COUNTY BRIDGE AT BLOOM. THE CONTRACTS SIGNED.

King Bridge Company will do the Iron Work, and Joseph Hendler the Masonry.

ESTIMATED COST \$69,256.

On Saturday, November 25th. the Commissioners of Columbia county (28) inch course; when the thickness had a letting for the erection of a of the wall will admit of it, the head-County bridge over the Susquehanna ers will interlock but when the wall is ing by the contractor or contractors at River at Bloom ferry. On Tuesday too thick to admit of this arrangement, the time of their occurrence. following, the statement below was they will be bonded with large backgiven out for publication.

"The Commissioners of the county have let the contracts for the new bridge which was ordered to be erect- thickness as the face and back, well and conclusive upon all parties. ed across the river at Bloomsburg. bedded but not jointed, but must be The King Bridge Company have the contract for the superstructure and Joseph Hendler for the masonry and other work.

upon this responsible task they acquainted themselves with prices cur rent for work and material of the character desired, and employed Mr. J. C. Brown engineer, to prepare plans, specifications—and also to acquire the requisite information and submit an also employed as engineer and superintendent of the work of construction.

The estimated cost of the bridge is of the most approved and substantial cubic yard. Of this price \$2.40 per cubic yard was counted for the freight alone, on the stone from the quarries to the place of construction, and the contract contains a stipulation that whatever sum may be abated or deducted from this amount for freight shall inure to the benefit of the county. In other words the stone work is \$9.60 per cubic yard, and freight not exceeding \$2.40 per cubic yard added. The cost for excavation per cubic yard varies from \$1.50 per cubic yard for solid rock below water, to \$2.50 per cubic yard above water.

The plans of an engineer require the stone work to be of the most substantial character, each stone to be of great size and the piers and abutments when completed will be similar to those seen in the construction of rail-

Mr. Hendler, the contractor for this part of the work, has had considerable should be used after it has been mixexperience in this character of work. We have been informed that no less than six bridges span the river, the masonry of which was done by him and that he did the work for the new R. R. bridge for the Lehigh Valley above Wilkes-Barre.

From the prices mentioned in the contracts for the bridge, and the kind of bridge to be built, the public will be assured that they will have this needed improvement at reasonable cost. The time for the making of this contract, because of the low prices prevailing, was very opportune, and the county will receive the benefit of such condition."

SPECIFICATIONS PREPARED BY J. C. BROWN, CIVIL ENGINEER FOR THE COUNTY.

SUBSTRUCTURE.

FOUNDATIONS .- Foundations for all masoniy shall be excavated to such depths as may be necessary to obtain a solid bearing for the masonry of which the Engineer shall be the judge; the materials excavated shall be classified as solid rock, loose rock or earth, as the case may be; and be paid for per cubic yard.

When required to secure a solid foundation, artificial foundation of timber shall be prepared as the Engineer may drawings or otherwise prescribe, of good quality sound Hemlock and shall be paid for by the one thousand (1,000) feet board measure, the price covering cost of material, framing and putting in place.

If coffer dams are required only the actual number of feet board measure of timber or plank used or left for use in the foundation will be paid for.

MASONRY .- The stone procured for the work must be of a strong, sound durab e quality, not affected injuriously by the weather and must be approved by the Engineer. The masonry shall consist of rock range work, the face of the stone to be accurately jointed and bedded and laid in regular horizontal courses not less than sixteen (16) inches in thickness except the top course to bring the work up to the required elevation which may

ceeding twenty-eight (28) inches in furnish the Engineer or Inspector with al parts shall be held firmly together by more than two inches, the stretch- all materials used in the work. ers shall be at least three and one half feet in length and not less than two (32) inches bed for a twenty-eight ing stone, laid over them to connect two opposite headers. The stone for the heart of the wall will be the same well fitted to their places; any remaining interstices must be filled with small sound stones and backing to be set in a good bed of cement mortar Before the Commissioners entered and mauled to place, the interstices shall be made up of the sizes and secmay be laid dry and then every course grouted separately.

The face stones (except the ice breakers) shall be left as they come from the quarries unless the projections above the draft should exceed four inches, when they are to be scabestimate of the cost. Mr. Brown was bled down to that point. Upon the points of the piers which act as ice breakers the projections shall not exceed two inches. The abutments and \$69,256. The contract for the super- piers shall be covered with a course structure, which is to be of wrought of coping sixteen (16) inches thick, iron and steel-18 feet roadway - and each stone to reach the entire distance across the pier or abutment and propattern is \$35,000. Several rival ject three inches over the wall on bridge manufacturers submitted pro- each side and to be not less posals, but that of the King Bridge than three feet wide. Especial care Company was the lowest. The conist to be exercised in preparing tract for the masonry is for the work the beds for the coping upon at certain prices per cubic yard for which the foot shoes of the bridge excavation—both above and below rest. Drafts one and one-half (11) water, and stone work at \$12.00 per inches wide are to be cut on all the exposed courses of the piers and abutments.

shall be of the same quality of stone apart equal to the thickness of the bar. paint before being riveted up. and shall be of the character of work twelve (12) inches in thickness and to perfect edges. project two (2) inches over the wall.

The masonry to be laid with good cement mortar composed of one part in bulk of well burned and seasoned Rosendale (or other equally good quality to be approved by the Engineer) cement to two parts of sharp in quality, and shall have an ultimate inch of section in 24 hours of at least | eighteen per cent. twenty (20) pounds and in one week of forty (40) pounds. No mortar ed and left stand over one-half hour after water is added.

The Grout shall be made in like cement and sand and only differ in the quantity of water used.

per yard for each kind of work shall include all expenses attending the delivery of materials and incident to the prosecution of the work and cover all risk and damages by flood or casualties of any kind.

No claim for extra work shall be allowed, unless the same shall have been done in pursuance of a written order from the Engineer, and the same must be presented at the first settlement after the work is done, unless the Engineer in his discretion should approve the claim or any part of it which he may deem equitable.

SUPERSTRUCTURE.

The superstructure shall be an open iron and steel truss bridge of six spans, each in length one hundred eightynine (189) feet from center to center of pins, or a total length of eleven hundred and fifty (1150). The roadway shall be eighteen (18) feet in the clear, steel joists with two and one-half (21) inch white oak flooring. The bridge shall have a capacity of fourteen hundred and forty (1440) pounds per lineal foot for trusses, and one hundred (100) pounds per square foot for floor, with a safety factor of "4." With the exception of the flooring, the entire

superstructure to be of iron and steel. The style and design are left to the contractor, but detailed drawings are to be submitted to the Commissioners | cold rivets designed to all them and | be furnished by the party of the first and approved by their Engineer before

the work begins. GENERAL CONDITIONS.

Contractors will be required to give their personal attention to the work and will not be allowed to sub-contract the whole or any part of the work without the consent of the Commisssioners given in writing.

The whole of the work must be prosecuted in a most expeditious and workmanlike manner, with the largest force of workmen than can be worked

to advantage. be twelve (12) inches thick nor ex- The contractor or contractors shall

No charge shall be made by the contractor or contractors for hindran-(20) inches bed for a sixteen (16) inch ces or delays in the progress of the course, and not less than twenty-four work, but they may entitle him to an (24) inches bed for an eighteen (18) extension of time for the completion inch course, and not less than thirty- of the work, provided they are of such a character as shall be deemed a sufficient cause of such extension by the

In case of any dispute or disagreement over the interpretation of any part of these specifications, the decision of the Engineer shall be final

SPECIFICATIONS OF THE KING BRIDGE COMPANY.

The structure shall be proportioned to carry the loads designated on strain

QUALITY OF MATERIAL.

IRON.—The iron shall be tough and fibrous and when tested in long specimens shall show an ultimate tensile per square inch, and elongation before rupture of at least twelve per cent, an elastic limit of at least one half the ultwenty per cent.

Round rods shall bend cold without sign of fracture until the two halves of the rod are parallel and at a distance apart equal to the diameter of the

Flat bars shall bend cold without sign of fracture until the two halves of The wing walls of the abutments the bar are parallel and at a distance

All wrought iron shall be thoroughknown in railroad parlance as third, ly welded during rolling and of full class masonry. The wing wall to be sections at all points, and free from coat of oxide of iron paint and pure lumbia, of the second part. covered with a coping not less than seams, blisters, cinder spots and im-

Rivets shall be made from the best quality of double refined iron.

All members in the structure shall be of iron except the ones marked

clean sand free from loam or clay. It tensile strength of from 58,000 to 66,should set in from thirty (30) minutes | 000 lbs. per square inch, an elastic to one hour, then be immersed in wa- limit of at least one half the ultimate ter, show a tensile strength per square strength, an elongation of not less than

All steel eve bar heads will be formed by upsetting the bar and without the use of piling pieces.

All steel bars will be thoroughly an manner to mortar as to proportion of nealed throughout their entire length.

IRON EYE BARS -- Iron bars will have the heads either upset on the bar or The prices agreed upon and paid upset with piling pieces. No welding on of ready made heads will be permitted. All eye bar heads will be so proportioned that when tested to destruction, rupture will occur in the body of the bar rather than in the head.

The shape of the head shall be satisfactory to the Commissioners or their Engineer.

WORKMANSHIP.

The workmanship shall be first class throughout. The pin holes shall be bored truly

in the axis of the bar, and perpendicular to the line of strain.

Bars belonging to the same panel shall be bored when the iron or steel is at the same temperature. No error in the size of the holes or

length of bar shall exceed one fiftieth part, to build, paint two coats, and of an inch.

one fiftieth of an inch. They shall be Bridge over the stream called The of such lengths as to have full bearing | Susquehanna River at a point where on all the members they pass through. the Bloom Ferry Road crosses said thread, at least ten per cent greater

than in the body of the bar. All abutting joints shall be so dressed as to fit truly against each other. Rivet holes shall not be more than one sixteenth of an inch larger than the shall be so accurately spaced at all part. Specifications and Plans apjoints, that the cold rivet can be in serted without the use of the drift pin.

In punching the holes, the diameter of the die shall not exceed the diameter of the punch by more than one furnishing necessary data, plans, specisixteenth of an inch.

pletely fill the holes, and shall have perfectly formed hemispherical heads, number of days. concentric with the axis of the rivet. All loose or defective riveting shall be

thickness and no superior course to exceed in thickness an inferior course spection of all work and the testing of tual contact, distance pieces shall be

DETAILS.

All details and connections throughout the entire structure shall be so proportioned that in case of destructive loading, failure will occur in the main hody of the members, rather than in any of the connections and

STEEL JOISTS.

Throughout the entire length of the bridge there will be seven lines of solid rolled steel joists, composed of two lines of seven inch steel channels, and five lines of seven inch steel eye beams. These steel joists will be firmly bolted | cent. as provided above. to the floor beams.

TIMBER WORK.

The roadway flooring shall be two and one half inches thick, six inches to ten inches wide, laid crosswise, and thoroughly fastened with wire spikes tions shown on drawings and strain driven through the flooring on either side of the steel joists, and clinched around the flanges.

FELLOE GUARD.-Felloe guard will be four inches by six inches, bolted to feet with a half inch bolt.

HUB GUARDS,-The Hub guards will be two inch by ten inch pine delays over which they have no conplaned and painted, securely bolted to trol. each intermediate post, with two bolts. strength of from 46,000 to 50,000 lbs. All of the above lumber (except hub guard) to be of good sound white oak, sawed true to size and out of wind, free from loose or defective knots, and timate strength, and a reduction of of a quality that will be acceptable to area at the breaking section of at least | the Commissioners or their Engineer.

PAINTING.

All iron work shall be thoroughly cleaned of rust and scale, and shall be given one good coat of oxide of iron paint, and pure linseed oil before leaving the shops. In riveted work, all surfaces coming in contact shall be given one good coat of oxide of iron

After erection the iron work and hub guards shall be given one good linseed oil. The last coat of paint shall be put on under the direction of the County Commissioners or the satisfaction,

All pins, friction rollers, pin holes and planed surfaces, shall be coated with white lead and tallow before leaving the shop.

DAMAGES.

The contractor shall have charge of and be responsible for the entire work embraced in this contract, until its fiuse of improper materials or workmanship in the construction of the bridge.

TIME.

The bridge shall be fully completed on or before October first, 1894. Respectfully submitted by

THE KING BRIDGE COMPANY, V. Morris, Contracting Agent. Approved, Nov. 24, 1893. J. C. Brown, Engineer for Columbia County, Penna.

CONTRACT FOR THE SUPERSTRUCTURE.

This Contract, made this 24th day of November, A. D., 1893, by and between The King Bridge Company, of the City of Cleveland and State of Ohio, party of the first part, and the County of Columbia by and through her Commissioners Jesse Rittenhouse, B. F. Edgar, and C. L. Sands of the county of Columbia and State of Pennsylvania, party of the second part ; Witnesseth, that the said party of the first part contracts and agrees to and with the party of the second have ready by the first day of October, Pins shall be turned true to size and 1894, for the party of the second part, straight, and shall fit the hole within the superstructure for a Wrought Iron Rods shall have upset thread ends stream in the county of Columbia and following dimensions, viz:

Extreme Length of Bridge, 1,150 ft. Roadway. No. of Spans, six (6) equal spans. All the materials for said bridge, ex-

cept the abutments and piers, are to proved form a part of this Contract. The center line of bridge to be at right angles to the abutments and piers. Delay in approving plans or tend the time of completion an equal

And the party of the second part have been completed and approved. contracts and agrees to furnish, ready

the ground, and in course of erection, of contract price (less previous estimates) shall be paid on delivery of the tract. iron, and the remaining twenty per

N. B. This contract is made subect to the provisions of the laws of Pennsylvania, relating to the appointment of Bridge inspectors, and also to the Constitution of the State.

And the party of the first part are not to be held responsible for unavoidable delays caused in transportation or by the elements, mobs, enemies of the Government, strikes of workingmen in the employ of the first party with it for the furnishing of materials for such work, acts of Providence, or eph Hendler, this Nov. 25th, 1893.

THE KING BRIDGE COMPANY, Per L. G. Brown, Agent. JESSE RITTENHOUSE, [SEAL.] B. F. EDGAR, C. L. SANDS. As County Commissioners of

Columbia county, Pennsylvania. Signed the day and year first above written, in presence of Robt. R. Little.

ATTEST : C. M. Terwilliger,

Clerk.

CONTRACT FOR THE MASONRY ETC.

Article of agreement made this Nov. 25th, 1893. between Joseph Hendler of Wilkes-Barre, Pa., as party of the first part and the county of Co-

Whereas, the county of Columbia Engineer, and to their or his entire the Susquehanna River at Bloomsburg; and the said party of the first part has submitted to the county Commissioners, a proposition in writing to build all piers, abutments, wing walls, and do all the required and necessary excavation for the same, and complete such part of the work to receive the superstructure, and whereas, also the said county, through its Commissioners have employed J. C. Brown, Enginal completion and acceptance, and neer, to prepare plans and specificashall assume all risk of accidents, and tions therefor-which have been of Columbia county, so far as is relevant and necessary for the undertaking of this Contract, are also referred to herein.

Now this Contract witnesseth, that to furnish the material, and do the work necessary for the accomplishment of said work, as aforesaid and in the following prices:

Solid rock excavat'n 90 cts. per cu yd. Loose " Hard pan rock ex. 40 " " " Earth excavation Solidrck. ex. (in water) \$1.50 " " Loose " " \$1.00 " Earth " " \$1,00 " " " \$1.00 " " Hard pan " \$12,00" " " Masonry " Concrete " \$6.00 " " "

Timber for foundations and cofter dam including iron and nails (in \$28.50 per m. place) The foregoing work and materials

is agreed to be done, and furnished, agreeably to the plans and specifications before referred to and forming a with a section at the root of the State of Pennsylvania according to the part hereof, the material to be of best quality throughout, and the work done in a good and workmanlike manner. and the whole to be comp'eted not later than August first (894, providing the elements admit.

In consideration therefor, the said county of Columbia, accepts the said proposition of the said Joseph Hendier and agrees to pay to the said Joseph Hendler in accordance with the said proposition, and which said payments are to be made as follows:

Such amounts as are certified to by fications, etc., by party of the second the Engineer in charge, on monthly esti-The rivets when driven shall com- part to party of the first part shall ex- mates to be made by him, less ten per cent. upon each estimate which is to be retained until after the job shall

Whereas, also it is understood that cut out and replaced. Rivets shall for the superstructure, the abutments said Hendler in fixing the amount of be machine driven where practicable. and piers for said bridge by the first the proposition for Masonry has count-In all cases of hand riveting the sever | day of August, A. D., 1894 and to | ed \$2.40 per cubic yard for the item

pay the party of the first part the sum of freight alone, which must be paid of Thirty-five Thousand Five Hun- by him to the Railroad Companies for dred (\$35,500) Dollars for the said the carrying of stone &c. from the Bridge, payable as fo lows, viz: In quarries to the place of construction monthly estimates upon acceptable of the bridge, and is willing that if any material, at the shops, delivered on abatement or deduction from said sum for freight, will be allowed him by the ninety per cent. of the amount of such Lehigh Valley, or Penna. Rail Road estimates, to be paid in cash within Company or other carrying Company, five days from date of estimate, the that such deduction, abatement or doremaining ten per cent. to be paid in nation, whether at the instance of the cash on final completion and accept- Contractor or county, shall enure to ance of the work herein specified. In the benefit of the county of Columbia, case the abutments and piers are not and it is agreed that such abatement ready for the superstructure on the &c., from said prices for freight, shall date agreed as above, eighty per cent. be deducted from the sum total to be paid to said Hendler under this Con-

It is agreed that this Contract is made subject to the Constitution of State of Pennsylvania and the Statutes relative to the duties of Bridge Inspectors.

Also that the said Hendler, shall give bond to the said county, with surety to be approved by the Commissioners, for the full and faithful performance of this Contract in the sum of \$15,000.

This Contract is executed by the county of Columbia, by its corporate the roadway plank about every eight or of manufacturers under contract seal, and the signatures of the Commissioners, and also by the said Jos-

JOSEPH HENDLER. JESSE RITTENHOUSE, E B. F. EDGAR, C. L. SANDS, C. M. Terwilliger, Clerk.

CONTRACT WITH J. C. BROWN, ENGINEER. Agreement made this November 24th, 1893, between the county of Columbia of one part and J. C. Brown of Bloomsburg, of second part as fol-

ATTEST :

Whereas, the said county, by resolution of the Commissioners of said county as of November 11th, 1893-See minutes of county Commissioners, have employed said Brown engineer, to do certain work relative to the procurement of the proper information so that the Bridge across the River can be contracted for intelligently, to proafter legal proceedings had, is about tect the interests of the county, and as to erect a county Bridge across an Engineer to superintend the construction of the proposed public im-provement and county Bridge referred

Now this paper witnesseth, that the said county of Columbia, agrees to pay to the said Brown the sum of Six dollars per day for all time employed by him in doing of the work proposed, and in addition thereto pay him for all the actual expenses incurred by him in furtherance of the duties required of him, and all pay for assistants and employees under him, which all loss of damage arising from the heretofore approved, and which plans he may require to fully do and perand specifications, are agreed to be, form what is required of him. It is and formed a part of this Contract, as hereby understood and agreed that is fully incorporated herein, and which the resolution and action taken by the proceedings for the building of said said Commissioners shall form part of Bridge, of Record in the proper Court | this Contract passed as of November 11th, 1894.

In consideration thereof the said Brown agrees to do and perform all of the duties and work, as contemplated by said resolution, and to the best the said Joseph Hendler hereby agrees of his professional skill, knowledge and ability.

This agreement is executed by the said county of Columbia, by the officaccordance with his said proposition ial and corporate seal, and attested given to the county Commissioners, at by the signatures of the county Commissioners, and by the said J. C.

JESSE KITTENHOUSE, B. F. EDGAR, C. L. SANDS, J. C. Brown. ATTEST : C. M. Terwilliger Clerk.

The King Bridge Company has filed a bond for \$50,000 for the faithful performance of their contract, with sureties who are certified by a Probate Judge in Ohio that they are responsible parties.

The act of June 13, 1836, provides that "whenever a bridge shall be anthorized and recorded as a county bridge, it shall be the duty of the commissioners to procure an estimate of the cost thereof, and provide in the county levies the moneys necessary to defray the same, and proceed to have such bridge erected by contract or otherwise, as shall seem to them expedient."

"They must build it either by contract, or under their own superintendence; and on no pretense exceed the estimate." Lehigh county vs. K eckner, 5 W. & S. 181.

By the act of 4 April 1870, the county commissioners of the counties of Bucks, Lancaster, Juniata, Venango, Adams, Erie, Mercer, Westmoreland, Montgomery, Clarion and Schuylail, must advertise for proposals for the erection of new buildings and bridges, by public advertisement in not less than two weekly newspapers

in the county, for four weeks, CONTINUED ON FOURTH PAGE.