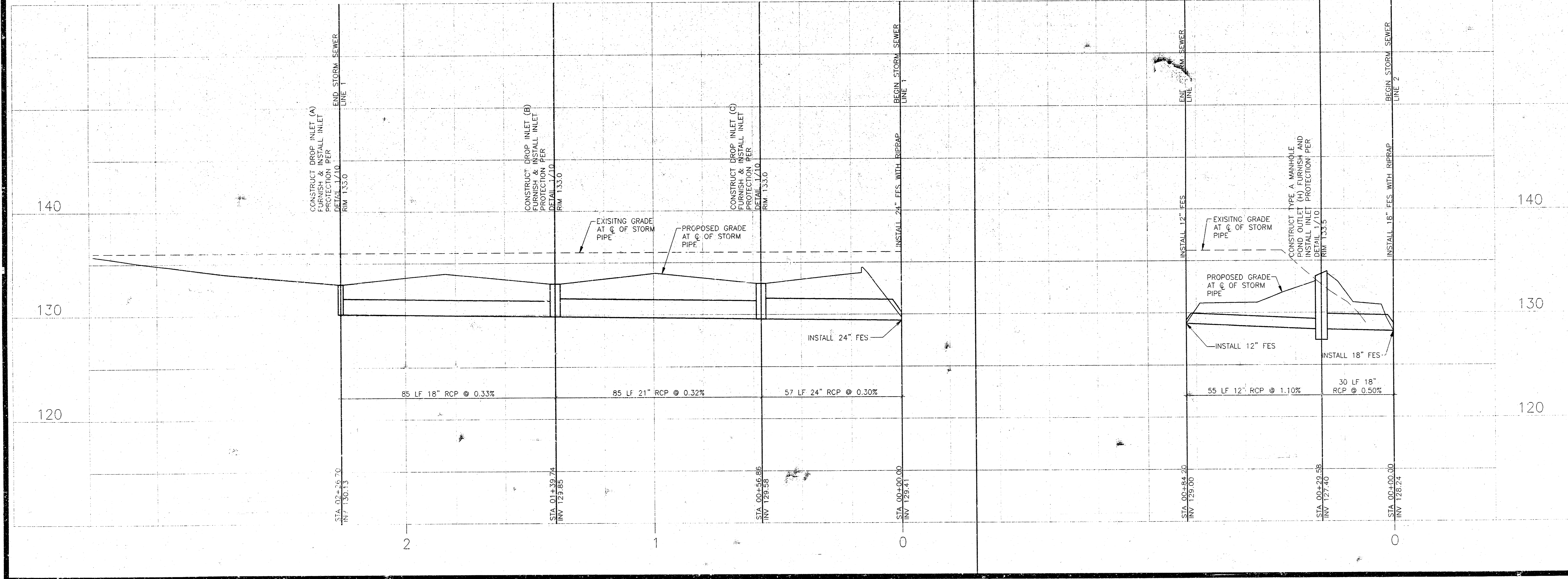
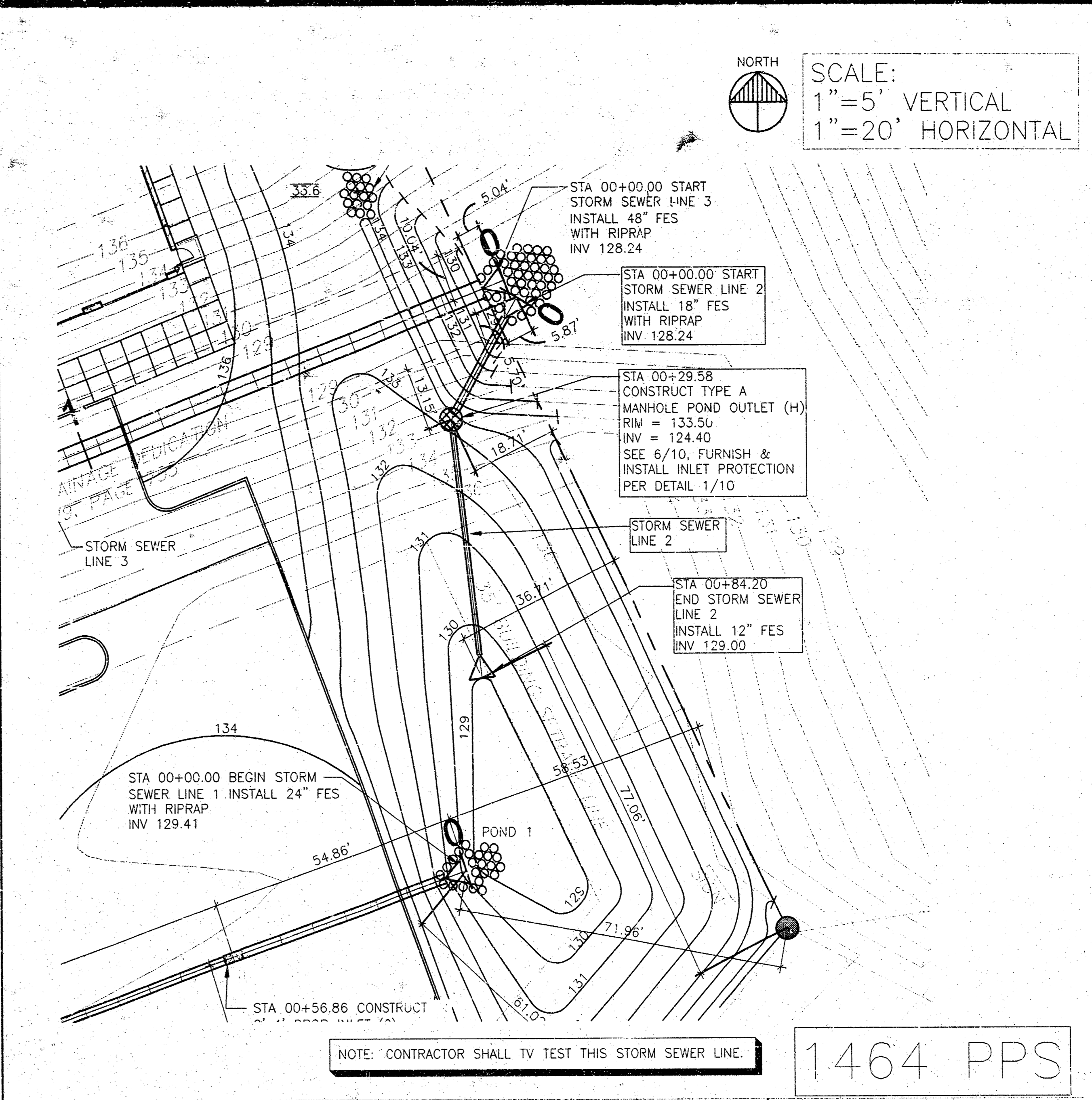
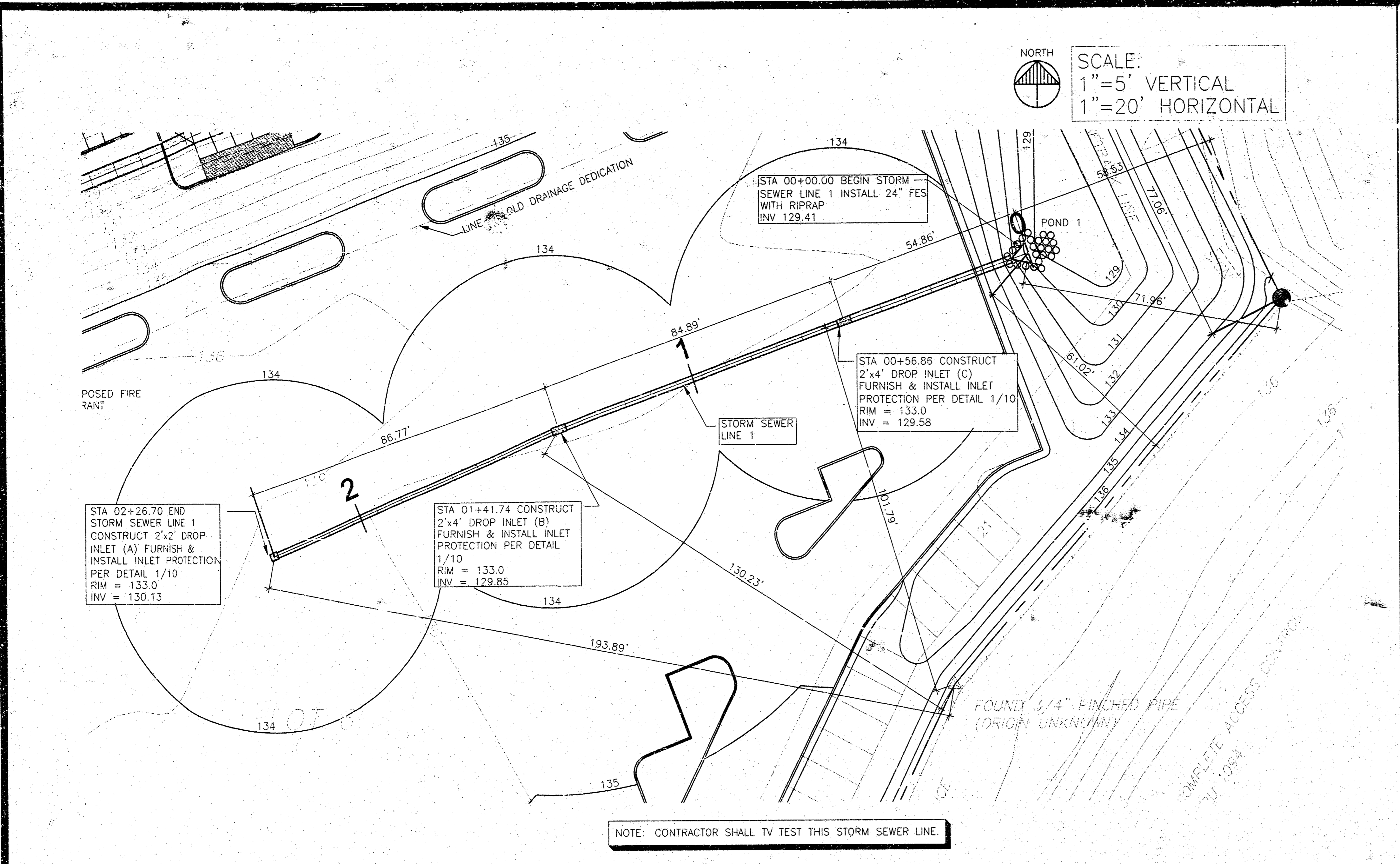
APPROVED AS NOTED  
 BY CITY ENGINEER OF WICHITA  
 STORM SEWERS VRH 8/30/04  
 NOTE TO CONTRACTORS

**AS-BUILT**  
 1/16/05  
 Date  
*[Signature]*  
 Signed

INSTALLATION, INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR WITHOUT SUCH INSPECTION NOR SHALL ANY WORK BE COMMENCED WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER. ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH THE CITY OF WICHITA SPECIFICATIONS AND STANDARDS (ON FILE AND AVAILABLE IN THE CITY ENGINEER'S OFFICE).



COLOR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLOTTING GUIDE															



**PATRICK G. BLEES**

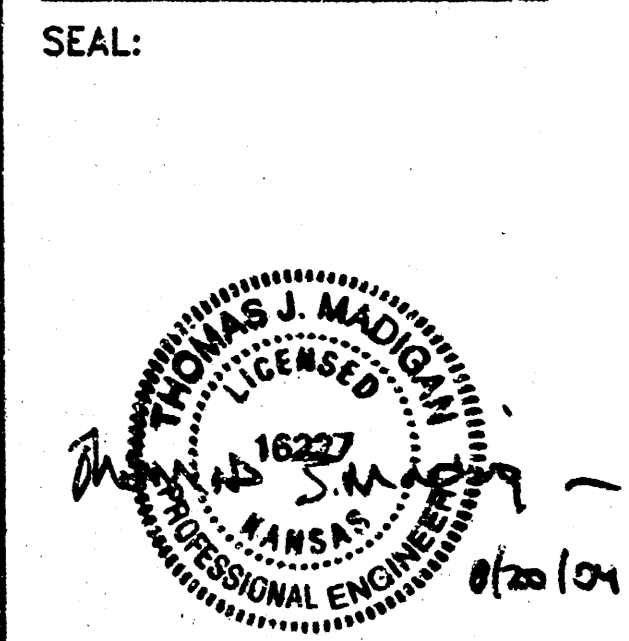
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THOMAS MADIGAN

**STRUCTURAL ENGINEER**  
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**LANDSCAPE ARCHITECT**  
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7599 ANOKRAM DRIVE  
EKEN PRairie, MN 55344  
952-937-5150  
DAN SJORDAL



**slumberland**

RIDGE PLAZA  
8TH ADDITION  
LOTS 4 AND 5, BLOCK B  
444 S EMERSON STREET  
WICHITA, KS 67209

**SHEET TITLE:**  
LINE 1 & 2

**REVISIONS:**

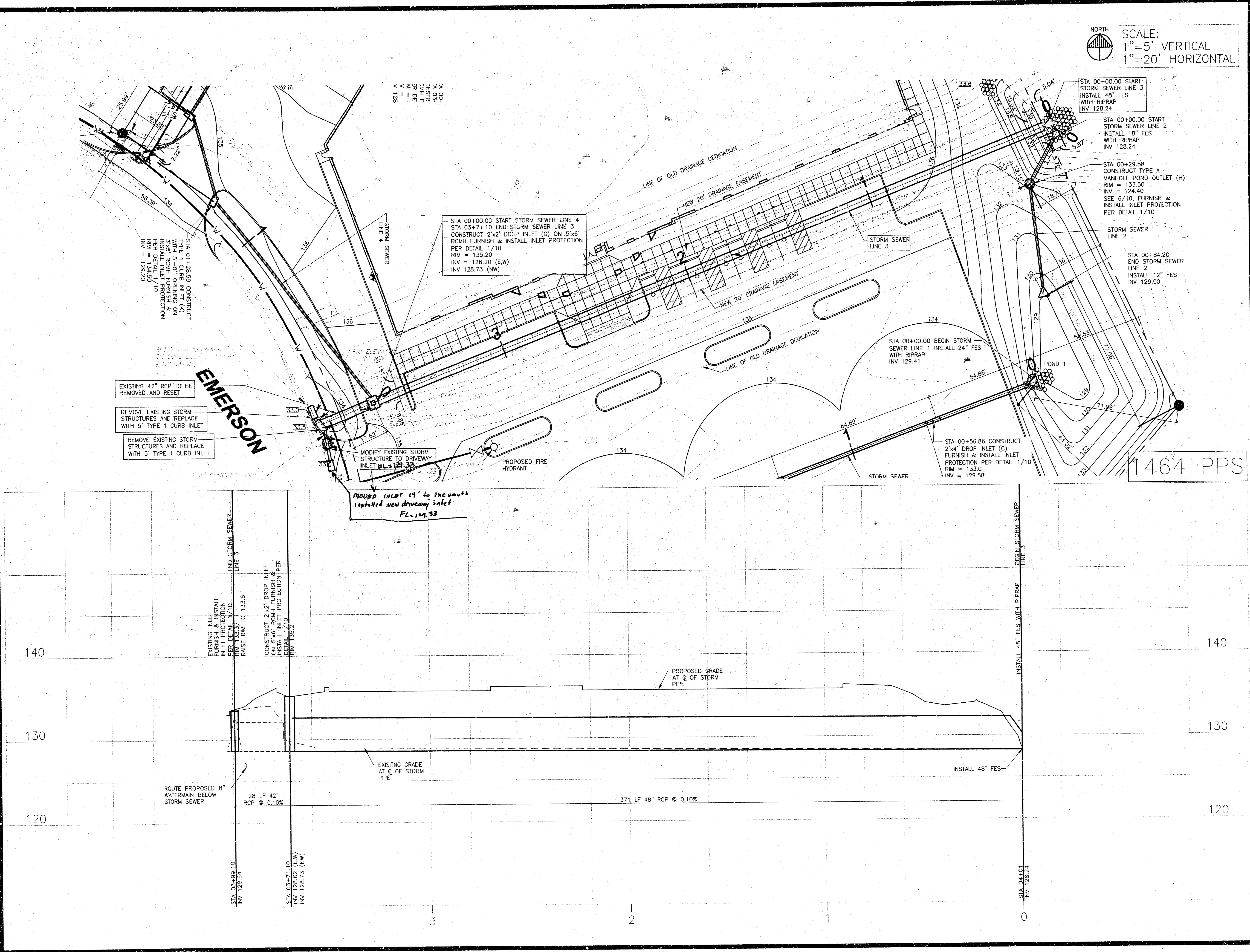
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6	08/20/04	NO REVISIONS THIS SHEET

PROJECT NO: 03109-15  
DRAWING DATE: 08-20-04  
DRAWN BY: QAV

**2**

SHEET 2 OF 10  
FILE: 03316 2-4  
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLOT	COLOR	QUANTITY	GUIDE											



NORTH  
SCALE:  
1"=5' VERTICAL  
1"=20' HORIZONTAL

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952-937-5150  
DAN SJORDAL

SEAL:  
  
THOMAS J. MADIGAN  
LICENSED PROFESSIONAL ENGINEER  
8/21/04

**slumberland**  
RIDGE PLAZA  
8TH ADDITION  
LOTS 4 AND 5, BLOCK B  
444 S EMERSON STREET  
WICHITA, KS 67209

SHEET TITLE:  
LINE 3

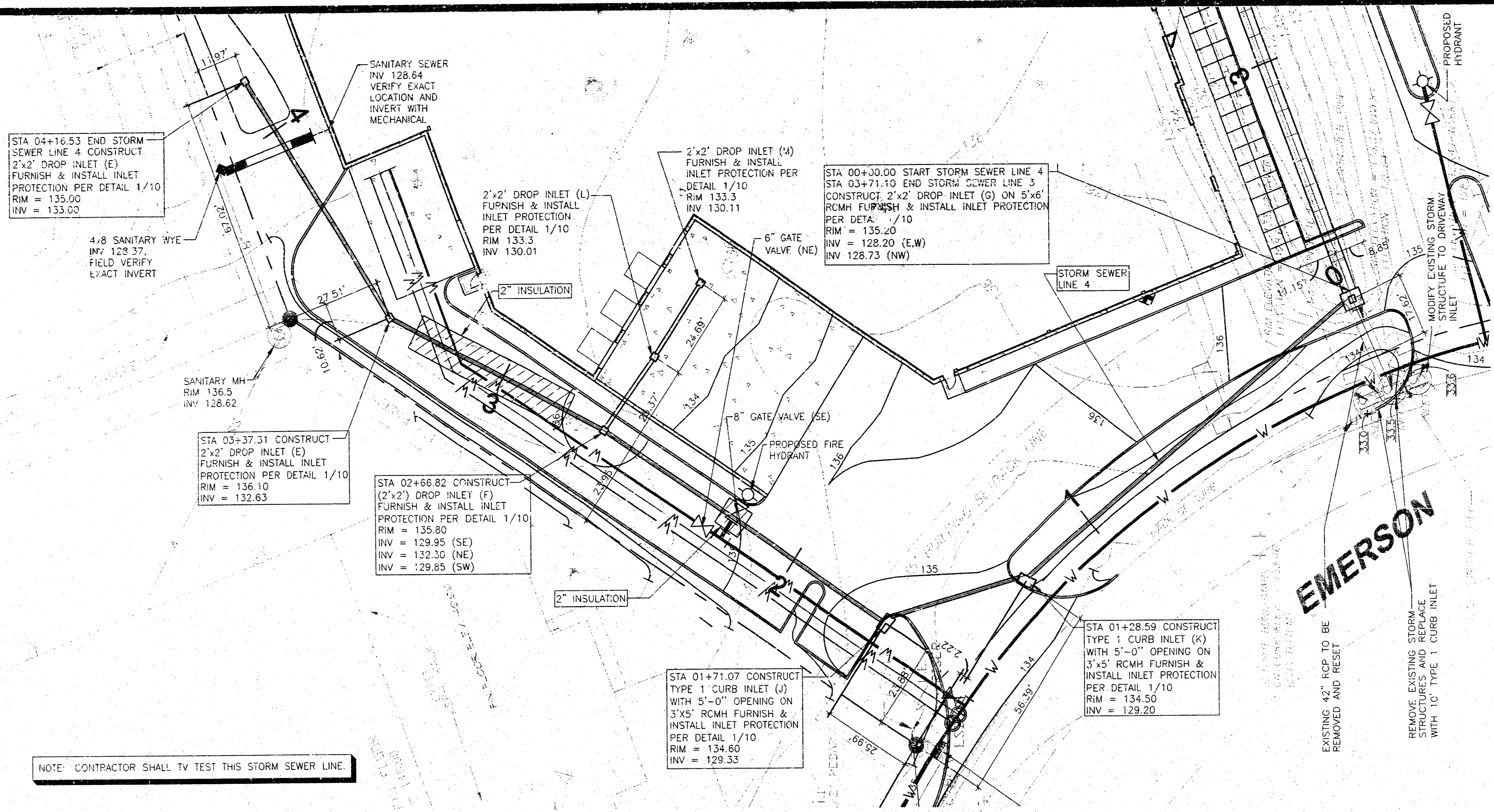
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PROJECT NO: 03109-15  
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DRAWN BY: QAV

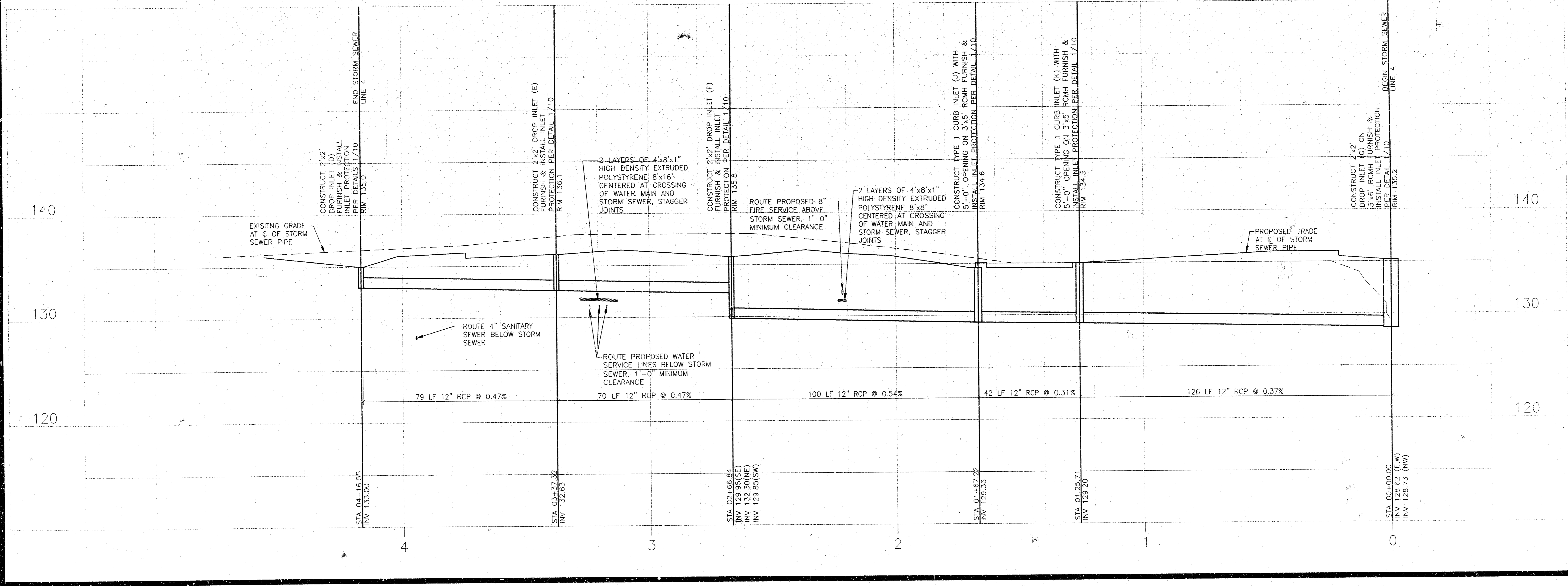
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SHEET 3 OF 10  
FILE: 03316 2-4

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SHADE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TEXT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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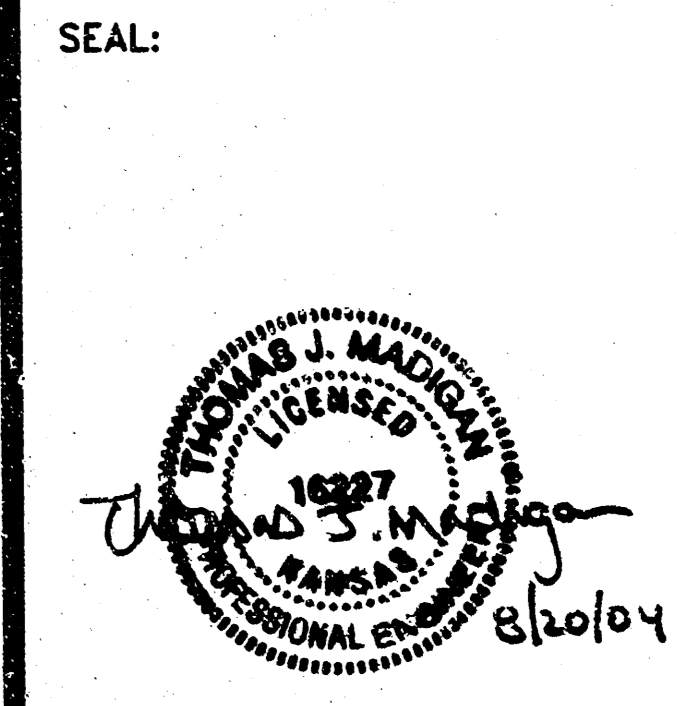
NORTH  
SCALE:  
1"=5' VERTICAL  
1"=20' HORIZONTAL

464 PPS



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**slumberland**  
RIDGE PLAZA  
8TH ADDITION  
LOTS 4 AND 5, BLOCK B  
444 S EMERSON STREET  
WICHITA, KS 67209

**SHEET TITLE:**  
STORM SEWER  
LINE 4

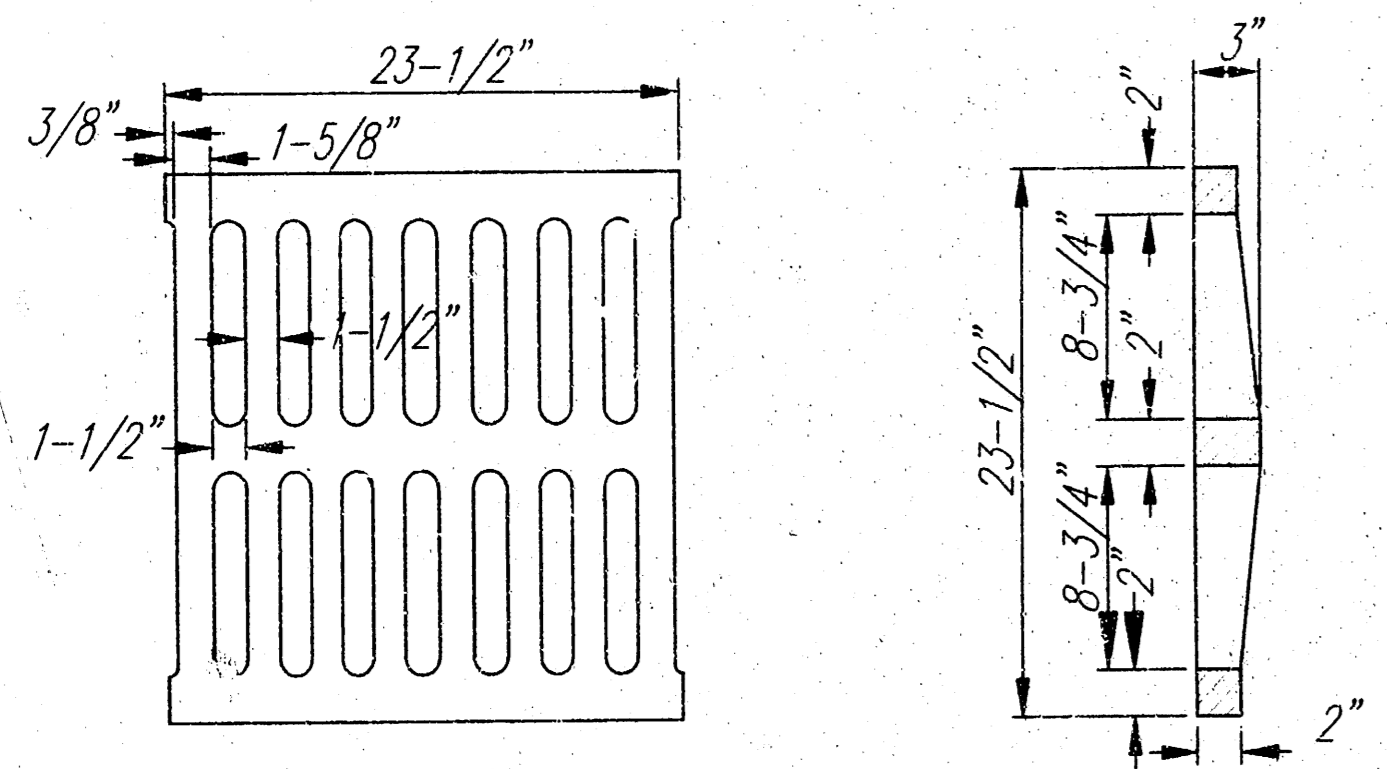
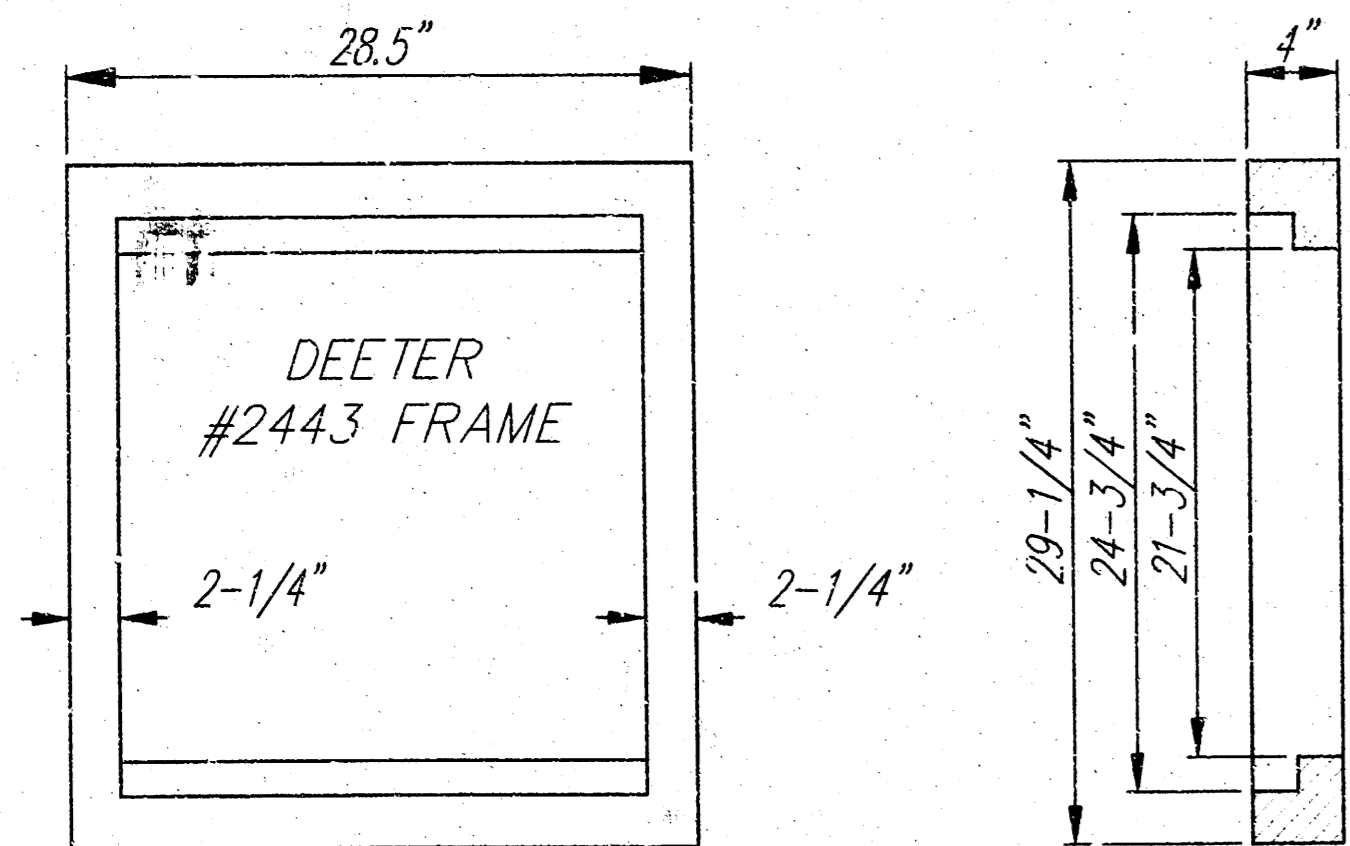
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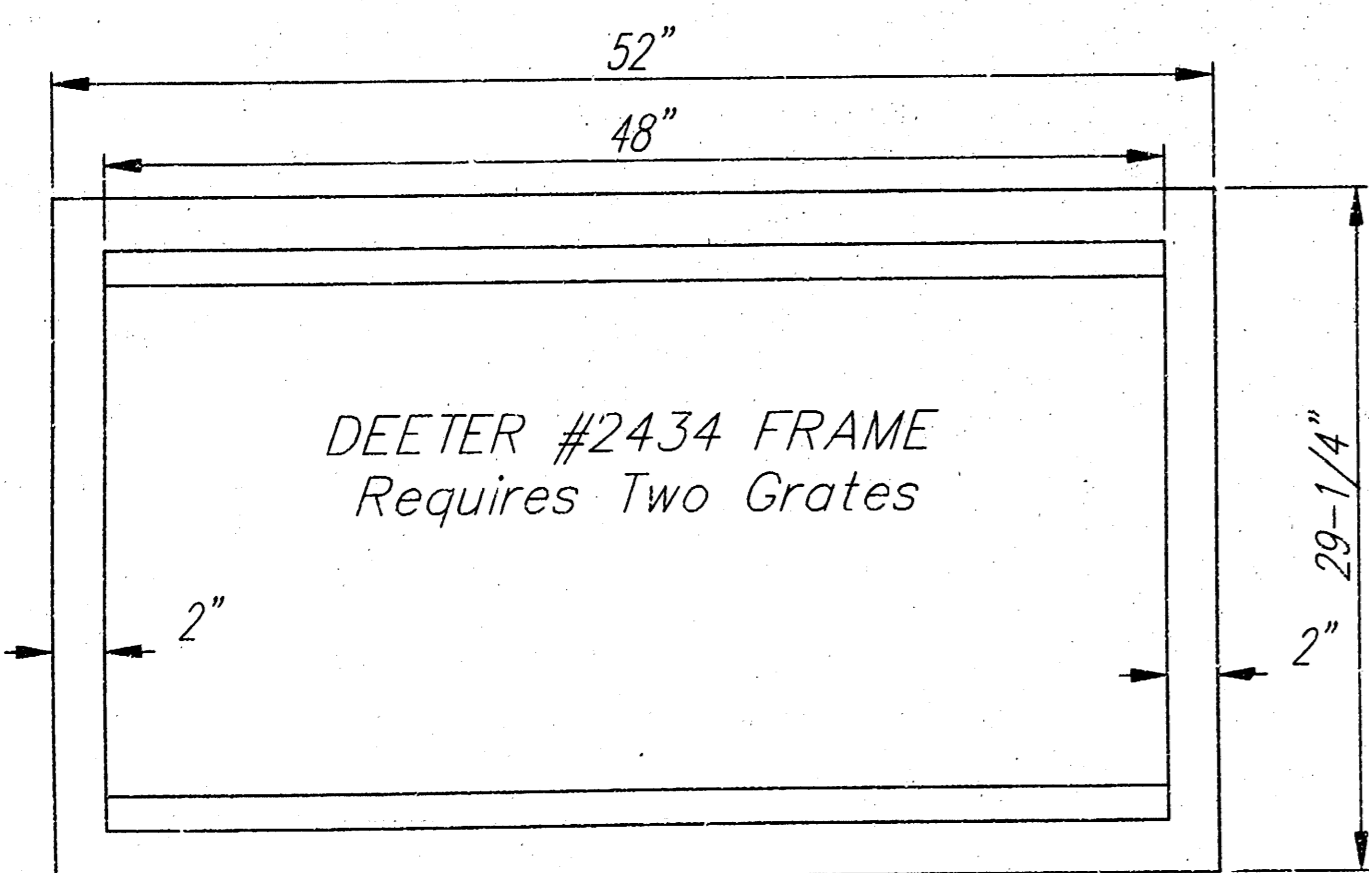
**4**  
SHEET 4 OF 10  
FILE: 03316 2-4  
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COLOR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PEN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SHADE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PLOTTING GUIDE															



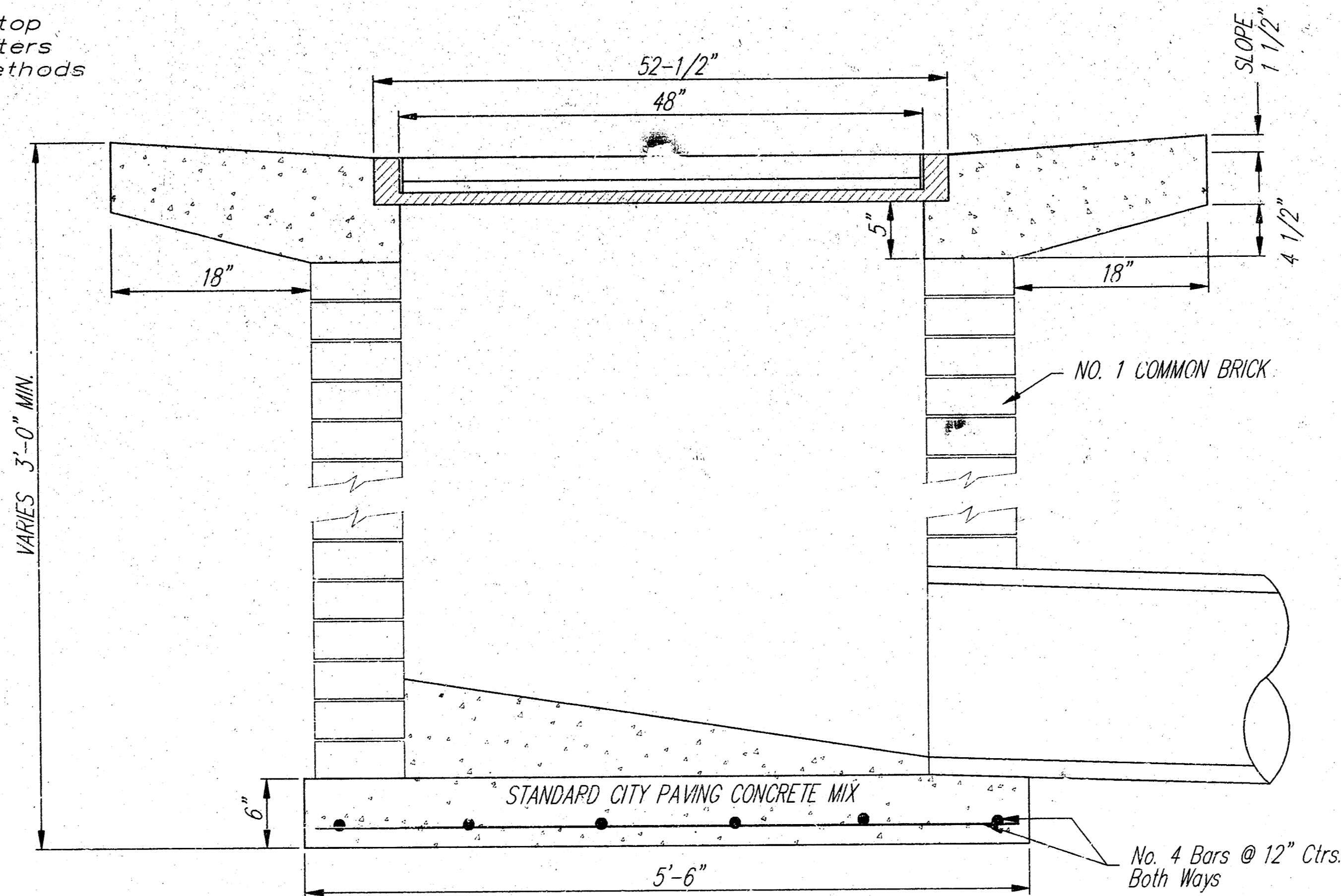
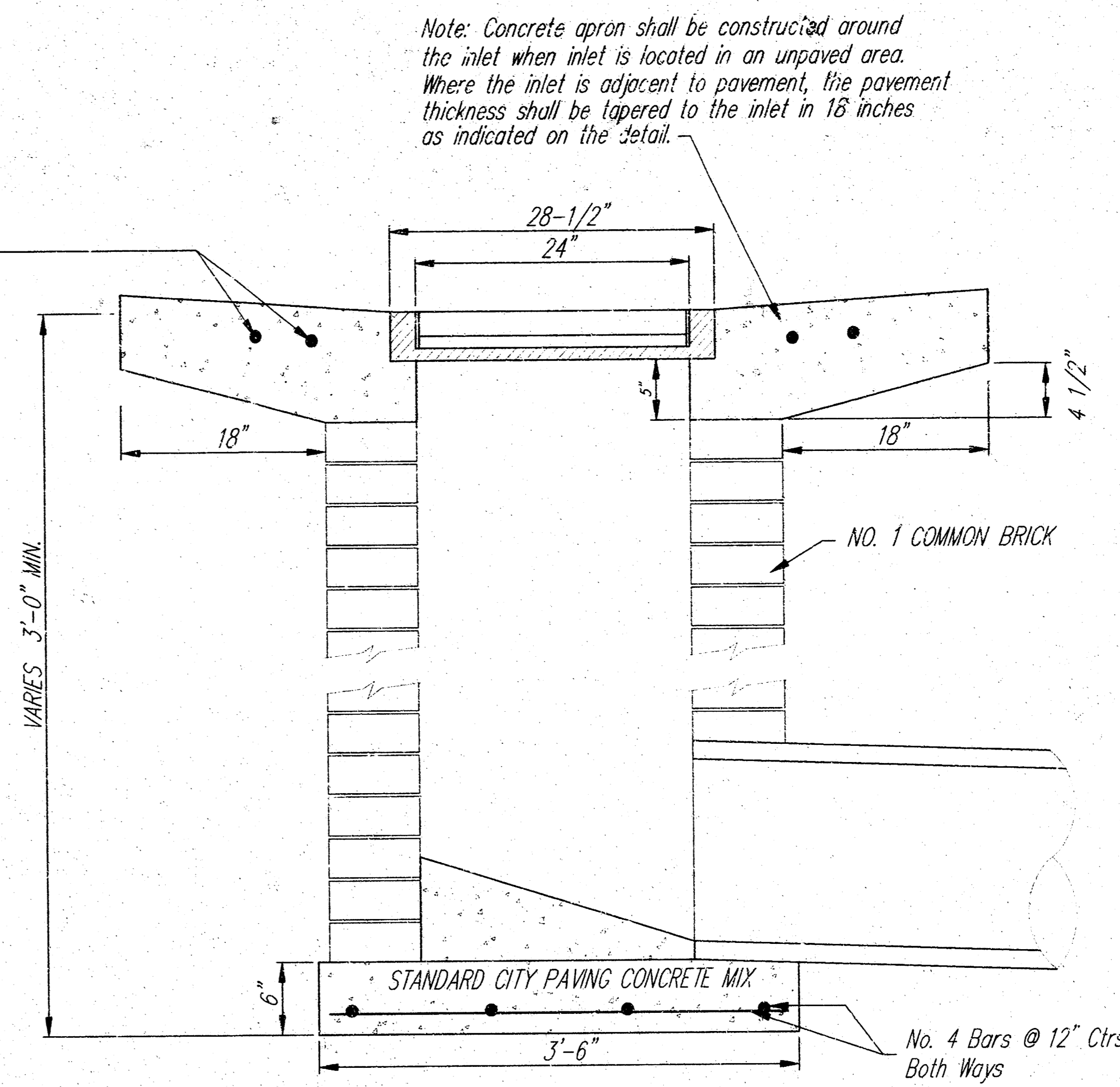
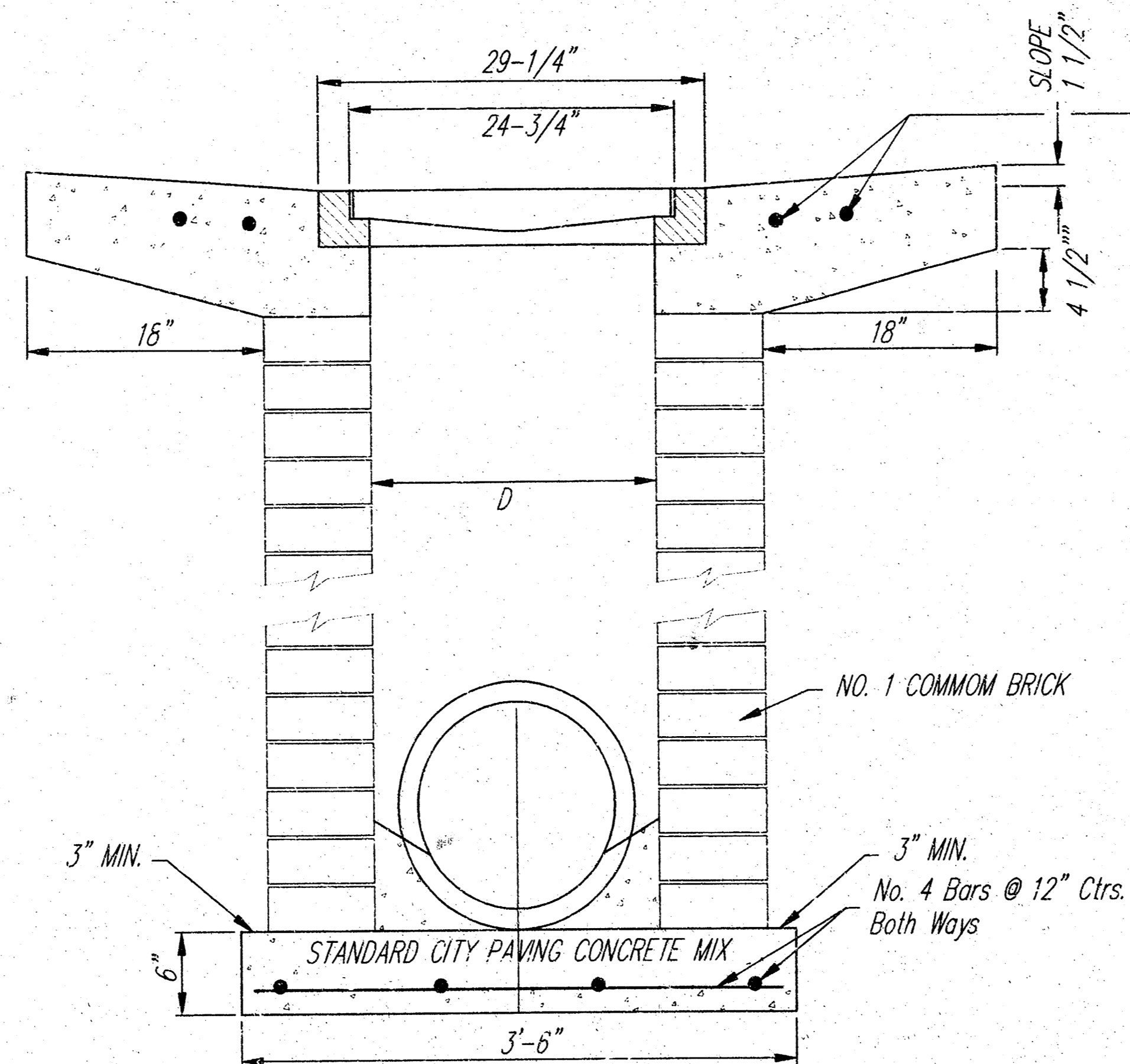
DEETER #2433 GRATE

24" x 24" Frame and Grate Detail



Double 24" x 24" Frame Detail

NOTE: Grates shall be imprinted on the top surface with "CITY OF WICHITA" using letters at least 1" in height. Other marking methods may be approved by the engineer.



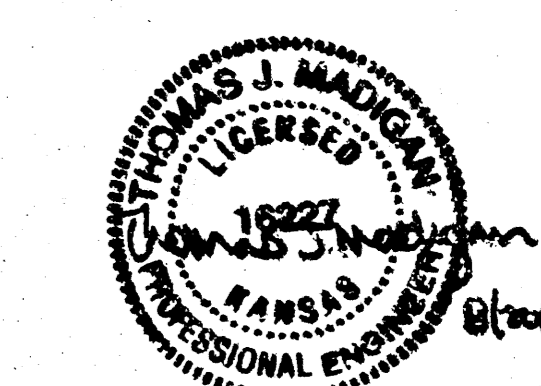
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 DAN SJORDAL

## SEAL:



## slumberland

RIDGE PLAZA  
 8TH ADDITION  
 LOIS 4 AND 5, BLOCK B  
 444 S EMERSON STREET  
 WICHITA, KS 67209

## SHEET TITLE:

CITY OF WICHITA  
 DROP INLET  
 SINGLE & DOUBLE

## REVISIONS:

NO.	DATE:	BY:	NO. REVISIONS
1	05/19/04		NO REVISIONS
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4	06/30/04		THIS SHEET
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5

SHEET 5 OF 10  
 FILE: 03316 5

COLOR  
PLOT  
SCALE  
DATE

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SEAL:



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RIDGE PLAZA  
8TH ADDITION  
LOTS 4 AND 5, BLOCK B  
444 S EMERSON STREET  
WICHITA, KS 67209

SHEET TITLE:  
CITY OF WICHITA  
STANDARD TYPE 1  
CURB INLET 5'-0" OPENING

**REVISIONS:**

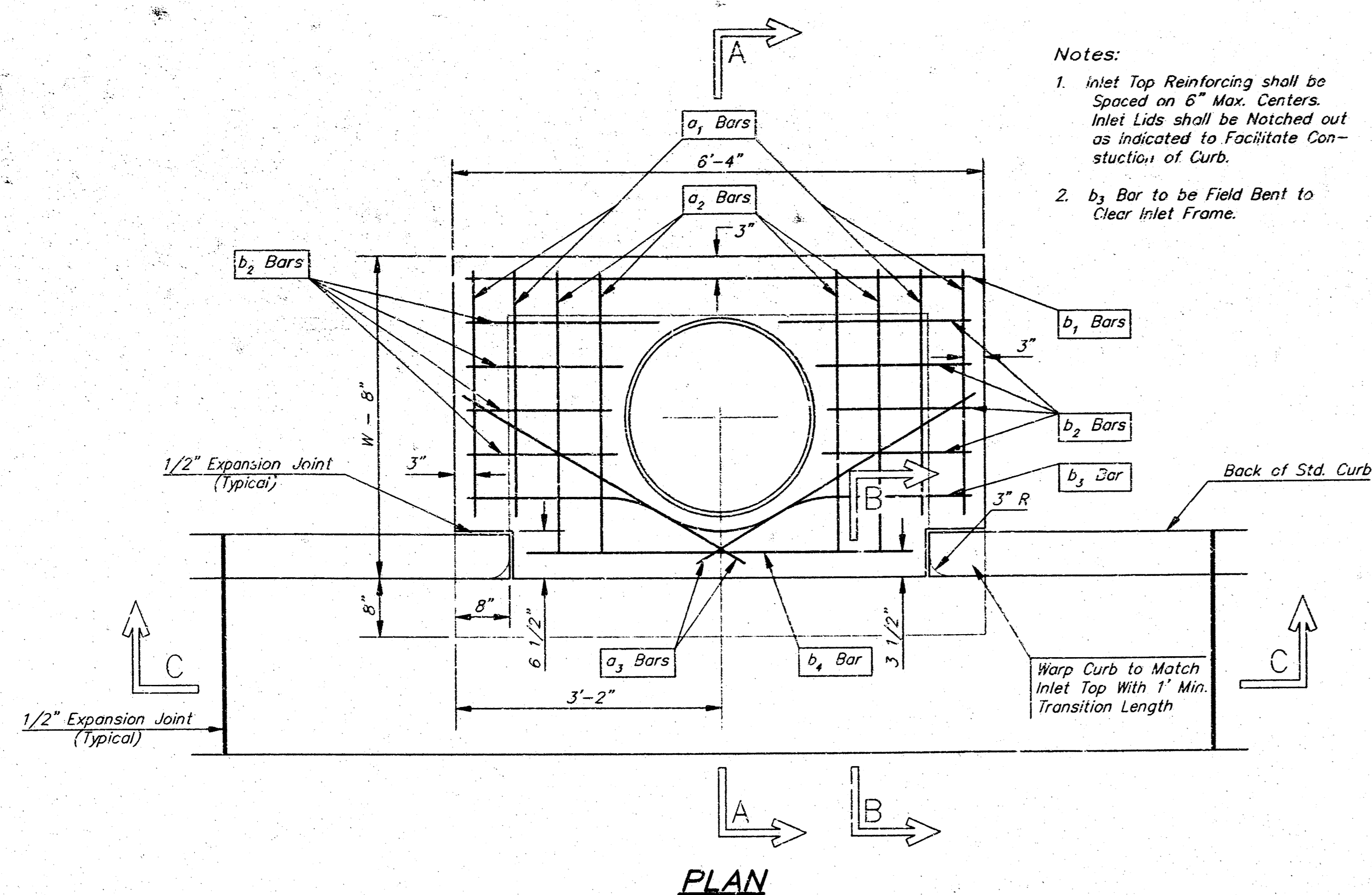
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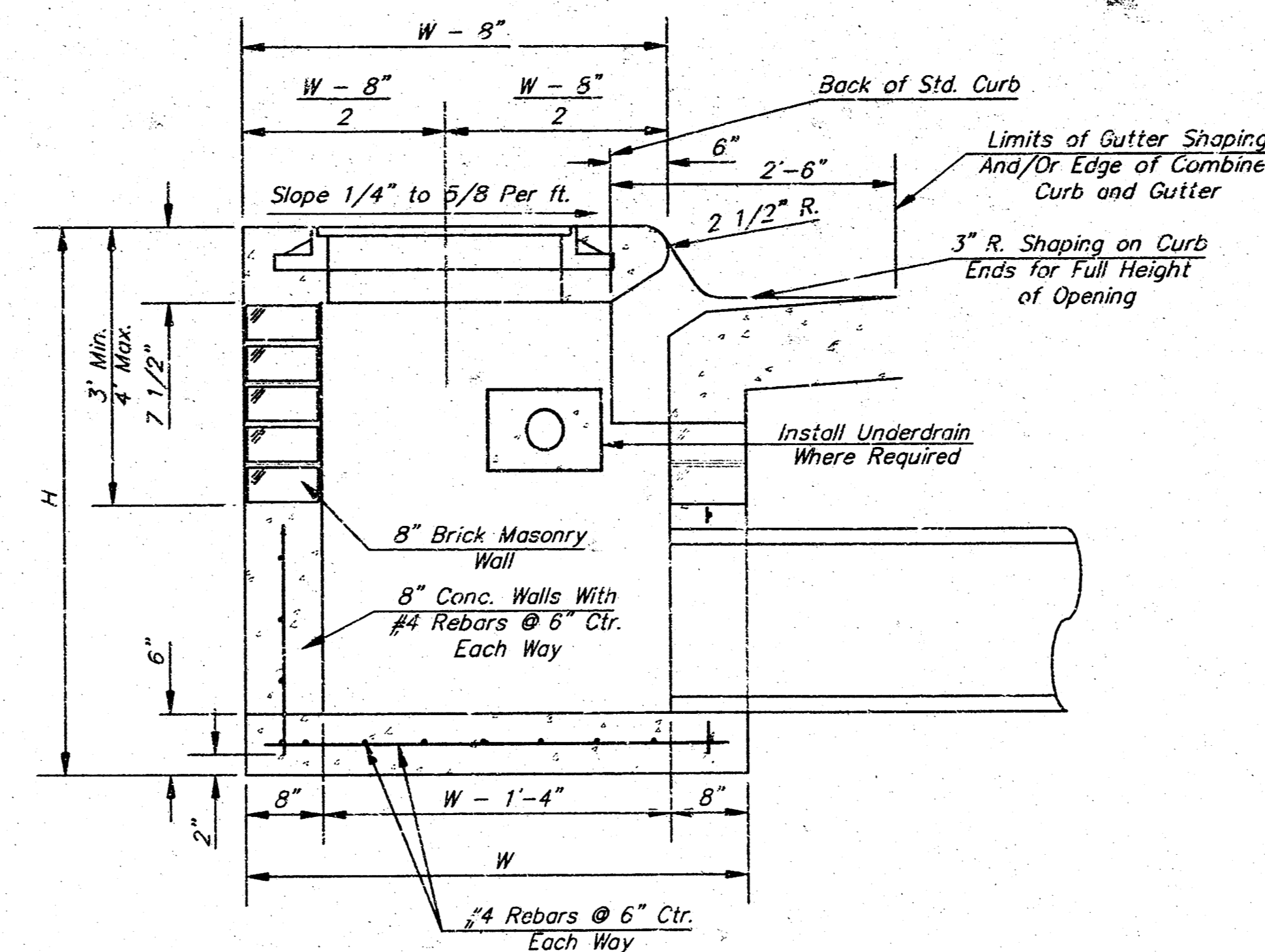
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SHEET 6 OF 10  
FILE: 03316 6

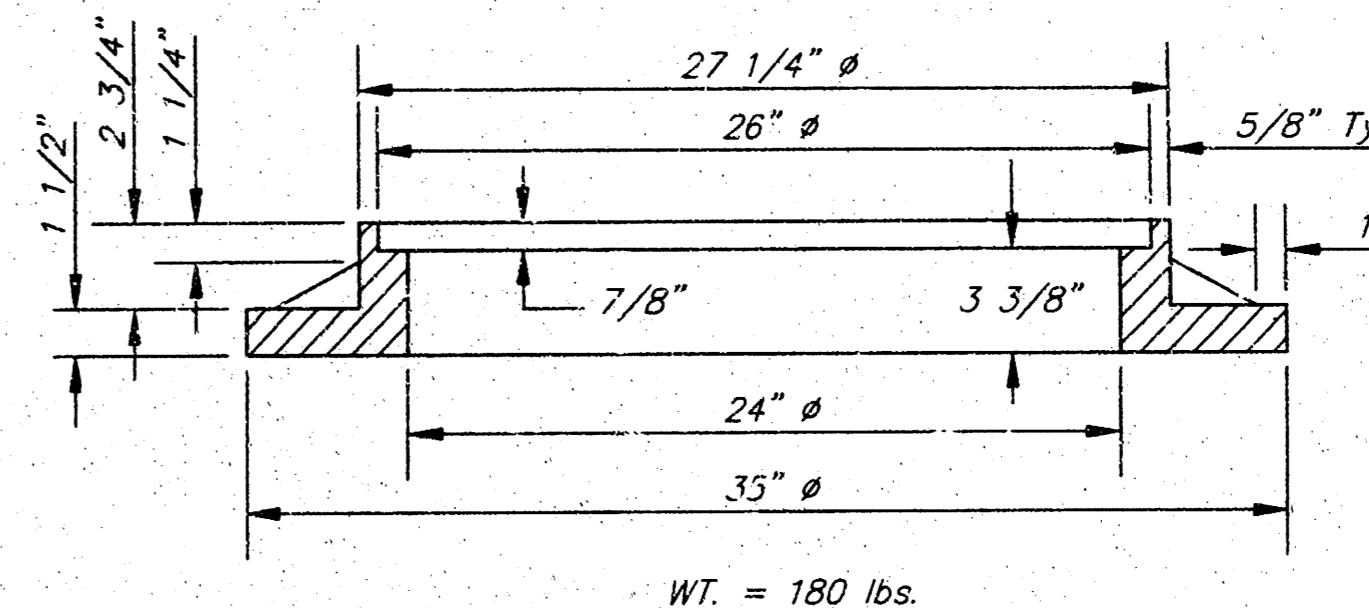
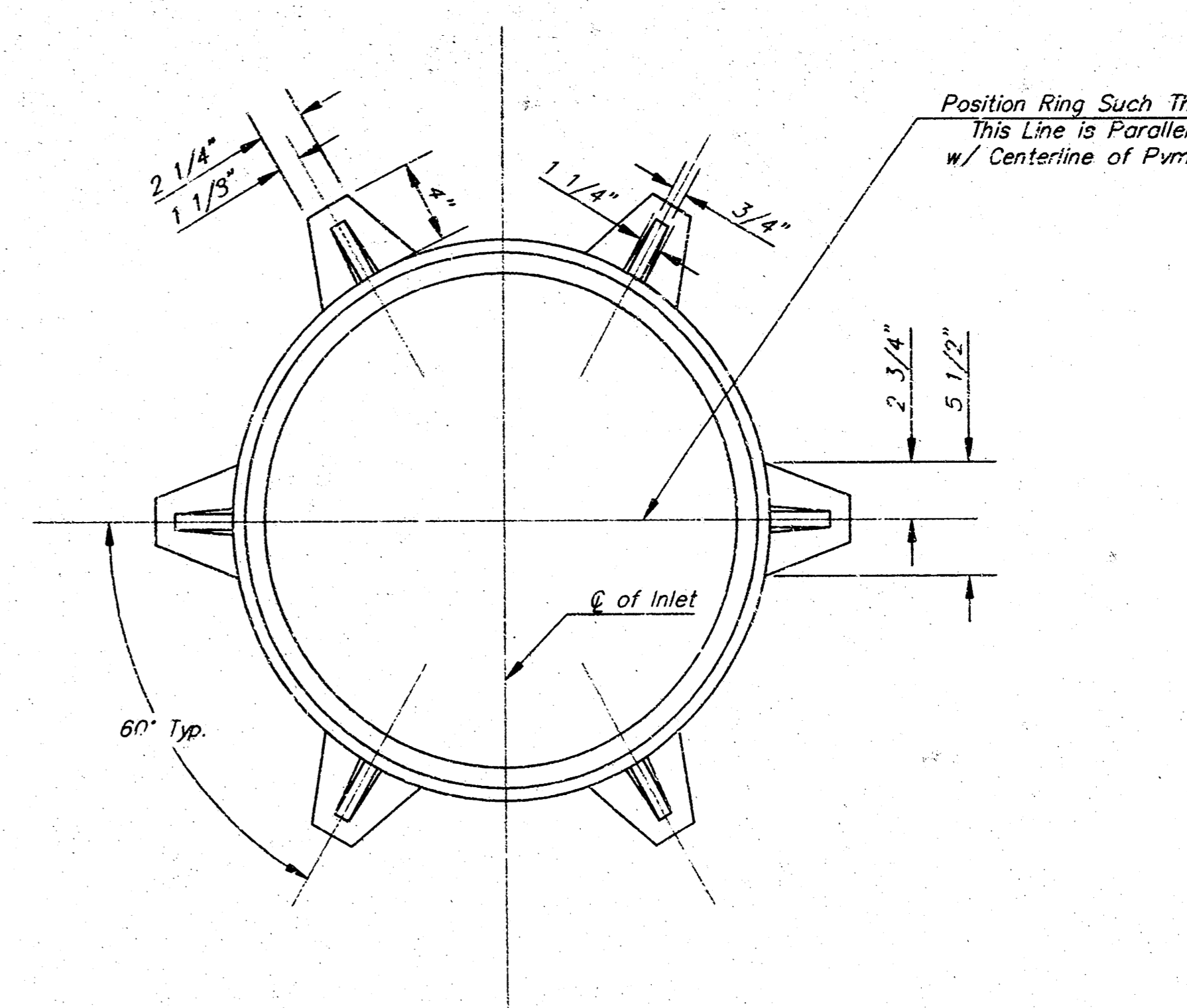
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PLAN

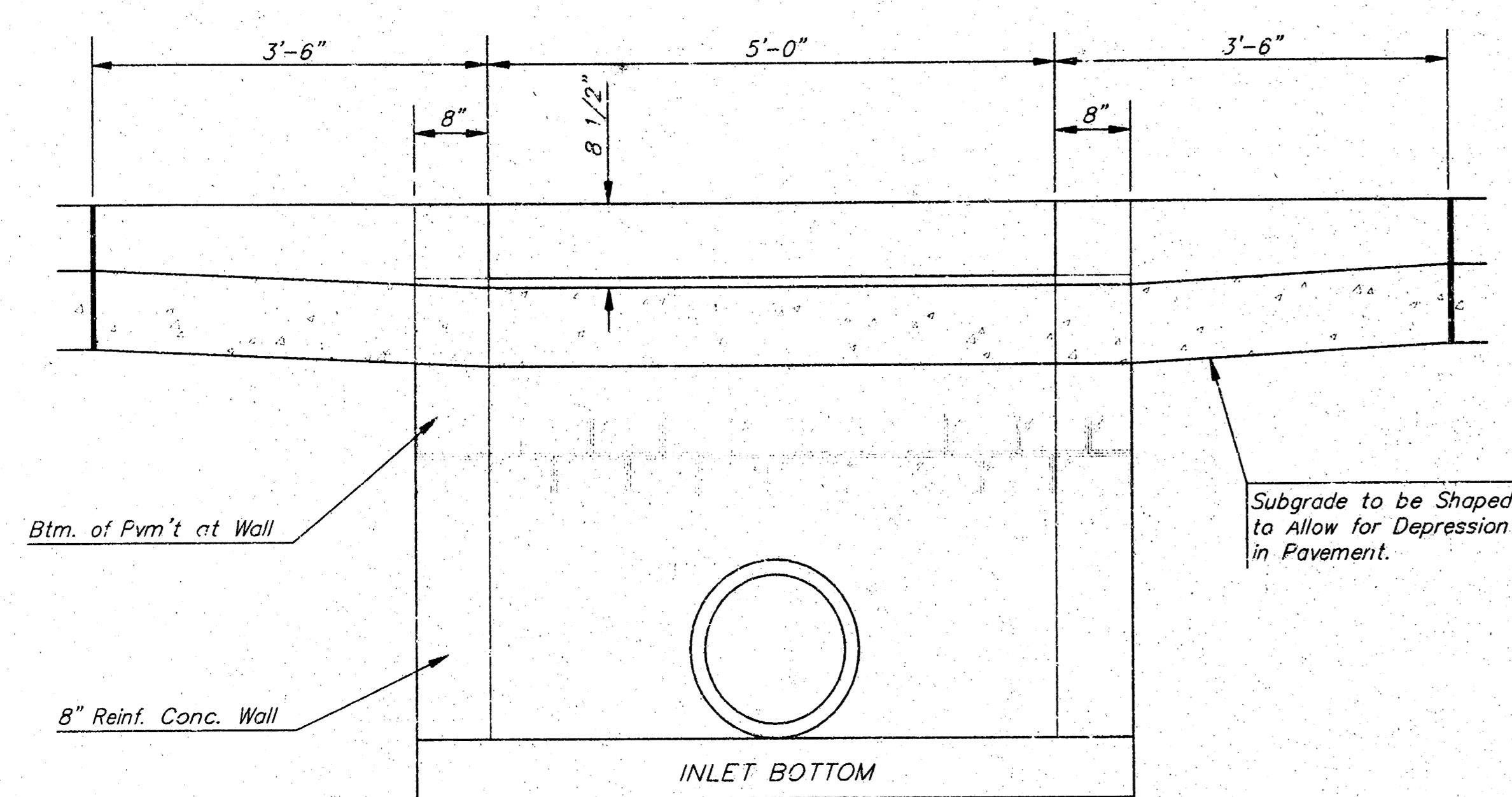


SECTION A-A

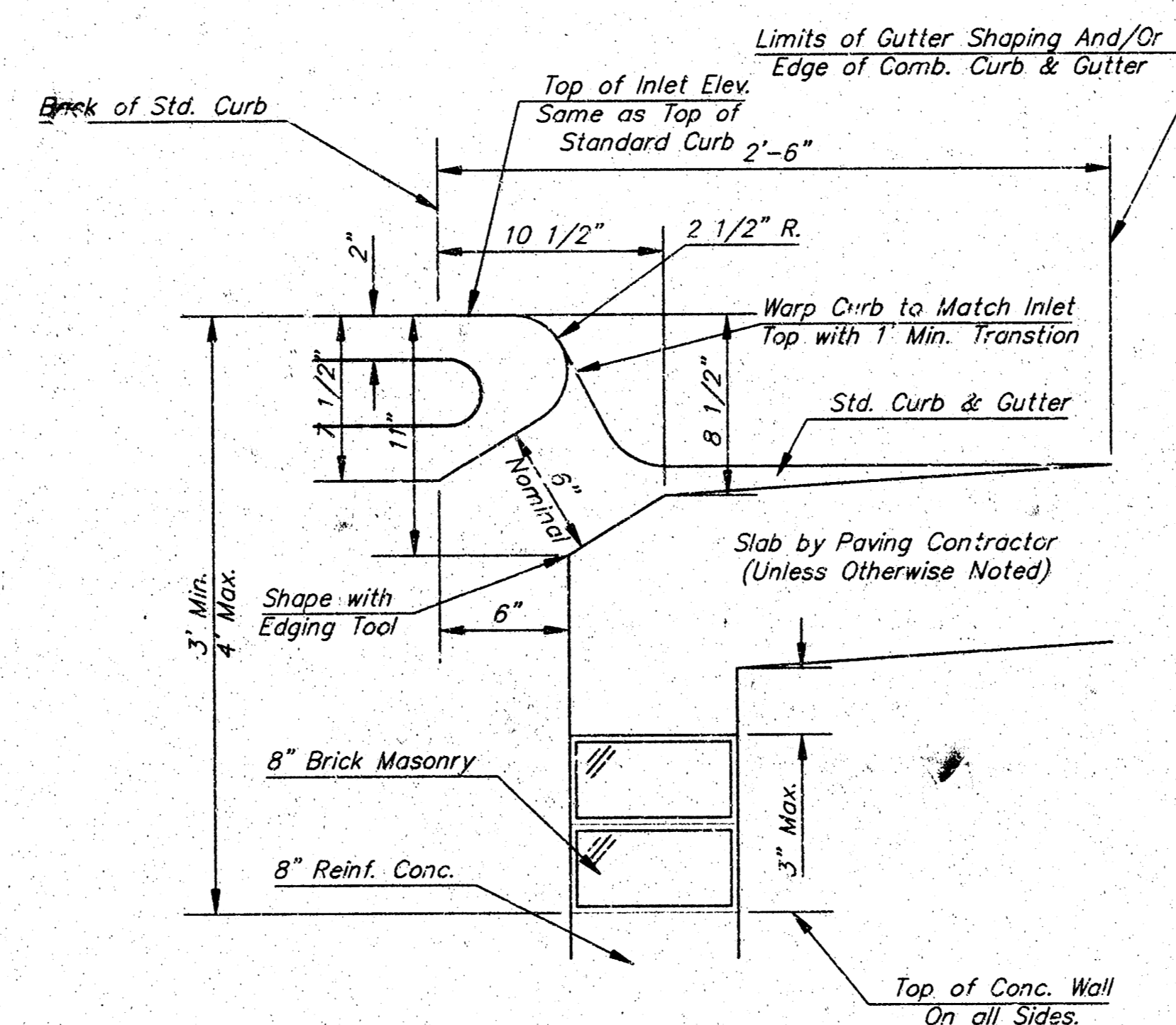


MANHOLE RING AND COVER

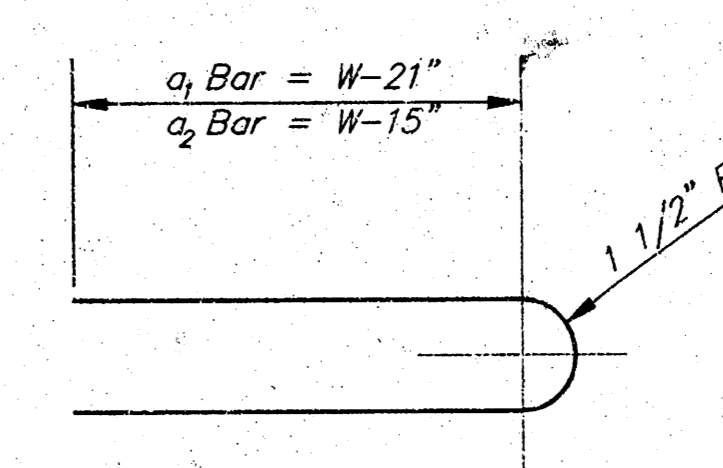
\*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.



SECTION C-C



SECTION B-B



BENDING DIAGRAM

STEEL SCHEDULE

BAR	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.	
				W=4'-0"	W=5'-0"	W=6'-0"	W=7'-0"					W=8'-0"
NUMBER	4	4	2	1	3	5	7	9	6	1	1	
SIZE	#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH	W=3'-0"	5'-7"	6'-7"	4'-0"	6'-1"	-	-	-	1'-9"	6'-2"	4'-8"	60±
	W=4'-0"	7'-7"	8'-7"	5'-0"	6'-1"	-	-	-	1'-9"	6'-2"	4'-8"	81±
	W=5'-0"	9'-7"	10'-7"	6'-0"	-	6'-1"	-	-	1'-9"	6'-2"	4'-8"	101±
	W=6'-0"	11'-7"	12'-7"	7'-0"	-	-	6'-1"	-	1'-9"	6'-2"	4'-8"	121±
W=7'-0"	13'-7"	14'-7"	8'-0"	-	-	-	6'-1"	1'-9"	6'-2"	4'-8"	141±	

Note: a<sub>3</sub> Bars to be Placed Approx. 2" Below Top of Inlet Cover.

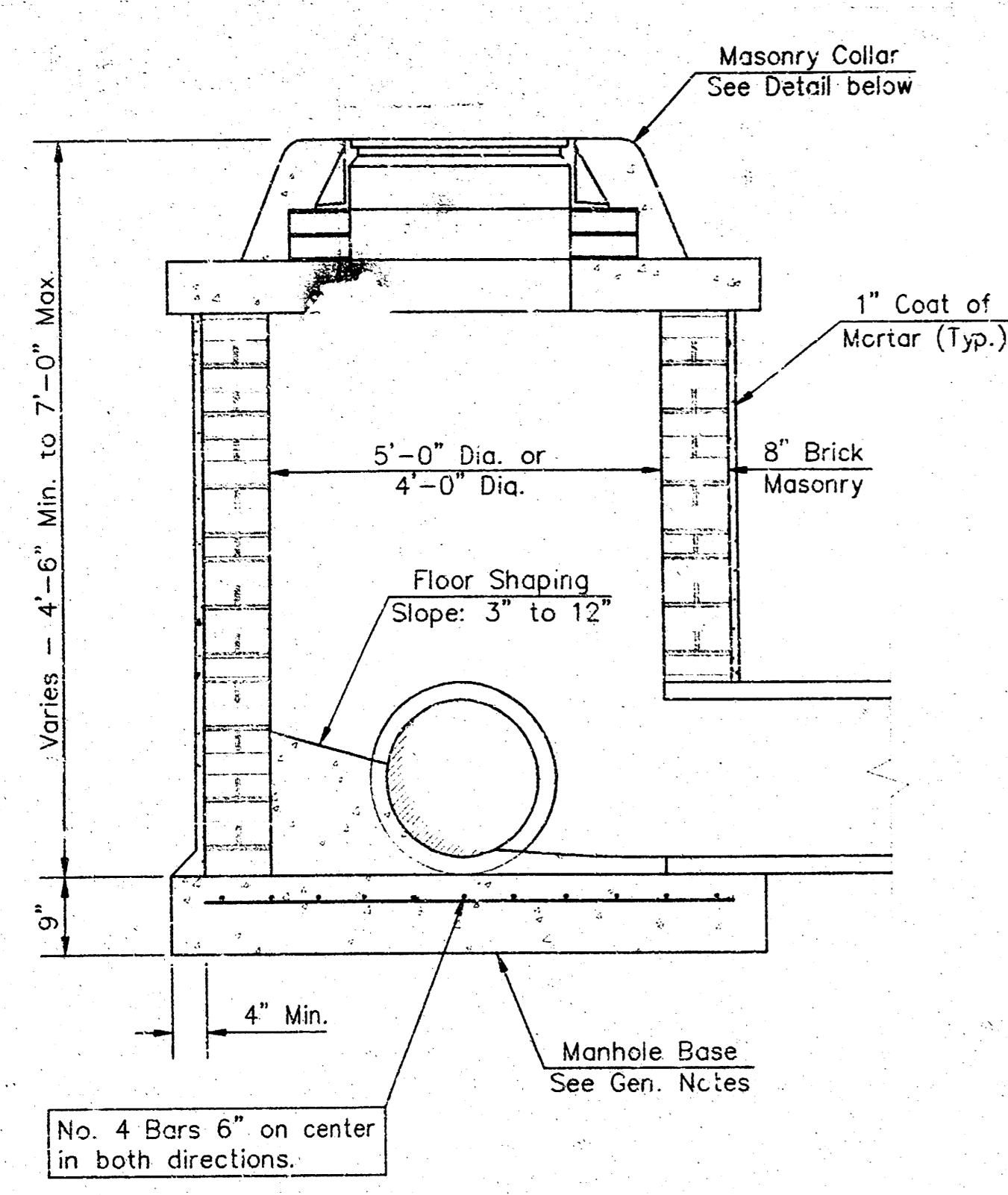
STANDARD CURB INLET PRECAST TOPS

W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
3'-0"	3'-8" 6'-4" 7 1/2"	21" & SMALLER	0.38±
4'-0"	4'-8" 6'-4" 7 1/2"	24" & 30"	0.51±
5'-0"	5'-8" 6'-4" 7 1/2"	36" & 42"	0.64±
6'-0"	6'-8" 6'-4" 7 1/2"	48" & 54"	0.77±
7'-0"	7'-8" 6'-4" 7 1/2"	60" & 66"	0.90±

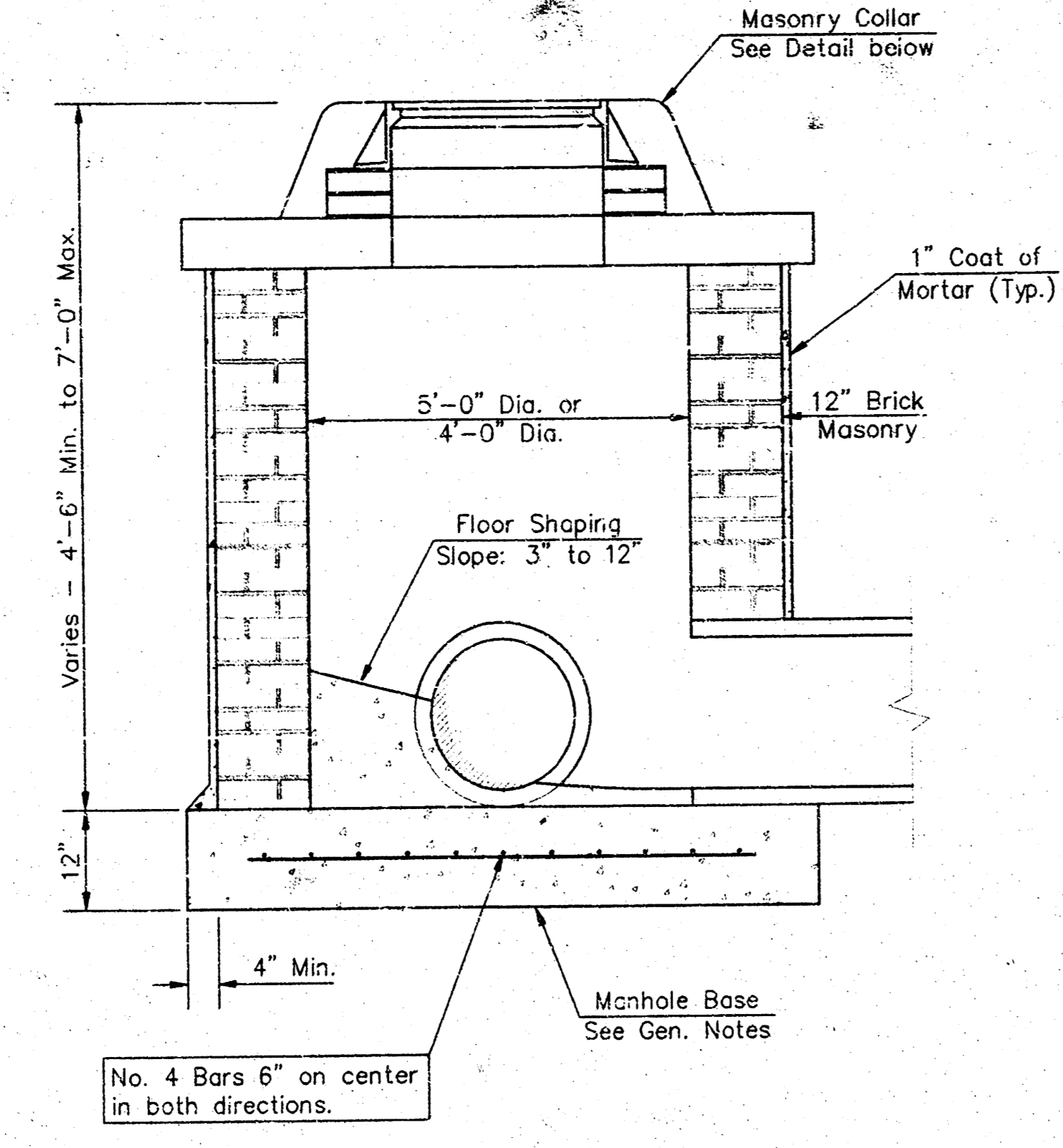
GENERAL NOTES

- 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.
- Contractor shall have the option of constructing 8" brick masonry walls between the concrete inlet base and top on this inlet when W=5'-0" and H=7'-0" or less.
- Inlet invert shall be shaped with 8 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.
- The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.

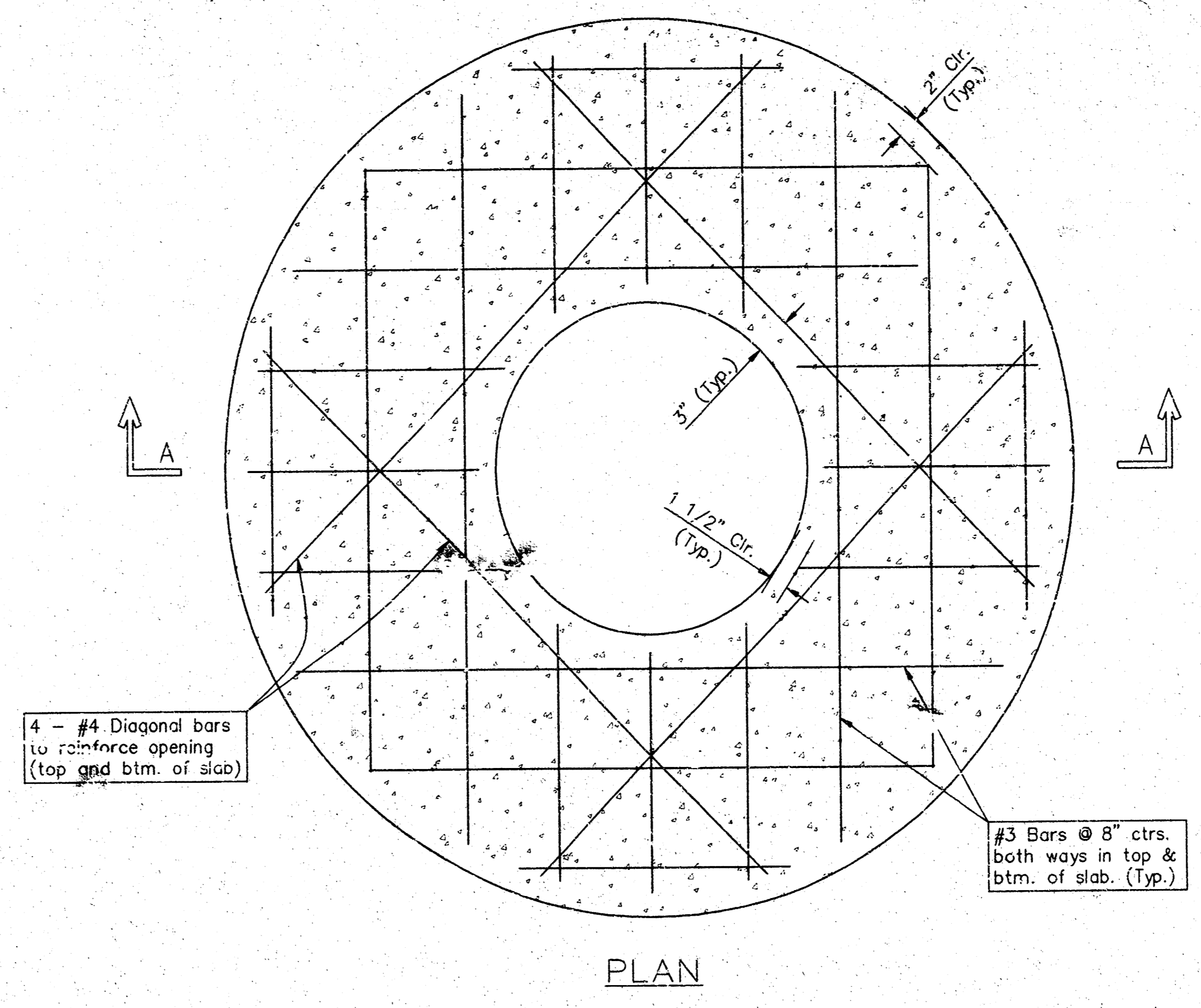
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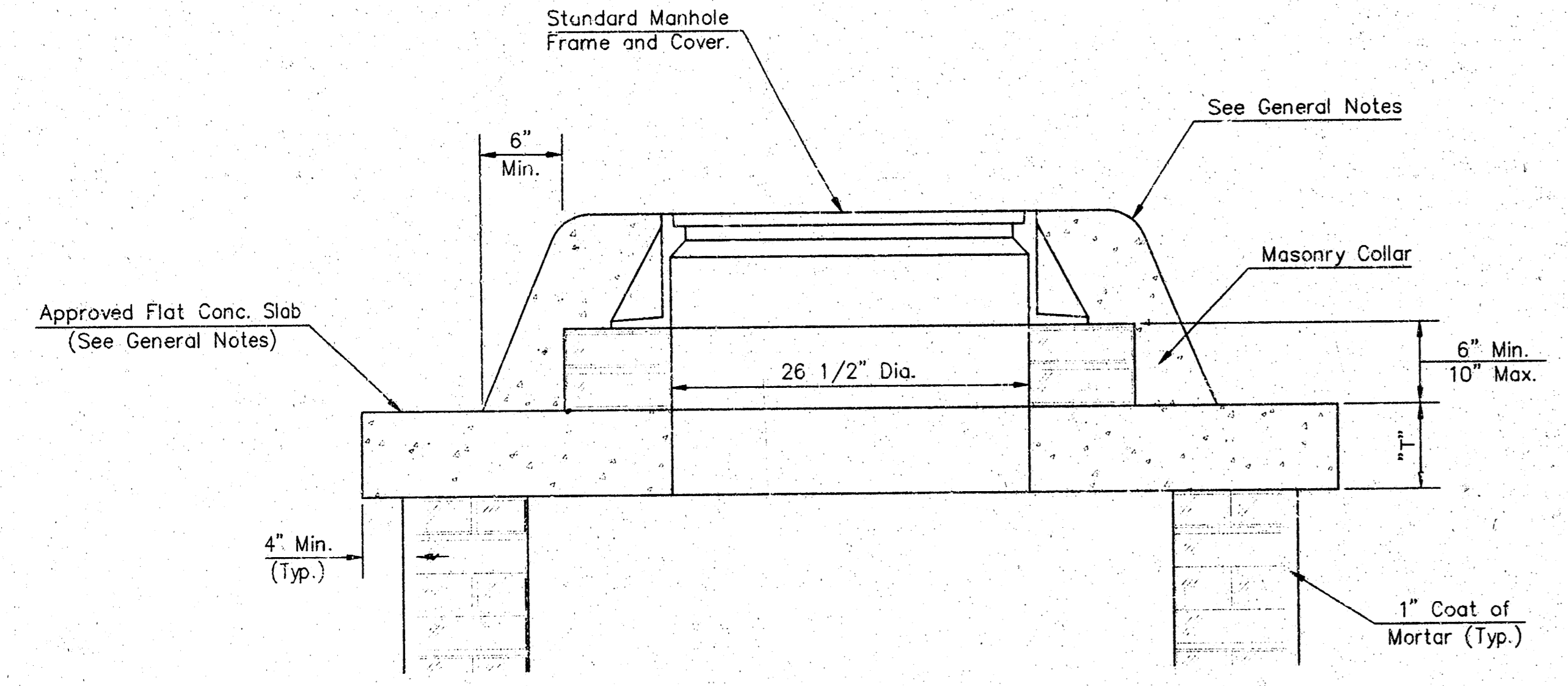
**SHALLOW TYPE "A" MANHOLE**



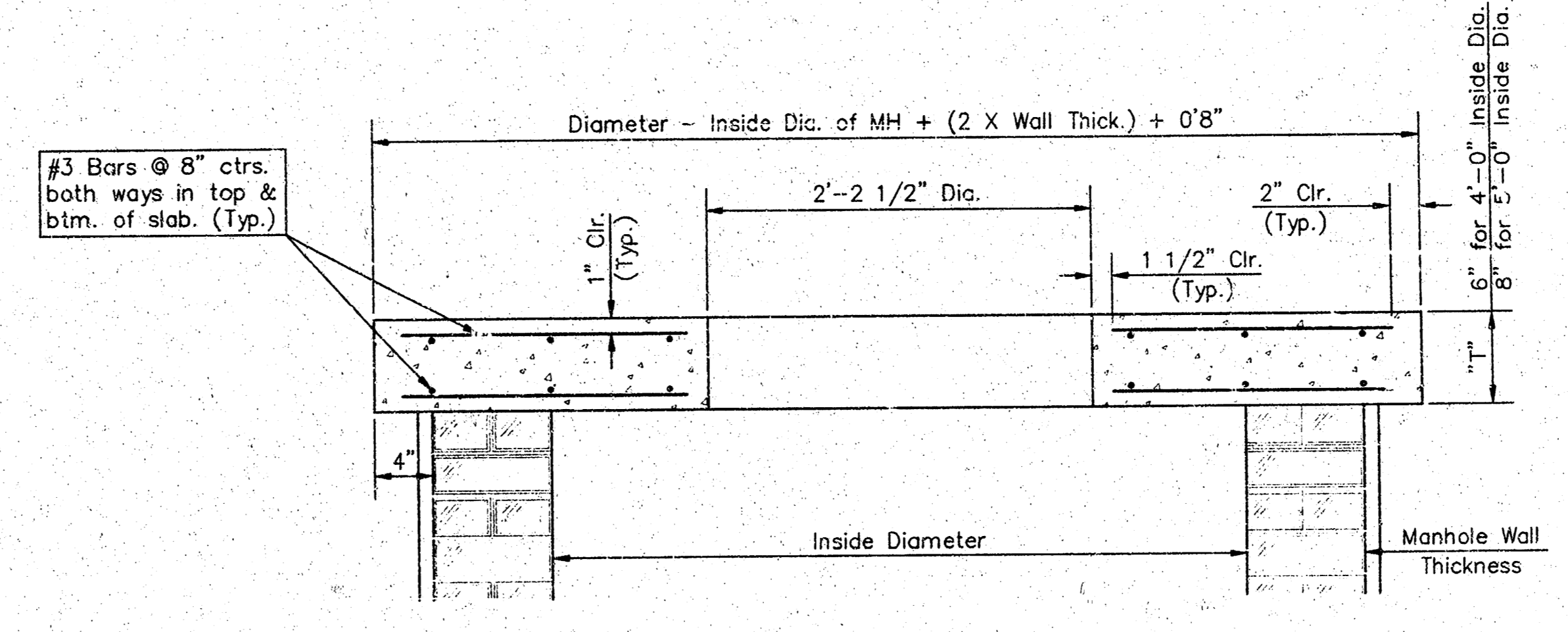
**SHALLOW TYPE "B" MANHOLE**



**PLAN**

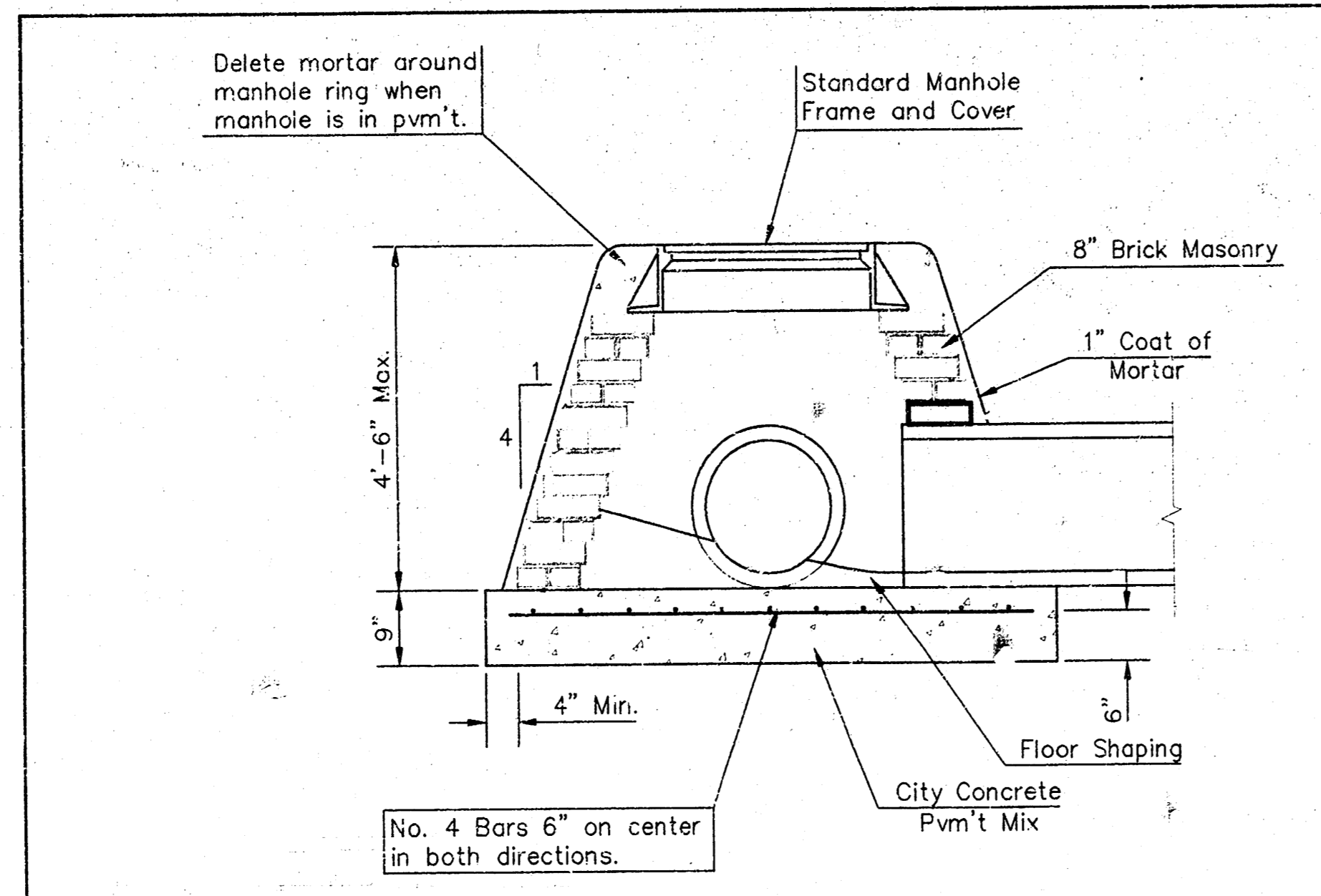


**MASONRY COLLAR DETAIL**

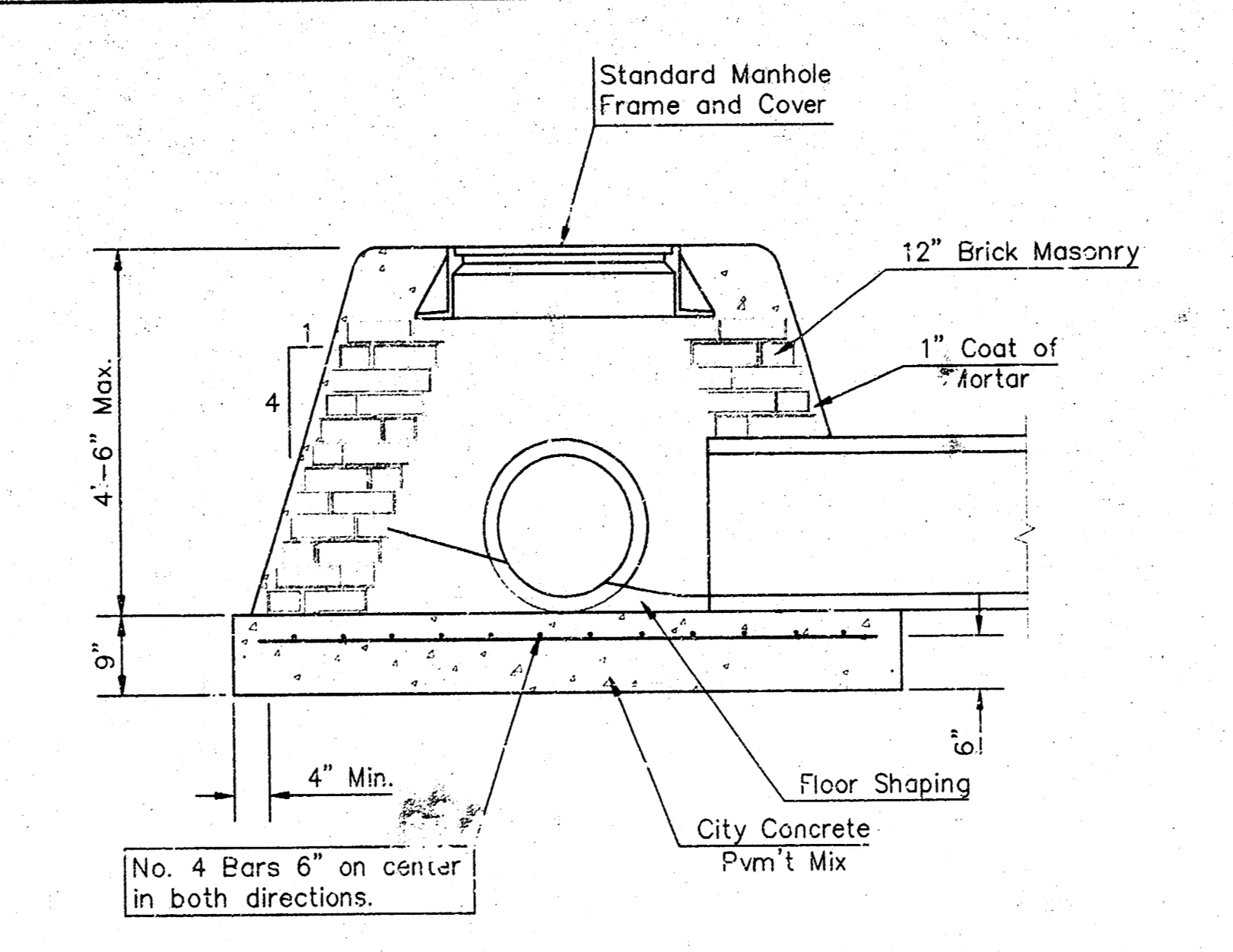


**SECTION A-A**

**FLAT CONCRETE SLAB DETAILS**



**SPECIAL SHALLOW TYPE "A" MANHOLE**



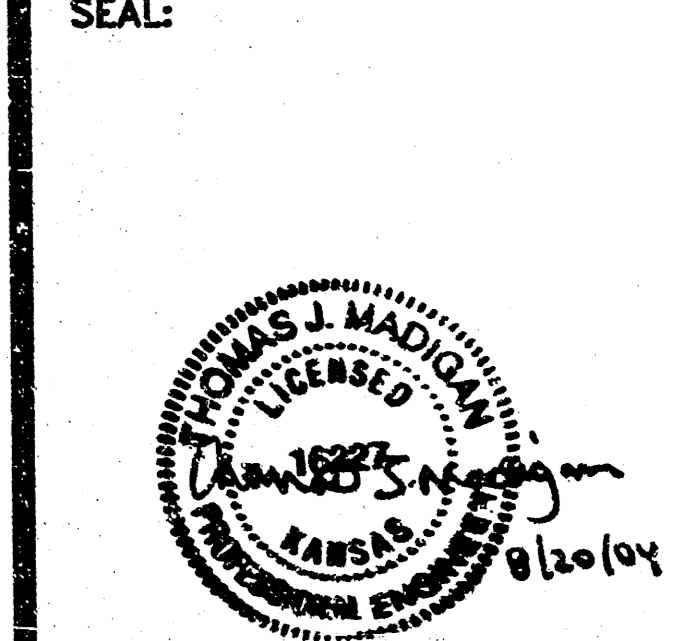
**SPECIAL SHALLOW TYPE "B" MANHOLE**

**GENERAL NOTES**

- 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 cement mix with 1 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.
- 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 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 neat lines for the full inside diameter of the manhole. Manhole floors shall then be shaped around the bottom half of the pipe which forms the flow channel.
- 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.
- 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 crowns of inflowing pipes shall never be set lower than the crown 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 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.
- All brick used in manhole construction shall meet Grade SW of ASTM C652 or C64-87.

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 952-937-5150  
 DAN SJORDAL



**slumberland**  
 RIDGE PLAZA  
 8TH ADDITION  
 LOTS 4 AND 5, BLOCK B  
 444 S EMERSON STREET  
 WICHITA, KS 67209

**SHEET TITLE:**  
 CITY OF WICHITA  
 STANDARD/SPECIAL SHALLOW  
 MANHOLES TYPE "A" & "B"

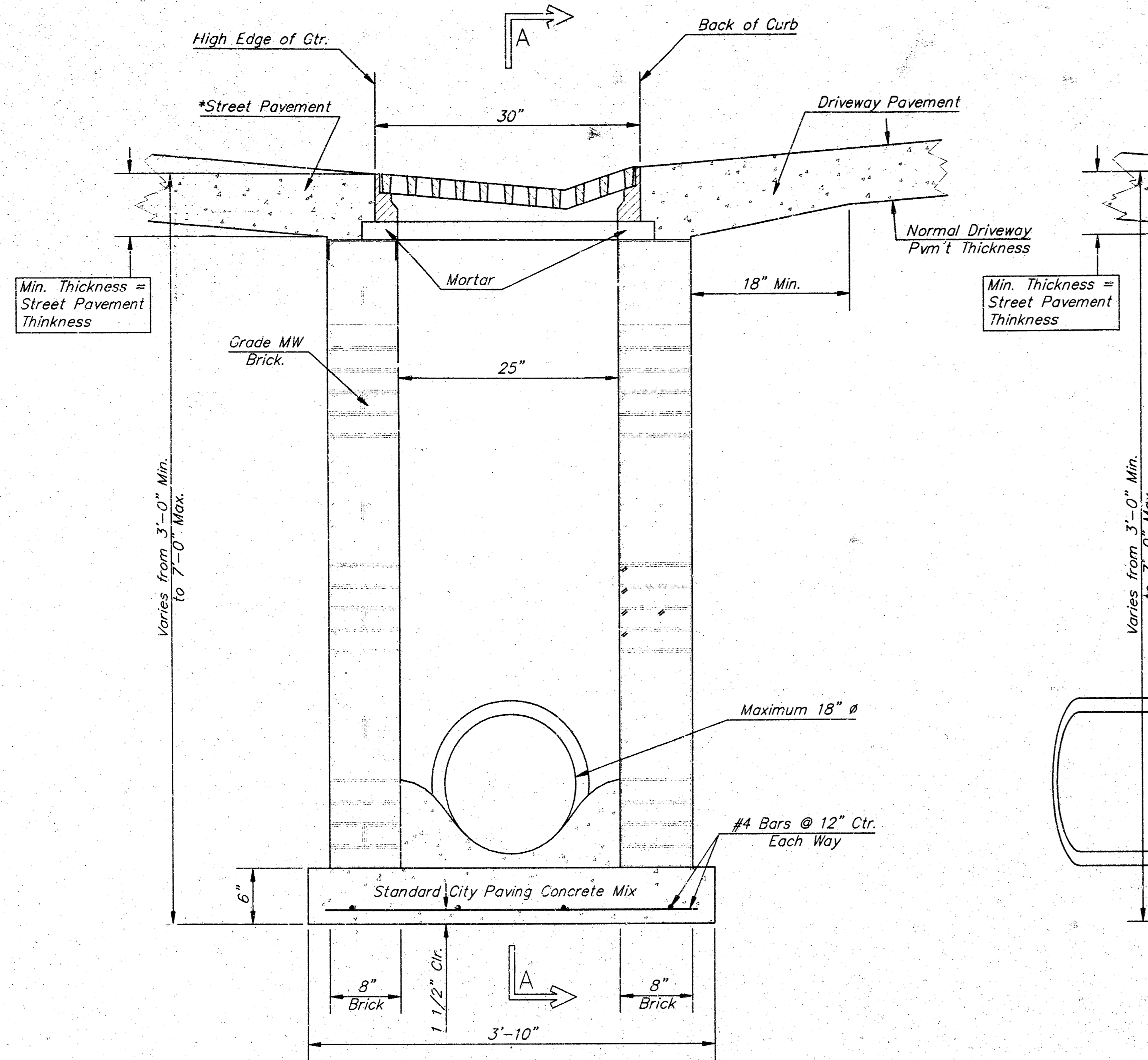
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3	06/30/04		NO REVISIONS THIS SHEET
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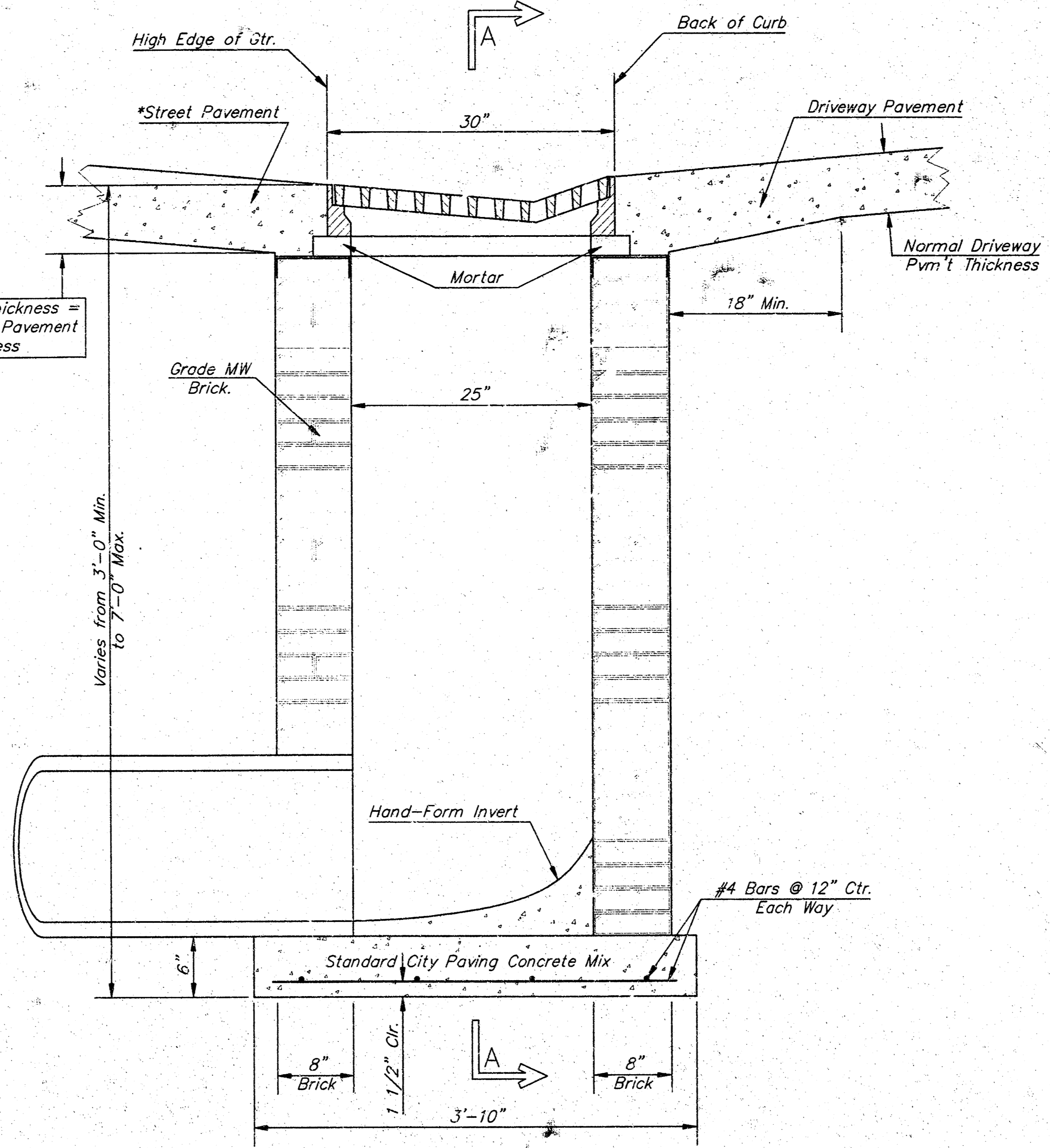
**PROJECT NO:** 03109-15  
**DRAWING DATE:** 08-20-04  
**DRAWN BY:** OAV

**7**  
 SHEET 7 OF 10  
 FILE: 03316 7

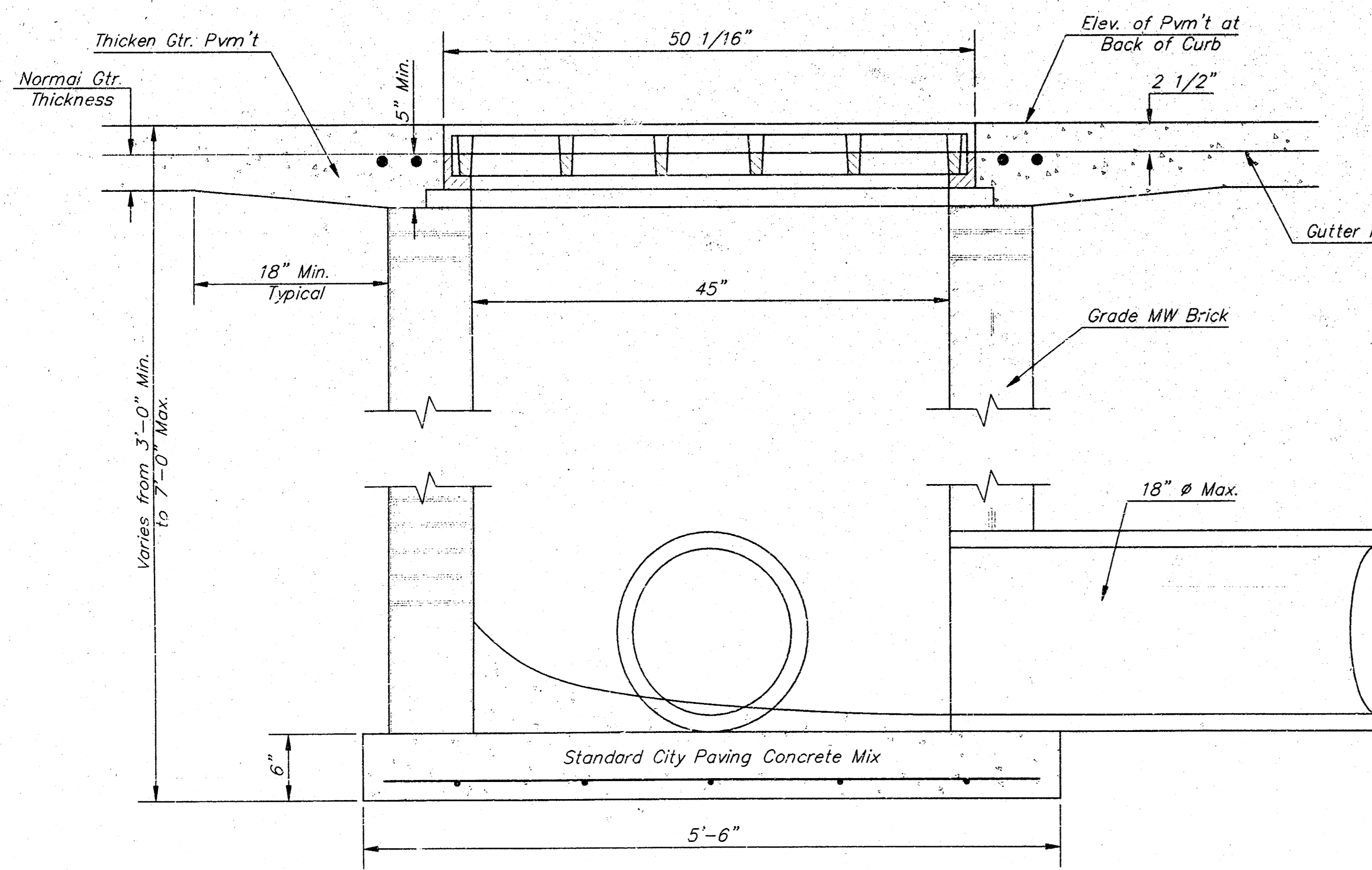
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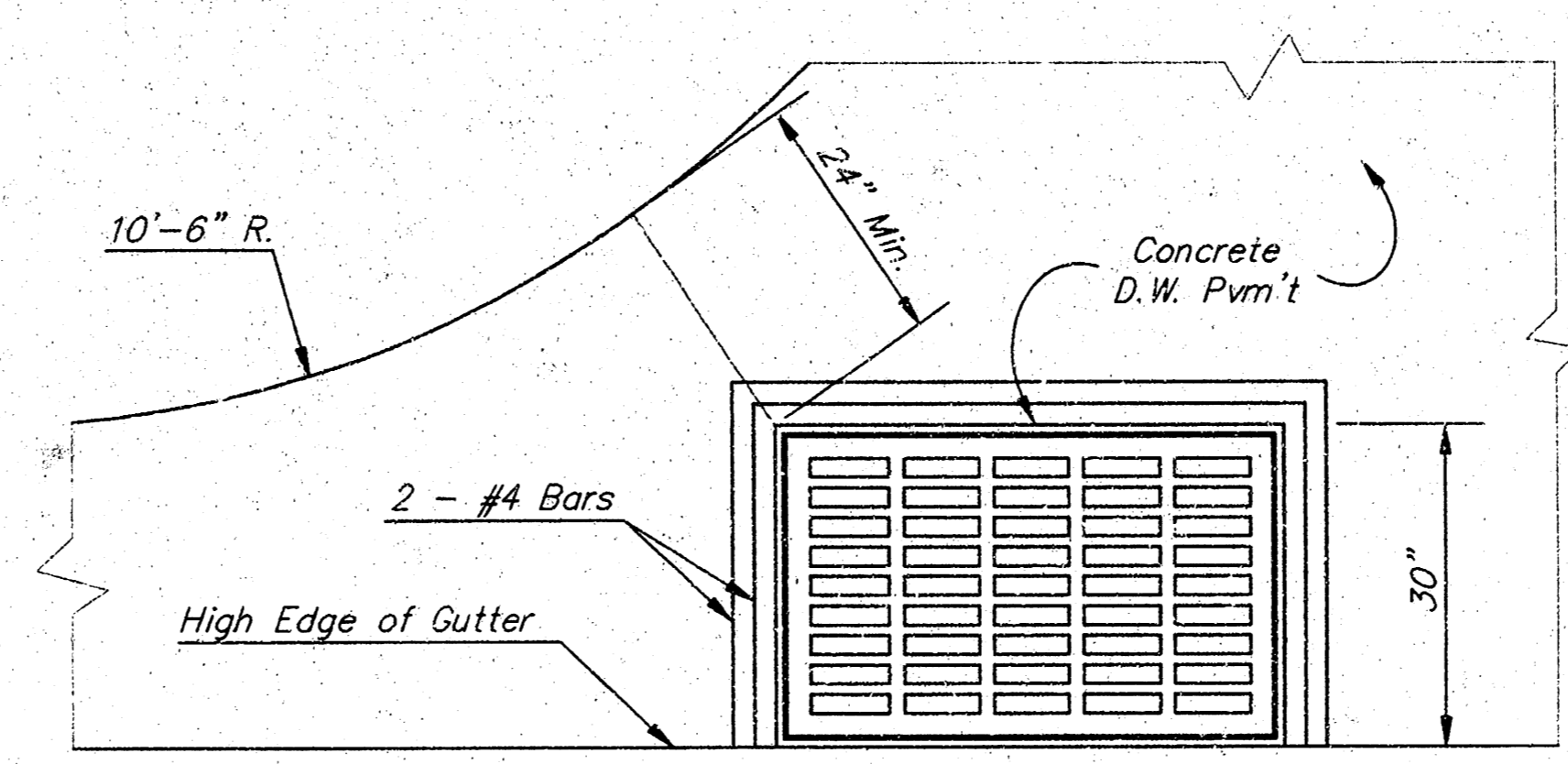
END OUTLET



SIDE OUTLET



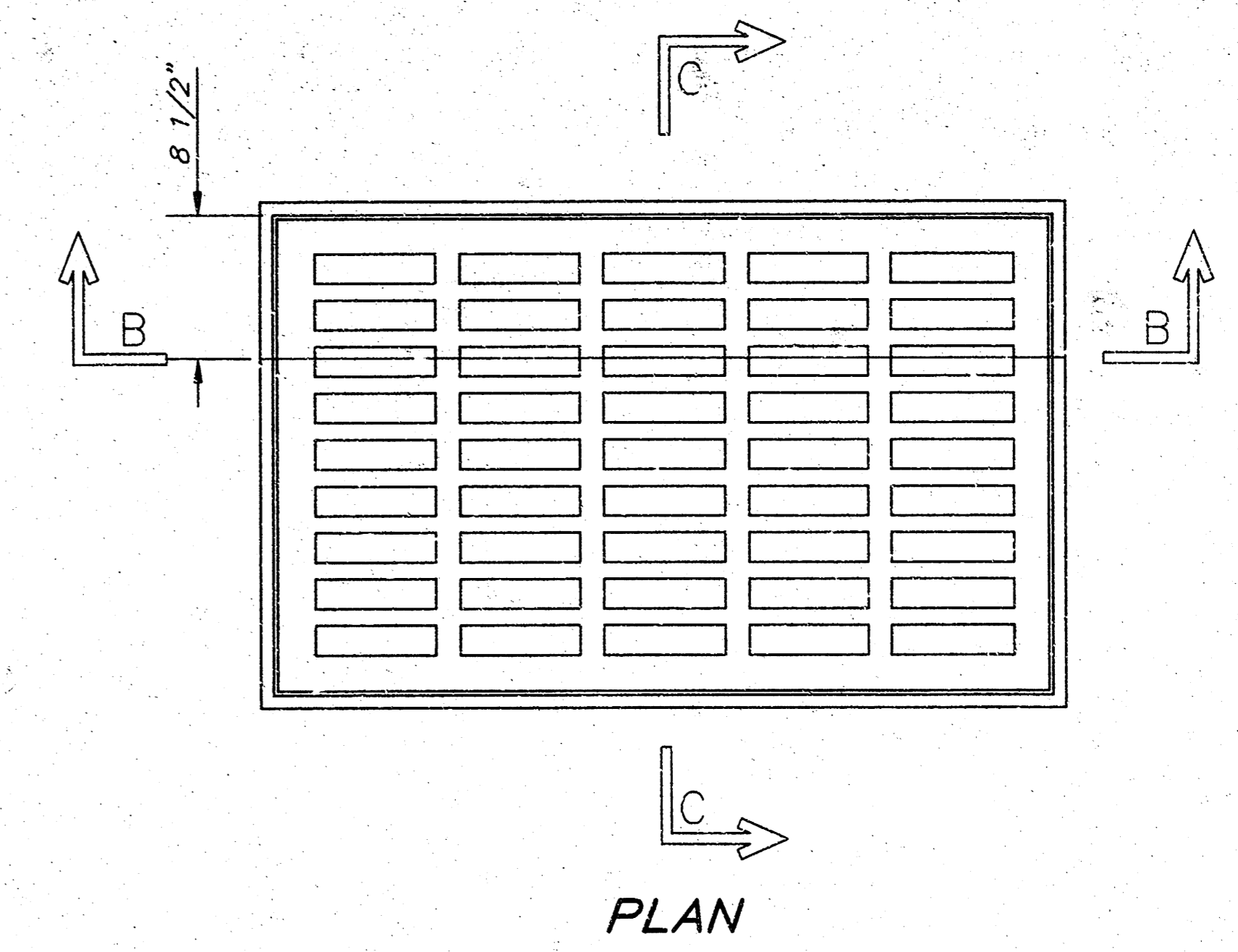
SECTION A-A



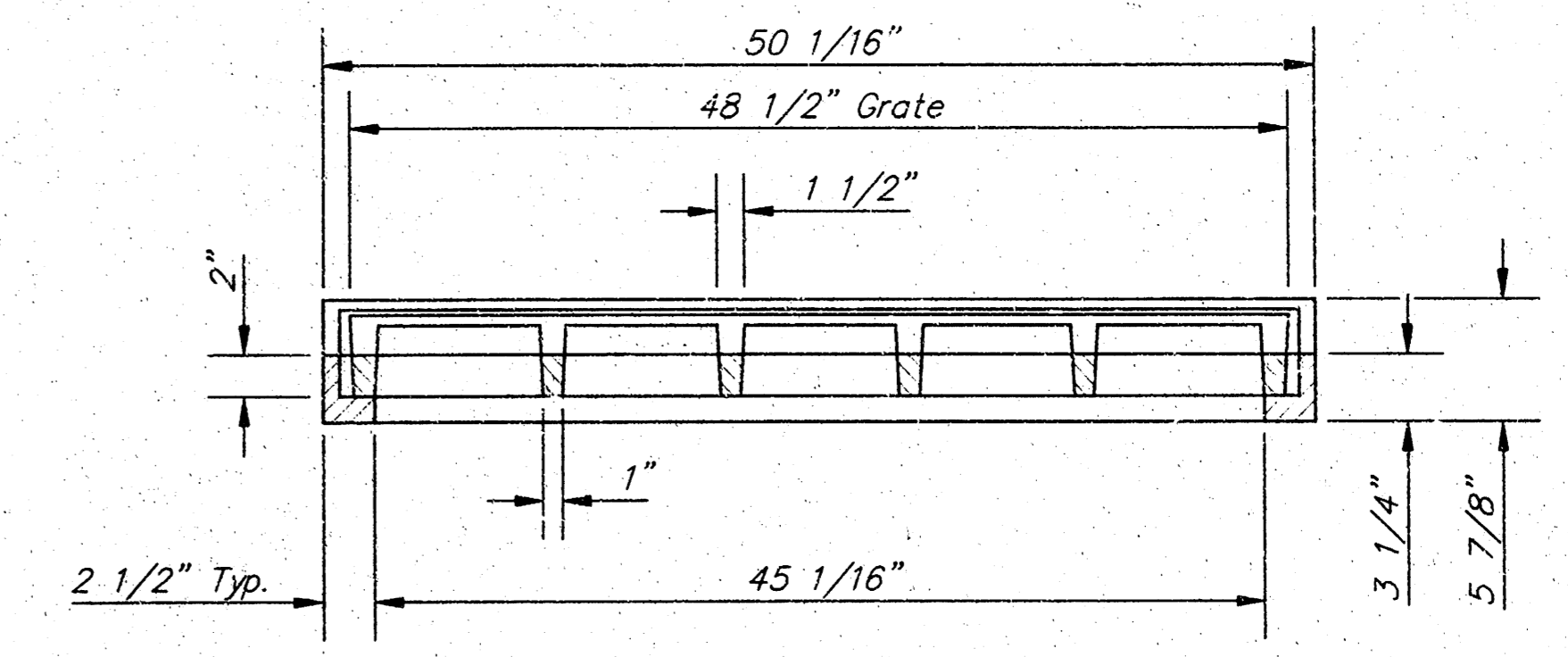
PLAN

GENERAL NOTES

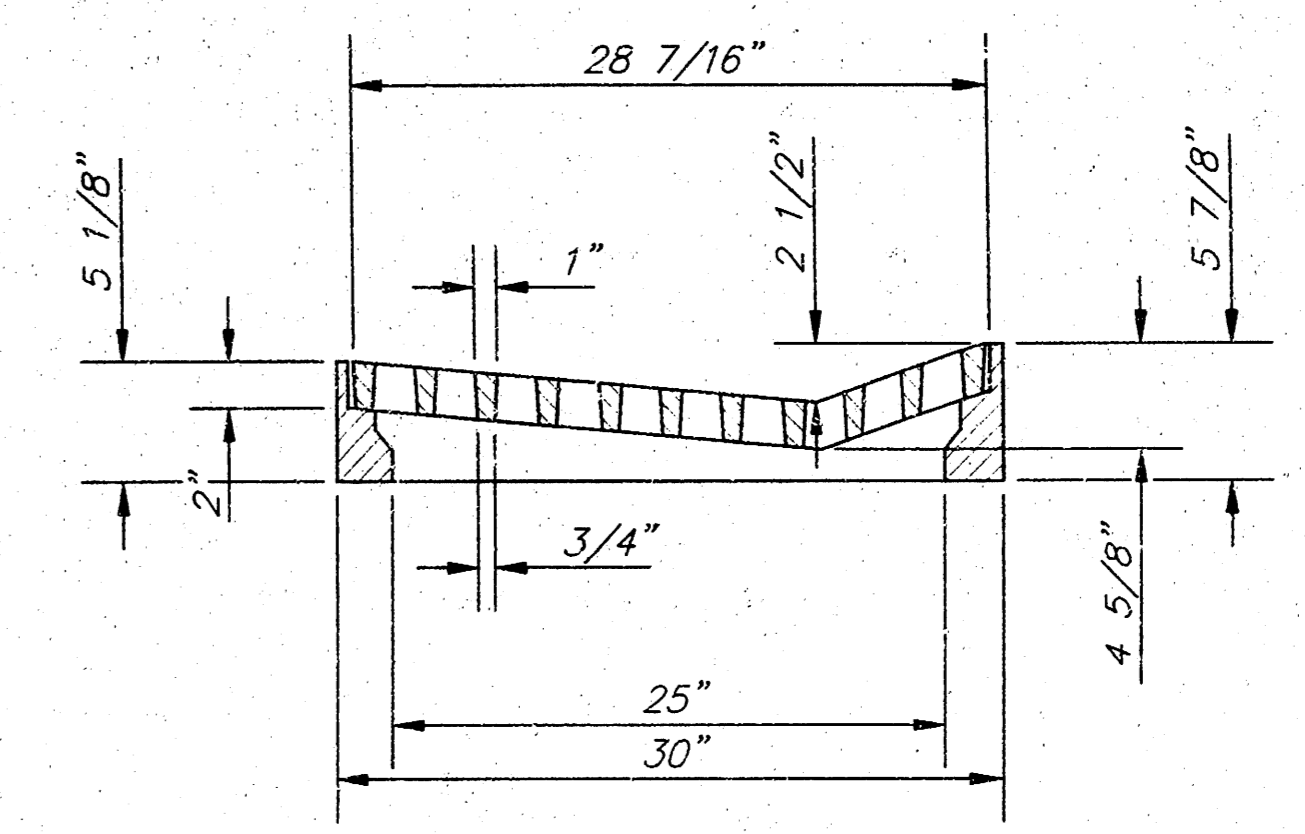
1. Grate frame to be installed on thin mortar cushion to insure full support along brick walls. Concrete used for inlet construction shall be concrete pavement mix.
2. Inlet invert shall be shaped with 8 sack sand mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self cleaning between all inlet and/or outlet pipes.
3. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.
4. Inlet Frame and Grate to be Deeter #2095 of approved equal



PLAN



SECTION B-B



SECTION C-C

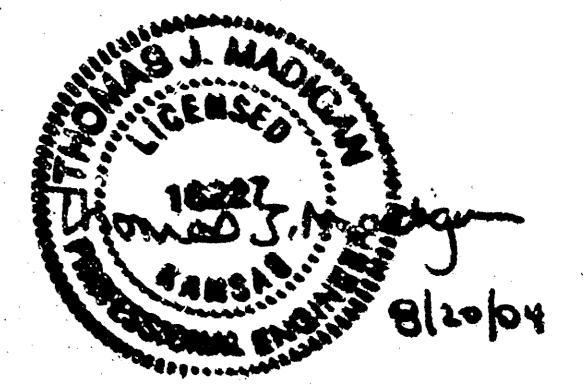
DEETER #2095 FRAME & GRATE  
TOTAL WEIGHT: 705 lbs.

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DAN SJORDAL

SEAL:



slumberland

RIDGE PLAZA  
8TH ADDITION  
LOTS 4 AND 5, BLOCK B  
444 S EMERSON STREET  
WICHITA, KS 67209

SHEET TITLE:  
CITY OF WICHITA  
DRIVEWAY GRATED  
INLET SINGLE

REVISIONS:

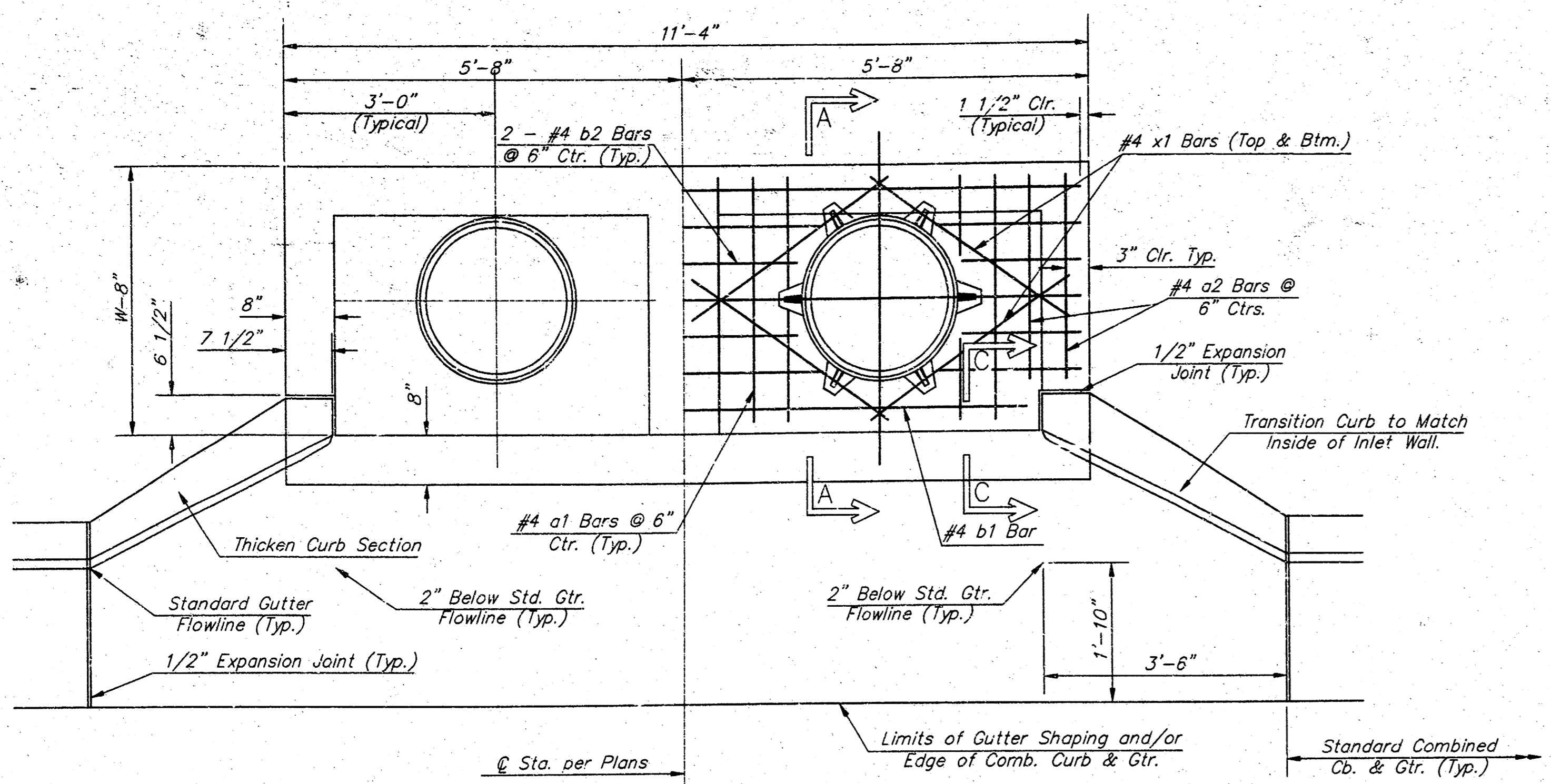
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5	07/16/04		NO REVISIONS
6	08/09/04		THIS SHEET
7	08/20/04		NO REVISIONS

PROJECT NO: 05109-15  
DRAWING DATE: 08-20-04  
DRAWN BY: OAV

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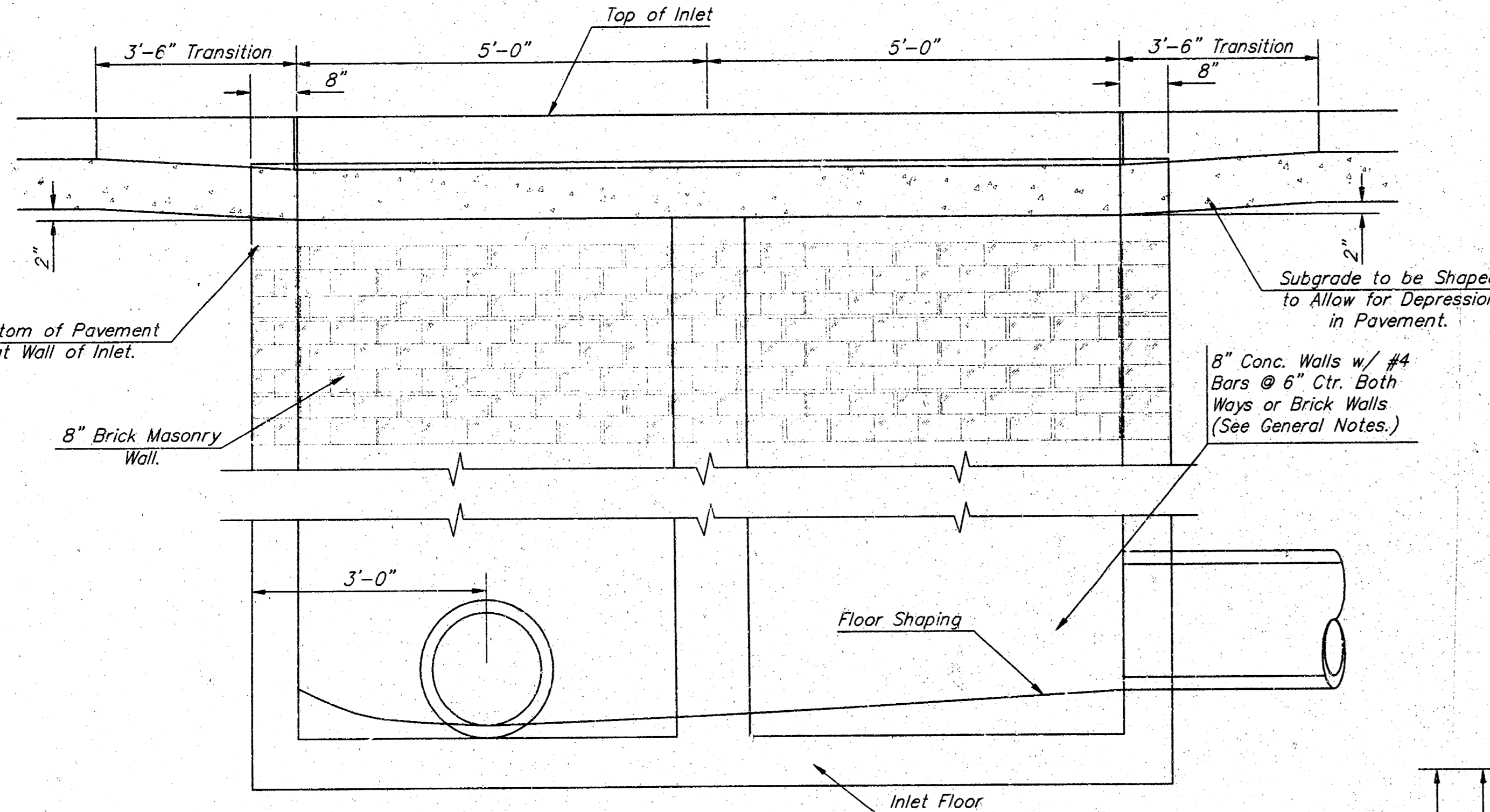
SHEET 8 OF 10  
FILE: 03316 8

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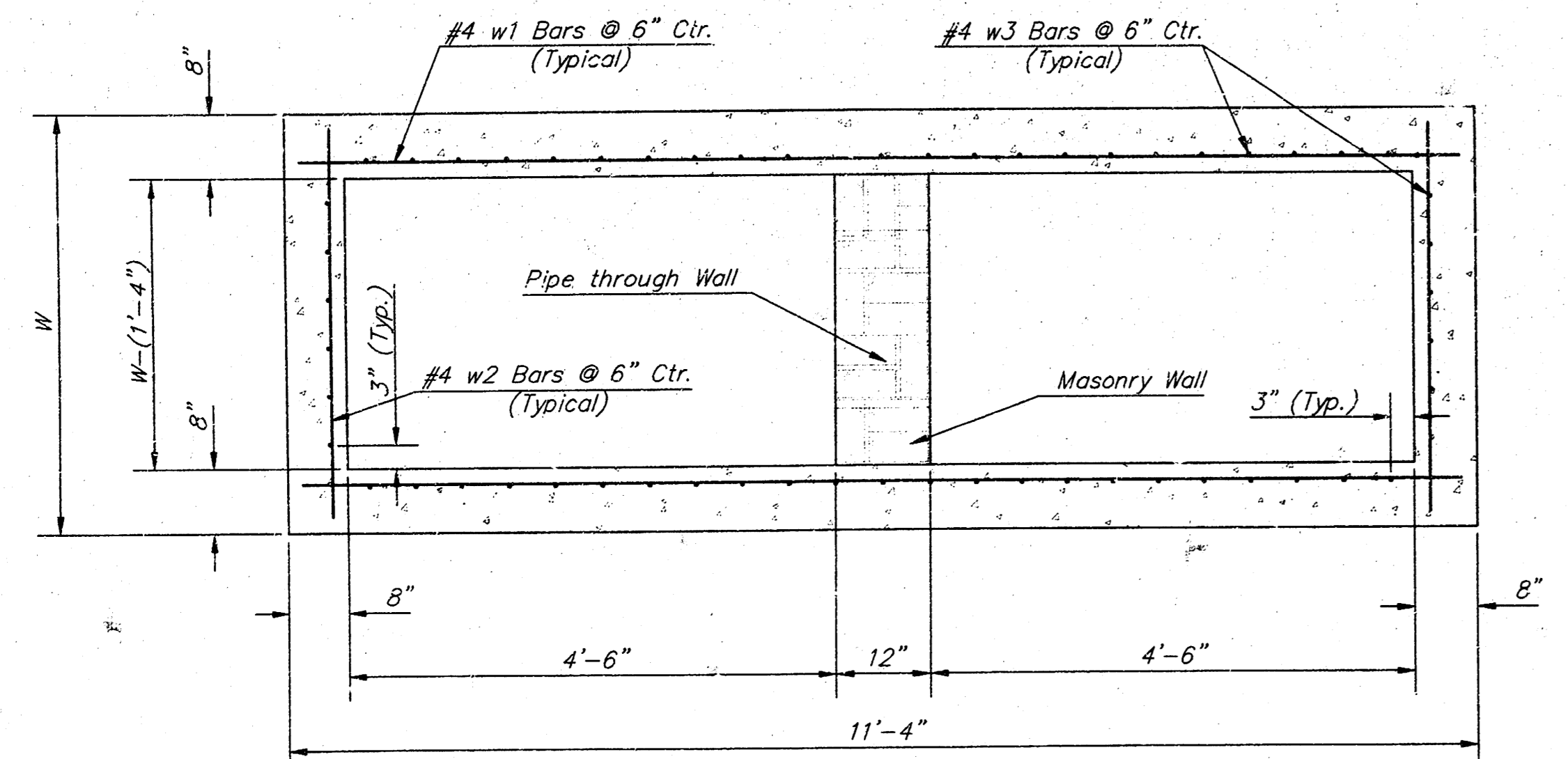


**PLAN**

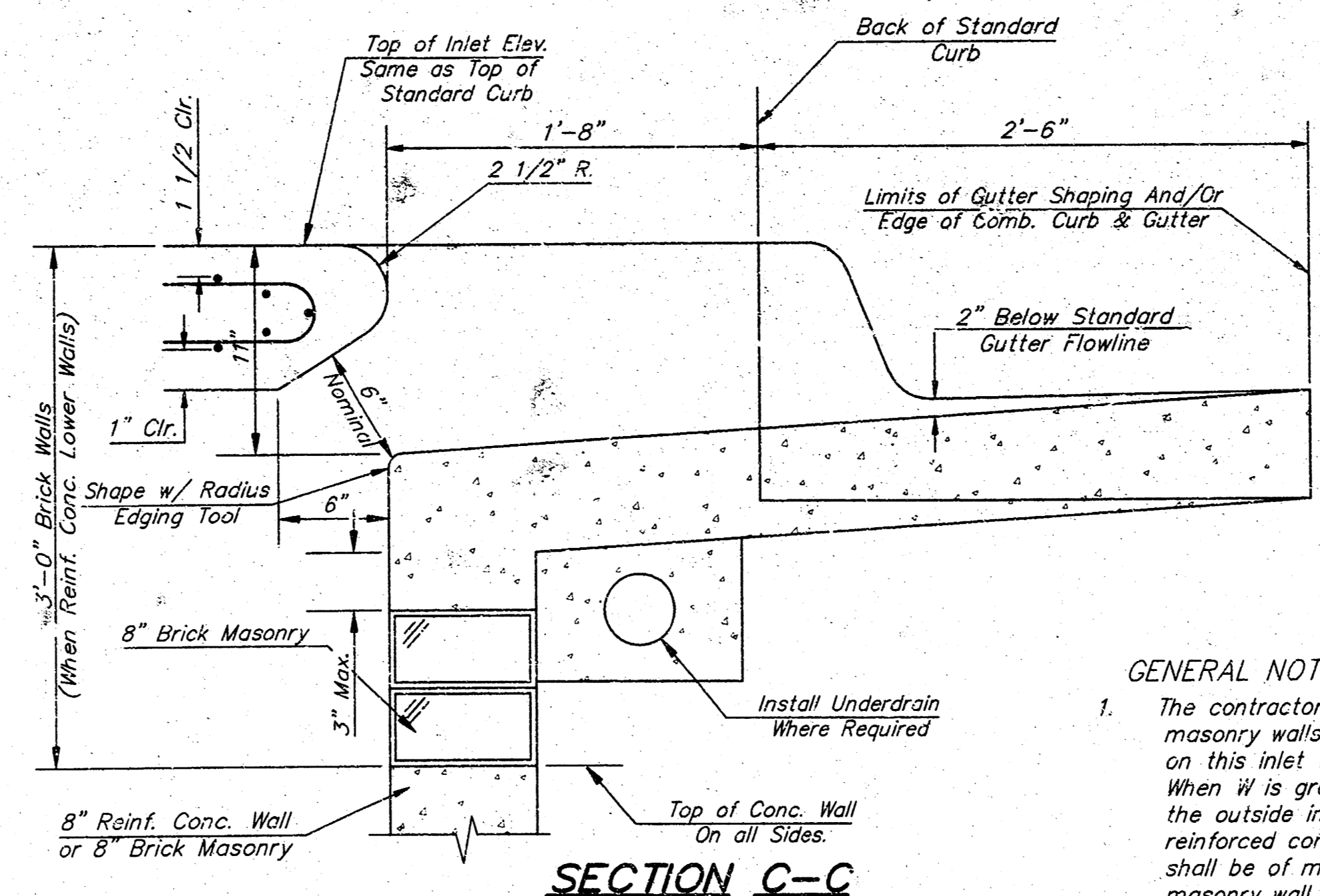
\*Left Side Shown Without Slab Reinforcing,  
Right Side Shown With Slab Reinforcing



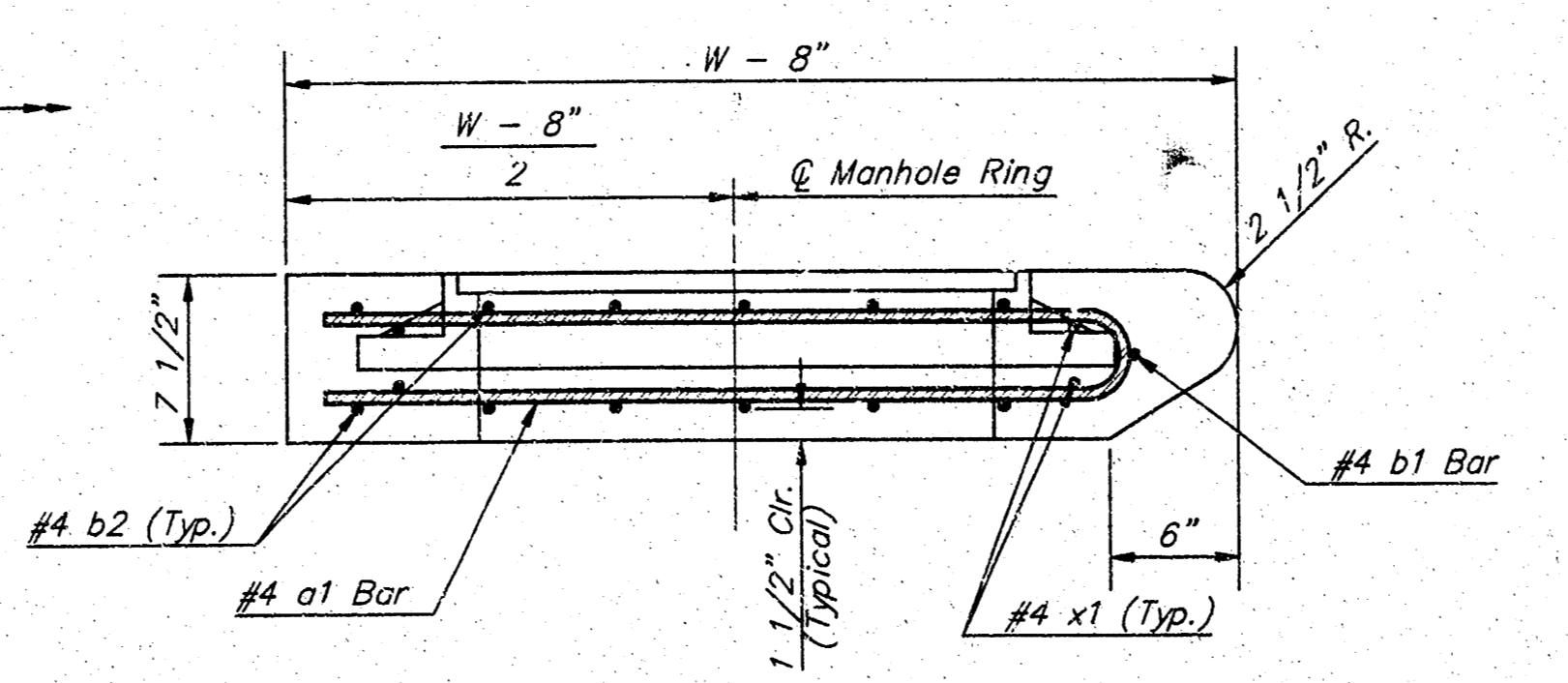
**ELEVATION**



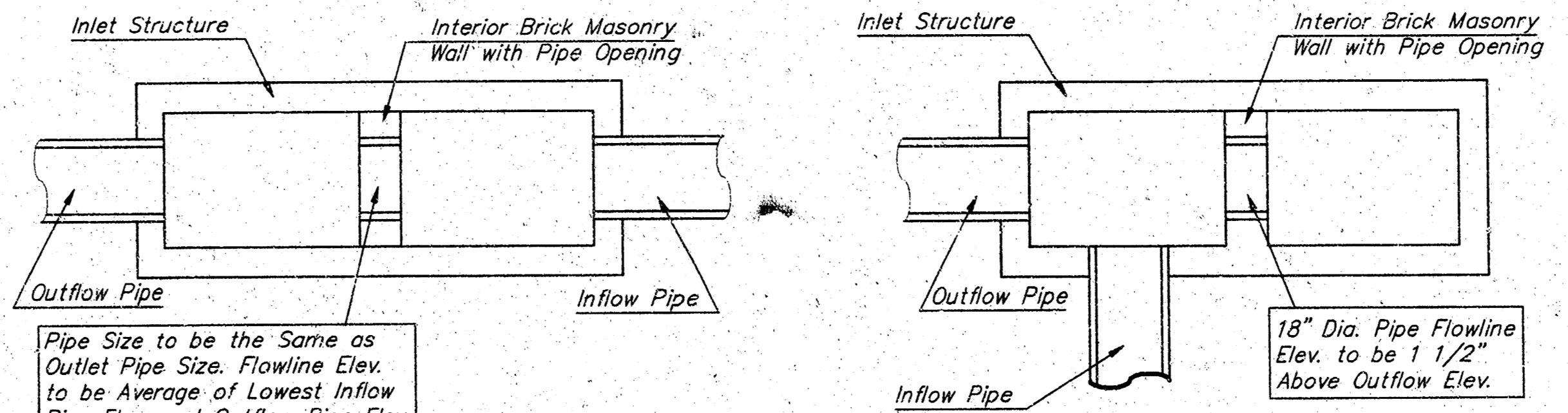
**SECTION B-B**



**SECTION C-C**



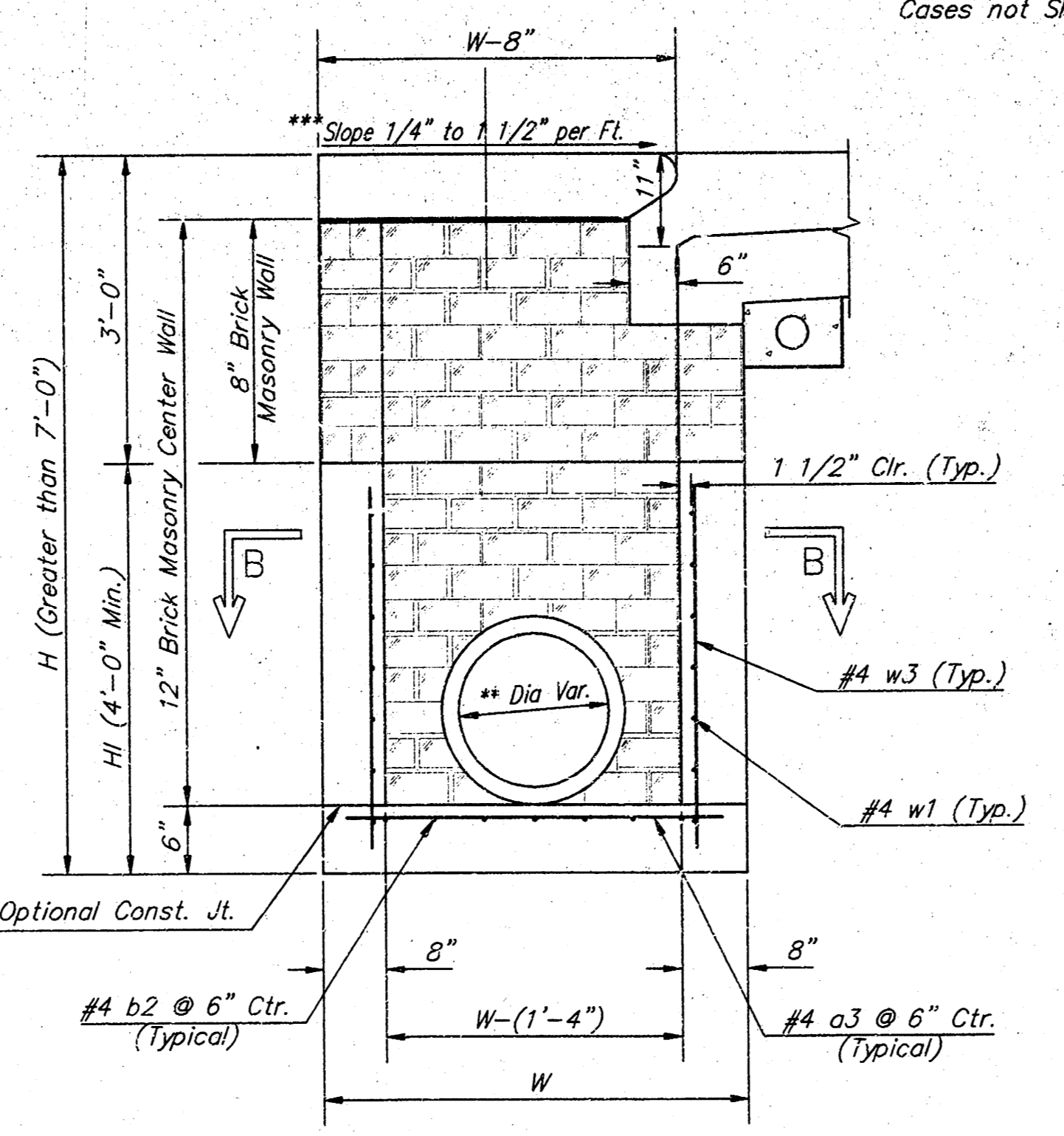
**SECTION A-A**



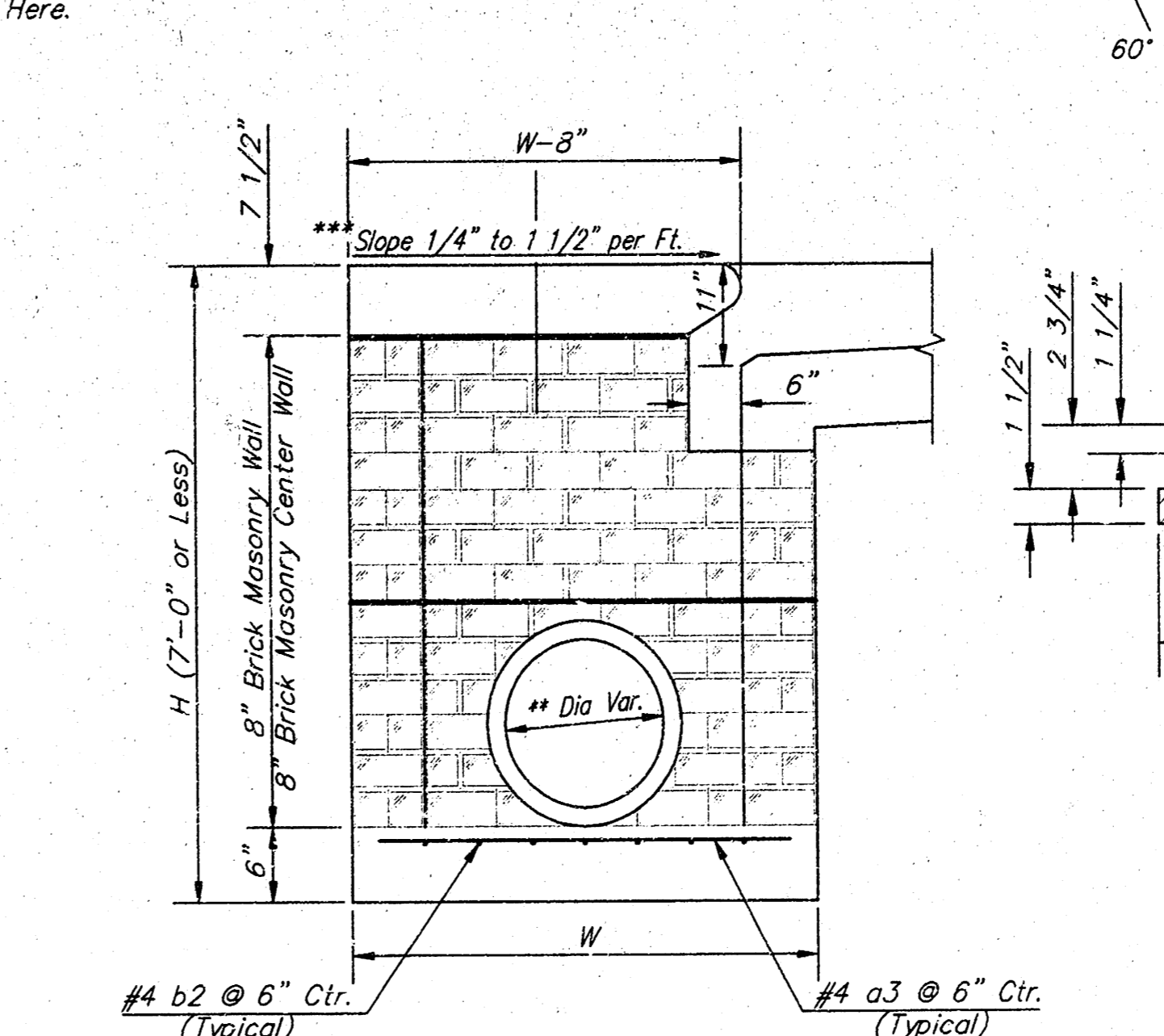
**CASE I**

**CASE II**

NOTE:  
Center Wall Pipe Size shall be as Specified in Inlet Construction Notes on the Plan/Profile Sheets for those Cases Not Shown Here.



**TYPICAL INLET SECTION AT CENTER WALL**  
(Reinforced Concrete Walls)



**TYPICAL INLET SECTION AT CENTER WALL**  
(Masonry Walls)

NOTES:  
\*\* A center wall opening shall be provided by means of a section of reinforced concrete pipe. See Case I and Case II above.  
\*\*\* Slope of inlet tops to match sidewalk or parking slopes within limits indicated

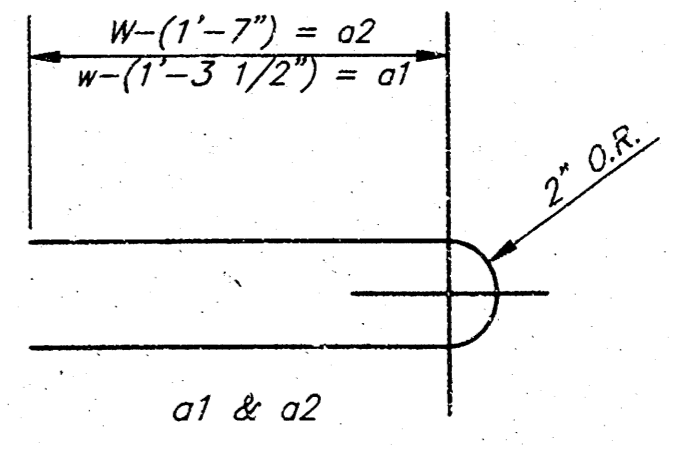
PRECAST SLAB AND FLOOR REINFORCING											
MARK	SIZE	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
a1	#4	13	6'-7"	13	8'-7"	13	10'-7"	13	12'-7"	13	14'-7"
a2	#4	4	6'-7"	4	8'-7"	4	10'-7"	4	12'-7"	4	14'-7"
a3	#4	23	4'-1"	23	5'-1"	23	6'-1"	23	7'-1"	23	8'-1"
b1	#4	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"
b2	#4	23	11'-1"	29	11'-1"	35	11'-1"	41	11'-1"	47	11'-1"
c1	#4	16	3'-10"	16	4'-2"	16	4'-6"	16	4'-10"	16	5'-2"

WALL REINFORCING											
MARK	SIZE	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
w1	#4	11	11'-1"	11	11'-1"	11	11'-1"	11	11'-1"	11	11'-1"
w2	#4	11	4'-1"	11	5'-1"	11	6'-1"	11	7'-1"	11	8'-1"
w3	#4	52	56	60	64	68	72	76	80	84	88

\* Field Bend or Cut Reinforcing as Required for Clearance.  
① 4 (H1 - 12") (H1 - 21") Rounded down to nearest 0.5"  
② H1 - 3"

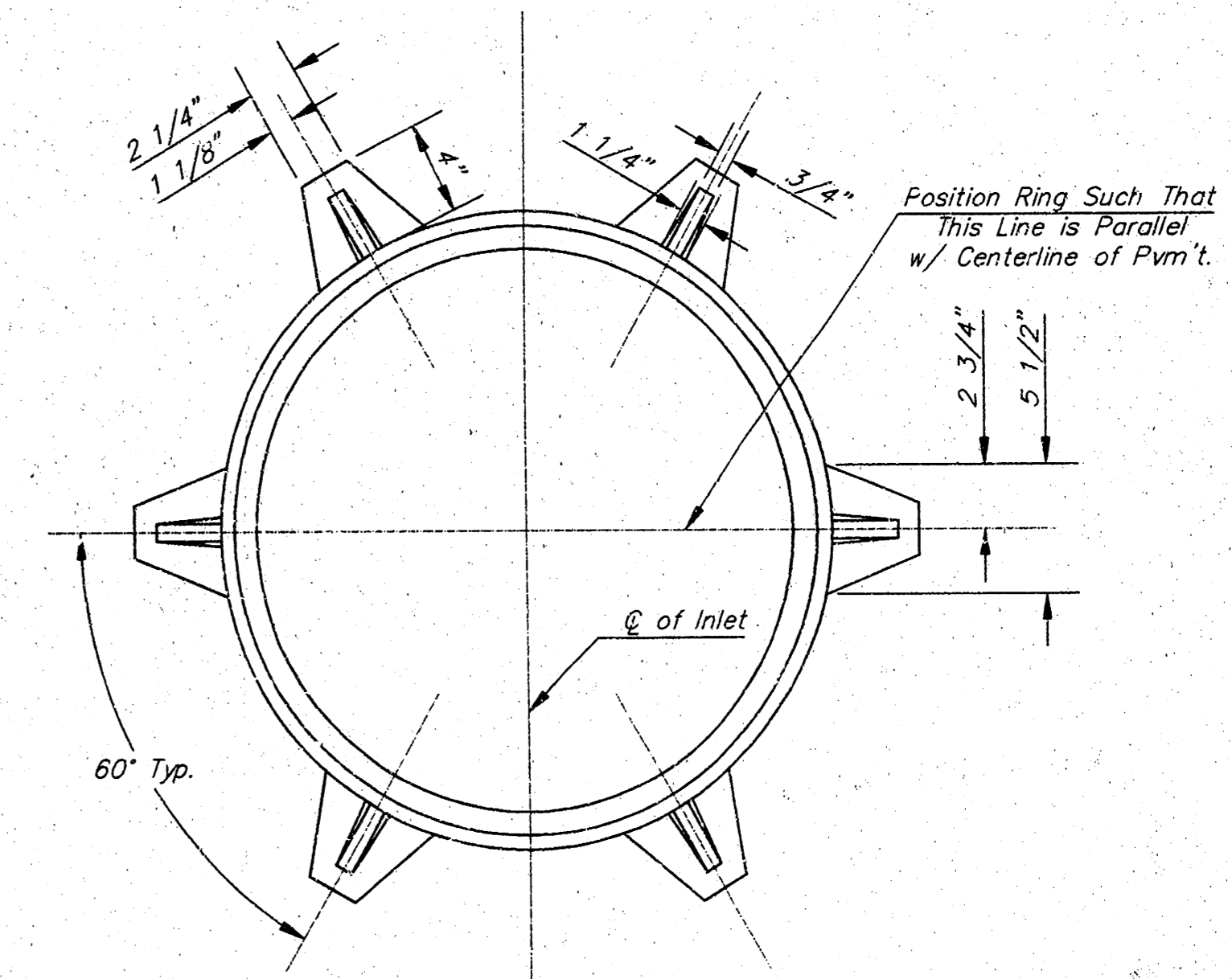
**GENERAL NOTES:**

- The contractor shall be required to construct 8" brick masonry walls between the concrete inlet base and top on this inlet when W=5'-0" or less and H=7'-0" or more. When W is greater than 5'-0" and H is more 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 8 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 6" 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.



**BENDING DIAGRAM**

STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
3'-0"	3'-8" 11'-4" 7 1/2"	21" & SMALLER	0.83±
4'-0"	4'-8" 11'-4" 7 1/2"	24" & 30"	1.09±
5'-0"	5'-8" 11'-4" 7 1/2"	36" & 42"	1.35±
6'-0"	6'-8" 11'-4" 7 1/2"	48" & 54"	1.61±
7'-0"	7'-8" 11'-4" 7 1/2"	60" & 66"	1.87±



**MANHOLE RING AND COVER**

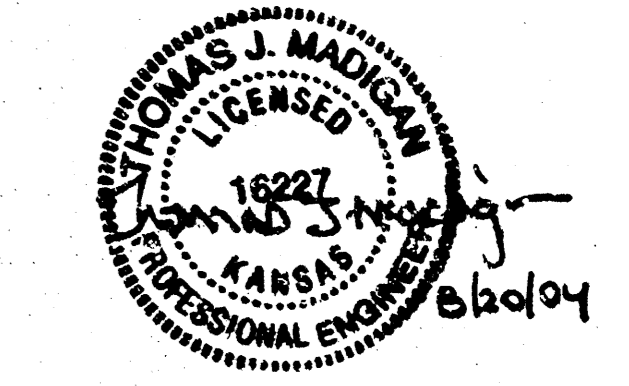
Weight = 180 lbs.  
\*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.

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DAN SICARDAL

SEAL:



**slumberland**  
RIDGE PLAZA  
8TH ADDITION  
LOTS 4 AND 5, BLOCK B  
444 S EMERSON STREET  
WICHITA, KS 67209

**SHEET TITLE:**  
CITY OF WICHITA  
STANDARD TYPE 1-A  
CURB INLET 10'-0" OPENING

**REVISIONS:**

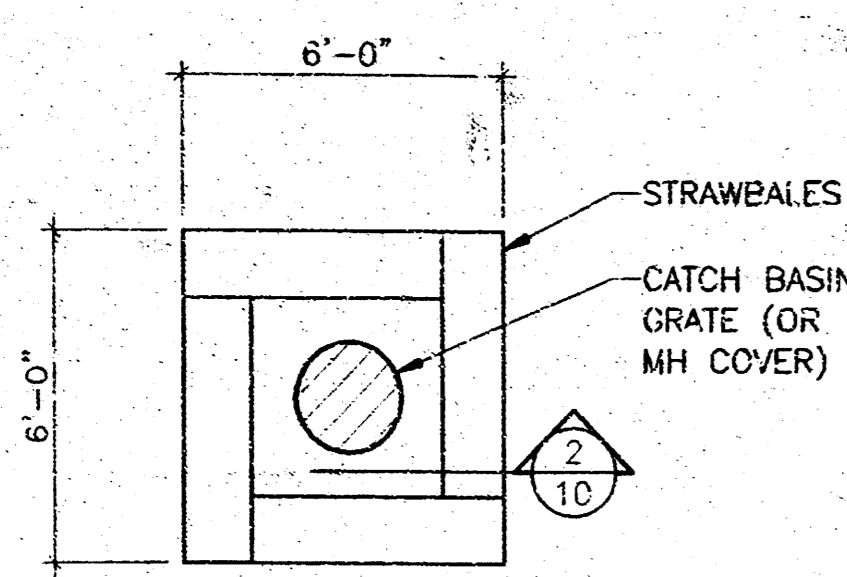
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4	07/16/04	NO REVISIONS	NO REVISIONS
5	08/09/04	NO REVISIONS	NO REVISIONS
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PROJECT NO: 03109-15  
DRAWING DATE: 03-20-04  
DRAWN BY: OAV

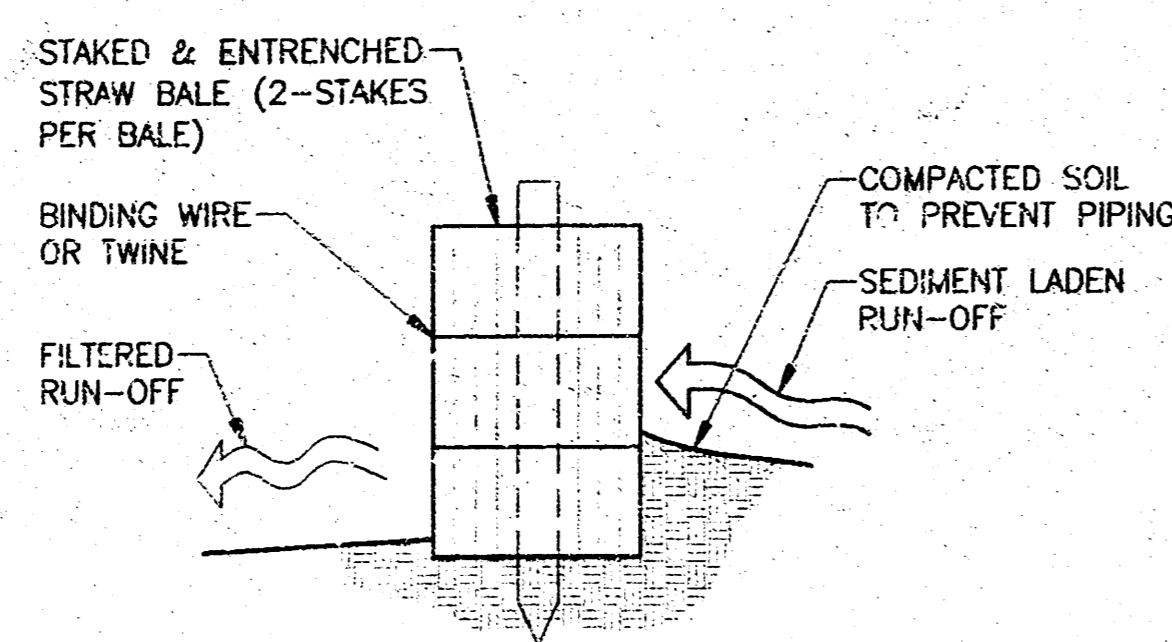
**9**  
SHEET 9 OF 10  
FILE: 03316 9

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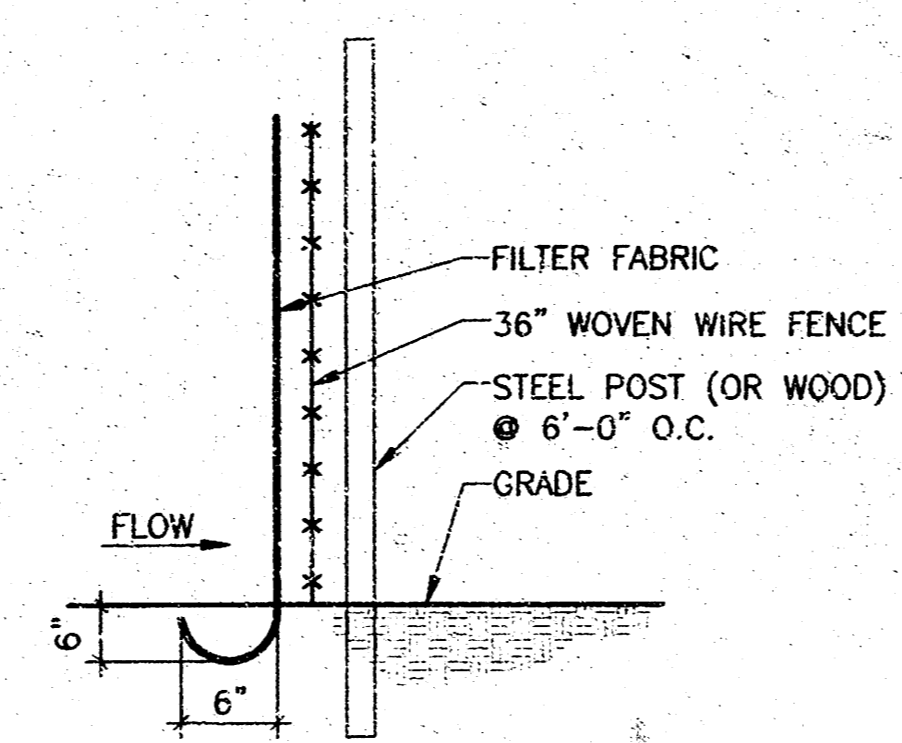
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 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30  
 SHADE TONE



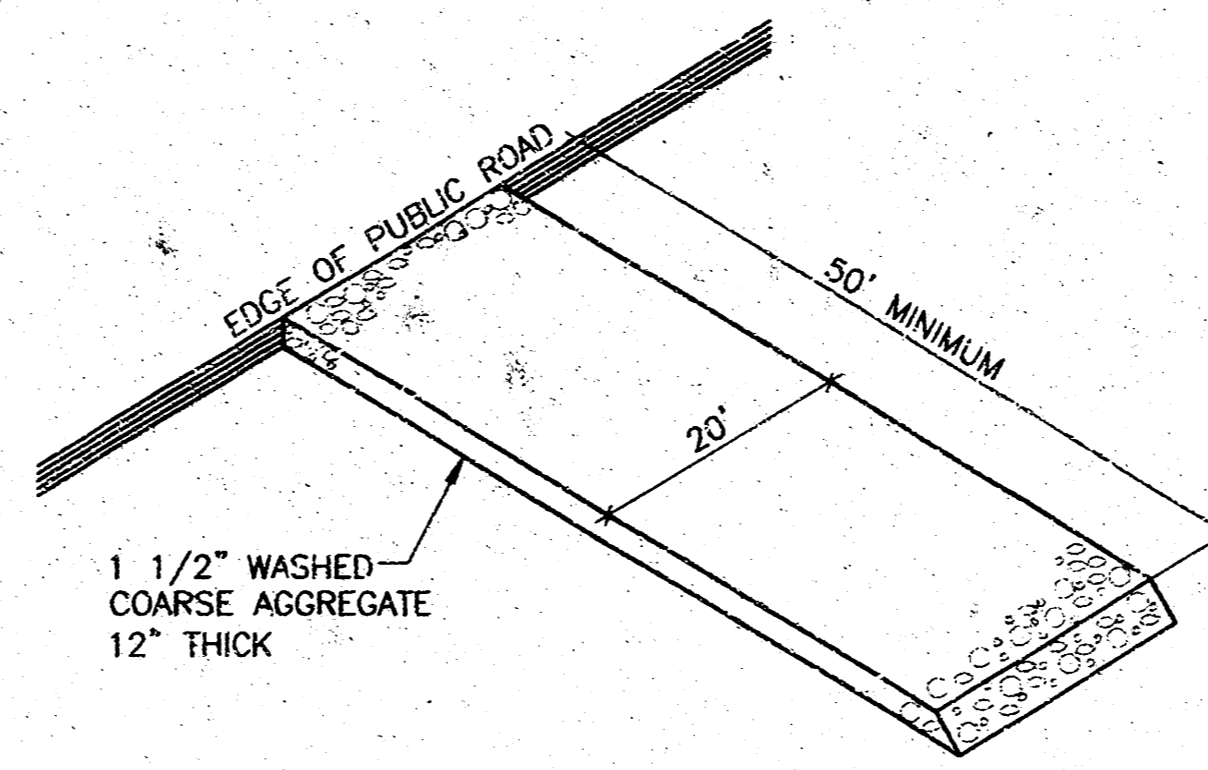
1 STRAWBALES @ STORM WATER INLET PROTECTION NO SCALE



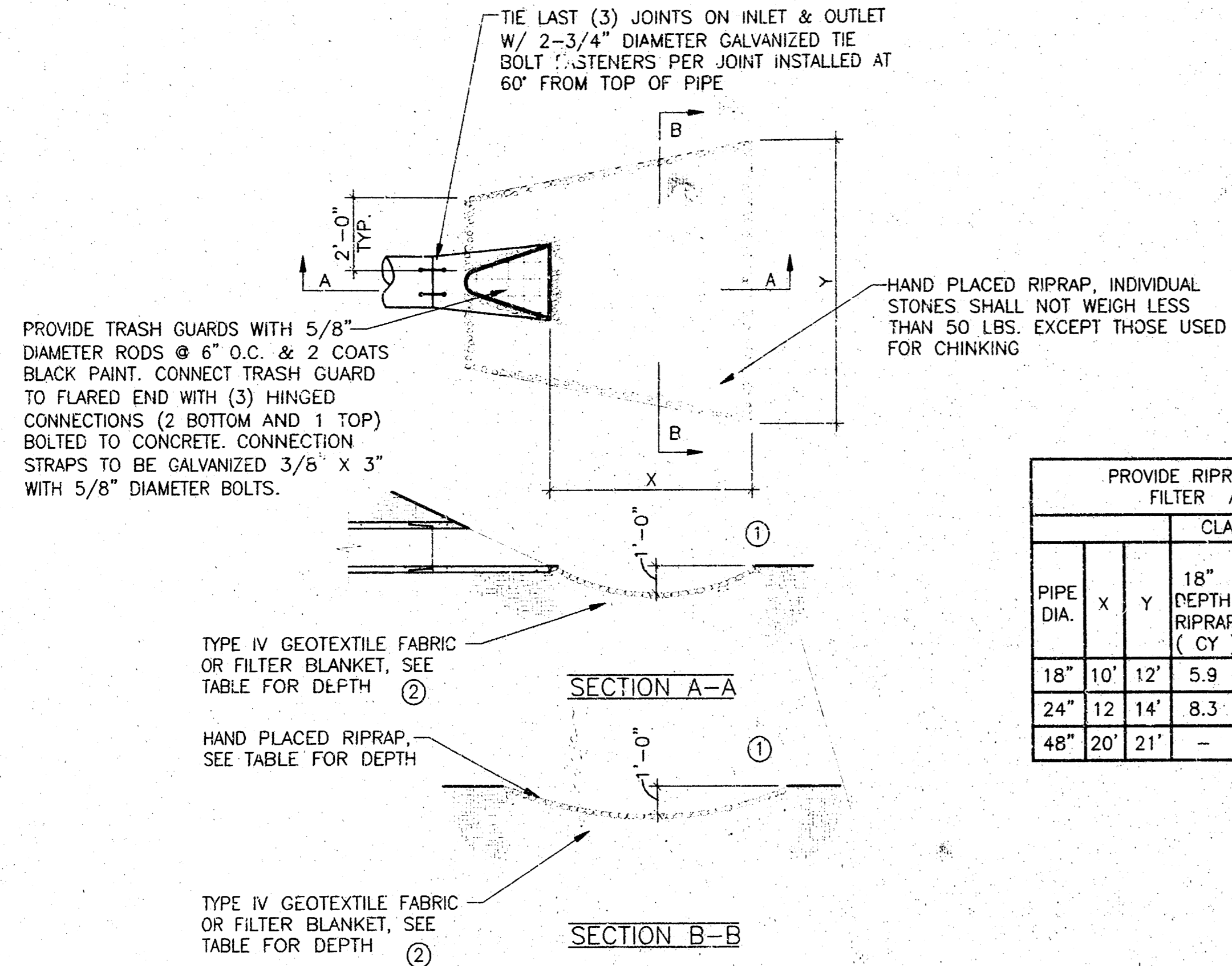
2 STRAWBALE BARRIER NO SCALE



3 SILT FENCE DETAIL NO SCALE



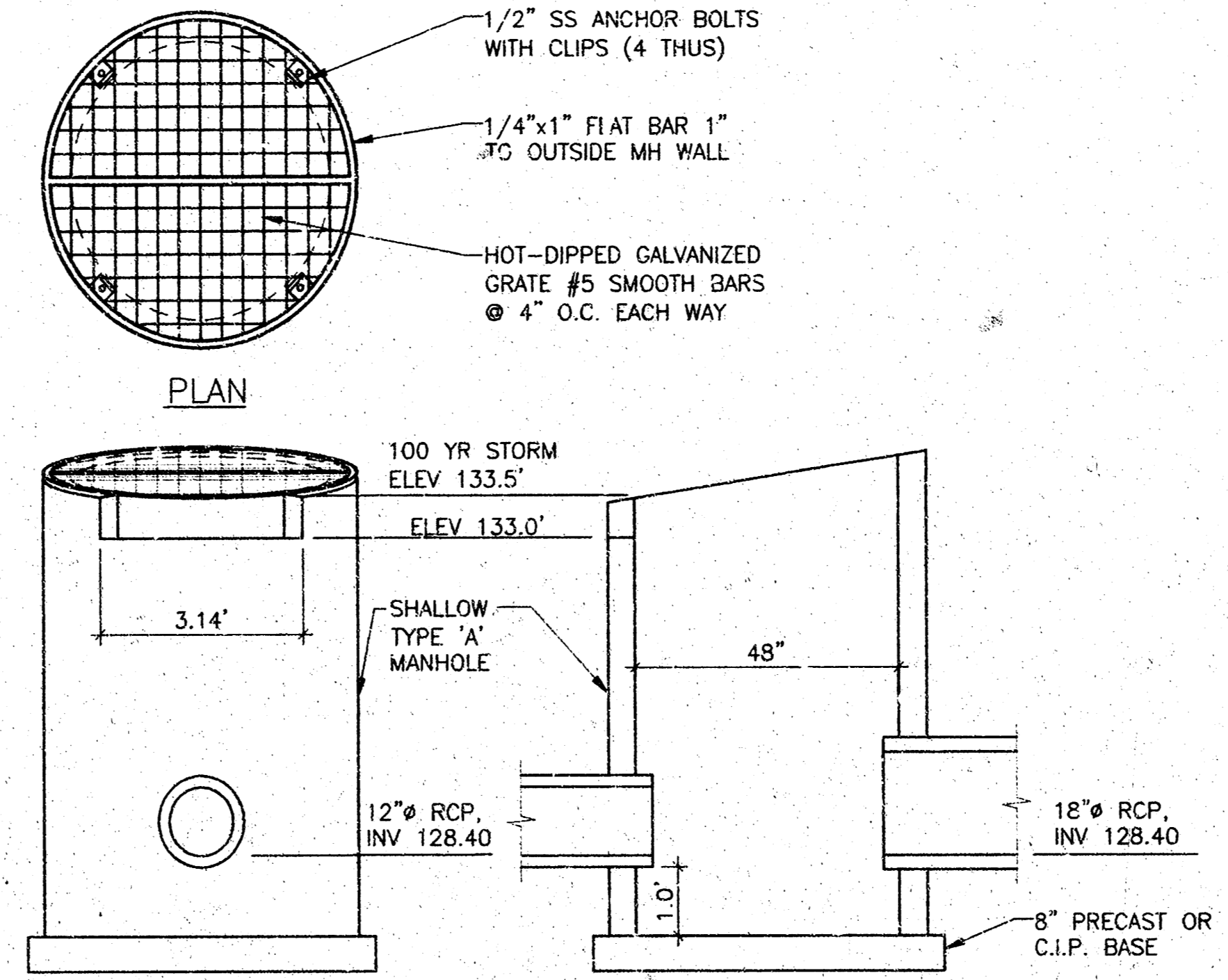
4 GRAVEL CONSTRUCTION ENTRANCE NO SCALE



PROVIDE RIPRAP & GRANULAR FILTER AS FOLLOWS						
PIPE DIA.	X	Y	CLASS III		CLASS IV	
			18" DEPTH RIPRAP (CY)	9" DEPTH GRAN. FILTER (CY)	24" DEPTH RIPRAP (CY)	12" DEPTH GRAN. FILTER (CY)
18"	10'	12'	5.9	3.0	-	-
24"	12'	14'	8.3	4.2	-	-
48"	20'	21'	-	-	25.8	12.9

5 RIPRAP AT RCP FLARED END SECTION (FES) NO SCALE

NOTES: 1 FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'.  
 2 THE CONTRACTOR, AT HIS OPTION, MAY SUBSTITUTE A GEOTEXTILE FABRIC, SPEC. 3601, FOR THE GRANULAR FILTER BLANKET U.N.O. THE FABRIC SHOULD COVER THE AREA OF THE RIPRAP AND EXTEND UNDER THE CULVERT APPROX 3 FEET.

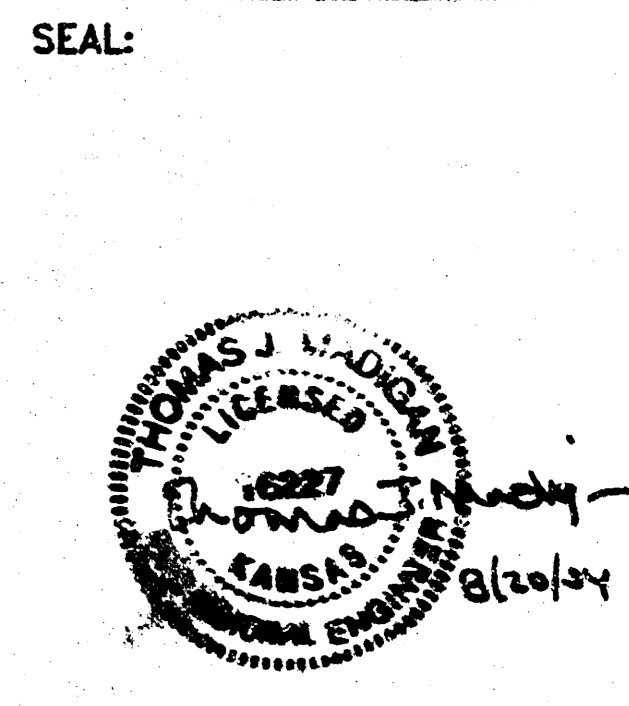


6 DETENTION POND OUTLET STRUCTURE NO SCALE

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 7599 ANAGRAM DRIVE  
 EDEN PRAIRIE, MN 55344  
 952-937-5150  
 DAN SJORDAL



**slumberland**  
 RIDGE PLAZA  
 8TH ADDITION  
 LOTS 4 AND 5, BLOCK B  
 444 S EMERSON STREET  
 WICHITA, KS 67209

SHEET TITLE:  
 DETAILS

REVISIONS:

NO.	DATE	BY	DESCRIPTION
1	05/19/04		NO REVISIONS THIS SHEET
2	06/02/04		NO REVISIONS THIS SHEET
3	06/30/04		NO REVISIONS THIS SHEET
4	07/16/04		NO REVISIONS THIS SHEET
5	08/09/04		NO REVISIONS THIS SHEET
6	08/20/04		NO REVISIONS THIS SHEET

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