

CITY OF WICHITA, KANSAS

STORM WATER SEWER NO. 261

(CHERRY CREEK HILLS)

PROJECT NO. 468-76-245-81342-000-000-001

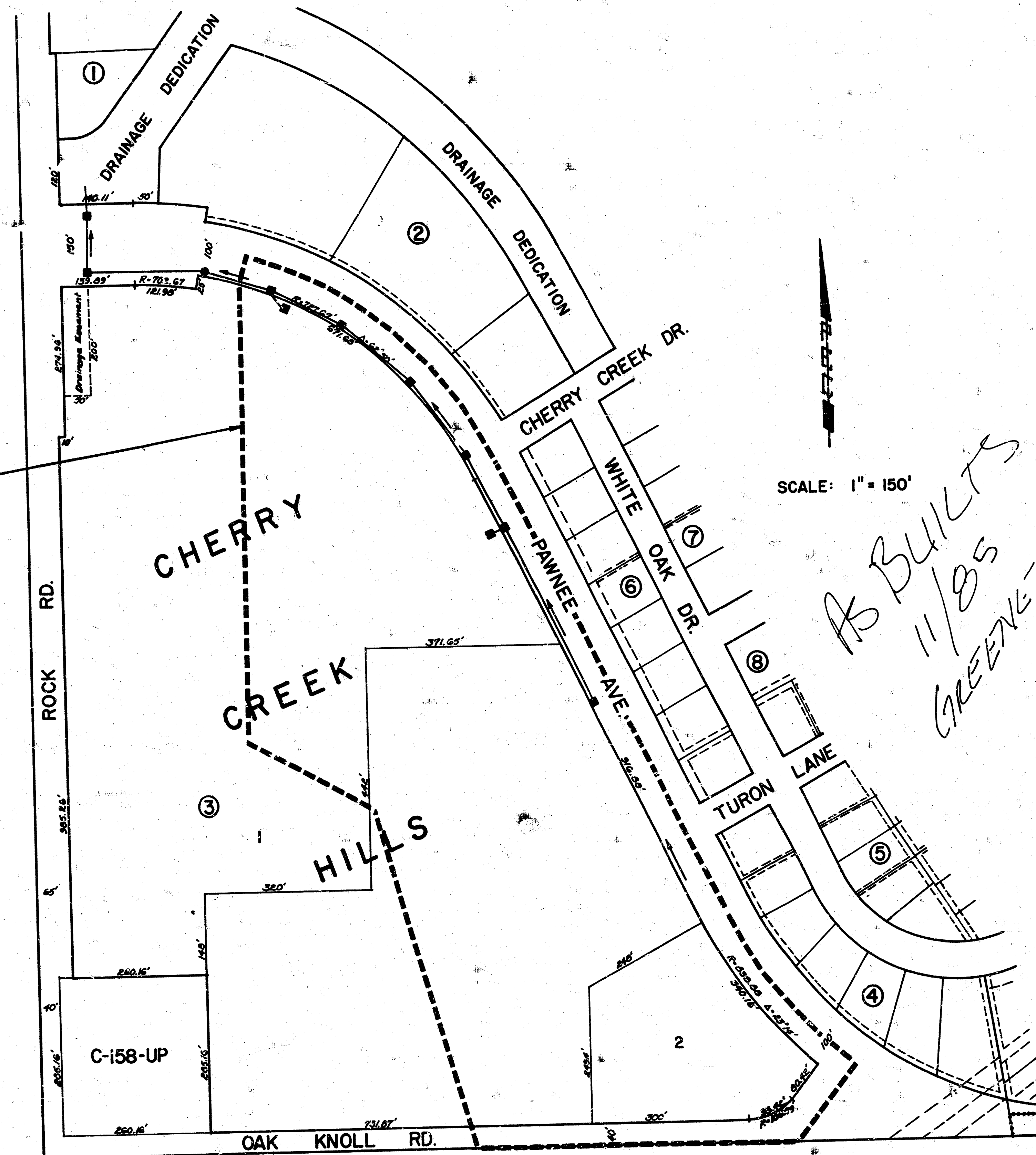
INDEX OF SHEETS

1. Title Sheet
- 2-4. Plan & Profile
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6. Type I Curb Inlet (10' Opening)
7. Flume Inlet (Type I)
8. Trench Inlet Details
9. Shallow Type "B" Manhole
10. Manhole Frame and Cover Detail

STORM WATER SEWER NO. 261
BENEFIT DISTRICT

LEGEND

- BENEFIT DISTRICT BOUNDARY
- DRAINAGE FLOW DIRECTION
- PROPOSED INLET
- PROPOSED MANHOLE



MICHAEL E. LINDEBAK, P.E., CITY ENGINEER
JULY, 1984

GENERAL NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR SHALL 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 OR A LICENSED PROFESSIONAL ENGINEER IN ACCORDANCE WITH APPLICABLE STATE LAWS.

UTILITIES: 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 PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED.

PRIVATE UTILITY SERVICE LINES, POLES, VALVE BOXES, METERS, ETC. ARE TO BE ADJUSTED BY OTHERS UNLESS THE PLANS CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES AT LEAST TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCEMENT OF WORK AND SHOULD REQUEST THAT ANY EXISTING LINES BE FLAGGED:

WICHITA WATER DEPARTMENT
MR. BILL OTTEN
268-4217

KANSAS GAS & ELECTRIC CO.
MR. BOB BLEVINS
261-6421

SOUTHWESTERN BELL TEL. CO.
MR. DAN CLEVELER
268-2895

GAS SERVICE COMPANY
MR. GENE CURLESS
263-7511 (EXT. 311)

MULTIMEDIA CABLEVISION
MR. DON SHUE
269-2336

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE EXCAVATING ALONGSIDE THE EXISTING 12-INCH WATER MAIN STA. 1+38 TO STA. 9+85. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF SAID WATER MAIN, AND THE COSTS ASSOCIATED WITH ITS REPAIR AND/OR REPLACEMENT DUE TO DAMAGE SHALL BE BORNE BY THE CONTRACTOR.

INLET OPENINGS WHICH ARE NOT ADJACENT TO EXISTING PAVEMENT ARE TO BE TEMPORARILY BRICKED SHUT. COST OF THIS SHALL BE CONSIDERED AS INCIDENTAL TO THE INLETS. THE PAVEMENT CONTRACTOR WILL REMOVE THE BRICK AND ADJUST THE INLETS TO FINAL GRADE.

NEW COMBINED CURB AND GUTTER ADJUTING EXISTING CURB AND GUTTER SHALL HAVE THE SAME SECTION AS THE EXISTING CURB AND GUTTER.

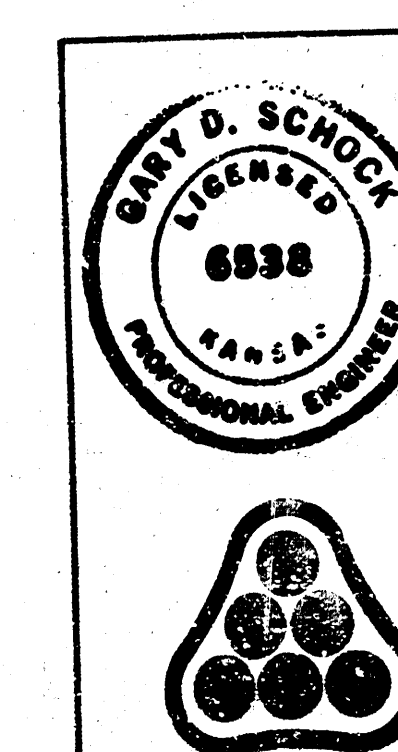
EXISTING COMBINED CURB AND GUTTER REMOVAL AND REPLACEMENT IS REQUIRED TO CONSTRUCT THE CURB INLETS AT STA. 6+47.45, STA. 8+16.07, STA. 9+84.80, STA. 11+34.52, AND STA. 14+96.52. THE CURB AND GUTTER SHALL BE REMOVED TO A MINIMUM OF 1'-4" BEYOND EACH OUTSIDE FACE OF THE INLET WALLS. IF RESULTING LENGTHS TO NEAREST EXISTING JOINTS ARE LESS THAN FIVE (5) FEET, INLET WALLS TO THE NEAREST EXISTING JOINT WILL BE REQUIRED. THE MAXIMUM REMOVAL REQUIRED WOULD BE INLET LENGTH PLUS 2'-8" PLUS 8'-0". THE MINIMUM REMOVAL REQUIRED WOULD BE INLET LENGTH PLUS 2'-8". 20'-0" REMOVAL AND REPLACEMENT HAS BEEN SHOWN AT EACH OF THE LISTED INLETS. PAYMENT, HOWEVER, WILL BE MADE ONLY FOR THAT AMOUNT ACTUALLY REMOVED AND REPLACED. SAW CUTS REQUIRED FOR CURB AND GUTTER REMOVAL SHALL BE SUBSIDIARY TO THE BID ITEM "COMBINED CURB AND GUTTER REMOVED".

SAW CUTS SHALL BE MADE AS NECESSARY FOR REMOVAL OF DRIVEWAYS AND STREET. THE ENGINEER SHALL DETERMINE THE AMOUNTS OF REMOVAL AND LOCATION OF SAW CUTS. SAW CUTS SHALL BE CONSIDERED AS SUBSIDIARY TO THE VARIOUS REMOVAL ITEMS.

ALL DISTURBED AREAS SHALL BE SEEDED AND FERTILIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF WICHITA STANDARD SPECIFICATIONS FOR SANITARY AND STORM SEWERS. THIS WORK SHALL NOT BE MEASURED OR PAID FOR DIRECTLY, BUT SHALL BE SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

CONSTRUCTION TRAFFIC CONTROL:

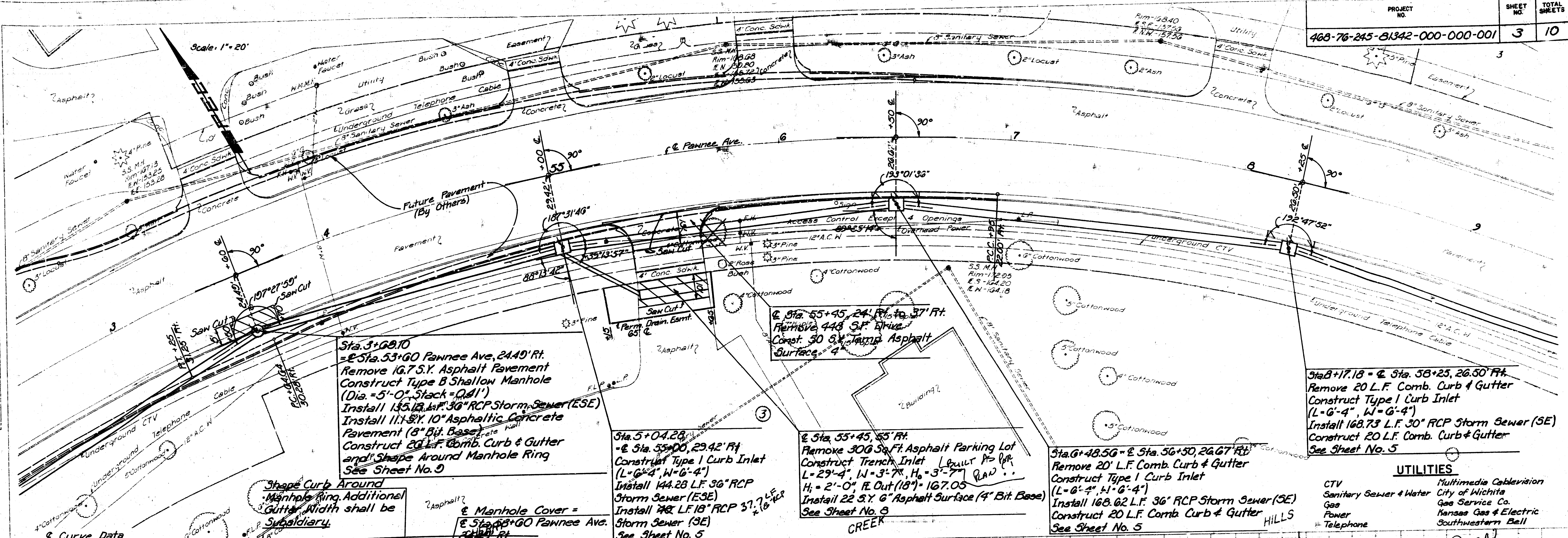
- A. THE CONTRACTOR SHALL MAINTAIN APPROPRIATE TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE CITY OF WICHITA BARRICADE MANUAL AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- B. A MINIMUM OF TWO-LANE, TWO-WAY TRAFFIC SHALL BE MAINTAINED ON PAWNEE AVENUE AT ALL TIMES. LOCAL TRAFFIC SHALL BE CARRIED THROUGH CONSTRUCTION.
- C. THE CONTRACTOR WILL BE PERMITTED TO CLOSE THE DRIVES RT. STA. 55+45 AND STA. 61+79, BUT BOTH DRIVES SHALL NOT BE CLOSED SIMULTANEOUSLY.



No.	Revision	By	Date
TITLE SHEET STORM WATER SEWER NO. 261			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
Designed by	Job No. 34273	Sht. 1 of 10	
Drawn by	Date		

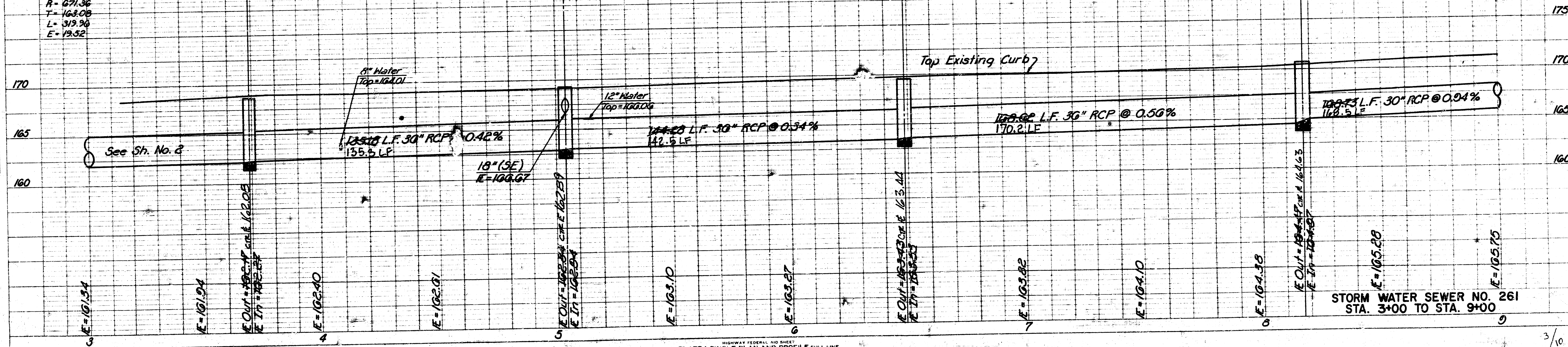
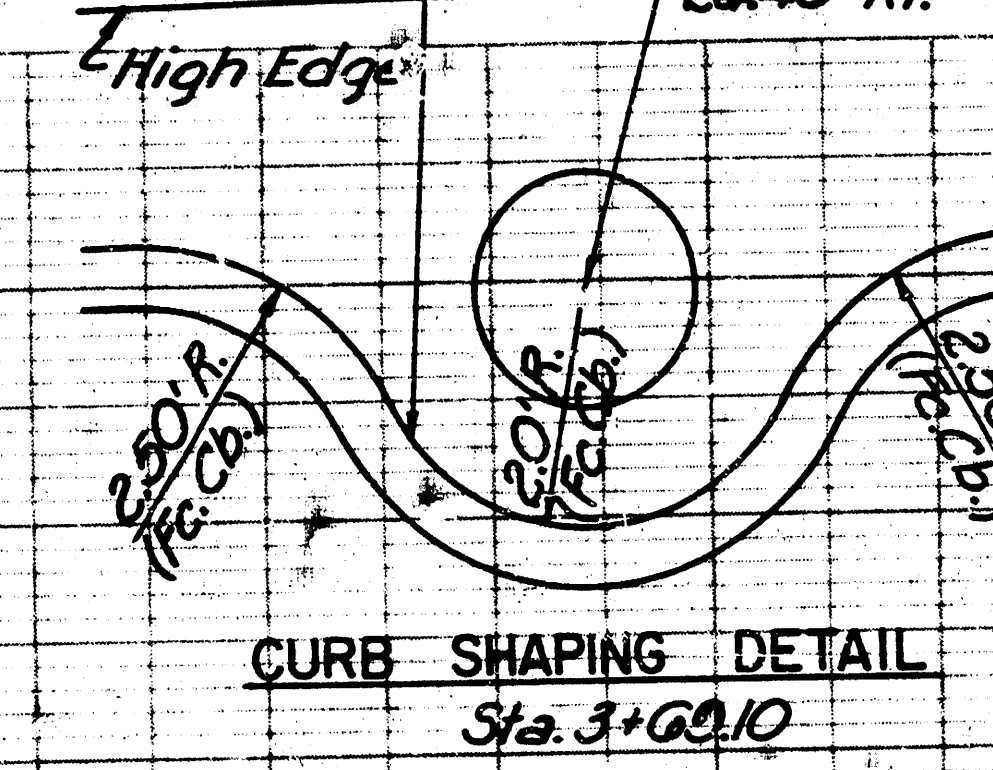
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PLAN
NOTE BOOK, ATTACHED, CHECKED
BY: [Signature]
DATE: [Date]



Curve Data
 PI Sta. 50+89.72 B.M.
 Sta. 55+93.08 End
 Δ = 62°45'43"
 D = 7°22'48"
 R = 776.37
 T = 473.54
 L = 550.44
 E = 133.02

Future P.E. Curve Data
 PI Sta. 57+11.18
 PC Sta. 53+04.04, 30.03' RT
 Δ = 27°18'21"
 D = 8°32'03"
 R = 671.36
 T = 163.08
 L = 319.96
 E = 193.52



AS BUILT PLAN
 11-5-85
 GREENE

STORM WATER SEWER NO. 261
 STA. 3+00 TO STA. 9+00

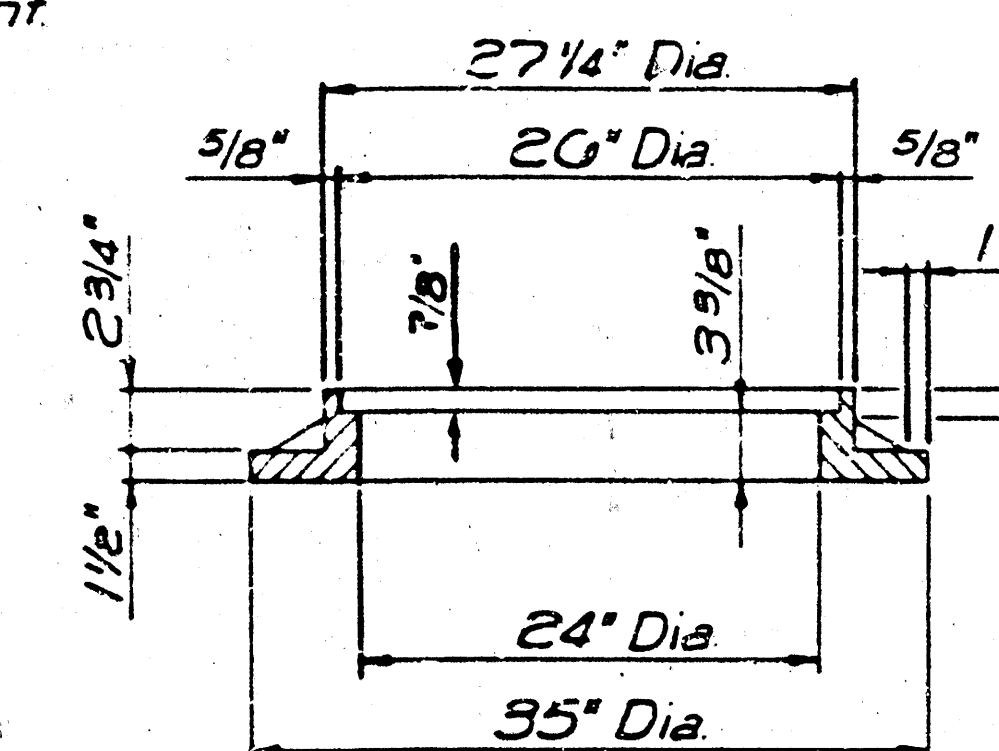
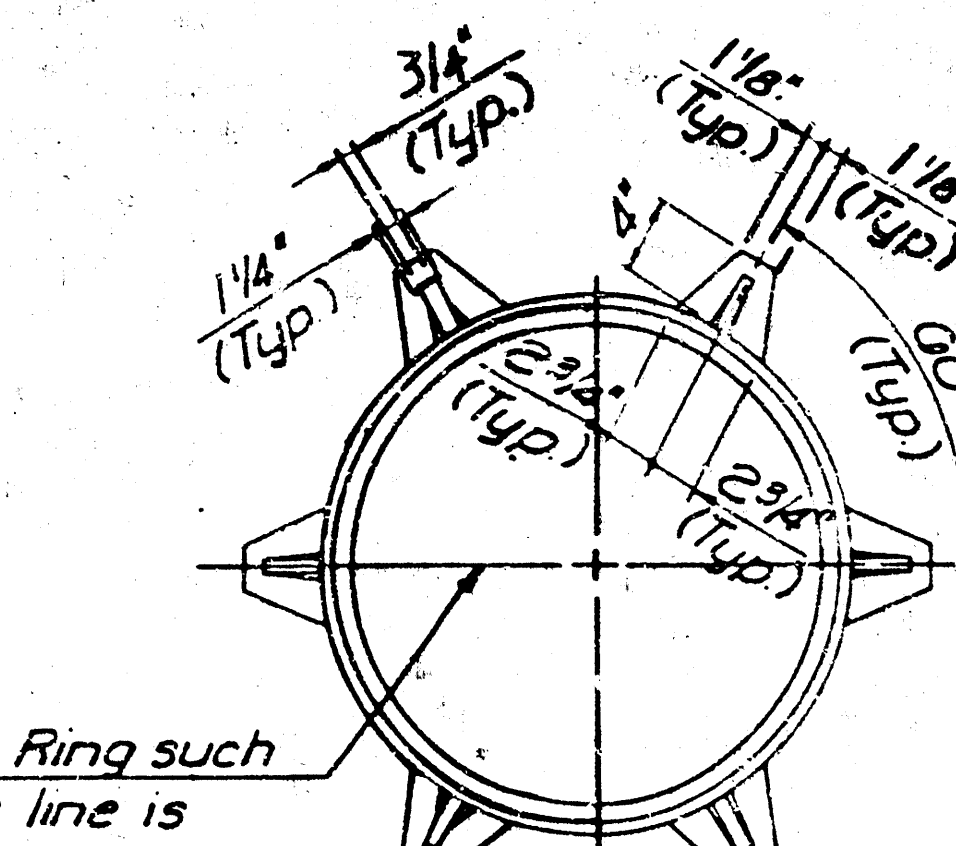
SLAB REINFORCING NOT SHOWN SHOWING SLAB REINFORCING
PLAN

ELEVATION

SECTION B-B

TYPICAL INLET SECTION AT CENTER WALL
(Reinforced Concrete Walls)

TYPICAL INLET SECTION AT CENTER WALL
(Masonry Walls)



INLET FRAME (Weight = 180 LBS.)

SEE CITY OF WICHITA STANDARD MANHOLE
FRAME AND COVER DETAIL SHEET FOR COVER
DETAILS TO BE USED WITH INLET FRAME.

GENERAL NOTES

Concrete shall be COW Standard
Paving Mix All exposed edges shall be
finished with an edging tool
Reinforcing Bars shall be field bent
or cut to clear pipes

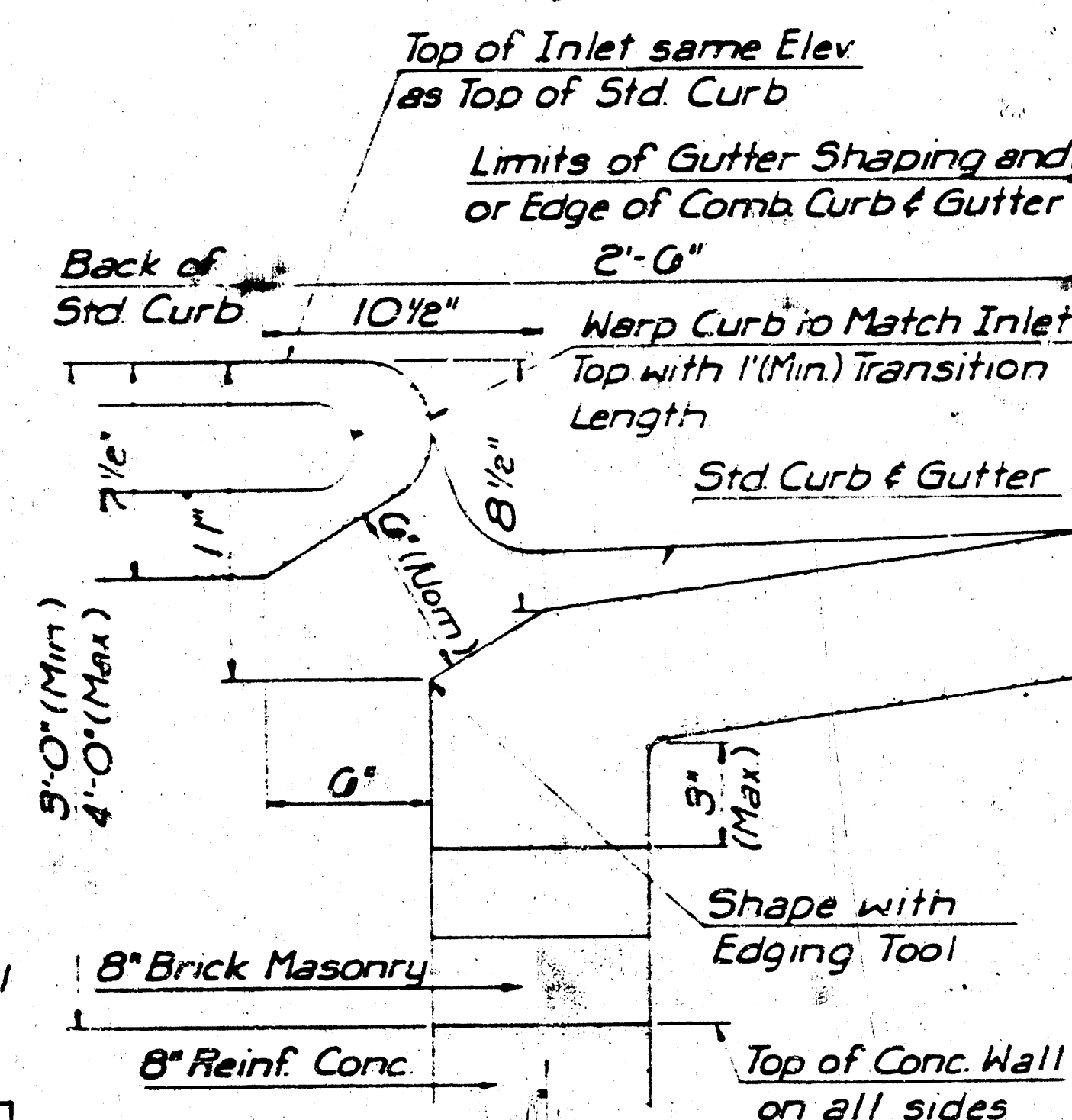
All bars are #4 bars at 6" Spacing
- and shall have a minimum clearance
of 1 1/2" unless otherwise noted
Floors of inlets shall be shaped with
- 8 Bag Sand Mix Concrete to increase
hydraulic efficiency such that the
inlet will be self cleaning between
all inlet and/or outfall pipe(s).
The Contractor will be required
to construct 8" Brick Masonry
walls between the concrete inlet
base and top on this inlet when
H=7'-0" or less and W=6'-4" or less.

THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.

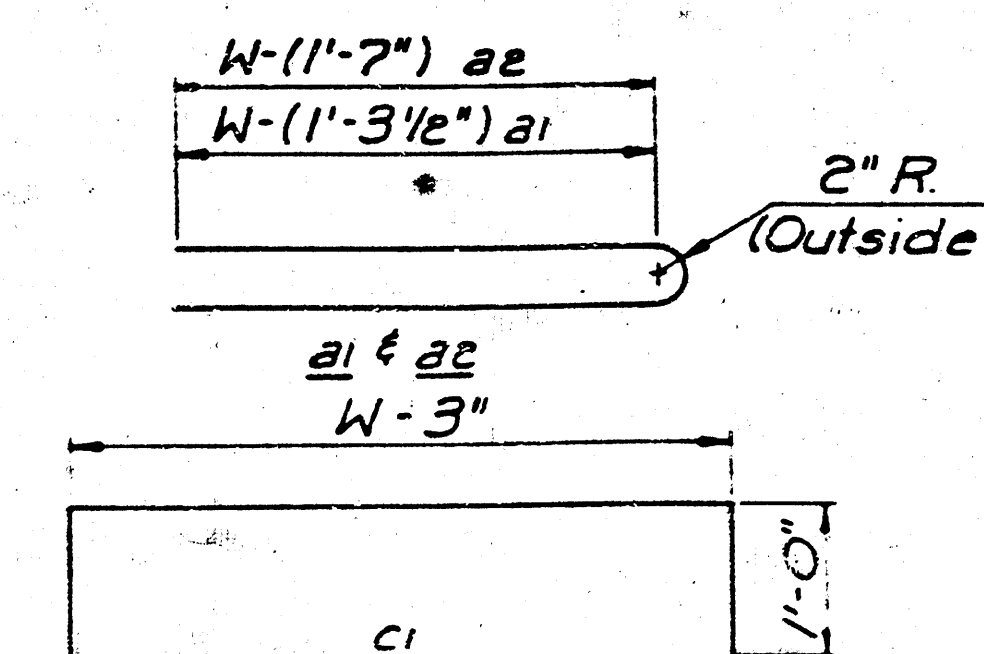
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* Field bend or cut Reinforcing as required for clearance

① $4(H_1 - G^*)$ ② $4O + 4(W - 1)$ ③ $H_1 - (D'')$



SECTION C-C



BENDING DIAGRAMS

REVISÉD 12-21-1984

DETAIL STANDARD
TYPE I CURB INLET

INLET OPENING = 6" x 10'-0"

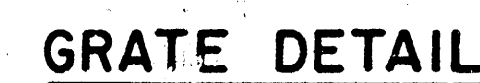
CITY OF WICHITA

M. E. LINDEBAK, CITY ENGINEER
OCTOBER 1984

Diagram of a square with dimensions: top side 51, right side 40-1/2", and bottom side 41-3".



* Field Cut bars at shallow end for vertical clearance.
** Field Cut or Bend for clearance.



1. THE TRENCH GRADE AND FRAME SHALL BE AS SHOWN ABOVE OR APPROVED EQUAL. THE GRADE SHALL BE THE HEAVY DUTY TYPE WITH A DESIGN LOADING OF H20-44 AND SHALL BE BICYCLE SAFE.

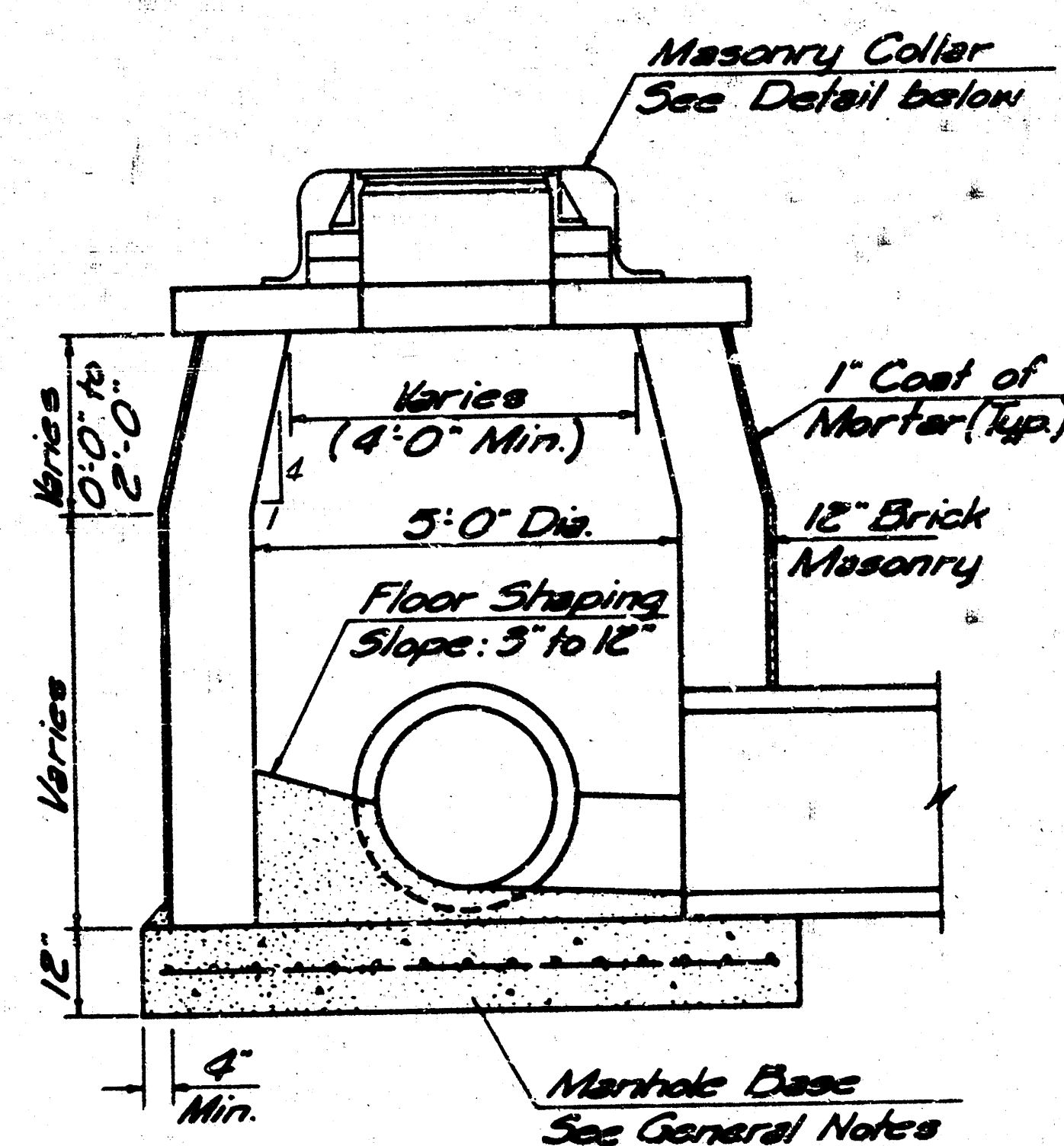
THE TRENCH AND FRAME MATERIAL SHALL BE GRAY CAST IRON CONFORMING TO THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR GRAY-IRON CASTINGS", ASTM A 48, GRADE 30.
2. *City of Wichita Standard Paving Mix to be used throughout.*
3. BEVEL ALL EXPOSED EDGES OF THE CONCRETE WITH A 3/4" TRIANGULAR MOLDING.
4. ALL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF "STANDARD SPECIFICATIONS FOR DEFORMED AND PLAIN BILLET-STEELS FOR CONCRETE REINFORCEMENT", ASTM A616, GRADE 40, OR GRADE 60.

Weights vary w/ Manufacturer

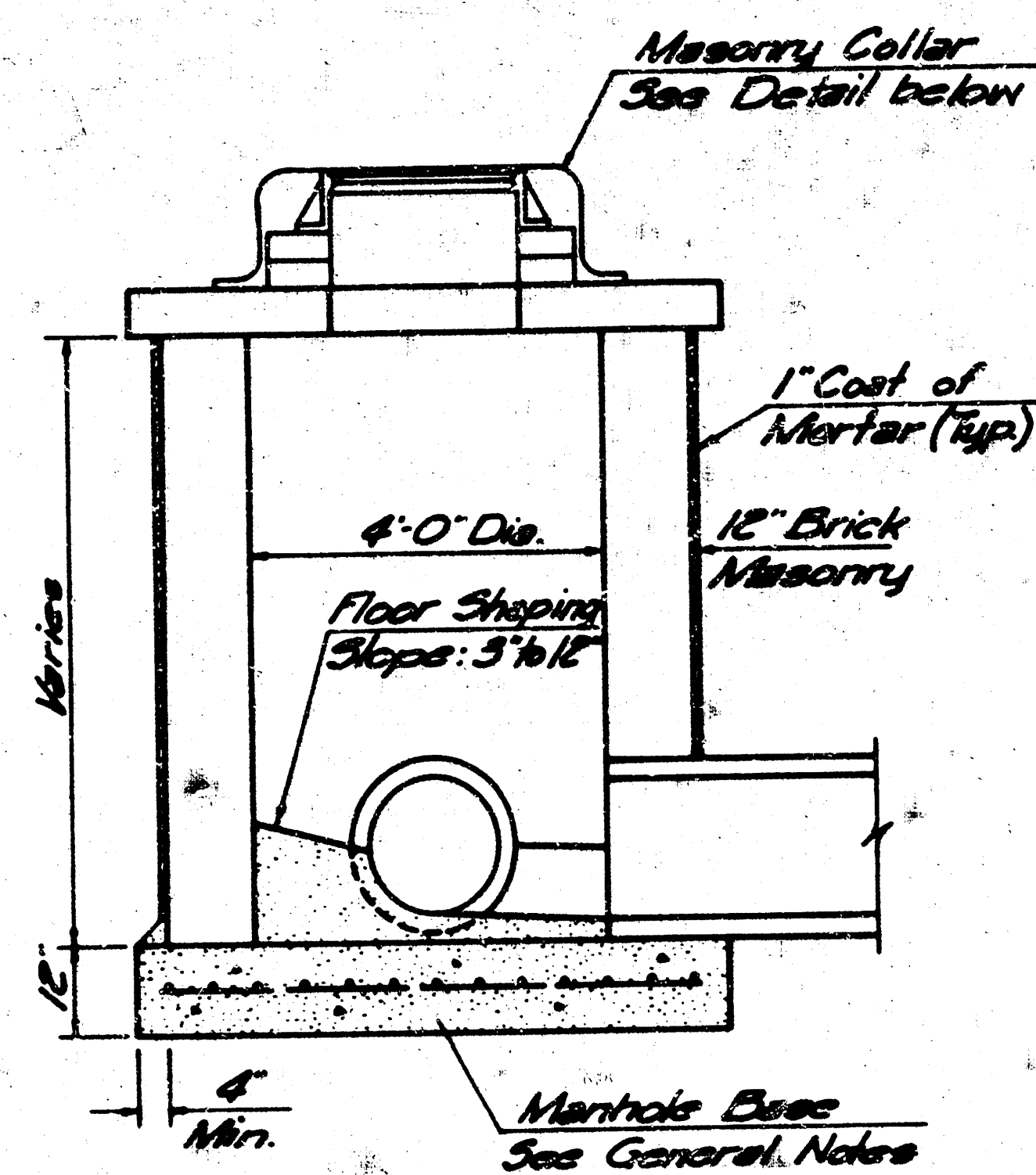
PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS				8 / 10
Designed by	K.J.S.	Checked by	K.J.S.	
Drawn by	W.L.L.	Date		Job No. 84278

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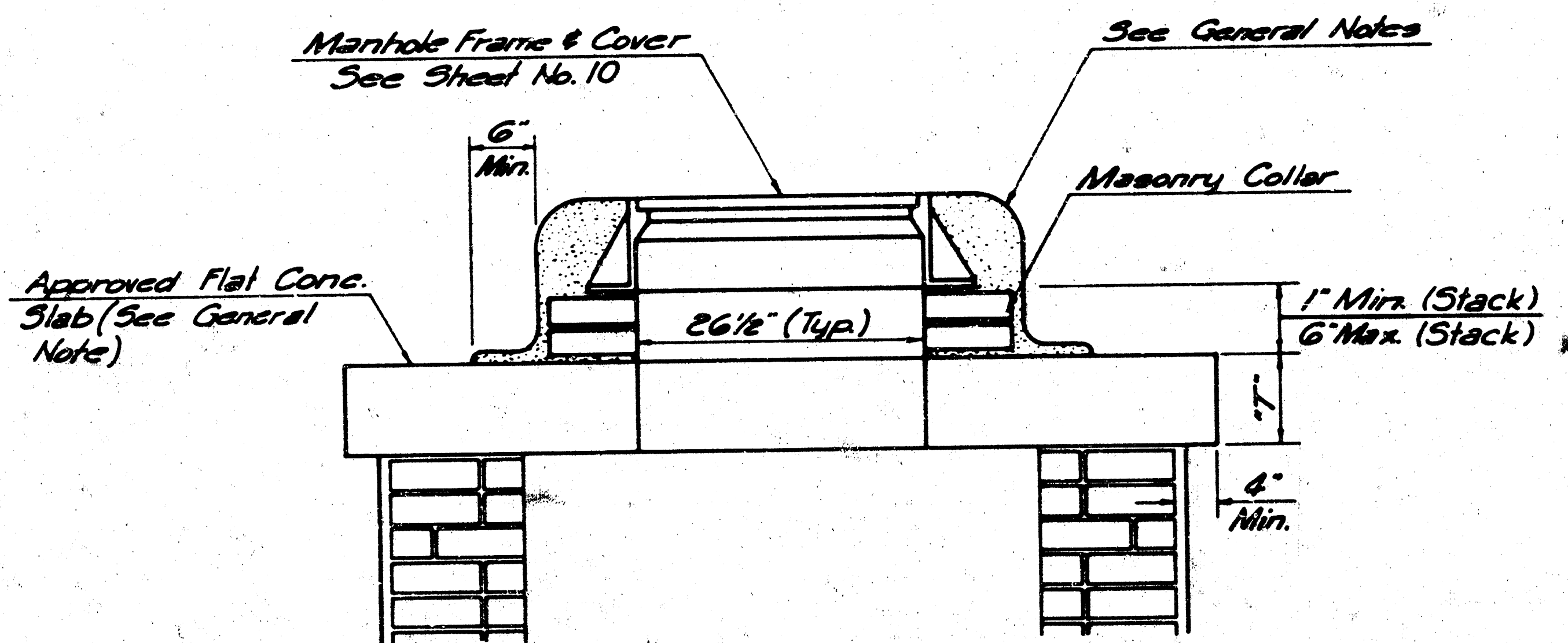
PROJECT NO.	SHEET NO.	TOTAL SHEETS
168-76-245-21342-000-001	9	10



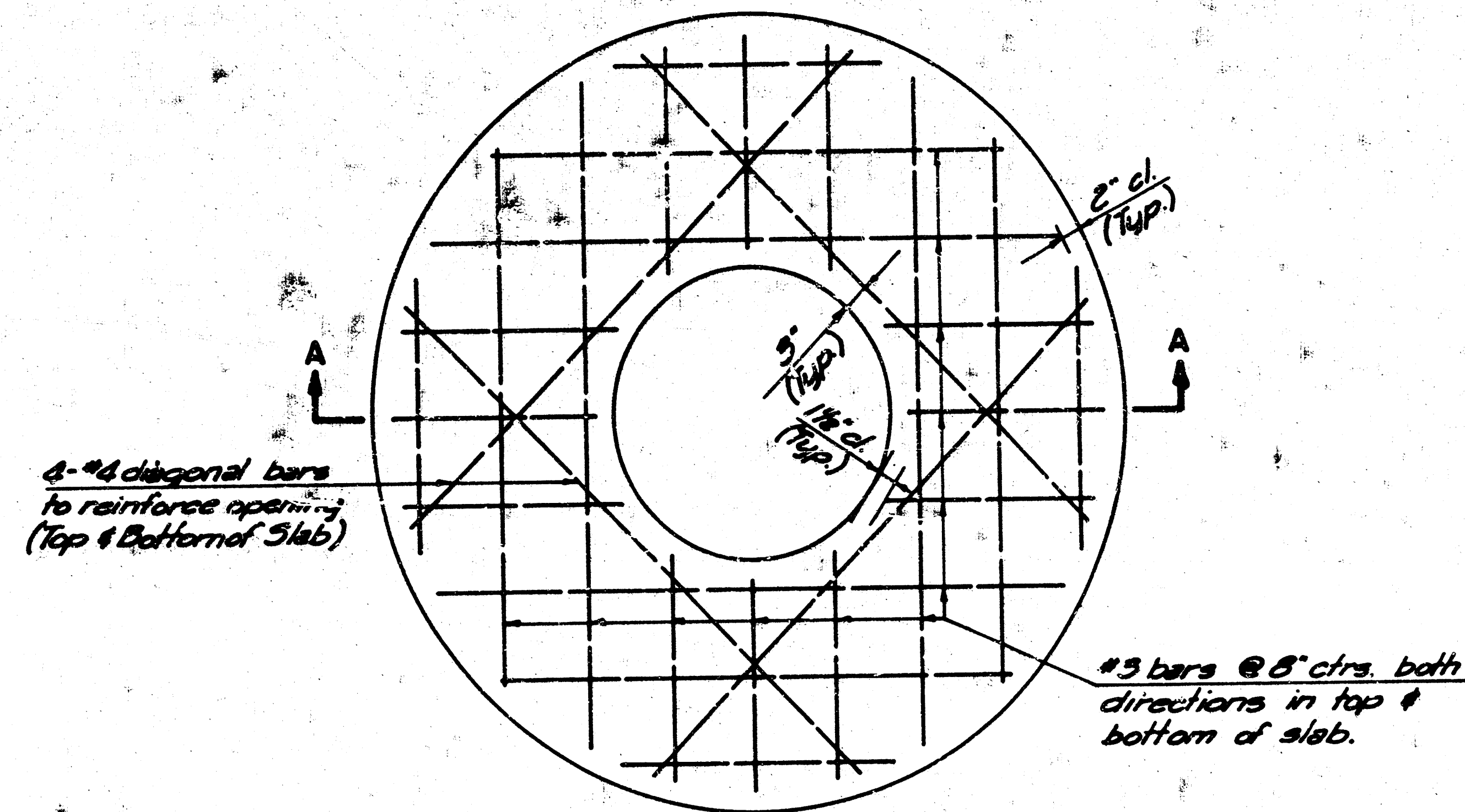
SHALLOW TYPE "B" MANHOLE (5' DIA.)



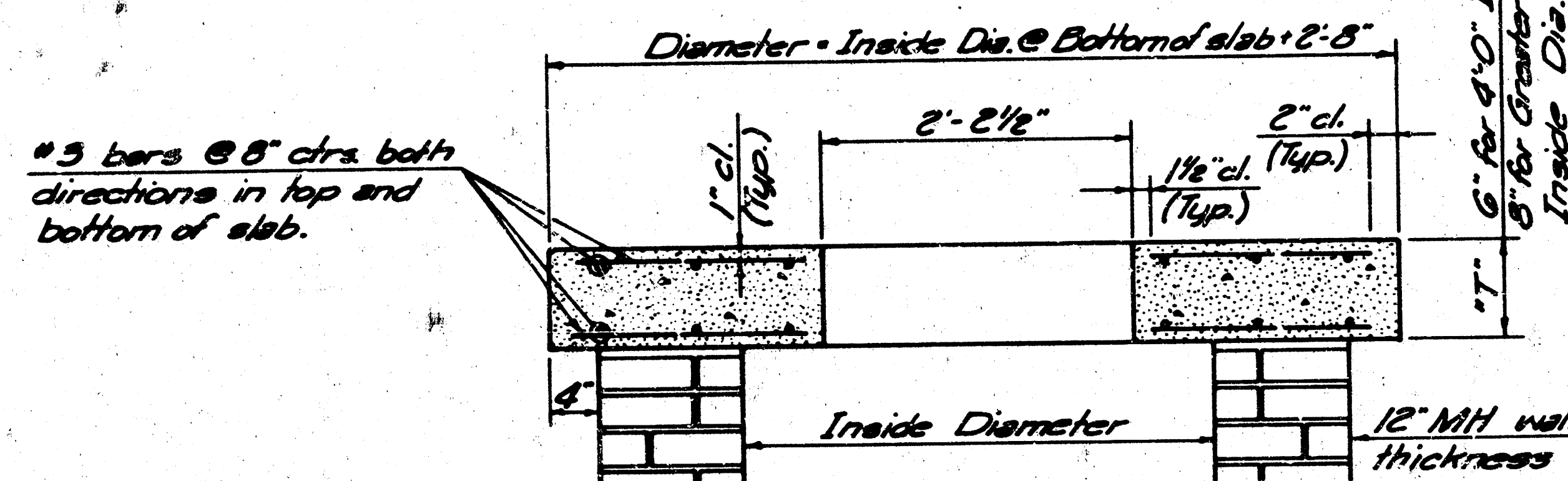
SHALLOW TYPE "B" MANHOLE (4' DIA.)



MASONRY COLLAR DETAIL



PLAN



SECTION A-A

FLAT CONCRETE SLAB DETAILS

GENERAL NOTES:

TOPS OF MANHOLES LOCATED IN PAVED AREAS SHALL BE SET FLUSH WITH THE PAVEMENT. TOPS OF MANHOLES LOCATED IN GRASSED AREAS SHALL BE SET FLUSH WITH THE FINISHED GRADE. TOPS OF MANHOLES LOCATED IN UNPAVED TRAVEL WAYS SHALL BE SET SIX INCHES (6") BELOW FINISHED GRADE.

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 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.

BRICK USED SHALL CONFORM TO THE REQUIREMENTS SPECIFIED FOR GRADE MS IN A.S.T.M. C 32-73 OR GRADE SW IN A.S.T.M. C 62-69.

ALL BRICK SHALL BE LAID WITH SHOVE JOINTS. THE ENTIRE OUTSIDE SURFACE OF THE MANHOLE SHALL BE PLASTERED WITH A MINIMUM OF ONE INCH (1") OF THE CEMENT MORTAR. ALL CONTACT SURFACES BETWEEN BRICK MASONRY, FLAT CONCRETE SLABS, AND CAST IRON RINGS SHALL BE SEALED WITH A LAYER OF THE CEMENT MORTAR. BACKFILL SHALL NOT BE ACCOMPLISHED UNTIL THE MORTAR HAS CURED FOR TWENTY-FOUR (24) HOURS.

CEMENT USED FOR MORTAR SHALL BE TYPE I COMPLYING WITH THE REQUIREMENTS OF THE LATEST REVISION OF A.S.T.M. DESIGNATION C-150.

FINE AGGREGATE USED FOR MORTAR SHALL CONFORM TO THE SAME REQUIREMENTS AS REQUIRED FOR CONCRETE PAVEMENT, EXCEPT THAT IT SHALL HAVE A GRADATION FACTOR OF NOT LESS THAN 2.75 AND SHALL BE FREE FROM DUST, LOAM OR DIRT.

AN APPROVED TYPE OF FLAT CONCRETE SLAB, CONFORMING TO THE REQUIREMENTS OF A.S.T.M. C-478, SHALL BE USED TO SUPPORT THE MANHOLE RING AND COVER. A ONE INCH (1") MINIMUM TO SIX INCH (6") MAXIMUM MASONRY COLLAR CONFORMING TO THE SAME TYPE OF CONSTRUCTION AS SPECIFIED ABOVE SHALL BE INSTALLED BETWEEN THE MANHOLE RING AND THE FLAT CONCRETE SLAB TO FACILITATE MINOR ADJUSTMENTS IN ELEVATIONS.

THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE DEBRIS COULD BE DEPOSITED AS WATER 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.

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.

SHALLOW MANHOLES TYPE "B" SHALL BE BID PER EACH FOR THE DIAMETER INDICATED. SAID PRICE BID SHALL BE FULL PAYMENT FOR FURNISHING ALL MATERIALS, FOR ALL EXCAVATION, BACKFILLING, AND FOR ALL LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

Note: Manhole's Frame & Covers on this project shall not be grouted to stack. Final adjustment to finish grade shall be made by paving contractor.

SHALLOW TYPE "B" MANHOLE (FOR STORM SEWERS)			
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.			
ENGINEERS WICHITA, KANSAS			
Designed by	B.E.R.	Checked by	
Drawn by	D.D.	Date	
			Job No. 84278

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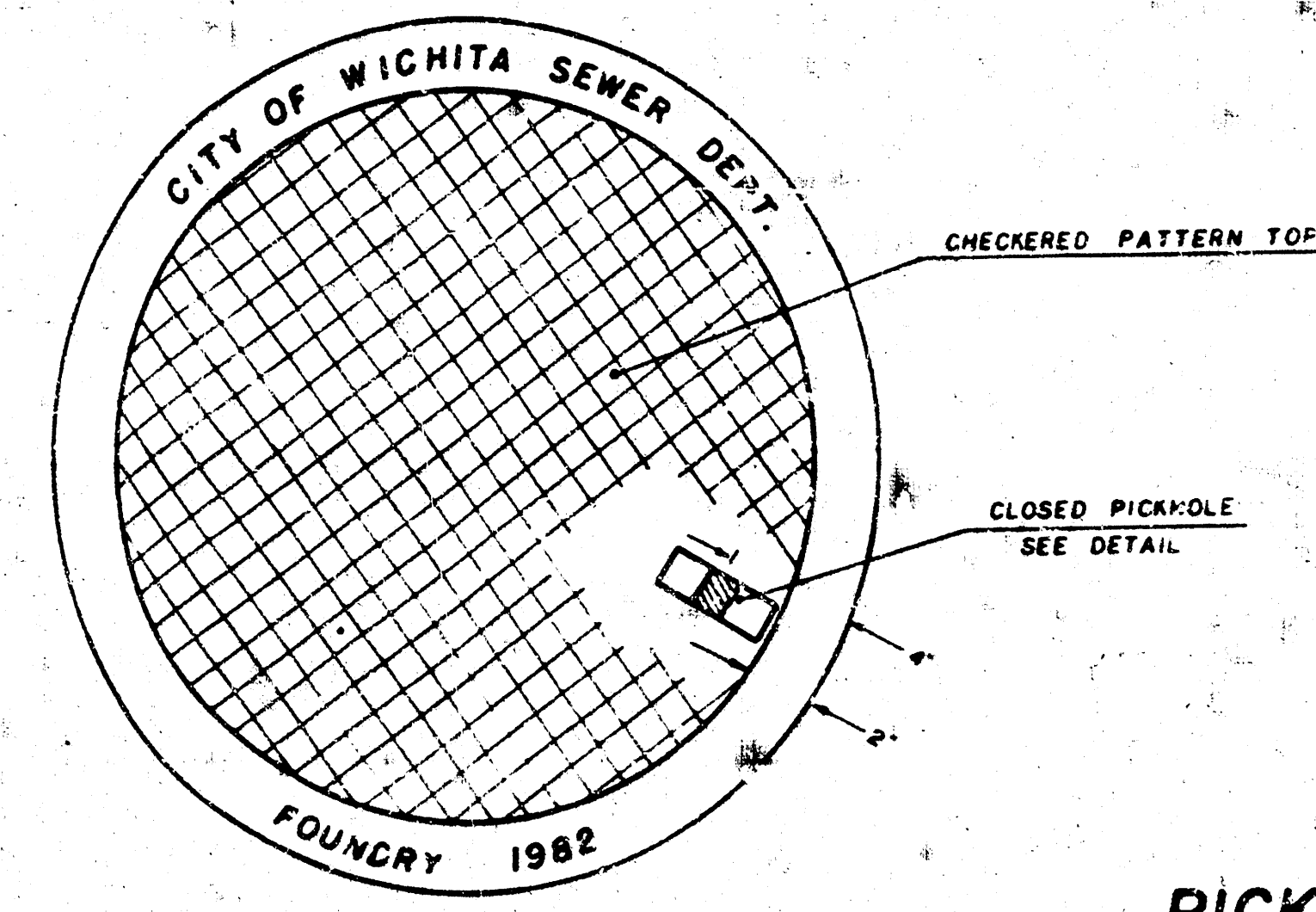
MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN

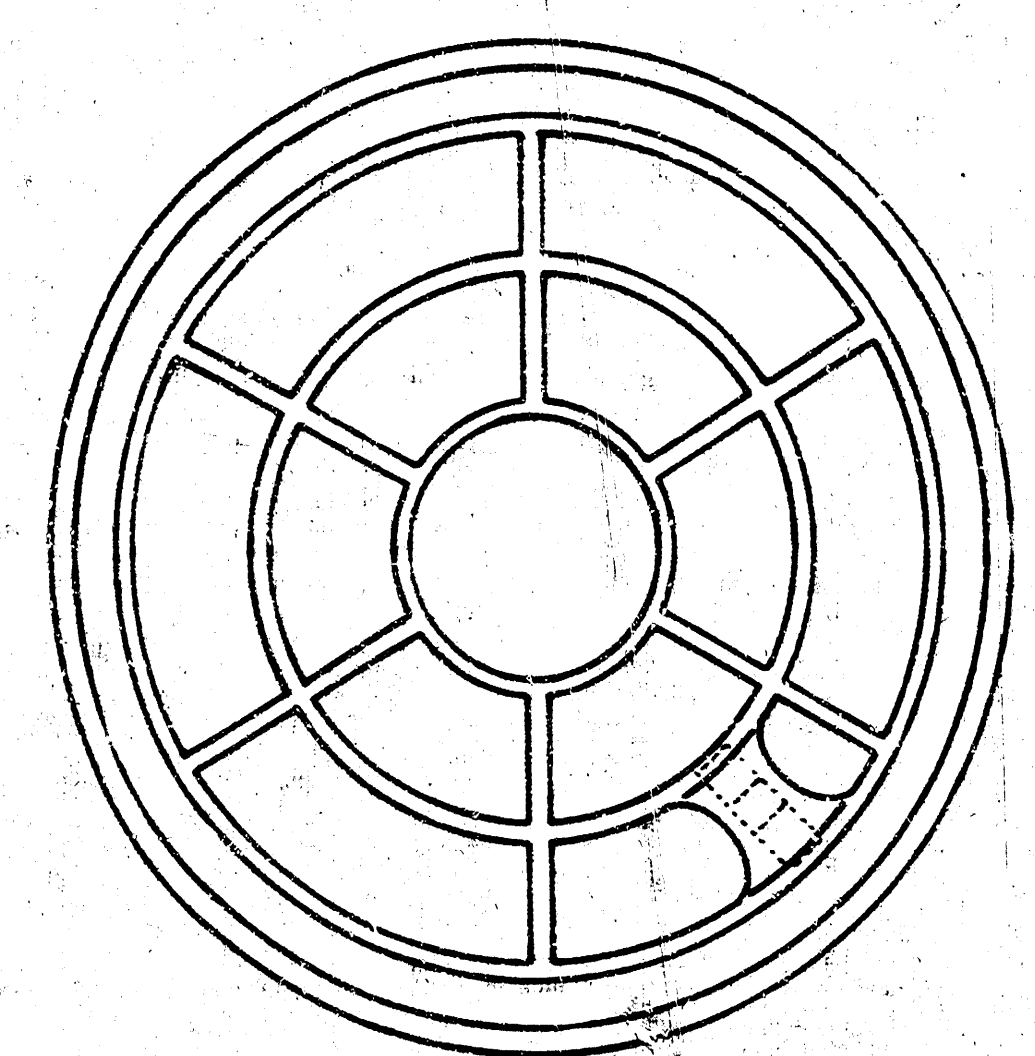
BY

City of Wichita, Kansas

MANHOLE COVER
Weight: 180 Lbs.

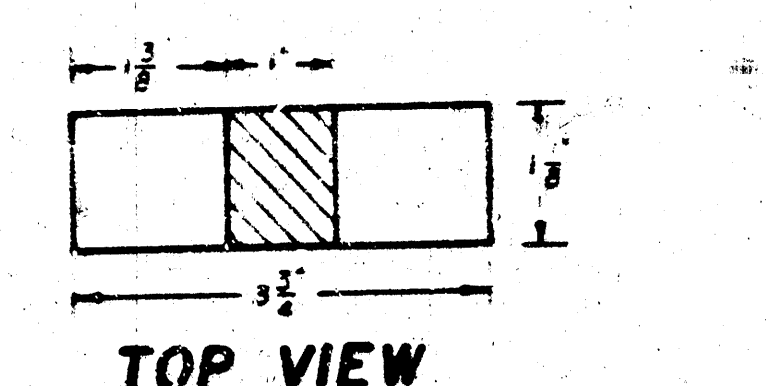


TOP VIEW

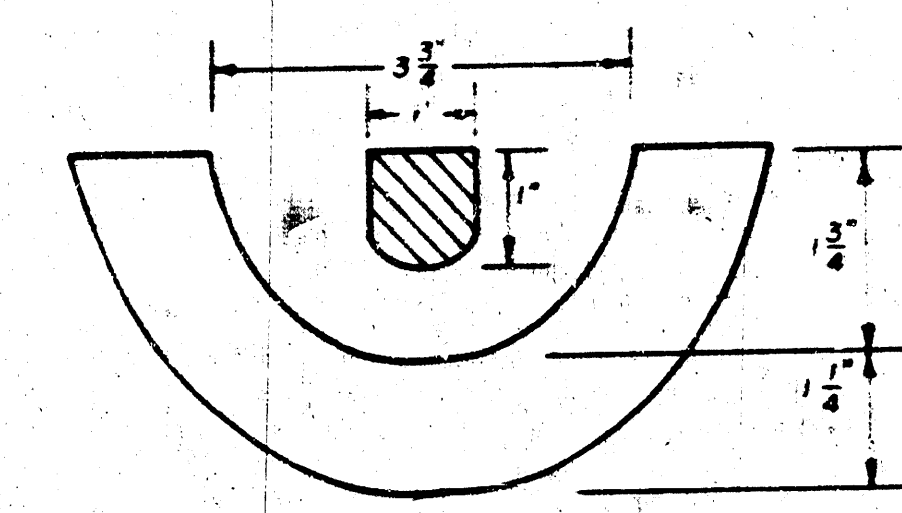


BOTTOM VIEW

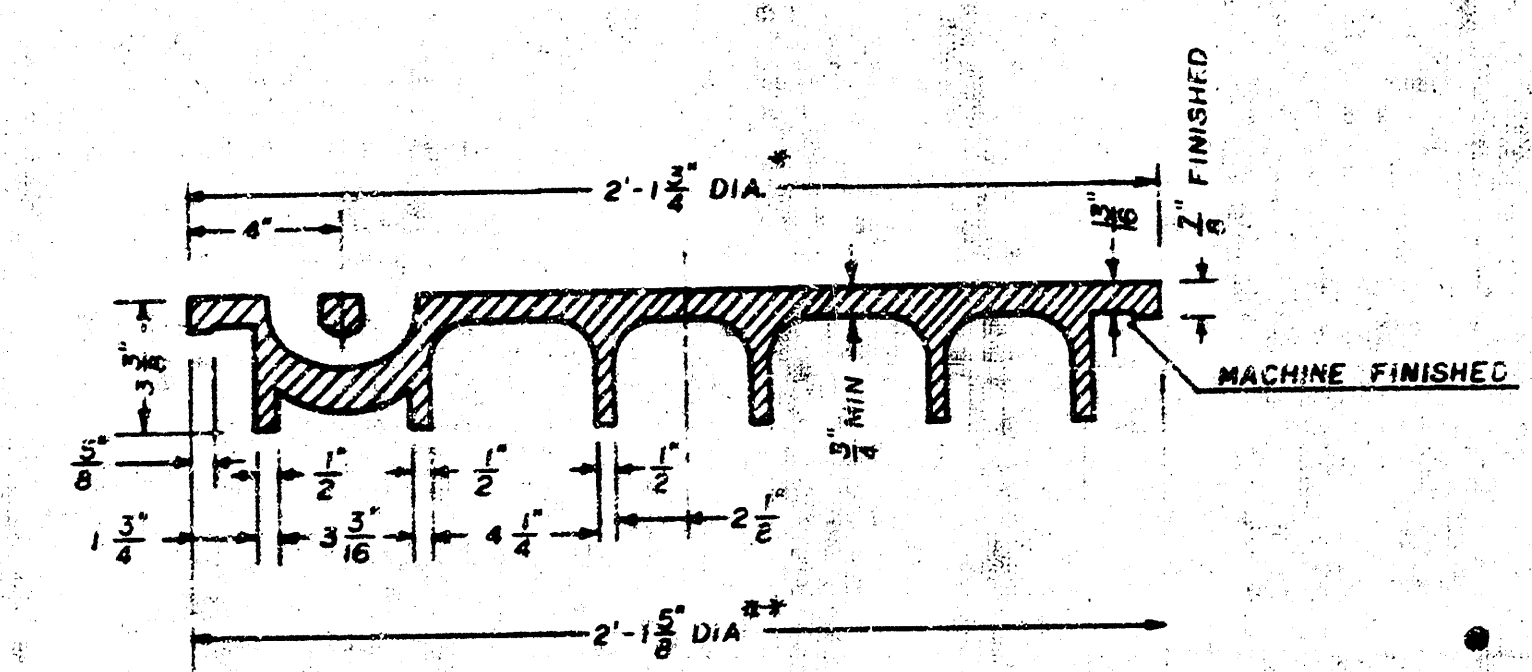
PICKHOLE DETAIL



TOP VIEW



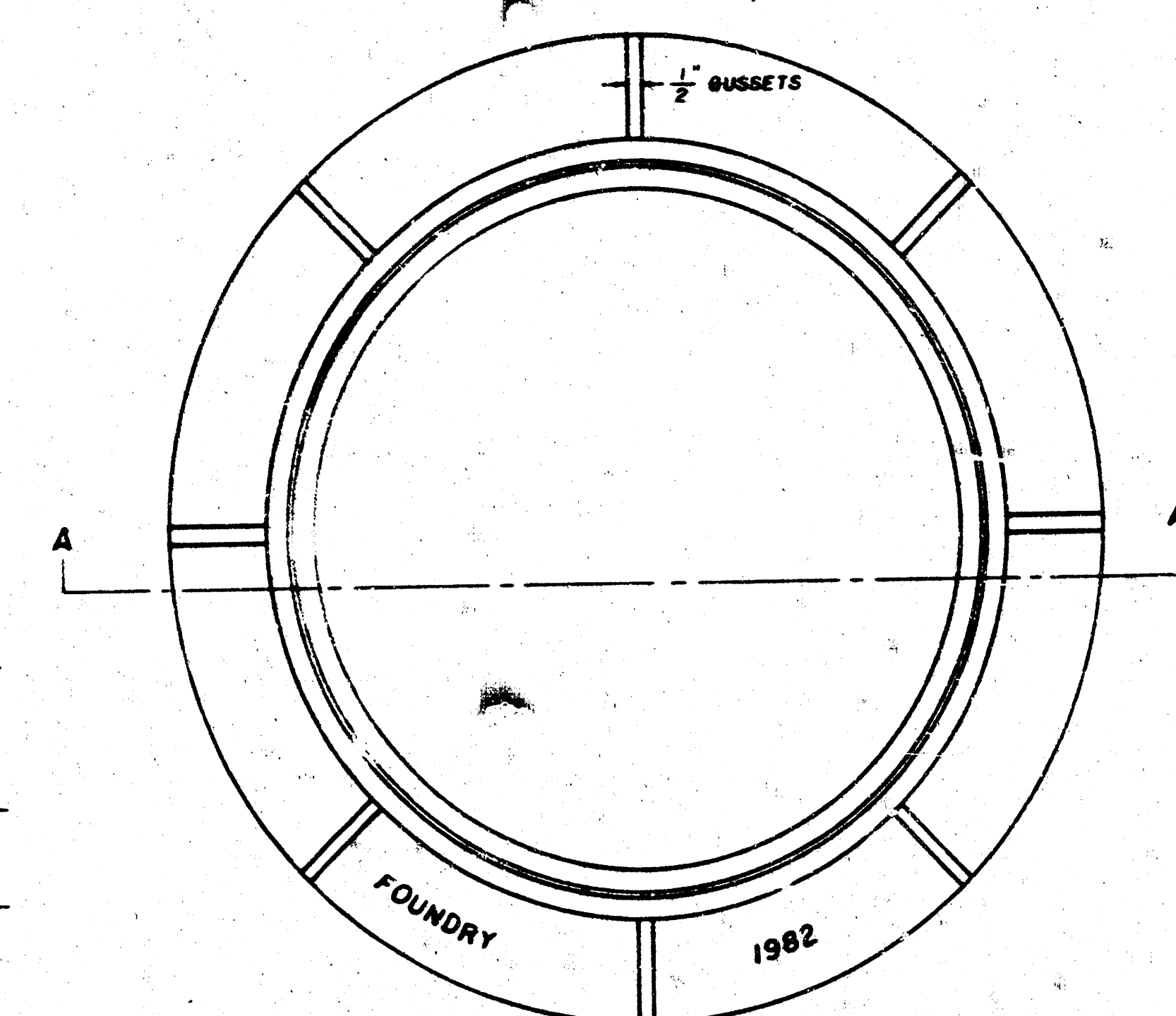
SECTION VIEW



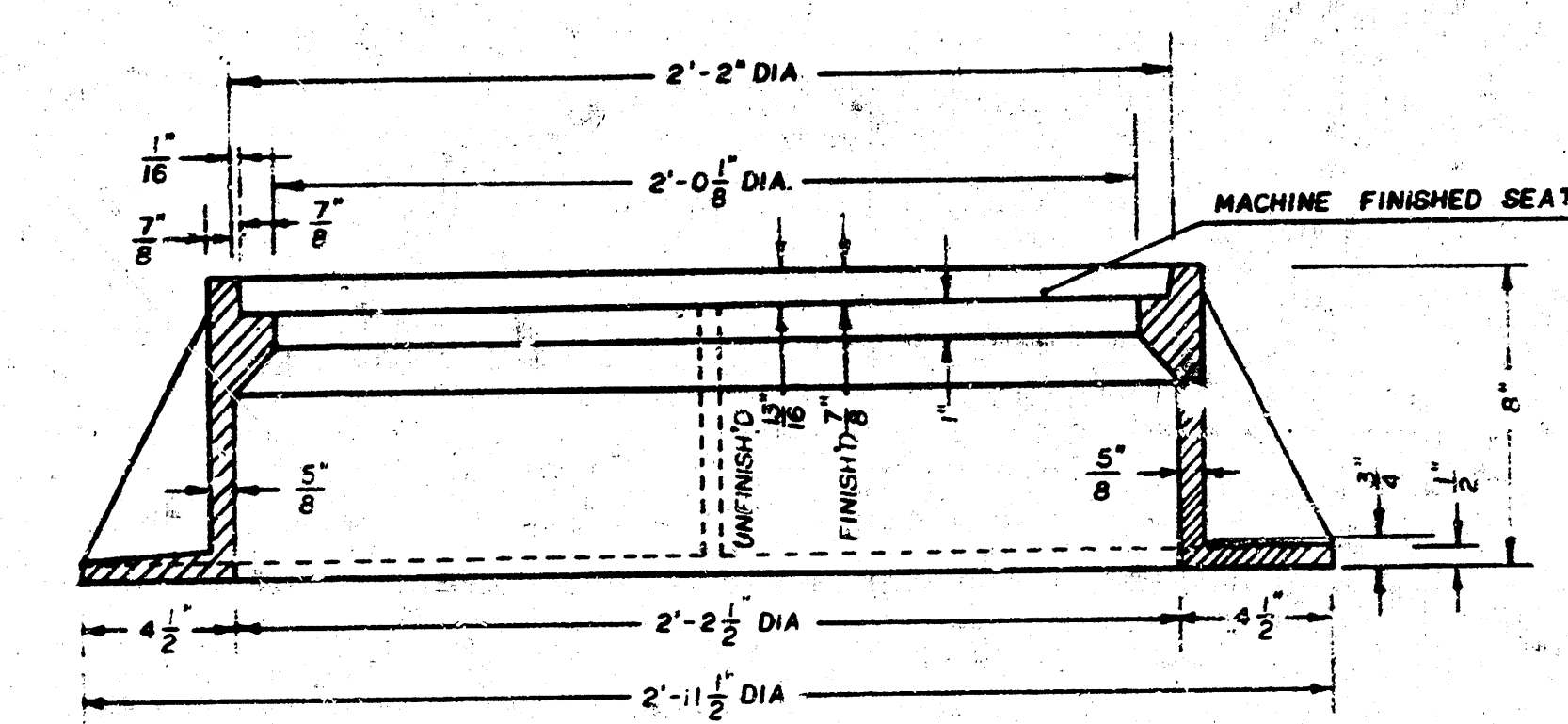
SECTION VIEW

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

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.