

# SANITARY SEWER & STORM SEWER IMPROVEMENTS

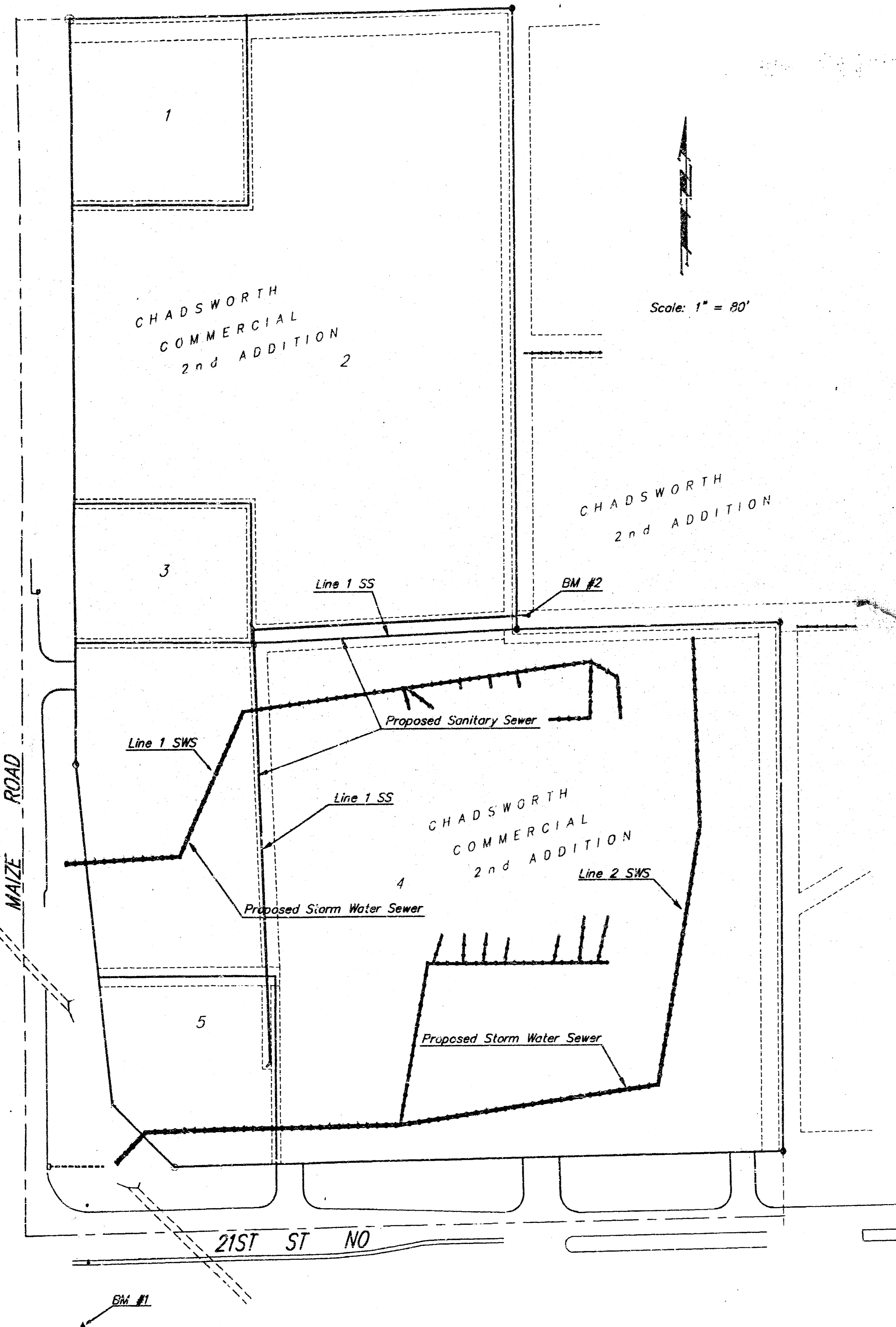
TO SERVE

## Chadsworth Commercial 2nd Addition

Private Project Number  
**617 PPS (607861)**

CITY OF WICHITA, KANSAS

Michael E. Lindeback, P.E. City Engineer



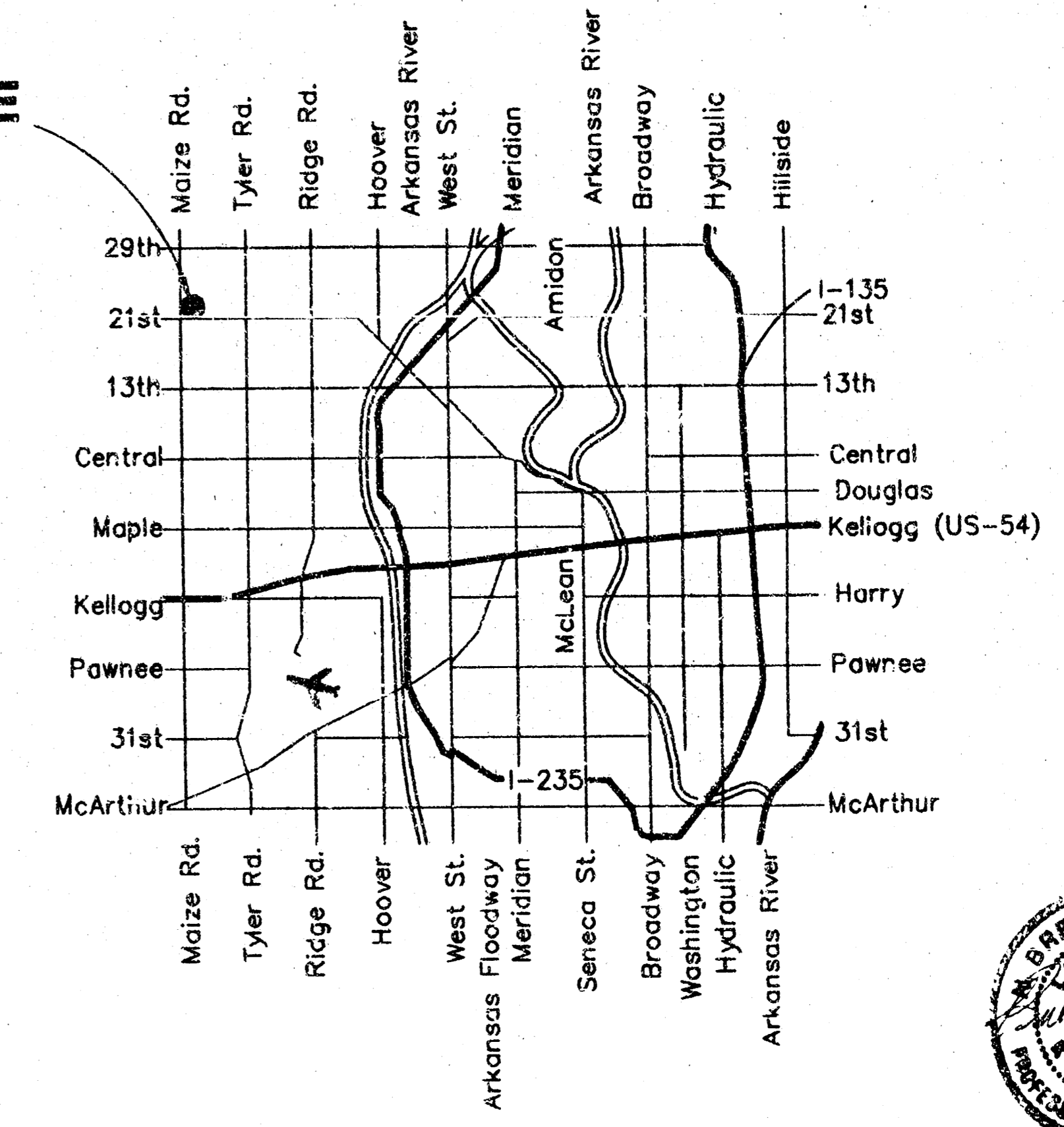
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### General Notes

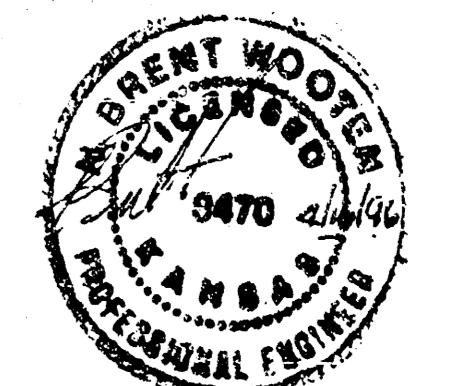
- Underground utility service lines and overhead utility pole lines are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. 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.
- 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 263-2061  
Southwestern Bell Telephone Company 1-571-2611  
City of Wichita Water Dept. 268-4008  
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.
- The Contractor shall be responsible for maintaining continuous flow of sewage through construction. Contractor's proposed method for maintaining sewage flow shall be approved by the Engineer. Cost of maintaining flow of sewage through construction will not be paid for directly and this cost shall be considered subsidiary to the other pay items of work.

### SITE



### LOCATION MAP

*Booked  
R/L  
8/16/96  
V-221*



APPROVED AS NOTED  
BY CITY ENGINEER OF WICHITA

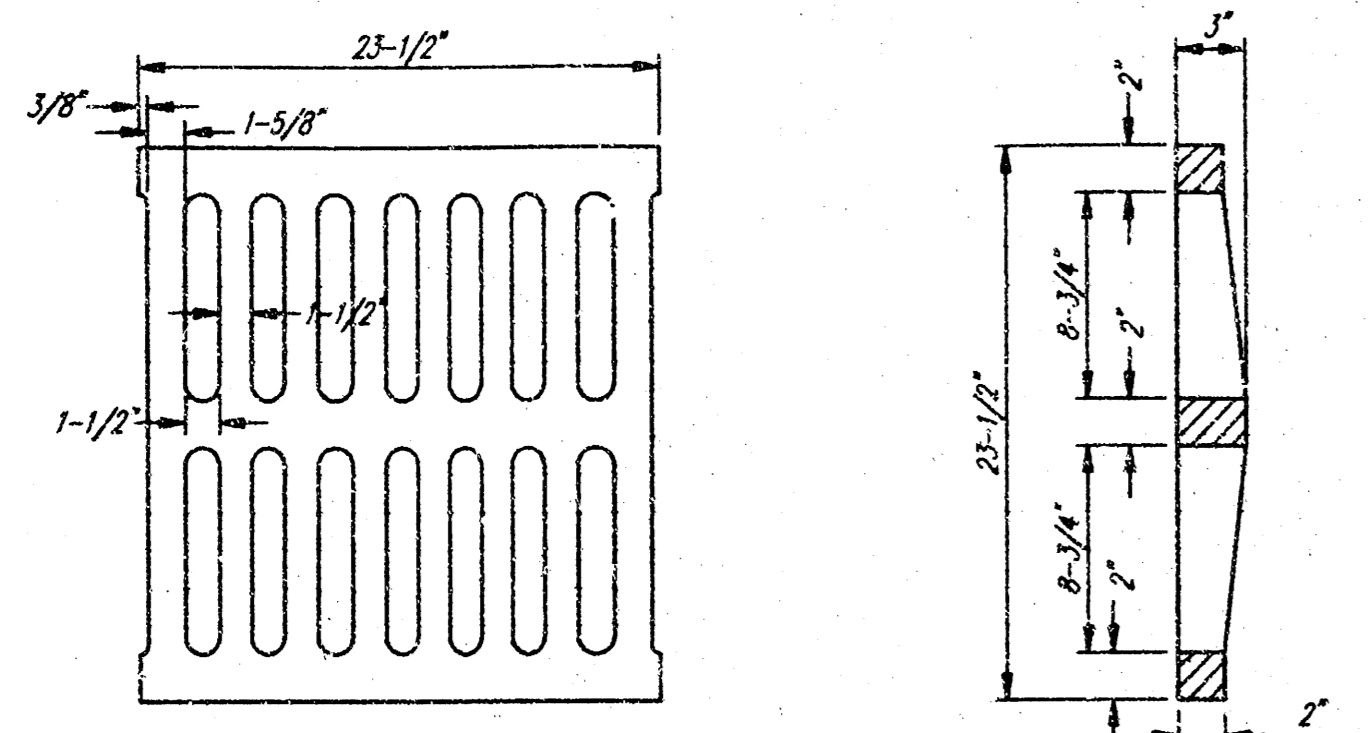
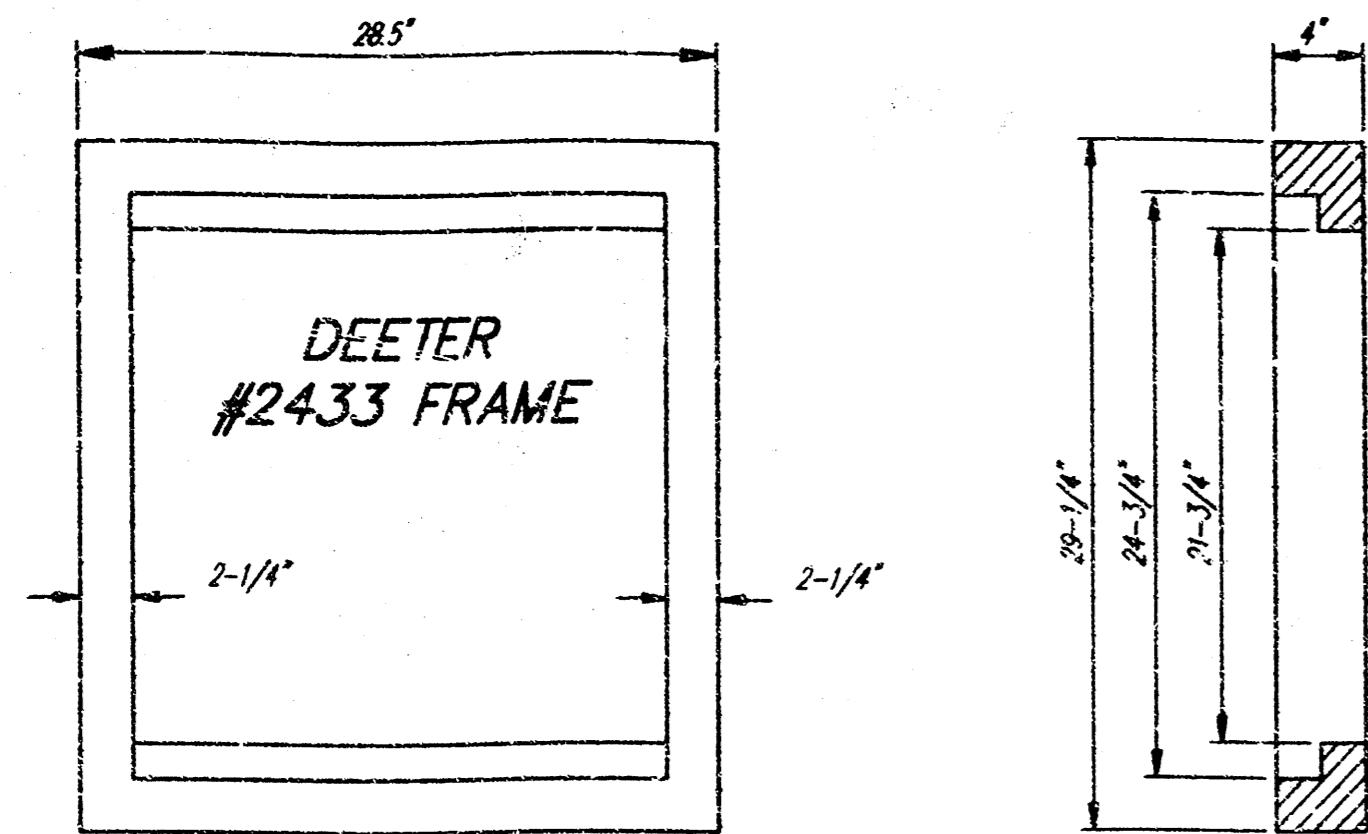
Storm Sewers VRH 4/17/96  
Sanitary Sewers VRH 4/17/96

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 to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).

### Benchmarks:

- BM #1 City of Wichita Disk 64' East & 99' South of Centerline of Both 21st Street & Maize Road. Elevation = 164.30 City Datum
- BM #2 South Rim of Manhole Located 14.1' East & 14.7' North of The Southeast Property Corner of Chadsworth Commercial 2nd Addition, Lot 2. Elevation = 166.23  
SS ASBUILT 5/30/96 9FB

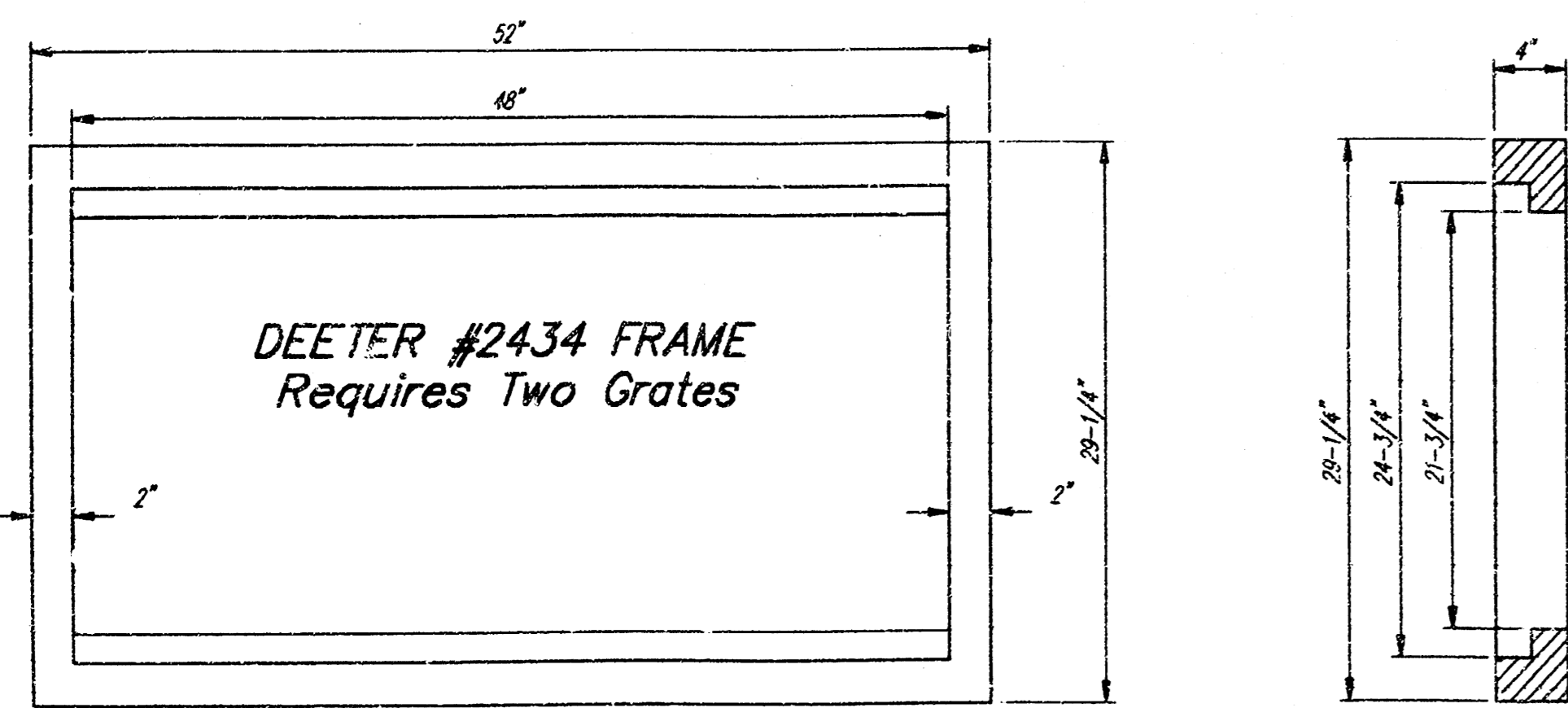
**BAUGHMAN COMPANY P.A.**  
ENGINEERING, SURVEYING, & PLANNING  
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211



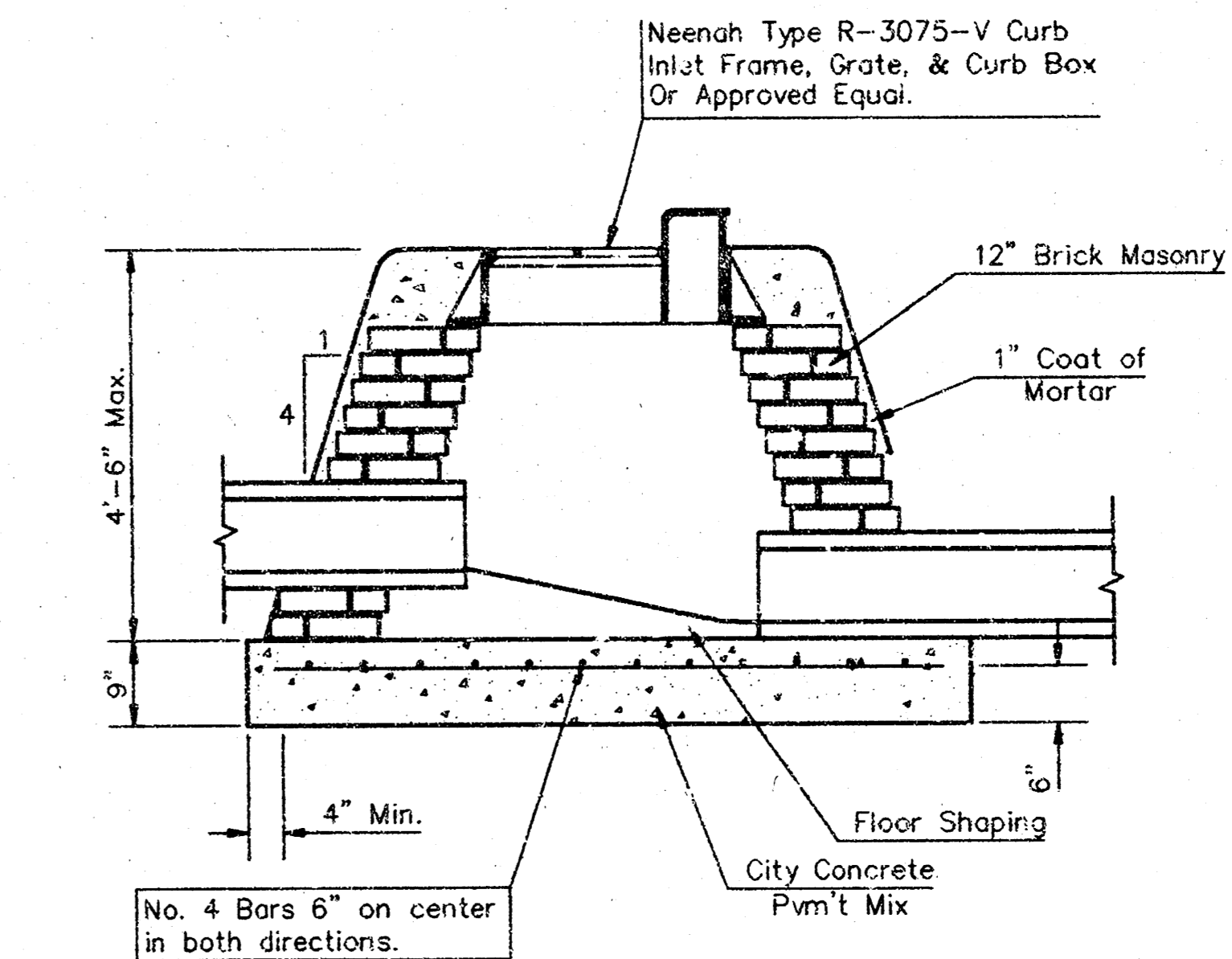
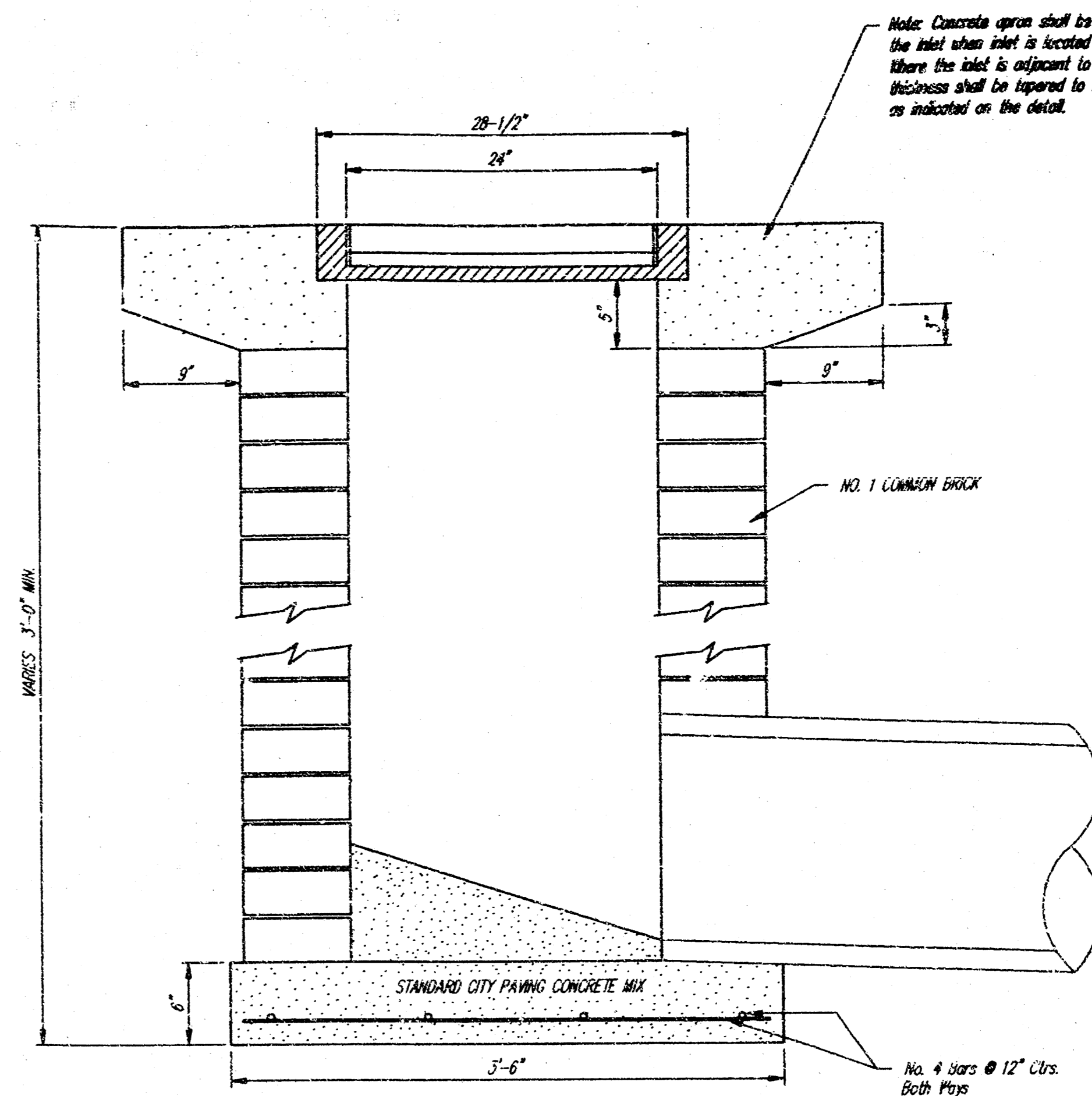
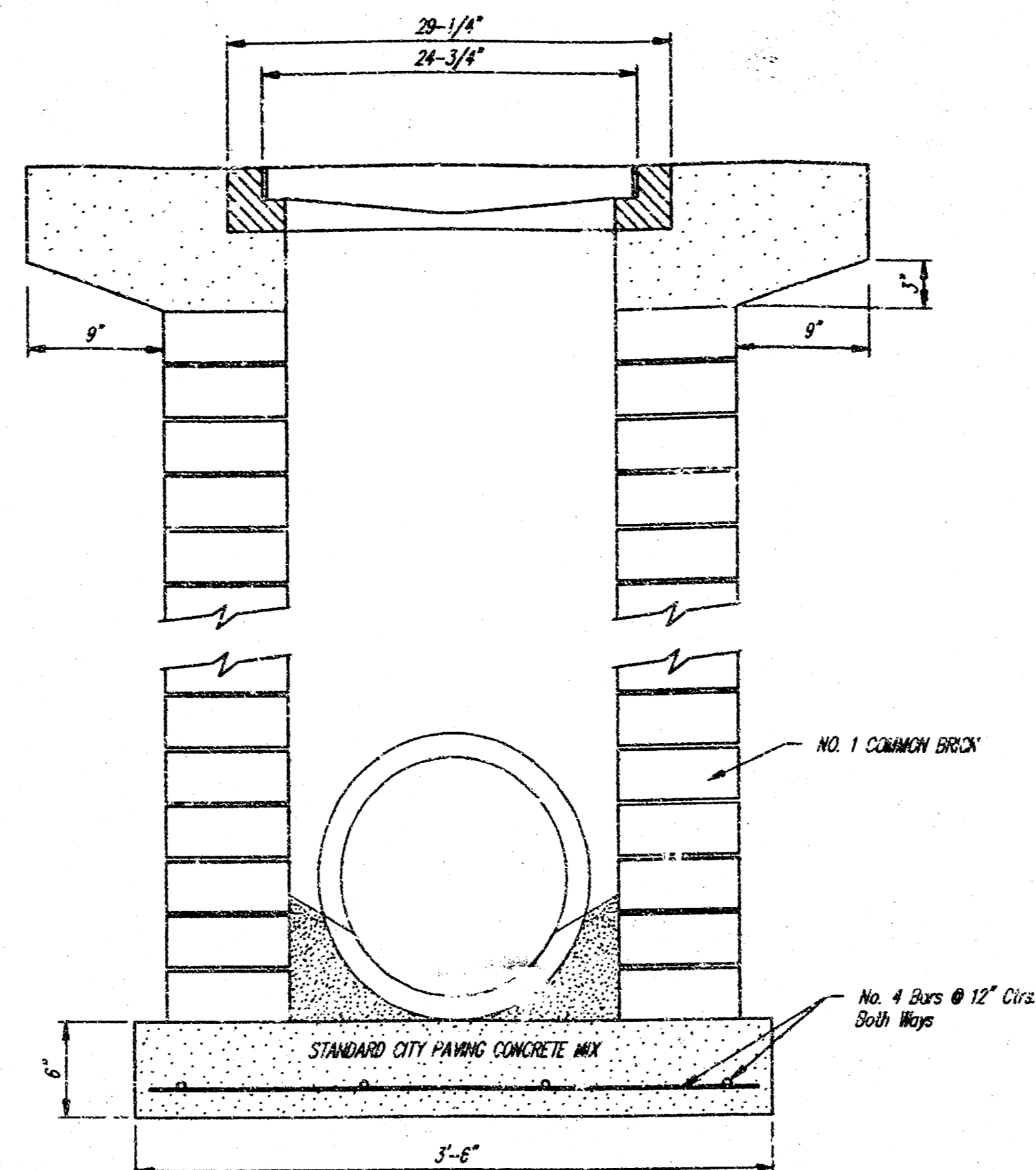
DEETER #2433 GRATE

24" x 24" Frame and Grate 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.



Double 24" x 24" Frame Detail



MODIFIED SPECIAL SHALLOW TYPE "B" MANHOLE

No Scale

CONSTRUCTION NOTES

- Mortar used in masonry construction shall contain 8 sacks of cement per cubic yard. Concrete used in manhole bases shall conform to the requirements of concrete for concrete pavement construction as specified in the city standard paving specifications using city concrete cement mix without air entraining admixture. Mortar shall be placed around the manhole ring as shown on the drawings when manholes are constructed in unpaved areas. Type "A" shallow manholes can be used on sewers when the manhole is not located within public street pavement. Manholes constructed where pipe sizes are smaller than 24" shall have an inside diameter of 4". Manholes constructed where pipe sizes are 24" or larger shall have an inside diameter of 5". Completed manhole shall be without leaks and water tight.
- Reinforcing steel shall be installed in the manhole bases and shall consist of no. 4 bars placed on 6" centers in both directions. The manhole base reinforcement shall be placed 6" above the bottom of the manhole base. All costs for furnishing and installing reinforcing steel shall be included in the unit price bid for the manhole.

City of Wichita Standard  
**Drop Inlet**

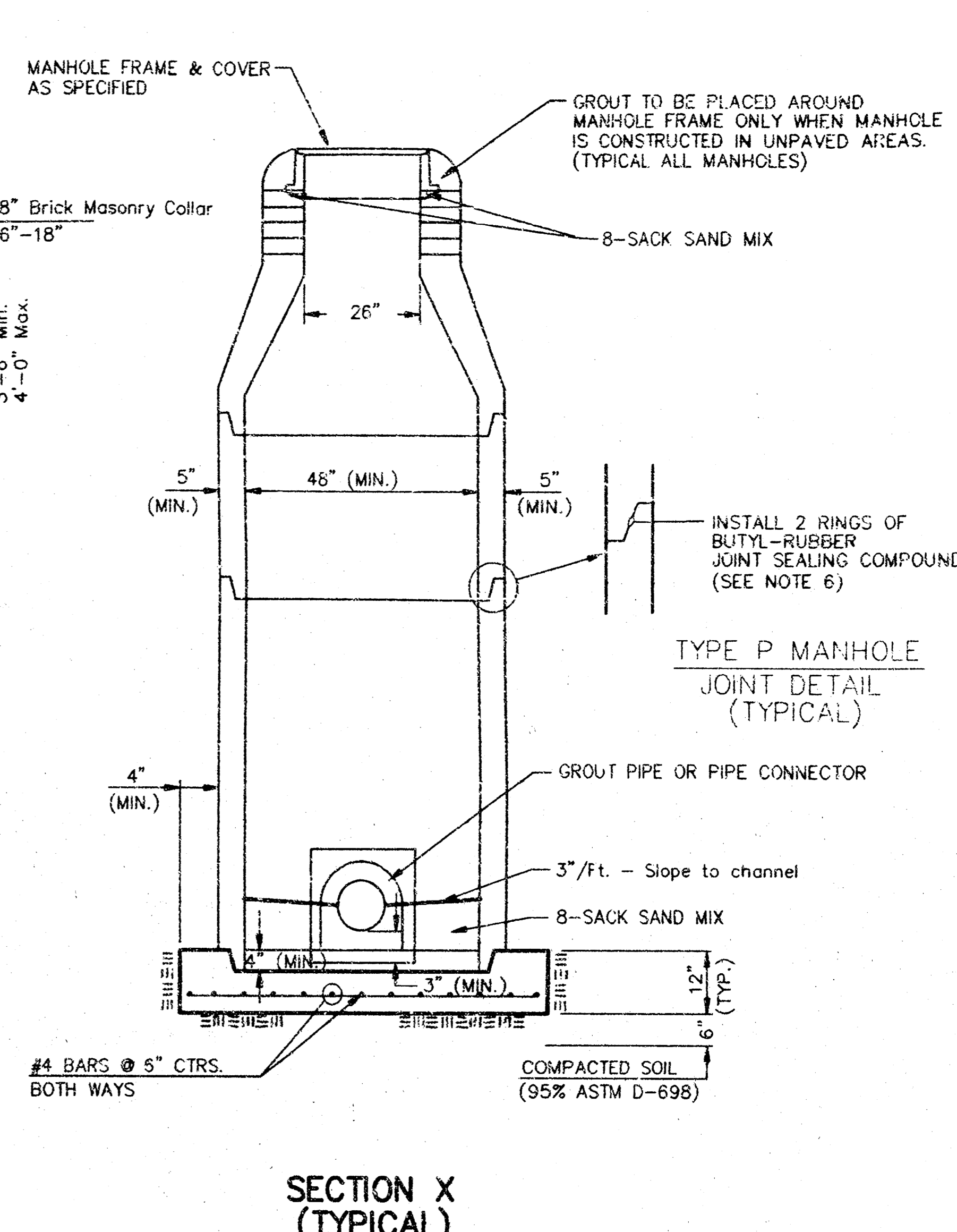
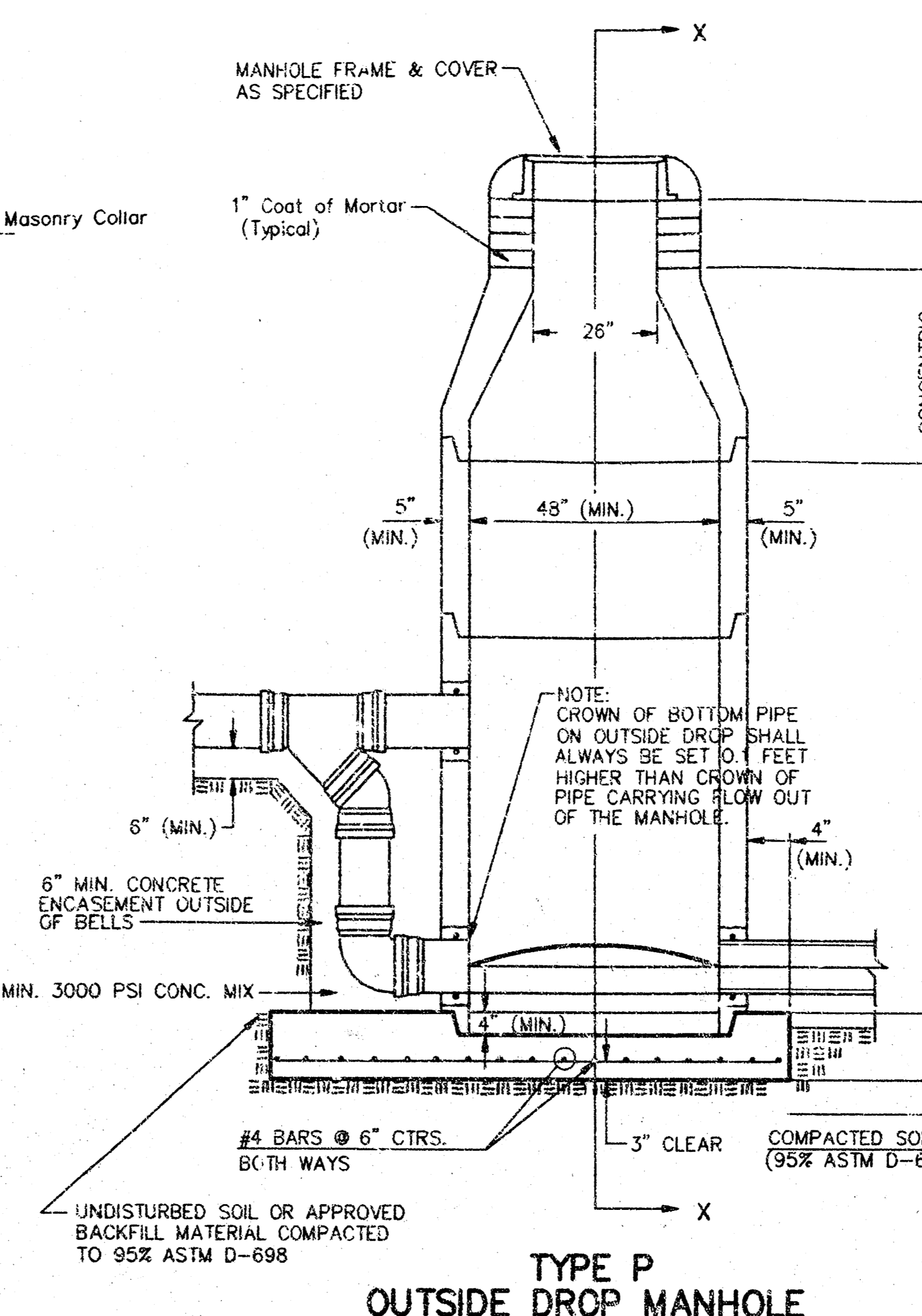
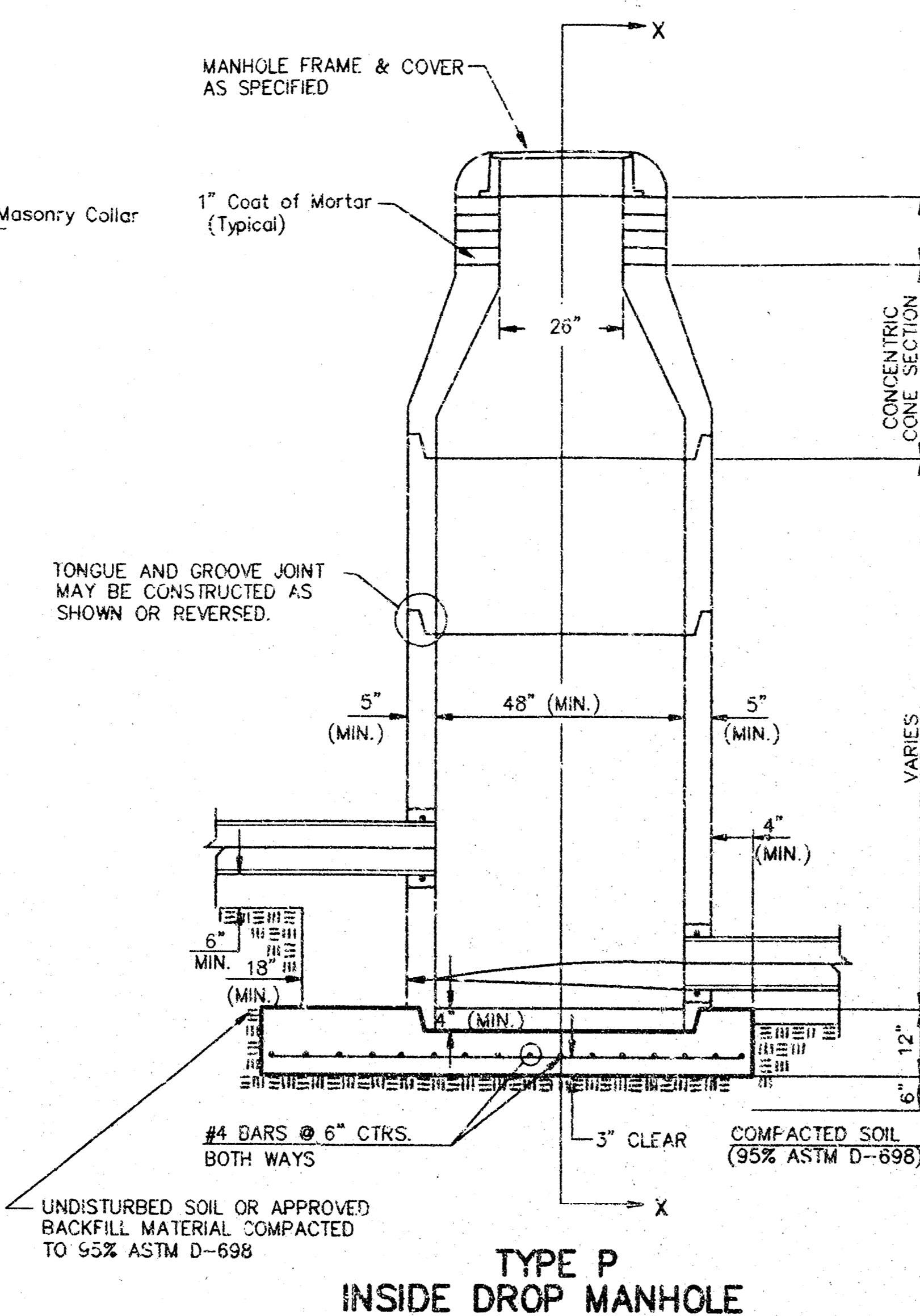
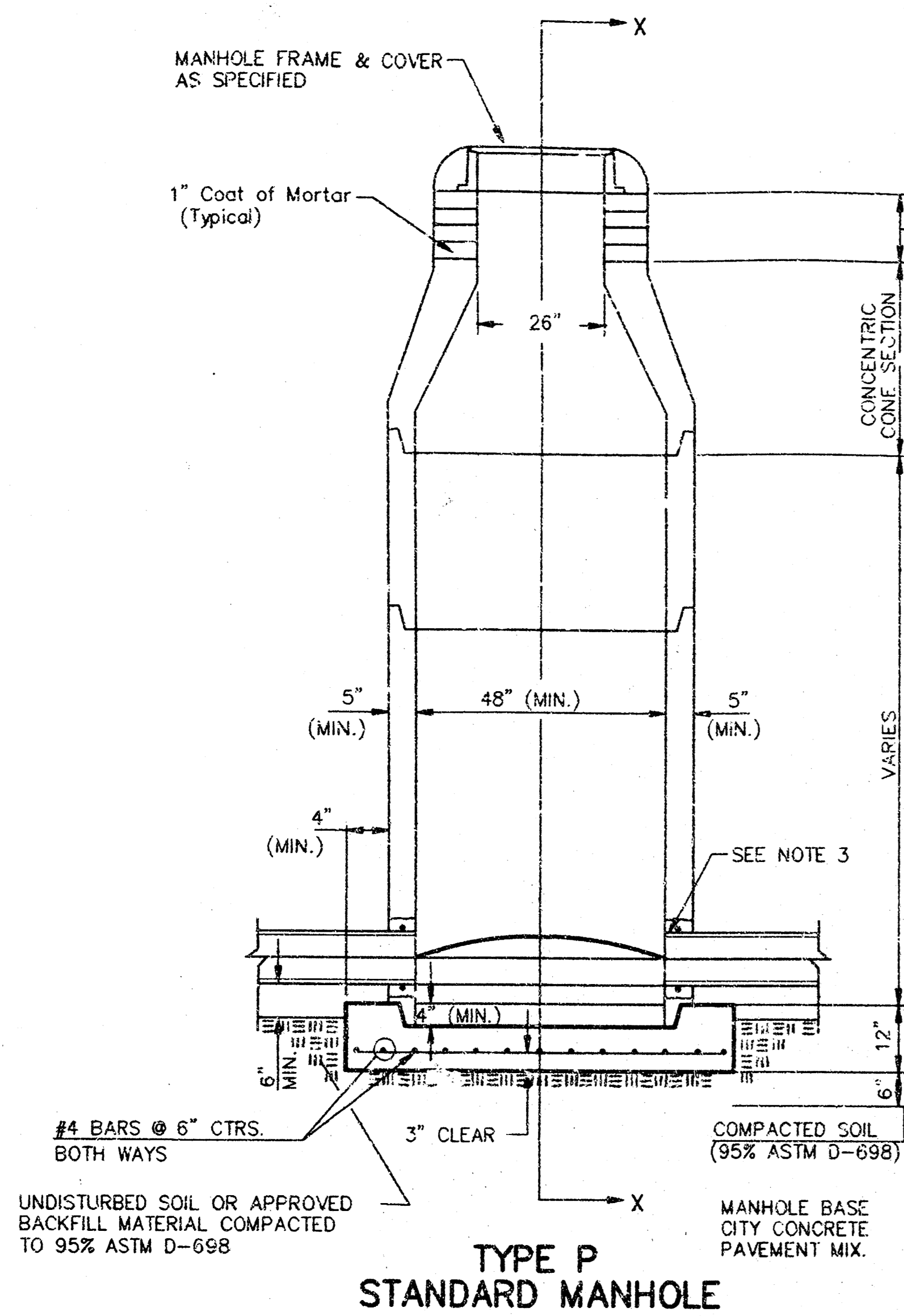
**BAUGHMAN COMPANY P. A.**  
ENGINEERING, SURVEYING, & PLANNING  
316-262-7227 • 317 S. ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER  
**617 FPS (607861)**

DESIGN	CAMN	APPROVED	DATE	SCALE	SHEET
			4-96		2

of 7

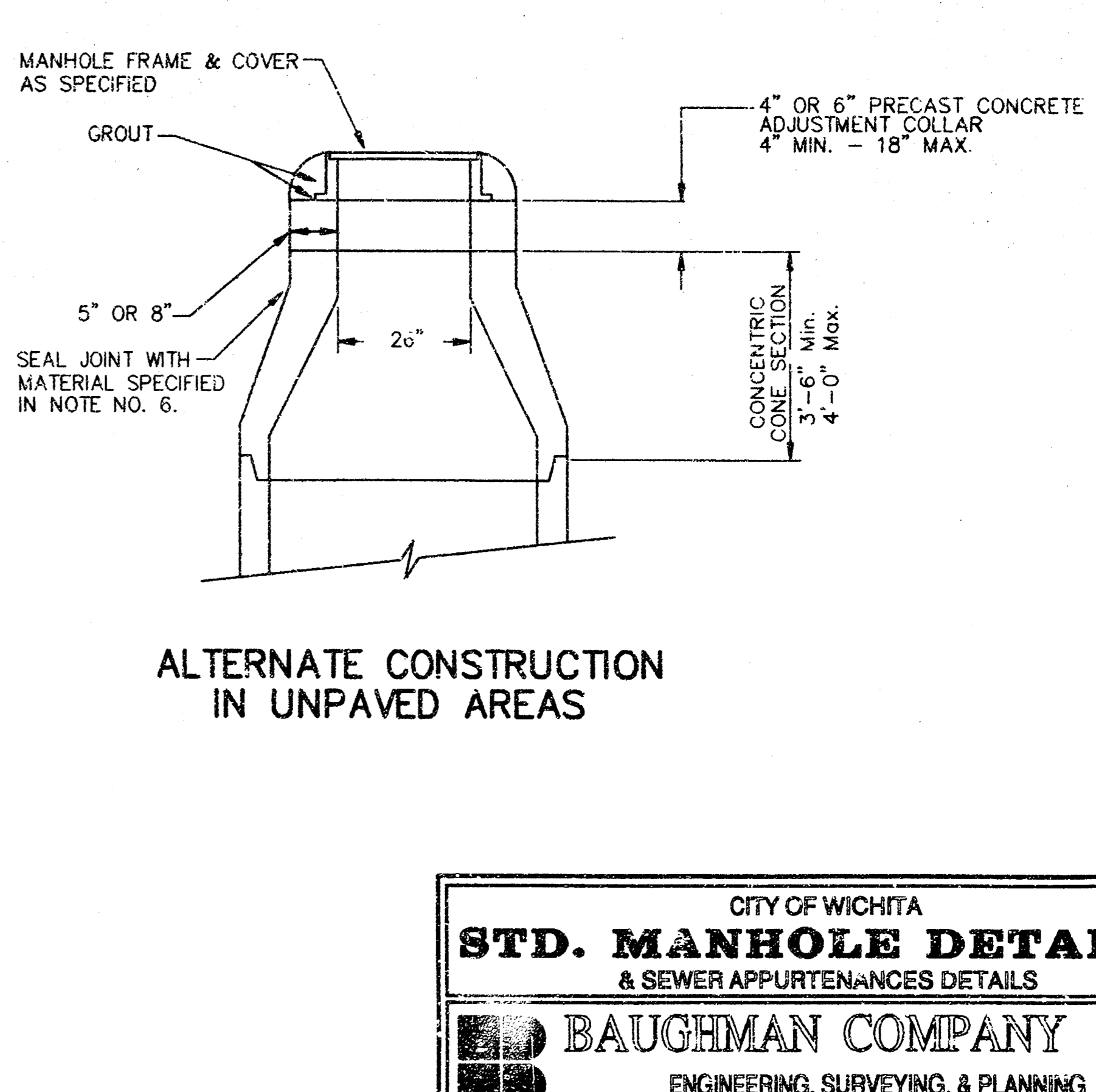
# SEWER APPURTENANCES DETAILS



- GENERAL NOTES
- PRECAST MANHOLE NOTES
- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
  - NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
  - 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.
  - ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNE MEC SERIES 66 HI-BUILD EPOXYLINE, DRY THICKNESS OF 8 MILS (MIN.)
  - EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
  - JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
  - PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
  - 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.
  - LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
  - 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.

- 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.
- 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.
- 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.
- 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 "LAY UP" JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.

- MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
- THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 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.
- 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.
- 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.



CITY OF WICHITA

**STD. MANHOLE DETAILS**

& SEWER APPURTENANCES DETAILS

**BAUGHMAN COMPANY P.A.**

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316-262-7271 • 316-262-7272 • WICHITA, KANSAS 67211

PROJECT NUMBER

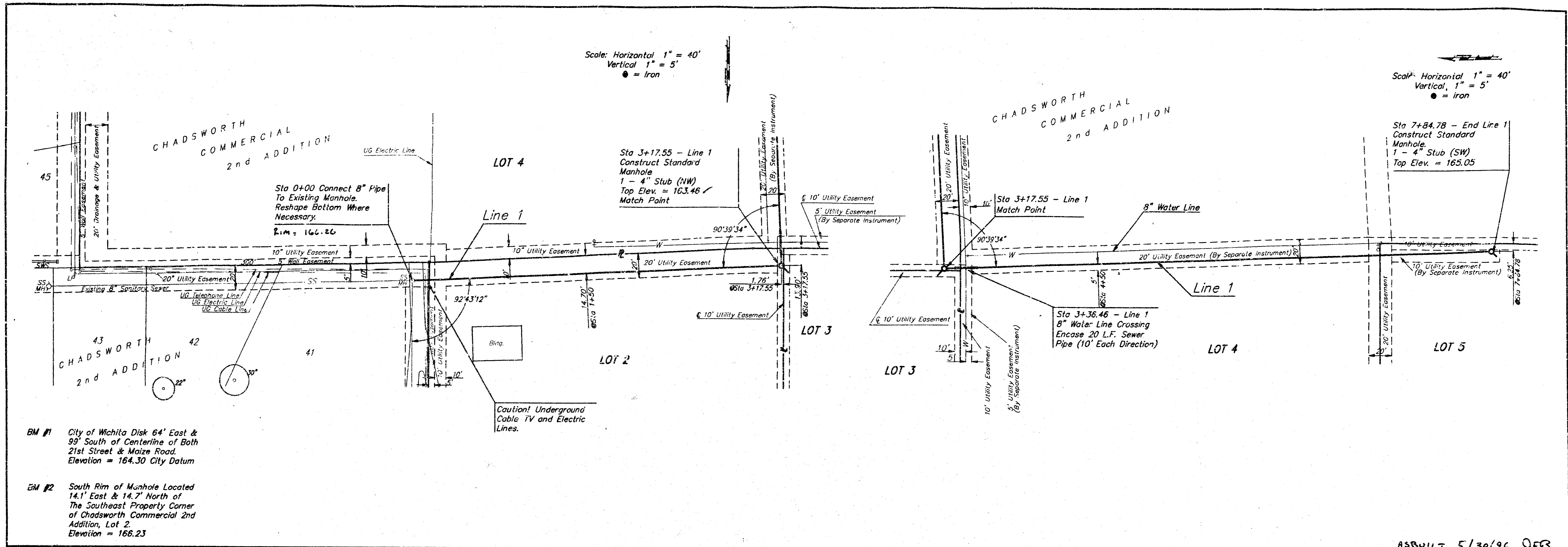
**617 PPS (807861)**

DESIGN DRAWN APPROVED DATE SCALE SHEET

4-96

3 OF 7

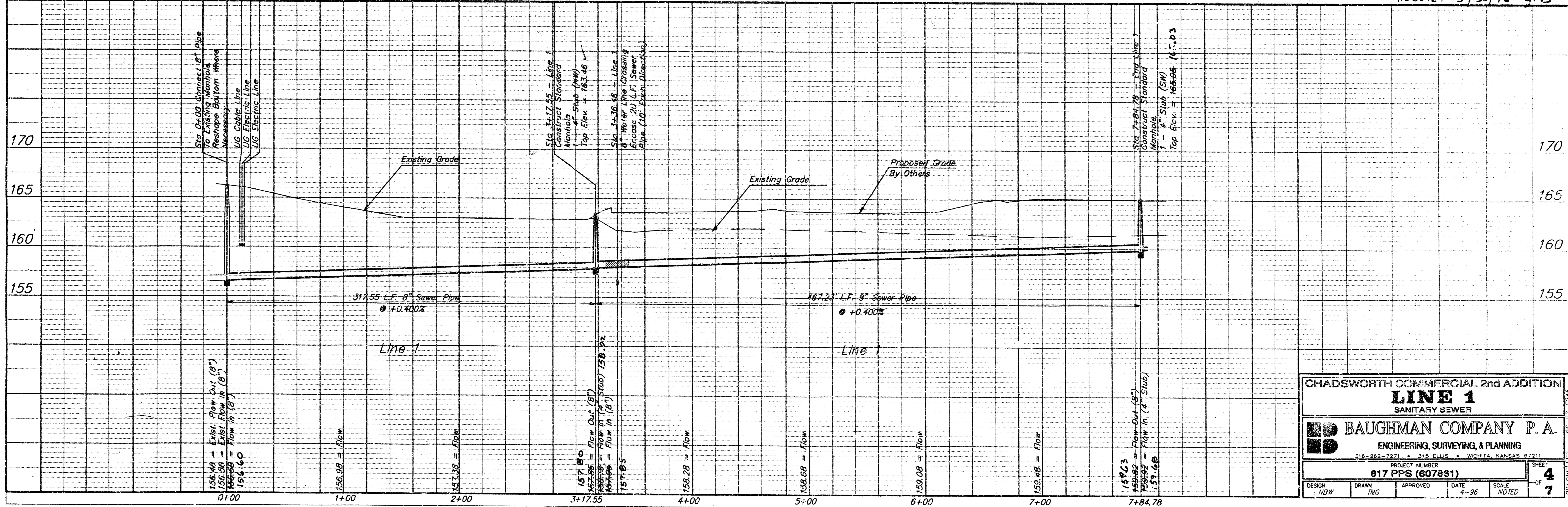
96-01-2245



BM #1 City of Wichita Disk 64' East & 99' South of Centerline of Both 21st Street & Maize Road. Elevation = 164.30 City Datum

BM #2 South Rim of Manhole Located 14.1' East & 14.7' North of The Southeast Property Corner of Chadsworth Commercial 2nd Addition, Lot 2. Elevation = 166.23

ASBUILT 5/30/96 QFB

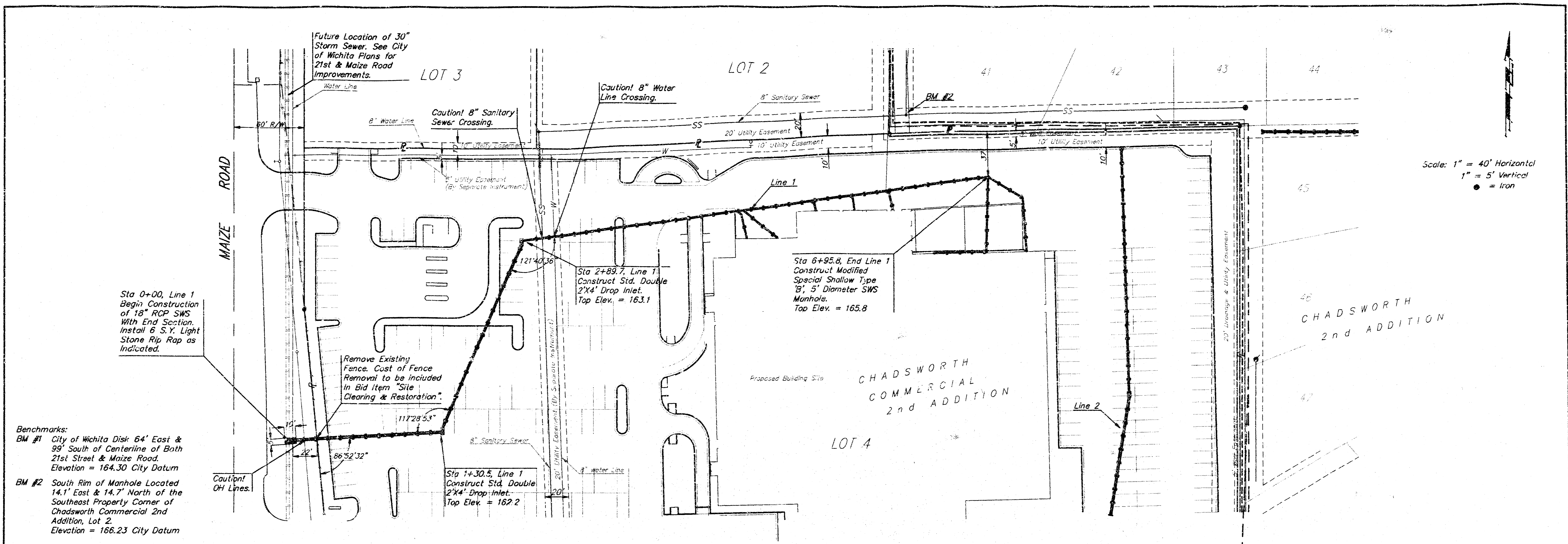


**CHADSWORTH COMMERCIAL 2nd ADDITION**  
**LINE 1**  
**SANITARY SEWER**

**BAUGHMAN COMPANY P. A.**  
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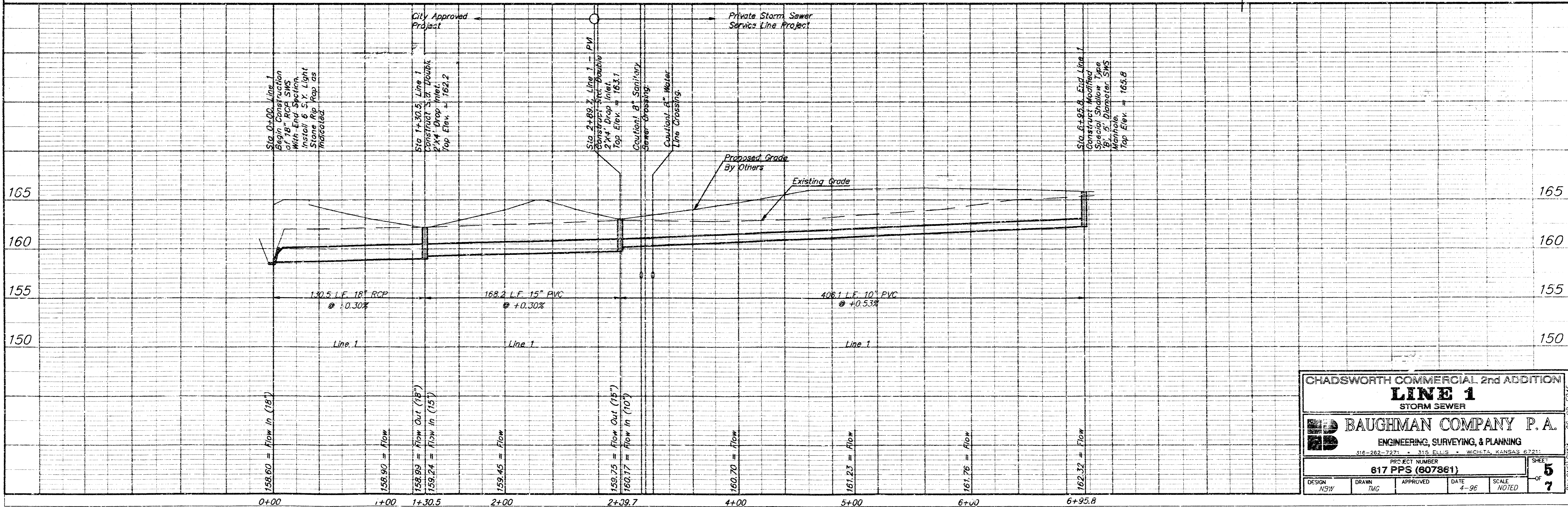
PROJECT NUMBER  
**617 PPS (607881)**

DESIGN: NBW    DRAWN: T/MG    APPROVED: [Signature]    DATE: 4-96    SCALE: NOTED    SHEET: 4 OF 7



Scale: 1" = 40' Horizontal  
 1" = 5' Vertical  
 ● = Iron

**Benchmarks:**  
 BM #1 City of Wichita Disk 64' East & 99' South of Centerline of Both 21st Street & Maize Road. Elevation = 164.30 City Datum  
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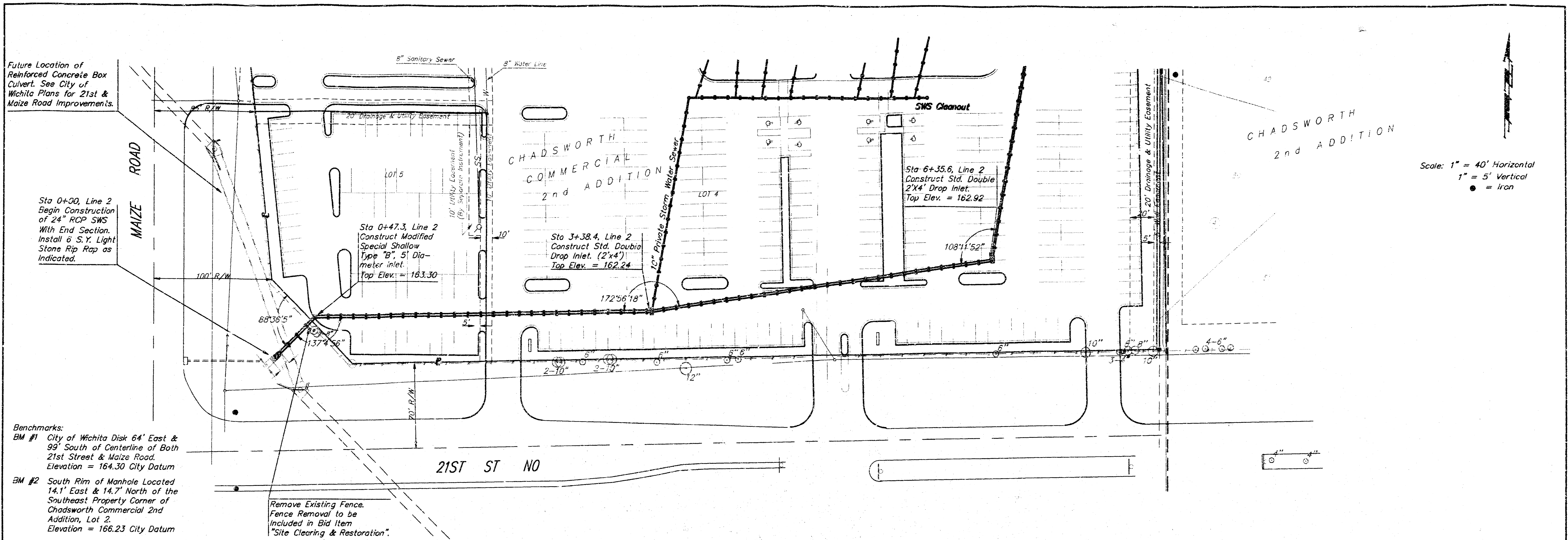
CHADSWORTH COMMERCIAL 2nd ADDITION  
**LINE 1**  
 STORM SEWER

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

PROJECT NUMBER  
**617 PPS (607861)**

DESIGN	DRAWN	APPROVED	DATE	SCALE
NSW	TMG		4-96	NOTED

SHEET **5** OF **7**

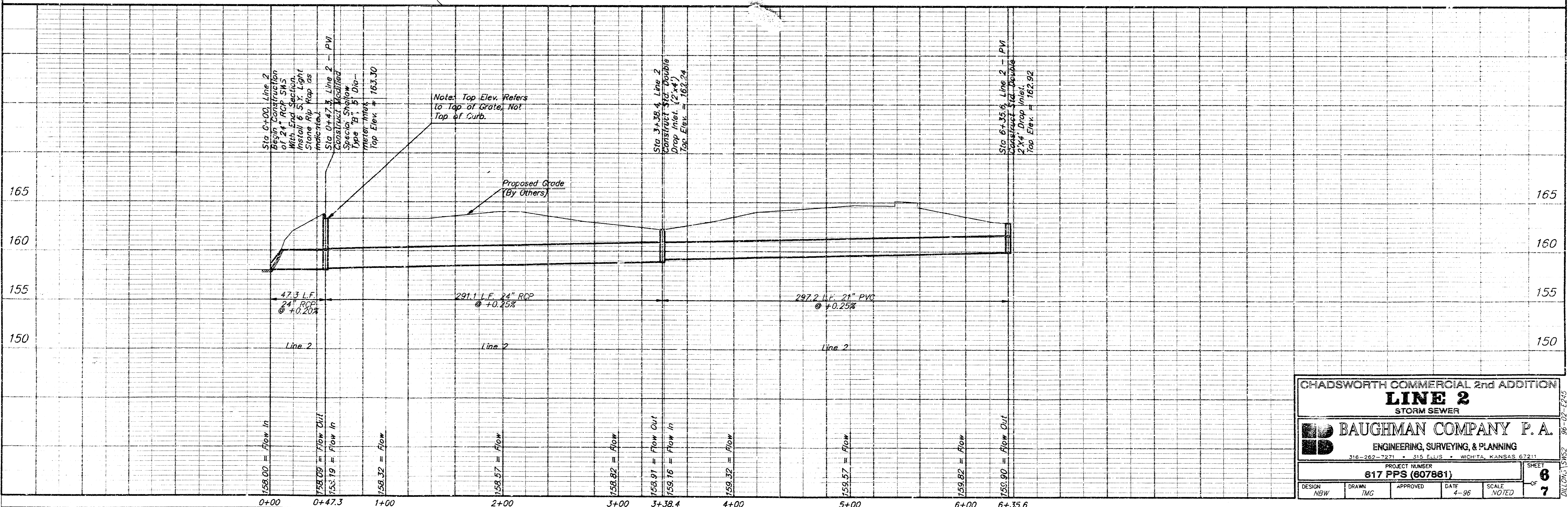


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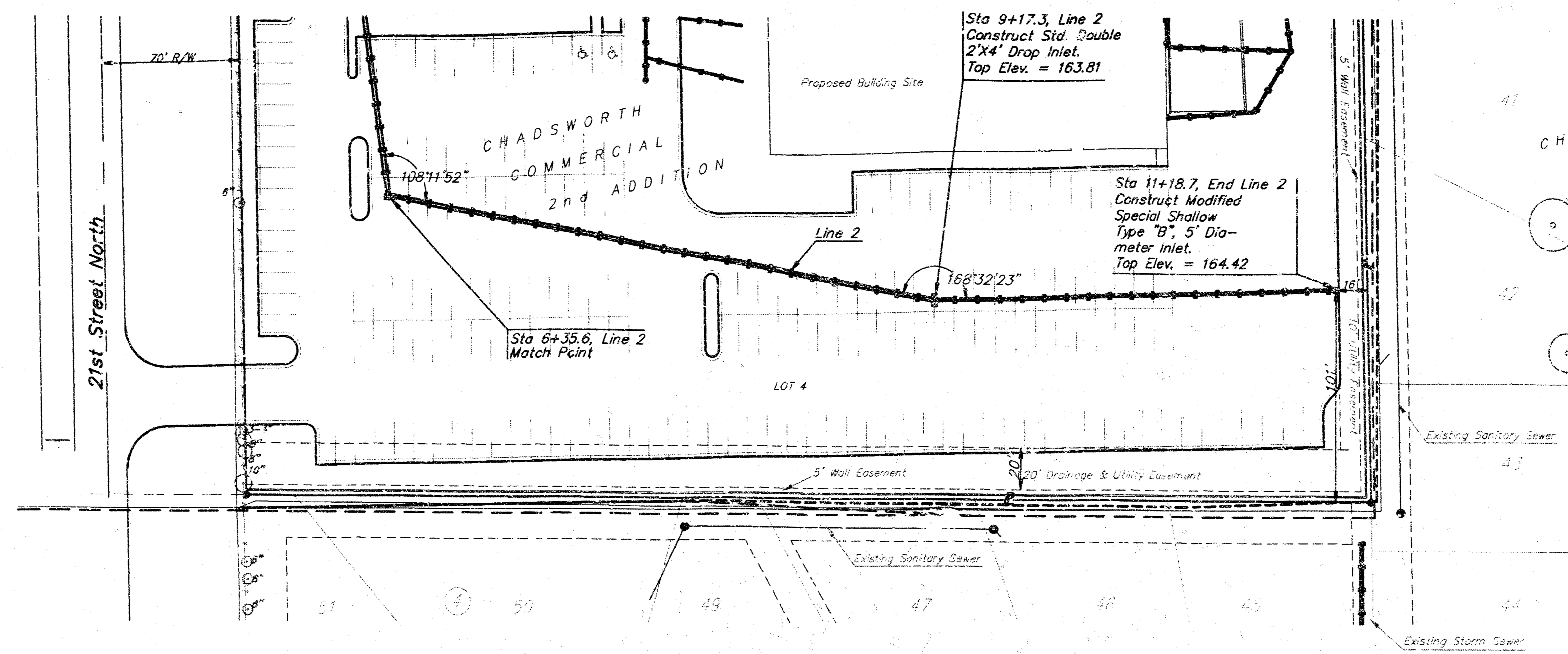
Remove Existing Fence. Fence Removal to be included in Bid Item "Site Clearing & Restoration".

CHADSWORTH  
 2nd ADDITION

Scale: 1" = 40' Horizontal  
 1" = 5' Vertical  
 ● = Iron

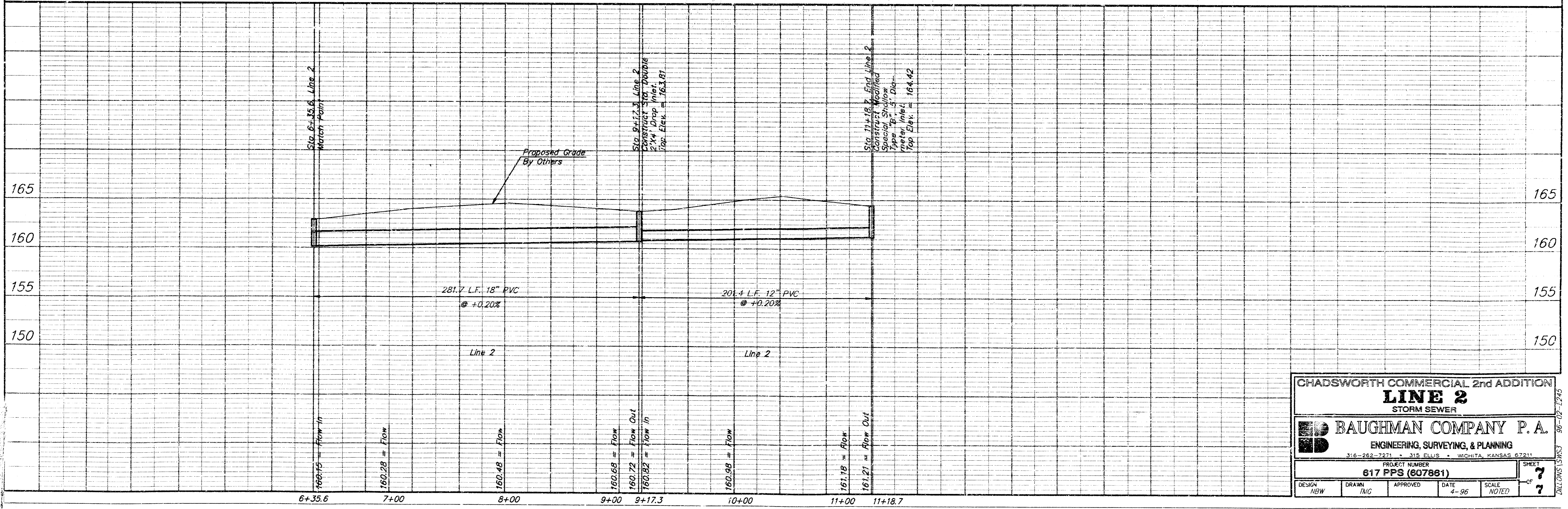


CHADSWORTH COMMERCIAL 2nd ADDITION				
<b>LINE 2</b>				
STORM SEWER				
<b>BAUGHMAN COMPANY P. A.</b>				
ENGINEERING, SURVEYING, & PLANNING				
316-262-7271 • 310 ELLIS • WICHITA, KANSAS 67211				
PROJECT NUMBER <b>817 PPS (607881)</b>				SHEET <b>6</b>
DESIGN NEW	DRAWN IMG	APPROVED	DATE 4-96	SCALE NOTED
				OF <b>7</b>



Scale: 1" = 40' Horizontal  
 1" = 5' Vertical  
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CHADSWORTH COMMERCIAL 2nd ADDITION			
<b>LINE 2</b>			
STORM SEWER			
BAUGHMAN COMPANY P. A.			
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PROJECT NUMBER			
617 PPS (607881)			
DESIGN	DRAWN	APPROVED	DATE
NEW	T/MG		4-96
SCALE			SHEET
NOTED			7
			OF 7