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Nansemond River:

Study of Leased Oyster Grounds in  
The Vicinity of the Mills E. Godwin Jr. Bridge (After Construction)

Conducted for the

Virginia Department of Highways and Transportation

Project 6017-061-103-RW-201

by

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and

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## Abstract

Leased grounds were studied in the vicinity of the newly constructed Mills E. Godwin Jr. Bridge across the Nansemond River during April and May 1982 to determine if any significant changes had occurred in oyster density or bottom topography since an earlier study made in 1979 (prior to construction).

Oyster distribution outside the right-of-way in 1982 was essentially the same as in 1979. However two dug channels were seen in shallow water in the right-of-way: one was downriver of the present bridge; the second was at or near the site of the old bridge (which has been removed).

## INTRODUCTION

In 1979 a study was made by VIMS of the leased oyster bottoms in the Nansemond River at the site of U.S. 17 bridge. It was conducted prior to the construction of the Mills E. Godwin Jr. Bridge (Project 6017-061-103, RW-201-C501 B603). In 1982 VIMS made a second study in the same area during April and May to determine possible changes in oyster populations, bottom topography, etc.

Reference may be made to the 1979 report for details of the Nansemond River, salinity, sampling methods, results, etc. (see 1979 report titled, "Nansemond River: Study of Leased Bottoms in the Vicinity of U.S. 17 Bridge" (1979) by Dexter S. Haven and Paul C. Kendall.

## METHODS

### Locating Leased Grounds

Methods of locating leased grounds in 1979 and the stations sampled were duplicated in the 1982 study. The lease holders, acreage held, numbers of stations studied, and number of samples collected in 1982 are shown for each lease (Table 1 and Figure 1).

The area studied in 1982 extended (on the down-river side of the new bridge) 600 ft. from the edge of the right-of-way (which is approximately 690 ft. from the previous right-of-way and 720 ft. from the new bridge).

On the upriver side, the study area extended a distance of 900 ft. from the right-of-way (1000 ft. from the previous right-of-way and 1050 ft. from the new bridge).

#### Collecting Samples

At each station occupied, two samples or "Licks" of the oyster tongs were taken by an experienced tonger. The area covered by each sample was a finite value since the heads of the tongs were always tied to allow them to open a standard (known) width. The following observations were made on the combined samples (2) at each station:

- A. Numbers of large oysters (over 3"), number of small oysters, and number of spat.
- B. Number of single oyster shells not buried in the bottom sediment;
- C. Number of single oyster shells buried in the bottom substrate;
- D. Number of "boxes" (i.e. shells in which both valves were still connected by the hinge); and
- E. Type of bottom vegetation, and number of hard clams.

The large and small oysters from all stations sampled during a day were saved; later, volumes (bu.) of each size group were determined; representative numbers of each size group were measured.

#### Fathometer Studies

A portable recording fathometer was used to trace profiles (transects) of the bottom. These profiles were generally parallel to the axis of the current (Figure 2). Copies of these traces (18) are

shown in the Appendix. The approximate location of the right-of-way is shown on the transects. In this study, the 1979 traces are compared to those made in 1982.

Estimates of Oyster and Shell Densities and Methods Used to Estimate Bushels Per Acre

Examples of calculations used to arrive at estimates of oyster density, and bushels per acre are shown in Table 2.

RESULTS AND BOTTOM SAMPLING

The results of sampling in 1982 are discussed below for individual leases in respect to: 1) the right-of-way 2) area outside right-of-way; and 3) sections of a lease which are up or downriver from the bridge.

Lease of Henry D. Parker (upriver from Bridge)

During the 1979 study, dredge boats were observed by our survey crew dredging oysters from this lease. Moreover, we were told by Mr. Parker that he intended to harvest those oysters prior to bridge construction.

A. Right-of-Way

There were about 1.85 acres of bottom in this area. Our study showed that oysters and shell were very scarce. We obtained 3 large and 8 small oysters, and only 69 shells (Figure 3 and Table 3). Mortality based on box counts was 8%. The bottom was a mixture of sand and mud with a very little shell.

B. Outside Right-of-Way

Sampling in this 29.69 acre area covered almost all of Parkers' lease. Samples from 55 stations yielded 176 larger oysters, 331 small oysters and 613 shells (Figure 3 and Table 3). About 65% of the oysters were less than 3 inches long.

Mortality based on box counts was 15% (Table 3).

Lease of Gordon Jones (upriver from bridge)

A. None of this lease was in the right-of-way area, and only 1.70 acres was in our study area (Figure 1). In this area the bottom was mud, only 1 large and 1 small oyster was recovered at two stations (Table 4).

Lease of Gordon Jones (downriver from bridge)

Twenty-five stations were sampled on this 7.27 acre lease (Figure 4 and Table 5).

A. Right-of-Way

In the right-of-way 12 stations were occupied. No oyster, oyster shells or hard clams were obtained.

B. Outside the Right-of-Way

Sampling at 13 stations downriver from the right-of-way yielded no oysters, oyster shells or hard clams (Figure 4 and Table 5).

Lease of Mills E. Godwin, Jr. (downriver from bridge)

Samples were collected at 3 locations on the 1.50 acre portion in our study area (Figure 1). No oysters, oyster shells or hard clams were recovered (Figure 4 and Table 6).

Lease of Jesse Hamilton (downriver from bridge)

A 1.35 acre portion of this 7.00 acre lease was sampled (Figure 4). No oysters, shells or hard clams were recovered (Figure 4 and Table 7).

Vacant Ground (downriver from bridge)

This piece of vacant ground below the bridge was 6.21 acres in size. It occupied the space between Adams lease and the bridge (Figure 1). Sampling at 20 stations showed no oysters, oyster shells or hard clams (Figure 4 and Table 8).

Lease of Charles Adams (downriver from bridge)

A 7.28 acre portion of this 10.87 acre lease was sampled, and 34 samples were taken at 17 stations (Figure 4 and Table 9).

A. Right-of-Way

1.97 acres were sampled in the right-of-way. No oysters, shells or hard clams were tonged.

B. Outside Right-of-Way

Same as A above.



Lease of Adams Oyster Co. (upriver from bridge)

A. Right-of-Way

Sampling at 7 stations in this 0.38 acres area yielded no oysters, shells or hard clams (Figure 5 and Table 10).

B. Outside Right-of-Way (2.02 acres)

Same as A above (Figure 5 and Table 10).

Leases of Barbara and William Newman (two leases up and downriver and adjacent to bridge (see Figure 1))

A. Right-of-Way

About 6 1/2 acres in these two tracts lay in the right-of-way. Sampling at 51 stations showed no oysters, oyster shells or hard clams (Figures 5 and 6 and Table 11).

B. Outside Right-of-Way

In this large area, sampling at 31 stations upriver yielded no oysters or hard clams and only 7 oyster shells. On the downriver lease tonging at 30 stations showed no oysters, or hard clams, and only 12 oyster shells (Figure 6). However, at eight stations located in the downriver (and inshore side) a small concentration of oysters was observed. There, (at 4 stations) 26 oysters, and 30 shells were recovered (Figure 6 and Table 11).

Lease of M. Newman (downriver from bridge)

This lease was located far below the bridge and only two stations were occupied (Figure 6 and Table 12). No oysters, shells or hard clams were recovered.

RESULTS OF FATHOMETER TRACES - 1982

The 1982 fathometer traces are shown in Transects 1-18 in the Appendix of this report. In the following discussion two aspects are covered:

- A. A summary of the 1982 traces;
- B. A comparison of the 1982 traces with those reported on in 1979 (when a change was indicated).

The 1982 fathometer traces showed two dug channels in shallow water on either side of the new bridge (Transects 1-18 Appendix). One channel was just downriver of the new bridge; it occupied most of the right-of-way (about 125 ft.).

The second channel was upriver of the new bridge and it is apparently on the site of the old bridge which has been removed. It occupies most of the 160 ft. right-of-way. Both channels average about 3 to 5 ft. below the surrounding bottom; slopes are fairly steep. In one instance a "hole" about 11 ft. was noted.

There two channels were not on the 1979 traces which in general showed a level bottom on most leases.

In a few instances the dug channel extended for a very short distance outside the right-of-way. The exact distance (ft.) was not possible to determine with our survey techniques, but estimates (average %) of the observed instances noted are given below (based on the traces shown in the Appendix).

Except for the channels, the profiles of the bottoms in 1979 and 1982 were essentially the same. The few exceptions are listed below.

Transect 1 - Jones Lease

A raised "berm" about 1/2 ft. high covered about 25% of Jones lease (along this transect). No oysters or shell were seen on any portion of this lease in 1979 or 1982.

Transect 2 - Jones Lease

The dug channel occupied about 5% of Jones lease along this transect (No oysters or were seen on any portion of this lease, in 1979 or 1982).

Transects 5, 6 and 15 - Adams

The dug channel extended slightly over on Adams leases (about 10% of the lease along transects 5 and 6. A raised berm about 1/2 ft. high covered about 16% more on part of the bottom (along transect 5) (Avg. about 13%). On transect 15 the channel occupied about 5% of the bottom. No oysters or shell were seen on those leases in 1979 or 1982.

Transect 7 - Parker - upriver

The dug channel took up about 3% of this lease.

Transect 12, 13 and 17 - Newman - downriver

The dug channel extended on to this lease so that it occupied about 7% of the lease (along this transect). No oysters or shell were observed on any part of this lease in 1979 or 1982.

Transect 14 and 18 - Newman - upriver

The dug channel extended on to this lease so that it occupied about 8% of the lease (along this transect). No oysters or shell were observed on this bottom in 1979 or 1982.

On all remaining transects the two dug channels appeared to be within the limits of the two right-of-ways.

## DISCUSSION

### Leases of Henry Parker

#### A. Right-of-Way (1.85 acres).

Our 1982 survey showed that oysters and shell were very scarce in the right-of-way area and that almost all of the area was a dug channel. However, our 1979 study made (prior to construction) also indicated a very low density of oysters and shell in the right-of-way.

This distribution is illustrated in Tables 13 and 14 where our data is converted to bushels (Tables 13 and 14). Data extracted from these tables follows.

	Bu. of Oysters		Bu. of Shell	Surface Shell %
	Large	Small		
1978	190	109	161	59
1982	8	7	61	40

We conclude that construction of the dug channel in the right-of-way further reduced the already low density of oysters and shell.

#### B. Outside the Right-of-Way.

An inspection of Figure 3 shows that in 1982 oysters were distributed in patches as they were in 1979.

The overall distribution of oysters and shell in 1982 is shown by our calculations for total bushels of shell and oysters (Tables 13 and 14). Data from this latter source appears below:

	Bu. of Oysters		Bu. of Shell	Surface Shell %
	Large	Small		
1978	4690	1337	8018	75
1982	2957	1924	3450	80

These data indicate: A 33% reduction in large oysters; a 19% increase in small oysters; a 58% decrease in total shell volume; and a slight increase (5%) in value of surface shell.

We believe that the observed changes outside the right-of-way may be interpreted as follows.

The reduction in quantities of large oysters (market size-over 3 inches) is due to harvesting activities observed by our field crews which was in progress during our 1979 study. Mr. Parker also told a member of our field group that it was his intention to harvest his oysters prior to the construction of the new bridge.

The increase in numbers of oysters largely on the upriver third of his leases was probably due to natural recruitment. That is, the number of small oysters found in 1982 were relatively more abundant in 1982 than in 1979 (58% in 1979 and 65% in 1982).

We cannot account for the decline in shell volume, except to suggest that there is no evidence of shell burial by silt since the % surface shell (unburied) increased from 1979 to 1982.

In conclusion, there was no evidence that bridge construction had a measurable impact outside the right-of-way on oysters on Parkers'

lease exceptions are noted in the following section on fathometer traces.

#### Leases of Barbara and William Newman

##### A. In the Right-of-Way

No oysters or shell were seen in this area in 1979 and 1982. However, the dug channel occupied most of this area in 1982.

##### B. Outside the Right-of-Way

No oysters or shells were observed in 1979 or 1982 over most of this lease, the only change was the dug channel over most of the right-of-way. However, one concentration of about 1.85 acres was observed which was about 5 times larger than that observed in 1979. The densities were lower in 1982 but the calculated total bushels was about the same for both periods. In conclusion there is no evidence of an impact of construction activity, except that noted in the fathometer section.

#### All Other Leases

No oysters, significant volumes of oyster shell or hard clams were observed in 1979 or 1982. The only change was the dug channel in the right-of-way.

#### Fathometer Studies

Our conclusion relative to this aspect are discussed under the Fathometer section. However, they are repeated here. Most of the right-of-way area is occupied by two dug channels 3-5 deep relative to

the surrounding bottom. In a few instances they extend slightly over on to leased bottoms (outside the right-of-way).

The probable area of bottom occupied by the dug channel on various leases (outside the right-of-way) is estimated below. It is noted that on none of these areas except Parkers did we find oysters in 1979 or 1982.

The estimates below are considered maximal.

Jones Lease - Transects 1 and 2

30% of 7.27 acres = 2.2 acres

Adams Lease - Transects 5 and 6

About 13% of 4.68 = 0.61 acres

Parkers Lease - Transect 7

About 3% of 19.5 acres = 0.59 acres

Newmans - Transects 12, 13, 14, 17 and 18

About 8% of 29.7 acres = 2.38 acres

Adams Lease - Transect 15

About 5% of 2.02 acres = 0.10 acres.



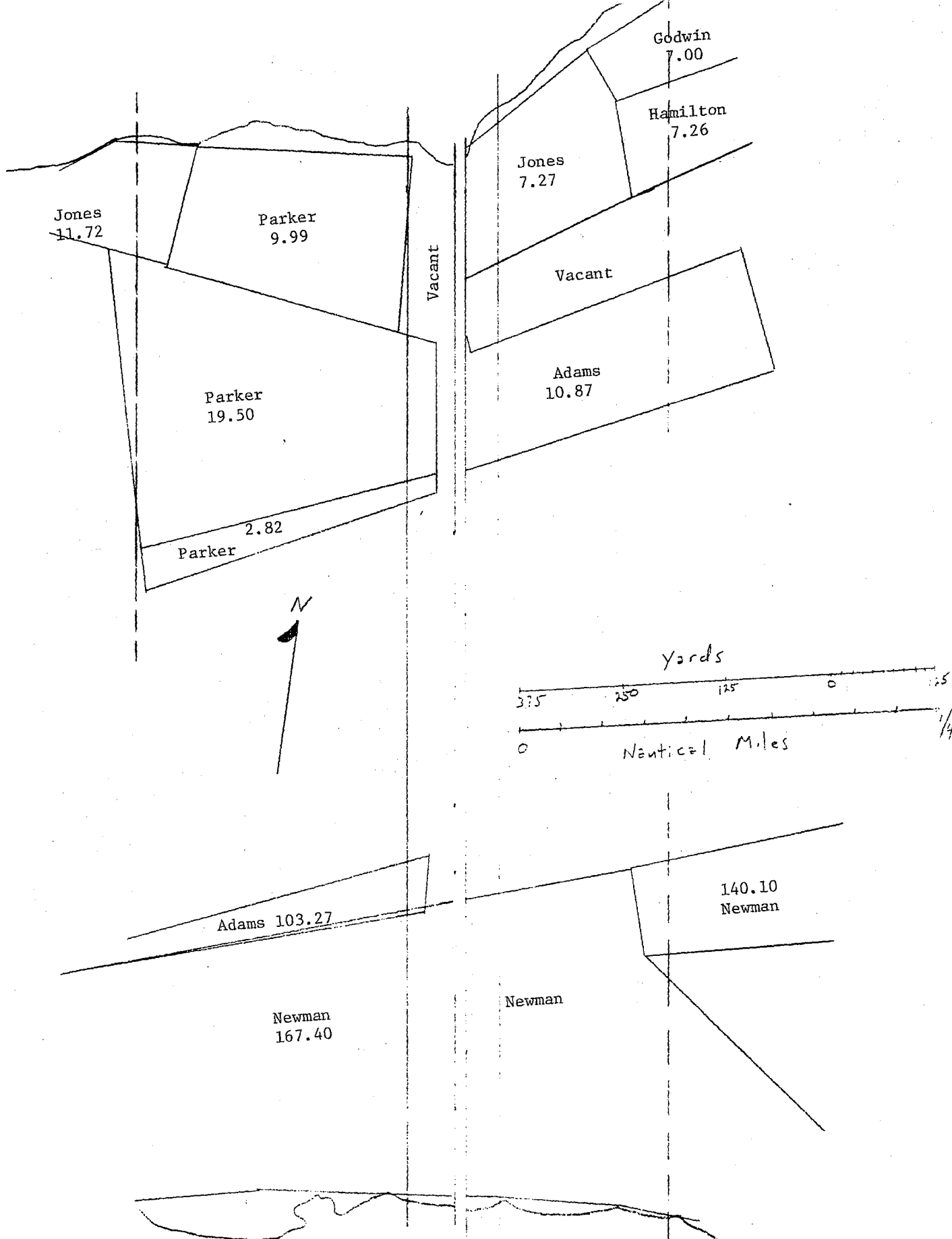


Figure 1. Mills E. Godwin, Jr. Bridge across Nansemond River with boundaries of oyster ground leases shown. Dashed lines show extent of sampling in 1982. Numbers show entire acreages of leases.

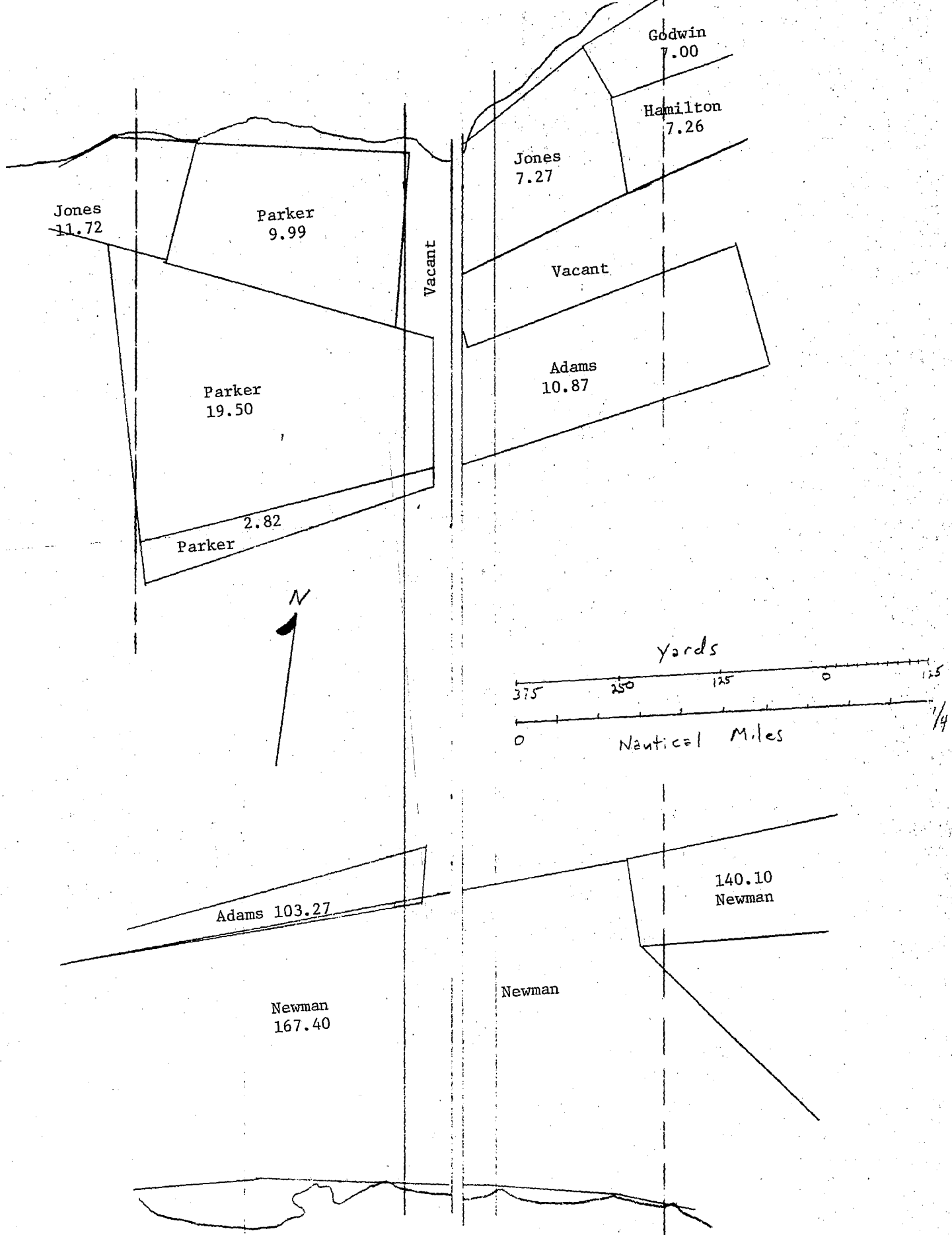


Figure 1. Mills E. Godwin, Jr. Bridge across Nansemond River with boundaries of oyster ground leases shown. Dashed lines show extent of sampling in 1982. Numbers show entire acreages of leases.

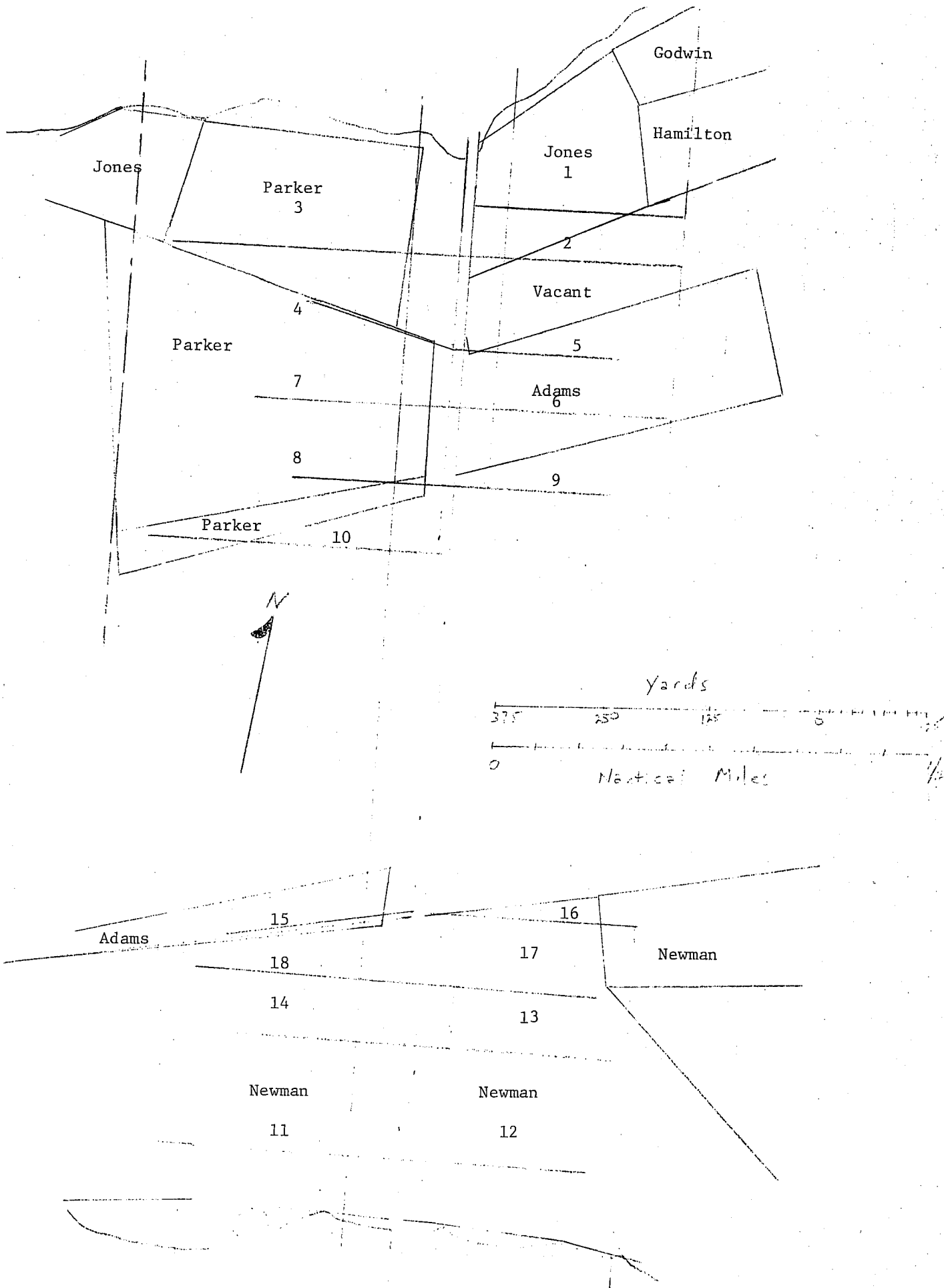


Figure 2. Fathometer transects in the vicinity of the Mills E. Godwin, Jr. Bridge across Nansemond River - May 1982.

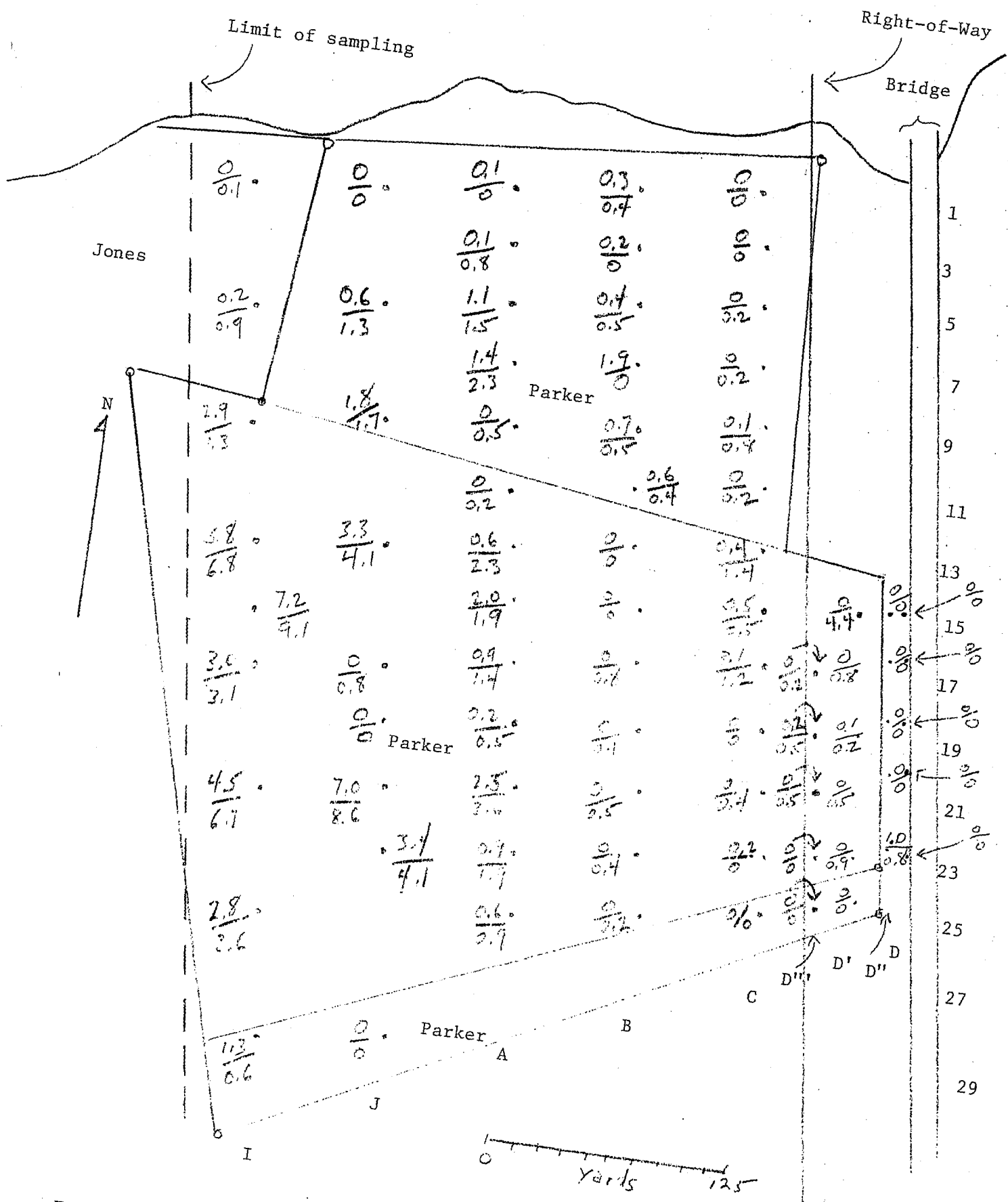


Figure 3. Results of sampling on leased oyster planting ground to the Northwest of the bridge - 1982. Data for each station shown in the following manner: number of live oysters per square foot (top number); and number of shells per square foot (bottom number).

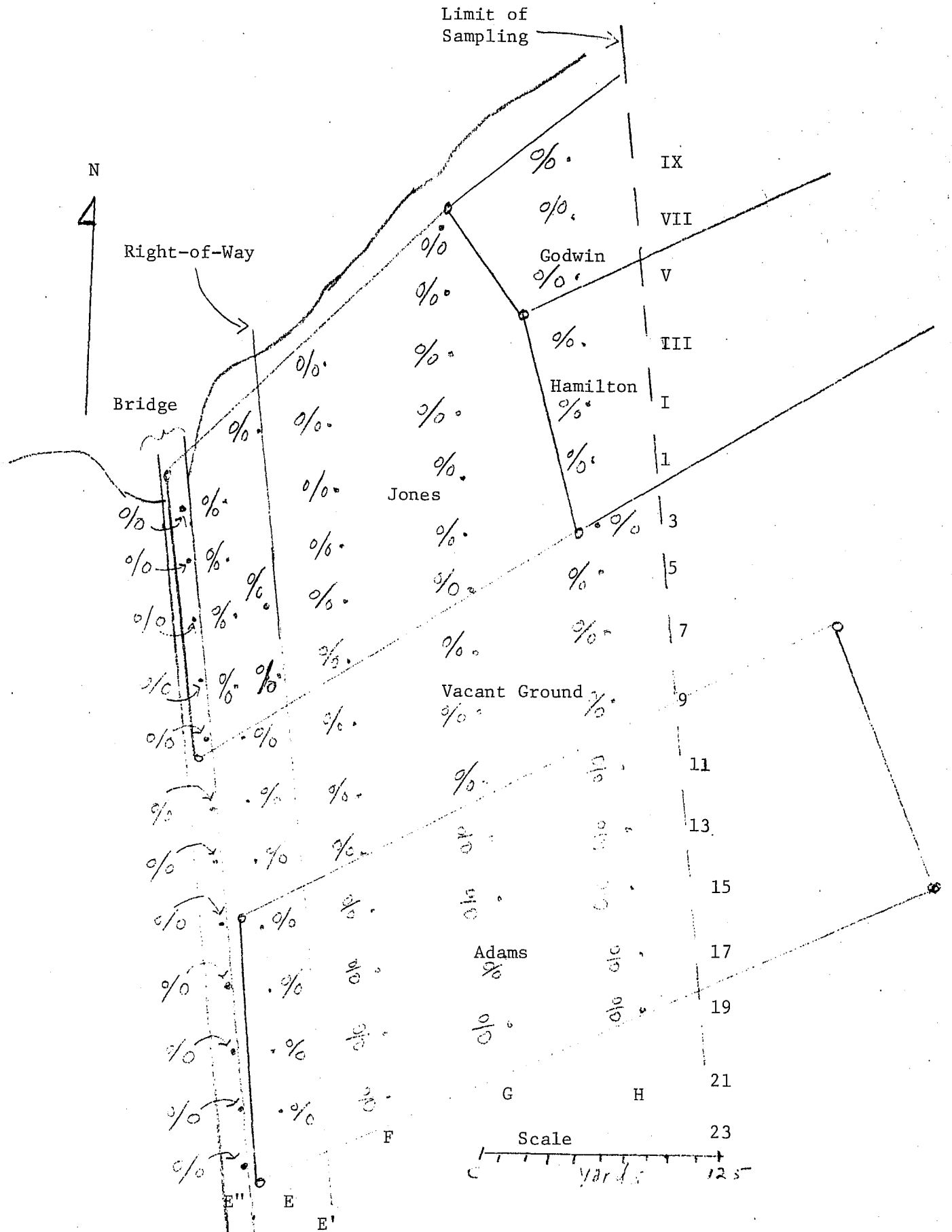


Figure 4. Results of sampling on leased oyster planting ground to the Northeast of the bridge - 1982. Data for each station are shown in the following manner: number of live oysters per square foot (top number); and number of shell per square foot (bottom number).

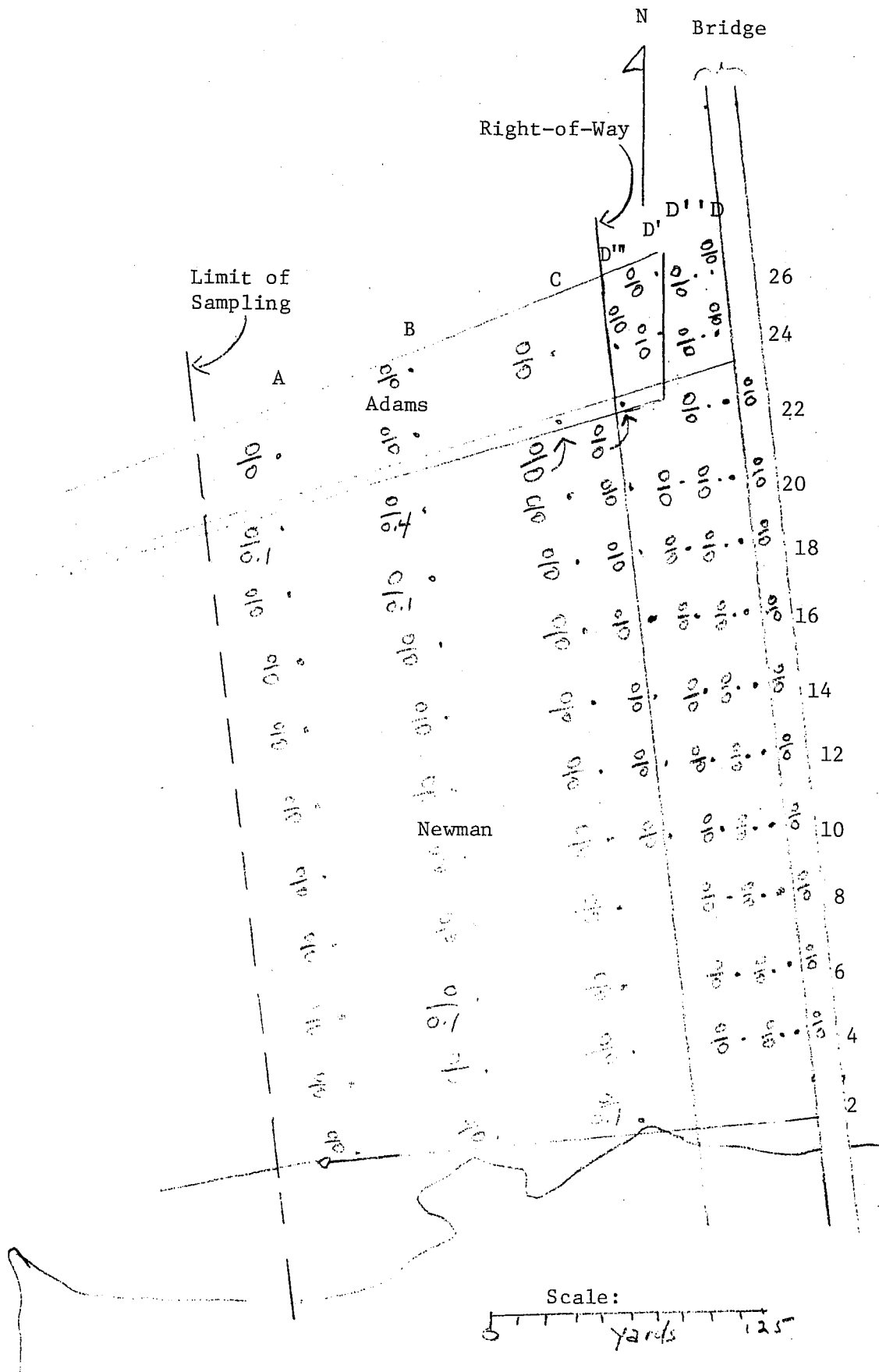


Figure 5. Results of sampling on leased oyster planting ground to the southwest of the bridge - 1982. Data from each station are shown in the following manner: number of live oysters per square foot (top number); and number of quarts of shell per square foot (bottom number).

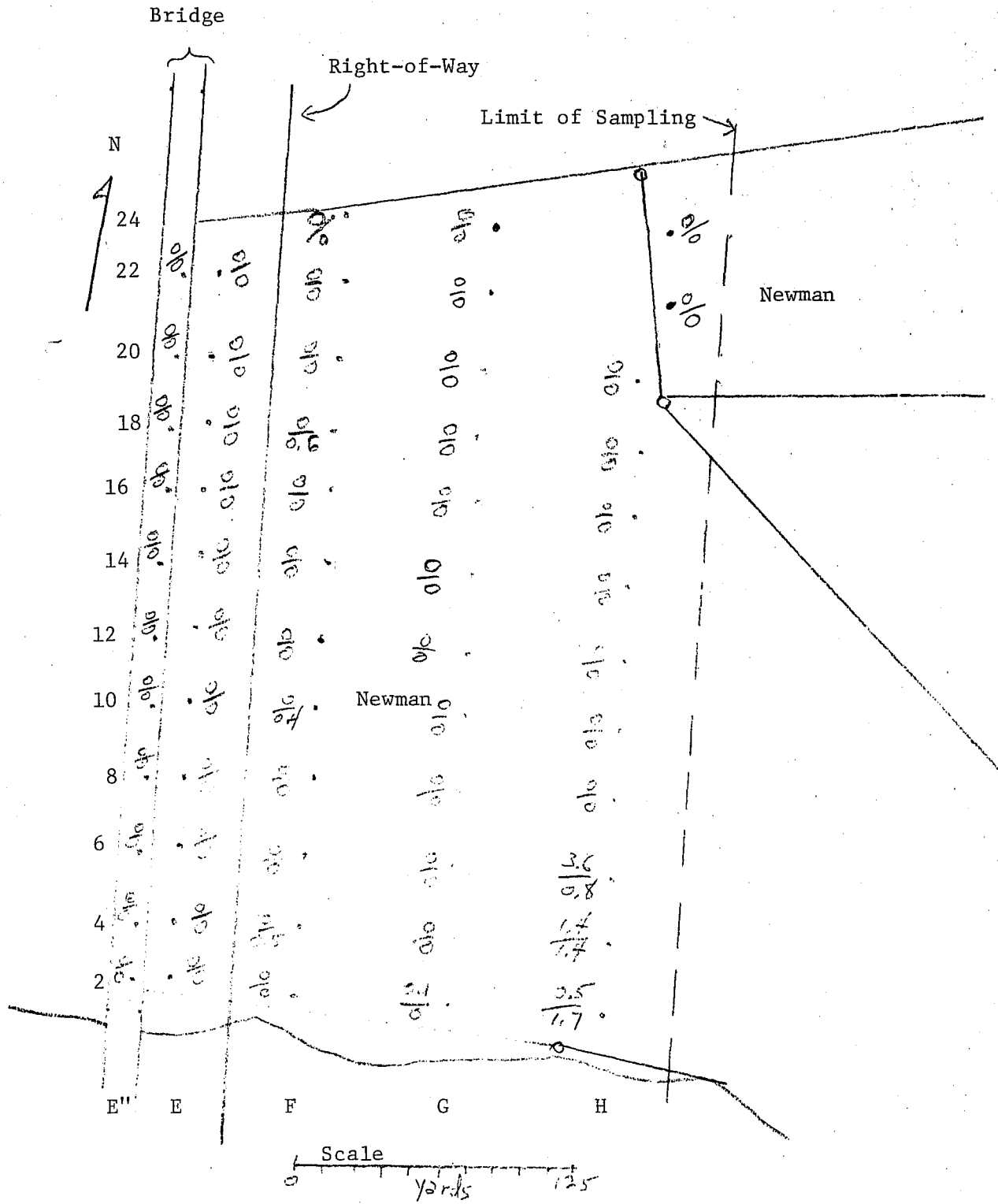


Figure 6. Results of sampling on leased oyster planting ground to the Southwest of the bridge - 1982. Data for each station shown in the following manner: number of live oysters per square foot (top number); and number of shell per square foot (bottom number).

Table 1

Oyster Ground Leases Studied, Number of Stations and Samples Taken in the Vicinity of the Mills E. Godwin, Jr. Bridge - 1982.

<u>Lessee's Name</u>	<u>Area Studied (Acres)</u>	<u>Number of Stations</u>	<u>Number of Samples</u>
Jones, Gordon W.	1.70	2	4
Parker, Henry D.	2.82		
Parker, Henry D.	18.73	78	156
Parker, Henry D.	9.99		
Jones, Gordon W.	7.27	25	50
Hamilton, Jesse P.	1.35	3	6
Godwin, Mills E., Jr.	1.50	3	6
Adams, Charles, G., Jr.	7.28	17	34
Newman, Barbara R. & William R.	35.60	124	248
Adams Oyster Co.	2.40	11	22
Newman, Annie M.	0.77	2	4
Vacant Ground NE of Bridge	6.21	20	40



Table 2

Methods of Calculating Estimates and Quantities of Oysters  
and Shell Around the Mills E. Godwin, Jr. Bridge - May 1982.

1. Calculation of the area covered by each grab of the tongs was done in the following manner:

The distance which the tongs were opened (this stayed constant because the heads of the tongs were tied) and the length of the heads were measured and multiplied to yield the area covered per grab or lick. The area was determined in this manner to be 3.89 square feet.

2. Oysters collected in a day's sampling were returned to our laboratory where they were counted and the volume was measured; in this way the number per bushel were calculated. These numbers, which were used to calculate estimated densities in bushels per acre, are shown below:

	<u>Number per VA Bushel</u>
Large (3" or longer) oysters	175
Small and yearling oysters	538
Shell	525

3. Estimated densities of oysters and shell were calculated as shown:

Data from Parker's lease outside the right-of-way, are used as an example. There 176 large oysters, 331 small oysters and 613 shells were recovered by the tongs from a combined area of 427.9 square feet of bottom.

$$176 \text{ lg. oysters} \div 427.9 \text{ square feet} = 0.41 \text{ lg. oysters/sq ft}$$

$$331 \text{ sm. oysters} \div 427.9 \text{ square feet} = 0.77 \text{ sm. oysters/sq ft}$$

$$613 \text{ shells} \div 427.9 \text{ square feet} = 1.4/\text{sq ft}$$

4. Estimates of quantities of oysters and shell were calculated by multiplying densities, as calculated above, by the size (in acres) of the area of each area studied.

For example:

$$\begin{aligned} &0.41 \text{ lg. oysters/sq ft} \times 43,560 \text{ sq ft/acre} \div \\ &175 \text{ lg. oysters/bushel} = \text{estimated density of} \\ &102.0 \text{ bushels/acre} \end{aligned}$$

$$\begin{aligned} &102.0 \text{ bushels/acre} \times 29.69 \text{ acres} = \text{estimated quantity} \\ &\text{of } 3,028 \text{ bushels} \end{aligned}$$

Table 3

Results of Sampling Three Plots of Oyster Planting Ground Leased by  
Henry D. Parker - April and May 1982.

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
		Lg.	Sm.	Lg.	Sm.					
A. Outside the Right-of-Way										
Transect I - 876 feet from the Right-of-Way										
I 9	7.78	8	15	1.0	1.9	1	4	10	1.3	20
13	7.78	14	31	1.8	4.0	7	13	53	6.8	94
15	7.78	7	49	0.9	6.3	7	11	71	9.1	92
17	7.78	11	17	1.4	2.2	6	18	24	3.1	100
21	7.78	17	18	2.2	2.3	10	22	52	6.7	92
25	7.78	15	7	1.9	0.9	8	27	28	3.6	54
29	7.78	6	4	0.8	0.5	6	38	5	0.6	100
Transect J - 676 feet from the Right-of-Way										
J 1	7.78	0	0	--	--	0	--	0	--	--
5	7.78	2	3	0.2	0.4	0	0	10	1.3	100
9	7.78	5	9	0.6	1.2	4	22	13	1.7	100
13	7.78	7	19	0.9	2.4	6	19	32	4.1	100
17	7.78	0	0	--	--	0	--	6	0.8	0
19	7.78	0	0	--	--	2	100	0	--	--
21	7.78	13	41	1.7	5.3	3	5	67	8.6	100
23	7.78	6	20	0.8	2.6	4	13	32	4.1	88
29	7.78	0	0	--	--	0	--	1	0.1	0

Table 3 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
Lg.	Sm.	Lg.	Sm.							
Transect A - 476 feet from the Right-of-Way										
A 1	7.78	1	0	0.1	--	1	50	0	--	--
3	7.78	1	0	0.1	--	0	0	6	0.8	0
5	7.78	1	8	0.1	1.0	0	0	12	1.5	92
7	7.78	2	9	0.2	1.2	3	21	18	2.3	67
9	7.78	0	0	--	--	0	--	4	0.5	0
11	7.78	0	0	--	--	0	--	2	0.2	0
13	7.78	10	5	1.3	0.6	1	6	18	2.3	100
15	7.78	1	15	0.1	1.9	0	0	15	1.9	100
17	7.78	1	6	0.1	0.8	1	12	11	1.4	45
19	7.78	1	1	0.1	0.1	0	0	4	0.5	100
21	7.78	2	18	0.2	2.3	1	5	28	3.6	82
23	7.78	4	3	0.5	0.4	3	30	15	1.9	80
25	7.78	0	5	--	0.6	0	0	7	0.9	86
Transect B - 276 feet from the Right-of-Way										
B 1	7.78	1	2	0.1	0.2	1	25	3	0.4	66
3	7.78	1	1	0.1	0.1	1	33	0	--	--
5	7.78	0	3	--	0.4	0	0	4	0.5	0
7	7.78	7	8	0.9	1.0	3	17	0	--	--
9	7.78	2	4	0.2	0.5	0	0	4	0.5	0
11	7.78	5	0	0.6	--	1	17	3	0.4	0
13	7.78	0	0	--	--	0	--	0	--	--
15	7.78	0	0	--	--	0	--	0	--	--
17	7.78	0	0	--	--	0	--	6	0.8	0
19	7.78	0	0	--	--	0	--	1	0.1	-0
21	7.78	0	0	--	--	0	--	4	0.5	0
23	7.78	0	0	--	--	0	--	3	0.4	0
25	7.78	0	0	--	--	0	--	2	0.2	100

Table 3 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent of Surface
Lg.	Sm.	Lg.	Sm.							
Transect C - 76 feet from the Right-of-Way										
C 1	7.78	0	0	--	--	0	--	0	--	--
3	7.78	0	0	--	--	0	--	0	--	--
5	7.78	0	0	--	--	0	--	2	0.2	0
7	7.78	0	0	--	--	0	--	2	0.2	0
9	7.78	0	1	--	0.1	1	50	6	0.8	100
11	7.78	0	0	--	--	0	--	2	0.2	100
13	7.78	2	2	0.2	0.2	1	20	11	1.4	18
15	7.78	3	1	0.4	0.1	2	33	4	0.5	25
17	7.78	18	6	2.3	0.8	5	17	9	1.2	100
19	7.78	0	0	--	--	0	--	0	--	--
21	7.78	0	0	--	--	0	--	3	0.4	100
23	7.78	2	0	0.2	--	2	50	0	--	--
25	7.78	0	0	--	--	0	--	0	--	--
Totals	427.9	176	331	0.4	0.8	91	15	613	1.4	80

## B. In the Right-of-Way

## Transect D''' - 10 feet inside the Right-of-Way

D'''17	7.78	0	0	--	--	0	--	2	0.2	0
19	7.78	2	0	0.2	--	1	33	4	0.5	0
21	7.78	0	0	--	--	0	--	4	0.5	0
23	7.78	0	0	--	--	0	--	0	--	--
25	7.78	0	0	--	--	0	--	0	--	--

## Transect D' - 70 feet inside the Right-of-Way

D' 15	7.78	0	0	--	--	0	--	34	4.4	56
17	7.78	0	0	--	--	0	--	6	0.8	0
19	7.78	1	0	0.1	--	0	--	2	0.2	0
21	7.78	0	0	--	--	0	--	4	0.5	0
23	7.78	0	0	--	--	0	--	7	0.9	0
25	7.78	0	0	--	--	0	--	0	--	--

Table 3 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent of Surface
		Lg.	Sm.	Lg.	Sm.					
Transect D'' - 123 feet inside the Right-of-Way										
D'' 15	7.78	0	0	--	--	0	--	0	--	--
17	7.78	0	0	--	--	0	--	0	--	--
19	7.78	0	0	--	--	0	--	0	--	--
21	7.78	0	0	--	--	0	--	0	--	--
23	7.78	0	8	--	1.0	0	--	6	0.8	50
25	(Could not touch bottom with 16-foot shaft tongs)									
Transect D - 141 feet inside the Right-of-Way and 18 feet from the bridge										
D15	7.78	0	0	--	--	0	--	0	--	--
17	7.78	0	0	--	--	0	--	0	--	--
19	7.78	0	0	--	--	0	--	0	--	--
21	7.78	0	0	--	--	0	--	0	--	--
23	7.78	0	0	--	--	0	--	0	--	--
25	(Could not touch bottom with 16-foot shaft tongs)									
Totals	163.4	3	8	<0.1	<0.1	1	8	69	0.4	40

Table 4

Results of Sampling a Portion of a Lease of Gordon Jones - 14 April 1982.

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent of Surface
Lg.	Sm.	Lg.	Sm.							
Transect I - 876 feet from the Right-of-Way										
I 1	7.78	0	0	--	--	0	--	1	0.1	0
5	7.78	1	1	0.1	0.1	1	33	7	0.9	100
Totals	15.56	1	1	<0.1	<0.1	1	33	8	0.5	88

Table 5

Results of Sampling a Lease of Gordon Jones - May 1982.

<u>Station Designation</u>	<u>Area Covered (ft<sup>2</sup>)</u>	<u>Live Oysters</u>		<u>Boxes</u>		<u>Shell</u>		
		<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Number</u>	<u>Percent of Live + Boxes</u>	<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Percent on Surface</u>
A. In the Right-of-Way								
Transect E'' - Under the downriver side of the bridge								
E'' 1	7.78	0	--	0	--	0	--	--
3	7.78	0	--	0	--	0	--	--
5	7.78	0	--	0	--	0	--	--
7	7.78	0	--	0	--	0	--	--
9	7.78	0	--	0	--	0	--	--
Transect E - 68 feet inside the Right-of-Way								
E 1	7.78	0	--	0	--	0	--	--
3	7.78	0	--	0	--	0	--	--
5	7.78	0	--	0	--	0	--	--
7	7.78	0	--	0	--	0	--	--
Transect E' - 10 feet inside the Right-of-Way								
E' I	7.78	0	--	0	--	0	--	--
5	7.78	0	--	0	--	0	--	--
7	7.78	0	--	0	--	0	--	--
Totals	93.36	0	--	0	--	0	--	--

Table 5 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters		Boxes		Shell		
		Number	Density (Nr/ft <sup>2</sup> )	Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
B. Outside the Right-of-Way								
Transect F - 102 feet from the Right-of-Way								
F III	7.78	0	--	0	--	0	--	--
I	7.78	0	--	0	--	0	--	--
1	7.78	0	--	0	--	0	--	--
3	7.78	0	--	0	--	0	--	--
5	7.78	0	--	0	--	0	--	--
7	7.78	0	--	0	--	0	--	--
Transect G - 302 feet from the Right-of-Way								
G VII	7.78	0	--	0	--	0	--	--
V	7.78	0	--	0	--	0	--	--
III	7.78	0	--	0	--	0	--	--
I	7.78	0	--	0	--	0	--	--
1	7.78	0	--	0	--	0	--	--
3	7.78	0	--	0	--	0	--	--
5	7.78	0	--	0	--	0	--	--
Totals	101.14	0	--	0	--	0	--	--



Table 6

Results of Sampling a Portion of a Lease of Mills Godwin - May 1982.

<u>Station Designation</u>	<u>Area Covered (ft<sup>2</sup>)</u>	<u>Live Oysters</u>		<u>Boxes</u>		<u>Shell</u>		
		<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Number</u>	<u>Percent of Live + Boxes</u>	<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Percent on Surface</u>
Transect H - 502 feet from the Right-of-Way								
H IX	7.78	0	--	0	--	0	--	--
VII	7.78	0	--	0	--	0	--	--
V	7.78	0	--	0	--	0	--	--
Totals	23.34	0	--	0	--	0	--	--

Table 7

Results of Sampling a Portion of a Lease of Jesse Hamilton - May 1982.

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters		Boxes		Shell		
		Number	Density (Nr/ft <sup>2</sup> )	Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
Transect H - 502 feet from the Right-of-Way								
H III	7.78	0	--	0	--	0	--	--
I	7.78	0	--	0	--	0	--	--
1	7.78	0	--	0	--	0	--	--
Totals	23.34	0	--	0	--	0	--	--

Table 8

Results of Sampling Vacant Ground Adjacent to the Mills E. Godwin, Jr. Bridge - May 1982.

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters		Boxes		Shell		
		Number	Density (Nr/ft <sup>2</sup> )	Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
A. In the Right-of-Way								
Transect E'' - Under the downriver side of the bridge								
E'' 11	7.78	0	--	0	--	0	--	--
13	7.78	0	--	0	--	0	--	--
15	7.78	0	--	0	--	0	--	--
17	7.78	0	--	0	--	0	--	--
19	7.78	0	--	0	--	0	--	--
21	7.78	0	--	0	--	0	--	--
23	7.78	0	--	0	--	0	--	--
Transect E - 68 feet inside the Right-of-Way								
E 9	7.78	0	--	0	--	0	--	--
11	7.78	0	--	0	--	0	--	--
13	7.78	0	--	0	--	0	--	--
B. Outside the Right-of-Way								
Transect F - 102 feet from the Right-of-Way								
F 9	7.78	0	--	0	--	0	--	--
11	7.78	0	--	0	--	0	--	--
13	7.78	0	--	0	--	0	--	--

Table 8 (Contd.)

<u>Station Designation</u>	<u>Area Covered (ft<sup>2</sup>)</u>	<u>Live Oysters</u>		<u>Boxes</u>		<u>Shell</u>		
		<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Number</u>	<u>Percent of Live + Boxes</u>	<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Percent on Surface</u>
Transect G - 302 feet from the Right-of-Way								
G 7	7.78	0	--	0	--	0	--	--
9	7.78	0	--	0	--	0	--	--
11	7.78	0	--	0	--	0	--	--
Transect H - 502 feet from the Right-of-Way								
H 3	7.78	0	--	0	--	0	--	--
5	7.78	0	--	0	--	0	--	--
7	7.78	0	--	0	--	0	--	--
9	7.78	0	--	0	--	0	--	--
Totals	155.6	0	--	0	--	0	--	--

Table 9

Results of Sampling a Portion of a Lease of Charles Adams - May 1982.

<u>Station Designation</u>	<u>Area Covered (ft<sup>2</sup>)</u>	<u>Live Oysters</u>		<u>Boxes</u>		<u>Shell</u>		
		<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Number</u>	<u>Percent of Live + Boxes</u>	<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Percent on Surface</u>
A. In the Right-of-Way								
Transect E - 68 feet inside the Right-of-Way								
E 15	7.78	0	--	0	--	0	--	--
17	7.78	0	--	0	--	0	--	--
19	7.78	0	--	0	--	0	--	--
21	7.78	0	--	0	--	0	--	--
Totals	31.12	0	--	0	--	0	--	--
B. Outside the Right-of-Way								
Transect F - 102 feet from the Right-of-Way								
F 15	7.78	0	--	0	--	0	--	--
17	7.78	0	--	0	--	0	--	--
19	7.78	0	--	0	--	0	--	--
21	7.78	0	--	0	--	0	--	--
Transect G - 302 feet from the Right-of-Way								
G 13	7.78	0	--	0	--	0	--	--
15	7.78	0	--	0	--	0	--	--
17	7.78	0	--	0	--	0	--	--
19	7.78	0	--	0	--	0	--	--

Table 9 (Contd.)

<u>Station Designation</u>	<u>Area Covered (ft<sup>2</sup>)</u>	<u>Live Oysters</u>		<u>Boxes</u>		<u>Shell</u>		
		<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Number</u>	<u>Percent of Live + Boxes</u>	<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Percent on Surface</u>
Transect H - 502 feet from the Right-of-Way								
H 11	7.78	0	--	0	---	0	---	---
13	7.78	0	---	0	---	0	---	---
15	7.78	0	---	0	---	0	---	---
17	7.78	0	---	0	---	0	---	---
19	7.78	0	---	0	---	0	---	---
Totals	101.14	0	--	0	--	0	---	---

Table 10

Results of Sampling a Portion of a Lease of Adams Oyster Co. - May 1982.

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters		Boxes		Shell		
		Number	Density (Nr/ft <sup>2</sup> )	Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
A. Outside the Right-of-Way								
Transect A - 476 feet from the Right-of-Way								
A 22	7.78	0	--	0	--	0	--	--
Transect B - 276 feet from the Right-of-Way								
B 24	7.78	0	--	0	--	0	--	--
22	7.78	0	--	0	--	0	--	--
Transect C - 76 feet from the Right-of-Way								
C 24	7.78	0	--	0	--	0	--	--
Totals	31.12	0	--	0	--	0	--	--
B. In the Right-of-Way								
Transect D'' - 10 feet inside the Right-								
D'' 24	7.78	0	--	0	--	0	--	--
Transect D' - 70 feet inside the Right-of-Way								
D' 26	7.78	0	--	0	--	0	--	--
24	7.78	0	--	0	--	0	--	--

Table 10 (Contd.)

<u>Station Designation</u>	<u>Area Covered (ft<sup>2</sup>)</u>	<u>Live Oysters</u>		<u>Boxes</u>		<u>Shell</u>		
		<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Number</u>	<u>Percent of Live + Boxes</u>	<u>Number</u>	<u>Density (Nr/ft<sup>2</sup>)</u>	<u>Percent on Surface</u>
Transect D'' - 123 feet inside the Right-of-Way								
D'' 26	7.78	0	--	0	--	0	--	--
24	7.78	0	--	0	--	0	--	--
Transect D - 141 feet inside the Right-of-Way and 18 feet from the bridge								
D 26	7.78	0	--	0	--	0	--	--
24	7.78	0	--	0	--	0	--	--
Totals	54.46	0	--	0	--	0	--	--



Table 11

Results of Sampling a Portion of a Lease of Barbara and William Newman - May 1982.

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
Lg	Sm	Lg	Sm							

## A. Outside the Right-of-Way

Transect A - 476 feet from the Right-of-Way

A 20	7.78	0	0	--	--	0	--	1	0.1	0
18	7.78	0	0	--	--	0	--	0	--	--
16	7.78	0	0	--	--	0	--	0	--	--
14	7.78	0	0	--	--	0	--	0	--	--
12	7.78	0	0	--	--	0	--	0	--	--
10	7.78	0	0	--	--	0	--	0	--	--
8	7.78	0	0	--	--	0	--	0	--	--
6	7.78	0	0	--	--	0	--	0	--	--
4	7.78	0	0	--	--	0	--	0	--	--
2	7.78	0	0	--	--	0	--	0	--	--

Transect B - 276 feet from the Right-of-Way

B 20	7.78	0	0	--	--	0	--	3	0.4	100
18	7.78	0	0	--	--	0	--	1	0.1	0
16	7.78	0	0	--	--	0	--	0	--	--
14	7.78	0	0	--	--	0	--	0	--	--
12	7.78	0	0	--	--	0	--	0	--	--
10	7.78	0	0	--	--	0	--	0	--	--
8	7.78	0	0	--	--	0	--	0	--	--
6	7.78	0	0	--	--	0	--	1	0.1	0
4	7.78	0	0	--	--	0	--	0	--	--
2	7.78	0	0	--	--	0	--	0	--	--

Table 11 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
		Lg	Sm	Lg	Sm					
Transect C - 76 feet from the Right-of-Way										
C 22	7.78	0	0	---	---	0	---	0	---	---
20	7.78	0	0	---	---	0	---	0	---	---
18	7.78	0	0	---	---	0	---	0	---	---
16	7.78	0	0	---	---	0	---	0	---	---
14	7.78	0	0	---	---	0	---	0	---	---
12	7.78	0	0	---	---	0	---	0	---	---
10	7.78	0	0	---	---	0	---	0	---	---
8	7.78	0	0	---	---	0	---	0	---	---
6	7.78	0	0	---	---	0	---	0	---	---
4	7.78	0	0	---	---	0	---	0	---	---
2	7.78	0	0	---	---	0	---	1	0.1	100
Totals	248.96	0	0	---	---	0	---	7	<0.1	57
B. In the Right-of-Way										
Transect D''' - 10 feet inside the Right-of-Way										
D''' 22	7.78	0	0	---	---	0	---	0	---	---
20	7.78	0	0	---	---	0	---	0	---	---
18	7.78	0	0	---	---	0	---	0	---	---
16	7.78	0	0	---	---	0	---	0	---	---
14	7.78	0	0	---	---	0	---	0	---	---
12	7.78	0	0	---	---	0	---	0	---	---
10	7.78	0	0	---	---	0	---	0	---	---

Table 11 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
Lg	Sm	Lg	Sm							
Transect D' - 70 feet inside the Right-of-Way										
D' 20	7.78	0	0	---	---	0	---	0	---	---
18	7.78	0	0	---	---	0	---	0	---	---
16	7.78	0	0	---	---	0	---	0	---	---
14	7.78	0	0	---	---	0	---	0	---	---
12	7.78	0	0	---	---	0	---	0	---	---
10	7.78	0	0	---	---	0	---	0	---	---
8	7.78	0	0	---	---	0	---	0	---	---
6	7.78	0	0	---	---	0	---	0	---	---
4	7.78	0	0	---	---	0	---	0	---	---
Transect D'' - 123 feet inside the Right-of-Way										
D'' 22	7.78	0	0	---	---	0	---	0	---	---
20	7.78	0	0	---	---	0	---	0	---	---
18	7.78	0	0	---	---	0	---	0	---	---
16	7.78	0	0	---	---	0	---	0	---	---
14	7.78	0	0	---	---	0	---	0	---	---
12	7.78	0	0	---	---	0	---	0	---	---
10	7.78	0	0	---	---	0	---	0	---	---
8	7.78	0	0	---	---	0	---	0	---	---
6	7.78	0	0	---	---	0	---	0	---	---
4	7.78	0	0	---	---	0	---	0	---	---
Transect D - 141 feet inside the Right-of-Way and 18 feet from the bridge										
D 22	7.78	0	0	---	---	0	---	0	---	---
20	7.78	0	0	---	---	0	---	0	---	---
18	7.78	0	0	---	---	0	---	0	---	---
16	7.78	0	0	---	---	0	---	0	---	---

Table 11 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
		Lg	Sm	Lg	Sm					
D 14	7.78	0	0	--	--	0	--	0	--	--
12	7.78	0	0	--	--	0	--	0	--	--
10	7.78	0	0	--	--	0	--	0	--	--
8	7.78	0	0	--	--	0	--	0	--	--
6	7.78	0	0	--	--	0	--	0	--	--
4	7.78	0	0	--	--	0	--	0	--	--
Transect E'' - Under the downriver side of the bridge										
E'' 22	7.78	0	0	--	--	0	--	0	--	--
20	7.78	0	0	--	--	0	--	0	--	--
18	7.78	0	0	--	--	0	--	0	--	--
16	7.78	0	0	--	--	0	--	0	--	--
14	7.78	0	0	--	--	0	--	0	--	--
12	7.78	0	0	--	--	0	--	0	--	--
10	7.78	0	0	--	--	0	--	0	--	--
8	7.78	0	0	--	--	0	--	0	--	--
6	7.78	0	0	--	--	0	--	0	--	--
4	7.78	0	0	--	--	0	--	0	--	--
2	7.78	0	0	--	--	0	--	0	--	--
Transect E - 68 feet inside the Right-of-Way										
E 22	7.78	0	0	--	--	0	--	0	--	--
20	7.78	0	0	--	--	0	--	0	--	--
18	7.78	0	0	--	--	0	--	0	--	--
16	7.78	0	0	--	--	0	--	0	--	--
14	7.78	0	0	--	--	0	--	0	--	--
12	7.78	0	0	--	--	0	--	0	--	--
10	7.78	0	0	--	--	0	--	0	--	--
8	7.78	0	0	--	--	0	--	0	--	--
6	7.78	0	0	--	--	0	--	0	--	--
4	7.78	0	0	--	--	0	--	0	--	--
2	7.78	0	0	--	--	0	--	0	--	--
Totals	451.24	0	0	--	--	0	--	0	--	--

Table 11 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
Lg	Sm	Lg	Sm							
C. Outside the Right-of-Way										
Transect F - 102 feet from the Right-of-Way										
F 24	7.78	0	0	--	--	0	--	0	--	--
22	7.78	0	0	--	--	0	--	0	--	--
20	7.78	0	0	--	--	0	--	0	--	--
18	7.78	0	0	--	--	0	--	5	0.6	100
16	7.78	0	0	--	--	0	--	0	--	--
14	7.78	0	0	--	--	0	--	0	--	--
12	7.78	0	0	--	--	0	--	0	--	--
10	7.78	0	0	--	--	0	--	3	0.4	100
8	7.78	0	0	--	--	0	--	0	--	--
6	7.78	0	0	--	--	0	--	0	--	--
4	7.78	0	0	--	--	0	--	4	0.5	100
2	7.78	0	0	--	--	0	--	0	--	--
Transect G - 302 feet from the Right-of-Way										
G 24	7.78	0	0	--	--	0	--	0	--	--
22	7.78	0	0	--	--	0	--	0	--	--
20	7.78	0	0	--	--	0	--	0	--	--
18	7.78	0	0	--	--	0	--	0	--	--
16	7.78	0	0	--	--	0	--	0	--	--
14	7.78	0	0	--	--	0	--	0	--	--
12	7.78	0	0	--	--	0	--	0	--	--
10	7.78	0	0	--	--	0	--	0	--	--
8	7.78	0	0	--	--	0	--	0	--	--
6	7.78	0	0	--	--	0	--	0	--	--
4	7.78	0	0	--	--	0	--	0	--	--
2	7.78	1	0	0.13		0	0	0	--	--

Table 11 (Contd.)

Station Designation	Area Covered (ft <sup>2</sup> )	Live Oysters				Boxes		Shell		
		Number		Density (Nr/ft <sup>2</sup> )		Number	Percent of Live + Boxes	Number	Density (Nr/ft <sup>2</sup> )	Percent on Surface
Lg	Sm	Lg	Sm							
Transect H - 502 feet from the Right-of-Way										
H 20	7.78	0	0	---	---	0	---	0	---	---
18	7.78	0	0	---	---	0	---	0	---	---
16	7.78	0	0	---	---	0	---	0	---	---
14	7.78	0	0	---	---	0	---	0	---	---
12	7.78	0	0	---	---	0	---	0	---	---
10	7.78	0	0	---	---	0	---	0	---	---
8	7.78	0	0	---	---	0	---	0	---	---
6	7.78	20	8	2.6	1.0	5	15	6	0.8	100
4	7.78	1	3	0.1	0.4	2	33	11	1.4	100
2	7.78	3	1	0.4	0.1	2	33	13	1.7	100
Subtotal in area where oysters were found	31.12	25	12	0.8	0.4	9	20	30	1.0	100
Total	264.52	25	12	0.1	<0.1	9	20	42	0.2	100

Table 12

Results of Sampling a Portion of a Lease of Annie M. Newman - May 1982.

<u>Station</u> <u>Designation</u>	<u>Area</u> <u>Covered</u> <u>(ft<sup>2</sup>)</u>	<u>Live Oysters</u>		<u>Boxes</u>		<u>Shell</u>		
		<u>Number</u>	<u>Density</u> <u>(Nr/ft<sup>2</sup>)</u>	<u>Number</u>	<u>Percent</u> <u>of Live</u> <u>+ Boxes</u>	<u>Number</u>	<u>Density</u> <u>(Nr/ft<sup>2</sup>)</u>	<u>Percent</u> <u>on</u> <u>Surface</u>
Transect H - 502 feet from the Right-of-Way								
H 24	7.78	0	--	0	--	0	--	--
22	7.78	0	--	0	--	0	--	--
Totals	15.56	0	--	0	--	0	--	--

Table 13

Estimated Quantities of Oysters on Leased Oyster Ground Adjacent to the Mills E. Godwin, Jr. Bridge Based on Sampling Conducted 1978 and 1982.

Name of Lessee	Area (acres)	Estimated Average Density (bu/acre)				Estimated Quantity (bu)				Percent Mortality	
		Large 1978	Oysters 1982	Small 1978	Oysters 1982	Large 1978	Oysters 1982	Small 1978	Oysters 1982	1978	1982
Parker											
in right-of-way	1.85	102.1	4.6	58.7	4.0	190	8	109	7	2	8
outside right-of-way	29.69	157.1	99.6	45.0	64.8	4,690	2,957	1,337	1,924	10	15
Jones											
NW of bridge outside of R/W	1.70	0.0	16.0	0.0	5.2	0	27	0	9	--	--
NE of bridge in R/W	2.59	0.0	0.0	0.0	0.0	0	0	0	0	--	--
outside of R/W	4.68	0.0	0.0	0.0	0.0	0	0	0	0	--	--
Adams											
SW of bridge in R/W	0.38	0.0	0.0	0.0	0.0	0	0	0	0	--	--
outside R/W	2.02	0.0	0.0	0.0	0.0	0	0	0	0	--	--
NE of bridge in R/W	1.97	0.0	0.0	0.0	0.0	0	0	0	0	--	--
outside R/W	5.31	0.0	0.0	0.0	0.0	0	0	0	0	--	--
Newman, Barbara and William											
in R/W	6.53	0.0	0.0	0.0	0.0	0	0	0	0	--	--
outside R/W	29.07	1,356.3 <sup>1</sup>	200.0 <sup>1</sup>	151.8 <sup>1</sup>	31.2 <sup>1</sup>	488	370	55	58	0	20
Newman, Annie											
outside R/W/	0.77	0.0	0.0	0.0	0.0	0	00	0	0	--	--



Table 13 (Contd.)

Name of Lessee	Area (acres)	Estimated Average Density (bu/acre)				Estimated Quantity (bu)				Percent Mortality	
		Large Oysters		Small Oysters		Large Oysters		Small Oysters		1978	1982
		<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>
Godwin											
outside R/W	1.50	0.0	0.0	0.0	0.0	0	0	0	0	--	--
Hamilton											
outside R/W	1.35	0.0	0.0	0.0	0.0	0	0	0	0	--	--

<sup>1</sup>These are the figures only for the small area where oysters were found (1.85 acres); on other areas of this lease no oysters were found.

Table 14

Estimated Quantities of Shell on Leased Oyster Grounds Adjacent to the Mills E. Godwin, Jr.  
Bridge Based on Sampling Conducted 1978 and 1982.

Name of Lessee	Area (acres)	Estimated Average Density (bu/acre)		Estimated Quantity (bu)		Percentage on Surface	
		1978	1982	1978	1982	1978	1982
Parker							
in right-of-way	1.85	87.1	33.2	161	61	59	40
outside right-of-way	29.69	270.1	116.2	8,018	3,450	75	80
Jones							
NW of bridge outside R/W	1.70	0.0	41.5	0	70	--	88
NE of bridge in R/W	2.59	0.0	0.0	0	0	--	--
outside R/W	4.68	0.0	0.0	0	0	--	--
Adams							
SW of bridge in R/W	0.38	0.0	0.0	0	0	--	--
outside R/W	2.02	0.0	0.0	0	0	--	--
NE of bridge in R/W	1.97	0.0	0.0	0	0	--	--
outside R/W	5.31	0.0	0.0	0	0	--	--
Newman, Barbara and William							
in R/W	6.53	0.0	0.0	0	0	--	--
outside R/W	29.07	287.5 <sup>1</sup>	7.9 <sup>2</sup>	103	230	100	100
Newman, Annie							
outside R/W	0.77	0.0	0.0	0	0	--	--

Table 14 (Contd.)

<u>Name of Lessee</u>	<u>Area (acres)</u>	<u>Estimated Average Density (bu/acre)</u>		<u>Estimated Quantity (bu)</u>		<u>Percentage on Surface</u>	
		<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>	<u>1978</u>	<u>1982</u>
Godwin							
outside R/W	1.50	0.0	0.0	0	0	--	--
Hamilton							
outside R/W	1.35	0.0	0.0	0	0	--	--

<sup>1</sup>This is the average density in one small area where the only shells were found.

<sup>2</sup>This is the average density for the entire area.

Table 15

Estimated Value<sup>1</sup> of Oysters and Shells on Leased Ground in the Nansemond River in the Bridge Right-of-Way.

Lessee	OYSTERS						SHELL	
	Large Oysters		Small Oysters		Total		Quantity <sup>2</sup> (Bu)	Value (\$)
	Quantity <sup>2</sup> (Bu)	Value (\$)	Quantity <sup>2</sup> (Bu)	Value (\$)	Quantity (Bu)	Value (\$)		
Parker	8	96	7	35	15	131	61	24.40
Jones	0	0	0	0	0	0	0	0.0
Adams								
NE side	0	0	0	0	0	0	0	0.0
SW side	0	0	0	0	0	00	0	0.0
Newman	0	0	0	0	0	0	0	0.0

<sup>1</sup>Calculation of value was based on the following prices: for large oysters (3 inches or longer)-\$12/bu is a wholesale price for good quality oysters; for smaller oysters-\$5/bu; and for planting shell-40¢/bu.

<sup>2</sup>From Table 13.

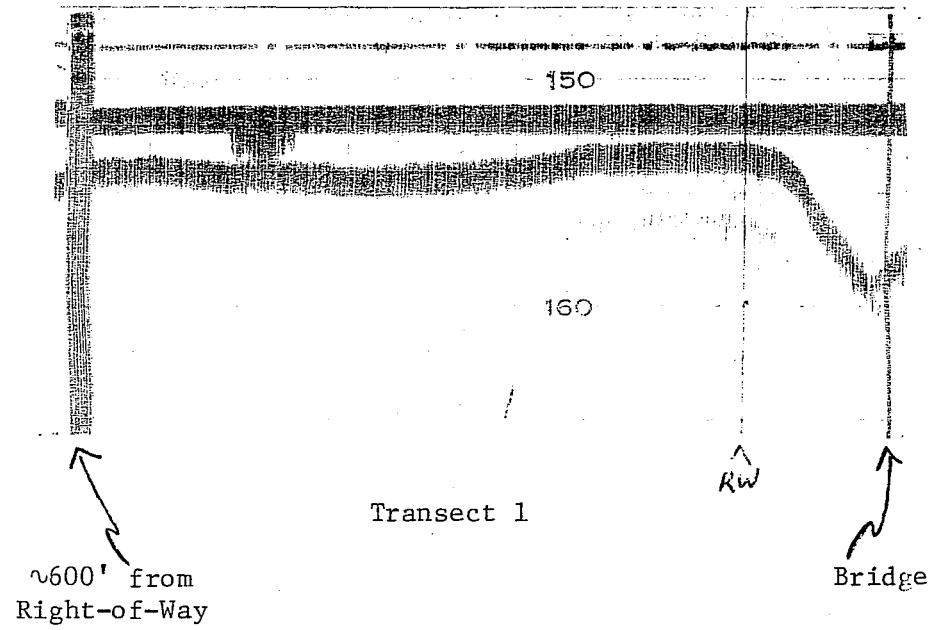
Table 16

Changes Between 1978 and 1982 in Estimated Value of Oysters and Shell on Leased Ground in the Right-of-Way for the Mills E. Godwin, Jr. Bridge.<sup>1</sup>

<u>Lessee</u>	<u>Large Oysters</u>			<u>Small Oysters</u>			<u>Shell</u>		
	<u>1978</u>	<u>1982</u>	<u>Decline</u>	<u>1978</u>	<u>1982</u>	<u>Decline</u>	<u>1978</u>	<u>1982</u>	<u>Decline</u>
Parker	\$2,280	\$ 96	\$2,184	\$545	\$ 35	\$510	\$64.40	\$24.40	\$40.00
Jones	0	0	0	0	0	0	0.00	0.00	0.00
Adams									
NE side	0	0	0	0	0	0	0.00	0.00	0.00
SW side	0	0	0	0	0	0	0.00	0.00	0.00
Newman	0	0	0	0	0	0	0.00	0.00	0.00

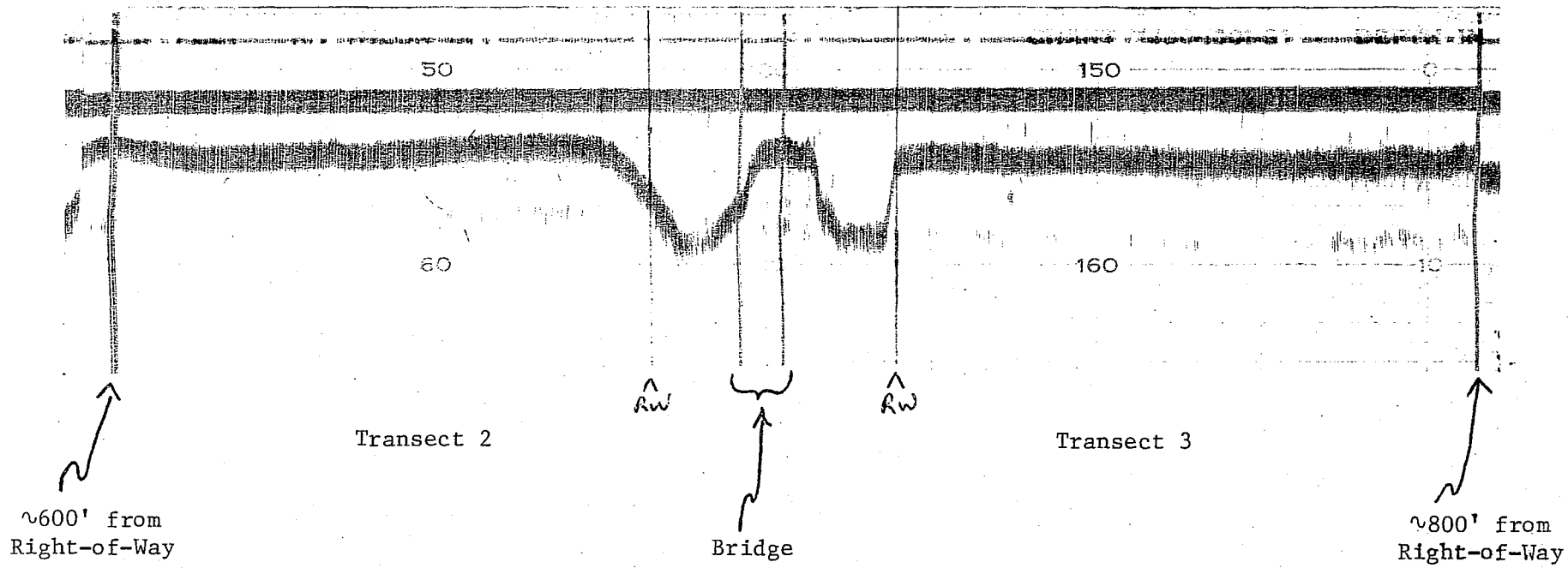
<sup>1</sup>Values calculated on the basis of present prices (see Table 15, Note 1).

APPENDIX



Transect 1 - Vacant and Jones

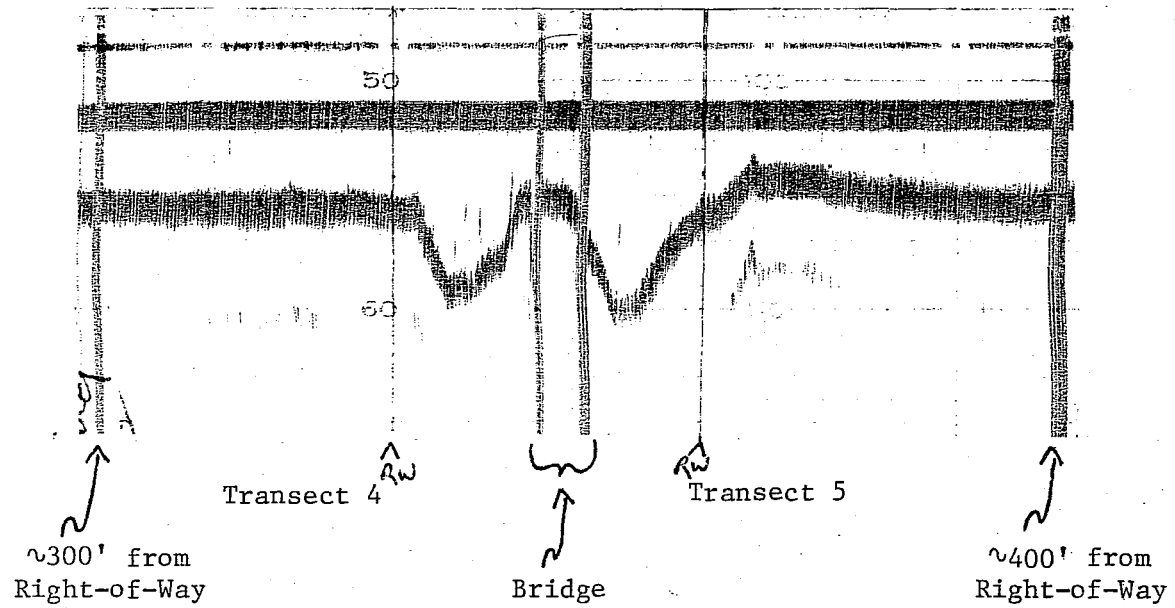
Bottom Profile Recorded by Fathometer - 4 May 1982



Transect 2 - Vacant and Jones and Transect 3 - Parker

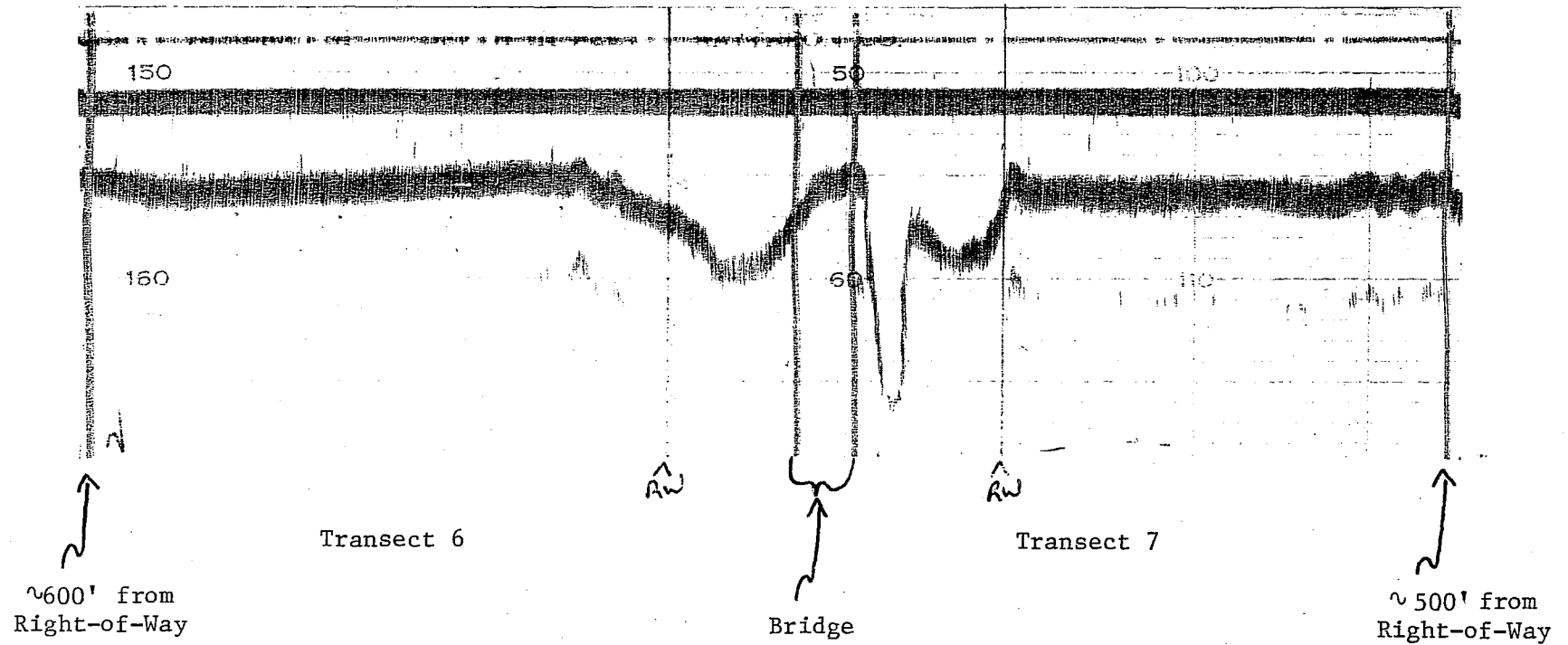
Bottom Profile Recorded by Fathometer - 4 May 1982





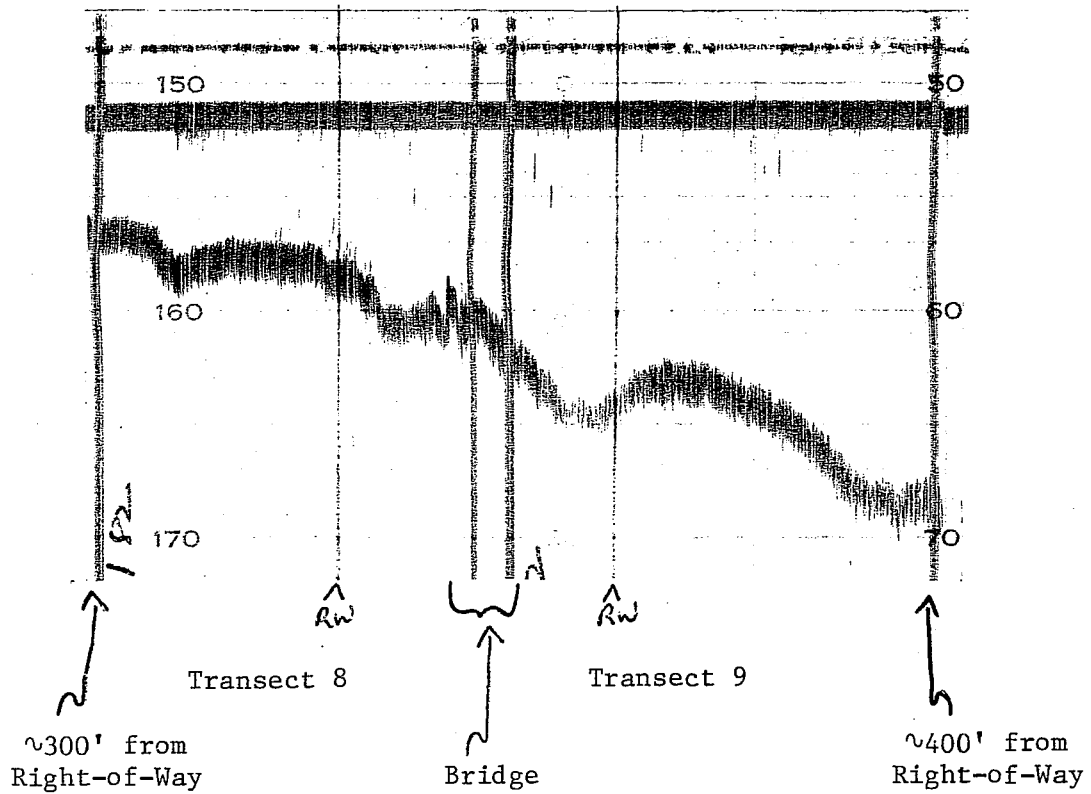
Transect 4 - Parker and Transect 5 - Adams

Bottom Profile REcorded by Fathometer - 4 May 1982



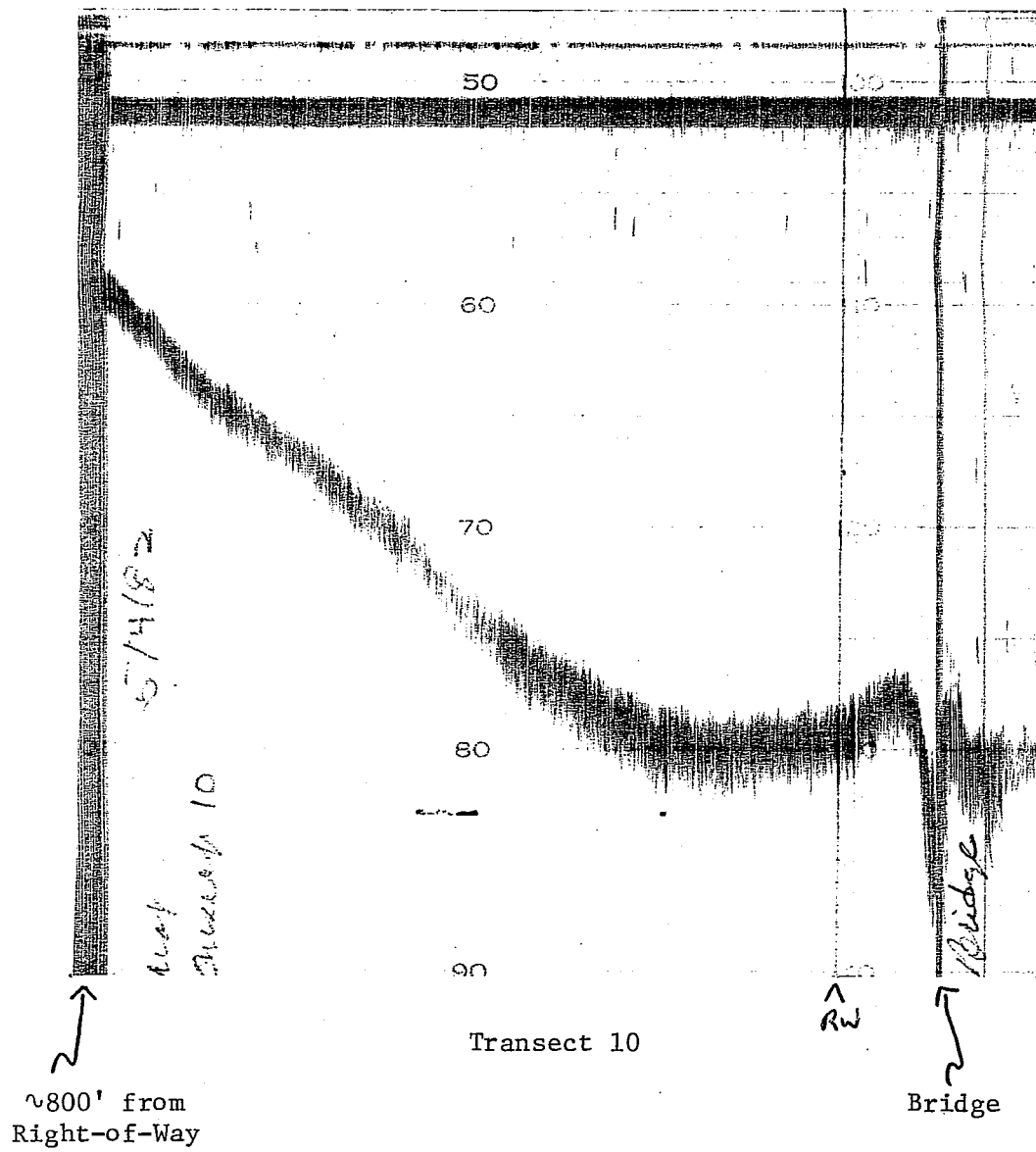
Transect 6 - Adams and Transect 7 - Parker

Bottom Profile Recorded by Fathometer - 4 May 1982



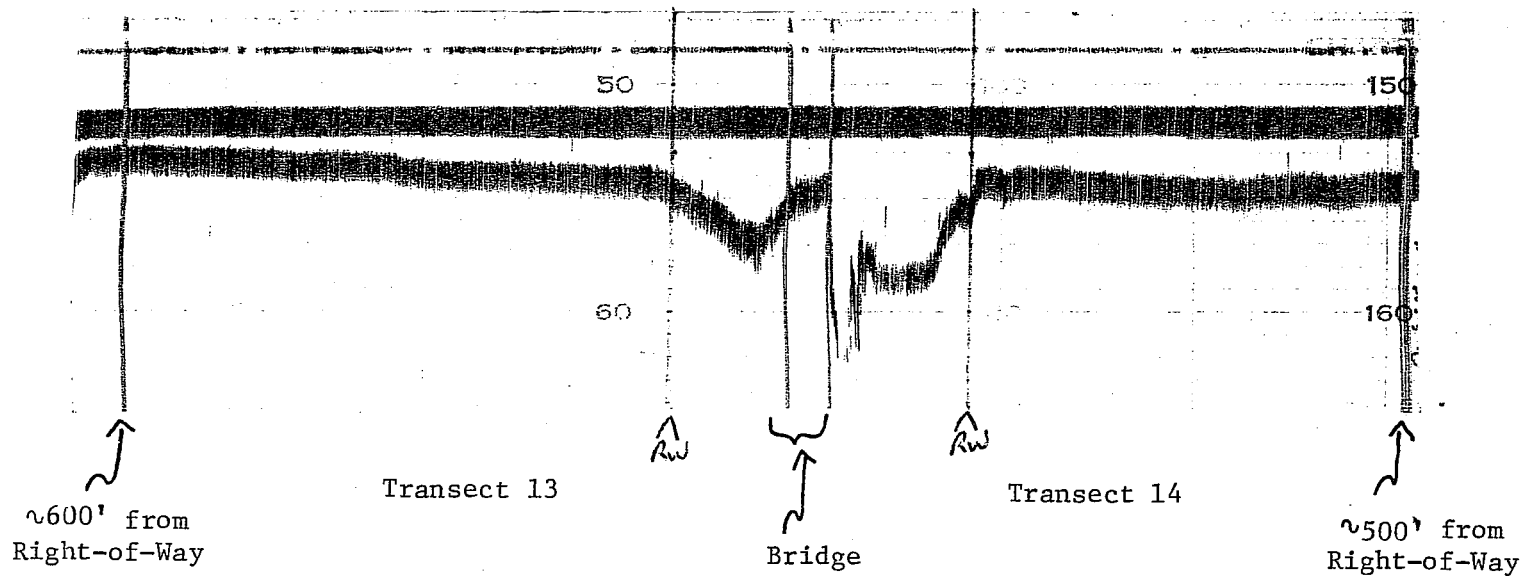
Transect 8 - Parker and Transect 9 - Vacant

Bottom Profile Recorded by Fathometer - 4 May 1982



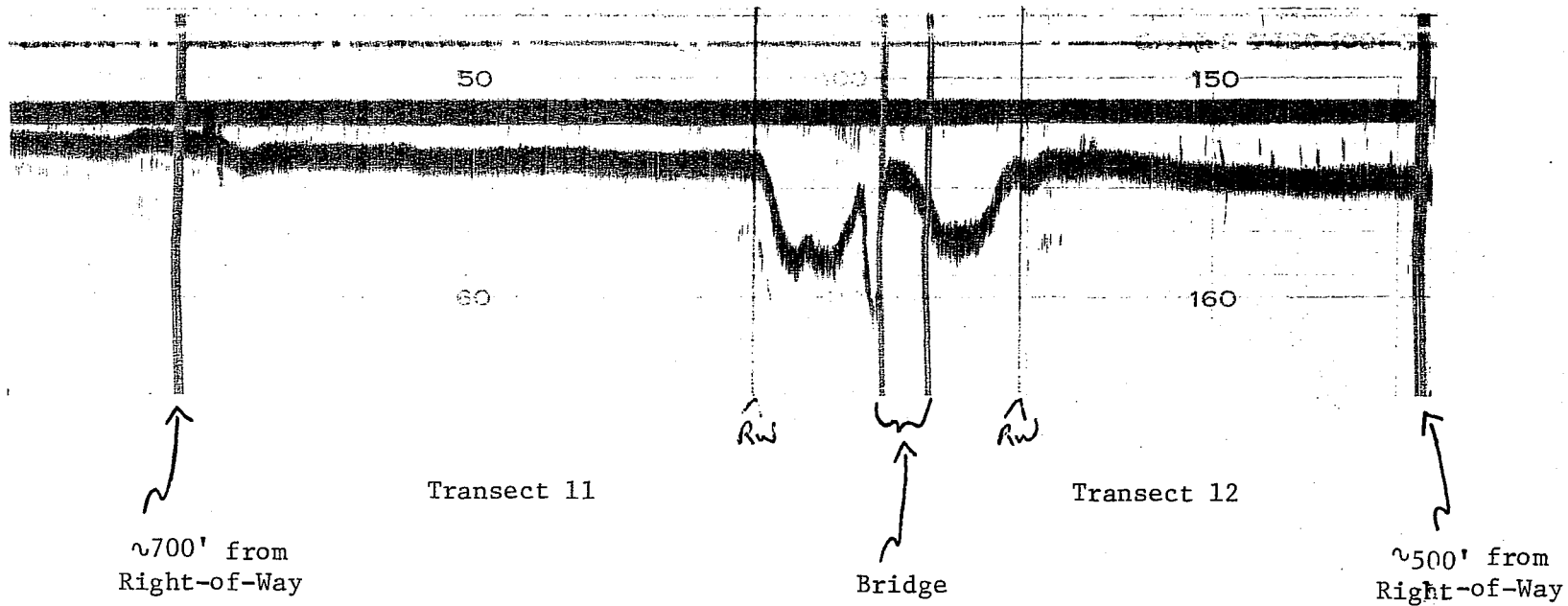
Transect 10 - Parker and Vacant

Bottom Profile Recorded by Fathometer - 4 May 1982



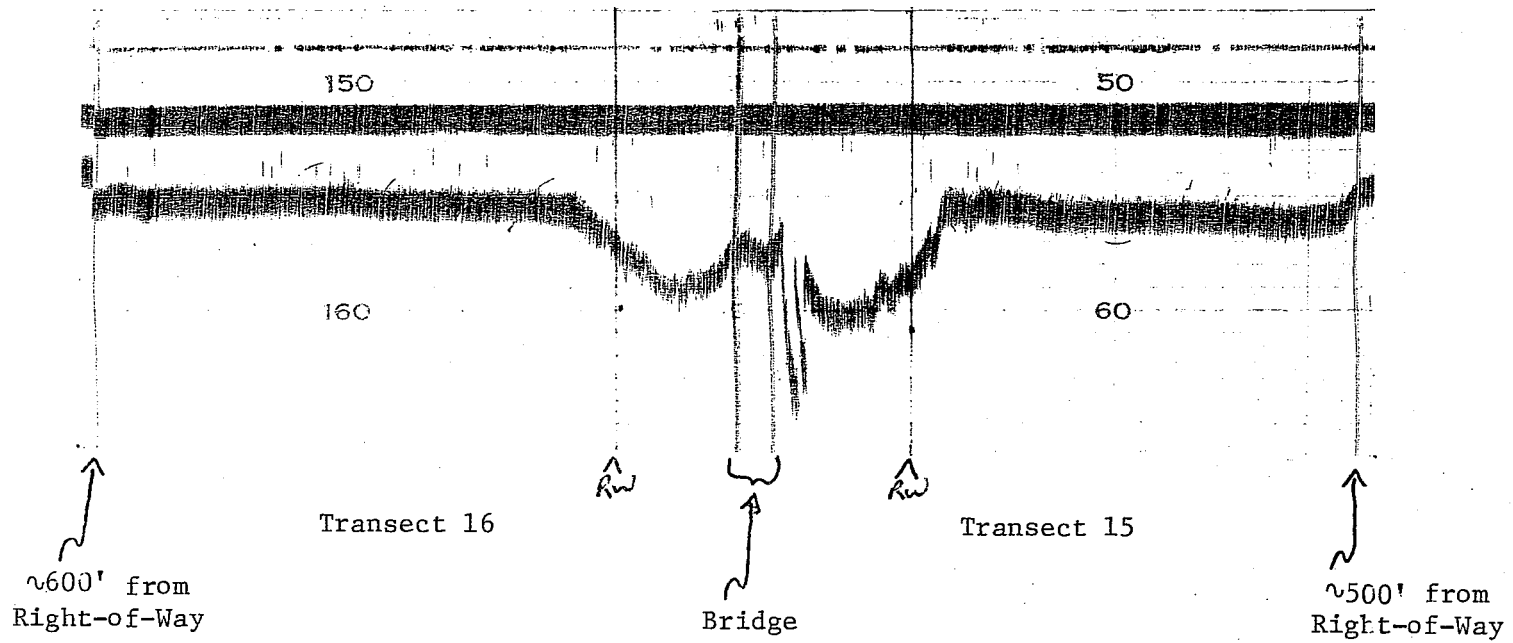
Transects 13 and 14 - Newman

Bottom Profile Recorded by Fathometer - 4 May 1982



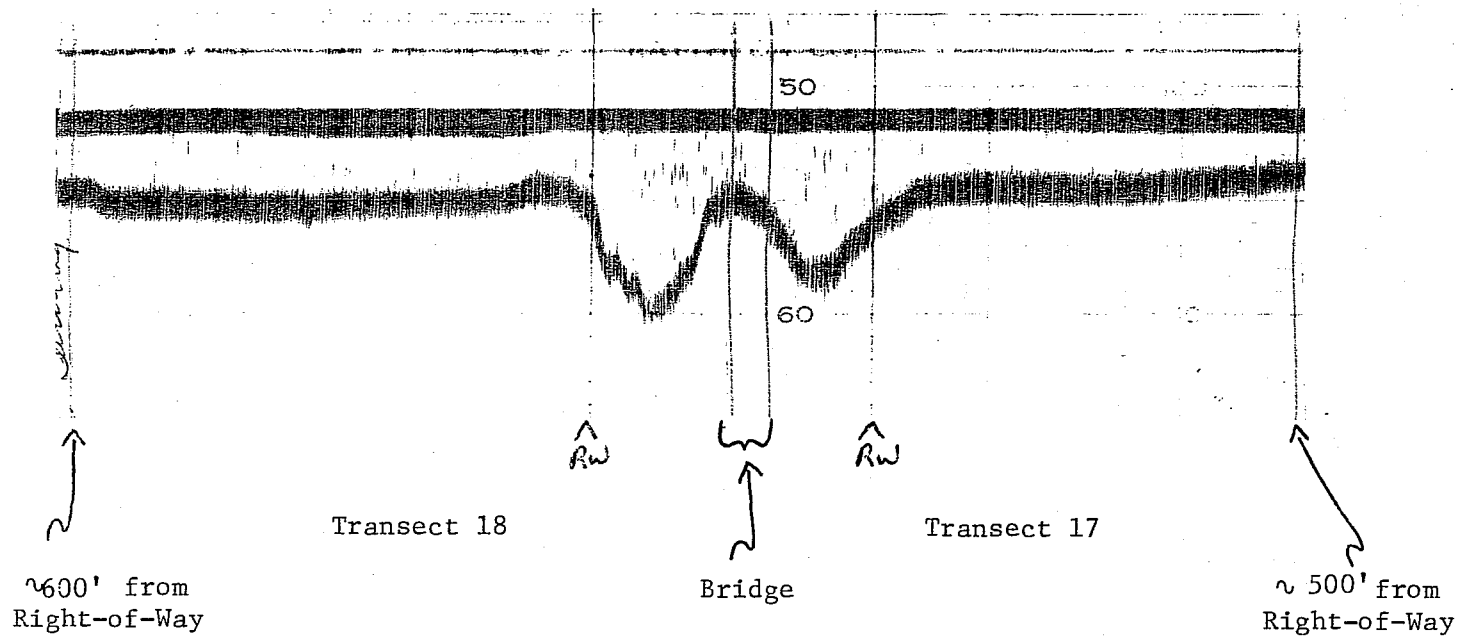
Transects 11 and 12 - Newman

Bottom Profile Recorded by Fathometer - 4 May 1982



Transects 16 - Newman and 15 - Adams

Bottom Profile Recorded by Fathometer - 4 May 1982



Transects 18 and 17 - Newman

Bottom Profile Recorded by Fathometer - 4 May 1982