

# STORMWATER & SANITARY SEWER IMPROVEMENTS

TO SERVE

## Lot 2

# The Dugan Centre Third Addition

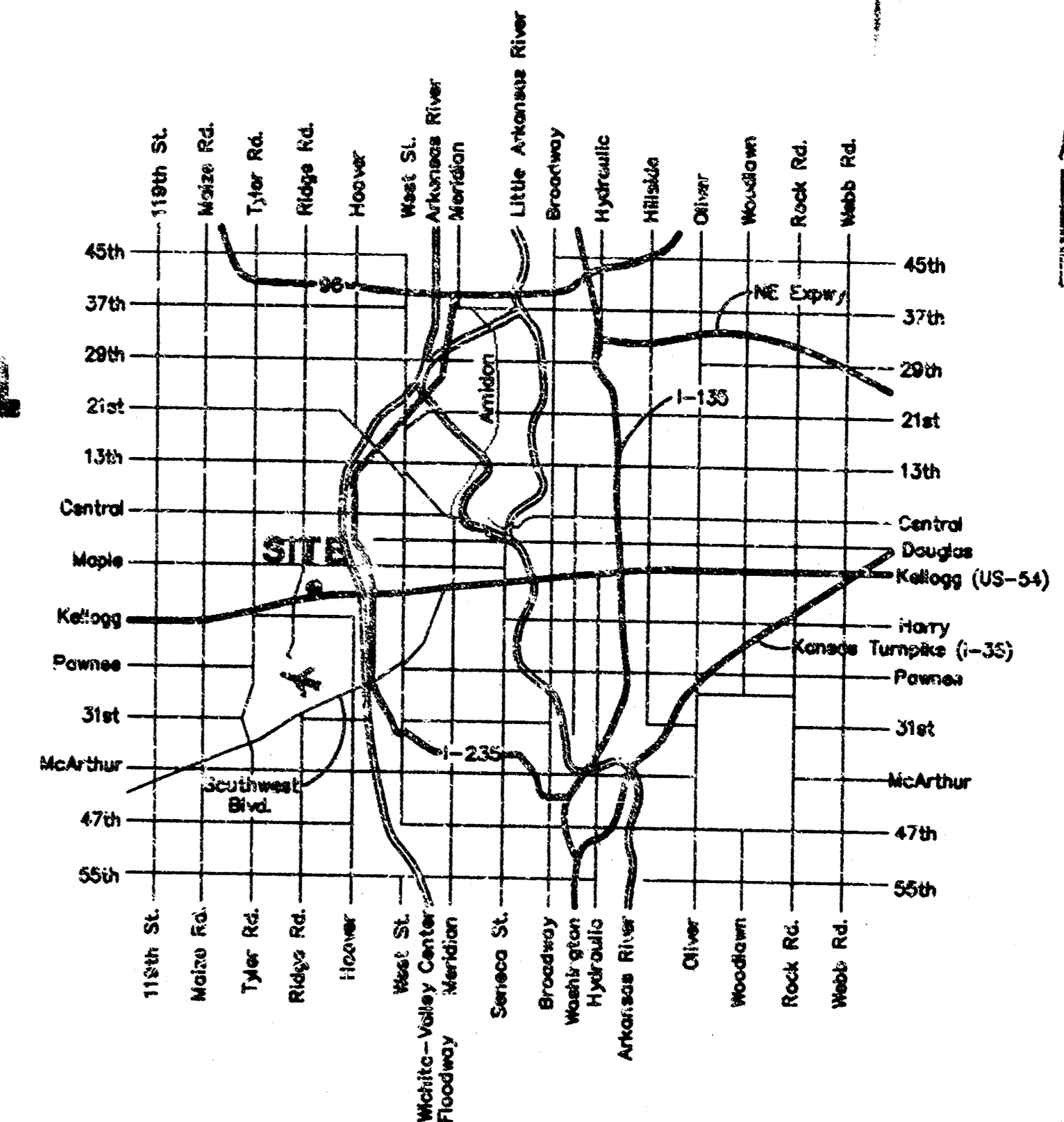
Private Project No. 629 PPS (607861)

Michael E. Lindeback, P.E. City Engineer

### Benchmark:

Square Cut on Top of  
Curb East end of return at  
SE. Corner of Dugan & Taft  
ELEV. = 118.61 CITY DATUM  
ELEV. = 1308.01 M.S.L.

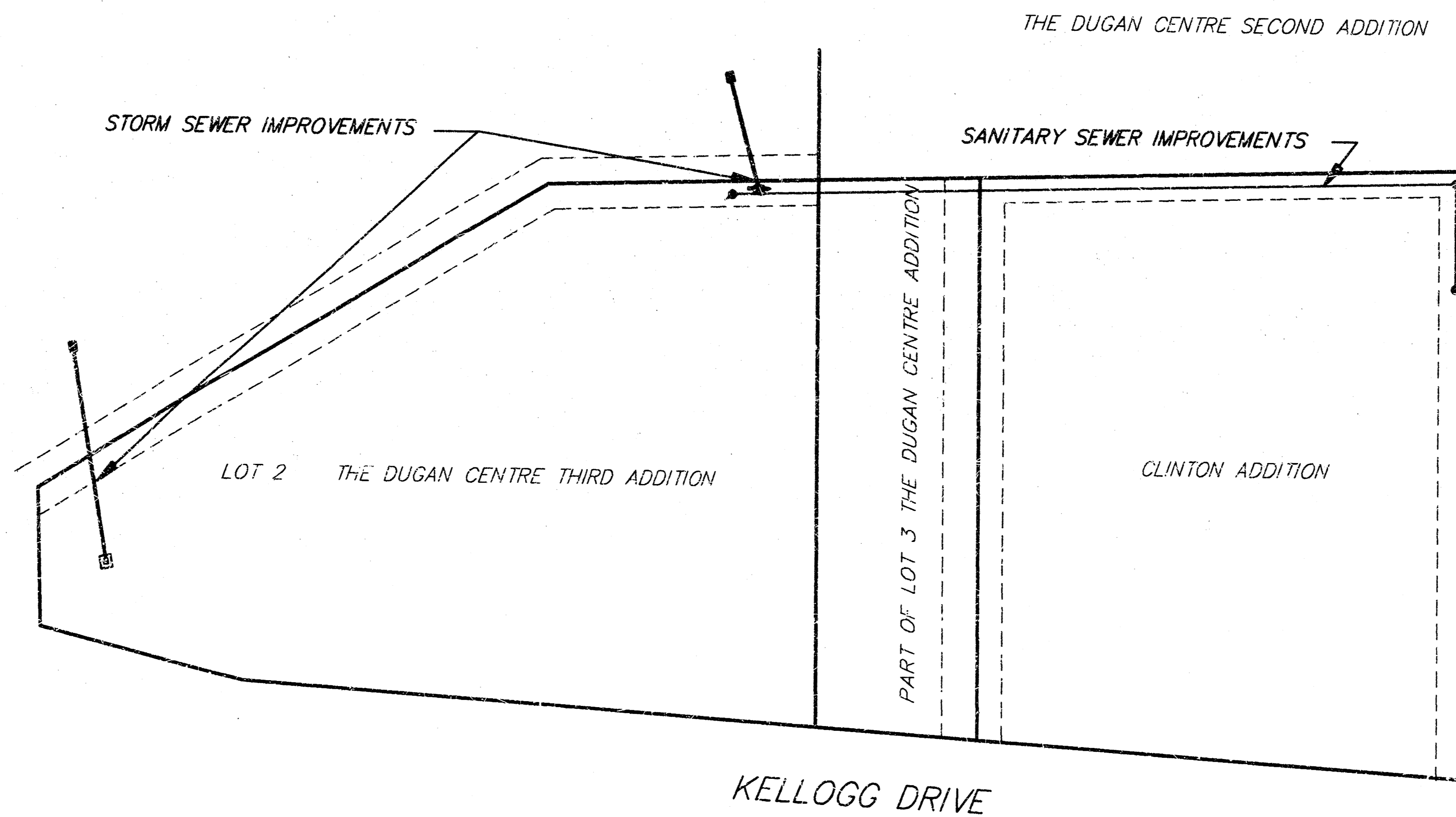
Plus Cut at the NE  
Corner Dugan Centre 3rd  
ELEV. = 131.26 CITY DATUM  
ELEV. = 1318.66 M.S.L.



Location Map

### General Notes

- 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. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
- The Contractor shall give all property owners and/or tenants of developed property adjoining the construction of this project a minimum of five (5) days advance notice prior to start of construction.
- 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.
- Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:  
Kansas One-Call 687-2470  
The Contractor must notify the following in case of an emergency:  
K.P.L. Gas Service Company 583-8630  
Kansas Gas & Electric Company 325-9600  
Cablevision 262-4270  
or 263-2081  
Southwestern Bell Telephone Company 1-571-2611  
City of Wichita Water Dept. 268-4908  
City of Wichita Sewer Maintenance 268-4071
- Existing utilities and their locations, 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 which do not conflict with proposed construction. The Contractor shall verify all utility locations prior to construction of this project.
- Contractor shall verify depth & location of existing utilities prior to construction.
- Disturbed areas within the street right-of-way are to be restored to the conditions existing prior to construction.



### Index of Sheets:

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SWS Plan/Profile	2
SS Plan/Profile	3
Manhole Detail	4
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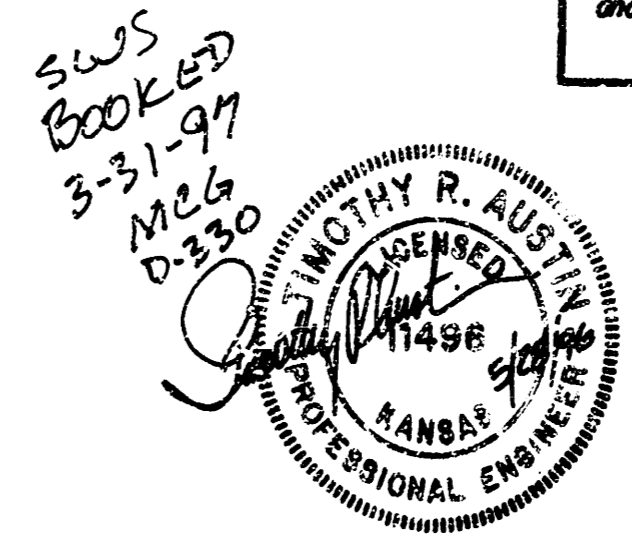
APPROVED AS NOTED  
BY CITY ENGINEER OF WICHITA

Storm Sewers *Steve Roth 5/26/96*  
Sanitary Sewers *Steve Roth 5/26/96*

NOTE TO CONTRACTORS

Inspection and testing for this project is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection is 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 each inspection or shut any work as 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).

San. Sew. Booked  
8-12-96  
JKB



BAUGHMAN COMPANY P. A.  
ENGINEERING, SURVEYING, & PLANNING  
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

SAN SUR  
ASBUILT  
7/22/96 JFB  
BAUGHMAN CO.

**BENCHMARK:**  
 Square Cut on Top of  
 Curb East end of return at  
 SE. Corner of Dugan & 1st  
 ELEV. = 118.61 CITY DATUM  
 ELEV. = 1306.01 M.S.L.

Plus Cut at the NE.  
 Corner Dugan Centre 3rd  
 ELEV. = 131.26 CITY DATUM  
 ELEV. = 1318.66 M.S.L.

Sta. 0+85 Line 1  
 Construct Std. 2x2 Drop Inlet  
 Top Elev. = 132.52

CAUTION!  
 Undgrd Elec.  
 Conduit

Sta. 0+00 Line 1  
 Install 12 SF Light  
 Stone Riprap.  
 Outfall Elev. = 125

Install 42 LF 12"  
 PVC Pipe.

Sta. 0+42 Line 2  
 Construct Type 1A Curb Inlet  
 (6'4" x 4'4")  
 Top Elev. = 132.27

CAUTION!  
 Proposed sanitary  
 sewer crossing.

Mitre outlet  
 to match  
 exstg contour.

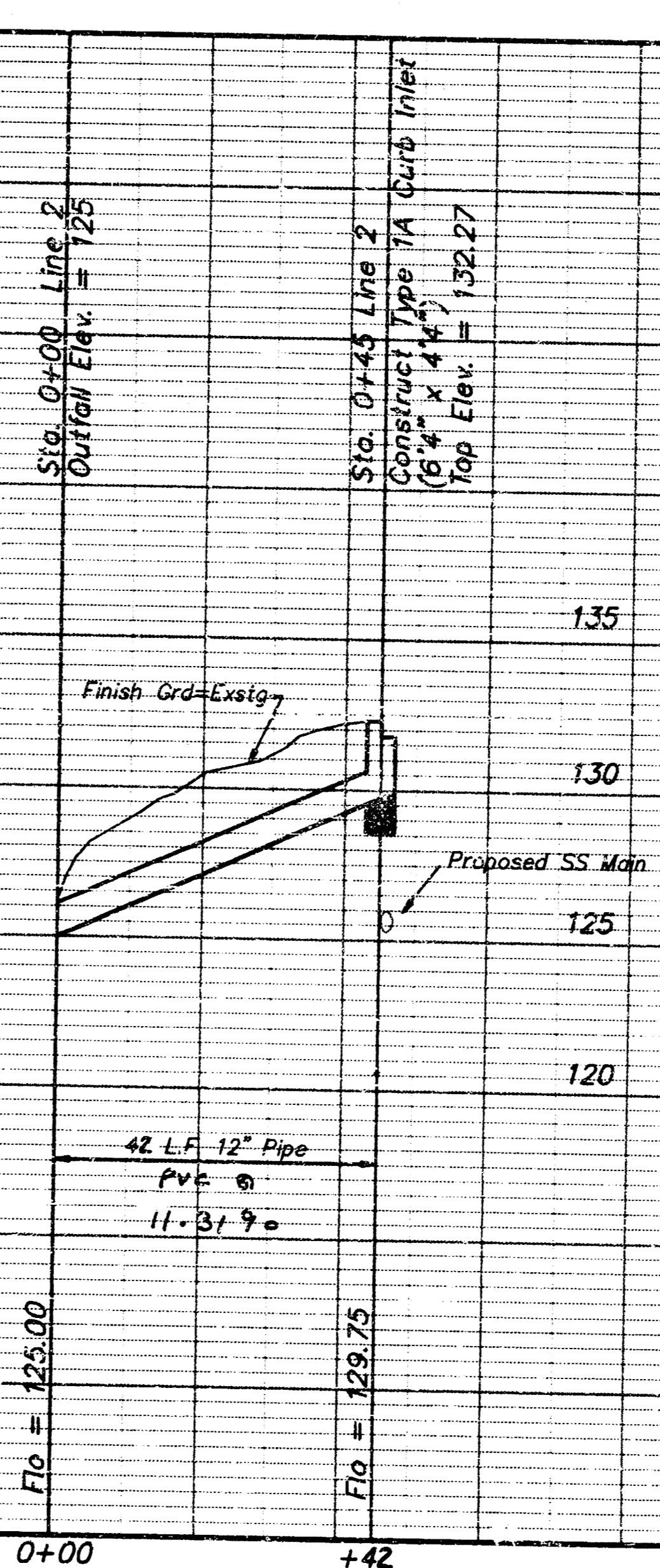
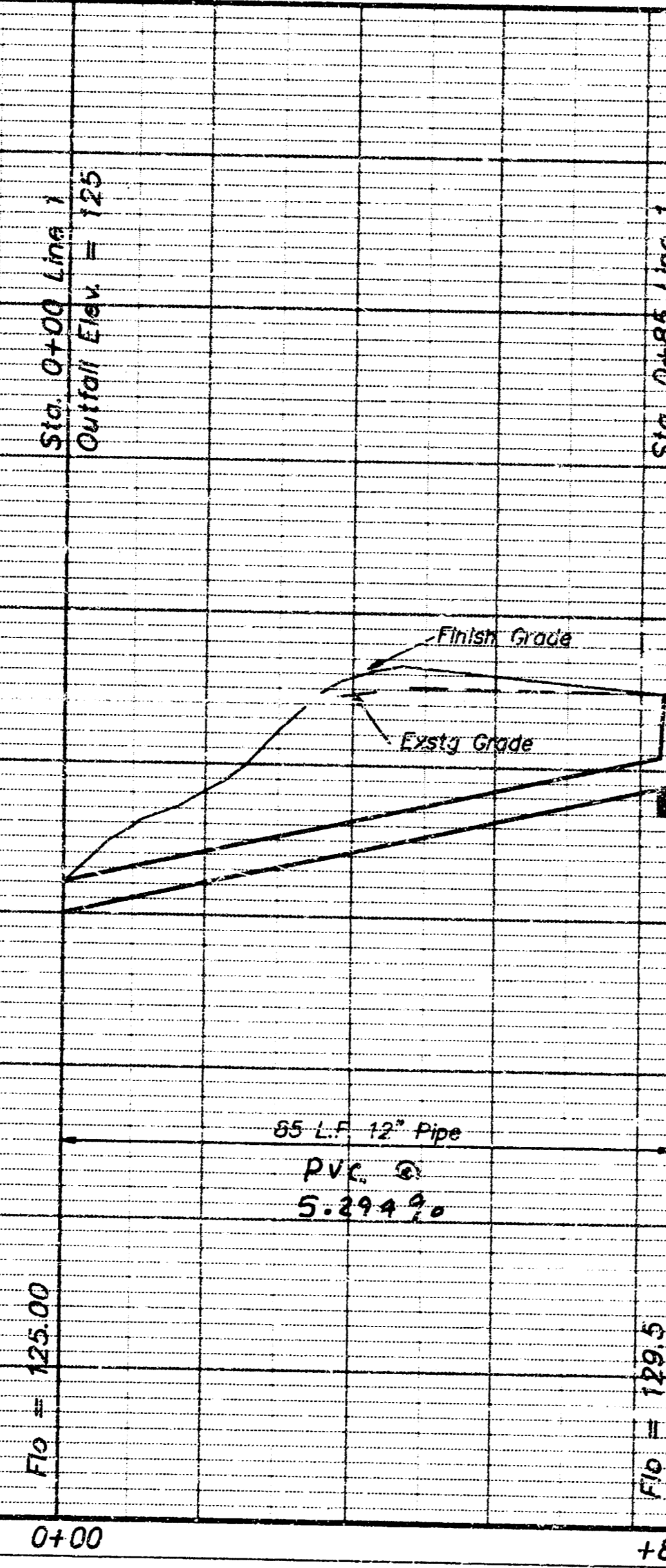
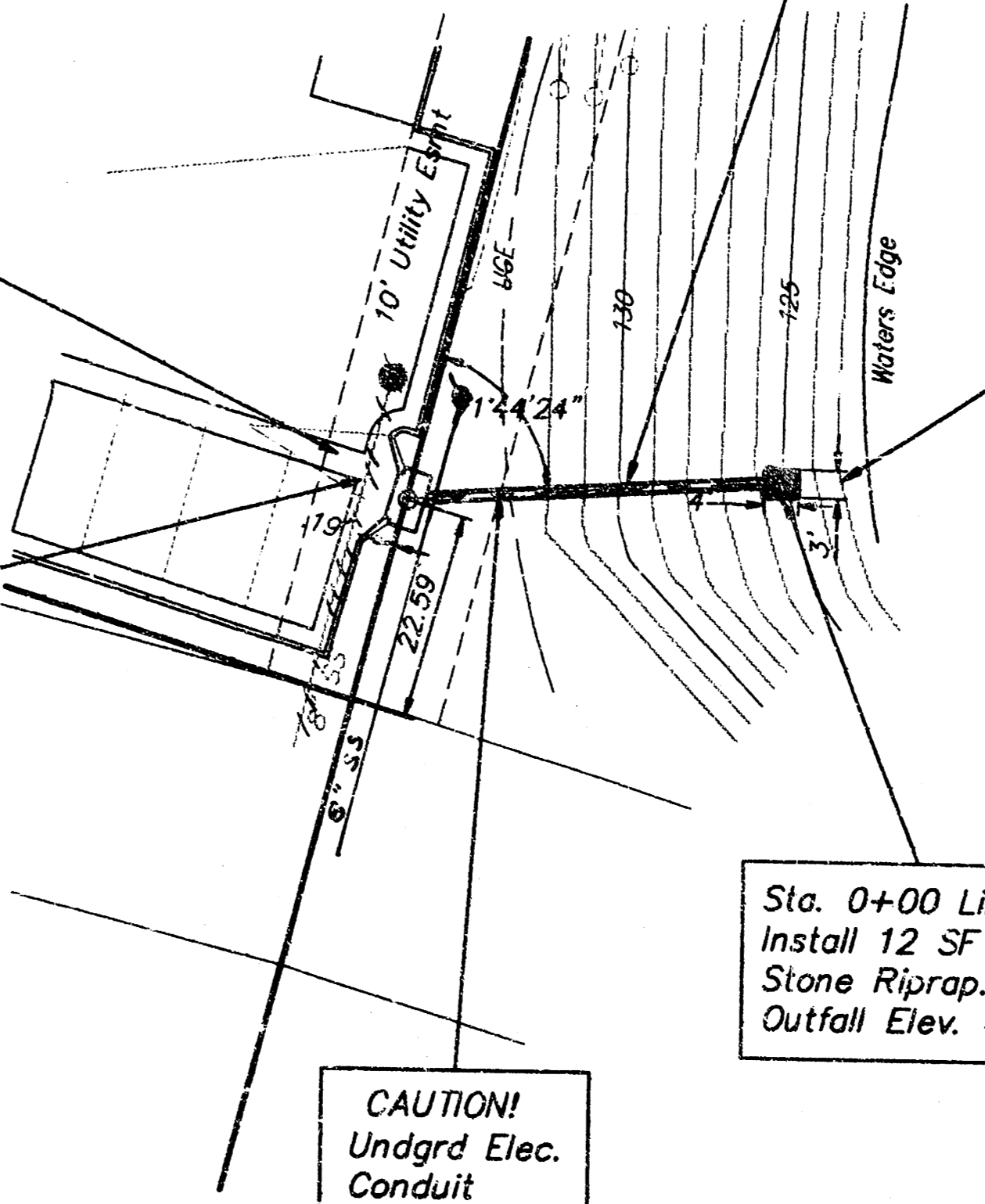
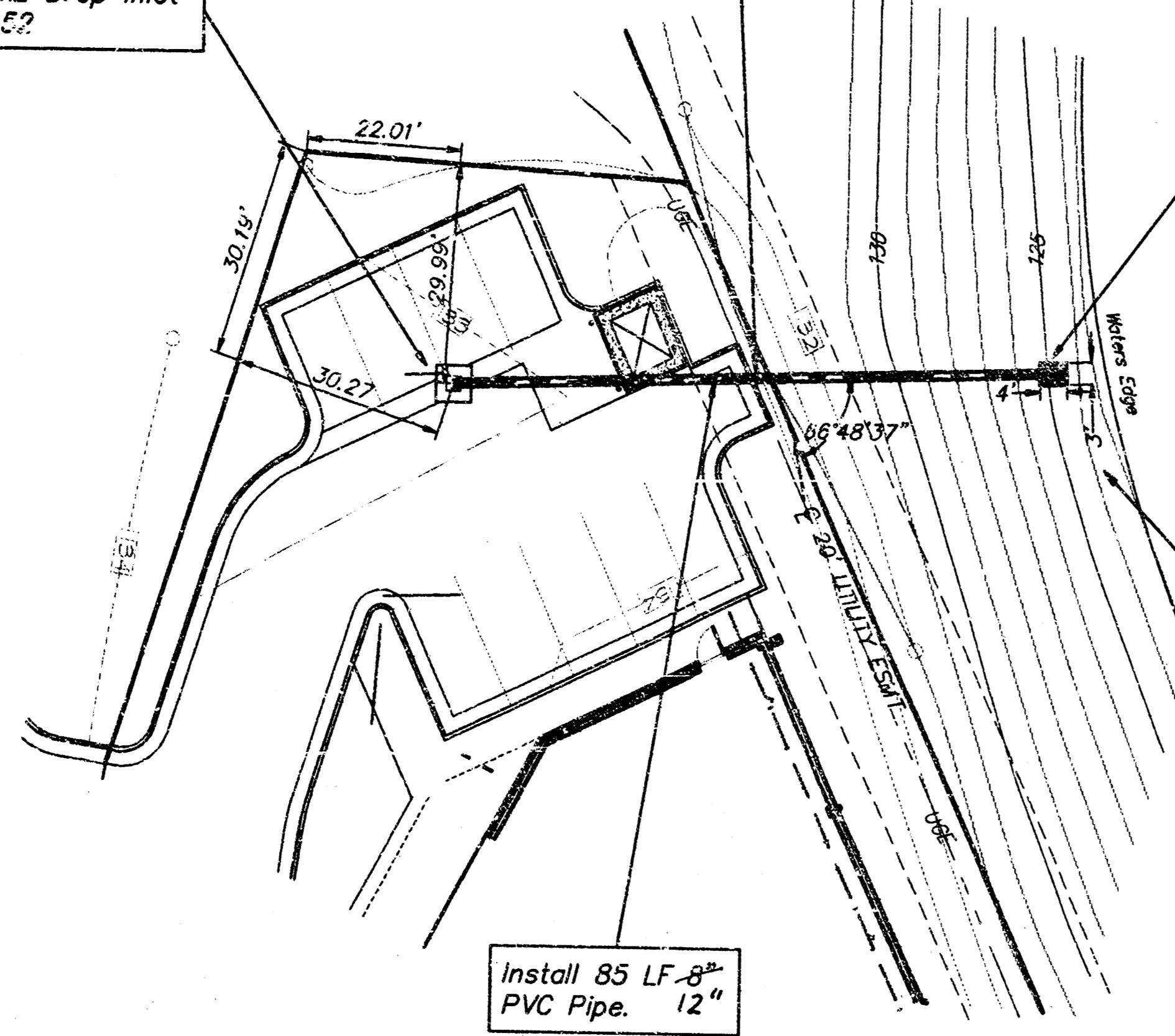
Sta. 0+00 Line 2  
 Install 12 SF Light  
 Stone Riprap.  
 Outfall Elev. = 125

CAUTION!  
 Undgrd Elec.  
 Conduit

INSPECTOR: CHRIS EDWARDS  
 BAUGHMAN CO.

SCALE:  
 1"=20' horz.  
 1"=5' vert.

ASBUILT: 12/10/97  
 JEFF BRADLEY BAUGHMAN



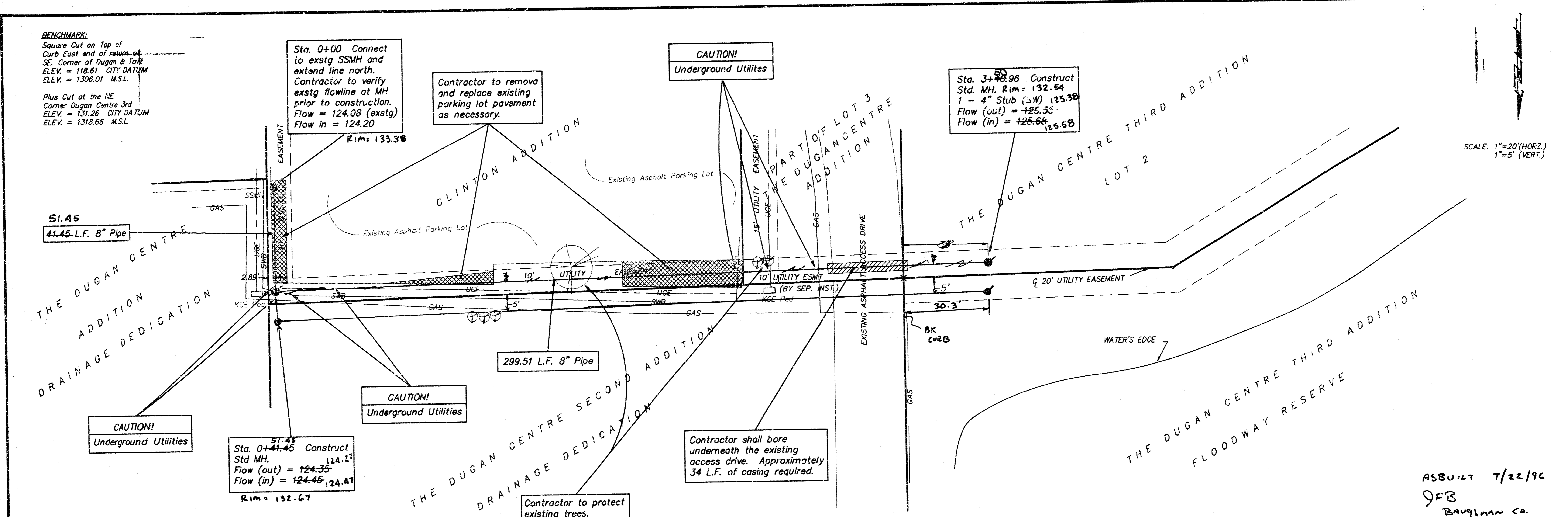
LOT 2 - THE DUGAN CENTRE THIRD ADDITION  
**SWS IMPROVEMENTS**  
 PARTY CITY

**BAUGHMAN COMPANY P. A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 318-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER: \_\_\_\_\_

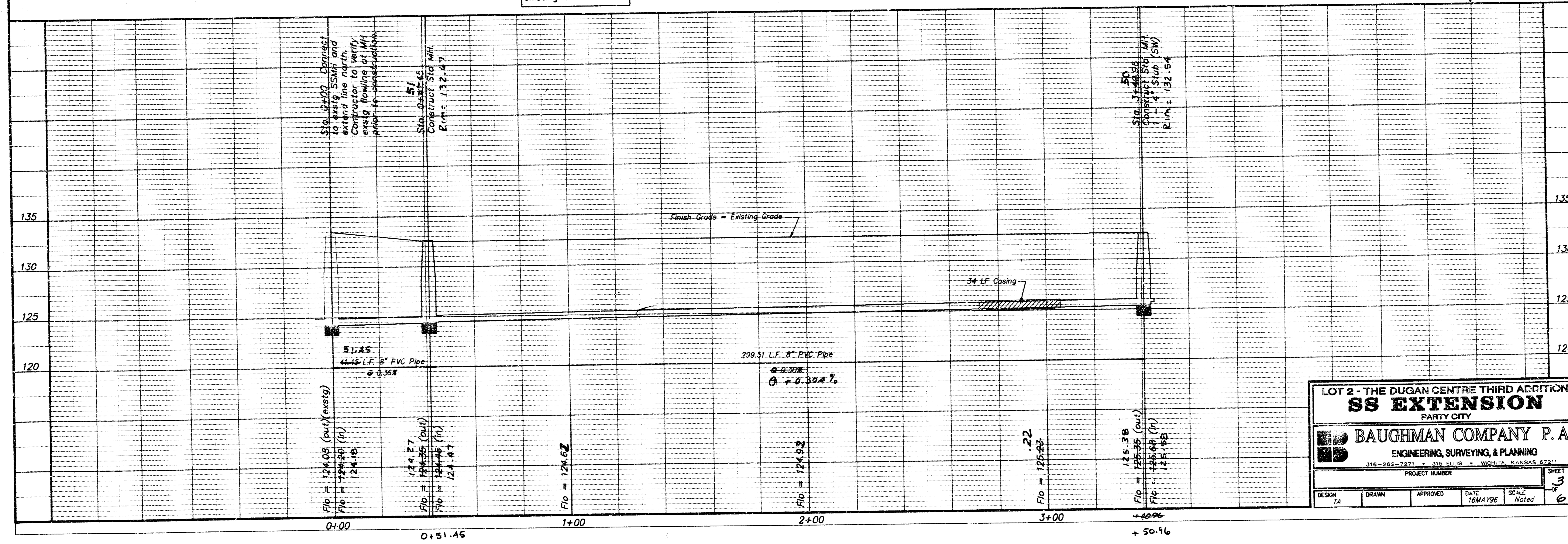
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PC 15/97

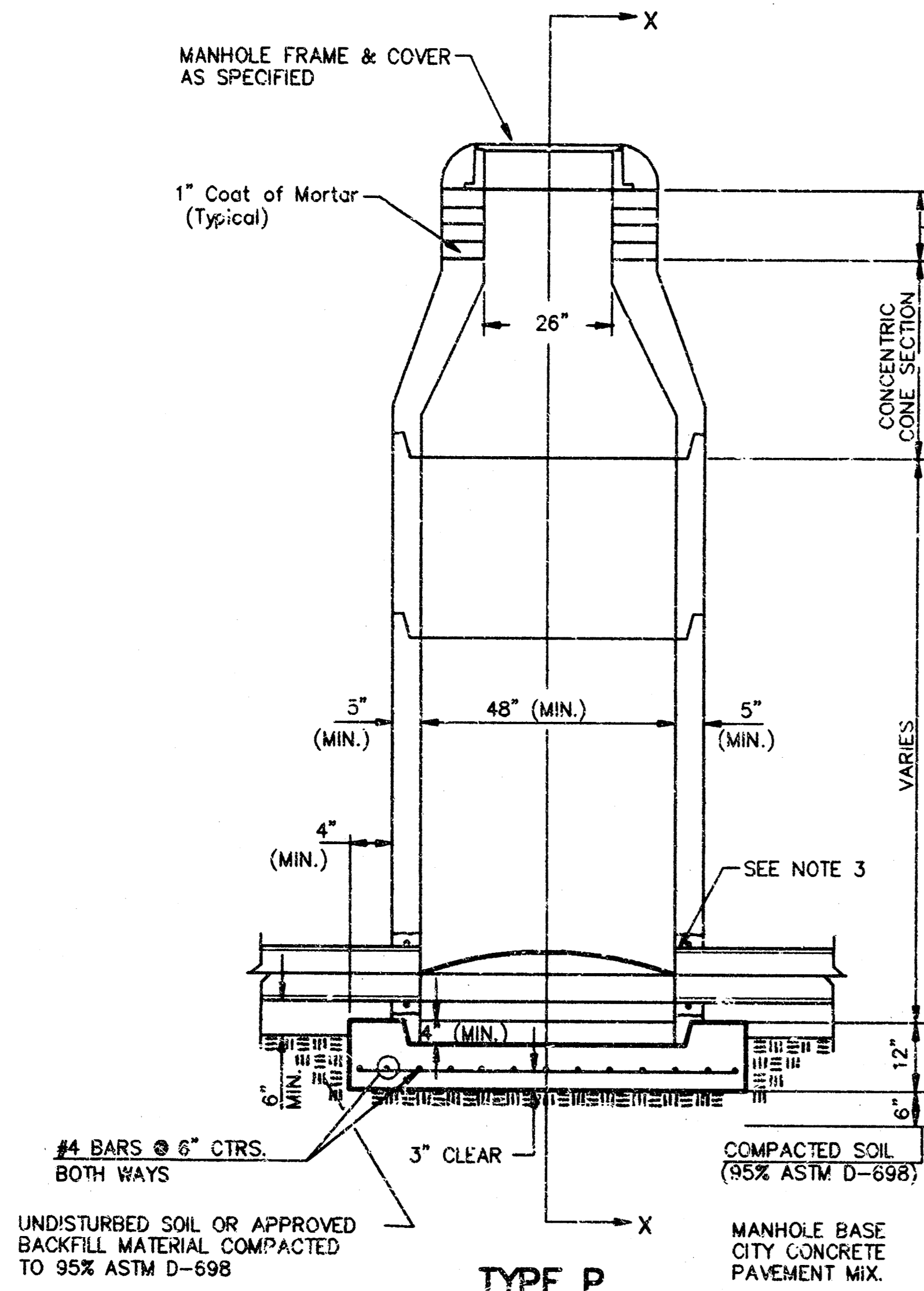


SCALE: 1"=20'(HORZ.)  
 1"=5'(VERT.)

ASBUILT 7/22/96  
 JFB  
 BAUGHMAN CO.



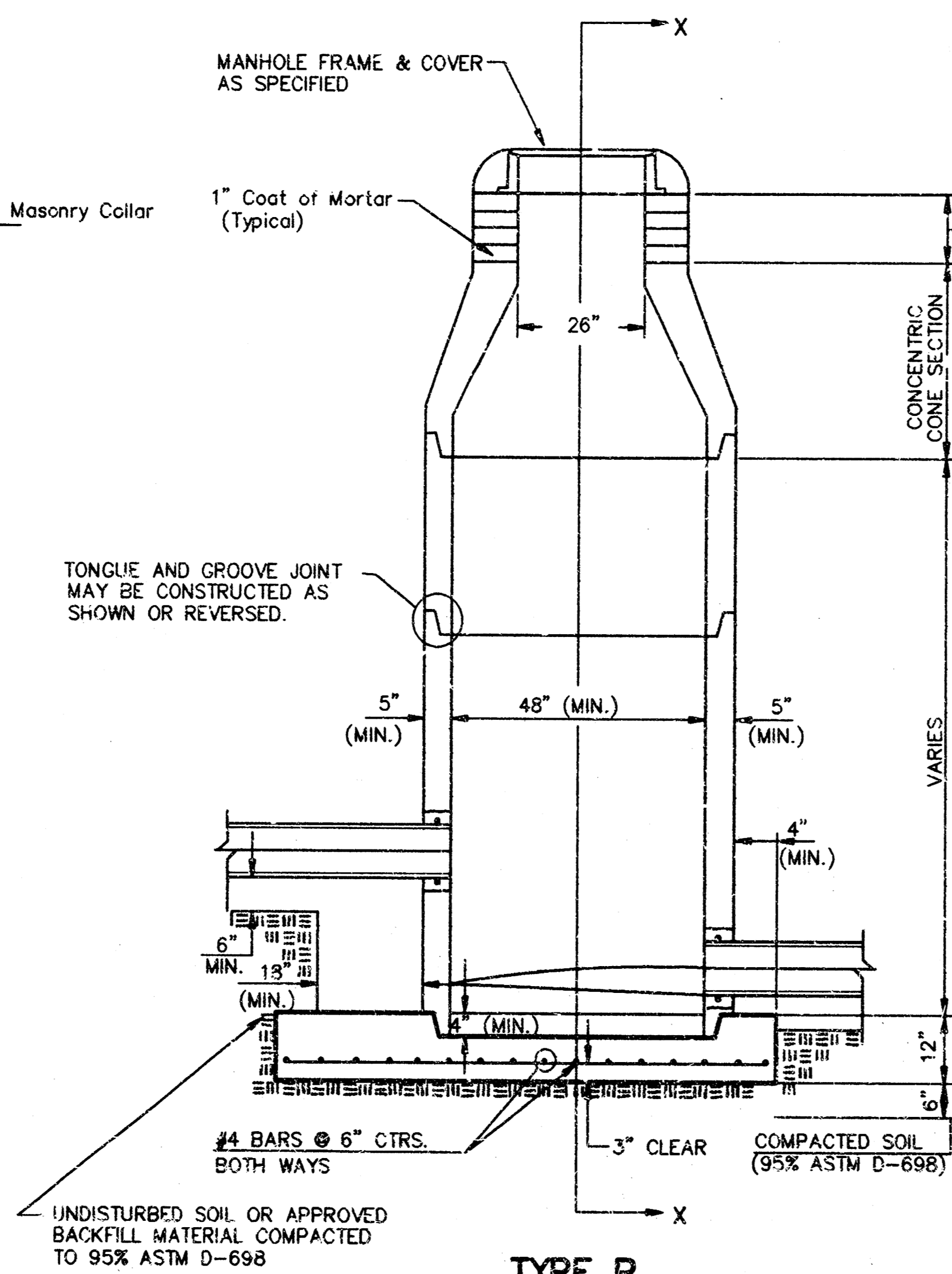
# SEWER APPURTENANCES DETAILS



**TYPE P  
STANDARD MANHOLE**

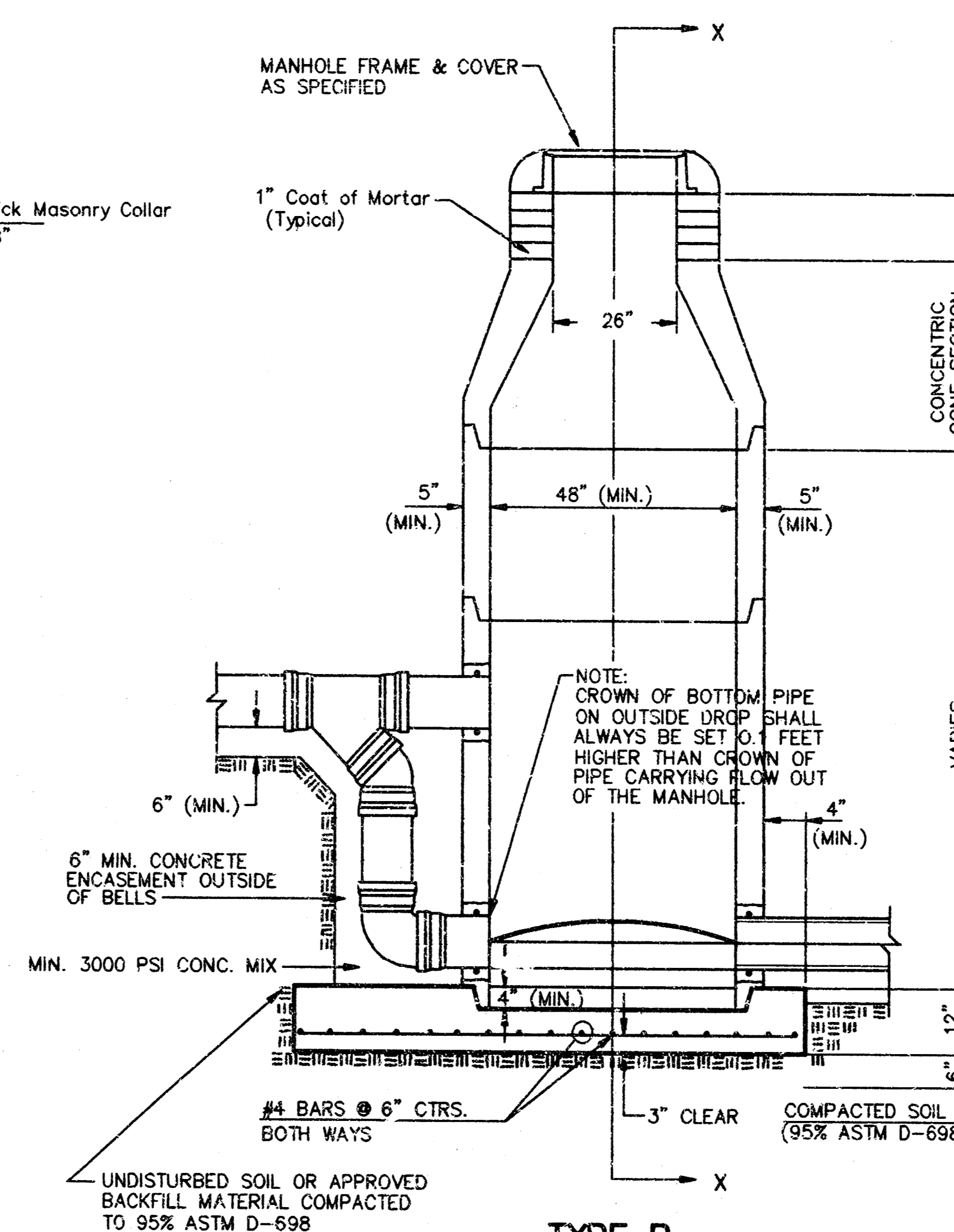
**GENERAL NOTES  
PRECAST MANHOLE NOTES**

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 TNEPEC SERIES 66 HI-BUILD EPOXYLINE, 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.



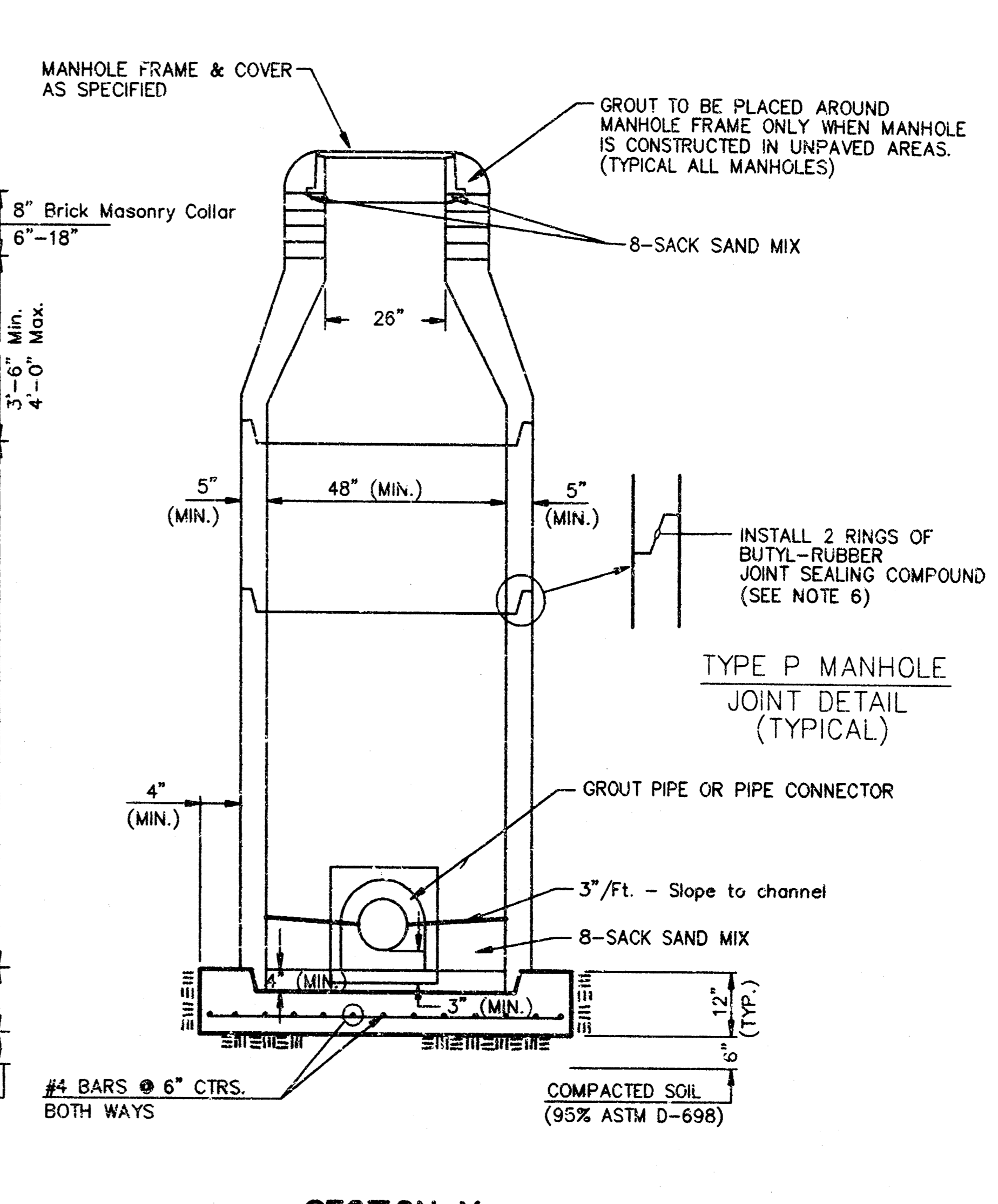
**TYPE P  
INSIDE DROP MANHOLE**

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.

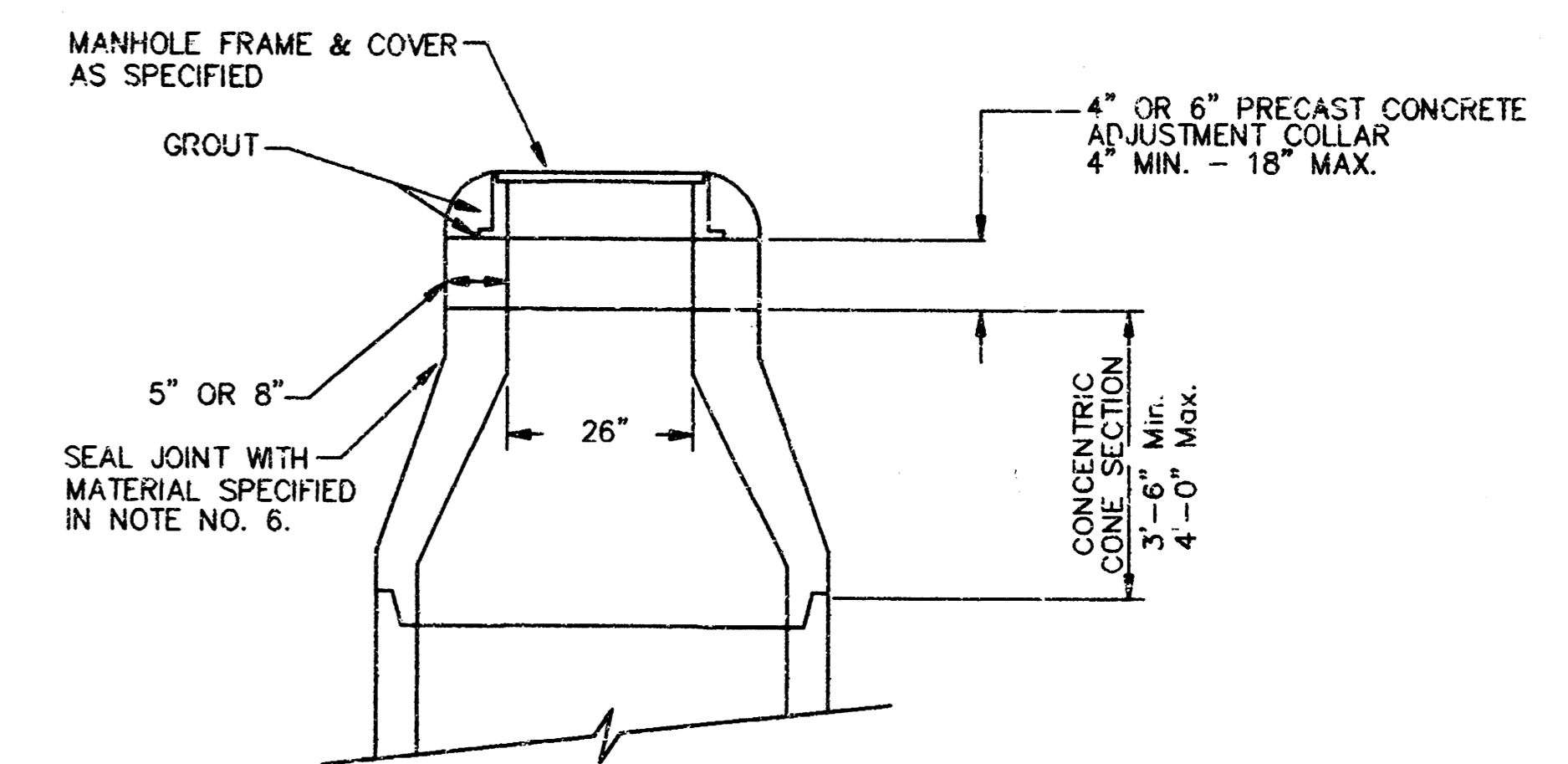


**TYPE P  
OUTSIDE DROP MANHOLE**

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.



**SECTION X  
(TYPICAL)**

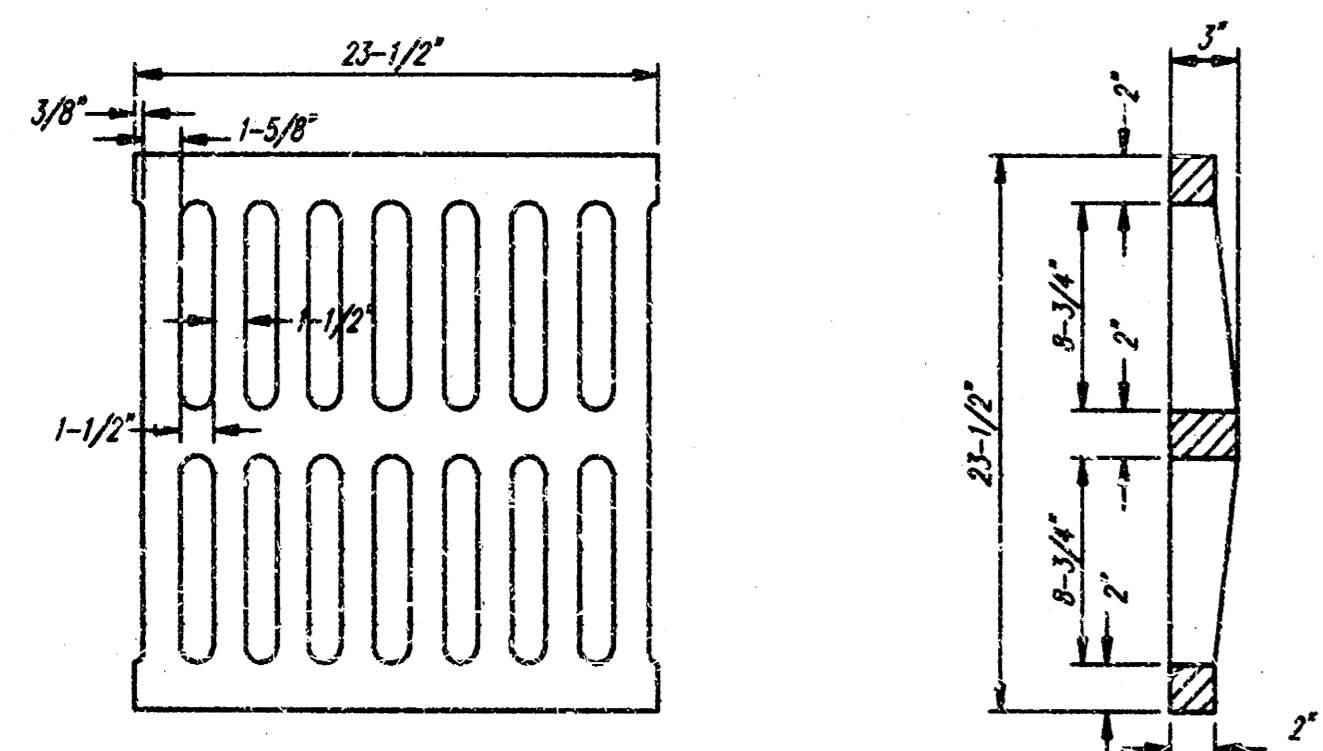
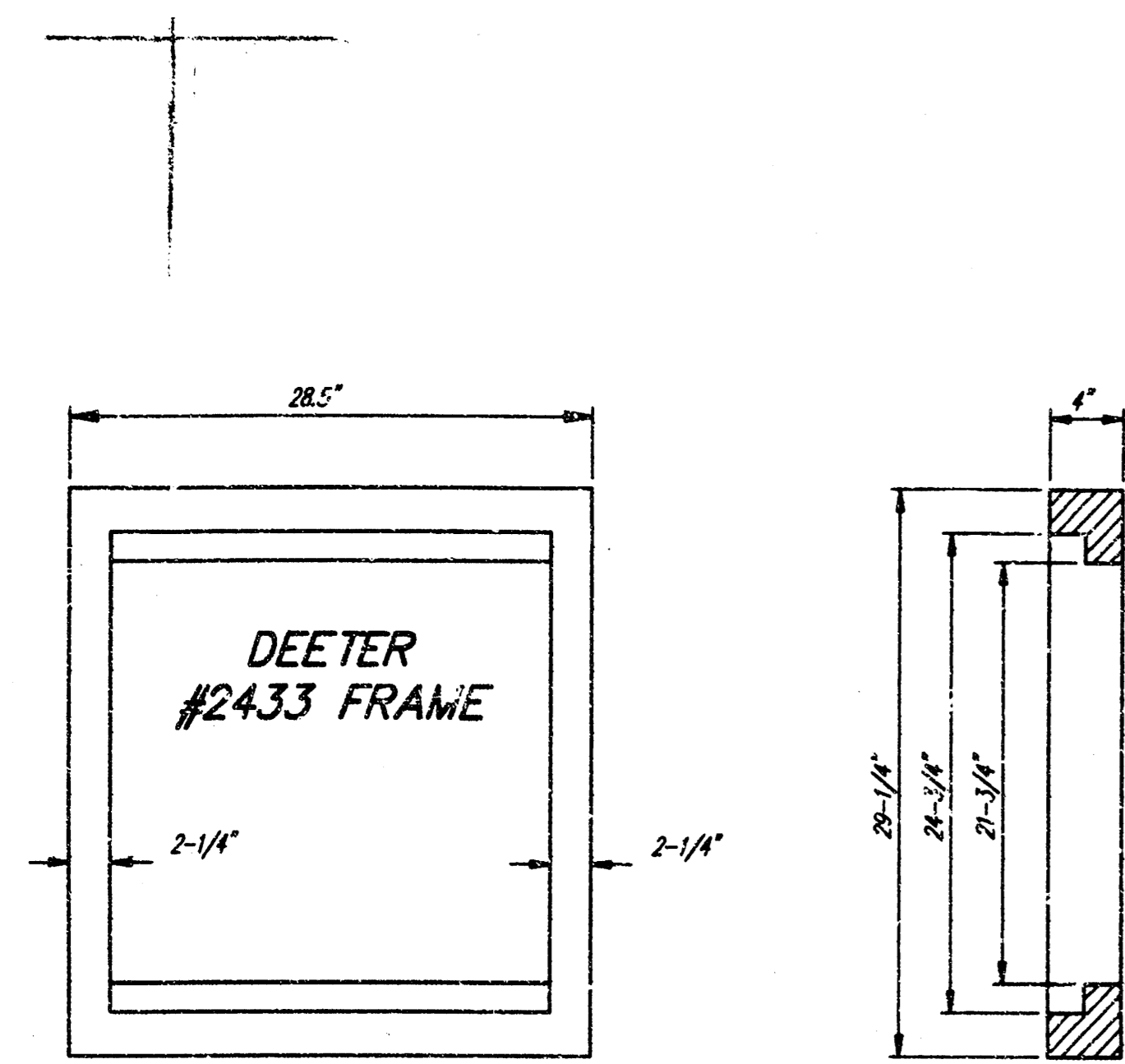


**ALTERNATE CONSTRUCTION  
IN UNPAVED AREAS**

CITY OF WICHITA  
**STD. MANHOLE DETAILS**  
 & SEWER APPURTENANCES DETAILS  
**BAUGHMAN COMPANY P. A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 318-282-7271 • 315 E. J. ST. • WICHITA, KANSAS 67211

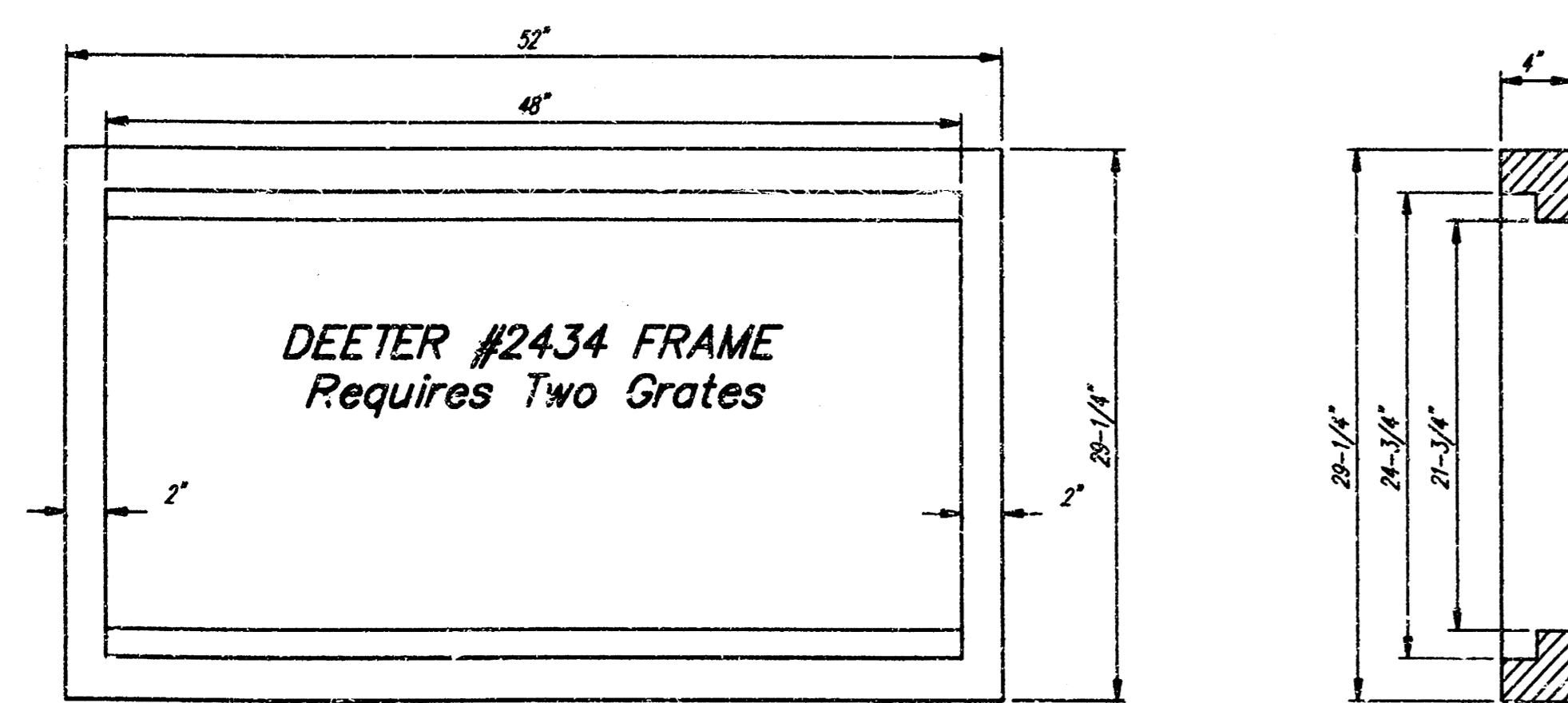
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PROJECT NUMBER: \_\_\_\_\_ SHEET: 6



DEETER #2433 GRATE

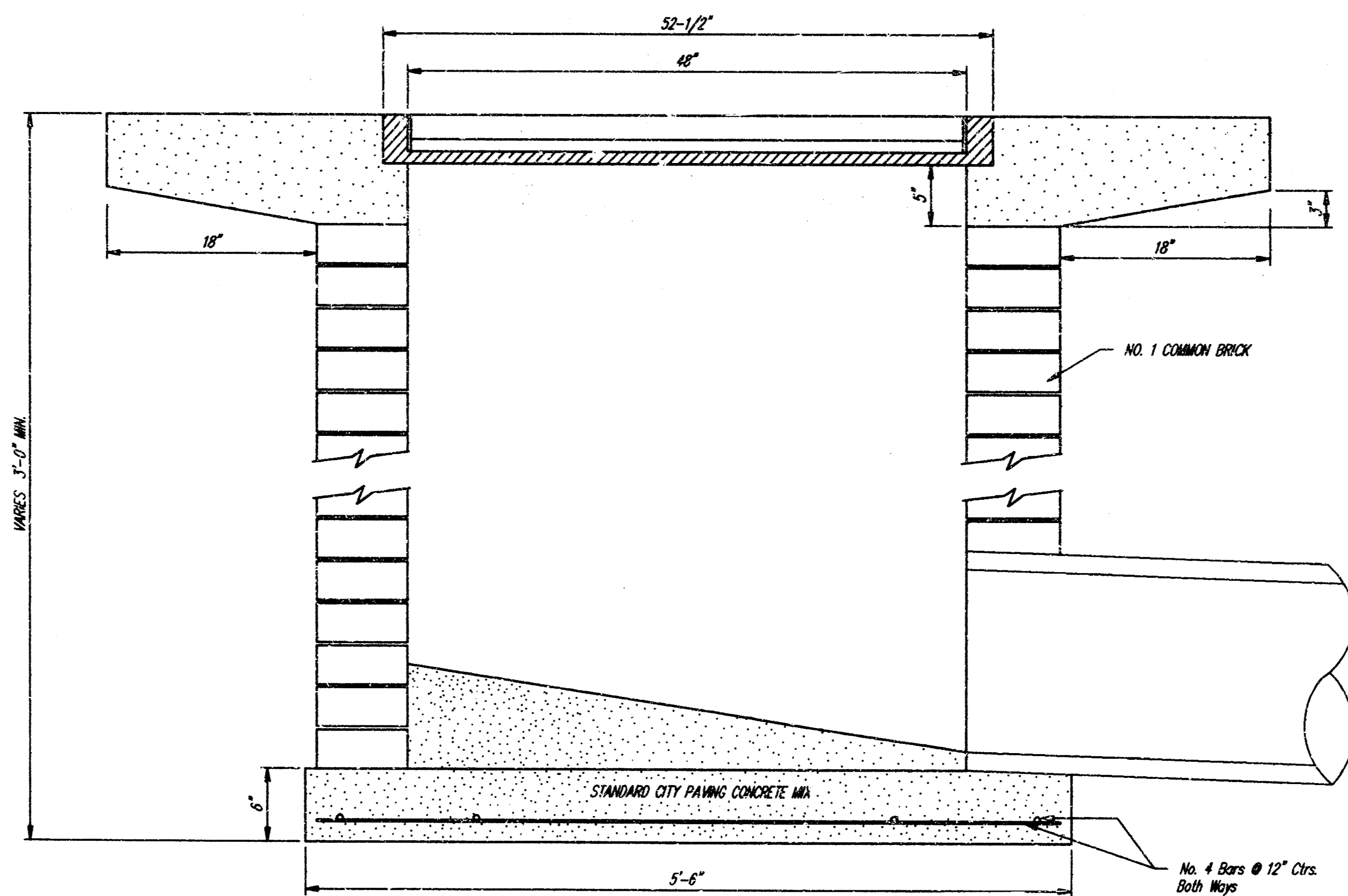
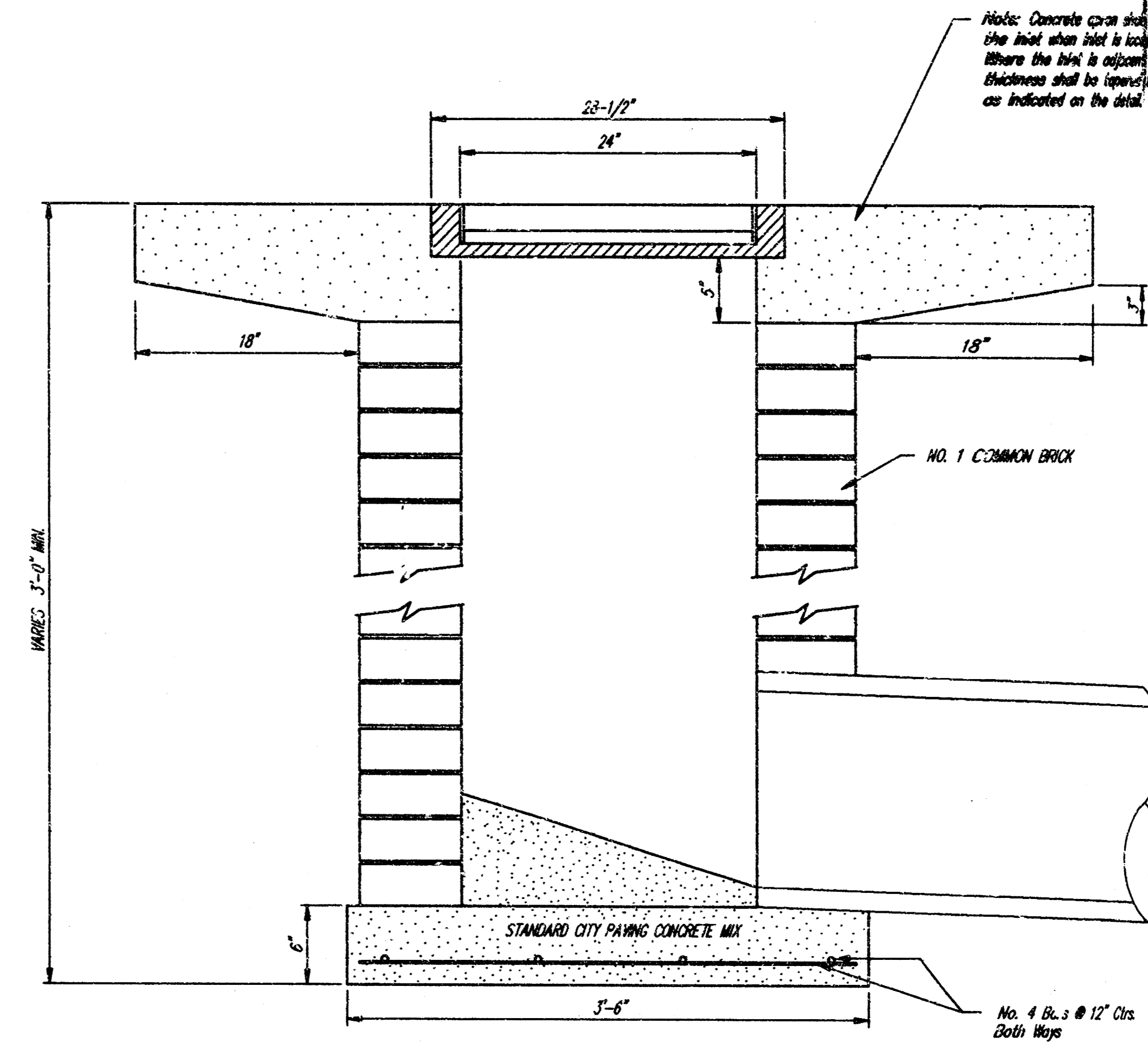
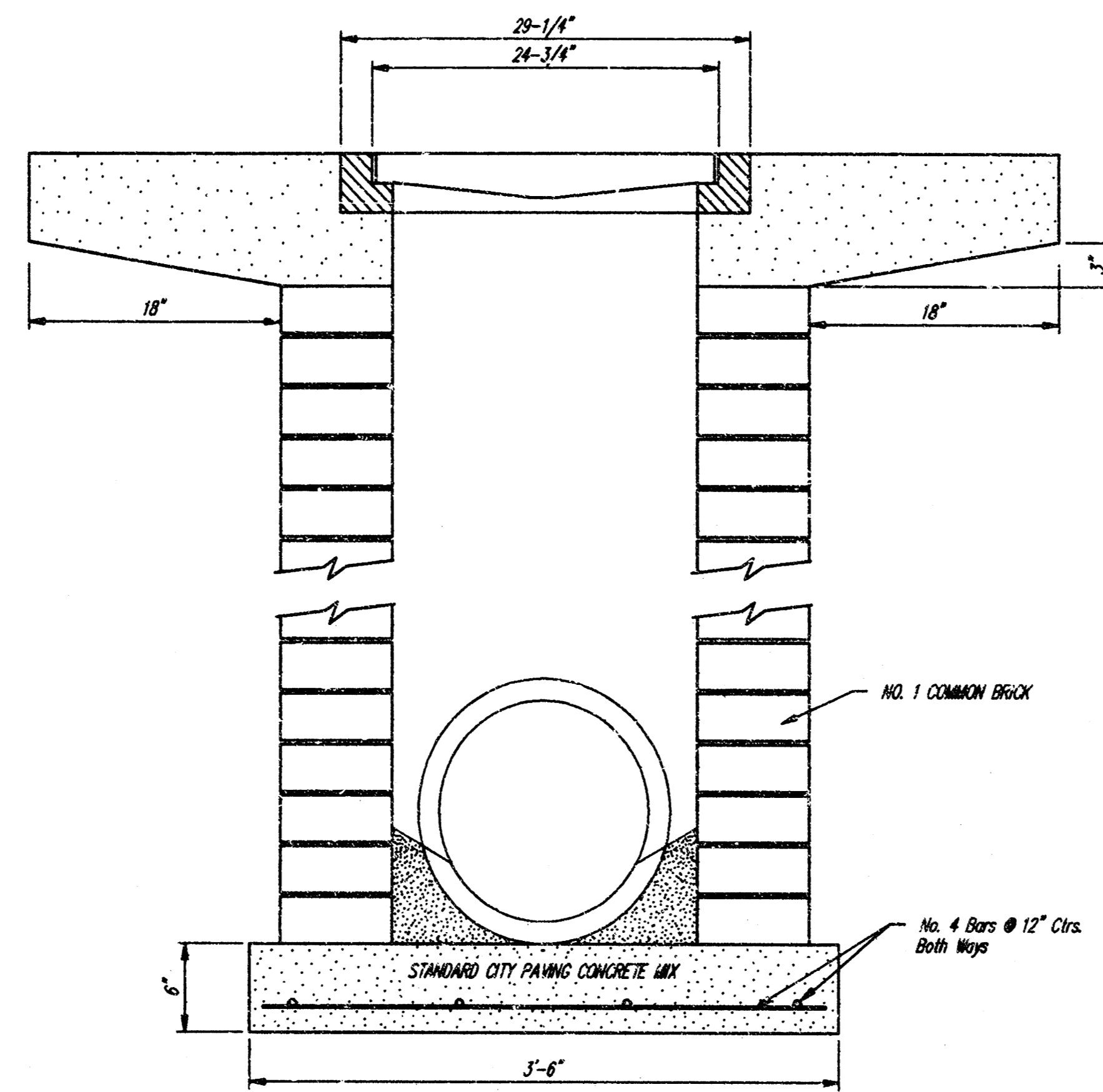
24" x 24" Frame and Grate Detail



DEETER #2434 FRAME  
Requires Two Grates

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.

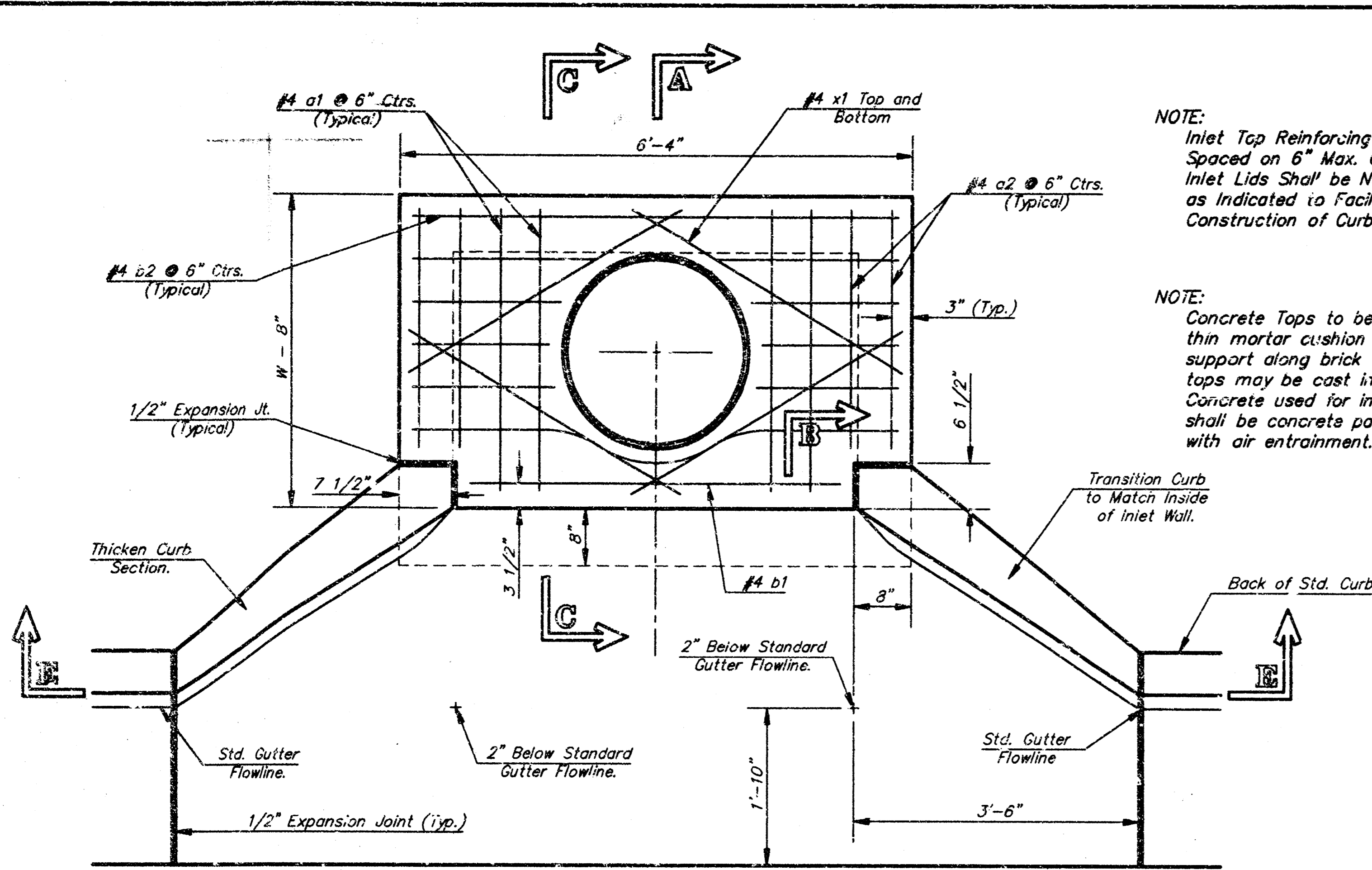


City of Wichita Standard  
**Drop Inlet**

**BAUGHMAN COMPANY P. A.**  
ENGINEERING, SURVEYING, & PLANNING  
316-262-7271 • 315 SULLS • WICHITA, KANSAS 67211

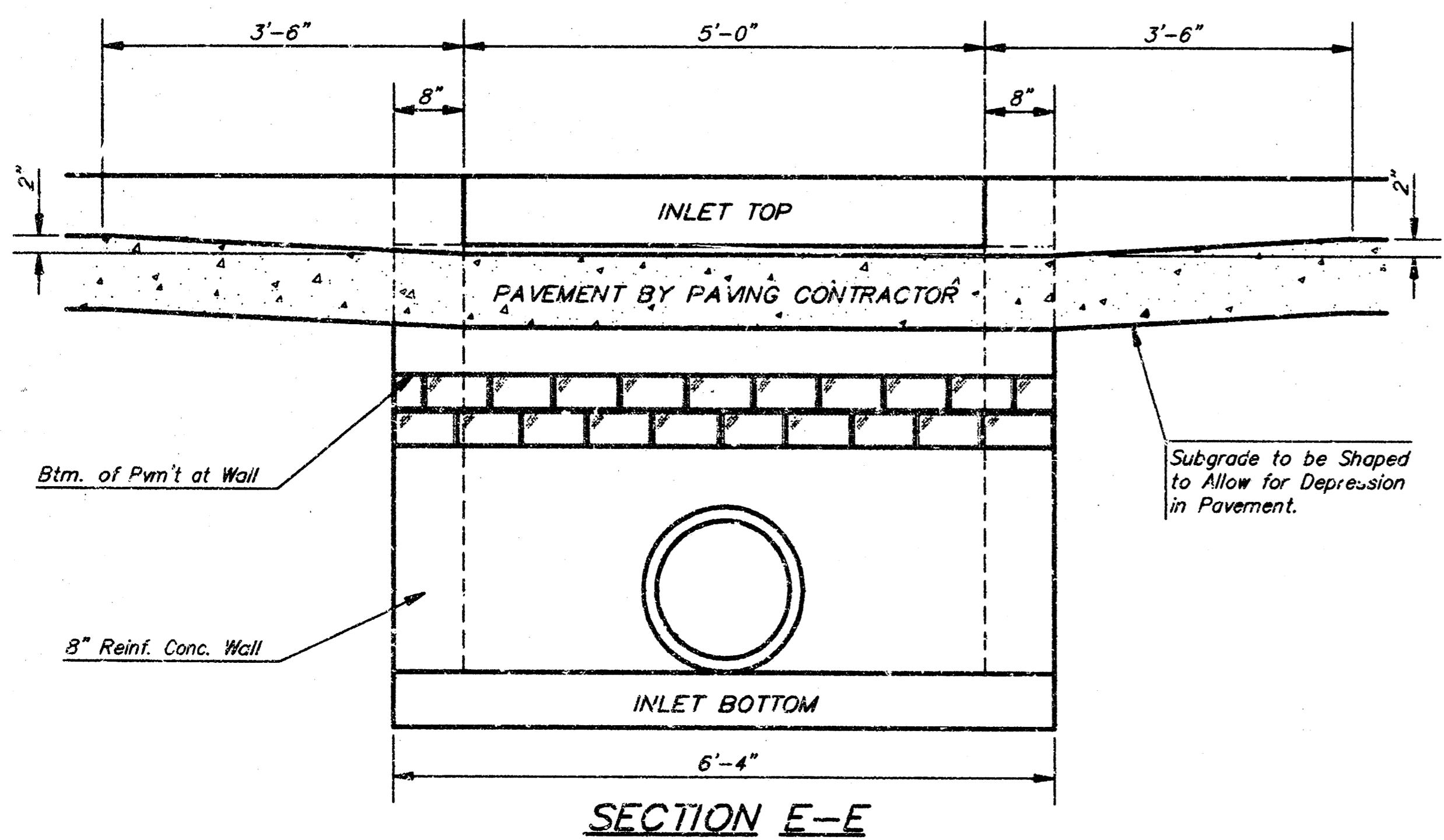
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					356

DETAILS CORRECT

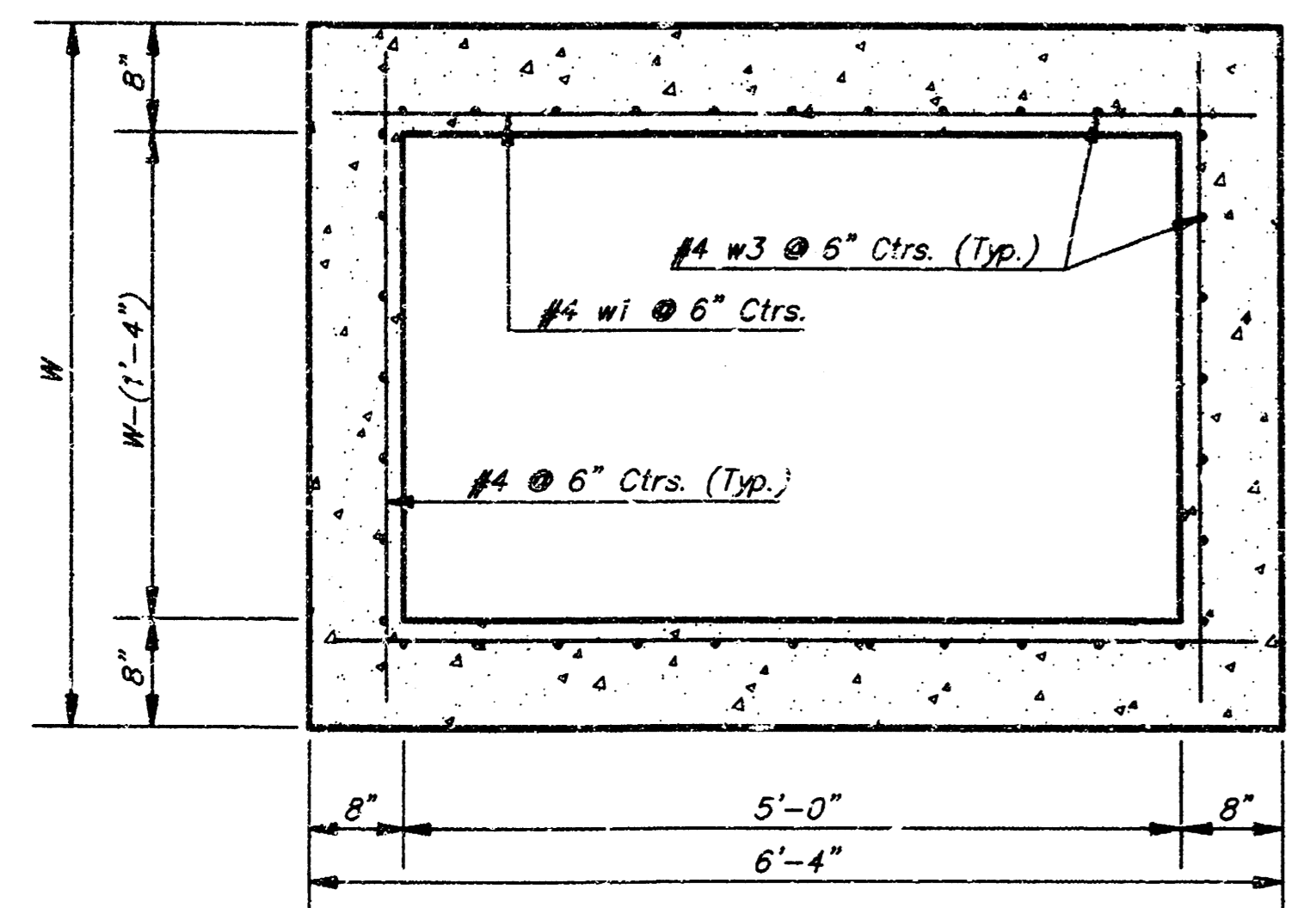


NOTE: Expansion Joint Only in Curb Area With Concrete Pavement.

PLAN



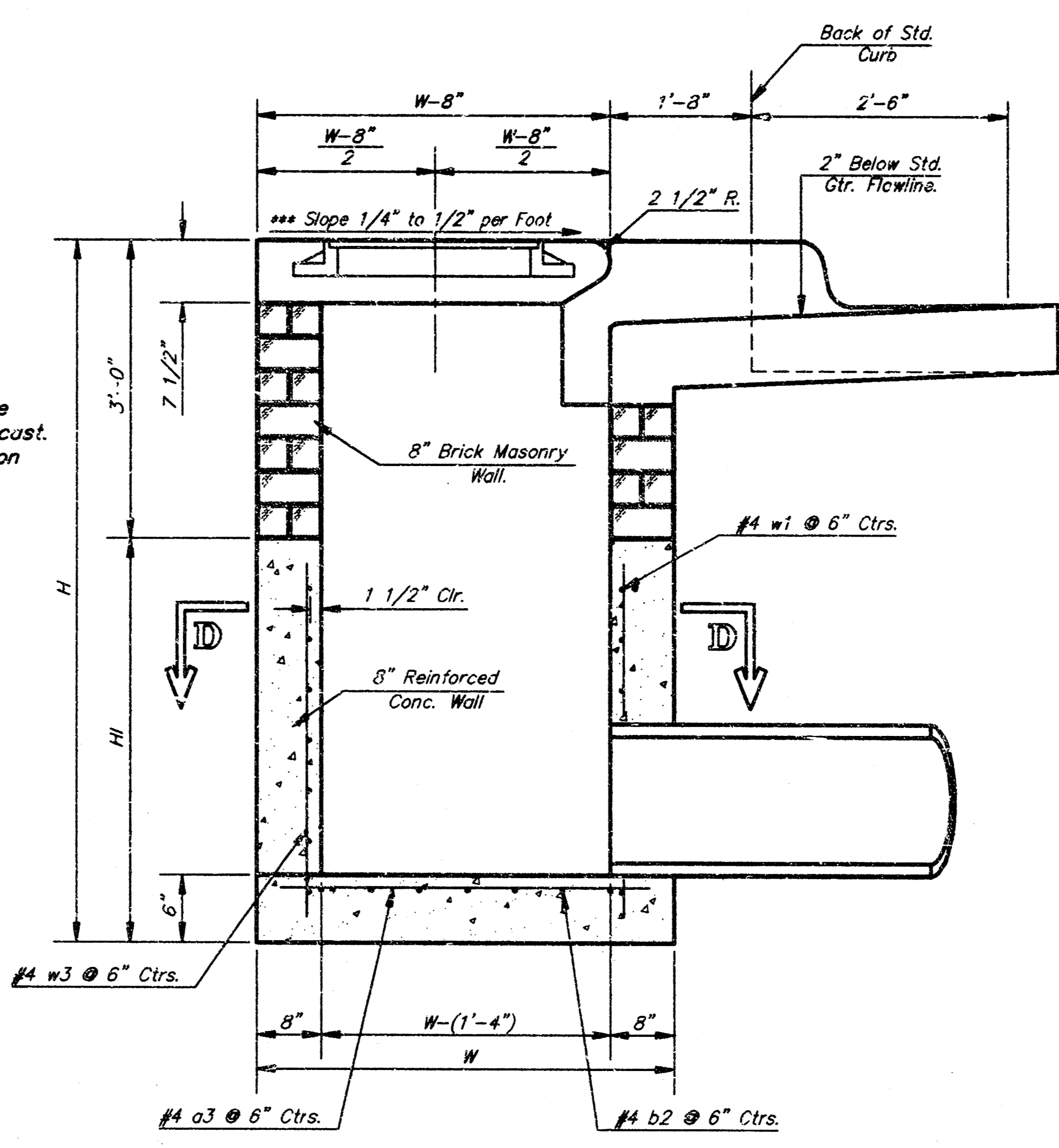
SECTION E-E



SECTION D-D

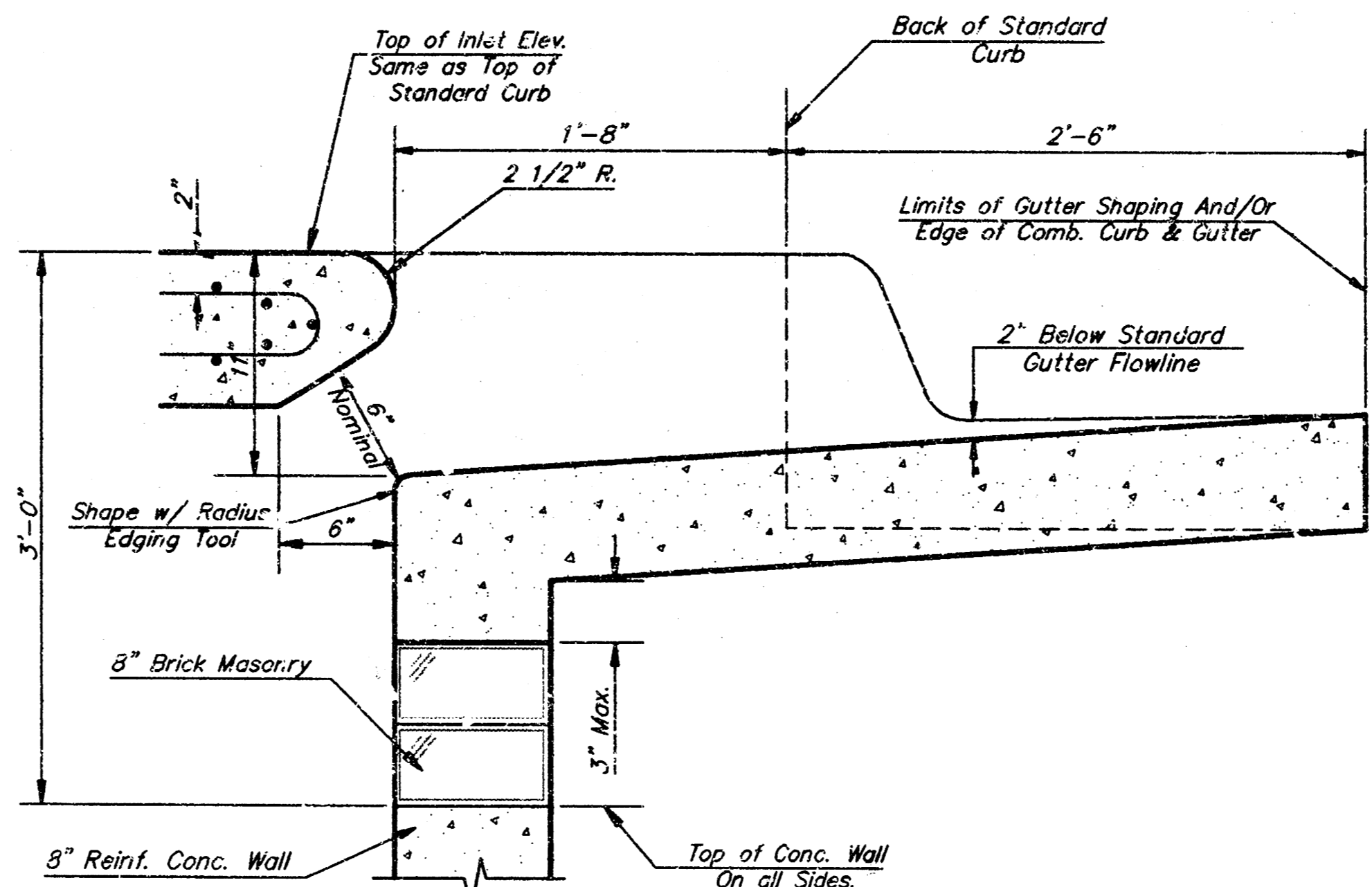
NOTE: Inlet Top Reinforcing shall be Spaced on 6\"/>

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.



SECTION B-B

NOTE: Contractor shall have the option of constructing 8\"/>

Additional curb and gutter construction necessary to 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.

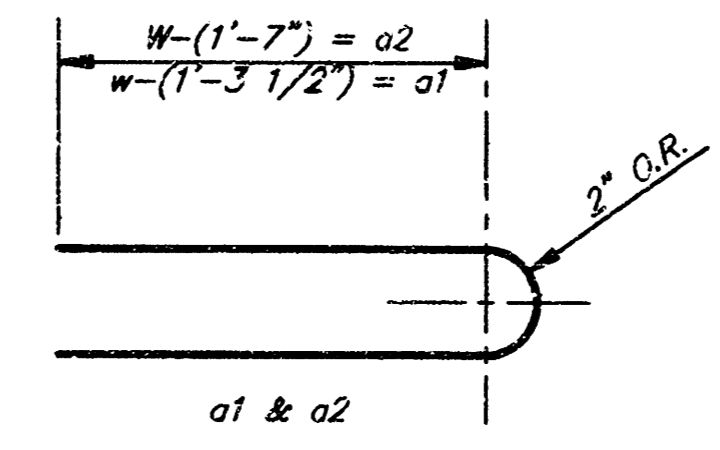
The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall

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"	5	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"

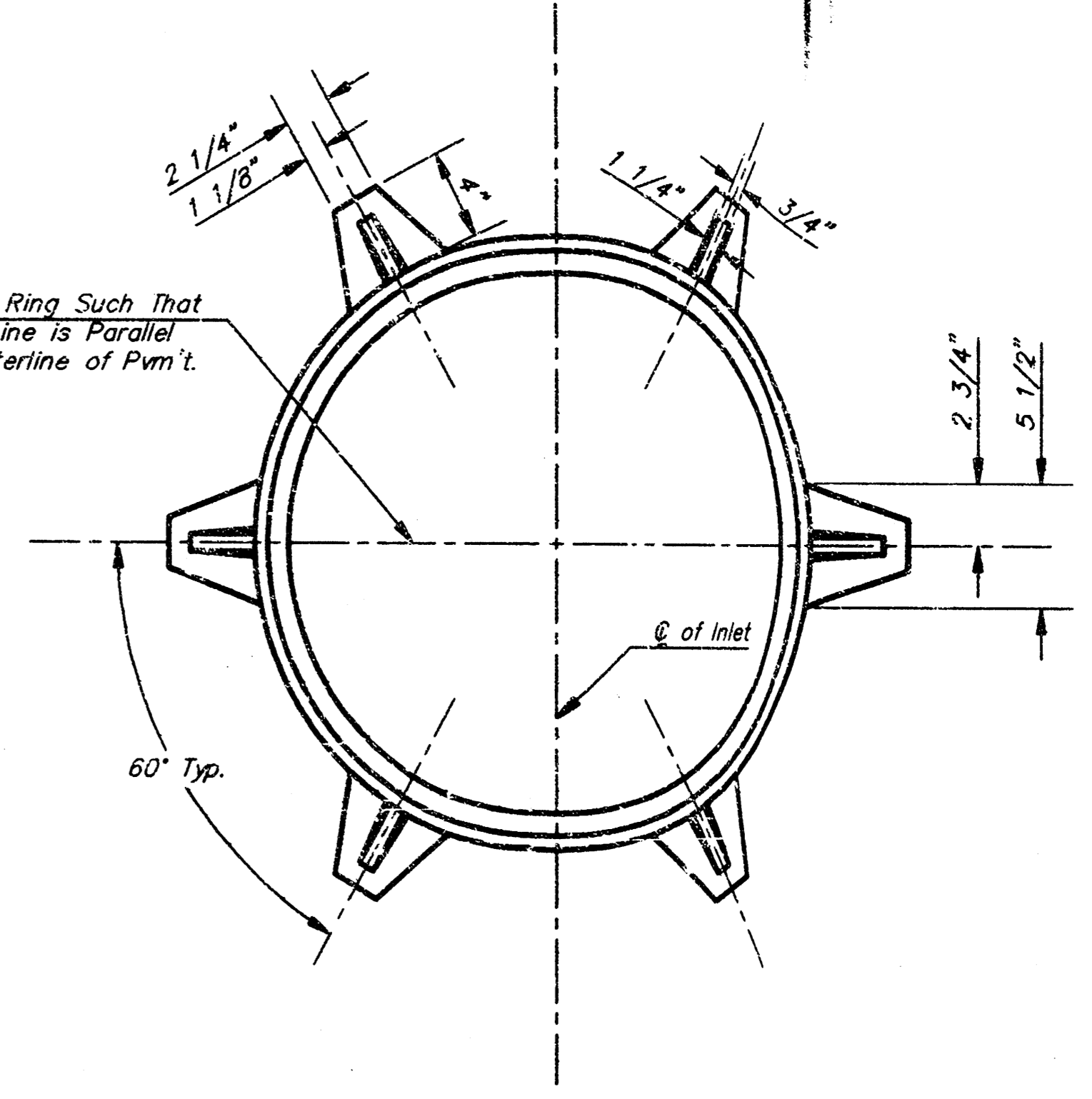
WALL REINFORCING											
MARK	SIZE	W = 4'-4"		W = 5'-4"		W = 6'-4"		W = 7'-4"		W = 8'-4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
w1	#4	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"	1	6'-1"
w2	#4	1	4'-1"	1	5'-1"	1	7'-1"	1	7'-1"	1	8'-1"
w3	#4	32	3"	36	3"	40	3"	44	3"	48	3"

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



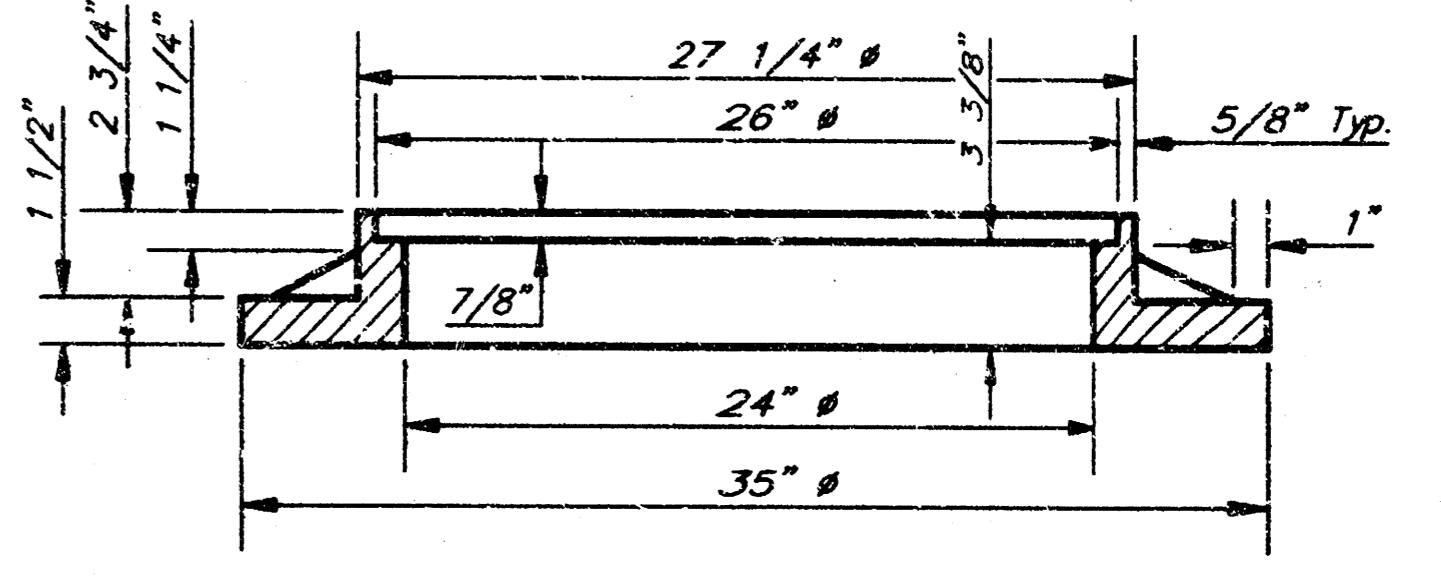
BENDING DIAGRAM

STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4'-4"	3'-0" x 6'-4" x 7 1/2"	21" & SMALLER	0.382
5'-4"	4'-0" x 6'-4" x 7 1/2"	24" & 30"	0.512
6'-4"	5'-0" x 6'-4" x 7 1/2"	36" & 42"	0.642
7'-4"	6'-0" x 6'-4" x 7 1/2"	48" & 54"	0.772
8'-4"	7'-0" x 6'-4" x 7 1/2"	60" & 66"	0.902



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 A-A

Revised - Feb. 16, 1989

CITY OF WICHITA STANDARD TYPE 1A  
**Curb Inlet Details**  
 INLET OPENING = 8" x 5'-0"

**BAUGHMAN COMPANY P. A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 316-262-3273 • 316 GLIB • WICHITA, KANSAS 67211

PROJECT NUMBER: \_\_\_\_\_  
 SHEET: 6 OF 6

DESIGN: C.O.W. DRAWN: Staff APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_ SCALE: None

# STORMWATER & SANITARY SEWER IMPROVEMENTS

TO SERVE

## Lot 2

# The Dugan Centre Third Addition

## Private Project No. 629 PPS (607861)

Michael E. Lindeback, P.E. City Engineer

### Benchmark:

Square Cut on Top of  
Curb East end of return at  
SE Corner of Dugan & Tott  
ELEV. = 118.61 CITY DATUM  
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Plus Cut at the NE  
Corner Dugan Centre 3rd  
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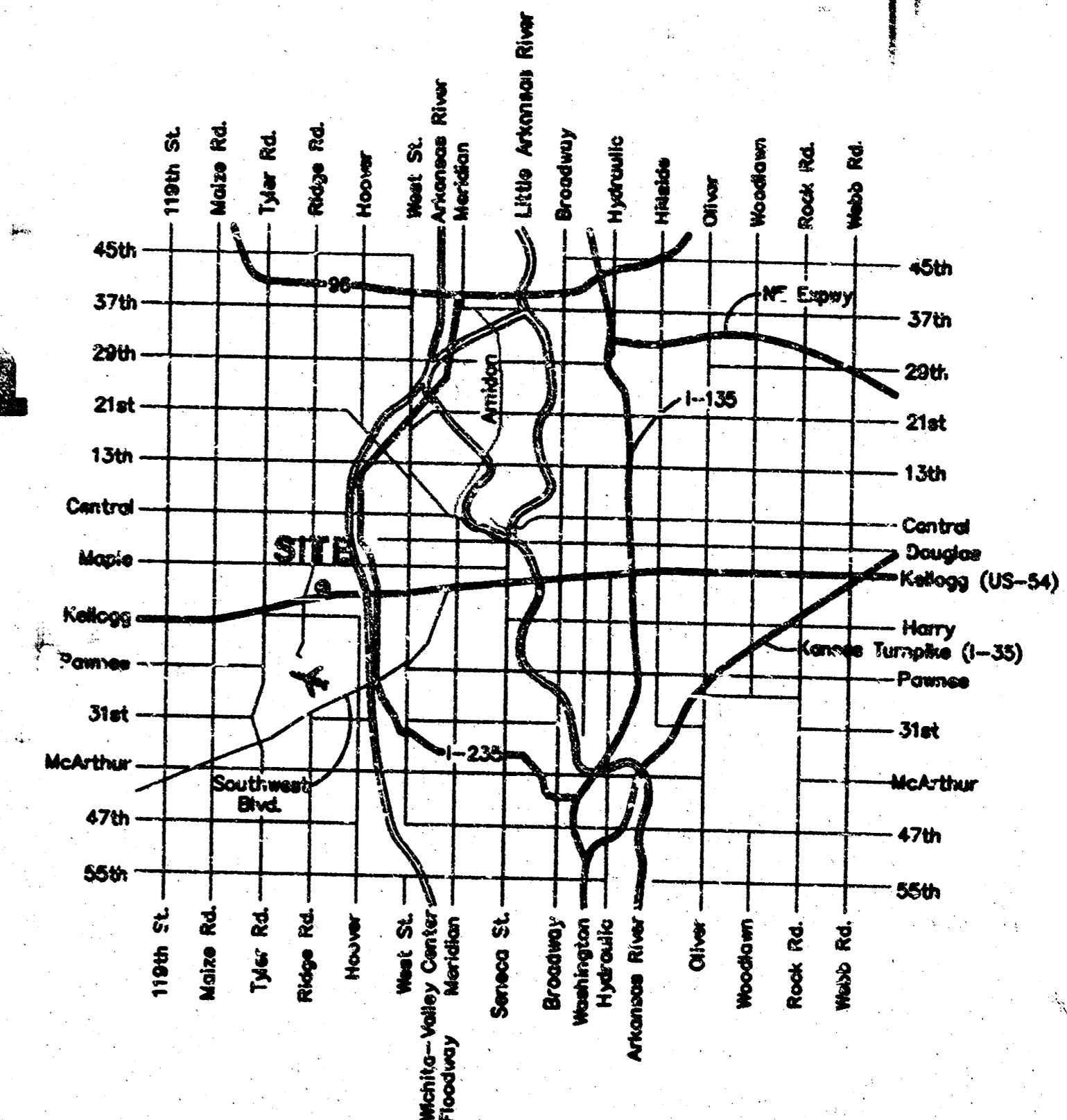
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- The Contractor shall give all property owners and/or tenants of developed property abutting the construction of this project a minimum of five (5) days advance notice prior to start of construction.
- The Contractor shall be responsible for preserving 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.
- Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:  

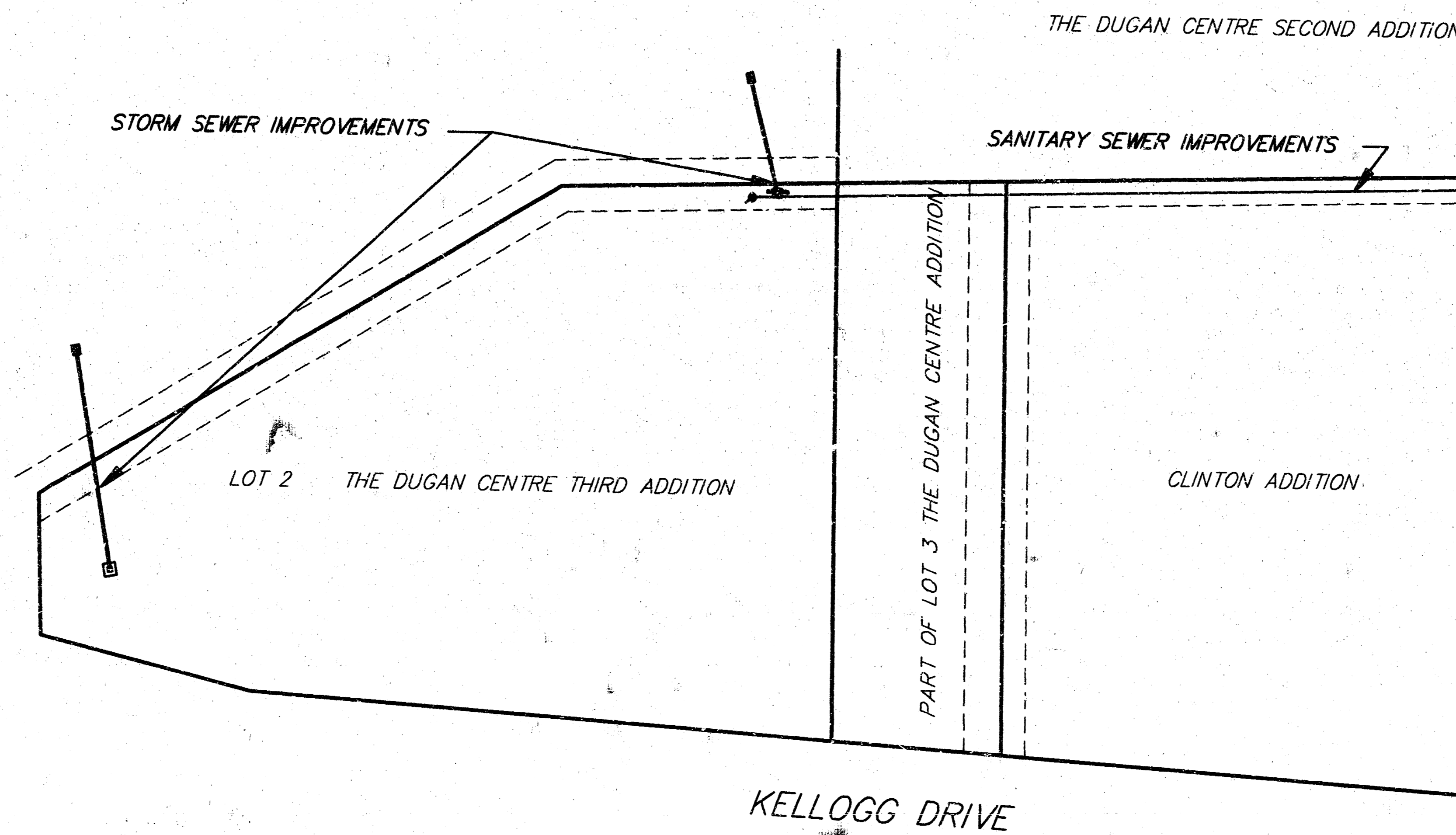
Kansas One Call	687-2470
-----------------	----------

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

K.P.L. Gas Service Company	383-8650
Kansas Gas & Electric Company	383-8600
Cablevision	262-4270
or	263-2001
Southwestern Bell Telephone Company	1-571-2611
City of Wichita Water Dept.	268-4908
City of Wichita Sewer Maintenance	268-4071
- Existing utilities and their locations, 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 which do not conflict with proposed construction. The Contractor shall verify all utility locations prior to construction of this project.
- Contractor shall verify depth & location of existing utilities prior to construction.
- Disturbed areas within the street right-of-way are to be restored to the conditions existing prior to construction.



Location Map



### Index of Sheets:

Title Sheet	1
SWS Plan/Profile	2
SS Plan/Profile	3
Manhole Detail	4
Drop Inlet Detail	5
Type IA Curb Inlet Detail	6

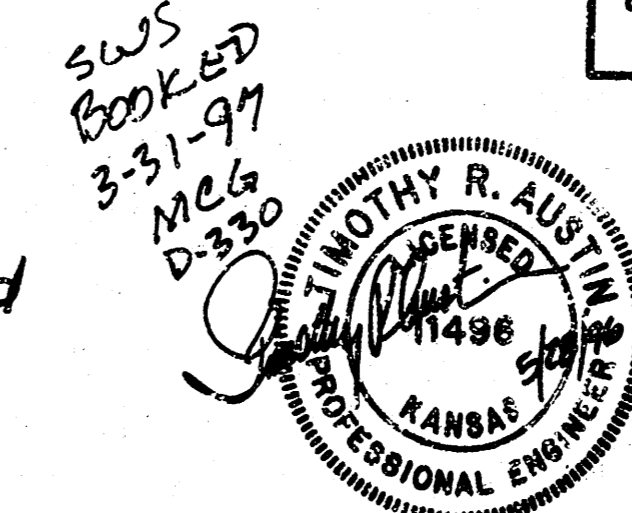
APPROVED AS NOTED  
BY CITY ENGINEER OF WICHITA

Storm Sewers Gene Roth 52856  
Sanitary Sewers Gene Roth 52856

NOTE TO CONTRACTORS  
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 (as the and available in the City Engineer's Office).

SAN SUR  
ASBUILT  
7/22/96 JFB  
BAUGHMAN CO.

San. Sew. Booked  
8-12-96  
JKB



**BENCHMARK:**  
 Square Cut on Top of  
 Curb East end of return of  
 SE Corner of Dugan & 3rd  
 ELEV. = 118.61 CITY DATUM  
 ELEV. = 1306.01 M.S.L.

Plus Cut at the NE  
 Corner Dugan Centre 3rd  
 ELEV. = 131.26 CITY DATUM  
 ELEV. = 1318.66 M.S.L.

Sta. 0+85 Line 1  
 Construct Std. 2x2 Drop Inlet  
 Top Elev. = 132.52

CAUTION!  
 Undgrd Elec.  
 Conduit

Sta. 0+00 Line 1  
 Install 12 SF Light  
 Stone Riprap.  
 Outfall Elev. = 125

Install 42 LF 12"  
 PVC Pipe.

Sta. 0+42 Line 2  
 Construct Type 1A Curb Inlet  
 (6'4" x 4'4")  
 Top Elev. = 132.27

Mitre outlet  
 to match  
 exstg contour.

CAUTION!  
 Proposed sanitary  
 sewer crossing.

Sta. 0+00 Line 2  
 Install 12 SF Light  
 Stone Riprap.  
 Outfall Elev. = 125

CAUTION!  
 Undgrd Elec.  
 Conduit

Mitre outlet  
 to match  
 exstg contour.

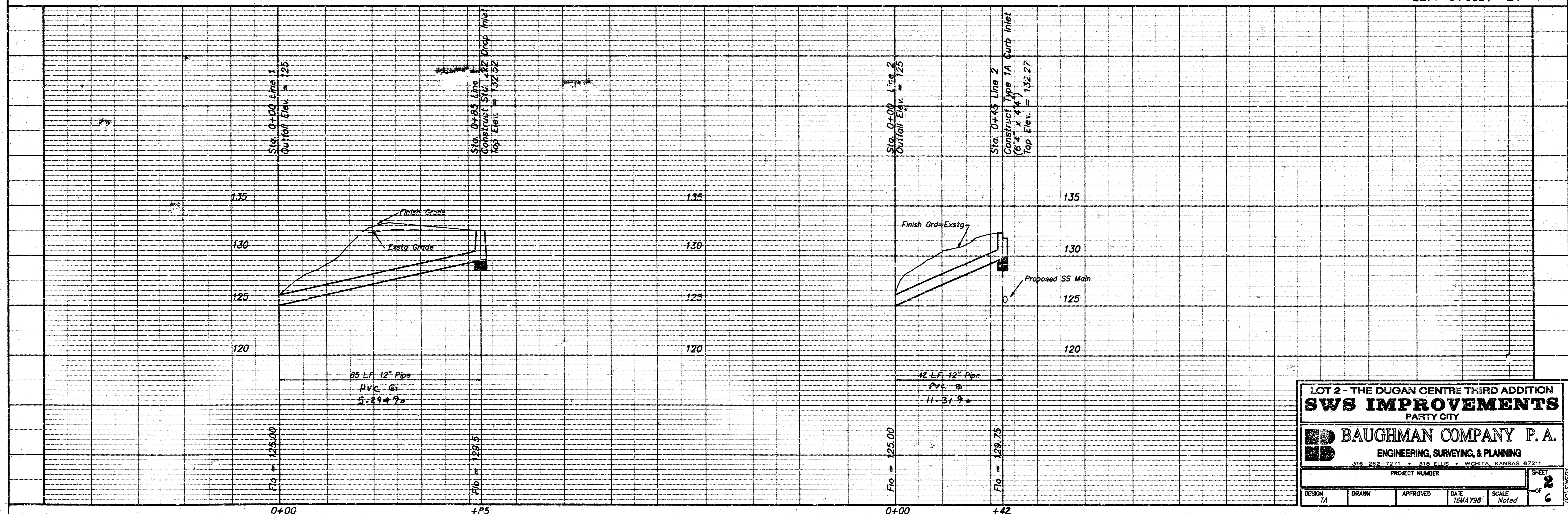
Install 85 LF 8"  
 PVC Pipe. 12"

INSPECTOR: CHRIS EDWARDS  
 BAUGHMAN CO.

SCALE:  
 1"=20' horz.  
 1"=5' vert.

ASBUILT: 2/10/97

JEFF BRADLEY BAUGHMAN



LOT 2 - THE DUGAN CENTRE THIRD ADDITION  
**SWS IMPROVEMENTS**  
 PARTY CITY

**BAUGHMAN COMPANY P. A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 316-262-7271 • 316 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER: \_\_\_\_\_ SHEET: **2**  
 DESIGN: TA DRAWN: \_\_\_\_\_ APPROVED: \_\_\_\_\_ DATE: 10/4/96 SCALE: Noted  
 10/15/96

**BENCHMARK:**  
 Square Cut on Top of  
 Curb East end of return at  
 SE Corner of Dugan & 3rd  
 ELEV. = 118.61 CITY DATUM  
 ELEV. = 1308.01 M.S.L.  
 Plus Cut at the NE  
 Corner Dugan Cent' to 3rd  
 ELEV. = 131.26 CITY DATUM  
 ELEV. = 1318.66 M.S.L.

Sta. 0+00 Connect  
 to exstg SSMH and  
 extend line north.  
 Contractor to verify  
 exstg flowline at MH  
 prior to construction.  
 Flow = 124.08 (exstg)  
 Flow in = 124.20  
 Rim = 133.38

Contractor to remove  
 and replace existing  
 parking lot pavement  
 as necessary.

**CAUTION!**  
 Underground Utilities

Sta. 3+40.96 Construct  
 Std. MH. Rim = 132.54  
 1 - 4" Stub (SW) 125.38  
 Flow (out) = 125.35  
 Flow (in) = 126.68  
 125.68

SCALE: 1"=20'(HORZ.)  
 1"=5'(VERT.)

51.45  
 41.45 L.F. 8" Pipe  
 THE DUGAN CENTRE  
 ADDITION  
 DRAINAGE DEDICATION

51.45  
 Sta. 0+41.45 Construct  
 Std. MH. Rim = 132.67  
 Flow (out) = 124.35  
 Flow (in) = 124.45  
 124.47

**CAUTION!**  
 Underground Utilities

299.51 L.F. 8" Pipe

Contractor shall bore  
 underneath the existing  
 access drive. Approximately  
 34 L.F. of casing required.

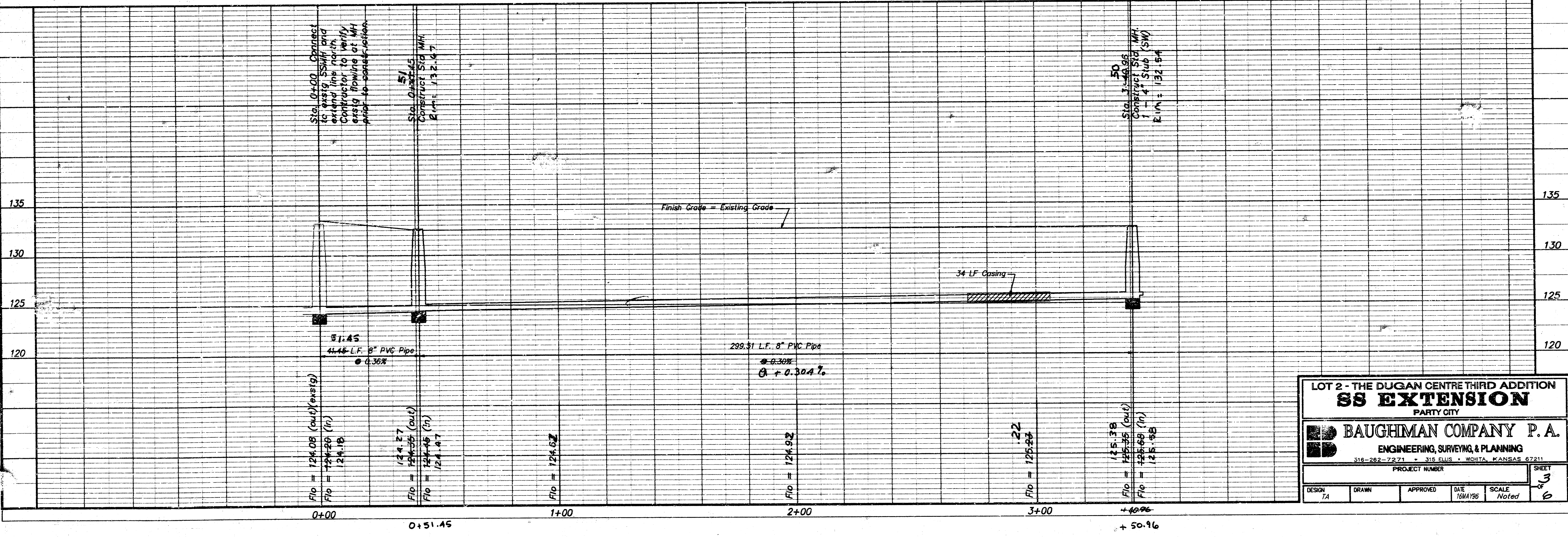
Contractor to protect  
 existing trees.

THE DUGAN CENTRE SECOND  
 ADDITION  
 DRAINAGE DEDICATION

THE DUGAN CENTRE THIRD ADDITION  
 LOT 2

THE DUGAN CENTRE THIRD ADDITION  
 FLOODWAY RESERVE

ASBUILT 7/22/96  
 JFB  
 BAUGHMAN CO.



**LOT 2 - THE DUGAN CENTRE THIRD ADDITION  
 SS EXTENSION**  
 PARTY CITY

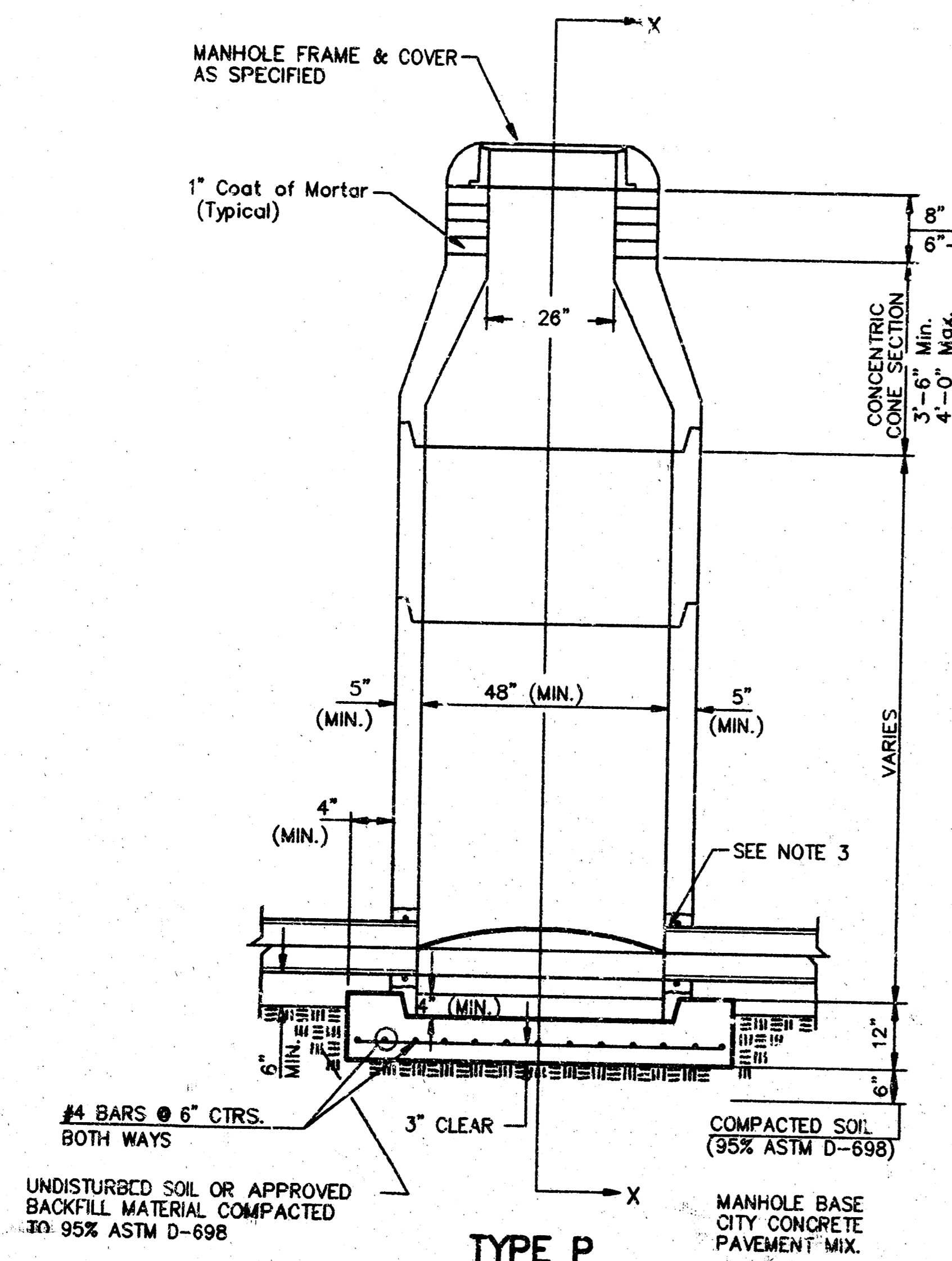
**BAUGHMAN COMPANY P.A.**  
 ENGINEERING, SURVEYING & PLANNING  
 316-282-7271 • 315 E. ILL. • MOHTA, KANSAS 67211

PROJECT NUMBER: \_\_\_\_\_ SHEET 3 OF 6

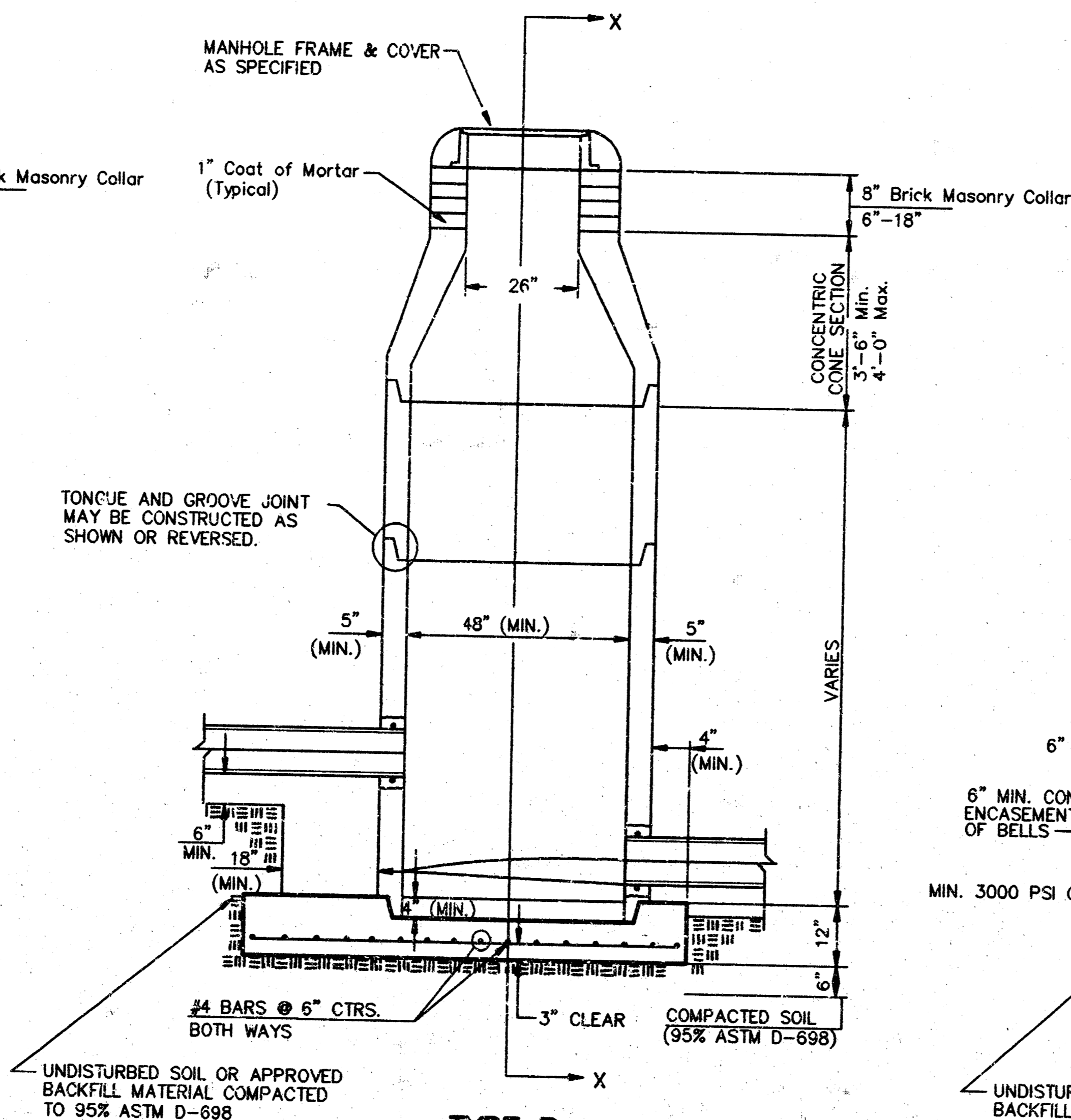
DESIGN: 7A DRAWN: \_\_\_\_\_ APPROVED: \_\_\_\_\_ DATE: 10/1/96 SCALE: Noted

PC13507

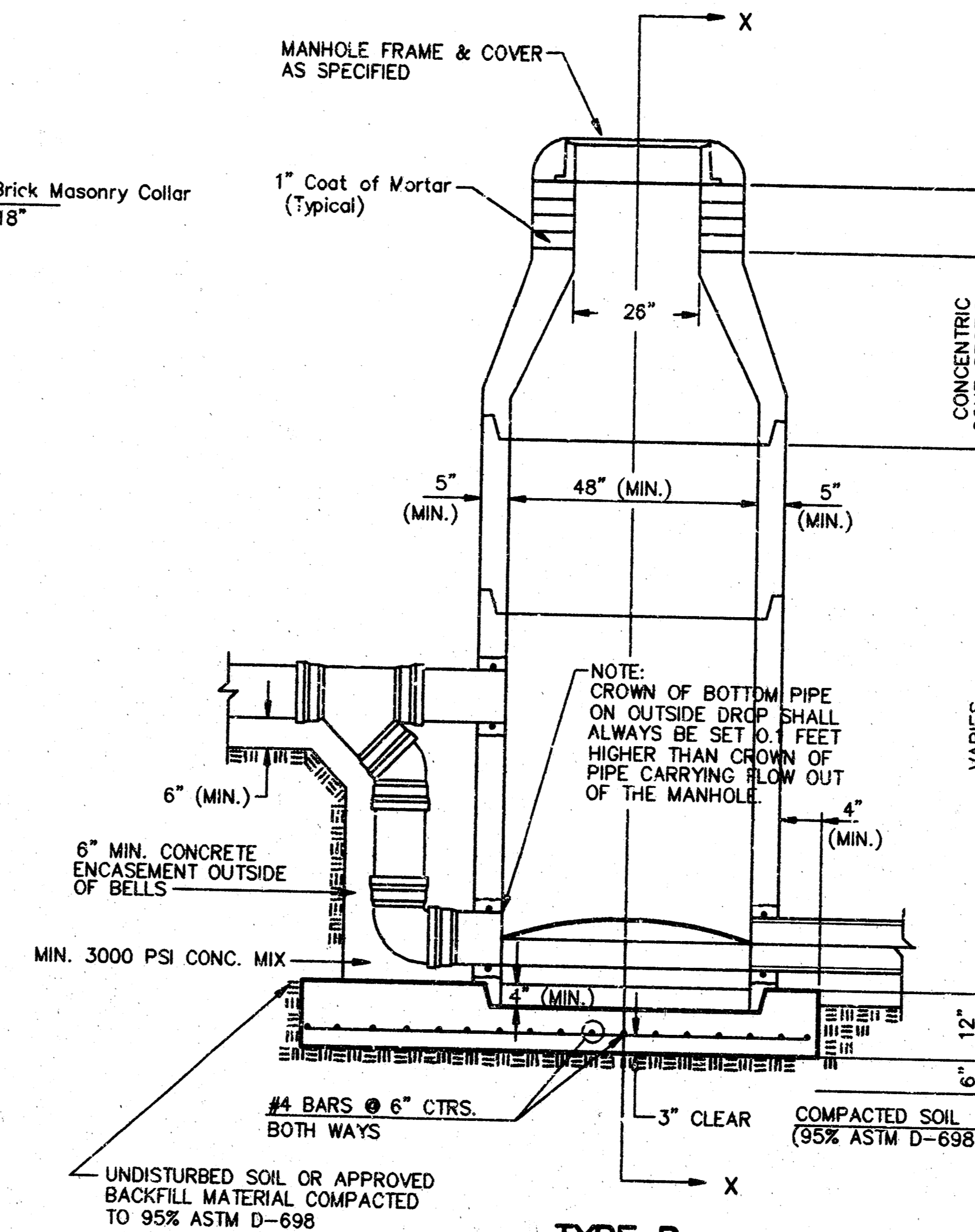
# SEWER APPURTENANCES DETAILS



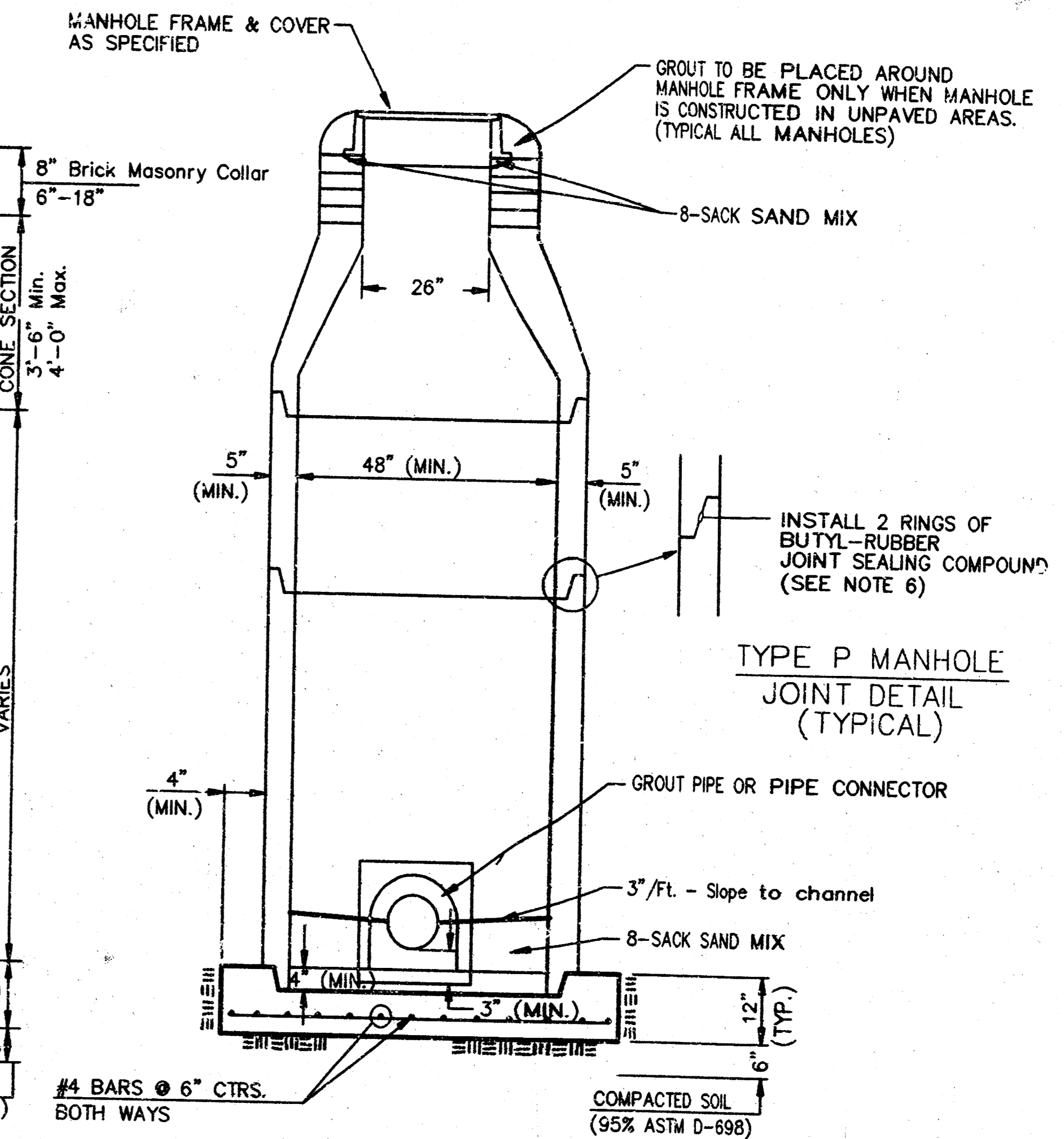
**TYPE P  
STANDARD MANHOLE**



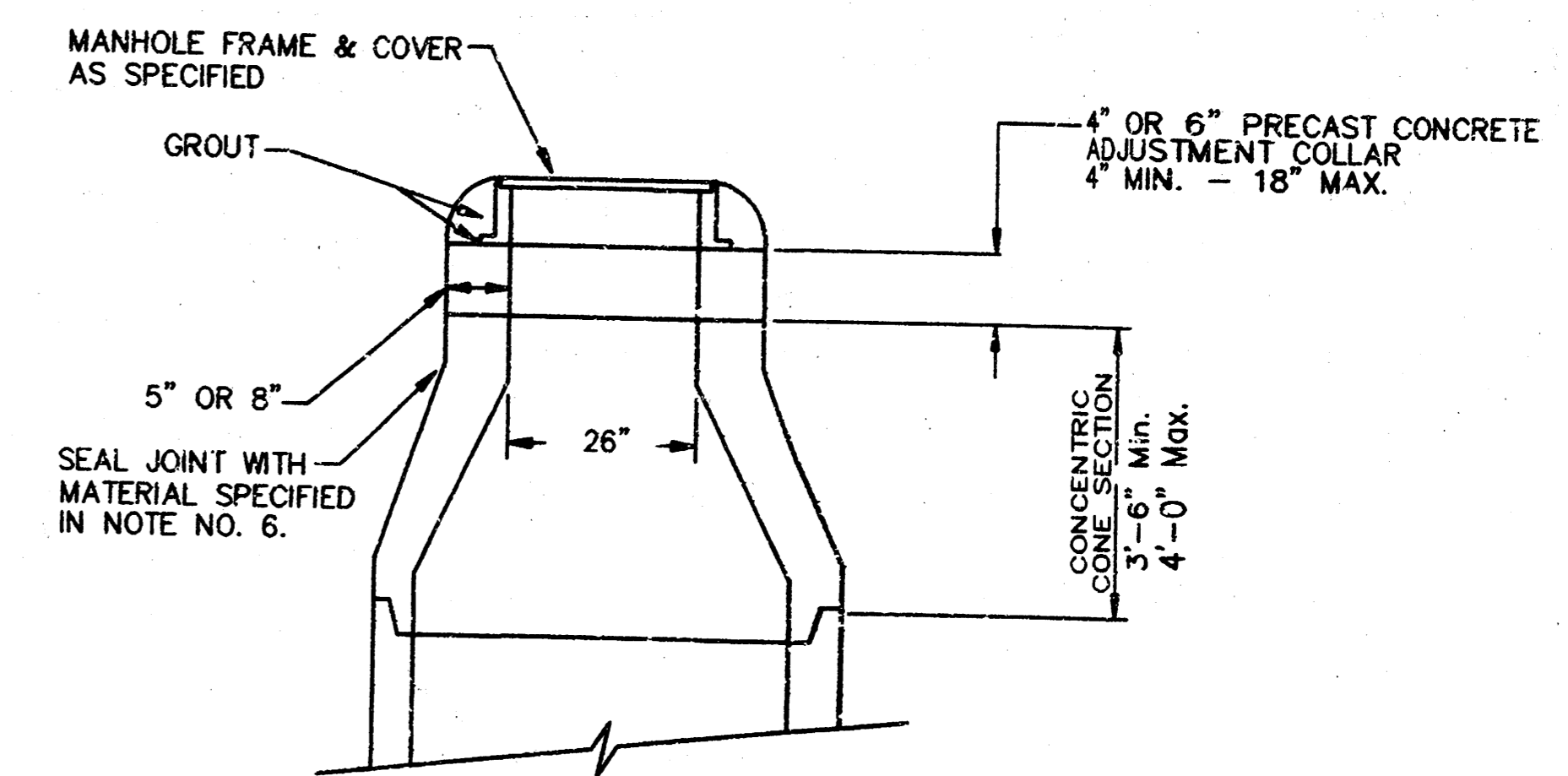
**TYPE P  
INSIDE DROP MANHOLE**



**TYPE P  
OUTSIDE DROP MANHOLE**



**SECTION X  
(TYPICAL)**



**ALTERNATE CONSTRUCTION  
IN UNPAVED AREAS**

## 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 PIPE SHALL BE GROUDED 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 TRENAC SERIES 66 HI-BUILD EPOXYLINE, 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 GROUDED 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 GROUDED INTO THE OPENING USING AN APPROVED NON-SHRINK 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 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.

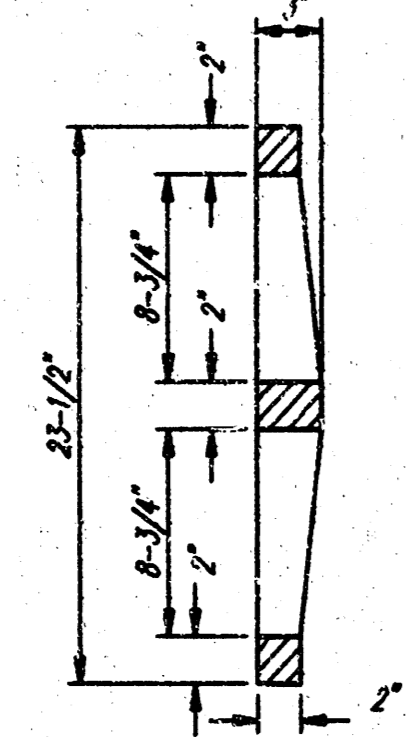
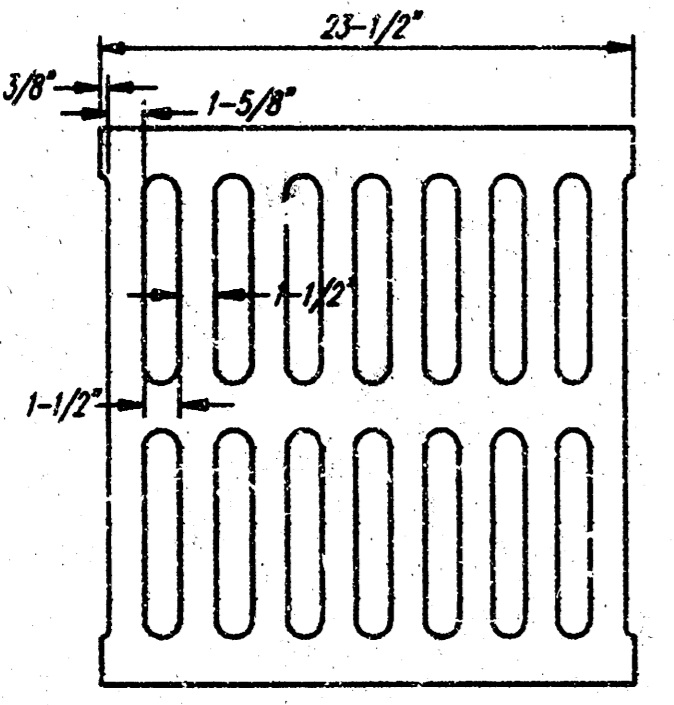
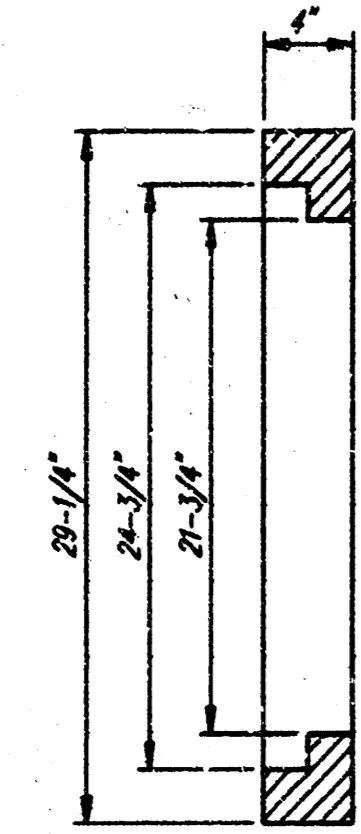
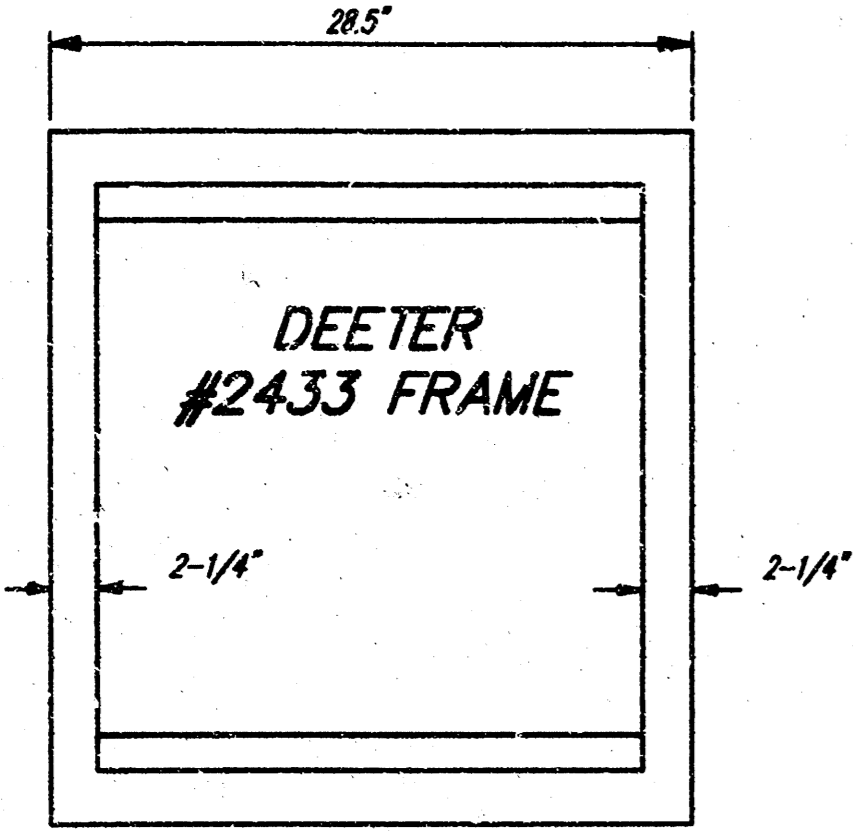
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING 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 CORE. 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.

CITY OF WICHITA  
**STD. MANHOLE DETAILS**  
& SEWER APPURTENANCES DETAILS

**BAUGHMAN COMPANY P. A.**  
ENGINEERING, SURVEYING, & PLANNING  
316-282-7271 • 315 ELLIS • WICHITA, KANSAS 67211

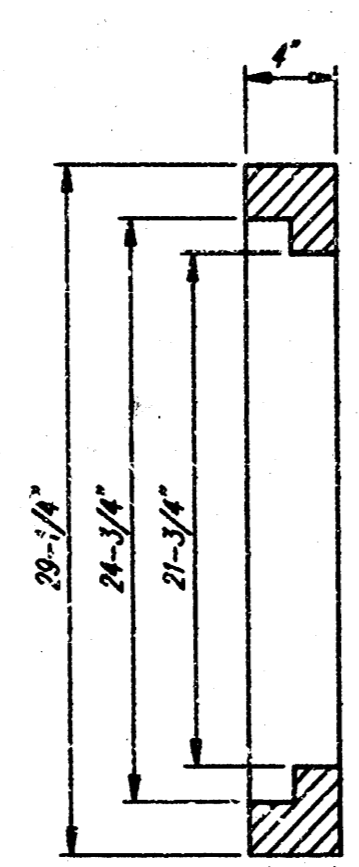
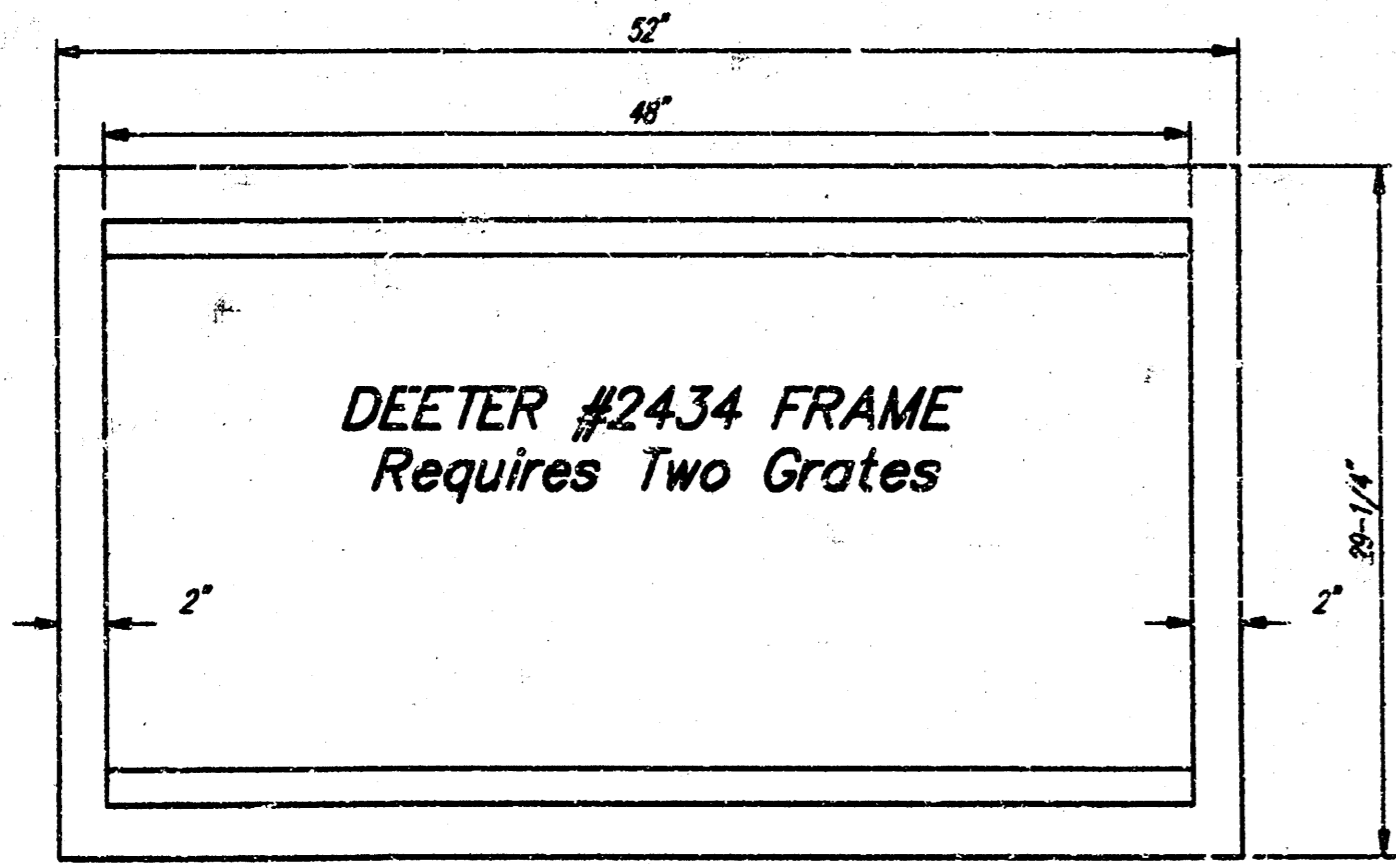
PROJECT NUMBER: \_\_\_\_\_ SHEET: 4/6

DESIGN	DRAWN	APPROVED	DATE	SCALE
	NOV. 93			



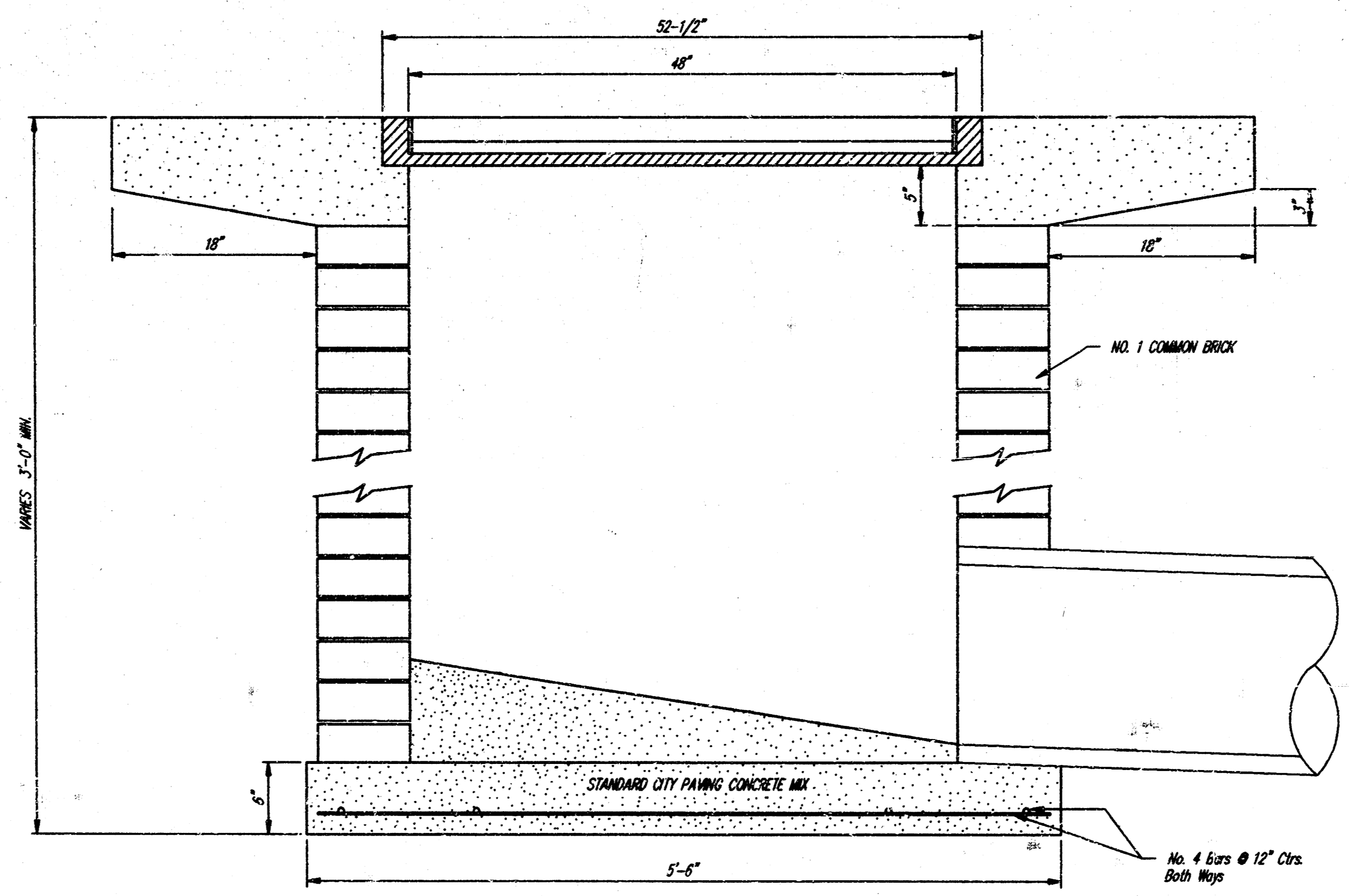
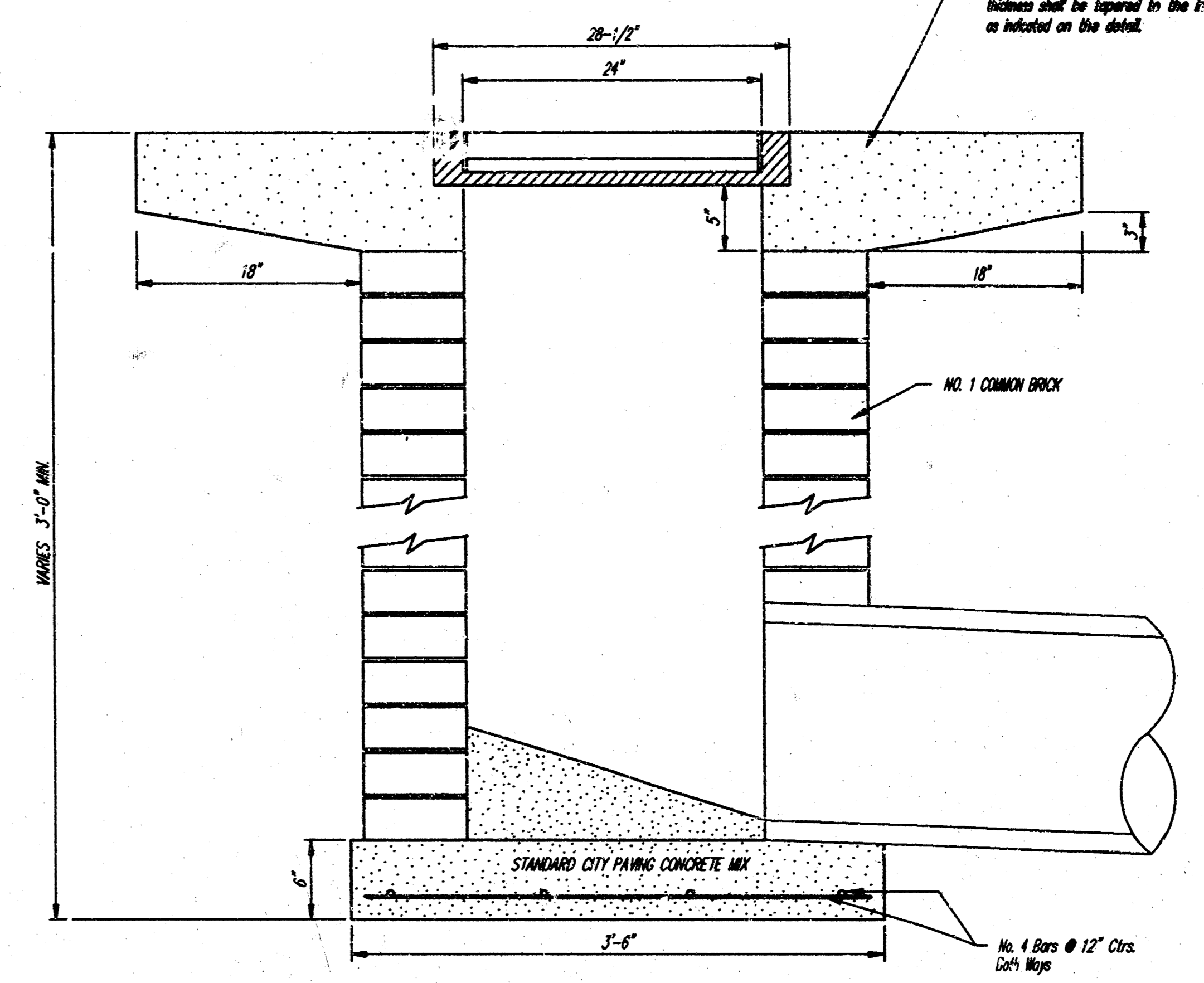
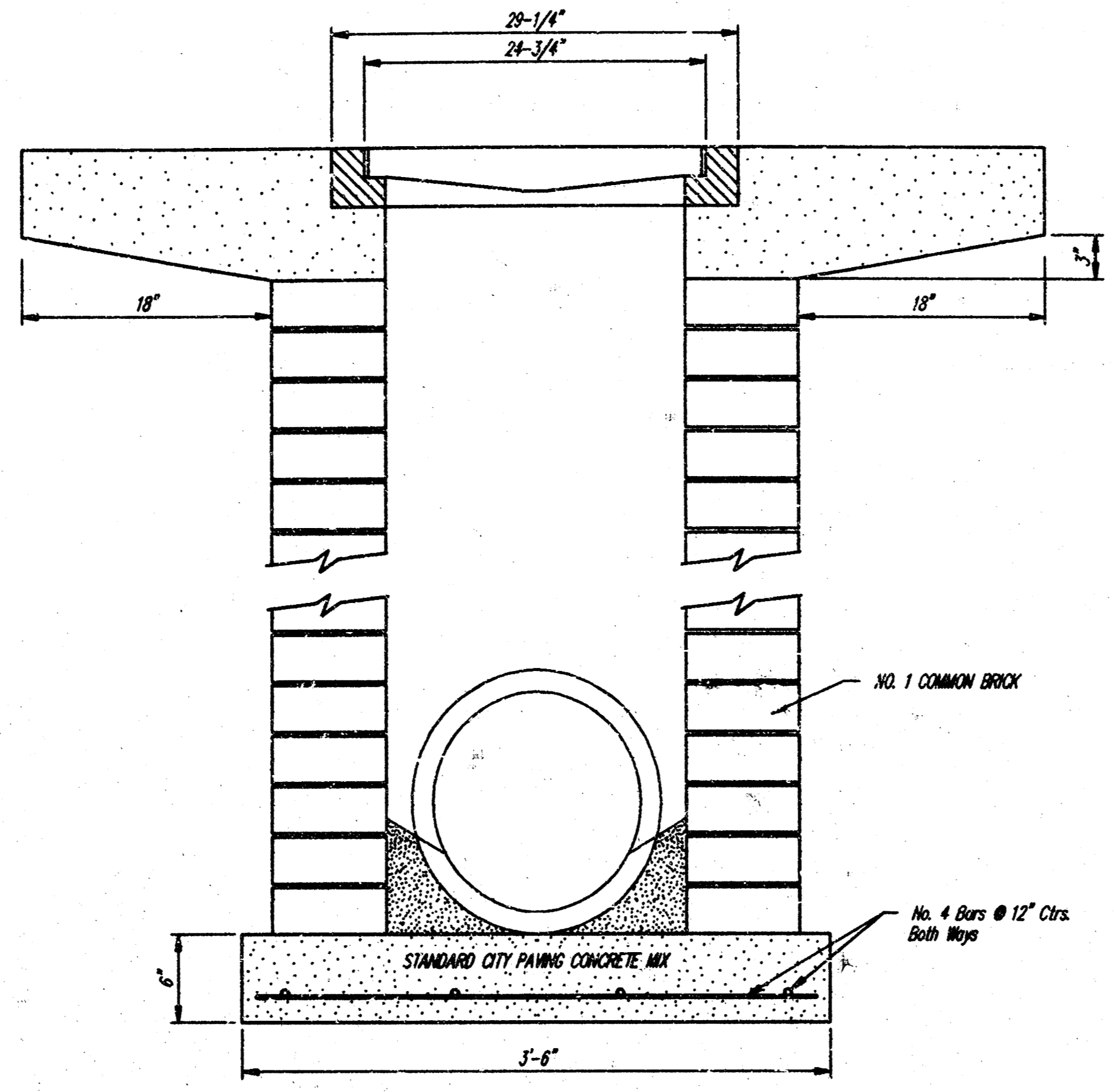
DEETER #2433 GRATE

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.



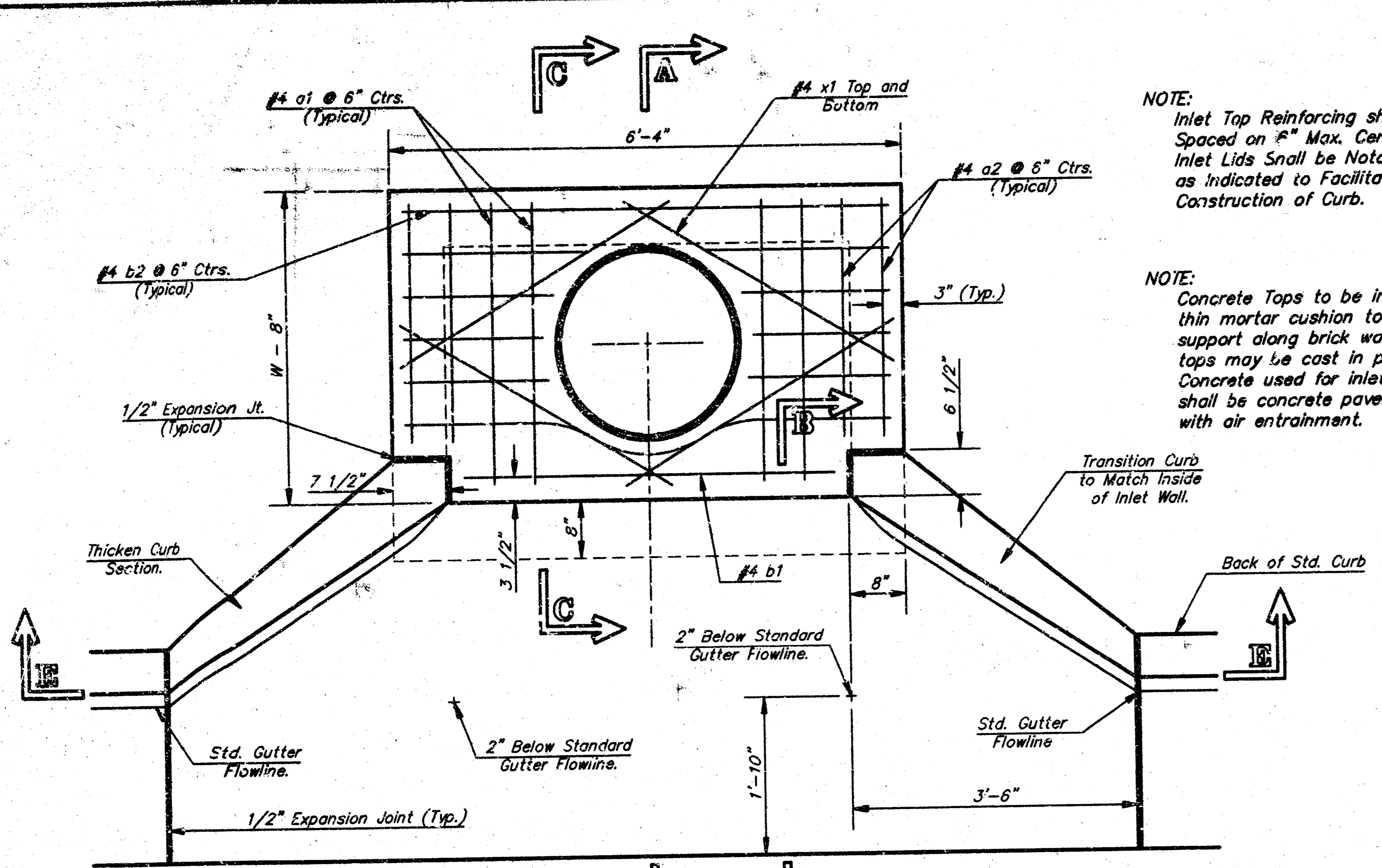
City of Wichita Standard  
**Drop Inlet**

**BAUGHMAN COMPANY P. A.**  
ENGINEERING, SURVEYING, & PLANNING  
318-282-7271 • 315 ELLIS • WICHITA, KANSAS 67211

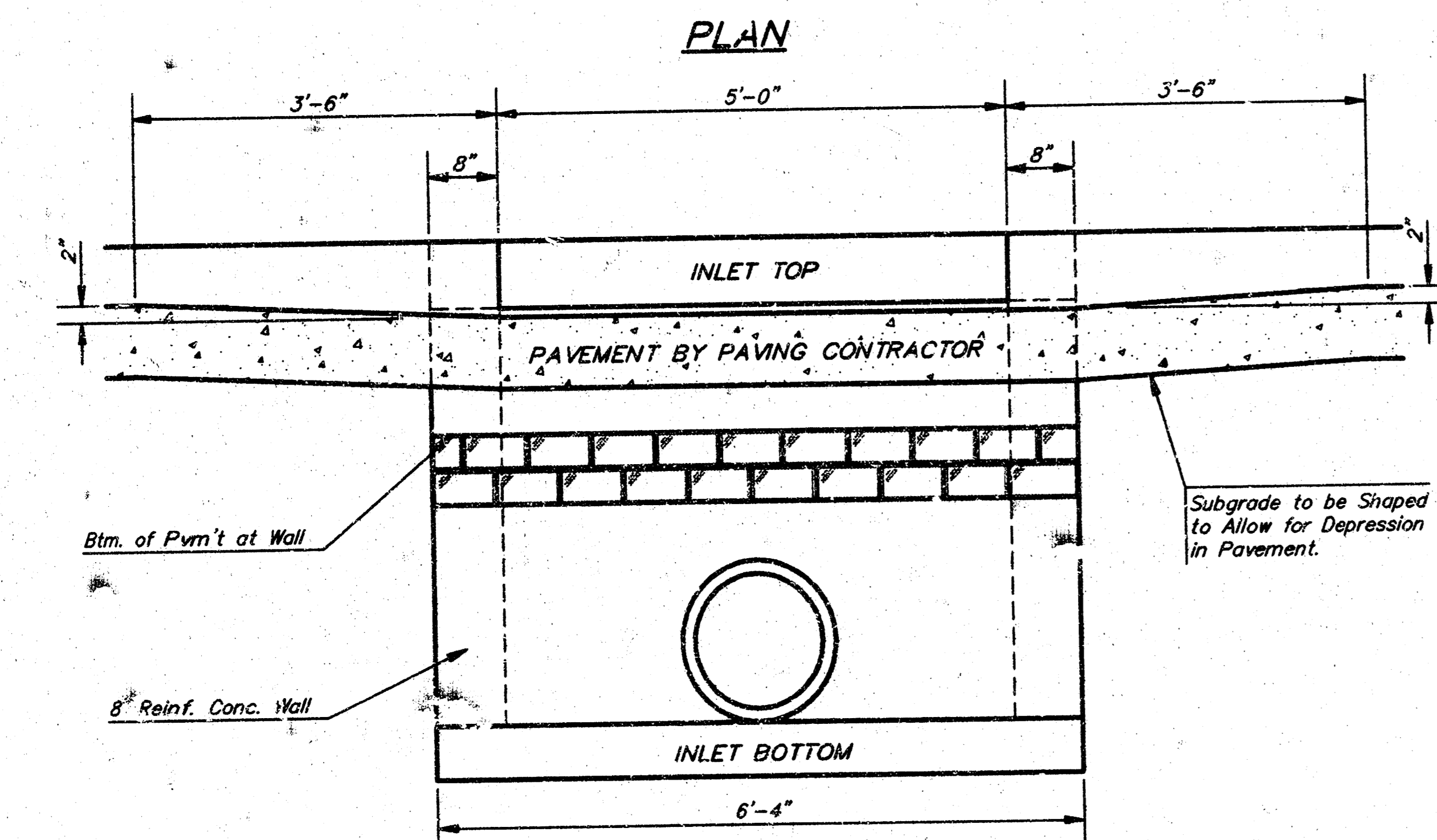
DESIGN	DRAWN	APPROVED	DATE	SCALE

PROJECT NUMBER: \_\_\_\_\_ SHEET 5 OF 6  
DETAILS: PROPRIETARY

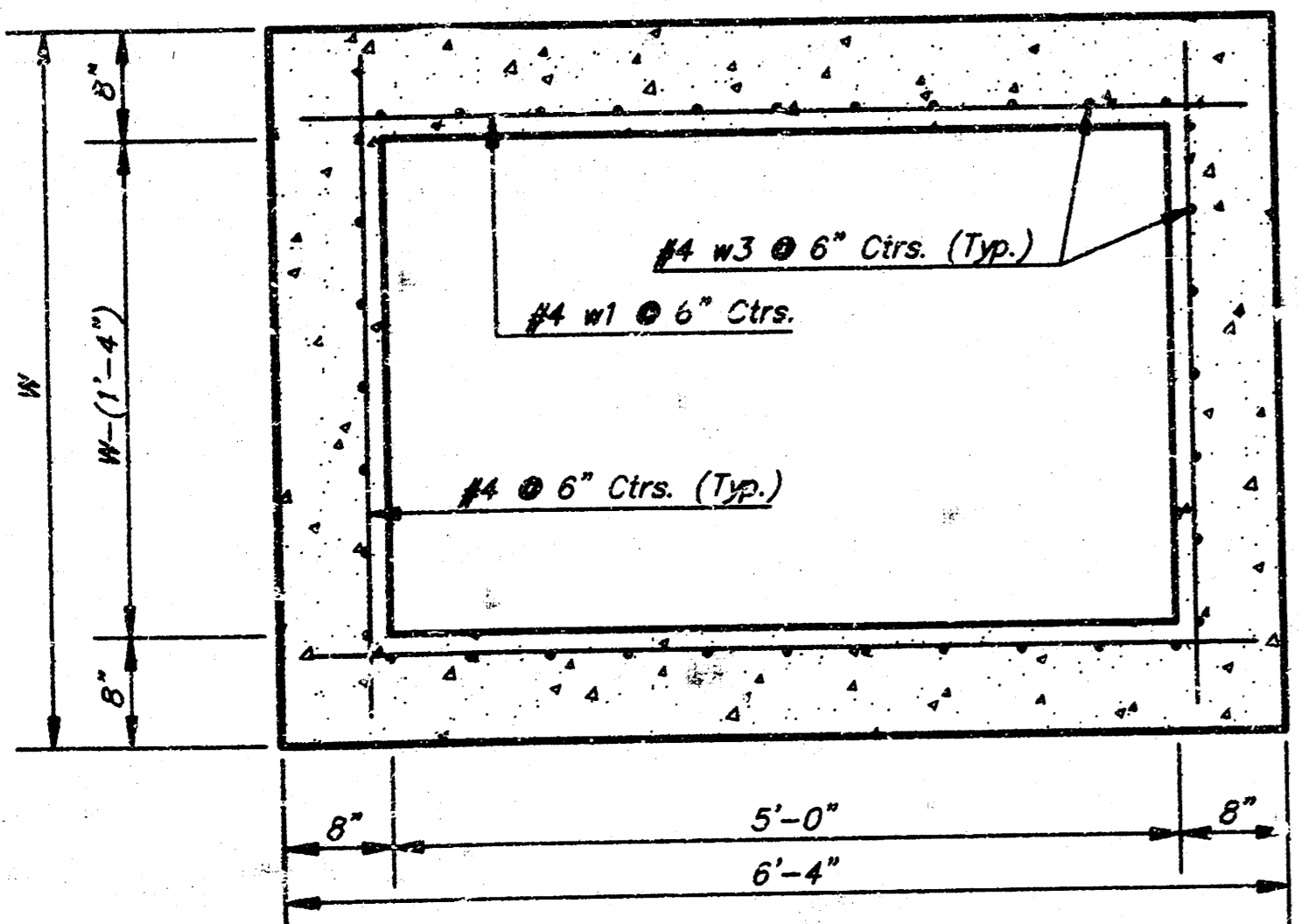
CS 5162



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



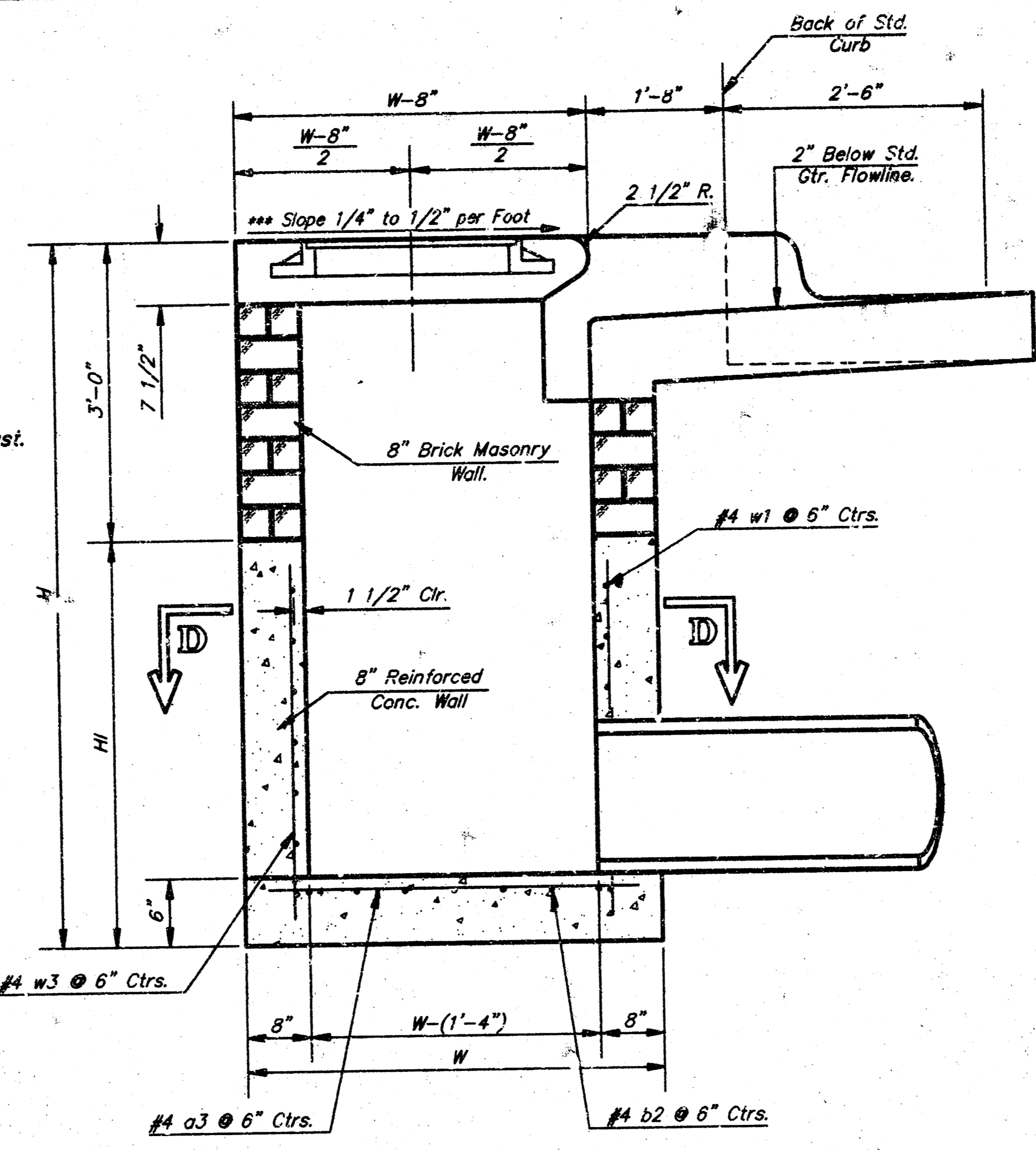
SECTION E-E



SECTION D-D

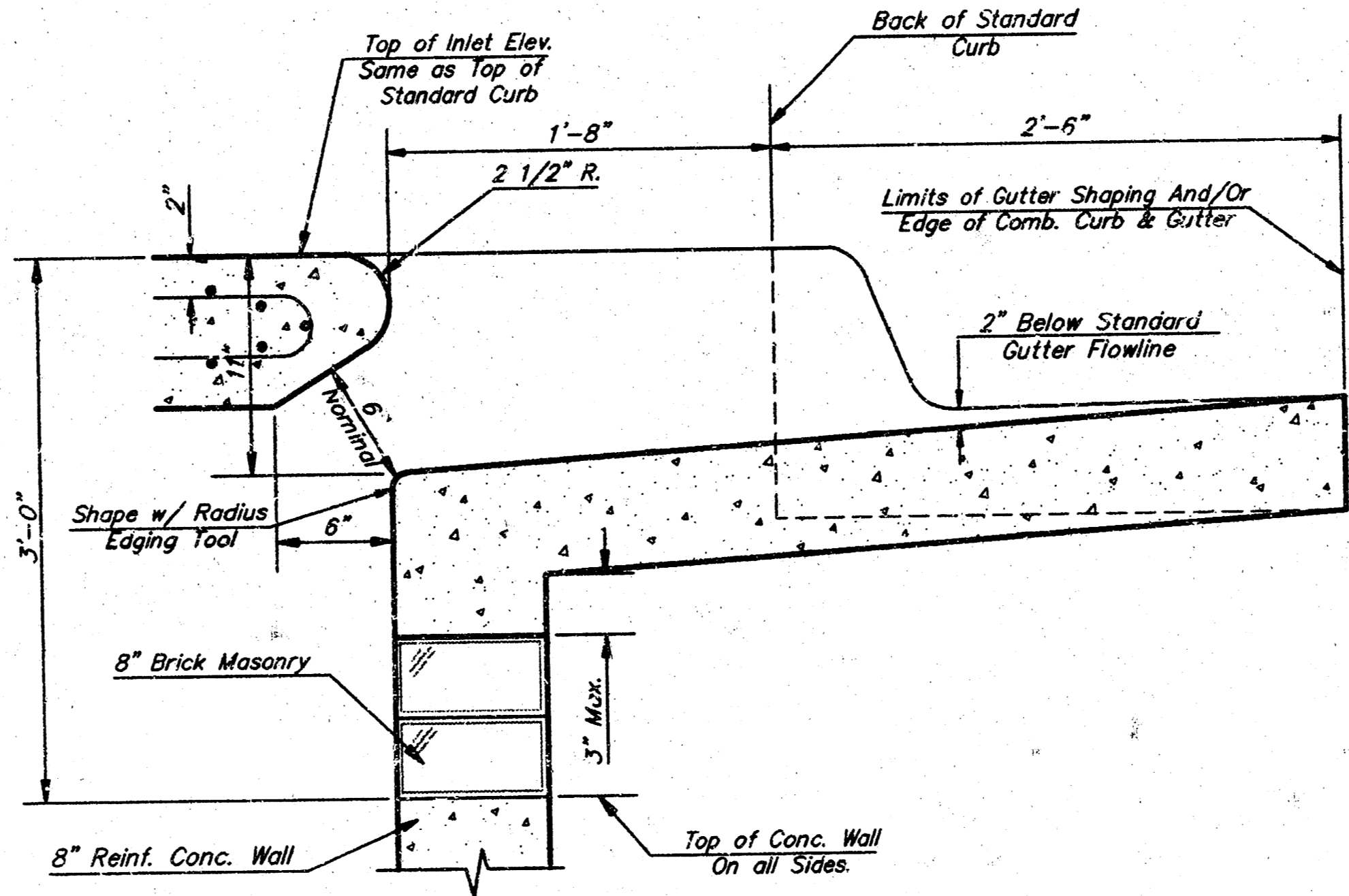
NOTE: Inlet Top Reinforcing shall be Spaced on 6\"/>

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.

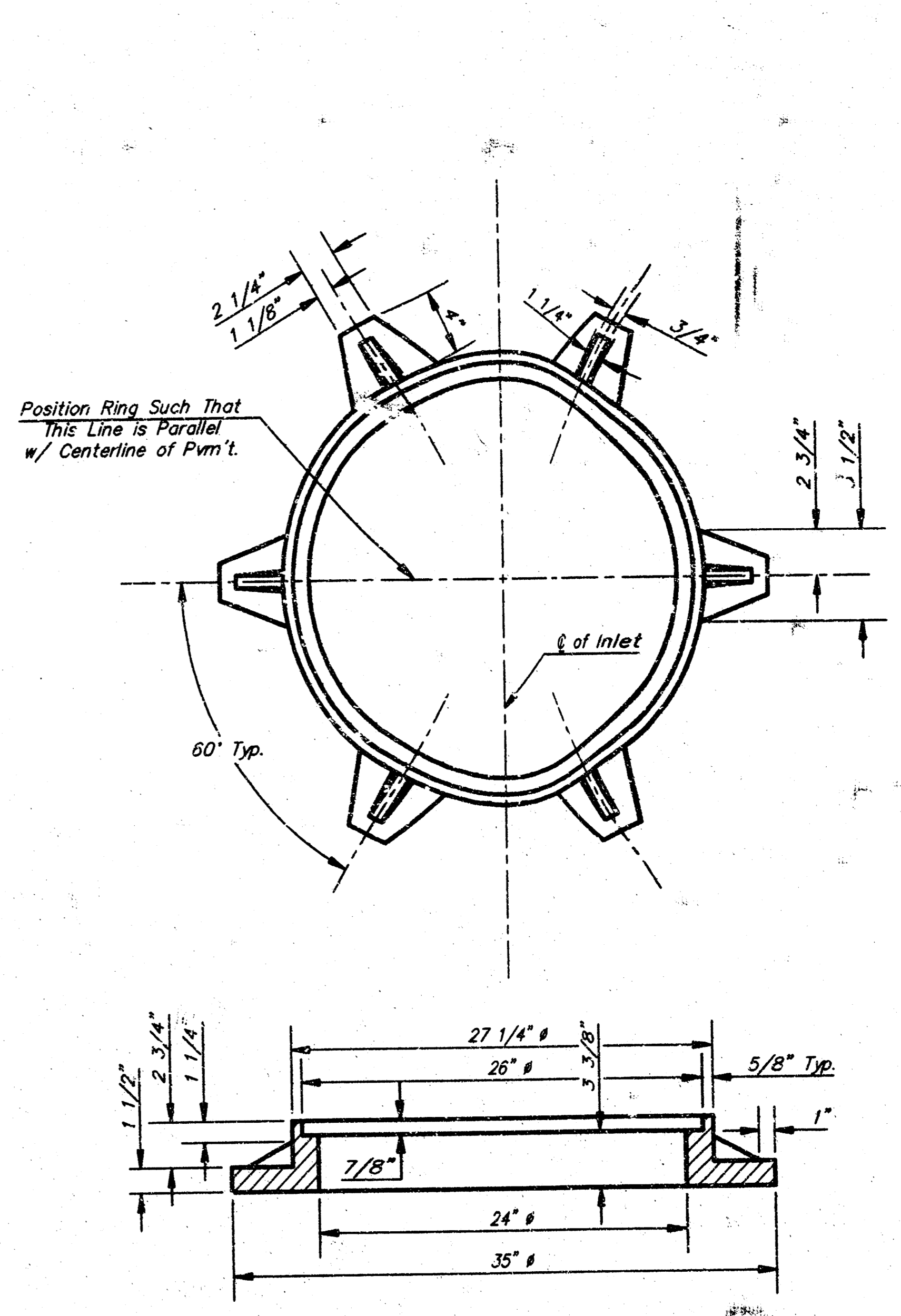


SECTION A-A

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

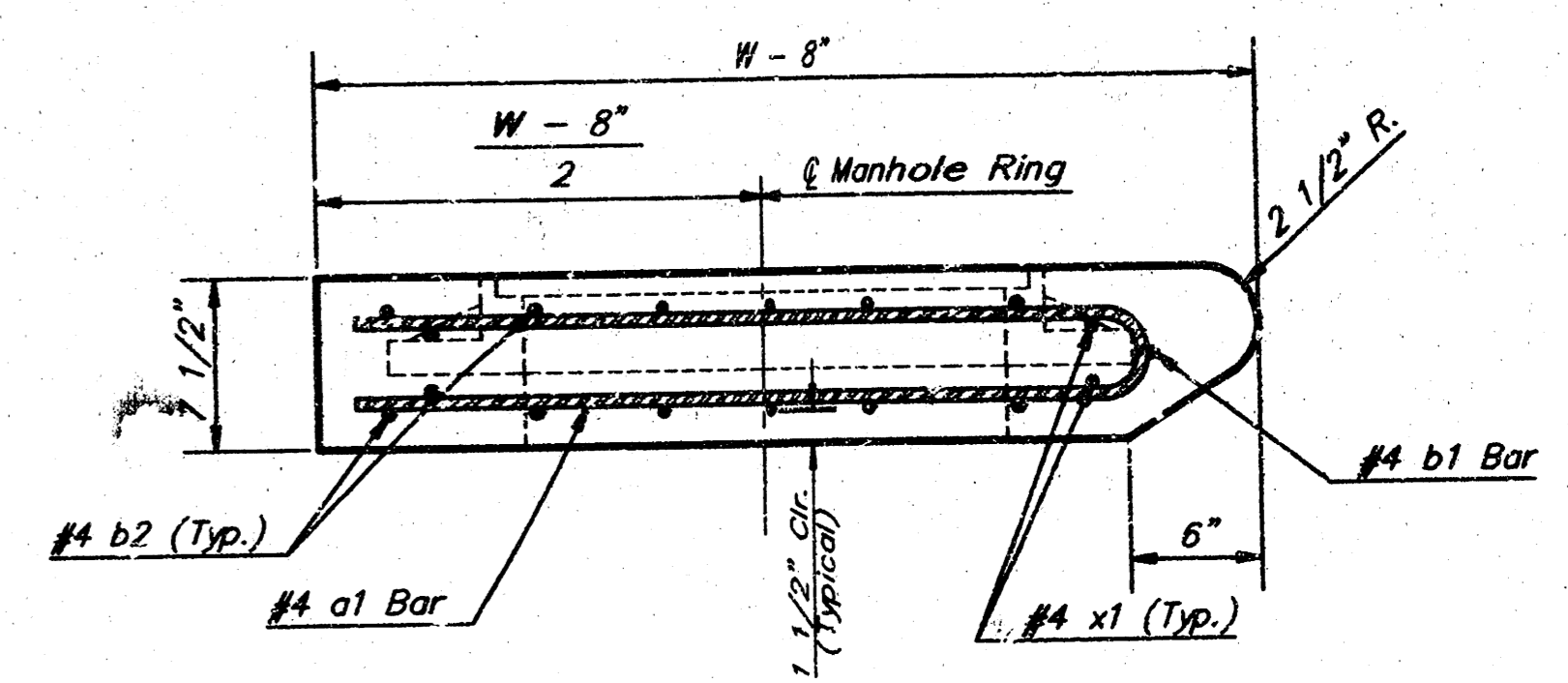


SECTION B-B



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.



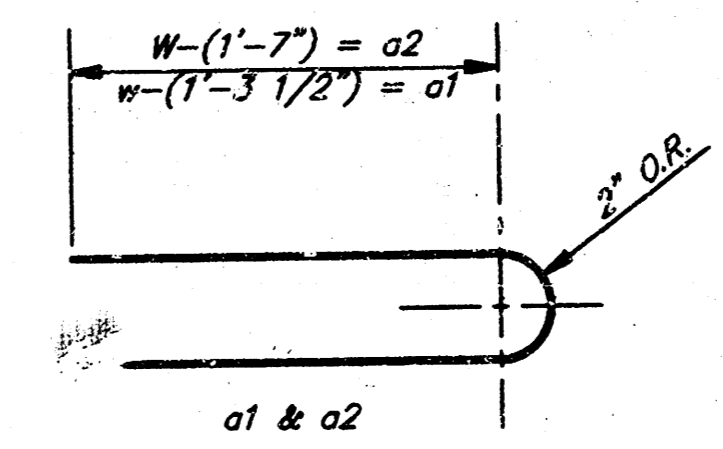
SECTION A-A

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	5	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'-6"	8	4'-10"	8	5'-2"

WALL REINFORCING  
 MARK SIZE 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'-1" 1 5'-1" 1 6'-1" 1 7'-1" 1 8'-1"  
 w3 #4 32 32 36 40 44 48

\* Field Bend or Cut Reinforcing as Required for Clearance.  
 ① 4 (H - 12") (H - 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	0.362
5'-4"	4'-8" x 6'-4" x 7 1/2"	24" & 30"	0.512
6'-4"	5'-8" x 6'-4" x 7 1/2"	36" & 42"	0.642
7'-4"	6'-8" x 6'-4" x 7 1/2"	48" & 54"	0.772
8'-4"	7'-8" x 6'-4" x 7 1/2"	60" & 66"	0.902

Revised - Feb. 16, 1989

**CITY OF WICHITA STANDARD TYPE 1A Curb Inlet Details**  
 INLET OPENING = 6" x 5'-0"

**BAUGHMAN COMPANY P.A.**  
 ENGINEERING, SURVEYING, & PLANNING  
 518-282-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER: \_\_\_\_\_  
 SHEET: \_\_\_\_\_ OF \_\_\_\_\_

DESIGN: C.O.W. DRAWN: Staff APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_ SCALE: None

S-4-7-41