



Northern Pacific Railway Company.  
Engineering Department Records.

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N. P. 1757  
6-24

OFFICE OF BRIDGE ENGINEER

FILE NO. 684

SUBJECT:

AUBURN CONCRETE PLANT

1912 TO 1924

PART 1



620.65  
Re: Inventory of Auburn  
Concrete Plant products  
for 1923.

Seattle, Wash.,  
October 30, 1923.

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

Dear Sir:-

I enclose herewith, in duplicate, on  
Form 317, inventory of manufactured products, corr-  
ugated reinforcing rods, supplies, raw material, etc.  
on hand at Auburn Concrete Plant as of October 31,  
1923.

One copy is for your files and the other  
for use of Engineering Dept. Accountant.

Yours truly,

(Signed) A. R. COOK

CES:L  
Encl.

cc MFC ✓  
HAH









Arithmetic

with. checked

Gen. verification

Recap.

Recap. checked

Recap. verified

## Northern Pacific Railway Company

## INVENTORY

No. ....

Lister's  
Sheet No. 3Corrugated Reinforcing Bars  
Auburn Concrete Plant

Listed by C. E. Springer

Called by

Location of Material Auburn Concrete Plant

Store, October 31, 1923 192 Division Seattle

1	DESCRIPTION	New or S. H.	Quantity or Number	LOT WEIGHT		Total Weight	Price	Unit	Amount	Class'n No.
				Pcs.	Lbs					
1	Forward					110536			3477.27	
2	Size Length No. Pcs.									
3	1/2" Rd. 45'		2	90	1.502	135	4.00		5.40	
4	1/2" " 35'		389	13615	"	20450	"		818.00	
5	" " 17' 6"		6	105	"	158	2.84		4.49	
6	" " 6'		2	12	"	18	"		.51	
7	" " 3' 6"		22	77	"	116	"		3.29	
8	" " 3'		24	72	"	108	"		3.07	
9	" " 2' 3"		2	4' 6"	"	7	"		.20	
10	Total 1/2" Rd. Rods			13970	6"	20992			834.96	
11										
12	1/2" Sq. 45'		84	3780						
13	" " 31'		24	744						
14	" " 30'		27	810						
15	" " 16' 6"		164	2706						
16	" " 15' 6"		378	5859						
17	" " 13' 6"		288	3888						
18	" " 12' 6"		1	12' 6"						
19	" " 6' 6"		277	1800' 6"						
20	" " 4'		5	20						
21	" " 3'		17	51'						
22	" " 2' 10"		103	291' 10"						
23	" " 2' 6"		21	52' 6"						
24				20015' 4"	1.913	38289	2.84 cwt.		1087.41	
25										
26	5/8" Rd. 7' 6"		8	60						
27	" " 7'		1	7'						
28	" " 4' 6"		2	9						
29	" " 4' 5"		3	13' 5"						
30	" " 4'		2	8						
31	" " 3' 2"		52	164' 8"						
32	" " 3'		7	21						
33	" " 2'		3	6						
34				288' 11"	1.043	301	2.14 cwt.		6.44	
35										
36										
37										
						170118			5406.08	



Received  
 by  
 Date  
 Name  
 Address  
 City  
 State  
 Zip

[illegible]



Arithmetic

Arith. checked

Men. verification

Recap.

Recap. checked

Recap. verified

## Northern Pacific Railway Company

## INVENTORY

No. ....

Lister's  
Sheet No. 2

Listed by C. E. Springer

Called by

Location of Material Auburn Concrete Plant

Corrugated Reinforcing Rods  
Auburn Concrete Plant

Store,

October 31, 1923.

192

Division

Seattle

1	DESCRIPTION			New or S. H.	Quantity or Number	LOT WEIGHT		Total Weight	Price	Unit	Amount	Class'n No.
						Pcs.	Lbs					
	Size	Length	No. Pcs.		Ln. Ft.		Unit Wt.					
2	1 1/8" Rd.	48' 10"	11		537'	2"	3.38	1816	3.75	11 cwt	68.12	
3	"	28' 4"	3		85	"	"	287	3.12	"	8.95	
4	"	24' 4"	496		12069'	4"	"	40794	"	"	1272.77	
5	"	20' 0"	127		2540	"	"	8585	"	"	267.85	
6	"	19' 9"	40		790	"	"	2670	3.75	11 "	100.15	
7	"	19' 0"	58		1102	"	"	3725	3.12	"	116.22	
8	"	17' 6"	1		17' 6"	"	"	59	"	"	1.84	
9	"	15' 4"	348		5336	"	"	18036	"	"	562.72	
10	"	13' 6"	9		121' 6"	"	"	411	"	"	12.82	
11	"	11' 0"	124		1364	"	"	4610	"	"	143.83	
12	"	4' 0"	39		156	"	"	527	"	"	16.44	
13	"	3' 6"	9		31' 6"	"	"	107	"	"	3.34	
14	"	3' 0"	14		42	"	"	142	"	"	4.43	
15	"	2' 6"	29		72' 6"	"	"	245	"	"	7.64	
16	"	29' 0" curved for arch	17		493	"	"	1666	"	"	51.98	
17	"	25' 0"	14		350	"	"	1183	"	"	36.91	
18	Total 1 1/8" Rd.				25107'	6"	3.38	84863			\$2676.01	
19												
20	1 1/8" Rd.	5' 4"	6		32		5.31	170	2.94	cwt.	5.00	
21												
22	1 1/8" Rd. Plain	33' 9"	126		4252'	6"						
23	"	27' 2"	31		842'	2"						
24	"	6' 9"	24		162							
25	"	4' 10"	6		29							
26					5285'	8"	4.173	22087	2.94		648.48	
27	1 1/8" Sq. U Bars	7'	61		427		5.31	2267	5.43	14 "	123.13	
28	1" Rd.	12'	18		216							
29	"	4'	8		32							
30	"	3'	11		33							
31					281		2.67	750	2.09	"	15.68	
32	1" Sq.	9'	2		18							
33	"	4' 5"	3		13' 3"							
34	"	3' 4"	9		30'							
35	"	3'	15		45							
36	"	2' 10"	7		19' 10"							
37					126'	1"	3.4	429	2.09	"	8.97	
	Forward							110536			3477.27	







# Northern Pacific Railway Company

No. \_\_\_\_\_

**Lister's**  
**Sheet No.** ..... 4 .....

## INVENTORY

Listed by C. R. Springer

**Called by** \_\_\_\_\_

Location of Material Auburn Concrete Plant

Corrugated Reinforcing Rods  
Auburn Concrete Plant.

Store 192 Division Seattle[illegible]



















# Northern Pacific Railway Company

## INVENTORY

1-A	Frogs, Switches and Parts			
1-B	Track Fastenings			
1-C	Track Tools			
2-A	Interlocking & Signal Material			
2-B	Telegraph & Telephone Material			
3	Brick, Lime, Cement, Stone, Etc.			
4	Lumber, Bridge & Building			
5-A	Switch Ties, Treated & Untreated			
5-B	Cross Ties, Treated & Untreated			
6	Iron Bridges, Turntables, etc.			
7	Ballast all kinds			
8	Rail, except scrap			
9-A	Fuel & Water Station Material			
9-B	Elevators, & Coal & Ore handling Machinery			
9-C	Steam Derricks, Shovels, Ditchers, etc.			
10	Chemicals for Timber Treatment			
11	Bolt, Nuts, Washers, etc.			
12	Springs for Locomotives & Cars			
13	Flues, Boiler			
14	Tubing, Ferrules & Soft Metals			
15	Bar Iron & Steel, etc.			
16	Sheet Steel, No. 13 & Heavier			
17	Heavy Forgings for Locomotives			
18	Car Forgings, etc.			
19	Locomotive Castings Iron & Steel			
20	Car Castings Iron & Steel			
21	Brass Castings & Journal Bearings			
22	Air Brake Material			
23	Mechanical Appliances for Locomotives			
24	Passenger Car Trimmings			
25	Electrical Material for Locomotives			
26	Electrical Material for Cars			
27	Shop Fuel			
28	Foundry Supplies			
29	Wheels, Tires, Axles & Centers			
30	Lumber, Locomotive & Car			
31	Machinery & Machine Tools			
32	Locomotive Boilers, Fireboxes, etc.			
33	Trucks for Locomotives & Cars			
34	Material in Process of Manufacture			
35	Floating Equipment Material			
36	Locomotive, Train & Station Supplies			
37	Oil House Material			
38	Ice, & Packing for Ice Houses			
39	Fuel for Locomotives			
40	Fuel for Stations & Cars			
41	Commissary Supplies			
42	Pipe, Iron & Steel			
43	Pipe Fittings			
44	Electric Lighting Material for Buildings, etc.			
45	Hardware			
46	Rubber & Leather Goods, etc.			
47	Glass, Drugs, Chemicals & Painters' Supplies			
48	Stationery & Printing			
49	Power Plant Equipment			
50	Scrap, All Kinds			
TOTAL - - -				

61  
Seattle, Washington,  
October 31st, 1923.

Re: Transfer of  
Manufactured product  
from D.A.S. # 10,  
to Material & Supplies  
Account.

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

Dear Sir:

In compliance with your instructions of October 25th, 1923, I have prepared and hand you herewith ARC Entry S-580, crediting D.A.S. # 10, Auburn Concrete Plant with the value of manufactured product and charging same to M & S Cl # 3.

In making this transfer, we have used same prices as shown on August 31st, 1923 Inventory, and annual report, as outlined in my letter to you dated September 10th, 1923.

Yours truly

A. R. Cook

Cy MFC  
CES

ANB



65  
MFC

Saint Paul, August 20, 1923.

Mr. H. E. Stevens,  
Chief Engineer.

Referring to your letter of April 11th, to which was attached a file of papers from Mr. Newton in regard to the manufacture of concrete pipe.

I attach a comparison of cost of 24" and 36" concrete pipe for the C.B. & Q. and Northern Pacific Railway, from which you will note that the Northern Pacific pipe costs 35 percent more than the Burlington pipe.

In your letter of April 11th you asked that I make a personal inspection of their plant at the first opportunity. I have not visited the plant, but I have gone over the plans with Mr. Haggander of the Burlington and I understand the general working conditions.

Their plant consists of a building adjacent to a concrete plant. The concrete plant consists of a gravel bin supported directly on the ground, from which the materials are elevated by a bucket elevator to a small bin above the mixer. Each pipe form is supported on a small tram car which can be moved to and from the mixer by hand. The concrete remains in the form on the car until it has set a sufficient amount to permit handling. There is a small hand derrick for moving the forms. Other than the concrete mixer, hand derrick and cars, there are no movable parts in the plant.

The cost of the Aurora plant was \$12,000, as compared with \$15,576 for the Auburn plant. My explanation of the difference in cost of the pipe manufactured at the two plants is as follows:

First:

The plant which I have described as costing \$12,000 is incomplete. It requires one or two locomotive cranes in addition for handling materials to and from the plant and a rental for the locomotive cranes sufficient to cover the cost of the investment and operation is not included in the cost of manufacturing pipe.

Second:

The Northern Pacific is required to pay 50 percent more for Portland cement than is paid by the Burlington.

Third:

The cost of washing, screening and handling gravel and sand at Auburn is more than four times the cost of gravel at Aurora. It is my understanding that the material at Aurora is excavated at a gravel pit during the ballast operations and is handled at the concrete plant with locomotive cranes. All of the material at Auburn is excavated, screened and moved to the plant by hand.

Fourth:

The Northern Pacific labor cost is 40 percent higher than the cost of the Burlington.

Fifth:

The depreciation on the Northern Pacific plant, interest on the plant investment and the cost of concrete products is greater than at the Burlington plant, due to the larger investment in



Mr. Stevens.

-3-

the plant, and the carrying charges have a larger stock of finished products.

Sixth:

The cost of repairs at the Northern Pacific plant is three times that of the Burlington. This is probably due to the maintenance of that portion of our plant which handles gravel and sand, and maintenance of machinery parts which are included in our plant investment, while repairs to movable parts at the Burlington plant include only those required for maintaining the locomotive crane, which is not charged to the plant.

It has been our practice to fix the price of concrete products in advance, and the price covers all overhead charges. I have made a study of the overhead charges at Auburn over a period of ten years and the overhead charges developed should have wiped out the original cost of the plant. In the early years of plant operation, interest charges, taxes and pit charges were not considered and the depreciation in those years was insufficient to meet them. In the last few years additions to the sale price have been made with the idea of providing a sufficient amount to cover the under charges of the earlier years. You will note that I have given a price for 24" pipe of \$1.65 and for 36" pipe of \$2.38. We are actually charging in 1923 for 24" pipe \$1.90 and for 36" pipe \$2.80. At these prices the cost of plant will probably be wiped out in 1923.

Mr. Newton's letter is returned herewith.

Bridge Engineer.

Encl.

MFC

Saint Paul, August 20, 1923.

Mr. H. E. Stevens,  
Chief Engineer.

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Mr. Newton's letter is returned herewith.

Bridge Engineer.

Encl.



Comparison of Cost of Reinforced Concrete  
Pipe manufactured by C.B. & Q. Railway and N.P. Railway  
1922 Operation  
-----

24 Inch Concrete Pipe C.B. & Q.				24 Inch Concrete Pipe N.P. Ry.			
Material	Quantity	Price	Amount	Material	Quantity	Price	Amount
Cement	6.24 sax	\$0.475	\$ 2.96	Cement	5.60 sax	\$0.608	\$ 3.39
Reinf. Bars	16.6 lbs.	1.785	.30	Rods	25.3 lbs.	2.006	.51
Gravel	.89 c.y.	.21	.19	Gravel	.91 c.y.	0.923	.84
Mesh	65 s.f.	2.64	1.72	Mesh	65 s.f.	2.558	1.66
Wire	3/4 lb.	3.37	.01	Wire	3/4 lb.	.04	.03
			5.18				6.43
Store handling 3%			.15				
			5.33				
Labor			2.08	Labor			2.90
Supervision 5%			.10				
			7.51				9.33
Overhead Expense			2.33	Overhead Expense			3.88
Cost 8 ft. length			\$ 9.84	Cost 8 ft. length			\$13.21
Cost per foot	\$1.23			Cost per foot	\$1.65		
<u>Overhead Expense</u> C.B. & Q.				<u>Overhead Expense</u> N.P.			
Fuel, oil etc.			.2500	Fuel, oil, etc.			.49
Proportion of Engr. Salary			.3409	Engineer's Salary			0
" Gen. Foreman Salary			.1909	Foreman included above			0
Interest Raw Mat'l at 6%			.0454	Int. on Plant Investment, raw			
Commercial Freight on Raw Mat'l			.1607	mat'ls & finished product at 6%			1.05
Int. Depr. Taxes & ins. on Plant			.9583	Depreciation on Plant			1.31
Proportion of repairs to plant, etc.			.2790	Repairs to plant			.75
Interest on finished product			.0995	Insurance on plant			.04
Taxes on finished product			.0062	Taxes on plant			.13
			2.3309	Gravel pit charge			.11
							3.88
			31%				41 1/2%

Office of Bridge Engineer,  
Saint Paul, August 20, 1923.

Comparison of Cost of Reinforced Concrete  
Pipe Manufactured by C.B. & Q. Railway and N.P. Railway  
1922 Operation

-----

36 Inch Concrete Pipe  
C.B. & Q.

Material	Quantity	Price	Amount
Cement	8.56 sax	\$0.475	\$ 4.07
Reinf. Bars	52 lbs.	1.785	.93
Gravel	1.22 c.y.	.21	.26
Mesh	92 s.f.	2.64	2.43
Wire	3/4 lbs.	3.37	.03
			<u>7.72</u>
Store handling 3%			.23
			<u>7.95</u>
Labor			2.69
Supervision 5%			.13
			<u>10.77</u>
Overhead Expense 31%			3.34
Cost 8 ft. length			<u>\$14.11</u>
Cost per foot		\$1.76	

Overhead Expense  
C.B. & Q.

Fuel oil, etc.	
Proportion of Engr. Salary	
" " Gen. Foreman Salary	
Interest Raw Mat'ls at 6%	
Commercial Freight on raw mat'l	
Interest, Depreciation, Taxes, Ins. on Plant	
Proportion of repairs to Plant	
Interest on finished product	
Taxes on finished product	

31% = 3.34

36 Inch Concrete Pipe  
N.P. Ry.

Material	Quantity	Price	Amount
Cement	8.00 sax	\$0.606	\$ 4.85
Reinf. Bars	36 lbs.	2.006	.72
Gravel	1.25 c.y.	.923	1.15
Mesh	92 s.f.	2.558	2.35
Wire	3/4 lb.	.04	.03
			<u>9.10</u>
			4.24
			<u>13.34</u>
Overhead Expense			5.70
Cost 8 ft. length			<u>\$19.04</u>
Cost per foot		\$2.38	

Overhead Expense  
N.P.

Fuel oil, etc.	.80
Engr. Salary	0
Foreman Included above	0
Interest on Plant investment, raw mat'ls & finished product at 6%	1.51
Depreciation on Plant	1.89
Repairs to Plant	1.09
Insurance on Plant	.06
Taxes on Plant	.19
Gravel Pit charge	.16

42½% = 5.70

Office of Bridge Engineer,  
Saint Paul, August 20, 1923.



Comparison of cost of  
Reinforced concrete Pipe  
made by CB & Q Ry and N.P. Ry.  
1922 Operation

25  
133  
117

36 in Concrete pipe  
CB & Q

N.P. Ry

Matl	Quant	Price	Amt
Cement	8.56 box	0.475	4.07
Reinf Bars	52 lbs	1.785	93
Gravel	1.22 cu	.21	26
Mesh	92 SF	2.64	243
Wire	3/4 lb	3.37	03
			772
Store handling 3%			.23
			795
Labor			269
			13
			1077
Overhead Expense 31%			334
Cost 8 ft length			1411
Cost per ft		1.76	

Matl	Quant	Price	Amt
Cement	8.0	.606	4.85
Reinf Bars	36 lbs	2.006	.72
Gravel	1.25	.923	1.15
Mesh	92 SF	2.558	235
Wire	3/4 lb	.04	03
			910
Repairs to Plant			109
Fuel Oil & Supplies			80
Labor			424

Overhead Expense	1523	13.34
Cost 8 ft length	761	5.70
Cost per ft.	2284	19.04
	2.85	2.38

Overhead Expense  
CB & Q

N.P.

Fuel Oil etc  
Proportion of Engr Salary  
" Gen Foreman Salary  
Interest Raw mats @ 6%  
Commercial Freight on raw mat  
Interest, Depreciation Taxes Insurance  
Proportion of ~~cost~~ repairs to plant  
Interest on finished product  
Taxes on finished Product

4.37

31%

Fuel Oil etc 80  
Engr Salary 0  
Foreman Included Above 0  
Interest on Plant investment, raw  
mats and finished Product @ 6% 1.51  
Depreciation of Plant 1.89  
Repairs to Plant 1.09  
Insurance on Plant .06  
Taxes on Plant .19  
Gravel Pst Charge 16

570

42 1/2%

Comparison of Cost of  
Reinforced Concrete Pipe  
Mfg by CB & Q Ry and NP Ry  
1922 Operation

24 in Concrete pipe

CB & Q

Matl	Quant	Price	Amnt
Cement	6.24 Docks	\$0.475	296
Reinf Rds	16 1/2 lbs	1.785	30
Gravel	.89 cy	.21	19
Mesh	65 Sq ft	2.64	172
Wire	3/4 lb	3.37 cut	01
			518
	Store Handling 3%		15
			533
Labor			208
	Supervision 5%		10
			751
Overhead Expense			233
8' length			984
Per ft		1.23	

CB & Q  
Overhead Expenses

Fuel, Oil etc	2500
Proportion of Eng Salary	3409
" Genl Foreman Salary	1909
Interest Raw Matl @ 6%	0454
Commercial Freight on Raw Matl	1607
Int, Depreciation Taxes + Insurance on plant	9583
Proportion of repairs to plant etc	2790
Int on finished product	0995
Taxes on finished product	0062
	23309
	31%

NP Ry

Matl	Quant	Price	Amnt
Cement	5.6 Docks	.606	339
Rods	25 1/2 lbs	2.006	51
Gravel	.91 cy	.923	84
Mesh	65 Sq ft	2.558 hd	1.66
Wire	3/4 lb	.04	03
			6.43
	Repairs to plant		75
	Fuel Oil + Supplies		49
	Labor	363	290
			1057
	Overhead Expense		264
8 ft length			1321
Per ft		1.65	

NP

Fuel Oil etc	49
Engineers Salary	730
Foreman included above	0
Interest on Plant investment, raw matls and finished product @ 6%	1.05
Depreciation of plant	1.31
Repairs to plant	.75
Insurance on plant	.04
Taxes on plant	.13
Gravel Pit Charge	11
	388 = 41 1/2 %

Handwritten calculations and notes on the right side of the page, including a large scribble and the number 123.



# AUBURN CONCRETE PLANT

## COST AND PROPOSED SELLING PRICE OF PRODUCT ON HAND AT END OF 1922

### 1920 Charges prorated to cost of products manufactured in 1921 and 1922

rand  
May 29, 1922

#### TOTAL COST

#### UNIT COST

Total Pit Chg.  
Ins. Tax, Interest  
and Depreciation

Unit Charge  
for Pit Chg. Ins.  
Tax, Interest  
and Depreciation

Proposed  
Selling  
Price

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Year Made	Kind	No.	Linear Feet	Unit Weight	Total Weight	Repairs & Renewals	Labor, Mtrls. and General	Sum 7+8	Pit Charge	Insurance and Taxes	Interest	Sum 10+11+12	Sum 13+14	Depreciation	Proposed S.P. 14+15	Repairs & Renewals	Labor, Mtrls. and General	Sum 17+18	Pit Charge	Insurance Taxes	Interest	Sum 20+21+22	Sum 19+23	Depreciation	Prop'd S.P. 24+25			19+28
1922	24" Pipe	4240	4240	3255	1725150	259	566629	5925	4771	125	133700	1510	7438	2092	4527	.061	1338	1397	.011	.029	.316	.356	17.53	.493	2246	3315	.78	218
1922	36" Pipe	1232	1232	4700	723800	10840	237628	2475	1999	5240	559	63139	3106	877	3983	.081	1928	2009	.016	.042	.454	.512	2521	.714	3283	1387	1.13	314
1921	30" Pipes	780	780	6600	1716000	4720	87487	922	476	1313	13750	15539	1077	208	1285	.061	1121	1182	.006	.017	.177	.200	1982	.269	1651	329	.42	160
1918	25'	50	50	5260	105200	132	4800	4932	.45	37	225	307	5239	1273	6512	.026	.960	.986	.009	.007	.045	.061	1.047	.255	1.302	2020	.40	139
1922	25'	675	675	5260	1420200	2130	73069	752	392	1030	10980	12402	876.01	17220	1048	.032	1082	1114	.006	.015	.163	.184	1.298	.255	1.553	273	.40	151
1919	20'	1160	1160	4300	2494000	1366	148390	149756	688	1560	13850	16098	165854	303	1961	.012	1280	1292	.006	.013	.119	.138	1.430	.261	1691	479	.41	170
1917	15'	435	435	3500	105500	1005	36598	37603	504	306	1850	2660	40263	12330	526	.023	841	.864	.012	.007	.043	.062	.926	.283	1.209	195	.45	131
1918	15'	60	60	3500	14000	175	6330	6505	61	49	299	409	6914	1700	86	.029	1055	1084	.010	.008	.050	.068	1.152	.284	1.436	2690	.45	153
1917	10'	420	420	2200	92400	915	41832	42747	458	279	1686	2423	45170	112	584	.022	.496	1018	.011	.007	.040	.058	1.1074	.267	1.343	177	.42	144
1918	S.T. Slabs	17		33300	566100	7085	186849	193934	2441	1960	12090	16491	210425	687	2791	4168	109911	114079	1.434	1.152	2.110	9.696	123775	4035	16412	1085	6380	17788
1918	D.T. Slabs	10		30700	309000	3867	101346	105213	1334	1072	6610	9010	114223	375	1517	3867	101346	105213	1.334	1.072	6.610	9.016	114229	3750	15173	593	5930	16451
1921	Water Bbls	2		375	750	21	24253	24974	22	06	.58	.66	25040	91	25131	105	12477	12487	.01	.03	.29	.33	125.20	.46	125.66	140	.70	125.57
1922	Water Bbls	22		375	8250	123	9783	9906	23	.60	638	721	10627	1000	11627	.054	445	451	.01	.03	.29	.33	4.84	.46	5.30	1580	.72	5.23
Cost Water Barrels less Cost of Forming	X			375	9000	1.44	24764	24908	.25	.60	6.96	7.87	256.95	1091	267.86	.06	1032	1037	.01	.03	.29	.33	107.10	.46	11.16	261720	.72	11.09 X
24					4114490	58281	1525694	1582770	13194	25912	251636	290265	1829156	499014	2371070											7893		

(Note: Slide Rule Used - Affects for small discrepancies in table)

#### General Notes:

- The 1920 charges have been prorated to cost of products mfgd. in 1921 and 1922
- The unit costs and total costs as tabulated above to left of red line are made up on the assumption that all charges during any year are charge to the products made during that same year.
- The cost of water barrels includes cost of forms. The cost of forms is properly and A+B charge but 1921 report includes them under cost of mfgng. Probably intention is to make out an A.F.E. Later. If cost of forms (99.72)

is deducted from the total cost of 24 bbls. the the results will be as shown on bottom line marked X. Of course if cost of forms is taken out of mfgng. cost then this item would be taken care of under depreciation resulting in a slight increase.

In making up this table it was assumed that the plant investment was totally depreciated i.e., the total in col. 3 of index 1816-66 has been included in proposed selling price. If allowance is made for salvage value of plant then the depreciation as shown in columns 15, 25, 27 and 28 should be reduced by proper amount.

- In the tabulation to right of red line the total charges exclusive of repairs, renewals, labor, materials and general expense, but including total dep. inv. as given in column 3 have been prorated uniformly to the cost of manufactured products on hand on the basis of weight
- Above total costs and unit prices do not included freight or materials and supplies to plant nor cost of loading products at the plant.
- Col. 24 gives prop'd S.P. if depreciated investment (Col. 3) is not included.

Rep. & Rew.	582
L & M & Genl.	15256
Total	15838
Pit. Charge	132
Insurance and Tax	254
Interest	2515
Depreciation	4992
	7893
7893 = 1.92	Depreciation per 1000

Repairs & Renewals	582	7	20
L & M & Genl.	15257	8	21
Pit Charge	132	10	23
Ins. & Tax	254	11	24
Interest	2515	12	25
Total	18740		
	4992		
	23732		
	4992		
	4114490		

Col. 3. Index 1816-66  
Prop'd S.P.

4992 = 1.92 per 1000 (Dep)



# AUBURN CONCRETE PLANT

## COST AND PROPOSED SELLING PRICE OF PRODUCT ON HAND AT END OF 1922

(1920 Charges deducted from 1920 Sales)

Vol. may 18 1923.

TOTAL COST														UNIT COST										Total Cost	Weights	Pit chg. Ins. Tax Interest and Depreciation Total	Unit charge for Pit chg. Ins. Tax, Interest and depreciation	Proposed Selling Price
1	2	3	4	7	8	9	10	11	12	13	14	15	17	18	19	20	21	22	23	24	25	26	16	6	5	27	28	29
Year Made	Kind	No.	lin. Ft.	Repairs and Renewals	Labor, Materials and Genl.	Sum 7+8	Pit Charge	Insurance and Taxes	Interest	Sum 10+11+12	Sum 9+13	Depreciation	Repairs and Renewals	Labor Mtrls and Genl.	Sum 17+18	Pit Charge	Insurance & Taxes	Interest	Sum 20+21+22	Sum 19+23	Depreciate	Prop'd S.P. 24+25	14+15	Total Weight Lbs.	Unit Wt.			19+28
1922	24" Pipe	536	4240	3604	556157	559761	4771	8220	82380	95341	655102	2690	1008	1313	1321	011	019	194	224	1545	633	2178	9241	1725150	3255	3520	808	2129
1922	36" Pipe	154	1232	1514	233234	234748	1999	3440	34480	39889	274637	1128	012	1892	1904	016	028	380	319	2218	915	3133	3874	723800	4700	1480	1200	310
1921	30" Pipe	26	1780	2414X	86446	88860	476	890	8670	60086	98896	267	1031	11107	1128	036	011	111	128	1766	1342	11608	1286	171600	6600	351	145	1159
1918	25" ✓	✓	50	132	4800	4932	45	37	225	307	5239	1640	026	760	986	009	007	045	061	1047	328	1375	6874	10520	5260	2150	43	140
1922	25" ✓	27	675	297	72207	72504	392	675	2760	7227	80231	22150	005	1069	1074	006	010	100	116	1190	329	1519	102381	142020	5260	29050	43	150
1919	20" ✓	58	1160	1366	148390	149756	682	1560	13850	16098	165854	388	012	1280	1292	006	013	119	138	1430	334	1764	2047	249400	4300	510	44	173
1917	15" ✓	29	435	1005	36598	37603	504	306	1850	2660	40263	158	023	841	864	012	007	043	062	924	359	1280	561	101500	3500	208	48	134
1918	15" ✓	4	60	175	6330	6505	61	49	249	409	6914	2180	029	1055	1084	010	008	050	068	1152	363	1515	9094	14000	3500	2370	48	156
1917	10" ✓	42	422	915	41832	42747	458	279	1686	2423	45170	144	022	996	1018	011	007	040	058	1076	343	1419	596	92400	2200	188	45	147
1918	ST. Slabs	17		2085	186849	193934	2441	1960	12090	16491	210425	881	4168	109911	114079	1434	1152	2110	9696	123775	5180	175575	2985	566100	33300	1157	6810	18218
1918	O.T. Slabs	10		3867	101346	105213	1334	1072	6610	9010	114223	482	3867	101346	105213	1334	1072	4610	9016	114224	48200	167929	1624	309000	30900	632	6320	16891
1921	Water Bbls	✓	21	11	24948	24959	02	04	38	44	25003	120	055	12474	124795	01	02	19	22	17502	60	12562	12622	750	375	158	77	12557
1922	Water Bbls	✓	21	17	4733	4750	23	37	393	455	10205	1280	008	442	443	01	02	18	21	464	58	522	580	8250	375	1690	77	520
1922	W. Barrels	less cost forms		28	24709	24737	25	43	431	499	25236	1400	012	1028	1040	01	02	18	21	1061	58	1419	26636	9000	375	1840	77	1117

Column No. 1508870 Index 181666

(Slide Rule Calculations - Accts for small discrepancies in totals)

(Note: W.B. are shown shipped out in 1922 report but price at which they were billed out is not known and they have therefore been shown above as on hand.)

⑦ Col. 24 gives prop'd S.P. if depreciated investment (Col. 3) is not included.

4,114,490<sup>#</sup>  
8421  
15313 Col. 9  
23734 Prop'd Selling Price

Repairs & Renewals	224	7	20
L & M and Genl.	15089	8	21
Pit Charge	132	10	23
Ins. & Tax	185	11	24
Interest	1693	12	25
Total	17373		
	6411	Col. 3 on Index 1816-66	
Prop'd S.P.	23734		

### General Notes:

- The 1920 Charges have been included in the cost of product sold in 1920 and therefore do not enter into cost of products mfgd in 1921 and 1922.
- The unit costs and total costs as tabulated above to left of red line are made up on assumption that all charges during any year are charged to the products mfgd during that same year.
- The cost of water barrels includes the cost of forms. The cost of forms is properly an addition to capital investment but 1921 report includes them under cost of mfging. Probably intention is to make an

A.F.E out later. If cost of forms (997<sup>m</sup>) is deducted from total cost then the results will be (for 1921 & 1922) as shown on bottom line marked X. Of course if cost of forms is taken out then this item would be taken care of under depreciation resulting in a slight increase.

④ In this table it was assumed that plant was totally depreciated, i.e., the total in column 3 of index 1816-66 has been included in Prop'd selling price. If allowance is made for the salvage value of plant then the depreciation as shown in columns 15, 25, 27, and 28 should be reduced by the proper amount.

⑤ In tabulation to right of red line the total charges exclusive of repairs & renewals labor, materials and general expense have been prorated uniformly, on basis of weight, on manufactured products on hand.

⑥ Above costs and unit prices do not include transportation of materials and supplies nor cost of loading products.

Repairs and Renewals	224	Col. 7
L & M & Genl.	15089	Col. 8
Total	15313	
Pit chg.	132	
Insurance & Tax	185	
Interest	1693	
Depreciation	6411	Col. 13
	8421	
	4,114,490	
	2047	Depreciation per 1000 lbs.

$$\frac{641069}{4114490} = 1558 \text{ on } 1000^{\text{th}} (\text{Dep})$$



JUL  
14  
1923

St. Paul, Minn., July 14, 1923.

Mr. M. F. Clements,  
Bridge Engineer.

Dear Sir:

Will be glad to have reply to my letter of April 11th with letter from Mr. Newton of March 23rd, about prices at which the CB&Q bill out their reinforced concrete pipe, and in which I requested you to have this statement analyzed and compared with similar items for the Northern Pacific.

Yours truly,

REG:WP

*H. E. Stinson*  
Chief Engineer.

*Circle  
Look into this  
and talk to me  
Tate 5/10*

# RAILWAY REVIEW

537 SOUTH DEARBORN STREET  
CHICAGO

CHICAGO May 21, 1923.

Mr. H. E. Stevens,  
Chief Engineer, Northern Pacific Ry.,  
St. Paul, Minn.

Dear Sir:

I wrote to you February 5th saying that I had a number of views of your concrete products plant at Auburn, Wash., and I solicited a letter from you giving us a description of the work that you are doing in this plant.

Perhaps, I worded my letter in such a way as to give you a wrong impression. I did not mean to ask you to burden yourself with preparing an extensive article for publication. If you would write me a letter giving just an outline of what you are doing I could put it in shape for publication myself. You can give us as many or as few particulars of the work as you find time for, considering the question of doing justice to the importance of the work. Or, if you have some assistant or subordinate at that place who would like to try his hand at writing something for publication, we will be glad to allow him our usual compensation for whatever description he could prepare and send in to us.

I think if you could see the views we have you would like to supplement them with at least sufficient description so that we could publish them.

On second thought, believe I will enclose proofs of the cuts which we have made and then leave it to your judgment whether you will be glad to give us at least a little description to go with them.

I might say I obtained these photographs from the Portland Cement Association.

Yours very truly,

*Clyde F. Burns*

Managing Editor.

CFB AS

CHIEF OF ENGINEER  
ST. PAUL, MINN.

CHIEF OF ENGINEER  
MAY 23 1923  
NOR. PAUL, MINN.  
RY.

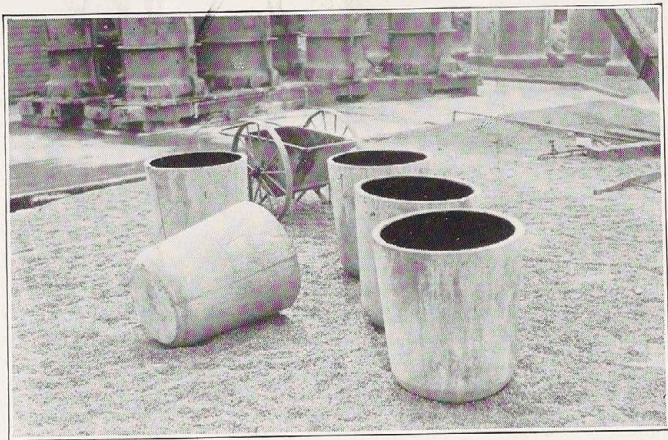


NORTHERN PACIFIC RAILWAY COMPANY

CHIEF ENGINEER,  
NORTHERN PACIFIC RAILWAY CO.,  
ST. PAUL, MINN.

FORM 321

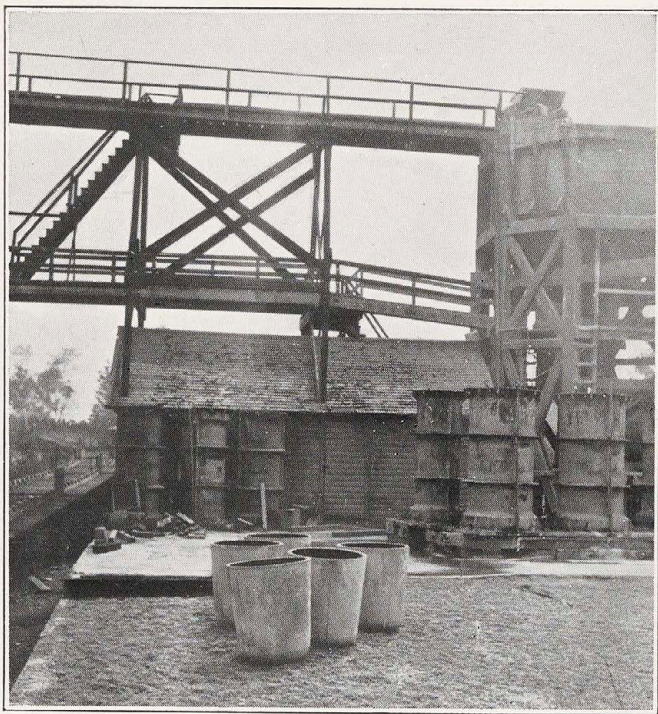
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Concrete Products Plant  
Nor Pac Ry. Auburn Wash  
(King Co) photo G S Eaton  
July 1922

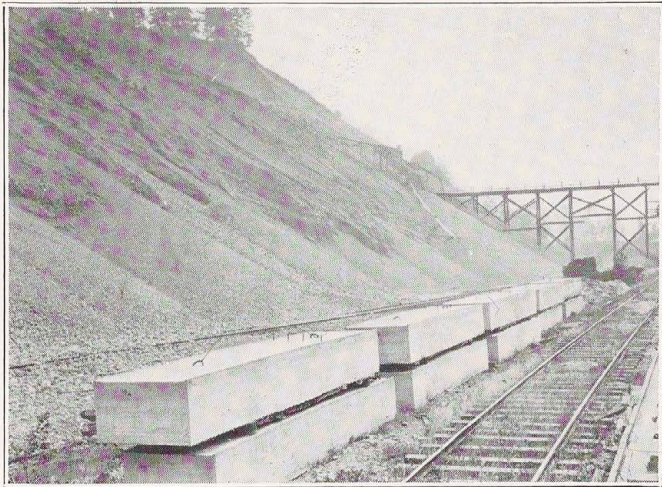




Concrete Products Plant  
Nor Pac Ry. - Auburn  
Wash (King Co)

Photo G S Eaton

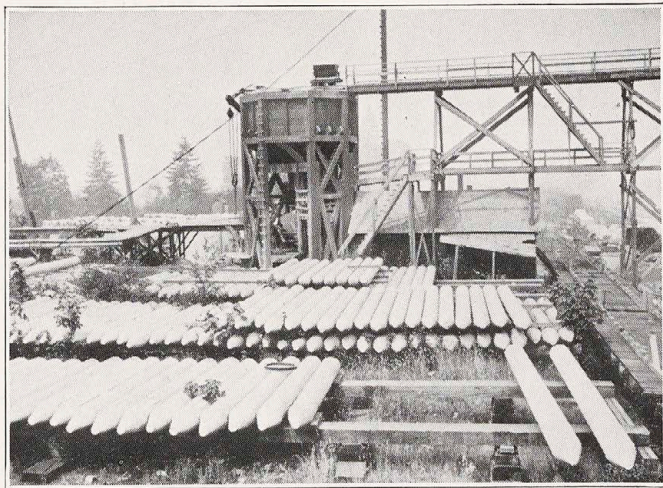
July 1928





Concrete Products Plant

Nor Pac Ry Auburn Wash

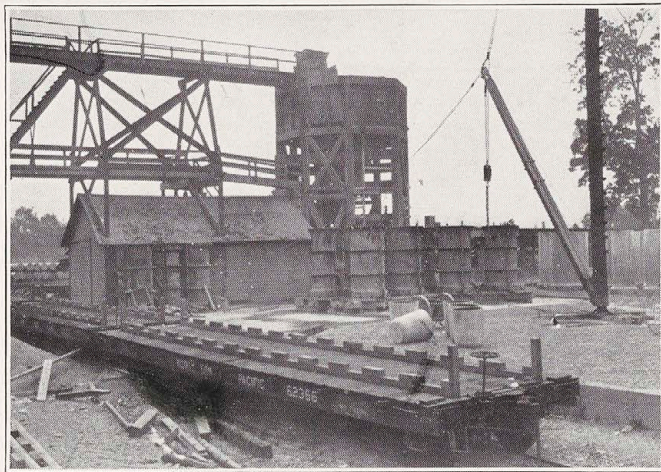




Concrete Products Plant

Nor Pac Ry Auburn Wash

Photo 7/22





Concrete Products Plant

Nor Pac. Ry.

Auburn, Wash

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PRESIDENT

HAROLD A. SMITH  
VICE-PRESIDENT

ROBERT R. GREIG  
SECRETARY-TREASURER

W. M. CAMP  
EDITOR

# RAILWAY REVIEW

537 SOUTH DEARBORN STREET  
CHICAGO

FEB  
6  
1923

CHICAGO February 5, 1923.

Mr. H. E. Stevens,  
Chief Engineer,  
Northern Pacific Ry.,  
St. Paul, Minn.

Dear Sir:-

We have a number of very good photographs of some of the recent views in and about your concrete products plant at Auburn, Wash. This interests us very much and we should like to give our readers some description of the work you are doing here.

Would you like to write us a letter telling what you think the engineering reader would like to know? For example, what the plant is producing, how it operates and what results you are obtaining?

Yours truly,

CFB:AM

*Clyde F. Burns*

Managing Editor.

*AMFC  
Pls. prepare a letter  
10/20  
1923*



Saint Paul, April 11, 1923.

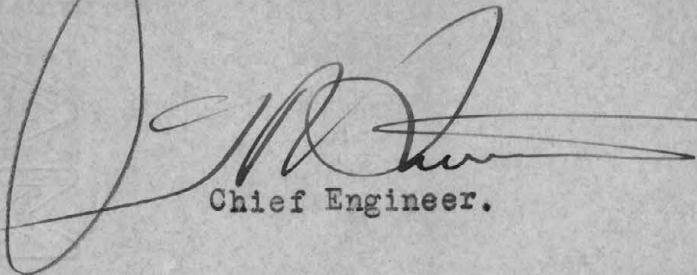
APR  
12  
1923

Mr. M. F. Clements:

Referring to Mr. Newton's letter to me of March 23rd, quoting prices at which the CB&Q bill out their reinforced concrete pipe.

I wish you would have this statement analyzed in detail and compared with similar items of cost for the Northern Pacific plant.

The statements are not quite clear to me and I am inclined to think you will have to get additional information from the CB&Q, and I also think it will be advisable for you to make a personal inspection of their plant at the first opportunity.



Chief Engineer.

HES-ar

Encl.

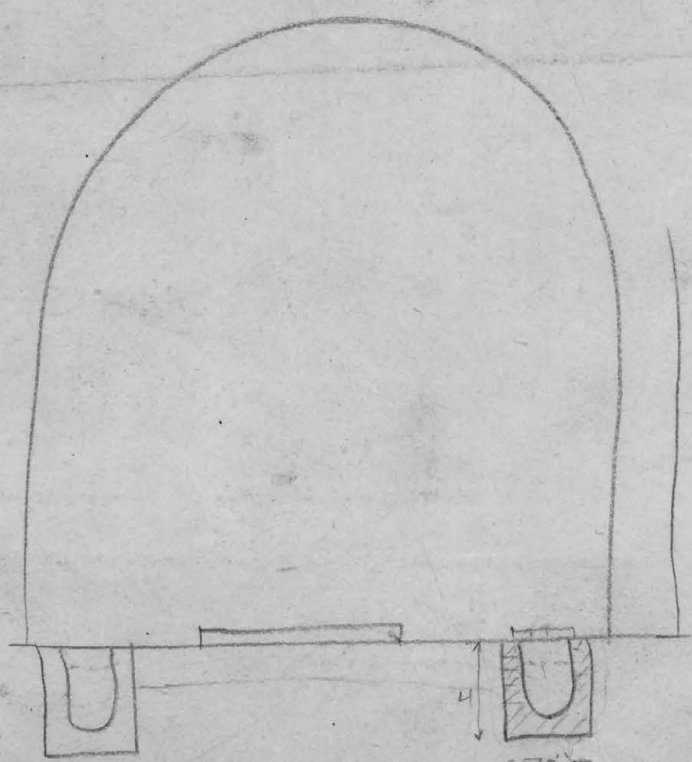
# SUMMARY — AUBURN CONCRETE PLANT

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	DEPRECIATION ON PRODUCTS MANUFACTURED.																						
	TOTAL CAPITAL INVESTMENT	ADD'NS TO CAP. INVEST. DURING YEAR	INTEREST ON DEPRE. INVEST. 6% NOT PER CAP. Yr.	GRAVEL PIT CHARGE	REPAIRS	SUM OF COLS. 3, 4, & 5.	SINKING FUND		DEPRECIATED INVEST. COL. 1 MINUS 8	MANF'G COST.	*DEPRECIATION.		24" PIPE			36" PIPE			48" PIPE			PILES			7x16 SLABS			6x16 SLABS							
							YEARLY COL. 12 MINUS 6	TOTAL			% COL. 10	AMOUNT	LIN. FT.	UNIT RATE	AMT.	LIN. FT.	UNIT RATE	AMT.	LIN. FT.	UNIT RATE	AMT.	LIN. FT.	UNIT RATE	AMT.	No. Pcs.	UNIT RATE	AMT.	No. Pcs.	UNIT RATE	AMT.					
1913									13037 40																										
1914	13675 89	638 49	782 24	106 00	780 43	1668 67	245 95	245 95	13429 94	8569 69	22 34	1914 62	2240	0.241	540 55	2576	0.316	813 02	—	—	—	3435	0.163	561 05	—	—	—	—	—	—	—	—			
1915	13675 89	0 00	805 80	91 00	1050 39	1947 19	(32 57)	213 38	13462 51	6212 16	30 82	1914 62	4240	0.232	1239 42	1072	0.392	420 00	284	0.899	255 20	—	—	—	—	—	—	—	—	—	—	—			
1916	13727 76	51 87	807 75	156 00	584 43	1548 18	366 44	579 82	13147 94	11540 88	16 59	1914 62	6608	0.180	119 2 00	2680	0.240	643 72	168	0.470	78 90	—	—	—	—	—	—	—	—	—	—	—			
1917	16132 72	2404 96	788 88	398 00	794 64	1981 52	3127 10	3706 92	12425 80	23221 01	22 00	5108 62	6432	0.238	1530 79	2320	0.318	738 52	312	0.668	208 30	3365	0.180	606 31	73	22 12	1614 64	21	19 52	410 06					
1918	16132 72	0 00	745 55	301 00	873 30	1919 85	3587 98	7294 90	8837 82	24293 31	22 7	5507 83	6512	0.199	1295 89	3200	0.201	634 20	—	—	—	4040	0.591	2389 26	37	2509	928 29	11	23 65	260 19					
1919	16132 72	720 77	530 27	166 57	211 64	848 50	1851 94	9176 89	7676 62	24293 31	5	5795 27	2024	0.287	582 15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
1920	6553 51	197 20	460 60	0	133 54	594 14	(594 14)	8582 78	3462 96	778 44	—	00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
1921	7045 51	51 17	507 78	129 44	—	637 22	2885 75	11468 50	6058 38	8500 79	19 22	3582 47	5184	0.25	1295 89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
1922	1866 72	(23 76)	365 30	140 50	—	525 80	2616 74	4085 24	3442 38	1823 07	19 56	3132 44	7814	0.27	2120 16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
1923	7533 07	—	206 90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			
1924																																			
1925																																			

\*NOTE:- Depreciation includes interest, repairs, gravel pit charge and percentage of capital investment.

\*NOTE: Depreciation includes interest, repairs, gravel pit charge and percentage of capital investment.





1500



H. E. Stevens.

A N N U A L   R E P O R T  
A U B U R N   C O N C R E T E   P L A N T  
1 9 2 0

Office of Asst. Chief Engr. & Engr. Mtce. of Way,  
Seattle, Washington, February 10th, 1923.



AUBURN CONCRETE PLANT 1920

S U M M A R Y

<u>Columns</u>		
	Total Investment 12/31/1919.	16853.51
2	Additions to Capital Investment during 1920	192.20
1	Total Investment 12/31/1920	<u>17045.71</u>
3	Interest on depreciated investment 6% on 7676.62	460.60
4	Gravel pit charges	.00
5	Repairs and Renewals (material only)	133.54
6	Sum of Columns 3-4-5.	594.14
7	Sinking Fund, 1921	<u>594.14</u>
8	Sinking Fund Total 12/31/1921	8582.75
9	Depreciated Investment 12/31/1921	8462.96
10	Manufacturer's Cost (Operation Expense of Plant November and December, 1920)	1716.44

AUBURN CONCRETE PLANTSTATEMENT OF COST OF OPERATION SEASON OF 1920

	<u>Total</u>	<u>Operation</u>	<u>Sinking Fund</u>	<u>Capital Account</u>
Inventory 12/31/1919 Material	12217.46	12217.46		
Material and Supplies recd 1920	1770.61	1536.12	133.54	100.95
Labor on Steel Shed Capital a/c	91.25			91.25
Labor Repairs and Renewals charged Operation A/C	1124.89	1124.89		
Labor Operation (exclusive of re- pairs and renewals)	591.55	591.55		
Less Inventory 1/1/21 Material	12572.40	12572.40		
Credit Reinforcing Rods Shipped Out	629.31	629.31		
	<u>2594.05</u>	<u>2268.31</u>	<u>133.54</u>	<u>192.20</u>
Manufactured product on hand 12/31/19	24961.50			
Manufactured product shipped away 1920	14837.00			
Manufactured product on hand 1/1/21	10124.50			
Interest on depreciated invest- ment 6% on \$7676.62	460.60		460.60	
	<u>3054.65</u>	<u>2268.31</u>	<u>594.14</u>	<u>192.20</u>



CREDITS TO AUBURN CONCRETE PLANT

MANUFACTURED PRODUCT SHIPPED AWAY DURING 1920 and BILLED  
OUT ON BOOKS

<u>Pipe</u>	<u>Pcs.</u>	<u>Lin. Ft.</u>	<u>Price</u>	<u>Operation</u>	<u>Investment</u>	<u>Total</u>
24"	498	3984	\$2.00			7968.00
36"	166	1328	3.00			3984.00

Piles

30 ft.	19	570				
25 ft.	4	100				
20 ft.	14	280				
Total Piles		950	1.90			1805.00

Slabs Single

8		135.00				1080.00
						14837.00

Credits to Auburn Concrete Plant, Operation Account, for reinforcing rods shipped from stock.

Reinforcing rods shipped out 629.31

Charges to Auburn Concrete Plant, Operation Account, Material received during 1920.

Reinforcing rods received	893.70		
200 # No.16 wire	14.71		
Lumber for saddles	253.18		
Coal 50 tons and misc.supplies	325.64		
Drayage	3.00		
Lumber (Repairs)	26.64		
Wire - Screens	19.25		
Total Material	1536.12	1536.12	1536.12

Pay Roll 1920

Nov. Pay Roll (Repairs & Renewals)	830.27		
Dec. Pay Roll (Repairs & Renewals)	294.62	1124.89	
Dec. Pay Roll (Operation exclusive of repairs & renewals)	591.55	591.55	
Total Pay Roll charge Operation A/C		1716.44	1716.44
			2623.25

AUBURN CONCRETE PLANT

MANUFACTURED PRODUCT ON HAND DECEMBER 31st, 1920

<u>Pipe</u>	<u>No. Pcs.</u>	<u>Lin.Ft.</u>	<u>Price Per Foot</u>	<u>Amount</u>	
24"	11	88	2.00	176.00	
36"	27	216	3.00	<u>648.00</u>	824.00

Piles

30'	14	420	1.90	798.00	
25'	10	250	1.90	475.00	
20'	58	1160	1.90	2204.00	
15'	33	495	1.90	940.50	
10'	42	420	1.90	<u>798.00</u>	5215.50

Slabs

Single Track 21		135.00	2835.00	
Double Track 10		125.00	<u>1250.00</u>	<u>4085.00</u>
				\$10124.50

	<u>Reinforced Concrete</u>		<u>Piles</u>					<u>Slabs</u>	
	<u>Pipe</u>		<u>30'</u>	<u>25'</u>	<u>20'</u>	<u>15'</u>	<u>10'</u>	<u>Single</u>	<u>Double</u>
On Hand	<u>24"</u>	<u>36"</u>							
1/1/1920	509	193	33	14	72	33	42	29	10
Made 1922	0	0	0	0	0	0	0	0	0
Shipped									
1920	498	166	19	4	14	0	0	8	0
On Hand									
12/31/20	11	27	14	10	58	33	42	21	10



## AUBURN CONCRETE PLANT

INVENTORY OF MATERIAL ON HAND JANUARY 1, 1921Corrugated Reinforcing Rods

<u>Size</u>	<u>Length</u>	<u>Unit Wt.</u>	<u>Weight</u>	<u>Price Per Cwt.</u>	<u>Amount</u>
1-1/8" Rd.	2433'-4"	3.38#	8200	3.85065	307.59
1-1/8" Rd.	43041'-1"	3.38#	145479	3.12	4538.94
1" Sq.	396'-11"	3.4#	1350	2.09	28.22
1" Rd.	32	3.67#	117	2.09	2.45
3/4" Sq.	42710'-8"	1.913	81705	2.84	2320.42
3/4" Rd.	2782'-6"	1.502	1479	2.84	42.00
5/8" Sq.	1487'-8"	1.33	1979	2.14	42.35
5/8" Rd.	1389'-6"	1.043	1449	2.14	31.00
1/2" Sq.	4608'-8"	0.85	3918	2.68	105.00
1/2" Rd.	22095'	0.688+	15221	3.75065	586.10
1/2" Rd.	21452'-3"	0.67	14373	2.68	385.20
3/8" Rd.	19774'	0.375	7415	3.14	232.83
1-1/4" Rd.	94'-9"	5.31	503	2.94	14.79
1-1/4" Sq.	13261'-11"	0.167	2215	2.76	61.13

Plain reinforcing rods

1-1/4" Rd.	5762'-11"	4.173	24048	2.94	707.01
1/4" Rd.	36000'	0.167	6012	2.76	165.93

Plain reinforcing plates  
for concrete piling

2-1/8"x1-1/8"x1'-3-3/4"			11948	5.13	612.83
2 hole 9557 pcs. 1.25 ea.			327411		10183.79

Reinforcing rods to be taken from Auburn Concrete Plant stock for use  
in Stampede Tunnel flume.

AFE 905-20 Transfer not yet made on book account

1/2" Rd.					
17'-6" 134 pcs.	2345'	0.67	1571#	2.68	42.10
35' 532 "	18620'	0.67	12475#	2.68	334.33
27'-6" 10 "	275'	0.67	184#	2.68	4.93
3/8" Rd.					
56'-0" 780 pcs.	43680'	0.375	16380#	3.14	514.33
			30610#		895.69

Wire Mesh Reinforcing for Pipes Style #153

48" 7500 lin.ft.	30000 sq.ft.				
44" 4100 " "	15033 " "				
	45033 " "	0032			1441.06

Annealed Wire

#16 335#	4.27 cwt.	14.30	
#16 200#	5.95 Cwt.	11.90	
#12 400#	3.98 cwt.	15.92	
#11 75#	4.58 cwt.	3.44	45.56

Malthine Paper

4-1/2 rolls	1.40		6.30
-------------	------	--	------

total material on hand 1/1/1921 12572.40

AUBURN CONCRETE PLANT

Statement of additions to Capital Investment charged to Investment account for 1920.

Steel Shed AFE 1200-14 ED 146-20Labor Charges from Pay Roll 1920

November	Draftsman making sketch	4.75	
November	Labor building steel shed	70.57	
December	Labor building steel shed	<u>15.93</u>	91.25

Material charges for 1920

December	11 squares roofing	37.29	
	Drayage	4.00	
	Lumber for steel shed	<u>59.66</u>	<u>100.95</u>

Total Addition to Capital Account			192.20
-----------------------------------	--	--	--------



AUBURN CONCRETE PLANT

Statement of charges for Repairs and Renewals charged to Investment Account during 1920.

Material

Feb.	1 bronze plate for boiler		.47
Dec.	1 set knives for bolt cutter		2.35
"	1/4" Wood block		1.07
"	50 ft. Wire		13.55
"	1 doz. Crosby clamps		4.29
"	(1100# nails	41.60	
	(22 sheets galv. iron	32.71	
	(Pipe fittings	7.70	
	(Oil can	2.04	
	(18# 1/2" nuts	1.41	
	(175# nails	6.43	
	(2-10 qt. Galv. water pails	1.11	
	(1-1/2" Globe valve	.74	
	(2 Gal. Boiler Paint	.94	
	(1 Repaired can	.95	
	(125# 1/2" x 10" Bolts	5.25	
	(18# 5/8" Washers	1.71	
	(6 Padlocks	2.89	
		<u>105.48</u>	
	Store Expense	<u>6.33</u>	<u>111.81</u>
	Total		133.54\$133.54

Re: Annual Reports  
Auburn Concrete Plant  
1920-1921 and 1922

Seattle, Washington,

February 17th, 1923.



Mr. H.E. Stevens, Chief Engr.,

St. Paul, Minn.

Dear Sir:

Enclosing herewith annual reports for the Auburn Concrete Plant for 1920, 1921 and 1922:

In checking over the 1920 accounts with Mr. Park's record, subsequent to sending you the annual report for 1920, we found some differences and have revised the 1920 report to make it agree with the corrected accounts.

Cost figures for 24" and 36" pipe for the three year period ending December 31st, 1922, indicate that 1923 product can be sold for approximately \$2.00 per foot for 24" reinforced concrete pipe and \$3.00 per foot for 36" reinforced concrete pipe and recommend that these prices be authorized for all 1923 sales including pipe carried over from 1922, price for piles and slabs, and depreciation charge for pipe, piles and slabs, to remain as at present. Please advise authorized 1923 prices as we are now shipping out pipe on 1923 orders and should make charges for same soon.

No pipe was made in 1920. The plant was being over-hauled during November and December of that year and operation costs, amounting to \$1716.44, accrued, which are properly a portion of the expense to be pro rated to cost of product manufactured during



#2

past two years. See Sheets "A" and "B" attached for analysis of pipe costs for 1920-1922 inclusive.

The plant at the present time is carrying concrete piles listed at \$6802.00; concrete slabs listed at \$3545.00, as follows:

26	pcs.	30'	piles made	1921
			(27	1921
29	"	25'	"	(2 1918
58	"	20'	"	made 1919
33	"	15'	"	" 1917
42	"	10'	"	" 1917
17	S.T.	Slabs	"	1918
10	D.T.	Slabs	"	1918

It is also carrying stock of various sized reinforcing rods listed at \$8777.00, most of which was in stock prior to 1918 when the plant was turned over by Mr. Perkins. Of this stock, only the 3/8" and 1/4" rods, amounting to \$408.00, are suitable for manufacture of pipe.

Very few piles have been made since 1919.

Interest charge on the money tied up in the above items is considerable, and I would suggest that the Central and Eastern Divisions draw on this stock for all items which can be used to advantage in their territory. Copy of inventory of October 31st, 1921, showing detail of rods, was furnished the Store Department, and also furnished your office.

In regard to interest charge on Investment. Should interest be charged on Depreciated Investment as per the statement made up by Mr. Clements - see your file 1816-54 - or has the Auditor made

#3

a yearly interest charge as per the amount shown on his Investment Account?

Please furnish me with statement showing total footings of Auditor's charges to Operation Account and Investment Account as of December 31st, 1920,  
" 31st, 1921,  
" 31st, 1922.

There was considerable correspondence during the past year in regard to differences between the Auditor's record and the record kept in this office, and I understand Auditor has made a complete check of the concrete plant accounts, using data furnished by this office, but I have not been advised of his final results.

Yours truly,

(Signed) A. R. COOK

CES/R

encls

cc to Mr. M.F. Clements



# AUBURN CONCRETE PLANT

ANALYSIS OF COSTS FOR 1920 - 1921 - 1922.

"A"

24" R.C.P.				36" R.C.P.			R.C.Piles			S.T.Slabs		
Lin.Ft.	Weight	Cost	Unit Cost Per Ft.	Lin.Ft.	Weight	Cost	Lin.Ft.	Weight	Cost	No. Slabs	Weight	Cost
1920 Operation Cost												
1716.44 Pro rated on basis of weight .0001762986 per Lb.												
		1074.25				520.37			98.34			23.48
1921	7152	2909970# 11126.10	1.32	2048	1203200	4485.16	2.24	1890	415800	2155.59	1.08	4 133200 484.46
1922	7834	3183390# 10326.64	1.56	2976	1748400	5671.43	2.19	675	142020	726.67	1.14	
Weight		6093360		2951800			557820					133200
Total Lin.Ft. 14976				5024			2565					
Total Mfg. Cost 1920, 1921, 1922		23526.99		10676.96			2980.60			507.94		
Average Mfg. Cost per ft.			1.504	2.125			1.162			126.99 ea.		
Depreciation Per Foot Cost			.23	.33			.621					
Recommended Sales Price for Pipe sold in 1923 including product carried over from 1922			1.78	2.48			1.78					
			2.00	3.00			1.90					

Office of Assistant Chief Engineer  
and Engineer Mtce. of Way  
Seattle, Washington,  
February 17, 1923.

1920  
1074.25  
52037  
2884  
23.48  
1716.44

1921  
11126.10  
498516  
215559  
484.46  
182513.1

1922  
10326.64  
5671.43  
726.67  
16747.4



# AUBURN CONCRETE PLANT

Sheet "B"

## ANALYSIS OF COSTS FOR 1920- 1921 - 1922.

	24"RCP		36"RCP		Total
	Cr.	Dr.	Cr.	Dr.	
Inventory 1/1/1920		8144.00		4632.00	
1920-1921-1922 Mfg.Cost		22526.99		10676.96	
Depreciation 1921		1573.44		675.84	
"    1922		1721.28		982.08	
1920 Sales	7968.00		3984.00		
1921 Sales	10815.20		4843.20		
1922 Sales	14626.40		8907.20		
Inventory 12/31/1922	9964.00		4250.40		
	43373.60	33965.71	21984.80	16966.88	
Surplus 3 yrs.operation		9407.89		5017.92	14425.81
Sinking Fund, 1920		594.14			
1921		2885.75			
1922		<u>2616.74</u>			<u>4908.35</u>
Balance Profit on Plant					9517.46
Pipe Made 1921	24"	36"			
"    "    1922	<u>7152</u>	<u>2048</u>			
	<u>7824</u>	<u>2976</u>			
	15976	5024			

Office of Assistant Chief Engineer,  
and Engineer Mtce. of Way,  
Seattle, Washington,  
February 17th, 1923.



Saint Paul, March 10th, 1923.

Mr. M. F. Clements:

I am attaching Mr. Cook's annual report covering operation of the Auburn concrete plant.

He is asking a number of questions about accounting distributions. I wish you would check this matter over with Mr. Cribbs as soon as you have opportunity, and let me have your recommendation as to the basis on which the plant products should be charged out.

In this connection, I have written Mr. Newton asking him to advise what system of bookkeeping is used by the Burlington in handling their concrete plants. As soon as I hear from him will send you the file.



Chief Engineer.

HES-ar

Encl.

Re: Accrued interest on  
slabs, piles and rods  
carried in stock at the  
Auburn concrete plant

Seattle, Washington,

February 20, 1923.

Mr. H. E. Stevens, Chief Engr.,

St. Paul, Minn.

Dear Sir:

Referring to report covering operation of the Auburn  
concrete plant for the last three years sent to you a few  
days ago:

You will note from these and past reports that we have  
been carrying a considerable number of piles and a few slabs  
for several years. It would seem that we should add to the  
price of these articles to cover accrued interest during the  
period they have been carried in stock.

We have also been carrying quite a large amount of rein-  
forcing rods of sizes that do not enter into our work. This  
stock is also accumulating interest and prices should be made  
accordingly.

Yours truly,

*A. R. Cook*

ARC-R

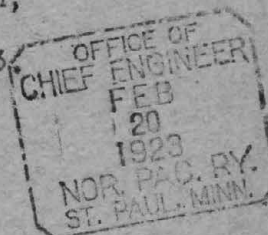


CHIEF OF  
OFFICE OF  
ENGINEERING  
NOR 1923  
ST. PAUL, MINN. RY.

Re: Annual Reports  
Auburn Concrete Plant  
1920-1921 and 1922

Seattle, Washington,

February 17th, 1923.



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

Dear Sir:

Enclosing herewith annual reports for the Auburn Concrete Plant for 1920, 1921 and 1922:

In checking over the 1920 accounts with Mr. Park's record, subsequent to sending you the annual report for 1920, we found some differences and have revised the 1920 report to make it agree with the corrected accounts.

Cost figures for 24" and 36" pipe for the three year period ending December 31st, 1922, indicate that 1923 product can be sold for approximately \$2.00 per foot for 24" reinforced concrete pipe and \$3.00 per foot for 36" reinforced concrete pipe and recommend that these prices be authorized for all 1923 sales including pipe carried over from 1922, price for piles and slabs, and depreciation charge for pipe, piles and slabs, to remain as at present. Please advise authorized 1923 prices as we are now shipping out pipe on 1923 orders and should make charges for same soon.

No pipe was made in 1920. The plant was being over-hauled during November and December of that year and operation costs, amounting to \$1716.44, accrued, which are properly a portion of the expense to be pro rated to cost of product manufactured during



#2

past two years. See Sheets "A" and "B" attached for analysis of pipe costs for 1920-1922 inclusive.

The plant at the present time is carrying concrete piles listed at \$6802.00; concrete slabs listed at \$3545.00, as follows:

26	pcs.	30'	piles	made	1921
				{ 27	1921) 1922 ✓
29	"	25'	"	{ 2	1918
58	"	20'	"	made	1919
33	"	15'	"	"	1917
42	"	10'	"	"	1917
17	S.T.	Slabs		"	1918
10	D.T.	Slabs		"	1918

It is also carrying stock of various sized reinforcing rods listed at \$8777.00, most of which was in stock prior to 1918 when the plant was turned over by Mr. Perkins. Of this stock, only the 3/8" and 1/4" rods, amounting to \$408.00, are suitable for manufacture of pipe.

Very few piles have been made since 1919.

Interest charge on the money tied up in the above items is considerable, and I would suggest that the Central and Eastern Divisions draw on this stock for all items which can be used to advantage in their territory. Copy of inventory of October 31st, 1921, showing detail of rods, was furnished the Store Department, and also furnished your office.

In regard to interest charge on Investment. Should interest be charged on Depreciated Investment as per the statement made up by Mr. Clements - see your file 1816-54 - or has the Auditor made


#3

a yearly interest charge as per the amount shown on his Investment Account?

Please furnish me with statement showing total footings of Auditor's charges to Operation Account and Investment Account as of December 31st, 1920,  
" 31st, 1921,  
" 31st, 1922.

There was considerable correspondence during the past year in regard to differences between the Auditor's record and the record kept in this office, and I understand Auditor has made a complete check of the concrete plant accounts, using data furnished by this office, but I have not been advised of his final results.

Yours truly,



CES/R

encls

cc to Mr. M.F. Clements



# AUBURN CONCRETE PLANT

ANALYSIS OF COSTS FOR 1920 - 1921 - 1922.

"A"

24" R.C.P.				36" R.C.P.			R.C.Piles			S.T.Slabs		
Lin.Ft.	Weight	Cost	Unit Cost Per Ft.	Lin.Ft.	Weight	Cost	Lin.Ft.	Weight	Cost	No. Slabs	Weight	Cost
1920 Operation Cost												
1716.44 Pro rated on basis of weight .0001762986 per Lb.												
1921	7152	2909970#	11426.10	1.32	2048	1203200	4485.16	2.34	1890	415800	2155.59	1.08 4
1922	7824	3183390#	10326.64	1.56	2976	1748400	5671.43	2.19	675	142020	726.67	1.14
Weight												
Total Lin.Ft.14976												
Total Mfg.Cost { 1920,1921,1922 }												
Average Mfg.Cost per ft.												
Depreciation Per Foot Cost												
Recommended Sales Price for Pipe sold in 1923 including product carried over from 1922 }												



# AUBURN CONCRETE PLANT

Sheet "B"

## ANALYSIS OF COSTS FOR 1920- 1921 - 1922.

	24"RCP		36"RCP		Total
	Cr.	Dr.	Cr.	Dr.	
Inventory 1/1/1920		8144.00		4632.00	
1920-1921-1922 Mfg.Cost		22526.99		10676.96	
Depreciation 1921		1573.44		675.84	
" 1922		1721.28		982.08	
1920 Sales	7968.00		3984.00		
1921 Sales	10815.20		4843.20		
1922 Sales	14626.40		8907.20		
Inventory 12/31/1922	9964.00		4250.40		
	43373.60	33965.71	21984.80	16966.88	
Surplus 3 yrs.operation		9407.89		5017.92	14425.81
Sinking Fund, 1920	594.14				
1921	2885.75				
1922	2616.74				
					4908.35
Balance Profit on Plant					9517.46
Pipe Made 1921	24"	36"			
" " 1922	7152	2048			
	7824	2976			
	15976	5024			

Office of Assistant Chief Engineer,  
and Engineer Mtce. of Way,  
Seattle, Washington,  
February 17th, 1923.



1918

1919

1920

Re: Auburn Concrete Plant.

OFFICE OF  
CHIEF ENGINEER  
AUG  
8  
1921  
DR. PAC.  
ST. PAUL, MINN.

Tacoma, Wash., Aug. 5th, 1921

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

Dear Sir:

Replying to your wire of July 27th, 1921, B-18, and July 30th, 1921, B-20, re Auburn Concrete Plant.

I hand you herewith in duplicate statement of sales of manufactured product for 1918, 1919 and 1920, segregated into amounts credited to Operation Account and Investment Account (depreciation). Also statement showing expenses and receipts for the same three year period ending December 31st, 1920.

The amount which appears on the books as having actually been charged off to depreciation for the three year period is \$5261.53 based on sales of manufactured product. The blue print statements sent me with your letter of May 4th, 1921, compiled by Mr. Clements from the various annual reports, base depreciation on yearly plant output. Your letter to me of date February 1st, 1919 enclosing Mr. Clements' letter of date January 30th, 1919 together with blue print statement, authorizes the use of units as recommended by Mr. Clements and the yearly reports and accounting for products sold since that date has been handled in accordance therewith, the depreciation charge for manufactured product sold being shown as credit to Investment Account on the Form 1924 covering each sale.

On the manufactured product carried on inventory as on hand December 31st, 1920, amount \$10124.50, the amount to be charged out



to depreciation if sold at inventory value would be \$2571.23.

Depreciation actually charged out for  
1918 - 1919 - 1920

\$5261.53

Proportion of value of manufactured stock on  
hand 12/31/1920 which will be applied to  
depreciation when stock is sold

2571.23  
\$7832.76

Total

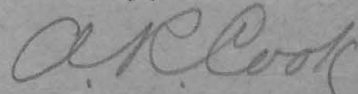
Depreciation shown by Mr. Clements on his blue print statement  
for this three year period is as follows:

Interest	\$1736.42
Gravel Pit charges	407.55
Repairs	1264.37
Sinking fund	4829.94
	<u>\$8238.32</u>

The difference between the two statements arises from the  
fact that during portion of 1918 no depreciation appears in the  
cost record here, for sales, the total depreciation charge for  
1918 being only \$591.45 on sales of \$20241.92.

The statements I am sending you, while not in the form you  
asked for, probably contain the desired information and are in  
accordance with accounting record as kept.

Yours truly,



Principal Assistant Engineer. J

CES-S

encls.

AUBURN CONCRETE PLANTSTATEMENT OF EXPENSES AND RECEIPTS FOR 1918 - 1919 - 1920

	Additions to Capital Invest- ment during year charged to Investment Account.	Repairs and Renewals charged to Investment account (de- preciation)	Cost of labor and material including Royalty on pipe charged to Operation Account.
1918	0.0	873.30	27270.01
1919	720.79	211.64	22075.35
1920	192.20	179.43	3297.36
Total for 3 years	912.99	1264.37	52642.62

Amount of Capital Investment 12/31/1917	16132.72
Additions to Capital Investment during 1918 - 1919 - 1920	912.99
Amount of Capital Investment 12/31/1920	<u>\$17045.71</u>

	<u>Credits</u>	<u>Charges</u>
Raw Stock on hand 1/1/1918		5766.28
Manufactured product on hand 1/1/1918		3580.28
Cost of labor and material including royalty on pipe 1/1/1918 to 12/31/1920 (Operation A/C)		52642.72
Cost of additions to Capital Account 1/1/1918 to 12/31/1920 charged to Investment Account		912.99
Cost of repairs 1/1/1918 to 12/31/1918 charged Investment Account		<u>1264.37</u>
		64166.64

Depreciation 1918 - 1919 - 1920 (Amount actually credited Investment Account on sales of manufactured product) See Sheet 2		5261.53
Surplus not charged out		<u>69428.17</u> 377.57

Sales of manufactured product for 3 years 1918 - 1919 - 1920 - See Sheet 2	47363.78	
Inventory 12/31/1920 Raw Material	12217.46	
Inventory 12/31/1920 Manufactured product	<u>10124.50</u>	
	69705.74	<u>69805.74</u>

Office of Principal Assistant Engineer,  
Tacoma, Wash., August 5th, 1921.



AUBURN CONCRETE PLANTSTATEMENT OF SALES OF MANUFACTURED PRODUCT FOR 1918 - 1919 - 1920.

			<u>Total</u>	<u>Credit Operation Account</u>	<u>Credit Investment Account (depreciation)</u>
1918	24" R.C.P.	668 pcs.	8625.06	8463.74	161.32
	36" R.C.P.	244 pcs.	4065.49	3975.35	90.14
	48" R.C.P.	2 pcs.	60.34	55.00	5.34
	20' Piles	63	2016.00	2016.00	
	25' Piles	66	2475.00	2475.00	
	15' Piles	9	143.16	118.17	24.99
	Single Track Slabs		2856.87	2547.21	309.66
	Total Sales for 1918		20241.92	19650.47	591.45
1919	24" R.C.P.	471 pcs.	6126.80	4736.02	1390.78
	36" R.C.P.	161 pcs.	2884.80	2366.19	518.61
	48" R.C.P.	8 pcs.	245.76	189.97	55.79
	30' Piles	51 pcs.	2371.50	1833.17	538.33
	20' Piles	10 pcs.	320.00	247.36	72.64
	15' Piles	14 pcs.	336.00	259.73	76.27
	Total Sales for 1919		12284.86	9632.44	2652.42
1920	24" R.C.P.	498 pcs.	7968.00	7199.38	768.62
	36" R.C.P.	166 pcs.	3984.00	3475.41	508.59
	30' Piles	19 pcs.)			
	25' Piles	4 pcs.)	1805.00	1265.27	539.73
	20' Piles	14 pcs.)			
	Slabs S.T.	8 pcs.	1080.00	879.28	200.72
	Total Sales for 1920		14837.00	12819.34	2017.66
<u>SUMMARY</u>					
1918			20241.92	19650.47	591.45
1919			12284.86	9632.44	2652.42
1920			14837.00	12819.34	2017.66
Total Sales for 1918 - 1919 and 1920			47363.78	42102.25	5261.53

Office of Principal Assistant Engineer,  
Tacoma, Wash., August 5th, 1921.

AUBURN CONCRETE PLANTSTATEMENT OF EXPENSES AND RECEIPTS FOR 1918 - 1919 - 1920

	Additions to Capital Invest- ment during year charged to Investment Account.	Repairs and Renewals charged to Investment account (de- preciation)	Cost of labor and material including Royalty on pipe charged to Operation Account.
1918	0.0	873.30	27270.01
1919	720.79	211.64	22075.35
1920	192.20	179.43	3297.36
Total for 3 years	912.99	1264.37	52642.62

Amount of Capital Investment 12/31/1917	16132.72
Additions to Capital Investment during 1918 - 1919 - 1920	912.99
Amount of Capital Investment 12/31/1920	<u>\$17045.71</u>

	<u>Credits</u>	<u>Charges</u>
Raw Stock on hand 1/1/1918		5766.28
Manufactured product on hand 1/1/1918		3580.28
Cost of labor and material including royalty on pipe 1/1/1918 to 12/31/1920 (Operation A/C)		52642.72
Cost of additions to Capital Account 1/1/1918 to 12/31/1920 charged to Investment Account		912.99
Cost of repairs 1/1/1918 to 12/31/1918 charged Investment Account		<u>1264.37</u>
		64166.64
Depreciation 1918 - 1919 - 1920 (Amount actually credited Investment Account on sales of manufactured product) See Sheet 2		<u>5261.53</u>
		69428.17
Surplus not charged out		377.57
Sales of manufactured product for 3 years 1918 - 1919 - 1920 -See Sheet 2	47363.78	
Inventory 12/31/1920 Raw Material	12217.46	
Inventory 12/31/1920 Manufactured product	<u>10124.50</u>	
	69705.74	<u>69805.74</u>

Office of Principal Assistant Engineer,  
Tacoma, Wash., August 5th, 1921.



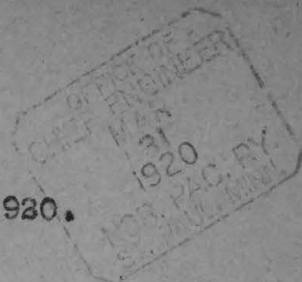
AUBURN CONCRETE PLANTSTATEMENT OF SALES OF MANUFACTURED PRODUCT FOR 1918 - 1919 - 1920.

			<u>Total</u>	<u>Credit Operation Account</u>	<u>Credit Investment Account (depreciation)</u>
1918	24" R.C.P.	668 pcs.	8625.06	8463.74	161.32
	36" R.C.P.	244 pcs.	4065.49	3975.35	90.14
	48" R.C.P.	2 pcs.	60.34	55.00	5.34
	20' Piles		2016.00	2016.00	
	25' Piles		2475.00	2475.00	
	15' Piles		143.16	118.17	24.99
	Single Track Slabs		2856.87	2547.21	309.66
	Total Sales for 1918		20241.92	19650.47	591.45
1919	24" R.C.P.	471 pcs.	6126.80	4736.02	1390.78
	36" R.C.P.	161 pcs.	2884.80	2366.19	518.61
	48" R.C.P.	8 pcs.	245.76	189.97	55.79
	30' Piles	51 pcs.	2371.50	1833.17	538.33
	20' Piles	10 pcs.	320.00	247.36	72.64
	15' Piles	14 pcs.	336.00	259.73	76.27
	Total Sales for 1919		12284.86	9632.44	2652.42
1920	24" R.C.P.	498 pcs.	7968.00	7199.38	768.62
	36" R.C.P.	166 pcs.	3984.00	3475.41	508.59
	30' Piles	19 pcs.)			
	25' Piles	4 pcs.)	1805.00	1265.27	539.73
	20' Piles	14 pcs.)			
	Slabs S.T.	8 pcs.	1080.00	879.28	200.72
	Total Sales for 1920		14837.00	12819.34	2017.66
<u>SUMMARY</u>					
1918			20241.92	19650.47	591.45
1919			12284.86	9632.44	2652.42
1920			14837.00	12819.34	2017.66
Total Sales for 1918 - 1919 and 1920			47363.78	42102.25	5261.53

Office of Principal Assistant Engineer,  
Tacoma, Wash., August 5th, 1921.

Re: Inventory and reports  
covering Auburn Concrete  
Plant

Tacona, March 27, 1920.



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

*m7c*

Dear Sir:

I am enclosing to you herewith three copies of the Auburn Concrete Plant inventory as of December 31st, 1919.

For the purpose of turning the plant over to the Store Department, I am enclosing a statement showing amount of pipe shipped during January and February, the amount of pipe on hand March 1st, requisitions which have been covered by Store Orders, pipe not yet shipped, and requisitions for pipe not covered by Store Orders and not shipped. There have been no shipments of piles, slabs or reinforcing steel since the first of the year. The Store Department, however, has made a shipment of reinforcing bars which we advised Mr. Robson we could not receive as we did not have the force to take care of them. I understand that these bars are in the freight house at Auburn.

I am also enclosing blue print forms showing record of shipments during January, amount of pipe on hand, number of



#2

slabs on hand as of March 1st, also number of piles on hand as of the same date.

Yours truly,

ARC-R  
encls

Principal Assistant Engineer

Re: Report on Auburn  
Concrete Plant for 1918.

*Heldman 100 2/18*  
Tacoma, Wn., Feb. 10, 1919.

*1918*  
Mr. H. E. Stevens,  
Chief Engineer,  
St. Paul, Minnesota.

Dear Sir:

I am enclosing to you, herewith, in duplicate a report on the Auburn Concrete Plant's operations for 1918, which has been made out in practically the same form as submitted last year.

I have discussed this matter with Mr. Clements Friday, the 7th inst., and I think that we practically agreed as to how the accounts should be handled although there was some difference in opinion as to the price at which the manufactured material should be billed. In connection with this matter, I am having a detailed analysis of the cost made up with which I can check with Mr. Clements' statement when submitted.

Yours truly,

*A. R. Quinn*  
Principal Assistant Engineer

ARC-R  
encs.

*The Clements has a copy of this report  
in checking up cost figures - copy of last  
year's report attached -*



UNITED STATES RAILROAD ADMINISTRATION  
W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS  
NORTHERN PACIFIC RAILWAY

(Sheet #1)

Tacoma, Wash., January 31, 1919.

Report on Auburn Concrete Plant for 1918.

SUMMARY OF INVESTMENT ACCOUNT FOR 1918

Investment Acct. at end of season 1917	Dec. 31-1917	\$8490.13
Labor and material for repairs and renewals charged to investment acct. during 1918. For details see sheets 15-16-17		<u>873.30</u>
		9363.43
Depreciation on manufactured product on hand 1/1/16 18?	787.67	
Deduct depreciation on manufactured pro- duct sold during 1918 and charged to in- vestments	<u>591.45</u>	
	196.22	
Depreciation at close of season 1918	<u>6807.62</u>	
Total Investment	-	9363.43
Total depreciation for 1918	7003.84	<u>7003.84</u>
Balance in investment account 12/31/1918	-	2359.59

UNITED STATES RAILROAD ADMINISTRATION  
W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS  
NORTHERN PACIFIC RAILWAY.

(Sheet #2)

STATEMENT OF COST OF OPERATING AUBURN CONCRETE PLANT FOR 1918

Charges

Supplies and material on hand 1/1/18		5766.28	✓
Manufactured product on hand 1/1/18		3580.28	✓
Cost of Labor and Material for 1918		26784.41	✓
Royalty on pipe .6512 lin ft 24" @ .05	325.60		
3200 " " 36" @ .05	160.00		
		485.60	✓
Total Charge	-	36616.57	✓

Credits

Manufactured product shipped away during 1918 and charged out on books See sheet #3 for detail	19650.47	✓
Manufactured product on hand Dec. 31, 1918. See sheet #4 for detail	14978.76	✓
Empty cement sacks on which adjustment not yet made. See sheet #4	248.20	✓
Inventory of material and supplies on hand 12/31/1918. See sheets 5 and 6	8742.98	✓
Total Credits	43620.41	

Depreciation charged to Investment  
.2883032 of \$24293.31 (cost of 1918 operation)

7003.84

43620.41

43620.41



## CREDITS TO AUBURN CONCRETE PLANT

Manufactured Product shipped away during year and billed out on books.

				Credit to Operation	Credit to In.	Total Credit.
<u>Pipe</u>						
24"	668 pcs.	5344	lin ft.	8463.74	161.32	8625.06
36"	244 "	1952	" "	3975.35	90.14	4065.49
48"	2 "	16	" "	55.00	5.34	60.34
<u>Piles</u>						
30'	0 pcs.	0	lin ft.			
25'	66 "	1650	@ "150"	2475.00		2475.00
20'	63 "	1260	@ "120"	2016.00		2016.00
15'	9 "	135	" "	118.17	24.99	143.16
<u>Slabs</u>						
Single	22 pcs.			2547.21	309.66	2856.87
Double	0 "					
				19650.47	591.45	20241.92

mt 5763

Manufactured Product on hand Dec. 31, 1918Pipe

24"	212	pcs.	1696	lin ft	@ 1.60	2713.60	
36"	188	"	1504	"	@ 2.10	3158.40	
48"	8	"	64	"	@ 3.84	<u>245.76</u>	6117.76

Piles

30'	35	"	1050	"	@ 1.55	1627.50	
25'	2	"	50	"	@ 1.50	75.00	
20'	10	"	200	"	@ 1.60	320.00	
15'	47	"	705	"	@ 1.60	1128.00	
10'	42	"	420	"	@ 1.20	<u>504.00</u>	3654.00

Slabs

Single	29		@ 135.00	3915.00		
Double	10		@ 125.00	<u>1250.00</u>	<u>5165.00</u>	14978.76

1241 empty cement sacks on which adjustment  
not yet made @ 20¢ per sk.

248.20

248.20



UNITED STATES RAILROAD ADMINISTRATION  
W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS  
NORTHERN PACIFIC RAILWAY

(Sheet #5)

STATEMENT OF COST OF AUBURN CONCRETE PLANT FOR 1918

Inventory of Material and Supplies on hand 12/31/1918.

Reinforcing rods	Length	Lin.ft.	Unit. wt. per foot.	Weight lbs.	
880 pcs $\frac{3}{4}$ " sq.	6'-6"	5720			
120 " " "	13'-6"	1620			
237 " " "	15'-6"	3673.5			
97 " " "	16'-6"	1600.5			
28 " " "	17'-6"	490			
71 " " "	35'	2485			
		<u>15589</u>			
			1.913#	29822#	3.473 cwt 1035.72 <sup>slab</sup>
138 " $\frac{1}{2}$ " "	35'	4830			
17 " " "	30'-6"	518'-6"			
86 " " "	27'-6"	2365			
259 " " "	6'-6"	1683-6"			
61 " " "	17'-6"	1067-6"			
123 " " "	3'-3"	399'-9"			
321 " " "	4'	1284			
		<u>12148-3"</u>			
			0.67#	8140#	3.617 cwt 294.42 <sup>slab?</sup>
907 " $\frac{3}{8}$ " "	7'-10"	7105			
128 " " "	13'-4"	1706-8"			
203 " " "	10'-8"	2165-4"			
6 " " "	17'-3"	103-6"			
634 " " "	2'	1268'			
		<u>12348-6"</u>			
			0.375#	4630#	3.95 cwt 188.82 <sup>Pipe</sup>
32 " $1\frac{1}{4}$ " rd	6'-9"	216			
33 " " "	27'-2"	896-6"			
		<u>1112.6"</u>			
			4.173#	4642#	4.45 cwt 206.57 <sup>slab?</sup>
285 " $1\frac{1}{8}$ " sq.	15'-4"	4370			
119 " " "	19'	2261			
168 " " "	20'	3360			
299 " " "	24'-4"	7275-8"			
		<u>17266.8"</u>			
			3.38 #	58361#	3.473 " 2026.88 <sup>Piles</sup>
X 14 " $\frac{5}{8}$ " rd	8'-2"	144-4"	1.04 #	119#	3.473 " X 4.13
				3000#	2.346 " P.P. 70.38
4570#	2 $1\frac{1}{8}$ " x $1\frac{1}{8}$ " x $1'-3\frac{1}{2}$ " plates for piling			5758#	2.703C pcs 123.53
Reinforcing rods recd on GSK 4916 for which no invoice has been recd and which are not yet charged out.					
175 pcs. $1\frac{1}{8}$ " rd	15'-4"				
485 " $1\frac{1}{8}$ " "	24'-4"				
200 " " "	28'-10"				
90 " " "	30'-8"				
143 " " "	39'-8"				
285 " " "	19'-10"				
					no charge -
					<u>3950.45</u>

2949  
413  
298.45

# UNITED STATES RAILROAD ADMINISTRATION

W. G. MEADDOO, DIRECTOR GENERAL OF RAILROADS

NORTHERN PACIFIC RAILWAY

(Sheet #6)

Scrap reinforcing rods.

Brot forward

3950.45

80 pcs $\frac{3}{4}$ " sq 7'6"	600					
31 " " " 5'6"	170.5					
	<u>770.5</u>	1.913#	1474#	\$10.00 ton		7.37
12600 lin ft 44" wide Style 153 Mesh 42 rolls 46200 sq ft)						
16425 " " 48" " " " " 54 $\frac{1}{2}$ " 65700 " " )						
				<u>111900</u>	" " @	
.03108 per sq. foot	-	-	-	-	-	3477.85

1443 sbs Olympic Cement	2.5957 per bbl.		936.40
625 # No 16 Annealed Wire	4.32 " 100#		27.00
400 # No 12 " "	3.98 " "		15.92
150 # No 11 " "	4.58 " "		6.87
10# 6-d Nails )			
15# 8-d " )			
90# 20-d " )			
20# 60-D " )	135# @ 4.17 per C #		5.63
41 rolls of Mathine paper @ 1.40			6.30
20# Gear grease	.0656#		1.31
3# Canvas packing 3/8" )			
2# Piston " $\frac{1}{2}$ " )			
3# " " 3/4" )			
5# 1/16" Rainbow Packing 13#	.30		3.90
3# Lamp Black	.11		.33
80 Tons Roslyn Coal @	2.90		232.00
114 Pcs. 4"x4" - 20' 3040 ft BM @	20.00		60.80
50 Gal Car Oil @	.2114 Gal.		10.57
3 " Coal Oil @	.095 "		.28

Total value of material and supplies on hand  
12/31/1918

8742.98

*mt 24*

248.20

8991.18



## UNITED STATES RAILROAD ADMINISTRATION

W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS

## NORTHERN PACIFIC RAILWAY

(Sheet #7)

## SUMMARY OPERATION FOR 1918

## PIPE

	24"	36"	Slabs	Piles	Total
Cement	2418.86	1728.91	1261.03	589.45	5998.25
Mesh	1503.30	1109.30			2612.60
Bars	1052.27	523.71	1618.27	1528.53	4722.78
Wire	34.89	15.69	8.89	10.93	70.40
Royalty	325.60	160.00			485.60
Labor	2195.16	1386.36	955.50	1318.83	5855.85
Sand and Gravel	528.30	389.42	378.70	176.91	1473.33
Mathine Paper			18.58	18.58	18.58
	8058.38	5313.39	4240.97	3624.65	21237.39
General	1071.41	7760.30	940.55	283.66	3055.92
	9129.79	6073.69	5181.52	3908.31	24293.31

General expense includes cost of coal, oil, form lumber, time of plant superintendent, doing clerical work, cost of pumping water, handling coal and cinders and other general items that cannot be charged directly to each product. Cost of general items is prorated on basis of weight of product manufactured during 1918.

## UNITED STATES RAILROAD ADMINISTRATION

W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS

## NORTHERN PACIFIC RAILWAY

(Sheet #8)

Operation Cost Per Lin Ft 24" Pipe compared with  
cost for 1916 and 1917.

Product for 1918 - 814 pcs. 6512 lin ft.

	<u>1918</u>	<u>1917</u>	<u>1916</u>
Cement	.371	.300	.280
Sand and Gravel	.081	.064	
Mesh	.231	.223	.219
Bars	.161	.115	.097
# 16 Wire	.005	.004	.004
Labor	.337	.199	.192
Royalty	.050	.050	.050
General	.165	.127	.242
	<hr/> 1.401	<hr/> 1.082	<hr/> 1.084
Depreciation	.404	.238	.180
	<hr/> 1.805	<hr/> 1.320	<hr/> 1.264



UNITED STATES RAILROAD ADMINISTRATION  
W. G. MCADDOO, DIRECTOR GENERAL OF RAILROADS  
NORTHERN PACIFIC RAILWAY

(SHEET #9)

Operation Cost per lin. ft. 36" pipe compared with  
cost for 1916 and 1917.

Product for 1918 - 400 pcs. 3200 lin. ft.

	1918	1917	1916
Cement	.540	.436	.409
Sand and Gravel	.122	.096	
Mesh	.347	.299	.295
Reinforcing Bars	.164	.162	.140
Annealed Wire	.005	.005	.004
Labor	.433	.230	.227
Royalty	.050	.050	.050
General	.238	.169	.322
	<hr/> 1.899	<hr/> 1.447	<hr/> 1.447
Depreciation	.548	.318	.240
	<hr/> 2.447	<hr/> 1.765	<hr/> 1.687

OPERATION COST PER LINEAL FOOT FOR PILES

Product Pcs. Feet	30' 35 1959'	25' 45 1125	20' 73 1469	15' 27 405				
	30'		25'		20'		15'	
	<u>1918</u>	<u>1917</u>	<u>1918</u>	<u>1917</u>	<u>1918</u>	<u>1917</u>	<u>1918</u>	<u>1917</u>
Cement	.144	.116	.144	.116	.149	.118	.144	.116
Sand and Gravel	.043	.034	.044	.035	.044	.035	.043	.034
Annealed Wire	.003	.0005	.003	.003	.003	.004	.004	.006
Labor	.233	.237	.324	.189	.372	.238	.413	.259
Reinforcing Rods	.373	.394	.377	.311	.384	.320	.375	.328
General	.071	.092	.068	.087	.070	.095	.076	.096
	.867	.784	.960	.741	1.022	.809	1.055	.841
Depreciation	.259	.172	.277	.163	.295	.178	.304	.185
	1.117	.956	1.237	.904	1.317	.987	1.359	1.026



## UNITED STATES RAILROAD ADMINISTRATION

W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS

## NORTHERN PACIFIC RAILWAY

(Sheet #11)

## OPERATION COST OF PILES FOR 1918

Exclusive of Depreciation.

	30' 35 pcs 1050 lin ft	25' 45 pcs 1125 lin ft	20' 73 pcs 1460 lin ft	15' 27 pcs 405 lin ft
Cement	151.28	162.08	217.74	58.35
Sand and Gravel	45.43	49.27	64.69	17.52
Annealed Wire	2.14	2.72	4.45	1.62
Labbr	244.13	363.99	542.87	167.84
Reinforcing Bars	391.54	423.82	561.13	152.04
General	74.79	76.64	101.64	30.59
	909.31	1078.52	1492.52	427.96

## UNITED STATES RAILROAD ADMINISTRATION

W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS

## NORTHERN PACIFIC RAILWAY

(Sheet #12)

## OPERATION COST PER SLAB COMPARED WITH 1917

Product for 1918 Single 37 pcs. Double 11 pcs.

	<u>1918</u>	Single <u>1917</u> <sup>n</sup>	Double <u>1917</u>	<u>1918</u>
Cement	27.014	21.803	23.773	19.176
Sand and Gravel	8.113	6.402	7.139	5.634
Annealed Wire	.186	.265	.181	.2256
Malthine Paper	.387	.553	.387	.553
Labor	19810	13.719	20.232	13.797
Reinforcing Bars	34.477	46.024	31.147	38.948
General	19.924	11.772	18.487	10.393
	<u>199.911</u>	<u>100.538</u>	<u>101.346</u>	<u>887.757</u>
Depreciation	316.87	211.118	29.218	19.527
	<u>141.598</u>	<u>122.656</u>	<u>130.564</u>	<u>108.284</u>



(Sheet #13)

	<u>Amt. used during 1918</u>	<u>Average price for 1918</u>	<u>Average price for 1917</u>
Sand and Gravel	2028 cu yds	.73 pr cu yd	0.576 per c.y.
Cement	11102 sacks	.540 " sk	0.43 " sk.
Mesh	81682 sq. ft.	.032 " sq ft	0.0272 "sq ft.
Reinforcing Bars for pipe	38736 #	.0407"#	.03252 pr #
Reinforcing " "	59656 #	.0256"#	
Reinforcing " "	49723 #	.0326"#	
Wire for pipe	967#	.0523"#	.0441 " #
" " piles	200#	" "	"
" " slabs	170#	" "	"
Malthine Paper 11.2 rolls 5600 sq.ft		{ .00331pr sq ft .010 " lin "	.0108pr lin #

[illegible]

UNITED STATES RAILROAD ADMINISTRATION  
W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS  
NORTHERN PACIFIC RAILWAY

(Sheet #14)

COMPARISON OF LABOR COSTS FOR 1917 AND 1918

		SEPTEMBER PAYROLL 1918			
		<u>Time</u>		<u>Rate</u>	<u>Amount</u>
Plant Supt.	1 mo	1 mo		160.00	160.00
Engineer		208 hrs 26 days		5.27	137.02
2 Steel men		376 hrs 47 "		5.00	235.00
Form men		192 hrs 24 "		4.75	114.00
Pump man		240 hrs 30 "		4.50	135.00
6 Concrete moulders		1036 hrs 129½ "		4.50	582.75
Total Amount of September Payroll				-	1363.77

Same time computed on basis of wages paid during  
last half of 1917.

		<u>Time</u>		<u>Rate</u>	<u>Amount</u>
Plant Supt.	1 mo	1 mo		121.00	121.00
Engineer		208 hrs 26 days		4.125	107.25
2 Steel Men		376 " 47 "		3.575	168.02
Form Man		192 " 24 "		3.575	85.80
Pump Man		240 " 30 "		3.30	99.00
6 Concrete Moulders		1036 " 129½ "		3.025	39 1.74
					<u>972.81</u>
Increase for 1918 over 1917					390.96

40.2%



UNITED STATES RAILROAD ADMINISTRATION

W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS

NORTHERN PACIFIC RAILWAY

(Sheet #15)

AUBURN CONCRETE PLANT

Statement of Items for Repairs and Renewals charged  
to Investment.

Material

Spur gears		24.27
Foreign frt. chgs. on same.		.39
Grindstone		2.91
3/4" water hose 100 ft.		22.77
For adjustment on pipe billed but not shipped		37.39
1/2 doz. white wash brushes		5.54
2-3/4" hose nozzle and 2 pails		2.58
1 chain, hook, 2 trowels		5.50
2-#210 mortar mixers		1.85
1 pc. smoke stack screen	10.13	
12-12" hacksaw blades	.76	
1/2 doz. 12" flat files	1.29	
Belt lacing	.07	
3 padlocks	.99	
1-12" monkey wrench	.88	
3-1" Ells	.26	
3-1" Tees	.24	
1/2 doz. 1" couplings	.43	
1/2 " 1/2 " "	.23	
3-1/2" Ells	.17	
3-1/2" Tees	.24	
912 ft. lumber	17.33	
	<u>33.02</u>	
Store expense	3.30	36.32
Repairs on steam pump		40.82
Drayage		2.00
Jaws for bolt clippers		3.46
300 lin.ft. 3/4" wire cable		67.03
5# rainbow packing 1/16"	1.50	
320 ft. BM 1" Lumber	6.40	
10 sheet metal screens		
1/16"x12'-4"	18.14	
20 lin.ft. 1 1/2" black pipe	2.37	
20 " " 1" " "	1.65	
2 sledge handles	.25	
2 shovels	1.35	
	<u>31.66</u>	
Store Expense	3.16	34.82

287.65

UNITED STATES RAILROAD ADMINISTRATION  
W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS  
NORTHERN PACIFIC RAILWAY

(Sheet #16)

Brought Forward		\$	287.65
6 sheets #22 black iron	7.04		
12-12" Hacksaw blades	.76		
	7.80		
	.78		8.58
Drayage			2.00
10 pcs. sheet metal screen	17.12		
640 ft. BM Lumber	13.74		
2 doz. 3/4" bolts-3 1/2" long	.45		
4 " 3/4" hex.nuts.	1.00		
	32.31		
	3.23		35.54
Store expense			
24 pcs. sheet iron 1/8"x			166.85
2'x8'			
1920# AS&MA 3269			
6 kegs spikes	22.56		25.98
Labor of boiler maker	3.42		14.88
Labor opr.Dept.loading ties			
<u>Labor Charges from Payroll</u>			
<u>April</u>	Repairs screens		62.35
	Repair 24" template		5.40
	" 36" "		5.40
	" water pipe line		21.82
	" toilet		4.75
	" mixer		17.95
	" bunker		9.26
	" slab forms		3.30
<u>May</u>	" pile storage ground		29.83
	" screens		19.40
	" steam line to mixer		3.45
	" engine		5.70
	" pump		3.80
	" mixer engine		.85
<u>June</u>	" Water pipe line		1.70
	" screens		7.95
	" grindstone stand		1.70
	" slab forms		3.30
	" pump		0.96
	" engine		2.86
	" bunkers		1.70
<u>July</u>	" screens		20.51
	" engine		3.33
	" " (back pay)		.16
	" pump		4.77
	" bunkers		1.70
	" pile platform		2.45
<u>August</u>	" engine		3.29
	" pump		1.32
	" concrete bucket		8.79
	sharpening tools		1.98
<u>September</u>	Repair screens		46.27
	" water pipe line		849.48
Forward			



## UNITED STATES RAILROAD ADMINISTRATION

W. G. F. SMOO, DIRECTOR GENERAL OF RAILROADS

## NORTHERN PACIFIC RAILWAY

(Sheet #17)

	Brought Forward	849.48
<u>September</u>	Repair water pipe line	10.63
	" engine	6.60
	" pump	5.27
<u>October</u>	" engine	1.32
<u>Nov. &amp; Dec.</u>	No charges.	

Total charges for repairs ) \$ 873.30  
and renewals during 1918 )

UNITED STATES RAILROAD ADMINISTRATION

W. G. MCADOO, DIRECTOR GENERAL OF RAILROADS

NORTHERN PACIFIC RAILWAY

(Sheet #18)

Cost of manufacturing pipe, piles and slabs considerably increased over cost in previous years on account of general increase in cost of both labor and material.

No 48" pipe was made during 1918, and forms for 48" pipe are practically worn out and useless.

Chargestooinvestment 873.30 consist of ordinary repairs and renewals, 300 ft of  $\frac{1}{4}$ " wire cable, 100 ft. of  $\frac{3}{4}$ " water hose and a few tools and miscellaneous items as per list attached.

Plant as a whole is in a fair state of repair.



(Sheet #1)

Tacoma, Wash., January 31, 1919.

Report on Auburn Concrete Plant for 1918.

SUMMARY OF INVESTMENT ACCOUNT FOR 1918

Investment Acct. at end of season 1917 Dec. 31-1917		\$8490.13
Labor and material for repairs and renewals charged to investment acct. during 1918. For details see sheets 15-16-17		<u>873.30</u>
		9363.43
Depreciation on manufactured product on hand 1/1/16	787.67	
Deduct depreciation on manufactured product sold during 1918 and charged to investments	<u>591.45</u>	
	196.22	
Depreciation at close of season 1918	<u>6807.62</u>	
Total Investment	-	9363.43
Total depreciation for 1918	7003.84	<u>7003.84</u>
Balance in investment account 12/31/1918	-	2359.59

## STATEMENT OF COST OF OPERATING AUBURN CONCRETE PLANT FOR 1918

Charges

Supplies and material on hand 1/1/18		5766.28
Manufactured product on hand 1/1/18		3580.28
Cost of Labor and Material for 1918		26784.41
Royalty on pipe .6512 lin ft 24" @ .05	325.60	
3200 " " 36" @ .05	160.00	485.60
Total Charge	-	36616.57

Credits

Manufactured product shipped away during 1918 and charged out on books See sheet #3 for detail	19650.47	
Manufactured product on hand Dec. 31, 1918. See sheet #4 for detail	14978.76	
Empty cement sacks on which adjustment not yet made. See sheet #4	248.20	
Inventory of material and supplies on hand 12/31/1918. See sheets 5 and 6	8742.98	
Total Credits	43620.41	
Depreciation charged to Investment .2883032 of \$24293.31 (cost of 1918 operation)		7003.84
	43620.41	43620.41



## CREDITS TO AUBURN CONCRETE PLANT

Manufactured Product shipped away during year and billed out on books.

					Credit to Operation	Credit to In.	Total Credit.
<u>Pipe</u>							
24"	668 pcs.	5344	lin ft.		8463.74	161.32	8625.06
36"	244 "	1952	" "		3975.35	90.14	4065.49
48"	2 "	16	" "		55.00	5.34	60.34
<u>Piles</u>							
30'	0 pcs.	0	lin ft.				
25'	66 "	1650	" "		2475.00		2475.00
20'	63 "	1260	" "		2016.00		2016.00
15'	9 "	135	" "		118.17	24.99	143.16
<u>Slabs</u>							
Single	22 pcs.				2547.21	309.66	2856.87
Double	0 "						
					19650.47	591.45	20241.92

(Sheet #4)

Manufactured Product on hand Dec. 31, 1918Pipe

24"	212	pcs.	1696	lin ft @ 1.60	2713.60	
36"	188	"	1504	" " @ 2.10	3158.40	
48"	8	"	64	" " @ 3.84	<u>245.76</u>	6117.76

Piles

30'	35	"	1050	" " @ 1.55	1627.50	
25'	2	"	50	" " @ 1.50	75.00	
20'	10	"	200	" " @ 1.60	320.00	
15'	47	"	705	" " @ 1.60	1128.00	
10'	42	"	420	" " @ 1.20	<u>504.00</u>	3654.00

Slabs

Single	29		@ 135.00	3915.00		
Double	10		@ 125.00	<u>1250.00</u>	<u>5165.00</u>	14978.76

1241 empty cement sacks on which adjustment  
not yet made @ 20¢ per sk.

248.20

248.20



(Sheet #5)

STATEMENT OF COST OF AUBURN CONCRETE PLANT FOR 1916

Inventory of Material and Supplies on hand 12/31/1918.

Reinforcing rods	Length	Lin.ft.	Unit wt. per foot.	Weight lbs.
880 pcs 1/4" sq.	6'-6"	5720		
120 " "	13'-6"	1620		
237 " "	15'-6"	3673.5		
97 " "	16'-6"	1600.5		
28 " "	17'-6"	490		
71 " "	35'	2485		
		<u>15589</u>	1.913#	29822# 3.473 cwt 1035.72
138 " 1/2" "	35'	4830		
17 " "	30'-6"	516'-6"		
86 " "	27'-6"	2365		
259 " "	6'-6"	1683-6"		
61 " "	17'-6"	1067-6"		
123 " "	3'-3"	399'-9"		
321 " "	4'	1284		
		<u>12148-3"</u>	0.67#	8140# 3.617 cwt 294.42
907 " 3/8" "	7'-10"	7105		
128 " "	13'-4"	1706-8"		
203 " "	10'-8"	2165-4"		
6 " "	17'-3"	103-6"		
634 " "	2'	1268'		
		<u>12348-6"</u>	0.375#	4630# 3.95 cwt 188.82
32 " 1 1/4" rd	6'-9"	216		
33 " "	27'-2"	896-6"		
		<u>1112.6"</u>	4.173#	4642# 4.45 cwt 206.5'
285 " 1 1/8 sq.	16'-4"	4370		
119 " "	19'	2261		
168 " "	20'	3360		
299 " "	24'-4"	7275-8"		
		<u>17266.8"</u>	3.38 #	58361# 3.473 " 2026.83
14 " 5/8" rd	8'-2"	144-4"	1.04 #	119# 3.473 " 4.13
				3000# 2.346 " 70.13
4570# 2 1/8" x 1/8" x 1'-3 1/2" plates for piling				5758# 2.703C pcs 123.13
Reinforcing rods used on GSK 4916 for which no invoice has been recd and which are not yet charged out.				
175 pcs. 1 1/8" rd	15'-4"			
485 " 1 1/8" "	24'-4"			
200 " "	28'-10"			
90 " "	30'-8"			
143 " "	39'-8"			
285 " "	19'-10"			
				no charge
				3950.5

Scrap reinforcing rods.	Brot forward	3950.45
80 pcs $\frac{1}{2}$ " sq 7'6"	500	
31 " " " 5'6"	170.5	
	<u>770.5</u>	
12600 lin ft 44" wide Style 163 Mesh 42 rolls 46200 sq ft)	1.913# 1474# \$10.00 ton	7.37
16425 " " 48" " " " 54# " " 65700 " " )		
	<u>111900</u>	
.03108 per sq. foot	-	3477.85
1443 sbs Olympik Cement	2.5957 per bbl.	936.40
625 # No 16 Annealed Wire	4.32 " 100#	27.00
400 # No 12 " "	3.98 " "	15.92
150 # No 11 " "	4.58 " "	6.87
10# 6-d Nails )		
15# 8-d " )		
90# 20-d " )		
20# 60-D " ) 135# @ 4.17 per C #		5.63
4# rolls of Mathine paper @ 1.40		6.30
20# Gear grease	.0656#	1.31
3# Canvas packing $\frac{3}{8}$ " )		
2# Piston " $\frac{1}{2}$ " )		
3# " " $\frac{3}{4}$ " )		
5# 1/16" Rainbow Packing 13#	.30	3.90
3# Lamp Black	.11	.33
80 Tons Roslyn Coal	@ 2.90	232.00
114 Pcs. 4"x4" - 20' 3040 ft BM @	20.00	60.80
50 Gal Car Oil	@ .2114 Gal.	10.57
3 " Coal Oil	@ .095 "	.28

Total value of material and supplies on hand  
12/31/1918 8742.98



## SUMMARY OPERATION FOR 1918

## PIPE

	24"	36"	Slabs	Piles	Total
Cement	2418.66	1728.91	1261.03	589.45	5998.25
Mesh	1503.30	1109.30			2612.60
Bars	1052.27	523.71	1618.27	1528.53	4722.78
Wire	34.89	15.69	8.89	10.93	70.40
Royalty	325.60	160.00			485.60
Labor	2195.16	1386.36	955.50	1318.83	5855.85
Sand and Gravel	528.30	389.42	378.70	176.91	1473.33
Mathine Paper			18.58	18.58	18.58
	8058.38	5313.39	4240.97	3624.85	21237.39
General	1071.41	760.30	940.55	283.66	3055.92
	9129.79	6073.69	5181.52	3908.31	24293.31

General expense includes cost of coal, oil, form lumber, time of plant superintendent, doing clerical work, cost of pumping water, handling coal and cinders and other general items that cannot be charged directly to each product. Cost of general items is prorated on basis of weight of product manufactured during 1918.

Operation Cost Per Lin Ft 24" Pipe compared with  
cost for 1916 and 1917.

Product for 1918 - 814 pcs. 6512 lin ft.

	<u>1918</u>	<u>1917</u>	<u>1916</u>
Cement	.371	.300	.280
Sand and Gravel	.081	.064	
Mesh	.231	.223	.219
Bars	.161	.115	.097
# 16 Wire	.005	.004	.004
Labor	.337	.199	.192
Royalty	.050	.050	.050
General	.165	.127	.242
	<u>1.401</u>	<u>1.082</u>	<u>1.084</u>
Depreciation	.404	.238	.180
	<u>1.805</u>	<u>1.320</u>	<u>1.264</u>



Operation Cost per lin. ft. 36" pipe compared with  
cost for 1916 and 1917.

Product for 1918 - 400 pcs. 3200 lin. ft.

	1918	1917	1916
Cement	.540	.436	.409
Sand and Gravel	.122	.096	
Mesh	.347	.299	.295
Reinforcing Bars	.164	.162	.140
Annealed Wire	.005	.003	.004
Labor	.433	.230	.227
Royalty	.050	.050	.050
General	.238	.169	.322
	<u>1.899</u>	<u>1.447</u>	<u>1.447</u>
Depreciation	.548	.318	.240
	<u>2.447</u>	<u>1.765</u>	<u>1.687</u>

(Sheet #10)

OPERATION COST PER LINEAL FOOT FOR PILES

Product	30'	25'	20'	15'
Pos.	35	45	73	27
Feet	1959'	1125	1469	405

	30'		25'		20'		15'	
	1918	1917	1918	1917	1918	1917	1918	1917
Cement	.144	.116	.144	.116	.149	.117	.144	.116
Sand and Gravel	.043	.034	.044	.035	.044	.035	.043	.034
Annealed Wire	.003	.0005	.003	.003	.003	.004	.004	.005
Labor	.233	.237	.324	.189	.372	.238	.413	.259
Reinforcing Rods	.373	.394	.377	.314	.384	.320	.373	.328
General	.071	.092	.068	.087	.070	.095	.076	.090
	.867	.784	.960	.741	1.922	.809	1.955	.841
Depreciation	.259	.172	.277	.163	.295	.178	.304	.185
	1.117	.956	1.237	.904	1.317	.987	1.359	1.026



## OPERATION COST OF PILES FOR 1918

Exclusive of Depreciation.

	30' 35 pcs 1050 lin ft	25' 45 pcs 1125 lin ft	20' 73 pcs 1460 lin ft	15' 27 pcs 405 lin ft
Cement	151.28	162.08	217.74	58.35
Sand and Gravel	45.43	49.27	64.69	17.52
Annealed Wire	2.14	2.72	4.45	1.62
Labbr	244.13	363.99	542.87	167.84
Reinforcing Bars	391.54	423.82	561.13	152.04
General	74.79	76.64	101.64	30.59
	909.31	1078.52	1492.52	427.96

(Sheet #12)

OPERATION COST PER SLAB COMPARED WITH 1917

Product for 1918 Single 37 pcs. Double 11 pcs.

	<u>1918</u>	Single	<u>1917</u>	<u>1917</u>	Double	<u>1918</u>
Cement	27.014		21.803	23.773		19.176
Sand and Gravel	8.113		6.402	7.139		5.634
Annealed Wire	.186		.265	.181		2256
Malthine Paper	.387		.553	.387		.553
Labor	19810		13.719	20.232		13.797
Reinforcing Bars	34.477		46.024	31.147		38.948
General	19.924		11.772	18.487		10.393
	<u>109.911</u>		<u>100.558</u>	<u>101.346</u>		<u>887.757</u>
Depreciation	316.87		211.118	29.218		19.527
	<u>141.598</u>		<u>122.656</u>	<u>130.564</u>		<u>108.284</u>



AND AVERAGE UNIT COSTS FOR SAME

Wire for pipe	967#	.0523*#	.0441	" #
" " piles	208#	" "	"	
" " slabs	170#	" "	"	
Malthine Paper 11.2 rolls 5600 sq.ft		{ .00331pr sq ft		
		{ .010 " lin "	.0108pr lin #	

PRODUCTS MANUFACTURED AND ON HAND

[illegible]

(Sheet #14)

COMPARISON OF LABOR COSTS FOR 1917 AND 1918

SEPTEMBER PAYROLL 1918

	<u>Time</u>	<u>Rate</u>	<u>Amount</u>
Plant Supt.	1 mo	160.00	160.00
Engineer	208 hrs 26 days	5.27	137.02
2 Steel men	376 hrs 47 "	5.00	235.00
Form men	192 hrs 24 "	4.75	114.00
Pump man	240 hrs 30 "	4.50	135.00
6 Concrete moulders	1036 hrs 129 1/2 "	4.50	582.75
Total Amount of September Payroll		-	1363.77

Same time computed on basis of wages paid during last half of 1917.

	<u>Time</u>	<u>Rate</u>	<u>Amount</u>
Plant Supt.	1 mo	121.00	121.00
Engineer	208 hrs 26 days	4.125	107.25
2 Steel Men	376 " 47 "	3.575	168.02
Form Man	192 " 24 "	3.575	85.80
Pump Man	240 " 30 "	3.30	99.00
6 Concrete Moulders	1036 " 129 1/2 "	3.025	391.74
			<u>972.81</u>
Increase for 1918 over 1917			390.96

40.2%



## AUBURN CONCRETE PLANT

Statement of Items for Repairs and Renewals charged  
to Investment.Material

Spur gears		24.27
Foreign frt. chgs. on same.		.39
Grindstone		2.91
3/4" water hose 100 ft.		22.77
For adjustment on pipe billed but not shipped		37.39
1 doz. white wash brushes		5.54
2-3/4" hose nozzle and 2 pails		2.58
1 chain, hook, 2 trowels		5.50
2-#210 mortar mixers		1.85
1 pc. smoke stack screen	10.13	
12-12" hacksaw blades	.76	
1 doz. 12" flat files	1.39	
Belt lacing	.07	
3 padlocks	.99	
1-12" monkey wrench	.88	
3-1" Flis	.26	
2-1" Tees	.24	
1 doz. 1" couplings	.43	
1/2 " 1/2 "	.23	
3-1" Flis	.17	
3-1" Tees	.24	
912 ft. lumber	17.33	
	<u>33.02</u>	
store expense	3.30	36.32
Repairs on steam pump		40.82
Drayage		2.00
Jaws for bolt clippers		3.46
300 lin.ft. 3/4" wire cable		57.03
5# rainbow packing 1/16"	1.50	
320 ft. BM 1" Lumber	6.40	
10 sheet metal screens		
1/16"x12'-4"	18.14	
20 lin.ft. 1 1/2" black pipe	2.37	
20 " " 1" " "	1.65	
2 sledge handles	.35	
3 shovels	1.35	
	<u>31.66</u>	
Store Expense	3.16	34.82
		<u>287.65</u>

-12 -

Brought Forward		\$ 287.65
6 sheets #22 black iron	7.04	
12-12" Hacksaw blades	.76	
	<u>7.80</u>	
	.78	8.58
Drayage		<u>2.00</u>
10 pos. sheet metal screen	17.12	
640 ft. BM Lumber	13.74	
3 doz. 3/4" bolts-3 1/2" long	.45	
4 " 3/4" hex.nuts.	1.00	
	<u>32.31</u>	
store expense	3.23	35.54
24 pos. sheet iron 1/8"x)		
2'x8'		166.85
1920# AS&MA 3269		
6 kegs spikes	22.56	
Labor of boiler maker	3.42	25.98
Labor opr. Dept. loading ties		<u>14.88</u>

Labor Charges from Payroll

<u>April</u>	Repairs screens	62.35
	Repair 34" template	5.40
	" 36" "	5.40
	" water pipe line	21.82
	" toilet	4.75
	" mixer	17.95
	" bunker	9.38
	" slab forms	3.30
<u>May</u>	" pile storage ground	29.82
	" screens	19.40
	" steam line to mixer	3.45
	" engine	5.70
	" pump	3.80
	" mixer engine	.85
<u>June</u>	" Water pipe line	1.70
	" screens	7.95
	" grindstone stand	1.70
	" slab forms	3.30
	" pump	0.96
	" engine	2.86
	" bunkers	1.70
<u>July</u>	" screens	20.51
	" engine	3.33
	" " (back pay)	.16
	" pump	4.77
	" bunkers	1.70
	" pile platform	3.45
<u>August</u>	" engine	3.29
	" pump	1.32
	" concrete bucket	8.79
	sharpening tools	1.98
<u>September</u>	Repair screens	46.27
	" water pipe line	
	Forward	849.48



-13 -

	Brought Forward	849.48
<u>September</u>	Repair water pipe line	10.63
	" engine	6.60
	" pump	5.37
<u>October</u>	" engine	1.32
<u>Nov. &amp; Dec.</u>	No charges.	

---

Total charges for repairs ) \$ 873.30  
and renewals during 1918 )

Cost of manufacturing pipe, piles and slabs considerably increased over cost in previous years on account of general increase in cost of both labor and material.

No 48" pipe was made during 1918, and forms for 48" pipe are practically worn out and useless.

Charge to investment 873.30 consist of ordinary repairs and renewals, 300 ft of  $\frac{1}{4}$ " wire cable, 100 ft. of  $\frac{1}{4}$ " water hose and a few tools and miscellaneous items as per list attached.

Plant as a whole is in a fair state of repair.



STATEMENT OF COST OF AUBURN CONCRETE PLANT  
JANUARY 1, 1918 to SEPTEMBER 30, 1918 INCL.

<u>Charges</u>	<u>Operation</u>	<u>Investment</u>	<u>Total</u>
Manufactured Product on hand 1/1/18	3580.28		3580.28
Cost of operation & supplies 1/1/18 to 9/30/18	33523.49	1414.40	34937.89
Total cost 1/1/18 to 9/30/18	\$37103.77	1414.40	38518.17
<u>Credits</u>			
Manufactured product shipped away & charged out on books see sheet #2 for details	13379.55	591.45	13971.00
Manufactured product shipped away but not yet billed out. See sheet #2 for details.	4850.80		4850.80
Manufactured product on hand 9/30/18 See sheet #2 for details	14358.98		14358.98
Empty cement sacks	1112.00		1112.00
Inventory material on hand 9/30/18 See sheet #3 for details	9633.88		9633.88
	\$43335.21	591.45	43926.66
Profit for 1918			5710.89
Less amount charged to Investment			591.45
Balance available for depreciation of plant or plant betterment			\$5111.44
Balance in Investment a/c 1/1/18 as per annual report E.M. of W.			8490.13
Labor and material for repairs and renewals 1/1/18 to 9/30/18 charged to Investment			1440.40
			9904.53
Deduct amount credited to Investment for depreciation and interest			591.45
Balance in Investment a/c not allowing for 1918 depreciation (except \$591.45 above noted)			\$9313.08
Deduct product on product manufactured in 1918			4728.88
			4584.20

Office of Principal Asst. Engr.,  
Tacoma, Wash., Oct. 10, 1918.

## CREDITS TO AUBURN CONCRETE PLANT

Manufactured product shipped away  
and charged out on books:

Pipe

24"	509 pcs.	4072 lin ft	.126	513.07
36"	239 "	1912 " "	.103	196.94
48"	1 "	8 " "	.10	.80

Piles

20'	20 pcs.	400 lin ft	.526	210.40
15'	9 "	135 " "	.498	67.23

Slabs

Single 20 pcs.

Total value of Manufactured product billed out

\$13971.00

Manufactured product shipped away  
but not yet billed out.

Pipe

24"	136 pcs.	1088 lin ft	1.60	1740.80	
36"	5 "	40 " "	2.10	84.00	1824.80

Piles

25'	44 pcs.	1100 lin ft	1.50	1650.00	
20'	43 "	860 " "	1.60	1376.00	3026.00 4850.80

Manufactured Product on hand 9/28/1918Pipe

24"	158 pcs.	1264 lin ft	1.60	2022.40	
36"	152 "	1216 " "	2.10	2553.60	
48"	9 "	72 " "	3.84	276.48	4852.48

Piles

30'	35 piles	1050 lin ft	1.55	1627.50	
25'	24 "	600 " "	1.50	900.00	
20'	13 "	260 " "	1.60	416.00	
15'	47 "	705 " "	1.60	1128.00	4071.50

Slabs

Single 31	135.00	4185.00		
Double 10	125.00	1250.00	5435.00	14358.98

Empty cement sacks for which  
adjustment not yet made 11120 @ .10

1112.00

FORWARD

34292.78



FORWARD

34292.78

Inventory Oct. 1, 1918.

Material on hand.

325#	No.16 Wire for pipe	5.38 cwt.	17.48	
125#	No.11 " " piles	5.38 "	6.73	24.21
73723#	Wire mesh " pipe	4.63 "		3414.37
3000#	1/4" round for pipe and piles	3.70 "	111.00	
7255#	3/8" square inf. rods for pipe	4.08 "	296.00	
7960#	1/2" " " " slabs	3.80 "	302.48	
40404#	1/2" " " " slabs	3.70 "	1494.95	
58359#	1-1/8" " " " for piles	3.70 "	2159.28	
4642#	1 1/2" round " " slabs	4.41 "	204.71	
4570#	plates 2 1/4" x 1/8" x 1' - 3 1/4" for piles	4.07 "	182.81	
			4751.23	
523 1/2	bbls cement	2.62	1371.57	
25	tons coal	2.90	72.50	9633.88
	Total credits			\$43926.66

R-F steel  
 24" 36  
 164 82  
 54 36

## Comparison of Labor Costs for 1917 and 1918.

SEPTEMBER PAYROLL 1918

	<u>Time</u>	<u>Rate</u>	<u>Amount</u>
Plant Supt. 1 mo.	1 mo.	160.00	160.00
Engineer	208 hrs. 26 days	5.27	137.02
2 Steel men	376 hrs. 47 "	5.00	235.00
Form men	192 hrs. 24 "	4.75	114.00
Pump man	240 hrs. 30 "	4.50	135.00
6 concrete moulders	1036 hrs. 129½ "	4.50	582.75
Total amount September Payroll			<u>\$1363.77</u>

Same time computed on basis of wages paid during last half of 1917

	<u>Time</u>	<u>Rate</u>	<u>Amount</u>
Plant Supt.	1 mo.	121.00	121.00
Engineer	208 hrs. 26 days	4.125	107.25
2 Steel men	376 " 47 "	3.575	168.02
Form man	192 " 24 "	3.575	85.80
Pump man	240 " 30 "	3.30	99.00
6 concrete moulders	1036 " 129½ "	3.025	391.74
			<u>972.81</u>
Increase for 1918 over 1917			<u>390.96</u> 40.2%



Results of Operation, April to September 30th, 1918.

	No. of pcs. made Jan. 1 to Sept. 30 <u>1918</u>	<u>Lin. ft.</u>	Established price for bill- ing out 1918 product.	Total Value.
15' Concrete Piles	27	405	1.60	648.00
20' " "	73	1460	1.60	2326.00
25' " "	45	1125	1.50	1687.50
30' " "	35	1050	1.55	1627.50
24" concrete pipe	748	5984	1.60	9574.40
36" " "	364	2912	2.10	6115.20
Single slabs	37		135.00	4995.00
Double slabs	11		125.00	1375.00
Total Value of output 1/1/18 to 9/30/18) at price established for 1918.				<u>\$28348.60</u>

Average Cost of Material

	<u>1917</u>	<u>1918</u>	
Cement per sack	0.43	0.534	25
Mesh per sq. ft.	0.0272	0.0315	15
Reinforcing bars per cwt.	3.252	# 3.04	25
Wire per cwt.	4.41	4.73	
Malthine, roll	4.00	1.59	

# Note. New stock purchased during past year at prices ranging from \$3.70 to \$4.08 per cwt. Low average price due to considerable amount of old stock carried over from 1917 and inventoried at prices considerably below present market values.



Approximate cost for 1918 for 24" concrete pipe based on average prices paid for material used January 1st to September 30th, 1918. Labor cost taken from Payroll distribution.

	1917 Cost per ft	Per Pipe	Unit Cost	1918 Cost per pipe	1918 Cost per ft
Cement	.2997	550#	.576 sack	3.168	.396
Sand & gravel (Labor)	.0640	24 cu ft	.02747 cuft	.660	.083
Mesh	.2233	16.67 lin ft or .66-2/3 sq ft	.0315 sq ft	2.100	.263
Re bars 1/4"-8' 1.33#)	.1150	31.30#	3.04 cwt	.951	.119
" " 3/8" 62'-8" 29.97#)		3#	4.13 "	.124	.015
Wire Nails		0.5#	4.73 "	.024	.003
#16 Wire .47 lin ft	.0043	15 FBM	20.00 M	.300	.038
Form Lumber				3.380	.425
Labor	.1988			.400	.050
Royally	.0500			.653	.082
General	.1267			11.760	1.474
	1.0818			2.587	.324
22% depreciation	.2380				
1917 cost per ft	\$1.3198			\$14.347	1.798
1918 approximate cost per pipe					
1918 approximate cost per foot					

Price used for billing out 1918 output  
1.60 per ft.

1.474  
- .126  
1.348

Approximate cost for 1918 for 36" concrete pipe based on average price paid for material used January 1st to September 30th, 1918. Labor costs taken from Payroll distribution.

	1917 Cost per ft	Material used per pipe	Unit Cost	1918 Approx Cost pipe	1918 Approx. Cost ft.
Cement	.4361	800#	.576 sk	4.608	.576
Sand & Gravel (Labor)	.0960	36 cu ft	.02747 cu ft	.989	.123
Mesh 22.33 lin ft	.2991	89-1/3 sq ft	.0315 sq "	2.814	.352
Re bars 1/4"-8' 1.33#	.1615	44.95#	3.04 cwt	1.366	.171
" " 3/8"-91'-4" 43.62#					
Wire Nails		3#	4.13 "	.124	.015
#16 Wire 52 lin ft	.0048	0.54#	4.73 "	.026	.003
Form Lumber		21 FBM	20.00 M	.420	.053
Labor	.2300			4.287	.536
Royalty	.0500			.400	.050
General	.1694			.942	.118
	<u>1.4469</u>			<u>15.976</u>	<u>1.997</u>
Depreciation 22%	.3183			<u>3.515</u>	<u>.439</u>
1917 Total cost per ft	\$1.7652				
1918 approx. cost per pipe				\$19.491	
1918 approx. cost per foot					\$2.436

Price used for billing out 1918 output  
\$2.10 per ft.

1997  
103



Approximate cost for 1918 for 30 ft. Concrete Piles based on average prices paid for material used January 1st to September 30th, 1918. Labor costs taken from Payroll distribution.

	1917 Cost per ft	Material used per pile	Unit Cost	1918 Approx. Cost px pile	1918 Approx cost per ft.
Cement	.1164	800#	.576 sk	4.608	.154
Sand & Gravel (Labor)	.0342	48 cu ft	.02747 cu ft	1.320	.044
Re. bars 115-1/3 lin ft					
1-1/8" 390.1# )					
Re. bars 121-1/3 lin ft )					
1/4" 26 plates 20.26# )	.3042	445.17#	3.04 cwt	13.533	.451
34.81# )					
#11 Wire 30 lin ft 445.17#	.0005	116#	4.73 "	.055	.002
Labor	.2367			7.614	.254
General	.0918			.741	.025
	.7838			27.871	.930
Depreciation 22%	.1724			6.131	.205
1917 Total cost per ft	0.9562				
1918 approx. cost per pile				34.002	
1918 approximate cost per ft					1.135

Price used for billing out 1918 output  
\$1.55 per ft.

93  
62

Approximate cost for 1918 for 25 ft. Concrete Pile based on average prices paid for material used January 1st to Sept. 30th, 1918. Labor costs taken from Payroll distribution.

	1917 Cost per ft	Material used per pile	Unit Cost	1918 Approx. cost per pile	1918 Approx. cost per foot
Cement	.1163	666#	.576 sk	3.836	.153
Sand & gravel (Labor)	.0346	40½ cu ft	.02747 cuft	1.113	.045
Re. bars 97-1/3 lin ft					
1-1/8" 329.21#)	.3105	376.03	3.04 cwt	11.431	.457
104 linft ¼" 17.37#)					
22 Plates 29.45#)					
376.03					
#11 Wire - 30 lin ft	.0034	1.16#	4.73 "	.055	.002
Labor	.1892			8.032	.321
General	.0867			.591	.024
	.7407			25.058	1.002
Depreciation - 22%	.1630			5.513	.220
1917 Total cost ft.	\$1.9037				
1918 approx. cost per pile				\$30.571	
1918 approx. cost per ft.					\$1.222

Price used for billing out 1918 output  
\$1.50 per ft.

1.002  
—  
.498



Approximate cost for 1918 for 20 ft. Concrete Pile based on average prices paid for material used January 1st to Sept. 30th, 1918. Labor costs taken from Payroll distribution.

	1917 Cost per ft	Material used per pile	Unit Cost	1918 Approx.cost per pile	1918 Approx cost foot.
Cement	.1173	544#	.576 sk	3.133	.157
Sand & Gravel (Labor)	.0349	32-2/3 cu ft	.02747 cu ft	.898	.045
Re.bars. 79-1/3 lin ft 1-1/8" 268.33#)					
86-2/3 lin ft 1 1/4" 14.47#)	.3200	306.90#	3.04 cwt	9.330	.467
18 plates 24.10#)					
	306.90				
No. 11 Wire 30 lin ft	.0042	1.16#	4.73 cwt.	.055	.002
Labor	.2380			7.577	.379
General	.0947			.482	.024
	.8091			21.475	1.074
Depreciation 22%	.1780			4.725	.236
1917 Total cost per ft	.9871			26.200	
1918 approx.cost per pile					1.310
1918 approx.cost per ft.					

Price used for billing out 1918 output  
\$1.60 per ft.

1.074  
.526

Approximate cost for 1918 for 15 ft. Concrete Pile based on average price paid for material used January 1st to Sept. 30th, 1918. Labor costs taken from Payroll distribution.

	1917 Cost per ft	Material used per pile	Unit Cost	1918 Approx. Cost pr.pile	1918 ap- prox cost per ft
Cement	.1162	400#	.576 sk	2.304	.154
Sand & Gravel (Labor)	.0342	24 cu ft	.02747 cuft	.660	.044
Re bars 58-1/3 lin ft					
1-1/8" 197.3# )					
69-1/3 lin ft 1/4" 11.51# )	.3281	227.55	3.04 cwt.	6.917	.461
14 plates 18.74# )					
	227.55 )				
No. 11 Wire 30 lin ft	.0056	1.16#	4.73 cwt	.055	.002
Labor	.2587			6.555	.437
General	.0985			.393	.026
	.8413			16.884	1.125
Depreciation 22%	.1851			3.714	.248
1917 Total cost per ft	\$1.0264				
1918 approx. cost per pile				\$20.598	
1918 approx. cost per ft.					\$1.373

Price used for billing out 1918 output

\$1.60  
 1.125  
 .475



Approximate cost for 1918 for single track slab (16'x7' with parapet) based on average prices paid for material used January 1st to Sept. 30th, 1918. Labor cost taken from Payroll distribution.

	1917 Cost per ft	Material used per slab	Unit Cost	1918 approxi- mate cost per slab
Cement	21.8032	5000#	.576 sk	28.800
Sand & Gravel (Labor)	6.4024	300 cu ft	.02747 cu ft	8.241
Re bars 410.5 lin <sup>ft</sup> " 784.06#)				
388.14 " " 260.44#)				
13.5 " " 56.54#)	46.0237	1101#	3.04 cwt	33.470
#16 Wire 362 lin ft	.2648	3.58#	4.73 "	.169
Labor	13.7189			25.962
Malthine Paper	.5530	153 sq ft	1.42 Rolls	.483
General	<u>11.7722</u>			<u>6.228</u>
	100.5382			103.353
Depreciation 22%	<u>22.1184</u>			<u>22.737</u>
1917 Total cost per slab	\$122.6566			
1918 approx. cost per slab				\$126.090

Price used for billing out 1918 output  
\$135.00 per slab.

103.353  
31.65

252.180

Approximate cost for 1918 for double track slab (16'x6 $\frac{1}{2}$ ' plain) based on average prices paid for material used January 1st to Sept. 30th, 1918. Labor costs taken from Payroll distribution.

	1917 Cost per slab	Material used per slab	Unit Cost	1918 approx- imate cost per slab
Cement	19.1757	4400#	.576	25.344
Sand & Gravel (Labor)	5.6343	264 cu ft	.02747 cu ft	7.252
Re.bars 381.5 lin ft $\frac{3}{4}$ "	728.67	}	981.33#	3.04 cwt
160 " " $\frac{1}{2}$ "	196.12			
13.5 " " $1\frac{1}{4}$ "	<u>56.54</u>			
	38.9481			29.832
#16 wire 350 lin ft	.2562	346#	4.73 cwt	.164
Labor	13.7971			25.850
Malthine paper 51 lin ft 36" wide	.5528	153 sq ft	1.42 roll	.483
General	<u>10.3929</u>			<u>5.771</u>
	88.7571			94.696
Depreciation 22%	<u>19.5267</u>			18.939
1917 Total cost per slab	108.2838			<u>113.635</u>
1918 approx. cost per slab				

Price used for billing out 1918 output

\$125.00  
94.70  
30.30



# SUMMARY

Cost for 1918 compared with cost for 1917.

	Cost for 1917 including 22% for deprecia- tion.	Cost for 1918 including 22% for deprecia- tion.	Price used for bill- ing out 1918 output.
24" concrete pipe per ft.	1.32	1.798	1.60
36" " " "	1.76	2.436	2.10
30' " pile " "	0.96	1.135	1.55
25' " " " "	0.90	1.222	1.50
20' " " " "	0.99	1.310	1.60
15' " " " "	1.03	1.373	1.60
Single slab per slab	122.65	126.09	135.00
Double slab " "	108.28	113.63	125.00

Memo of weight of finished product and raw material for figuring freight charges for output of Auburn Concrete Plant.

	Finished Product	Cement	Reinforcing
24" Pipe	3255#	550#	69#
36" "	4700#	800#	108#
48" "	5630#	1000#	232#
30' Pile	6600#	800#	447#
25' "	5260#	666#	377#
20' "	4300#	544#	308#
15' "	3500#	400#	229#
Single Slab	33300#	5000#	1105#
Double Slab	30900#	4400#	985#



## AUBURN CONCRETE PLANT

Inventory of Material on hand 12/31/1919Corrugated reinforcing rods.

Size	No. of Pos.	Length	Unit Wt.	Weight	Price	Amount
3/4"sq 45'6"	95	4322'6"				
" 31'0"	50	1550				
" 30'0"	50	1500				
" 16'6"	431	7311'6"				
" 15'6"	985	15267'6"				
" 13'6"	492	6642				
" 9'0"	41	369				
" 8'0"	21	168				
" 7'0"	3	21				
" 6'6"	942	6123				
" 6'0"	61	366				
" 5'0"	16	80				
" 4'3"	12	51				
" 3'6"	30	1105				
" 3'0"	103	309				
" 2'6"	39	97'6"				
		44083	1.913	84331#	2.84	\$2395.00
3/4"rd 36'0"	40	1440				
" 37'0"	19	703				
" 39'0"	16	624				
" 35'0"	106m .	3710				
" 31'6"	37	1165'6"				
" 29'6"	30	885				
" 27'6"	20	550				
" 24'6"	7	171'6"				
" 17'6"	38	665				
" 17'0"	3	51				
" 12'0"	11	131				
" 11'6"	11	126'6"				
Forward		10222'6"		84331#		\$2395.00

## AUBURN CONCRETE PLANT

Inventory of Material on hand 12/31/1919

Size	No. of Pos.	Length	Unit	Weight	Price	Amount
	Brought forward	1022'6"		84331#		\$2395.00
3/4" rd 10'9"	2	21'6"				
" 10'3"	2	20'6"				
" 9'6"	1	9'6"				
" 8'0"	157	12564				
" 7'6"	42	315				
" 6'9"	7	47'3"				
" 5'6"	191	1050'6"				
" 4'3"	60	255				
" 4'0"	24	96				
" 3'6"	17	59'6"				
" 3'0"	16	48'				
" 2'3"	10	22'6"				
" 2'0"	7	14				
		13437'9"	1502#20184#	\$2.84		573.22
1/2"sq 10'0"	4	40				
" 9'3"	3	27'9"				
" 8'0"	94	752				
" 7'6"	68	510				
" 6'6"	49	318'6"				
" 5'6"	93	511'6"				
" 5'0"	253	1265				
" 4'3"	44	187				
" 4'0"	62	248				
" 3'0"	38	114				
" 2'8"	140	373'4"				
" 2'0"	101	202				
		4549-1"	0.85# 3867#	2.68		103.63
1/2"rd 35'0"		566				
" 33'6"		21				
" 31'0"		193				
" 30'6"		80				
	Forward	28936'6"	107562#			\$3071.85



## AUBURN CONCRETE PLANT

Inventory of Material on hand 12/31/19

Size	No. of Pcs.	Length	Unit	Weight	Price	Amount
Brought for 'dr			28936'6"	107563#		\$3071.85
1/2"rd 30'4"	30	910				
" 27'6"	72	1980				
" 17'6"	166	2905				
" 15'6"	241	3735'6"				
" 14'6"	1	14'6"				
" 7'0"	43	301				
" 6'9"	394	2659'6"				
" 6'6"	283	1833				
" 6'3"	79	493'9"				
" 5'6"	17	93'6"				
" 5'3"	17	89'3"				
" 4'0"	721	2884				
" 3'4"	9	30				
" 3'3"	124	403				
" 3'0"	336	1008				
" 2'0"	51	102				
		48378'6"	0.67#	32413#	2.68	868.67
1-1/8"rd 39'8"	140	5553'4"				
" 30'8"	90	2760				
" 28'10"	51	1470'6"				
" 24'4"	771	18761				
" 20'0"	123	2460				
" 19'0"	56	1064				
" 15'4"	447	6854				
" 10'6"	31	325'6"				
" 10'3"	4	41				
" 9'0"	3	27				
" 7'6"	2	15				
" 7'0"	35	245				
" 5'6"	6	33				
" 4'0"	49	196				
Forward		39805'4"		139976#		\$3940.53

## AUBURN CONCRETE PLANT

Inventory of Material on hand 12/31/19

Size	No. of Pos.	Length	Unit Wt	Weight	Price	Amount
	Brought forward	39805'4"		139976#		\$3940.52
1-1/8"rd	3'6" 9	31'6"				
"	3'0" 14	42				
"	2'6" 29	72'6"				
"	29'0" 17	493	curved for arch			
"	25'0" 14	350	" " "			
"	18'0" 3	54	" " "			
		40848'4"	3.38#	138067#	3.12	4307.69
1" sq.	19'0" 4	76				
"	7'0" 2	14				
"	6'0" 17	102				
"	5'3" 8	42				
"	4'10" 16	77'4"				
"	3'3" 30	97'6"				
		408'10"	3.4#	1390#	2.09	29.05
1" rd	3'6" 1	3'6"	2.67#	9#	2.09	.19
1-1/4"sq	6'9" 5	33'9"	5.31#	179#	2.94	5.26
5/8"sq.	10'6" 79	829'6"				
"	7'6" 6	45				
"	6'6" 30	195				
"	4'0" 57	228				
"	3'6" 47	164'6"				
"	3'0" 17	51				
		1513	1.33#	2012#	2.14	43.06
5/8" rd	14'6" 17	246'6"				
	9'6" 16	152				
	9'0" 18	162				
	8'0" 10	80				
	7'6" 29	217'6"				
	6'6" 53	344'6"				
	5'0" 53	265				
	4'0" 35	140				
	2'0" 24	48				
		1655'6"	1.043#	1726#	2.14	\$36.94
Forward				283359#		\$8362.71



## AUBURN CONCRETE PLANT

Inventory of material on hand 12/31/19

Size	No. of Pcs.	Length	Unit Wt	Weight	Price	Amount
Brought for'd				283359#		\$8362.71
3/8" sq.	5'6"	12	66			
"	3'3"	6	<u>19'6"</u> <u>85'6"</u>	0.48#	41#	3.14
						1.29
3/8"	56'0"	1149	64344			
	17'3"	146	2518'6"			
	14'4"	25	358'4"			
	13'3"	1	13'3"			
	10'9"	7	75'3"			
	7'8"	2	15'4"			
	2'0"	27	54			
			<u>67378'8"</u>	0.375#	25267#	3.14
						\$793.38
1/4"sq.	8'0"	97	776			
	0'23"	6201	11885'3"			
	0'20"	826	<u>1376'8"</u>			
			14038	0.167#	2344#	2.76
						64.69

Plain reinforcing rods

1 1/2"rd	27'2"	30	815			
	6'9"	32	216			
	33'9"	140	<u>4725</u>			
			<u>5756</u>	4.173#	24019#	2.94
						706.16
1/4" rd	30'0"	1200	<u>36000</u>	.167#	6012#	2.76
						165.93

Plain reinforcing plates for concrete piling

2-1/8"x1-1/8"x3-3/4" (2 hole)	.9557 pcs.	1.25#	11946#	5.13		612.83
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Total reinforcing rods 353807#

10706.99

Wire Mesh reinforcing for pipes Style #153

Width	Lin.ft.	Sq.feet		
48"	7500	30000		
44"	4100	<u>15033</u>		
		<u>45033</u>	0.32	1441.06

Annealed Wire	Weight	Price	Amt.
#16	335#	4.27	14.30
#12	400#	3.98	15.92
#11	85#	4.58	3.44
			<u>33.66</u>

33.66

Forward

12181.71

## AUBURN CONCRETE PLANT

Inventory of material on hand 12/31/19

Brought forward	\$12181.71
<u>Malthine Paper</u>	
4 $\frac{1}{2}$ rolls @ 1.40	6.30
Lumber for slab forms <u>lin ft</u> <u>FBM</u>	
4'x4' 20' average length 1240 1653 }	29.45
@ 18.99 pr M less 2% + Pure. Exp }	
1%	
Total material on hand 12/31/1919	<u>\$12217.46</u>



MANUFACTURED PRODUCT ON HAND DECEMBER 31st-1919

<u>Pipe</u>	<u>Pcs</u>	<u>Lin Ft.</u>	<u>Price per + foot</u>	
24"	809	4072	2.00	8144.00
36"	193	1544	3.00	4632.00
<u>Piles</u>				
30	33	990		
25	14	350		
20	72	1440		
15	33	495		
10	42	<u>420</u>		
		3695	1.90	7020.50
<u>Slabs</u>				
Single	29		135.00	3915.00
Double	10		<u>125.00</u>	<u>1250.00</u>
				24961.50

Note--This inventory is based on prices recommended for product now on hand-as shown on sheet #11. of annual report.

These prices are exclusive of cost of loading product for shipment from plant.

## AUBURN CONCRETE PLANT

## Inventory of tools and pipe on hand 12-31-1919

	Page in Mtl Book	% of orig. Value	Value new	Present Value
1 Hand forge #21 Champion	6	50	5.76	2.88
1 Anvil	38	50	7.98	3.99
1 #3 bolt cutter(new easy)	54	80	5.40	4.32
1 grindstone	157	50	2.91	1.45
1 set pipe dies 1/4" to 1" with stock	11	50	18.68	9.34
1 set pipe dies 1" to 2" with stock				
1 set pipe dies 2 1/2"				
2 pipe cutters 1" to 2 1/2" Saunders #2	11	50	1.49	.75
and 3	11	50	2.20	1.10
1 pr. 18" tin snips	54	50	2.25	1.12
1 ratchet drill with 1-3/4" bit and 1-1" bit	11	50	10.00	5.00
2-50' 3/4" water hose	157	50	22.77	11.38
1 cross cut saw - 6 ft.	11	50	3.50	1.75
1 ship auger - 3/4"	11	50	1.22	.61
1-18" Stillson wrench	54	50	1.60	.80
1-36" " "	42	100	6.75	6.75
1-12" monkey wrench	162	50	.96	.48
1-24" " "	29	50	1.43	.72
1 hack saw	11	80	.65	.52
6 ball pein hammers		50	3.58	1.76
1-4# sledge	93	50	.37	.18
1-8# sledge	11	50	1.00	.50
1 machinist hammer	195	50	.52	.26
6-S wrenches	11	50	2.10	1.05
1-12" flat file-new		100	.36	.36
1 cold chisel	6	50	.25	.12
1 set taps and dies 1/4"-3/4" with stock	11	50	9.56	4.78
Green River #103				
2 pinch bars	11	100	1.75	1.75
1 claw bar		75	1.00	.75
2 peavies handled	11	50	2.60	1.30

Forward - - - - 65.77



	Bill Book Page	% of Orig Value	value new	Pres- ent Value
Forward -				65.77
3 picks handled	109	50	1.23	.61
4 coal hcoops #2	11	50	3.20	1.60
3#2 shovels	11	50	2.02	1.01
1 ax. SB	4	50	1.90	.95
3 mortar hoes	2 - 159	50	1.85	.92
	1 - 11	50	.50	.25
300-ft 3/4" hemp rope (on boom)	11/2	50	9.39	4.70
1 double block 3/4" rope 4" sheave.		50	.63	.31
6 track chisels-SH	2 - 117	50	.79	.40
	2 - 115	50	.79	.40
	2 - 109	50	1.18	.59
3 pick handles new	117	100	.37	.37
1 sledge handle new	117	100	.10	.10
5 joints stove pipe 5"-6"	12	50	1.54	.77
1 poker for donkey engine	11	80	.55	.44
1 spike maul		100	.75	.75
1 stenciling brush	15	50	.30	.15
2 bamboo brooms	11	50	1.26	.62
2 pump springs-new	1	100	.28	.28
3 wheel barrows	11	50	15.75	7.87
3 concrete carts recd May-1914	9	50	45.00	22.50
3 concrete carts-1018-18 recd Apr-'17	96	50	56.81	28.40
3 lug hobs	11	50	7.50	3.75
1/2" #88	12	50	14.00	7.00
1 pipe vise Reed Mfg.Co.#22	11	50	2.75	1.37
1 bench vise GM Yost Mfg.Co.#104	11	50	5.75	2.88
1-5-gal oil can - Sept 1918	180	50	1.06	.53
2-1-qt oil cans	11	50	.33	.16
1 plasterers trowel-SH-Apr 1918	158	50	1.50	.75
1 bolt cutter from 1/4" to 1"	11	50	23.50	11.75
2 car repairer's lanterns	106	50	2.01	1.00
1 white wash brush 8"-May-(19)-new	4	100	1.05	1.05
1 3/4" globe valve-new-July-1919	10	100	1.78	1.78
8 pump valves-Rubber 3 1/2"-new(Plant Rubber Co's #300)	109	100	.92	.92
3-14" water glasses-new	38	100	.24	.24
20-ft				
Forward				172.94

	Page in Mtl Book	% of orig cost	Value new	<del>Est</del> Pres. Value	<del>Est</del>
Brought Forward				172.94	
20 ft $\frac{1}{2}$ " wrt pipe(black)new-June '19	12/2	100	1.45	1.45	
60 ft 1" " " " " " " " 12/2	100	5.28	5.28		
80 ft $1\frac{1}{2}$ " " " " " - 20ft	171	100	2.60	2.60	
60 ft " " " " " "	100	7.80	7.80		
40 ft $3/4$ " " " " " " 12/2	100	2.38	2.38		
4 $\frac{1}{2}$ " couplings-new	12/2	100	.16	.16	
1 $3/4$ " " " " " " 12/2	100	.07	.07		
5 1" " " " " " 12/2	100	.50	.50		
5 2" " " " " " 100		.50	.50		
8 $2\frac{1}{2}$ " " " " " " 11	100	1.20	1.20		
10 $\frac{1}{2}$ " ells-new	12/2	100	.80	.80	
3 $3/4$ " " " " " " 12/2	100	.34	.34		
6 1" " " " " " 12/2	100	.75	.75		
5 $1\frac{1}{2}$ " " " " " " 11	50	3.00	1.50		
3 2" ells	1	100	.40	.40	
1 $2\frac{1}{2}$ " ell	11	100	.15	.15	
2 $3/4$ " tees.	5	100	.06	.06	
4 1" " -new	162	100	.26	.26	
7 $1\frac{1}{2}$ " Tees-new	162	100	.60	.60	
1 $2\frac{1}{2}$ " Tee		100	.30	.30	
2 1" plugs		100	.06	.06	
1 $1\frac{1}{4}$ " plug		100	.03	.03	
2 $1\frac{1}{2}$ " "		100	.06	.06	
1 2" "	11	100	.03	.03	
1 1" cap	11	100	.03	.03	
1 $1\frac{1}{8}$ " "	11	100	.05	.05	
1 2" "	11	100	.08	.08	
3 $2\frac{1}{2}$ " "	5	50	.40	.20	
2 $1\frac{1}{2}$ " - $2\frac{1}{2}$ " bushings		100	.06	.06	
3 1" - 2" "	11	100	.06	.06	
1 $1\frac{1}{4}$ " - $1\frac{1}{2}$ " bushings	1	100	.03	.03	
2 $2\frac{1}{2}$ " flange unions	54	50	1.38	.69	
1 $2\frac{1}{2}$ " union	1	100	.47	.47	
2 $1\frac{1}{2}$ " union	14/2	100	.50	.50	
Forward - - -				202.39	



Page in Mtl. Book	% of Orig. cost	Value new	<del>Est</del> Pres. Val. <del>Est</del>
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Brought Forward

302.39

1 - 3/4" - 1 1/2" reducer-new	100	.25	.25
11 sheets wrt iron 24"x8'-0"x1/8"-880# 195 recd Jany-1919	195	76.45	76.45
1 chisel point(for rail hemmer)from Thorp Bridge.		No charge.	

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 \$279.09

AUBURN CONCRETE PLANT  
Inventory December 31, 1919.

Second hand pipe stored at Auburn Concrete Plant in small steel  
shed-salvage from various water pipe connection at plant value  
50% of new

<u>2 1/2" Pipe</u>	<u>Lin Ft</u>	<u>Value New</u>	<u>Pres. Value</u>
4 pcs 21'6"	86		
1 pc 21'4"	21'4"		
1 pc 20'6"	20'6"		
1 pc 18'6"	18'6"		
1 pc 17'6"	<u>17'6"</u>		
	163'10"	24.60	12.30

<u>2" Pipe</u>			
2 pcs 20'6"	41'0"		
4 pcs 21'0"	84'		
3 pcs 20'	60'		
1 pc 18'	18'		
1 pc 16'	16'		
1 pc 15'	15'		
1 pc 6'	<u>6'</u>		
	240' 10¢	24.00	12.00

<u>1" Pipe</u>			
1 pc. 23'	23'		
1 pc. 11'	11'		
1 pc. 10'	10'		
1 pc. 8'	<u>8'</u>		
	52' 4¢	2.08	1.04

<u>3/4" Pipe</u>			
1 pc. 11'	11'		
1 pc. 10'	10'		
1 pc. 9'	9'		
2 pc. 8'	<u>16'</u>		
	46' 4¢	1.84	
			<u>.92</u>
			26.26
			<u>26.26</u>
			For'd 26.26



AUBURN CONCRETE PLANT  
Inventory December 31st-1919

Sheet #13

Second hand pipe stored in tool shed at Auburn Concrete Plant (salvage from various water pipe connections (at plant value 50% of new galv.

Forward 26.26

<u>1" Pipe</u>	<u>Lin. Ft.</u>			
1 pc. 5'	5'			
1 pc. 4'	4'			
1 pc. 2'6"	2'6"			
1 pc. 2'3"	2'3"			
1 pc. 2'	2'			
1 pc. 1'10"	1'10"			
	<u>17'7"</u>	4¢	.70	.35

<u>1½" Pipe</u>				
1 pc. 7'6"	7'6"			
1 pc. 4'6"	4'6"			
	<u>12'</u>	8¢	.96	.48

<u>¾" Pipe</u>				
1 pc. 6'	6'			
1 pc. 5'6"	5'6"			
1 " 4'9"	4'9"			
1 " 4'3"	4'3"			
5 " 4'	20'			
1 " 3'3"	3'3"			
2 " 3'	6'			
2 " 2'9"	5'6"			
3 " 2'6"	7'6"			
1 " 2'2"	2'2"			
1 " 2'	2'			
2 " 1'8"	3'4"			
4 " 1'6"	6'			
1 " 1'3"	1'3"			
3 " 0'10"	2'6"			
1 " 0'9"	0'9"			
2 " 0'8"	1'4"			
3 " 0'7"	1'9"			
2 " 0'6"	1'			
2 " 0'5"	0'10"			
2 " 0'4"	0'8"			
	<u>86'4"</u>	4¢	3.44	1.72

<u>1/2" Pipe</u>					
1 pc. 5'	5'	2½¢	.12	<u>.06</u>	
				2.61	2.61

Forward 28.87

Sheet #14

Pipe fittings stored in tool shed. Auburn Concrete Plant salvaged from various water connections at Plant value 50% of new galv.

			Value new	Present value
			Brot Forward	28.87
18 - 3/4" Ells	17¢		3.06	1.53
2 - 1/2" "	15¢		.30	.15
1 - 1" "	20¢		.20	.10
4 - 3/4" Tees	3¢		.12	.06
4 - 3/4" Unions	7¢		.28	.14
1 - 1 1/2" Unions	5¢		.05	.03
14 - 3/4" valves			6.16	3.13
5 - 1" Globe valves	63¢		3.15	1.57
1 - 2" valve			2.00	<u>1.00</u>
				7.71
				<u>7.71</u>
Total second hand pipe and fittings				- \$ 36.58
				oooooooooooo



*memorandum*

ANNUAL REPORT  
AUBURN CONCRETE PLANT

1922

Office of Assistant Chief Engineer  
and Engineer Mtce. of Way,  
Seattle, Washington, February 16, 1923.

## AUBURN CONCRETE PLANT 1922

S U M M A R Y

<u>Column</u>		
	Total Investment 12/31/1921	17556.88
2	Additions to Capital Investment during 1922) For details See Sheet #11.	23.26
2	Total Investment 12/31/1922	17533.62
3.	Interest on Depreciated Investment 6% of 6088.38	365.30
4	Gravel Pit Charges	140.50
5	Repairs charged to Investment	
6	Total Columns 3-4-5	505.80
7	Sinking Fund 1922	
	Depreciation, 1922	3122.54
	Less Column 6	505.80
8	Sinking Fund Total 12/31/22	2616.74
	Sinking Fund 12/31/1921	11468.50
	Plus 1922 Sinking Fund	2616.74
9	Depreciated Investment 12/31/22	14085.24
	Column 1 Capital Investment	17533.62
	Less Column 8 Sinking Fund	14085.24
10	Manufacturers Cost for 1922	3448.38
11	Depreciation Percent Cd.10	16822.07
12	Depreciation Amount	.1856
		3122.54



AUBURN CONCRETE PLANT

SUMMARY OF COST OF OPERATION FOR 1922

		<u>Total</u>	<u>Operation Account</u>	<u>Investment Account</u>
<u>Inventory 1/1/1921</u>				
Raw Material	11825.67			
Supplies	<u>364.81</u>	12190.48	12190.48	
Labor & Mtl. chgs for 1922 See Sheet 9 for details }		16373.49	16396.75	23.26
Deduct Inventory 12/31/1922 See Sheets 5 and 6				
Raw Material	11267.69			
Supplies	<u>497.49</u>	<u>11765.16</u>	<u>11765.16</u>	
Manufacturers Cost 1922		16798.81	16822.07	23.26
Manufactured Product on hand 1/1/1922 See Sheet 4 1921 Report		18708.90		
Manufactured Product shipped out 1922 - See Sheet 3		24103.60	21697.94	2405.66
Manufactured Product on hand 12/31/1922 See Sheet 4		24561.40		
Interest on Depreciated In- vestment for year 1922 6% on 6088.38		365.30		

AUBURN CONCRETE PLANT

INVENTORY DECEMBER 31st, 1922.

Reinforcing Rods

Piles	1-1/8" Rd.	2441'-8"	3.38+	8200#	3.7511 Cwt.	307.59
Piles	1-1/8" "	27777'-4"	3.38	93887#	3.12 "	2929.27
Slabs	1-1/4" "	94'-9"	5.31	503#	2.94 "	14.79
	1" Sq.	79'-1"	3.4	337#	2.09 "	7.04 x
	1" Rd.	276'	3.67	1013#	2.09 "	21.17 x
	3/4" Rd.	1305'	1.502	1960#	4.00 "	78.40 x
	3/4" Rd.	15855'	1.502	23814#	4.00 "	952.56 x
	3/4" Rd.	1165'-7"	1.502	1751#	2.84 "	49.73 x
	5/8" Rd.	704'	1.043	734#	2.14 "	15.71 x
	5/8" Sq.	809'-8"	1.33	1077#	2.14 "	23.05 x
		(6075'	0.6888	4184#	3.85 "	161.08
Slab	1/2" Rd.	(9497'-6"	0.67	6363#	2.68 "	170.53
	1/2" Sq.	6581'	0.8635	5683#	1.5878 "	90.23 x
	1/2" Sq.	590'	0.85	502#	2.68 "	13.45 x
	1-1/4" Sq.	826'	5.311	4387#	5.4314 "	238.27 x
Slab	3/4" Sq.	39890'-4"	1.913	76310#	2.84 "	2167.20
Piles	3/8" Rd.	47544'	0.375	17829#	2.18 "	388.67
P & P	1/4" Sq.	2336'	0.167	390#	2.76 "	10.76
P & P	1/4" Rd. Plain	4188'	0.167	699#	2.76 "	19.29
Slab?	1/4" Rd. "	5290'-5"	4.173	22077#	2.94 "	649.06 ?
Piles	7325 Plain Plates for Piles					
Piles	2-1/8"x1/8"x1'3-3/4"x2 hole		1.25 ea.	9156#	5.13 "	469.70
Hooks?	Total Reinforcing			276672#		8777.55

Wire Mesh

Pipes	41294 Sq. Ft.	2.36066 C Sq.Ft.	974.81
-------	---------------	------------------	--------

Annealed Wire

160# No. 11 Wire	3.60 Cwt.	5.76
88# No. 15 "	3.43 "	3.02
		8.78

Cement

129900#	.666625	865.95
Empty sacks returned (Credit allowed in January 1923)		
3666 @ 10¢		366.60
29 B.O.		
3695		
2740 Empty Sacks on Hand @ .10	274.00	1506.55

Total Raw Material \$11267.69

7.04  
21.17  
15.71  
28.08  
90.23  
13.45  
238.27  
408.92  
78.40  
952.56  
49.73  
1489.61



# AUBURN CONCRETE PLANT

Manufactured Product shipped during 1922 and billed out

on both.

Pipe	No. Pcs.	Lin. ft.	Price per Lin. Ft.	Credited to* Operation Account	Credited to Investment Account	Total Credit
24"	778	6224	2.35	13257.12	1369.28	14626.40
36"	322	2536	3.45	7912.32	836.88	8749.20
	5	40	3.95	144.80	13.20	158.00
<u>Pipes</u>						
30"	10	300	1.90	383.70	186.30	570.00
				21697.94	2405.66	24103.60

\* Price per lin.ft. credited to  
Investment Account as follows

24" RCP	0.22
36" RCP	0.33
Pipes	0.621

## STATEMENT OF OUTPUT FOR 1922

	R.C.P.				Pipes			Slabs		Water Bbls.
	24"	36"	30'	25'	20'	15'	10'	Single	Double	
On hand 1/1/1922	330	104	36	2	58	33	42	17	10	2
Made 1922	978	372		27						22
	1308	476	36	29	58	33	42	17	10	24
Shipped 1922	778	322	10							24
On Hand 12/31/22	530	154	26	29	58	33	42	17	10	0

AUBURN CONCRETE PLANT 1922

Inventory Manufactured Product on Hand December 31st, 1922.

<u>R.C.Pipe</u>	<u>No. Pcs.</u>	<u>Lin.Ft.</u>	<u>Price per Ft.</u>	<u>Amount</u>
24"	530	4240	2.35	9964.00
36"	154	1232	3.45	<u>4250.40</u>
				14214.40

R.C.Piles

30'	26	780	1.90	1482.00
25'	29	725	1.90	<u>1377.50</u>
20'	58	1160	1.90	2204.00
15'	33	495	1.90	940.50
10'	42	420	1.90	<u>798.00</u>
				6802.00

Slabs

Single Track	17	135.00 ea.	2295.00	
Double Track	10	125.00 "	<u>1250.00</u>	<u>3545.00</u>

\$24361.40



AUBURN CONCRETE PLANT

INVENTORY DECEMBER 31st, 1922.

Reinforcing Rods

Piles	1-1/8" Rd.	2441'-8"	3.38+	8200#	3.7511 Cwt.	307.59
Piles	1-1/8" "	27777'-4"	3.38	93887#	3.12 "	2929.27
Slabs	1-1/4" "	94'-9"	5.31	503#	2.94 "	14.79
	1" Sq.	79'-1"	3.4	337#	2.09 "	7.04 x
	1" Rd.	276'	3.67	1013#	2.09 "	21.17 x
	3/4" Rd.	1305'	1.502	1960#	4.00 "	78.40 x
	3/4" Rd.	15855'	1.502	23814#	4.00 "	952.56 x
	3/4" Rd.	1165'-7"	1.502	1751#	2.84 "	49.73 x
	5/8" Rd.	704'	1.043	734#	2.14 "	15.71 x
	5/8" Sq.	809'-8"	1.33	1077#	2.14 "	23.05 x
		(6075'	0.6888	4184#	3.85 "	161.08
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	1/2" Sq.	590'	0.85	502#	2.68 "	13.45 x
	1-1/4" Sq.	826'	5.311	4387#	5.4314 "	238.27 x
Slab	3/4" Sq.	39890'-4"	1.913	76310#	2.84 "	2167.20
Pile	3/8" Rd.	47544'	0.375	17829#	2.18 "	388.67
Pile	1/4" Sq.	2336'	0.167	390#	2.76 "	10.76
Pile	1/4" Rd. Plain	4188'	0.167	699#	2.76 "	19.29
Slab	1/4" Rd.	5290'-5"	4.173	22077#	2.94 "	649.06 ?
Pile	7325 Plain Plates for Piles					
Pile	2-1/8"x1/8"x1'3-3/4"x2 hole		1.25 ea.	9156#	5.13 "	469.70
Hooks?	Total Reinforcing			276672#		8777.55

Wire Mesh

Pipe	41294 Sq. Ft.	2.36066 C Sq.Ft.	974.81
------	---------------	------------------	--------

Annealed Wire

160# No. 11 Wire	3.60 Cwt.	5.76
88# No. 15 "	3.43 "	3.02
		8.78

Cement

129900#	.666625	865.95
---------	---------	--------

Empty sacks returned (Credit allowed in January 1923)

3666 @ 10¢	366.60
------------	--------

29 B.O.

3695

2740 Empty Sacks on Hand @ .10	274.00	1506.55
--------------------------------	--------	---------

Total Raw Material

\$11267.69

7.04  
21.17  
15.71  
28.08  
90.23  
13.45  
238.27  
408.92  
78.40  
952.56  
49.73  
1489.61



AUBURN CONCRETE PLANT  
INVENTORY DECEMBER 31st, 1922

Supplies

Coal	25 Tons	50,000#	6.48 N.T.	162.00
Valve Oil	20 Gals		50.85 C Gal.	10.17
Car Oil	150 Gals		22.37 C Gal.	33.56
Coal Oil	5 Gals		14.50 C Gal.	..72
60-d Nails	200 #		4.39 Cwt.	8.78
20-d "	300 #		3.86	11.58
10-d "	175 #		3.08	5.39
6-d "	100 #		3.68	3.68
4"x4" Lbr.	9044 Ft.B.M.		14.00 M	126.62
Sheet Iron 24"x1/8"x8'	So. Tacoma			
1432	1400#			125.31
8 pcs. 2"x12"x16'	256' B.M.		18.61 M	4.76
10 " 2"x4" x16'	107' B.M.		16.96 M	1.81
Cotton Waste	30#		10.29 C#	<u>3.09</u>
Total Supplies				497.47



AUBURN CONCRETE PLANT  
INVENTORY DECEMBER 31st, 1922

Recapitulation

Manufactured Product on Hand

Pipe	14214.40	
Piles	6802.00	
Slabs	<u>3545.00</u>	24561.40

Raw Material on Hand

Reinforcing	8777.55	
Mesh	974.81	
Wire	8.78	
Cement	865.95	
Empty Cement Sacks	<u>640.60</u>	11267.69

Supplies

497.47

Total

\$36326.56

AUBURN CONCRETE PLANT  
SUMMARY OF OPERATION FOR 1922

	24" R.C.P. 978 Pcs. 7824 Lin. Ft.	36" R. C. P. 372 Pcs. 2976 Lin. Ft.	25' Piles 27 Pcs. 675 Lin. Ft.	22 Water Barrels	Total Operation Costs
Sand and Gravel	802.15	457.84	36.92	1.85	1298.76
Cement	3259.00	1893.08	108.94	6.67	5177.69
Rods	483.42	260.81	328.73	4.14	1077.10
Wire	22.60	7.25	1.00	.32	31.17
Mesh	1501.11	789.84		11.87	2302.82
Labor	2840.48	1571.57	186.12	64.73	4662.90
Plant Operation (Genl. Expense)	1353.92	743.61	60.40	3.51	2161.44
Repairs	63.96	37.43	4.56	.26	106.21
Paint				3.98	3.98
Manufacturer's Cost	10326.64	5671.43	726.67	97.33	16822.07
Depreciation Less Pit Chg.	1634.38	932.48	415.18		2982.04
Gravel Pit Charges	86.90	49.60	4.00		140.50
Total	12047.92	6653.51	1145.85	227 97.33 (4.42) 53 93 140.50	19944.61



AUBURN CONCRETE PLANT  
INVENTORY DECEMBER 31st, 1921

Raw Material	11825.67	
Supplies	<u>364.81</u>	12190.48
<u>Charges and Credits to</u> <u>Operation Account</u>		
Book footing for 1922	11535.11	
<u>Add for amounts expended in</u> <u>1921 Account AFE 905-20 but</u> <u>credited in 1922 Account</u>		
Screen Sand and Gravel	1648.35	
General Expense and Repairs	<u>3213.29</u>	
Operation Expense 1922	16396.75	<u>16396.75</u>
		28587.23
<u>Deduct Inventory 12/31/22</u>		
Raw Material	11267.69	
Supplies	<u>497.47</u>	<u>11765.16</u>
Manufacturer's Cost 1922 (Exclusive of depreciation or transportation)		16822.07

AUBURN CONCRETE PLANT 1922Cost of Manufacturing per lineal foot

	24" RCP		36" RCP		R.C. Piles	
	Rate	Cost	Rate	Cost	Rate	Cost
Sand & Gravel	.923 Cy	.10252	.923	.15385	.923	.05470
Cement	2.423 Bbl.	.41654	2.423	.60587	2.423	.16139
Rods	2.00614 Cwt.	.06179	1.98078	.08764	3.25057	.48701
Wire	.03986 #	.00289	.03986 #	.00244	.03986 #	.00148
Mesh	2.5580 Sq'	.19186	2.5580 Sq'	.26540		
Labor		.36304		.52808		.27573
Plant Operation (Genl. Expense)		.17305		.24987		.08948
Repairs		.00817		.01257		.00676
		1.31986		1.90572		1.07655
Depreciation less pit charge		.20894		.31333		.61507
Gravel Pit Chgs.		.01106		.01667		.00593
Total exclusive of transportation		1.53986		2.23572		1.69755
Lineal feet manufactur- ed		7824		2976		675
Depreciation charged to total		1721.28		982.08		419.18
Depreciation per lin. ft.		.22		.33		.621



AUBURN CONCRETE PLANT 1922

Statement of additions to Capital Investment during year charged  
to Investment Account for 1922

P.A.E.-T. 433	100 ft. 3/4" Water hose	11.76
"	5-3/4# Rainbow Packing	3.45
P.A.E.-S. 475	1 Set Knives for Bolt Cutter	4.50
	Pur Exp. later M.O.P.	
	8/3/22	<u>.03</u>
		19.74
Credit Pit charge for sand and Gravel used in making slabs for bridge 39		
AFE 1376-1921 Form 1924 - 6138		<u>43.00</u>
Net Credit to Investment Account		23.26

AUBURN CONCRETE PLANT 1922

Statement of minor repair items charged to Operation Account during 1922

1922

January Payroll		101.03
February	"	5.10
March	"	21.53
April	"	41.21
May	"	15.89
June	"	24.28
July	"	10.92
March	S-305 Repairs to Steam Governor	3.85
"	" " " " "	<u>22.71</u>
		246.52

Credit

Pro.chgd AFE 905-20 for 1922 Work	91.63	
" " " 1376-21 " " "	<u>48.68</u>	<u>140.31</u>
Net total Expense for 1922 Repairs		106.21



H.E. Stevens

ANNUAL REPORT  
AUBURN CONCRETE PLANT

1922

Office of Assistant Chief Engineer  
and Engineer Mtce. of Way,

Seattle, Washington, February 16, 1923.

AUBURN CONCRETE PLANT 1922

S U M M A R Y

Column

	Total Investment 12/31/1921		17556.88
2	Additions to Capital Investment during 1922)		
	For details See Sheet #11.		<u>23.26</u>
2	Total Investment 12/31/1922		17533.62
3.	Interest on Depreciated Investment		
	6% of 6088.38		365.30
4	Gravel Pit Charges		140.50
5	Repairs charged to Investment		
6	Total Columns 3-4-5		505.80
7	Sinking Fund 1922		
	Depreciation, 1922	3122.54	
	Less Column 6	<u>505.80</u>	2616.74
8	Sinking Fund Total 12/31/22		
	Sinking Fund 12/31/1921	11468.50	
	Plus 1922 Sinking Fund	<u>2616.74</u>	14085.24
9	Depreciated Investment		
	12/31/22		
	Column 1 Capital Investment	17533.62	
	Less Column 8 Sinking Fund	<u>14085.24</u>	3448.38
10	Manufacturers Cost for 1922		16822.07
11	Depreciation Percent Cd. 10		.1856
12	Depreciation Amount		3122.54



AUBURN CONCRETE PLANTSUMMARY OF COST OF OPERATION FOR 1922

		<u>Total</u>	<u>Operation Account</u>	<u>Investment Account</u>
<u>Inventory 1/1/1921</u>				
Raw Material	11825.67			
Supplies	<u>364.81</u>	12190.48	12190.48	
Labor & Mtl. chgs for 1922 See Sheet 9 for details	)	16373.49	16396.75	23.26
Deduct Inventory 12/31/1922 See Sheets 5 and 6				
Raw Material	11267.69			
Supplies	<u>497.49</u>	<u>11765.16</u>	<u>11765.16</u>	
Manufacturers Cost 1922		16798.81	16822.07	23.26
Manufactured Product on hand 1/1/1922 See Sheet 4 1921 Report		18708.90		
Manufactured Product shipped out 1922 - See Sheet 3		24103.60	21697.94	2405.66
Manufactured Product on hand 12/31/1922 See Sheet 4		24561.40		
Interest on Depreciated In- vestment for year 1922 6% on 6088.38		365.30		

AUBURN CONCRETE PLANTManufactured Product shipped during 1922 and billed outon both.

Pipe	No. Pcs.	Lin. ft.	Price per Lin. Ft.	Credited to Operation Account	Credited to Investment Account	Total Credit
24"	778	6224	2.35	13257.12	1369.28	14626.40
36"	322	2536	3.45	7912.32	836.88	8749.20
	5	40	3.95	144.80	13.20	158.00
<u>Piles</u>						
30'	10	300	1.90	383.70	186.30	570.00
				21697.94	2405.66	24103.60

\* Price per lin.ft. credited to  
Investment Account as follows

24" RCP	0.22
36" RCP	0.33
Piles	0.621

STATEMENT OF OUTPUT FOR 1922

	R.C.P.				Piles			Slabs		Water Bbls.
	24"	36"	30'	25'	20'	15'	10'	Single	Double	
On hand 1/1/1922	330	104	36	2	58	33	42	17	10	2
Made 1922	978	372		27						22
	1308	476	36	29	58	33	42	17	10	24
Shipped 1922	778	322	10							24
On Hand 12/31/22	530	154	26	29	58	33	42	17	10	0



AUBURN CONCRETE PLANT 1922Inventory Manufactured Product on Hand December 31st, 1922.

<u>R.C. Pipe</u>	<u>No. Pcs.</u>	<u>Lin. Ft.</u>	<u>Price per Ft.</u>	<u>Amount</u>	
24"	530	4240	2.35	9964.00	
36"	154	1232	3.45	<u>4250.40</u>	14214.40
 <u>R.C. Piles</u>					
30'	26	780	1.90	1482.00	
25'	29	725	1.90	1377.50	
20'	58	1160	1.90	2204.00	
15'	33	495	1.90	940.50	
10'	42	420	1.90	<u>798.00</u>	6802.00
 <u>Slabs</u>					
Single Track	17		135.00 ea.	2295.00	
Double Track	10		125.00 "	<u>1250.00</u>	<u>3545.00</u>
					\$24561.40

AUBURN CONCRETE PLANT

INVENTORY DECEMBER 31st, 1922.

Reinforcing Rods

1-1/8" Rd.	2441'-8"	3.38+	8200#	3.7511 Cwt.	307.59
1-1/8" "	27777'-4"	3.38	93887#	3.12 "	2929.27
1-1/4" "	94'-9"	5.31	503#	2.94 "	14.79
1" Sq.	79'-1"	3.4	337#	2.09 "	7.04
1" Rd.	276'	3.67	1013#	2.09 "	21.17
3/4" Rd.	1305'	1.502	1960#	4.00 "	78.40
3/4" Rd.	15855'	1.502	23814#	4.00 "	952.56
3/4" Rd.	1165'-7"	1.502	1751#	2.84 "	49.73
5/8" Rd.	704'	1.043	734#	2.14 "	15.71
5/8" Sq.	809'-8"	1.33	1077#	2.14 "	23.05
	(6075'	0.6888	4184#	3.85 "	161.08
1/2" Rd.	(9497'-6"	0.67	6363#	2.68 "	170.53
1/2" Sq.	6581'	0.8635	5683#	1.5878 "	90.23
1/2" Sq.	590'	0.85	502#	2.68 "	13.45
1-1/4" Sq.	826'	5.311	4387#	5.4314 "	238.27
3/4" Sq.	39890'-4"	1.913	76310#	2.84 "	2167.20
3/8" Rd.	47544'	0.375	17829#	2.18 "	388.67
1/4" Sq.	2336'	0.167	390#	2.76 "	10.76
1/4" Rd. Plain	4188'	0.167	699#	2.76 "	19.29
1/4" Rd. "	5290'-5"	4.173	22077#	2.94 "	649.06
7325 Plain Plates for Piles					
2-1/8"x1/8"x1'-3-3/4"x2 hole	1.25 ea.	9156#	5.13	"	<u>469.70</u>
Total Reinforcing			276672#		8777.55

Wire Mesh

41294 Sq. Ft.	2.36066 C Sq. Ft.	974.81
---------------	-------------------	--------

Annealed Wire

160# No. 11 Wire	3.60 Cwt.	5.76	
88# No. 15 "	3.43 "	<u>3.02</u>	8.78

Cement

129900#	.666625	865.95
---------	---------	--------

Empty sacks returned (Credit allowed in January 1923)

3666 @ 10¢	366.60
------------	--------

29 B.O.

3695

2740 Empty Sacks on Hand @ .10	<u>274.00</u>	<u>1506.55</u>
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Total Raw Material

\$11267.69



AUBURN CONCRETE PLANT  
INVENTORY DECEMBER 31st, 1922

Supplies

Coal	25 Tons	50,000#	6.48 N.T.	162.00
Valve Oil	20 Gals		50.85 C Gal.	10.17
Car Oil	150 Gals		22.37 C Gal.	33.56
Coal Oil	5 Gals		14.50 C Gal.	..72
60-d Nails	200 #		4.39 Cwt.	8.78
20-d "	300 #		3.86	11.58
10-d "	175 #		3.08	5.39
6-d "	100 #		3.68	3.68
4"x4" Lbr.	9044 Ft.B.M.		14.00 M	126.62
Sheet Iron 24"x1/8"x8'	So.Tacoma			
1432	1400#			125.31
8 pcs. 2"x12"x16'	256' B.M.		18.61 M	4.76
10 " 2"x4" x16'	107' B.M.		16.96 MM	1.81
Cotton Waste	30#		10.29 C#	<u>3.09</u>
Total Supplies				497.47

AUBURN CONCRETE PLANT  
INVENTORY DECEMBER 31st, 1922

Recapitulation

Manufactured Product on Hand

Pipe	14214.40	
Piles	6802.00	
Slabs	<u>3545.00</u>	24561.40

Raw Material on Hand

Reinforcing	8777.55	
Mesh	974.81	
Wire	8.78	
Cement	865.95	
Empty Cement Sacks	<u>640.60</u>	11267.69

Supplies

497.47

Total

\$36326.56



AUBURN CONCRETE PLANT  
SUMMARY OF OPERATION FOR 1 9 2 2

	24" R.C.P. 978 Pcs. 7824 Lin. Ft.	36" R. C. P. 372 Pcs. 2976 Lin. Ft.	25' Piles 27 Pcs. 675 Lin. Ft.	22 Water Barrels	Total Operation Costs
Sand and Gravel	802.15	457.84	36.92	1.85	1298.76
Cement	3259.00	1893.08	108.94	6.67	5177.69
Rods	483.42	260.81	328.73	4.14	1077.10
Wire	22.60	7.25	1.00	.32	31.17
Mesh	1501.11	789.84		11.87	2302.82
Labor	2840.48	1571.57	186.12	64.73	4662.90
Plant Operation (Genl. Expense)	1353.92	743.61	60.40	3.51	2161.44
Repairs	63.96	37.43	4.56	.26	106.21
Paint				3.98	3.98
Manufacturer's Cost	10326.64	5671.43	726.67	97.33	16822.07
Depreciation Less Pit Chg.	1634.38	932.48	415.18		2982.04
Gravel Pit Charges	86.90	49.60	4.00		140.50
Total	12047.92	6653.51	1145.85	97.33	19944.61

9-

AUBURN CONCRETE PLANT  
INVENTORY DECEMBER 31st, 1921

Raw Material	11825.67	
Supplies	<u>364.81</u>	12190.48
 <u>Charges and Credits to</u> <u>Operation Account</u>		
Book footing for 1922	11535.11	
<u>Add for amounts expended in</u> <u>1921 Account AFE 905-20 but</u> <u>credited in 1922 Account</u>		
Screen Sand and Gravel	1648.35	
General Expense and Repairs	<u>3213.29</u>	
Operation Expense 1922	16396.75	<u>16396.75</u>
		28587.23
 <u>Deduct Inventory 12/31/22</u>		
Raw Material	11267.69	
Supplies	<u>497.47</u>	<u>11765.16</u>
Manufacturer's Cost 1922 (Exclusive of depreciation or transportation)		16822.07



AUBURN CONCRETE PLANT 1922Cost of Manufacturing per lineal foot

	24"RCP		36"RCP		R.C.Piles	
	Rate	Cost	Rate	Cost	Rate	Cost
Sand & Gravel	.923 Cy	.10252	.923	.15385	.923	.05470
Cement	2.423Bbl.	.41654	2.423	.60587	2.423	.16139
Rods	2.00614Cwt	.06179	1.98078	.08764	3.25057	.48701
Wire	.03986#	.00289	.03986#	.00244	.03986#	.00148
Mesh	2.558C.Sq'	.19186	2.558C.Sq'	.26540		
Labor		.36304		.52808		.27573
Plant Operation (Genl. Expense)		.17305		.24987		.08948
Repairs		.00817		.01257		.00676
		1.31986		1.90572		1.07655
Depreciation less pit charge		.20894		.31333		.61507
Gravel Pit Chgs.		.01106		.01667		.00593
Total exclusive of transportation		1.53986		2.23572		1.69755
Lineal feet manufactur- ed		7824		2976		675
Depreciation charged to toal		1721.28		982.08		419.18
Depreciation per lin. ft.		.22		.33		.621

AUBURN CONCRETE PLANT 1922Statement of additions to Capital Investment during year charged  
to Investment Account for 1922

P.A.E.-T. 433	100 ft. 3/4" Water hose	11.76
"	5-3/4# Rainbow Packing	3.45
P.A.E.-S. 475	1 Set Knives for Bolt Cutter	4.50
	Per Exp. Later E.O.P.	
	8/3/22	<u>.03</u>
		19.74
Credit Pit charge for sand and Gravel used in making slabs for bridge 39		
AFE 1376-1921 Form 1924 - 6138		<u>43.00</u>
Net Credit to Investment Account		23.26



AUBURN CONCRETE PLANT 1922Statement of minor repair items charged to Operation Account  
during 19221922

January Payroll	101.03
February "	5.10
March "	21.53
April "	41.21
May "	15.89
June "	24.28
July "	10.92
March S-305 Repairs to Steam Governor	3.85
" " " " "	<u>22.71</u>
	246.52

Credit

Pro.chgd AFE 905-20 for 1922 Work	91.63	
" " " 1376-21 " " "	<u>48.68</u>	<u>140.31</u>
Net total Expense for 1922 Repairs		106.21

H. Estabrook

A N N U A L      R E P O R T  
A U B U R N   C O N C R E T E   P L A N T  
1 9 2 1

Office of Asst. Chief Engr. & Engr. Mtce. of Way,  
Seattle, Washington, February 10th, 1923.

CHAS. J. BORD  
JAN 11 1923



AUBURN CONCRETE PLANT 1921S U M M A R YColumns

	Total Investment 12/31/1920		17045.71
2	Additions to Capital Investment during 1921		511.17
1	Total Investment 12/31/1921		17556.88
3	Interest on Depreciated Investment 6% of 8462.96		507.78
4	Gravel Pit Charges		129.44
5	Repairs charged to Investment		
6	Total Columns 3-4-5		637.22
7	<u>Sinking Fund 1921</u>		
	Depreciation 1921	3522.97	
	Less Column 6	637.22	2885.75
8	<u>Sinking Fund Total 12/31/1921</u>		
	Sinking Fund 12/31/1920	8582.75	
	Plus 1921 Sinking Fund	2885.75	11468.50
9	<u>Depreciated Investment 12/31/1921</u>		
	Column 1, Capital Investment	17556.88	
	Less Column 8 (Sinking Fund)	11468.50	6088.38
10	Manufacturer's Cost for 1921		18500.79
11	Depreciation percent Column 10		.1904
12	Depreciation amount		3522.97

AUBURN CONCRETE PLANTSUMMARY OF COST OF OPERATION FOR 1921

	<u>Total</u>	<u>Operation Account</u>	<u>Investment Account</u>
Inventory of 1/1/1921 Raw Mtl.& Supplies	12572.40	12572.40	
Labor and Material charges for 1921	18630.04	18118.87	511.17
Deduct Inventory 12/31/1921 See Sheet 6			
Raw Material	11825.67		
Supplies	364.81		
	<u>12190.48</u>	<u>12190.48</u>	
Manufacturers Cost for 1921	19011.96	18500.79	511.17
Manufactured Product on Hand 1/1/1921	10124.50		
Manufactured Product shipped out 1921 See Sheet 3	19681.40	17095.90	2585.50
Manufactured Product on hand 12/31/1921	<u>18708.90</u>		
Interest on Depreciated Investment for year 1921 6% on 8462.96	507.78		



AUBURN CONCRETE PLANTManufactured product shipped away during 1921, and billed out on books

Pipe	No.Pcs.	Lin. Ft.	Price Per Lin.Ft.	Credited to Operation Account	Credited to Investment Account	Total Credit
24"	6	48	2.75 +	119.26	12.74	132.00
24"	5	40	2.00 +	72.28	7.72	80.00
24"	564	4512	2.35 /	9610.56	992.64	10603.20
Total 24"	575	4600		9802.10	1013.10	10815.20
36"	27	216	3.00 +	565.27	82.73	648.00
36"	152	1216	3.45 /	3793.92	401.28	4195.20
Total 36"	179	1432				
<u>Piles</u>						
30'	41	1230	1.90	1573.17	763.83	2337.00
25'	8	200	1.90	255.80	124.20	380.00
<u>Slabs</u>						
Single	4		135.00	439.64	100.36	540.00
Double	4 Special		191.50	666.00	100.00	766.00
Total				17095.90	2585.50	19681.40

+ 1919 Product

/ 1921 Product

AUBURN CONCRETE PLANT 1921

Manufactured product on hand, December 31st, 1921

<u>Pipe</u>	<u>No. Pcs.</u>	<u>Lin. Ft.</u>	<u>Price per ft.</u>	<u>Amount</u>	
24"	330	2640	2.35	6204.00	
36"	104	832	3.45	2870.40	9074.40
<u>Piles</u>					
30'	36	1080	1.90	2052.00	
25'	2	50	1.90	95.00	
20'	58	1160	1.90	2204.00	
15'	33	495	1.90	940.50	
10'	42	420	1.90	798.00	6089.50
<u>Slabs</u>					
Single	17		135.00 ea.	2295.00	
Double	10		125.00 "	1250.00	3545.00
					\$18708.90

STATEMENT OF OUTPUT FOR 1921

	<u>Pipe</u>		<u>Piles</u>					<u>Slabs</u>		<u>Water</u>
	24"	36"	30'	25'	20'	15'	10'	Single	Double	BBls.
On Hand 1/1/1921	11	27	14	10	58	33	42	21	10	
Total 1921 Product	894	256	63	0	0	0	0	0	4	2
Total Shipped Away	575	179	41	8	0	0	0	4	4	
Surplus on Hand. 12/31/1921	330	104	36	2	58	33	42	17	10	2



AUBURN CONCRETE PLANTINVENTORY JANUARY 1 9 2 1Reinforcing Rods

	<u>Weight</u>	<u>Price</u>	<u>Amount</u>
1-1/8" Rd.	8200#	3.7511	307.59
"	145479#	3.12	4538.94
1" Sq.	1350#	2.09	28.22
1" Rd.	117#	2.09	2.45
3/4" Sq.	81705#	2.84	2320.42
3/4" Rd.	1479#	2.84	42.00
5/8" Sq.	1979#	2.14	42.35
5/8" Rd.	1449#	2.14	31.00
1/2" Sq.	3918#	2.68	105.00
1/2" Rd.	15221#	3.85065	586.10
1/2" Rd.	14373#	2.68	385.20
3/8" Rd.	7415#	3.14	232.83
1-1/4" Rd.	503#	2.94	14.79
1/4" Sq.	2215#	2.76	61.13

Plain Round Rods

1-1/4" Rd.	24048#	2.94	707.01
1/4" Rd.	6012#	2.76	165.93

Plates for Piles

9557 pcs.	11948#	5.13	<u>612.83</u>
-----------	--------	------	---------------

Total Rods

10183.79

Rods held for AFE 905-20 but not charged out

895.69

11079.48

Mesh 45033 sq. ft.

0.32

1441.06

Wire 1010 #

45.56

Malthine Paper 4-1/2 rolls

6.30

Total Raw Material on Hand January 1-1921

12572.40

INVENTORY DECEMBER 31st, 1921Corrugated Reinforcing Rods

	<u>Weight</u>	<u>Price</u>	<u>Amount</u>
1-1/8" Rd.	8200#	3.7511	307.59
1-1/8"	119989#	3.12	3743.66
1-1/4" Rd	503#	2.94	14.79
1" Square	1327#	2.09	27.73
1" Rd	117#	2.09	2.45
1-1/4" Square	4387#	5.4314	238.27
3/4" "	78182#	2.84	2220.37
5/8" "	1965#	2.14	42.05
5/8" Rd.	1776#	2.14	38.00
3/4" "	7284#	3.8478	280.27
3/4" "	23877#	3.9721	948.43
3/4" Rd.	1104#	3.81	42.06
3/4" Rd.	1784#	2.84	50.67
1/2" Rd.	15221#	3.85065	586.10
1/2" Rd.	29053#	2.68	778.62
1/2" Sq.	1116#	2.68	29.90
3/8" Rd.	9158#	3.00	274.74
1/4" Square	1020#	2.76	28.15

Plain Rods

1-1/4" Rd.	24048#	2.94	707.01
1/4" Rd.	2852#	2.76	78.72
Plates for Piles	9900#	5.13	507.87

Total Reinforcing Rods

10947.45 10947.45

Wire Mesh	29257 sq.ft.	0.293771	859.49
Malthine Paper	2 rolls	1.40	2.80
Annealed Wire	350#	4.55 Cwt.	15.93

Total Raw Material

11825.67

Miscellaneous Supplies

364.81
<u>12190.48</u>



AUBURN CONCRETE PLANT1921 ACCOUNTInventory 1/1/1921

Reinforcing Rods	327411#	10183.79	
	30610#	895.69	11079.48
Mesh	45033 sq.ft. .032		1441.06
Wire	1010 #		45.56
Mathine Paper	4-1/2 rolls 1.40		6.30
			12572.40

Charges and Credits for Operation Acct. 1921

22980.51

Deduct Supplies on hand 12/31/21 )  
 Charged to Operation Account but not used )

364.81	22615.70
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35188.10

Deduct Inventory Material on Hand 12/31/1921

Reinforcing Rods	10947.45	
Mesh	859.49	
wire	15.93	
Mathine Paper	2.80	11825.67
		23364.43

Deduct Expense incurred during 1921 )  
 a/c AFE 905-20 which was credited )  
 to Operation Account in 1922 )

Sand and Gravel		1648.35	
Genl. Expense	2397.38		
Repairs	815.91	3213.29	4861.64

Net Operation Cost for 1921

\$18500.79

## AUBURN CONCRETE PLANT

## SUMMARY OF OPERATION FOR 1921

	24" RCP 894 Pos. 7152 Ft.	36" RCP 256 Pos 2048 Ft.	30" Piles 63 Pcs. 1890 Lin.Ft.	Slabs 4 pos. Slabs for Clarks Creek	Water Barrels 2 pos.	Total Operation Acct.	Expended in 1921 for 905- 20, Credited to Operation Acct. in 1922 Account	Total Including charges account AF 905-20
Sand and Gravel	767.52	329.63	108.17	42.88	.20	1248.40	1648.35	2896.75
Cement	2977.50	1240.17	305.20	121.11	.60	4644.58		4644.58
Rods	663.22	272.48	935.56	57.68		1928.94		1928.94
Wire	20.90	6.02	3.19	.61		30.72		30.72
Mesh	1607.11	671.85				2278.96		2278.96
Labor	3134.50	1205.04	563.51	181.81		5084.86		5084.86
Royalty on RCP	276.00	65.60				341.60		341.60
Plant Operation (General Expense)	1252.93	518.06	179.03	57.35	.32	2007.69	2397.38	4405.07
Repairs	426.42	176.31	60.93	19.52	.11	683.29	815.91	1499.20
Malthine for Slabs				3.50		3.50		3.50
Forms for Water Barrels					99.72			
Mesh for Water Bbls.					39.46	248.25		248.25
Labor making 17 cages and 2 bbls.					109.07			
Manufacturer's Cost	11126.10	4485.16	2155.59	484.46	249.48	18500.79	4861.64	23362.43
Depreciation less Pit Chgs.	1493.97	641.71	1162.49	95.36		3393.53		
Gravel Pit Chgs	79.47	34.13	11.20	4.64		129.44		
Total	12699.54	5161.00	3329.28	584.46	249.48	22023.76		



AUBURN CONCRETE PLANT 1921

-9-

COST OF MANUFACTURING PER LINEAL FOOT

	24" RCP		36" RCP		30' R.C.Piles	
	Rate	Cost	Rate	Cost	Rate	Cost
Sand and Gravel	.9658	.107315	.9658	.160952	.9658	.057233
Cement - Per Bbl.	2.42221	.416317	2.42221	.605552	2.42221	.161481
Rods	2.987074	.092732	2.991	.133047	3.24689	.495005
Wire	0.04363#	.002922	0.04363	.002939	0.04363	.001688
Mesh - Per 100 sq.ft.	2.93771	.224708	2.93771	.328051		
Labor		.438269		.588398		.298153
*Royalty on R.C.P.		.038591		.032031		
Plant Operation						
(General Expense)		.175186		.252959		.094725
Repairs		.059622		.086089		.032238
		1.555662		2.190018		1.140523
Depreciation less pit charges		.208888		.313335		.615075
Gravel Pit Charges		.011112		.016665		.005925
Total Exclusive of Transportation		1.775662		2.520018		1.761523
Lineal feet manufactured		7152		2048		1890

Depreciation charged - total	1573 .44	675.84	1173.69
" " - per ft.	.22	.33	0.621

\* Note: Royalty at rate of 0.05 per lin ft paid on R.C.P.Manufactured prior to July 5, 1921, Expiration of Patent

Royalty paid on 5520 lin.ft. of 24" R.C.P. .05	276.00
" " " 1312 " " " 36" R.C.P.	65.60

Total Royalty Paid in 1921 341.60

AUBURN CONCRETE PLANT

Statement of Addition to Capital Investment charged to Investment Account for 1921

Steel Shed: AFE 1200-14 ED 146-20

Labor

Payroll	January, 1921	20.88	
"	March "	6.81	
"	May "	<u>21.41</u>	49.10

Material

20,400#	SH 56# rail J.607 So.Tacoma #1345	<u>325.55</u>	374.65
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Tools & Supplies charged to Investment Acct.

March, 1921 J-317

267'	2"x4"-16' Rgh.Lbr.	6.41	
3	8" White Wash Brushes	9.45	
3240'	9"x18"-24' Stringers	51.84	
1	5' Cross Cut Saw	2.00	
1	Stencilling Plate	3.32	
	Store Expense	<u>4.38</u>	77.40

April, 1921

3	8" White Wash Brushes	9.45	
1	Smoke Stack 12'long, 21"diam.	42.71	
	Store Expense	<u>3.13</u>	55.29

Sept., 1921 J.913

4	Sets Moulds	<u>3.83</u>	<u>136.52</u>
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Total Charged to Investment Acct for 1921 511.17



M. F. Clements

ANNUAL REPORT

AUBURN CONCRETE PLANT

1921

Office of Asst. Chief Engr. & Engr. Mtce. of Way,  
Seattle, Washington, February 10th, 1923.

AUBURN CONCRETE PLANT 1921

S U M M A R Y

Columns

	Total Investment 12/31/1920		17045.71
2	Additions to Capital Investment during 1921		<u>511.17</u>
1	Total Investment 12/31/1921		17556.88
3	Interest on Depreciated Investment 6% of 8462.96		507.78
4	Gravel Pit Charges		129.44
5	Repairs charged to Investment		
6	Total Columns 3-4-5		<u>637.22</u>
7	<u>Sinking Fund 1921</u>		
	Depreciation 1921	3522.97	
	Less Column 6	<u>637.22</u>	2885.75
8	<u>Sinking Fund Total 12/31/1921</u>		
	Sinking Fund 12/31/1920	8582.75	
	Plus 1921 Sinking Fund	<u>2885.75</u>	11468.50
9	<u>Depreciated Investment 12/31/1921</u>		
	Column 1, Capital Investment	17556.88	
	Less Column 8 (Sinking Fund)	<u>11468.50</u>	6088.38
10	Manufacturer's Cost for 1921		18500.79
11	Depreciation percent Column 10		.1904
12	Depreciation amount		3522.97



AUBURN CONCRETE PLANT

SUMMARY OF COST OF OPERATION FOR 1921

	<u>Total</u>	<u>Operation Account</u>	<u>Investment Account</u>
Inventory of 1/1/1921 Raw Mtl. & Supplies	12572.40	12572.40	
Labor and Material charges for 1921	18630.04	18118.87	511.17
Deduct Inventory 12/31/1921 See Sheet 6			
Raw Material	11825.67		
Supplies	364.81		
	<u>12190.48</u>	<u>12190.48</u>	
Manufacturers Cost for 1921	19011.96	18500.79	511.17
Manufactured Product on Hand 1/1/1921	10124.50		
Manufactured Product shipped out 1921 See Sheet 3	19681.40	17095.90	2585.50
Manufactured Product on hand 12/31/1921	13708.90		
Interest on Depreciated Investment for year 1921 6% on 8462.96	507.78		

AUBURN CONCRETE PLANTManufactured product shipped away during 1921, and billed out on books

Pipe	No.Pcs.	Lin. Ft.	Price Per Lin.Ft.	Credited to Operation Account	Credited to Investment Account	Total Credit
24"	6	48	2.75 +	119.26	12.74	132.00
24"	5	40	2.00 +	72.28	7.72	80.00
24"	564	4512	2.35 /	9610.56	992.64	10603.20
Total 24"	575	4600		9802.10	1013.10	10815.20
36"	27	216	3.00 +	565.27	82.73	648.00
36"	152	1216	3.45 /	3793.92	401.28	4195.20
Total 36"	179	1432				
<u>Piles</u>						
30'	41	1230	1.90	1573.17	763.83	2337.00
25'	8	200	1.90	255.80	124.20	380.00
<u>Slabs</u>						
Single	4		135.00	439.64	100.36	540.00
Double	4 Special		191.50	666.00	100.00	766.00
Total				17095.90	2585.50	19681.40

+ 1919 Product

/ 1921 Product



AUBURN CONCRETE PLANT 1921

Manufactured product on hand, December 31st, 1921

<u>Pipe</u>	<u>No. Pcs.</u>	<u>Lin. Ft.</u>	<u>Price per ft.</u>	<u>Amount</u>	
24"	330	2640	2.35	6204.00	
36"	104	832	3.45	2870.40	9074.40

## Piles

30'	36	1080	1.90	2052.00	
25'	2	50	1.90	95.00	
20'	58	1160	1.90	2204.00	
15'	33	495	1.90	940.50	
10'	42	420	1.90	798.00	6089.50

## Slabs

<u>Slabs</u>	<u>No.</u>	<u>Pcs.</u>			
Single	17		135.00 ea.	2295.00	
Double	10		125.00 "	1250.00	3545.00

\$18708.90

## STATEMENT OF OUTPUT FOR 1921

	Pipe			Piles				Slabs		Water
	24"	36"	30'	25'	20'	15'	10'	Single	Double	Bbls.
On Hand 1/1/1921	11	27	14	10	58	33	42	21	10	
Total 1921 Product.	894	256	63	0	0	0	0	0	4	2
Total Shipped Away	575	179	41	8	0	0	0	4	4	
Surplus on Hand. 12/31/1921	330	104	36	2	58	33	42	17	10	2

AUBURN CONCRETE PLANT

INVENTORY JANUARY 1 9 2 1

<u>Reinforcing Rods</u>	<u>Weight</u>	<u>Price</u>	<u>Amount</u>
1-1/8" Rd.	8200#	3.7511	307.59
"	145479#	3.12	4538.94
1" Sq.	1350#	2.09	28.22
1" Rd.	117#	2.09	2.45
3/4" Sq.	81705#	2.84	2320.42
3/4" Rd.	1479#	2.84	42.00
5/8" Sq.	1979#	2.14	42.35
5/8" Rd.	1449#	2.14	31.00
1/2" Sq.	3918#	2.68	105.00
1/2" Rd.	15221#	3.85065	586.10
1/2" Rd.	14373#	2.68	385.20
3/8" Rd.	7415#	3.14	232.83
1-1/4" Rd.	503#	2.94	14.79
1/4" Sq.	2215#	2.76	61.13

Plain Round Rods

1-1/4" Rd.	24048#	2.94	707.01
1/4" Rd.	6012#	2.76	165.93

Plates for Piles

9557 pcs.	11948#	5.13	612.83
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Total Rods

10183.79

Rods held for AFE 905-20 but not charged out

895.69  
11079.48

11079.48

Mesh	45033 sq. ft.	0.32	1441.06
Wire	1010 #		45.56
Malthine Paper	4-1/2 rolls		6.30

Total Raw Material on Hand January 1-1921

12572.40



INVENTORY DECEMBER 31st, 1921

<u>Corrugated Reinforcing Rods</u>		<u>Weight</u>	<u>Price</u>	<u>Amount</u>
Pile	1-1/8" Rd.	8200#	3.7511	307.59
Pile	1-1/8"	119989#	3.12	3743.66
Slabs	1-1/4" Rd	503#	2.94	14.79
	1" Square	1327#	2.09	27.73 x
	1" Rd	117#	2.09	2.45 x
	1-1/4" Square	4387#	5.4314	238.27 x
Slab	3/4"	78182#	2.84	2220.37
	5/8"	1965#	2.14	42.05 x
	5/8" Rd.	1776#	2.14	38.00 x
	3/4"	7284#	3.8478	280.27 x
	3/4"	23877#	3.9721	948.43 x
	3/4" Rd.	1104#	3.81	42.06 x
	3/4" Rd.	1784#	2.84	50.67 x
Slab	1/2" Rd.	15221#	3.85065	586.10
Slab	1/2" Rd.	29053#	2.68	778.62
	1/2" Sq.	1116#	2.68	29.90 ✓
Pipe	3/8" Rd.	9158#	3.00	274.74
P & P	1/4" Square	1020#	2.76	28.15
<u>Plain Rods</u>				
Slab	1-1/4" Rd. Hooks for Slabs ?	24048#	2.94	707.01 ← ?
P & P	1/4" Rd.	2852#	2.76	78.72
	Plates for Files	9900#	5.13	507.87
Total Reinforcing Rods				10947.45 10947.45
Wire Mesh	29257 sq.ft.	0.293771		859.49
Malthine Paper	2 rolls	1.40		2.80
Annealed Wire	350#	4.55 Cwt.		15.93
Total Raw Material				11825.67
Miscellaneous Supplies				364.81
				12190.48

27.73 ✓  
298 ✓  
238.27 ✓  
4205 ✓  
3800 ✓  
280.27 ✓  
948.43 ✓  
4205 ✓  
50.67 ✓  
29.90 ✓  
1699.83 ✓

10947.45

AUBURN CONCRETE PLANT1921 ACCOUNTInventory 1/1/1921

<u>Reinforcing Rods</u>	327411#	10183.79	
	<u>30610#</u>	<u>895.69</u>	11079.48
Mesh 45033 sq.ft. .032			1441.06
Wire 1010 #			45.56
Mathine Paper 4-1/2 rolls 1.40			<u>6.30</u>
			12572.40

<u>Charges and Credits for Operation Acct. 1921</u>	22980.51
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Deduct Supplies on hand 12/31/21	}		
Charged to Operation Account but not used		<u>364.81</u>	<u>22615.70</u>
			35188.10

Deduct Inventory Material on Hand 12/31/1921

Reinforcing Rods	10947.45	
Mesh	859.49	
wire	15.93	
Mathine Paper	<u>2.80</u>	
		<u>11825.67</u>
		<u>23364.43</u>

Deduct Expense incurred during 1921 )  
a/c AFE 905-20 which was credited )  
to Operation Account in 1922 )

Sand and Gravel	1648.35	
Genl. Expense	2397.38	
Repairs	<u>815.91</u>	<u>3213.29</u>
		<u>4861.64</u>

Net Operation Cost for 1921

\$18500.79



## AUBURN CONCRETE PLANT

## SUMMARY OF OPERATION FOR 1921

	24" RCP 894 Pos. 7152 Ft.	36" RCP 256 Pos 2048 Ft.	30' Piles 63 Pos. 1890 Lin.Ft.	Slabs 4 pcs. Slabs for Clarks Creek	Water Barrels 2 pcs.	Total Operation Acct.	Expended in 1921 for 905- 20, Credited to Operation Acct. in 1922 Account	Total Including charges account APR 905-20
Sand and Gravel	767.53	329.63	108.17	42.88	.20	1248.40	1648.35	2896.75
Cement	2977.50	1240.17	305.20	121.11	.60	4644.58		4644.58
Rods	663.22	272.48	935.53	57.68		1928.94		1928.94
Wire	20.90	6.02	3.19	.61		30.72		30.72
Mesh	1607.11	671.85				2278.96		2278.96
Labor	3134.50	1205.04	563.51	181.81		5084.86		5084.86
Royalty on RCP	276.00	65.60				341.60		341.60
Plant Operation (General Expense)	1252.93	518.06	179.03	57.35	.32	2007.69	2397.38	4405.07
Repairs	426.42	176.31	60.93	19.52	.11	683.29	815.91	1499.20
Malthine for Slabs				3.50		3.50		3.50
Forms for Water Barrels					99.72			
Mesh for Water Bbls.					39.46	248.25		248.25
Labor making 17 cages and 2 bbls.					109.07			
Manufacturer's Cost	11128.10	4485.16	2155.59	484.46	249.48	18500.79	4861.64	23362.43
Depreciation less Pit Chgs.	1493.97	641.71	1162.49	95.38		3393.53		
Gravel Pit Chgs	79.47	34.13	11.20	4.64		129.44		
Total	12699.54	5161.00	3329.28	584.46	249.48	22023.76		

AUBURN CONCRETE PLANT 1921

-9-

COST OF MANUFACTURING PER LINEAL FOOT

	24" RCP		36" RCP		30' R.C.Piles	
	Rate	Cost	Rate	Cost	Rate	Cost
Sand and Gravel	.9658	.107315	.9658	.160952	.9658	.057233
Cement - Per Bbl.	2.42221	.416317	2.42221	.605552	2.42221	.161481
Rods	2.987074	.092732	2.991	.133047	3.24689	.495005
Wire	0.043634	.002922	0.04363	.002939	0.04363	.001688
Mesh - Per 100 sq.ft.	2.93771	.224708	2.93771	.328051		
Labor		.438269		.588398		.298153
*Royalty on R.C.P.		.038591		.032031		
Plant Operation						
(General Expense)		.175186		.252959		.094725
Repairs		.059622		.086089		.032238
		1.555862		2.190018		1.140523
Depreciation less pit charges		.208888		.313335		.615075
Gravel Pit Charges		.011112		.016865		.005925
Total Exclusive of Transportation		1.775662		2.520018		1.761523
Lineal feet manufactured		7152		2048		1890
Depreciation charged - total	1573	.44	675.84		1173.69	
" " - per ft.		.22	.33		0.621	

\* Note: Royalty at rate of 0.05 per lin ft paid on R.C.P. Manufactured prior to July 5, 1921, Expiration of Patent

Royalty paid on 5520 lin.ft. of 24" R.C.P.	.05	276.00
" " " 1312 " " " 36" R.C.P.		65.60

Total Royalty Paid in 1921	341.60
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AUBURN CONCRETE PLANT

Statement of Addition to Capital Investment charged to Investment Account for 1921

Steel Shed: AFE 1200-14 ED 146-20

Labor

Payroll January, 1921	20.88	
" March "	6.81	
" May "	<u>21.41</u>	49.10

Material

20,400# SH 56# rail J.607 So.Tacoma #1345	<u>325.55</u>	374.65
---	---------------	--------

Tools & Supplies charged to Investment Acct.

March, 1921 J-317

267' 2"x4"-16' Rgh.Lbr.	6.41	
3 8" White Wash Brushes	9.45	
3240' 9"x18"-24' Stringers	51.84	
1 5' Cross Cut Saw	2.00	
1 Stencilling Plate	3.32	
Store Expense	<u>4.38</u>	77.40

April, 1921

3 8" White Wash Brushes	9.45	
1 Smoke Stack 12'long, 21"diam.	42.71	
Store Expense	<u>3.13</u>	55.29

Sept., 1921 J.913

4 Sets Moulds	<u>3.83</u>	<u>136.52</u>
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Total Charged to Investment Acct for 1921 511.17

## Inventory of Equipment buildings and platforms-12-31-1919

4735.92



AUBURN CONCRETE PLANT

Inventory of Equipment, buildings and platforms 12-31-1919

	Value new	% of orig value	Present value
Forward			4735.92
<u>Sand and Gravel Bins</u>			
Labor and Material	689.29		
Freight	154.66		
	<u>843.95</u>	50	421.97
<u>Cement house 14'x30'</u>			
Frame construction not sealed inside-shingle roof-concrete and old stringer foundation			
Labor and Material	233.89		
Freight	18.97		
	<u>252.86</u>	50	126.43
<u>Boiler House Shed 1018-18</u>			
Labor and Material	92.13	30	27.68
<u>Slab platform 1018-18</u>			
Concrete-value 100% of new	581.83	100	581.83
<u>Slab forms 1018-18</u>	271.46	50	135.73
<u>Slab runway 1018-18</u>	39.91	50	19.95
<u>Template for bend, slab reinforcing rod 1018-18</u>	12.40	50	6.20
<u>Cement house floor-1018-18</u>	87.60	50	33.80
<u>Bulkhead</u> 1018-18	13.10	50	6.55
<u>Office and tool house size 12'x36'</u>			
Shingle roof frame	169.69		
Freight                      --              --	15.50		
	<u>185.19</u>	50	92.60
<u>Steel shed 16'x30' frame</u>			
shingle roof	182.87		
Freight                      ==              --	20.35		
	<u>203.22</u>	50	101.61
<u>Steel racks-4'x30' frame</u>			
shingle roof	51.22		
Freight                      --              --	6.20		
	<u>57.42</u>	approx. 40%+	23.12
Forward			6313.39

AUBURN CONCRETE PLANT  
Inventory December 31st, 1919.

Equipment, Buildings and Platform.

	Value new	% of orig value	Present Value
Forward			6313.39
<u>Water supply</u>			
1/2 interest in 4" wire bound wood pipe line 1800-ft long connecting with Company main of 10" wood pipe along main line R/w one half cost	260.11		
Freight -	6.25		
	<u>266.36</u>	.30	79.91
9 pile forms	457.57		
Freight -	27.80		
	<u>485.37</u>	.30	145.61
Pipe mandrels 24" and 36"	267.89		
Freight -	35.00		
	<u>302.89</u>	.30	90.87
<u>Loading track</u>			
L&N	456.79		
Freight -	100.92		
	<u>557.71</u>	.30	177.31
Pile storage ground built-1919	60.42		60.42
Pipe storage ground-built-1919	493.44		<u>493.44</u>
			\$ 7360.95



AUBURN CONCRETE PLANT  
Inventory December 31st, 1919.SUMMARY

Material on hand sheets #1-6 incl.	12217.46	12217.46
Manufactured product on hand sheet #7	<u>24961.50</u>	24961.50
<u>Investment a/c</u>		
Tools on hand sheets 8-9-10-11	279.09	
SH pipe and fittings salvaged from plant- sheets 12-13-14	36.58	
Equipment and buildings sheets 15-16-17	<u>7360.95</u>	
Value of Depreciated Investment	7676.62	<u>7676.62</u>
Total --	--	-- \$44855.58

Saint Paul, March 26th, 1930.

1919  
Mr. A. R. Cook,  
Principal Assistant Engineer,  
Tacoma, Washington.

Dear Sir:-

Your letter of the 5th with copy of annual report for Auburn concrete plant.

Although it seems somewhat inconsistent to charge at so much higher rate the balance of the products manufactured in 1919, I see <sup>other</sup> no way out of the difficulty, and approve the prices you recommend.

Yours truly,

Chief Engineer.

cc-Mr. M.F. Clements.  
Mr. H.A. Cribbs.



ANNUAL      REPORT

AUBURN      CONCRETE      PLANT

1919

Office of Principal Assistant Engineer,  
Tacoma, Washington, March 2nd, 1920.

## AUBURN CONCRETE PLANT-1919

(1)

## SUMMARY

COLUMN

	Total Investments 12/31/1919	16132.72
2	Additions to Capital Investment during 1919	<u>720.79</u>
1	Total Investment-12/31/1919	<u>16853.51</u>
3	Interest on depreciated investment 6%	530.27
4	Gravel Pit Charges	106.59
5	Repairs	<u>211.64</u>
6	Sum of Columns 3 - 4 and 5	<u>848.50</u>
7	Sinking Fund 1919 Column 12 minus 6	2296.10
8	Sinking Fund Total 12/31/1919	9591.00
9	Depreciated Investment Column 1 minus 8	7262.51
10	Manufacturers cost for 1919 including roy- alty	18070.62
11	Depreciation % column 10	.17402
12	Depreciation amount	3144.60



STATEMENT OF COST OF OPERATION AUBURN CONCRETE PLANT  
SEASON OF 1919

--00000--

<u>Summary</u>	<u>Total</u>	<u>Operation</u>	<u>Sinking Fund</u>	<u>Capital Account</u>
Inventory 1-1-1919. Material	8742.98	8742.98		
Labor and Material chgs 1919.	22107.13	21174.70	211.64	720.79
Royalty (voucher to be made in St. Paul Office)	370.40	370.40		
Less inventory 12-31-1919 Material	<u>12217.46</u>	<u>12217.46</u>		
Total Mfgs. Cost-1919	19003.05	18070.62	211.64	720.79
Mfgd. product on hand 1-1-'19 as per inventory -	14937.26 ?	14937.26 ?		
Manufactured product recd 1919	530.25	530.25		
Gravel Pit charges	106.59		106.59	
Interest on depreciated inv.	530.27		530.27	
Manufactured product shipped) away during 1919	12284.86			
Manufactured product on hand) 12-31-1919 as per inventory (at prices recommended for 1920 shipments)	24961.50	34101.76		
Depreciation on 1919 operation			3144.60	
	<u>\$2138.94</u>	<u>\$563.63</u>	<u>\$2296.10</u>	<u>\$720.79</u>

## CREDITS TO AUBURN CONCRETE PLANT-

Manufactured Product shipped away during 1919 and billed out on books. This includes 12 pcs 24" pipe shipped 1-7-1920 on 1919 order and included in 1919 account.

<u>Pipe</u>	<u>pcs</u>	<u>Lin Ft.</u>	<u>Total Credits</u>
24"	471	3768	6126.80
36"	161	1288	2884.80
48"	8	64	245.76
<u>Piles</u>			
30 ft	51	1530	2371.50
20 ft	10	200	320.00
15 ft	14	210	336.00
		<u>TOTAL</u>	<u>12284.86</u>

Charged to Auburn Concrete Plant

Manufactured Product received during year.

13-30' piles returned from Olequa	\$427.34	
8 pcs 24" RCP received from So Tacoma	<u>102.91</u>	\$530.25



MANUFACTURED PRODUCT ON HAND December 31st-1919

<u>Pipe</u>	<u>Pcs</u>	<u>Lin Ft</u>	<u>Price per Ft.</u>	
24"	509	4072	2.00	8144.00
36"	193	1544	3.00	4632.00
<u>Piles</u>				
30	33	990		
25	14	350		
20	72	1440		
15	33	495		
10	42	420		
		3695	1.90	7020.50
<u>Slabs</u>				
Single	29		135.00	3915.00
Double	10		125.00	1250.00
				24961.50

Note-

+ - This inventory is based on prices recommended for product now on hand as shown on sheet #11.

These prices are exclusive of cost of loading product for shipment from plant.

AUBURN CONCRETE PLANT

Inventory of Material on hand 12/31/1919

Corrugated reinforcing rods

	<u>Length</u>	<u>Unit Wt</u>	<u>Weight</u>	<u>Price per cwt</u>	<u>Amt</u>
Slabs 3/4" sq.	44083	1.913	84331	2.84	2395.00
3/4" rd.	13437'9"	1.502	20184	2.84	573.22 X
1/2" sq.	4549'1"	0.85	3867	2.68	103.63 X
Slab 1/2" rd.	48378'6"	0.67	32413	2.68	868.67
Piles 1-1/8" rd.	40848'4"	3.38	138067	3.12	4307.69
1" sq.	408'10"	3.4	1390	2.09	29.05 X
1" rd.	3'6"	2.67	9	2.09	.19 X
1-1/4" sq.	33'9"	5.31	179	2.94	5.26 X
5/8" sq.	1513	1.33	2012	2.14	43.06 X
5/8" rd.	1655'6"	1.043	1726	2.14	36.94 X
Pipe 3/8" sq.	85'6"	0.48	41	3.14	1.29 X 791.35
Pipe 3/8" rd.	67378'8"	0.375	25267	3.14	793.38
Pipe 1/4" sq.	14038	0.167	2344	2.76	64.69
Slab 1-1/4" rd.	5756	4.173	24019	2.94	706.16 ?
Pipe 1/4" rd.	36000	.167	6012	2.76	165.93
Pile Plates	9557 pcs	1.25 ea.	<u>11946</u>	5.13	<u>612.83</u>
			353807	10706.99	10706.99

Wire Mesh reinforcing for pipes Style #153

48"	7500 lin ft	30000 sq.ft.	
44"	4100 " "	<u>15033</u> " "	
		45033 " "	@ .032
			1441.06

Annealed wire

#16	335#	4.27	14.30	
#12	400#	3.98	15.92	
#11	75#	4.58	<u>3.44</u>	33.66

Malthine Paper

4-1/2 rolls	1.40		6.30
-------------	------	--	------

Lumber for slab forms

4"x4" 20' average length 1240 lin ft 1653 FBM @ 18.00 )  
 less 2% discount and Purch. Exp. 1%

29.45  
12217.46



AUBURN CONCRETE PLANTSummary operation for 1919

	<sup>760 per</sup> <u>24" Pipe</u>	<sup>146 per</sup> <u>36" Pipe</u>	<sup>2800'</sup> <u>Piles</u>	<u>Total</u>
Cement	2230.04	708.42	402.37	3340.83
Mesh	1652.89	484.90		2137.79
Rods	776.22	247.27	1442.73	2466.22
Wire	19.96	4.78	7.82	32.56
Royalty	304.00	66.40		<sup>7977.40</sup> 370.40
Labor	2686.58	909.69	933.56	4529.83
Sand and Gravel	635.63	208.25	159.12	1003.00
General	2682.29	845.96	661.74	4189.99
Total Mfg. Cost.	10987.61	3475.67	3607.34	18070.62
Depreciation less Pit chgs.	1142.37	244.80	1650.84	3038.01
Gravel Pit charge	67.55	22.13	16.91	106.59
	12197.53	3742.60	5275.09	21215.22
Unit cost per ft.	\$2.00618	\$2.81822	\$1.87061	

AUBURN CONCRETE PLANT - 1919

Cost of Manufacturing per lineal foot

	RC PILES		24" RC PIPE		36" RC Pipe	
	Rate	Cost	Rate	Cost	Rate	Cost
Sand and gravel	0.94	0.05643	0.94	0.10455	0.94	0.15681
Cement	2.12	0.14270	2.12	0.36678	2.12	0.53345
Rods	0.031	0.51161	0.0311	0.12767	.0311	0.18620
Wire	0.04343	0.00277	0.04343	0.00328	.04343	0.00360
Mesh			3.19708	0.27186	3.19708	0.36514
Labor		0.33105		0.44187		0.68501
Royalty				0.05000		0.05000
Plant operation(General)	0.23466			0.44117		0.63702
Depreciation less pit chg.	0.58540			0.18789		0.18433
Gravel Pit charge		0.00599		0.01111		0.01666
<hr/>						
Total exclusive of trsp.	1.87061		2.00618		2.81822	
Lineal feet manufactured	2820		6080		1328	
Depreciation charge-total	1667.75		1209.92		266.93	
Depreciation per lin. ft.	0.5914		0.199		0.201	



## AUBURN CONCRETE PLANT

Statement of Additions to Capital Investment during year charged  
to Investment Account for 1919-

Labor charges - from payroll1919

May	Building road to plant		86.93
June	Pipe storage grounds-labor		444.84
July	" " " "	48.60	
"	pile " " "	<u>55.90</u>	104.50
August	" " " "		<u>4.52</u>
	Total labor charges from payroll		640.79
May	Building road to plant Team hire		20.00
June	" " " " " "		<u>60.00</u>
			720.79

## AUBURN CONCRETE PLANT

Statement of charges for repairs and renewals charged  
to investment account during-1919.

LABORLabor charges from Payroll-

1918			
September	Back pay Supt.	2.71	
1919			
March	Unload 4"x4"	28.16	
	Repair bunkers	2.26	
	" screens	53.01	
	" derrick	12.96	
	" 24" pipe forms	26.74	123.13
April	" bunkers	9.70	
	" engine	1.98	
	" pump	1.32	
	2 office	2.63	15.63
	Total labor charges from payroll	141.47	
May 8	Labor load.ties for concrete plant platform	14.88	
	Repairs on boiler	3.42	159.77

MATERIAL

4 kegs 60d nails	13.48		
1 keg 6d nails	3.57		
1 keg 8d nails	3.46		
Store expense	2.05	22.56	
Drayage		3.50	
1 - 1-1/2" union	.24		
2 - 7/8" water guage coil	15.40		
1 - 7/8" guage cock	7.82		
Store expense	2.35	25.81	51.87
Total charges for repairs and renewals			211.64



(10)

## Products Manufactured and on Hand

	Pipe				Piles				Slabs	
	24"	36"	48"	30	25	20	15	10	Single	Double
On hand 1/1/1919 from last season	212	188	8	35	2	10	47	42	29	10
Total 1919 product	760	166		36	12	72	0	0	0	0
*Total shipped away '19	471	161	8	51		10	14	0	0	0
Rec'd. during 1919	8			13						
Surplus on hand	509	193	0	33	14	72	33	42	29	10

\* Includes 12 pcs 24" pipe shipped 1-7-1920 on 1919 order and included in 1919 accounts.

AUBURN CONCRETE PLANT - 1919 OPERATION

Statement showing actual cost and recommended price

	Prices authorized for 1919 shipments		Actual cost of 1919	Recommended price for 1920 shipments
	Product	Product	Product	
<u>Pipe</u>				
24"	1.60	1.65	2.00	2.00
36"	2.10	2.20	2.813	3.00
48"	3.84	3.84	None made	
<u>Piles</u>				
30'	1.55	1.55	1.87	1.90
25'	1.50	1.55	1.87	
20'	1.60	1.55	1.87	
15'	1.60	1.55	None mde	
10'	1.20	1.55	"	
<u>Slabs</u>				
6-1/2x16 Double	125.00	125.00	None mde	125.00
7 x 16 Single	135.00	135.00	" "	135.00

NOTE-Recommended price is exclusive of cost of loading product for shipment from plant.

Office of Principal Assistant Engineer,  
Tacoma, Washington, 3/2/1920



ANNUAL REPORT  
AUBURN CONCRETE PLANT  
1920

Office of Asst. Chief Engr. & Engr. Mtce. of Way,  
Seattle, Washington, February 10th, 1923.

AUBURN CONCRETE PLANT 1920

S U M M A R Y

<u>Columns</u>		
	Total Investment 12/31/1919.	16853.51
2	Additions to Capital Investment during 1920	192.20
1	Total Investment 12/31/1920	17045.71
3	Interest on depreciated investment 6% on 7676.62	460.60
4	Gravel pit charges	.00
5	Repairs and Renewals (material only)	133.54
6	Sum of Columns 3-4-5.	594.14
7	Sinking Fund, 1921	594.14
8	Sinking Fund Total 12/31/1921	8582.75
9	Depreciated Investment 12/31/1921	8462.96
10	Manufacturer's Cost (Operation Expense of Plant November and December, 1920)	1716.44



AUBURN CONCRETE PLANTSTATEMENT OF COST OF OPERATION SEASON OF 1920

	<u>Total</u>	<u>Operation</u>	<u>Sinking Fund</u>	<u>Capital Account</u>
Inventory 12/31/1919 Material	12217.46	12217.46		
Material and Supplies recd 1920	1770.61	1536.12	133.54	100.95
Labor on Steel Shed Capital a/c	91.25			91.25
Labor Repairs and Renewals charged Operation A/C	1124.89	1124.89		
Labor Operation (exclusive of repairs and renewals)	591.55	591.55		
Less Inventory 1/1/21 Material	12572.40	12572.40		
Credit Reinforcing Rods Shipped Out	629.31	629.31		
	<u>2594.05</u>	<u>2268.31</u>	<u>133.54</u>	<u>192.20</u>
Manufactured product on hand 12/31/19	24961.50			
Manufactured product shipped away 1920	14837.00			
Manufactured product on hand 1/1/21	10124.50			
Interest on depreciated investment 6% on \$7676.62	460.60		460.60	
	<u>3054.65</u>	<u>2268.31</u>	<u>594.14</u>	<u>192.20</u>

CREDITS TO AUBURN CONCRETE PLANT

MANUFACTURED PRODUCT SHIPPED AWAY DURING 1920 and BILLED  
OUT ON BOOKS

<u>Pipe</u>	<u>Pcs.</u>	<u>Lin. Ft.</u>	<u>Price</u>	<u>Operation</u>	<u>Investment</u>	<u>Total</u>
24"	498	3984	\$2.00			7968.00
36"	166	1328	3.00			3984.00

Piles

30 ft.	19	570				
25 ft.	4	100				
20 ft.	14	280				
Total Piles		950	1.90			1805.00

Slabs Single

8		135.00				1080.00
						14837.00

Credits to Auburn Concrete Plant, Operation Account, for reinforcing rods shipped from stock.

Reinforcing rods shipped out 629.31

Charges to Auburn Concrete Plant, Operation Account, Material received during 1920.

Reinforcing rods received	893.70		
200 # No.16 wire	14.71		
Lumber for saddles	253.18		
Coal 50 tons and misc. supplies	325.64		
Drayage	3.00		
Lumber (Repairs)	26.64		
Wire - Screens	19.25		
Total Material	1536.12	1536.12	1536.12

Pay Roll 1920

Nov. Pay Roll (Repairs & Renewals)	830.27		
Dec. Pay Roll (Repairs & Renewals)	294.62	1124.89	
Dec. Pay Roll (Operation exclusive of repairs & renewals)	591.55	591.55	
Total Pay Roll charge Operation A/C		1716.44	1716.44
			2623.25



AUBURN CONCRETE PLANT

MANUFACTURED PRODUCT ON HAND DECEMBER 31st, 1920

<u>Pipe</u>	<u>No. Pcs.</u>	<u>Lin. Ft.</u>	<u>Price Per Foot</u>	<u>Amount</u>	
24"	11	88	2.00	176.00	
36"	27	216	3.00	<u>648.00</u>	824.00

Piles

30'	14	420	1.90	798.00	
25'	10	250	1.90	475.00	
20'	58	1160	1.90	2204.00	
15'	33	495	1.90	940.50	
10'	42	420	1.90	<u>798.00</u>	5215.50

Slabs

Single Track 21		135.00	2835.00	
Double Track 10		125.00	<u>1250.00</u>	<u>4085.00</u>
				\$10124.50

	<u>Rinforced Concrete</u>		<u>Piles</u>					<u>Slabs</u>	
	<u>Pipe</u>		<u>30'</u>	<u>25'</u>	<u>20'</u>	<u>15'</u>	<u>10'</u>	<u>Single</u>	<u>Double</u>
On Hand	<u>24"</u>	<u>36"</u>							
1/1/1920	509	193	33	14	72	33	42	29	10
Made 1922	0	0	0	0	0	0	0	0	0
Shipped									
1920	498	166	19	4	14	0	0	8	0
On Hand									
12/31/20	11	27	14	10	58	33	42	21	10

AUBURN CONCRETE PLANT

INVENTORY OF MATERIAL ON HAND JANUARY 1, 1921

Corrugated Reinforcing Rods

	<u>Size</u>	<u>Length</u>	<u>Unit Wt.</u>	<u>Weight</u>	<u>Price Per Cwt.</u>	<u>Amount</u>
Pile	1-1/8" Rd.	2433'-4"	3.38#	8200	3.85065	307.59
Pile	1-1/8" Rd.	43041'-1"	3.38#	145479	3.12	4538.94
	1" Sq.	396'-11"	3.4#	1350	2.09	28.22 x
	1" Rd.	32	3.67#	117	2.09	2.45 x
Slab	3/4" Sq.	42710'-8"	1.913	81705	2.84	2320.42
	3/4" Rd.	2782'-6"	1.502	1479	2.84	42.00 x
	5/8" Sq.	1487'-8"	1.33	1979	2.14	42.35 x
	5/8" Rd.	1389'-6"	1.043	1449	2.14	31.00 x
	1/2" Sq.	4608'-8"	0.85	3918	2.68	105.00 x
Slab	1/2" Rd.	22095'	0.688+	15221	3.75065	586.10
Slab	1/2" Rd.	21452'-3"	0.67	14373	2.68	385.20
Pipe	3/8" Rd.	19774'	0.375	7415	3.14	232.83
Slab	1-1/4" Rd.	94'-9"	5.31	503	2.94	14.79
	1-1/4" Sq.	13261'-11"	0.167	2215	2.76	61.13 x

Plain reinforcing rods

Slab	1-1/4" Rd.	5762'-11"	4.173	24048	2.94	707.01 ?
	1/4" Rd.	36000'	0.167	6012	2.76	165.93

Plain reinforcing plates  
for concrete piling

2-1/8"x1-1/8"x1'-3-3/4"						
2 hole 9557 pcs. 1.25 ea.				11948	5.13	612.83
				327411		10183.79

Reinforcing rods to be taken from Auburn Concrete Plant stock for use  
in Stampede Tunnel flume.

AFE 905-20 Transfer not yet made on book account

1/2" Rd.						
17'-6" 134 pcs.	2345'	0.67	1571#	2.68		42.10
35' 532 "	18620'	0.67	12475#	2.68		334.33
27'-6" 10 "	275'	0.67	184#	2.68		4.93
3/8" Rd.						
56'-0" 780 pcs.	43680'	0.375	16380#	3.14		514.33
			30610#			895.69 x

Wire Mesh Reinforcing for Pipes Style #153

48" 7500 lin.ft.	30000 sq.ft.					
44" 4100 "	" 15033 "					
	45033 "	" 0032				1441.06

Annealed Wire

#16 335#	4.27 cwt.	14.30				
#16 200#	5.95 Cwt.	11.90				
#12 400#	3.98 cwt.	15.92				
#11 75#	4.58 cwt.	3.44				45.56

Malthine Paper

4-1/2 rolls	1.40					6.30
-------------	------	--	--	--	--	------

total material on hand 1/1/1921 12572.40

28.22  
2.95  
42.35  
31.03  
105.00  
61.13  
270.15  
42.00  
312.15

312.15  
295.69  
1207.84



AUBURN CONCRETE PLANT

Statement of additions to Capital Investment charged to Investment account for 1920.

Steel Shed AFE 1200-14 ED 146-20

Labor Charges from Pay Roll 1920

November	Draftsman making sketch	4.75	
November	Labor building steel shed	70.57	
December	Labor building steel shed	<u>15.93</u>	91.25

Material charges for 1920

December	11 squares roofing	37.29	
	Drayage	4.00	
	Lumber for steel shed	<u>59.66</u>	<u>100.95</u>

Total Addition to Capital Account			192.20
-----------------------------------	--	--	--------

7-

AUBURN CONCRETE PLANT

Statement of charges for Repairs and Renewals charged to Investment Account during 1920.

Material

Feb.	1 bronze plate for boiler		.47
Dec.	1 set knives for bolt cutter		2.35
"	1/4" Wood block		1.07
"	50 ft. Wire		13.55
"	1 doz. Crosby clamps		4.29
"	(1100# nails	41.60	
	(22 sheets galv. iron	32.71	
	(Pipe fittings	7.70	
	(Oil can	2.04	
	(18# 1/2" nuts	1.41	
	(175# nails	6.43	
	(2-10 qt. Galv. water pails	1.11	
	(1-1/2" Globe valve	.74	
	(2 Gal. Boiler Paint	.94	
	(1 Repaired can	.95	
	(125# 1/2" x 10" Bolts	5.25	
	(18# 5/8" Washers	1.71	
	(6 Padlocks	2.89	
		<u>105.48</u>	
	Store Expense	<u>6.33</u>	<u>111.81</u>
	Total		<u>133.54</u> 133.54



1917

## Auburn Concrete Plant - 1917

Investment Account at end of 1916	1372776
Slab platform, slab forms, template for bending slab reinforcing New tools - 1917 -	246496
Total investment - 1914 - 1917 -	1613272
Credit to depreciation at end of 1916	332861?
Depreciation 1917 - 22% of \$2322101 / cost of operation)	510862
	843723
Fabric and material for repairs and renewals 1917	79464
Credit to depreciation at end 1917	764259
Balance in investment account	849013

Tocoma Jan 23, 1918.

Tacoma, Washington, January 23, 1918.

Mr. A. M. Burt,

Chief Eng'r of Maintenance of Way,

Saint Paul, Minnesota.

Dear Sir:-

Herewith report covering operation of Auburn Concrete  
Plant for season 1917:

SUMMARY INVESTMENT ACCOUNT 1917

Investment account at end of season 1916	\$13,727.76
Slab platform, slab forms, template for bending slab reinforcing, new boiler	<u>2,404.96</u>
Present investment	\$16,132.72

SUMMARY DEPRECIATION, REPAIRS AND RENEWALS 1917

Credit to depreciation at end of season 1916	\$ 3
Depreciation 1917 - 22% of \$23,221.01 (cost of operation)	<u>5,108.62</u>
	\$ 8,437.23
Labor and material for repairs and renewals season 1917	<u>794.64</u>
Credit to depreciation at end of season 1917	\$ 7,642.59
Balance in Investment Account	\$ 6,490.13



SUMMARY OPERATION ACCOUNT 1917

	<u>24"</u>	<u>36"</u>	<u>48"</u>	<u>Slabs</u>	<u>Piles</u>	<u>Total</u>
Cement	1927.87	1011.71	170.28	1994.32	393.86	5497.74
Mesh	1436.40	894.02				2130.42
Bars	739.74	374.76	317.69	4177.64	1077.13	6686.96
Wire	27.63	11.03	9.45	24.71	14.05	86.87
Royalty	321.60	116.00	13.60			453.20
Labor	2178.37	533.52	287.99	1291.22	832.58	4223.68
Sand and Gravel	411.81	222.81	34.96	585.70	116.89	1371.17
Maltime Paper				51.98		51.98
	6143.42	2963.85	835.97	8125.57	2433.21	20502.02
General	814.74	393.07	110.87	1077.62	322.69	2718.99
	6958.16	3356.92	946.84	9203.19	2755.90	23221.01
Deprecia- tion	1530.79	738.52	208.30	2024.70	606.31	5108.62
	86488.95	34095.44	81155.14	111227.89	23362.21	228329.63

General expenses include cost of coal, oil, time of Plant Superintendent doing clerical work, pumping water, handling cinders, and other general items that cannot be charged directly to each product. This amounts to \$2718.99, and is proportioned against each product on the following basis, for 24" pipe -  $\frac{6143.42}{20502.02}$  of \$2718.99 - Depreciation -  $\frac{6958.16}{23221.01}$  of \$5108.62, and for balance of products likewise.

Operation cost per lineal foot 24-inch pipe compared  
with cost for 1916 - product 894 pcs. = 6432 lin. ft.:

	<u>1917</u>	<u>1916</u>
Cement	.29973103	.28042421
Sand and Gravel	.06402518	- - -
Mesh	.22332089	.21945652
Bars	.11500932	.09739432
#16 Wire	.00429570	.00384208
Labor	.19875155	.19228411
Royalty	.05000000	.04957922
General	<u>.12666977</u>	<u>.24155042</u>
	\$1.0818034	\$1.08483088
Depreciation	<u>.2379960</u>	<u>.17998037</u>
	\$1.3197994	\$1.26481125



Operation cost per lineal foot 36-inch pipe compared  
with cost for 1916. Product 290 pgs. = 2320 lin. ft.:

	<u>1917</u>	<u>1916</u>
Cement	.43608189	.40886567
Sand and Gravel	.00603879	- - -
Mesh	.29914655	.29467910
Bars	.16153448	.14023880
#16 Wire	.00475431	.00422761
Labor	.22996551	.22706343
Royalty	.05000000	.05000000
General	<u>.16942672</u>	<u>.32227611</u>
	\$1.44694825	\$1.44735072
Depreciation	<u>.3183276</u>	<u>.24013059</u>
	\$1.76527585	\$1.68748131

Operation cost per lineal foot 48-inch pipe compared  
with cost for 1916. Product 39 pes. = 312 lin. ft.:

	<u>1917</u>	<u>1916</u>
Cement	.54576923	.51023809
Sand and Gravel	.11205128	- - -
Bars	1.0182371	.92482142
#16 Wire	.03028846	.00279761
Labor	.92304487	.71446428
Royalty	.05000000	.05000000
General	<u>.35538256</u>	<u>.63083333</u>
	3.0347432	2.83315473
Depreciation	<u>.6676282</u>	<u>.47000000</u>
	\$3.7023714	\$3.30315473



OPERATION COST PER LINEAL FOOT FOR PILES

Product	<u>30'</u>	<u>25'</u>	<u>20'</u>	<u>15'</u>	<u>10'</u>
Pieces	25	36	10	73	42
Feet	750	900	200	1095	420

	<u>30'</u>		<u>25'</u>		<u>20'</u>		<u>15'</u>		<u>10'</u>	
	<u>1917</u>	<u>1914</u>	<u>1917</u>	<u>1914</u>	<u>1917</u>	<u>1914</u>	<u>1917</u>	<u>1914</u>	<u>1917</u>	<u>1914</u>
Cement	.11641333	.09946913	.11632222	.097848	.1173	.09618	.11623744	.10066666	.1210000	- -
Sand and Gravel	.03414666	---	.03457777	---	.0349	---	.03414611	---	.03521428	- -
Fill Wire	.00056000	---	.00338888	--	.0042	---	.00564383	---	.00848238	- -
labor	.23674741	.14787654	.18922222	.17067200	.23795	.17017	.23664840	.25226666	.36048238	- -
Bars	.30414666	.26101234	.31046888	.34552000	.32000	.35769	.32813698	.31202666	.34826190	- -
General	.09177333	.11358924	.08673333	.13718400	.09475	.13942	.09851141	.14856000	.11661904	- -
	.78378739	.62193825	.74073339	.751224	.8091	.78346	.84132417	.81351998	.99591996	- -
Deprecia- tion	.1724834	.13895061	.16206667	.167840	.17880	.17057	.1850867	.18176000	.2191190	- -
	.95624079	.76088887	.90369997	.919064	.98710	.93403	1.02641087	.99527998	1.21511896	- -

OPERATION COST PER SLAB

	<u>73</u> <u>Single</u>	<u>1917</u> <u>Double</u>
Cement	\$1.803150	19.175714
Sand and Gravel	6.402465	5.634285
#16 Wire	.264794	.256190
Galvanized Paper	.553013	.552657
Labor	13.718904	13.797142
Bars	46.023698	38.948095
General	<u>11.772191</u>	<u>10.392857</u>
	\$100.538215	\$88.757140
Depreciation	<u>22.118356</u>	<u>19.526666</u>
	\$122.656571	\$108.283806



Depreciation of plant added to cost of product is arrived at as follows:

Net cost of operation, exclusive of depreciation, \$23221.01  
 22% of operation cost, \$23221.01 \$ 5108.62

For interest on investment to be charged to Additions and Betterments, etc.

\$16132.72 ÷ 6 = 2688.79; this divided by \$23221.01 gives 4.1684664% of cost of production to be added to bills where proper.

Average cost of materials for 1917 as compared with 1916 for pipe and 1914 for piling:

	<u>1917</u>	<u>1916</u>	<u>1914</u>
Cement, per sack	.43439791	.406284	.362946
Sand and Gravel, per cu. yd.	.00057622	- -	- -
Mesh, per ft.	.00107172	.00105572	- -
Bars for pipe, per ft.	.00013013	.00011223	- -
Bars for slabs, per ft.	.00056669	- -	- -
Bars for piling, per ft.	.00038555	- -	.00040004
Wire for pipe and slabs, per ft.	.00007313	.00005907	- -
Wire for piling, per ft.	.00282128	- -	.00075876
Galvanized Paper, for slabs, per ft.	.01084272	- -	- -

No comparison can be furnished for sand and gravel as for previous years no particular cost record was kept; cost was absorbed under "General". The increase on bars is not as much as it would have been if all bars consumed had been purchased this year. We had a considerable quantity on hand from 1916 due to

cancellation of a large portion of the Flathead Line order.  
The increases for other items are slight and due to increased  
cost of material.

SALARIES AND WAGES FOR 1917 COMPARED WITH 1916

	<u>1 9 1 7</u>		<u>1 9 1 6</u>
	<u>1st Half</u>	<u>2nd Half</u>	
Foreman	\$110.00	\$121.00	\$100.00
Engineer	3.85	4.125	3.50
Carpenters	3.30	3.575	3.00
Pumpman	3.025	3.30	2.75
Concrete Helpers	2.75	3.025	2.50



MATERIAL ON HAND DECEMBER 31, 1917

1521	ft.	3/4"	round reinforcing for piles				
140	pcs.	1-1/8"	x 28'10"	corrugated bars for piles			
3	"	1-1/8"	x 27'	"	"	"	"
2	"	16"	x 18"	pile top bands			
3402	"	2 1/4"	x 1-1.8"	x 1' 3-3/4"	flat bars for piles		
8	"	3/8"	x 17'3"	corrugated bars for pipe			
13	"	3/8"	x 10'8"	"	"	"	"
93	"	3/8"	x 7'10"	"	"	"	"
32	"	3/8"	x 2'0"	"	"	"	"
1	"	3/8"	x 13'4"	"	"	"	"
10	lbs.			#16 wire			
50	gals.			car oil			
6	tons			coal			
20	gals.			engine oil			
15	"			lubricating oil			
2	kegs			40d spikes, 200#			
1	gal.			boiler paint			
30	lbs.			gear grease			
2				brooms			
11	pcs.	5"	x 7"	x 6'	fence posts		
376	pcs.	1-1/8"	x 24'4"	corrugated bars for piles			
460	"	1-1/8"	x 19'10"	"	"	"	"
298	"	3/4"	round x 33'	"	"	"	slabs
70	"	5/8"	"	x 17'6"	"	"	"

37  
X 336 pcs. 3/4" rd. x 16'6" corrugated bars for slabs

X 755 " 3/4" " x 15'6" " " " "

X 93 " " " x 14'6" " " " "

X 383 " " " x 13'6" " " " "

962 " " sq. x 6'6" " " " "

29 " 1/2" rd. x 30'6" " " " "

100 " " " x 27'6" " " " "

126 " " " x 17'6" " " " "

655 " " " x 15'6" " " " "

94 " " " x 14'6" " " " "

852 " " " x 6'9" " " " "

24 " " " x 6'3" " " " "

2376 " " " x 4'0" " " " "

2/3 roll Saltine paper " "

43 pcs. 4 x 4 x 16 for saddles for pipe

87 sacks cement

100 X 1 16' pile - 1914

75 lbs. #11 wire for piles.



Total material used in manufacture of 1917 products:

Sand and Gravel	2447.3 cu. yds.
Cement	12656 sacks
Mesh	19878 feet
Rods for pipe	110051 "
" " piles	27937 "
" " slabs	73719 "
Wire for pipe and slabs	99573 "
" " piles	5580 "
Walthing Paper	4794 "

Products manufactured and on hand:

	<u>P I P E</u>			<u>P I L E S</u>					<u>S L A B S</u>	
	<u>24"</u>	<u>36"</u>	<u>48"</u>	<u>30'</u>	<u>25'</u>	<u>20'</u>	<u>15'</u>	<u>10'</u>	<u>Single</u>	<u>Double</u>
On hand from last season,	130	57	10	41	10	10	25	0	0	0
Total Pipe made 1917	804	290	39	25	36	10	73	42	73	21
Total shipped 1917	874	315	46	66	23	20	69	0	59	21
On hand	60	32	3	0	23	0	29	42	14	0
Orders on hand unfilled	0	0	0	0	0	0	0	0	14	0
Surplus on hand no disposition	60	32	3	0	23	0	29	42	0	0

You will note that the manufacturing cost of pipe seems about the same as last year, even with increased cost of labor. The increased cost of labor was offset by putting into use more 24 and 36-inch forms, enabling larger output with very little more labor cost than during 1916, when less forms were used. The 48-inch form is in poor shape, requiring more care in pouring than for 24 and 36-inch, and the labor cost was also increased due to making this size pipe separately, whereas, in 1916 the 48-inch size was poured along with the smaller sizes. The general expense is considerably less this year, due to this office giving the Plant Superintendent instructions to watch this item carefully and include under that head only such items as could not properly be assigned to any of the items which go to make the products.

A.F.B. is <sup>being</sup> prepared to cover additional investment in plant during latter part of 1916 and this year.

Respectfully submitted,

AMW-W



# NORTHERN PACIFIC RAILWAY COMPANY

## AUBURN CONCRETE PLANT

COMPARISON OF DEPRECIATION 1914 TO 1917.

### OPERATION

	24" PIPE		36" PIPE		48" PIPE		SLABS		PILES		Total Cost Less Deprecia- tion	Total Dep. Charged off	Total Cost plus Deprecia- tion	Invest- ment at end of year	Dep. per cent. of cost	Dep. per cent. of invest-	Repairs and Renewals Credit	Repairs and Renewals Debit
	Number of Ft. made	Cost	Number of Ft. made	Cost	Number of Ft. made	Cost	Number of Slabs made	Cost	Number of Ft. made	Cost								
1914	2340	\$ 2983.93	2076	\$ 4427.99					3438	\$ 3022.39	\$ 8869.69	\$ 1914.62	\$10484.31	\$13675.89	22.34	14	\$ 1914.62	\$ 780.43
1915	4240	6261.33	1088	1782.39	184	\$1083.06					6212.16	1914.62	8126.78	13675.89	30.82	14	1914.62	1050.39
1916	6608	8378.05	2683	4522.51	168	854.94					11640.56	1914.62	13495.50	13675.89	16.58	14	1914.62	584.43
1917	6432	8488.99	2320	4099.44	312	1155.14	94	\$11227.89	3369	3362.21	23221.01	5108.62	28329.63	16132.72	22.00	32	5108.62	794.64
Total																		
4 Yrs.	19620	\$25012.26	7664	\$14828.43	754	\$2793.14	94	\$11227.89	6800	\$ 6434.60	\$49543.74	\$10852.48	\$60396.22	\$57160.35	91.74	74	\$10852.48	\$3209.89
Average																		
4 Yrs.	4880	\$ 6253.06	1916	\$ 3707.11	161	\$ 698.26	24	\$ 2806.97	1700	\$ 1608.65	\$12385.93	\$ 2713.12	\$15099.05	\$14290.10	22.93	18	\$2713.12	\$ 802.47

Office of Engineer of Maintenance of Way,  
Tacoma, Washington, January 23, 1918.



9265  
MFC

Saint Paul, June 22, 1923.

Mr. A. R. Cook,  
Asst. Chief Engineer,  
Seattle, Washington.

Dear Sir:-

Referring to your letter of June 18th in regard to prices for products manufactured at the Auburn Concrete Plant, to be charged out in 1923.

In making up the cost prices in my letter of June 6th, I have taken into consideration the cost of products from the time the plant was first constructed to January 1, 1923 and the assignment of depreciation on plant was made on the basis of weights. This may not agree exactly with the process used in obtaining \$1.87 as the cost of piling, but it is made up so that the division of plant cost of the various products would be on a uniform basis. However, if you have charged out piling at \$1.90 and slabs at \$135.00, I would let the bill stand and use those prices for the remainder of the season. I think the final adjustment of accounts will not vary a great deal one way or the other.

Early in the cost accounting record, a method was established by which a certain percentage of the cost of manufacture was added to the invoices of manufactured product to be applied as depreciation of the plant. This method was followed until the Federal administration made it mandatory on the company to close up the account on completed work within sixty days. Such an arrangement made it necessary to fix the price in advance. The fixing of the price eliminated a fixed percentage for depreciation, as it must vary to absorb the varying cost



Mr. Cook

-2-

of manufacture. The depreciation of plant in any year depends on the money left over at the end of the year.

I understand that you have continued to prepare invoices, using a fixed amount for depreciation. Such a method is wrong and should not be continued. I have explained the matter to Mr. Springer many times but apparently he does not understand it. In charging out manufactured products, you should use the fixed price, with no mention on the invoice of an amount for depreciation.

The second item which you claim is lacking is in regard to products entering into joint account. If you will read my letter of June sixth you will note I stated that future, and what I mean by that is the year 1924 and thereafter, or after the analysis has been made of the 1923 cost data, prices will be fixed for Northern Pacific exclusive territory and other prices, including overhaul charges, for territory joint with other companies.

For material manufactured previous to June 1, 1923, prices outlined in my letter of June sixth should be used but I would not make any change in invoices already furnished.

As soon as the plant is closed for 1923, make a report showing the cost of manufacture and the sale prices for Northern Pacific and joint lines can be fixed.

Yours truly,

Bridge Engineer.

Re: Bill of material and  
prices to be charged for  
products from Auburn  
Concrete Plant.

Seattle, Washington, June 18, 1923.

Mr. M. F. Clements,  
Bridge Engineer,  
St. Paul, Minn.

Dear Sir:

Acknowledging your favor of the 6th. inst. in  
re prices at which products of the Auburn Concrete  
Plant should be charged out in 1923.

I think that your price of \$1.50 per lin. ft.  
is too low for the piling. Our figures show that these  
piles have cost \$1.87 per lin. ft. and we have been  
billing them out at \$1.90. Bills have been rendered  
for all piles shipped this season, also for part of  
the slabs which have been billed out at the old price  
of \$135.00. Will make corrected bills for those already  
covered and use the new price for the remainder of the  
bills.

Your letter leaves us a little lacking on some  
particulars:

1. Are you using the same unit price for charges  
to cover depreciation?
2. We are holding up the billing of all pro-  
ducts entering into joint account, for lack  
of information as to the prices we should use.  
You state in your letter that you think we  
should continue to add a certain amount to  
the cost of the pipe for the purpose of billing  
against joint territory but do not state how  
much you think that addition should be. Please  
advise what percentage we should add to the  
product going into joint territory in excess  
of those going into exclusive territory?

Yours truly,

*A. R. Cook*

ARC:B



SA 65

MFC

Saint Paul, June 6, 1923.

Mr. A. R. Cook,  
Asst. Chief Engineer,  
Seattle, Washington.

Dear Sir:-

Referring to your letter of May 22nd to Mr. Stevens in regard to prices on concrete products now in stock at the Auburn concrete plant.

I have had a man working over the cost records for some little time and have arrived at prices to be applied on the stock which was on hand January 1, 1923 and in arriving at the prices which I think should be used for that stock, have taken into consideration the cost of labor and material, repairs and renewals, pit charges on sand and gravel, interest, insurance and taxes, depreciation of plant and salvage value of plant.

If we consider that all the charges from the first construction of the plant to January 1, 1923 be covered by the sales and the present salvage value of the plant, the following prices are required for the sale of material in stock:

24" Reinforced Concrete Pipe	\$1.90 per lin. ft.	1.94
36" " " "	2.80 " " "	2.86
Reinforced Concrete Piles	1.50 " " "	1.54
Single Track Slabs	\$165.00	157
Double " "	185.00	171

I think you should use these prices in charging out the material to culverts in 1923.

When the concrete plant is shut down for the year 1923, we will again go over the cost data and arrive at a figure to cover

Mr. Coe

-2-

the product manufactured in 1923 and in making charges in the future, I think we should continue to add a certain amount to the labor and material costs on pipe which is shipped into joint territory and for pipe shipped in Northern Pacific territory, the prices should be sufficient to cover the cost of construction only.

Yours truly,

Bridge Engineer.





FORM 1385

# Telegram—Be Brief

MFC

Time Filed

Ba 65 M.

Saint Paul, May 12, 1923

A R Cook  
Seattle Wash

Your letter to HES about Auburn Concrete Plant.

Requisitions for all bridge material will be made by Superintendent.

Koren can give you list of material required. A-8

M F CLEMENTS

Bu 65-

MFC

Saint Paul, March 17, 1923.

Mr. H. E. Stevens,  
Chief Engineer.

Referring to your notation on Mr. Cook's letter of March 13th in regard to additional slabs and piles to be manufactured at Auburn for future requirements.

Mr. Cook will manufacture nine slabs 7' x 16' for 1923 requirements. I think it would be advisable to make up additional stock material as follows:

20	Single track slabs	7' x 16'	
10	Concrete piles	30' long.	
25	"	20'	"
20	"	15'	"

Mr. Cook's letter is returned herewith.

Yours truly,

Bridge Engineer.

Encl.