9-275 c
(July 1935)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WATER RESOURCES BRANCH

DISCHARGE MEASUREMENT NOTES

Meas. No. 179

Checked by TCB

Date 1-12-1942

RECORDED

Brazos River at Richmond, Tex

Date Nov. 27, 1940 Party V. L. Austin

Width 500 Area 16,900 Vel. 6.57 G. H. _____ Disch. 111,000

Method SV, 2-8 No. secs. 21 G. H. change +.05 in 2.34 hrs. Susp. 100 C

Method coef. 90-1.12 Hor. angle coef. none Meter No. 1828 Susp. coef. 1.00

GAGE READINGS

Time		Recorder	~~Inside~~	Outside
		Tape	W.W.	
	Start 2:00 P			
2.00 P		37.6	38.35	38.00
3:00 PM start				
4:10 PM finish				
4.20 P		37.65	38.40	38.0
	Finish 4.10			
Weighted M. G. H.		37.63		
G. H. correction				
Correct M. G. H.				

Date rated 7-28-39 Used rating for rod _____ susp. Meter 1.00 ft. above bottom of wt. Tags checked _____

Spin before meas. _____ after _____

Meas. plots _____ % diff. from _____ rating

Wading, cable, ice, boat, upstr., downstr., side bridge 270' feet, mile, above, below gage, and _____ (meas. 12/4/40)

Chain, wire, found CB. 58.59, changed to not changed at _____

Correct length 58.58

Levels obtained _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section regular

Flow _____ Weather Cool clear

Other _____

Gage _____

Record removed no Intake flushed no

~~Observer~~ Soundings based on rod v-section attached from occasional soundings this date. 'C' for SV based

~~Control~~ on 18 vert. vel. curves made 1932-40 (see tabulated values of 'C' in vert. vel. file)

Remarks

rate of change of stage: +.02/hr

Sheet No. 1 of 5 sheets. G. H. of zero flow _____ ft.

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80 • 75 •

9-275
January 1935

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

Ch. bar 58.59

85 •

Date 11-27, 1940 DISCHARGE MEASUREMENT NOTES

Brazos River, at Richmond

90 •

Dist. from initial point	Angle coefficient	Depth	Depth of observation	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	VELOCITY Mean in section	Area	Mean depth	Width	Discharge
92 •												
94 •	start	2.00 pm										
		O.G. 38.00 — Topp 37.6 — W.W. 38.35 @ 2.00 pm										
96 •	560	LEW 1.6										
97 •								1.38	32	1.6	20	40
98 •	540	1.6	1.0	50	40	2.77						
99 •								2.22	~~49~~ 3		20	~~110~~ 100
	520	2.3	12	30	40	1.67						
								1.78	98	32.5	30	170
	490	4.2	S	40	47 (100)	1.90	1.90					
	drift -10'							3.80	912	22.8	40 (10)	3470
	440	41.4	S	100	43 (1.12)	5.10	5.71					
99 •								5.26	834		20	4380
	420	42.0	S	100	49½ (1.08)	4.44	4.90					
98 •								4.59	857		20	~~3980~~ 3920
97 •	400	~~44.4~~ 43.7	S	80	41½	4.24						
96 •			8.9	100	46	4.77	~~4.38~~ 4	4.93	869		20	~~4280~~ 4270
94 •			35.5	80	44	4.00						
92 •	380	43.2	S	100	40	5.48 (1.00)	5.48					
								6.74	1296	43.2	30	~~8740~~ 8730
90 •	350	43.2	S	150	41	7.99 (1.00)	7.99					
								7.50	1293	43.1	30	9700
	320	43.0	S	75	22½	7.29 (.96)	7.00					
85 •								7.70	1287	42.9	30	~~9930~~ 9910
	290	42.8	S	200	50	8.74 (.96)	8.40					44,690
80 •	3.30 pm.											
									7,517			

No. 2 of 5 Sheets. Comp. by _____ Chk. by TCB

75 •

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80 • 75 •

9-275
January 1935

85 •

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

Date 11-27, 1940 DISCHARGE MEASUREMENT NOTES

Brazos River, at Richmond

90 •

Dist. from initial point	Angle coefficient	Depth	Depth of observation	Revolutions	Time in seconds	VELOCITY At point	VELOCITY Mean in vertical	VELOCITY Mean in section	Area	Mean depth	Width	Discharge
	to WS							.98 7.63	7,517 1278	42.6	30	10,200 9780
260		42.4	S	200	52	(90) 8.40 84	756					
20' drag								7.76	1269	42.3	30	9780 9830
230	15	42.2 50.5	S	200	50	(90) 8.74	.88 7.97					
10 to WS												
			11.0	150	39	8.39		7.94 8.00	7.5 1296	43.2	30	120 10,400
200		44.3	S	200	49	(90) 8.91	802		104			
								7.60	895		20	6800
180		45.2	S	150	41	(90) 7.99	.19 7.18					
18 16 VA.96								7.22	920		20	40 6650
160	18	46.8 47.0	S	200	51	8.57						
			9.4	150	40½	8.09	7.26					
VA96			37.6	150	51	6.44		7.03	938		20	6590
16 140	18.8	47.0 48.3	9.7	150	45½	7.29	.76 6.80					
VA96			38.6	150	52	6.31		6.72	931		20	40 6260
120	19.3	46.1 47.3	9.5	150	47	6.98	6.64					
VA96			37.4	150	52	6.31		6.37	847		20	5400
16 100	21.0	38.6 39.8	8.0	150	43	7.63	6.12					
11 VA98			31.8	100	48	4.58		5.31	651		20	70 3450
80	21.5	26.5 27.0	5.4	150	47½	6.92	4.52					
			21.6	40	42	2.12		2.52	329		20	830
60		6.4	1.3	25	55	1.02	.51					
			5.1	0	0	0		.26	32	3.2	10	10
50	REW								16,904.5		500	66,080
560 50			finish 410 P					W.W. 38.40 @ 4.20				
510 10								38.00 @ 9.25				
500			T.G. 37.65						16,913			770 110,750

No. 3 of 5 Sheets. Comp. by _____ Chk. by TCB

75 •

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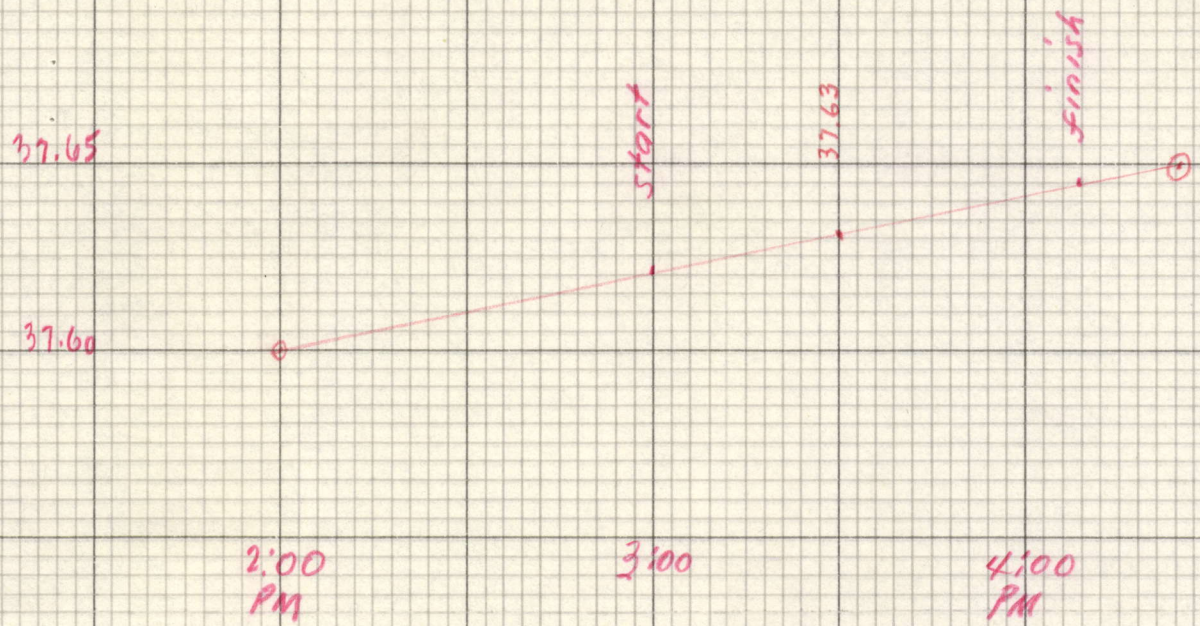
Brazos River at Richmond Tex
Nov. 27, 1940



4 of 5

Comp'd
TCB

A-16

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

Date 11-27, 1940 No. of Meas.

SUPPLEMENTARY DISCHARGE MEASUREMENT NOTES

Brazos River at Richmond, Tex

WEIGHTED MEAN GAGE HEIGHT COMPUTATION

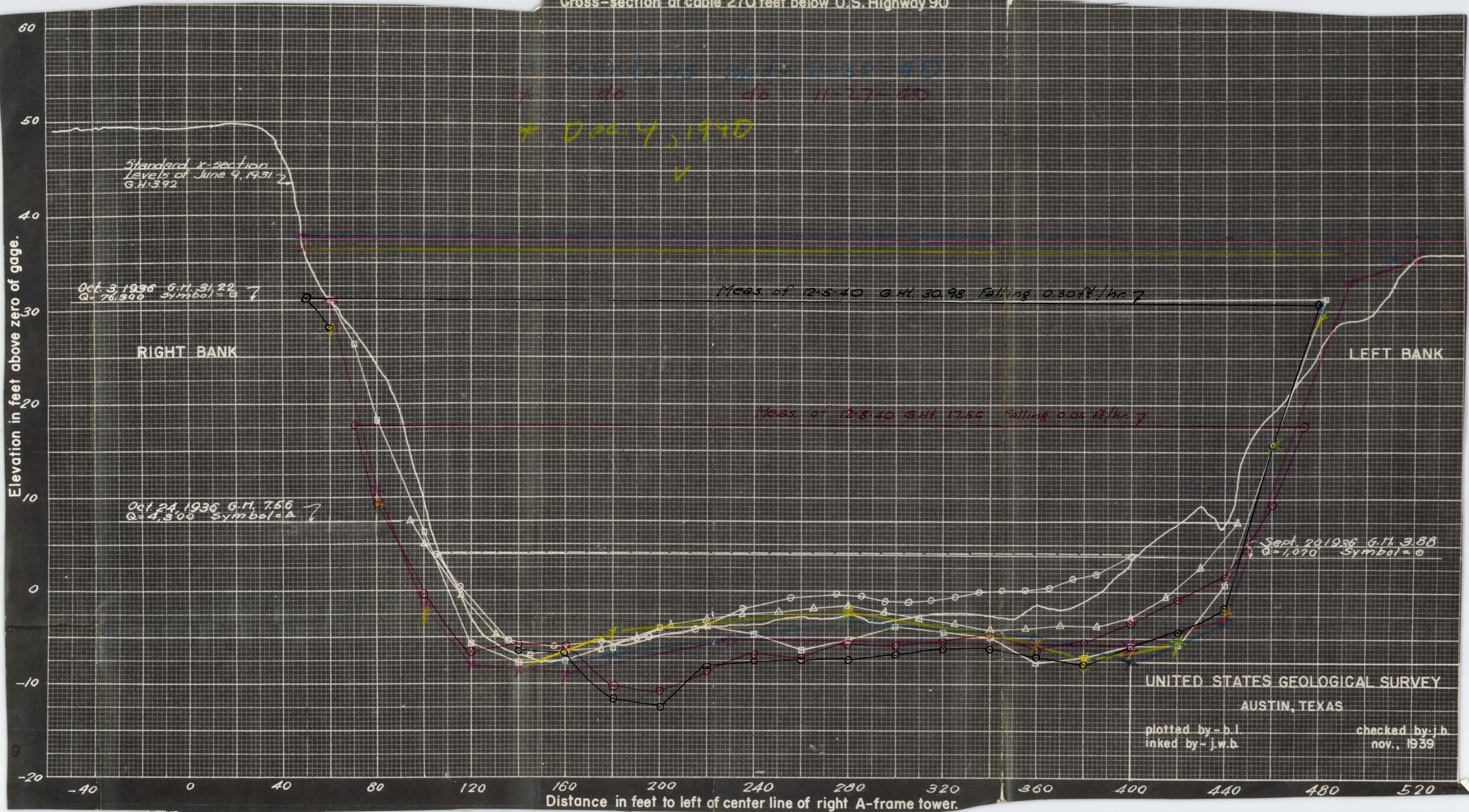
Gage Height	A Av. Gage Height		B Partial Discharge		Product A × B
37.62		X		=	
37.63	0.625	X	44.700	=	27.900
37.644	0.637	X	66.100	=	42.100
		X		=	
		X	110.800	=	70.000
		X		=	
		X		=	
		X		=	= 0.637
	Add 37.00	X		=	37.00
		X		=	
		X		=	37.63
		X		=	
		X		=	
		X		=	
		X		=	
		X		=	

Total Q = Tape

Weighted mean G. Ht. 37.63

No. 5 of 5 sheets Comp. by TCA Chk. by

G1323-740-2m

BRAZOS RIVER AT RICHMOND, TEXAS

Cross-section at cable 270 feet below U.S. Highway 90