

## STANDARD TURNOUT APPLICATIONS

### DIVERGES FROM A...

WHERE A(N)...	BRANCH TRACK * , YARD LEAD OR INDUSTRIAL LEAD ( < 20 MPH)	HEAVY USAGE BRANCH TRACK, YARD LEAD OR INDUSTRIAL LEAD ( > 20 MPH)	WOOD TIE SIDING	TIMBER MAINLINE (LESS THAN 40MGT)	TIMBER MAINLINE (GREATER THAN 40MGT)	CONCRETE TIE SIDING	CONCRETE MAINLINE
INDUSTRY TRACK OR SET OUT TRACK	#9 W/ SMSG	#9 W/ RBM (NO HST)	#11 W/ JUMP FROG	#11 W/ JUMP FROG	#11 W/ JUMP FROG	#11 CONC W/ JUMP FROG***	#11 CONC W/ JUMP FROG***
INDUSTRY TRACK UTILIZED BY SHUTTLE OR UNIT TRAINS	#11 W/ SPRG (NO HST)	#11 W/ SPRG (NO HST)	#11 W/ SPRG (NO HST)	#11 W/ SPRG (NO HST)	#15 W/ SPRG (WITH HST)	#11 CONC W/ SPRG	#15 CONC W/ SPRG
BRANCH TRACK OR INDUSTRY LEAD WHERE TRACK SPEED ON DIVERGING ROUTE IS 20 MPH OR LESS.	#11 W/ SMSG	#11 W/ RBM (NO HST)	#11 W/ SPRG (NO HST)	#11 W/ SPRG (NO HST)	#11 W/ SPRG (WITH HST)	#11 CONC W/ SPRG ***	#11 CONC W/ SPRG
BRANCH TRACK OR INDUSTRY LEAD WHERE TRACK SPEED ON DIVERGING ROUTE IS GREATER THAN 20 MPH.	#15 W/ SPRG (NO HST)	#15 W/ SPRG (NO HST)	#11 W/ SPRG (NO HST)	#15 W/ SPRG (NO HST)	#15 W/ SPRG (WITH HST)	#15 CONC W/ SPRG	#15 CONC W/ SPRG
YARD TRACK	#9 W/ SMSG	#9 W/ RBM (NO HST)	N/A	N/A	N/A	N/A	N/A
YARD LEAD OR SWITCHING LEAD	#11 W/ SMSG	#11 W/ RBM (NO HST)	#11 W/ SPRG (NO HST)	#11 W/ RBM (NO HST)	#11 W/ SPRG TIER 2	#11 CONC W/ SPRG	#11 CONC W/ SPRG
SIDING	N/A	N/A	N/A	#15 W/ SPRG (NO HST)	#15 W/ SPRG (WITH HST)	N/A	#15 CONC W/ SPRG

### BETWEEN MAIN TRACKS

WHERE A(N)...	TIMBER MAINLINE (LESS THAN 40MGT)	TIMBER MAINLINE (GREATER THAN 40MGT)	CONCRETE MAINLINE
MAIN TRACK (HAND THROW CROSSOVER)	#11 W/ SPRG (NO HST)	#11 W/ SPRG (WITH HST)	#11 CONC W/ SPRG
SINGLE MAIN TO MULTIPLE MAIN WHERE DIVERGENT SPEED OF 40 MPH OR LESS IS REQUIRED	#20 W/ SPRG (NO HST)	#20 W/ RBM (WITH HST) OR #20 W/ SPRG (WITH HST)	#24 CONC W/ MPF
SINGLE MAIN TO MULTIPLE MAIN WHERE DIVERGENT SPEED OF 50 MPH IS REQUIRED	#24 W/ SPRG (NO HST)	#24 W/ SPRG (WITH HST)	#24 CONC W/ MPF
SINGLE MAIN TO MULTIPLE MAIN WHERE DIVERGENT SPEED OF 60 MPH IS REQUIRED	N/A	N/A	#24 CONC W/ MPF
MULTIPLE MAIN TRACK (DUAL CONTROL CROSSOVER) WHERE DIVERGENT SPEED OF 40 MPH OR LESS IS REQUIRED	#20 W/ SPRG (NO HST)	#24 W/ SPRG (WITH HST)	#24 CONC W/ MPF
MULTIPLE MAIN TRACK (DUAL CONTROL CROSSOVER) WHERE DIVERGENT SPEED OF 50 MPH IS REQUIRED	#24 W/ SPRG (NO HST)	#24 W/ SPRG (WITH HST)	#24 CONC W/ MPF
JUNCTIONS WHERE TWO OR MORE MAIN TRACKS CONVERGE AND WHERE DIVERGENT SPEED OF 40MPH IS REQUIRED	#20 W/ SPRG (NO HST)	#20 W/ RBM (WITH HST)	#24 CONC W/ MPF
JUNCTIONS WHERE TWO OR MORE MAIN TRACKS CONVERGE AND WHERE DIVERGENT SPEED OF 50MPH IS REQUIRED	#24 W/ SPRG (NO HST)	#24 W/ SPRG (WITH HST)	#24 CONC W/ MPF
JUNCTIONS WHERE TWO OR MORE MAIN TRACKS CONVERGE AND WHERE DIVERGENT SPEED OF 60MPH IS REQUIRED	N/A	N/A	#24 CONC W/ MPF

ABBREVIATIONS: CONC=CONCRETE, MPF=MOVABLE POINT FROG, RBM=RAIL BOUND MANGANESE FROG, SMSG=SOLID MANGANESE SELF GUARDED FROG, SPRG=SPRING, W=WITH, HST=HOLLOW STEEL TIE

- \* BRANCH TRACK IS A TRACK WITH LESS THAN 10 MGT AND 20 MPH OR LESS.
- \*\* MPF TO BE USED WHEN 7 OR MORE DIVERGING MOVES PER DAY ARE MADE.
- \*\*\* JUMP FROG TURNOUTS SHOULD BE UTILIZED WHERE MAINLINE TRACK OR SIDING TRACK CONNECTS TO INDUSTRY OR SET OUT TRACKS AND TRAFFIC DOES NOT EXCEED MORE THAN 65 CARS BEING SHOVED AT ONE TIME.

### RECOMMENDED SWITCH STAND APPLICATIONS FOR HAND THROW SWITCHES

SWITCH STAND MODEL	MAST HEIGHT	OPERATING CONTROL	TRAILABLE	IN-TRACK APPLICATION
36-EH	HIGH	RAISED TRI-HANDLE	NO	MAIN AND SIDINGS
1008ARS	HIGH	RAISED STRAIGHT HANDLE	NO	MAIN AND SIDINGS
112-E	HIGH	COLUMN HANDLE	NO	MAIN AND SIDINGS
1004ARS	LOW	RAISED STRAIGHT HANDLE	NO	MAIN AND SIDINGS
1003ARS	LOW	RAISED STRAIGHT HANDLE	YES	OTHER THAN MAIN AND SIDINGS
22-E	LOW	RAISED TRI-HANDLE	YES	OTHER THAN MAIN AND SIDINGS
HYDRA SWITCH 3000	LOW	PUSH BUTTON	YES	OTHER THAN MAIN AND SIDINGS

**NOTES:**

1. THIS TABLE IS TO BE USED AS RECOMMENDED DESIGN GUIDELINES.
2. AT EACH CONTROL POINT WHERE THERE IS MORE THAN ONE FROG, MPF'S ARE NOT TO BE MIXED WITH RBM'S OR SPRING FROG'S.
3. WOOD AND CONCRETE TURNOUTS WILL BE FURNISHED IN 136# RAIL.
4. MINIMUM TRACK CENTERS OF 20' ARE RECOMMENDED FOR ALL DUAL CONTROL MAINLINE CROSSOVERS.
5. SPRING FROGS ARE RECOMMENDED WHEN DIVERGING TRAFFIC IS LESS THAN 30%, OTHERWISE RBM IS PREFERRED.
6. LOCAL CONDITIONS MAY REQUIRE THE USE OF TURNOUTS NOT CONSISTENT WITH THIS MATRIX. EXCEPTIONS MUST BE APPROVED BY THE CHIEF ENGINEER-MAINTENANCE FOR THE AFFECTED TERRITORY.
7. WHEN CROSSOVERS ARE REQUIRED BETWEEN DIFFERING TRACK TYPES, THE HIGHER CLASS TRACK WILL GOVERN THE TURNOUT NUMBER TO BE USED FOR BOTH TURNOUTS.
8. THE TYPE OF TURNOUT (IE: WOOD, CONCRETE) SHOULD BE DETERMINED BY THE RESPECTIVE TRACK TYPE. ALSO NOTE THAT MGT PERTAINS TO TRACK TONNAGE - NOT CORRIDOR TONNAGE.
9. WHEN THE APPLICATION REQUIRES A #11 TURNOUT TO BE POWERED, AND GEOMETRY AND CLEARANCE ALLOWS, UPGRADE TO A #15 POWER TURNOUT.

## UNION PACIFIC RAILROAD ENGINEERING STANDARDS

# STANDARD TURNOUT APPLICATIONS



APPROVED: *Caci Selinger*  
VP ENGINEERING  
ADOPTED: MARCH 1, 1998  
REVISED: JAN. 3, 2019  
FILE NO.: 0080L

STD DWG

0080L

0080L  
STD DWG