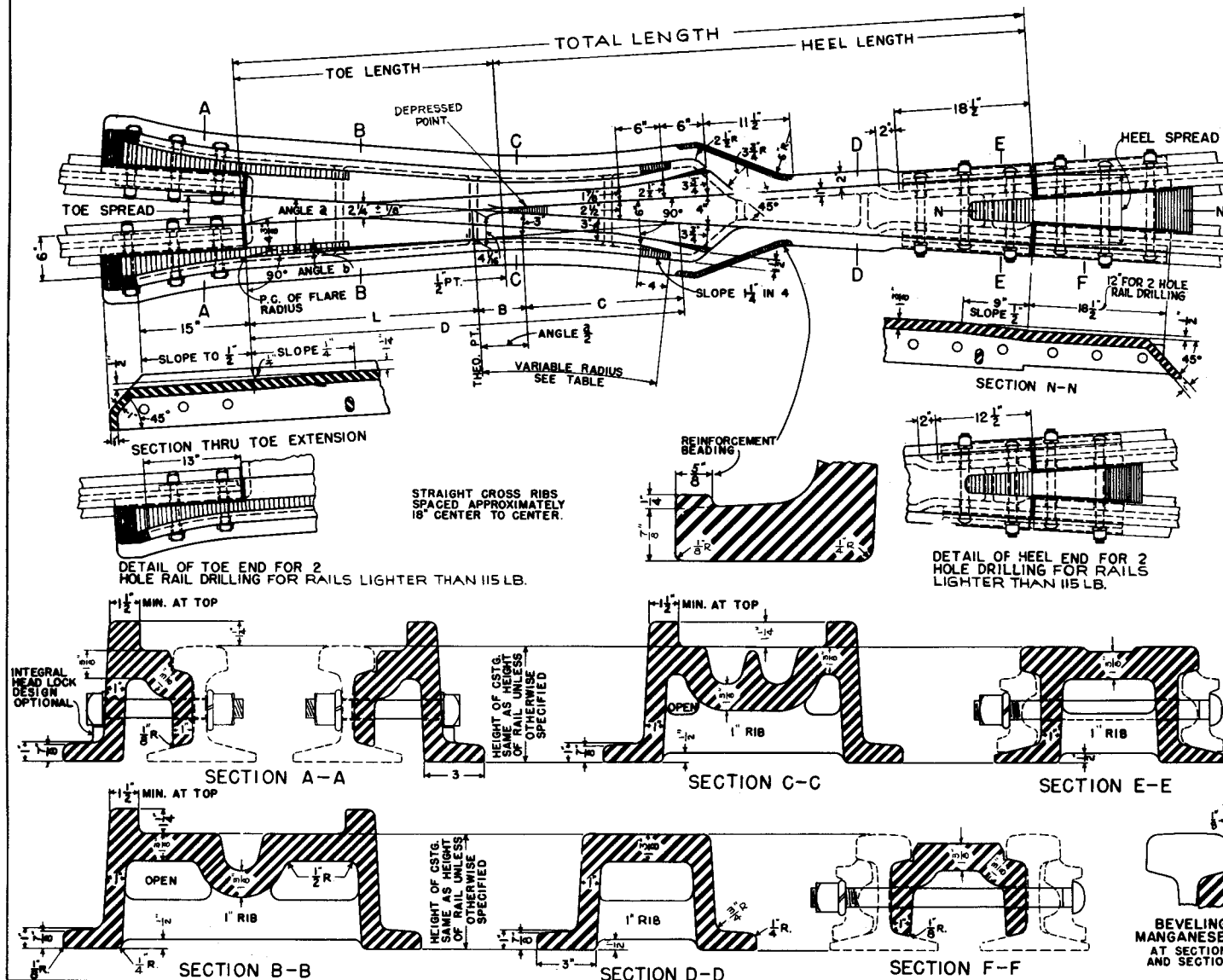
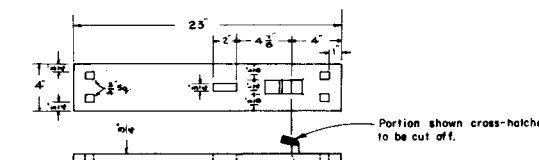
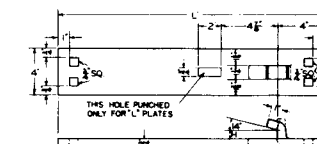
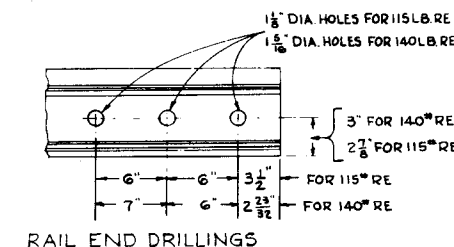
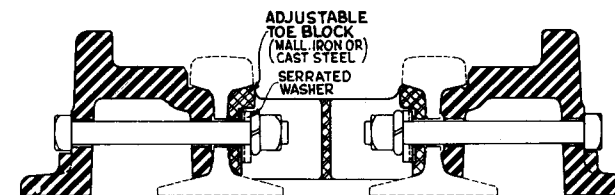
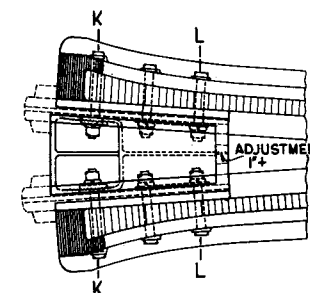
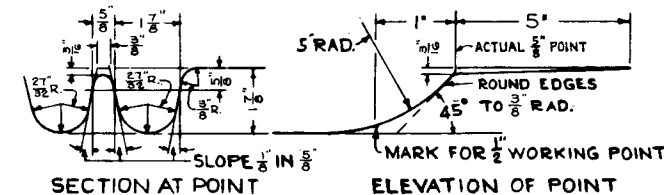


DIMENSIONS OF RAISED GUARDS						
RAIL SECTION	< b	< a	D	C	L	B
115 RE 140 RE	0°-34'-40"	7°-43'-50"	5'-0" ³¹ / ₃₂	22 ⁵ / ₁₆ "	2'-7"	7 ¹⁵ / ₃₂ "

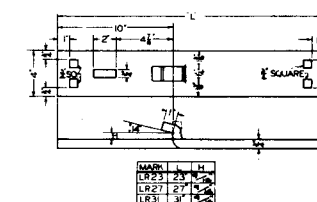
RAIL SECTION	TOE LENGTH	HEEL LENGTH	TOTAL LENGTH	VAR. RADIUS	TOE SPREAD	HEEL SPREAD
115 RE 140 RE	2'-11"	6'-0"	8'-11"	9'-2"	3 ³ / ₈ "	9 ¹ / ₂ "



FORMULA FOR VARIABLE RADIUS OF RAISED GUARDS
 $\tan \text{ANGLE } b = \frac{5/16}{L}$
 $L a = L b + \text{FROG ANGLE}$
 $D = \frac{\text{TOE SPREAD} + 4 \frac{1}{4}}{\tan a}$
 $C = \frac{3}{\sin a}$
 $B = D - (L + C)$
 $\text{RADIUS} = \frac{B}{\tan \frac{a}{2}}$



QUANTITY OF HOOK TWIN TIE PLATES								
RAIL SECTION	L23Mod	L27	H23	H27	H31	H35	LR23	LR27
115 RE 140 RE	2	4	6	4	2	2	-	4



PLATES MUST BE CLEARLY MARKED AND SHOW A.R.E.A. PLATE DESIGNATION.
 HOOKS ON TWIN TIE PLATES AT HEEL JOINT TO BE BENT UP TO VERTICAL POSITION, OR HORIZONTAL PORTION BURNED OFF, TO AVOID INTERFERENCE WITH JOINT BARS.

74153-A

THE PENNSYLVANIA RAILROAD
 AREA STANDARD 1962
 PLAN 8-62 SHEET 4

No. 8 SOLID SELF-GUARDED MANGANESE STEEL FROG
 FOR 115LB.RE AND 140LB.RE RAIL

OFFICE OF CHIEF ENGINEER, PHILA., PA. FEB. 1965