

INDEX OF SHEETS

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GENERAL NOTES

- 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:
 Cablevision 262-4270
 or 263-2061
 K.P.L. Gas Service Company 383-8650
 Kansas Gas & Electric Company 383-8600
 Peoples Natural Gas 1-571-2611
 Southwestern Bell Telephone Company 268-4908
 City of Wichita Water Department 268-4071
 City of Wichita Sewer Department 832-3168
 Kansas Gas Service 832-3167
 or 942-8811
 Peoples Natural Gas 1-800-303-0357
 or
- Exist. 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 to verify utility locations prior to construction of this project.
- Utility service and installation shall be coordinated with the respective utility owners. Contacts are:

Kansas Gas Service	James Stoltz	831-3122
Kansas Gas & Electric	Russ Chitwood	261-6251
Peoples Natural Gas	John Stark	942-8811
Wichita Water	Paul Bryant	268-4555
	Steve Palmer	268-4908
Southwestern Bell	Jim Tabin	268-2759
Multimedia Cablevision	Mark Anaya	262-4270
- All lawn/turf areas disturbed by construction of proposed improvements shall be restored with sod. All sodding work shall be in accordance with the City of Wichita standard specifications and the City of Wichita administrative regulation No. 4478 which governs cleanup and replacement following construction. All costs for this work shall be subsidiary to the lump sum price bid for "Site Restoration."
- Traffic affected by the construction of this project shall be handled in accordance with the latest edition of the Manual on Uniform Traffic Control Devices.
- All commercial signs to be moved by others prior to construction.
- Properties within the project may have underground irrigation systems (lawn sprinklers) which conflict with the new construction. Contractor shall remove such components as needed during construction of the project. The irrigation system shall be reinstalled in like kind before project completion. Any irrigation system modifications required because of project improvements shall be coordinated with the property owner. Portions of underground irrigation systems not in conflict with construction shall be protected from damage and shall remain in place. All work related to underground irrigation/sprinklers shall be subsidiary to Site Restoration.
- Cuts made to paved surfaces on public property will be repaired by the City's contractor and charged against the owner / applicant. Unit repair Prices are available from the City at 268-4418. A surcharge may be applicable. Call 268-4118 for details. Repair costs to be paid prior to release of water Service if water service is affected.

STORM AND SANITARY SEWER LINES TO SERVE LINWOOD ELEMENTARY SCHOOL

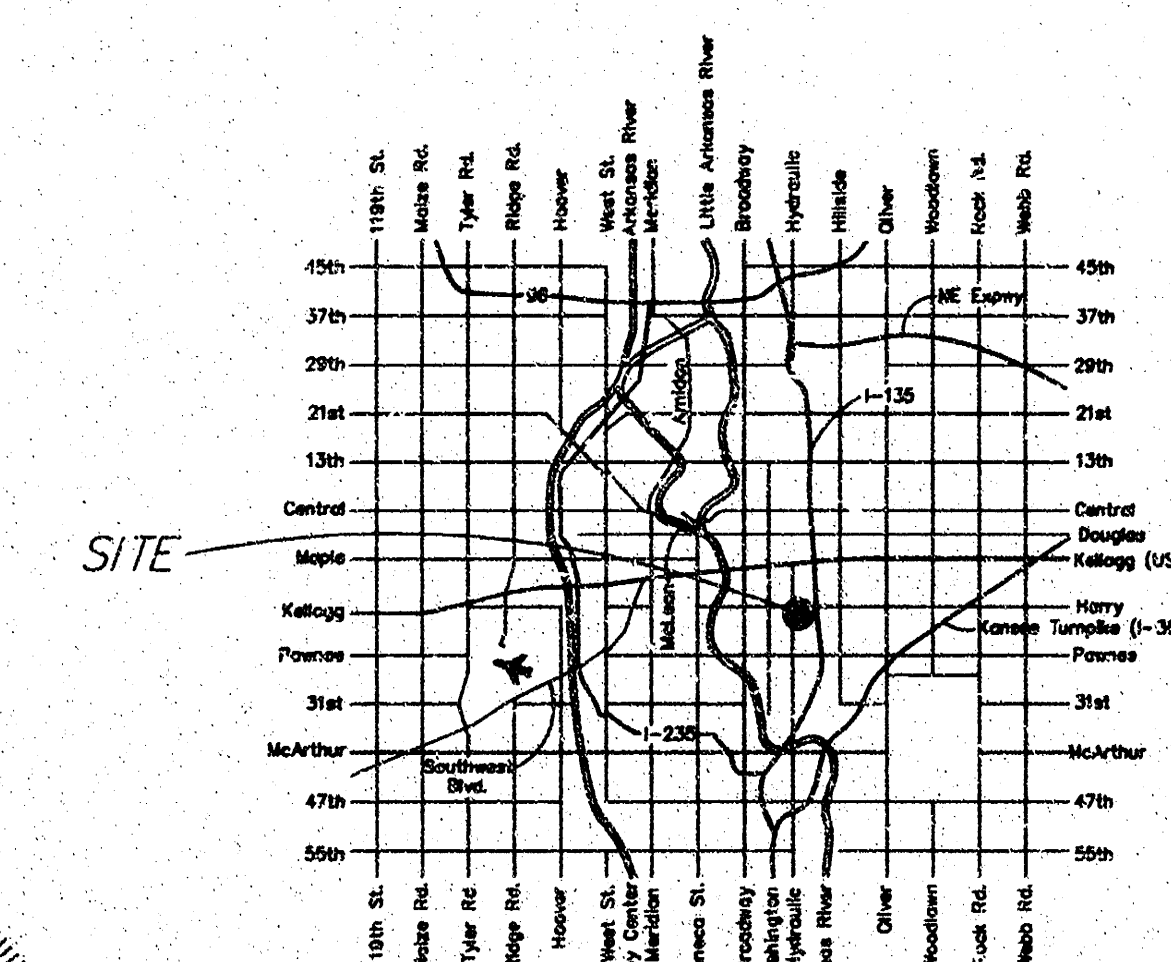
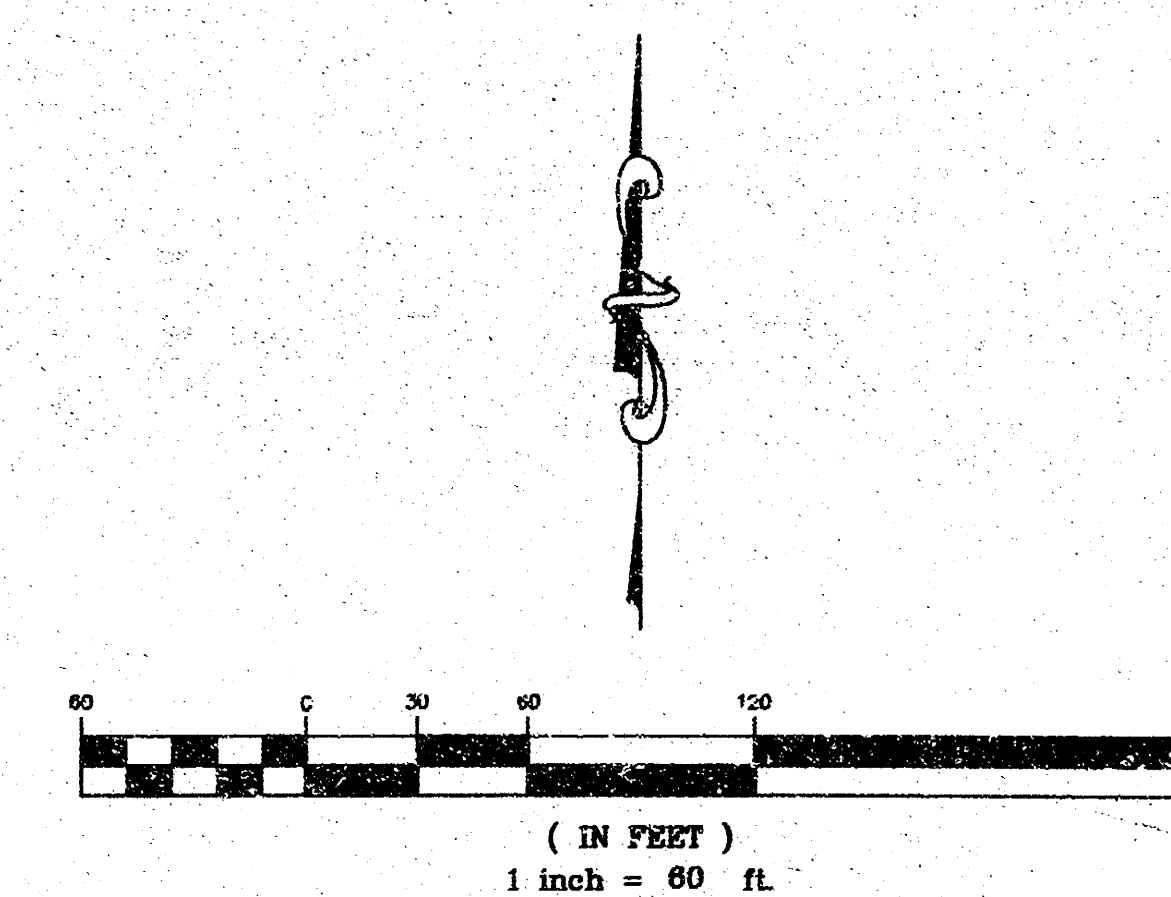
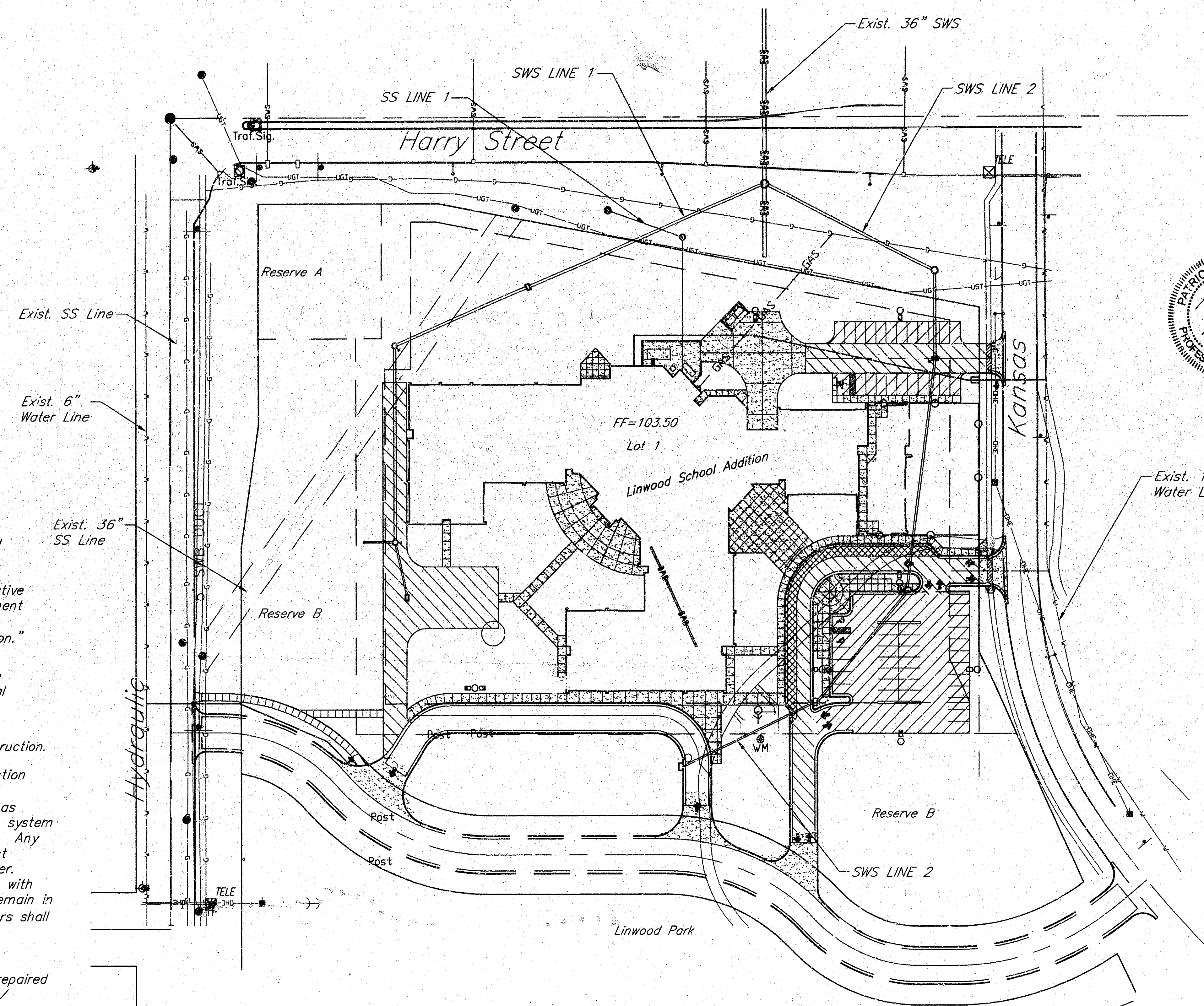
LINWOOD SCHOOL ADDITION

1654 S. Hydraulic

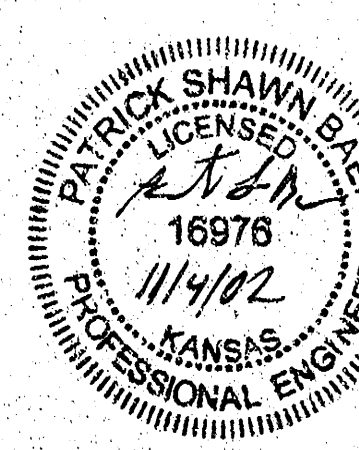
1296 PPS (607861)

CITY OF WICHITA, KANSAS

Neil D. Cable, P.E., City Engineer



LOCATION MAP



AS-BUILT
Date 1-30-03
Signature [Signature]

APPROVED AS NOTED

Sanitary Sewers VRH 11/6/02
 Storm Sewers VRH 11/6/02

NOTE TO CONTRACTORS

Installation, inspection and testing for this project is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).

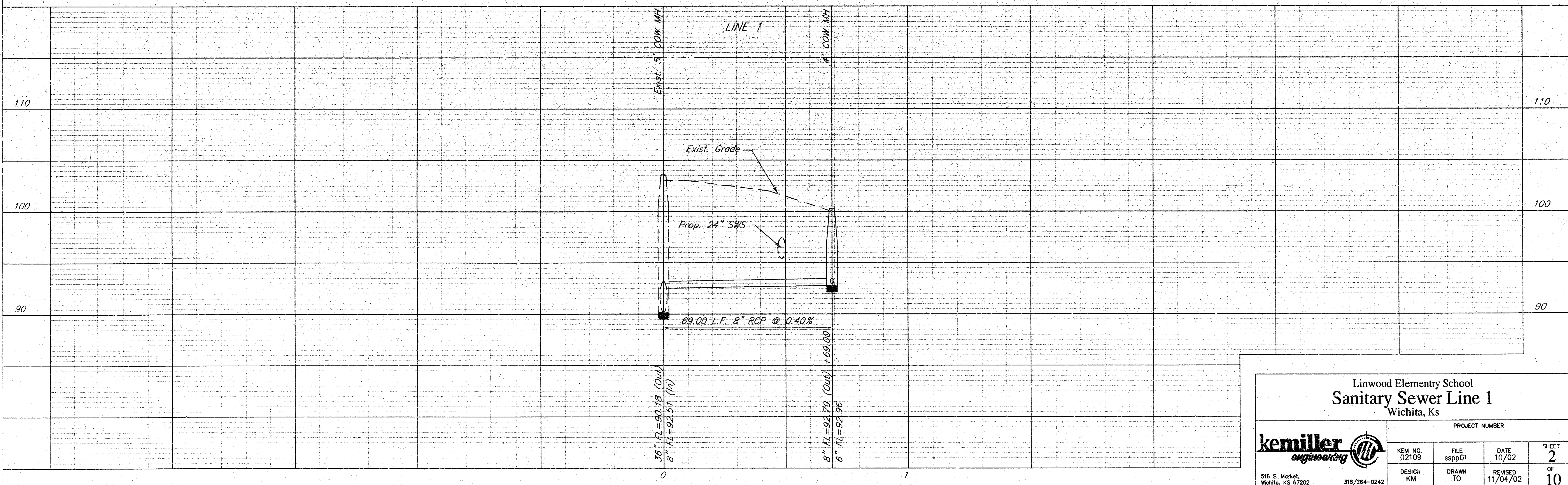
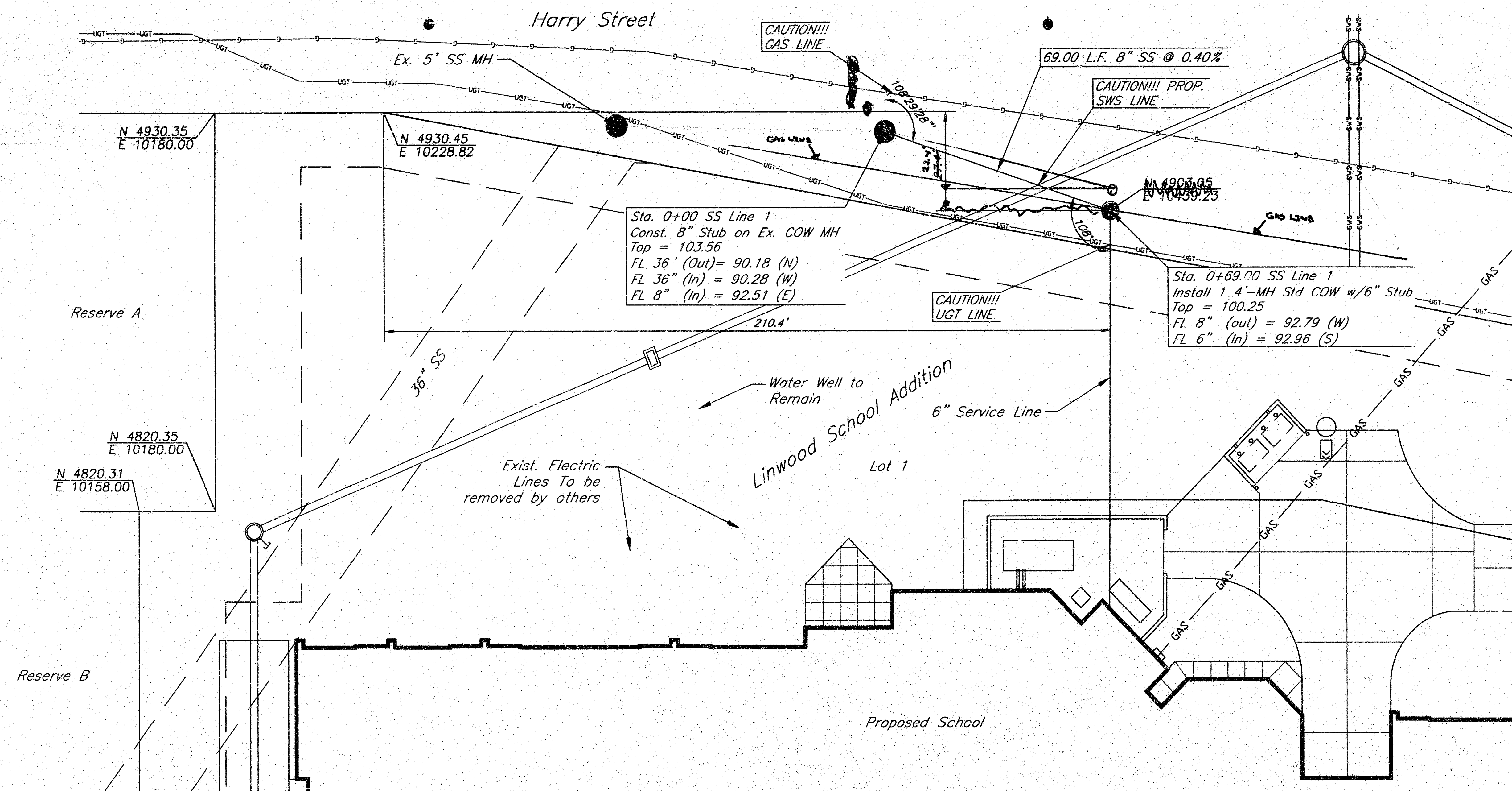
SS - PDF
 3/06/03
 RDL

BENCHMARK:
 City disc on the traffic signal base
 on the southeast corner of Harry
 and Hydraulic.
 Elevation=100.26 City Datum



516 S. Market,
 Wichita, KS 67202

316/264-0242

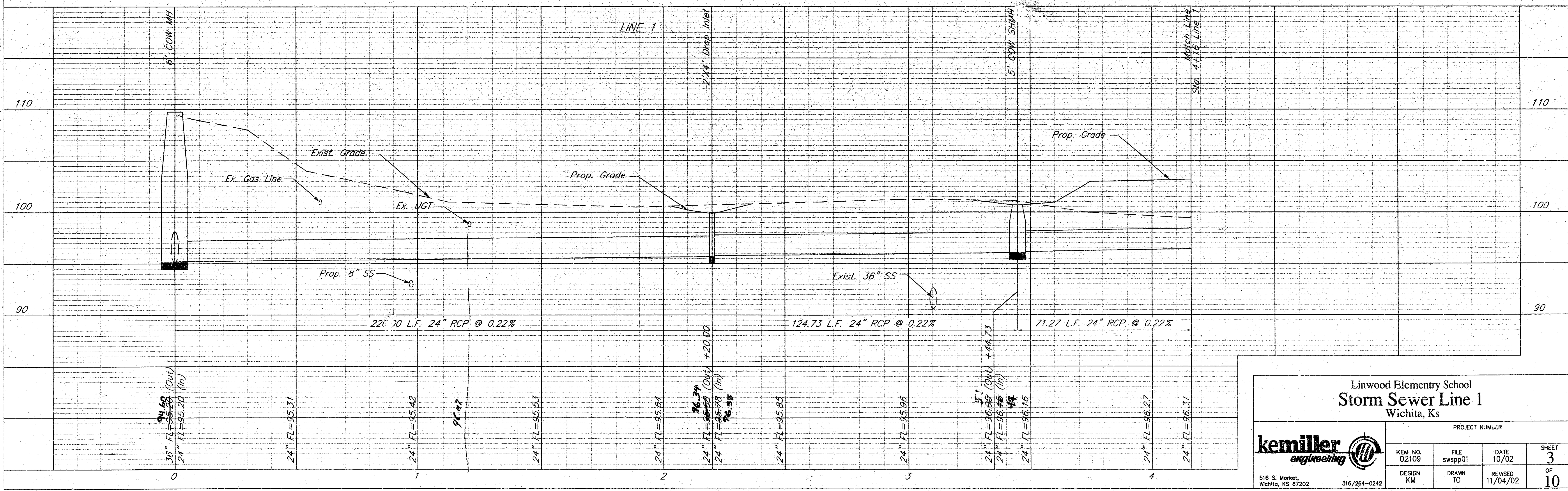
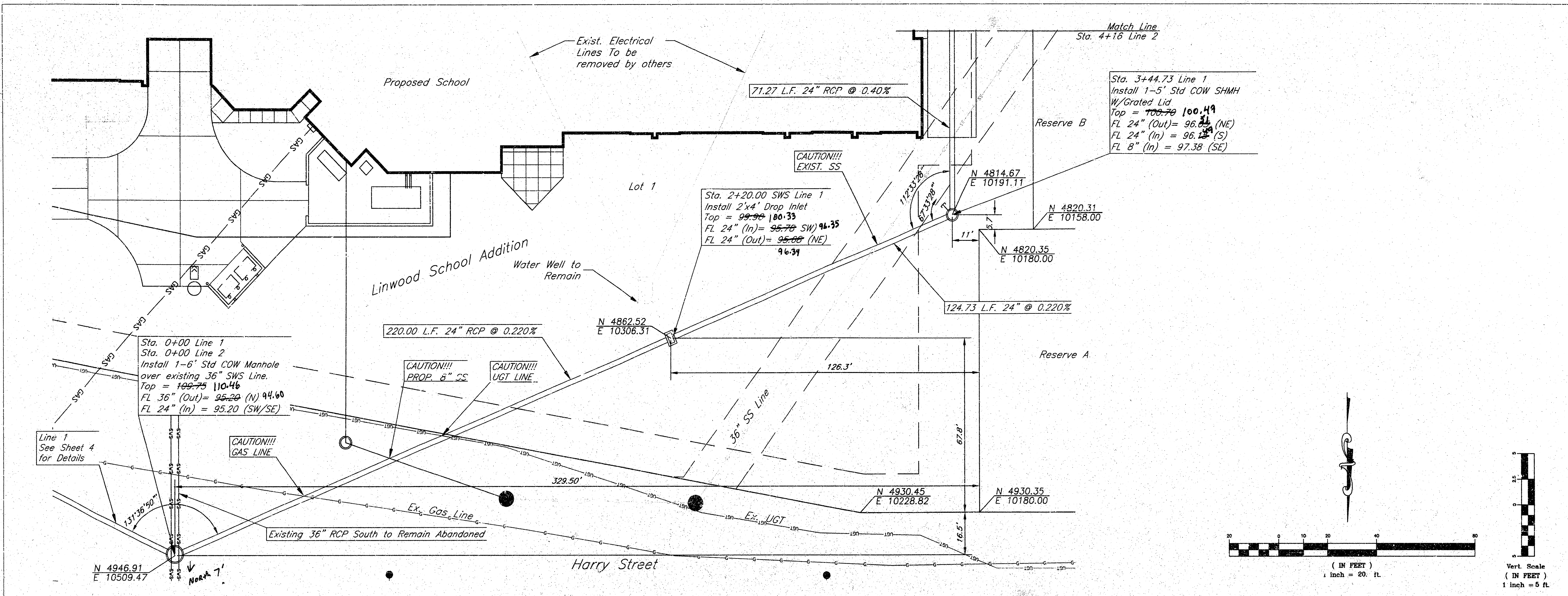


**Linwood Elementary School
Sanitary Sewer Line 1
Wichita, Ks**

PROJECT NUMBER		SHEET	
KEM NO. 02109	FILE sspp01	DATE 10/02	2
DESIGN KM	DRAWN TO	REVISED 11/04/02	OF 10

516 S. Market,
Wichita, KS 67202

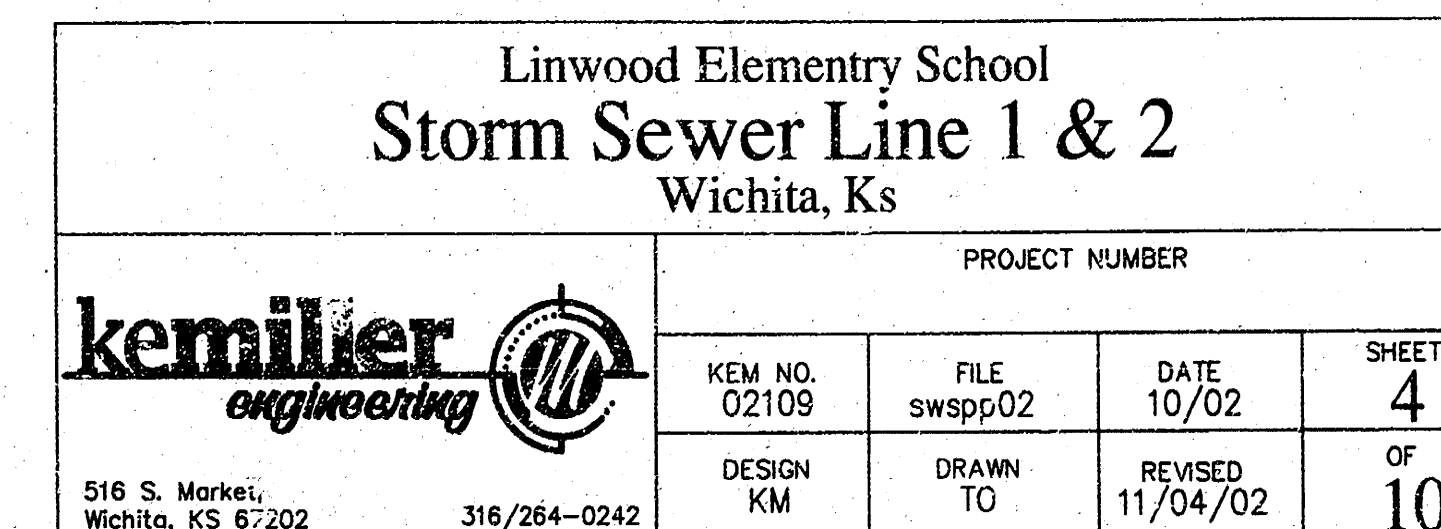
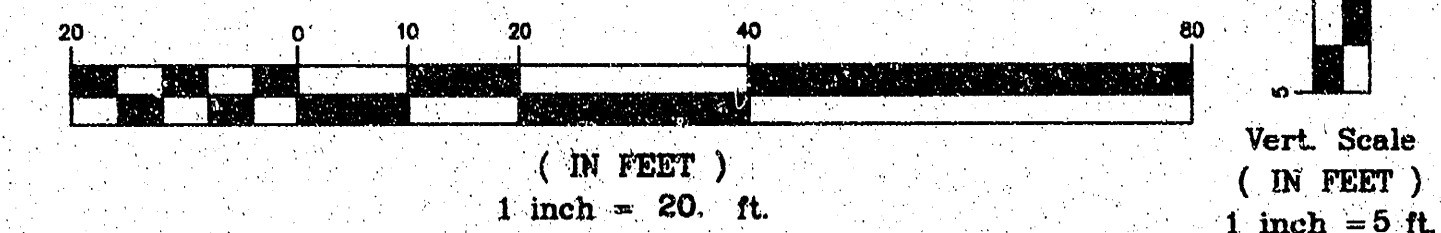
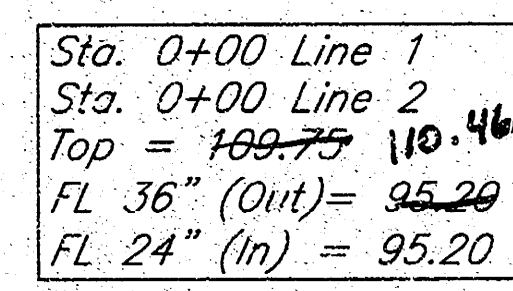
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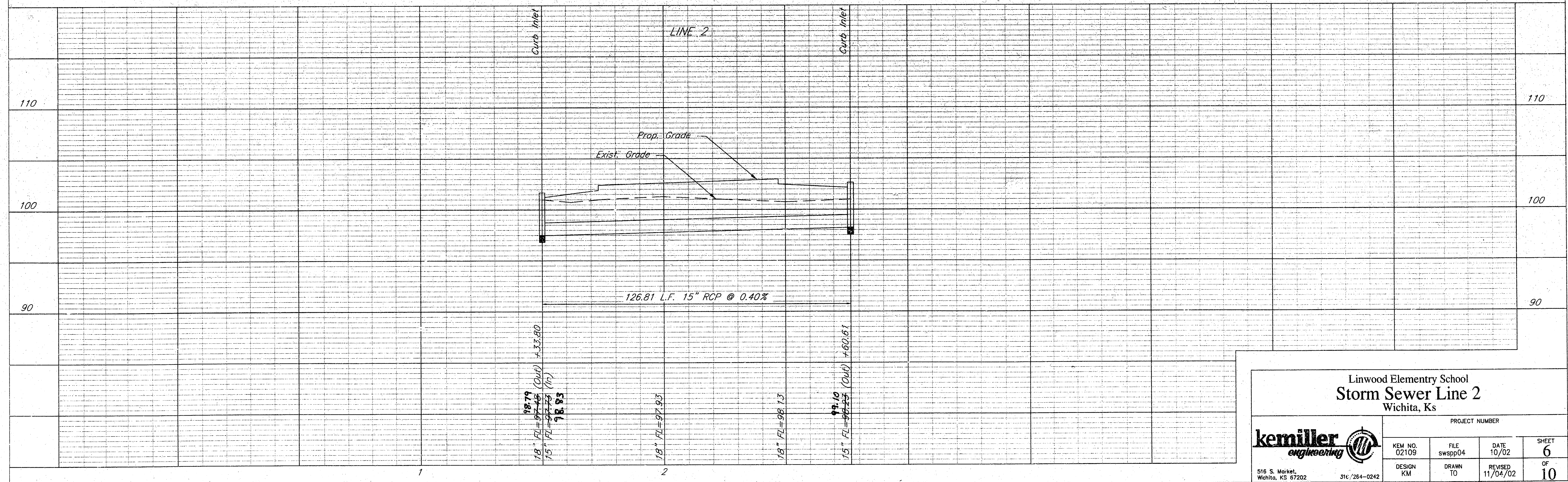
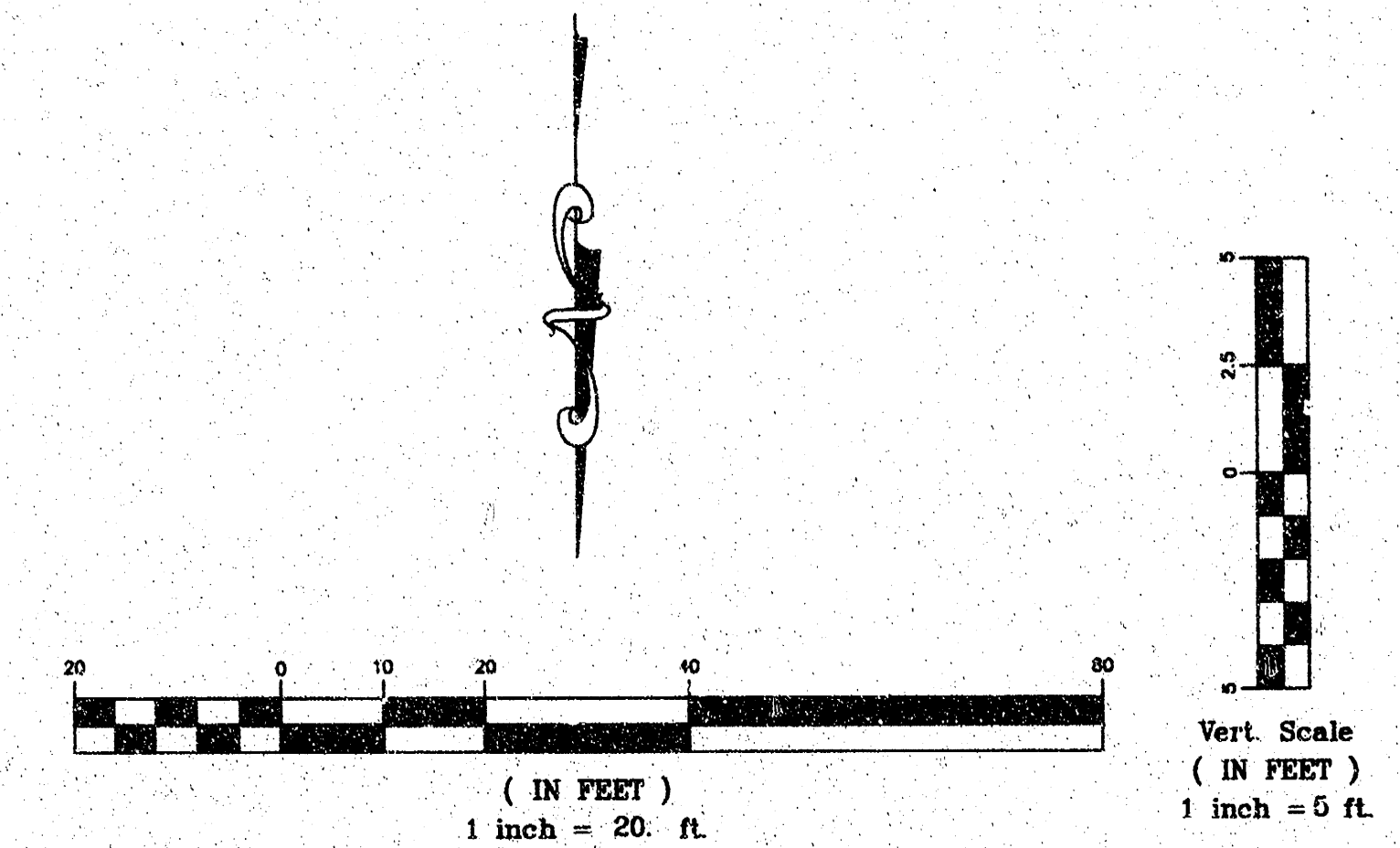
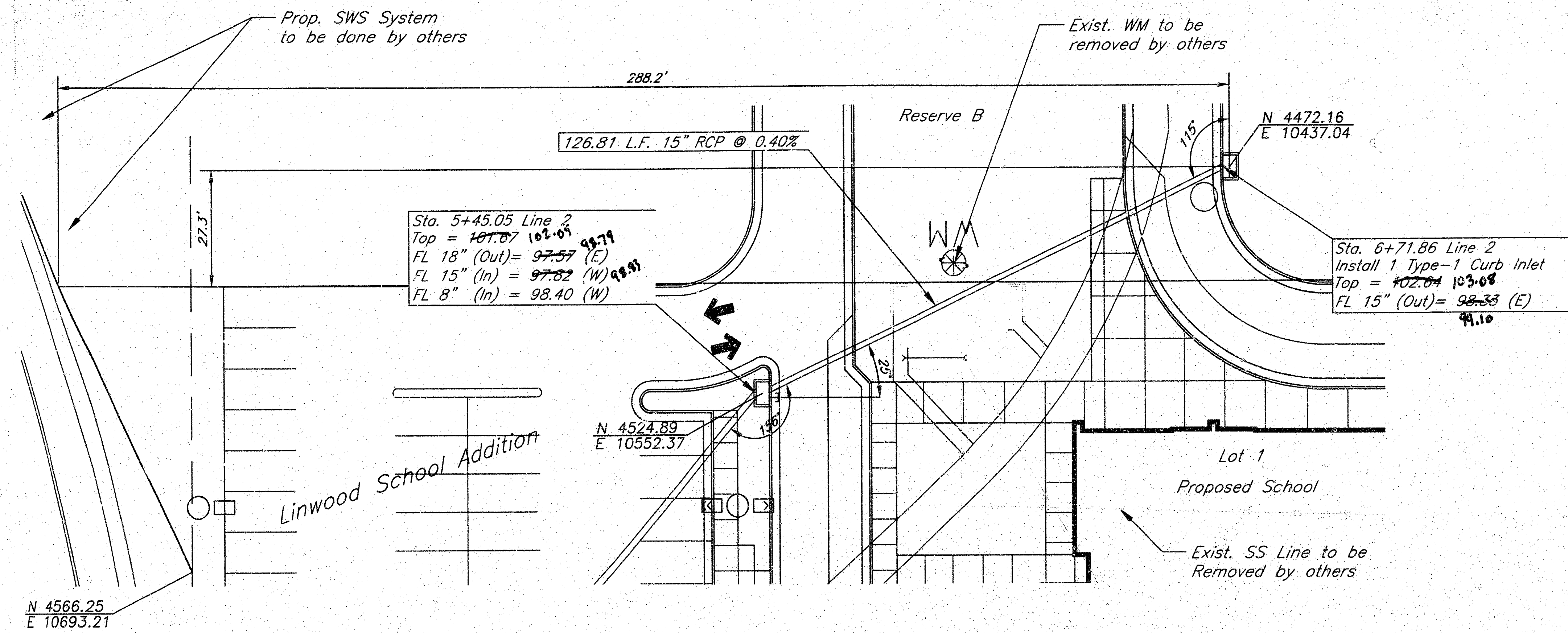


**Linwood Elementary School
Storm Sewer Line 1
Wichita, Ks**

PROJECT NUMBER			
KEM NO. 02109	FILE SWSP01	DATE 10/02	SHEET 3
DESIGN KM	DRAWN TO	REVISED 11/04/02	OF 10

516 S. Market, Wichita, KS 67202 316/264-0242





Linwood Elementary School
Storm Sewer Line 2
Wichita, Ks

kemiller
engineering

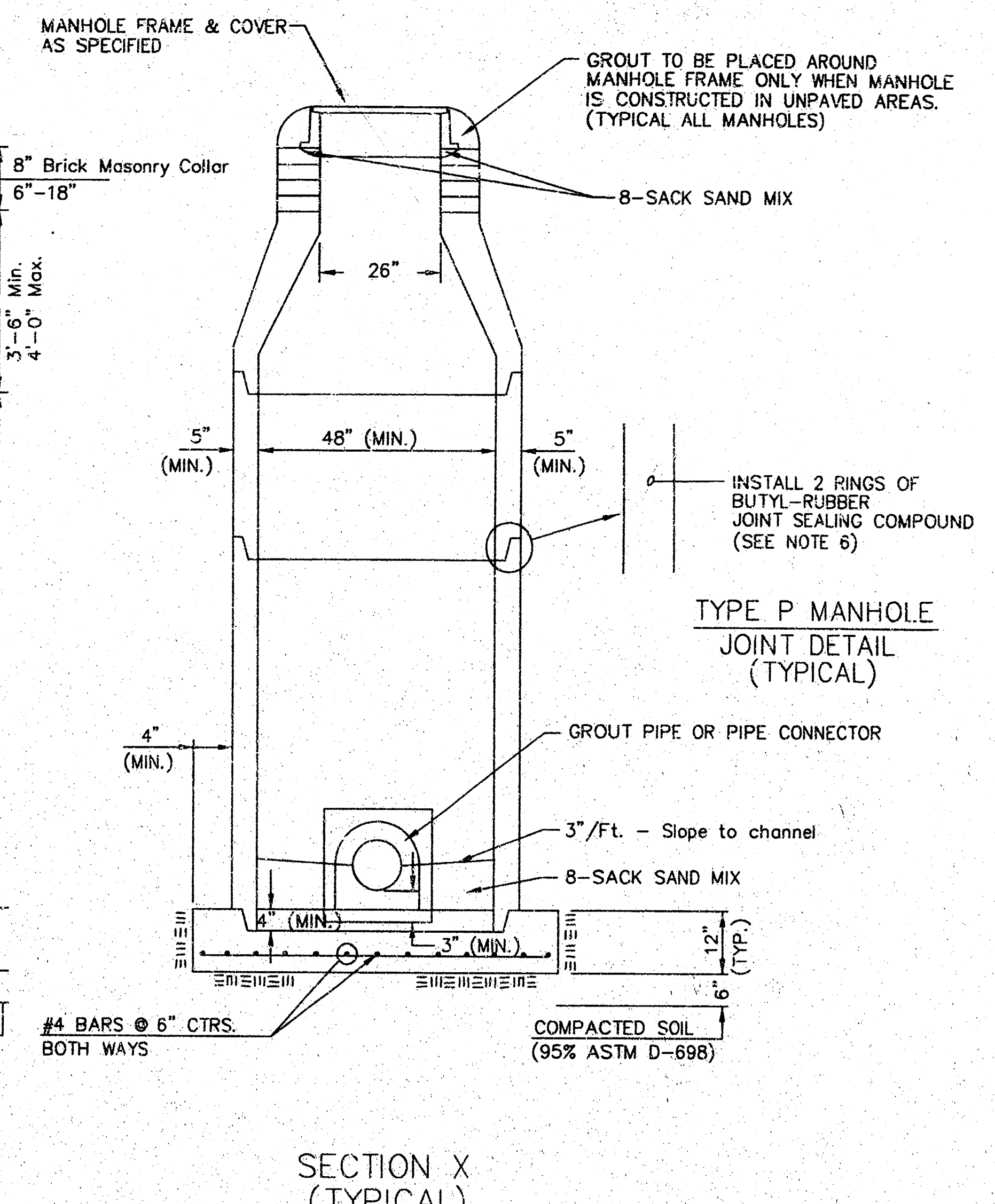
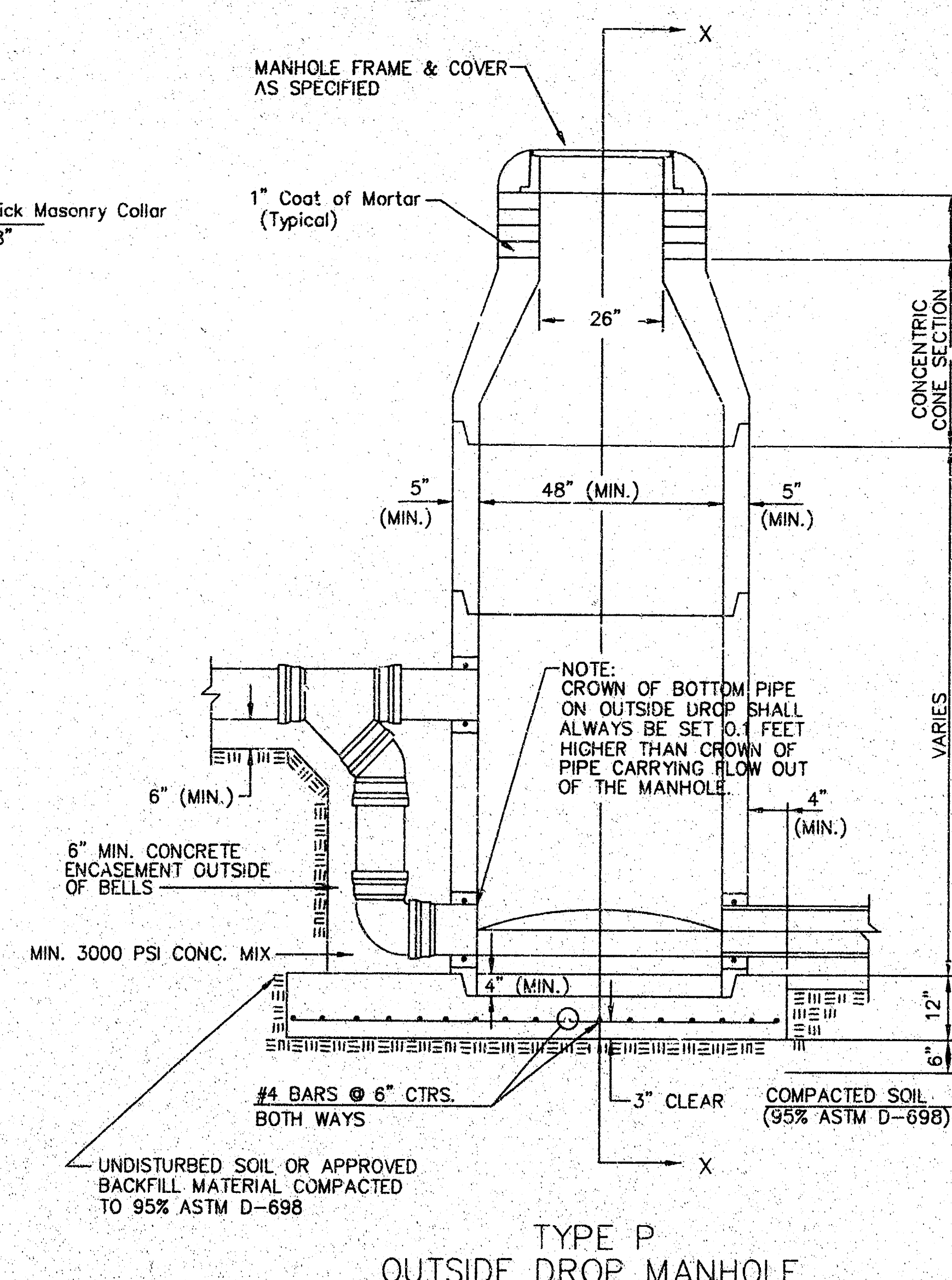
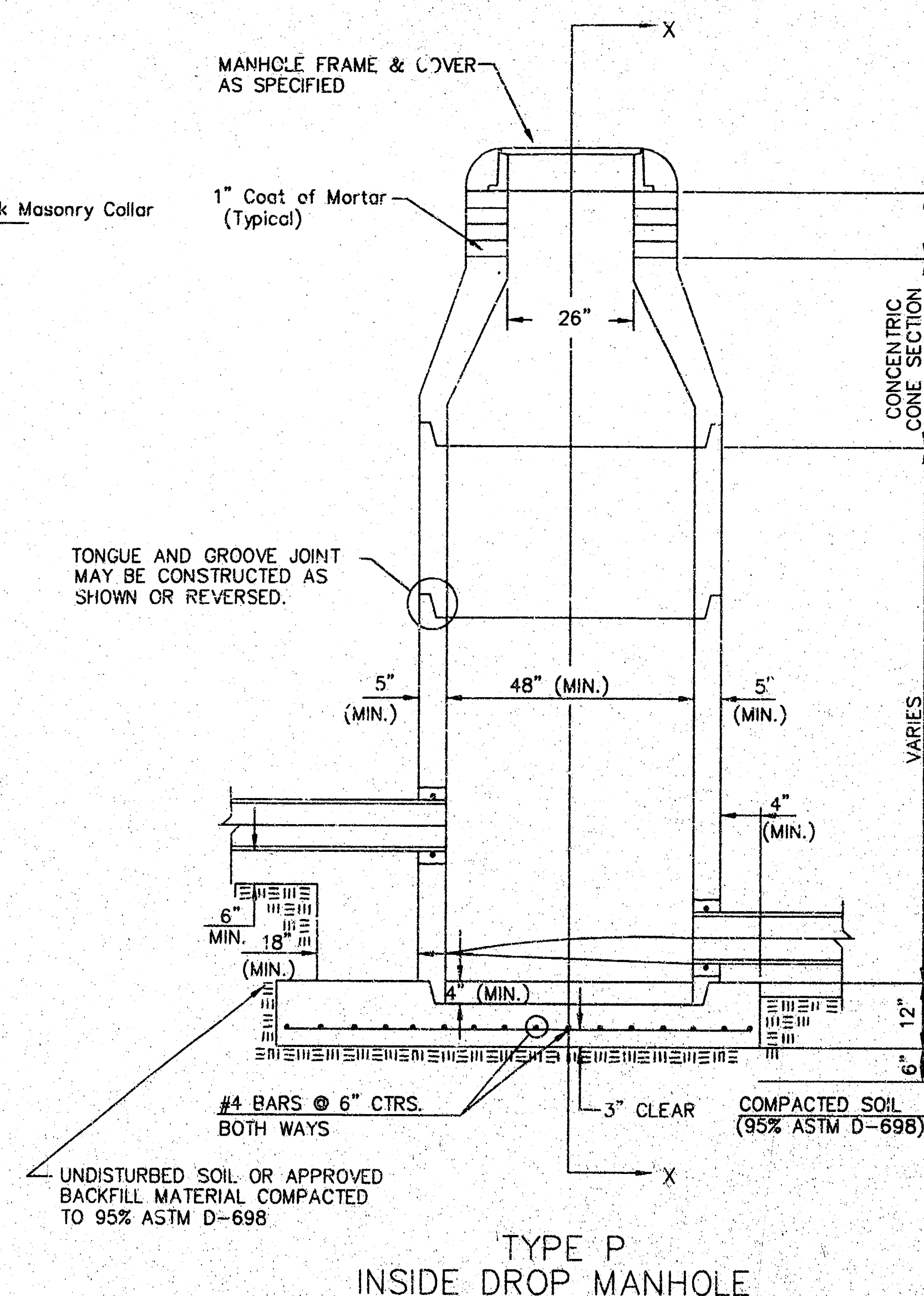
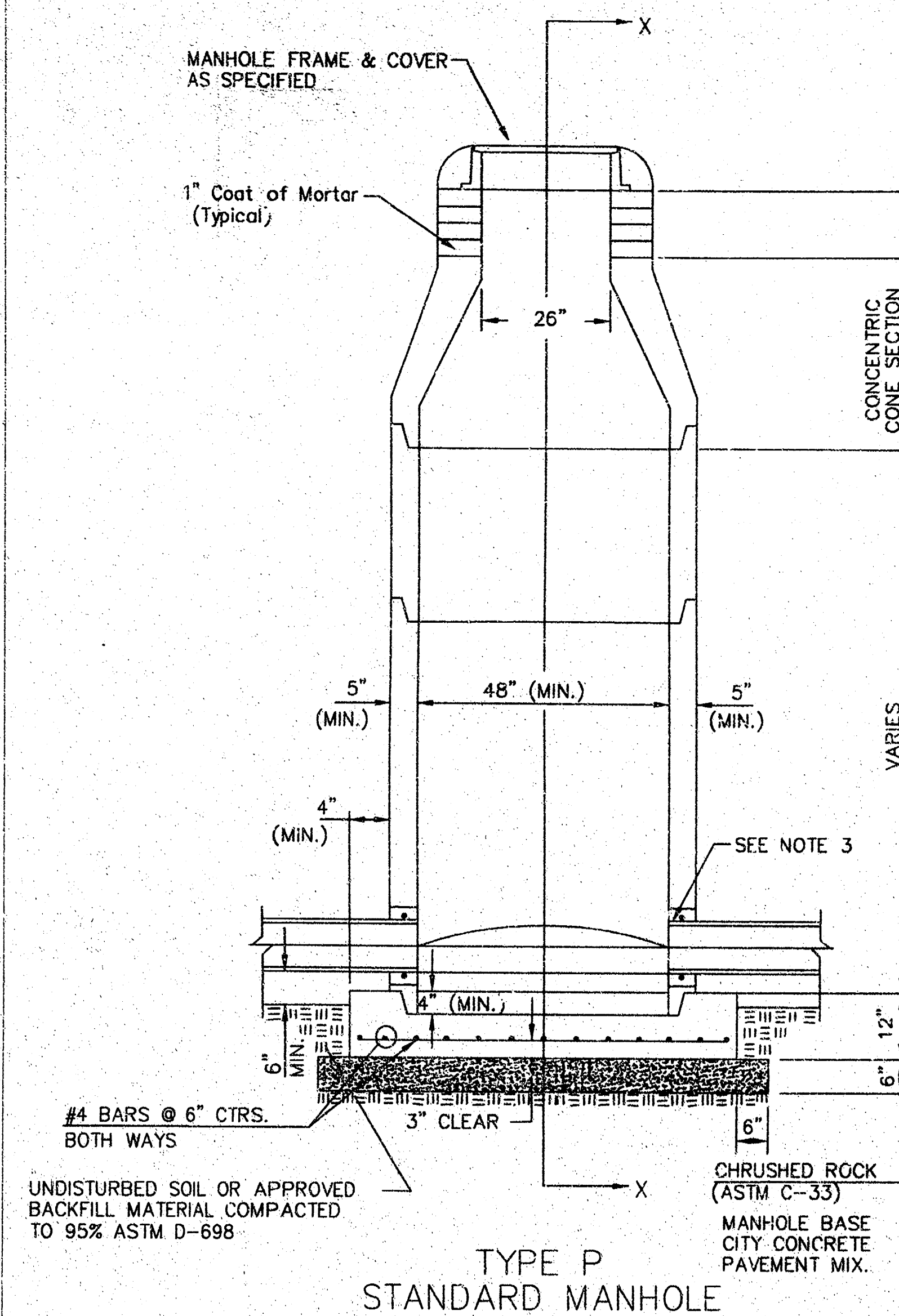
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518 S. Market,
Wichita, KS 67202

31c/264-0242

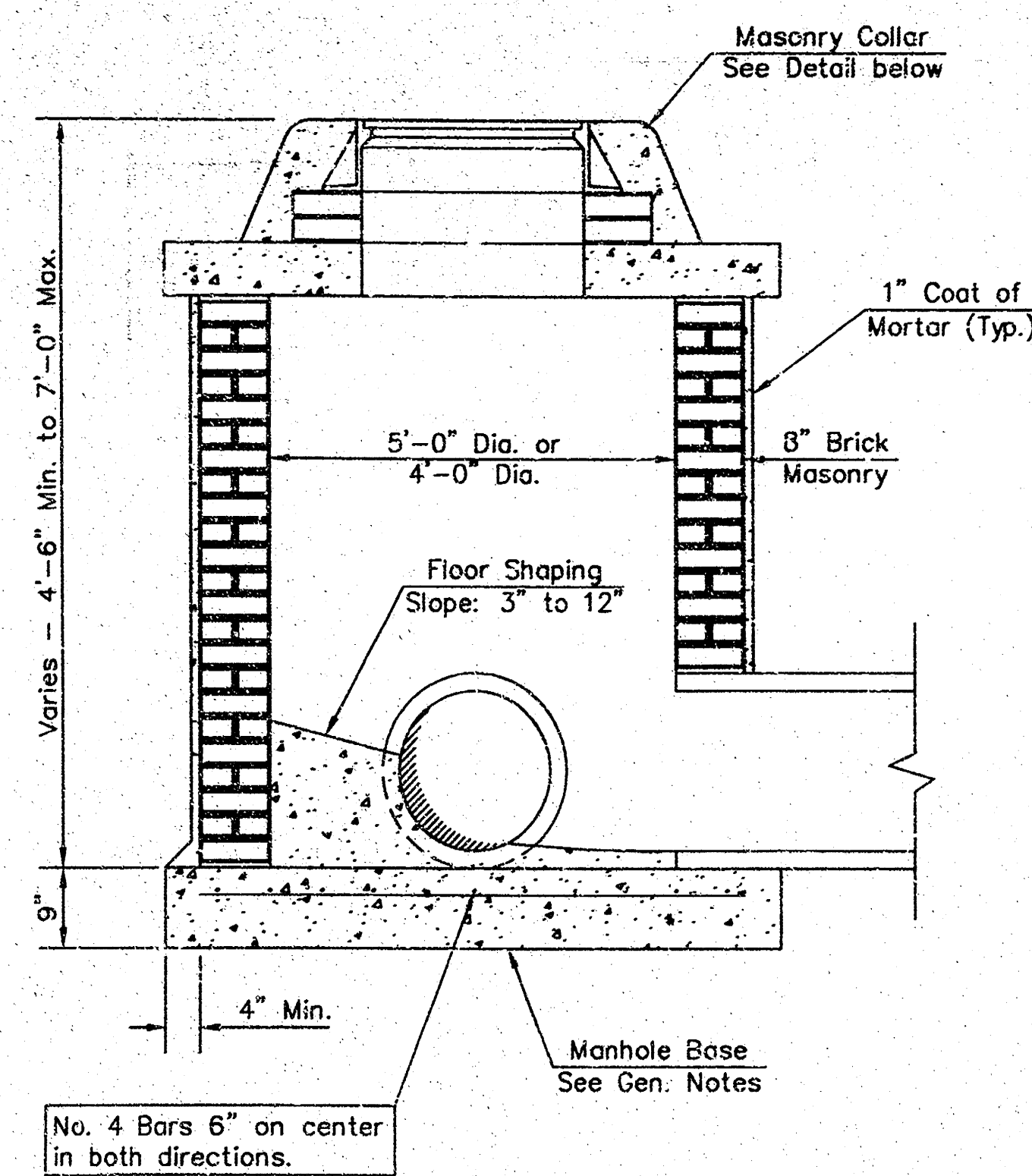
SEWER APPURTENANCES DETAILS



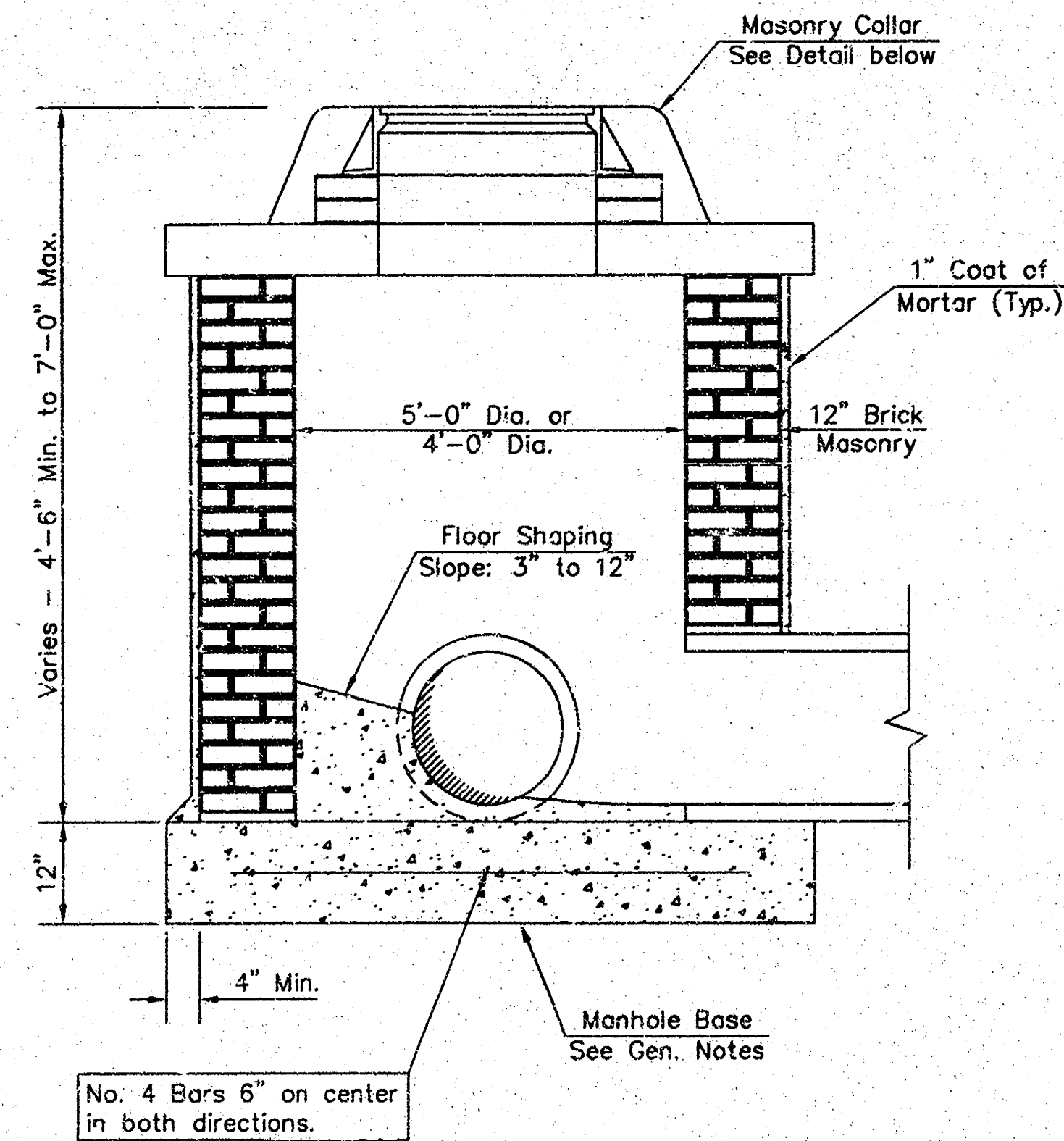
GENERAL NOTES

- 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 ENCASUREMENT 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 TNEC SERIES 68 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 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 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 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.
- CHURISHED ROCK CONFORMING TO ASTM C-33 WITH A GRADATION OF NO. 67 SHALL BE INSTALLED AT THE BASE OF THE MANHOLE TO A DEPTH OF NO LESS THAN 6", AND SHALL EXTEND NO LESS THAN 6" OUTSIDE THE DIAMETER OF THE CONCRETE FLOOR OF THE MANHOLE.

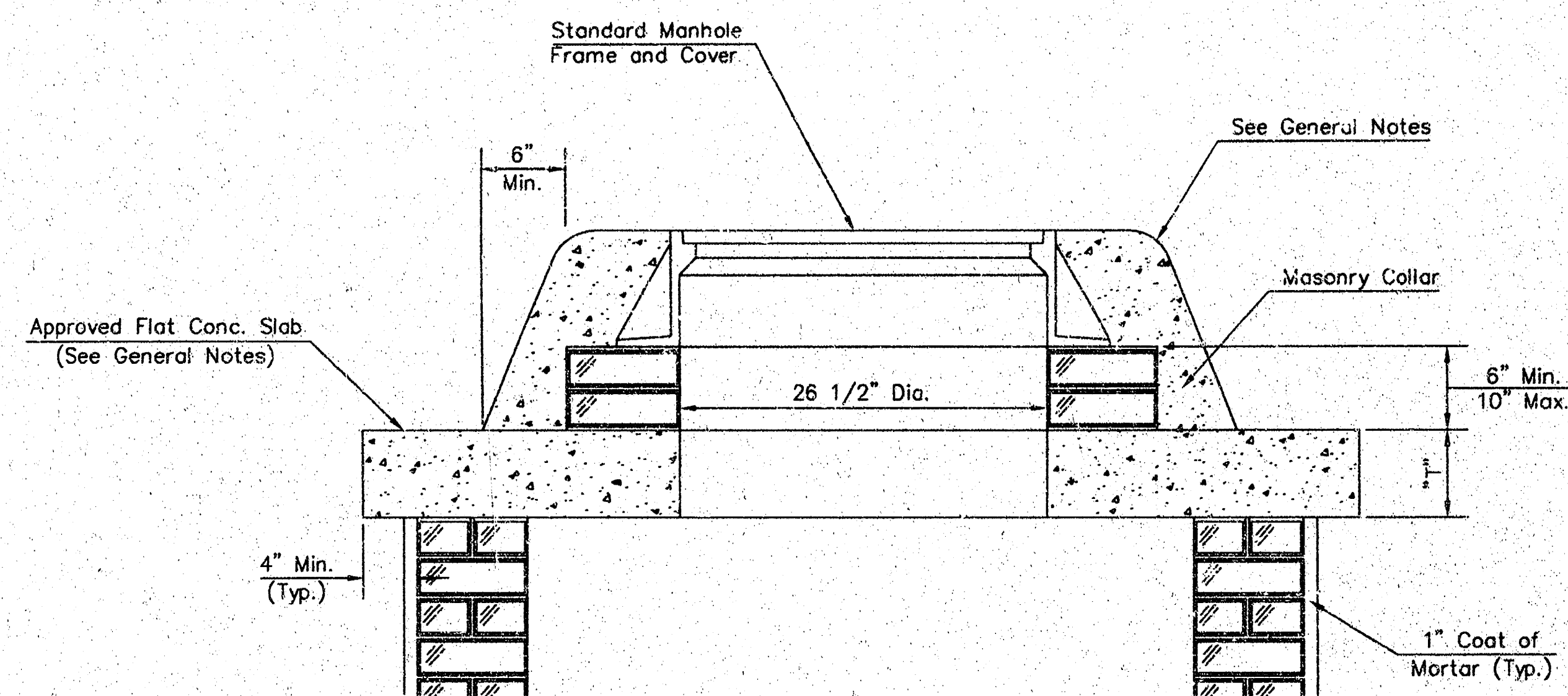
THE CITY OF WICHITA CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 402 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 251-2401 (316) 258-6114 FAX	STANDARD	
	TYPE 'P'	
	MANHOLES	
	N. D. Cable P.E. - CITY ENGINEER	
FILE NAME	KEM. PROJ.	
Type P MH	02109	
DATE		
OCT 02	SHEET 7 OF 10	



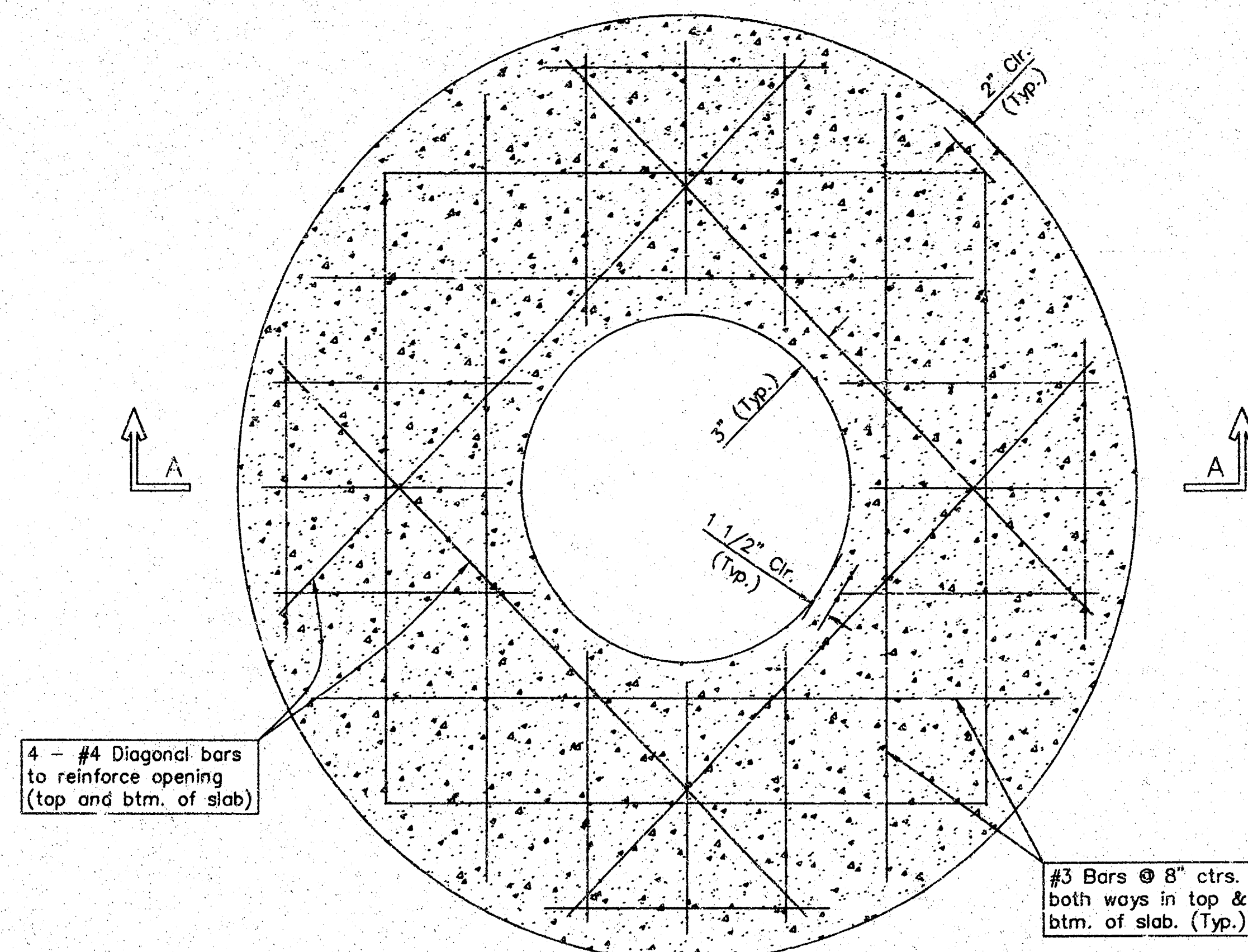
SHALLOW TYPE "A" MANHOLE



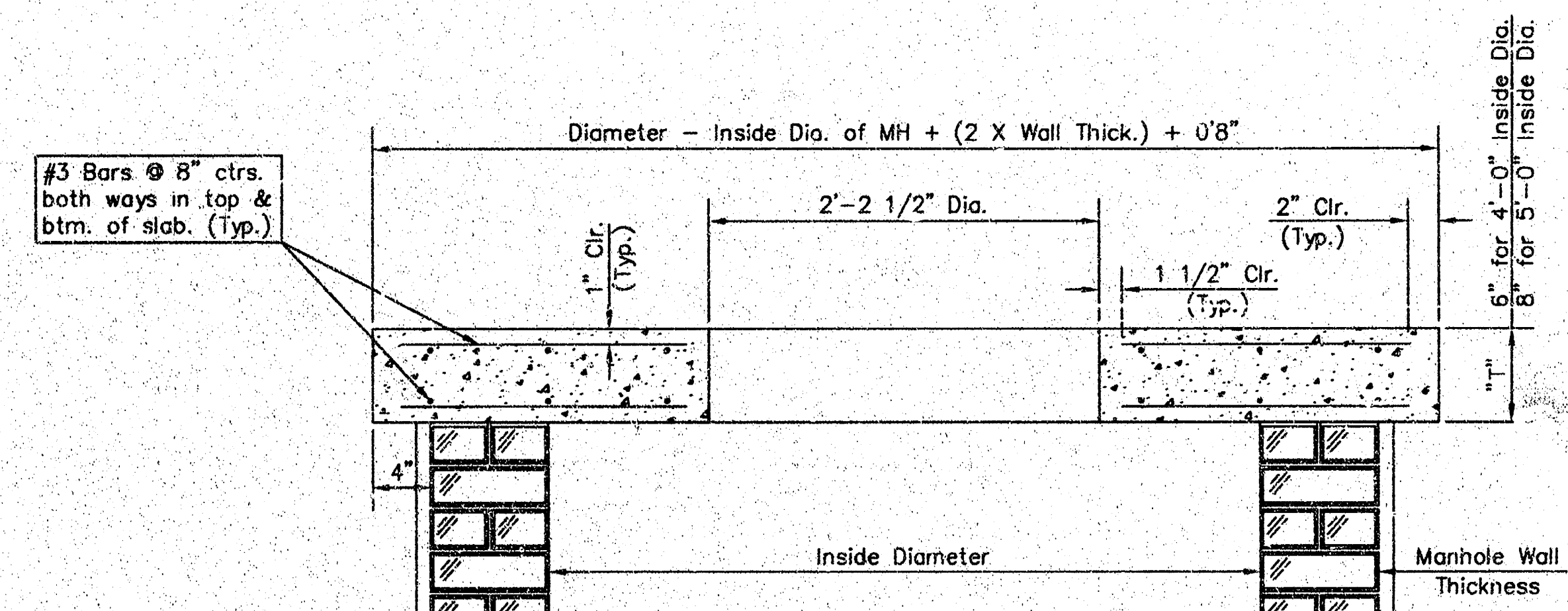
SHALLOW TYPE "B" MANHOLE



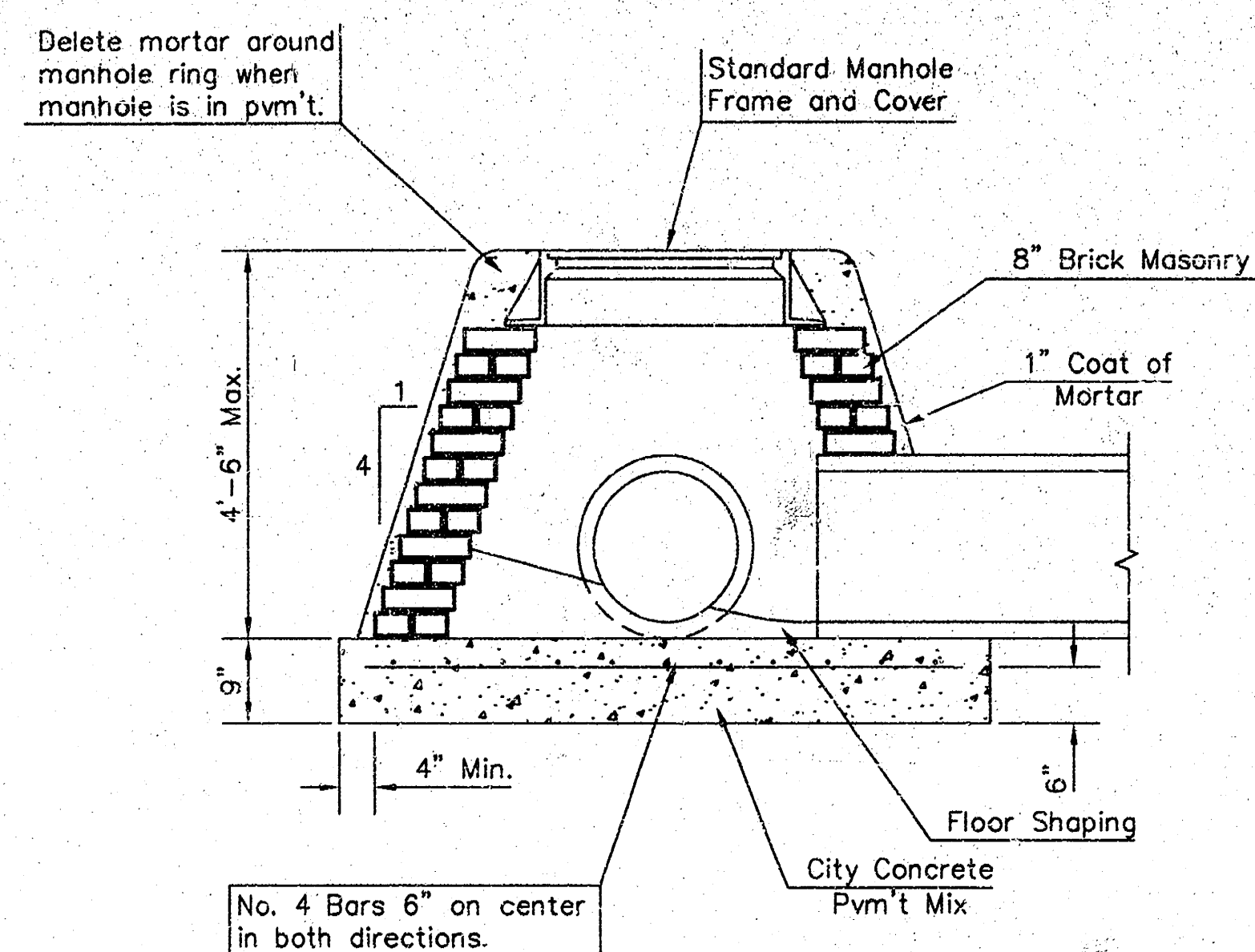
MASONRY COLLAR DETAIL



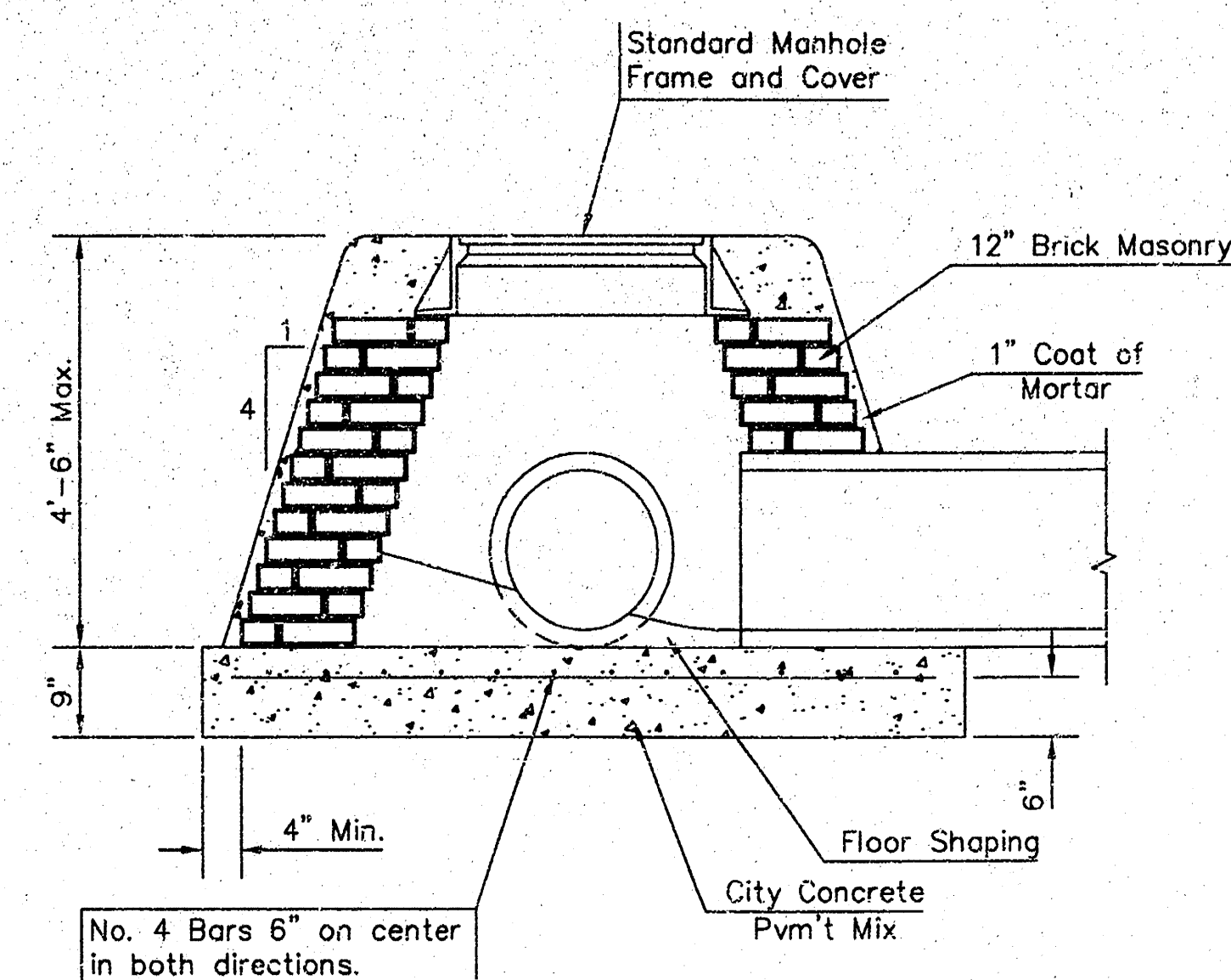
PLAN



SECTION A-A
FLAT CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE "A" MANHOLE



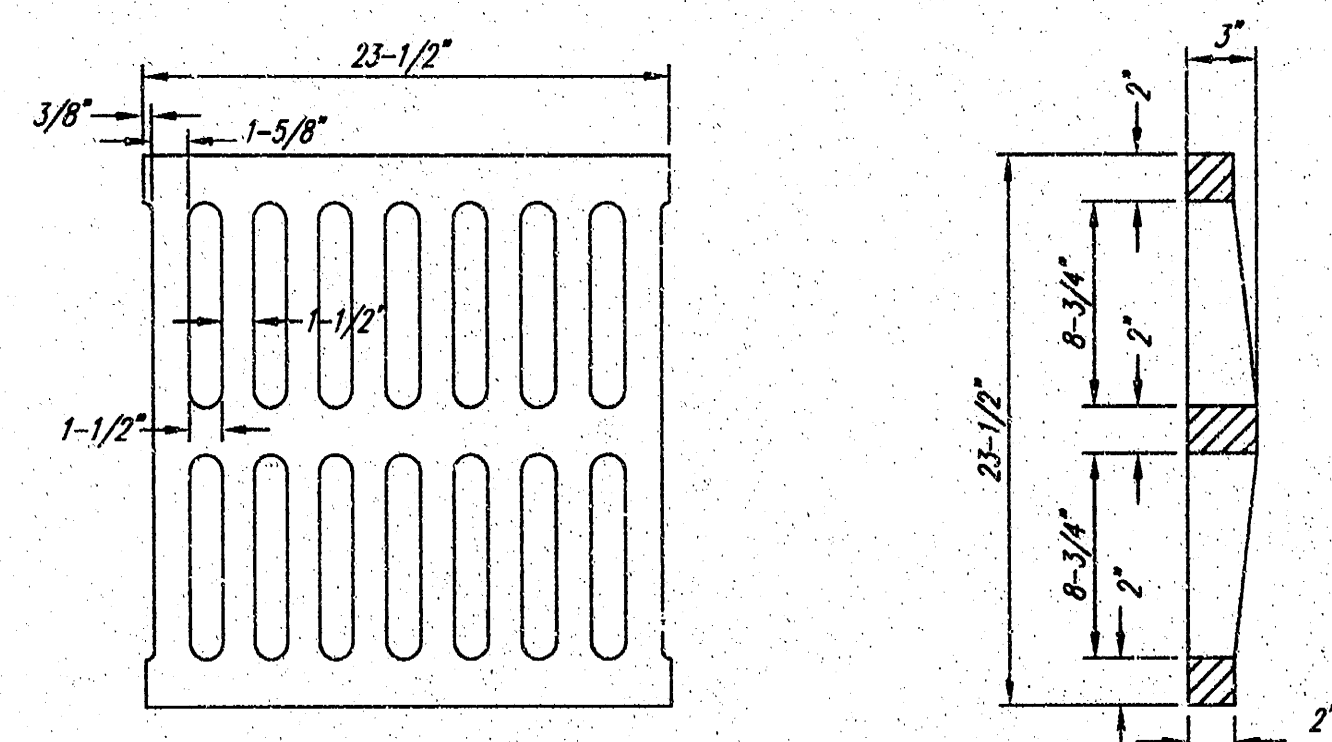
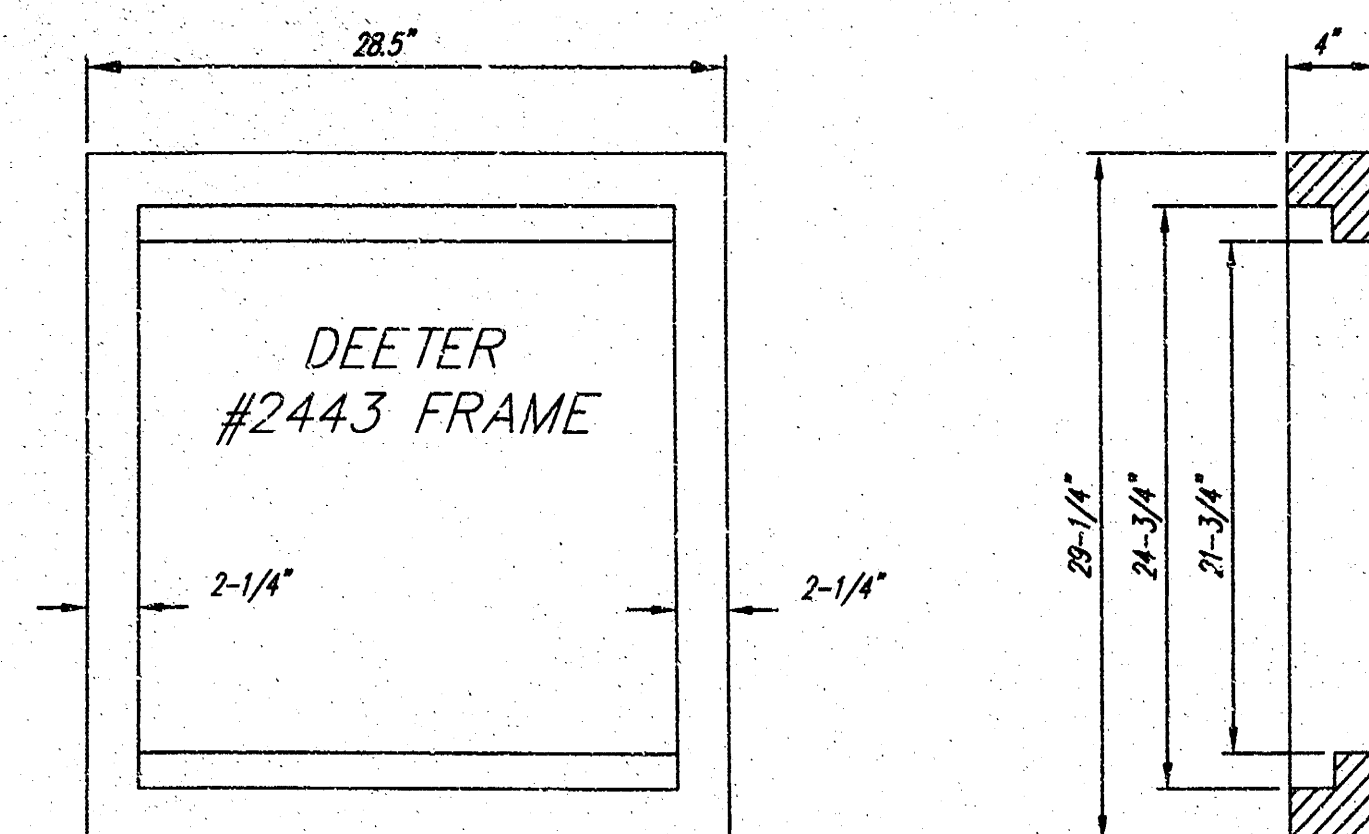
SPECIAL SHALLOW TYPE "B" MANHOLE

GENERAL NOTES

- Mortar used in masonry construction shall contain 8 sacks of cement per cubic yard. Concrete used in manhole bases shall conform to the requirements of concrete for concrete pavement construction as specified in the city standard paving specifications using city concrete cement mix 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.
- 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.

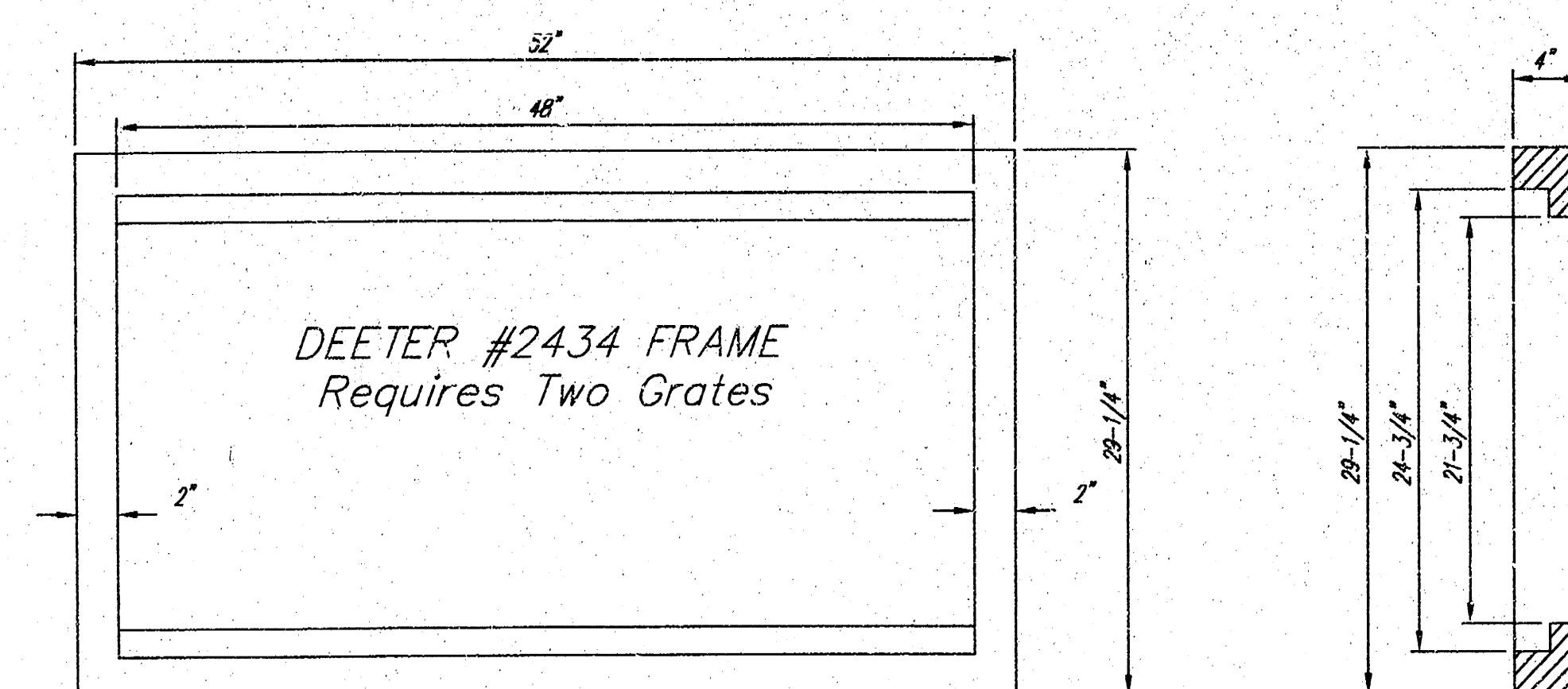
THE CITY OF WICHITA W CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4500 FAX (316) 268-4114 FAX	STANDARD/SPECIAL SHALLOW MANHOLES TYPE 'A' & 'B'	
	N. D. Cable P.E. - CITY ENGINEER	
	FILE NAME SPEC. SH. MH	KEN. PROJ. 02109
	DATE OCT. 02	SHEET 8 OF 10

SHLWMH.DWG



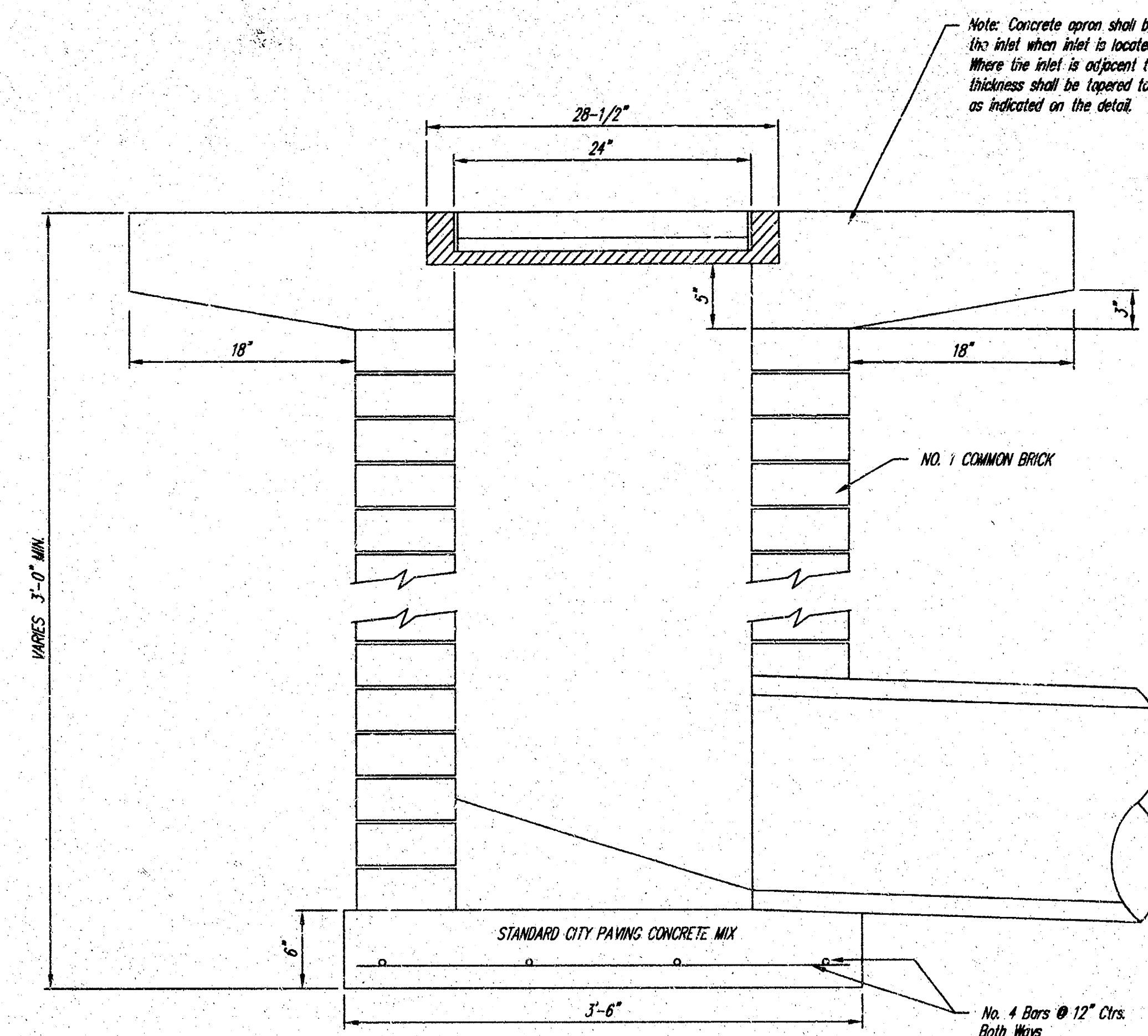
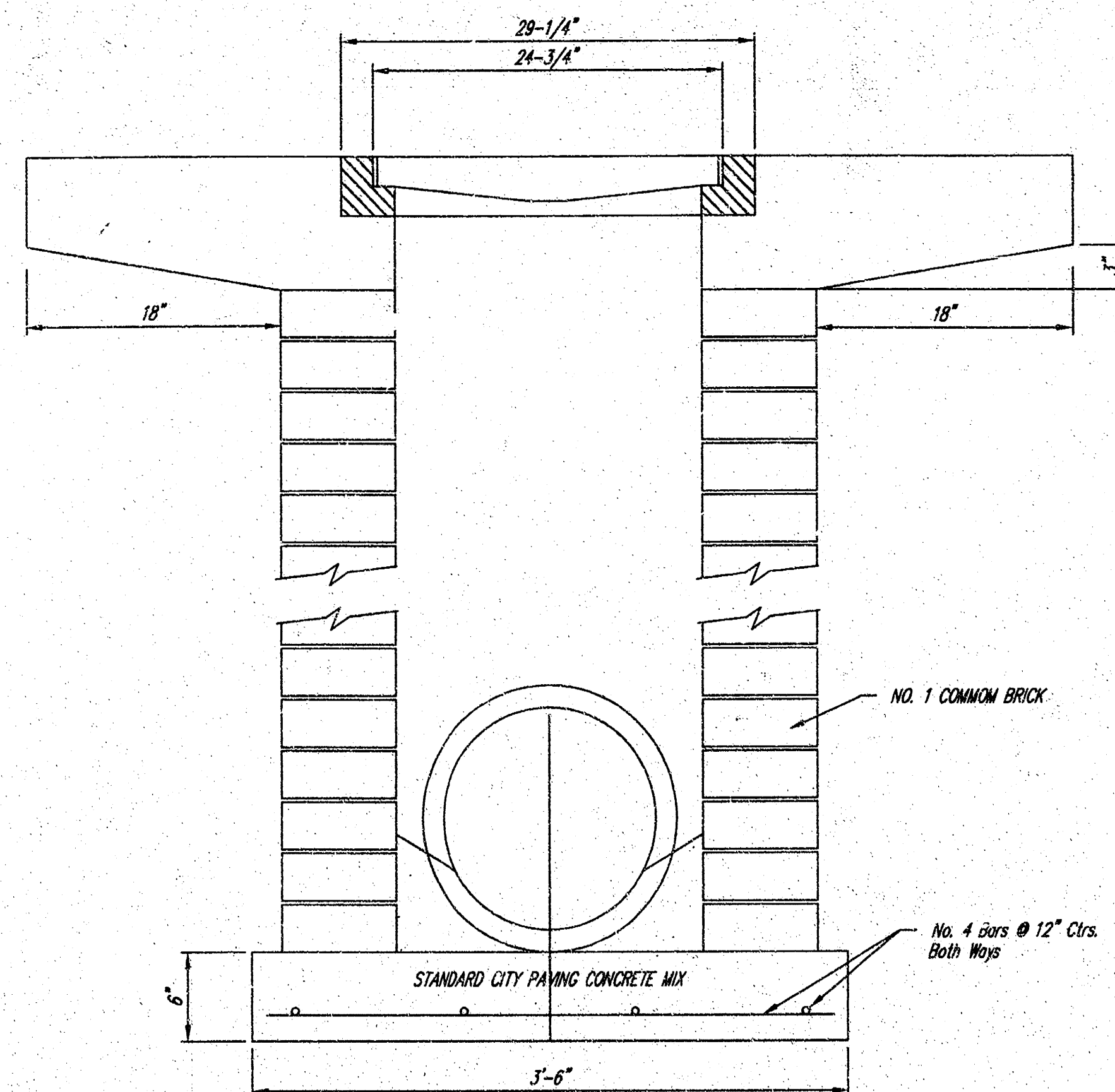
DEETER #2433 GRATE

24" x 24" Frame and Grate Detail

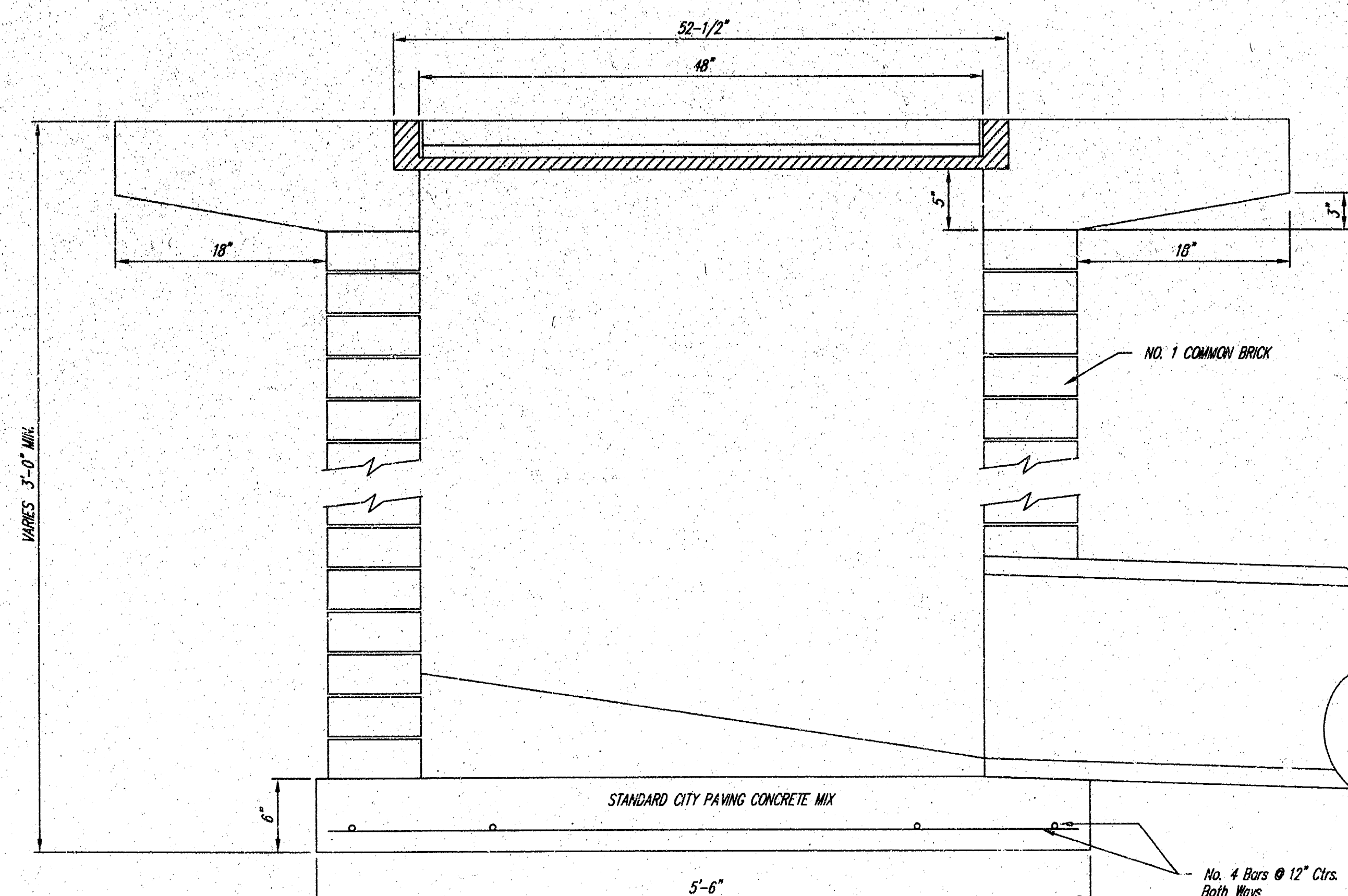


Double 24" x 24" Frame Detail

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.



Note: Concrete apron shall be constructed around the inlet when inlet is located in an unpaved area. Where the inlet is adjacent to pavement, the pavement thickness shall be tapered to the inlet in 10 inches as indicated on the detail.



THE CITY OF WICHITA CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 105 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 244-2501 (316) 248-6114 FAX	DROP INLET 2' X 2' 1/2' X 4'	
	N. D. Cable P.E. - CITY ENGINEER	
	FILE NAME DROP INLET	REV. PROJ. 02109
	DATE OCT. 02	SHEET 10 OF 10

DROPINLET.DWG

18 12 01 13