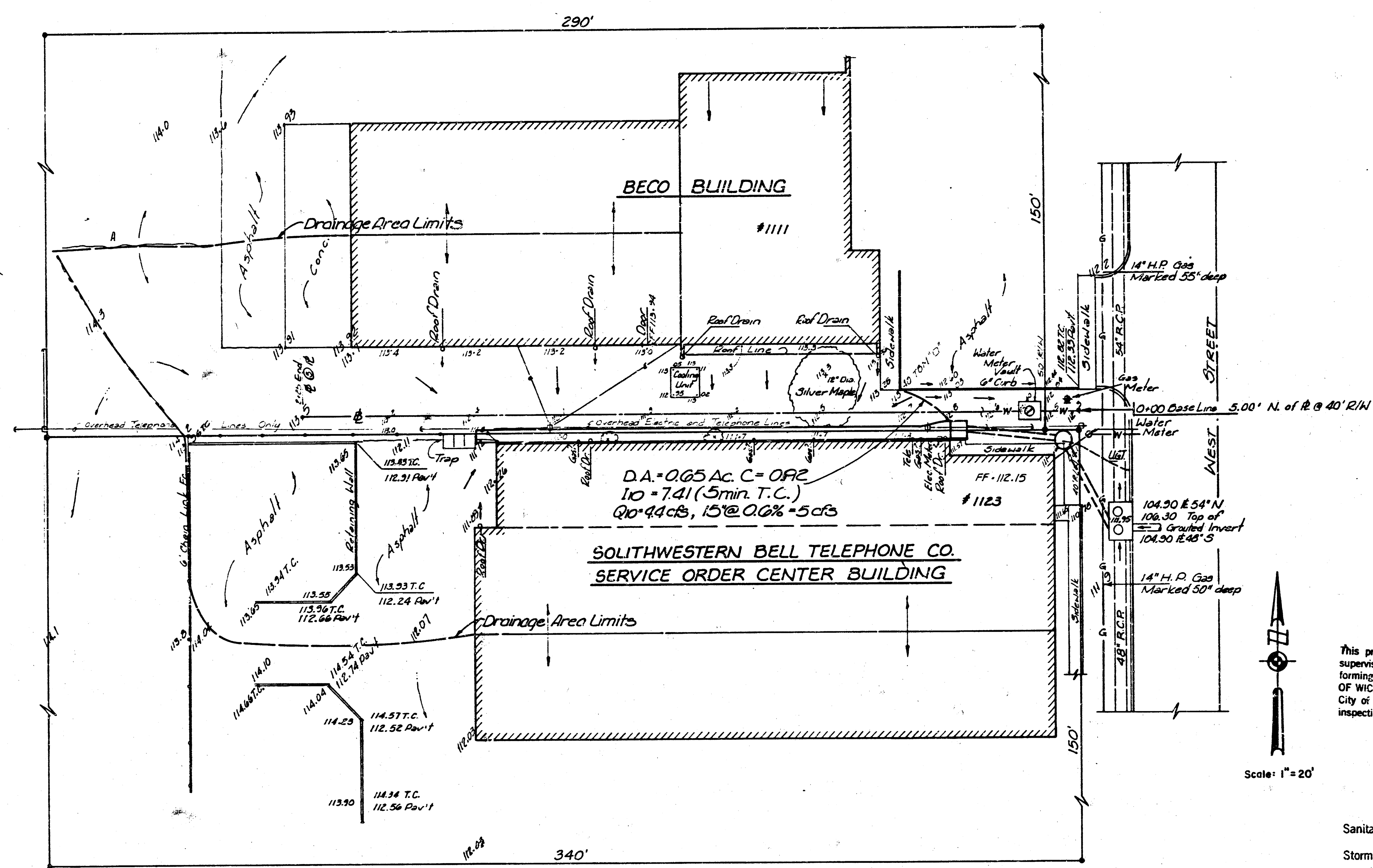


INDEX TO DRAWINGS

- | SHEET NO. | DESCRIPTION |
|-----------|-----------------------------------|
| 1. | TITLE SHEET |
| 2. | PLAN & PROFILE |
| 3. | DITCH INLET TYPE II & SLOPE DRAIN |
| 4. | SHALLOW MANHOLE TYPE "A" |
| 5. | MANHOLE FRAME & COVER DETAILS |

SOUTHWESTERN BELL TELEPHONE CO. WICHITA WEST STREET SERVICE ORDER CENTER DRAINAGE IMPROVEMENTS

CITY OF WICHITA, KANSAS
MICHAEL E. LINDEBAK — CITY ENGINEER



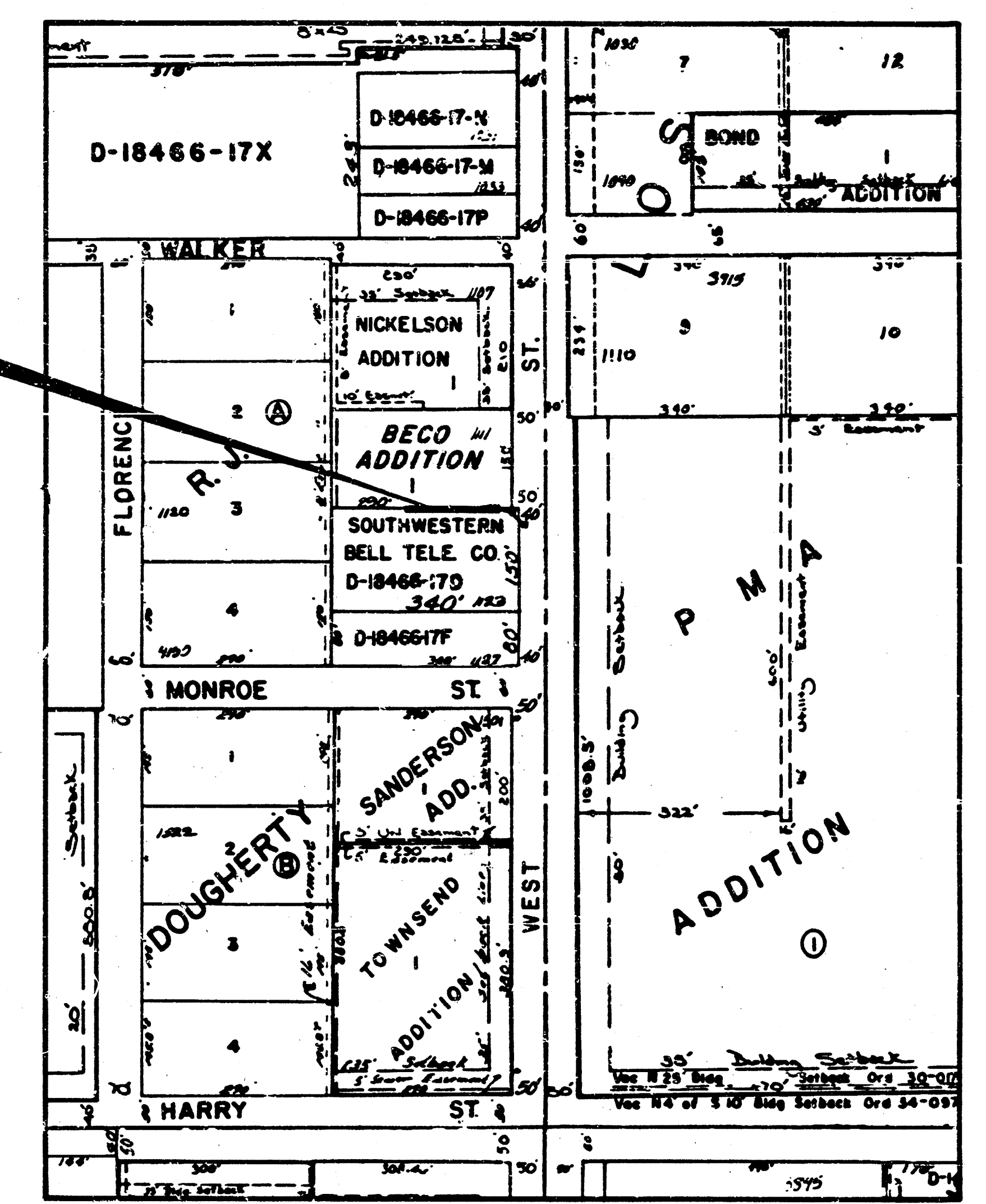
DRAINAGE MAP

PROJECT NO.
468-76-245-80001-000-000-077

OCTOBER, 1986

VanDoren Hazard Stallings
architects engineers planners
topeka • wichita • minneapolis • kansas city
Job No. 86-219-AO

PROJECT LOCATION



LOCATION MAP

LEGEND

- | | |
|---|-----------------------------|
| ⊕ | Fire Hydrant |
| ⊙ | Sign |
| ⊙ | Telephone Pole |
| ⊙ | Telephone & Power Pole |
| ⊙ | Power Pole & Down Guy |
| — | Water Line |
| ⊙ | Water Meter |
| ⊙ | Water Valve |
| — | Gas Line |
| ⊙ | Gas Meter |
| ⊙ | Gas Valve |
| — | Underground Telephone |
| — | Underground Power |
| — | Underground Tele. Conduit |
| — | Sanitary Sewer |
| — | Property or R.O.W. Line |
| — | Fence |
| — | Survey Base Line |
| ⊙ | Light Pole |
| ⊙ | Trees (Dia.) |
| ⊙ | Bush or Ornamental Tree |
| ⊙ | Shrubs or Hedge Row |
| ⊙ | Culvert |
| ⊙ | Curb or Comb. Curb & Gutter |

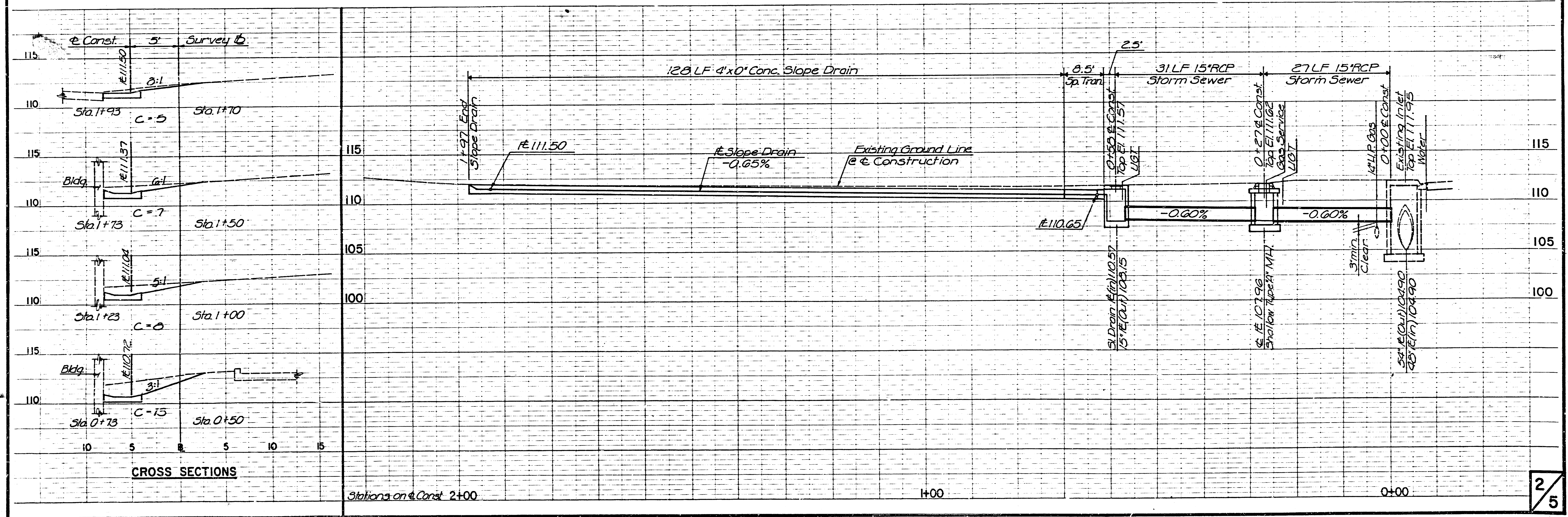
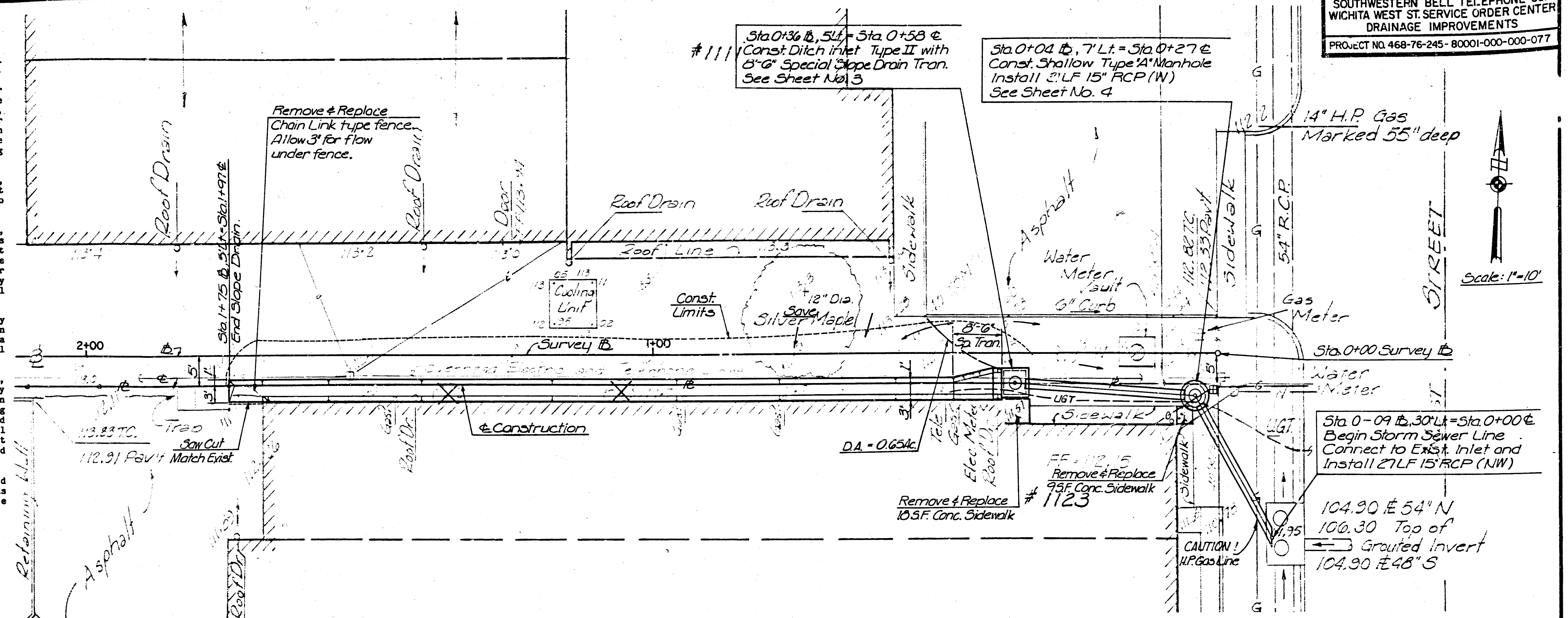
NOTE TO CONTRACTOR
This project will be constructed under the supervision of the CITY ENGINEER and conforming to the SPECIFICATIONS of the CITY OF WICHITA. The CONTRACTOR will pay the City of Wichita for all costs of plan review, inspection and bidding per contract.

APPROVED AS NOTED
By CITY ENGINEER OF WICHITA
Sanitary Sewers _____
Storm Sewers 10/13/86
Driveway Approaches _____
Water Mains _____
Per _____

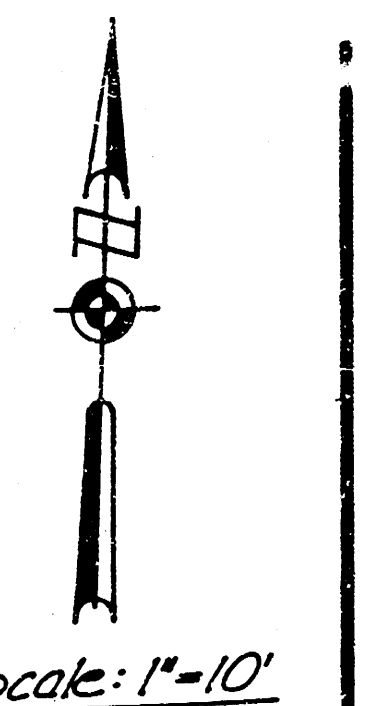
Note: All methods and materials for this Project shall conform to the Specifications of the City of Wichita.

GENERAL NOTES

1. All methods and materials for this project shall conform to the Specifications of the City of Wichita.
2. The Contractor shall notify all utility owners prior to work in any area where existing utilities will be uncovered to allow the utility owner to locate, adjust, relocate and to inspect uncovering of their utility. Any utility damaged by his construction operations shall be repaired or replaced by the Contractor at no cost to the City or the Consulting Engineer.
3. The Contractor shall coordinate the tie back, protection of and/or relocation of power poles, light poles and appurtenances with K&E. 2 weeks notice to K&E is required.
4. The Contractor shall be responsible for repairing, replacing, relocating and/or reconnecting utilities for which the various utility companies are not responsible. Such work shall include, but not be limited to, utility service lines and sanitary sewer drains. The Contractor shall perform such utility work in accordance with applicable codes; cost shall be incidental to the project.
5. The Contractor shall be required to re-establish any property pins which are damaged by his construction operations. Such pins shall be re-established by a licensed land surveyor or a licensed professional engineer in accordance with State laws.
6. All adjacent buildings, structures, parking lots, drives, street pavements, utility lines, utility structures and appurtenances other than those shown for replacement shall be protected from damage during construction of the project. Any removal of damaged items beyond the limits shown on the drawings shall be replaced by the Contractor at no additional cost to the Owner. Sheeting and shoring may be required to protect the items mentioned above.
7. All removal of existing fences, rubble, clearing and grubbing trees, brush, debris and any other items which might interfere with construction shall be incidental to the project.

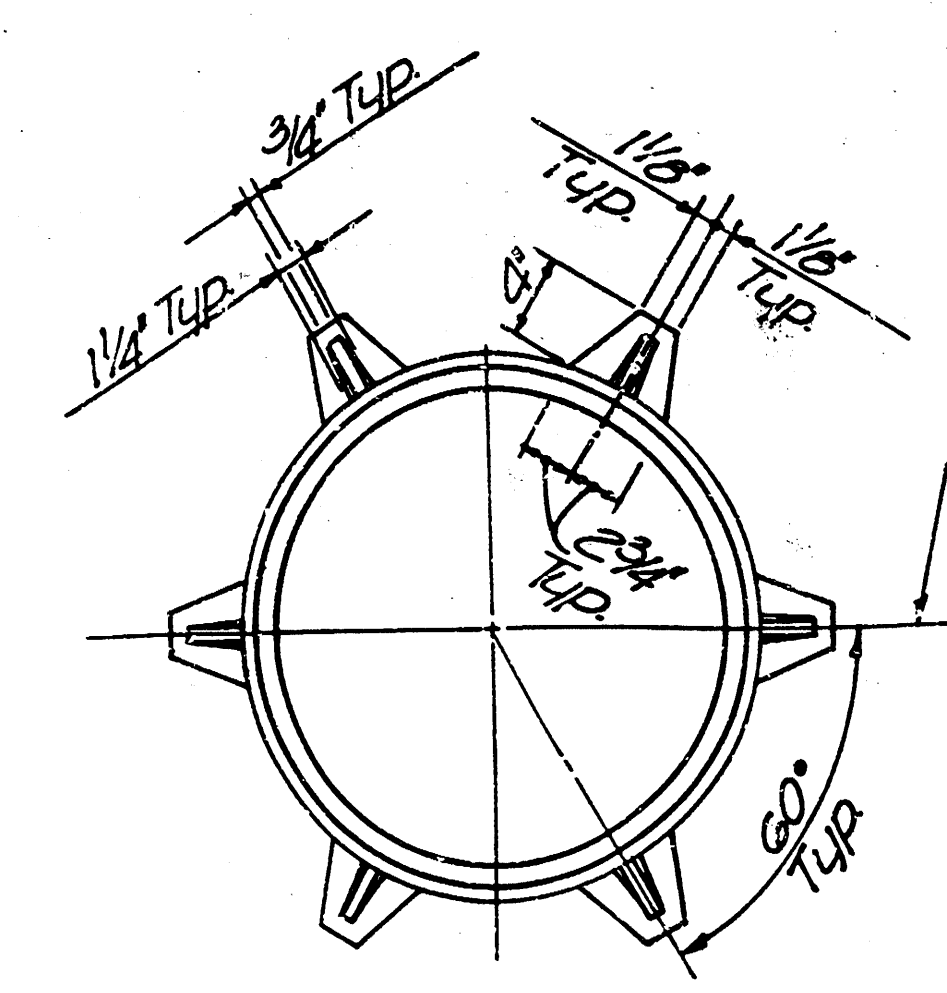


SOUTHWESTERN BELL TELEPHONE CO.
WICHITA WEST ST. SERVICE ORDER CENTER
DRAINAGE IMPROVEMENTS
PROJECT NO. 468-76-245 - 80001-000-000-077



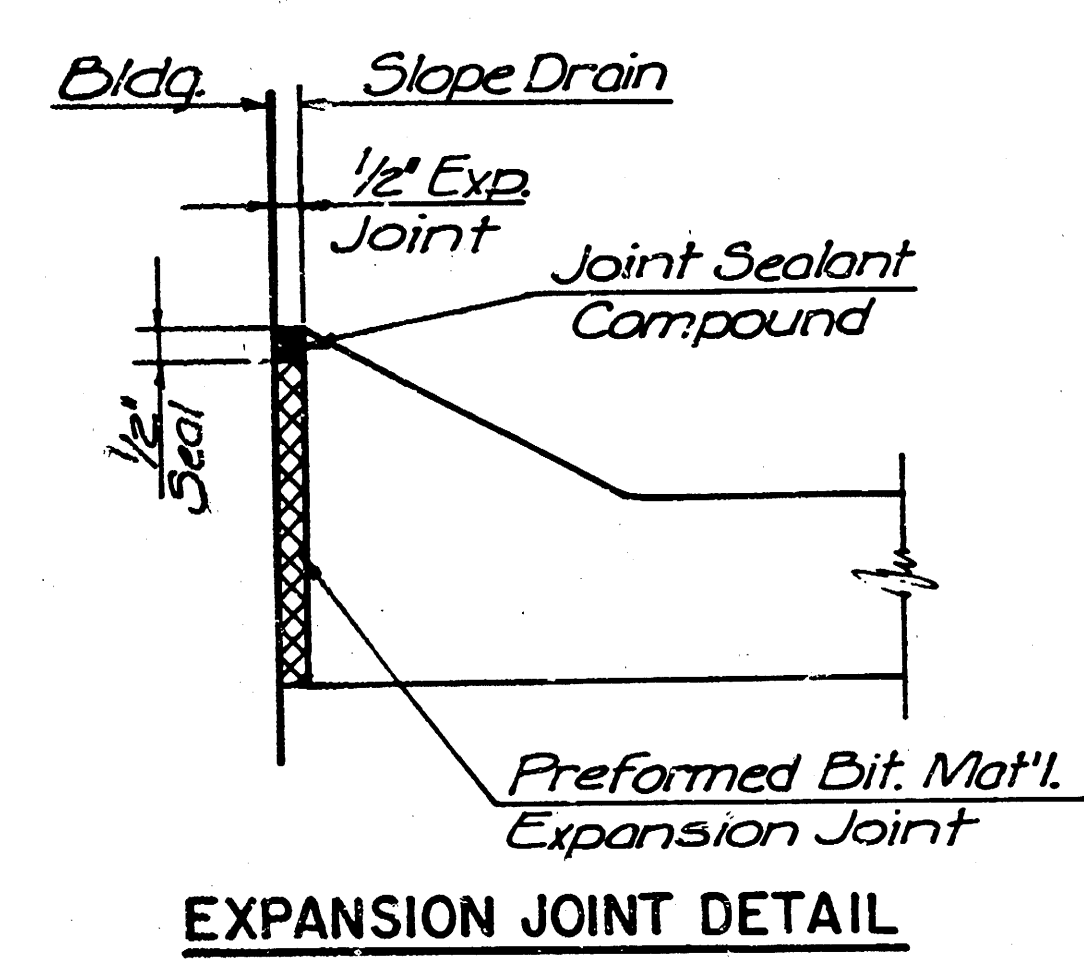
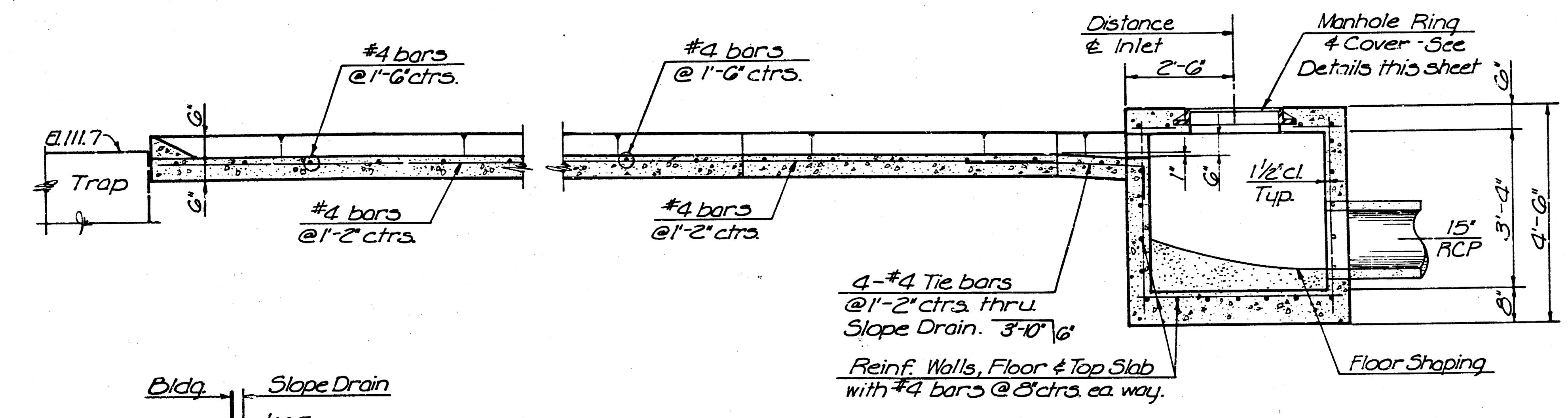
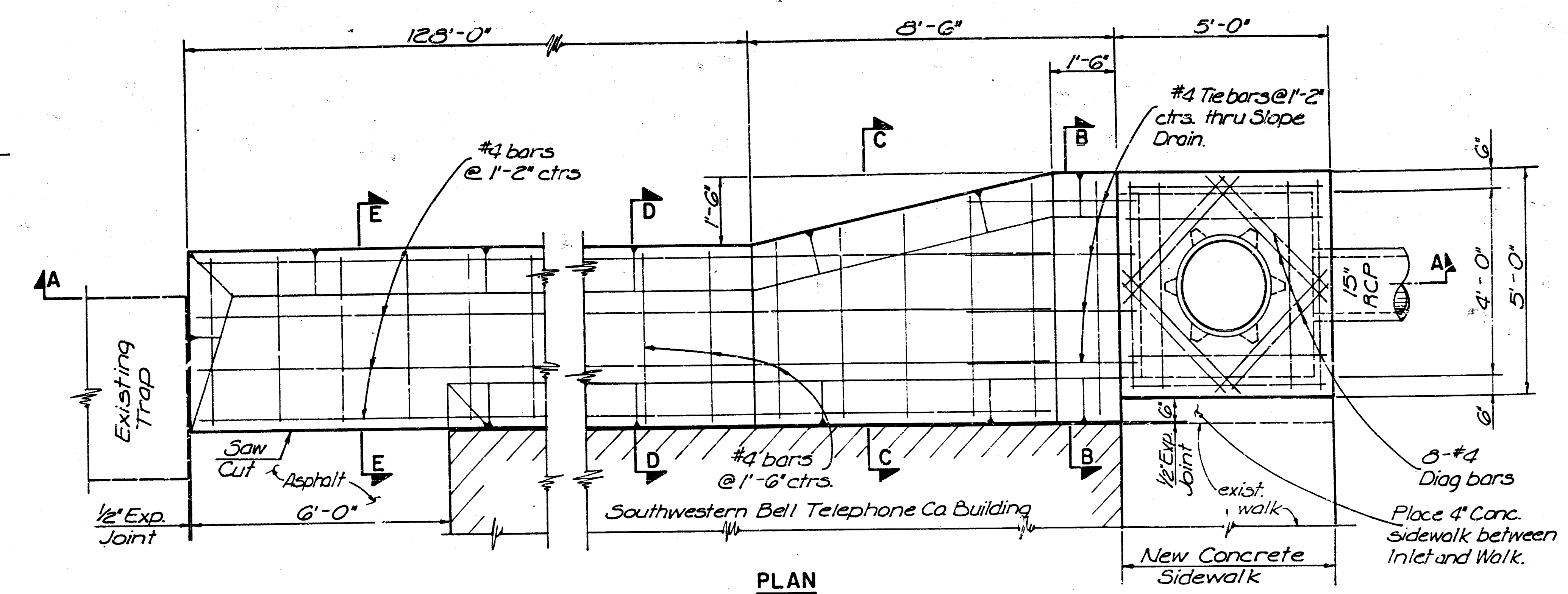
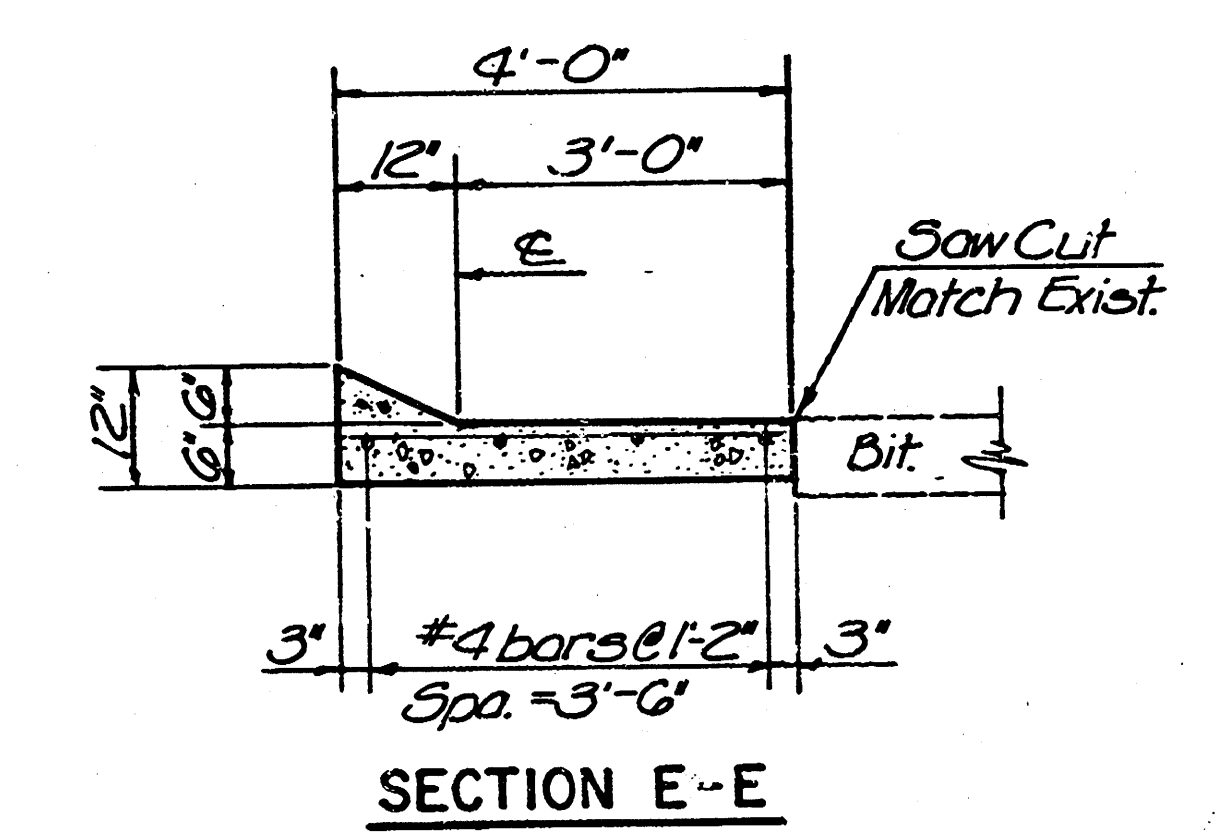
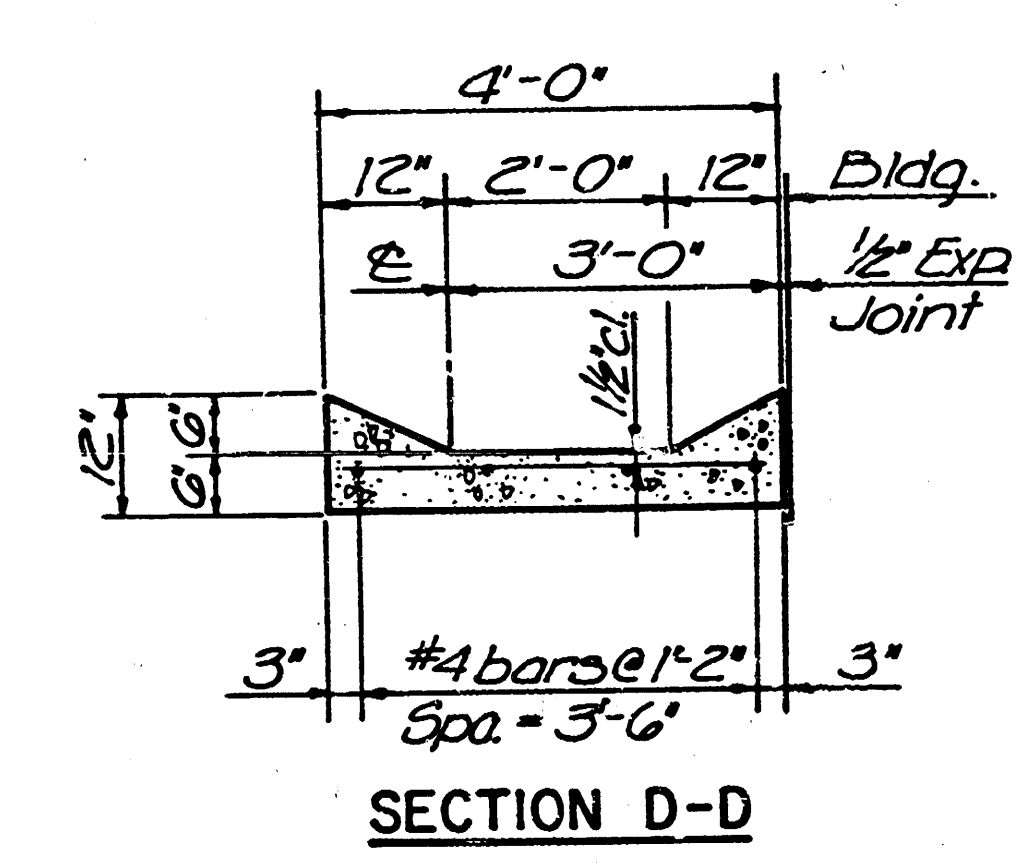
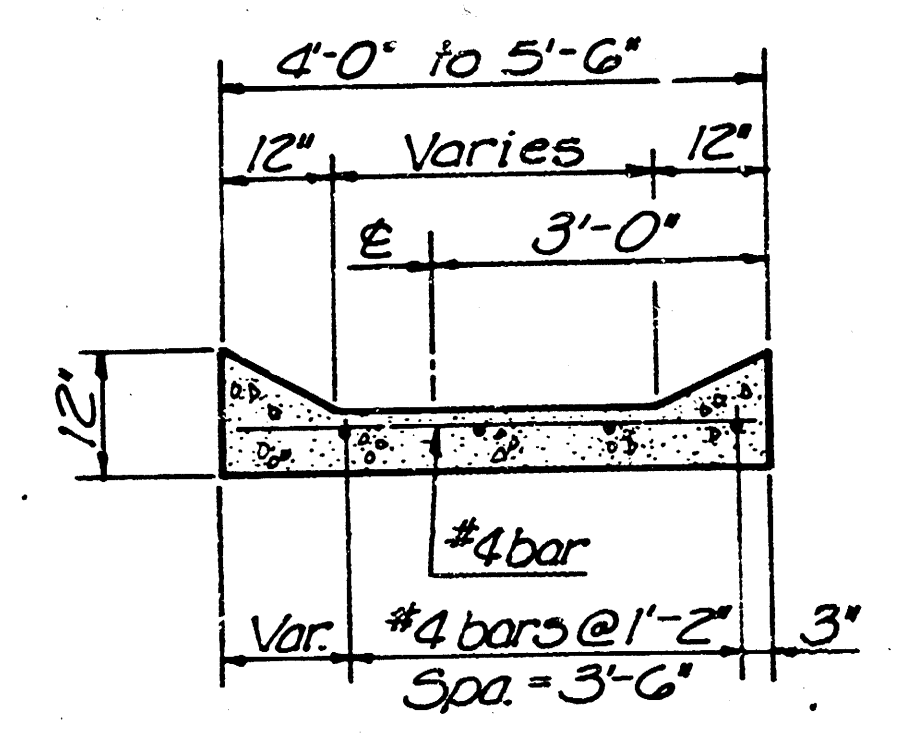
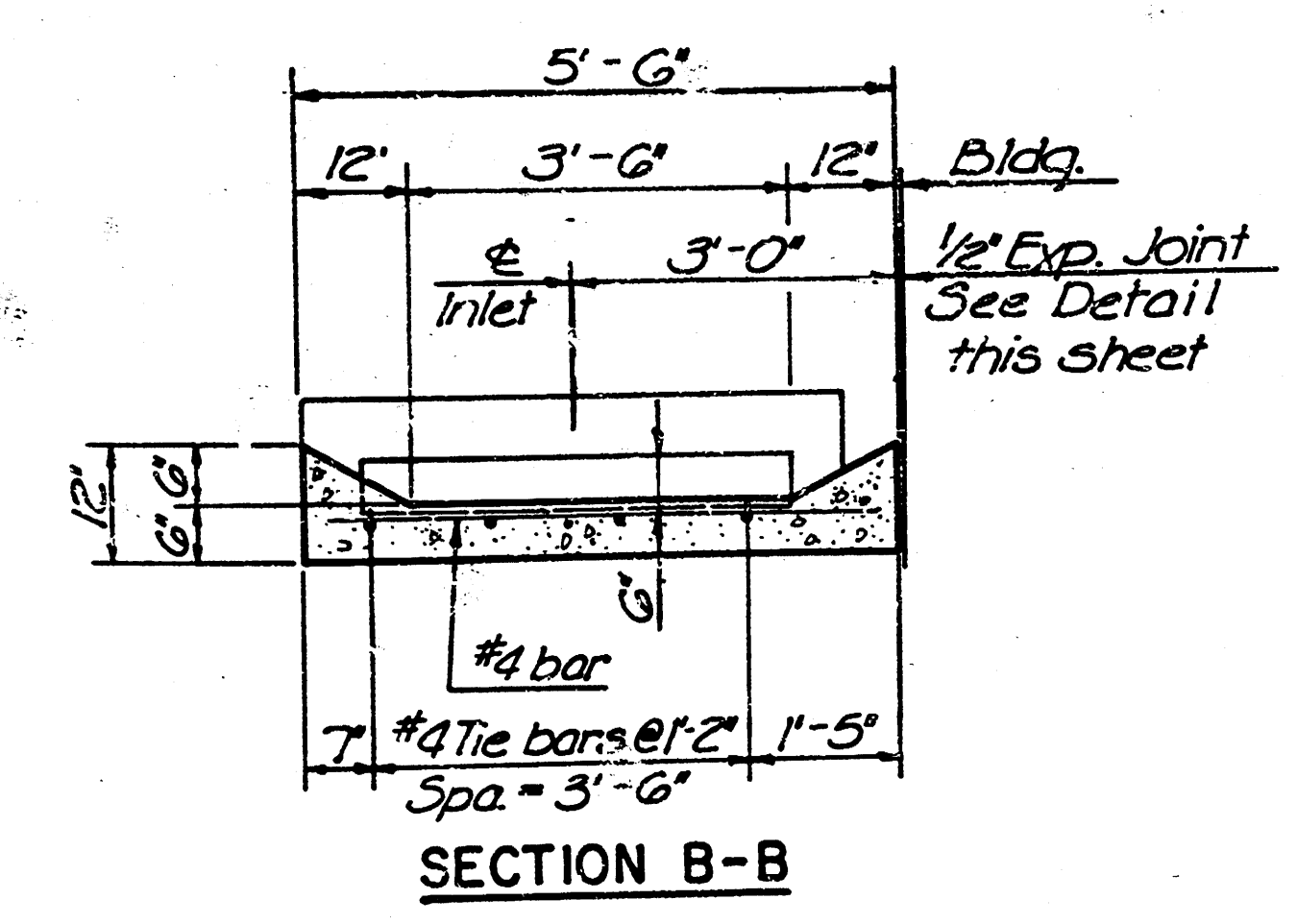
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CAST IRON MAN HOLE RING
Weight=180# Scale: 1"=1'-0"

Position Ring such that this line is parallel with & const.



SECTION A-A

GENERAL NOTES

- Concrete shall be City of Wichita standard paving mix, proportioned and mixed per Pages 21 and 22 of City of Wichita's "Concrete Paving" specification.
- All reinforcing to meet ASTM A615-60,000, welded wire fabric shall meet ASTM A185.
- Reinforcement of the inlet walls, may at the contractor's option, be reinforced with woven wire fabric. Such welded wire fabric inlet wall reinforcing shall be WWF 3 x 6 - W11 x W11 supplied in 16'-0" long by 8'-0" wide flat sheets. (Approximately 232 lbs./100 sq.ft. or 296#/sheet).
- Welded wire fabric splices shall be made with a minimum of 3 wire spacing lap (i.e. 18" horizontal, 9" vertical lap lengths).
- Concrete protection for reinforcing 1-1/2" unless noted otherwise.
- All concrete exposed edges shall be finished with an edging tool.
- Floors of inlets shall be shaped with 8 sack sand mix concrete to increase hydraulic efficiency such that the inlet will be self-cleaning between all inlet and/or outfall pipe(s).
- Reinforcing bars shall be field cut to clear pipes and manhole ring(s).
- Plane of weakness in slope drain to be constructed at not to exceed 10'-3" intervals.

SOUTHWESTERN BELL TELEPHONE CO.
WICHITA WEST STREET SERVICE ORDER CENTER
DRAINAGE IMPROVEMENTS



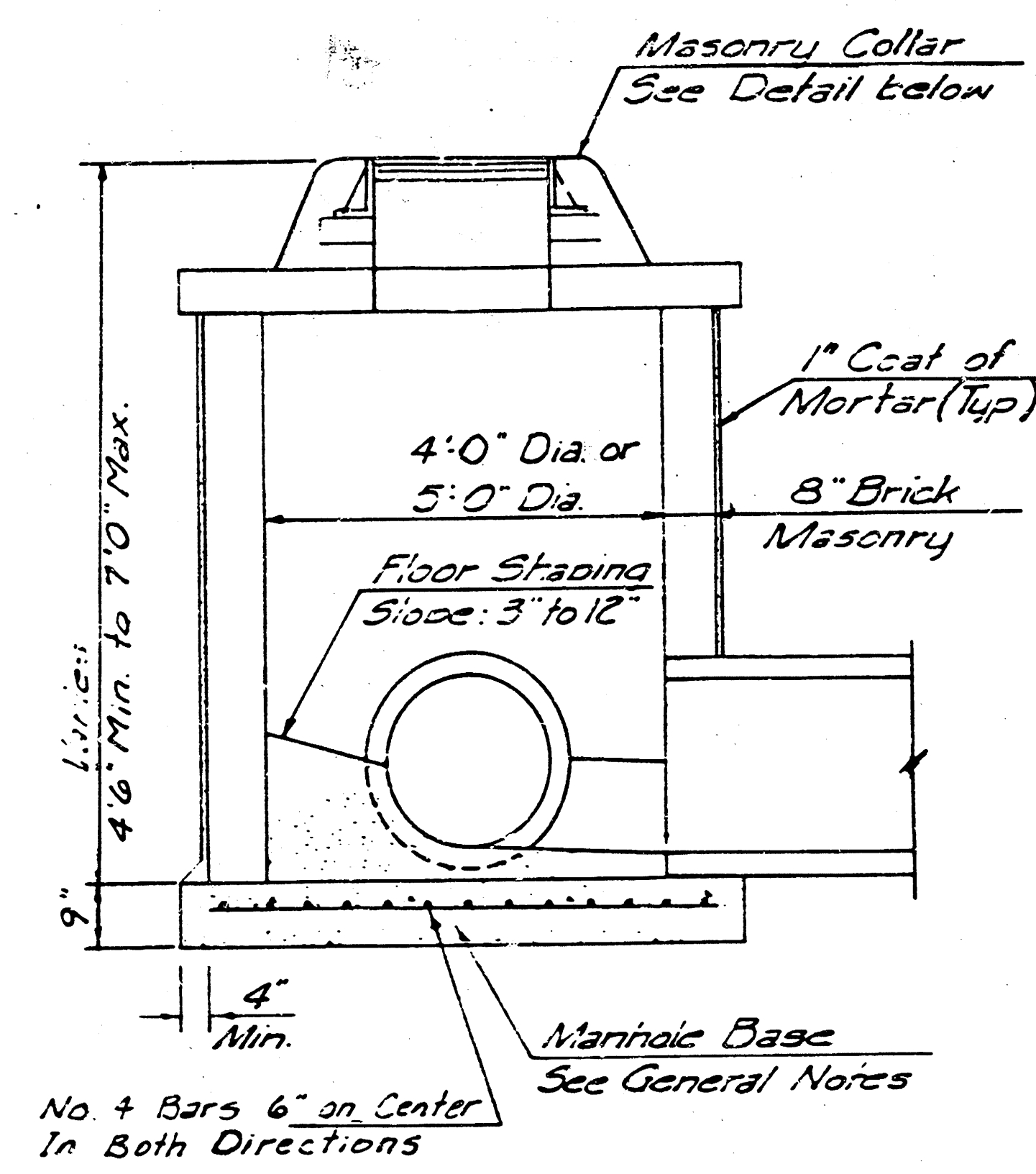
Van Doren Hazard Stallings
Architects - Engineers - Planners
Topeka - Wichita - Minneapolis - Kansas City

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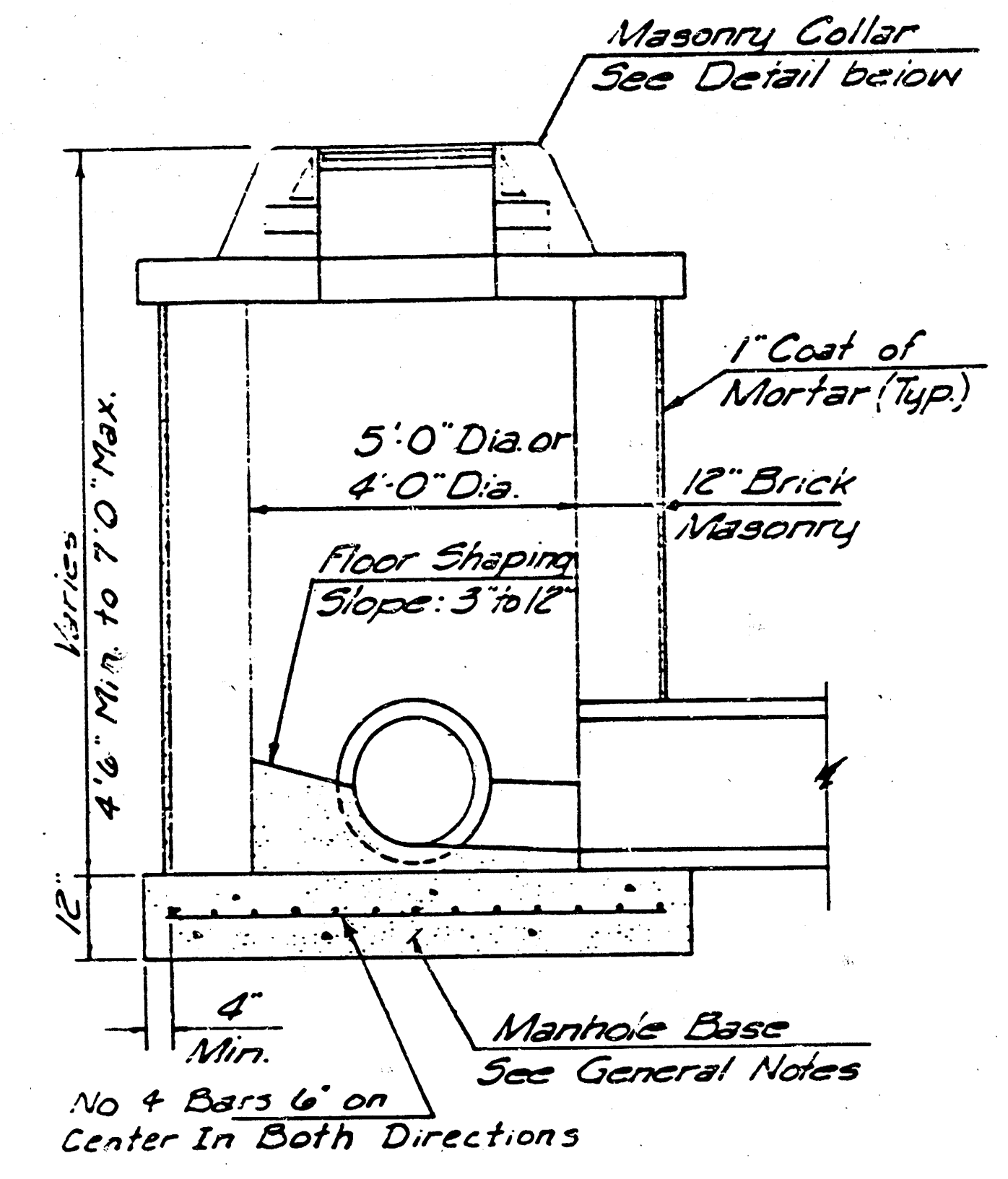
3/5

22x36

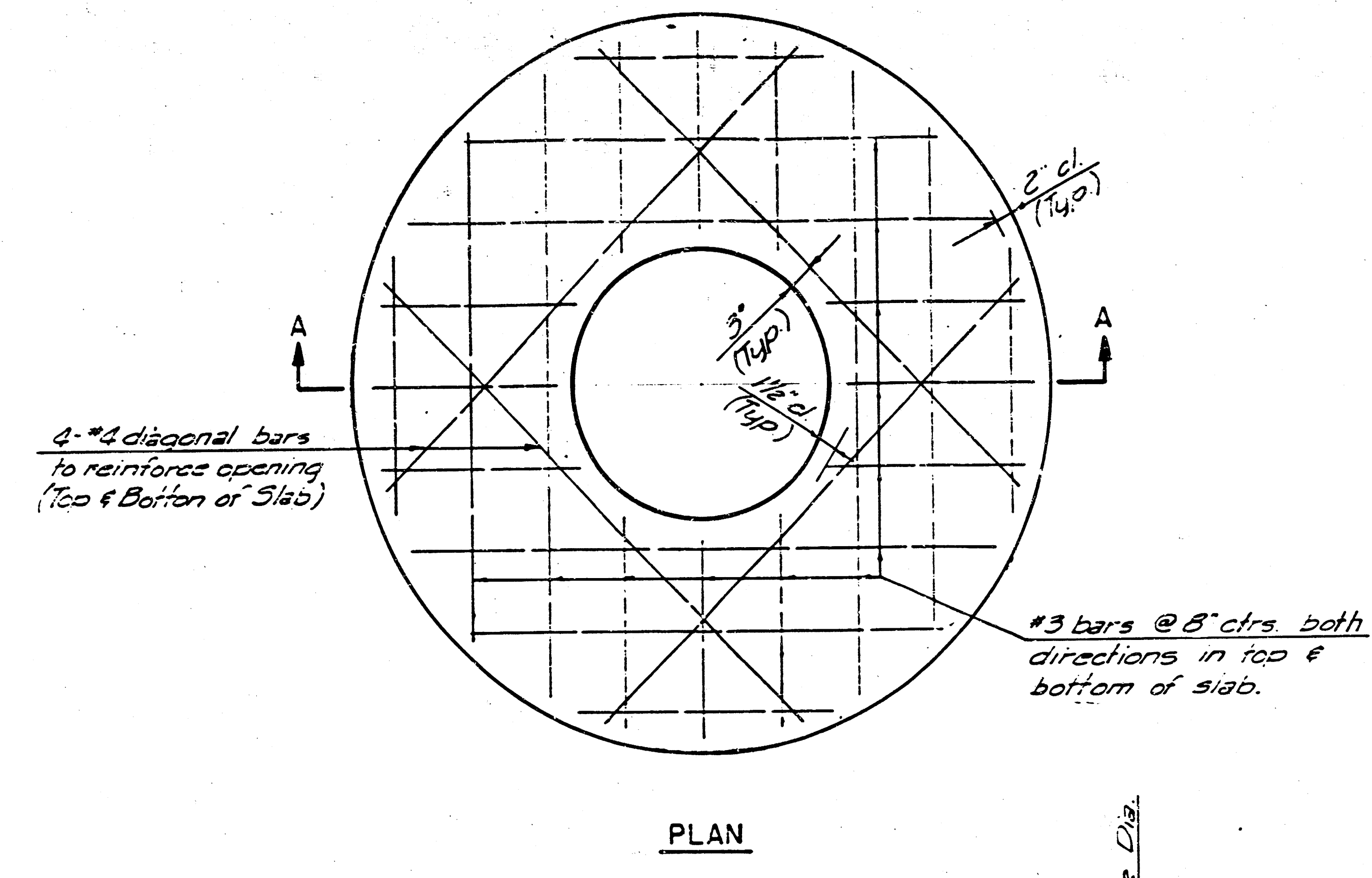
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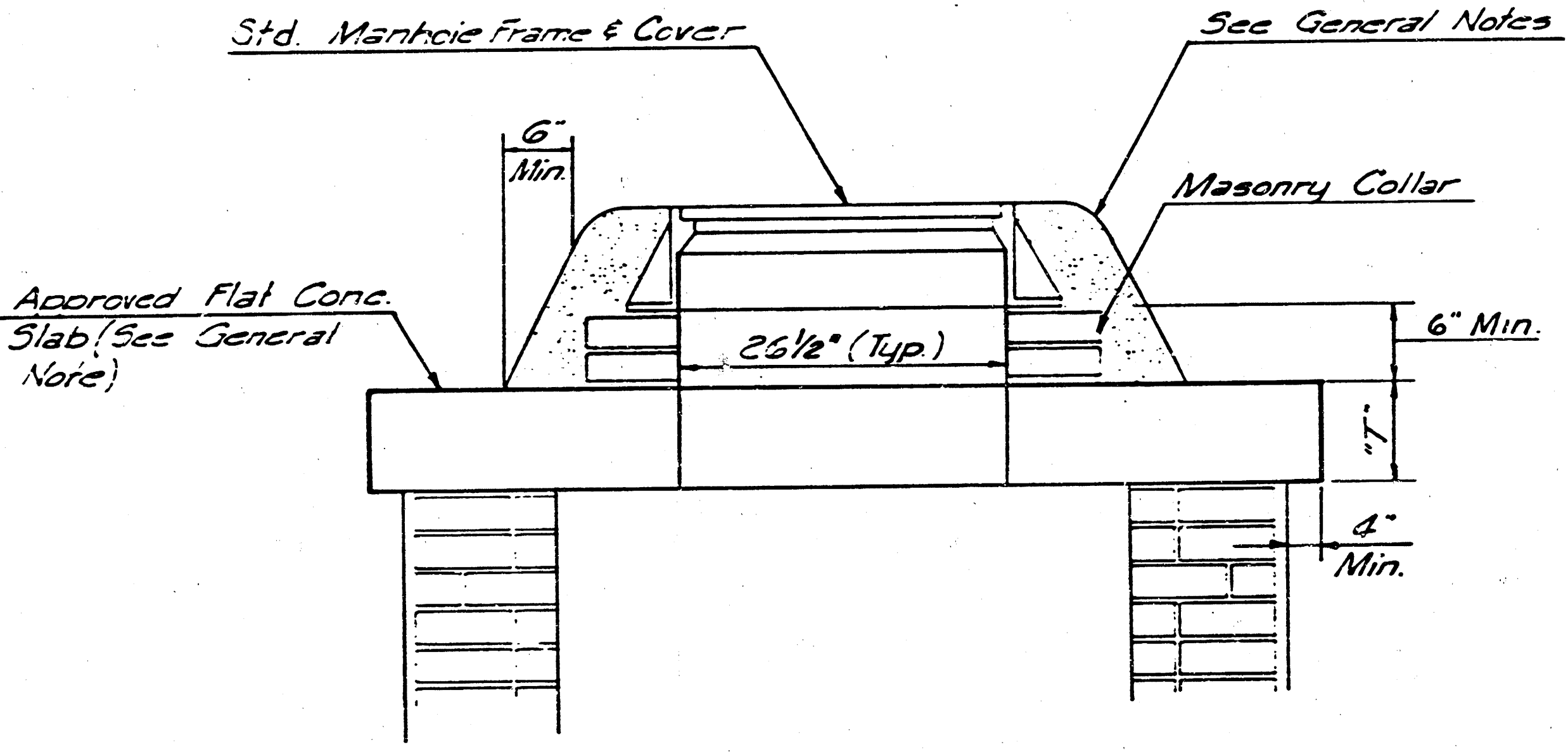
SHALLOW TYPE "A" MANHOLE



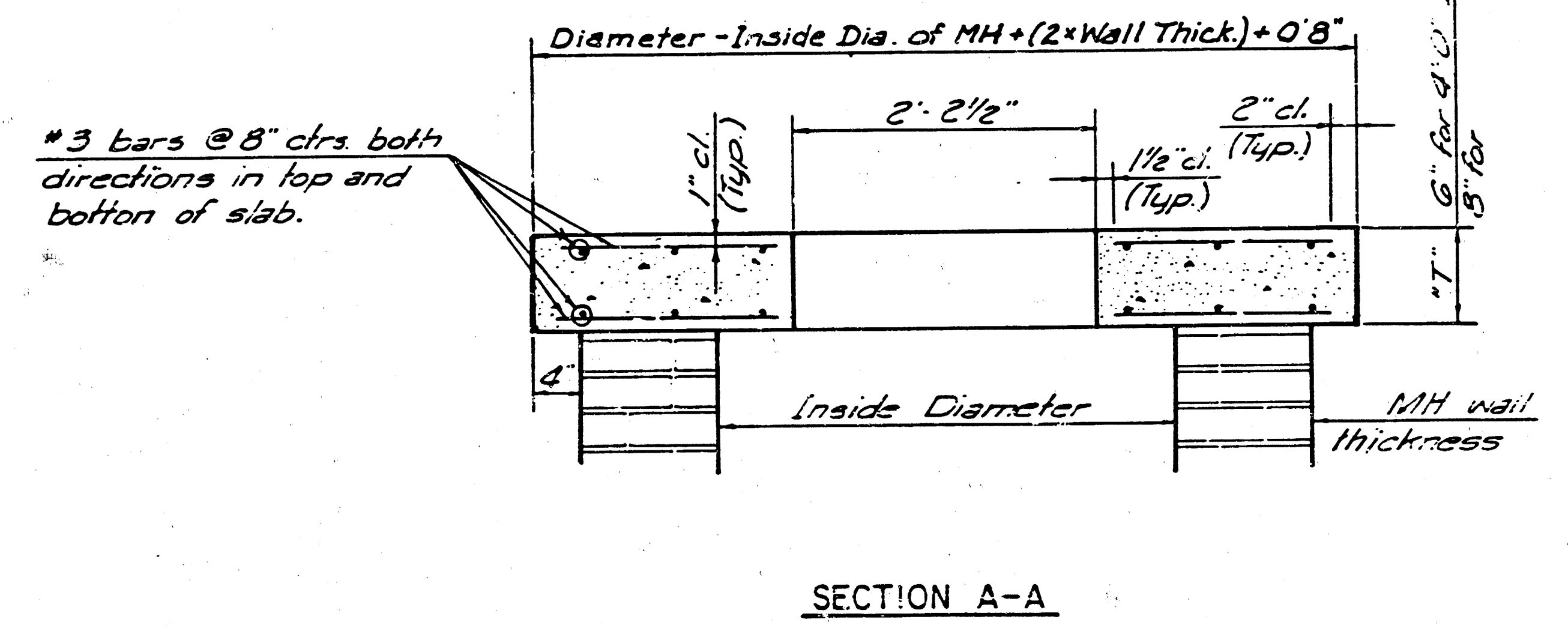
SHALLOW TYPE "B" MANHOLE



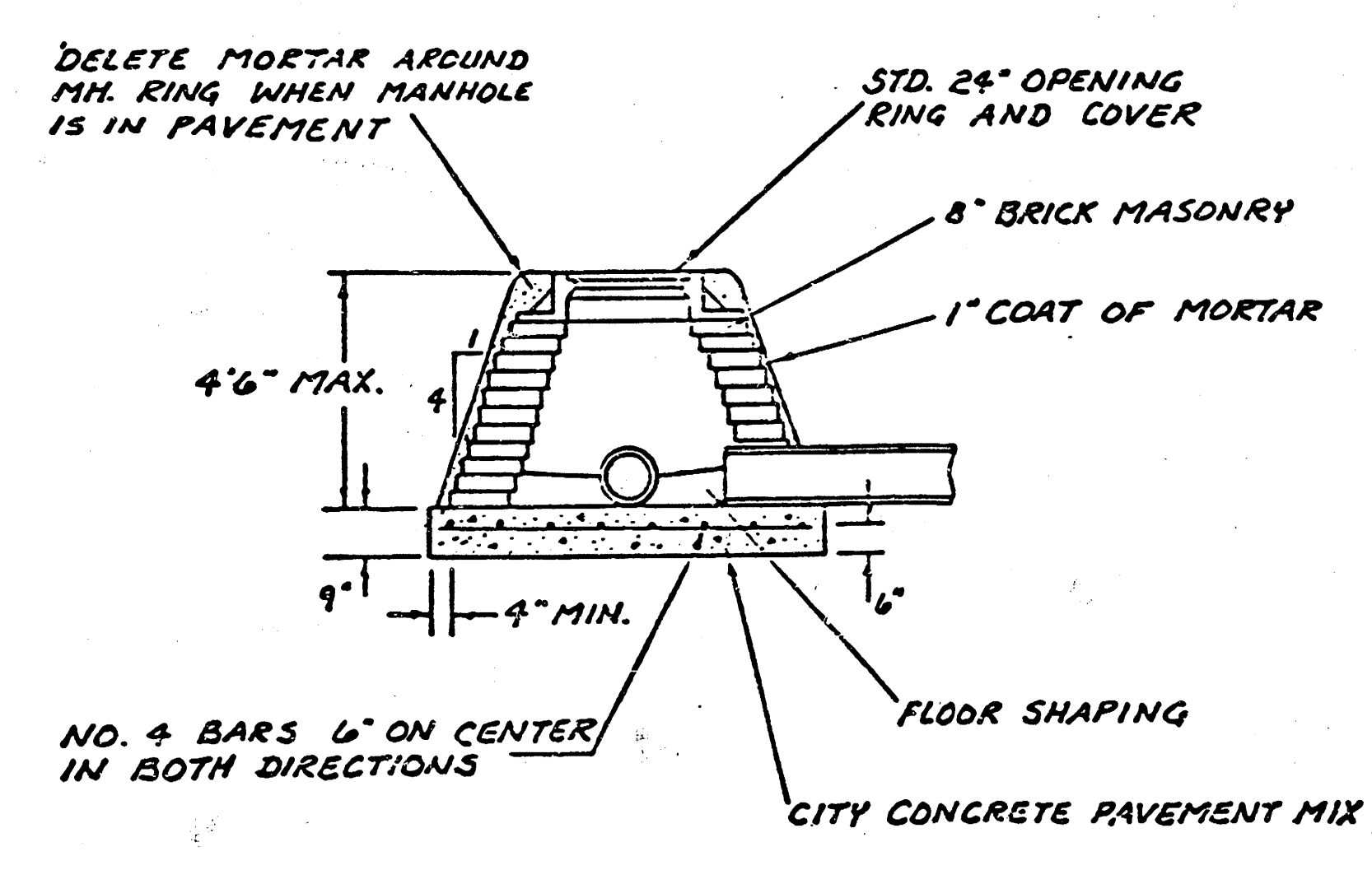
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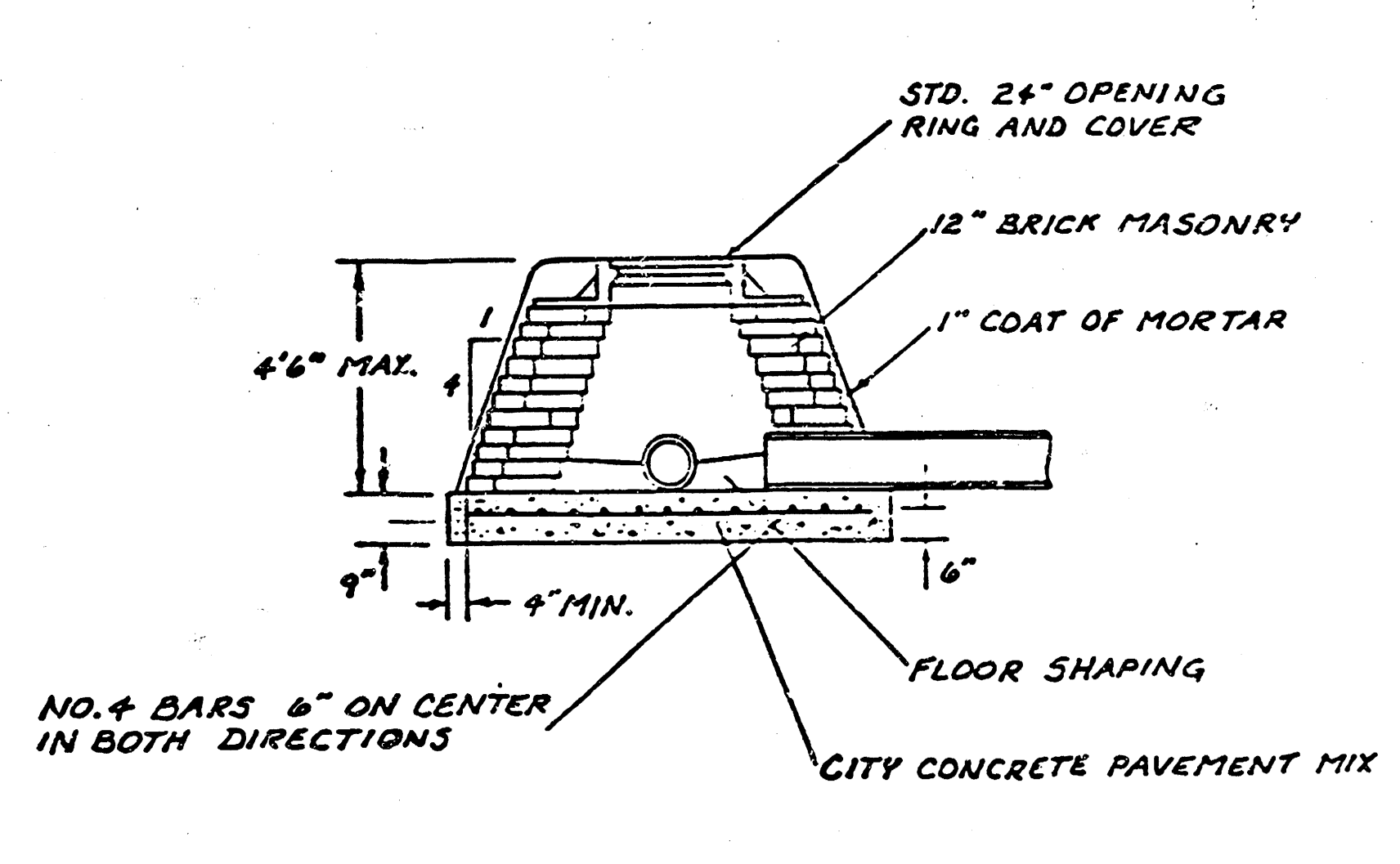
MASONRY COLLAR DETAIL



SECTION A-A
FLAT CONCRETE SLAB DETAILS



SPECIAL SHALLOW TYPE "A" MANHOLE



SPECIAL SHALLOW TYPE "B" MANHOLE

- GENERAL NOTES
1. 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.
 2. 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.
 3. 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.
 4. 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.
 5. 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.
 6. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
 7. 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.

CITY OF WICHITA, KANSAS
STANDARD SHALLOW MANHOLES
TYPE 'A'

PROJECT NO. 468-76-245-80001-000-000-077

Drawn by _____ Date _____
Checked by _____ Date _____
Job No. _____

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MANHOLE FRAME AND COVER DETAIL

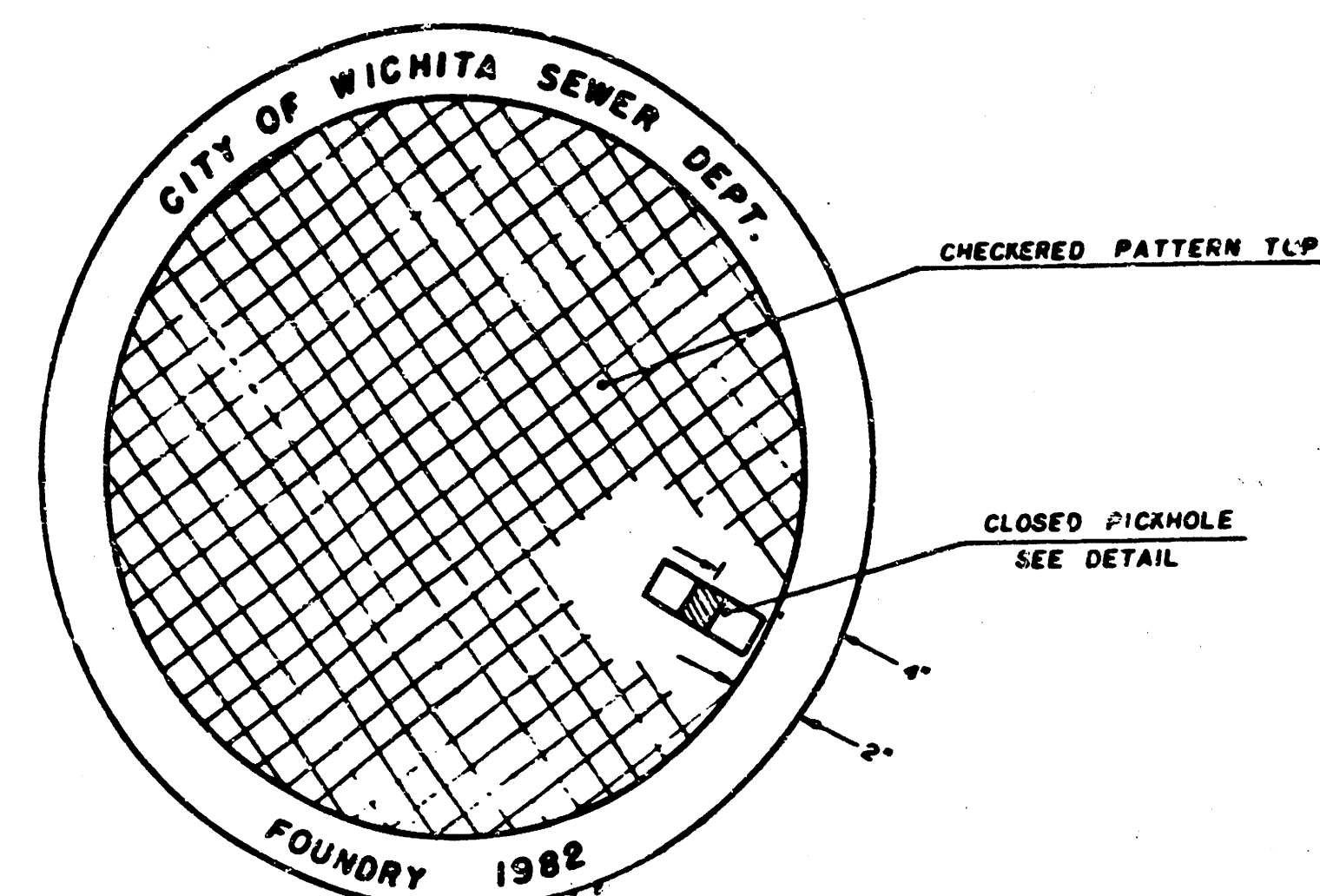
ADOPTED AS STANDARD DESIGN

BY

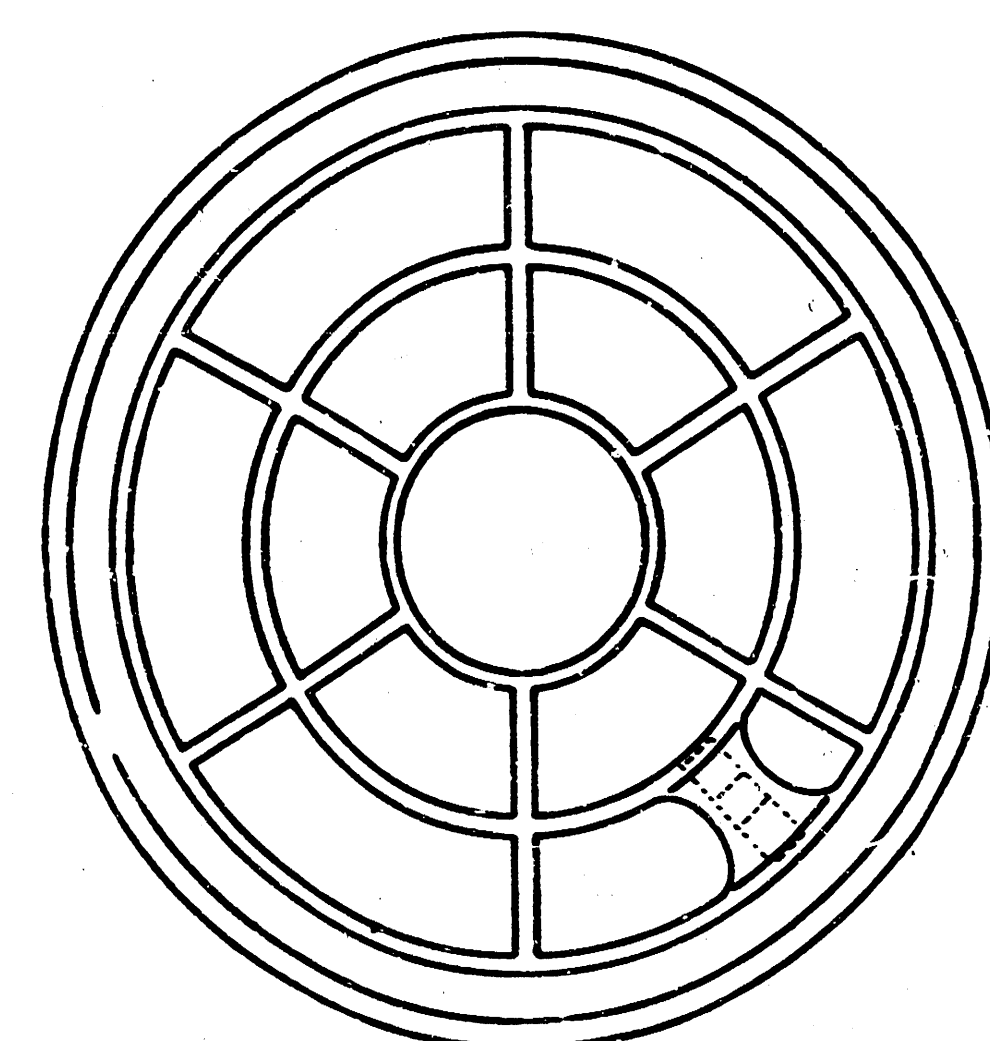
City of Wichita, Kansas

MANHOLE COVER

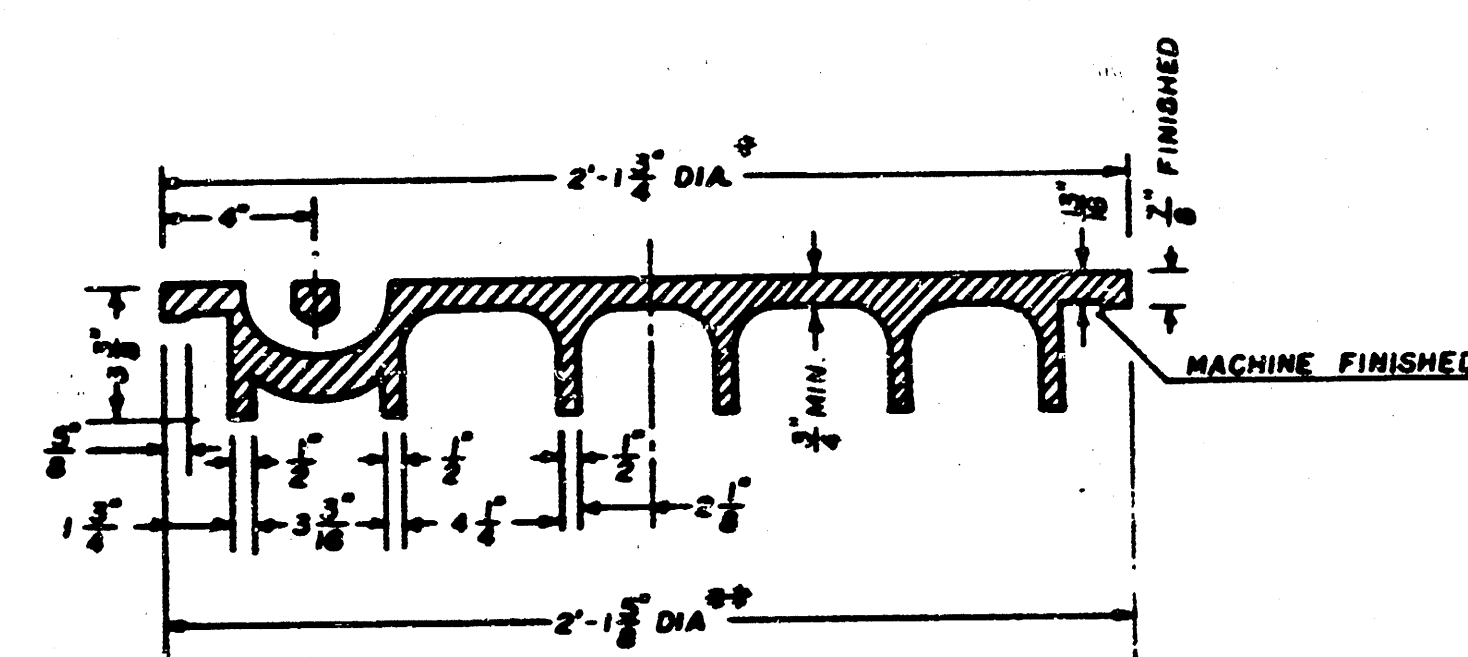
Weight: 180 Lbs.



TOP VIEW



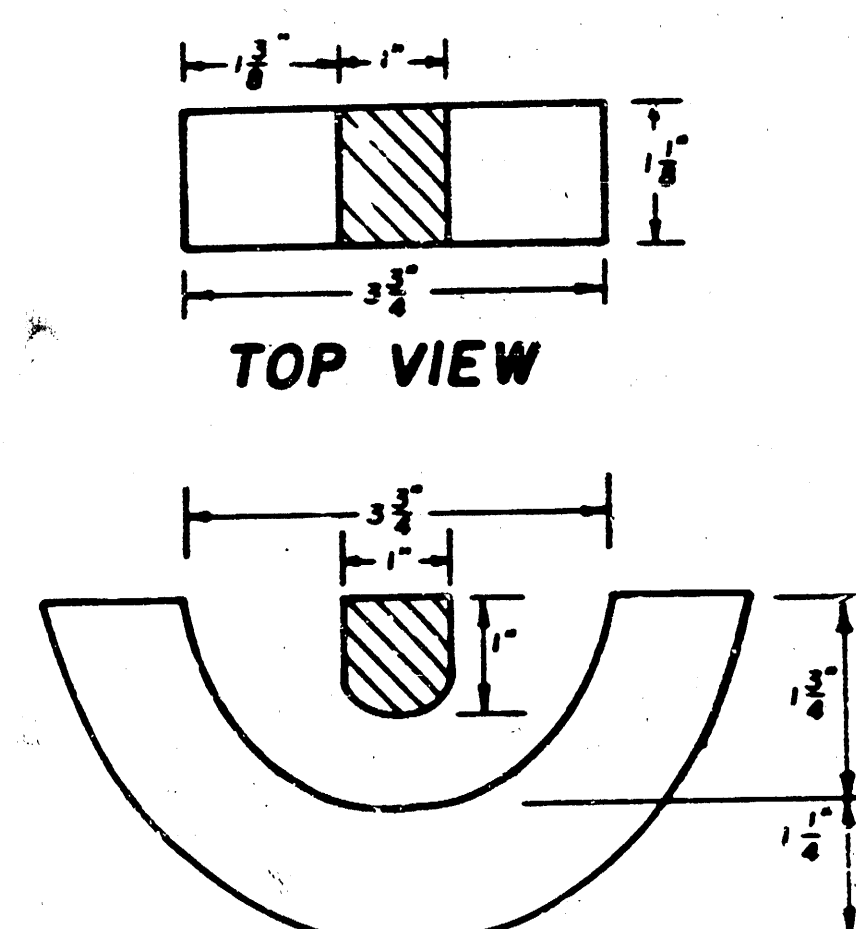
BOTTOM VIEW



SECTION VIEW

* OUTSIDE DIA. TOP OF COVER
** OUTSIDE DIA. BOTTOM OF COVER

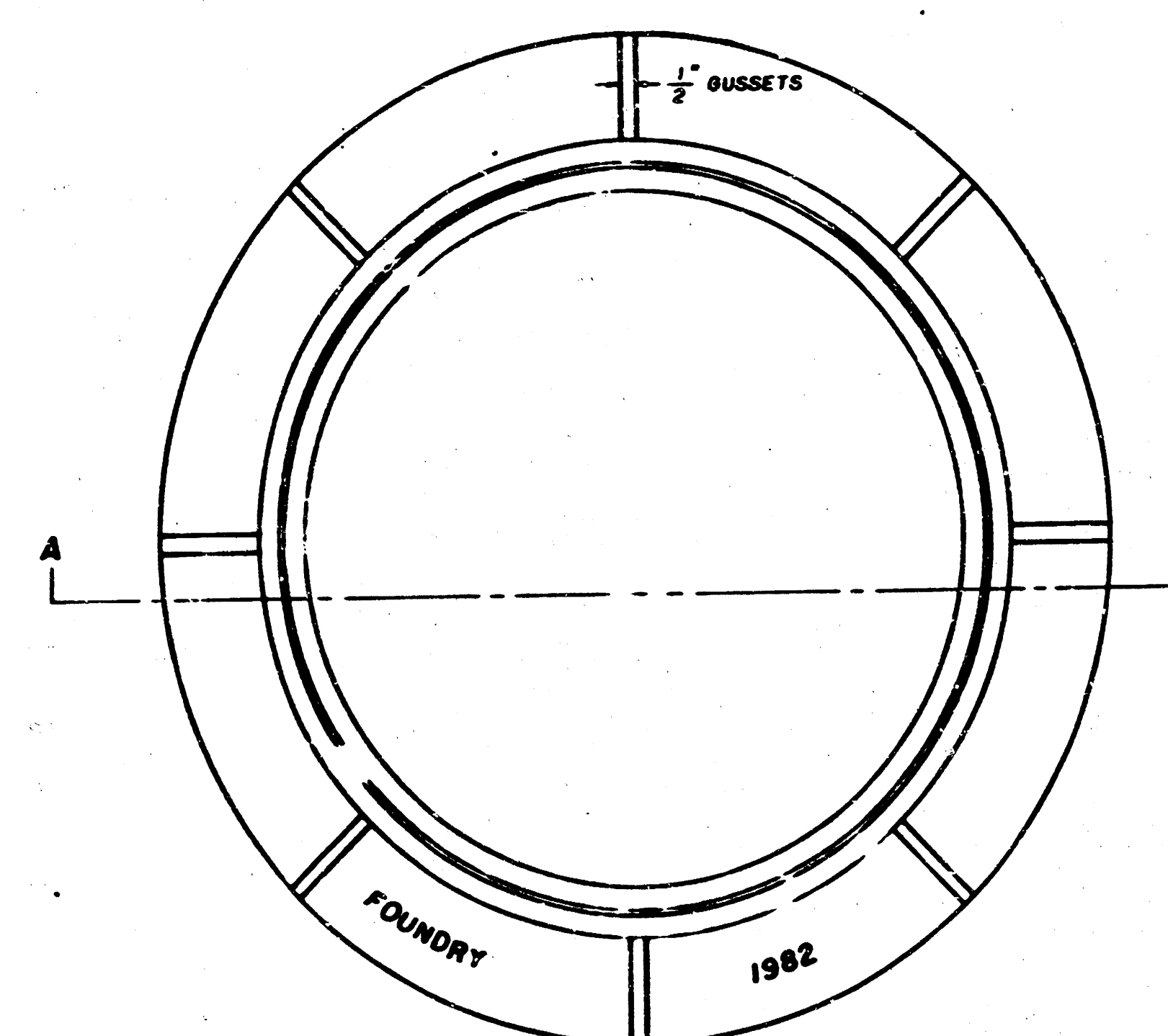
PICKHOLE DETAIL



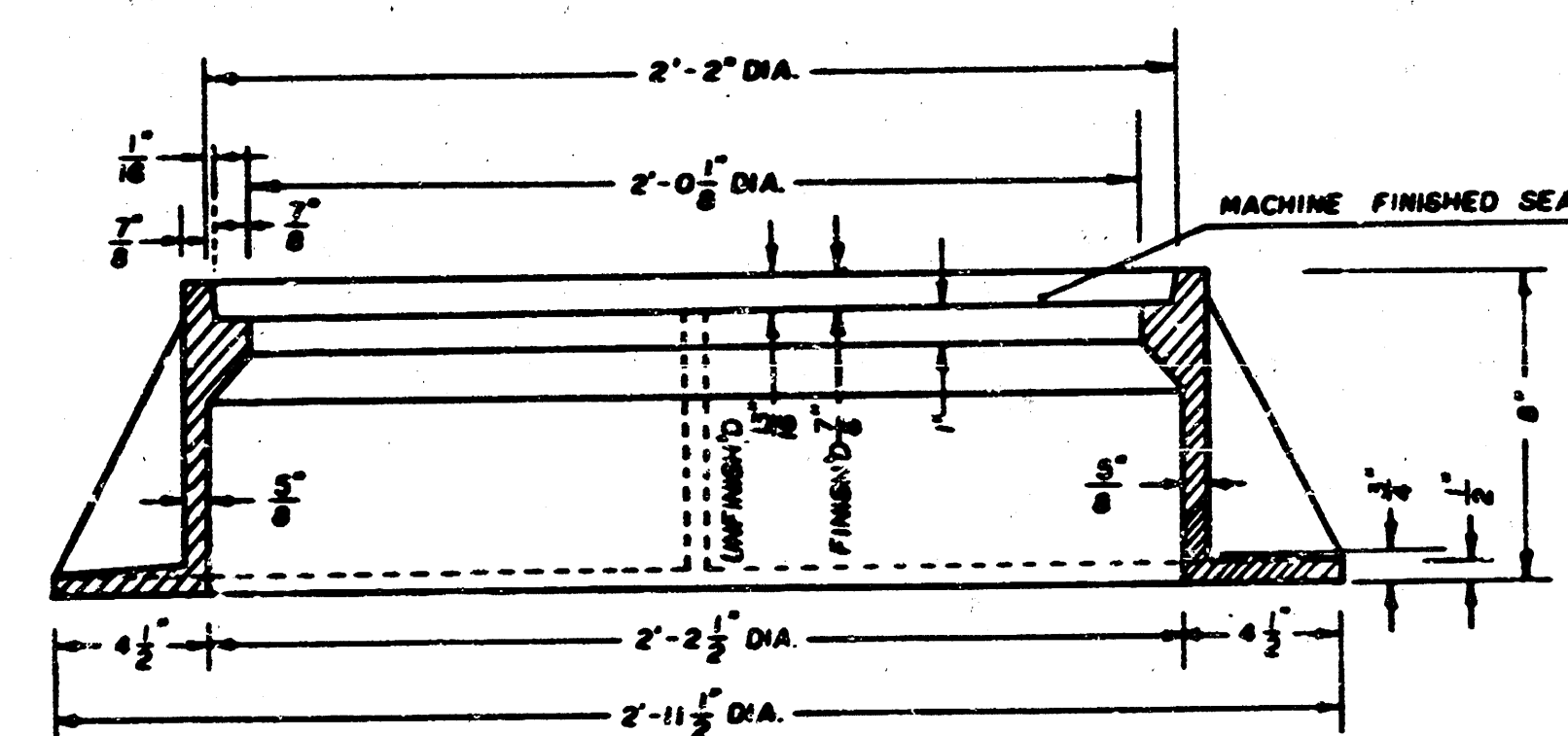
SECTION VIEW

MANHOLE FRAME

Weight: 240 Lbs.



TOP VIEW



SECTION A-A

GENERAL NOTES

1. 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 UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.
2. MANHOLE CASTINGS SHALL BE COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.
3. 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.
4. 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 THAT THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.
5. 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" 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.