

FIRST REPORT OF THE ARCHITECT
OF THE
NEW IOWA STATE CAPITOL
TO THE
BOARD OF CAPITOL COMMISSIONERS.

JANUARY 1, 1872.

OFFICE OF THE ARCHITECTS
OF THE NEW IOWA STATE CAPITOL,
DES MOINES, January 1, 1872. }

To the Board of Capitol Commissioners :

GENTLEMEN—We herewith submit our first report of the progress of the work and other matters in connection with the Capitol Building from the commencement of the work to this date.

We received our appointment as architects on the 21st day of October, 1870, and received our instructions from your Board as to the general plans and design selected, and proceeded to perfect a design to conform to your instructions. We at once prepared the foundation plans, which indicated the construction of all the foundation, and cellar walls, sewerage, and the method of heating and furnishing fresh air to the building.

At the present time most of the concrete has been laid in the trenches, and a little more than three-fifths of the outside walls have been laid in accordance with them. We have completed all the floor plans, showing the arrangement of the different rooms and halls, the longitudinal and transverse sections of the main building, and in addition thereto, transverse sections, showing the interior of the House of Representatives and Senate Chamber, which show the style of the interior finish, height of stairs, &c. We have also prepared an elevation of each front of the building, showing the style

of the exterior work, and such other plans and specifications, as are necessary to enable a skillful architect to develop the same, and properly construct the building in accordance with them.

We have given the work the general superintendence contemplated in our contract, giving the local superintendent all necessary instructions, explanatory of the plans, and the method of construction of the work, to enable him to properly execute the same. And we are of the opinion that, notwithstanding the many difficulties encountered at the commencement of the work, the progress has been in a degree highly satisfactory.

Prior to the completion of the foundation plans, contracts were entered into by your board with certain parties to furnish materials for a portion of the work, and to do the general excavation, under the contract with M. H. King, for excavating the cellar, at the rate of 23 cents per cubic yard, for all above the depth of five feet, and at 27 cents per cubic yard for all below five feet deep; 15,213 cubic yards, has been excavated at an aggregate cost of \$3,609.63, also an extra of \$150.00 paid him for excavation, occasioned by a change in the location of the building upon the lot. The excavation of the trenches and an extra depth of the cellar of 15 inches, has been done by laborers and teams employed by the day, and has cost in the aggregate \$2,650.81, making the total cost of the excavation already done \$6,410.44. There are still to be excavated 361 cubic yards for interior walls, piers, and foundation of the outside steps, which will cost \$180.50, making a total for the excavation of the building, when completed, \$6,590.94.

Messrs. Robertson, McGrady & Keffer have delivered 78,332½ bushels of sand, at three cents per bushel. There is more than one-half of the sand delivered by them now upon the grounds to be used in the future.

The Des Moines Coal Company have delivered under their contract 3,455 33 barrels of cement, at the rate of \$1.69 per barrel, of 265 pounds, amounting to \$5,839.51. They have also received for unloading the same \$60.75, making a total for cement delivered \$5,900.26.

The concrete stone prepared for use, furnished by the Des Moines Stone and Lime Company, is of superior quality for such work.

They have furnished 1,620 cubic yards, at \$4.50 per yard, amounting to \$7,290.00.

Owing to the delay occasioned by re-advertising for proposals for the foundation stone, the contract was not made for that material until the 12th day of May, 1871, which caused the work to commence quite late in the season; if but for this, and the failure of the Bear Creek quarry (from which we at first received the stone) the entire foundation and cellar walls, including that for the rotunda, would have been completed by this date.

It has been our aim to erect the building for the least amount of money possible, and to attain this we realized the importance of your having a skillful superintendent. We had learned of the experience and skill of Mr. James Appleyard in connection with many of the public buildings of the United States, and others, and was convinced that he was the right man for the position. Your Board elected him and he entered upon his duties on the 27th day of June, and since that time five derricks have been made, three steam derricks and two hand derricks; most of the trenches have been excavated; and 2,711 cubic yards of foundation stone has been cut and laid; and in addition thereto, 200 yards of stone have been cut ready for the walls that have not been laid.

In eighty-four days there has been cut and laid at the rate of 33 cubic yards of stone per day.

The average cost of laying the concrete has been at the rate of 80 cents per cubic yard.

A small amount of dimension stone was cut at first by men employed by the day, which cost from \$8.00 to \$9.00 per cubic yard. It was therefore determined to have the stone cut by the superficial foot, and established as the price, 10 cents for the Bear Creek stone, and 7½ cents for the Rock Creek stone.

At this time we were paying \$3.00 per day for good cutters. When we established the price per foot, great complaints were made by them, but experience has shown that instead of their making \$3.00 per day, they have made from \$4.00 to \$6.00 per day, showing that it was better for the mechanic and economy for the State, as it reduced the cost per yard over 30 per cent.

The stone has been laid at a reasonable cost, and we doubt if ever a public work was executed with greater economy.

Our estimate for the concrete for the entire foundations was \$24,650.00. What has been laid and at the same cost to lay the remaining portion, the aggregate will amount to \$17,973.57, or \$6,676.43 less than our estimate.

The actual cost for the materials and labor for the 2,711 yards of foundation stone laid in the walls, is at the rate of \$16.96 per cubic yard, or a total of \$45,978.56, including the cut stone from the Farmington lock. There are yet to be laid to complete the foundation and cellar walls, 2,812 cubic yards. At the same cost per yard will amount to \$47,691.52, a total of \$93,670.08. To this should be added the following items: \$2,728.96, extra cost for granite coping; \$1,289.26, for carpenter work, lumber for sheds, lime and tool houses, mortar beds, etc.; \$9,309.80, for other labor and materials for derricks, tools, keeping railroad in repairs, and also, \$150 for use and wear of engines; \$1,436.88 for iron work; and \$5,624.22 for laborers and teams to assist in the work, and filling and grading around the walls, unloading stone, etc.; \$636.00, the proportion of the cost of the railroad, and right of way, properly belonging to the foundation and cellar walls; making a total of \$114,845.20. From this should be deducted the following: \$1,184.98, for sand on hand; \$6,150.00, for 605 cubic yards of stone on hand; \$1,008.00 for 200 cubic yards of stone, cut and not laid—which leaves a balance of \$106,502.22, as the cost of the foundation and cellar of the building so far as the stone work is indicated. Our estimate for the same was \$145,440.00, making the actual cost \$38,937.78 less than our estimate.

The total cost for all excavation, concrete, and the stone foundation and cellar walls, including the foundation for the outside steps, at the rate the work has been done thus far, will be \$131,066.73. To this might be added \$3,500.00 for one year's salary of local superintendent, and \$5,500.00 for contingencies, making a total of \$140,066.73. Our estimate for the same work was \$176,590.00, making the actual cost \$36,523.27 less than our estimate. It should be remembered that in the foregoing items of the cost of the work is included the entire cost of three steam derricks and two hand

derricks, which are of the most approved make; also, all the lime and tool houses, blacksmith shops, etc., which buildings and machinery will be of use during the entire erection of the building.

Our original specifications called for rubble walls under all windows, but at the cost for dimension stone we thought advisable to use no rubble except for filling, and have used all dimension stone for the walls accordingly.

It was thought advisable, owing to the nature of the stone used in the foundation, to use granite taken from the boulders in Buchanan county, for the coping or top facing corner of the on side walls, as a protection against frost and moisture.

Your Board therefore contracted with Mr. David Armstrong, of Independence, on the 17th day of August, 1871, for that material, at the rate of \$27.00 per cubic yard—1,046 cubic feet have already been received, and we are informed that the balance required is now ready for shipment.

The corner stone, laid on the 23d day of November, 1871, is of the same kind of material, and is a fair specimen of that stone.

The Bear Creek quarry (from which Messrs. Tuttle & Robertson contemplated taking the stone, under their bid of \$10.25 per cubic yard) was undeveloped, and for that reason your Board, as well as ourselves, had some hesitancy in adopting it for the foundations, but after the majority of the Board, and we visited the quarry, and examined the outcroppings of it, and knowing the responsibility of the parties proposing to furnish it, your Board entered into a contract with them to furnish the stone according to the specifications.

These parties commenced delivering the stone on the 3d day of July, 1871, but the stone not being in accordance with the specifications, either as to shape or quality, it became our duty to reject them, and we refused to unload them from the cars; but upon the urgent solicitation of the contractors, and by the advice of the Executive Committee, or a majority of them, we agreed to unload them, and use such as would be suitable for the work, and charge the extra cost for cutting to the contractors, and to lay aside such as we thought unsuitable. At the same time we were assured that in a short time the stone would be delivered strictly according to the contract; but greatly to our disappointment such was not the case, but the stone

continued to come in as bad shape as at first. We determined to stop the delivery of any more such stone unless instructed to do so by your Board. We therefore, on the 21st day of July last, reported the facts to you and asked for instructions, and will refer to the resolution passed by the Board relative to the matter.

While the Bear Creek stone was not delivered according to the contract, either in quantity or quality, yet after it was cut and laid in the walls, we believe it to be sufficient for the purpose; for when the building is enclosed, it will be protected entirely from frost or moisture.

The disposition of Messrs. Tuttle & Robertson to fulfill their contract is truly commendable; for when they discovered that the Bear Creek quarry was about to fail, they at once proposed to go elsewhere and procure the stone at any cost, provided the Board would give them the authority to do so, or that the Board might purchase the stone and charge the cost to them. It is due to these gentlemen to state that they have manifested great energy and perseverance, and did go to great expense in opening the quarry and building over two miles of railroad, which, since the quarry has failed to supply the stone, is a total loss to them of several thousand dollars—while at the same time they furnished the stone at a low price.

On the 4th day of August, 1871, the board authorized them to furnish stone from the Earlham quarries, or from the Platte River quarry, and on September 20th, the Executive Committee, by order of the Board, advised them that they would accept stone from the Rock Creek quarry, on the Des Moines Valley Railroad; but notwithstanding that permission was given to procure the stone at these several places, the time left for this season being so short, they failed to furnish the stone as fast as wanted to complete the cellar walls this autumn.

At a meeting of your Board on the 22d day of November, 1871, a resolution was passed to stop all work on the building, on account of the cold weather, and that the local superintendent, the mechanics and laborers be discharged; accordingly your Secretary notified the superintendent on the 24th of the same month, and hence the work is now suspended for the winter.

We would recommend that the work upon the building be resumed as soon as practicable, in order that the balance of the foundation and cellar stone walls can be completed as early as May or June next, which will permit us to commence the superstructure at an early date.

We would also state that the more rapidly the work progresses the cheaper will be its execution, and we are of the opinion that by pushing the work judiciously you could expend during the next two years the sum of five hundred thousand dollars, or to go forward with the work less rapidly, you can well expend the sum of three hundred thousand dollars.

We would also recommend that the Board of Commissioners be empowered to contract for the whole of each kind of material at any one time, in order to procure it at a low cost and of uniform quality.

Respectfully submitted.

COCHRANE & PIQUENARD,

Architects.