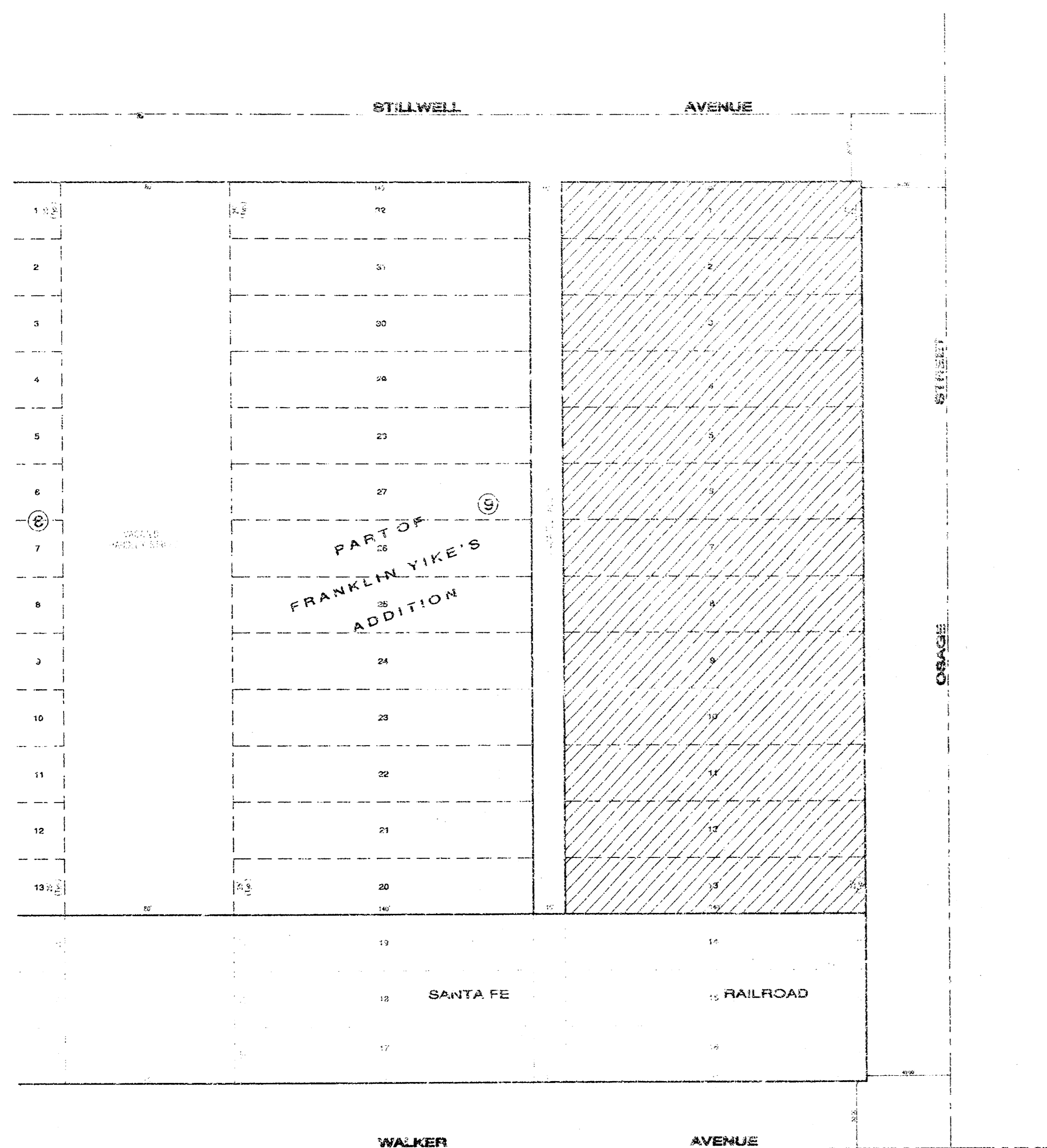


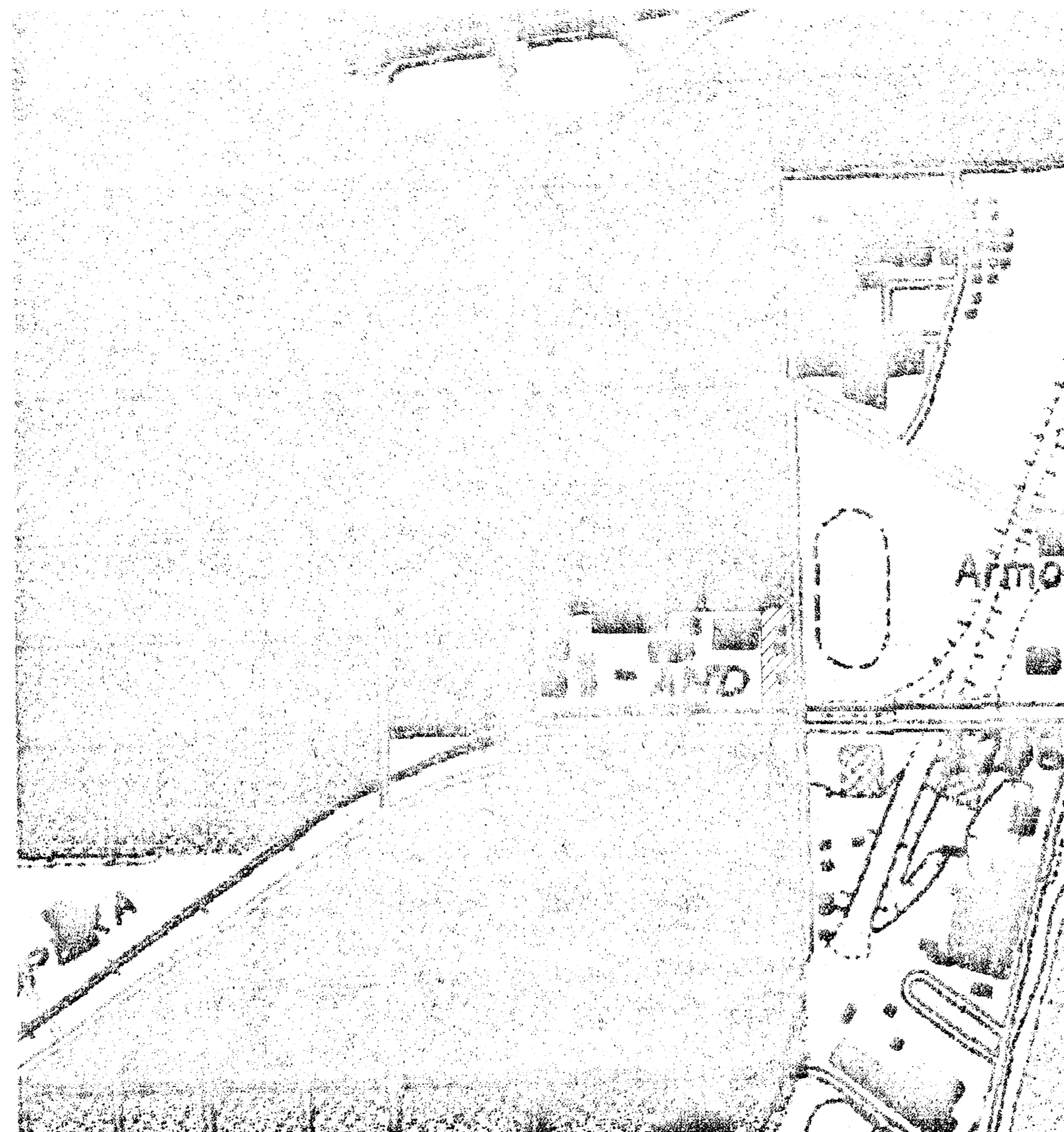
**STORM SEWER IMPROVEMENTS
TO SERVE
SEDGWICK COUNTY HOUSEHOLD
HAZARDOUS WASTE FACILITY
OSAGE STREET AND STILLWELL
PRIVATE PROJECT NO. 1172 PPS (607861)**

City of Wichita
Sedgwick County, Kansas
MICHAEL E. LINDEBAK, PE, CITY ENGINEER

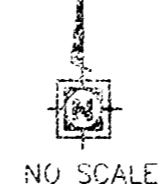


SANITARY SEWER BENEFIT DISTRICT AREA

KEY MAP



VICINITY MAP



OCTOBER 2001

PLANS PREPARED BY:

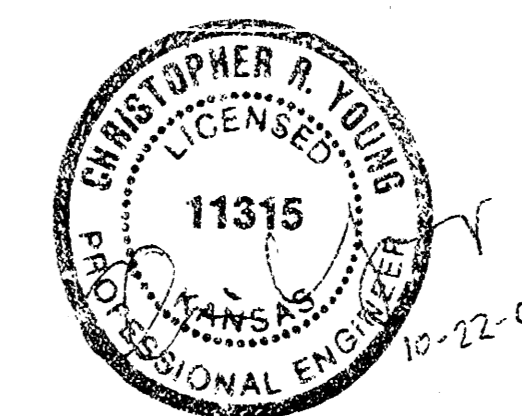


YOUNG & ASSOCIATES, P.A.
Civil and Environmental Engineers

100 South Georgie * Derby, Kansas * 67037

INDEX OF SHEETS:

TITLE SHEET	1
STORM SEWER PLAN & PROFILE	2
DROP INLET DETAILS	3
SHALLOW MANHOLE DETAILS	4
MISCELLANEOUS DETAILS	5



APPROVED AS NOTED
BY CITY ENGINEERS OF WICHITA

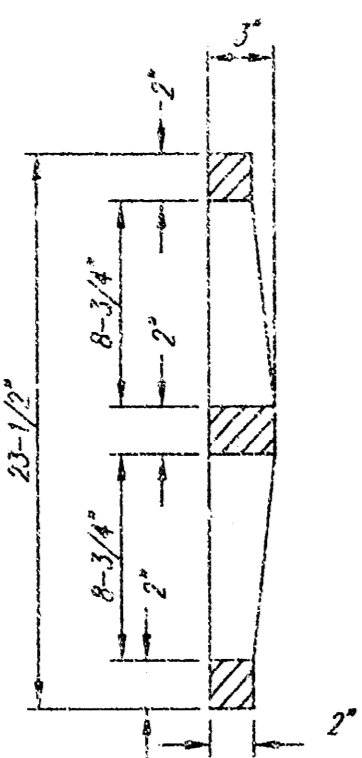
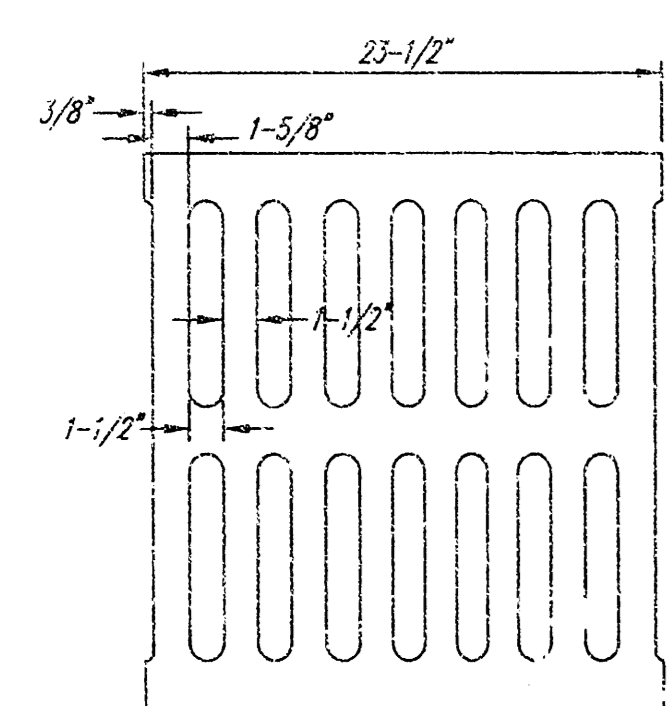
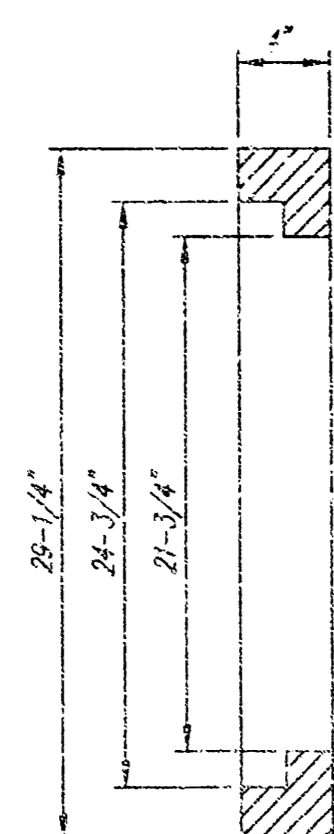
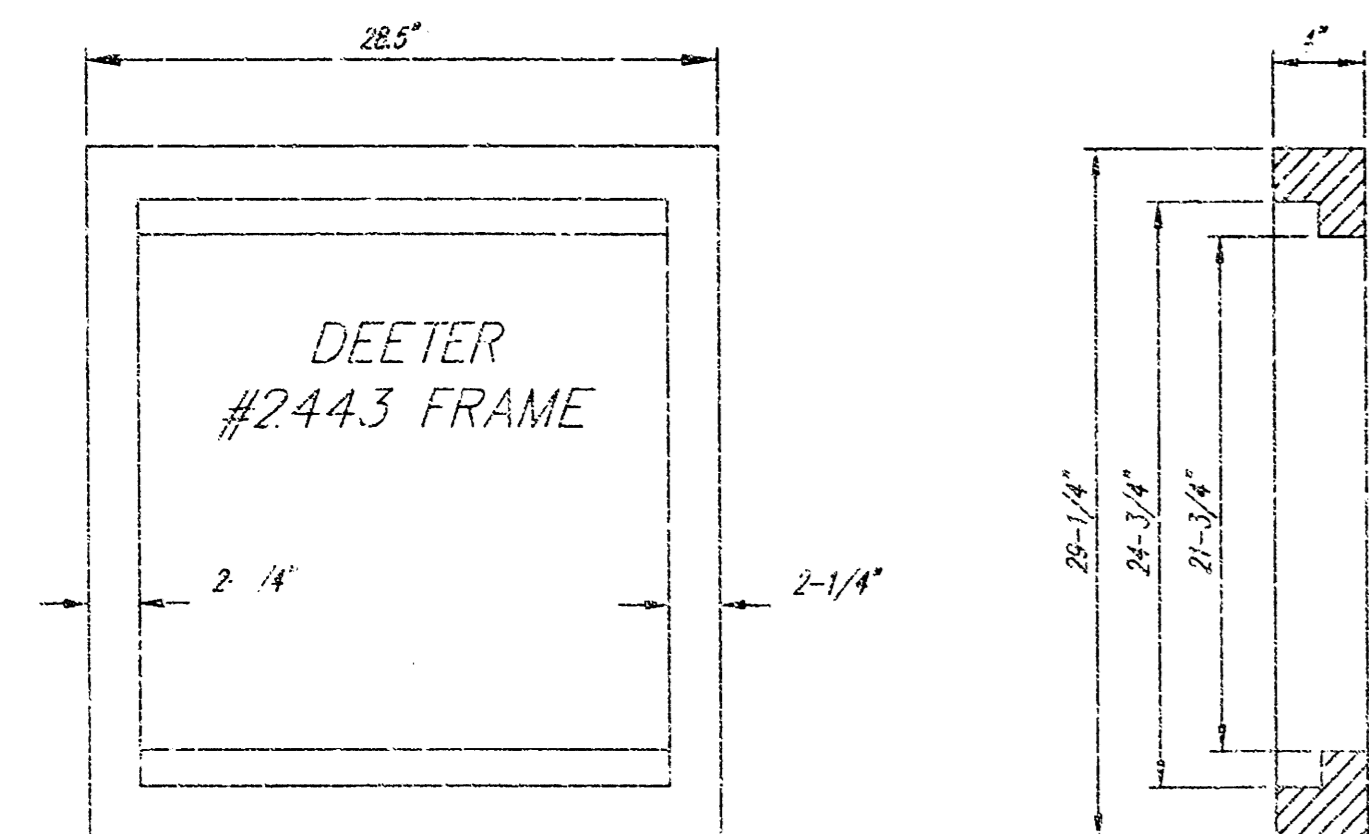
SANITARY SEWERS _____
STORM SEWERS VRH 10/23/01
DRIVEWAY APPROACHES _____
WATER MAINS _____
PAVING _____

NOTE TO CONTRACTORS

INSPECTION AND TESTING FOR THIS PROJECT ARE TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICE 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.

CITY OF WICHITA PRIVATE PROJECT NO:
1172 PPS (607861)

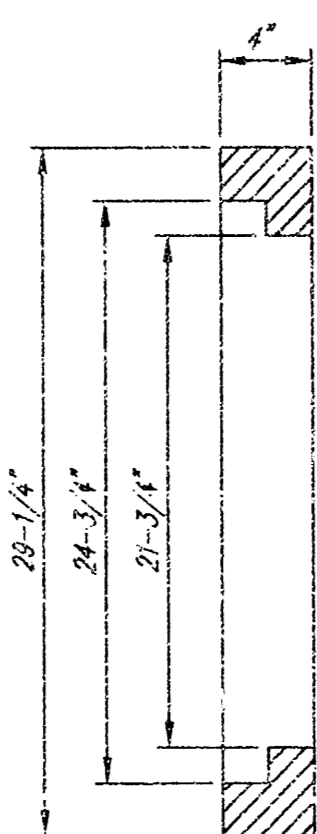
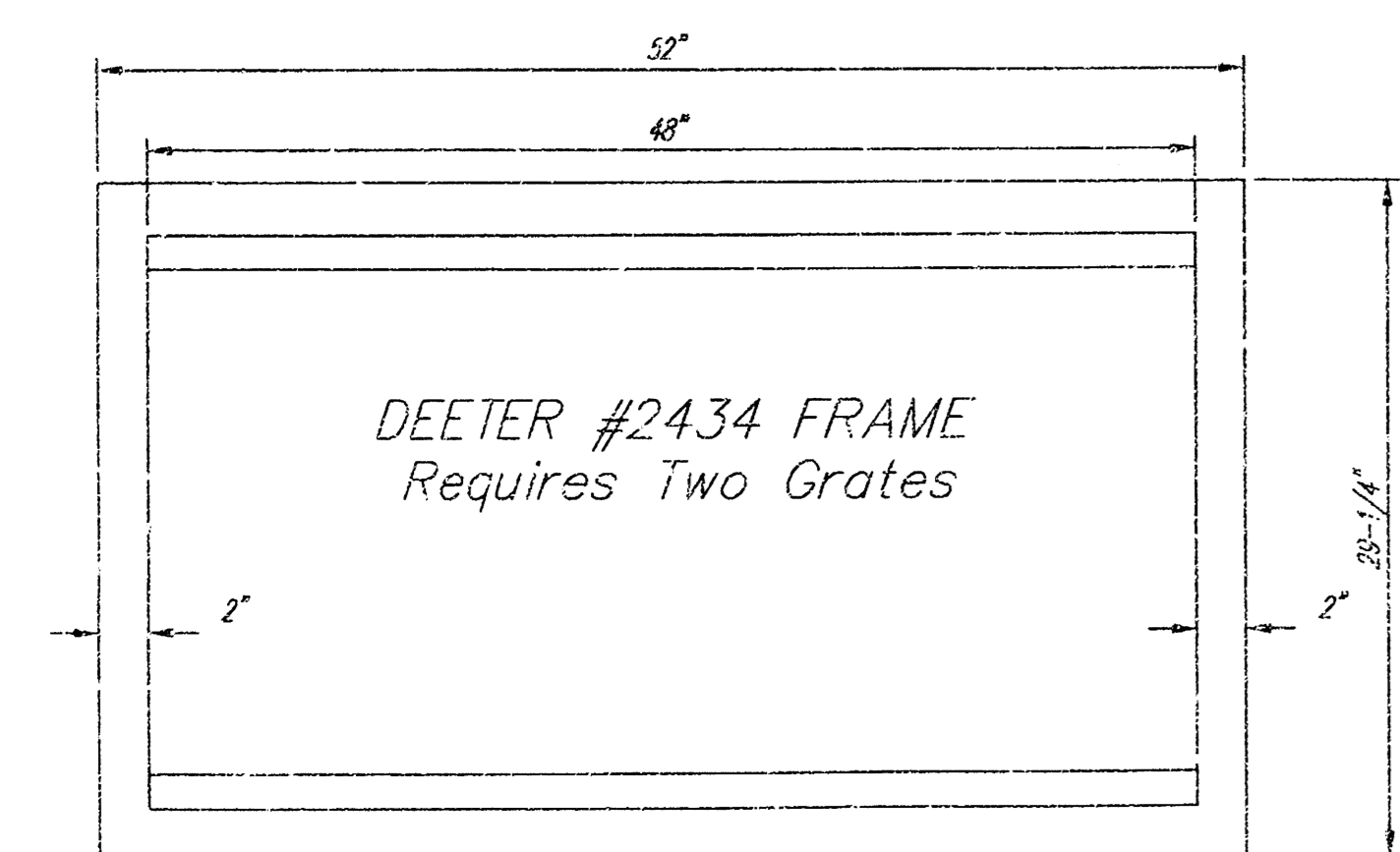
AS-BUILT
3/15/03
Date
[Signature]
Signed



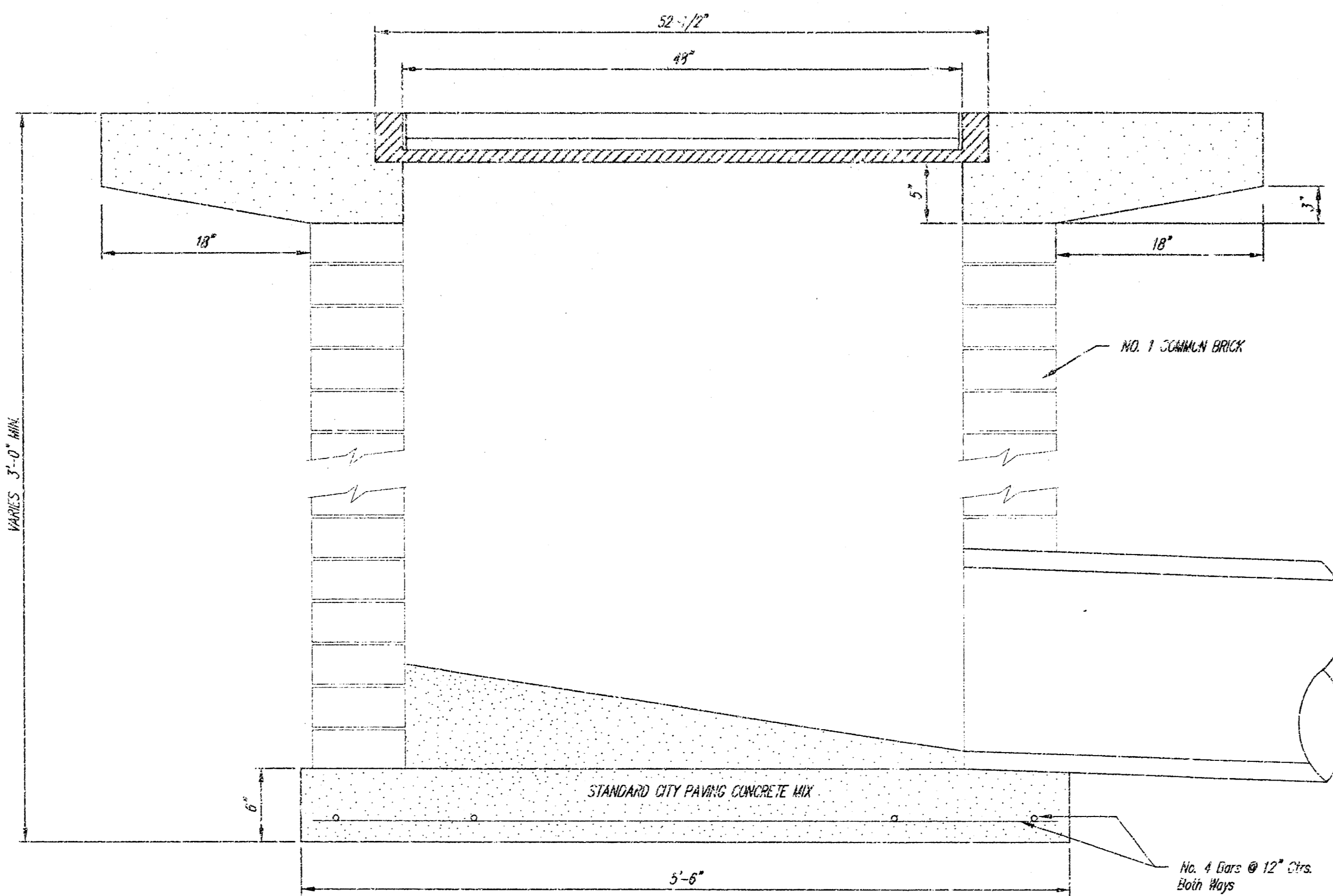
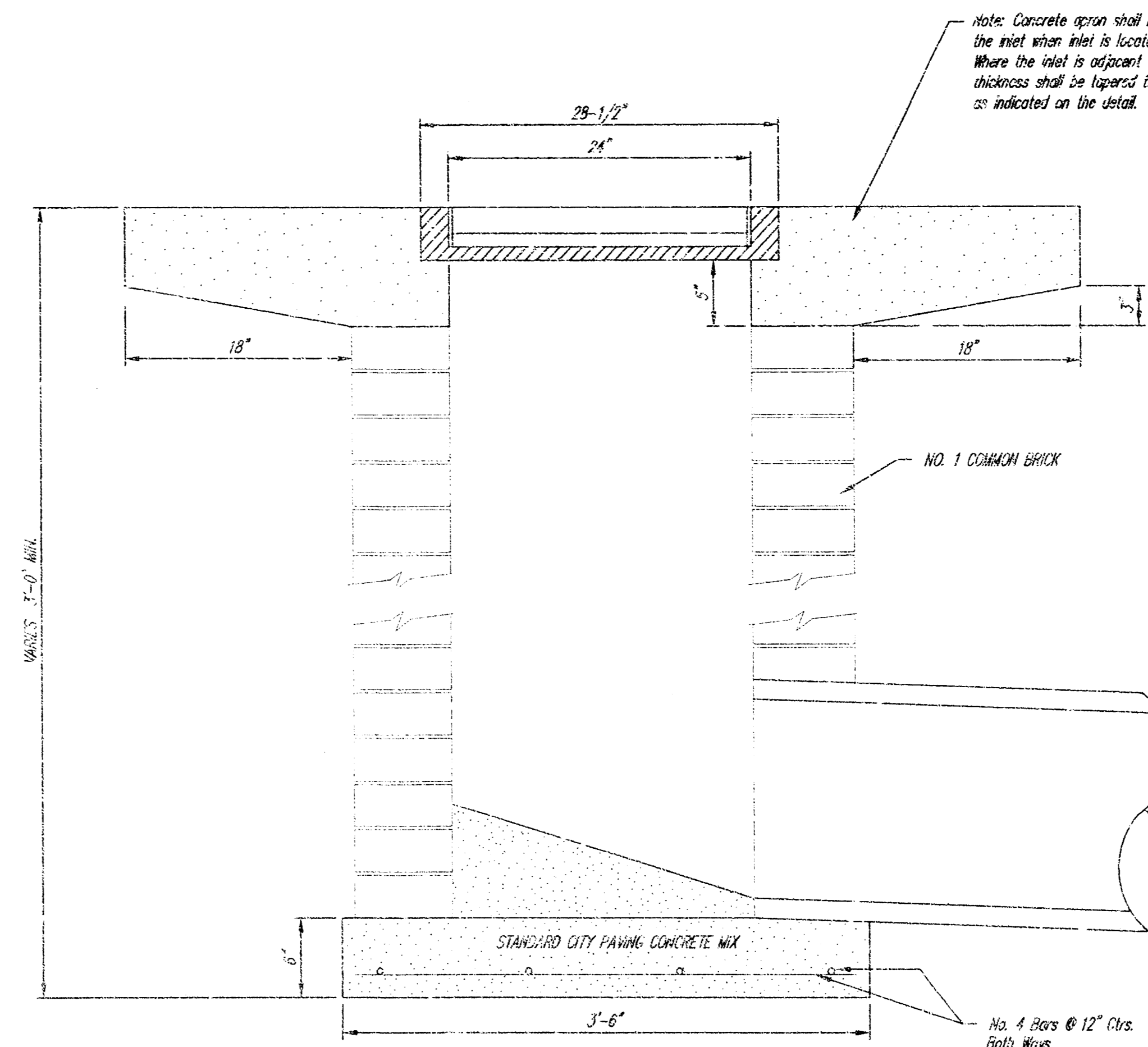
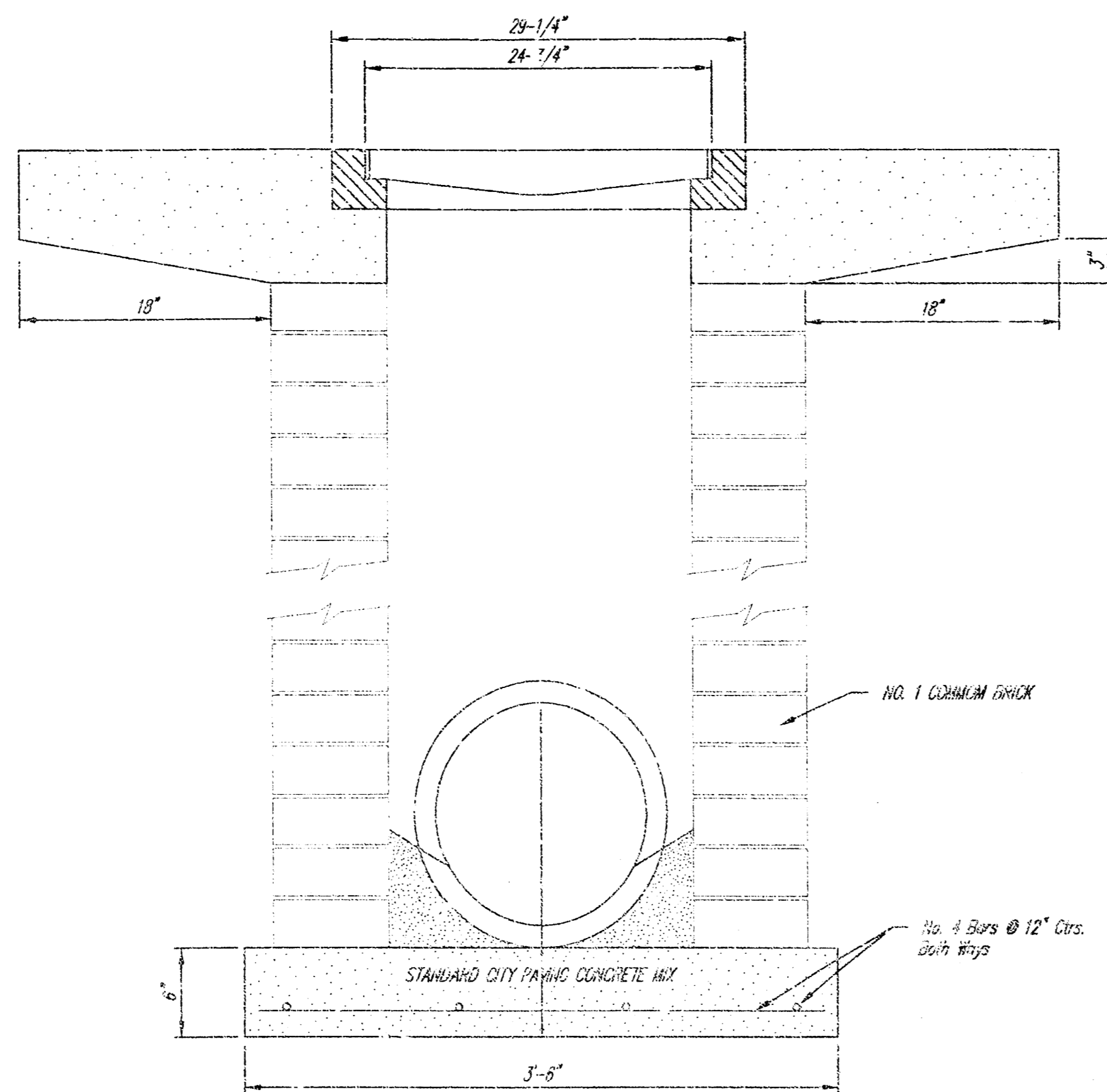
DEETER #2433 GRATE

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.



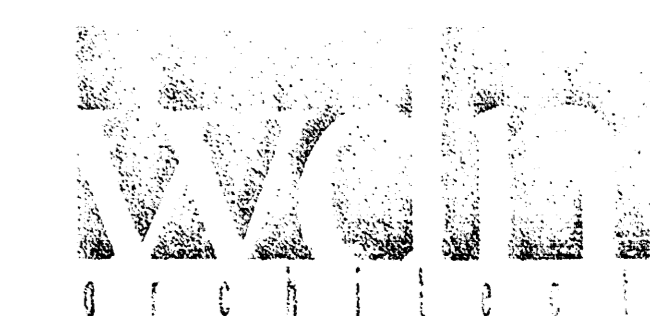
Double 24" x 24" Frame Detail



<p>THE CITY OF WICHITA</p> <p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 426 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 268-4501 (316) 268-4114 FAX</p>	DROP INLET 24" x 24" x 4"	
	M. E. LINDEBAK P.E. - CITY ENGINEER	
	PROJECT NUMBER XXX-XXXX	INDEX CODE XXXXXX
	DATE MAR 96	SHEET 3 OF 5

NO SCALE

DROP:NL.T.DWG



Wilson Damell Mann P.A.
105 N. Washington Wichita, Kansas 67202
ph 316.262.4700 fx 316.252.0902
www.wdmanng.com

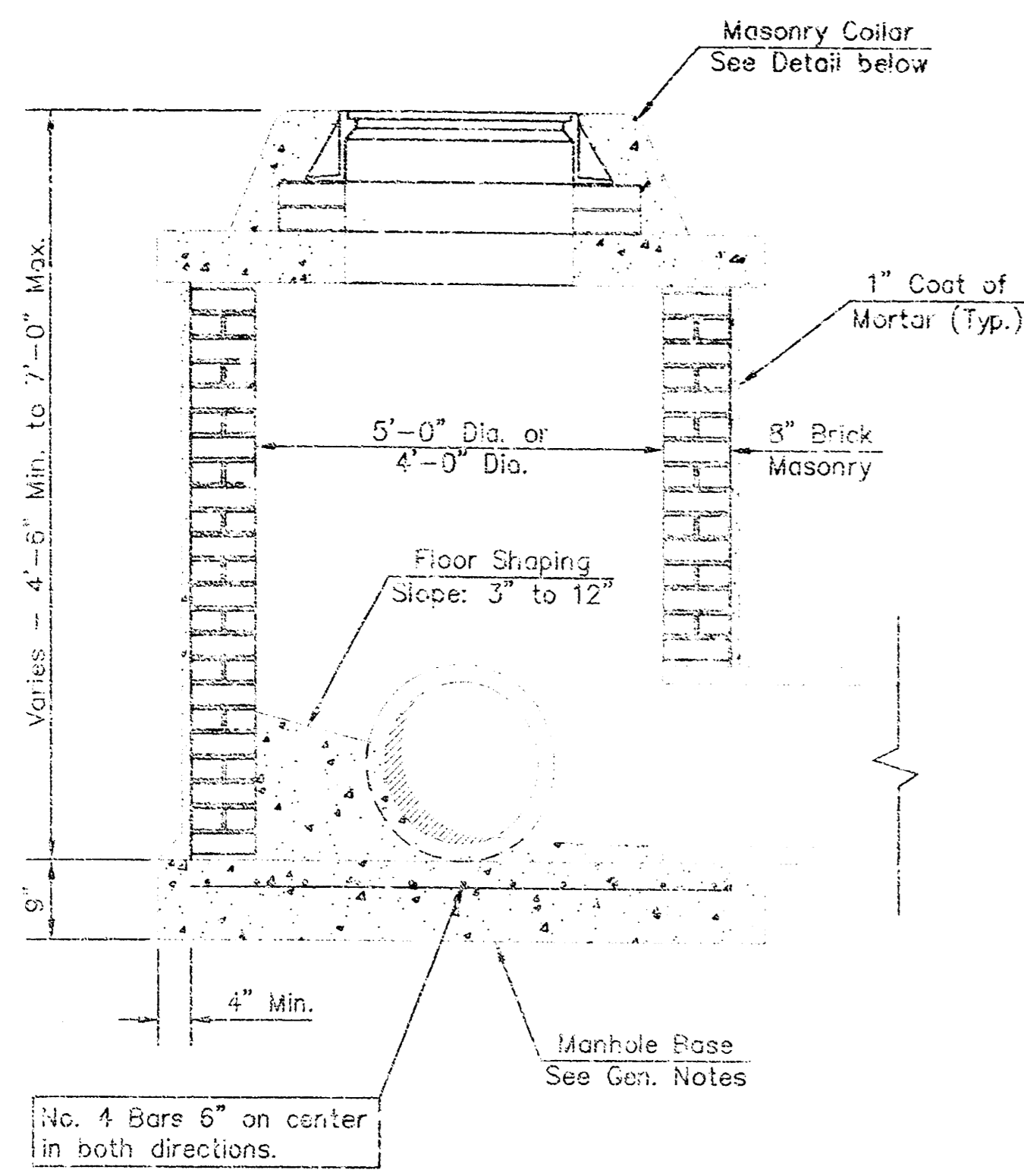
Household Hazardous Waste Facility

OSAGE AND STILLWELL
WICHITA, KANSAS

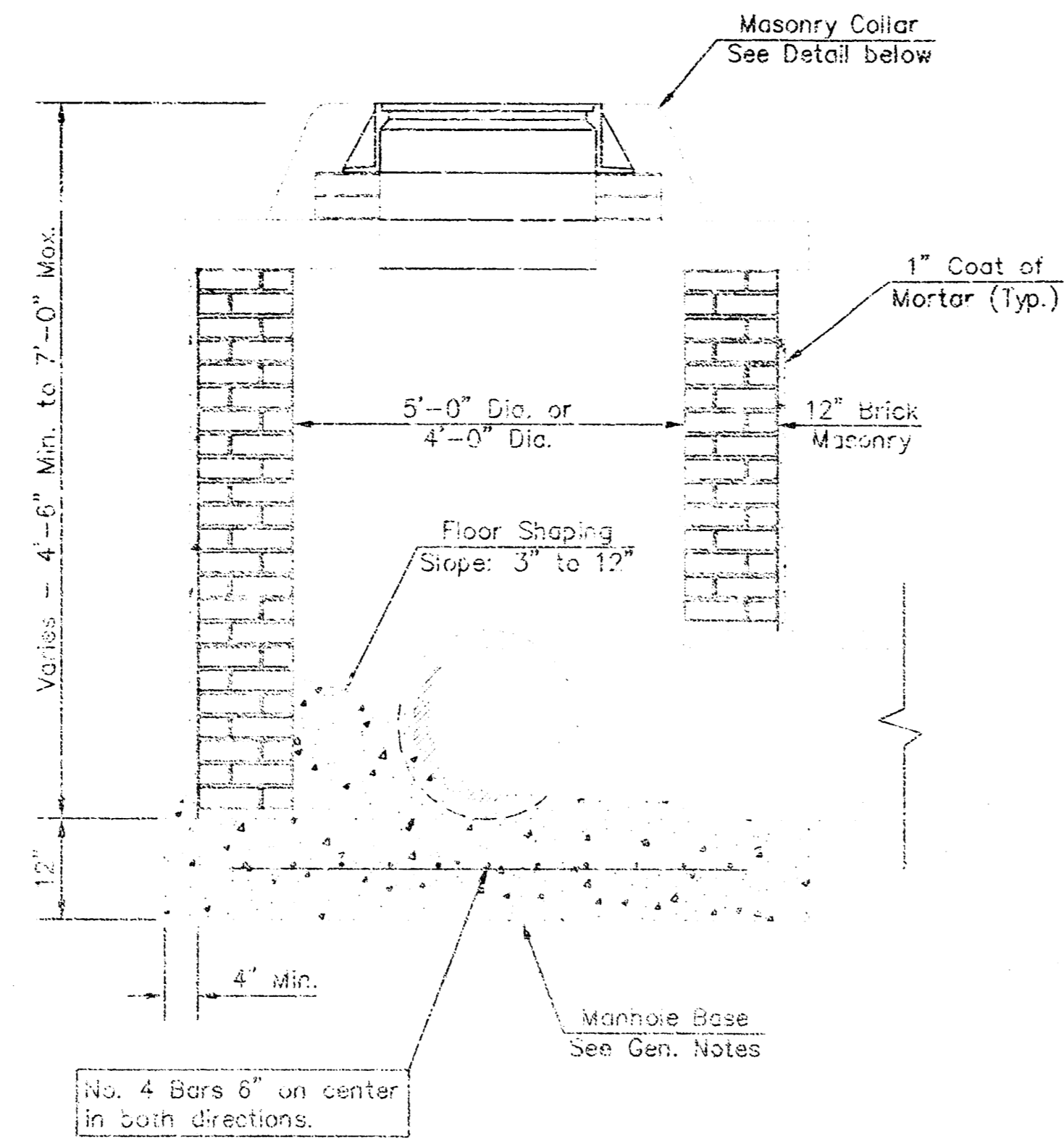
PRINTS ISSUED
8.30.01
REVISION DATE
10.05.01

WDM No. 00193 drawn: DAS
checked: CRY
Drop inlet details

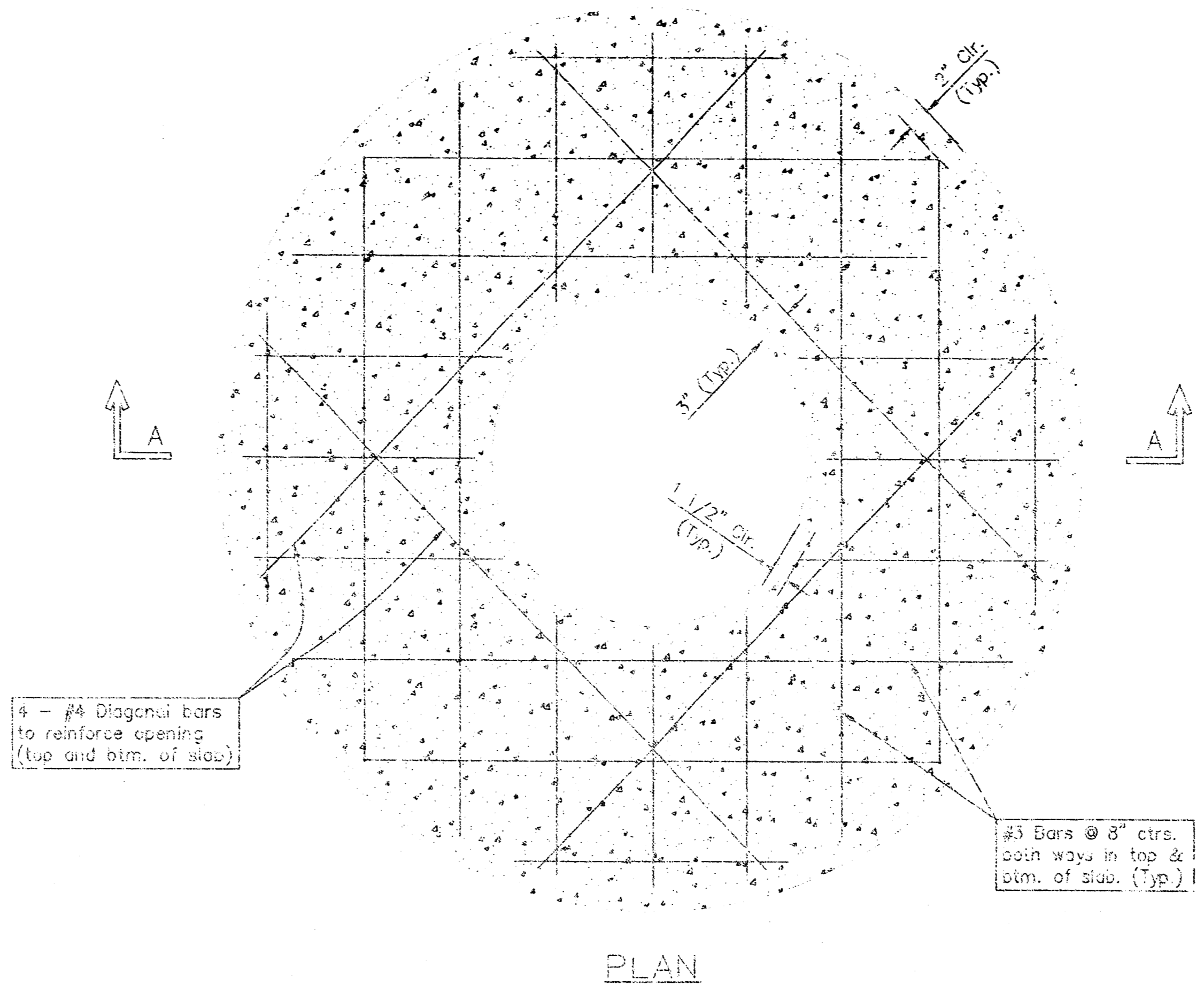
© copyright Wilson Damell Mann P.A.



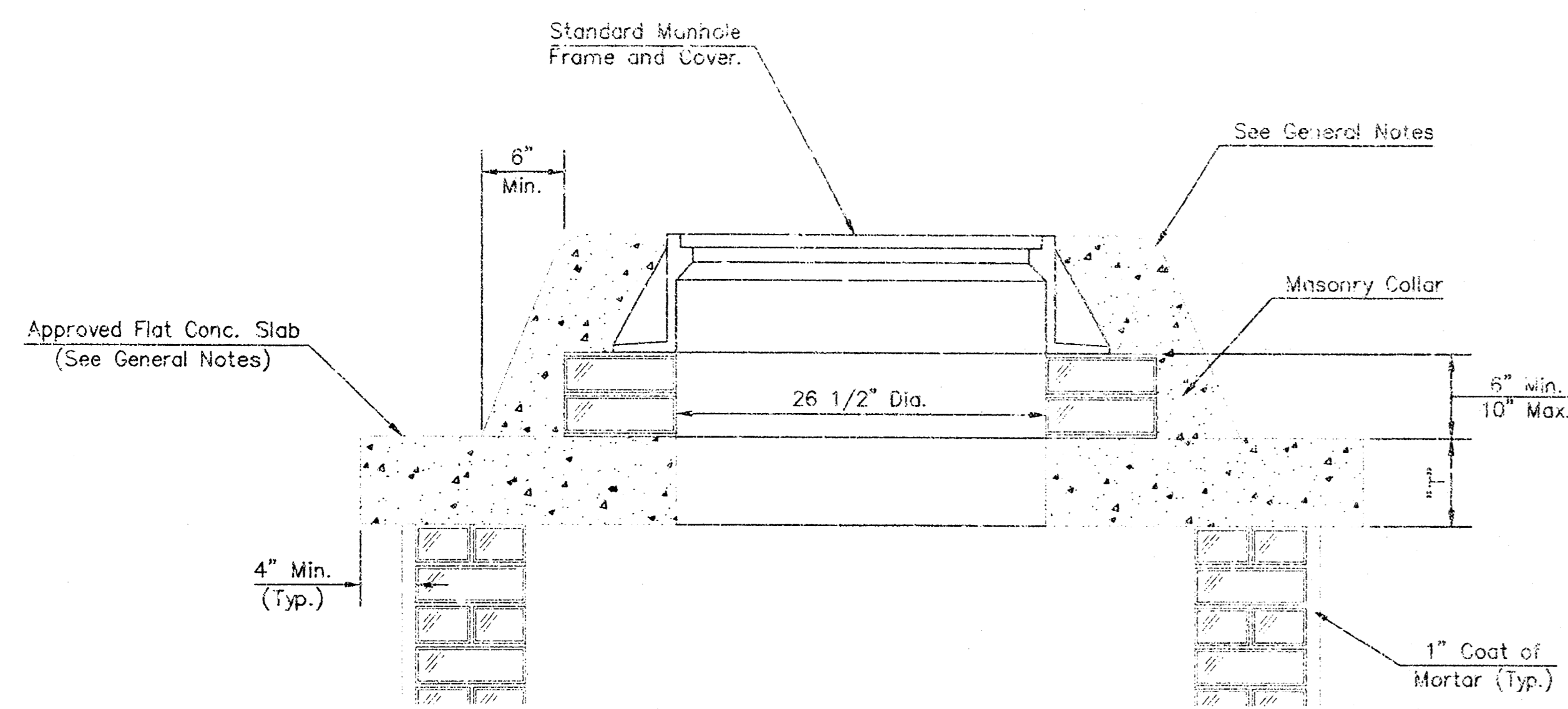
SHALLOW TYPE "A" MANHOLE



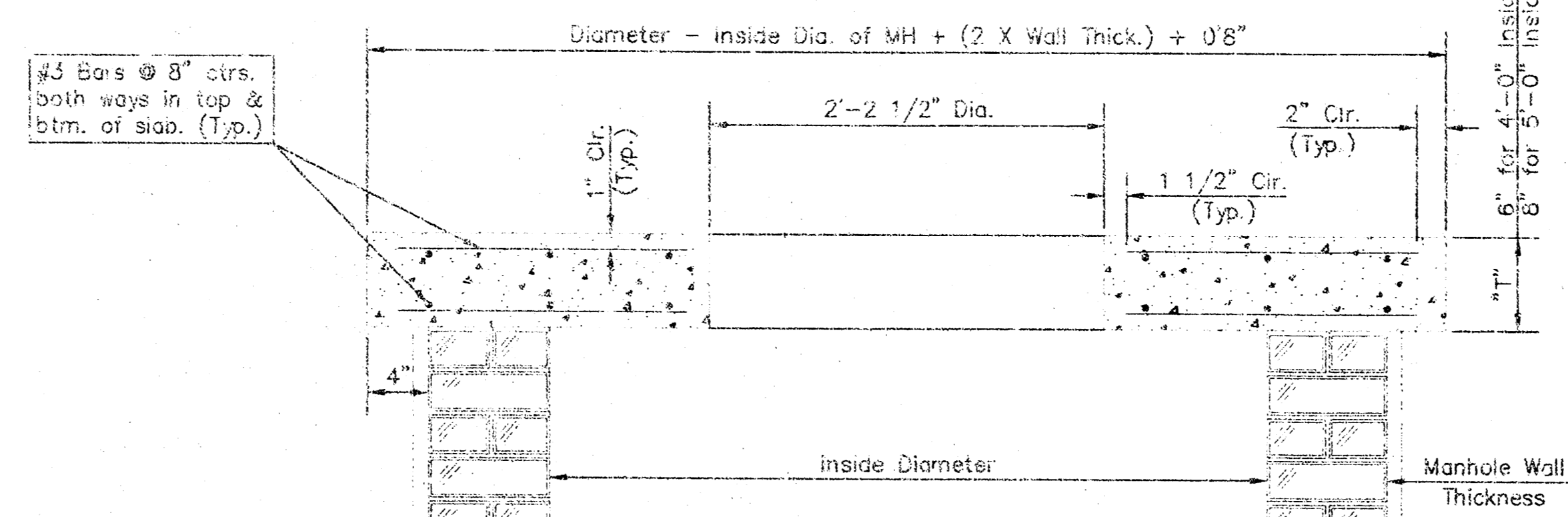
SHALLOW TYPE "B" MANHOLE



PLAN

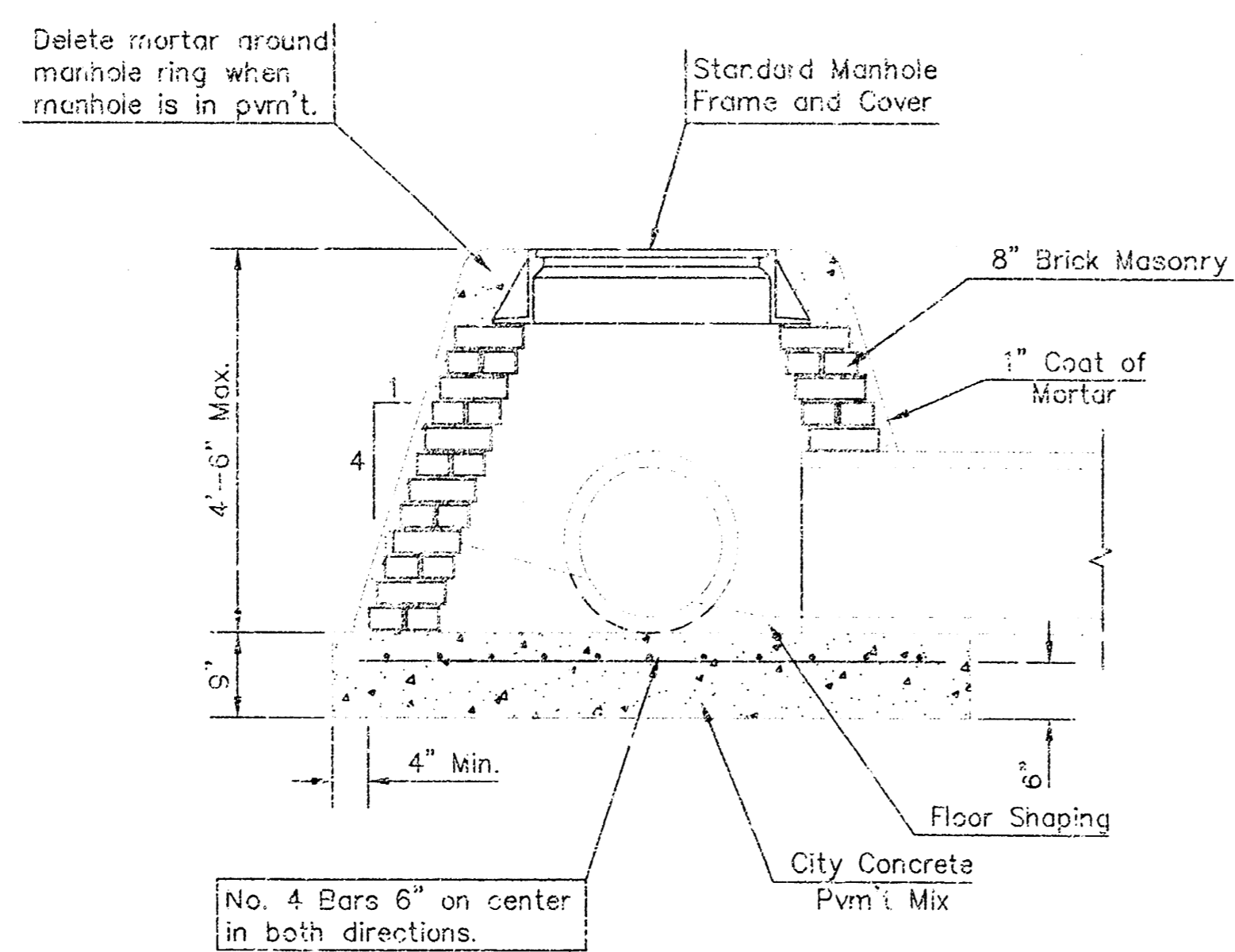


MASONRY COLLAR DETAIL

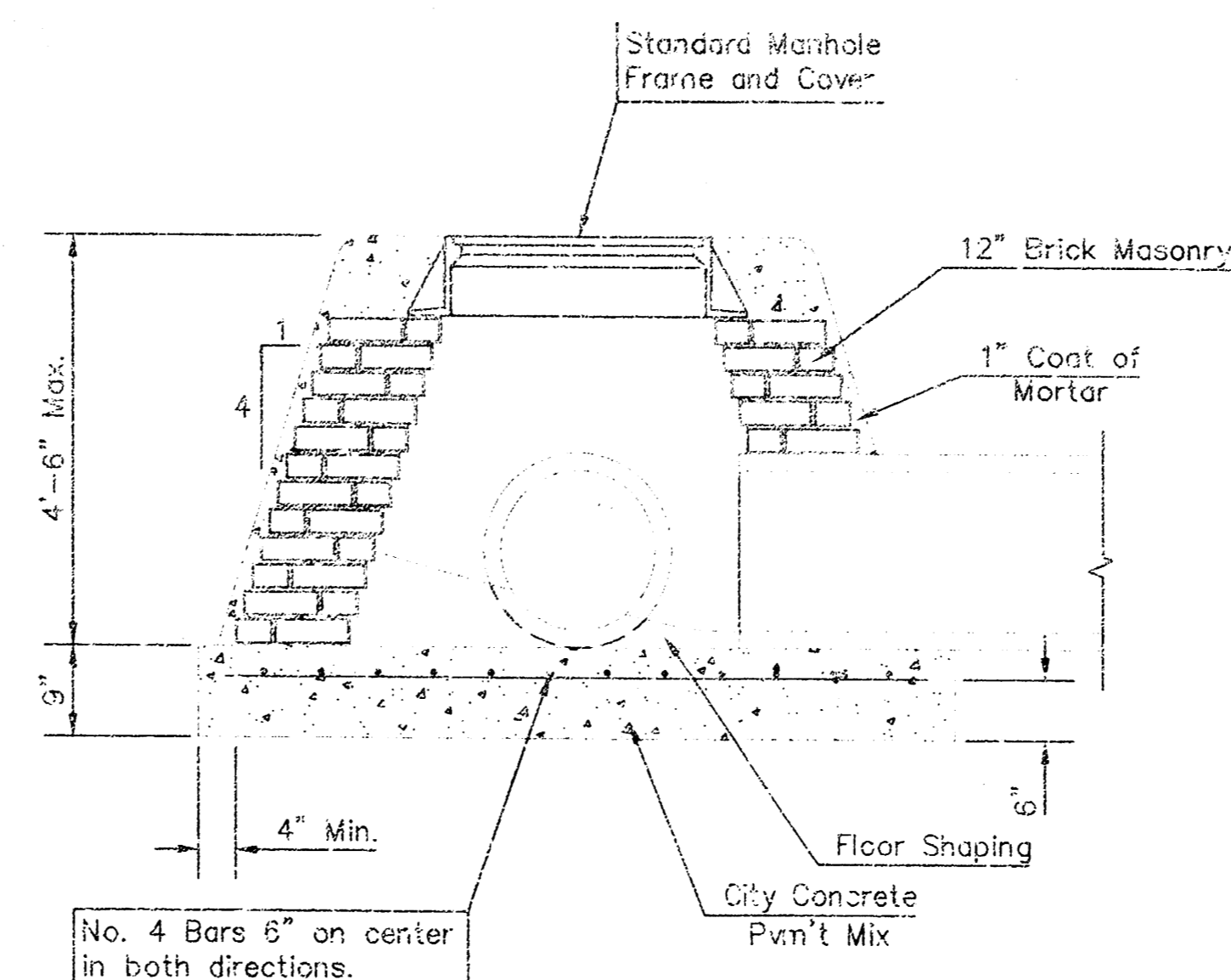


SECTION A-A

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 manholes.
- 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 nest 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.

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www.wdmann.com

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OSAGE AND STILLWELL
WICHITA, KANSAS

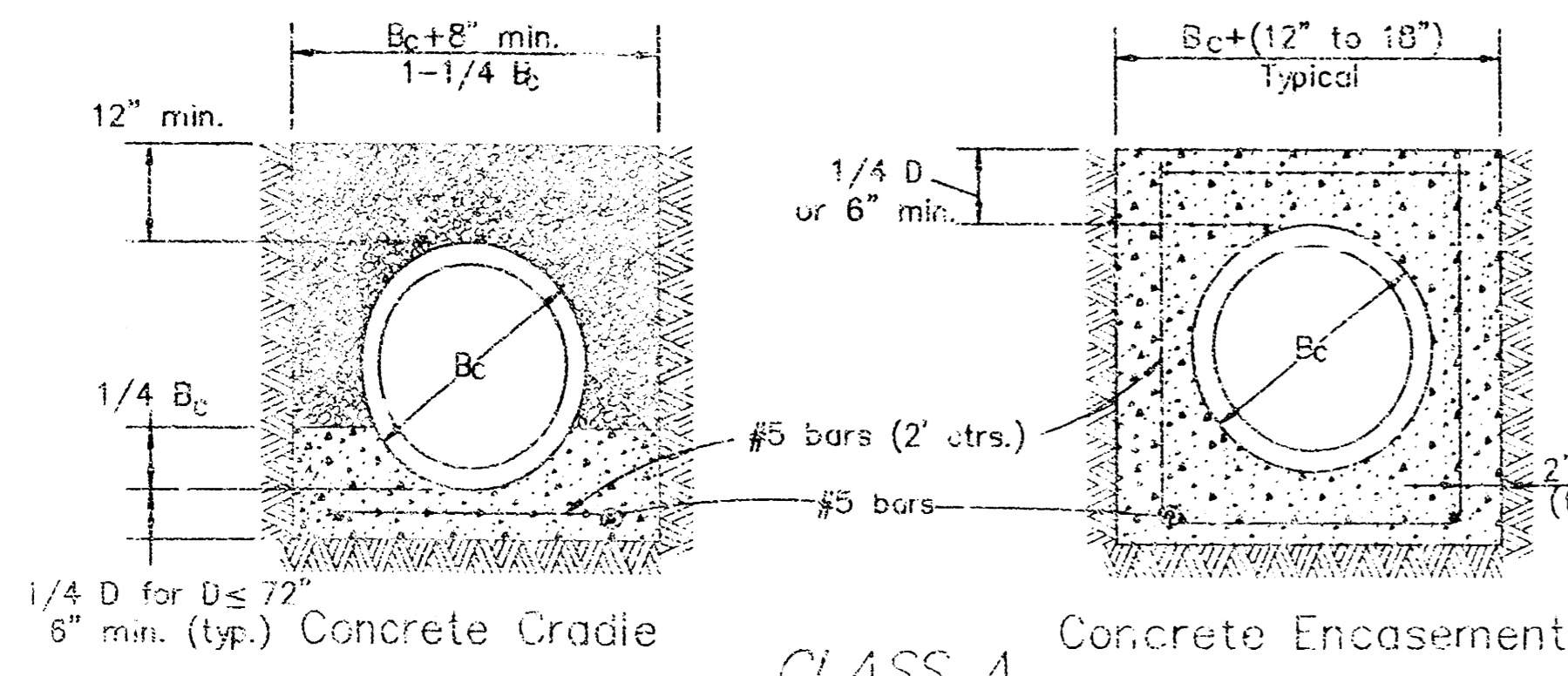
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8.30.01
REVISION DATE
10.05.01

WDM No. 00193 drawn: D&S
checked: GRY
Shallow manhole details

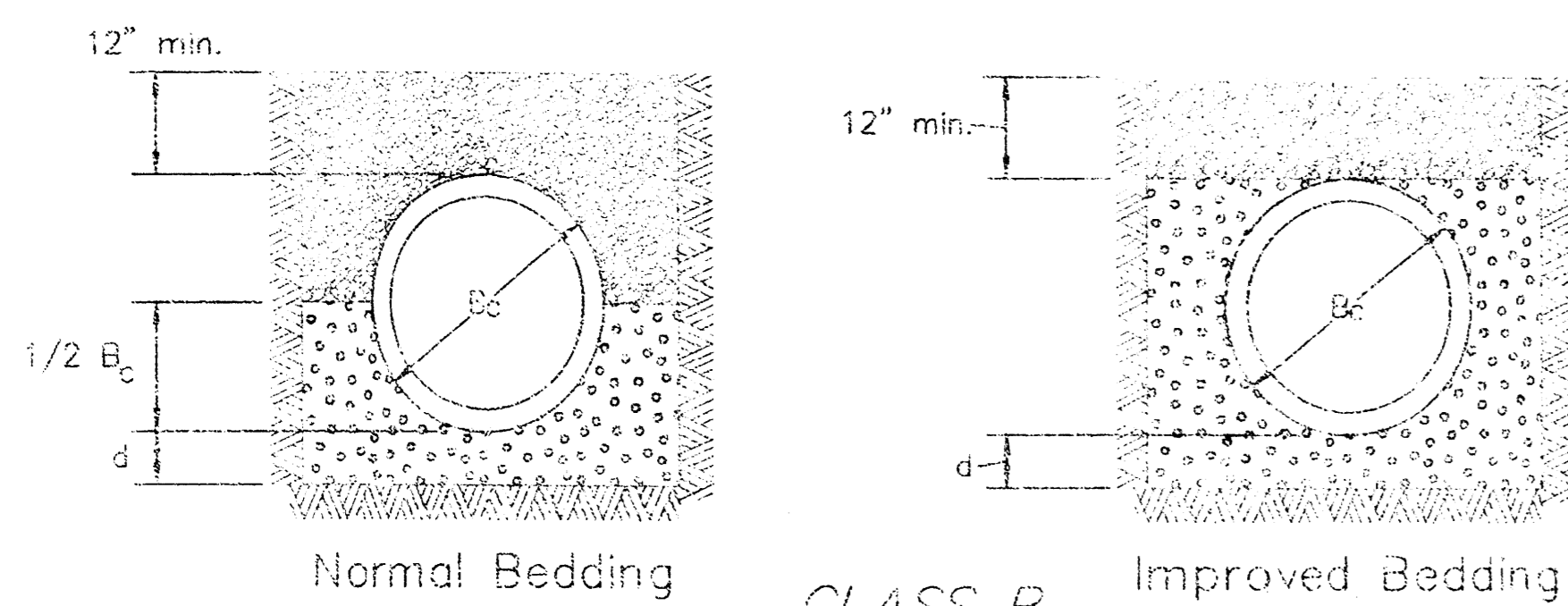
<p>THE CITY OF WICHITA CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 400 NORTH MAIN STREET WICHITA, KANSAS 67202 (316) 251-4001 (316) 251-4174 FAX</p>	STANDARD/SPECIAL SHALLOW MANHOLES TYPE "A" & "B"	
	M. E. LINDEBAK P.E. - CITY ENGINEER	
	PROJECT NUMBER XXX-XXXX	INDEX CODE XXXXXX
	DATE MAR 96	SHEET 4 OF 5

SHLWMH.DWG

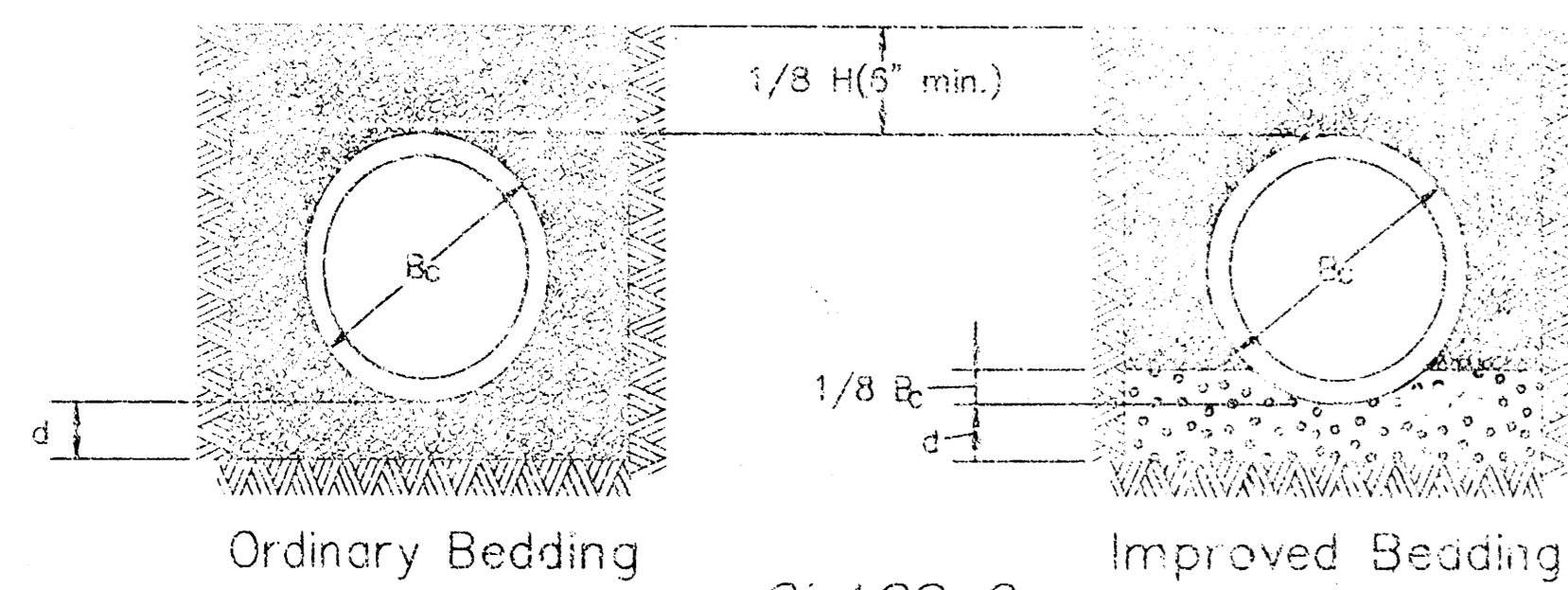
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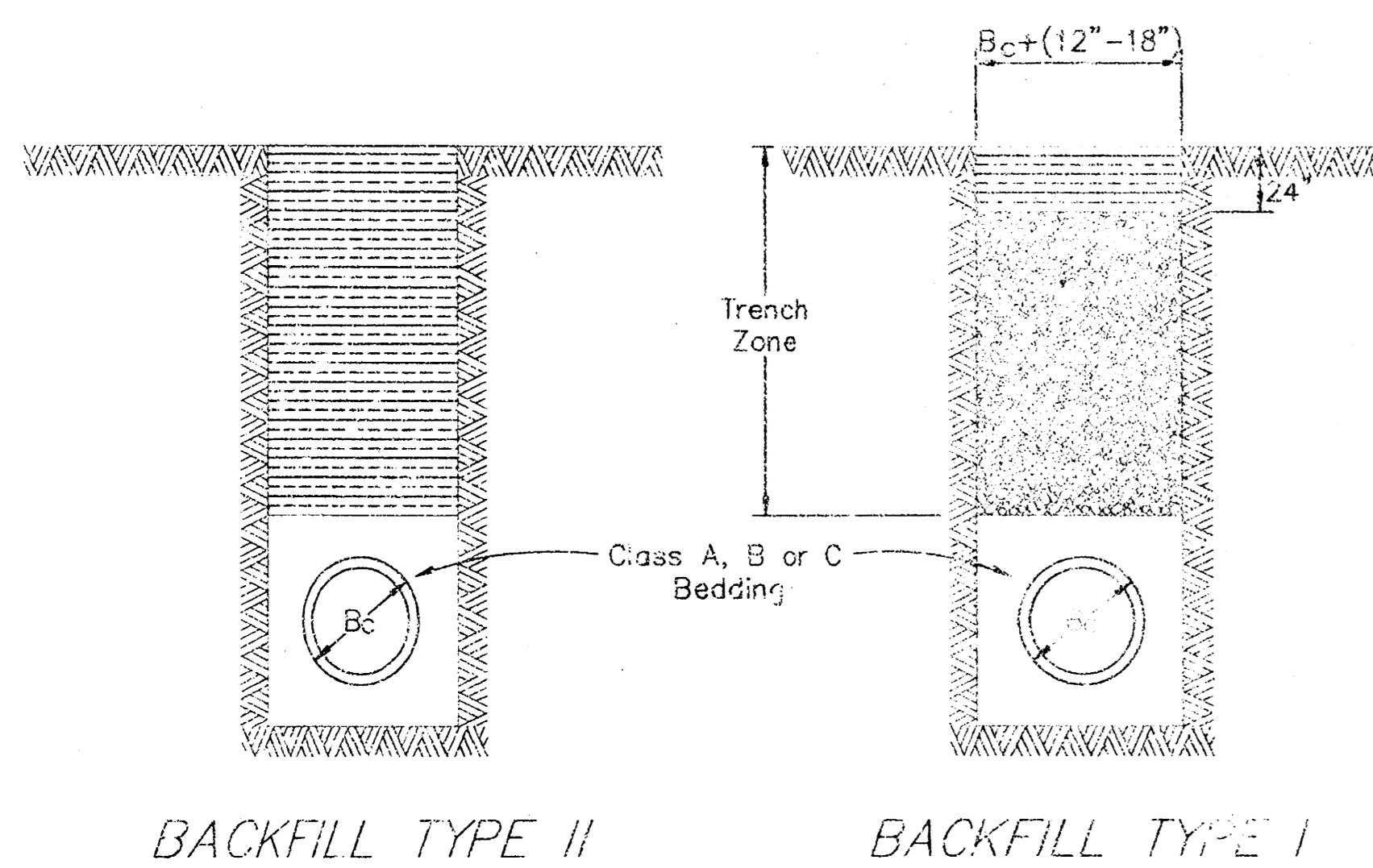
CLASS A



CLASS B



CLASS C



BEDDING AND BACKFILL DETAILS

LEGEND

- B_c = Outside Pipe Diameter
- D = Inside Pipe Diameter
- d = Depth of Bedding Material Below Pipe
- H = Backfill from Top of Pipe to Existing Ground
- [Pattern] = Granular Bedding Material or Sand-Gravel Bedding
- [Pattern] = Compacted Embedment
- [Pattern] = Concrete (Class III)

D	Depth of Bedding Material Below Pipe	
	Soil	Rock
0' - 2'	4"	6"
2' - 4'	6"	8"
4' & larger	8"	12"

Granular Bedding Material shall be an approved material consisting of a curable crushed rock conforming with the requirements of the latest revision of ASTM C-73 Size No. 67 (3/4" to No. 4); to be placed in not more than 3" layers and compacted by sliding with a shovel or vibrating. Soundness, abrasion, and absorption limits shall be as required for coarse aggregates in Section 03010-Concrete Work.

Sand-Gravel Bedding Material - sand-gravel mix meeting Type 50-2 of the 1990 Kansas Standard Specifications for State Road and Bridge Construction.

Compacted Embedment shall be an approved sand material free from debris, organic material, and stones with 100% passing the 3/4" sieve and not more than 15% passing a No. 200 sieve; to be jelled and mechanically vibrated into place and compacted to 95% density as determined by ASTM D1557. Compacted granular backfill beneath existing or proposed street paving shall be compacted to 95% density, as determined by ASTM D1557. See Paragraph 3.3.5.

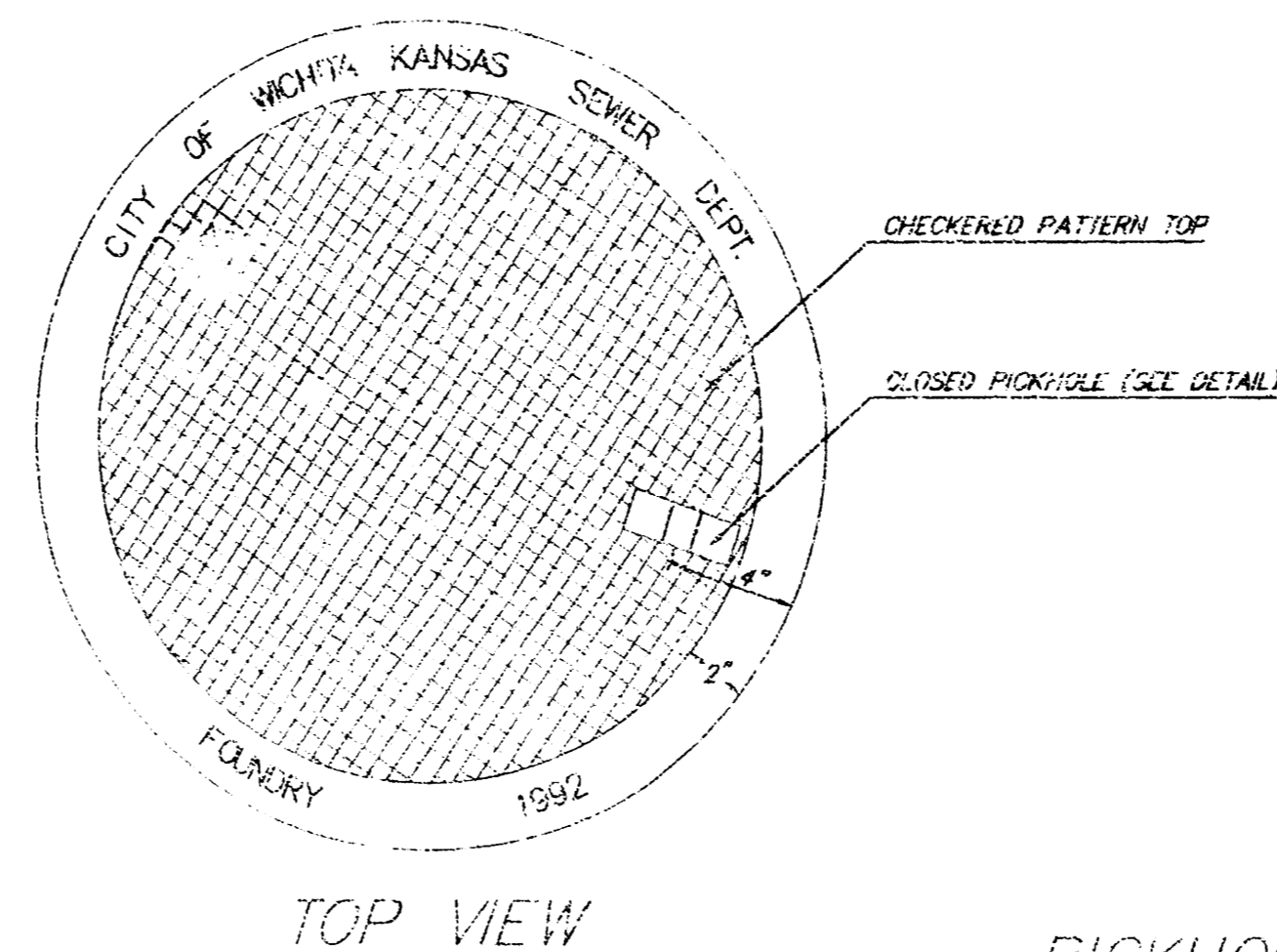
Compacted Granular Backfill material shall be an approved sand material free from debris, organic material and stones with 100% passing the 3/4" sieve and not more than 15% passing a No. 200 sieve; to be jelled and mechanically vibrated into place and compacted to 95% density as determined by ASTM D1557. Compacted earth backfill beneath existing or proposed street paving shall be compacted to 95% density, as determined by ASTM D1557. See Paragraph 3.3.5.

Compacted Earth Backfill shall consist of material existing prior to trenching or selected material as directed by the Engineer, and shall be compacted to 95% density as determined by ASTM D1557. Compacted earth backfill beneath existing or proposed street paving shall be compacted to 95% density as determined by ASTM D1557. See Paragraph 3.3.5.

LEGEND

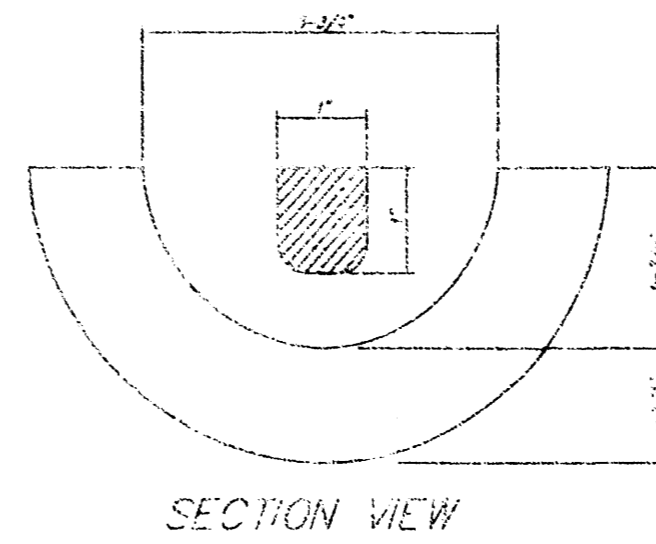
- B_c = Outside Pipe Diameter
- [Pattern] = Compacted Granular Backfill
- [Pattern] = Compacted Earth Backfill

MANHOLE COVER
Weight = 180 Lbs.

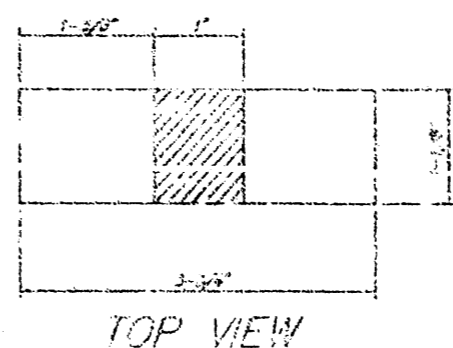


TOP VIEW

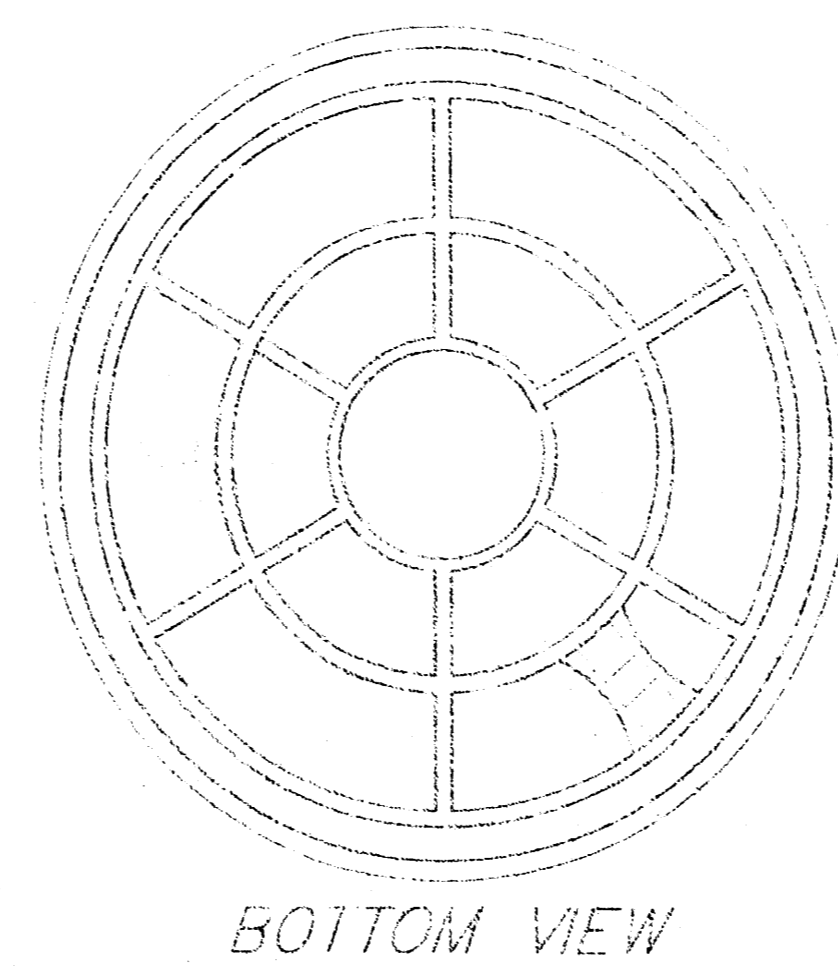
PICKHOLE DETAIL



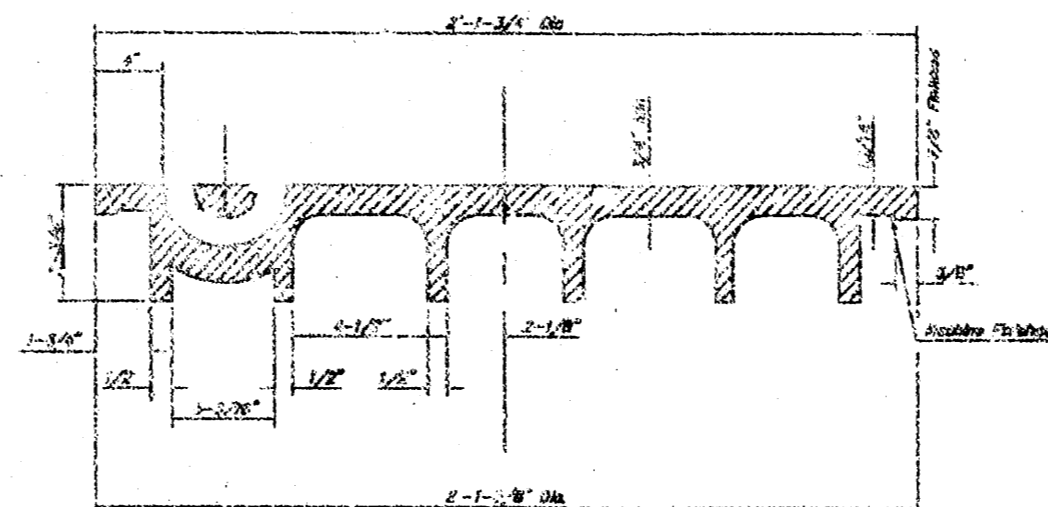
SECTION VIEW



TOP VIEW

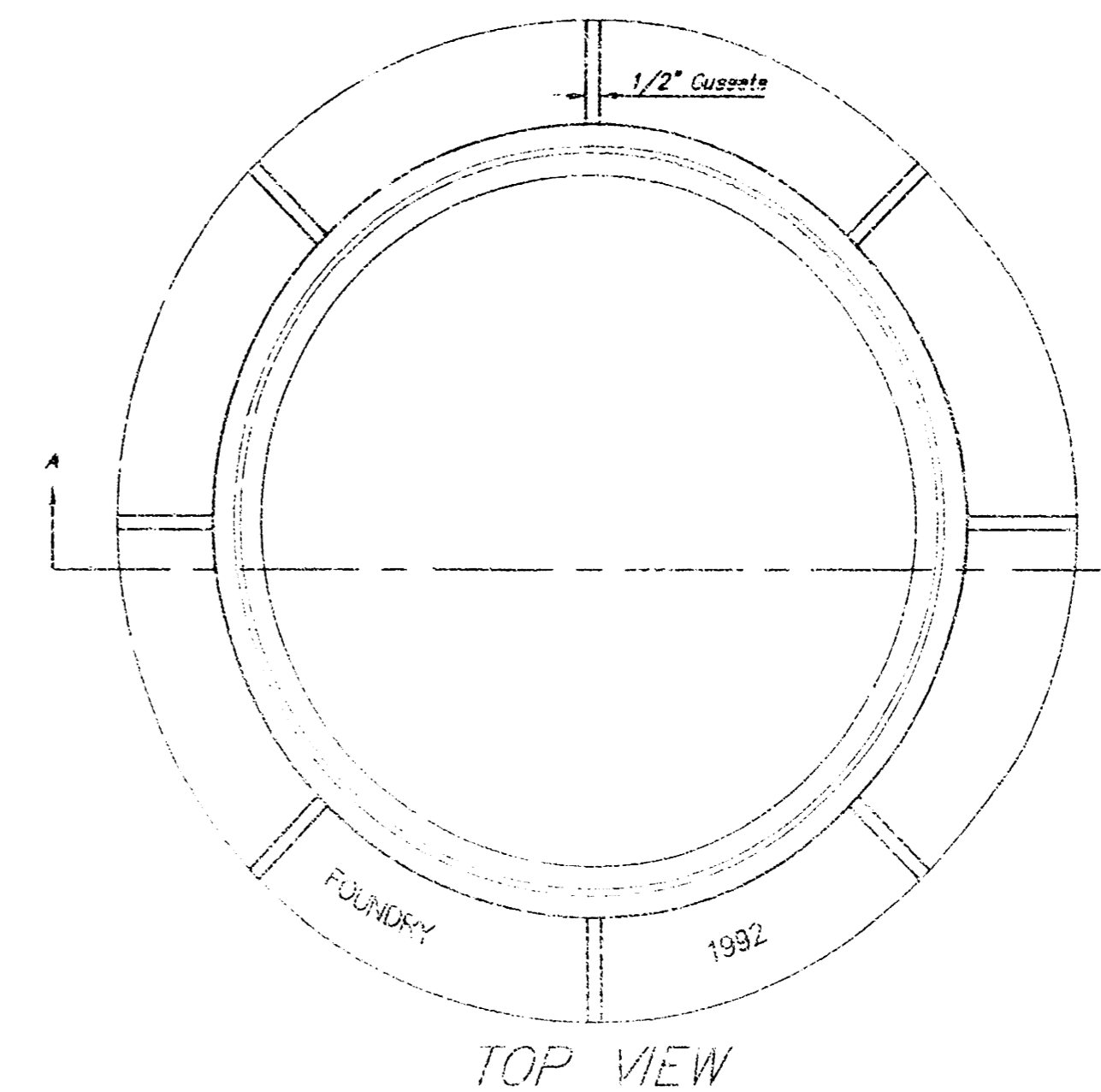


BOTTOM VIEW

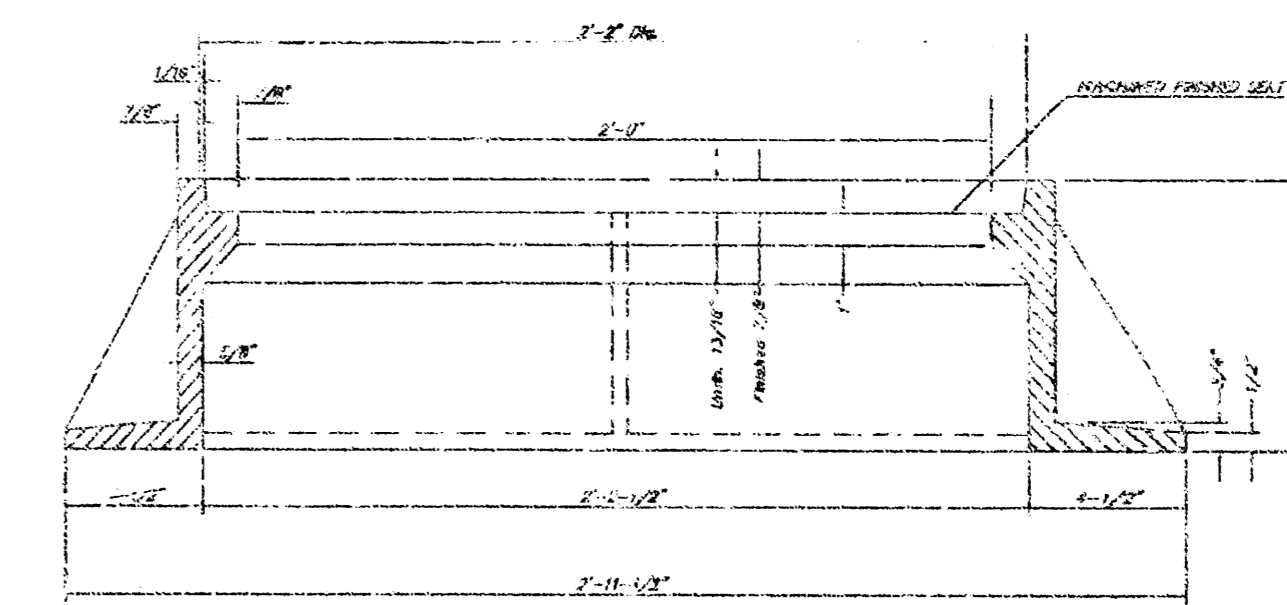


SECTION VIEW

MANHOLE FRAME
Weight = 240 Lbs.



TOP VIEW



SECTION A-A

GENERAL NOTES

MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF USUALLY QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.

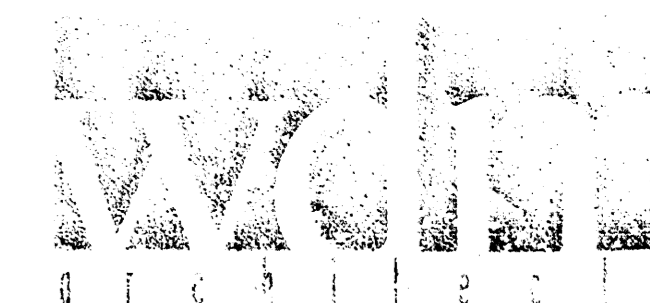
MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH AS THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1 INCH IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY
CITY OF WICHITA, KANSAS



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Household Hazardous Waste Facility

ORANGE AND SILLWELL WICHITA, KANSAS

PRINTS ISSUED
8.30.01
REVISION DATE
10.05.01

WDM No. 00193
Drawn: DAS
Checked: GRY
Miscellaneous details

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