Northern Pacific Railway Company. Engineering Department Records.

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OFFICE OF Chief Engineer

FILE NO. 6916

SUBJECT:

G. N. & St. P.

Proposed joint operation various points

6916

69 16

NORTHERN PACIFIC RAILWAY COMPANY

FORM 1780

RY. B.

6916

Joint Report Tudson Crane
Proposed Elimination Milwaukee Barge Service
Front Street Tacoma
November 12th 1927.

6916

JOINT REPORT

PROPOSED ELIMINATION
MILWAUKEE BARGE SERVICE
FRONT ST-TACOMA

Report on a study made to determine the operating economies that would result from an elimination of the Chicago, Milwaukee and St. Paul Railway's Barge Service between the Milwaukee Sound Terminal and Front Street, Tacoma, and the handling of Milwaukee cars between Northern Pacific-Milwaukee Transfer and Front Street by the Northern Pacific. This proposition also includes the proposed elimination of the Milwaukee switch engine now operating on Front Street. Milwaukee switching to be done by Northern Pacific crew.

This report was prepared jointly by Mr. E.B. Crane, Principal Assistant Engineer, Chicago, Milwaukee and St. Paul Railway, and Mr. W. W. Judson, Assistant Engineer, Northern Pacific Railway Company.

Seattle, Washington.
November 12th, 1927.

POINT DEFIANCE

POINT DEFIANCE PARK

PARK PAVILLION

COUNTY FERRY

YACHT CLUB

TACOMA SMELTER

RUSTON

SALMON BEACH

DEFIANCE LBR. CO.

Milwaukee

MILWAUKEE CAR FERRY

Front Street Line

MILWAUKEE CAR FERRY ROUTE

NORTHERN PACIFIC DOUBLE TRACK MAIN LINE

NOR. PAC. INDUSTRY TRACK

PUGET SOUND MILLS

DANAHER MILL

PUGET SOUND FLOUR MILLS

SPERRY FLOUR MILLS

N.P. OCEAN DOCK

NARROWS

POINT EVANS

THE NARROWS

CITY OF TACOMA

COMMENCEMENT BAY

BROWN POINT

KING COUNTY

PIERCE COUNTY

HYLEBOS

TODD SHIPYARD

WAPATO WATERWAY

PORT of TACOMA

MILWAUKEE SOUND TERMINAL

PUYALLUP WATERWAY

WAPATO AVENUE

LINCOLN AVENUE

CREEK

MARSHALL AVENUE

CITY WATERWAY

NORTHERN PACIFIC HALF MOON YARD

UNION DEPOT

O & W YARDS

G.N. YARDS

N.P. YARDS

NORTHERN PACIFIC HEAD OF THE BAY YARD

MILWAUKEE – NORTHERN PACIFIC INTERCHANGE TRACK

DAY ISLAND

DAY ISLAND WATERWAY

WILSON WAY

Trail hinges - first class

Section 19

Southern Limit

SCALE.

FEET 1000 2000 3000 4000 5000

MILES 1/4 1/2 3/4 1

The Northern Pacific track serving the industries on Front Street was originally a spur track leading from the Half Moon Yard to the Smelter. When the Point Defiance Line was completed in 1914, this spur track was changed to serve as a passing or switching track as far as McCarver Street, from which point it now serves the waterfront along Front Street in its original location.

Under a franchise from the City of Tacoma, the Milwaukee, in 1909, constructed a switching track on Front Street serving all industries and extending from a point south of McCarver Street to the Smelter, some two miles northerly, at the same time constructing car ferry landings on Front Street, near Knox Street, and in the Milwaukee Waterway at its Sound Terminals; cars being transferred between the two landings by means of barges.

All industries on Front Street, with the exception of the Smelter, are lumber and shingle mills. All are now served by both railroads, with the exception of the Dickman Lumber Company, which is served only by the Milwaukee.

Under existing agreements the trackage serving the Smelter, the North End Lumber Company and the Defiance Lumber Company is jointly used by both railways. All industries have dockage facilities, being located adjacent to the waterfront, and since the opening of the Panama Canal have shipped the greater part of their output by boat, resulting in a perceptible decrease in rail traffic.

MILWAUKEE OPERATION

One, two track, six car barge is used in the transfer of cars between landings. Towing is done by contract with a towing company at the rate of $40.00 per round trip for the first ten trips per month, and $25.00 per round trip for all additional trips, ten trips per month being guaranteed. Trips are made as business demands which, in 1926, required 126 on 123 days, or an average of 2.4 trips per week.

Switching on Front Street is done by a crew which works on days on which the barge operates and on occasional extra days when industries require additional switching service. Such additional switching was done on six days in 1926.

The engine used by this crew is kept on Front Street at all times.

MILWAUKEE BUSINESS

Normal business in 1925 and 1926 was as follows:

Year	Loads In and Out	Empties In and Out	Total
1925	422	280	702
1926	308	290	598

During six months of 1927, 142 loads, 106 empties, or a total of 248 cars were handled. On this basis the total for year is estimated at 496.

In 1925 and 1926 there were 714 car loads of rock handled to Front Street on account of improvement work on that street by the City of Tacoma; of this number 534 cars were handled in 1925 and 180 in 126. This rock is in addition to the normal business and is not included in above statement.

MILWAUKEE COST

Costs are divided between barge and switching services.

Barge service costs include tug hire and interest on investment in barge and transfer landing at Front Street, as well as depreciation, insurance and maintenance of these facilities. They do not include any cost for the Sound Terminal landing, as it is assumed that this would be retained for other service and no saving in this connection would result from discontinuance of barge service to Front Street.

Switching costs include wages of crew, engine rental, repairs, fuel, etc. for engine and crew doing switching on Front Street only. They do not include any cost of engine and crew in loading and unloading barges at the Sound Terminal as this would be offset by cost of including Front Street cars in regular interchange with the Northern Pacific.

The total cost of barge and switching service per loaded car for six months of 1927 was $57.81. The presence of the 180 cars of rock in the total business of 1926 is abnormal. There were 14 special trips made on 11 days in 1926 because of this rock and the switch crew worked 11 days in addition to what was necessary to handle normal business. The remaining 112 barge trips and 118 switch crew days were to handle normal business and the rock not handled on special trips. Based on 6 months of 1927, 104 trips will be made this year with 496 cars, as against 112 trips with 598 cars of normal business in 1926.

Taking this into consideration the cost in 1926 of barge and switching service, per load and per car, for handling normal business was:

	Barge Service		Switching Service		Barge & Switch	
	Per Load	Per Car	Per Load	Per Car	Per Load	Per Car
Mtce. and Operation	$28.64	14.75	14.38	7.41	43.02	22.16
Carrying Charges	8.88	4.57	2.70	1.39	11.58	5.96
Total	$ 37.52	$19.32	$ 17.08	$ 8.80	$54.60	$28.12

The increase in cost per loaded car from $54.60 in 1926, to $57.81 in 1927, is due to an indicated 8% reduction in number of loads handled.

Car load business in 1925, including 534 cars of rock, was over three times the normal business of 1926 and was handled at a barge service cost of $14.42 per load, and a switching cost of $7.83, or a total cost of $22.25 per load.

1926 business, including 180 cars of rock, was one and one-half times normal business and cost $24.88 per load for barge service, and $11.64 for switching, or a total of $36.52 per load.

There is at present no reason to expect other than normal business which, for the past three years, has been falling off and for that reason 1926 costs for normal business, which are for a full year, have been used.

MILWAUKEE RETIREMENTS

Discontinuance of barge service in addition to eliminating expense of tug hire, would permit of retirement of transfer landing at Front Street, and of the barge. The landing at the Sound Terminal to be retained for future service in connection with other lines. Because of the slight probability of re-use of the Front Street landing at another location within a reasonable time, it is estimated that the value of salvage would only pay for the cost of removal. It is estimated that the barge would have a sale value of $5,000. It is in good condition, having been in drydock in June 1927, inspected, cleaned and painted. It was built in 1914 and represents a cost to date of $26,569.

Loss Due to Retirements

Landing - Front Street, cost to date			$28,126.
Barge - cost to date		$26,569.	
Accrued depreciation	$2081.		
Sale value	5000.	7,081.	19,488.
Total Charge to Profit and Loss			$47,614.

No abandonments other than of the barge service are proposed. It might be possible later to consider the abandonment of parts of one or other of these two parallel switching lines, but at present the maintenance expense is not great and it is possible that future development would require or make desirable the two lines. The Milwaukee line for the most part lies on the easterly or Bay side of the paved roadway on Front Street and as practically all available industrial property is on that side of the roadway and street, it could be served from this track more economically and with

less interference with street traffic than from the Northern Pacific line. It is our thought that the plan proposed might best be tried out with trackage as it now exists and the matter of abandonment of trackage be considered later.

NORTHERN PACIFIC OPERATION

The Northern Pacific switching on Front Street is done by an assigned switch crew. This is a six day a week assignment and the work requires an average of six hours per day. The remaining two hours of the shift is used in miscellaneous switching in the yard. Cars for Front Street are assembled in the Half Moon Yard and are taken to Front Street by the assigned crew leaving yard about 1:00 P.M. On the return movement the cars from Front Street are left in the Half Moon Yard and are there made up for the regular transfer movements to Head of the Bay Yard and for delivery to other destinations.

At the present time an interchange is made between the Milwaukee and Northern Pacific at the transfer track, a connection between the Northern Pacific Dempsey Spur and the Milwaukee main freight line located about one mile from the Northern Pacific Head of the Bay Yard and one mile from the Milwaukee Sound Terminal Yard. The Northern Pacific interchange is made to the Milwaukee between 8:00 and 9:00 P.M. daily and Milwaukee interchange is made to the Northern Pacific about 10:00 P.M. daily.

NORTHERN PACIFIC BUSINESS

During the year 1926 a total of 7796 cars were switched in and out of the industries located on Front Street by the Northern Pacific. These cars were divided as follows:

To industries:	From industries:
2868 loads	1041 loads
1030 empties	2857 empties

NORTHERN PACIFIC COSTS

On the basis of six hours per day, six days per week, for an average Tacoma Yard switch engine cost, the cost of switching the 7796 cars between the Half Moon Yard and Front Street, exclusive of yard office overhead, was approximately $1.81 per car.

The Milwaukee-Northern Pacific daily interchange will average approximately 12,000 cars per year, being about evenly divided as to direction. To make the Northern Pacific interchange requires an average of four hours per day for a switch crew, at a cost to the Northern Pacific of $0.94 per car.

The present cost of handling a car between Milwaukee Transfer and the industries on Front Street is approximately as follows:

Between Milwaukee Transfer and Head of Bay Yard	$0.94
Advance movement between Head of Bay and Half Moon Yards	0.75
Between Half Moon Yard and Front Street	1.81
	$3.50
Yard Overhead	.18
Total Per Car	$3.68

PROPOSED OPERATION

Under this proposed plan Milwaukee cars for Front Street would be delivered to the Northern Pacific in the regular interchange at about 10:00 P.M. daily. These cars would move to Head of Bay Yard in the regular transfer movement, advanced to the Half Moon Yard the following morning and taken to Front Street in the regular Front Street switch in the afternoon. These cars would then be switched to the various industries on Front Street using Milwaukee tracks as may be necessary. Milwaukee cars from Front Street would leave there in regular switching movement late in the afternoon, advanced thru Half Moon Yard to Head of Bay Yard during the night or next morning and delivered to Milwaukee in the regular transfer at 8:00 or 9:00 P.M. and in time for making up in Milwaukee Train #264.

Assuming that it would take no more time to handle the Milwaukee cars than is consumed in the present switching, the cost of handling cars between the transfer and Front Street, with the additional Milwaukee cars, would be as follows:

Between Milwaukee Transfer and Head of Bay Yard	$0.89
Advance movement between Head of Bay Yard and Half Moon Yard	0.75
Between Half Moon Yard and Front Street	1.68
	$ 3.32
Yard Overhead	.18
Total Per Car	$ 3.50

The additional time required for switching Milwaukee cars to Milwaukee industry tracks on Front Street, over the present time of switching, is uncertain as in many cases the destination of a Milwaukee car will be to industries served by jointly used tracks and the time required to switch the Milwaukee car will be very little in addition to the time required to switch the Northern Pacific car. However, this will not apply in all cases and there will be times when an additional swi tch will be required to spot the Milwaukee car. We are of the opinion that one hour additional time would be a safe average to apply to the Milwaukee switching. This one hour additional time would cost $2203. per year, and for the 598 Milwaukee cars handled would amount to $3.68 per car. This $3.68 should be added to the $3.50 total shown above, making a total of $7.18 as being the out of pocket cost of handling a Milwaukee car one way between the Transfer and Front Street. On this basis a load in and an empty out, or an empty in and a load out, would cost $14.36 for the round trip. This, of course, does not include any interest, depreciation, taxes or maintenance on trackage or facilities used in those movements. The yard overhead included is for wages and supplies of yard office.

The following existing swi tching rates would apply to Milwaukee cars destined to or originating on Front Street if swi tched by the Northern Pacific from the transfer track to their own industry tracks on Front Street. To permit Northern Pacific crew to spot cars on exclusive Milwaukee spurs would necessitate an arrangement permitting the use of Milwaukee tracks as may be required.

Non-competitive business:

40,000 lbs. and under	$5.85 per car
Over 40,000 lbs. and not exceeding 60,000 lbs.	6.30 " "
Over 60,000 lbs.	8.10 " "

Competitive business:

2½ cents per cwt. wi th minimum of	8.55 per car

Swi tching business:

Between District "A" and "H",	11.50 per car
The revenue from swi tching business divided between carriers handling car	

Applying these rates to the Milwaukee's 1926 business, the following would be switching revenue collected by the Northern Pacific:

Normal business- 308 loads (298 empties)

Competitive	154	@	$13.15 equals	$ 2025.10
Non-competitive	43	@	7.49 "	322.07
Switch	111	@	5.75 "	638.25
				$ 2985.42
	Per Load			$ 9.69
	Per Car			$ 4.99

There are existing connections between Northern Pacific and Milwaukee tracks at or near the plants of the Smelter, the North End Lumber Company and the Defiance Lumber Company, which would permit the Northern Pacific switching these plants and to reach Milwaukee storage tracks at Knox Street. In order that the Northern Pacific engine could reach Milwaukee spurs serving industries on the south end of the district, a connection should be made at that end. To save a crossing of paved roadway on Front Street, this connection might be made just east of McCarver Street by throwing existing track to connect with a turnout from Northern Pacific switching track. This is estimated to cost $700.

This proposed plan would give the Milwaukee service daily except Sunday, instead of present average of a trip every third day, resulting in more satisfactory service and shortened time of delivery of cars to destination. While cars via Northern Pacific would not reach the interchange until the evening of day following departure from Front Street there would be considerable saving in car days.

CONCLUSION

Based on 1926 business the costs were as follows:

Milwaukee

Transfer by barge- Sound Terminal to Front St.	per load	$37.52
Switching on Front Street	" "	17.08
Total	" "	$54.60

Northern Pacific

Estimated cost Engine and Yard Service to handle cars between Milwaukee-Northern Pacific Transfer Track and Front Street,	per load	7.00
Approximate additional out of pocket cost for spotting Milwaukee cars on Milwaukee industry tracks,	per load	7.36
Total		$14.36

The average charge at regular switching rates that would have been assessed by the Northern Pacific for switching Milwaukee cars in 1926 from Transfer Track to Front Street industries (spotted on Northern Pacific spurs), per load 9.69

The difference between the Milwaukee cost of barge service of $37.52 and the average switching rate, $9.69 per load, indicates the possibilities of an arrangement that would result in a saving to the Milwaukee of $8572. for the year, and the difference between the switching rate and Northern Pacific cost of $7.00 per load would show a profit to the Northern Pacific of $828.00.

The proposed service by the Northern Pacific in spotting cars on Milwaukee industry tracks, at an estimated cost of $7.36 per load, is in addition to the service required under the switching rate. The difference between the Milwaukee cost of switching of $17.08 per load and the estimated additional Northern Pacific cost of $7.36, over and above their present cost, indicates the possibility for the establishment of some arrangement thru negotiation by the managements of the two roads.

In order to show totals involved the following statement shows results on basis of costs and average switching rate:

Milwaukee

Present Cost			
Maintenance and operation	308 x $43.02 -	$13,248.	
Interest charges	308 x 11.58	3,569.	$16,817.
Proposed Cost			
Switching rate plus estimated out of pocket cost to N.P. of spotting on Milwaukee industry tracks	308 x 17.05	5,251.	
Interest on new work - 5%		35.	5,286.
	ANNUAL SAVING		$11,531.
To accomplish this saving the Milwaukee will, because of abandonment of landing and barge, have a net charge to Profit and Loss of $47,614.			
Deduct interest at 5% on loss due to retirement			2,381.
	NET ANNUAL SAVING		$ 9,150.

Northern Pacific

Additional revenue	$ 5,251.	
Estimated cost	4,423.	
Estimated Additional Profit		$ 828.

The actual saving to the Milwaukee and profit to the Northern Pacific will be governed by whatever arrangement is arrived at thru negotiation.

In addition to the money saving the Milwaukee would benefit thru having daily service and a saving in car days.

Principal Asst. Engineer, C.M.& St.P.Ry.

Assistant Engineer, Northern Pacific Ry.

Saint Paul, June 12, 1931.

6916

Mr. H. E. Stevens:

Your letter May 28 and returning papers about proposed joint operation with the Milwaukee between Enumclaw and the crossing of the Green River Branch and the Milwaukee main line at Bagley Junction:

There undoubtedly will be some real savings by abandonment of the trackage as outlined, although the interest on the net salvage is rather theoretical.

There are two distinct arguments for the proposition; one that it is a start towards cutting out unnecessary duplicate trackage and may lead eventually to some joint operation that will make some good savings to both companies. The other is that it will put us both on the same footing with respect to shipments from the White River Lumber Company.

On the other hand I do not like the proposed abandonment of our Buckley Line between Palmer Junction and Bayne. In case of any trouble between Kanaskat and Auburn we have an alternate line and for direct movement to Tacoma it would be a little awkward to go to Kanaskat, back around the wye and switch on to the Milwaukee tracks. Until we see how this works out I think it would be advisable to leave in our track between points Q and B. That would not in any way affect the arrangement as each company is to maintain its own trackage.

It does not appear the right thing to maintain the Milwaukee

tracks between points C and D as it involves the maintenance of an expensive wooden bridge over the Green River and over our main line. As pointed out by Mr. Judson, this does not affect our savings.

Chief Engineer.

MB h

Saint Paul, June 12, 1931.

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Your letter May 28 and returning papers about proposed joint operation with the Milwaukee between Enumclaw and the crossing of the Green River Branch and the Milwaukee main line at Bagley Junction:

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tracks between points C and D as it involves the maintenance of an expensive wooden bridge over the Green River and over our main line. As pointed out by Mr. Judson, this does not affect our savings.

Chief Engineer.

MS h

St. Paul, Minn., June 2, 1931

Mr. Bernard Blum:

Mr. Stevens' letter of May 28th together with attached letters and report on proposed joint operation with the Milwaukee between Bagley Junction and Enumclaw:

The main thing I see in this proposition, of course aside from the fact that both roads save some money and that delivery from the White River Lumber Company is made at a common point instead of one on the Milwaukee, is the disposition on the part of competing companies to cut out useless expense and the maintaining of duplicate facilities where competition is the only justification. It seems to me, as has been stated in the correspondence, that it is very decidedly a step in the right direction and a very much expanded program of this kind, I believe, is about the only thing that is going to be of any material help to the railroads under present conditions.

The scheme as outlined in the report which is of course based on intimate knowledge of local conditions seems to me to be an equitable arrangement.

Lowry Smith
Office Engineer

enc


ST. PAUL, MINN.
P.R.C.
1931
JUN
FED
OFFICE OF
DEFENSE MOBILIZATION

7760

Saint Paul, Minn.,

May 28, 1931.

MR. BERNARD BLUM:

Herewith Mr. Craver's letter of May twenty-fifth, Mr. Judson's of May twenty-second together with joint report covering proposed joint operation of the Milwaukee and Northern Pacific between Bagley Junction and Enumclaw.

Will you please check this over and let me have your comments with return of file.

6916

Saint Paul, October 3, 1928.

Mr. H. E. Stevens:

Your letter August 21 requesting detailed valuation of the South Bend Branch between the two crossings of the Milwaukee Railway one mile west of Chehalis and at Dryad:

I am handing you herewith two copies of reproduction estimate covering that part of our line. The estimate has been set up in two forms --

Estimate No. 1, which totals $633514.00, is based on the prices allowed in the I.C.C. Engineering report, plus A&B work as covered by AFEs.

Estimate No. 2, which totals $959,491.00, is made up of the quantities allowed in the I.C.C. Engineering report, plus A&B quantities from June 1917 to June 1928 at present day prices.

In these estimates Engineering has been included at 6%, General Expenses at 1½% and Interest at 6% for one year.

Chief Engineer.

BB h

St. Paul, Minn.,
Oct. 2nd, 1928.

Mr. Bernard Blum,
Chief Engineer.

Dear Sir:

As per your pencil notation on attached letter of Mr. H. E. Stevens dated August 21, 1928, I am handing you herewith three copies of Reproduction Estimate covering that portion of the Northern Pacific Railway Company's South Bend Branch extending from the Milwaukee Crossing west of Chehalis to the Milwaukee Crossing west of Dryad, Washington.

This estimate has been set up in two ways. In Estimate #1 the quantities and prices as allowed in the I.C.C. Engineering Report have been used, while the Addition and Betterment work is shown by A.F.E.'s at the end of the Estimate. In Estimate #2 the quantities allowed in the I.C.C. Engineering Report for the portion of the line involved were used as a basis. To these were added all A. & B. quantities from 6/30/17 to 6/30/28 and estimated at present day prices applied to same. In this estimate Engineering has been included at 6%, General Expenses at 1½% and Interest at 6% for one year.

All Addition and Betterment work as included in these estimates was furnished by the Record Engineer, Right of Way values by Mr. J. L. Watson's Office, Telegraph by the Telegraph Department, Signal Items by the Signal Department and Mechanical Items by the Mechanical Department.

Yours truly,

W. H. Finell.
Valuation Engineer.

WHF:MP

St. Paul, Minn., August 21st, 1928.

Mr. Bernard Blum:

During the past year study has been made jointly with the Milwaukee to determine what, if any, saving could result from a corelation of facilities on the Coast.

One of the plans studied involved the abandonment of about seventeen miles of the Milwaukee Willapa Harbor Branch and the use of Northern Pacific track by the Milwaukee. This proposition was originally worked up on the basis of saving to be made by the abandonment of the Milwaukee track. The Milwaukee now advise that should they enter into such a consolidation, they would much prefer usual joint facility contract and to carry the study further on this basis, it will be necessary to have valuation figures for the Northern Pacific line.

Please furnish valuation for all the accounts in detail for the Northern Pacific South Bend Branch from the crossing with the Milwaukee one mile west of Chehalis Junction to the crossing with the Milwaukee at Dryad.

H. E. Stevens.

Mr Terrell
Pls furnish
D.C.
8/22

NORTHERN PACIFIC RAILWAY COMPANY

Estimate of Cost covering that portion of the Northern Pacific Railway Company's South Bend Branch extending from the Milwaukee Crossing (Station 77+49) near Chehalis Jct. to the Milwaukee Crossing (Station 890+50) just west of Dryad, Washington. Quantities and Prices used in this estimate are those shown in the I.C.C. Revised Engineering Report.

Estimate #1

Acct. No.	Description	Unit	No. of Units	Unit Price		Total
1	Engineering 4%					$ 18,646.
2	Land					$ 19,440.
3	Grading					
	Clearing-Heavy Underbrush	Acre	94.99	$ 43.50	$4132.07	
	" -Light Timber	"	94.99	43.50	4132.07	
	Grubbing-Heavy Stump Land	"	9.9	261.00	2583.90	
	Excavation-Common	C.Y.	35235	0.23	8104.05	
	" -Hard Pan	"	6353	0.39	2477.67	
	" -Loose Rock	"	84276	0.45	37924.20	
	" -Solid Rock	"	32401	0.90	29160.90	
	Embankment-Common Borrow	"	212755	0.23	48933.65	
	" -Hard Pan Borrow	"	14525	0.39	5664.75	
	" -Loose Rock Borrow	"	7928	0.45	3567.60	
	Team Overhaul-500' free haul	C.Y.Sta.	645846	0.0125	8073.08	
	Spec.Material,common,av.haul 5¼ mi.	C.Y.	1073	0.30	321.90	
	Protection of Roadway					
	Riprap,loose, hauled 22.1 miles, all on slope	C.Y.	190	1.35	256.50	
	Riprap, hand placed, hauled 10.3 miles, all on slope	"	800	2.00	1600.00	
	Riprap, derrick placed, hauled 25 miles, all on slope	"	5680	2.50	14200.00	
	Masonry, Rubble, Dry	"	835	5.15	(4300.00)	
	Piling	L.Ft.	10190	0.31	3158.90	
	Timber	MBM	61.631	18.25	1124.77	
	" , Second Hand	"	163.250	11.25	1836.56	
	Iron	Lbs.	8703	0.04	348.12	$181,901.
6	Bridges, Trestles & Culverts					
	Steel Bridges:					
	None					
	Combination Bridges:					
	Bridge #2.1:					
	Length 300' - Single Track					
	Substructure - 3 frame Piers					
	Piling	L.Ft.	1360	$ 0.41	$ 558.00	
	Timber	MBM	57.800	30.00	1734.00	
	Iron	Lbs.	6080	0.04	243.00	
	Superstructure - 2 Howe Truss Spans - 150' long					
	Timber - Painted	MBM	159.020	56.00	8905.00	
	Iron	Lbs.	169090	0.0489	8269.00	
	Sundry Items (Galv.Iron-2330 Lbs. (Water Bbls. 17 (Bridge Sign-1 (Riprap-180 cu.yds.				378.00	
					$20087.00	

Acct. No.	Description	Unit	No. of Units	Unit Price	Total
	Bridges, Trestles & Culverts (Cont'd)				
	Combination Bridges (Cont'd)				
	Bridge #5:				
	Length 150' - Single Track				
	Substructure - 2 pile Piers				
	Piling	L.Ft.	1800	$ 0.41	$ 738.00
	Timber	MBM	11.600	30.00	348.00
	Iron	Lbs.	2620	0.04	105.00
	Superstructure - 1 Howe Truss - 150' long				
	Timber - Painted	MBM	79.510	56.00	4453.00
	Iron	Lbs.	84540	0.0489	4134.00
	Sundry Items (Galv. Iron-1590 lbs. (Water Bbls- 10 (Bridge Sign - 1				97.00
					$9875.00
	Bridge #6:				
	Length 150' long - Single Track				
	Substructure - 2 frame Piers				
	Piling	L.Ft.	900	$ 0.41	369.00
	Timber	MBM	41.100	30.00	1233.00
	Iron	Lbs.	3680	0.04	147.00
	Excavation - common	C.Y.	48	0.50	24.00
	Superstructure - 1 Howe Truss - 150' long				
	Timber - Painted	MBM	79.510	56.00	4453.00
	Iron	Lbs.	84540	0.0489	4134.00
	Sundry Items (Galv. Iron-1590 lbs. (Water Bbls. - 7 (Bridge Sign - 1				94.00
					$10454.00
	Bridge #16.1:				
	Length 150' long - Single Track				
	Substructure - 2 frame Piers				
	Piling	L.Ft.	900	$ 0.41	$ 369.00
	Timber	MBM	35.820	30.00	1075.00
	Iron	Lbs.	3680	0.04	147.00
	Excavation, common	C.Y.	52	0.50	26.00
	Superstructure - 1 Howe Truss - 150' long				
	Timber, Painted	MBM	79.510	56.00	4453.00
	Iron	Lbs.	84540	0.0489	4134.00
	Sundry Items (Galv. Iron-1590 lbs. (Water Bbls. - 7 (Bridge Sign - 1				94.00
					$10298.00
	Total Combination Bridges				$ 50,714.
	Pile & Frame Trestles				
	Bridge #2:				
	1 span - 17' long - Single Track				
	Piling	L.Ft.	225	$ 0.41	$ 92.25
	Stringers	MBM	1.377	32.00	44.06
	Other Timber	"	1.605	30.00	48.15
	Iron	Lbs.	262	0.04	10.48
	Galv. Iron	"	176	0.054	9.50
	Bridge Sign	Each	1	1.00	1.00
					205.00
	Bridge #2.1 (East Approach)				
	67 spans - 987' long - Single Track				
	Piling	L.Ft.	8488	$ 0.41	$ 3480.08
	Stringers	MBM	79.947	32.00	2558.30
	Other Timber	"	45.767	30.00	1373.01
	Timber - Second Hand	"	4.680	18.05	84.47

Acct. No.	Description	Unit	No. of Units	Unit Price	Total
	Pile & Frame Trestles (Cont'd)				
	Bridge #2.1 (East Approach) (Cont'd)				
	Iron	Lbs.	14.937	$ 0.04	$ 597.48
	Galv. Iron	"	9305	0.054	502.47
	Water Barrels	Each	8	1.00	8.00
	Bridge Sign	"	1	1.00	1.00
					$8605.00
	Bridge #2.1 (West Approach)				
	10 spans - 148' long - Single Track				
	Piling	L.Ft.	908	$ 0.41	$ 372.28
	Timber - Stringers	MBM	11.988	32.00	383.62
	" - Other	"	16.876	30.00	506.28
	Iron	Lbs.	2881	0.04	115.24
	Galv. Iron	"	1400	0.054	75.60
	Water Barrell	Each	1	1.00	1.00
	Bridge Sign	"	1	1.00	1.00
					$1455.00
	M.P. 2+				
	Cribbing under track on Temp. Spur				
	Timber, Second Hand	MBM	4.680	$18.05	$ 84.47
	Iron	Lbs.	234	0.04	9.36
					$ 94.00
	Bridge #3:				
	3 spans - 42' long - Single Track				
	Piling	L.Ft.	267	$ 0.41	$ 109.47
	Stringers	MBM	3.402	32.00	108.86
	Other Timber	"	2.466	30.00	73.98
	Iron	Lbs.	742	0.04	29.68
	Galv. Iron	"	430	0.054	23.22
	Water Barrels	Each	2	1.00	2.00
	Bridge Sign	"	1	1.00	1.00
					$ 348.00
	Bridge #4:				
	8 spans - 121' long - Single Track				
	Piling	L.Ft.	936	$ 0.41	$ 383.76
	Stringers	MBM	9.801	32.00	313.63
	Other Timber	"	7.969	30.00	239.07
	Iron	Lbs.	1934	0.04	77.36
	Galv. Iron	"	1157	0.054	62.47
	Water Barrels	Each	3	1.00	3.00
	Bridge Sign	"	1	1.00	1.00
					$1080.00
	Bridge #5 (East Approach)				
	5 spans - 68' long - Single Track				
	Stringers	MBM	5.508	$32.00	176.26
	Other Timber	"	8.385	30.00	251.55
	Iron	Lbs.	1409	0.04	56.36
	Exc. Common	C.Y.	12	0.50	6.00
	Galv. Iron	Lbs.	733	0.054	39.58
	Water Barrels	Each	1	1.00	1.00
	Bridge Sign	"	1	1.00	1.00
					$ 532.00
	Bridge #5 (West Approach)				
	47 spans - 705' long - Single Track				
	Piling	L.Ft.	6265	$ 0.41	$2568.65
	Stringers	MBM	57.105	32.00	1827.36
	Other Timber	"	60.934	30.00	1828.02
	Iron	Lbs.	12133	0.04	485.32
	Galv. Iron	"	6650	0.054	359.10

Acct. No.	Description	Unit	No. of Units	Unit Price	Total
	Pile & Frame Trestles (Cont'd)				
	Bridge #5 (West Approach) (Cont'd)				
	Water Barrels	Each	8	$ 1.00	$ 8.00
	Bridge Sign	"	1	1.00	1.00
					$1078.00
	Bridge #5.1				
	3 spans - 45' long - Single Track				
	Piling	L.Ft.	521	$ 0.41	$ 213.61
	Stringers	MBM	3.645	32.00	116.64
	Other Timber	"	2.264	30.00	67.92
	Iron	Lbs.	586	0.04	23.44
	Galv. Iron	"	450	0.054	24.30
	Water Barrels	Each	2	1.00	2.00
	Bridge Sign	"	1	1.00	1.00
					$449.00
	Bridge #6 (East Approach)				
	4 spans - 64' long - Single Track				
	Piling	L.Ft.	332	$ 0.41	$ 136.12
	Stringers	MBM	5.184	32.00	165.89
	Other Timber	"	4.721	30.00	141.63
	Iron	Lbs.	1190	0.04	47.60
	Galv. Iron	"	689	0.054	37.21
	Bridge Sign	Each	1	1.00	1.00
					$ 530.00
	Bridge #6 (West Approach)				
	4 spans - 64' long - Single Track				
	Piling	L.Ft.	578	$ 0.41	$ 236.98
	Stringers	MBM	5.184	32.00	165.89
	Other Timber	"	4.721	30.00	141.63
	Iron	Lbs.	1190	0.04	47.60
	Galv. Iron	"	689	0.054	37.21
	Bridge Sign	Each	1	1.00	1.00
					$ 630.00
	Bridge #0.2 (Hill Logging Co.) (at Bunker)				
	15 spans - 175.2' long - Single Track				
	Piling	L.Ft.	1326	$ 0.41	$ 543.66
	Stringers	MBM	14.191	32.00	454.11
	Other Timber	"	9.128	30.00	273.84
	Iron	Lbs.	2749	0.04	109.96
					$1382.00
	Bridge #4.7 (Hill Logging Co.) (at Bunker)				
	17 spans - 250.9' long - Single Track				
	Piling	L.Ft.	1804	$ 0.41	$ 739.64
	Stringers	MBM	20.323	32.00	650.34
	Other Timber	"	11.384	30.00	341.52
	Iron	Lbs.	3792	0.04	151.68
	Bridge Sign	Each	1	1.00	1.00
					$1884.00
	Bridge #7.7 (Hill Logging Co.) (at Bunker)				
	4 spans - 59.5' long - Single Track				
	Piling	L.Ft.	442	$ 0.41	$ 181.22
	Stringers	MBM	4.820	32.00	154.24
	Other Timber	"	2.712	30.00	81.36
	Iron	Lbs.	783	0.04	31.32
	Bridge Sign	Each	1	1.00	1.00
					$ 449.00
	Bridge #D (Hill Logging Co.) (at Bunker)				
	23 spans - 346' long - Single Track				
	Piling	L.Ft.	1800	$ 0.41	$ 738.00

Acct. No.	Description	Unit	No. of Units	Unit Price	Total
	Pile & Frame Trestles (Cont'd)				
	Bridge #D (Hill Logging Co.) (at Bunker)				
	Stringers - 16" Logs	L.Ft.	1100	$ 0.16	$ (176.00)
	Other Timber	MBM	2.592	30.00	77.76
	Iron	Lbs.	700	0.04	28.00
					$ 1020.00
	Bridge #12				
	3 spans - 44' long - Single Track				
	Piling	L.Ft.	314	$ 0.41	$ 128.74
	Stringers	MBM	3.564	32.00	114.05
	Other Timber	"	5.238	30.00	157.14
	Iron	Lbs.	990	0.04	39.60
	Galv. Iron	"	439	0.054	23.71
	Water Barrels	Each	2	1.00	2.00
	Bridge Sign	"	1	1.00	1.00
					$ 466.00
	Bridge # - On May's Spur M.B.+327'				
	23' on R/W allowed by I.C.C.				
	Stringers	MBM	1.472	$32.00	$ 47.10
	Other Timber	"	1.698	30.00	50.94
	Iron	Lbs.	278	0.04	11.12
	Excavation	C.Y.	6	0.50	3.00
					$ 112.00
	Bridge #13				
	3 spans - 41' long - Single Track				
	Piling	L.Ft.	283	$ 0.41	$ 116.03
	Stringers	MBM	3.321	32.00	106.27
	Other Timber	"	4.574	30.00	137.22
	Iron	Lbs.	912	0.04	36.48
	Galv. Iron	"	420	0.054	22.68
	Water Barrels	Each	2	1.00	2.00
	Bridge Sign	"	1	1.00	1.00
					$ 422.00
	Bridge #14				
	3 span - 60' long - Single Track				
	Stringers	MBM	4.860	$32.00	$ 155.52
	Other Timber	"	11.720	30.00	351.60
	Iron	Lbs.	1153	0.04	46.12
	Galv. Iron	"	645	0.054	34.83
	Excavation, common	C.Y.	8	0.50	4.00
	Water Barrels	Each	2	1.00	2.00
	Bridge Sign	"	1	1.00	1.00
					$ 595.00
	Bridge #16				
	3 span - 44' long - Single Track				
	Piling	L.Ft.	140	$ 0.41	$ 57.40
	Stringers	MBM	3.564	32.00	114.05
	Other Timber	"	3.921	30.00	117.63
	Iron	Lbs.	756	0.04	30.24
	Galv. Iron	"	440	0.054	23.76
	Water Barrels	Each	2	1.00	2.00
	Bridge Sign	"	1	1.00	1.00
					$ 346.00
	Bridge #16.1 (East Approach)				
	3 span - 44' long - Single Track				
	Piling	L.Ft.	308	$ 0.41	$ 126.28
	Stringers	MBM	3.564	32.00	114.05
	Other Timber	"	4.207	30.00	126.21

Acct. No.	Description	Unit	No. of Units	Unit Price		Total
	Pile & Frame Trestles (Cont'd)					
	Bridge #16.1 (East Approach)					
	Iron	Lbs.	807	$ 0.04	$ 32.28	
	Galv. Iron	"	436	0.054	23.54	
	Bridge Sign	Each	1	1.00	1.00	
					$423.00	
	Bridge #16.1 (West Approach)					
	4 span - 61' long - Single Track					
	Piling	L.Ft.	352	$ 0.41	$144.32	
	Stringers	MBM	4.941	32.00	158.11	
	Other Timber	"	3.812	30.00	114.36	
	Iron	Lbs.	999	0.04	39.96	
	Galv. Iron	"	605	0.054	32.67	
	Water Barrel	Each	1	1.00	1.00	
	Bridge Sign	"	1	1.00	1.00	
					$491.00	
	Total Pile & Frame Trestles					$ 28,596.
	Pipe & Timber Culverts					
	Wood Box Culverts	MBM	5.810	$32.00	$185.92	
	Tile Pipe Culverts - 24"	Lin.Ft.	469	2.60	1219.40	
	" " " - 10"	"	38	0.65	24.70	
	" " " - 30"	"	73	4.30	313.90	
	Concrete Pipe Culverts - 24"	"	24	3.80	91.20	
	" " " - 36"	"	56	5.60	313.60	
	Plain Concrete (H.W.)	C.Y.	11	9.00	99.00	
	Cast Iron Pipe Culverts - 24" - 134' at.0855	Net Ton	11.46	44.75	512.84	
	Cast Iron Pipe Culverts - 30" - 78' at.1275	" "	9.95	44.75	445.26	
	Cast Iron Pipe Culverts - 36" - 49' at.1510	" "	7.40	44.75	331.15	
	Hand Placed Riprap	C.Y.	1	2.10	2.10	
	Total Pipe & Timber Culverts					$ 3,539.
	Masonry Culverts					
	None					
8	**Ties**					
	Main Tracks:					
	7"x9"x8' Cross Ties, Untr. Fir	Each	287	$ 0.40	$ 114.80	
	7"x8"x8' " " " "	"	43124	0.40	17249.60	
	8"x8"x12' Bridge" " "	MBM	161.929	11.50	1862.18	
	8"x8"x10' " " " "	"	17.451	11.50	200.69	
	Total Main Tracks					$ 19,427.
	Other Tracks:					
	#1 - Hewn Fir Cross Ties	Each	6	0.40	2.40	
	7"x8"x8' Cross Ties - Sawn Fir, Untr.	"	5488	0.40	$2195.20	
	7"x9"x8' " " - " " "	"	859	0.40	343.60	
	8"x8"x12' Bridge"	MBM	27.200	11.50	312.80	
	8"x8"x8' " "	"	6.443	11.50	74.09	
	7"x9"x12' Crossing Ties	"	.441	11.50	5.07	
	7"x9" Switch Ties 1 Set	"	3.395	11.50	39.04	
	7"x8" " " 24 "	"	69.036	11.50	793.91	
	H.B. Ties for Derails	"	.530	11.50	6.10	
	Total Other Tracks					$ 3,772.
9	**Rail**					
	Main Tracks:					
	I.C.C. Sta. 77+50 to Sta. 890+80					
	162.628 lin.ft. 72# Relay Bess.					
	Rail	G.Ton	1742.444	29.50	$51402.10	
	Total Main Tracks					$ 51,402.

Acct. No.	Description	Unit	No. of Units	Unit Price		Total
	Rail (Cont'd)					
	Other Tracks:					
	23,807 lin.ft.56# Relay Bess.Rail	G.Ton	198.392	$ 29.50	$ 5852.56	
	3,760 " " 66# " " "	"	36.929	29.50	1089.41	
	3,040 " " 72# " " "	"	32.571	29.50	960.84	
	Note: For Tracks Lengths, See Work Sheets.					
		Total Other Tracks				$ 7,903.
10	Other Track Material					
	Main Tracks:					
	72# - 24" Relay Angle Bars, 5524 at 36#	Cwt.	1988.64	$ 1.30	$ 2585.23	
	3/4"x3½" Bolts 23,839 at 0.77	"	183.56	2.63	482.76	
	72# - 24" Relay Cont. Ins. Jts. 4 at 75#	Each	4	2.65	10.60	
	6"x8" Std. Tie Plates 26,977 at 6.36#	Cwt.	1715.74	2.08	3568.74	
	6"x8" Sellers 3770 at 6.93	"	261.26	2.08	543.42	
	9/16"x6" Spikes 196,893 at .63	"	1240.43	2.13	2642.12	
	Rail Rack - Std. 13	Each	13	1.00	13.00	
		Total Main Tracks				9,846.
	Other Tracks:					
	72# - 24" Relay Angle Bars 131 at 36#	Cwt.	47.16	1.30	61.31	
	56# - 24" " Angle Bars 624 at 31#	"	193.44	1.30	251.47	
	66# - 24" " Angle Bars 143 at 34.72#	"	49.65	1.30	64.55	
	56# - 24" " Fish Plates 276 at 18.53#	"	51.14	1.30	66.48	
	72#/56# - 24" Comp. Joints, Relay at 34.5#	Each	26	1.40	36.40	
	72#/66# - 24" Comp. Joints, Relay at 36.45#	"	2	1.45	2.90	
	66#/56# - 24" Comp. Joints, Relay at 32.58#	"	2	1.30	2.60	
	3/4"x3½" Bolts, 4752 at 0.77	Cwt.	36.59	2.63	96.23	
	6"x8" - 72# Tie Plates,423 at 6.36#	"	26.90	2.10	56.49	
	9/16"x5½" Spikes, 41,485 at .555	"	230.24	2.13	490.41	
	72# P.M.Co. Rail Braces 194 at 3.69	"	7.16	3.10	22.20	
	66# " " " " 74 at 3.6	"	2.66	3.10	8.25	
	56# " " " " 780 at 3.65	"	28.47	3.10	88.26	
	72# 15' Spring Rail Frogs #10 Relay 2 at 1419#	Each	2	28.50	57.00	
	72# 15' Spring Rail Frogs #9 Relay 13 at 1424#	"	13	28.60	371.80	
	72# 15' Spring Rail Frogs #9 New 4 at 1424#	"	4	57.25	229.00	
	72# 15' Split Switches, Relay 13 at 1017#	"	13	20.25	263.25	
	72# 15' Split Switches, New 6 at 1017#	"	6	40.50	243.00	
	66# 15' Split Switches, New 1 at 952#	"	1	(37.90)	38.00	
	66# 15' Split Switches, Relay 1 at 952#	"	1	(18.95)	19.00	
	60# 15' Split Switches, Relay 1 at 930#	"	1	18.95	18.95	
	#9- 60# Rigid Frog 9' long, New 2 at 649#	"	2	29.85	59.70	
	#7 -66# Rigid Frog 9.3' long, Relay 1 at 692#	"	1	(15.30)	15.00	

Acct. No.	Description	Unit	No. of Units	Unit Price	Total	
	Other Track Material					
	Other Tracks (Cont'd)					
	#7 - 66# Rigid Frog 9.0' long, Relay 2 at 681#	Each	2	$(15.05)	$ 30.00	
	#7 - 60# Rigid Frog 7.0' long, New 1 at 547#	"	1	25.15	25.15	
	#8 - 60# Rigid Frog 10.0' long, Relay 1 at 660#	"	1	15.20	15.20	
	#9 - 60# Rigid Frog 11.5' long, Relay 3 at 750#	"	3	17.25	51.75	
	#10 - 60# Rigid Frog 11.5' long, Relay 1 at 715#	"	1	16.45	16.45	
	56# - 15' Split Switch, New 1 at 842#	"	1	35.20	35.20	
	56# - 15' " " , Relay 1 at 842#	"	1	17.60	17.60	
	60# - 15' " " , " 3 at 930#	"	3	18.95	56.85	
	60# - 15' " " , New 1 at 930#	"	1	37.95	37.95	
	60# - 10' " " , Plain, New 1 at 540#	"	1	(23.85)	24.00	
	56# - Stub Switch, Relay 1 at 311#	"	1	(4.25)	4.00	
	72# - 15' Braced G.Rail, Relay 19 at 738#	Cwt.	140.22	2.28	319.70	
	66# - 15' " " " Relay 3 at 679#	"	20.37	2.28	46.44	
	60# - 15' " G.Rail, Relay 1 at 622#	"	6.22	2.28	14.18	
	56# - 15' " G.Rail, Relay 5 at 584#	"	29.20	2.28	66.58	
	56# - 14' " G.Rail, Relay 1 at 547#	"	5.47	2.28	12.47	
	56# - 16½' " G.Rail, Relay 1 at 640#	"	6.40	2.28	14.59	
	High Banner Switch Stand at 275#	Each	24	15.45	370.80	
	Low Banner Switch Stand at 230#	"	1	12.95	12.95	
	Economy Box " " at 118#	"	5	11.75	58.75	
	Ground Throw Economy" at 118#	"	2	(11.75)	24.00	
	Jack Knife Switch " at 75#	"	1	7.80	7.80	
	Switch Locks	"	23	0.50	11.50	
	Hayes, Model "E" Size 5 2 at 86#	"	2	10.80	21.60	
	60# - 15' Split Derail 1 " 466#	"	1	19.00	19.00	
	56# - 15' " " 2 " 458#	"	2	19.15	38.30	
		Total Other Tracks				$ 3,915.
11	**Ballast**					
	Main Tracks:					
	Gravel Ballast from M.P. 20 - Av. haul 9 mi.	C.Y.	20804	$ 0.31	$ 6449.24	
	Gravel Ballast from Mima - Av. haul 38 mi.	"	49469	0.45	22261.05	
		Total Main Tracks				$28,710.
	Other Tracks:					
	Gravel Ballast from Mima	C.Y.	4198	$ 0.45	$ 1889.10	
	Cinder " " South Bend	"	30	0.26	7.80	
		Total Other Tracks				$ 1,897.
12	**Tracklaying & Surfacing**					
	Main Tracks:					
	Tracklaying & Initial Surfacing 90/61	Trk.Mi.	15.40	$1000.00	$15400.00	
	Placing of Gravel Ballast	C.Y.	70273	.23	16162.79	
		Total Main Tracks				$31,563.

Acct No.	Description	Unit	No. of Units	Unit Price	Total	
	Tracklaying & Surfacing					
	Other Tracks:					
	Tracklaying & Initial Surfacing 90/61#	Trk.Mi.	.766	$ 875.00	$ 670.25	
	" " " " 60/0#	" "	1.976	850.00	1679.60	
	Placing of Gravel Ballast	C.Y.	4198	.23	965.54	
	" " Cinder "	"	30	.19	5.70	
	Note: 1688' deducted acct. of Ind. Trk. corrections.					
				Total Other Tracks		$ 3.321.
	All Tracks:					
	Placing of Turnouts	Each	26	$ 30.00	$ 780.00	
	" of Derails Block Type no stand	"	2	3.00	6.00	
	" " " Split with stand	"	3	7.50	22.50	
	" of Tie Plates	"	32170	0.0125	402.13	
	" " Rail Braces	"	1048	.02	20.96	
	" & Framing Bridge Ties	MBM	213.023	10.00	2130.23	
						$ 3.362.
13	**Right of Way Fences**					
	Cedar Posts 6"x7'	Each	7454	$ 0.10	$ 745.40	
	Barb Wire 522928 L.F.	Cwt.	348.62	2.80	976.14	
	48" Woven Wire 380 L.F.	"	4.31	3.00	12.93	
	#12 Plain Galv.Wire 10250 L.F.	"	3.65	2.60	9.49	
	Staples	"	5.07	2.80	14.20	
	1"x6" Lumber in place	MFBM	5.587	17.75	99.17	
	Nails	Cwt.	0.48	2.50	1.20	
	Bracing in place	MFBM	0.704	19.50	13.73	
	Iron	Cwt.	0.21	2.50	.53	
	Standard Single Track Cattle Guards	Each	13	15.50	201.50	
	5'x16' Wood Gate	"	2	3.00	6.00	
	4'x14' " "	"	1	3.00	3.00	
	5'x14' " "	"	1	3.00	3.00	
	4'x12' " "	"	2	3.00	6.00	
	4'x16' " "	"	16	3.00	48.00	
	5'x12' " "	"	1	3.00	3.00	
	Labor Setting Posts	"	7454	.13	969.02	
	" Stringing Barb wire, posts spaced under 12 ft.	Wi.Mi.	0.897	4.85	4.35	
	" Stringing Barb wire, posts spaced over 12. ft.	"	98.142	4.10	402.38	
	" Stringing plain Galv. wire posts spaced 8'	"	1.941	4.10	7.96	
	" Stringing 48" Woven Wire posts spaced 12'	Fence Mi.	0.070	38.85	(3.00)	
				Total Account 13		$ 3.530.
15	**Crossings & Signs**					
	24 Plank grade crossings	MFBM	13.890	$ 19.25	$ 267.38	
	Iron	Cwt.	4.17	4.00	16.68	
	Embankment Common	C.Y.	1211	.23	278.53	
	Gravel	"	98	.80	78.40	
	Loose Rock Excavation	"	548	.45	246.60	
	2 Timber Box Culverts	MFBM	0.870	32.00	27.84	
	10" Logs	L.Ft.	212	.14	29.68	
	12" "	"	150	.17	25.50	
	Iron	Cwt.	0.34	5.00	1.70	
	24" Concrete Pipe	L.Ft.	32	3.80	121.60	
	18" Corrugated Iron Pipe	"	22	1.10	24.20	
	Crushed Rock	C.Y.	11	1.50	16.50	
	24" Corrugated Iron Pipe	L.Ft.	56	1.70	95.20	
	2 Wooden Bridges	MFBM	2.120	19.25	40.81	
	Iron	Cwt.	0.63	5.00	3.15	
	Whistle Posts	Each	10	2.00	20.00	

Acct. No.	Description	Unit	No. of Units	Unit Price		Total
	Crossings & Signs (Cont'd)					
	Mile Posts	Each	14	$ 1.50	$ 21.00	
	Standard Tell Tales Single Track	"	8	22.50	180.00	
	Highway Crossing Signs	"	8	5.00	40.00	
	Station One Mile Signs	"	9	2.75	24.75	
	Dump Cinder "	"	3	2.75	8.25	
	Section "	"	3	1.25	3.75	
	Slow "	"	5	2.50	12.50	
	Tress Pass Keep Off Signs	"	2	2.75	5.50	
		Total Account 15				$ 1590.
16	Station & Office Buildings					
	Littell - Mile - 4:-					
	Pass. & Frt. Depot Frame - 2 Story 24'x24' 1 Story 24'x31'	Each	1	$3208.00		
	Furniture			349.00		
	Platform - 2100 sq.ft. frame	"	1	359.00		
	- 122 cu.yds. cinders & gravel	"	1	317.00		
	Sundry Item (Coal Shed & R&T Pipe)			363.00		
		Total Littell				$4596.00
	Adna - Mile - 5:-					
	Pass. & Frt. Depot Frame - 2 Story 24'x24' 1 Story 24'x31'	Each	1	$2913.00		
	Furniture			261.00		
	Platform - 1000 cu.yds. gravel	"	1	804.00		
	Sundry Items (Stock Chute,Pipe,Well Shed,Oil Box,Out Ho. & Fence)			324.00		
		Total Adna				$4302.00
	Bunker - Mile - 8:-					
	Shelter Shed - (Carbody)	Each	1	$ 298.00		
	Platform - 200 cu.yds. gravel & cinders			246.00		
		Total Bunker				$ 544.00
	Ceres - Mile - 11:-					
	Pass. & Frt. Depot Frame - 2 Story 24'x24' 1 Story 24'x31'	Each	1	$2864.00		
	Platform 683 cu.yds. gravel	"	1	708.00		
	Sundry Items (Stock Chute,Out Ho., Platform & Furniture)			412.00		
		Total Ceres				$3948.00
	Meskill - Mile - 13:-					
	Depot - Carbody	Each	1	$ 393.00		
	Furniture			61.00		
	Platform - 3520 sq.ft., Frame			337.00		
	" - 16 cu.yds., Cinders			243.00		
		Total Meskill				$1034.00
	Mays - Mile - 14:-					
	Shelter Shed - 10'x20',frame	Each	1	$ 159.00		
	Platform, 2480 sq.ft., frame	"	1	399.00		
	" 67 cu.yds., cinders	"	1	153.00		
		Total Mays				$ 711.00
	Dryad - Mile - 17:-					
	Pass. & Frt. Depot, Frame - 2 Story 24'x24' 1 Story 24'x31'	Each	1	$2943.00		
	Furniture			345.00		

Acct. No.	Description	Unit	No. of Units	Unit Price		Total
	Station & Office Buildings (Cont'd)					
	Dryad - Mile - 17 (Cont'd)					
	Platform - 3100 sq.ft., frame	Each	1	$ 536.00		
	" - 197 cu.yds., cinders	"	1	842.00		
	Sundry Items (Drain, Out Ho. & Well)			301.00		
			Total Dryad		$4967.00	
			Total Account 16			$ 20,102.
17	Roadway Buildings					
	Adna - Mile - 5:-					
	Section Ho. 1½ Story 16'x32' with 1 story 14'x16'	Each	1	$1378.00		
	Fences			108.00		
	Excavation			138.00		
	Well			114.00		
	Bunk Ho.	"	1	492.00		
	Tool Ho. 10'x24'	"	1	168.00		
	Sundry Items (Oil Ho., Well, Shed, Root Cellar, Out Ho., Chick Ho., H.C.S.O., Gravel)			474.00		
			Total Adna		$2872.00	
	Ceres - Mile - 10:-					
	Bunk Ho. 12'x24', add. 6'x24'	Each	1	$ 437.00		
	Tool Ho. 10'x12'	"	1	136.00		
			Total Ceres		$ 573.00	
	Dryad - Mile - 16:-					
	Section Ho. 1½ Story 27'x30'	Each	1	$1745.00		
	Well - 30" diam. x 13'			89.00		
	Fences			87.00		
	Bunk Ho. 1 story 16'x30' with addn. 8'x16'	"	1	496.00		
	Tool Ho. 10'x12'	"	1	100.00		
	Sheds, 12'x14' & 14'x20'			261.00		
	Sundry Items -(2 Out Houses, Shed, Oil Ho., Oven Ho., H.C.S.O., Rail)			336.00		
			Total Dryad		$3114.00	
			Total Account 17			$ 6,559.
18	Water Stations					
	Meskill - Mile - 13:-					
	Pump Ho. 10'x12' with 8'x24' addn.	Each	1	$ 205.00		
	Equipment			578.00		
	Pipe Lines			100.00		
	Tank - 8'x16'x8' high - wood	"	1	284.00		
	" - 8'x16'x6' "	"	1	261.00		
			Total Meskill		$1428.00	
			Total Account 18			$ 1,428.
26	Telegraph & Telephone Lines					
	Pole Structure - N.P. 50% W.U. 50%					
	Poles 20 ft. H.C. Class D	Each	400	$ 1.3789	$ 551.56	
	" 25 " " " "	"	64	3.9585	253.34	
	" 30 " W.C. " "	"	46	4.4518	204.78	
	" 35 " " " "	"	25	5.0639	126.60	
	" 40 " " " "	"	6	5.8068	34.84	
	Pole Braces 25' W.C. Class C	"	54	3.0338	163.83	
	Lighting Rods	"	54	0.1159	6.26	
	Poles Brush Treated	"	541	0.1010	54.64	
	Anchor Rods 1/2"x6'	"	3	0.3137	0.94	
	" " 5/8"x8'	"	30	0.4762	14.29	

Acct. No.	Description	Unit	No. of Units	Unit Price		Total
	Telegraph & Telephone Lines					
	Guy Wire #6 to Anchor	Each	1	$ 0.1796	$ 0.18	
	" " 6000# Strand to Anchor	"	32	0.6855	21.94	
	Cross Arms 8' Single (T.B.&B.)	"	533	0.5626	299.87	
	" " 8' Double "	"	9	1.0856	9.77	
	Labor				1441.59	
	Freight				261.97	
					$3446.40	
	I.C.C. allows 91.164% of $3446.40				$3141.88	
	N.P. Portion 50%					$ 1,571.
	Wire Structure - N.P. 50% I.C.C. 50%					
	Wire #9 Iron	Miles	30.66	$16.1031	$ 493.72	
	Steel Pins 1/2"	Each	1102	0.0415	45.73	
	Glass Insulators - Standard	"	1102	0.0557	61.38	
	Labor				263.09	
	Freight				45.23	
					$ 909.15	
	I.C.C. allows 96.413% of $909.15				$ 876.54	
	N.P. Portion 50%					$ 438.
	Cable Structure - N.P. 33-1/3% I.C.C. 66-2/3%					
	Cable 5 Pair 14 Ga. B.R.C. W.P.	L.Ft.	194	$ 0.1944	$ 37.71	
	Suspension - 6000# Strand (Marlin Loop)	Each	2	1.6601	3.32	
	Cable Boxes - 2 Arm	"	2	3.8094	7.62	
	Labor				22.39	
	Freight				1.57	
					$ 72.61	
	I.C.C. Allows 83.426% of $72.61				$ 60.58	
	N.P. Portion - 33-1/3%					$ 20.
	Office Equipment - N.P. 50% W.U. 50%					
	Wire #14 Ga. B.S. B.R.C. Single	L.Ft.	160	$ 0.0125	$ 2.00	
	" #16 " " " "	"	75	0.0071	0.53	
	" #14 " " C.C. "	"	20	0.0088	0.18	
	Ground Rods 6' Pipe	Each	3	0.5713	1.71	
	Labor				7.64	
	Freight				0.25	
					$ 12.31	
	I.C.C. allows 53.871% of $12.31				6.63	
	N.P. Portion					$ 3.
	Office Equipment - N.P. 100%					
	Relays - 37.5 Ohm	Each	3	$3.6232	$ 10.87	
	Sounders - 4 "	"	3	1.5584	4.68	
	Keys	"	3	1.1854	3.56	
	Labor				1.83	
	Freight				0.19	
					$ 21.13	
	I.C.C. allows 95.782% of $21.13				$ 20.24	$ 20.
	Total Account #26					$ 2,052.
27	**Signals & Interlockers**					
	Target Type Train Order Signals	Each	2	$ 30.00	$ 60.00	$ 60.
35	**Miscellaneous Structures**					
	Meskill - Mile - 13:-					
	Pumpers House 8'x34' Carbody	Each	1	$271.00		$ 271.
37	**Roadway Machines**					
	Motor Cars, Hand Cars, Push Cars & Velocipedes					$ 339.
38	**Roadway Small Tools**					
	Section Tools	Sets	3	$115.00	$ 345.00	$ 345.

Acct. No.	Description	Unit	No. of Units	Unit Price	Total
	Gen. Exp. 1½%				$ 7,272.
	Interest 6%				$29,556.
	Total 6/30/17				$541,058.

ADDITION & BETTERMENT FROM 6/30/17 to 6/30/28

	Charges for Property Installed	Credits for Property Retired
A.F.E. 509-17	$ 48.56	$ 40.43
" 2465-17	919.96	- -
" 2621-17		419.97
" 3081-17	53.93	
" 3318-17	13.25	
" 2488-18	2007.23	
" 482-19		192.14
" 2730-17	13968.93	9590.01
" J2233-19	674.06	
" 2305-19	1548.52	
" 2409-19	1105.80	
" 2791-17	28094.39	18654.37
" 203-19	107.87	
" 2089A-19	95.89	
" 2181-19	1633.41	18.50
" 2688-19	72.45	
" 347-20	58.47	
" 654-20	78.35	
" 917-20	2297.64	
" 1036-20	2046.48	23.00
" 1615-20	336.06	
" 291-21	222.50	134.00
" 297-21	420.71	171.84
" 561-21	1786.76	
" 854-22	249.10	155.13
" 1195-22	777.76	323.03
" 853-22	1618.49	569.66
" 1060-22	3650.86	129.44
" 1178-22	216.79	
" 833-23	753.88	213.12
" Inf.-23	23.85	17.23
" 1579-23	15233.41	3449.76
" 1141-23	316.11	113.46
" 1354-23	4688.27	
" 1355-23	4663.15	
" 596-23	1264.12	555.16
" 108-24	32.82	2046.39
" 591-24	1680.67	1085.69
" 600-24	1230.84	575.24
" 918-23	11766.66	44.14
" 401-24	1733.16	
" 831-24	169.66	7.47
" 64-24	430.10	143.09
" 1628-24	1876.81	
" 1540-24	221.93	
" 1395-25	66.69	
" 894-25	189.98	149.37
" 650-25	217.99	212.98
" 652-25	277.44	290.42
" 1110-25	4208.73	1798.54
" 1643-25		780.89
" 915H-3-24	11.75	

ADDITION & BETTERMENT FROM 6/30/17 to 6/30/28 (Cont'd)

	Charges for Property Installed	Credits for Property Retired
A.F.E. 1657-63-26	$	$ 299.08
" 421-26	19201.88	11874.09
" 422-26	19228.46	12106.45
" 879-26	535.57	395.68
" 714-26	383.59	59.80
" 1100-96-27	33.01	
" 1157-61-27	31.91	
" 1158-61-27	2.97	
" 7028-27	- - -	-- -
" 848-27	358.00	34.59
" 303-27	1111.77	404.77
" 854-83-27	66.91	
" 967-J-28	28.60	
" 263-27	17094.99	11074.81
" 299-28	10.00	24.00
" 480-25	484.10	69.66
" 1785-27		3126.00
	$173734.00	$81373.40
	81373.40	
	$ 92360.60	

Total Value 6/30/17 Plus A & B Work to 6/30/28 $633514.

NORTHERN PACIFIC RAILWAY COMPANY

Estimate of Cost as of June 30, 1928, covering the reproduction of that portion of the Northern Pacific Railway Company's South Bend Branch extending from the Milwaukee Crossing (Station 77+49) near Chehalis Junction to the Milwaukee Crossing (Station 890+50) just west of Dryad, Washington.

Estimate #2

Main track	15.40 Miles
Other tracks	3.15 "
Total	18.55 Miles

Acct. No.	Description	Unit	No. of Units Total	Unit Price		Total 6/30/28
1	Engineering 6%					$ 49,454.
2	Land					$ 19,440.
3	Grading					
	Clearing-Heavy Underbrush	Acre	94.99	65.00	$ 6,174.	
	-Light Timber	"	94.99	65.00	6,174.	
	Grubbing-Heavy Stump Land	"	9.9	350.00	3,465.	
	Excavation-Common	C.Y.	36358	0.33	11,998.	
	-Hard Pan	"	6353	0.52	3,304.	
	-Loose Rock	"	84276	0.62	52,251.	
	-Solid Rock	"	32401	1.20	38,881.	
	Embankment-Common Borrow	"	212755	0.33	70209.	
	-Hard Pan Borrow	"	14525	0.52	7,553.	
	-Loose Rock Borrow	"	7928	0.62	4,915.	
	-Gravel	"	3183	0.33	1,050.	
	-Special Material-Common-Ave.haul 54 Miles	"	1073	0.55	590.	
	Team Overhaul-500' free haul	" 100'	645846	0.0175	11,302.	
	Cl. #1 Train haul material-Common-Ave. haul 0.75 miles	C.Y.	480	0.55	264.	
	Cl. #1 Train haul material-Common-Ave. haul 0.113 miles	"	2071	0.35	725.	
	Cl. #2 Train haul material-Common-Ave. haul 3 miles	"	3316	0.34	1,127.	
	Cl. #2 Train haul material-Cinders-Ave. haul 23 miles	"	960	0.45	432.	
	Cl. #2 Train haul material-Cinders-Ave. haul 18 miles	"	27	0.43	12.	
	Protection of Roadway:					
	Riprap, loose, hauled 22.1 miles all on slope	"	190	2.50	475.	
	Riprap, loose, hauled 108.9 miles all on slope	"	209	3.00	627.	
	Riprap, loose, hauled 94.2 miles Ave. 44 ft. from C line	"	308	2.95	909.	
	Riprap, hand place hauled 10.3 Mi. all on slope	"	800	3.35	2,680.	
	Riprap, derrick, hauled 25 miles all on slope	"	5680	4.50	25,560.	
	Masonry-Dry rubble	"	835	7.80	6,513.	
	Piling	l.ft.	1150	0.60	690.	
	Timber	M.B.M.	61.631	40.00	2,465.	
	Timber S.H.	"	---	33.00	---	
	Iron	Lbs.	2440	0.07	171.	
	Trans. M. C. S.				11,723.	$272,239.

Acct. No.	Description	Unit	No. of Units Total	Unit Price	Total 6/30/28.
6	**Bridges, Trestles & Culverts**				
	Steel Bridges:				
	Bridge #2:-				
	Substructure:				
	Common Excavation	Cu.Yds.	43	$ 4.50	$ 194.
	Piling-Cedar	Lin.Ft.	2345	0.75	1759.
	" -Fir creosoted	"	1292	1.15	1486.
	Timber-Untreated	MBM	8.323	48.00	400.
	" -Treated	"	15.020	75.00	1127.
	Iron	Lbs.	3266	0.07	229.
	Superstructure:				
	Steel	"	472021	0.07	33041.
	Timber-Untreated	MBM	2.200	48.00	106.
	Iron	Lbs.	962	0.07	67.
	Painting Steel	Tons	234.34	3.00	703.
	Bridge #5:-				
	Substructure:				
	Piling-Fir creosoted	Lin.Ft.	3480	1.15	4002.
	Timber-Fir "	MBM	12.219	75.00	916.
	Iron	Lbs.	1486	0.07	104.
	Iron-Galv.	"	768	0.0725	56.
	Protective Work:				
	Derrick Riprap	Cu.Yds.	209	4.50	941.
	Superstructure:				
	Steel	Lbs.	266573	0.07	18660.
	Timber-Untreated	MBM	1.264	48.00	61.
	Iron	Lbs.	724	0.07	51.
	Painting Steel	Tons	133.286	3.00	400.
	Bridge #6:-				
	Substructure:				
	Piling-Cedar	Lin.Ft.	2380	0.75	1785.
	Timber-Untreated	MBM	14.648	48.00	703.
	Iron	Lbs.	1170	0.07	82.
	Protective Work:				
	Riprap Loose	Cu.Yds.	265	3.00	795.
	Superstructure:				
	Steel	Lbs.	262361	0.07	18365.
	Timber-Untreated	MBM	1.256	48.00	60.
	Painting Steel	Tons	131.180	3.00	394.
	Bridge #16.1				
	Substructure				
	Piling-Treated Cedar	Lin.Ft.	1641	1.15	1887.
	Timber-Fir Treated	MBM	14.482	75.00	1086.
	Iron	Lbs.	1365	0.07	96.
	Protective Work:				
	Riprap-Derrick-Haul from Wilkinson	Cu.Yds.	211	4.50	950.
	Superstructure:				
	Steel	Lbs.	266573	0.07	18660.
	Timber-Untreated	MBM	1.656	48.00	79.
	Iron	Lbs.	764	0.07	53.
	Painting Steel	Tons	133.286	3.00	400.
	Combination Bridges- (Now Portion of Steel Bridges)				
	Bridge #2.1:-				
	Substructure:				
	Piling	Lin.Ft.			
	Timber	MBM			
	Iron	Lbs.			

Acct. No.	Description	Unit	No. of Units Total	Unit Price		Total 6/30/28
6	**Bridges, Trestles & Culverts** (Cont'd.)					
	Bridge #2.1:- (Cont'd.)					
	Superstructure:					
	Timber-Painted	MBM				
	Iron	Lbs.				
	Iron Galv.	"				
	Water Bbls.	Each	17	$ 1.50	$ 26.	
	Bridge signs	"	1	1.60	2.	
	Protective Work					
	Rip rap	C.Y.	180	2.50	450.	
	Bridge #5:-					
	Substructure:					
	Piling	l.ft.				
	Timber	MBM				
	Iron	lbs.				
	Superstructure:					
	Timber-Painted	MBM				
	Iron	Lbs.				
	Iron Galv.	"				
	Water Bbls.	Each	10	1.50	15.	
	Bridge Signs	Each	1	1.60	2.	
	Protective work:					
	Riprap-Loose-Hauled from Veazie	C.Y.	77	3.00	231.	
	Bridge #6:					
	Substructure:					
	Piling	L.ft.				
	Timber	MBM				
	Iron	Lbs.				
	Excavation, Common	C.Y.	48	0.85	41.	
	Superstructure:					
	Timber-Painted	MBM				
	Iron	Lbs.				
	Iron Galv.	"				
	Water Bbls.	Each	2	1.50	3.	
	Bridge Signs	"	1	1.60	2.	
	Bridge #16:					
	Substructure:					
	Piling	L.ft.				
	Timber	MBM				
	Iron	Lbs.				
	Excavation-Common	C.Y.	52	0.85	44.	
	Superstructure					
	Timber-Painted	MBM				
	Iron	Lbs.				
	Iron Galv.	"				
	Water Bbls.	Each	7	1.50	11.	
	Bridge Signs	"	1	1.60	2.	$110,527.
	Pile & Frame Trestles:-					
	Piling	L.ft.	27584	0.75	$ 20,688.	
	Stringers	MBM	246.100	51.00	12,551.	
	Stringers-Logs	l.ft.	1100	0.32	352.	
	Other Timber	MBM	181.956	48.00	8,734.	
	Other Timber- S.H.	MBM	20.258	48.00	972.	
	Iron	Lbs.	48.616	0.07	3,403.	
	Iron Galv.	Lbs.	24821	0.0725	1,800.	
	Excavation Common	C.Y.	26	0.85	22.	
	Water Barrels	Each	32	1.50	48.	
	Bridge Signs	"	17	1.60	27.	

Acct No.	Description	Unit	No. of Units Total	Unit Price	Total	Total 6/30/28.
	Pile & Frame Trestles:-(Cont'd)					
	Protective Work:					
	Excavation Common	Cu.Yds.	3000	$ 0.85	$ 2,550.	
	Riprap-Loose	"	3311	3.00	9,933.	
	Dykes --					
	Timber Untreated	MBM	25.321	48.00	1,215.	
	Timber Untreated - S.H.	"	7.290	48.00	350.	
	Piling-Cedar Untreated	Lin.Ft.	3567	0.60	2,140.	
	Iron	Lbs.	4012	0.07	281.	
	River Gauges	Each	4	20.00	80.	$ 65,146.
	Pipe & Timber Culverts:-					
	Tile pipe culverts-24"	Lin.Ft.	198	4.42	875.	
	" " " 10"	"	38	1.15	44.	
	" " " 30"	"	42	7.30	307.	
	Concrete Pipe culverts-24"	"	577.6	6.00	3,466.	
	" " " 36"	"	181.9	8.50	1,546.	
	Plain Concrete (H W)	Cu.Yds.	15	16.65	250.	
	Cast Iron Pipe Culverts 24"	Net Tons	11.46	82.50	945.	
	" " " " 30"	"	9.95	82.50	821.	
	" " " " 36"	"	7.40	82.50	611.	
	Armco " " " 12"	Lin.Ft.	16	1.15	18.	
	Wood Box Culverts-Timber	MBM	3.014	48.00	145.	$ 9,028
8	**Ties:-**					
	Main Tracks:-					
	7"x9"x8' Cross Ties Untr. Fir	Each	293	$ 0.67	$ 196.	
	7"x8"x8' " " " "	"	43268	0.60	25,961.	
	7½"x7½"x6'" " " "	"	97	0.45	44.	
	7"x9"x9' " " " "	"	12	0.76	9.	
	8"x8"x10' " " " "	"	9	0.85	8.	
	7"x9"x10' " " " "	"	7	0.84	6.	
	7"x9"x11' " " " "	"	8	0.92	7.	
	8"x8"x12' " " " "	"	2	1.02	2.	
	7"x9"x12' " " " "	"	7	1.01	7.	
	7"x9"x14' " " " "	"	10	1.18	12.	
	8"x9"x14' " " " "	"	2	1.34	3.	
	8"x8"x14' " " " "	"	11	1.19	13.	
	8"x10"x14'" " " "	"	8	1.49	12.	
	8"x12"x12'" " " "	"	1	1.54	2.	
	Bridge Ties - Untr. Fir	MBM	199.643	17.00	3,394.	
	Other Tracks:-					
	#1 Hewn Fir Cross Ties Untr.	Each				
	7"x8"x8" Cross Ties Sawed Fir Untr.	"	7202	0.60	4,321.	
	7"x9"x8' " " " " " "	"	697	0.67	467.	
	Bridge Ties - Untr. Fir	MBM	33.643	17.00	572.	
	Crossing Ties - Untr. Fir	"	0.441	17.00	7.	
	Derail Ties - Untr. Fir	"	0.977	17.00	17.	
	Switch Ties - Untr. Fir		79.308	17.00	1,348.	
	Freight	Ton Mi.	18518	0.007	130.	$ 36,538.
9	**Rail**					
	Main Tracks:-					
	72# Relay Bess. Rail	Gr.Tons	1742.444	35.00	60,986.	
	Other Tracks:-					
	56# Relay Bess. Rail	"	187.299	35.00	6,555.	
	66# " " "	"	36.929	35.00	1,293.	
	72# " " "	"	38.397	35.00	1,344.	
	90# " O.H. "	"	83.866	35.00	2,935.	$ 73,113.

Acct. No.	Description	Unit	No. of Units Total	Unit Price	Total 6/30/28.
10	**Other Track Material**				
	Main Tracks:-				
	72# - 24" Ang. Bars - Relay	Cwt.	1991.52	$ 2.57	$ 5,118.
	65# - 24" " " "	"	1.50	2.57	4.
	60# - 24" " " "	"	0.32	2.57	1.
	56# - 24" " " "	"	16.43	2.57	42.
	60# - 24" " " New	"	5.90	3.42	20.
	56# - 24" " " "	"	32.00	3.42	109.
	66# - 24" Fish Plts. "	"	1.44	3.42	5.
	56# - 22" " " "	"	9.35	3.42	32.
	72# Continuous Ins. Jts. - New	Each	24.	579.	139.
	72# " " " " - Relay	"	4.	4.34	17.
	65# Weber Jts. - New Insulated	"	16.	4.40	70.
	3/4"x3½ Trk. Bolts - Relay	Cwt.	183.56	2.03	373.
	23/32x3-3/8 Trk. " - "	"	0.38	2.03	1.
	23/32x3-3/8 " " - New	"	5.22	4.05	21.
	9/16x6 Trk. Spikes	"	1282.95	3.03	3887.
	72# Rail Brace - New	Each	12.	0.43	5.
	72# Tie Plates - Relay	Cwt.	3937.06	1.83	7205.
	72# - 6"x8" Sellars Tie Pl.Relay	"	261.26	1.83	478.
	90# - Tie Plates	"	757.73	1.83	1387
	56# - " "	"	0.14	1.83	- -
	Rail Racks - Std.	Each	13.	1.85	24.
	56# Inner Gd. Rail - Relay	Cwt.	1196.47	1.75	2094.
	60# " " " - "	"	65.20	1.75	114.
	66# " " " - "	"	179.88	1.75	315.
	65# " " " - "	"	28.16	1.75	49.
	72# " " " - "	"	187.20	1.75	328.
	Guard Rail Points	"	19.20	9.67	186.
	72# Wharton Derail	Each	3.	39.25	118.
	65# Clausen "	"	3.	56.68	170.
	Other Tracks:-				
	90# M.T. Ang. Bars - Relay	Cwt.	101.01	2.88	291.
	72# Ang. Bars - Relay	"	55.03	2.57	141.
	66# " " - "	"	49.65	2.57	128.
	56# " " - "	"	177.94	2.57	457.
	90# M.T. Ang. Bars - New	"	9.44	3.84	36.
	56# - 24" Fish Plts. - Relay	"	46.88	2.57	120.
	72/56# - 24" Comp. Joints-Relay	Each	24.	2.60	62.
	72/66# - 24" " " - "	"	2.	2.70	5.
	66/56# - 24" " " - "	"	2.	3.68	7.
	90/72# - 24" " " -New	"	3.	6.00	18.
	90/72# - 24" Offset Bars - "	"	1.	2.75	3.
	3/4"x3½" Trk. Bolts - Relay	Cwt.	34.29	2.03	70.
	23/32x3-3/8" Trk. " - New	"	0.55	4.05	2.
	1"x5-1/8" " " - "	"	16.37	4.05	66.
	9/16"x5½" " Spikes	"	214.15	3.03	649.
	9/16"x6" " " - New	"	47.83	3.03	145.
	72# Rail Braces	Each	194.	0.43	83.
	66# " "	"	74.	0.43	32.
	56# " "	"	741.	0.43	319.
	72# Tie Plates - Relay	Cwt.	26.90	1.83	49.
	56# Tie Rods	"	0.21	1.19	--
	72# - 15° - #10 S.R. Frog-Relay	Each	2.	61.57	123.
	72# - 15° - #9 " " "	"	12.	61.79	741.
	72# - 15° - #9 " " -New	"	5.	82.38	412.
	60# - 9° - #9 Rigid Frog - "	"	2.	45.75	92.
	60# - 11.5 - #9 " " -Relay	"	3.	39.66	119.
	60# - 11.5 - #10 " " - "	"	1.	37.81	38.
	60# - 10° - #8 " " - "	"	1.	34.90	35.
	60# - 7° - #7 " " - New	"	--	---	--

Acct. No.	Description	Unit	No. of Units Total	Unit Price		Total 6/30/28.
	Other Track Material (Cont'd)					
	Other Tracks (Cont'd)					
	65# Rigid Frog - Relay	Each	1.	$ 28.94	$ 29.	
	66# - 9" - #7 " " - "	"	2.	35.31	71.	
	66# - 9.3- #7 " " - "	"	1.	35.88	36.	
	56# - 11½'-#9 " " - New	"	1.	60.93	61.	
	72# - 15' Split Switches-Relay	"	14.	41.19	577.	
	72# - 15' " " -New	"	6.	54.92	330.	
	66# - 15' " " - "	"	1.	51.69	52.	
	66# - 15' " " -Relay	"	1.	38.77	39.	
	60# - 15' " " - "	"	4.	38.23	153.	
	56# - 15' " " -New	"	2.	46.62	93.	
	56# - 15' " " -Relay	"	1.	34.97	35.	
	60# - 15' " " -New	"	1.	50.98	51.	
	60# - 10' " " Plain- "	"	1.	29.60	30.	
	56# Stubb Switch - Relay	"	--	--		
	72# - 15' -Frog Gd.Rail Braced-Relay	Cwt.	132.84	1.37	182.	
	66# - 15' - " " " " "	"	20.37	1.37	28.	
	60# - 15' - " " " " "	"	--	1.37	--	
	56# - 15' - " " " " "	"	23.36	1.37	32.	
	56# - 14' - " " " " "	"	5.47	1.37	7.	
	56# - 16½'- " " " " "	"	6.40	1.37	9.	
	72# - 8' - 3" " " Std. - New	"	15.10	2.21	33.	
	High Banner Switch Stands	Each	25.	18.26	457.	
	Low " " "	"	2.	13.58	27.	
	Economy Box " "	"	4.	20.70	83.	
	Ground Throw Economy Switch Stands	"	2.	20.70	41.	
	Jack Knife " "	"	1.	14.25	14.	
	Odenkirk " "	"	1.	23.14	23.	
	Switch Locks	"	23.	0.75	17.	
	Switch Lumps	"	21.	8.61	181.	
	Derail - Hays Model "B" Size 5	"	2.	19.76	40.	
	" - Hobart	"	1.	17.88	18.	
	" - 90# Split Derail-Sw.Pts.10' Relay	"	2.	23.69	47.	
	" - 56# " " - " " 15'	"	3.	35.00	105.	
	" - 56# " " - " " 10' Relay	"	1.	23.19	23.	
	" - 60# " " - " " 15'	"	1.	34.75	35.	
	56# Rail in Derail	Cwt.	1.31	1.75	2.	
	90# Nut Locks	Per M.	0.760	45.00	34.	
	Freight	Ton Mi.	1174979	0.007	8225.	$37,775.
11	Ballast					
	Main Tracks:-					
	Gravel Ballast-Av. haul 9 mi. from M.P. 20	Cu.Yds.	20789	0.55	11434.	
	" " " haul 38 mi. " Mima	"	49469	0.67	33144.	
	" " " haul 50 mi. from Pt.Defiance Line	"	5037	0.71	3576.	
	Cinder " " haul 18 mi. from Centralia	"	18	0.60	11.	
	Other Tracks:-					
	Gravel Ballast-Av. haul 38 mi. from Mima	Cu.Yds.	4141	0.67	2774.	
	" " " haul 61.5 mi. from Steilacom	"	597	0.74	442.	
	" " " haul 48 mi. from Steilacom	"	300	0.64	192.	
	Cinder " " haul 5 mi. from South Bend	"	30	0.53	16.	
	" " " haul 23 mi. from Centralia	"	973	0.62	603.	$52,192.

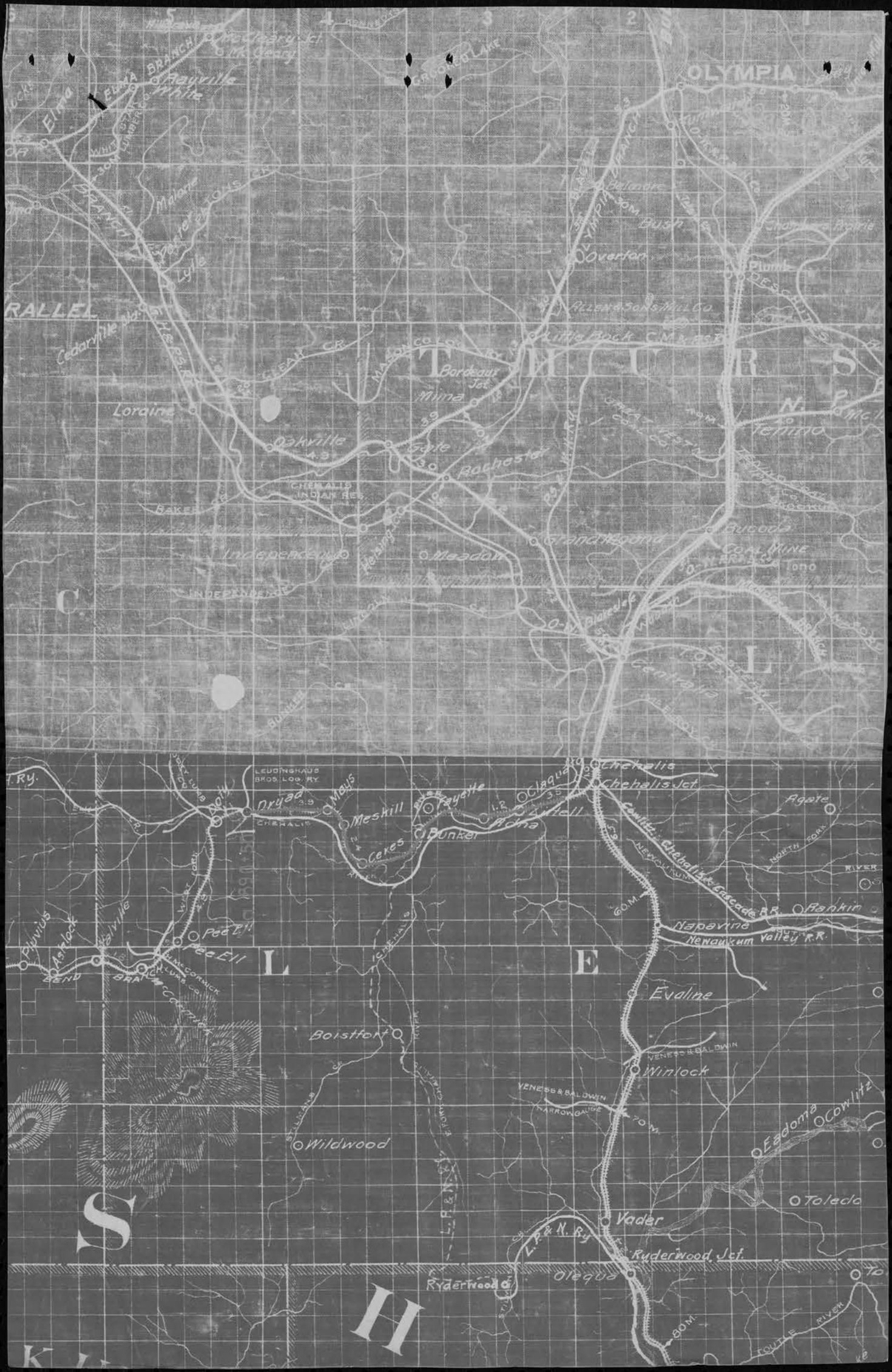
Acct. No.	Description	Unit	No. of Units Total	Unit Price	Total	Total 6/30/28
12	**Tracklaying & Surfacing**					
	Main Tracks:-					
	Tracklaying & Initial Surfacing 90/61# Steel	Trk.Mi.	15.40	$1940.00	$29876.	
	Placing Gravel Ballast	Cu.Yds.	75295	0.485	36518.	
	" Cinder "	"	18	0.485	9.	
	Other Tracks:-					
	Tracklaying & Initial Surfacing 90/61# Steel	Trk.Mi.	1.245	$1940.00	2415.	
	Tracklaying & Initial Surfacing 60/0# Steel	" "	1.905	1940.00	3696.	
	Placing Gravel Ballast	Cu.Yds.	5038	0.485	2443.	
	" Cinder "	"	1003	0.485	486.	
	All Tracks:-					
	Placing Turnouts	Each	26	107.50	2795.	
	Placing Rail Braces	"	1021	0.032	33.	
	Placing Tie Plates	"	74953	0.021	1574.	
	Placing Derail-Split Sw. Plts.	"	5	12.75	64.	
	" " -Wharton	"	3	5.00	15.	
	" " -Block Type No Stand	"	2	5.10	10.	
	" " -Hobart	"	1	5.00	5.	
	" " -Clausen	"	3	5.00	15.	
	" Inner Gd.Rail 90/61# Rail	Miles	0.224	700.00	157.	
	" " " " 60/0# "	"	0.533	700.00	373.	
	" " " " Points	Each	10	1.50	15.	
	" Nut Locks	"	760	0.002	2.	
	" Extra 65# Rig. Frog	"	1	12.00	12.	
	" " " Sw. Plts.	"	2	4.00	8.	
	" & Framing Bridge Ties	MBM	233.446	20.00	4669.	$ 85190.
13	**Right of Way Fences**					
	Cedar Posts 6"x7'	Each	7454	0.16	1193.	
	Barb Wire	Cwt.	348.62	4.70	1639.	
	48" Woven Wire	"	4.31	5.10	22.	
	#12 Plain Galv. Wire	"	3.65	4.50	16.	
	Staples	"	5.07	4.70	24.	
	Lumber in Place	MBM	5.587	40.00	223.	
	Nails	Cwt.	0.48	7.00	3.	
	Bracing in place - Timber	MBM	0.704	42.00	30.	
	Iron	Cwt.	0.21	7.00	1.	
	Standard single track cattle gds.	Each	13	30.00	390.	
	5'x16' Wood Gates	"	2	5.10	10.	
	4'x14' " "	"	1	5.10	5.	
	5'x14' " "	"	1	5.10	5.	
	4' x12' " "	"	2	5.10	10.	
	4'x16' " "	"	16	5.10	82.	
	5'x12' " "	"	1	5.10	5.	
	Labor Setting Posts	"	7454	0.22	1640.	
	Labor Stringing Barb Wire posts spaced over 12 ft.	Wire Mi.	98.142	7.00	687.	
	Labor Stringing Barb Wire posts spaced under 12 ft.	" "	0.897	8.50	8.	
	Labor Stringing Plain Galv. Wire posts spaced 8 ft.	" "	1.941	7.00	14.	
	Labor Stringing 48" Woven Wire post spaced 12 ft.	Fc. Mi.	0.070	65.00	5.	$ 6012.
15	**Crossings & Signs**					
	Planking-24 Grade Crossings	MBM	20.290	27.50	558.	
	Iron	Cwt.	4.97	7.00	35.	
	Embk. - Common	Cu.Yds.	1211	0.33	400.	
	Gravel	"	98	1.00	98.	
	Loose Rock Excavation	"	548	0.62	340.	
	Timber Box Culverts	MBM	0.870	48.00	42.	

Acct. No.	Description	Unit	No. of Units Total	Unit Price		Total 6/30/28	
	Crossings & Signs (Cont'd)						
	Logs in Culverts - 10" Logs	Lin.Ft.	212	$ 0.24	$	51.	
	" " " - 12" "	"	150	0.29		44.	
	Iron " "	Cwt.	0.34	7.00		2.	
	24" Concrete Pipe	Lin.Ft.	32	6.00		192.	
	12" " "	"	24	2.35		56.	
	18" Corrugated Iron Pipe	"	22	1.80		40.	
	24" " " "	"	56	2.75		154.	
	Crushed Rock	Cu.Yds.	11	2.50		28.	
	2 Wooden Bridges - Timber	MBM	2.120	48.00		102.	
	Iron	Cwt.	0.63	7.00		4.	
	Concrete Paving	Sq.Yds.	490	2.36		1156.	
	Whistle Posts	Each	10	3.50		35.	
	Mile "	"	14	2.50		35.	
	Std. Tell Tales - Single Track	"	8	38.25		306.	
	Highway Crossing Signs	"	8	8.00		64.	
	Station One Mile Signs	"	9	4.75		43.	
	Domp Cinder Signs	"	3	4.75		14.	
	Section Signs	"	3	2.25		7.	
	Slow Signs	"	5	4.25		21.	
	Tresspass - Keep off signs	"	2	4.75		10.	
	Iron Derail Signs	"	1	2.50		2.	
	Culvert Markers	"	35	1.75		61.	$ 3900.
16	Station & Office Buildings						
	At Littell:-						
	Pass.& Frt. Depot-Frame-2 story 24'x24' & 1 story 24'x31'	Each	1		$	6256.	
	Furniture		- -			681.	
	Platform - Timber 21 sq.ft.frame	"	1			700.	
	" - Cinders & Gravel - 122 Cu.yds.	"	1			618.	
	Sundry Items -						
	Coal Shed & R & T Pipe	$	- -			708.	
					$	8963.	
	At Adna:-						
	Pass.& Frt. Depot-Frame-2 story 24'x24' & 1 story 24'x31'	Each	1		$	5680.	
	Furniture		- -			509.	
	Platform - Gravel - 1000 cu.yds.	"	1			1568.	
	6" Cement Drain Pipe	Lin.Ft.	95	0.25		24.	
	Sundry Items -						
	Stock chute Pipe,Well,Shed,Oil Box, Out House & Fence		- -			632.	
					$	8413.	
	At Bunker:-						
	Shelter Shed - Carbody	Each	1		$	581.	
	Platform-Gravel & Cinders 200 cu.yds.	"	1			480.	
					$	1061.	
	At Ceres:-						
	Pass.& Frt. Depot-Frame-2 story 24'x24' & 1 story 24'x31'	Each	1		$	5585.	
	Platform-Gravel-683 cu.yds.	"	1			1381.	
	Sundry Items -						
	Stock chute,Out House,Platform, Furniture	$	412.00			803.	
					$	7769.	
	At Meskill:-						
	Depot - Carbody	Each	1		$	766.	
	Furniture		- -			119.	
	Platform - Frame 3520 sq.ft.	"	1			657.	
	" - Cinders 16 cu.yds.	"	1			474.	
					$	2016.	

Acct. No.	Description	Unit	No. of Units Total	Unit Price		Total 6/30/28
	Station & Office Buildings (Cont'd)					
	At Mays:-					
	Shelter Shed Frame 8'x10'	Each	--	--	--	
	Platform - Frame	Sq.Ft.	--	--	--	
	" - Cinders	Cu.Yds.	--	--	--	
	At Dryad:-					
	Pass.& Frt. Depot-Frame-2 story 24'x24' & 1 story 24'x31'	Each	1		$ 5739.	
	Furniture		--		673.	
	Platform - Frame - 3100 sq.ft.	"	1		1045.	
	" - Cinders - 197 cu.yds.	"	1		1642.	
	Unloading Platform					
	Timber - New	MBM	0.267	63.00	17.	
	" - S.H.	"	4.261	47.00	200.	
	Iron	Lbs.	54	0.07	4.	
	Sundry Items -					
	Drain, Out House & Well		--		587.	
					$ 9907.	
	Total Acct. #16					$ 38,129.
17	Roadway Buildings					
	At Adna:-					
	Section House 1½ Story 16'x32' with 1 story 14'x16'	Each	1		$ 2687.	
	Fences				211.	
	Excavation		--		269.	
	Well		--		222.	
	Bunk House	Each	1		959.	
	Tool House 10'x24' frame	"	1		328.	
	Sundry Items -					
	Oil House,Well,Shed,Root Cellar,Out House,Chicken House, H.C.S.O.,Gravel		--		924.	
					$ 5600.	
	At Ceres:-					
	Bunk House - 10'x24'	Each	1		$ 852.	
	Tool House - 10'x12'	"	1		265.	
	Section House - Carbody 8'x34'	"	1		289.	
	Steel Gasoline Storage Tank-100 Gals. complete with tin pump	"	1		30.	
					$ 1436.	
	At Dryad:-					
	Section House 1½ story 27'x30'	Each	1		$ 3403	
	Well - 30" diam. x 13'	"	1		174.	
	Fences		--		170.	
	Bunk House - 1 story 16'x30' with addn. 8'x16'	"	1		967.	
	Tool House - 10'x12'	"	1		195.	
	Sheds - 12'x14' & 14'x20'	"	2		509.	
	Sundry Items -					
	2 Out Houses,Shed,Oil House,Oven House, H.C.S.O., Rail		--		655.	
	Steel Gasoline Storage Tank-100 Gals. complete with tin pump	Each	1		30.	
					$ 6103.	
	Total Acct. #17					$ 13,139.
18	Water Stations					
	At Meskill:-					
	Pump House 10'x12' with 8'x24' addn.	Each	1		$ 390.	
	Equipment		--		1098.	
	Pipe Line		--		190.	

Acct. No.	Description	Unit	No. of Units Total	Unit Price		Total 6/30/28
	Water Stations (Cont'd)					
	Wood Tank - 8'x16'x8' high	Each	1		$ 540.	
	" " - 8'x16'x6' "	"	1		496.	$ 2,714.
26	Telegraph & Telephone Lines					
	Pole Structure N.P. 50%, W.U. 50%					
	Poles 20 ft. N.C. Class D	Each	400	$ 2.09	$ 836.	
	" 25 " N.C. " "	"	64	3.30	211.	
	" 30 " W.C. " "	"	46	5.06	233.	
	" 35 " W.C. " "	"	25	6.60	165.	
	" 40 " W.C. " "	"	6	7.92	48.	
	" 25 " S.H.	"	1	1.50	2.	
	" 30 " S.H.	"	2	2.00	4.	
	Pole Braces 25 ft. W.C.	"	54	5.06	273.	
	Lighting Rods	"	54	0.10	5.	
	Poles Brush Treated	"	541	0.16	87.	
	Anchor Rods ½" x6'	"	3	1.38	4.	
	" " 5/8" x8'	"	30	1.41	42.	
	Guy - #6 Wire to Anchor	"	1	0.25	- -	
	" - 6000# Strand to Anchor	"	32	0.86	28.	
	Cross Arms 8' Single (T.B.&B.)	"	533	0.96	512.	
	" " 8 double "	"	9	1.92	17.	
	" " 6 Pin	"	2	0.52	1.	
	" " Braces	"	4	0.09	- -	
	Screws - 2½"	"	4	0.015	- -	
	" - 4½"	"	4	0.02	- -	
	Cross Arm Bolts - 11"	"	2	0.12	- -	
	Guys - 4000# Strand	Lin.Ft.	62	0.01	1.	
	Guy Clamps - 3 bolt	Each	4	0.16	1.	
	Labor				2218.	
	Freight				50.	
					$4738.	
	N.P. Proportion 50%				$2369.	
	Wire Structure N.P. 50%, W.U. 50%					
	Wire #9 Iron	Miles	30.66	$ 20.36	$ 624.	
	Steel Pins - 1/2"	Each	1102	0.07	77.	
	Glass Insulators Standard	"	1102	0.07	77.	
	Labor				555.	
	Freight				26.	
					$1359	
	N.P. Proportion 50%				$ 680	
	Cable Structure N.P. 100%					
	Cable - 5 Pair 14 Ga. B.R.C. W.P.	Lin.Ft.	194	$0.275	53.	
	Suspension, 6000# Strand (Morlin Loop)	"	194	0.04	8.	
	Cable Boxes - 2 Arm	Each	2	9.90	20.	
	Labor				16.	
	Freight				1.	
					$ 98.	
	Office Equipment N.P. 100%					
	Wire 14 Ga. B.S. B.R.C.	Lin.Ft.	160	0.0092	1.	
	" 16 " " "	"	75	0.0076	1.	
	" 14 " " C.C.	"	20	0.01	- -	
	Ground Rods 6' Pipe	Each	3	0.66	2.	
	Relays 37.5 Ohm	"	3	8.58	26.	
	Sounders 4 "	"	3	3.30	10.	
	Keys	"	3	2.16	6.	
	Switchboards 4/6	"	2	3.94	8.	
	Gravity Cells	"	9	1.25	11.	
	Office Grounds	"	3	1.00	3.	
	Switchboards 6/8	"	1	6.19	6.	
	Labor				47.	
	Freight				1.	
					$ 122.	$ 3,269.

Acct. No.	Description	Unit	No. of Units Total	Unit Price		Total 6/30/28
27	Signals & Interlockers					
	Target Type-Train Order Signal at Littell	Each	- -			
	Target Type-Train Order Signal at Adna	"	1	$ 30.00	$ 30	
	Nor.Pac. Portion 50% of Interlocking Plants near Chehalis & Dryad				13016	$ 13,046.
35	Miscellaneous Structures					
	At Meskill:-					
	Pumpers House 8'x34' Carbody	Each	1		$	$ 528.
37	Roadway Machines					
	Motor Cars,Hand Cars,Push Cars, & Velocipedes					$ 1,091.
38	Roadway Small Tools					
	Section Tools - 3 Sets					$ 656.
	General Expenses - 1½%					$ 13,105.
	Interest during Const. 6% for 1 yr.					$ 53,260.
			Grand Total			$959,491.


OLYMPIA
Elma
Rayville
Overton
Bordeaux Jct.
Mima
Loraine
Oakville
Gate
Rochester
Bucoda
Grand Mound
Meadow
Independence
Tono
Coal Mine
Chehalis
Chehalis Jct.
Claquato
Centralia
Bunker
Meskill
Cokes
Mayfield
Doty
Dryad
Pe Ell
Napavine
Newaukum Valley R.R.
Rankin
Agate
Evaline
Winlock
Boistfort
Wildwood
Vader
Ryderwood Jct.
Ryderwood
Toledo
Cowlitz
Castle Rock
Kalama
Olequa
Toutle River
North Fork
Newaukum River
Chehalis River
Cowlitz River
Cedarville
Lyle
Bellingham Bush
Chehalis Indian Res.
Leudinghaus Bros. Log. Ry.
Vancouver, Klickitat & Yakima R.R.
Chehalis & Eastern R.R.
Tacoma Eastern R.R.
Vancouver, Klickitat & Southern R.R.
Chehalis & Cowlitz R.R.
Chehalis & Grays Harbor R.R.
Chehalis & Coal Co.
Allen & Sons Mill Co.
Little Rock C.M. & R.R.
Vancouver, Klickitat & Yakima R.R.
Chehalis & Eastern R.R.
Tacoma Eastern R.R.
Vancouver, Klickitat & Southern R.R.
Chehalis & Cowlitz R.R.
Chehalis & Grays Harbor R.R.
Chehalis & Coal Co.
Allen & Sons Mill Co.
Little Rock C.M. & R.R.
Venesss & Baldwin Narrow Gauge
Venesss & Baldwin
L. P. & N. Ry.
G.O.M.
Ry.
Dayton
Walville
Asylock
Plynius
Bend
Pe Ell
Ch. Lumber Co.
Branch
Cowlitz
Chehalis
Lewis
Skamania
Klickitat
Yakima
Thurston
Pacific
Grays Harbor
Mason
Lewis
Cowlitz
Wahkiakum
Clark
Skamania
Klickitat
Yakima
Thurston
Pacific
Grays Harbor
Mason

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MR. H. E. STEVENS:

On March 22nd final report was made to Mr. Williamson on the joint study made with the Milwaukee to determine what if any operating economies might be effected by joint use of trackage and facilities on the Pacific Coast.

At the time this report was made a copy was prepared for you, but through oversight was not sent to you. I presume that since that time Mr. Williamson has talked to you about the various proposals, but I am attaching your copy of the report, for your information.

It has been proposed to the Milwaukee that Propositions 3 and 5 be worked out and put into operation; and as yet we have had no answer from them.

W. M. Judson

St.Paul, 4/19/28

Saint Paul, March 22, 1928-s

MR. F. E. WILLIAMSON:

Attached is a report on the joint study which was made with the Milwaukee to determine what if any operating economies might be effected by a joint use of trackage and facilities on the Pacific Coast.

This study - which was made by Mr. E. B. Crane, Principal Assistant Engineer of the Milwaukee, and myself, has been completed and discussed with Mr. Buford, General Manager of the Milwaukee at Seattle.

Six propositions were considered in the study. Out of these six propositions two remain as attractive; one may prove economical if satisfactory negotiations can be concluded; two proved unattractive to the Milwaukee; and one, partially completed, was dropped at the request of Mr. Donnelly, pending decision on the merger application.

Summary sheet is attached, which shows briefly the present status of all of the six propositions, detail of which is given in the attached report.

The basis of all of the studies is a division of the saving which can be made by an abandonment of a facility or track. Approximately half of the money saved by the company making the abandonment to be paid to the other company for use of trackage or facilities.

All of the savings are based on what maintenance and depreciation charges, together with the interest on net salvage, can be saved. No credit for elimination of carrying charges is shown, as by the abandonment of a line or facility no saving is made in the carrying charges.

Proposition V, which is the proposed abandonment of a portion of the Milwaukee Willapa Harbor Line, appears to be the most attractive of the propositions completed.

A careful study was made to determine the present annual cost of Milwaukee trackage. This was done from the annual maintenance figures and with the depreciation figured on a 5% sinking fund basis. If this proposition is carried into final negotiations it will have to be covered by a long-term contract on a sliding scale basis, providing for a possible fluctuation in the business of both companies. The figures shown for the saving on this proposition of course are based on the present labor and material prices and for the present volume of traffic. Due to the basis used in arriving at the savings, the contract should provide for a readjustment at stated intervals, to take care of the fluctuation in price trend for labor and material. I have worked up a tentative plan to take care of the sliding scale feature of the contract, but do not presume that you will want to go into this detail until negotiations have been carried further.

In our original study of the Enumclaw and Willapa Harbor propositions, we assumed that the additional Milwaukee traffic on Northern Pacific track would have no effect on the Northern Pacific maintenance costs. Later, when consideration was given to a sliding

scale contract, and for reasons brought up by the Milwaukee, it was thought best to include a figure for increased Northern Pacific maintenance costs. This was agreed to by Mr. Crane. We have made several assumptions in providing for this increased maintenance cost. First, it was assumed that the $1575 per mile annual maintenance cost shown for Milwaukee expense on the Willapa Harbor Line was the minimum cost that this track could be maintained for, with the present volume of traffic. It was also further assumed that for the same amount the same volume of business could be moved over the Northern Pacific track. Following this same line of reasoning, the present Northern Pacific maintenance costs were established by increasing one-third the costs established on the Milwaukee, in direct proportion to the increase that Northern Pacific traffic is over that of the Milwaukee. It was assumed that approximately one-third of the maintenance costs are directly proportional to the business handled. In the same manner, the Northern Pacific costs were again increased to show the estimated cost with the additional Milwaukee wheelage. This increase was put in as a necessary expense to the proposition, and is divided equally between the two roads.

Northern Pacific maintenance figures were not worked up, for this would have prolonged the study a much longer time; and the probability exists that a widely different figure would have been obtained than was arrived at on the Milwaukee. This would have further complicated the negotiations. This arrangement as outlined above was satisfactory to Mr. Crane, and I am of the opinion that it presents a liberal estimate of what the maintenance costs are.

Maps showing the various propositions are attached.

Detail figures used in arriving at the results shown in this report, as well as other data used in the study, are on file.

W. W. Hudson

S U M M A R Y

Detail of which is given in the following pages

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PROPOSITION I

Proposed abandonment of Milwaukee barge service between Seattle and Bellingham; and the handling of Milwaukee cars in Northern Pacific trains between Seattle and Deming; also includes proposed abandonment of Northern Pacific Bellingham Branch and the handling of Northern Pacific cars in Milwaukee trains between Deming and Bellingham

Tentative study showed an attractive operating saving. Study was dropped pending decision on the merger application, and was not completed.

PROPOSITION II

Proposed abandonment of a portion of the Bagley Junction-Enumclaw Branch of the Milwaukee from Sellick to Cumberland; and the use of Northern Pacific track between those points by Milwaukee trains

Study completed and final results showed a total saving of only $7200, or $3600 for each road. Due to the small saving and the operating complications in connection with the plan, the Milwaukee did not want to enter into it; and it is the joint recommendation that the matter be dropped.

PROPOSITION III

Proposed abandonment of Milwaukee barge service to Front Street at TACOMA; and elimination of Milwaukee switching service on Front Street and the handling of Milwaukee cars to and from Front Street by the Northern Pacific.

Study completed; and results showed an annual saving to the Milwaukee of $9150, and to the Northern Pacific of $3000, based on 1926 business, at the established switching rate. The Northern Pacific saving is based on the contention that the handling of the Milwaukee cars by Northern Pacific switch engine will not create any additional expense.

Milwaukee favorable to the plan provided better time can be made on the delivery of its cars to Milwaukee transfer. This matter can probably be overcome in the negotiations, as the service under the proposed plan will be at least as good as the present Milwaukee service.

Plan should be negotiated on the established switching rate and an additional charge of approximately $5 per car or $10 per load, when necessary to spot Milwaukee cars on exclusive Milwaukee spurs on Front Street. If the $5 spotting charge is obtained it increases the Northern Pacific saving about $3000 per year.

Recommend that favorable consideration be given this plan to put it into operation as soon as possible, and later the matter of duplicate trackage on Front Street can be taken up to secure greater savings.

PROPOSITION IV

Proposed abandonment of Milwaukee passenger station at Tacoma and use by the Milwaukee of the Union Passenger Station.

Very little done with this proposition, as the Milwaukee is not interested at this time. Study was dropped before data had been completed to show the results.

PROPOSITION V

Proposed abandonment of a portion of the Milwaukee WILLAPA HARBOR BRANCH, from the crossing of the two lines a mile west of Chehalis Jct. to the crossing at Dryad; and use of Northern Pacific track by the Milwaukee between those points.

Study on this plan was completed; and showed an annual saving of $12028 to the Milwaukee and $13628 to the Northern Pacific; with an actual payment of $18220 by the Milwaukee to the Northern Pacific for the use of 15.8 miles of track between points of connection. The above saving - made by the abandonment of 17.21 miles of Milwaukee track - is based on 1926 traffic and costs.

Milwaukee favorable to this plan, and it is recommended that favorable consideration be given to this proposition under a sliding scale contract, providing for a fluctuation in the volume of business and also for any variation in the price trend of labor and material.

PROPOSITION VI

Proposed abandonment of Northern Pacific Bridge 1 on the OCOSTA BRANCH at COSMOPOLIS: and use of Joint OWR&N-CMStP&P bridge between Aberdeen and South Aberdeen by Northern Pacific non-joint switch engine

Study completed; and showed an annual cost on Northern Pacific bridge 1 of $12569, exclusive of carrying charges and including ma ntenance and depreciation. An estimate of increased switching costs under the proposed plan leaves a net cost of $11369 per year to be applied to the use of the OWR&N-CMStP&P bridge. Based on the present operation of the bridge of 832 movements per year, this amounts to $13.70 per movement.

Recommend favorable consideration of this plan, provided it is negotiated on a flat rate per movement basis of approximately one-half of the present cost of $13.70. If approached on a trade basis the plan becomes unattractive to the Northern Pacific, due to the traffic consideration - in the opening up of the present switching agreement, or the joint use of now exclusive Northern Pacific spurs.

PROPOSITION I

PROPOSED ABANDONMENT OF MILWAUKEE BARGE SERVICE BETWEEN SEATTLE AND BELLINGHAM: AND THE HANDLING OF MILWAUKEE CARS IN NORTHERN PACIFIC TRAINS BETWEEN SEATTLE AND DEMING - also includes PROPOSED ABANDONMENT OF NORTHERN PACIFIC BELLINGHAM BRANCH AND HANDLING OF NORTHERN PACIFIC CARS IN MILWAUKEE TRAINS BETWEEN DEMING AND BELLINGHAM..

Considerable study was made of this proposition as it offers the greatest saving, from an operating standpoint, of any of the six considered; but it was not carried to completion because at the Chicago meeting in December Mr. Donnelly decided that the matter should be held in abeyance until decision was reached on the proposed merger with the Great Northern.

Following is an outline of the approximate savings to be made under this proposition, which shows the method used to arrive at the results. This estimate is only tentative, for, as stated before, all of the details were not completed when this plan was dropped.

(Based on 1926 operation)

MILWAUKEE OPERATION

Annual credits under proposed plan:		
Maintenance and operation of barge line.....	$74,423	
Interest on net salvage ...	300	
Total credits	$74,723	$74,723
Annual debits under proposed plan:		
Increase in operation of other barge lines, due to transfer of equipment.....	$834	
Interest on new connection ...	625	
Maintenance on new connection.....	625	
Net additional rail costs west of Cedar Falls, including cost of new train on Bellingham Division	15427	
Total debits	$17,511	17,511
NET CREDITS - - - - - - - - - - - -		$57,212

PROPOSITION I (continued)

NORTHERN PACIFIC OPERATION

Annual credits under proposed plan:

Maintenance Bellingham Branch.....	$20,700	
Elimination of train 931 and 932...	25,050	
Interest on net salvage.....	2,415	
Total credits - - - - - -		48,165

Annual debits under proposed plan:

Interest on new connection.....	625	
Maintenance on new connection.....	625	
Estimated additional cost of handling NP cars between Wickersham and Deming.....	3,709	
Estimated cost to handle CMStP&P cars in existing trains.....	12,636	
Total debits - - - - - -		17,595
NET CREDITS		$30,570

TOTAL MILWAUKEE net credits, under proposed plan	$57,212
TOTAL NORTHERN PACIFIC do	30,570
Total amount available for payment by one company for services performed by the other, and for savings and profits to both.....	$87,782

The amounts shown as debits to each company for handling the cars of the other company is the out of pocket expense only for engine and train service costs, and includes no percentage of maintenance or carrying charges.

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The traffic consideration in this proposition is important. At the present time the Milwaukee with its tri-weekly barge service is not in position to compete with the Northern Pacific on preference business; and by going into this proposition Milwaukee cars would be handled in Northern Pacific trains in the same manner as Northern Pacific cars are now handled, which would give that company equal footing at Bellingham. Should this proposition be taken up again at a later date, this traffic matter will have to be given careful

study to determine whether this traffic advantage to the milwaukee would offset the operating savings to be made.

PROPOSITION II

PROPOSED ABANDONMENT OF A PORTION OF THE BAGLEY JUNCTION - ENUMCLAW BRANCH OF THE MILWAUKEE, FROM SELLICK TO CUMBERLAND, AND USE OF NORTHERN PACIFIC TRACK BETWEEN THOSE POINTS BY MILWAUKEE TRAINS

In the original consideration of this plan it was thought that the entire branch of the Milwaukee between Bagley Junction and Enumclaw could be abandoned, but further study showed that this was not feasible; and the final figures as worked up provided for Milwaukee abandonment between Sellick and Cumberland only, a distance of 8.8 miles on the Northern Pacific, and 7.37 miles of main track and 1.49 miles of other tracks on the Milwaukee. Under the original plan a connection with the Milwaukee was considered about a mile west of Bagley Junction, near Northern Pacific MP 6, but it is believed that at a later date - probably not far distant, when the timber has been removed from territory adjacent to the end of the Green River Branch - the Northern Pacific line will be taken up west of Kangley Junction. For that reason the easterly connection was established at Sellick where there is an important lumber mill now served by both lines. The connection on the west end could have been made with the Milwaukee at Enumclaw, but the Milwaukee objected to this location due to the fact that it has a contract with the White River Lumber Company to run over the Lumber Company's logging road entering Enumclaw, which contract specifies also that the Milwaukee will maintain approximately 2.5 miles of its own track for the use of the Lumber Company; and as this lumber company is a large producer of long-haul business, they do not wish to do anything in

the adjustment of this contract that would in any way affect their business out of Enumclaw. For that reason the westerly connection was established at Cumberland, where the two lines are parallel and adjacent. By establishing the connection at Cumberland the line to be abandoned was reduced by approximately five miles. This materially affected the savings to be made under this proposition. Following is an estimate of the savings to be made, which shows an annual saving to both companies of only $3600:

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SAVINGS IN MILWAUKEE MAINTENANCE

Ordinary repairs - not including superintendence, section foreman labor, or other expenses not eliminated by abandonment of part of line - per road mile	$351	
Annual cost of replacements on 5% annuity basis - per road mile	891	
TOTAL per road mile		$1,242
Annual cost for main line removed: 7.374 mi. @ $1242..		9,159

EXPENSE OF CHANGES AND FOR NEW WORK

Connection at Selleck	$1,200	
Connection at Cumberland	1,800	
Transfer 2 wire telegraph and telephone circuits to N.P. poles, 7.4 mi. @ $50...	370	
Install telephone booths at Cumberland and Selleck and cut in telephones at Enumclaw and Kanaskat	130	
TOTAL		$3,500

PROPOSITION II (continued)

COST OF REMOVAL AND SALVAGE

Salvage recoverable.....		$26,262
Cost of recovery:		
Howe truss & crossings of N.P. $7404		
8.197 mi.track @ $528.....	4328	11,732
Net salvage - - - - - - - - - -		$14,530

SUMMARY

ANNUAL SAVINGS IN MAINTENANCE.....			$ 9,159
5% interest on net salvage.....		$726	
5% interest on new work.....	$175		
Mtce. on new work:			
Selleck connection	60		
Cumberland connection ...	40		
Mtce. on .663 mi. ML converted to spur @ 1/3 of $1242....	274	549	177
NET ANNUAL MILWAUKEE SAVING - - - - -			$9,336
Increase in N.P. maintenance due to Milwaukee traffic.....			2,136
NET ANNUAL SAVING - - - - - - - - -			$7,200

On basis of an equal division of saving:

Northern Pacific annual saving.....	$3,600
Milwaukee annual saving.....	3,600
Northern Pacific to receive from Milwaukee 1/2 of Milwaukee annual saving.....	4,668
and	
1/2 of increased N.P. maintenance....	1,068
TOTAL ANNUAL PAYMENT BY MILWAUKEE to N.P. for use of track - - - - - - - - - -	$5,736

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In this estimate no consideration has been given to any expense for operators at Cumberland or Sellick for delivery of train orders to Milwaukee trains leaving or entering Northern Pacific track. It was thought that this could be handled by means of telephone booths, and as far as the Milwaukee is concerned I think that it could be; but the Northern Pacific would undoubtedly be confront-

ed with a complaint from both the trainmen and the telegraphers under such an arrangement. If it were necessary to install telegraphers at the points of connection, it would reduce the saving to such an extent as to make it still more unattractive.

At the present time the Milwaukee operates one freight train each way daily, except Sunday, between Bagley Junction and Enumclaw. If the Milwaukee were to run over the Northern Pacific track between Selleck and Cumberland, its car miles would have been in 1925 40% of the total car miles on this portion of track.

Mr. Buford was not in favor of this proposition, and was of the opinion that the necessary backup movement between Kanaskat and Palmer Junction, with the resultant delays to Milwaukee trains, would perhaps offset the saving. He did not think that the amount involved was worth consideration. This will be his recommendation to Mr. Gillick. It is the joint recommendation that the matter be dropped.

PROPOSITION III

PROPOSED ABANDONMENT OF MILWAUKEE BARGE SERVICE TO FRONT STREET AT TACOMA AND ELIMINATION OF MILWAUKEE SWITCHING SERVICE ON FRONT STREET AND HANDLING OF MILWAUKEE CARS TO AND FROM FRONT STREET BY NORTHERN PACIFIC

A copy of the completed report on this proposition is attached.

As stated in the report there exists a switching rate to Front Street available to the Milwaukee; and based on 1926 business this would have averaged about ten dollars per car had the Milwaukee turned over its cars for switching by the Northern Pacific. The Milwaukee is very eager to retain its identity on Front Street, and hopes to do so by having the cars spotted on Milwaukee spurs serving the industries. The established switching rate applies only to cars spotted on our spurs and if the Milwaukee insists on the spotting of cars on its own tracks the Northern Pacific should receive additional compensation for the additional switching over and above the switching charge. Considering the savings to be made by the Milwaukee by the elimination of its barge service, it seems to me that it should be willing to pay at least five dollars per car for the additional switching.

It is my idea in regard to this proposition that the duplicate trackage on Front Street should be eliminated and one of the lines retained and made joint. By doing this we would have available for savings the maintenance costs on the abandoned track, which would more than offset any amount we could get from the Milwaukee for the additional switch to its exclusive tracks. I think that this plan should be

put into operation on a switching charge basis with the additional charge for switching to Milwaukee exclusive spurs when requested by that company; and after the plan has been in operation long enough to determine whether or not it is satisfactory to both parties, the matter of abandonment of trackage could then be taken up and worked out to provide greater savings.

The handling of Milwaukee cars in our switch trains will add no expense to the switching service on Front Street; and any amount we get from the Milwaukee for service can be considered as profit.

In talking with Mr. Buford, he suggested that the Northern Pacific allow the Milwaukee to run its own switch engine from the interchange track near Dempsey bridge through our entire terminal to Front Street. This seemed to me to be a proposal to put into operation duplicate service, the elimination of which was the object of this study. The Milwaukee has no way of reaching Front Street except by its barge service, and I do not think that running rights on Northern Pacific track should be considered. In the last talk with Mr. Buford he was agreeable to dropping his suggestion and to letting the Northern Pacific handle Milwaukee cars in Northern Pacific trains provided that the Northern Pacific could deliver the outgoing cars to the Milwaukee on the evening of the same day they were loaded on Front Street. The Milwaukee barge operates to Front Street only when necessity demands, and on those days cars leave TACOMA about 9 pm on its eastward time freight. If Milwaukee cars are handled by the Northern Pacific, they

would not be interchanged to the Milwaukee until 7 pm the day following departure from Front Street. This they claim delays their cars approximately 24 hours, which would be true if the barge ran daily. To get the cars to the Milwaukee on the evening of the same day they depart from Front Street will require a separate and expensive switch from the "Half Moon" yard to the "Head of the Bay" yard. This of course could be handled by the money available for savings, if the Milwaukee paid an additional rate over the switching rate to take care of this additional movement. I believe that this additional switch is unnecessary, and that if the Milwaukee cars are allowed to move in the same manner as Northern Pacific cars are now moved, the service will be satisfactory in comparison to the present service. Based on the contention that the switching of Milwaukee cars in existing Northern Pacific switching movements would not create any additional expense, the Northern Pacific would profit to the extent of approximately $3000 per year on the switching rate, and in addition should receive about $5 per car or $10 per load for the additional switching to Milwaukee spurs, making a total profit of about $6000 per year, with the present volume of business.

It is recommended that favorable consideration be given to this plan.

PROPOSITION IV

PROPOSED ABANDONMENT OF THE MILWAUKEE PASSENGER STATION AT TACOMA: AND USE BY THE MILWAUKEE OF THE UNION PASSENGER STATION

Very little was done with this proposition, inasmuch as the Milwaukee is not interested at this time.

A valuation statement covering the trackage and facilities was prepared by the Valuation Engineer, and this statement is attached, with a map, for file purposes.

It would be necessary for the Milwaukee to abandon its passenger station and coach yard facilities and to electrify the Northern Pacific tracks from Reservation to the Passenger Station.

Due to the nature of the contract with the OWR&N for use of this station and the line between Reservation and Tenino, the Northern Pacific would stand to lose approximately $9000 on the maintenance expense by allowing the Milwaukee to use the depot. This is due to the fact that it would be necessary for the Northern Pacific first to credit the OWR&N with one-fourth of the maintenance between Reservation and Tenino, and of course the Milwaukee wheelage between Reservation and the depot does not nearly approximate this one-fourth.

This proposition can be considered as dropped for the present, and until such time as the Milwaukee seriously considers the improvement of its passenger station facilities at Tacoma.

PROPOSITION V

PROPOSED ABANDONMENT OF A PORTION OF THE MILWAUKEE WILLAPA HARBOR BRANCH, FROM THE CROSSING OF THE TWO LINES ONE MILE WEST OF CHEHALIS JUNCTION TO THE CROSSING AT DRYAD; AND USE OF NORTHERN PACIFIC TRACK BY THE MILWAUKEE BETWEEN THE TWO POINTS

This proposition has developed into the most attractive of any of the four which were completed.

The Milwaukee has a comparatively expensive line to maintain between the proposed points of connection, and very little business in that territory. At the present time the Milwaukee is running a freight train each way six days per week and a passenger train each way daily, compared with Northern Pacific service of one freight train each way six days per week and two passenger trains each way daily.

Following is an estimate showing savings to be made under this proposition, which indicates under the present volume of business an annual payment by the Milwaukee to the Northern Pacific of $18220 for use of 15.8 miles of track between the connections. This statement also shows how the result was arrived at. Milwaukee line to be abandoned is 17.21 miles of main track and 1.88 miles of other tracks.

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MILWAUKEE MAINTENANCE
(based on 1926 traffic and costs)

Ordinary repairs - not including superintendence or other expense not eliminated by abandonment of part of line - per road mile.....	$673	
Annual cost of replacements on 5% annuity basis, per road mile.....	902	$1575

ANNUAL COST for line to be abandoned: 17.21 x 1575----- $27,106

PROPOSITION V (continued)

Expense of changes and new work

Connection near Chehalis	$4340	
Connection near Dryad	1260	$5600
Transfer 2 wire Tel. & Tel. circuit to NP poles		731
Connect depots Dryad, Doty and Chehalis by telephone and cut in telephone at Adna.....		200
New work - - - - - - - -		$6531

Cost of removal and salvage

Salvage recoverable		$62,489	
Cost of recovery:			
Bridges:	$6200		
19.09 mi.track	9763	15,963	
Net salvage------		$46,526	
Annual savings, Milwaukee maintenance - - - - - --			$27,106
5% interest on net salvage		$2326	
5% interest on new work	$327		
Mtce.on new work	457		
Elimination Milw.agent,Dryad		1600	
	784	3926	3,142
Net annual saving due to Milw.abandonment.....			30,248
Increase in NP mtce. due to Milw. traffic.....			4,592
Net annual saving - - - - - - - - - -			$25,656

Milwaukee annual saving

One-half of net annual saving.....	$12,828	
Less one-half NP agent at Adna.....	800	
TOTAL Milw.saving - - - - - -	12,028	

Northern Pacific annual saving

One-half of net annual saving.....	$12,828	
Plus one-half NP agent at Adna.....	800	
TOTAL N.P. saving - - - - - -	$13,628	

Northern Pacific to receive from the Milwaukee

One-half of Milwaukee gross saving	$15,124	
One-half of increased mtce.cost,NP	2,296	
One-half of agent at Adna.....	800	
TOTAL annual payt.CMStP&P to NP----------		$18,220

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PROPOSITION V (continued)

If in putting this plan into operation it is found necessary to retain 2.6 miles of the Milwaukee main track as a spur to serve the station of Ruth, the savings would be reduced as follows:

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Annual Milwaukee maintenance saving.....			$27,106
5% on net salvage	$1917		
5% on new work		$577	
Mtce. on new work		819	
Mtce. on track left in to serve Ruth		1373	
Elim.Milw.agent,Dryad	1600		
	3517	2769	748
NET annual saving due to Milw.abandonment-------			$27,854
Increase in N P mtce. due to Milwaukee traffic--			4,592
Net annual saving - - - - - - - -			$23,262

MILWAUKEE ANNUAL SAVING:

1/2 of net annual saving	$11,631
less 1/2 of N P agent, Adna	800
TOTAL Milw.saving-----	$10,831

NORTHERN PACIFIC ANNUAL SAVING:

1/2 of net annual saving	$11,631
plus 1/2 agent at Adna	800
TOTAL N.P.saving------	$12,431

NORTHERN PACIFIC TO RECEIVE FROM MILWAUKEE:

1/2 of Milw.gross savings.....	$13,927
1/2 of increased mtce. cost,NP	2,296
1/2 of agent at Adna.....	800
TOTAL annual payt.CMStP&P to NP	$17,023

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In talking over this plan with Mr. Buford he was very favorable towards it and his recommendation to Mr. Gillick will be that negotiations should be carried further to put it into operation.

Attached also is a map showing the Milwaukee line to be abandoned, on which is indicated the business done by the Milwaukee at the

abandoned stations, and also the business done by the Northern Pacific on the line it is proposed to use jointly.

In the original consideration of this plan it was thought that the additional Milwaukee traffic on the Northern Pacific track would have no effect on maintenance costs, but upon further consideration it was thought best to include something in the set-up to show the estimated additional cost to the Northern Pacific due to Milwaukee wheelage. Based on 1926 figures, Milwaukee business on the Northern Pacific line would have been about 27% of the total. Assuming that one-third of the maintenance costs on this line are directly due to traffic, and assuming that the Northern Pacific line is now maintained properly at a minimum cost, I estimated that it would cost the Northern Pacific approximately $4592 per year more for the Milwaukee to run over this track, half of which would be paid for by the Milwaukee. This amount of increased maintenance was agreed to by Mr. Crane, but it is more or less a matter of judgment, and cannot be backed up by specific figures. Milwaukee traffic being 27% of the total certainly justifies inclusion of some figure for increased maintenance.

The actual saving under this plan, to the Milwaukee, will be one-half of the net annual saving, amounting to $12828, less $800 for one-half of Northern Pacific agent's salary at Adna - making a net saving to the Milwaukee of $12028. The Northern Pacific annual saving will be one-half of the Milwaukee annual gross saving, or $12828, plus one-half of the Northern Pacific agent's salary at Adna, $800 - making

a total annual payment to the Northern Pacific of $18,220 - all of which is profit to the Northern Pacific, with the exception of the increased maintenance allowance of $2296, which is only an estimate, and I believe it is a liberal one.

For the payment of this amount the Milwaukee would be entitled to operate over Northern Pacific tracks; to load and unload cars on house or loading tracks at the various stations; to load and unload passengers and l.c.l. business at the stations. It would NOT be allowed access to any trackage serving industries or mills now existing. If future industries locate on this portion of the Northern Pacific line the Milwaukee would be allowed access to them if it so desired, on payment of its proportion of the construction and maintenance charges on the tracks involved. This is based on the assumption that under present conditions they have at least an equal opportunity with the Northern Pacific to attract industries to their line; and a clause to this effect will be necessary in the contract. Otherwise, by abandonment of its line the Milwaukee gives up all hope of increasing its business within the limits of this abandonment, and the proposition becomes unattractive to it.

The $18,220 represents payment by the Milwaukee to the Northern Pacific on the basis of business handled by the Milwaukee over its line during the year 1926. The contract must necessarily be a long-term document, and the problem is to make it flexible enough to take care of the fluctuation in Milwaukee as well as Northern Pacific traffic. I believe that it should be made on the basis that approxi-

mately one-third of the maintenance costs are due and directly proportioned to traffic, and that any increase in the Milwaukee business on its present line would increase its maintenance costs; and this increase should be divided between the two lines, should they enter into this agreement. It will have to be assumed that the maintenance costs as established by Mr. Crane and me are minimum costs for the handling of the present volume of business. Any additional wheelage will also increase the Northern Pacific maintenance cost, and this should be taken into consideration.

The normal contract for a proposition of this kind would be for the Milwaukee to pay one-half of the carrying charges on the facilities used, and maintenance on a user basis. An estimate on this basis amounts approximately to $22,000 per year. This of course would give the Milwaukee use of all the facilities on the Northern Pacific line, while the plan under consideration, as stated above, does not give access to existing industries. The set-up in its present form, as shown above, is the more favorable to the Northern Pacific.

The matter of dispatching Milwaukee trains over the Northern Pacific line has been gone into; and I believe that it can be worked out nicely by installing dispatching circuit in Milwaukee depots at Chehalis and Doty, and by a transfer of the Milwaukee telegraph line to Northern Pacific poles between the points of connection.

The Milwaukee is desirous of serving the small town of Ruth, the most important station on its proposed abandoned line. To do this they propose to leave in 2.6 miles of the present track, connecting

with our line near Bunker, where they are parallel. Mr. Crane originally deducted this portion of the line from that part to be abandoned, but this has now been changed and the entire mileage between crossings is credited. I told Mr. Buford that should it be necessary to leave in the 2.6 miles serving the town of Ruth, due to an order of the Interstate Commerce Commission, we would reduce the maintenance credit on this line to one-third of that of a main line track, and include it in the proposal as a necessary part of it, but that should this track be left in solely for Milwaukee traffic reasons, with its main line operation transferred to the Northern Pacific track, we would not consider it as a deduction from the maintenance saving. In his recommendation to Mr. Gillick he will agree to this understanding. The estimate of savings shown above gives the results under both plans of abandonment.

There are no industries located on the Milwaukee line to be abandoned; and I do not think that there will be any trouble in getting permission to abandon the entire 17.21 miles, provided that the shippers can haul to the Northern Pacific track, which would be arranged for in any proposed agreement.

Under this plan all business on both sides of the Northern Pacific track, with the exception of existing industries now served by the Northern Pacific, becomes competitive, but the traffic objections to this should not be serious, as both roads would have an equal right

to obtain what business they could and at the present time the Milwaukee business on the proposed abandoned line is greater than the Northern Pacific business between the connections.

Favorable consideration of this proposition is recommended.

PROPOSITION VI

PROPOSED ABANDONMENT OF NORTHERN PACIFIC BRIDGE 1 ON THE OCOSTA BRANCH AT COSMOPOLIS; AND USE OF JOINT OWR&N-MILWAUKEE BRIDGE BETWEEN ABERDEEN AND SOUTH ABERDEEN BY NORTHERN PACIFIC NON-JOINT SWITCH ENGINE

Under contracts of June 13, 1913, October 25, 1921, and December 23, 1924, the switching at Aberdeen, Hoquiam, and Cosmopolis, is done jointly. The Northern Pacific performs the work; charges are prorated on the basis of cars handled. Under this arrangement the switch engine while engaged in joint switching is permitted to use the OWR&N-CMStP&P bridge over the Chehalis River, between Aberdeen and South Aberdeen. The Northern Pacific has one switch engine assignment, a large part of which switching is non-joint. This is a six-day per week assignment, with the tie-up at Cosmopolis. This crew does the joint and non-joint switching at Cosmopolis; crosses the river; and does non-joint switching at Aberdeen Junction, and between Aberdeen Junction and Aberdeen. On two days per week - Tuesday and Friday - this crew makes a trip down the Ocosta Branch to Markham and return. While crossing the river - on account of being engaged in non-joint switching - it is necessary for them to use Northern Pacific bridge 1, and this movement is the only use which is made of that bridge. On the two days per week when the engine goes to Markham, they use the bridge four times per day, and on the other four days they use it twice per day, making a total of 832 movements per year. If the Northern Pacific bridge were abandoned, these movements could be made over the OWR&N-Milwaukee bridge with very little increase in switching expense. It has been estimated that the Northern Pacific bridge represents an annual cost for ordinary repairs and depreci-

ation of $12,869.

xxxxxxxxxxxxxxxxxxxxxxxxxxx

ANNUAL COST OF BRIDGE 1, OCOSTA BRANCH, ON A 5% SINKING FUND BASIS

Annual depreciation on bridge	$8074
Painting	217
Ordinary repairs	2400
Bridge tender	1650
Supplies	108
Miscellaneous	100
Track maintenance, .32 miles	320
TOTAL annual cost - - -	$12869

xxxxxxxxxxxxxxxxxxxxxxxxxxx

The cost of removal of the bridge, at approximately $20,000 is offset by the value of salvage. With a possible increase of $1500 per year in the switching costs, there remains a net cost of $11369 to be applied to any other arrangement to be made. This amounts to $13.70 per movement, and on the basis of car count during the year 1926 amounts to approximately $1.80 per car. There were 3889 cars and 2496 equivalent cars in engines and cabooses moved over Bridge 1 during the year 1926. This traffic would have been about 12% of the total non-joint business on the OWR&N-Milwaukee bridge in 1926.

The OWR&N is interested jointly with the Milwaukee in this proposition, and Mr. O'Brien has approached Mr. Brown with a proposition for allowing the Northern Pacific non-joint engine to use this bridge - in trade for access to some Northern Pacific exclusive industrial spurs. I believe that this is not a trading proposition, and that it should not be approached from that angle. The present switch-

ing contract covering the joint switching can be terminated on five days notice by any of the parties to the contract - and the savings to be made by a use of the other bridge, should a satisfactory rate be obtained, are not great enough to risk the opening up of this contract - if it is approached from this angle by either the OWR&N or the Milwaukee. But could we obtain a flat rate of less than $13.70 per movement, it would show a saving. The $12869 maintenance cost is built up on a 5% annuity basis for depreciation. The bridge is in good shape at the present time and of course will not require actual expenditure of this amount each year for some time.

-xxxxxxxxxx-

0916

Saint Paul, January 12, 1928.

Mr. W. W. Judson:

On receipt of your letter of October 11 about set up for abandonment of Bridge 1 over the Chehalis River on the Ocosta Branch, I asked Mr. Clements to furnish the information you requested. His reply has just been received, dated January 10, and I am enclosing you a copy herewith.

Although this is now probably too late to be of any service, wish you would go over the figures with Mr. Clements, who is now on his way to Seattle.

HES:H

enc

Chief Engineer.

cc Mr. M. F. Clements

MFC

Saint Paul, January 10, 1928.

Mr. H. E. Stevens:

Referring to your letter of October 15th in regard to the abandonment of Bridge 1, over Chehalis River on the Ocosta Branch.

Bridge 1 consists of one 293 foot Draw Span with two 155 foot steel spans on the east end and 826 lineal feet of timber trestle approach. The draw span is of light construction but the two 155 foot spans were designed for 116 ton loading and are good for a class "W" engine.

If the line were abandoned the bridge would be removed. The following estimates should be used in considering the economy:

Valuation				$167,000
Cost of removing the bridge				32,000
Salvage value				18,700
Annual Cost of N. P. Bridge				
Interest at 5% $167,000 x .05 =				8,350
Annuity at 5%				
Permanent portion	70 yrs.	135000x 1.02=	$ 137	
Timber "	10 "	31000x 71.57=	2218	
Paint	5 "	1000x167.36=	167	
		167000		
Minor Maintenance			826	
Insurance			183	
Operation of Draw			4180	7,711
				$16,061

Mr. Judson furnished the information that there are 832 movements per year over Bridge 1, which could be moved over the O. W. R. & N. Bridge. The cost per movement due to the bridge, is:

$16,061 ÷ 832 = $19,30

I do not have any definite information in regard to the value of the O.W.R.& N. Bridge. In 1917 Mr. Bratager made some studies in regard to the use of the bridge and at that time he used an amount of $281,936. Mr. Judson uses a value of $400,000. The latter figure is probably more nearly correct and the annual cost of $38,000 agrees with the latter valuation.

The cost of operating the Northern Pacific special service over the O.W.R.& N. Bridge would be determined from the cost of the OW Bridge plus the net annual cost of the Northern Pacific bridge removed. Inasmuch as I do not know the total movements over the OW bridge, the cost per movement cannot be determined.

Net Annual Cost of Northern Pacific Bridge

Investment	$167,000	
Cost of Removal	32,000	
	199,000	
Less Salvage	18,700	
Net Investment	$180,300	
Interest on Net Investment at 5%		$ 9,015
Saving in Maintenance & Operation of Bridge		7,711
Net Annual Cost due to abandoned bridge		$ 1,304

The net amount per movement for Northern Pacific special trains which would be transferred from the Northern Pacific to the OW Bridge:

$1304 ÷ 832 = $1.57

This deducted from present cost of Northern Pacific Bridge is

$19.30 - $1.57 = $17.73

Any amount due to the use of the OW bridge which would result in a less cost per movement for the Northern Pacific special business than $17.73 would be a saving.

File returned.

M. S. Clements

Bridge Engineer.

Encl.

6916

Seattle, Wash.
Jan. 7th, 1928.

Mr. H. E. Stevens:

You will recall conversation we had on my last trip to St. Paul in regard to the process used in printing report on the proposed elimination of the Milwaukee barge service at Tacoma.

I called on the American Blue Printing Company at Seattle where the work was done and they advised that the cover and contents are just ordinary brown line prints. The typewritten sheets were back carboned, negative was made from these sheets and prints made from the negative in a blue printing machine. A good grade of paper was used and great care used in the washing process. They have the latest type blue printing machine and the good results obtained are due to the paper being held tightly against the glass by creating a vacuum under the glass by means of an air pump attached to the machine.

H. M. Judson

Ans Seattle
Auto 1/12
Rec'd 1/14

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

6916

St.Paul, December 16, 1927.

H. E. Stevens
Glendive, Mont.

Judson wires Will be in St.Paul tuesday December twentieth Mr. Bulford on line and will be unable to see him before leaving here Mr. Byram has requested Mr. Cranes presence at Chicago meeting. M-146

R. E. Gemmell

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

6916

St.Paul, December 16, 1927.

H. E. Stevens
Glendive, Mont.

Mr. Williamson wires Judson copy to you - A meeting has been arranged at Chicago December twenty-second with Mr. Byram and other Milwaukee representatives to discuss the proposals you and Mr. Crane have worked out. I want you to be present and suggest you be in St.Paul not later than December twenty-first as we will want to have a preliminary conference. Mr. Stevens will confirm. M-147

R. E. Gemmell

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

cf x

Seattle Dec 16 1927

192 FEWilliamson
193 HEStevens
StPaul

Will be in StPaul tuesday Dec twentieth Mr Buford on line and will be unable to see him before leaving here Mr Byram has requested Mr Cranes presence at Chicago meeting

WUJudson

213p

6916

St.Paul, December 16, 1927.

Mr. E. T. Dakin:

I hand you herewith the Accounting Dept. form 6-A, for the years 1922 & 1923 which I borrowed from you last May for the use of Mr. W. W. Judson.

REG-w
encl

Chief Engineer

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED 6916 M.

N P Cy
Seattle 1-1/16-7

To H E Williamson
Care J.
Dickinson
By M. Stevens
Genl Mgr

Will be in Spokane tuesday
the twentieth Mrs Byram
on June and will be unable
to see him before leaving
here Mr Byram has requested
Mr Cranes presence at Chicago Meeting
W C Judson

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

55 NP CN

St Paul Dec 16-27 H E Stevens

Glendive

M r Williamson wires Judson copy to you: A meeting has been arranged at Chicago Dec twenty second with ~~my~~ Mr Byram and other Milwaukee representatives to discuss the proposals you and Mr Crane have worked out I want you to be present and suggest you be in St Paul not later than December twenty first as we will want to have a preliminary conference Mr Stevens will confirm M-147

R E Gemmell

323P

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

, M.

4:3 Mpcu

St paul 17th

Mr E Stevens

Glendive

Judson wires will be in St paul tuesday December twentieth Mr Bryans on same train will be unable to see him before leaving here Mr Bryans has requested Mr Crans presence at Chicago meeting Dec 16

R E Gemmell 3057

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED 6916 M.

Orofino, December 13, 1927.

F E Williamson,
St. Paul, Minn.,

W-43. I expect to be in St. Paul the 19th, or 20th. Presume you have advised Judson of arrangements.

H E Stevens

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED 6916 M.

SF S

Seattle Dec 13 1927

H E Stevens
Orofino

Mr Donnelly has arranged for conference with Byram at Chicago Dec twenty second proposals worked out by Judson and Crane will want you and Judson present. W-43

F E Williamson

1056AM

6916

Seattle, Wash.
Dec. 13, 1927

Mr. F. E. Williamson
Vice President
St. Paul, Minnesota

Dear Sir:

Referring to your letter of December 11 in regard to proposition #2, abandonment of a portion of the Bagley Jct. - Enumclaw Branch of the Milwaukee:

1. The existing contract which allows the Milwaukee joint use of the logging road between Enumclaw and Enumclaw Jct. presents a complication in the proposition. The traffic situation at Enumclaw makes this contract an important point for consideration by the Milwaukee in any proposed change of operation. In the study of this proposition we considered two plans. The Milwaukee could run over the Northern Pacific track into Enumclaw and under an arrangement satisfactory to the logging company could perhaps continue to pay their obligation under the contract, or a connection could be made between the Northern Pacific and Milwaukee at a point near Veazie, allowing Milwaukee trains to enter and leave Enumclaw as at present. The estimate handed to you with my letter of December 9 did not take into consideration any saving on the trackage covered by this contract.

2. It is very doubtful if the Milwaukee would consider abandoning their station at Enumclaw. They are very desirous in this proposition, as well as all others, to retain their identity and I think they will hope to overcome traffic objections by maintaining their station and agent.

Both of these items are matters which have not been taken up with the Milwaukee but I will go over them with Mr. Buford when I see him and will be able later to let you know more in regard to their attitude. A joint use of the Northern Pacific facilities at Enumclaw in addition to which was shown in my estimate would, of course, increase the amount of money available for negotiations.

Yours truly,

W. W. Jackson

Assistant Engineer.

WWJ:B

cc HES

Seattle, Wash.
Dec. 13, 1927

Mr. P. E. Williamson
Vice President
St. Paul, Minnesota

Dear Sir:

Referring to your letter of December 11 in regard to proposition #1, proposed abandonment of Milwaukee barge service between Seattle and Bellingham:

1. The estimate submitted with my letter of December 9 did not contain any saving due to a proposed discontinuance of Northern Pacific switching at Bellingham. This is one of the uncompleted items of the study and has not been worked out to show definitely what saving would result from such a plan. I am of the opinion at this time that joint switching at Bellingham, together with a consolidation of station forces, would result in an attractive saving.

2. It is difficult to estimate in money value the advantage to be gained by the Milwaukee with service six days a week at Bellingham instead of tri-weekly. Additional study will have to be made, taking into consideration the revenue accruing from Bellingham cars and what additional cars they would probably hope to obtain thru the bettered service.

3. To secure trackage rights over the Milwaukee from Deming to Bellingham, to be used in case individual operation is later desired, will require an arrangement whereby the Northern Pacific would pay a proportion of the maintenance and carrying charges between these points. The usual basis of one-half the carrying charges and percentage of maintenance on user basis for Northern Pacific business in 1926 would have amounted to approximately $24,000 for carrying charges and $11,000 for maintenance. There is very little intermediate business between Deming and Bellingham and with no participation in business on this line a substantial reduction in the carrying charges should be obtained. The new train to be put on between Deming and Bellingham by the Milwaukee, which will handle Northern Pacific cars, will cost for engine and train service approximately $25,000 per year. Based on 1926 business the Northern Pacific proportion of this train cost would have been approximately $18,000.

4 & 5. The Great Northern trackage charge, on account of increased cars on the joint line between Lowell and Snohomish and between Delta and Kruse, was not shown in the estimate with my letter of December 9. It was Judge Reid's opinion that by handling Milwaukee cars over these joint lines in Northern Pacific trains, with no participation in

the revenue, we would in reality be allowing the use of these lines to a third party. If the Great Northern makes the same interpretation it would open the contracts and necessitate the Milwaukee paying one-third of the carrying charges which, together with the maintenance on user basis for their cars, would amount to approximately $27,000 per year. This would reduce the Northern Pacific percentage of maintenance and carrying charges about $9,000. To avoid the Milwaukee expense on ~~their~~ those joint lines, which would have to come out of the saving from the elimination of the barge service, and to make this expense available for negotiations, it was considered in the latest plan worked out that Trains 675 and 676 could be run over the Hartford Line instead of thru Everett. There seems to be no serious objection to rerouting these trains and there is a probability that it will be put into effect regardless of negotiations with the Milwaukee. This change will in addition save the wheelage charge on the joint lines for the thru cars on these two trains. Everett business to be handled to and from these trains by means of switch engines now operating at Everett. In our first study of this proposition with Trains 675 and 676 running thru Everett it was necessary to consider that the Milwaukee would desire to interchange at Everett all cars from and destined to points east of Cedar Falls for movement between Cedar Falls and Everett on the Everett Branch, and with interchange at Seattle only for cars destined to or from Seattle and points south. By routing Trains 675 and 676 via the Hartford Line interchange at Everett would not be made and all cars would be interchanged at Seattle. This plan, in addition to eliminating the expense on the joint lines at Everett, would result in more Milwaukee car miles over the Northern Pacific, making possible greater profits to the Northern Pacific.

It is very probable that the Milwaukee will desire an arrangement to give them, at some future time, rights to run their own trains over the Northern Pacific between Everett and Deming.

These are all matters which I think will come up in talking with Mr. Buford and later we will have a more definite plan to follow.

Yours truly,

W. W. Jackson

Assistant Engineer.

WWJ:B

cc HES

PROPOSITION # 1

Proposed abandonment of Milwaukee barge service between Seattle and Bellingham and the handling of Milwaukee cars in Northern Pacific trains between Seattle and Deming. Also includes a proposed abandonment of the Northern Pacific Bellingham Branch and the handling of Northern Pacific cars in Milwaukee trains between Deming and Bellingham.

\- - -

Based on 1926 Operation.

MILWAUKEE OPERATION

Annual Credits under proposed plan.		
Maintenance and operation of barge line.	$74,423	
Interest on net salvage	300	
Total Credits		$ 74,723
Annual Debits under proposed plan.		
Increase in operation of other barge lines due to transfer of equipment	834	
Interest on new connection	625	
Maintenance on new connection	625	
Net additional rail costs west of Cedar Falls, including cost of new train on Bellingham Div.	15,427	
Total Debits		17,511
Net Credits		$57,212

NORTHERN PACIFIC OPERATION

Annual Credits under proposed plan.		
Maintenance Bellingham Branch	$20,700	
Elimination train #931 & #932	25,050	
Interest on net salvage	2,415	
Total Credits		48,165
Annual Debits under proposed plan.		
Interest on new connection	625	
Maintenance on new connection	625	
Estimated additional cost of handling NP cars between Wickersham and Deming	3,709	
Estimated cost to handle Milwaukee cars in existing trains	12,636	
Total Debits		17,595
Net Credits		$ 30,570

Total Milwaukee net credits under proposed plan	$57,212
Total Northern Pacific net credits under proposed plan	30,570
Total amount available for payment by one company for services performed by the other company and for savings and profits to both companies	$ 87,782

The amounts shown as debits to each company for handling the cars of the other company is the out of pocket expense only for engine and train service costs and includes no percentage of maintenance or carrying charges.

PROPOSITION # 2

Proposed abandonment of a portion of the Bagley Junction - Enumclaw Branch of the Milwaukee from Sellick to Enumclaw and the use of Northern Pacific track between these points by Milwaukee trains.

MILWAUKEE OPERATION

Annual Credits under proposed plan.		
Maintenance	$ 17,458	
Interest on net salvage	1,313	
Total Credits		$ 18,771
Annual Debits under proposed plan.		
Carrying charges on new work	410	
Maintenance on new work	410	
Total Debits		820
Net Credits		$ 17,951

For the purpose of this estimate no additional expense to Northern Pacific is shown for use of line by the Milwaukee. Final report will probably include some expense to allow Milwaukee trains to receive train orders before entering Northern Pacific line at Sellick.

Increased expense of maintenance due to Milwaukee traffic is not considered.

Total amount available for negotiations for saving to Milwaukee and profit to Northern Pacific $ 17,951

Survey for 8 miles. 11715

PROPOSITION # 3

Proposed abandonment of Milwaukee barge service to Front Street at Tacoma and the elimination of Milwaukee switching service on Front Street. Milwaukee cars to be handled to and switched on Front Street by the Northern Pacific.

MILWAUKEE OPERATION

Annual Credits under proposed plan.		
Maintenance & Operation of barge line	$13,248	
Interest on net salvage	1,188	
Total Credits		$ 14,436
Annual Debits under proposed plan.		
Carrying charges on new connection	35	
Maintenance on new connection	50	
Total Debits		85
Net Credits		$ 14,351

Total amount available for negotiation for saving to Milwaukee and profit to Northern Pacific. $ 14,351

On basis of average cost of handling cars to Front Street, Tacoma, it would cost Northern Pacific $4423 to perform service required by Milwaukee.

It is estimated that there will be very little, if any, additional expense to Northern Pacific for doing this work as all cars will move in regular switching movements with no increased time for switching.

PROPOSITION # 4

Proposed abandonment of the Milwaukee passenger station at Tacoma and the use by the Milwaukee of Northern Pacific station:

No data available at the time to show present cost of maintenance and operation on the Milwaukee station.

This proposition is not attractive until such time as the Milwaukee decide to better their passenger station facilities at Tacoma.

PROPOSITION # 5

Proposed abandonment of a portion of the Milwaukee Willapa Harbor Branch Line from the N. P. crossing one mile west of Chehalis Junction to crossing at Dryad and the use of the Northern Pacific track by Milwaukee trains between these points.

MILWAUKEE OPERATION

Annual Credits under proposed plan.		
Maintenance	$ 32,384	
Interest on net salvage	1,837	
Total Credits		$ 34,221
Annual Debits under proposed plan.		
Carrying charges on new work	490	
Maintenance on new work	780	
Total Debits		1,270
Net Credits		$ 32,951

No additional expense to the Northern Pacific for use of line by Milwaukee is considered in the estimate.

Total amount available for negotiations for saving to the Milwaukee and profit to the Northern Pacific. $ 32,951

PROPOSITION # 6

Proposed abandonment of Northern Pacific Bridge # 1 on the Ocosta Branch at Cosmopolis and the use by the Northern Pacific now-joint switch engine of the joint C.W.-Milwaukee Bridge between Aberdeen and South Aberdeen.

NORTHERN PACIFIC OPERATION

Annual Credits under proposed plan.		
Maintenance and Operation	$16,277	
Interest on net salvage (salvage in bridge approximately pays for its removal)	---	
Total Credits		$ 16,277
Annual Debits under proposed plan.		
(A difference of opinion exists as to method and cost of operating switch engine over joint bridge. Allowance is made for a possible added expense)	1,500	
Total Debits		1,500
Net Credits		$ 14,777

No additional expense will be incurred on the joint bridge due to use by N. P. switch engine.

Total amount available for negotiations for profit to the CW and Milwaukee and for saving to the N.P. $ 14,777

It must be considered that the above maintenance and operation cost includes the annual cost on several items which are in good repair and on which money will not have to be expended for several years.

Summary of estimated operating savings available through negotiations for savings or profits to both companies and for payment by both companies to the other company for services performed under the outlined six propositions of the joint use of various facilities by the Northern Pacific and Milwaukee.

	Milwaukee savings available for negotiation.	Northern Pacific savings available for negotiations.
Proposition # 1	$ 57,212	$ 30,570
" # 2	17,951	
" # 3	14,351	
" # 4 (No data at this time).		
" # 5	32,951	
" # 6		14,777
	$122,465	$ 45,347
		122,465
Total		$167,812

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED M.

Seattle 12-13-27 W W Judson Seattle

Mr Williamson wires Judson Copy to you —

A meeting has been arranged at Chicago December twenty-second with Mr. Byram and other Milwaukee representatives to discuss the proposals you and Mr. Crane have worked out. I want you to be present and suggest you be in St.Paul not later than December twenty-first as we will want to have a preliminary conference. Mr. Stevens will confirm. W-44

F E Williamson

Copy Mr.H.E.Stevens

6916

Seattle, Wash.
December 12, 1927.

Mr. H. E. Stevens:

I am returning herewith Accounting Department Form 6-A for the years 1922 and 1923, which were borrowed from Mr. Dakin's file for my use and sent to me with your letter of May 4th.

W. W. Judson

WWJ:H

Enc.

At Seattle, Wash.,

December 11, 1927.

MR. W. W. JUDSON:

Your Proposition 2, proposed abandonment of a portion of the Bagley Junction - Enumclaw Branch of the Milwaukee from Sellick to Enumclaw and the use of Northern Pacific track between these points by Milwaukee trains.

1. Is there any complication account Milwaukee now using part of Hanson's logging road as I understand it jointly?

2. Would Milwaukee consider abandoning their station and making the Northern Pacific station joint? If so there would be a further saving to both companies but there might be traffic objections.

Copy Mr. H. E. Stevens

At Seattle, Wash.,

December 11, 1927.

MR. W. W. JUDSON:

Your letter December ninth, estimate of savings resulting from joint use of facilities by Northern Pacific and Milwaukee .

Proposition 1 - Bellingham. The following comments occur to me:

1. Does this propose continuance of Northern Pacific switch engine at Bellingham?

2. What amount should be included for Milwaukee traffic advantage account daily service?

3. We should protect the future, if the Bellingham Branch is eliminated, by securing trackage rights Deming to Bellingham to be used in case individual operation later desired.

4. Has Great Northern trackage charge account increased cars been considered account handling Milwaukee cars in Northern Pacific trains?

5. Is there any legal obstacle to handling Milwaukee cars in Northern Pacific trains under Great Northern trackage contracts in Everett territory?

You have probably considered all these points but I thought it well to call them to your attention.

Copy Mr.H.E.Stevens


OFFICE OF CHIEF ENGINEER
DEC 17 1927
N.Y.

Saint Paul, December 9th, 1927.

Mr. W. W. Judson: 6916

Your message of the first about principles used in set up of net savings by proposed elimination of Milwaukee barge service on Front Street, Tacoma:

My letter to you of November 26 was based on the assumption that the $2770.00 deduction from the annual savings represented the interest on the net property retired, and that the charge of $16,816.00 represented the operating cost of the barge service.

On further examination of your report I find that I was in error in both of these assumptions and that the barge cost charge of $54.60 includes the interest charge on the property used in the barge service, and that of the $2770.00 item, $2735.00 presumably represents interest on the full original investment of the property retired.

On this basis, with interest included in the first item and deducted in the second item, you have arrived at precisely the same result you would have arrived at had the interest charge been omitted altogether from both items, as suggested in my letter should be the case.

Your message of the first apparently was intended to be based on the principles used in the set up of investments in steam and electric operation studies over the Cascade Mountains, where we set up a different showing for the first years operation than for succeeding years. In doing so we had in mind showing a specific thing, which it is not necessary to show in your Front Street study, nor have

you shown it in your set up of figures.

On further consideration of this subject I think you will agree with me that it is entirely unnecessary to put in and take out the interest charges as you have done on page 10 of your report, and doing so is somewhat misleading unless in future reports you split the first item as between operating expenses and interest charges.

Chief Engineer.

HBS:H

Seattle, Washington.
December 9th, 1927.

Mr. F. E. Williamson,
Vice President,
St. Paul, Minn.

Dear Sir:

At a recent conference with you and Mr. Donnelly you requested an estimate of the savings which would result from a joint use of facilities by the Northern Pacific and the Milwaukee, which would be available through negotiations for savings or profits to both companies and for payment by both companies to the other company for services performed under the six propositions, which were outlined to you and study of which has not been completed.

Attached are estimates of these savings made from data now available. The amounts shown have not been checked by Mr. Crane and this should not be considered as a joint report.

The credits shown include an estimate of the money which would be saved by the abandonment of a facility, and the debits include the fixed expense necessary to put the plan into operation, together with an estimated out of pocket expense of handling cars for the other company.

There is no item shown in the debits or credits for the amount to be paid by one company to the other for services performed, as it was agreed at the conference that this was a matter of negotiation. Figures will be available later to show the amount of service which will be performed by both companies for the other company, and the relation this service bears to the total expense of the line over which the service is performed.

Under proposition # 1 it will be necessary for the Milwaukee to put on an additional train between Deming and Bellingham and the expense for this train is shown under Milwaukee debits. Northern Pacific will handle Milwaukee cars in existing trains and the expense shown under Northern Pacific debits for the service is an estimated additional expense to these trains, due to the handling of Milwaukee cars.

The only services performed by the Milwaukee for the Northern Pacific are in proposition # 1 and # 6. In proposition # 1 the Milwaukee will handle Northern Pacific cars between Deming and Bellingham and in proposition # 6 the Northern Pacific would use the joint OW-Milwaukee bridge at Aberdeen. From this it will be seen that the large part of the total savings shown will be available through negotiations to the Northern Pacific for services performed. It is assumed that the negotiations will include the consideration of the traffic advantages to the Milwaukee in at least two of these propositions.

Yours truly

H. N. Judson

Assistant Engineer.

cc - Mr. H.E. Stevens.

J:h

H. Sleeper

From letter 8th to Mr. Judson

The $2700 represents Interest on Ledger Value of Landing + Barge equipment = $2735 + $35 as interest on $700 new work all at 5% interest. The $35 interest item should strictly be deducted from the gross earning.

H.S. 1/9

Saint Paul, December 8, 1927.

Mr. W. W. Judson:

Your message of the first about principles used in set up of net savings by proposed elimination of Milwaukee barge service on Front Street, Tacoma:

My letter to you of November 26th was based on the assumption that the $2770.00 deduction from the annual savings represented the interest on the net property retired, and that the charge of $16,816.00 represented the operating cost of the barge service.

On further examination of your report I find that I was in error in both of these assumptions and that the $2770.00 presumably represents the interest on the original investment of the property to be retired. Also the barge cost charge of $54.60 includes the interest charge on the property used in the barge service, so that, in effect, you have put in the interest in the first item and deducted it in the second item, or, in other words, arrived at precisely the same result you would have arrived at had the interest charge been omitted altogether from both items as suggested in my letter should be the case.

Your message of the first apparently was intended to be based on the principles used in the set up of investments in steam and electric operation studies over the Cascade Mountains, where we set up a different showing for the first years operation than for succeeding years. In doing so we had in mind showing a specific thing, which it is not necessary to show in your Front Street study, norhave

St. Paul, Minn.

December 7, 1927.

Mr. H. E. Stevens:

Referring to your notation on Mr. Judson's wire relative to his report on the joint study of Front Street situation at Tacoma.

The subject of profit and loss charge is one that may develop considerable argument, and could be carried through all the ramifications of depreciation accounting, such as is proposed by the Interstate Commerce Commission in a recent order, as well as the recapture clause of the Transportation Act. For the purpose of an economic analysis such as this, in view of the present accounting status and the financial resources of both the Milwaukee and the Northern Pacific, it seems to me we should take a straight cut, common sense view of the problem. The railroads are concerned in this study with any relief to operating expenses thereby increasing net revenues, the saving in operating expenses, of course, being properly debited with the appropriate interest and maintenance charge for any new property created in connection with the revised operation. The present investment of the Milwaukee involved in this study is no doubt covered in some form by interest bearing securities,

December 7, 1927.

Mr. H. E. Stevens - #2

and these securities would not be altered by crediting the retirement to investment in road and equipment, with a corresponding debit to profit and loss, so that the present interest burden, whatever it may be, will continue. From this it is clear that the interest burden is one of the constant factors in the problem, the same as other charges, such as General Expenses, which might be allocated to the particular operation in question, so that the short cut method is obviously to disregard the interest charge on the present investment on both sides of the set-up. This is essentially what Mr. Judson has done in this report, even though the basic principle may not have been so recognized. The variation in his result from that which I have just outlined arises from the fact that he has charged interest on the net retirement value rather than upon the original investment.

LY-JW

L. Y. Sayre
Assistant Chief Engineer.

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

160 cf x

Seattle Dec 1 1927 6916 HEStevens

StPaul

Your letter of twenty sixth regarding Tacoma report clearly understand that interest on abandoned property would not be shown in accounts as a charge after property has been charged off to profit and loss. Effort made to show that saving would be reduced due to loss first year on retirement. Would not net retirement loss first year be considered a direct financial loss and should it not be considered in arriving at saving in subsequent years. If in showing typical annual results this loss is not considered what becomes of the interest on amount credited to appropriate accounts to offset charge to profit and loss. Before completing studies as a joint report it will be necessary to go over with you in detail various abandonments this is the same problem as explained in my message of Sept 2nd WWJudson 24op

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED M.

161 cf x

Seattle Dec 1 1927

HEStevens

StPaul

Have talked with Mr Donnelly and Mr Williamson decided necessary to defer further work joint study until Mr Crane is released from assignment on Merger study Tacoma report not discussed suggest you return all copies to me to be corrected and submitted later now working on memorandum for Mr Williamson showing approximate results and possibilities of study

WWJudson

241p

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

Saint Paul, November 29, 1927

J T Gillick
Chf Op.Officer
CM&StP Ry

6916

C h i c a g o

C-94 It is satisfactory to us to discontinue special studies being made by Messrs. Judson and Crane. C-2

F E Williamson

Cy HHS

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

161 cf GI

6916

Seattle nov 29 1927 H E Stevens

Stpaul

Your wire have advised Gillick satisfactory to discontinue special study being made by Judson and Crane. He suggests suspending for period of about one month or six weeks I think report should be made of the work done up to- date and after this report is made we can see whether we want to continue the study.

F E Williamson

135pm.

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

Chicago Nov 28 1927

F E Williamson

St Paul

In appointing a committee to make study of terminal situation we would like to use Engineer Crane who as you know is engaged with your Mr Judson in making special studies and on account of this other pressing work we would like to suspend the other for a period of about one month or six weeks. Will this be satisfactory to you. C-94

J T Gillick

503 pm

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

6916

Saint Paul November 28 1927

F E Williamson On Car Yellowstone
Train #3 Pasco Division

Judson advises Mr Crane will probably go on Committee making investigation for Mil barnyard in connection with consolidation paussus data.

He and Judson have collected a large mass of data about possible economies but in view of present situation believe we should promptly stop untaught all activities along the lines we have been working.

Suggest you see Judson on your arrival Seattle S-44

H E Stevens

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

Saint Paul November 28 1927

W W Judson Seattle

Your wire 26th. Have wired Mr Williamson suggesting we immediately defer any further investigations along the lines you have been working. He will discuss with you S-45

H E Stevens

N. P. 1386 12-24

172 cf x

TELEGRAM—BE BRIEF

TIME FILED

M.

Seattle Nov 26 1927

HEStevens

StPaul

Indications now are that Mr Crane will be appointed by Mr Earling on a committee making investigations for the Milw in connection with the merger will advise later when I know definitely in regard to his plans and how it will affect our present work

WWJudson

215p

6916

Saint Paul, November 26, 1927.

Mr. W. W. Judson:

I have your letter of the 19th transmitting report covering proposed elimination of Milwaukee barge service on Front Street, Tacoma, and handling this business by the Northern Pacific.

I have not transmitted a copy of this report to Mr. Williamson as yet as it seems to me you should correct what appears to be a very glaring arithmetical on page 8, where you divide $2,203 by 598 cars and arrive at a result of 37¢ per car; whereas the correct figure should be $3.68.

On Page 5 of the report you estimate the Milwaukee retirements at $47,614 and on Page 10 apparently set up interest on this amount at something approximating 5⅛%; the amount shown being $2,770.

It seems obvious that interest should not be charged on property retired and charged off to Profit and Loss. It seems you have yourself made this apparent on Page 5 where you deduct the accrued depreciation and the sale value on the barge. Charging the balance to Profit and Loss is, in effect, charging off at one entry the depreciation which would otherwise go on accruing until the barge had been retired at some date in the future were it to be continued in service.

If a new method of operation was adopted by the Company, thereby making the barge useless, the balance of its retirement would at once be charged off to Profit and Loss, and not go on accruing interest as you have set up on Page 10.

Even with these very apparent discrepancies corrected the

proposition would still be quite unattractive both from the financial and competitive standpoint so far as the Northern Pacific is concerned, and it would, of course, be necessary to work out a very different division of the savings if this proposition were to merit any consideration from us.

As I understand the matter the rates given on page 8 of your report is a published tariff of which the Milwaukee are free to avail themselves at any time they may elect. If that is the case, it may be difficult to work anything out of this proposition through negotiations which would be at all desirable from the Northern Pacific standpoint.

I have not had the opportunity to examine your report in detail and, in fact, there is but scant information contained in the report from which one can make an independent check. No supporting data is given for the most of your figures nor is there anything in the text or in your letter which shows the derivation of many of these figures.

The pages are not numbered and the references I have given above are on the basis of numbering each sheet consecutively starting with the prologue.

Altogether, I should say this report should be re-written and corrected before passing it along to any of the operating officers, and that is the reason why I am writing you before we have gone into the figures in more detail.

Mr. Williamson and Mr. Donnelly being on their way West, it occurred to me some questions might come up and you would want to have your figures corrected before discussing the matter with them.

HES:H

Chief Engineer.

St. Paul, Minn.

November 26, 1927.

Mr. H. E. Stevens:

Referring to the attached joint report on proposed elimination of Milwaukee barge service, Front St., Tacoma.

Perhaps it will be just as well to reverse the order, and state the conclusion at the beginning. Casual examination of the relatively large Milwaukee investment, and the small amount of business to be handled by an assigned switch crew at Front Street makes it very evident that the Milwaukee interests could be most economically and satisfactorily served by resorting to turning the cars over to the Northern Pacific at the regular transfer point for movement to Front Street, and then compensating the Northern Pacific on some agreed basis for spotting cars on Milwaukee industry tracks. The Milwaukee costs per unit are so high that almost any reasonable amount assessed for spotting cars on Milwaukee industry tracks, added to the published switching tariff would certainly be considerably less than the present Milwaukee costs, the change being in every way to the advantage of the Milwaukee in giving them daily except Sunday switching service and saving in car days. The Northern Pacific, on the other hand, would be giving up for a relatively small revenue some obvious traffic advantages accruing to a senior line

which has large investments in terminal facilities. It seems to me that it would have been clearly within the province of the Committee to point out the improvement in Milwaukee service, value of car day saving and the influence on Northern Pacific competitive business.

This project, treated in an individual sense on its own merits, has no attractive features for the Northern Pacific. It may well be, however, that when combined with other projects where the advantage is the reverse, the project may be worthy of consideration.

I quite agree with you that the report is made up in very neat form, but a casual reading gives one the impression that the general appearance of the report has been emphasized at the expense of the quality of the subject matter.

The report states that in the analysis of Milwaukee operation costs all direct costs, as well as interest on investment, have been included, therefore it is not clear why Milwaukee savings should be debited with the interest charge on the transfer to profit and loss. It seems to me that that line of reasoning is worthy of some explanation.

The cost figures are reduced to a pro rata car basis which is proper in an analysis of this kind, under

November 26, 1927.

Mr. H. E. Stevens: #3

other circumstances the minimum fixed cost would have to be taken into consideration. The published switching tariffs must obviously govern in determining the costs to the Milwaukee for the new operation, and the analysis of the 1926 assumed normal business shows this to be $9.69 per loaded car. It is further stated that the actual pro rata cost to the Northern Pacific is $7.00 per load. In the paragraph on top of page 8 the statement is made that the estimated actual cost to the Northern Pacific for spotting cars on Milwaukee tracks is one hour switch engine per day, or $2203.00 per year. Conclusion is then reached that this would amount to 37 cents per car, or 74 cents per load on the basis of 598 Milwaukee cars handled in 1926. There is something radically wrong with this statement. The $2203.00 per year figures roughly $7.00 per switch engine hour, probably not far from the unit cost of switch engine service investigated. A simple division makes this cost $3.70 instead of 37 cents per car, and this makes a radical difference in the final figure. Errors in arithmetic of this sort are not particularly serious, only insofar as in this case they suggest a mechanical handling of the subject and a lack of perspective in the developement of the subject.

November 26, 1927.

Mr. H. E. Stevens: #4

It is evident that even though the cost be $3.70 per car or more for spotting Milwaukee cars on Milwaukee industries, it does not materially change the conclusion that the arrangement would be to the great advantage of the Milwaukee.

LY-JW

L Y Layng
Assistant Chief Engineer.

Seattle, Wash.,
Nov. 19, 1927.

Mr. H. E. Stevens, Chief Engr.,
St.Paul, Minn.

Dear Sir:

Enclosed are five copies for you and Mr. Williamson of a report made jointly with Mr. Crane to determine the operating economies which may be effected by a proposed elimination of the Milwaukee Barge Service between the Milwaukee Sound Terminal and Front Street at Tacoma, and the handling of Milwaukee cars by the Northern Pacific.

This is proposition No. 3 of the various studies we aremaking and which have been outlined in previous correspondence. It is the first of the reports to be completed and is submitted for consideration while the others are being worked up in final form. Mr. Crane is forwarding copies to Milwaukee Officers. In this first report submitted the financial advantages are greater for the Milwaukee than for the Northern Pacific but this will not be true of all of the reports to follow. Due to the nature of some of the points to be settled by negotiation in the following plans to be submitted it will perhaps be best to consider them collectively, but in the case of this report I think it can be considered separately due to the necessary application of the existing switching rates on which the report is based.

In the preparation of a report of this kind it is necessary to arrive at costs for the performance of certain services in which we are interested. Perhaps as good a measure of these costs as any is to use the average costs which now apply, and in parts of this report in deciding on the switching costs in the Tacoma Yard this has been done and I think rightly so when the joint feature of the report is considered, however, from a strictly Northern Pacific standpoint it must be considered that all the Milwaukee cars will move in regular switching movements which are made at the present time and considering the small amount of Milwaukee business to be handled there will be very little if any additional expense incurred for the handling of the Milwaukee cars.

No carrying charges or maintenance on the facilities used in switching Milwaukee cars between the Transfer Track and Front Street are shown because the existing switching rates apply between these points and the amount to be paid by the Milwaukee is not affected by the cost and is not a matter of negotiation.

This plan also includes the elimination of the Milwaukee switch engine now operating on Front Street, and in addition to the Northern Pacific handling Milwaukee cars between the interchange track and Front Street, to which service the switching rates apply, it will be necessary, when called upon, to switch Milwaukee cars to Milwaukee spurs on Front Street. This additional switch is a separate matter, not included in the switching service performed under the switching rates, and is shown in the report at an estimated cost of $7.36 per load. This $7.36 per load is an estimated out of pocket cost to the Northern Pacific for performing this additional switching service, which service, by the spotting of cars on Milwaukee spurs, enables them to retain their identity on Front Street. No attempt has been made in the report to establish a rate for this service, the matter being left open for negotiations when considered by the two Companies. Any rate decided upon over the $7.36 can be considered as additional profit to the Northern Pacific, with a like reduction in the amount of Milwaukee saving. When the estimated saving to be made by the Milwaukee under this plan is considered it is my opinion that they should and can well afford to pay a substantial rate for this service. The Milwaukee will wish to retain their identity on Front Street and when for this reason and for reasons of benefit to an industry it is requested that a switch be made to the Milwaukee track serving the industry, the Northern Pacific should receive considerable compensation for making the switch over what we estimate as the actual cost.

The actual profit to the Northern Pacific based on 1926 business, instead of being $828.00 as shown in the report will be the total amount of $5,251.00 received from the Milwaukee for switching service plus the amount the negotiated rate for switching the Milwaukee cars to Milwaukee spurs is over the estimated actual cost of $7.36.

It will be necessary to make an agreement allowing Northern Pacific switch engines to use Milwaukee trackage to switch Milwaukee cars to Milwaukee spurs.

There are several ways in which the trackage of the two lines on Front Street can be handled but it is hardly a matter that can be settled in the report and undoubtedly will be brought out in the negotiations.

Yours very truly,

H. H. Judson

6916

Saint Paul, October 15, 1927.

Mr. M. F. Clements:

I am attaching copy of Mr. Judson's memo to Mr. Williamson of October 11th about tentative plans for using the OW bridge between Aberdeen and South Aberdeen and abandoning our bridge at Cosmopolis.

You will remember we had considerable discussion of this matter a few years back - see my file.

Wish you would check over the set up outlined by Mr. Judson and advise your recommendations.

Chief Engineer.

HES:H
enc

6916

Seattle, Washington,
October 11, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

I was sorry to learn from Mr. Stotler that you were unable to complete your trip to the Coast due to not being in the best of health. I hope it is nothing serious. There were several matters in connection with the study that Mr. Crane and I are now making which I wished to discuss with you.

I have seen Mr. Williamson, who is now in Seattle, and have gone over with him, in a tentative way, all of the propositions Mr. Crane and I are working on. I told Mr. Williamson that the proposed conference, which was suggested with the Milwaukee, would have been advantageous if held when originally proposed, but now the study has reached a point where I think it would probably be better to let Mr. Crane and I complete it on basis agreed upon by us. After the submittal of the report, discussion can be held at a joint meeting with the Milwaukee. To hold the report up now, awaiting for a conference in regard to policy to be followed, would undoubtedly result in the delay of the submission of the report.

Mr. Williamson has requested me to furnish him a memorandum on the proposed abandonment of Bridge #1 on the Ocosta Branch. This proposed abandonment is one of the propositions included in our studies, and while it has not been completed, I am furnishing him today a rough outline giving what approximate figures are now available.

I am attaching a copy of this memorandum, together with my letter to him, for your information.

Yours truly,

H. M. Judson

Assistant Engineer.

COPY

Seattle, Washington,
October 11, 1927.

(3)

Mr. F. E. Williamson,
Vice President,
Seattle, Washington.

Dear Sir:

Attached is memorandum, requested by you, in regard to a possible abandonment of Northern Pacific Bridge #1 on the Ocosta Branch at Cosmopolis, Washington, which was discussed with you yesterday.

Attached to the memorandum are two prints, one being the general location map of Aberdeen, Hoquiam and Cosmopolis which you requested, and the other a more detailed map which I have obtained, showing the ownership and use of tracks by the joint switch engines. The last mentioned map is an exhibit which is attached to the joint switching contract.

As explained to you yesterday, the report being made by Mr. Crane and myself on this proposition, has not been completed, but I am giving you in the memorandum, what approximate figures are now available.

I am informed that this proposition was up several years ago at the time the timber trusses were replaced with steel.

Yours truly,

F. B. Jenkinson

Assistant Engineer

COPY (3)

Memorandum covering a proposed abandonment of Northern Pacific Bridge #1 on the Ocosta Branch at Cosmopolis and the use of joint O-WRR&N , Milwaukee bridge between Aberdeen and South Aberdeen.

Present Operation

Under contracts dated June 13th, 1913, October 25th, 1921 and December 23rd, 1924, the switching at Aberdeen, Hoquiam and Cosmopolis is done jointly. The Northern Pacific performs the work and charges are pro-rated on basis of cars handled. Under this agreement the switch engines, while engaged in joint switching, are permitted to use the joint OW - Milwaukee bridge over the Chehalis River between Aberdeen and South Aberdeen.

The Northern Pacific has one switch engine assignment a large part of which is non-joint switching. This is a six day a week assignment, tieing up at Cosmopolis. This crew does joint and non-joint switching at Cosmopolis, crosses the river and does non-joint switching at Aberdeen Junction and between Aberdeen Junction and Aberdeen. On two days a week, Tuesdays and Fridays the crew makes a trip down the Ocosta Branch to Markham and return. When crossing the river, on account of its being engaged in non-joint switching, it is necessary for this engine to use Northern Pacific Bridge #1, and this movement is the only use that is made of this bridge. On the two days this engine goes to Markham they use this bridge 4 times per day, and on the other 4 days per week they use it 2 times per day, making a total of 832 movements per year. The necessary movements of this non-joint switch engine over Northern Pacific Bridge #1 could be made over the O.W - Milwaukee bridge with no additional time or increase in expense of the switch engine operation. Such an arrangement might require a slight revision in the manner and order of switching between Aberdeen and Aberdeen Jct. but this would have no detrimental effect on the service or expense.

Northern Pacific Bridge #1

The Northern Pacific Bridge #1, 0.27 miles long, consists of a steel draw span and two steel spans all on timber piers, and timber trestle approaches. The bridge including the trestle approaches is valued at approximately $146,000. The annual cost including interest on investment, operation, repairs and depreciation is approximately $22000 per year. On this basis the above mentioned 832 movements over the bridge per year cost approximately $26.00 per movement. It would cost approximately $20,000 to remove the bridge. The use of this bridge is restricted in

regard to power operating over same and considering the tendency of use of heavier power on the branch lines, I do not think the use of this bridge in another location, should it be removed, can be considered.

Joint O-W - Milwaukee Bridge

This bridge consists of one steel draw span and three steel spans all on permanent foundations, and 585 feet of timber trestle approach. This bridge with the necessary trackage on both sides to reach the bridge is valued at approximately $400,000 with an annual cost of approximately $38,000, which includes interest on investment, operation, maintenance and depreciation.

Should the Northern Pacific enter into negotiations for the use of this bridge by the non-joint switch engine, the usual basis would be on one-third of the carrying charges and maintenance on user basis, but in this special case, considering the use to be made of this bridge by the Northern Pacific and considering the improbability of any extended increase in this use, it would appear that some arrangement could be entered into whereby a flat rate per movement could be established which would show a saving to the Northern Pacific and a profit to the joint owners. The use of this bridge by the Northern Pacific non-joint switch engine, would not increase the maintenance cost and any rental received by the owners would be net profit. To put the operation into effect would require an expenditure of $20,000 for removal of bridge and a retirement charge to Profit and Loss of $146,000. The interest on these two charges is $8300 per year or approximately $10 per movement. This $10 would have to be added to any rate established for the use of the O.W.-Milwaukee bridge and when substracted from the present cost of $26 per movement leaves $16 as the actual cost of present movements when compared with the proposed plan.

Seattle, Wash.,
October 11th, 1927.
W. W. Judson.

C O P Y

Seattle, Wash.,Oct. 11, 1927

Mr. F. E. Williamson
Vice President
Seattle, Wash.

Attached is memorandum, requested by you, in regard to a possible abandonment of NP Bridge #1 on the Ocosta Branch at Cosmopolis, Washington, which was discussed with you yesterday.

Attached to the memorandum are two prints, one being the general location map of Aberdeen, Hoquiam & Cosmopolis which you requested, and the other a more detailed map which I have obtained, showing the ownership and use of tracks by the joint switch engines. The last mentioned map is a n exhibit which is attached to the joint switching contract.

As explained to you yesterday, the report being made by Mr. Crane and myself on this proposition, has not been completed, but I am giving you in the memorandum, what approximate figures are now available.

I am informed that this proposition was up several years ago at the time the timber trusses were replaced with steel.

Yours truly,

Signed W W Judson

COPY

Memorandum covering a proposed abandonment of Northern Pacific Bridge #1 on the Ocosta Branch at Cosmopolis and the use of joint O-WRR&N, Milwaukee bridge between Aberdeen and South Aberdeen.

Present Operation

Under contracts dated June 13, 1913, Oct. 25th, 1921 and December 23, 1924, the switching at Aberdeen, Hoquiam and Cosmopolis is done jointly. The Northern Pacific performs the work and charges are pro-rated on basis of cars handled. Under this agreement the switch engines, while engaged in joint switching, are permitted to use the joint OW - Milwaukee bridge over the Chehalis River between Aberdeen and South Aberdeen.

The Northern Pacific has one switch engine assignment a large part of which is non-joint switching. This is a six day a week assignment, tieing up at Cosmopolis. This crew does joint and non-joint switching at Cosmopolis, crosses the river and does non-joint switching at Aberdeen Jct., and between Aberdeen Jct., and Aberdeen. On two days a week, Tuesdays and Fridays the crew makes a trip down the Ocosta Branch to Markham and return. When crossing the river, on account of its being engaged in non-joint switching, it is necessary for this engine to use Northern Pacific Bridge #1, and this movement is the only use that is made of this bridge. On the two days this engine goes to Markham they use this bridge 4 times per day, and on the other 4 days per week they use it 2 times per day, making a total of 832 movements per year. The necessary movements of this non-joint switch engine over Northern Pacific Bridge #1 could be made over the O.W - Milwaukee bridge with no additional time or increase in expense of the switch engine operation. Such an arrangement might require a slight revision in the manner and order of switching between Aberdeen and Aberdeen Jct., but this would have no detrimental effect on the service or expense.

Northern Pacific Bridge #1

The Northern Pacific Bridge #1, o-27 miles long, consists of a steel draw span and two steel spans all on timber piers, and timber trestle approaches. The bridge including the trestle approacher is valued at approximately $146,000. The annual cost including interest on investment, operation, repairs and depreciation is approximately $22,000 per year. On this basis the above mentioned 832 movements over the bridge per year cost approximately $26.00 per movement. It would cost approximately $20,000 to remove the bridge. The use of this bridge is restricted in regard to power operating over same and considering the tendency of use of heavier power on the branch lines, I do not think the use of this bridge in another location, should it be removed, can be considered.

C O P Y

Joint O-W - Milwaukee Bridge.

This bridge consists of one steel draw span and three steel spans all on permanent foundations, and 585 feet of timber trestle approach. This bridge with the necessary trackage on both sides to reach the bridge is valued at approximately $400,000 with an annual cost of approximately $38,000, which includes interest on investment, operation, maintenace and depreciation.

Should the Northern Pacific enter into negotiations for the use of this bridge by the non-joint switch engine, the usual basis would be on one-third of the carrying charges and maintenance on user basis, but in this special case, considering the use to be made of this bridge by the Northern Pacific and considering the improbablility of any extended increase in this use, it would appear that some arrangement could be entered into whereby a flat rate per movement could be established which would show a saving to the Northern Paicific and a profit to the joint owners. The use of this bridge by the Northern Pacific non-joint switch engine, would not increase the maintenance cost and any rental received by the owners would be net profit. To put the operation into effect would require an expenditure of $20,000 for removal of bridge and a retirement charge to Profit and Loss of $146,000. The interest on these two charges is $8300 per year or approximately $10 per movement. This $10 would have to be added to any rate established for the use of the O.W - Milwaukee bridge and when substracted from the present cost of $26 per movement leaves $16 aa the actual cost of present movements when compared with the proposed plan.

Seattle, Wash.
Oct. 11, 1927.
W.W.Judson.

6916

Saint Paul, September 7, 1927.

Mr. W. W. Judson:

Supplementing my letter to you of the 1st, transmitting Valuation Department estimate of Tacoma Passenger Station, I am attaching copy of Mr. Thian's letter of September 2nd giving further details as to basis of this estimate.

Chief Engineer.

MES:H
enc

6916

St. Paul, Minnesota, Sept. 2, 1927.

Mr. H. E. Stevens,
Chief Engineer.

Dear Sir:-

In reply to your letter of September 1st, 1927, in reference to valuation of the Tacoma Passenger Station.

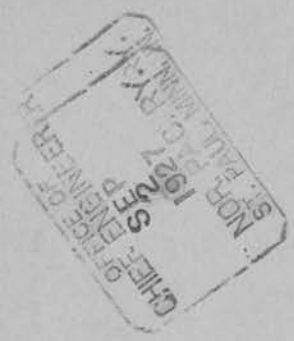
The basis of this estimate was the Engineering Report quantities and prices. This estimate was brought to date by applying a trend factor of 1.6 to all accounts, to this was then added the land value at the prices shown in the land report and also A. & B. work to date at its reported cost.

This same method was used in making all other estimates which we have sent to Mr. Judson.

Yours truly,

T. E. Thrian
VALUATION ENGINEER.

ACT-RW.


CHIEF ENGINEER'S OFFICE
1927
NORTHERN PACIFIC RY. CO.
ST. PAUL, MINN.

6916

Saint Paul, September 1, 1927.

Mr. P. E. Thian:

Your letter August 31st transmitting valuation of the Tacoma Passenger Station:

What method was used in bringing the valuation up to date? In order to make the report complete I think the factors should be shown.

Chief Engineer.

HBS:H

Saint Paul, September 1, 1927.

Mr. W. W. Judson:

As requested in your letter of August 4th, the Valuation Department have compiled data covering the Tacoma Passenger Station in line with Mr. Thian's letter to you of August 8th and your message of August 11th - copy of Mr. Thian's letter and prints enclosed you herewith.

You will note the land valuation is about 40% of the total, and for the purposes of your present study, I have no doubt Mr. Williamson and Mr. Gillick will be able to agree upon a compromise figure at the conference which we hope to hold at an early date; meanwhile I suggest you hold the figures in abeyance.

Chief Engineer.

HBS:H
enc

St. Paul, Minn., August 31st, 1927.

Mr. H.E.Stevens,
Chief Engineer.

Dear Sir:-

As per Mr. Judson's wire of Aug. 11, 1927, in answer to my letter of August 8th, 1927 which was written per your pencil notation on Mr. Judson's letter of August 4th, I have had the following estimate set up. Copy of my letter of August 8th, and Mr. Judson's wire in answer to same is herewith attached. This estimate covers the same tracks and facilities as were included in estimate dated March 20, 1920 and is based on quantities and prices as shown in the Revised Engineering Report. Attached map shows tracks colored red included in this estimate.

Acct.No.		
1	Engineering	$ 44,157
2	Land	1,433,530
3	Grading	222,438
6	Bridges, Trestles & Culverts	7,518
8	Ties	10,355
9	Rail	36,873
10	Other Track Material	18,330
11	Ballast	18,090
12	Track Laying and Surfacing	21,033
13	Right of Way Fences	8
15	Crossings and Signs	165,690
16	Station and Office Buildings	592,351
17	Roadway Buildings	74
26	Telephone & Telegraph Lines	1,251
27	Signals and Interlockers	230
31	Power Transmission Systems	1,365
32	Power Distribution Systems	864
34	Underground Conduits	166
37	Roadway Machines	2,244
38	Roadway Small Tools	315
44	Shop Machinery	4,733
	Total Accounts 1 to 47 as of 6-30-17	$2,581,615
	General Expenditures	17,221
	Interest	122,357
	Total as of June 30,1917	$2,721,193
	Present day value of Engr. Report Costs as of 6-30-17.	$3,493,791
	A&B Work from 6-30-17 to 12-31-26	26,422
	Total as of Present date	$3,520,213
	Miles of Main Track (Double Track)	2.536
	" " Other Tracks	5.164
	Total	7.700

Land value used in foregoing estimate was furnished by Mr. Watson, Telegraph by Mr. Dildine, Signals by Mr. Christofferson, Mechanical Items by Mr. Mathews and Additions and Betterment Work by Mr. Stout.

Yours truly,

P. E. Thiam
VALUATION ENGINEER.

WHF-RW.

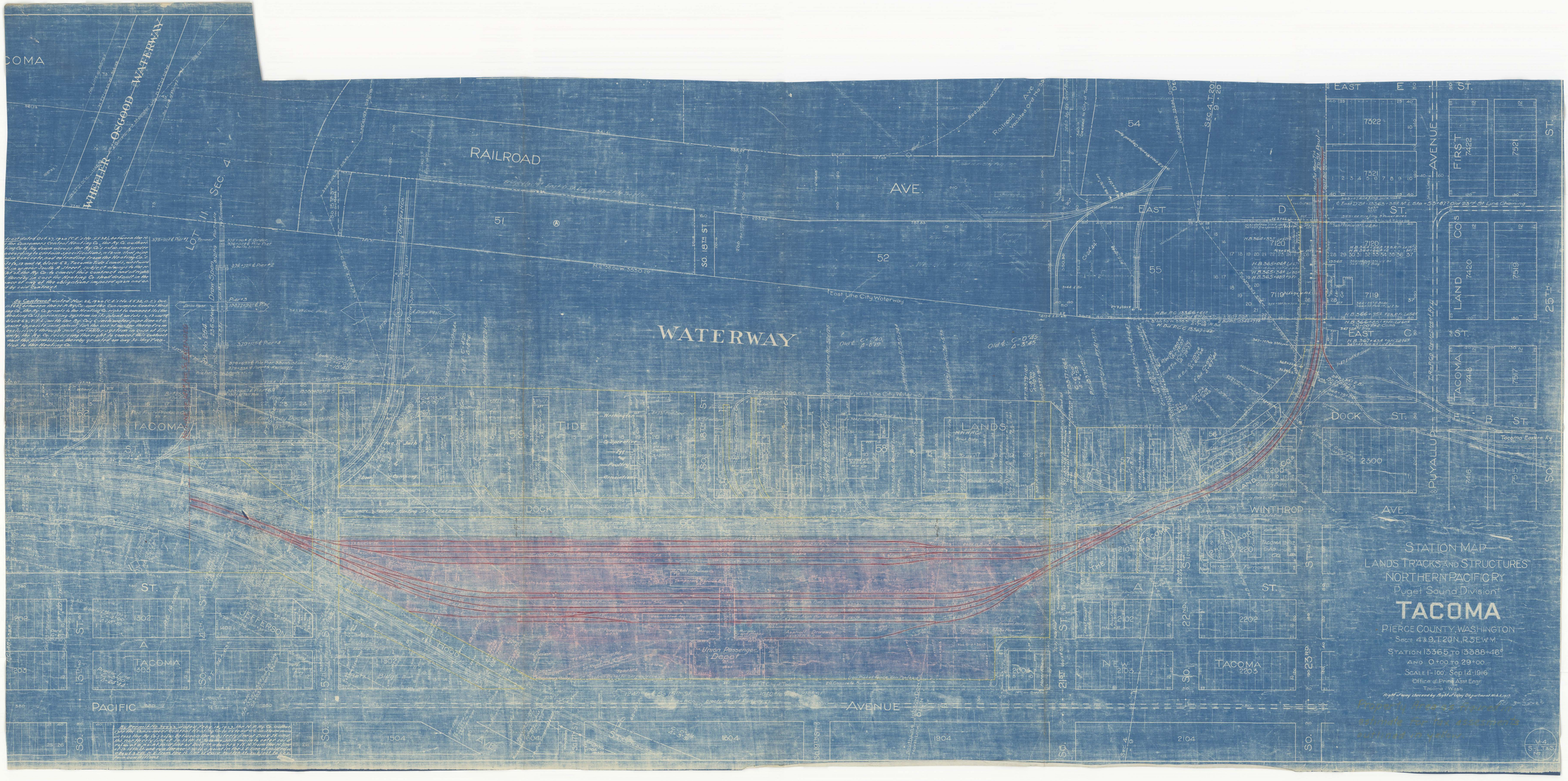
NORTHERN PACIFIC RAILWAY COMPANY

Statement of Additions to And Deductions from the tracks and other facilities on that portion of Valuation Section Washington 4 between Sta. 305 + 48.2, near Reservation, and the north line extended of South 14th Street, in Tacoma, and located within the area colored red on the blue prints of the two sections of the station plat of Tacoma, transmitted by Mr. Thian with his letter of August 15, 1927, from Valuation date, June 30, 1917 to December 31, 1926.

	Additions	Reductions
Additions and Betterments and Retirements for		
6 months ending Dec. 31, 1917	$ 2,987.83	$ - - - - -
12 months ending Dec. 31, 1918	1,030.41	170.05
Total as of Dec. 31, 1918	4,018.24	170.05
12 months ending Dec. 31, 1919	848.08	20.72
Total as of Dec. 31, 1919	4,866.32	190.77
12 months ending Dec. 31, 1920	2,049.68	14.63
Total as of Dec. 31, 1920	6,916.00	205.40
12 months ending Dec. 31, 1921	473.41	- - - -
Total as of Dec. 31, 1921	7,389.41	205.40
12 months ending Dec. 31, 1922	3,753.12	3,644.55
Total as of Dec. 31, 1922	11,142.53	3,849.95
12 months ending Dec. 31, 1923	9,464.86	1,182.61
Total as of Dec. 31, 1923	20,607.39	5,032.56
12 months ending Dec. 31, 1924	3,331.11	979.31
Total as of Dec. 31, 1924	23,938.50	6,011.87
12 months ending Dec. 31, 1925	3,111.90	1,334.70
Total as of Dec. 31, 1925	27,050.40	7,346.57
12 months ending Dec. 31, 1926	7,528.56	809.91
Total as of Dec. 31, 1926	34,578.96	8,156.48

Office of Record Engineer,
St. Paul, Minnesota,
August 23, 1927.

STATION MAP
LANDS TRACKS AND STRUCTURES
NORTHERN PACIFIC RY.
Puget Sound Division
TACOMA
PIERCE COUNTY WASHINGTON
Secs 3,4,9 & 10 T20 N.R 3E.W.M.
STATION 13310 TO 13365
SCALE 1"=100' April, 18 1916
Office of Engr. M. of W.
Tacoma, Wash.
Right of Way checked by R. of W. Dept. St. Paul, 6-14-16.
Note
N.P. Tracks shown thus
G.N. " "
O.W. " "
C.M.&St.P. " "
TACOMA GAS CO.
CLEVELAND
SO. 21ST ST.
G.N. PROPERTY
TIDE LANDS
G.N. Freight Ho.
RAILROAD AVE
N.P. Freight House
PUYALLUP AVE
TACOMA LAND CO'S FIRST ADD
INDIAN ADD
S. 25TH ST.
Carman Mfg. Co.
Washington Mfg. Co.
Tacoma Biscuit & Candy Co.


WHEELER-OSGOOD WATERWAY
RAILROAD
AVE.
WATERWAY
East Line City Waterway
West Line City Waterway
TIDE LANDS
TACOMA
DOCK ST.
Union Passenger Depot
JEFFERSON
PACIFIC AVENUE
PUYALLUP AVENUE
WINTHROP AVE.
EAST D ST.
EAST E ST.
EAST C ST.
FIRST AVENUE
25TH ST.
B ST.
Tacoma Eastern Ry
STATION MAP
LANDS TRACKS AND STRUCTURES
NORTHERN PACIFIC RY
Puget Sound Division
TACOMA
PIERCE COUNTY, WASHINGTON
Secs 4 & 9, T 20 N., R 3 E. W. M.
STATION 13365 TO 13388+46
AND 0+00 TO 29+00
SCALE 1"-100' SEP 14-1916
Office of Prins Asst Engr
Tacoma, Wash.

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

Seattle Aug 11 1927

P. E. Thian,

St. Paul, Minn.

Your letter Aug 8, valuation estimate should be based on engineering report quantities and prices as of June 30 nineteen hundred and seventeen with subsequent A and B - additions or deductions to December 31st nineteen twenty six we will then be in position to support such an estimate when plan is carried into future negotiations.

WWJ

237p

COPY

St. Paul, Minn.,
August 8th, 1927.

Mr. W. W. Judson,
Assistant Engineer,
Seattle, Wash.

Dear Sir:

Your letter of the 4th inst. about the estimate for the Tacoma passenger station has been referred to me.

The estimate which you mention dated March 20th, 1920 was made before we received our Engineering Report and is based almost entirely on A.F.E. quantities. These, of course, will not necessarily agree in all particulars with the Engineering Report quantities. In fact, there may be some discrepancies.

If the estimate as made up above is satisfactory to you, we can apply new prices and furnish you an estimate in about a week. If, however, you prefer to have an estimate based upon the Engineering Report quantities, it will take at least three weeks to prepare same.

On receipt of wire from you we will proceed accordingly.

PET/wbs VALUATION ENGINEER.

COPY

6916

Seattle, Washington,
August 4, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

Referring to your letter of July 23 with Mr. Thian's letter to you of July 21.

The information furnished by Mr. Thian is satisfactory, but it will be necessary to have the information which was not furnished on Proposition #4, which is the joint use of the Tacoma Passenger Station by the Milwaukee, before anything can be done with this proposition. Mr. Thian states in his letter that it will take three weeks work to split out the desired quantities from Washington Valuation Section #4. The estimate made up by Mr. Thian, dated March 20, 1920, and mentioned in my letter to you, contains in detail the desired quantities, and it was my idea that these same quantities could perhaps be repriced to show the valuation as of June 30, 1917.

Yours truly,

N. N. Judson

Assistant Engineer.


CHILEAN CONSULATE
AUG
1937
NEW YORK
ST. PAUL, MINN.

6916

Saint Paul, Minn.,

August 25, 1927.

MR. H. E. STEVENS:

Referring to my letter August first to Mr. Gillick, copy to you, in regard to conference in connection with a study which is being made of possibility of economies in the Coast territory by joint use of lines and facilities.

As information, I attach hereto copy of Mr. Gillick's letter dated August fifteenth, which is in reply to mine of August first, in which he states he will be glad to arrange for a meeting to discuss this subject on his return from a trip to the Coast.

F. Williamson

CHICAGO MILWAUKEE & ST.PAUL RAILWAY

Chicago, August 15, 1927.

Mr. F. E. Williamson,
Vice President, Northern Pacific Ry. Co.,
St.Paul, Minn.

Dear Sir:

Your letter of August twelfth calling attention to your letter of August first suggesting a conference at St.Paul to discuss the joint use of facilities that Messrs. Crane and Judson have been looking into on the Coast.

I have not seen all of the reports that they have made. I am leaving for Seattle the last of the week, and on my return will be very glad to arrange for a meeting at your convenience.

Yours very truly,

(Signed) J.T.Gillick
Chief Operating Officer

COPY

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

Chicago 8-24-27

W W Judson
Nor. Pac.
Seattle, Wash.

Your message seventeenth. We concur in your proposed method of handling and believe figures should be considered as a whole by executives of both companies.

H E Stevens

N. P. 1386 12-24
231 cf x

TELEGRAM—BE BRIEF

TIME FILED
M.

Seattle Aug 17 1927

REGemmell

StPaul

Referring to my pink this date to Mr Stevens If Mr Stevens is in Washington suggest you show this messag e to Mr Williamson

WWJudson

22op

Jm Smith - Will you please take up with Mr Williamson

reg 8/17

N. P. 1386 12-24

232 cf x

TELEGRAM—BE BRIEF

TIME FILED

M.

Seattle Aug 17 1927

HEStevens

St Paul

Mr Earling has asked Crane to furnish him with information and progress on study especially the Bellingham proposition in its present form so that he may talk the matter over with Mr Byram now on western trip I have not furnished Mr Crane with final NP figures and have requested him not to use what information he has on NP costs I feel that the tentative figures which we have prepared might well be the subject of a general discussion in a conference as suggested to the Milwaukee but do not think that figures on the various propositions should be given out piece meal without you and Mr Williamson going over same

WWJudson

225p

6916

On #4, Rky. Mtn. Divn.,
August 3rd, 1927.

Mr. W. W. Judson:

For your information I am attaching copy of Mr. Williamson's letter to Mr. Gillick of August 1st, in line with my telegram to him last week.

Chief Engineer.

HES:H
enc

Mr.

N H

St.

August 1, 1927.

Mr. J. T. Gillick,
Chief Operating Officer,
C.M.& St.P. Railway Co.,
Chicago, Illinois.

Dear Sir:

Please refer to your letter on line February 14th, previous correspondence and conference in connection with a study which is being made of possibility of economies in the Coast territory by joint use of lines and facilities.

I presume you have been kept posted as to the progress of the study being made by Mr. Crane and Mr. Judson and we believe this investigation has now reached a point where it would be desirable to arrange for a conference with Messrs. Crane and Judson at which you would be present, together with Mr. Stevens, our Chief Engineer, and myself, together with any others you might think proper. Such conference might be held either in Chicago or Saint Paul and if you agree, would you kindly name a time and place which would meet your convenience?

Yours truly,

CC-Mr. H. E. Stevens.

C O P Y

August 1, 1927.

Mr. J. T. Gillick,
Chief Operating Officer,
C. M. & St.Paul Railway Co.,
Chicago, Illinois.

Dear Sir:

Please refer to your letter on line February 14th, previous correspondence and conference in connection with a study which is being made ofpossibility of economies in the Coast territory by joint use of lines and facilities.

I presume you have been kept posted as to the progress of the study being made by Mr. Crane and Mr. Judson and we believe this investigation has now reached a point where it would be desirable to arrange for a conference with Messrs. Crane and Judson at which you would be present, together with Mr. Stevens,our Chief Engineer, and myself, together with any others you might think proper. Such conference might be held either in Chicago or Saint Paul and if you agree, would you kindly name a time and place which would meet your convenience.

Yours truly,

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED M.

6916

Seattle July 30 1927

F E Williamson St Paul

Discussed progress with Mr Judson today and believe it would be advisable for you to arrange with Mr Gillick for conference with Messrs Judson and Crane at earliest possible date. The studies Messrs Blum and Sloan have been making in work of this character should be helpful to Messrs Judson and Crane in settling matters of principle and methods which must be decided before work can be carried through in detail to a final report S-97

cc Mr. W.W. Judson H E Stevens

On #3, Fargo Division,
July 23rd, 1927.

Mr. W. W. Judson:

As requested in your letter of June 22nd, Mr. Thian has had compiled valuations of various lines and sections of lines, copy of which is handed you herewith together with copy of his letter of July 21st.

Please advise if these figures are in sufficient detail to meet your requirements.

Chief Engineer.

HES:H
enc

6916

St. Paul, Minn., July 21, 1927.

Mr. H. E. Stevens,
Chief Engineer.

Dear Sir:-

As per your letter of June 27th, 1927, relative to valuations requested in Mr. Judson's letter of June 22nd, in connection with the study he is now making of joint operation of the Milwaukee and Northern Pacific Railways, I have had the following tabulations made:

	Buckley Line Palmer Jct. to Meeker, Wash. Sec. #10.	Willapa Harbor Line Chehalis to So. Bend Wash. Sec. #29	Palmer Cutoff Palmer Jct. to Auburn, Wash. Val. Sec. 2D.
Total Accts. 1&3 to 47 except Accts. 2 & 26.	$1,327,164	$1,782,452	$1,293,483
General Expenditures	19,907	26,737	19,402
Interest	87,560	108,551	137,853
Telegraph Acct. #26	9,176	15,910	5,943
	$1,443,807	$1,933,650	$1,456,681
Land	244,104	139,249	35,432
Total as of June 30,1917	$1,687,911	$2,072,899	$1,492,113
Present Day Value of Engr. Report Costs as of June 30, 1917	$2,554,195	$3,233,089	$2,366,122
A.&B. Work from 6-30-17 to 12-31-26	+ 153,220	+ 253,097	+ 7,031
Total as at present date	$2,707,415	$3,486,186	$2,373,153
Miles of Main Track	32.459	56.280	21.021
Ave. Cost Per Mile as of 6-30-17 (1914 Prices)	$52,001	$36,832	$70,982
Ave. Cost Per Mile as of Present Date	$83,410	$61,944	$112,894

	Green River Br. Kanaskas to Kerriston Wash. V.Sec.2C	Ocosta Branch Sta. 2702Plus 40 to Sta. 2716 Plus 75 Wash. Val. Sec. 28B.
Accts 1 & 8 to 47, except Acct. #26	$ 149,565	$ 2,037*
Acct. #3 - Grading	225,734	-
Acct. #6 - Bridges, Trestles and Culverts.	54,284	105,154
General Expenditures	6,444	1,608
Interest	45,783	9,248
Telegraph Acct. #26	4,047	-
	$ 485,857	$ 118,047
Land	6,856	1,100
Totals as of June 30,1917	$ 492,713	$ 119,147
Present Day Value of Engineering Report costs as of 6-30-17.	784,226	189,975
A. & B. Work from 6-30-17 to 12-31-26.	+ 49,755	+ 26,716
Total as of Present Date	$ 833,981	$ 216,691
Miles of Main Track	14.315	0.272
Ave. Cost per Mile as of 6-30-17 (1914 Prices)	$ 34,419	-
Ave. Cost per Mile as of Present Date	$ 58,259	-

* Only Ties, Rail, Track Fastenings and Track Laying.

The above tabulations have been worked up along the same lines as those furnished with my letter of May 12, 1927, and are only approximate.

These tabulations cover all of the propositions as listed in Mr. Judson's letter of June 22nd, except proposition No. 4. In this case he asks for a valuation of a portion of Tacoma Terminals covering the same tracks and facilities as were included in estimate of same made up in 1920. In order to furnish this on

the same basis as above tabulations at least three weeks work will be required as all quantities must be split out of Wash. Sec. 4. Due to the need of using all employes in this office in getting out data, for the N.P. Hearing, I have done nothing on this proposition. Advise if you desire same should be furnished.

Attached find statement of all A. & B. work on these sections as furnished by the Record Engineer's Office.

Yours truly,

P. E. Irwin

WHF-RW. VALUATION ENGINEER.

NORTHERN PACIFIC RAILWAY COMPANY

Statement of Additions to and Deductions from Valuation Section 10, Washington, from Valuation Date to December 31, 1926.

- - - - - - - - - - - - - - - - - -

	Additions	Deductions
Additions and Betterments, 6 Mo. ending 12-31-17	$ 2,918.27	$ 420.67
" " " 12 Mo. " 12-31-18	14,611.52	2,050.17
Total as of 12-31-18	17,529.79	2,470.84
Additions and Betterments, 12 Mo. ending 12-31-19	6,331.37	280.21
Total as of 12-31-19	23,861.16	2,751.05
Additions and Betterments, 12 Mo. ending 12-31-20	45,731.91	83.02
Total as of 12-31-20	69,593.07	2,834.07
Additions and Betterments, 12 Mo. ending 12-31-21	21,548.68	6,365.69
Total as of 12-31-21	91,141.75	9,199.76
Additions and Betterments, 12 Mo. ending 12-31-22	45,222.21	18,640.27
Total as of 12-31-22	136,363.96	27,840.03
Additions and Betterments, 12 Mo. ending 12-31-23	157,710.93	90,238.39
Total as of 12-31-23	294,074.89	118,078.42
Additions and Betterments, 12 Mo. ending 12-31-24	12,894.32	45,539.82
Total as of 12-31-24	306,969.21	163,618.24
Additions and Betterments, 12 Mo. ending 12-31-25	16,598.62	2,084.15
Total as of 12-31-25	323,567.83	165,702.39
Additions and Betterments, 12 Mo. ending 12-31-26	2,420.39	7,066.66
Total as of 12-31-26	325,988.22	172,769.05

Office of Record Engineer,
St.Paul, Minnesota,
July 6, 1927.

NORTHERN PACIFIC RAILWAY COMPANY

Statement of Additions to and Deductions from Valuation Section 29, Washington, from Valuation date to December 31, 1927

	Additions	Deductions
Additions and Betterments, 6 Mo. ending 12-31-17	$ 29,148.45	$ 16,787.98
" " " 12 " " 12-31-18	10,905.75	1,895.74
Total as of 12-31-18	40,054.20	18,683.72
Additions and Betterments, 12 Mo. ending 12-31-19	28,975.20	18,248.55
Total as of 12-31-19	69,029.40	36,932.27
Additions and Betterments, 12 Mo. ending 12-31-20	76,895.90	31,098.82
Total as of 12-31-20	145,925.30	68,031.09
Additions and Betterments, 12 Mo. ending 12-31-21	10,366.44	1,147.95
Total as of 12-31-21	156,291.74	69,179.04
Additions and Betterments, 12 Mo. ending 12-31-22	29,716.34	10,899.72
Total as of 12-31-22	186,008.08	80,078.76
Additions and Betterments, 12 Mo. ending 12-31-23	60,535.45	17,644.63
Total as of 12-31-23	246,543.53	97,723.39
Additions and Betterments, 12 Mo. ending 12-31-24	44,251.32	11,263.84
Total as of 12-31-24	290,794.85	108,987.23
Additions and Betterments, 12 Mo. ending 12-31-25	104,272.78	62,357.37
Total as of 12-31-25	395,067.63	171,344.60
Additions and Betterments, 12 Mo. ending 12-31-26	62,942.00	33,568.00
Total as of 12-31-26	458,009.63	204,912.60

Office of Record Engineer,
St.Paul, Minnesota,
July 6th, 1927.

NORTHERN PACIFIC RAILWAY COMPANY

Statement of Additions to and Deductions from Valuation Section 2-D, Washington, from Valuation Date to December 31, 1926.

- - - - - - - - - - - - - - - - - -

	Additions	Deductions
Additions and Betterments, 6 Mo. ending 12-31-17	$ 6,650.17	$ 54,312.17
" " " 12 " " 12-31-18	380.24	4.77
Total as of 12-31-18	7,030.41	54,316.94
Additions and Betterments, 12 Mo. ending 12-31-19	10,079.64	3,170.32
Total as of 12-31-19	17,110.05	57,487.26
Additions and Betterments, 12 Mo. ending 12-31-20	10,782.25	94.45
Total as of 12-31-20	27,892.30	57,581.71
Additions and Betterments, 12 Mo. ending 12-31-21	7,063.15	1,444.38
Total as of 12-31-21	34,955.45	59,026.09
Additions and Betterments, 12 Mo. ending 12-31-22	4,471.54	2,308.87
Total as of 12-31-22	39,426.99	61,334.96
Additions and Betterments, 12 Mo. ending 12-31-23	63,070.64	35,540.78
Total as of 12-31-23	102,497.63	96,875.74
Additions and Betterments, 12 Mo. ending 12-31-24	30,849.27	16,275.61
Total as of 12-31-24	133,346.90	113,151.35
Additions and Betterments, 12 Mo. ending 12-31-25	21,762.97	32,064.01
Total as of 12-31-25	155,109.87	145,215.36
Additions and Betterments, 12 Mo. ending 12-31-26	15,644.64	18,507.68
Total as of 12-31-26	170,754.51	163,723.04

Office of Record Engineer,
St.Paul, Minnesota,
July 6, 1927.

NORTHERN PACIFIC RAILWAY COMPANY

Statement of Additions to and Deductions from Valuation Section 2-C, Washington, from Valuation date to December 31,1926.

- -

	Additions	Deductions
Additions and Betterments, 6 mo. ending 12-31-17	$ 672.43	$ 85.47
" " " 12 " " 12-31-18	- - -	- - -
" " " 12 " " 12-31-19	2,589.97	87.65
Total as of 12-31-19	3,262.40	173.12
Additions and Betterments, 12 mo. ending 12-31-20	12,987.89	40.13
Total as of 12-31-20	16,250.29	213.25
Additions and Betterments, 12 mo. ending 12-31-21	70,809.03	41,263.27
Total as of 12-31-21	87,059.32	41,476.52
Additions and Betterments, 12 mo. ending 12-31-22	23,066.20	14,204.75
Total as of 12-31-22	110,125.52	55,681.27
Additions and Betterments, 12 mo. ending 12-31-23	8,551.45	2,738.96
Total as of 12-31-23	118,676.97	58,420.23
Additions and Betterments, 12 mo. ending 12-31-24	537.63	139.09
Total as of 12-31-24	119,214.60	58,559.32
Additions and Betterments, 12-mo. ending 12-31-25	12,733.05	23,715.38
Total as of 12-31-25	131,947.65	82,274.70
Additions and Betterments, 12 mo. ending 12-31-26	82.50	
Total as of 12-31-26	132,030.15	82,274.70

Office of Record Engineer,
St.Paul, Minnesota,
July 6th, 1927.

NORTHERN PACIFIC RAILWAY COMPANY

Statement of Additions to and Deductions from that portion of Washington Valuation Section 28-B between Station 2702+40 to Station 2716 +75, covering the Draw Bridge over the Chehalis River and approaches to same, from June 30, 1917 to December 31, 1926.

	Additions	Deductions
Additions and Betterments, 6 mo. ending 12-31-17	- - - -	- - - - -
" " " 12 " " 12-31-18	$ 746.46	$ 776.45
" " " 12 " " 12-31-19	- - - - -	- - - - - -
Total as of 12-31-19	746.46	776.45
Additions and Betterments, 12 mo. ending 12-31-20	2,523.20	50.00
Total as of 12-31-20	3,269.66	826.45
Additions and Betterments, 12 mo. ending 12-31-21	- - - - -	- - - - -
Additions and Betterments, 12mo. ending 12-31-22	- - - - -	- - - - -
Additions and Betterments, 12 mo. ending 12-31-23		
Additions and Betterments, 12 mo. ending 12-31-24		
Additions and Betterments, 12 mo. ending 12-31-25	53,729.75	33,959.04
Total as of 12-31-25	56,999.41	34,785.49
Additions and Betterments, 12 mo. ending 12-31-26	4,501.81	- - - - -
Total as of 12-31-26	61,501.22	34,785.49

Office of Record Engineer,
St.Paul, Minnesota,
July 9th, 1927.

6916

On #4, Idaho Division,
June 27, 1927.

Mr. A. C. Terrell:

Regarding valuations requested in Mr. Judson's letter of June 22nd in connection with the study he is now making of joint operation of the Milwaukee and Northern Pacific:

Very approximate figures will be satisfactory for the present. After we have gotten the general situation sized up we will go into the matter in further detail.

Chief Engineer.

HES:H

Seattle, Washington,
June 22, 1927.

Mr. H. E. Stevens
Chief Engineer
St Paul, Minnesota

Dear Sir:

The following information will be necessary in connection with our study of possible economics which may exist by a joint use of facilities with the Milwaukee.

The information desired is shown under the various propositions as outlined in my letter to you of June 16th.

The information should be shown in the same manner as the valuation north of Seattle was shown in Mr. Thian's statement dated June 9th which shows the value as of June 30th, 1917 plus the cost of improvements subsequent to that date and also the present day value of the Engineering Report with the miles of main track for which the valuation is given.

Proposition #2

The plan as outlined at this time provides for the abandonment of the Enumclaw Branch of the Milwaukee. Under this arrangement the Milwaukee will operate its own trains over Northern Pacific track between Enumclaw and a proposed connection with the Milwaukee near Bridge #6 on the Tacoma Division, Green River Branch. It will be necessary to have an average valuation per mile for the Tacoma Division, Buckley Line, from Palmer Junction to Meeker Junction, not including Branches. Any needed adjustment necessary to apply it to the particular part of the line under consideration can be made here from field inspection. Also need an average valuation per mile for the Tacoma Division, Green River Branch. The average valuation per mile for this Branch will require more adjustment here due to the heavier construction being beyond the proposed point of connection with the Milwaukee near Bridge #6. This adjustment in the average valuation can be made from field inspection if Account #3 - Grading, and Account #6 - Bridges, Trestles & Culverts, are shown separately. Under this plan the Milwaukee trains will operate over the main line of the Seattle

Division between Palmer Junction and Kanaskat. It will be necessary to know the valuation on the Seattle Division from the east switch at Palmer Junction to the west switch at Kanaskat. I presume it will be a difficult matter to obtain the valuation for this portion of line, and it may be that an average valuation per mile for the Palmer Cuttoff between Palmer Junction and East Auburn, with adjustments, will be satisfactory.

Proposition #4

Under the study of a possible use of the Tacoma Union Station by the Milwaukee it will be necessary to know the valuation of the facilities to be used jointly with the Milwaukee. I have Mr. Cook's file covering this subject when it was under consideration in 1920, which contains a blue printed statement dated office of Valuation Engineer, St Paul, Minn., March 20th, 1920, showing the valuation of facilities which it will be necessary for the Milwaukee to use should they enter into a joint use of the station. Your file #5430 contains a copy of this statement and also a map which shows the facilities for which valuation is given. This valuation statement shows a total of $3,332,027 from which an item for train haul on grading was deducted making a total of $3,170,971. This valuation having been made up in 1920, and for a different purpose than the present study, will you please advise a valuation to be used in this study on the same facilities as shown in the above mentioned statement.

Proposition #5

It will be necessary to have an average valuation per mile of the Tacoma Division, Willapa Harbor Line, from Chehalis Junction to South Bend.

Proposition #6

Please furnish a valuation figure to be used in a plan for the possible abandonment of Bridge #1 on the Tacoma Division, Ocosta Branch, from station 2702+40 to station 16+75 which includes the drawbridge and approaches.

Yours truly,

W. W. Judson

Assistant Engineer.

WWJ/W

Mr Stevens
Gave copy to Mr Terrell with regard to work up
valuations 11 2/6/25

COPY

Seattle, Wash.,
June 22nd, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:--

The following information will be necessary in connection with our study of possible economics which may exist by a joint use of facilities with the Milwaukee.

The information desired is shown under the various propositions as outlined in my letter to you of June 16th.

The information should be shown in the same manner as the valuation north of Seattle was shown in Mr. Thian's statement dated June 9th which shows the value as of June 30th, 1917 plus the cost of improvements subsequent to that date and also the present day value of the Engineering Report with the miles of main track for which the valuation is given.

Proposiition No. 2: The plan as outlined at this time provides for the abandonment of the Enumclaw Branch of the Milwaukee. Under this arrangement the Milwaukee will operate its own trains over Northern Pacific track between Enumclaw and a proposed connection with the Milwaukee near Bridge #6 on the Tacome Division, Green River Branch. It will be necessary to have an average valuation per mile for the Tacoma Division, Budkley Line, from Palmer Junction to Meeker Junction, not including Branches. Any needed adjustment necessary to apply it to the particular part of the line under consideration can be made here from field inspection. Also need an average valuation per mile for the Tacoma Division, Green River Branch. The average valuation per mile for this Branch will require more adjustment here due to the heavier construction being beyond the proposed point of connection with the Milwaukee near Bridge #6. This adjustment in the average valuation can be made from field inspection if Account #3 - Grading, and Account #6 - Bridges, Trestles & Culverts, are shown separately. Under this plan the Milwaukee trains will operate over the main line of the Seattle Division between Palmer Junction and Kanaskat. It will be necessary to know the valuation on the Seattle Division from the east switch at Palmer Junction to the west switch at Kanaskat. I presume it will be a difficult matter to obtain the valuation for this portion of line, and it may be that an average valuation per mile for the Palmer Cuttoff between Palmer Junction and East Auburn, with adjustments, will be satisfactory.

Proposition No. 4: Under the study of a possible use of the Tacoma Union Station by the Milwaukee it will be necessary to know the valuation of the facilities to be used jointly with the Milwaukee. I have Mr. Cook's file covering this subject when it was under consideration in 1920, which contains a blue printed statement dated Office of Valuation Engineer, St. Paul, Minn., March 20th, 1920, showing the valuation of facilities which it will be necessary for the Milwaukee to use should they enter into a joint use of the station. Your file No. 5430 contains a copy of this statement and also a map which shows the facilities for which valuation is given. This valuation statement shows a total of $3,332, 027 from which an item for train haul on grading was deducted making a total of $3, 170, 971. This valuation having been made up in 1920, and for a different purpose than the present study, will you please advise a valuation to be used in this study on the same facilities as shown in the above mentioned statement.

Proposition No. 5: It will be necessary to have an average valuation per mile of the Tacoma Division, Willapa Harbor Line, from Chehalis Junction to South Bend.

Proposition No. 6: Please furnish a vlauation figure to be used in a plan for the possible abandonment of Bridge No. 1 on the Tacoma Division, Ocosta Branch, from station 2702 + 40 to station 16 + 75 which includes the d drawbridge and approaches.

Yours truly,

W. W. Judson,

ASSISTANT ENGINEER.

WWJ:J

6916

Saint Paul, July 18, 1927.

Mr. W. W. Judson:

Your letter of the 13th about conference with you and Mr. Crane:

I expect to start West the latter part of this week and probably will not return to St. Paul until after the first of August. Will see you on the Coast and make more definite arrangements as to date for conference.

Chief Engineer.

HES:H

Seattle, Washington,
July 13, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

Referring to your letter of July 7 in regard to conference in St. Paul.

Mr. Crane and I have gone over all the propositions mentioned in my letter to you of June 15, in a tentative way, but we have not completed the statistics and costs from which a final decission could be reached in regard to the saving which could be made. On some of the propositions considerable work remains to be done and some of them we are waiting for statistics and costs requested from St. Paul and Chicago, which is necessary before work can be carried on.

Mr. Crane intends to go to Chicago soon to confer with the Accounting Dept. in regard to statistics and costs furnished him, and your suggested conference will work in nicely with that trip.

We wish to prepare some maps and have some of our tentative figures in better shape before meeting with you. This can be accomplished in about 10 days, and I would suggest that conference be arranged for about August first, it being understood

that we are in a position to discuss these propositions in a tentative way only.

Will wait advice from you as to date selected.

Yours truly,
H. H. Judson
Assistant Engineer.

6916

Saint Paul, July 7th, 1927.

Mr. W. W. Judson

In line with our conversation in Seattle, I discussed with Mr. Williamson my suggestion that as soon as you and Mr. Crane had run through in a preliminary way the subjects covered by your memorandum, that arrangements be made for a conference in St. Paul with Mr. Gillick, Mr. Williamson and myself.

Mr. Williamson concurs in this suggestion and we would like to be advised about when you think the matters you now have in hand will be in shape for a general discussion.

As you of course appreciate, we do not wish to go into too much detail until certain questions of policy and principle have been settled.

Chief Engineer.

HES H

6916

Saint Paul, July 15, 1927.

Mr. W. W. Judson:

I have your letter of the 11th with clipping from the Seattle P.I. of July 9th.

I do not think there is any likelihood of statements of this character carrying any substantial weight with those in authority, it being quite apparent that tonnage cannot be handled over mountain grades at the same unit costs as it is handled over level grades regardless of character of power used.

Chief Engineer.

HBS:H

Seattle, July 11, 1927.

PERSONAL

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

Attached is an editorial from the Seattle Post-Intelligencer of July 9th.

The statements in regard to the economical operations by one road due to its electrification, represent in a general way, the popular belief that economies due exist through electrification.

Since being engaged in the various studies there has always existed a doubt in my mind as to the real economies under the present conditions and volume of business.

I will have figures in a short time for your information which will show approximately what the ton mile costs under electrification are. These figures will also throw considerable light on the electrification study which was completed last year and will give you more nearly the information in regard to operating costs which you wanted, and which up to the present time I had been unable to get.

noted 7/14/27

Yours truly,

H. M. Judson

Assistant Engineer

That women adorn themselves in modest apparel.—I Tim. 2:9.

Today's text is suggested by the Rev. C. J. Boppell, pastor of West Side Presbyterian Church. Monday's text will be chosen by the Rev. T. A. Hilton, pastor of All Saints' Church (Episcopal).

Discrimination Against Puget Sound Ought To Be Ended

THERE is renewed hope that ultimate success may come out of plans now being formulated to level off the purely artificial obstacle standing between Eastern Washington farm products and the Seattle market.

The movement is being led by the Port of Seattle, a logical leadership. But interests working for reconsideration of the discriminatory ruling of the interstate commerce commission are diversified in activity and broad in geographical scope.

Portland has argued that wheat and other farm products find their way from Southeastern Washington to the Oregon metropolis by water grade, whereas to bring them to Puget Sound would entail lifting them over the Cascade Mountains.

This argument, here stripped down to its essentials, has won for Portland a 10 per cent favorable rate differential.

* * *

AS A matter of demonstrable fact, economies of operation through electrification make possible to at least one railroad ton-mile operating costs to Puget Sound comparable with those enjoyed by Columbia River lines to tidewater. A low-level tunnel being constructed by another Puget Sound railroad, with the added saving afforded by electrification, will also give it decided advantage.

Thus is swept away the main argument advanced by Portland.

There are other compelling reasons why the differential should be wiped out.

Movement of Puget Sound freight leans preponderantly to loads east. This means that "empties" have to be hauled here over the mountains. Many of these could be loaded with farm products were it not for the artificial rate barrier. This would further reduce average operating costs by giving greater revenue mileage to rolling stock.

The advantage of the Portland differential to producers is wholly illusory. It is turned into actual disadvantage by giving Portland buyers a monopoly in what ought, in the interest of better prices, to be a competitive market.

* * *

PORTLAND'S preferential treatment is highly discriminatory. It is the same kind of discrimination between cities which the interstate commerce commission would not for a moment permit between railroads.

One Seattle railway probably can haul a ton of freight from Eastern Washington to Puget Sound at lower cost than its competitors. The reasoning back of the Portland ruling, if applied to this road, would permit it to make a rate lower than other lines terminating here. That, however, would be unsound.

But would it be more unsound than the present Columbia River differential?

The Post-Intelligencer believes that if reconsideration is secured and directed to an analysis of the whole body of facts, rather than being narrowed to a question of topography, Puget Sound cities will be relieved of this unjust handicap.

N. P. 1386 12-24

TELEGRAM—BE BRIEF

TIME FILED

M.

St. Paul, July 20th 1927

W. W. Judson,
Seattle

Your wire 19th Expect to furnish information within a few days M-13

H. E. Stevens

N. P. 1386 12-24

TELEGRAM—BE BRIEF

M.

98cfr

6916

Seattle July 19 1927 M E Stevens

Stpaul

When may I expect valuation information asked for in my letter June 22

W W Judson

3a20

6916

Saint Paul, Minn.,

July 6, 1927.

MR. H. E. STEVENS:

Your letter June twenty-fifth, investigation being made by Messrs. Judson and Crane as to possibilities of economies from combination of Milwaukee and Northern Pacific facilities at certain points.

I think you are correct that we should have a conference with Mr. Gillick as early as possible as I want to find out whether the Milwaukee would be interested in any kind of a proposition under which we would again handle their traffic between the Twin Cities and the Head-of-the-Lakes. They have now had experience enough to know what their own costs are and I am satisfied that their operation between Pigs Eye and Gloster particularly is so expensive that they might be ready to consider a proposition from us which would be lower than their present costs but give us an attractive return.

We will want to have Messrs. Judson and Crane make an investigation along these lines provided the Milwaukee would consider such an arrangement.

6916

St. Paul, Minn.,
June 28th, 1927.

Mr. W. W. Judson:--

Per your request of the 22nd, I inclose condensed profiles for the Rocky Mountain, Montana, Idaho and Pasco Divisions.

Chief Engineer.

REG-jk
Inc.

6916

On #4, Seattle, Division,
June 25, 1927.

Mr. F. E. Williamson:

For your information I am attaching copy of letter from Mr. Judson, outlining the start he and Mr. Crane have made in collecting data for preliminary report on possibilities of economies from consolidation of the Milwaukee and Northern Pacific facilities at certain points.

I have discussed this matter personally with Mr. Judson and advised him that in my opinion they were proceeding on the proper lines and that the subjects covered by his memorandum should be worked through to show approximate results which might be expected in case the changes in operation were made.

There are a number of questions of policy involved which will have to be decided before we go to the expense of collecting all of the data necessary to make the reports complete.

I told Mr. Judson that I thought we would probably want him and Mr. Crane to come to St. Paul for a conference with you and Mr. Gillick as soon as the preliminary report is in shape for general discussion.

Chief Engineer.

HES:H
enc

Seattle, Washington,
June 22, 1927.

Mr. H. E. Stevens
Chief Engineer
St Paul, Minnesota

Dear Sir:

Please send me condensed profiles, main line and branches, for the Rocky Mountain, Montana, Idaho and Pasco Divisions.

#15 to 21—
45 " 56

Yours truly,

W. W. Judson

WWJ/W

Assistant Engineer.

JWP

Please furnish

Copies hereof

6/28

#8 9
7/25—

COPY 6916

Seattle, Wash.,
June 22nd, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Copy to Mr Terrell with request to work up valuations 6/28 HES

Dear Sir:--

The following information will be necessary in connection with our study of possible economics which may exist by a joint use of facilities with the Milwaukee.

The information desired is shown under the various propositions as outlined in my letter to you of June 16th.

The information should be shown in the same manner as the valuation north of Seattle was shown in Mr. Thian's statement dated June 9th which shows the value as of June 30th, 1917 plus the cost of improvements subsequent to that date and also the present day value of the Engineering Report with the miles of main track for which the valuation is given.

Proposiition No. 2: The plan as outlined at this time provides for the abandonment of the Enumclaw Branch of the Milwaukee. Under this arrangement the Milwaukee will operate its own trains over Northern Pacific track between Enumclaw and a proposed connection with the Milwaukee near Bridge #6 on the Tacome Division, Green River Branch. It will be necessary to have an average valuation per mile for the Tacoma Division, Budkley Line, from Palmer Junction to Meeker Junction, not including Branches. Any needed adjustment necessary to apply it to the particular part of the line under consideration can be made here from field inspection. Also need an average valuation per mile for the Tacoma Division, Green River Branch. The average valuation per mile for this Branch will require more adjustment here due to the heavier construction being beyond the proposed point of connection with the Milwaukee near Bridge #6. This adjustment in the average valuation can be made from field inspection if Account #3 - Grading, and Account #6 - Bridges, Trestles & Culverts, are shown separately. Under this plan the Milwaukee trains will operate over the main line of the Seattle Division between Palmer Junction and Kanaskat. It will be necessary to know the valuation on the Seattle Division from the east switch at Palmer Junction to the west switch at Kanaskat. I presume it will be a difficult matter to obtain the valuation for this portion of line, and it may be that an average valuation per mile for the Palmer Cutoff between Palmer Junction and East Auburn, with adjustments, will be satisfactory.

Proposition No. 4: Under the study of a possible use of the Tacoma Union Station by the Milwaukee it will be necessary to know the valuation of the facilities to be used jointly with the Milwaukee. I have Mr. Cook's file covering this subject when it was under consideration in 1920, which contains a blue printed statement dated Office of Valuation Engineer, St. Paul, Minn., March 20th, 1920, showing the valuation of facilities which it will be necessary for the Milwaukee to use should they enter into a joint use of the station. Your file No. 5430 contains a copy of this statement and also a map which shows the facilities for which valuation is given. This valuation statement shows a total of $3,332,027 from which an item for train haul on grading was deducted making a total of $3,170,971. This valuation having been made up in 1920, and for a different purpose than the present study, will you please advise a valuation to be used in this study on the same facilities as shown in the above mentioned statement.

Proposition No. 5: It will be necessary to have an average valuation per mile of the Tacoma Division, Willapa Harbor Line, from Chehalis Junction to South Bend.

Proposition No. 6: Please furnish a vlauation figure to be used in a plan for the possible abandonment of Bridge No. 1 on the Tacoma Division, Ocosta Branch, from station 2702 + 40 to station 16 + 75 which includes the d drawbridge and approaches.

Yours truly,

W. W. Judson,

ASSISTANT ENGINEER.

WWJ:J

8

Seattle, June 16, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

Mr. Crane and I have gone over in a tentative way, the various locations in this territory where, in our opinions, there exists a possibility of operating economies by a joint use of facilities with the Milwaukee.

No report having as yet been made, on what we are doing, I am giving you attached an outline of the various propositions that we have under consideration with comments on same. Details are not shown, but the outline will give you an idea of what, in our opinions, the work consists of. There are several complications in connection with each one of the propositions, and any comments you have to make will be of assistance to us in carrying to completion the data on the various propositions.

The data on these propositions has not been completed and as there is considerable detail to go into even for a tentative report, there is much work yet to be done. In some cases the figures, when completed, may not bear out our contentions that operating economies do exist. Later we will be in a position to give you tentative figures on the results.

In the considerations of all of these propositions we have been guided by the assumption that in no case would a joint use of facilities give either road access to business which is not now competitive. The right of one company to use tracks or facilities of the other would be solely for the purpose of a more economical handling of the business which now exists for each company.

There are several propositions which could be looked into east of here on the main and branch lines in Washington, Idaho and Montana. Is it your intention to make a study of these propositions at this time. Mr. Crane has no definite instructions

but feels that if it was the intention to make a general survey of the situation that the locations, where duplications exist, east of here, should be considered and included in the tentative report.

Yours truly,

H. N. Judson

Assistant Engineer

PROPOSITION #1

Elimination of the Milwaukee Barge Service between Seattle and Bellingham and the handling of that business over the Northern Pacific.

Milwaukee barge service to be eliminated.

Milwaukee Seattle-Bellingham business to be handled in Northern Pacific trains in same manner as N.P. business out of Seattle is handled.

Interchange to Milwaukee to be made at Deming where the N.P. crosses the Bellingham Division of the Milwaukee.

Milwaukee business originating or destined to points east of Cedar Falls to be picked up and set out at Everett for handling by the Milwaukee on their Everett Branch between Everett and Cedar Falls.

Possibility of abandonment of N.P. Bellingham Branch between Park and Bellingham -

N.P. Bellingham business to be turned over to Milwaukee at Deming for handling by the Milwaukee.

Mill at Larson to be switched by Milwaukee -

Possibility of one road doing the switching at Bellingham-

The Milwaukee may desire to run their own trains between Everett and Deming, but this does not look attractive at this time due to small amount of business to be handled and the cost of running rights and expense of running train for this business.

PROPOSITION #2

Abandonment of Milwaukee Bagely Junction - Enumclaw Line and the handling of that business over N.P.

Abandonment of the Milwaukee Line between Enumclaw and a point near Barneston where connection can be made with N.P.

Practically all business over this line is in and out of Enumclaw.

Due to the break in N.P. service at Kanaskat and resulting delay at that point if Milwaukee business was handled in N.P. trains

and due to fact that Milwaukee will want to retain their identity in Enumclaw they will probably desire to run their own train over the N.P. track between Barneston and Enumclaw.

PROPOSITION #3

Abandonment of Milwaukee Front Street Barge Service at Tacoma - and the handling of that business by N.P. switch engine.

Barge service between Milwaukee terminal and Front Street gridiron to be abaondoned.

All Milwaukee business to be handled by N.P. switch engine and switched on Front Street in same manner as N.P. business is handled.

PROPOSITION #4

Joint use of the Tacoma Union Passenger Station by the Milwaukee.

The present Milwaukee station at Tacoma is not suitable for a City of that size -

This proposition is doubtful but if consideration was given to the construction of a new depot at Tacoma, a saving could be made by both roads in the use by the Milwaukee of the Union Depot.

Dependent upon the consent of other tenants now using Union Depot -

This proposition was under consideration at the time the Milwaukee left the Union Station after use during government control, but at that time the rental rate established was such as to be unattractive to the Milwaukee.

PROPOSITION #5

Willapa Harbor Lines - The abandonment of the Milwaukee line between Blakeslee Junction and Dryad or between the crossing one mile west of Chehalis Junction and Dryad -

The running of Milwaukee trains between these points over N.P. track -

The Milwaukee will in all probability want to retain their identity at Chehalis and Centralia so that the abandonment will

probably be figured on the 17 miles between the two crossings at Chehalis Junction and Dryad.

PROPOSITION #6

Grays Harbor Lines

Milwaukee line to Grays Harbor is joint with O.W.R.R.& N. and there appears to be no feasible plan of any change in the lines to Aberdeen and Hoquiam.

Practically all facilities around Aberdeen and Hoquiam are not jointly operated.

Possibility of abandonment of N.P. Bridge #1 on the Ocosta Branch and use of O.W. Milwaukee bridge to South Aberdeen by N.P.

This bridge is now used by the joint switch engine, but is not used by the Ocosta Branch train.

COPY

Seattle, June 16, 1927.

Mr. H. E. Stevens:

Mr. Crane and I have gone over in a tentative way the various locations in this territory where, in our opinions, there exists a possibility of operating economies by a joint use of facilities with the Milwaukee.

No report having as yet been made on what we are doing, I am giving you attached an outline of the various propositions that we have under consideration with comments on same. Details are not shown, but the outline will give you an idea of what, in your opinions, the work consists of. There are several complications in connection with each one of the propositions, and any comments you have to make will be of assistance to us in carrying to completion the data on the various propositions.

The data on these propositions has not been completed and as there is considerable detail to go into even for a tentative report, there is much work yet to be done. In some cases, the figures, when completed, may not bear out our contentions that operating economies do exist. Later we will be in position to give you tentative figures on the results.

In the considerations of all of these propositions we have been guided by the assumption that in no case would a joint use of facilities give either road access to business which is not now competitive. The right of one company to use tracks or facilities of the other would be solely for the purpose of a more economical handling of the business which now exists for each company.

There are several propositions which could be looked into east of here on the main and branch lines in Washington, Idaho and Montana. Is it your intention to make a study of these propositions at this time. Mr. Crane has no definite instructions but feels that if it was the intention to make a general survey of the situation that the locations, where duplications exist east of here, should be considered and included in the tentative report.

(sgd) W.W. Judson

COPY

Proposition #1:

Elimination of the Milwaukee Barge Service between Seattle and Bellingham and the handling of that business over the NP.

Milwaukee barge service to be eliminated.

Milwaukee Seattle-Bellingham business to be handled in NP trains in same manner as NP business out of Seattle is handled.

Interchange to Mil. to be made at Deming where the NP crosses the Bellingham Division of the Milwaukee.

Mil. business originating or destined to points east of Cedar Falls to be picked up and set out at Everett for handling by the Mil. on their Everett Br. between Everett and Cedar Falls.

Possibility of abandonment of NP Bellingham Br. between Park and Bellingham.

NP Bellingham business to be turned over to Milwaukee at Deming for handling by the Milwaukee.

Mill at Larson to be switched by Milwaukee.

Possibility of one road doing the switching at Bellingham.

The Milwaukee may desire to run their own trains between Everett and Deming, but this does not look attractive at this time due to small amount of business to be handled and the cost of running rights and expense of running train for this business.

Proposition #2:

Abandonment of Milwaukee Bagely Junction - Enumclaw Line and the handling of that business over NP:

Abandonment of the Milwaukee Line between Enumclaw and a point near Barneston where connection can be made with NP.

Practically all business over this line is in and out of Enumclaw.

Due to the break in NP service at Kanaskat and resulting delay at that point if Milwaukee business was handled in NP trains and due to the fact that Milwaukee will want to retain their identity in Enumclaw they will probably desire to run their own train over the NP track between Barneston and Enumclaw.

Proposition #3

Abandonment of Milwaukee Front St. Barge Service at Tacoma, and the handling of that business by NP switch engine.

Barge service between Milwaukee terminal and Front St. gridiron to be abandoned.

All Milwaukee business to be handled by NP switch engine and switched on Front St. in same manner as NP business is handled.

Proposition #4

Joint use of the Tacoma Union Passenger Station by the Milwaukee.

The present Milwaukee station at Tacoma is not suitable ~~hyxtkm~~ for a City of that size -

This proposition is doubtful but if consideration was given to the construction of a new depot at Tacoma, a saving could be made by both roads in the use by the Milwaukee of the Union Depot.

Dependent upon the consent of other tenants now using Union Depot -

This proposition was under consideration at the time the Milwaukee left the Union Station after use during government control, but at that time the rental rate established was such as to be unattractive to the Milwaukee.

Proposition #5

Willapa Harbor Lines - The abandonment of the Milwaukee line between Blakeslee Jct. and Dryad or between the crossing one mile west of Chehalis Jct. and Dryad -

The running of Milwaukee trains between these points over NP track -

The Milwaukee will in all probability want to retain their identity at Chehalis and Centralia so that the abandonment will probably be figured on the 17 miles between the two crossings at Chehalis Jct. and Dryad.

Proposition #6 GRAYS HARBOR LINES

Milwaukee line to Grays Harbor is joint with OWRR&N and there appears to be no feasible plan of any change in the lines to Aberdeen and Hoquiam.

Practically all facilities around Aberdeen and Hoquiam are now jointly operated.

Possibility of abandonment of NP Bridge #1 on the Ocosta Branch and use of OW Milwaukee bridge to So. Aberdeen by NP.

This bridge is now used by the joint switch engine but is not used by the Ocosta Branch train.

6916

Saint Paul, June 10, 1927.

Mr. W. W. Judson:

Your letter of May 24th about valuation furnished by Mr. Thian for lines north of Seattle:

We did quite a little A&B work on these lines after valuation date and I have had Mr. Thian make a set up of these charges. Same is covered by his report of June 9th, copy attached.

Chief Engineer.

MES:H
enc

St. Paul, Minn., June 9, 1927.

Mr. H. E. Stevens,
Chief Engineer.

Dear Sir:

Referring to your pencil notation on my letter of June 1st, relative to valuation of lines north of Seattle:

I am attaching copy of statements covering all A. & B. work on these valuation sections from June 30, 1917, to December 31, 1926. The following tabulation takes this A. & B. work into consideration, which was omitted in statement in my letter of May 12, 1927.

	Woodinville to Sumas. Wash. Sec. 9	Black River to Woodinville. Wash. Sec. 8-A	Bellingham Branch. Wash. Sec. 26
Total Accts., 1 & 3 to 47, except Accts. 2 and 27.	$ 4,393,673	$ 1,061,449	$ 763,211
General Expenditures	65,905	15,932	11,448
Interest	334,468	113,124	38,733
Telegraph, Account 27	29,325	6,626	6,348
	$ 4,823,371	$ 1,197,131	$ 819,740
Land	247,053	108,544	176,853
Totals as of June 30, 1917	$ 5,070,424	$ 1,305,665	$ 996,593
Present-day Value of Engr. Report Costs as of June 30, 1917	$ 7,964,447	$ 2,023,938	$ 1,488,437
A. & B. Work, as per attached sheets	(+) 285,273	(+) 110,757	(+) 63,660
Total as of Present Date	$ 8,249,720	$ 2,134,695	$ 1,552,097
Miles of Main Track	103.732	23.437	22.455
Average Cost per Mile as of 6/30/17 (1914 Prices)	$ 48,880	$ 55,709	$ 44,382
Average Cost per Mile as of present date	$ 79,529	$ 91,082	$ 69,120

Above tabulation worked up on basis as outlined in my letter of May 12, 1927.

Yours truly,

P. E. Thiau
VALUATION ENGINEER.

WHF/j

6916

St. Paul, Minnesota, June 1, 1927

Mr. H. E. Stevens,
Chief Engineer.

Dear Sir:

Referring to attached letter of Mr. Judson dated May 24, relative to valuation of lines north of Seattle.

The Revised Engineering Report is as of June 30, 1917, Prices in same being 1914 prices. A trend factor of 1.6 was applied to all accounts except land to bring same to a present day value. As this trend factor of 1.6 is probably high when applied to all accounts no consideration was given to A & B Work in the figures in my letter of May 12. To get the A&B figures for these sections would require a large amount of extra work and take some time. Kindly advise if you want this done.

Yours truly,

P. E. Thian
VALUATION ENGINEER.

WMF:ap

6916

Saint Paul, May 31, 1927.

Mr. W. W. Judson:

As requested in your letter of May 4th, I am handing you herewith three copies of statements prepared by Mr. Mayer covering train statistics on the Seattle-Sumas and Bellingham Branches.

Chief Engineer.

HWS:H
enc

6916

St. Paul, Minnesota,
May 27, 1927.

File 3903 - M.

MR. H. E. STEVENS:

Referring to yours of the 9th inst. and my reply of the 10th in connection with request of Mr. Judson for certain train statistics on the Seattle - Sumas and Bellingham Branches.

Enclosed I hand you three copies of statements showing the information for April and October 1925 and 1926 for trains 931 and 932 and including switch engine handling cars between Bellingham and Larson, and similar statement covering trains 675 and 676. The latter statement bears notation that doubling hills and train switching not included. This was done for the reason that it would be hard to obtain the information here, but if Mr. Judson needs such figures he can obtain them from the superintendent's office much easier than they could be obtained here.

Asst. General Auditor.

Enclosure.

D 4

6946

Saint Paul, May 27, 1927.

Mr. W. W. Judson:

Your letter of the 24th about valuation to be used in the studies you are now making:

In order to provide a uniform basis for negotiations, I think it would be advisable to use the I.C.C. valuation figures so far as they are available.

Chief Engineer.

NWS:H

Seattle, May 24, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

In the consideration of the various propositions of proposed joint use of facilities with the Milwaukee, the question will come up as to the basis of valuation to be used where a rental is involved.

Whether the book value, Interstate Commerce valuation figures or the cost to reporduce at present day prices is used may depend on the circumstances peculiar to each proposition, but for the sake of uniformity in the preliminary report is seems best for both roads to use the same basis throughout.

In the final consideration of any of the propositions should any of them be given serious consideration there of course will be some trading on both sides, but this fact cannot be taken into consideration in the report of possible operating economies.

The study thus far indicates that a larger proportion of Northern Pacific facilities will be used jointly than Milwaukee facilities. This fact should not influence the establishment of a just basis of valuation, but I mention it to show that it probably will influence the negotiations as the difference in valuations from the actual cost to present day prices will materially effect the result of the study.

Have you in mind a basis of valuation which you wish followed in this particular study?

Yours truly,

W. M. Judson

Assistant Engineer

6916

Seattle, May 24, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

Referring to your letter of May 13th, with copy of Mr. Thian's letter attached, giving valuation totals for the lines north of Seattle, as requested in my letter of May 4th.

When request was made for the valuation of the Bellingham Branch by miles, I was unaware of the manner in which the valuation records were kept and the work involved in furnishing this information. The valuation given for the Bellingham Branch, as a whole, can be adjusted as suggested in your letter, and, I think, will be satisfactory for the preliminary report.

In Mr. Thian's statement dated May 12th, which was attached to your letter to me of May 13th, he gives a valuation as of June 30th, 1917. As I understand it June 30th, 1917 is the date of the Revised Engineering Report, and the prices in this valuation are for some date prior to 1917. This is indicated by the trend factor of 1.6 which was used to bring the valuation to present day prices. Is this

assumption correct?

In the statement the valuations have been brought up to present date by applying the trend factor to all accounts except Land Acct. #2. No mention has been made of any revision in the valuations due to work done subsequent to June 30th, 1917. Has this been taken into consideration and is it of enough importance to be taken into consideration?

Yours truly,

F. M. Judson

Assistant Engineer.

6916

Seattle, Wash.,
May 14, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

Your letter May 11, in regard to train statistics and costs on the Bellingham and Sumas Lines.

Train #675 runs from BlackRiver to Sumas, and the statistics for this train should be from Black River as you have arranged.

WWJ:C

Yours truly,

W. W. Jackson


CHIEF ENGINEER
MAY 17 1927
RECEIVED
NORTHERN PACIFIC RY.
ST. PAUL, MINN.

6916

Saint Paul, May 13, 1927.

Mr. W. W. Judson:

I am attaching copy of Mr. Thian's letter of May 12th, giving the valuation totals for the lines requested in your letter of May 4th. You will note, however, it will be a slow and somewhat expensive job to work out the valuations by miles for the Bellingham Branch.

It seems to me with the figures Mr. Thian has furnished you will be able to pro rate the valuations from field inspection closely enough to answer present requirements.

Chief Engineer.

HR:H
enc

St. Paul, Minnesota,
May 12, 1927.

Mr. H. E. Stevens,
Chief Engineer.

Dear Sir:

As per your letter of the 9th inst. in regard to valuations requested by Mr. Judson to be used in connection with the joint study being made by the Northern Pacific & Milwaukee Railways as to the possibilites of savings by joint operation of certain branch lines and terminals, I have had the following tabulation set up:

	Woodinville to Sumas Wash.Sec.9	Black River to Woodinville Wash.Sec.8A	Bellingham Branch Wash.Sec.26
Total Accts. 1 & 3 to 47 except Accts #2 & 27	$4393673	$1061499	$763211
Gen. Exp.	65905	15922	11448
Interest	334468	113124	38733
Telegraph Acct.#27	29325	6626	6348
	$4823371	$1197121	$819740
Land Acct #2	247053	108544	176853
Total as of 6/30/17	$5070424	$1305665	$996593
Miles of Main Track	103.732	23.437	22.455
Av. Cost Per Mile as of 6/30/17	$48880	$55709	$44382
Av. Cost Per Mile as of Present Date	$76779	$86356	$66286
Total as of present date	$7964439	$2023972	$1488452

The above tabulation is based on the values as shown for these valuation sections in the Revised Engineering Report. The average cost per mile as of present date has been arrived at by applying the trend factor of 1.6 to all accounts except land for each section.

Sections 9, 9A & 9B are shown as combined in the Engineering Report. 9A & 9B have been split out on a mileage basis. Section 8A has also been split out of Sec. 8 & 8A.

Mr. H. E. Stevens #2

The Right of Way Department advises that of the $176853 as shown for land for Wash. Sec.#26 only $10000 of this can be assigned as value of land outside of the city of Bellingham, the balance namely $166853 representing the value of land within the city. Thus you see that the above cost per mile for the Bellingham Branch is probably too high and if applied would give a too high value for that portion M.P. 0 to 4 and a too low value for that portion M.P. 15 to the end.

In the last sentence of the paragraph under "Valuation" Mr. Judson requests an actual total valuation by miles from Wickersham to the end of the Bellingham Branch. In order to comply with this it will be necessary for us to set up and price an estimate covering each mile of this branch making a total of more than twenty separate estimates requiring at least a month's time to complete. In view of the large amount of work necessary to furnish this data I will do nothing more unless instructed otherwise by you.

Yours truly,

P. E. Thiam
W.H.F.

VALUATION ENGINEER.

WHF:ap

6916

Saint Paul, May 11, 1927.

Mr. W. W. Judson:

I am attaching copy of Mr. Mayer's letter of the 10th about train statistics you requested on the Bellingham and Sumas Lines.

Mr. Mayer advises there is quite a little work involved in collecting the figures because of the fact that the branch line costs on the Seattle Division are thrown into one general statement. He has agreed, however, to pick out such figures as he can from the records, but claims that train 675 runs from Black River to Sumas; not from Seattle to Sumas, and asks if statistics should be furnished from Black River or Woodinville. I have tentatively advised him that these figures should be from Black River. Please say if correct.

Chief Engineer.

HEB:H
enc

COPY

Saint Paul, May 10, 1927.

Mr. H. E. Stevens:

Referring to yours of the 9th inst. to Mr. Sweney and our conversation on the subject:

I am arranging to get the information asked for, for the months of April and October in the years 1925 and 1926, showing movements east and westbound. No statistics are now being figured covering cars handled by the switch engine between Bellingham and Larson, but we will figure those and show the results separately from the statistics of the trains from Bellingham to Wickersham.

Seattle - Sumas train 675 runs from Black River to Seattle, and I will give you the statistics between these points, but if you prefer to have the information from Woodinville to Sumas, and you will let me know, it can easily be arranged.

(sgd) G.J. Mayer

4916

Saint Paul, May 10th, 1927.

File 3863-M.

Mr. H. E. Stevens:

Referring to yours of the 9th inst . to Mr. Sweney and our conversation on the subject:

I am arranging to get the information asked for, for the months of April and October in the years 1925 and 1926, showing movements east and west bound. No statistics are now being figured covering cars handled by the switch engine between Bellingham and Larson, but we will figure those and show the results separately from the statistics of the trains from Bellingham to Wickersham.

Seattle - Sumas train #675 runs from Black River to ~~Seattle~~, and I will give you the statistics between these points, but if you prefer to have the information from Woodinville to Sumas, and you will let me know, it can easily be arranged.

Asst. General Auditor.

6916

Saint Paul, May 9th, 1927.

Mr. W. W. Judson:

Your letter of the 4th about progress on the study of joint operation of the Milwaukee and Northern Pacific:

I have requested the Accounting Department to furnish the statistics for the Bellingham Branch and the Seattle-Sumas Line, and the Valuation Department to furnish the valuations requested in the last paragraph of your letter; although I hardly think we can furnish detailed valuations per mile without a great deal of additional work which probably is not justified at this stage of the study.

I will get the figures to you as soon as possible.

Chief Engineer.

RSS:H

Saint Paul, May 9th, 1927.

Mr. F. W. Sweney:

Representatives of the Northern Pacific and Milwaukee are now engaged in study of the possibilities of effecting savings by joint operation of certain branch lines and terminals, and Mr. Judson - our representative in this work - advises that he will need the following statistics:

Bellingham Branch Statistics:

Gross ton miles trailing, engine miles, train miles, empty and loaded car miles between Bellingham and Wickersham. To be shown separately for east and west movement. On this branch the engine miles and train miles will show considerable variance due to the manner of operation. Information should show how the tonnage is accounted for that is handled by Bellingham switch crew out of Bellingham over the hill to Larson and picked up there by local freight and handled into Wickersham. A representative average figure is all that is necessary on the above statistics and the period used can be best determined in St. Paul. On other data which I am working up, I am using a five year period ending December 31, 1926.

Seattle to Sumas Statistics:

Gross ton milestrailing, engine miles, train miles, empty and loaded car miles on trains #675 and 676 between Seattle and Sumas. Period to be selected to show a representative average figure.

Chief Engineer.

HES:H

Saint Paul, May 9th, 1927.

Mr. P. E. Thian:

In connection with the joint study being made by the Northern Pacific and Milwaukee as to possibilities of savings by joint operation of certain branch lines and terminals, Mr. Judson advises as follows:

Valuation:

To arrive at a tentative figure, showing costs of operation, it is necessary to take into consideration the valuation of the various lines involved. I think for the present it will be sufficient to furnish an average valuation per mile for the line from Seattle to Sumas via Hartford Line - Lake Washington Belt Line from Black River to Woodinville and the Bellingham Branch from Wickersham to Bellingham. In the consideration of the abandonment of the Bellingham Branch it will probably be necessary to leave in that portion of the line from MP 0 to MP 4 and from MP 15 to end, and it is possible that other developments will come up as the study progresses. Therefore, in addition to the above requested average valuation per mile on the Bellingham Branch, the statement should also show the actual total valuation by miles from Wickersham to End.

Will you please look this up and advise if the valuations requested by Mr. Judson can be conveniently furnished.

Chief Engineer.

HWS:H

Seattle, Washington,
May 4, 1927.

Mr. H. E. Stevens,
Chief Engineer,
St. Paul, Minn.

Dear Sir:

The first proposition on which we are working in connection with the joint study with the Milwaukee is the situation north of Seattle, which involves the elimination of the Milwaukee barge service between Seattle and Bellingham and the handling of that business in Northern Pacific Railway trains. In studying this proposition there developes the possibility of the abandonment of the Northern Pacific Bellingham Branch.

In the preparation of a tentative report on this proposition certain basic figures on tonnage and costs are necessary. Upon investigation I find that a large part of the desired information is not available in Seattle and what is available will have to be broken down and is probably more readily available in St. Paul. To determine what, if any, operating economies exist, it is necessary to know, even for a tentative report, the amount of business handled and the cost of handling that business. I am attempting to establish a unit cost basis without going into all the details which will perhaps be necessary later.

Following is information desired:

Bellingham Branch Statistics

Gross ton miles trailing, engine miles, train miles, empty and loaded car miles between Bellingham and Wickersham. To be shown separately for east and west movement. On this branch the engine miles and train miles will show considerable variance due to the manner of operation. Information should show how the tonnage is accounted for that is handled by Bellingham switch crew out of Bellingham over the hill to Larson and picked up there by local freight and handled into Wickersham. A representative average figure is all that is necessary on the above statistics and the period used can be best determined in St. Paul. On other data

which I am working up I am using a five year period ending December 31st, 1926.

Seattle to Sumas Statistics

Gross ton miles trailing, engine miles, train miles, empty and loaded car miles on trains #675 and 676 between Seattle and Sumas. Period to be selected to show a representative average figure.

Costs

In connection with the costs corresponding to the above statistics, I have been able to work up an average operating cost figure for Seattle Division Branch Line which I believe will be satisfactory to apply to the statistics. The figure I have worked up includes several trains in which we are not interested, but by using the total tonnage and total costs a representative figure for tentative purposes can be obtained. More detail can be worked up after you have considered the preliminary report.

Valuation

To arrive at a tentative figure, showing costs of operation, it is necessary to take into consideration the valuation of the various lines involved. I think for the present it will be sufficient to furnish an average valuation per mile for the line from Seattle to Sumas via Hartford Line - Lake Washington Belt Line from Black River to Woodinville and the Bellingham Branch from Wickersham to Bellingham. In the consideration of the abandonment of the Bellingham Branch it will probably be necessary to leave in that portion of the line from M.P. 0 to M.P. 4 and from M.P. 15 to end, and it is possible that other developments will come up as the study progresses. Therefore, in addition to the above requested average valuation per mile on the Bellingham Branch, the statement should also show the actual total valuation by miles from Wickersham to End.

Other necessary data is to be worked up here in Seattle.

Yours truly,

H. M. Judson

St. Paul, Minn.,
May 4th, 1927.

Mr. W. W. Judson,
Seattle, Washington.

As requested in your message of the 2nd, I inclose copy of the Accounting Department 6-A for the years 1921, 1922 and 1923.

You will note that the figures for the year 1921 are given on the form for 1922 under the heading "last year."

When these reports have answered your purpose will you please see that they are returned to me as there were no extra copies available, and I borrowed Mr. Dakin's office file.

Chief Engineer.

REG-jk

enc.

N. P. 1350 12-24

TELEGRAM—BE BRIEF

TIME FILED M.

288cfw

Seattle May 2 1927

HEStevens

StPaul

AVB

Please send me copies of accounting department 6-A annual report for years 1921, 1922 and 1923 —

WWJudson

622p

6916

Saint Paul, April 30, 1927.

Mr. W. W. Judson:

For your information I am attaching copy of Mr. Williamson's joint letter to Mr. Lantry and Mr. Brown, instructing the operating officers to co-operate and assist you and Mr. Crane in your study.

Chief Engineer.

HES:H
enc

6916

St. Paul, Minn.,
April 30th, 1927.

Mr. A. R. Cook:--

Referring to your letter of the 22nd, I inclose herewith the following passes in favor of W. W. Judson:

No. L-3049 - Northern Pacific Ry.

No. 6234 - Chicago, Milwaukee & St. Paul Ryl

Chief Engineer.

reg-jk

ejkc.

St. Paul, Minn., April 29, 1927.

Mr. H. E. Stevens,
Chief Engineer.

As requested in your letter of April 26, I enclose herewith Milwaukee annual pass No. 6234 good on trains 15 and 16 and Northern Pacific annual pass No. L-3049 good on trains 1 and 2 in favor of Mr. W. W. Judson.

R W Clark
F

Encl.

St. Paul, Minn., April 28, 1927.

Mr. T. H. Lantry:

Mr. A. V. Brown:

We have arranged to assign Mr. Judson, of our Engineering Department, to work with Mr. Crane, of the CM&StP Railway, in connection with study as to possibility of economies by correlating our operations at some points on the Central and Western Districts.

It is desirable that our operating officers co-operate with Mr. Judson and Mr. Crane and give them any needed statistics and costs desired. Will you please instruct accordingly?

F. E. WILLIAMSON.

CC-Mr. H. E. Stevens.

6916

Saint Paul, April 27, 1927.

Mr. F. E. Williamson:

Mr. Judson has wired me requesting a letter to Operating Officers on the Central and Western Districts, authorizing them to furnish Mr. Judson and Mr. Crane with any needed statistics and costs. Will you please have such a letter issued.

Chief Engineer.

HES:H

cc Mr. W.W. Judson

12-24

TELEGRAM—BE BRIEF

M.

169cfe

Seattle Apr 25 1927

H E Stevens

St Paul

Suggest you arrange for letter to operating officials on Central and Western districts which will enable Crane and me to get needed operating information and costs

W W Judson

312pm

6916

Saint Paul, April 25, 1927.

Mr. R. W. Clark:

Mr. W. W. Judson, Assistant Engineer at Seattle, has been assigned to work with a representative of the Milwaukee on a study of certain possibilities of effecting operating economies. He will need transportation good on trains 1 and 2 on the Northern Pacific and good on trains 15 and 16 on the Milwaukee.

If consistent, will you please arrange to furnish.

Chief Engineer.

HES:H

Re: Transportation for
W.W.Judson.

Seattle, Wash.,
April 22, 1927.

0-89

Mr. H. E. Stevens,
Chief Engineer,
Saint Paul, Minn.

Dear Sir:-

Mr. Crane, representing the Milwaukee, now advises Mr. Judson, our representative, that he is foot-loose and ready to devote his entire time to matters on which he and Mr. Judson are to report.

In carrying on this work it will be necessary for Mr. Judson to have some additional, or entirely new, transportation, therefore, if consistent, will you please provide him with Northern Pacific system transportation, good on Nos. 1 and 2; also Milwaukee system transportation, good on Nos. 15 and 16, which are the Milwaukee's daylight trains.

On receipt of the above, Mr. Judson will turn in his present transportation, which he has and, when work is completed, if completed before the end of the year, he will then turn in the transportation for which I am asking.

Yours truly,

A. R. Cook

ARC:L

691.6

Seattle Washington,
April 14th,1927.

Mr.H.E.Stevens,
Chief Engineer,
St.Paul Minn.

Dear Sir;

Mr.Crane of the Milwaukee advised me yesterday that he is now ready to commence work on the joint study of possible economies to be effected by a joint operation between various points on the Northern Pacific Ry and the Milwaukee.

Mr. Williamson is in Seattle, I have talked with him and he has wired you this date that work is being commenced.

I have no definte instructions in regard to the matter other than what Mr.Cook and Mr.Williamson have told me. I had hoped that I would have the opportunity of talking with you before commencing but Mr.Williamson advises that there is no definite idea in mind and of course there will be more or less pioneering to do.

It is my idea at this time to make a general survey of the situation on the Coast and then submit to you each case where we think economies could be made before going into the detailed study of the costs. Of course the merits

of each case cannot be decided without costs but it is my idea that the most probable propositions will have to be worked up in more detail after you have looked them over.

Yours truly,

H. M. Judson

Assistant Engineer.

6916

Saint Paul, April 14, 1927.

Mr. A. R. Cook:

Mr. Williamson wires that he finds Messrs. Judson and Crane are ready to proceed with the study of possibilities of joint operation of the Milwaukee and Northern Pacific, and that he has told them to go ahead.

If there is anything Mr. Judson needs in the way of the records in St. Paul we shall be glad to furnish same on request.

As suggested in my letter to you of February 19th, it is my thought they ought first to make a general inspection of the possibilities and then work up a tentative program as to further detail procedure.

Chief Engineer.

HES:H

cc Mr. F. E. Williamson

12-24 **TELEGRAM—BE BRIEF** M.

155 cf x

Seattle Apl 14 1927 HEStevens

StPaul

Talked with Judson today and find that Mr Crane principal assistant engineer Milwaukee is in Seattle prepared to go ahead with joint study have told Judson to proceed along lines as we discussed possibly you may have some files you will want them to have W 19

FEWilliamson

245p

6916

Saint Paul, February 19, 1927.

Mr. A. R. Cook:

Referring again to the study of possibility of effecting operating economies from joint operation with the Milwaukee:

Mr. Gillick now advises that Mr. E. B. Crane of Seattle has been assigned to this work in place of Mr. Lodge, and that Mr. Crane has been instructed to get in touch with Mr. Judson at the earliest possible date.

As advised you in my letter of January 12th there has been no program of procedure outlined, but, in brief, the idea is for the representatives of the two Companies to determine the possibilities.

I would suggest Messrs. Judson and Crane make a general inspection of the properties of the two Companies where there seems to them to be a possibility of joint operation, drafting up for our consideration a tentative program for further procedure on the points which appear to present the best possibilities.

I expect to be on the Coast in the near future and will then go over the matter in further detail with Mr. Judson and Mr. Crane.

Chief Engineer.

HES:H

cc Mr. F. E. Williamson

6916

St. Paul, Minn., February 18, 1927.

Mr. H. E. Stevens:

Referring to my letter of February 1st, and previous correspondence, in regard to assigning representative of this line to confer with representative of the Milwaukee in connection with study as to the possibility of economies by correlating our operations at some points in the Coast territory:

Mr. Gillick advises under date of February 14th that Mr. Lodge has been assigned to some work in connection with their reorganization that will keep him tied up for a greater part of the Summer. In place of Mr. Lodge they have assigned their Principal Assistant Engineer, Mr. E. B. Crane, Seattle, Washington, and have instructed that he get in touch with Mr. Judson at the earliest possible date.

F. E. Williamson

St. Paul, Minn., February 1, 1927.

Mr. H. E. Stevens:

Referring to my letter of January 25th to Mr. Gillick, of the Milwaukee, copy to you, in regard to advisability of definitely assigning a representative of each of our lines to make a study as to possibility of economies by correlating our operations at some points in the Coast territory:

For your information, attached is copy of Mr. Gillick's letter of January 28th.

D E Williamson

COPY

CHICAGO, MILWAUKEE & ST. PAUL RAILWAY

Chicago, January 28th, 1927.

Mr. F. E. Williamson,
Vice President, Northern Pacific Ry. Co.,
St. Paul, Minnesota.

Dear Sir:

Your letter of January 25th advising that you had appointed Mr. W. W. Judson of Seattle, to work with our Mr. Lodge in making a study of the possible economies that might be made by the use of facilities on the Coast.

I think Mr. Stevens' suggestion that Mr. Lodge and Mr. Judson meet at Mr. Stevens' office to consider some of the problems to be discussed would be helpful. I do not know when it would be convenient for me to be there, as I am planning on a trip West next week and in any event we would want Mr. Earling to sit in on such a conference.

If agreeable I will ask Mr. Lodge to arrange with Mr. Stevens for such a meeting at St. Paul, and then suggest that Mr. Judson and Mr. Lodge have a conferencein Seattle with Mr. Earling before they start their study.

I have asked Mr. Sparrow to arrange to have Mr. Lodge go into the subject just as soon as he can be spared for that purpose, and I hope they will be able to get at it soon.

Yours very truly,

Signed - J. T. Gillick,

Chief Operating Officer.

6916

Saint Paul, February 1st, 1927.

Mr. A. R. Cook:

Your letter of January 28th about assignment of Assistant Engineer Judson for study of possibilities of joint operation with the Milwaukee:

Mr. Gillick has assigned Mr. Lodge to represent the Milwaukee in this study and I have suggested that Mr. Lodge and Mr. Judson meet with Mr. Williamson, Mr. Gillick and myself in St. Paul for the purpose of outlining in a general way the work to be done.

I expect a date for the conference will be fixed in the near future and will wire you definitely as soon as date has been selected.

Chief Engineer.

HES:H

Re: Proposed joint operation with Milwaukee.

Seattle, Wash.,
January 28, 1927.

1513-280

Mr. H. E. Stevens,
Chief Engineer,
Saint Paul, Minn.

Dear Sir:-

Referring to your letter of January 12, relating to your talks with Mr. Williamson regarding the employment of Assistant Engineer Judson on some special work.

Has any decision been reached in the matter? We should have some advance information so that we may take measures to transfer men and fill Mr. Judson's position, at least until such time as he may be released from special work on which he may be engaged.

Yours truly,

A. P. Cook

ARC:L


CHIEF OF ENGINEERS
JAN 1927
ST. PAUL, MINN.

6916

January 25, 1927.

Mr. J. T. Gillick,
Chief Operating Officer,
C. M. & St. P. Ry. Co.,
Chicago, Ill.

Dear Sir:

Referring to your letter January 17 and our recent discussion at Chicago as to the advisability of definitely assigning a representative of each of our lines to make a study as to possibilities of economies by correlating our operations at some points in the Coast territory.

I believe this is the only way any definite results will be obtained, and we will assign Mr.W.W. Judson, Assistant Engineer, Seattle, Wash., to work with Mr. Lodge.

I am attaching copy of letter from Mr.Stevens, our Chief Engineer, in this connection, and I believe it would be desirable to have a general discussion of the points to be covered before the detail work is started. If you can conveniently meet with us, will you kindly name a convenient date in the near future. If you think this unnecessary, I suggest you name a date when Mr. Lodge can meet Mr. Stevens and Mr.Judson at St.Paul before proceeding to the Coast.

Yours very truly,

Copy Mr.H.E.Stevens

6916

Saint Paul, January 22, 1927.

Mr. F. E. Williamson:

Your letter of the 21st advising that Mr. Gillick has assigned Mr. A. E. Lodge to act for the Milwaukee in study of possibilities of joint operation of the Milwaukee and Northern Pacific in Coast territory:

I am well acquainted with Mr. Lodge and believe Mr. Gillick has made an excellent selection in assigning him to this work.

I have arranged to have Mr. Judson start on the assignment for the Northern Pacific at any time the Milwaukee is ready.

Inasmuch as this assignment will require some little pioneering, would it not be well for Mr. Judson and Mr. Lodge to meet with you, Mr. Gillick and myself here in St. Paul for a general discussion of the points to be covered?

In case you and Mr. Gillick do not find it convenient to meet with us, I think I will arrange to have Mr. Judson meet with Mr. Lodge and myself and spend a day or two here in the office going over the records of the two lines in order to outline a tentative general program for the undertaking.

Chief Engineer.

Saint Paul, Minn.,

January 21, 1927.

MR. H. E. STEVENS:

Supplementing my letter January eleventh, study to be made as to possibilities of economy by correlating our operations with that of the Milwaukee at some points in the Coast territory.

Herewith copy of letter from Mr. Gillick, appointing Mr. A. E. Lodge to represent him in that study.

Are you now in a position to assign Mr. Judson?

F. Riemann

CHICAGO MILWAUKEE AND ST.PAUL RAILWAY

Chicago, Jan. 17, 1927.

Mr. F. E. Williamson,
Vice President, Nor.Pac.Ry.Co.,
St.Paul,Minn.

Dear Mr. Williamson:

The last time I saw you, we discussed the advisability of our sending someone to the Seattle territory to look into the possibilities of joint operation, etc.

Have you given the subject any consideration? I have in mind that if you want to go into it, we will have our Valuation Engineer, Mr. A. E. Lodge, represent us in the study. He is a high-class Engineer with an analytic mind, and I think if you could find someone of similar capacity we might find out whether there are any economies that could be worked out.

Yours very truly,

(Signed) J. T. Gillick

Chief Operating Officer

6916

Saint Paul, January 12, 1927.

Mr. A. R. Cook:

Mr. Williamson has had some discussion with Mr. Gillick of the Milwaukee as to possibility of effecting economies for both companies by joint operation, or joint use of facilities, or exclusive operation by one company for the benefit of both.

The matter just at present is in an embryonic state and there are no clearly defined ideas as to the method of procedure. However, Mr. Gillick has agreed to assign a man to work with a man to be assigned by Mr. Williamson for a general survey of the situation on the westerly end of the line.

The first thing to be done by these men is to suggest possibilities. After these have been submitted we will then decide what detail study should be made to further develop and reach final conclusions as to the suggestions which the Committee may make.

We will assign Mr. Judson as our representative and Mr. Gillick has been notified to that effect. As soon as he has named his representative I will advise you and we will arrange to get Mr. Judson started on the work.

Mr. Williamson is to give him a letter authorizing him to obtain any information he may require from other officers or departments.

It may be a week or two before Mr. Gillick assigns his man and arrangements are made to start the work, and I am giving you this advance information so that you may line up someone for Mr. Judson's present position as he will have to devote his exclusive attention to the Milwaukee study for, I should judge, five or six months.

HES:H

CHIEF ENGINEER.

Saint Paul, Minn.,

January 11, 1927.

MR. H. E. STEVENS:

Referring to our conversation about the assignment of a man to devote the next few months to a study of the possibilities of economy by correlating our operations with those of the Milwaukee at some points in the Coast territory.

Can Mr. Judson be assigned to this work? If so I will notify Mr. Gillick accordingly and ask him to name his representative.

Kriesmann

1916