

NORTHERN PACIFIC RAILWAY COMPANY

Duluth and Superior Terminals

SPEED TABLE

Time Per mile		Miles Per Hour	Time Per mile		Miles Per Hour
Minutes	Seconds		Minutes	Seconds	
0	45	80	1	12	50
0	46	78.3	1	15	48
0	47	76.6	1	20	45
0	48	75	1	25	42.3
0	49	73.5	1	30	40
0	50	72	1	40	36
0	51	70.6	1	45	34.3
0	52	69.2	1	50	32.7
0	53	67.9	2	..	30
0	54	66.6	2	10	27.6
0	55	65.4	2	15	26.6
0	56	64.2	2	20	25.7
0	57	63.1	2	30	24
0	58	62.0	2	40	22.5
0	59	61.0	2	45	21.8
1	..	60	2	50	21.2
1	1	59	3	..	20
1	2	58	3	9	19
1	3	57.1	3	20	18
1	4	56.2	3	31	17
1	5	55.3	3	45	16
1	6	54.5	4	..	15
1	7	53.7	5	..	12
1	8	52.9	6	..	10
1	9	52.1	7	30	8
1	10	51.4	10	..	6

TIME TABLE 224

In Effect at 12:01 A. M.
Central Standard Time.

Sunday, May 18, 1947

For the Government of Employees only. The Company reserves the right to vary therefrom at pleasure. Be positive that you have the Current Time Table and destroy all previous numbers. Read carefully the Special Instructions and always carry for reference a copy of OPERATING RULES.

C. CORSER,
Superintendent.

C. V. BERGLUND,
General Manager.

R. E. MATTSON,
General Superintendent of
Transportation.

2 WESTWARD

FIRST SUBDIVISION

FIRST CLASS

65	35	57	303	405	19	401	61	201	23	407	55	Distance from East D. M. & I. R. Jct.	Time Table No. 224 May 18, 1947
Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger		STATIONS
Daily	Ex. Sun.	Daily	Ex. Sun.	Daily	Daily	Daily	Ex. Sun.	Daily	Daily	Daily	Daily		Telegraph Offices and Calls
	G. N. 35		D. W. & P. 19	D. M. & I. R. 6	G. N. 19	D. M. & I. R. 10		D. M. & I. R. 1	G. N. 23	D. M. & I. R. 8		0.0	... EAST D. M. & I. R. JCT. ...
L 11.30 PM	L 9.30 PM	L 7.40 PM		L 5.41 PM	L 4.30 PM	L 8.25 AM				L 7.45 AM		0.9	DU.....DULUTH.....DN
11.33	A 9.32 PM	A 7.43 PM	L 7.19 PM	A 5.45 PM	A 4.32 PM	A 8.30 AM	L 8.45 AM	L 8.20 AM	L 8.00 AM	A 7.50 AM	L 7.30 AM	1.0	.....GARFIELD AVE.....
f 11.35			7.21				8.47	8.23	A 8.02 AM		A 7.33 AM	2.2	.....20TH AVE. W...PD
11.37			7.23				8.50	A 8.26 AM				2.8	WEST D. M. & I. R. JCT..
												3.6	...500 LINE CROSSING...
11.40			A 7.29 PM				8.53					4.5	...D. W. & P. JCT.....
s 11.44							8.55					5.1	WU..WEST DULUTH..DN
A 11.50 PM							A 8.57 AM					5.9	...WEST DULUTH JCT. P
												6.9	.....D. T. CROSSING.....
												8.1	.....RIVERSIDE.....
												9.7	.....MORGAN PARK.....
												12.4	.....NEW DULUTH.....PD
												15.1	.....FOND DU LAC.....
Daily	Ex. Sun.	Daily	Ex. Sun.	Daily	Daily	Daily	Ex. Sun.	Daily	Daily	Daily	Daily		Time Over Subdivision
.20	.02	.03	.10	.04	.02	.05	.12	.06	.02	.05	.03		Average Speed Per Hour
14.7	30.0	20.0	15.0	13.5	30.0	10.8	24.5	19.0	30.0	10.8	20.0		

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

EASTWARD

FIRST SUBDIVISION

FIRST CLASS

Water, Fuel, Scales, Turn Tables, Wyes and Yard Limits.	Car Capacity of Siding.	Station Numbers.	56	20	204	62	24	304	400	36	58	66	Distance from Fond du Lac.	Time Table No. 224 May 18, 1947
			Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger		STATIONS
			Daily	Daily	Daily	Ex. Sun.	Daily	Ex. Mon.	Daily	Ex. Mon.	Daily	Daily		Telegraph Offices and Calls
CTW XYZ	Yard	WB 71	A 10.50 PM	A 8.00 PM	A 4.10 PM	A 12.35 PM	A 11.58 AM		A 9.00 AM	A 7.00 AM	A 8.00 AM	A 6.30 AM	15.1	...EAST D. M. & I. R. JCT....
X			L 10.45 PM	L 7.58 PM	4.07	12.32	L 11.56 AM	A 9.00 AM		L 6.57 AM	L 7.57 AM	6.25	14.2	DU.....DULUTH.....DN
X	L 2				4.06	f 12.31		8.58				f 6.22	13.2	.....GARFIELD AVE.....
X	L02				L 4.03 PM	12.29		8.56				6.19	12.9	.....20TH AVE. W...PD
X													12.3	WEST D. M. & I. R. JCT..
X						12.25		L 8.50 AM				6.14	11.5	...500 LINE CROSSING...
X	L04					s 12.23						s 6.12	10.6	...D. W. & P. JCT.....
XY	L 5					L 12.21 PM						L 6.03 AM	10.0	WU WEST DULUTH DN
													9.2	...WEST DULUTH JCT. P
	18												8.2	.....D. T. CROSSING.....
													7.0	.....RIVERSIDE.....
	13	LB5											5.4	.....MORGAN PARK.....
	82	LB8											2.7	.....NEW DULUTH.....PD
													0.0	.....FOND DU LAC.....
			Daily	Daily	Daily	Ex. Sun.	Daily	Ex. Mon.	Daily	Ex. Mon.	Daily	Daily		Time Over Subdivision
			.05	.02	.07	.14	.02	.10	.04	.03	.03	.27		Average Speed Per Hour
			12.0	30.0	10.3	21.0	30.0	15.0	13.5	20.0	20.0	10.9		

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

FIRST SUBDIVISION Westward

3

Time Table No. 224

May 18, 1947

SECOND CLASS

623 627

STATIONS

Telegraph Office and Calls

Freight Freight
Daily Daily

....EAST D. M. & I. R. JCT....		
DU.....DULUTH.....DN	L 6.00 PM	L 7.35 PM
.....GARFIELD AVE.....	A 6.03 PM	7.39
.....20TH AVE. W....PD		7.40
WEST D. M. & I. R. JCT..		7.42
..SOO LINE CROSSING..		
....D. W. & P. JCT.....		7.48
WU..WEST DULUTH..DN		7.51
...WEST DULUTH JCT..P	A 7.55 PM	
.....D. T. CROSSING.....		
.....RIVERSIDE.....		
.....MORGAN PARK.....		
.....NEW DULUTH.....PD		
.....FOND DU LAC.....		
	Daily	Daily
Time Over Subdivision	.03	.20
Average Speed Per Hour	20.0	14.7

SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

FIRST SUBDIVISION Eastward

Time Table No. 224

May 18, 1947

SECOND CLASS

624 626 628 404 402

STATIONS

Telegraph Offices and Calls

C. M. St. P. & P. 626 D.M.&I.R. 7 D.M.&I.R. 9
Freight Freight Freight Passenger Passenger
Daily Daily Daily Daily Daily

....EAST D. M. & I. R. JCT....				A 4.25 PM	A 5.55 PM
DU.....DULUTH.....DN			A 4.30 AM	L 4.20 PM	L 5.50 PM
.....GARFIELD AVE....			4.20		
.....20TH AVE. W....PD	A 3.50 AM	A 4.00 AM	4.09		
WEST D. M. & I. R. JCT..	3.43	3.53	4.06		
..SOO LINE CROSSING..					
....D. W. & P. JCT.....	3.37	3.46	4.00		
WU WEST DULUTH DN	3.35	3.43	3.58		
...WEST DULUTH JCT..P	L 3.30 AM	L 3.40 AM	L 3.55 AM		
.....D. T. CROSSING.....					
.....RIVERSIDE.....					
.....MORGAN PARK.....					
.....NEW DULUTH.....PD					
.....FOND DU LAC.....					
	Daily	Daily	Daily	Daily	Daily
Time Over Subdivision	.20	.20	.35	.05	.05
Average Speed Per Hour	10.8	10.8	8.4	10.8	10.8

SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

4 WESTWARD

SECOND SUBDIVISION

SECOND CLASS			FIRST CLASS									Time Table No. 224 May 18, 1947		Distance from Garfield Ave.
629	625	623		35	89	57	93	19	23	55	65			
N. P. 630	C. M. St. P. & P. 625			G. N. 35	Omaha 510		Omaha 512	G. N. 19	G. N. 23					
Freight	Freight	Freight		Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	STATIONS		
Mon., Wed., Fri., Sat.	Daily	Daily		Ex. Sun.	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Telegraph Offices and Calls		
		L 6.03 PM		L 9.32 PM		L 7.43 PM		L 4.32 PM	L 8.02 AM	L 7.33 AM		.....GARFIELD AVE.....	0.0
L 6.00 AM	L 7.40 PM	6.04		9.34		7.45		4.34	8.04	7.35		.....RICES POINT.....P	0.7
6.05	7.45	6.06		9.36	L 8.22 PM	7.46	L 5.05 PM	4.36	8.06	7.37		.....BRIDGE SWITCH.....	1.3
6.09	7.49	6.09		9.39	8.25	7.49	5.08	4.40	8.10	7.40		.....ELEVATOR STATION...	2.2
6.11	7.51	6.11		9.42	A 8.28 PM	7.51	A 5.10 PM	4.42	8.12	7.42		.....OMAHA CONN.....	2.9
												0.3		

BETWEEN OMAHA CONNECTION AND BELKNAP STREET TRAINS USING L. S. T. & T. RAILWAY
WILL BE GOVERNED BY L. S. T. & T. RY. TIME TABLE AND SPECIAL INSTRUCTIONS.

				s 9.45		s 7.52		s 4.45	s 8.15	s 7.45	L 12.06 AM	BY.....SUPERIOR U. D.....PDN	3.2
6.20	8.25	6.22		9.46		7.54		4.46	8.16	7.46	12.08	.....BELKNAP ST.....P	3.7
A 6.45 AM	A 8.40 PM	A 6.50 PM		A 9.55 PM		A 8.05 PM		A 4.53 PM	A 8.23 AM	A 7.54 AM	A 12.20 AM	AJ.....CENTRAL AVE.....DN	7.4
Mon., Wed., Fri., Sat.	Daily	Daily		Ex. Sun.	Daily	Daily	Daily	Daily	Daily	Daily	Daily		
.45	.60	.47		.23	.06	.22	.05	.21	.21	.21	.14	Time Over Subdivision	
8.7	6.5	9.3		19.0	13.7	19.9	19.1	20.9	20.9	20.8	17.1	Average Speed Per Hour	

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION. SINGLE TRACK
OPERATION OVER MINNESOTA DRAW ON ST. LOUIS RIVER BRIDGE, BETWEEN BRIDGE SWITCH AND ELEVATOR STATION—
INTERLOCKED. FIRST CLASS TRAINS USE L. S. T. & T. RAILWAY BETWEEN OMAHA CONNECTION AND BELKNAP STREET.

SECOND SUBDIVISION

EASTWARD

Time Table No. 224 May 18, 1947			FIRST CLASS								SECOND CLASS
			66	94	58	36	96	24	20	56	630
				Omaha 511		G. N. 36	Omaha 513	G. N. 24	G. N. 20		N. P. 629
			Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Passenger	Freight
			Daily	Daily	Daily	Ex. Mon.	Daily	Daily	Daily	Daily	Mon., Wed., Fri., Sat.
X		7.4			A 7.57 AM	A 6.57 AM		A 11.56 AM	A 7.58 PM	A 10.45 PM	
CTW XYZ	Yard	L 1 6.7			7.54	6.55		11.54	7.56	10.43	A 4.30 PM
X		6.1			A 7.33 AM	7.52	6.53	A 11.21 AM	11.52	7.54	10.42
X		5.2			7.29	7.49	6.49	11.18	11.47	7.49	10.38
X		4.5			L 7.27 AM	7.46	6.47	L 11.15 AM	11.45	7.46	10.35

BETWEEN OMAHA CONNECTION AND BELKNAP STREET TRAINS USING L. S. T. & T. RAILWAY
WILL BE GOVERNED BY L. S. T. & T. RY. TIME TABLE AND SPECIAL INSTRUCTIONS.

X		WB 67	4.2	BY.....SUPERIOR U. D.....PDN	A s 5.40 AM		s 7.44	s 6.45		s 11.43	s 7.45	s 10.34	
X			8.7	.....BELKNAP ST.....P	5.38		7.41	6.39		11.40	7.39	10.30	4.10
WXY	Yard	67	0.0	AJ.....CENTRAL AVE.....DN	L 5.29 AM		L 7.33 AM	L 6.33 AM		L 11.33 AM	L 7.34 PM	L 10.25 PM	L 4.00 PM
					Daily	Daily	Daily	Ex. Mon.	Daily	Daily	Daily	Daily	Mon., Wed., Fri., Sat.
				Time Over Subdivision.....	.11	.06	.24	.24	.06	.23	.24	.20	.30
				Average Speed Per Hour	22.3	16.0	18.2	18.5	16.0	19.0	18.2	21.9	13.0

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION. SINGLE TRACK
OPERATION OVER MINNESOTA DRAW ON ST. LOUIS RIVER BRIDGE, BETWEEN BRIDGE SWITCH AND ELEVATOR STATION—
INTERLOCKED. FIRST CLASS TRAINS USE L. S. T. & T. RAILWAY BETWEEN OMAHA CONNECTION AND BELKNAP STREET.
SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

WESTWARD

THIRD SUBDIVISION

EASTWARD 5

Water, Fuel, Scales, Turn Tables, Wyes and Yard Limite.	Car Capacity of Sidings.	Station Numbers.	FIRST CLASS					Distance from West Duluth Jct.	Time Table No. 224 May 18, 1947		Distance from L. S. T. & T. Ry. Jct.	FIRST CLASS				
			65	53	317	313	311									
				D. S. S. & A. 8	Soo Line 18	Soo Line 63	Soo Line 65		54	66		318	312	314		
			Passenger	Passenger	Passenger	Passenger	Passenger		Passenger	Passenger		Passenger	Passenger	Passenger		
			Daily	Ex. Sat.	Daily	Daily	Ex. Sun.		Ex. Sun.	Daily		Daily	Ex. Sun.	Daily		
XY		L5	L 11.50 PM				0.0	.....WEST DULUTH JCT.... P	3.3		A 6.03 AM				
X			11.53				0.3	.....ZENITH FURNACE.....	3.0		6.01				
X			11.55 PM	L 8.28 PM	L 6.13 PM	L 1.13 PM	L 8.43 AM	1.1BERWIND JCT... P	2.2	A 5.16 AM	5.58	A 7.43 AM	A 4.02 PM	A 5.39 PM	
								0.7{ GRASSY POINT DRAWBRIDGE }... 1.5.....L. S. T. & T. RY. JCT.}	1.5						
X			A 12.05 AM	A 8.33 PM	A 6.18 PM	A 1.18 PM	A 8.48 AM	3.3		0.0	L 5.11 AM	L 5.49 AM	L 7.38 AM	L 3.57 PM	L 5.34 PM	

TRAINS USING L. S. T. & T. RAILWAY WEST OF L. S. T. & T. RY. JCT. WILL BE GOVERNED
BY L. S. T. & T. RY. TIME TABLE AND SPECIAL INSTRUCTIONS.

		Daily	Ex. Sat.	Daily	Daily	Ex. Sun.			Ex. Sun.	Daily	Daily	Ex. Sun.	Daily
		.15	.05	.05	.05	.05		Time Over Subdivision	.05	.14	.05	.05	.05
		13.2	24.0	24.0	24.0	24.0		Average Speed Per Hour	24.0	14.1	24.0	24.0	24.0

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.

WESTWARD

FOURTH SUBDIVISION

EASTWARD

Water, Fuel, Scales, Turn Tables, Wyes and Yard Limits.	Car Capacity of Sidings	Station Numbers.	SECOND CLASS		FIRST CLASS		Distance from East End.	Time Table No. 224 May 18, 1947		Distance from Central Ave.	FIRST CLASS		SECOND CLASS	
				629	631			53			54		632	630
					D. S. S. & A. 21			D. S. S. & A. 7	D. S. S. & A. 8			D. S. S. & A. 22		
			Freight	Freight	Passenger	Freight		Freight						
			Mon., Wed., Fri., Sat.	Daily		Ex. Sun.		STATIONS			Daily	Mon., Wed., Fri., Sat.		
								Telegraph Offices and Calls						
WXY	Yard	63	L 3.45 PM	L 5.20 AM		L 4.51 AM	0.0	.....EAST END.....P	4.1	A 9.10 PM		A 12.15 AM	A 6.58 AM
X	Yard	65	3.47	A 5.21 AM		A 4.52 AM	0.2	.....NEWTON AVENUE....	3.9	L 9.09 PM		L 12.14 AM	6.56
	Yard		3.52				1.6	.....HILL AVE.....P	2.5				6.51
X							3.0	.....SOO LINE CROSSING..	1.1				
WXY	Yard	67	A 3.59 PM				4.1	AJ.....CENTRAL AVE...DN	0.0				L 6.45 AM	
			Mon., Wed., Fri., Sat.	Daily		Ex. Sun.				Ex. Sat.		Daily	Mon., Wed., Fri., Sat.	
			.14	.01		.01				.01		.01	.13	
			17.6	12.0		12.0				12.0		12.0	18.9	
								Time Over Subdivision						
								Average Speed Per Hour						

EASTWARD TRAINS ARE SUPERIOR TO TRAINS OF THE SAME CLASS IN THE OPPOSITE DIRECTION.
SPECIAL INSTRUCTIONS PAGES 6, 7, 8 AND 9.

SPECIAL INSTRUCTIONS

ALL SUBDIVISIONS.

1. Speed Restrictions—

Maximum Speeds Permitted—

The maximum speeds in miles per hour permitted are listed by Zones for each Subdivision.

Except on mountain grades, passenger trains with diesel-electric engines and all light weight cars may run at speeds ten (10) miles per hour faster than passenger trains with steam engines.

Speed Restrictions Account Curves, etc.—

Reductions of speeds, within the zones listed for each Subdivision, when necessitated by curves or for other reasons, are designated by Advance Warning, Reduce Speed and Resume Speed signs.

The maximum permissible speeds in miles per hour for trains with steam engines are shown on the signs.

Except on mountain grades, passenger trains with diesel-electric engines and all light weight cars may operate through the restricted zones at speeds (10) miles per hour faster than those shown on the signs.

Speed Restrictions, Miscellaneous—

The locations where reduced speeds are required, for such reasons as city ordinances, bridges, etc., where not designated by Advance Warning, Reduce Speed and Resume Speed signs, are listed for each Subdivision and appear directly after the list of maximum speeds permitted.

All trains and engines:

Through crossovers, turnouts and gantlets.....15 MPH.

Over Spring Switches—

In facing point direction,
If not equipped with facing point lock.....30 MPH.

If equipped with facing point lock.....Normal Speed.

In trailing point direction,
When movement actuates switch points30 MPH.

On track for which switch is lined.....Normal Speed.

If any movement is through turnout, the allowable turnout speed must be observed.

Handling steam wrecking cranes, pile drivers,
locomotive cranes and similar equipment.....30 MPH.

Handling scale test cars { Main Line.....35 MPH.
Branch Lines.....25 MPH.

Picking up train orders from operators.....30 MPH.

Engines—	Handling	Running
Classes—	trains.	light.

All A and Q (except on passenger trains where higher speed is authorized).....	60 MPH.	60 MPH.
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Z-6, Z-7 and Z-8.....	60 MPH.	50 MPH.
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Z-5, Y, Y-1, Y-3.....	40 MPH.	35 MPH.
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Z-3, Z-4.....	35 MPH.	30 MPH.
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S-4, T, T-1, W to W-5 inc. Y-2.....	50 MPH.	45 MPH.
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S-10.....	45 MPH.	40 MPH.
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Steam switch engines, without engine trucks, under all conditions.....	15 MPH.	15 MPH.
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660 HP diesel-electric switch engines, Nos. 125 to 130 inc.....	45 MPH.	45 MPH.
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5400 HP diesel-electric road engines, Nos. 6000 to 6010 inc.....	65 MPH.	65 MPH.
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900 HP and 1000 HP diesel-electric switch engines and combination road-switch engines.....	60 MPH.	60 MPH.
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Coming from shops, under steam, to prevent running hot:

All A and Q and classes Z-6, Z-7 and Z-8.....	50 MPH.
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S-4, T, T-1, W to W-5 inc., Y-2.....	35 MPH.
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Z-5, S-10, Y, Y-1, Y-3.....	30 MPH.
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Z-3, Z-4.....	25 MPH.
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Main Line—With main and side rods removed:

All A and Q and classes Z-6, Z-7 and Z-8.....	30 MPH.
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Z-5, S-4, S-10, T, T-1, W to W-5 inc., Y to Y-3 inc.....	25 MPH.
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Z-3, Z-4.....	20 MPH.
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With main rods removed and side rods in place:

All A and Q and classes Z-6, Z-7 and Z-8.....	35 MPH.
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Z-5, S-4, S-10, T, T-1, W to W-5 inc., Y to Y-3 inc.....	30 MPH.
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Z-3, Z-4.....	25 MPH.
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Branch Lines—With either or both main and side rods removed:

All A and Q classes.....	25 MPH.
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All other classes.....	20 MPH.
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On bridges—With either or both main and side rods removed;

Steam switch engines, without engine trucks.....	15 MPH.
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Other engines.....	20 MPH.
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In the event the above speeds are in excess of 50% of the permissible speed for operating the engine in working order over any bridge carrying speed restrictions, speed on such bridges shall be 50% of the permissible speed for engine in working order.

Dead engines going to shops or being transferred from one district to another with all rods up or in place, the piston rod parted from the crosshead and removed and the valve motion disconnected and blocked, may be moved in trains at not to exceed the permissible speed of freight trains operating in the territory over which the engines are to be moved, or the operating speed restriction for track or bridges for that class of engine, whichever is the lower.

Engines handled in this manner when coming from shops must not exceed the operating speeds specified for engines coming from shops under steam.

Diesel-electric, 660 HP Nos. 125 to 130 inc., when handled dead in train.....	45 MPH.
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Diesel-electric, other engines, when handled dead in train.....	50 MPH.
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Bridge or other restrictions must be observed for these engines the same as when in operating condition.

2. Single and Double Headers; operation—track and bridges—general. Except as otherwise provided, double header operation of engines of the same class carry the restrictions applicable to single headers of that class. Double headers of engines of different classes carry the restrictions applicable to double headers of the heavier class of the combination.

Double-Heading Restrictions—Engines, Classes A-2 to A-5 or Z-5 to Z-8 inclusive:

When necessary to use two such engines on freight trains, the second engine must be cut in at the middle or in the rear portion of the train. When such engines are used as helpers on passenger trains handled by engines of the same class, such helper engine must be placed on the rear of the train. When engines of these classes are used to double-head with engines of W or other A or Z classes, the A-2 to A-5 or Z-5 to Z-8 inclusive, must be the lead engine.

Diesel engines—Except as otherwise provided, diesel-electric engines of the 6000 series and all diesel switch engines may be operated over bridges under the same restrictions shown for Class T engines.

3. Rule D-97 applies to all subdivisions.
4. Except in case of fog, storms, or otherwise bad weather, yellow signals may be used, without flagmen, when placed as prescribed by Rule 10(h) to indicate approach to a red signal in special cases when authorized by the Superintendent and protected by train order.
5. Rule 606: Emergency Signals are not used at inter-lockings or draw-bridges operated by the Northern Pacific Railway.
6. Test of hand brakes of gas-electric motor cars must be made once each trip. If crew has charge of moving car prior to leaving initial station, test will be made during such movement; otherwise, as soon as possible after leaving initial station. On cars equipped with "Deadman's Control," conductor and engineer will cooperate in making test.
7. Gas-electric motor cars, when handled dead in freight trains, must be behind caboose.
Scale test cars must be handled only in local freight trains, and placed immediately ahead of the caboose.
Cranes or similar machines geared for self-propulsion moving on commercial billing, must not be handled in time freight trains.

8. Precautions must be taken on double track to prevent accidents from swinging doors or other loose construction attached to cars or locomotives. Trains handling logs must stop when being met or passed by passenger trains.
9. Electric Switch Locks—To operate, open door of electric switch lock and, if indicator shows "proceed", move lock lever to the left, which will unlock switch and permit it to be opened and movement may be made at once. If indicator shows "stop", and conflicting train movement is not evident, open door of release box and push the push button. This will start operation of clockwork release which will run down in three minutes and, at the end of that time, indicator will show "proceed" and switch can be unlocked by moving lever to the left. Restore lock lever, close and lock doors of electric locks and release boxes when switches are restored to normal position.
10. Signal Operation at Spring Switches Equipped for Switch Key Operation—Unless otherwise provided, the normal position of the spring switch is for main track. The normal indication of main track signals is Proceed. The normal indication of siding signal is Stop. To clear the siding signal when train is ready to enter main track, insert switch key in control box and turn to right. If route is clear the siding signal will immediately clear. If siding signal does not clear by switch key operation, open release box and push the button which will put the time release mechanism into operation. After time release has operated, the siding signal will clear if there is no conflicting train movement. The release box door must be left open until leading wheels of train on the siding have passed the siding signal, then close and lock the release box door. If the siding signal has been cleared and train on the siding is not ready to depart, if necessary to clear signals for a main track movement, open the release box door and push the button which will start the time release mechanism. After the time release mechanism has started to operate, close and lock the release box door.
11. Pusher engines must not push on cabooses not equipped with steel sills.
12. Second class, inferior trains, and engines may run ahead of delayed first class trains without train order authority. Flagman must be stationed on the rear car, at all times. In case train is stopped on main track, flagman must protect as prescribed by Rule 99. Conductors and switch foremen will be held responsible for the strict observance of this rule.
13. Extra trains, and yard engines may move with current of traffic between West Duluth Jct. and Duluth (1st sub.); between Central Avenue and Rice's Point (2nd sub.); between Central Avenue and Allouez (4th sub.), and in either direction on single track and with the current of traffic on double track between West Duluth Jct. and Superior (3rd sub.) without train order authority.
14. The D. T. Ry. main track is the northmost track between the Hanna Coal Dock crossing and connection with Grassy Point main track. All switches leading from this track, when not in use, will be left lined for D. T. Ry.
15. All trains and engines using D. T. Ry. main track from connection of Missabe coal dock to east end of Zenith Furnace Company's lead, on Grassy Point line, will move in both directions at restricted speed, expecting to find the D. T. Ry. main track occupied.
16. D. T. Ry. connection, located at east end of Zenith Furnace Company's lead, Grassy Point line, will be considered a railroad crossing. Trains and engines using this connection will come to a full stop and make sure that track is clear before proceeding.
17. Bulletin Stations—
Duluth. Union Depot, Rices Point Yard and Roundhouse.
Soo Line Passenger Station.
Superior. Soo Line Yard and Roundhouse.
18. Standard Time Clocks—
Duluth—Union Depot, Rices Point Yard Office and Round House.
19. Watch Inspectors—
Duluth.....Kanter's Jewelry Co.
Duluth.....Herbert W. Schmidt.
Duluth.....Harlan Wells.
West Duluth.....W. F. Hurst.
Superior.....L. J. Howatt.

FIRST SUBDIVISION

1. **Speed Restrictions—**
Zone—Between:
East D. M. & I. R. Jct., and West Duluth Jct. 30 MPH. 30 MPH
West Duluth Jct., and Fond du Lac..... 15 MPH. 15 MPH.
Fond du Lac and Upper Power Plant..... 8 MPH. 8 MPH.
Over 21st Avenue West Crossing..... 15 MPH. 15 MPH.
First class trains, within yard limits..... Restricted Speed.
2. **Bridge and Engine Restrictions—**Between Duluth and West Duluth Junction—Engines classes A-2 to A-5 inc. and Z-5 to Z-8 inc., not permitted.
All bridges—Trains handling wrecking cranes of 250 tons, or heavier, NP cranes 45, 46, 47 and 48..... 15 MPH.
Between West Duluth Junction and Fond du Lac—engines heavier than Class Q-4 not permitted.
Between Fond du Lac and upper Power Plant—engines heavier than Class L-9 not permitted.
3. **At Fifth Avenue West—**Normal position of main track switch is for Union Depot
4. **At Garfield Avenue—**Junction switches will be kept set for First Subdivision.
Trains stop not less than two hundred (200) feet from junction switch and crossover used by D. W. & P. and not proceed until track is known to be clear.
5. **At Nineteenth Avenue West—**Trains using the Dick tracks must not block crossing.
6. **At Twenty-first Avenue West—**Telephone at crossover—Eastward trains call yard (3 rings) for route when necessary.
7. **At West D. M. & I. R. Jct. Interlocking—**Trains will call for route as follows:
o o o Martins track to D. M. & I. R. yard.
o o o D. M. & I. R. yard to Martins track.
o o o— Martins track to westward main.
o o o o Martins track to D. T. main.
o o o o D. T. main to Martins track.
— o Westward main to D. M. & I. R. yard.
— o D. M. & I. R. yard to eastward main.
— — Through main track movements.
8. **At West Duluth Jct.—**Switch at west end wye will be kept set and locked for first Subdivision.
Yard engines will use west leg of wye and Fond du Lac line but will not leave cars on these tracks.
Switch at end of double track is dual control. Normal position is for the westward track.
9. **At Fond du Lac—**Trains will call upper Power Plant (Douglas 50) from New Duluth and secure permission to use track between Fond du Lac and Power Plant, but must secure authority from chief dispatcher to use track to lower Power Plant.
10. **Yard Limits—**Between East D. M. & I. R. Jct. at Fifth Ave. East and Lake Superior Division yard limit sign west of West Duluth Jct.
11. **Derail Switches—**Duluth—House Track No. 4. Fond du Lac, on main track.
12. **Register Stations—**Duluth Union Depot for trains arriving at or departing from Fifth Ave. Yard or Union Depot, Rice's Point Yard office for other trains.
West Duluth.
13. **Register Exceptions—**At Duluth first class trains arriving may register by Form 608, using tube at foot of east stairway for delivery to operator in "DU" office.
At West Duluth trains register by form 608. A check of register on form 602 may be issued by operator when authorized by train dispatcher, either instead of, or addition to, train order check.
14. **Clearance Exceptions—**Trains originating at East D. M. & I. R. Jct., Garfield Ave., 20th Ave. West, West D. M. & I. R. Jct., D. W. & P. Jct., West Duluth Jct. and Fond du Lac will not require clearance.

SECOND SUBDIVISION

1. **Speed Restrictions—**

Zone—Between:	Freight and Mixed	Passenger
Garfield Ave., and Central Ave.....	50 MPH.	60 MPH.
Superior and Central Ave., Great Northern engines class P-2.....	40 MPH.	40 MPH.
Trains handling loaded ore cars.....	40 MPH.	
At Superior—Over switches at Belknap Street and Omaha Conn.....	15 MPH.	15 MPH.
At Central Ave.—Over highway crossings...	20 MPH.	20 MPH.
First class trains, within yard limits.....	Restricted Speed.	
2. **Bridge and Engine Restrictions—**Engines classes A-2 to A-5 inc. and Z-5 to Z-8 inc., not permitted.
 Bridge 2.1, St. Louis Bay..... 20 MPH.
 All bridges—Trains handling wrecking cranes of 250 tons, or heavier.
 NP cranes 45, 46, 47 and 48..... 15 MPH.
3. **At Garfield Avenue—**Junction switches will be kept set for First Subdivision.
 Trains will stop not less than two hundred (200) feet from junction switch and crossover used by D. W. & P. and not proceed until track is known to be clear.
4. **At Rice's Point—**Spring switches not equipped with facing point locks, roundhouse lead, 900 feet south of coal dock, indicate—
 Yellow—Straight Track.
 Green—Roundhouse Lead.
 Normal position of switches designated below is as follows:
 South End Rice's Point Yard,
 switch from B to C yard lead (top switch). when lined for B yard lead;
 No. 26 and 31 crossovers on Hump
 (A Yard)..... when lined for Hump (A Yard) lead;
 No. 26 and 31 crossovers on Load
 (B Yard) lead..... when lined for Load (B Yard) lead.
 North End Rice's Point Yard,
 switch off outside lead for
 lead to C Yard..... when lined for Load (B Yard) lead;
 Crossover switch on inside lead..... when lined for inside lead;
 Crossover switch off outside lead..... when lined for outside lead.
 Roundhouse, hand throw switches No. 2 and No. 4 from the outgoing roundhouse tracks..... when lined for lead.
 Crossover switches from yard tracks to main track must be set for yard tracks when not in use.
5. **Between Bridge Switch and Elevator Station, St. Louis River Bridge—**Interlocking signals govern use of tracks.
 Single track over Minnesota Draw.
 The three-light semaphore on eastward track west of Minnesota Draw indicates position of double track switch, position of draw and route:
 Top Light—C. St. P. M. & O.
 Middle Light—Great Northern
 Bottom Light—Northern Pacific
 The two-light semaphore on westward track east of Elevator Station indicates route:
 Top Light—Straight main track.
 Bottom Light—Great Northern freight track.
 Westward trains will stop before entering onto Wisconsin Draw.
 Eastward trains will stop before entering onto Minnesota Draw.
 Westward trains entering onto Minnesota Draw and Eastward trains entering onto Wisconsin Draw will be governed by signal at the approach and, if proceed signal is received, will not be required to stop.
6. **At Central Avenue—**Westward trains and engines may use eastward main track between west lead from yard and junction with Fourth (Terminal) Subdivision without protection.
7. **Yard Limits—**From Garfield Ave. to yard limit sign west of 28th Street, Superior, and from yard limit sign east of Central Ave. to the yard limit sign just east of Soo Line crossing on Terminal Fourth Subdivision, and yard limit sign west of Central Ave. on Second Subdivision of Lake Superior Division.
8. **Derail Switches—**At approach to Minnesota Draw from Duluth.
 At Elevator Station.
 At Superior—just East of N. P. freight house.

9. Register Stations:

Rice's Point for second class and inferior trains, except passenger extras.
 Central Avenue.

10. **Register Exceptions—**At Central Avenue trains register by form 608. A check of register on form 602 may be issued by operator when authorized by train dispatcher, either instead of, or in addition to, train order check.

11. Clearance Exceptions:

Trains originating at Garfield Ave., Rice's Point (Yard), Bridge Switch, Elevator Station, Omaha Conn. and Belknap St. will not require clearance.

At Central Ave. eastward trains will not require clearance if train order signal is in the proceed position. Westward Great Northern trains enroute to Great Northern tracks, at the Interlocking, not governed by train order signal.

THIRD SUBDIVISION

1. **Speed Restrictions—**

Zone—Between:	Freight and Mixed	Passenger
West Duluth Jct., and L. S. T. & T. Jct.....	40 MPH.	40 MPH.
First class trains, within yard limits.....	Restricted Speed.	
At West Duluth Jct., around east leg of wye and passing Zenith Furnace Plant.....	Restricted Speed.	
2. **Bridge and Engine Restrictions—**Engines classes A-2 to A-5 inc. and Z-5 to Z-8 inc., not permitted.
 All bridges—Trains handling wrecking cranes of 250 tons, or heavier,
 NP cranes 45, 46, 47 or 48..... 15 MPH.
 Bridge 94.6, Grassy Point..... 20 MPH.
3. **At West Duluth Jct.—**Normal position of switches on east leg of wye is for Third (Terminal) Subdivision main track.
4. **Clearance Exceptions:**
 Trains originating at West Duluth Jct., Berwind Jct. and L. S. T. & T. Ry. Jct. will not require clearance.
5. **Derails—**Winter St. just east of junction with Second Subdivision.
6. **Yard Limits—**Between West Duluth Jct. and yard limit sign west of Grassy Point drawbridge, and between yard limit sign east of L. S. T. & T. Ry. Jct. and Superior.

FOURTH SUBDIVISION

1. **Speed Restrictions—**

Zone—Between:	All Trains and Engines
East End and Central Ave.....	Restricted Speed.
Engines heavier than Classes A-2 and W-5.....	20 MPH.
2. **Bridge and Engine Restrictions:**
 Engines Class W or heavier, over trestle approach to
 Ore Dock..... 15 MPH.
3. **At East End—**Normal position of switch at end of double track is for westward trains.
 The approach signal of interlocking is an automatic block signal governing single track to end of double track and westward track to Newton Ave. interlocking. Eastward D. S. S. & A. and C. St. P. M. & O. trains and engines will use westward main track between Newton Ave. interlocking and end of double track as single track, under single track and yard limit rules.
4. **At Soo Line Crossing—**When using Soo Line tracks, Northern Pacific crews must have in their possession and be governed by current Soo Line Duluth and Superior Terminal Division Time Table, a supply of which is maintained at Rice's Point Yard office and roundhouse.
5. **At Central Ave.—**Normal position of switch at end of double track is for eastward trains.
 Normal position of switch at junction of Fourth and Second (Terminal) Subdivisions is for Second Subdivision.
 Normal position of wye switch, adjacent to Tower Avenue, is for movements from Second Subdivision main track to Terminal Fourth Subdivision.

6. **Yard Limits**—Tracks between yard limit signs west of East End and east of Allouez, and from yard limit sign east of Central Avenue to the yard limit sign just east of Soo Line crossing on terminal Fourth Subdivision.
7. **Register Stations:**
Central Ave.
Soo Line 21st St. Yard Office, Superior, for D. S. S. & A. Ry.
8. **Register Exceptions**—At Central Ave. trains register by form 608. A check of register on Form 602 may be issued by operator when authorized by train dispatcher, either instead of, or in addition to, train order check.
9. **Clearance Exceptions**—Trains originating at East End and Hill Ave. will not require clearance.

AUTHORIZED SURGEONS

Dr. B. I. Derauf, Chief Surgeon.....	St. Paul.
Dr. J. W. Jesion,	} Assistant Surgeons, N. P. B. A. Hospital, St. Paul.
Dr. A. McEwan,	
Dr. C. H. Decker,	
Dr. J. A. Evert.	

SPECIALISTS

Dr. L. A. Nelson, Oculist.....830 Lowry Bldg., St. Paul
 Dr. H. E. Binger, Eye, Ear, Nose
 & Throat.....1039 Lowry Bldg., St. Paul
 Dr. L. T. Simons, Eye, Ear, Nose
 & Throat.....1039 Lowry Bldg., St. Paul
 Dr. K. A. Phelps, Oculist and Aurist, 1137 Medical Arts Bldg.,
 Minneapolis.
 Dr. M. F. Fellows, Oculist and Aurist, 1209 Medical Arts Bldg.,
 Duluth.

SURGEONS

Dr. J. W. McGill.....1225 Tower Ave., Superior
 Dr. Victor E. Ekblad.....1507 Tower Ave., Superior
 Dr. C. M. Smith.....1115 Medical Arts Bldg., Duluth
 Dr. C. L. Haney.....2004 West Superior St., Duluth
 Dr. Daniel F. Pennie.....706 Medical Arts Bldg., Duluth

C. M. ST. P. & P. RY. SURGEONS

Dr. Cyril M. Smith, 1115 Medical Arts Bldg., Duluth

LOCATION OF STRETCHERS

East End Station.

Central Avenue Station.

Superior Freight Station.

Duluth—Fifth Avenue Yard Office, Dock 6, Union Depot, Store
 Room, Tool Car, Dock 2, Car Shops, Roundhouse.

West Duluth Station.

Superior Ore Dock.

NOTE.

N. P. B. A. physicians and surgeons, when called upon, will attend to all cases of sickness and accident to employees, passengers, and others. In a case of illness or in any case of injury unrelated to Railway operation, surgeon should endeavor to collect a reasonable fee for service from person attended, other than members of the N. P. B. A. If unable to collect, Chief Surgeon should be notified.

Where injuries are directly related to Railway operation, charge for service should be sent to the General Claim Agent of the Railway Company.

In case of emergency, proper aid should be procured until arrival of local surgeon, when case must be placed in his hands.

RAILROAD CROSSINGS AND INTERLOCKINGS.

First Sub-division

West D. M. & I. R. Jct., Interlocking.
 Soo Line Crossing, Interlocking.
 D. W. & P. Jct., Interlocking.
 West Duluth Jct., Automatic Interlocking.
 D. T. Crossing, Duluth Terminal Ry.
 Morgan Park, Minnesota Steel Co. Crossing.

Second Sub-division

Bridge Switch and Elevator Station, Interlocking.
 St. Louis River Drawbridge;
 Minnesota Draw, Interlocking.
 Wisconsin Draw, Interlocking.
 Superior, Winter St., near Omaha Connection.

Third Sub-division

Zenith Furnace—D. M. & I. R. Ry. Crossing.
 Berwind Jct., Interlocking, is also junction with Soo Line and D. W. & P.
 Grassy Point Drawbridge, Interlocking.
 G. N. Ry. Crossing.
 L. S. T. & T. Ry. Jct.

Fourth Sub-division

Newton Avenue—C. St. P. M. & O. Crossing, Interlocking.
 Soo Line Crossing, Interlocking.

MAXIMUM CLEARANCES.

	LIMIT OF LOAD MEASUREMENT										
	HEIGHT ABOVE TOP OF RAIL										
	1 ft. Wide	2 ft. Wide	3 ft. Wide	4 ft. Wide	5 ft. Wide	6 ft. Wide	7 ft. Wide	7 ft. 6 in. Wide	8 ft. Wide	Max. Height	Max. Width
1st Sub-division, Duluth to Fond du Lac.....	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	11' 6"
2nd Sub-division, Garfield Ave. to Central Ave.	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	11' 6"
3rd Sub-division, W. Duluth Jct. to Superior U. D.	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	11' 6"
4th Sub-division, East End to Central Ave.....	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	11' 6"

	LIMIT OF LOAD MEASUREMENT										
	HEIGHT ABOVE TOP OF RAIL										
		8 ft. 6 in. Wide	9 ft. Wide	9 ft. 6 in. Wide	10 ft. Wide	10ft. 2 in. Wide	10ft. 6 in. Wide	11 ft. Wide	11ft. 6 in. Wide	Max. Height	Max. Width
1st Sub-division, Duluth to Fond du Lac.....	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	18' 5"	11' 6"
2nd Sub-division, Garfield Ave. to Central Ave.	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	11' 6"
3rd Sub-division, W. Duluth Jct. to Superior U. D.	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	20' 3"	11' 6"
4th Sub-division, East End to Central Ave.....	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	21' 0"	11' 6"

Note: Length of load 52 ft. Heights and widths in table allow 9 inches clearance.
 Table is based on open car loading equally divided on either side of center line of car.

C. T. SPONSEL,
 Asst. Supt.

O. A. HANSON,
 Trainmaster.

G. W. MINKEL,
 Trainmaster-Roadmaster.

B. V. COYER,
 Asst. Trainmaster.

E. J. WIGG,
 Chief Dispatcher.