

1906

No. 1 Sept 55. 1906

In re Public Bridge
over Susquehanna
River at Lumber
City.

Permit for
Inspectors.

FILED

SEE 21 1908

Bill B. Hensley

a.m.d.

CURTZ BROS. CLEARFIELD, PA.

IN THE COURT OF QUARTER SESSIONS OF CLEARFIELD COUNTY, PENN'A.

In the Matter of a bridge over (NO. 1, SEPT. SESSION, 1905.
the Susquehanna River at Lumber City. (

TO THE HONORABLE ALLISON O. SMITH, PRESIDENT JUDGE:

The petition of the County Commissioners
of Clearfield County, respectfully represents:-

That by virtue of two agreements, one
bearing date the day of August , 1906, made with J. A. Dinkel
& Co., and the other bearing date July 5, 1907, and made with
A. Buchanan, petitioners contracted for the building of the foundations
and superstructure of a public bridge across the Susquehanna River,
at Lumber City. Said contracts, copies of which are hereto
attached, were filed, approved by the Court.

Petitioners further represent that the
contractors proceeded in due course with the carrying out of the terms
of their agreements, and they are now advised that the bridge is com-
pleted. They, therefore, pray the Court to appoint viewers to
inspect said bridge, according to the several Acts of Assembly in
that behalf made and provided, and make report thereof to the Court.

A. R. Hamilton

W. P. Howles

Now the 19th day of February, 1908,
petition presented and J. C. Evans - of Glenfield, Frank
F. Omer of Dubois and John S. Chaplin of Elfd.

By the author
Allison O. Smith
P.J.

ARTICLE OF AGREEMENT, made and entered into
this day of August, 1906, by and between John A. Dunkle
of Tyrone, and George I Thompson of Clearfield, trading and doing
business as J. A. Dunkle & Company, of the first part, and the
County of Clearfield, by its commissioners, S. R. Hamilton, C. P.
Rowles and B. F. Wilhelm, of the second part, WITNESSETH,

WHEREAS, after due and legal advertisement
█ bids for stone masonry abutments for a proposed new County
bridge to be built across the West Branch of the Susquehanna
River at Lumber City were received by the County Commissioners
at Clearfield County on the 14th day of August, 1906, up to 1:00
o'clock P. M., and

WHEREAS, said bids were on the 14th day of
August, 1906, at 2:00 o'clock P. M., publicly opened, and J. A.
Dunkle & Company were found to be the lowest and best bidders
for said masonry abutments at the price or sum of \$6.58 per cu.
yd., and

WHEREAS at a meeting of the said Clearfield
County Commissioners on the 15th day of August, 1906, the con-
tract for said masonry abutments was awarded to said J. A. Dunkle
& Company, at the price or sum of \$6.58 per cu. yd.

Now this Agreement WITNESSETH that for and in
consideration of the payments hereinafter mentioned, the said
party of the first part, J. A. Dunkle & Company, does hereby
contract and agree to furnish, at its own expense, all the labor,
tools, and materials required for the erection of, and to erect,
construct and finish in the most workmanlike manner, to the satis-
faction and acceptance of the party of the second part, and of the
inspectors to be appointed by the Court of Clearfield County when
the bridge is completed, the stone masonry and foundations re-
quired for the two abutments of the proposed new County Bridge to
be built across the West Branch of the Susquehanna River at

Lumber City, as more fully set forth in the plans and specifications, hereto attached, which plans and specifications are declared to be and are accepted as an essential part of this Agreement.

It is mutually agreed between the parties hereto that the work contemplated hereunder shall be staked out by the Engineer of the party of the second part, and said Engineer shall inspect all work and all materials, and shall pass upon the quantity thereof to see that the plans are correctly carried out.

The Contractors agree to give said Engineer all facilities for such inspection that he may require, and to follow carefully all lines, grades, and other details for the work laid down by the Engineer.

Upon the completion of the work, it shall be finally measured by the Engineer and his statement of quantities shall be conclusive and binding upon all parties hereto.

It is further agreed that any preliminary estimate of quantities given is only approximate, and may be increased or diminished as necessary for the successful completion of the work; and the Contractors agree that such changes shall not affect this contract, the prices to be paid hereunder to be per unit of work as actually constructed as hereinafter mentioned.

The Contractors are to make, at their own cost and expense, all requisite excavations to a foundation satisfactory to the County Commissioners and their Engineer; to do all pumping and bailing, all shoring, sheeting, and other work necessary to protect the construction in progress, and to replace any work injured or destroyed by flood or otherwise.

The Contractors agree to keep open in good and safe condition for travel the present Highway Bridge at or near the point of their construction work, and they will safely support it where affected by the progress of their work. They further agree not to remove any of the present stone masonry that may

endanger the present structure.

The Contractors further agree to be and hold themselves to be responsible for the payment of all just claims for labor, supplies or material furnished for, or done in and about the construction of the said stone masonry abutments, and for any and all just claims for damages by accident, or otherwise caused by or during their construction work; and the party of the second part shall have the right to apply ~~the~~ funds in their hands due the party of the first part on this contract to the payment of such claims as are in this paragraph enumerated, and such payment shall be considered and accepted by the party of the first part as payment on this contract. The Contractors agree also to protect the party of the second part from any and all claims that may be made by or on behalf of sub-contractors..

The Contractors agree that they will remove from time to time and before the final acceptance of the work, all surplus and rejected material, all waste and refuse; and that such final cleaning up shall be done to the satisfaction of the County Commissioners and their Engineer at the expense of the Contractors.

Should at anytime imperfect or unsound material be observed, whether before or after the same has been incorporated into the abutments, the Contractors on notice from the County Commissioners, or their Engineer, shall cause the same to be removed without delay and replaced with good and proper materials or workmanship, or both, and in default of their doing so, the party of the second part may effect the same result by such other means as it shall deem best, and shall charge the cost of such alteration to the Contractors, and the amount shall be deducted from the sum due and payable to the Contractors.

The party of the first part does further agree to complete the work as stipulated to the satisfaction of the party of the second part, and to deliver the completed work to the said party of the second part not later than the 31st day of

December. A. D., 1906, and the said party of the first part does further agree that for each and every day required to complete the said work after the said 31st day of December, 1906, the said party of the second part shall have the option to deduct from the contract price the sum of \$ 5.00 per day as liquidated damages for delay.

IN CONSIDERATION OF WHICH, the said party of the second part agrees to pay unto the said party of the first part, when said work has been formally accepted by the inspectors, to be appointed by the Court of Clearfield County, and said report has been approved by the Court, the sum of \$6.58 for each cu. yd. of stone masonry actually built; measurements to be made by the Engineer representing the party of the second part.

And the Contractors hereby distinctly and expressly declare and acknowledge that before the signing of this contract, they have carefully read the same and the whole thereof, together with and in connection with the said plans and specifications, and that they have made such examination of this contract and of such plans and specifications, and such investigation of the work required to be done, and of the material required to be furnished, as to enable them to understand the intention of the same thoroughly, and the requirements, covenants, agreements, stipulations and restrictions contained in this contract and in said plans and specifications, and they distinctly agree that they will not hereafter make any claim or demand upon the said Commissioners of Clearfield County, or their successors, based upon or arising out of any alleged misunderstanding on their part of the said requirements, covenants, stipulations and restrictions.

IN WITNESS WHEREOF, the said party of the first part has hereunto set its hand and seal, and the said parties of the second part have hereunto set their hands and caused the cor-

porate seal of the said County duly attested by the Clerk thereof,
to be affixed the day and year aforesaid.

J. A. Daniels & Co (SEAL)
John A. Daniels

J. R. Hamilton

B. F. Michelin

Attest:

Clerk.

-SPECIFICATIONS-

STONE MASONRY ABUTMENTS.

All stone masonry built in the structure shall be calculated and paid for at the unit price agreed upon. Stone shall be of the best Clearfield County sandstone, or other satisfactory stone.

The excavations for foundations shall be carried to a depth of not less than four (4) feet below the level of low water, and to such further depths as may be necessary to secure a good and sufficient foundation, satisfactory to the Inspector or the Engineer. Should rock be found, it shall be levelled off and the masonry begun on it. Should a satisfactory foundation of clay, gravel, or hard-pan be found, the masonry may be laid on it; or if required, a timber grillage foundation shall be laid and the masonry begun on it.

If used, the grillage shall be made of good quality white oak or yellow pine, sixe to be 10" by 10", and to be laid in two courses. The first course to be placed at right angles to the current of the river, the second to be at right angles to the first. Timber to be sixteen feet long, if required; the two courses to be thoroughly spiked together with rag-bolts 7/8" by 18". The neat work of masonry should be started on this. Grillage, if used, will be paid for at the actual cost to the Contractor for materials and labor with 10% added for superintendence. The Contractor will be required to show receipted bills for all expense connected with placing grillage.

If no timber is used, the foundation course to be of large stones, not less than 16" thick, well bedded and back filled to give a fairly smooth surface for starting the neat work.

The masonry will consist of range work, rock faced, laid in courses, no course to be less than twelve (12) inches in thickness. Thickness of courses to decrease from bottom toward top.

Face stones to be of selected quality, free from defects, with edges pitched to a straight line, and no rock face to project more than four (4) inches, and shall have parallel beds and vertical joints.

All stones shall be laid on their natural beds, and no stone shall have less than one and one-half times its thickness.

At least one-fifth of the stone in the face and back of the wall shall consist of headers, such headers to be not less than 3 ft. 6 inches in length, if the thickness of the wall will permit, and they shall hold their width and thickness, and not require blocking up.

Face stones shall be so dressed that bed and vertical joints shall not exceed three-quarters of an inch in thickness for a distance from the face not less than the height of the course. Stretchers shall extend into the wall a distance of not less than one-half times their height.

No vertical joint shall be made within less than nine (9) inches of a vertical joint in the course just below.

All stone backing shall consist of large angular stone, well laid in beds of mortar, interstices to be filled with smaller stones, and the whole then to be grouted, so that when completed the structure shall be a solid mass of stone and mortar.

Each course shall be levelled off, leaving no projections, before the next course is started. No pointing, hammering or dressing of stone on the wall will be permitted.

Joints below the level of water shall be carefully pointed as soon as laid. Joints above water shall be carefully cleaned out after mortar has set, at least one (1) inch in depth and pointed, using calking iron.

All stone shall be thoroughly cleaned off and wet with clean water before being laid. Bridge seats, coping stones on abutments and wingwalls are to be dressed smooth and even on top, and to have neat pitchline, not less than one (1) in. wide, on alleexposed corners. Coping stones to extend clear across walls of abutments, and to be not less than two and one-half feet (2'6") and of length shown on plans. Bridge seats to be selected hard stone, suitable to stand the weight to be put on them.

Neat chisel draft, one and one-half inches ($1\frac{1}{2}$ ") to be cut on all corners and batter lines of abutments.

CEMENT: The cement used in this work shall be of the best Portland Cement, equal in quality to Vulcanite, Alpha, Atlas, Lehigh or Saylor's brands, and shall be accepted by the Engineer before delivery. It shall successfully pass any reasonable tests required. It shall be delivered on the ground in the original packages, and shall be carefully preserved from rain and moisture,

SAND shall be clean, coarse, sharp and free from loam or vegetable matter. If necessary to meet these requirements, it shall be screened or washed.

WATER shall be fresh and clean, free from dirt, earth or sewage.

MORTAR: Pointing mortar shall consist of one (1) part cement to one (1) part sand. All other mortar shall consist of one (1) part cement to three (3) parts sand by measure, and shall be mixed dry in theseproportions. Small quantities are then to be mixed with a hoe, using enough water to give a good stiff paste that will work well under the trowel. No mortar mixed more than one (1) hour shall be used in the work. Grouting mortar shall be of the above proportions, made thin enough to run.

Chambersburg Trust Company,
Chambersburg, Pa.

CONTRACTOR'S BOND.

Know all men by these presents, that

A. Buchanan,

of

Chambersburg, Penna.,

, as principal, and the Chambersburg Trust Company, of Chambersburg, Pennsylvania, as surety, are held and firmly bound unto

S. R. Hamilton, C. P. Rowles and B. F. Wilhelm, Commissioners of Clearfield County, Pennsylvania,

of , in the sum of Two thousand , Dollars,

(\$ 2,000.00) lawful money of the United States, to be paid to the said

S. R. Hamilton, C. P. Rowles and B. F. Wilhelm, Commissioners of Clearfield County, Pennsylvania,

their certain attorney, or assigns to which payment well and truly to be made the said

A. Buchanan,

principals, his heirs, executors, administrators, and assigns, and the said Chambersburg Trust Company, surety, its successors and assigns, do bind themselves, and each and every of them, jointly and severally, and firmly by these presents. Sealed with the seal of the said parties as principal, and with the common and corporate seal of the said Chambersburg Trust Company, duly attested by the

Vice - President and Secretary of the same, and dated this eighth day of July Anno Domini, one thousand nine hundred and seven (1907).

Whereas, The said A. Buchanan,

parties principal above named, by an agreement in writing bearing date the fifth day of July , A. D. 1907 made between the said

A. Buchanan,

parties of the first part, and the said S. R. Hamilton, C. P. Rowles and B. F. Wilhelm, Commissioners of Clearfield County, Pennsylvania,

parties of the second part, entered into a contract for the construction of a County Bridge over the Susquehanna River at Lumber City, Clearfield County, Pennsylvania,

the contract price for the same being the sum of

Five thousand, six hundred and fifty four Dollars, (\$ 5,654.00)

Now the condition of this obligation is such that if the said

A. Buchanan,

shall well and truly perform, keep and faithfully observe all the covenants, stipulations and agreements as provided

No. 360 Amount \$ 2,000.

Contractor's Bond.

A. Buchanan,

Chambersburg, Pa.,

PRINCIPAL and the

Chambersburg
Trust Company,

of CHAMBERSBURG, PA.,

SURETY to

County Commissioners of

Clearfield Co.,

Pennsylvania.

Attest:

Chambersburg Trust Company,

[Seal]

[Seal]

[Seal]

[Seal]

Signed, sealed and delivered
in the presence of

John A. Buchanan

C. Buchanan

then this obligation to be void, or else to be and remain in full force and virtue.

the said

A. Buchanan,

by the said contractor stipulated to be performed, kept and observed by

THIS AGREEMENT made this 5th day of July, 1907, by and between A. Buchanan of Chambersburg, Pa., party of the first part, and S. R. Hamilton, C. P. Rowles and B. F. Wilhelm, County Commissioners of Clearfield County, of the second part,

WITNESSETH, that the said party of the first part, for the consideration hereinafter mentioned, agrees to furnish all the material of every kind, and do all the work necessary to construct and finish ready for public use, for the parties of the second part, the superstructure for a bridge over the Susquehanna River at Lumber City, Clearfield County; said bridge to be built in accordance with the plans and specifications hereto attached and made a part of this contract and according to the strain sheet also hereto attached, which is made a part of the contract.

All the materials for said bridge, except the abutments and piers, are to be furnished by the party of the first part, and are to be of good and suitable quality, and the work is to be done in a thorough and workmanlike manner.

The party of the first part agrees that the said bridge shall be completed and ready for use on or before 3½ months after the approval of this contract, and the bond herein referred to by the Court of Clearfield County.

The second party agrees to pay to the said first party, the sum of \$5654.00, in manner following, to wit:-

\$2500.00 upon delivery of the finished iron work at the point of construction; and the balance \$3154.00 upon completion of the superstructure and acceptance thereof, according to law.

The party of the first part agrees to hold himself responsible for the payment of all just claims for

labor, supplies or material furnished for or done in and about the construction of the said superstructure, and for any and all just claims for damages by accident or otherwise, caused by or during his construction work; and the party of the second part shall have the right to apply the funds in its hands due the party of the first part on this contract to the payment of such just claims, as are in this paragraph enumerated, if any arise, and such payment shall be considered and accepted by the party of the first part, as payment on this contract.

The party of the first part agrees to remove from time to time, and before the final acceptance of the work, all surplus and rejected material, all waste and refuse, at his own expense.

If at any time notice having been given to the party of the first part that the construction or material is not in accordance with the specifications and strain sheet, said party of the first part shall fail to change the same or furnish new such parts as are deficient, the party of the second part may effect the same result by such other means as it shall deem best, and shall charge the cost of such alteration to the party of the first part, and the amount shall be deducted from the sum due and payable to the party of the first part.

The party of the first part is not to be held responsible by delays caused by the party of the second part, nor by delays caused by any act of Providence; and for any delays so caused a proper extension of time shall be allowed.

Party of the first part agrees to furnish a bond in the sum of \$2000.00, with corporate surety, conditioned for the faithful performance of this contract.

IN WITNESS WHEREOF, the said party of the first part has hereunto set his hand and seal, and the parties

of the second part have hereunto set their hands and caused the corporate seal of Clearfield County, duly attested, to be hereunto affixed the day and year first above written.

Attest:

J.W. Polton

A. Buchanan
Per Will Buchanan (SEAL)

Clearfield County,

By

S.P. Hamilton

K.P. Cowles

B.F. Wilhelm

Commissioners

SPECIFICATIONS FOR STEEL HIGHWAY BRIDGE OVER THE WEST BRANCH OF
THE SUSQUEHANNA RIVER AT LUMBER CITY, PA.

The bridge shall be built in accordance with these specifications and the strain sheet and plan hereto attached.

The centre line of the roadway to be at right angles to face of the abutments, and there shall be a clear head room of at least fourteen feet and width of eighteen feet in clear between trusses.

The bridge is designed to carry the following loads and the details not worked out on strain sheet, nor fixed in size by specifications, shall be proportioned with factor of safety used in good steel highway bridge practice to correspond with factor of safety and allowed stresses in members worked out on strain sheet.

LOADS.

1st:- Dead or static load.

Consisting of the weight of steel in the superstructure, together with lumber used counted as weighing four (4) pounds per foot board measure.

2nd:- Live load as follows:-

For the floor system one hundred pounds per square foot of floor and surface, or twelve tons on two axles seven and one-half feet centres. For the trusses eighty pounds per square foot of floor surface. The bottom lateral system to resist a lateral force of three hundred pounds for each foot of span, one hundred and fifty pounds of this to be considered as moving load; the top lateral bracing to resist a lateral force of one hundred and fifty pounds for each foot of span.

Steel and workmanship shall be in accordance with Manufacturers Standard Specifications, as revised Feb. 6th, 1903, and each part of the structure shall be made of quality of steel best suited for work, for which the part is intended.

The floor shall be made of three inch White Oak plank free from wind shake, loose knots, wane, rotten wood, etc., and shall be firmly spiked to the spiking pieces. There shall be three lines of spiking pieces three inches by eight inches firmly bolted to the joists. There shall be two lines of wheel guards 3" x 8" on 3" blocks.

Allowed Strains.

Unit strains in tension members.

Rolled shapes, plain 16,000 pounds per square inch of section. Plates, channels and angles in built members 15,000 pounds per square inch of net section. Counters and Hangers, 12,000 pounds per square inch of section; Lateral rods 18,000 pounds per square inch of section.

Unit strains in compression according to the following formulae:

Let P be the allowed strain in compression per square inch of section in pounds;

L equal the length of member between supports, in inches.

R equal the least radius of gyration of section in inches

For members having two square ends P equals

$$\frac{12,000}{1 + \frac{L^2}{36,000 R^2}}$$

For members having one square end and one pin end P equals

$$\frac{12,000}{1 + \frac{L^2}{24,000 R^2}}$$

For members having two pin ends

$$\frac{12,000}{1 + \frac{L^2}{18,000 R^2}}$$

Compression members must be correctly and neatly fitted together rivetting carefully and neatly done and field bolting carefully completed. Steel joists must be securely fastened to tops of each floor beam. A nest of expansion rollers shall be provided under each shoe at one end of the bridge. All details of the entire steel structure, plates,

....., and he shall complete and
make it ready for travel, making the material and workmanship
throughout up to the standard of good highway bridge building.

On completion of the work, Contractor shall remove
all false work and shall leave no rubbish about bridge or
vicinity.

pins, rivets, bolts, etc., must be of such quality and dimensions as to insure the entire work standard and as substantial in details as the members are shown to be on the strain sheet. All metal shall have one coat of Dixons Graphite Paint before erection and a coat of Dixon's black graphite paint after erection. Painting to be done when the metal is clean and dry and temperature mild. Paint to be furnished at work before being riveted together. Pieces which are not accessible for painting after erection shall have two coats of paint before erection. Pins, pin holes, screw threads and other finished surfaces shall be coated with White Lead and tallow before being shipped from the shop.

All work and material to be subject to inspection by County Commissioner's Engineer, and if at any time the construction or material is not in accordance with the specifications and strain sheet, the Contractor shall change or furnish such new parts as are deficient.

The Contractor shall afford means for inspection of material of work at such time as the Engineer directs, either in shop or field, but such inspection by said Engineer or lack of inspection shall not excuse Contractor from building the bridge in every part in a workmanlike manner.

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All work and material to be subject to inspection by County Commissioner's Engineer, and if at any time the construction or material is not in accordance with the specifications and strain sheet, the Contractor shall change or furnish such new parts as are deficient.

The Contractor shall afford means for inspection of material of work at such time as the Engineer directs, either in shop or field, but such inspection by said Engineer or lack of inspection shall not excuse Contractor from building the bridge in every part in a workmanlike manner, and he shall complete and make it ready for traffic, making the material and workmanship throughout up to the standard of good highway bridge building.

On completion of the work, Contractor shall remove all false work and shall leave no rubbish about bridge or vicinity.

July 18, 1907 contract and
specifications
and approved
by the Compt.
Allison & Smith
D.







