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BHP—AIS HOT ROLLED CARBON STEEL SECTIONS AND PLATES

PRODUCED BY



THE BROKEN HILL PROPRIETARY CO. LTD.
AUSTRALIAN IRON & STEEL PTY. LTD.

PUBLISHED 1967

RAILS

All rail sections currently produced are listed.

For some sizes of rails the information is identical with that contained in the "Steel Shapes and Sections" 1961, in other cases there are alterations, additions, or deletions. The following summary describes the position.

SUMMARY OF CURRENT SECTIONS

Section	Remarks
387 lb. crane rail	New presentation
175 lb. crane rail	New section
146 lb. crane rail	New presentation of former 147 lb. rail
107 lb. rail to AS.E22—1964 and fishplates to AS.E23—1964	New title
102 lb. grooved tramrail	Unchanged
94 lb. rail to AS.E22—1964 and fishplates to AS.E23—1964	New title
91 lb. rail and fishplates	New section
82 lb. rail to AS.E22—1964 and fishplates to AS.E23—1964	New title
63 lb. rail to AS.E22—1964 and fishplates to AS.E23—1964	New title
45 lb. rail and fishplates	Additional dimension included
30 lb. rail and fishplates	Unchanged
20 lb. rail and fishplates	Unchanged
Dimensions & standard punching for 75 lb. rail fishplates	New section

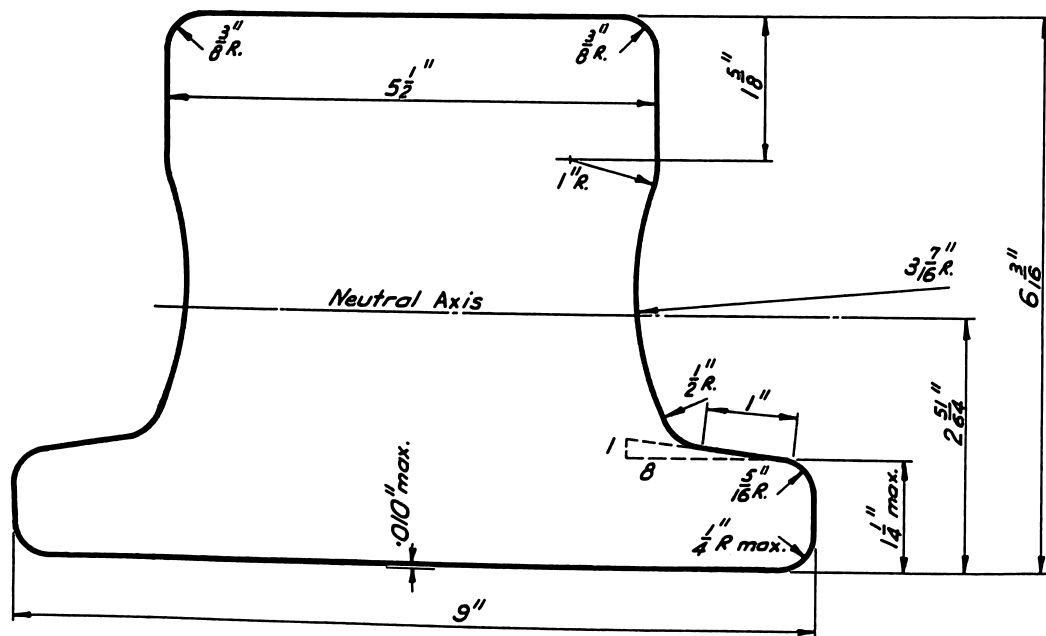
RAILS (contd.)

Section	Remarks
Dimensions of Standard Drilling for Heavy rails to AS.E22—1964	New presentation
Dimensions of Standard Punching for fishplates for 107 lb. rail to AS.E23—1964	New title
Dimensions of Standard Punching for Bar Type Fishplates	New presentation
Dimensions of Standard Punching for Angle Type Fishplates to AS.E23—1964	New title
Dimensions of Standard Punching for fishplates for 91 lb. rail	New section
Dimensions of Standard Drilling for 45 lb. rails	Unchanged
Dimensions of Standard Punching for Fishplates for 45 lb. rail	Unchanged
Dimensions of Standard Drilling for 30 lb. and 20 lb. rails	New presentation
Dimensions of Standard Punching for Fishplates for 30 lb. and 20 lb. rails	Unchanged
107 lb. Double Shoulder Sleeper Plate to AS.E29—1964	New section
82.94 lb. Double Shoulder Sleeper Plate to AS.E29—1964	New section
75 lb. Double Shoulder Sleeper Plate	New section

The following rail sections which appeared in the "Steel Shapes and Sections", 1961 are no longer produced.

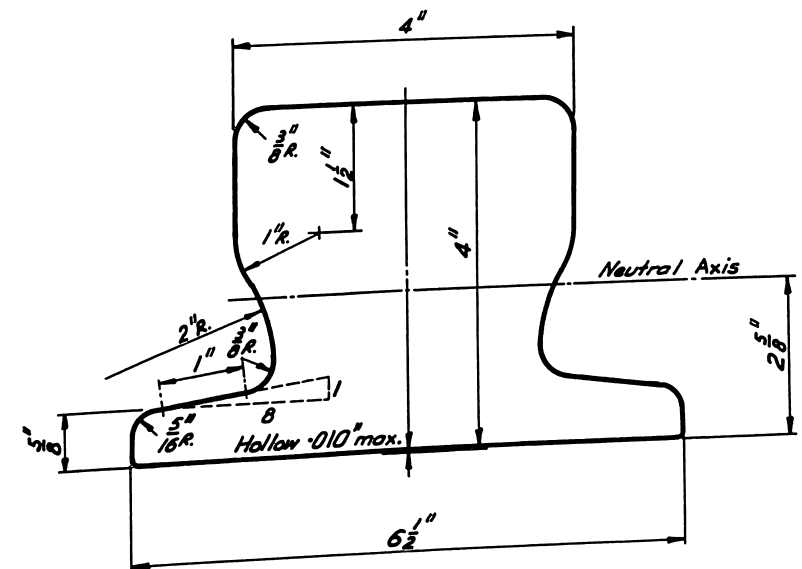
Section	Remarks
85 lb. rail	British Standard
70 lb. rail	British Standard

387 lb. CRANE RAIL



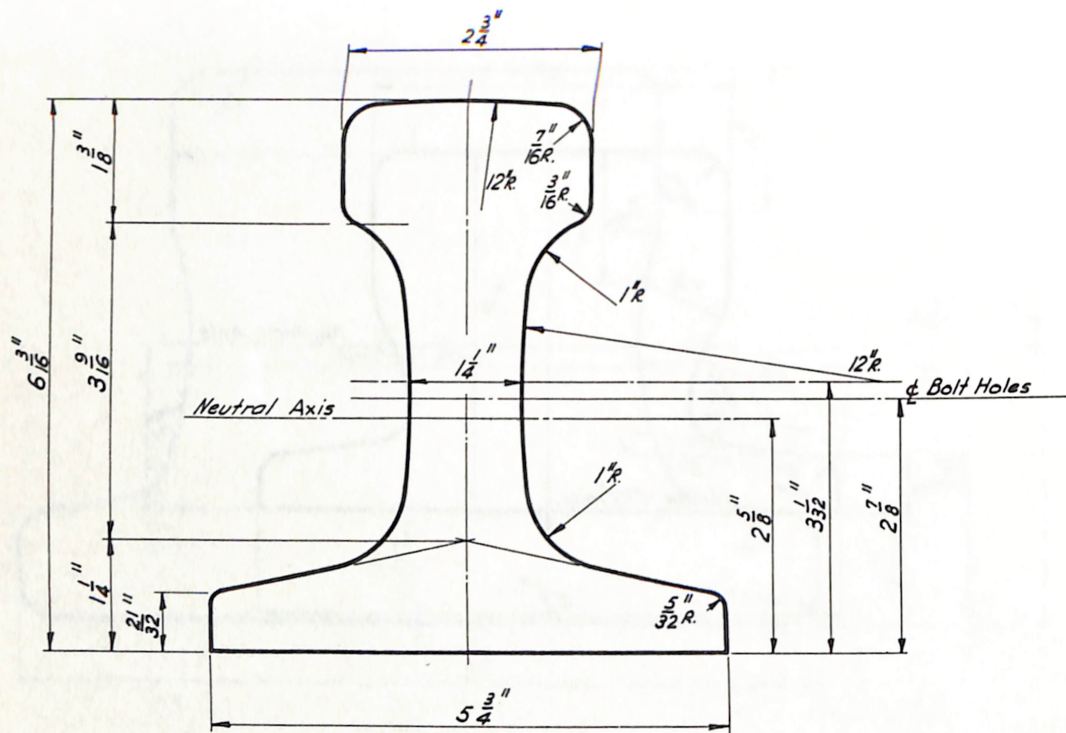
AREA	=	37.90 ins. ²
MOMENT OF INERTIA	=	131.64 ins. ⁴
SECTION MODULUS HEAD	=	38.82 ins. ³
SECTION MODULUS BASE	=	47.05 ins. ³
WEIGHT	=	386.58 lb. per yard

175 lb. CRANE RAIL



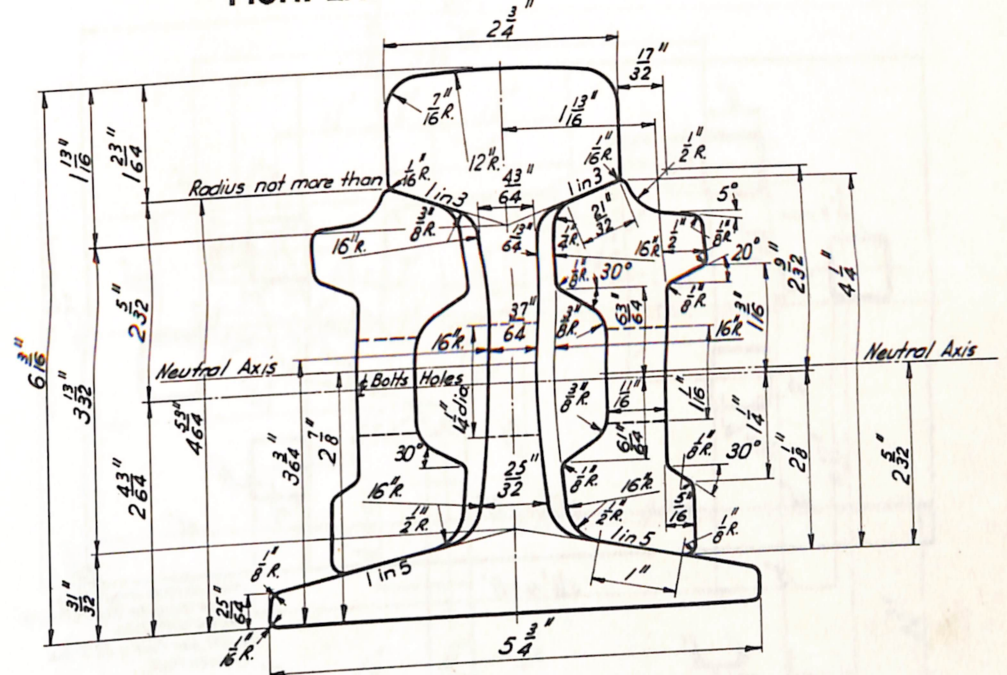
AREA	=	16.92 ins. ²
MOMENT OF INERTIA	=	26.00 ins. ⁴
SECTION MODULUS HEAD	=	12.14 ins. ³
SECTION MODULUS BASE	=	14.05 ins. ³
WEIGHT	=	172.58 lb. per yard

146 lb. CRANE RAIL



AREA	=	14.37 ins. ²
MOMENT OF INERTIA	=	65.38 ins. ⁴
SECTION MODULUS HEAD	=	18.95 ins. ³
SECTION MODULUS BASE	=	24.30 ins. ³
WEIGHT	=	146.57 lb. per yard

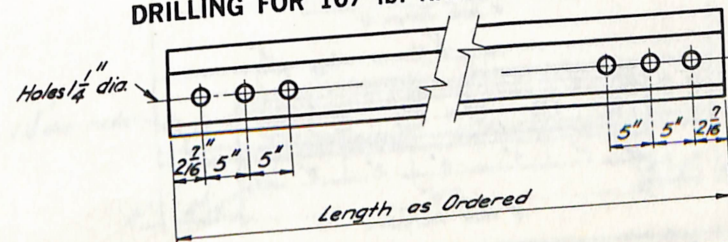
107 lb. RAIL TO AS. E22 — 1964 AND FISHPLATES TO AS. E23 — 1964



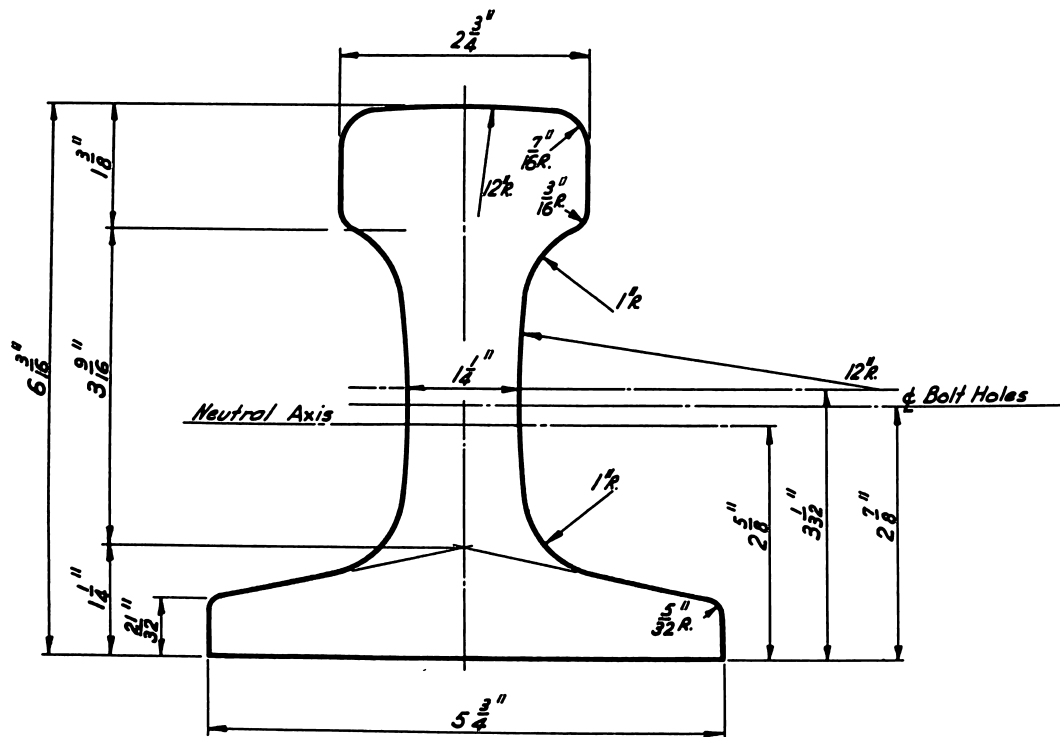
RAIL		FISHPLATE	
AREA OF HEAD	= 4.20 ins. ² = 40.15%	WEIGHT PER YARD	= 106.72 lb.
AREA OF WEB	= 2.37 ins. ² = 22.66%	MOMENT OF INERTIA	= 54.78 ins. ⁴
AREA OF BASE	= 3.89 ins. ² = 37.19%	SECTION MODULUS HEAD	= 16.56 ins. ³
		SECTION MODULUS BASE	= 19.01 ins. ³
Total	= 10.46 ins.² = 100.00%		

FISHPLATE	
AREA	= 4.64 ins. ²
WEIGHT PER PAIR	{ 4 HOLE = 52.59 lb.
	{ 6 HOLE = 78.89 lb.
MOMENT OF INERTIA	= 7.54 ins. ⁴
SECTION MODULUS HEAD	= 3.60 ins. ³
SECTION MODULUS BASE	= 3.49 ins. ³

DRILLING FOR 107 lb. RAILS TO AS. E22 — 1964

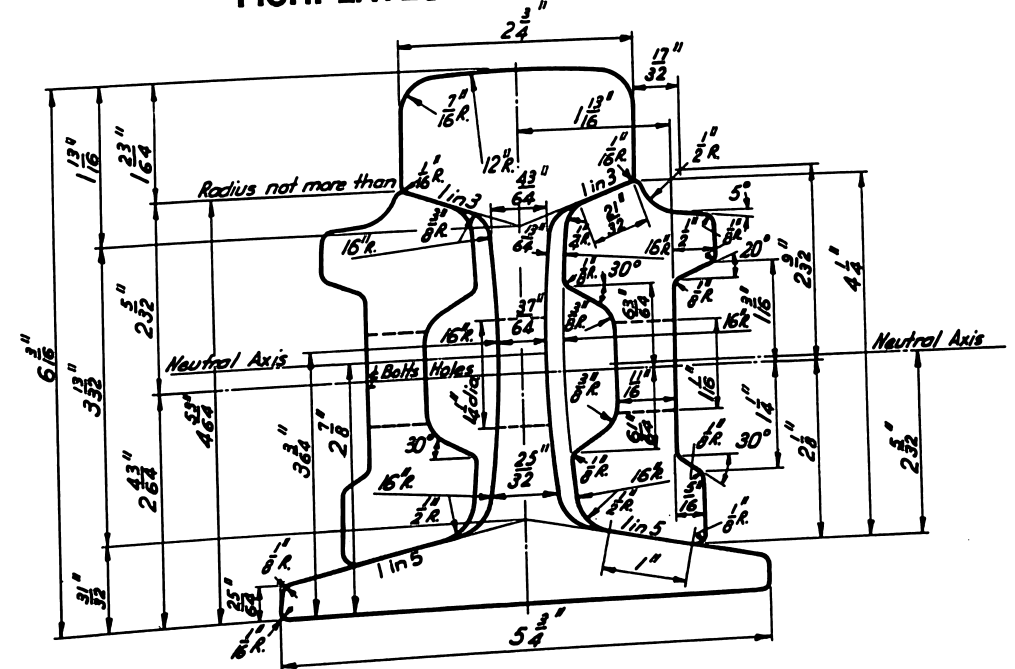


146 lb. CRANE RAIL



AREA	=	14.37 ins. ²
MOMENT OF INERTIA	=	65.38 ins. ⁴
SECTION MODULUS HEAD	=	18.95 ins. ³
SECTION MODULUS BASE	=	24.30 ins. ³
WEIGHT	=	146.57 lb. per yard

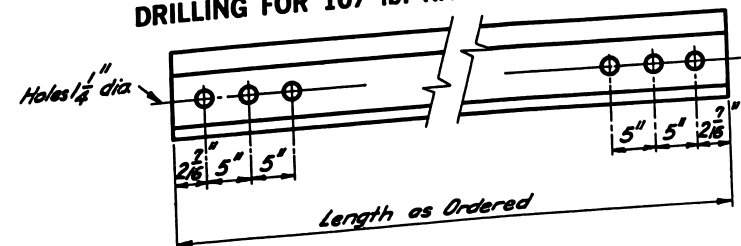
107 lb. RAIL TO AS. E22 — 1964 AND FISHPLATES TO AS. E23 — 1964



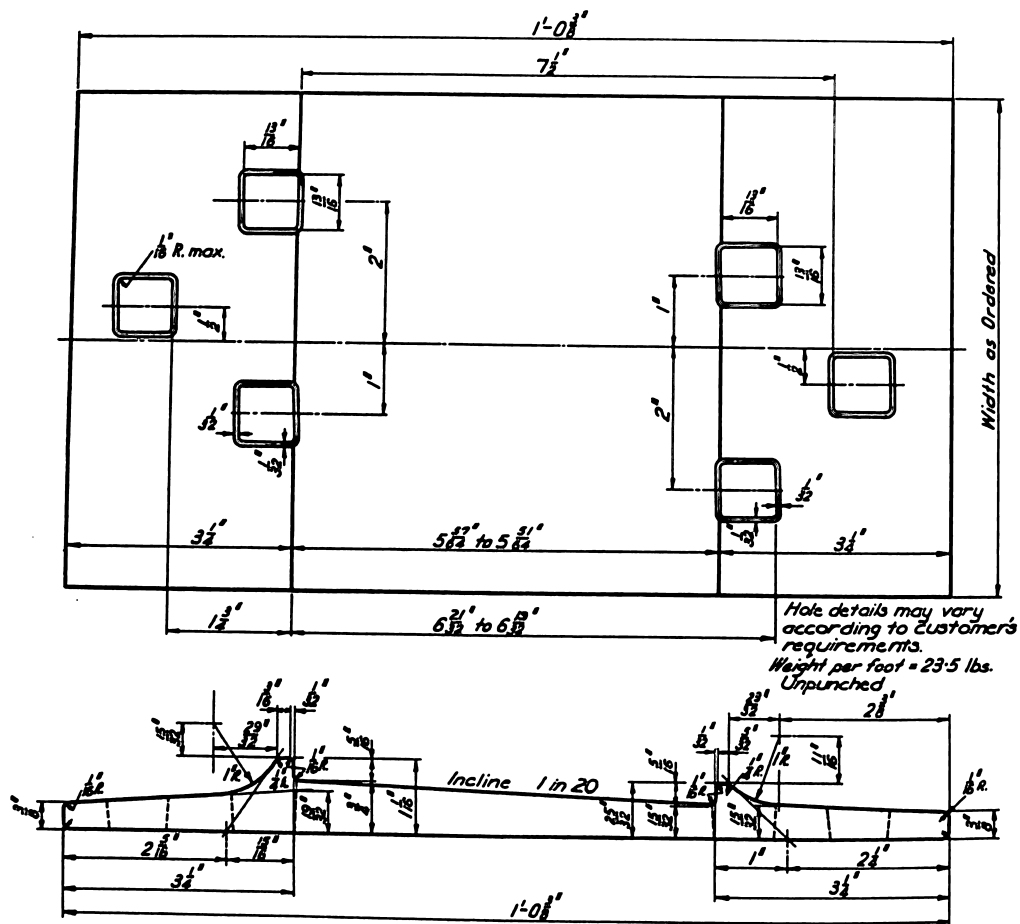
RAIL				
AREA OF HEAD	=	4.20 ins. ²	=	40.15%
AREA OF WEB	=	2.37 ins. ²	=	22.66%
AREA OF BASE	=	3.89 ins. ²	=	37.19%
Total	=	10.46 ins.²	=	100.00%
			WEIGHT PER YARD	= 106.72 lb.
			MOMENT OF INERTIA	= 54.78 ins. ⁴
			SECTION MODULUS HEAD	= 16.56 ins. ³
			SECTION MODULUS BASE	= 19.01 ins. ³

FISHPLATE		
AREA	=	4.64 ins. ²
WEIGHT PER PAIR	{	4 HOLE = 52.59 lb.
	{	6 HOLE = 78.89 lb.
MOMENT OF INERTIA	=	7.54 ins. ⁴
SECTION MODULUS HEAD	=	3.60 ins. ³
SECTION MODULUS BASE	=	3.49 ins. ³

DRILLING FOR 107 lb. RAILS TO AS. E22 — 1964

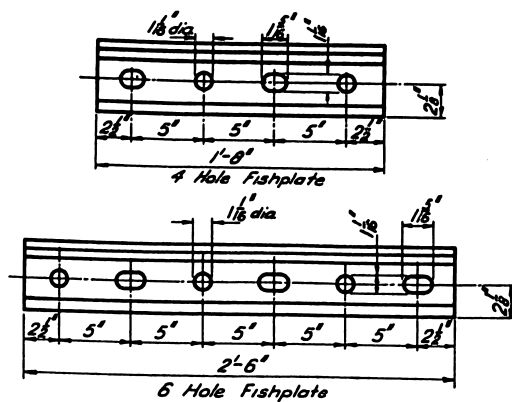


107 lb. RAIL DOUBLE SHOULDER SLEEPER PLATE TO AS. E29 — 1964

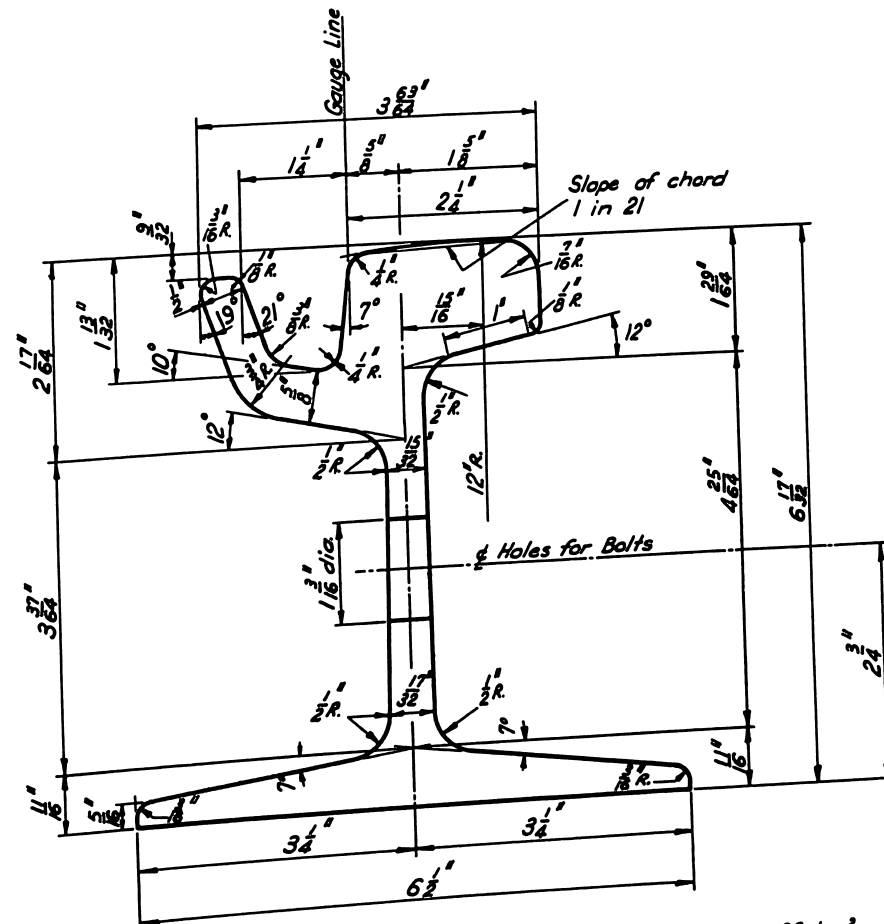


Hole details may vary according to Customer's requirements.
Weight per foot = 23.5 lbs. Unpunched

PUNCHING FOR FISHPLATES FOR 107 lb. RAIL TO AS. E23 — 1964



102 lb. GROOVED TRAMRAIL

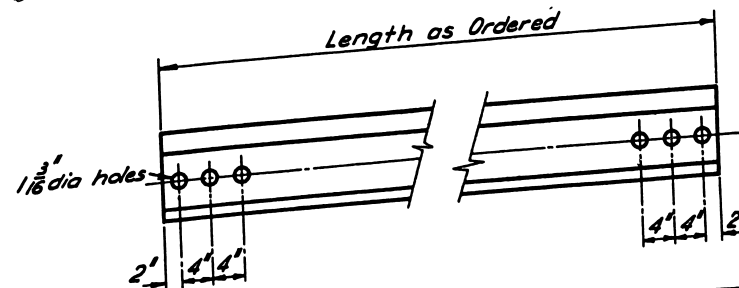


$$6 \frac{12}{32} - 2 \frac{3}{4} = \frac{29}{32}$$

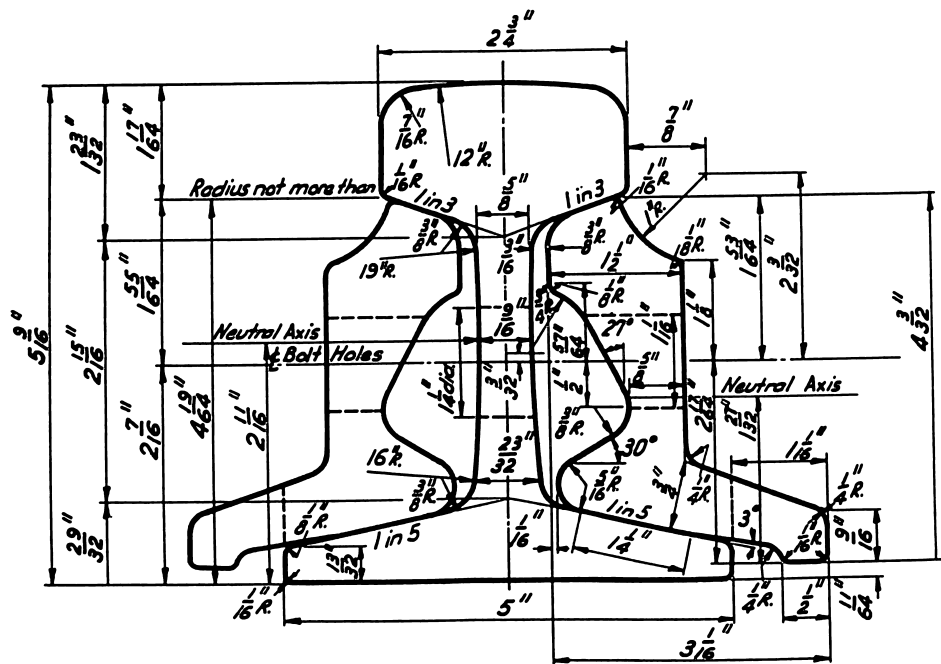
$$3' \frac{27}{32}$$

Area = 10.08 ins²
Weight per yard = 102.73 lbs.

DIMENSIONS OF STANDARD DRILLING FOR 102 lb. RAILS



94 lb. RAIL TO AS. E22 — 1964 AND
FISHPLATES TO AS. E23 — 1964



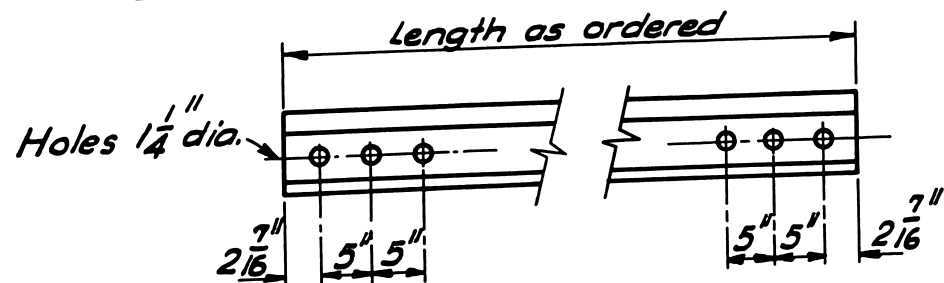
RAIL

AREA OF HEAD	= 3.95 ins. ²	= 42.98%	WEIGHT PER YARD	= 93.74 lb.
AREA OF WEB	= 1.98 ins. ²	= 21.55%	MOMENT OF INERTIA	= 38.26 ins. ⁴
AREA OF BASE	= 3.26 ins. ²	= 35.47%	SECTION MODULUS HEAD	= 13.29 ins. ³
			SECTION MODULUS BASE	= 14.26 ins. ³
Total	= 9.19 ins. ²	= 100.00%		

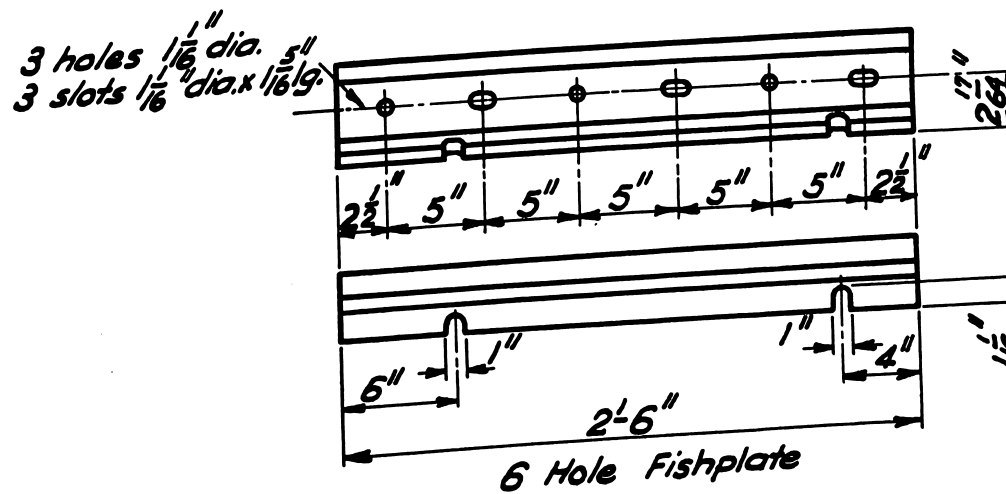
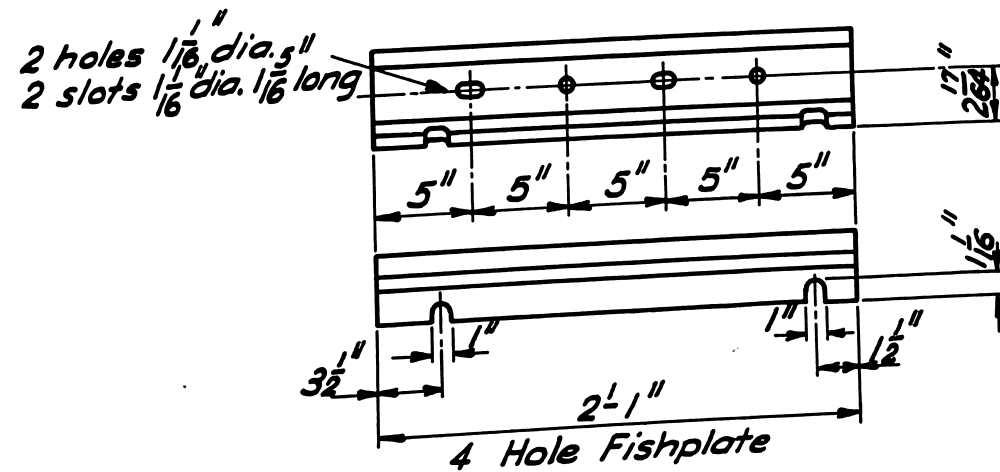
FISHPLATE

AREA	= 4.80 ins. ²
WEIGHT PER PAIR { 4 HOLE	= 67.89 lb.
{ 6 HOLE	= 81.47 lb.
MOMENT OF INERTIA	= 6.55 ins. ⁴
SECTION MODULUS HEAD	= 2.93 ins. ³
SECTION MODULUS BASE	= 3.56 ins. ³

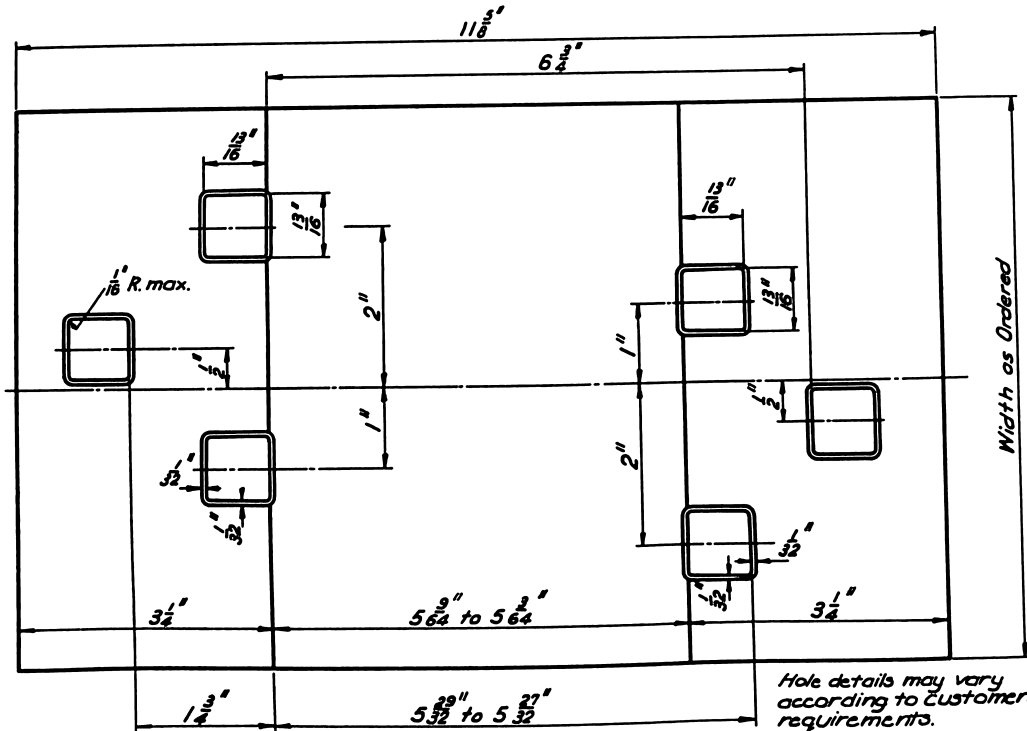
DRILLING FOR 94 lb. RAIL TO AS. E22 — 1964



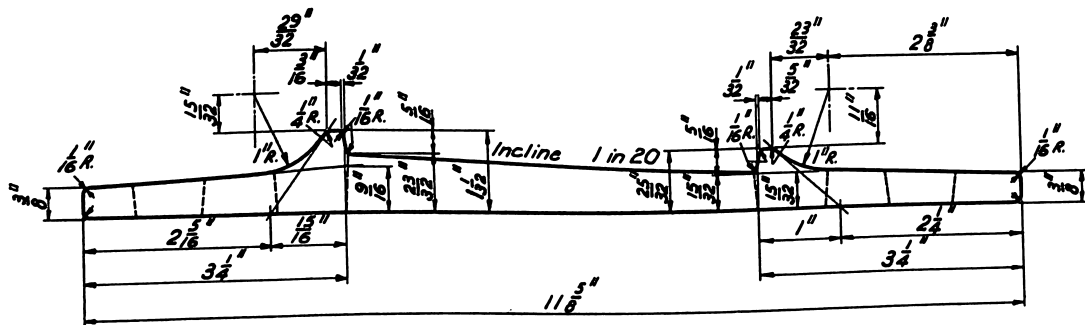
PUNCHING FOR ANGLE TYPE FISHPLATES
FOR 94 lb. RAIL TO AS. E23 — 1964



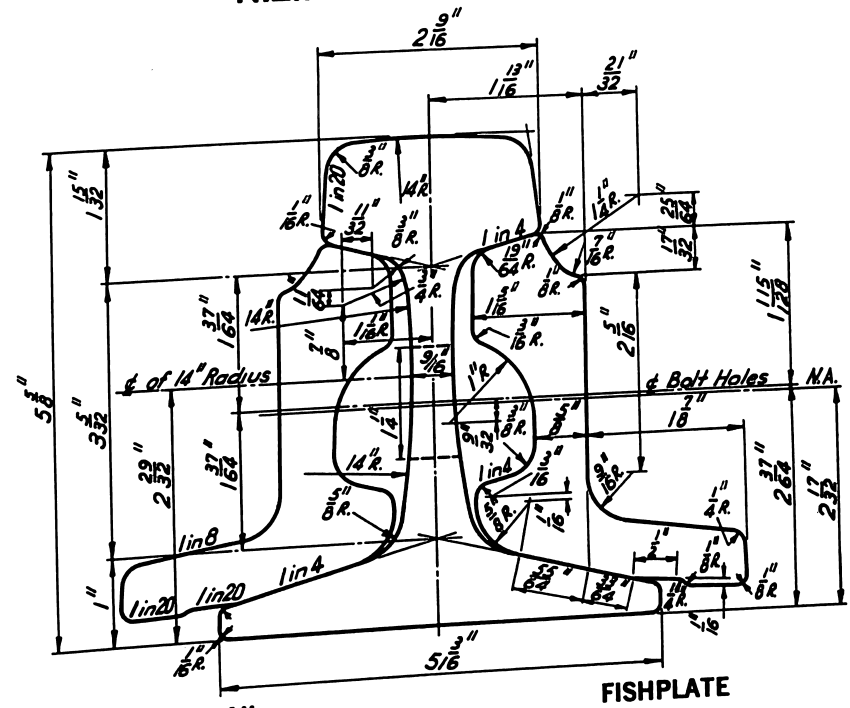
**94 lb. RAIL DOUBLE SHOULDER SLEEPER PLATE TO
AS. E29 — 1964**



Weight per foot = 21.85 lbs.
Unpunched

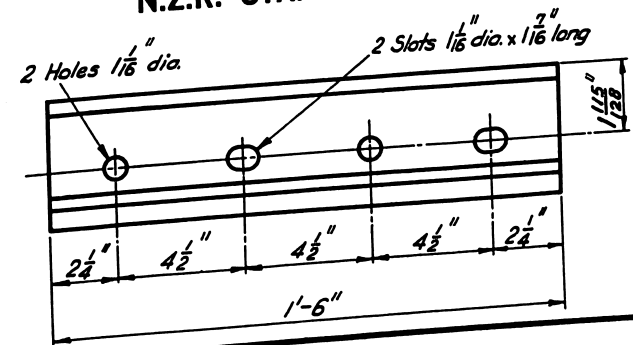


**91 lb. RAIL AND FISHPLATES
• N.Z.R. STANDARD RAIL**

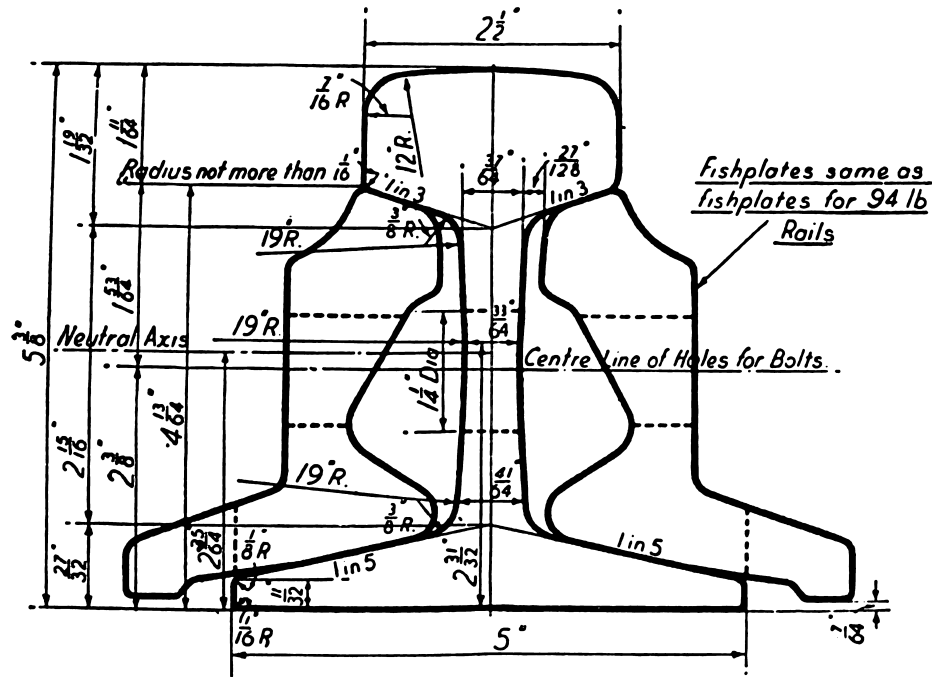


RAIL		FISHPLATE	
AREA	= 8.84 ins. ²	AREA	= 4.83 ins. ²
WEIGHT PER YARD	= 90.168 lbs.	WEIGHT PER PAIR (4 HOLE)	= 47.36 lbs.
MOMENT OF INERTIA	= 38.10 ins. ⁴	MOMENT OF INERTIA	= 7.15 ins. ⁴
SECTION MODULUS HEAD	= 10.03 ins. ³	SECTION MODULUS HEAD	= 3.05 ins. ³
SECTION MODULUS BASE	= 12.31 ins. ³	SECTION MODULUS BASE	= 3.83 ins. ³

**DIMENSIONS OF STANDARD PUNCHING
FOR FISHPLATES FOR 91 lb. RAIL
N.Z.R. STANDARD RAIL**



82 lb. RAIL TO AS. E22 — 1964 AND FISHPLATES TO AS. E23 — 1964



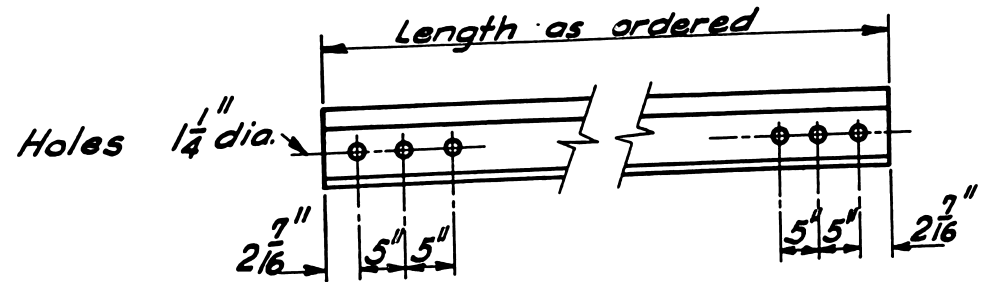
RAIL

AREA OF HEAD = 3.33 ins. ² = 41.42%	WEIGHT PER YARD = 82.00 lb.
AREA OF WEB = 1.72 ins. ² = 21.39%	MOMENT OF INERTIA = 31.81 ins. ⁴
AREA OF BASE = 2.99 ins. ² = 37.19%	SECTION MODULUS HEAD = 11.25 ins. ³
	SECTION MODULUS BASE = 12.48 ins. ³
Total = 8.04 ins. ² = 100.00%	

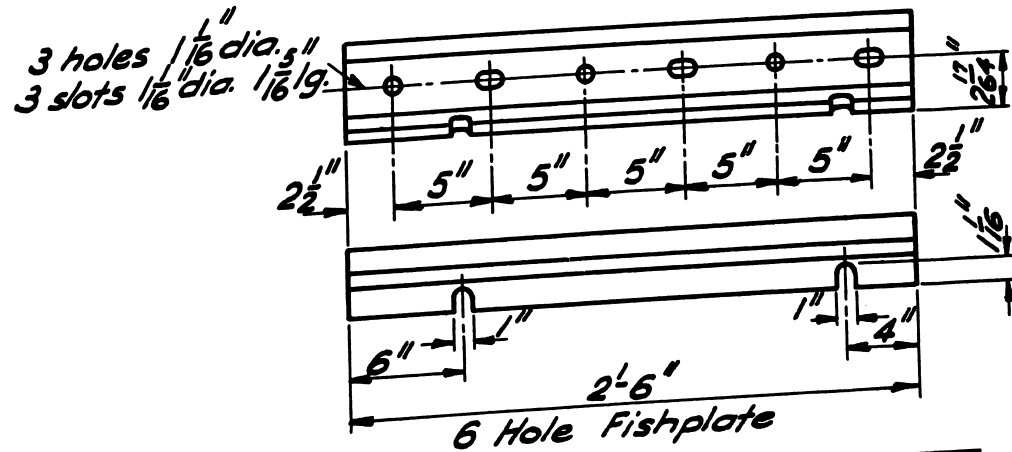
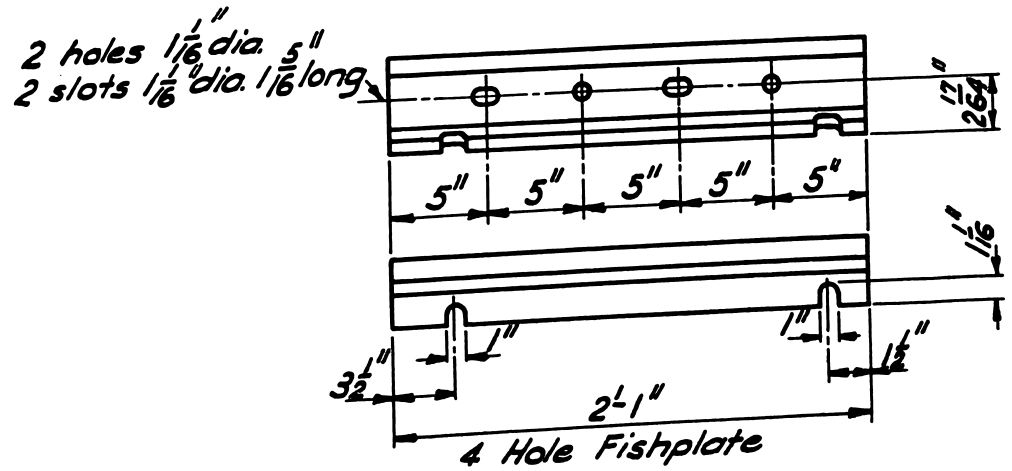
FISHPLATE

AREA = 4.80 ins. ²	
WEIGHT PER PAIR	4 HOLE = 67.89 lb.
	6 HOLE = 81.47 lb.
MOMENT OF INERTIA = 6.55 ins. ⁴	
SECTION MODULUS HEAD = 2.93 ins. ³	
SECTION MODULUS BASE = 3.56 ins. ³	

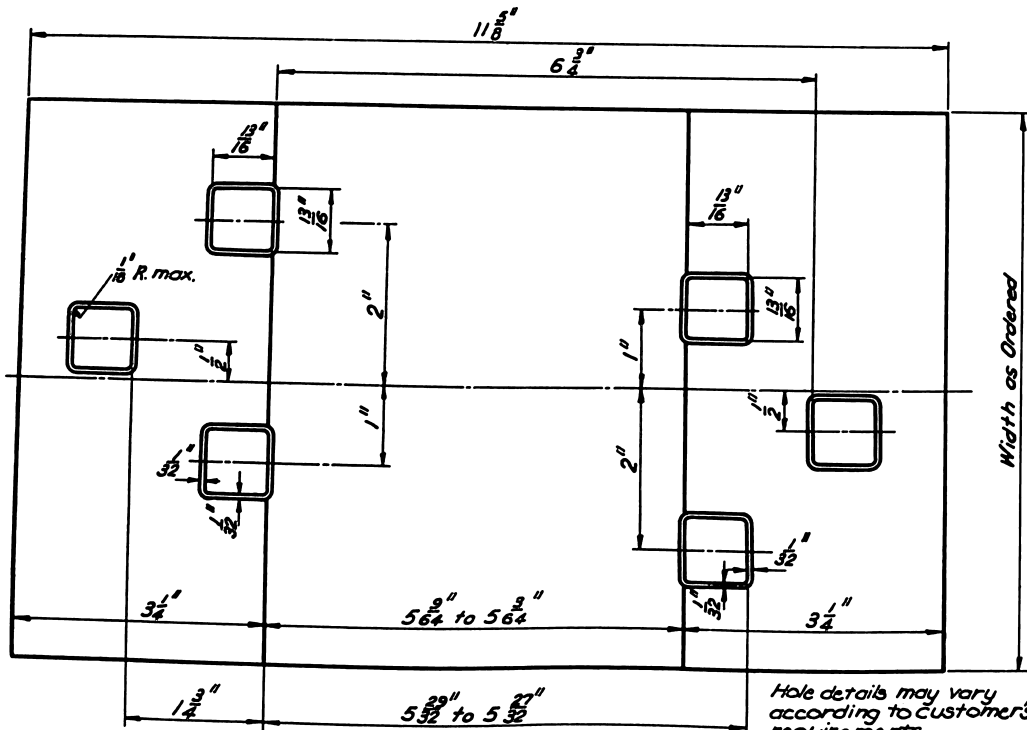
DRILLING FOR 82 lb. RAIL TO AS. E22 — 1964



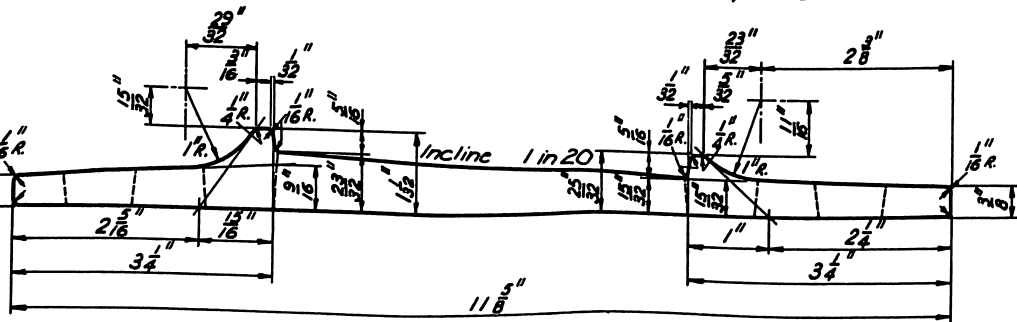
PUNCHING FOR ANGLE TYPE FISHPLATES FOR 82 lb. RAIL TO AS. E23 — 1964



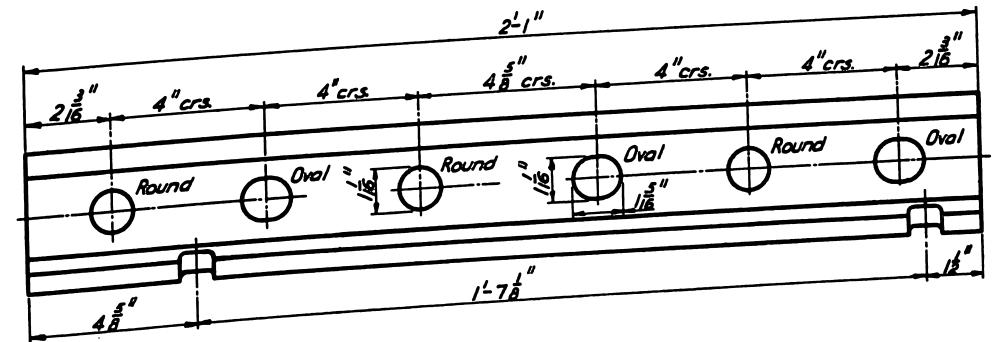
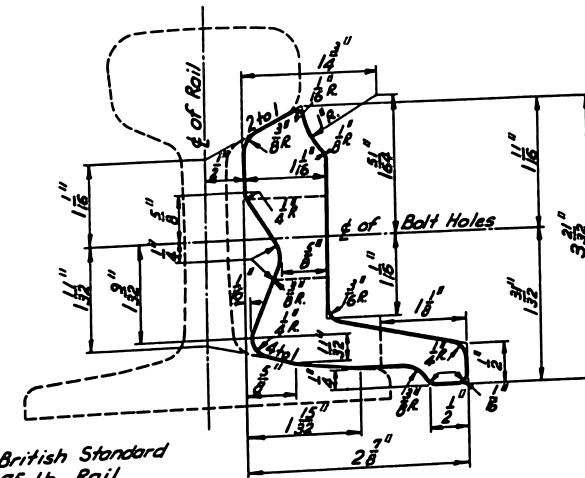
82 lb. RAIL DOUBLE SHOULDER SLEEPER PLATE TO AS. E29 — 1964



Weight per foot = 21.85 lbs.
Unpunched

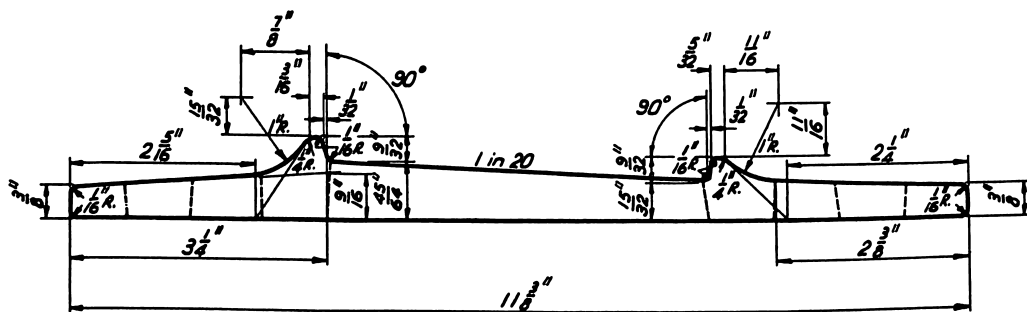
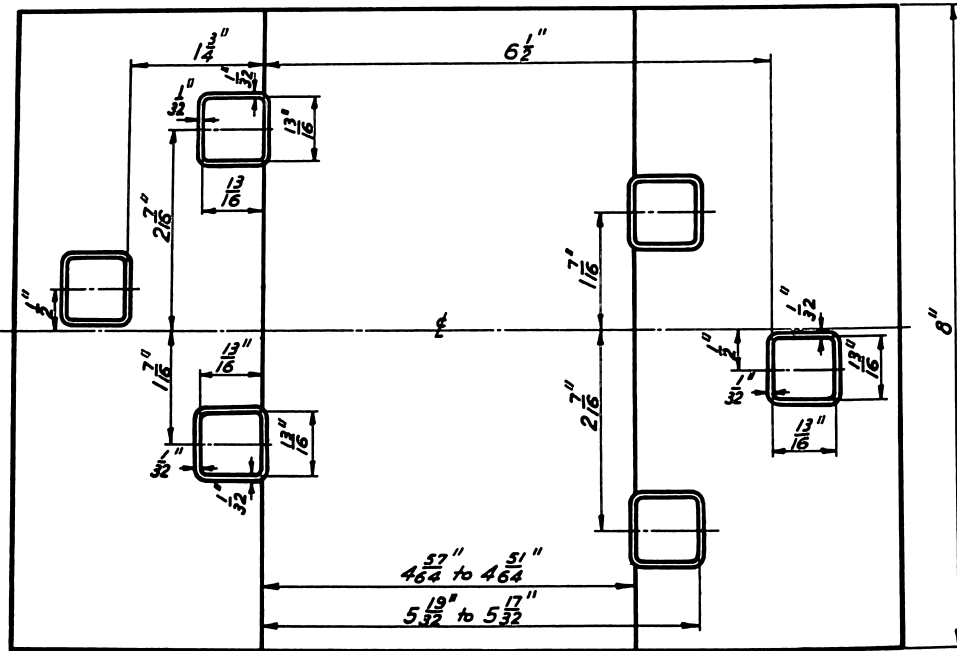


**75 lb. RAIL FISHPLATE
DIMENSIONS & STANDARD PUNCHING**



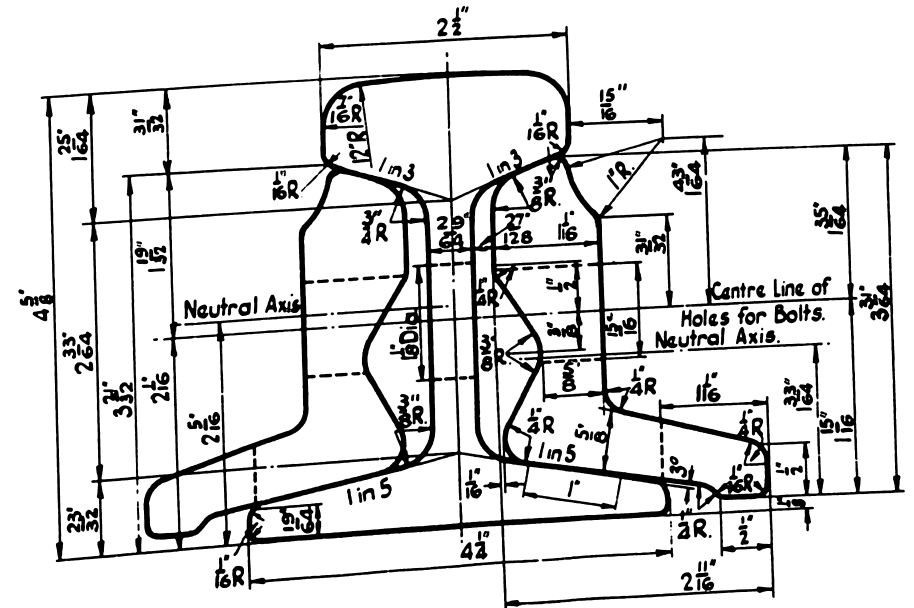
WEIGHT PER FOOT = 12.56 lbs.
WEIGHT PER PLATE UNPUNCHED = 26.16 lbs.
WEIGHT PER PLATE PUNCHED = 24.42 lbs.

75 lb. RAIL DOUBLE SHOULDER SLEEPER PLATE



WEIGHT PER PLATE 13.749 lb. UNPUNCHED
WEIGHT PER PLATE 13.00 lb. PUNCHED

63 lb. RAIL TO AS. E22 — 1964 AND FISHPLATES TO AS. E23 — 1964



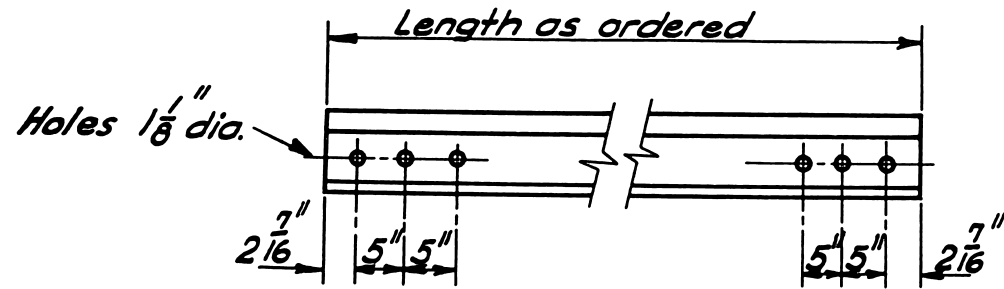
RAIL

AREA OF HEAD	= 2.83 ins. ²	= 45.49%	WEIGHT PER YARD	= 63.36 lb.
AREA OF WEB	= 1.23 ins. ²	= 19.78%	MOMENT OF INERTIA	= 18.40 ins. ⁴
AREA OF BASE	= 2.16 ins. ²	= 34.73%	SECTION MODULUS HEAD	= 7.96 ins. ³
Total	= 6.22 ins. ²	= 100.00%	SECTION MODULUS BASE	= 7.96 ins. ³

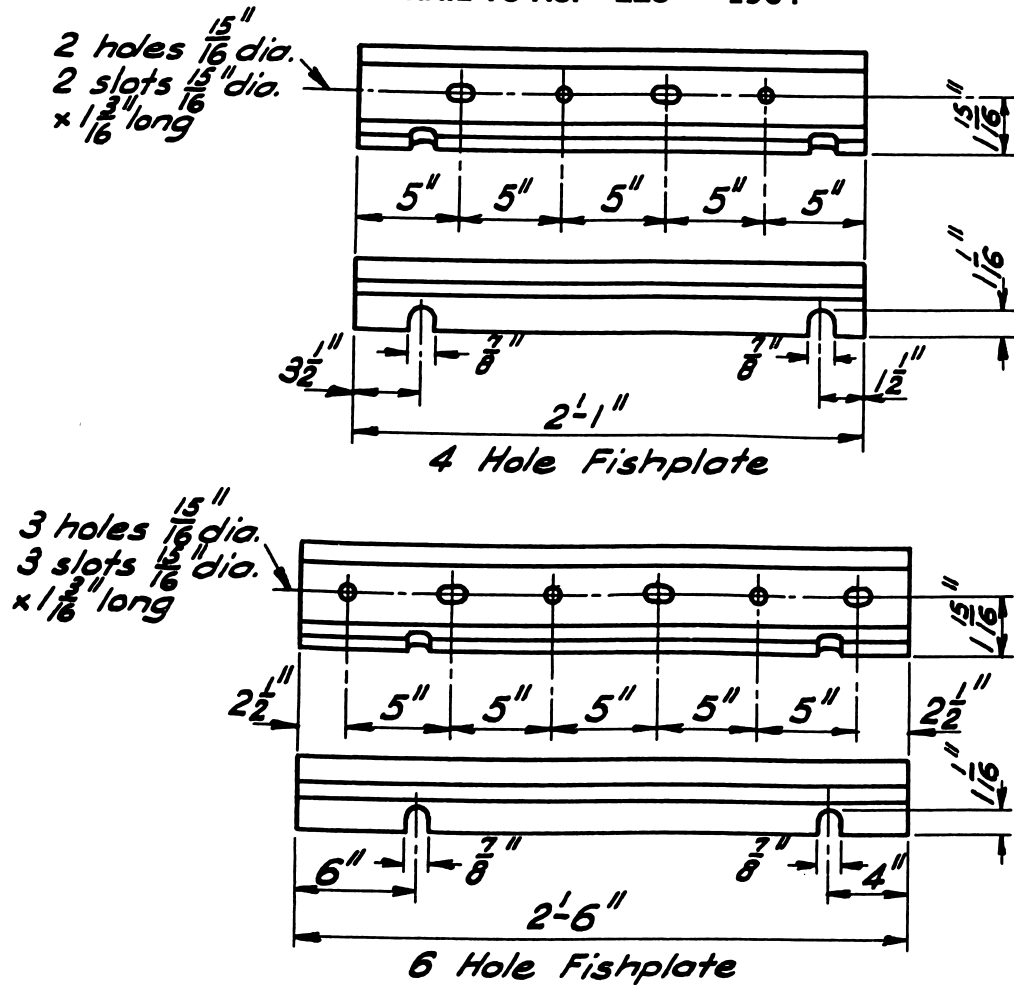
FISHPLATE

AREA	= 3.55 ins. ²
WEIGHT PER PAIR	{ 4 HOLE = 50.17 lb. 6 HOLE = 60.21 lb.
MOMENT OF INERTIA	= 3.53 ins. ⁴
SECTION MODULUS HEAD	= 1.79 ins. ³
SECTION MODULUS BASE	= 2.33 ins. ³

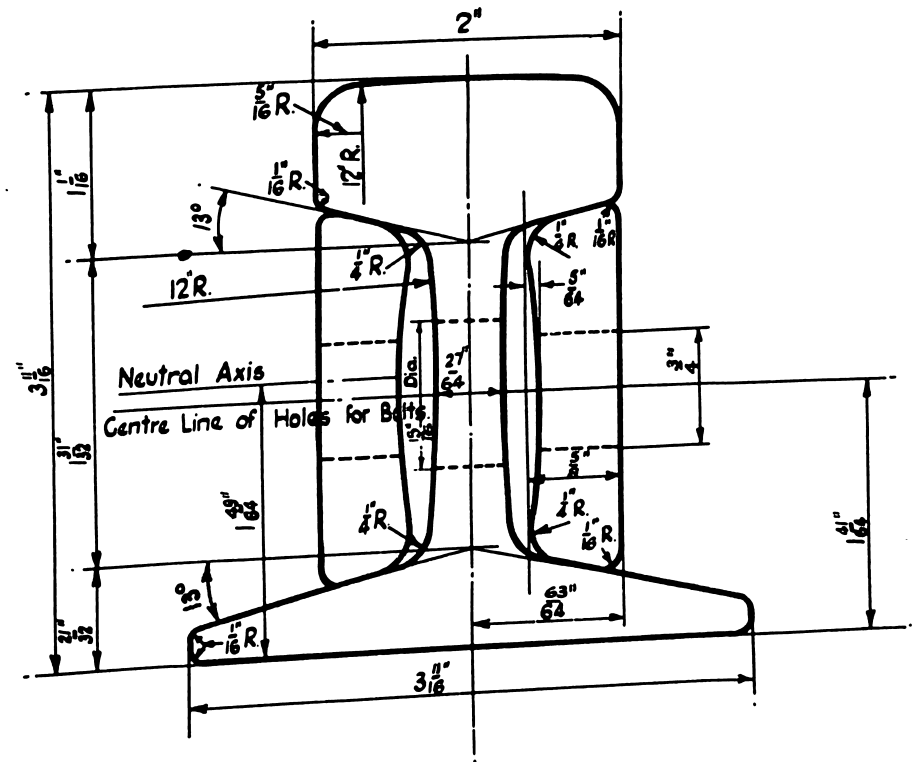
DRILLING FOR 63 lb. RAIL TO AS. E22 — 1964



PUNCHING FOR ANGLE TYPE FISHPLATES FOR 63 lb. RAIL TO AS. E23 — 1964



45 lb. RAIL AND FISHPLATES



RAIL

AREA OF HEAD	= 1.83 ins. ²	= 41.57%
AREA OF WEB	= .94 ins. ²	= 21.34%
AREA OF BASE	= 1.63 ins. ²	= 37.09%
Total	= 4.40 ins.²	= 100.00%

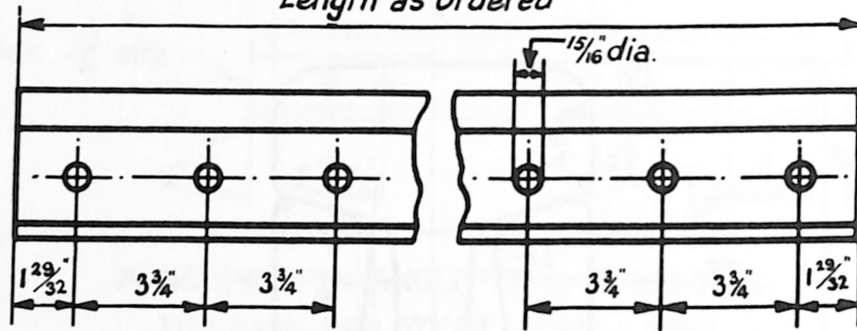
WEIGHT PER YARD	= 44.89 lb.
MOMENT OF INERTIA	= 8.10 ins. ⁴
SECTION MODULUS HEAD	= 4.22 ins. ³
SECTION MODULUS BASE	= 4.58 ins. ³

FISHPLATE

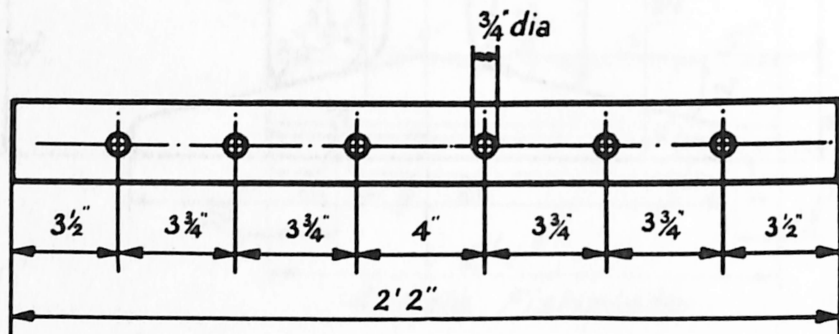
AREA	= 1.30 ins. ²
WEIGHT PER PAIR (6 HOLE)	= 18.13 lb.
MOMENT OF INERTIA	= .541 ins. ⁴

**DIMENSIONS OF STANDARD DRILLING FOR
45 lb. RAILS**

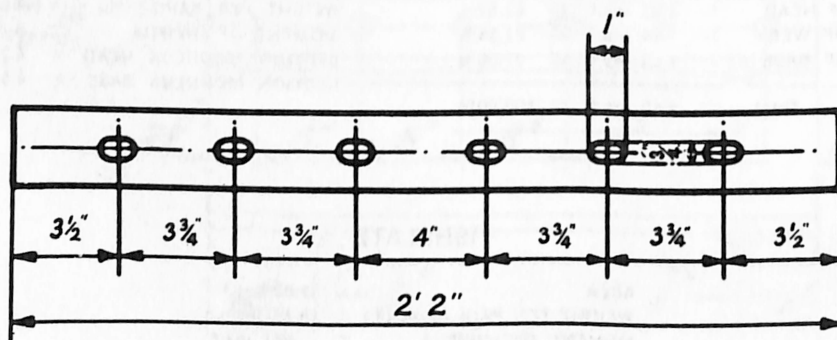
Length as Ordered



**DIMENSIONS OF STANDARD PUNCHING FOR
FISHPLATES FOR 45 lb. RAILS**

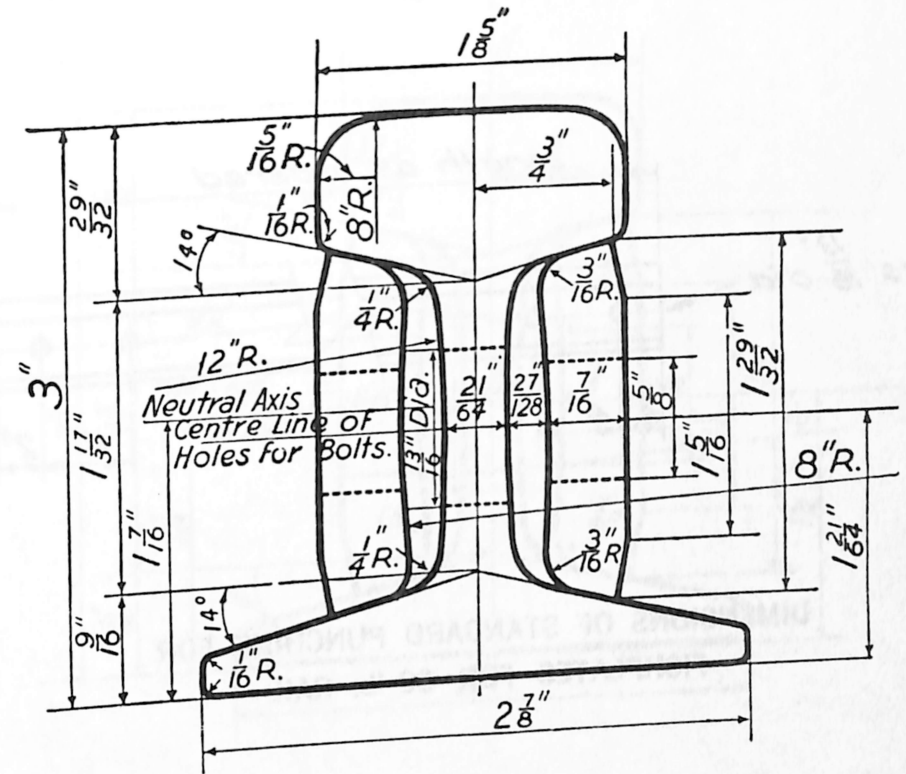


Elevation of Fishplate (Round Holes)



Elevation of Fishplate (Oval Holes)

30 lb. RAIL AND FISHPLATES



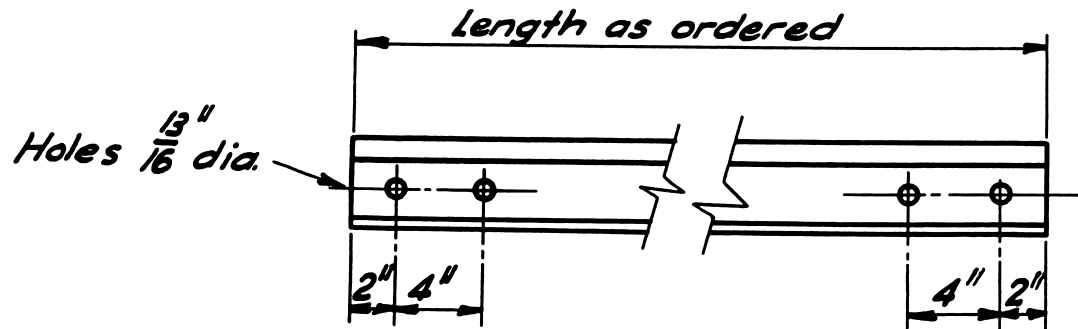
RAIL

AREA OF HEAD	= 1.25 ins. ²	= 42.80%	WEIGHT PER YARD	= 29.79 lb.
AREA OF WEB	= .57 ins. ²	= 19.55%	MOMENT OF INERTIA	= 3.52 ins. ⁴
AREA OF BASE	= 1.10 ins. ²	= 37.65%	SECTION MODULUS HEAD	= 2.26 ins. ³
Total	= 2.92 ins. ²	= 100.00%	SECTION MODULUS BASE	= 2.44 ins. ³

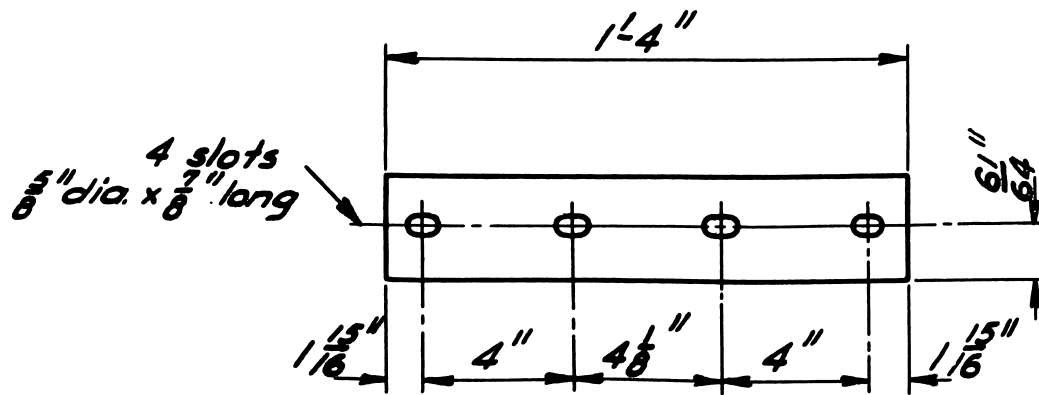
FISHPLATE

AREA	= .79 ins. ²
WEIGHT PER PAIR (4 HOLE)	= 6.68 lb.
MOMENT OF INERTIA	= .21 ins. ⁴
SECTION MODULUS HEAD	= .22 ins. ³
SECTION MODULUS BASE	= .22 ins. ³

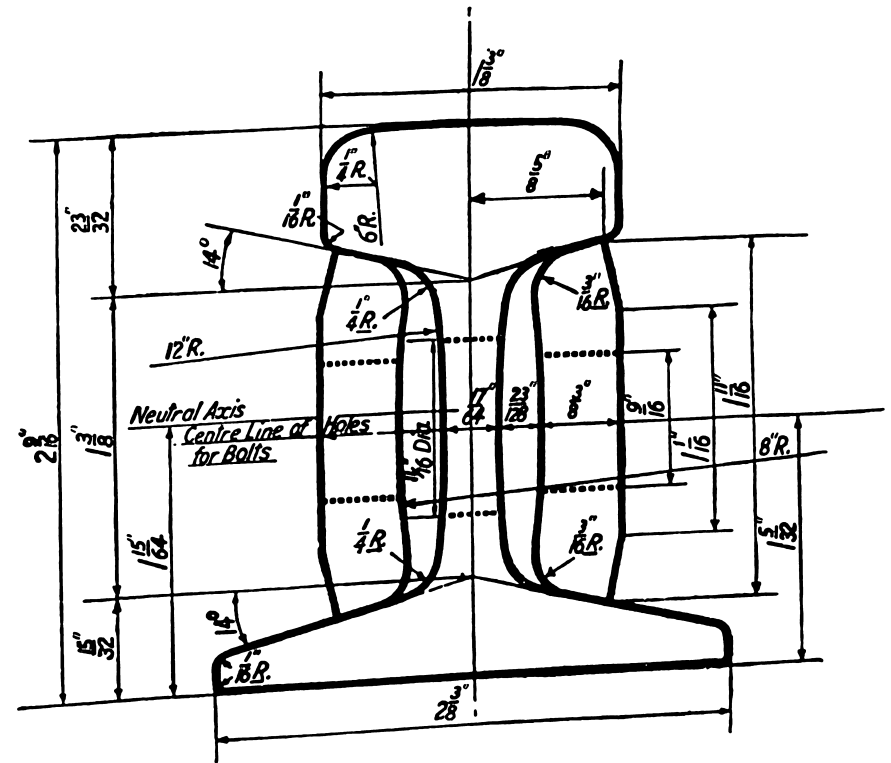
DIMENSIONS OF STANDARD DRILLING FOR
30 lb. RAIL



DIMENSIONS OF STANDARD PUNCHING FOR
FISHPLATES FOR 30 lb. RAIL



20 lb. RAIL AND FISHPLATES



RAIL

AREA OF HEAD	=	.83 ins. ²	=	41.28%	WEIGHT PER YARD	=	20.50 lb.
AREA OF WEB	=	.42 ins. ²	=	20.96%	MOMENT OF INERTIA	=	1.80 ins. ⁴
AREA OF BASE	=	.76 ins. ²	=	37.76%	SECTION MODULUS HEAD	=	1.35 ins. ³
Total	=	2.01 ins. ²	=	100.00%	SECTION MODULUS BASE	=	1.47 ins. ³

FISHPLATE

AREA	=	.59 ins. ²
WEIGHT PER PAIR (4 HOLE)	=	5.07 lb.
MOMENT OF INERTIA	=	.10 ins. ⁴
SECTION MODULUS HEAD	=	.12 ins. ³
SECTION MODULUS BASE	=	.12 ins. ³