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A C C O U N T

OF THE

Conewago-Canal,

ON THE RIVER

Susquehanna.

TO WHICH IS PREFIXED,

T H E A C T

FOR INCORPORATING THE COMPANY.

Whitehall-Press:

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1798.

The Reader is desired to make the following *Corrections*:

P. 2. line 27, for *Halderman*, read *Haldiman*.

P. 3. line 2, for £ 5,200, read £ 5,250.

P. 4. line 3, for *Tryo*, read *Tyro*.

AN ACT to Incorporate the Conewago Canal Company.

WHEREAS the General Assembly of this commonwealth did, in and by an act, entitled "An Act to provide for the opening and improving fundry, navigable waters and roads within this commonwealth," authorize and empower the Governor to contract with individuals or companies, among other things, for improving the navigation of the river Susquehanna, from Wright's ferry to the mouth of Swatara creek, inclusive, and for that purpose appropriated the sum of five thousand two hundred and fifty pounds: And whereas a contract and articles of agreement were made and entered into on the third day of July, in the year of our Lord, one thousand seven hundred and ninety-two, between Thomas Mifflin, Governor of the commonwealth of Pennsylvania, on behalf of the state, of the one part, and Robert Morris, William Smith, Walter Stewart, Samuel Meredith, John Steinmetz, Tench Francis, John Nicholson, John Donaldson, Samuel Miles, Timothy Matlack, David Rittenhouse, Samuel Powel, Alexander James Dallas, William Bingham, Henry Miller, Abraham Witmer and Robert Harris, all of the state of Pennsylvania, of the other part, as a company, by the name of The Conewago Company, for opening and improving that part of the river Susquehanna, from Wright's ferry to the mouth of Swatara creek, inclusive, agreeably to the true intent, meaning, and design of the Legislature, whereby the said Robert Morris, and others, as a company, and each of them, did agree, undertake and contract, to and with the said Thomas Mifflin, and his successors, Governors of the said commonwealth, that they, the said company, will well and truly open and improve the navigation of the said river Susquehanna, between Wright's ferry, and the mouth of Swatara aforesaid, agreeably to the true intention of the Legislature, in the manner set forth in the said contract, reference being thereto had at large; and, particularly, that at the Conewago falls, they will cut, establish and maintain a canal, of a sufficient and convenient width, not less than forty feet, of a length sufficient to pass and extend beyond all obstructions created in the navigation of the said river by means of the said Conewago falls, and of a depth sufficient at all times to contain and convey, through the whole distance of the said canal, a body of water, at least four feet

deep ; and that they will also erect and maintain on the said canal a sufficient number of safe and commodious locks, not less than two, for the benefit of navigation ; and that the said canal and locks, and the works thereunto belonging, shall be for ever kept and maintained in good and perfect order and repair, by them, the said contractors, their heirs, executors, administrators and assigns, at the proper cost of them, and every of them, and opened as a public highway, and for public use for ever, so that all persons whosoever, with boats, rafts, and other suitable vessels, and their freights, may thenceforth, at all seasons, when the navigation of the said river Susquehanna is not rendered impracticable by ice, pass and repass in the said canal, and use and enjoy the benefit of the said locks, free of toll and any and every other charge whatsoever, as freely as if the said canal and locks were made and established by the public, and duly declared by law to be a public highway : And whereas the said Thomas Mifflin, in behalf of this commonwealth, in consideration of the undertakings and contracts of the said company, did covenant and agree, that they shall have and receive the sum of five thousand two hundred and fifty pounds, the sum appropriated by law, to be taken as full satisfaction and compensation of all their services and expences in carrying on, compleating, and maintaining the said works : And whereas it has been represented to the Legislature by the said company, that no provision having been made by the public to purchase the ground through which the said canal is to pass, for the distance of three hundred and six perches, more or less, nor to compel the owners to part with the same, at a reasonable price or valuation, for the public use, and that they have been obliged to purchase the same at their own expence, and at a very high rate, appropriating to the use of the public such part of their grounds as may be necessary to the said canal and works, the whole of which is to be constructed and maintained within the grounds so purchased ; but that in the execution of the said important work, for the public use and benefit, as well as for securing and maintaining the necessary constructions and erections from trespasses and damages, the better managing their several shares, dividing and transferring the same, making and executing contracts for carrying on the work, and the improvement of the natural advantages of their estates and interest in the lands contiguous to and connected with the said canal (including the ferry at the

lower end of the said Conewago falls) they labor under many inconveniencies, as a number of individuals bound by temporary articles to the execution and support of a public work, for permanent and perpetual use to the community at large, and have therefore prayed, that they may be constituted into a body politic and corporate, with the powers, rights and privileges, incident and necessary to a corporation of the like nature and kind:

SEC. I. *Be it therefore enacted by the Senate and House of Representatives of the commonwealth of Pennsylvania, in General Assembly met, and it is hereby enacted by the authority of the same,* That the said Robert Morris, William Smith, Walter Stewart, Samuel Meredith, John Steinmentz, Tench Francis, John Nicholson, John Donaldson, Samuel Miles, Timothy Matlack, David Rittenhouse, Samuel Powel, Alexander James Dallas, William Bingham, Henry Miller, Abraham Witmer, and Robert Harris, their successors and assigns, shall be, and they are hereby, incorporated into a body politic and corporate, in deed and in name, by the name, stile and title of “The Conewago Canal Company;” and by the same name, stile and title, they shall have succession for ever, and be able and capable in law to sue and be sued, to implead and be impleaded, and to have and to make one common seal, to use in their affairs, and the same to break and alter at their pleasure; and to hold and enjoy any lands, tenements, goods, wares and merchandize, and all manner of estates, real and personal, and mixed, provided the same shall not exceed, at any time, one million of dollars; and shall have power to meet, choose, appoint and contract with all officers, servants, and persons necessary in the management of their affairs, and to do and perform such acts, and to make such rules, ordinances, bye-laws and regulations, (not inconsistent with the laws of the United States and of this state) as they, or a majority of them, shall from time to time find convenient, useful and necessary, for establishing and maintaining the said canal and locks, and the works thereunto belonging, or connected with the same; and in general for the better managing and promoting the interests of the said corporation and company, and the improvement of the natural advantages of their estate in the premises, in as full and ample a manner as any other corporate body within this commonwealth can or may do.

SEC. II. *And be it further enacted by the authority aforesaid,* That the said canal and locks shall be, and the same are hereby declared to be, a public highway, and as such shall be kept and maintained by the said corporation and company, for public use, for ever, so that all persons with boats, rafts, and other suitable vessels, with their freights, may at all seasons, when the navigation of the river Susquehanna and the said canal is not rendered impracticable by ice, pass and repass in the same, and use and enjoy the benefit of the said locks, free of toll, and any and every other charge whatsoever; and the said company shall keep and maintain a skilful person for opening and shutting the locks, for assisting the boatmen in their passage through the same.

SEC. III. *And be it further enacted by the authority aforesaid,* That if any person or persons whatsoever shall, wilfully and knowingly, do any act or thing whatsoever, whereby the said navigation, or any lock, gate, engine, machine or device, thereto belonging, shall be injured or damaged, he, she, or they, so offending, shall forfeit and pay to the said company fourfold the cost and damages by them sustained by means of such known and wilful act, together with cost of suit in that behalf expended, to be recovered, by action of debt, before any Justice of the Peace, or in any court having jurisdiction competent to the sum due.

SEC. IV. *Provided always, and be it further enacted by the authority aforesaid,* That nothing in this act contained shall be held, deemed, taken, or in any ways understood, to invalidate the contract had and made between the Governor of this commonwealth and the said company, for completing the said canal and locks in the manner, and in the time, therein specified, nor to release the said company, or any of them, from their responsibility, each for the other, jointly and severally, in the due and faithful execution of the work, according to the true intention of the Legislature, as specified and set forth in the said contract.

GERARDUS WYNKOOP, *Speaker
of the House of Representatives.*

SAMUEL POWEL, *Speaker
of the Senate.*

Approved, April the tenth, 1793.

THOMAS MIFFLIN, *Governor
of the commonwealth of Pennsylvania.*



Account

OF THE

CONEWAGO CANAL.

A LAUDABLE spirit of emulation having diffused itself among the *Agricultural* and *Commercial* States of the Union, for the improvement of their respective territories, and transportation of their produce to the proper markets, by means of INLAND NAVIGATION and good ROADS ; the following account of the rise and progress of the CONEWAGO CANAL, (the first great work of the kind, in Pennsylvania, brought into operation under the sanction, and with the assistance, of the Legislature) it is hoped may be acceptable to the public ; and particularly to the Senate and House of Representatives, for whose use it was originally compiled.

In the year 1789, among the Commissioners appointed to view and explore fundry roads and waters in different parts of the state ; Samuel Boyd, Bartram Galbraith and Thomas Huling, were commissioned by the President and supreme executive Council “ to view and explore “ the Susquehanna and Juniata rivers, and ascertain the “ expence, in their opinion, necessary for removing the “ different obstructions in said rivers ;” and made their Report as follows, so far as respects that part of Susquehannah (including the Conewago Falls) from the mouth of Swatara to Wright’s ferry, viz.

“ January 30th, 1790.

“ *Conewago Falls*, about 14 miles above Wright’s ferry,
 “ *the great obstruction and barr to the wealth and population*
 “ *of our Western Country*, is at present the grand object.
 “ We are clear that a CANAL is the *sure and safe way* of
 “ effecting a *good navigation* for boats to pass and repass—
 “ We have marked, on the eastern side of the river, by
 “ courses and distances, being 306 perches in length, pr.
 “ draught, in which distance, 19 feet, the fall being divi-
 “ ded, is not three quarters of an inch to a perch. The
 “ proposed width of the Canal, to be 33 feet, for boats
 “ to pass each other; the depth to dig at its entrance, will
 “ be 9 feet. The boatmen we have consulted, all agree,
 “ that the fall of 19 feet, so divided equally in the length
 “ of the Canal, will be but *little obstruction* to boats.
 “ Some few individuals have been in favour of the *York-*
 “ *shore*; but in our opinion, the hill comes in too close
 “ on high-water mark. To effect a good and standing
 “ Canal will require *five thousand pounds*. From thence
 “ to *Swatara ripples* 3 miles of middling boatable water,
 “ where boats of thirty-five tons burden (drawing 20
 “ inches water) have frequently passed and unloaded, at
 “ the head of Conewago Falls.”

To the above estimate for the Canal at Conewago Falls,
 viz. - - - - £5,000

They add—

For Halderman’s ripples, about 8 miles above Wright’s ferry, - - - - }	100
For Chiquis falls, near and above said ferry,	150
For Swatara ripples, 17 miles above said fer- ry, and about 3 m. above Conewago falls, }	50

What is here reported upon, was contem- plated to be in <i>one contract</i> , as compre- hending the whole navigation from the <i>mouth of Swatara</i> , one mile below Middle- town, to Wright’s ferry, (now Columbia) and the estimated amount is	} £5,300
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This report being communicated by the Governor to the Legislature, an appropriation was made, April 13th, 1791, in general terms, viz.—“ For *Susquehanna*, from

“Wright’s ferry to the mouth of Swatara, inclusive, “£5,200”—falling £50 short of the estimate, and no provision was made for the purchase of the ground, (about a mile in length) necessary for the Canal. This expence it seems had escaped the notice of the Commissioners as well as the Legislature, in their estimate, on the plan of a Canal to be dug along shore, clear of the bed of the river; for in that case considerable trespasses must in sundry places be made upon the adjacent ground, dividing the 19 *Feet Fall* equally through the whole length: Or probably it was considered as a matter of course, that the Legislature would provide the means for obtaining the ground, either by contract with the owners, or by condemning the same by a *jury*, according to law.

But although the *commissioners* were men of skill and integrity, yet from our inexperience and the novelty of works of this kind in America, at that time; as well as from the unforeseen rise in the price of labor, and especially, having depended, as they say, upon the advice of boatmen, respecting the force and pressure of running water, instead of applying *hydraulic* principles, by which the modern philosophy and doctrine of gravity have reduced this science to the mathematical certainty of other sciences, as confirmed by experience; it is easy to shew that their calculations were erroneous, and that the £5000, granted by the Legislature, if Contractors could have been found, and the ground purchased, would have been *wholly lost to the public*, if expended in a SLUICE CANAL, as above explained, according to the plan of the Report. For it is ascertained, (see Varenus and others) that if the declivity “of the channel of a sluice or river, be depressed at “the rate of *one pace in five hundred paces*, or *one foot in five “hundred feet*, the current becomes too rapid for safe “navigation, either in the *ascent* or *descent*.” That is to say, a descent of 1 foot in 500, or of about 10 f. $\frac{56}{1000}$, in one mile, renders navigation dangerous and almost impracticable.

But the descent of the CONEWAGO FALLS, (and consequently of the *Sluice-Canal*, upon the construction proposed) is 19 feet 2 inches, in less than one mile, viz.

306 perches ; and the velocity of bodies falling perpendicularly, or down *inclined planes*, (setting friction aside) being an easy calculation to almost every Tryo in the learning of the present day, it may be judged what a velocity a fall of 19 feet pr. mile would give. But experience and observation at those very *Conewago Falls*, will demonstrate this to the plainest capacity, without the nicety of mathematical calculations.

A RAFT, although *retarded* somewhat, and the distance lengthened by guiding it in a circuitous course, to avoid rocks, *descends in FIVE MINUTES through these Falls* ; and large *floating logs*, of several tons weight, in $4\frac{1}{2}$ minutes, as has been accurately ascertained by Mr. *Brindley*, the Engineer of the Conewago Canal, as well as by others ; which taking the circuitous course into consideration, gives a velocity from 12 to 15 miles pr. hour. With respect to the *ascent* of this Sluice Canal, as first proposed, up the inclined plane of the bed of the river along the *shore* or banks ;—Suppose one or more of those logs of seven tons, or a River-boat of the same burthen, to be towed and set up against a current of 12 miles velocity pr. hour, the strength of men necessary, (supposing each man to exert a strength equal to his own weight, say 180 pounds pr. man on an average) may easily be calculated on the principles of the inclined plane, which gives the equilibrium, by the ratio of the length of the plane to its height—But, on the present occasion, *experiment* will be more convincingly satisfactory than *calculations* on mechanic principles.

At the Falls of *Schuylkill*, which are about 3 1-2 feet fall, in about 30 perches, it is commonly an hour's hard work, of 12 or 15 men, to draw up an empty or light-loaded boat ; and an expence of two or three dollars in drink, and loss of time. It is seldom that boats of any weight have been attempted to be towed up either shore of the Conewago Falls, and then it has required 30 or 40 men a great part of a day, and an expence of 5 or 6*l.* at least, to accomplish the work ; for the men are obliged to perch, and scatter themselves, (as it has been humourously expressed) like *black-birds*, on the rocks, and to drag their burden, shifting from rock to rock through the whole length of the falls.—The expence of horses would

would be perhaps equal, if their strength could be applied; but horses cannot be made use of because of the irregularity of the shores, and the great incumbrance of rocks, some extending a farther, some a shorter, distance into the bed of the river; and to blow those rocks, or fill up the intervals between them with standing materials for an effectual towing-*path*, would have required more than the *Legislative grant* of £5000, exclusive of the digging the Canal on the proposed plan of the Commissioners, even if a Canal on that plan had been practicable.

But it has been already *stated*, that such a Canal, following the margin of the river, and in close contiguity to its shore, dividing the 19 feet fall, equally through the whole length of one mile, would have been impracticable or of no use.

1st. *Impracticable*, because the banks or sides close on the water's edge, could not have been raised or supported without *strong masonry*, still subject to all the expence, risk and difficulty of *ascending* and *descending* as stated above. But what is still further to be considered, the *velocity* and friction of a body of water, 3 1-2 feet deep, at the rate of 12 or 15 miles pr. hour, would have soon torn the bottom, and undermined the *foundation* of the walls, unless carried to an immense depth; and after all this incalculable expence, in the construction of such a SLUICE-CANAL, and the almost impossibility of maintaining it in repair, it could only have been of use in navigation, when the river did not rise above mean high-water mark, or the depth of the Canal and *towing-bank*; that is, when the river did not rise more than 5 feet above *mean* low-water mark. In times of any flood or fresh, rising above the *mean* standard height of the river, the whole Canal and banks would have been buried under water, of no use in navigation, and subject to destruction by floating ice, heavy logs, &c.

But it may be said, that the Canal might have been dug at a safe distance from the shore, and clear of the danger of freshes. In answer to this, let it be remembered, that the *inclined plane* of the bottom, so as to divide the 19 feet fall equally through the whole length, could not

have been continued without digging in many places, perhaps more than 19 feet deep; an inconvenience only to have been remedied, by carrying the Canal on a *level*, and taking off the *fall* at the end, by the noble invention of *locks*, rendering every thing *safe* and practicable.

To obviate these difficulties, some of the Managers of the *Schuylkill and Susquehannah Canal Company*, (after viewing the *Swatara* and the *Conewago Falls*, in June, 1792), considering that every part of the *Susquehannah* navigation, and its branches, had a connexion with the great work committed to their management, and that the success of *one* would aid the *other*, represented to the *Governor* the defects in the plan proposed, for the improvement of the navigation of the *Conewago Falls*, as stated above; and, that the money proposed by the Legislature for that purpose, would be lost to the public, if applied to any plan of a Canal without *locks*; and that as no particular plan had been digested by the Commissioners or by the Legislature, the whole must rest in the discretion of the Governor, respecting the formation of a contract—adding, “That if no other individuals or companies are prepared or willing to undertake the work, under proper direction, or are doubtful whether the money granted by the Legislature is sufficient for completing the same, (as will probably be the case) they are desirous, either as a *company*, or certain of them as *individuals*, to render proposals to your Excellency, to undertake the work, at their own risk, and supply the deficiency of the money, upon certain stipulations to be contracted for in the use and property of water-works to be erected.”

To which the Governor answered—

“That considering the terms offered by the Company, in some respects more advantageous to the public than any which preceded them,” he would be ready to enter into a contract with the company or individuals of the same, on certain principles suggested in his letter.

The contract was soon after completed between the Governor and *seventeen individuals*, mostly of the *Schuylkill and Susquehannah company*; but not on behalf of

the company, who as a body thought the undertaking foreign to the ends of their incorporation, and a risk in which they could not involve the stockholders of that Company. And happy it was, that they were not so involved; for it would doubly have increased the difficulties under which they now labour, on account of the rise of wages, and the unskilful calculations of the expence of undertakings of this kind, in the *new world*; for we find, that after all their experience in the *old world*, and the best calculations of their engineers, it is always a rule to double the *estimates* first made, in order to provide against contingencies, and other matters respecting the nature and purchase of the ground, unforeseen obstructions in digging and making the bottom and banks water-tight; it being impossible, by boring, or any other method, to be fully ascertained in theory, or before hand, of the compleat nature of the soil, or a multitude of circumstances which will occur in the execution of the work.

The *contract* was, therefore, immediately compleated, by which it will appear, that the Governor deserves credit for his attention to the interest of the state, and that the *Contractors* were either too sanguine, or not very skilful in counting the cost on their part. But this by the bye—it is a *contract* binding both parties in good *faith* to what is just and reasonable, without committing either party to the *suspicion* of wishing any undue advantage in the execution of the work.

The *Contractors* are to construct, or cut, establish and
 “ maintain, a Canal, not less than *forty feet* wide, and *four*
 “ *feet* deep; also, to erect and maintain not less than
 “ two safe and commodious Locks, to be *opened* as a pub-
 “ lic high-way, and for public use, forever.

The work, according to the contract, hath been accomplished, with much labor and perseverance on the part of the company, attended with many vexations and disappointments in the progress of the business, and an expence at least so far beyond all their own calculations, and those of their engineers, that if it could have been foreseen at the beginning, they would have been deterred

from their undertaking, or would have soon deserted it. The following is a correct statement of the whole expenditures, brought down to the 15th of November, 1797, the day on which the *locks* were opened, and the *canal* put in operation, in the presence of the Governor of the Commonwealth, viz.

To the purchase of the ground, and expence	} <i>dollars</i>	
of cutting the CANAL, in the years 1793,		56,726
'94, '95, '96, '97,		
To the expence of the locks,	-	45,274
		<hr/>
TOTAL--ONE HUNDRED AND TWO THOUSAND DOLLARS,		102,000

As the LOCKS alone have cost 45,274 dollars, (and the legislative grant, which was originally estimated as sufficient for the completion of the whole work, was but 14,000 dollars) it may be satisfactory to exhibit an exact statement of the different items of expence, belonging solely to the locks and regulating gates, &c. viz.

	<i>Dolls.</i>	<i>Cts.</i>
Bricks, - - - - -	6,500	
Lime, - - - - -	1,937	50
Sand, - - - - -	1,690	75
Free stone, - - - - -	3,870	
Bricklayers, - - - - -	5,432	
Stone cutting and setting, - - - - -	4,129	50
Smiths, - - - - -	2,843	25
Timber and sawing plank, - - - - -	830	
Wrought iron and steel, - - - - -	620	
Castings, - - - - -	430	
Foundations of the three locks, tools,	} 6,900	
powder, and backing the chamber		
walls, &c. - - - - -		
Hauling brick, - - - - -	1,666	
Superintendance, &c. - - - - -	3,830	
Carpenters, - - - - -	4,595	
		<hr/>
<i>Dollars,</i>	45,274	

dollars

So far the cost of the locks, as above stated,
amounts to - - - - - 45,274

But to compleat the whole, so as to introduce boats into the locks with perfect safety, in their descent from Middleton, at different heights of the river, the following work will be necessary; and although it lies beyond the limits of the company's contract, must be attended to, for the preservation of the locks and the safety of the navigation, viz.

1. One stop-gate, 60 yards above the regulating lock, for the purpose of laying the locks dry, as occasion may require, most of the materials being prepared, 60
2. Further repairs, of the exterior dam, that surrounds all the obstructions in the canal, will be necessary in the spring, and to lay the whole *dry*, say - 50
3. To compleat the canal thro' the bar-rocks, at the head, and to fill up the gaps left in the sluice dam, - - - - - 750
4. Extra of the company's contract, a canal or boat passage for high-water is necessary; which must commence near the West Grasp-Platt, above the upper bar, and run east of the Drift-Wood Heaps, into the *canal*, below the bars, as is shewn by the dotted lines in the map—may be executed by contract, for 1,500
5. To make a *weir* or tumbling-dam, 250 long, and secure the same with stone, to regulate the canal, - - - - - 100
6. To carry out *three* temporary dams, at the lower locks, and clear them of brick and rubbish, slope the banks from the wing walls into the river, and widen that part, or the mouth of the canal, to give more room for

boats at low-water, and to secure the trunk
drains in the bank, 250

Additional expence, 2,710

The Governor having been addressed by the company, in the beginning of Nov. 1797, requesting, that previously to the meeting of the Legislature, the works might be examined, and reported upon, and the canal opened and put in operation according to the *contract*; his Excellency was pleased to answer, that as the contract and undertaking were of the first magnitude and importance to the state, he wished the company to determine on a day for that purpose, and he would himself attend with a special agent, to *report* upon the proceedings; and Wednesday, 22d Nov. was the day appointed; and the following is the report of John Hall, esq. the agent specially appointed, a copy of which has been communicated to both houses of the legislature, viz.

REPORT ON THE CONEWAGO CANAL.

To his Excellency Governor MIFFLIN.

“ December 5th, 1797.

“ SIR,

“ Having been specially appointed by your excellency, to view and make *report* upon the execution of the CONTRACT made July 3d, 1792, between the Commonwealth and the Conewago Canal Company, viz. *Robert Morris, William Smith, D.D. and others**; and as upon the invitation of the company, with a laudable public spirit, in order to countenance and encourage a work of such utility, as well as to enable you the better, in your

* The company as incorporated, and as the names stand in the original *contract* with the Governor, are Robert Morris, William Smith, Walter Stewart, Samuel Meredith, John Steinmetz, Tench Francis, John Nicholson, John Donaldson, Samuel Miles, Timothy Matlack, David Rittenhouse, Samuel Powell, Alexander James Dallas, William Bingham, Henry Miller, Abraham Witner and Robert Harris.

executive capacity, to do justice to the Commonwealth, as well as to the contractors; you were pleased, at a very inclement season, to attend at the opening of this grand canal, my report on the subject may be shorter, consisting only of a *state of facts*, which fell within your own knowledge and observation.

“ After having left you on the afternoon of Tuesday the 21st ult. [November] I arrived at the CANAL, in company with the Rev. Dr. SMITH, who attended as a committee on the part of the Canal-Company, and Mr. THOMAS LEIPER, and some other gentlemen.—About sun-set we crossed the river, and passed the evening with Mr. JAMES BRINDLEY, the engineer and superintendant of the works, in order to prepare for the operations of the succeeding day.

“ Wednesday, 22d Nov.—Finding the canal considerably obstructed with ice, we embarked at the head of the *lower-locks*, about 10 o'clock, with a number of the canal workmen, under the direction of Mr. Brindley, in two large flats belonging to the ferry, and proceeded up the canal to the regulating lock and gates, breaking the ice in our way. The gates being then opened, we ascended the regulating lock, and passed to its head in the Susquehannah, above the falls, where one of the Middletown river boats, which they called a *nine ton boat*, lay prepared to descend; and on our signal, immediately passed out of the river into the basin at the head of the regulating lock, where our two large flats lay to receive her. This small fleet then passed the regulating lock, and down the canal, keeping as much a-breast of each other as possible, and breaking the ice into small cakes in our way. Having reached the lower locks, we passed the same, one after another, and entered the river below the falls, at about half an hour after eleven o'clock; when it was perceived, that your Excellency and your attendants were waiting at the ferry on the Lancaster side, amidst the snow and sleet of the day. One of the ferry-boats, doubly manned, pushed across to receive you, but the Middletown river-boat with her oars-men, about six in number, being emulous of that service, pushed across the river, got first to the landing, and in the space of 18 or 20 minutes, re-

turned and entered the canal at the bottom of the *lower lock*. The grand operation of ascending the locks now commenced. Your excellency declining to land, or lose time, Mr. Brindley went on shore, and with two of his best men took the command of the locks. While the first lock was filling, every person, who could conveniently, to the number of about 55, got into the Middletown boat with your excellency, and were astonished to find themselves raised nine feet perpendicular, (viz. to the level of the second lock) in the space of 8 minutes, scarcely conjecturing whence the water came, the gates above them being still shut.—Having entered the second lock, it was filled and passed in 4 minutes and a half, which would have been the case in the first lock, if the unbroken ice at its upper gate had not retarded the operation. Having now ascended both locks, the boat with her 55 passengers, pushed up the canal, by means of five setting poles, thro' the broken and floating ice, to the *regulating-lock*, in 17 minutes, then through the same in 3 minutes, more, and to the head of the cutting and upper entrance of the river, above the falls, in 5 minutes, in all, *thirty-seven minutes and a half*. The descent in the same boat, with the same or rather a greater number of passengers, thro' the regulating lock and down to the double locks, was only 17 minutes. Here your excellency and others of the company landed; but there being near five hundred persons present, (and if the weather had permitted they would probably have been some thousands) Mr. Brindley indulged as many as desired, by opening the lower locks, passing and repassing them several times, in the several boats. The Governor need not be reminded here, of a circumstance which did credit to the workmen, who had been so long employed in subduing the rocks in the scite and bed of the canal, namely, that having no artillery of brass or iron, they bored their artillery out of the hardest rocks, in the space of 3 hours, and gave the Governor a federal salute, at his entrance into the lower lock, and another ascending and descending the body of the canal; and that in regular succession of discharges, with a report so loud as to be reverberated from their fellow-rocks on both shores of the Susquehannah, trembling as it were for their own safety.

What is now most material to be added in this report, is the situation of the canal, and execution of the work, to enable you to pronounce safely concerning the *completion* of the contract—

1. It is one mile in length, wanting a few perches.
2. It is every where 40 feet in width, at bottom, and 4 feet deep, in some places more, when filled only within 20 inches of the top of its banks or towing-path ; all which is compleatly agreeable to the *contract*.
3. The locks are indeed a grand work, constructed in the most masterly manner, of the most solid materials, brick and hewn stone. The two locks at the lower end are 80 feet each in length, and 12 feet in breadth or width, and in the lowest state of the river *three* feet six inches in depth, over the main fills of each lock-gate.

To say these locks amount to the terms of the contract, would be to say but little. Their nature, construction, &c. being new in this country, could not have been contemplated or understood by the commonwealth or the company, at the time of the *contract* ; for I am instructed to say, and the company in an address now preparing, mean to demonstrate, and submit their case to the legislature, that the two lower locks, the regulating lock, the wing walls, and barriers at the head of the canal, which are all for the public use, exceed in an immense degree, in expence, the whole sum estimated and contracted for by the commonwealth, exclusive of the purchase of the ground and digging the canal a mile nearly in length, 40 feet wide and 4 feet deep, through the most difficult ground within the state*. Add to this, that the said locks are to be maintained at the expence of the company, and *kept open* as a high way for public use, &c. By *keeping open* can only be intended the *liberty of passing* ; for *locks always open* would be of *no use* in navigation ; they must be opened and shut at every passage of a boat, and that by a skilful person, master of the key of the locks, to prevent their being damaged or trespassed upon ; and from

* See above the estimates and papers here referred to.

the foregoing statement, as it appears that the regulating lock is near a mile above the lower locks, and that such person cannot reside at both ends of the canal at the same time, it will require at least one hour and 14 minutes of his labour and attendance for every boat that passes, and that he must be always ready, and can scarcely pursue any other business ;—yet no provision is made in the contract to compensate such person for his assisting the boatmen, nor the company by the *contract* bound to provide or maintain such person, but only to *keep the locks open*, or in other words *useless*. You will judge of the equity of this case, from the face of the contract, and although the company should be allowed no toll, to *compensate* for the extraordinary expence of those locks, beyond the public appropriation, and the future expence of maintaining and supporting them, yet it would be a hard case to require of them an *additional annual salary* to the keeper of the locks, without at least as much toll from those who are benefited by the services of the keeper, as will *compensate* his labor, and without whose assistance they could neither pass nor repass.

Besides the sum of £5000 for the canal and locks, I find by the contract, £250 appropriated for *Chickis Falls*, *Haldiman's ripples* and *Swatara ripples* ; and it appears, by the estimate of Samuel Boyd, Bartram Calbraith and Thomas Huling, the commissioners, upon whose report the appropriation of the legislature was made, that *Chickis-Falls* should be £130, *Haldiman's ripples*, £100, *Swatara ripples*, £50, that is £300 in the whole—How the difference of £50 less in the contract, than in the *estimate*, arises, does not appear to me—and whether this small part of the contract be sufficiently compleated or not, could not be ascertained at the time of my examination of the *Conewago-Canal*, because the waters of the Susquehanna, were some feet higher than low-water mark, and the contract specifies that the low-water mark is to be ascertained and fixed by commissioners or agents appointed by your excellency, which remains to be done before this part of the contract can be reported upon—but it appears to me that you may safely discharge the company of their bond and obligation so far as concerns

the £5000 for the Conewago-Canal, taking a new obligation respecting the £250, to be laid out on the other part.

I have the honor to be, very respectfully,

Your Excellency's most obedient servant,

JOHN HALL.

5th Dec. 1797.

In consequence of the foregoing *report* of the Agent of Information, and the actual view and observation of the *Governor* himself, he was pleased, in his address to both houses of the Legislature, at the opening of their present session, to recommend as follows, viz.

“ The REPORT of the Agent of Information, (which I
“ have directed to be communicated to you) satisfactori-
“ ly exhibits the progress in executing the several con-
“ tracts that have been formed for improving our ROADS
“ and RIVERS.

“ But it is a justice *peculiarly* due to the CONTRACTORS
“ for opening a CANAL at the FALLS OF CONEWAGO, in
“ the river *Susquehannab*, publicly to announce the COM-
“ PLETION of their important undertaking, and to ac-
“ knowledge from *actual observation*, that the work ap-
“ pears to be an HONOUR to the STATE, as well as a
“ lasting MONUMENT of their *enterprize, skill and integrity*.

“ The DISBURSEMENTS of the *contractors* have so far
“ indeed exceeded the sum appropriated by law, that on
“ a principle of *equity*, as well as to excite an advantageous
“ *emulation*, I am induced to recommend such a *modifica-*
“ *tion* of their *contract*, as will allow the exaction of a toll
“ from passengers, equal to the *charge of hiring persons*
“ to attend the locks and keep them in constant repair.”

The Governor, has stated generally, in the above address, that “ the disbursements had so far exceeded the
“ sum appropriated by law, that he was induced, on a
“ principle of *equity*, as well as to excite an advantageous
“ *emulation*, to recommend a *modification* of the contract,

“&c.”—In the foregoing papers the disbursements are particularly specified, amounting as follows, viz.

	<i>dollars</i>
The purchase of the ground, cutting the canal, &c.	56,726
The expence of the <i>locks</i> , at the time of opening, - - -	45,274
Additional estimate, to complete the works, - - -	2,710
	47,984
Whole cost of the locks,	47,984
Total expence of the canal and locks,	104,710

The legislative appropriation being only 14,000 dollars, it appears then that the disbursements of the company for the whole work, amount to 90,710 dollars more than the money appropriated by law—and that the disbursements for the *locks* alone, when completed and secured by the additional sum of 2,710 dollars for the public use, (the locks not being essentially necessary in the works of the company) will exceed the legislative appropriation, in the sum of 33,984 dollars—that is to say, the state have 14,000 dollars invested in the *locks* for *public use*, and the company have 33,984 dollars—The Governor’s recommendation to the legislature, therefore, is not for a toll on the *capital* expended on the canal and locks, viz. 104,710 dollars, which, at 6 per cent. would be, 6,282⁶⁰/₁₀₀ dollars per annum; but leaving the whole works free of toll on this capital, “to modify the contract so as to allow a compensation from passengers equal to the charge of hiring persons to attend the locks, and keep them in constant repair.” And surely this will appear reasonable to a public-spirited legislature; and it would be a hard case, even if it were required by the contract, that after such expenditures, beyond whatever was originally contemplated, the company should be required, in addition, to pay an *annual* salary to a *keeper* of the locks, and for giving that assistance to the boatmen, which is necessary for their safe passage, and without which they could neither pass nor repass, except with great risk to themselves,

and the probability of a speedy destruction of the locks, in which so much public as well as private capital is invested.

By the original contract, the *locks* when finished are to be for *public* use, free of toll so far as concerns the capital to be expended in the construction of them, for which it was apprehended the legislative appropriation of £5000 would be sufficient; but to compensate the services of a skilful person for the preservation of the locks, and assisting the boatmen in their passage, (after expending the public money, and more than double the sum in addition) is not required by the *contract*, nor a condition of it; but what follows is found in the act of incorporation of the company, passed April 10th, 1793, soon after the contract, and before the works were any further commenced than clearing the surface of the timber, and levelling and laying out the tract of the *canal*. The words in the incorporating act are—"The said company shall keep and maintain a skilful person for *opening* and *shutting* the locks, for ASSISTING the *boatmen* in their passage thro' the same"—for which service, in the draft of the bill, as brought in by the company, a *compensation* was provided for the *assistance and services* of the lock-keeper, as it would have been unreasonable, by an *ex post facto* act to enjoin a *new service* or duty, without an *equivalent compensation*; but in the passage of the bill, the *compensation* was left out, and the duty of providing a *lock-keeper* left standing, upon an allegation that the £5000 appropriated by the public, would be fully adequate to the construction of the whole works.

Without entering into any contest with the legislature, how far such an *ex post facto* clause can be obligatory on the company, they wish to call the attention of the legislature, only to the *equity* of the case, and the *public-spirited* exertions of the company, in completing a work which does honor to the state, in the terms it has been *recommended*, in the Governor's address; adding this further, that no *boatmen* would ever venture thro' the locks without assistance, nor will ever the small compensation of a dollar, as proposed, be thought too much for an hour or

two's service of a skilful person, as the *premium of insuring* a safe passage ; nor would any boatman, if left at liberty, think of passing without such assistance ; which leaving the risk out of the question, will be a saving of time and expence to himself. Nor is it probable in the common course of trade, that more than 200 loaded boats will pass in a year thro' these locks, for some years to come, unless the removal of the seat of government to *Columbia* or *Wright's ferry* should occasion some considerable increase of the trade ; so that 200 dollars a year would be but a scanty compensation for the superintendant of the locks, leaving nothing over for casual repairs or damages by freshes and ice—It is to be considered further that the *bill* before the House of Representatives, as originated by the Senate, is only for a *temporary provision* ; and is to expire, at the end of *ten* years, when the *whole* will again come before a future Legislature, to *provide* as in their wisdom and justice may be deemed for the public good.—All which is humbly submitted, on behalf of the Company—

WILLIAM SMITH }
HENRY MILLER } *Committee.*

March 24th, 1798.

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