

STORM WATER SEWER IMPROVEMENTS FOR GRAF-GOLDSTON ADDITION

SWS #278

PROJECT NO.: 468-81426

INDEX NO.: 750786

CITY OF WICHITA, KANSAS

MICHEAL E. LINDEBAK - CITY ENGINEER

INDEX OF SHEETS

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7. Type 1A Inlet Details (double)
8. Standard Manhole Details
9. Shallow Manhole Details
10. Plot Copy

GENERAL NOTES

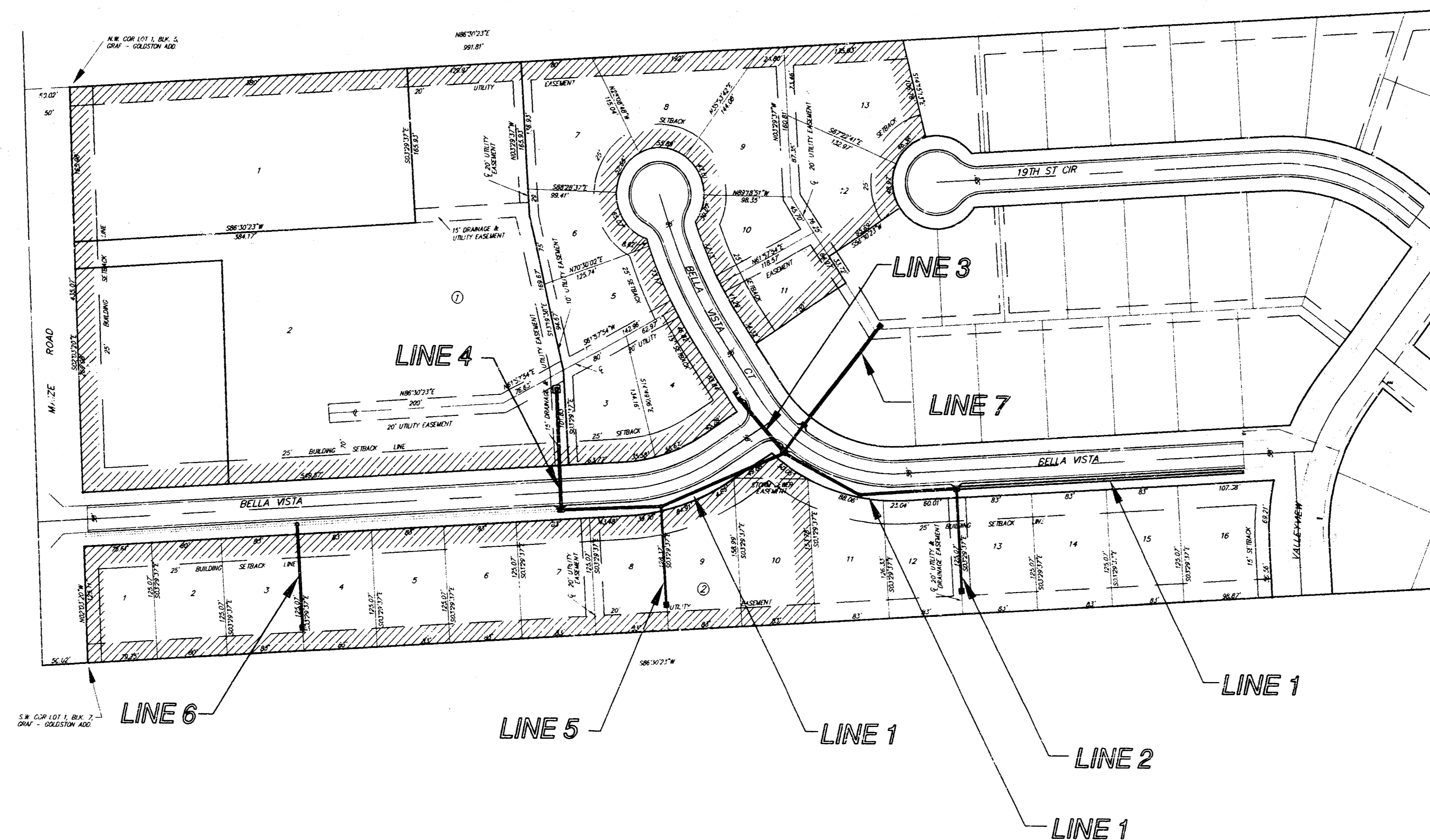
1. Interurban traffic generated outside the project area and local business or apartment traffic generated within the project area are to be carried through construction as further promulgated by project special provisions.
2. Underground utility service lines and overhead utility pole lines are to be 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.
3. Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps permitting regulations. Any material buried or stockpiled beyond approved of Engineer's construction limits would require additional archeological investigations unless buried in a previously approved borrow location.
4. Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed new construction shall be saved and protected from damage.
5. The Contractor shall give all property owners and/or tenants of developed property directly abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.
6. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws.

BENCH MARKS

CITY OF WICHITA

- BM #1 "x" cut in top of curb at Southwest corner of E-W sidewalk at West Towne Baptist Church
Elev. 164.92
- BM #2 "x" cut in top of Retaining wall at Southeast corner of parking lot at Acrobatic Academy
Elev. 165.14
- BM #3 City of Wichita BM Disc 64' East & 99' South of centerline of Maize Road & 21st Street North
Elev. 164.30

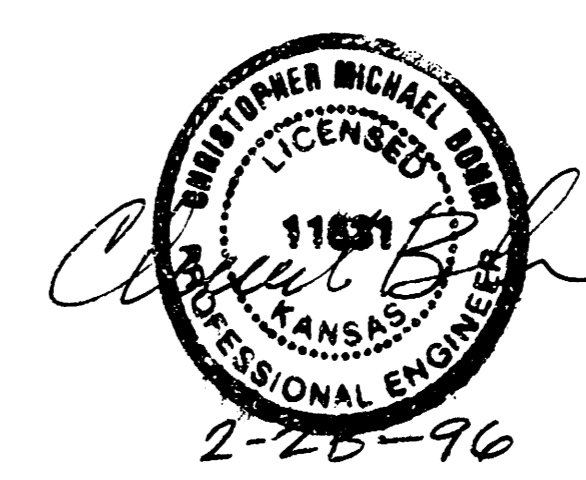
SCALE: 1"=100'



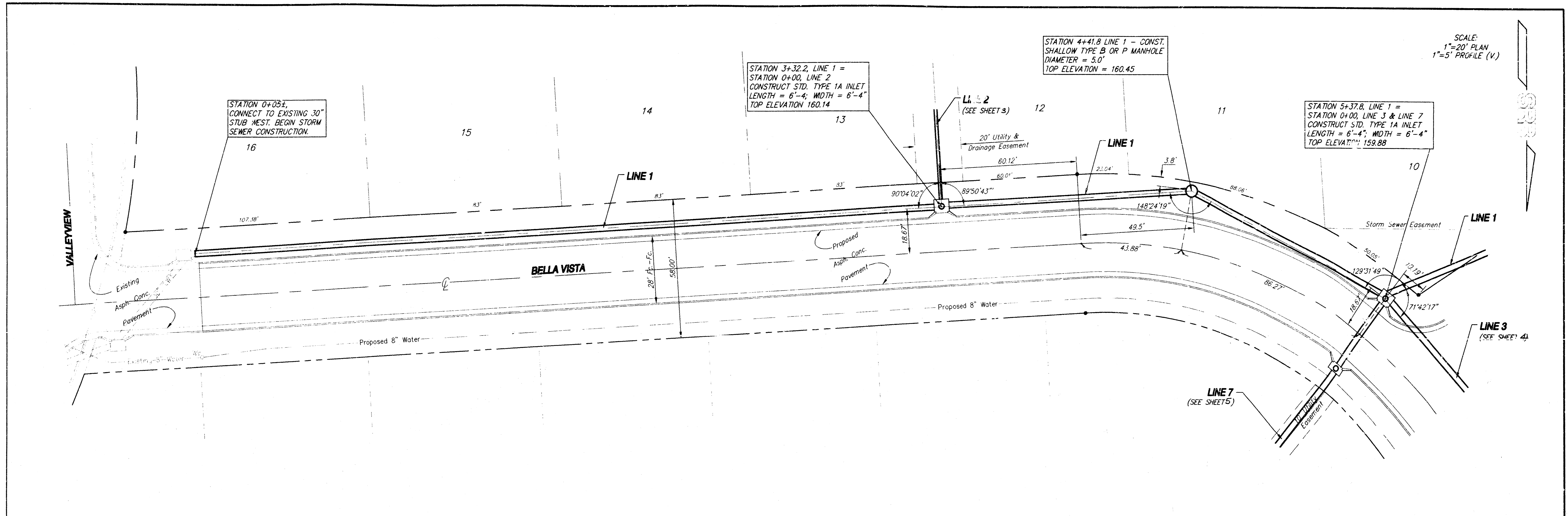
////// FUTURE BENEFIT DISTRICT

BOOKED
5-24-96
MCG
D-295

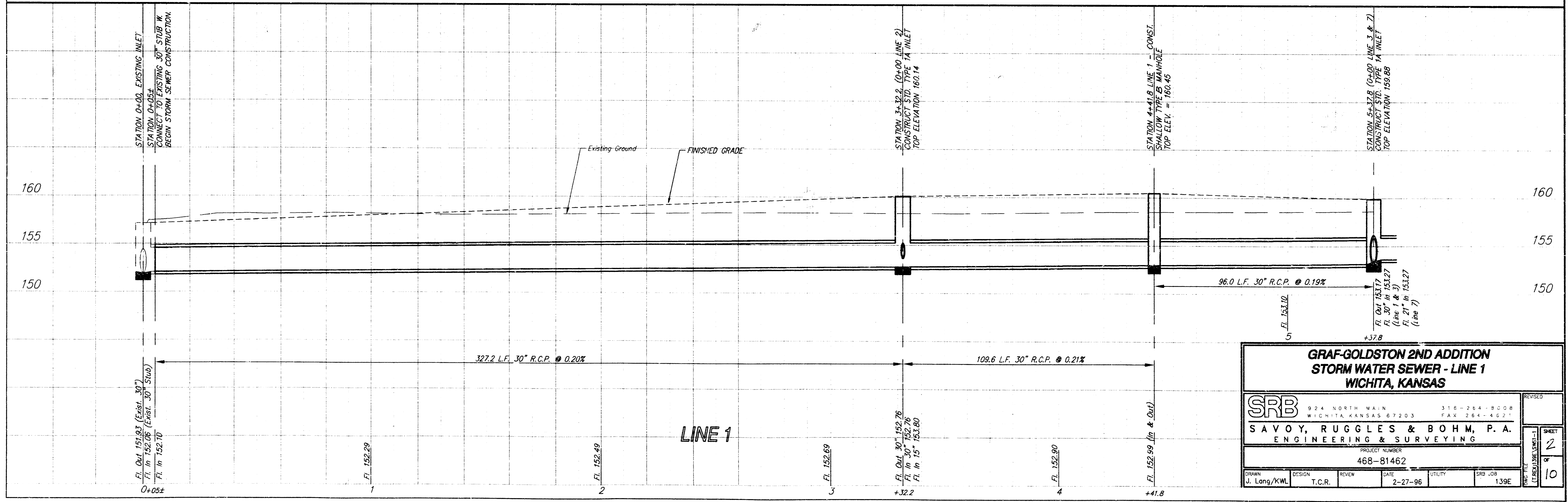
2-28-96



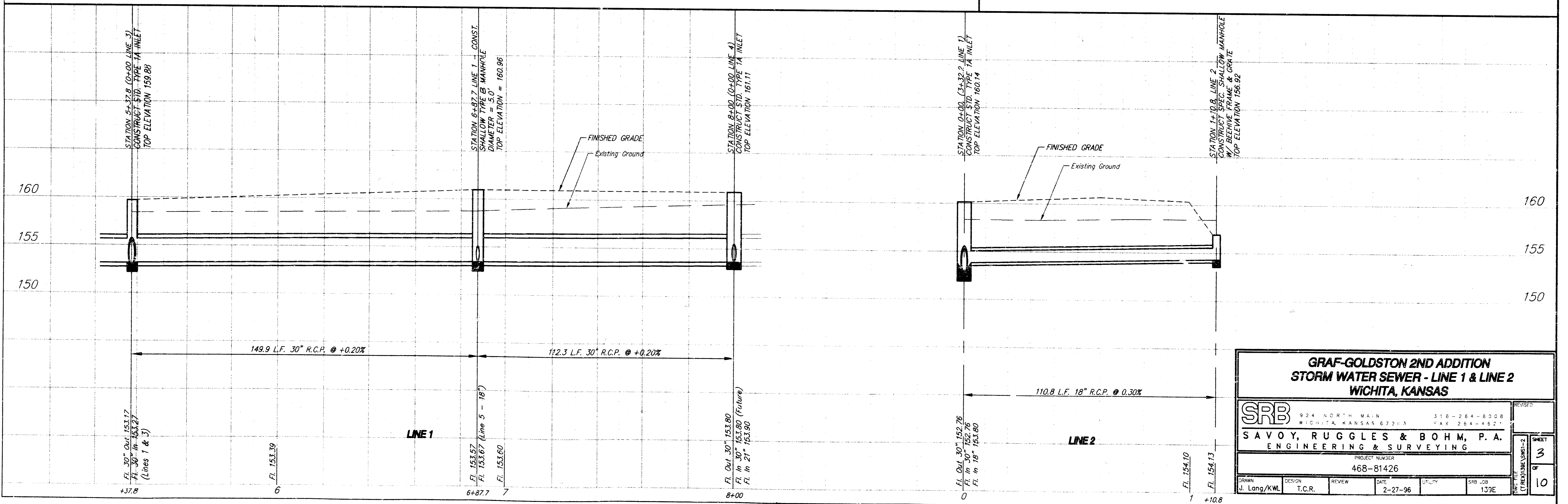
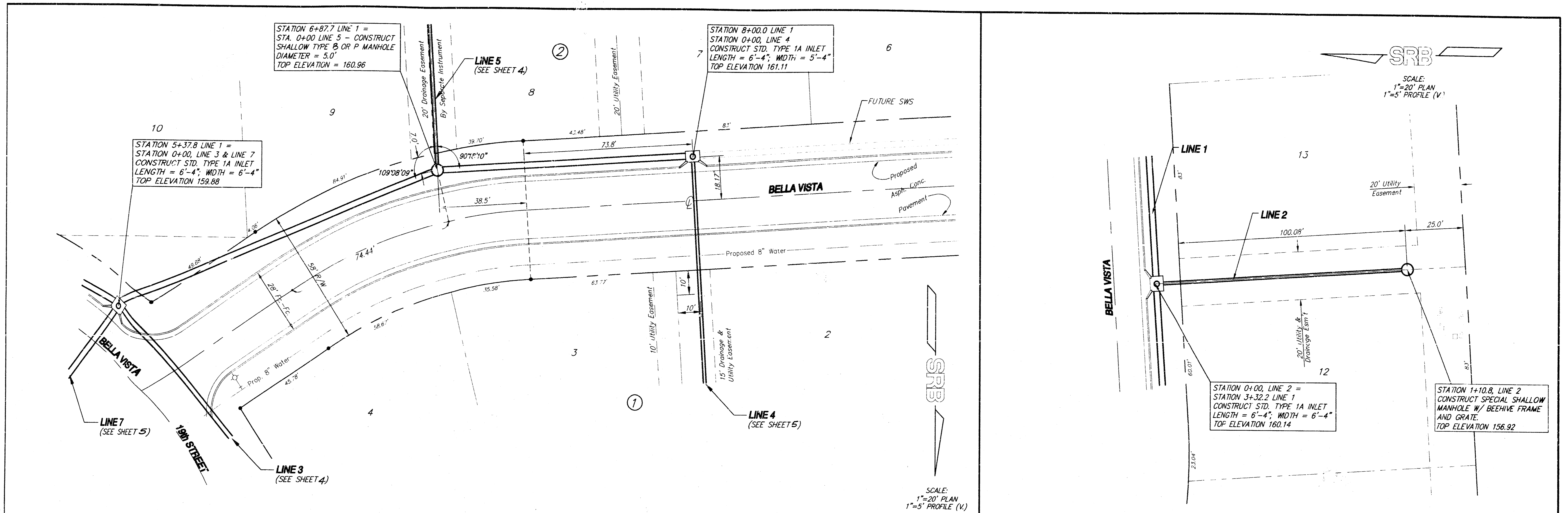
SRB 2/28/96
SAVOY, RUGGLES & BOHM, P. A.
ENGINEERING & SURVEYING



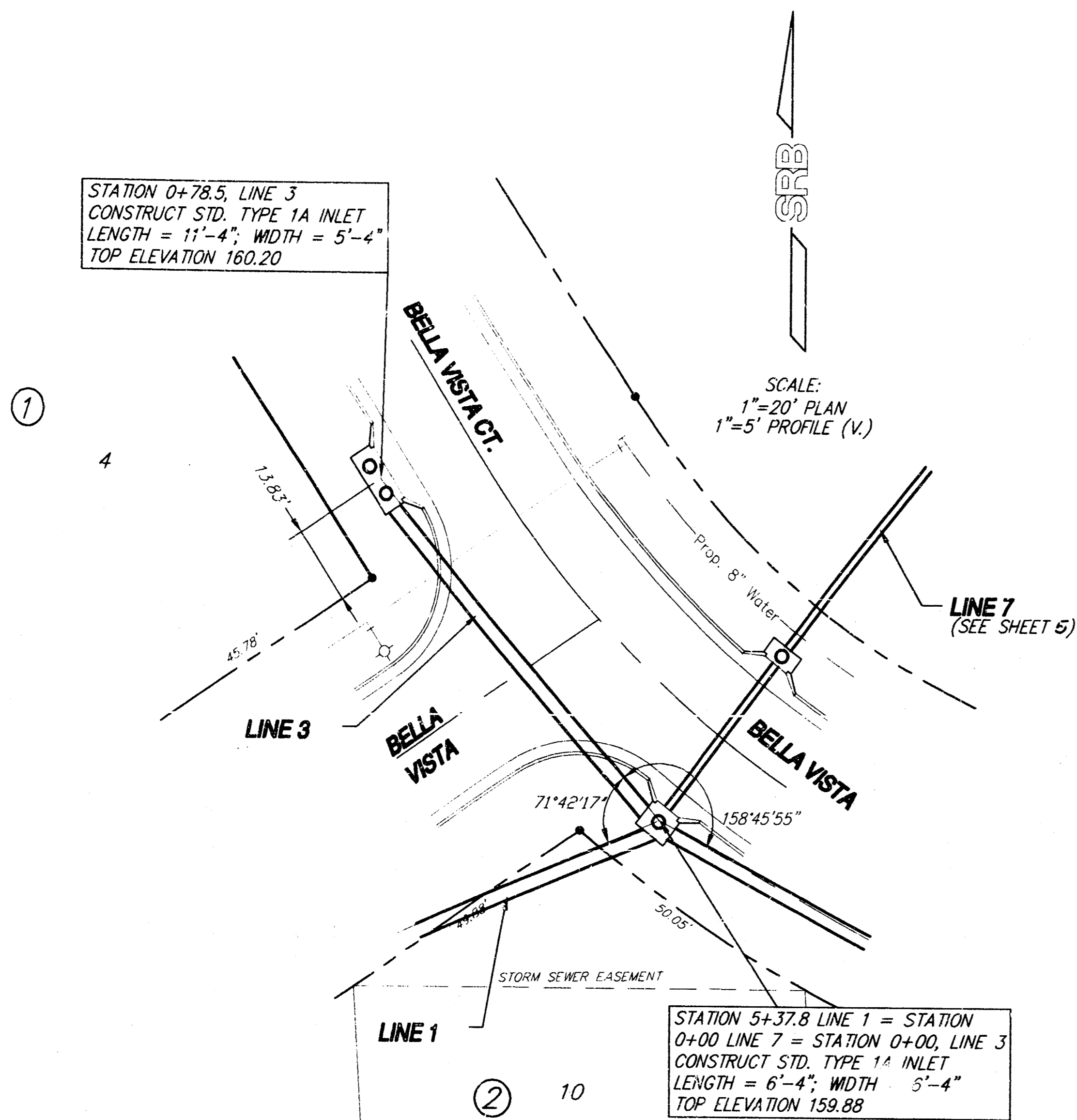
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1"=20' PLAN
1"=5' PROFILE (V.)



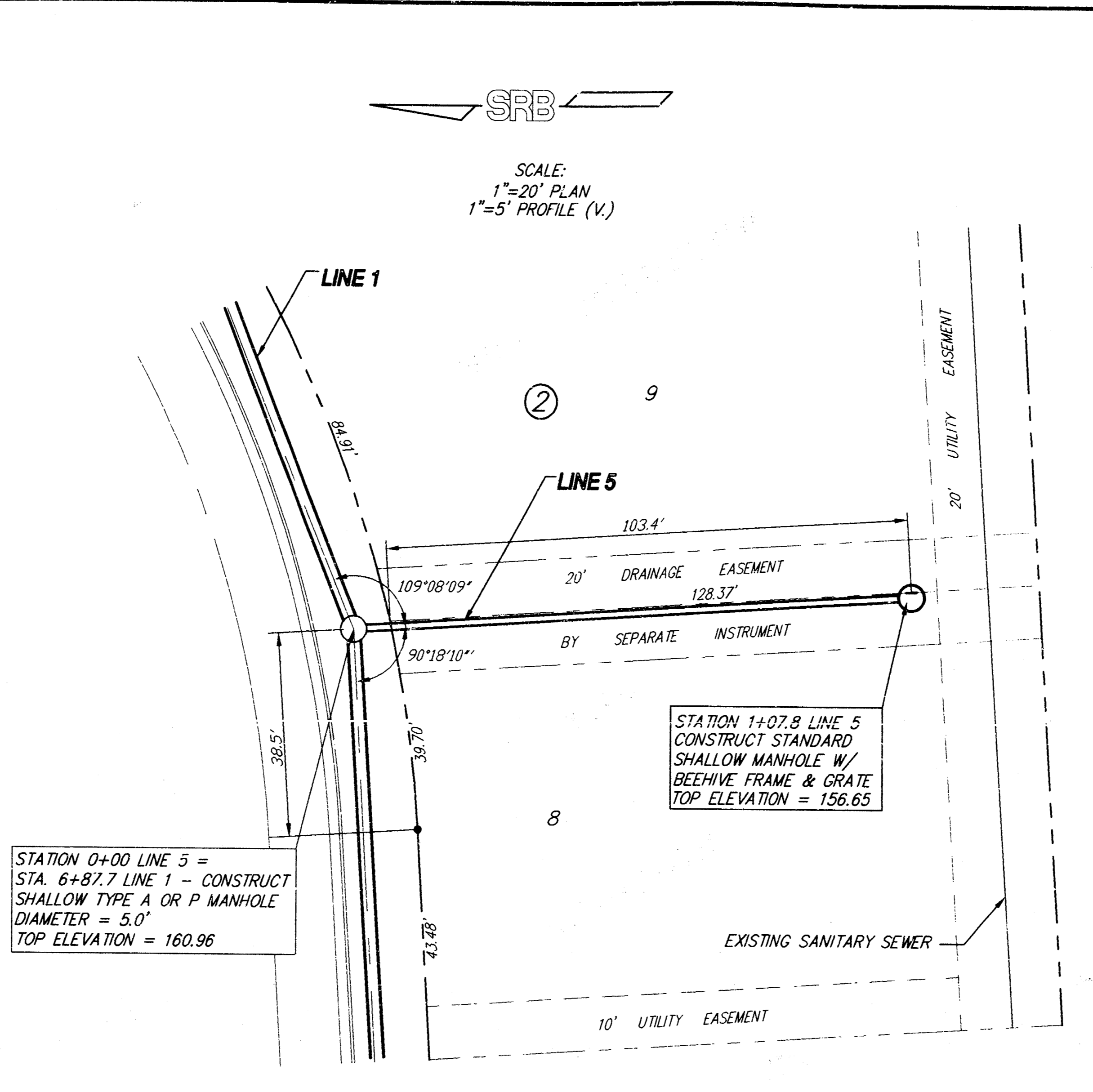
GRAF-GOLDSTON 2ND ADDITION STORM WATER SEWER - LINE 1 WICHITA, KANSAS			
SRB	924 NORTH MAIN WICHITA, KANSAS 67203	316-264-8008 FAX 264-4627	REVISED
	SAVOY, RUGGLES & BOHM, P. A. ENGINEERING & SURVEYING		SHEET 2 OF 10
PROJECT NUMBER 468-81462			
DRAWN J. Lang/KWL	DESIGN T.C.R.	REVIEW	DATE 2-27-96 UTILITY SRB -08 139E



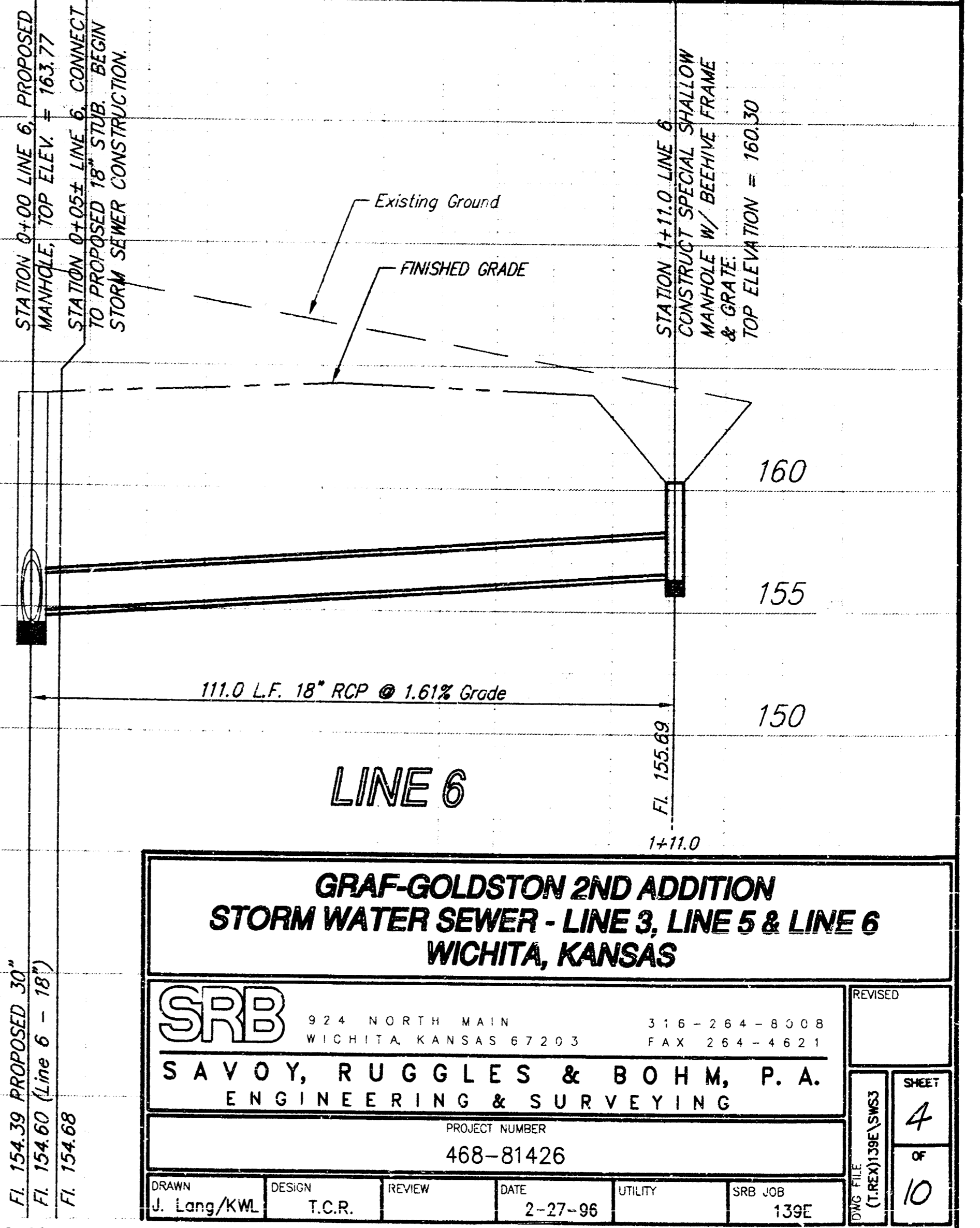
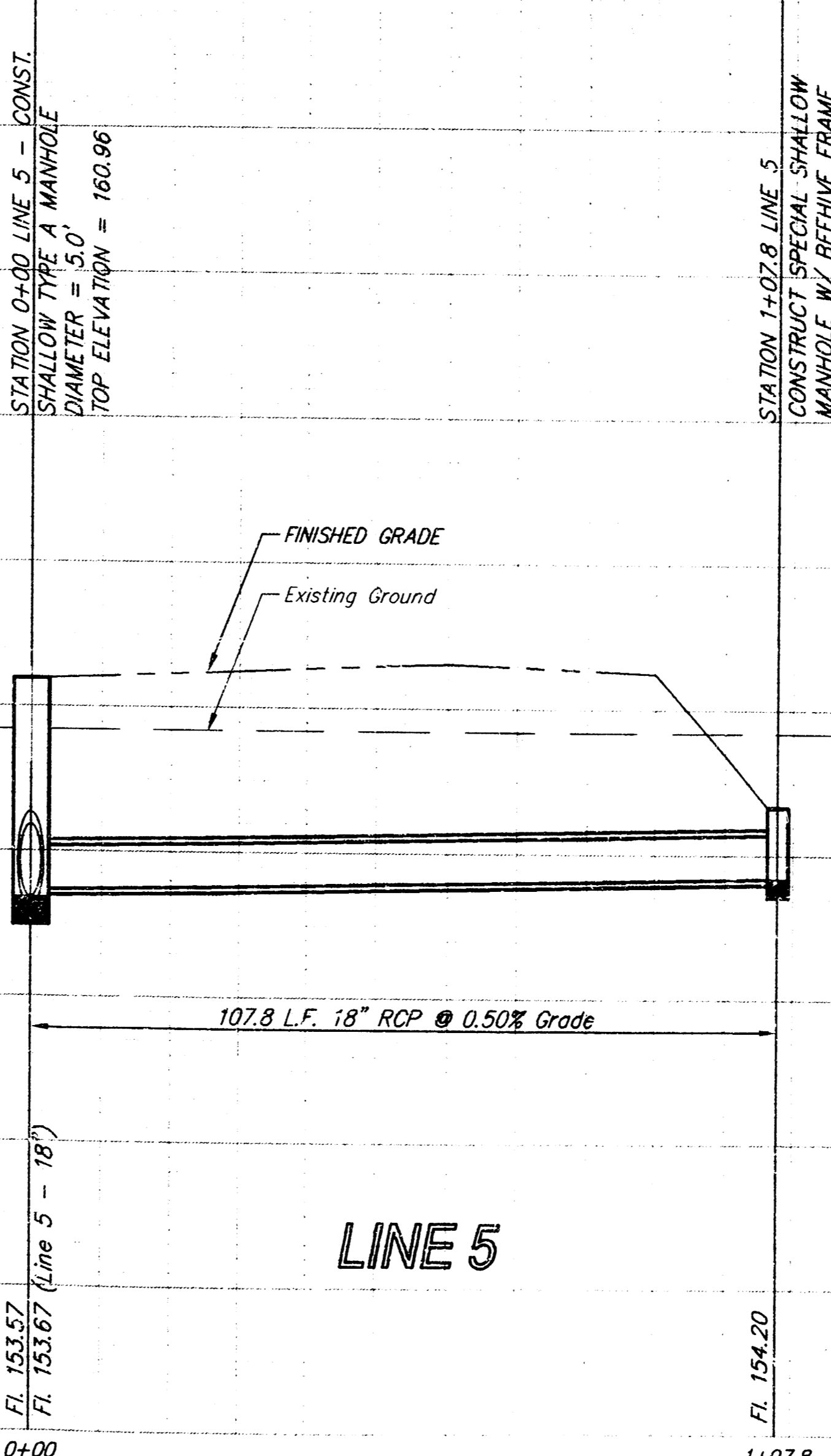
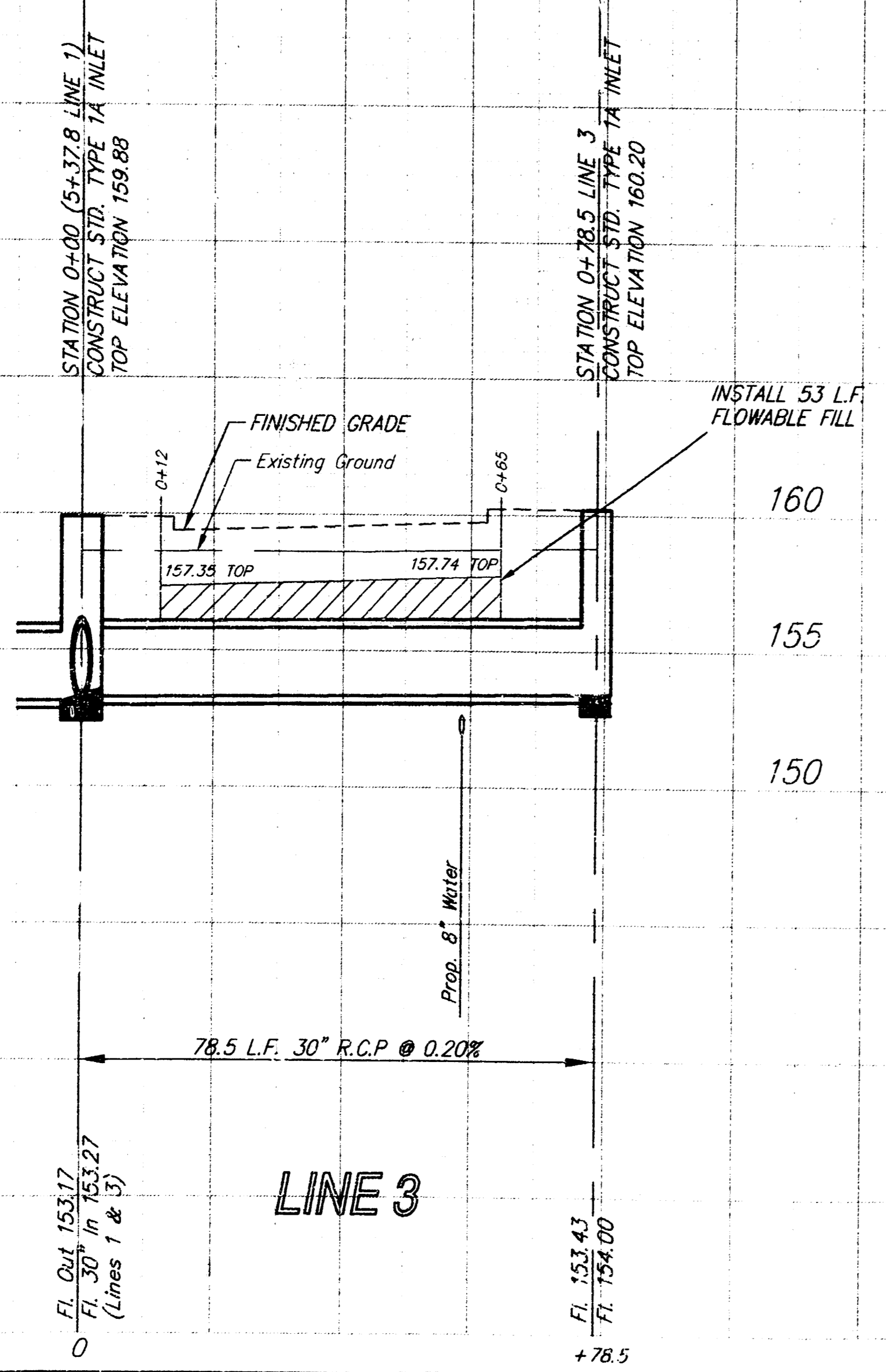
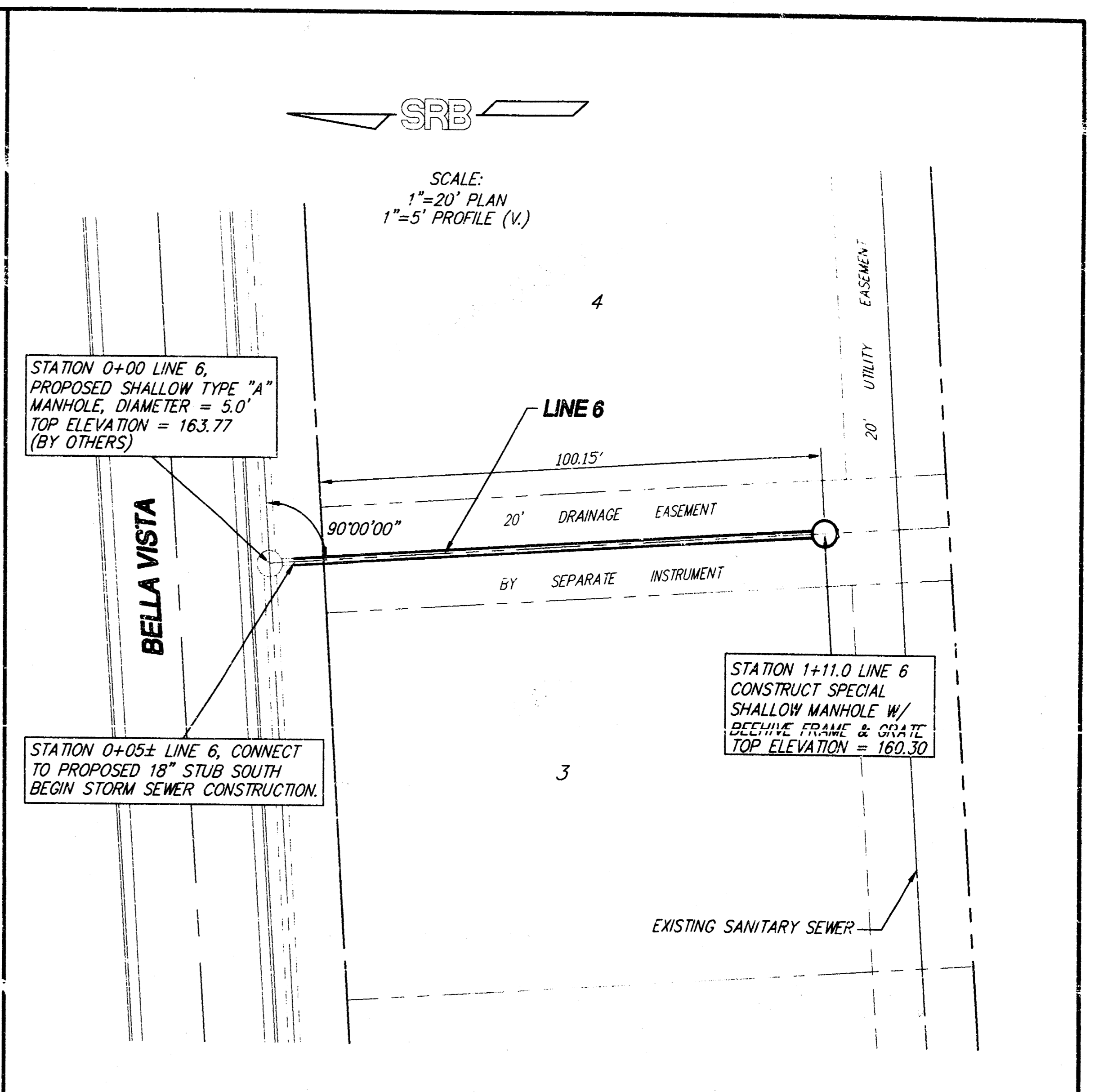
STATION 0+78.5, LINE 3
CONSTRUCT STD. TYPE 1A INLET
LENGTH = 17'-4"; WIDTH = 5'-4"
TOP ELEVATION 160.20



SCALE:
1"=20' PLAN
1"=5' PROFILE (V.)



SCALE:
1"=20' PLAN
1"=5' PROFILE (V.)



**GRAF-GOLDSTON 2ND ADDITION
STORM WATER SEWER - LINE 3, LINE 5 & LINE 6
WICHITA, KANSAS**

SRB 974 NORTH MAIN 316-264-8008
WICHITA, KANSAS 67203 FAX 264-4821

SAVOY, RUGGLES & BOHM, P.A.
ENGINEERING & SURVEYING

PROJECT NUMBER
468-81426

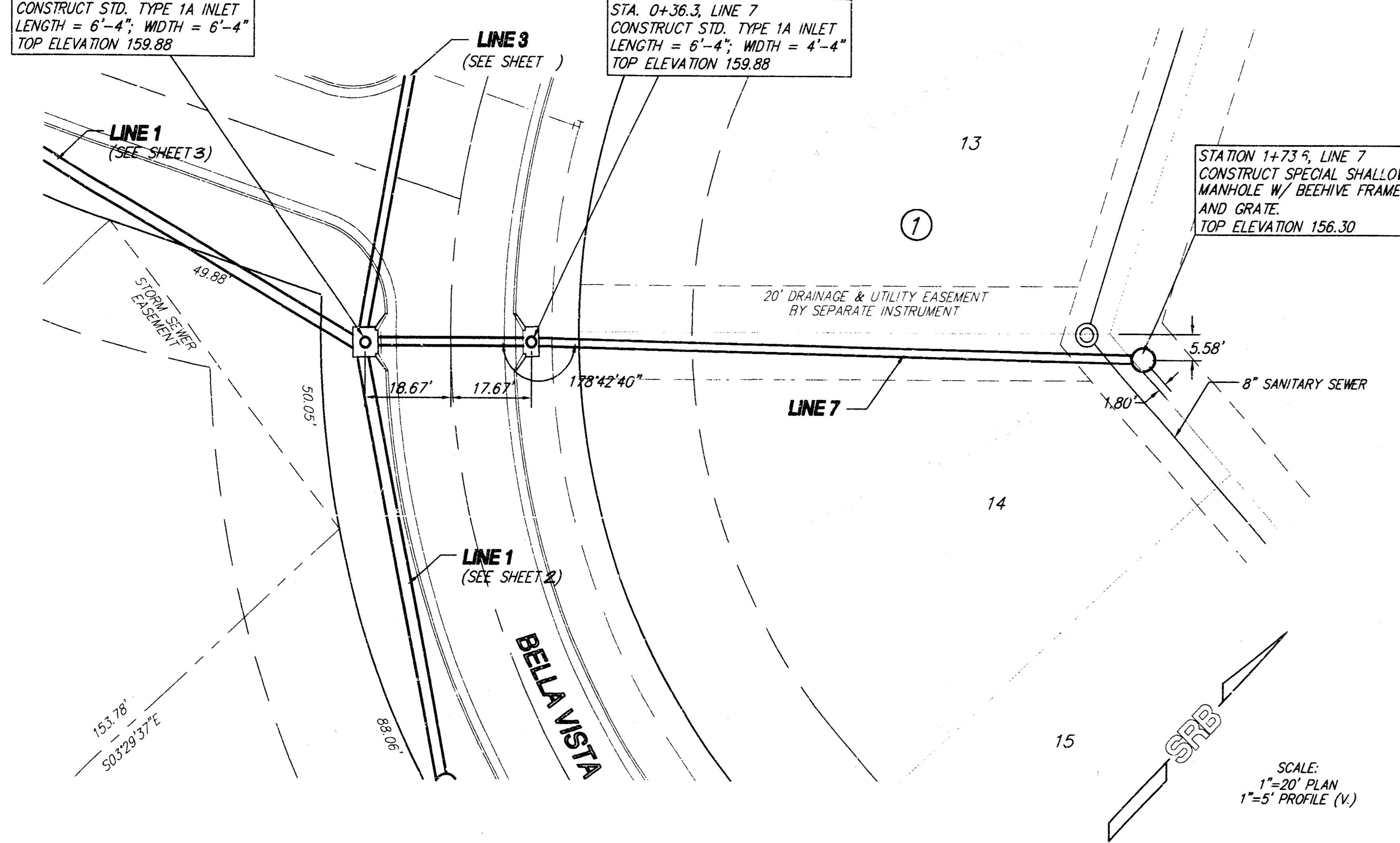
DRAWN J. Lang/KWL	DESIGN T.C.R.	REVIEW	DATE 2-27-96	UTILITY	SRB JOB 139E
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REVISIONS
4 OF 10

STA. 5+37.8 LINE 1 = STA. 0+00
 LINE 3 = STA. 0+00, LINE 7
 CONSTRUCT STD. TYPE 1A INLET
 LENGTH = 6'-4", WIDTH = 6'-4"
 TOP ELEVATION 159.88

STA. 0+36.3, LINE 7
 CONSTRUCT STD. TYPE 1A INLET
 LENGTH = 6'-4", WIDTH = 4'-4"
 TOP ELEVATION 159.88

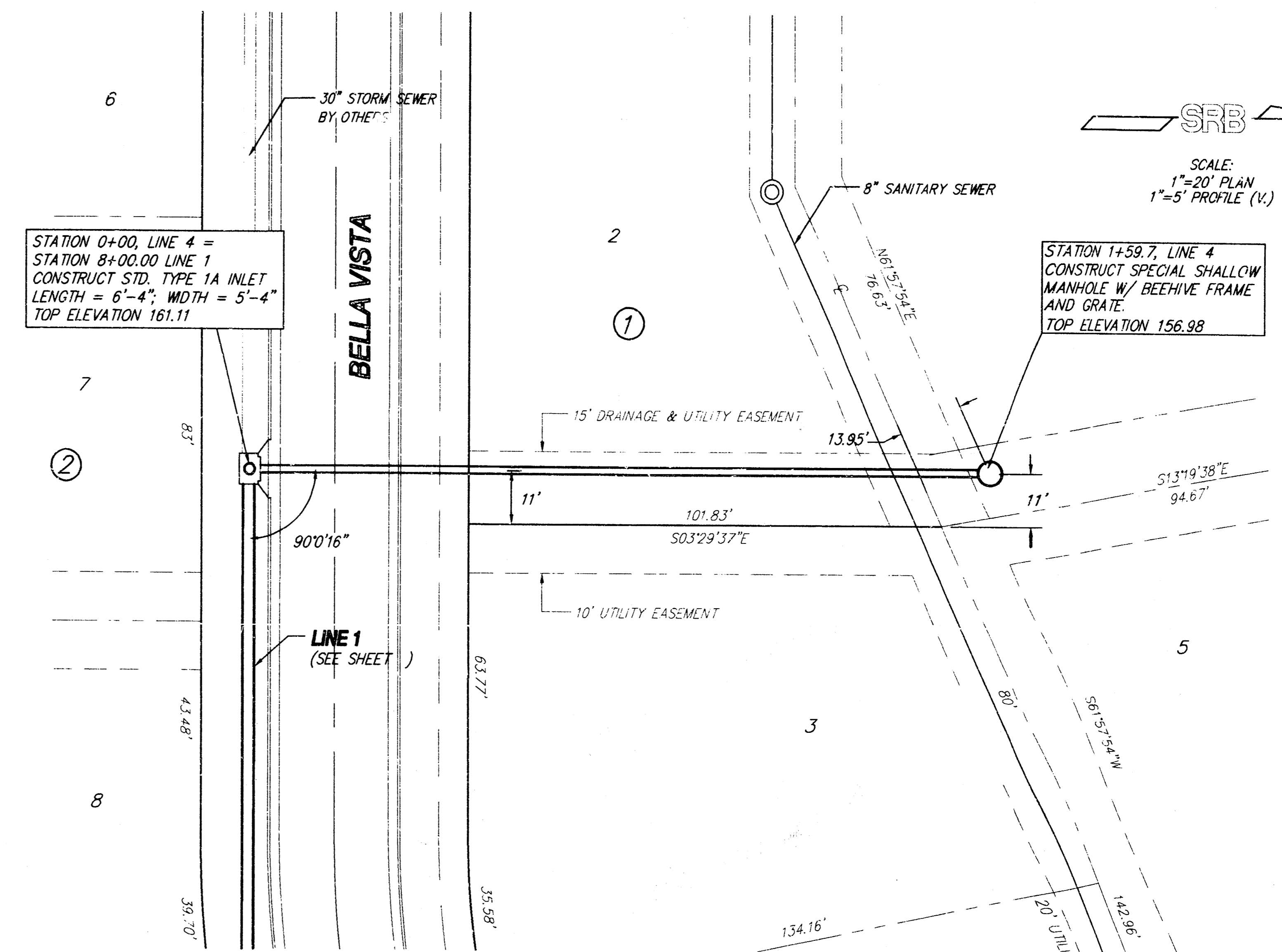
STATION 1+73.6, LINE 7
 CONSTRUCT SPECIAL SHALLOW
 MANHOLE W/ BEEHIVE FRAME
 AND GRATE.
 TOP ELEVATION 156.30



SCALE:
 1"=20' PLAN
 1"=5' PROFILE (V.)

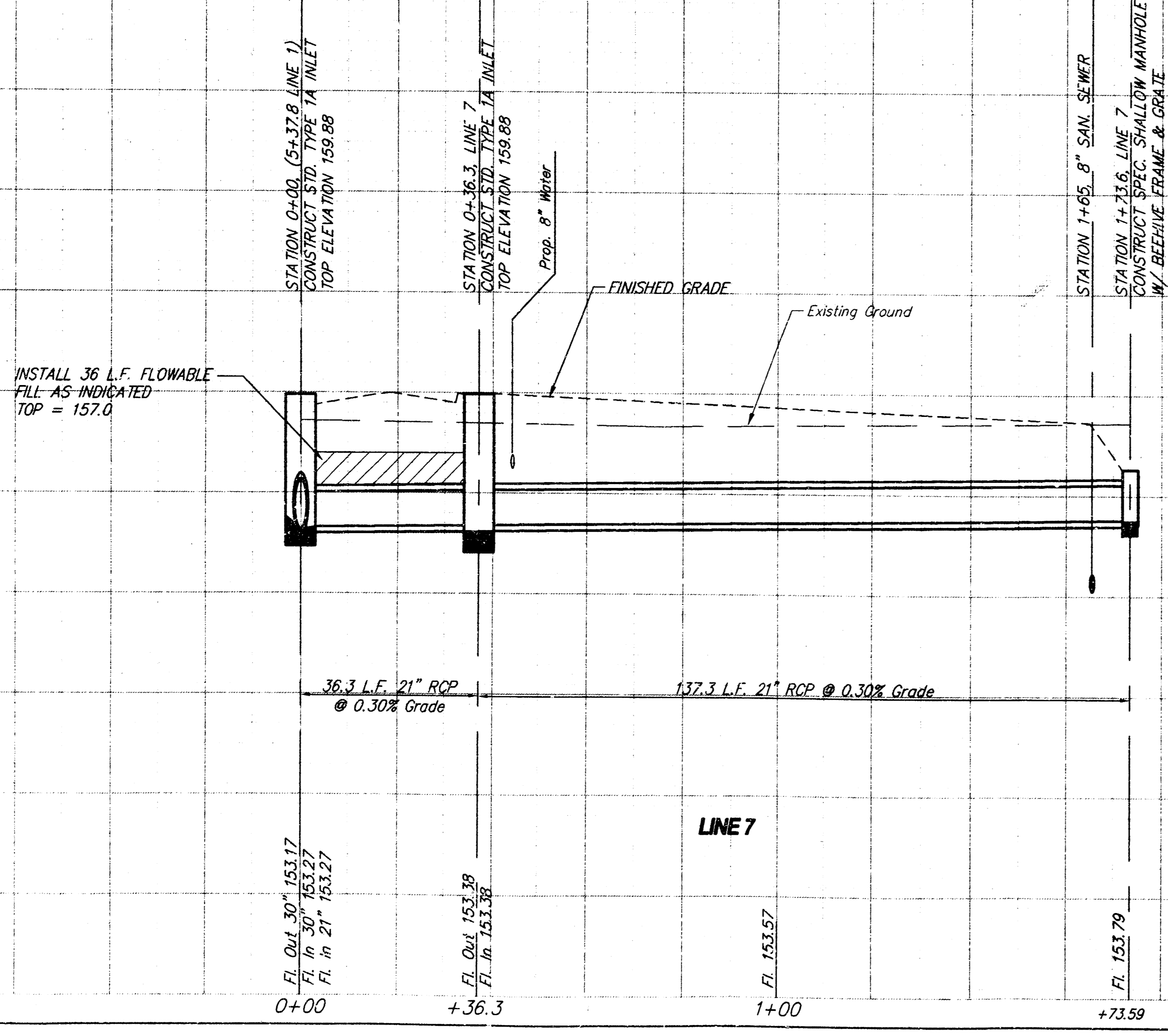
STATION 0+00, LINE 4 =
 STATION 8+00.00 LINE 1
 CONSTRUCT STD. TYPE 1A INLET
 LENGTH = 6'-4", WIDTH = 5'-4"
 TOP ELEVATION 161.11

STATION 1+59.7, LINE 4
 CONSTRUCT SPECIAL SHALLOW
 MANHOLE W/ BEEHIVE FRAME
 AND GRATE.
 TOP ELEVATION 156.98

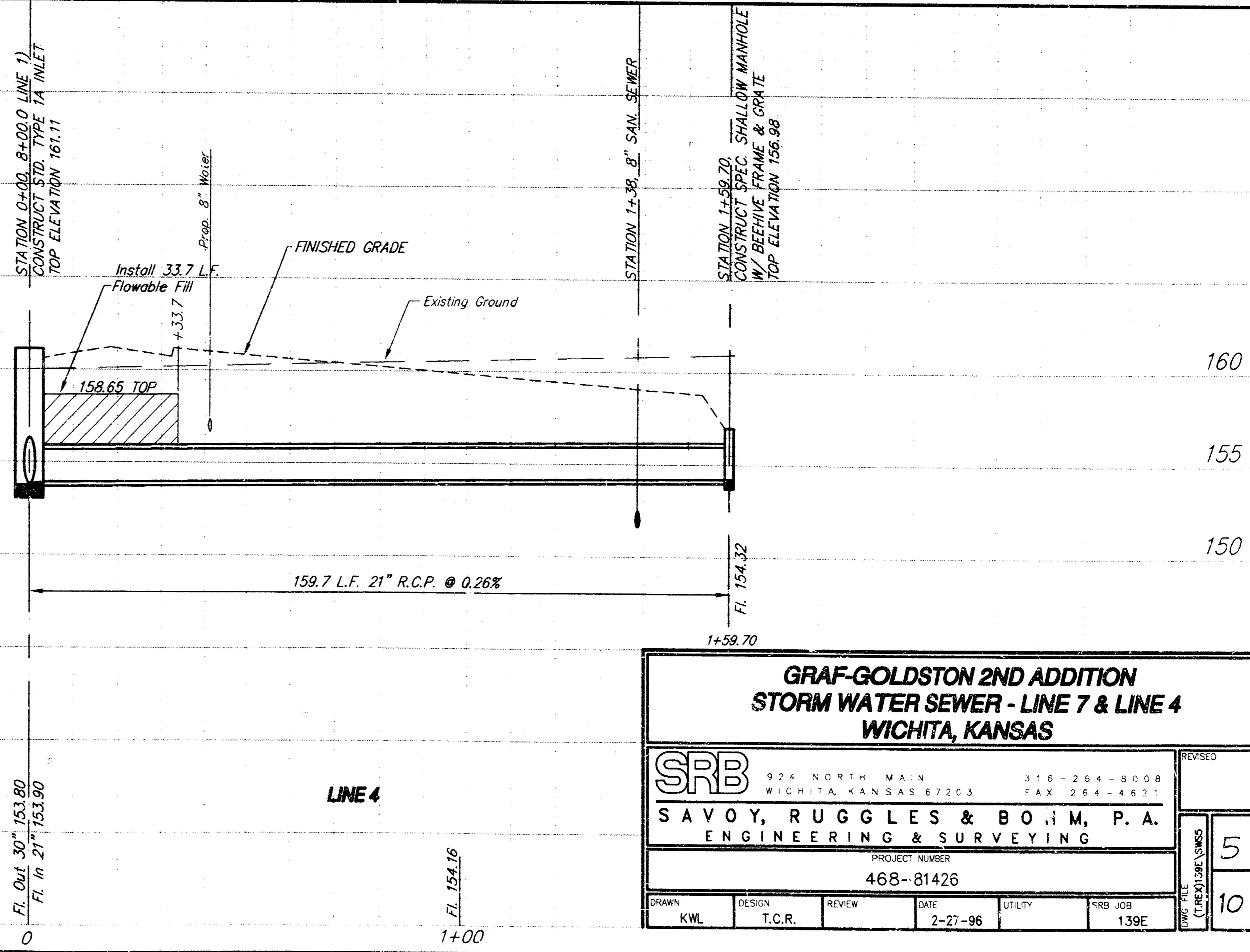


SCALE:
 1"=20' PLAN
 1"=5' PROFILE (V.)

INSTALL 36 L.F. FLOWABLE
 FILL AS INDICATED
 TOP = 157.0

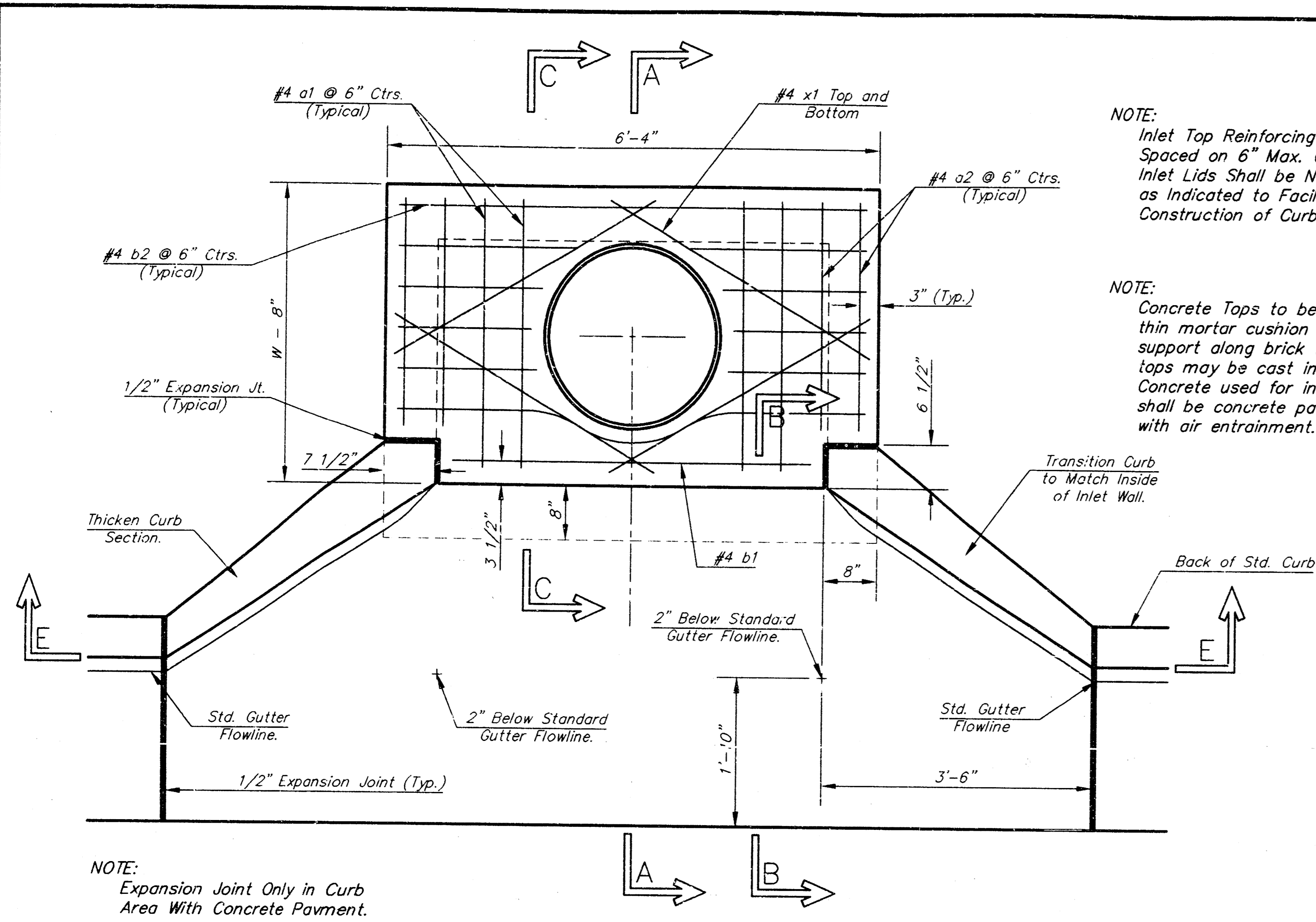


Install 33.7 L.F.
 Flowable Fill
 +.33' Water



**GRAF-GOLDSTON 2ND ADDITION
 STORM WATER SEWER - LINE 7 & LINE 4
 WICHITA, KANSAS**

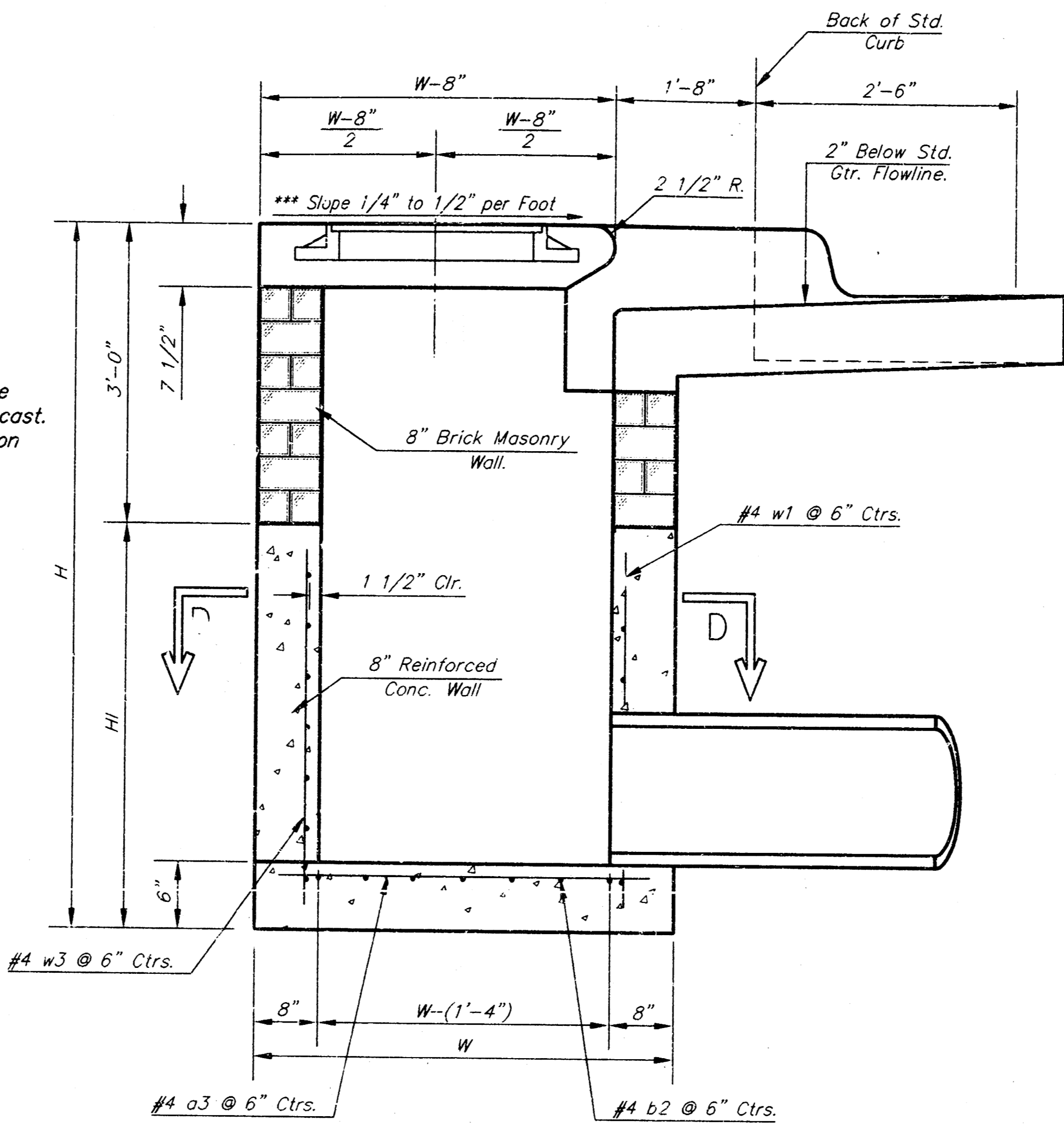
SRB		924 NORTH MAIN WICHITA, KANSAS 67203		316-264-8008 FAX 264-4622	
SAVOY, RUGGLES & BOIM, P. A. ENGINEERING & SURVEYING					
PROJECT NUMBER 468-81426					
DRAWN KWL	DESIGN T.C.R.	REVIEW	DATE 2-27-96	UTILITY	SRB JOB 139E
REVISED					5
CREATED/ISSUES					10



NOTE: Expansion Joint Only in Curb Area With Concrete Pavement.

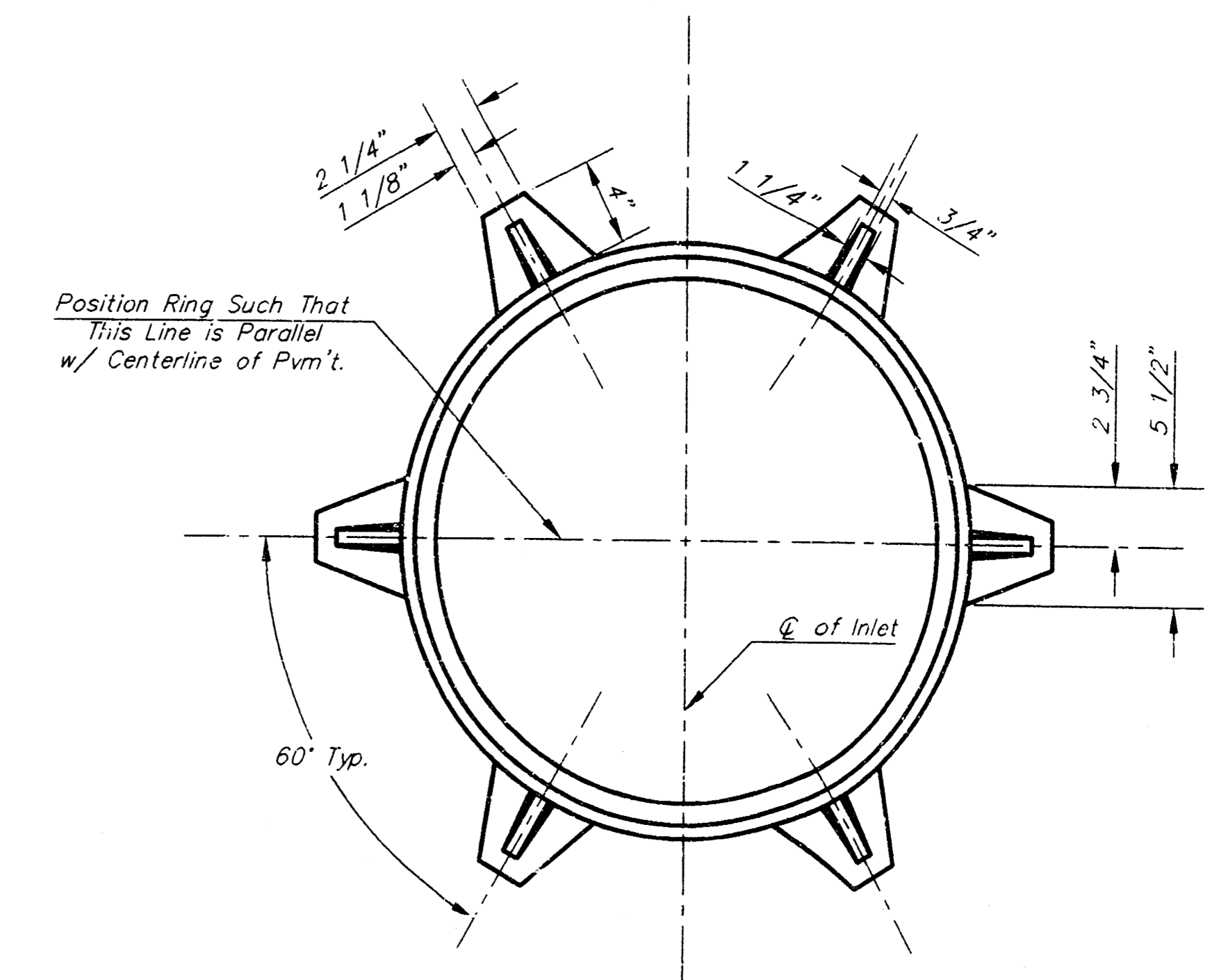
NOTE: Inlet Top Reinforcing shall be Spaced on 6" Max. Centers. Inlet Lids Shall be Notched Out as Indicated to Facilitate Construction of Curb.

NOTE: Concrete 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 with air entrainment.



SECTION A-A

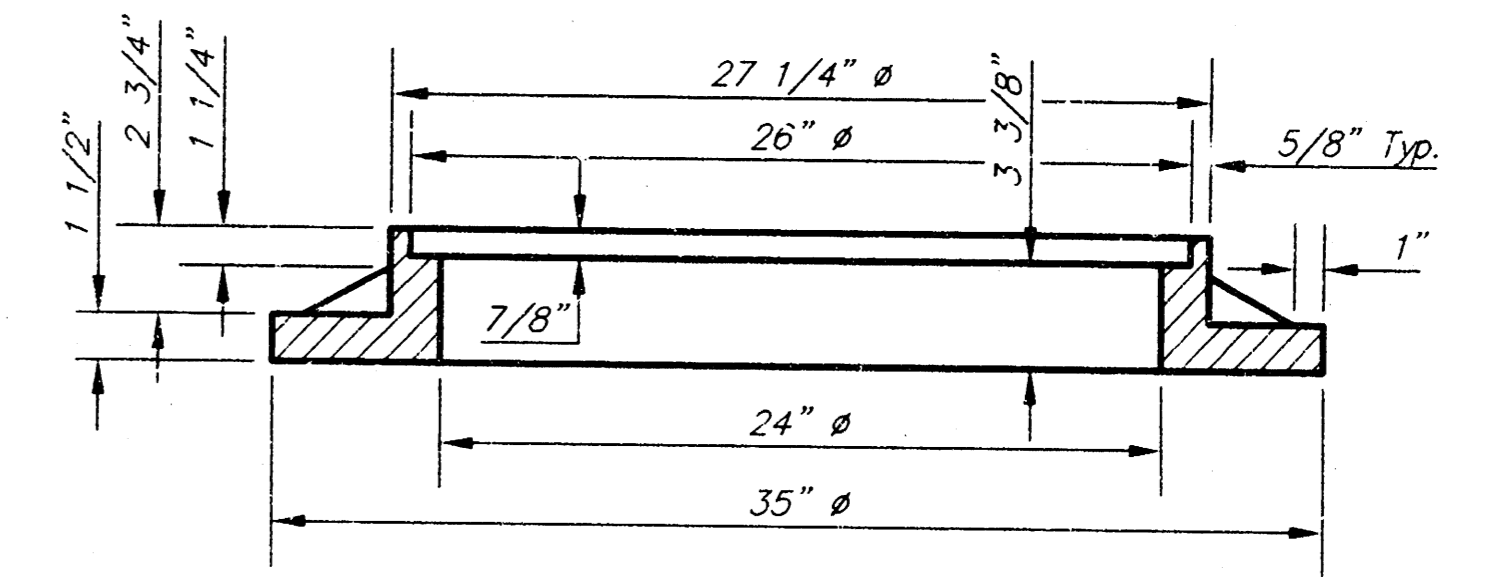
NOTE: Slope of Inlet tops to Match Sidewalk or Parking Slopes within Limits Indicated.



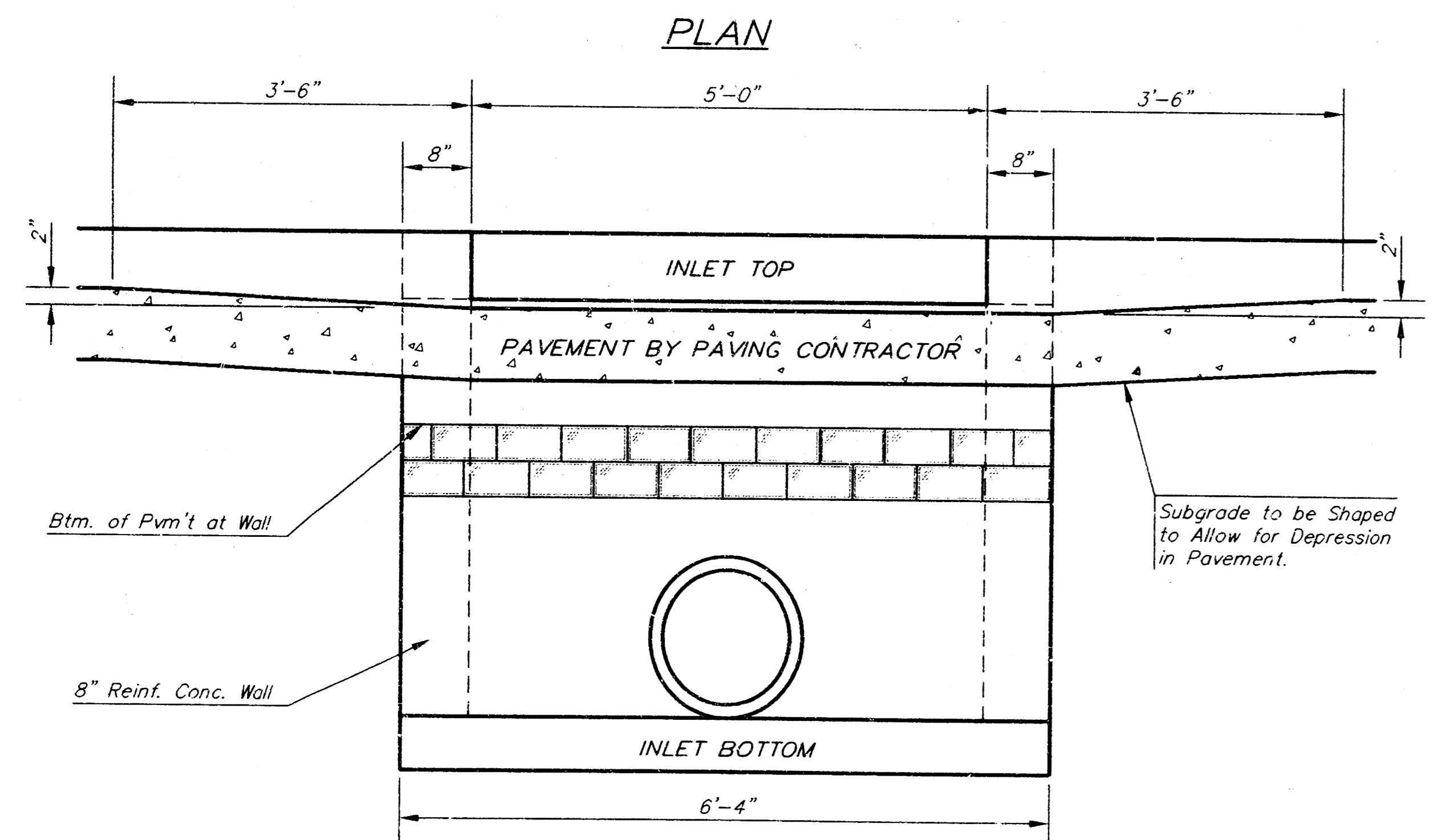
MANHOLE RING AND COVER

Weight = 180 Lbs.

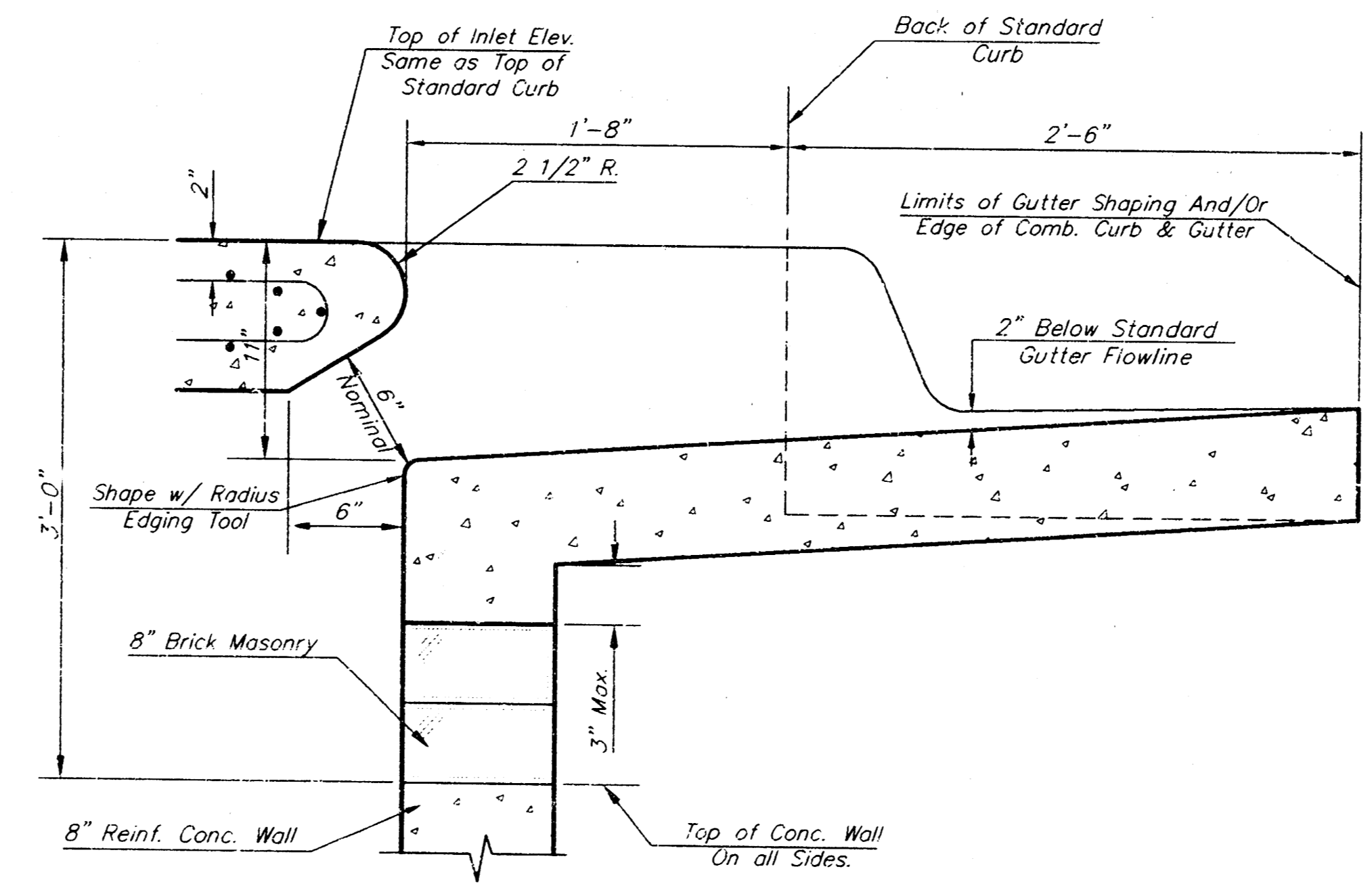
*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.



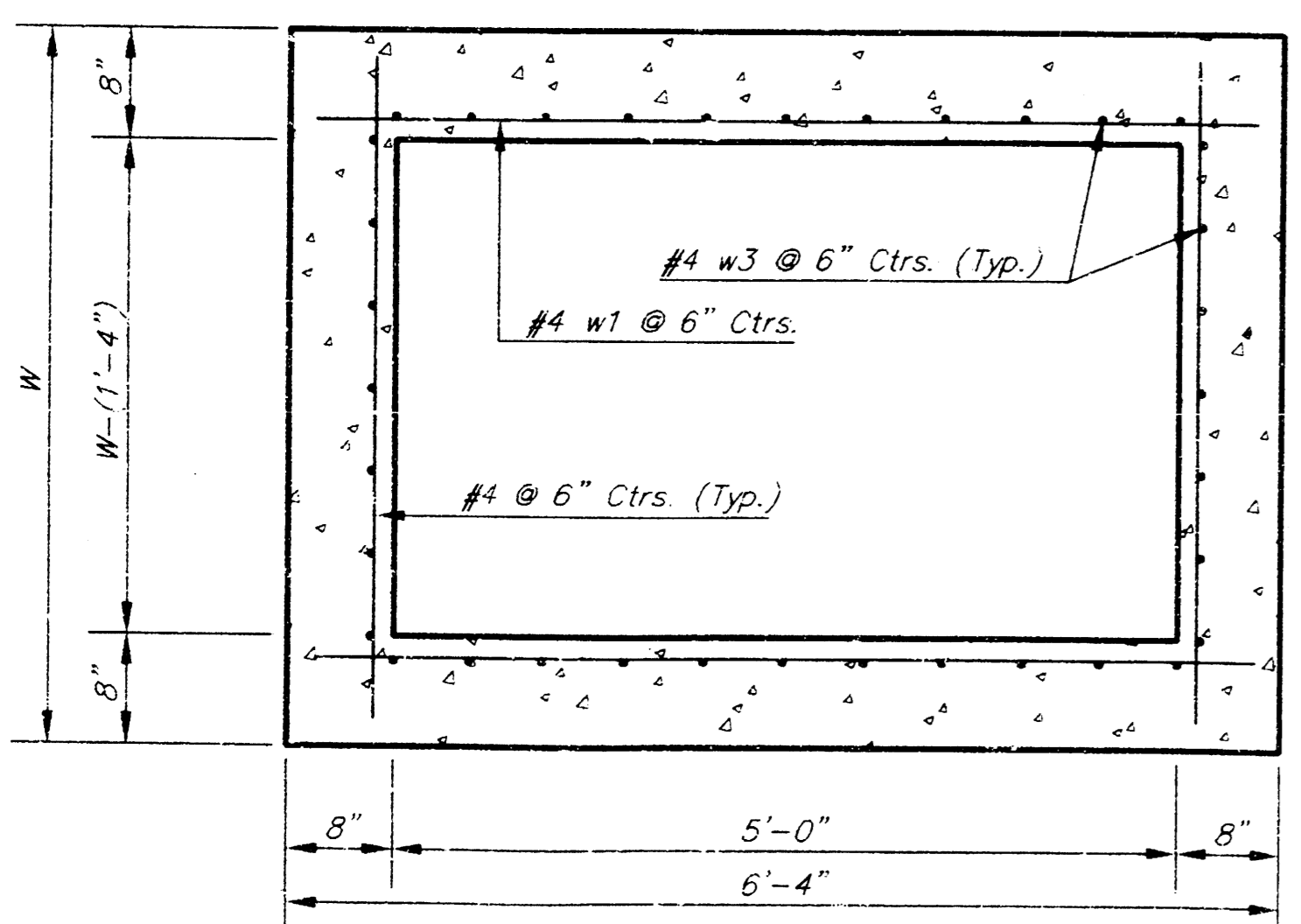
SECTION A-A



SECTION E-E



SECTION B-B



SECTION D-D

NOTE: 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.

Additional curb and gutter construction necessary connect set-back inlet to pavement will be paid for at the unit price bid for each inlet hookup.

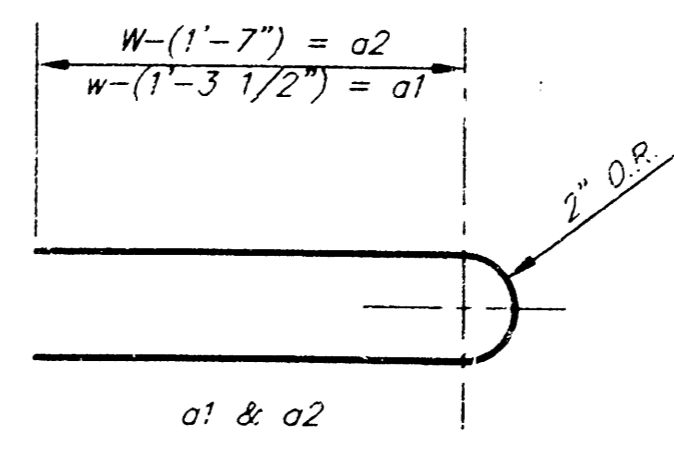
Inlet invert shall be shaped with 8 sack sand mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self-cleaning between all inlet and/or outlet pipes.

The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.

PRECAST 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	6	6'-7"	6	8'-7"	6	10'-7"	6	12'-7"	6	14'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	13	4'-1"	13	5'-1"	13	6'-1"	13	7'-1"	13	8'-1"
b1	#4	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"
* b2	#4	23	6'-1"	29	6'-1"	35	6'-1"	41	6'-1"	47	6'-1"
x1	#4	8	3'-10"	8	4'-2"	8	4'-2"	8	4'-10"	8	5'-2"

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
w1	#4	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"
w2	#4	1	4'-4"	1	5'-1"	1	6'-1"	1	7'-1"	1	8'-1"
w3	#4	32		36		40		44		48	

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



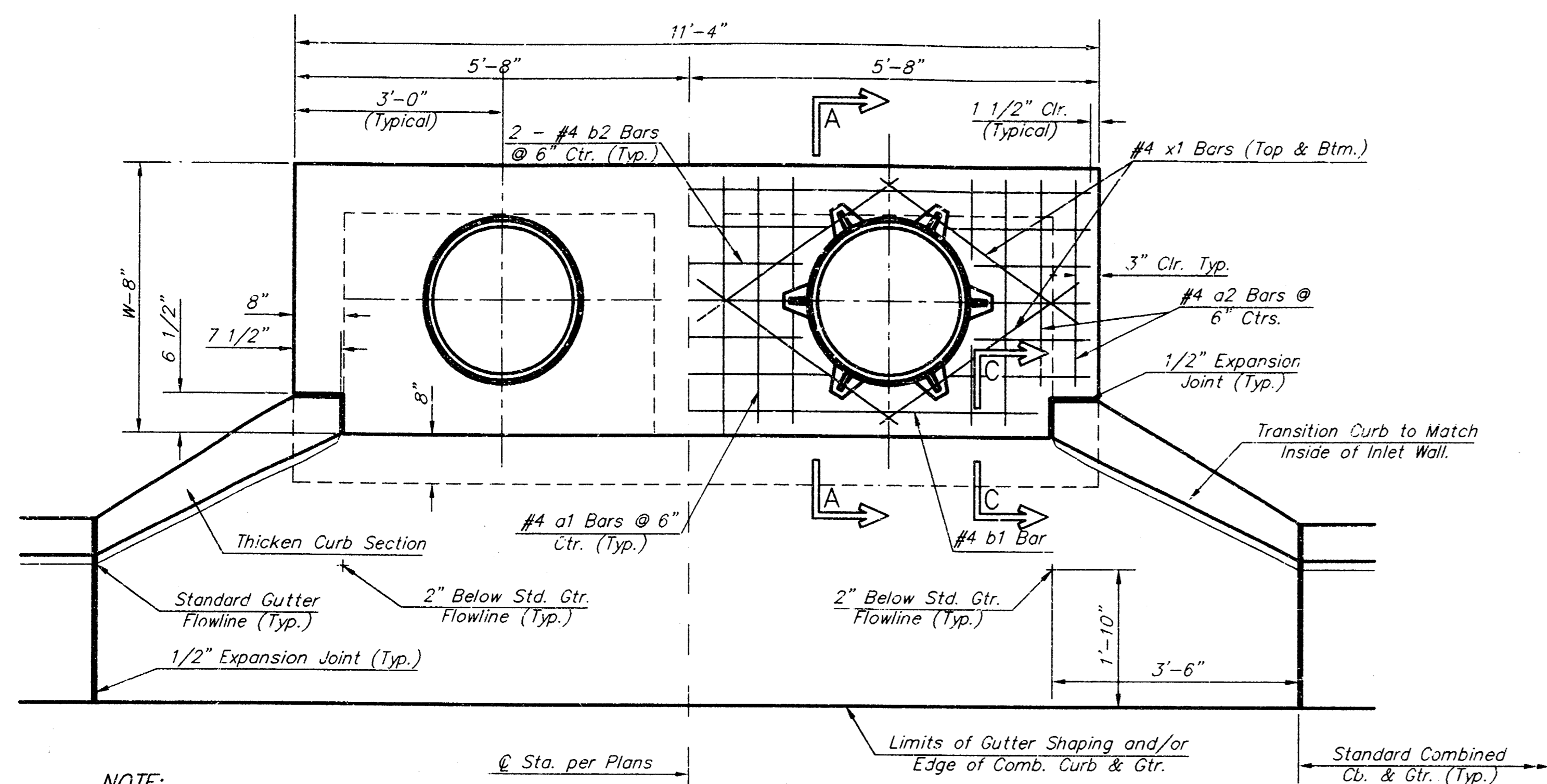
BENDING DIAGRAM

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	0.384
5'-4"	4'-8" x 6'-4" x 7 1/2"	24" & 30"	0.514
6'-4"	5'-8" x 6'-4" x 7 1/2"	36" & 42"	0.644
7'-4"	6'-8" x 6'-4" x 7 1/2"	48" & 54"	0.774
8'-4"	7'-8" x 6'-4" x 7 1/2"	60" & 66"	0.904

TYPE 1A INLET (LENGTH = 5.0')
 CITY OF WICHITA, KANSAS

Revised - Feb. 16, 1989

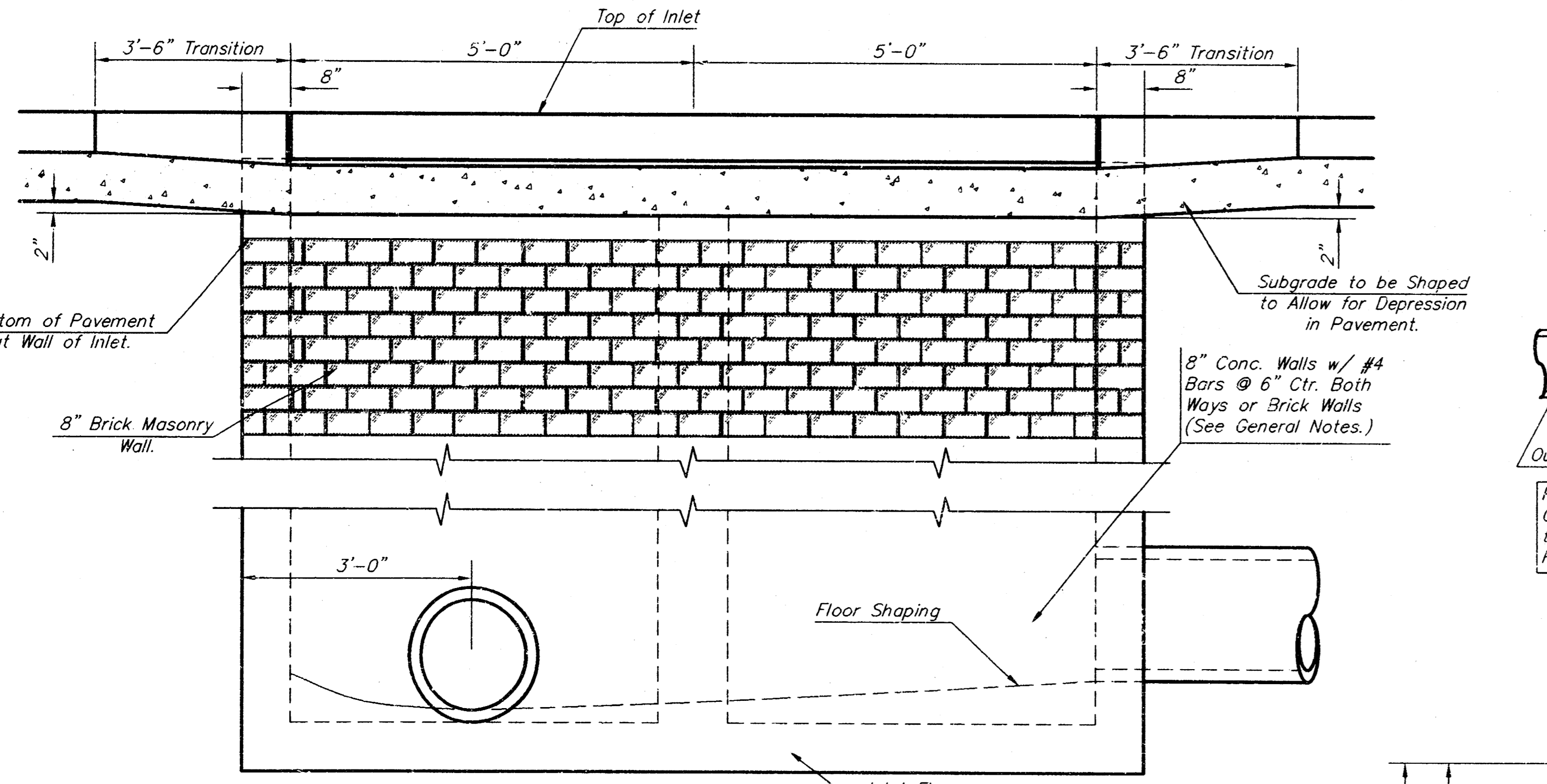
6
10



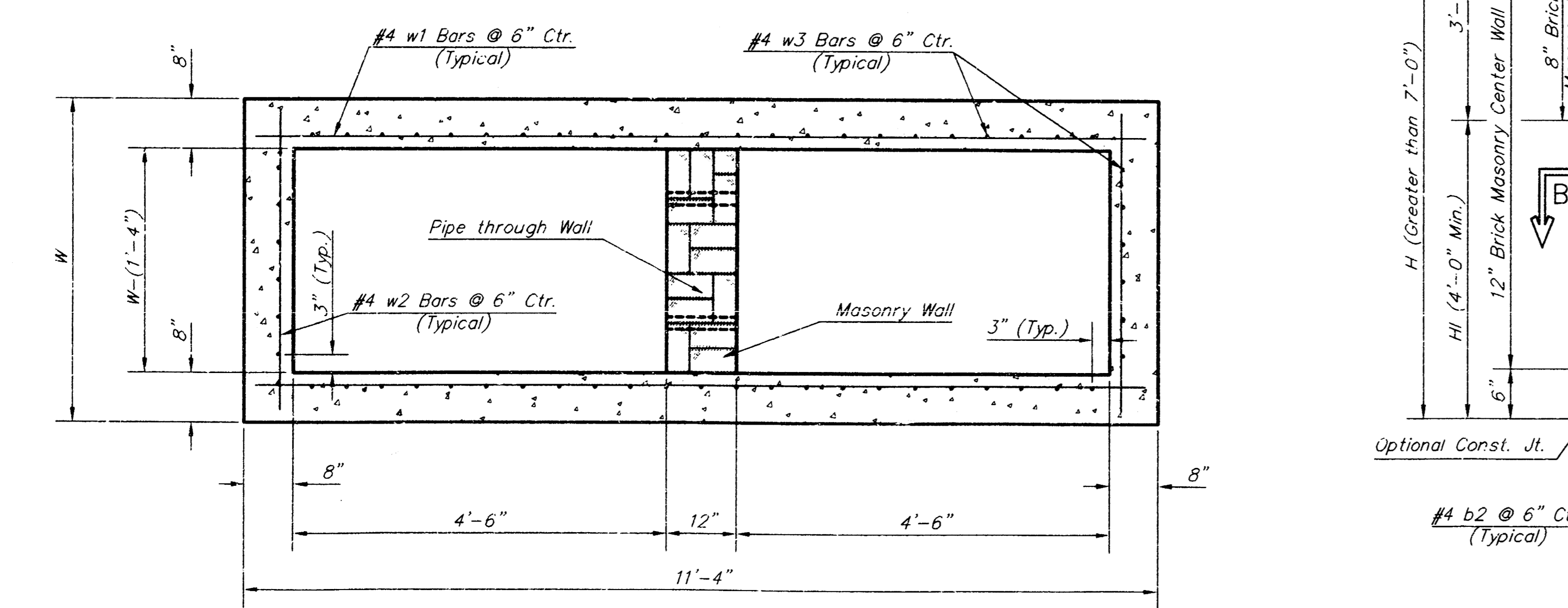
NOTE:
Expansion Joint Only in Curb Area with Concrete Reinforcement.

PLAN

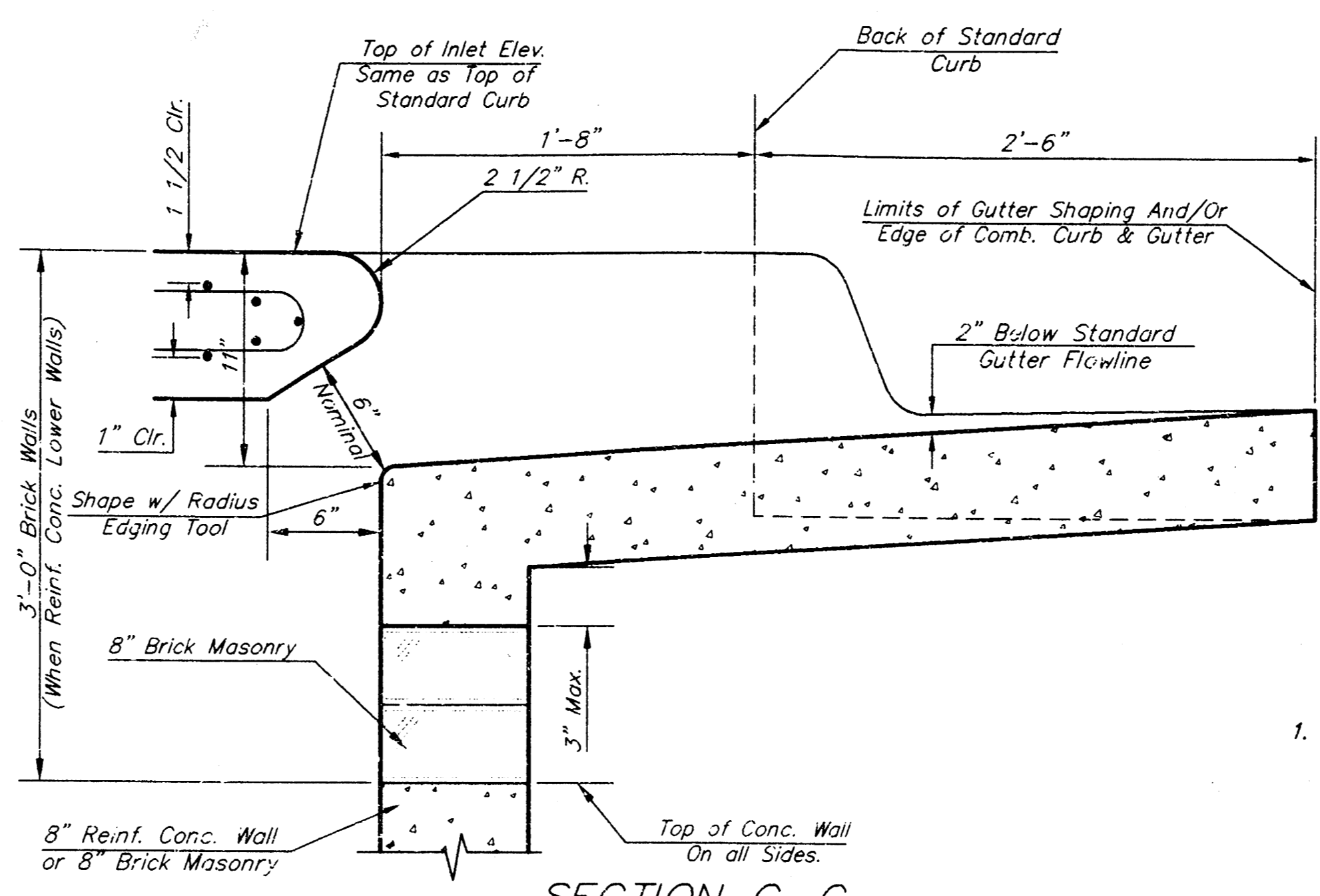
*Left Side Shown Without Slab Reinforcing, Right Side Shown With Slab Reinforcing



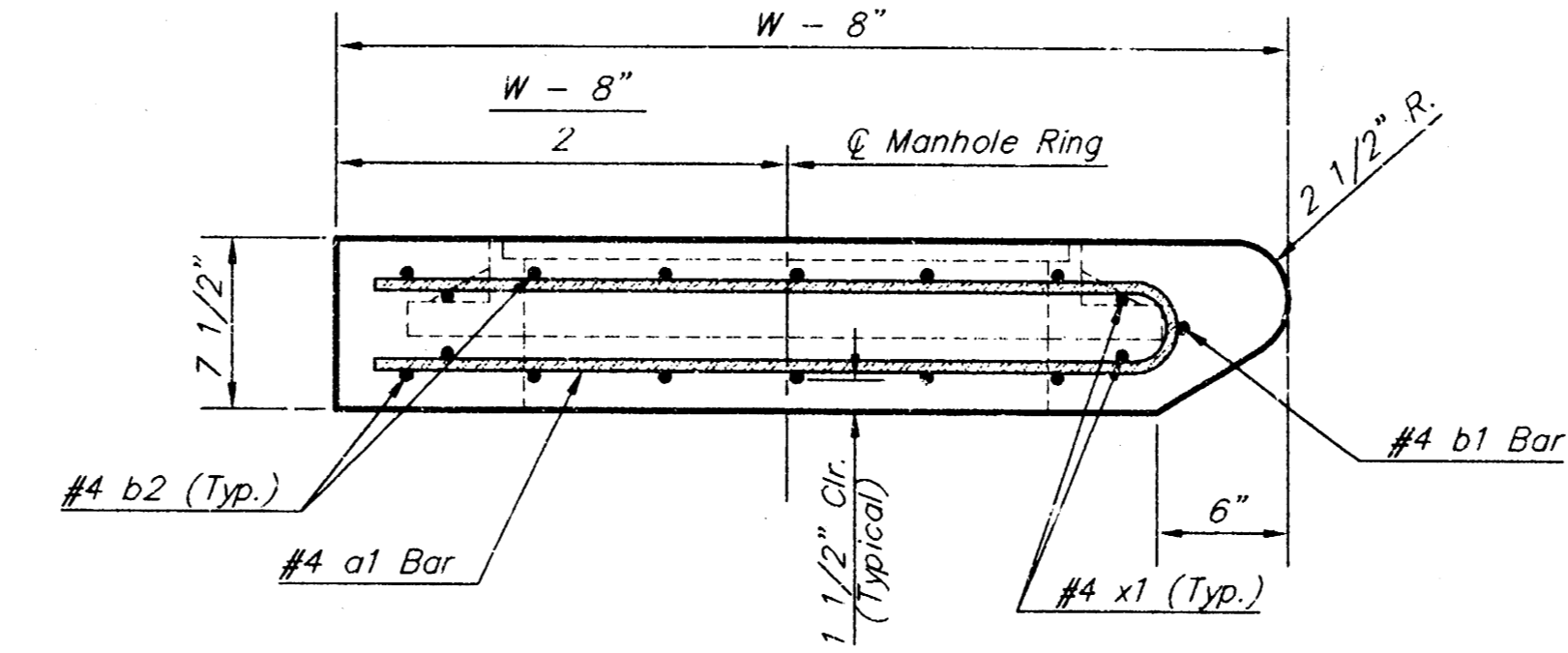
ELEVATION



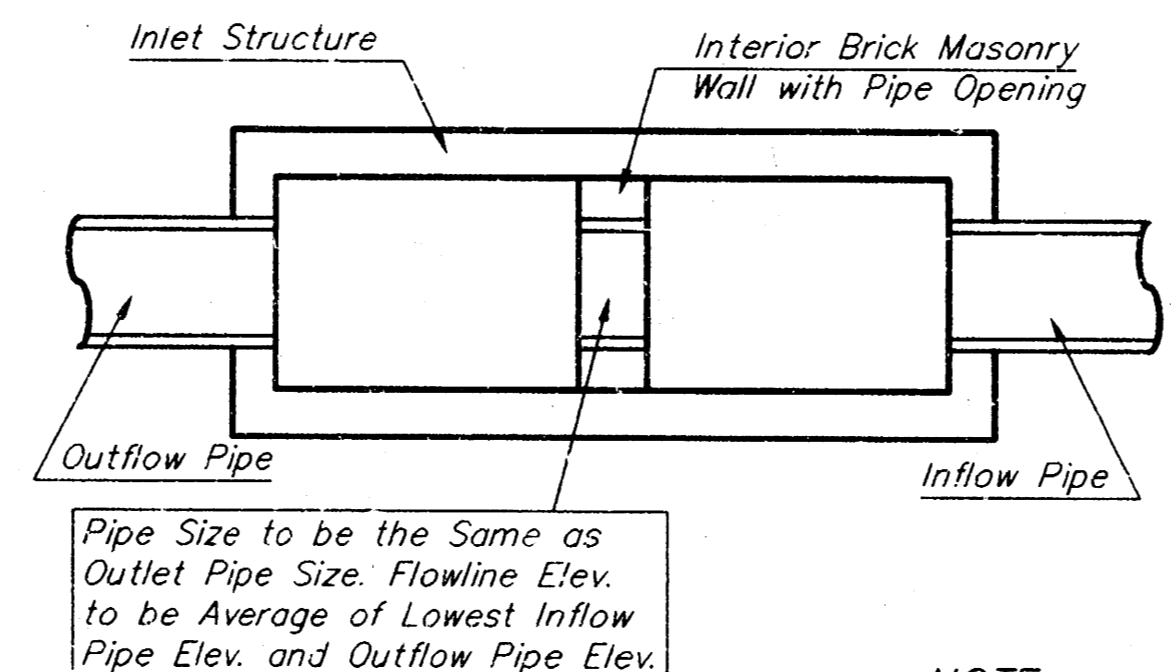
SECTION B-B



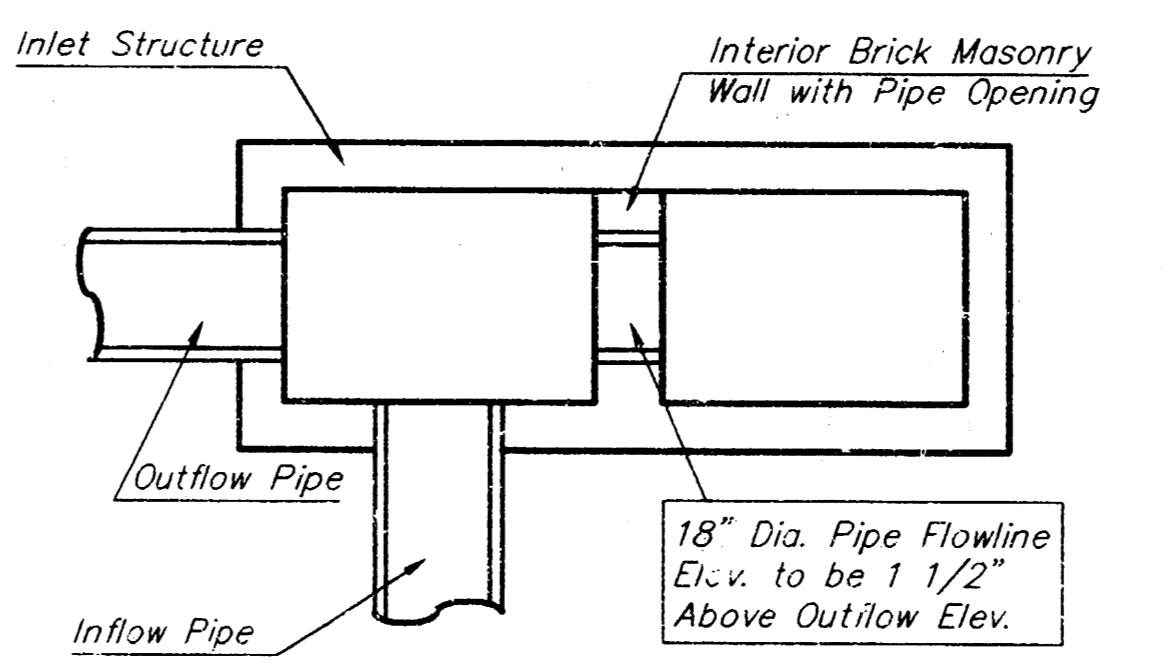
SECTION C-C



SECTION A-A

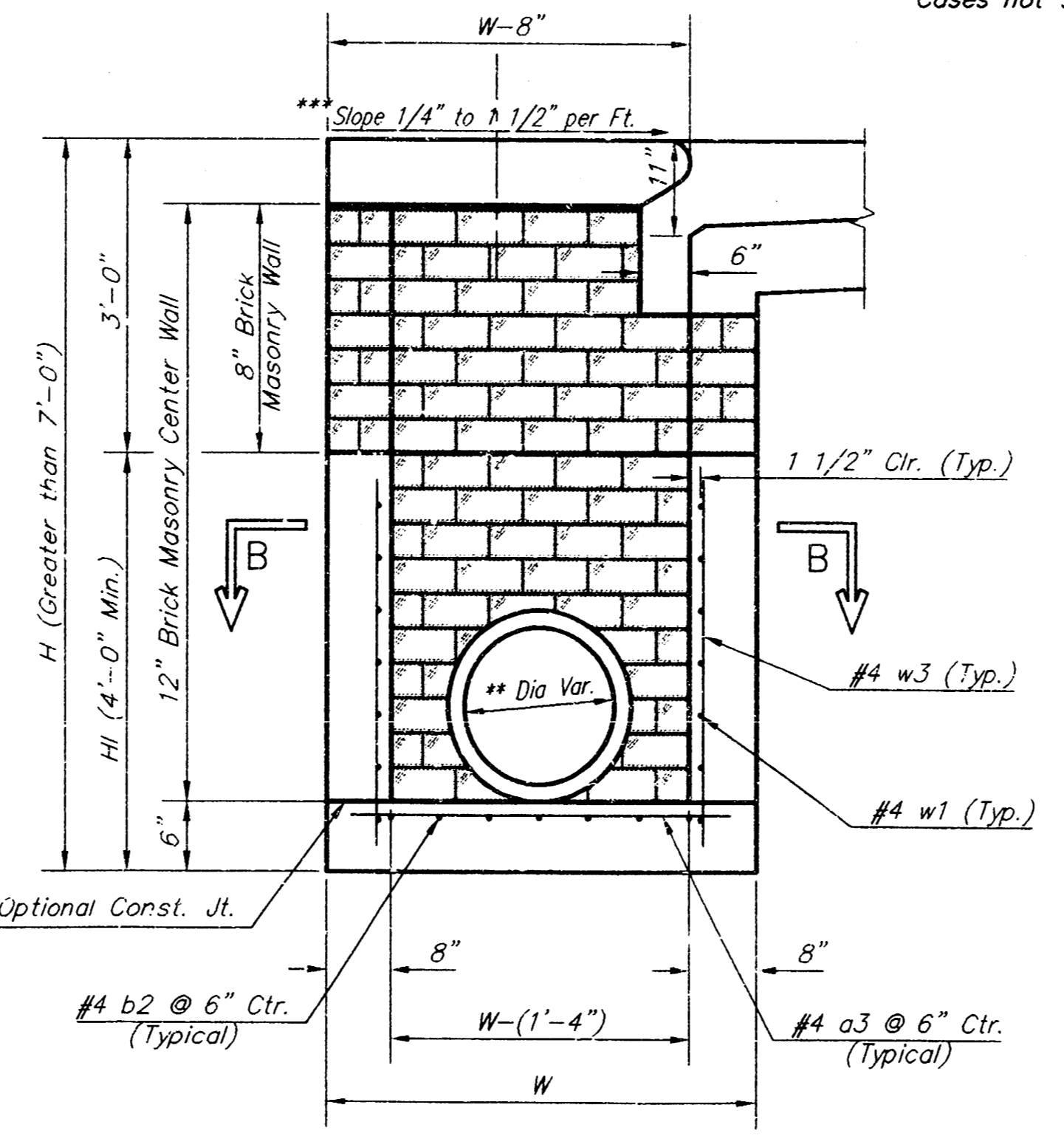


CASE I

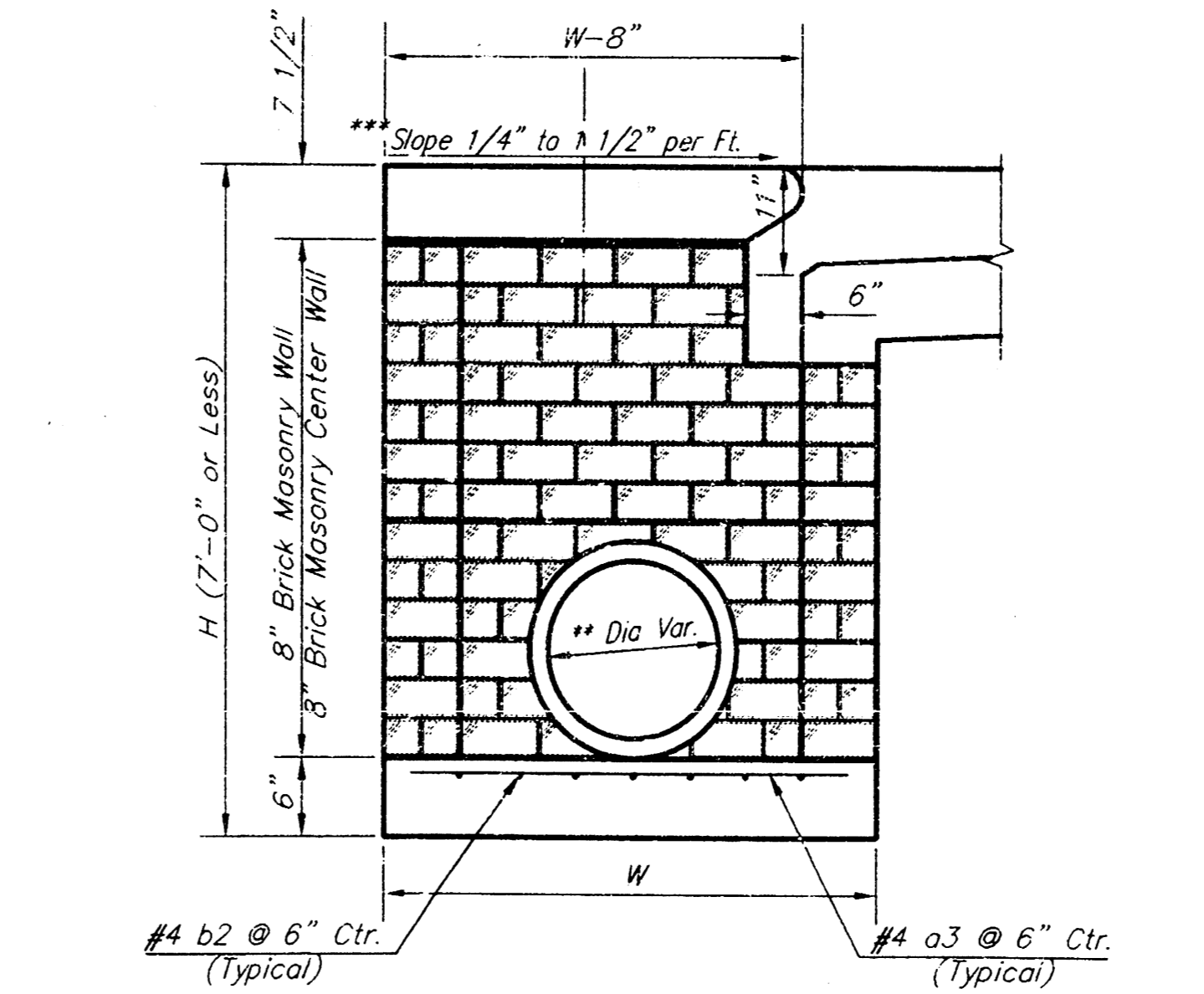


CASE II

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 of parking slopes within limits indicated

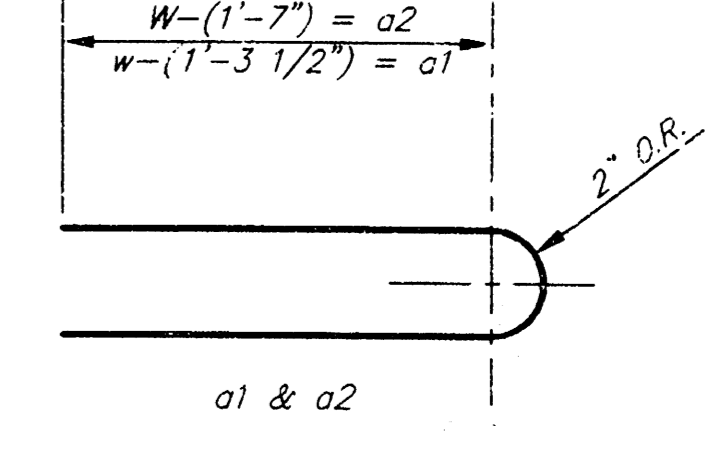
PRECAST SLAB AND FLOOR REINFORCING											
MARK	SIZE	W = 4'-4"		W = 5'-4"		W = 6'-4"		W = 7'-4"		W = 8'-4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
* a1	#4	13	6'-7"	13	8'-7"	13	10'-7"	13	12'-7"	13	14'-7"
* a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
* b1	#4	23	4'-1"	23	5'-1"	23	6'-1"	23	7'-1"	23	8'-1"
* b2	#4	7	9'-9"	7	9'-9"	7	9'-9"	7	9'-9"	7	9'-9"
* x1	#4	16	3'-10"	16	4'-2"	16	4'-6"	16	4'-10"	16	5'-2"

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
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	52	2	56	2	60	2	64	2	68	2

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

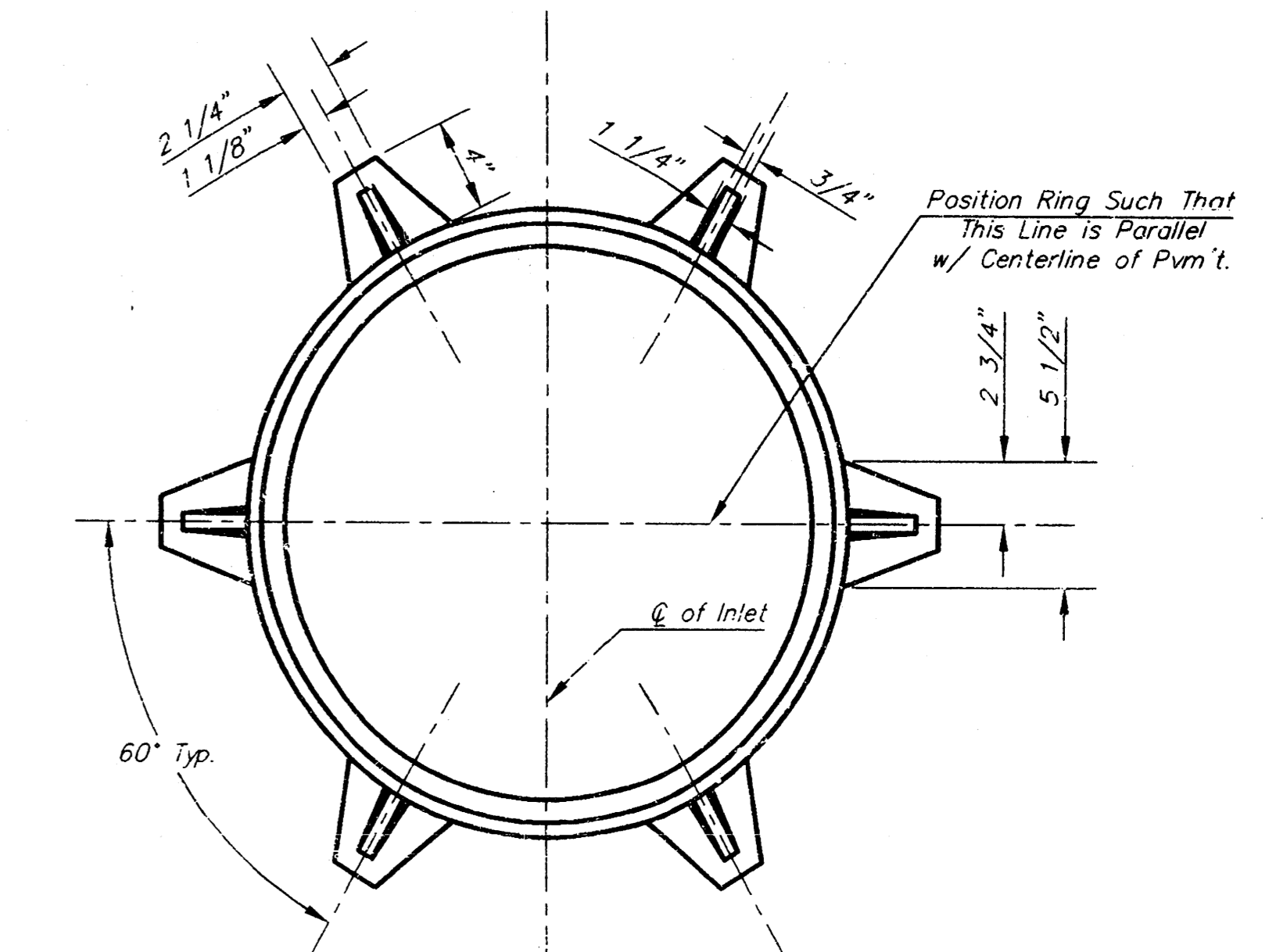
GENERAL NOTES:

- The contractor shall be required to construct 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" or less and H=7'-0" or less. When W is greater than 6'-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 5 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.
4'-4"	3'-8" 11'-4" 7 1/2"	21" & SMALLER	0.83±
5'-4"	4'-8" 11'-4" 7 1/2"	24" & 30"	1.09±
6'-4"	5'-8" 11'-4" 7 1/2"	36" & 42"	1.35±
7'-4"	6'-8" 11'-4" 7 1/2"	48" & 54"	1.61±
8'-4"	7'-8" 11'-4" 7 1/2"	60" & 66"	1.87±



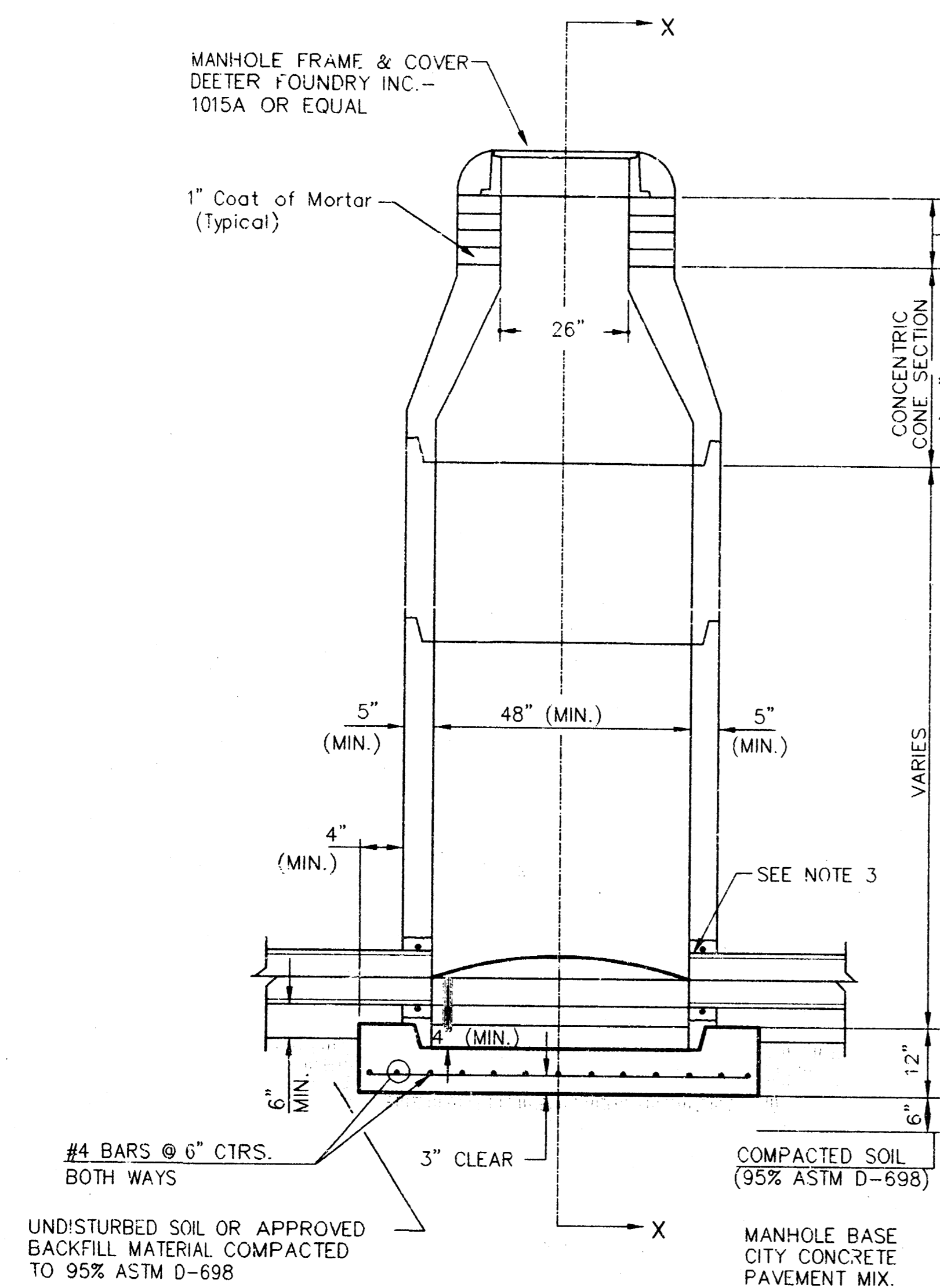
MANHOLE RING AND COVER
Weight = 180 lbs.

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

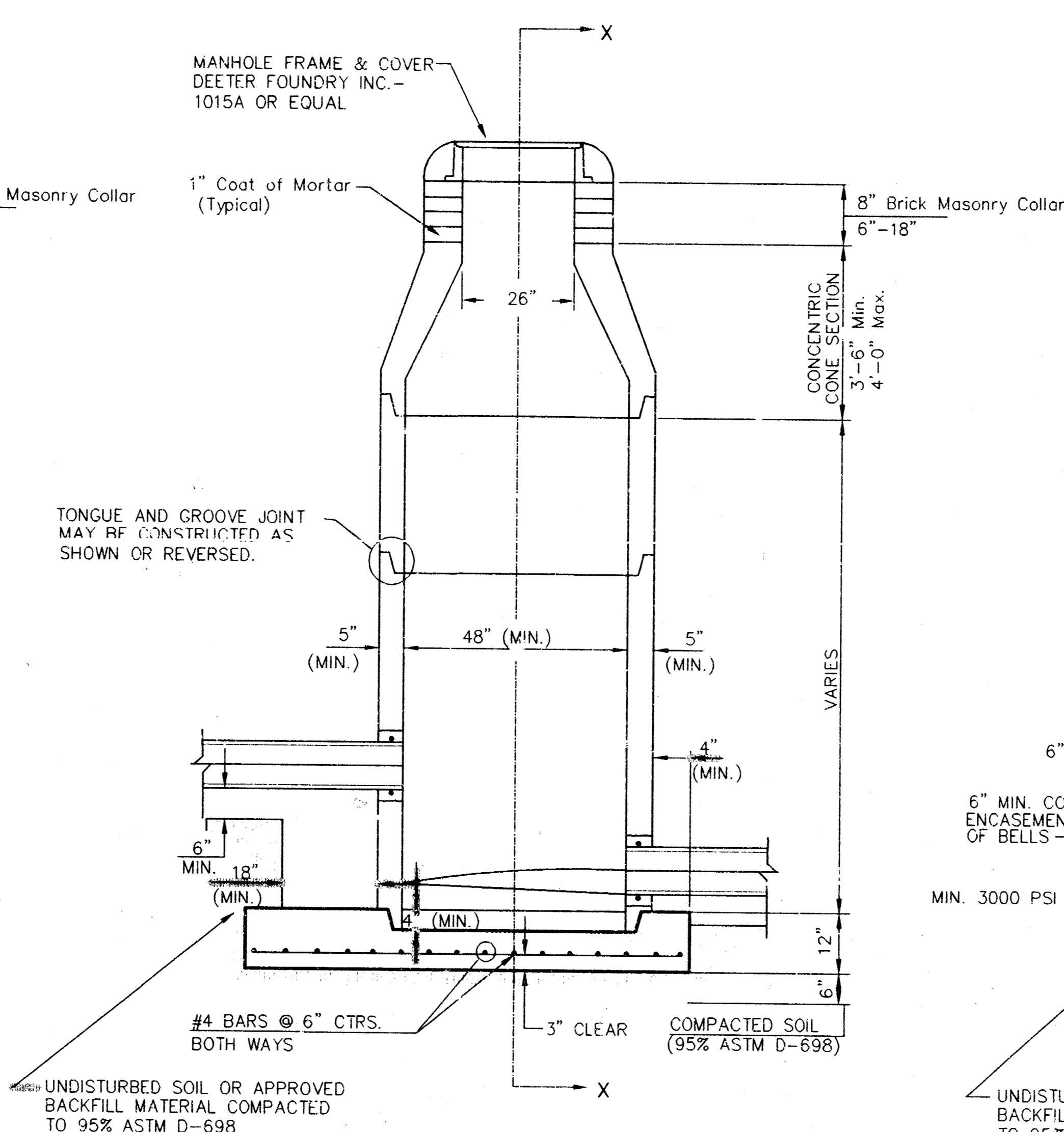
Revised - Feb. 16, 1989

TYPE 1A INLET (LENGTH = 10.0')		7
CITY OF WICHITA, KANSAS		
		10

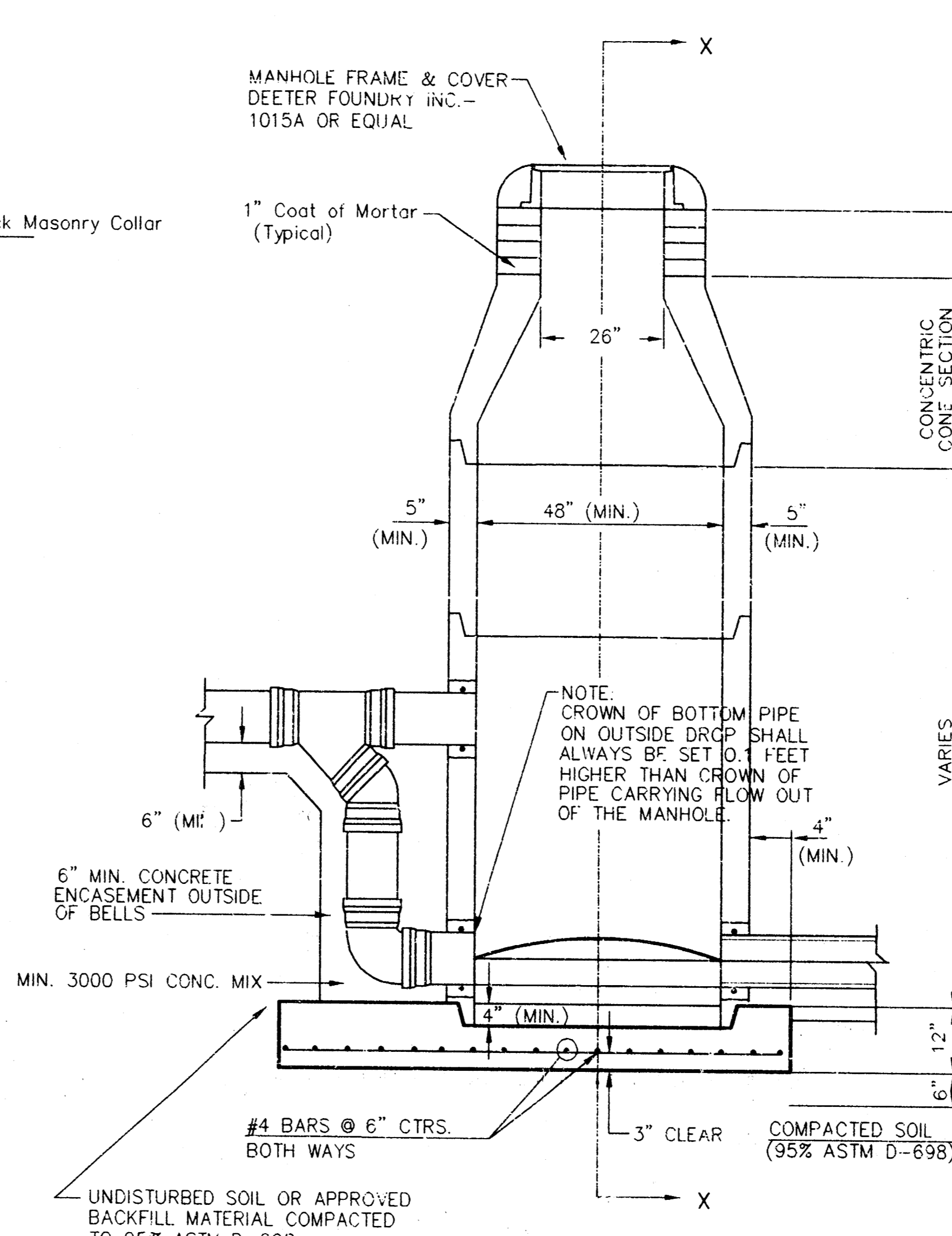
SEWER APPURTENANCES DETAILS



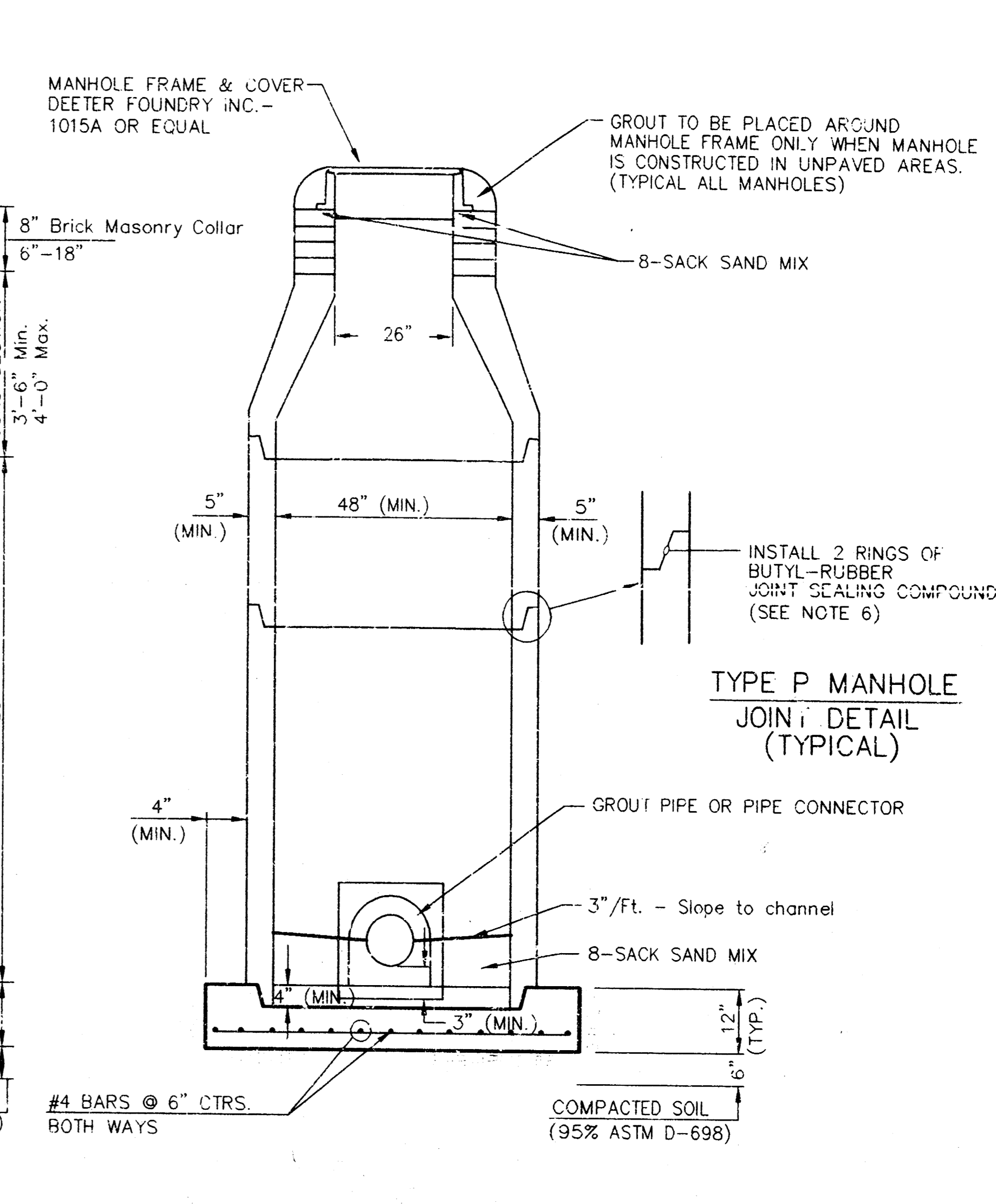
**TYPE P
STANDARD MANHOLE**



**TYPE P
INSIDE DROP MANHOLE**



**TYPE P
OUTSIDE DROP MANHOLE**



**SECTION X
(TYPICAL)**

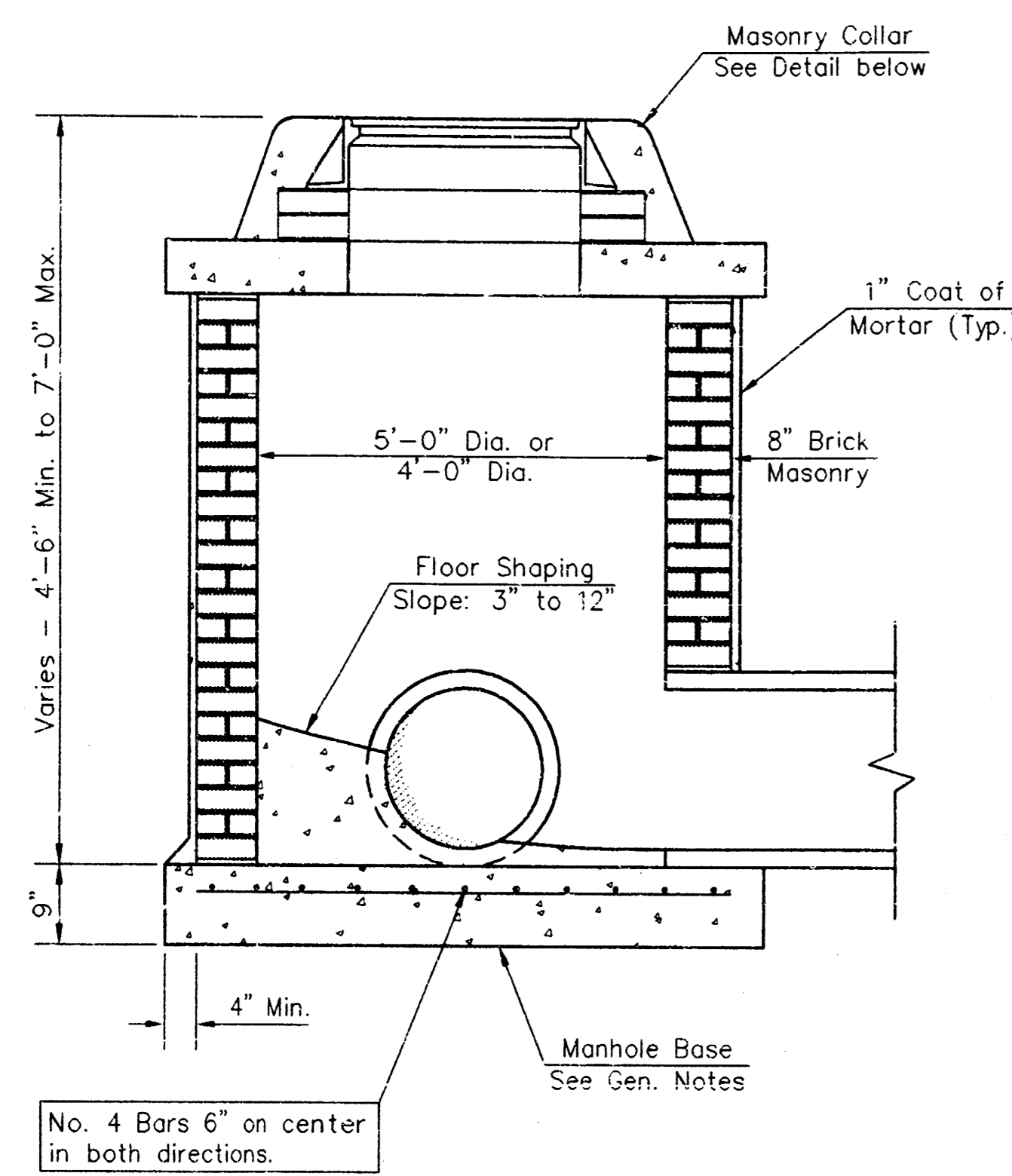
GENERAL NOTES
PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
9. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. 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.

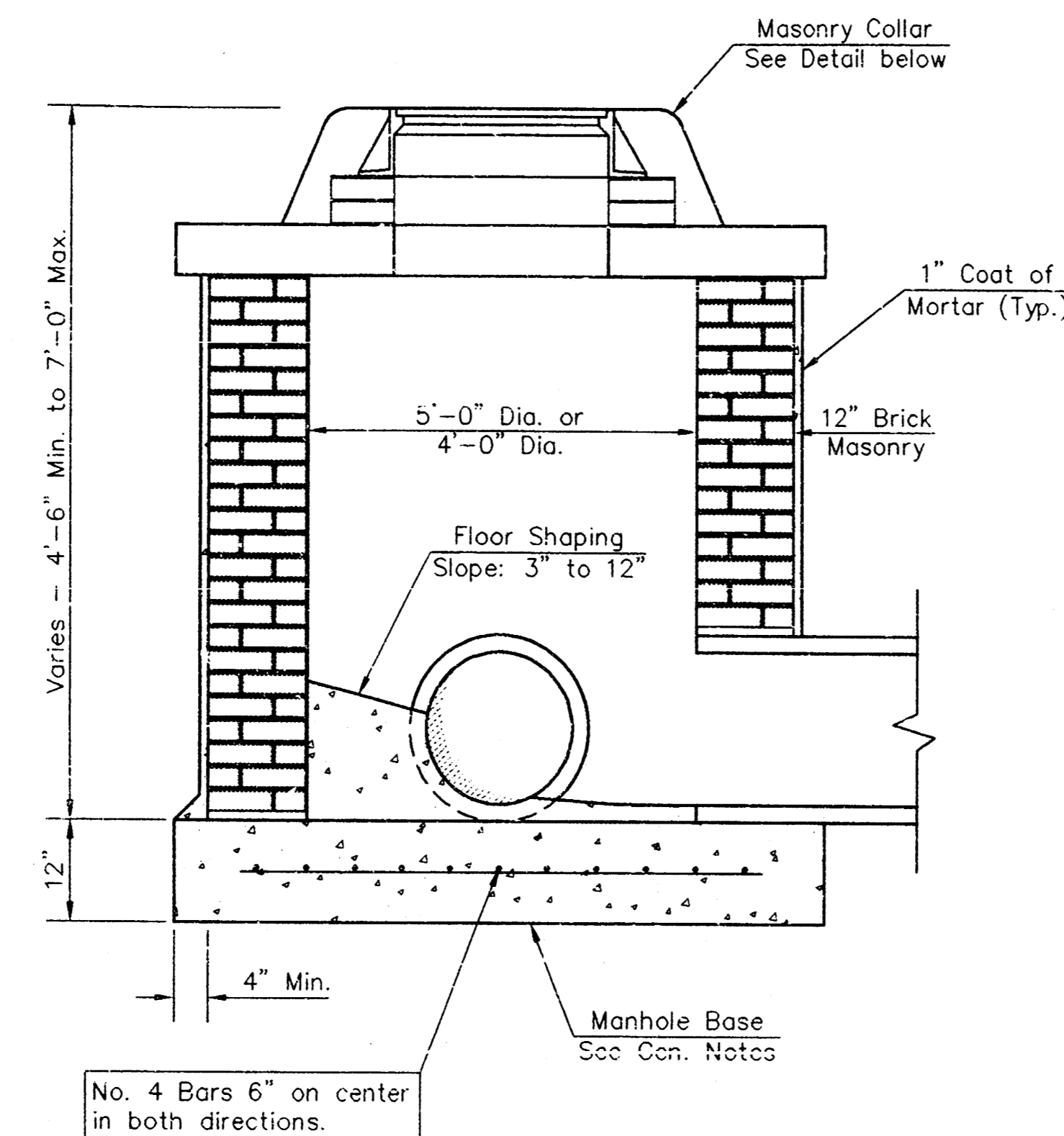
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO 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.
14. 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.

15. 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.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' 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.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.

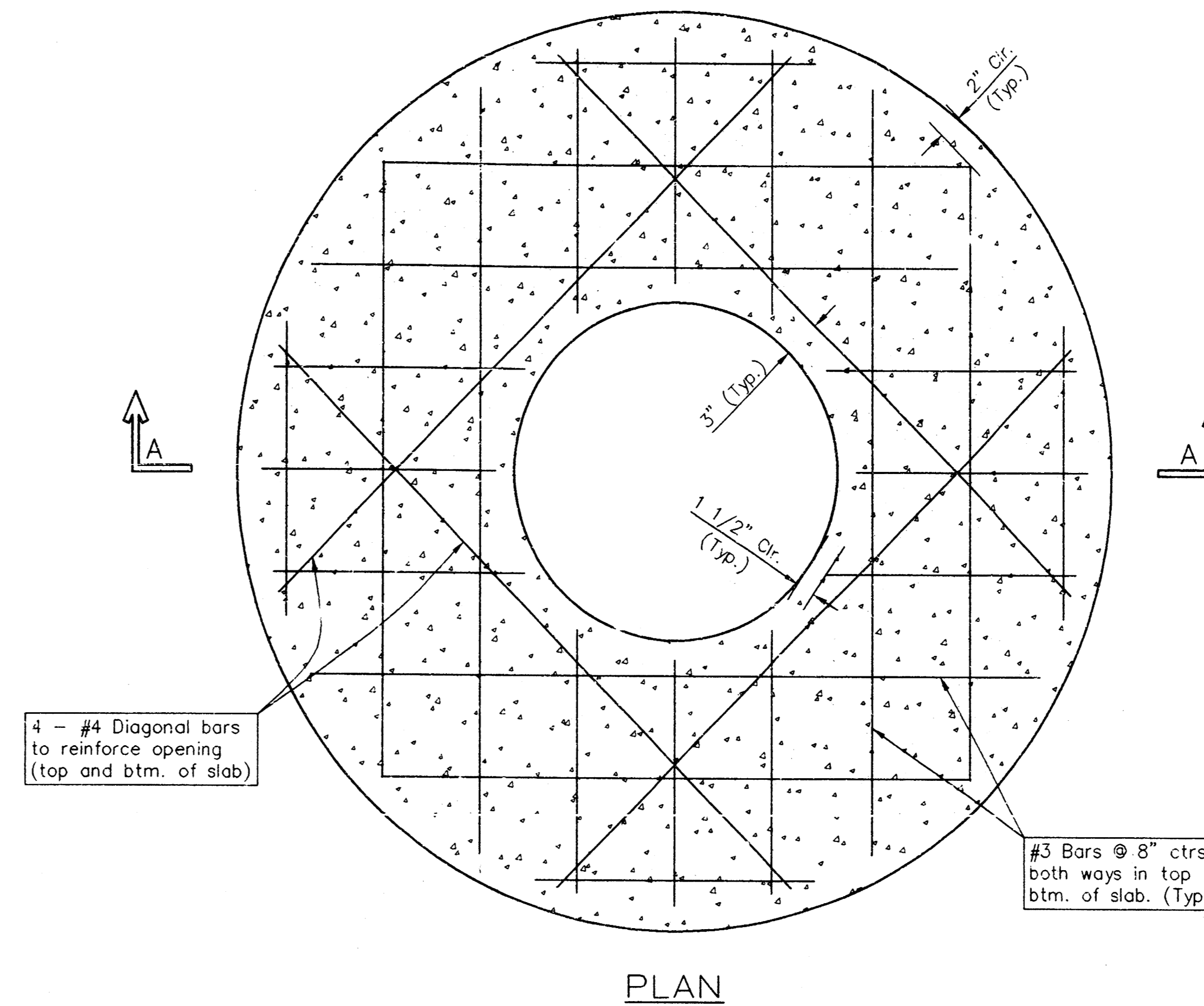
STANDARD MANHOLE DETAILS
SEWER APPURTENANCES DETAILS
CITY OF WICHITA, KANSAS



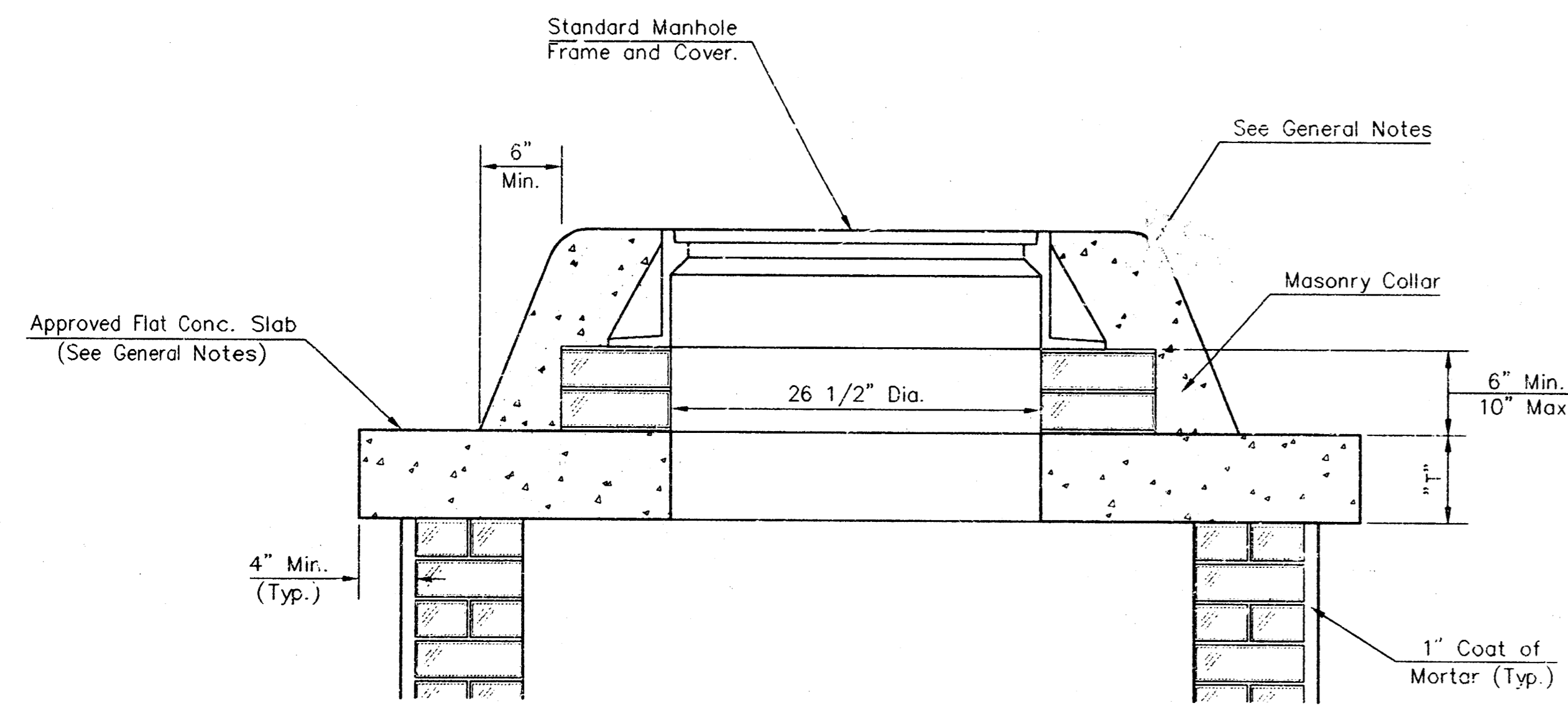
SHALLOW TYPE "A" MANHOLE



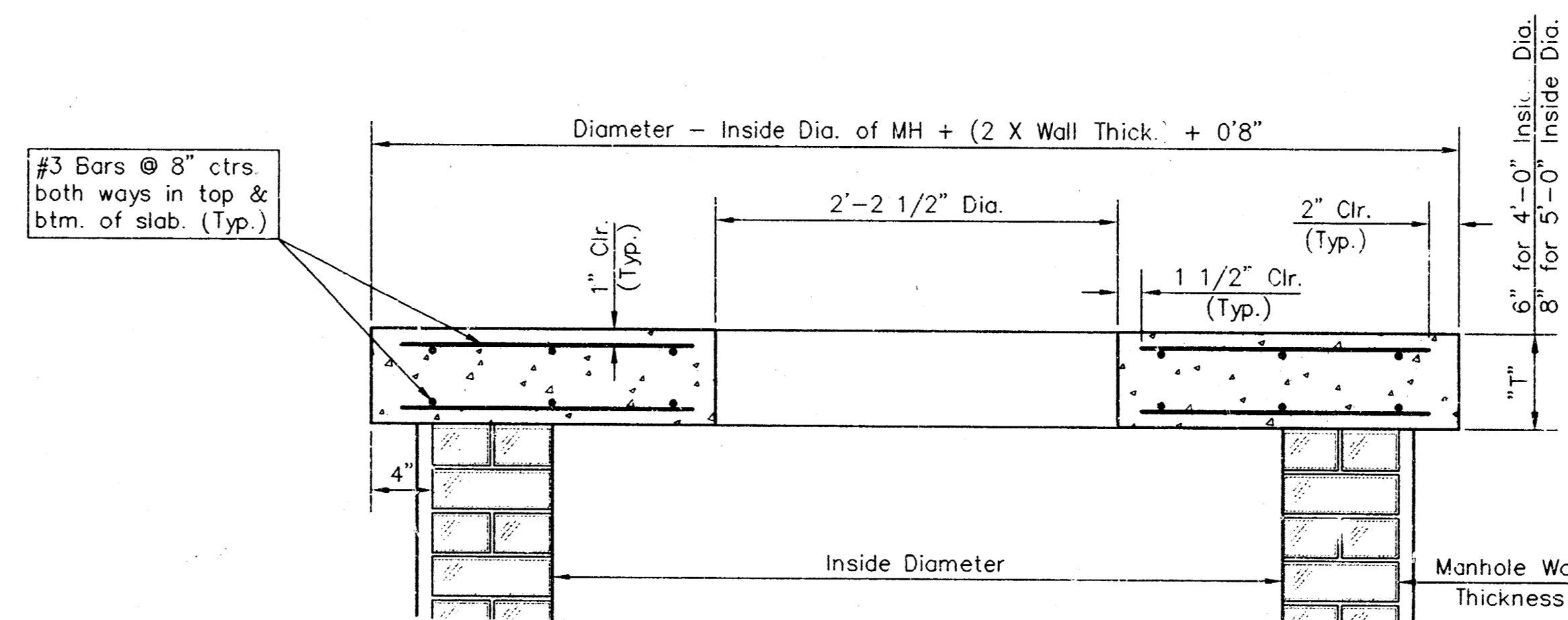
SHALLOW TYPE "B" MANHOLE



PLAN



MASONRY COLLAR DETAIL

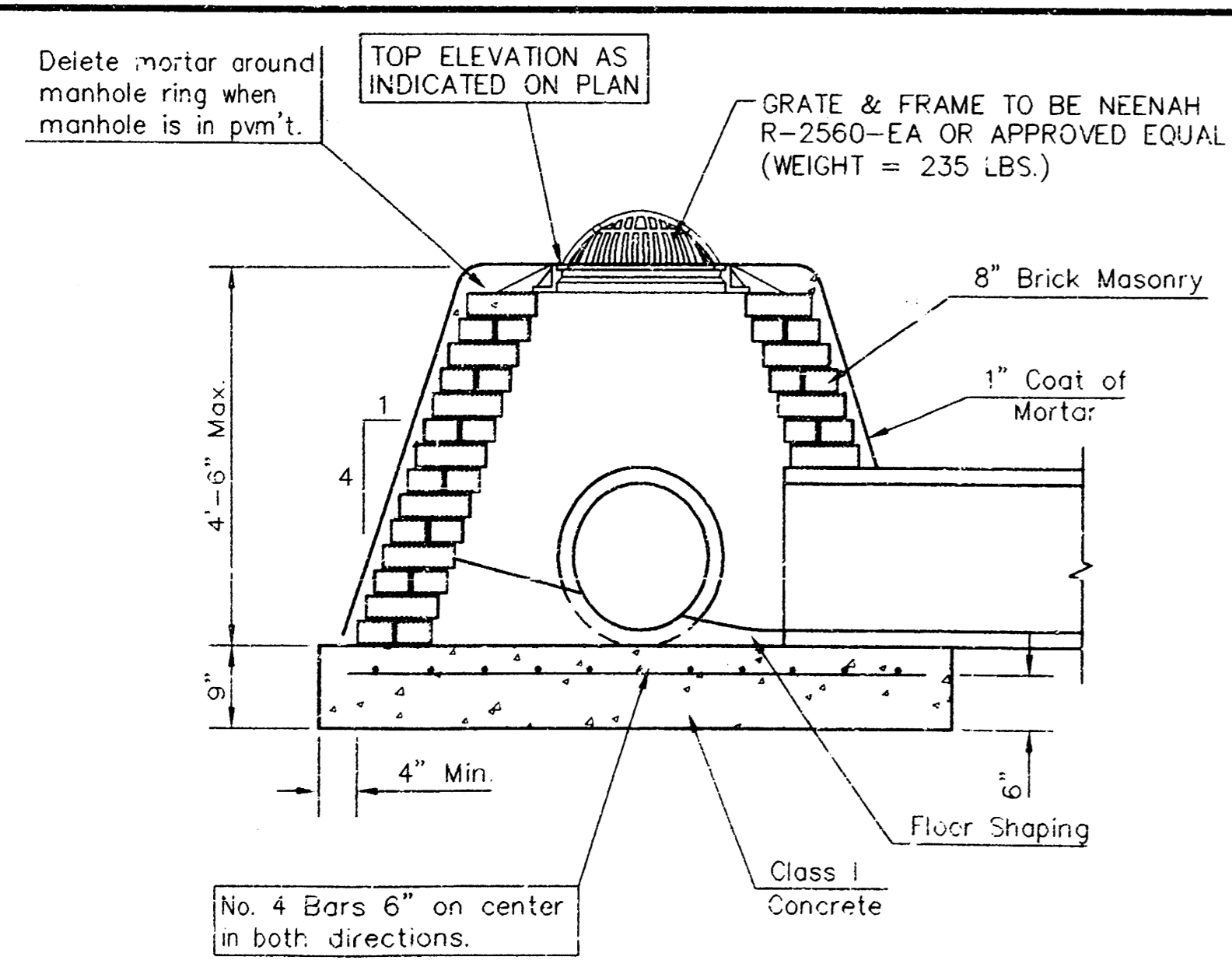


SECTION A-A

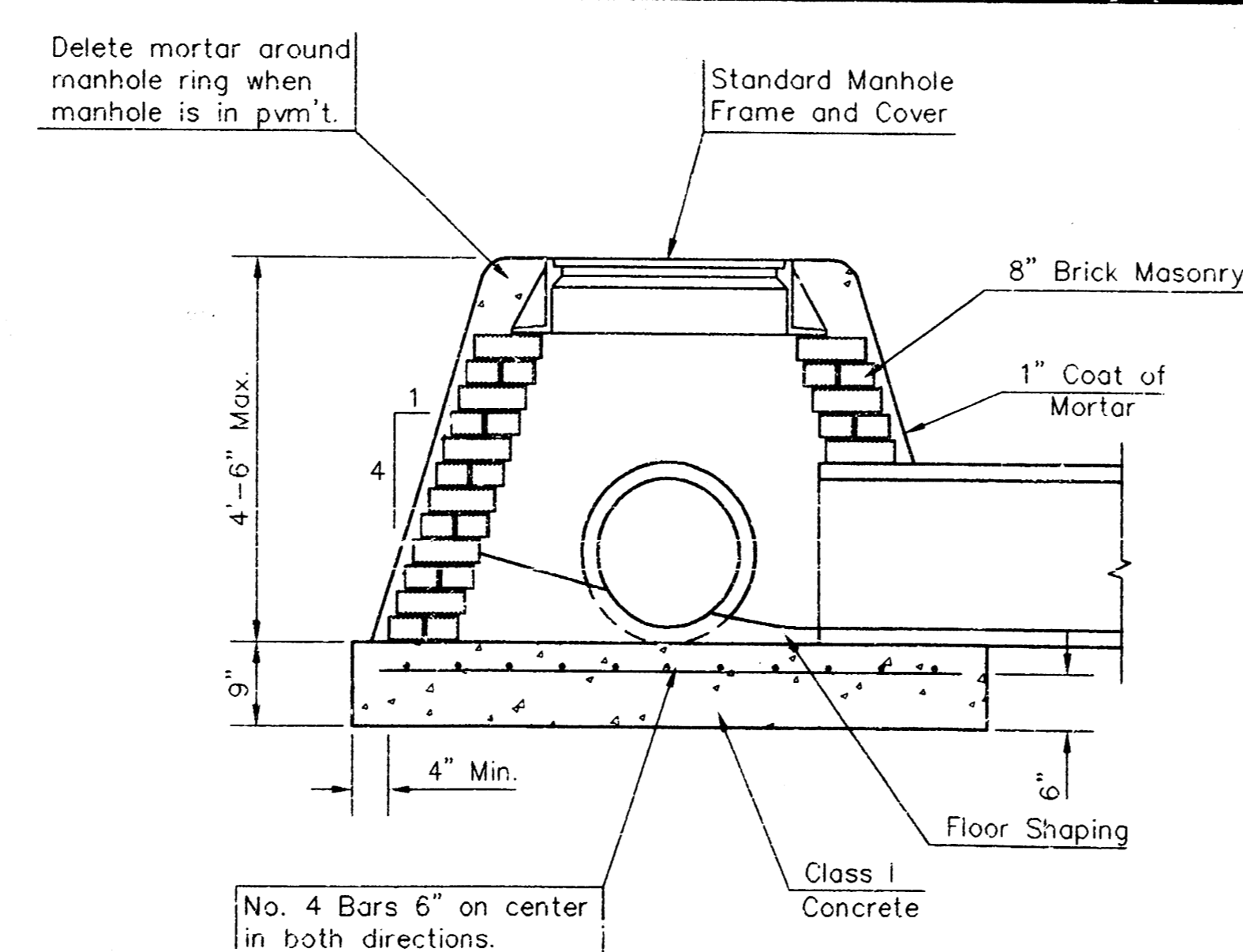
FLAT CONCRETE SLAB DETAILS

GENERAL NOTES

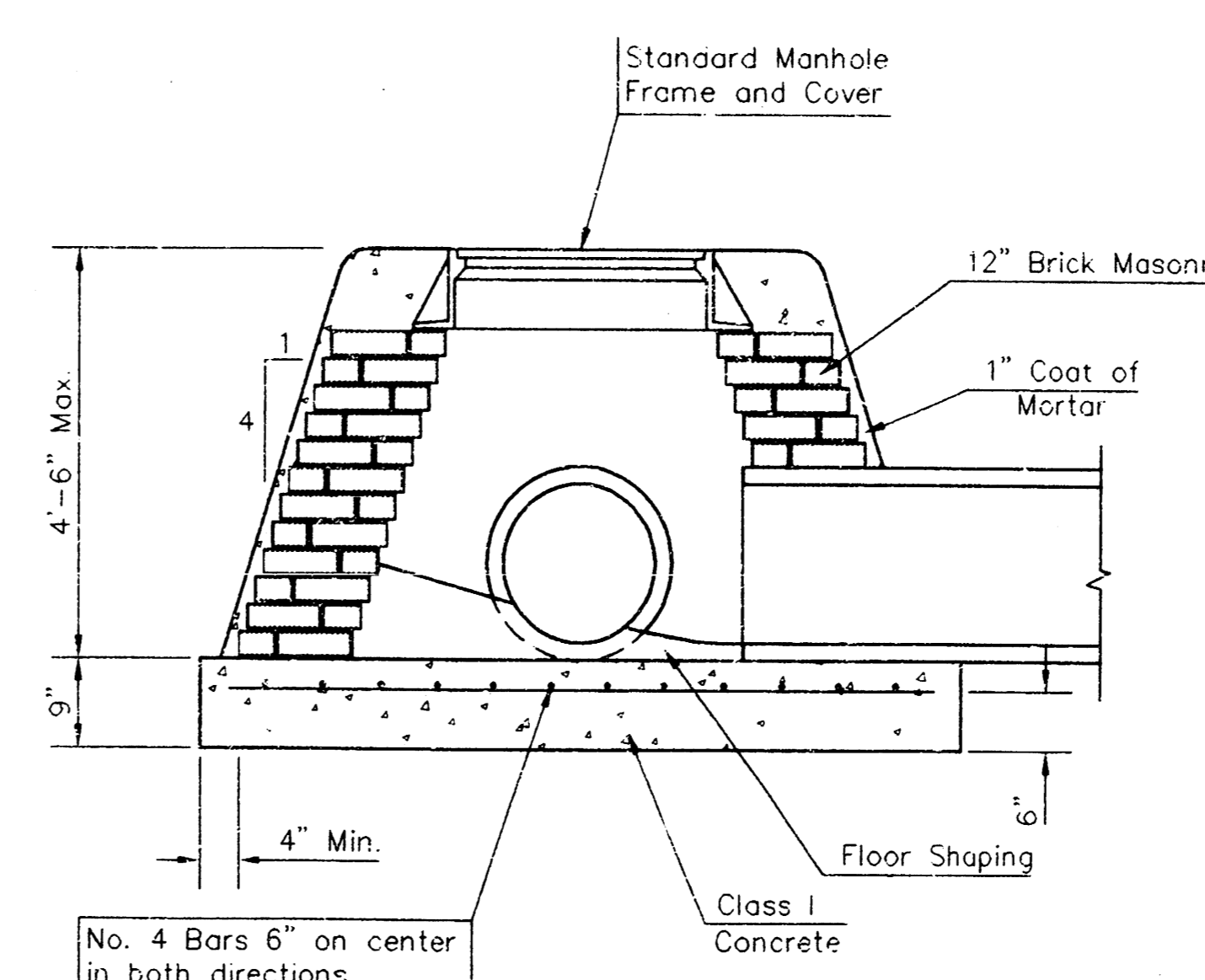
- Mortar used in masonry construction shall be Class III. Concrete used in manhole bases shall be Class I. Mortar shall be placed around the manhole ring as shown on the drawings when manholes are constructed in unpaved areas. Type "A" shallow manholes can be used on sewers when the manhole is not located 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 C62-87.



SPECIAL SHALLOW TYPE "A" MANHOLE WITH BEEHIVE FRAME & GRATE



SPECIAL SHALLOW TYPE "A" MANHOLE

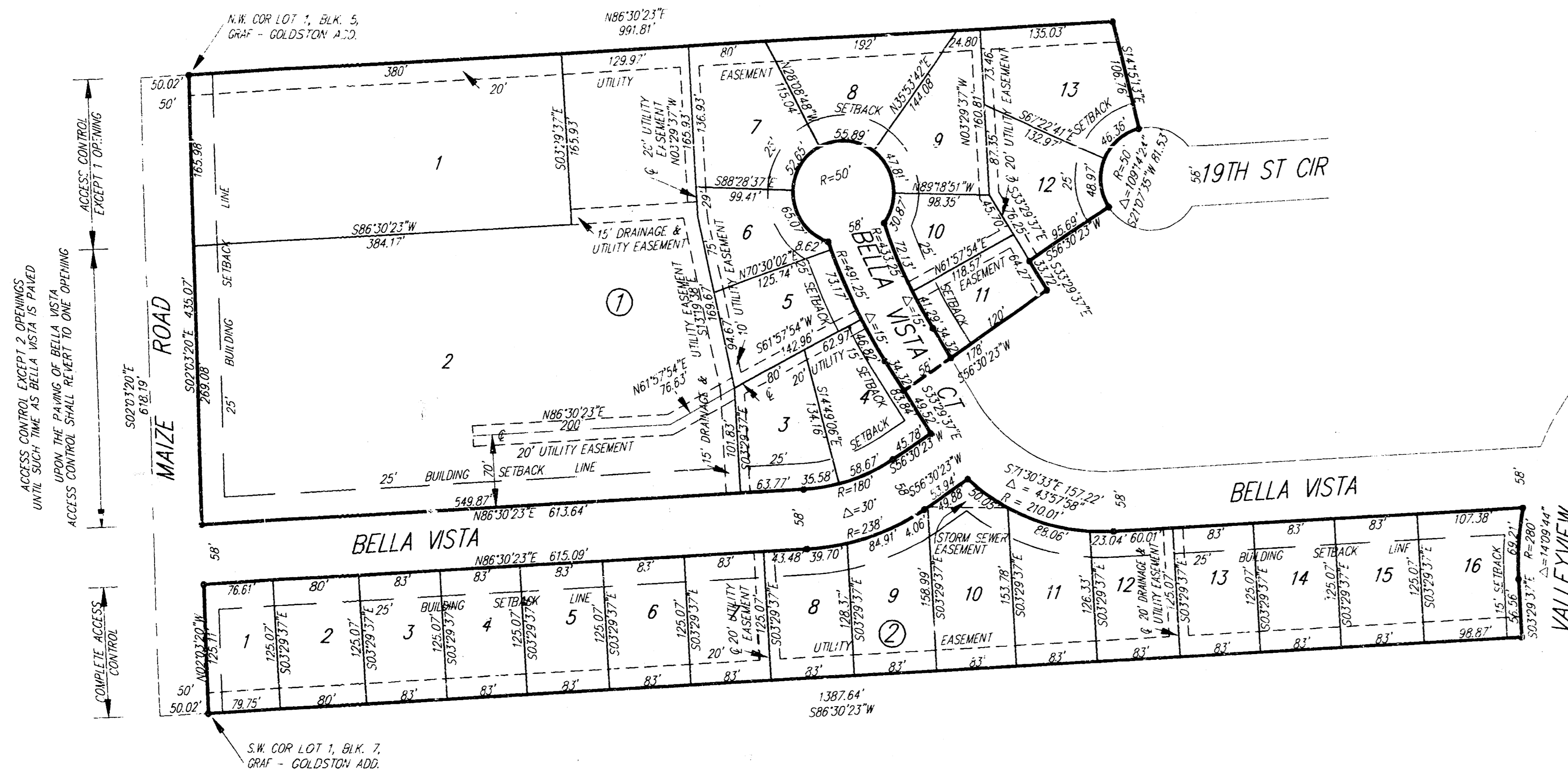


SPECIAL SHALLOW TYPE "B" MANHOLE

SHALLOW MANHOLE DETAIL						REVISIONS
						9
						10
DRAWN	DESIGN	REVIEW	DATE	UTILITY	SRS/JSR	

GRAF - GOLDSTON 2ND ADDITION

WICHITA, SEDGWICK COUNTY, KANSAS



State of Kansas)
Sedgwick County) SS
We, Savoy, Ruggles & Bohm, P.A., Surveyors in aforesaid county and state do hereby certify that we have surveyed and platted this plat of "GRAF-GOLDSTON 2ND ADDITION", Wichita, Sedgwick County, Kansas, and that the accompanying plat is a true and correct exhibit of said survey, described as and being a re-plat of the following described property:

Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and Lots 29 and 30, in Block 5, and Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13, in Block 6 and Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18 in Block 7, Graf - Goldston Addition to Wichita, Sedgwick County, Kansas, and Lot 1, Block 1, West Towne Baptist Church Addition, Sedgwick County, Kansas, and all of 19th Street extending east from the east line of Maize Road to the south line of Lot 12, in said Block 5, extended southwesterly to the northeasterly line of Lot 7, in said Block 6.

All being situated in the NW 1/4 of Sec. 8, Twp. 27-S, R-1-W of the 6th P.M., Sedgwick County, Kansas.

Said 19th Street and all other public easements and dedications being vacated by virtue of K.S.A. 12-512(b).

Savoy, Ruggles & Bohm, P.A.

Date _____
Mark A. Savoy Surveyor

This plat of "GRAF-GOLDSTON 2ND ADDITION", Wichita, Sedgwick County, Kansas has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this _____ day of _____ 1995
Wichita-Sedgwick County Metropolitan Area Planning Commission.

John W. McKay, Jr. Chairman

Marvin S. Krout Secretary

This plat approved and all dedications shown hereon accepted by the Board of Commissioners of the City of Wichita, Kansas, this _____ day of _____ 1995.

Bob Knight Mayor

Pat Burnett Deputy City Clerk

Entered on Transfer Record, this _____ day of _____ 1995.

Susan E. Crockett-Spoon County Clerk

Know all men by these presents that we, the undersigned, have caused the land described in the surveyors certificate to be platted into Lots, Blocks and Streets to be known as "GRAF-GOLDSTON 2ND ADDITION", Wichita, Sedgwick County, Kansas. The utility easements are hereby granted for the construction and maintenance of all public utilities. The drainage and utility easement is hereby granted for drainage purposes and for the construction and maintenance of all public utilities. The Street is hereby dedicated to and for the use of the public. All abutters rights of access to or from Maize Road, over and across the west line of Lots 1 and 2, Block 1, and Lot 1, Block 2, are hereby granted to the City of Wichita, provided however that Lot 1, Block 1, shall have access to Maize Road at one location over the west line; hereof and that Lot 2 shall have access to Maize Road at two locations until such time as Bella Vista is paved, and that upon such paving, Lot 2 shall have access to Maize Road at one location, all as shall be determined by the City Engineer of the City Wichita, Kansas.

Courtland Development Corporation

Joe Graf President

West Towne Baptist Church, Inc.

Bob Shank President

West Congregation of Jehovah's Witnesses

Richard E. Wiechman Shirley A. Wiechman

We, the undersigned, holders of a mortgage on a portion of the above described property do hereby consent to this plat of "GRAF-GOLDSTON 2ND ADDITION", Wichita, Sedgwick County, Kansas.

Emprise Bank

The American Baptist Extension Corporation

Fidelity Savings Association of Kansas, FSB

State of Kansas)
Sedgwick County) SS
The foregoing instrument acknowledged before me, this _____ day of _____ 1995, by _____, _____ of Emprise Bank, on behalf of the corporation.

Notary Public
My App't. Exp. _____

State of Kansas)
Sedgwick County) SS
The foregoing instrument acknowledged before me, this _____ day of _____ 1995, by _____, _____ of The American Baptist Extension Corporation, on behalf of the corporation.

Notary Public
My App't. Exp. _____

State of Kansas)
Sedgwick County) SS
The foregoing instrument acknowledged before me, this _____ day of _____ 1995, by _____, _____ of Fidelity Savings Association of Kansas, FSB, on behalf of the corporation.

Notary Public
My App't. Exp. _____

State of Kansas)
Sedgwick County) SS
This is to certify that this plat has been filed for record in the office of the Register of Deeds, this _____ day of _____ 1995, at _____ o'clock _____ M., and is duly recorded.

Pat Kettler Register of Deeds

Ed Resa Deputy

State of Kansas)
Sedgwick County) SS
The foregoing instrument acknowledged before me, this _____ day of _____ 1995, by Joe Graf, President of Courtland Development Corporation, on behalf of the corporation.

Notary Public
My App't. Exp. _____

State of Kansas)
Sedgwick County) SS
The foregoing instrument acknowledged before me, this _____ day of _____ 1995, by Bob Shank, President of West Towne Baptist Church, Inc., on behalf of the corporation.

Notary Public
My App't. Exp. _____

State of Kansas)
Sedgwick County) SS
The foregoing instrument acknowledged before me, this _____ day of _____ 1995, by _____, _____ of West Congregation of Jehovah's Witnesses, on behalf of the congregation.

Notary Public
My App't. Exp. _____

State of Kansas)
Sedgwick County) SS
The foregoing instrument acknowledged before me, this _____ day of _____ 1995, by Richard E. Wiechman and Shirley A. Wiechman, husband and wife.

Notary Public
My App't. Exp. _____

1" = 100'
• = 1/2" Rebar/SRB Cap