

a distance of  $4\frac{1}{2}$  miles, there is now a channel varying in depth from  $6\frac{1}{2}$  to 8 feet and in width from 20 to 60 feet. This channel is shown on sections C and D.

Section D.—The average depth of cutting throughout this section is 2.7 feet in soft mud, and the quantity of excavation from mouth of Blackwater Creek to Faraby Island necessary to give the required channel is 186,057 cubic yards. This properly finishes the estimate for dredging along the present channel of the river. These estimates are presented in a condensed form in the following:

Tabular statement of location, quantities, and cost of the dredging required for a channel 80 feet wide at bottom and 9 feet deep through North Landing River.

Location.	Cubic yards.	Cost.
1. Section A, field-sheets Nos. 12 to 15, inclusive .....	46,912	\$9,382 40
2. Section C, field-sheets Nos. 2 and 3 .....	19,702	3,940 40
3. Section C, field-sheet No. 1, and section D, Blackwater Flats.....	186,057	37,211 40
	252,671	50,534 20
Removal of wreck near Devil's Half-Acre .....		1,800 00
		52,334 20
Add 20 per cent. for contingencies .....		10,466 84
Total .....		62,801 04

## CUT-OFFS.

As has already been mentioned, some improvements will now be suggested, the object of which is to straighten the river at certain places where the direction of the channel is objectionable and the bends too abrupt for safe and easy navigation, especially for long steamers.

The first of these is *Cypress Tree Point*, about one-half mile below Roper's Mill, and shown on section A, field-sheet No. 14. This point shuts out the view of the river for both ascending and descending vessels.

The mid-channel of the proposed cut-off is indicated by a broken green line, and marked proposed cut-off No. 1.

This improvement will straighten the river at the point named, and is strongly recommended, for this point is the first objectionable feature in the river south of North Landing, in so far as the general direction of the stream is concerned. It is not deemed advisable to cut off the first point, viz, the one on the right bank nearly opposite to Cypress Tree Point, but to make the entire cut from the latter point, and dredge to the depth of 9 feet, cutting 40 feet to the left of the proposed mid-channel line, and also dredging to the depth of 9 feet out to the present mid-channel.

The amount of dredging required here is 17,883 cubic yards, of which 68 per cent. is soft mud and 32 per cent. is hard sand.

Proposed cut-off No. 2.—This is at "Double S" Bend, a prominent point on right bank of the river 2 miles south of the initial point and three-quarters of a mile above West Landing, and is shown on section A, field-sheets Nos. 12 and 13, by a broken green line, indicating the mid-channel of the proposed cut. The length of the cut is 200 feet through the swamp, and it is proposed to cut to the depth of 9 feet below mean low-water, extending from 40 feet on the right of the new channel to the present mid-channel line.

The estimate for this cut-off is 28,727 cubic yards, of which 98 per cent. is soft mud and the remaining 2 per cent. hard sand.

Proposed cut-off No. 3.—This cut is recommended as an improvement in the direction of the river at "Double S" Bend, as it overcomes the present existing difficulties at the "Double S," the same as the cut-off No. 2, and, in addition thereto, gives a straight channel for half a mile and shortens the distance 700 feet.

The cut proposed is shown by a broken green line on section A, field-sheets 12 and 13. It is 1,100 feet in length, extending in a straight line through the swamp, which has a general elevation of 2 feet above mean low-water.

The amount of earth to be excavated is 52,619 cubic yards, all soft material. This cut-off, if made, would be a great improvement, but it is not as necessary as the cuts Nos. 1 and 2.

Proposed cut-off No. 4.—A quarter of a mile above Etheridge's Wharf (section B, field-sheet No. 9) an abrupt point extends out from the east bank, and although the depth of water in mid-channel is sufficient for all purposes, there are numerous stumps near the point on the left and in the bend on the right, which are obstructions to navigation. In order to improve the channel at the bend, it is proposed to dredge a new

channel for a distance of 500 feet, cutting off a portion of the point. This can be effected by the removal of 17,740 cubic yards of soft mud and a few stumps.

Proposed cut-off No. 5.—In order to avoid the dredging of "Gordon's Wood Yard Reach," the shoal below "Devil's Half Acre," and the removal of the wreck between these two bars, it is proposed to dredge a channel through the marsh from Deep Bend to the first bend below Pungo Ferry. The length of the cut would be 2,400 feet, and it reduces the distance by the channel nearly  $\frac{1}{4}$  of a mile. The amount of excavation in this cut is 97,903 cubic yards, all soft material. This cut-off would be of great advantage to navigation, as it would enable vessels to pass direct from the good water of Deep Bend into 12 feet of water in the bend below Pungo Ferry.

For ease of reference the numerical data relating to these proposed cut-offs is grouped together in the following:

Tabular statement of lengths, locations, and cost of proposed cut-offs and cost of removing logs and stumps.

Ref. No.	Location.	Length.	Cubic yards.	Cost.
		<i>Feet.</i>		
1	Cypress Tree Point, section A, field-sheet No. 14 .....	400	17,883	\$3,576 60
2	Double S Bend, section A, field-sheets 12 and 13 .....	200	28,727	5,745 40
3	Double S Bend, section A, field-sheets 12 and 13 .....	1,100	52,619	10,523 80
4	Stumpy Tree Reach, section B, field-sheet 9 .....	500	17,741	3,548 20
5	Deep Bend, section C, field-sheet No. 3 .....	2,400	97,903	19,580 60
			214,873	42,974 60
	Removal of 72 logs and stumps, at \$8 each .....			576 00
	Add 20 per cent. for contingencies .....			8,710 12
	Total .....			52,260 72

The total cost of all these improvements is \$115,061.76. If cut-offs Nos. 3 and 5 be omitted, the total cost will be reduced to \$87,928.24.

To F. W. Frost, assistant engineer, the efficient chief of field-party, much credit is due for the zeal, energy, and ability with which he has prosecuted the survey; and to Messrs. Burgwyn, Goode, Yeates, Darling, Reardon, and Ainsworth my thanks are tendered for excellent work in the field and valuable assistance in the office.

Very respectfully, your obedient servant,

J. B. SHINN,  
Assistant Engineer.

Capt. CHAS. B. PHILLIPS,  
Corps of Engineers, U. S. A.

Tabular statement of the number and class of vessels passing through the North Landing River for the fiscal year ending 30th September, 1878.

Month.	Steamers.	Schooners.	Sloops.	Barges.	Lighters.	Boats.	Rafts.	Total.
1877.								
October .....	198	105	37	24	43	14	10	431
November .....	235	109	34	18	60	4	11	471
December .....	247	133	57	36	55	3	12	543
1878.								
January .....	199	159	83	17	55	1	9	523
February .....	213	123	92	15	48	2	12	505
March .....	243	170	54	35	64	14	11	591
April .....	216	162	34	16	59	7	15	509
May .....	242	208	35	13	66	8	23	595
June .....	213	135	61	11	66	15	16	517
July .....	231	208	88	14	42	76	23	682
August .....	195	155	38	10	51	83	18	550
September .....	195	92	27	17	52	16	11	410
	2,627	1,759	640	226	661	243	171	6,327
North .....	1,351	886	325	111	348	127	171	3,319
South .....	1,276	873	315	115	313	116	.....	3,008
Total .....	2,627	1,759	640	226	661	243	171	6,327

A general statement of number and class of vessels navigating the North Landing River, Virginia, from 1st October, 1859, to 30th September, 1878.

Years.	Steamers.	Schooners.	Sloops.	Barges.	Lighters.	Boats.	Rafts.	Total.
1860	116	393	29	97	248	136	10	1,029
1861	671	1,139	74	153	300	179	8	2,524
1862	453	192	88	69	275	188		1,265
1863	377	62	71	16	292	125		943
1864	953	24	15	124	96	174	5	1,391
1865	1,300	266	190	122	79	602	3	2,562
1866	1,062	739	302	256	338	921	18	3,636
1867	1,112	907	358	313	763	761	29	4,243
1868	1,093	944	442	381	778	1,066	26	4,730
1869	1,093	752	398	297	950	1,077	36	4,603
1870	1,487	859	437	167	911	486	35	4,382
1871	1,659	944	555	183	1,030	483	49	4,900
1872	1,667	1,070	523	158	752	553	85	4,808
1873	2,075	1,380	592	225	886	460	152	5,770
1874	2,214	1,607	654	338	937	411	122	6,283
1875	2,408	1,837	722	340	697	425	73	6,502
1876	2,463	1,719	720	292	639	260	113	6,206
1877	2,376	1,626	508	344	587	277	123	5,841
1878	2,627	1,759	640	226	661	243	171	6,327
	27,206	18,219	7,318	4,101	11,219	8,827	1,058	77,945

List of steamers navigating the North Landing River, Virginia, for the fiscal year ending September 30, 1878.

Name.	Class.	Tonnage.	Where from.	Where bound.	Trips.
Astoria	P.	210	Norfolk	Roanoke River	8
Bonita	P. W.	85	do	Roanoke Island	42
Bel Virginia	P.	30	do	Albemarle Sound	21
Ben Minder	P.	135	Baltimore	Roanoke River	32
Chas. Henaje	P.	123	do	do	24
Chowan (tug)	P.	33	Norfolk	North River	217
Commerce	P.	222	Baltimore	Roanoke River	51
Cygnets	P. W.	93	Norfolk	Currituck	234
Currituck	P.	92	do	Jamesville, N. C.	5
Croatan (tug)	P.	23	do	North River	223
Dixie	P.	12	do	Albemarle Sound	36
Deer	P. W.	60	Philadelphia	Morehead City	1
Day Dream	P.	76	Wilmington, Del.	Galveston, Tex.	1
Dot	P.	5	Norfolk	Currituck	2
Experiment	P.	356	Baltimore	Newbern	63
E. A. Stevens, U. S.	P.	150	do	do	4
Eureka	P.	93	New York	Roanoke River	2
Endeavor, U. S.	P.	164	Baltimore	Wilmington, N. C.	1
F. L. Moore	P.	87	Georgetown	Roanoke River	24
G. W. Stout	P.	110	Baltimore	Newbern	30
H. G. Wagner	P.	64	Georgetown	Roanoke River	20
Harbinger	P.	64	Norfolk	Hertford	6
Heliotrope	P. W.	200	Baltimore	Pamlico Sound	4
Isis	St. W.	173	Norfolk	Wilmington, N. C.	1
J. D. Coleman	P.	95	do	Roanoke River	71
Ida	P.	29	do	Albemarle Sound	6
J. T. Scribner	P.	87	Georgetown	Roanoke River	22
Juniper	P.	23	Norfolk	Alligator River	64
John S. Ide	P.	212	Baltimore	Newbern	41
J. W. Haring	P.	28	New York	Roanoke River	7
Keystone	P.	162	Philadelphia	Alligator River	62
Lucy	P.	116	Norfolk	Roanoke River	67
Louisa	P.	280	Baltimore	do	85
Lynnhaven	St. W.	89	Norfolk	Alligator River	63
L. G. Cannon	P.	177	do	Roanoke River	99
Lookout, U. S.	P.	53	Washington	Albemarle Sound	6
Lumberman	P.	19	Norfolk	do	31
M. E. Roberts	P.	121	do	Yeopin River	94
Mary C.	P.	248	Philadelphia	Scuppernong River	20
Mt. Vernon	P.	120	do	Roanoke River	2
Mollie Wentz	P.	20	Norfolk	do	10
Newbern	P.	412	do	Hatteras, N. C.	118
North Carolina	P.	51	do	Newbern	52
N. W. A. Cobb	P.	18	do	Chowan River	35
Nettie	P.	60	do	Hatteras	10

List of steamers navigating the North Landing River, Virginia, &c.—Continued.

Name.	Class.	Tonnage.	Where from.	Where bound.	Trips.
Oriole	P. W.	262	Boston	Jamesville, N. C.	1
O. H. Hastings	P.	24	Philadelphia	Yeopin River	4
Orlando	P.	42	do	Wilmington, Del.	1
Pulaski	P.	15	Norfolk	Chowan River	74
Pamlico	P.	352	do	Newbern	75
Pass Port	P. W.	127	New York	Florida	1
Peter Cooper	P.	117	Philadelphia	Roanoke River	14
R. T. Waters	P.	25	Norfolk	Chowan River	50
Royal Arch	P.	30	Philadelphia	Charleston	2
Rotary	P.	215	Norfolk	Roanoke River	53
Silver Wave	S. W.	168	do	do	2
Storm Signal, U. S.	P.	16	do	Hatteras	2
Spring Garden	P.	24	do	Albemarle Sound	8
S. Neelson	P.	114	Philadelphia	Chowan River	4
Tuckahoe	P.	155	Baltimore	Newbern	66
Tulip, U. S.	P. W.	182	do	Pamlico Sound	8
Tourist	P.	80	New York	Florida	2
Tredegar	P.	27	Norfolk	Yeopin River	42
United	P.	194	Philadelphia	Elizabeth City, N. C.	11
Uncle Knapp	P.	167	do	Chowan River	8
United States steamer Launch	P.	14	Navy Yard	Nag's Head	4
Uncle Sam	P.	170	Philadelphia	Chowan River	8
Virginia	P.	27	Norfolk	Yeopin River	101
Vesta	St. W.	219	do	Jamesville	2
W. F. Taylor	P.	27	do	Perquimans River	63
W. P. Craighill	P.	28	Baltimore	Washington	1
Wm. Gates	P.	67	Norfolk	Chowan River	2
Young America	P.	10	New York	Florida	1

H 6.

IMPROVEMENT OF CURRITUCK SOUND AND NORTH RIVER BAR, NORTH CAROLINA.

The object of this improvement is to secure by dredging a channel 80 feet in width at bottom, and 9 feet in depth at an ordinary winter stage of water, through the entire length of upper Currituck Sound, a distance, by the route usually followed by vessels, of 10.49 miles, which takes us to the northern end of the Carolina or Coanjoek Cut of the Albemarle and Chesapeake Canal.

An appropriation of \$20,000 was made for this work by act of Congress approved June 18, 1878. A careful survey of the upper sound was made during the months of September and October last, in connection with the "survey of water routes south from Norfolk, Va.," in order to make an estimate of the total cost of the work proposed, as well as to determine the exact points where the appropriation should be applied. It was estimated that to excavate such a channel as that described above would require the removal of 386,000 cubic yards of material, at a cost of about \$90,000. As the appropriation was less than one-fourth of the estimated cost of the entire work, it was proposed to apply the amount available to those portions of the channel most in need of dredging, securing the required depth, but cutting to but little more than half the width contemplated ultimately.

The portions of the channel most in need of attention appeared to be, 1st, that portion of the route from Farraby's Island (at the head of the sound) south for a distance of 21,240 feet; and 2d, that portion of the route between buoys Nos. 6 and 10, lower down the sound, a distance of 3,440 feet.

This project having met with the approval of the Chief of Engineers, a contract was, after due advertisement for proposals, entered into with Mr. G. H. Ferris, of Baltimore, the lowest bidder, for dredging 90,000

cubic yards of material (more or less) at the rate of 9 $\frac{3}{4}$  cents per cubic yard.

Work under this contract was commenced on the 17th of February last and completed on the 30th of June. During this time 138,522 cubic yards of material were removed and redeposited at the dumping grounds.

The portions of the channel referred to above were made fully 50 feet in width, with a depth of 9 feet, at a winter stage of water. A portion of a dangerous shell ridge, below Farraby's Island, was dredged away, and a channel was excavated on each side of a new beacon, recently established opposite Mackey's Island. The river and harbor act of March 3, 1879, appropriated \$25,000 for continuing this improvement. A project for the expenditure of this amount was submitted to the Chief of Engineers on the 21st of April last, and was by him approved.

It is proposed to devote the new appropriation (when available) to carrying out, as far as it will permit, the project for an 80-foot channel the entire length of the sound.

It is not deemed advisable to attempt an improvement of North River Bar until the above shall have been accomplished. But two appropriations have been made for this work, viz:

June 18, 1878.....	\$20,000
March 3, 1879.....	25,000

The work has been under the immediate supervision of Mr. George H. Elliott, assistant engineer, to whom I am indebted for the constant zeal and energy which he had displayed in the discharge of his duties. His detailed report upon the work is appended hereto.

Currituck Sound is in the collection-district of Albemarle, Edenton being the port of entry.

The commercial statistics relating to North Landing River apply also to Currituck Sound, as they are each links in the same line of communication from Norfolk Harbor, south, to Albemarle Sound.

*Money statement.*

July 1, 1878, amount available.....	\$20,000 00
Amount appropriated by act approved March 3, 1879.....	25,000 00
July 1, 1879, amount expended during fiscal year.....	\$45,000 00
July 1, 1879, amount available.....	16,947 44
July 1, 1879, amount available.....	28,052 56
Amount (estimated) required for completion of existing project.....	45,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881.	45,000 00

*Abstract of proposals for dredging in Currituck Sound, North Carolina, opened at 12.5 p. m., December 20, 1878.*

Number.	Name.	Address.	Time.		Machinery.	Daily amount expected, cubic yards.	Price per cubic yard.
			Commence—	Complete—			
1	G. H. Ferris.....	Baltimore, Md.....	Feb. 10, 1879	June 30, 1879	2 dipper dredges.	500*	\$0 00 $\frac{3}{4}$
2	H. E. Culpepper...	Portsmouth, Va...	Feb. 10, 1879	June 30, 1879			115
3	Geo. C. Fobes & Co.	Baltimore, Md.....	Jan. 15, 1879	June 30, 1879	1 clam-shell.	1,000	12
4	G. F. Brott.....	Washington, D. C.	Jan. 15, 1879	June 30, 1879	{ 1 dipper dredge. 1 clam-shell. }	1,000	14

Contractor, G. H. Ferris, at 9 $\frac{3}{4}$  cents per cubic yard.

\* Each.

† From Farraby's Island south.

‡ From buoy No. 10 to No. 6, opposite Bells Island.

NORFOLK, VA., July 7, 1879.

CAPTAIN: I have the honor to submit herewith annual report on the improvement of Currituck Sound and North River Bar for the fiscal year ending June 30, 1879. The river and harbor act of June 18, 1878, appropriated \$20,000 for this work. No preliminary survey or examination having been made, it was recommended in a partial project for the expenditure of this appropriation, submitted July 25, 1878, that a survey be made to obtain sufficient data upon which to base estimates, and to ascertain what portions of the work were most in need of improvement. This recommendation having met the approval of the Chief of Engineers, a party was organized and the survey made during the months of September and October, 1878.

On the 19th of November a report was submitted, in which estimates were given of the total cost of improvement proper to be made, and also a project for the expenditure of the appropriation for the fiscal year. The improvement proposed was the dredging of a channel 80 feet wide at bottom, and 9 feet deep at an ordinary stage of water, the entire length of the sound. The appropriation being inadequate to complete the whole work, it was proposed to dredge a channel 40 feet wide and 9 feet deep, from Farraby's Island, the northern extremity of the sound, south to a point 375 feet west of the Old Beacon, a dilapidated structure which is now entirely destroyed.

This channel is 21,240 feet long. A similar channel was also proposed from buoy No. 10, 14,490 feet south of the Old Beacon, to buoy No. 6, a distance of 3,440 feet. These two localities were apparently most in need of immediate improvement.

This project having been approved by the Chief of Engineers, proposals were invited for the excavation by dredging of 90,000 cubic yards of material, more or less. The lowest bidder was Mr. G. H. Ferris, of Baltimore, at 9 $\frac{3}{4}$  cents per cubic yard. A contract was entered into with Mr. Ferris, the work to be commenced February 10 and completed by June 30, 1879.

The work was commenced in the long cut from Farraby's Island south, February 17, with one dredge, and continued until March 22, when an additional dredge was put on; these working in the same channel until the end of the month, and until the 14th of April, when another dredge was put in this cut, and also one in the lower cut. One of the dredges in the long cut was, however, withdrawn on the 19th of April, and the work was prosecuted with three dredges until the expiration of the contract, at the end of the fiscal year. Under this contract the channel from Farraby's Island south has been excavated to a width of 52 to 53 feet, and 9 feet deep at ordinary winter water, in a straight line to the New Beacon, which is located 375 feet west of the Old Beacon, and in the center of cut. This location necessitated the excavation of a channel on both sides of the beacon, which has been made 80 feet wide, and the same depth as the main channel. Half way down the long cut, a hard ridge of shells and sand was found near the edge of the cut; this ridge having only 4 $\frac{1}{2}$  feet of water on it, was exceedingly dangerous and troublesome to navigation; a portion of it has also been dredged away. The total amount of material dredged in this portion of the sound is 122,890 cubic yards, which, with the exception of the shell ridge referred to, was of mixed sand and mud and very easily removed. It was all deposited on the eastern shore of the sound, near Mackey's Island; and as the locality is well sheltered from the prevailing winds, it is not likely that any of this material will find its way back to the channel.

The channel from buoy No. 10 to buoy No. 6 has been dredged its entire length (3,440 feet) to a width of about 50 feet, and 9 feet deep at an ordinary stage of water. The material at this locality was a very sticky clay, with usually a layer of shelly substance on the upper surface; this material was difficult to excavate, and particularly so to dump from the scows, having almost invariably to be pushed and washed out. The amount removed from this locality was 15,632 cubic yards, which was deposited on the western shore of the sound, near Bell's Island, about 2 miles from the dredged channel. As in the case of the material deposited from the long cut, this is also in a well sheltered locality, unlikely to be affected by the winds prevalent in Currituck Sound.

Opportunity has not yet offered to make final examination of the work done, but from examinations made from time to time during its progress, it is apparent that the work was faithfully performed by the contractor according to the terms of the specifications, except that done by dredge Cambridge, during March last; 1,815 cubic yards were removed by this dredge, but, examination showing that the depth attained was much in excess of that required by specifications, a deduction of 808 cubic yards was made for such excess. This dredge was withdrawn from the work April 19.

There are no regular lunar tides in Currituck Sound. An average low winter stage of water has been taken as datum, below which excavations have been made.

The improvement of Currituck Sound already accomplished will necessarily be of much benefit to navigation, but to thoroughly utilize it, the long cut should be staked

out, as it will be impossible for vessels to keep in the cut otherwise. This can be accomplished at a small expense. Beacons have been erected by the Light-House Board at the termini of the proposed and existing channels, which are to be lighted after the 15th instant. When this shall have been done, the channel increased in width as proposed to 80 feet, and properly staked out, it will leave little to be desired in the way of improvement to this portion of the sound. The remaining portions should also, as recommended, be dredged. As this work is a connecting link in the line of inland navigation from Norfolk, Va., via the Albemarle and Chesapeake Canal, and North Landing River to the south, reference is respectfully requested to the report on North Landing River for statistics.

Very respectfully, your obedient servant,

GEO. H. ELLIOTT,  
Assistant Engineer.

Capt. CHAS. B. PHILLIPS,  
Corps of Engineers, U. S. A.

### H 7.

#### IMPROVEMENT OF EDENTON HARBOR, NORTH CAROLINA.

The object of this improvement has been to secure by dredging a channel 100 feet in width and 9 feet in depth at an ordinary stage of water, from the wharves, at the town, across the bar to the deep water of Edenton Bay, a distance of about 850 yards, and to provide a basin in the inner harbor of proper dimensions for turning. The river and harbor appropriation act of June 18, 1878, provided \$4,000 for this work, and during the past fiscal year this amount has been expended in carrying out the plan proposed. The channel across the bar has been excavated to the dimensions above indicated, but the turning basin has not been made as large as desirable, on account of the want of funds.

Dredging was commenced on the 31st of January and was completed on the 25th of March last. During this period 21,360 cubic yards of material were removed from the harbor and the channel of approach thereto. The dredging was done by contract at the rate of 15 cents per cubic yard. The river and harbor act of March 3, 1879, appropriated \$1,000 for continuing this improvement.

A project for the expenditure of this amount was submitted to the Chief of Engineers on the 21st of April last and was by him approved.

It is proposed to devote the entire amount (when available) to dredging at the turning-basin inside the bar. The excavation will be to a depth of 9 feet at an ordinary stage of water. One side of the basin will conform as near as safety will permit to the present Port Warden's line, and it will be made as wide as funds will permit. The new appropriation is so small that it is proposed to execute the work by the hire of machinery and labor in open market.

But two appropriations (\$5,000 in all) have been made for the work. Owing to the present low prices for dredging, the expenditure of this total will have accomplished all that appears necessary at this locality, and considerably more than was originally projected in 1872; and no further appropriation for the work seems necessary at present.

The work has been under the immediate supervision of Mr. George H. Elliott, assistant engineer, who has my thanks for the efficiency which he has displayed in the discharge of this as well as other duties that have been assigned to him. His report is appended hereto, as is also a statement giving commercial statistics. The latter has been kindly

furnished by Mr. Charles G. Manning, the courteous collector of customs at this port of entry.

#### Money statement.

July 1, 1878, amount available.....	\$4,000 00
Amount appropriated by act approved March 3, 1879.....	1,000 00
July 1, 1879, amount expended during fiscal year.....	3,991 44
July 1, 1879, amount available.....	1,008 56

Abstract of proposals for dredging in Edenton Harbor, North Carolina, opened at noon, September 18, 1878.

Number.	Name.	Address.	Time.		Machinery.	Daily amount expected cubic yards.	Price per cubic yard.
			Commence.	Complete.			
1	H. D. B. Norris....	Salem, Va.....	Nov. 1, 1878	Mar. 31, 1879	1 dipper dredge..	500 to 1,000	\$0 29
2	G. H. Ferris.....	Baltimore, Md..	Dec. 15, 1878	Mar. 31, 1879	1 dipper dredge..	300	15
3	H. E. Culpepper...	Portsmouth, Va.	Oct. 15, 1878	Mar. 31, 1879	1 Osgood dredge..	250	22
4	Geo. C. Fobes & Co.	Baltimore, Md..	.....	June 30, 1879	.....	.....	25

Contractor, G. H. Ferris, at 15 cents per cubic yard.

#### REPORT OF MR. GEORGE H. ELLIOTT, ASSISTANT ENGINEER.

NORFOLK, VA., June 30, 1879.

CAPTAIN: I have the honor to submit annual report of operations on improvement of the Edenton Harbor, North Carolina. The act of Congress approved June 10, 1872, directed a survey or examination of this harbor, which was made from August 27 to 30 of that year, under the direction of Maj. William P. Craighill, Corps of Engineers, who in his report stated that "the proper improvement seems to be the excavation of a channel 100 feet wide and 9 feet deep, from the town to the deep water of the bay."

A subsequent examination or survey was ordered by act approved March 3, 1875, under authority of which Mr. S. T. Abert, United States civil engineer, made a personal examination and reported that "a channel dredged on a line which is nearly a prolongation of the main street of Edenton, having a length of 2,500 or 2,600 feet and a depth of 9 feet, will retain its depth for many years." The channel proposed by Mr. Abert is practically the one recommended by Major Craighill; Mr. Abert's being carried a little farther out into the bay. The act of Congress approved June 18, 1878, appropriated \$4,000 for this work.

A project for the expenditure of this sum was submitted to the Chief of Engineers August 2, in which the original plans proposed were recommended; no material changes having occurred in the interval. This project was approved by the Chief of Engineers and authority given to advertise for proposals for dredging, which were received, and a contract entered into with Mr. G. H. Ferris to dredge 12,000 cubic yards, more or less, at 15 cents per cubic yard.

Work was to have been commenced December 15, 1878, but owing to the unusually severe winter the contractor's machinery was all frozen in at a more northern point. He was unable to begin the work until January 31, 1879. This delay was not detrimental to the interests of the United States. Under this contract 21,360 cubic yards of material were removed and deposited on the eastern shore of the bay.

The work was completed on the 25th of March last, and an examination made and the result plotted, showing that a channel 100 feet wide and 9 feet deep had been made from the vicinity of the wharves out to the bay in a direct line until that depth was reached; in addition to which excavations were made near the wharves, with a view to secure a turning-basin, to enable vessels the more readily to land and depart. One of the wharf owners also had a considerable amount of excavation done on private account by the contractor, after the United States dredging was completed; and as he is interested in shipping, this shows an evident disposition to make the most of the newly-excavated channel. That the improvement already made will be of material

benefit to the commerce of the town there can be no doubt, as it was not an uncommon thing during the low stages of water to see the larger class of vessels navigating the sound and bay aground on the bar, which will now be obviated. A letter from the collector of customs, giving statistical information, is appended herewith.  
Respectfully submitted.

GEO. H. ELLIOTT,  
Assistant Engineer.

Capt. CHAS. B. PHILLIPS,  
Corps of Engineers, U. S. A.

COMMERCIAL STATISTICS.

CUSTOM-HOUSE, EDENTON, N. C.,  
Collector's Office, July 3, 1879.

SIR: In compliance with your request per letter of June 24, 1879, I make the following report relating to Edenton Harbor.  
Amount of products shipped to and from Edenton during the fiscal year ending June 30, 1879, viz:

3,250 bales cotton, valued at.....	\$136,000
14,150 boxes fruit and vegetables.....	25,000
5,000 bushels grain, wheat and corn.....	4,500
350 packages merchandise.....	800
7,000 boxes fresh fish.....	70,000
5,000 barrels salt fish.....	25,000
1,500,000 corned salt fish.....	5,000
1,250,000 cypress shingles.....	8,150
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Imported from Northern markets:	274,450
10,000 packages merchandise.....	175,000
25,000 bushels salt.....	10,000
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	459,450

Total tonnage arriving and departing, about 150,000 tons.  
As far as I can learn, there seems to be a general demand, on the part of steamboat-owners and others interested, for additional improvement in the harbor, and it is believed would have a tendency to increase the trade and commerce of the place. I think these estimates are below what they really are.  
Very respectfully,

CHAS. G. MANNING,  
Collector.

GEO. H. ELLIOTT, Esq.,  
Assistant Engineer.

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IMPROVEMENT OF SCUPPERNONG RIVER, NORTH CAROLINA.

An appropriation of \$2,000 was made for the improvement of this river by act of Congress approved June 18, 1878.

As no preliminary examination or survey of this river with a view to its improvement had been made, the sum of \$200 was allotted from the appropriation for the purpose of obtaining such data as would enable a project to be submitted for its expenditure, as well as an estimate for the total cost of improvement proper to be made.

With these objects in view, an examination was made of the bar at the mouth of the river, and also of the upper river from Simmons' Landing to Spruill's Bridge, the head of navigation, a distance of 7 miles. The examination was made during the month of September last, and it was estimated that the amount then available would be sufficient to excavate a channel across the bar 80 feet in width and 9 feet in depth at

an ordinary stage of water, which seemed to be all that was required here; and that the further sum of \$6,000 would be required to improve the upper river, the improvement to consist principally in cutting off several sharp bends, and in removing a few stumps from the channel.

Proposals were invited for the excavation of 6,000 cubic yards of material from the bar at the mouth of the river, and the only one received was opened on the 28th of September last. This proposal was rejected on the ground that it was unreasonably high, viz, 29 cents per cubic yard. Authority has been granted by the Chief of Engineers to conduct the dredging by the hire of machinery and labor in open market, at such time as would be most advantageous to the United States. It was at that time anticipated that the proper time for doing the work would be during the (then) coming spring, when dredges would be closing up other works in the vicinity.

By act of March 3, 1879, however, an additional appropriation of \$2,000 was made for the work, which, added to the amount already available, made a sum sufficiently large to warrant the belief that competition would be excited should the work be readvertised, and that reasonable proposals might be expected.

The balance of the appropriation of June, 1878, has, therefore, remained unexpended up to the present time, awaiting the availability of the appropriation of March 3 last. The two appropriations above specified are the only ones that have been made for this work. Scuppernong River empties from the south into Albemarle Sound, and drains quite a large section of fertile and well-cultivated country. Reliable inhabitants state that Spruill's Bridge is the entrepôt for the supplies of nearly 6,000 people, and the shipping point for the surplus products of over 40,000 acres of cultivated land. Besides a regular steam-packet from Norfolk, Va., from 8 to 12 schooners depend mostly upon the upper river for freights.

Among the average amount of products shipped annually may be mentioned 4,500 bales of cotton, 150,000 bushels of corn, and 6,000,000 shingles. The shipment of eggs, chickens, and cattle is extensive, though not positively estimated. The work is in the collection-district of Albemarle; Edenton, N. C., being the nearest port of entry.

Money statement.

July 1, 1878, amount available.....	\$2,000 00
Amount appropriated by act approved March 3, 1879.....	2,000 00
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	\$4,000 00
July 1, 1879, amount expended during fiscal year.....	231 57
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	3,768 43
July 1, 1879, amount available.....	<hr/>
	4,000 00
Amount (estimated) required for completion of existing project.....	4,000 00
Amount that can be profitably expended in fiscal year ending June 30, 1881..	4,000 00

Abstract of proposals for dredging at the mouth of Scuppernong River, North Carolina, opened at noon of September 28, 1878.

Number.	Name.	Address.	Time.		Machinery.	Daily amount expected, cubic yards.	Price per cubic yard.
			Commence.	Complete.			
1	H. D. B. Norris....	Washington, D. C.	.....	.....	1 dredge...	500 to 1,000	\$0 29