

PRIVATE STORM SEWER SYSTEM TO SERVE LOT 23 THRU 37 OF KELLOGG TERRACE FOR SEDGWICK COUNTY JUVENILE DETENTION CENTER PRIVATE PROJECT NUMBER 1568 PPS (607861)

GENERAL NOTES

1. Contractor will be required to provide a minimum advance notice of forty-eight (48) hours to utility companies prior to starting any excavation as follows:

Kansas One-Call 687-2470

The Contractor must notify the following in case of an emergency:

Cox Communications	262-0861
Kansas Gas Service	383-8800
Weslar	383-8800
Aquila Energy	1-800-303-0357
SBC	1-800-286-8313
City of Wichita Water Department	262-6000
City of Wichita Sewer Maintenance	262-6000

2. 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.

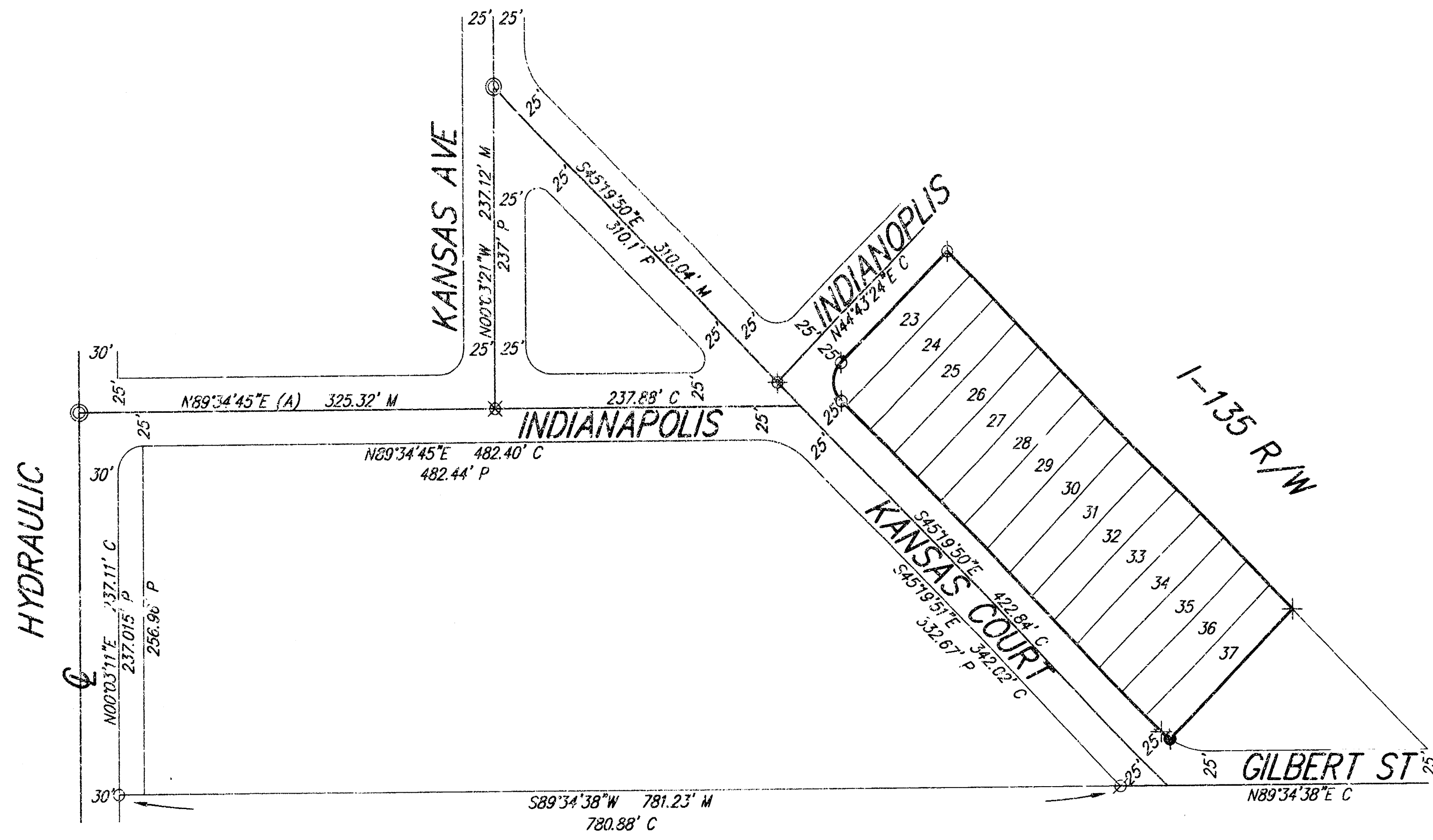
3. This project is located within the limits of a larger project which will include building construction. The General Contractor for the project will submit a Storm Water Pollution Prevention Plan for the entire project prior to beginning any work on this project.

4. This project is to be constructed in accordance with City of Wichita Standard Specifications for the Construction of City Projects, and Policy on Construction of Public Works Improvements by Private Contract.

5. No work shall begin on this project before required bonds are submitted to the City of Wichita, and the project inspector has been notified.

6. All areas of public R/W disturbed by construction of this project are to be restored in accordance with Administrative Regulation AR 78 of the City of Wichita.

7. All disturbed areas shall be seeded, mulched and fertilized unless otherwise specified on the landscape plan.

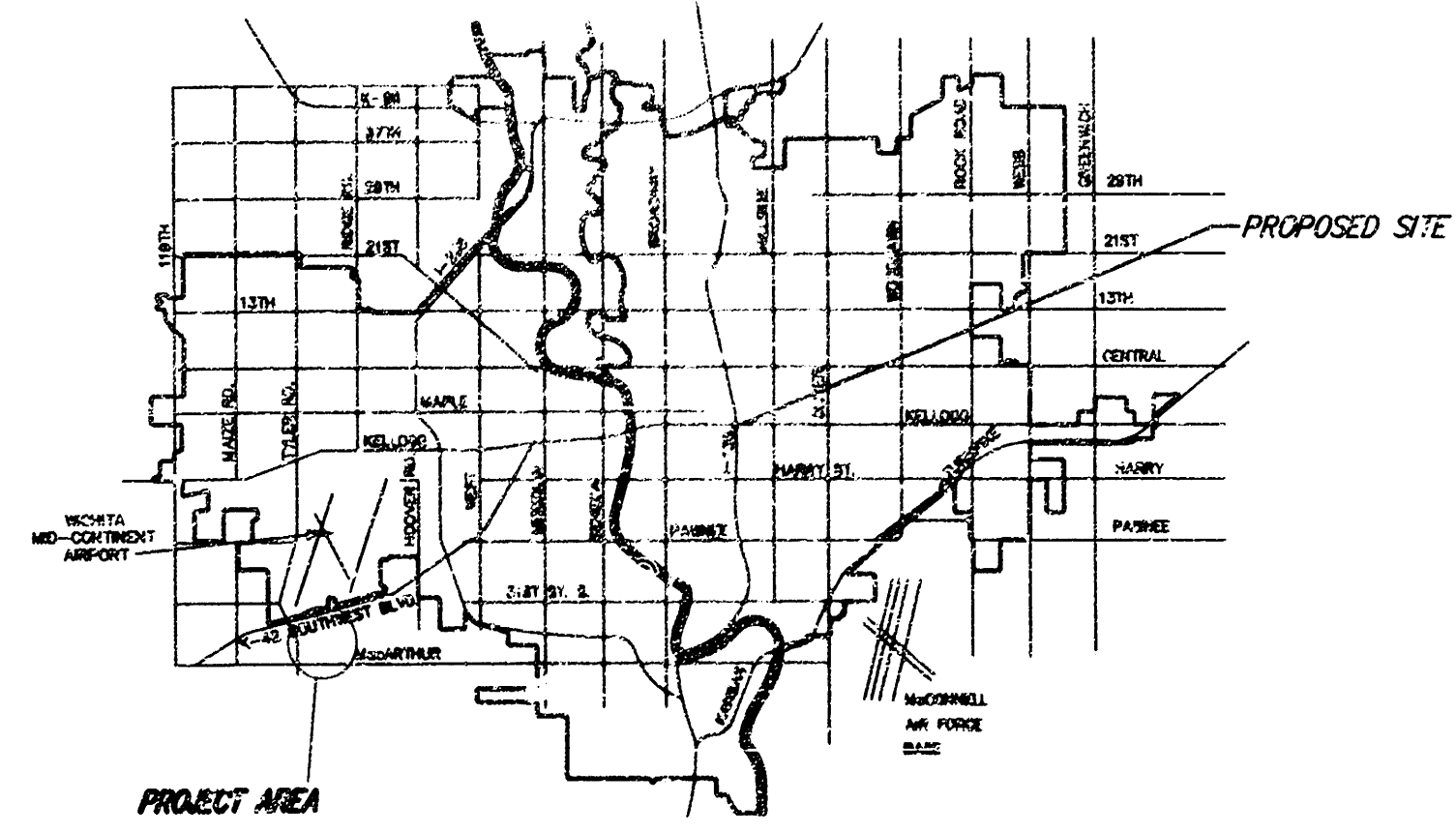


INDEX OF SHEETS

1. TITLE SHEET
2. PARKING LOT LAYOUT
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4. EROSION CONTROL PLAN
5. EROSION CONTROL DETAILS
6. TYPE 1 CURB INLET DETAIL
7. TYPE 1A CURB INLET DETAIL
8. DOUBLE DROP INLET DETAILS

BENCHMARKS

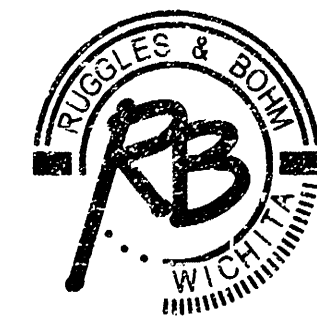
BM #1 Hydraulic and Indianapolis
COW Benchmark. R.R. spike in the east face of the power pole at the south east corner of Hydraulic and Indianapolis.
City 106.00 MSL 1293.40



APPROVED AS NOTED BY CITY ENGINEER OF WICHITA	
Sanitary Sewers	
Storm Sewers	7/22/05
Driveway Approaches	
Water Mains	
Paving	
NOTE TO CONTRACTORS	
Inspection and testing for this project are 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.	

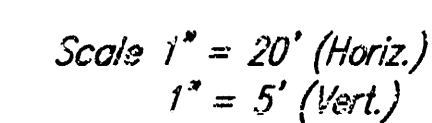
Paul D. Galt
7/22/05

CITY OF WICHITA, KANSAS
JAMES L. ARMOUR, P.E., CITY ENGINEER

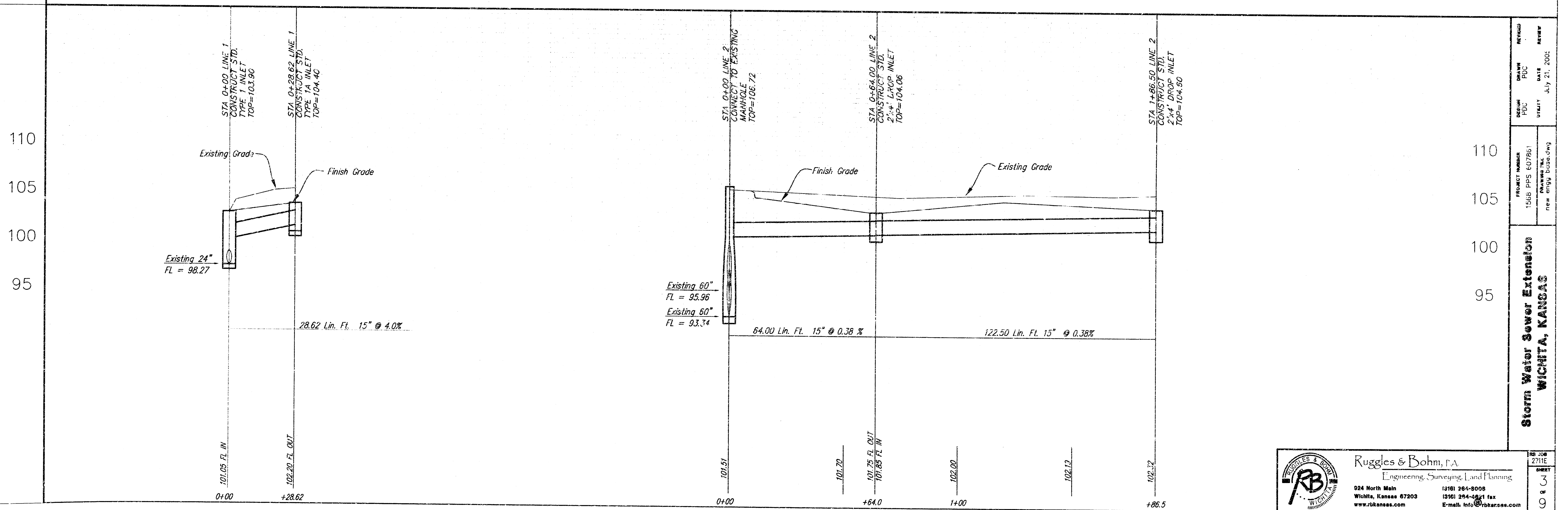
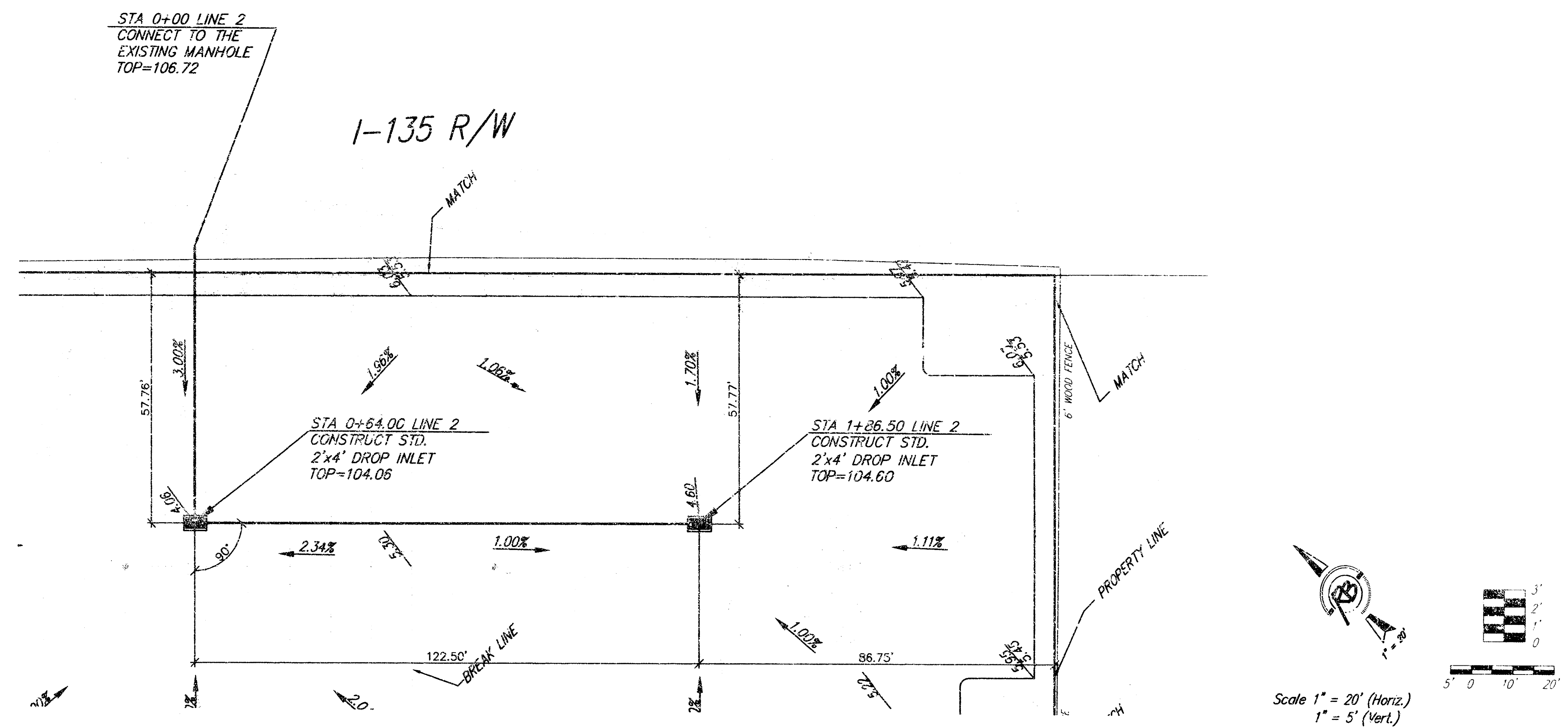
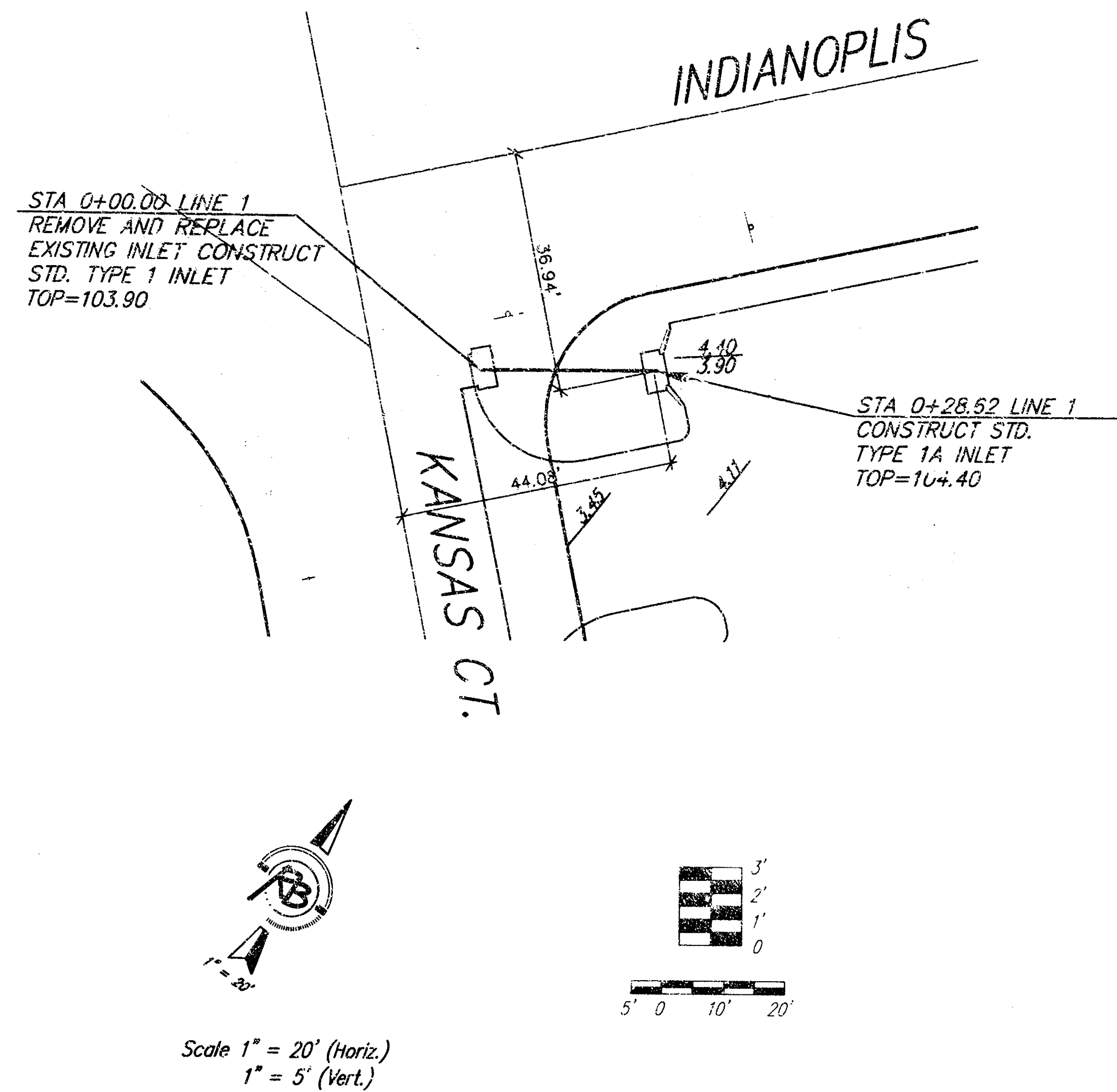


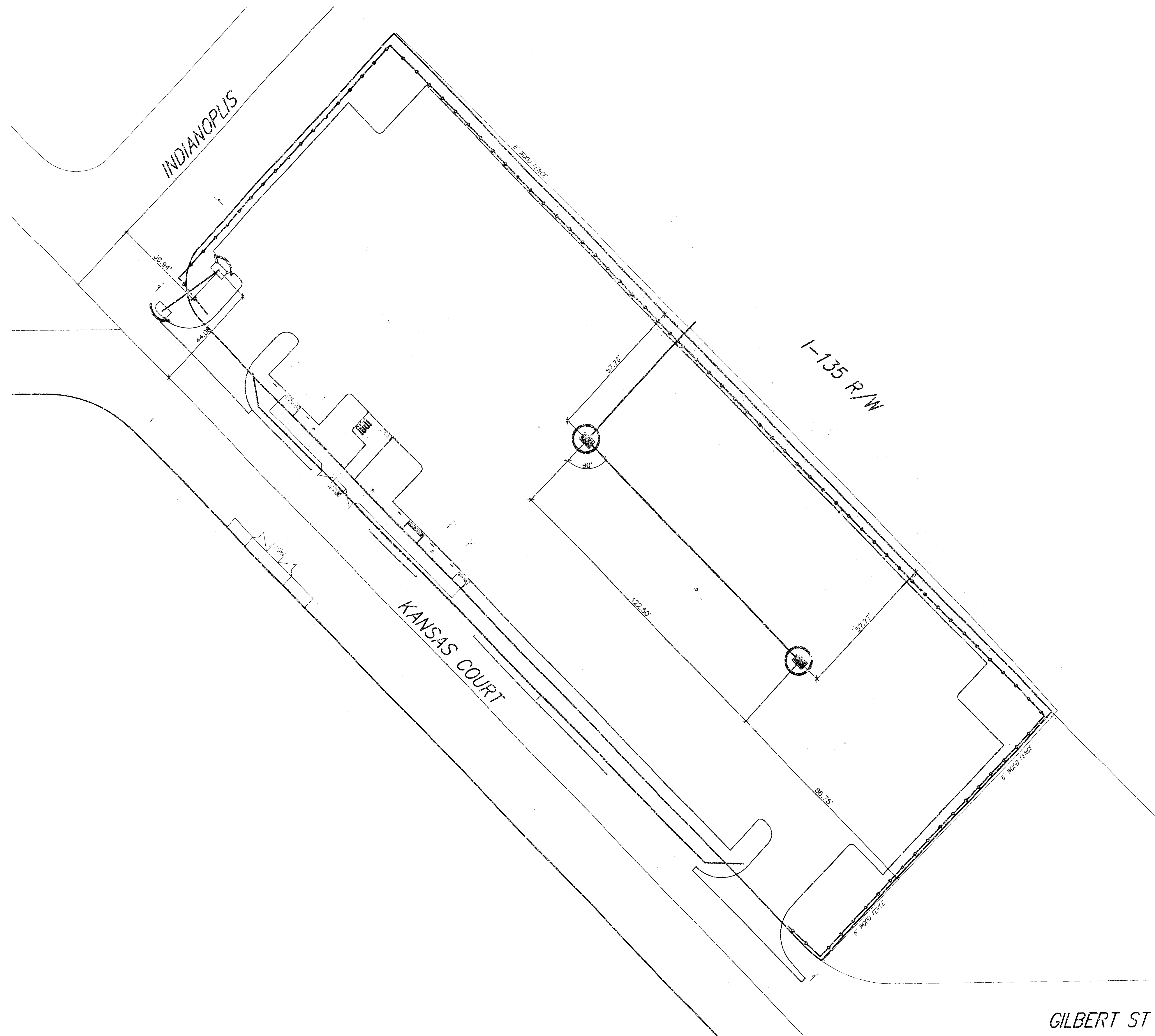
As-built 11-22-05 VCR

Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main (316) 264-8008
Wichita, Kansas 67203 (316) 264-4621 fax
www.rbkansas.com E-mail: info@rbkansas.com



	Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning		DESIGN <i>POC</i>	NO. 27116 SHEET 2 OF 9
	924 North Main Wichita, Kansas 67203 www.rbkansas.com		DRAWN: <i>POC</i>	
	(316) 264-8008 (316) 264-4821 fax		REVIEW	
	DRAWING FILE <i>new engg bsse</i>		UTILITY	
PROJECT NUMBER 1568 PPS 607861		DATE 7/21/05		





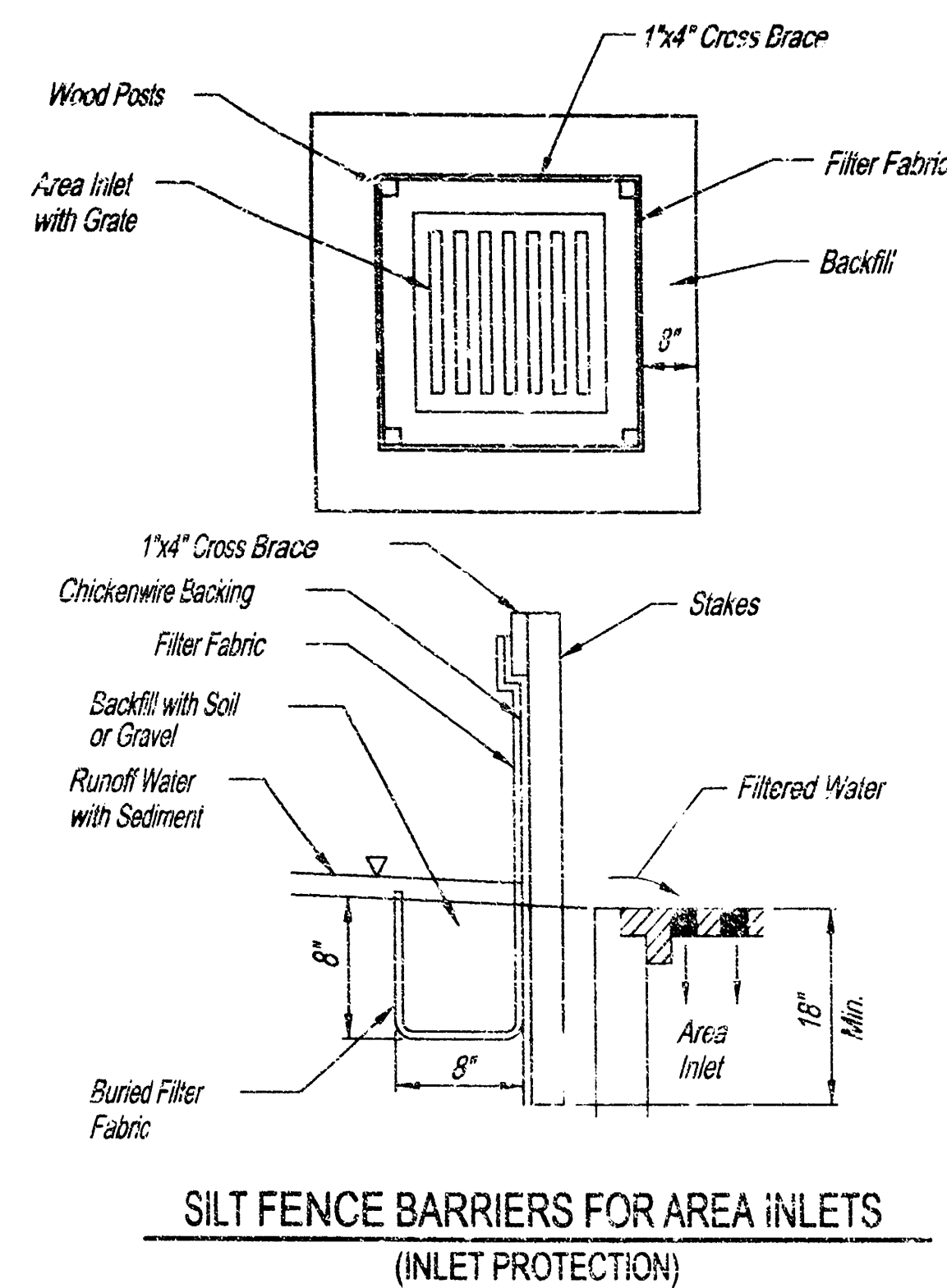
Scale 1" = 20' (Horiz.)
 1" = 5' (Vert.)

LEGEND

- SILT FENCE
 INLET PROTECTION
 DISTURBED AREA = 1.1 AC.

SEDGWICK COUNTY JUVENILE DETENTION PARKING LOT EROSION CONTROL PLAN			
 Ruggles & Bohm, P.A. Engineering, Surveying, Land Planning 924 North Main Wichita, Kansas 67203 www.rbkansas.com	13161 264-8008 13161 264-4831 fax E-mail: info@rbkansas.com		DESIGN PDC DRAWN PDC REVIEW PDC CHECKED PDC DATE 7/21/05
	PROJECT NUMBER 1568 PPS 607861		SHEET 2711E 4 OF 8
	DRAWING FILE new engg base		

GILBERT ST



Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The wire or polymeric mesh backing used to help support the silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. The material used to frame the tops of the posts should be 1" by 4" boards. Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

Place a silt fence drop inlet barrier in a location where it is unlikely to be overtopped. Water should flow through silt fence, not over it. Silt fence barriers for area inlets often fail when repeatedly overtopped. When used as a barrier for area inlets, silt fence fabric and posts must be supported at the top by a wooden frame. When a silt fence barrier for area inlets is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 8" deep by 8" wide. Drive posts to a depth of at least 18" around the perimeter of the area inlet. The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them. Connect the tops of all the posts with a wooden frame made of 1" by 4" boards. Use nails or screws for fastening. Attach the wire or polymeric-mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails. Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed. Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.

Note: When a silt fence barrier for area inlet is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

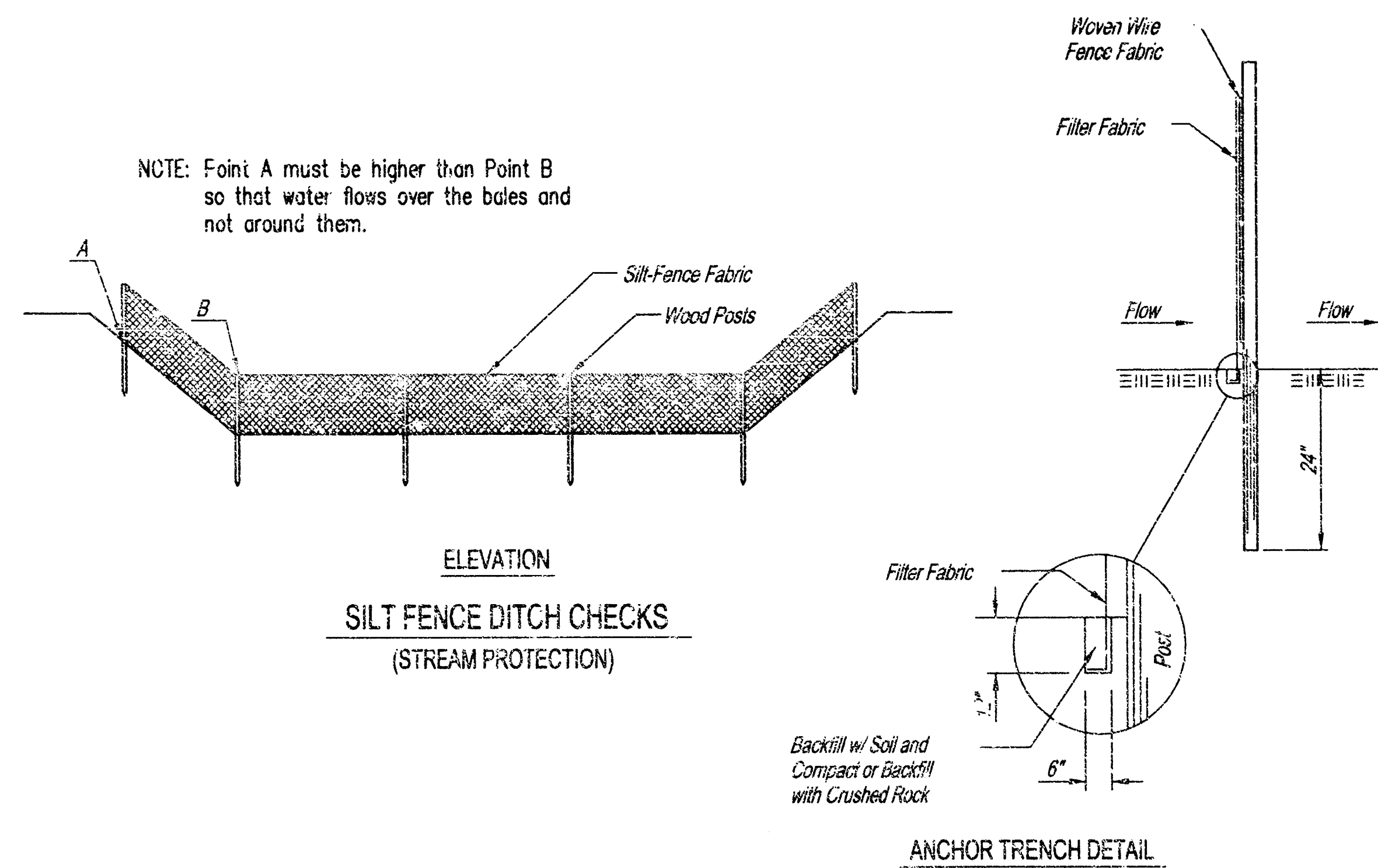
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence barrier for area inlet—not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barriers for area inlets often fail when repeatedly overtopped. Do not place posts on the outside of the silt fence barrier for area inlet. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip-ties, nails, etc.). The silt fence will rip and fail. Do not install silt fence barrier for area inlets without framing the top of the posts. The corner posts around area inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

Inspection and Maintenance:

Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the silt fence?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the area inlet barrier?



Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

Place silt fence in ditches where it is unlikely that it will be overtopped. Water should flow through a silt fence ditch check, not over it. Silt fence ditch checks often fail when overtopped. Silt fence ditch checks should be placed perpendicular to the flowline of the ditch. The silt fence should extend far enough so that the ground level at the ends of the fence is higher than the top of the low point of the fence. This prevents water from flowing around the check. Checks should not be placed in ditches where high flows are expected. Rock checks should be used instead. Silt fence should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.

The following table provides check spacing for a given ditch grade:

Ditch Check Ditch grade (%)	Spacing Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench for later use. Roll out a continuous length of silt fence fabric on the downstream side of the trench. Place the edge of the fabric in the trench starting at the top upstream edge of the trench. Line two sides of the trench with the fabric as shown on detail. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed. Lay the exposed silt fence on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart. Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

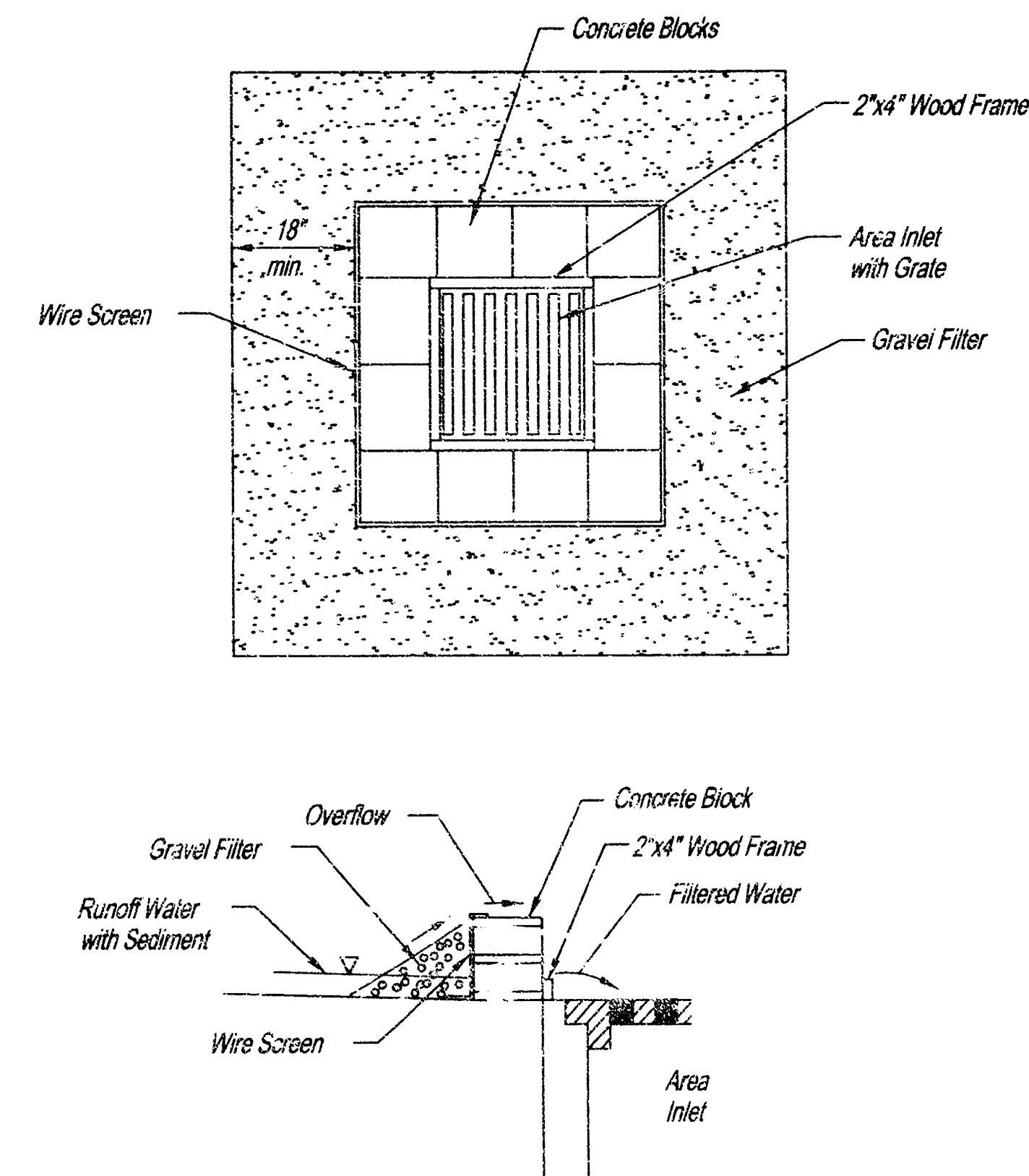
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence ditch check—not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them. Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail. Do not place a silt fence ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow. Do not place silt fence ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow. Follow prescribed ditch check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks. Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the fence is higher than the low point on the top of the fence. Do not place silt fence ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.

Inspection and Maintenance:

Silt fence ditch checks should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the ditch check?



CONCRETE BLOCK FILTER FOR AREA DRAIN (INLET PROTECTION)

Gravel barriers provide little filtering of large inflow waters. However, when installed correctly and maintained, they can effectively treat low runoff flows.

Placement of gravel filters around area drains must be completed in a manner that will not cause local flooding.

Gravel filters can be used if the immediate and adjacent area to the area drain consists of soil or pavement.

Only gravel filters are to be installed on top of the pavement.

Instructions for installing:

STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary.

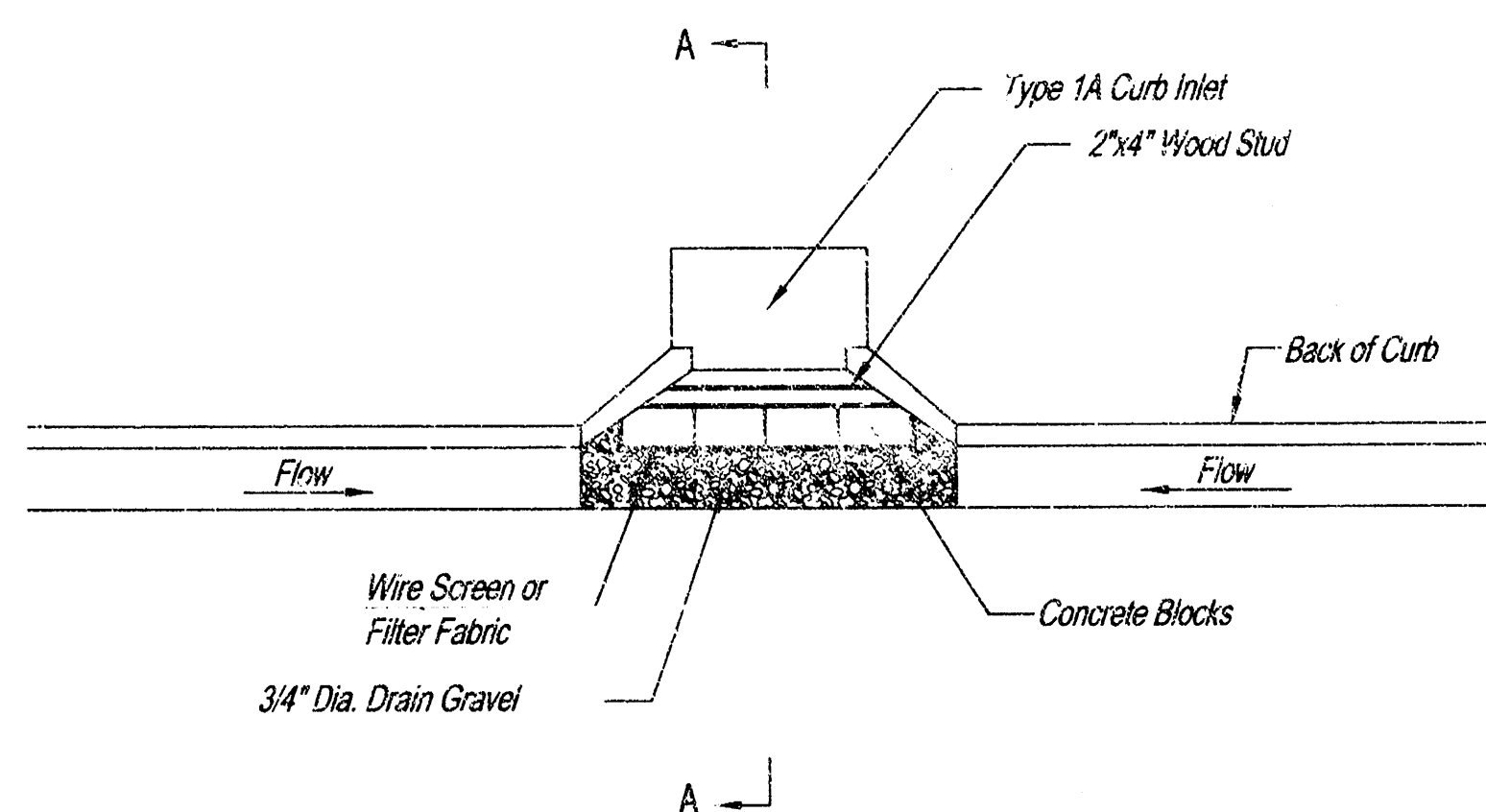
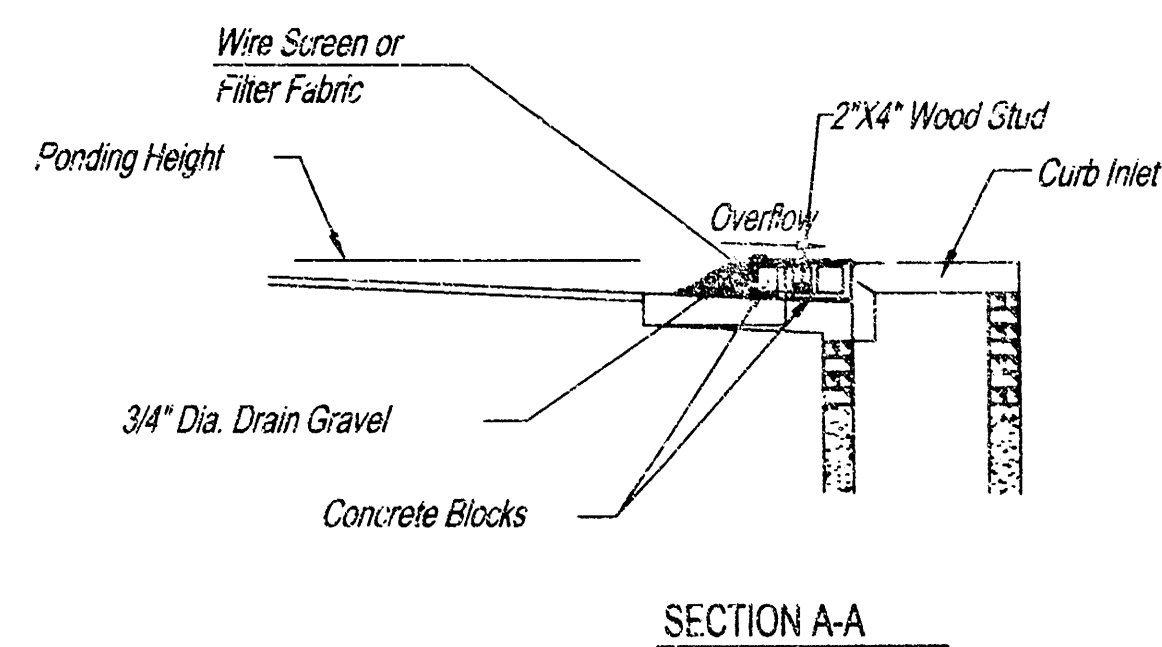
An alternative method is use of gravel bags that are supported to prevent collapsing.

Use of rock having diameters smaller than 1" may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets after every runoff event.

	SOIL EROSION BMP DETAILS	
	CHRISTOPHER M. CARRIER, P.E. STORM WATER ENGINEER	
	PROJECT NUMBER 1568 PPS 607861	QA NO. XXXX
	DATE MAY 2001	SHEET X OF X



CURB INLET GRAVEL FILTERS (INLET PROTECTION-RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

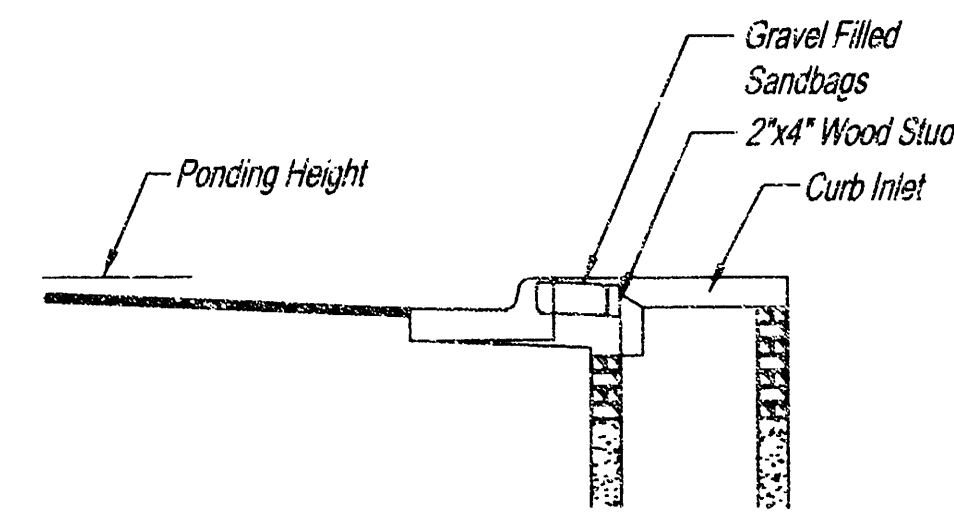
Instructions for Installing:

- STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
- STEP 2: Wrap 1/2\" mesh wire screen around the concrete blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
- STEP 3: Place 1\" to 1-1/2\" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
- STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2x4\" board to prevent collapsing.

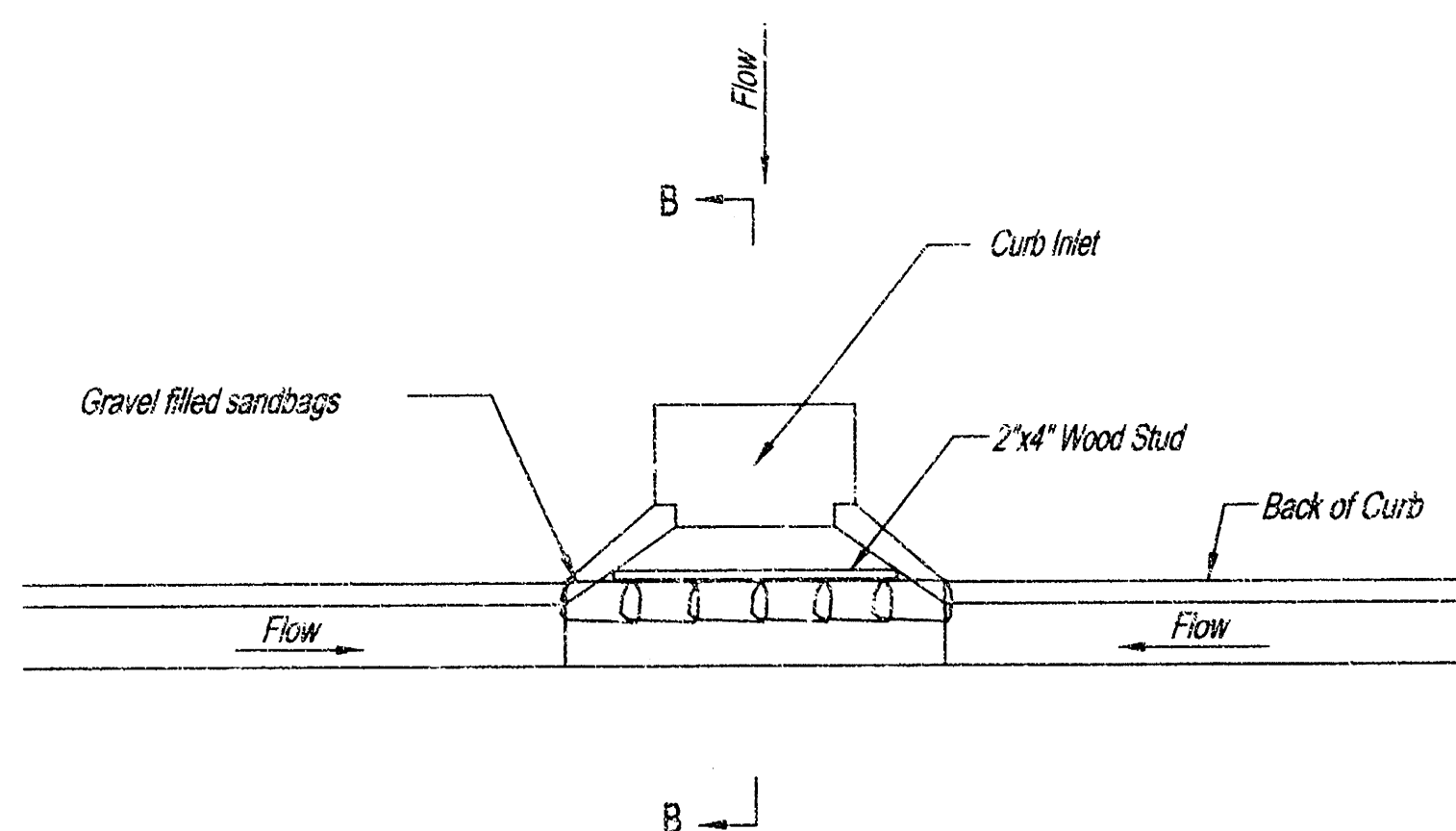
Use of rock with diameters smaller than 1\" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

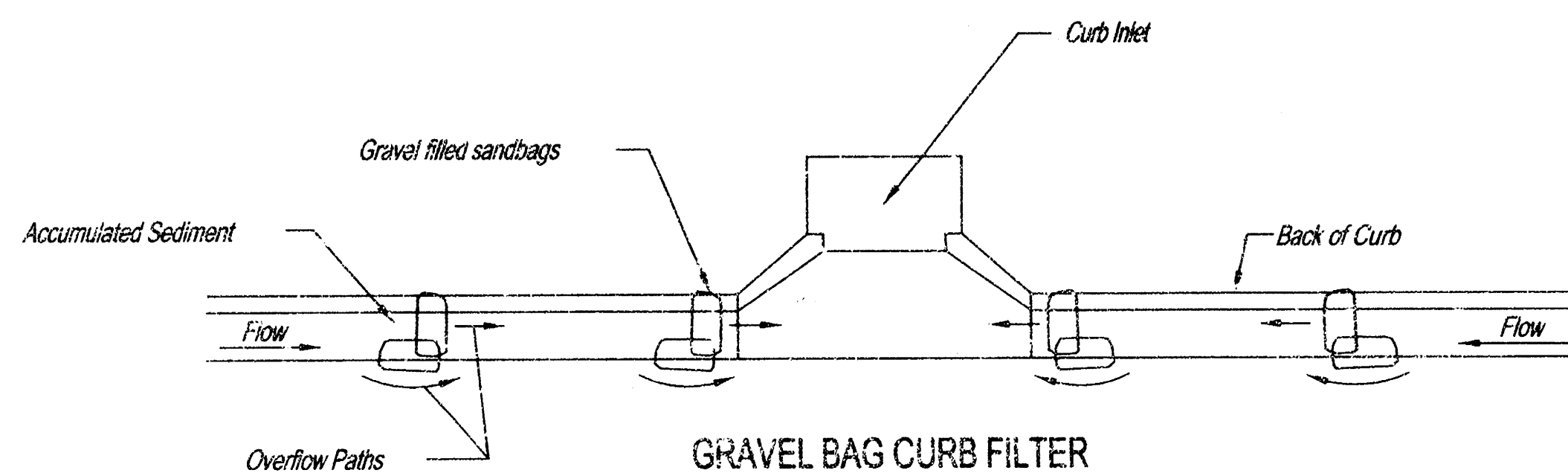


SECTION B-B



CURB INLET SANDBAG FILTERS (INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.



GRAVEL BAG CURB FILTER (INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

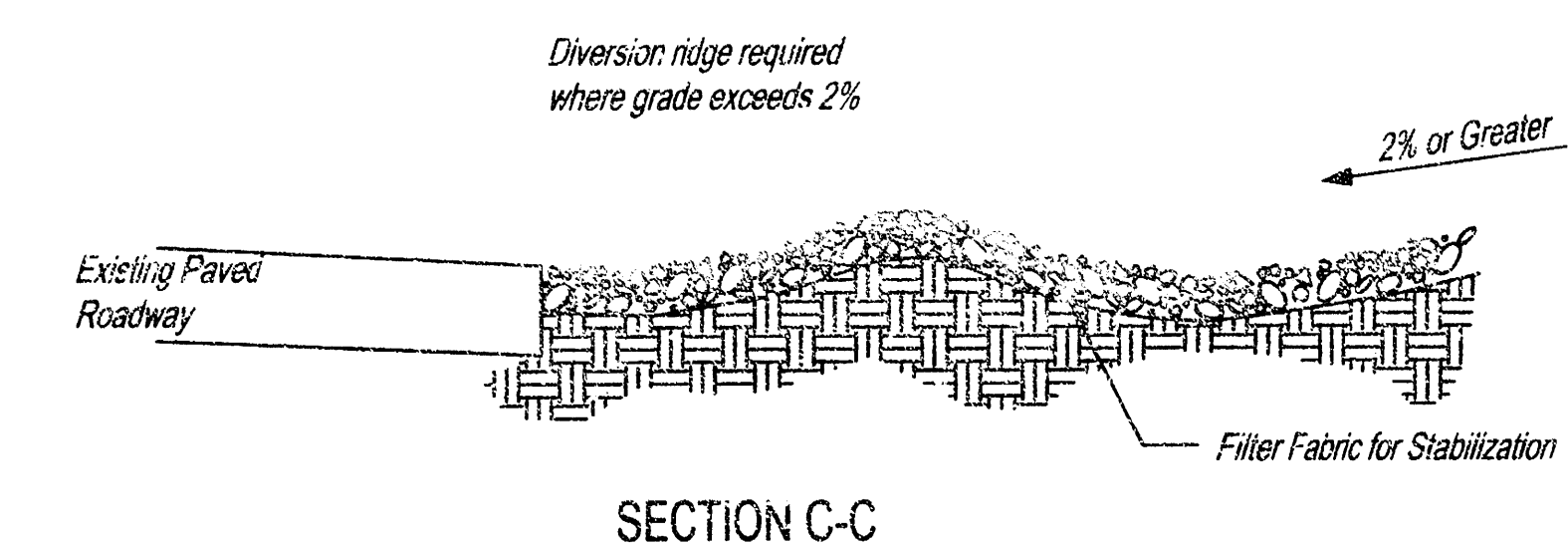
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

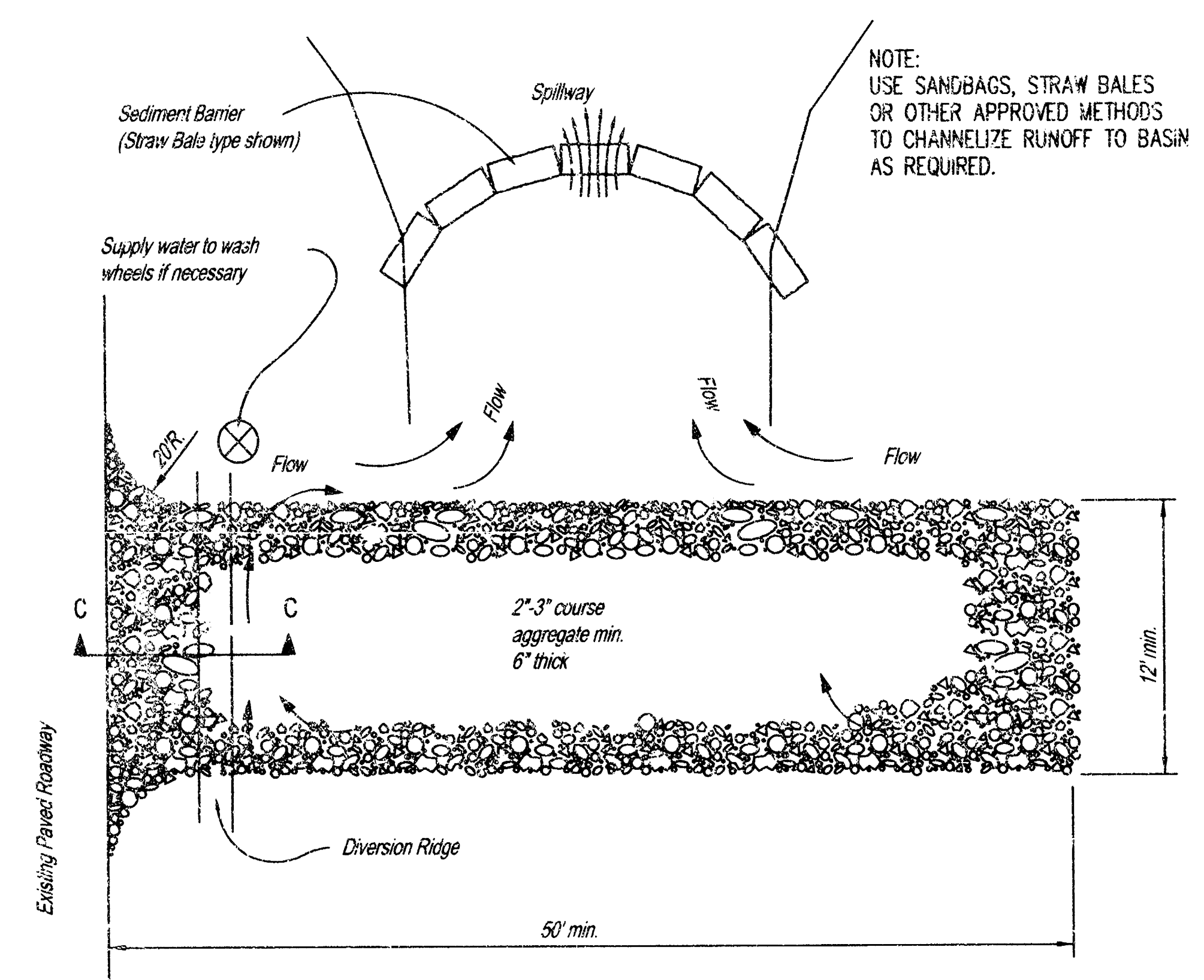
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



SECTION C-C

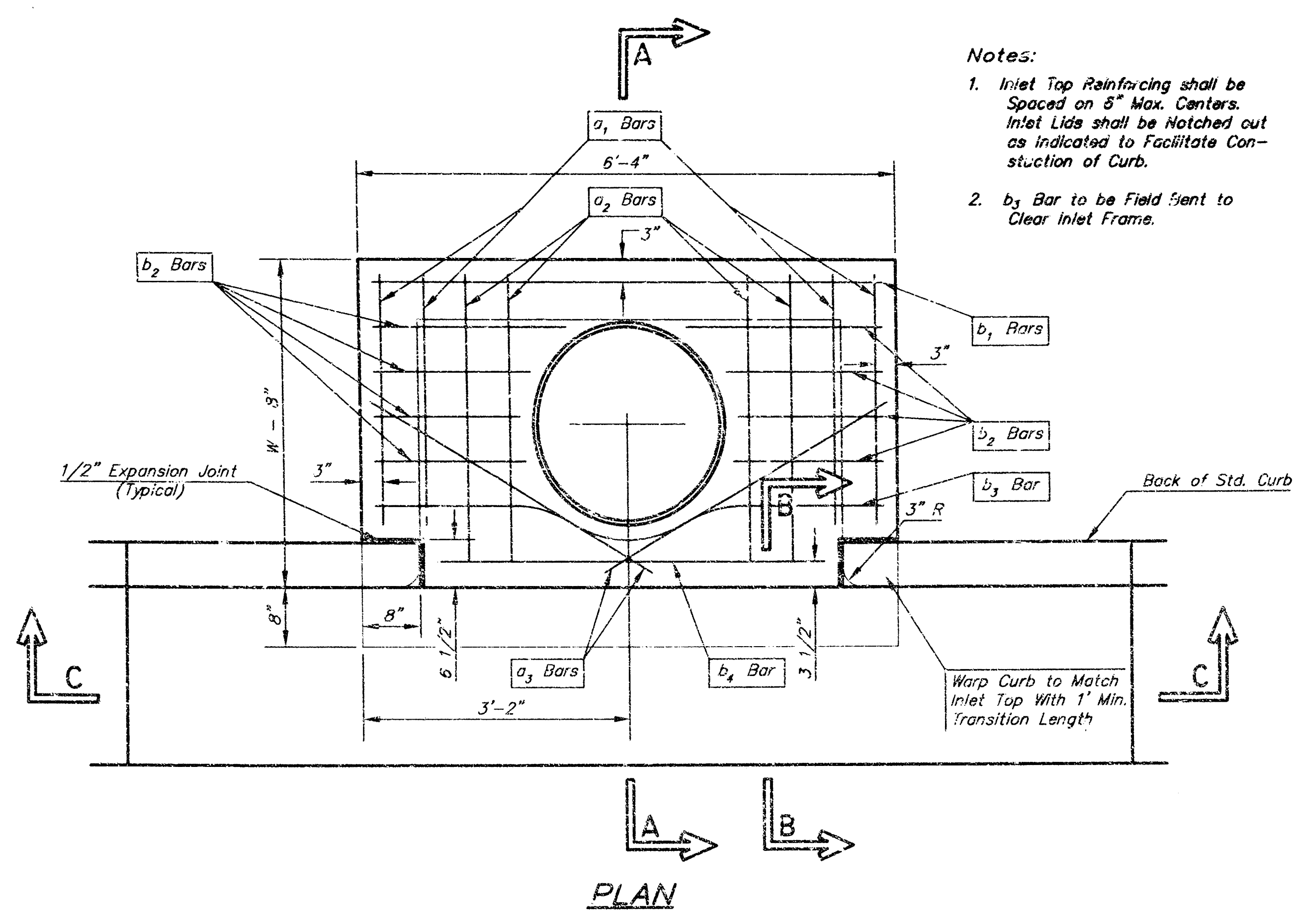


STABILIZED CONSTRUCTION ENTRANCE

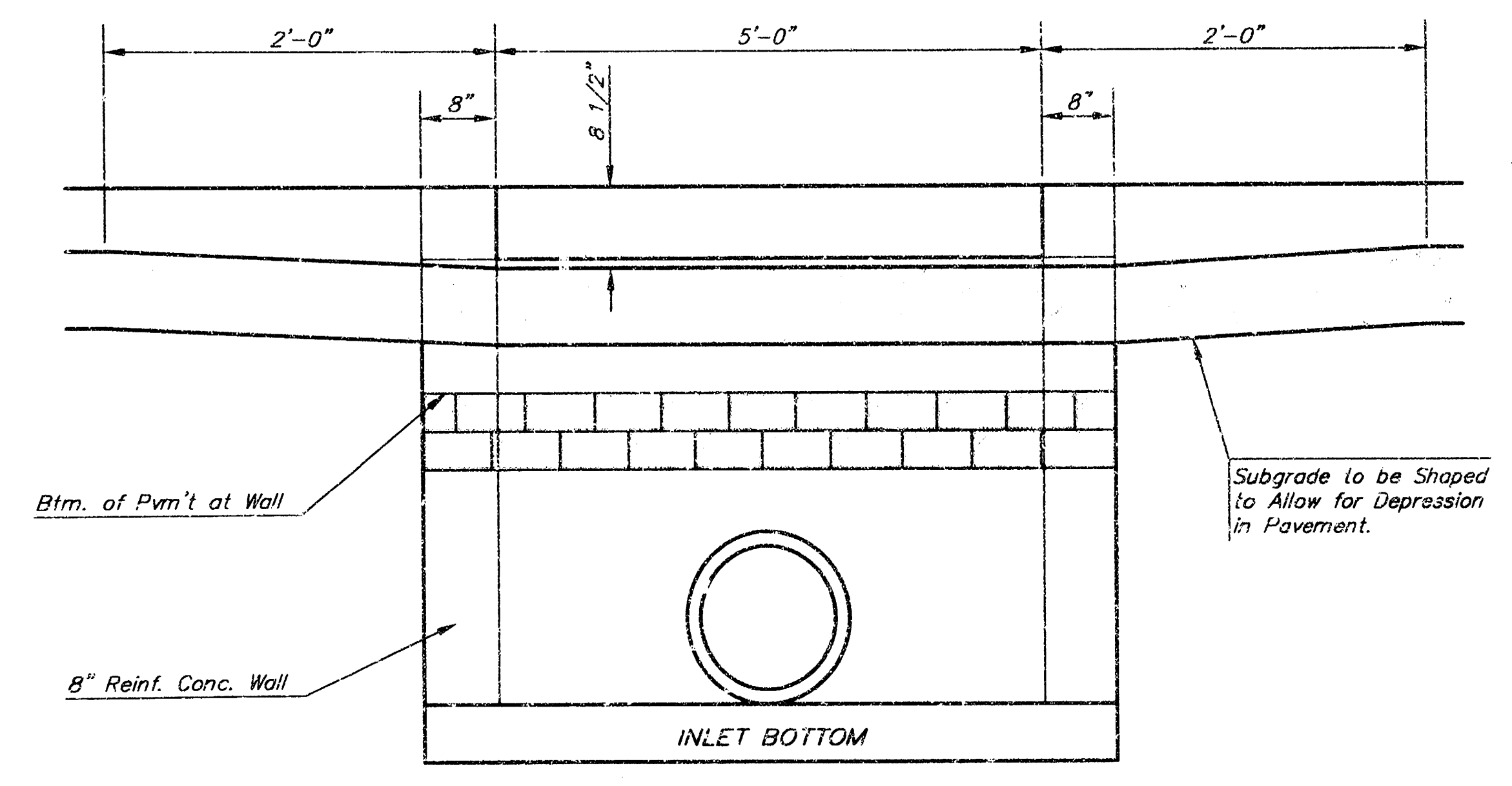
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

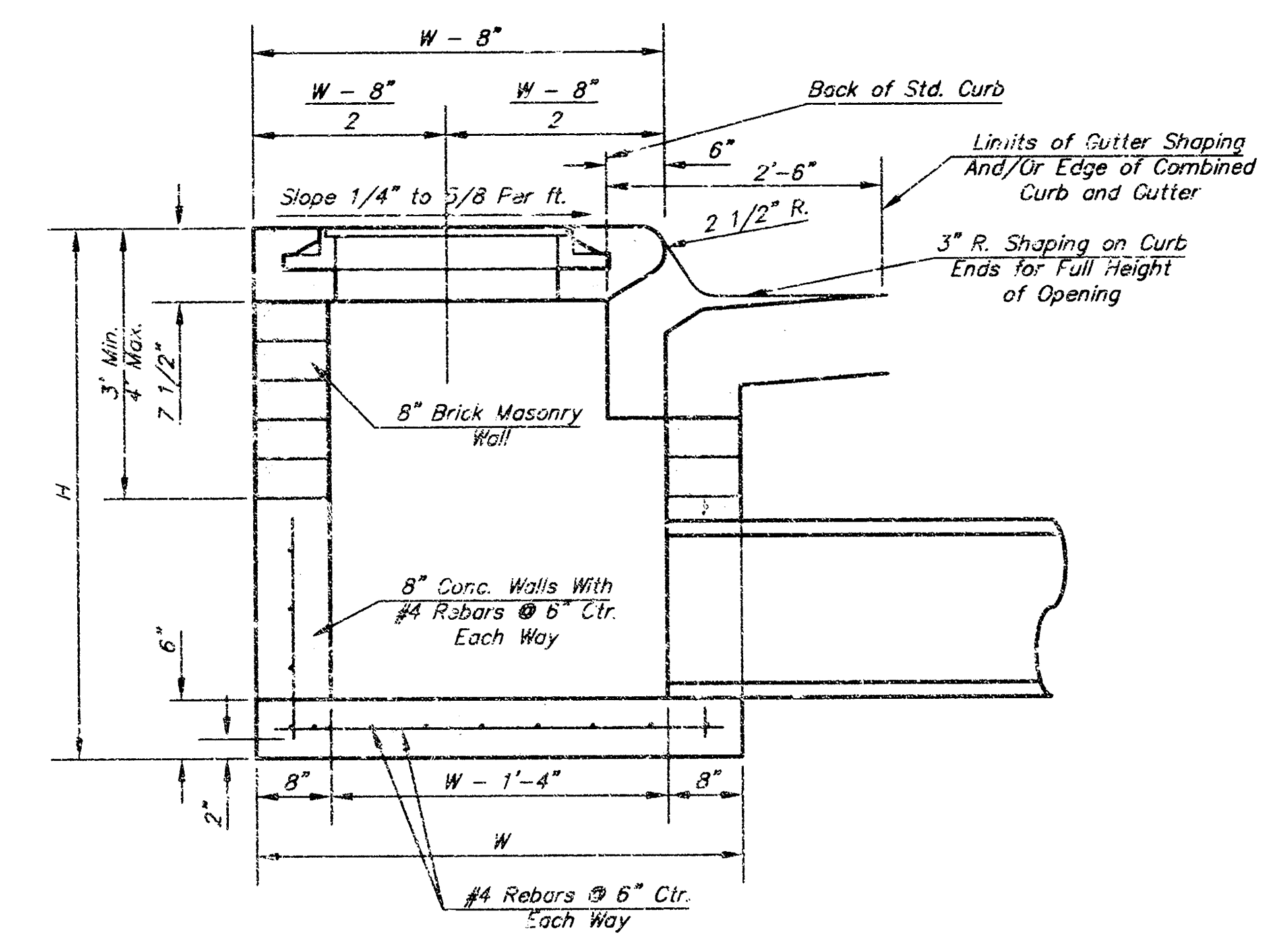
	SOIL EROSION BMP DETAILS	
	CHRISTOPHER M. CARRIER, P.E. STORM WATER ENGINEER	
	PROJECT NUMBER 1568 PPS 607861	CCA NO. XXX
	DATE MAY 2001	SHEET X OF X



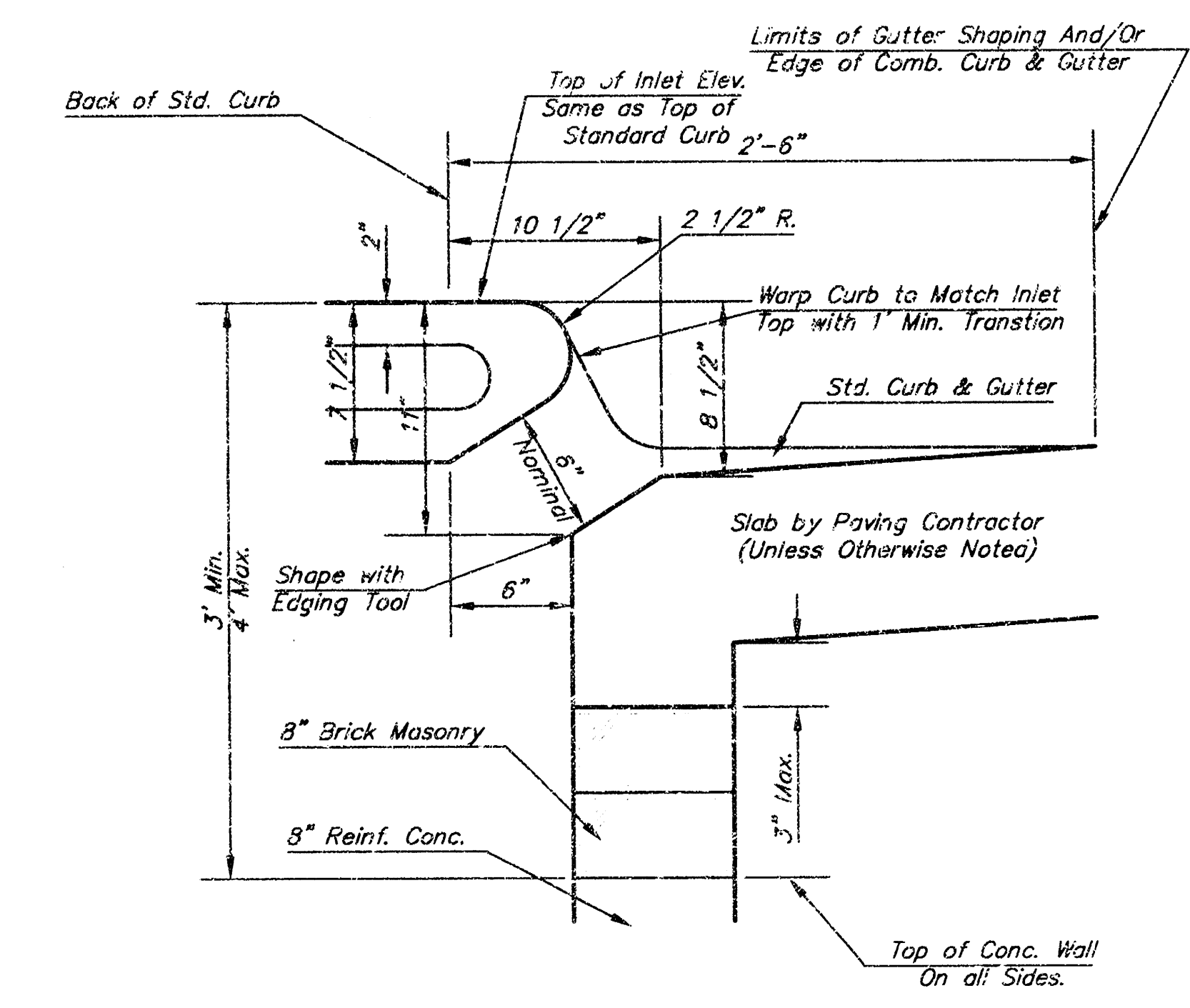
- Notes:**
1. Inlet Top Reinforcing shall be Spaced on 8" Max. Centers. Inlet Lids shall be Notched out as Indicated to Facilitate Construction of Curb.
 2. b_3 Bar to be Field Bent to Clear Inlet Frame.



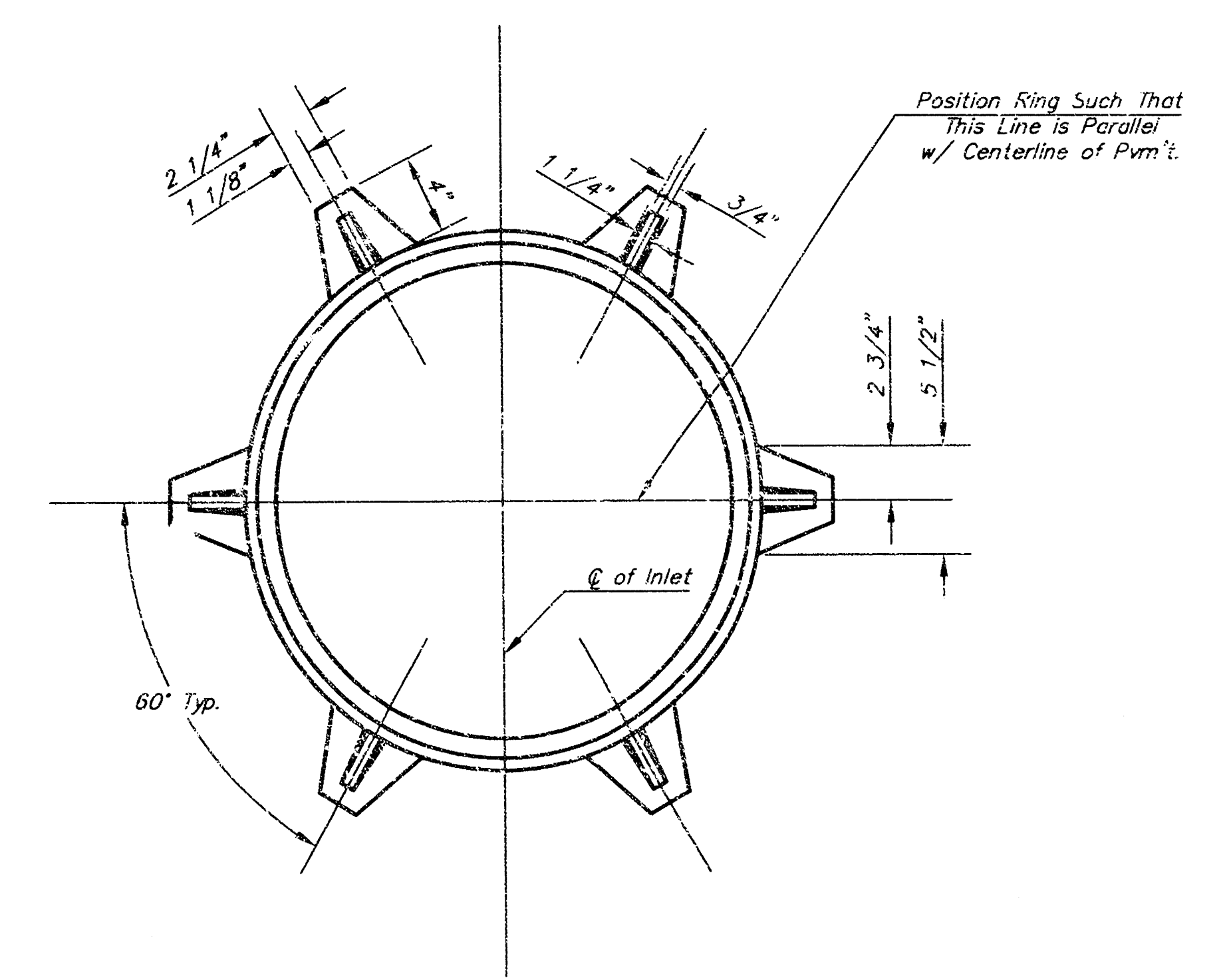
SECTION C-C



SECTION A-A

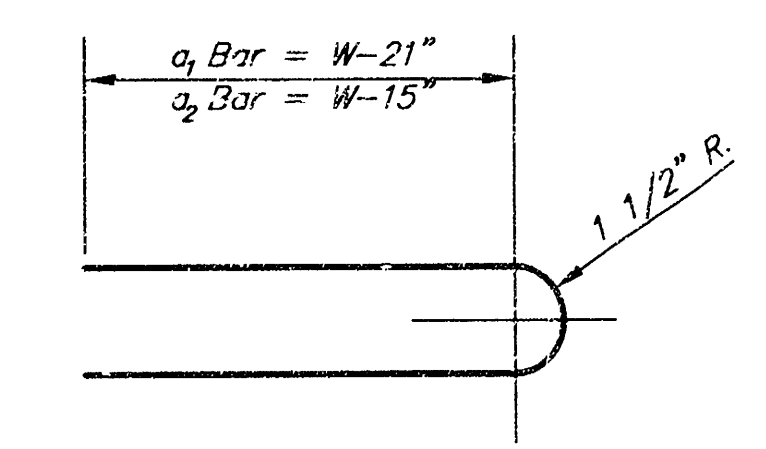


SECTION B-B



MANHOLE RING AND COVER

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



BENDING DIAGRAM

STEEL SCHEDULE

BAR	a ₁	a ₂	a ₃	b ₁	b ₂	b ₃	b ₄	WT. LBS.
NUMBER	4	4	2	1	3	5	7	9
SIZE	#4	#4	#4	#4	#4	#4	#4	#6
LENGTH	W-4'-4"	5'-7"	6'-7"	4'-0"	6'-1"	-	-	1'-9"
	W-5'-4"	7'-7"	8'-7"	5'-0"	-	6'-1"	-	1'-9"
	W-6'-4"	9'-7"	10'-7"	6'-0"	-	-	6'-1"	1'-9"
	W-7'-4"	11'-7"	12'-7"	7'-0"	-	-	-	1'-9"
	W-8'-4"	13'-7"	14'-7"	8'-0"	-	-	-	1'-9"

Note: a_3 Bars to be Placed Approx. 2" below Top of Inlet Cover.

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

GENERAL NOTES

1. 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.
2. Contractor shall have the option of constructing 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" and H=7'-0" or less.
3. 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.
4. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.

THE CITY OF WICHITA
CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MARK STREET
WICHITA, KANSAS 67202
(316) 268-4500
(316) 268-4114 FAX

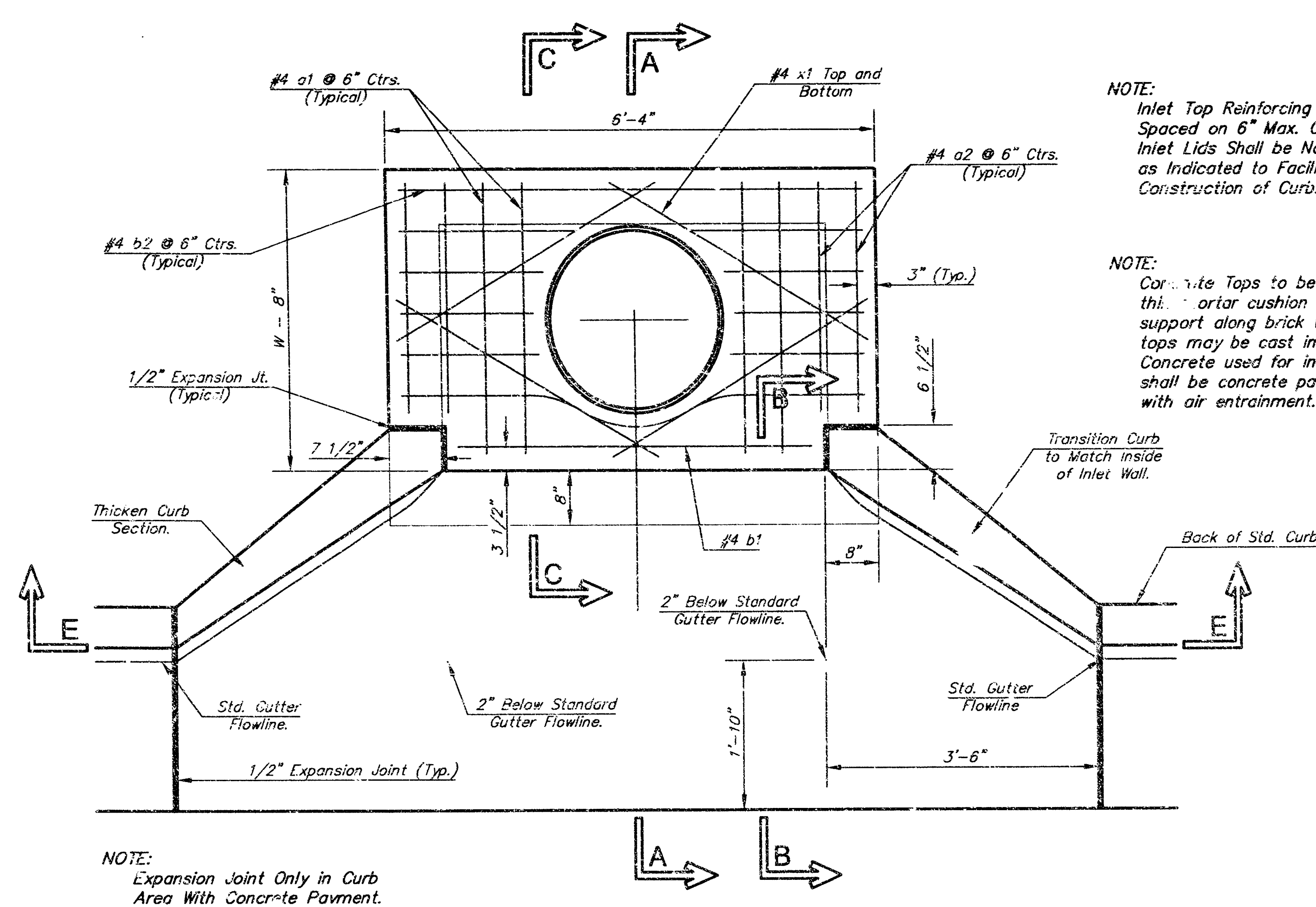
STANDARD TYPE 1 CURB INLET
OPENING = 6"x5'-0"

SEDG. CO. JUV. DET.

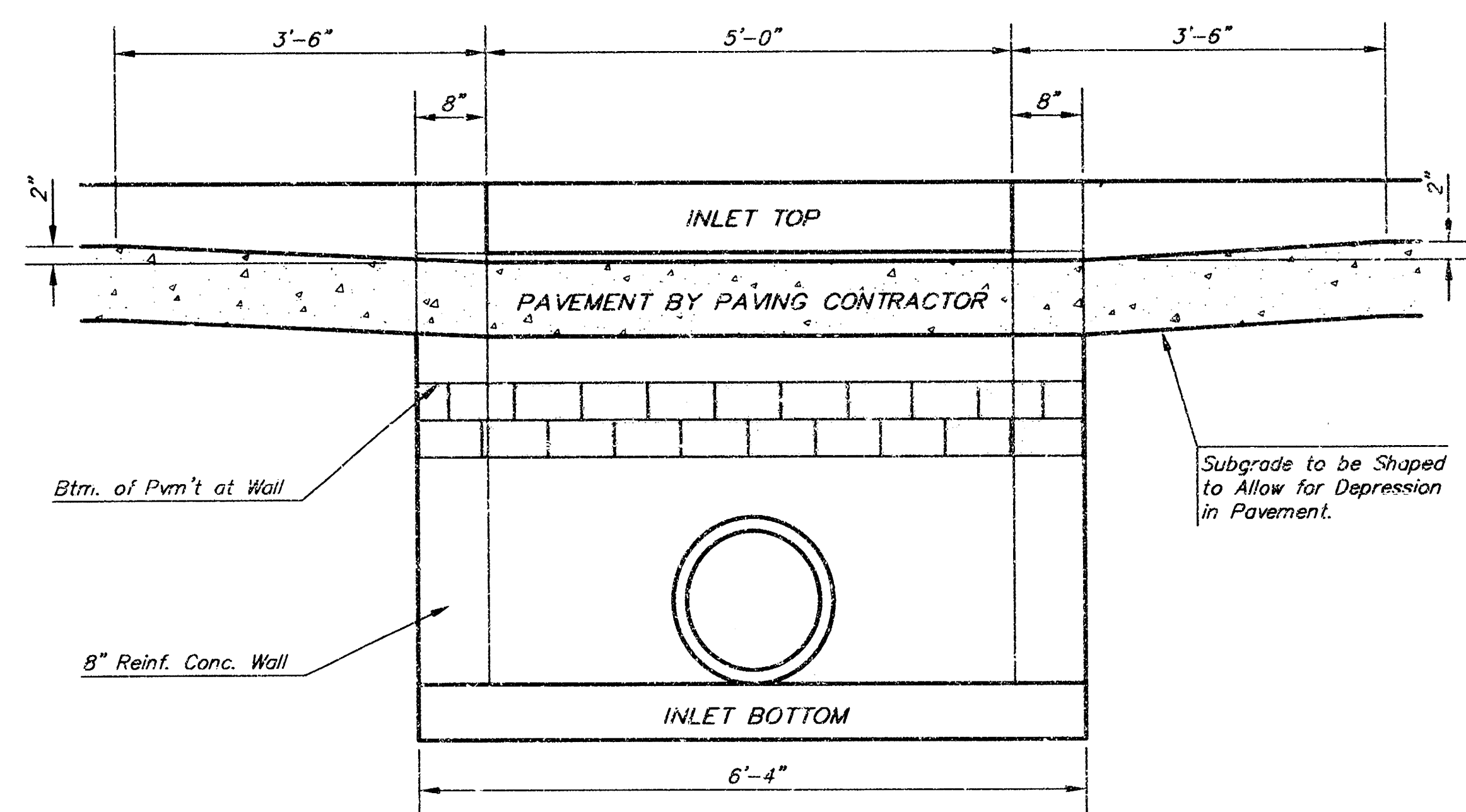
PROJECT NUMBER
1568 PPS 607861

DATE
MAR 96

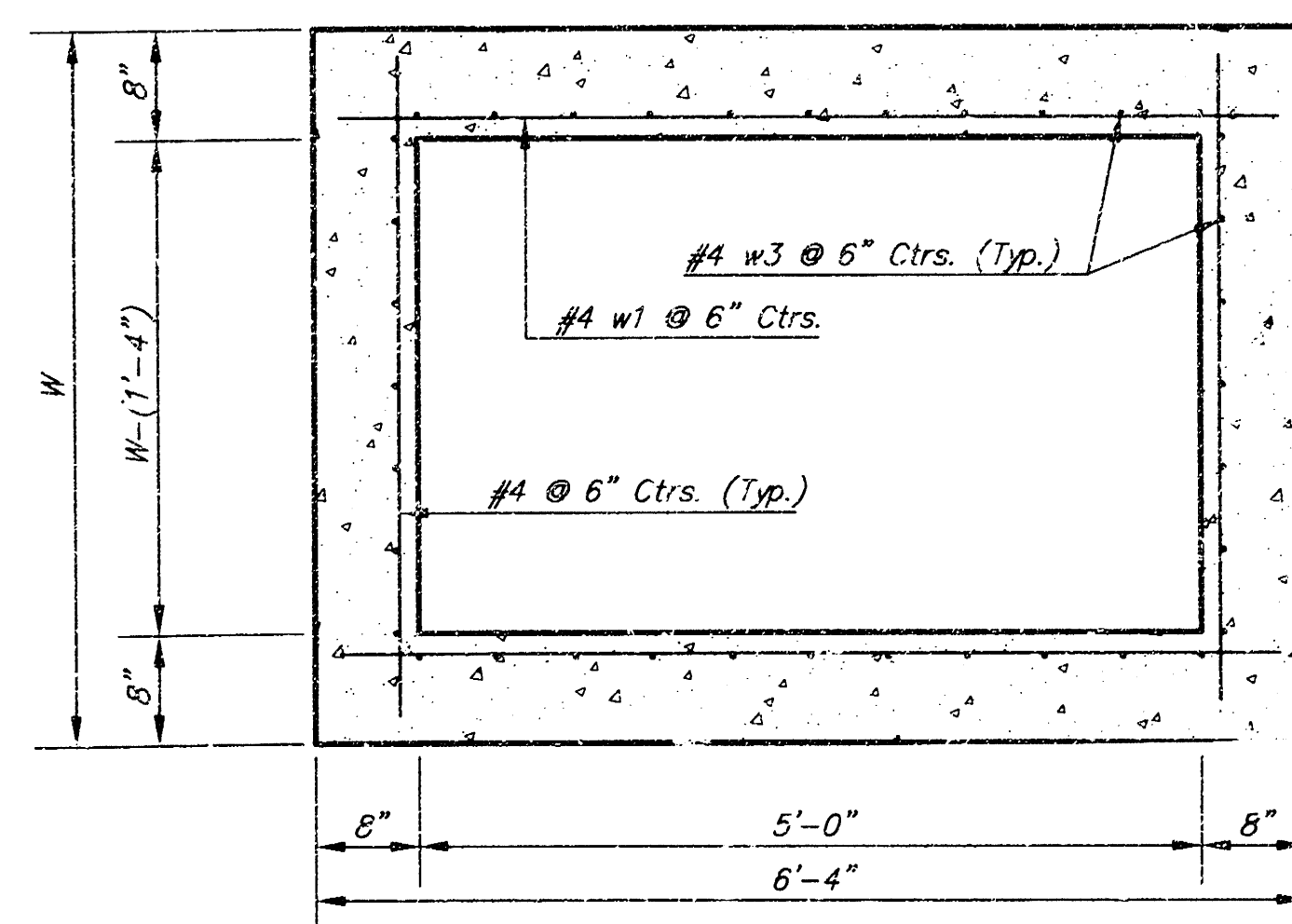
SHEET
6 OF 8



PLAN

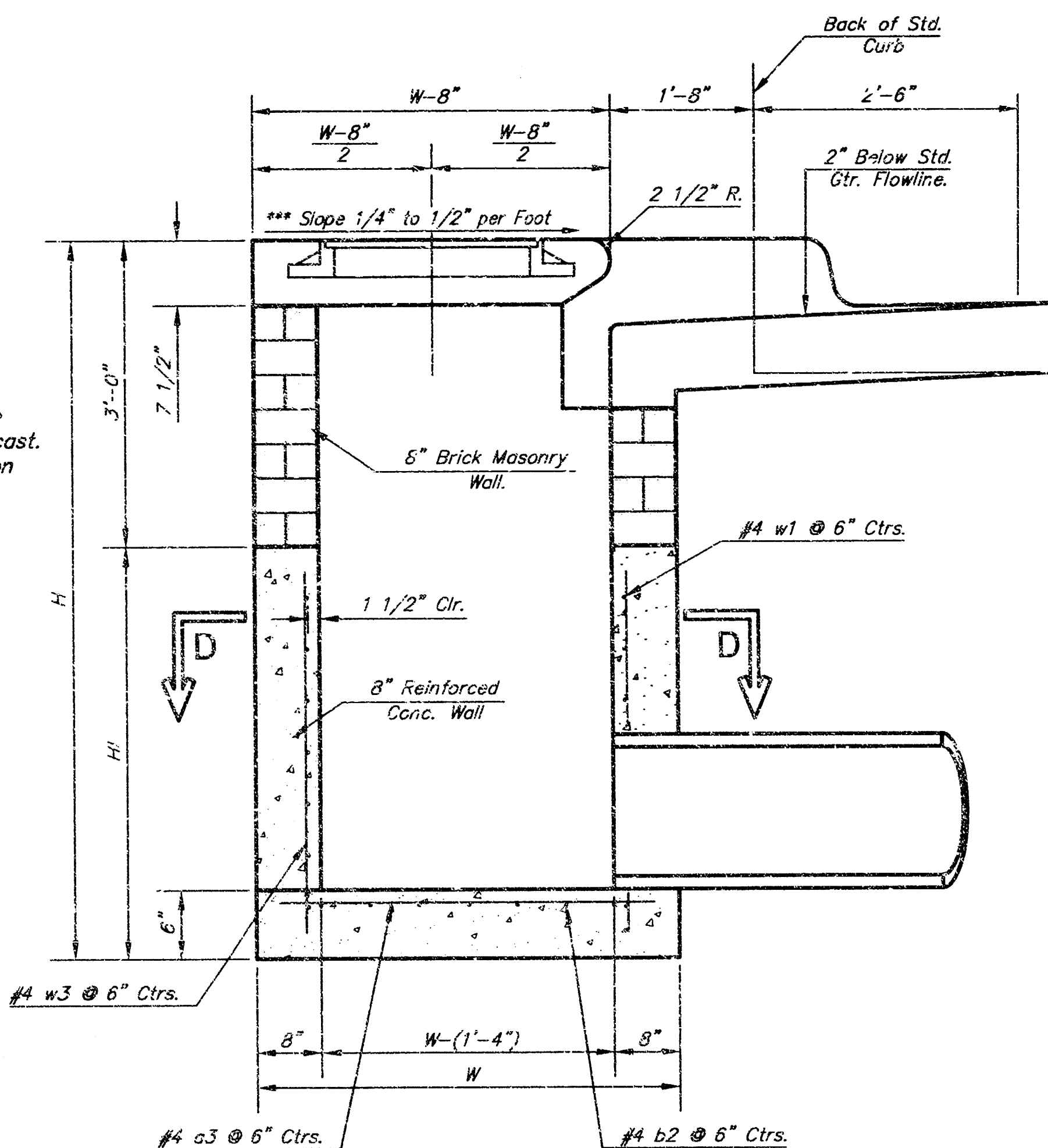


SECTION E-E

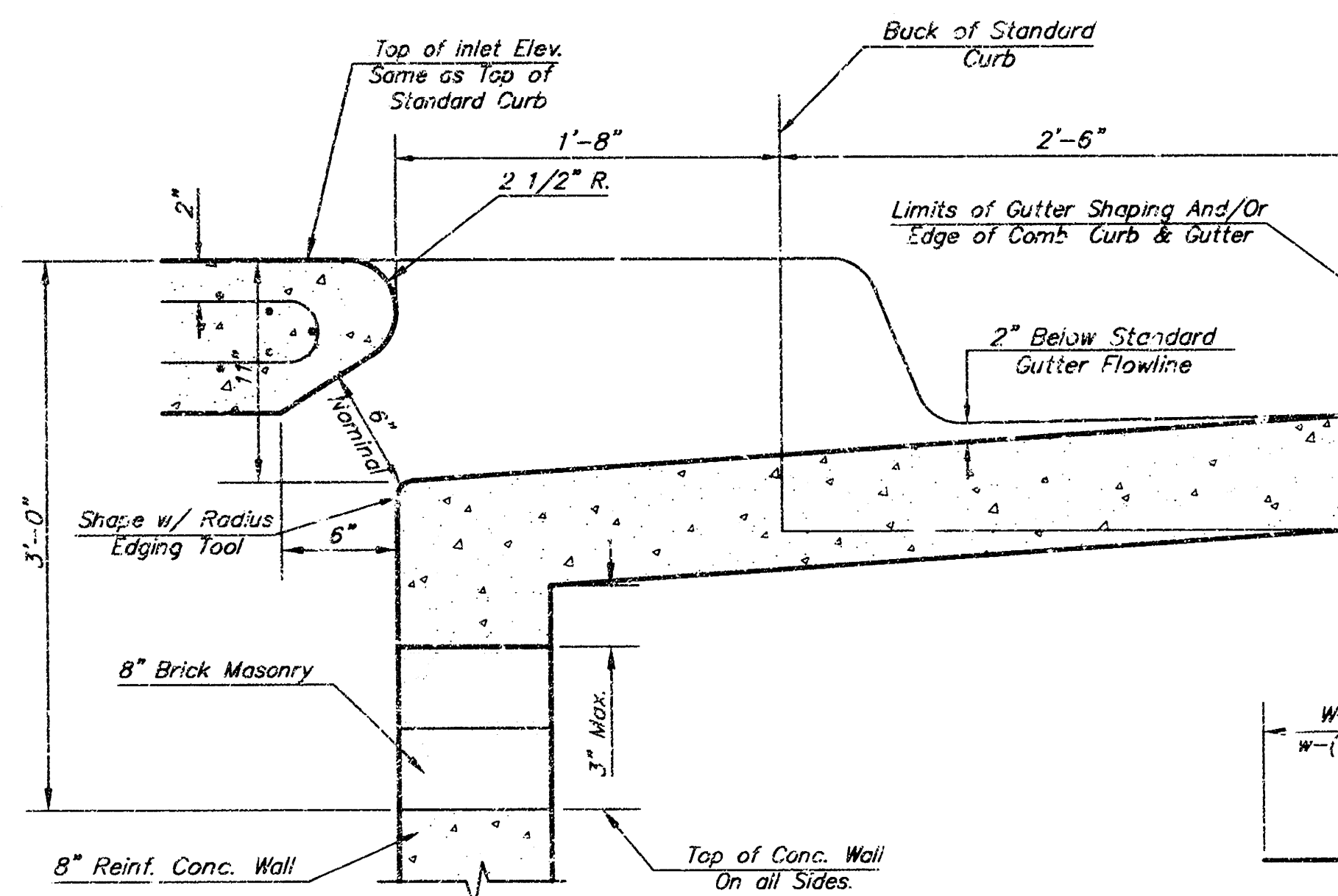


NOTE: Inlet Top Reinforcing shall be Spaced on 6" Max. Centers. Inlet Lids Shall be Notched Out as Indicated to Facilitate Construction of Curb.

NOTE: Concrete Taps to be installed on this orator cushion to insure full support along brick walls. Concrete taps may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix with air entrainment.



NOTE: Slope of Inlet tops to Match Sidewalk or Parking Slopes within Limits Indicated.

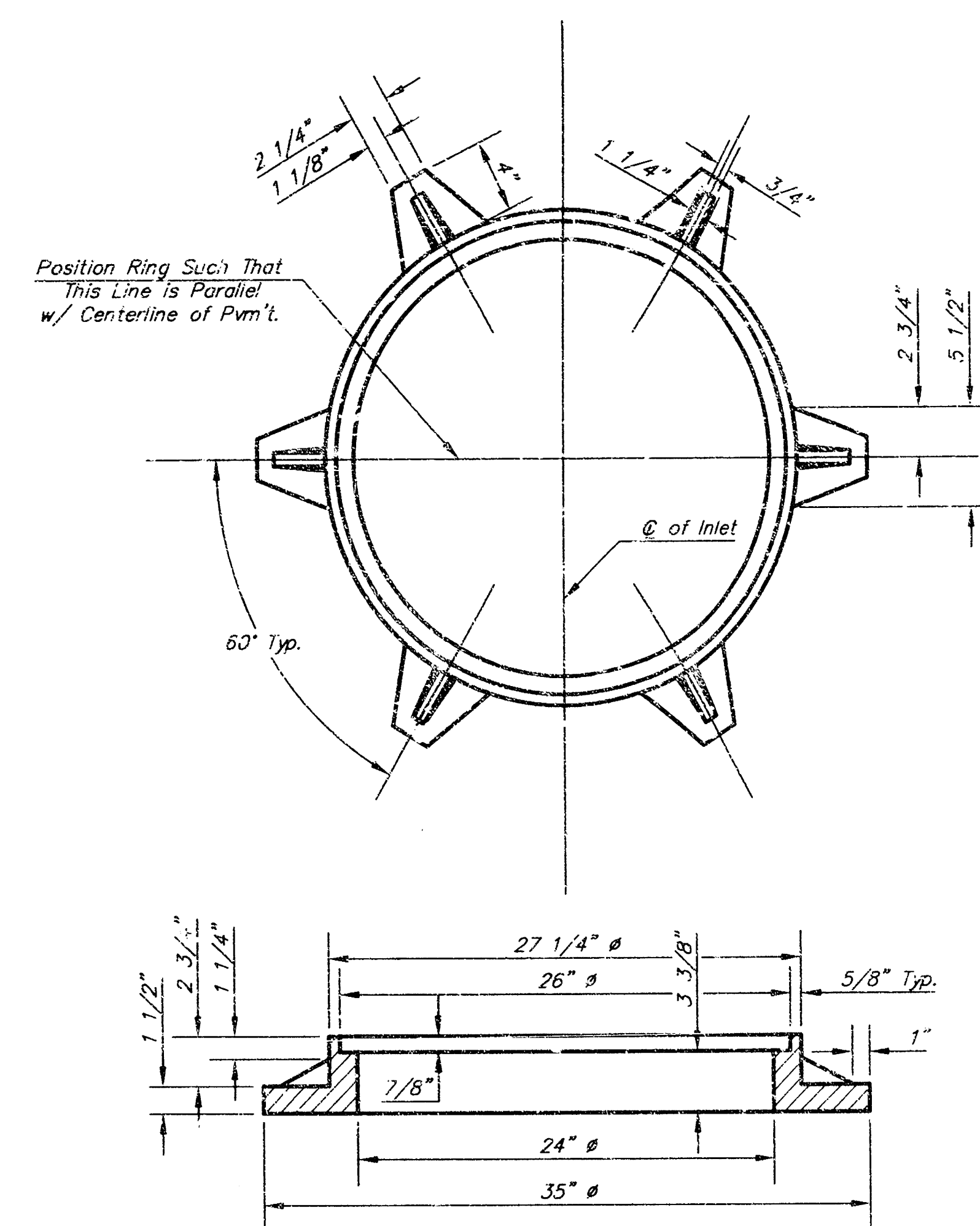


SECTION B-B

PRECAST SLAB AND FLOOR REINFORCING									
MARK	SIZE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
a1	#4	6	6'-7"	6	8'-7"	6	10'-7"	6	12'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	14'-0"
a3	#4	13	4'-1"	13	5'-1"	13	6'-1"	13	7'-1"
b1	#4	1	4'-5"	1	4'-9"	1	4'-9"	1	4'-9"
b2	#4	23	6'-1"	29	6'-1"	35	6'-1"	41	6'-1"
x1	#4	8	3'-10"	8	4'-2"	8	4'-6"	8	4'-10"

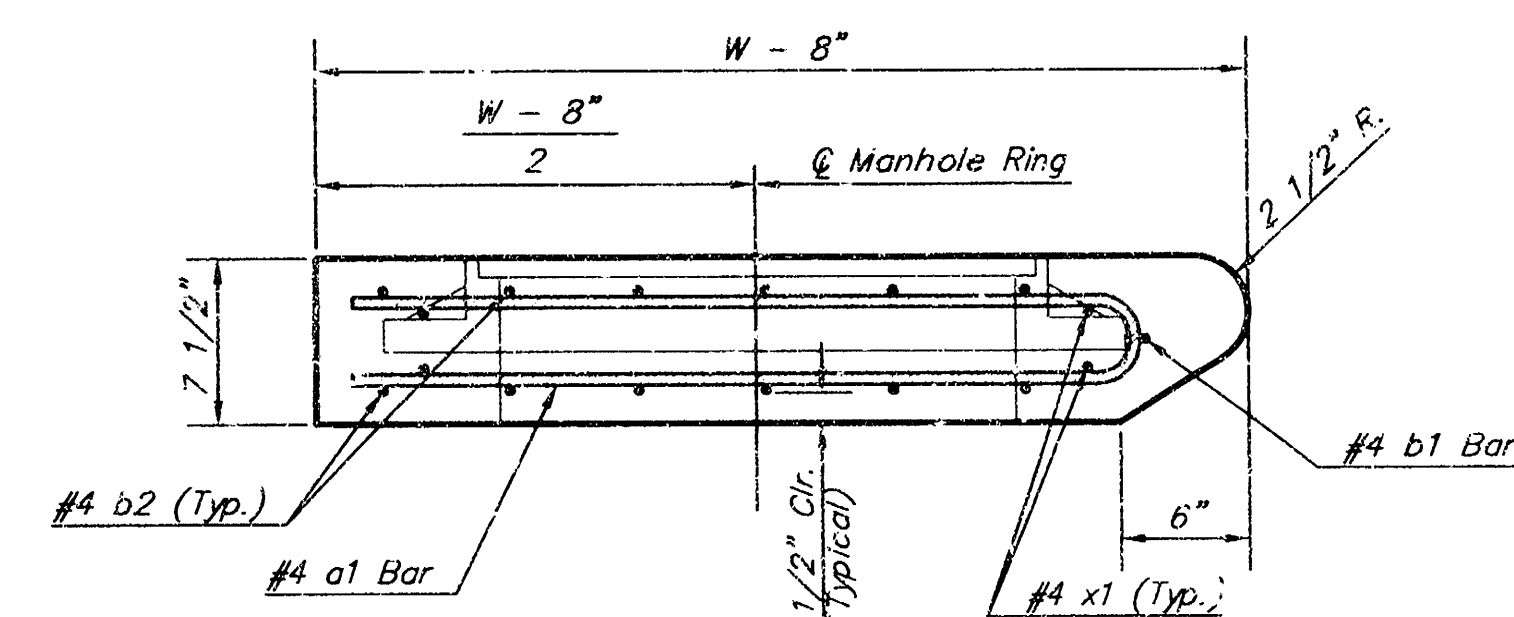
WALL REINFORCING									
MARK	SIZE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
w1	#4	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"
w2	#4	1	4'-1"	1	5'-1"	1	6'-1"	1	7'-1"
w3	#4	32	2	36	2	40	2	48	2

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



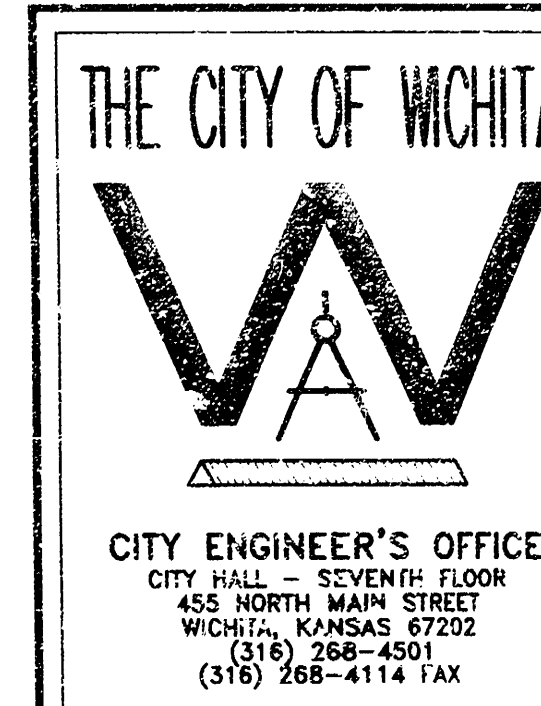
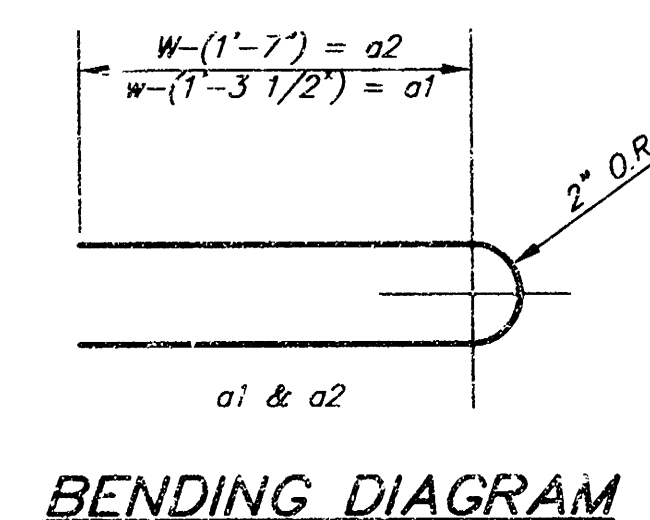
Weight = 180 Lbs.

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



SECTION A-A

STANDARD CURB INLET PRECAST TOPS				
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.	
4'-4"	3'-8" x 6'-4" x 7 1/2"	21" & SMALLER	0.38±	
5'-4"	4'-8" x 6'-4" x 7 1/2"	24" & 30"	0.51±	
6'-4"	5'-8" x 6'-4" x 7 1/2"	36" & 42"	0.64±	
7'-4"	6'-8" x 6'-4" x 7 1/2"	48" & 54"	0.77±	
8'-4"	7'-9" x 6'-4" x 7 1/2"	60" & 66"	0.90±	



STANDARD TYPE 1-A
CURB INLET
OPENING = 6"x5'-0"

SEDG. CO. JUV. DET.

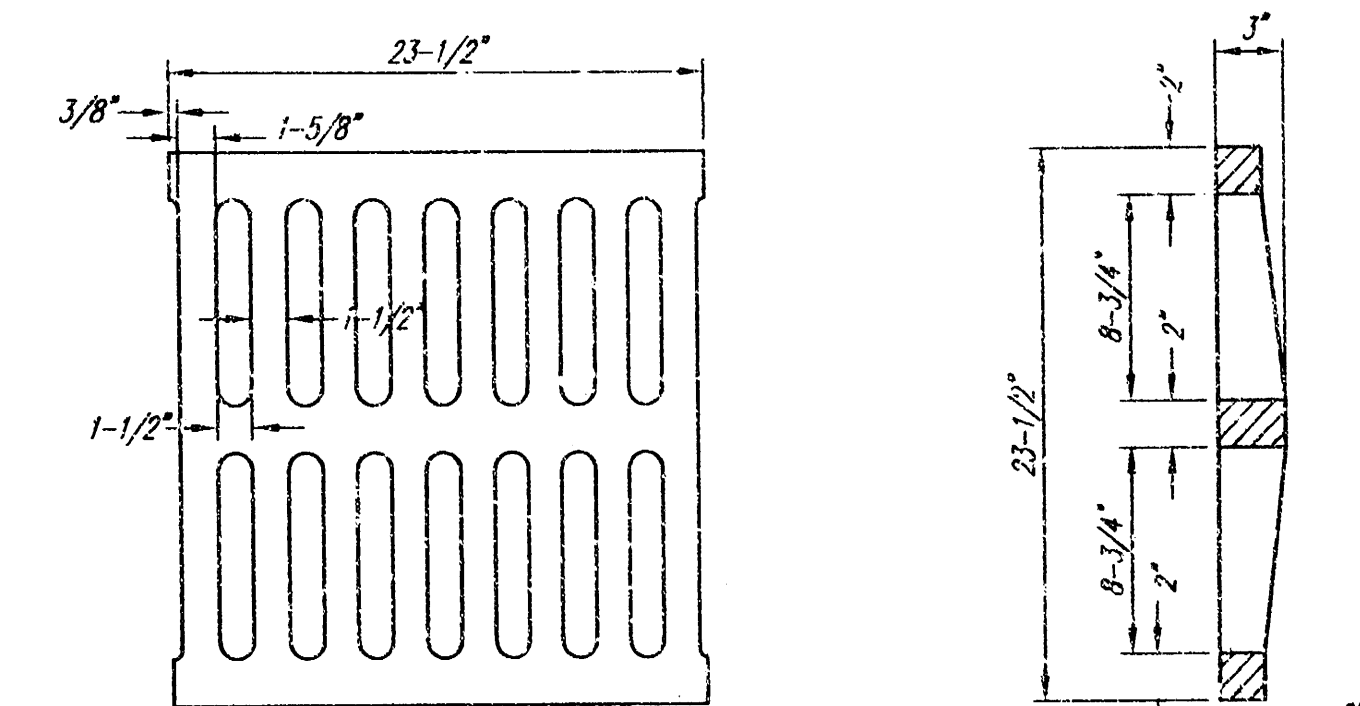
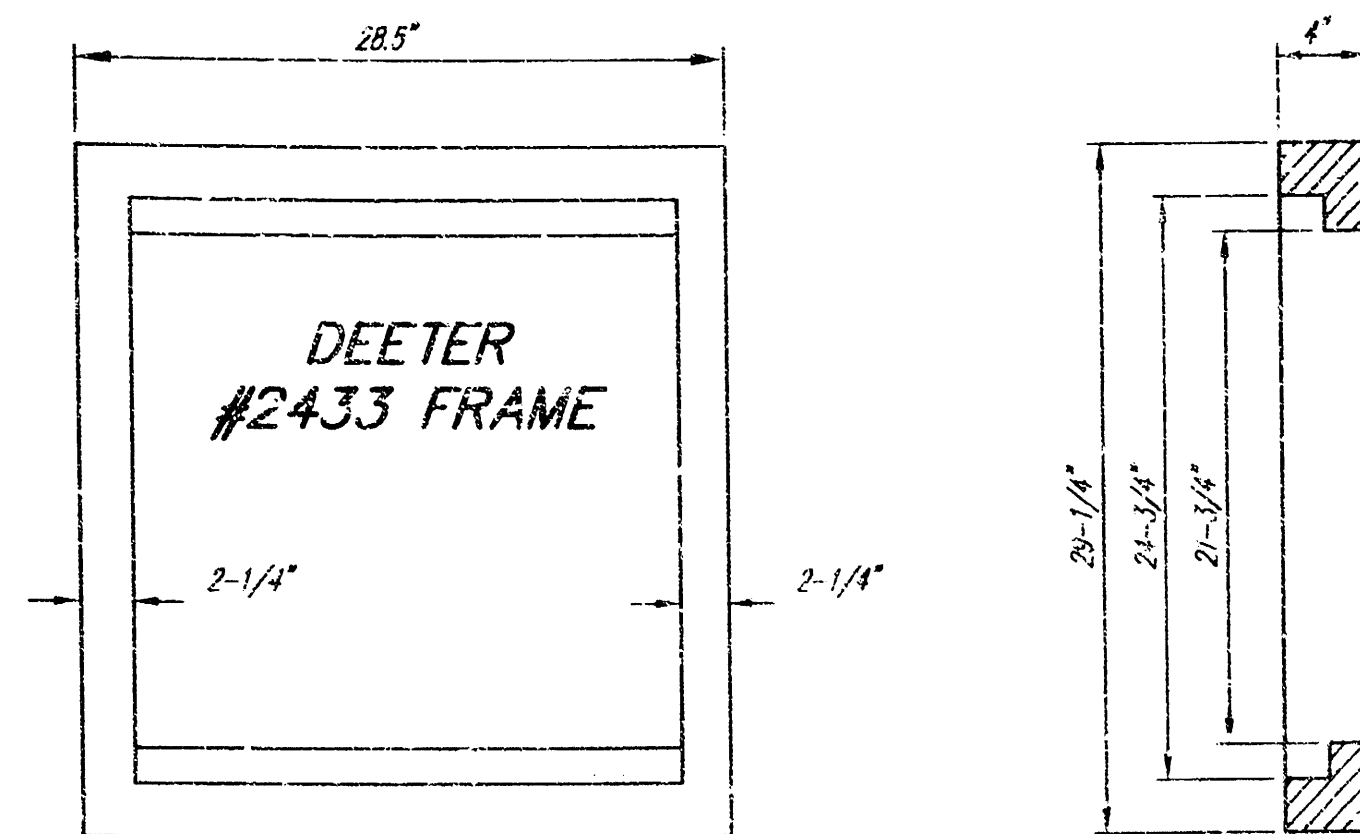
PROJECT NUMBER
1568 PPG 607861

OCA #

DATE
MAR 95

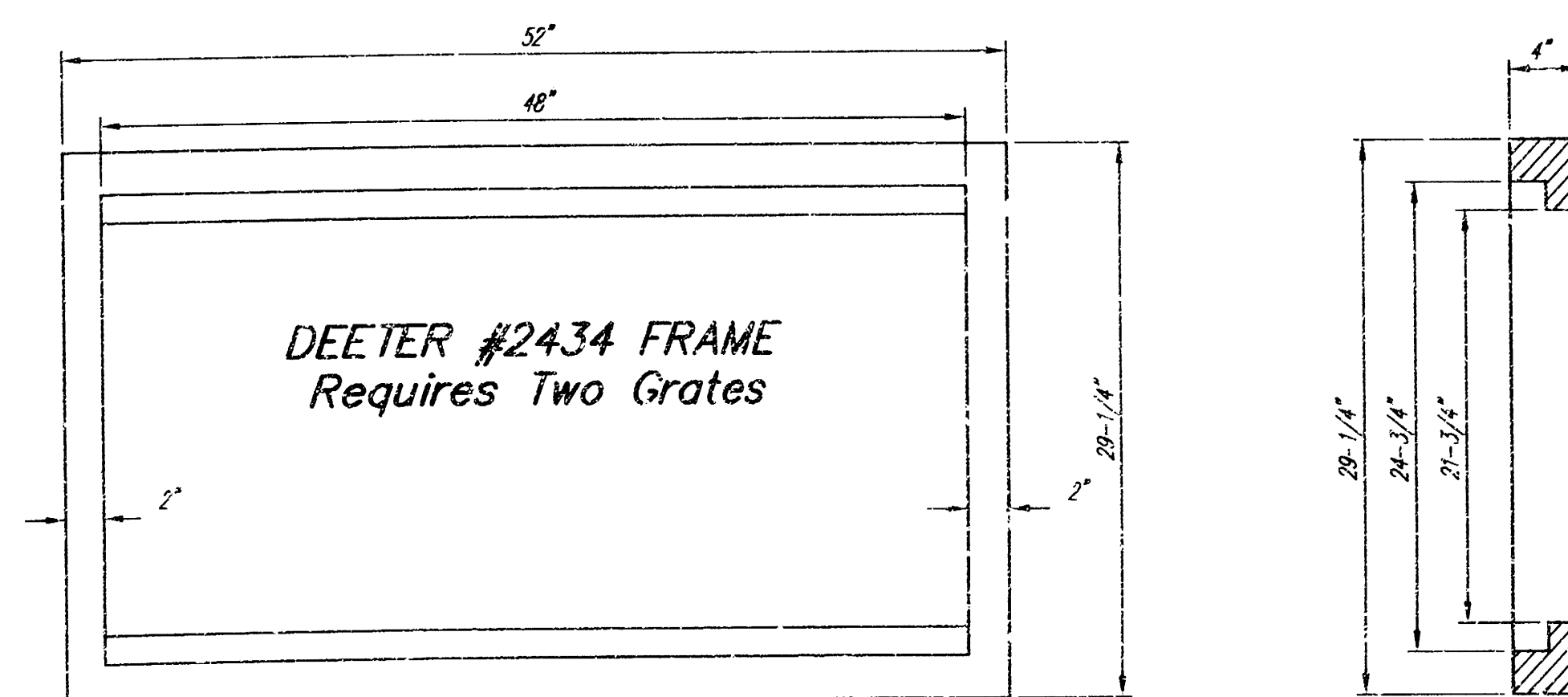
SHEET 7 OF 8

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
405 NORTH MARK STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

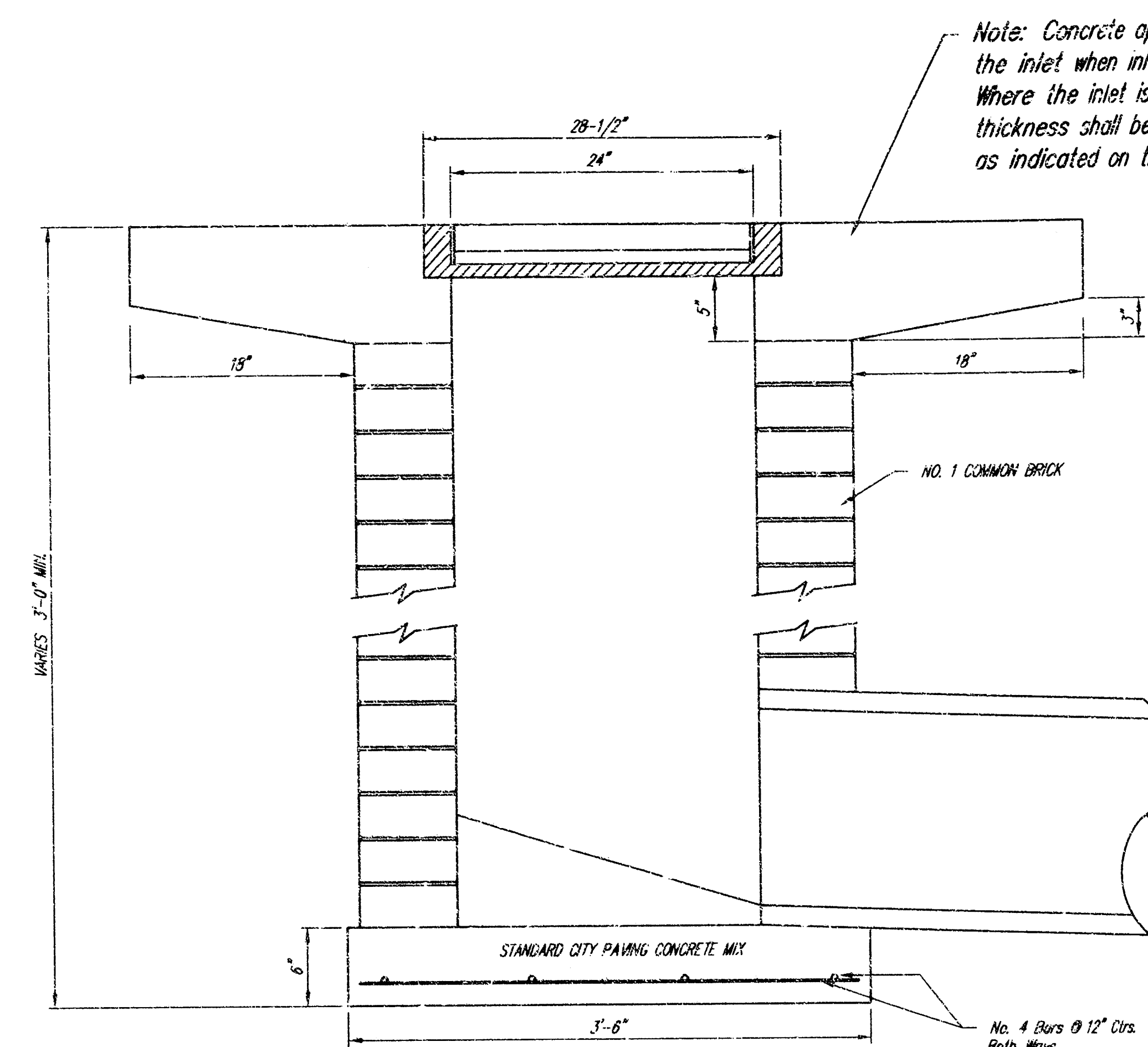
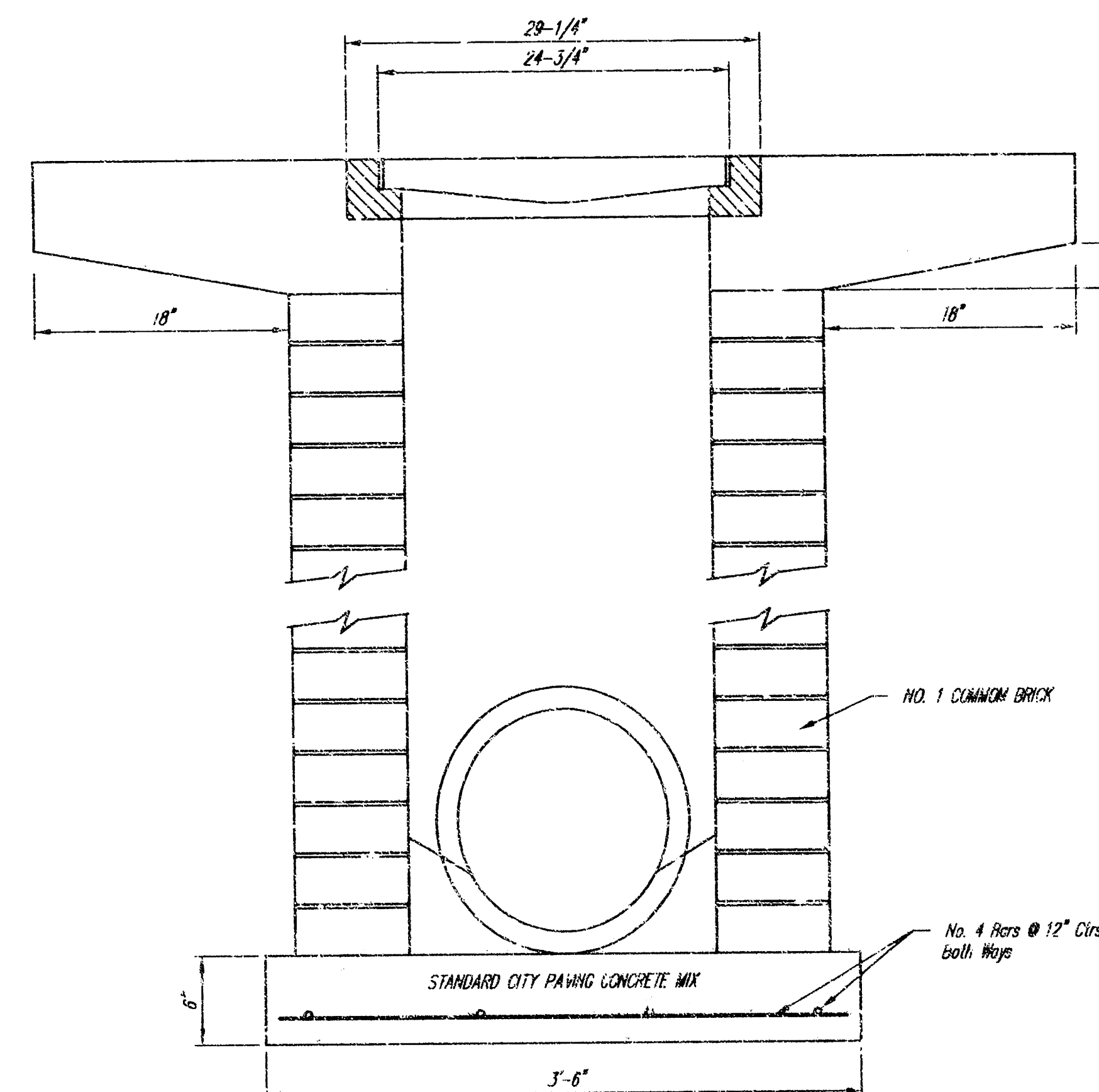


DEETER #2433 GRATE

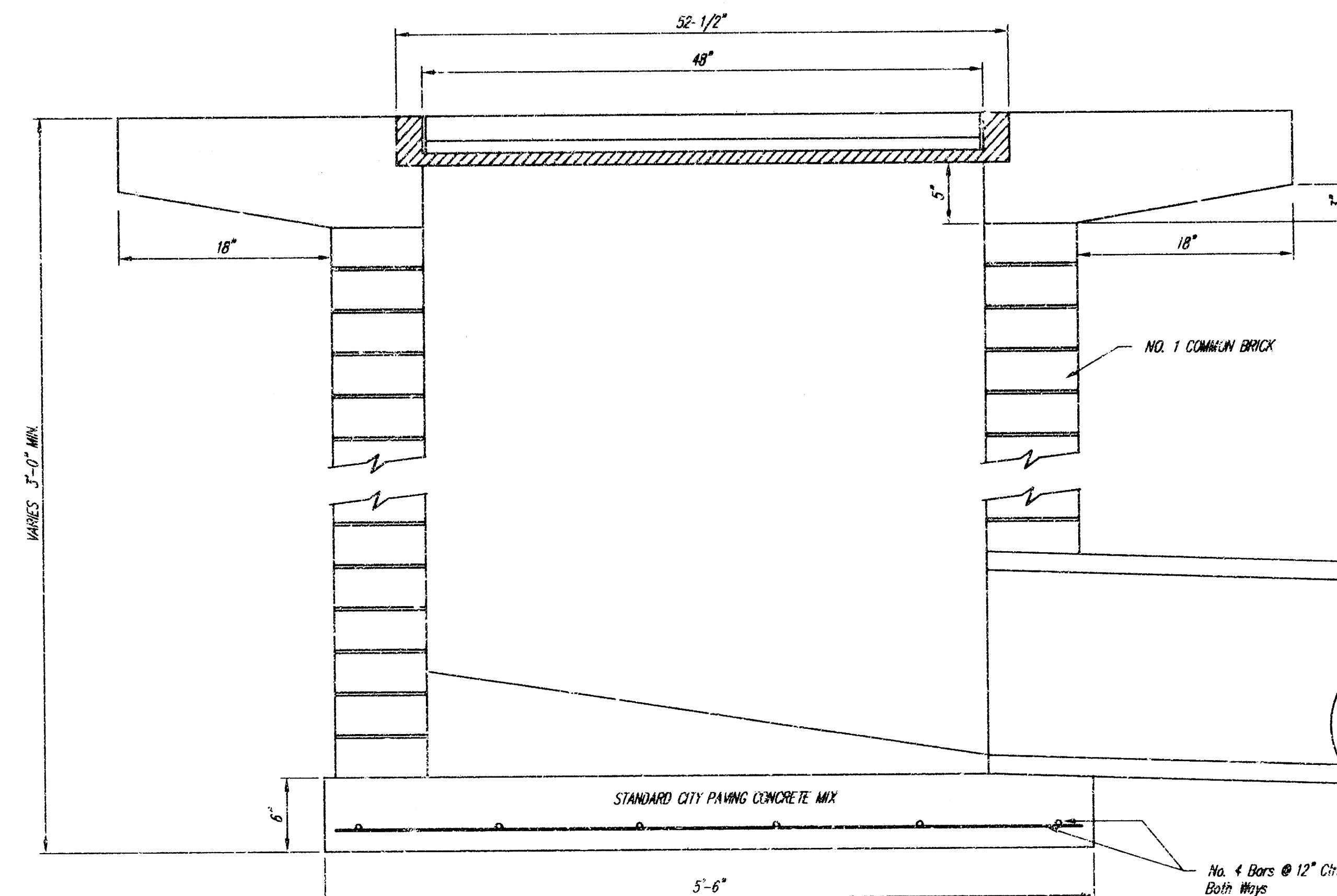
24" x 24" Frame and Grate Detail



Double 24" x 24" Frame Detail



Note: Concrete apron shall be constructed around the inlet when inlet is located in an unpaved area. Where the inlet is adjacent to pavement, the pavement thickness shall be tapered to the inlet in 18 inches as indicated on the detail.



THE CITY OF WICHITA CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4200 (316) 268-4114 FAX	DROP INLET 2'x2' / 2'x4'	
	SEDG. CO. JUV. DET.	
	PROJECT NUMBER 1568 PPS 607861	OCA #
	DATE MAR 96	SHEET 8 OF 8