

Northern Pacific Railway Company. Engineering Department Records.

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Version 3
August 20, 2018

2444

St.Paul - April 13th, 1923.

Mr. E. L. Grimm:

In pursuance of your letters of February 23rd, and March 27th, I have prepared and hand you herewith a tabulated statement showing number and length of stalls of engine houses and length and make of turntables on the system. The statement contains six sheets and is dated April 2nd, 1923.

Assistant Chief Engineer

SJB/L
encl.

FORM 1386

2444

Telegram—Be Brief

Time Filed

M.

388 cfsi

Seattle Apr 9 1923

H E Stevens

ST Paul

M 19 Two stall enginehouse at South Bend is of frame construction

L-19

ARCook

1054p

JMP
To note
AJB 4/10

J.M.P.
Our statement is made showing frame const.
J.M.

J.B.
Recvd made
4/9

FORM 1936

Telegram—Be Brief

Time Filed

M.

St.Paul - April 9th, 1923.

A. R. Cook,
Seattle, Wash.

Please advise if the two-stall engine house at South Bend is of brick or frame construction. M-13

H. E. Stevens

St.Paul - April 2nd, 1923.

Mr. E. L. Grimm,
Mechanical Engineer.

The roundhouse data requested in your letters of February 23rd, and March 27th, is being compiled and I expect to be able to send you the information very soon.

Assistant Chief Engineer

SJB/L

TUBE 25

St. Paul, March 27, 1923.

OFFICE OF
CHIEF ENGINEER
MAR
29
1923
NOR. PAC. RY.
ST. PAUL, MINN.

Equipment-Locations
Roundhouses
Data

22G16

Mr. S. J. Bratager:

On February 23 I wrote you per the attached copy of letter. Can you now advise?

E. L. Grimm
Mechanical Engineer.

P

St. Paul, February 23, 1923.

Equipment-Locations
Roundhouses
Data

22G16

Mr. S. J. Bratager:

I have several requests from Master Mechanics for up to date information similar to what is shown on our drawing S222-E. Can you furnish me data to bring this drawing up to date?

TRW-p

Mechanical Engineer.

J. N. P.

Herewith revised list of engine houses and turntables as requested in letter from Mr. E. L. Grimm dated Feb. 23, 1923.

This list does not include M + I. Ry. as I do not believe we have correct data for that company.

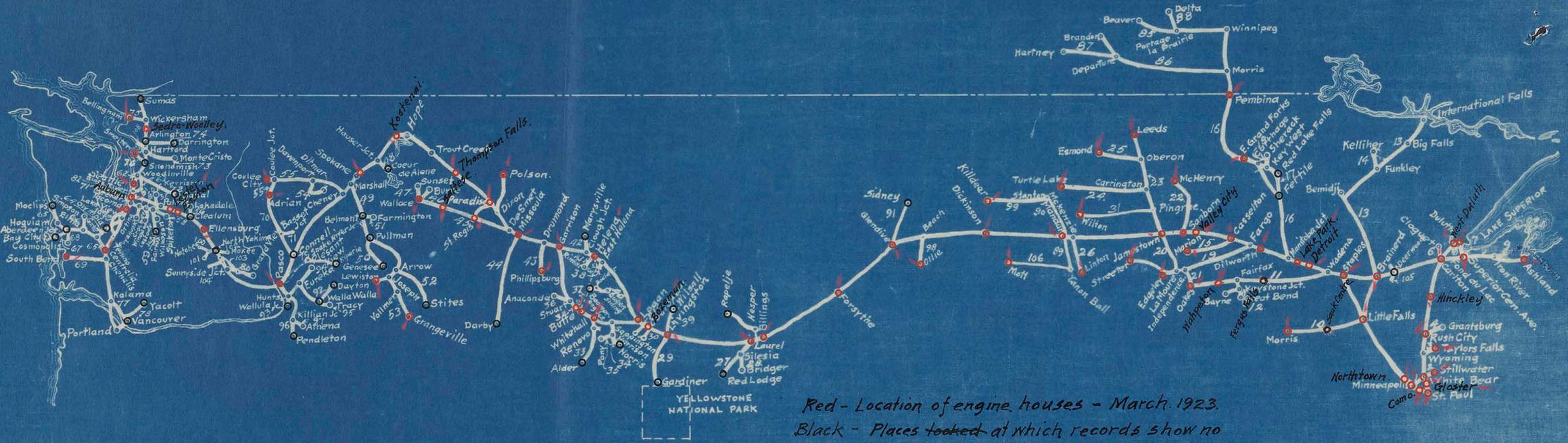
It does not include Anaconda and Monte Cristo on account of these lines being leased and maintained by other companies. The engine house at Claymont Yard St Paul is not included as it has never been used as an engine house since we acquired the St P + D. R.R.

The black ink figures on print from mechanical department are my corrections and the red figures are the architects corrections to the statement as printed.

I attach a print of a sketch map of N. P. Ry system showing in red location of engine houses in March 1923, and in black places at which I find that records indicate that there is no engine house in March 1923

John Mickelsen.

P J B
Revised list herewith
9/2



Red - Location of engine houses - March. 1923.
Black - Places ~~looked~~ at which records show no engine house in March 1923

Sketch Map of NORTHERN PACIFIC RAILWAY SYSTEM.

N.P. Ry.

Tabulated statement showing number and length of stalls of Engine Houses and length of Turntables on the System.

NOTE: The length of stalls given is the inside building dimension measured along center line of track.

Office of Chief Engr. St. Paul, Minn. Apr. 2, 1923.
Sheet No. 1 of 6 Sheets.

Location		Const.	Stalls		Turntable		Remarks
Station	Division		No.	Length	Size	Make	
Adrian	Idaho	Frame	2	66'-8"	60'	Union Br. Co.	
Ashland	L. Sup.	Frame	6	64'-2"	64'-4"	Phila. Br. Co.	
Auburn	Seattle	Brick	5	113'-2"			
"	"	"	20	86'-9"	85'-0"	Amer. Br. Co.	Electric turntable tractor
Billings	Mont.	Brick	4	76'-9"			13' of this is frame rear etxn.
"	"	"	5	97'-2"			Constructed in 1922
"	"	"	7	62'-5"			
"	"	"	5	77'-0"			
"	"	Frame	11	87'-4"	85'	Amer. Br. Co.	Electric turntable tractor
Bozeman	Mont.	Brick	10	116'-6"	85'	Amer. Br. Co.	Elec. T.T. tractor. Replace Eng. Ho. in 1923
Brainerd	L. Sup.	Brick	9	86'-9"			
"	"	"	35	64'-7"	85'	Amer. Br. Co.	Electric turntable tractor
Butte (East)	Mont.	Brick	10	65'-5"	85'	Amer. Br. Co.	Electric turntable tractor
"	"	"	8	85'-5"			
"	"	"	3	80'-10"			15' of this is frame rear etxn.
"	"	"	1	100'-10"			35' of this is frame rear etxn.
Butte (M.U.Yd.)	Mont.	Frame	2	65'-0"			Not used as engine house
"	"	"	2	70'-0"			One stall not used as engine house
"	"	"	4	80'-0"	70'	Phila. Br. Co.	
Bridger	Mont.				64'-4"	Phila. Br. Co.	
Bellingham	Seattle	Frame	1	98'-0"			
Carlton	L. Sup.	Frame	4	78'-8"			
Casselton	Fargo	Frame	1	77'-0"			
Coulee City	Idaho	Brick	2	62'-5"	56'	Union Br. Co.	
Cooperstown	Fargo				64'-4"	Phila. Br. Co.	
Centralia	Tacoma	Brick	5	113'-2"			
"	"	"	15	86'-9"	85'	Amer. Br. Co.	Electric turntable tractor
Dayton	Pasco				65'	Keystone Br. Co.	
Dickinson	Yell.	Brick	6	86'-9"			
"	"	Frame	2	63'-6"			One stall not equipped. No track.
"	"	"	19	87'-4"	85'	Amer. Br. Co.	Electric turntable tractor
Dilworth	Fargo	Brick	45	100'-6"	80'	Amer. Br. Co.	Electric turntable tractor

Location		Const.	Stalls		Turntable		Remarks
Station	Division		No.	Length	Size	Make	
Duluth (Rices Pt.)	L. Sup.	Brick	6	107'-0"			
"	"	"	6	87'-0"			
"	"	"	24	77'-0"	85'	Amer. Br. Co.	Electric turntable tractor
Duluth (West)	L. Sup.	Frame	8	77'-0"	80'	Amer. Br. Co.	Operated by hand
Detroit	Minn.	Frame	2	62'-0"	56'	Union Br. Co.	A.F.E. for removal
E. Gr. Forks	Minn.	Brick	10	70'-6"			6' front frame etxn.
"	"	"	8	62'-5"	70'	Phila. Br. Co.	
Easton	Seattle	Frame	3	107'-4"	85'	Amer. Br. Co.	
Ellensburg	Seattle	Frame	10	87'-4"			
"	"	Brick	15	86'-9"	85'	Amer. Br. Co.	Electric turntable tractor
Everett	Seattle	Frame	2	134'-0"			
Esmond	Dakota	Frame	1	104'-0"			
Elma	Tacoma				65'	Phila. Br. Co.	
Edgeley	Fargo	Frame	1	63'-0"			
Forsyth	Yell.	Brick	4	72'-0"			8' of this is frame front extn.
"	"	"	4	62'-5"			
"	"	"	8	86'-9"	70'	Phila. Br. Co.	
Fergus Falls	Minn.				60'-4"	Chicago F. & B. Co.	
Fairfax	Tacoma				65'	Keystone Br. Co.	
Grangeville	Idaho	Frame	2	87'-4"			
Garrison	R.M.	Frame	4	87'-4"			
Gloster	St. Paul	Brick	2	80'-8"			6'-8" front extn. & 10' frame rear extn.
"	"	"	8	73'-4"			10' of this is frame rear extn.
"	"	"	15	63'-2"	64'-4"	Phila. Br. Co.	Round ho. not in use
Glendive	Yell.	Brick	5	62'-5"			
"	"	"	17	77'-0"			
"	"	"	18	86'-9"	85'	Amer. Br. Co.	Electric turntable tractor
Grantsburg	L. Sup.				56'	Union Br. Co.	
Goble					60'	Union Br. Co.	Prop'd being sold
Helena	R.M.	Brick	5	116'-9"			
"	"	"	37	86'-9"	85'	Amer. Br. Co.	Electric turntable tractor.
Hinckley	L. Sup.	Brick	4	67'-4"			

Location		Const.	Stalls		Turntable		Remarks
Station	Division		No.	Length	Size	Make	
Howell	Idaho				65'	Phila. Br. Co.	
Hoquiam	Tacoma				85'	Amer. Br. Co.	
Jamestown	Dakota	Brick	15	96'-9"			Constructed in 1922
"	"	"	5	113'-2"			Constructed in 1922
"	"	"	3	86'-9"			23' of this is frame rear extn.
"	"	"	2	64'-5"			
"	"	"	7	77'-0"			
"	"	"	18	86'-9"	80'	Amer. Br. Co.	Electric turntable tractor
Killdeer	Dakota	Frame	1	170'-0"			
Kendrick	Idaho				56'	Union Br. Co.	
Kootenai	Idaho	Brick	20	86'-9"	85'	Amer. Br. Co.	Electric turntable tractor
Linton	Dakota	Frame	2	77'-0"			
Lake Park	Minn.	Frame	4	78'-2"			
Laurel	Mont.	Brick	40	86'-9"	80'	Amer. Br. Co.	Electric turntable tractor
Lester	Seattle	Frame	6	107'-4"	85'	Amer. Br. Co.	
Lewiston	Idaho	Brick	8	86'-9"	85'	Amer. Br. Co.	
Lind	Pasco				60'	Phila. Br. Co.	
Livingston	Mont.	Brick	5	116'-9"			
"	"	"	39	86'-9"	85'	Amer. Br. Co.	Electric T.T. tractor. 1922 A.F.E. for 100' T.T.
Logan	Mont.	Frame	5	87'-4"	85'	Amer. Br. Co.	
Lisbon	Fargo				64'-4"	Phila. Br. Co.	
Little Falls	St. Paul	Frame	2	67'-0"			
Leeds	Dakota	Frame	2	108'-6"			
Marion	Fargo	Frame	1	104'-0"			
Mc Henry	Fargo	Frame	1	104'-6"			
Mott	Dakota	Frame	1	170'-0"			
Mahtomedi	St. Paul				60'	N.J. Steel & I. Co.	
Mandan	Yell.	Brick	4	62'-5"			
"	"	"	11	71'-0"			
"	"	"	7	77'-6"			
"	"	"	23	86'-9"	80'	Amer. Br. Co.	Electric turntable tractor
Mc Cleary	Tacoma				60'	Phila. Br. Co.	

Location		Const.	Stalls		Turntable		Remarks
Station	Division		No.	Length	Size	Make	
Marysville	R.M.				56'	Union Br.Co.	
Missoula	R.M.	Brick	11	86'-9"	85'-9"	Amer.Br.Co.	Electric turntable tractor
"	"	"	1	65'-5"			
"	"	Frame	6	79'-0"			
"	"	"	3	87'-4"			
Missoula	R.M.	Frame	19	86'-9"	85'	Amer. Br.Co.	Elec.T.T.tractor. Replace Eng.No.in 1923.
Moscow	Idaho				60'	Union Br.Co.	Phila.Br.Cos' center casting.
Morris	St.Paul	Frame	2	78'-0"			
Minneapolis	St.Paul	Brick	7	65'-5"			Not in use
"	"	"	12	72'-0"	80'	Amer. Br. Co.	Not in use. 6' front frame extn. T.T. not used.
Northtown	St.Paul	Brick	30	86'-9"	85'	Amer.Br.Co.	Electric turntable tractor
Ocosta	Tacoma				56'	Edgemore Ir.Co.	
Orting	Tacoma				60'	Union Br. Co.	
Olympia	Tacoma				64'-4"	Phila. Br. Co.	
Oakes	Dakota	Frame	3	87'-4"			
Ollie	Yell.	Frame	1	118'-0"			
Parkwater	Idaho	Brick	5	113'-2"			
"	"	"	32	86'-9"	85'	Amer.Br.Co.	Electric turntable tractor
Paradise	Idaho	Brick	20	86'-9"	85'	Amer. Br.Co.	Electric turntable tractor
Pasco	Pasco	Brick	5	113'-2"			
"	"	"	32	86'-9"	85'	Amer.Br.Co.	Electric turntable tractor
Pendleton	Pasco				60'	Phila. Br. Co.	
Pleasant View	Pasco				65'	Phila. Br.Co.	
Pluvius	Tacoma				66'	Lassig B.&I.Co.	
Pembina	Minn.	Frame	4	72'-0"			
Polson	R.M.	Frame	1	110'-0"			
Philipsburg	R.M.	Frame	3	68'-0"			Only one stall in use
Rimini	R.M.				55'-4"	Phila.Br.Co.	
Rush City	L.Sup.	Frame	1	70'-0"			
St.Regis	R.M.	Frame	2	87'-4"			

Location		Const.	Stalls		Turntable		Remarks
Station	Division		No.	Length	Size	Make	
Sedro-Woolley	Seattle	Frame	2	66'-8"	80'	Amer. Br. Co.	
Sanborn	Fargo	Frame	2	68'-0"			
Spokane	Idaho						See Parkwater
Streeter	Fargo	Frame	1	110'-6"			
South Bend	Tacoma	Frame	2	65'-5"	65'	Phila. Br. Co.	
So. Prairie					70'	Phila. Br. Co.	
Saltese	R.M.	Frame	2	62'-0"	85'	Amer. Br. Co.	
Sauk Centre	St. Paul				64'	Keystone Br. Co.	
Stillwater	St. Paul	Frame	1	68'-0"	56'	Union Br. Co.	
Superior	L. Sup.	Frame	3	78'-2"			
Stites	Idaho				56'	Union Br. Co.	
St. Paul (Miss St.)	St. Paul	Brick	5	113'-2"			
"	"	"	30	86'-9"	100'	Amer. Br. Co.	Electric turntable tractor
St. Paul (Como)	St. Paul	Brick	2	66'-4"			Not used for Engine House
Seattle	Seattle	Frame	9	69'-2"			
"	"	"	6	87'-2"			
"	"	"	4	107'-2"	85'	Amer. Br. Co.	Electric turntable tractor
So. Tacoma	Tacoma				65'	Union Br. Co.	
Staples	Minn.	Brick	21	62'-5"	64'-4"	Phila. Br. Co.	
Staples	Minn.	Brick	30	83'-9"	80'	Amer. Br. Co.	Air turntable tractor
Tacoma	Tacoma	Brick	22	65'-5"	85'	Amer. Br. Co.	Electric turntable tractor
Taylors Falls	L. Sup.	Frame	1	82'-0"	56'	Union Br. Co.	
Toppenish	Pasco				70'	Phila. Br. Co.	
Thompson Falls	Idaho	Frame	2	62'-0"			Not used as Engine House
Turtle Lake	Dakota	Frame	2	108'-4"			
Valley City	Fargo	Frame	2	80'-0"			
Vancouver	Tacoma						Contract with S.P.&S. for use of Eng. Ho.
Whitehall	Mont.	Frame	4	107'-4"			

Location		Const.	Stalls		Turntable		Remarks
Station	Division		No.	Length	Size	Make	
Wilton	Dakota	Frame	2	110'-0"			
Wahpeton	Minn.	Frame	2	87'-4"			
Wilkeson	Tacoma				56'		
Wallace	R.M.	Brick	6	100'-7"	85'	Amer. Br. Co.	
Walla Walla	Pasco				65'	Phila Br. Co.	
Woodinville	Seattle				66'	Phila. Br. Co.	
White Bear	St. Paul	Brick	6	62'-0"	60'	N.J. Steel & Ir. Co.	
Yakima	Pasco				80'	Amer. Br. Co.	

STATION	DIVISION	NUMBER OF STALLS	LENGTH OF STALLS FT.	IN.	LENGTH OF TURNTABLE FT.	IN.
ADRIAN ✓ Frame 5-32-22	IDAHO	2	86	8	80	0
ASHLAND ✓ Frame.	LAKE SUPERIOR	6	65	2	64	4
* AUBURN ✓	PUGET SOUND				85	0
" ✓ ✓ Brick	"	5	113	2		
" ✓ ✓ Brick.	"	20	86	9		
~~Adrian~~	Brick- Frame Extn	4	78	2		
	Brick	5	77	2		
*BILLINGS ✓	MONTANA Brick	7	68	9	85	0
"	Brick	5	77	9		
"	Frame.	11	89	4		
*BOZEMAN ✓ ✓ Brick.	MONTANA	10	116	6	85	0
*BRAINERD ✓ ✓ Brick	LAKE SUPERIOR	9	86	9	85	0
"		35	84	9		
BUTTE ✓ East Butte.	MONTANA	10	68	9	70	0
" ✓ Brick		8	85	5		
" ✓ East ✓		3	80	10	85	0
		1.	100	10		
See also below. BRIDGER	MONTANA				64	4
BENSON	MINNESOTA				70	0
"	"				70	0
" Bellingham ✓ Frame.		1.	98	0		
CARLTON ✓ Frame 1906 Plan #297-110.	LAKE SUPERIOR	4	78	0		
CASSELTON ✓ Frame	FARGO	1	77	0	56	0
COULEE CITY ✓ ✓ Brick	IDAHO	2	62	5	56	0
COOPERSTOWN					64	5
*CENTRALIA ✓	TACOMA				85	0
" ✓ Brick Impt #32-192	"	5	113	2		
" ✓ Brick "	" "	15	86	9		
DAYTON ✓	PASCO				65	0
DICKINSON	YELLOWSTONE Frame	2	63	6	65	0
"			78	5		
" Brick		6	86	9		
* " Frame		19	87	4	85	0
*DILWORTH ✓ ✓ Brick	FARGO	45	100	6	80	0
"						
"						
"						
"		6	107	6		
"		6	87	9		
*DULUTH ✓ (Rices Point) ✓ Brick	LAKE SUPERIOR	24	77	6	85	0
~~DENVER~~ No Taken out 1909.	DAKOTA	1	105	0		
DETROIT ✓ AFE for removal of Turntable	MINNESOTA Frame	2	62'	0"	56	0
~~DIXON~~ SOLD	ROCKY MT.				60	0
~~North Dakota~~	Lake Super.				80	0
Duluth. (West Duluth.)	Lake Sup'r.	8	77	Frame 6"	80	0
		10	70	6"		
EAST GRAND FORKS ✓ Brick	MINNESOTA	8	62	5	70	0
EASTON ✓	PACIFIC Frame	3	107	4	85'	0"
*ELLENSBURG ✓	PACIFIC Frame	10	68	9	85	0
"	Brick	15	86	9		
~~ELLISTON~~ Taken out ABANDONED	ROCKY MT.	2	65	3	60	0
EVERETT ✓ Frame.	SEATTLE	2	134	0		
~~EDEN~~ Turntable Taken out.	FARGO Frame	1	63	0	56	0
~~ELMHURST~~ ABANDONED Taken out.	MONTANA				56	0
ESMOND ✓ Frame.	DAKOTA	1	104	6		
ELMA.	TACOMA				65	0
Butte. Mont. N. Yard.	Frame	2	65	0.	Not used as engine ho	
	"	2	70	0.		
	"	4	80	0.		
✓ Brick. Frame Extn.		4	72	0		
FORSYTHE ✓ Brick YELLOWSTONE		4	62	5	70	0
" ✓ Brick.		8	88	9		
FERGUS FALLS ✓	MINNESOTA				60	4
FAIRFAX	TACOMA				65	0
Grangeville. ✓ Frame		2.	87'	4"		
Garrison ✓ Frame		4.	87'	4"		
New Gloster. ✓ (still there.		2	88'	8"		
~~GLADSTONE~~ ABANDONED	ST. PAUL 1887 Brick	1	73	4	64	4
"		15	63	2		
*GLENDIVE ✓	YELLOWSTONE		86	4	85	0
" ✓	Brick	5	62	5		
" ✓	Brick	17	73	0		
" ✓	Brick	18	86	9		
"			63	3		
"		16	76	6		
"		18	87	9		
"						
~~GRAND VIEW~~ Taken out No Record	IDAHO				55	0
GRANTSBURG ✓	LAKE SUPERIOR				56	0

STATION	DIVISION	NUMBER OF STALLS	LENGTH OF STALLS FT.	IN.	LENGTH OF TURNTABLE FT.	IN.
GOBLE ✓ Proposed to be sold.	PACIFIC				60	0
		5	116	9		
*HELENA ✓ ✓ Brick	ROCKY MT.	37	86	9	85	0
"		37	87	3		
HINCKLEY ✓ Turntable out.	LAKE SUPERIOR Brick	4	69	4	60	0
~~HOMESTAKE~~ Taken out.	MONTANA				60	0
HOWELL ✓	IDAHO				65	0
Hoquiam	TACOMA				85	0

STATION	DIVISION	NUMBER OF STALLS	LENGTH OF STALLS FT.	LENGTH OF STALLS IN.	LENGTH OF TURNTABLE FT.	LENGTH OF TURNTABLE IN.
ADRIAN	IDAHO	2	68	6	59	8
ASHLAND	LAKE SUPERIOR	6	68	6	56	0
* AUBURN	PUGET SOUND				85	0
"		5	113	3		
"		20	86	6		
			52	6		
*BILLINGS	MONTANA	7	64	6	85	0
"		9	76	6		
"		16	88	6		
*BOZEMAN	MONTANA	10	116	6	85	0
*BRAINERD	LAKE SUPERIOR	9	68	0	85	0
"		35	64	6		
BUTTE	MONTANA	22	67	8	71	8
"			65	6		
* "					85	0
CARLTON	LAKE SUPERIOR	4	76	6		
CASSELTON	FARGO	1	63	0	56	0
COULEE CITY	IDAHO	2	63	6	56	0
COOPERSTOWN					84-5"	0
*CENTRALIA	TACOMA				85	0
" "	"	5	113	0		
" "	"	10	86	6		
DAYTON	PASCO				65	0
DICKINSON	YELLOWSTONE	3	63	6	85	0
"			70	6		
"		25	86	6		
* "					85	0
"					80	
*DILWORTH	FARGO	45	100	6	85	0
"						
"						
"						
*DULUTH	LAKE SUPERIOR	36	76	6	85	0
DENHOFF - No Record.	DAKOTA	1	105	0		
DETROIT - No Record.	MINNESOTA				56	0
DIXON - No Record.	ROCKY MT.				60	0
			62-5			
EAST GRAND FORKS	MINNESOTA	18	61	0	56	2
EASTON	PACIFIC	3	108	0	64	4
*ELLENSBURG	PACIFIC	25	88	0	85	0
"		10	87	4		
ELLISTON - Abandoned	ROCKY MT.	6	65	5	66	0
EVERETT	SEATTLE	2	134	0		
EDGELY	FARGO	1	42	0	54	0
ELKHORN - Abandoned	MONTANA				56	0
ESMOND	DAKOTA	1	104	0		
FORSYTHE	YELLOWSTONE	8	63	6	70	0
"		8	86	6		
FERGUS FALLS - Abandoned	MINNESOTA				60	0
GLADSTONE - Abandoned	ST. PAUL	2	72	4	64	6
" "		23	63	2		
*GLENDIVE	YELLOWSTONE		86	6	85	0
"		4	60	0		
"		18	76	6		
"		18	86	6		
"		1	63	2		
"		16	76	6		
"		12	87	0		
"						
GRAND VIEW No Record	IDAHO				60	0
GRANTSBURG	LAKE SUPERIOR				56	0

STATION	DIVISION	NUMBER OF STALLS	LENGTH OF STALLS FT.	LENGTH OF STALLS IN.	LENGTH OF TURNTABLE FT.	LENGTH OF TURNTABLE IN.
GOBLE	PACIFIC				60	0
*HELENA	ROCKY MT.	42	86	6	85	0
"		27	87	3		
HINCKLEY	LAKE SUPERIOR	4	68	0	58	6
HOMESTAKE	MONTANA				60	0
HOWELL	IDAHO				64	0

St. Paul, February 23 1923

OFFICE OF CHIEF ENGINEER FEB 26 1923 NOR. PAC. RY. ST. PAUL, MINN.

Equipment-Locations
Roundhouses
Data

22G16

Mr. S. J. Bratager:

I have several requests from Master Mechanics for up to date information similar to what is shown on our drawing 8222-E. Can you furnish me data to bring this drawing up to date?

E. L. Grimm

TRW-p

Mechanical Engineer.

OMR
JNP
Furnish information
MSC
2/26

S.J.B.
3 Sets of prints herewith.
JNP
4/11 JM

S 32-1 86' 9'

886546

2444

FRISCO LINES

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

F. G JONAH
CHIEF ENGINEER
C. B SPENCER
VALUATION ENGINEER
H. B BARRY
PRINCIPAL ASS'T ENGINEER
R. E MILLER
BRIDGE ENGINEER
R. C. STEPHENS
ARCHITECT

OFFICE OF CHIEF ENGINEER

ST. LOUIS, MO.

OFFICE OF CHIEF ENGINEER
OCT 14 1922
NOR. PAC. R
ST. PAUL, MINN

St. Louis
October 11th, 1922

19-145 West Shops Springfield
Roach Sanding Building

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

Dear Sir:

Pardon my delayed response to your favor of September 20th.

I am herewith attaching you blue prints of a set of doors which we used on our Coach Sanding Building, Nos. 14232 (9-30-20) and #14237 (1-17-21)

You will notice on the engine doors is shown a small wicket door in lower half on extreme right door fold. We do not put these in every panel or stall, merely those doors which suit the convenience in operation of the roundhouse.

For your information in the event that you would care to have doors open back against the wall inwardly, similar to a swing door, this same arrangement with a little different projecting hanger support can be furnished.

I might further state that we used to run an upright post the heigth of the door for the doors when open to butt against but I find this is not necessary. All we do is to put a small stop of either concrete or creosote or other timber at a point so when the door is wide open it can be held by a latch or dog at the bottom.

If I can be of any further service to you, do not hesitate to call upon me.

Yours very truly,

R C Stephens

Architect

Mr Rognan
Its note and return the letter and one print for file. You may keep the other print for the drafting room file. SHB 10/16
Notice 1 print retained 12/5 - - - [illegible]

STATIONARY SASH
See General Plans For Glass Sizes.

⅜"x1½" Strap 2.2" Lg. On Each Side of Post

6"x8" 4"x4"x ⅜" Brace 7'-5½" Lg.

¾"x12" Eye Bolt

1¾"x5½" Stiles

1¾"x5½" Braces

1¾"x7½" Rails

℄ of Post 2

℄ of Post 1

7/8"x3¼" T.&G. Ceiling

16"x4"x⅜" L, 6½" Lg.

Ends of all Rails to be let into Stiles as Indicated

See General Drawings For Width of Doors

Inside Latch

Latch Bar

Wicket Door In One Stall Only

Latch

1¾"x12" Bottom Rails

10"x12" Oak Sill

18"x18" Concrete Pier

12"x30"x30" Footing

~FRONT ELEVATION~
Scale ½"=1'-0"

Composition Roof

2"x12" Joists 24" O.C.

6"x12" Girder

⅜"x1½"x2.2" Strap

1'-3½"

6'-7½"

6"x6"

Pivoted Sash

¼"x2" U. Strap

⅝"ϕ Bolt

6"x8" Bruce

Dowel post into Brace

¾" Bracing Rod 7'-3" Lg.

8"x10"

6"x4"x⅜" Angle 6½" Lg.

½" Bolts

2-2½"x3½"x¼" Angles 10" Lg. back to back riveted together and bolted to post

6'-0"

6"x8" Bumping Post

26'-0"

17'-0"

½" Bolts

6'-0"

5'-0"

2"x2"x¼" L Guards 5'-0" Lg.

2'-4"

C.I. Plate

Top of Rail

10"x12" Oak Sill

2'-5"

~SECTION~

C.I. Plate

10"x10" Post

¾"x12" Eye Bolt

1¾" Bracing Rod 7'-3" Lg.

Dotted Lines Indicate Position of Doors When Open.

C.I. Plate

6"x8" Bumping Post

~PLAN~
Scale ½"=1'-0"

Bracing Rods 7'-3"

Eye Bolts 12"

¾"ϕ

Thread Rods 6" One End And Furnish Nuts, Also C.I. Washer & Eye Bolts

DETAIL OF BRACING ROD & EYE BOLT
Scale 1½"=1'-0"

5⅛" 3'-4½" 5⅝" 3'-4½" 6"

1"x6" Exp. Bolts

2⅜" Holes In Brackets

No. 33 Track

Hanger

ELEVATION
DETAIL OF HANGERS
Scale 1"=1'-0"

⅞"ϕ Bolts

2⅜" Holes In all Brackets

½"ϕ Bolt

#33 Track

Hanger

6"x4"x⅜" L.

⅝" Bolts

~SECTION C.C~
Scale 1"=1'-0"

13/16" Holes

10"x10" Post

DETAIL OF HINGE
Scale 1"=1'-0"

5¾"

2" 1¾" 2"

2¼"

3¼"

~PLAN~
Scale 3"=1'-0"

Holes For Spikes

13/16" Holes

~ELEVATION~
DETAIL OF WROT TOP ANCHOR FOR BUMPING POST

C.S. Screw Holes, For #14 Wood Screws

2"x2"x¼" L

ANGLE GUARDS TO FRONT ROW OF POSTS
Scale 3"=1'-0"

~STANDARD~
~ENGINE DOOR DETAILS~

FOR ROUND HOUSES WITHOUT MONITOR
ST. LOUIS-SAN FRANCISCO RY. CO.
OFFICE OF ARCHITECT. ST LOUIS. MO.

Made By E.H.R.
Chd By.
Date. 9-14-20.
Revised 1-17-21

CHIEF ENGINEER | ARCHITECT

14237

2444

St. Paul, Minn., December 5th, 1922.

Mr. F. V. Weisenberger,
Timber Agent.

Dear Sir:

Referring to your verbal request on Mr. Rognan for six prints of the old Standard Plan S-32-9 which plan covers hardware for a first class roundhouse door.

I understand that what you want is the millwork required for this door and I am consequently sending you six prints of the old Standard Plan S-32-6 which covers the details of the millwork. The door should be glazed with 1/4" rough wire glass which we have recently provided in such doors at other points.

Yours truly,

SJB/jll
encl.

Principal Assistant Engineer

Mr. Bratager

Mr. Wessenburger has requisition for 4 pairs of roundhouse doors and upon inquiry as to what plan these doors were to follow received a wire that they were to be according to old standard plan S-32-9 dated March 1. 99. This plan shows only how the hardware is to be applied and will not do for a millwork detail. I have printed sheet S-32-6 which bears the same date and which gives the details necessary for the mill. In addition I have marked on the plan that Glass is to be 1/4" rough wire glass same as we made the doors for Staples.

12/5-22

O.M.R.

24 2016 2444

Saint Paul, November 11th, 1922.

OFFICE OF CHIEF ENGINEER NOV 11 1922 NOR. PAC. RY. ST. PAUL, MINN.

Mr. H. E. Stevens,

Chief Engineer.

Please note attached letter from Mr. Cutler relative to new roundhouse doors that are being installed at Helena:

I think that Mr. Cutler's opinion is correct about these doors and by next spring when we have had an opportunity to see how they stand up in service it would be advisable to make them a standard so that replacement doors from time to time at various roundhouses will be made of these lights, thereby illuminating our roundhouses.

Yours truly,

Bernard Blum

Engr. Mtce. of Way.

BB-O
encl.

BB

Before receiving all these letters and comments along the line I did not struggle realize what a hard struggle you had "developing" this plan

11/12

Mr Stevens

I trust you straightened Shepp out

B.B.

11/10

OFFICE OF ENGR. M. OF WAY
NOV 10 1922
NOR. PAC.
ST. PAUL, MINN.

Livingston, Montana, November 8th, 1922

Rebuilding roof and front
doors of 15 stalls, Helena
Roundhouse -

C-92

Mr. Bernard Blum,
Engr. Mtce. of Way,
St. Paul, Minn.

When in Helena recently, I took particular notice of the new Roundhouse doors that you are installing at that point. This work had been completed in the first or Machine Shop section of the Roundhouse, and I wish to say that in my opinion you have developed a real door for Roundhouse and Machine Shops. There are twenty-eight lights of glass in each ~~half~~ door re-enforced with wire, and while the first cost may be a little bit higher than an ordinary door, I am satisfied that there will be but very little breakage, and benefits derived from the light in our Roundhouses and Shops will be more than counter-balanced by the increased costs, and I would certainly recommend, and hope that you will make this the standard door for Roundhouses and Shops.

J. Cutler
General Master Mechanic

TJC:r

2444

St. Paul, Minn., October 25th, 1922.

Mr. E. L. Grimm,
Mechanical Engineer.

Dear Sir:

Referring to your letter of October 20th, to Mr. Rogman, I hand you herewith a print of plan of driver drop pit revised October 24th, 1922, to show pattern numbers B-1974 and B-1976.

I hand you also a print of plan of truck drop pit revised October 24th, 1922, to show pattern numbers B-1975 and B-1977. I return the two prints which accompanied your letter.

Yours truly,

SJB/jll
encl.

Principal Assistant Engineer

St.Paul, Minn., Oct. 20, 1922

Correspondence
Patterns
B-1974
B-1975

15C

Mr.O.M.Rognon:

I am attaching hereto two prints of details showing truck and driver drop pits.

I have indicated on these prints patterns B-1974 and B-1975. B-1976 & B-1977 Please have these numbers shown on drawing.

E.L. Grimm

Mechanical Engineer

TRW-s.

All/R
Above Patt numbers have been recorded on our drawings and plans marked revised
10-24-22

2444

September 20th, 1922.

Mr. R. C. Stephens,
Architect,
St.Louis-San Francisco Ry.Co.,
St. Louis, Mo.

Dear Sir:

I beg to thank you for your letter of September 14th, with information in regard to the Richard-Wilcox Manufacturing Company's engine house doors. I would be very much pleased if you will kindly, in accordance with the last paragraph in your letter, send me prints of your engine house doors and similar doors that you use in machine and mill shops.

Yours truly,

SJB/jll

Chief Engineer

St. Paul, Minn., September 20th, 1922.

Mr. O. M. Rognan:

Herewith for your information and for your file a copy of letter of September 14th, from Architect Stephens of the St.Louis-San Francisco Ry. Co. in regard to Richard-Wilcox doors. I have asked Mr. Stephens for prints of the engine house doors and similar doors used in their machine and mill shops.

I am handing you, also, for your information and file copy of letters of September 8th, and September 16th, from Engineer Hawk of the Chicago, Rock Island & Pacific Railway in reference to the Richard-Wilcox doors as used on the Rock Island System, together with the prints referred to in his letters.

Yours truly,

SJB/jll
encl.

Principal Assistant Engineer

FRISCO LINES

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

F. G JONAH
CHIEF ENGINEER
C. B SPENCER
VALUATION ENGINEER
H. B BARRY
PRINCIPAL ASS'T ENGINEER
R. E MILLER
BRIDGE ENGINEER
R. C. STEPHENS
ARCHITECT

OFFICE OF CHIEF ENGINEER

ST. LOUIS, MO.

OFFICE OF CHIEF ENGINEER
SEP 19 1922
NOR. PAC. RY.
ST. PAUL, MINN.

St. Louis
Sept. 14th, 1922

4-20 Doors General

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

Dear Sir:

Absence from the city is the reason for not replying to your favor of Sept. 10th at an earlier date.

In regard to the Richard-Wilcox Mnfg. Company installation of roundhouse doors, beg to advise that they do not furnish us with the doors but merely the hardware in connection with same, I having the planing mills get out these doors.

We have several roundhouses equipped with this type of door, having openings 16' wide and 17' high, which apparently are very successful.

My only criticism is that their hardware, due to the action of the sulphur fumes, rusts and attacks it, and unless it is protected with graphite or kept lubricated, the hardware or equipment will not properly or easily function, and the roundhouse foreman sooner or later becomes acquainted with this fact. So far as I know we are having little or no trouble if taken care of in manner referred to.

We have not only placed this on our roundhouses but also on our coach shops and similar doors in our new standard machine shops.

The Richard-Wilcox people, however, are not the only concern who make hardware of this type, and I think Allith-Prody or the Coburn people manufacture a similar equipment. However, I have not used the latter.

There is one feature about this particular kind of hardware and that is that it can be so ordered that [illegible] not only

FRISCO LINES

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

F. G JONAH
CHIEF ENGINEER
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PRINCIPAL ASS'T ENGINEER
R. E MILLER
BRIDGE ENGINEER
R. C. STEPHENS
ARCHITECT

OFFICE OF CHIEF ENGINEER

ST. LOUIS, MO.

will the door fold in a by-fold vertical position but will lay flat against the wall if required, unlike the roundhouse door which project straight out parallel with the track.

Experience has proved that high winds have very little affect on it since when the wind blows against this door it will have a tendency to either close or open it depending upon its direction, in such a manner that it will have no effect whatsoever like that of the straight single swinging door when once caught by the wind, blowing same against the stops or inwardly with great force, eventually causing its complete destruction.

Again the doors are divided in smaller units, there being four doors to each opening instead of two, as usual, thus reducing the projection beyond the face of the inner wall considerably more than were these doors opened in one single fold.

If it would interest you would be glad to send you blue print of our engine house doors and similar doors that we use in our machine and mill shops.

Yours very truly,

R. C. Stephens

Architect

THE CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY COMPANY

C. A. MORSE,
CHIEF ENGINEER
ROBERT N. FORD,
ASST. CHIEF ENGINEER
I. L. SIMMONS,
BRIDGE ENGINEER
A. T. HAWK,
ENGINEER OF BUILDINGS
H. K. LOWRY,
SIGNAL ENGINEER
C. F. FORD,
SUPERVISOR TIE AND TIMBER SUPPLY
J. G. WISHART,
OFFICE ENGINEER
P. M. LABACH,
ENGINEER WATER SERVICE
C. P. RICHARDSON,
ENGINEER TRACK ELEVATION

ENGINEERING DEPARTMENT

LA SALLE STREET STATION

2404

CHICAGO, September 16, 1922.

File-

Mr. H.E. Stevens,
Chief Engineer, Nor. Pac.Ry.Co.,
St.Paul, Minn.

Dear Sir:

I have yours of September 13, 1922, and wish to thank you for the prints you have sent me.

The construction is quite similar to our design, with the exception that you show a standard gauge track for your push car and serve two car repair tracks from this push car track. We use a narrow gauge (two feet) for our industry tracks, and while we install probably a little more industry tracks than absolutely necessary, we have it so that each car repair track is served direct without crossing over the car repair track.

At Inver Grove and other places, we have a mill building at the end and some distance from car repair shed, which we feel is much more convenient than for the machinery inside the car repair shed proper.

We buy direct the industry cars, generally from the Whiting Foundry Equipment Company.

At a shed similar to Inver Grove, only a little smaller, we purchased one ball bearing industry car, narrow gauge, for handling wheels; and two ball bearing narrow gauge industry cars for handling scrap.

If there is anything further that I can be of service to you, kindly call on me and I will be only too glad to do what I can.

Yours truly,

A. T. Hawk

Engineer of Buildings

Prints to McKenna for file.

OFFICE OF CHIEF ENGINEER
SEP 18 1922
NOR. PAC. RY.
ST. PAUL, MINN.

2444

Sept, 13, 1922.

Mr. A. T. Hawk,
Engineer of Buildings,
Chicago, Rock Island and Pacific Railway Co.,
Chicago, Illinois.

Dear Sir:-

I am very much obliged to you for your letter of the 8th, about Richard-Wilcox roundhouse door, also for prints of your car shop design.

I note you are providing a push car track for serving each of the car shed repair tracks. Are you using a special type of push car? If so, I should be glad to have sketch.

Enclosed are sketches we recently presented for approval to the Minnesota Railroad & Warehouse Commission, covering proposed car sheds at Staples and Mississippi Street, which you may be interested in looking over and comparing with your design.

In the construction of car sheds we have found it quite desirable to install machinery for handling the more common operations and, as you will note, we provide ample space for installation of this machinery along one side of the shop, also a foreman's office, etc. This portion of the shop is covered with a concrete floor.

Yours truly,

Chief Engineer.

HES-ar

Encl.

THE CHICAGO, ROCK ISLAND AND PACIFIC RAILWAY COMPANY

C. A. MORSE,
CHIEF ENGINEER
ROBERT H. FORD,
ASST. CHIEF ENGINEER
I. L. SIMMONS,
BRIDGE ENGINEER
A. T. HAWK,
ENGINEER OF BUILDINGS
H. K. LOWRY,
SIGNAL ENGINEER
C. F. FORD,
SUPERVISOR TIE AND TIMBER SUPPLY
J. G. WISHART,
OFFICE ENGINEER
P. M. LABACH,
ENGINEER WATER SERVICE
C. P. RICHARDSON,
ENGINEER TRACK ELEVATION

ENGINEERING DEPARTMENT

LA SALLE STREET STATION

CHICAGO, September 8, 1922.

File-

Mr. H.E. Stevens,
Chief Engineer, Northern Pacific Railway Company,
St. Paul, Minnesota.

Dear Sir:

I have your letter of September 6, 1922, in reference to the use of Richards Wilcox Manufacturing Company's hardware for handling of roundhouse doors:

I have used quite a considerable amount of this type of hardware on large doors on car sheds, shop buildings and round houses. We have some of these at Cedar Rapids, Iowa, and are going to use this type of equipment on some large track doors on our new car repair shed that is now under construction at Inver Grove (South St. Paul). I really believe this type of equipment is the best, for large doors, on the market. The ordinary roundhouse door is built in two sections, but with this type of equipment they are constructed in four sections; consequently the rack on them and the warping and twisting is considerably lessened. Another great advantage is that doors so equipped are not subject to slamming by wind. Also, believe that the doors will close and stay tighter than the old-fashioned type of door.

I am enclosing a complete set of plans of our car repair shed that we are now building at Inver Grove, which will show you the details that we have been using on this, as well as on our other work.

Yours truly,

A. T. Hawk

Engineer of Buildings

Enc.

SJB

Any questions you wish me to revise in acknowledging receipt

RD

9/11

Mr. Stevens!

The doors are the Wilcox type the same as we propose to use.- The planes are quite plain and I do not know think any questions are necessary.- I notice he has a push car track to serve every repair track. The permanent scaffold looks as if it would be a good thing. It would possibly be desirable to get a plan of the push car he is using.

SJB 9/12

OFFICE OF
CHIEF ENGINEER
SEP
11
1922
NOR. PAC. RY.
ST. PAUL, MINN.

St. Paul, Sept. 30, 1922

2444

Mr. O. M. Rognan:

It has been arranged that we will have doors added to the lavatory stalls at Como.

In making up future plans and specifications we will show doors on lavatory stalls.

SJB/jl

cc - Mr. Kielland

Saint Paul, September 29, 1922.

Mr. Bernard Blum:

Referring to Mr. Curry's letter to you of September 12th, about lavatory doors at Como.

Will you please arrange to have these doors added.

In making up future plans and specifications we will show doors on lavatory stalls.

Chief Engineer.

HES-ar

cc-Mr. S.J.Bratager

2444

Saint Paul, September 29, 1923.

Mr. Bernard Blum:

Referring to Mr. Curry's letter to you of September 12th, about lavatory doors at Como.

Will you please arrange to have these doors added.

In making up future plans and specifications we will show doors on lavatory stalls.

Chief Engineer.

HES-ar

cc-Mr. S.J.Bratager

Saint Paul, Minnesota.
September 28, 1922-rg.

Mr. H. E. Stevens:

Answering your letter of September 27 referring to letter from Mr. Curry to Mr. Blum in regard to doors on the new lavatory at Como.

I wish you would arrange to have these doors put on.

OFFICE OF
CHIEF ENGINEER
SEP
29
1922
NOR. PAC. RY.
ST. PAUL, MINN.

X

2444

Saint Paul, September 27th, 1932.

Mr. J. M. Rapelje:

I am attaching copy of Mr. Curry's letter to Mr. Blum of September 13th, about doors on the lavatory stalls at Como.

This is a matter that is very easily remedied; in fact, prior to 1919 our plans always called for doors on lavatory stalls, but it is my recollection that about that time some of the Mechanical Department officers complained that the doors had a tendency to convert the stalls into reading rooms, and on some of our subsequent plans the doors have been omitted. These plans, however, are not always followed, as we find plans for the lavatories at Staples, Mandan and Glendive provided for doors, but on these buildings, which were erected by the division forces, none were placed.

I think the installation of doors has been largely a matter of judgment of the local Operating and Mechanical officers. If you wish them placed at Como kindly advise and we will arrange to have it done.

Chief Engineer.

HES-ar

Encl.

Saint Paul, September 27th, 1922.

OFFICE OF CHIEF ENGINEER SEP 27 1922 NOR. PAC. RY. ST. PAUL, MINN.

Mr. H. E. Stevens,

Chief Engineer.

Your notation on attached papers relative to the use of doors at each closet of the lavatory at Como:

I have gone through all my files covering lavatory buildings at Staples, Dilworth, Butte, Missoula, Mandan, Brainerd, Livingston and Como but can find nothing in them relative to the use of doors. There is one interesting thing that I have noticed -- the Architect's plans for the lavatories at Staples, Mandan and Glendive call for these doors. On none of these buildings are there doors in place at the present time. Both of these structures I believe were erected by the division forces so it would appear to be a matter of local jurisdiction in omitting the doors. Will you kindly advise if you wish to have the doors applied on the new lavatory at Como and I will arrange accordingly.

Yours truly,

Bernard Blum

Engr. Mtce. of Way.

BB-O
encl.

St. Paul, Minn., September 20th, 1922.

Mr. H. E. Stevens,
Chief Engineer.

Dear Sir:

Referring to Mr. Curry's letter to Mr. Blum of September 12th, in reference to doors for Lavatory stalls.

I have looked up some of the recent Lavatory installations and find that we provided doors for the stalls in the St. Paul, Northtown, Jamestown, Mandan, Glendive and Helena Lavatories built in 1917 and 1918.

We did not provide doors for the Brainerd and Livingston toilets, plans for which were made in 1919, nor the Como toilet built in 1921, nor is it proposed to install doors in the Laurel toilet to be built this year.

Evidently the matter came up in connection with the Brainerd toilets but I can find nothing in reference to it in the file other than Mr. Blum's letter of June 1st, 1920, advising that Mr. Curry concurred in the arrangement shown on the plans.

Yours truly,

S. J. Bratager

SJB/jll

Principal Assistant Engineer

On Line, At Laurel, Montana,
September 12, 1922.

Shop Camps

File 5399

Mr. Bernard Blum:-

A few days before leaving St. Paul, Mr. Rapelje, Mr. Nichols, Mr. Burt and myself spent some time at Como, and on going through the new lavatory Mr. Rapelje gave a very marked expression of his displeasure in regard to the omission of doors of about one-third less than full length at each hopper. On previous occasions I have heard him quite forcibly express himself to the effect that these doors should be provided.

Knowing that you are as desirous of pleasing him as I am, I write to suggest that as soon as conditions will permit that these plans be changed and that these doors be provided.

Will you kindly advise action taken.

[signature]

General Mechanical Superintendent

Cy Mr. H. E. Stevens
Mechanical Superintendents
General Master Mechanics
Shop Superintendents

JB note - when did we first change 18 9/16

2444

The Atchison, Topeka and Santa Fe Railway Company

F. M. BISBEE,
Chief Engineer

OFFICE OF CHIEF ENGINEER

File No.

Amarillo, Texas, Oct. 5, 1922.

Richards-Wilcos doors:

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

Dear Sir:

I have your inquiry of Sept. 6th on doors using the Richard-Wilcox Manufacturing Company hardware.

We have installed quite a number of doors of this sort on enginehouses, namely six on enginehouse at La Junta, Colo., 14 at Raton, N.M., one at Wellington, Kansas, six at Vaughn, N.M. and six at Belen, N.M. These doors have all been in from three to four years and so far have given excellent service. At La Junta and Raton we have quite severe weather at times but no complaint has been made upon the doors on that account.

Will also say that on our new machine shop building at Albuquerque, we have installed doors of this sort and expect to install them on the new boiler shop now under construction. We believe that this type of door will give the best service on buildings of this sort.

Yours truly,

F. M. Bisbee

Note 10/8

Mr Stevens.
Noted - We are installing doors of this type now in the Billings Roundhouse and the Glendive Power plant (Entrance to Coal hopper). Would suggest we also try them out in the Mississippi Street and Staples Car Repair Shops. Do you approve?
AB 10/9

Better wait until we try them out at Billings. AB 10/9

Noted AB 10/9

OFFICE OF
CHIEF ENGINEER
OCT
6
1922
NOR. PAC. RY
ST. PAUL, MINN.

2440

St. Paul, Minn., September 20th, 1922.

Mr. H. E. Stevens,
Chief Engineer.

Dear Sir:

Referring to Mr. Curry's letter to Mr. Blum of September 12th, in reference to doors for Lavatory stalls.

I have looked up some of the recent Lavatory installations and find that we provided doors for the stalls in the St. Paul, Northtown, Jamestown, Mandan, Glendive and Helena Lavatories built in 1917 and 1918.

We did not provide doors for the Brainerd and Livingston toilets, plans for which were made in 1919, nor the Como toilet built in 1921, nor is it proposed to install doors in the Laurel toilet to be built this year.

Evidently the matter came up in connection with the Brainerd toilets but I can find nothing in reference to it in the file other than Mr. Blum's letter of June 1st, 1920, advising that Mr. Curry concurred in the arrangement shown on the plans.

Yours truly,

SJB/jll

Principal Assistant Engineer

Sept. 6, 1922.

Mr. R. C. Stevens, Architect,
St. Louis-San Francisco R.R.,
St. Louis, Mo.

Dear Sir:-

The Richards-Wilcox Mfg. Company advise me you have installed a number of their roundhouse doors, and I beg to inquire if you have found them entirely satisfactory, particularly under adverse weather conditions, and do you think you would prefer them to the ordinary type of roundhouse and car shop door for installation in locations where severe weather conditions prevail during the winter season?

Yours truly,

Chief Engineer.

HES-ar

Sept. 6, 1922.

Mr. A. T. Hawk, Architect,
Chicago, Rock Island & Pacific,
Chicago, Illinois.

Dear Sir:-

The Richards-Wilcox Mfg. Company advise me you have installed a number of their roundhouse doors, and I beg to inquire if you have found them entirely satisfactory, particularly under adverse weather conditions, and do you think you would prefer them to the ordinary type of roundhouse and car shop door for installation in locations where severe weather conditions prevail during the winter season?

Yours truly,

Chief Engineer.

HES-ar

Sept. 6, 1922.

Mr. F. M. Bisbee, Chief Engineer,
Santa Fe,
Amarillo, Texas.

Dear Sir:-

The Richards-Wilcox Mfg. Company advise me you have installed a number of their roundhouse doors, and I beg to inquire if you have found them entirely satisfactory, particularly under adverse weather conditions, and do you think you would prefer them to the ordinary type of roundhouse and car shop door for installation in locations where severe weather conditions prevail during the winter season?

Yours truly,

Chief Engineer.

HES-ar

Saint Paul, September 6th, 1933.

Mr. Bernard Blum:

Your letter of the second with letter from the Richards-Wilcox Company about sliding doors for round-houses.

We did not receive their letter of July 27th, but I have now written the gentlemen mentioned to ascertain their views as to the features of this door.

Chief Engineer.

HES-ar

OFFICE OF CHIEF ENGINEER
SEP 5 1922
NOR. PAC. RY.
ST. PAUL, MINN.

Livingston, Mont.,
Sept. 2nd, 1922.

Mr. H. E. Stevens,

Chief Engineer.

Dear Sir:-

Some time ago I had up with you about the use of Richards-Wilcox sliding doors for roundhouses.

You asked me to get some information from Roads actually using them. I took the matter up at the time but did not receive a reply. I traced them when in St. Paul, and they have just sent me the enclosed letters.

Possibly you got the letter dated July 27th, while I was at Mandan, as I note that you have figured on the use of these doors in the Billings roundhouse.

Do you desire to obtain any additional information? So far these doors seem to have been placed in warm climates but it does not seem to me that snow would affect their use any more than our present swinging type.

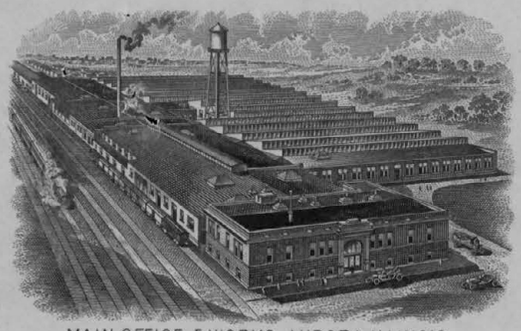
Yours truly,

Bernard Blum

Eng'r Mtce of Way.

Encl.

W. H. FITCH, Prest. & Genl. Mgr. LEE MIGHELL, Vice Prest. MILTON D. JONES, Secy. & Treas. P. L. HOFFMAN, Supt.



MAIN OFFICE & WORKS, AURORA, ILLINOIS.
WESTERN UNION CODE
Cable Address
"RICHWILCO"

Richards-Wilcox
INCORPORATED
MANUFACTURING COMPANY
DOOR HANGERS
HARDWARE SPECIALTIES

Branches
NEW YORK
CHICAGO
PHILADELPHIA
BOSTON
ST. LOUIS
MINNEAPOLIS
SAN FRANCISCO
LOS ANGELES
LONDON, ONT.

OFFICE OF ENGR. M. OF W. AUG 25 1922 NOR. PAC. RY. ST. PAUL, MINN.
RICHARDS-WILCOX R-W AURORA TRADE MARK

AURORA, ILL. Aug. 24, 1922

IN REPLY REFER TO ENGINEERING SERVICE DEPARTMENT.

SLIDING DOOR HANGERS
FOR
PUBLIC BUILDINGS
HOUSES
AUDITORIUM FOLDING DOORS
BARNS, WAREHOUSES
ELEVATOR DOORS
SCHOOL HOUSES
GARAGE DOOR EQUIPMENT

AUTOMATIC FIRE DOOR FIXTURES

OVERHEAD TROLLEY AND I BEAM CARRYING SYSTEMS
DOOR CLOSER AND CHECKS
CHECKING FLOOR HINGES

ROLLING STORE LADDERS
STEEL STORE SHELVING

MOUNTED GRIND STONES
POWER GRIND STONES
FAMILY GRIND STONES
EMERY GRINDERS

MANUAL TRAINING BENCHES
WOODWORKERS VISES

PIPE AND RATCHET WRENCHES

FOLDING STEERING SLEDS

WAGON JACKS

WIRE FENCE STRETCHERS

AUTO LUGGAGE CARRIERS

SCREEN DOOR CATCHES

SLIDING DOOR LOCKS

DOOR HOLDERS

EXPANSION BOLTS

STAY ROLLERS

CORNER IRONS

FOOT SCRAPERS

STEEL HATCHETS

"A HANGER FOR ANY DOOR THAT SLIDES"

Mr. Bernard Blum,
Engineer of Maintenance of Way,
Northern Pacific Railway Co.,
ST. PAUL, Minn.

Dear Sirs:

Replying to your letter of the 21st inst. we do not understand why you did not receive a reply to your letter of July 25th in reference to names of railroads that are using our #434 Door Arrangement for round houses and car shops.

We wrote you on July 27th giving you full information and we attach hereto copy of our letter of that date.

Yours truly,
RICHARDS WILCOX MFG. CO.

A. J. Eggleston,
MGR. ENGINEERING SERVICE DEPT.

AJE:CMC

OUR GOODS ARE ILLUSTRATED IN "SWEETS INDEXED CATALOG" USED BY ALL ARCHITECTS.

(COPY)

July 27, 1922.

Northern Pacific Railway Company,
Engineering Department
St. Paul, Minn.

Gentlemen: Attention of Mr. B. Blum.

Replying to your letter of the 25th inst. in referance to our #434 Door Arrangement for Round House and Car Shop doors, the writer might say that the first installation of this equipment was made about four or five years ago by the Santa Fe on a Round House at Wellington, Kansas. This was done at the suggestion of Mr. F. M. Bisbee, Chief Engineer of the Western Lines, Amarillo, Tex.

The Santa Fe tested this very carefully for two years. The doors during that time were subjected to very severe weather conditions and as a result of that test, the Santa Fe has furnished several Round Houses at different points with this equipment. Mr. Bisbee will be glad to confirm this.

The Rock Island Road has also used a great deal of this equipment for Car Shop doors and they have been specified by Mr. A. T. Hawk, Architect, Chicago. Mr. Hawk will also be glad to recommend this equipment.

We might also say in reference to the Santa Fe that they have used this equipment on a very large car shop building at Albuquerque, New Mexico, which was just completed.

The St. Louis-San Francisco Railroad have also used a great deal of this equipment specified by Mr. R. C. Stevens, Architect at St. Louis. The Burlington Road is now planning to give us a trial on this equipment and we have also some other roads which the writer does not recall.

We are pleased to report that the general results have been more than satisfactory. There has been absolutely no complaint at all and the general consent of opinion has been that this equipment is superior to anything which has yet been offered for Round House or Car Shop Doors.

If you wished toget detailed information we suggest that you communicate with our Minneapolis Office, located at 321 Plymouth Building. They will be glad to assist you.

Thanking you for the inquiry, we remain,

Yours very truly,

RICHARDS-WILCOX MFG. CO.

A. J. Eggleston,
MGR. ENGINEERING SERVICE DEPT.

AJE:EEB

P.S. We are just filling an order for a number of sets of this hardware for a new roundhouse for the Gulf & Ship Island Railroad.

Re: Blow-off lines at
Auburn

2444

Seattle, Washington,

July 28, 1922.

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

St. Paul, Minn.

Dear Sir:

Your favor of the 25th instant together with 3 prints of complete plans for blow-off lines at Auburn, Washington, received.

Yours truly,

A. P. Cook

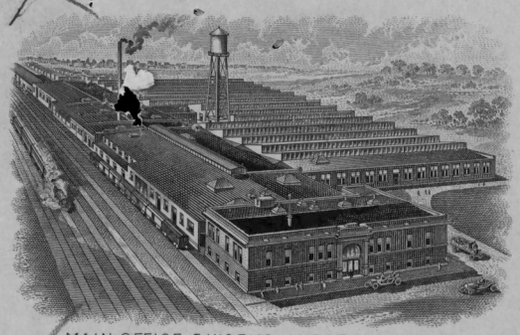
ARC-R

Principal Assistant Engineer

OFFICE OF
CHIEF ENGINEER
JUL
31
1922
NOR. PAC. RY.
ST. PAUL, MINN.

W. H. FITCH, Prest. & Genl. Mgr. LEE MIGHELL, Vice Prest. MILTON D. JONES, Secy. & Treas. P. L. HOFFMAN, Supt.

2440



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SAN FRANCISCO
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LONDON, ONT.

AURORA, ILL.

OFFICE OF ENGR. M. OF WAY JUL 28 1922 NOR. PAC. ST. PAUL, M.

RICHARDS WILCOX R-W AURORA TRADE MARK

July 27, 1922.

IN REPLY REFER TO
ENGINEERING SERVICE DEPARTMENT

Genera 2281

SLIDING DOOR HANGERS
FOR
PUBLIC BUILDINGS
HOUSES
AUDITORIUM FOLDING DOORS
BARNS, WAREHOUSES
ELEVATOR DOORS
SCHOOL HOUSES
GARAGE DOOR EQUIPMENT

AUTOMATIC FIRE DOOR FIXTURES

OVERHEAD TROLLEY AND I BEAM
CARRYING SYSTEMS
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ROLLING STORE LADDERS
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MOUNTED GRIND STONES
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FOLDING STEERING SLEDS

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EXPANSION BOLTS

STAY ROLLERS

CORNER IRONS

FOOT SCRAPERS

STEEL HATCHETS

"A HANGER FOR ANY DOOR THAT SLIDES"

Northern Pacific Railway Company,
Engineering Department,
St. Paul, Minn.

Gentlemen: Attention of Mr. B. Blum.

Replying to your letter of the 25th inst. in reference to our #434 Door Arrangement for Round House and Car Shop doors, the writer might say that the first installation of this equipment was made about four or five years ago by the Sante Fe on a Round House at Wellington, Kansas. This was done at the suggestion of Mr. F. M. Bisbee, Chief Engineer of the Western Lines, Amarillo, Tex.

The Sante Fe tested this very carefully for two years. The doors during that time were subjected to very severe weather conditions and as a result of that test, the Sante Fe has furnished several Round Houses at different points with this equipment. Mr. Bisbee will be glad to confirm this.

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Done AMB

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If you wished to get any detailed information, we suggest that you communicate with our Minneapolis Office, located at 321 Plymouth Building. They will be glad to assist you.

Thanking you for the inquiry, we remain

Yours very truly,

RICHARDS-WILCOX MFG. CO.

A. J. EGGLESTON.
Mgr. Engineering Service Dept.

AJE*EEB

P.S. We are just filling an order for a number of sets of this hardware for a new roundhouse for the Gulf & Ship Island Railroad.

July 25th, 1922.

Richards-Wilcox Mfg. Co.,

Aurora, Illinois.

Gentlemen:-

Attention - A. J. Eggleston:

Referring to your letter of July 8th, relative to your #434 Door Arrangement for Round House and Car Shop doors:

I wish that you would advise me as quickly as possible the names of the railroads that are using your door and if they are using it on roundhouses or on car shops. If you can, advise me the name of the engineer under whose jurisdiction these doors were placed.

I have been expecting some information from you ever since last March when I looked over your sample door at the Railway Appliance Show.

We are just starting the construction of a new roundhouse and to receive consideration, I want to investigate this promptly.

Yours very truly,

BB-O

Saint Paul, July 18th, 1922.

OFFICE OF ENGR. M. OF W. JUL 18 1922 NOR. PAC. RY. ST. PAUL, MINN.

Mr. Bernard Blum:

Your letter of the 13th about roundhouse door made by the Richards-Wilcox Company.

This door seems to have some very good features, but the details are not fully shown on the print. Can you ascertain locations where installations of this type of door have been made? If so, I wish you would take the matter up with the users and find out if they have been satisfactory. It may be we can install a few test doors in the Jamestown roundhouse installation.

Chief Engineer.

HES-ar

Saint Paul, July 18th, 1922.

2444

Mr. Bernard Blum:

Your letter of the 13th about roundhouse door made by the Richards-Wilcox Company.

This door seems to have some very good features, but the details are not fully shown on the print. Can you ascertain locations where installations of this type of door have been made? If so, I wish you would take the matter up with the users and find out if they have been satisfactory. It may be we can install a few test doors in the Jamestown roundhouse installation.

Chief Engineer.

HES-ar

Saint Paul, July 13th, 1922.

OFFICE OF CHIEF ENGINEER
JUL 15 1922
NOR. PAC. RY.
ST. PAUL, MINN.

Mr. H. E. Stevens,

Chief Engineer.

When I was in Chicago at the March meeting of the A.R.E.A. I looked over a sliding roundhouse carshop door made by the Richards-Wilcox Company. They had a door on exhibition.

They have just sent me the enclosed print of their drawing covering door which will provide an opening 13-feet wide and 17-feet 4-inches high. They claim that this door can be handled easily by one man in a heavy wind. The door at Chicago worked very easily. I see no reason why a liberal amount of glass could not be used in the panels as the shear on the doors should not be very great on account of the support at both ends.

I am sending you this print for such consideration as you may care to give to this proposition.

Yours truly,

Bernard Blum

Engr. Mtce. of Way.

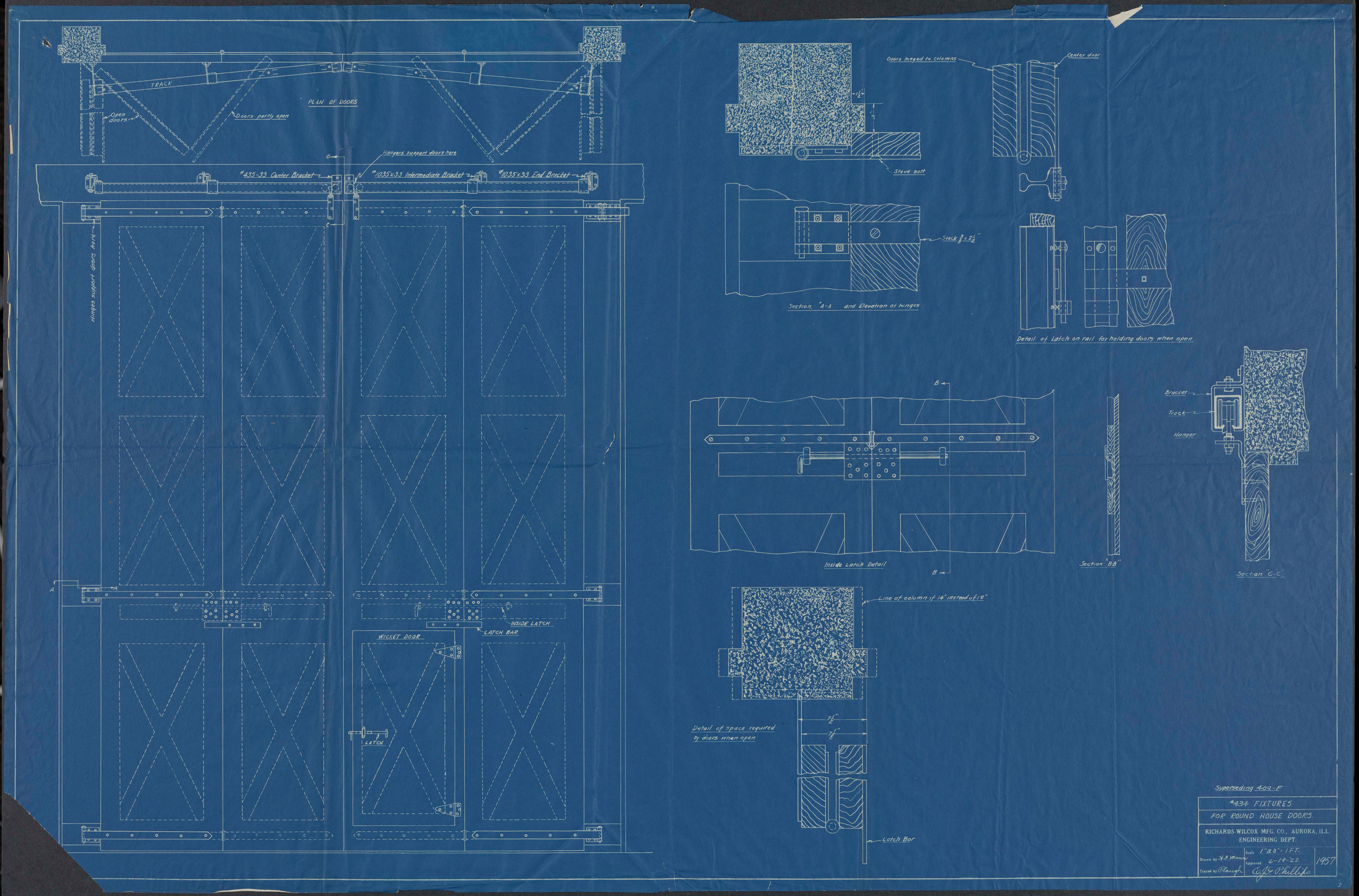
BB-O
encl

SJB

What do you think of this? We might try out a few at Jamestown if price is right. 7/15

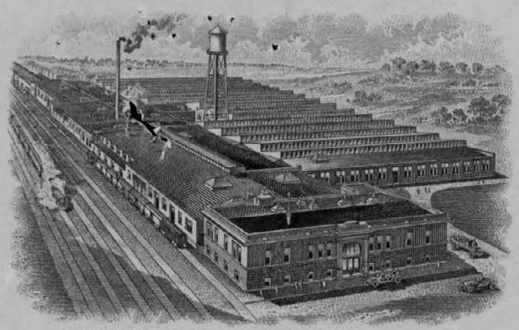
Mr. Stevens:

I like the principle on which the door operates. - The drawing is however incomplete as to details so it is not possible to say definitely what may be expected. - Would suggest Mr Blum find out if there has been any installation made of such doors and results obtained. - SJB 7/18



TRACK
PLAN OF DOORS
Open doors
Doors partly open
Hangers support doors here
#435-33 Center Bracket
#1035x33 Intermediate Bracket
#1035x33 End Bracket
Hinges support doors here
INSIDE LATCH
LATCH BAR
WICKET DOOR
LATCH
Doors hinged to columns
Center door
Stove bolt
Stock 3/8 x 2 1/2"
Section "A-A" and Elevation of hinges
Detail of Latch on rail for holding doors when open.
Inside Latch Detail
Section "B-B"
Bracket
Track
Hanger
Section "C-C"
Line of column if 14" instead of 12"
Detail of space required by doors when open
Latch Bar
Superseding 409-F
#434 FIXTURES
FOR ROUND HOUSE DOORS.
RICHARDS-WILCOX MFG. CO., AURORA, ILL.
ENGINEERING DEPT.
Drawn by H.F. Mann
Traced by Plough
Scale 1" & 3" = 1 FT.
Approved 6-19-22
C.J.G. Phillips
1957

W. H. FITCH, Prest. & Genl. Mgr. LEE MIGHELL, Vice Prest. MILTON D. JONES, Secy. & Treas. P. L. HOFFMAN, Supt.



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MINNEAPOLIS
SAN FRANCISCO
LOS ANGELES
LONDON, ONT.

AURORA, ILL. July 8, 1922.

IN REPLY REFER TO
ENGINEERING SERVICE DEPARTMENT.

OFFICE OF
ENGR. M. OF W.
JUL
10
1922
NOR. PAC. RY.
ST. PAUL, MINN.

SLIDING DOOR HANGERS
FOR
PUBLIC BUILDINGS
HOUSES
AUDITORIUM FOLDING DOORS
BARNS, WAREHOUSES
ELEVATOR DOORS
SCHOOL HOUSES
GARAGE DOOR EQUIPMENT

AUTOMATIC FIRE DOOR FIXTURES

OVERHEAD TROLLEY AND I BEAM
CARRYING SYSTEMS
DOOR CLOSER AND CHECKS
CHECKING FLOOR HINGES

ROLLING STORE LADDERS
STEEL STORE SHELVING

MOUNTED GRIND STONES
POWER GRIND STONES
FAMILY GRIND STONES
EMERY GRINDERS

MANUAL TRAINING BENCHES
WOODWORKERS VISES

PIPE AND RATCHET WRENCHES

FOLDING STEERING SLEDS

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SCREEN DOOR CATCHES

SLIDING DOOR LOCKS

DOOR HOLDERS

EXPANSION BOLTS

STAY ROLLERS

CORNER IRONS

FOOT SCRAPERS

STEEL HATCHETS

"A HANGER FOR ANY DOOR THAT SLIDES"

Mr. Bernard Dinn,
Engineer M. of W.,
Northern Pacific Ry.,
ST. PAUL, Minn.

Dear Sirs

We are sending you under separate cover blue print applying to our #434 Door Arrangement for Round House and Car shop doors. We believe you saw this door arrangement at the Railway Appliance Show at Chicago, and we are pleased to inform you that several railroads are now using this arrangement and find it far superior to anything they have ever tried.

It would be worth your while to give us a trial and we will be very glad to furnish any additional information you may require.

Yours truly,
RICHARDS WILCOX MFG. CO.

A. J. Eggleston

A. J. Eggleston,
MGR. ENGINEERING SERVICE DEPT.

AJE:CMC

Hold for catalogue
BB

OUR GOODS ARE ILLUSTRATED IN "SWEETS INDEXED CATALOG" USED BY ALL ARCHITECTS.

Saint Paul, July 13th, 1922.

Mr. H. E. Stevans,

Chief Engineer.

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They have just sent me the enclosed print of their drawing covering door which will provide an opening 13-feet wide and 17-feet 4-inches high. They claim that this door can be handled easily by one man in a heavy wind. The door at Chicago worked very easily. I see no reason why a liberal amount of glass could not be used in the panels as the shear on the doors should not be very great on account of the support at both ends.

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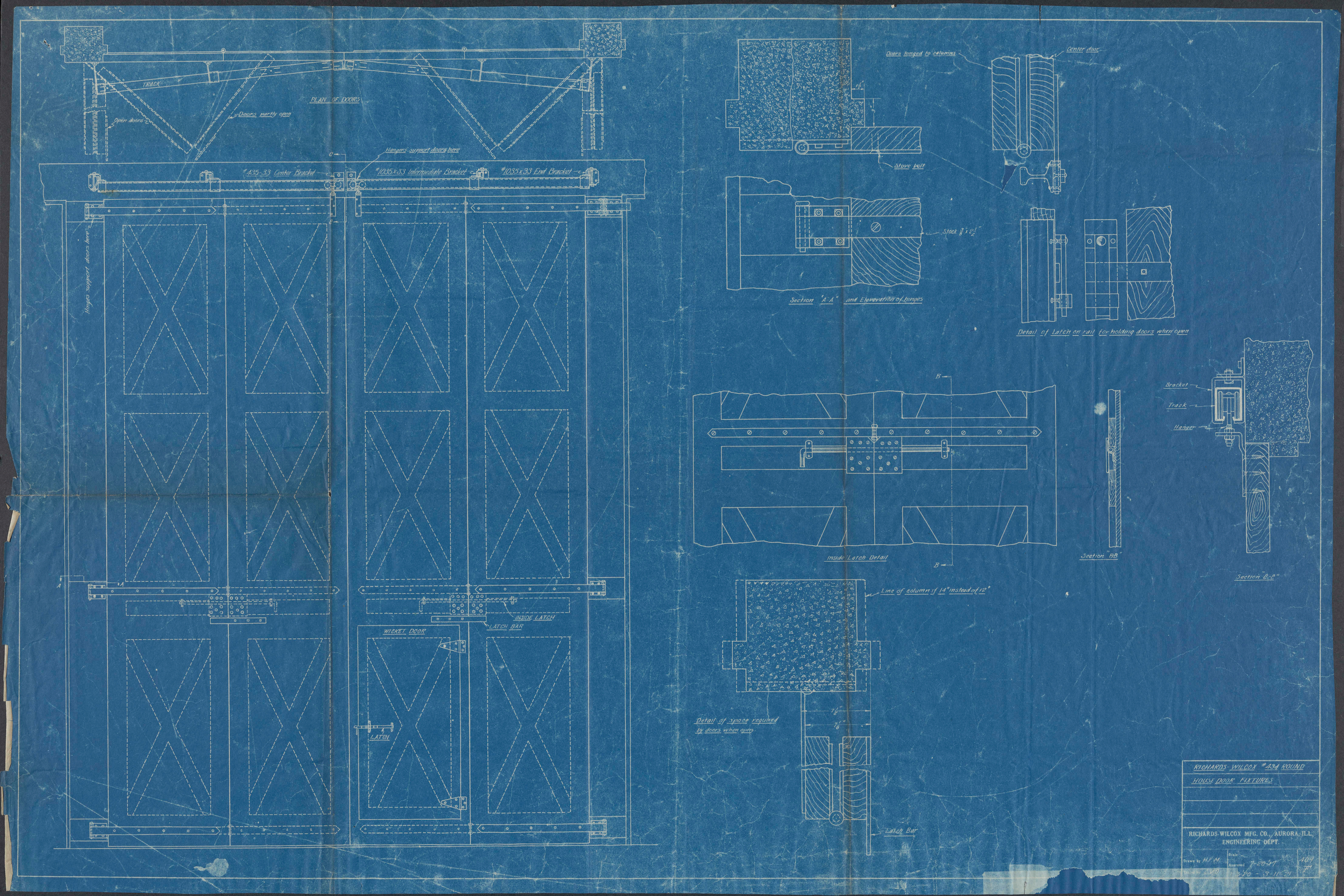
Engr. Mtce. of Way.

BB-O
encl



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Open doors
Doors partly open
Hangers support doors here
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Hinges support doors here
INSIDE LATCH
LATCH BAR
WICKET DOOR
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Doors hinged to columns
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Stove bolt
Stock 3/8 x 2 1/2"
Section "A-A" and Elevation of hinges
Detail of Latch on rail for holding doors when open
Bracket
Track
Hanger
Inside Latch Detail
Section "BB"
Section "C-C"
Line of column if 14" instead of 12"
Detail of space required by doors when open
Latch Bar
RICHARDS-WILCOX #434 ROUND
HOUSE DOOR FIXTURES
RICHARDS-WILCOX MFG. CO., AURORA, ILL.
ENGINEERING DEPT.
Drawn by H.F.M.
Scale
Approved 7-20-41
Date 3-20 - 3-11-21
409

SCHEDULE FOR ESTIMATING COST OF BLOW-OFF LINES

Material and Cost for each pit with 3" main blow-off pipe.
Not to be used for more than six pits.

		Labor	Material	Total
18	ft. 3" extra heavy pipe		$ 10.80	$ 10.80
35	ft. 2" " " "		10.50	10.50
1	3" x 2" " " screw tee		2.15	2.15
1	2" " " 90° elbow		.55	.55
2	2" " " nipples		.60	.60
1/2	of 1-3" " " angle flange union		1.85	1.85
1	2" Jenkins Angle check valve		14.00	14.00
1	2" Double angle flexible joint		12.30	12.30
1	2" #350 flexible joint		11.40	11.40
1	2" Straight flexible joint		7.00	7.00
6	ft. 3x8 Lumber		.50	.50
	Nails		.20	.20
	Hangeriron		1.50	1.50
	Paint	.50	.25	.75
	Labor installing pit	23.00		23.00
		$ 23.50	$ 73.60	$ 97.10

Freight on 600 Lbs.

3" can be used from each end going towards the main discharge, if no question of extending roundhouse. In that case 4" to be used to end in direction of extension.

SCHEDULE FOR ESTIMATING COST OF BLOW-OFF LINE

Balance of overhead blow-off line to be 4".

		Labor	Material	Total
18	ft. 4" extra heavy pipe	$	$ 14.40	$ 14.40
35	ft. 2" " " "		10.50	10.50
1	4" x 2" " " screw tee		5.00	5.00
1	2" " " 90° elbow		.55	.55
2	2" " " nipples		.60	.60
1/2	of 1-4" " " Angle flange union		2.45	2.45
1	2" Angle check valve		14.00	14.00
1	2" Double angle flexible joint		12.30	12.30
1	2" #250 flexible joint		11.40	11.40
1	2" Straight flexible joint		7.00	7.00
6	ft. 3x8 lumber		.50	.50
	Nails		.20	.20
	Gasket		.20	.20
	Hangeriron		1.50	1.50
	Paint	.50	.25	.75
	Labor	27.00		27.00
		$ 27.50	$ 80.85	$108.35

Freight on 700 lbs. per stall

The 4" starts on each side of the main discharge line, whether this is 5" or 4".

SCHEDULE FOR ESTIMATING COST OF BLOW-OFF LINE.

The main discharge pipe from blow-off line to tower.

		Labor	Material	Total
120	ft. 5" extra heavy pipe	$	$132.00	$132.00
1	5x4x4 " " flange twin elbow		45.00	45.00
2	5" " " " elbow 90°		21.70	21.70
1	5"x2"x5" " " screw tee		7.20	7.20
1	5" " " flange union		4.75	4.75
5	5" " " comp. flanges		16.75	16.75
2	4" " " " "		5.90	5.90
	Gaskets		2.25	2.25
	Paint	1.50	.50	2.00
	Labor	50.00		50.00
	Hangeriron		3.00	3.00
		$ 51.50	$239.05	$290.55

Freight on 2800 lbs.

Operating Expense:

Cutting holes in walls	30.00
Removing old blow off line, if any, per stall	2.30

Salvage scrap (old line) per stall

SCHEDULE FOR ESTIMATING COST OF BLOW-OFF LINE

On smaller installations, where no future extension expected the main line to tower can be 4"

		Labor	Material	Total
120	ft. 4" extra heavy pipe	$	$ 96.00	$ 96.00
1	4x4x4 " " flange twin elbow		40.00	40.00
2	4" " " " 90° elbows		16.50	16.50
1	4x2x4 " " screw tee		5.00	5.00
7	4" " " Comp. flanges		21.00	21.00
1	4" " " flange union		3.15	3.15
	Gaskets		2.00	2.00
	Paint	1.50	.50	2.00
	Hangeriron		3.00	3.00
	Labor	45.00		45.00
		$46.50	$187.15	$233.65

Freight on 2100 lbs.

4" main discharge to tower can be used where roundhouse 3 sections or less, and extension of roundhouse will be quite out of the question, otherwise 5".

ESTIMATED COST OF TOWER FOR BLOW-OFF LINE

		Labor	Material	Total
80	yds. excavating & part backfill	$25.00		$25.00
10	yds. concrete & form $8 M $8 L	80.00	$80.00	160.00
2000	F.B.M. Lumber $25 L $35 M	50.00	70.00	130.00
	Nails and iron		30.00	30.00
71	Yds. paint 20¢ M 20¢ L	14.20	14.20	28.40
60	sq. ft. galv.roof 10¢ M 10¢L	6.00	6.00	12.00
16	sq. ft. screen 10¢ L 30¢ M	1.60	4.80	& 6.40
		$176.80	$205.00	$381.80

Freight

The location of the tower depends on local conditions and as to convenience to sewer, and also consideration should be given to possible future boiler washing plant.

Add. Sewer made of 12x12 lumber box made of four pcs. 2" x 10" placed with point up and down, and lower angle filled in by three cornered stip (4x4 cut diagonal) length and excavating trench depends on local conditions as to cost. Outsides painted wood preservative.

APPLICATION SCHEDULE BLOW-OFF LINE

		Labor	Material	Total
6	Stalls 3"	$141.00	$441.60	$582.60
20	" 4"	550.00	1617.00	2167.00
5"	Main discharge	51.50	239.05	290.55
	Tower	176.80	205.00	381.80
100	Ft. sewer digging	150.00		150.00
1000	FBM Lumber	25.00	35.00	60.00
	Nails 50#		3.00	3.00
		$1094.30	$2530.65	$3624.95
	Supt. & Use of Tools	109.40		109.40
		$1203.70	$2530.65	$3734.35
	Engr. & Inc.	120.30		120.30
		$1324.00	$2530.65	$3854.65

Freight 30,000 Transportation

Operating Expense:

Cutting walls for pipe	$30.00
Removing old pipe	50.00

Salvage scrap

Schedule for estimating cost of Blow off lines

Material and cost for each pit with 3" main Blow off pipe not to be used for more than 6 pits.

	Labor	Material	Total
18 ft. - 3" extra heavy pipe		10.80	10.80
35 " 2" " " "		10.50	10.50
1 - 3"x2" " " screw tee		2.15	2.15
1 - 2" " " 90° Elbow		.55	.55
2 - 2 " " nipples		.60	.60
½ of 1 - 3" " " Angle Fly valve		1.85	1.85
1 - 2 Jenkins Angle check Valve		14.00	14.00
1 - 2 Double Angle flexible joint		12.30	12.30
1 - 2 #250 " "		11.40	11.40
1 - 2 straight " "		7.00	7.00
6 ft. - 3x8 Lumber		.50	.50
Nails		.20	.20
Hangers		1.50	1.50
Paint	.50	.25	75
Labor installing pit	23.00		2300
	23.50	73.60	$ 97.10

Freight on 600 lbs

3" can be used from each end going towards the main discharge, if no question of extending Ramshaw in that case 4" to be used to end in direction of extension.

Schedule for estimating cost of Blow off line
Balance of overhead Blow off line to be 4".

	Labor	Material	Total
18 ft 4" extra heavy pipe.		14.40	14.40
35 " 2" " " "		10.50	10.50
1 - 4"x2" " " screw tee		5.00	5.00
1 - 2 " " 90° Elbow		.55	.55
2 - 2 " " nipples		.60	.60
1/2 of 1 - 4" " " Angle Flange union		2.45	2.45
1 - 2. Angle check Valve		14.00	14.00
1 - 2 Double Angle Flexible joint		12.30	12.30
1 - 2 #250 " "		11.40	11.40
1 - 2 straight " "		7.00	7.00
6 ft 3x8 lumber		.50	.50
Nails		.20	.20
gasket		.20	.20
Hangerirons		1.50	1.50
Paint	.50	.25	75
Labor	27.00		27.00
	27.50	80.85	108.35

Freight on 700 lbs per steel.

The 4" starts on each side of the main discharge line, wether this is 5" or 4".

Schedule for estimating Cost of Blow off Line.
The main discharge pipe from Blow off line to Tower.

	Labor.	Material	Total.
120 ft. 5" extra heavy pipe		132.00	132.00
1 - 5x4x4 " " flg. Twinn Ell.		45.00	45.00
2 - 5" " " " Elbow 90°		21.70	21.70
1 - 5"x2"x5" " " screw tee		7.20	7.20
1 - 5" " " Flange union		4.75	4.75
5 - 5" " " Comp. Flanges.		16.75	16.75
2 - 4" " " " "		5.90	5.90
Gaskets.		2.25	2.25
Paint	1.50.	50	2.00
Labor	50.00		50.00
Hangerirow	3.00.	3.00	3.00
	51.50	239.05	290.55

Freight on 2800 lbs

Operating expense
Cutting holes in walls. 30.00
Removing old Blow off line
if any per stall. 2.30

Salvage scrap:
(old line) per stall

Schedule for estimating cost of Blow off line.

On smaller installations, where no future extension expected the main line to Tower can be 4".

	Labor	Material	Total
120 ft 4" extra heavy pipe		96.00	96.00
1 - 4x4x4 " " fly Twinn Elbow		40.00	40.00
2 - 4" " " " 90° Elbow		16.50	16.50
1 - 4x2x4 " " screw tee		5.00	5.00
7 - 4 " " Comp. flange		21.00	21.00
1 - 4 " " Flange union		3.15	3.15
gaskets		2.00	2.00
Paint	1.50	50	2.00
Hangers iron		3.00	3.00
Labor.	45.00		45.00
	46.50	187.15	233.65

Freight on 2100 lbs

4" main discharge to Tower can be used where Roomhouse 3 sections or less, and extension of Roomhouse will be quite out of the question - otherwise 5".

Estimated cost of Tower for Blow off Line.

			Labor	Material	Total
20 yds excavating & part backfill			25.00		25.00
10 yds concrete & form	8.00	8.00	80.00	80.00	160.00
2000 FB.M lumber	25.00	35.00	50.00	70.00	120.00
Nails & iron				~~30~~.00	30.00
71 yds paint	.20	.20	14.20	14.20	28.40
60 sq. ft. galv. roof	.10	.10	6.00	6.00	12.00
16 sq ft. screen	10	.30	1.60	4.80	6.40
			176.80	205.00	381.80

Freight.

The location of the Tower depends on local conditions and as to convenience to sewer; and also consideration should be given to possible future Boilerwashing plant.

made of 4 pcs. 2"x10"

Add. Sewer made of 12x12 lumber box, placed with point up and down, and lower angle filled in by three cornered strip (4x4 cut diagonal). length and excavating trench depends on local conditions as to cost. Outsides painted wood preservative.

Application. Schedule Blow off line.

	Labor	Material	Total.
6 - Stalls 3".	141.00	441,60	582.60
20 " " 4" -	550.00	1617.00	2167.00
5" main discharge.	51.50	239.05	290.55
Tower.	176.80	205.00	381.80
100 ft Sewer digging	150.00		150.00
1000 FBm. Lumber 2"x12" 25.00 35.00	25.00	35.00	60.00
nails 50 lbs		3.00	3.00
	1094.30	2530.65	3624.95
Supt. use of Tools	109.40		109.40
	1203.70	2530.65	3734.35
Engr. Inc.	120.30		120.30
	132400	2530.65	3854.65

Freight 30.00. Transportation.

Operating Expense.
Cutting walls for pipe 30.00
Removing old pipe 50.00

Salvage scrap ?

2444

St. Paul, Minn., June 12, 1922

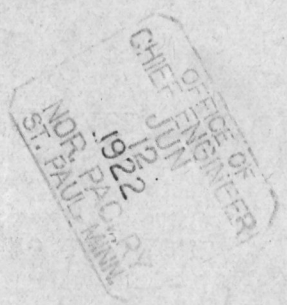
Roundhouse and
Car Shop Doors

File 4612

Mr. H. E. Stevens:-

I have your letter of June 8th regarding trying out the plan of providing for lights in the entire upper half of doors at Jamestown Roundhouse, and thank you for the adoption of the plan proposed.

General Mechanical Superintendent


OFFICE OF
CHIEF ENGINEER
JUN
1922
NOR. PAC. RY.
ST. PAUL, MINN.

Saint Paul, June 6th, 1922.

Mr. H. M. Curry:

Your letter of the 7th about lights in roundhouse doors.

We will try out at Jamestown the plan providing for lights in the entire upper half of the door.

Chief Engineer.

HES-ax

cc-Mr. S.J.Bratager:

Please note and have the plans made accordingly.

H.E.S.

2444

St. Paul, Minn., June 7, 1922.

Roundhouse and
Car Shop Doors

File 4612

Mr. H. M. Stevens:-

I thank you very much for your letter of June 1st, which referred to our conversations about additional light in roundhouse doors.

My recommendations are that we would be justified in assuming the increased first cost and increased maintenance that would result in the adoption of the doors as shown on the print which indicates in yellow wire glass lights for the entire upper half of the door.

I am fully satisfied that the cost of installation of doors having glass arrangement proposed would be very quickly made up by the very great improvement that would result.

Shall be obliged if in due season you will kindly advise me conclusions arrived at.

General Mechanical Superintendent

OFFICE OF
CHIEF ENGINEER
JUN 7
1922
NOR. PAC. RY.
ST. PAUL, MINN.

X

2444

Saint Paul, June 1st, 1932.

Mr. H.M.Curry:

Referring to our several conversations about additional light in roundhouse doors, I am attaching two prints of standard plan, sheet 100.

On one of these prints we have indicated in yellow wire glass lights for the entire upper half of the door. We estimate the increased cost at about $35.00 per set.

In the second sketch we have indicated two panels of 10 x 16 lights, estimated increase in cost being $15.00 per set.

Even with wire glass there would, of course, be considerable breakage account of the rough use these doors receive and the excessive twist account of their great height and width. I think, however, the lights would be fairly substantial and would be glad if you would advise if, in your opinion, we would be justified in assuming the increased first cost and increased maintenance which would result in the adoption of either of these plans.

Chief Engineer.

HES-ar

[illegible]l.

Saint Paul, June 1st, 1922.

OFFICE OF CHIEF ENGINEER JUN 1 1922 NOR. PAC. RY. ST. PAUL, MINN.

Mr. H. E. Stevens,

Chief Engineer.

Dear Sir:

Referring to your letter of March 28th about additional lights in roundhouse doors.

Attached I hand you two prints of Standard Plan Sheet 100 of Roundhouse Doors. On one sheet is indicated in yellow lines suggested glass panels in the entire upper half of the door and on the other glass panels in the upper half corresponding to those now in the lower half.

New doors with lights in the entire upper half, as shown, equipped with 1/4" wire glass will cost about $35.00 more a set than the present standard door and $15.00 more a set if glass panels are provided in the upper half corresponding to those in the lower half.

In the plans for remodeling the Helena roundhouse which I will send Mr. Blum today or tomorrow, I have in accordance with our discussion yesterday provided doors with glass panels in the entire upper half.

And I am also having the plans of the doors for the Jamestown roundhouse made the same way.

Yours truly,

SJB/FS

Encl.

S J Bataye

Principal Asst. Engineer.

X

2444

Saint Paul, June 1st, 1922.

Mr. H. E. Stevens,

Chief Engineer.

Dear Sir:

Referring to your letter of March 28th about additional lights in roundhouse doors.

Attached I hand you two prints of Standard Plan Sheet 100 of Roundhouse Doors. On one sheet is indicated in yellow lines suggested glass panels in the entire upper half of the door and on the other glass panels in the upper half corresponding to those now in the lower half.

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In the plans for remodeling the Helena roundhouse which I will send Mr. Blum today or tomorrow, I have in accordance with our discussion yesterday provided doors with glass panels in the entire upper half.

And I am also having the plans of the doors for the Jamestown roundhouse made the same way.

Yours truly,

SJB/FS

Encl.

Principal Asst. Engineer.

24444

May 17, 1922.

Mr. H. P. Padley, Asst. Chief Engineer,
Chicago, St. Paul, Minneapolis & Omaha,
St. Paul, Minnesota.

Dear Sir:-

As per your verbal request, I am handing you herewith the following standard plans showing roundhouse door clearances:

Standard Plan S-32-1, dated 12-28-1889
" " S-32-2, " 12-28-1889
" " S-32-4, " 3-1-1899
" " Sheet 100, dated July 1, 1910, (Rev. 11-14-16)

These plans were our standard for construction over the periods covered by the above dates and roundhouses built in the respective periods have the door clearances shown on these plans.

Sheet 100, revised November 14, 1916 is our present standard of construction.

Yours truly,

Chief Engineer.

HES-ar

Encl.

Mr. Stevens

In accordance with our conversation this morning I hand you herewith the prints requested by Capt Padley showing our Standard Roundhouse door clearances at various periods:

Standard plan S-32-1 dated 12-28-1889

" " S-32-2 " 12-28-1829

" " S-32-4 " 3-1-1899

" " Sheet 100 " July 1st 1910 (Revised 11-14-1916)

SJB. 5/16

2444

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA RY. CO.

H. E. BARLOW,
CHIEF ENGINEER

H. P. PADLEY,
ASS'T CHIEF ENGINEER

Please refer to File No.

ST. PAUL, MINN.

May 20, 1922.

Clearances
- - - - -

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

Dear Sir:

I am in receipt of and wish to thank you for the following standard plans of your engine houses:

Standard Plan S-32-1, dated 12-28-1889
" " S-32-2, " 12-28-1889
" " S-32-4, " 3-1-1899
" " Sheet 100, dated July 1, 1910, (Rev.11-14-16).

Yours truly,

H. P. Padley

Ass't Chief Engineer

HPP:4

Saint Paul, March 28th, 1922.

Mr. S. J. Bratager:

Please note the attached about additional lights in roundhouse doors.

At some convenient time, I wish you would have sketch worked up of a revised design and approximate estimate of the cost prepared. If we increase the glass area to any great extent I think we ought to go to wire glass.

Chief Engineer.

HES-ar

Encl.

Saint Paul, March 27th, 1922.

OFFICE OF CHIEF ENGR. MAR 28 1922 C.M.St.P.&P.R.R. ST. PAUL, MINN.

Mr. H. E. Stevens,

Chief Engineer.

Referring to your letter of the 13th and returning papers about the matter of glass lights in roundhouse doors:

You have copy of Mr. Curry's letter of the 23rd to me wherein he advocates we start a program of putting in additional lights in all of our roundhouses so as to get it completed before cold weather. This would be quite an elaborate program and when I took the matter up with you I did not have in mind doing any more at this time than changing our standard and putting in all the new doors with additional lights. The present roundhouse doors have eight lights each. I believe that we should introduce at least eight more lights in the upper panels which are now solid wood. If necessary, these lights could be made of wire glass. With the additional lights placed at this height the natural light would come into the roundhouse above the tenders and give some illumination in the front part of the house which is now rather dark. Building our new stalls 100 feet deep will put the tender further away from the doors, admitting more light.

I am inclined to sympathize with Mr. Curry's views on the matter as the front part of our roundhouses do not appear to be adequately lighted. I would strongly recommend that the lights now shown in the lower portion of our standard roundhouse door, Sheet 100, be duplicated in the upper panel.

Yours truly,

Engr. Mtce. of Way.

BB-O
encl.

24464

Saint Paul, March 13th, 1922.

Mr. Bernard Blum:

Please note the attached about additional lights in roundhouse doors.

The size and weight of these doors is such that it seems to me it would be a difficult job to maintain in satisfactory condition any substantial glass area. Eight additional lights in the top panel of about the same size as those in the bottom panel would be about all we could figure on and this, perhaps, will be sufficient, as I do not see that there is any great necessity for light around the back end of the tenders on the large engines. These tenders are so close to the doors that it is impossible to see anything or do anything without opening the door.

Chief Engineer.

HES-ar

2444

OFFICE OF CHIEF ENGINEER MAR 25 1922 NOR. PAC. RY. ST. PAUL, MINN.

St. Paul, Minn., March 23, 1922.

Car Shop Doors

File 4612

Mr. Bernard Blum:-

Thanks for your letter of March 16th, which was accompanied by prints of doors installed at Dickinson and Jamestown car shops.

I think these are quite a satisfactory door, although I do not think as much so as the design of door in use at Laurel car shop. If you can succeed in the adoption of an enginehouse door as standard that will give as good lighting effect as Laurel car shop doors, I will be everlastingly under obligations to you, and the railway will be the financial beneficiary.

In addition, won't you kindly be so good as to make a study of and endeavor to line up a program the adoption of which will result in the installation of larger windows in roundhouse doors now in use? Doubtless difference in the design of doors will necessitate using a different arrangement. This, however, is of minor importance if ample window area is provided.

Considering the immeasurable benefit that will be derived from lining this up on such a basis as necessary to provide an ample supply of natural light, I know of no improvement that could be made, at comparatively limited expenditure, that would result in greater benefit.

Please understand that I am not writing in any spirit of complaint, but with the thought of improving a situation that I am sure all will concur in as not being either satisfactory or economical.

I make these recommendations appreciating that if adopted doubtless a greater number of window light replacements will be necessary, but as stated above, the benefit to be derived is of so much greater importance as to not make this item of expense one of serious consideration.

I shall be glad to render any possible assistance in getting the program herein recommended under way, so that the job can be practically completed for the entire system before cold weater and short days come next winter, when it is necessary to keep roundhouse doors continually closed, resulting in shutting out the light.

I am sending a copy of this letter to Messrs. Rapelje and Stevens, that they may know of our interest and contemplated action regarding this important matter, and to enlist their support in accomplishingthe ends sought.

General Mechanical Superintendent

Cy Mr. J. M. Rapelje
Mr. H. E. Stevens

St. Paul, March 11, 1922.

Mr. H. E. Stevens,

Chief Engineer.

Dear Sir:

Referring to your notation on Mr. Blum's letter of March 9th in reference to glass in roundhouse doors.

Our standard practice prior to about 1906 at which time we had roundhouse doors with semi-circular tops is illustrated on standard plan S-32-9, a print of which is attached. We did, however, have so much trouble with breakage of glass in connection with this style of door that the glass area was reduced to what is now required by standard plan Sheet 100.

As far as the strength of the door is concerned, we could increase the glass area above our present practice if desired.

Attached I hand you a print of the old standard plan Sheet S-32-9 and of the present standard plan Sheet 100.

Yours truly,

SJB/FS

Encl.

Principal Asst. Engineer.

Saint Paul, March 9th, 1922.

Mr. H. E. Stevens,

Chief Engineer.

Mr. Curry wrote me from Laurel about the matter of glass lights in the car shop doors at that place. It appears that some doors have been renewed and the new ones have two less lights, 10"x12", than the original doors. Both types of doors would seem to afford sufficient illumination and I do not understand that he has objected particularly to this place. He has brought up however, the general question of illumination of Mechanical Department buildings.

The new car shops at Jamestown and Dickinson have large windows and I believe afford sufficient natural illumination. The end doors have glass in the entire upper halves. I have looked up our standard engine house door, Standard Plan 100, and I believe that this plan should be changed. There are 8 lights 10"x16" in each half door except for those doors that have a wicket where the glass area is less. I believe that the two large upper panels of each door should be fitted with large sashes. This, in addition to the lights shown on the present plan. The only illumination in the front of a roundhouse comes through these doors. I would recommend that the plan be modified accordingly at this time and revised prints be furnished the Purchasing Department so that gradual change can be made as repair doors are ordered.

Yours truly,

Edward Blum

Engr. Mtce. of Way.

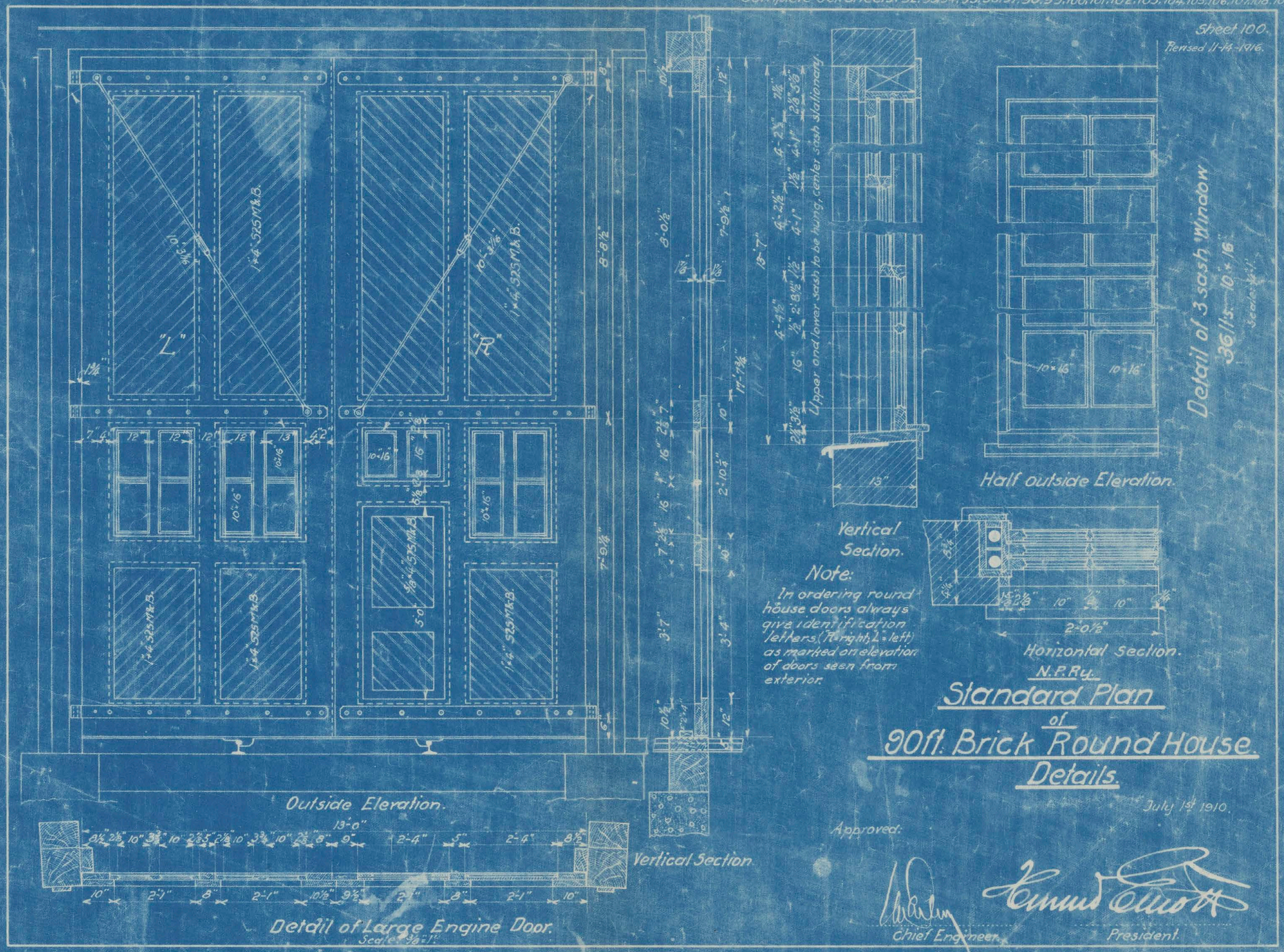
BB-O

OFFICE OF
CHIEF ENGINEER
MAR
10
1922
NOR. PAC. RY
ST. PAUL, MINN.

Complete set Sheets: 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109.

Sheet 100.

Revised 11-14-1916.



Note:
In ordering round house doors always give identification letters ("R"=right; "L"=left) as marked on elevation of doors seen from exterior.

N.P.Ry.

Standard Plan of 90ft. Brick Round House. Details.

July 1st 1910.

Approved:

Chief Engineer.

President.

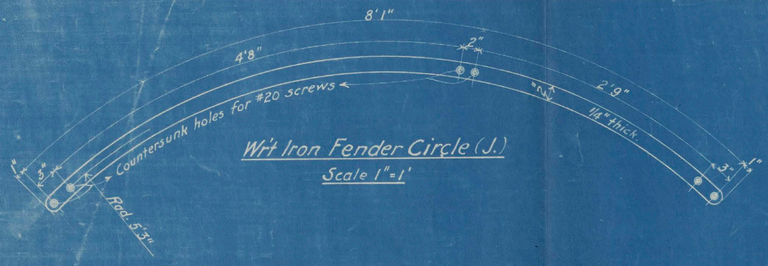
S-32-9
3-1-1899.

N.P. Ry.

STANDARD PLAN
OF
1st CLASS ROUNDHOUSE
DETAILS

Approved:
J.M. Hannaford
Second Vice President.

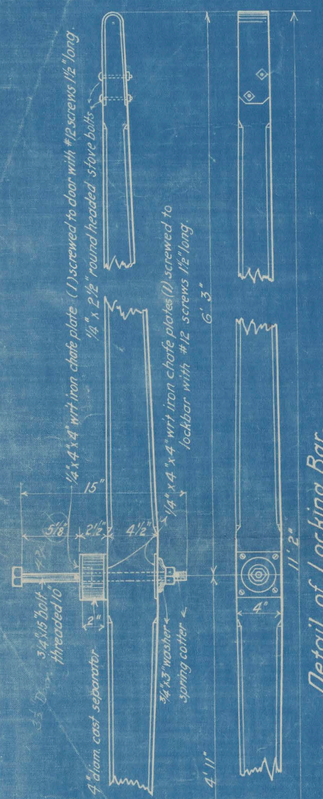
E.H. McHenry
Chief Engineer.

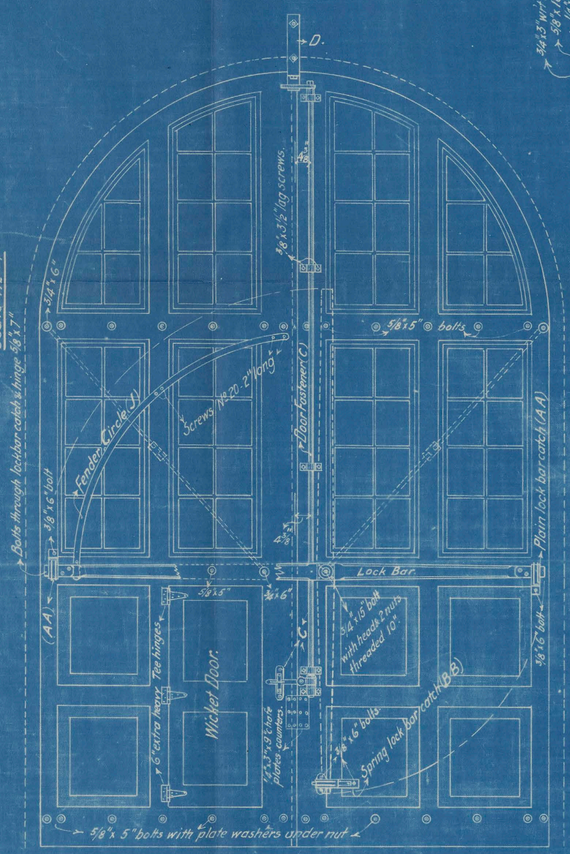


Wr't Iron Fender Circle (J.)
Scale 1"=1'

SCALES.



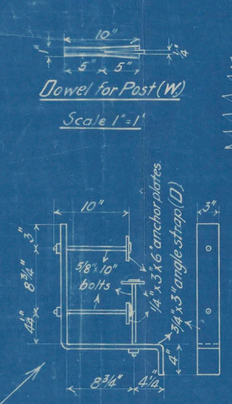


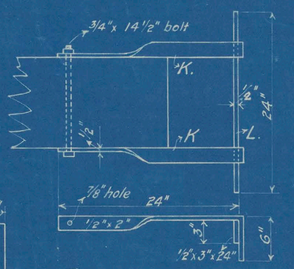


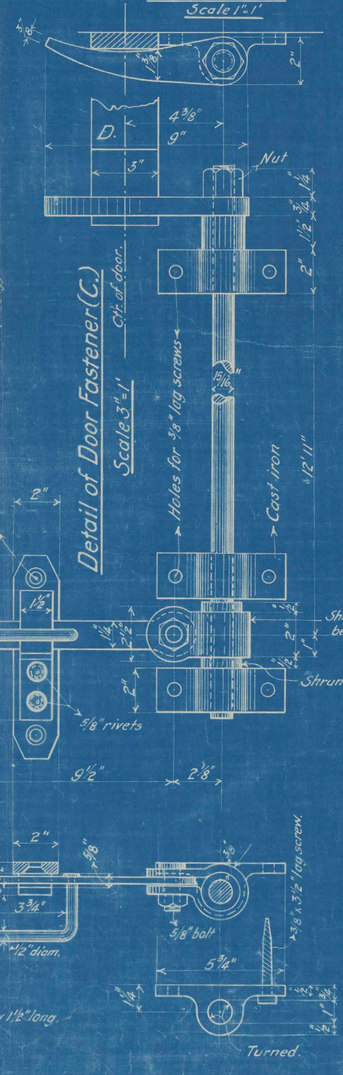
Inside Elevation of Large Door.
showing locking apparatus.

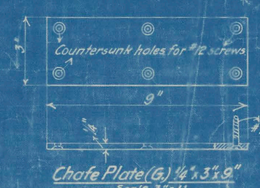
Note: Fit nice wicket door with:
1 mortize dead lock.
1 extra heavy thumb latch.
1-5" wr't iron barrel bolt.

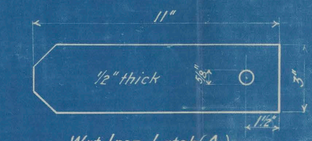
Scale ½"=1'

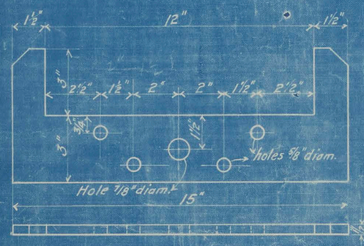




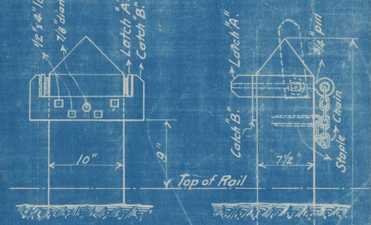












Detail of Fastening Post and position of Doors when open.
Scale 1"=1'

Complete Set S-32-1 to 19 inclusive.

2445

NORTHERN PACIFIC RAILWAY
ST. PAUL, MINN.
DEC 19 1921
OFFICE OF
General Mechanical Supt.

Saint Paul, December 17th, 1921.

4057

Mr. H. M. Curry:

Please note the attached letter from Mr. Otis and prints of his terminal design revised somewhat in line with our conversation; that is, to make the roundhouse round instead of square and cut out the coaling feature. He is apparently now working along the lines on which we constructed the Dilworth roundhouse, and in the course of time he will probably get back to standard roundhouse design.

After you have looked over the prints, will you kindly forward them to Mr. Rapelje with your comments.

Chief Engineer.

HES-ar
Encl.

2444

J. E. TRUITT, PRESIDENT E. ACKERMAN, VICE PRES. THEO. F. LEJEUNE, SECY. & TREAS.

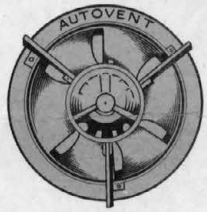
PHONE HAYMARKET 7060 ALL DEPTS.

Autovent Fan & Blower Co.

FORMERLY BATTERMAN - TRUITT CO.

MANUFACTURERS

▫ *Autovent* ▫
PROPELLER FANS ▫▫▫▫ AND LOUVRES



▫ *Uniblade* ▫
STANDARD PRESSURE AND VOLUME BLOWERS

VENTILATING, HEATING AND DRYING APPARATUS

General Offices and Works, 730-738 W. MONROE STREET
CHICAGO

Dec. 27, 1921.

N.P. Ry.Co.,
1016 Railroad Bldg.,
St.Paul, Minn.

Gentlemen:

Have you any ventilating problems on which you would like assistance at this time? Our Engineering Department would be only too pleased to assist you on any problems you may have.

We are in a position to give good service and prompt shipment on our standard equipment at this time.

We manufacture first-class equipment, which can be used on most any kind of a job. It is used for ventilating, heating, drying and exhausting. Our fans and blowers are neat in appearance, exceptionally quiet in operation, and easy to install.

We would like to hear from you on any ventilating requirements you may have.

Yours very truly,

AUTOVENT FAN & BLOWER CO.

J. S. Eagan.

SALES & ENG. DEPT.

EH

SALES OFFICES

SAN FRANCISCO ★ DENVER ★ ST. LOUIS ★ KANSAS CITY, MO. ★ INDIANAPOLIS ★ MILWAUKEE ★ DETROIT ★ CINCINNATI ★ CLEVELAND ★ TOLEDO ★ PITTSBURGH ★ PHILADELPHIA ★ NEW YORK ★ BUFFALO ★ BOSTON ★ DALLAS ★ NEW ORLEANS

ALL QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE. WE RESERVE THE RIGHT TO CORRECT STENOGRAPHIC ERRORS AND OMISSIONS

2444

St. Paul, March 11, 1922.

Mr. H. E. Stevens,

Chief Engineer.

Dear Sir:

Referring to your notation on Mr. Blum's letter of March 9th in reference to glass in roundhouse doors.

Our standard practice prior to about 1906 at which time we had roundhouse doors with semi-circular tops is illustrated on standard plan S-32-9, a print of which is attached. We did, however, have so much trouble with breakage of glass in connection with this style of door that the glass area was reduced to what is now required by standard plan Sheet 100.

As far as the strength of the door is concerned, we could increase the glass area above our present practice if desired.

Attached I hand you a print of the old standard plan Sheet S-32-9 and of the present standard plan Sheet 100.

Yours truly,

SJB/FS

Encl.

Principal Asst. Engineer.

2444

Saint Paul, November 15th, 1921.

Mr. S. J. Bratager:

I am attaching file about rectangular engine house design proposed by the National Boiler Washing Company, which we were discussing this morning.

It will be necessary for us to go into some detail in making reply, and I will have to have at least approximate comparative estimates of trackage and buildings involved in such a scheme as compared with layout of our established practice.

This information, however, can be worked up at your convenience and at times when it will not delay work of real importance.

Chief Engineer.

HES-ar

Encl.

2444

Saint Paul, November 15th, 1921.

Mr. W. T. Tyler,

Vice President.

Dear Sir:-

Mr. Curray has forwarded me plans which you sent him showing rectangular engine terminal proposed by the National Boiler Washing Company.

As mentioned in my letter of November 11th, the basic idea of a rectahgular engine house is not at all new, sketches of this kind having been proposed and considered by various engineering associations, including the A.R.E.A., for the past 15 or 20 years. The idea has certain basic difficulties which have not as yet been successfully eliminated, but I shall, of course, be glad to give Mr. Otis' plans consideration as soon as pressure of other work will permit detailed analysis and comparative estimates. At the present time, however, there are a number of jobs which will have to be given precedence over the consideration of this plan.

Yours truly,

Chief Engineer.

RES-ar

cc-Mr. Curry.

2444

December 29, 1921.

Mr. Spencer Otis, President,
National Boiler Washing Co.,
Railway Exchange,
Chicago, Illinois.

My Dear Mr. Otis:

I have your letter of the 27th, with memorandum covering the history of the early steam shovels and dinky locomotives. This history, as well as the photograph, is very interesting to me, and I very much appreciate your thoughtfulness in forwarding same.

I also beg to thank you for the products of the farm of the National Boiler Washing Company, which is much appreciated, particularly by my small children.

Wishing you a Happy and Successful New Year, I am,

Yours very truly,

17 2444

Saint Paul, February 28th, 1922.

Mr. H. M. Curry,

General Mechanical Superintendent.

I have your letter of the 19th, File 4612, written at Mandan, relative to floor in the proposed new roundhouse sections which we all hope will receive early executive approval.

I regret that the recent repair job at Duluth did not afford proper drainage along the side of the engine pits. We should of course have sufficient camber in the flooring between the pits without making it excessive. The main trouble is that the brick flooring settles a little creating a ridge where the brick joins the concrete of the pits.

I am sending a copy of this letter to Mr. Derrig so he, as well as myself, may watch this very important matter and see that adequate drainage is afforded so there will be no opportunity for water to stand along side of the pits.

Yours truly,

BERNARD BLUM

Engr. Mtce. of Way.

BB-O

Copy - Mr. Stevens
Mr. Derrig.

BERNARD BROWN

OFFICE OF
CHIEF ENGINEER
MAR 1
1922
NOR. PAC. RY.
ST. PAUL, MINN.

2444

Saint Paul, March 28th, 1922.

Mr. S. J. Bratager:

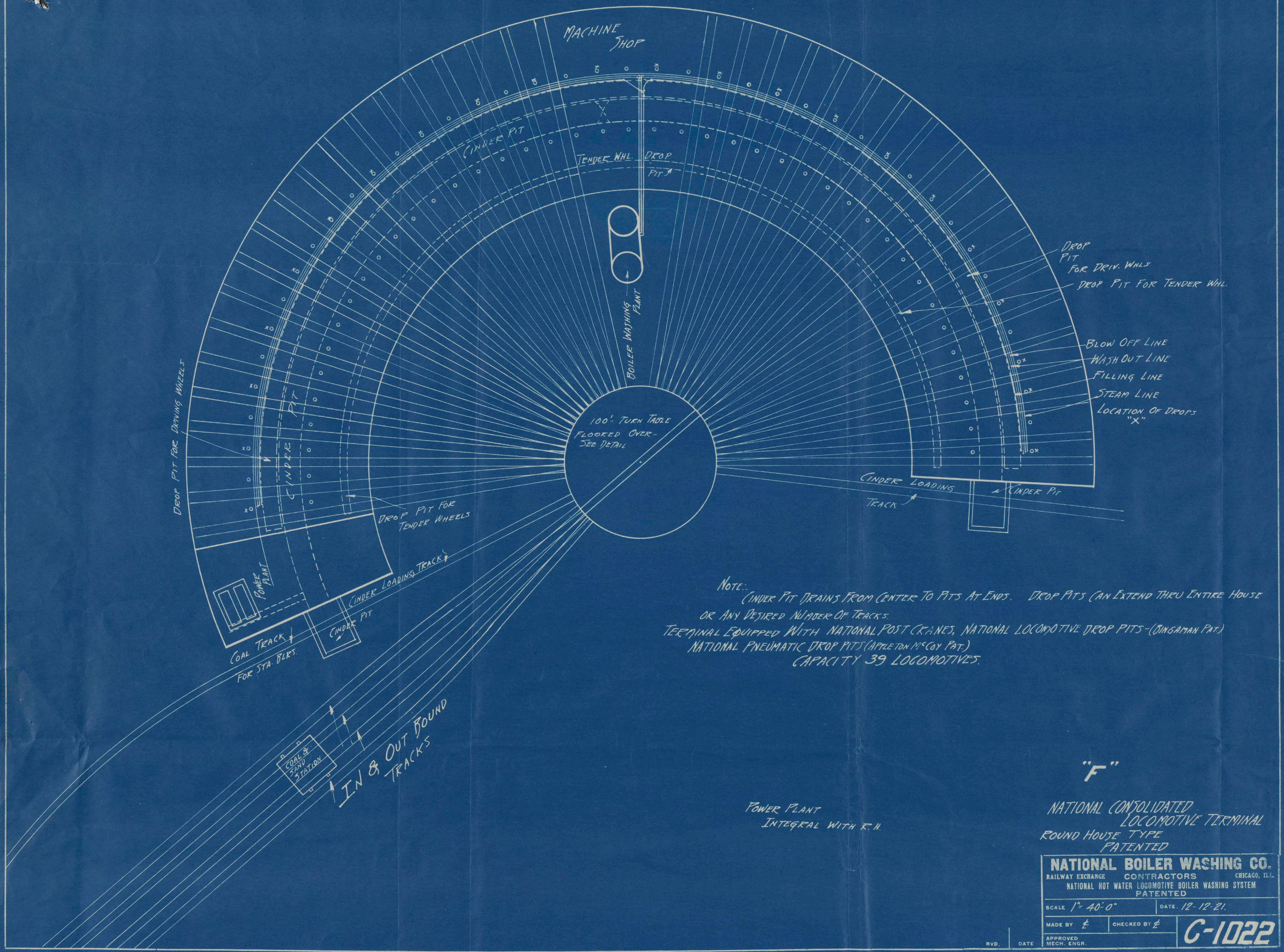
Please note the attached about additional lights in roundhouse doors.

At some convenient time, I wish you would have sketch worked up of a revised design and approximate estimate of the cost prepared. If we increase the glass area to any great extent I think we ought to go to wire glass.

Chief Engineer.

HES-ar

Encl.



NOTE:- CINDER PIT DRAINS FROM CENTER TO PITS AT ENDS. DROP PITS CAN EXTEND THRU ENTIRE HOUSE OR ANY DESIRED NUMBER OF TRACKS.
TERMINAL EQUIPPED WITH NATIONAL POST CRANES, NATIONAL LOCOMOTIVE DROP PITS - (BINGAMAN PAT.)
NATIONAL PNEUMATIC DROP PITS (APPLETON McCOY PAT.)
CAPACITY 39 LOCOMOTIVES.

POWER PLANT INTEGRAL WITH R.H.

"F"

NATIONAL CONSOLIDATED LOCOMOTIVE TERMINAL
ROUND HOUSE TYPE
PATENTED

NATIONAL BOILER WASHING CO.
RAILWAY EXCHANGE CONTRACTORS CHICAGO, ILL.
NATIONAL HOT WATER LOCOMOTIVE BOILER WASHING SYSTEM
PATENTED

SCALE 1" = 40'-0"	DATE. 12-12-21.
MADE BY E	CHECKED BY E
APPROVED MECH. ENGR.	C-1022

RVD. DATE

Auxiliary Steam Line

Boiler Washing Plant

Driving Wheel Drop Pit

Cinder Pit

Tender Truck Drop Pit

Cinder Pit & Sump

Cinder Loading Track

Sta Boilers Located Here

Coal Track for Buckets

Machine & Shop (Air Compressors Pumps etc)

Power Plant

Turn Table Decked Over To Keep Out Sand, Water & Snow. 100'-0 Turn Table

See Detail

In & Out Bound Tracks

Coaling & Sanding Station

Cinder Loading Track

Cinder Pits Sump

Boiler Washing Piping

- Blow Off Line
- Wash Out Circulating Line
- Wash Out Line
- Filling Circulating Line
- Filling Line

Note:- Cinder pit drains from center towards both ends of house.

Terminal equipped with
National Post Cranes (Bingaman Pat)
National Locomotive Drop Pits (Bingaman Pat) Screw, Motor Driven Drv. Whls.
National Pneumatic Drop Pits (Appleton-McCoy Pat) Tender Whls.
Drop Pits can extend thru entire house or any desired number of tracks.

Capacity 30 Locomotives.

"D."

-Plan-

National Consolidated Locomotive Terminal - Round House Style

-Patented-

NATIONAL BOILER WASHING CO.
Railway Exchange Contractors Chicago, Ill.
National Hot Water Locomotive Boiler Washing System
Patented

Scale 1" = 20'-0"	Date. 12-6-21.
Made by E	Checked by E
Approved Mech. Engr.	D-1019

Rvd. Date

MACHINE SHOP

OPENINGS IN FLOOR FOR DROP PITS

JIB CRANES

CINDER PIT

CINDER PIT

DRIVING WHEEL DROP PIT

TENDER WHEEL DROP PIT

100' TURNTABLE FLOORED OVER SEE DETAIL

B.W. PLANT

B.W. PLANT PIPE LINES
BLOW OFF LINE
WASH OUT LINE
FILLING LINE

STEAM LINE
LOCATION B.W. DROPS - "X"

DROP PIT FOR DRIVING WHEELS

DROP PIT FOR TENDER WHEELS

BOILER WASHING PLANT

BOILER WASHING PLANT PIPING
BLOW OFF LINE
WASH OUT LINE
FILLING LINE
LOCATION OF BOILER WASH DROPS - "X"

STEAM LINE

DROP PIT FOR DRIVING WHEELS

DROP PIT FOR TENDER TRUCK WHEELS
BOTH DRIVING WHEEL & TENDER DROP PITS CAN BE INSTALLED AROUND COMPLETE CIRCLE OR ANY DESIRED NUMBER OF TRACKS.
JIB CRANES LOCATED AS DESIRED THRU-OUT R. H.

CAPACITY
79 LOCOMOTIVES.

CINDER LOG CRANE

CINDER PIT

CINDER LOG TRACK

IN &

OUT BOUND TRACKS

CINDER PIT

CINDER PIT (STA. BLRS)

CINDER LOG CRANE

CINDER LOG & COAL TRACK FOR POWER PLT.

STA. BOILERS

POWER PLANT

CINDERS LOADED & COAL SUPPLIED TO STA. BLRS. BY MONO RAIL CRANE

TERMINAL EQUIPPED WITH THE FOLLOWING:-
NATIONAL POST CRANES
NATIONAL LOCOMOTIVE DROP PITS } (SPANGLAMAN PAT.)
NATIONAL PNEUMATIC DROP PITS (APPLETON-MCCOY PAT.)

NOTE:- COALING & SANDING FACILITIES ARE LOCATED ON OUT-BOUND TRACKS, LOCOMOTIVES TO STOP FOR COAL & SAND WHEN LEAVING HOUSE. LOCATION OF FACILITIES CAN BE VARIED TO SUIT LOCAL CONDITIONS.

RVD. DATE

"E."
- PLAN - NATIONAL CONSOLIDATED LOCOMOTIVE TERMINAL ROUND HOUSE STYLE
- PATENTED -

NATIONAL BOILER WASHING CO.
RAILWAY EXCHANGE CONTRACTORS CHICAGO, ILL.
NATIONAL HOT WATER LOCOMOTIVE BOILER WASHING SYSTEM
PATENTED

SCALE 1" = 40'-0"	DATE 12-9-21
MADE BY E	CHECKED BY E
APPROVED MECH. ENGR.	D-1021