



WORK SAFELY TODAY
EACH RULE VIOLATION IS A
POTENTIAL ACCIDENT

ASSISTANT SUPERINTENDENT

L. W. BREINER.....Sacramento

TRAINMASTERS

J. K. BRENNAN.....Oakland - San Francisco
R. A. HENDERSON.....San Jose
R. A. CHRIST.....San Jose
J. H. BROWN.....Stockton
W. W. GEIL.....Keddie

TERMINAL TRAINMASTERS

A. E. STENE.....Oakland - San Francisco
P. E. RUTHERFORD.....Stockton

ASSISTANT TRAINMASTERS-AGENTS

A. P. MURPHY.....San Francisco
H. K. REESE.....Stockton
M. E. GRAHAM.....Sacramento

ASSISTANT TERMINAL TRAINMASTER

R. M. VERHAEGE.....Stockton

**TRAINMASTERS — ROAD FOREMEN
ENGINES**

J. C. LUSAR.....Stockton
V. H. EDWARDS.....Oroville

ROAD FOREMAN ENGINES

J. C. CURRIER, JR.....Keddie

CHIEF TRAIN DISPATCHER

E. J. HILLIER.....Sacramento

ASSISTANT CHIEF TRAIN DISPATCHER

R. W. HUFFMON.....Sacramento

NIGHT CHIEF TRAIN DISPATCHERS

C. R. PFENNING.....Sacramento
R. A. DITMANSON.....Sacramento
M. C. McMANUS.....Sacramento



**THE
WESTERN PACIFIC
RAILROAD CO.**



**WESTERN DIVISION
TIMETABLE**

49

EFFECTIVE SUNDAY, APRIL 26, 1964

AT 12:01 A. M.

PACIFIC STANDARD TIME

**FOR THE GOVERNMENT AND INFORMATION
OF EMPLOYEES ONLY**

M. M. CHRISTY,

Executive Vice-President and General Manager.

L. D. MICHELSON,

General Superintendent.

K. V. PLUMMER, JR.,

Superintendent of Transportation.

Eastward FIRST SUBDIVISION Westward

| FIRST CLASS | Mile Post | Timetable No. 49 April 26, 1964 | FIRST CLASS |
|--------------------------------|-----------|---|--------------------------------|
| 18 California Zephyr | | STATIONS | 17 California Zephyr |
| Leave Daily | | SIDING CAPACITIES AND FACILITIES | Arrive Daily |
| AM 10.00 | 0.0 | FO } Major Coach | PM 4.00 |
| 10.25 | 4.7 | San Francisco | 3.30 |
| AM 10.35 | 4.7 | 4.7 Oakland Yard | PM 3.20 |
| | 5.8 | Yd. Lmts. BKFTPO TO-R OAKLAND YARD | |
| | 5.9 | 1.1 I | |
| s 10.45 | 6.6 | SP Crossing | |
| | 7.2 | 0.1 I } Double Track | |
| | 7.7 | CHESTNUT JCT. (SP Conn.) | s 3.10 |
| | 9.6 | 0.7 | |
| | 10.6 | OAKLAND | |
| | 11.3 | 0.6 | |
| | 13.7 | SP Crossing | |
| | 14.8 | Yd. Lmts. 0.5 IP | |
| | 20.1 | CLINTON (SP X'ing.) | |
| s 11.22 | 29.7 | 1.9 | |
| | 30.3 | FRUITVALE | |
| | 30.5 | 1.0 IP | |
| | 38.1 | MELROSE (SP X'ing.) | |
| AM s 11.38 | 41.5 | 68 0.7 P | |
| | 42.7 | KOHLER | |
| | 42.97 | 2.4 IP | |
| | 47.0 | ELMHURST (SP X'ing.) | |
| | 56.2 | 1.1 P | |
| | 63.3 | SAN LEANDRO | |
| | 72.8 | 147 5.3 P | |
| | 74.05 | HAYWARD | |
| | 82.1 | 76 9.6 P | s 2.30 |
| | 84.45 | FREMONT | |
| PM 12.33 | 92.0 | 0.6 IP | |
| | 93.2 | NILES TOWER (SP X'ing.) | |
| s 12.37 | 93.8 | 0.2 YP | |
| PM | | NILES JUNCTION | |
| Arrive Daily | | 87 7.6 P | |
| | | HEARST | |
| | | 3.4 P | 2.10 |
| | | PLEASANTON | |
| | | 1.2 AIP | |
| | | RADUM (SP X'ing.) | |
| | | 0.27 AI | |
| | | RADUM (SP X'ing.) | |
| | | 80 4.03 P | |
| | | LIVERMORE | |
| | | 110 9.2 P | |
| | | ALTAMONT | |
| | | 109 7.1 P | |
| | | MIDWAY | |
| | | 216 9.5 YP | |
| | | CARBONA | |
| | | 1.25 AI | |
| | | SP Crossing | |
| | | 111 8.05 P | |
| | | WYCHE | |
| | | 2.35 I | |
| | | SP Crossing | |
| | | Yard 7.55 BKFTPO TO-R STOCKTON YARD | |
| | | 1.2 IP | |
| | | AT&SF Crossing | |
| | | 0.6 IP | 1.10 |
| | | STOCKTON (SP X'ing.) | PM |
| | | | Leave Daily |
| 18 | | | 17 |

Eastward SECOND SUBDIVISION Westward

| FIRST CLASS | Mile Post | Timetable No. 49 April 26, 1964 | FIRST CLASS |
|--------------------------------|-----------|---|--------------------------------|
| 18 California Zephyr | | STATIONS | 17 California Zephyr |
| Leave Daily | | SIDING CAPACITIES AND FACILITIES | Arrive Daily |
| | 92.0 | Yard BKFTPO TO-R STOCKTON YARD | |
| | 93.2 | 1.2 IP | |
| | 93.8 | AT&SF Crossing | |
| | 94.3 | 0.6 IP | PM 1.07 |
| PM 12.40 | 95.1 | STOCKTON (SP X'ing.) | 1.04 |
| | 97.9 | 52 0.5 P | |
| | 104.6 | FLORA STREET | |
| | 105.5 | 0.8 IP | |
| | 113.9 | EL PINAL (SP X'ing.) | |
| | 121.9 | 117 2.8 P | |
| | 132.4 | HAMMER LANE | |
| | 136.5 | 70 6.7 P | 12.52 |
| 17 12.52 | 137.5 | KINGDON | 18 |
| | 138.0 | 0.9 YP | |
| | 138.6 | TERMINOUS JUNCTION | |
| | 139.5 | 71 8.4 P | |
| | 140.7 | THORNTON | |
| | 143.6 | 128 8.0 P | |
| | 152.5 | PHILLIPS | |
| | 156.5 | 96 10.5 P | |
| | 161.5 | POLLOCK | |
| | 165.5 | Yard 4.1 KFPO TO-R SOUTH SACRAMENTO | |
| | 172.5 | 1.0 IP | |
| | 175.63 | "X" ST. (CCT and SN X'ing.) | |
| | 178.8 | 0.5 IYP | |
| | 180.2 | "R" ST. (SP Crossing) | |
| | 180.42 | 0.6 KP | s 12.10 |
| | 186.0 | SACRAMENTO | PM |
| | 193.0 | 0.9 P | |
| | 202.9 | HAGGIN (SN Conns.) | |
| | 205.1 | 1.2 P | |
| | | GLOBE (SN Conn.) | |
| | | 122 2.9 P | 11.58 |
| | | DEL PASO | AM |
| | | 8.9 P | |
| | | SANKEY (SN X'ing & Conn.) | |
| | | 125 4.0 P | |
| | | PLEASANT GROVE | |
| | | 76 5.0 P | |
| | | TROWBRIDGE | |
| | | 73 11.0 P | |
| | | EAST ARBOGA | |
| | | 3.13 P | |
| | | SN CONNECTION | |
| | | 101 3.17 P | s 11.24 |
| | | MARYSVILLE | |
| | | 1.4 IP | |
| | | BINNEY JCT. (SP X'ing.) | |
| | | 0.22 P | |
| | | SP CONNECTION | |
| | | 72 5.58 P | |
| | | TAMBO | |
| | | 125 7.0 P | |
| | | CRAIG | |
| | | Yard 9.9 BKFTPO TO-R OROVILLE YARD | |
| | | 2.2 BKP | 10.55 |
| | | OROVILLE | AM |
| | | | Leave Daily |
| 18 | | | 17 |

Sacramento Northern trains and engines will be governed by Western Pacific timetable and operating rules.

At South Sacramento and Sacramento, engine whistle or horn should be used only when necessary and then kept as soft as possible consistent with the particular requirement.

Eastward THIRD SUBDIVISION Westward

| FIRST CLASS | | Mile Post | Timetable No. 49 | | FIRST CLASS | |
|-------------------|-------|------------------------|----------------------------------|-------------------------|-------------------|------------|
| 18 | | | April 26, 1964 | | 17 | |
| California Zephyr | | Leave Daily | STATIONS | | California Zephyr | |
| Leave Daily | | | SIDING CAPACITIES AND FACILITIES | | Arrive Daily | |
| | 202.9 | Traffic Control System | Yard TO-R 94 | BKFTPY 2.2 OROVILLE BKP | | AM s 10.45 |
| PM 2.50 | 205.1 | | 127 | 4.8 KRAMM P | | |
| | 213.9 | 129 | 6.1 ELSEY P | | | |
| | 220.0 | 132 | 6.0 JAMES P | | | |
| | 226.0 | 141 | 8.9 POE P | | | |
| | 234.9 | 122 | 4.6 PULGA P | | | |
| | 239.5 | 79 | 4.0 CRESTA P | | | |
| | 243.5 | 73 | 4.1 MERLIN P | | | |
| | 247.6 | 55 | 5.5 TOBIN P | | | |
| | 253.1 | 83 | 2.2 CAMP RODGERS P | | | |
| | 255.3 | 94 | 4.8 BELDEN P | | | |
| | 260.1 | 73 | 4.5 RICH BAR P | | | |
| | 264.6 | 75 | 5.6 VIRGILIA P | | | |
| | 270.2 | 85 | 3.5 TWAIN P | | | |
| | 273.7 | 84 | 3.6 PAXTON P | | | |
| | 277.3 | Yard TO-R 76 | 4.2 KFTPY 6.4 KEDDIE P | s 8.20 | | |
| s 5.10 | 281.5 | 83 | 4.7 MASSACK P | | | |
| | 287.9 | 92 | 3.8 SPRING GARDEN P | | | |
| | 292.6 | 85 | 5.2 SLOAT P | | | |
| | 296.4 | 85 | 3.8 TWO RIVERS P | | | |
| | 301.6 | 98 | 5.0 BLAIRSDEN P | | | |
| | 305.4 | 82 | 8.3 MABIE P | | | |
| | 310.4 | Yard TO-R 82 | 2.7 BKFPYO 8.3 PORTOLA P | 7.10 AM | | |
| s 6.20 PM | 318.7 | | | | | |
| Arrive Daily | 321.4 | | | Leave Daily | | |
| 18 | | | | 17 | | |

Eastward FOURTH SUBDIVISION Westward

| SECOND CLASS | | Mile Post | Timetable No. 49 | | SECOND CLASS | |
|--------------|--------------|----------------------------------|-------------------|------------------------|--------------|-------------|
| 156 | | | April 26, 1964 | | 153 | |
| Leave Daily | | STATIONS | | Arrive Daily | | |
| Leave Daily | | SIDING CAPACITIES AND FACILITIES | | Arrive Daily | | |
| PM 2.00 | AM 10.00 | 0.0 | Yd. Lmts. TO-R 86 | BKFTPY 6.2 KEDDIE P | PM 1.30 | PM 8.20 |
| 2.16 | 10.19 | 6.2 | | MOCCASIN | 1.13 | 8.04 |
| 2.19 | 10.23 | 8.6 | 13 TO-R 86 | 2.4 CRESCENT MILLS P | 1.09 | 8.00 |
| 2.28 | 10.32 | 14.7 | 86 TO-R 86 | 6.1 GREENVILLE P | 1.00 | 7.51 |
| 2.51 | 11.07 | 25.7 | 146 TO-R 86 | 11.0 WYP ALMANOR P | 12.34 | 7.25 |
| 3.07 | 11.24 | 32.4 | | 6.7 LASSEN VIEW P | 12.17 | 7.08 |
| 3.14 | 11.31 | 35.2 | | 2.8 CLEAR CREEK JCT. P | 12.10 | 7.01 |
| 3.23 | 11.41 | 39.4 | Yd. Lmts. TO-R 86 | 4.2 KYP WESTWOOD P | 12.01 PM | 6.52 |
| 3.31 | 11.50 | 43.5 | | 4.1 MASON P | 11.52 AM | 6.44 |
| 3.32 | AM 153 11.51 | 44.1 | 86 TO-R 86 | 0.6 ROBBERS CREEK P | 11.51 154 | 6.43 |
| 3.43 | PM 12.07 | 52.5 | | 8.4 NORVELL P | 11.40 | 6.32 |
| 3.57 | 12.21 | 62.9 | 86 TO-R 86 | 10.4 LODGEPOLE P | 11.26 | 6.18 |
| 4.15 | 12.39 | 76.4 | | 13.5 HALLS FLAT YP | 11.08 | 6.00 |
| 4.33 | 12.58 | 84.2 | 86 TO-R 86 | 7.8 JELICO P | 10.42 | 5.34 |
| 4.47 | 1.13 | 90.2 | | 6.0 WILLOW SPRINGS P | 10.22 | 5.14 |
| 4.57 | 1.24 | 94.8 | 86 TO-R 86 | 4.6 LITTLE VALLEY P | 10.05 | 4.57 156 |
| 5.11 | 1.39 | 100.9 | | 6.1 DIXIE P | 9.50 | 4.40 |
| 5.31 | 2.00 | 109.5 | 86 TO-R 86 | 8.6 PIT RIVER P | 9.25 | 4.15 |
| 5.35 PM | 2.05 PM | 111.8 | Yd. Lmts. TO-R 86 | 2.3 BKYP BIBER P | 9.20 AM | 4.10 PM |
| Arrive Daily | Arrive Daily | | | | Leave Daily | Leave Daily |
| 156 | 154 | | | | 153 | 155 |

In Bieber Yard trains will be governed by Great Northern timetable and transportation rules. Rule 93, Great Northern Transportation Rules, reads as follows:

"Within yard limits the main track may be used, clearing first-class trains when due to leave the last station where time is shown. In case of failure to clear the main track, protection must be given as prescribed by Rule 99.

"Within yard limits the main track may be used without protection against second and inferior class, extra trains and engines.

"Within yard limits second and inferior class, extra trains and engines must move at restricted speed.

"Within yard limits when running against the current of traffic on a portion of double or three or more tracks used as single track, all trains and engines must move at restricted speed."

Definition of "Restricted Speed" in Great Northern Transportation Rules is:

"Proceed prepared to stop short of train, obstruction or anything that may require the speed of a train to be reduced."

FIRST SUBDIVISION "A"—SAN JOSE BRANCH
Eastward **Westward**

| | | Timetable No. 49 April 26, 1964 | | | |
|---------------------------------|-----------------------------------|--|-----------------------------------|----------|---------------------------------|
| | | STATIONS SIDING CAPACITIES AND FACILITIES | | | |
| Distance from Niles Junction | Traffic Control System | 76 | FREMONT P | | |
| | | 0.0 | 0.8 NILES JUNCTION YP | | |
| | | 3.3 | Spur 1 E 3.3 IRVINGTON P | | |
| | | 6.8 | 12 Spur 1 E 3.5 WARM SPRINGS P | | |
| | | 8.0 | 18 Spur 1 E 1.2 CURTNER P | | |
| | | 11.5 | E 71 3.5 MILPITAS YP | | |
| | | 14.1 | W 77 10 BERRYESSA P | | |
| | | 17.5 | Spur 1 E 2.6 SAN JOSE YARD BKFTPO | | |
| | | Yard Limits | | Yard 3.4 | TO-R SAN JOSE YARD |
| | | | | 19.6 | 2.1 VALBRICK (SP X'ing.) I |
| | | | | 20.4 | 0.8 WILLOW GLENN (SP X'ing.) I |
| | | | | 22.3 | 1.9 WEST SAN JOSE (SP X'ing.) I |
| 23.0 | Yard 0.7 SAN JOSE FREIGHT STATION | | | | |

FIRST SUBDIVISION "B"—CARBONA BRANCH
Eastward **Westward**

| | | Timetable No. 49 April 26, 1964 | | |
|--------------------------|--|--|----------------------|--------------------|
| | | STATIONS SIDING CAPACITIES AND FACILITIES | | |
| Distance from Carbona | | 216 | CARBONA YP | |
| | | 1.7 | 63 1.7 KERLINGER PO | |
| | | 1.92 | Spur 1 W 0.22 TEEKAY | |
| | | 2.0 | 18 | 0.08 END OF BRANCH |
| | | | | |

RULE 201. Train order authority is not required on Carbona Branch and all movements on branch must be made at yard speed.

SECOND SUBDIVISION "A"—TERMINOUS BRANCH
Eastward **Westward**

| | | Timetable No. 49 April 26, 1964 | | |
|--------------------------------|--|--|-------------------|-----------|
| | | STATIONS SIDING CAPACITIES AND FACILITIES | | |
| Distance from Terminus Jct. | | 31 | TERMINOUS JCT. YP | |
| | | 6.6 | 3 6.6 GRASS | |
| | | 7.8 | Yard 1.2 | TERMINOUS |
| | | | | |

RULE 201. Train order authority is not required on Terminus Branch and all movements on branch must be made at yard speed.

Special Instructions

ALL SUBDIVISIONS

All times as shown for trains at Stations on schedule pages are Pacific Standard Time. Trains will continue to operate on Pacific Standard Time during period that Daylight Saving Time is in effect.

GENERAL RULE M. Add. Employees are prohibited from riding or walking on the roof of any moving car.

RULE 10-J. Between Chestnut Junction and Oroville, yellow round speed-control boards indicate the maximum permissible speed of passenger trains except as noted at bottom of page 29. Elsewhere, passenger trains will be governed by the higher number speeds indicated on white oval speed-control boards.

Between Chestnut Jct. and Oroville, the higher number on white oval speed-control board indicates the maximum permissible speed for Special Freight Trains under column 2 and the lower number indicates the maximum permissible speed for Other Freight Trains under column 3. Where but one number is shown, it indicates the maximum permissible speed for both Special and Other Freight Trains.

RULE S-17. Outside of T.C.S. territory care must be taken to see that flag protection is furnished ahead when taking siding to meet trains unless it is definitely known that train is clear of the main track. After train comes to rest in the siding, the head end must receive a stop signal from the rear end indicating that train is clear of the main track. Until such signal has been received by head end, headlight will be displayed and flag protection provided. This does not in any way relieve the approaching train from complying with provisions of Rule S-90.

RULE 82-A. Trains in T.C.S. territory which change engines at intermediate stations need not obtain a new clearance. Thereafter any clearances issued will indicate the latest engine number. Train dispatcher must be notified promptly of change in engines.

First-class trains must obtain clearance at Oroville Yard and will not require a clearance at Oroville.

RULE 92. First-class trains must respect schedule shown.

RULE 101-A. Freight trains designated by the General Superintendent or the Superintendent may operate at speeds shown under column 2, Special Freight Trains, pages 28 and 29 when they receive the following message:

"This is your authority to operate at speeds shown under column 2, Special Freight Trains, current timetable between and"
 (Station) (Station)

Freight trains that do not have this written authority, or when this authority is cancelled, will operate at speeds shown under column 3, Other Freight Trains.

RULE 101-B. When tracks are covered by water and it is known they are safe for movement, engines may be operated over them only if the water is below the traction motor frames, not exceeding 5 MPH.

RULE 105. Sidings on Third Subdivision except Keddie and siding at Carbona included in signal circuits.

RULE 110. Freight trains need not stop for train inspection if train is operating normally, except westward trains on Third Subdivision requiring use of retainers must stop for inspection at Belden unless train has been inspected at Keddie, in which case, they may run from Keddie to Elsey for inspection.

If stops for train inspection are contemplated and if practicable to do so, train dispatcher should be notified in advance of any such stops.

When conditions restrict visibility, the conductor will designate any stops or additional stops for inspection that in his judgment, are necessary.

RULE 204. Train orders may be issued to first-class trains at Portola and Oroville Yard which affect their movements on both Second and Third Subdivisions. At Oroville Yard train order must located on north side of main track in front of telegraph office.

Incoming crews on first-class trains when crew change is made at Oroville, must deliver train orders, clearance and instructions to outgoing crew.

RULE 509. When a train becomes disabled in a block between stations, and the conductor or engineer has given train dispatcher assurance it is unable to proceed, the train dispatcher may, after an understanding has been reached with the conductor or engineer of the disabled train, orally authorize another train in opposing direction to enter the block under flag protection to relieve the disabled train. When a train is reported disabled to the train dispatcher, it must thereafter not be moved in either direction until relief train has arrived, or unless otherwise instructed by the train dispatcher.

RULE 540. Traffic Control System extends from Clinton to Portola, from absolute signals located just west of tail of wye switch at Niles Junction to west yard limit San Jose, MP BR-15.25 and from Keddie to and including east switch Moccasin.

On First, Second and Third Subdivisions, including First Subdivision "A"-San Jose Branch, and on Fourth Subdivision at Keddie trains will be authorized by clearance at initial stations. Trains originating at intermediate stations will be authorized orally by train dispatcher, except at a station where an operator is on duty.

Conductor, or engineer if there is no conductor, of a train authorized orally, must ascertain from the train dispatcher what instructions are outstanding as to track conditions on that portion of the system over which movement is to be made.

Trains on First and Second Subdivisions which are operated through Stockton and Stockton Yard with the same conductor may be issued Form Y train orders affecting their movement on either or both Subdivisions and may assume corresponding schedules or run extra from Stockton or Stockton Yard without obtaining clearance. When engine crews are changed at Stockton or Stockton Yard, incoming engineer must deliver clearance, train orders and instructions to outgoing engineer.

RULE 547. When a train is standing or switching in a block at a station, train dispatcher may authorize another train to flag into the block to perform work. Crew of train so authorized must have an understanding with crew of train occupying the block before entering and must fully protect their movements against any movements by the train originally occupying the block.

The granting of work authority does not relieve trains or engines from complying with the indications of any interlocking signals within the working limits. Any movements within the interlocking limits or to enter the interlocking limits must be made in accordance with interlocking rules, except when a train or yard engine, after entering the limits as prescribed by such rules, finds it necessary to temporarily leave a portion of their train or switch cut within the interlocking limits and permit their engine to leave the interlocking limits in the process of completing a switch movement, they may, after stopping, pass the interlocking signal governing entrance to the interlocking limits in stop position to again couple to their train or switch cut. In such cases if the crossing involved has been left clear, no movement must be made to foul or cross same without first protecting against movement on conflicting route.

RULE 550. The areas in which authority will be granted to use switches within work limits when work time is obtained are between:

East switch Kohler and west switch Stockton Yard (MP 90).

East switch Flora St. and west switch Oroville Yard, except electrically-locked switches between switches of sidings and North Channel line switch.

San Jose Branch, Niles Jct. and MP BR-15.25.

When a train or engine is to clear the main track at an electrically-locked switch, after it has entered the block in which the switch is located, the train dispatcher must hold all signals governing movement into that block at STOP and apply red tags to the levers controlling such signals. When movement is clear of main track and switch again normal, crew member will then report to train dispatcher that train or engine is clear. Until crew member so reports train dispatcher must not remove red tags from levers controlling the signals involved.

RULE 550-A. Trains and engines must not clear the main track at hand-operated switches not equipped with electric locks in territory where maximum speed is greater than 20 MPH.

RULE 825. Modified to extent that diesel engines not exceeding two units or 3500 H.P. may be used behind 400 and 600 series cabooses.

RULE 826. When necessary to handle a car ahead of the engine between stations, it must be chained to engine unless air brakes are cut in and operative.

RULE 831. When steam shovels, cranes, pile drivers, ditchers, spreaders or similar equipment are handled in trains, other than work trains in service, they must be placed on rear, unless otherwise directed. If picked up at a point where they cannot be placed on rear, they may be placed on head end and switched to rear at first station where possible to do so.

RULE 1011. When engine is not detached from train on No. 17 or No. 18 at Oroville, or on No. 17 at Portola, it will not be necessary for outgoing enginemen to check supplies and equipment.

FIRST SUBDIVISION

Nos. 17 and 18 receive and discharge passengers to and from San Francisco at Middle Harbor Road, Oakland Yard.

No. 18 must obtain clearance at Oakland Yard.

No. 17 will stop at Pleasanton to discharge revenue passengers from Salt Lake City or beyond.

Switches of certain tracks are not electrically-locked or signalled. Except in emergency a train must not clear main track on such tracks. If necessary to clear, permission must be obtained from the train dispatcher before again entering main track and provisions of Rule 520 will apply.

Switching may be done at these switches without work authority provided part of train is left at all times on main track within the block being used. Train dispatcher should be advised when such switching is to be done between stations.

RULE D-71. Trains have no timetable superiority between Clinton and Chestnut Jet.

Yard engines must obtain information as to when first-class trains are due and avoid delaying them and give way promptly to other trains.

RULES 83-A and 83-B. First-class trains need not register at Stockton Yard.

Oakland.

(a) **RULE D-151.** Before trains are authorized to move against the current of traffic between Clinton and Chestnut Jet, train dispatcher must first contact yardmaster Oakland Yard advising him of such impending train movement. After yardmaster has informed train dispatcher yard engines have been notified and track to be used will be clear, train movement against the current of traffic will be authorized as follows:

Westward: By signal indication per Rule 292-A at absolute signal Clinton.

Eastward: By train order form reading "No. _____ use westward main track Chestnut Jet. to Clinton."

(b) Yard engines must move with current of traffic when practicable, using crossovers to move to other track to perform work. Yardmaster may authorize long moves against the current of traffic after obtaining information that opposing trains or yard engines will not be encountered. If impracticable to contact yardmaster and it is necessary to make a long move against the current of traffic, engine

foreman may arrange such move after obtaining similar information. Short moves against the current of traffic may be made at any time except when first-class trains are due or when informed by yardmaster a train will move against the current of traffic.

(c) Street Crossing at Third and Broadway must not be blocked.

A westward train finding an eastward passenger train at passenger station will not pass Franklin St. until eastward train leaves station.

(d) Train and engine movements over Broadway Street crossing will be governed by vehicular traffic signals.

Eastward and westward trains and engines must approach Broadway Street expecting to find signals at STOP.

Trains and engines may proceed without stopping at Broadway Street on green traffic signal.

Lunar white light is located on near right-hand traffic light masts. When lighted, it indicates track circuit control is effective.

Eastward trains and engines, if stopped or delayed between Washington and Broadway Streets, and Westward trains and engines, if stopped or delayed between Webster and Broadway Streets, in excess of one minute and find traffic signals displaying red, must stop within ten (10) feet of curb line of Broadway Street and wait for green traffic signal. Should traffic signal fail to display green and lunar white marker is not lighted, flag protection over street crossing must be provided. Occupancy of the intersection by a train or engine will cause signals governing vehicular traffic to display red.

After having crossed Broadway Street, trains or engines must clear the circuits as soon as possible.

(e) Joint WP and SP drill track between Melrose and Elmhurst must not be used for meeting or passing trains.

(f) 66th and Seminary Avenue Crossings must be cut when blocked more than five minutes.

San Leandro. Absolute signal governing movement from siding to main track, lock 430-C, will display aspect per Rule 288 when main track switch is in reverse position and will continue to display aspect per Rule 288 for movement from siding as long as main track switch is in reverse position.

When signal displays aspect per Rule 288, trains and engines may proceed at restricted speed prepared to stop until the next signal in advance can be determined.

Hayward.

(a) Freight trains doing switching will leave train outside of limits of bonded rails operating crossing bells at "A," "B" and "C" Streets and will use engine whistle or horn and bell only when necessary to prevent accident.

(b) Trainmen must not ride cars beyond a point 548 feet from point of switch on Hayward Building Material Company spur. Sign has been placed at this point, reading: "STOP: Trainmen must not operate beyond this point."

(c) A lunar white marker light on 7-foot mast is located to the right of the siding at MP 20.15. Eastward trains moving on siding finding this lunar white marker light illuminated may proceed to east siding switch and be governed by signal indication displayed there. Eastward trains finding this marker light extinguished must stop before passing it and contact train dispatcher for instructions.

Train dispatcher's telephones are located in booth adjacent to marker light mast and in baggage room.

Decoto. Eastward trains setting out, picking up or doing other work stop clear of and west of the "F" Street grade crossing (No. 4-26.4), leaving sufficient room for cars picked up and engine west of that crossing.

Fabrico. Spur serving American Forge Co. east connected.

Switch is electrically-locked and is protected by hand-throw derail. Derail is not electrically-locked and must remain in derailing position until release of electrically-locked switch is obtained. Derail actuates signals on main track when not in derailing position.

Instructions for operation of electrically-locked switch and derail posted in telephone booth.

Engines will not operate beyond a point 15 feet inside of industry's gate.

Fremont. Look out for heavy movement of gravel trucks using Shinn Road crossing over main track, siding and back track 800 feet west of Station. Engineers must prolong horn or whistle signal 14 (1) approaching and passing over this crossing on any of the above named tracks.

Train dispatcher's telephone located in baggage room.

Niles Tower. RULE 670. Reverse movements may be made within interlocking limits without obtaining permission from the towerman provided a portion of the train or engine is between interlocking home signals.

Rhodes and Jamieson Spur. Switch is electrically-locked and is protected by hand-throw derail. Derail is not electrically-locked and must remain in derailing position until release of electric locked switch is obtained. Derail actuates signals on main track when not in derailing position.

Trevarno. Drill track. Switch is electrically-locked and is protected by hand throw derail. Derail is not electrically-locked and must remain in derailing position until release of electrically-locked switch is obtained. Derail actuates signals on main track when not in derailing position.

Altamont. Water cars spotted on house track are connected with underground water line. They must not be moved except on special instructions.

Carbona.

(a) Engines must move with extreme care not exceeding 3 MPH while moving over frogs and switches and around curves on Tomato Spurs.

(b) Main track and inside crossover switches at east end are dual-control. When either switch is placed in hand-throw position the other switch is disconnected from power operation and it is then unnecessary to place it in hand-throw position.

Signals governing movement over inside dual-control switch are controlled by train dispatcher. When signals display aspect per Rule 288, movements may be made to or from SP interchange and engines may drill over this switch without placing it in hand-throw position. If signals display STOP aspect per Rule 292 and reason is not apparent or if call light is lighted on adjacent telephone booth, train dispatcher must be contacted promptly.

Carbona siding is included in signal circuits and must not be fouled or occupied unless authorized by an absolute signal indication or by permission of the train dispatcher.

San Joaquin River Bridge. Train dispatcher's telephone located in booth on north side of track east end of bridge.

Army Supply Depot (Lathrop).

(a) At west end, normal position of all switches in switching lead lined for switching lead. Do not exceed 10 MPH on switching lead or interchange trackage with Army Supply Depot.

(b) Tracks 2 and 3 are to be used for setting out and picking up cars.

Stockton Yard.

(a) Eastward trains, caboose hops and light engines will be governed by signal indication entering Stockton Yard.

Eastward trains which head in at MP 90, call yardmaster on phone located near absolute signal for track instructions.

Eastward trains which head in at MP 90.85, call yardmaster on talk-back speaker for track instructions.

(b) Unless instructed by yardmaster, No. 3 lead will not be used for train movements.

(c) Switch leading to Tidewater Southern main track just west of Bridge 90.4, normal position lined for entering and leaving No. 1 lead.

Diverging switch between No. 1 and No. 2 leads at east end of Bridge 90.4, normal position toward No. 2 lead and trains entering No. 1 lead at this point must be sure switch lined back to normal position.

FIRST SUBDIVISION "A" — SAN JOSE BRANCH

Electric locks applied to main track switches and associated derrails at the following locations:

Irvington.....MP BR-3.35
 Inland Steel.....MP BR-4.68 and 5.02
 Warm Springs.....MP BR-6.75
 Curtner.....MP BR-7.95

These locks cannot be released by train dispatcher to enter main track. Therefore trains and engines must not clear main track at these locations unless specifically instructed to do so by train dispatcher. Rules 520 and 547 will apply at all switches between Niles Junction and MP BR-15.25 not protected by absolute signals or electrically-locked.

Niles Junction.

(a) Absolute signals governing eastward movements on branch, located at clearance point of switch at tail of wye.

(b) Switch at tail of wye is a spring switch, normal position lined for movements toward east leg of wye. This switch is equipped with electric switch indicator displaying yellow light when switch is in normal position. If yellow indicator lamp is found not illuminated by a westward train or engine, it must stop and examine spring switch at tail of wye before passing over it to make sure that point is fully closed.

Crews switching over this spring switch must stop and examine switch points if yellow indicator lamp is not illuminated after trailing movement is completed. This inspection must be made regardless of direction of movement to be made after using switch. Rule 519 applies.

(c) A lunar white marker light on 11 foot mast is located at MP BR-0.8 just east of Morrison Canyon Road governing movement of westward trains to the east leg of the wye.

Such trains finding lunar white marker light illuminated may proceed; those finding marker light extinguished must stop before passing and contact train dispatcher for instructions, unless train consists of less than forty cars including caboose, it may pass marker light without stopping and pull ahead to next absolute signal, making sure Morrison Canyon Road crossing is open and clear for vehicular traffic.

Movement on either east or west leg of wye must be made at yard speed.

Milpitas.

(a) Track adjoining south side of main track west of office is known as "West Siding" and track adjoining south side of main track east of office is known as "East Siding."

(b) Absolute signals installed at crossovers, MP BR-11.65, just east of office building.

(c) Deraill on west leg of wye located at clearance point. Deraill on east leg of wye located 392 feet west of main track switch.

RULES 341 and 509 (B). When instructed by the train dispatcher to line crossover switches to enter west or east siding, both switches to crossover to be used must be lined before any portion of train or engine passes absolute signal and thereafter, to enter siding only, trains may pass absolute signal displaying aspect per Rule 292.

(c) Crossover movement from either east or west siding to main track may be made by signal indication after train dispatcher has authorized lining of crossover switches by display of illuminated "S" indicator per Rule 292-A.

Dwarf signals located adjacent to crossover govern crossover movements to main track only and do not apply to siding movements. Except when in use for movement through crossover these signals will be dark.

(d) Trains setting out, picking up or doing other work will contact train dispatcher for instructions when ready to depart.

(e) At the Ford plant there are electrically-locked derrails on Tracks F-1 and F-2, located 200 feet west of the west track entrance and 227 feet east of the east track entrance to the assembly building. The doors to the track entrances at each end of the building cannot be closed until the derrails are lined in derailing position and locked. Unless requested by the Ford Motor Co. cars must not be left on either track at either end of the building between the derrails and point of entrance to the building.

In addition, at the west end, not more than two cars may be left (while switching or otherwise) on either Tracks F-1 or F-2 between the diverging switch to these tracks and the derrails. If Ford Co. orders two cars left on either Tracks F-1 or F-2 as above the east car must be left as close to deraill as safety permits to allow clearance on west end of these cars.

Hayes type derrails installed on Track F-4, 388 feet east of west switch to Track F-3 and on Track F-5, 238 feet east of entrance switch.

Gates, doors to buildings and derrails on both east and west ends of Ford plant are controlled and operated by Ford security police.

San Jose Yard.

Westward absolute signal located opposite west yard limit sign, MP BR-15.25.

After obtaining clearance, westward trains must contact train dispatcher by telephone before leaving yard tracks at William Street for authority to proceed to absolute signal at MP BR-15.25.

SECOND SUBDIVISION

RULES 83-A and 83-B. First-class trains need not register at Oroville Yard.

South Sacramento is register station for Sacramento Northern trains originating and terminating only.

Sacramento Northern trains need not register at Stockton Yard.

Stockton Yard.

Charter Way. Westward signal is a two-unit signal and diverging route may be to either "B" lead or Diner Siding.

When either of the dual-control switches in this block is placed in hand-throw position the other switch is disconnected from power operation and it is not necessary to place it in hand-throw position when switching over it unless it is used.

Stockton.

North Channel Line. Governed by absolute signals and electric lock. Eastward signal is a two-unit signal with "S" unit. When the "S" unit is illuminated electric lock is released and must be unlocked before switch is changed by hand operation.

Engines and cars must be brought to a stop at Country Club Highway crossing and must be preceded by flagman over crossing. Bridge over Smith Canal will not clear man on top of car.

South Sacramento.

(a) Campbell Soup Co. track. West crossover switches both electrically-locked. After lock is released main track switch must be opened before inside switch can be opened and inside switch must be closed before main track switch can be closed.

(b) Two dual-control switches at east end. Easterly switch connects with No. 1 track on north side and westerly switch connects with yard tracks on south side of main track. Power-operated switch point deraill in No. 1 track connected with dual-control switch but operates separately when either switch or deraill is in hand-throw position. When either dual-control switch or power deraill is placed in hand-throw position the other switch and deraill are disconnected from power operation and it is not necessary to place other switch in hand-throw position when switching over it unless it is used.

Westward absolute signal at east end is a two-unit signal with two marker lights on bracket which, when signal indication is per Rule 287, will show whether switch to north or south side is open.

(c) Both switches of crossover from main track to No. 1 track at west end of train yard electrically-locked. After lock is released, main track switch must be opened before inside switch can be opened and inside switch must be closed before main track switch can be closed.

Sacramento.

(a) **RULE 509.** Train dispatcher may issue Form B covering blocks Globe to east end South Sacramento, inclusive, in either direction.

(b) Normal position of switch at tail of wye "R Street Line" is lined for west leg of wye.

(c) Lunar white marker displayed in connection with aspect per Rule 287 on westward absolute signal at east switch Haggin, indicates that switches are lined for movement to Sacramento Northern yard. When aspect per Rule 287 is displayed without display of lunar white marker it indicates switches are lined to siding.

Marysville.

(a) Main track switch of crossover west of depot and east No. 1 track switch are bolt-locked by electric lock 346 B.

Inside crossover switch on siding and hand-throw tandem derrails on east end of tracks 1 and 2 are not electrically-locked and must NOT be operated before obtaining electric lock 346 B.

(b) SN connection switch on siding must be locked for siding when not in use. All movements on siding must be made at yard speed.

SP Connection MP 180.42.

The hand-operated switch is east connected to main track, equipped with electric lock and protected by separate hand-operated derail located on turnout approximately 110 feet west of main track switch.

Instructions for operation of electric lock located in telephone box adjacent to main track switch. Electric lock switch must be operated before derail, otherwise electric lock will not release. See operating Rule 550.

Eastward SP trains and engines at MP 180.42 must contact train dispatcher to obtain permission to operate electric lock and for instructions to move MP 180.42 to Oroville Yard. Westward SP trains and engines must contact train dispatcher for instructions to move Oroville Yard to MP 180.42. Refer to page 8, Rule 540.

THIRD SUBDIVISION

Sidings are included in signal circuits except at Keddie. No siding may be occupied or fouled unless authorized by an absolute signal indication or by permission of the train dispatcher.

Retainers will not be used on westward freight trains unless in the judgment of the engineer their use is necessary. If retainers are necessary, a sufficient number will be used to control the speed of train while brake pipe pressure is being restored. When used, they will be applied to cars on head end in a block of not less than fifteen cars and in a low-pressure position (horizontal). Should wheels show a tendency to heat, retainers must be alternated.

RULE 10-J. Blue rectangular speed control boards indicate the maximum permissible speed of Special Freight Trains and will be displayed on the same post below the white oval speed control board.

RULES 83-A and 83-B. Keddie is register station for trains originating and terminating only.

Nos. 17 and 18 register by ticket at Portola.

Oroville.

A sign reading "Diesel Stop" painted on a yellow marker post located between main track and siding 804 feet east of east end passenger station building.

Engineers of eastward passenger trains should endeavor to stop with cab of engine opposite this post so that water tanks of engine can be filled without respotting.

Engineers of westward passenger trains should endeavor to stop just to clear of westward leaving signal at west end of siding.

Intake. The trackage south of electric locked connection and derail located 275 feet from switch is joint trackage for interchange purposes.

Grays Flat Spur, MP 272.6. Cars must not be left at top of hill or on descending grade on this spur.

Keddie.

(a) When calling in flagman from east on Fourth Subdivision enginemen will sound six long blasts of horn.

(b) All switches leading in or out of siding (No. 1 track), except inside switch to Upper Crossover, must be left lined for the siding. Derailing switch at west end of siding is dual-control, power-operated and when in power position works simultaneously with west siding switch. When west siding switch is in hand-operated position, derailing switch must also be hand-operated.

(c) Hand-operated switch located 20 Ft. east of the inside west crossover switch Keddie siding must be left lined for the siding.

(d) Movements of trains or engines between yard tracks and tail track east of upper crossover may be made by, first obtaining release of electric lock on switch from roundhouse lead to tail track from the train dispatcher. After obtaining release of electric lock and reversing switch, then line inside switch of upper crossover to tail track. Movements must not be made west of roundhouse lead switch or on tail track east of eastward dwarf absolute signal at inside switch of upper crossover until this is done. Signal will display aspect per Rule 287 for eastward movement to tail track.

Hayes derail on tail track, pipe-connected to inside switch to upper crossover.

After this lineup is made, roundhouse lead switch must not be lined back until engine or cars are clear of section of tail track between dwarf signal and derail.

(e) Main track switch and derail at east end of house track is not pipe-connected.

Separate switch stand and electric lock 106A installed on this derail. The switch stand and electric lock is located 25 feet from track on south side of derail. Electric locks 106 and 106A can be unlocked by train dispatcher when either door of electric locks is opened.

(f) Emergency water facilities for supplying water for steam heat units on passenger diesels located adjacent to telephone booth just east of telegraph office.

DRAGGING EQUIPMENT DETECTORS

West switch Poe. Indicator lamp 50 feet west of detector.

Signal 2238. Indicator lamp 50 feet east.

When indicator lamp is actuated, it will display a lighted "D" and trains must be stopped promptly before reaching West Branch Bridge, and inspection made.

FOURTH SUBDIVISION

Markers must be burning through Tunnels 1, 2, 3 and 6.

RULE S-72. WESTWARD TRAINS ARE SUPERIOR TO EASTWARD TRAINS OF THE SAME CLASS.

RULE 827. Permasco car skates at Moccasin, Greenville, Lasen View, Robbers Creek, Lodge Pole, Jellico, Willow Springs and Little Valley.

When setting cars out on any of these sidings see they are used.

If cars already on siding, arrange to couple cars to be set out with the cars already there, resetting skates under outside pair of wheels of truck of first car on the down hill side. When coupling into car or cars on siding make coupling carefully and see skates removed before cars are pulled or pushed.

When all cars are removed from siding crew making pickup will see skates are re-hung on post or pole in place provided.

In addition to the use of Permasco car skates, provisions of second paragraph Rule 827 pertaining to use of hand brakes are also applicable.

Retainers will not be used on westward freight trains Almanor to Greenville or eastward freight trains Halls Flat to Little Valley unless in the judgment of the engineer their use is necessary. If retainers are necessary a sufficient number will be used to control the speed of train while brake pipe pressure is being restored. When used they will be applied to cars on head end in a block of not less than fifteen cars and in a low-pressure position (horizontal). Should wheels show a tendency to heat, retainers must be alternated.

Keddie. When calling in flagmen from east on Fourth Subdivision enginemen will sound six long blasts of horn.

Upper unit of 2-unit absolute signal governs eastward movement from Keddie Yard to the Fourth Subdivision. **RULE 509** is applicable.

Absolute dwarf signal on Fourth Subdivision lead when displaying aspect per **RULE 288** will govern westward movement from Fourth Subdivision to siding or yard.

Indian Creek. Switch is not equipped with electric lock. Be governed by **RULE 550-A** page 9.

Box. Engines or cars must not be moved over road crossing on Box Spur just east of Greenville without being brought to a stop and road traffic flagged in both directions by a member of crew.

Clear Creek Junction. The 33-car siding is the interchange track with Almanor Railroad Company and trackage between Western Pacific main track switch and yard limit board 2000 feet beyond end of the 33-car siding toward Chester is joint track for interchange purposes. Movements over this trackage are under operating rules governing operations within yard limits. Switch point derail on Almanor RR main track 400 feet from junction switch.

Normal position junction switch lined for Western Pacific main track.

Westwood. No. 4 track and old electric siding connected with No. 4 track at west end will be used as siding.

Derails on west end old electric siding and house track must be kept in derail position except when being used. East switch of old electric siding must be left lined for siding.

Poison Lake. Switch point derail at clearance point west end of log loading track. This derail must be left in derailing position except when track is actually being switched.

Jellico. Log loading track capacity 40 cars connected both ends leads off south side of siding.

Switch point derail on east end of this track and there must be no failure to leave it in derailing position except when track is actually being switched.

INTERLOCKING PLANTS AND SIGNALS AND RAILROAD CROSSINGS NOT INTERLOCKED

At certain Interlocking Crossings aspects per Rules 281 through 292 will be supplemented by semaphore arms as follows:

RULE 281. A single semaphore arm 60 degrees below horizontal position.
NAME. CLEAR.
INDICATION. PROCEED.

RULE 292. A single square-ended red semaphore arm in horizontal position.
NAME. STOP.
INDICATION. STOP.

MP 5.8—SP Crossing and MP 5.9—Chestnut Junction, Magnolia Tower. Interlocking. Towerman on duty.

Eastward: Two-unit home signal 490 feet west of Crossing. Upper unit governs movement to eastward main track; lower unit to westward main track. Single unit dwarf signal 490 feet west of Crossing governs movement from No. 1 track to either eastward or westward main track.

Westward: Three-unit home signal on westward main track 700 feet east of Crossing; upper unit governs movement to SP; middle unit to WP yard; lower unit to OT Interchange. Color-light dwarf signal 490 feet east of Crossing governs movement from eastward main track to WP yard or SP.

Eastward whistle signals: Old yard to eastward main track—one long; to westward main track—one long, one short and one long. No. 1 track, old yard, to eastward main track—one short and one long; to westward main track—one short, one long and one short.

MP 7.2 SP Crossing, Both Main Tracks. No Interlocking.

Protected by manually-operated gates. When SP engines or cars are using SP track, gates will be across both WP tracks and indicate STOP to movements on WP in either direction. Trains must approach under control and not proceed over this Crossing unless it is known to be clear.

MP 7.7 Clinton, SP Crossing. Interlocking. Remote-Controlled.

Spring switch located 60 feet west of Crossing at end of double track normally lined for westward main track and may be trailed through eastward on eastward main track.

Home signal east of Crossing is a two-unit signal with "S" unit on mast. Upper unit governs movement over Crossing to westward main track; lower unit to eastward main track after spring switch has been lined. The "S" unit must be illuminated before spring switch is changed. Trains or engines moving from eastward main track to westward main track or vice versa must move beyond home signal and receive proper signal indication for reverse movement. If authorized to pass this signal in STOP position, in addition to observing Rule 663, spring switch must be examined and points found to fit properly for movement desired.

That part of paragraph (D) Rule 663, referring to waiting time, is modified to three minutes instead of ten minutes at this Crossing.

MP 10.6 and MP 10.7 Melrose, SP Crossings. Interlocking. Remote-Controlled.

That part of paragraph (D) Rule 663, referring to waiting time, is modified to five minutes instead of ten minutes at this crossing.

MP 13.7 Elmhurst, SP Crossing. Interlocking. Remote-Controlled.

RULE 509 also applies. That part of paragraph (D) Rule 663, referring to waiting time, is modified to five minutes instead of ten minutes at this Crossing.

MP 30.3 Niles Tower, SP Crossing. Interlocking. Towerman on duty.

MP 42.7 and MP 42.97 Radum, SP Crossings. Interlocking. Automatic.

That part of paragraph (D) Rule 663, referring to waiting time, is modified to five minutes instead of ten minutes at this Crossing.

In order to avoid delay to trains on opposing route while doing work at Radum, train must be left outside of interlocking plant circuit governed by home signals.

MP 74.05, SP Crossing. Interlocking. Automatic.

While doing work on tracks adjoining this Crossing, train or cars must be left outside of interlocking plant circuit governed by home signals in order to avoid delay to trains on opposing route.

Signals are approach clearing. If train or engine fails to reach home signal within eleven minutes after proceed aspect is displayed, train or engine must expect to find STOP aspect displayed. Secondary clearing circuits extending 500 feet in approach to home signals, must be occupied before signal may again display proceed aspect.

MP 84.45 SP Crossing. Interlocking. Remote-Controlled. Under control SP train dispatcher.

When interlocking signals display STOP aspect and reason not apparent, contact SP train dispatcher. When westward home interlocking displays STOP aspect, westward trains will stop to clear Lathrop highway crossing.

WP emergency release box located adjacent to Crossing must be operated only on instructions from SP train dispatcher. If unable to contact SP train dispatcher and no trains can be seen or heard approaching, operate emergency release and observe Rules 663 (B), (C), (D) and 509.

When switching is done on main track at West Lathrop or cross-over west end of Army Supply Depot track, SP train dispatcher must be notified by telephone, length of time to be used so signal lineup may be changed if necessary and must also be notified when switching is completed.

MP 90.5 Ortega, Hunter Street Line, SP Crossing. Interlocking. Remote-Controlled.

Movements over SP Crossing will be made in accordance with signal indication.

Westward interlocking signal is also absolute signal. **RULE 509** also applies.

Electric locks on WP main track switch to Hunter Street Line and derail located north side SP Crossing are under control of WP train dispatcher. Both switch and derail are equipped with spring device for trailing movements.

Instructions for handling movements over SP Crossing posted in telephone shelters adjacent to both switch and derail.

MP 93.2 AT&SF Tower, AT&SF Crossing. Interlocking. Towerman on duty.

RULE 509 also applies. Limits of AT&SF Stockton Tower No. 2 have been extended to include that portion of main track and siding on the AT&SF to Commerce Street and signal indications will supersede the superiority of trains for both opposing and following movements on the same track. The movement of trains and engines in these limits will be supervised by the Tower who will issue instructions as may be required. The Tower must be advised in advance of any known condition that will delay the train or engine or prevent it from making usual speed.

Speed limit between Stockton Tower and Commerce Street — 20 MPH.

Following fixed signals and indications are effective in above specified territory:

Red — Stop and communicate with Tower for instructions.

Flashing Red — Proceed prepared to stop short of train, obstruction or switch not properly lined but not exceeding 20 MPH.

Red over Yellow — Same as Flashing Red.

Telephones to AT&SF Tower located in booth at Hazelton Avenue Lead and Commerce Street.

Western Pacific train dispatchers' telephone located in booth at Hazelton Avenue Lead.

Absolute signal governing movement from Hazelton Avenue Lead may display aspect per Rules 288 or 292 for movement to Western Pacific main track at MP 93.2. When aspect per Rule 288 is displayed, proceed to next governing signal.

Signal governing movement from Commerce Street to AT&SF main track or siding may display aspect per Rules 288 or 292. When aspect per Rule 288 is displayed, this authorizes movement to AT&SF main track and siding. When aspect per Rule 292 is displayed, crew must contact tower for instructions.

Next governing signal on AT&SF main track and siding will authorize movement to Western Pacific main track. If aspect per Rule 292 is displayed, authority for movement may be obtained through towerman.

Dwarf signals at Center Street govern movement from AT&SF main track and siding to Commerce Street.

Following whistle signals will be observed:

From WP to AT&SF enroute Hazelton Avenue Lead. 3 shorts, 1 long.
From WP to AT&SF enroute Commerce Street. . . . 1 long, 1 short.
From AT&SF to WP main track and WP main track either direction 1 long.

MP 93.8 Weber Avenue, SP Crossing. Interlocking. Remote-Controlled.

RULE 509 also applies. That part of paragraph (D) of Rule 663, referring to waiting time, is modified to five minutes instead of ten minutes at this Crossing.

MP 95.1 El Pinal, SP Crossing. Interlocking. Remote-Controlled. Under control of SP train dispatcher.

When interlocking signals display STOP aspect and reason not apparent, contact SP train dispatcher.

SP dispatchers telephone and WP emergency release box located adjacent to crossing. Emergency release must be operated only on instructions from SP train dispatcher. If unable to contact SP train dispatcher and no trains can be seen or heard approaching, operate emergency release and observe Rules 663 (B), (C), (D) and 509.

MP 137.5 "X" Street, CCT and SN Crossing. Interlocking. Remote-Controlled.

Dwarf signals with "S" indicators on Sacramento Valley Tractor Co. spur and west end interchange track. For movement out of spur or interchange track, first contact train dispatcher, then when "S" is illuminated line switch and signal should clear for movement.

RULE 509 also applies. That part of paragraph (D) of Rule 663, referring to waiting time, is modified to three minutes instead of ten minutes at this Crossing.

MP 138.0 "R" Street, SP Crossing. Interlocking. Remote-Controlled.

RULE 509 also applies. Low dwarf absolute signal bearing letter "A" located 80 feet east of "S" Street on west leg of wye governs movement from west leg of wye to main track only and does not apply to movements to California Builders Supply spur. When switch is lined for movement to California Builders Supply spur, this signal will display aspect per Rule 288.

Interlocking Home signals located 75 feet west and 200 feet east of SP Crossing west leg of wye govern movements over SP Crossing only. When these signals display aspect per Rule 288, movement may be made over SP Crossing at yard speed. If aspect per Rule 288 is not displayed, paragraph (D) Rule 663 will apply and waiting time modified to three minutes.

Switches leading to California Builders Supply spur and CAL-PAK 15 spur are manually operated. These switches will be lined and locked normally for through movements on west leg of wye. Movements into and out of these spurs can be made without contacting train dispatcher.

Rule 670 is modified at this location to permit reverse movements to be made within interlocking limits provided a portion of switch cut or engine is between interlocking home signals.

That part of paragraph (D) Rule 663, referring to waiting time, is modified to three minutes instead of ten minutes at this Crossing. **RULE 509** also applies.

MP 152.5 Sankey, SN Crossing and Connection.

RULES 509 and 546 apply. Westward absolute signal is a two-unit signal. Upper unit governs movements on WP main track. Lower unit governs movements to SN main track.

MP 180.2 Binney Junction, SP Crossing. Remote-controlled. Under control SP train dispatcher.

When interlocking signals display STOP aspect and reason not apparent, contact SP train dispatcher.

SP dispatchers telephone and WP emergency release box located adjacent to crossing. Emergency release must be operated only on instructions from SP train dispatcher. If unable to contact SP train dispatcher and no trains can be seen or heard approaching, operate emergency release and observe Rules 663 (B), (C), (D) and 509.

SAN JOSE BRANCH

MP 19.6 Valbrick, SP Crossing. No interlocking.

MP 20.2 Willow Glenn, SP Crossing. Interlocking.

Home signals 225 feet east and west of Crossing. No approach signals.

All trains must come to STOP at home signals, and a member of crew go to Crossing and carefully follow instructions pasted inside of derail lock box at Crossing before proceeding over Crossing.

MP 22.3 West San Jose, SP Crossing. No interlocking.

Protected by Stop Boards. All trains, locomotives and cars shall come to a STOP before proceeding across this Crossing and shall not thereafter proceed until it has been ascertained that no trains, locomotives or cars are approaching from either direction upon the conflicting route within a distance and at a speed which will in any way render them liable to conflict with the movement about to be made over the Crossing.

Southern Pacific Company shall have precedence in the use of the Crossing.

YARD OPERATIONS**OAKLAND — BETWEEN CLINTON AND EAST SWITCHING LIMIT****STOCKTON — BETWEEN WEST AND EAST SWITCHING LIMITS****SACRAMENTO — BETWEEN WEST AND EAST SWITCHING LIMITS****OROVILLE — BETWEEN WEST AND EAST SWITCHING LIMITS**

(A) RULE 547. Will apply within above limits, with work authority limited to not more than four blocks at any one time. Engine foreman must obtain authority from train dispatcher whenever switching is to be done in a block or blocks and, when switching is completed, engine foreman personally must release block or blocks to the train dispatcher.

When initially entering a block at a switch where there is no signal or electric lock, permission must be obtained from the train dispatcher and three minutes must elapse after switch is opened before engine or cars foul main track.

A yard engine may be granted work authority including a block in which a train is standing (provided such train has not been granted block work authority) for the purpose of switching such train. When such authority is granted signal indication is not required for entrance to the block nor must three minutes elapse after opening switch not protected by signal or electric lock to enter the block provided train to be switched can be seen stopped in the block. If it becomes necessary to switch such train from both ends or for a second engine to enter the same block on end of train opposite the end on which train is to be worked, to perform other work, both engines may be granted authority to work in the same block. Under such arrangements a portion of the train must be left at all times in the block originally occupied and after switching is completed the work authority will be considered cancelled.

(B) Certain switches within above limits are not electrically locked or signalled. Switch crews using such switches within a block under work authority may leave and return to the main track with-

out additional authority from the train dispatcher provided they have left a car or cars on main track or main track switch open with a man in charge.

If main track has been cleared and switches restored to normal position new authorization must be obtained from the train dispatcher before returning to the main track.

(C) Engine foreman must notify train dispatcher when leaving or intending to leave main track at an intermediate switch except when working under work authority. A block must not be released to the train dispatcher in advance when work authority has been granted but blocks must be released promptly when switching has been completed or specified time has expired in order to avoid delay to trains.

OAKLAND

(a) Block limits are as follows:

Clinton, MP 7.7 to absolute signal MP 8.8

Absolute signals MP 8.8 to MP 9.9

Absolute signal MP 9.9 to west switch Kohler

West switch Kohler to east switch Kohler

East switch Kohler to absolute signal MP 13.7.

(b) Train dispatcher must be notified when yard engines intend to enter T.C.S. on main track at Clinton and thereafter signal indications will govern.

STOCKTON

(a) Block limits are as follows:

East switch Wyche to MP 90

MP 90 to MP 90.85

MP 90.85 to west switch Diner Siding

West switch Diner Siding to east switch Diner Siding

East switch Diner Siding to AT&SF Crossing

AT&SF Crossing to Weber Avenue Crossing

Weber Avenue Crossing to west switch Flora Street

West switch Flora Street to east switch Flora Street

East switch Flora Street to North Channel Line

North Channel Line to west switch Hammer Lane.

(b) Work authority is not required for straight moves to or from SP Transfer or through other switches protected by electric locks.

(c) Main track and inside crossover switches at west end of train yard, MP 90.85, are dual-control. When either switch is placed in hand-throw position the other switch is disconnected from power operation and it is then unnecessary to place it in hand-throw position.

Dwarf signals governing movement on No. 1 lead track over inside switch of power-operated crossover MP 90.85, are absolute signals controlled by the train dispatcher. When these signals display aspect per Rule 288, movement may be made over this switch without placing it in hand-throw position.

These signals may be set to display STOP per Rule 292 by the train dispatcher at any time. If these signals display STOP indication per Rule 292 and reason is not apparent or if call light is lighted on signal house north of main track, contact train dispatcher promptly by telephone.

SACRAMENTO

(a) Block limits are as follows:

East switch Pollock to west switch South Sacramento

West switch South Sacramento to east switch South Sacramento

East switch South Sacramento to absolute signal SN-CCT Crossing X Street

Absolute signal SN-CCT Crossing X Street to absolute signal SP Crossing R Street

Absolute signal SP Crossing R Street to absolute signal west switch Haggin

Absolute signal west switch Haggin to absolute signal east switch Haggin

Absolute signal east switch Haggin to absolute signal Globe.

(b) Flashing red aspect displayed by indicator on signal mast in front of yard office South Sacramento authorizes switching movements between absolute signals at east and west ends of train yard without contacting train dispatcher. All movements so authorized must be made at yard speed. It will not be necessary to wait three minutes before entering main track after opening non-locked switches in this block when flashing red aspect is displayed on the indicator.

When the flashing red aspect is extinguished it will terminate the authority and main track must be cleared as promptly as possible. If unable to clear the main track within five minutes, the train dispatcher must be contacted.

(c) Flashing red aspect displayed by indicator on instrument house in vicinity of east train yard is authority to place power switches at east end of train yard in hand-throw position and to make switching movements in block between eastward absolute signals east switch South Sacramento and eastward absolute signal "X" Street. All movements so authorized must be made at yard speed.

When flashing red aspect is extinguished it will terminate switching authority and main track must be cleared promptly and power switches returned to motor position. If unable to clear main track within five minutes, the train dispatcher must be contacted.

Power switch to be used must be placed in hand-throw position before passing absolute signals and must be restored to motor position immediately when switching movements are completed.

(d) In connection with the power-operated derail at east end of No. 1 track, South Sacramento, it is permissible for a yard engine to make an eastward move over it by signal indication, then, without reaching main track, move westward without placing the derail in hand-throw position. However, if there are a series of such moves the derail must be placed in hand-throw position to avoid hazard of train dispatcher changing lineup during the switching operations.

(e) At South Sacramento authority to place power switches at east end in hand-throw position will carry with it authority to switch in the block between east switch South Sacramento and eastward absolute signal at "X" Street and at west end authority to switch in the block between west switch South Sacramento and Pollock, as well as between east and west switches South Sacramento. This means that two yard engines may be granted authority to switch over power switches at each end of South Sacramento at the same time but, only the yard engine which has specific authority from the train dispatcher to do so may use the main track block between east and west switches. The foregoing not in conflict with instructions in paragraphs (b) and (c).

It will not be necessary for train dispatcher to record switching authority in connection with permission to use these power switches except when authority includes the main track block between east and west switches.

(f) An engine foreman may permit road crews to use his switching authority for moves, such as engine to or from train, etc., or other switch crews crossing over, but must insure that there is no hazard by reason of his own switching operations. Train dispatcher may not issue switching authority (including operation of power switches in hand-throw position) to more than one person at a time (except to switch both ends of a train).

OROVILLE

(a) **RULE 547.** Train dispatcher may grant permission to different engines in different parts of the same block to operate a dual-control switch by hand or use the main track for switching and will not be required to protect work limits by absolute signals in each direction or apply red tags to the signal levers. However, he must not grant such permission if a train or engine is moving by signal indication in the block toward point where work is to be done or is closely approaching such block.

(b) Switch to house track, Oroville, operates derails on east end of house track and east end of team track simultaneously.

(c) **Oroville Yard.** Yard track indicators located opposite absolute signals governing movements of eastward or westward freight trains into yard will indicate to trains or engines the number of the track on which they are to yard their trains.

When indicator is dark yardmaster must be contacted at head-in switch to obtain track assignment unless previously received.

(d) Main track and inside crossover switches at east end of train yard, MP 203.75, are dual-control. When either switch is placed in hand-throw position the other switch is disconnected from power operation and it is then unnecessary to place it in hand-throw position.

Signals governing movement over inside dual-control switch are controlled by the train dispatcher. When these signals display aspect per Rule 288, movements may be made over this switch without placing it in hand-throw position. If signals display STOP aspect per Rule 292 and reason is not apparent or if call light is lighted on adjacent telephone booth, train dispatcher must be contacted promptly.

(e) East drill track switch is located just west of Mitchell Ave. crossing. Switch is electrically-locked.

Ehman Spur switch leading from east drill track is located 379 feet west of east drill track switch and when in normal position it is lined for Ehman Spur, also electrically-locked and serves as derail.

Electric locks on both these switches work simultaneously but switches are not pipe-connected to one another and must be hand operated separately.

SACRAMENTO NORTHERN CREWS

Eastward SN trains and engines at Haggin must contact train dispatcher for instructions to move Haggin to Globe. It will not be necessary to obtain similar instructions at SN-WP connection at Sankey for movement beyond if leaving signal on SN displays a proceed aspect.

When westward SN trains or engines at Marysville have contacted train dispatcher for instructions to move Marysville to SN-WP connection at MP 175.63 or Sankey, it will not be necessary to obtain similar instructions at Globe for movement beyond, except to obtain permission to operate electric lock.

SANKEY

Eastward absolute signal on Sacramento Northern is a two-unit signal.

Upper unit governs movements to Western Pacific main track. Lower unit governs movements on Sacramento Northern main track.

Western Pacific Operating Rules 509 and 546 apply.

MARYSVILLE

(a) All switches for entrance to WP main track are governed by absolute signals or electric locks. Movements of SN trains or yard engines will be made by signal indication or by permission of the WP train dispatcher. Western Pacific Rules will apply.

(b) **RULE 547.** Governs switching operations. Block limits are: Absolute signal at SN Connection MP 175.63 to west siding switch Marysville.

West siding switch Marysville to east siding switch Marysville.

East siding switch Marysville to west siding switch Tambo.

Engine foreman must obtain authority from train dispatcher whenever switching is to be done in a block or blocks and, when switching is completed, engine foreman personally must release block or blocks to the train dispatcher.

A yard engine may be granted work authority including a block in which a train is standing (provided such train has not been granted block work authority) for the purpose of switching such train.

Work authority is not required for straight moves across WP main track through switches protected by electric locks.

(c) Instructions for operating electric locks are posted in telephone booths adjacent thereto.

Permission must be obtained from train dispatcher before electric locks can be released and he must be notified after movement is completed and electric lock has been locked.

(d) Switch point derail on California Packing Corp. Spur 172 feet west of main track switch at MP 179.2.

OPERATION OF TRAINS AND ENGINES BETWEEN EAST AND WEST TRAIN YARD SWITCHES PORTOLA

(A) Signal aspect per Rule 288 displayed by automatic signals or indicators between east train yard switch MP 322.13 and west train yard switch MP 320.25, authorizes yard switching or engine movement on main track within these limits.

(B) The absence of signal aspect per Rule 288, or its removal, is an indication that the train dispatcher desires the main track cleared for through train movements. Howlers controlled by the train dispatcher are located throughout the yard, and when operated the main track must be cleared immediately.

(C) In addition, train dispatchers will furnish information to operator as to times passenger trains are expected to reach Portola. Employees in charge of yard engines, light engines, and similar moves must ascertain from operator whether these trains are due before occupying main track and not delay them.

(D) When main track is used on authority of signal aspect per Rule 288, all movements must be made at yard speed.

(E) When a westward train or engine is stopped at absolute signal at east train yard switch, MP 322.13, or an eastward train or engine is stopped at absolute signal at west train yard switch, MP 320.25, by a STOP indication and train or engine is instructed by the train dispatcher to proceed under flag protection per Rule 509(A) 2, it must be preceded by a flagman. When next signal or indicator in advance can be seen displaying aspect per Rule 288, and intervening track to such signal can be seen to be clear, train or engine may pick up flagman and proceed at yard speed.

(F) Eastward absolute signals at west train yard switch are under electrically-coordinated joint control of train dispatchers for the Third Subdivision, Western Division and First Subdivision, Eastern Division.

Permission to take switch or derail at west end train yard in hand-throw must be obtained from Western Division train dispatcher. Western Division train dispatcher will in turn contact Eastern Division train dispatcher for his concurrence.

When west train yard switch is in hand-operated position, derauling switch, if used, must also be hand-operated.

(G) Train washer located on main track between west pocket track switch and east switch west siding.

Automatic signals 3210 and 3211 located adjacent to washer are equipped with marker lights indicating the position of washing arches.

All aspects displayed by these signals are subject to the restrictions imposed by the marker lights and the following will govern:

LUNAR: Washer clear — Movement may be made through washer not exceeding 10 MPH.

PURPLE: Washing position — Restricted clearance. All trains and engines to be washed STOP and then proceed not exceeding 2 MPH.

Lunar light must be displayed for all non-washing movements. If lunar light not displayed for non-washing movements, trains and engines must STOP, check all washing arches, see they are locked in clear, then movement may be made through washer not exceeding 10 MPH.

Employees are prohibited from riding on sides or tops of trains, cars or engines while passing through train washer in operating position.

No. 17, California Zephyr, will make station stop so that baggage car will be spotted at west end of hard-surface platform. In event it is too cold to wash train, engineer will be notified accordingly.

(H) After being authorized by clearance, trains must not leave until given permission by train dispatcher after member of crew advises him they are ready to leave, except Nos. 17 and 18 will leave when ready being governed by signal indications.

(I) Derail at west end of west siding is hand-operated independent of switch. Derail will actuate signals on main track when not in derauling position.

(J) Yard track indicators located opposite absolute signals governing movements of eastward or westward freight trains into yard will indicate to such trains the number of the track on which they are to yard their trains.

When indicator is dark yardmaster must be contacted at head-in switch to obtain track assignment.

TRACKS ON WHICH ENGINE MOVEMENTS RESTRICTED

| Location and Description of Track | Class of Engine | Prohibited |
|---|----------------------------|---|
| Radium | All | Beyond frog on all tracks except 1 and 2. |
| Carbana Branch Spur MP 0.5 | All | Beyond frog. |
| Stockton N. Channel Line* | All Road | Beyond frog. |
| Terminus Branch..... | All, except one unit .. | On entire branch. |
| Marysville Old SN freight Connections | All | Beyond frog. |
| Craig, Outfit Spur | All | Beyond restricting sign. |
| Oroville Ehman Spur..... | All, except one unit .. | Beyond restricting sign. |
| Belden, House Spur | All | Beyond MP 260. |
| Westwood Standard Oil Spur**..... | All..... | Beyond 220 feet from frog. |
| Poison Lake Log Loading Track | All..... | Beyond 1125 feet from derail. |

* All yard engines, except S-50 class (501-511), must be separated from any loaded cars by at least 1 empty while handling cars over Smith Canal drawbridge, North Channel Line, Stockton.

** Necessary to have hold of at least 4 cars to switch Standard Oil spur.

SPURS AND COMMERCIAL TRACKS

MAIN LINE

| STATIONS | Mile Post | How Connected | Car Capacity |
|--|-----------|---------------|--------------|
| ESTUDILLO..... | 16.5 | 1 E | 11 |
| CARPENTER... (P)..... | 24.9 | Both Ends | 39 |
| UNION CITY..... | 25.9 | Both Ends | .. |
| DECOTO..... | 26.6 | Both Ends | 18 |
| PABRICO | | | |
| Pacific States Steel..... | 27.8 | Both Ends | 75 |
| American Forge..... | 27.8 | 1 E | .. |
| EBERLY..... | 28.9 | Both Ends | 20 |
| RADUM... (P)..... | 43.4 | Both Ends | 33 |
| RHODES and JAMIESON.. (P).. | 44.6 | 1 E | 50 |
| TREVARNO (P) | | | |
| Interchange..... | 49.0 | 1 W | 24 |
| Drill track..... | 49.16 | 1 W | .. |
| LOX..... | 50.3 | 1 W | 30 |
| LYOTH (P) | | | |
| U.S.Q.M. & SP Conn..... | 73.8 | 1 W | .. |
| (Spur leads from east end Carbona siding) | | | |
| RHODES... (P)..... | 75.6 | Both Ends | 26 |
| ARMY SUPPLY DEPOT (LATHROP) (P)..... | 85.76 | Both Ends | 130 |
| FRENCH CAMP (P)..... | 88.35 | Both Ends | 29 |
| VILLINGER... (P)..... | 107.8 | 1 W | 13 |
| LAS VINAS... (P)..... | 109.5 | 1 W | 24 |
| GLANNVALE... (P)..... | 118.5 | 1 W | 13 |
| ALBERT (P)..... | 127.2 | 1 W | 9 |
| BOMBAY... (P)..... | 146.6 | 1 E | 13 |
| VISTA ROBLES (P)..... | 198.8 | 1 E | 33 |
| ZEPHYR... (P)..... | 210.4 | 1 W | .. |
| INTAKE... (P)..... | 232.36 | 1 E | .. |
| JARBO... (P)..... | 236.1 | Both Ends | 17 |
| GRIZZLY... (P)..... | 246.1 | 1 E | 11 |
| ROCK CREEK... (P)..... | 249.1 | Both Ends | 18 |
| DALTE... (P)..... | 256.8 | 1 W | 12 |
| GRAY'S FLAT.. (P)..... | 272.6 | 1 W | 74 |

FOURTH SUBDIVISION

| STATIONS | Mile Post | How Connected | Car Capacity |
|-------------------------|-----------|---------------|--------------|
| INDIAN CREEK.. (P)..... | 3.1 | 1 W | 14 |
| CHENEY..... | 13.9 | 1 E | 16 |
| BOX... (P)..... | 15.5 | 1 W | 34 |
| POISON LAKE... (P)..... | 70.4 | 1 W | 40 |
| LITTLE VALLEY | | | |
| LUMBER CO.. (P)..... | 95.4 | 1 W | 12 |

YARD LIMITS

| West MP | | East MP |
|----------|--------------------------------|-----------|
| WP Mole | Oakland | 7.7 |
| BR-15.25 | San Jose | BR-23.0 |
| | Keddie (4th Subdivision) | K-0.48 |
| K-38.25 | Westwood | SP-409.45 |
| | (2¼ miles west of Mason) | |
| K-111.2 | Bieber | GN-86.5 |
| | (3.1 miles east of station) | |

* SWITCHING LIMITS

| West MP | | East MP |
|---------|--|---------|
| 7.7 | Oakland | 13.78 |
| 28.5 | Fremont | 31.38 |
| | Niles Junction (San Jose Branch) | BR-0.82 |
| 70.14 | Carbona | 73.05 |
| 89.34 | Stockton | 96.59 |
| 133.4 | Sacramento | 140.69 |
| 177.62 | Marysville | 180.24 |
| 201.44 | Oroville | 210.04 |
| 280.0 | Keddie | 282.47 |
| 319.94 | Portola | 323.09 |

* Indicated by "SL" signs.

TONNAGE RATING

| Engine Number | 1st Sub-division | 2nd Sub-division | 3rd Sub-division | 4th Subdivision | | San Jose Branch | |
|-----------------|------------------|------------------|--------------------------------------|--|-----------------------|-----------------|------|
| | | | | Keddie to Greenville and Almanor to Bieber | Greenville to Almanor | | |
| Eastward | | | | | | | |
| 801-805 | 875 | 1985 | 605 | 415 | 285 | 875 | |
| 902-912 | 1825 | 2500 | 1095 | 835 | 585 | 1825 | |
| 913-924 | 2275 | 3060 | 1375 | 1080 | 810 | 2275 | |
| 501-511 | 1050 | 2645 | 880 | 600 | 435 | 2800 | |
| 551-564 | 1450 | 3340 | 1150 | 790 | 535 | 3160 | |
| 581-585 | 1450 | 3340 | 1150 | 790 | 535 | 3160 | |
| 601-606 | | | | | | | |
| 701-713 | 2350 | 3925 | 1500 | 1175 | 875 | 3340 | |
| 725-732 | | | | | | | |
| 801-D | | | | | | | |
| 2001-2010 | 2600 | 4175 | 1750 | 1425 | 1125 | 3590 | |
| 3001-3010 | | | | | | | |
| Westward | | | | | | | |
| 801-805 | 780 | 1985 | Descending grade No tonnage limit | 350 | 765 | 880 | |
| 902-912 | 1375 | 2725 | | 755 | 1485 | 1825 | |
| 913-924 | 1710 | 3400 | | 1035 | 1825 | 2275 | |
| 501-511 | 880 | 2645 | | 530 | 1350 | 2800 | |
| 551-564 | 1150 | 3340 | | 660 | 1855 | 3160 | |
| 581-585 | 1150 | 3340 | | 660 | 1855 | 3160 | |
| 601-606 | | | | | | | |
| 701-713 | 1715 | 4150 | | | 1125 | 2350 | 3340 |
| 725-732 | | | | | | | |
| 801-D | | | | | | | |
| 2001-2010 | 1965 | 4400 | | 1375 | 2600 | 3590 | |
| 3001-3010 | | | | | | | |

Ratings shown above are for one unit engine, and for actual tonnage, and based on maximum grade each subdivision.

Between points where grades are less than maximum, greater tonnage can be handled.

When units 801-A and 802-A are equipped with freight gears, they have the same tonnage rating as one unit of a 913-924 engine.

| SPEED RESTRICTIONS IN MILES PER HOUR BETWEEN | 1 Passenger Trains | | 2 Special Freight Trains | | 3 Other Freight Trains | |
|--|---------------------------------|-------------------|-----------------------------------|-------------------|---------------------------------|-------------------|
| | Maxi- mum | Restric- tions | Maxi- mum | Restric- tions | Maxi- mum | Restric- tions |
| | First Subdivision—Page 2 | | | | | |
| Chestnut Jct. and Oak St., Oakland.. | 15 | .. | 15 | .. | 15 | .. |
| Over Washington and Franklin Streets, Oakland..... | .. | 8 | .. | 8 | .. | 8 |
| Oak St., Oakland and SP Crossing, MP 10.6..... | 20 | .. | 20 | .. | 20 | .. |
| MP 7.2 over SP Crossing..... | .. | 10 | .. | 10 | .. | 10 |
| *MP 7.7 over SP Crossing, Clinton .. | .. | 15 | .. | 15 | .. | 15 |
| MP 9.5 just west 29th Ave. and MP 9.8 just east of Fruitvale Ave. | .. | 10 | .. | 10 | .. | 10 |
| *SP Crossing MP 10.6 and East Oak- land Swg. Limit | 35 | .. | 35 | .. | 25 | .. |
| *MP 13.7 over SP Crossing..... | .. | 30 | .. | 30 | .. | .. |
| East Oakland Swg. Limit and MP 29.7 Bridge 14.55 just west of San Lean- dro depot and Williams St., 5 blocks east of depot..... | 70 | .. | 60 | .. | 50 | .. |
| Over "A" and "B" Streets, Hayward .. | .. | 20 | .. | 20 | .. | 15 |
| MP 23.93 and MP 24.31..... | .. | 45 | .. | 45 | .. | 30 |
| MP 29.25 and MP 29.6 on curve..... | .. | 50 | .. | 45 | .. | 35 |
| MP 29.7 and MP 39..... | .. | 45 | .. | 40 | .. | 30 |
| *MP 30.3 over SP Crossing | 55 | .. | 50 | .. | 40 | .. |
| MP 30.3 and MP 35 on curves and through Tunnel 1..... | .. | 30 | .. | 25 | .. | 20 |
| MP 36.4 and MP 38.7 on curves and at SP underpass..... | .. | 45 | .. | 40 | .. | 30 |
| MP 39 and MP 52..... | .. | 50 | .. | 45 | .. | 35 |
| MP 39.9 and MP 40.3 on curve..... | 70 | .. | 60 | .. | 50 | .. |
| City Limits, Pleasanton..... | .. | 60 | .. | 55 | .. | 45 |
| *MP 42.7 and MP 42.97 SP Crossings City Limits, Livermore..... | .. | 50 | .. | 45 | .. | 40 |
| MP 49.6 and MP 50.1 on curve and at SP underpass..... | .. | 50 | .. | 40 | .. | 35 |
| MP 51.5 and MP 51.9 on curve..... | .. | 60 | .. | 55 | .. | .. |
| MP 52 and MP 60.5..... | 50 | .. | 45 | .. | 35 | .. |
| MP 52.3 and MP 58.2 on curves..... | .. | 45 | .. | 40 | .. | .. |
| MP 60.5 and MP 68..... | 79 | .. | 60 | .. | 50 | .. |
| MP 61.8 and MP 62.1 on curve..... | .. | 60 | .. | 55 | .. | 45 |
| MP 63.3 and MP 67 on curves..... | .. | 50 | .. | 45 | .. | 40 |
| MP 67.3 and MP 68 on curve..... | .. | .. | .. | .. | .. | 45 |
| MP 68 and Stockton Depot | 79 | .. | 60 | .. | 60 | .. |
| MP 71.8 and MP 72.2 on curve..... | .. | 70 | .. | .. | .. | 50 |
| *MP 74.05 SP Crossing..... | .. | 55 | .. | 50 | .. | 40 |
| MP 79.8 and East End Bridge 80.28 .. | .. | 50 | .. | 40 | .. | 30 |
| MP 81.8 and MP 83.4 on curve | .. | 70 | .. | .. | .. | 50 |
| *MP 84.45 SP Crossing..... | .. | 55 | .. | 50 | .. | 40 |
| MP 88.3 and MP 89.9 on curves..... | .. | .. | .. | .. | .. | 50 |
| MP 90.4 and MP 90.55 on curve..... | .. | 50 | .. | 45 | .. | 35 |
| MP 90.55 and MP 92.4..... | .. | .. | .. | 50 | .. | 40 |
| MP 92.4 and Charter Way on curves Charter Way and Stockton Depot, Main Track..... | .. | 50 | .. | 45 | .. | 30 |
| Other Tracks..... | .. | 20 | .. | 20 | .. | 20 |
| | .. | 12 | .. | 12 | .. | 12 |

| SPEED RESTRICTIONS IN MILES PER HOUR BETWEEN | 1 Passenger Trains | | 2 Special Freight Trains | | 3 Other Freight Trains | |
|---|----------------------------------|-------------------|-----------------------------------|-------------------|---------------------------------|-------------------|
| | Maxi- mum | Restric- tions | Maxi- mum | Restric- tions | Maxi- mum | Restric- tions |
| | Second Subdivision—Page 3 | | | | | |
| Stockton Depot and MP 122..... | 70 | .. | 55 | .. | 50 | .. |
| Stockton Depot and MP 94.2, Main Track..... | .. | 20 | .. | 20 | .. | 20 |
| Other Tracks..... | .. | 12 | .. | 12 | .. | 12 |
| MP 94.2 and MP 95.1..... | .. | 40 | .. | 40 | .. | 30 |
| *MP 95.1 over SP Crossing..... | .. | 40 | .. | 40 | .. | 30 |
| MP 95.1 and MP 97.3..... | .. | .. | .. | 50 | .. | 45 |
| MP 116.07 Mokelumne River Bridge Over Bridges 116.28 and 116.37..... | .. | 45 | .. | 40 | .. | 35 |
| MP 122 and MP 133.5..... | 55 | .. | 40 | .. | 35 | .. |
| MP 133.5 and MP 140.1..... | 60 | .. | 60 | .. | 40 | .. |
| MP 135.95 and "C" St., Saeramento "C" St. and MP 140.1..... | .. | 15 | .. | 15 | .. | 15 |
| MP 140.1 and MP 197..... | 70 | .. | 60 | .. | 50 | .. |
| MP 140.1 and MP 142..... | .. | .. | .. | .. | .. | 45 |
| MP 178 and MP 179.1..... | .. | 45 | .. | 40 | .. | 30 |
| *MP 180.2 SP Crossing..... | .. | 50 | .. | 45 | .. | 35 |
| MP 197 and Oroville..... | 79 | .. | 60 | .. | 50 | .. |
| MP 201.7 and MP 201.9 on curve..... | .. | 45 | .. | 40 | .. | 35 |
| MP 202 and MP 202.5 on curve..... | .. | 70 | .. | .. | .. | .. |
| MP 204.7 and MP 205.1 on curve..... | .. | 50 | .. | 45 | .. | 35 |
| Third Subdivision—Page 4 | | | | | | |
| Oroville and MP 232.2 | 40 | .. | 35 | .. | 35 | .. |
| MP 232.2 and MP 273.5 | 35 | .. | 30 | .. | 30 | .. |
| MP 232.2 and MP 238.9 | .. | 30 | .. | .. | .. | 25 |
| MP 244.2 and MP 244.94 | .. | 30 | .. | .. | .. | 25 |
| MP 248.6 and MP 252.57..... | .. | 30 | .. | .. | .. | 25 |
| Over Bridge 252.6 | .. | 25 | .. | 20 | .. | 20 |
| MP 252.65 and MP 271.5..... | .. | 30 | .. | .. | .. | 25 |
| MP 273.5 and MP 275.3 | 40 | .. | 30 | .. | 30 | .. |
| MP 275.3 and MP 282.9..... | 30 | .. | 25 | .. | 25 | .. |
| West wye switch, Keddie..... | .. | .. | .. | .. | .. | 15 |
| MP 282.9 and MP 320.3..... | 45 | .. | 35 | .. | 30 | .. |
| MP 282.9 and MP 283.76..... | .. | 35 | .. | .. | .. | .. |
| MP 286.04 and MP 287.05..... | .. | 35 | .. | .. | .. | .. |
| MP 287.05 and MP 287.65..... | .. | 40 | .. | .. | .. | .. |
| MP 288.94 and MP 291.85..... | .. | 40 | .. | .. | .. | .. |
| MP 291.85 and MP 294..... | .. | 35 | .. | .. | .. | .. |
| MP 294 and MP 295.1 | .. | 35 | .. | .. | .. | 25 |
| MP 295.1 and MP 296.15..... | .. | 40 | .. | .. | .. | .. |
| MP 298.53 and MP 299.75..... | .. | 30 | .. | 30 | .. | 25 |
| MP 300.82 and MP 300.97..... | .. | 35 | .. | .. | .. | .. |
| MP 304 and MP 305.17..... | .. | 35 | .. | .. | .. | .. |
| MP 306.11 and MP 307.25..... | .. | 40 | .. | .. | .. | .. |
| MP 310.7 and MP 314.25..... | .. | 40 | .. | .. | .. | .. |
| MP 314.25 and MP 314.35..... | .. | 35 | .. | .. | .. | .. |
| MP 316.1 and MP 316.98..... | .. | 35 | .. | 30 | .. | 25 |
| MP 320.3 and Portola..... | 20 | .. | 20 | .. | 20 | .. |

*All trains approaching interlocked crossings must reduce to speeds shown above before engine passes home signal.

Between Chestnut Jct. and Oroville, passenger trains handling conventional equipment will not exceed speeds shown under column 2, Special Freight Trains.

| SPEED RESTRICTIONS IN MILES PER HOUR BETWEEN | 1 | | 2 | |
|---|---------------------|-------------------|-------------------|-------------------|
| | Passenger Trains | | Freight Trains | |
| | Maxi- mum | Restric- tions | Maxi- mum | Restric- tions |
| Fourth Subdivision—Page 5 | | | | |
| Keddie and Moccasin | 35 | .. | 25 | .. |
| Moccasin and West switch Greenville. | 40 | .. | 40 | .. |
| West switch Greenville and MP 17... | 35 | .. | 35 | .. |
| West switch Greenville and MP 17 westward trains | .. | .. | .. | 25 |
| MP 17 and Clear Creek Jct. | 35 | .. | 25 | .. |
| Clear Creek Jct. and Mason | 35 | .. | 30 | .. |
| Clear Creek Jct. and Westwood, on curves | .. | 25 | .. | 25 |
| Mason and Halls Flat | 45 | .. | 45 | .. |
| Halls Flat and Pit River | 35 | .. | 25 | .. |
| Halls Flat and Pit River, on curves | .. | 25 | .. | .. |
| Pit River and Bieber | 40 | .. | 30 | .. |
| San Jose Branch—Page 6 | | | | |
| Niles Jct. and MP 7.5 | 35 | .. | 35 | .. |
| MP 0.0 and MP 0.3 | .. | 15 | .. | 15 |
| MP 7.5 and MP 10.5 | 30 | .. | 25 | .. |
| MP 10.5 and city lmts. San Jose | 20 | .. | 20 | .. |
| MP 15.7 and MP 23 within city limits, San Jose | 12 | .. | 12 | .. |
| Carbona Branch—Page 6 | 12 | .. | 12 | .. |
| Terminus Branch—Page 6 | 15 | .. | 15 | .. |

On curves speed will be reduced below the maximums or restrictions provided where necessary, on all Subdivisions, to insure safety.

Light engines must not exceed speeds as shown in column 3 on First, Second and Third Subdivisions and column 2 on Fourth Subdivision and Branches.

SPEED RESTRICTIONS FOR ENGINES: Maximum speed in miles per hour shown below is subject to further restrictions applicable to certain territories as shown in Speed Restrictions for Trains:

| Class | Unit H-P | Engine Maximum Speed |
|----------------------------------|-------------|----------------------------|
| D-176 (801-805)* | 1500 | 79 |
| D-62 (801D) | 1500 | 65 |
| D-225 (902-912) | 1350 | 65 |
| D-239 (913-924) | 1500 | 65 |
| S-50 (501-503) | 600 | 45 |
| S-50 (504-511) | 660 | 35 |
| S-57 (551-564) | 1000 | 35 |
| S-57 (559-564 in multiple) | 1000 | 30 |
| S-60 (581-585) | 1000 | 65 |
| S-62 (601-606) | 1200 | 30 |
| RS-62 (701-713) | 1500 | 65 |
| RS-62 (725-732) | 1750 | 65 |
| RS-64 (2001-2010) | 2000 | 65 |
| RS-65 (3001-3010) | 2500 | 70 |

*Units 801A and 802A are equipped with freight gears, Maximum speed 65 MPH.

OTHER MAXIMUM SPEEDS Maximum MPH

When engineer is operating D-62, D-176, D-225 and D-239 class engines from other than leading control cab in direction of movement. 20

On curves and where track conditions are unfavorable, and when approaching highway or street crossings at grade, speed of engines running backward must be further reduced to a rate consistent with safety.

Through turnouts including west leg of wye Keddie, cross-overs, on sidings and on all inside tracks* (except on "Other Tracks" between Charter Way and MP 95 and except as provided in following paragraph. 10

*On inside tracks when curvature or other conditions require, speed will be further reduced to insure safe operation.

Through turnouts with power-operated switches in reverse position—

Kohler to Wyche inclusive, except east leg of wye switch, Niles Junction.

Westward trains leaving Stockton Yard, after receiving signal from rear to indicate rear end has passed Tidewater Southern Jct.,

Hammer Lane, Phillips, Del Paso to Craig inclusive, Kramm, Elsey, James,

and through sidings at the stations and within the limits listed above 20

Passenger trains with 400 series caboose may make authorized passenger train speeds.

All trains with other series cabooses 60

Trains handling steam derrick No. 37—straight track. 35

On curves 5 MPH less than speed prescribed in column 3, First, Second and Third Subdivisions, and in column 2, Fourth Subdivision and Branches but not exceeding 30

Trains handling steam derricks (other than derrick No. 37), steam shovels, cranes, rotary plows or pile drivers on own wheels—

First and Second Subdivisions 25

Third and Fourth Subdivisions 20

Trains handling logs loaded on flat cars. 20

When two trains meet, either of which is handling logs, the standing train will remain standing until other train has cleared or come to a stop unless necessary to saw by.

Maximum speed of train passing 15

Trains handling loaded air dump cars. 25

Scale test cars on own wheels must be handled next to caboose and trains handling such cars will not exceed—

Between Oakland and Portola 30

Between Keddie and Bieber 25

Branches 20

North Channel Line, Stockton 12

MISCELLANEOUS

Trains handling diesel engines dead in train must not exceed the maximum speed for such class engine.

Diesel freight engines dead in train must have automatic brake valves cut out in cabs and brake valve handles locked in running position; independent brake valve handles locked in running position (locking pins are provided for this); dead engine features cut in; all isolation switches placed in "start" position; all switches at engineer's control stand locked in "off" position and main battery switches pulled and reversers locked in neutral position in all units. Distributing valve pops must be set to 25 pounds pressure. Same procedure should be followed on passenger engines.

Diesel yard engines dead in train must have automatic brake valve cut out and handle placed in running position; distributing valve pop set to 15 pounds pressure; dead engine feature cut in; main battery switch pulled and reversers locked in neutral position.

During freezing weather engine water cooling system must be drained on any type diesel engine being towed.

Coupling snow plow ends of diesel engines to passenger equipment or to other engines is prohibited.

When the plow end of Jordan Spreaders 6, 7 or 13 are to be coupled to other cars or locomotives, an empty flat car must be placed next to plow end, to prevent damage to locomotive or equipment.

AIR BRAKE RULES

RULE 24-C. On California Zephyr trains, if motive power is changed at any intermediate station or terminal, or continuity of brake pipe is disturbed, air brake test must be made.

On No. 18 at Oroville and on No. 17 at Portola and Oroville, except when engine is to be detached, the incoming engineer, after making station stop, must make a 20 pound brake pipe reduction with the automatic brake. Release will be made by outgoing engineer upon receiving the proper signal (hand or air whistle).

On other passenger trains at points where terminal tests are made, when the continuity of the brake pipe is not disturbed, or motive power not changed, the incoming engineer, after making station stop, must apply the train brakes with a 15 pound brake pipe reduction immediately after stopping and without waiting for a signal.

The brake pipe leakage must be noted, then the reduction increased to a total of 20 pounds. The incoming engineer will notify the outgoing engineer the amount of brake pipe leakage.

Release of the train brakes will be made upon receiving the proper release signal.

RAILROAD SURGEONS

| LOCATION | NAME | TITLE |
|-----------------------|--------------------------|------------------------|
| San Francisco, Calif. | Dr. G. F. Cushman | Chief Surgeon |
| San Francisco, Calif. | Dr. C. E. Smith | Asst. Chief Surgeon |
| San Francisco, Calif. | Dr. Ruth Fleming | Local Surgeon |
| San Francisco, Calif. | Dr. R. H. Bacon | Local Surgeon |
| San Francisco, Calif. | Dr. F. D. Fellows | Aurist |
| San Francisco, Calif. | Dr. Wm. H. Spencer | Oculist |
| Oakland, Calif. | Dr. J. P. Evans | Local Surgeon |
| Oakland, Calif. | Dr. Fred Fisher | Local Surgeon |
| Oakland, Calif. | Dr. R. F. Westerfield | Local Surgeon |
| Oakland, Calif. | Dr. M. O. Kling | Local Surgeon |
| Oakland, Calif. | Dr. L. L. Coleman | Local Surgeon |
| Oakland, Calif. | Dr. Joseph R. Carlisle | Oculist |
| Hayward, Calif. | Dr. H. C. Crockett | Local Surgeon |
| Hayward, Calif. | Dr. Bruce Fisher | Local Surgeon |
| Fremont, Calif. | Dr. E. C. Grau | Local Surgeon |
| Pleasanton, Calif. | Dr. Harold J. Shanks | Local Surgeon |
| San Jose, Calif. | Dr. R. A. Larocca | Local Surgeon |
| San Jose, Calif. | Dr. W. A. Johnson | Local Surgeon |
| Tracy, Calif. | Dr. John C. Kimball | Local Surgeon |
| Tracy, Calif. | Dr. John V. Hume | Local Surgeon |
| Stockton, Calif. | Dr. E. G. Hermostillo | Local Surgeon |
| Stockton, Calif. | Dr. P. H. McHugh | Local Surgeon |
| Stockton, Calif. | Dr. H. F. Quinn | Local Surgeon |
| Stockton, Calif. | Dr. V. S. Solis | Local Surgeon |
| Stockton, Calif. | Dr. O. R. Vannucci | Local Surgeon |
| Stockton, Calif. | Dr. D. R. Powell | Oculist |
| Stockton, Calif. | Dr. Wm. H. Plageman | Oculist |
| Lodi, Calif. | Dr. W. G. Fessler | Local Surgeon |
| Lodi, Calif. | Dr. S. W. Leiske | Local Surgeon |
| Sacramento, Calif. | Dr. D. O. Kilroy | Local Surgeon |
| Sacramento, Calif. | Dr. P. W. Frame, Jr. | Local Surgeon |
| Sacramento, Calif. | Dr. A. Calkin | Local Surgeon |
| Sacramento, Calif. | Dr. B. A. Daley | Local Surgeon |
| Sacramento, Calif. | Dr. R. M. Zinky | Local Surgeon |
| Sacramento, Calif. | Dr. John A. Berg | Oculist |
| Sacramento, Calif. | Dr. R. L. Alexander | Oculist |
| Sacramento, Calif. | Dr. J. J. Fisher | Oculist |
| Marysville, Calif. | Dr. P. B. Hoffman | Local Surgeon |
| Oroville, Calif. | Dr. Chas. Benninger, Jr. | Local Surgeon |
| Oroville, Calif. | Dr. C. Craviotto | Local Surgeon |
| Oroville, Calif. | Dr. J. E. Patrick | Local Surgeon |
| Oroville, Calif. | Dr. E. S. Fortner, Jr. | Local Surgeon |
| Oroville, Calif. | Dr. R. D. Bethel | Oculist |
| Quincy, Calif. | Dr. D. J. Bleiberg | Local Surgeon |
| Quincy, Calif. | Dr. D. H. Mansell, Jr. | Local Surgeon |
| Quincy, Calif. | Dr. J. F. Narkevitz | Local Surgeon |
| Quincy, Calif. | Dr. H. T. Unsell | Local Surgeon |
| Greenville, Calif. | Dr. W. C. Batson | Local Surgeon |
| Westwood, Calif. | Dr. H. G. Levin | Local Surgeon |
| Bieber, Calif. | Dr. A. O. Meier | Local Surgeon |
| Portola, Calif. | Dr. C. W. Brown | Division Surgeon |
| Portola, Calif. | Dr. W. S. Bross, Jr. | Asst. Division Surgeon |

WATCH INSPECTORS

| LOCATION | NAME | TITLE |
|-----------------------|-------------------|-------------------------|
| San Francisco, Calif. | K. I. Dunlap | Manager of Time Service |
| San Francisco, Calif. | A. Solari | Watch Inspector |
| Oakland, Calif. | Evan J. Sawyer | Watch Inspector |
| Oakland, Calif. | Don J. Allphin | Watch Inspector |
| San Lorenzo, Calif. | Kurt J. Prosch | Watch Inspector |
| Fremont, Calif. | Hoyle Easley | Watch Inspector |
| San Jose, Calif. | Frank Scholes | Watch Inspector |
| Stockton, Calif. | W. K. Bank & Son | Watch Inspector |
| Sacramento, Calif. | Grebitus & Son | Watch Inspector |
| Marysville, Calif. | John J. Fargo | Watch Inspector |
| Oroville, Calif. | Philip K. Schmidt | Watch Inspector |
| Quincy, Calif. | E. L. Stewart | Watch Inspector |
| Greenville, Calif. | Dee Fay | Watch Inspector |

TUNNEL LOCATIONS

OAKLAND TO PORTOLA

| Tunnel Number | West Portal Mile Post | East Portal Mile Post | Length Feet |
|---------------|-----------------------|-----------------------|-------------|
| 1 | 32.12 | 32.94 | 4320.9 |
| 2 | 33.39 | 33.47 | 407.3 |
| 3 | 57.67 | 57.75 | 414.7 |
| 4 | 224.66 | 225.12 | 2410.0 |
| 5 | 227.34 | 227.90 | 2922.5 |
| 6 | 228.14 | 228.63 | 2583.0 |
| 7 | 229.54 | 230.38 | 4406.5 |
| 8 | 230.42 | 232.11 | 8856.3 |
| 9 | 236.37 | 236.48 | 551.8 |
| 10 | 237.01 | 237.05 | 231.8 |
| 11 | 237.33 | 237.37 | 223.8 |
| 12 | 237.69 | 237.70 | 51.4 |
| 13 | 244.92 | 244.96 | 195.9 |
| 14 | 246.25 | 246.29 | 244.9 |
| 15 | 250.10 | 250.69 | 3117.81 |
| 16 | 257.43 | 257.54 | 600.9 |
| 17 | 257.85 | 257.91 | 324.5 |
| 18 | 258.08 | 258.11 | 150.1 |
| 19 | 258.16 | 258.19 | 164.0 |
| 20 | 258.32 | 258.38 | 291.5 |
| 21 | 258.85 | 258.93 | 405.0 |
| 22 | 259.55 | 259.61 | 306.1 |
| 23 | 262.87 | 263.11 | 1257.7 |
| 24 | 263.89 | 264.01 | 616.1 |
| 25 | 265.20 | 265.23 | 186.4 |
| 26 | 271.58 | 271.66 | 446.0 |
| 27 | 278.42 | 278.49 | 364.4 |
| 28 | 278.96 | 279.06 | 608.6 |
| 29 | 279.19 | 279.30 | 587.8 |
| 30 | 279.55 | 279.65 | 537.5 |
| 31 | 280.08 | 280.21 | 687.3 |
| 32 | 280.37 | 280.48 | 595.2 |
| 33 | 283.06 | 283.30 | 1270.7 |
| 34 | 283.71 | 283.77 | 304.6 |
| 35 | 297.18 | 298.57 | 7343.7 |
| 36 | 316.00 | 316.14 | 762.7 |

KEDDIE TO BIEBER

| Tunnel Number | West Portal Mile Post | East Portal Mile Post | Length Feet |
|---------------|-----------------------|-----------------------|-------------|
| 1 | 0.00 | 0.12 | 685.9 |
| 2 | 0.97 | 1.08 | 588.3 |
| 3 | 2.61 | 2.73 | 621.0 |
| 4 | 3.39 | 3.47 | 470.2 |
| 5 | 3.71 | 3.76 | 278.7 |
| 6 | 21.03 | 21.24 | 1103.0 |

SPEED TABLE

| TIME PER MILE | MILES PER HOUR |
|---------------|----------------|
| 36" | 100 |
| 37" | 97.3 |
| 38" | 94.7 |
| 39" | 92.3 |
| 40" | 90 |
| 41" | 87.8 |
| 42" | 85.7 |
| 43" | 83.7 |
| 44" | 81.8 |
| 45" | 80 |
| 46" | 78.3 |
| 47" | 76.6 |
| 48" | 75 |
| 49" | 73.5 |
| 50" | 72 |
| 51" | 70.6 |
| 52" | 69.2 |
| 53" | 67.9 |
| 54" | 66.7 |
| 55" | 65.5 |
| 56" | 64.3 |
| 57" | 63.2 |
| 58" | 62.1 |
| 59" | 61 |
| 1'00" | 60 |
| 1'01" | 59 |
| 1'02" | 58.1 |
| 1'03" | 57.1 |
| 1'04" | 56.2 |
| 1'05" | 55.4 |
| 1'06" | 54.5 |
| 1'07" | 53.7 |
| 1'08" | 52.9 |
| 1'09" | 52.2 |
| 1'10" | 51.4 |
| 1'11" | 50.7 |
| 1'12" | 50 |
| 1'13" | 49.3 |
| 1'14" | 48.6 |
| 1'15" | 48 |
| 1'16" | 47.4 |
| 1'17" | 46.8 |
| 1'18" | 46.2 |
| 1'19" | 45.6 |
| 1'20" | 45 |
| 1'25" | 42.4 |
| 1'30" | 40 |
| 1'35" | 37.9 |
| 1'40" | 36 |
| 1'45" | 34.3 |
| 1'50" | 32.7 |
| 1'55" | 31.3 |
| 2'00" | 30 |
| 2'15" | 26.7 |
| 2'30" | 24 |
| 2'45" | 21.8 |
| 3'00" | 20 |
| 3'30" | 17.1 |
| 4'00" | 15 |
| 5'00" | 12 |
| 6'00" | 10 |
| 7'00" | 8.6 |
| 7'30" | 8 |
| 8'00" | 7.5 |
| 10'00" | 6 |