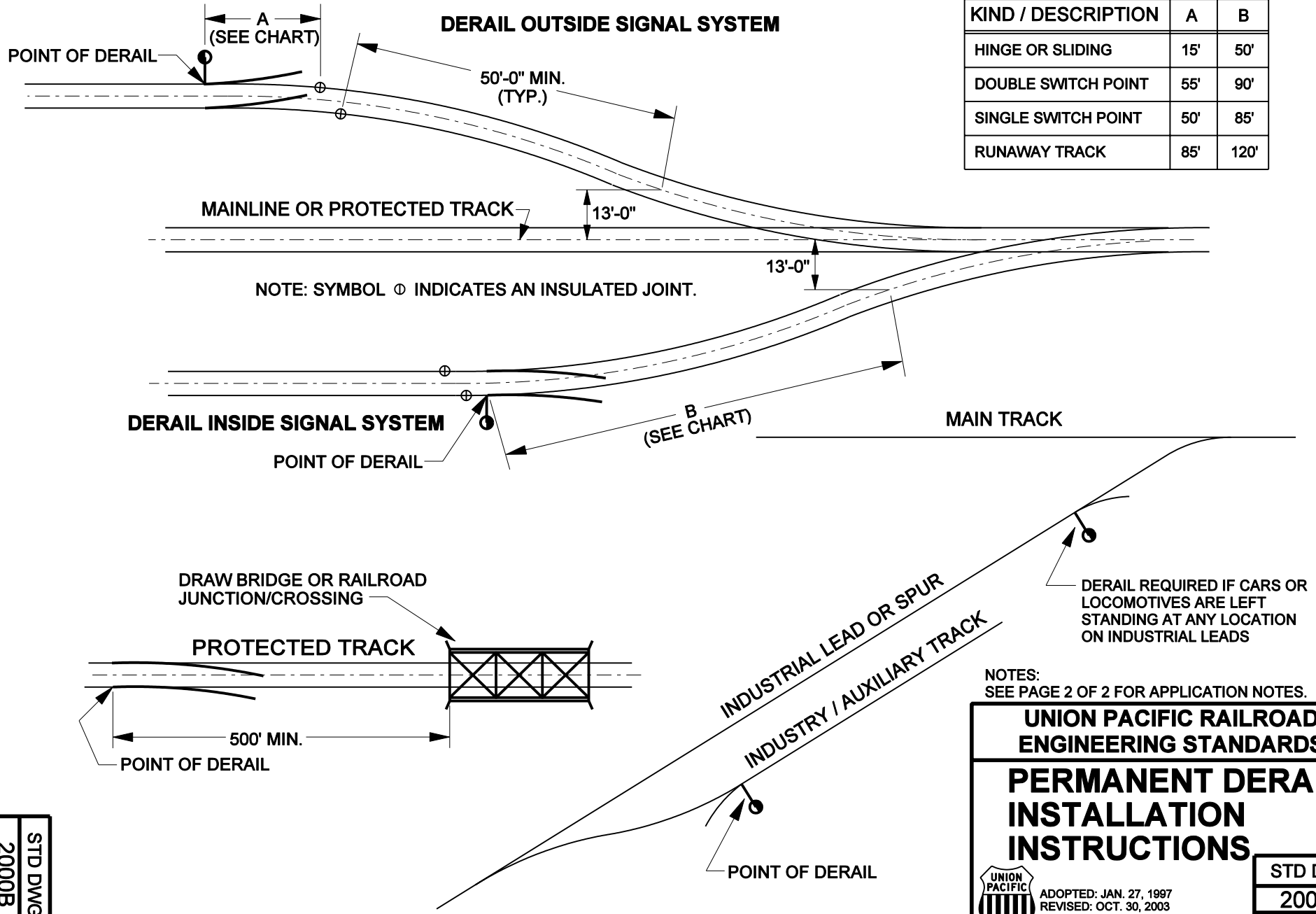


DERAIL SETBACK CHART		
KIND / DESCRIPTION	A	B
HINGE OR SLIDING	15'	50'
DOUBLE SWITCH POINT	55'	90'
SINGLE SWITCH POINT	50'	85'
RUNAWAY TRACK	85'	120'



NOTES:
SEE PAGE 2 OF 2 FOR APPLICATION NOTES.

**UNION PACIFIC RAILROAD
ENGINEERING STANDARDS**

**PERMANENT DERAIL
INSTALLATION
INSTRUCTIONS**

UNION PACIFIC

ADOPTED: JAN. 27, 1997
REVISED: OCT. 30, 2003
FILE NO.: 2000B

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DERAIL APPLICATIONS

APPLICATION	DESCRIPTION	TYPE
INDUSTRY/ AUXILIARY TRACK	ASCENDING GRADE AWAY FROM MAIN TRACK OR SIDING	2
INDUSTRY/ AUXILIARY TRACK	ASCENDING GRADE GREATER THAN 1% AWAY FROM MAIN TRACK OR SIDING	3 (NOTE A)
INDUSTRY/ AUXILIARY TRACK	LEVEL OR DESCENDING GRADE AWAY FROM MAIN TRACK OR SIDING	1
INDUSTRY/ AUXILIARY TRACK	LEADING TO AN INDUSTRIAL LEAD	1
INDUSTRIAL LEAD	LEADING TO MAIN TRACK OR SIDING IF CARS OR LOCOMOTIVES ARE LEFT STANDING	2
INDUSTRY/ AUXILIARY TRACK	INDUSTRY UTILIZES MOTIVE POWER / CAR MOVER ON TRACKS LEADING TO MAIN TRACK, SIDING, INDUSTRIAL LEAD	2
SIDING	ASCENDING GRADE AWAY FROM MAIN TRACK	2 (NOTE B)
SIDING	LEVEL OR DESCENDING GRADE AWAY FROM MAIN TRACK	NONE (NOTE B & C)
YARD LEAD/TRACK	LEADING TO MAIN TRACK, SIDING, OR INDUSTRIAL LEAD	2
MAIN TRACK	IF PROTECTION IS REQUIRED FOR DRAW BRIDGES OR RAILROAD JUNCTIONS / CROSSINGS	2
RIP TRACK/ LOCOMOTIVE FACILITY	USED IN CONJUNCTION WITH BLUE FLAG REQUIREMENTS	2

NOTE A: FOR EXISTING TRACKS THAT MEET THIS CRITERIA, THE CHIEF ENGINEER SHALL EVALUATE THE POTENTIAL FOR ROLL OUTS AND DETERMINE THE APPROPRIATE LEVEL OF PROTECTION.

NOTE B: INCLUDES ONLY SIDINGS DESIGNATED BY SUPERINTENDENT AS A SETOUT LOCATION. DERAILS SHALL REMAIN IN NON-DERAILING POSITION UNLESS CARS ARE PRESENT (REFERENCE GCOR 8.2).

NOTE C: IF SIDING IS IN A DESIGNATED SEALED CORRIDOR, LEVEL 1 WILL APPLY. SEALED CORRIDORS ARE ROUTES DESIGNATED AS PASSENGER, CRITICAL, OR PREMIUM.

NOTES:

- AUXILIARY TRACK IS ANY TRACK NOT OTHERWISE SPECIFIED IN THIS STANDARD THAT DIRECTLY CONNECTS TO ANY MAIN TRACK, SIDING, OR INDUSTRIAL LEAD WHERE CARS OR LOCOMOTIVES ARE LEFT STANDING.
- TO DETERMINE GRADE AND THE LIKELIHOOD OF CARS ROLLING OUT OF A TRACK, ALL GRADES MUST BE EVALUATED FOR AT LEAST 1/2 MILE FROM PROPOSED DERAIL LOCATION IF TRACK LENGTH PERMITS. LEVEL GRADE IS DEFINED AS PLUS OR MINUS 0.25% (3" RISE OR FALL IN 100'-0" OF TRACK).
- TO MEASURE THE GRADE IF SURVEYORS ARE NOT AVAILABLE, USE A 200'-0" STRING WITH A STRING LEVEL IN THE CENTER. AFTER LEVELING THE STRING WITH ONE END FIXED TO THE TOP OF THE RAIL, MEASURE THE DISTANCE BETWEEN THE STRING AND THE RAIL AT THE FREE END. 0.25% GRADE EQUALS 6" OF SEPARATION. CARE MUST BE TAKEN TO AVOID TRACK PROFILE IRREGULARITIES NEAR THE STRING ENDS.
- INSTALLATION OF DERAIL SHOULD BE SUCH THAT CAR OR LOCOMOTIVE WILL DERAIL AWAY FROM PROTECTED ADJACENT TRACK OR STRUCTURE.
- IF EXISTING DERAIL DESIGN IS OF A HIGHER TYPE THAN SPECIFIED IN THE MATRIX, IT WILL SUFFICE.
- POINT OF DERAIL MUST BE A MINIMUM OF 50'-0" FROM 13'-0" CLEARANCE POINT WHERE PRACTICAL. SEE CHART ON PAGE 1 FOR MINIMUMS BY DERAIL KIND.
- IF DERAIL IS TO BE PLACED ON A CURVE AND THE DESIRED DIRECTION TO DERAIL IS TO THE INSIDE OF THE CURVE, USE A TYPE 2 OR 3 DERAIL.
- DERAIL WILL BE EQUIPPED WITH DUAL CONTROL POWER SWITCH MACHINE AT LOCATIONS DETERMINED BY CHIEF ENGINEER. DERAIL INSTALLATIONS REQUIRED IN CONTROLLED SIGNALIZED TRACK MUST BE APPROVED BY DIRECTOR OF SIGNAL DESIGN.
- EXCEPTIONS DUE TO LOCAL CONDITIONS MAY BE AUTHORIZED BY CHIEF ENGINEER.
- REFERENCE UPRR STD DWGS 2005, 2006, AND 2007.

TYPE	KIND / DESCRIPTION
1	*SLIDING OR SINGLE SWITCH POINT
2	SLIDING W/ CROWDER, DOUBLE SWITCH POINT, TYPE 2 SINGLE SWITCH POINT
3	RUNAWAY TRACK (#7 TURNOUT W/ PANEL)

* USE OF HINGED DERAILS SHALL BE LIMITED TO CURRENT INSTALLATIONS OF TYPE 1 PROTECTION OR WHERE THERE IS INSUFFICIENT CLEARANCE TO INSTALL A SLIDING DERAIL.

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UNION PACIFIC RAILROAD ENGINEERING STANDARDS

PERMANENT DERAIL INSTALLATION INSTRUCTIONS

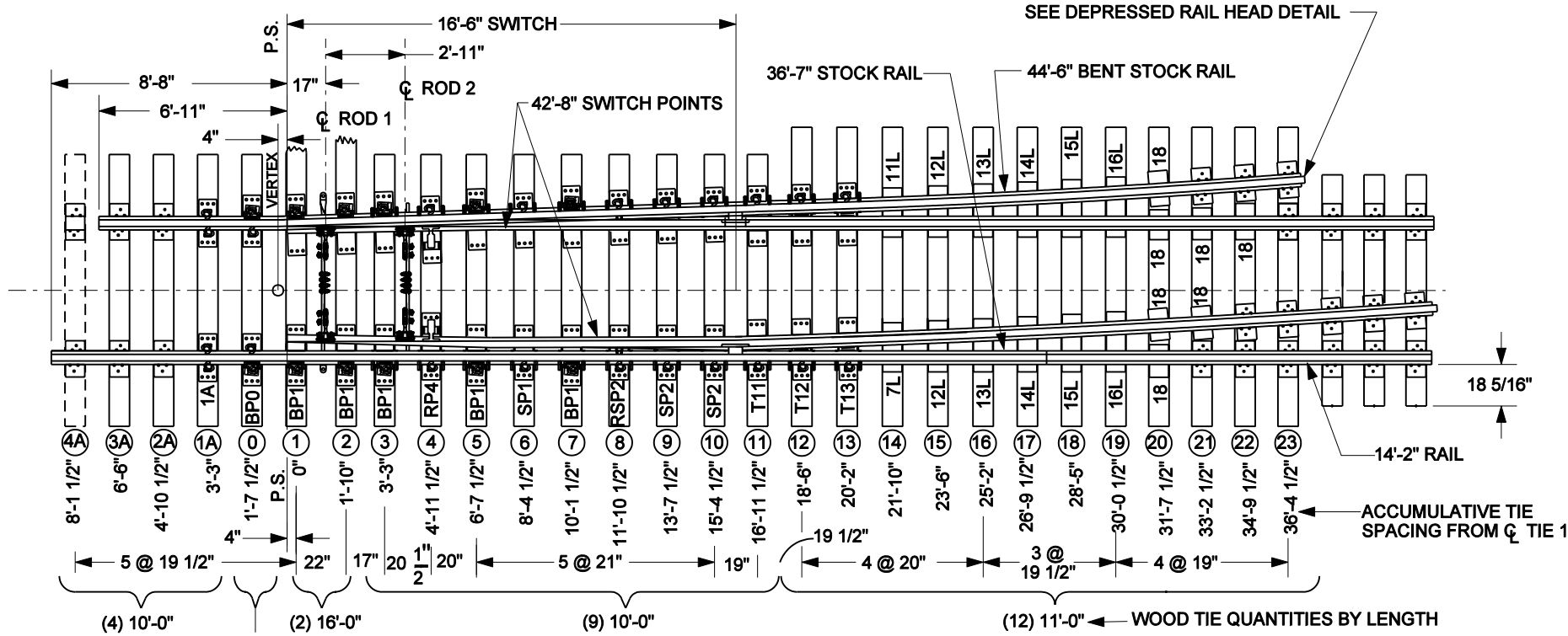


ADOPTED: JAN. 27, 1997
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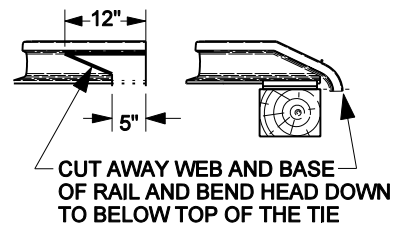
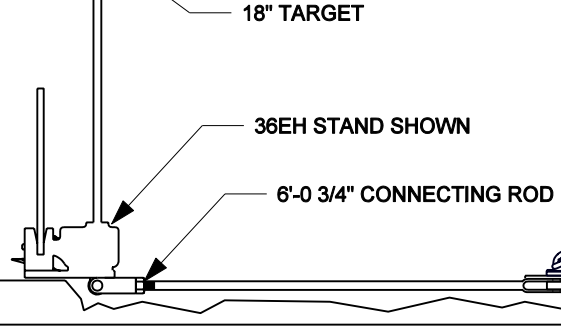
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(4) 10'-0" (2) 16'-0" (9) 10'-0" (12) 11'-0" ← WOOD TIE QUANTITIES BY LENGTH



18" TARGET



DEPRESSED RAIL HEAD DETAIL

- NOTES:
1. DOUBLE SWITCH POINT DERAILS MEET TYPE 2 PROTECTION PER STD DWG 2000.
 2. DOUBLE SWITCH POINT DERAILS MAY BE CONSTRUCTED OF THE SAME RAIL SIZE AS THE CONNECTING TRACK. (115 LB MINIMUM). ALL NEW DERAILS INSTALLED IN UPRR MAINTAINED TRACK SHALL BE CONSTRUCTED OF 133 OR 136 LB. MATERIAL.
- REF. CS DWG 341000 FOR 16'-6" SWITCH
 REF. UP STD DWG 5000 FOR NO. 7 TURNOUT
 REF. UP STD DWG 2000 FOR INSTALL LOCATION
 REF. UP STD DWG 2020 FOR DERAIL TARGET
 REF. UP STD DWG 2111 FOR 36EH SWITCH STAND
 REF. UP STD DWG 2175 FOR CONNECTING ROD

**UNION PACIFIC RAILROAD
ENGINEERING STANDARDS**

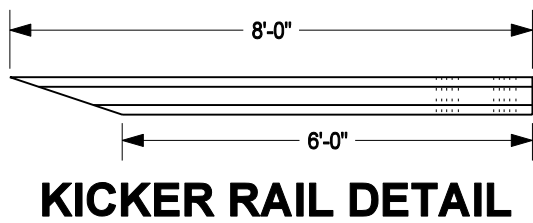
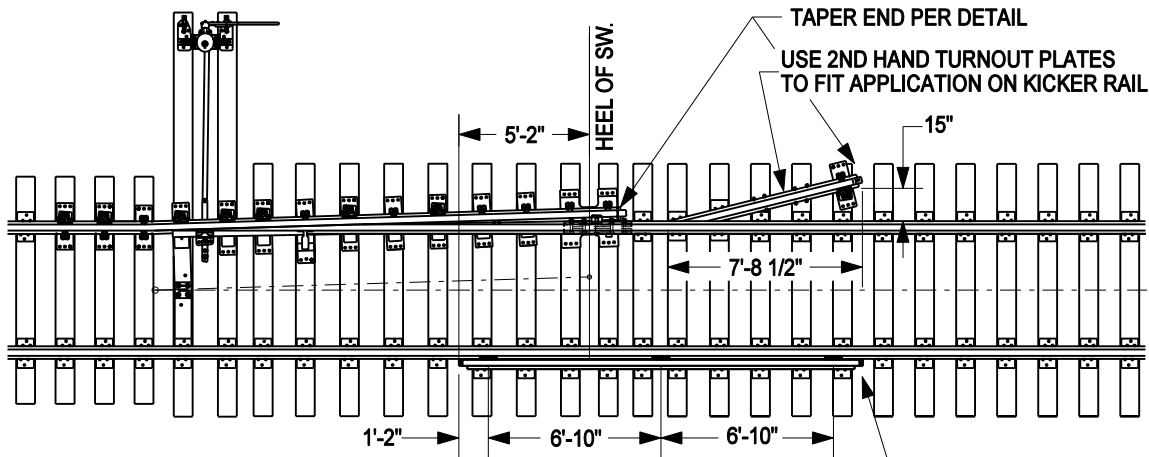
**16'-6" DOUBLE SWITCH
POINT DERAIL**



ADOPTED: FEB. 8, 1974
 REVISED: JUL. 24, 2007
 FILE NO.: 2005D

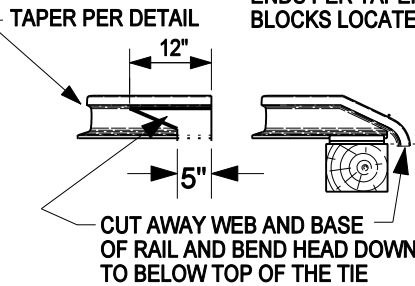
STD DWG
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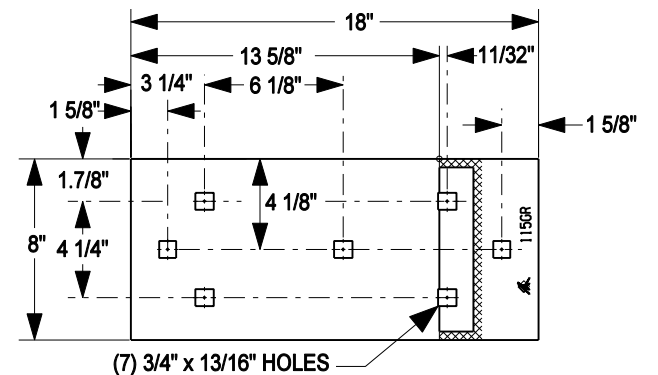


KICKER RAIL DETAIL

16'-0" TRUCKSIDE RAIL (TAPER BOTH ENDS PER TAPERED RAIL HEAD DETAIL) BLOCKS LOCATED AS SHOWN

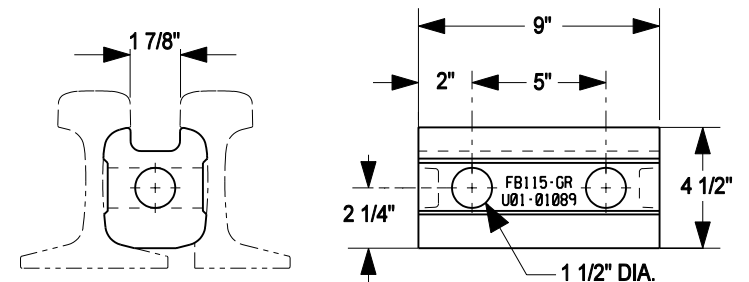


TAPERED RAIL HEAD DETAIL



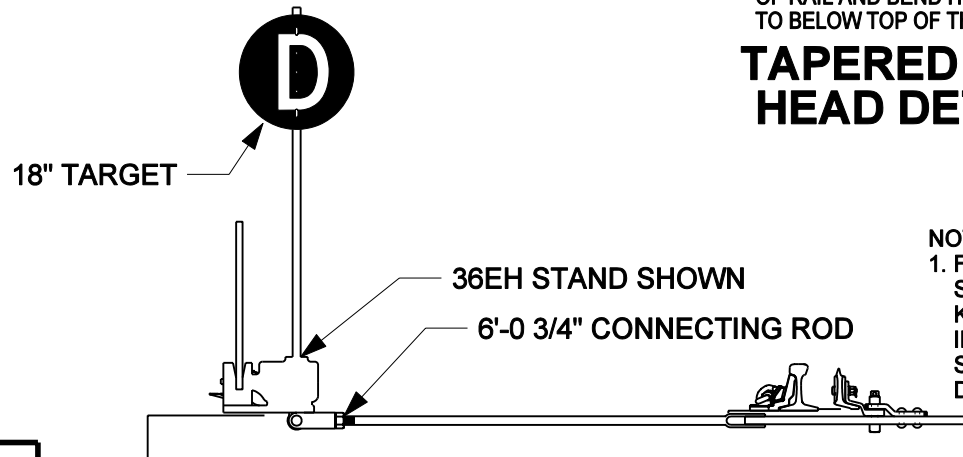
TRUCKSIDE RAIL PLATES

(PLATES SHOWN ARE FOR 6" RAILBASE)



TRUCKSIDE RAIL BLOCK DETAIL

USE BLOCK EQUAL TO THAT USED ON AREMA STYLE GUARD RAIL



SWITCH POINT ARRANGEMENT

TIE CUT OUT FOR CLARITY

NOTES:

1. FOR TYPE 2 PROTECTION PER STD DWG 2000, TRUCKSIDE AND KICKER RAIL MUST BE INSTALLED IN CONNECTION WITH ALL SINGLE SWITCH POINT DERAILS (SEE DETAILS THIS DWG).

**UNION PACIFIC RAILROAD
ENGINEERING STANDARDS**

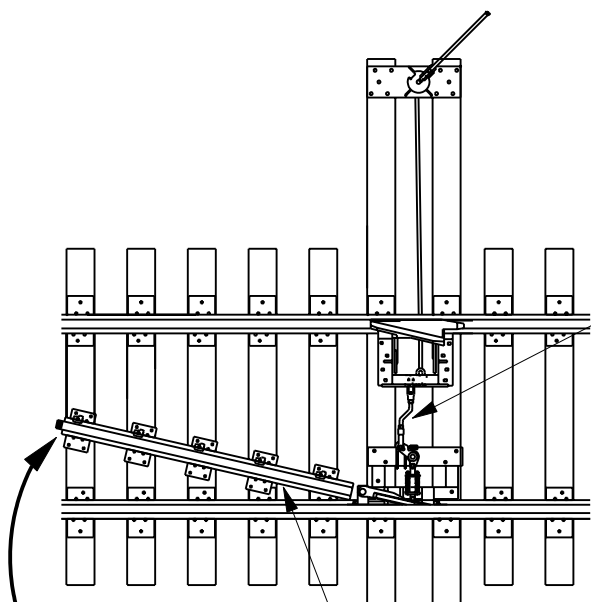
**SINGLE SWITCH
POINT DERAIL**



ADOPTED: OCT. 31, 2003
REVISED:
FILE NO.: 2006

STD DWG
2006

STD DWG
2006



CROWDER ROD

18" TARGET SHOWN

HAYES STAND SHOWN

9'-0" ROD SHOWN

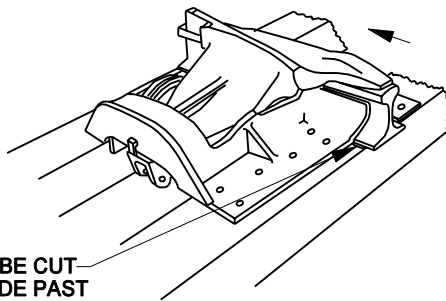
☉ OF TRACK

(2) 7"x 9" x 16'-0" SWITCH TIES REQUIRED

FOR KICKER RAIL, USE AN 8'-0" STICK OF 90LB. RAIL BUTTED UP TO WHEEL CROWDER MECHANISM

CUT AWAY WEB AND BASE OF RAIL AND BEND HEAD DOWN TO BELOW TOP OF THE TIE

SLIDING DERAIL WITH WHEEL CROWDER



TIE PLATES ARE TO BE CUT AS TO NOT PROTRUDE PAST THE BASE OF RAIL ON THE GAGE SIDE

SLIDING DERAIL

NOTES:

1. FOR TYPE 2 PROTECTION PER STD DWG 2000, A WHEEL CROWDER AND KICKER RAIL MUST BE INSTALLED IN CONNECTION WITH ALL SLIDING DERAILS (SEE DETAILS THIS DWG).
2. THE TYPE OF SWITCH STAND USED IS DEPENDENT UPON LOCAL CONDITIONS AND REQUIREMENTS. THE HAYES HIGH STAND SHOULD BE USED WHERE POSSIBLE.
3. ALL DERAILS AND WHEEL CROWDERS TO BE PAINTED SAFETY YELLOW.
4. ALL NEW INSTALLATIONS OF SLIDING AND HINGED DERAILS ALONG WITH WHEEL CROWDER SHALL BE SECURED TO TIES WITH STANDARD COACH SCREWS.
5. WHEN DERAIL IS INSTALLED IN SIGNALIZED TRACK, THE USE OF AN INSULATED CROWDER ROD (ITEM NO. 559-1500) IS REQUIRED.
6. FOR DERAIL PLACEMENT, SEE UPRR STD DWG 2000. FOR SWITCH TARGETS, SEE UPRR STD DWG 2020. FOR COACH SCREWS, SEE UPRR STD DWG 0450

HINGE AND SLIDING DERAILS MAY NOT FUNCTION PROPERLY IF NOT SIZED CORRECTLY. DERAILS IN THIS MATRIX ARE SIZED TO THE PARTICULAR RAIL SIZE PROVIDED THE RAIL IS PLATED.

NO.	RAIL SIZE	TYPE	HAND	ITEM NO.
6	90 - 100 LB.	SLIDING	LH	559-2425
6	90 - 100 LB.	SLIDING	RH	559-2546
6	90 - 100 LB.	CROWDER	LH	559-2429
6	90 - 100 LB.	CROWDER	RH	559-2548
7	112 - 119 LB	SLIDING	LH	559-3153
7	112 - 119 LB	SLIDING	RH	559-3274
7	112 - 119 LB	CROWDER	LH	559-3035
7	112 - 119 LB	CROWDER	RH	559-3039
8	132 - 136 LB	SLIDING	LH	559-3314
8	132 - 136 LB	SLIDING	RH	559-3325
8	132 - 136 LB	CROWDER	LH	559-3320
8	132 - 136 LB	CROWDER	RH	559-3323

9'-0" ROD AND HAYES STAND (SHOWN) - ITEM NO. 557-7075
 5'-9 1/4" ROD FOR LOW PROFILE STANDS - ITEM NO. 557-6135

**UNION PACIFIC RAILROAD
 ENGINEERING STANDARDS**

**SLIDING DERAIL WITH
 WHEEL CROWDER**



ADOPTED: JUNE 16, 1982
 REVISED: APRIL 7, 2004
 FILE NO.: 2007E

STD DWG
2007E

STD DWG
2007E