

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

STORM WATER SEWER

IN

GOLDEN HILLS 4TH ADDITION

CITY OF WICHITA PROJECT NO. 468-76-245-80001-000-000-157

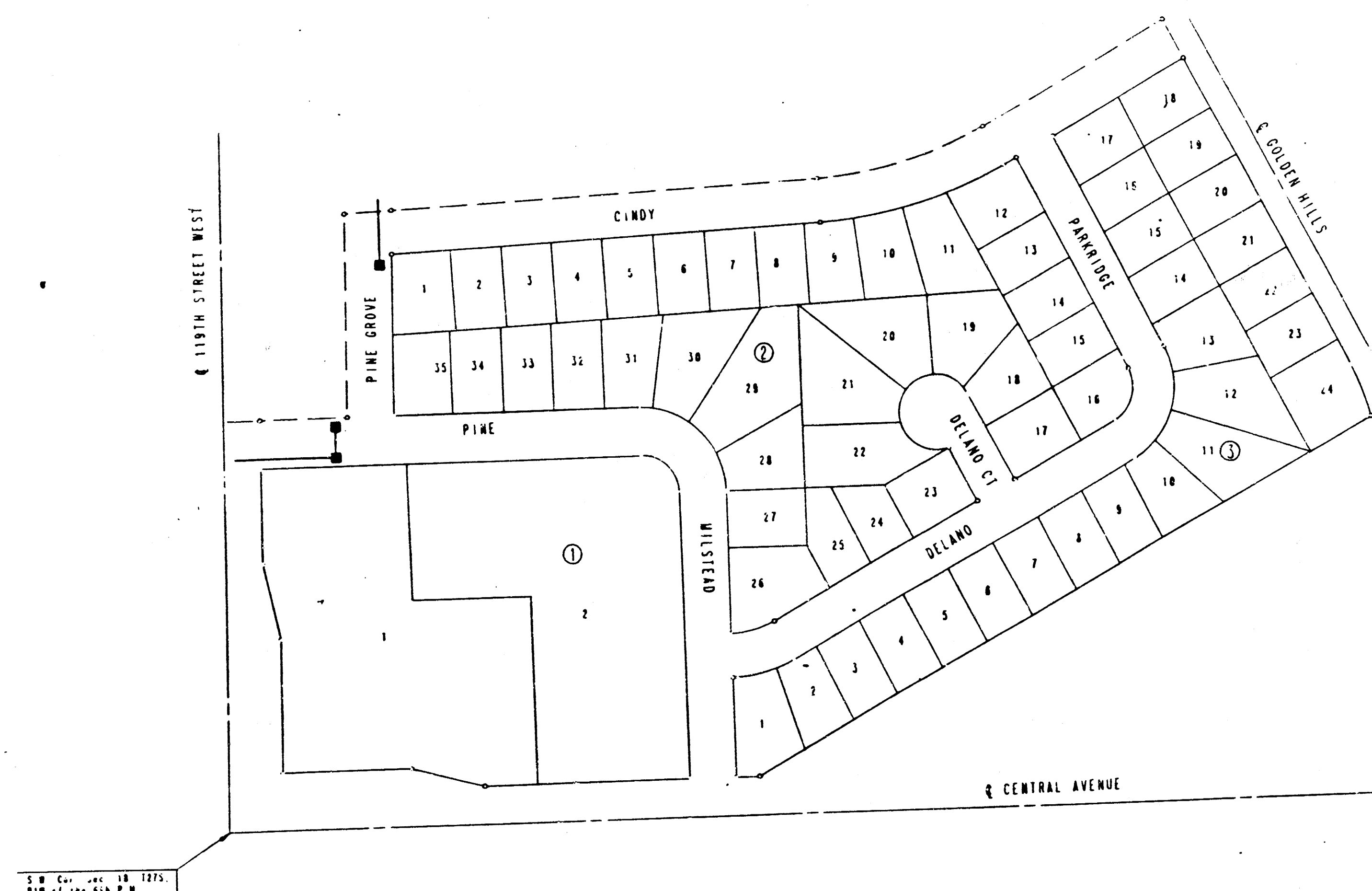
SHEET NO.	TOTAL SHEETS
1	6

INDEX OF SHEETS

1. TITLE SHEET
2. PLAN
3. STORM WATER SEWER PLAN/PROFILE
4. STANDARD TYPE 1A CURB INLET (L-6'-4")
5. STANDARD TYPE 1A CURB INLET (L-11'-4")
6. MANHOLE FRAME & COVER DETAIL

PROJECT SURVEY CONTROL

CITY OF WICHITA DATUM.
DATUM BENCH MARK: CITY OF WICHITA BENCH MARK DISC 40' EAST AND 44' SOUTH OF INTERSECTION OF E'S CENTRAL AND 19TH STREET WEST. ELEV. +156.93
BENCH MARK: 8" SPIKE IN NW FACE 18' CEDAR ON SOUTH SIDE CENTRAL AT GOLDEN HILLS STREET. ELEV. +160.27



SCALE: 1" = 150'

GENERAL NOTES

1. 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. EXISTING UTILITIES AND THEIR LOCATION, 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 WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.
2. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED.
3. CONTRACTOR SHALL SATISFY HIMSELF OF SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION.
4. TREES AND SHRUBS IN PUBLIC RIGHT-OF-WAY WHICH ARE IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE REMOVED BY THE CONTRACTOR WITH THE ENGINEER'S APPROVAL. TREES AND SHRUBS WHICH ARE NOT IN DIRECT CONFLICT WITH PROPOSED NEW CONSTRUCTION SHALL BE SAVED AND PROTECTED FROM DAMAGE.
5. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ADJUTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN (10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL 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 STATE LAWS.

AS BUILT - JUNE 1988

BOOKED - JULY, 1988 MCA

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 booking per contract.

APPROVED AS NOTED

By CITY ENGINEER OF WICHITA

Sanitary Sewers

Storm Sewers VRH 2/29/88

Driveway Approaches

Water Mains

Paving

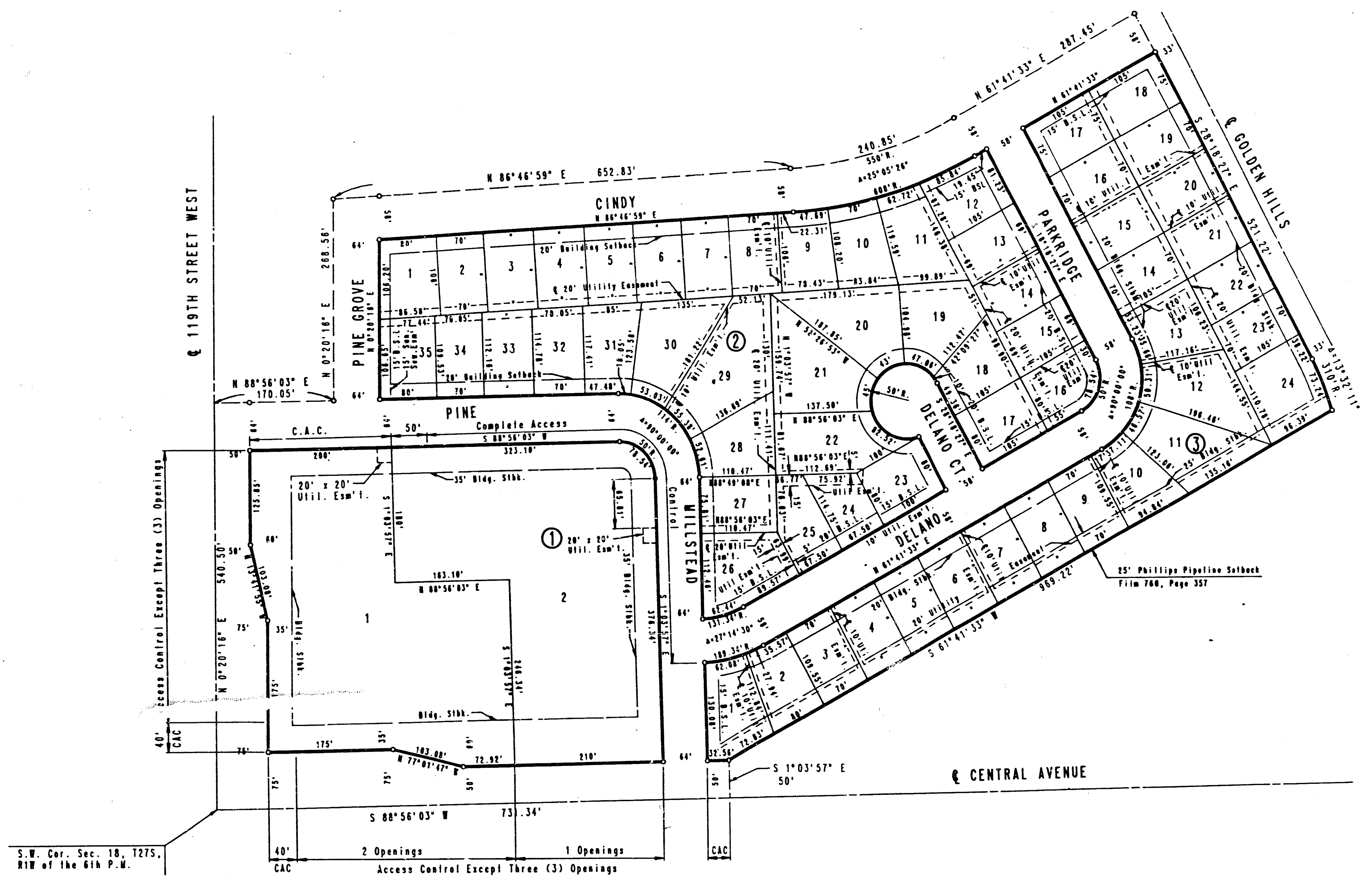


JANUARY, 1988
PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

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PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-74-245-80501-000-000 033	2	6

GOLDEN HILLS 4TH ADDITION WICHITA, SEDGWICK COUNTY, KANSAS



SCALE: 1" = 100'

BENCH MARK: RR SPIKE IN WINGWALL PILE
3000' NORTH OF E. CENTRAL
AVENUE AND 119TH ST. WEST
ELEV. = 1337.90 W.S.L. =
145.58 CITY DATUM
CAC = COMPLETE ACCESS CONTROL

PLAT

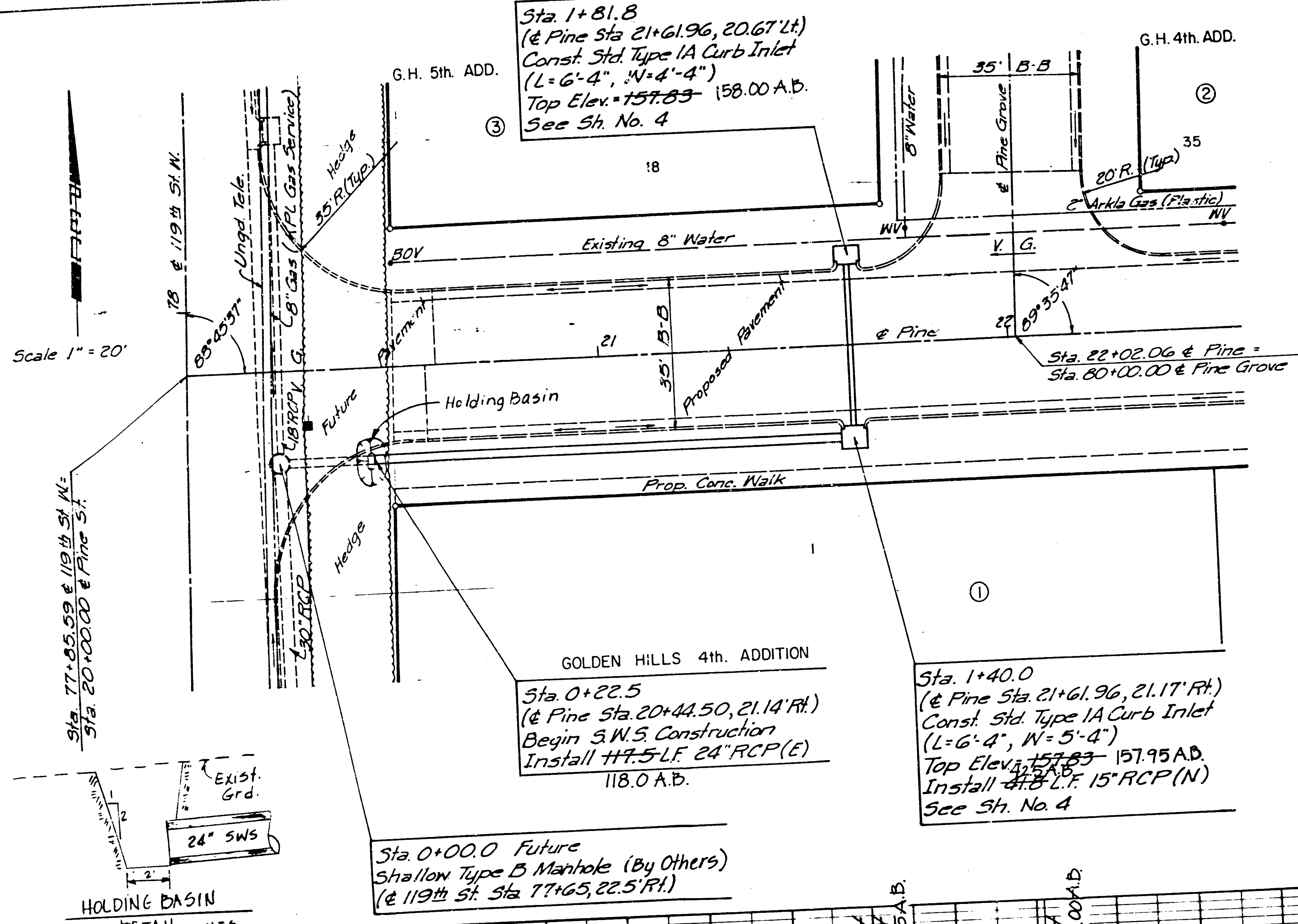
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by: Drawn by: Date: AUC: 1987 Job No: 86276

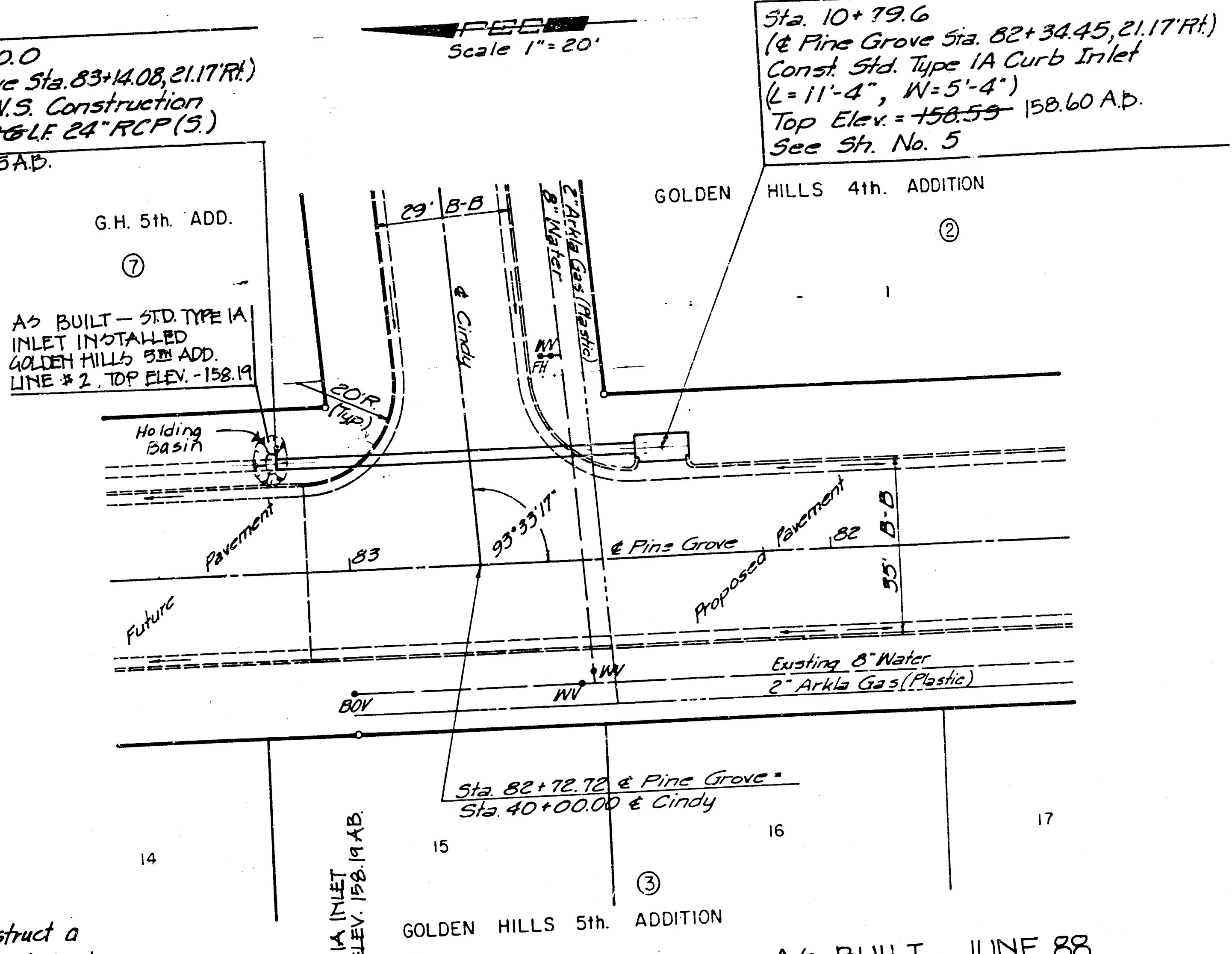
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PLAN	DATE	BY
REVISION		
NOTE BOOK		
NO.		

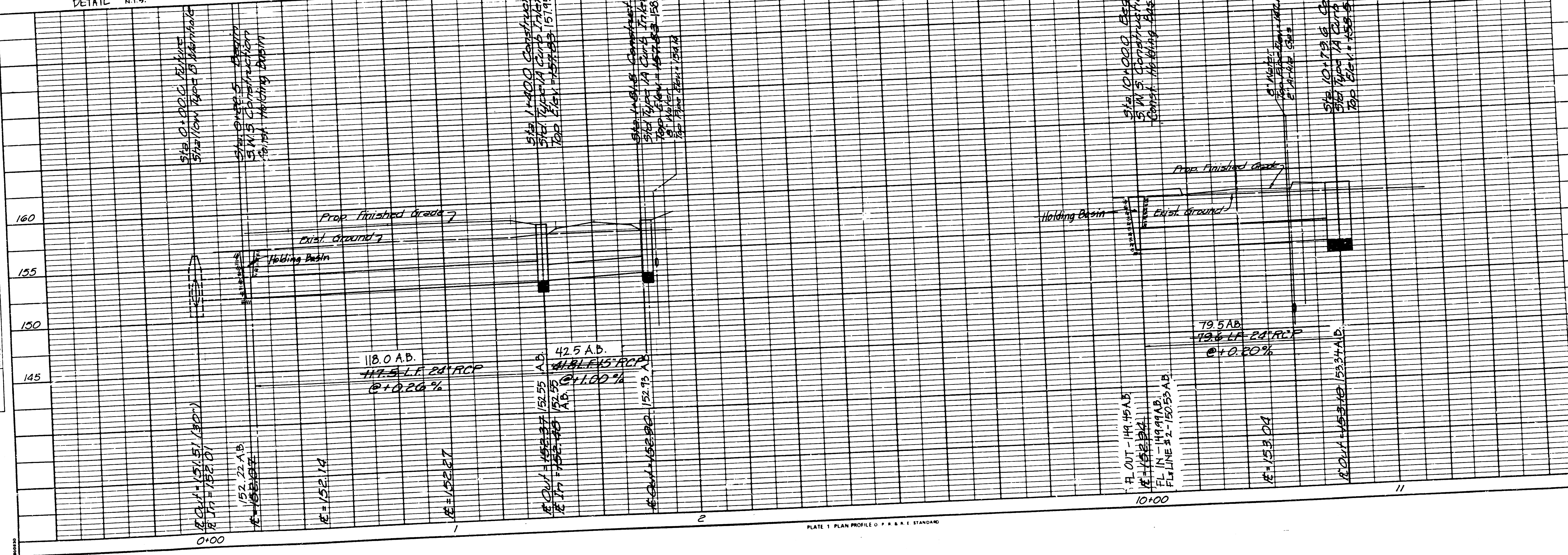
PROFILE	DATE	BY
REVISION		
NOTE BOOK		
NO.		



Sta. 10+00.0
(& Pine Grove Sta. 83+14.08, 21.17' R/L)
Begin S.W.S. Construction
Install 15\"/>

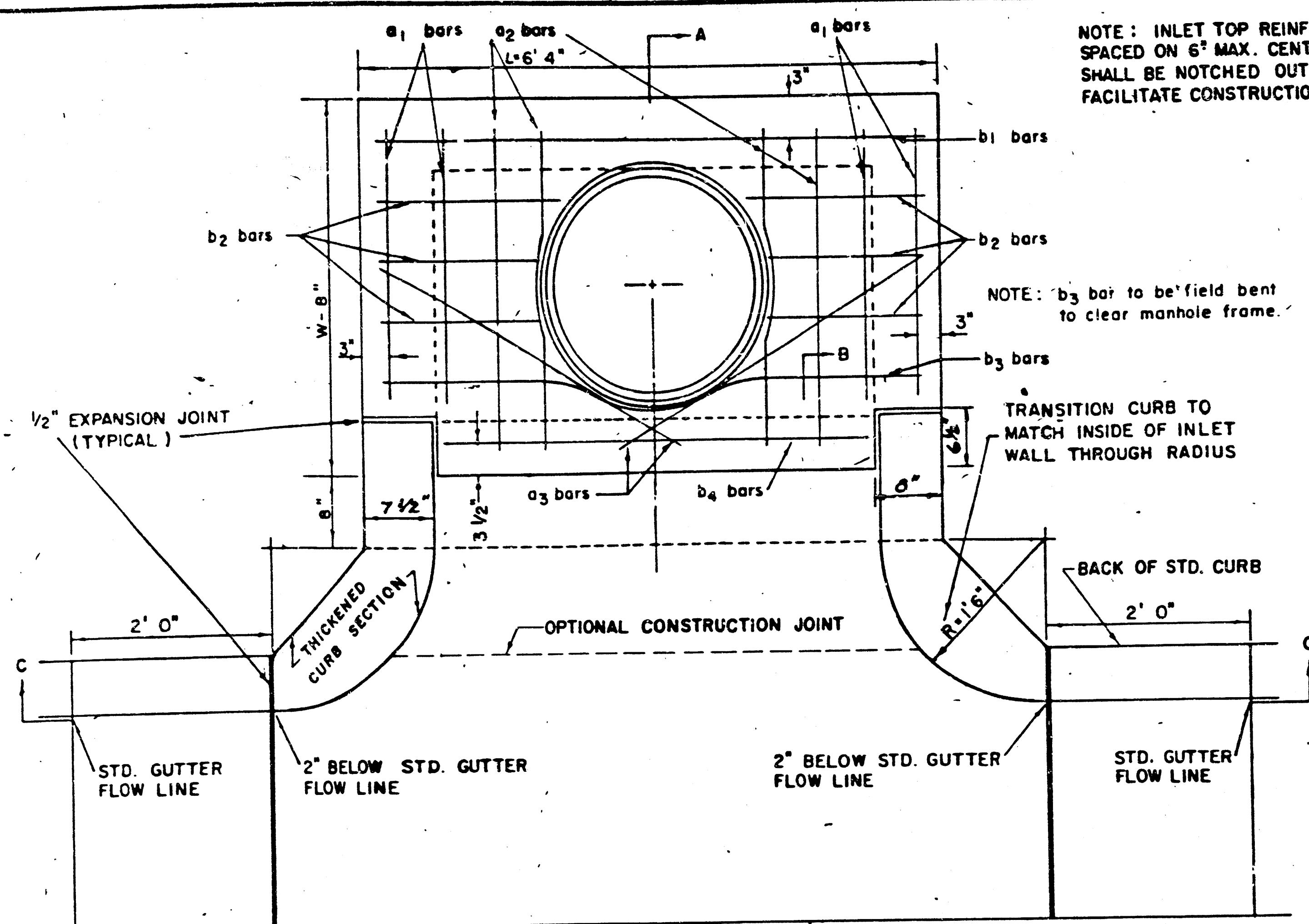


NOTE: The Contractor shall construct a temporary holding basin at the low end of each s.w.s. system. (See Detail this sheet).



GOLDEN HILLS 4th. ADDITION	
S.W.S. IMPROVEMENTS	
C.O.W. PROJ. NO. 472-76-245 80001 000 000 033	
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.	ENGINEER
WICHITA, KANSAS	DATE
Job No. 32-06570-2	Date
Designed by C.S.B., G.D.D.	Drawn by D.D.

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NOTE: EXPANSION JOINT ONLY IN CURB AREA WITH CONC. PAVEMENT.

PLAN

STEEL SCHEDULE

BAR	a ₁	a ₂	a ₃	b ₁	b ₂	b ₃	b ₄	WT. LBS.
NUMBER	4	4	2	1	3	7	2	
SIZE	#4	#4	#4	#4	#4	#4	#4	#6
W=4'4"	5'7"	6'7"	4'0"	6'1"	-	-	-	1'9"
W=5'4"	7'7"	8'7"	5'0"	6'1"	-	-	-	1'9"
W=6'4"	9'7"	10'7"	6'0"	6'1"	-	-	-	1'9"
W=7'4"	11'7"	12'7"	7'0"	6'1"	-	-	-	1'9"
W=8'4"	13'7"	14'7"	8'0"	6'1"	-	-	-	1'9"

NOTE: a₃ BARS TO BE PLACED APPROX. 2" BELOW TOP OF INLET COVER

NOTE: INLET TOP REINFORCING SHALL BE SPACED ON 6" MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB.

NOTE: b₃ bar to be field bent to clear manhole frame.

TRANSITION CURB TO MATCH INSIDE OF INLET WALL THROUGH RADIUS

BACK OF STD. CURB

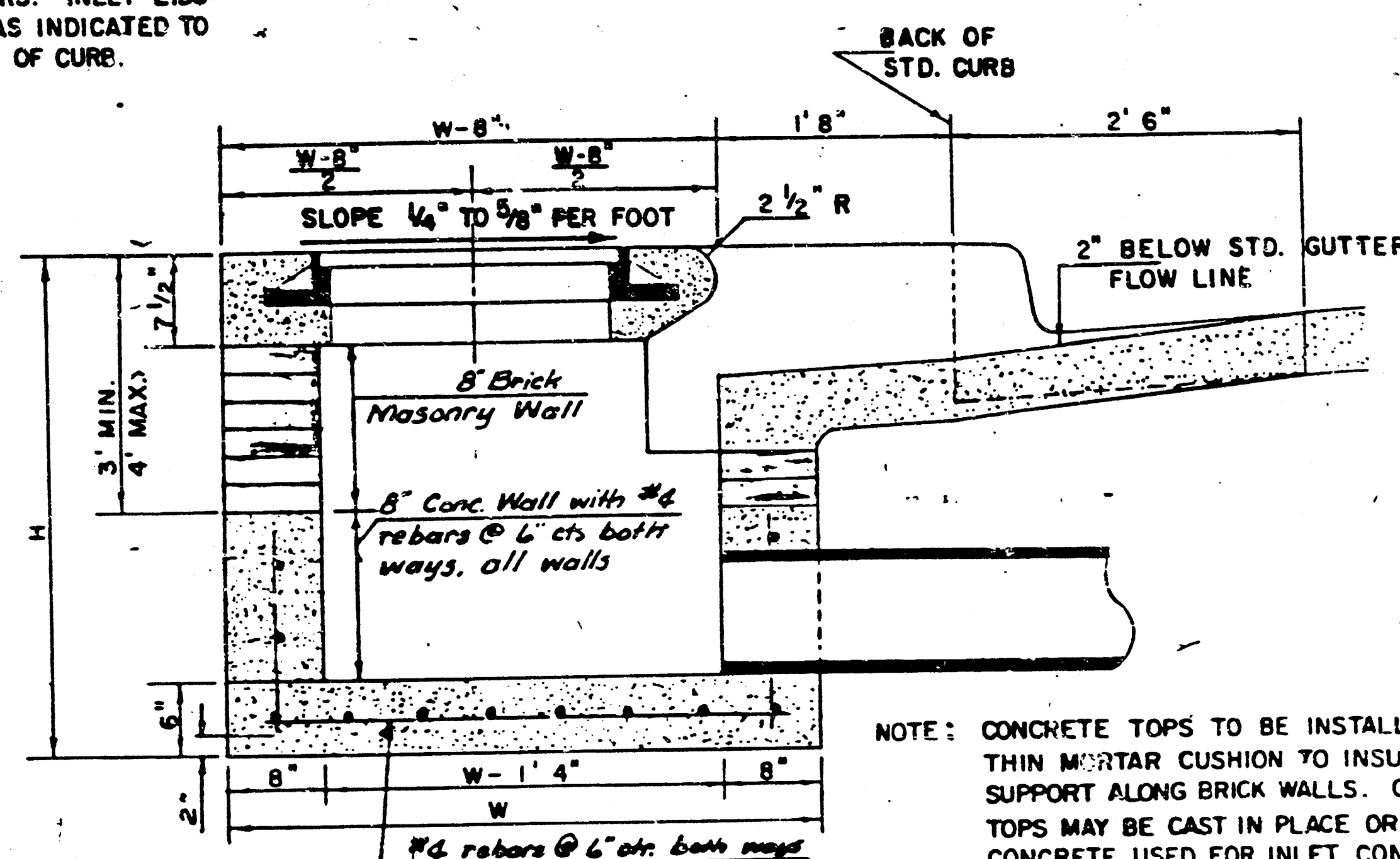
STD. GUTTER FLOW LINE

a₁ bar = W-21"

a₂ bar = W-15"

BENDING DIAGRAM

W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 4"	5' 6" x 6' 4" x 7 1/2"	21" & SMALLER	0.38 ±
5' 4"	6' 6" x 6' 4" x 7 1/2"	24" & 30"	0.51 ±
6' 4"	7' 6" x 6' 4" x 7 1/2"	36" & 42"	0.64 ±
7' 4"	8' 6" x 6' 4" x 7 1/2"	48" & 54"	0.77 ±
8' 4"	9' 6" x 6' 4" x 7 1/2"	60" & 66"	0.90 ±



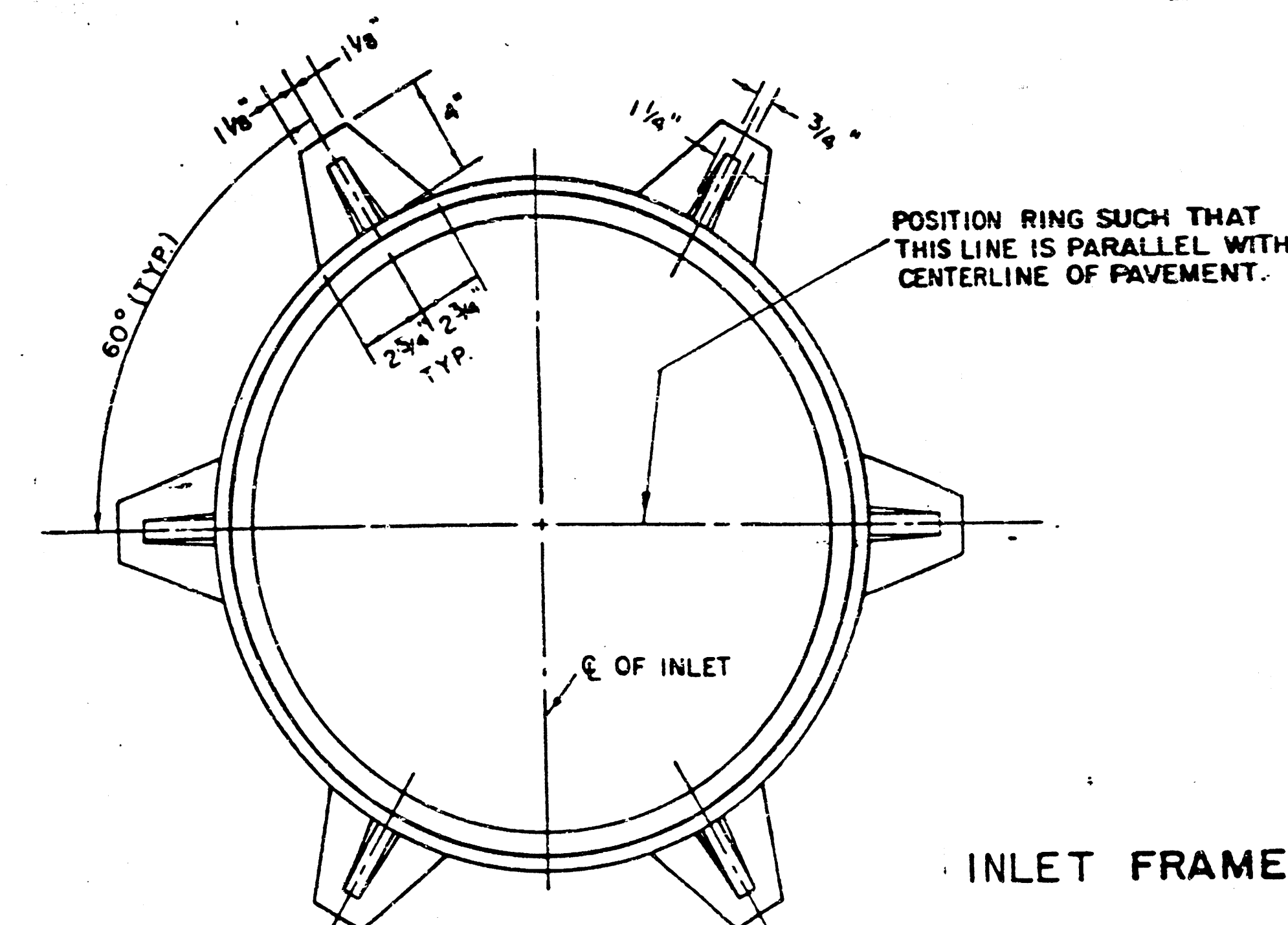
SECTION A-A

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN W = 6'4" AND H = 7'0" OR LESS.

ADDITIONAL CURB AND GUTTER CONSTRUCTION NECESSARY TO CONNECT SET-BACK INLET TO PAVEMENT WILL BE PAID FOR AT THE UNIT PRICE BID FOR EACH INLET HOOKUP.

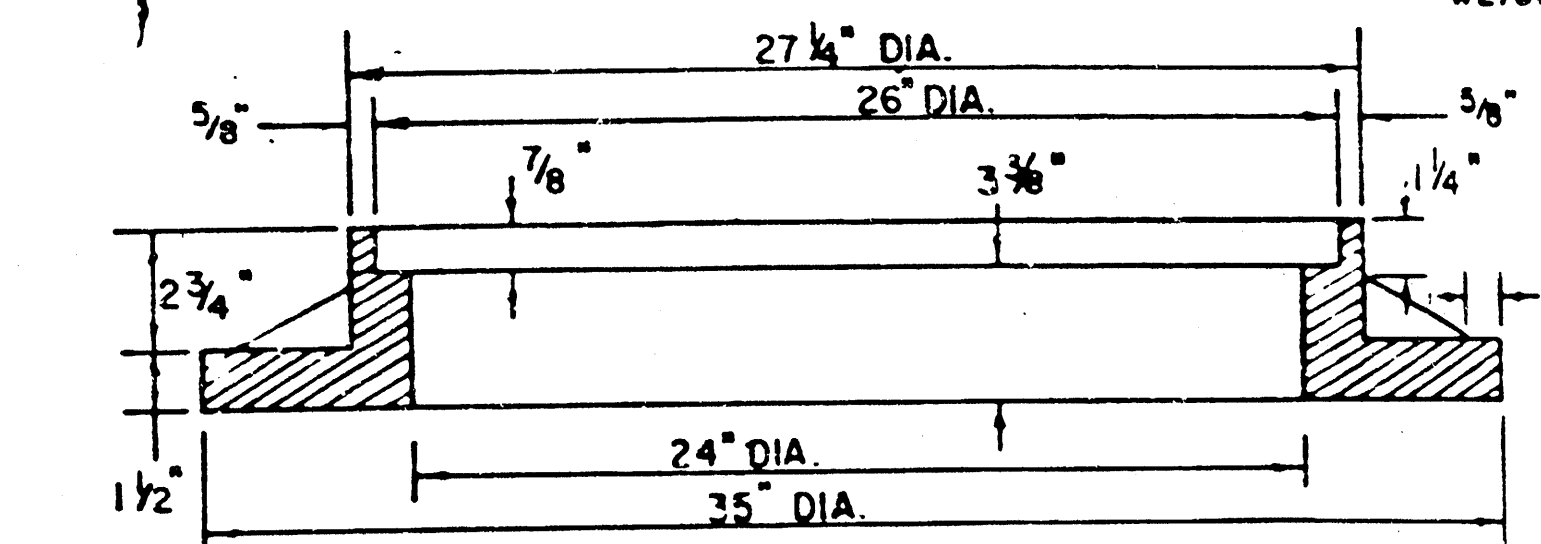
INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF-CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.

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

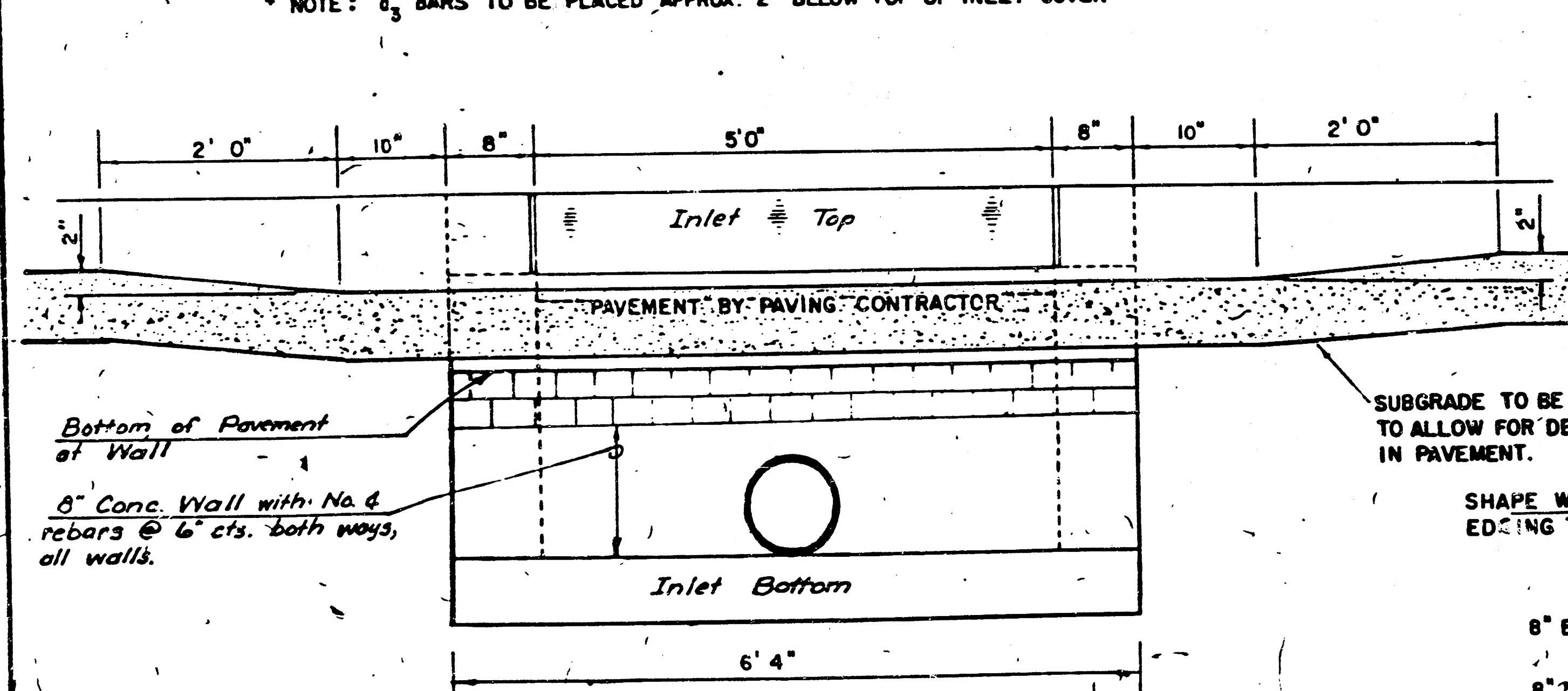


INLET FRAME

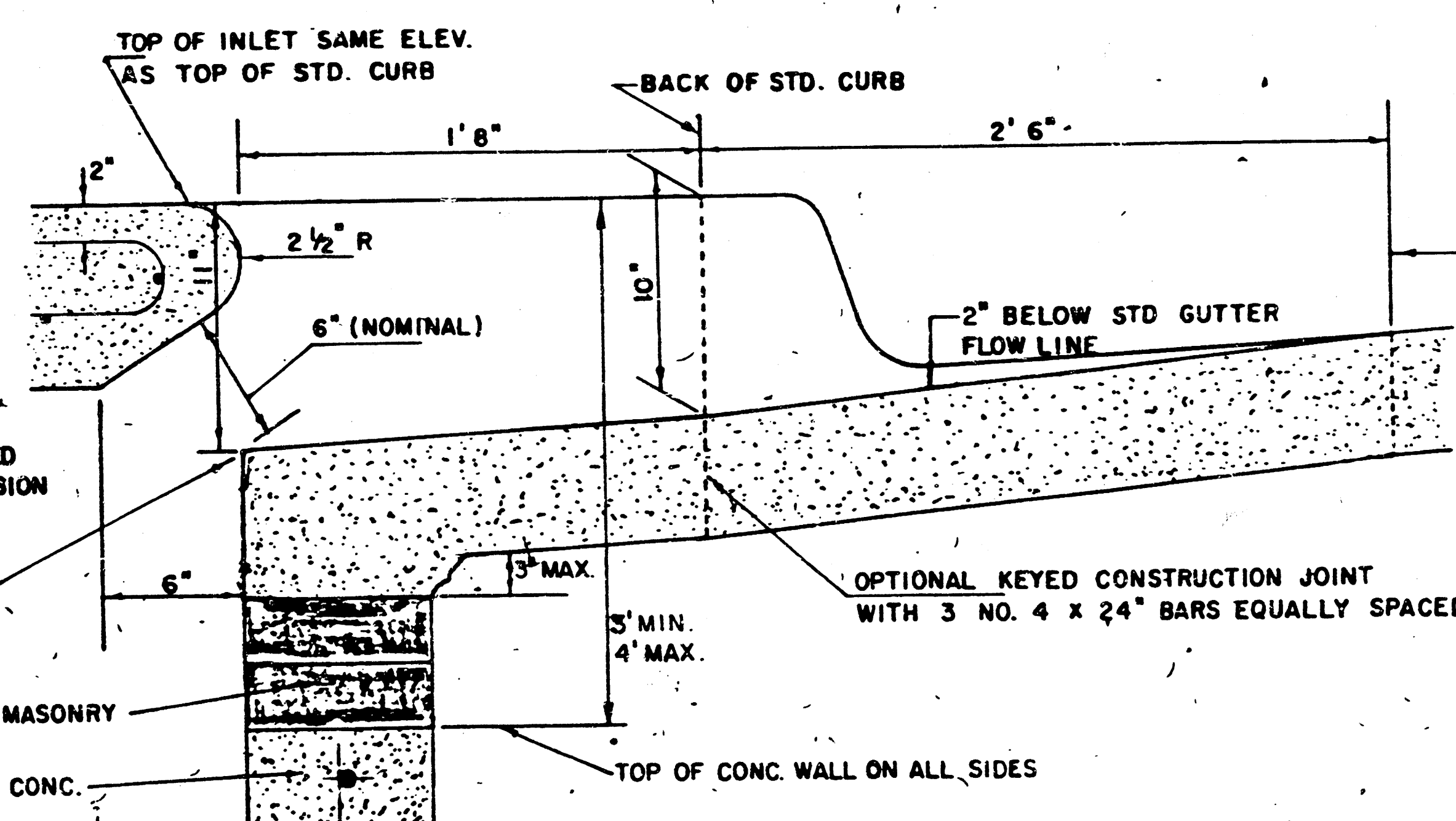
WEIGHT = 180 LBS.



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



SECTION C-C



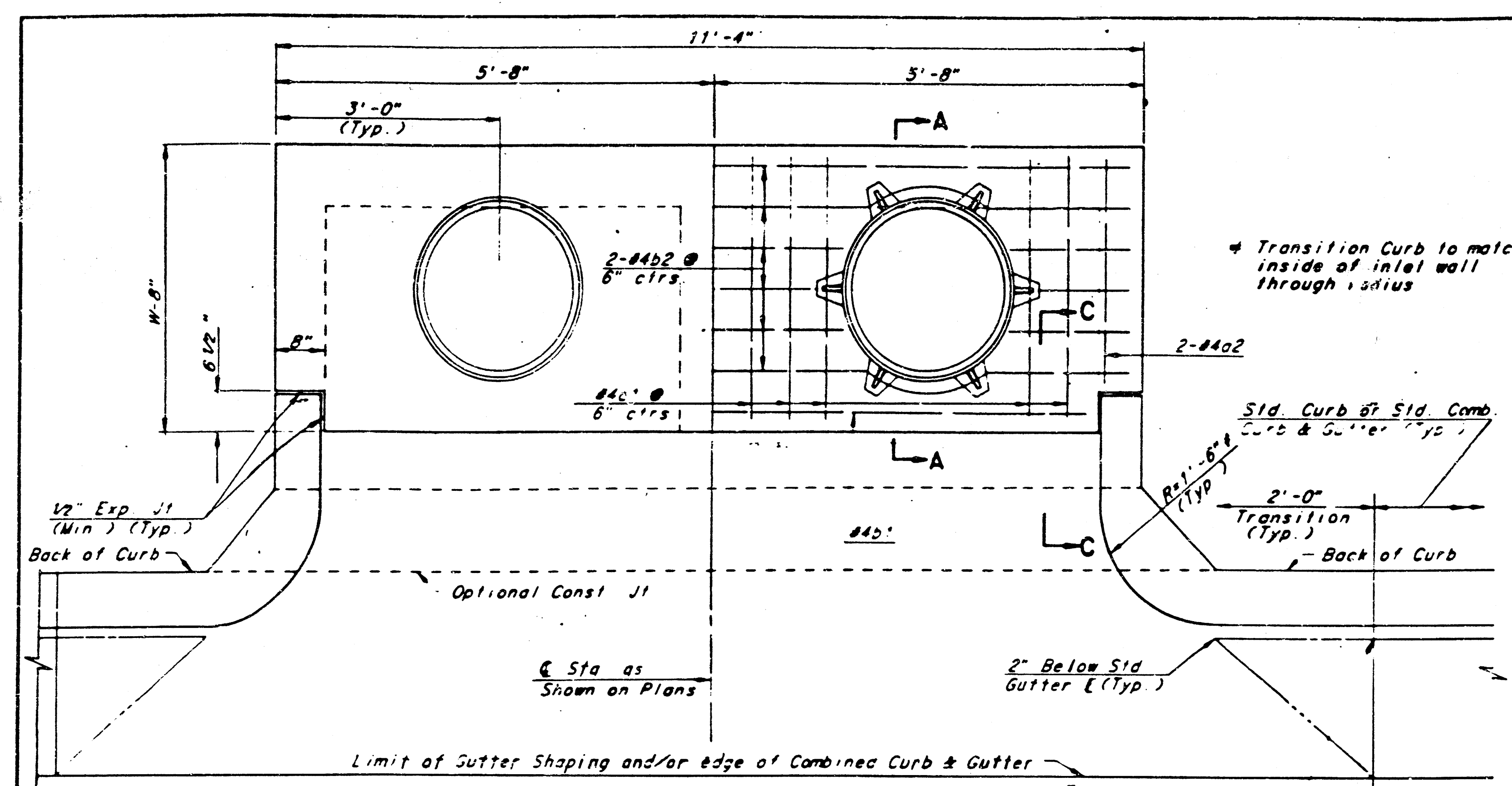
SECTION B-B

LIMITS OF GUTTER SHAPING AND/OR EDGE OF COMB. CURB AND GUTTER

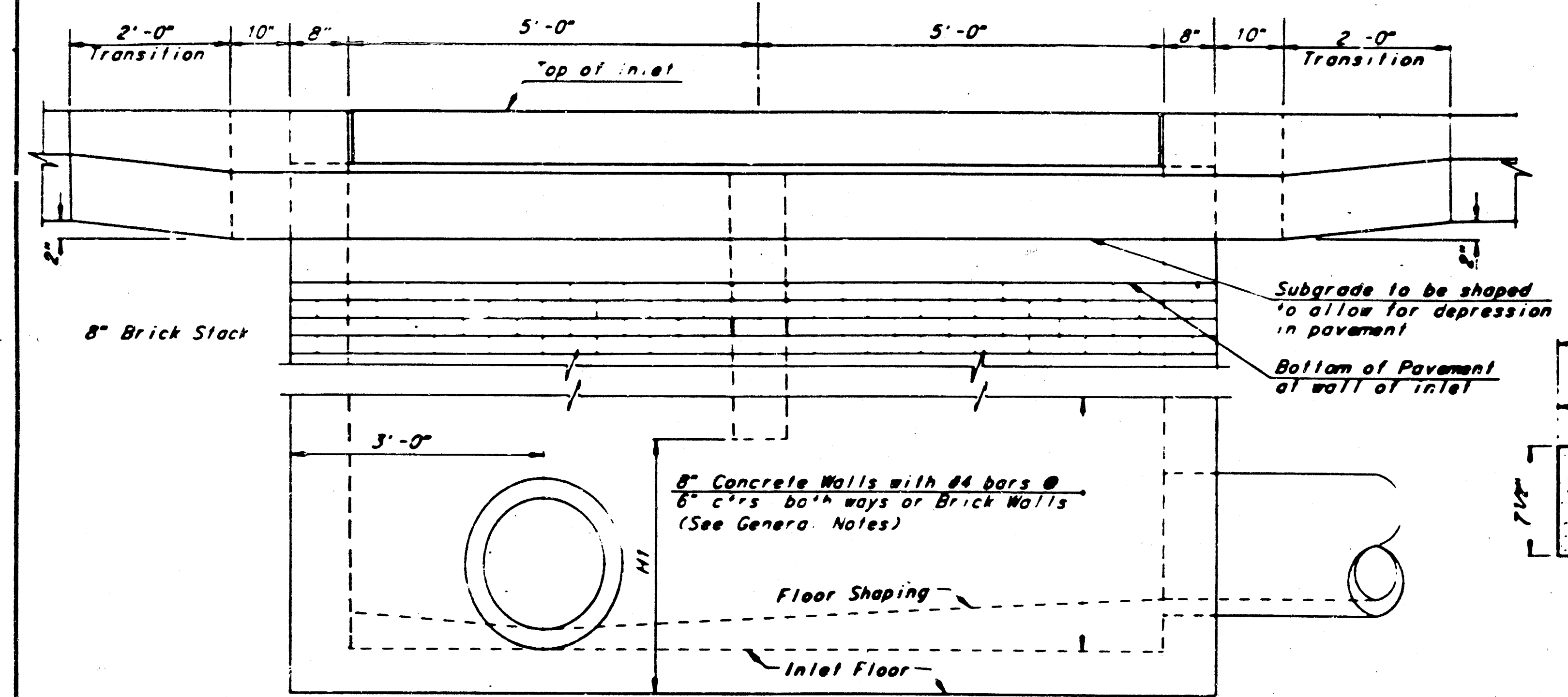
REVISED 12-21-1984

DETAIL STANDARD TYPE IA CURB INLET
CITY OF WICHITA, KANSAS
INLET OPENING = 6" x 5' 0"
(6' 0" x 4")
JUNE 1984

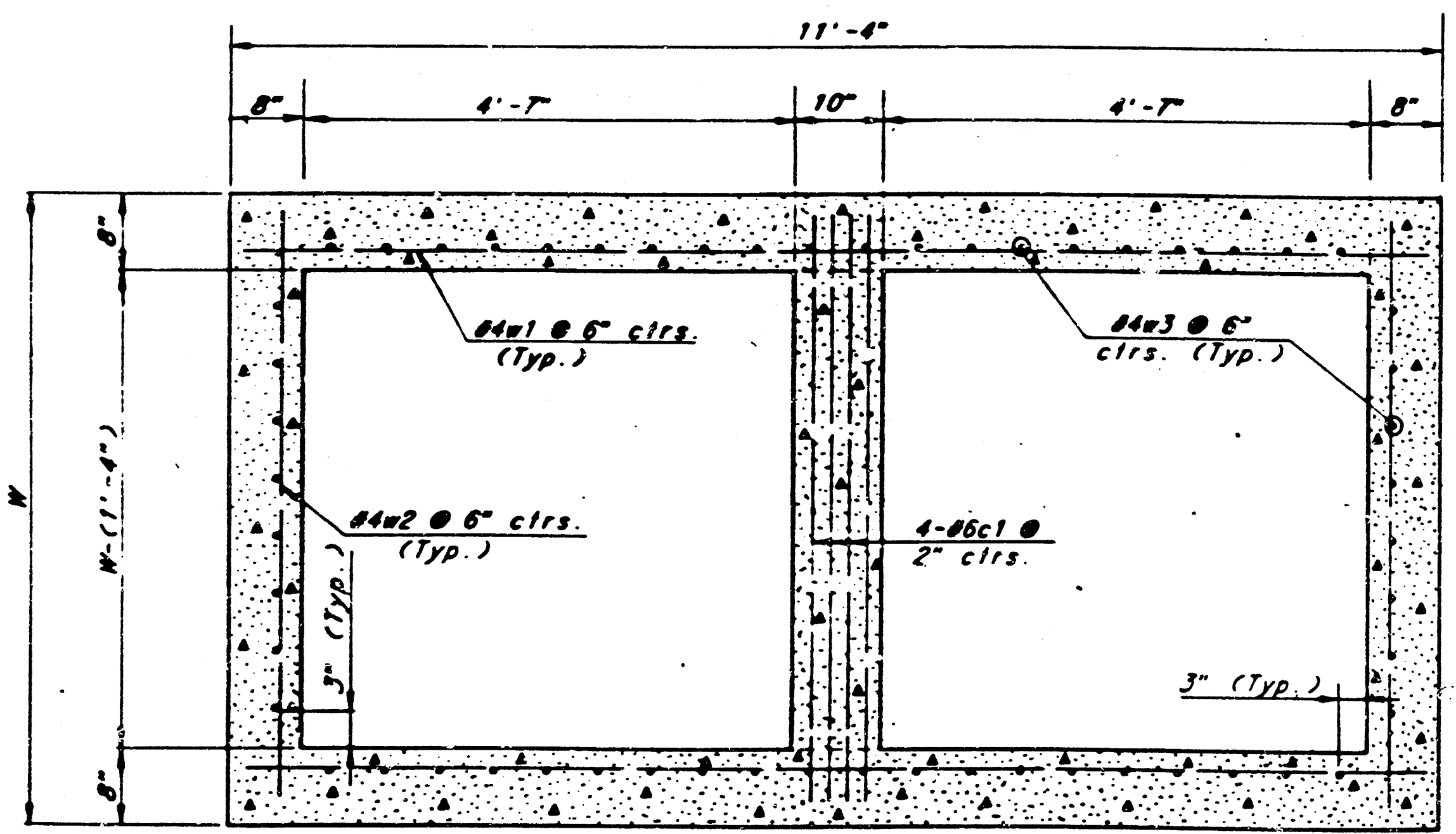
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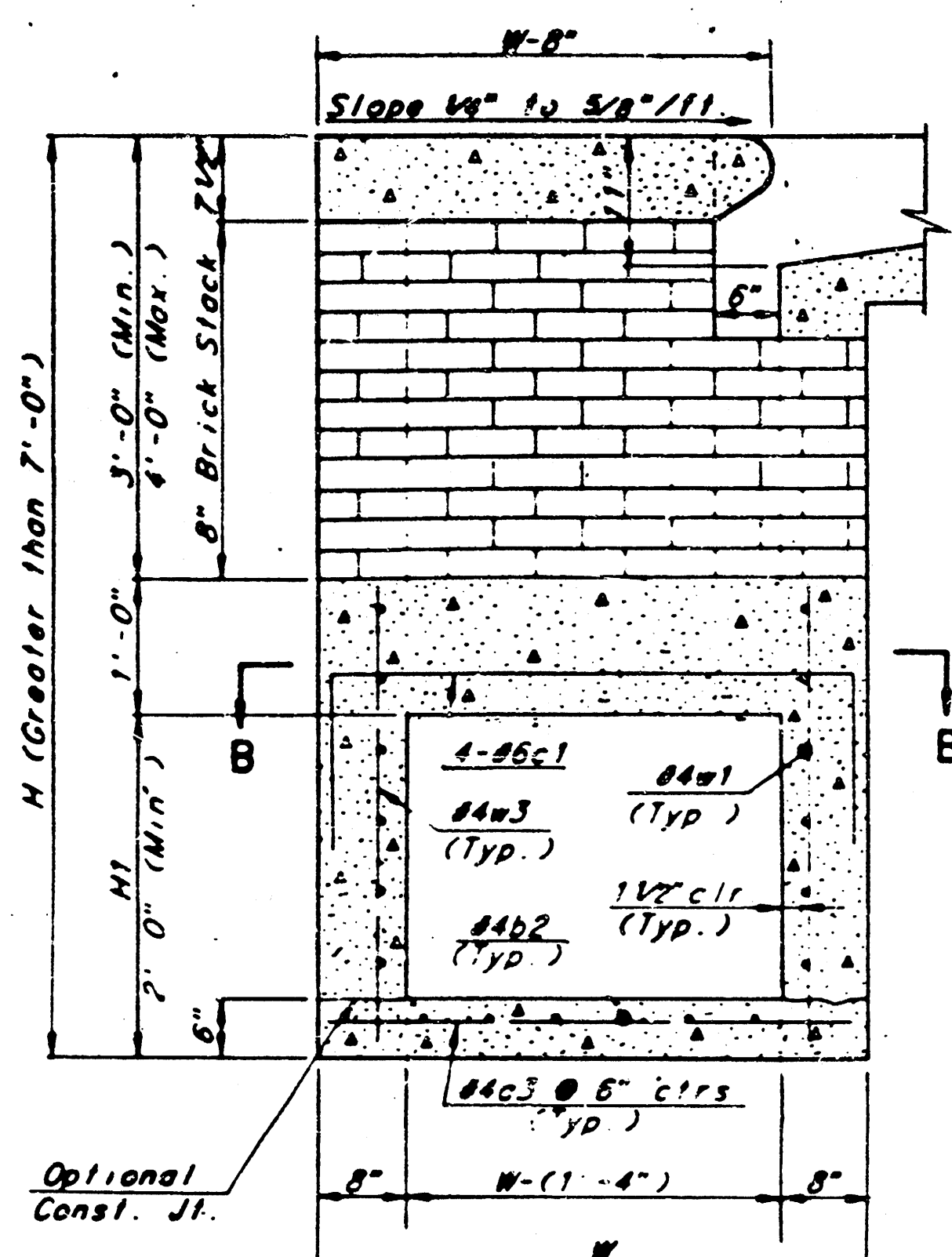
SLAB REINFORCING NOT SHOWN
SHOWING SLAB REINFORCING
PLAN



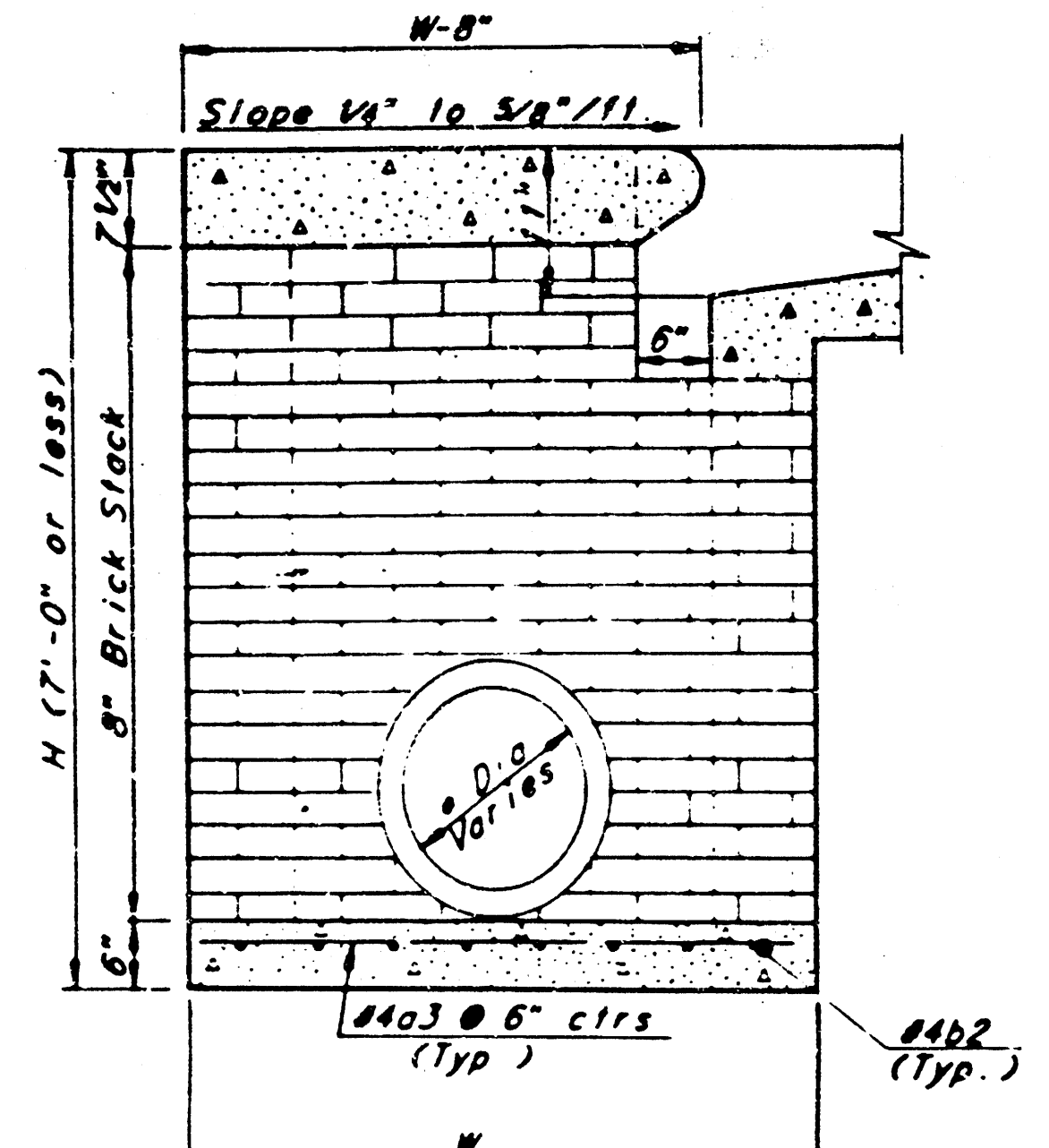
ELEVATION



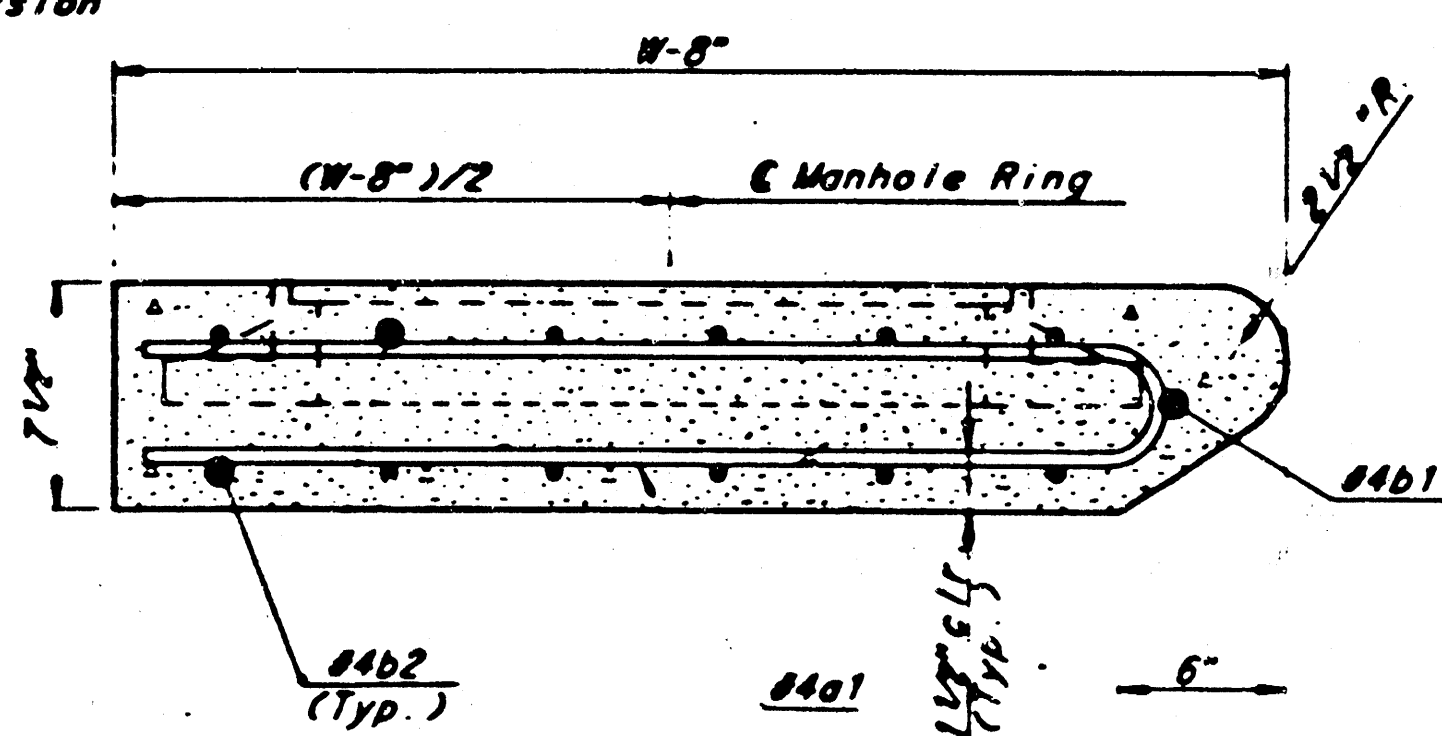
SECTION B-B



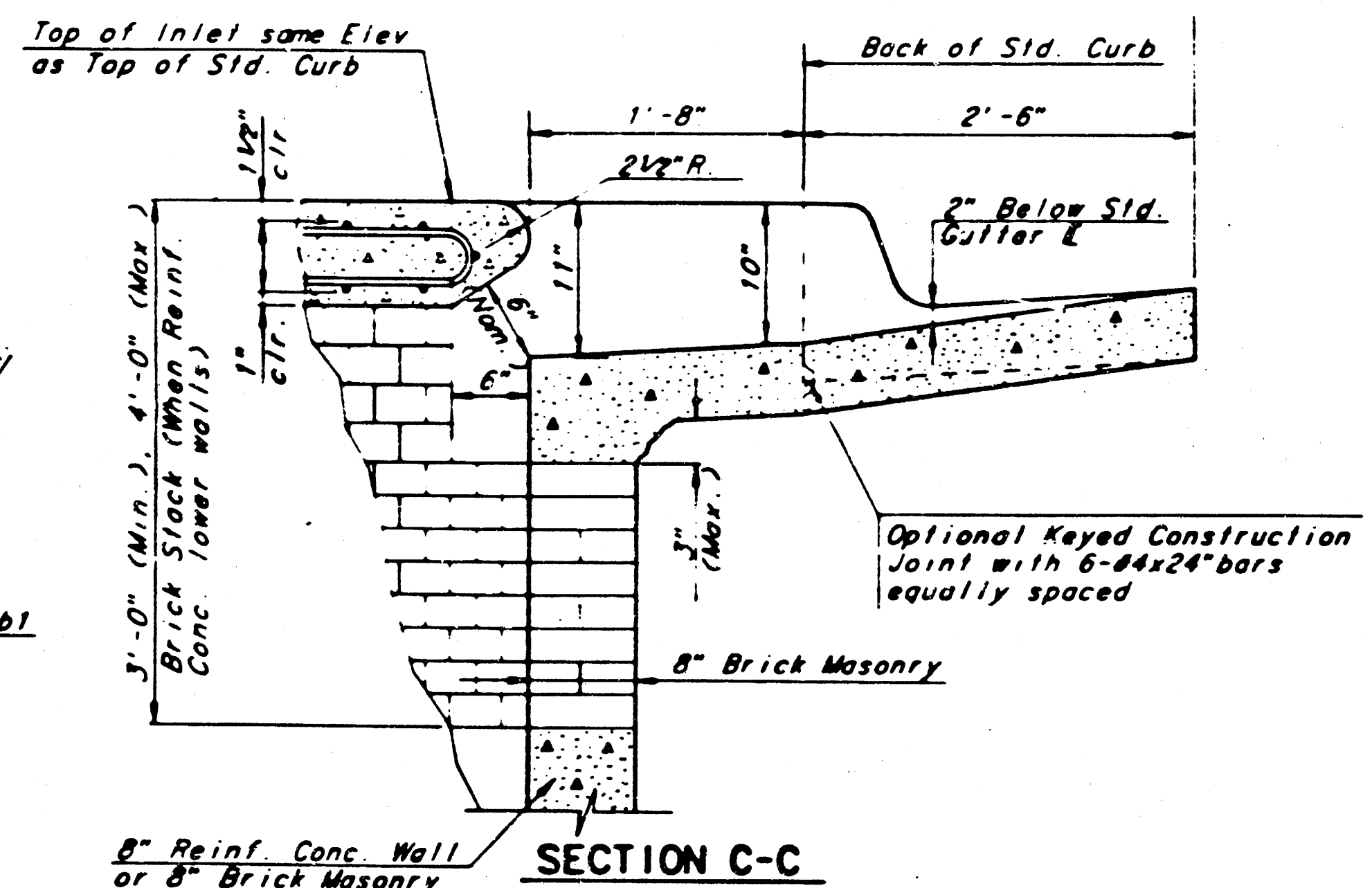
TYPICAL INLET SECTION AT CENTER WALL
(REINFORCED CONCRETE WALLS)



TYPICAL INLET SECTION AT CENTER WALL
(MASONRY WALLS)



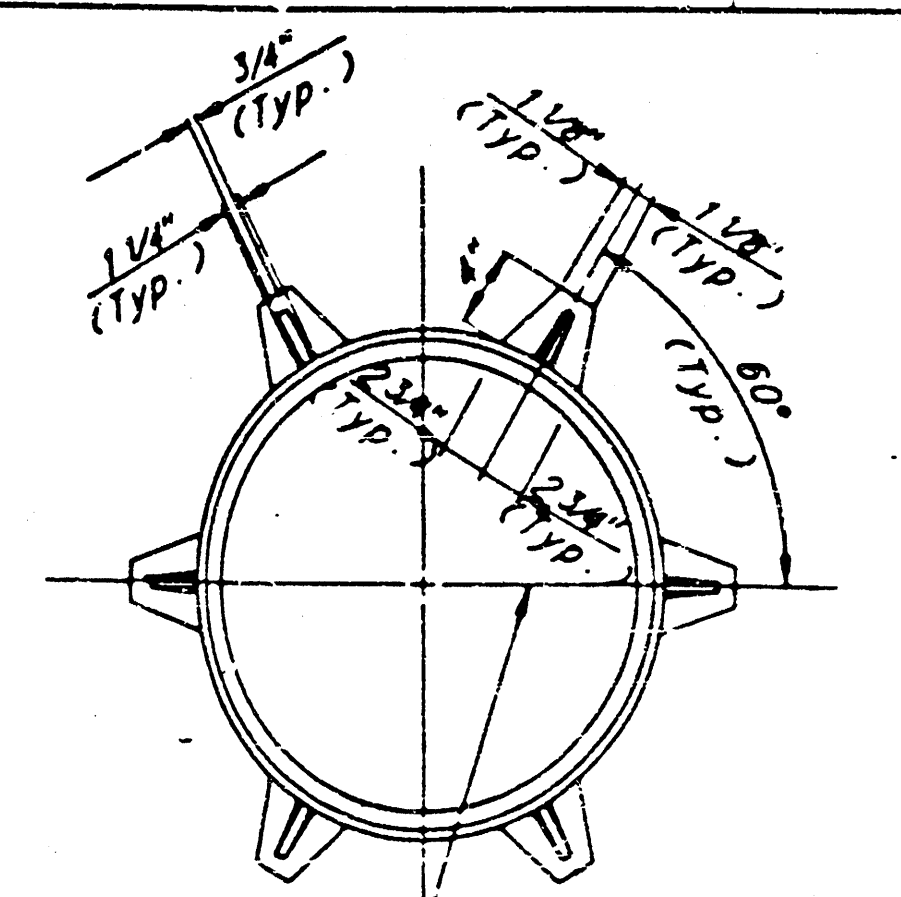
SECTION A-A



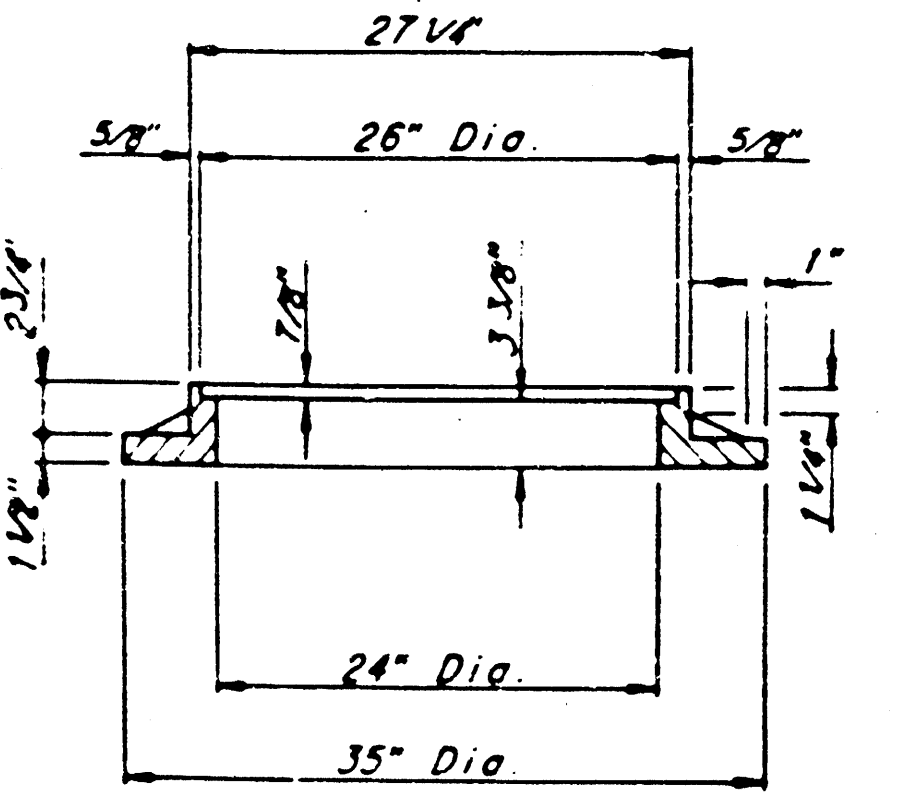
SECTION C-C

GENERAL NOTES

1. THE CONTRACTOR SHALL BE REQUIRED TO CONSTRUCT 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN W=6'-4" OR LESS AND W=7'-0" OR LESS. WHEN W IS GREATER THAN 6'-4" AND H IS LESS THAN 7'-0" THE OUTSIDE INLET WALLS BELOW THE BRICK STACK SHALL BE REINFORCED CONCRETE CONSTRUCTION AND THE CENTER WALL SHALL BE OF MASONRY CONSTRUCTION AS SHOWN FOR THE MASONRY WALL OPTION.
2. INLET INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
3. CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK WALLS. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL BE CONCRETE PAVEMENT MIX.
4. INLET TOP REINFORCING SHALL BE SPACED ON 6" MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB BARS IN INLET TOP TO BE FIELD BENT OR CUT TO CLEAR MANHOLE RING.
5. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.



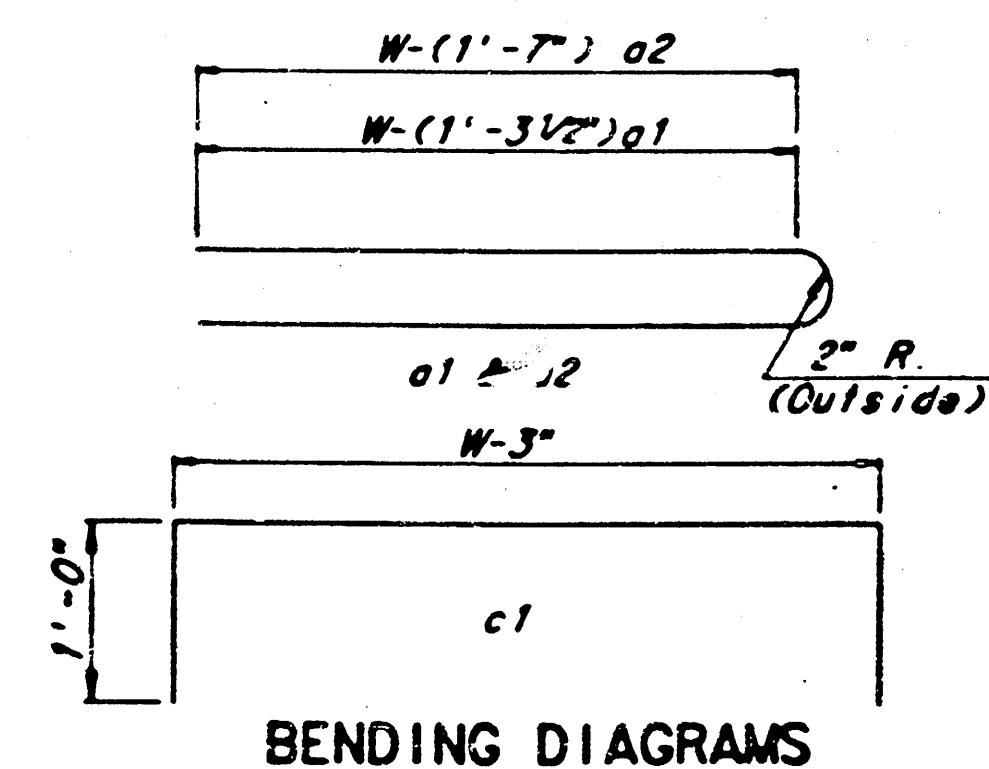
CAST IRON INLET RING
Wt. = 180 lbs.



See City of Wichita Standard Manhole Frame and Cover Detail Sheet for Cover Details to be used with Inlet Frame.

SLAB AND FLOOR REINFORCING											
MARK	SIZE	W-4' -4"		W-5' -4"		W-6' -4"		W-7' -4"		W-8' -4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
a1	#4	13	6'-7 1/4"	13	8'-7 1/4"	13	10'-7 1/4"	13	12'-7 1/4"	13	14'-7 1/4"
a2	#4	2	6'-0"	2	8'-0"	2	10'-0"	2	12'-0"	2	14'-0"
a3	#4	20	4'-1"	20	5'-1"	20	6'-1"	20	7'-1"	20	8'-1"
b1	#4	1	9'-8"	1	9'-8"	1	9'-8"	1	9'-8"	1	9'-8"
b2	#4	18	11'-1"	24	11'-1"	30	11'-1"	36	11'-1"	42	11'-1"
WALL REINFORCING											
MARK	SIZE	W-4' -4"		W-5' -4"		W-6' -4"		W-7' -4"		W-8' -4"	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
c1	#6	4	6'-1"	4	7'-1"	4	8'-1"	4	9'-1"	4	10'-1"
w1	#4	0	11'-1"	0	11'-1"	0	11'-1"	0	11'-1"	0	11'-1"
w2	#4	0	4'-1"	0	5'-1"	0	6'-1"	0	7'-1"	0	8'-1"
w3	#4	2	0	2	0	2	0	2	0	2	0

* Field bend or cut Reinforcing as required for clearance
 ① 4(HI-6")-4 (HI-6") Rounded down to nearest 0.5'
 ② 40-4(W-16") ③ HI-6"



BENDING DIAGRAMS

STANDARD TYPE 1A
CURB INLET
INLET OPENING = 6" x 10'-0"

WICHITA, KANSAS

Designed by BER, KJS, LMB
 Drawn by JGP

Checked by LMB
 Date Nov. 1984 Job No. 3226516

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MANHOLE FRAME AND COVER DETAIL

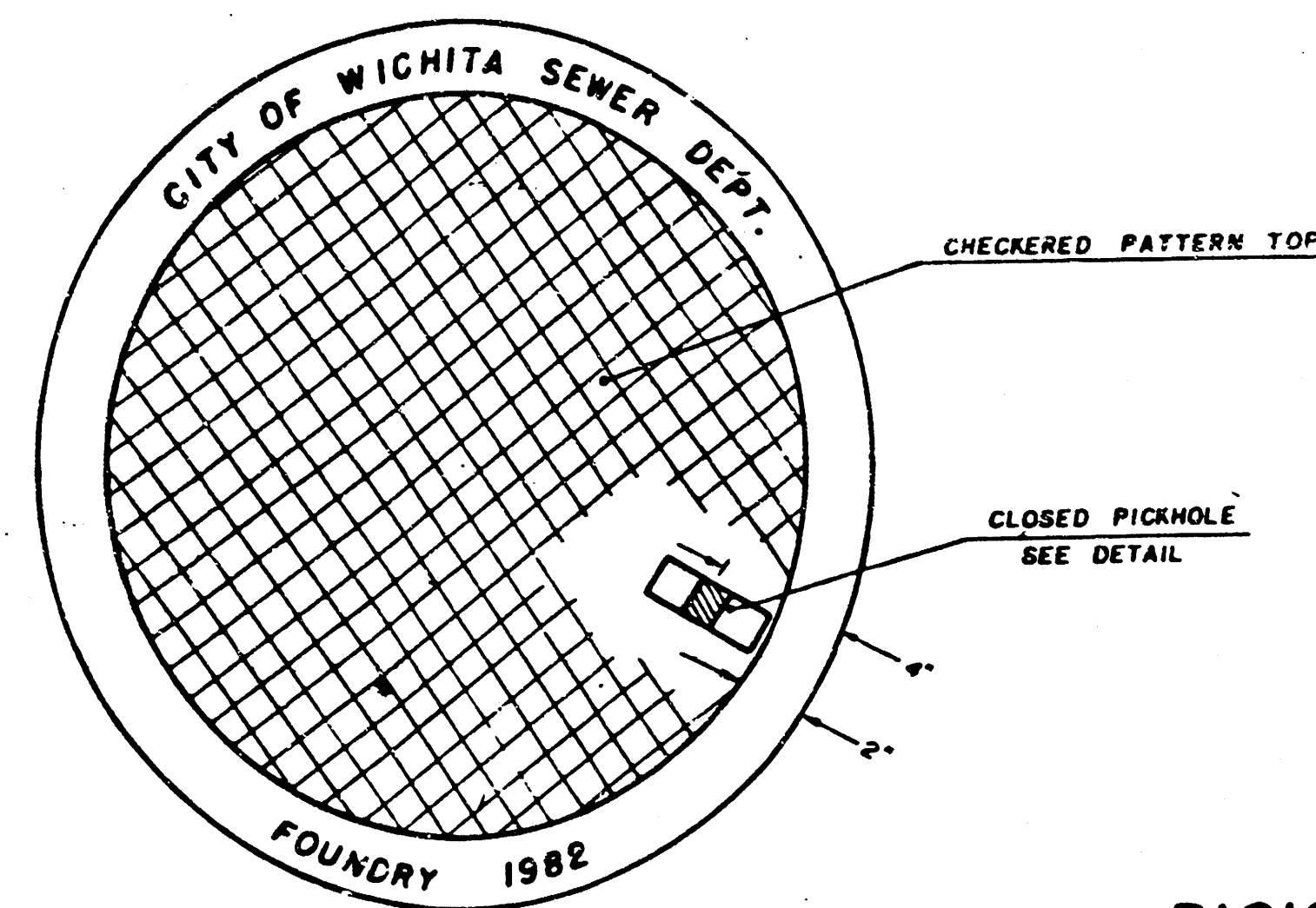
ADOPTED AS STANDARD DESIGN

BY

City of Wichita, Kansas

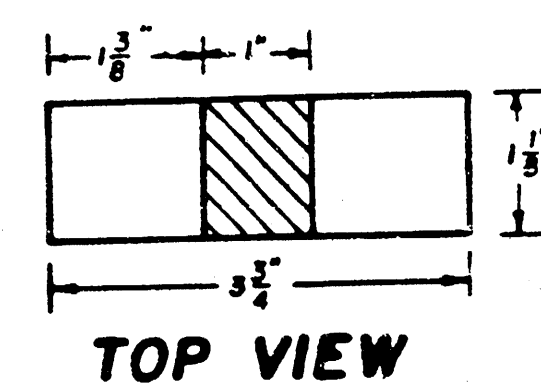
MANHOLE COVER

Weight: 180 Lbs.

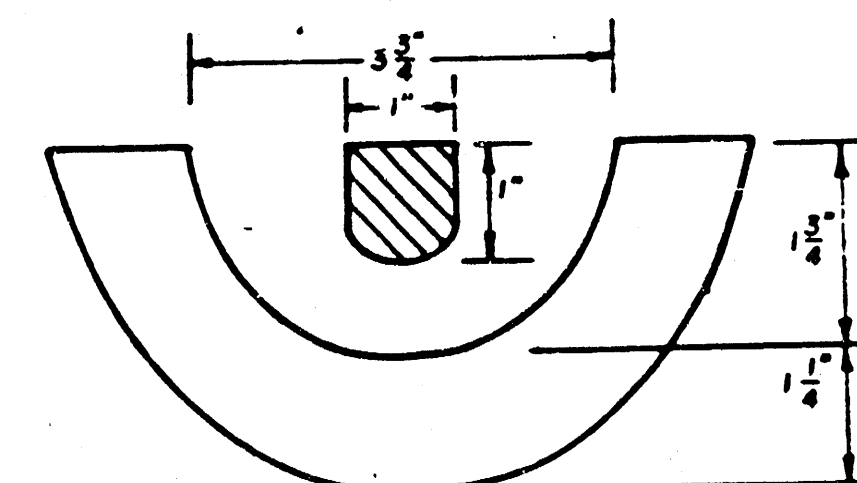


TOP VIEW

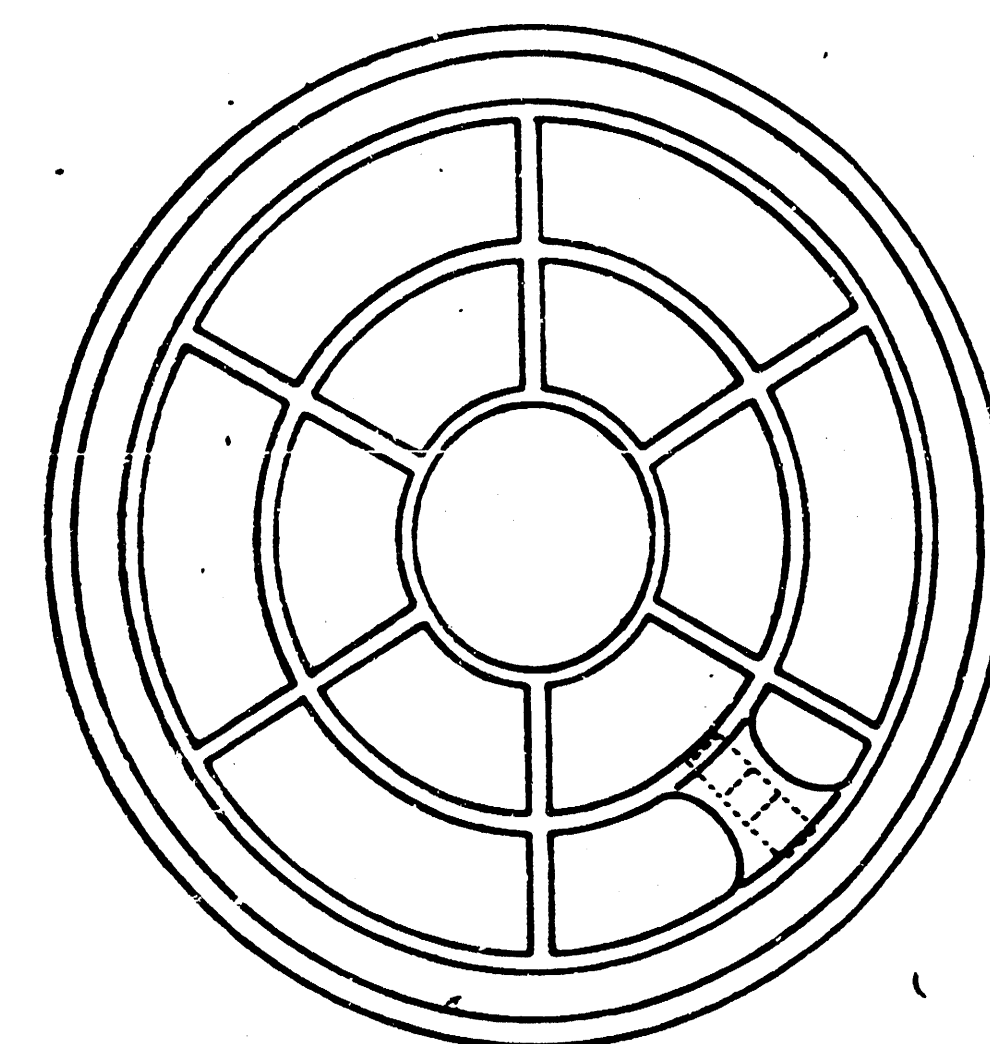
PICKHOLE DETAIL



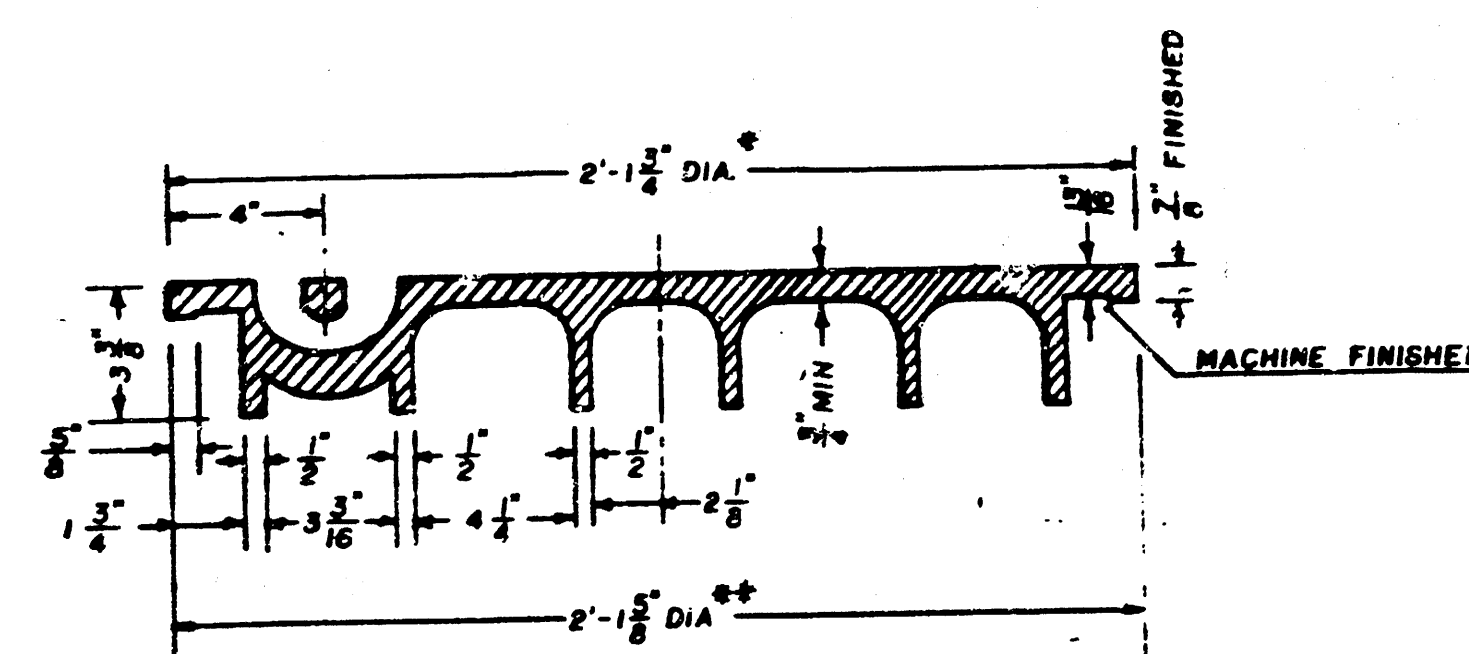
TOP VIEW



SECTION VIEW



BOTTOM VIEW

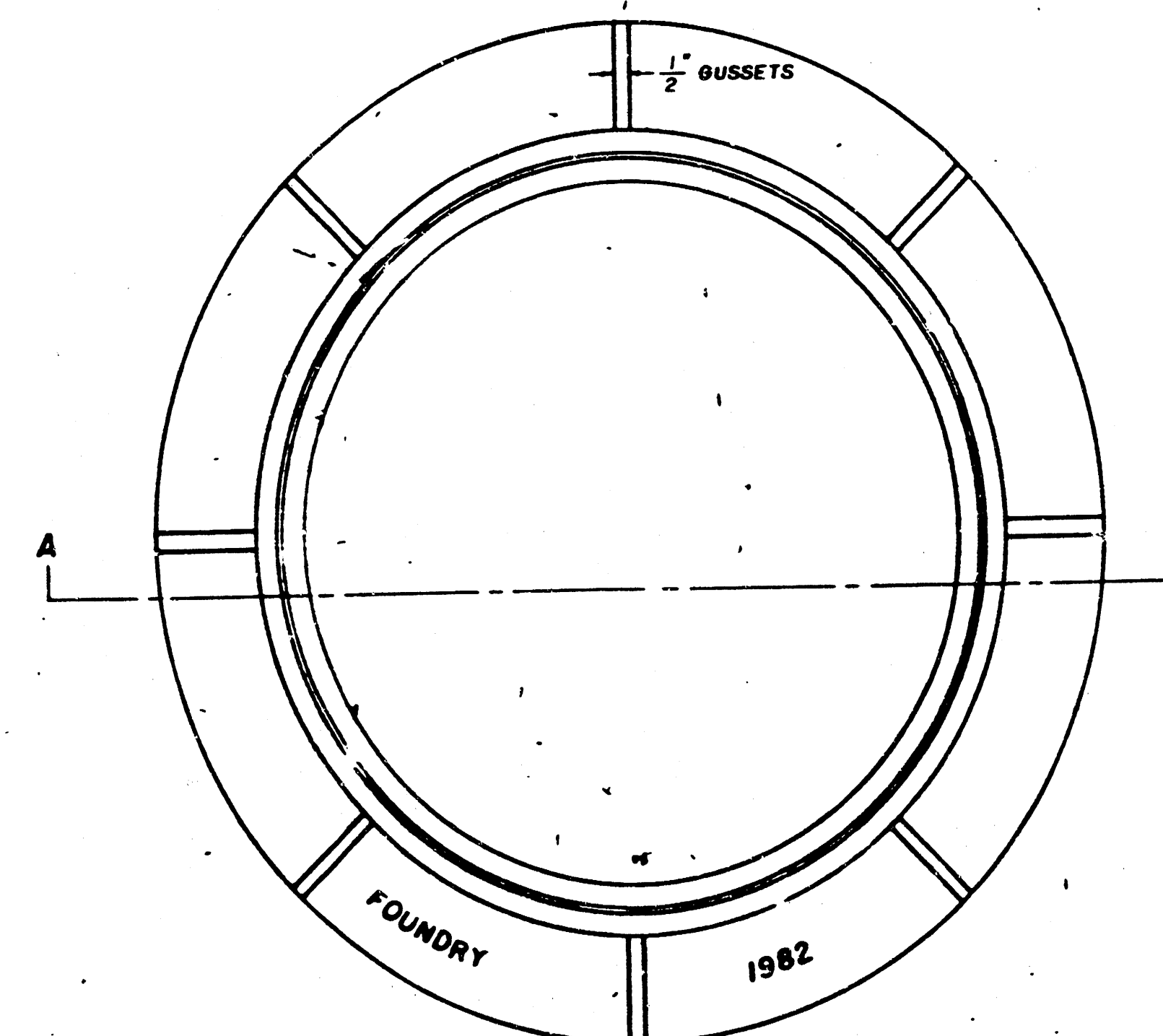


SECTION VIEW

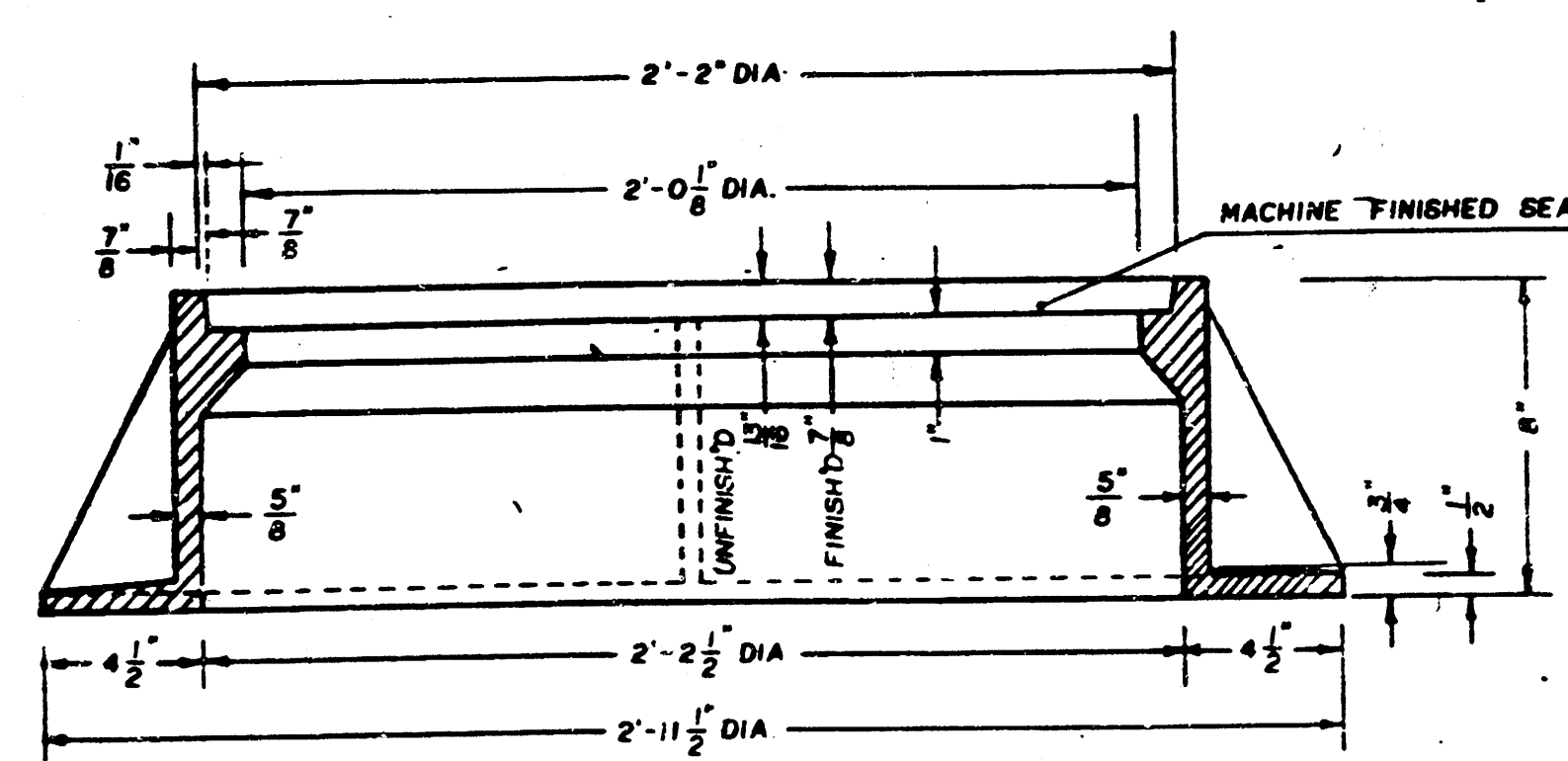
* OUTSIDE DIA. TOP OF COVER
** OUTSIDE DIA. BOTTOM OF COVER

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 DETAIL 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.