

Northern Pacific Railway Company. Engineering Department Records.

Copyright Notice:

This material may be protected by copyright law (U.S. Code, Title 17). Researchers are liable for any infringement. For more information, visit www.mnhs.org/copyright.

Version 3
August 20, 2018

3-21-04 500 CR

N. P. RY. CO.

OFFICE OF CHIEF ENGINEER

FILE NO. 1176.

SUBJECT:

Contract Foley Bros.& Larson,

Construction Wash.Cent.Extn.

Coulee City to Adrian.

To Jan. 11th, 1905.

1176

2

Form 109. Construction Contract

This Article of Agreement, Made the Twenty Second (22nd) day

Date. of October, A. D. 1902 by and between

Timothy Foley, Thomas Foley, M. H. Foley and John Foley, comprising the firm of Foley Bros., of St.Paul, Minnesota, and Peter Larson of Helena, Montana, parties of the first part, and the ~~Northern Pacific~~ Washington Central Railway Company, a corporation of

Parties, the State of ~~Wisconsin,~~ Washington, party of the second part.

WITNESSETH:—

Covenant. That the said parties of the first part, in consideration of the covenants, promises and agreements hereinafter contained, on the part of the said party of the second part to be performed, do hereby covenant, promise and agree to and with the said party of the second part, that they will construct, complete and finish, in the most thorough, workmanlike and substantial manner, in every respect to the satisfaction and approval of the Chief Engineer of the said party of the second part, in the manner and within the time hereinafter specified and limited, and according to the specifications hereto annexed and made part of this contract, all the clearing, grubbing, grading, embankment protection, truss, pile and trestle bridging, culverts, road crossings, cattle guards, ~~tracklaying, surfacing, ballasting; all of the work necessary in connection with the construction of the depots, section houses, water tanks, fences and other structures,~~ and all work for which prices are hereinafter specified, including such other and extra work as may be required by the said Chief Engineer, and that may be necessary to fully complete and finish, ready for operation, a single track railroad, with side tracks, yards, spurs, and other necessary and appurtenant tracks, extending from

Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length.

Locality.

Keep Crossings open and safe. The parties of the first part hereby agree that they will perform and complete all of the work necessary to construct, finish and complete the said line of railroad, the structures appurtenant thereto, the depot grounds, terminal yards, side tracks and other appurtenant tracks; make and keep open, and in safe condition for use, all crossings and approaches, wherever the line of the railroad is traversed by, or is adjacent to, public or private roads, and will alter and amend said roads and approaches whenever required by the Engineer in charge of the work during the construction of the line.

The said work to be commenced immediately and the entire railroad to be completed on or before the

Date of completion.

Twenty Second (22nd) day of April, A. D., 1903.

The said parties of the first part further promise and agree, to and with the said party of the second part, that the said work shall be performed under the personal supervision of the said parties of the first part, and that this contract or any interest therein shall not be assigned, nor said work, or any part thereof, be sub-contracted without the written consent of the Engineer of the said party of the second part to each and every such assignment or sub-contract. That they, the said parties of the first part, will in all things conform to, and comply with, the instructions of the said Engineer and his duly appointed assistants. That all imperfect or insufficient work or material shall be immediately remedied when pointed out, and shall be made good and sufficient by the said parties of the first part, at their sole cost and expense, to the satisfaction of the said engineers, and any omission by the engineers to disapprove of, or reject, any insufficient or imperfect work or material at the time of any monthly or other estimate, shall not be deemed an acceptance of such work or material; and the said Engineer shall have the power, and it shall be his duty, at any time, to have any defective work or material taken out, and rebuilt or replaced, at the expense of the said parties of the first part.

Sub-contracts.

Comply with instructions.

Remedy faulty work.

No liquors.

The said parties of the first part further promise and agree that they will not bring, or permit to be brought onto the said line of railroad, or anywhere on or near the said work, any spirituous or other intoxicating liquors; and that if any foreman, laborer or other employe of the said parties of the first part shall, in the opinion of the Engineer in charge of the work, be intemperate, disorderly, incompetent, wilfully negligent or dishonest in performance of his duties under this contract, he shall, on direction of the said Engineer, be forthwith discharged; and the said parties of the first part shall not employ, or permit to remain about the work, any person who may have been discharged for any or all of the said causes from said work, or from any other part of said railroad.

Disorderly workmen.

Extra work and bills therefor.

The said parties of the first part further agree that no extra work or material is to be allowed or paid for, excepting only in performance of a previous order in writing of the said Engineer; and that any and all claims for extra work or material must be presented to the Engineer for allowance at the close of the month in which it shall have been done or furnished, to be included in the estimate for that month; otherwise all claims therefor shall be deemed absolutely waived by the said parties of the first part, and the said party of the second part shall not be required to allow or pay for the same.

Work when and where directed.

The said parties of the first part further covenant, promise and agree, to and with the said party of the second part, that they will carry on and prosecute the said work in all its several parts and branches, in such manner, and at such times, and at such points or places along the line, as the said Engineer shall from time to time direct.

Arbitration.

It is hereby mutually covenanted and agreed, by and between the said parties hereto, that to prevent disputes or misunderstandings between them in relation to any of the stipulations and provisions contained in this agreement, or the true intent and meaning thereof, or the manner of performance thereof by either of said parties, and for the speedy settlement of such as may occur, the Chief Engineer of the party of the second part shall be, and he hereby is made and constituted, the umpire to decide all such questions and matters; he shall also decide the amount and quantity, character and kind of work and materials performed and furnished by the said parties of the first part under this contract, including all extra work and material; and his decision shall be final and shall be binding and conclusive, to all intents and purposes, and in all places, on the said parties hereto.

Covenant to pay.

The said party of the second part, in consideration of the faithful performance by the said parties of the first part of all and singular their covenants, promises and agreements herein contained, hereby covenants, promises and agrees, to and with the said parties of the first part, well and truly to pay to the said parties of the first part, on the full completion by them of all the work embraced in this contract, in the manner, and within the time herein specified and limited for the completion thereof, to the satisfaction, approval and acceptance of the said Engineer, the following sums and prices, viz:—

Prices for work.

CLEARING: Generally 100 feet wide (50 feet each side of centre line) and paid for only where actually done.

HEAVY TIMBER: Ten (10) Dollars per acre.

LIGHT TIMBER AND BRUSH: Ten (10) Dollars per acre.

GRUBBING: Where excavations are four feet deep, or less, and embankments two feet high, or less, Five (5) dollars per station of 100 feet.

EARTH EXCAVATION: Seventeen cents per cubic yard.

LOOSE ROCK EXCAVATION, WHICH INCLUDES CEMENT GRAVEL AND HARD PAN: Thirty five (35) cents per cubic yard.

SOLID ROCK EXCAVATION: Eighty (80) cents per cubic yard.

MASONRY & BRIDGES: Piles delivered, cleared of bark, driven and cut off, complete, Twenty (20) cents per lineal foot for labor only. Said price shall include haul as per specifications, up to a distance not exceeding four miles from end of track. If piles are required to be hauled a longer distance the contractor shall be paid the cost of haul beyond said four miles from end of track.

TIMBER SAWED IN STRUCTURES: Eight Dollars and fifty cents (8.50) per M feet B. M. for labor only. Said price shall include haul as per specifications up to a distance not exceeding four miles from end of track/ If timber is required to be hauled a longer distance the contractor shall be paid the cost of haul beyond siad four miles from end of track.

CULVERTS: Laying cast iron pipe 24" diameter to 48" diameter inclusive, complete in place as perm standard plans, Twenty Five (25) cents per Lineal foot.

Laying vitrified pipe 24" diameter, complete in place as per standard plans, Twenty Fiver cents (25) per lineal foot.

Laying vitrified pipe 18" in diameter in road crossings, Twenty Five (25) cents per lineal foot.

Hauling pipe per ton per mile Forty (40) cents.

"The Railway Company will furnish transportation at the rate of ½ cent per ton per mile for material required in the work and contractor's outfit with a minimum of twenty five cents per ton and twenty five cents for single shipments. Bulky articles filling car to visible capacity to take minimum car load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies, including powder, fuel and lumber. The Railway Company will also furnish transportation for men employed on the work at the rate of one cent per mile."

Price for extra work.

FOR EXTRA WORK, or work done under written orders of the Engineer, by the parties of the first part, in the proper execution of this contract, for which prices are not named herein, they shall be paid the actual cost to them of such work, and ten (10) per cent. additional for use of tools, superintendence and their profit.

Estimates.
Payments.

Approximate estimates of the work done under this contract are to be made at the end of each calendar month by the said Engineer, or his assistants, and payments thereon are to be made by the party of the second part to the said parties of the first part, on or about the twentieth day of the next ensuing month, less all previous payments, and less ten (10) per centum of the amount of each and every such monthly estimate; which percentage shall be retained by the said party of the second part until the complete performance of this contract by the said parties of the first part, as an additional security for such performance.

Retained percentage.

Stopping work.

It is hereby mutually covenanted and agreed, by and between the said parties hereto, that whenever in the opinion of the said party of the second part it shall be necessary or expedient for it that the said work, or any portion of it, should be stopped, or that the force employed thereon should be diminished, the said party of the second part will have the right and power to stop said work, or diminish said force, and the said parties of the first part shall have no claim for damage by reason thereof; but they shall stop the work, or reduce the force as the said party of the second part may in writing direct; which writing shall be signed by the said Engineer in charge of the work, and delivered to the said parties of the first part, or one of them, or in case of their absence, to some person on the work representing them, at least thirty (30) days prior to such required stoppage of work, or reduction of force.

Accelerating work.

It is further mutually covenanted and agreed, by and between the said parties hereto, that if, at any time during the existence of this contract, the said parties of the first part shall not, in the opinion of the said Engineer, be progressing with said work as fast as necessary, or with sufficient force to insure its progress and completion within the time and times required he shall have the power, and it shall be his duty, to order and direct the said parties of the first part to put on and employ, such additional force and means, as in his judgment shall complete said work, and each portion thereof, within the specified time and on the refusal, failure or omission of the said parties of the first part to comply with such order and directions, the said Engineer shall have the power and authority, and it shall be his duty, to declare this contract abandoned by said parties of the first part; and in such case the amount of moneys which may then remain unpaid, and would otherwise be payable to the said parties of the first part under this contract, including the percentage retained on all monthly estimates, shall be kept, retained and appropriated by the said party of the second part, in its own right, absolutely, and the said parties of the first part shall have no claim to said moneys, or any part thereof; and the said party of the second part may employ such force and means as in its judgment shall be necessary to complete said work, and the cost and expense thereof shall be charged to, and paid by, the said parties of the first part.

Retained percentage forfeited.

Power to cancel contract.

It is further mutually covenanted and agreed, by and between the said parties hereto, that if the said parties of the first part shall, at any time, fail, omit or refuse to comply with, or perform, any of the provisions or agreements herein contained, on their part to be observed or performed, the said party of the second part shall have the right and power to cancel and annul this contract; in which event the said parties of the first part shall have no claim or demand whatever on or against the said party of the second part for damages, or for compensation for work or material done or furnished, or for any portion of the said percentage retained on monthly estimates; and the said party of the second part shall have the right, power and authority to take possession of, and hold, the said work and all materials furnished under this contract, and to retain, and appropriate, to its own use, all moneys which may then be unpaid to the said parties of the first part, including the said percentage; and the said party of the second part shall be absolutely and forever released from all liability to the said parties of the first part therefor.

Contractors to pay all laborers.

The said parties of the first part further covenant and agree that they will promptly pay all laborers and others in their employ, as often as payments are made by the said party of the second part to the said parties of the first part, and in the event of their failure at any time to do so, the said party of the second part may retain from all subsequent estimates, such amounts of money as the Engineer in charge of the work may deem sufficient and necessary to pay, each month, the laborers and all others employed on or about said work. And before final settlement is made between said parties for work done and materials furnished under this contract, the said parties of the first part shall, and will, produce and furnish satisfactory evidence to the said party of the second part, that the said road and structures are free and clear from all liens for labor, workmanship or materials, and that no claim then exists for, or in respect to which, such lien could attach.

Contractors to keep laborers under control.

The said parties of the first part further covenant and agree that they, their agents, laborers, and all others in their employ, or under their control, shall and will take and use all due care that no public or private property, including growing crops, meadows, fencing, ditches, farm and other improvements be injured or destroyed in the prosecution of said work; and that if any injury or damage to, or loss or destruction of, any such property be done or occasioned by any act or neglect of the said parties of the first part, their agents, laborers, or other employes, while engaged or employed in or about the said work, or if loss or damage be occasioned by uncontrolled right-of-way fires, the damages or compensation therefor shall be paid by the said parties of the first part. And in case, when the final estimate is made and returned, there shall be any unsatisfied claim or claims for such damages or compensation, the said party of the second part may deduct from the moneys then due, or to become due to the said parties of the first part, a sum equal to the amount so claimed, together with the estimated cost of adjusting the same; which sum the said party of the second part may retain until all such claims are determined by legal proceedings or otherwise, when the amounts so ascertained shall be paid to the claimants, and the remainder, if any, shall be paid to the said parties of the first part.

Retention of claims from final estimate.

Temporary suspension.

It is hereby mutually covenanted and agreed, by and between the said parties hereto, that in case there be any stoppage of the work, or if its progress be materially delayed by reason of, or from want of location or staking out the line of the work, or securing the right of way, or from any act or neglect of any of the engineers, agents, or employes of the said party of the second part, then and in such case, the time for completing the said work, as limited in this contract, shall be extended for a period equal to the time of such stoppage or delay; and the said parties of the first part shall have no further or other claim therefor, or from anything arising therefrom, or caused thereby.

Extension of time.

The said parties of the first part must make their claim for such extension in writing, to the said Engineer, at the time of such stoppage or delay, therein stating the occasion and nature thereof; and the said parties of the first part failing so to do, their right or claim to such extension shall be deemed waived.

Total suspension.

It is further agreed that in case of a total suspension of all work under this contract, without any fault, default, failure, collusion, or procurement of the said parties of the first part, for a longer period than ninety (90) days, unless such suspension shall have been caused by the winter season or protracted rigor of weather, it shall be the duty of the said Engineer, or his assistants, to make a final estimate of all work done according to the terms of this contract, and make a return thereof to the said party of the second part, when the amount found by said Engineer to be then due for work done, together with all percentage retained up to that time except as herein otherwise provided, shall be paid to the said parties of the first part.

Insurance.

It is further agreed that any damage by fire that may occur to buildings or structures during construction must be made good by the parties of the first part, who must keep such structures fully insured until such time as such structures, or the section of the road upon which they are located, has been fully completed and accepted by the party of the second part. The operation of a portion of the track before the entire completion of the road and its appurtenant structures is not to be considered as an acceptance by the party of the second part.

The cost of premium for fire insurance provided for herein will be divided equally between the parties hereto, the policies to be written in the name of both parties hereto, loss payable as their interests may appear, the policy or policies to be deposited with the Chief Engineer of the party of the second part.

Final estimate.

When, in the opinion of the Chief Engineer, this contract, and all things therein covenanted, promised or agreed to be done by the said parties of the first part, shall have been completely performed and finished according to the provisions of this contract, and within the time herein provided, he shall certify the same in writing under his hand, with a final estimate of the work done by the said parties of the first part, and a statement of the amount due and unpaid them therefor; and the said party of the second part shall, within sixty (60) days after the completion of the work as aforesaid, pay to the said parties of the first part the full amount which shall be so found due them, including the percentage retained on former estimates as aforesaid, except as in this contract is otherwise provided. And the said parties of the first part agree that before final payment shall be required to be made under this contract, they will execute, acknowledge and deliver to the said party of the second part, under their several hands and seals, a valid release and discharge of and from any and all claims and demands for, and in respect of all matters and things growing out of, or connected with, this contract, or the subject-matter thereof, and of and from all claims and demands whatsoever.

Time of payment of final estimate and retained percentage.

Release.

Contractors' base of information

It is declared and agreed by the said parties of the first part that this contract is made and entered into by them, for the consideration therein expressed, solely on their own knowledge, and on information derived from other than the said party of the second part, its officers or agents, of, and respecting, the nature and formation of the country in which the said work is to be done, or the character, quantities or location of the material required to be removed, or to be used in forming the road-bed for said railroad, and in doing and performing, completing and finishing, all the work herein required to be done and performed, completed and finished; and that the plans, maps and profiles of the said work prepared by the engineers, and the quantities estimated therefrom, are approximate merely, and are subject to change and alteration as herein provided.

Right reserved to change line of R. R.

The said party of the second part expressly reserves the right, at any time, to change and alter, in whole or in part, as to it may seem expedient, the line and grade of that portion of its railroad embraced in this contract, and it is hereby mutually covenanted and agreed, by and between the said parties hereto, that any change or alteration of the line or grade or bridges, or of all, shall not affect the prices herein specified; nor shall any bill for "extras" or other charge or claim be made, allowed or paid, by reason thereof, or of any difference occasioned by any such change or alteration, in the quality, locality or nature of the work to be performed. But if, in any case, the Chief Engineer shall deem the change of line or alteration of grade to have materially affected the cost of doing the work, he shall fix and determine the price to be paid, either above or below, as the case may be, the prices hereinbefore provided to be paid for such work, so as to do substantial justice between the parties. The parties of the first part agree to furnish the party of the second part a good and sufficient bond covering the faithful performance of the work included in this contract, and also to furnish a good and sufficient bond for the protection of the party of the second part against the filing of mechanics' liens by employes or creditors of the parties of the first part: the said bonds to be subject to the approval of the Chief Engineer of the party of the second part.

Definition of term "Engineer."

It is understood that where the word "Engineer" occurs in this Contract, or in the Specifications attached hereto, it refers to, and means, the Engineer of the said party of the second part in charge, for the time being, of the work of construction covered by this Contract.

Execution.

IN WITNESS WHEREOF, The parties of the first part have hereunto set their hands and seals, and the party of the second part has caused these presents to be signed by its President the day first above named, in duplicate.

Witnesses as to Party of First Part.

Ble Benner
Lew Barclay

E F White
as to signature of Peter Larson.

Timothy Foley (SEAL)
Thos Foley. (SEAL)
M A Foley. (SEAL)
John Foley (SEAL)
Peter Larson (SEAL)
(SEAL)

Witnesses as to Party of Second Part.

H A Fabian

M. A. Thompson

Washington Central Railway Co.
~~NORTHERN PACIFIC~~ RAILWAY CO.

BY C S Mellen

KNOW ALL MEN BY THESE PRESENTS that Timothy Foley, Thomas Foley, M. H. Foley and John Foley, comprising the firm of Foley Bros., of St.Paul, Minnesota, and Peter Larson of Helena, Montana, as principals, and _____

_____, as surety, are held and firmly bound unto the ~~Northern Pacific~~ Washington Central Railway Company, a Wisconsin corporation in the sum of Fifty Thousand (50,000) Dollars lawful money of the United States, for the payment of which sum well and truly to be made, the said principals, their heirs, executors, administrators and assigns, and the said surety , its successors and assigns, do hereby bind themselves jointly and severally by these presents.

SIGNED BY SAID OBLIGORS, and sealed with their seals this

_____ day of _____ A. D. 1902.

WHEREAS the said Timothy Foley, Thomas Foley, M. H. Foley and John Foley, and Peter Larson have entered into a contract dated October 22nd, 1902, with the said ~~Northern Pacific~~ Washington Central Railway Company for all work in connection with the construction of a single track railroad extending from Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length, as described therein, and which contract among the other things requires this bond,

AND WHEREAS, the said work is required by said contract to be done and performed in the manner, within the time, and in all respects according to the terms specified in said contract,

NOW THEREFORE, if the above named principals Timothy Foley, Thomas Foley, M. H. Foley and John Foley, and Peter Larson, shall well and faithfully keep, perform and carry out each and all of the covenants, conditions and agreements of said contract, then this obligation shall be null and void; otherwise to be and remain in full force and effect.

Signed, sealed and delivered in the presence of

_____ _____(SEAL)

_____ _____(SEAL)

_____ _____(SEAL)

Witnesses as to the execution of Surety

_____ _____(SEAL)

_____ _____(SEAL)

_____ _____(SEAL)

STATE OF _____)
)SS
COUNTY OF _____)

On this _____ day of _____ A. D. 1902, before me appeared _____ to me personally known, who being duly sworn did say, that he is the _____ _____ of the _____ the above named corporation, who signed the foregoing bond, and that the seal affixed to said instrument is the corporate seal of said corporation, and that the said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors of the said _____. Acknowledged said instrument to be the free act and deed of said corporation.

_____
Notary Public.

STATE OF _____)
)
COUNTY OF _____)

On this _____ day of _____ A. D. 1902, before me personally appeared _____ _____, to me known and known to me to be the individuals described in and who executed the within bond, and acknowledged that the executed the same.

_____
Notary Public.

BOND TO PROTECT FROM MECHANICS' LIEN.

KNOW ALL MEN BY THESE PRESENTS, that Timothy Foley, Thomas Foley, M. H. Foley and John Foley, comprising the firm of Foley Bros., of St.Paul, Minnesota, and Peter Larson, of Helena, Montana, as principals, and _____ _____

_____ a corporation organized and existing under the laws of the State of _____ with its principal

offices in the City of _____ in the said State, as surety, are held and firmly bound unto the ~~Northern Pacific~~ Washington Central Railway Company, a Wisconsin corporation, in the sum of Fifty Thousand (50,000) Dollars for the payment of which sum well and truly to be made, the said principals bind themselves, their successors and assigns, and the said surety binds itself, its successors and assigns, jointly and severally, firmly by these presents.

SIGNED BY SAID OBLIGORS, and sealed with their seals

this _____ day of _____ A D. 1902.

The conditions of above obligation are such that,

WHEREAS, the said Timothy Foley, Thomas Foley, M. H. Foley and John Foley, and Peter Larson are contracting with the said ~~Northern Pacific~~ Washington Central Railway Company, by an agreement in writing, dated October 22nd, 1902, for constructing a single track railroad from Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length,

NOW THEREFORE, if the above named principals, Timothy Foley, Thomas Foley, M. H. Foley and John Foley, and Peter Larson, shall well and truly pay all laborers, mechanicsm material-men and persons who supply sub-contractors with provisions, all just dues to such person, or to any person to whom any part of such work is given, incurred in carrying on such work; then this obligation shall be null and void; otherwise to be and remain in full force and effect.

Signed, sealed and delivered
in the presence of)
)_____
_____)
(
)_____
_____)
)_____
_____)
)_____
_____)
)_____
_____)
)_____
_____)
)_____

STATE OF _____)
)SS
COUNTY OF _____)

On this _____ day of _____ A. D. 1902, before me appeared _____ to me personally known, who being duly sworn did say, that he is the _____ _____ of the _____ the above named corporation, who signed the foregoing bond, and that the seal affixed to said instrument is the corporate seal of said corporation, and that the said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors of the said _____. Acknowledged said instrument to be the free act and deed of said corporation.

_____ _____
Notary Public.

STATE OF _____)
)
COUNTY OF _____)

On this _____ day of _____ A. D. 1902, before me personally appeared _____ _____, to me known and known to me to be the indivisuals described in and who executed the within bond, and acknowledged that the executed the same.

_____
Notary Public.

STATE OF _____)
)SS.
COUNTY OF _____)

On this _____ day of _____ A. D. 1902, before me personally appeared _____ to me known and known to me to be the individual described in and who executed the within bond, and acknowledged that he executed the same.

_____
Notary Public.

(C. D. 117.)

NORTHERN PACIFIC RAILWAY COMPANY.

SPECIFICATIONS.

CLEARING AND GRUBBING.

1. As much ground included in the right of way as the Engineer in charge of the work may direct shall be cleared of trees, logs, brush and rubbish, all of which shall be burned, except such materials as are made into cross-ties, timber or wood.

2. The clearing will usually extend fifty (50) feet each side of the center line, and any trees outside of that limit considered unsafe by the Engineer, shall be cut down and disposed of as other clearing.

3. From ground adjacent to excavations, all logs, stumps, roots and brush must be thoroughly cleared, so they cannot fall or be washed into cuts or ditches, and to furnish ample space for any reuired drains or surface ditches at the sides of cuts, or elsewhere.

4. From ground to be occupied by embankments all trees, logs, brush, rubbish and perishable matter shall be entirely removed.

Where embankments are to be two (2) feet high, or more, all trees, stumps and bushes shall be cut off even with the surface of the ground, and removed.

Where embankments are to be less than two(2) feet high, all stumps and large roots must be grubbed out and removed.

5. Grubbing will be allowed and paid for only when the excavation is less than four (4) feet deep, or embankment is less than two feet high. The cost of grubbing, where cutting is more than four feet deep, will be included in the price per yard for grading.

Grubbing in borrow pits will not be paid for, and it will not be done where embankments are more than two feet high.

6. Clearing and grubbing will be paid for only for the surface where actually done.

GRADING.

7. Under this head will be included all excavations required for the formation of the road-bed, embankments, sidings, station grounds, cutting all ditches and drains about or contiguous to the road, all borrowing pits, changing of streams, roads or highways, foundation pits for bridges, culverts, trestlework, buildings and structures, and all other excavations in any way connected with, required for, or incident to the construction of the railroad.

EXCAVATION.

8. *Earth Excavations* will be twenty (20) feet wide at grade, which is the line of the bottom of the cross-ties, with slopes of one (1) to one (1), or otherwise, as the said Engineer shall direct.

9. *Rock Cuts* will be sixteen feet wide at the bottom, with slopes of one (1) to six (6), or otherwise, as said Engineer may require. All rock cuts will be excavated to the depth of one (1) foot below the grade as above defined.

10. *Embankments* less than 16 feet in height will be 14 feet wide at grade. Embankments more than 16 feet in height will be 16 feet wide at grade. Side slopes will be one and one-half to one, unless otherwise ordered by the Engineer. There must be bermes not less than four feet in width between slopes of the embankments, and borrowing pits from which earth is taken, and the slopes of these pits next to the railroad, must be at least one and one-half horizontal to one perpendicular.

CLASSIFICATION.

11. *Grading* will be commonly classified under the following heads: *Solid Rock, Loose Rock* and *Common Excavation.*

12 *Solid Rock* will include all rock in masses that cannot be removed without drilling or blasting, and detached rock or boulders containing more than one cubic yard each.

13. *Loose Rock* will include all slate, soft sandstones or other rock that can be quarried or removed without blasting, although blasting may occasionally be resorted to; also all detached rock or boulders containing one cubic foot or more and not more than one cubic yard each.

Beds of boulders or angular fragments of rock not in place will be classified as *Loose Rock* or *Solid Rock* only to the extent of the actual quantities of such material present.

14. *Common Excavation* will include all material of every description not included in the foregoing classifications or in other special classifications which may be established before award of contracts.

Under this head will be classified all material commonly called earth, loam, clay, sand, gravel, gumbo, ~~hard pan, cement, gravel,~~ small boulders or angular rock fragments and all other material not elsewhere classified.

15. *Special Classifications* will be established only when material in large quantities is encountered of such character and quality that it cannot be conveniently classified under the ordinary heads.

16. Material borrowed for embankments will be classified strictly in accordance with the specifications, but no classification higher than *Loose Rock* will be allowed for such material unless with prior written authority of the Engineer.

Material in slips, slides or subsidences, extending beyond the slope lines will not be estimated nor paid for, unless, in the judgment of the Engineer, such occurrences were beyond the control of the contractor and not preventible by the exercise of due care and diligence.

The classification of material from "slides" will be in accordance with its condition at the time of removal regardless of prior conditions.

HAUL.

17. The price paid per yard for grading shall include the actual haul of materials for any distance not exceeding six hundred (600) feet, and the limit to which any materials may be required to be hauled is twenty-five hundred (2,500) feet. For any haul exceeding six hundred (600) feet the contractors shall be paid one Cent ——per one hundred (100) feet per cubic yard beyond six hundred (600) feet.

~~18. The price paid for masonry shall include any haul of materials not exceeding twenty-five hundred (2,500) feet, and the price for haul greater than that distance shall be at the rate of per hundred (100) feet per cubic yard, but stone shall not be hauled a greater distance except by permission of the Engineer.~~

MISCELLANEOUS DIRECTIONS FOR GRADING.

19. The center line and grades of the road may be changed whenever the Engineer shall consider it necessary or expedient, but no claim will be allowed for damage, nor will any increase of prices be made in consequence of such change.

20. The line will be divided into sections averaging about one mile in length, so arranged as to accommodate as near as practicable the economical distribution of material from excavations, or required in embankments. This will not prevent the removal of materials required for the road-bed, track or structures from one section to another whenever, in the opinion of the Engineer, it may be necessary or expedient to do so.

21 All materials taken from excavations shall be deposited in the embankments, except when directed otherwise by the engineer. All grading shall be estimated, measured and paid for in excavation only except where the shape or surface of such excavation is too irregular to be measured correctly. In such cases the quantities *may* be measured in the embankment, and the Engineer shall make a fair allowance for compression or shrinkage, if in his judgment there be any; which allowance shall in no case exceed ten per cent.

22. When it is necessary, in the judgment of the Engineer, to make allowance for future settlement of the banks, either on account of their height, the character of the material of which they are built, or the manner in which the material is placed, the width of road-bed shall be increased, so that when the bank is finally topped out to the true grade the road-bed shall be of proper full width.

23. Contractors will deposit on the side of the railroad, or at such convenient points within the limits of haul as may be designated by the Engineer, any rock or stone they may have excavated; and all such rock or stone, and all timber cut on the right of way, shall be considered to be the property of the Railroad Company, and shall not be used by the contractors, except by permission of the Engineer.

24. The use of powder in large blasts, such as seams, pot-holes, shaft or drift shots may be restricted by the Engineer. The position of charges of powder in seams, pot-holes, drifts or shafts may be determined by the Engineer.

25. In procuring materials from outside the road-bed, the place and manner of taking them out shall be designated by the Engineer.

26. Embankments will be formed in layers of such depth, and the materials distributed in such manner as the Engineer may direct.

27. When a cut contains material in excess of the amount required to make embankments between the limits of a haul, such excess must be hauled and used to widen the banks equally on both sides of the center line within the limit of free haul. In cases where the banks are so low as to make this impracticable, material will be wasted. In such cases care must be taken to deposit it in such a way that it will not be washed back into the cut; and in general the foot of the waste bank must be at least 40 feet from the slope line of the cut. Wasting of material is objectionable, and will only be resorted to when it cannot be avoided.

28. When embankments are constructed over culverts, or when they are to abut against masonry, or trestle bridges, the earth forming such embankments must be tamped or otherwise made as compact as possible, but no extra or other compensation shall be allowed or paid therefor. The contractors will be required to use the greatest care in such cases, so that masonry be not jarred, broken, pushed out of place or injured in any way. If masonry, or other structures, be in any way injured or displaced in the construction of the road-bed, the contractors for grading shall bear the loss and shall make the same good at their sole cost.

29. The grade line shown by the profiles represents the sub-grade, except where the material is suitable for ballast. In that case the profile grade will coincide with the bottom of the ties. Grade lines represent the elevation of the grade at the center of the road-bed, which must be finished so as to give proper elevation for curves.

30. The railroad shall be secured against damage from water in its vicinity by building embankments of earth or stone, or facing the road embankments with riprap, or by widening or changing the channel of streams, or by such other means and in such manner as the Engineer may direct. When practicable, embankments or slopes which are to be riprapped shall be flattened to a slope of two to one.

31. Logs, stumps, brush, or other perishable material will not be allowed in embankments, and sods will not be put in the central part of embankments less than five (5) feet high, except by permission of the Engineer.

32. Borrowing from the sides will not be allowed on station grounds or sidings, except by the especial permission of the Engineer. Material must be hauled from excavations made at the ends of such sidings or station grounds.

33. The price per yard for grading will include the grubbing and removal of all stumps and roots where the grading exceeds four feet in depth; also grubbing in borrow pits of any depth. The full dimensions of the cut or borrow pit will be estimated in such cases; that is, no deduction on account of stumps will be made from the measurement of the borrow pit.

34. The contractor shall, at his own cost, remove snow or ice from any portion of the work in any of its stages, whenever deemed necessary by the Engineer.

TUNNELS.

35. The dimensions of tunnels will be as shown by the standard plans.

36. The section of tunnel, when completed, must conform closely to the dimensions shown by the plans, and will be estimated and paid for by the lineal foot. No allowance will be made for material taken out beyond the limits of the proper section. The price per lineal foot of tunnel will include the haul of materials and deposit in embankment at each end of the tunnel, as directed by the Engineer.

37. The contractor must take down, at his own cost, all loose or shattered rock or material of any kind which, in the opinion of the Engineer, is dangerous or likely to become so in the future; except in ground where timbering or arching is required.

38. When, in the opinion of the Engineer, the use of Explosives is badly managed, so as to unnecessarily shatter the sides or roof of tunnel, he will have the right to restrict the use of such explosives.

39. In case the material proves of such character as to require timbering or arching inside for support, the section will be increased to the size necessary for such timbering or arching. The additional excavation will be paid for by the cubic yard, according to the theoretical section.

40. The timber used in the tunnel will be red or yellow fir, oak, tamarac, or white or yellow pine, as may be designated by the Engineer, and may be sawed or hewed, as found most convenient or desirable.

41. The timber used must be entirely sound, free from wind shakes and loose knots, and in every way acceptable to the Engineer.

42. The lagging shall be in pieces at least four inches thick and five inches wide.

43. The contractor will be required to protect timber, when in place, from the effects of blasting, at his own cost, by covering with slabs or otherwise, as may be most convenient. He will also be required to replace, at his own cost, any timber shattered or crushed in any stage of the work, by blasting or other operations of his own.

44. Timber used for lining the tunnel will be estimated and paid for at a price per thousand feet B. M. of timber left in the completed structure, and the price paid per thousand feet will include the total cost of all labor incidental to putting the timber and iron in place.

45. The contractor must, at his own cost, fill in with stones or timber, closely packed, to the satisfaction of the Engineer, any cavities resulting from any cause whatever, so that the roof and sides will, in all cases where required, have a direct and firm bearing on the lagging or lining.

46. All temporary timbering or shoring for roof or sides that may be necessary for the safe or convenient prosecution of the work in any of its stages, will be done by the contractor at his own expense.

47. Any material taken from outside the proper dimensions shown on the general plans furnished, must be removed from the tunnel and roadway without expense to the Company.

48. Should the portals of the tunnel be built of timber, it will be estimated and paid for the same as timber in the tunnel.

49. Other specifications indicating the length, etc., of posts, wall plates, voussoir pieces or lagging, and necessary plans therefor, will be furnished by the Engineer as required.

50. The right is reserved to vary the standard dimensions of the tunnel, should the Engineer deem it advisable, but the end area shall not thereby be increased.

FOUNDATIONS.

51. Foundation pits shall be of such dimensions and excavated to such depth as the Engineer in charge of the work may deem necessary to ensure the safety and stability of the structure to be erected, and the materials so excavated shall be deposited in the embankments, unless otherwise ordered by the Engineer, and shall be considered and estimated as part of the ordinary excavation on the section.

52. Whenever required, piling or grillages composed of timber or plank shall be introduced as a part of the foundation of structures. The dimensions, quality and quantity of all materials used, and the manner in which the work shall be done, will be subject to the directions of the Engineer. Piling will be paid for by the lineal foot, measured below the cut-off, and the timber will be estimated at the price that applies to timber in structures.

53. Where piling is used for foundations, the piles must conform to the specifications under paragraph ~~164~~ 168, and will be driven to such depth as required by the Engineer to secure a reliable foundation. Pile foundations for all masonry must be cut off below low water mark, so as to make a uniform level support for the grillage under the masonry. In case a grillage is used, its top surface must be at least 12 inches below extreme low water.

54. In preparing foundations for trestles or other structures care must be taken to have the bed entirely in excavation whenever practicable and to thoroughly tamp and solidify the soil before erecting the structure. When such foundations are partially upon an embankment, they must be constructed of masonry, which will be classified as rubble or dry rubble. (See paragraphs 115-129.)

55. No allowance will be made for pumping or baling, unless specially provided for in the agreement. The price paid for excavation and materials used will be considered as full compensation for the same completed and delivered in the work.

56. The soil in the bottoms of foundation trenches for abutments or retaining walls or buildings and other structures must be thoroughly tamped and brought to true and proper level before masonry or structure is commenced.

MASONRY.

57. The kind of stone to be used will be designated by the Engineer.

58. All stones must be sound, free from seams, sand holes and other defects.

59. All stones must be laid on their natural beds.

FIRST-CLASS MASONRY.

60. Masonry under this head will be rock-faced, with the exceptions hereinafter noted.

61. No projection will be allowed that exceeds three inches from the pitch line of the joints.

62. Masonry will be built in parallel courses, with level beds and vertical joints. No course shall be less than 14 inches thick, and no course shall be thicker than the course upon which it is built, except in the case of the belting course and the coping.

63. The width of every stone, measured at right angles to the face, shall be at least one-half greater than its thickness.

64. In general, every third stone of each course shall be a header. The headers in any course shall be so disposed as to bond the stretchers of the adjoining courses; and the headers in either face of the wall, in pier work, must be so disposed as to interlock with the headers in the opposite face. Where masonry is six feet or less in thickness, the headers must extend through it. Headers must be at least five feet long.

65. Backing must be made of stones as large as it is practicable to use, and these must be so laid as to give an interior bond with the stretchers. Backing must be dressed to one-half inch on both upper and lower beds. It may occasionally be doubled; that is, two courses of backing may be used to one in the face.

66. No spalls will be allowed except in small vertical openings in backing.

67. All stones that show on face must hold their general dimensions to the back. The general use of fish tail stones, or stones which are scant in width at the back, is prohibited.

68. All joints must be pitched to a true line, and dressed to one-half inch, for a distance of at least 12 inches from the face.

69. Beds, both upper and lower, shall be pitched to a true line, and dressed to one-half inch.

70. Joints must be broken at least 15 inches on the face.

71. All angles must be pitched to a true line and finished with a two-inch draft upon each face.

72. The belting course and coping must be cut in accordance with the plans made therefor, both with respect to the size of the stones and the finish. The face of parapet walls must be pitched off to one-half inch so as to avoid any interference with the superstructiure.

73. All stones must be thoroughly wet before laying, and must be laid in full mortar beds. They shall be lowered upon the bed of mortar and brought to a bearing with a maul.

74. Vertical joints must be filled with thin mortar properly rammed to place with a piece of bar iron.

75. All joints must be raked out to a depth of one inch from the pitch line before the mortar is thoroughly set, and pointed during mild weather by calking in pointing mortar and finishing the joints with a tool.

76. The upper surface of each course must be dressed, if necessary, so as to make it perfectly level before the next course is laid.

77. Doweling must be provided when called for by the plans. This will usually occur in the starlings or ice breakers of piers erected in running water. It should be done as follows: The dowels must be 12 inches in length, and made of one inch round iron. The holes must be drilled vertically, at least 12 inches from the face of the stones which are to be doweled together, and must extend through the upper and eight inches into the lower stone. Two inches of mortar shall then be put into the hole, the dowel dropped in and driven home, and the hole filled with mortar and rammed. There will be two dowels securing each stone to course beneath.

78. Stones in the belting course and in the coping course will be secured to each other by iron clamps according to the plans, and countersunk.

CULVERT MASONRY.

(FOR ARCHES HAVING SPAN OF MORE THAN TEN FEET.)

79. *Abutments.* This work will be broken range. Continuous courses will not be required.

80. No course shall be less than 12 inches thick.

81. All stones must have beds of at least one and one-half times their thickness.

82. Joints shall be broken at least 10 inches on the face. All joints shall be vertical and dressed to three-quarters of an inch for at least eight inches from the pitch line of the face. Upper and lower beds shall be dressed to three-quarters of an inch, and must be pitched to a true line at joints.

83. In general, every third stone in each course must be a header which shall extend through the wall if the same is six feet in thickness, or less.

84. All stones must be laid on their natural beds, in full mortar beds and joints. They shall be lowered on the beds and brought to a bearing with a maul.

85. The backing will be formed of good rubble stone, thoroughly bedded in mortar.

86. No spalls will be allowed, except in small vertical openings in the backing.

87. Face joints must be raked out and pointed by calking in pointing mortar.

88. The face of the stones will be left in quarry shape, with no projection to exceed two inches.

89. *Voussoir Stones.* Generally these will be of the same kind of stone as used for the abutment masonry.

90. The thickness of the arch stones shall not exceed their depth.

91. Beds and joints shall be worked out of wind and dressed to one-half inch and a 1½ inch draft cut on each side of soffit joint to fit the lagging.

92. No stone shall be longer than six feet.

93. Stones must be set carefully to the marks put upon the lagging by the Engineer, and the joints must be filled with mortar by ramming it in with a flat calking iron.

94. The back of the stones shall be pitched off so that there will be no projection greater than two and one-half inches.

95. The arch, when completed, must be plastered with a coat of beton, made of one part cement, two parts sand and four parts of clean roofing gravel, and applied as shown by the plans.

96. *Coping Stones.* Coping stones must conform to the dimensions shown upon the standard plans.

97. The beds and joints must be dressed to one-half inch.

98. The upper surface must be dressed so that it will shed water; other faces left in quarry shape, with all corners pitched to true lines.

CULVERT MASONRY.

(FOR ARCHES HAVING SPAN OF TEN FEET OR LESS.)

99. This work is to be of rubble masonry, built of sound, well-shaped stones, of proper size and thickness for the dimensions of the wall.

100 All stones must be laid in cement mortar.

101. No course to be less than eight inches in thickness and generally not less than twelve inches in thickness.

102. Face stones must be laid so as to give good beds and joints. All joints to be broken. Joints in face of walls to be pointed, with pointing mortar.

103. One-third of the stones must be headers, and generally extend through the wall, and in all cases far enough to insure a thorough bond of the work.

104. Top courses of walls to be composed entirely of headers extending the full width of the wall.

105. Arches, excepting the end rings, to be of rubble masonry, built of selected stones, with parallel faces and of suitable length to break joints, and of such width as to extend through the arch ring as shown on plan.

106. Arch stones for end rings of rubble and brick arches are to be dressed on joints, intrados, and back to one-half inch. All angles and joints are to be pitched to true lines. They must extend into and bond with the rubble or brick masonryof the arch.

BRICK ARCHES.

107. Bricks must be of first-class quality, thoroughly burned and laid in single rowlock courses in cement mortar. The bricks in each course must break joints with those of the adjoining courses at the middle. Joints must not exceed one-quarter of an inch in thickness.

108. The extrados of brick arches to be finished with concrete made as follows: One part of American Portland cement, two parts of clean, sharp sand and four parts of clean gravel, thoroughly mixed while dry, wet to the proper consistency, and thoroughly worked. This covering is to be applied as shown by the plans.

CENTERS.

109. Centering and lagging for arches must be provided by the contractor, according to the directions of the Engineer. Centers must not be struck until the back filling is completed.

BOX CULVERTS.

110. The side walls of box culverts will be composed of heavy rubble stone, laid in cement mortar, and will be built according to the dimensions shown by the standard plans.

111. The footing course, apron and cover stones are to be quarried to the sizes and shapes indicated by the plans.

112. The edges of cover stones must be spalled off so as to fit closely together.

PAVING.

113. Paving will be made of flat stones, set upon their edges, the longest dimension at right angles to the waterway, in such manner as to leave the least possible space between them, and of such size as to reach through the entire depth of the paving.

114. Great care must be taken at the ends of any piece of paving to make it secure, so that it cannot be undermined or cut out by water flowing underneath it. The lower end must receive special care to prevent the earth next the pavement being gradually washd away, thus leaving the paving stones unsupported.

FIRST-CLASS RUBBLE MASONRY.

115. Rubble masonry for retaining walls will be built of derrick stone (that is, stones of such size and weight that a derrick is required to handle them), of proper size and thickness for the dimensions of the work. They must be of fair shape, and spalled so that they will lay with good and even bearings upon the wall without the undue use of spalls or pinners. Care must be taken to secure good faces.

116. All stones must be laid with full mortar beds and joints. Exposed faces must be neatly pointed.

117. There must be a header in each course, not less than once in eight feet, so introduced between the course above and below as to make a thorough bond. The length of headers must be at least twice the width of the stretchers. All headers must be at least four feet long. When walls are five feet or less in thickness the headers must extend through them.

118. In general, no stones less than 12 inches in thickness will be allowed.

119. The walls must conform to the dimensions given by the plans.

120. Weep holes must be left in the masonry wherever directed by the Engineer.

121. Copings must conform to the dimensions and be dressed in the manner shown by plans.

SECOND-CLASS RUBBLE MASONRY.

122. Rubble masonry for buildings, turntables, etc., will be composed of stones of proper size and thickness for the dimensions of the work. They must be of fair shape and spalled so that they will lay with good and even bearings in the wall.

123. All stones shall be laid in full mortar beds and joints. All exposed faces must be neatly pointed.

124. All work must be thoroughly done and well bonded. An abundance of headers must be introduced and properly spaced, so as to make a good and substantial wall. No stone will be considered a header that does not extend through light walls.

125. The tops of all walls or piers will be finished to a true level surface with stones the width of which is equal to the thickness of the wall.

126. No stones less than six inches in thickness are to be used; and generally the thickness must not be less than ten inches.

127. The walls must conform to the dimensions given on the plans, or must be built according to the instructions of the Engineer.

128. Water tables and pedestal stones must conform to the dimensions given on the plans, and must be dressed as shown therein. They must be accurately set on a bed of mortar by being tamped to place to the lines and levels shown on the plans or given by the Engineer.

DRY RUBBLE MASONRY.

129. Dry rubble masonry will be built according to the specifications for first or second class rubble masonry according to the purpose of the wall, except that no mortar will be used. In general, retaining walls of dry rubble should be built of as large stones as may be available, and stones should be bedded upon each other by using slightly moistened earth or loam, and brought to a perfect bearing by wedging them up with pinners. All vertical joints shall be completely filled with earth and spalls and particular attention shall be paid to the securing of proper bond by means of long headers as specified for the mortar rubble.

MORTAR.

130. When mortar is made with American cement, it is to be composed of one part of cement to two parts of clean, coarse, sharp sand, thoroughly mixed while dry, wet to the proper consistency and thoroughly worked.

131. It must be made on clean plank beds and in small quantities, as required for use.

132. When made of American Portland cement it shall be composed of one part of cement to three parts of clean, sharp sand, or otherwise, as the Engineer may direct. It shall be mixed, wet and worked as above specified.

133. *Pointing Mortar* shall be made of equal measures of cement and clean, sharp and fine sand thoroughly mixed while dry and wet to the proper consistency.

CONCRETE PIERS, ABUTMENTS AND CULVERTS.

134. Concrete for this work will be composed of Portland cement, clean sharp sand, gravel and broken stone, either both or one of the latter ingredients in such proportions as will be suitable for each particular part of the structure. Cement should be kept at all times under cover, and must be protected from moisture. Contact of sacks or barrels with the ground must be avoided.

135. If the cement is lumpy it should be thoroughly pulverized before mixing with sand. Lumps which cannot be broken up by a light blow of the shovel should be picked out, and only cement which is in perfect condition should be used for face work. All papers and other rubbish must be carefully removed.

136. Sand should be clean, coarse and sharp, free from clay or earthy matter, and for face work should, if necessary, be screened to free from papers or other foreign bodies. Gravel must be clean, and if pit gravel is used, which is mixed with earthy matter it should be washed.

137. Broken stone must be of suitable character, and in general of such size that any piece will pass through a two and one-half inch ring. It should be handled with pitch forks to free it from accumulations of sand and dust which occur with some classes of rock in the process of breaking, and the fine material left must not be used.

138. The proportions of cement, sand and rock will in general be marked on the plans, and are subject to change in accordance with the directions of the Engineer, if required by the character of the work and the nature of the available ingredients. In general, facing will be made in the proportion of one to four to seven, shafts in the proportion of one to three to five, coping and bearing blocks in the proportion of one cement to one sand, with a small proportion of rock. Facing will be made in the proportion of one sand to one cement. In footings stones of convenient sizes may be incorporated in the concrete to an extent not exceeding twenty per cent of the entire mass.

139. Cement and sand should be mixed dry by hoeing the mixture until it is uniform throughout. The mixture is then spread over a bed of rock, turned over and sprinkled with water. A second turning will usually be sufficient to make a good mixture, the result aimed at being the complete covering of each piece of rock with mortar. If wheel barrows are used to carry the mass to the pit, it is practicable, by careful handling to accomplish proper mixture after the first turning during the process of shoveling into the barrows. Absorbent rock should be thoroughly wetted before mixing.

140. Great care is necessary to make the amount of moisture such that the greatest possible strength will be given to the concrete. Concrete in proper condition for placing into the pit should not be sloppy, but should have sufficient moisture to make it plastic under slight pressure, and it should always be possible by tamping to draw a film of water to the surface. In placing concrete in pits care should be taken to avoid separation of rock and sand mixture. This can usually be secured by sliding it down a chute instead of dumping from a high elevation. Great care is necessary when concrete is deposited in water, and in this case the concrte should be deposited by means of a spout or bucket, and in no case should the mixture be allowed to drop through the water for any distance, to avoid the washing out of the mortar.

141. Concrete should be deposited in layers not exceeding eight inches in depth. Each course should be thoroughly tamped until the whole mass becomes compact, which is apparent through the flushing of the mortar to the surface. Facing should be deposited simultaneously with the body of the work and tamped together. The thickness of the facing should, in general, be about one and one-half inches. A convenient tool for placing the facing consists in a strip of iron one-quarter of an inch thick, six or eight inches wide and about four feet long, one and one-half inches at each end being bent at right angles and provided on the top edge with a handle. The one and one-half inch bends on each end are placed against the timber moulds, and the space between mould and sheet is filled with the facing mortar, the body concrete being deposited behind, after which the iron is withdrawn and the whole mass tamped together. The facing mixture should in all cases be mixed separately and wet only in such quantities as required for immediate use.

142. The courses in all cases must be kept level, and a course should not be left unfinished at the close of a day's work, but work should always be adjusted so that it will be possible to finish the course. When work is resumed after an interruption the surface of the old work should always be wetted. Before a new course is started, any mortar which may have become attached to the moulds above the line of finished work should be removed and the old course finished clean and sharp against the timber mould.

143. Coping should always be made in sections not exceeding seven feet in length by dividing the mould with planks so that when any shrinkage takes place and cracks open they will be on the straight lines made by the partitions, but plank used for partitions should, of course, be removed after one section is completed and before the next one is joined on. Each section of coping and bearing blocks must be made to full thickness in one day, so that they will, as nearly as possible, be in one piece. Top surfaces should be floated and brought to true and perfect surface with straight-edge and trowel.

144. When it becomes necessary, after timber moulds are removed, to patch up defects, the loose portions of the concrete work should all be removed and the surface which is to be patched made rough by cutting into the surface so as to present a fresh face. It should then be wetted and immediately before the application of the patch, receive a wash of neat cement. The patching must be done with mortar of one to one, consolidated as much as possible, neatly troweled without leaving any thin edges over the old work, and protected from the sun and moisture for several days until it has well set.

145. Timber moulds for exposed work should be built of surfaced lumber according to correct dimensions. Joints must be neatly fitted and special care is to be taken to have lining plank present an even surface without offsets where the planks join. Forms must be properly braced to prevent their being sprung by the weight of the fresh concrete. Square corners are to be avoided, and will in general be broken, if no other shape is provided, by corner strips three-quarters of an inch wide. It is advisable to complete forms entirely before concrete work is commenced. If this is not practicable, care must be taken to remove all chips and dust which may become deposited on the concrete during the process of constructing the moulds, before concreting is resumed. Forms should be removed as soon as the setting of the concrete permits, which should be done carefully to avoid damaging the work. It is desired to avoid patching and subsequent veneering as much as possible, and it should be the aim to have the work, when forms are taken off, in such shape that this will be unnecessary.

146. To prevent concrete from adhering to moulds, the timber should receive a wash of a solution of soft soap, applied with a brush or swab. To coat the timber by rubbing it with pieces of soap will not be permitted.

147. Holes for anchor bolts may be made by building in pieces of wrought iron pipe of proper size. When necessary to build anchor bolts into the work, the bolts should be hung up in proper templets at the required elevation.

CULVERTS.

148. Culvert pipe will either be cast iron or vitrified pipe. Whenever it is practicable, culvert pipe should be so placed that the top of the pipe will be at or below the natural surface of the ground. The material used for bedding the pipe shall be free from stones. Great care is necessary to have the material well compacted under and against the sides of the pipe; but the material on top of the pipe shall be put on loosely.

149. The joints in vitrified pipe shall be made of soft tempered cement mortar, completely filling the socket and rounded off on the outside. No mortar shall be allowed to project on the inside of the pipe, but the joint must be completely filled and smoothed.

150. With cast iron pipe, the lower half of the joint shall be made with cement mortar, as specified for vitrified pipe, and the upper part shall be made by calking in oakum.

151. Cast iron pipe above 24 inches in diameter shall be stayed and crowned by wedging in struts in accordance with standard plans, the struts not to be removed until the embankment has settled sufficiently.

RIPRAP.

152. Riprap will consist of rough stones, laid or placed in the slopes of embankments or about foundations, or at the ends of culverts or other masonry.

153. The largest stones must be placed at the bottom and where the current has the greatest force, and must be laid as closely together as possible, so as to avoid large openings.

154. The ends of all riprap protection should be turned into the bank, so as to prevent its being undermined or washed out.

155. Stones should generally measure not less than one cubic foot.

156. Care should be taken to make a smooth connection between riprap and the paving of culverts and masonry.

BLIND DRAINS.

157, Blind drains will be made of rough stones thrown in without particular order, except that the largest stones shall be at the bottom. The top of the drain should be covered with brush or sods. The use of blind drains is objectionable, and should be restricted to cases where the amount of water to be disposed of is known to be very small.

ABUTMENT AND PIER CRIB FILLING.

158. Abutment and pier cribs will be filled with angular stones of a size and character satisfactory to the Engineer, and which shall be placed in the cribs without damage to any portion of the structure and as the inspectors may direct.

WELLS.

159. Wells for water stations will be 16 feet in diameter inside of the curb, which will usually be 16 inches in thickness.

160. Wells will be curbed with rubble masonry, laid in mortar (see paragraph 122 *et seq.*), or with hard, well burned bricks laid in cement mortar. (See paragraph ~~136.~~ 180)

161. Wells for depots and section houses must be three feet in diameter, inside of the curb, which will usually be twelve inches thick and composed of dry rubble masonry. (See paragraph ~~135.~~ 129)

162. Contractors must provide syphon or suitable pumps for use while digging wells. The use of the Company's pumps for this purpose will not be permitted.

163. The contract price will be held to include all necessary timber, false work and labor on same incidental to the construction of wells.

TIMBER STRUCTURES.

164. The timber used for structures must be cut from some suitable wood approved by the Engineer. The varieties which will commonly be used are white oak, white pine, Norway pine, red and yellow fir. All timber must be sawn square and be of proper dimensions, free from large wanes, shakes, rot, large and unsound knots, or any defects which will impair its strength and durability. The use for which the timber is intended will be taken into consideration, and especial pains must be taken to reject and exclude all imperfect sticks which in use will be required to sustain considerable loads. This applies to caps, posts, stringers, bridge chords, joists, etc.

165. The structures must be built in strict accordance with standard plans.

166. All pile and timber ends, chips and rubbish shall be burned or otherwise disposed of as the Engineer may direct.

167. All structures must be left in perfect line and surface at the conclusion of the work.

Bridges must be erected ahead of the track in all cases where not especially excepted, but the maximum haul beyond end of track shall not exceed four miles.

PILES.

168 Piles will be of fir, oak, tamarac or other suitable wood, as designated by the Engineer. They must be made from sound, live, thrifty and reasonably straight trees; must be free from wanes, shakes, rotten knots and any indication of decay. They must not be less than nine (9) nor more than twelve (12) inches in diameter at the small end, and not less than fourteen (14) nor more than twenty-two (22) inches in diameter at the large end. They must be cleared of bark their entire length before they are inspected.

169. Piles must be delivered by the track or roadbed at convenient points, which must be situated not less than three nor more than twelve feet above the track or grade of roadbed. They must be piled not less than 10 nor more than 30 feet from the track, on skids of sufficient size to keep them well up from the ground.

PILE BRIDGES.

170. Piles for bridges and structures generally must be driven until the fall of a hammer weighing 1800 pounds for a distance of 25 feet, or an equivalent blow, causes penetration not to exceed one inch, or otherwise as prescribed by the Engineer. When in the judgment of the Engineer the ground is so hard that piles cannot properly be driven, frame bents will be used.

171. When necessary, piles will be shod with iron.

172. When necessary to drive to a great depth, and piles of adequate length cannot be obtained, one shall be spliced upon the top of another. The first pile having been driven as far as practicable, it must be cut off squarely to receive the following pile, which must also be squared and set on top of the one already driven. The piles are then to be squared on four sides and fastened together by spiking on pieces of scantling.

173. Piles will be paid for by the lineal foot, for the part below the cut off. Timber will be paid for according to the number of feet B. M. in the finished structure.

174. False work may be required to cross streams or gulches where more permanent bridges are to be afterwards built, in order to proceed with track laying, surfacing and transportation of materials for work beyond. Such false work will be paid for at the contract price for pile or trestle work, but such false work must be removed at the conclusion of the work without extra cost to the Railway Company.

FRAME TRESTLES.

175. Frame trestles will have foundations composed of piles or mud sills. When the latter expedient is adopted, the sills must be settled as nearly as possible to a permanent bearing by the use of heavy rammers.

176. Care must be taken not to bury with earth any portion of the sills or posts.

177. All foundation pits for trestle bents should be arranged so as to give good drainage.

178. Great care must be taken in framing trestles and all timber structures to secure a perfect fit at all joints. Shimming will not be permitted.

179. All adjustments in height of structures, due to settlement or other causes, must be rectified by jacking up from the bottom to the proper elevation.

180. Truss bridges of steel will be constructed under special specifications.

TRUSS BRIDGES.

181. Timber for truss bridges will usually be of red or yellow fir (see standard plans). Great care must be taken to exclude all unsound, imperfect or defective sticks. Sap wood, wane edges, decayed wood, large or loose knots, will not be allowed. All sticks must be straight and of such length that when framed, the ends will be sound and clear. Knots in stringers or beams are most injurious if existing on under side near middle between supports.

182. No variation in size of timber exceeding one-quarter of an inch from the dimensions shown on plans will be allowed.

183. Before commencing to frame a Howe truss span, check over carefully the material furnished, comparing the same with the plan, to insure that it is of the proper dimensions for the structure as shown.

184. No excuse will be accepted from contractors or foremen for the improper framing of a Howe truss span, either in the manner in which the work is done, or for lack of fit of the different members in erection.

185. If any errors are detected in the plans, or in the kind or sizes of material furnished, the same must be brought to the attention of the Engineer, in writing, before the work is commenced.

186. Frame all four chords of the truss on the same ways, which must be accurately leveled.

187. Observe carefully that the lengths of panels in the bottom chord are exactly the same as shown by plan, and also that the lengths of panels in the top chord are exactly as shown by plan. The lengths of top chord panels are slightly in excess of those of bottom chord panels, on account of providing for camber.

188. Extreme caution must be exercised in laying out the lengths of panels.

189. Determine the distance between keys by putting together a right and left hand clamp head, clamp bar and key, placing them in a position corresponding with that which they will occupy in the finished work, leaving the key loose enough so that it can be driven in the completed chord a sufficient distance to draw the clamp up tight. Check this distance between keys in each panel as the framing is carried on. The timber must be framed in such a manner that the clamp heads will at least fill the space between the chord sticks, and that keys will all be dapped into the chord sticks a sufficient distance; and to the end that when the chord is framed and packed together, the lower and upper surfaces of the same as it lies on the ways will be straight, parallel, the distance apart shown on plan (which will correspond with the lengths of angle blocks) and free from twists or wind.

190. All measurements, lines and marks for framing which may be placed on the chords shall be made on, or with reference to, one of the three true faces of the chord, as above described.

191. The location of lateral panel points must be made with the same accuracy and care as for the panel points of the main trusses.

192. Care must be taken during the framing of the chords to place the timber in such a way that as little work will be required in facing as possible. After the chords are framed and packed together, they are to be faced. If a through span, the upper sides of bottom chord and the lower sides of top chord; if a deck span, the top sides of both chords.

193. All work, to insure uniformity, must be done from patterns and templates, which must be made from the actual castings and iron members.

194. The chords must be so framed for angle blocks that they will be accurately at right angles to the faces of the chords.

195. Determine the length and cut of main and counter braces by laying out the panel full size, as per sketch on page 11. The shape of the angle blocks in the panel as laid out must be determined from patterns made from the angle blocks showing their end view. In laying out the panel, the lines representing the upper surface of the bottom chord and the lower surface of the top chord, respectively, are parallel, and their centers are on a line which is perpendicular to them. With a panel laid out full size as shown, the brace pattern can be fitted to the marks which coincide with the position that these members will occupy in the bridge.

196. One corner of the brace patterns must always be kept on the upper angle of the block on the lower chord and the lower angle of the block on the upper chord, and buttons or marks must be placed near each of these ends to show the position the pattern must occupy in marking the brace timbers. Braces must be laid out and framed in pairs, always keeping the crowning side, if any, uppermost and outward.

197. One pattern can be used for cutting all of the main braces and counters, providing the angle blocks are all of one size. If two sizes of angle blocks are used, three sets of patterns will be required, as follows: One set for braces which rest on large angle blocks at both ends; one set for braces which rest on large angle block at one end and small angle block at the other end, and one pattern for braces which rest on small angle blocks at both ends.

198. Particular care must be observed in making patterns for, and in the framing of braces.

199. Camber, as is sometimes erroneously supposed, is not put in a truss by varying the lengths of the braces, or by screwing up the rods, but is due to the excess in length of panel of top chord over that of panel in bottom chord.

200. Patterns for lateral braces must be made in the same manner in which patterns for main braces are made, excepting that the lateral panel as laid out will be a perfect rectangle, which is not the case with the panel of the main truss.

201. All members must be framed carefully in accordance with the dimensions and instructions which are given on the plans.

202. The bearings for all angle blocks and other castings are to be planed to give an even and true bearing for the iron members, which must have a snug fit.

203. Chords must be sized for the bearings of gib plates. In spans in which the angle blocks have tubes the chord sticks must be left of such a size that after shrinkage they will still continue to assist the tubes in transmitting the strain from the gib plates to the body of the angle block.

204. Holes for lateral rods and packing bolts shall be bored from the inside face of the chord, and augurs must be steadied by a bracket or guide to insure the boring of the holes in a line perpendicular to the inside face of the chord.

205. All framing must be neatly and accurately done so that all joints will fit close and snug.

206. All members which bear against each other must have good and even bearings. Cutting and sawing beyond marks and lines, and then filling up the deficiency so caused with wedges or shims will not be permitted.

207. Wall plates must be sized to receive bolsters. Corbels must be brought to uniform thickness. Bolsters must be brought to uniform thickness by surfacing, and chords must be sized to give them an even bearing on bolsters.

208. Floor beams need not necessarily be sized. Three-fourths of the camber shall be removed from the floor system by notching the stringers onto the floor beams. The notching of stringers will not be done until the bridge is erected and the floor beams are in place, after which the stringers will be strung out on the floor beams and packed, when they will be marked and notched as may be necessary to allow for the inequalities in the floor beams, and to remove the amount of camber specified above.

209. As the structure is framed, mark each piece of timber and iron so as to insure that in erecting, it will be located in the same place that it occupied in the framing, and make a diagram showing the system followed in making the marks, so that they can be readily understood by the foreman who raises the work.

210. Before the erection of the truss, care must be taken to insure the correct elevation of all of the wall plates, or parts of the foundation below the bolster.

211. Neither shims nor sizing of the timber below the dimensions specified by plans will be allowed.

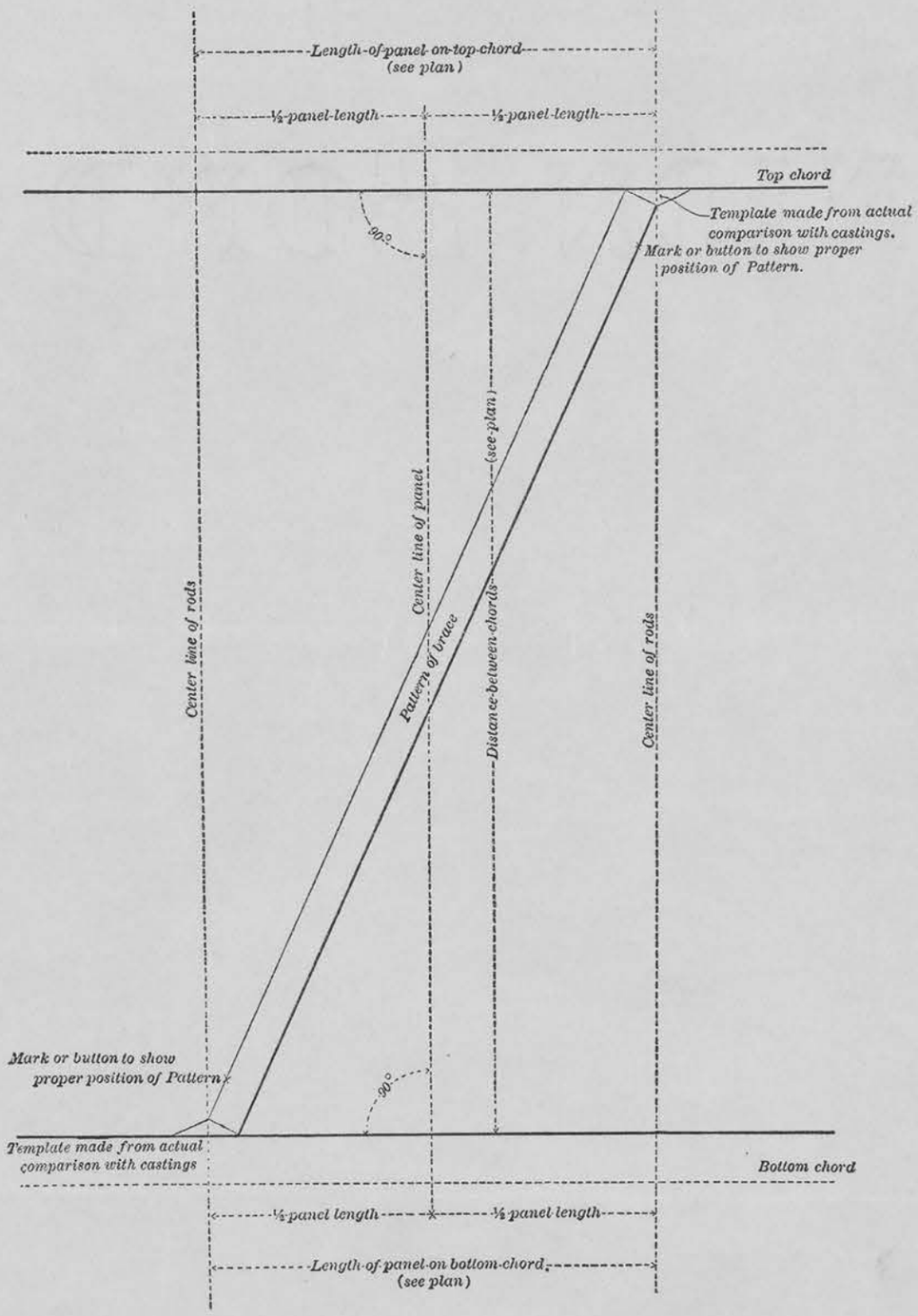
212. All recesses or surfaces which will be inaccessible after erection must be coated with white lead before the structure is assembled.

213. Secure the nuts of all bolts through floor beams, stringers and guard rails by burring thread close to the nut with a cape chisel or center punch.

214. Truss and lateral rods must be so adjusted as to make close and even bearings, but must not be overstrained.

False work must be removed at the conclusion of the work without extra charge.

SKETCH SHOWING MANNER OF MAKING BRACE PATTERN.



LOG AND TIMBER CULVERTS.

215. Timber for log and timber culverts must be sound, and the variety and quality must be satisfactory to the Engineer.

216. Log culverts will be made of sound, straight, green logs, from which all bark must be removed, not less than ten inches in diameter at the small end, and of nearly uniform diameter throughout each course.

217. After the foundation for the culvert is prepared, mud-sills will be laid not more than five feet apart, on which the first course of side wall timbers shall rest. The mud-sills will be flattened on top and bottom sides to a thickness of not less than twelve inches, and at the ends where the side walls are joined to the sills will be boxed down three inches, so as to give a close fit.

218. The timbers will be drift bolted to the mud-sills with iron drift bolts ¾ inch square by 16 inches, driven into holes ¾ inch in diameter.

219. The walls will be made by piling the logs one upon another, the larger logs to be in the lower courses, with the top invariably laid down stream. After flattening the logs on the upper and lower sides to even thickness throughout, and thoroughly pinning or drift bolting them together, all knots and other projections into the opening of the culvert are to be carefully cut away. At the ends of the culvert the layers of logs will be drawn in as they rise above the bottom to conform to the slope of the embankment. Where practicable each log will extend the entire length of the culvert. The logs will be so laid as to leave the full size of the inside of the culvert clear for passage of water, and the inside walls shall be vertical. If drift bolted, each course of logs will be well bolted to the one beneath it with three-fourths by sixteen inch iron drift bolts, spaced not more than five feet apart; and where logs join, a drift bolt shall be driven on each side of the joint. All drift bolts will be countersunk to such a depth that one-half the bolt shall be in the upper timber and the other half in the lower.

220. The bottom of log culverts may be formed of logs laid close together across direction of current not less than nine (9) inches in diameter at small end, extending on each side one (1) foot beyond outside of side wall, or be paved to the top of the mud-sills with angular rock, where it can be obtained from the adjacent cuttings; otherwise with large boulders. This paving will be classified as riprap in place.

221. The covering of these culverts will be round logs not less than fourteen inches in diameter, flattened for a distance of eighteen inches at each end to a face of not less than eight inches; at least one log in four secured to the top course of the side walls with three-fourths by sixteen inch iron drift bolts. At intervals of five feet one of the top logs shall be boxed down on the side walls three inches to a close fit. The hollows between the covering logs must be filled with poles or brush.

222. Material in log culverts will be estimated by the lineal foot, and the length of the timbers only will be considered, without regard to varying size or thickness.

223. Timber culverts will be made of sound hewed or sawed timber, in accordance with the standard plans. They will be estimated and paid for by board measure.

224. Log or timber culverts will not be used except when it is practicable to build or place within them stone or brick structures or drain pipes of ample size to carry the water.

225. In cases where the embankment is six feet high or less, a single span of pile bridge with timber bulkheads will be used, and will be built according to the standard plans.

CROSS TIES.

226. Cross ties will be made from such varieties of timber as may be designated by the Engineer; usually from white oak, red fir or tamarac. They must be cut only from live, sound and thrifty trees, must be free from rotten knots and all indications of decay; also from splits and shakes.

227. Ties must be exactly eight feet long, with ends sawed square. They must be hewn or sawed straight and true on two parallel faces to a uniform thickness of seven inches. Those less than seven inches or more than seven and one-half inches in thickness will not be received.

228. The minimum width of face for hewn ties will be seven inches, exclusive of bark. The minimum width of sawed ties will be nine inches, provided they are sawed on four sides. If they are sawed on two opposite sides only the width will be the same as for hewn ties. The above minimum dimensions are absolute and will be insisted upon.

229. No split ties will be accepted.

230. Ties must be piled on skids in rows or tiers containing 1,000 ties or less, with small ends of all ties in each tier piled one way. When they are piled in adjacent tiers an open space of not less than three feet must be left between them. They must be piled at points where they can be conveniently loaded; that is, at or near grade.

TRACK LAYING.

231. Track laying will include all the work of laying the main track, sidings, or other permanent tracks, frogs, switches, rail braces, tie plates, crossings, etc., laying and spiking the plank of road crossings wherever required, and trimming down or filling up the surface of the roadbed to bring it to the true grade. Also setting all track markers and signs.

232. When the material of which the roadbed is made is fit for ballast, it will be finished to the proper elevation for the bottoms of the ties, and if, at the time the track is laid, it is lower or higher, it must be brought to the proper elevation before the ties are distributed. When material is unfit for ballast, the roadbed will be finished to an elevation four inches below the bottoms of the ties or subgrade, and the track must be brought to the true grade in ballasting.

233. Track laying must conform with the standard specifications of the Railway Company. (Form 140.)

234. Only such sidings or spur tracks, and such lengths thereof, as may be ordered by the Engineer will be estimated and paid for. This will include tracks required at material yards, but will not include spurs in gravel pits, nor temporary spurs laid for the accommodation of boarding cars. The price paid for such work will be held to include the taking up and removal of material at the close of the work.

SURFACING AND BALLASTING.

235. When material of which roadbed is made is suitable for ballast, the track will be surfaced from the sides, otherwise the material generally will be hauled, in which case it will be classified as ballast. The Company will furnish the train and train crew, and the contractor must load, unload and spread the ballast and put it under track.

236. Ballast will be paid for by the cubic yard. Borrow pits from which ballast is obtained must be cross sectioned, and the amount removed therefrom measured in excavation. No waste of ballast upon banks will be permitted. Deficiencies in grading which are rectified at the time of ballasting, by the use of train hauled material, will be paid for as earth excavation.

237. Surfacing and ballasting must conform to the standard specifications of the Railway Company. (Form 140.)

238. All road and surface ditches will be left clear and free, so open and extended as to conduct water freely and quickly from the roadbed; and all side ditches must be left unobstructed.

239. The side slopes and ditches must be left neat and smooth, and free from all rubbish, materials and obstructions. Material for filling or ballasting must not be taken from the slopes of embankments. This will be insisted upon.

240. The surfacing or ballasting must be kept up with the track laying. All new track must be brought to surface and tamped up before it is run over. Rails that are damaged by reason of neglect on the part of the contractor to comply with these requirements will be replaced at his expense.

241. When the surfacing or ballasting is completed, the track must be in perfect line, surface and gauge, and must be so maintained by the contractor until it is accepted by the Company for operation. This contemplates a second adjustment of the track to line and grade, after it has settled under traffic. The line will not be accepted until it is fully completed.

242. Track laying and surfacing will be estimated by the lineal mile of 5,280 feet. Sidings will be estimated between head blocks of switches. Where ballasting is done by train, surfacing will not be estimated.

243. All track work will be closely inspected, and inferior work will not be paid for by the Company.

244. All crossing, flanger, station, tank and other signs, mile and clearance posts, are to be set by the contractor as directed by the Engineer, and will be considered a part of the track laying and surfacing; and the expense of setting will be held to be included in the price paid for track laying.

FENCES.

245. Fences must be built according to the standard plans. Farm gates must be provided wherever necessary.

246. Posts must be set plumb, firmly planted, and no variation in height above the ground line exceeding 3 inches will be allowed. Where ground surface is irregular, in sharp depressions, or on ridges, additional fence posts must be used. Posts in depressions must be properly anchored, and where fence is constructed through overflow bottoms, a cross-piece shall be spiked to the bottom of each post in such a manner as to prevent its floating up. Corners and posts at openings must be properly stayed by struts. The price paid for fencing shall include the construction and placing of the necessary farm gates and cattle guards.

BUILDINGS.

247. All buildings must be constructed according to the standard plans.

248. *Excavations.* Grading for building sites other than excavations for cellars, trenches, foundations, etc., incidental to plans, will be paid for by the cubic yard, under the classification of and at the prices that apply to grading. The price paid for excavation of trenches for water pipes and drains will include the back filling of the same, for which no further allowance shall be made.

249. *Drains.* Drains will usually be of first quality of vitrified tile, with the dimensions shown by the standard plans. They must be carefully laid on a true grade, with a fall of at least one inch in 50 feet, and more if the elevation of the outlet will permit. They must be jointed with hydraulic cement, and must be scraped smooth inside as laid. They must be provided with all necessary traps, bends and connections, and be left in perfect working order.

250. *Foundation Walls.* Foundation walls will generally be classified under the head of concrete, second-class rubble masonry (see paragraph ~~128~~ 122) laid with cement mortar, hydraulic lime mortar, or lime mortar, as directed by the Engineer.

251. *Brick Work.* Bricks used in buildings must be of standard size, well and neatly moulded and thoroughly burned. Care must be taken to exclude salmon brick, or bricks which are imperfectly burned. The stock of bricks must be assorted, and those of perfect shape, quality and uniform color must be used in face of wall.

252. Bricks for paving and other special purposes must be selected with especial reference to the purpose for which they are intended to be used.

253. All bricks must be thoroughly wet before laying.

254. In general, bricks in the walls of buildings above the water table, boiler settings and chimneys will be laid in lime mortar. (See paragraph ~~240~~ 268.)

255. Bricks in pits or foundations, below the elevation of the water table, and not exposed to an undue amount of moisture, will be laid in hydraulic lime mortar. (See paragraph 241.)

256. Bricks for floor arches and other masonry which is exposed to water will be laid in cement mortar. (See paragraph 242.)

257. Bricks in walls will generally be laid in common bond; five stretcher courses to one header course. The Engineer may require a more thorough bond when he deems it necessary.

258. All bricks must be laid in full mortar beds, and all joints must be completely filled.

259. Particular care must be taken to secure straight, level bed joints of moderate uniform thickness. All joints must be cut and struck as the work proceeds.

260. Arches must be turned upon proper and substantial centers, which should be slacked away as soon as the mortar has set.

261. Hollow walls must be tied together every fifth course with bricks not over three feet apart. Care must be taken to leave air vents in such cases.

262. Anchors, hinge castings, lookouts, nailing strips, etc., must be properly and neatly jointed into the brick work.

263. Where the interior of brick walls is to be lathed and plastered, build in a lath to which to nail furring strip every fifth joint.

264. Scaffolding must be furnished by the contractor, and must be thoroughly and strongly built.

265. Brick paving will be understood to be bricks set on edge, bedded in cement mortar and grouted.

266. Chimney flues will be constructed as shown by the plans. Especial pains must be taken to secure full mortar joints. They must be thoroughly plastered on the inside and troweled to a smooth finish.

267. Thimbles must be provided as shown by the plans.

268. *Mortar.* Lime mortar will be composed of fresh lime and sand, in the proportion of one part of the former to about four of the latter. The proportions of lime and sand may be varied to suit the nature of the lime used, and the product must in all cases be satisfactory to the Engineer.

269. Hydraulic lime mortar will be composed of one part of hydraulic cement, two parts of lime and six parts of sand. The cement must be thoroughly mixed with three parts of sand in a dry state. The slacked lime must then be added gradually, the remaining five parts of sand worked into the mortar thus formed, and the whole mass worked to the proper condition for use.

270. Cement mortar will be made of American Portland cement and sand, in the proportion of one part of cement to three parts of sand. These ingredients must be measured. They must be thoroughly mixed while dry and then wet and worked to the proper consistency.

271. The proportion of ingredients as mentioned above may be changed by the order of the Engineer, if the mortar thus made is not satisfactory to him.

272. All mortar will be made in small quantities, as required for use, and none shall be used after it has commenced to set.

273. Cement and lime not required for immediate use must be protected from moisture; and any deterioration in its quality from this cause, and loss resulting therefrom, will be charged to the contractor.

274. Clean, sharp sand, thoroughly screened, shall be furnished for all work.

275. Fresh water must be used for making mortar, and all mortar must be prepared on clean plank beds.

276. *Plaster.* Two coats of cement plaster of an approved brand shall be used.

277. The first coat of plaster must extend behind the wainscoting, if any, through the floor, and must fill out all spaces between frames of timber, etc. After the first coat has dried, put on white hard finish or float finish as will be directed and trowel to a true and glossy surface.

278. After carpenters are through plasterers must patch up all defects.

279. *Timber.* Timber must be sound, free from wanes, shakes and large, black or unsound knots. It must be of the quality specified by the standard plans, and when this specification does not agree with the grades of the local markets, it will be understood that it must be suitable for the purpose for which it is intended.

280. All timber will be subject to the inspection and acceptance of the Engineer.

281. Timber having defects which impair its strength must be excluded from all work where it will be subjected to a considerable load.

282. Where sizes are given they will be understood to mean the dimensions of the timber as it comes from the saw, without reference to the diminution in size caused by dressing, unless an exception is noted upon the plans.

283. All timber and workmanship is subject to inspection before and after it is put into the work, and the Engineer may order any part of the structure, which in material or workmanship does not correspond with the terms of these specifications, removed, and substitution made in proper manner, at the expense of the contractor.

284. *Mill Work.* All material used for making window sash, frames, and work of this description, must be made of first quality white pine, excepting such portions of window or other frames as will not be exposed which may be of common lumber.

285. All timber used for these purposes must be thoroughly dried and seasoned. All inferior finish shall be kiln dried lumber, free from imperfections. Stair railings, balusters, treads, risers, stringers, mouldings and wainscotings must be made of material specified by the plans.

286. All finish shall be put up in the best manner, smoothed by hand, and left free from machine and tool marks.

287. Unless especially agreed to the contrary, it will be understood that interior wood work is to be painted, unless finish is hard wood, in which case it shall be filled with oil, rubbed and finished with a hard finish.

288. When not otherwise specified, all sash will be glazed with second quality American glass, S. S.

289. Contractor must properly protect all frames, sash and doors, not used immediately, from the action of the rain and sun. All mill work, except such as is required for inside work, and mouldings, shall receive one priming coat before shipping. This will not apply to the frames shipped knocked down, which will receive their priming coat after they are fastened together and before they are put into the work.

290. All door and window frames must be carefully squared before they are put into the work, and stayed to keep them in proper position.

291. *Iron.* Castings must be made of the best quality of tough grey iron, neatly moulded, free from sand holes, flaws or other imperfections. Particular care must be taken, especially in cored work, to have the holes required by rods, bolts, etc., large enough to admit these without battering the threads.

292. Rod iron must be of good quality of merchant iron. If an enlargement of the diameter of the rods for screw ends is called for, such enlargement is to be secured by upsetting, not by welding. An exception may be made in the case of suspension rods for large doors and other work in which the rods are not subjected to considerable strain.

293. All turn buckles and other forged work to be well and neatly made.

294. *Carpenter Work.* All framing is to be done in a neat and workmanlike manner, to give close joints, and thoroughly nailed and spiked. All joists and studding must be sized. Studding must be doubled around openings, with double headers and trusses above openings. All corners and angles must be made solid.

295. Joists must be stiffened by bridging cut in at proper intervals.

296. Roof boards must be nailed to rafters at every intersection, to avoid warping and injury to the roof covering.

297. Buildings which are to be plastered will be lathed with best dry pine lath. Laths will break joints every fifth lath, and shall be nailed with threepenny coarse lath nails, leaving a three-sixteenth inch crack on side walls and one-quarter inch crack on ceilings. No vertical laths shall be put on for the purpose of piecing out.

298. In case of the omission of any essential parts upon the plans, such omissions must be supplied in workmanlike manner; and flimsy, shiftless work will not be permitted.

299. Matched flooring must be blind nailed, and smoothed by hand.

300. Siding will be firmly nailed to each stud. Drop siding and clapboards must be neatly jointed and blind nailed.

301. Where floors are double, a layer of No. 2 roofing felt must be put in between upper and lower courses.

302. The top floor must not be laid before the plastering is finished.

303. The building must be cleared of all rubbish and swept before it is plastered. All refuse, chips, shavings, etc., must be collected and disopsed of by burning, or otherwise; and the interior of the building, as well as the grounds around it, must be left free from all litter.

304. Hardware, locks, knobs, window fastenings, etc., are to be neatly put into place, and must be of suitable quality and satisfactory to the Engineer.

305. *Painting.* All wood work that is exposed to the weather (excepting rough work), shall receive priming coat and two finishing coats, in colors corresponding to the Company's standard.

306. Body work will be finished in dark red. Trimmings and sashes in dark green. Doors will be finished in solid body colors. No trimming paint on panels.

307. All knot holes and cracks must be puttied, and knots or pitchy places filed with shellac before painting.

308. Interior work must be finished with two coats of paint; standard colors.

309. Shingle roofs will be finished with two coats of paint; standard colors.

WATER TANKS.

310. Water tanks are to be built according to the standard plans. Posts must be cut to the proper height and sized to receive cast iron caps. Caps must be sized to fit the casting. Timber caps should be bored to receive dowel.

311. Lay rail joists on caps as shown on standard plan.

312. The edges of bottom planks are to be accurately jointed, to insure perfect contact, and be well clamped and cut to proper circle.

313. The floor must be well doweled and joists white leaded.

314. Staves are to be carefully jointed, to secure perfect contact, and should be put together with white lead joints and three tiers of dowels. The chime is to be accurately fitted to the bottom. Staves are to be surfaced on both sides.

315. Put on the third band first; then commence at the bottom and put the bands in regular order. Divide the lugs equally around the tub and screw up to fair bearing.

316. Bands must be watched when filling tub to prevent breaking on account of swelling of timber.

317. Ceil as shown by plan:

318. Valve to be so placed that bolt holes will take in two center planks and have one-eighth inch rubber gasket under it. The intake pipe is to be extended up twelve inches above tank floor and to have a three inch inlet valve. Outlet valve to be placed twelve inches above tank bottom.

319. Construct air spaces carefully in accordance with the plans. Leave a two by four opening on the south side, provided with three doors, all to be hinged.

320. Sheeting and battens must be in accordance with the plans.

321. Provide inside and outside ladders as shown by the plans.

PUMP HOUSES.

322. Particular attention must be paid to the location of pump houses, so that it will be convenient to supply them with fuel from the cars. They will be built in accordance with the standard plans.

WATER PIPES.

323. All wrought iron pipes with screw ends must be laid on true grade so that they can be thoroughly drained. Threads must be treated with red lead before uniting. They must be screwed together as far as practicable.

CAST IRON PIPES.

324. Cast iron pipes must be laid on true grade so that they can be thoroughly drained. All changes in direction are to be made with curved pipes and connection with proper branches delivering in direction of drainage.

325. Joints in cast iron pipes shall be made by calking in hemp packing, and shall then be run with molten lead and thoroughly calked.

326. Joints of lead pipe with iron pipe shall be made by calking in a brass ferule and making connection between lead pipe and ferrule by a wiped joint.

327. Joints between lead pipes must be wiped.

MATERIAL.

328. Unless otherwise provided, it will be understood that the Railroad Company is to furnish to the contractor all the material required for track, bridges and buildings, with the exceptions hereafter noted, on board cars at point of divergence from the main line of the branch railroad to be constructed, or at points along the line of road to be constructed, but not necessarily alongside the roadbed; or, in the case of buildings and structures erected under contract, upon lines already constructed, delivery will be made on board cars at the site of such buildings or structures, or as near as practicable thereto.

329. The exceptions above referred to are the stone for rubble masonry,—and other masonry, unless otherwise specified in the contract,—gravel, concrete stone and sand for mortar, etc., logs for log culverts and log crib work, all of which will be furnished by the contractor, unless otherwise specified by the contract.

330. The contractor will be required to receive and receipt for all material immediately on arrival, and will thereafter be held responsible for its safe keeping until its incorporation in the work. Storehouses or other structures required to shelter the material will be provided by the contractor at his own expense, and the material of the Railroad Company will not be used for this or any purpose other than that for which it is intended.

331. The contractor will be required to handle all material at his own expense, including unloading and loading in cars, and all material must be unloaded from cars within three days after its arrival, unless special authority to the contrary is given by the Engineer.

332. Whenever cross ties, piles, timber or other material is delivered along the line of the road, the contractors must do the hauling required to put it in place, including loading in cars when necessary.

333. The Railway Company to furnish without charge all necessary train service, including crews and supplies, required for track laying, ballasting and hauling material, except iron cars, boarding cars and fuel and supplies for steam shovels, but the amount and kind to be furnished will be at the discretion of the Railroad Company. The train service will be controlled by the Engineer or such person as he may designate.

334. It is distinctly understood that the quantities of work estimated are approximate only, and the Railroad Company reserves the right to have built only such kinds and quantities and according to such plans as the nature or economy of the work, in the opinion of the Engineer, may require.

335. The contractor, at his own cost, must provide all wagon roads to reach and carry on the work; he must also provide all tools of every description and all supplies required for the prosecution of the work.

336. Any omission to disapprove of work at the time of making any monthly or other estimate, will not be construed as an acceptance of any defective work, and the contractor must remove and rebuild, or make good at his own cost, any work which the Engineer may consider to be defectively executed.

337. It is expressly understood that all work of any character performed for the Railroad Company, under these specifications, must be satisfactory to the Engineer in charge of the work, and to the Chief Engineer.

338. The price paid for buildings, water tanks, turn tables, depots, section houses, and other standard structures, will be held to include the foundations, according to these plans; and it will be understood that the specifications for concrete, rubble masonry, etc., and the prices which govern such work, are intended to cover additional work of the same character which may be required and is not shown upon the plans.

SPECIAL SPECIFICATIONS FOR TRACK LAYING AND SURFACING.

Track will be laid with second-class steel taken from the main line.

All steel shall be unloaded in material yard as soon as it is received.

The contractor shall be required to assort it so that the rails of eqaul length will be piled together.

Steel that is not fit for main line will be piled by itself and used for sidings and wyes.

All curved steel must be straightened, or piled so that it will fit the curves to be laid.

The straightening of curved steel must be done before sending it to thefront.

Asssoon as each ten miles of track are laid, or oftener if necessary, the contractor will be required to pick up material, including both steel and ties, that has been found undit for main track, and use it for sidings, etc., or pile it up in its proper place in the material yard.

Highway crossings will generally be constructed with old rails and put in according to standard plan.

Filling between crossing rails with gravel or other desirable material will be considered a part of the track laying.

Ties will be gernerally received in box cars, and contractor will be required to unload them in yard as soon as received.

Surfacing will be held to include the original surfacing of track and the maintenance of same while construction is in progress, and keeping the track in safe condition for passage of construction and other trains necessary to handle traffic offered. It shall also include a final adjustment of surface and line, so as to put it in condition to be accepted by the Railway Company.

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

232 Unrep 8 Pais 8/6p

RECEIVED at

Received JAN 19 9- 19 PM 1904

Spokane Wn Jan 11

E J Parson N.P.Ry Spokane Wn

See Foley Brothers My letter

should have reached them

P. Welch

Form No. 260.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

ROBERT C. CLOWRY, President and General Manager.

Receiver's No.	Time Filed	Check

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

St. paul, Minn. Jan. 11, 1904.

Mr. P. Welsh,
c/o Foley Bros. Larson & Co.,
Spokane, Wash.

Your message 7th. When may I expect reply?

E. J. Pearson.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it REPEATED; that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

ROBERT C. CLOWRY, President and General Manager.

Form No. 260.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

22,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

ROBERT C. CLOWRY, President and General Manager.

Receiver's No.	Time Filed	Check
	3:25 P. M.	

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

Spokane, Washington, Jan. 7th 1904

E. J. Pearson,
Northern Pacific Railway Company,
St. Paul, Minn.

Hold offer. Expect Peter Larson tomorrow. Am writing Foley.

P. Welch

TIME FILED 3:25 P.M. (PREPAID)

Confirmation of Telegram.
FOLEY BROS., LARSON & CO.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it REPEATED; that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

ROBERT C. CLOWRY, President and General Manager.

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at 13 Jun 11 By 9 paid

Spokane Wn June 5 1897

E J Pearson

Northern pacific R R Co

St Paul

Hold offer Expect peter Larson
to morrow Am writing Foley
Welch

Form No. 260.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

ROBERT C. CLOWRY, President and General Manager.

Receiver's No.	Time Filed	Check
		Frank No. 5233.

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

P. Welch,

Care of Foley Brothers & Larsen, Contractors,

Spokane, Wash.

Careful investigation confirms accuracy of measurements. On borrow and classification under terms you stated I am willing to allow one thousand seven hundred seventy seven dollars additional. Advise if accepted and claims withdrawn.

E. J. Pearson.

EJP-M

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it REPEATED; that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

ROBERT C. CLOWRY, President and General Manager.

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J. PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn. 1—7—04

Mr E. J Pearson
acting Chief Engr

Dear Sir:—

I attach detailed report on Carter City - Adrian line. I consider the estimate as correct with the following exceptions.

Sta 229-234 add 5540 cubyds borrow @ 17¢ 941,80
" 332-415 Change 2645 " " Common to L.R. @ 18¢ 476.10
" 1052-1087 " 2000 " " " " " " " " 360.00
4600
740

$1777,80

The amount of overhaul, as a whole, is correct
M.E.R.

M. E. Rust
Asst Engr
A. D Ball Asst. Engr

COP. 1176

EJP-M

January 5, 1904.

Mr. M. E. Reed:-

Let me have sketch showing the way overhaul was figured on the Coulee City-Adrian extension.

E. J. Pearson.

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J. PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn. 12/31 03

Mr E. J. Pearson
acting Chief Engineer
St Paul.

Dear Sir:—

Following your instructions of Dec 2nd I have made an examination of the Custer City - Adrian extension of the Washington Central Ry, having in mind especially the subjects of classification and measurment of quantities. After going over the line with Mr Ball on Dec 8–10 I called on Mr Walsh, Supt for the Contractors, Foley Bros & Larson, in order to get a detailed statement of the grievances of the sub-contractors but obtained little information not given in Mr Walsh's letter to you of Nov 23rd. I was also present at an interview between Mr Walsh and yourself on Dec 22nd I have also examined the final record notes, re-cross section sheets and final estimates and would submit the following report:—

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J. PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn.

1st Classification

I find that instructions of Chief Engineer Darling to Asst Engr Ball were carried out as far as they covered (see N.L. Dis letter of July 5th) In his letter to Mr Ball of Aug. 3rd Mr Darling says "I agree with it all (i.e. classification) except the following" specifying several changes in classification which changes were afterwards made by Mr Ball in his revised final estimate. This, as I take it, places the matter of classification directly in Mr Darlings hand except as to the quantities which were added after Aug 3rd due to the re cross sectioning of the work. The classification of these additional quantities was made to conform to Mr Darlings letter to Ball of May 6th instructing that ½ the overbreak should be solid rock and ½ loose rock. Therefore Mr Darlings instructions as to classification were carried out. I also am of the opinion that as a whole this classification was fair both

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn.

to the contractor and the Company

Replying to Mr Walsh's letter to you of Nov 23 in detail:-

Sta 0-267+50. "Yardage and classification far below what ground shows" W. Where solid rock was in place it was calculated from the cross section notes, not estimated as a percentage of the cut. Boulders were estimated as solid rock although a large proportion of them did not measure 1 cub yd.

Sta. 332-415 "Mr Darling instructed better classification" W. About 22% of this borrow was estimated as loose rock and this classification approved by Mr Darling in his letter to Ball of Aug 3rd. I am of the opinion that this borrow might warrant a little higher percentage of loose rock. say 40% (changing 2695 cub yds from earth to loose rock)

Sta 495-510 "Darling promised 5000 cub yds solid rock" The estimate of 4000 cub yds solid rock was accepted by Mr Darling in his letter

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J PEARSON,
ACTING CHIEF ENGINEER,

St. Paul, Minn.

of Aug 3rd in which letter he reduces the loose rock in this cut from 10000. cub yds to 6480 cub yds.

Sta. 1052–1087 "Mr Darling instructed entire borrow as loose rock" See letter of Aug 3rd in which Mr Darling reduces Balls estimate of 8000. cub yds loose rock to 6000. cub yds.

(Rain clds to 8000 M.&R.)

2nd Correct measurment.

After comparing carefully the re-cross section notes taken by Resident Engr Saunders, under direction of Mr Ball with the original cross sections taken by Messrs Ball and Balcom and with the ground as I examined it, I am of the opinion that the final measurment was taken with exceptional care. A party of from four to six men were employed on this work for about two months The cross sections were taken at more frequent intervals than is customary, often less than ten feet apart. The method

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J PEARSON,
ACTING CHIEF ENGINEER,

St. Paul, Minn.

of doing the field work as the customary one and the cross section notes have all been plotted. I have checked an occasional calculation to satisfy myself that the results are probably correct. These cross sections cover all the cuts where there was overbreak as well as some of the fills which were not filled out to the slope stakes.

When it comes to the question of overhaul, limit of haul and borrow there is a question of doubt.

The original mass diagram was destroyed by mistake and I have been replotting the haul and do not check the estimated quantities. I find that Mr Balls method of calculating overhaul was incorrect ~~and~~ and the results I get are in excess though the difference is not great.

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn.

In regard to limit of haul and borrow, the question comes up as to what were the engineers instructions. Mr Ball says it was understood by the contractors that where material was wasted the corresponding borrow should be made by the contractor at their own expense and that the quantities of borrow were to be estimated in the embankment and not measured in the borrow pits. On the other hand the contractors claim that the borrow pits were in many cases actually measured by the engineer and under the contract should be estimated on borrow pit measurments.

Take borrow at Sta 229–234

Borrow measured in borrow pits	=	21670. cub Yds
" estimated in embankment		13130 " "
Diffrence		8540. " "
Rock wasted from cut at sta 216-224 about		3000 " "
		5540 " "

This leaves 5540 cub yds of borrow at this

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J. PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn.

point which should be estimated. Part of this difference is due to the compacting of the borrow when placed in the fill by trains and subsequently loaded with the rock from the cut.

Eslick Hartnett and Chews June estimate compared with their revised final estimate.

	Solid Rock	Loose Rock	Common Ex.	Overhaul	TOTAL	Borrow
June Estimate	39,396	6991	81469	192540	127856	68,076
Final "	44317	16150	63554	230120	124021	59,416
Difference	+ 4921	+9159	-17915	+ 37,580	- 3835	- 8660

1) The explanation of the decrease of total quantities is that the fills, where borrow was estimated, were found not filled out to the slope stakes (See Sta 211-216 and 223-236.)

2) The decrease in yardage is also accounted for in part by the change of classification from loose rock to solid rock ~~in the over break~~. A cut estimated as originally as loose rock ~~would~~ was assumed

(8)

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J. PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn.

to have made an equal volume in the fill, after classification was raised, one cubic yard of solid rock was assumed to have made one & one half cubic yard in the fill and so estimated.

3) Also:- one cubic yard of solid rock added as by the re-crossection and over-break would diminish the theoretical borrow one & one half cubic yards

Summary:-

1 Classification in accord with Mr Darlings instruction

2 Classification in accord with the facts except at Sta 332-415 & 1052-1087 where I should recommend slightly higher classification

3 Re cross section of work is probably correct

4 Borrow at Sta 229-234 should be measured in the borrow pits with a reasonable deduction for material wasted from cut Sta 216-224.

Yours truly

W. E. Reed. Asst Engr

Form 25c 76½

Northern Pacific Railway Company.

Ewan Calif 12/10/03

ME Reed Asst Engr.

Explanation of Diff of Vonow at Sta 228 is as follows.

Reverse section of fill at Sta 216 gives 700 less than before

do do do Sta 228 do 1300 " " "

Allowance of one bank in Cut at 226 gives 4,400 More " "

Total 6400

The waste in cut bank in cut 238-249 gives 600 more " "

Total 7000

This makes Theoretical Vonow of 13130 in stead of 20100 Cy.

G D Ball A.E.

12603
240
412
13255

O 12,865 SR

F 14702 2379 0

O = 12603 LR-240-E412

16771
13255
3000

12603

23210 Asbund
21607 Arapart

10.210
13000

13701
3864
450
17073

16771
12865
3406
1700
1850
4250

1000
1500
2500

17371

Form 290

Northern Pacific Railway Company.

Statement of Asst Engr Ball.

E.P. & C. Chas

Contractors allowed to waste Sta 6 to 9 and borrow in fill at 20 to haul on work

Wasted much of the roadbed and scratch work on just 1½ miles for the same reason.

Contractors permitted to waste unsuitable of cut at Sta 104 instead of hauling east.

Wasted at cut Sta 220 with the understanding they should borrow to replace. Claimed they could not work it from face but obliged to put in "Coyote" holes and blow it over board.

E.P. & C. allowed to put in bottom of fill at Sta 264 the borrowed material of to extend over on to P.P. Johnsons work - instead of putting all this material in their section which ended at 264 and putting that part up to grade.

P.P. Johnson.

Permitted to waste cut at 330 and borrow to make good.

Johnson & Anderson

Permitted to waste unsuitable material cut at 546 and borrow close to fill.

Same at 556.

Form 290

Northern Pacific Railway Company.

Johnson + Peterson -

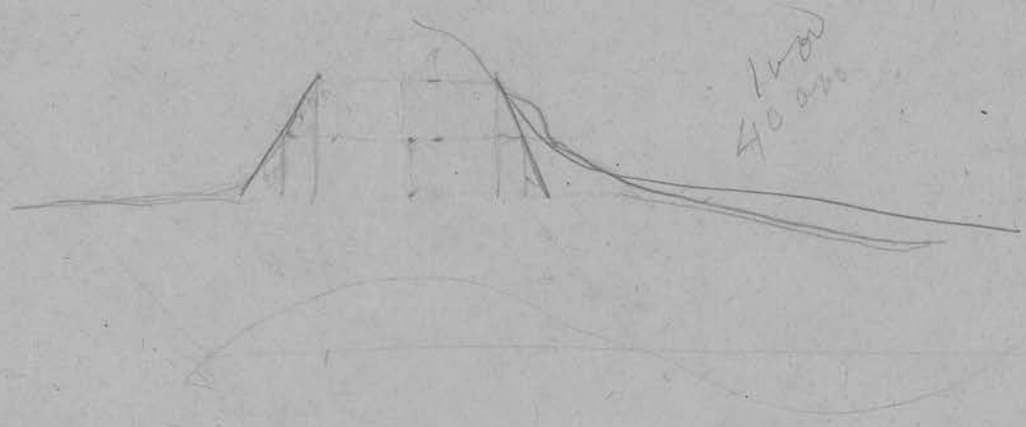
Allowed to waste cut at 8+66 and borrow close to fill east of there to Sta 8+41.

V. W Smith

Allowed to haul cut at 900 west and borrow at 885 with understanding cut was to be figured as going both ways.
Practically the same at 9+35

Johnson + Brandt.

Allowed to waste material at 10+45 and borrow close to fill. East of there.



8-02 2M StP

Form 94

NOTE.—Each Resident Engineer will make out this estimate in duplicate (written with copying ink) at the end of each month, forwarding both copies to Assistant Engineer, who will consolidate all for his line in one blank, and then forward one copy of each Resident Engineer's estimate and the consolidated estimate with Form 108 to Division Engineer.

Washington Central RAILWAY.

Coulee City to Adrian Division. 1st & 2nd Residency. Foley Bros & Peter Larson Contractor.

Estimate No. 17 Final of Work Done, from Section 1 to Section 2 & 1 inclusive, for the Month of October

SECTION	STATION From	STATION To	SUB-CONTRACTOR	CLEARING. Light — Acres: Total Work to Date	Previous Estimates	Present Estimate	GRUBBING. Hauling Culvert Pipe, tons per mile: Total Work to Date	Previous Estimates	Present Estimate	SOLID ROCK EXCAVATION Cubic Yards: Total Work to Date	Previous Estimates	Present Estimate	LOOSE ROCK EXCAVATION Cubic Yards: Total Work to Date	Previous Estimates	Present Estimate	Laying 24" Culvert Pipe, per lin.ft.: Total Work to Date	Previous Estimates	Present Estimate	EARTH EXCAVATION Cubic Yards: Total Work to Date	Previous Estimates	Present Estimate	EXTRA HAUL Cubic Yards—Per 100 Feet: Total Work to Date	Previous Estimates	Present Estimate
1	0	52+80	Eslick Hartnett & Chew				12	12		2355	2355		2662	2662		72	72		2037	2037		14380	14380	
2		105+60	" " "				8	8		818	818		353	353		44	44		2125	2125		11810	11810	
3		158+40	" " "				51	51		2806	2806		289	289		208	208		22036	22036		7720	7720	
4		211+20	" " "							18554	18544	10	3988	3981	7				10608	10608		83200	83200	
5		264	" " "							19784	19684	100	9458	9458		90	90		24175	18635	5540	113010	113010	
6		267+30	" " "																8113	8113				
6		316+80	A. P. Johnson & Co.	0.3	0.3					44027	44027		14116	14116					3005	3005		222180	222180	
7		366+43	" " "	0.4	0.4					1600	1600		7883	5238	2645				18640	21285	2645	630	630	
8		415+40	" " "	2.0	2.0					197	197		887	887					8036	8036		2730	2730	
8		419+23	Johnson & Braudt	0.2	0.2					2	2								2990	2990				
9		472+03	" "	2.6	2.6					2624	2624		353	353					17497	17497				
10		528	" "	5.1	5.1					4165	4165		6480	6480					18379	18379		319140	319140	
11		570	Johnson & Anderson	2.1	2.1					1259	1259		232	232		100	100		15793	15793		3250	3250	
12		625+78	" "							27085	25880	1205	2040	3900	1860	40	40		790	280	510	38200	34000	4200
13		646	" "							24571	24400	171	6507	6300	207				2500	2500		57000	40000	17000
13		678+34	Larson & Chindahl							23395	22980	1315	4904	1070	3834	82	80	2	2721	3330	609	35280	33000	2280
14		731+22	Burns & Jordon Totals							37539	35850	1689	15858	11220	4638				10995	10380	615	27720	20000	7720
15		765	Burns & Jordon							20654	18620	2034	7257	5650	1607	60	60		7996	6900	1096	1000	1000	
15		781+89	Johnson & Peterson							6024	5860	164	427	830	403				656	870	214	1650	1000	650
16		834+69	" "							6101	5590	511	1393	1030	363	92	80	12	13206	14280	1074	70970	65000	5970
17		885											300	300					10695	10695		36430	36430	
18		937+82	V. W. Smith	2.0	2.0								2700	2700		64	60	4	18124	18124		69630	69630	
19		990+62	" "	2.0	2.0					7625	7625		4296	4165	131				8163	8235	72	58550	58550	
20		1022+50	" "	0.6	0.6					16	16		2900	2900					4077	4077		18300	18300	
20		1043+92	Johnson & Braudt	1.0	1.0								364	364					1200	1200		5490	5490	
21		1097+37.5	" "							20	20		8678	6678	2000				11057	13057	2000	42550	42550	
5			J. H. Cunningham				47	47																
11			" "				95	95																
12			" "				40	40																
14			" "				95	95																
15			" "				80	80																
17			" "				140	140																
19			" "				116	116																
			Totals.	18.3	18.3		684	684		251221.244022.		7199.	103725	90556	13169	852	834	18	245614	244467	1147	1240820	1203000	37820

SECTION	STATION From	STATION To	SUB-CONTRACTOR	Sawed timber in structure — F.B.M.: Total Work to Date	Previous Estimates	Present Estimate
7	Bridge	1	Snow Dowd & Co	17149	17100	49
9		2	" " "	23230	23200	30
12		3	" " "	206645	206200	445
13		4	" " "	298608	298600	8
13		5	" " "	235630	235600	30
14		6	" " "	137033	138900	1867
15		7	" " "	122125	122100	25
15		8	" " "	175495	175400	95
15		9	" " "	145807	145800	7
21		10	" " "	31385	31300	85
			Totals.	1393107	1394200	1093

Examined and Approved:

G. D. Ball. Assistant Engineer

I Hereby Certify that the above Estimate is Correct:

Resident Engineer.

Form 94.

_____ RAILWAY.

Section _____

To _____

Estimate No. _____

_____

Contractor.

P. P. Johnson & Co's Work.

Hors & Cart
Teams
Contract
Line

1176

Labor	4	0	7	4	0	2	9
Explosives		9	8	7	4	5	6
Measelaneous		1	0	5	6	1	8
Timber Planks and Lumber used on work			4	9	8	8	3
Shovels & Picks bought on the work			3	2	4	3	0
1/2 the Steels Drills " " " "			1	4	0	4	7
Office Material				3	6	9	0
Freight charges to ship to the work less $100 charged to Kitchen Outfit			6	6	2	4	0
$	5	3	3	3	3	9	3

The above does not include anything connected with the boarding dept ~~or~~ or building the camp except the Barn, Blacksmith shop powder house etc.

Superseded

3-02 2M StP

NOTE.—Each Resident Engineer will make out this estimate in duplicate (written with copying ink) at the end of each month, forwarding both copies to Assistant Engineer, who will consolidate all for his line in one blank, and then forward one copy of each Resident Engineer's estimate and the consolidated estimate with Form 108 to Division Engineer.

Washington Central RAILWAY.

Form 94

Coulee City to Adrain Division. 1 & 2 Residency. Foley Bros and Peter Larson Contractor.

Estimate No. 12 Final of Work Done, from Section 1 to Section 21 inclusive, for the Month of October 1903

Light

SECTION	STATION From	STATION To	SUB-CONTRACTOR	CLEARING ACRES Total Work to Date	CLEARING Previous Estimates	CLEARING Present Estimate	GRUBBING Stumps over 100 Feet Total Work to Date	GRUBBING Previous Estimates	GRUBBING Present Estimate	SOLID ROCK EXCAVATION Cubic Yards Total Work to Date	SOLID ROCK EXCAVATION Previous Estimates	SOLID ROCK EXCAVATION Present Estimate	LOOSE ROCK EXCAVATION Cubic Yards Total Work to Date	LOOSE ROCK EXCAVATION Previous Estimates	LOOSE ROCK EXCAVATION Present Estimate	Laying 24" V.S. Lined feet Total Work to Date	Laying 24" V.S. Lined feet Previous Estimates	Laying 24" V.S. Lined feet Present Estimate	EARTH EXCAVATION Cubic Yards Total Work to Date	EARTH EXCAVATION Previous Estimates	EARTH EXCAVATION Present Estimate	EXTRA HAUL Cubic Yards—Per 100 Feet Total Work to Date	EXTRA HAUL Previous Estimates	EXTRA HAUL Present Estimate
1	0	52+80	Eslick Hartnett & Chew				12	12		2355	2355		2062	2062		72	72		2037	2037		14380	14380	
2		105+60	✓				8	8		818	818		353	353		44	44		2175	2175		11810	11810	
3		158+40	✓				51	51		2806	2806		289	289		208	208		22036	22036		7720	7720	
4		211+20	✓							18554	18544	10	3988	3981	7				10608	10608		83200	83200	
5		264	✓							19784	19684	100	9458	9458		90	90		18635	18635		113010	113010	
6		267+30	✓																8113	8113				
6		316+80	P. P. Johnson & Co.	0.3	0.3					44027	44027		14116	14116					3005	3005		22218022180		
7		366+43Z	✓	0.4	0.4					1600	1600		5238	5238					21285	21285		630	630	
8		415+40	✓	2.0	2.0					197	197		887	887					8036	8036		2730	2730	
8		419+23Z	Johnson & Brandt	0.2	0.2														2990	2990				
9		472+03Z	✓	2.6	2.6					2624	2624		353	353					17497	17497				
10		528	✓	5.1	5.1					4165	4165		6480	6480					18379	18379		319140	319140	
11		570	Johnson & Anderson	2.1	2.1					1259	1259		232	232		100	100		15793	15793		3250	3250	
12		625+78C	✓							27085	25880	1205	2040	3900	1860	40	40		790	280	510	38200	34000	4200
13		646	✓							24571	24400	171	6507	6300	207				2500	2500		57000	40000	17000
13		678+34S	Larson & Chindahl							23395	22080	1315	4904	1070	3834	82	80	2	2721	3330	609	35280	33000	2280
14		731+22C	Burns & Jordan							37539	35850	1689	15858	11220	4638				10995	10380	615	27720	20000	7720
15		765	Burns & Jordan							20654	18620	2034	7257	5650	1607	60	60		7996	6900	1096	1000	1000	
15		781+89Z	Johnson & Peterson							6024	5860	164	427	830	403				656	870	214	1650	1000	650
16		834+69Z	✓							6101	5590	511	1393	1030	363				13206	14280	1074	70970	65000	5970
17		885	✓										300	300		92	80	12	10695	10695		36430	36430	
18		937+82L	V. W. Smith	2.0	2.0								2700	2700					18124	18124		69630	69630	
19		990+62L	✓	2.0	2.0					7625	7625		4296	4165	131	64	60	4	8163	8235	72	58550	58550	
20		1022+50	✓	0.6	0.6					16	16		2900	2900					4077	4077		18300	18300	
20		1043+42	Johnson & Brandt	1.0	1.0								364	364					1200	1200		5490	5490	
21		1097+35L	✓							20	20		6678	6678					13057	13057		42550	42550	
5			J. H. Cunningham				47	47																
11			✓				95	95																
12			✓				40	40																
14			✓				95	95																
15			✓				80	80																
17			✓				140	140																
19			✓				116	116																
			Totals,	18.3	18.3		684	684		251221	244077	7199	99080	90556	8524	852	834	18	244719	244467	252	1240820	1203000	37820

Sawed Timber in Structures Sect B 11

SECTION	STATION From	STATION To	SUB-CONTRACTOR	Total Work to Date	Previous Estimates	Present Estimate
7	Bridge	1	Snow Dowd & Co.	17149	17100	49
9	"	2	✓	23230	23200	30
12	"	3	✓	206645	206200	445
13	"	4	✓	29808	29800	8
13	"	5	✓	23630	23600	30
14	"	6	✓	139033	138900	1867
15	"	7	✓	12225	12200	25
15	"	8	✓	17595	17500	95
15	"	9	✓	14507	14500	7
21	"	10	✓	31385	31300	85
			Totals,	139307	139400	1093

Superseded
New form made

Examined and Approved:

M. D. Bell
Assistant Engineer.

I Hereby Certify that the above Estimate is Correct:

Resident Engineer.

Form 94.

W C RAILWAY.

Section Coville City

To Adrian

Estimate No. 12 and Final

Foley Bros. Eng Peter Foley
Contractor.

3-02 500 S

Form 108

Washington Central RAILWAY COMPANY.

Coulee City to Adrian Division. Foley Bros. & Peter Sorenson Contractor.

Estimate No. 2nd & Final of Work for the Month of September 1903, under Contract dated Sept. 22, 1902

CLASSIFICATION		CONTRACT PRICE	TOTAL WORK TO DATE Quantities	TOTAL WORK TO DATE Amount	PREVIOUS ESTIMATES Quantities	PREVIOUS ESTIMATES Amount	THIS ESTIMATE Quantities	THIS ESTIMATE Amount
Clearing,	per acre,	10 00	18 3/10	183 00	18 3/10	183 00		
Grubbing,	per station,							
Excavation—Earth,	per cu. yard,	17	245614	41754 38	244467	41559 39	1147	194 99
do Solid Rock,	do	80	251221	200976 80	244022	195217 60	7199	5759 20
do Loose Rock,	do	35	103725	36303 75	90556	31694 60	13169	4609 15
do	do							
do	do							
do Tunnel, without lining,	per lin. ft.,							
do Tunnel, extra, when lined,	per cu. yard,							
Extra haul,	per cu. yard,	01	1240820	12408 20	1203000	12030 00	37820	378 20
Grib Filling,	per cu. yard,							
Culvert Masonry,	per cu. yard,							
Slope Wall,	per cu. yard,							
Riprap in place,	do							
Blind Drains,	do							
Piles delivered, driven, &c., complete in Structure,	per lin. ft.,							
Timber, sawed, complete in structure,	per M. ft. B. M.,	8 50	1393107	11841 41	1394200	11850 70	1093	929
do hewed or sawed, in crib work,	do							
do do do in abutments and piers,	do							
Plank, complete in structure,	do							
Truss Bridge,								
Hauling Culvert pipe, per ton per mile		40	684	27360	684	27360		
Laying 24" vitrified pipe, per lineal ft.		25	852	21300	834	20850	18	450
Log Crib Work,	per lin. ft. of log,							
Log Culverts,	do							
Timber Culverts,	per M. ft. B. M.,							
Cattle Guards,	do							
Road Crossings,	do							
Charge; Open Accts., 7.592 (1902) W.C. Extn., C.C. to Ad.								
Grading			11210.49					
B.T.+C.			8.65					
T. L.+S.			13.75	11,233.09				
T.B.+P.L. a/c Cont.				30,239.54				
				$41,472.63				
Track Laying, Main Track,	per mile,							
do Side Track,	do							
Surfacing,	do							
Ballasting,	per cu. yard,							
Extra Work, per force account,				96063		93804		2259
" " " " " Refund of fares covered by Pass 14732, June 10, 1903, 11 men, Spokane to Coulee City, @ 125				1375				1375
				$31362852		$30239543		$1123309
	.....% Retained,				.....% Retained, Former Payments,	30239 54	.....% Retained, Due on this Est.,	30239 54
	Balance,			31362852		27215589		4147263

COPY as attached to final Est. HHC 1/20/1904

I certify the above estimate is correct.

.....

.....Engineer.

Coulee City Wn Oct 21st '03

Washington Central Ry Co

To Foley Bros & Larson Dr

To force account as follows:—

Per Larson & Chisholm

Excavating trestle pits at Station 657+50.

7 Days Foreman @	3.50	24.50	
110 Days Labor @	2.00	220.00	
Add 10 %		24.45	268.95

Per Snow Dowd & Co

Readjusting bent 16 Bridge 9

2 Days Carpenter @	3.25	6.50	
3/10 " Foreman @	4.00	1.20	
Add 10 %		7.7	8.47

Readjusting bent 13 Bridge #7

11.2 days Carpenter @	3.25	39.0	
0.2 " Foreman @	4.00	8.0	
Add 10 %		4.7	51.7
			$347.59

CORRECT:
Charge Washington Central Ry.,
Coulee City to Adrian.

Sub account Grading 268.95
Bridges 13.64
..... $347.59
.....
.....

Copy

CORRECT:

Charge Washington Central Ry.,

Coulee City to Adrian.

Sub account Grading 94 32 59

B Trestles & Culverts ... 8 6 85

..... 94 44

..... 41

.....

3-02 500 S

Form 108

Superseded

Washington Central RAILWAY COMPANY.

Oakville City to Adiaw Division.

Estimate No 17- Final of Work for the Month of October 1903, under Contract dated Oct 22 - 1902

Daley Bros & Peter Larson Contractor.

CLASSIFICATION		CONTRACT PRICE	TOTAL WORK TO DATE Quantities	TOTAL WORK TO DATE Amount	PREVIOUS ESTIMATES Quantities	PREVIOUS ESTIMATES Amount	THIS ESTIMATE Quantities	THIS ESTIMATE Amount
Clearing,	per acre,		18 3/10	18300	18 3/10	18300		
Grubbing,	per station,							
Excavation—Earth,	per cu. yard,	17	744719	416073	744467	415539	252	534
do Solid Rock,	do	80	251221	2009680	244022	1952160	7199	57520
do Loose Rock,	do	35	99080	346780	90556	316960	8524	29820
do	do							
do	do							
do Tunnel, without lining,	per lin. ft.,							
do Tunnel, extra, when lined,	per cu. yard,							
Extra haul,	per cu. yard,	01	1740820	17408 20	1703000	120300 00	37820	378 20
Grib Filling,	per cu. yard,							
Culvert Masonry,	per cu. yard,							
Slope Wall,	per cu. yard,							
Riprap in place,	do							
Blind Drains,	do							
Piles delivered, driven, &c., complete in Structure,	per lin. ft.,							
Timber, sawed, complete in structure,	per M. ft. B. M.,	850	1393107	1184141	1394200	1185070	1093	929
do hewed or sawed, in crib work,	do							
do do do in abutments and piers,	do							
Plank, complete in structure,	do							
Truss Bridge.								
Hauling Culvert Pipe.	Per ton per mile	40	684	27360	684	27360		
Laying 24" Vitrified Pipe	Per lineal foot.	25	857	21300	834	20850	18	450
Log Crib Work,	per lin. ft. of log,							
Log Culverts,	do							
Timber Culverts,	per M. ft. B. M.,							
Cattle Guards,	do							
Road Crossings,	do							
Track Laying, Main Track,	per mile,							
do Side Track,	do							
Surfacing,	do							
Ballasting,	per cu. yard,							
Extra Work, per force account,			966063		937804			28259

I certify the above estimate is correct.

G. D. Ball

Cust. Engineer.

Contract Completed Sept 13- 1903

	$311836 87		$302395 43	$ 944144
....% Retained,		..10....% Retained, Former Payments,	30239 54	..10....% Retained, Due on this Est.,	30239 54
Balance,	311836 87		272155 89		3968098

Northern Pacific Railway Company.

1

Office of the Chief Engineer.

W. L. DARLING,
CHIEF ENGINEER.

St. Paul, Minn.

June Estimate as vouchered

(1.)

Earth	295,140 c.y.	@ 17¢ =	50,173
Solid Rock	223,680 " "	@ 80¢ =	178,944
Loose "	46,690 " "	@ 35¢ =	16,342
Total	565,510 "		
Om Haul	1,163,000 " "	@ 1¢ =	11,630
	TOTAL		$257,089

Revised approximate Est. Submitted by Mr Ball to Mr. Darling 7/30

(2.)

Earth	238,442 Cy.	@ 17¢ =	40,535
Solid R.	243,003 "	" 80¢ =	194,402
Loose R.	91,732 "	" 35¢ =	32,106
	573,177 "		
Omhaul	1,212,140 "	" 1¢ =	12,121
	TOTAL		$279,164

Increase of (2.) over (1.) $22,075

Mr. Darling corrected classification of (2) reducing amount of same approx $2,000

Final revised Estimate as returned by Ball.

(3.)

Earth	244,719 c.y.	@ 17¢ =	$41,602
Solid R.	251,221 " "	" 80¢ =	200,977
Loose R.	99,080 " "	" 35¢ =	34,678
	595,020		
Omhaul	1,240,820 " "	1¢ =	12,408
	TOTAL		$289,665

Northern Pacific Railway Company.

Office of the Chief Engineer.

W. L. DARLING,
CHIEF ENGINEER.

St. Paul, Minn.

Increase of (3.) over (1.) = $ 32,576
" " (3) " (2.) = 10,501
" " (3) " (1.)
Increased yardage of (3.) over (1.) (30,256)
29,510

See note below.

Ball's Explanation.

$4606 increase of (3.) over (2.) due to incorrect Estimate of Ball's ~~Chas~~ in his figures of July 30.

$ 7,963 increase of (3) over (2) due to fact that (2) was based on Estimate of C.C. Boleom which were found to be wrong on recross sectioning

There is a discrepancy between (1.) above as vouchered. and original Trial Est. (Corresponding to June Est) which he refers to. His statements show figures as follows for (1.)

Earth	295,264 Cy.	@ 17¢ =	50,195
Solid R.	225,029 "	@ 80¢ =	180,023
Loose R.	49,130 "	@ 35¢ =	17,196
	569,423		
Overhaul	1,199,530 "	@ 1¢ =	11,995
		TOTAL	$ 259,409

12/12 nd / 03 — on 104

Welch
Reed
EJP
} Not treated ugh
on 1st 8 miles —
Erlick Hartnett + Chew
had sta 0 - 265
P.P. Johnson + Co sta 265 - 420
Ball - Resd Engr. on
1st 10 miles —
Darling read letter about
classification to welch.
Weathercock one line
with NLD + considers
NLD ties to be fair —

(2)

Welch thinks guarantees on E.H.+C. incorrect Measures —

so far as Foley Bros. + Lawler Concerned are willing to accept returns but cant say for E.H.+C.

If Clas'n carried out per W.L.D. it would be satisfact'y + think it would to the Subs.

(will verify above)

(3)

Borrow Sta 229 - 234

1st Est 20100 cy
2nd " 13130 "

2nd Est & Final 6970 "

Welch claims borrow commenced and stopped on order of Engr - & claims Taylor agreed with sub to allow borrow & 1st Est was measured in the borrow pit

~~after deductions~~

Welch admits 600 - 700 cy that overboard -

(4) (4½ next)

Above covers all about E.H. & C.

except SEE 4½

Johnson & Co's work.

Ain't expect out from Johnsons.

He thinks cuts not proper remeasured —

only kick really on most of casing is that work only measured once while others had ~~none~~ increases due to remeasurements.

(Look this up)

(442)

E&H claim that yardage in bonus sta 260 - 270. verify by final record + if req by remeasurement

(8)

Borrow Sta. 332-415
WLA Just's fair amt
Loose R -
was given approx avg
of 22 d/o - Welch
claims 40 d/o as
fair avg -
Sta 333-335 - 1/2 LR
1/2 E Welch
thinks liberal
(1866 2.64)
Sta 335-350 ± 20 d/o given. Welch
thinks should be 40 d/o
Sta 350-372 - W.L.D. says
nothing - 90% Earth allowed
10% L.R.

(6)

Sta 372-393 - WLD says
1/2 LR which was
given - Welch
thinks Q 16,
(See if more L.R. justly due, Reed thinks perhaps)
Cut 494-510
thinks WLD Made
his only mistake on
this cut. See Doyle +
investigate further if necy.-
Borrow - Sta 100-2-108
Welch agreed to pay
Sub. Wages if not Made
which was done.
Cut made according
to Instrs W.L.D.

(7)

~~Hilt Project~~

Final Statement EH&C

44207	CY	SR - 73	32271.11
16143	"	LR - 33	5327.19
63554	"	E - 15½	9850.87
230120	"	O.H. - 1	2301.20
71 Tons Culvert Pipe - 25			17.75
414 Lin ft 24" V " Pais - 15			62.10
			$49830.22
Contr Cor			-6924.43
Adverse bal			7094.21
Gro pay rolls -			32700.97
Team "			11115.88
Explosives			7693.01
Repair "			1614.65
Fuel "			3799.92
			-16924.43

The pay roll incls cash paid for labor only - Team time consists of actual Cash paid for hired horses & does not incl chgs for Co. horses, nor does above age include charges for use of outfit.

(9)

P Robertson & Co
Cert Contw

Gross payroll -	30341.80
Deduc a/c	10654.83
Expenses	963.26
Repr a/c	1979.86
Gen Exp.	369.39
	6198.64

Final Ent

4582	Cy	SR - 71	3235.04
20241	"	LR - 30	6072.30
32326	"	E - 15	4848.90
22540	"	Oth - 01	2255.40
			21.60
2.7	clearing	@ 8.00	252.38
	Force a/c		48 285.62

As verc Calaucd 7913.02

Some note, "Gross payrolls etc

(10)

Wilcox suggests - cut out all claims other than E.H.&C. & P.P.O.&P.Co. which are only $14.000. - Co. to then allow part & he to then allow further part & make settlements & take care-no suits & such final to be accepted - suggests Co allow

W.E. Ford
Asst Engr

Form 1386

1176

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.
After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM TO

DATED AT

52.BY.R.RO.

Spokane, Wn.Dec.18,1903.

E.J.Pearson,

Seattle, Wn.

Your wire 16th Contractor Welsh advises will meet you at Spokane train Number FOUR Monday night and will accompany you east.

A..Beamer.

1.07.p.m.

Form 1886

NORTHERN PACIFIC

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance. After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	RECD FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		1176

FROM

DATED. BY. R. RO.

TO

AT

Spokane, Wn. Dec. 17, 1903.

E. J. Pearson,

Seattle, Wn.

Your wire 16th Welch out of city expected here on first train from East by G.N. Have wired him if he can be on hand as you desire expect reply this P.M. Will wire on receipt.

A. Beamer.

1.10.p.m.

Form 1386

1176

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				M.		M.			M.		

FROM Seattle, Dec. 16, 1903. TO A. Beamer,

DATED AT Spokane, Wash.

Please communicate with P. Welsh representing Foley Bros & Larson on Coulee City-Adrian ~~xxx~~ work. Advise him I will go east on No. 4 passing Spokane Monday night and would like to have him take same train and ride with me part of the next day. Advise me if he can do so at Seattle and I will arrange transportation.

E. J. Pearson.

To Mr. Reed,

Seattle, Washington.

c/o Engineering Dept.,

N. P. Ry. Co.

FROM
P. WELCH & CO.,
RAILWAY CONTRACTORS.
319-320 PEYTON BLOCK,

SPOKANE, WASH., BOX 1913. PHONE MAIN 1387.

Dec. 11th 1903

Dear Sir:-

Since my conversation with you last evening, I have come to the conclus-ion that a conference between you, Mr. Pearson and myself in St. Paul would not be amiss, as we might devise some plan which would successfully meet the situation and thereby avoid the necessity of the threatened law-suits by our sub-contractors.

Kindly wire me the date of your departure from Seattle for St. Paul and I'll arrange to meet you at the latter point.

Very truly yours,

P. Welch.

P Welsh



Courtesy 1176

THE SPOKANE.

SPOKANE, WASH., Dec 10 1903

Mr E. J. Pearson
Chief Engineer
St Paul

Dear Sir:—

Following your instructions, I left Hoquiam on Dec 3rd, remaining at Spokane until the 7th waiting for Mr Ball. On the 8th & 9th I walked over the Cedar City—Adrian line with him and, to day, had a talk with Mr Walsh, Supt. for Foley Bros & Larson. Mr Walsh expressed much dissatisfaction with the manner in which the work has been handled by the engineers, both Mr Taylor & Mr Ball, and is quite certain that Eslick, Hartnett and Chow will take the matter into the courts and I am also of



THE SPOKANE.

SPOKANE, WASH., 190

the same opinion as the way the estimates have been "juggled" looks bad on the face of it. Though I think there is a reason for each of the changes. I am of the opinion that the last re-crossection is about right and that if any change is to be made in the estimate it will be in the amount of overhaul and borrow. I think this overhaul should be re-calculated. The notes for this are not here but in your office and, if you desire, when I reach St Paul I will take this matter up. I can not give you a comprehensive report until I have a profile showing limits of haul &c and so will delay my report until I reach St Paul. I go



THE SPOKANE.

SPOKANE, WASH., 190

to Hoquiam tonight - and expect to close up that work in a couple of days. This has been delayed in order to permit Res Engr Sweet to complete his final record and some odd jobs such as making a estimate of timber used in wagon road & bridges.

I shall endeavor to send you a comprehensive report of the conditions of the work on the Peninsular Branch when I leave the work after closing my office at Hoquiam I will go to Seattle and get all matters relative to Mr Henry settled as far as I am able. After which I should like to take a trip to my timber claim before coming east. Yours truly

W. E. Reed
Asst Engr

COPY.

1176

EJP

December 7, 1903.

Mr. M. E. Reed, Asst. Engr.,

Care of A. Beamer, Superintendent,

Spokane, Wash.

Dear Sir:-

When you are fully advised in regard to the various matters pertaining to the Coulee City-Adrian line, I want you to meet Foley Bros. & Larsen's Superintendent, headquarters Spokane, so that he may be fully heard regarding this. Want to be sure that you have all of his complaints so that when you make report to me you can let me know what they are in detail, and what the facts regarding them are. Also want Mr. Welch to understand that he has had full opportunity to present such matters as he wishes.

Yours truly,

Acting Chief Engineer.

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at

Frank No. 6413.

St.Paul, Dec. 5, 1903.

P. Welch,
Care of Foley Bros. & Larsen, Contractors,
Spokane, Wash.

Detailed estimate held account complaints pending reinvestigation of estimate which is now underway. Messrs. Foley and Larsen called at my office yesterday, this was explained to them, and was satisfactory.

E. J. Pearson.

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at

163 UN QG D 13 Paid

Spokane, Wash., Dec. 3, 1903.

592

E. J. Pearson,

Acting Chief Engineer, St.Paul, Minn.

Still waiting for detailed estimate primised your wire October thirtieth in few days.

Folley Bros Larson Co.

5:18pm

Mr Pearson this was not sent to me and I suppose cannot be until estimate has been gone over by Supt + Asst Supt BMM 12/4

COPY.

EJP-M

December 3, 1903.

Mr. W. L. Darling,

Chief Engineer, C.R.I & P.Ry.,

Chicago, Ill.

Dear Sir:-

I beg to acknowledge and thank you for yours of the 30th ultimo relating to the Coulee City-Adrian work. I also think that Mr. Ball has carried out your instructions properly, and am looking into the matter to confirm the same.

Yours very truly,

Acting Chief Engineer.

COPY. 1176

EJP

On Dakota Division, December 2, 1903.

Mr. G. D. Ball,

Assistant Engineer,

C/o Superintendent, Spokane, Wash.

Dear Sir:-

I shall be glad to have you give Mr. Reed freely all information and assistance concerning the Coulee City-Adrian estimates that is possible, and assure you that while Mr. Reed has instructions to carefully and thoroughly investigate all matters pertaining to these estimates, that endeavor will be made to handle the same fairly, and with full record as to the actual facts, in which I am sure you will gladly co-operate.

In addition, as Mr. Reed and yourself work over the line, I will be glad if you will prepare a statement, and cover in detail the various points where the Contractors have not performed their work satisfactorily under their contract, and any favors or concessions that have been extended them. Such a complete list in detail will enable me in handling the final settlement with them to present the other side of the case, and to show that this is not entirely a case in which the Contractors have had all the difficulties, have done nothing but what they should, and have not been generously given concessions heretofore providing such is the case.

Yours truly,

Acting Chief Engineer.

COPY.

EJP

On Yellowstone Division, December 2, 1903.

Mr. M. E. Reed, Asst. Engr.,

C/o Superintendent, Spokane, Wash.

Dear Sir:-

On the Coulee City-Adrian extension on which work was commenced under present Division Engineer F. J. Taylor, Mr. Ball being one of the Resident Engineers, and afterwards completed by Mr. Ball as Assistant Engineer, there are points to investigate as follows:

FIRST: Chief Engineer Darling went over the line and made reclassification. He instructed the Assistant Engineer to figure up the total estimate. When this was done he found the total to be more than he expected, and reduced the classification so that the total should be $277,000., which amount he said should not be exceeded. The final estimate when prepared amounted to approximately $289,000. I wish to know if Mr. Darling's instructions were carefully observed, and if the estimate has been carefully made according to his instructions as far as they cover, and the remaining items according to the facts. You can understand my hesitation at passing a final estimate $12,000. greater than Chief Engineer Darling considered after carefully investigating the matter.

SECOND: The Contractors claim that Mr. Darling's instructions have not been carried out, and that the estimates have been improperly and inaccurately made; that there are certain failures to make proper classification; that the classification for two sub-contractors is such that these sub-contractors threaten suit, and are only

waiting for further investigation to see if they will fare better than they have. Mr. P. Welch of Spokane represents the Contractors as their Superintendent in charge of this work, and after you have practically completed the work, but before you finally leave, there is no objection to getting an explanation from him on any points at issue that he may have to make, which will enable better understanding of his complaint. I suggest you will not care to meet him until you are well along on the work, as otherwise he might wish to accompany you, and make it impossible for you to thoroughly discuss matters, and handle the work with the freedom that is possible, although I wish to give him such consideration as is reasonable so that he may be heard fully. I enclose to you my file relating to this matter, which I wish you to keep in tact and return to me. I think it gives you information concerning the Contractor's complaints, the instructions issued by Mr. Darling, and the explanations of Mr. Ball. The Contractors refer to subsequent estimates giving a total yardage less than preceding estimates, etc., which I will admit looks peculiar. What I wish you to do substantially is to confirm the final estimate made if correct. If not, to make corrections, and as far as the Contractors are concerned to give me such full information as will enable me to reply. Mr. Ball can give you much of the inside history of this construction, the way the Contractors have performed their work, etc. I think that Mr. Ball has undoubtedly done his work correctly, notwithstanding excess of final estimate over that figured by Mr. Darling, but the complaints of Contractors are such that thorough investigation is necessary. Obviously this is not a pleasant situation for Mr. Ball, and I shall appreciate it if you handle matters with him considerately and friendly, being sure, however, that you comply with my instructions regardless of any personalities. If discrepancies are found the information regarding them should be given to me only, as on your recommendation I will finally handle the settlement of this contract. If necessary to recross-section any part of the work,

you may put on a party, or two parties, if necessary to do so. You can determine as to the necessity of this. With the file you will find a copy of a letter to Mr. Ball. Mr. Ball is also instructed to take full files and records concerning this work for your information. I do not expect any increase in classification or yardage will be necessary, although if they are just we will be obliged to accept them.

Yours truly,

Enclosure. Acting Chief Engineer.

SEND BY EXPRESS.

Northern Pacific Railway Company.

Office of the Chief Engineer.

E. J. PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn.

EJP

On Yellowstone Division, December 2, 1903.

Mr. M. E. Reed, Asst. Engr.,

C/o Superintendent, Spokane, Wash.

Dear Sir:-

On the Coulee City-Adrian extension on which work was commenced under present Division Engineer F. J. Taylor, Mr. Ball being one of the Resident Engineers, and afterwards completed by Mr. Ball as Assistant Engineer, there are points to investigate as follows:

FIRST: Chief Engineer Darling went over the line and made reclassification. He instructed the Assistant Engineer to figure up the total estimate. When this was done he found the total to be more than he expected, and reduced the ~~approximate~~ classification ~~estimate~~ so that the total should be $277,000., which amount he said should not be exceeded. The final estimate when prepared amounted to approximately $289,000. I wish to know if Mr. Darling's instructions were carefully observed, and if the estimate has been carefully made according to his instructions as far as they cover, and the remaining items according to the facts. You can understand my hesitation at passing a final estimate $12,000. greater than Chief Engineer Darling considered after carefully investigating the matter.

SECOND: The Contractors claim that Mr. Darling's instructions have not been carried out, and that the estimates have been improperly and inaccurately made; that there are certain failures to make proper classification; that the classification for two sub-contractors is such that these sub-contractors threaten suit, and are only

waiting for further investigation to see if they will fare better than they have. Mr. P. Welch of Spokane represents the Contractors as their Superintendent in charge of this work, and after you have practically completed the work, but before you finally leave, there is no objection to getting an explanation from him on any points at issue that he may have to make, which will enable better understanding of his complaint. I suggest you will not care to meet him until you are well along on the work, as otherwise he might wish to accompany you, and make it impossible for you to thoroughly discuss matters, and handle the work with the freedom that is possible, although I wish to give him such consideration as is reasonable so that he may be heard fully. I enclose to you my file relating to this matter, which I wish you to keep in tact and return to me. I think it gives you information concerning the Contractor's complaints, the instructions issued by Mr. Darling, and the explanations of Mr. Ball. The Contractors refer to subsequent estimates giving a total yardage less than preceding estimates, etc., which I will admit [redacted] looks peculiar. What I wish you to do substantially is to confirm the final estimate made if correct. If not, to make corrections, and as far as the Contractors are concerned to give me such full information as will enable me to reply. Mr. Ball can give you much of the inside history of this construction, the way the Contractors have performed their work, etc. I think that Mr. Ball has undoubtedly done his work correctly, notwithstanding excess of final estimate over that figured by Mr. Darling, but the complaints of Contractors are such that thorough investigation is necessary. Obviously this is not a pleasant situation for Mr. Ball, and I shall appreciate it if you handle matters with him considerately and friendly, being sure, however, that you comply with my instructions regardless of any personalities. If discrepancies are found the information regarding them should be given to me only, as on your recommendation I will finally handle the settlement of this contract. If necessary to recross-section any part of the work,

you may put on a party, or two parties, if necessary to do so. You can determine as to the necessity of this. With the file you will find a copy of a letter to Mr. Ball. Mr. Ball is also instructed to take full files and records concerning this work for your information. I do not expect any increase in classification or yardage will be necessary, although if they are just we will be obliged to accept them.

Yours truly,

Acting Chief Engineer.

Enclosure.

SEND BY EXPRESS.

COPY.

EJP

On Dakota Division, December 2, 1903.

Mr. G. D. Ball,

Assistant Engineer,

C/o Superintendent, Spokane, Wash.

Dear Sir:-

I shall be glad to have you give Mr. Reed freely all information and assistance concerning the Coulee City-Adrian estimates that is possible, and assure you that while Mr. Reed has instructions to carefully and thoroughly investigate all matters pertaining to these estimates, that endeavor will be made to handle the same fairly, and with full record as to the actual facts, in which I am sure you will gladly co-operate.

In addition, as Mr. Reed and yourself work over the line, I will be glad if you will prepare a statement, and cover in detail the various points where the Contractors have not performed their work satisfactorily under their contract, and any favors or concessions that have been extended them. Such a complete list in detail will enable me in handling the final settlement with them to present the other side of the case, and to show that this is not entirely a case in which the Contractors have had all the difficulties, have done nothing but what they should, and have not been generously given concessions heretofore providing such is the case.

Yours truly,

Acting Chief Engineer.

RECEIPT.

On Dakota Divn., Dec. 2, 1903.

Received one letter addressed to M. E. Reed, care Superintendent, Spokane to be handled by Northern Pacific Express Company.

Sullivan

For N. P. Ex. Co. at Fargo.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	RECD FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM On Yell. Div., Dec. 2, 1903. TO A. Beamer,

DATED AT Spokane, Wash.

Have instructed Asst. Engrs. M. E. Reed and G. D. Ball to meet at Spokane both to report to your office so they can find each other; also send by Express to Asst. Engr. in your care package of papers which please deliver on his arrival.

E. J. Pearson.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM On Yell. Div., Dec. 2, 1903. TO F. J. Taylor,

DATED AT Livingston, Mont.

Instruct Ball to meet M. E. Reed at Spokane, to wire him there care Supt's. office when he will arrive, and look for him care Supt's. office. Should go at once.

E. J. Pearson.

Form 1398

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	RECD FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				M.		M.			M.		

FROM On Yell. Div., Dec. 2, 1903. TO M. E. Reed,

DATED AT Hoquiam, Wash.

Go to Spokane where you will find instructions sent by Express care of Supt. Beamer regarding work on Coulee City-Adrian extension. Have directed Ball to meet you there and to advise you care Supt. Beamer when he will arrive and to enquire for you at Supt's. office.

E. J. Pearson.

FORM 4455

The Chicago, Rock Island & Pacific Railway Co.
Choctaw, Oklahoma & Gulf Railroad Co.
St. Louis, Kansas City & Colorado R.R. Co.

CHIEF ENGINEER N.P.RY. DEC 3 1903 ST.PAUL.MINN.

Office of Chief Engineer.

W. L. Darling,
Chief Engineer.

Chicago, Nov. 30, 1903.

Mr. E. J. Pearson,
Act.Chf.Engr., Northern Pacific Ry.,
St. Paul, Minnesota.

Dear Sir:-

Referring to your favor of 25th inst., from Seattle, and returning all correspondence attached thereto, regarding final estimate for the Coulee City-Adrian cut-off:

The estimate of $279,164 was based on information contained in my letter of July 5th, but on account of giving them so much more loose rock near Adrian than I had expected or thought they were entitled to, and some differences in a few other cuts, I believed that Mr. Ball's estimate of July 30th was too large by $2,000, and that was the occasion of my letter of August 3rd. Just why he has increased it $11,500 more I am unable to say, except that he evidently made an error in his original calculations. The basis on which Mr. Ball has probably made his calculations is on my letter of July 5th and some previous letters, in which I stated to him my idea of how over-break should be allowed. I believe with the above letters that you will be able to arrive at a satisfactory solution of the matter.

Yours truly,

W. L. Darling

Enc.

Chief Engineer.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM On Mont. Div., Nov. 30, 1903. TO A. Beamer,

DATED AT Spokane, Wash.

Eslick, of the firm Eslick, Hartnett & Chew, sub-contractors on Coulee City-Adrian extension was going to give me a letter with certain information yesterday, which he did not do. Will you please ascertain from him where it is?

E. J. Pearson.

COPY.

EJP

At Seattle, November 25, 1903.

Mr. W. L. Darling,

Chief Engineer, C.R.J & P.R.R.,

Chicago, Ill.

Dear Sir:-

In making the final estimate for the Coulee City-Adrian work it is found the amount considerably over-runs the total which you apparently intended after making reclassification. I enclose copies of various papers giving information regarding this. After you reclassified, the estimate submitted to you was $279,164. After receiving this you changed classification again reducing the amount approximately $2,000., so that the estimate on that basis would be presumably $277,164 which your letter states should not be exceeded. Ball now turns in estimate for $289,665. If you can furnish me with any information regarding the basis on which the $277,164. total was derived, and will indicate where the difference between the amount you determined and the amount Ball now estimates is, and how it should be handled, I will much appreciate your assistance in the matter.

Yours truly,

Enc.

Acting Chief Engineer.

COPY.

EJP

At Seattle, November 25, 1903.

Mr. W. L. Darling,

Chief Engineer, C.R.J & P.R.R.,

Chicago, Jll.

Dear Sir:-

In making the final estimate for the Coulee City-Adrian work it is found the amount considerably over-runs the total which you apparently intended after making reclassification. I enclose copies of various papers giving information regarding this. After you reclassified, the estimate submitted to you was $279,164. After receiving this you changed classification again reducing the amount approximately $2,000., so that the estimate on that basis would be presumably $277,164 which your letter states should not be exceeded. Ball now turns in estimate for $289,665. If you can furnish me with any information regarding the basis on which the $277,164. total was derived, and will indicate where the difference between the amount you determined and the amount Ball now estimates is, and how it should be handled, I will much appreciate your assistance in the matter.

Yours truly,

Enc.

Acting Chief Engineer.

To Mr. E. J. Pearson, Chief Engineer,

Tacoma, Washington.

c/o Asst. Gen. Supt.

FROM
FOLEY BROS., LARSON & CO.,
RAILWAY CONTRACTORS.

OFFICE AT
SPOKANE OFFICES,
319-320 PEYTON BLOCK.
Spokane, Wash. BOX 1913 NOV 23 1903

Dear Sir:-

In refer ence to your request for a statement re the Coulee city work, would say that it is rather a difficult matter to make one of a specific nature covering the entire contract. However we submit the following comments.

Eslick, Hartnett & Chew, who constructed the first five miles (stations 0 to 267+30)maintain, and justly too, in our opinion, that both yardage and class-ification on almost their entire contract are far below what the ground shows. Furthermore, they allege that Mr. Ball permitted his personal feelings to influence him in the matter. As the writer informed you while in St. Paul, these parties have fully concluded to enter suit at an early date, unless your Company shows some inclination to re-consider Mr. Ball's estimate.

We have done and are still doing our utmost to persuade them to hold the matter in abeyance, promising to place the question before you for a definite reply in the near future. Eslick, Hartnett & Chew are in the possession of facts which would be difficult to dispute and which in our opinion, would make a very strong case against your Company.

In making our first set of statements, we overlocked quite a discrepancy between returns for borrow at stations 229--234 :

First Estimate, Total Yardage	20100 ✓
Second Estimate " "	13130 — 1560
Decrease	6970 Cu. Yds.

TO _____

FROM
FOLEY BROS., LARSON & CO.,
RAILWAY CONTRACTORS.

OFFICE AT
SPOKANE OFFICES,
319-320 PEYTON BLOCK.

EJP #2

An explanation from Mr. Ball re this shortage would be very much in order.

In addition to the foregoing, there seems to have been entirely too much earth returned at the expense of Loose and Solid Rock. You will recollect that even with the additional yardage,(Owing to re-measurement) Eslick, Hartnett & Chew's estimate is 3835 cu. yds. less than the first one.

P. P. Johnson & Company, who had the work between stations 316+80 and 415+40, are also very short both as to yardage and classification. The scraper work between stations 332 and 415 was of a very hard rocky nature and in our estimation, at least 40% should have been returned as Loose Rock. Mr Darling mentioned this particular point and our distinct recollection is, that Mr. Darling instructed Mr. Ball to allow a better classificaion (in his letter). He also made special reference to cut at station 494--510, at which point we were promised 5000 cu. yds Solid Rock,but were allowed only 4000 cu. yds.. We are also entitled to more Loose Rock in this cut.

Referring to Borrow between Stations 1052 and 1087, out of a total yardage of 16194, Mr. Ball returned but 6000 cubic yards as Loose Rock. Mr. Darling's instructions were to allow the entire quantity as such·(Loose rock).

In conclusion we desire to re-iterate our earnest wish to have the quest-ion of P. P. Johnson & Co.'s and Eslick, Hartnett & Chew's estimates settled without recourse to law suits, by them, and will continue to use our best endeavors (with your help) to that end.

Very truly yours, P. Welch

Coulee City, Wash., May 5th, 1903.

Estimate of J. H. Johnson & Co., station-men. Stations 609--616+65

Solid Rock	5000 cu. Yds.
Loose Rock	1400 cu. Yds
Common Excav.	600 cu. yds.
Overhaul	1000 cu. yds.
	7000.

Note:
Total Yardage 7000 Cu. Yds.

(Signed) G. D. Ball,
Asst Engr.

5334. in cut actual measurment
1128. 0.13. = 1692 cy. { 266 Common / 1480 LR / 469 2

5000 Cy. S.R.
334 Com.
266
600
1426 L.R.
7000.

~~5334~~ 5000 S.R.
564 S.R.
5564.
1180
6750.

334 L.R.
846. L.R.
1180 L.R.

2) 1128
564 S.R.
282 "
846 L.R.

NORTHERN PACIFIC RAILWAY COMPANY.

Coulee City, May 11, 1903.

Estimate of J. H. Johnson- Station-men for Johnson & Avaluson.

Station 609 to 616+65

Solid Rock	5564	cu.yds.
Loose Rock	1180	" "
Overhaul	1000	" "

6744.

G. D. Ball,
Asst Engr.

FOLEY BROS. LARSON & CO.

Check No. PAID C.B.Page

573-580 May 12 1903 .42..

RECEIVED PAYMENT.

.....

254

564

318
159
7

HAC-F. November 21st,1903.

Foley Bros.,Larson & Co.,

Spokane, Wash.

Dear Sir.-

Referring to your bill of October 6, # M.61 covering pass #14732, G.Shaw and ten men, amount $13.75. Will you please attach the original pass or give our Auditor's number of bill in which this pass was included.

Yours truly,

Acting Chief Engineer.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

1176

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				M.		M.			M.		

FROM At Tacoma, Nov. 20, 1903. TO A. Beamer,

DATED AT Spokane.

Please ascertain from Contractor Welsh who was associated with Foley Bros. & Larson on Coulee City work when he will have the statement for me which he wanted to submit.

E. J. Pearson.

Mr. Weston,

I cannot find that this was allowed. Should we not have original poso?

HAC

11/19

NORTHERN PACIFIC RAILWAY COMPANY.

Coulee City, May 11, 1903.

Estimate of J. H. Johnson- Station-men for Johnson & Avaluson.

Station 609 to 616+65

Solid Rock	5564	cu.yds.
Loose Rock	1180	" "
Overhaul	1000	" "

G. D. Ball,

Asst Engr.

FOLEY BROS. LARSON & CO.

Check No. PAID C.B.Page

573+580 May 12 1903 .42..

RECEIVED PAYMENT.

.....

Coulee City, Wash., May 5th, 1903.

Estimate of J. H. Johnson & Co., station-men. Stations 609--616+65

Solid Rock	5000 cu. Yds.
Loose Rock	1400 cu. Yds
Common Excav.	600 cu. yds.
Overhaul	1000 cu. yds.

Note:
Total Yardage 7000 Cu. Yds.

(Signed) G. D. Ball,
Asst Engr.

Northern Pacific Railway Company.

1176

Office of the Chief Engineer.

W. L. DARLING,
CHIEF ENGINEER.

St. Paul, Minn.

Cont file

	Orig Est			Final Est.		
Earth Exc	270,000 cy.	@ .17	45,900	244,719 cy.	@ 17¢	41,602
Solid Rock	234,000 "	" .80	187,200	251,221 "	" 80¢	200,977
Loose Rock	17,000	" .35	5950	99,080	" 35¢	34,678
	521,000			595,020		
Ex Haul	1,600,000 "	" .01	16,000	1,240,820 "	" 1¢	12,408
			255,050			289,665

June Estimate

257,089
82,576

Earth	295,140 cy. @	17¢	= 50,173
Solid Rock	223,680 "	" 80¢	= 178,944
Loose Rock	46690	" 35¢	= 16,342
	565,510		
Ex Haul	1,163,000 "	" 1¢	= 11,630
			257,189

July 30 - 279,— LWLD - 2000
inc 10000

289.665
279.164
10.501

Form 285 2-7-03 10M E R

NORTHERN PACIFIC RAILWAY COMPANY.

Mem. No. To FOLEY BROTHERS & PETER LARSON, Dr.

COPY

Address St.Paul, Minn.

1903.

Sept.30, For labor performed during the month of September, 1903, constructing the Washington Central Extension, Coulee City to Adrian, as per Estimate No.12 and Final, certified to by G.D.Ball, Asst.Engineer, under terms of contract dated October 22nd, 1902.

ESTIMATE NO. 12 AND FINAL.

EARTH EXCAVATION:	244,719	Cu.Yds.	@	.17	41,602.23
SOLID ROCK EXCAVATION:	251,221	"	@	.80	200,976.80
LOOSE ROCK EXCAVATION:	99,080	"	@	.35	34,678.00
EXTRA HAUL:	1,240,820	"	@	.01	12,408.20
CLEARING:	18.3	Acres,	@	10.00	183.00
TIMBER IN STRUCTURE:	1,393,107	F.B.M.	@	8.50	11,841.41
HAULING CULVERT PIPE:	684	T.Miles	@	.40	273.60
LAYING 24" PIPE:	852	Lin.Ft.	@	.25	213.00
EXTRA WORK PER FORCE ACCOUNT:					9,660.63
					$311,836.87

Less previous payments:

E.D.No. 2859,	Aud.No.	10,503.63	
E.D.No. 3124,	Aud.No.	38,509.65	
E.D.No. 130,	Aud.No.	44,666.10	
E.D.No. 270,	Aud.No.	46,150.65	
E.D.No. 476,	Aud.No.	41,278.12	
E.D.No. 724,	Aud.No.	28,866.43	
E.D.No. 903,	Aud.No.	17,957.14	
E.D.No. 1247,	Aud.No.	15,336.53	
E.D.No. 1427,	Aud.No.	20,180.79	
E.D.No. 1647,	Aud.No.	1,063.35	
E.D.No. 1941,	Aud.No.	7,643.50	$272,155.89

WORK COMPLETED SEPTEMBER 13TH, 1903. AMOUNT OF THIS VOUCHER: $ 39,680.98

PAYMENT DUE NOVEMBER 13TH, 1903.

Correct..... *Approved*.....
For the General Manager

Correct..... *Approved*.....
For the President

I certify that this account is duly approved by the proper officers; that the same has been examined, found correct, and is hereby audited for payment.

.....
Auditor of Disbursements.

$.....

Received ....., 190..., *of the* **NORTHERN PACIFIC RAILWAY COMPANY,**

..... *Dollars*

in full of the above account.

Witness.....

☞ READ THIS.—The above receipt must be dated and signed by the party in whose favor this Voucher is made out, or, when signed by another party, the authority for so doing must in all cases accompany it and the receipt must NOT be cut off from the body of the Voucher.

This Voucher, when dated and signed in ink as above, becomes a SIGHT DRAFT on the Northern Pacific Railway Company, St. Paul, Minn., and may be used through bank in the same manner as a check. VOID IF ALTERED OR ERASED.

.....
TREASURER.

Northern Pacific Railway Co.

*Audit No.*_____

Month of _____ *190*

_____

_____

_____

_____

*$*_____

Form 285 2-7-03 10M B R

NORTHERN PACIFIC RAILWAY COMPANY.

Mem. No. To FOLEY BROTHERS & LARSON, Dr.

Address (Sheet 2)

1903.

Oct. 28,	Brought forward,		$39,680.98
Charge:-			
Open Accounts,			
File 592,('02), Wash. Central Extn.,			
Coulee City to Adrian,			
Grading,		9,432.59	
Bridges, Trestles & Culverts,		8.85	
Open Accounts,			
Foley Bros.& Peter Larson,A/C.Contract,		30,239.54	$39,680.98

WORK COMPLETED SEPTEMBER 18TH, 1903.

PAYMENT DUE NOVEMBER 13TH, 1903.

Northern Pacific Railway Co.

Audit No. _____

Month of _____ *190*

_____

_____

_____

_____

$ _____

Form 1386 4-21-02 800M D

TELEGRAM.

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
58	Hn	FJR	Rd	1229p M.		M.			M.		

FROM St Paul Minn TO E J Pearson

DATED 11/19 1903 AT On Spe

Have you any directions yet for Mr Ball

Hold

R A Waton

Cont file
Foley Bros Larsen

1176

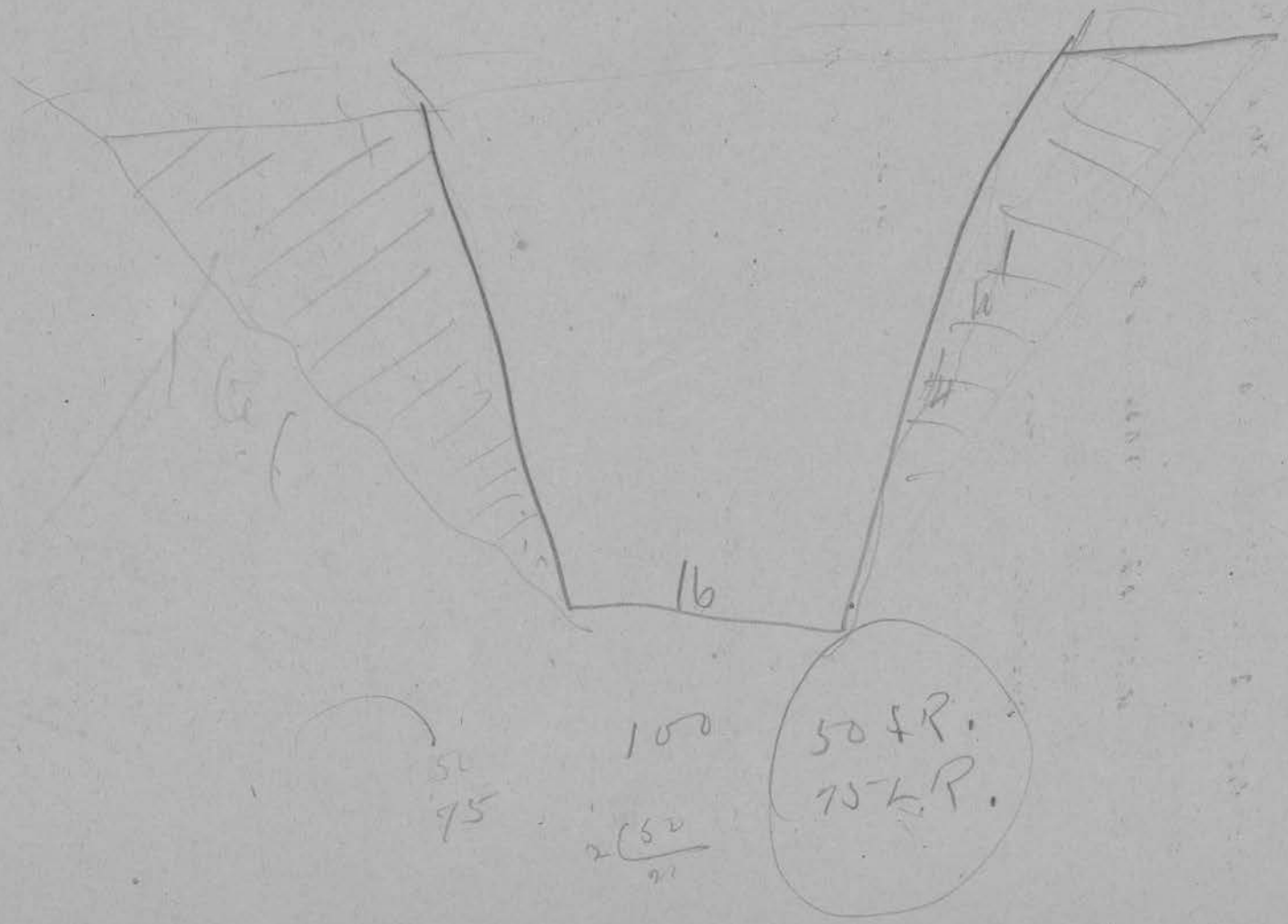
Mr Pearson

Mr Ball explains the difference between the two estimates as due to instructions he received from Mr Darling in the time which intervened in regard to classification of our break

RAW

11/14

Att to
prepare


16
100
50 ft R.
75 ft R.

Form 1386

NORTHERN PACIFIC — YELLOWSTONE PARK LINE

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
42vs-bn-g				____M.		____M.			____M.		

FROM Livingston Nov 11th, 1903 TO E J Pearson.

DATED AT

Ball will leave Missoula on No 4 thursday for St Paul.

F. J. Taylor 1:24 p m

St Paul
Sat. a.m

Form 1386 TW Pink

TELEGRAM.

4 21 02 100M D

COPY

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM

DATED Nov 10 - 1903

TO T. J. Taylor

AT Livingston Mont

Wish Ball to come to St Paul immediately - If he is up the Bitter Root send Messenger for him - Advise when he will be here -

E. J. Pearson

This Blank only to be used for RUSH Messages.

Form 1386 TW Pink

TELEGRAM.

4 21 02 100M D

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				——M.		——M.			——M.		

FROM St. Paul, Minn.

DATED Nov. 10th, 1903 .

TO F. J. Taylor,

AT Livingston, Mont.

Mr. Ball should bring with him any data pertaining ~~the~~ to estimates on Coulee City Line which he has not already forwarded.

E. J. Pearson.

This Blank only to be used for RUSH Messages.

COPY

RAW*A

Nov. 9th, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Hamilton, Mont.

Dear Sir:-

Referring to your letter of the 3rd instant in regard to the claim of Foley Bros & Larson amounting to $13.75 for refund of fares. In as much as you paid for this work by force account, it seems to me that this bill will have to be allowed as being part of the cost of the work. If, as you state, the contract included this grading at a regular contract price, I do not quite understand why it was paid for by force account. Of course there is no reason to allow the bill simply because the contract between this company and Eslick & Hartnett provided for free transportation, and this has nothing whatever to do with it. If other demands are made, as you anticipate in your letter of the 3rd, for refund of fares where contractors were doing force account work, I do not see any way to prevent it. Each claim will have to be considered on its own merits and according to the terms of the contract. I cannot escape the conclusion that this bill should be allowed under the facts as shown in your letter, and will have the bill vouchered.

Yours truly,

E. J. PEARSON.

Acting Chief Engineer.

Northern Pacific Railway Company.

Office of the Acting Chief Engineer.

E. J. PEARSON,
ACTING CHIEF ENGINEER.

St. Paul, Minn.

COPY

Ann Taylor

C.M.N.

289,665
259,409
30,256

279,164
257,089
22,075

295,140
244,719
50,421
17

352,947
504,61
857,157

251,221

29,510
25,510
4,000

Could you about getting
some of this
data together —
Welch is enroute
from Maine with
a complaint.

E.P.

COPY. E.J.P.

Hamilton, Montana, November 4, 1903.

Mr. E. J. Pearson,

Acting Chief Engineer,

St.Paul, Minn.

Dear Sir:-

Answering your telegram of November 2nd concerning increases in Foley Bros. & Larson's estimate over June estimate.

I presume you have the detailed statement of estimated classification of each cut sent Mr. Darling July 30th with my letter of that date. I have no copy of June estimate but will compare with the new classification as modified by Mr. Darling's letter of August 3rd.

See my detail of July 30th.

In that estimate I was responsible for figures on work Station 0 to 573, Station 592 to 641, and Station 767 to end. The cut station 570 to 583 and work 647 to 759 was estimated by C. C. Balcom Resident Engineer under Mr. Taylor, and my figures in detail of July 30th was based on his estimates.

One of the grievences of Contractor was "Mr. Balcom did not recross-section any cuts but guessed at classification and over-break. In checking up comparison between the quantities shown on final estimate and those in estimate of July 30th, to which I referred above, for the work Station 0 to 570, Station 592 to 641, Station 767 to end I find that there is an increase of 4944 cubic yards. Actually: Increase 3305 C. Y. S. R., increase 8373 C. Y. L. R., decrease 6734 C.Y. common X, increase 17640 C. Y. overhaul. Total increase in dollars $4,606.17.

I find that practically the whole insrease is in the two cuts 270 to 278, and 283 to 297. These cuts had been recross-sectioned at the time but had not

been platted and quantities figured. My estimate was therefore a guess as to overbreak and a wild guess as finals show. I sent you recross-section sheets which show just what cuts were recross-sectioned. I expected at the time that recross-sections of cuts which I assume Mr. Balcom guessed at would diminish rather than increase the quantities and that the total would be about right as shown on my estimate of July 3 0th.

Now as to the compariso n of quantities Sta 573-583 and 647 to 759. I find that there is an increase of 16,899 C.Y. over my detailed estimate of July 30th. Actually 4913 C.Y. S.R., 10471 L.R., 1515 C.Y. common X, 11040 C.Y. overhaul. All increases. Total increase in dollars $7963.20. Concerning this increase. My recross-sections proved that original estimate was based on figures that were guessed at by the Res. Engr. who gave those final estimates to station men.

Therefore my estimate of July 30th was bound to be wrong for this part of the work since it was based on those figures.

When I relived Mr. Balcom, Res. Engr., Second Residency, I asked for re-cross-section notes, and was informed that there were no records of them kept.

Totals as per my estimate of July 30th revised by Mr. Darling compared with final estimate are as follows:

	S.R.	L.R.	Com. X	Overhaul
Est 7/30	243003	80236	249938	1212140
Final	251221	99080	244719	1240820
Increase	8218	18884	5219	
	6574.40	$6595.40	$ 887.23	286.80

$12569.37 Total increase¼

Hoping this explanation will prove satisfactory, I am,

Yours truly,

(Signed) G.D.Ball,

Asst. Engr.

The other $2320. increase comes from force account bills for bridge pits mostly.

(1)

Memo by R.A.W.

June estimate as vouchered	Earth	295,140	C.Y.	@ 17¢	=	$ 50,173.
	Solid Rock	223,680	"	@ 80¢	=	178,944.
	Loose Rock	46,690	"	@ 35¢	=	16,342
	Total	565,510	"			
	Overhaul	1,163,000	"	@ 1¢		11,630.
					Total	$257,089.

Revised approximate
Estimate submitted by Mr. Ball to
Mr. Darling 7/30

	Earth	238,442	C.Y.	@ 17¢	=	$ 40,535.
	Solid Rock	243,003	"	@ 80¢	=	194,402.
(2)	Loose Rock	91,732	"	@ 35¢	=	32,106.
		573,177	"			
	Overhaul	1,212,140	"	@ 1¢	=	12,121.
					Total	$279,164.

Increase of (2) over (1) $22,075.
Mr. Darling corrected classification of (2)
reducing amount of same approx. 2,000.

Final revised estimate as
returned by Mr. Ball.

	Earth	244,719	C.Y.	@ 17¢	=	$ 41,602.
(3)	Solid Rock	251,221	"	@ 80¢	=	200,977.
	Loose Rock	99,080	"	@ 35¢	=	34,678.
		595,020				
	Overhaul	1,240,820	"	@ 1¢	=	12,408
					Total	$289,665.

Increase of (3) over (1)	=	$32,576.
" " (3) " (2)	=	10,501
Increased yardage of (3) over (1)		(30,256)

See note below

Ball's explanation.

$4,606 increase of (3) over (2) due to incorrect estimate of Ball's in his figures of July 30th.

$7,963 increase of (3) over (2) due to fact that (2) was based on estimates of Balcom which were found to be wrong on recross-sectioning

There is a discrepancy between (1) above as vouchered and original final estimate (corresponding to June estimate) which he refers to -- His statements show figures as follows for (1).

Earth	295,264 C.Y.	@ 17¢	=	$50,195.
Solid Rock	225,029 "	@ 80¢	=	180,023.
Loose Rock	49,130 "	@ 35¢	=	17,196.
	569,423			
Overhaul	1,199,530 "	@ 1¢	=	11,995.
			Total	$259,409.

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER N.P.R.Y. NOV 7 1903 ST. PAUL, MINN.

Hamilton Mont 11/4/03.

E. J. Pearsons Esq.
. Acting Chief Engr.

a file 1176

Dear Sir -

Answering your telegram of Nov 2 - Concerning Increases in Poley Bros and Larsons Estimate over June Estimate.

I presume you have the detailed statement of estimated Classification of each cut sent Mr Darling July 3 with my letter of that date.

I have no copy of June Estimate but will compare with the New Classification as modified by Mr. Darling's letter of August 3.

See my detail of July 30.

In that estimate I was responsible for figures on work Station 0 to 573 Sta 592 to 641 and Sta 767 to End.

The cut Sta 570 - 583 and 647 to 759 (work) was estimated by C.C. Bolam Resident Engr under Mr. Taylor and my figures in detail of July 30 were based on his estimate.

One of the grievances of Contractors was "Mr Bolam did not Re-measure the cuts but guessed at Classification and Overbreak.

In checking up comparison between the quantities shown on final estimate and those on Estimate of

Form 290

Northern Pacific Railway Company.

(2)

July 30, to which I refined above, for the work Sta 0 to 570 Sta 542 to 641 Sta 767 to End.
I found that there is an increase of 4944 Cu. Yds.
Actually - Increase 3305 C.Y. S.R. Increase 8373 C.Y. L.R.
Decrease 6734 C.Y. Common X. Increase 17,640 C.Y. Overhaul. Total Increase in Dollars $4,606.17
I found that Practically the whole increase is in the two cuts 270 to 278 and 283 to 297.
These cuts had been recross sectioned at the time but had not been plotted and quantities figured. My estimate was then from a guess as to Com break and a rolled guess as finals show.
I sent you Recross section sheets which show just what cuts were recross sectioned.
I expected at the time that recross sections of cuts which I assume Mr. Bolcom guessed at - would diminish rather than increase the quantities and that the total would be about right as shown on my estimate of July 30.
Now as to the comparison of quantities Sta 573-578 and 641 to 759. I found that there is an increase of 16899 C.Y. over my detailed Estimate of July 30.
Actually. 4913 C.Y. S.R. 10471 C.Y. L.R. 1515 C.Y. Common X 11040 C.Y. Overhaul. All increase

Form 290

Northern Pacific Railway Company.

(3)

Total increase in Dollars — $12963.20

Concerning this increase — My Resurrection Jewel that original estimate was based on figures that were guessed at by the Res. Engr who gave those final estimates to Station men.

Then for my estimate of July 30 was based to be wrong for this part of the work since it was based on these figures.

When I relieved Mr Bolens Res Engr. 2nd Resilvery. I asked for Resurrection notes and was informed there were no records of them Kept.

Totals for my estimate of July 30 revised by Mr Darling compared with final estimate are follows.

	SR	LR.	Cmn	Cmn Land
Est 7/30	243003 ✓	80236 ✓	249938 ✓	1212140
Final	251221	99080	244719	1240820
Increase	8218	18884	5219	28680
	$6574.40	$6595.40	$	$28680

$12569.37 Total Increase.

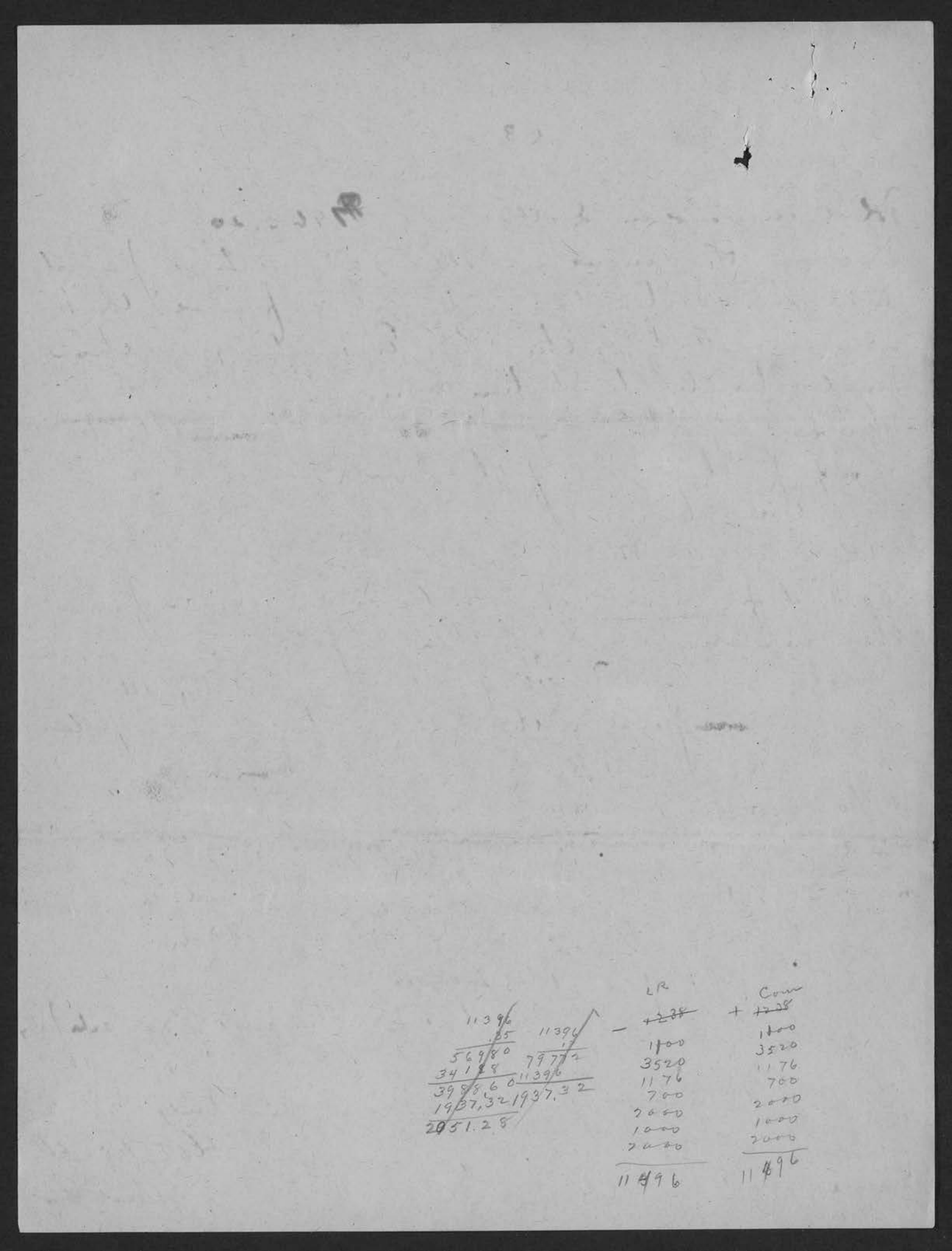
Hoping this explanation will prove satisfactory

The other $2320 Increase comes from five account bills for Bridge Pile Mathy.

Yours truly

W. D. Ball

Asst Engr.



Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER N.P.R.R.
NOV 7 1903
ST. PAUL, MINN.

Hamilton Mont 11/3 03.

E. J. Pearsons Esq.
Chief Engr.

Dear Sir —

Refering to your letter of Oct. 17 - forwarded from Custer City — Concerning refunding of fares for men shipped from Spokane by Foley Bros. and Larsen.

The facts are these — There was not enough material to fill at Sta 622 so we ended by track.

It became necessary then for to borrow enough to complete this fill. The Station men who had taken out the cut at 629-34 — who were the last on the ground did not or could not do this So Foley Bros shipped men from Spokane. This borrow was part solid rock part loose rock — The former blasted from cliff. So instead of paying by the yard it was decided to pay for an account plus 10%. It might be considered that this was a case when the fare of the men entered into the cost of doing the work. Still this was a part of the grading and Contractor was supposed to furnish fare for that.

My reason for not recommending it was that I was afraid it would lead to a general demand for fares in several specific instances. When Sub Contractors doing fence account work on the wind up — such as Bridge pits and pipe line work were obliged to ship men in — asked they not with reason

Form 200

Northern Pacific Railway Company.

(2)

ask for refund of fares for these?
Again - I believe their custom was to collect fares from the men up to the time Eslick & Hartnett's contract was signed - so that their reason for asking for these fares and not for any others is - that they were forced to ship these men in pursuance of free fare. The letter accompanying their bill was firmer than in pursuance.
(E+H. Contract gave them free transportation for men)

Summary - I asked them to complete a fill which the cuts did not furnish material enough for - owing to hauling to fill between Sta 632+35 + 634 west instead of east.
I agreed to pay them fares account for this borrow instead of yardage.
Query - Why should we pay them refund for fares of men which they had up to this time collected from the men themselves - Simply because another contract for doing other work on the line - provided for free fares. to the latter Contractors?

Note - If cut had not been taken out the way it was it would have delayed track laying - as it was - it was the last cut on the line to be completed. The fill was completed one day ahead of the track laying.

Yours truly
G. D. Ball
Asst Engr.

Form 1386

NORTHERN PACIFIC — YELLOWSTONE PARK LINE

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.	COPY	____M.			____M.		

FROM St. Paul, Minn. TO G. D. Ball,

DATED Nov. 2nd, 1903. AT Hamilton, Mont.

Referring to final Estimate impish favor Foley Bros & Larson. My understanding adducible from Mr. Darling's instructions to you that revision of exequy classification of quantities would not increase Estimate impish more than 10,000 chasseur charlotte 5000 to chasseur charm 10000 grumpish 6000 dollars. See his letter of July 5th and your telegram of July 25th stating additional allowance would amount to chasseur chartist 10000 to chasseur chasing 8000 grumpish 10000 dollars. I find that revised Estimate impish increases allowance for grading 30000 chasten chariness 2000 chaperon 500 chablis 76 grumpish over June Estimate impish and that total quantities of earth&& rock are increased 30000 chasten yds. over June impish. Would like explanation.

E. J. Pearson.

COPY.

Hamilton, Mont., Oct. 31, 1903.

E. J. Pearson, Esq.,

Acting Chief Engineer,

St.Paul, Minn.

Dear Sir:-

I enclose statement of station men's work on W.C.Ry. What I think Foley Bros. had reference to in their letter is that some cuts were partly taken out by station men and partly by sub-contractor; also some cuts taken out by two gangs of station men.

Cut at 248: Taken out by sub-contractor up to Sta 248+96.

Cut at 616: Taken out by two station men divides at 616+65.

Cut at 634: Taken out by two station men. In regard to this cut. The station men met at Sta 634. On the east half the sub-contractor took off a top lift between 632+35 and 634 leaving a cut of about 15½ feet. When I relieved Bolcom on second residency he told me that the sub-contractor and station men had this matter arranged and that cut up to 634 would be estimated to J. Maeyer & Co. and they would settle with sub-contractor. Consequently, I did not crosssection what Johnson & Anderson did, and am obliged to give the cut to station men. Very likely Foley Bros. & Larson will ask for this amount of work done by sub-contractor and we will be unable to give more than an approximate estimate.

Cut at 653: Am informed that Larson & Chindahl had to do some work in this cut after an estimate was given J. A. Olson. They put ina bill for extra work at the last minutr. I did not allow it, maintaining that the recross-sections covered all of the material taken out of the cut. Think they

should settle with station men themselves as to the amout of work they had to put on it.

Cut at 700: Burns & Jordan borrowed considerable to get fill so we could lay track across it after station men had completed. Mr. Taylor did not allow over break on this cut or pay for borrow, contending that they wasted so much material dow n the slope that they were not entitled to it. Mr. Darling allowed them over break and it seems to me that this is a very liberal allowance. It is a well known fact they they did throw all they could over board, although, of course, I cant prove it. I think the over break allowed liberal enough to cover the borrow to replace material that by rights should have been hauled from the cut. They put in a bill for extra work which was not allowed.

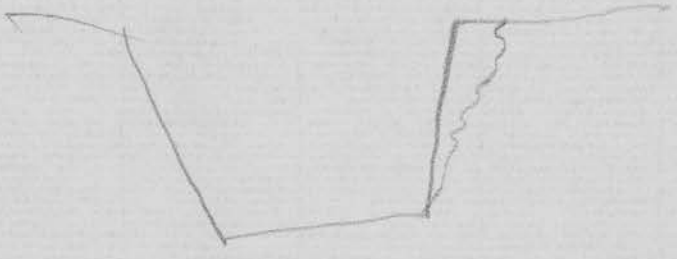
Cut at 775: Taken out by C. Erickson & Company up to Sta 780.

There is no allownace made for extra work done by sub-contractors in cuts after station men had received estimates. Final recross-sections cover all work and contractor should adjust his expenses with station men.

Yours truly,

(Sgd) G. D. Ball,

Asst. Engr.



COPY.

Sub-contractor	Station men	Sta to Sta	S. Rock.	L. Rock	Com excava'n	Overhaul
Eslick & Hartnett	N.Nelson &Co	206-213	589	1167	1708	
do	C.Olsen & Co	248+96-254	2835	312		4130
do	do	259-261	707			
Johnson & Anderson	O.Turnquist & Co.	554-558	1259	132	228	1000
do	do	570-583	3406	165	385	7250
do	P.Jackson	592-601	7524	1588	405	30190
do	do	604-606	380	75		
do	J.H.Johnson	613-616+65	6085			760
do	J. Jackson	616+65-620	9690	212		
do	J.Maeyer &Co	629-634	14142	3399	286	54400
do	A.Munson & Co	634-640	10429	3108	2214	2600
Larson & Chindahl	E.Mickelson	646-651	9093	1671	476	
do	J.A.Olson	651-654	1094	58		
Burns & Jordan	Siegermel &Co	686-695	6193	5290	4740	5880
do	J.Erickson	698-702	20193	4807	457	
do	Swenson & Co	705-709	1284	205	1073	
do	do	709-717	6089	5085	4155	21840
do	T.Alfelt	720-725	3780	285	73	
do	do	725-729		130	329	
do	J.Lind	729-737	10	1288	3864	
do	T.Nelson	Borrow		2408	4000	1000
do	Miller & Johnson	743-749	11329	2231		
do	Ovem & Co	751-759	9315	1386	300	
Johnson & Peterson	J.Swanson	767-769	1693	85		
do	C.Erickson & Co	772-780	3896	321	583	1000
A.W.Smith	L.Johnson & Co	972-973			14	
do	do	973-980	7625	2996	722	44050

Form 290

Northern Pacific Railway Company.

Hamilton Mont Oct 31. 1903.

(1)



E. J. Pearson Esq.
Acting Chief Engr.

Dear Sir –

I enclose statement of Station men's work on H.C. Ry. What I think Foley Bros had reference to in their letter – is that some cuts were partly taken out by Station men and partly by Sub contractor. Also some cuts taken out by 2 gangs of station men.

Cut at 248. – taken out by Sub Contractor up to Sta 248+96

Cut at 616 taken out by 2 station men. divides at 616+65

Cut at 634 taken out by 2 station men. I arranged to this cut. The station men met at Sta 634. On the east half – the Sub Contractor took off a top lift between 632+35 and 634 leaving a cut of about 15½ feet. When I relieved Bolcum on 2nd Residency – he told me that the Sub contractor and Station men had this matter arranged and that cut up to 634 would be estimated to J. Mangan & Co. and they would settle with Sub Contractor. Consequently I did not correct what Johnson & Anderson did – and am obliged to give the cut to Station men. Very likely Foley Bros and Larson will ask for this amount of work done by sub contractor – and we will be unable to give men then an approximate estimate. Cut at 653 –. Am informed that Larson & Churchill

Form 290

Northern Pacific Railway Company.

(2)

had to do some work in this cut after an estimate was given J. A. Olson. They put in a bill for extra work at the last month. I did not allow it - maintaining that the regular section covered all material taken out of the cut. Think they should settle with Station men themselves as to amount of extra work they had to put in it.

Cut at 700 - Bunn & Jordan banned considerable to get fill so we could lay track across it after Station men had completed. Mr. Ivey he did not allow - Own track in that cut or pay for banns - contending that they wasted so much material down the slope that they were not entitled to it. Mr. Darling allowed them 60 cu yds. and it seems to me that this is a very liberal allowance. It is a well known fact that they did throw all they could over board - although of course I can't prove it. I think the 60 cu yds allowed liberal enough to cover the banns to replace material that by right should have been hauled from the cut. They put in a bill for extra work which was not allowed.

Cut at 775 - Taken out by C Erickson & Co up to Sta 780. There is no allowance made for extra work done by Sub contractors on cuts after Station men had received estimate. Final Regular section covers all work and Contractor should adjust his expenses with Station men.

Yours truly

A. D. Ball
Asst Engr.

Sub Contractor	Station	Sta to Sta.	Solid Rock	Loose Rock	Com. Ex.	Overhead.
						(X)
Erlick H. & Co.	N. Nelson & Co.	206 – 213	589	1167	1708	
do	C. Olson & Co.	248+96 – 254	2835	312		4130
do	do	259 – 261	707			
Johnson & Anderson	O. Lundquist & Co.	554 – 558	1259	132	228	½ 1000
do	do B	570 – 583	3406	165	385	7250
do	P. Jackson	592 – 601	7524	1588	405	30190
do	do	604 – 606	380	75		
do.	J. H. Johnson	613 – 616+65	6085			½ 760
do	J. Jackson	616+65 – 620	9690	212		
do.	J. Haeyer & Co.	629 – 634	14142	3399	286	½ 54400
do	A. Munson & Co.	634 – 640	10429	3108	2214	½ 2600
Larson & Chindahl.	E. Mickelson B	646 – 651	9093	1671	476	
do.	J. A. Olson B	651 – 654	1094	58		
Burns & Jordan.	Siegarmel & Co.	686 – 695	6193	5290	4740	5880
do	J. Erickson	695 – 702	20193	4807	457	
do	Swanson & Co.	705 – 709	1284	205	1073	
do	do	709 – 717	6089	5085	4155	21840
do	T. Olfelt	720 – 725	3780	285	73	
do	do	725 – 729		130	329	
do	J. Lind	729 – 737	10	1288	3864	
do	P. Nelson	Borrow		2408	4000	1080
do	Miller & Johnson	743 – 749	11329	2231		
do	Owen & Co.	751 – 759	9315	1386	300	
Johnson & Peterson	P. Swanson	767 – 769	1693	85		
do	C. Erickson & Co	772 – 780	3896	321	583	½ 1000
O. W. Smith.	L. Johnson & Co.	972 – 973			14	
do	do	973 – 980	7625	2996	722	44050

Letter of Oct 31 03

Loaded _____

Empty _____

Work Train _____

Total _____

Correct:

C. D. Ball

Ass't Engineer.

Pla. Forwarded to Foley Bros & Larson.

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

1176

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

SENT

RECEIVED at

COPY

St. Paul, Minn.

Oct. 30th, 1903.

Frank #6413.

Cont File

Foley Bros & Larson,

320 Peyton Blk.,

Spokane, Wash.

Your letter October 24th. Mr. Ball will send you detailed estimate in a few days.

E. J. Pearson.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
110	HN	S	C	____M.		____M.			____M.		

FROM Hamilton Oct 29th,1903, TO E.J.Pearson,

DATED AT

Did not get Foley Brothers, estimate detailed for each station man will have it out in a f ew days.

G.D.Ball,

1143am

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	RECD FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

COPY

FROM St. Paul, Minn. TO G. D. Ball,

DATED Oct. 28th, 1903. AT Hamilton, Mont.

Letter received from Foley Bros & Larson stating they have not received sufficient detail of their estimate. They state estimate as received shows the quantities and clasifications of each section. They want estimate showing details of finals covering work done by various station-men. They state that in several instances you included work done by sub-contractors and that done by station-men in one total in estimate rendered to sub-contractor , and they are therefore unable to reconcile totals with estimates covered by previous ~~xxxxx~~ settlements. Please advise.

E. J. Pearson.

3-02 500 S

Form 108

Washington Central RAILWAY COMPANY.

Coulee City to Adrian Division.

Foley Bros & Peter Larson Contractor.

Estimate No 17 Final of Work for the Month of ~~October~~ September 1903, under Contract dated October 27 1902

OFFICE OF CHIEF ENGINEER N.P.R.Y. OCT 27 1903 ST. PAUL, MINN.

CLASSIFICATION		CONTRACT PRICE	TOTAL WORK TO DATE Quantities	TOTAL WORK TO DATE Amount	PREVIOUS ESTIMATES Quantities	PREVIOUS ESTIMATES Amount	THIS ESTIMATE Quantities	THIS ESTIMATE Amount
Clearing,	per acre,		18 3/10	18300	18 3/10	18300		
Grubbing,	per station,							
Excavation—Earth,	per cu. yard,	17	244719	4160223	244467	4155939	252	4284
do Solid Rock,	do	80	251221	20097680	244022	19521760	7199	575920
do Loose Rock,	do	35	99080	3467800	90556	3169460	8524	298340
do	do							
do	do							
do Tunnel, without lining,	per lin. ft.,							
do Tunnel, extra, when lined,	per cu. yard,							
Extra haul,	per cu. yard,	01	1240820	12408 20	1203000	12030 00	37820	378 20
Grib Filling,	per cu. yard,							
Culvert Masonry,	per cu. yard,							
Slope Wall,	per cu. yard,							
Riprap in place,	do							
Blind Drains,	do							
Piles delivered, driven, &c., complete in Structure,	per lin. ft.,							
Timber, sawed, complete in structure,	per M. ft. B. M.,	850	1393107	1184141	1394200	1185070	1093	929
do hewed or sawed, in crib work,	do							
do do do in abutments and piers,	do							
Plank, complete in structure,	do							
Truss Bridge.								
Hauling Culvert Pipe	Per ton per mile	40	684	27360	684	27360		
Laying 24" Vitrified Pipe	Per lin foot	25	854	21300	834	20850	18	450
Log Crib Work,	per lin. ft. of log,							
Log Culverts,	do							
Timber Culverts,	per M. ft. B. M.,							
Cattle Guards,	do							
Road Crossings,	do							
Track Laying, Main Track,	per mile,							
do Side Track,	do							
Surfacing,	do							
Ballasting,	per cu. yard,							
Extra Work, per force account,			966063		937804			28259
				$31183687		$30239543		$ 944144
	.....% Retained,				.10.....% Retained, Former Payments,	3023954	.10....% Retained, Due on this Est.,	3094454
	Balance,			31183687		27215589		3968098

I certify the above estimate is correct.

G. D. Ball

Asst. *Engineer.*

Final Est

Form 285 CONSTRUCTION. 2-7-03 10M S R

NORTHERN PACIFIC RAILWAY COMPANY.

Mem. No. To FOLEY BROTHERS & PETER LARSON, Dr.

E. D. No. Address St.Paul, Minn.

1903.

Oct. 28 For labor performed during the month of September, 1903, constructing the Washington Central Extension, Coulee City to Adrian, as per Estimate No.12 and Final, certified to by G.D.Ball, Asst.Engineer, under terms of contract dated October 22nd, 1902.

ESTIMATE NO. 12 AND FINAL.

EARTH EXCAVATION:	244,719	Cu.Yds.	@	.17	41,602.23
SOLID ROCK EXCAVATION:	251,221	"	@	.80	200,976.80
LOOSE ROCK EXCAVATION:	99,080	"	@	.35	34,678.00
EXTRA HAUL:	1,240,820	"	@	.01	12,408.20
CLEARING:	18.3	Acres,	@	10.00	183.00
TIMBER IN STRUCTURE:	1,393,107	F.B.M.	@	8.50	11,841.41
HAULING CULVERT PIPE:	684	T.Miles	@	.40	273.60
LAYING 24" PIPE:	852	Lin.Ft.	@	.25	213.00
EXTRA WORK PER FORCE ACCOUNT:					9,660.63
					$311,836.87

Less previous payments:

E.D.No. 2859,	Aud.No.	10,503.63	
E.D.No. 3124,	Aud.No.	38,509.65	
E.D.No. 130,	Aud.No.	44,666.10	
E.D.No. 270,	Aud.No.	46,150.65	
E.D.No. 476,	Aud.No.	41,278.12	
E.D.No. 724,	Aud.No.	28,866.43	
E.D.No. 903,	Aud.No.	17,957.14	
E.D.No. 1247,	Aud.No.	15,336.53	
E.D.No. 1427,	Aud.No.	20,180.79	
E.D.No. 1647,	Aud.No.	1,063.35	
E.D.No. 1941,	Aud.No.	7,643.50	$272,155.89

WORK COMPLETED SEPTEMBER 13TH, 1903. AMOUNT OF THIS VOUCHER: $ 39,680.98

PAYMENT DUE NOVEMBER 13TH, 1903.

Correct..... *Approved*..... HAC

ACTING CHIEF ENGINEER.

Correct..... *Approved*.....

For the President

I certify that this account is duly approved by the proper officers; that the same has been examined, found correct, and is hereby audited for payment.

.....

Auditor of Disbursements.

$.....

Received ..... *190*....., *of the* **NORTHERN PACIFIC RAILWAY COMPANY,**

..... *Dollars*

in full of the above account.

Witness.....

☞ READ THIS.—The above receipt must be dated and signed by the party in whose favor this Voucher is made out, or, when signed by another party, the authority for so doing must in all cases accompany it and the receipt must NOT be cut off from the body of the Voucher.

This Voucher, when dated and signed in ink as above, becomes a SIGHT DRAFT on the Northern Pacific Railway Company, St. Paul, Minn., and may be used through bank in the same manner as a check. VOID IF ALTERED OR ERASED.

.....

TREASURER.

Northern Pacific Railway Co.

Audit No. _____

Month of _____ *190*

_____

_____

_____

_____

$ _____

Form 286 2-7-03 10M B R

NORTHERN PACIFIC RAILWAY COMPANY.

Mem. No.
E. D. No.

To FOLEY BROTHERS & LARSON, Dr.

Address (Sheet 2)

1903.

Oct. 28,	Brought forward,		$39,680.98
Charge:-			
Open Accounts,			
File 592, ('02), Wash. Central Extn.,			
Coulee City to Adrian,			
Grading,		9,432.59	
Bridges, Trestles & Culverts,		8.85	
Open Accounts,			
Foley Bros.& Peter Larson, A/C.Contract,		30,239.54	$39,680.98

WORK COMPLETED SEPTEMBER 18TH, 1903.

PAYMENT DUE NOVEMBER 13TH, 1903.

Northern Pacific Railway Co.

Audit No. _____

Month of _____ *190*

_____

_____

_____

_____

$ _____

CORRECT:

Charge Washington Central Ry.,

Coulee City to Adrian.

Sub account..... Grading 943259

..... B. & C. Culverts 8.85

..... $9441.44

.....

.....

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
221	HN	CN	H	____M.		____M.			____M.		

FROM Hamilton, Oct. 29-30th 1903 TO E.J.Pearson,

DATED AT St.Paul.

Browsing Foley Bros. completed grading June 23rd. and bridges Sept. 13th. latter date completed contract.

G.D.Ball.

3:21 P.M.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	RECD FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				M.		M.			M.		

Copy

FROM October 29th,1903. TO G.D.Ball,

DATED AT Hamilton,Mont.

Solomon 28th, which states Foley Bros. & Larson contract completed September 13th. Final Estimate has made by you covers work month of October. Do you mean October 13th?

E.J.Pearson.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
83	HN	F C		____M.		____M.			____M.		

FROM Hamilton Oct 28th,1903, TO E.J.Pearson,

DATED AT

Foley Bros contract completed Sept 13th,

G.D.Ball,

1050a m 29th

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

COPY.

FROM St. Paul, Minn.

DATED Oct. 28th, 1903.

TO G. D. Ball,

AT Hamilton, Mont.

Wire me date of completion of contract Foley Bros & Larson.

E. J. Pearson.

Nac
I think better
Lord this Put it in
work the final Est
7/19 PTH

Form 285 CONSTRUCTION. 2-7-03 10M B R

NORTHERN PACIFIC RAILWAY COMPANY.

Mem. No.
E. D. No.
1903.

To FOLEY BROTHERS AND PETER LARSON, Dr.

Address Spokane, Washn.

Nov. 30th, For refund of amount paid for transportation of G. Shaw and ten men, Spokane to Coulee City, on account of extra work by force account, construction of Wash.Cent.Exten., Coulee City to Adrian:

Pass No. 14732, June 10th, 1903,
11 men, Spokane to Coulee City @ 1.25, $ 13.75

CHARGE:
Open Accounts,
File 592(1902), W.C.Extn., C.C.to Adrian,
Transportation Charges, $ 13.75.

Correct ..... Approved ..... ACTING CHIEF ENGINEER.
For the General Manager

Correct ..... Approved .....
For the President

I certify that this account is duly approved by the proper officers; that the same has been examined, found correct, and is hereby audited for payment.

.....
Auditor of Disbursements.

$.....

Received ..... *190*....., *of the* **NORTHERN PACIFIC RAILWAY COMPANY,**

..... *Dollars*

in full of the above account.

Witness .....

READ THIS.—The above receipt must be dated and signed by the party in whose favor this Voucher is made out, or, when signed by another party, the authority for so doing must in all cases accompany it and the receipt must NOT be cut off from the body of the Voucher.

This Voucher, when dated and signed in ink as above, becomes a **SIGHT DRAFT** on the Northern Pacific Railway Company, St. Paul, Minn., and may be used through bank in the same manner as a check **VOID IF ALTERED OR ERASED.**

.....
TREASURER.

Northern Pacific Railway Co.

Audit No _____

Month of _____ *190*

_____

_____

_____

_____

_____

$ _____

TO Mr. E. J. Pearson,

Saint Paul, Minn.

FROM
FOLEY BROS., LARSON & CO.
RAILWAY CONTRACTORS.
OFFICE AT SPOKANE OFFICES,
319-320 PEYTON BLOCK.

OFFICE OF CHIEF ENGINEER G.N.R.R.
OCT 27 1903
ST. PAUL, MINN.

Spokane, Wash. Oct . 24th 1903.
BOX 1913

Dear Sir:-

We have today received by mail, a copy of our final estimate, from Mr. D. G. Ball. This estimate shows no further details than quantities and classification thereof, of each section. Kindly forward to us at above address, at your earliest convenience, a copy giving estimate in detail as rendered to our sub-contractors, which estimate should also show details of finals covering work done by various station-men.

We note in several instances where Mr. Ball included work done by sub-contractor and that done by stationman, in one total (referring to estimate as rendered to sub-contractor) and we are therefore unable to reconcile totals with estimates covered by previous settlements. An early reply will be greatly appreciated.

Very truly yours,

Foley Bros., Larson & Company,

for Foley Bros., & Peter Larson

By

RAM / Find out from Ball about this. [illegible]

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER
OCT 24 1908
ST. PAUL, MINN.

Custer City Oct 20 1908

E. J. Pearson Esq.
Acting Chief Eng.
Dear Sir—

Replying to yours of Oct 12—
I note fact Foley Bros are to blame entirely for delay.

Yours truly
C. T. Ball
Asst Engr

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph

1176

NUMBER	Repeated From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
	56 SP	H VI		____M.		____M.			____M.		

FROM

TO

DATED Coulee City Oct 20-03

AT E J Pearson.

Final estimate based on revised notes.

G D Ball

941-P

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.
After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	R[redacted]	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

COPY.

FROM

TO G. D. Ball

DATED Oct 20 - 1903

AT Coulee City Wash

Solomon 19th - My message intended to say use final Cross Section quantities as per revised Note -

E. J. Pearson

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Recd Fr[illegible]ER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
	36 SP[illegible]RO VT		____M.		____M.			____M.		

FROM

DATED Coulee City Oct 10-05

TO

AT E J Pearson

Browsing see my letter Oct 4th Re quantities.

G D Ball

[illegible]-P

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec[redacted]	ENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M. COPY		

FROM

DATED 10/19/03.

TO G. D. Ball,

AT Coulee City, Wash.

Solomon 16th. Use cross section quantities for ~~annual~~ final estimate referred to in your letter Oct. 4th.

E. J. Pearson.

Cor File

October 17, 1903.

RAW-B

Mr. G. D. Ball,

Assistant Engineer, C o u l e e C i t y .

Dear Sir:-

Referring to yours of Oct. 13th in regard to claim of Foley Bros. & Larson for refund of fares.

I am inclined to think that their claim is correct if these men were sent out to do extra work. In that case, this transportation was a part of the actual cost of the work to the contractors. Is this not so, and, if so, is he not entitled to a refund under the terms of the contract which provides that for extra work, he shall have the actual cost , pluss a percentage for superintendence, etc.

Yours truly,

E. J. PEARSON.

Acting Chief Engineer.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd F	DER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
107	HN	F	C	____M.		____M.			____M.		

FROM Coulee Oct 16th,1903, TO E.J.Pearson,

DATED AT

Have not rec'd my letter 4th

Cacti please advise as to case where recross section shows less quantities than given station men for final .

G.D.Ball,

1035am 17th

Form 290

Northern Pacific Railway Company.

Coulee City Oct 13 1903.

OFFICE OF CHIEF ENGINEER N.P.R.R.
OCT 16 1903
ST. PAUL, MINN.

E. J. Pearsm. Esq.
Chief Engineer.

Dear Sir -

Attached please find bill for refund of fare for men shipped from Spokane to Coulee City to do fire accident work on fire at Sta 622 - in order to enable us to lay track across without bridging. Under their contract they are required to pay 1¢ per mile and also were obliged to do the work. They have then claim on the fact that Esbick & Hartnett were shipping men for at same time - of course under their own contract which allowed it. Have note fm Holy Bros & Larsen that under their Contract they could not allow this but had refunded it to you. I do not recommend doing this.

Yours truly
G. D. Ball
Asst Engr.

Encl.

October 12, 1903.

RAW-B

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I notice certain items which you have cut out of bill rendered by Foley Bros. & Larson and attached to their estimate for the month of September. In case of this kind, do you notify Foley Bros. and Larson of the cutting out ofthe items with reasons for such action?

Yours truly,

E. J. PEARSON.

Acting Chief Engineer.

Form 1386

1176

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				M.		M.			M.		

FROM On Mont. Div., Oct. 10, 1903. TO G. D. Ball,

DATED AT Coulee City, Wash.

If you have bills for extras from Foley Bros. & Larson covering items on your residency and before you assumed general charge submit same to Mr. Taylor who can perhaps assist you in checking them up. Want them checked closely. You may furnish Contractors information regarding their estimates as they request.

E. J. Pearson.

Cor file

To G. D. Ball,

Coulee City, Wash.

FROM
FOLEY BROS., LARSON & CO.,
RAILWAY CONTRACTORS.
OFFICE AT SPOKANE OFFICES,
319-320 PEYTON BLOCK.

Spokane, Wash. Oct. 6th 1903.

Dear Sir:-

We enclose our M. No. 61 covering expense of sending men from Spokane to Coulee City for employment on Borrow at Stations 621--625. This amount ($13.57 is not included in the charge made for this extra work as rendered under date of June 30th ($912.90 included in amount $2742.76) You will recollect that the question of making the above mentioned shipment, a free one, was taken up with you at the time by our Mr. Kellett, owing to the fact that at the time Eslick & Hartnett were granted free transportation from Spokane.

Very truly yours,
FOLEY BROS. LARSON & CO.
By

Enc (3)

Spokane, Wash. oct. 6th 1903. 190

Northern Pacific Railway Co.

To FOLEY BROS., LARSON & CO., Dr.
RAILWAY CONTRACTORS.

No. X M 61
REFER TO THIS INVOICE BY NUMBER.

S & B CO. 47525

June	10	Pass No. 14732, G. Shaw and ten men Spokane to Coulee City for force work at stations 621--625 = 11 Men @ $1.25 (Original list attached)		$13 75

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER N.P.R.R. OCT 7 1903 ST. PAUL, MINN.

Couler City Oct 4 1903.

E. J. Pearsen Esq.
Acting Chief Engr

Dear Sir —

Have got the fill for turntable almost graded — will be completed tomorrow. Material for concrete setting is here but circle material has not arrived. I have asked Supt Beamer to have foreman here tomorrow and as soon as he gets here will organize gang.

Great Northern are going to put in all the switches except the two on the round house track (1 to the coal dock & 1 to the coach track). So we do not need any additional switches. They are taking up one rail back to first cross over switch so their switches will fit.

This rail will give us with what we have on hand about enough for our tracks. What little more we need if any I will get from Supt Beamer and cover by Req'n.

Figuring recross sections goes very slowly but hope to get out Forty Bis. and Leisens final estimate this week.

Pls advise as to one point. One cut over recross sectioned by Mr Lusher and final estimate given station men on that basis. Recross sectioned, it shows that this estimate was 500 Cu Yds. too much — making a difference of $290. Which estimate shall be used in final — the Sub contractor

Form 290

Northern Pacific Railway Company.

(2)

well receive slight increase in other cuts that will more than make up this loss.

Thank for file which nearly completed also station plats. Please advise station names and send me a sample plat for title lettering. Will letter them

G.N. seem to be taking their time at Adrian so I think will have time table ready soon as they are ready.

Yours truly
G. D. Ball
Asst Engr.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.
After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	R[illegible]M	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
106	HN CN H			____M.		____M.			____M.		

FROM Hope, Sept. 28-29th, 1903 TO R.A.Weston,

DATED AT St.Paul.

Send me a copy of Darlings last letter of instructions to Ball as to method should be followed in remeasuring and making final estimates if there are 2 or 3 letters on this subject have a copy of each made and send. Also think there was a letter in May or about that time to Taylor while he was in charge or to Ball when he first took charge instructing how t to classify and allow for over break in rock cuts.

E.J.Pearson.

9:54 R.M.

Taylor in charge Dark Lake

Mr Pearson Copies all letters 9/29

Raw
Keep together
Call it Gadwar
may want to file
later

1176

WLD-M

August 3rd, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

Have received your sheet showing change in classification on the Coulee City Branch, and I agree with it all except the following:

Between Stations 206 and 213 the estimate should be 1138 yards of loose rock instead of 2138 as you have it, the balance or 1000 yards should be classified as common earth.

From Station 494 to 520 instead of 10000 yards of loose rock there should be 6480 what you had in the first place, the balance or 3520 should be classified as earth.

Between Stations 686 and 695 loose rock should be 3500 instead of 4676, the balance 1176 yards should be classified as common excavation.

From 888 to 904 there should be 800 yards of loose rock, the balance or 700 yards to be classified as common excavation.

From 925 to 944 there should be 3200 yards of loose rock, the extra 2000 yards to be classified as common excavation.

From 997 to 1010 there should be 2900 yards of loose rock, the other 1000 yards to be common.

From 1052 to 1087 there should be 6000 yards of loose rock instead of 8000, the other 2000 to be classified as common excavation.

G.D.B. 2.

My understanding was that there was only 6000 yards of borrow on the north side of the track, and I agreed to allow it all as loose rock, but I believe the allowance is entirely too much and we should settle at 6000 yards instead of 8000. This will make something over $2,000. difference in the estimate, leaving an increase over the old classification of about $17,500., which I think they are entitled to.

Yours truly,

Chief Engineer.

COPY.

August 3rd, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

Have received your sheet showing change in classification on the Coulee City Branch, and I agree with it all except the following:

Between Stations 206 and 213 the estimate should be 1138 yards of loose rock instead of 2138 as you have it, the balance or 1000 yards should be classified as common earth.

From Station 494 to 510 instead of 10000 yards of loose rock there should be 6480 what you had in the first place, the balance or 3520 should be classified as earth.

Between Stations 686 and 695 loose rock should be 3500 instead of 4676, the balance 1176 yards should be classified as common excavation.

From 888 to 904 there should be 800 yards of loose rock, the balance or 700 yards to be classified as common excavation.

From 925 to 944 there should be 3200 yards of loose rock, the extra 2000 yards to be classified as common excavation.

From 997 to 1010 there should be 2900 yards of loose rock, the other 1000 yards to be common.

From 1052 to 1087 there should be 6000 yards of loose rock instead of 8000, the other 2000 is to be classified as common excavation.

G.D.B. 2.

My understanding was that there was only 6000 yards of borrow on the north side of the track, and I agreed to allow it all as loose rock, but I believe the allowance is entirely too much and we should settle at 6000 yards instead of 8000. This will make something over $2,000. difference in the estimate, leaving an increase over the old classification of about $17,500., which I think they are entitled to.

Yours truly,

(Signed) W. L. Darling,

Chief Engineer.

Form 290

Northern Pacific Railway Company.

CHIEF ENG
AUG 3 1903
ST. PAUL, M

Coulee City July 30 1903

W L Darling Esq
Chief Engr
St Paul

Dear Sir -

Attached please find statement of Classification as requested. The Classification marked Old - is the Classification on which Hoffy Bros & Larsen made their objections. The Classification marked new is an estimate based on the same data as the other but in accordance with your letter of July 5th. When the Reconnections are in there will be changes I cannot - but do not anticipate an increase over what I have given here. Still it is difficult to say as the heaviest part of the work was in the second residency and completed and estimated before Mr Taylor left - and there are no notes to show basis of estimate.

Yours truly
A D Ball
Asst Engr.

COPY. 1176

WLD-M

July 30th, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

If you are satisfied that Saunders is the right man and capable of doing the work, I have no objection to your keeping him.

Yours truly,

(Signed) W. L. Darling

Chief Engineer.

Form 290

Northern Pacific Railway Company.

CHIEF ENGINEER'S OFFICE JUL 30 1903 ST. PAUL, MINN.

Custer City 7/27/03.

W. L. Darling Esq.
Chief Engineer.
Dear Sir —

Your wire 26 Re Saunders. — I think he is capable of doing the necessary surveying. — In fact I feel safer with him than I would with any stranger just now. I cannot reconcile your telegram with your letter of April 27 in which you stated that I ought to be able to handle the work with the assistance of Mr. Saunders. Mr. Cox will send me an assistant Engineer — Mr Lisher — And Saunders is certainly far ahead of him. Cox will send me another man — who just quit his job before he got here when I just Saunders to work for fear I never would get started. If you can send me a reliable man who is competent to go ahead all right — but rather than take chances on a stranger reliability I would prefer to Rely Saunders.

Yours truly
G. D. Ball
Asst Engr.

Form 1386

NORTHERN PACIFIC — YELLOWSTONE PARK LINE

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

COPY

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM St.Paul, July 26, 1903. TO G. D. Ball,

DATED AT Coulee City, Wash.

Your wire 25th. Send me comparison of each cut showing old and new classification so I can judge proper allowance.

W. L. Darling.

WLD-M

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
306	HN	CN		____M.		____M.			____M.		

FROM Coulee City, July 25th, 1908 W.L.Darling,

DATED AT St.Paul.

Personal letter additional allowance revised estimate 18

Salic July 5th. Cogitate conquering per your strenous impish casuistry to

19 thousand estimate

catacomb vixen over June impish.

G.D.Ball.

3:03 P.M.

July 22nd, 1903.

Mr. G. D. Ball,

Assistant Engineer, N.P.Ry.,

Coulee City, Wash.

Dear Sir:-

I find that I have neglected to answer some of your questions relative to measurements of work in connection with classification between Coulee City and Adrian.

I believe the cuts should be recross-sectioned if there is any question whatever about the accuracy of the measurements.

With reference to solid rock increasing the amount of fill. Contract provides that everything should be measured in excavation, therefore if a yard of rock makes a yard and a half of fill you should estimate accordingly.

Yours truly,

Chief Engineer.

1176

WLD-F. July 16th,1903.

Mr. G. D. Ball,

Assistant Engineer, Coulee City,Wash.

Dear Sir:-

Referring to your favor of the 12th inst . Wherever the material is solid rock it should , of course, swell 50% in the embankment and the borrow be estimated accordingly.

Yours truly,

Chief Engineer.

WLD-M

July 8th, 1903.

PERSONAL.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I have written you today fully regarding the classification which I would recommend on the line from Coulee City to Adrian.

Before making this in full, I wish you would reckon up what it comes to on the basis of my notes, and wire me the additional allowance in dollars and cents.

Do not want it under any consideration to be above $15,000. or $16,000.

Please let me know by wire as soon as you can.

Yours truly,

Chief Engineer.

WLD-M

July 5th, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I would like to have you revise Foley Bros. & Larsen's estimate as far as classification is concerned so that they can have the benefit of it in the estimate which you are to make the first of this month.

I have been unable to write you previously on account of the press of other matters, but I think the Contractors are entitled to a considerable increase in the classification that has been allowed. Technically I believe Mr. Taylor's and your classification is very near right, , but I also believe they are entitled to a little more liberal construction of the contract and specifications than has been given them, and in making my inspection with you and Mr. Welch on June 27th, I took notes of the different cuts which I believe should be classified, and have embodied them in this letter.

I would be glad, therefore, if you would make your classification based on these notes as far as practicable. If I am in error in any place, I wish you would advise to the end that there may be no error, and that the contractors get a fair allowance under the terms of their contract.

In the cut between Station 6 and 16 the top surface was a mass of boulders varying from 18 inches to 2 feet and more in thickness, but averaging at least 18 inches throughout. The boulders were practically one mass, and for

that reason I believe they are entitled to a classification of solid rock for a strip [illegible]0 feet long, 30 ~~inches~~ feet wide and 2[illegible] feet deep, making a total of approximately 1800 cubic yards. For the balance of the cut they should be entitled to 50% earth and 50% loose rock.

In the cut at Station 27 I believe they are entitled to solid rock for a distance of 400 feet in length, 20 feet in width and 1 foot in depth, which is approximately 300 cubic yards; the balance of the previous classification is all right.

From Station 32 to 36 they should have solid rock for 400 feet in length, 20 feet in width and 1 foot in depth, approximately 300 cubic yards; the balance of the classification is all right.

From Station 49 to 56 they are entitled to 72 cubic yards of solid rock, the balance loose rock.

In the cuts from 70 to 79, 93 to 103, 118 to 124, 132 to 147 and 160 to 170 that classified as loose rock should be solid, the balance of the classification is all right.

From Station 170 to 180 that classified as loose rock should be solid rock, the balance of classification is all right.

From Station 187 to 200 that now classified as earth should be one-half loose rock and one-half solid rock.

From Station 207 to 212 75% of the earth as classified should be loose rock, the balance earth.

From Station 216 to 224 overbreak should be allowed throughout the cut. My understanding is that the overbreak in the western part of the cut has been allowed, but not in the eastern part. I believe from the arguments that were produced at the time we were there that Contractors are entitled to this overbreak.

From Station 236 to 237 classification is O.K.

From Station 239 to 249 the loose rock as estimated should be solid rock, that estimated as earth should be 50% loose rock and 50% earth.

At Station 230 the upper borrow which was in loose rock who is I believe be estimated from 50 to 75% loose rock. I believe there are now 8000 cubic yards to be considered. There should therefore be from 4000 to 6000 yards of loose rock estimated.

From Station 249 to 254 one-half of the loose rock estimated should be solid rock.

From Station 270 to 278 that estimated as earth should be loose rock.

From Station 279 to 281 the earth estimated should be loose rock.

From Station 283 to 297 the loose rock should be estimated as solid rock, the earth remain as it is.

From Station 306 to 309 the loose rock should be estimated as solid rock, the earth as it is.

From Station 310 to 315 that estimated as earth should be loose rock.

From Station 323 to 331 there should be a space 27 feet wide 800 feet long and 2 feet thick estimated as solid rock. This is for the boulders that are on top of the cut; the balance should be one-half earth and one-half loose rock. From Station 333 to 337 cut should be 50% loose rock. The borrow from Station 335 to 350 should have a fair percentage of loose rock estimated. From Station 372 to 393 should be one-half loose and one-half common excavation.

From Station 426 to 430 it looks as if there was too little solid rock estimated. The earth estimated in the cut should be not to exceed 120 cubic yards, and looks as if the balance should be solid rock.

The cuts from Station 433 to 435, 439 to 441 are all right as estimated.

G.D.B. 4.

From Station 449 to 455 all common excavation estimated should be loose rock.

In cuts from Station 462 to 464 there should be 60 cubic yards of solid rock added to the estimate.

Cut at 490 is O. K.

From Station 493 to 510 the portion in bottom of cut shown valley should practically be estimated as solid rock for a depth, I should judge, of from 3 to 4 feet above the bottom of the cut. There should also be a fair percentage of the clay streak estimated as loose rock.

From 542 to 550 think it is all right.

From 554 to 558 and from 558 to 564 is O. K. From 572 to 580 the common should be estimated as loose rock.

From 593 to 605 the overbreak, I believe, should be allowed.

From 648 to 651 there should be about 520 cubic yards of solid rock.

From 668 to 677 there should be considerably more solid rock estimated, and I believe it would stand from 700 to 800 cubic yards.

From 686 to 694 that estimated as earth, of which there is 6082 yards, I believe should be 50% loose rock and 50% earth.

At Station 700 the overbreak should be allowed.

From Station 705 to 717 O.K.

From 725 to 736 there is 11000 cubic yards of common excavation estimated, about 25% of which should be loose rock.

From 745 to 750 the common estimated at 495 cubic yards should, I believe, be loose rock.

From 751 to 759 is O.K.

Cut at 768 is O.K.

G.D.B. S.

From 773 to 780, 795 to 798, 803 to 808 and 812 to 819 cuts are estimated O.K.

At Station 867 there is a pipe that has a very poor opening. This should be attended to so that water can get into it.

At Station 878 this matter was pretty thoroughly discussed, and I believe you understand my idea of the method of classification.

From 889 to 904 there is a layer of about 8 feet in bottom of cut that should be estimated as cement gravel.

In the cut at Station 935 there should be about 5200 yards of loose rock.

In the Cut at Station 1005 there should be 3900 yards of loose rock.

The cut at Station 1048 loose rock should be 1040 cubic yards, earth 3120.

The borrow for making track parallel with the Great Northern should be estimated as loose rock for the portion taken out on the north side, that portion on the south side should be common excavation.

At mile post 5 the excavation and embankment do not seem to check. I wish you would have this investigated and find the trouble.

Yours truly,

Chief Engineer.

COPY.

St.Paul, July 5th, 1903.

PERSONAL.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I have written you today fully regarding the classification which I would recommend on the line from Coulee City to Adrian.

Before making this in full, I wish you would reckon up what it comes to on the basis of my notes, and wire me the additional allowance in dollars and cents.

Do not want it under any consideration to be above $15,000. or $16,000.

Please let me know by wire as soon as you can.

Yours truly,

(Sgd) W. L. Darling,

Chief Engineer.

COPY.

St .Paul, July 5th, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I would like to have you revise Foley Bros. & Larson's estimate as far as classification is concerned so that they can have the benefit of it in the estimate which you are to make the first of this month.

I have been unable to write you previously on account of the press of other matters, but I think the Contractors are entitled to a considerable increase in the classification that has been allowed. Technically I believe Mr. Taylor's and your classification is very near right, but I also believe that they are entitled to a little more liberal construction of the contract and specifications than has been given them, and in making my inspection with you and Mr. Welch on June 27th, I took notes of the different cuts which I believe should be classified, and have embodied them in this letter.

I would be glad, therefore, if you would make your classification based on these notes as far as practicable. If I am in error in any place, I wish you would advise to the end that there may be no error, and that the contractors get a fair allowance under the terms of their contract.

In the cut between Station 6 and 16 the top surface was a mass of boulders varying from 18 inches to 2 feet and more in thickness, but averaging at least 18 inches throughout. The boulders were practically one mass, and for

that reason I believe they are entitled to a classification of solid rock for a strip 800 feet long, 30 feet wide and 2 feet deep, making a total of approximately 1800 cubic yards. For the balance of the cut they should be entitled to 50% earth and 50% loose rock.

In the cut at Station 27 I believe they are entitled to solid rock for a distance of 400 feet in length, 20 feet in width and 1 foot in depth, which is approximately 300 cubic yards; the balance of the previous classification is all right.

From Station 32 to 36 they should have solid rock for 400 feet in length, 20 feet in width and 1 foot in depth, approximately 300 cubic yards; the balance of the classification is all right.

From Station 49 to 56 they are entitled to 72 cubic yards of solid rock, the balance loose rock.

In the cuts from 70 to 79, 93 to 103, 118 to 124, 132, to 147 and 160 to 170 that classified as loose rock shoul d be solid, the balance of the clazsi-f cation, is allright.

From Station 17% to 180 that classified as loose rock should be solid rock. The rest of the classification is all right.

From Station 187 to 200 that now classified as earth should be $\frac{1}{2}$ lose rock and $\frac{1}{2}$ solid rock.

From station 206to 222 75% of the earth as classified should be loose rock, the balance earth.

From Sta 216 to 224 overbreak should be allowed throughout the cut. My understanding is that the overbreak in the western part of the cut has been allowed, but not in the eastern part. I believe from the arguments that were produced at the time we were there that contractors are entitled to this overbreak.

G.D.B. 3.

From Sta 236 to 237 classificat ion is O.K.

From Sta 239 to 249 the loose rock as estimated should be solid rock, that estimated as earth should be 50% loose rock and 50% earth.

At Sta 230 the upper borrow whish was in loose rock should I believe be estimated from 50 to 75% loose rock. I believe there are now 8000 cu yds to be considered. There should therefore be from 4000 to 6000 yds of loose rock estimated.

From Sta 249 to 254 ½ of the loose rock estimated should be solid rock.

From Sta 270 to 278 that estiated as earth should be loose rock.

From Sta 27 9 to 281 the earth estimated should be loose rock.

From Sta 283 to 297 the loose rock should be estimated as solid rock the earth remain as it is.

From Sta 306 to 309 the loose rock should be estimatedas solid kk rock, the earth as it is.

From Sta 310 to 315 that estimated as earth should be loose rock.

From Sta 323 to 331 there should be a space 27 ft wide 800 ft long and 2 ft thick estimated as solid rock. This is for the boulders that are on top of the cut: The balance should be one half earth and one half loose rock.

From Sta 333 to 337 cuts should be 50% loose rock. The borrow from sta 335 to 350 should have a fair percentage of loose rock estimtaed.

XXXXXXXXX

From sta 372 to 393 should be ½ loose and ½ common excavation.

From sta 426 to 430 it looks as if there was too little solid rock estimated. The earth estimated in the cut should be not to exceed 120 cu yds and looks as if the balance should be solid rock.
The cuts from sta 433 to 435, 439 to 441 are all right as estimated .

G.D.B. 4.

From sta 449 to 455 al l common excavation estimatedshould be loose rock.

In cuts from sta 462 to 464 there should be 60 cu yds of solid rock added to the estimate.

Cut at 490 is O.K.

From sta 493 to 510 the portion in bottom of cut shown yellow should practically be estimated as so lid rock for a depth, I should judge, of from 3 to 4 ft above the bottom of the cut. There should also be a fair percentage of the clay streak estimated as loose rock.

From 542 to 5 5@ think it is all right.

From 554 to 558 and from 558 to 564 is O.K.

From 572 to 580 the common should be e stimated as loose rock.

From 593 to 605 Jthe overbreak I believe should be al lowe d.

From 648 to 651 there should be about 620 yds of solid rock.

From 668 to 677 there should be considerably more solid rock estimated and I believe it would stand from 700 to 800 cu yds.

From 686 to 694 that estimated as earth of which there is 6082 yds I believe should be 50% lose rock and 50% earth.

At sta 700 the overbreak should be allowed.

From sta 705 to 717 O.K.

From 725 to 736 there is 11000 cu yds of common excavation estimated about 75% of which should be loose rock.

Frm 745 to 750 the common estimated at 495 cu yds, should, I believe, be loose rock.

G.D.H. 5.

From 751 to 759 is O.K.

Cut at 768 is O.K.

From 773 to 780, 795 to 798, 803 to 808 and 812 to 819 cuts are estimated O.K.

At sta 867 there is a pie that has a very poor opening. This should be attended to so that water can get into it.

At station 878 this matter was pretty thoroughly discussed, and I believe you understaad my idea of themethod of classification.

From 889 to 904 there is a layer of about 3 ft in bottom of cut that should be estimated as cement gravel.

In the cut at sta 935 there should be about 5200 yds of loose rock.

In the cut at sta 1005 there should be 3900 yds of loose rock.

The cut at sta E 1048 loose rock should be 1040 cu yds, earth 3120.

The borrow for making tracks parallel with the G. N. should be estimated as loose rock for the portion taken out on the north side, that portion on the south side should be common excavation.

At M.P. 5 the excavation and embankment do not seem to check. I wish you would have this investigated and find the trouble.

Yours truly,

(Sgd) W.L.Darling.

Chief Engineer.

COPY. 1176

WLD-M On Dakota Division, July 1st, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I hand you herewith letter from Mr. L. Chindahl concerning estimate between Stations 664 and 682.

After the classification is finally determined upon, and estimate furnished Foley Bros., wish you would send a copy of it to the Sub-contractor between Stations 664 and 682.

Yours truly,

(Signed) W. L. DARLING.

Enc. Chief Engineer.

COPY.

WLD-M

On Dakota Division, July 1st, 1903.

Mr. L. Chindahl,

Box 262, Kalispell,

Montana.

Dear Sir:-

Your favor of the 27th instant from Kalispell has been received.

I have asked Mr. Ball, the Engineer in charge at Coulee City, to send you correct estimate after classification has been completed.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Form 1336

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

1176

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
	[redacted]			____M.		____M.			____M.	COPY	

FROM

DATED June 22nd,1903.

TO W.L.Darling,

AT Care Car #5, On Line.

Following from Coulee City,June 22nd; "Only 20 men working on Bridge #3. Contractors claim unable to get men account high water and washouts on railroads using all available men. Will have bents erected to-day and start decking", signed G.D.Ball.

R.A.Weston.

COPY

June 22nd,1903.

Foley Bros.,

Herewith copy of message from Assistant Engineer Ball in regard to force working on Bridge #3 on Coulee City Line.

W.L.Darling.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
240	HN	CN	H	____M.		____M.			____M.		

FROM Coulee City, June 22nd, 1903 TO W.L.Darling,

DATED AT St.Paul.

Only 20 men working on bridge 3 contractors claim unable to get men account high water and washouts on railroads using all available men, will have bents erected to-day and start decking.

G.D.Ball.

2:45 P.M.

Repeat

Copy sent to Foley 10:20

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

1176

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

SEND

RECEIVED at

At Seattle, June 21, 1903.

Patrick Welch,

Contractor,

Spokane, Wash.

Ball advises me only 3000 ft. of timber being erected per day on bridge and but 23 men at work. You promised me to have sufficient force to erect 50000 ft. per day as soon as track reached there.

W. L. Darling.

Frank No. 6350.
WLD-M

Form 1886

NORTHERN PACIFIC — YELLOWSTONE PARK LINE

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

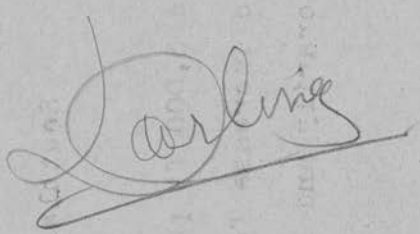
NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
12	BY.C.X.			____M.		____M.			____M.		

FROM Coulee City, TO W.L.parling,

DATED June 21.1903 AT Seattle.

Commenced bridge 3 yesterday. Have errected 3,000 ft per day with 23 men expect 10 men tonight. Am after them to increase force Broke their engine yesterday? Have reapired it temporarily and have a new one coming Monday.

G.D.ball,1156A



Form 1886

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.
After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM On Monte Cristo Br., June 20, 1903. TO G. D. Ball,

DATED AT Coulee City, Wash.

How big a force on bridge three?

W. L. Darling.

WLD-M

Form 1386

NORTHERN PACIFIC

TELEGRAM.

COPY

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance. Operators transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Recd F...	...NDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM On Seattle Divn., June 19, 1903. TO G. D. Ball,

DATED AT Coulee City, Wash.

Your track shows laid up to big bridge. Have contractors any force at work? Keep me advised about bridge work and what they are doing per day in foot board measure.

W. L. Darling.

WLD-M

Form 1386

1176

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance. After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily so, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				M.		M.			M.		

COPY

FROM

DATED June 16th,1903.

TO W. L. Darling,

AT Care Car #5, On Line.

Following message from Coulee City, dated June 15th; "Foley Bros. men here advised by Welsh that Mr.Darli ng had realsed them from hauling ahead of track after mud sills Bridge #3 were delivered. Please advise. Cannot do much now before we will have track at bridge" signed G.D. Ball.

R.A. Weston.

Form 1386

1176

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance. All operators transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, [illegible] operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	RECD. FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
	N P R	[redacted]		330 P.M.		M.			M.		

FROM Coeur d'Alene City DATED 6/16

TO O L Sorley AT Bay

Have reed 5 Cars steel and put in track on one half mile from Brudge 3 Contractors Pulled mud Piles for this Brudge then quit Pauling 5 Cars steel on road Dester Days but have not reached Spokane at Midnight

G S Ball

Form 1386

NORTHERN PACIFIC — YELLOWSTONE PARK LINE

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance. After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Recd. From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				M.		M.			M.		

FROM At Hoquiam, June 16, 1903. TO G. D. Ball,

DATED AT Coulee City, Wash.

I told Welch that he need not haul material after he reached the bridge 12 miles out of Coulee City. Understood from you that there were no roads and delivery could not be made.

W. L. Darling.

WLD-M

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
	22 S[illegible] R[illegible] R			____M.		____M.			____M.		

FROM Coulee June 15th ,1903. TO W.L.Darling,

DATED AT St Paul.

Foley Bros. ~~men~~ men here advised by Welsh that Mr.Darling had released them from hauling ahead of track after mud sills bridge 3 were delivered , pls advise , cannot do much now before we will have track at bridge

G.D.Bell.

9 43 P.M.

Repeat

Form 1286

NORTHERN PACIFIC

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.	COPY	

FROM June 15th,1903. TO G.D.Ball,

DATED AT Coulee City, Wash.

Foley Bros.received message from their man at Coulee City in which it is stated that they were released from hauling head of track excepting the mud sills for Bridge #3 which have been hauled and are now in place. Is this correct and are matters going O.K. now?

W.L.Darling.

1176

Form 1386

NORTHERN PACIFIC

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.
After tr[illegible]g telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, opera[illegible]quired to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	RECD FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

COPY

FROM
DATED June 14th,1903.

TO W.L.Darling,
AT Care General Manager's Special.

Following from Coulee City dated June 13th; "Four teams hauling mud sills to Bridge #3, to-day. Cannot keep bridge crew busy"; Signed G.D.Ball. Have telephoned this to Foley Bros. who will again wire Welsh. They have written and telegraphed him before but have not been able to locate him.

R.A.Weston.

Form 1386

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After tr[illegible]g telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, opera[illegible]quired to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.	COPY	

FROM

DATED June 13th,1903.

TO G.D.Ball,

AT Coulee City,Wash.

Solomon 13th. Foley Bros. will again take up with Welsh matter of hauling bridge timber for Bridge #3.

W.L.Darling.

Form 1396

TELEGRAM.

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	Rec'd From	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
2	27	a	1H	214 at M.	6/13	M.			M.		

FROM Coulee

DATED June 13/03

TO W. L. Darling

AT

Four Teams Hauling mud sills to bridge

3 today cannot keep bridge Crew busy

G. D Ball

Telephoned Taken 1 p.m. 6/13

1176

SJB- F.

June 8th,1903.

Mr. G. D. Ball,

Assistant Engineer, Coulee City,Wash.

Dear Sir:-

Referring to your letter of the 4th inst. Under specifications for pile bridges (Form C.D.#117) you will find that "Timber will be paid for according to the number of feet B.M. in the finished structure".

Yours truly,

Chief Engineer.

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER N.P.R.R.
JUN 8 1903
ST. PAUL, MINN.

Coulee City June 4 1903

W. L. Darling Esq.
Chief Engineer
Dear Sir—

Ple. advise method of determining first board measure of several timber in straight lines.

Do you figure length of timber in place or merchantable length.

Thus for a Beam of say 27 feet 11 inches. Width at bottom of sill.

Material reduced by 3 feet (R.W.) must you figure the lengths of pieces to the nearest foot and scale estimate from that or take the next even foot above. Or if (piece) is say 20' 11" would you call it 20'.

W 22 feet.

Yours truly.
A. D. Ball
Asst Engr.

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER
JUN 3 1903
ST. PAUL, MINN.
76

Center City May 31 1903

(1)

H. L. Darling Esq.
Chief Engineer.
Dear Sir—

Referring to your letter of May 27 Re Unsatisfactory classification. Very little definite complaint has been made to me about classification.

There is a general complaint because all over break is not classified as solid rock and because there is earth classification in cuts where solid rock predominates. Their claim being that it is just as costly to move the yardage as if it were all solid rock.

On the first two miles which were surface work with boulders on top - I gave them a liberal classification - full liberal enough Mr Taylor thought.

On the lower end - beg inning Sta. 885 - all cuts except the one at 976 - are very coarse gravel - some boulders and some cement gravel. This gravel is closely packed and the crevices filled with sand. It was hard material to handle but was classified as earth except for the boulders and cement gravel - which were classified as loose rock. They have not said any thing to me about it but I heard that they expected had poor classification - which makes this contract is loose rock. The only two cuts that show much loose

Form 290

Northern Pacific Railway Company.

(2)

work on them at 1005 & 1045 - which I gave about 25% low work. I have consulted Mr. Taylor about them and he thought I gave the contractor all them were in them. Understand there is much dissatisfaction with classification between Sta 645 and 760. All this work completed before I took charge as Asst Engr and estimate was made out by C.C. Boldman - then Res. Engr. All the bridge pile Contractor claim should be on account - as it costs about 3 times the value of the aggregate to dig them. As soon as I can I will send you a detailed statement of estimates already completed. The bulk of them are made up on lines indicated by Mr Taylor. - The Estimate 645 to 765 he knows all about and can give you information that I may not be able to. I think perhaps the better way would be for me to make up the detailed estimate and send it to him with my explanation and let him add what he can and forward to you. If this is satisfactory - please let me know by mail.

Yours truly

G. D. Ball

Asst Engr.

OFFICE OF
FOLEY BROTHERS,
RAILROAD CONTRACTORS, LUMBER MANUFACTURERS,
AND WHOLESALE GROCERS,
GILFILLAN BLOCK.

SAW MILLS AT
FOLEY AND MILACA, MINN.

OFFICE OF CHIEF ENGINEER
MAY 29 1903
ST. PAUL, MINN.
176

ST. PAUL, MINN. May 28, 1903.

W. L. Darling, Esq.

Chief Engineer N. P. Ry.

St. Paul, Minn.

Dear Sir:-

Answering yours of the 27th inst. I wrote Mr. Welch and Mr. Larson yesterday, after having the conversation with you, the importance of having the work rushed. We have also forwarded your letters of the 27th to Mr. Welch and a copy of it to Mr. Larson in order that they may be fully advised of the situation.

Yours truly,

Foley Bros.

COPY. 1176

WLD-M

May 27th, 1903.

Messrs. Foley Bros. and Larson,

Contractors,

St.Paul, Minn.

Gentlemen:-

I expect to go over the Coulee City Branch about the middle of June, and would be glad to have one of your firm or representatives go over it with me. I am unable to say at this time just what date I can be there, but it will be some time between the middle of June and the 1st of July.

Have asked Assistant Engineer Ball to keep Mr. Welch advised.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

COPY.

WLD-M

May 27th, 1903.

Messrs. Foley Bros. and Larson,

Contractors,

St.Paul, Minn.

Gentlemen:-

I am afraid that the timber work in connection with your contract on the Coulee City Line is apt to hold track back. We must have the road completed by August 1st, and in order to do it the timber work must be completed not later than the 10th of July. This means that there should be put in place at least 60,000 feet daily, beginning not later than June 1st, and averaging that until July 10th. I am having the track rushed all possible to get material to the front as fast as possible, but when it does reach within your hauling distance of 4 miles, there should be no time lost in completing the bridging. It is very important to us that there be no slip up on this, and will be greatly obliged if you will take such means as practicable to carry this out.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

COPY.

WLD-M

May 27th, 1903.

PERSONAL.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

My attention has just been called to the unsatisfactory classification on Coulee City Line. I do not know just where this occurs, so am unable to write definitely, but wish you would advise me promptly as to what has been done, and where there is any question as to whether material should be classified as loose rock or earth or solid rock.

If it is necessary to get more information from Mr. Taylor, I wish that you would advise me so that we can arrange it.

I expect to be on the work some time during the middle of next month, and would like to have Mr. Welch there at that time. I wish you would please be sure and advise him, so that he will be there at the time we are.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

COPY.

WLD-M

May 27th, 1903.

PERSONAL.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I want to call your attention again to the condition of work on the Coulee City Line. I tried to impress particularly on you the importance of keeping posted regarding the progress of the work, and to see that all work was laid out so that it would be completed before August 1st. Over a month has passed and there appears to be no practical progress in bridging. There are 1,900,000 F.B.M. of timber to erect, and you have got not to exceed 40 days after June 1st to erect it. It is necessary, therefore, to average for that 40 days 50,000 feet per day, and it will require at least 75 laborers to do it. You can understand, therefore, the condition that you are in at the present time, and what you are liable to be in if the work is delayed any longer.

The contract with Foley Bros. and Larson provides for a 4 mile haul, beyond that they will have to be paid the actual cost of hauling. It is, therefore, necessary to push the track through to mile post 12 as quickly as possible, if not more than one third tied. Get track down any way so as to get cars over it to get bridge material to the front.

I beg to hand you herewith copy of a letter just written Foley Bros. and Larson.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

COPY. 1176

WLD-M

May 6th, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

With reference to estimating quantities in rock cuts that have fallen from outside the slope stakes into the cuts. The specifications distinctly state that such quantities will be estimated in the condition in which material is found when excavated. In other words, if the material before it slides is solid rock, and it slips into the cut from outside the slope stakes, and breaks into small pieces, then it appears to be loose rock, but the number of cubic yards must be measured in the shape in which the material is in the cut. That is, its measurement as loose rock would practically be 50% higher than its measurement as solid rock. For instance, if 100 cubic yards of rock excavation has fallen from outside the slope stakes into the cut, andmakes 150 cubic yards of loose rock, then the difference between the estimating as loose rock and solid rock is as follows.

Solid rock 100 cubic yards at 80¢ $80.00.
Loose rock 150 cubic yards at 35¢ 52.50.

There is therefore a difference of $27.50 in favor of the contractors if the material was estimated as solid rock.

There has been considerable discussion between Mr. Taylor, the contractors and myself with reference to the manner in which it should be estimated. The specifications are very explicit, but I believe you will find in some of the cuts that material comes out in such shape that it is practically worse than loose rock to handle, and in view of the fact that so many of their sub-contractors

have lost money on the work, even in face of the fact that prices almost as high as what the contractors received were given them, I am perfectly willing to allow them 50% of the material as solid rock, the balance as loose rock. I refer to those places where the material outside the slope stakes was originally solid rock. I understand from Mr. Taylor that there were about 12,000 cubic yards of this, measured in loose rock measurements inside the cut. This would mean about 8,000 coubic yards of solid rock, measured in place before it slipped. For this I am willing to estimate them as follows:

4,000 cubic yards of solid rock at 80¢		$3,200.
6,000 " " of loose rock at 35¢		2,100.
Total		$5,300.

in place of 12,000 cubic yards of loose rock at 35¢ $4,000, making a difference of $1,300. in favor of the contractors. I am not sure that 12,000 yards is the proper figure to use. Anyway, whatever the rock measured in place before it slide outside the slope stakes, I am willing to allow half of it as solid rock at 80¢, the other half I am willing to allow 50% more at loose rock prices.

I will be glad, therefore, if you will return Foley Bros. estimate on that basis.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

May 6th, 1903.

Mr. G. D. Ball,

Assistant Engineer,

Coulee City, Wash.,

Dear Sir:-

With reference to estimating quantities in rock cuts that have fallen from outside the slope stakes into the cuts. The specifications distinctly state that such quantities will be estimated in the condition in which material is found when excavated. In other words, if the material before it slides is solid rock, and it slips into the cut from outside the slope stakes, and breaks into small pieces, then it appears to be loose rock but the number of cubic yards must be measured in the shape in which the material is in the cut. That is, its measurement as loose rock would practically be 50% higher than its measurement as solid rock. For instance, if 100 cubic yards of rock excavation has fallen from outside the slope stakes into the cut, and makes 150 cubic yards of loose rock, then the difference between the estimating as loose rock and solid rock is as follows.

Solid rock 100 cubic yards at 80¢ $80.00

Loose rock 150 cubic yards at 35¢ 52.50.

There is therefore a difference of $27.50 in favor of the contractors if the material was estimated as solid rock.

There has been considerable discussion between Mr. Taylor, the contractors and myself with reference to the manner in which it should be estimated. The specifications are very explicit, but I believe you will find in some of the cuts that material comes out in such shape that it is practically worse than loose rock to handle, and in view of the fact that so many of their sub-contractors have lost money on the work, even in face

of the fact that prices almost as high as what the contractors received were given them, I am perfectly willing to allow them 50% of the material as solid rock, the balance as loose rock. I refer to those places where the material outside the slope stakes was originally solid rock. I understand from Mr. Taylor, that there were about 12,000 cubic yards of this, measured in loose rock measurements inside the cut. This would mean about 8,000 cubic yards of solid rock, measured in place before it slipped. For this I am willing to estimate them as follows:

4,000 cubic yards of solid rock at 80¢ $3,200.

6,000 cubic yards of loose rock at 35¢ 2,100

Total, $5,300. in place of 12,000 cubic yards of loose rock at 35¢ $4,000, making a difference of $1,300, in favor of the contractors. I am not sure that 12,000 yards is the proper figure to use. Anyway, whatever the rock measured in place before it slide outside the slope stakes, I am willing to allow half of it as solid rock at 80¢, the other hald I am willing to allow 50% more at loose rock prices.

I will be glad, therefore, if you will return Foley Bros. estimate on that basis.

Yours truly,

W. L. Darling,

Chief Engineer.

COPY. 1176

WLD-M

April 20th, 1903.

Messrs. Scott & Rosslow,

Attorneys at Law,

323-6 Fernwell Block, Spokane, Wash.

Gentlemen:-

Referring to your letter of the 3rd instant regarding work done by Nels Nelson for Foley Bros. & Larson between Stations 206+14 and 212+72 on the Coulee City extension of this road:

I beg to hand you with this copy of letter from Assistant Engineer Taylor, who has gone into the matter very carefully, and rechecked his work. I would suggest that if Mr. Nelson has any reason for doubting the accuracy of the estimate that he have it remeasured by some competent Engineer, and we will be very glad to check the matter up with him, as it is certainly the intention of this Company to pay for all work done.

Yours truly,

(Signed) W. L. DARLING.

Enc.

Chief Engineer.

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER N.P.R.
APR
19
1903
ST. PAUL, MINN.

Coeur d'Alene City, Wash. April 18th 1903

Mr. W. L. Darling,
Chief Engineer.
St Paul, Minn.

Dear Sir:-

Referring to enclosed letter from Scott & Rosslow, of Spokane, in regard to estimate between Stas 206+14 and 212+72, for work done by Nels Nelson, station-man under Sub-Contractor, for Foley Bros & Larson.

I have gone over the estimate and ground carefully and find no reason for changing the estimate given, which was as follows:

Common Exc.	2984 cu. yds
Solid Rock	589 " "

This party was settled with by the Contractors, about Feb 1st, on the above basis. If he thinks he has any reason for doubting the accuracy of the figures I would suggest that he submit the notes of measurements on which he bases his opinion.

Yours truly,

F. J. Taylor.
Asst. Engr.

JOS. ROSSLOW. W. D. SCOTT, NOTARY PUBLIC.

SCOTT & ROSSLOW,
ATTORNEYS AT LAW,

TELEPHONE BLACK 1791. 323-6 FERNWELL BLOCK.

OFFICE OF CHIEF ENGINEER N.P.R.R. APR 6 1903 ST.PAUL,MINN.

SPOKANE, WASH., April 3rd,1903

Northern Pacific Railway Co., (construction department)

St. Paul,Minn.

Gentlemen:-

Nels Nelson had,with others,sub-contract for grading road bed on the Coulee City cut-off between the Northern Pacific Railroad and the Great Northern. Their contract was for that portion from Station No. 206 + 14 and Station No. 212 + 72. They have been given estimates of classification and amount taken out by them from the main contractor that are greatly in error as to amount and kind of work and will not accept the same,as it is depriving them of a large amount of work that they have done. Before doing anything in the matter we thought it best to advise you and to request of you to let us know from your books how the estimates were on this portion,as to the classification and the number of cubic yards in each classification. Hoping to hear from you as soon as possible,we are

Very respectfully yours;

(Dict.R.)

Scott & Rosslow

F.P.

Pl Sy - Ks 4/6

1176

RAW*F

January 13th, 1903.

COPY

Geo. Sherriff, Esq.,

Auditor Passenger Receipts.

Dear Sir;-

I hand you herewith a letter from Superintendent Gilbert advising of issuance of pass in favor of A. M. Johnson and seven men from Spokane to Coulee City. Please have this pass included in your bill against Foley Bros. & Larson, Contractors, at the contract rate.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Enclosure.

1176

Jan. 3rd, 1903.

RAW*F

COPY

M. P. Martin, Esq.,

Auditor.

Dear Sir;-

Herewith, to be filed with the contract, Mechanics' Lein Bond given by Foley Bros & Larson in connection with their contract dated October 22nd, 1902.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Enclosure.

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER N.P.R.Y. JAN 2 1903 ST. PAUL, MINN.

Coeur d'Alene City Wash., Dec 29th 1902

Mr. W. L. Darling,
Chief Engineer.
St Paul, Minn.

Dear Sir:-

Herewith please find Mechanics' lien bond given by Foley Bros & Larson in connection with their contract for the construction of line between Coeur d'Alene City and Adrian, the same having been received with your letter of Dec 31st, and recorded in office of County Auditor of Douglas Co.

Yours truly,
F. J. Taylor,
Asst Engr

(N.P. Exp.)

1176

COPY.

WLD-C

December 27th, 1902.

F. J. Taylor, Esq.,

Assistant Engineer,

Coulee City, Wash.

Dear Sir:-

I wish you would furnish Foley Brothers & Larson at the end of each month with the same copy of estimate that you furnish us, showing work in total over the whole line, as well as the Resident Engineer's subdivision, giving amount of material moved by each contractor or station man. This is in order that the contractors may be able to keep check on their subcontractors and see that they are not over-running their estimate.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

1176

December 2nd, 1902.

W-GVF.

COPY

M. P. Martin, Esq.,

Auditor.

Dear Sir;-

I enclose herewith bond in the sum of $50,000.00 given by Foley Bros. & Larson, in connection with their contract for construction of line between Coulee City and Adrian. The Mechanics' Lien bond referred to inthe contract has been sent for record in the County office

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Enclosure.

November 28th, 1902.

W-GVF.

COPY

Messrs Foley Bros. & Larson,

Gilfilian Building,

St. Paul, Minnesota.

Gentlemen;-

I enclose herewith for your files one copy of contract dated October 22nd, 1902, for the construction of line from Coulee City to Adrian. Contract has been duly executed.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Enc.

COPY

November 28th, 1902.

W-GVF.

M. P. Martin, Esq.,

Auditor.

Dear Sir;-

Herewith for your files, one copy of duly executed contract with Foley Bros. & Larson, dated October 22nd, for the construction of line from Coulee City to Adrian.

The bonds called for by this contract will be forwarded later.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Enclosure.

Northern Pacific Railway Company.

Office of the Assistant Secretary.

R. H. RE[illegible]
ASSIST[illegible] SECRETARY.

St. Paul, Minn.

November 25, 1902.

RHR-MBL

Mr. W. L. Darling,

Chief Engineer.

Dear Sir:--

Herewith contract in duplicate dated October 22, 1902, between the Washington Central Railway Company and Foley Bros., providing for construction of line from Coulee City to Adrian. This contract you will note has been executed on behalf of the Railway Company by President Mellen and is ready for delivery.

Yours truly,

R. H. Reed

Enclosure

Assistant Secretary

COPY.

November 21, 1902.

Mr. C. S. Mellen,

President.

Dear Sir:-

I beg to hand you herewith, for execution, contract, in duplicate, with Foley Brothers and Larson for the construction of a line from Coulee City to Adrian; this contract having been awarded in accordance with your authority on October 21st.

Yours truly,

Chief Engineer.

COPY.

November 21, 1902.

Mr. F. J. Taylor,

Asst. Engr., Coulee City, Wash.

Dear Sir:-

Replying to your letter of November 5th in regard to contract with Foley Brothers and Larson, I wish to state that the copy of the contract sent to you is somewhat in error. The original contract was corrected by re-writing the third page. I hand you herewith copy of this page as re-written, and wish you would substitute it for page three in copy of contract which you have.

Yours truly,

Chief Engineer.

November 18th, 1902.

W-GVF.

COPY

Foley Bros.,

Gilfillan Block,

St. Paul, Minn.

Gentlemen;-

Some time ago I sent you, for execution, contract covering the work from Coulee City to Adrian. I inadvertently omitted to put into this contract the paragraph relating to transportation, and I find also that the condition with respect to haul of bridge material is not stated in the contract in accordance with the intent of the proposal as understood between yourselves and Mr. Darling.

I have accordingly rewritten the third page of this contract and hand you herewithbtwo copies of same. I wish you would have these pages substituted for the third page now in the contract as it now stands. I would like to have contracts executed and returned as soon as practicable.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Enc.

Northern Pacific Railway Company.

Office of the Chief Engineer.

W. L. DARLING,
CHIEF ENGINEER.

St. Paul, Minn.

WLD-C

At Seattle, Washington, November 14th, 1902.

(Memorandum).

Mr. Weston:-

F. I. Taylor, Esq.,
Assistant Engineer,
Coulee City, Wash.

~~Dear Sir:-~~

Referring to the enclosed contract for the construction of the Coulee City-Adrian line by Foley Bros. & Larson.

The contract is in error in that the price paid for timber should include the haul up to four miles, as per specifications. The intention in the proposal, as both Mr. Larson and Foley Brothers explained to me, was that the Company should pay for the cost of haul if hauled a longer distance than that called for in the specifications. Please change contract accordingly.

Yours truly,

Chief Engineer.

Enc.

OFFICE OF CHIEF ENGINEER
NOV 10 1902
ST. PAUL, MINN.

Form 290

Northern Pacific Railway Company.

Coeur d'Alene City, Wash. Nov. 5th 1902.

Mr. W. L. Darling
Chief Engineer.
St Paul. Minn.

Dear Sir:-

Referring to Foley Bros & Larson's contract. Under the item "Timber saved in Structures" it is stated that the price for labor does not include hauling timber from end of track to structures. The specifications give the maximum haul beyond end of track four miles, unless especially excepted. The clause in the contract being a special exception, will you please say if any understanding was had with the Contractors as to the manner in which bridge material would be handled. Whether bridges were to be built at the end of track in all cases, or in case it should be desirable to construct some of them ahead of track, whether they would be paid force account for hauling or would haul timber at their rate per ton per mile for hauling culvert pipe.

Mr Darling
Copy contract is attached as price as Foley & Larsons proposal. Do not know to any understanding as to hauling

The proposal reads that they shall be paid for the actual cost for hauling from cars to end of track, but was not known whether assistant engineer was to furnish teams or not. J. Taylor. Asst. Engrs.

11/10

W-GVF.

October 31st, 1902.

COPY

F. J. Taylor, Esq.,

Assistant Engineer,

Coulee City, Wash.

Dear Sir;-

Referring to my letter of October 27th, sending you a copy of contract with Foley Bros. & Larson, for construction Coulee City to Adrian. The following transportation clause was inadvertendly left out of this contract but will be inserted before the contract is executed. Please insert in your copy:

"The Railway Company will furnish transportation at the rate of one half cent per ton per mile for material required in the work and contractor's outfit, with a minimum of twenty five cents per ton and twenty five cents for single shipments. Bulky articles filling the car to visible capacity to make minimum car load weight. Live stock to be billed at actual weight with usual commercial minimum. The Railway company will charge full tariff rates for transportation of supplies including powder, fuel and lumber."

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

W-GVF.

COPY

October 27th, 1902.

F. J. Taylor, Esq.,

Assistant Engineer,

Coulee City, Wash.

Dear Sir;-

I beg to enclose herewith for your files and information copy of contract with Foley Brós. & Larson, for construction Coulee City to Adrian.

Yours truly,

(Signed) W. L. DARLING

Chief Engineer.

Enc.

October 27th, 1902.

W-GVF.

COPY

Foley Bros. & Larson,

Gilfilian Block,

St. Paul, Minn.

Dear Sirs;-

Referring to my letter of October 22nd.

I beg to hand you herewith for execution contract in duplicate covering construction of the line from Coulee City to Adrian. I also enclose regular and Mechanics' Lien Bonds in the sum of $50,000.00, which I wish you would furnish with this contract. I wish to have Surety Company bonds furnished. Will you kindly have the papers executed and returned to me as soon as possible.

Yours truly,

(Signed) W. L. DABLING

Chief Engineer.

COPY

W-GVF.

October 27th, 1902.

Foley Bros. & Larson,

Gilfilian Block,

St. Paul, Minn.

Dear Sirs;-

Referring to my letter of October 22nd.

I beg to hand you herewith for execution contract in duplicate covering construction of the line from Coulee City to Adrian. I also enclose regular and Mechanics' Lien Bonds in the sum of $50,000.00, which I wish you would furnish with this contract. Will you kindly have the papers executed and returned to me as soon as possible.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

W-CVF.

October 27th, 1902.

J. M. Hannaford, Esq.,

COPY

Second Vice President.

Dear Sir;-

I beg to advise that contract has been awarded to Foley Bros. & Larson, for the construction of the line from Coulee City, Wash., to Adrian, Wash. The contract contains the following provisions with respect to freight rates;

"The Railway Company will furnish transportation at the rate of one-half cent per ton per mile for material required in the work and contractor's outfit, with a minimum of twenty five cents per ton and twenty fiveX cents for single shipments. Bulky articles filling the car to visible capacity to take minimum car-load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies including powder, fuel and lumber.

Shipments of contractor's outfit will be made in the following form:

To Northern Pacific Railway Company,
Coulee City, Washington.
For Foley Bros. & Larson.

Will you please instruct the Agent at Coulee City to accept the contractor's OK on expense bills, covering outfit so billed, at contract rate, in lieu of collecting the charges in cash.

Yours truly,

(Signed) W. T. DARLING.

Chief Engineer.

Copy to H. A. Gray, Comptroller.
F. J. Taylor, Asst. Engineer.

October 27th, 1902.

W-GVF.

1d09

Foley Bros. & Larson,

Gilfilian Block,

St. Paul, Minn.

Gentlemen;-

In making shipments of your outfit, account construction Coulee City to Adrian, please have consigned in the following form:

To Northern Pacific Railway Company,
Coulee City, Washington.
For Foley Bros. & Larson.

If this is done, the Agent will release shipments on your OK of expense bills at the contract rate.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

October 25th, 1902.

W-GVF.

COPY

B. E. Palmer, Esq.,

Division Engineer,

Spokane, Wash.

Dear Sir;-

Until Foley Bros. & Larson, contractors for the line from Coulee City to Adrian, get their office established at Spokane, I wish you would arrange to issue laborers passes on account of this work upon request of their representative, Mr. Pat Welch. According to contract they will be charges 1¢ per mile for transportation.

In issuing the passes please note on the account line of the pass "Foley Bros. & Larson Contractors". It is customary to issue a limited number of passes free to sub-contractors to go out to view the work, and thi s you may do charging the same on the pass, not to Foley Bros. & Larson, but to"Construction Coulee City to Adrian"

A book of laborers passes will be sent to Foley Bros. & Larson and they will issue passes for laborers at their office at Spokane.

Yours truly,

(Signed) W. L. DARLING.
Chief Engineer.

Copy to F. J. Taylor.

COPY

October 25th, 1902.

W-GVF.

Foley Bros. & Larson,

Gilfilian Block,

St. Paul, Minn.

Gentlemen;-

I hand you herewith book of laborers passes for the counter-signature of E. F. White, good west of Missoula, to be used for laborers sent to Coulee City to work on the line from Coulee City to Adrian, in accordance with the terms of your contract.

Please issue very explicit instructions to your people about issuing these passes. They should simply be issued to bona fide laborers on the work. In case you find it necessary to send men from St. Paul you can obtain passes at this office. I have thought best to limit this book.

Yours truly,

(Signed) W. L. DARLING

Chief Engineer.

Form No. 260.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

THOS. T. ECKERT, President and General Manager.

COPY.

Receiver's No.	Time Filed	Check

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

St. Paul, Oct. 23, 1902.

Callaghan Bros.,

Logan, Mont.

Contract for line Coulee City to Adrian has been awarded to Foley Bros. & Larson St. Paul.

W. L. Darling.

Frank 7322.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it REPEATED; that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

THOS. T. ECKERT, President and General Manager.

Form No. 143.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, President and General Manager.

RECEIVED at

62 UN R ND 11 Paid 2 Ex W

~~EXXXm~~ Bozeman Mont Oct 23

Chief Engineer Darling, Care N P Ry Co St.Paul.

Has Cooley City road been let If so to whom.

Callaghan Bros,

Logan Mont.

1128 A

430

Form 1386 TW

TELEGRAM.

9-6-02 400M E R

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

424 hm.d.sl.

FROM Spokane TO W.L.Darling,

DATED Oct.24-02. AT

Please instruct me in regard to issuing construction Passes to Foley Brothers and Larson account Coules City work.

B.E.Palmer.

246p.

Form 1386 TW

TELEGRAM. COPY

5-30-02 400M R P C

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM St. Paul, Minn., Oct. 24th, 1902. TO B. E. Palmer,

DATED AT Spokane, Wash.

Upon request of Pat Welch please issue laborers passes from Spokane to Coulee City charging on pass ~~the~~ Foley Bros and Larson Contractors, also transportation for subcontractors going to view the work charging same on passes to construction Coulee City to Adrian.

W. L. Darling.

WLD-C

October 22nd, 1902.

Messrs. Foley Bros. & Larson,

St. Paul, Minn.

Gentlemen:-

I beg to advise you that the contract for construction of line from Coulee City to Adrian has been awarded to you on the basis of your bid. Contract will be sent you as soon as possible for execution.

Yours truly,

Chief Engineer.

Form No. 260.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

[redacted],000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

THOS. T. ECKERT, President and General Manager.

COPY.

Receiv[redacted]'s No.	Time Filed	Check

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

St. Paul, Oct. 22, 1902.

L. Shields,

Shelby, Mont.

Contract for line Coulee City to Adrian let to Foley Bros. & Larson.

W. L. Darling.

Frank 7322.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it REPEATED, that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

THOS. T. ECKERT, President and General Manager.

Form No. 260.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

[redacted],000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

THOS. T. ECKERT, President and General Manager.

Receiver's No.	Time Filed	Check

COPY

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

St. Paul, Oct. 22, 1902.

H. C. Henry,

Seattle, Wash.

Your message yesterday. Contract Coulee City to Adrian line let to Foley Bros. & Larson.

W. L. Darling.

Frank 7322.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it REPEATED; that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

THOS. T. ECKERT, President and General Manager.

WLE-C

October 22nd, 1902.

Pacific Coast Construction Co.,

Portland, Oregon.

Gentlemen:-

As per your request of the 16th inst. asking that you be notified who obtained contract for the construction of line from Coulee City to Adrian.

I beg to advise that this contract has been awarded to Foley Bros. & Larson of St. Paul, Minn.

Yours truly,

Chief Engineer.

Northern Pacific Railway Company,

Office of the President,

St. Paul, Minn. October 21, 1902.

CHIEF ENGINEER N.P.RY. OCT 22 1902 ST.PAUL.MINN.

Mr. W. L. Darling,

Chief Engineer,

B u i l d i n g .

Dear Sir:-

You may let the contract for the construction of the line from Coulee City to Adrian, to Foley Bros. & Larson, on basis of their bid referred to in your favor of the 20th inst.

Yours truly,

President.

COPY.

WLD-C

October 20th, 1902.

C. S. Mellen, Esq.,

President.

Dear Sir:-

I beg to hand you herewith a schedule of bids received for the construction of line from Coulee City to Adrian. The quantities bid upon are as follows:-

Earth, - - - - - - - - - -	260,000	cu. yds.
Loose rock, - - - - - -	17,000	"
Solid rock, - - - - - -	213,000	"
Over-haul, - - - - -	1,600,000	"
Timber in bridges, - -	1,600,000	ft. B. M.
24 in. pipe, - - - - -	550	lin. ft.
30 in. pipe, - - - - -	402	lin. ft.

In the total cost for the work the bids submitted by H. C. Henry and Foley Bros. & Larson are the lowest. Mr. Henry's bid provides that the Railway Company must furnish free transportation for his men from Spokane to Coulee City, and that gumbo in cut at station 500 shall be classified. This afternoon, however, I received a message a message from Mr. Henry, which I attach hereto, in which he states that according to later information there is no gumbo in the cut he refers to. I suppose by this that he means to lower his bid and withdraw his provision of classification. Our experience with North Dakota lines has been that the

transportation for men costs from one to one and one half cent per cubic yard for earth, but as removal of solid rock calls for a great deal more labor than earth in at least a proportion of five to one, it certainly would cost at least five cents a yard extra for transportation for men to move solid rock. McArthur Brothers' actual cost for transportation of men on the construction of the Bowdon Extension was about one and one-tenth cents per yard. Cook & Hinds' on the McKenzie line was one cent on account of having to furnish transportation. I think it is very safe, therefore, to figure that on the Coulee City line there will be at least one cent per yard on the earth and five cents per yard on rock, making $2,600.00 for earth and $10,650.00 for solid rock, or a total of $13,250.00. Mr. Henry's bid therefore, is $241,438 as per schedule, plus the cost of transportation, or $13,250.00 as above, making his total bid $254,688.00, as compared with bid submitted by Foley Bros. & Larson of $250,388.00.

The bids obtained are very good and very much better than I had expected on account of the conditions of the labor market, but on account of the work along the north bank of the Snake River being hung up, a large number of contractors have congregated at Spokane and we have been able on this account to obtain much better bids than otherwise. Foley Bros. & Larson are perhaps the best contractors in the west and I have no hesitancy in recommending that award be made to them. Mr. Henry, as you are aware, now has contract for the construction of the second fourteen miles of the Hoquiam Extension on percentage basis, but thus far I have been unable to get him to sign a contract. He has made several promises to do so but never yet has actually signed, although the contract has been in his hands for several weeks.

Yours truly,

(Signed) W. L. DARLING.

Chief Engineer.

Enc.

COPY.

SCHEDULE OF BIDS RECEIVED FOR CONSTRUCTION
OF LINE COULEE CITY TO ADRIAN.

	per cubic yard:					per lin. ft.		
Contractor.	Earth.	Loose Rock.	Solid Rock.	Over-haul.	Timber 1000FBM	24" pipe.	30" pipe.	Totals.
P. Gibbons,	16¢	48¢	$1.20	1¢	$9.50	$0.40	$0.55,	$337,001.10.
Seattle Bridge Co.,	23¢	45¢	.89	1¢	9.00	....	....	287,420.00,
H. C. Henry,	16¢	35¢	.77	1¢	8.50	.25	.35	241,438.20,
Nelson Bennett Co.,	25¢	40¢	.78	1¢	6.50	.75	.75	265,614.00,
Geo. S. Deeks & Co.,	19¢	39¢	.88	1¢	13.50	.40	.40	280,650.80,
A. Guthrie & Co.,	20¢	39¢	.84	1¢	15.00	.25	.25	277,788.00,
Foley Bros. & Larson,	17¢	35¢	.80	1¢	8.50	.25	.25	250,388.00,
T. L. Greenough,	20¢	40¢	.90	1¢	14.00	1.00	1.25	289,814.60,

---oooOooo---

Coulee City to Adrian	Quantities	P. Gibbons	Seattle Br. Co.	H.C. Henry	Nelson Bennett & Co. and Nelson Bick & Co.	Geo. A. Hodek & Co.	A. Guthrie & Co.	Foley Bros. and Larson	T.L. Yarmouth
1. Clearing, Heavy,								10.00	
2. Clearing, Brush,					10.00			10.00	8.00
3. Grubbing,								5.00	
4. Earth Excavation	26000	41600.00	59800.00	41600.00 ✓	65000.00	49400.00	52000.00	44200.00 ✓	52000.00
	~~700,000~~ 16¢	~~42000.00~~ 23¢	~~69000.00~~ 16¢	~~42000.00~~ 28¢	~~75000.00~~ 17¢	~~67000.00~~ 20¢	~~60000.00~~ 17¢	~~67000.00~~ 20¢	~~60000.00~~
5. Solid Rock,	213000	2556000.00	1895700.00	1640100.00 ✓	1661000.00	1874400.00	1784200.00	1704000.00 ✓	1917000.00
	~~200,000~~ 12.00	~~2400000.00~~ 9.00	~~1740000.00~~ 7.00	~~1540000.00~~ 7.00	~~1560000.00~~ 8.00	~~1760000.00~~ 8.00	~~1660000.00~~ 8.00	~~1660000.00~~ 9.00	~~1800000.00~~
6. Loose Rock,	17000	816000	765000	595000.00 ✓	680000	663000	663000	595000.00 ✓	680000 ✓
	~~39,000~~ 4.80	~~1944240~~ 4.15	~~1794600~~ 3.50	~~1394000~~ 4.00	~~1615200~~ 3.90	~~1555320~~ 3.70	~~1555320~~ 3.50	~~1394000~~ 4.00	~~1615200~~
7. Overhaul,	1,600.000	160000.00	160000.00	160000.00	160000.00	160000.00	160000.00	160000.00 ✓	160000.00
	~~3,516,000~~ 14	~~251600.00~~	~~351600.00~~	~~351600.00~~	~~351600.00~~	~~351600.00~~	~~251600.00~~	~~351600.00~~	~~351600.00~~
8. Timber in Bridges	1,600.000	152000.00	144000.00	136000.00 ✓	104000.00	206000.00	240000.00	136000.00 ✓	224000.00
	~~1,500,000~~ 9.50	~~1092500~~ 9.00	~~1035000~~ 9.50	~~977500~~ 9.50	~~1147500~~ 12.00	~~1495000~~ 15.00	~~1725000~~ 15.50	~~977500~~ 14.00	~~1610000~~
9. Team Haul, timber,				Haul not to exceed four Miles				Add Cost hauling beyond end track 10.00	
10. 24" C.I. Pipe	156' 40¢	6240		257- 3900	75¢ 11700	40¢ 6240	25¢ 3900	25¢ 3900 1.00	15600
11. 30" C.I. Pipe	402' 55¢	22110		35¢ 14070	75¢ 30150	40¢ 16080	25¢ 10050	25¢ 10050 1.25	50250
				~~24~~ ~~33470~~				~~25026952~~	
12. 36" C.I. Pipe				45¢	75¢	40¢	25¢	25¢	
13. 42" C.I. Pipe				55¢	75¢	40¢	25¢	25¢	
14. 48" C.I. Pipe				75¢	75¢	40¢	25¢	25¢	
15. 24" Vit. Pipe	394'	15760		25- 9850	75¢ 29550	40¢ 15760	25¢ 9850	25¢ 9850 65¢	25610
16. 18" " "		337001.00	2874200.00	⊛ 2414384.40	75¢ 2650140.00	2806500.60	2777880.00	25¢ 2503850.00 65¢	2898146.60
17. Hauling Pipe, ton Mile				50¢	75¢	45¢	50¢	40¢	
18. Piling,	550' 40¢				35¢	28¢		20¢	30¢
19. Masonry,		6.00				5.00			
20. Slope wall,					2.00				
21. Riprap.									
22. Concrete,						6.50			
23. Ballasting,	50¢	600.00			500.00			35¢	
24. Fencing,								65.00	
25.	~~353,666.50~~	311,456.00 ⊛	~~261,072.70~~	~~290,301.00~~	~~299,044.00~~	~~296,201.20~~	270131.00	308126.60	
Track Laying.	250.00	5000.00	350.00	300.00	6000.00	350.00		250.00	5000.00
Track Surfacing.	150.00	3000.00		500.00	10000.00			200.00	4000.00
		361668.50			306301.00				317126.60

T.L. Yarmough Company to furnish free train service

T.L. Yarmough Prices include handling pipe

Foley Bros. & Larson. Actual cost of hauling pile from end track to trestle

@ ~~Total for~~ ~~not include pipe and piling~~

⊛ On basis for transportation, Spokane to Coulee City, for laborers. No price shown for 24" Vit. pipe. Jumbo, Etc 500, to be classified.

~~Total for~~ ~~not include piling~~

~~Totals, Line 25, for items only for which quantities are shown, with exceptions as noted.~~

9-02 5M

H. C. HENRY, PRES. R. R. SPENCER, CASHIER O. A. SPENCER, ASS'T CASHIER

THE NATIONAL BANK OF COMMERCE

CODES:
A. B. C. AND A. I.
LIEBER'S
BEDFORD McNEILL

CABLE ADDRESS: "COMMERCE"

Seattle, Wash., Oct 22 1902

W L Darling. Ch Eng
St. Paul. Minn
Dear Sir

In considering my bill on the Coulee City - work please eliminate all reference by me to Gumbo.

Yours truly
H. C. Henry

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.
This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.
THOS. T. ECKERT, President and General Manager.

RECEIVED at

122 Un.Ms .Ns. 17 Paid.

582

Portland Ogn Oct 16-17 '02.

W.L.Darling,

Chief Engineer N.P.R.R, St.Paul Minn.

Will you kindly let us know when awarded who to have idle outfit would like to work.

Pac Coast Construction Co.

2:32 pm.

1917

Pacific Coast Construction Co
Incorporated —
J. H. Smith, President

Form No. 260.

COPY

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

THOS. T. ECKERT, President and General Manager.

Receive[illegible]s No.	Time Filed	Check

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

St. Paul, Oct. 16, 1902.

Pacific Coast Construction Co.,

Portland, Ore.

Your wire to-day. Bids for Grand Coulee work already in and opened. Sorry your message too late.

W. L. Darling.

Frank 7322.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS.

To guard against mistakes or delays, the sender of a message should order it REPEATED; that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured; nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

THOS. T. ECKERT, President and General Manager.

Form 1386TW Pink

TELEGRAM.

8-15-02 100M E R

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
189	HN	D	H	____M.		____M.			____M.		

FROM Mullan, Oct.13th.1902. TO W.L.Darling,

DATED AT St.Paul.

Will you please advise me what answer to make Greenough about wiring or mailing his figures Please rush.

Shunk.

1213Pm.

This Blank only to be used for RUSH Messages.

Form 1386 TW

TELEGRAM.

2-21-02 400M D

NORTHERN PACIFIC RAILWAY COMPANY

COPY

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 288, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M		

FROM St. Pau , Oct. 13, 1902. TO Agent at Mullan.

DATED AT

Have Greenough wire bid as cannot wait for mail. Will hold open until thirteenth.

W.L. Darling.

Form 1386 TW

TELEGRAM.

9-6-02 400M E R

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
203	HN	CN	H	____M.	Duplicate.	____M.			____M.		

FROM Wallace, Oct.13-14th.1902. TO W.L.Darling.

DATED AT

Likeness says evangelist you as follows solid rock chambering cents loose rock caucas cts. common excavation catalan cts. common embankment catalan cts. sage brush clearing cassock dollars sabbath twenty four inch cast pipe caspian dollar per foot thirty inch caspian dollar cataplexy vitrified pipe cellarist cts. This includes wagon haul from illogical to openings bridging castling dollars salinity team haul cassowary dollars salinity train haul piling catechise cents per foot driven and cut off wolf chantry and cave dollars sagasta surfacing chantry dollars sagasta ballasting catholic cents per yard company to furnish youthful for wolf and ballasting fencing cellarist dollars sagasta of fence. This is as clear mollify make it without having blank severing to fill out traduce likeness will send original by yawn tomorrow morning.

Hare.

1035Am.

Form 1386 Pink

8-15-02 100M E R

TELEGRAM.

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
374	M	Cy	Jc	6 07 M.	P	M.			M.		

FROM Mullan TO W L Darling

DATED Oct 13 190 2 AT

Greenough says to advise you he will have Mr Boyd wire you his figures from Wallace this Evening in Cipher your wire just recd

Hunt

This Blank only to be used for RUSH Messages.

Oct. 13, 1902. Wallace W. L. Darling.

T. L. Greenough says cipher you as follows:-

Solid Rock, - - - - - - - - - - - -	90¢	
Loose rock, - - - - - - - - - - - -	40¢	
Common excavation - - - - - - - - -	20¢	
Common embankment - - - - - - - - -	20¢	
Sage brush clearing, - - - - - -	$8.00 per acre.	
24 inch cast pipe - - - - - - - -	1.00 per foot	
30 inch cast pipe, - - - - - - - -	1.25 per foot	This includes wagon haul from end
Vitrified pipe, - - - - - - - -	65¢	of track to openings.
Bridging, - - - - - - - - - -	$14.00 per M	
Team haul	10.00 per M	
Train haul, - - - - - - -		
Piling - - - - - - - - - - - - - - -	30¢ per foot driven and cut off.	
Track laying, - - - - - - - - -	$250.00 per mile	
Surfacing - - - - - - - - - -	200.00 per mile	Company to furnish train service
Ballasting - - - - - - - - - - - - - -	35¢ per yard.	for track laying and ballasting.
Fencing, - - - - - - - - - - - - -	$65.00 per mile of fence.	

This is as clear as I can make it without having blank proposals to fill out. Signature T. L. Greenough. Will send original by yawn tomorrow morning.

Hare.

Form 1386 TW

TELEGRAM.

2-21-02 400M D

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 226, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M		

FROM

TO

DATED

AT

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company **TRANSMITS** and **DELIVERS** messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages**, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, President and General Manager.

RECEIVED at

523

88 UN R NF 26 Paid.

Portland, Ogn. Oct. 16,1902.

W. L. Darling,

Chief Engr., N.P. Ry., StPaul, Minn.

Understand you are going to let Grand Coulee work We have large outfit idle. Refer Merchants Natl. Bank for responsibility and would like chance to bid.

Pac. Coast Construction Co.

128 PM.

Northern Pacific Railway Company.

Traffic Department.

J. G. BOYD,
GENERAL AGENT.

Wallace, Idaho, Oct 12th 1902

Mr W. L. Darling
Asst Engr St Paul Minn

Dear Sir. Herewith I beg to hand you confirmation of telegram I sent you in cipher to day for Mr T. L. Greenough at his request

Yours truly
J G Boyd Jr

Form 1386 TW

TELEGRAM.

9-6-02 400M E R

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
228	HN	CN	H	____M.		____M.			____M.		

FROM Mullan, Oct.12th.1902. TO W.L.Darling,

DATED AT St.Paul.

Greenough would like to know if he will wire his figures in tomorrow or send by mail answer.

Agent.

1228Pm.

Form 1386

TELEGRAM.

9-6-02 600M E R

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interests as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
1193	Hv	Gm	Bx	7 04 P M.		M.			M.		

FROM Mullan TO W J Darling

DATED Oct 10 190 2 AT

Greenough says will wire you figures Monday unless you have time for them to reach you by mail. If mailed from here Monday morning, please advise

Shunk

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, President and General Manager.

RECEIVED at

920 860

860

444 CH OG SW. 47-paid, 3-Ex

Seattle Wn Oct 9-02

W.L.Darling,

Chief Eng'r Nor Pac. Ry

St Paul Minn

Our bid coulee city adrian Branch follows solid rock eighty nine cents per yard loose rock forty five cents earth twenty three cents. Placing timber nine dollars per M.M.balasting six hundred dollars per mile layong track three hundred and fifty dollars per mile

Seattle Bridge Co...D.McL Brown,

835p

Form 1386 TW

TELEGRAM.

9-6-02 400M E R

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
	347	hm.d.si.		____M.		____M.			____M.		

FROM Spokane Oct.9-02. TO W.L.Darling,

DATED AT

Mr Rich and Nelson Bennett forward bids on Coulee City work today from Spokane.

B.E.Palmer.

258p.

Form 1386 TW

TELEGRAM.

2-21-02 400M D

NORTHERN PACIFIC RAILWAY COMPANY

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 288, and forward same to Superintendent of Telegraph.

COPY.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M		

FROM St. Paul, Oct. 8, 1902. TO F. J. Taylor,

DATED AT Coulee City, Wash.

No transportation will apply account of Adrian contract. No rates given over Great Northern. Rates will be same as in other contracts, one cent per passenger per mile and one-half cent per ton per mile for all freight except supplies.

W. L. Darling.

Form 1386 TW

TELEGRAM.

9-6-02 400M E R

NORTHERN PACIFIC RAILWAY COMPANY

All Railway Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in separate envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by mail, and which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
	1067	HN	CS	BN	——M.		——M.			——M.		

FROM Coulee City Oct 8th-1902 TO W.L.Darling,

DATED AT ST PAUL

What transportation terms will apply on Adrian contract will any rates be given over G N.

T.J.Taylor

1 28 pm

Form No. 260.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

THOS. T. ECKERT, President and General Manager.

COPY.

Receiver's No.	Time Filed	Check

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

~~Oct~~ October 7, 1902. 189

To H. C. Henry,

Seattle, Wash.

O K to get bids in by the twelfth.

W. L. Darling.

Frank 7322.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS:

To guard against mistakes or delays, the sender of a message should order it REPEATED, that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

THOS. T. ECKERT, President and General Manager.

Form 1386 TW

TELEGRAM.

5-30-02 400M R P C

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM St. Paul, Minn., Oct. 7th, 1902. TO W. L Darling,

DATED AT Car No. 5, On Line.

H. C. Henry asks if it will be O.K. if he gets his bid in on the twelfth.

R. A. Weston.

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

23,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at Fourth and Robert Streets, St. Paul, Minn. 7P Standard Time

613UN FC X 10 Paid.

Seattle, Wn., 6 Oct. '02

W.L.Darling,

Chf. Engr., StPaul, Minn.

If I get bid in on twelfth

will that do.

H.C.Henry.

6:05PM

824

Robert

PETER LARSON,
HELENA, MONTANA

T. L. GREENOUGH,
MISSOULA, MONTANA.

OFFICE OF
LARSON & GREENOUGH,
MULLAN, IDAHO.

"MORNING" AND "YOU LIKE" MINES.

OFFICE OF CHIEF ENGINEER N.P.R.Y.
OCT 10 1902
ST. PAUL, MINN.

Oct 5th, 1902. 190

W. L. Darling,

Chief EngineerN. P. Raplway Co.,

Tacoma Washington.

Dear Sir

Your letter of 30th ult was forwarded to me from Missoula, and is received this evening. I will send Wren o er the line and endeavor to get figures to you by the 10th as you request.

Yours truly,

T. L. Greenough

Prosser Wash Oct 4/1902



Mr. N. L. Darling

St Paul. Minn.

Dear Sir.

We are today in receipt of your request for proposals for Construction of Coulee City & Odair work and if we are unable to get our bid to you by mail on the 10th will wire proposal on that date- Thanking you for the favor we are.

Yours truly

Rich & Harris

Form 1386 TW

TELEGRAM.

COPY

5-30-02 400M RPC

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				——M.		——M.			——M.		

FROM St. Paul, Minn., Oct. 2nd/ 1902. TO F. J. Taylor,

DATED AT Coulee City, Wash.

Member of firm Guthrie and Company was at Spokane yesterday, understand will be at Coulee City immediatley. They want information on the ground.

W. L. Darling.

Northern Pacific Railway Company.



W. L. DARLING,
CHIEF ENGINEER.

Office of the Chief Engineer.

St. Paul, Minn. Oct. 2nd, 1902.

Mr. Peter Larson, New Whatcom, Wash.
Mr. H. C. Henry, Seattle, Wash.
Mr. Pat Gibbons, Renton Wash.
Mr. T. L. Greenough, Spokane, Wash.
Mr. N. D. Miller, 551 Westminister St., St. Paul, Minn.
Messrs Nelson Bennett Company, Tacoma, Wash.
Messrs Foley Bros., St. Paul, Minn.,
Messrs A. Guthrie & Co., St. Paul, Minn.
Messrs Rich & Harris, Prosser, Wash.
Messrs Twohy, Bros., Anaconda, Mont.
Messrs Geo. S. Deeks & Co., St. Paul, Minn.

COPY

Gentlemen;-

Referring to my letter of yesterday asking for proposal for construction of a line from Coulee City to Adrian.

Please add to the proposal that the line shall be constructed within six months from the award of the contract, and also change the specifications on the first page so that they will provide that embankments shall be fourteen (14) feet wide at grade.

Yours truly,

(Signed) W. L. DARLING.
Chief Engineer.

Form 1386 4-21-02 800M D

TELEGRAM.

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVED
1119	Ath	[illegible]	Bz	3.44 PM		Close M.			M.		

FROM Ratty TO R A Weston

DATED Oct 1 1902 AT

Coulee City Line Shoved to be Completed inside 6 months from date of Contract embankments Shoved to be fourteen feet wide at grade

W J Darling

Form 1386 TW

TELEGRAM.

5-30-02 400M R P C

COPY

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM St. Paul, Oct. 1st, 1902.

DATED

TO W. L. Darling,

AT Car No. 5, On Line.

Standard specifications provide that embankments more than ~~sixteen~~ feet in height will be sixteen feet at grade. We have usually specified that all embankments will be fourteen feet ~~in~~ at grades in branch lines. Shall I make same change in getting bids for the Coulee City line?

R. A. Weston.

Form 1386 TW

TELEGRAM. COPY

5-30-02 400M RPC

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM St..Paul, Oct. 1st, 1902.

DATED

TO W. L. Darling,

AT Car No. 5, On Line.

Message received will send out invitations to contractors at once.

Please wire date line should be completed to put in proposal.

R. A. Weston.

Form 1386 TW

TELEGRAM.

COPY

5-30-02 400M R P C

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
				____M.		____M.			____M.		

FROM St. Paul, Oct. 1st, 1902. TO F. J. Taylor,

DATED AT Coulee City.

Furnish information and profile if possible to A. Guthrie or Chas. Ffolliott of the firm of A. Guthrie and Company who will make proposal for the construction of line.

W. L. Darling.

COPY

October 1st, 1902.

Mr. F. J. Taylor,

Assistant Engineer, Coulee City, Wash.

Dear Sir:-

I enclose, for your information, copy of my letter of this date asking for proposals for the construction of the line from Coulee City to Adrian. The following parties have been asked to bid on this work.

Mr. Peter Larson, New Whatcom, Wash.
Mr. H. C. Henry, Seattle, Wash.
Mr. Pat Gibbons, Renton, Wash.
Mr. T. L. Greenogh, Spokane, Wash.
Mr. N. D. Miller, 551 Westminster St., St.Paul, Minn.
Messrs. Nelson Bennett Co., Tacoma, Wash.
Messrs. Foley Bros., St.Paul, Minn.
Messrs. A. Guthrie & Co., St.Paul, Minn.
Messrs. Rich & Harris, Prosser, Wash.
Messrs. Twohy Bros., Anaconda, Mont.
Messrs. Geo. S. Deeks & Co., St.Paul, Minn.

Yours truly,

Chief Engineer.

Form 1386

TELEGRAM.

4-21-02 800M D

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVED
1110	Jhn	Cs	Bx	5 pm		M.			M.		

FROM Coulee City TO W. J. Darling

DATED Oct 1 1902 AT

When will parties mentioned your message today be here or where do they want data

F J Taylor

Northern Pacific Railway Company.

W. L. DARLING,
CHIEF ENGINEER.

Office of the Chief Engineer.

COPY

St. Paul, Minn. Oct. 1, 1902.

Mr. Peter Larson, New Whatcom, Wash.
Mr. H. C. Henry, Seattle, Wash.
Mr. Pat Gibbons, Renton, Wash.
Mr. T. L. Greenogh, Spokane, Wash.
Mr. N. D. Miller, 551 Westminster St., St.Paul, Minn.
Messrs. Nelson Bennett Co., Tacoma, Wash.
Messrs. Foley Bros., St.Paul, Minn.
Messrs. A. Guthrie & Co., St.Paul, Minn.
Messrs. Rich & Harris, Prosser, Wash.
Messrs. Twohy Bros., Anaconda, Mont.
Messrs. Geo. S. Deeks & Co., St.Paul, Minn.

I would be glad to receive a proposition from you for the construction of an extension of the Washington Central Branch, from Coulee City to Adrian, in accordance with the specifications attached.

Your proposal should be made on the enclosed form, and to receive consideration should be in my office not later than October 10th.

Profiles of the line can be seen in the office of F. J. Taylor, Assistant Engineer, Coulee City, Washington.

Transportation to view the work can be obtained upon application to this office, or to Assistant Engineer Taylor.

Yours truly,

W. L. Darling

Chief Engineer.

W S & B PARAGON LINEN
MADE IN U.S.A.

Form 290

Northern Pacific Railway Company.

OFFICE OF CHIEF ENGINEER N.P.RY. OCT 8 1902 ST. PAUL, MINN.

Coulee City, Wash. Oct 1st 1902

Mr. W. L. Darling,
Chief Engineer.
St Paul, Minn.

Dear Sir:-

Report for week ending Sept 27th 1902

Location of line from Coulee City to Adrian has been continued from Sta 170 to Sta 1061+06, the latter station being to a connection with the Great Northern at the Gravel Pit, about 3 miles east of Adrian, in SE¼ Sec 13, T. 22 N., R 27 E.

The line as run gives quite heavy rock work for two miles on the east side of "Dry Coulee", but can be lightened up by using more curvature, increasing the bridging and breaking up the grade line.

Following is a summary of the estimated quantities in Roadway.

Excavation

Solid Rock	344 360	C.Y.
Loose Rock	39 880	"
Earth	113 600	"
Borrow	162 250	"
Over Haul	2,516,000	"

394 lin ft	24" Vit Pipe
156 " "	24" C.I.P.
402 " "	30" "
984000 ft BM	Bridging
550 lin ft	piling

Yours truly
F. J. Taylor.
Asst Engr.

Form 1368 TW

TELEGRAM.

NORTHERN PACIFIC RAILWAY COMPANY

All Railroad Messages must be written in ink on these blanks, which must not be used for other purposes, and those for parties on trains (except trainmen) enclosed in sealed envelopes. The exact time sent, time received, personal signal of sending and receiving operators, call of sending office and name of receiving station must be entered in proper spaces in every instance.

After transmitting telegrams which in their judgment would have served the Company's interest as well if sent by train mail, or which appear unnecessarily long, operators are required to attach a copy to Form 238, and forward same to Superintendent of Telegraph.

NUMBER	REC'D FROM	SENDER	RECEIVER	TIME REC'D	DATE REC'D	TIME FILED	NUMBER	SENT TO	TIME SENT	SENDER	RECEIVER
73	HN	AO	EA	——M.		——M.			——M.		

FROM. Hot Springs Sept 30-1902 TO. R.A. ~~Newton,~~ Weston

DATED AT

Please send proposals at once to the following contractors for bidding on line from Coulee City to Adrian NP standard specifications to be used except that loose rock shall include cement gravel and hard pan. Bids to be in St Paul by October tenth. Profiles to be seen in office of Taylor Coulee City Peter Larson, H.C.Henry, Nelson Bennett Co, Pat Gibbons, Foley Bros N.B.Miller, Geo S.Deeks and Co, T.L.Greenough, Twohy Bros , Guthrie and Co.

W.L.Darling,

238am 1st

Northern Pacific Railway Company.

Office of the Chief Engineer.

W. L. DARLING,
CHIEF ENGINEER.

WLD-C

St. Paul, Minn. On Pacific Division,
September 30th, 1902.

COPY

Will be glad to receive proposals from you for construction of line from Coulee City to Adrian in Washington, all work to be in accordance with Northern Pacific standard specifications with the following classifications: Earth, loose rock and solid rock. Loose rock is to include cement gravel and hardpan, otherwise specifications will be identical with those on printed form. Profile can be seen at office of Mr. F. J. Taylor, Coulee City, Washington. All bids should be received at the office of the undersigned not later than October 10th, 1902. Work is to be completed within six months after date of award of contract.

Yours truly,

Chief Engineer.

This letter to:-

Peter Larson, Helena.
H. C. Henry, Seattle.
Nelson Bennett Co., Tacoma.
Patrick Gibbons, Renton, Wash.
Foley Bros., St. Paul.
N. D. Miller, St. Paul.
Geo. S. Deeks & Co., St. Paul.
T. L. Greenough, Missoula,
Guthrie & Co. St. Paul.
Twohy Bros., Spokane, Wash.

PETER LARSON,
HELENA, MONTANA

T. L. GREENOUGH,
MISSOULA, MONTANA.

OFFICE OF
LARSON & GREENOUGH,
MULLAN, IDAHO.

"MORNING" AND "YOU LIKE" MINES.

Sept 13 1902

J. G. Boyd G. A.
Wallace.

Dear Sir:

Please send the following telegram in cipher to W. L. Darling Chief Engineer.

Greenough says. Solid Rock Ninety Cents. Loose Rock forty Cents. Common excavation twenty Cents. Common embankment twenty Cents. Sagebrush Clearing Eight Dollars per Acre. Twenty four inch Cast pipe One dollar per foot. Thirty inch. One dollar twenty five cents. Vitrified pipe Sixty five cents. This includes Wagon haul from end of track to openings. — Bridging fourteen dollars per thousand team haul. Ten dollars per thousand train haul. Piling thirty Cents per foot, drive & cut off.

Track laying two hundred & fifty dol-

PETER LARSON,
HELENA, MONTANA

T. L. GREENOUGH,
MISSOULA, MONTANA.

OFFICE OF

LARSON & GREENOUGH,
MULLAN, IDAHO.

"MORNING" AND "YOU LIKE" MINES.

....., 190....

lars per mile, Surfacing two hundred dollars per mile, Ballasting thirty five cents per yard. Company to furnish train service for track laying and ballasting, Fencing Sixty five dollars per mile of fence,

This is as clear as I can make it without having a blank proposal to fill out

T. L. Greenough

5-19-1900 500 P

Form 163

NORTHERN PACIFIC RAILWAY COMPANY.

PROPOSAL

For the construction of a line from Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length.

(Location) *Division*

The undersigned hereby propose....., and, if this proposal is accepted, agree..... to enter into a written contract, if required, with the Northern Pacific Railway Company, to do all the work for which prices are named herein, according to the plans and directions of the Engineer for said Company, in conformity with the specifications made for said work and attached hereto, upon the terms and conditions of the contract prepared therefor, and within the time specified.

CLEARING, GRUBBING AND GRADING.

1. CLEARING, generally 100 feet wide (50 feet each side of centre line) and paid for only where actually done.
   a. Heavy Timber.....per acre.
   b. ~~Light Timber and~~ Brush..... Ten Dollars ($10.00) .....per acre.
   c. Cutting down and removing Trees outside of clearing limits.....per tree.
2. GRUBBING, where excavations are four (4) feet deep, or less, and embankments two (2) feet high, or less.
   .....per station of 100 feet.
3. EARTH EXCAVATION..... Twenty five (25) Cents .....per cubic yard.
4. .....per cubic yard.
5. LOOSE ROCK EXCAVATION..... which includes cement gravel and hard pan. Forty (40) Cents .....per cubic yard.
6. SOLID ROCK EXCAVATION..... Seventy eight (78) Cents .....per cubic yard.
7. TUNNELS.....per lineal foot.
8. TIMBER-LINING OF TUNNELS, in structure, including all iron and timber backing required, also handling and workmanship complete..... per M feet, B. M.

   A fixed price of one (1) cent per cubic yard per 100 feet, after first 600 feet, up to 2500 feet, will be paid for HAUL

MASONRY AND BRIDGES.

9. MASONRY, BRIDGES, CULVERTS, ETC. As to furnishing material, see paragraphs 328 to 332 of specifications
   a. .....per cubic yard.
   b. .....per cubic yard.
   c. .....per cubic yard.
10. CONCRETE.
    a. .....per cubic yard.
    b. .....per cubic yard.
11. SLOPE WALL ..... Two (2) dollars .....per cubic yard.
12. RIP-RAP, in place.....per cubic yard.
13. ABUTMENT AND PIER CRIB FILLING.....per cubic yard.
14. PILES, delivered cleared of bark, driven and cut off, complete..... Thirty five (35) Cents .....per lineal foot.

15. TIMBER, sawed, in structures.

a. Six and one half ($6.50) dollars ..... per M feet, B. M.

b. ..... per M feet, B. M.

c. ..... per M feet, B. M.

16. CAST IRON, in structures ..... per pound.

17. WROUGHT IRON, in structures, includes spikes, bolts, nails, drift bolts, nuts, etc. ..... per pound.

18. CULVERTS.

a. 24" ..... per lineal foot. 75 Cents

b. 30" ..... per lineal foot. " "

19. 36" ..... " "

20. 40" ..... " "

21. 46" ..... " "

22. 24" ..... " "

23. 30" ..... " "

24. Seventy five (75) Cents .....

Only materials actually used in, and left as part of the finished structures, to be paid for.
Above prices include handling and workmanship, complete.

TRACKLAYING, SURFACING AND BALLASTING.

25. TRACKLAYING ..... Three hundred ($300) dollars ..... per mile.

26. SURFACING TRACK ..... Five hundred ($500) " ..... per mile.

27. BALLASTING TRACK ..... " ..... " ..... " ..... " ..... per cubic yard.

28. .....

BUILDINGS AND STRUCTURES.

29. .....

30. .....

31. .....

32. .....

33. .....

34. .....

All the above work, for which prices are given, to be completed on or before ..... 190...

The Railway Company will furnish transportation at the rate of 1½ cents (1½) per ton per mile for material required in the work and contractor's outfit with minimum of ..... per ton and 25 Cents for single shipments. Bulky articles filling car to visible capacity to take minimum car load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies, including powder, fuel and lumber. The Railway Company will also furnish transportation for men employed on the work at the rate of 1 cent per mile.

The information upon which this proposal is based was obtained by the proposer through his own sources of knowledge, and was not derived from any officer or agent of the Railway Company.

The Railway Company reserves the right to reject any and all bids, and, at its option, to require a satisfactory bond from the contractor for the faithful performance of the work.

Signature of Proposer Nelson Bennett Co by Nelson Bennett Pres
Nelson Rich & Co by Nelson Rich

Address Tacoma or Prosser Wash.

Date 10/9 1902

The Spokane
SPOKANE, WASH.

10/9/02

Mr W. L. Darling
Chief Engineer N. P. Ry.
St Paul Minn.

Dear Sir

Enclosed find bid on work between Coeur d'Alene City and Adrian —

You will note that Mr Nelson Rich & Co and my Co. have signed this bid — we believe there is work enough for both outfits and have agreed to bid together and if awarded the work will sign contract jointly —

Respectfully
Nelson Bennett

5-19-1900 500 P

Form 163

NORTHERN PACIFIC RAILWAY COMPANY.

PROPOSAL

For the construction of a line from Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length.

(Location) ..... *Division* .....

The undersigned hereby propose....., and, if this proposal is accepted, agree..... to enter into a written contract, if required, with the Northern Pacific Railway Company, to do all the work for which prices are named herein, according to the plans and directions of the Engineer for said Company, in conformity with the specifications made for said work and attached hereto, upon the terms and conditions of the contract prepared therefor, and within the time specified.

CLEARING, GRUBBING AND GRADING.

1. CLEARING, generally 100 feet wide (50 feet each side of centre line) and paid for only where actually done.
   a. Heavy Timber..... per acre.
   b. Light Timber and Brush..... per acre.
   c. Cutting down and removing Trees outside of clearing limits..... per tree.
2. GRUBBING, where excavations are four (4) feet deep, or less, and embankments two (2) feet high, or less.
   ..... per station of 100 feet.
3. EARTH EXCAVATION..... Sixteen Cents (16¢) ..... per cubic yard.
4. (Gumbo in Excavation at Sta. 500 to be Classified) ..... per cubic yard.
5. LOOSE ROCK EXCAVATION..... which includes cement gravel and hard pan Thirty-five (35¢) per cu. yd. per cubic yard.
6. SOLID ROCK EXCAVATION..... Seventy-Five (75¢) Seven Cents ..... per cubic yard.
7. TUNNELS..... per lineal foot.
8. TIMBER-LINING OF TUNNELS, in structure, including all iron and timber backing required, also handling and workmanship complete..... per M feet, B. M.

   A fixed price of one (1) cent per cubic yard per 100 feet, after first 600 feet, up to 2500 feet, will be paid for HAUL

MASONRY AND BRIDGES.

As to furnishing material, see paragraphs 328 to 332 of specifications

9. MASONRY, BRIDGES, CULVERTS, ETC.
   a. ..... per cubic yard.
   b. ..... per cubic yard.
   c. ..... per cubic yard.
10. CONCRETE.
   a. ..... per cubic yard.
   b. ..... per cubic yard.
11. SLOPE WALL ..... per cubic yard.
12. RIP-RAP, in place..... per cubic yard.
13. ABUTMENT AND PIER CRIB FILLING..... per cubic yard.
14. PILES, delivered cleared of bark, driven and cut off, complete..... per lineal foot.

15. TIMBER, sawed, in structures.

a. Eight-($8.50)$^{50}/_{100}$ dollars ..... per M feet, B. M.

b. Price per M - in cribs haul not to exceed four miles ..... per M feet, B. M.

c. ..... per M feet, B. M.

16. CAST IRON, in structures ..... per pound.

17. WROUGHT IRON, in structures, includes spikes, bolts, nails, drift bolts, nuts, etc ..... per pound.

18. CULVERTS.

a. ..... per lineal foot. 25-ft

b. ..... per lineal foot. 35-ft

19. ..... 45-ft

20. ..... 65-ft

21. ..... 75-ft

22. .....

23. ..... 15-ft

24. ..... Fifty (50¢) cents

Only materials actually used in, and left as part of the finished structures, to be paid for.
Above prices include handling and workmanship, complete.

TRACKLAYING, SURFACING AND BALLASTING.

25. TRACKLAYING ..... per mile.

26. SURFACING TRACK ..... per mile.

27. BALLASTING TRACK ..... per cubic yard.

28. .....

BUILDINGS AND STRUCTURES.

29. .....

30. .....

31. .....

32. .....

23. .....

34. .....

X All the above work, for which prices are given, to be completed on or before ..... 190....

The Railway Company will furnish transportation at the rate of ½ cent per ton per mile for material required in the work and contractor's outfit with minimum of ..... per ton and 25 Cents for single shipments. Bulky articles filling car to visible capacity to take minimum car load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies, including powder, fuel and lumber. The Railway Company will also furnish transportation for men employed on the work at the rate of 1 cent per mile. Free transportation for Laborers from Spokane to Boulder City

The information upon which this proposal is based was obtained by the proposer through his own sources of knowledge, and was not derived from any officer or agent of the Railway Company.

The Railway Company reserves the right to reject any and all bids, and, at its option, to require a satisfactory bond from the contractor for the faithful performance of the work.

Signature of Proposer H. L. Henry

Address Seattle. Wash

Date Oct. 13th 1902 190....

Northern Pacific Railway Company.

Office of the Chief Engineer.

W. L. DARLING,
CHIEF ENGINEER.

St. Paul, Minn. Oct. 1, 1902.

Mr. H. C. Henry,

Seattle, Wash.

Dear Sir:-

I would be glad to receive a proposition from you for the construction of an extension of the Washington Central Branch, from Coulee City to Adrian, in accordance with the specifications attached.

Your proposal should be made on the enclosed form, and to receive consideration should be in my office not later than October 10th.

Profiles of the line can be seen in the office of F. J. Taylor, Assistant Engineer, Coulee City, Washington.

Transportation to view the work can be obtained upon application to this office, or to Assistant Engineer Taylor.

Yours truly,

W. L. Darling

Chief Engineer.

5-19-1900 500 P

Form 163

NORTHERN PACIFIC RAILWAY COMPANY.

PROPOSAL

For The construction of a line from Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length.

(Location) ..... *Division* .....

The undersigned hereby propose....., and, if this proposal is accepted, agree..... to enter into a written contract, if required, with the Northern Pacific Railway Company, to do all the work for which prices are named herein, according to the plans and directions of the Engineer for said Company, in conformity with the specifications made for said work and attached hereto, upon the terms and conditions of the contract prepared therefor, and within the time specified.

CLEARING, GRUBBING AND GRADING.

1. CLEARING, generally 100 feet wide (50 feet each side of centre line) and paid for only where actually done.
   a. Heavy Timber..... per acre.
   b. Light Timber and Brush..... per acre.
   c. Cutting down and removing Trees outside of clearing limits..... per tree.
2. GRUBBING, where excavations are four (4) feet deep, or less, and embankments two (2) feet high, or less.
   ..... per station of 100 feet.
3. EARTH EXCAVATION. Twenty (20¢) cents. per cubic yard.
4. ..... per cubic yard.
5. LOOSE ROCK EXCAVATION. Thirty nine (39¢) cents. per cubic yard.
6. SOLID ROCK EXCAVATION. Eighty four (84¢) cents. per cubic yard.
7. TUNNELS..... per lineal foot.
8. TIMBER-LINING OF TUNNELS, in structure, including all iron and timber backing required, also handling and workmanship complete..... per M feet, B. M.

   A fixed price of one (1) cent per cubic yard per 100 feet, after first 600 feet, up to 2500 feet, will be paid for HAUL

MASONRY AND BRIDGES.

9. MASONRY, BRIDGES, CULVERTS, ETC.
   a. ..... per cubic yard.
   b. ..... per cubic yard.
   c. ..... per cubic yard.
10. CONCRETE.
    a. ..... per cubic yard.
    b. ..... per cubic yard.
11. SLOPE WALL ..... per cubic yard.
12. RIP-RAP, in place..... per cubic yard.
13. ABUTMENT AND PIER CRIB FILLING..... per cubic yard.
14. PILES, delivered cleared of bark, driven and cut off, complete..... per lineal foot.

15. TIMBER, sawed, in structures.

a. Fifteen Dollars ($15.00) per M feet, B. M.

b. ..... per M feet, B. M.

c. ..... per M feet, B. M.

16. CAST IRON, in structures ..... per pound.

17. WROUGHT IRON, in structures, includes spikes, bolts, nails, drift bolts, nuts, etc ..... per pound.

18. CULVERTS.

a. Laying Cast Iron Pipe 24" complete, in place as per standard plans. per lineal foot.

b. Laying Cast Iron Pipe 30" complete in place, as per standard plans. per lineal foot.

19. Laying Cast Iron Pipe 36" complete in place as per standard plans,

20. Laying Cast Iron Pipe 42" complete in place, as per standard plans.

21. Laying Cast Iron Pipe 48" complete in place, as per standard plans,

22. Laying Vitrified Pipe 24" complete in place as per standard plans,

23. Laying Vitrified Pipe 18" ~~complete~~ in road Crossings.

24. Hauling Pipe per ton per mile, Fifty (50¢) Cents

Twenty five (25¢) Cents per lineal ft.

Only materials actually used in, and left as part of the finished structures, to be paid for.
Above prices include handling and workmanship, complete.

TRACKLAYING, SURFACING AND BALLASTING.

25. TRACKLAYING Three hundred fifty Dollars ($350.00) per mile.

26. SURFACING TRACK ..... per mile.

27. BALLASTING TRACK ..... per cubic yard.

28. .....

BUILDINGS AND STRUCTURES.

29. .....

30. .....

31. .....

32. .....

33. .....

34. .....

35. .....

All the above work, for which prices are given, to be completed on or before ..... 190....

The Railway Company will furnish transportation at the rate of 1/2 cent per ton per mile for material required in the work and contractor's outfit with minimum of 25 cents per ton and 25 cents for single shipments. Bulky articles filling car to visible capacity to take minimum car load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies, including powder, fuel and lumber. The Railway Company will also furnish transportation for men employed on the work at the rate of 1 cent per mile.

The information upon which this proposal is based was obtained by the proposer through his own sources of knowledge, and was not derived from any officer or agent of the Railway Company.

The Railway Company reserves the right to reject any and all bids, and, at its option, to require a satisfactory bond from the contractor for the faithful performance of the work.

Signature of Proposer A. Gr Thwing & Co

Address 202 & 203 Fr Amer Bk Bldg

Date October 11th 190 7

5-19-1900 500 P

Form 163

NORTHERN PACIFIC RAILWAY COMPANY.

PROPOSAL

For the construction of a line from Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length.

(Location) ..... *Division* .....

The undersigned hereby propose....., and, if this proposal is accepted, agree..... to enter into a written contract, if required, with the Northern Pacific Railway Company, to do all the work for which prices are named herein, according to the plans and directions of the Engineer for said Company, in conformity with the specifications made for said work and attached hereto, upon the terms and conditions of the contract prepared therefor, and within the time specified.

CLEARING, GRUBBING AND GRADING.

1. CLEARING, generally 100 feet wide (50 feet each side of centre line) and paid for only where actually done.
   a. Heavy Timber..... per acre.
   b. Light Timber and Brush..... per acre.
   c. Cutting down and removing Trees outside of clearing limits..... per tree.
2. GRUBBING, where excavations are four (4) feet deep, or less, and embankments two (2) feet high, or less.
   ..... per station of 100 feet.
3. EARTH EXCAVATION..... 19 cts per cubic yard.
4. ..... per cubic yard.
5. LOOSE ROCK EXCAVATION..... 39 cts which includes cement gravel and hard pan per cubic yard.
6. SOLID ROCK EXCAVATION..... 88 cts per cubic yard.
7. TUNNELS..... per lineal foot.
8. TIMBER-LINING OF TUNNELS, in structure, including all iron and timber backing required, also handling and workmanship complete..... per M feet, B. M.

   A fixed price of one (1) cent per cubic yard per 100 feet, after first 600 feet, up to 2500 feet, will be paid for HAUL

MASONRY AND BRIDGES.

9. MASONRY, BRIDGES, CULVERTS, ETC. As to furnishing material, see paragraphs 328 to 332 of specifications
   a. ..... $5.00 per cubic yard.
   b. ..... per cubic yard.
   c. ..... per cubic yard.
10. CONCRETE.
    a. ..... $6.50 per cubic yard.
    b. ..... per cubic yard.
11. SLOPE WALL ..... per cubic yard.
12. RIP-RAP, in place..... per cubic yard.
13. ABUTMENT AND PIER CRIB FILLING..... per cubic yard.
14. PILES, delivered cleared of bark, driven and cut off, complete..... 28 cts per lineal foot.

15. TIMBER, sawed, in structures.

a. #13.00 per M feet, B. M.

b. ..... per M feet, B. M.

c. ..... per M feet, B. M.

16. CAST IRON, in structures ..... per pound.

17. WROUGHT IRON, in structures, includes spikes, bolts, nails, drift bolts, nuts, etc ..... per pound.

18. CULVERTS.

a. Laying Cast Iron Pipe 24" complete, in place as per standard plans. ..... per lineal foot.

b. Laying Cast Iron Pipe 30" complete in place, as per standard plans, ... per lineal foot.

19. Laying Cast Iron Pipe 36" complete in place as per standard plans. .....

20. Laying Cast Iron Pipe 42" complete in place, as per standard plans, 40 cts

21. Laying Cast Iron Pipe 48" complete in place, as per standard plans. .....

22. Laying Vitrified Pipe 24" complete in place, as per Standard plans. .....

23. Laying Vitrified Pipe 18" in Road Crossings .....

24. Hauling Pipe per ton per mile. 48 cts

Only materials actually used in, and left as part of the finished structures, to be paid for.
Above prices include handling and workmanship, complete.

TRACKLAYING, SURFACING AND BALLASTING.

25. TRACKLAYING ..... per mile.

26. SURFACING TRACK ..... per mile.

27. BALLASTING TRACK ..... per cubic yard.

28. .....

BUILDINGS AND STRUCTURES.

29. .....

30. .....

31. .....

32. .....

33. .....

34. .....

35. .....

All the above work, for which prices are given, to be completed on or before ..... 190....

The Railway Company will furnish transportation at the rate of 1/2 ¢ per ton per mile for material required in the work and contractor's outfit with minimum of 25 ¢ per ton and 25 ¢ for single shipments. Bulky articles filling car to visible capacity to take minimum car load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies, including powder, fuel and lumber. The Railway Company will also furnish transportation for men employed on the work at the rate of one cent per mile.

The information upon which this proposal is based was obtained by the proposer through his own sources of knowledge, and was not derived from any officer or agent of the Railway Company.

The Railway Company reserves the right to reject any and all bids, and, at its option, to require a satisfactory bond from the contractor for the faithful performance of the work.

Signature of Proposer Geo. S. Davis & Co.

Address .....

Date ..... 190....

Form No. 168.

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

21,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, President and General Manager.

1159a

RECEIVED at

Renton Wn 10/11 456

W L Darling Chief Engr NPRy Stpaul

My proposal meant I was to furnish timber my price timber furnished Nine Dollars and fifty Cents P Gibbons

Form No. 260.

COPY

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

31,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

THOS. T. ECKERT, President and General Manager.

Receiver's No.	Time Filed	Check

SEND the following message subject to the terms on back hereof, which are hereby agreed to.

St. Paul, Minn., Oct. 10th, 1902.

P. Gibbons,
Renton, Wash.

Your proposal for timber in bridges evidently includes material.

What is your figure for labor only.

W. L Darling.

☞ READ THE NOTICE AND AGREEMENT ON BACK. ☜

ALL MESSAGES TAKEN BY THIS COMPANY ARE SUBJECT TO THE FOLLOWING TERMS.

To guard against mistakes or delays, the sender of a message should order it REPEATED; that is, telegraphed back to the originating office for comparison. For this, one-half the regular rate is charged in addition. It is agreed between the sender of the following message and this Company, that said Company shall not be liable for mistakes or delays in the transmission or delivery, or for non-delivery of any UNREPEATED message, beyond the amount received for sending the same; nor for mistakes or delays in the transmission or delivery, or for non-delivery of any REPEATED message, beyond fifty times the sum received for sending the same, unless specially insured, nor in any case for delays arising from unavoidable interruption in the working of its lines, or for errors in cipher or obscure messages. And this Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other Company when necessary to reach its destination.

Correctness in the transmission of a message to any point on the lines of this Company can be INSURED by contract in writing, stating agreed amount of risk, and payment of premium thereon, at the following rates, in addition to the usual charge for repeated messages, viz, one per cent. for any distance not exceeding 1,000 miles, and two per cent. for any greater distance. No employee of the Company is authorized to vary the foregoing.

No responsibility regarding messages attaches to this Company until the same are presented and accepted at one of its transmitting offices; and if a message is sent to such office by one of the Company's messengers, he acts for that purpose as the agent of the sender.

Messages will be delivered free within the established free delivery limits of the terminal office. For delivery at a greater distance, a special charge will be made to cover the cost of such delivery.

The Company will not be liable for damages or statutory penalties in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

THOS. T. ECKERT, President and General Manager.

OFFICE OF CHIEF ENGINEER N.P.R.R.
OCT 9 1902
ST. PAUL, MINN.

Renton, Wash., Oct. 6, 1902.

Mr. W. L. Darling,

Chief Engineer N.P.R.R.,

St. Paul, Minn.

Dear Sir:--

Enclosed you will please find my bid for the Grading, Bridging and Track Laying of the Washington Central Branch from Coulee City to Adrian on the line of the Great Northern R.R., and will agree to put night crews drilling in Rock Cuts to expedite the work.

Yours truly,

P. Gibbons

5-19-1900 500 P

Form 163

NORTHERN PACIFIC RAILWAY COMPANY.

PROPOSAL

For the construction of a line from Coulee City, Washington to Adrian, Washington, approximately Twenty (20) miles in length.

(Location) ..... *Division* .....

The undersigned hereby propose....., and, if this proposal is accepted, agree..... to enter into a written contract, if required, with the Northern Pacific Railway Company, to do all the work for which prices are named herein, according to the plans and directions of the Engineer for said Company, in conformity with the specifications made for said work and attached hereto, upon the terms and conditions of the contract prepared therefor, and within the time specified.

CLEARING, GRUBBING AND GRADING.

1. CLEARING, generally 100 feet wide (50 feet each side of centre line) and paid for only where actually done.
   a. Heavy Timber..... per acre.
   b. Light Timber and Brush..... per acre.
   c. Cutting down and removing Trees outside of clearing limits..... per tree.
2. GRUBBING, where excavations are four (4) feet deep, or less, and embankments two (2) feet high, or less.
   ..... per station of 100 feet.
3. EARTH EXCAVATION..... 16¢ per cubic yard.
4. ..... per cubic yard.
5. LOOSE ROCK EXCAVATION..... which includes cement gravel and hard pan 40¢ per cubic yard.
6. SOLID ROCK EXCAVATION..... 120 per cubic yard.
7. TUNNELS..... 65.00 per lineal foot.
8. TIMBER-LINING OF TUNNELS, in structure, including all iron and timber backing required, also handling and workmanship complete..... 28.00 per M feet, B. M.

   A fixed price of one (1) cent per cubic yard per 100 feet, after first 600 feet, up to 2500 feet, will be paid for HAUL

MASONRY AND BRIDGES.

9. MASONRY, BRIDGES, CULVERTS, Etc. As to furnishing material, see paragraphs 320 to 332 of specifications
   a. ..... 6.50 per cubic yard.
   b. ..... per cubic yard.
   c. ..... per cubic yard.
10. CONCRETE.
    a. ..... per cubic yard.
    b. ..... per cubic yard.
11. SLOPE WALL ..... per cubic yard.
12. RIP-RAP, in place..... 3.50 per cubic yard.
13. ABUTMENT AND PIER CRIB FILLING..... per cubic yard.
14. PILES, delivered cleared of bark, driven and cut off, complete..... 40¢ per lineal foot.

15. TIMBER, sawed, in structures.

a. ..... 28.00 per M feet, B. M.

b. ..... per M feet, B. M.

c. ..... per M feet, B. M.

16. CAST IRON, in structures..... 7¢ per pound.

17. WROUGHT IRON, in structures, includes spikes, bolts, nails, drift bolts, nuts, etc..... 7¢ per pound.

18. CULVERTS.

a. ..... 40¢ per lineal foot.

b. ..... 40¢ per lineal foot.

19. ..... 53¢

20. ..... 65¢

21. ..... 70¢

22. ..... 75¢

23. ..... 20¢

24. ..... 60¢

Only materials actually used in, and left as part of the finished structures, to be paid for.
Above prices include handling and workmanship, complete.

TRACKLAYING, SURFACING AND BALLASTING.

25. TRACKLAYING..... 250.00 per mile.

26. SURFACING TRACK..... 150.00 per mile.

27. BALLASTING TRACK..... 50¢ per cubic yard.

28. .....

BUILDINGS AND STRUCTURES.

29. .....

30. .....

31. .....

32. .....

33. .....

34. .....

All the above work, for which prices are given, to be completed on or before..... 190 .....

The Railway Company will furnish transportation at the rate of 1/2 cent per ton per mile for material required in the work and contractor's outfit with minimum of 20 cents per ton and..... for single shipments. Bulky articles filling car to visible capacity to take minimum car load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies, including powder, fuel and lumber. The Railway Company will also furnish transportation for men employed on the work at the rate of 1 cent per mile.

The information upon which this proposal is based was obtained by the proposer through his own sources of knowledge, and was not derived from any officer or agent of the Railway Company.

The Railway Company reserves the right to reject any and all bids, and, at its option, to require a satisfactory bond from the contractor for the faithful performance of the work.

Signature of Proposer..... P. Gibbons

Address..... Burton Wash

Date..... October 6 1902

Room 109
+ Cap

5-19-1900 500 P

Form 163

NORTHERN PACIFIC RAILWAY COMPANY.

PROPOSAL

For the construction of a line from Quilcene, Washington to Hoodsport, Washington, approximately Twenty (20) miles in length.

(Location) ..... *Division* .....

The undersigned hereby propose....., and, if this proposal is accepted, agree..... to enter into a written contract, if required, with the Northern Pacific Railway Company, to do all the work for which prices are named herein, according to the plans and directions of the Engineer for said Company, in conformity with the specifications made for said work and attached hereto, upon the terms and conditions of the contract prepared therefor, and within the time specified.

CLEARING, GRUBBING AND GRADING.

1. CLEARING, generally 100 feet wide (50 feet each side of centre line) and paid for only where actually done.
   a. Heavy Timber..... Ten ($10.00) Dollars .....per acre.
   b. Light Timber and Brush..... Ten ($10.00) Dollars .....per acre.
   c. Cutting down and removing Trees outside of clearing limits.....per tree.
2. GRUBBING, where excavations are four (4) feet deep, or less, and embankments two (2) feet high, or less.
   Five ($5.00) Dollars .....per station of 100 feet.
3. EARTH EXCAVATION..... Seventeen (17) Cents .....per cubic yard.
4. ....per cubic yard.
5. LOOSE ROCK EXCAVATION..... Thirty (35) Cents .....per cubic yard.
6. SOLID ROCK EXCAVATION..... Eighty (80) Cents .....per cubic yard.
7. TUNNELS..... .....per lineal foot.
8. TIMBER-LINING OF TUNNELS, in structure, including all iron and timber backing required, also handling and workmanship complete..... per M feet, B. M.

   A fixed price of one (1) cent per cubic yard per 100 feet, after first 600 feet, up to 2500 feet, will be paid for HAUL

MASONRY AND BRIDGES.

9. MASONRY, BRIDGES, CULVERTS, Etc.
   a. .....per cubic yard.
   b. .....per cubic yard.
   c. .....per cubic yard.
10. CONCRETE.
   a. .....per cubic yard.
   b. .....per cubic yard.
11. SLOPE WALL .....per cubic yard.
12. RIP-RAP, in place.....per cubic yard.
13. ABUTMENT AND PIER CRIB FILLING.....per cubic yard.
14. PILES, delivered cleared of bark, driven and cut off, complete..... Twenty (20) cents .....per lineal foot.

actual Cost of hauling piles from End of track to Structures to be paid for additional

15. TIMBER, sawed, in structures.

a. Work of building in Dane $8.50 per M feet, B. M.

b. Actual Cost of hauling timber from per M feet, B. M.

c. End of track to Structures. To be paid per M feet, B. M.
For additional

16. CAST IRON, in structures..... per pound.

17. WROUGHT IRON, in structures, includes spikes, bolts, nails, drift bolts, nuts, etc..... per pound.

18. CULVERTS.

a. Laying Cast Iron Pipe 24" complete, in place as per standard plans. per lineal foot.

b. Laying Cast Iron Pipe 30" complete in place, as per standard plans. per lineal foot.

19. Laying Cast Iron Pipe 36" complete in place as per standard plans,

20. Laying Cast Iron Pipe 42" complete in place, as per standard plans.

21. Laying Cast Iron Pipe 48" complete in place, as per standard plans,

22. Laying Vitrified Pipe 24" complete in place as per standard plans,

23. Laying Vitrified Pipe 18" ~~complete~~ in Road Crossings.

24. Hauling Pipe per ton per mile,

25 cts

40 ¢

Only materials actually used in, and left as part of the finished structures, to be paid for.
Above prices include handling and workmanship, complete.

TRACKLAYING, SURFACING AND BALLASTING.

25. TRACKLAYING..... per mile.

26. SURFACING TRACK..... per mile.

27. BALLASTING TRACK..... per cubic yard.

28. .....

BUILDINGS AND STRUCTURES.

29. .....

30. .....

31. .....

32. .....

33. .....

34. .....

All the above work, for which prices are given, to be completed on or before ..... 190....

The Railway Company will furnish transportation at the rate of 1/2 cent per ton per mile for material required in the work and contractor's outfit with minimum of 25 cents per ton and 25 cents for single shipments. Bulky articles filling car to visible capacity to take minimum car load weight. Live stock will be billed at actual weight with usual commercial minimum. The Railway Company will charge full tariff rates for transportation of supplies, including powder, fuel and lumber. The Railway Company will also furnish transportation for men employed on the work at the rate of 1 cent per mile.

The information upon which this proposal is based was obtained by the proposer through his own sources of knowledge, and was not derived from any officer or agent of the Railway Company.

The Railway Company reserves the right to reject any and all bids, and, at its option, to require a satisfactory bond from the contractor for the faithful performance of the work.

Signature of Proposer Foley Bros & Larson

Address Gilfillan Blk. City

Date October 11th 1902

(C. D. 117.)

NORTHERN PACIFIC RAILWAY COMPANY.

SPECIFICATIONS.

CLEARING AND GRUBBING.

1. As much ground included in the right of way as the Engineer in charge of the work may direct shall be cleared of trees, logs, brush and rubbish, all of which shall be burned, except such materials as are made into cross-ties, timber or wood.

2. The clearing will usually extend fifty (50) feet each side of the center line, and any trees outside of that limit considered unsafe by the Engineer, shall be cut down and disposed of as other clearing.

3. From ground adjacent to excavations, all logs, stumps, roots and brush must be thoroughly cleared, so they cannot fall or be washed into cuts or ditches, and to furnish ample space for any reuired drains or surface ditches at the sides of cuts, or elsewhere.

4. From ground to be occupied by embankments all trees, logs, brush, rubbish and perishable matter shall be entirely removed.

Where embankments are to be two (2) feet high, or more, all trees, stumps and bushes shall be cut off even with the surface of the ground, and removed.

Where embankments are to be less than two(2) feet high, all stumps and large roots must be grubbed out and removed.

5. Grubbing will be allowed and paid for only when the excavation is less than four (4) feet deep, or embankment is less than two feet high. The cost of grubbing, where cutting is more than four feet deep, will be included in the price per yard for grading.

Grubbing in borrow pits will not be paid for, and it will not be done where embankments are more than two feet high.

6. Clearing and grubbing will be paid for only for the surface where actually done.

GRADING.

7. Under this head will be included all excavations required for the formation of the road-bed, embankments, sidings, station grounds, cutting all ditches and drains about or contiguous to the road, all borrowing pits, changing of streams, roads or highways, foundation pits for bridges, culverts, trestlework, buildings and structures, and all other excavations in any way connected with, required for, or incident to the construction of the railroad.

EXCAVATION.

8. *Earth Excavations* will be twenty (20) feet wide at grade, which is the line of the bottom of the cross-ties, with slopes of one (1) to one (1), or otherwise, as the said Engineer shall direct.

9. *Rock Cuts* will be sixteen feet wide at the bottom, with slopes of one (1) to six (6), or otherwise, as said Engineer may require. All rock cuts will be excavated to the depth of one (1) foot below the grade as above defined.

10. *Embankments* less than 16 feet in height will be 14 feet wide at grade. Embankments more than 16 feet in height will be 16 feet wide at grade. Side slopes will be one and one-half to one, unless otherwise ordered by the Engineer. There must be bermes not less than four feet in width between slopes of the embankments, and borrowing pits from which earth is taken, and the slopes of these pits next to the railroad, must be at least one and one-half horizontal to one perpendicular.

CLASSIFICATION.

11. *Grading* will be commonly classified under the following heads: *Solid Rock, Loose Rock* and *Common Excavation.*

12 *Solid Rock* will include all rock in masses that cannot be removed without drilling or blasting, and detached rock or boulders containing more than one cubic yard each.

13. *Loose Rock* will include all slate, soft sandstones or other rock that can be quarried or removed without blasting, although blasting may occasionally be resorted to; also all detached rock or boulders containing one cubic foot or more and not more than one cubic yard each.

Beds of boulders or angular fragments of rock not in place will be classified as *Loose Rock* or *Solid Rock* only to the extent of the actual quantities of such material present.

14. *Common Excavation* will include all material of every description not included in the foregoing classifications or in other special classifications which may be established before award of contracts.

Under this head will be classified all material commonly called earth, loam, clay, sand, gravel, gumbo, ~~hard pan, cement, gravel~~, small boulders or angular rock fragments and all other material not elsewhere classified.

15. *Special Classifications* will be established only when material in large quantities is encountered of such character and quality that it cannot be conveniently classified under the ordinary heads.

16. Material borrowed for embankments will be classified strictly in accordance with the specifications, but no classification higher than *Loose Rock* will be allowed for such material unless with prior written authority of the Engineer.

Material in slips, slides or subsidences, extending beyond the slope lines will not be estimated nor paid for, unless, in the judgment of the Engineer, such occurrences were beyond the control of the contractor and not preventible by the exercise of due care and diligence.

The classification of material from "slides" will be in accordance with its condition at the time of removal regardless of prior conditions.

HAUL.

17. The price paid per yard for grading shall include the actual haul of materials for any distance not exceeding six hundred (600) feet, and the limit to which any materials may be required to be hauled is twenty-five hundred (2,500) feet. For any haul exceeding six hundred (600) feet the contractors shall be paid one cent per one hundred (100) feet per cubic yard beyond six hundred (600) feet.

~~18. The price paid for masonry shall include any haul of materials not exceeding twenty-five hundred (2,500) feet, and the price for haul greater than that distance shall be at the rate of per hundred (100) feet per cubic yard, but stone shall not be hauled a greater distance except by permission of the Engineer.~~

MISCELLANEOUS DIRECTIONS FOR GRADING.

19. The center line and grades of the road may be changed whenever the Engineer shall consider it necessary or expedient, but no claim will be allowed for damage, nor will any increase of prices be made in consequence of such change.

20. The line will be divided into sections averaging about one mile in length, so arranged as to accommodate as near as practicable the economical distribution of material from excavations, or required in embankments. This will not prevent the removal of materials required for the road-bed, track or structures from one section to another whenever, in the opinion of the Engineer, it may be necessary or expedient to do so.

21 All materials taken from excavations shall be deposited in the embankments, except when directed otherwise by the engineer. All grading shall be estimated, measured and paid for in excavation only except where the shape or surface of such excavation is too irregular to be measured correctly. In such cases the quantities *may* be measured in the embankment, and the Engineer shall make a fair allowance for compression or shrinkage, if in his judgment there be any; which allowance shall in no case exceed ten per cent.

22. When it is necessary, in the judgment of the Engineer, to make allowance for future settlement of the banks, either on account of their height, the character of the material of which they are built, or the manner in which the material is placed, the width of road-bed shall be increased, so that when the bank is finally topped out to the true grade the road-bed shall be of proper full width.

23. Contractors will deposit on the side of the railroad, or at such convenient points within the limits of haul as may be designated by the Engineer, any rock or stone they may have excavated; and all such rock or stone, and all timber cut on the right of way, shall be considered to be the property of the Railroad Company, and shall not be used by the contractors, except by permission of the Engineer.

24. The use of powder in large blasts, such as seams, pot-holes, shaft or drift shots may be restricted by the Engineer. The position of charges of powder in seams, pot-holes, drifts or shafts may be determined by the Engineer.

25. In procuring materials from outside the road-bed, the place and manner of taking them out shall be designated by the Engineer.

26. Embankments will be formed in layers of such depth, and the materials distributed in such manner as the Engineer may direct.

27. When a cut contains material in excess of the amount required to make embankments between the limits of a haul, such excess must be hauled and used to widen the banks equally on both sides of the center line within the limit of free haul. In cases where the banks are so low as to make this impracticable, material will be wasted. In such cases care must be taken to deposit it in such a way that it will not be washed back into the cut; and in general the foot of the waste bank must be at least 40 feet from the slope line of the cut. Wasting of material is objectionable, and will only be resorted to when it cannot be avoided.

28. When embankments are constructed over culverts, or when they are to abut against masonry, or trestle bridges, the earth forming such embankments must be tamped or otherwise made as compact as possible, but no extra or other compensation shall be allowed or paid therefor. The contractors will be required to use the greatest care in such cases, so that masonry be not jarred, broken, pushed out of place or injured in any way. If masonry, or other structures, be in any way injured or displaced in the construction of the road-bed, the contractors for grading shall bear the loss and shall make the same good at their sole cost.

29. The grade line shown by the profiles represents the sub-grade, except where the material is suitable for ballast. In that case the profile grade will coincide with the bottom of the ties. Grade lines represent the elevation of the grade at the center of the road-bed, which must be finished so as to give proper elevation for curves.

30. The railroad shall be secured against damage from water in its vicinity by building embankments of earth or stone, or facing the road embankments with riprap, or by widening or changing the channel of streams, or by such other means and in such manner as the Engineer may direct. When practicable, embankments or slopes which are to be riprapped shall be flattened to a slope of two to one.

31. Logs, stumps, brush, or other perishable material will not be allowed in embankments, and sods will not be put in the central part of embankments less than five (5) feet high, except by permission of the Engineer.

32. Borrowing from the sides will not be allowed on station grounds or sidings, except by the especial permission of the Engineer. Material must be hauled from excavations made at the ends of such sidings or station grounds.

33. The price per yard for grading will include the grubbing and removal of all stumps and roots where the grading exceeds four feet in depth; also grubbing in borrow pits of any depth. The full dimensions of the cut or borrow pit will be estimated in such cases; that is, no deduction on account of stumps will be made from the measurement of the borrow pit.

34. The contractor shall, at his own cost, remove snow or ice from any portion of the work in any of its stages, whenever deemed necessary by the Engineer.

TUNNELS.

35. The dimensions of tunnels will be as shown by the standard plans.

36. The section of tunnel, when completed, must conform closely to the dimensions shown by the plans, and will be estimated and paid for by the lineal foot. No allowance will be made for material taken out beyond the limits of the proper section. The price per lineal foot of tunnel will include the haul of materials and deposit in embankment at each end of the tunnel, as directed by the Engineer.

37. The contractor must take down, at his own cost, all loose or shattered rock or material of any kind which, in the opinion of the Engineer, is dangerous or likely to become so in the future; except in ground where timbering or arching is required.

38. When, in the opinion of the Engineer, the use of Explosives is badly managed, so as to unnecessarily shatter the sides or roof of tunnel, he will have the right to restrict the use of such explosives.

39. In case the material proves of such character as to require timbering or arching inside for support, the section will be increased to the size necessary for such timbering or arching. The additional excavation will be paid for by the cubic yard, according to the theoretical section.

40. The timber used in the tunnel will be red or yellow fir, oak, tamarac, or white or yellow pine, as may be designated by the Engineer, and may be sawed or hewed, as found most convenient or desirable.

41. The timber used must be entirely sound, free from wind shakes and loose knots, and in every way acceptable to the Engineer.

42. The lagging shall be in pieces at least four inches thick and five inches wide.

43. The contractor will be required to protect timber, when in place, from the effects of blasting, at his own cost, by covering with slabs or otherwise, as may be most convenient. He will also be required to replace, at his own cost, any timber shattered or crushed in any stage of the work, by blasting or other operations of his own.

44. Timber used for lining the tunnel will be estimated and paid for at a price per thousand feet B. M. of timber left in the completed structure, and the price paid per thousand feet will include the total cost of all labor incidental to putting the timber and iron in place.

45. The contractor must, at his own cost, fill in with stones or timber, closely packed, to the satisfaction of the Engineer, any cavities resulting from any cause whatever, so that the roof and sides will, in all cases where required, have a direct and firm bearing on the lagging or lining.

46. All temporary timbering or shoring for roof or sides that may be necessary for the safe or convenient prosecution of the work in any of its stages, will be done by the contractor at his own expense.

47. Any material taken from outside the proper dimensions shown on the general plans furnished, must be removed from the tunnel and roadway without expense to the Company.

48. Should the portals of the tunnel be built of timber, it will be estimated and paid for the same as timber in the tunnel.

49. Other specifications indicating the length, etc., of posts, wall plates, voussoir pieces or lagging, and necessary plans therefor, will be furnished by the Engineer as required.

50. The right is reserved to vary the standard dimensions of the tunnel, should the Engineer deem it advisable, but the end area shall not thereby be increased.

FOUNDATIONS.

51. Foundation pits shall be of such dimensions and excavated to such depth as the Engineer in charge of the work may deem necessary to ensure the safety and stability of the structure to be erected, and the materials so excavated shall be deposited in the embankments, unless otherwise ordered by the Engineer, and shall be considered and estimated as part of the ordinary excavation on the section.

52. Whenever required, piling or grillages composed of timber or plank shall be introduced as a part of the foundation of structures. The dimensions, quality and quantity of all materials used, and the manner in which the work shall be done, will be subject to the directions of the Engineer. Piling will be paid for by the lineal foot, measured below the cut-off, and the timber will be estimated at the price that applies to timber in structures.

53. Where piling is used for foundations, the piles must conform to the specifications under paragraph ~~164~~ 168, and will be driven to such depth as required by the Engineer to secure a reliable foundation. Pile foundations for all masonry must be cut off below low water mark, so as to make a uniform level support for the grillage under the masonry. In case a grillage is used, its top surface must be at least 12 inches below extreme low water.

54. In preparing foundations for trestles or other structures care must be taken to have the bed entirely in excavation whenever practicable and to thoroughly tamp and solidify the soil before erecting the structure. When such foundations are partially upon an embankment they must be constructed of masonry, which will be classified as rubble or dry rubble. (See paragraphs 115-129.)

55. No allowance will be made for pumping or baling, unless specially provided for in the agreement. The price paid for excavation and materials used will be considered as full compensation for the same completed and delivered in the work.

56. The soil in the bottoms of foundation trenches for abutments or retaining walls or buildings and other structures must be thoroughly tamped and brought to true and proper level before masonry or structure is commenced.

MASONRY.

57. The kind of stone to be used will be designated by the Engineer.

58. All stones must be sound, free from seams, sand holes and other defects.

59. All stones must be laid on their natural beds.

FIRST-CLASS MASONRY.

60. Masonry under this head will be rock-faced, with the exceptions hereinafter noted.

61. No projection will be allowed that exceeds three inches from the pitch line of the joints.

62. Masonry will be built in parallel courses, with level beds and vertical joints. No course shall be less than 14 inches thick, and no course shall be thicker than the course upon which it is built, except in the case of the belting course and the coping.

63. The width of every stone, measured at right angles to the face, shall be at least one-half greater than its thickness.

64. In general, every third stone of each course shall be a header. The headers in any course shall be so disposed as to bond the stretchers of the adjoining courses; and the headers in either face of the wall, in pier work, must be so disposed as to interlock with the headers in the opposite face. Where masonry is six feet or less in thickness, the headers must extend through it. Headers must be at least five feet long.

65. Backing must be made of stones as large as it is practicable to use, and these must be so laid as to give an interior bond with the stretchers. Backing must be dressed to one-half inch on both upper and lower beds. It may occasionally be doubled; that is, two courses of backing may be used to one in the face.

66. No spalls will be allowed except in small vertical openings in backing.

67. All stones that show on face must hold their general dimensions to the back. The general use of fish tail stones, or stones which are scant in width at the back, is prohibited.

68. All joints must be pitched to a true line, and dressed to one-half inch, for a distance of at least 12 inches from the face.

69. Beds, both upper and lower, shall be pitched to a true line, and dressed to one-half inch.

70. Joints must be broken at least 15 inches on the face.

71. All angles must be pitched to a true line and finished with a two-inch draft upon each face.

72. The belting course and coping must be cut in accordance with the plans made therefor, both with respect to the size of the stones and the finish. The face of parapet walls must be pitched off to one-half inch so as to avoid any interference with the superstructiure.

73. All stones must be thoroughly wet before laying, and must be laid in full mortar beds. They shall be lowered upon the bed of mortar and brought to a bearing with a maul.

74. Vertical joints must be filled with thin mortar properly rammed to place with a piece of bar iron.

75. All joints must be raked out to a depth of one inch from the pitch line before the mortar is thoroughly set, and pointed during mild weather by calking in pointing mortar and finishing the joints with a tool.

76. The upper surface of each course must be dressed, if necessary, so as to make it perfectly level before the next course is laid.

77. Doweling must be provided when called for by the plans. This will usually occur in the starlings or ice breakers of piers erected in running water. It should be done as follows: The dowels must be 12 inches in length, and made of one inch round iron. The holes must be drilled vertically, at least 12 inches from the face of the stones which are to be doweled together, and must extend through the upper and eight inches into the lower stone. Two inches of mortar shall then be put into the hole, the dowel dropped in and driven home, and the hole filled with mortar and rammed. There will be two dowels securing each stone to course beneath.

78. Stones in the belting course and in the coping course will be secured to each other by iron clamps according to the plans, and countersunk.

CULVERT MASONRY.

(FOR ARCHES HAVING SPAN OF MORE THAN TEN FEET.)

79. *Abutments.* This work will be broken range. Continuous courses will not be required.

80. No course shall be less than 12 inches thick.

81. All stones must have beds of at least one and one-half times their thickness.

82. Joints shall be broken at least 10 inches on the face. All joints shall be vertical and dressed to three-quarters of an inch for at least eight inches from the pitch line of the face. Upper and lower beds shall be dressed to three-quarters of an inch, and must be pitched to a true line at joints.

83. In general, every third stone in each course must be a header which shall extend through the wall if the same is six feet in thickness, or less.

84. All stones must be laid on their natural beds, in full mortar beds and joints. They shall be lowered on the beds and brought to a bearing with a maul.

85. The backing will be formed of good rubble stone, thoroughly bedded in mortar.

86. No spalls will be allowed, except in small vertical openings in the backing.

87. Face joints must be raked out and pointed by calking in pointing mortar.

88. The face of the stones will be left in quarry shape, with no projection to exceed two inches.

89. *Voussoir Stones.* Generally these will be of the same kind of stone as used for the abutment masonry.

90. The thickness of the arch stones shall not exceed their depth.

91. Beds and joints shall be worked out of wind and dressed to one-half inch and a 1½ inch draft cut on each side of soffit joint to fit the lagging.

92. No stone shall be longer than six feet.

93. Stones must be set carefully to the marks put upon the lagging by the Engineer, and the joints must be filled with mortar by ramming it in with a flat calking iron.

94. The back of the stones shall be pitched off so that there will be no projection greater than two and one-half inches.

95. The arch, when completed, must be plastered with a coat of beton, made of one part cement, two parts sand and four parts of clean roofing gravel, and applied as shown by the plans.

96. *Coping Stones.* Coping stones must conform to the dimensions shown upon the standard plans.

97. The beds and joints must be dressed to one-half inch.

98. The upper surface must be dressed so that it will shed water; other faces left in quarry shape, with all corners pitched to true lines.

CULVERT MASONRY.

(FOR ARCHES HAVING SPAN OF TEN FEET OR LESS.)

99. This work is to be of rubble masonry, built of sound, well-shaped stones, of proper size and thickness for the dimensions of the wall.

100 All stones must be laid in cement mortar.

101. No course to be less than eight inches in thickness and generally not less than twelve inches in thickness.

102. Face stones must be laid so as to give good beds and joints. All joints to be broken. Joints in face of walls to be pointed, with pointing mortar.

103. One-third of the stones must be headers, and generally extend through the wall, and in all cases far enough to insure a thorough bond of the work.

104. Top courses of walls to be composed entirely of headers extending the full width of the wall.

105. Arches, excepting the end rings, to be of rubble masonry, built of selected stones, with parallel faces and of suitable length to break joints, and of such width as to extend through the arch ring as shown on plan.

106. Arch stones for end rings of rubble and brick arches are to be dressed on joints, intrados, and back to one-half inch. All angles and joints are to be pitched to true lines. They must extend into and bond with the rubble or brick masonryof the arch.

BRICK ARCHES.

107. Bricks must be of first-class quality, thoroughly burned and laid in single rowlock courses in cement mortar. The bricks in each course must break joints with those of the adjoining courses at the middle. Joints must not exceed one-quarter of an inch in thickness.

108. The extrados of brick arches to be finished with concrete made as follows: One part of American Portland cement, two parts of clean, sharp sand and four parts of clean gravel, thoroughly mixed while dry, wet to the proper consistency, and thoroughly worked. This covering is to be applied as shown by the plans.

CENTERS.

109. Centering and lagging for arches must be provided by the contractor, according to the directions of the Engineer. Centers must not be struck until the back filling is completed.

BOX CULVERTS.

110. The side walls of box culverts will be composed of heavy rubble stone, laid in cement mortar, and will be built according to the dimensions shown by the standard plans.

111. The footing course, apron and cover stones are to be quarried to the sizes and shapes indicated by the plans.

112. The edges of cover stones must be spalled off so as to fit closely together.

PAVING.

113. Paving will be made of flat stones, set upon their edges, the longest dimension at right angles to the waterway, in such manner as to leave the least possible space between them, and of such size as to reach through the entire depth of the paving.

114. Great care must be taken at the ends of any piece of paving to make it secure, so that it cannot be undermined or cut out by water flowing underneath it. The lower end must receive special care to prevent the earth next the pavement being gradually washd away, thus leaving the paving stones unsupported.

FIRST-CLASS RUBBLE MASONRY.

115. Rubble masonry for retaining walls will be built of derrick stone (that is, stones of such size and weight that a derrick is required to handle them), of proper size and thickness for the dimensions of the work. They must be of fair shape, and spalled so that they will lay with good and even bearings upon the wall without the undue use of spalls or pinners. Care must be taken to secure good faces.

116. All stones must be laid with full mortar beds and joints. Exposed faces must be neatly pointed.

117. There must be a header in each course, not less than once in eight feet, so introduced between the course above and below as to make a thorough bond. The length of headers must be at least twice the width of the stretchers. All headers must be at least four feet long. When walls are five feet or less in thickness the headers must extend through them.

118. In general, no stones less than 12 inches in thickness will be allowed.

119. The walls must conform to the dimensions given by the plans.

120. Weep holes must be left in the masonry wherever directed by the Engineer.

121. Copings must conform to the dimensions and be dressed in the manner shown by plans.

SECOND-CLASS RUBBLE MASONRY.

122. Rubble masonry for buildings, turntables, etc., will be composed of stones of proper size and thickness for the dimensions of the work. They must be of fair shape and spalled so that they will lay with good and even bearings in the wall.

123. All stones shall be laid in full mortar beds and joints. All exposed faces must be neatly pointed.

124. All work must be thoroughly done and well bonded. An abundance of headers must be introduced and properly spaced, so as to make a good and substantial wall. No stone will be considered a header that does not extend through light walls.

125. The tops of all walls or piers will be finished to a true level surface with stones the width of which is equal to the thickness of the wall.

126. No stones less than six inches in thickness are to be used; and generally the thickness must not be less than ten inches.

127. The walls must conform to the dimensions given on the plans, or must be built according to the instructions of the Engineer.

128. Water tables and pedestal stones must conform to the dimensions given on the plans, and must be dressed as shown therein. They must be accurately set on a bed of mortar by being tamped to place to the lines and levels shown on the plans or given by the Engineer.

DRY RUBBLE MASONRY.

129. Dry rubble masonry will be built according to the specifications for first or second class rubble masonry according to the purpose of the wall, except that no mortar will be used. In general, retaining walls of dry rubble should be built of as large stones as may be available, and stones should be bedded upon each other by using slightly moistened earth or loam, and brought to a perfect bearing by wedging them up with pinners. All vertical joints shall be completely filled with earth and spalls and particular attention shall be paid to the securing of proper bond by means of long headers as specified for the mortar rubble.

MORTAR.

130. When mortar is made with American cement, it is to be composed of one part of cement to two parts of clean, coarse, sharp sand, thoroughly mixed while dry, wet to the proper consistency and thoroughly worked.

131. It must be made on clean plank beds and in small quantities, as required for use.

132. When made of American Portland cement it shall be composed of one part of cement to three parts of clean, sharp sand, or otherwise, as the Engineer may direct. It shall be mixed, wet and worked as above specified.

133. *Pointing Mortar* shall be made of equal measures of cement and clean, sharp and fine sand thoroughly mixed while dry and wet to the proper consistency.

CONCRETE PIERS, ABUTMENTS AND CULVERTS.

134. Concrete for this work will be composed of Portland cement, clean sharp sand, gravel and broken stone, either both or one of the latter ingredients in such proportions as will be suitable for each particular part of the structure. Cement should be kept at all times under cover, and must be protected from moisture. Contact of sacks or barrels with the ground must be avoided.

135. If the cement is lumpy it should be thoroughly pulverized before mixing with sand. Lumps which cannot be broken up by a light blow of the shovel should be picked out, and only cement which is in perfect condition should be used for face work. All papers and other rubbish must be carefully removed.

136. Sand should be clean, coarse and sharp, free from clay or earthy matter, and for face work should, if necessary, be screened to free from papers or other foreign bodies. Gravel must be clean, and if pit gravel is used, which is mixed with earthy matter it should be washed.

137. Broken stone must be of suitable character, and in general of such size that any piece will pass through a two and one-half inch ring. It should be handled with pitch forks to free it from accumulations of sand and dust which occur with some classes of rock in the process of breaking, and the fine material left must not be used.

138. The proportions of cement, sand and rock will in general be marked on the plans, and are subject to change in accordance with the directions of the Engineer, if required by the character of the work and the nature of the available ingredients. In general, facing will be made in the proportion of one to four to seven, shafts in the proportion of one to three to five, coping and bearing blocks in the proportion of one cement to one sand, with a small proportion of rock. Facing will be made in the proportion of one sand to one cement. In footings stones of convenient sizes may be incorporated in the concrete to an extent not exceeding twenty per cent of the entire mass.

139. Cement and sand should be mixed dry by hoeing the mixture until it is uniform throughout. The mixture is then spread over a bed of rock, turned over and sprinkled with water. A second turning will usually be sufficient to make a good mixture, the result aimed at being the complete covering of each piece of rock with mortar. If wheel barrows are used to carry the mass to the pit, it is practicable, by careful handling to accomplish proper mixture after the first turning during the process of shoveling into the barrows. Absorbent rock should be thoroughly wetted before mixing.

140. Great care is necessary to make the amount of moisture such that the greatest possible strength will be given to the concrete. Concrete in proper condition for placing into the pit should not be sloppy, but should have sufficient moisture to make it plastic under slight pressure, and it should always be possible by tamping to draw a film of water to the surface. In placing concrete in pits care should be taken to avoid separation of rock and sand mixture. This can usually be secured by sliding it down a chute instead of dumping from a high elevation. Great care is necessary when concrete is deposited in water, and in this case the concrte should be deposited by means of a spout or bucket, and in no case should the mixture be allowed to drop through the water for any distance, to avoid the washing out of the mortar.

141. Concrete should be deposited in layers not exceeding eight inches in depth. Each course should be thoroughly tamped until the whole mass becomes compact, which is apparent through the flushing of the mortar to the surface. Facing should be deposited simultaneously with the body of the work and tamped together. The thickness of the facing should, in general, be about one and one-half inches. A convenient tool for placing the facing consists in a strip of iron one-quarter of an inch thick, six or eight inches wide and about four feet long, one and one-half inches at each end being bent at right angles and provided on the top edge with a handle. The one and one-half inch bends on each end are placed against the timber moulds, and the space between mould and sheet is filled with the facing mortar, the body concrete being deposited behind, after which the iron is withdrawn and the whole mass tamped together. The facing mixture should in all cases be mixed separately and wet only in such quantities as required for immediate use.

142. The courses in all cases must be kept level, and a course should not be left unfinished at the close of a day's work, but work should always be adjusted so that it will be possible to finish the course. When work is resumed after an interruption the surface of the old work should always be wetted. Before a new course is started, any mortar which may have become attached to the moulds above the line of finished work should be removed and the old course finished clean and sharp against the timber mould.

143. Coping should always be made in sections not exceeding seven feet in length by dividing the mould with planks so that when any shrinkage takes place and cracks open they will be on the straight lines made by the partitions, but plank used for partitions should, of course, be removed after one section is completed and before the next one is joined on. Each section of coping and bearing blocks must be made to full thickness in one day, so that they will, as nearly as possible, be in one piece. Top surfaces should be floated and brought to true and perfect surface with straight-edge and trowel.

144. When it becomes necessary, after timber moulds are removed, to patch up defects, the loose portions of the concrete work should all be removed and the surface which is to be patched made rough by cutting into the surface so as to present a fresh face. It should then be wetted and immediately before the application of the patch, receive a wash of neat cement. The patching must be done with mortar of one to one, consolidated as much as possible, neatly troweled without leaving any thin edges over the old work, and protected from the sun and moisture for several days until it has well set.

145. Timber moulds for exposed work should be built of surfaced lumber according to correct dimensions. Joints must be neatly fitted and special care is to be taken to have lining plank present an even surface without offsets where the planks join. Forms must be properly braced to prevent their being sprung by the weight of the fresh concrete. Square corners are to be avoided, and will in general be broken, if no other shape is provided, by corner strips three-quarters of an inch wide. It is advisable to complete forms entirely before concrete work is commenced. If this is not practicable, care must be taken to remove all chips and dust which may become deposited on the concrete during the process of constructing the moulds, before concreting is resumed. Forms should be removed as soon as the setting of the concrete permits, which should be done carefully to avoid damaging the work. It is desired to avoid patching and subsequent veneering as much as possible, and it should be the aim to have the work, when forms are taken off, in such shape that this will be unnecessary.

146. To prevent concrete from adhering to moulds, the timber should receive a wash of a solution of soft soap, applied with a brush or swab. To coat the timber by rubbing it with pieces of soap will not be permitted.

147. Holes for anchor bolts may be made by building in pieces of wrought iron pipe of proper size. When necessary to build anchor bolts into the work, the bolts should be hung up in proper templets at the required elevation.

CULVERTS.

148. Culvert pipe will either be cast iron or vitrified pipe. Whenever it is practicable, culvert pipe should be so placed that the top of the pipe will be at or below the natural surface of the ground. The material used for bedding the pipe shall be free from stones. Great care is necessary to have the material well compacted under and against the sides of the pipe; but the material on top of the pipe shall be put on loosely.

149. The joints in vitrified pipe shall be made of soft tempered cement mortar, completely filling the socket and rounded off on the outside. No mortar shall be allowed to project on the inside of the pipe, but the joint must be completely filled and smoothed.

150. With cast iron pipe, the lower half of the joint shall be made with cement mortar, as specified for vitrified pipe, and the upper part shall be made by calking in oakum.

151. Cast iron pipe above 24 inches in diameter shall be stayed and crowned by wedging in struts in accordance with standard plans, the struts not to be removed until the embankment has settled sufficiently.

RIPRAP.

152. Riprap will consist of rough stones, laid or placed in the slopes of embankments or about foundations, or at the ends of culverts or other masonry.

153. The largest stones must be placed at the bottom and where the current has the greatest force, and must be laid as closely together as possible, so as to avoid large openings.

154. The ends of all riprap protection should be turned into the bank, so as to prevent its being undermined or washed out.

155. Stones should generally measure not less than one cubic foot.

156. Care should be taken to make a smooth connection between riprap and the paving of culverts and masonry.

BLIND DRAINS.

157, Blind drains will be made of rough stones thrown in without particular order, except that the largest stones shall be at the bottom. The top of the drain should be covered with brush or sods. The use of blind drains is objectionable, and should be restricted to cases where the amount of water to be disposed of is known to be very small.

ABUTMENT AND PIER CRIB FILLING.

158. Abutment and pier cribs will be filled with angular stones of a size and character satisfactory to the Engineer, and which shall be placed in the cribs without damage to any portion of the structure and as the inspectors may direct.

WELLS.

159. Wells for water stations will be 16 feet in diameter inside of the curb, which will usually be 16 inches in thickness.

160. Wells will be curbed with rubble masonry, laid in mortar (see paragraph 122 *et seq.*), or with hard, well burned bricks laid in cement mortar. (See paragraph ~~136.~~ 130

161. Wells for depots and section houses must be three feet in diameter, inside of the curb, which will usually be twelve inches thick and composed of dry rubble masonry. (See paragraph ~~135.~~ 129

162. Contractors must provide syphon or suitable pumps for use while digging wells. The use of the Company's pumps for this purpose will not be permitted.

163. The contract price will be held to include all necessary timber, false work and labor on same incidental to the construction of wells.

TIMBER STRUCTURES.

164. The timber used for structures must be cut from some suitable wood approved by the Engineer. The varieties which will commonly be used are white oak, white pine, Norway pine, red and yellow fir. All timber must be sawn square and be of proper dimensions, free from large wanes, shakes, rot, large and unsound knots, or any defects which will impair its strength and durability. The use for which the timber is intended will be taken into consideration, and especial pains must be taken to reject and exclude all imperfect sticks which in use will be required to sustain considerable loads. This applies to caps, posts, stringers, bridge chords, joists, etc.

165. The structures must be built in strict accordance with standard plans.

166. All pile and timber ends, chips and rubbish shall be burned or otherwise disposed of as the Engineer may direct.

167. All structures must be left in perfect line and surface at the conclusion of the work.

Bridges must be erected ahead of the track in all cases where not especially excepted, but the maximum haul beyond end of track shall not exceed four miles.

PILES.

168 Piles will be of fir, oak, tamarac or other suitable wood, as designated by the Engineer. They must be made from sound, live, thrifty and reasonably straight trees; must be free from wanes, shakes, rotten knots and any indication of decay. They must not be less than nine (9) nor more than twelve (12) inches in diameter at the small end, and not less than fourteen (14) nor more than twenty-two (22) inches in diameter at the large end. They must be cleared of bark their entire length before they are inspected.

169. Piles must be delivered by the track or roadbed at convenient points, which must be situated not less than three nor more than twelve feet above the track or grade of roadbed. They must be piled not less than 10 nor more than 30 feet from the track, on skids of sufficient size to keep them well up from the ground.

PILE BRIDGES.

170. Piles for bridges and structures generally must be driven until the fall of a hammer weighing 1800 pounds for a distance of 25 feet, or an equivalent blow, causes penetration not to exceed one inch, or otherwise as prescribed by the Engineer. When in the judgment of the Engineer the ground is so hard that piles cannot properly be driven, frame bents will be used.

171. When necessary, piles will be shod with iron.

172. When necessary to drive to a great depth, and piles of adequate length cannot be obtained, one shall be spliced upon the top of another. The first pile having been driven as far as practicable, it must be cut off squarely to receive the following pile, which must also be squared and set on top of the one already driven. The piles are then to be squared on four sides and fastened together by spiking on pieces of scantling.

173. Piles will be paid for by the lineal foot, for the part below the cut off. Timber will be paid for according to the number of feet B. M. in the finished structure.

174. False work may be required to cross streams or gulches where more permanent bridges are to be afterwards built, in order to proceed with track laying, surfacing and transportation of materials for work beyond. Such false work will be paid for at the contract price for pile or trestle work, but such false work must be removed at the conclusion of the work without extra cost to the Railway Company.

FRAME TRESTLES.

175. Frame trestles will have foundations composed of piles or mud sills. When the latter expedient is adopted, the sills must be settled as nearly as possible to a permanent bearing by the use of heavy rammers.

176. Care must be taken not to bury with earth any portion of the sills or posts.

177. All foundation pits for trestle bents should be arranged so as to give good drainage.

178. Great care must be taken in framing trestles and all timber structures to secure a perfect fit at all joints. Shimming will not be permitted.

179. All adjustments in height of structures, due to settlement or other causes, must be rectified by jacking up from the bottom to the proper elevation.

180. Truss bridges of steel will be constructed under special specifications.

TRUSS BRIDGES.

181. Timber for truss bridges will usually be of red or yellow fir (see standard plans). Great care must be taken to exclude all unsound, imperfect or defective sticks. Sap wood, wane edges, decayed wood, large or loose knots, will not be allowed. All sticks must be straight and of such length that when framed, the ends will be sound and clear. Knots in stringers or beams are most injurious if existing on under side near middle between supports.

182. No variation in size of timber exceeding one-quarter of an inch from the dimensions shown on plans will be allowed.

183. Before commencing to frame a Howe truss span, check over carefully the material furnished, comparing the same with the plan, to insure that it is of the proper dimensions for the structure as shown.

184. No excuse will be accepted from contractors or foremen for the improper framing of a Howe truss span, either in the manner in which the work is done, or for lack of fit of the different members in erection.

185. If any errors are detected in the plans, or in the kind or sizes of material furnished, the same must be brought to the attention of the Engineer, in writing, before the work is commenced.

186. Frame all four chords of the truss on the same ways, which must be accurately leveled.

187. Observe carefully that the lengths of panels in the bottom chord are exactly the same as shown by plan, and also that the lengths of panels in the top chord are exactly as shown by plan. The lengths of top chord panels are slightly in excess of those of bottom chord panels, on account of providing for camber.

188. Extreme caution must be exercised in laying out the lengths of panels.

189. Determine the distance between keys by putting together a right and left hand clamp head, clamp bar and key, placing them in a position corresponding with that which they will occupy in the finished work, leaving the key loose enough so that it can be driven in the completed chord a sufficient distance to draw the clamp up tight. Check this distance between keys in each panel as the framing is carried on. The timber must be framed in such a manner that the clamp heads will at least fill the space between the chord sticks, and that keys will all be dapped into the chord sticks a sufficient distance; and to the end that when the chord is framed and packed together, the lower and upper surfaces of the same as it lies on the ways will be straight, parallel, the distance apart shown on plan (which will correspond with the lengths of angle blocks) and free from twists or wind.

190. All measurements, lines and marks for framing which may be placed on the chords shall be made on, or with reference to, one of the three true faces of the chord, as above described.

191. The location of lateral panel points must be made with the same accuracy and care as for the panel points of the main trusses.

192. Care must be taken during the framing of the chords to place the timber in such a way that as little work will be required in facing as possible. After the chords are framed and packed together, they are to be faced. If a through span, the upper sides of bottom chord and the lower sides of top chord; if a deck span, the top sides of both chords.

193. All work, to insure uniformity, must be done from patterns and templates, which must be made from the actual castings and iron members.

194. The chords must be so framed for angle blocks that they will be accurately at right angles to the faces of the chords.

195. Determine the length and cut of main and counter braces by laying out the panel full size, as per sketch on page 11. The shape of the angle blocks in the panel as laid out must be determined from patterns made from the angle blocks showing their end view. In laying out the panel, the lines representing the upper surface of the bottom chord and the lower surface of the top chord, respectively, are parallel, and their centers are on a line which is perpendicular to them. With a panel laid out full size as shown, the brace pattern can be fitted to the marks which coincide with the position that these members will occupy in the bridge.

196. One corner of the brace patterns must always be kept on the upper angle of the block on the lower chord and the lower angle of the block on the upper chord, and buttons or marks must be placed near each of these ends to show the position the pattern must occupy in marking the brace timbers. Braces must be laid out and framed in pairs. always keeping the crowning side, if any, uppermost and outward.

197. One pattern can be used for cutting all of the main braces and counters, providing the angle blocks are all of one size. If two sizes of angle blocks are used, three sets of patterns will be required, as follows: One set for braces which rest on large angle blocks at both ends; one set for braces which rest on large angle block at one end and small angle block at the other end, and one pattern for braces which rest on small angle blocks at both ends.

198. Particular care must be observed in making patterns for, and in the framing of braces.

199. Camber, as is sometimes erroneously supposed, is not put in a truss by varying the lengths of the braces, or by screwing up the rods, but is due to the excess in length of panel of top chord over that of panel in bottom chord.

200. Patterns for lateral braces must be made in the same manner in which patterns for main braces are made, excepting that the lateral panel as laid out will be a perfect rectangle, which is not the case with the panel of the main truss.

201. All members must be framed carefully in accordance with the dimensions and instructions which are given on the plans.

202. The bearings for all angle blocks and other castings are to be planed to give an even and true bearing for the iron members, which must have a snug fit.

203. Chords must be sized for the bearings of gib plates. In spans in which the angle blocks have tubes the chord sticks must be left of such a size that after shrinkage they will still continue to assist the tubes in transmitting the strain from the gib plates to the body of the angle block.

204. Holes for lateral rods and packing bolts shall be bored from the inside face of the chord, and augurs must be steadied by a bracket or guide to insure the boring of the holes in a line perpendicular to the inside face of the chord.

205. All framing must be neatly and accurately done so that all joints will fit close and snug.

206. All members which bear against each other must have good and even bearings. Cutting and sawing beyond marks and lines, and then filling up the deficiency so caused with wedges or shims will not be permitted.

207. Wall plates must be sized to receive bolsters. Corbels must be brought to uniform thickness. Bolsters must be brought to uniform thickness by surfacing, and chords must be sized to give them an even bearing on bolsters.

208. Floor beams need not necessarily be sized. Three-fourths of the camber shall be removed from the floor system by notching the stringers onto the floor beams. The notching of stringers will not be done until the bridge is erected and the floor beams are in place, after which the stringers will be strung out on the floor beams and packed, when they will be marked and notched as may be necessary to allow for the inequalities in the floor beams, and to remove the amount of camber specified above.

209. As the structure is framed, mark each piece of timber and iron so as to insure that in erecting, it will be located in the same place that it occupied in the framing, and make a diagram showing the system followed in making the marks, so that they can be readily understood by the foreman who raises the work.

210. Before the erection of the truss, care must be taken to insure the correct elevation of all of the wall plates, or parts of the foundation below the bolster.

211. Neither shims nor sizing of the timber below the dimensions specified by plans will be allowed.

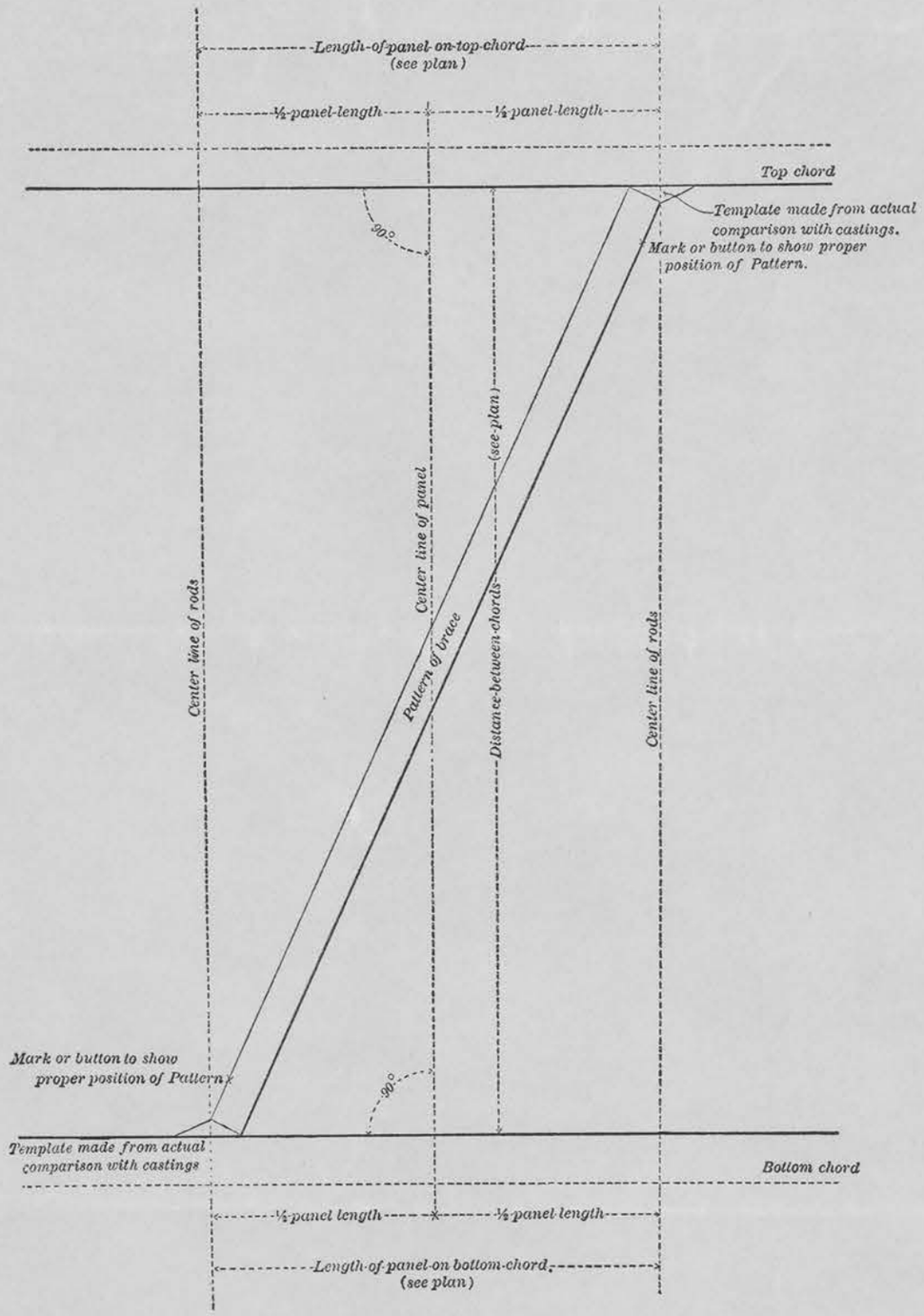
212. All recesses or surfaces which will be inaccessible after erection must be coated with white lead before the structure is assembled.

213. Secure the nuts of all bolts through floor beams, stringers and guard rails by burring thread close to the nut with a cape chisel or center punch.

214. Truss and lateral rods must be so adjusted as to make close and even bearings, but must not be overstrained.

False work must be removed at the conclusion of the work without extra charge.

SKETCH SHOWING MANNER OF MAKING BRACE PATTERN.



LOG AND TIMBER CULVERTS.

215. Timber for log and timber culverts must be sound, and the variety and quality must be satisfactory to the Engineer.

216. Log culverts will be made of sound, straight, green logs, from which all bark must be removed, not less than ten inches in diameter at the small end, and of nearly uniform diameter throughout each course.

217. After the foundation for the culvert is prepared, mud-sills will be laid not more than five feet apart, on which the first course of side wall timbers shall rest. The mud-sills will be flattened on top and bottom sides to a thickness of not less than twelve inches, and at the ends where the side walls are joined to the sills will be boxed down three inches, so as to give a close fit.

218. The timbers will be drift bolted to the mud-sills with iron drift bolts ¾ inch square by 16 inches, driven into holes ¾ inch in diameter.

219. The walls will be made by piling the logs one upon another, the larger logs to be in the lower courses, with the top invariably laid down stream. After flattening the logs on the upper and lower sides to even thickness throughout, and thoroughly pinning or drift bolting them together, all knots and other projections into the opening of the culvert are to be carefully cut away. At the ends of the culvert the layers of logs will be drawn in as they rise above the bottom to conform to the slope of the embankment. Where practicable each log will extend the entire length of the culvert. The logs will be so laid as to leave the full size of the inside of the culvert clear for passage of water, and the inside walls shall be vertical. If drift bolted, each course of logs will be well bolted to the one beneath it with three-fourths by sixteen inch iron drift bolts, spaced not more than five feet apart; and where logs join, a drift bolt shall be driven on each side of the joint. All drift bolts will be countersunk to such a depth that one-half the bolt shall be in the upper timber and the other half in the lower.

220. The bottom of log culverts may be formed of logs laid close together across direction of current not less than nine (9) inches in diameter at small end, extending on each side one (1) foot beyond outside of side wall, or be paved to the top of the mud-sills with angular rock, where it can be obtained from the adjacent cuttings; otherwise with large boulders. This paving will be classified as riprap in place.

221. The covering of these culverts will be round logs not less than fourteen inches in diameter, flattened for a distance of eighteen inches at each end to a face of not less than eight inches; at least one log in four secured to the top course of the side walls with three-fourths by sixteen inch iron drift bolts. At intervals of five feet one of the top logs shall be boxed down on the side walls three inches to a close fit. The hollows between the covering logs must be filled with poles or brush.

222. Material in log culverts will be estimated by the lineal foot, and the length of the timbers only will be considered, without regard to varying size or thickness.

223. Timber culverts will be made of sound hewed or sawed timber, in accordance with the standard plans. They will be estimated and paid for by board measure.

224. Log or timber culverts will not be used except when it is practicable to build or place within them stone or brick structures or drain pipes of ample size to carry the water.

225. In cases where the embankment is six feet high or less, a single span of pile bridge with timber bulkheads will be used, and will be built according to the standard plans.

CROSS TIES.

226. Cross ties will be made from such varieties of timber as may be designated by the Engineer; usually from white oak, red fir or tamarac. They must be cut only from live, sound and thrifty trees, must be free from rotten knots and all indications of decay; also from splits and shakes.

227. Ties must be exactly eight feet long, with ends sawed square. They must be hewn or sawed straight and true on two parallel faces to a uniform thickness of seven inches. Those less than seven inches or more than seven and one-half inches in thickness will not be received.

228. The minimum width of face for hewn ties will be seven inches, exclusive of bark. The minimum width of sawed ties will be nine inches, provided they are sawed on four sides. If they are sawed on two opposite sides only the width will be the same as for hewn ties. The above minimum dimensions are absolute and will be insisted upon.

229. No split ties will be accepted.

230. Ties must be piled on skids in rows or tiers containing 1,000 ties or less, with small ends of all ties in each tier piled one way. When they are piled in adjacent tiers an open space of not less than three feet must be left between them. They must be piled at points where they can be conveniently loaded; that is, at or near grade.

TRACK LAYING.

231. Track laying will include all the work of laying the main track, sidings, or other permanent tracks, frogs, switches, rail braces, tie plates, crossings, etc., laying and spiking the plank of road crossings wherever required, and trimming down or filling up the surface of the roadbed to bring it to the true grade. Also setting all track markers and signs.

232. When the material of which the roadbed is made is fit for ballast, it will be finished to the proper elevation for the bottoms of the ties, and if, at the time the track is laid, it is lower or higher, it must be brought to the proper elevation before the ties are distributed. When material is unfit for ballast, the roadbed will be finished to an elevation four inches below the bottoms of the ties or subgrade, and the track must be brought to the true grade in ballasting.

233. Track laying must conform with the standard specifications of the Railway Company. (Form 140.)

234. Only such sidings or spur tracks, and such lengths thereof, as may be ordered by the Engineer will be estimated and paid for. This will include tracks required at material yards, but will not include spurs in gravel pits, nor temporary spurs laid for the accommodation of boarding cars. The price paid for such work will be held to include the taking up and removal of material at the close of the work.

SURFACING AND BALLASTING.

235. When material of which roadbed is made is suitable for ballast, the track will be surfaced from the sides, otherwise the material generally will be hauled, in which case it will be classified as ballast. The Company will furnish the train and train crew, and the contractor must load, unload and spread the ballast and put it under track.

236. Ballast will be paid for by the cubic yard. Borrow pits from which ballast is obtained must be cross sectioned, and the amount removed therefrom measured in excavation. No waste of ballast upon banks will be permitted. Deficiencies in grading which are rectified at the time of ballasting, by the use of train hauled material, will be paid for as earth excavation.

237. Surfacing and ballasting must conform to the standard specifications of the Railway Company. (Form 140.)

238. All road and surface ditches will be left clear and free, so open and extended as to conduct water freely and quickly from the roadbed; and all side ditches must be left unobstructed.

239. The side slopes and ditches must be left neat and smooth, and free from all rubbish, materials and obstructions. Material for filling or ballasting must not be taken from the slopes of embankments. This will be insisted upon.

240. The surfacing or ballasting must be kept up with the track laying. All new track must be brought to surface and tamped up before it is run over. Rails that are damaged by reason of neglect on the part of the contractor to comply with these requirements will be replaced at his expense.

241. When the surfacing or ballasting is completed, the track must be in perfect line, surface and gauge, and must be so maintained by the contractor until it is accepted by the Company for operation. This contemplates a second adjustment of the track to line and grade, after it has settled under traffic. The line will not be accepted until it is fully completed.

242. Track laying and surfacing will be estimated by the lineal mile of 5,280 feet. Sidings will be estimated between head blocks of switches. Where ballasting is done by train, surfacing will not be estimated.

243. All track work will be closely inspected, and inferior work will not be paid for by the Company.

244. All crossing, flanger, station, tank and other signs, mile and clearance posts, are to be set by the contractor as directed by the Engineer, and will be considered a part of the track laying and surfacing; and the expense of setting will be held to be included in the price paid for track laying.

FENCES.

245. Fences must be built according to the standard plans. Farm gates must be provided wherever necessary.

246. Posts must be set plumb, firmly planted, and no variation in height above the ground line exceeding 3 inches will be allowed. Where ground surface is irregular, in sharp depressions, or on ridges, additional fence posts must be used. Posts in depressions must be properly anchored, and where fence is constructed through overflow bottoms, a cross-piece shall be spiked to the bottom of each post in such a manner as to prevent its floating up. Corners and posts at openings must be properly stayed by struts. The price paid for fencing shall include the construction and placing of the necessary farm gates and cattle guards.

BUILDINGS.

247. All buildings must be constructed according to the standard plans.

248. *Excavations.* Grading for building sites other than excavations for cellars, trenches, foundations, etc., incidental to plans, will be paid for by the cubic yard, under the classification of and at the prices that apply to grading. The price paid for excavation of trenches for water pipes and drains will include the back filling of the same, for which no further allowance shall be made.

249. *Drains.* Drains will usually be of first quality of vitrified tile, with the dimensions shown by the standard plans. They must be carefully laid on a true grade, with a fall of at least one inch in 50 feet, and more if the elevation of the outlet will permit. They must be jointed with hydraulic cement, and must be scraped smooth inside as laid. They must be provided with all necessary traps, bends and connections, and be left in perfect working order.

250. *Foundation Walls.* Foundation walls will generally be classified under the head of concrete, second-class rubble masonry (see paragraph ~~128~~ 122) laid with cement mortar, hydraulic lime mortar, or lime mortar, as directed by the Engineer.

251. *Brick Work.* Bricks used in buildings must be of standard size, well and neatly moulded and thoroughly burned. Care must be taken to exclude salmon brick, or bricks which are imperfectly burned. The stock of bricks must be assorted, and those of perfect shape, quality and uniform color must be used in face of wall.

252. Bricks for paving and other special purposes must be selected with especial reference to the purpose for which they are intended to be used.

253. All bricks must be thoroughly wet before laying.

254. In general, bricks in the walls of buildings above the water table, boiler settings and chimneys will be laid in lime mortar. (See paragraph ~~240.~~ 268)

255. Bricks in pits or foundations, below the elevation of the water table, and not exposed to an undue amount of moisture, will be laid in hydraulic lime mortar. (See paragraph 241.)

256. Bricks for floor arches and other masonry which is exposed to water will be laid in cement mortar. (See paragraph 242.)

257. Bricks in walls will generally be laid in common bond; five stretcher courses to one header course. The Engineer may require a more thorough bond when he deems it necessary.

258. All bricks must be laid in full mortar beds, and all joints must be completely filled.

259. Particular care must be taken to secure straight, level bed joints of moderate uniform thickness. All joints must be cut and struck as the work proceeds.

260. Arches must be turned upon proper and substantial centers, which should be slacked away as soon as the mortar has set.

261. Hollow walls must be tied together every fifth course with bricks not over three feet apart. Care must be taken to leave air vents in such cases.

262. Anchors, hinge castings, lookouts, nailing strips, etc., must be properly and neatly jointed into the brick work.

263. Where the interior of brick walls is to be lathed and plastered, build in a lath to which to nail furring strip every fifth joint.

264. Scaffolding must be furnished by the contractor, and must be thoroughly and strongly built.

265. Brick paving will be understood to be bricks set on edge, bedded in cement mortar and grouted.

266. Chimney flues will be constructed as shown by the plans. Especial pains must be taken to secure full mortar joints. They must be thoroughly plastered on the inside and troweled to a smooth finish.

267. Thimbles must be provided as shown by the plans.

268. *Mortar.* Lime mortar will be composed of fresh lime and sand, in the proportion of one part of the former to about four of the latter. The proportions of lime and sand may be varied to suit the nature of the lime used, and the product must in all cases be satisfactory to the Engineer.

269. Hydraulic lime mortar will be composed of one part of hydraulic cement, two parts of lime and six parts of sand. The cement must be thoroughly mixed with three parts of sand in a dry state. The slacked lime must then be added gradually, the remaining five parts of sand worked into the mortar thus formed, and the whole mass worked to the proper condition for use.

270. Cement mortar will be made of American Portland cement and sand, in the proportion of one part of cement to three parts of sand. These ingredients must be measured. They must be thoroughly mixed while dry and then wet and worked to the proper consistency.

271. The proportion of ingredients as mentioned above may be changed by the order of the Engineer, if the mortar thus made is not satisfactory to him.

272. All mortar will be made in small quantities, as required for use, and none shall be used after it has commenced to set.

273. Cement and lime not required for immediate use must be protected from moisture; and any deterioration in its quality from this cause, and loss resulting therefrom, will be charged to the contractor.

274. Clean, sharp sand, thoroughly screened, shall be furnished for all work.

275. Fresh water must be used for making mortar, and all mortar must be prepared on clean plank beds.

276. *Plaster.* Two coats of cement plaster of an approved brand shall be used.

277. The first coat of plaster must extend behind the wainscoting, if any, through the floor, and must fill out all spaces between frames of timber, etc. After the first coat has dried, put on white hard finish or float finish as will be directed and trowel to a true and glossy surface.

278. After carpenters are through, plasterers must patch up all defects.

279. *Timber.* Timber must be sound, free from wanes, shakes and large, black or unsound knots. It must be of the quality specified by the standard plans, and when this specification does not agree with the grades of the local markets, it will be understood that it must be suitable for the purpose for which it is intended.

280. All timber will be subject to the inspection and acceptance of the Engineer.

281. Timber having defects which impair its strength must be excluded from all work where it will be subjected to a considerable load.

282. Where sizes are given they will be understood to mean the dimensions of the timber as it comes from the saw, without reference to the diminution in size caused by dressing, unless an exception is noted upon the plans.

283. All timber and workmanship is subject to inspection before and after it is put into the work, and the Engineer may order any part of the structure, which in material or workmanship does not correspond with the terms of these specifications, removed, and substitution made in proper manner, at the expense of the contractor.

284. *Mill Work.* All material used for making window sash, frames, and work of this description, must be made of first quality white pine, excepting such portions of window or other frames as will not be exposed, which may be of common lumber.

285. All timber used for these purposes must be thoroughly dried and seasoned. All inferior finish shall be kiln dried lumber, free from imperfections. Stair railings, balusters, treads, risers, stringers, mouldings and wainscotings must be made of material specified by the plans.

286. All finish shall be put up in the best manner, smoothed by hand, and left free from machine and tool marks.

287. Unless especially agreed to the contrary, it will be understood that interior wood work is to be painted, unless finish is hard wood, in which case it shall be filled with oil, rubbed and finished with a hard finish.

288. When not otherwise specified, all sash will be glazed with second quality American glass, S. S.

289. Contractor must properly protect all frames, sash and doors, not used immediately from the action of the rain and sun. All mill work, except such as is required for inside work, and mouldings, shall receive one priming coat before shipping. This will not apply to the frames shipped knocked down, which will receive their priming coat after they are fastened together and before they are put into the work.

290. All door and window frames must be carefully squared before they are put into the work, and stayed to keep them in proper position.

291. *Iron.* Castings must be made of the best quality of tough grey iron, neatly moulded, free from sand holes, flaws or other imperfections. Particular care must be taken, especially in cored work, to have the holes required by rods, bolts, etc., large enough to admit these without battering the threads.

292. Rod iron must be of good quality of merchant iron. If an enlargement of the diameter of the rods for screw ends is called for, such enlargement is to be secured by upsetting, not by welding. An exception may be made in the case of suspension rods for large doors and other work in which the rods are not subjected to considerable strain.

293. All turn buckles and other forged work to be well and neatly made.

294. *Carpenter Work.* All framing is to be done in a neat and workmanlike manner, to give close joints, and thoroughly nailed and spiked. All joists and studding must be sized. Studding must be doubled around openings, with double headers and trusses above openings. All corners and angles must be made solid.

295. Joists must be stiffened by bridging cut in at proper intervals.

296. Roof boards must be nailed to rafters at every intersection, to avoid warping and injury to the roof covering.

297. Buildings which are to be plastered will be lathed with best dry pine lath. Laths will break joints every fifth lath, and shall be nailed with threepenny coarse lath nails, leaving a three-sixteenth inch crack on side walls and one-quarter inch crack on ceilings. No vertical laths shall be put on for the purpose of piecing out.

298. In case of the omission of any essential parts upon the plans, such omissions must be supplied in workmanlike manner; and flimsy, shiftless work will not be permitted.

299. Matched flooring must be blind nailed, and smoothed by hand.

300. Siding will be firmly nailed to each stud. Drop siding and clapboards must be neatly jointed and blind nailed.

301. Where floors are double, a layer of No. 2 roofing felt must be put in between upper and lower courses.

302. The top floor must not be laid before the plastering is finished.

303. The building must be cleared of all rubbish and swept before it is plastered. All refuse, chips, shavings, etc., must be collected and disopsed of by burning, or otherwise; and the interior of the building, as well as the grounds around it, must be left free from all litter.

304. Hardware, locks, knobs, window fastenings, etc., are to be neatly put into place, and must be of suitable quality and satisfactory to the Engineer.

305. *Painting.* All wood work that is exposed to the weather (excepting rough work), shall receive priming coat and two finishing coats, in colors corresponding to the Company's standard.

306. Body work will be finished in dark red. Trimmings and sashes in dark green. Doors will be finished in solid body colors. No trimming paint on panels.

307. All knot holes and cracks must be puttied, and knots or pitchy places filed with shellac before painting.

308. Interior work must be finished with two coats of paint; standard colors.

309. Shingle roofs will be finished with two coats of paint; standard colors.

WATER TANKS.

310. Water tanks are to be built according to the standard plans. Posts must be cut to the proper height and sized to receive cast iron caps. Caps must be sized to fit the casting. Timber caps should be bored to receive dowel.

311. Lay rail joists on caps as shown on standard plan.

312. The edges of bottom planks are to be accurately jointed, to insure perfect contact, and be well clamped and cut to proper circle.

313. The floor must be well doweled and joists white leaded.

314. Staves are to be carefully jointed, to secure perfect contact, and should be put together with white lead joints and three tiers of dowels. The chime is to be accurately fitted to the bottom. Staves are to be surfaced on both sides.

315. Put on the third band first; then commence at the bottom and put the bands in regular order. Divide the lugs equally around the tub and screw up to fair bearing.

316. Bands must be watched when filling tub to prevent breaking on account of swelling of timber.

317. Ceil as shown by plan:

318. Valve to be so placed that bolt holes will take in two center planks and have one-eighth inch rubber gasket under it. The intake pipe is to be extended up twelve inches above tank floor and to have a three inch inlet valve. Outlet valve to be placed twelve inches above tank bottom.

319. Construct air spaces carefully in accordance with the plans. Leave a two by four opening on the south side, provided with three doors, all to be hinged.

320. Sheeting and battens must be in accordance with the plans.

321. Provide inside and outside ladders as shown by the plans.

PUMP HOUSES.

322. Particular attention must be paid to the location of pump houses, so that it will be convenient to supply them with fuel from the cars. They will be built in accordance with the standard plans.

WATER PIPES.

323. All wrought iron pipes with screw ends must be laid on true grade so that they can be thoroughly drained. Threads must be treated with red lead before uniting. They must be screwed together as far as practicable.

CAST IRON PIPES.

324. Cast iron pipes must be laid on true grade so that they can be thoroughly drained. All changes in direction are to be made with curved pipes and connection with proper branches delivering in direction of drainage.

325. Joints in cast iron pipes shall be made by calking in hemp packing, and shall then be run with molten lead and thoroughly calked.

326. Joints of lead pipe with iron pipe shall be made by calking in a brass ferule and making connection between lead pipe and ferrule by a wiped joint.

327. Joints between lead pipes must be wiped.

MATERIAL.

328. Unless otherwise provided, it will be understood that the Railroad Company is to furnish to the contractor all the material required for track, bridges and buildings, with the exceptions hereafter noted, on board cars at point of divergence from the main line of the branch railroad to be constructed, or at points along the line of road to be constructed, but not necessarily alongside the roadbed; or, in the case of buildings and structures erected under contract, upon lines already constructed, delivery will be made on board cars at the site of such buildings or structures, or as near as practicable thereto.

329. The exceptions above referred to are the stone for rubble masonry,—and other masonry, unless otherwise specified in the contract,—gravel, concrete stone and sand for mortar, etc., logs for log culverts and log crib work, all of which will be furnished by the contractor, unless otherwise specified by the contract.

330. The contractor will be required to receive and receipt for all material immediately on arrival, and will thereafter be held responsible for its safe keeping until its incorporation in the work. Storehouses or other structures required to shelter the material will be provided by the contractor at his own expense, and the material of the Railroad Company will not be used for this or any purpose other than that for which it is intended.

331. The contractor will be required to handle all material at his own expense, including unloading and loading in cars, and all material must be unloaded from cars within three days after its arrival, unless special authority to the contrary is given by the Engineer.

332. Whenever cross ties, piles, timber or other material is delivered along the line of the road, the contractors must do the hauling required to put it in place, including loading in cars when necessary.

333. The Railway Company to furnish without charge all necessary train service, including crews and supplies, required for track laying ballasting and distributing material, except spoil cars, hoarding cars and fuel and supplies for steam shovels, but the amount and kind to be furnished will be at the discretion of the Railroad Company. The train service will be controlled by the Engineer or such person as he may designate.

334. It is distinctly understood that the quantities of work estimated are approximate only, and the Railroad Company reserves the right to have built only such kinds and quantities and according to such plans as the nature or economy of the work, in the opinion of the Engineer, may require.

335. The contractor, at his own cost, must provide all wagon roads to reach and carry on the work; he must also provide all tools of every description and all supplies required for the prosecution of the work.

336. Any omission to disapprove of work at the time of making any monthly or other estimate, will not be construed as an acceptance of any defective work, and the contractor must remove and rebuild, or make good at his own cost, any work which the Engineer may consider to be defectively executed.

337. It is expressly understood that all work of any character performed for the Railroad Company, under these specifications, must be satisfactory to the Engineer in charge of the work, and to the Chief Engineer.

338. The price paid for buildings, water tanks, turn tables, depots, section houses, and other standard structures, will be held to include the foundations, according to these plans; and it will be understood that the specifications for concrete, rubble masonry, etc., and the prices which govern such work, are intended to cover additional work of the same character which may be required and is not shown upon the plans.