

**SEE STD DWG 1405 FOR SWITCH PLAN**

**SEE MATCHLINE ON PAGE 2**

\*ALL CROPPING DIMENSIONS ARE THEORETICAL AND DO NOT ALLOW FOR NECESSARY RAIL JOINT AND FIELD WELD GAPS. TURNOUT COMPONENTS SHOULD BE CROPPED TO THE NO. 1 LOCATION DURING ORIGINAL TURNOUT CONSTRUCTION TO ALLOW FOR LATER COMPONENT CHANGE OUTS WITHOUT ADDITIONAL RAIL.

**LEGEND**

- Ⓢ TIE NUMBERING (7A THRU 73)
- ◇ CROPPING LOCATIONS:
  - ◇ 1ST INSTALLATION
  - ◇ 1ST REPLACEMENT
  - ◇ 2ND REPLACEMENT

**NOTES:**

**UNION PACIFIC RAILROAD  
ENGINEERING STANDARDS**

**NO. 10 PREMIUM  
133 LB. TURNOUT**



ADOPTED: AUG. 21, 1968  
REVISED: APR. 25, 2013  
FILE NO.: 5025G

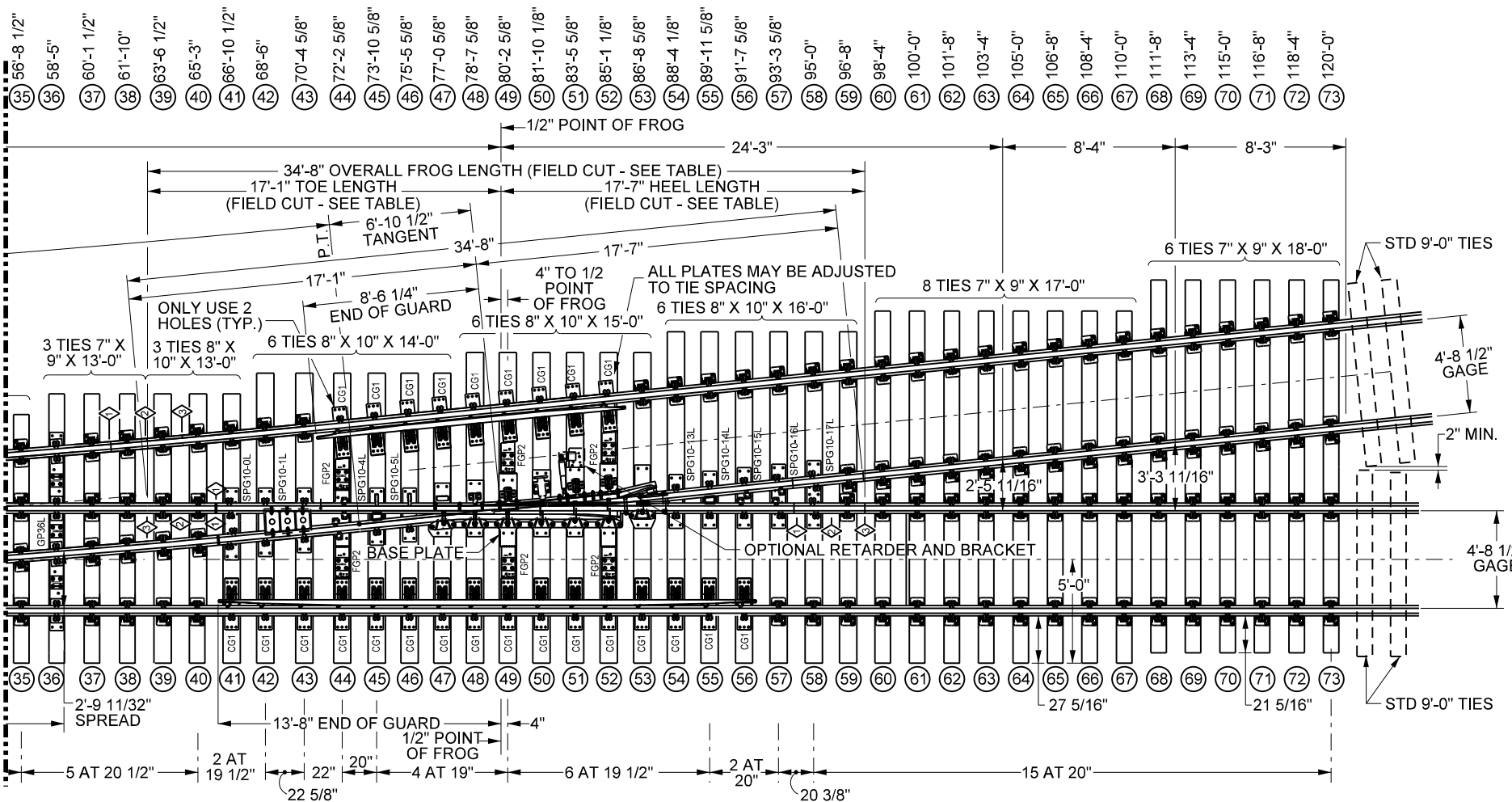
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**SEE PAGES 2, 3 AND 4 FOR THE REST OF THE DWG**

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SEE MATCHLINE ON PAGE 1



SEE PAGE 4 FOR LAYOUT WITH JUMP FROG

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TRANSITION NOTES:  
 WHERE SPEED IS GREATER THAN 40MPH,  
 TRANSITION ZONES ARE REQUIRED AHEAD OF POINT  
 AND BEHIND LAST LONG TIE ON MAIN TRACK.  
 ZONES TO CONSIST OF (24) 10' TIES WITH  
 ELASTIC FASTENER PLATING AHEAD OF SWITCH  
 POINT. ZONE BEHIND LAST LONG TIE CONSIST OF  
 (24) 9' TIES WITH ELASTIC FASTENER PLATING.

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NOTES:  
NEW INSTALLATION OF TURNOUT REQUIRES A MINIMUM OF 6" OF CLEAN BALLAST UNDER THE TIES.

THIS PLAN IS BASED ON 133 LB. R.E. MATERIAL BUT MAY ALSO BE USED ON OTHER RAIL SECTIONS, SLIGHT DIFFERENCES WILL OCCUR IN FROG AND SWITCH PLATE DESIGNATIONS, FROG AND SWITCH TIE CENTERS, FROG LENGTHS, ETC., DEPENDING ON RAIL SECTION EMPLOYED.

STOCK RAILS OF 112 LB. OR HEAVIER RAIL SECTION ARE TO BE PRE-BENT BY THE MANUFACTURER.

ADJUSTABLE RAIL BRACES SHOWN ARE SYMBOLIC ILLUSTRATIONS ONLY. ACTUAL RAIL BRACES EMPLOYED ARE DEPENDENT ON THE MANUFACTURER.

INSTALL INSULATED JOINTS WHERE INDICATED ONLY WHEN REQUIRED BY SIGNAL CIRCUITS. ALL INSULATED JOINTS ARE TO BE SUSPENDED. THE LOCATION OF INSULATED JOINTS ON CROSSOVER RAILS AS SHOWN ARE BASED ON A MINIMUM 13' TRACK CENTERS. WHERE TRACK CENTERS ARE GREATER, CROSSOVER RAILS TO BE EXTENDED, BUT INSULATED JOINTS MUST NOT BE STAGGERED OVER 4'-3".

ALL SWITCH RODS AND GAGE PLATES TO BE FURNISHED WITH SWITCH PACKAGE.

FOR SPRING SWITCH INSTALLATIONS, TIE SPACING UNDER POINTS SHOULD BE 21", 17", 19", 18", 19", 4 AT 22.5", AND 9" TO END OF SWITCH POINTS TO AFFORD CLEARANCE REQUIRED FOR SWITCH ROD NO. 3.

USE 36EH OR 112E SWITCH STANDS FOR MAINLINE APPLICATION.

MAINLINE CROSSOVER INSTALLATIONS MUST HAVE BOTH MAINLINE AND SIDE TRACK AT CROSS LEVEL WITH EACH OTHER AND FOR 1500' IN ADVANCE OF EACH SWITCH. MAINLINE TURNOUT INSTALLATIONS MUST HAVE BOTH TRACKS AT CROSS LEVEL WITH EACH OTHER AND FOR 500' BEYOND THE SIGNAL LOCATION.

PLATES TO BE LAGGED TO TIES WITH 15/16" X 7" COACH SCREWS.

HAND THROW TURNOUT SHOWN. SEE STD DWG 1420 FOR POWER OPERATION.

ALL RAIL TO BE HEAD HARDENED.  
ALL MATERIAL SHOWN TO BE FURNISHED WITH TURNOUT.

QTY		BILL OF TIES
HAND	POWER	DESCRIPTION
17	16	7" X 9" X 10'
13	13	7" X 9" X 11'
11	11	7" X 9" X 12'
3	3	7" X 9" X 13'
3	3	8" X 10" X 13'
6	6	8" X 10" X 14'
6	6	8" X 10" X 15'
6	6	8" X 10" X 16'
*10	8	7" X 9" X 17'
6	6	7" X 9" X 18'
—	1	8" X 10" X 10'
—	2	8" X 10" X 14'-6"
81	81	TOTAL

\*INCLUDES 2-HEADBLOCK TIES

TURNOUT BILL OF MATERIAL	
QTY.	DESCRIPTION
136	16" SAFELOK PLATES
272	SAFELOK CLIPS #36800
544	COAH SCREWS
1	16'-6" L.H. SWITCH POINT EXTENDED TO 34'-3"
1	16'-6" R.H. SWITCH POINT EXTENDED TO 34'-3"
*1	34'-8" L.H. SPRING FROG
*1	26'-0" FROG GUARD RAIL
*1	15'-0" FROG GUARD RAIL
1	58'-6" STRAIGHT STOCK RAIL
1	39'-6" BENT STOCK RAIL
2	39'-0" I-BONDS MITRE CUT
270 FT.	133 LB. H.H. RAIL
1	SWITCH PLATE PACKAGE
*1	FROG PLATE PACKAGE
*1	TURNOUT PLATE PACKAGE
6	FROG GAGE PLATES

\*INCLUDES CLIPS AND COACH SCREWS

REFERENCE THE FOLLOWING ASSOCIATED STD DWGS:

SWITCH PLAN SEE STD DWG 1405  
EXTENDED SPRING FROG SEE STD DWG 3049  
FROG GAGE PLATES SEE STD DWG 3030  
FROG GUARD RAILS SEE STD DWG 4019  
GUARD RAIL SETTINGS SEE STD DWG 4090  
STOCK RAIL DETAILS SEE STD DWG 1100  
SWITCH GAGE PLATES SEE STD DWG 1005  
MACHINE GAGE PLATES SEE STD DWG 1025  
SWITCH PLATES SEE STD DWG 1900  
TURNOUT PLATES SEE STD DWG 1905  
TURNOUT GAGE PLATES SEE STD DWG 1906  
E-CLIPS SEE STD DWG 0411  
SAFELOK CAST PLATE SEE STD DWG 0434  
SAFELOK CLIP #36800 SEE STD DWG 0409  
SCREW SPIKES SEE STD DWG 0450  
INSULATED JOINT-  
PLUG RAIL SEE STD DWG 0960

THEORETICAL TURNOUT DESIGN DATA TABLE AS FURNISHED			
FROG	NUMBER	10	
	ANGLE	5°-43'-29"	
	TOE LENGTH	13'-10"	
	HEEL LENGTH	14'-2"	
	TOTAL LENGTH	28'-0"	
16'-6" SWITCH	LENGTH OF SWITCH (POINTS)	29'-11"	
	HEEL SPREAD	6 1/4"	
	STRAIGHT STOCK RAIL	54'-7"	
	BENT STOCK RAIL	38'-3"	
	HEEL ANGLE	1°-44'-11"	
	TURNOUT POINT	THICKNESS AT POINT	1/4"
		ANGLE AT POINT	1°-44'-11"
		RADIUS (CLOSURE CURVE)	752.6641324'
		VERTEX DISTANCE	8 1/4"
	MAINLINE POINT	THICKNESS AT POINT	1/4"
ANGLE AT POINT		1°-44'-11"	
RADIUS (CLOSURE CURVE)		NONE	
VERTEX DISTANCE		8 1/4"	
ACTUAL LEAD		80'-3 5/8"	
HIGH SIDE I-BOND		36'-8 5/8"	
LOW SIDE I-BOND		29'-10 1/2"	
RADIUS OF CENTERLINE		749.753945694'	
TURNOUT CURVE	T =	26'-1 1/2"	
	CENTRAL ANGLE (CLOSURE CURVE)	3°-59'-18"	
	DEGREE OF CURVE	7°-38'-31"	

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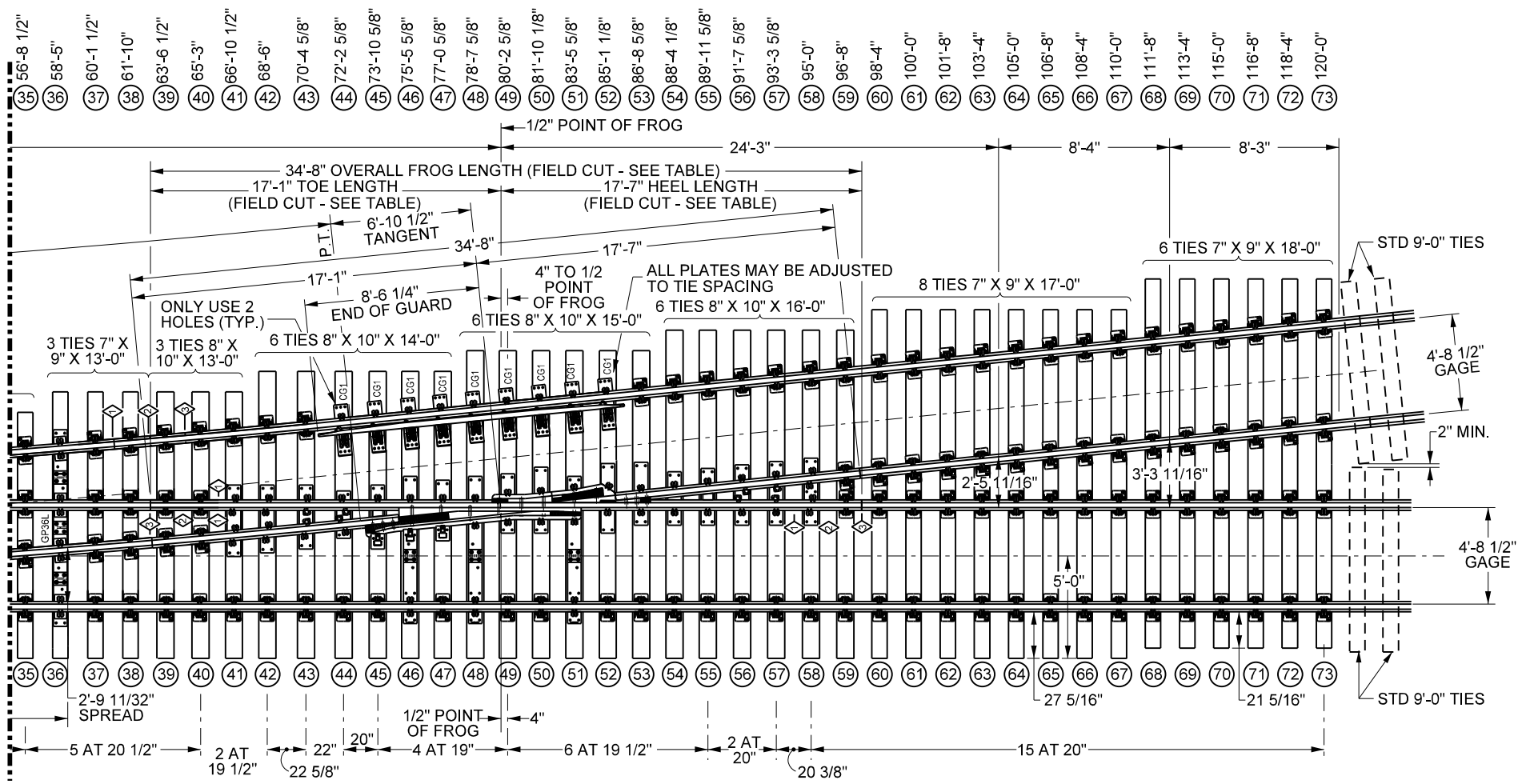
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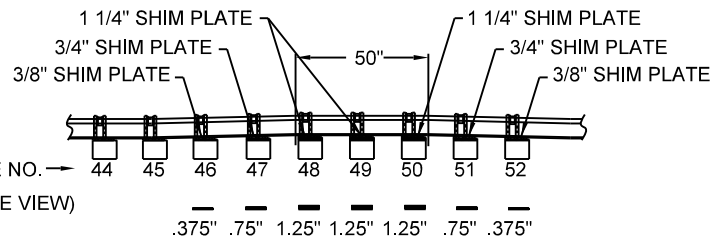


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LAYOUT WITH 34'-8" JUMP FROG

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PLACE SHIM PLATES UNDER TURNOUT SIDE GUARD RAIL PLATES ON TIES AS SHOWN BELOW.



NOTES:  
 1. IF JUMP FROG TURNOUT IS UTILIZED, JUMP FROG HY-RAIL WARNING SIGN MUST BE INSTALLED ON MAINLINE SIDE OF TRACK PER STD DWG 0562.

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