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INDIANA CANALS

JOURNAL OF THE CANAL SOCIETY OF INDIANA

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Summer 1995



☞ Arrivals and departures of Canal Boats at Covington during the past week:

<i>Arrivals.</i>	<i>Departures.</i>
July.	July.
15 Wabash. G. W. Ewing. A. S. White.	15 Wabash. G. W. Ewing. A. S. White.
17 Wabash. Dave Rawles.	18 Wabash. Dave Rawles.
18 A. S. White. G. W. Ewing. Fountain.	18 G. W. Ewing. Fountain.
20 S. Taylor. Wabash. A. S. White. Western Trader	20 Wabash. 21 A. S. White. Western Trader. Seventy Six.
21 Seventy Six.	22 Wabash.
22 Wabash. G. W. Ewing. Dave Rawles.	23 G. W. Ewing. S. Taylor. Dave Rawles.
23 A. S. White.	

WILLIAMSPORT SIDE CUT.- We learn from the Commercial that the construction of the Williamsport Side Cut has been let to Messrs. Barcus & Co., of Lafayette, on favorable terms, and that the contractors intend to commence operations immediately; and push the work with all possible dispatch to completion. The Billy'sportians if the Commercial justly represents their feelings, are perfectly wild with enthusiastic delight at the prospect, and hail it as they hail a Nation's jubilee. They propose one hundred thousand shots, three earthquakes, and a tornado for their half-mile ditch, and dub it a "glorious work."
"Prairie Farmer", June 29, 1850.

CANAL BOAT SUNK

The canal-boat Iowa was staved on the lock at Perrysville side-cut, in the Wabash river. She was laden at Perrysville with between 900 and 1000 bushels shelled corn, a purchase by Mr. Hardy of this place, and in passing from Perrysville to the side-cut lock, owing to high water, failed in making a landing. She jerked out her bow in the attempt, swung and struck a tree broadside, and then sunk. Boat and cargo a total loss.
"Prairie Farmer", June 10, 1848.

As is the custom of INDIANA CANALS, this issue is dedicated to the area to be covered in the Indiana Canal Society's fall tour. This includes the line of the Wabash & Erie Canal between Attica and Armiesburg. Included in this issue are a history of this part of the canal, abstracts from the 1842 and 1843 engineer's reports showing the work to be done, and the story of Portland Bluff, one of the most interesting points on the tour. We also continue our ongoing series on the rules and regulations of the Wabash & Erie Canal.

The original Wabash & Erie Canal was designed to connect Lake Erie, somewhere near Toledo, and the head of navigation on the Wabash River at the mouth of the Tippecanoe River. Soon after construction began in 1832, there was agitation to extend the canal further south towards Terre Haute where river navigation was a bit more reliable. With this in mind, the Indiana Canal Commissioners ordered Charles T. Whippo to survey the route for a canal extension to Terre Haute in 1835. This was done in conjunction with a number of improvement surveys which culminated in the 1836 Internal Improvement Act. Under the third part of this program \$1.4 million was allocated to extend the Wabash & Erie Canal to Terre Haute and then by way of Eel River to the Central Canal. During the construction of this extension Coal Creek served as dividing line on the work. The Canal Society of Indiana's 1995 Fall Tour covers much of the line on both of these sections.

After the passage the 1836 improvement act there was little done on the canal south of Lafayette. Unlike many of the projects which consisted of unconnected detached lettings, work in the north continued steadily west from Fort Wayne toward Lafayette. It wasn't until 1838 that contracts were let for heavy sections in the vicinity of Covington. Despite Indiana's financial difficulties the Wabash & Erie Canal was completed to Lafayette in 1840. In summer and fall 1841 the canal line south of Lafayette was located a final time. In February 1842, William J. Ball was appointed engineer of the extension west of Lafayette and shortly thereafter the route was marked for contractors. Work was divided into three divisions, (Division 1, Lafayette-Attica, Division 2, Attica-Covington, Division 3, Covington-Coal Creek) and the first contracts made for Flint and Shawnee Creek aqueducts, locks 2, 3, and 4 and the deep cut. Work was rapidly begun after the May 16th letting with a labor force of men, oxen and horses equal to 2,000 men employed. By late in the season work was nearly suspended in some

areas due to illness which claimed the lives of two of the principal contractors, Marshall Wines and Robert Stewart. Work continued to be hindered in 1843 due to the severity of the winter and a 50-60% depreciation in the script used to pay the workers. The difficulty in obtaining stone also placed the construction of mechanical structures behind schedule. Despite these difficulties the chief engineer believed it possible to complete the work by fall 1844. This optimism was premature. Work on the "old letting", as the route from Lafayette to Coal Creek was called, was not completed in 1844 as anticipated. With the heaviest work remaining and an uncertainty of funding, completion was set back another year. Continuous rain and high water from April to July washed out completed banks and washed gravel into the canal bed in 6 sections. Still, much progress had been made. The locks at Attica, Covington and Vicksburg were nearing completion, the keystones of the Bear Creek culvert were in and the structures were being raised on the Flint and Shawnee Creek aqueducts. In 1845 work on the canal was completed to Covington. In May water was let into the Attica-Covington level and heavy breaches resulted at the Shawnee aqueduct embankment and Portland Bluff. On October 1st water was let into the level above Attica and soon after a boat was locked through. Until the level was closed by ice the boat was used to protect the banks as they slowly settled. Still there was insufficient water for navigation. Below Covington the final work on the final sections to Coal Creek had been abandoned. At the August letting no bids were received as many contractors had gone instead to work on the Illinois & Michigan Canal. Work was finally begun on the sections with a small force of 40 men and citizens. At the same time the citizens of Perryville were completing their side cut containing two locks from the Wabash River opposite town to the canal. In 1846 the entire canal as far as Covington was accepted as complete from the contractors. As the entire

length of the canal was filled, considerable breaches occurred between Shawnee Creek and Attica. As a result, two miles of the canal was lined with clay to seal the gravel banks. These delays prevented boats from reaching Attica until the latter half of September. To the people of Covington delays in the water reaching town were also caused by Attica's failure to open their lock. This resulted in the brief September conflict between the citizens of both towns. By the end of November navigation was finally opened to Covington. On November 27, 1847 navigation was opened the entire line to Coal Creek. Unfortunately the gravel nature of the soil made it difficult to keep filled and only half loads were possible. To correct this plans were made to raise the heights of feeder dams, limit hydraulic leases, and raise the level of water in the canal to five feet.

Below Coal Creek little work had been done during this period of time. The route had been laid out and some work done but the "new letting" was not a priority. Things changed in 1847 with the change of the canal's management. As a result of the Butler Bill, the canal was turned over to trustees of the bond holders who were obliged to finish the canal to Evansville. On July 1st, work on the Coal Creek-Terre Haute line were commenced. The failure to get the foundations in for the major structures led to delays in 1848. Coal Creek dam had to be relet on July 4th leading to another six months delay. Work on the other major structures (Sugar Creek dam, Racoon and Sugar Creek aqueducts) continued and the rest of the line continued. Floods in December 1848, caused major damage to the embankments on the Coal and Sugar Creek works. Successive floods in February and March delayed repairs on the December damage. Repairs to the Sugar Creek feeder allowed the filling of the canal to Terre Haute on April 9th and allowed the rest of the stone to be brought for aqueduct construction. Still the work continued until the first canal boats arrived in Terre Haute on October 25, 1848.

Although the Wabash & Erie Canal was completed to Terre Haute in 1849, this didn't mean that navigation was secure. The major problem continued to be a lack of water. This was due to the failure of many of the feeders, continued leakage from the gravel banks and the excessive waste of water by the Perrysville side-cut. During the spring floods the canal was found to have insufficient waste weirs and guard locks to prevent flood waters from entering the canal. This resulted in a number of breaches and slides, one of which carried earth, large trees and Wright & Wade's porkhouse into the river. Navigation opened April 1st in 1850 and wasn't interrupted until the close of the season on November 21st. The unusual drought of that year meant that during three months only 3/4 loads could be shipped from Covington, notwithstanding the exertions made by the superintendents. To increase the water supply additions were made to the dam at Delphi and the grass in the canal was cut more frequently. Since it was determined that the Perrysville side-cut was using more water than the Coal Creek feeder could supply, the Trustees refused to construct the Williamsport and Independence side-cuts. Local residents then initiated suit in Montgomery County court against the trustees. In 1851 the problem on the canal was too much water. From May to August there were a series of floods in which the Wabash River was out of its banks 5 or 6 times at Lafayette. There was no record of August flood as bad as that in 1851. On February 13th the Clinton Drawbridge Company was incorporated. In return for the trustees subscribing to 2/3 of the stock, they were relieved of the obligation of constructing the Clinton side-cut. In 1852 the problem was a scarcity of water again. This was aggravated by the construction of the Williamsport side-cut by a private company. This became such a detriment to navigation that chief engineer J.L. Williams had stop planks placed to close it. These were forcibly removed a short time later by order of

the side-cut directors. Still, navigation continued without major interruption throughout 1852 and 1853. In May of 1854, navigation came to an abrupt halt. On the 14th, 12 inches of rain fell in an 18 hour period. The resulting flood undermined the piers and dropped the entire Sugar Creek aqueduct structure into the stream. Of the 266 foot, three span structure, only the two stone abutments remained. To rebuild the structure on the plan would have taken a full boating season because of the complicated arches and piers. Instead it was decided to rebuild with shorter spans of more simple construction. Instead of the original three spans of 80 feet each, the new aqueduct would have six spans ranging from 34 to 50 feet. Unless injured by drift this wooden structure was equally substantial and economical as the one destroyed. To protect against this one danger the piers and bents were provided with strong drift braces on the upper sides. After \$7,410 and a 30 days delay, navigation across Sugar Creek was restored. Throughout the rest of 1854 the usual lack of adequate water occurred. The failure of the feeders, aggravated by the cutting of the Birch Creek reservoir in Clay County, and the waste of water at the Williamsport side-cut made it impossible to maintain water on the Covington level in the dry season. Measurements by the superintendent found that the increasing waste at the side cut now equalled 11 miles of supply. With no control over the side-cut and effort was made to pass more water. A second grass boat with 12 scythes was provided and the level above Attica was cut five times in the summer. In 1855 navigation was delayed a few weeks to clean out and deepen the sections between Lafayette and Attica. After that, navigation continued the entire season without problems. In 1856 the navigation season ran from May to December. Traffic between Attica and Terre Haute was interrupted several weeks by failure of the feeders and waste at the side-cuts. The second cutting of the Birch Creek reservoir in 1855 also effected the supply of water as far

north on the canal as Clinton. The situation was further aggravated on July 12th when the high embankment at the south end of the Shawnee aqueduct gave way. In 1857 the major interruption in navigation was the result of the railroad. Several miles above Attica a railroad had been constructed along the canal. After very heavy rains on June 14th, parts of the railroad embankment in four places were washed into the canal. At one point in the canal this resulted in a bar four feet deep and 1200 feet long. In 1858 the floods returned to the Wabash valley. The flood of June 9th was two feet higher than the record high of January, 1828. The Shawnee Creek aqueduct was totally destroyed, with the exception of the northern stone abutment. On the Shawnee feeder the stream passed around the south end of the dam taking out the south abutment and the feeder head gates. At Coal Creek a large breach in the guard bank permitted the whole stream to pass around the south side of the dam and across the high embankment of the canal. Repairs required the replacement of 25,000 cubic yards of earth. Along with other breaks, repairs to the above prevented navigation from being resumed to Terre Haute until September. On the positive side, the flood destroyed the Williamsport side-cut, which had long plagued canal operations. During 1859 there were few problems with navigation. The main event of that year was the change in operators of the canal. The line from Terre Haute to the state line was leased from the trustees for four years by private interests. In 1860 and 1861 there were few problems and the only event of note was the rebuilding of the trunk on the Racoon Creek aqueduct. In 1862 the winter floods carried away 10,000 cubic yards of embankment below Attica and carried away the Shawnee Creek feeder dam. When repaired the dam was double its original length. The 1863 boating season was effected by both flood and drought. On March 4th the Racoon Creek aqueduct's superstructure gave way. Both 90 foot spans and part of the stone pier were carried away. The necessity for immediate repair meant

that construction was to be on a more simple plan which avoided expensive arches. This was accomplished by reducing the length of the spans by $\frac{1}{2}$ and adding two intermediate wooden bents. The work was completed on July 1st. Low water in the summer, and the abandonment of the Cross Cut Canal, meant that there was little traffic from Terre Haute or points south of Montezuma in 1863. This lack of navigation continued into 1864 for the same reason. To increase the water supply, plans were made to clean out the bog above Covington. This situation continued for the next few years. In 1870 there was no boat traffic between Terre Haute and Armiesburg. At the Sugar Creek feeder, the disrepair of the dam and the obstruction of the feeder meant that little water was passed into the canal. South of Clinton the Chicago, Danville & Vincennes Railroad filled in a portion of the canal during construction without any authority. The decline of the canal rapidly increased. By 1873 there were no through cargoes from the Lafayette area to the lake. The following year there was only local traffic between Delphi and Attica. The destruction of the culvert over Rattlesnake Creek cut Delphi off from the eastern portion of the canal. The year 1874 also saw the abandonment of the private lease of the canal. From this point the Wabash & Erie Canal ceased to exist.

As the Canal Society of Indiana's fall tour follows the route of the Wabash & Erie Canal between Attica and Armiesburg it becomes rapidly apparent that the Wabash & Erie Canal has not entirely ceased to exist. Remnants of wood, earth and stone still exist all along the canal's route. Unfortunately, most of the sites are known only to the locals. Tours like this help to inform the society's membership, and the public at large, of the many and varied canal remains still existing.

THE "RAGING CANAWL."

We are happy to have the pleasure of announcing to our readers that the Canal to this place is now rapidly filling with water; and boats will be able to start with over half loads on Monday. It will be filled as fast as the tempering of the banks will admit. The fine rain of yesterday will contribute materially to its full navigation. Our groaning Warehouses will now get relief.

Today a large pleasure party takes a trip to Portland on the fine boat D. Rawles, J. Bodly Captain, which has been kindly tendered by the captain and owners, for that purpose.

Listen for the Cannon.

Covington Prairie Farmer, May 8, 1847.

COME ONE—COME ALL!

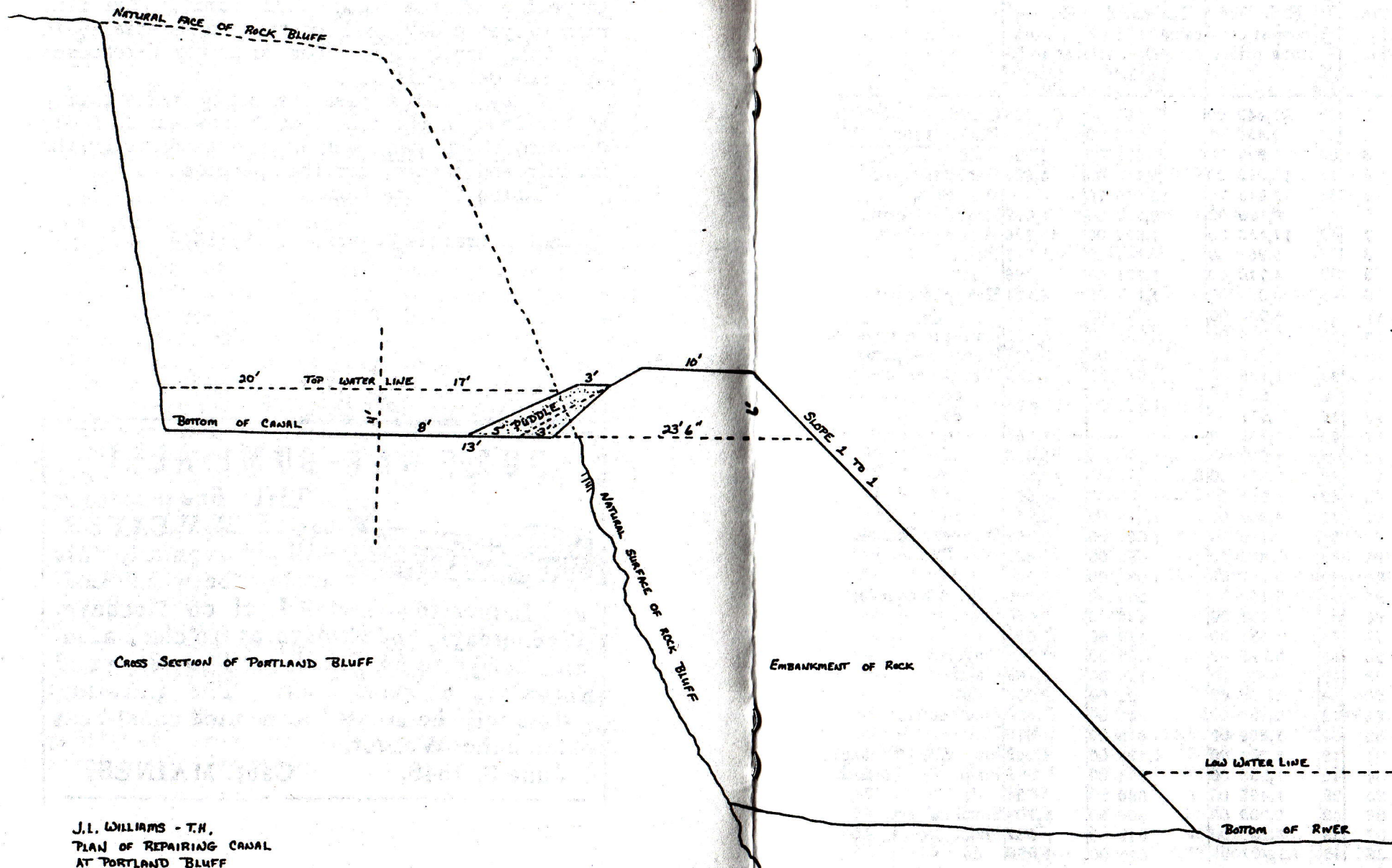


THE fine passenger boat, **E.M. WEAVER**, will ply regularly this season between Lodi and Lafayette—leaving Lodi on Mondays, Wednesdays, and Fridays, at 8 o'clock a. m. and Lafayette on Tuesdays, Thursdays and Saturdays at same hour. The traveling public will be treated to a nice canal-boat ride on the Weaver.

June 3, 1848.

Capt. MAINES.

The town of Portland is now called Fountain



CROSS SECTION OF PORTLAND BLUFF

EMBANKMENT OF ROCK

J. I. WILLIAMS - T.H.,
PLAN OF REPAIRING CANAL
AT PORTLAND BLUFF

REPORT -
Nov. 16. 1847 -

DIVISION No. 1.

Extending from Section No. 1 to 44, both inclusive.

No. of sections.	Lf. in chs.	Estimated cost at contract prices.	Estimated value of work done Dec. 1st, 1842.	Est. val. of work yet to be done.	REMARKS.
1	39	\$1,449 00	\$ 186 00	\$1,263	Com't at Lafayette.
2	42	7,459 00	796 00	6,663	Durkey's Run.
3	39	2,977 00	1,673 00	1,304	Plain.
4	45	10,028 00	5,144 00	4,884	Heavy tow-path.
5	36	15,845 76	15,845 76	.....	Wea Bluff.
6	42	6,166 00	2,154 00	4,012	Heavy tow-path.
7	42	17,458 00	1,222 00	16,236	Wea aqueduct.
8	36	5,961 00	144 00	5,817	Plain.
9	39	4,710 00	1,784 00	2,926	do
10	42	7,319 00	1,145 00	6,174	Heavy tow-path.
11	42	5,004 00	3,897 00	1,107	do
12	39	8,358 00	2,861 00	5,497	Brush protect'n req'd.
13	42	4,676 00	971 00	3,705	Heavy tow path.
14	39	2,126 00	641 00	1,485	Wea plains.
15	36	1,672 00	1,998 00	1,585	do
16	42	1,911 00		do	
17	42	1,367 00		do	
18	42	1,636 00		do	
19	42	1,321 00		do	
20	42	1,521 00	.....	1,521	do
21	42	4,027 00	1,016 00	3,011	do
22	51	3,480 00	1,021 00	2,459	Weaver's Branch.
23	39	1,346 00	685 00	661	Wet Prairie.
24	42	2,187 00	1,002 00	1,185	do
25	42	9,018 00	902 00	8,116	Flint cr'k aqueduct.
26	39	2,484 00	433 00	2,046	Plain.
27	45	1,531 00	478 00	1,053	do
28	39	3,775 00	569 00	3,206	Culvert.
29	42	2,649 00	180 00	2,469	Plain.
30	39	2,102 00	99 00	2,003	do
31	42	2,132 00	243 00	1,889	Small culvert.
32	39	1,622 00	819 00	812	Plain.
33	42	5,704 00	1,475 00	4,229	Maysville X Young's
34	42	1,936 00	994 00	992	Plain. [branch.
35	39	1,432 00	698 00	734	do
36	42	2,209 00	500 00	1,709	Small culvert.
37	39	1,481 00	949 00	532	Plain.
38	42	1,727 00	611 00	1,086	do

DIVISION No. 1 — *Continued.*

No. of sections.	Length in chs.	Estimated cost at contract prices.	Estimated val. of work done Dec. 1st, 1842.	Est. val. of work yet to be done.	REMARKS.
39	42	\$1,659 00	\$ 598 00	\$ 1,061	Plain.
40	42	1,743 00	306 00	1,437	do
41	39	1,597 00	576 00	1,021	do
42	42	2,160 00	430 00	1,730	do
43	42	4,585 00	970 00	3,615	Culvert & R. bridge.
44	39	5,398 00	1,139 00	4,259	Attica lock, No. 2.
Wea f. dam,	29	7,674 00	648 00	6,926	
Totals,	1,832	\$184,672 76	\$57,828 76	\$126,844	

Length 22.53 miles: average cost per mile \$8,196 70.

DIVISION No. 2.

Extending from Sections 45 to 65, both inclusive.

No. of sections.	Length in chains.	Estimat'd cost at contract prices.	Est. val. of work done Dec. 1st, 1842.	Est. val. of work yet to be done.	REMARKS.
45	42	\$4,324	\$2,152	\$2,172	Heavy tow-path.
46	39	6,993	1,917	5,076	do
47	42	3,795	3,153	642	Plain.
48	42	3,352	2,295	1,057	do
49	39	7,211	2,959	4,252	Heavy tow-path.
50	42	10,617	3,829	6,788	Heavy embk't & culv't
51	42	25,559	6,977	18,582	Shawnee cr. aquedc't.
52	39	8,094	1,218	6,876	Heavy tow-path.
53	42	3,652	309	3,343	Plain.
54	42	2,888	1,674	1,214	do
55	43.74	3,490	1,508	1,982	do
56	56.85	43,560	26,505	17,055	Portland bluff.
57	41.20	14,456	7,420	7,036	Culv't over Bear cr'k.
58	155.65	35,652	22,754	12,898	North sec. of deep cut.
59	156.30	37,951	22,740	15,211	South " "
60	42	2,797	2,190	607	Plain.
61	42	1,792	1,356	456	do
62	42	2,289	1,834	455	do
63	39	2,173	1,815	358	do
64	42	3,089	2,431	658	Culvert.
65	39	5,709	.....	5,709	Covington lock, No. 3.
Totals,	1,110.74	\$229,443	\$117,016	\$112,427	

Length 13 88-100 miles: average cost per mile, \$16,530 47.

DIVISION No. 3.

From Section 66 to 92, both inclusive.

No. of sections.	Length in chains.	Estimat'd cost at contract prices.	Est. val. of work done Dec. 1st, 1842.	Est. val. of work yet to be done.	REMARKS.
66	45	\$4,252	\$2,654	\$1,598	Culvert.
67	39	1,263	704	559	Plain.
68	39	2,164	550	1,614	Culvert.
69	39	1,366	1,044	322	Plain.
70	39	2,387	775	1,612	do
71	42	3,323	803	2,520	Culvert.
72	42	2,600	1,431	1,169	do
73	39	2,863	1,574	1,289	Plain.
74	42	3,611	580	3,031	Heavy tow-path.
75	39	4,606	1,113	3,493	do
76	42	2,393	1,297	1,096	R'd bridge.
77	39	3,251	282	2,969	Culvert.
78	42	7,943	2,390	5,553	Lock No. 4, Perrysville.
79	39	3,536	2,550	986	Deep cutting.
80	42	3,088	618	2,470	Heavy tow-path.
81	42	2,949	2,272	677	do
82	42	3,149	200	2,949	do R'd bridge.
83	42	1,300	475	825	Swale back of Silver Is'd.
84	39	1,513	370	1,143	do
85	42	1,552	.....	1,552	do
86	39	1,511	.....	1,511	do
87	39	2,022	100	1,922	do
88	42	1,731	262	1,469	do
89	39	1,657	1,360	297	Plain.
90	42	1,228	798	430	do
91	42	3,700	414	3,286	do
92	37	4,216	3,473	743	R'd bridge—full embk't.
Totals,	1,096	\$75,174	\$28,089	\$47,085	

Length 13 70-100 miles : average cost per mile, \$5,487 15.

ABSTRACT

Of sections from Coal Creek to Terre Haute.

Section.	No.	Length in chains.	Estimated cost.	Character of work.
Coal Creek feed'r and dam, Section,		1521	\$20,000 00	Feeder and feeder dam.
	93	39	23,269 00	Coal Creek aqueduct.
	94	39	2,964 00	Plain. (CHANGED TO DAM)
	95	39	4,890 00	do
	96	42	5,893 00	do
	97	40	5,558 00	do
	98	42	8,166 00	Road bridge.
	99	39	6,570 00	Plain.
	100	42	15,081 00	Mill Creek aqueduct.
	101	39	4,893 00	Plain. (CHANGED TO CULVERT)
	102	42	6,693 00	do
	103	39	5,228 00	do
	104	42	3,346 00	do
	105	39	3,990 00	Road bridge.
	106	43	5,469 00	Plain.
	107	39	44,727 00	Sugar Cr. aq. and lock No. 5.
	Sugar Cr. feeder and dam, Section,		77	25,274 00	Feeder and feeder dam.
108		42	4,625 00	Plain.
109		39	5,849 00	do
110		42	3,206 00	Road bridge.
111		39	2,953 00	Plain.
112		42	3,943 00	do
113		39	3,566 00	do
114		42	2,859 00	do
115		39	1,822 00	do
116		42	2,192 00	do
117		39	2,679 00	Road bridge.
118		42	4,331 00	Culvert.
119		39	1,834 00	Plain.
120		42	4,386 00	Culvert.
121		39	2,143 00	Plain.
122		42	26,181 00	Raccoon Creek aqueduct.
123		39	2,229 00	Plain.
124	42	6,130 00	Lock No. 6.	
125	39	1,919 00	Road Bridge.	
126	42	1,945 00	Plain.	
127	39	1,514 00	do	

ABSTRACT— *Continued.*

	No.	Length in chains.	Estimated cost.	Character of work.
Section,	128	42	\$1,989 00	Road bridge.
	129	39	2,176 00	Culvert.
	130	42	1,660 00	Plain.
	131	39	1,310 00	do
	132	42	2,918 00	do
	133	39	1,373 00	Road bridge.
	134	42	1,600 00	Plain.
	135	39	1,451 00	do
	136	42	1,606 00	do
	137	42	6,871 00	Lock No. 7 and r'd bridge.
	138	39	5,783 00	Plain.
	139	39	4,739 00	do
	140	42	4,478 00	do
	141	39	4,133 00	do
	142	42	4,137 00	do
	143	39	11,891 00	Walker's Bluff.
	144	42	5,587 00	Spring Cr. aqueduct.
	145	39	2,378 00	Plain.
	146	42	3,880 00	do
	147	39	3,531 00	do
	148	42	3,596 00	do
	149	39	2,441 00	do
	150	42	3,310 00	do
	151	39	10,050 00	Otter Cr. aqueduct.
	152	42	1,809 00	Plain.
	153	39	1,333 00	do
	154	39	1,845 00	do
	155	42	2,143 00	do
	156	42	2,186 00	do
	157	45	8,719 00	Lost Cr. culvert.
	158	51	4,570 00	Plain.
	159	48	9,106 00	Culvert.
	160	51	3,944 00	Plain.
	161	48	6,263 00	Bluff.
	162	49	8,385 00	Road bridge and basin.
		3,112 1/2	\$421,508 00	
Add for contingencies 5 pr ct.,			21,075 00	

\$442,583 00 total cost.

Cost per mile of main line, \$12,280 00. Cost per mile of main line, feeders and feeder dams included, \$11,377 00.

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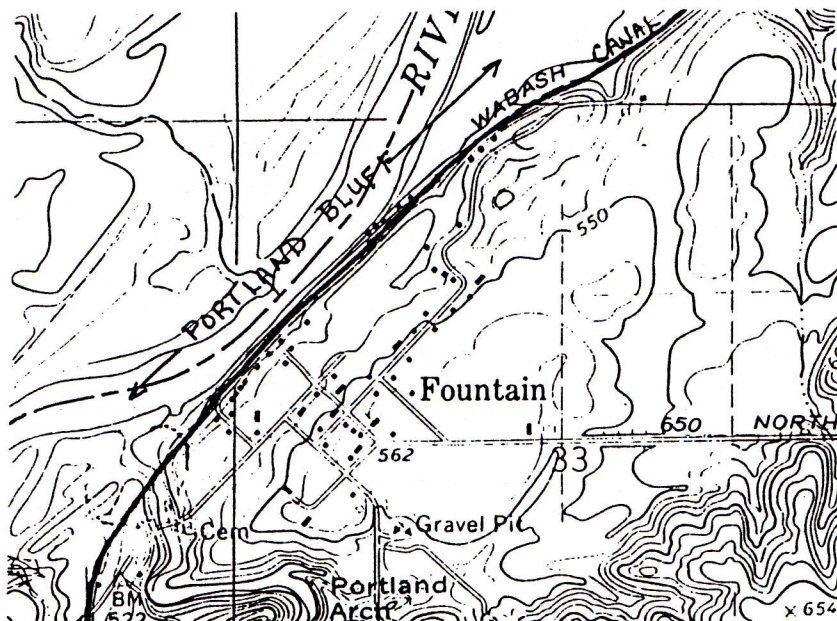
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PORTLAND BLUFF

One of the more interesting sections of the Wabash & Erie Canal south of Lafayette is the Portland Bluff. At this point in Fountain County a part of the bluff over a half mile long drops off into the Wabash River some 60 feet below. Plans for the construction of the canal required that it be located along the river roughly half way up the face of the bluff. Although this would make the canal bank subject to erosion by the river, there was no other practical option. Construction of the canal required that a section of the bluff be cut away and the resulting material be used to form the tow-path out in the river. Because of this, section 56 in division 2 was the most expensive contract on the canal line between Lafayette and Sugar Creek. The cost for the heavy rock excavation resulted in a cost of over \$11 per foot of the section's length. To accomplish this it was necessary to drill and blast into the rock to form the bottom and one side of the canal. When water was first let into the completed section of the canal in 1845 a serious breach resulted at the bluff. The pressure of the water simply pushed the recently constructed tow-path bank out into the river. The breach was repaired but throughout the following year the engineers found it hard to keep the canal filled because of heavy water leakage through the gravel banks at the bluff and other location. Early attempts to correct the problem included diverting muddy water in the canal with the hope that it would settle and seal the leaks and in the worst areas lining the canal bed with clay. Throughout the lifetime of the canal the leakage problem was never completely solved. Portland bluff experienced most of its problems during the summer and fall of 1847. In July a breach serious enough to impede navigation occurred. A temporary dam was constructed to enable boats to pass during the repairs. In October, 40 feet of the tow-path below the Portland warehouse slid

into the river. The agent placed a full repair force on the break and it was quickly mended without the need of a coffer dam. In November the canal tow-path slipped into the river for a third time at Portland. This was the most serious of the three breaks and required the construction of a coffer dam to allow the conclusion of the navigation season until the break was mended. It was at this time that the cross section drawing of Portland Bluff was made. It is redrawn from an original in the Indiana State Archives. Unfortunately that drawing was heavily marked with tape during earlier repair attempts and not easily read. The plan shows the extent of rock excavation, fill placed into the Wabash River and the attempt to prevent future slippage by placing a three to eight foot layer of clay puddle along the junction between the natural rock and gravel embankment. The repairs must have worked since there are no references in the canal engineers reports to future breaks at the bluff.

The Wabash & Erie Canal is long gone, but evidence of its existence at Portland Bluff is readily visible. The section of the bluff, complete with the tool marks from its construction over 150 years ago still remains.



WABASH & ERIE CANAL
ORDERS, RULES AND REGULATIONS

Sec.25. It shall be the duty of each Collector of tolls on the canal, carefully to inspect the cargo of every boat or other float applying for a clearance, and to ascertain the weight in amount of cargo, by examining the bills of lading, or otherwise, and also to ascertain the number of passengers; and after receiving the amount of tolls due on such cargo, the Collector shall furnish the master of such float with a clearance; and it shall be the duty of each Collector to examine the cargo and the clearance, as may be practicable, of every boat passing his office, to see that the tolls required by the rates established have been paid, and to be vigilant in observing well and enforcing such rules and regulations in regard to the navigation and protection of the canal, and the collection of tolls, as may from time to time be established by the Board of Trustees.

Sec.26. The owner or owners of any boat navigating the canal, shall make out, sign and deliver to the Collector, of whom the first clearance of such boat shall be demanded a certificate, to be entitled a "certificate of registry", containing the name of the owner, or owners, with his or their place of abode, together with the name of the boat, and the town or place where it is owned, which certificate of registry shall be recorded by the Collector in a book kept for that purpose; and said Collector shall also furnish to each of the other Collectors on said canal, a copy of the registry of each boat registered in his office, which registry shall be copied by the Collectors to whom it is sent, in the registry books belonging to their office; and the Collector shall also at the same time transmit to the office of the Board of Trustees, a copy of the said registry. And if the name of any boat be changed, the owner or master thereof shall apprise the Collector of whom he may first ask a clearance, of the change, and such Collector shall forthwith inform each Collector on the canal of such change, and shall also report the same immediately to the

office of the Board of Trustees.

Sec.27. No clearance shall be granted to any boat, by any Collector, unless the name of such boat, and the name of the owner, with the place where such boat is owned, be found in the registry book of such Collector.

Sec.28. Any owner or master of a boat, who shall change the name of his boat, without the written consent of the Collector, or who shall enter or report such boat, at any Collectors office by a different name from that of the Collector's books of registry, shall for every such offense, forfeit and pay to the Board of Trustees the sum of twenty-five dollars.

Sec.29. No boat shall receive a clearance, or be permitted to pass on the canal, unless the proper name of the boat be painted on it in some conspicuous place, in letters of at least four inches in height.

Sec.30. Clearances for every voyage shall be required of and issued by the Collector, whose office shall be nearest the place in the direction of which the boat is proceeding: Provided, that where there is a Collector's office at the place at which the boat is loading, a clearance shall always be obtained at such office.

Sec.31. Every master of a boat shall be required to exhibit his clearance to any Collector, Engineer, Superintendent or lock-tender, whenever they demand it, and no boat shall be permitted to pass on the canal without such clearance, signed by the Collector.

Sec.32. Every master of a boat or other float, navigating the canal, who shall omit to exhibit or deliver a true bill of lading to any Collector, or to pay the toll thereon when required, or shall deliver any article mentioned in a bill of lading at a place beyond that to which such article shall have been cleared, shall forfeit and pay to the Board of Trustees a sum not less than ten or more than one hundred dollars.

To be continued.

CANAL SOCIETY OF INDIANA

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