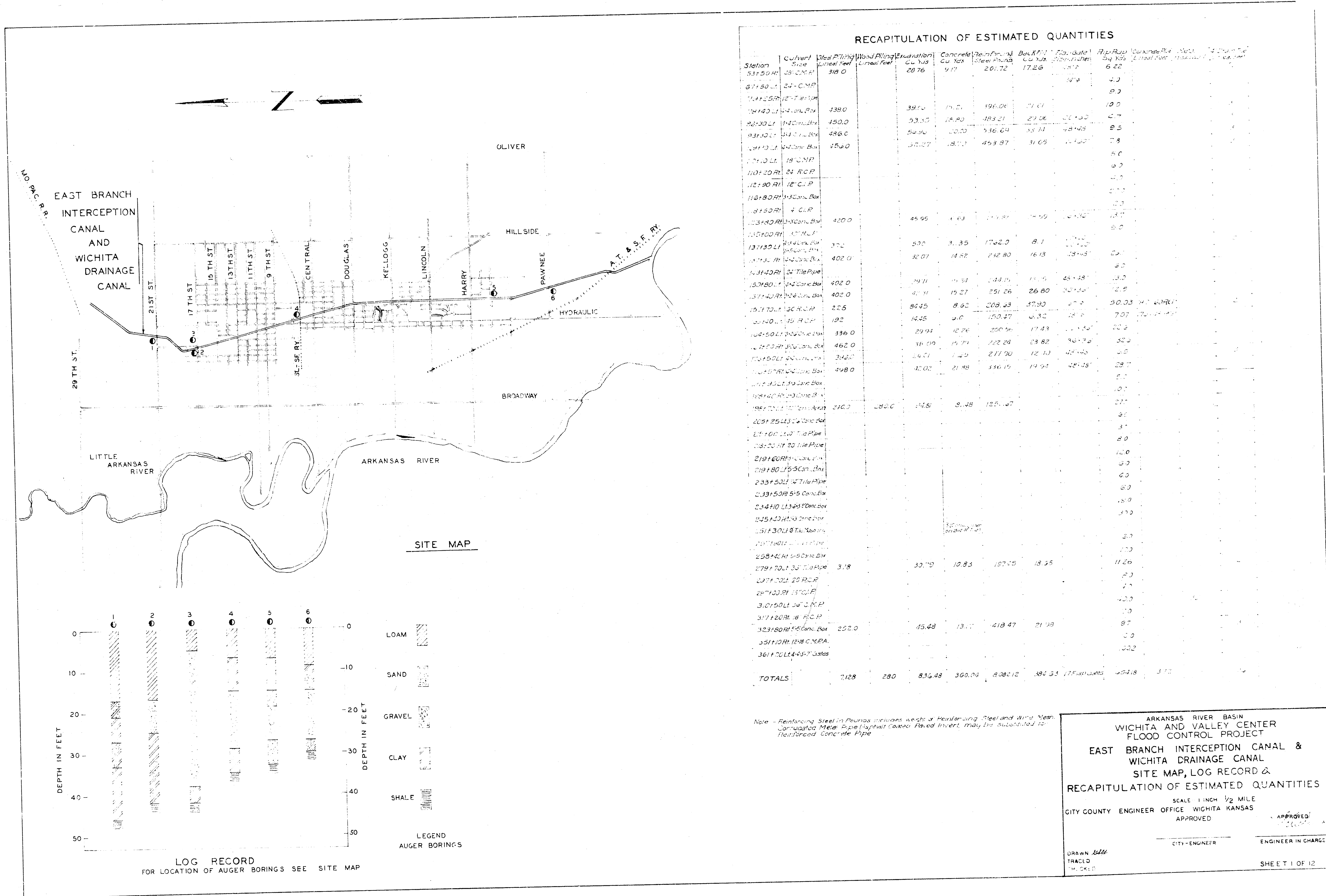
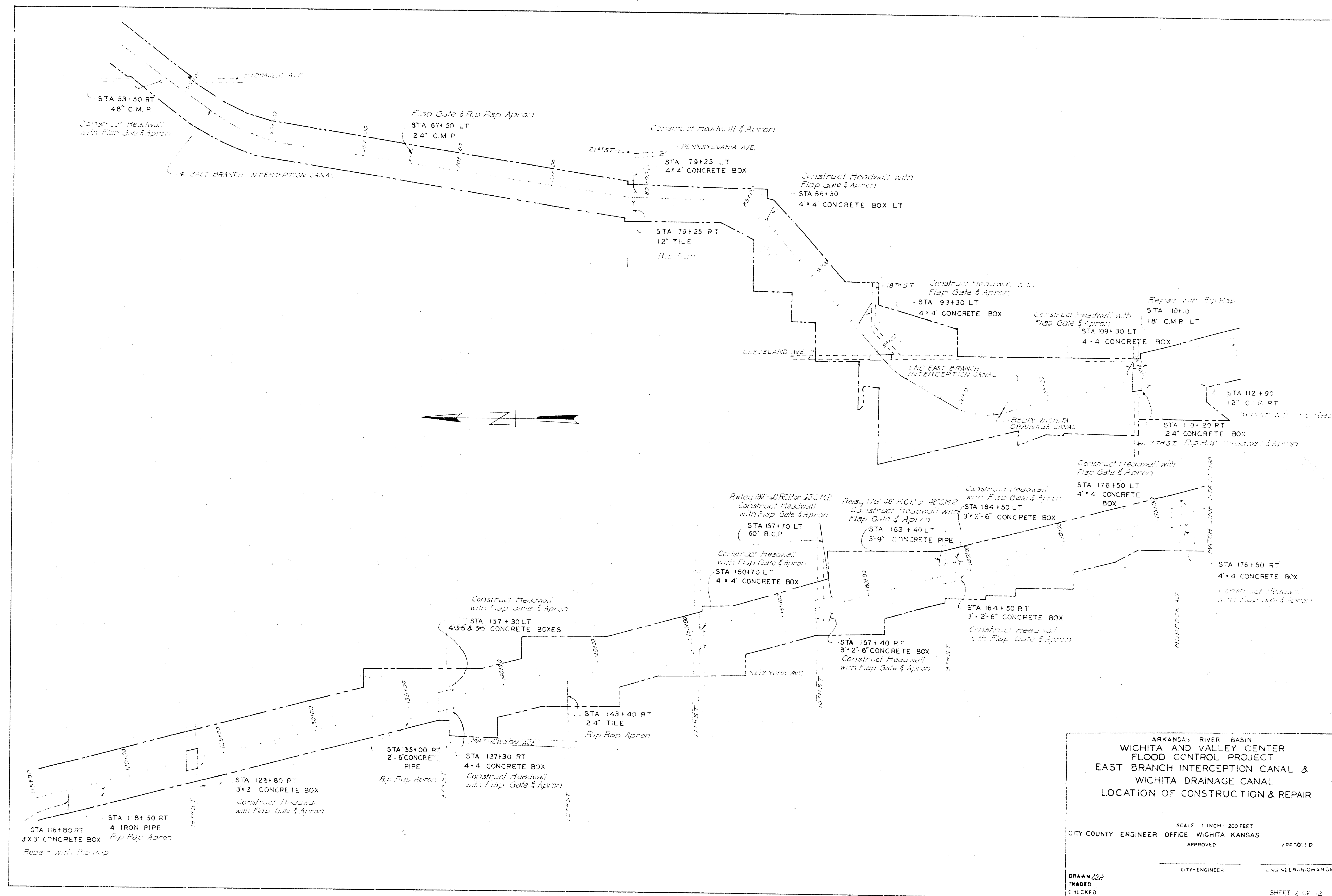


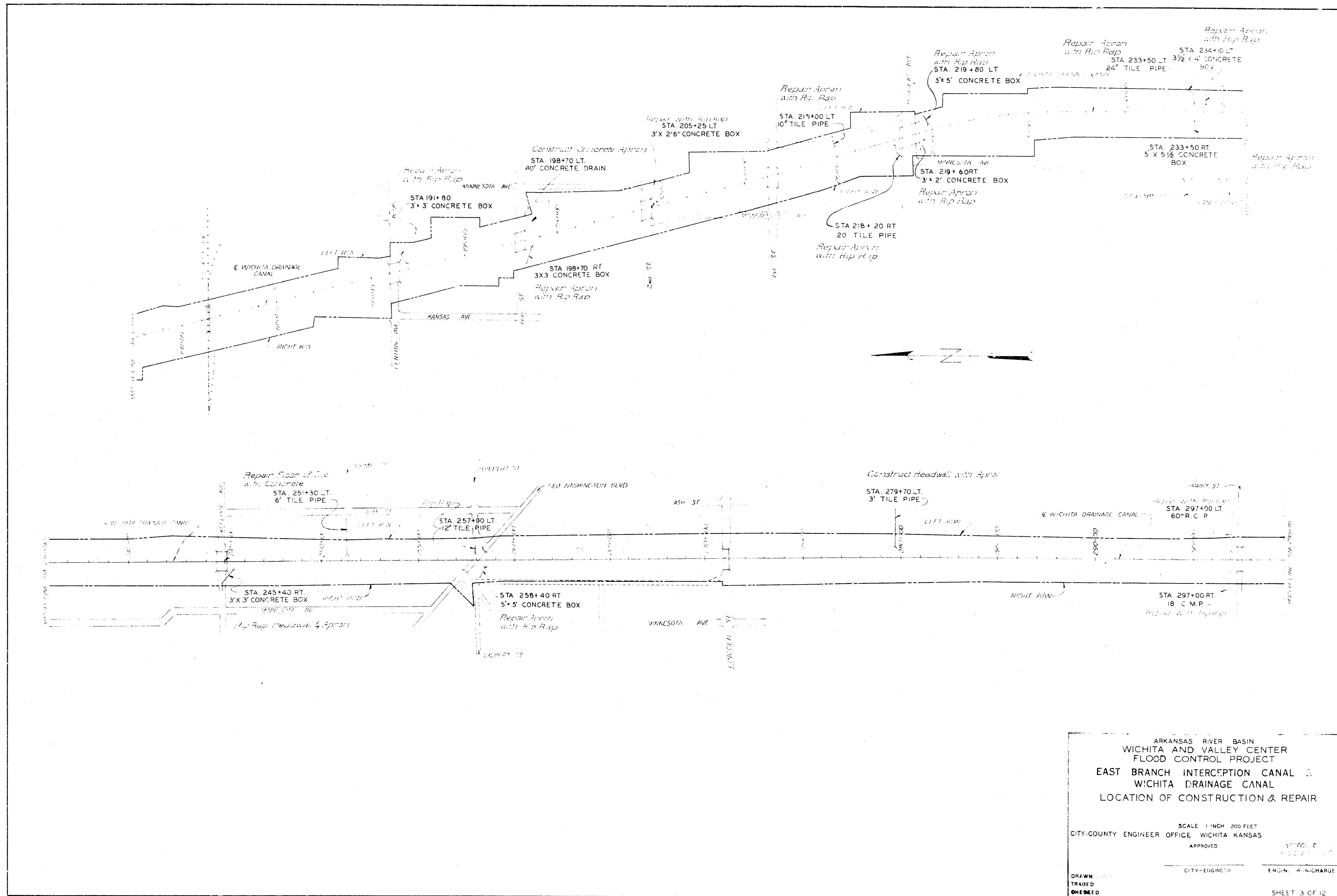


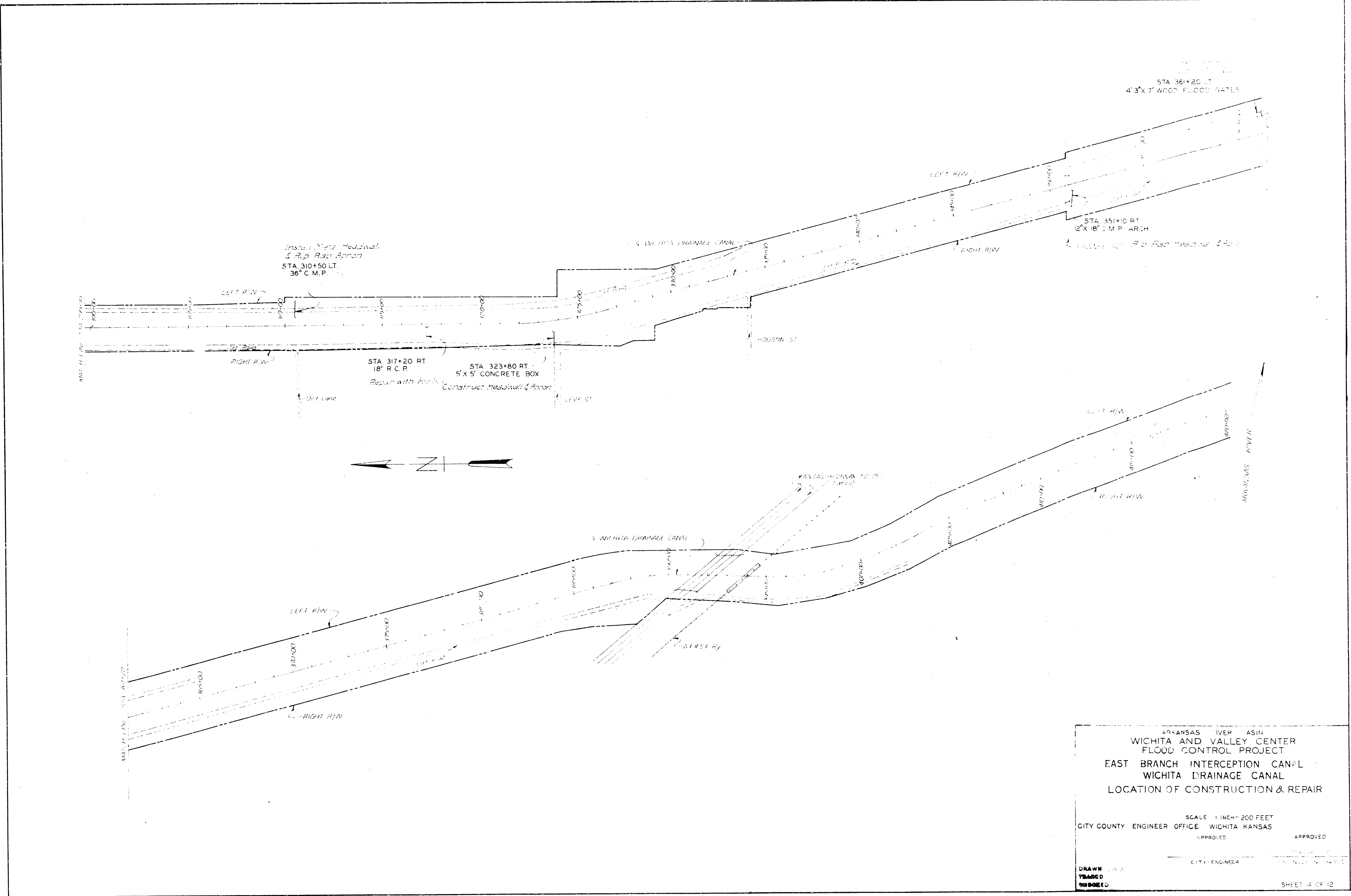
RECAPITULATION OF ESTIMATED QUANTITIES											
Station	Curved Feet	Steel Piping Culvert Feet	Wood Piping Culvert Feet	Excavation Cu Yds	Concrete Cu Yds	Reinforced Steel Piping Cu Yds	Backfill Cu Yds	Gravel Cu Yds	Gravel Bags	Gravel Cubic Feet	Gravel Cubic Feet
53+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
57+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
61+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
65+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
69+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
73+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
77+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
81+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
85+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
89+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
93+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
97+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
101+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
105+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
109+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
113+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
117+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
121+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
125+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
129+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
133+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
137+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
141+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
145+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
149+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
153+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
157+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
161+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
165+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
169+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
173+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
177+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
181+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
185+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
189+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
193+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
197+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
201+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
205+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
209+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
213+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
217+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
221+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
225+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
229+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
233+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
237+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
241+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
245+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
249+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
253+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
257+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
261+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
265+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
269+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
273+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
277+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
281+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
285+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
289+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
293+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
297+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
301+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
305+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
309+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
313+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
317+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
321+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
325+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
329+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
333+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
337+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
341+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
345+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
349+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
353+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
357+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
361+50.00	30.0	30.0	30.0	20.76	9.17	20.76	17.28	17.28	6.42	6.42	6.42
TOTALS	7128	280	834.98	360.06	808.12	892.53	173.12	173.12	6.42	6.42	6.42

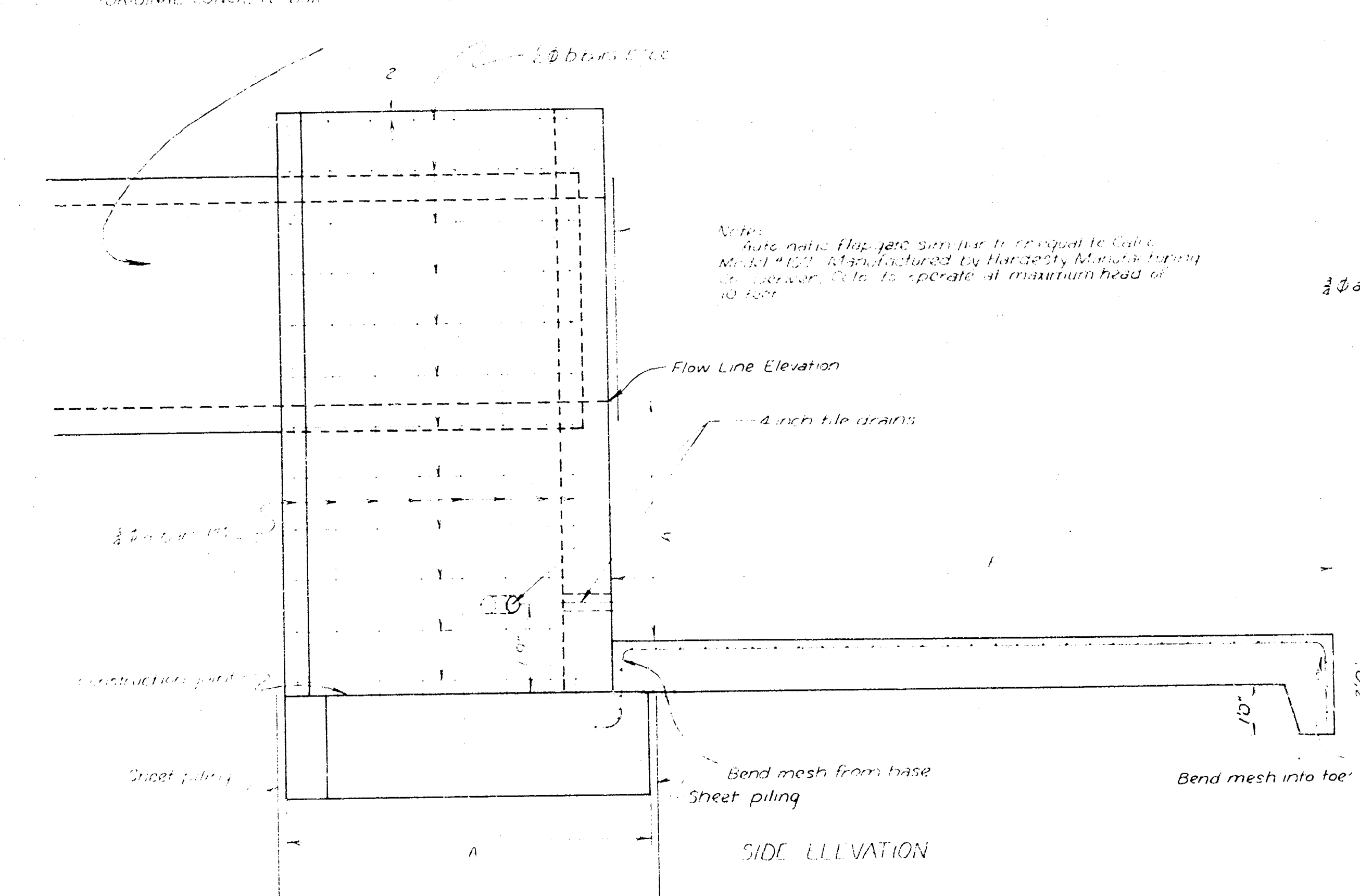
Note: Reinforcing Steel in Piers and Abutments, and in the Main Line, may be substituted for Reinforced Concrete Pipe.

ARKANSAS RIVER BASIN
WICHITA AND VALLEY CENTER
FLOOD CONTROL PROJECT
EAST BRANCH INTERCEPTION CANAL &
WICHITA DRAINAGE CANAL
SITE MAP, LOG RECORD &
RECAPITULATION OF ESTIMATED QUANTITIES
SCALE: 1 INCH = 1/2 MILE
CITY COUNTY ENGINEER OFFICE WICHITA KANSAS
APPROVED: [Signature]
CITY ENGINEER
ENGINEER IN CHARGE
DRAWN: [Signature]
CHECKED: [Signature]
SHEET 1 OF 12



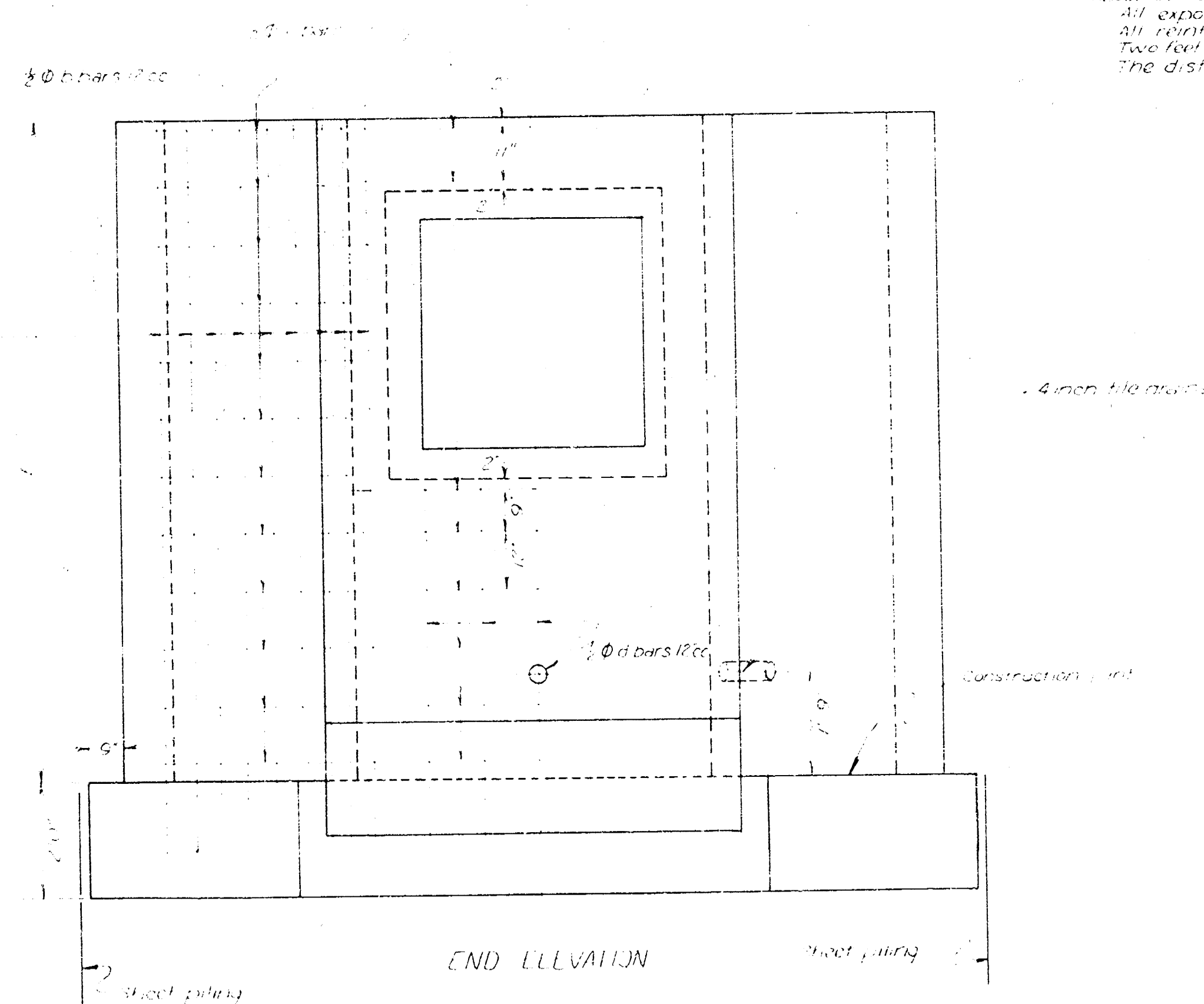






Note
The corrugated sheet piling sections shall be of 12 gauge steel and 6 feet long.
For Flapgate detail see sheet no. 47
3 sets of 3 inch tie back rods shall be required for each headwall.

GENERAL NOTES

[illegible]

ARKANSAS RIVER BASIN
WICHITA AND VALLEY CENTER
FLOOD CONTROL PROJECT
EAST BRANCH INTERCEPTION CANAL
WICHITA DRAINAGE CANAL
HEADWALLS FOR BOX CULVERTS

SCALE 1 INCH = 2 FEET
CITY COUNTY ENGINEER OFFICE WICHITA KANSAS

APPROVED

APPROVED

CITY-ENGINE

CHINESE-AMERICAN BUSINESS

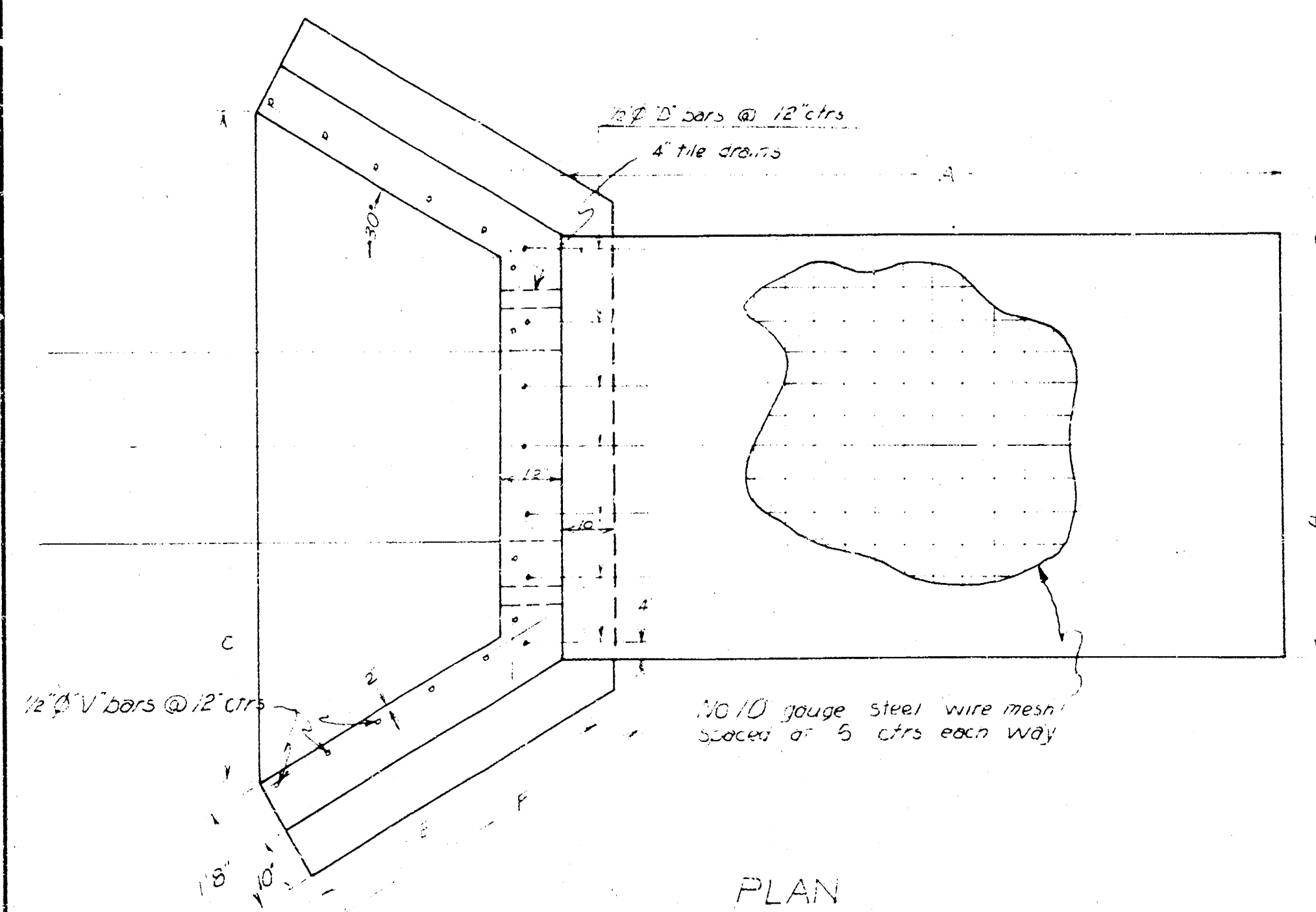
DRAWN JRS.
TRACED
CHECKED

SHEET 5 OF 12

STATION	ELEVATION			
	A	B	C	D
53+50	1309.00	1299.25	1300.10	
279+70 LI	1280.20	1274.00	1273.00	
157+70	1294.50	1289.00	1288.50	

LISTS OF BARS, DIMENSIONS, AND QUANTITIES FOR HEADWALLS FOR													
36" TILE PIPE AT STA 279 + 70 LT.													
Letter	A	B	C	D	D ₁	E	F	G	H	J	K	L	
Dimension	12'0"	6'0"	102 1/2"	36"	42 1/2"	5'3"	5'0"	11'11"	0'0"	6'0"	10'0"	12"	
Bar	A	B	C	V	H	D	F						
Number	3	4	4	14	14	7	4						
Size	20	20	20	20	20	20	20						
Length	7'6"	2'9"	1'9"	7'0"	5'4"	3'6"	3'6"						
Excavation	30179 cu yds												
Concrete	144.70 cu yds - Apron 323 cu yds												
Rein Steel	174.35 "												
Sheet Piling	63 Sections*												
Wire Mesh	23.1 "												
Flap Gate	None												
Backfill	14.5 cu yds												
Rip Rap	11.65 sq yds												
48" C.M. PIPE AT STA 63 + 50 LT.													
Letter	A	B	C	D	D ₁	E	F	G	H	J	K	L	
Dimension	6'0"	6'0"	102 1/2"	48"	5'3"	5'0"	11'11"	9'0"	7'0"	5'0"	12"		
Bar	A	B	V	H	D	F							
Number	3	4	14	16	7	4							
Size	20	20	20	20	20	20							
Length	7'6"	2'3"	0'5"	5'4"	3'6"	3'6"							
Excavation	28.16 cu yds												
Concrete	144.70 cu yds Apron 141 cu yds												
Rein Steel	186.4 "												
Sheet Piling	53 Sections*												
Wire Mesh	14.91 "												
Flap Gate	48												
Backfill	11.6 cu yds												
Rip Rap	6.22 sq yds												
60" CONCRETE PIPE AT STA 157 + 70 LT.													
Letter	A	B	C	D	D ₁	E	F	G	H	J	K	L	
Dimension	24'0"	0'2"	11'8 1/2"	60"	20'5'3"	5'0"	13'5"	10'0"	8'0"	5'0"	12"		
Bar	A	B	V	H	D	F							
Number	3	4	14	16	7	4							
Size	20	20	20	20	20	20							
Length	9'0"	2'4"	9'0"	5'4"	3'6"	3'6"							
Excavation	64.45 cu yds												
Concrete	144.70 cu yds												
Rein Steel	209.3 "												
Sheet Piling	38 Sections												
Rip Rap	5203 sq yds												
Flap Gate	60"												
Backfill	11.90 cu yds												

AT STA 157+70 LI			
QUANTITIES FOR RELAYING PIPE			
Excavation	1.80 cu yds		
Rein Steel Max	14.0' of 20#		
Backfill	1.90 cu yds		

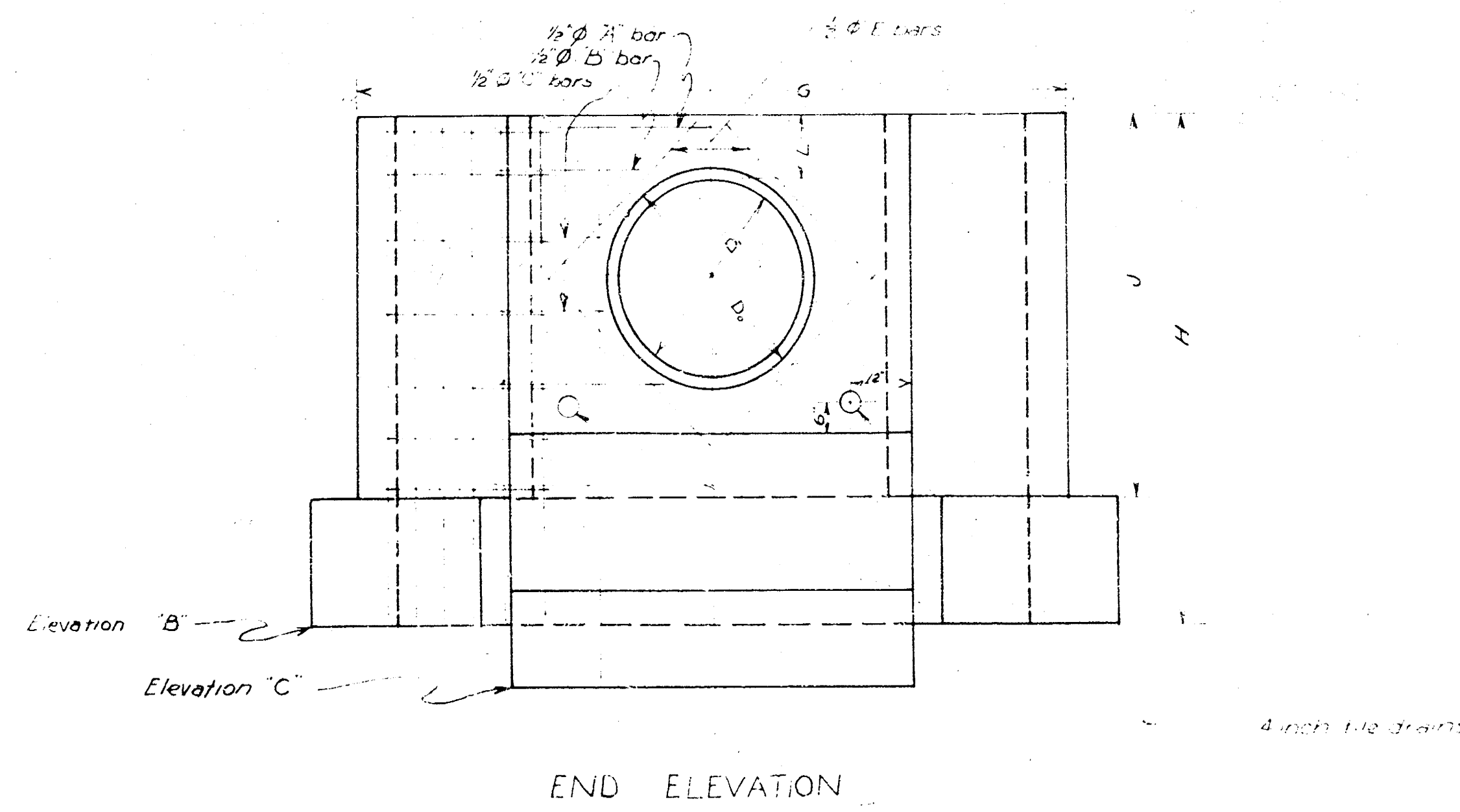
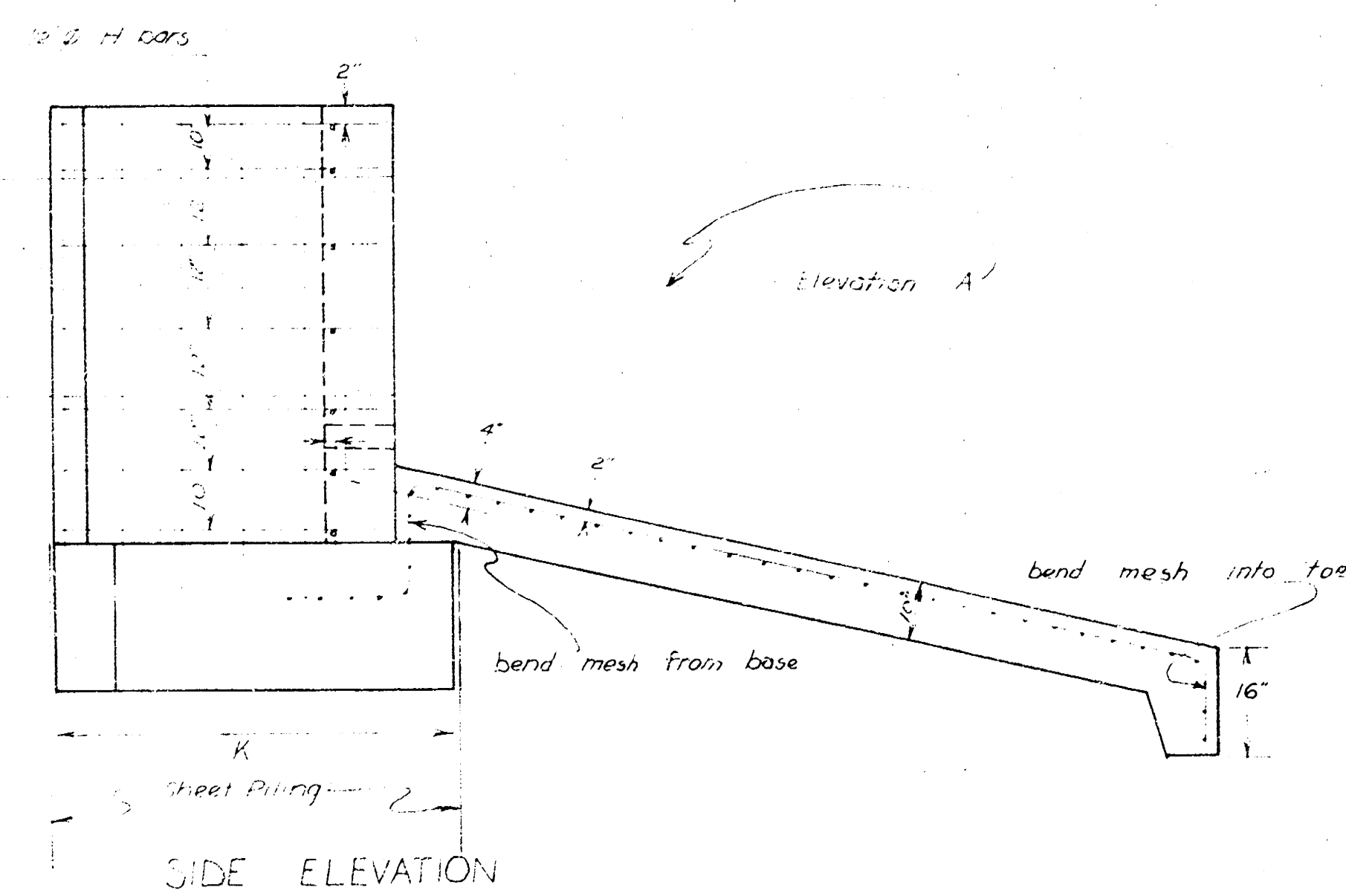


NOTE: Rip rap at sta 157+70 to be rip rapped with 12' x 10' bars for a length of 24' ft from the bottom shall be 2' x 2' with 12' x 10' bars shall be one to one to top of structure bank.

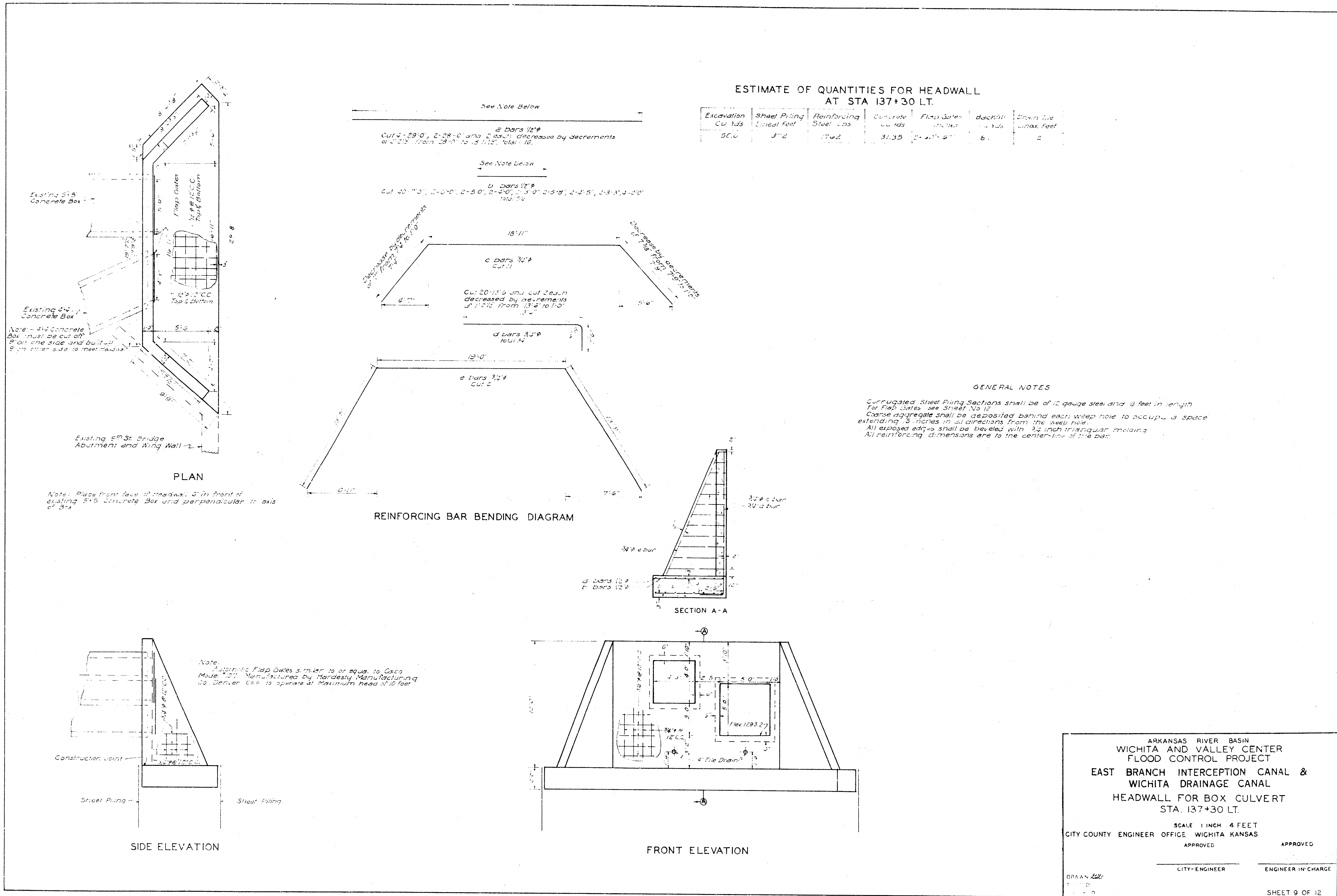
NOTE: Automatic flagging to be similar to or equal to Calumet No. 100 Manufactured by Harsco Manufacturing Co. Denver, Colo. to operate at a maximum head of 10 ft. The corrugated sheet piling sections shall be of 12 gauge steel and 6 ft long. Section one 40 in section of 36 in tile pipe before placing headwall. Cut 2 ft off of 48 in C.M.P. before placing headwall. Headwalls to be pinned at 45 angles to & of pipe. For flap gate detail see sheet no. 11. 2' x 2' of 4 inch bars are required for each headwall.

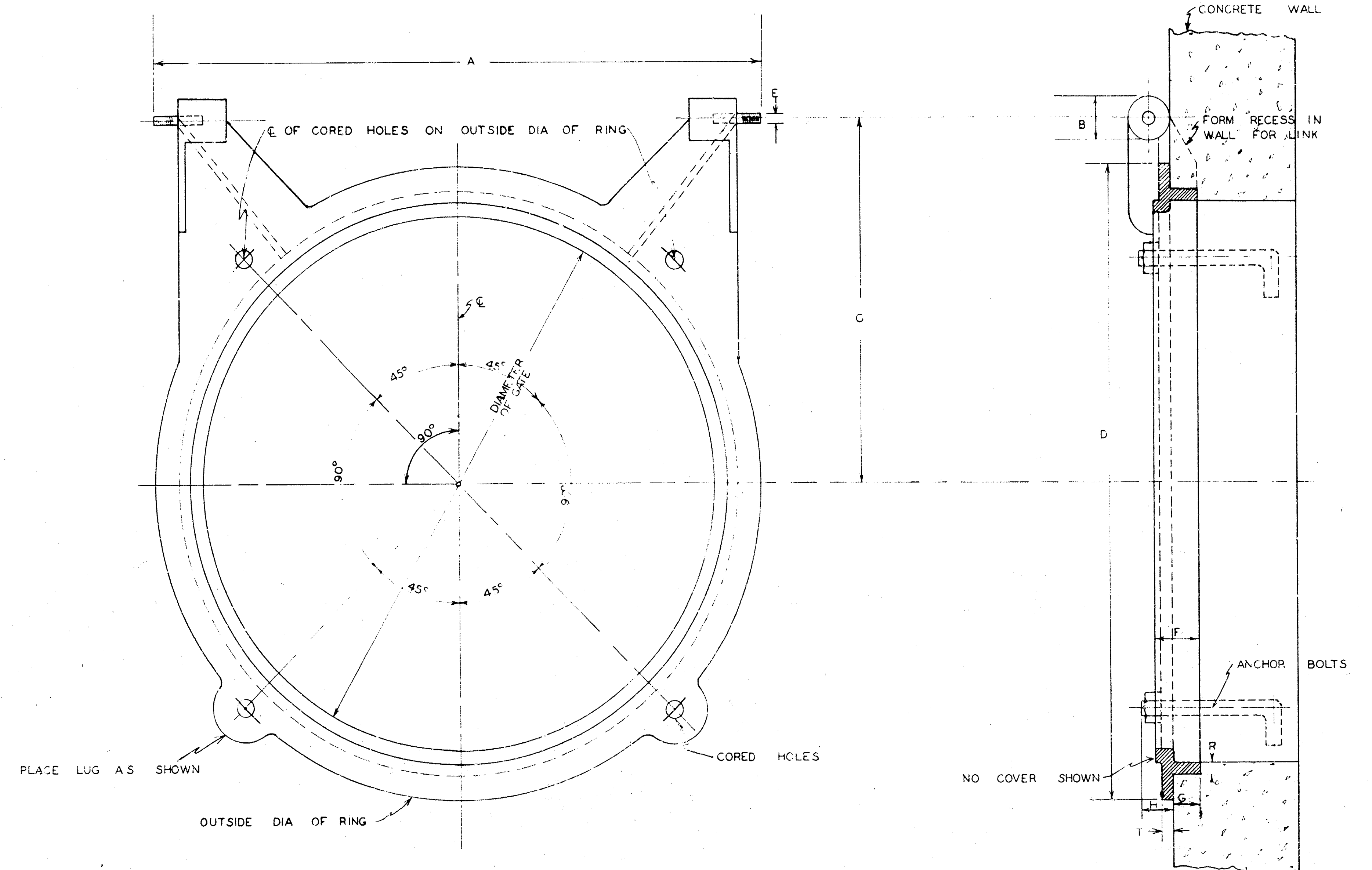
General Notes

Grass aggregate shall be deposited behind each weep hole to occupy a space extending 15 ft in all direction from the weep hole. Weep holes shall be placed with 1/2 in. triangular spacing. Forcing dimensions are to centerlines of bars. The apron shall be placed on each side of all aprons. The apron shall extend 1 ft front of each apron as is R.R. as Sta. 279+70 LI 5 feet. Sta. 157+70 LI 3 feet.



ARKANSAS RIVER BASIN WICHITA AND VALLEY CENTER FLOOD CONTROL PROJECT EAST BRANCH INTERCEPTION CANAL & WICHITA DRAINAGE CANAL HEADWALLS FOR PIPE CULVERTS	
SCALE: 1 INCH = 2 FT. CITY-COUNTY ENGINEER OFFICE, WICHITA, KANSAS APPROVED: _____ CITY-ENGINEER ENGINEER-IN-CHARGE	
DRAWN: C.W.G. TRACED: CHECKED:	SHEET 7 OF 12



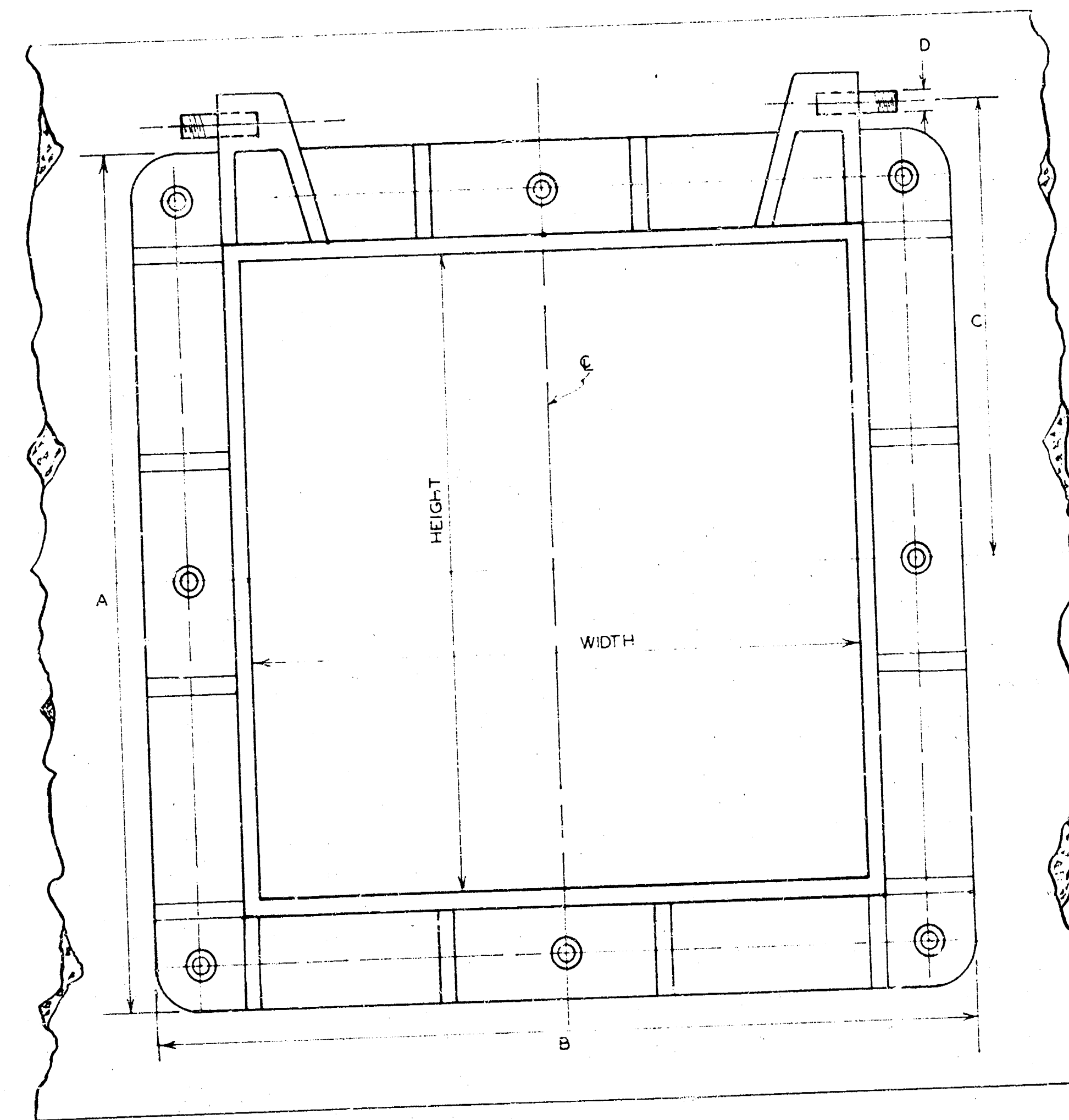


FRONT ELEVATION
RING ONLY

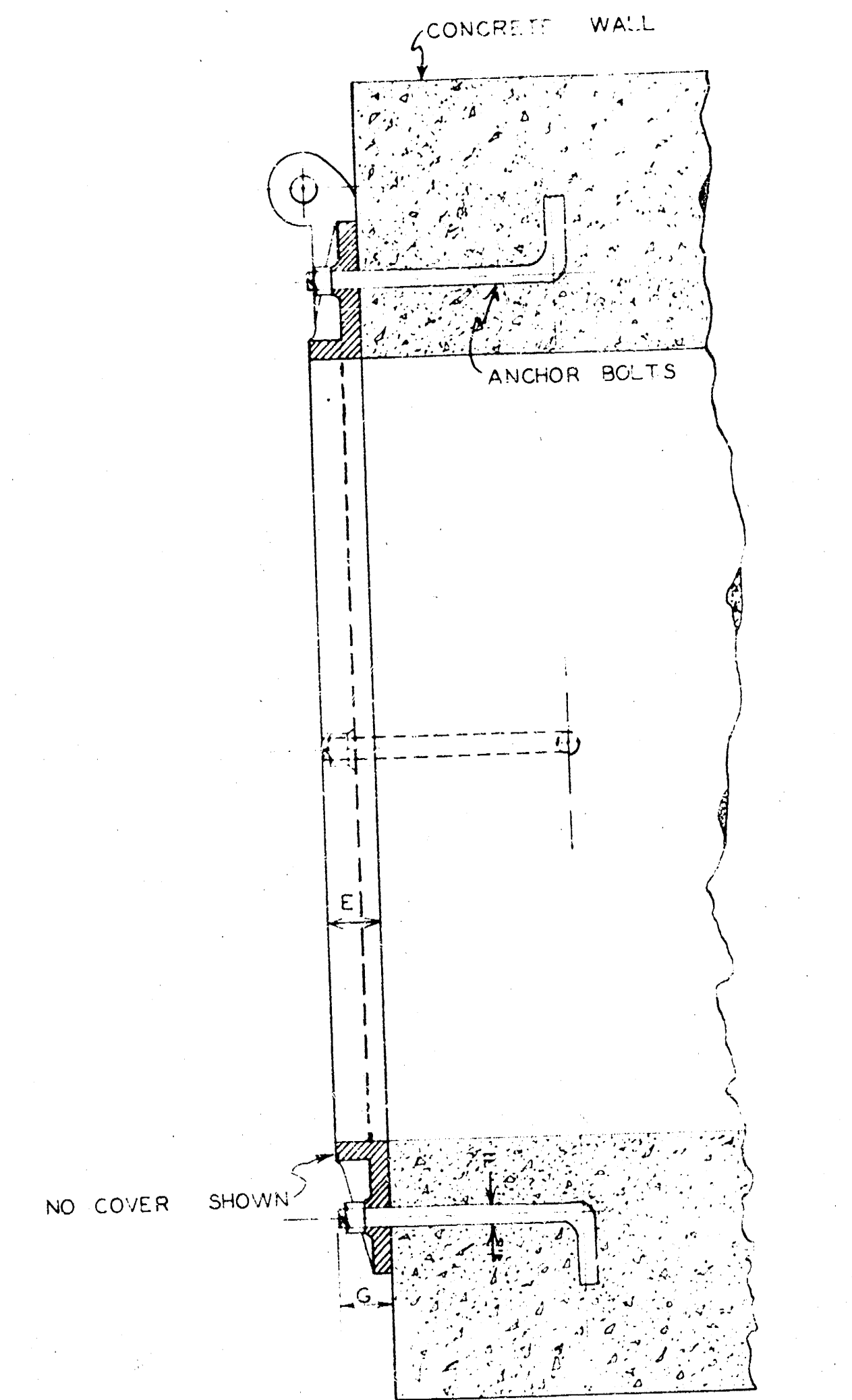
SECTION ON C

STATION	DIA	A	B	C	D	E	F	G	H	R	T	ANCHOR BOLT DIA
53+50	48"	5 1/2"	2 1/2"	34"	54"	1"	4"	2 1/2"	1 1/2"	3/4"	3/4"	3/4"
67+50	24"	2 1/2"	2"	17"	27 1/2"	3/4"	2 1/2"	1 1/2"	1 1/2"	3/4"	3/4"	3/4"
157+70	60"	6 1/2"	2 1/2"	42"	60 1/2"	1 1/4"	4 3/16"	2 3/4"	2 1/4"	7/8"	1 1/2"	1"
163+40	40"	5 3/8"	2 1/2"	34"	54"	1"	4"	2 3/4"	1 3/4"	3/4"	3/4"	3/4"

ARKANSAS RIVER BASIN
WICHITA AND VALLEY CENTER
FLOOD CONTROL PROJECT
EAST BRANCH INTERCEPTION CANAL &
WICHITA DRAINAGE CANAL
FLAP GATE DETAIL
MODEL 100
SCALE: 1/4" = 1'-0"
CITY COUNTY ENGINEER OFFICE WICHITA KANSAS
APPROVED: _____
CITY ENGINEER ENGINEER-IN-CHARGE
DRAWN: L.W.G.
TRACED
CHECKED SHEET 11 OF 12



FRONT ELEVATION
RING ONLY



SECTION ON C-C

FLAP GATE SCHEDULE — CALCO MODEL 107										
STATION	GATE SIZE		A	B	C	D	E	F	G	
	WIDTH	HEIGHT								
85 + 30 LT	6'0"	6'0"	7'0"	7'0"	4'2"	1'4"	2'2"	1'	2'4"	
93 + 30 LT	4'6"	4'6"	5'1"	5'7"	3'4"	1'	2'2"	3/4"	1'3/4"	
109 + 30	6'0"	6'0"	7'0"	7'0"	4'2"	1'4"	2'2"	1'	2'4"	
123 + 60	3'6"	3'6"	4'4"	4'4"	2'5"	1'	2'2"	3/4"	1'3/4"	
137 + 30 LT	6'0"	6'0"	7'0"	7'0"	4'2"	1'4"	2'2"	1'	2'4"	
151 + 30 LT	6'0"	6'0"	7'0"	7'0"	4'2"	1'4"	2'2"	1'	2'4"	
171 + 30 RH	4'6"	4'6"	5'7"	5'7"	3'4"	1'	2'2"	3/4"	1'3/4"	
150 + 60 LT	4'6"	4'6"	5'7"	5'7"	3'4"	1'	2'2"	3/4"	1'3/4"	
157 + 40 RH	3'6"	3'6"	4'4"	4'4"	2'5"	1'	2'2"	3/4"	1'3/4"	
164 + 60 LT	3'6"	3'6"	4'4"	4'4"	2'5"	1'	2'2"	3/4"	1'3/4"	
164 + 60 RH	3'6"	3'6"	4'4"	4'4"	2'5"	1'	2'2"	3/4"	1'3/4"	
176 + 60 LT	4'6"	4'6"	5'7"	5'7"	3'4"	1'	2'2"	3/4"	1'3/4"	
176 + 60 RH	4'6"	4'6"	5'7"	5'7"	3'4"	1'	2'2"	3/4"	1'3/4"	

ARKANSAS RIVER BASIN
WICHITA AND VALLEY CENTER
FLOOD CONTROL PROJECT
EAST BRANCH INTERCEPTION CANAL &
WICHITA DRAINAGE CANAL
FLAP GATE DETAIL
MODEL 107
SCALE: 1 INCH = 4 FEET
CITY COUNTY ENGINEER OFFICE WICHITA KANSAS
APPROVED
ENGINEER IN CHARGE
DRAWN CIVIL
TRACED
CHECKED
SHEET 12 OF 12