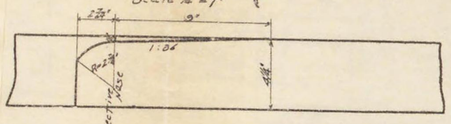
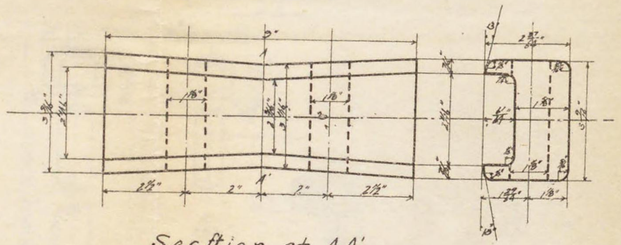
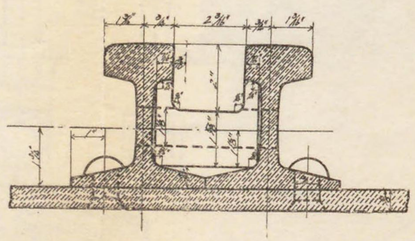
Diagram Showing the Inclination of Nose.
Scale 12" = 1'



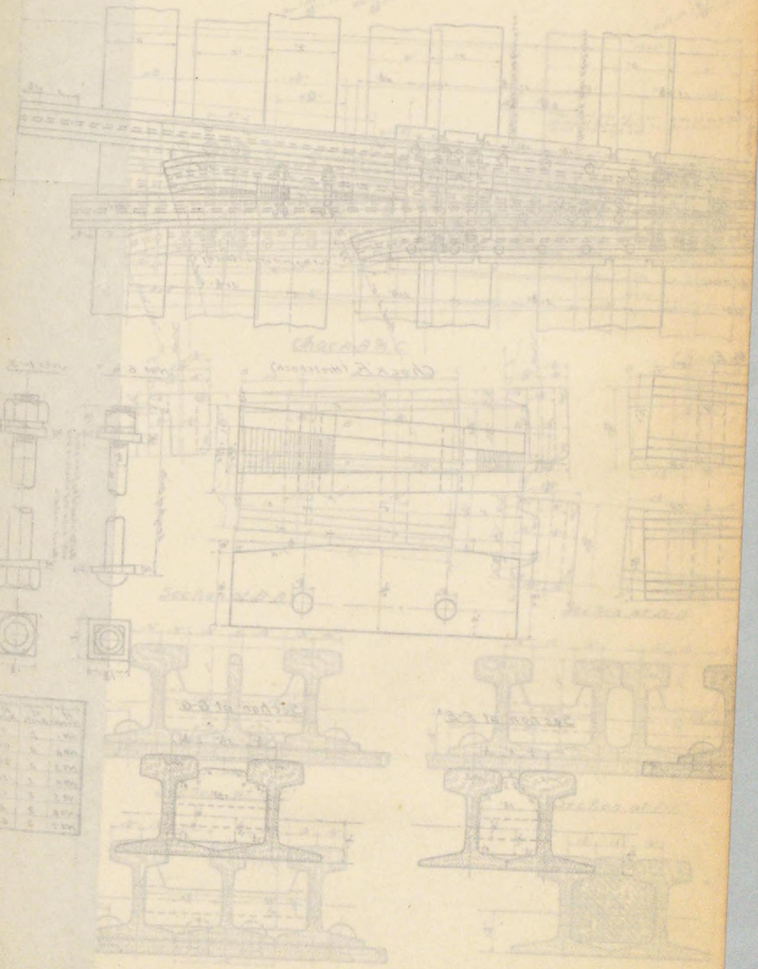
Chocck No. 5.

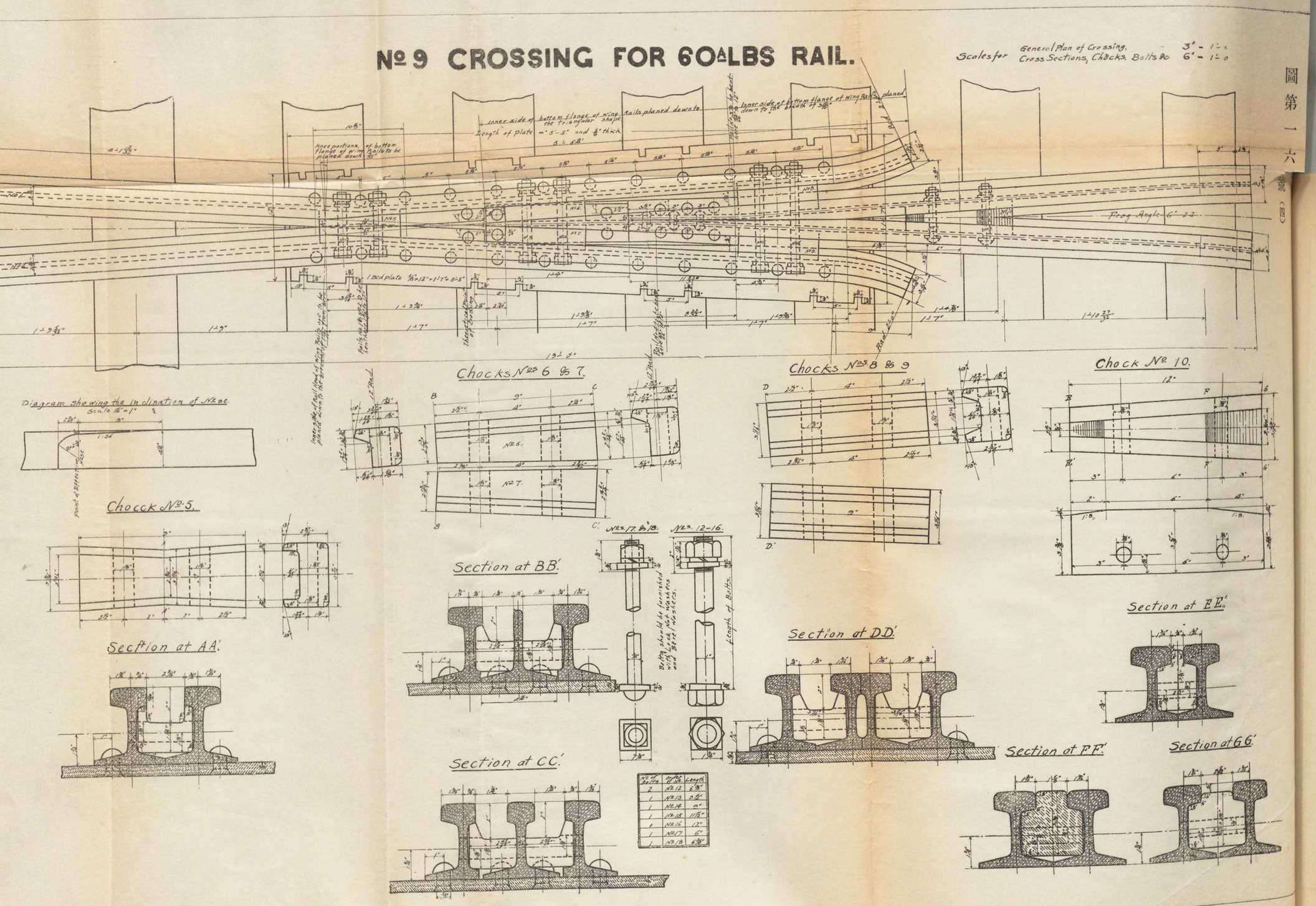


Section at AA.



CENTER CROSSING FOR



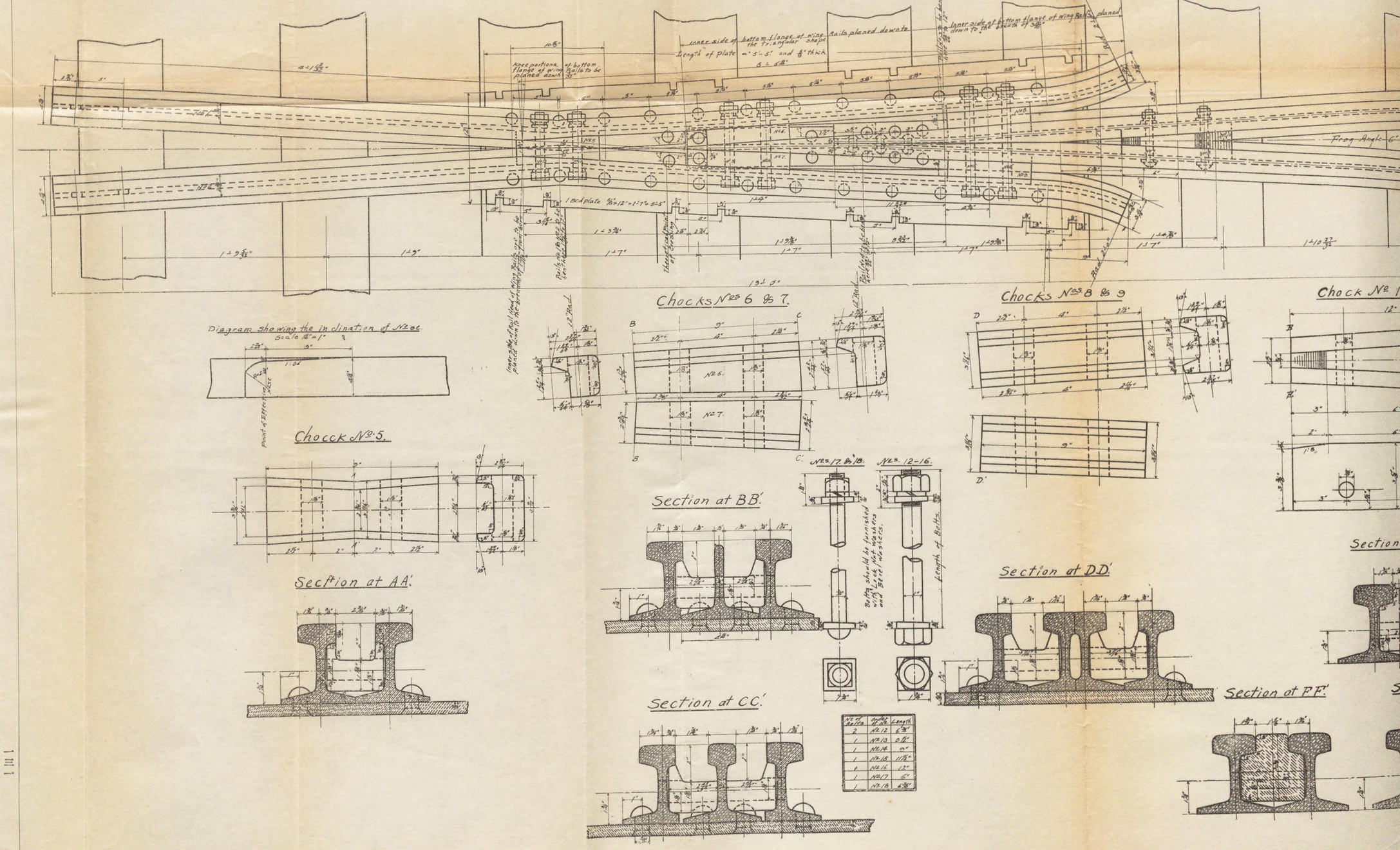


Nº 9 CROSSING FOR 60 LBS RAIL.
Scales for General Plan of Crossing, 3" = 1'-0
Cross Sections, Chocks, Bolts &c 6" = 1'-0
Frog Angle 6° 22'
Diagram showing the inclination of Nose.
Chocks Nos 6 & 7.
Chocks Nos 8 & 9
Chock Nº 10.
Chocck Nº 5.
Section at BB'.
Section at DD'.
Section at EE'.
Section at AA'.
Section at CC'.
Section at FF'.
Section at GG'.
Nos 17 & 18.
Nos 12-16.
Length of Bolts.

圖第一六號（四）

No 9 CROSSING FOR 60 LBS RAIL.

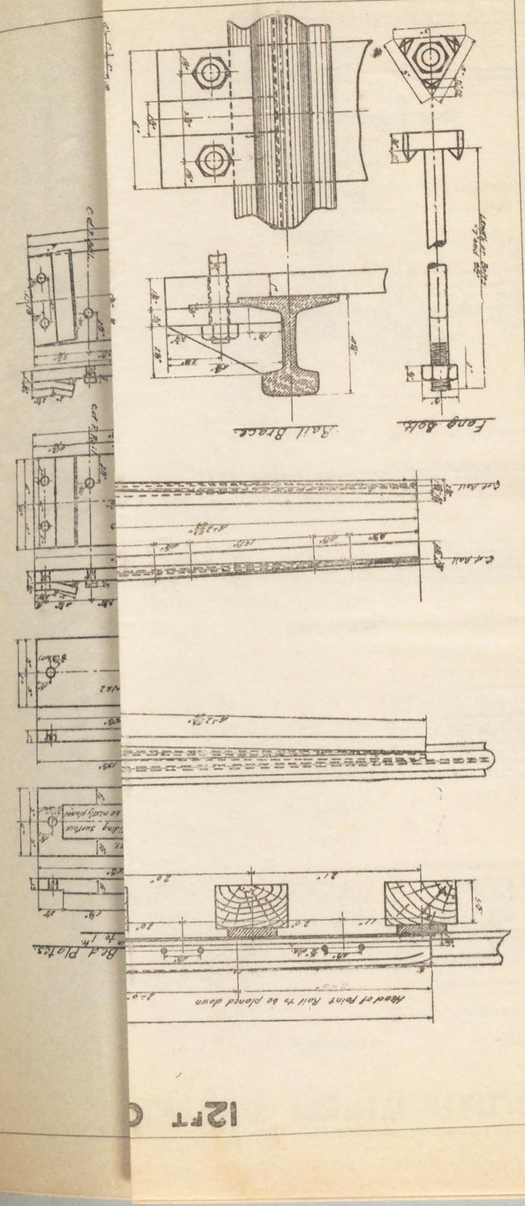
Scales for General Plan of Crossing, Cross Sections, Chocks, Bolts &c



No of Bolts	Order of No.	Length
2	No 12	6 3/8"
1	No 13	8 1/2"
1	No 14	9"
1	No 15	11 1/2"
1	No 16	12"
1	No 17	6"
1	No 18	6 3/4"

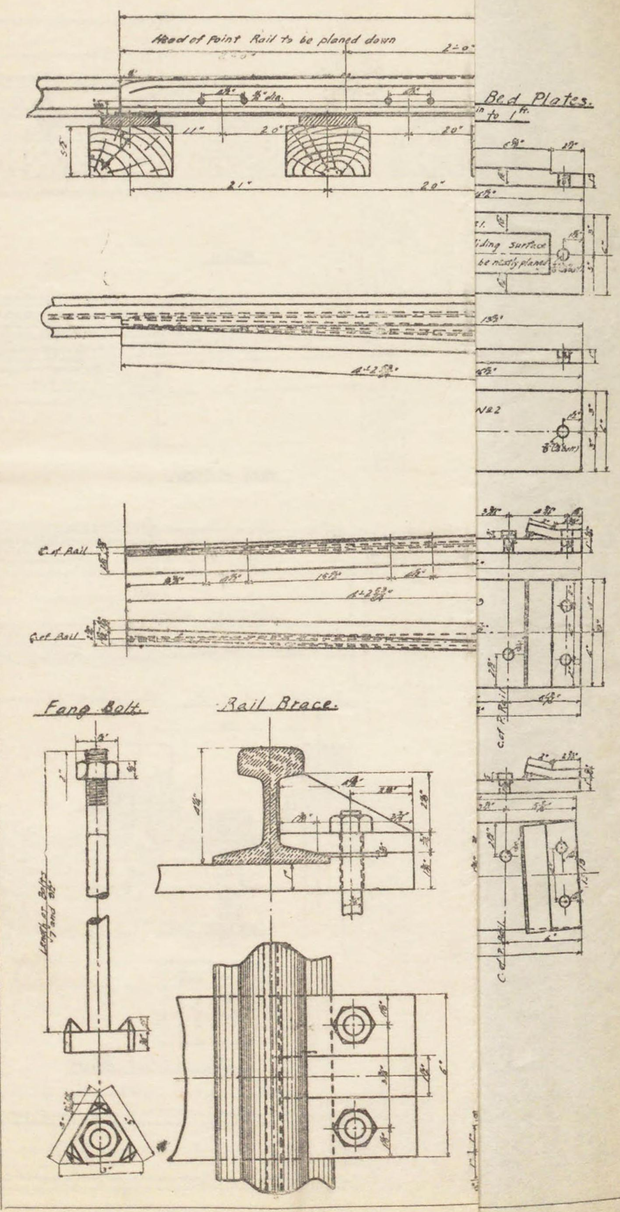
No 9 CROSSING FOR SCALES RAIL.

圖第一十六號（甲）



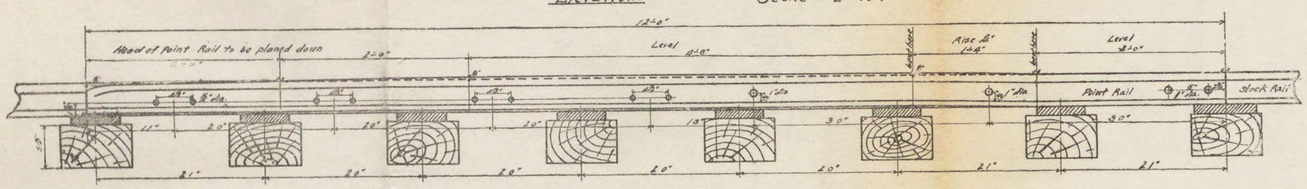
圖第一六號（五）

12FT C

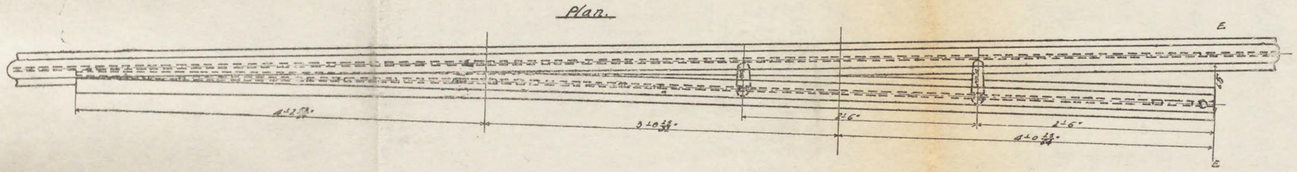


12FT CENTER POINT RAIL FOR Nº9 SINGLE SLIP SWITCH.

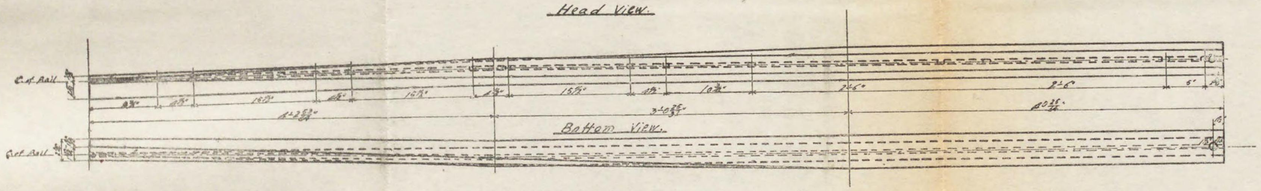
Elevation. Scale 2 in to 1 ft.



Plan.

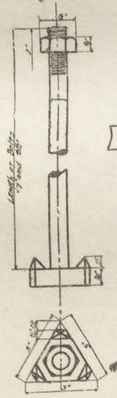


Head View.

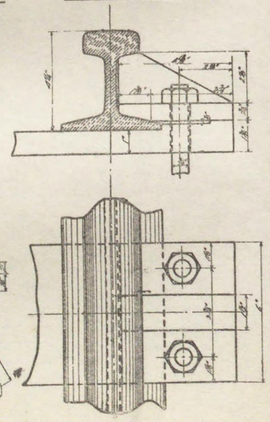


Bottom View.

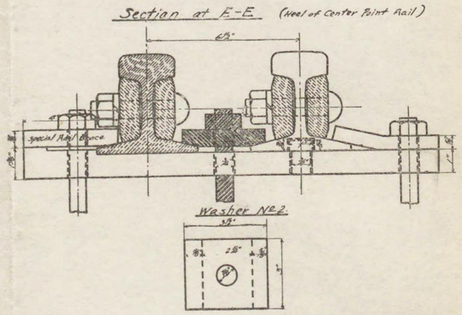
Fang Bolt.



Rail Brace.

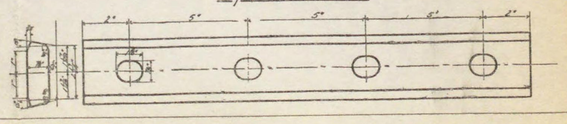


Section at E-E. (Heel of Center Point Rail)



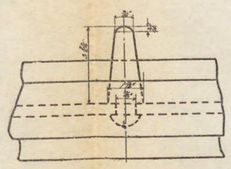
Washer Nº2.

Special Fish Plate.

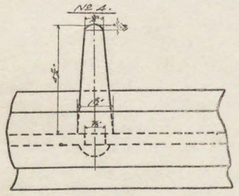


Studs.

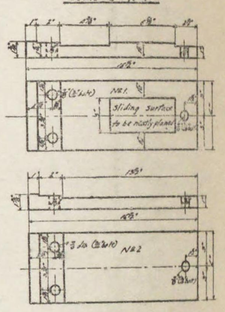
Nº3.



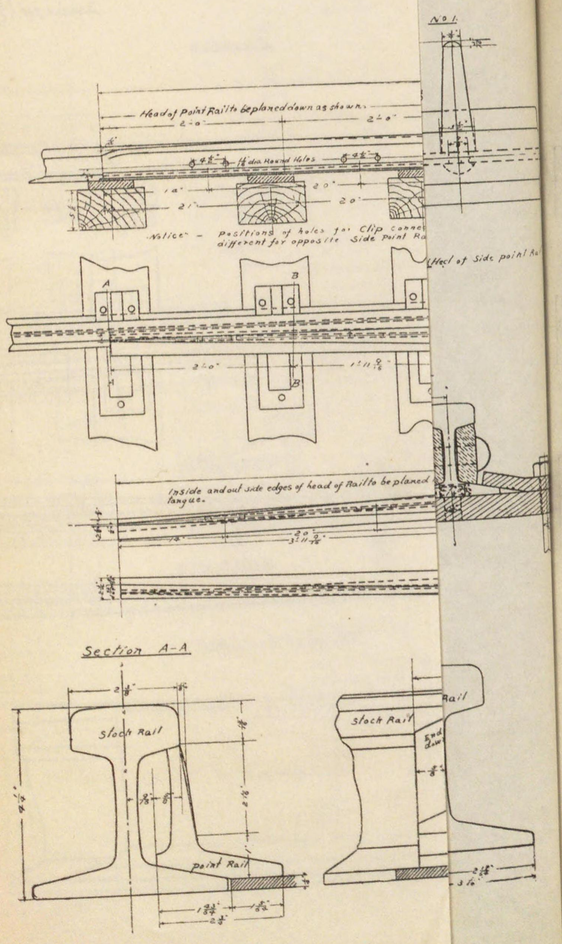
Nº4.



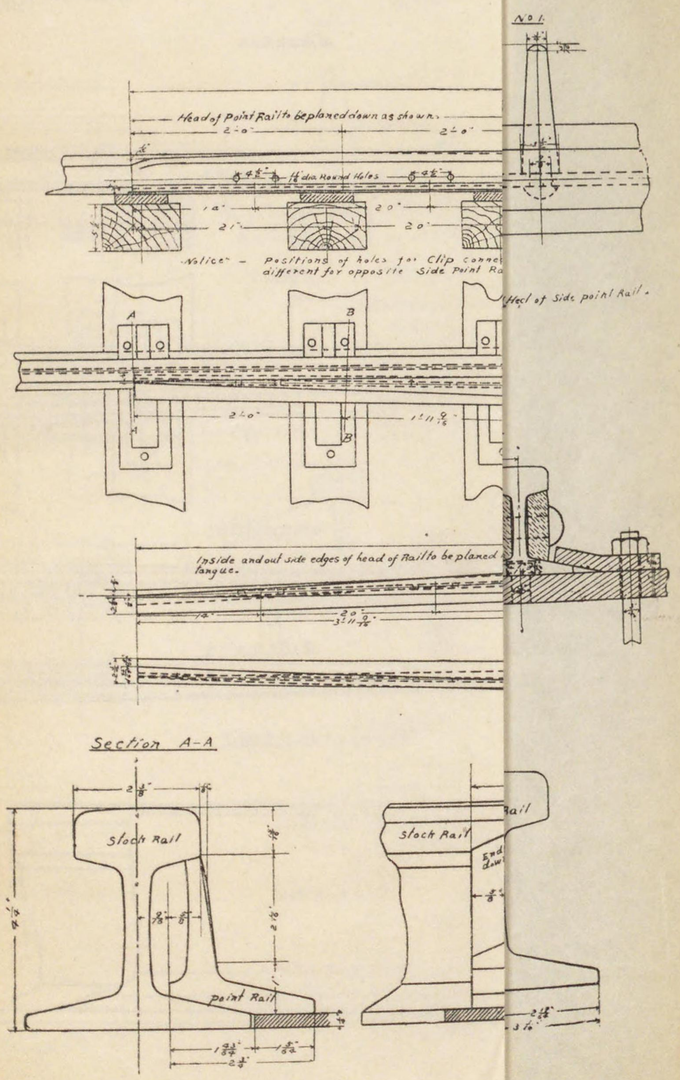
Cast Steel Bed Plates.
Scale 3 in to 1 ft.



圖第一六號（五）


No 1.
Head of Point Rail to be planed down as shown.
Notice - Positions of holes for Clip conne
different for opposite Side Point Ra
Heel of Side point Ra
Inside and out side edges of head of Rail to be planed
tangue.
Section A-A
Stock Rail
Point Rail
Stock Rail
Rail

圖第一六號（六）

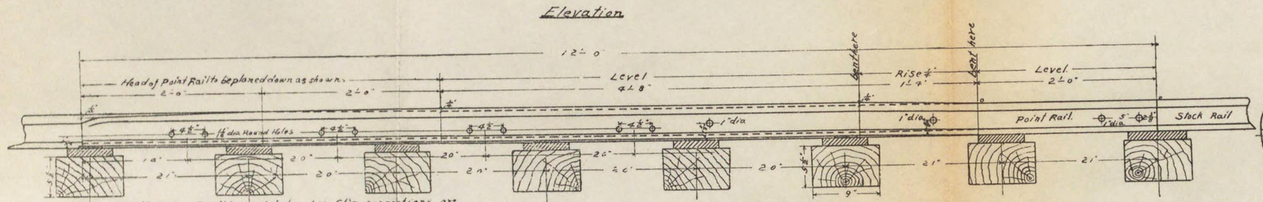

12
No 1.
Head of Point Rail to be planed down as shown.
2'-0"
2'-0"
1¼" dia. Round Holes
14"
20"
21"
20"
Notice - Positions of holes for Clip conne
different for opposite Side Point Ra
Heel of Side point Rail.
A
B
2'-0"
Inside and out side edges of head of Rail to be planed
tangue.
Section A-A
Stock Rail
Point Rail
Stock Rail
Rail

12 FT SIDE POINT RAIL FOR № 9 SLIP SWITCH.

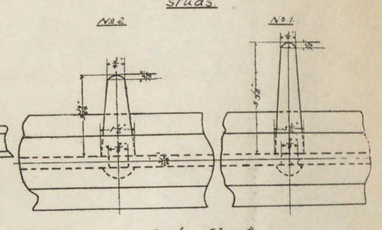
Scales for { Elevation & plan = 2"-1ft / Cross section = Natural }

圖第一六號(六)

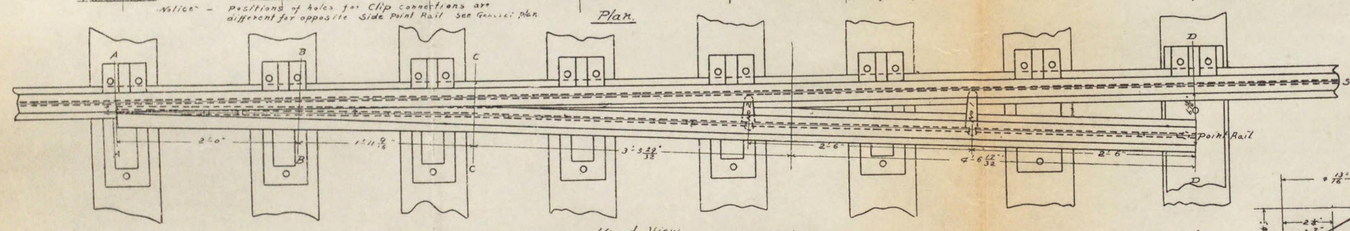
Elevation



Studs

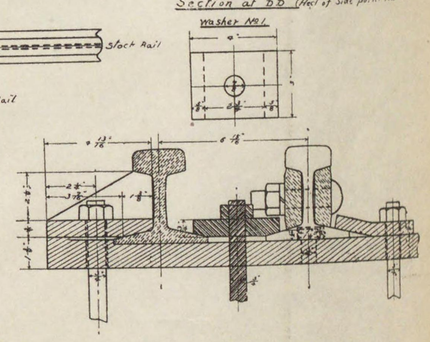


Plan.

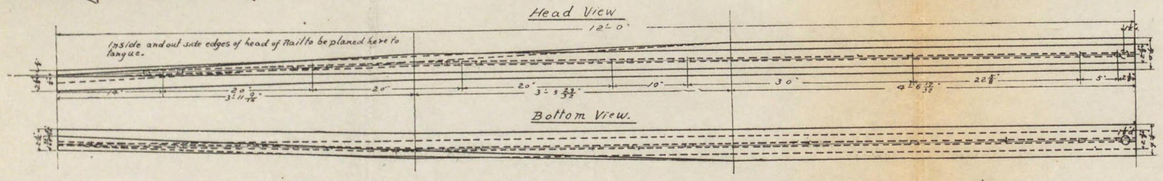


Scale 6"-1ft

Section at DD (Heel of Side point Rail.

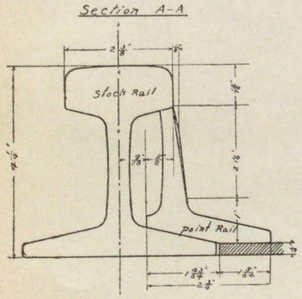


Head View

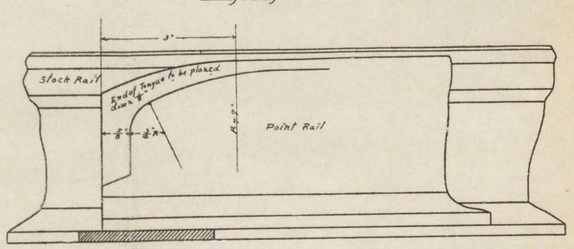


Bottom View.

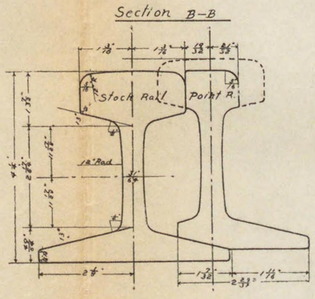
Section A-A



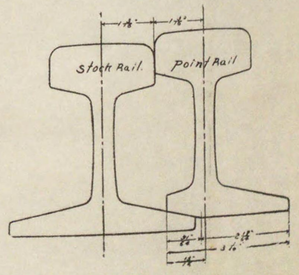
Tongue of Point Rail



Section B-B



Section C-C



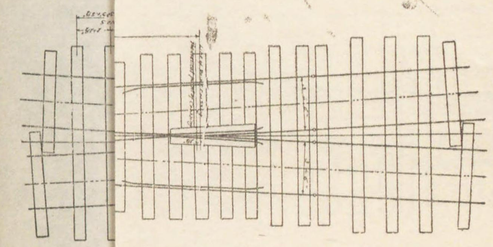
1 of 1 plan

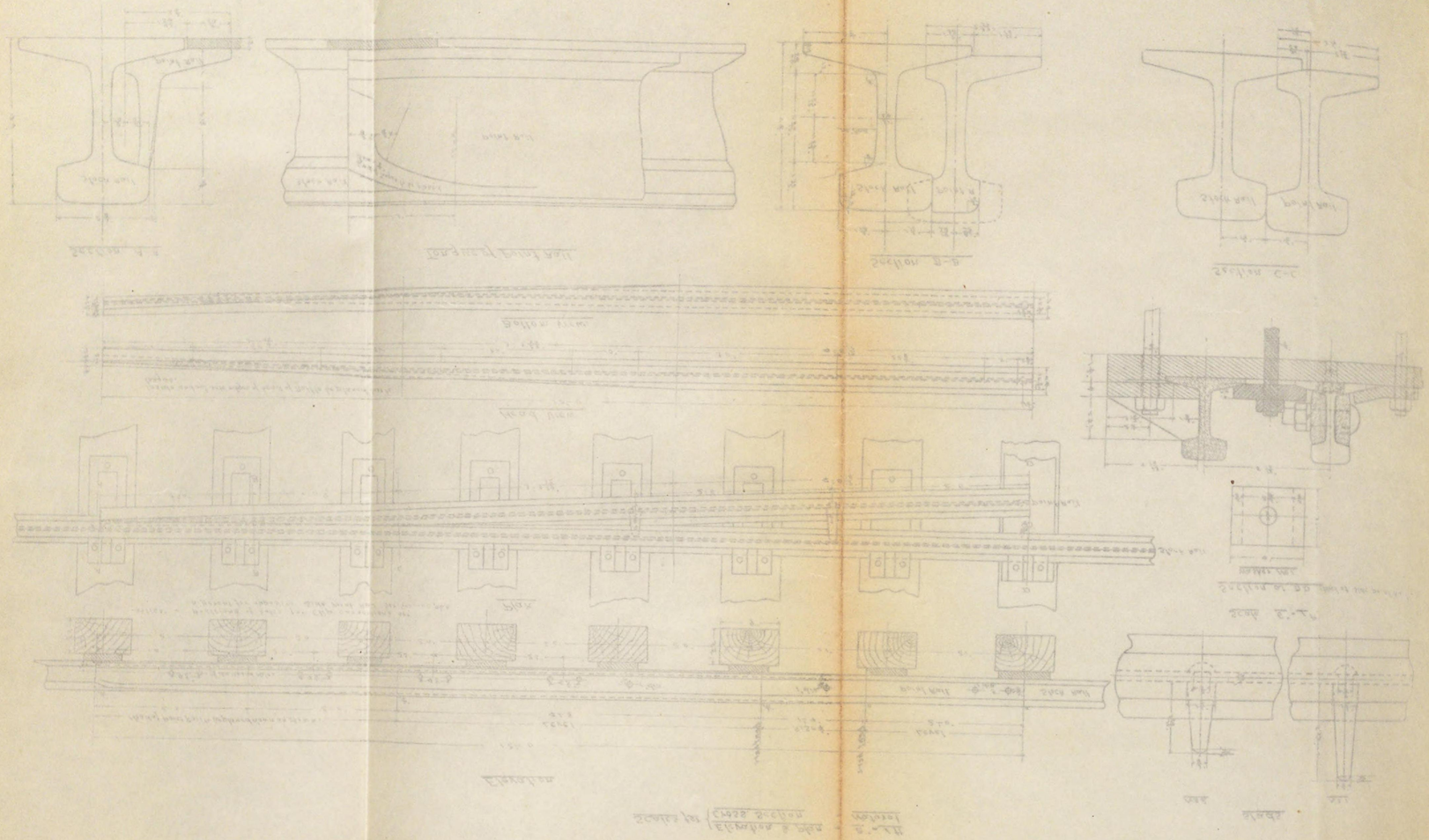
圖第一六號(七)

Right of Way Plan for No 9 Cross-over
Annexed to Drawing Sheet 1

Nos.	Description.
1.	Centre Crossings
2.	No 9 Crossings (and)
3.	Point Rails
4.	Guard Rails
5.	Stocks
6.	"
7.	"
8.	Heel Bars
9.	"
10.	"
11.	Clips
12.	"
13.	"
14.	"
15.	Coach Iron-Bed Plates
16.	"
17.	"
18.	"
19.	Rail Braces
20.	Wedges
21.	"
22.	Chairs
23.	Fang-Bolts
24.	"
25.	Wedges
26.	Special Tie Plates
27.	Wrought Iron Stays
28.	"
29.	"
30.	Steel Angle Splice Bars
31.	Complete Switch Connection

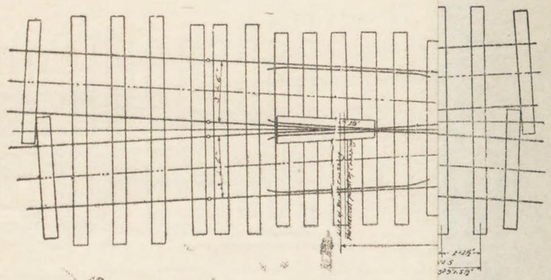
Sizes.	
9 ft. 0 in.	
12 ft. 8 in.	
26 ft. 2 in.	
12 ft. 8 in.	
10 ft. 0 in.	
No 1	
No 2	
No 3	
No 4	
No 1	
No 2	
No 3	
No 4	
(Special Section)	
3 ft. 4 in.	
3 ft. 4 in.	
2 ft. 10½ in.	
1 ft. 7 in.	
No 1	
No 2	
No 3	
No 4	





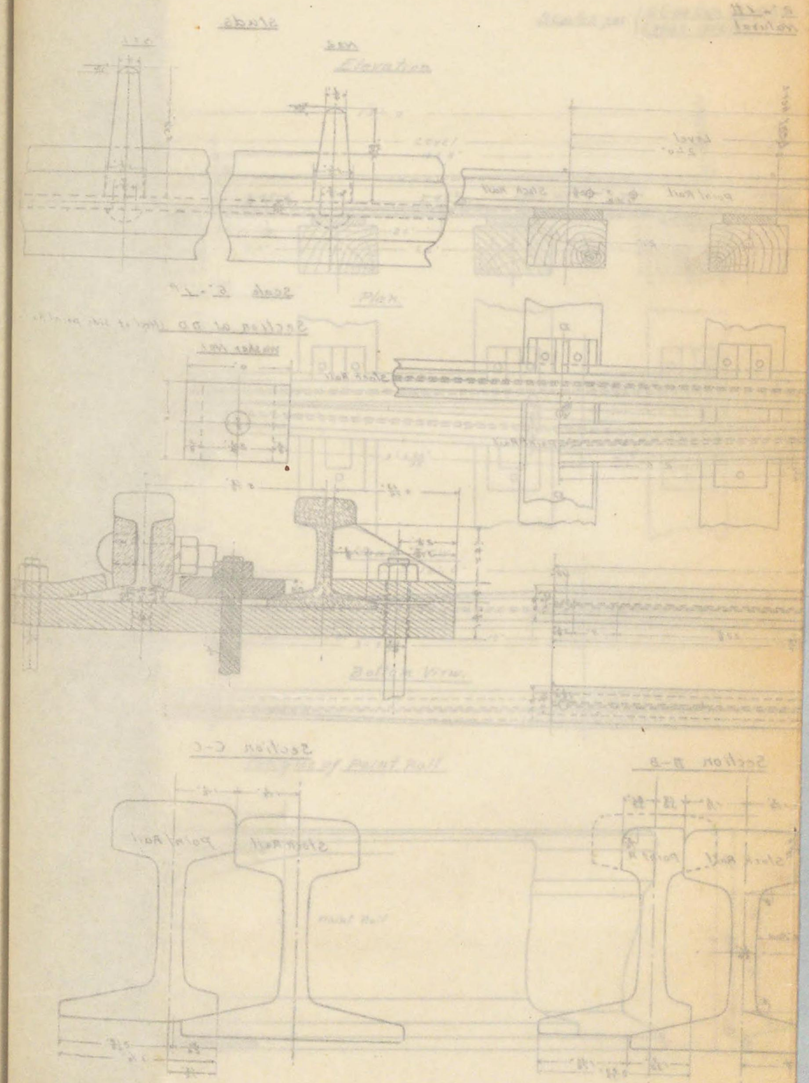
IS FT SIDE POINT RAIL FOR No 9 CUR SWITCH.

圖第一六號（七）



List of Materials for No 9 Cross
Annexed to Drawing Sheet

No of Pieces	Descriptions
2.	center Crossings
2.	No 9 Crossings (End)
4.	Point Rails 12 ± 0"
4.	Guard Rails 9 ± 0"
4.	Stock " 17 ± 8⅜"
2.	" " 26 ± ⅞"
4.	" " 13 ± 0"
2.	" " 17 ± ⅜"
1.	" " 18 ± 0"
2.	Steel Tie Bars No 1.
2.	" No 2
2.	" No 3
2.	" No 4.
4.	Clips No 1.
4.	" No 2.
4.	" No 3.
4.	" No 4.
24.	Cast Iron Bed Plates No 1.
4.	" No 2.
2.	" No 3.
2.	" No 4.
32.	Rail Braces
2.	" (special Brace)
2.	Washers No 1 3"×4"
2.	" No 2 3"×3½"
4.	Pins
76.	Fang Bolts ¾" dia 8½"
28.	" " " 7"
4.	Washers
16.	Special Fish plates 1 ± 7"
2.	Wrought Iron Studs No 1
2.	" " " No 2
2.	" " " No 3.
2	" " " No 4.
38.	Steel Angle Splice Bars
320.	Spikes
1.	Complete Switch Connection

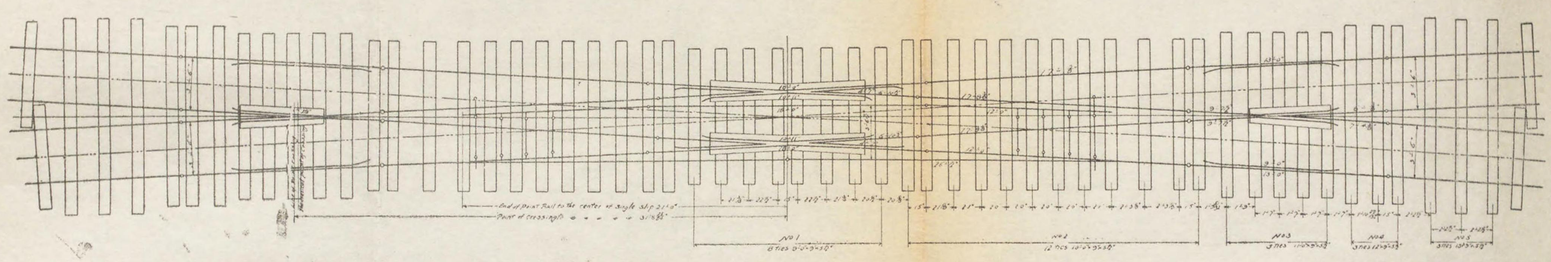


Sheet No 7.

No 9 SINGLE SLIP SWITCH.

Arrangement for Sleepers and Rails

Scale ⅜" = 1'0"



圖第一六號(七)

List of Materials for No 9 Crossing Single Slip Switch Annexed to Drawing Sheet Nos 1, 2, 5, 6, 7.

No of Pieces	Description		Remarks.
2.	Center Crossings		Complete with chairs, bolts &c.
2.	No 9 Crossings (End)		" " " "
4.	Point Rails	12 ± 0"	"Tongue Rails"
4.	Guard Rails	9 ± 0"	Complete with checks, braces &c.
4.	Stock "	17 ± 8¾"	
2.	" "	26 ± 8"	
4.	" "	13 ± 0"	
2.	" "	17 ± 8¾"	
1.	" "	18 ± 0"	Curved Rail
2.	Steel-Tie-Bars No 1.		Complete with 2-⅞" dia. bolts &c.
2.	" No 2		" " " " "
2.	" No 3		" " " " "
2.	" No 4.		" " " " "
4.	Clips No 1.		Complete with 2-⅞" dia. bolts &c.
4.	" No 2.		" " " " "
4.	" No 3		" " " " "
4.	" No 4.		" " " " "
24.	Cast Iron-Bed-Plates No 1.		With sliding surface.
4.	" No 2		Without " "
2.	" No 3		
2.	" No 4		
30.	Rail Braces		
2.	" (special Brace)		To fit at the Ends of 17'8¾" Rails
2.	Washers No 1	3"×4"	" " Hot Boy Point Rails.
2.	" No 2	3"×3½"	" " " " "
4.	Pins	⅝"	" " " " "
76.	Fang-Bolts ⅝" dia	8½"	Complete with Nuts & washers.
28.	" " "	7"	" " " " "
4.	Washers		To fit at the heel of Point Rails.
16.	Special Fish Plates	1'7"	Complete with Bolts Nuts &c.
2.	Wrought Iron Studs	No 1	
2.	" " "	No 2	
2.	" " "	No 3.	
2	" " "	No 4.	
38.	Steel Angle Splice Bars		Complete with 2-¾" dia bolts.
320.	Spikes		
1.	Complete Switch Connection		

List of Materials for Center Crossing of No 9 Crossing Single Slip Switch. Annexed to Drawing Sheet No 5.

No of Pieces	Description		Remarks.
1	Stock Rail	No 1 18 ± 0"	
1	Winged check Rail	No 2 10 ± 11"	
2	Side Point Rails	No 3 & 5 4 ± 7"	or "short Nose Rail"
2	Main "	No 4 & 6 6 ± 10½"	or "Long " "
1	Cast Iron check	A 9"	
2	" "	B 9"	
2	" "	C 9"	
2	" "	D 9"	
2	" "	E 9"	
2	" "	F 12"	
2	Bolts	No 1 1" dia 7"	For check A
2	"	No 2 " 9⅛"	" " B & C
2	"	No 3 " 9½"	" "
2	"	No 4 " 12⅛"	" " D & E
2	"	No 5 " 13"	" " "
2	"	No 6 ⅝" dia 6"	" " F
2	"	No 7 " 6⅜"	" "
1	⅜" steel Bed Plate	17½"×10± 0"	
64	⅝" dia Counter Sunk Rivets		Counter Sunk one end only
6	¾" dia Rivets		

List of Materials for No 9 Crossing of Single Slip Switch. Annexed to Drawing Sheet No 4.

No of Pieces	Description		Remarks.
1	Wing Rail	No 1 9 ± 7½"	
1	" "	No 2 9 ± 7½"	
1	Side Point Rail	No 3 6 ± 8"	or "short Nose Rail"
1	Main "	No 4 7 ± 4¾"	or "Long " "
1	Cast Iron check	No 5 9"	
1	" " "	No 6 9"	
1	" " "	No 7 9"	
1	" " "	No 8 9"	
1	" " "	No 9 9"	
1	" " "	No 10 12"	
2	Bolts	No 12 1" dia 6⅜"	
1	"	No 13 " 8½"	
1	"	No 14 " 9"	
1	"	No 15 " 11½"	
1	"	No 16 " 12"	
1	"	No 17 ⅞" dia 6"	
1	"	No 18 " 6⅜"	
1	⅜" steel Bed Plate	17" × 5 ± 5"	
36	¾" Counter sunk Rivets		one end only
3	¾" Rivets		

List of Sleepers for one set of No 9 Crossing Single Slip Switch Annexed to Drawing sheet No 7.

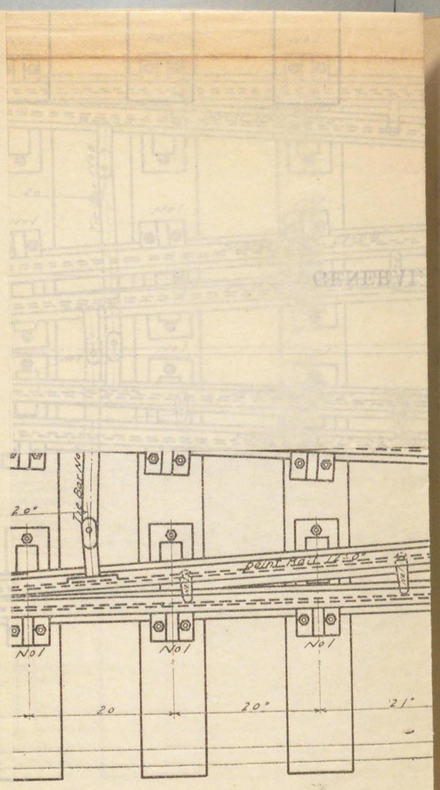
No of Pieces	Description	Remarks.
8	Sleepers No 1	9"×8½"×9 ± 0"
24	" No 2	" ×10 ± 0"
10	" No 3	" ×11 ± 0"
6	" No 4	" ×12 ± 0"
6	" No 5	" ×13 ± 0"

List of Rails for one set of No 9 Crossing Single Slip Switch Annexed to Drawing Sheet No 7.

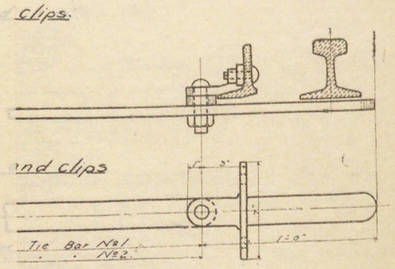
No of Pieces	Description		Remarks.
4	Wing Rails	9 ± 7½"	for No 9 Crossing (End)
2	Side Point Rails	6 ± 8"	" "
2	Main "	7 ± 4¾"	" "
2	Stock Rails	18 ± 0"	" Center Crossing
2	Winged check Rails	10 ± 11"	" "
4	Side Point Rails	4 ± 7"	" "
4	Main "	6 ± 10½"	" "
4	Point Rails	12 ± 0"	or "Tongue Rails"
4	Guard Rails	9 ± 0"	
4	Stock "	17 ± 8¾"	
2	" "	26 ± 8"	Partly Curved (Rad 300')
2	" "	17 ± 8¾"	
4	" "	13 ± 0"	
1	" "	18 ± 0"	Curved (Rad Bolted)

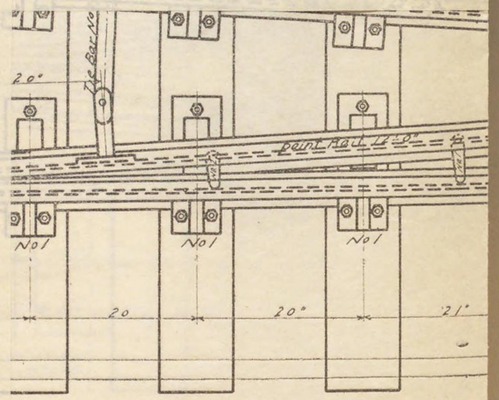
List of Materials for one set of Guard Rail of No 9 Crossing Single Slip Switch Annexed to Drawing sheet No 2.

No of Pieces	Description		Remarks.
1	Rail	9 ± 0"	Curved at ends.
5	Rail Braces		
2	Chocks		
10	Bolts for Braces	8"	
2	" " Chocks	6"	

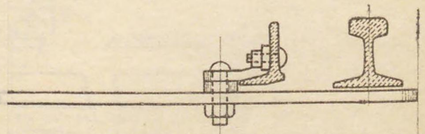


clips.

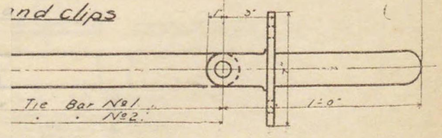




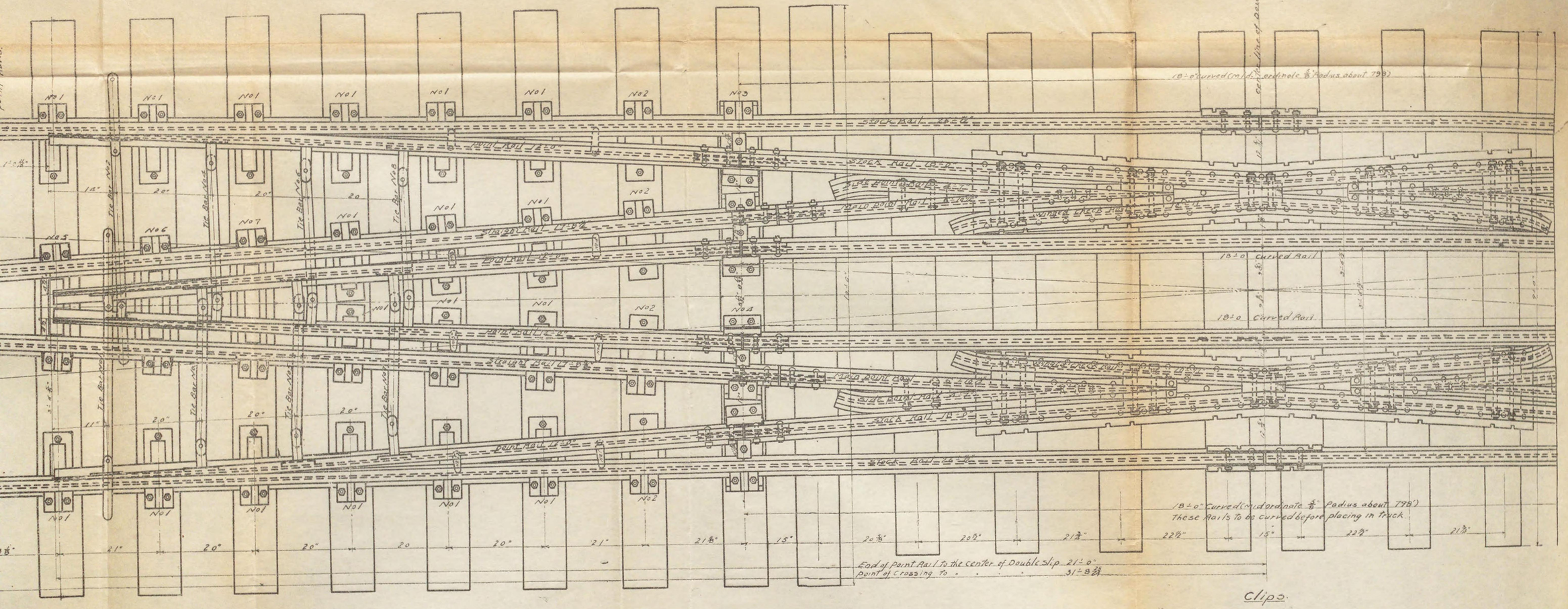
clips.



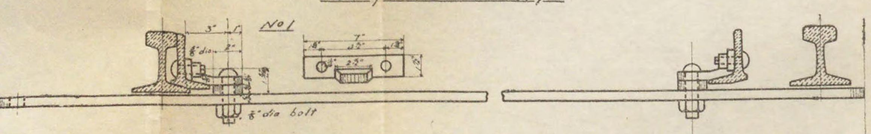
nd clips



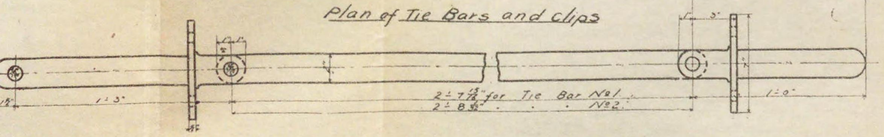
GENERAL PLAN OF NO 9 DOUBLE SLIP SWITCH. (1)



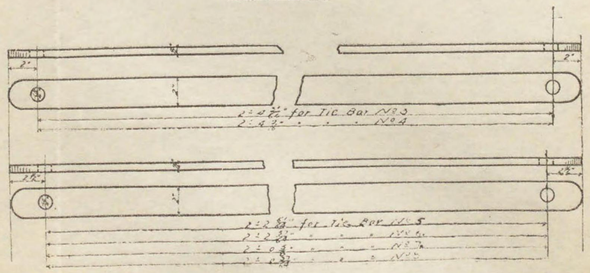
View of Tie Bars and Clips.



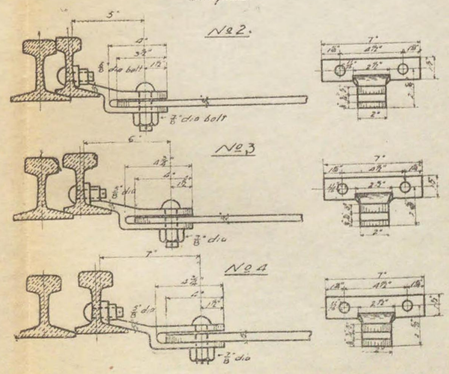
Plan of Tie Bars and clips



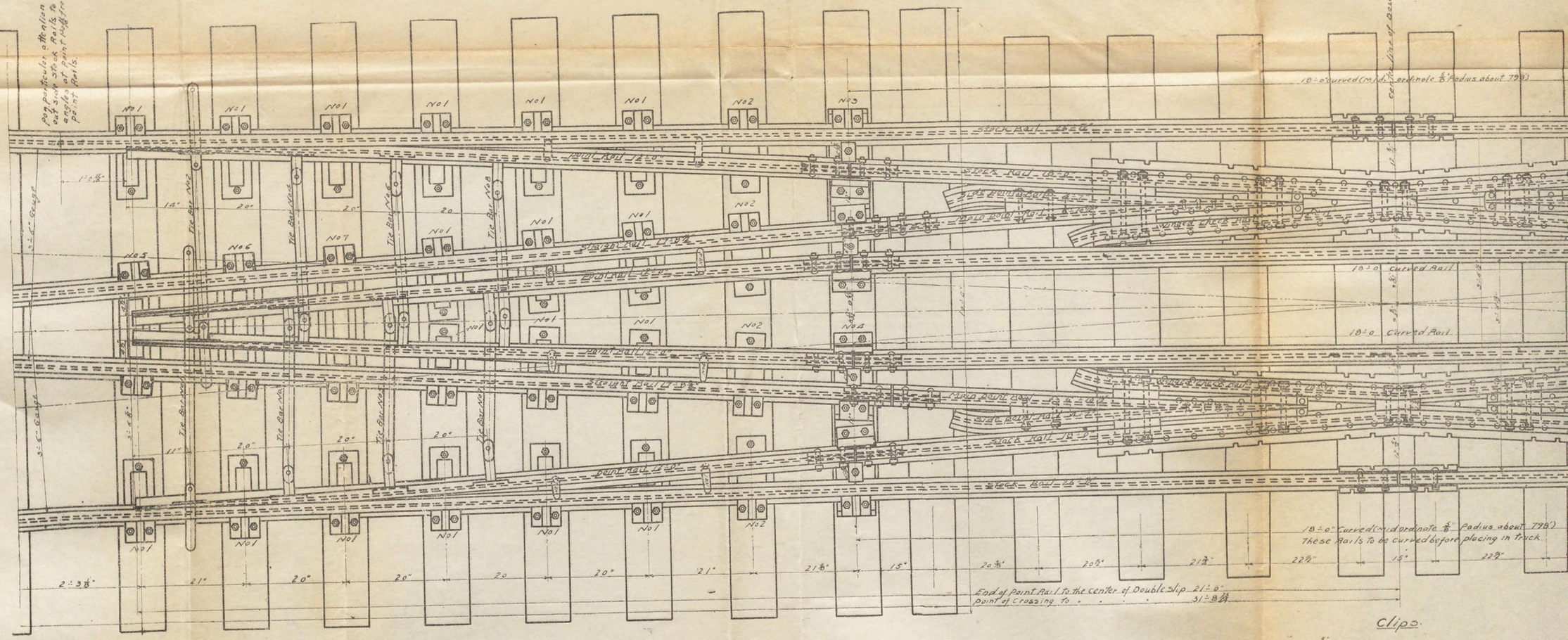
Tie Bars.



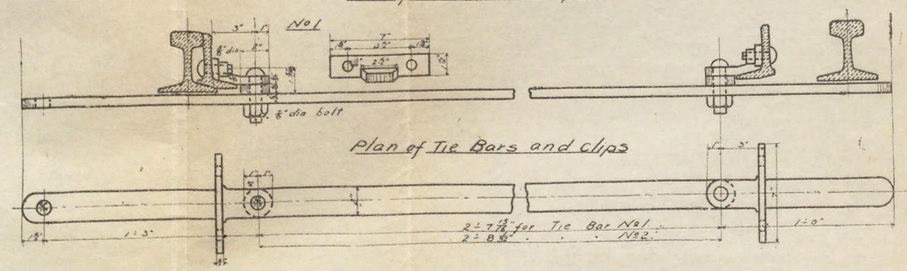
Clips.



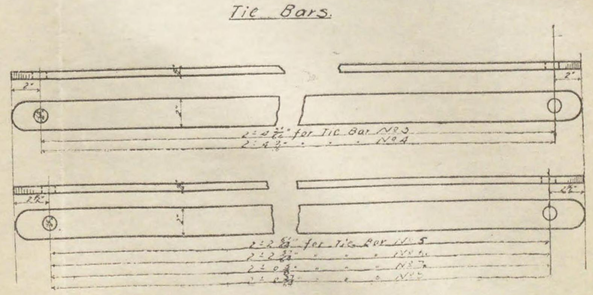
GENERAL PLAN OF NO 9 DOUBLE SLIP SWITCH. (1)



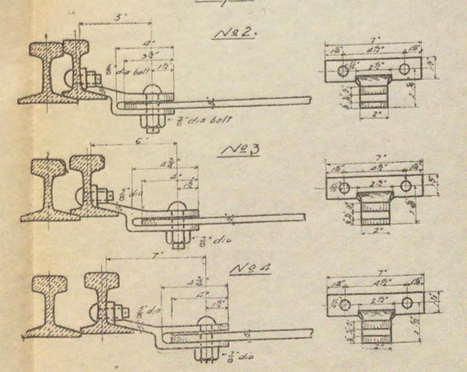
View of Tie Bars and Clips.



Tie Bars.

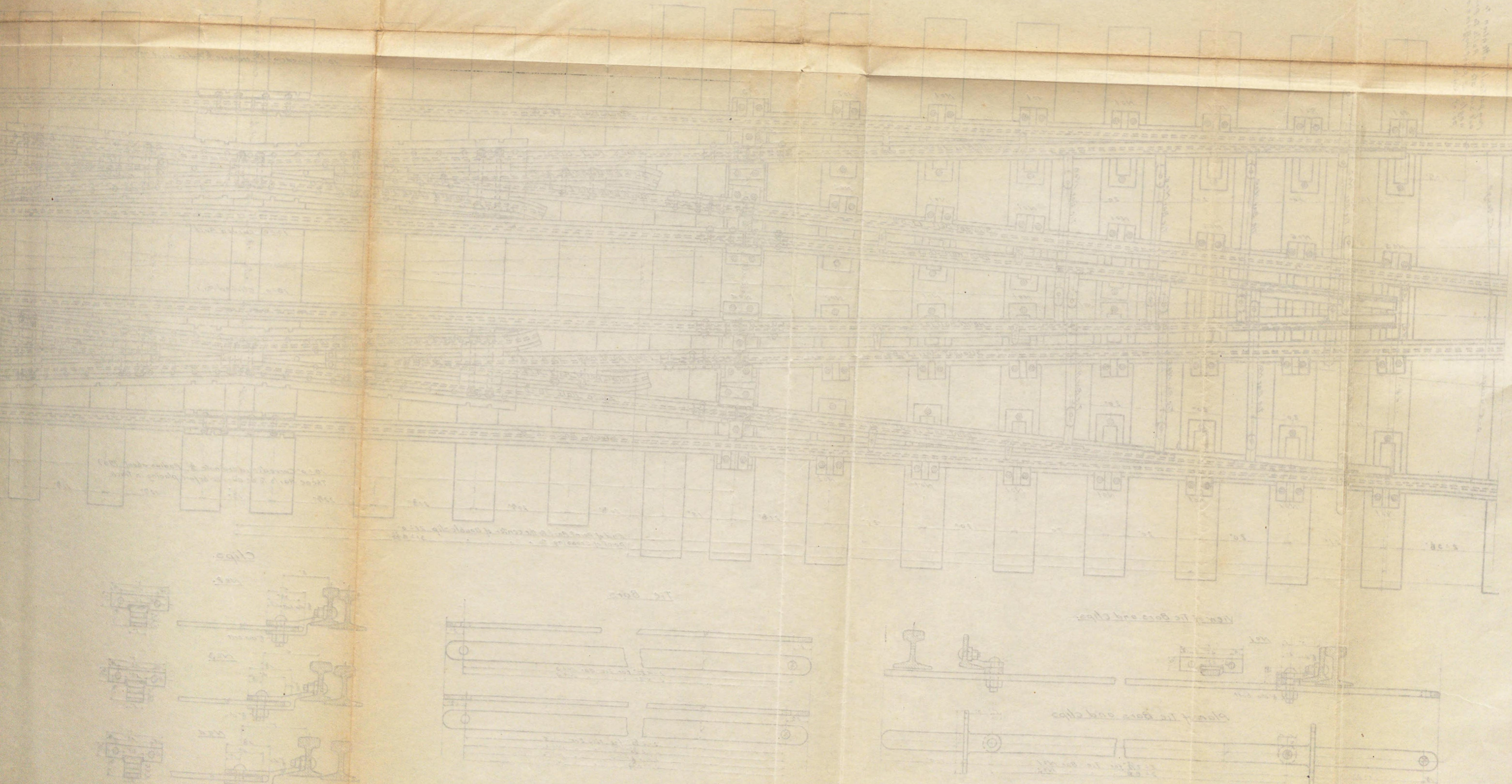


Clips.

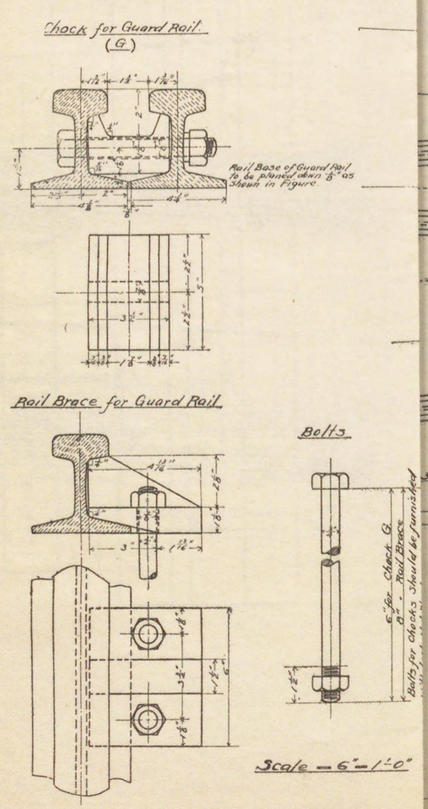


1 三五

GENERAL PLAN OF NO 9 DOUBLE SLIP SWITCH. (1)

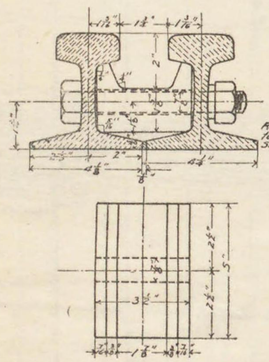


圖第一六號（九）

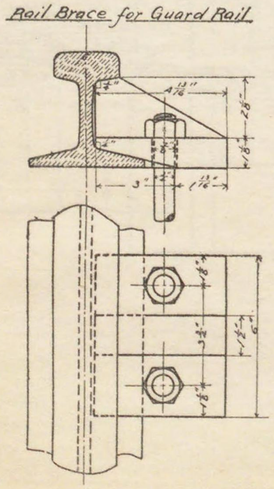

Chock for Guard Rail
(G)
Rail Base of Guard Rail to be planed down 1/8" as shown in Figure
Rail Brace for Guard Rail
Bolts
6" for Chock G.
8" - Rail Brace
Bolts for Chocks should be furnished
Scale — 6" = 1'-0"

圖第一六號(九)

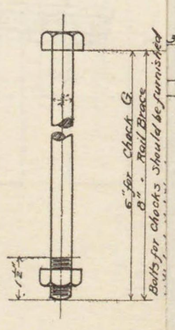
Chock for Guard Rail
(G)



Rail Brace for Guard Rail



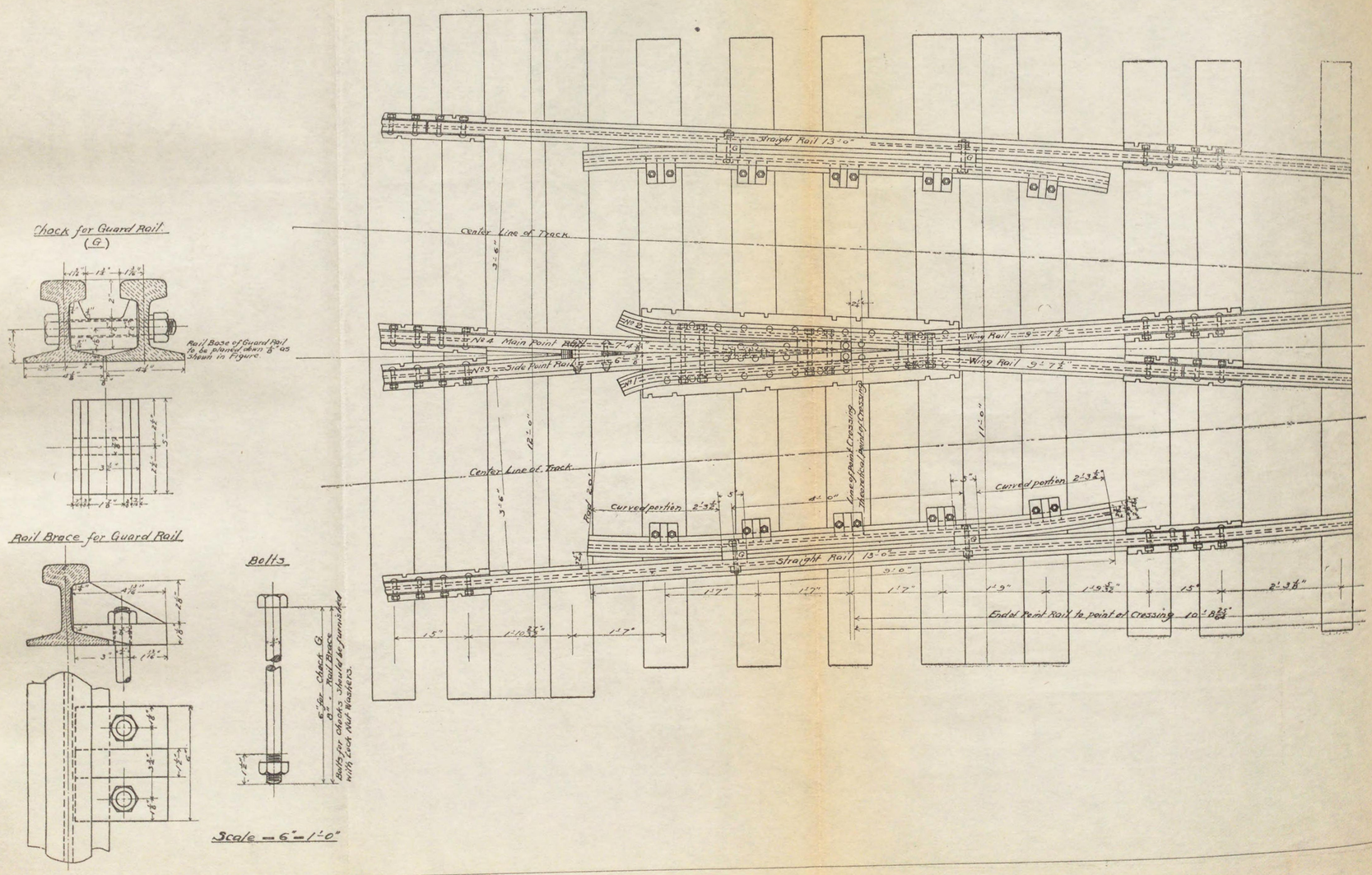
Bolts



Scale — 6"—1'-0"

GENERAL PLAN OF NO 9 DOUBLB SLIP SWITCH. (2)

圖第一六號（九）

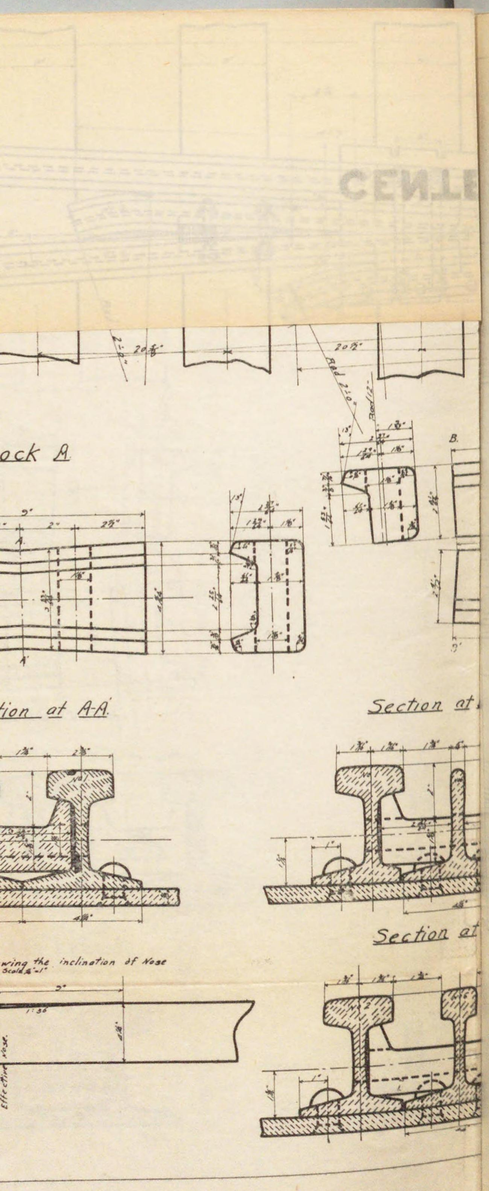


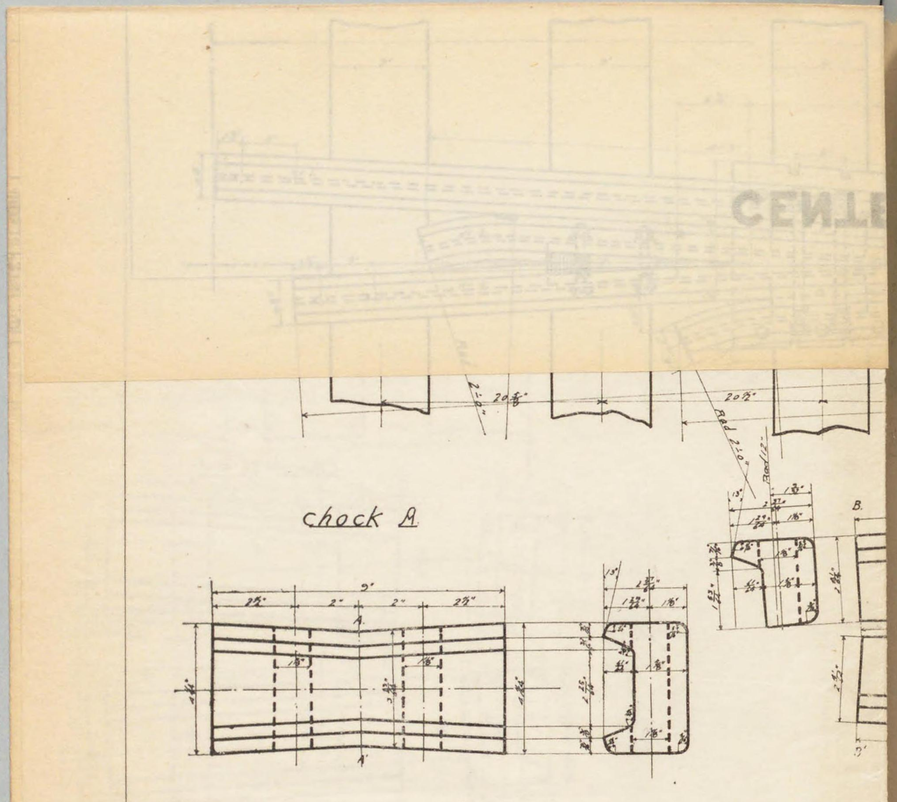
Chock for Guard Rail.
(G)

Rail Brace for Guard Rail.

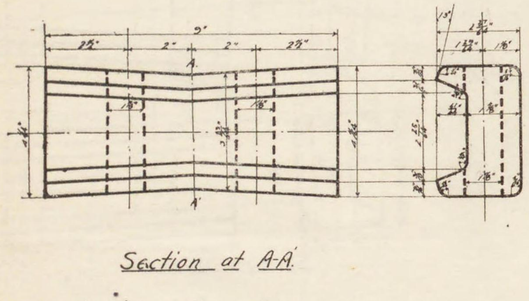
Bolts.

Scale — 6"=1'-0"


ock A
tion at A-A
Section at
Section at
wing the inclination of Nose



Chock A



Section at A-A'

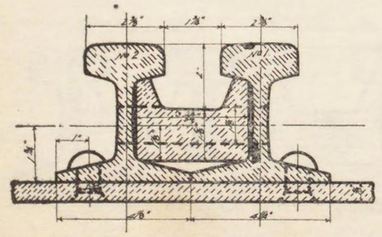
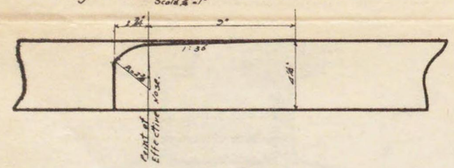
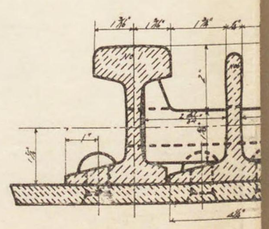


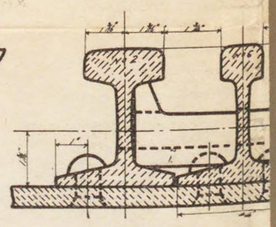
Diagram showing the inclination of Nose

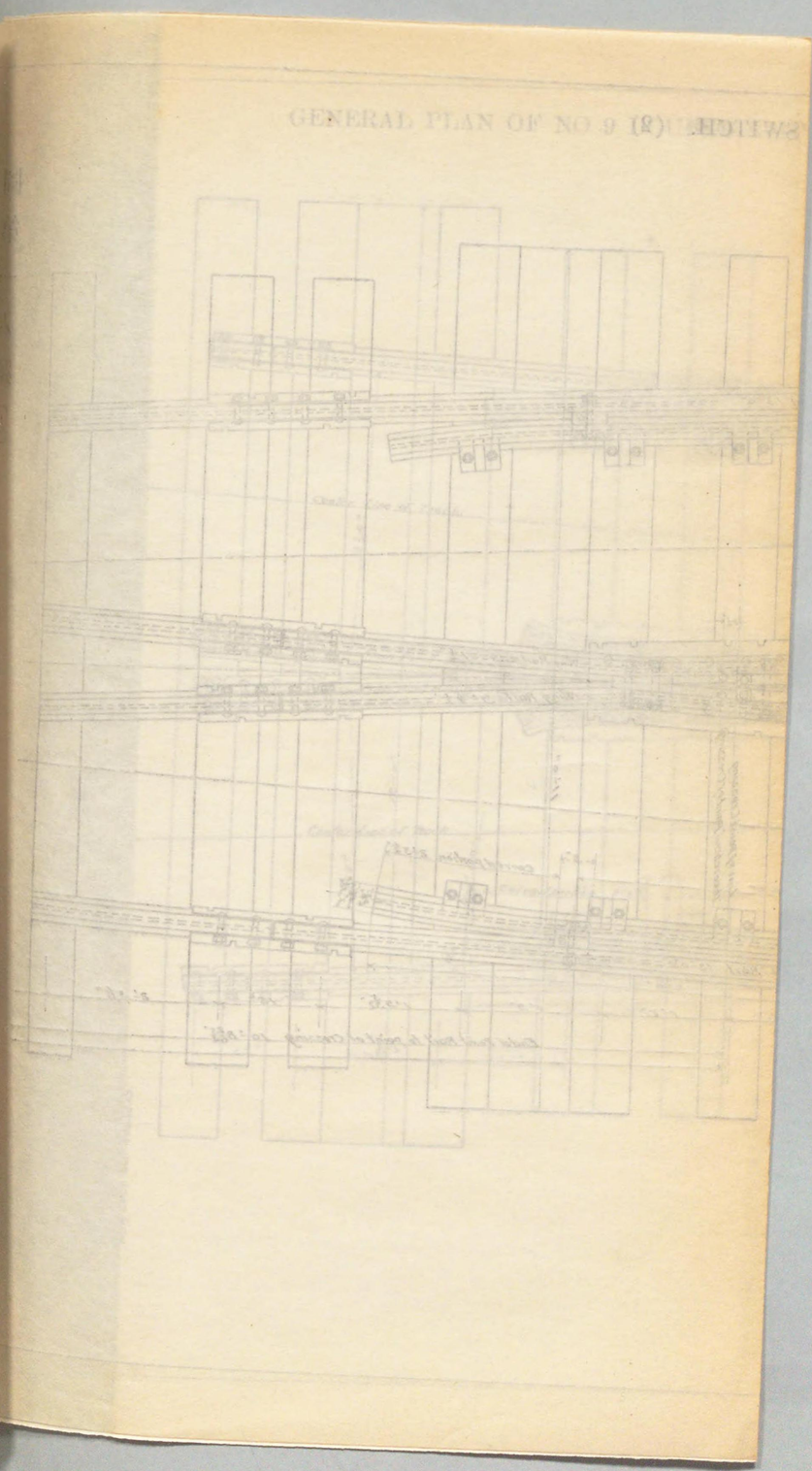


Section at



Section at

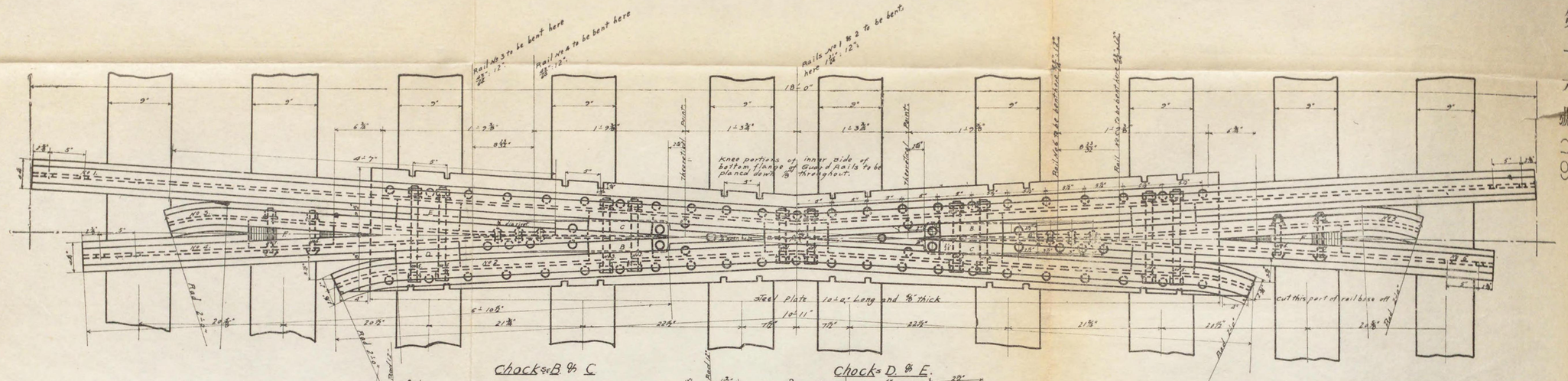




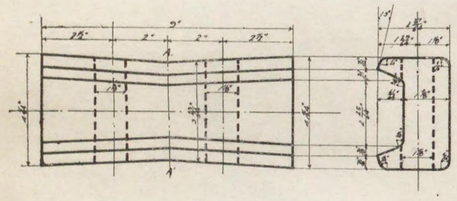
GENERAL PLAN OF NO 9 (R) SWITCH

CENTER CROSSING FOR №9 SLIP SWITCH.

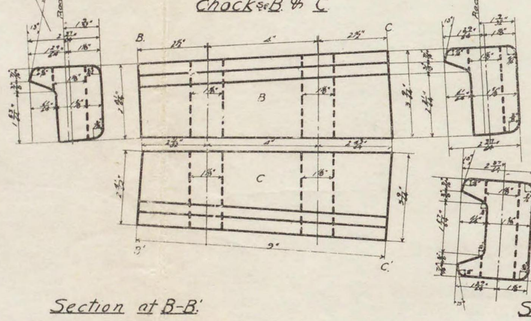
Scales for General Plan of Crossing. 2" = 1'0"
Cross Section chocks & bolts. 6" = 1'0"



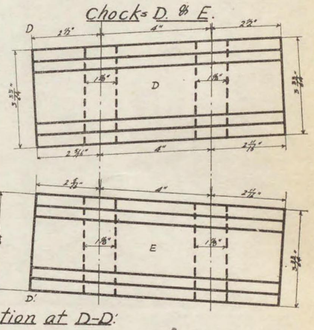
Chock A



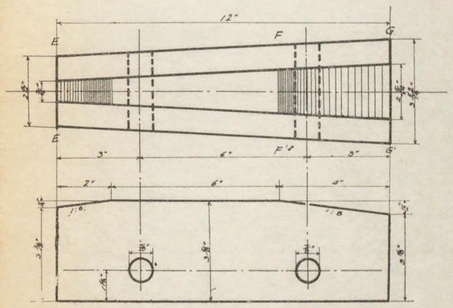
Chocks B & C



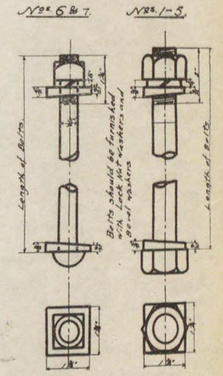
Chocks D & E



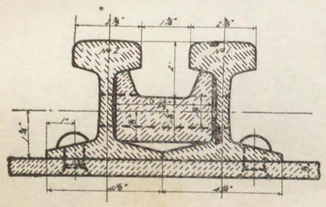
Chock F. (Heel chock)



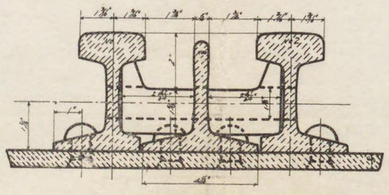
Nos. 6 & 7. Nos. 1–5.



Section at A-A'



Section at B-B'



Section at D-D'

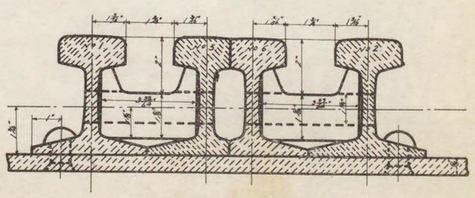
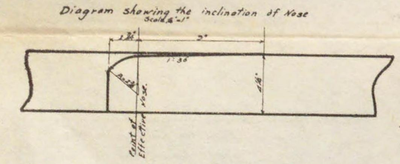
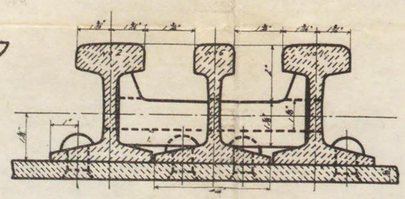


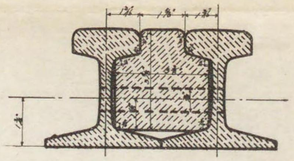
Diagram showing the inclination of Nose
Scale 6"=1'



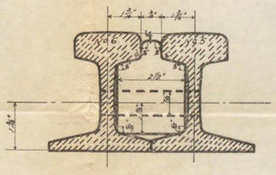
Section at C-C'



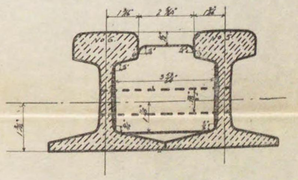
Section at F-F'



Section at E-E'



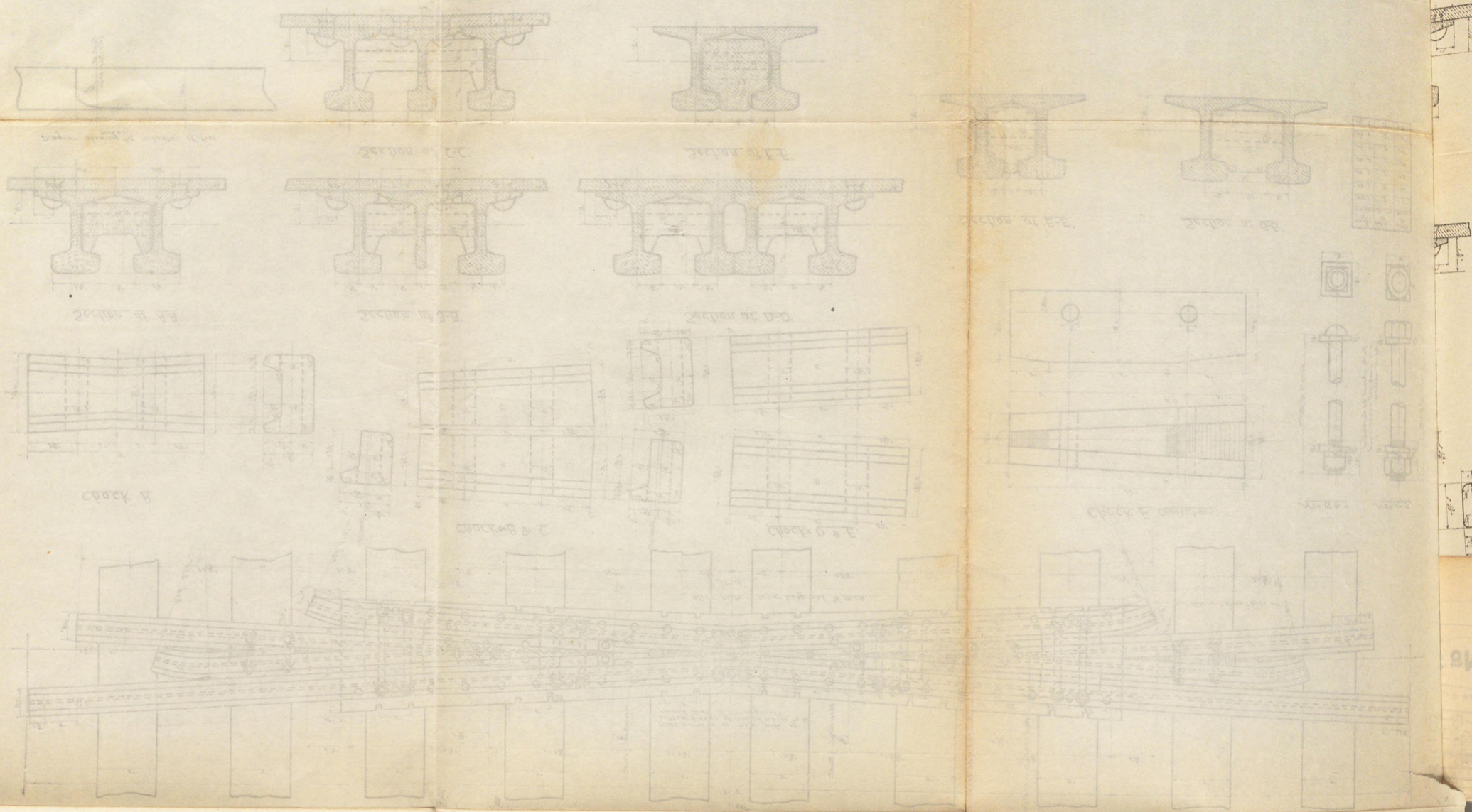
Section at G-G'

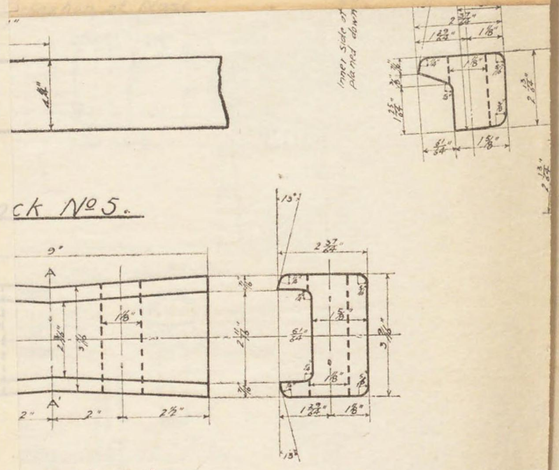


order of number	number of bolts	Length of Bolts
№ 1	2	7"
№ 2	2	9½"
№ 3	2	7½"
№ 4	2	12½"
№ 5	2	13"
№ 6	2	6"
№ 7	2	4½"

圖第一六號(一〇)

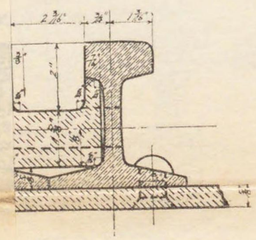
CENTER CROSSING FOR No 8 SLIP SWITCH





ck No 5.

on at AA.



Nº 9 CROSSING FOR 60 LBS RAIL.

Scales for General Plan of Crossing = 3" = 1'-0"
Cross Sections, Chocks, Bolts &c. = 6" = 1'-0"

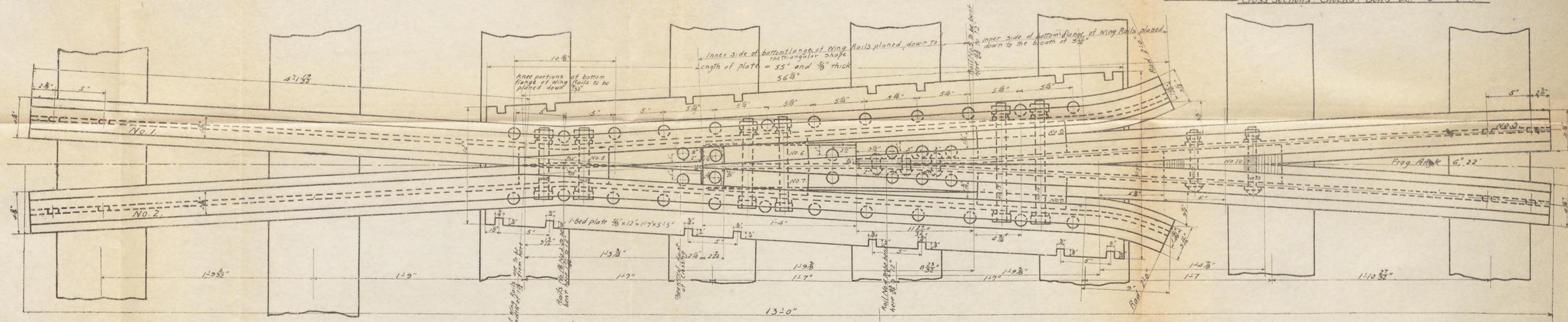
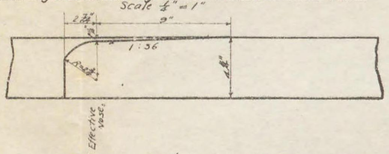
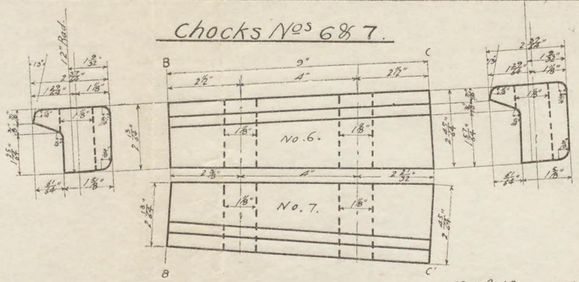


Diagram Showing the inclination of Nose

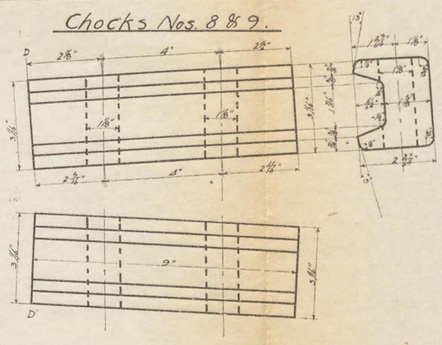
Scale ½" = 1"



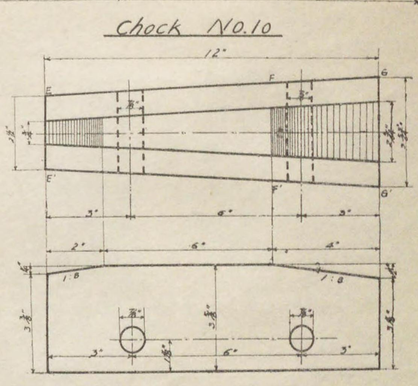
Chocks Nos 6 & 7.



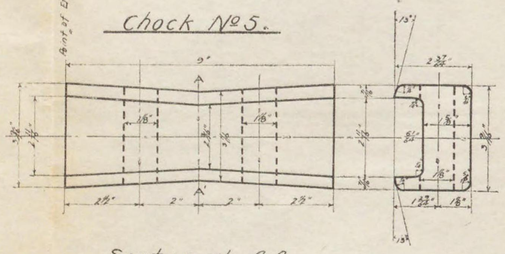
Chocks Nos. 8 & 9.



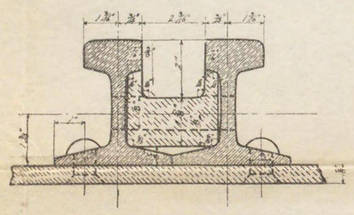
Chock No. 10



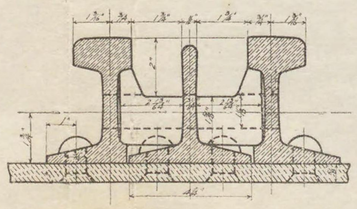
Chock No. 5.



Section at AA.

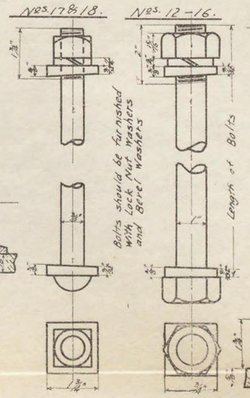


Section at BB.

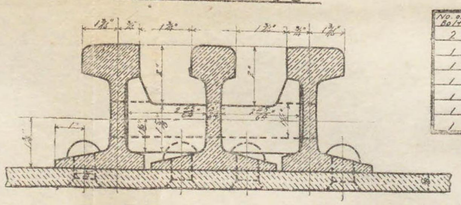


Nos. 17 & 18.

Nos. 12 – 16.

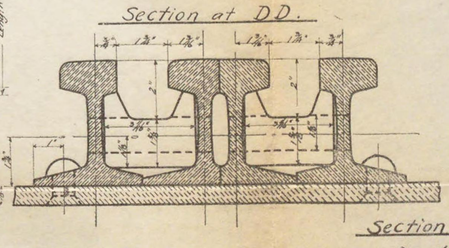


Section at CC.

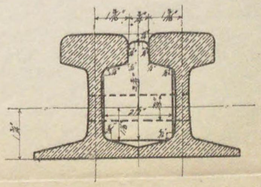


No. of Bolts	Letter No.	Length
2	No 12	6¾"
1	No 13	8⅞"
1	No 14	9"
1	No 15	11⅝"
1	No 16	12"
1	No 17	6"
1	No 18	6¾"

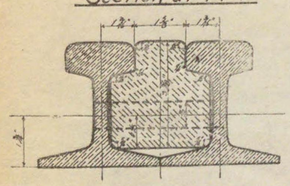
Section at DD.



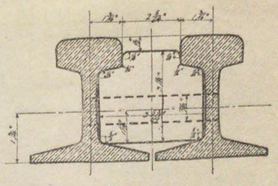
Section at EE.



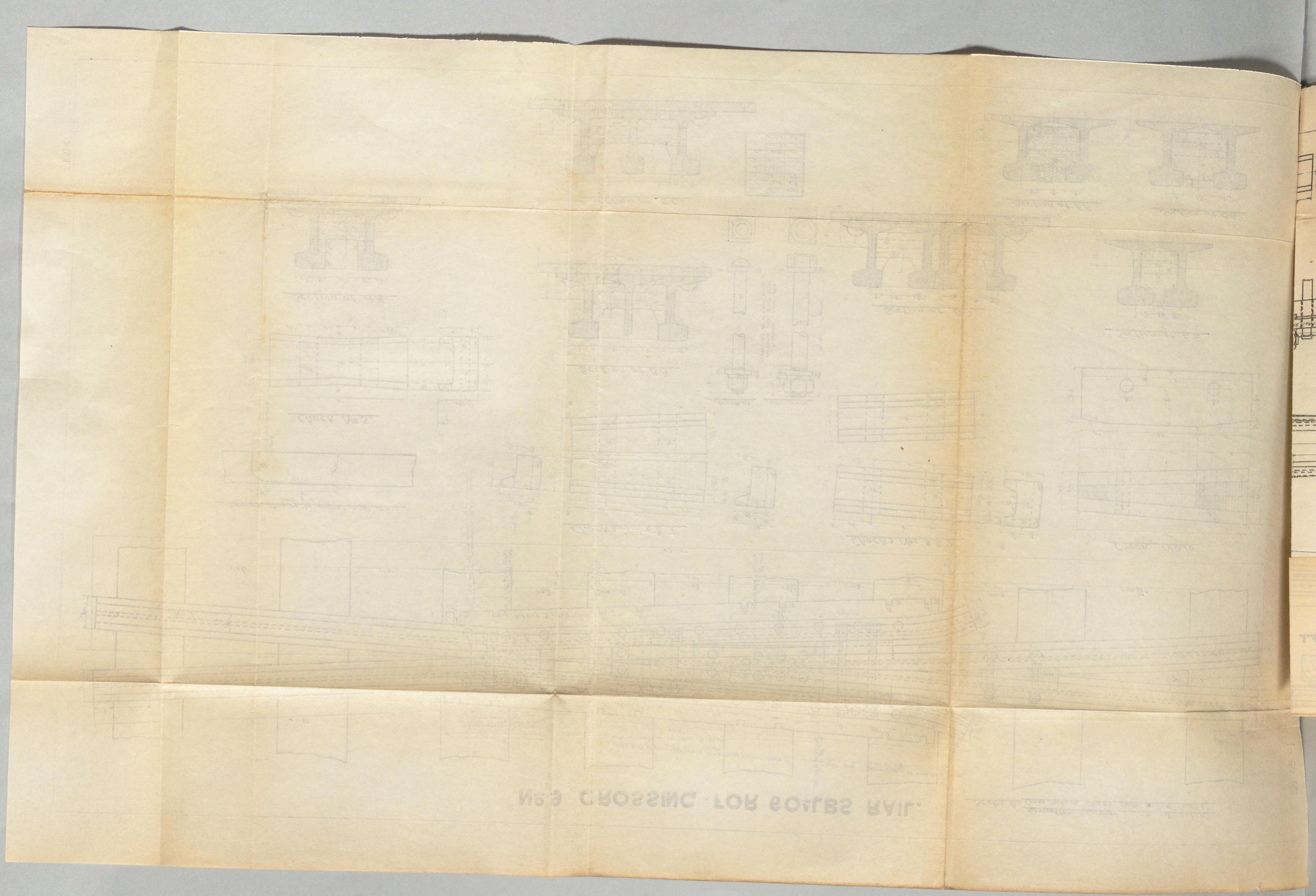
Section at FF.

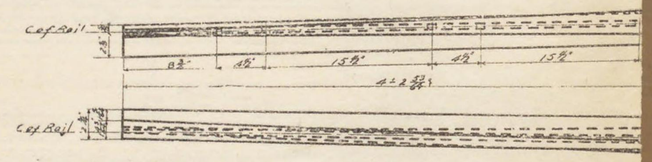


Section at GG.

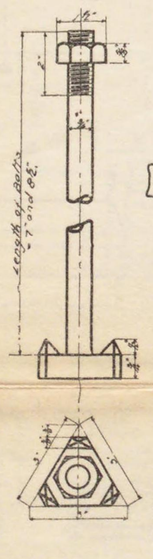


圖第一六號 (二)



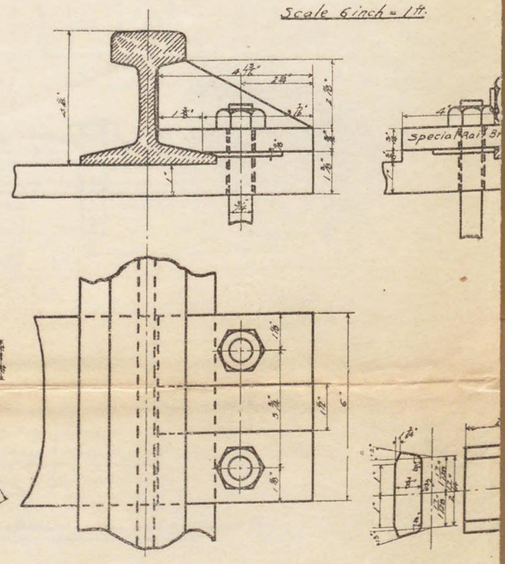


Fang Bolt.



Rail Brace.

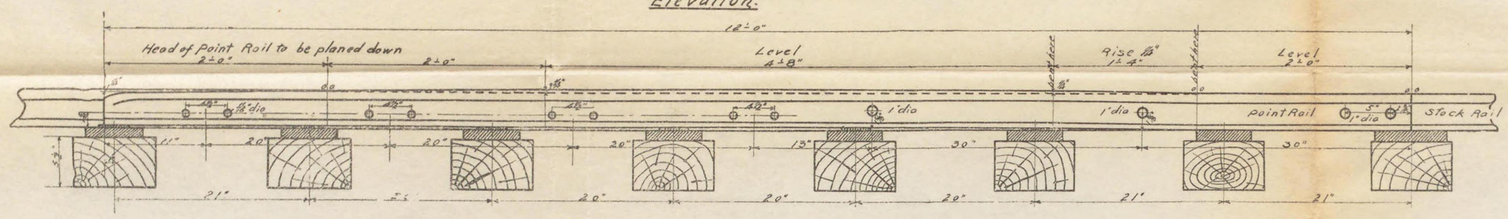
Scale 6 inch = 1ft.



12FT CENTER POINT RAIL FOR Nº9 SLIP SWITCH.

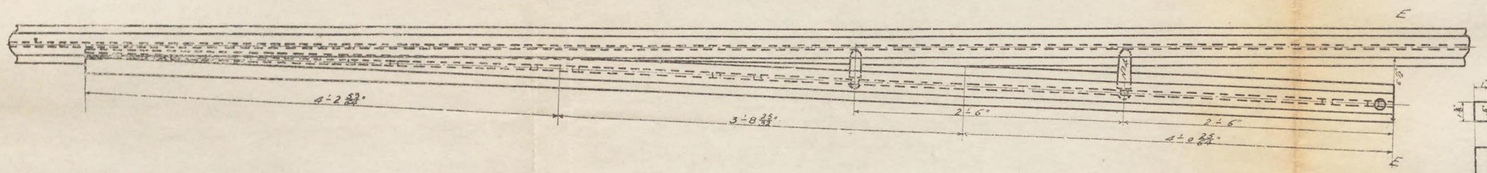
Scale 2" = 1 ft.

Elevation.

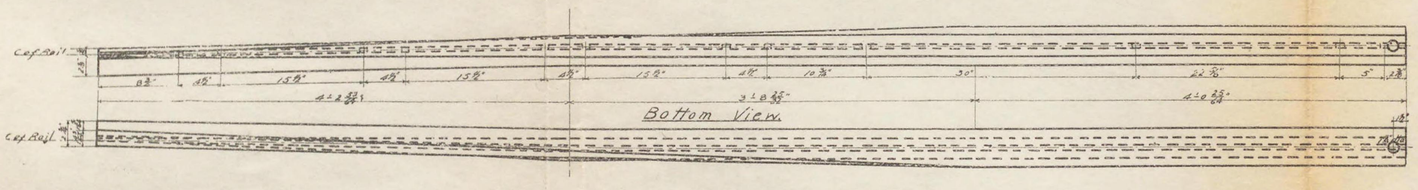


Notice Positions of holes for Clip Connections are different for opposite Center Point Rail. See General-plan.

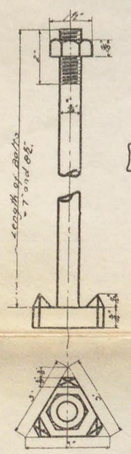
Plan



Head View.

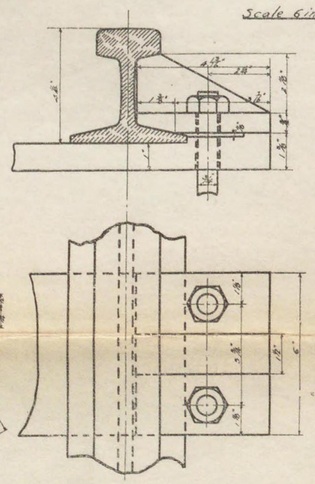


Eang Bolt.

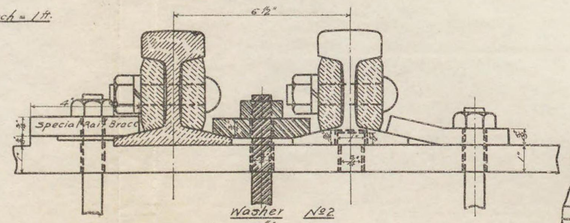


Rail Brace.

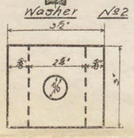
Scale 6 inch = 1 ft.



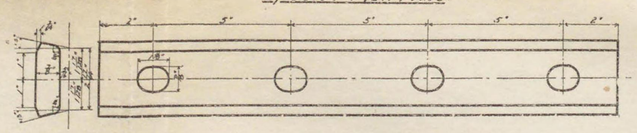
Section at E-E (Heel of Center point Rail)



Washer Nº2

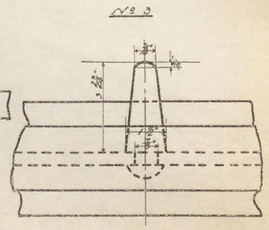


Special Fish Plate.

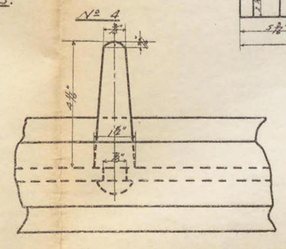


Studs.

Nº 3

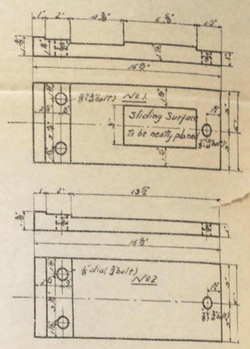


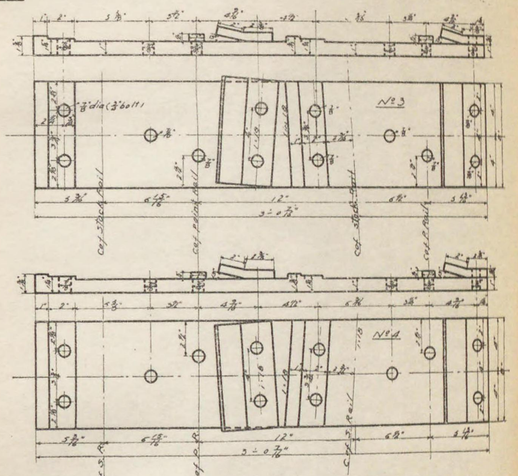
Nº 4

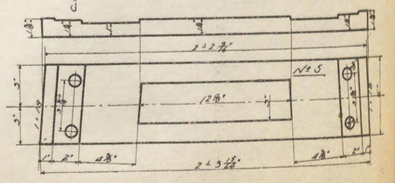


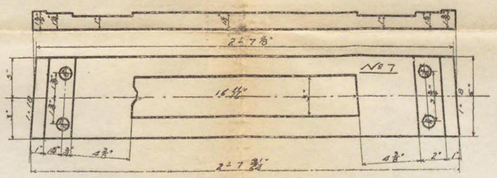
Cast Steel Bed plates

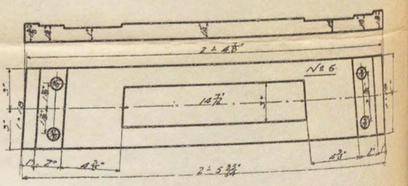
Scale 3" = 1 ft

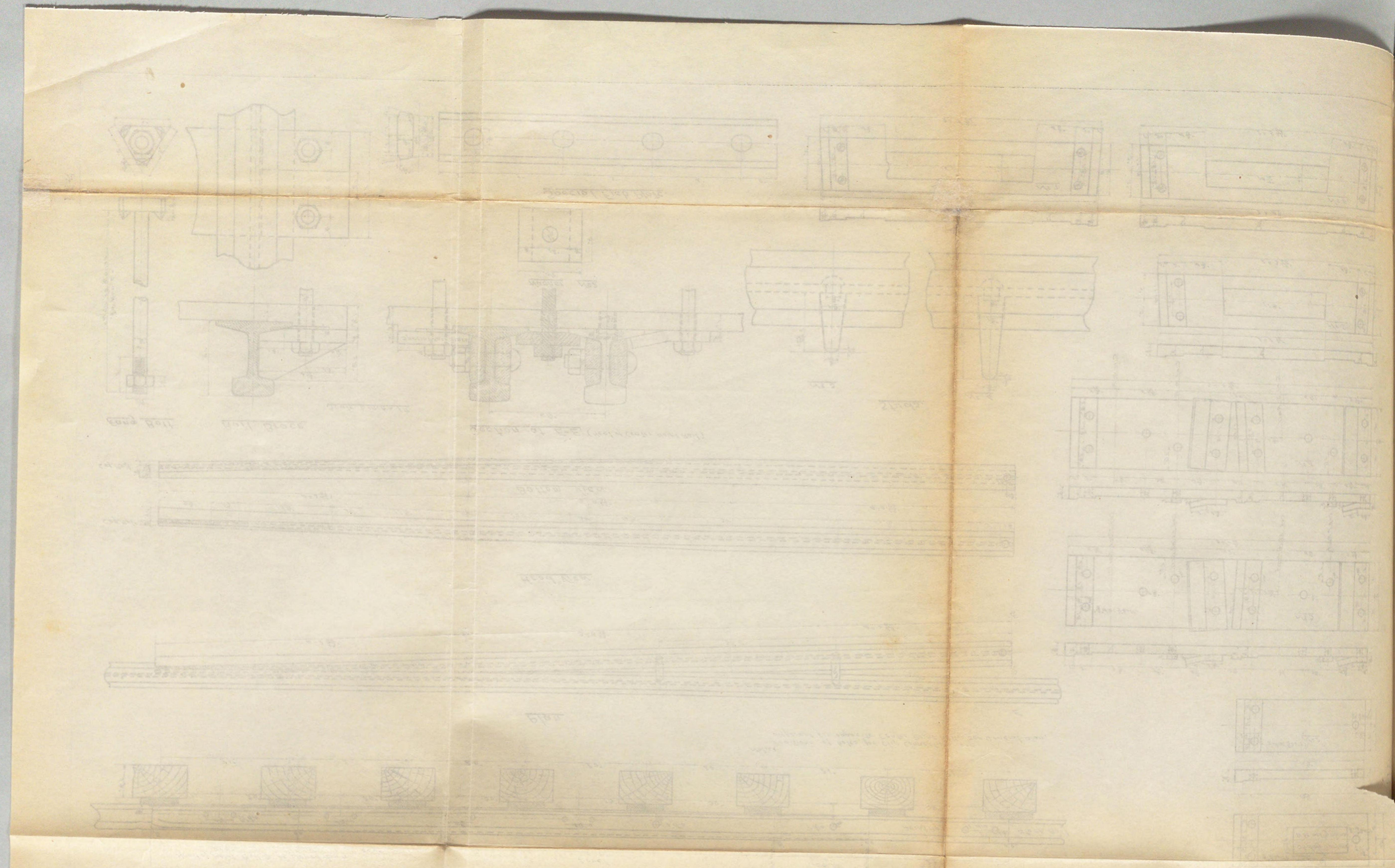






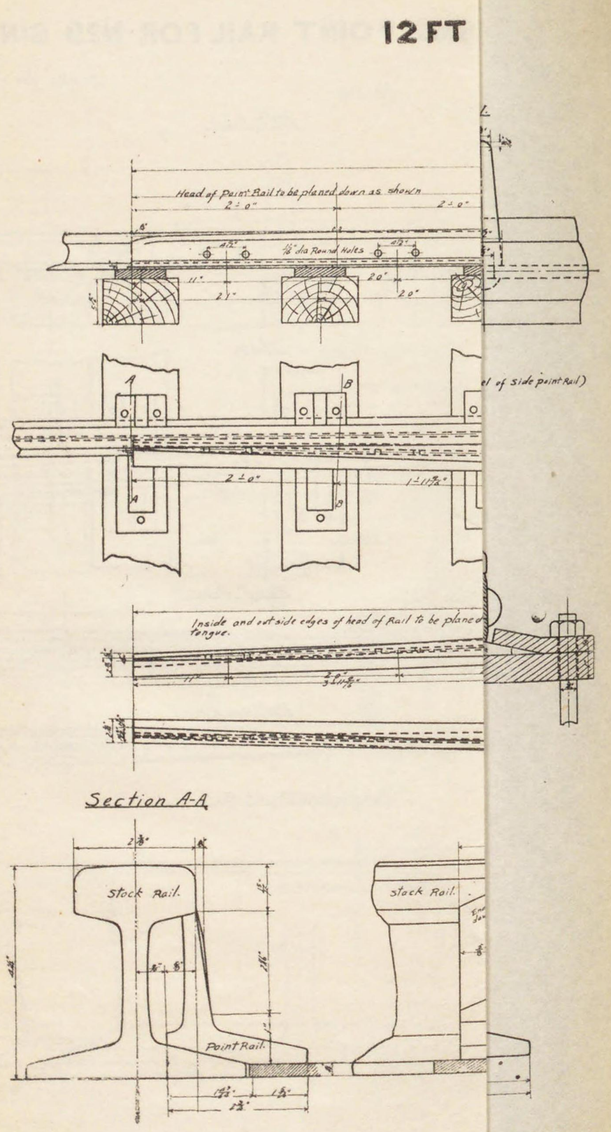






12FT CENTER POINT RAIL for NO 8 SLIP SWITCH

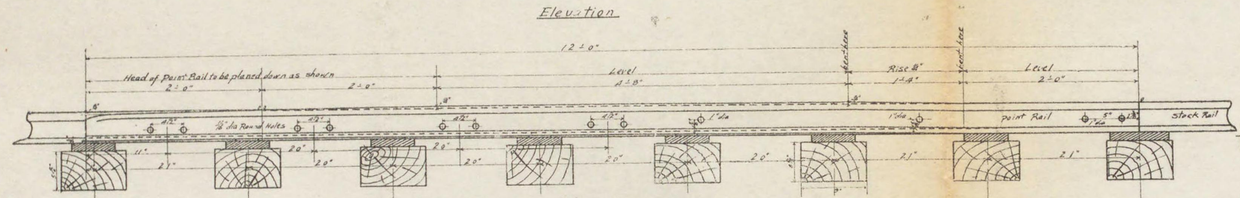
圖第一六號（一三）


12 FT
Head of Point Rail to be planed down as shown
Inside and outside edges of head of Rail to be planed
tongue.
Section A-A
Stock Rail.
Stock Rail.
Point Rail.

12 FT SIDE POINT RAIL FOR №9 SINGLE SLIP SWITCH.

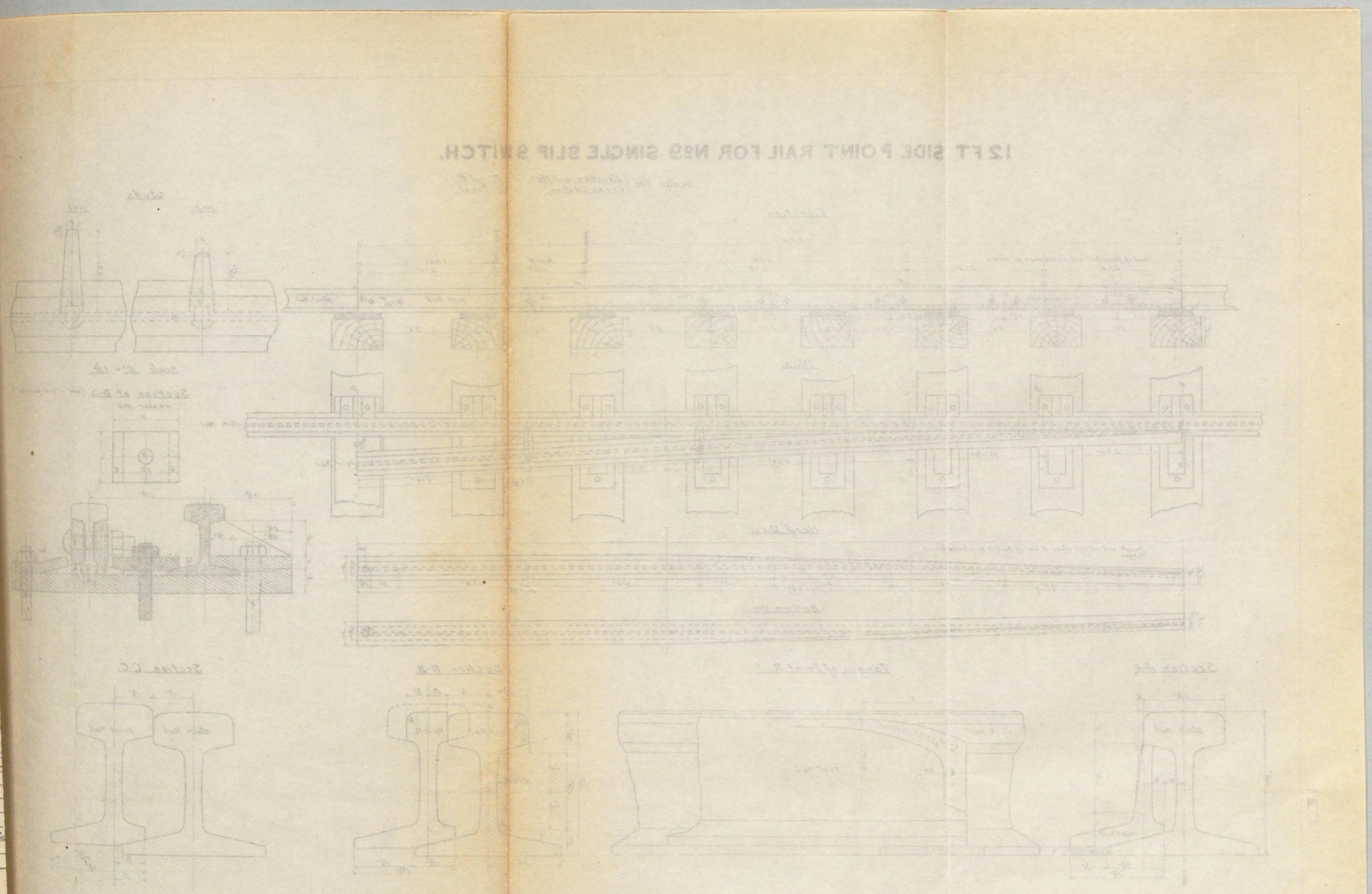
Scales for { Elevation and Plan = 2" = 1 ft. / Cross Section = Natural.

Elevation

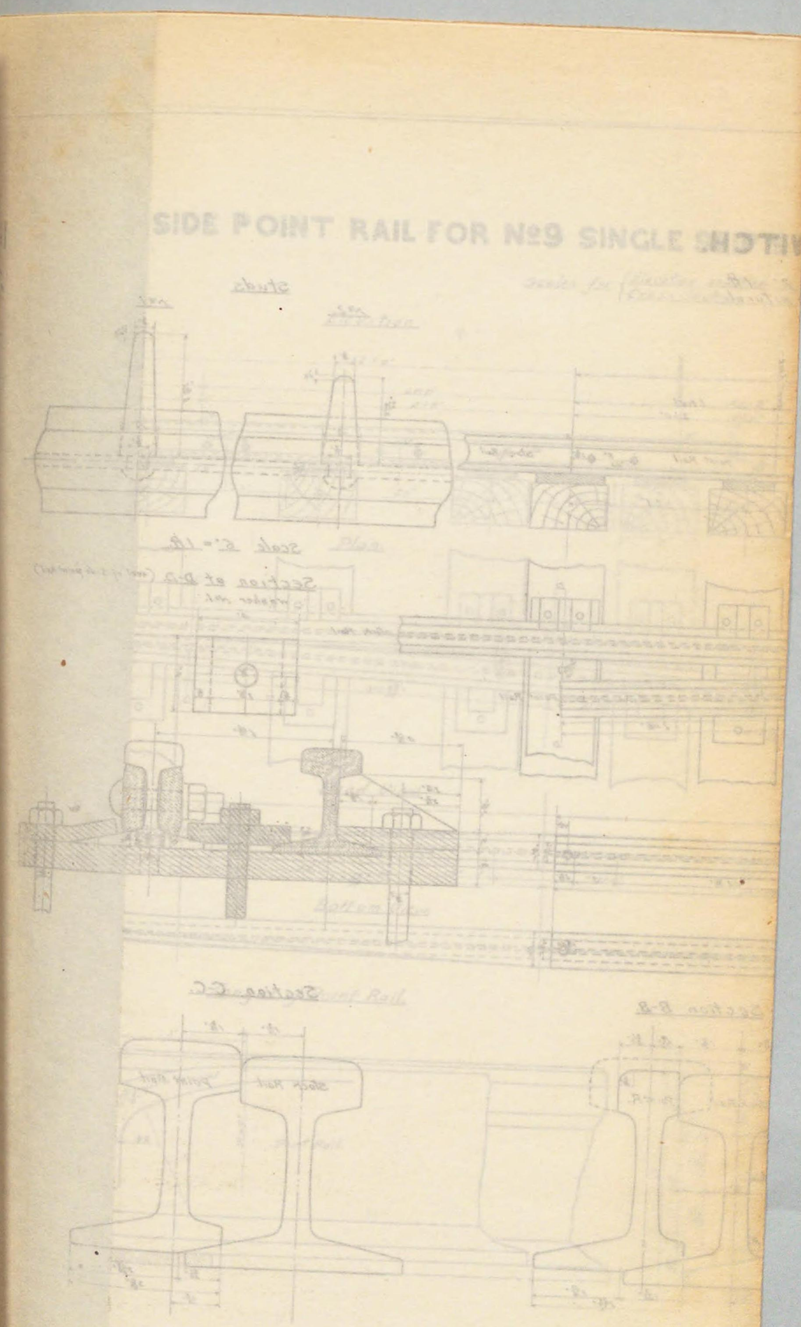

12'-0"
Head of Point Rail to be planed down as shown
2'-0"
2'-0"
Level
8'-0"
Rise 8"
1'-4"
Level
2'-0"
Point Rail
Stock Rail
Heel
Toe
Heel
Toe
Heel
Toe

List of Materials for New Crossing Frogs & Switches as per Drawings Nos 1 2 3 4 5 6

No.	Description		Remarks
8	Point Rails	18'-0"	Complete with check Rails
4	Guard Rails	9'-0"	
6	Stock Rails	17'-8⅞"	
4	" "	24'-3"	
4	" "	13'-0"	
4	" "	18'-0"	Curved Rails
2	Steel Tie-Bars No 1		Complete with 2-¾" di
2	" " " No 2		" " "
2	" " " No 3		" " "
2	" " " No 4		" " "
2	" " " No 5		" " "
2	" " " No 6		" " "
2	" " " No 7		" " "
2	" " " No 8		" " "
8	Clips No 1		Complete with 2-¾" di
8	" No 2		" " "
8	" No 3		" " "
8	" No 4		" " "
36	Cast-Iron-Bed-Plates No 1		With Sliding Sur
8	" " " No 2		Without "
9	" " " No 3		
2	" " " No 4		
2	" " " No 5		
2	" " " No 6		
2	" " " No 7		
60	Rail-Braces		
4	" " "Special"		To fit at the ends of 12 ft
6	Washers No 1	3"x6"	" " " heels of Bra
4	" No 2	3"x3½"	" "
8	Pins	¾" dia 8½ L	Complete with Nuts an
152	Ring-Bolts	¾" dia 8½ L	" " "
44	" "	7" "	To fit at the heels of T
8	Washers		Complete with Bolts
24	Special Fish-Plates	1'-7"	
6	Wrought Iron Studs	No 1	
4	" " "	No 2	
4	" " "	No 3	
4	" " "	No 4	
36	Steel Angle Splice Bars		Complete with 2-¾" d
300	Spikes		
1	Complete Switch connection		



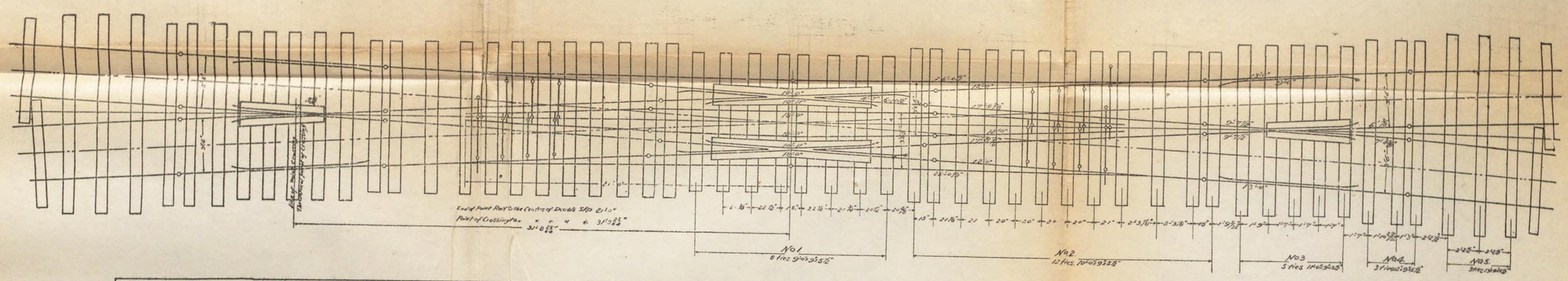
8	Point Rails	12'-0"	
4	Guard Rails	9'-0"	Complete with checks
4	Stock Rails	17'-8 3/8"	
4	" "	24'-1/2"	
4	" "	13'-0"	
2	" "	18'-0"	Curved Rails
2	Steel-Tie-Bars No 1		Complete with 2-7/8" di
2	" " " No 2		" " "
2	" " " No 3		" " "
2	" " " No 4		" " "
2	" " " No 5		" " "
2	" " " No 6		" " "
2	" " " No 7		" " "
2	" " " No 8		" " "
8	Clips No 1		Complete with 2-5/8" di
8	" No 2		" " "
8	" No 3		" " "
8	" No 4		" " "
36	Cast-Iron-Bed-Plates No 1		With Sliding Sur
8	" " No 2		Without "
2	" " No 3		
2	" " No 4		
2	" " No 5		
2	" " No 6		
2	" " No 7		
60	Rail-Braces		
4	" " "Special"		To fit at the ends of 17'-8
4	Washers No 1	3"x4"	" " " heels of Pai
4	" No 2	3"x3 1/2"	" "
8	Pins		" "
152	Fang-Bolts	3/4" dia 8 1/2 L	Complete with Nuts an
44	" "	" 7" "	" " "
8	Washers		To fit at the heels of P
24	Special Fish-Plates	1'-7"	Complete with Bolts
6	Wrought Iron Studs	No 1	
4	" " "	No 2	
4	" " "	No 3	
4	" " "	No 4	
36	Steel Angle Splice Bars		Complete with 2-3/4" d
300	Spikes		
1	Complete Switch connection		



№9 DOUBLE SLIP SWITCH.

Rails and Sleepers Arrangements.

Scale ⅜" 1'0"



List of Materials for №9 Crossing Double Slip Switch
Annexed to Drawing Sheet №s 1, 2, 5, 6 & 7.

№s of Pieces	Description		Remarks
2	Center Crossings		Complete with chocks bolts &c.
2	№9 Crossings (Ends)		" " " "
8	Point Rails	12'-0"	
4	Guard Rails	9'-0"	Complete with chocks braces &c.
4	Stock Rails	17'-8⅞"	
4	" "	26'-3"	
4	" "	13'-0"	
2	" "	18'-0"	Curved Rails
2	Steel Tie-Bars №1		Complete with 2-⅞" dia bolts &c.
2	" " №2		" " " " "
2	" " №3		" " " " "
2	" " №4		" " " " "
2	" " №5		" " " " "
2	" " №6		" " " " "
2	" " №7		" " " " "
2	" " №8		" " " " "
8	Clips №1		Complete with 2-¾" dia bolts &c.
8	" №2		" " " " "
8	" №3		" " " " "
8	" №4		" " " " "
36	Cast-Iron Bed Plates №1		with Sliding Surface
8	" " №2		without " "
9	" " №3		
2	" " №4		
2	" " №5		
2	" " №6		
2	" " №7		
60	Rail Braces		
4	" " "special"		To fit at the ends of 17'-8⅞" Rails
4	Washers №1	3"×4"	" " " heels of Point Rails
4	" №2	3"×3-5"	
8	Pins		
157	King Bolts	⅞" dia 8¼"	Complete with Nuts and Washers
66	" "	7"	" " " "
8	Washers		To fit at the heels of Point Rails
24	Special Fish-Plates	1'-7"	Complete with Bolts Nuts &c.
6	Wrought Iron Studs	№1	
4	" " "	№2	
4	" " "	№3	
4	" " "	№4	
36	Steel Angle Splice Bars		Complete with 2-⅞" dia bolts
300	Spikes		
1	Complete Switch connection		

List of Materials for Center Crossing of №9 Crossing Double Slip Switch.
Annexed to Drawing Sheet №3

№s of Pieces	Description		Remarks
1	Stock Rail	№1 18'-0"	
1	Winged Check Rail	№2 10'-11"	
2	Side Point Rails	№s 3 & 5 4'-7"	or "Short Nose Rail"
2	Main "	№s 4 & 6 6'-10½"	or "long Nose Rail"
1	Cast Iron Chock	A 9"	
2	" " "	B 9"	
2	" " "	C 9"	
2	" " "	D 9"	
2	" " "	E 9"	
2	" " "	F 12"	
2	Bolts	№1 1 dia 7"	For Chock A
2	"	№2 " 9⅛"	" " B & C
2	"	№3 " 9½"	" " "
2	"	№4 " 12⅝"	" " D & E
2	"	№5 " 13"	" " "
2	"	№6 ⅞" dia 6"	" " F
2	"	№7 " 6⅜"	" " "
1	⅜" Steel Bedplate	17⅝"×10"-0"	
66	⅞" dia Counter Sunk Rivets		one end only
6	⅞" dia Rivets		

List of Materials for №9 Crossing of Double Slip Switch.
Annexed to Drawing №4

№s of Pieces	Description		Remarks
1	Wing Rail	№1 9'-7½"	
1	" "	№2 9'-7½"	
1	Side Point Rail	№3 6'-2"	or "Short Nose Rail"
1	Main " "	№4 7'-6⅞"	or "Long " " "
1	Cast Iron Chock	№5 9"	
1	" " "	№6 9"	
1	" " "	№7 9"	
1	" " "	№8 9"	
1	" " "	№9 9"	
1	" " "	№10 12"	
2	Bolts	№12 1 dia 6⅞"	
1	"	№13 " 8⅝"	
1	"	№14 " 9"	
1	"	№15 " 11½"	
1	"	№16 " 12"	
1	"	№17 ⅞" dia 6"	
1	"	№18 " 6⅜"	

1	⅜" Steel Bed Plate 1'-7"×5'-5"	
36	⅞" Countersunk Rivets	one end only
3	⅞" Rivets	

List of Sleepers for one set of №9 Crossing Double Slip Switch
Annexed to Drawing Sheet №7.

№s of Pieces	Description		Remarks
9	Sleepers	№1 9"×5"×9'-0"	
24	"	№2 " " ×10'-0"	
10	"	№3 " " ×11'-0"	
6	"	№4 " " ×12'-0"	
6	"	№5 " " ×13'-0"	

List of Rails for one set of №9 crossing Double Slip Switch
Annexed to Drawing Sheet №7.

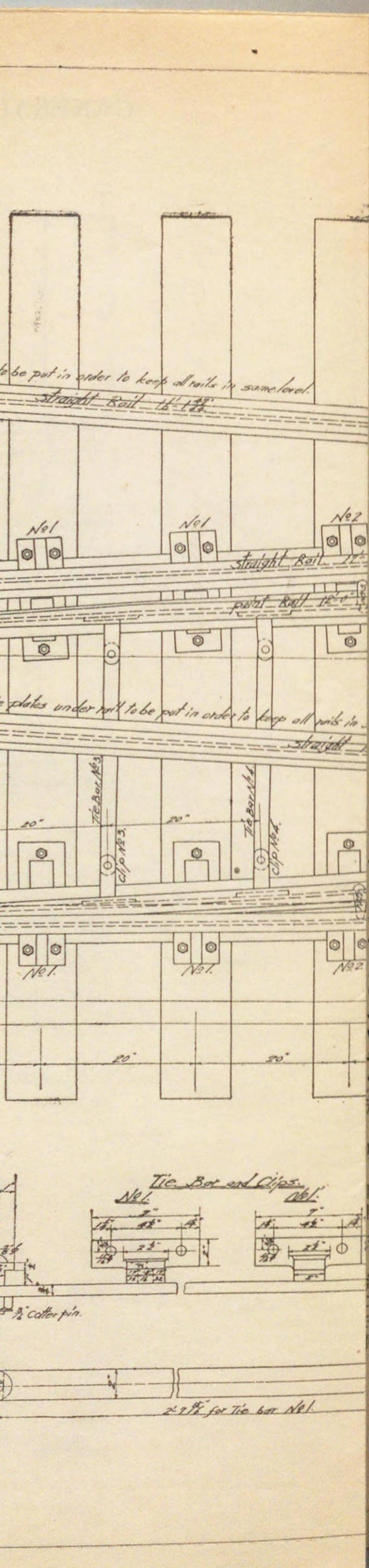
№s of Pieces	Description		Remarks
4	Wing Rails	9'-7½"	for №9 Crossings (Ends)
2	Side Point Rails	6'-2"	" " "
2	Main " "	7'-4⅞"	" " "
2	Stock Rails	18'-0"	Center Crossings
2	Winged check Rails	10'-11"	" " "
4	Side Point Rails	4'-7"	" " "
4	Main " "	6'-10½"	" " "
8	Point Rails	12'-0"	or "Tongue Rails"
4	Guard Rails	9'-0"	
4	Stock "	17'-8⅞"	
4	" "	26'-3"	Partly Curved
4	" "	13'-0"	
2	" "	18'-0"	Curved

List of Materials for one set of Guard Rail of №9 Crossing Double Slip Switch
Annexed to Drawing Sheet №2

№s of Pieces	Description		Remarks
1	Rail	9'-0"	Curved at ends
5	Rail Braces		
2	Chocks		
10	Bolts for Braces	8"	
7	" " Chocks	6"	

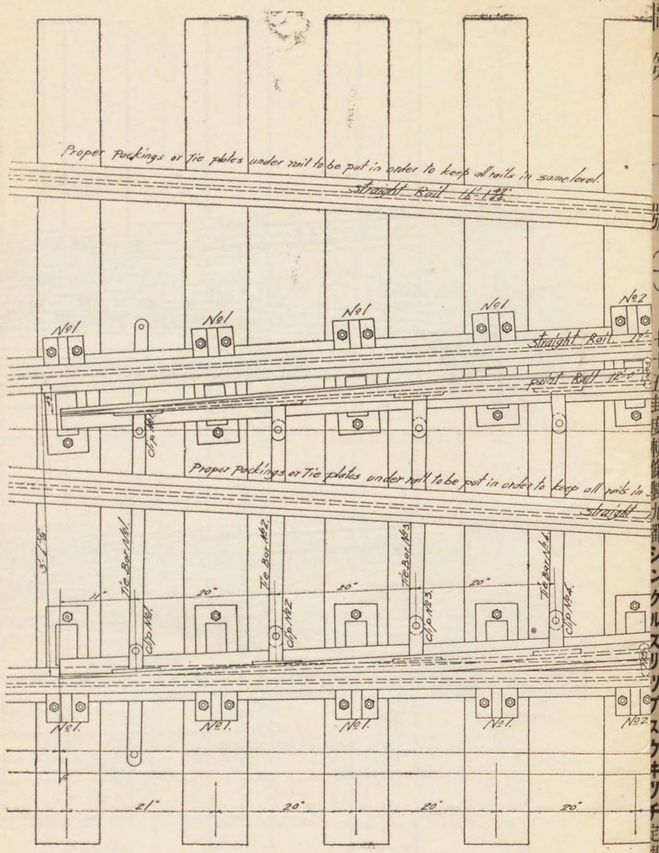
圖第一六號（一四）

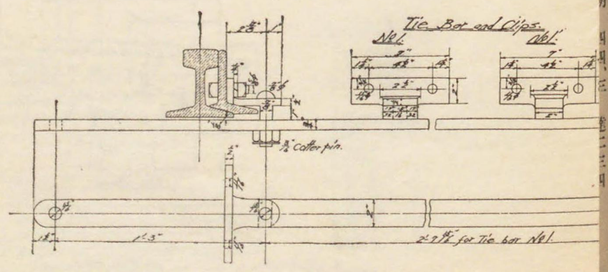
一四一



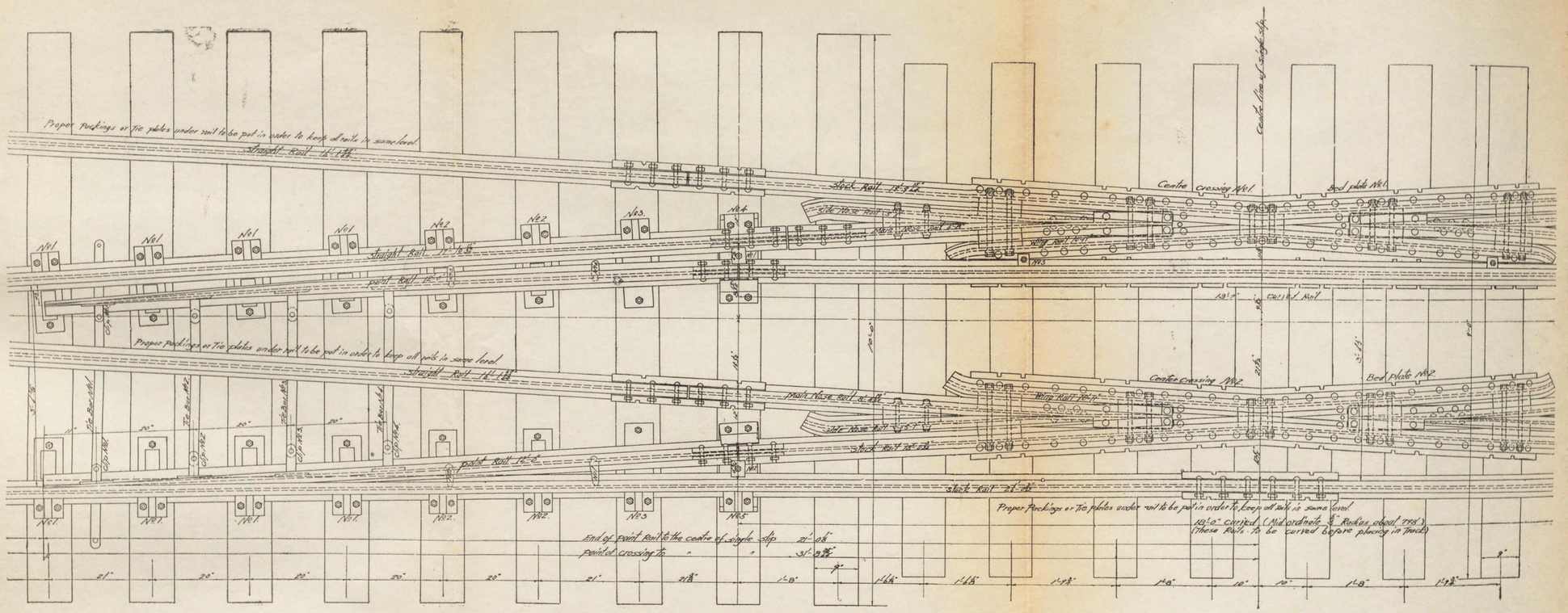
圖第一七號（一）　七十五封度軌條製九番シングルスリツプスウヰツチ定規　明四四、三、達三三四

圖第一七號（一）七十五封度軌條製九番シングルスリップスクキンチ定規

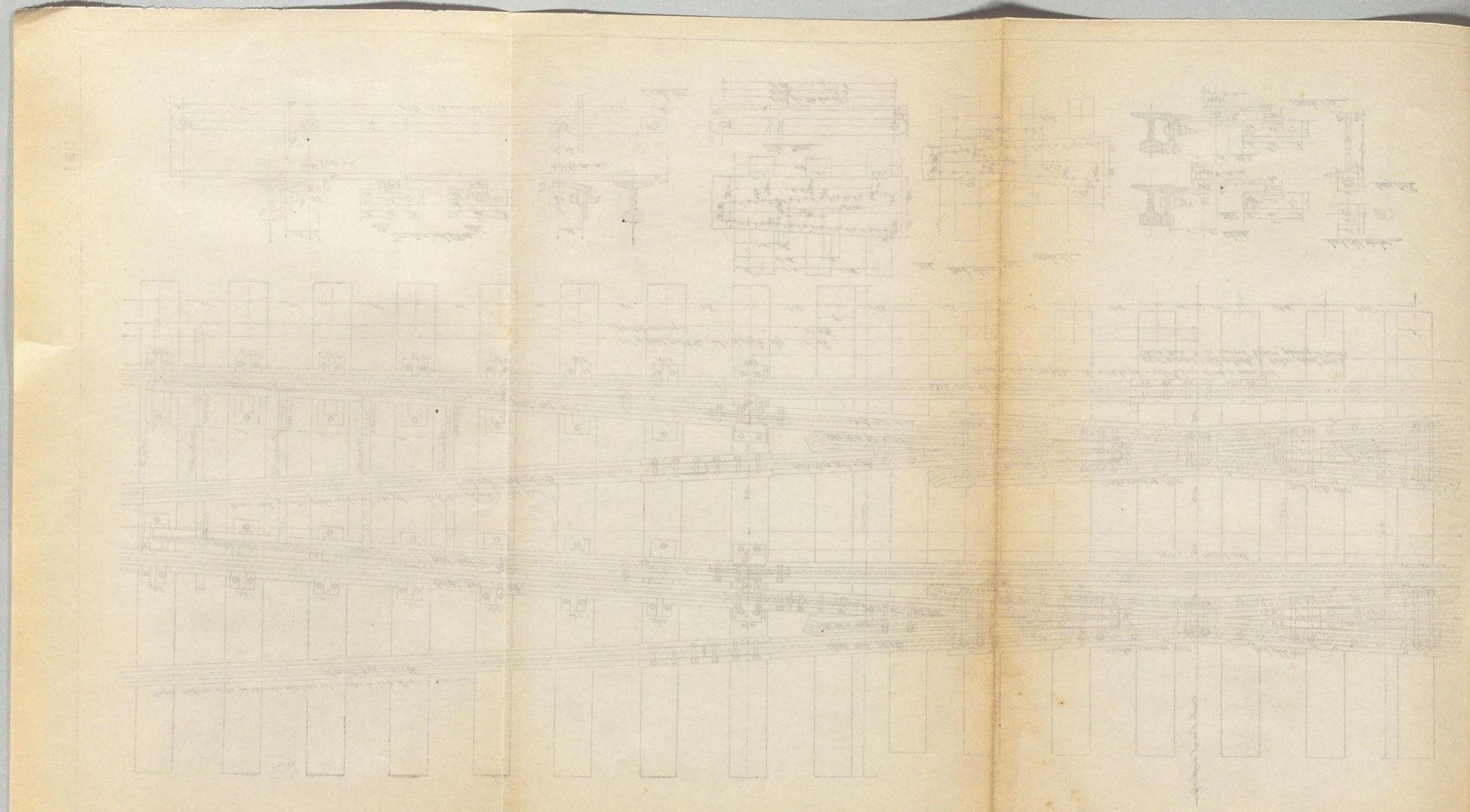




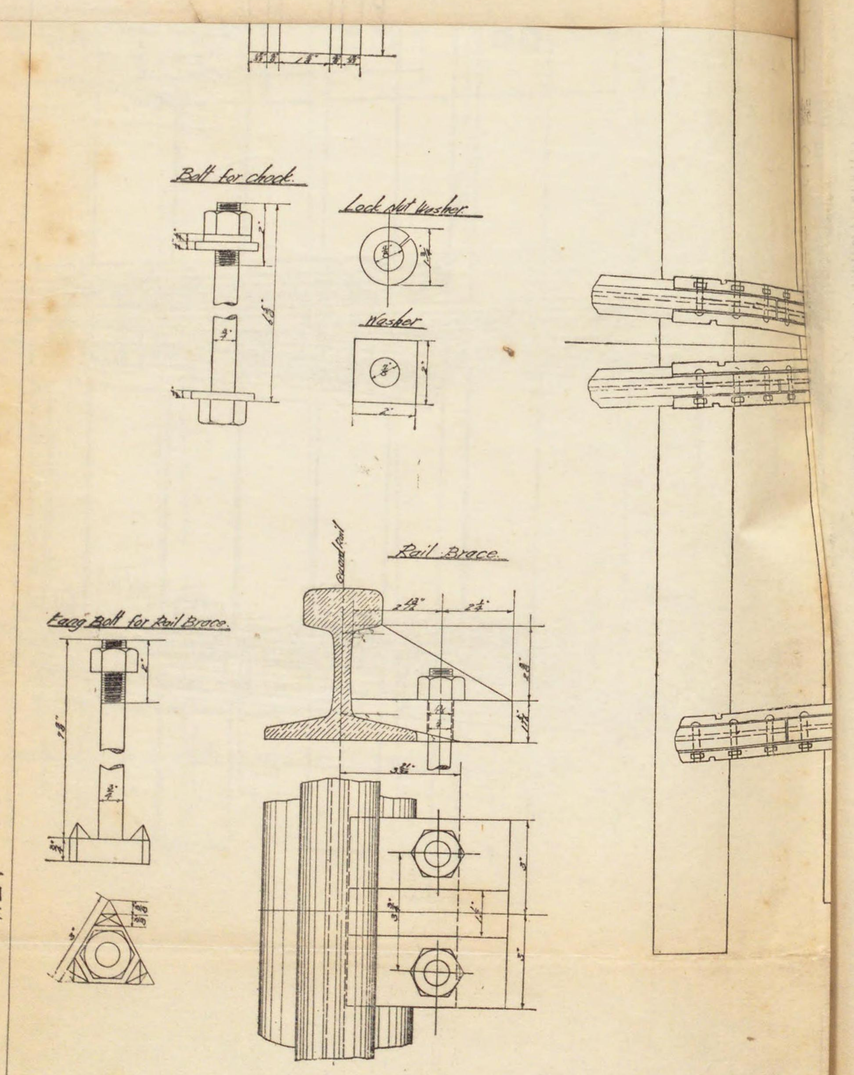
GENERAL PLAN OF NO. 9 SINGLE SLIP SWITCH (1)



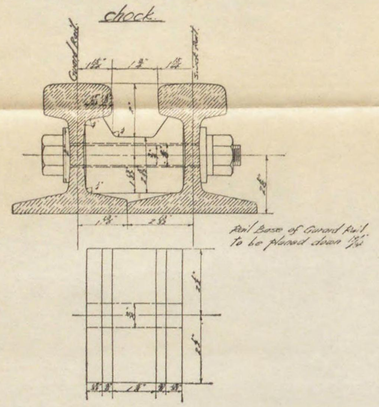
圖第一七號（一）　七十五封度軌條製九番シングルスリップスウキッチ定規　明四四、三　逓二三四

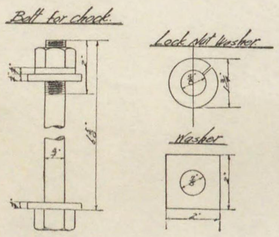


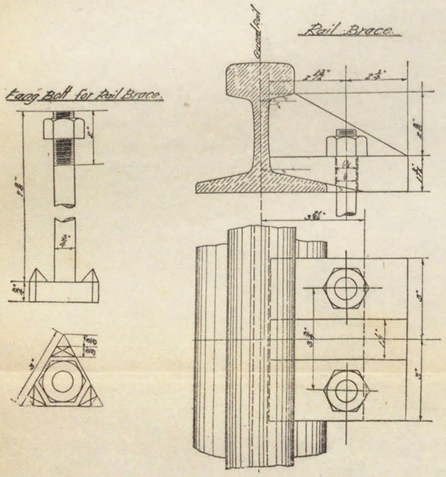
GENERAL PLAN OF NO 6 SINGLE SLIP SWITCH (1)

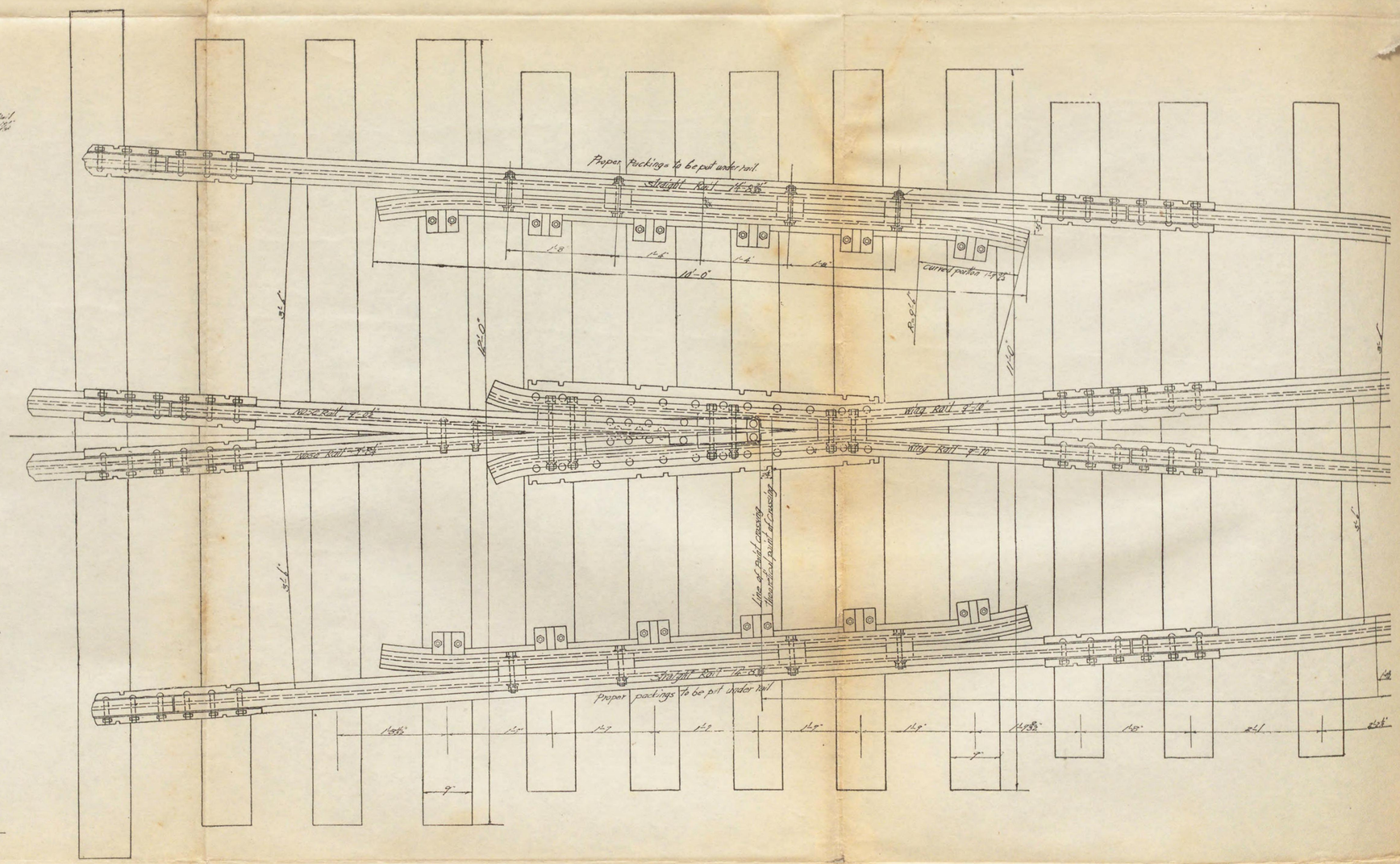

Bolt for chock.
Lock Nut Washer.
Washer
Rail Brace.
Guard Rail
Fang Bolt for Rail Brace.

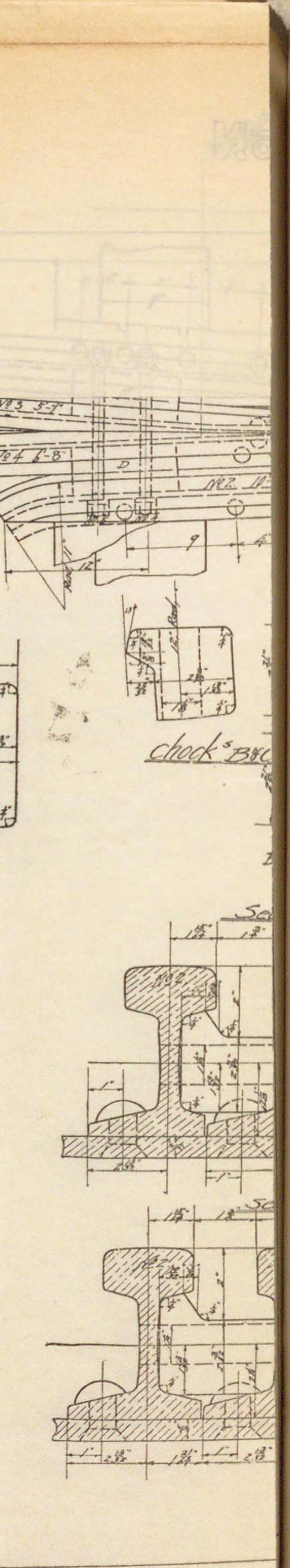
GENERAL PLAN OF NO9 SINGLE SLIP SWITCH. (2)

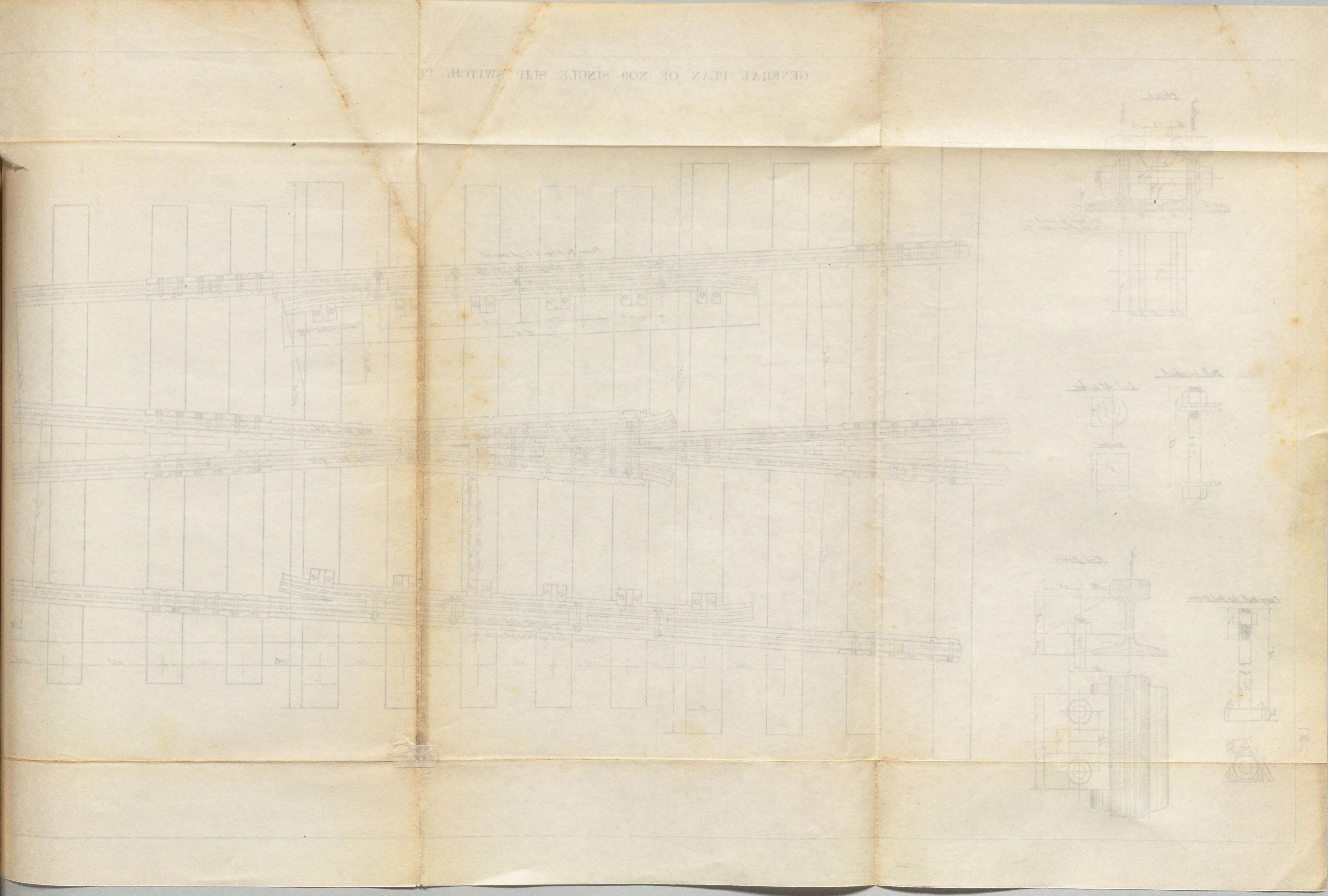


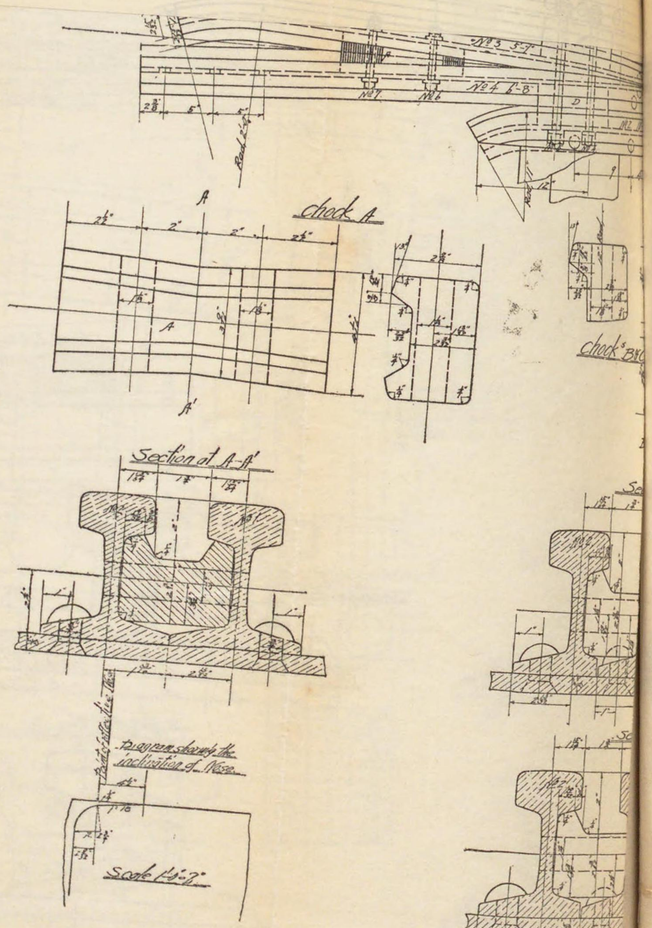




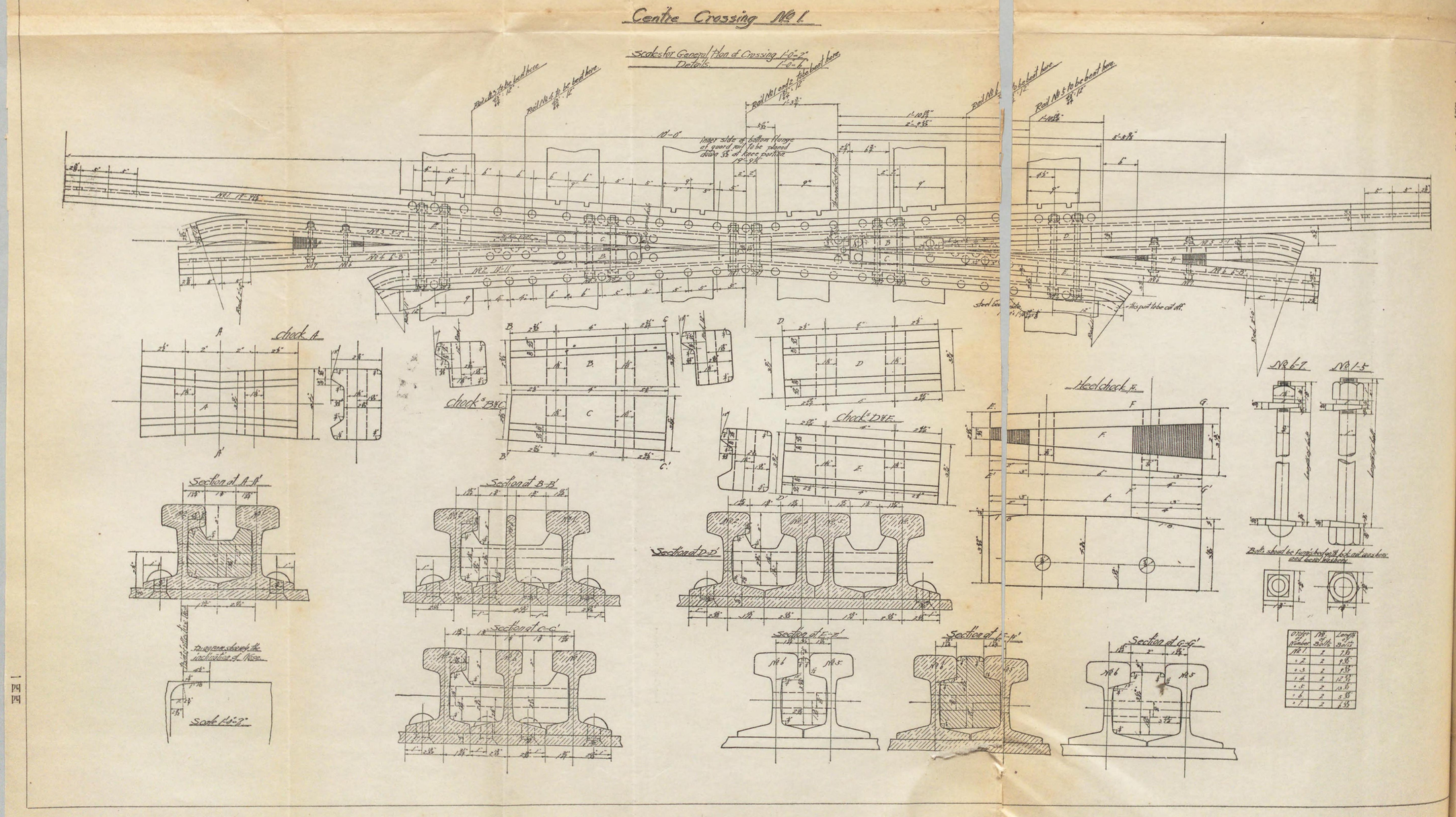



chock's B&C

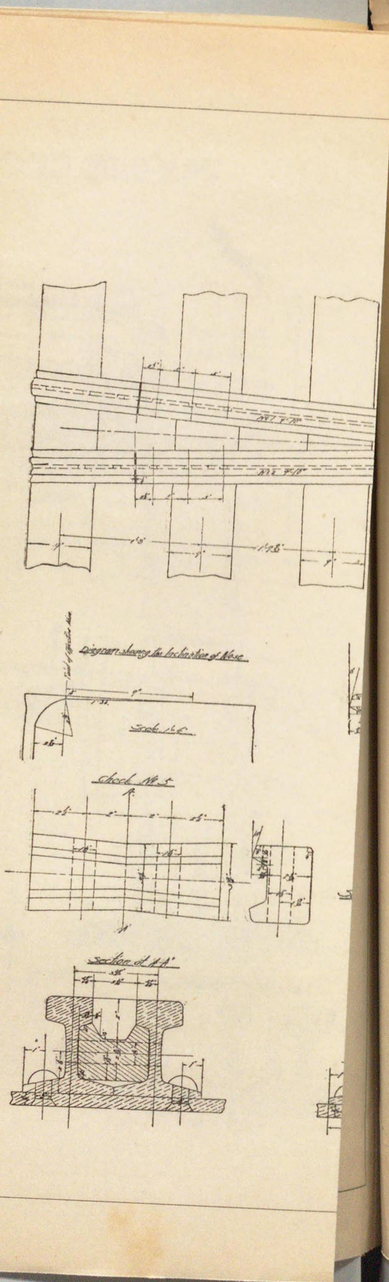

GENERAL PLAN OF NO9 SINGLE SLIP SWITCH.


Check A
Section at A-A'
Scale 1½"=1'-0"

No 9 CENTER CROSSING FOR 75LBS RAIL.



Order of Number	No. of Bolts	Length of Bolts
No 1.	2	7 3/32
" 2.	2	9 3/32
" 3.	2	9 3/32
" 4.	2	12 9/32
" 5.	2	13 3/32
" 6.	2	5 3/32
" 7.	2	6 3/32



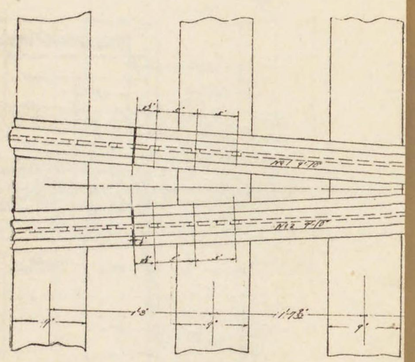
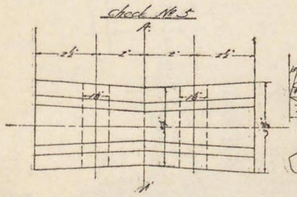
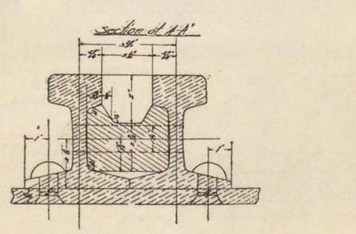


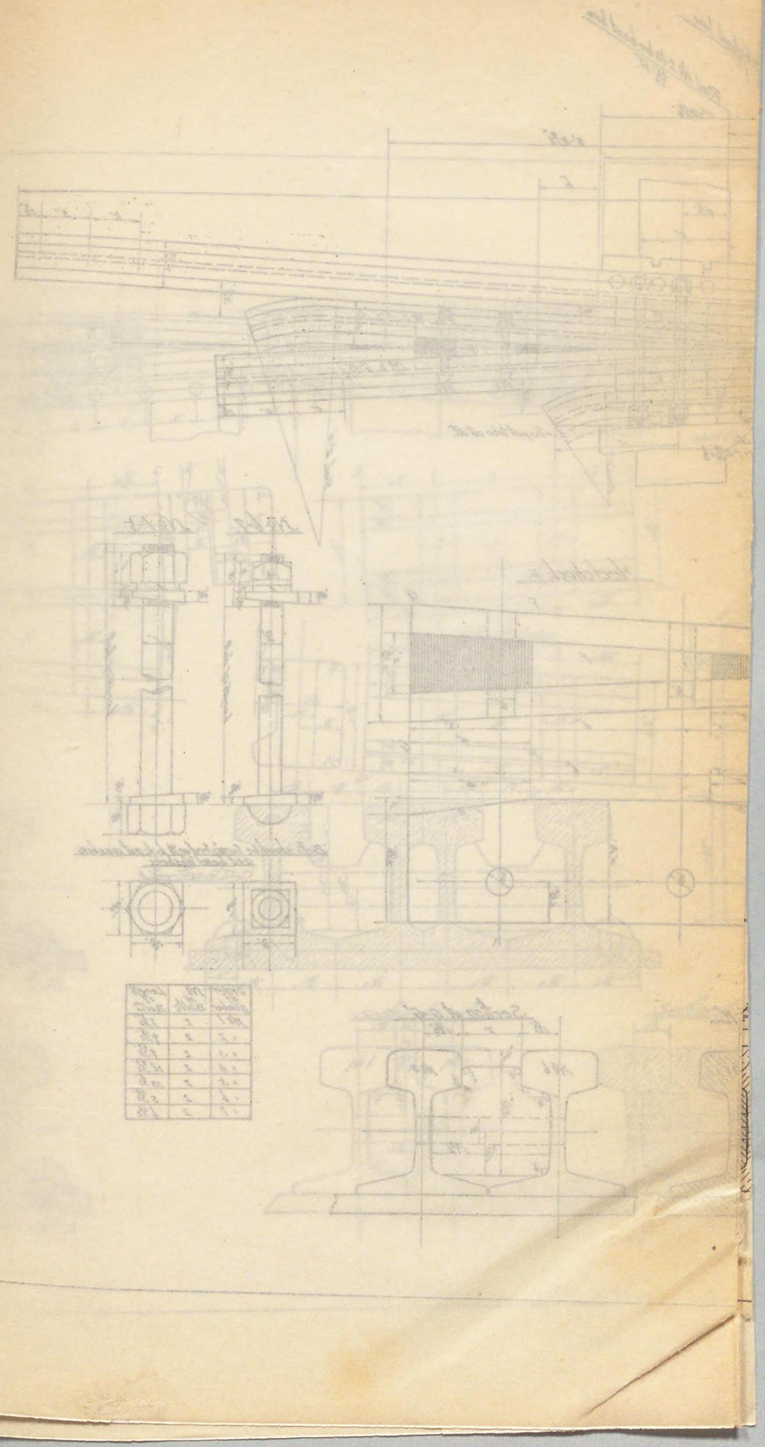
Diagram showing the inclination of Nose



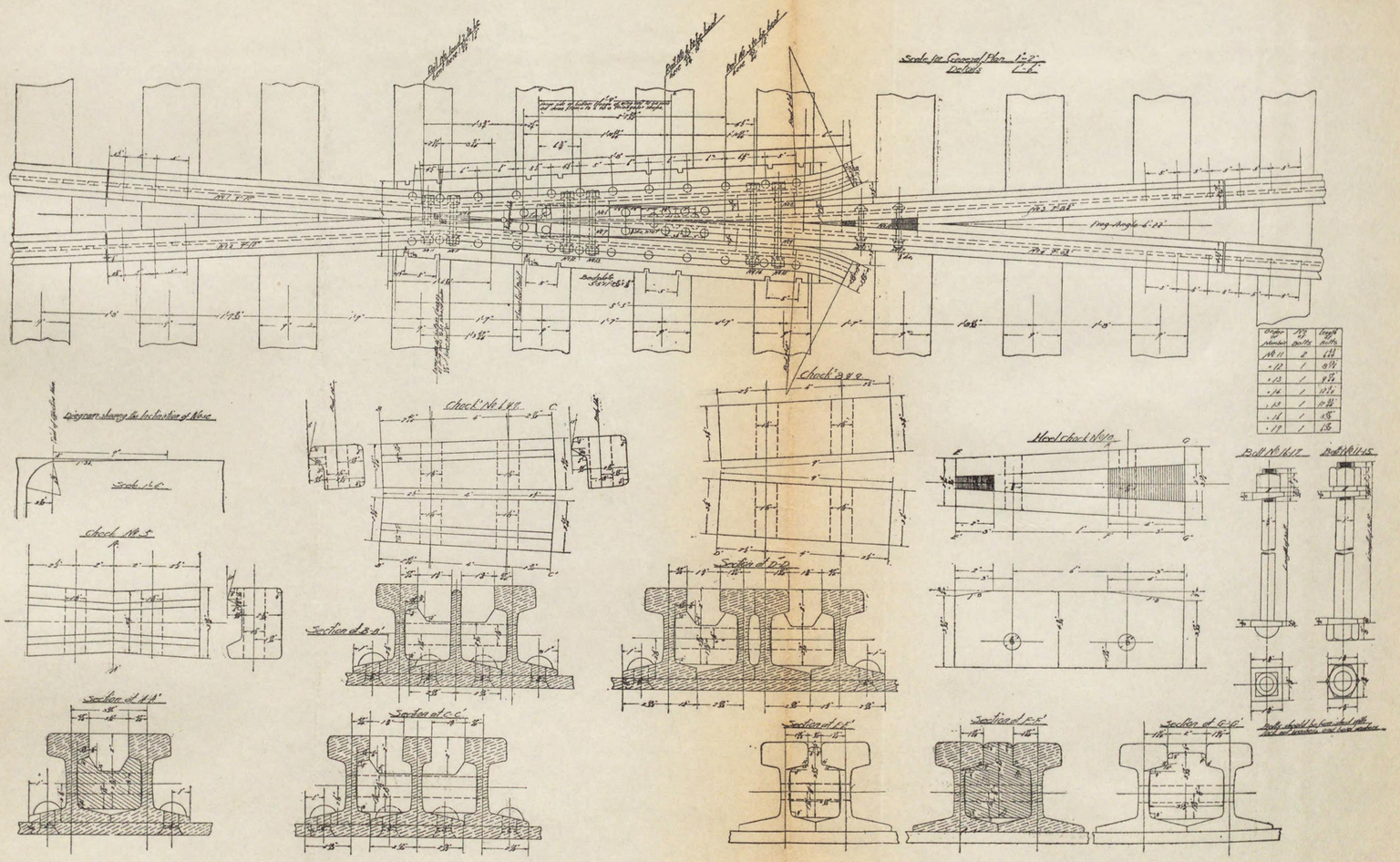
Check No 3



Section at AA'

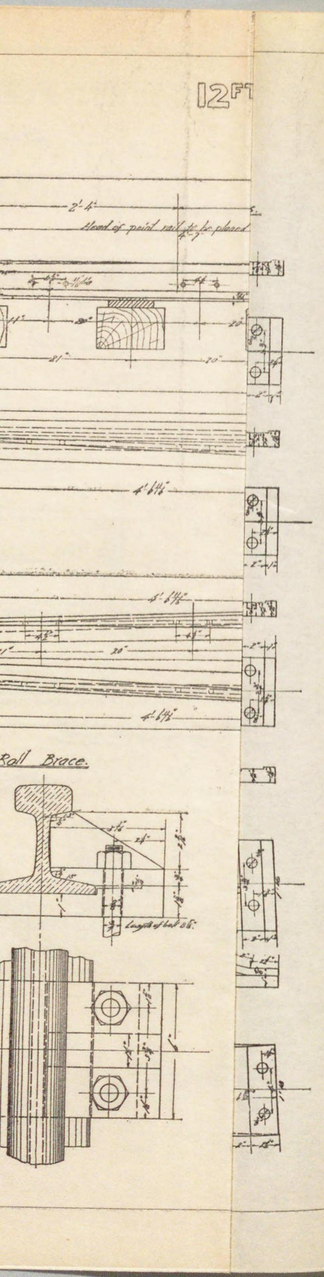


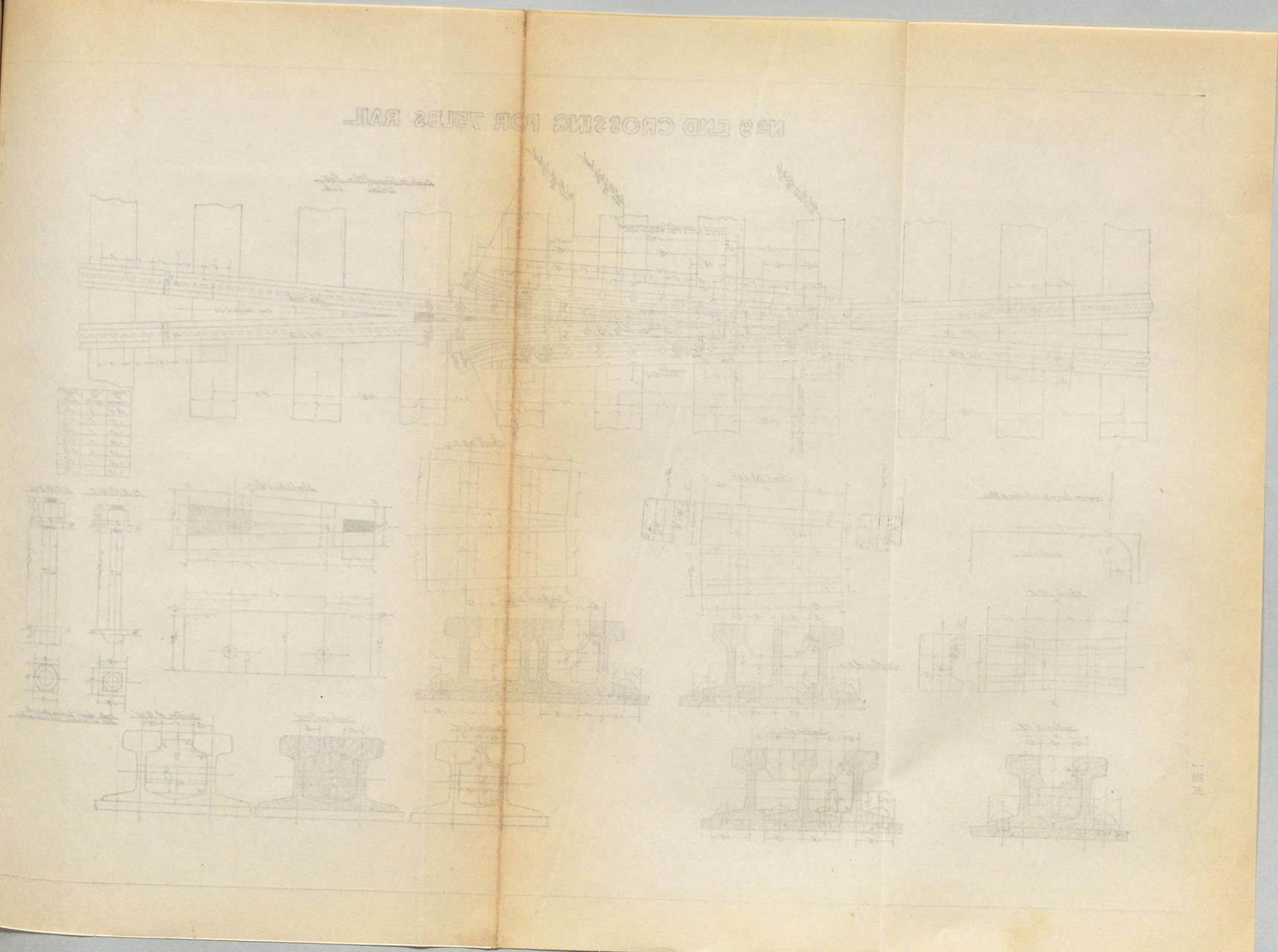
No 9 END CROSSING FOR 75LBS. RAIL.



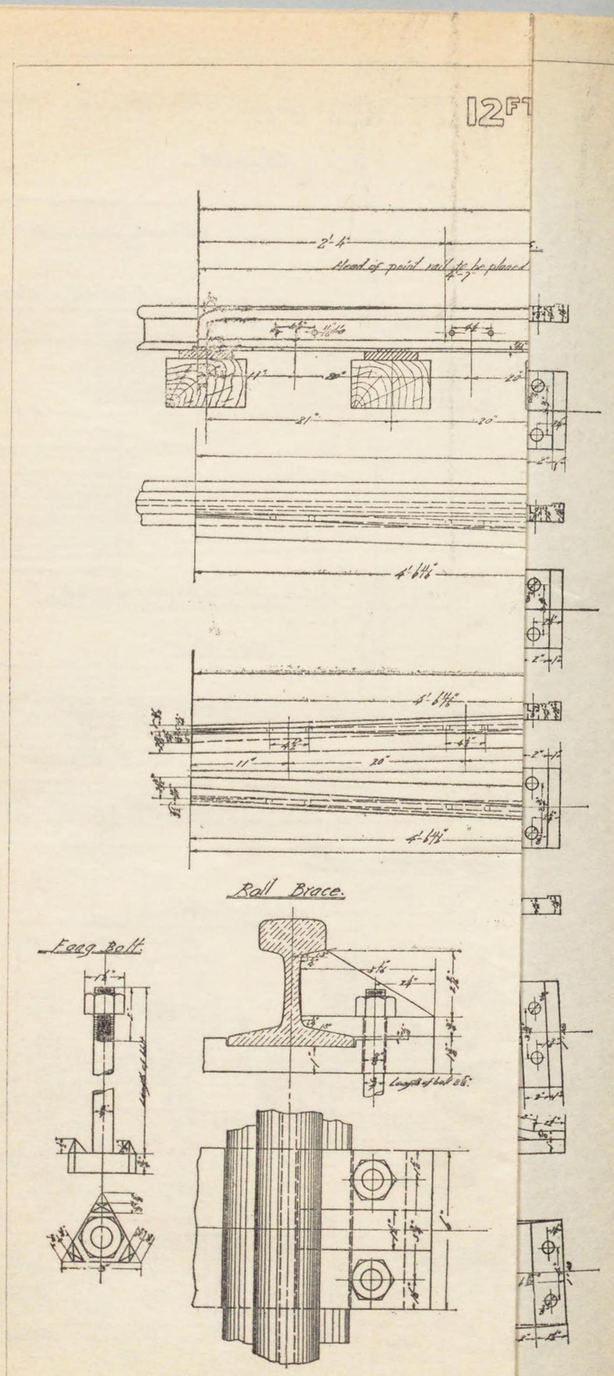
Order number	No of bolts	Length inches
No 11	2	4½
" 12	1	6¼
" 13	1	8¼
" 14	1	10¼
" 15	1	12½
" 16	1	15
" 17	1	18

圖第一七號（五）

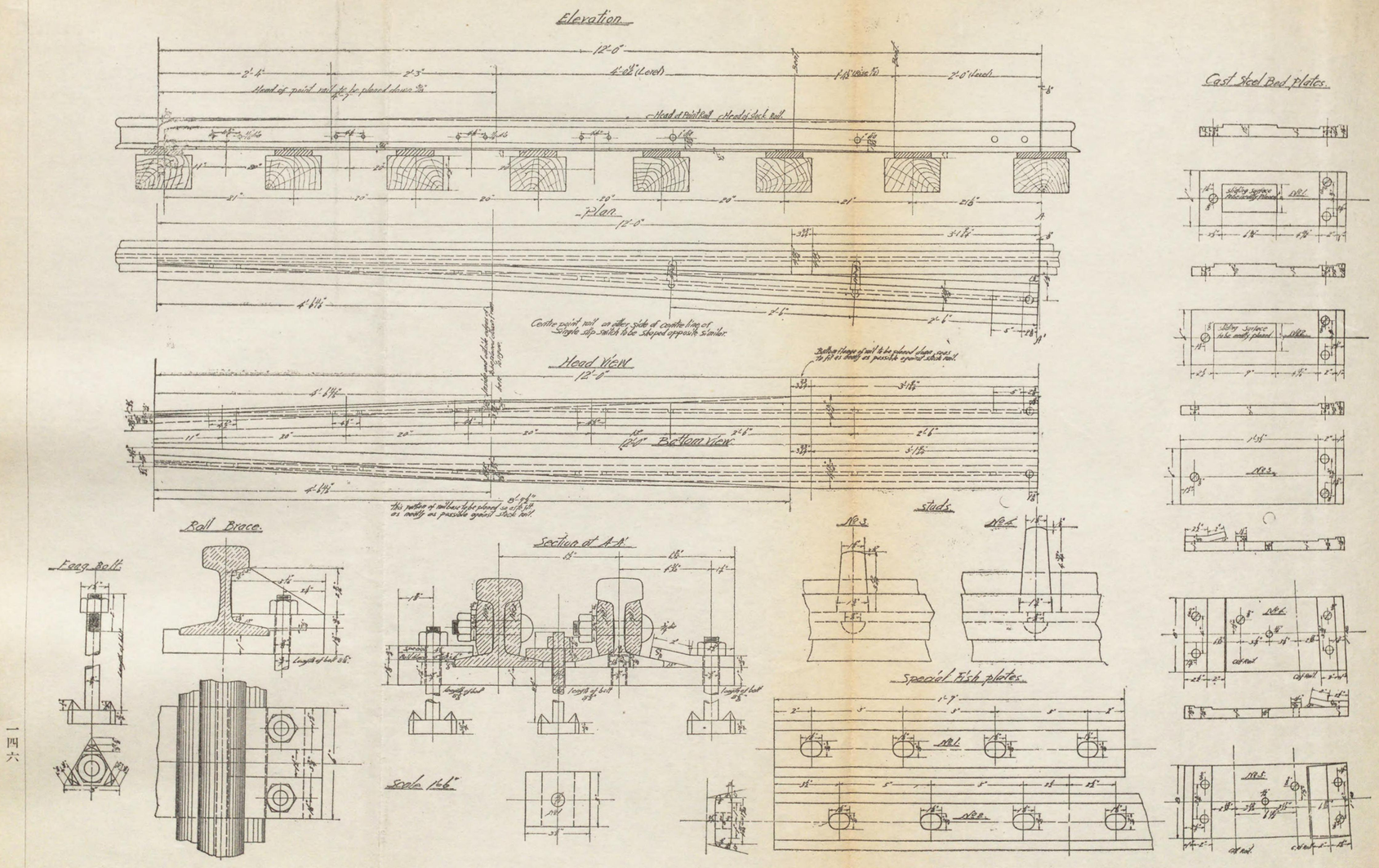




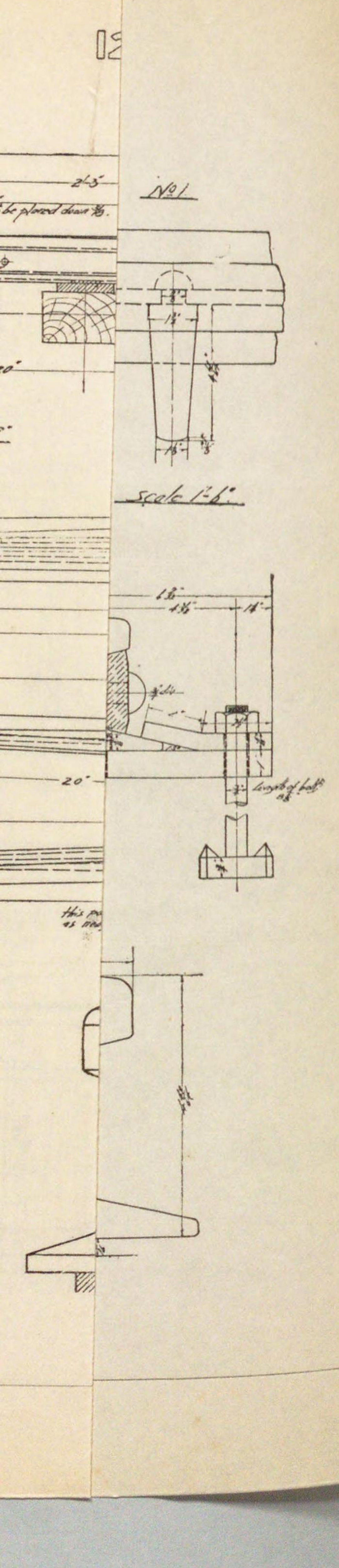
圖第一七號（五）


12FT
Head of point rail to be placed
Ball Brace.
Fang Bolt
Length of bolt 8½"

12FT CENTER POINT RAIL FOR No9 SINGLE SLIP SWITCH.

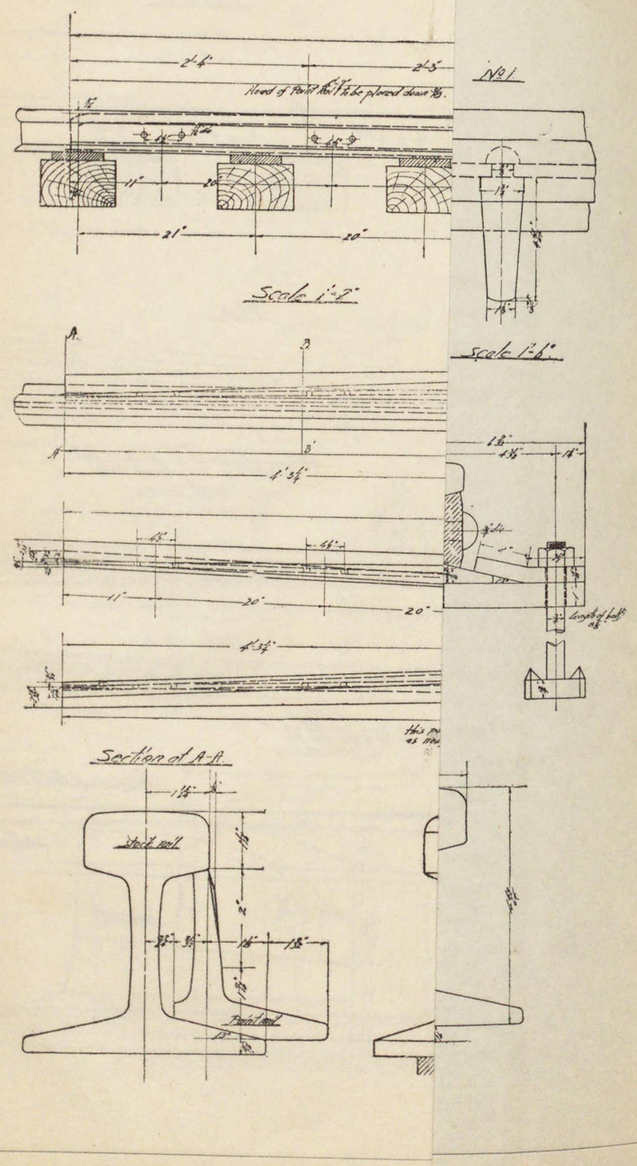


圖第一七號（五）



圖第一七號（六）

圖第一七號(六)



12FT SIDE POINT RAIL FOR Nº9 SINGLE SLIP SWITCH.

Elevation

Scale 1"=1'

Plan

Head View

Bottom View

Scale Full size

Steel

Nº2

Nº1

Section at D-D'

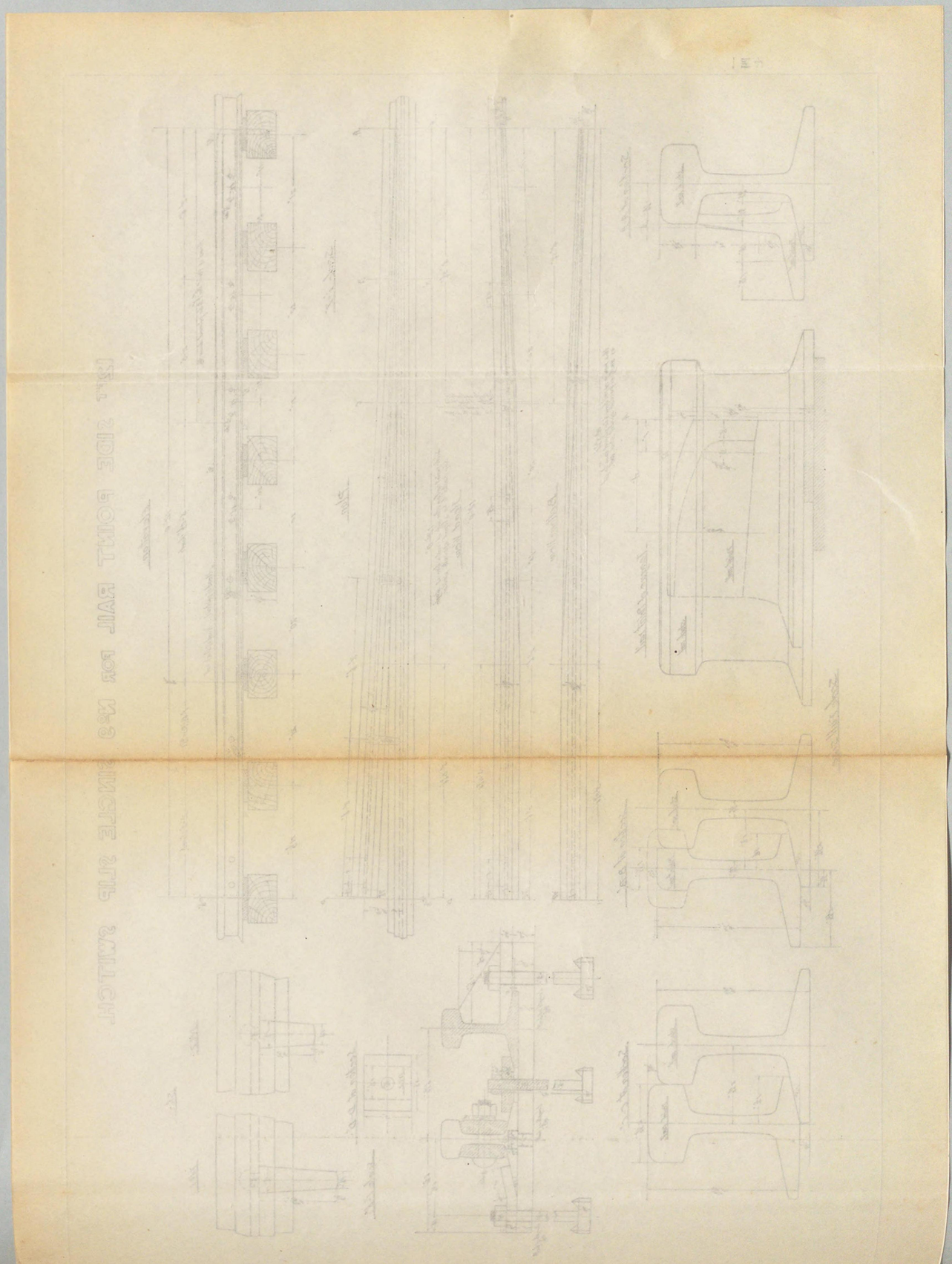
Scale 1"=1'

Section at A-A'

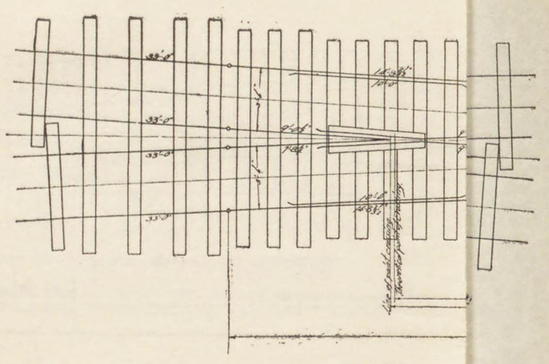
Section at B-B'

Section at C-C'

圖第一七號(七)



圖第一七號（七）

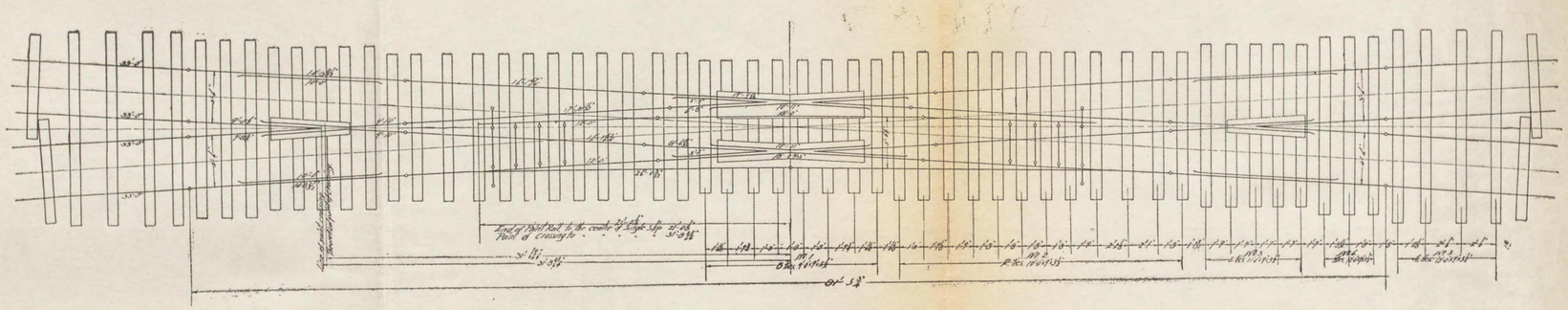


List of Materials for No 9 Crossing Single Slip switch
Annexed to Drawing Sheet No 1 2 3 4 5 6 & 7

No of pieces	Description		Remarks
1	No 9 Centre crossing	No 1	Complete with chocks bolts etc.
1	" " "	No 2	" " " " "
2	No 9 end crossings		" " " " "
2	Centre Point rails	12'-0"	
2	Side Point rails	12'-0"	
4	Guard rails	10'-0"	Complete with chocks braces etc.
2	Stock rails	26'-0½"	
1	Stock rails	18'-0"	Curved
2	Stock rails	17'-10⅝"	
4	Stock rails	12'-1¾"	
4	Stock rails	14'-8¾"	
2	Steel tie bars	No 1	Complete with 2'-⅜" dia. bolts etc.
2	" " "	No 2	" " " " " "
2	" " "	No 3	" " " " " "
2	" " "	No 4	" " " " " "
4	Clips	No 1 & No 1'	Complete with 2'-⅝" dia. bolts etc.
4	"	No 2	" " " " " "
8	"	No 3	" " " " " "
16	Cast steel bed plates	No 1	with sliding surface
8	" " " "	No 2	" " "
4	" " " "	No 3	without sliding surface
2	" " " "	No 4	" " "
2	" " " "	No 5	" " "
30	Rail braces		Cast iron
2	" " (special)		to fit at the ends of 12'-1½" rails
2	Washers	No 1 5"x5½"	to fit at the heels of Point rails
2	"	No 2 5"x5½"	" " " " " "
2	"	No 3 2½"x2½"	Near the ends of 10'-11" Wing rails
4	Pins		to fit at the heels of point rails
92	Fang bolts	¾" dia 8½" length	
28	" "	" 7½" "	
4	" "	⅝" dia 8½" "	
2	" "	" 8¾" "	with lock nut washer
4	Washers		to fit at the heels of Point rails
8	Special fish Plates	No 1	Complete with bolts nuts etc.
4	" " "	No 2	" " " " "
2	Wrought Iron studs	No 1	
2	" " "	No 2	
2	" " "	No 3	
2	" " "	No 4	
42	Steel angle splice bars.		Complete with 4-¾" dia bolts & washers
310 (about)	Spikes		
1	Complete switch connection		
	Packings or tie plates		Under the rails to be put in under the large at rails in same l

№9 SINGLE SLIP SWITCH FOR 75LBS RAIL.

Rails and Sleepers Arrangements.



List of Materials for №9 Crossing Single Slip Switch Annexed to Drawing Sheet №s 1,2,3,4,5,8,9

No of Pieces	Description		Remarks
1	№9 Centre Crossing	№1	Complete with check bolts etc
1	" " "	№2	" " "
2	№9 end crossings		" " "
2	Centre Point rails	10'-0"	
2	Side Point rails	10'-0"	
4	Guard rails	18'-0"	Complete with check, keep as etc
2	Check rails	21'-0½"	
1	Check rail	18'-0"	Curved
2	Wing rails	17'-10½"	
2	Wing rails	11'-7½"	
4	Check rails	14'-9⅜"	
1	Steel Fr. base	№1	Complete with 2-⅞ dia. bolts etc.
1	" " "	№2	" " " " "
2	" " "	№3	" " " " "
1	" " "	№4	" " " " "
16	Chairs	№1 (R.H.)	Complete with 4-⅞ dia. bolts etc.
6	"	№2	" " " " "
10	"	№3	" " " " "
11	Cast steel bed plates	№1	with sliding surface
8	" " "	№2	" " "
4	" " "	№3	Without sliding surface
2	" " "	№4	" " "
2	" " "	№5	" " "
32	Rail braces		Cast iron
2	" (spools)		To fill up the ends of 11"-0" rails
2	Washers	№1 3"x3"x⅜"	to fill up the heads of Point rods
2	"	№2 3"x3"x½"	" " " " "
2	"	№3 4½"x4½"x½"	Near the ends of 9"-0" wing rails to fill up the heads of point rails
8	Nuts	⅞	
22	Fang bolts	⅞ dia. 8⅜" length	
28	"	⅞ " 8" "	
8	"	⅞ " 8½" "	
2	"	⅞ " 6" "	with check and washer
4	Washers	5"dia.x⅜"	to fill up the heads of Point rails
8	Spooled Fish Plates	№1	Complete with bolts and etc
4	" " "	№2	" " "
2	Wrought Iron rods	№1	
2	" " "	№2	
2	" " "	№3	
2	" " "	№4	
32	Steel angle splice bars		Complete with ⅞ dia. bolts & washers
32 (about)	Spikes		
1	Complete switch connection		
1	Double rod for Point		Including with the pull & push by hand attached to lever No 1

List of Materials for Centre №9 Crossings of Single Slip Switch Annexed to Drawing Sheet №s 3 & 7

Centre Crossing №1.

No of Pieces	Description		Remarks
1	Check rail	№1 14'-5⅞"	
1	Wing rail	№2 16'-11"	
2	Side wase rail	№s 3&5 5'-1"	
2	Main wase rail	№s 4&6 6'-8"	
1	Cast iron check	A 9"	
2	Cast iron checks	B 7"	
2	" " "	C 7"	
2	" " "	D 9"	
2	" " "	E 7"	
2	Cast iron fixed check	F 7"	
2	Steel bolts	№1 Tube 1⅛ length	for check A with lock nut washer & bevel washers
2	" "	№2 " 4½ "	" " A&C " " " " "
2	" "	№3 " 7½ "	" " " " " " "
2	" "	№4 " 10½ "	" " DEF " " " " "
2	" "	№5 " 13½ "	" " " " " " "
2	" "	№6 ⅞ dia. 17½ "	" " F " " " " "
2	" "	№7 " 14⅜ "	" " " " " " "
1	Steel bed plate	№1 18"x11"x⅜"	
16	⅞ dia. bolts & nuts	3" long	
1	⅞ dia. Steel rivets		

Centre Crossing №2.

No of Pieces	Description		Remarks
1	Check rail	№1 18'-0"	
1	Wing rail	№2 15'-11"	
2	Side wase rail	№s 3&5 5'-1"	
2	Main wase rail	№s 4&6 8'-8½"	
1	Cast iron check	A 9"	
2	Cast iron checks	B 7"	
2	" " "	C 9"	
2	" " "	D 7"	
2	" " "	E 9"	
2	Cast iron fixed checks	F 12"	
2	Steel bolts	№1 Tube 1⅛ length	for check A with lock nut washer & bevel washers
2	" "	№2 " 4½ "	" " A&C " " " " "
2	" "	№3 " 7½ "	" " " " " " "
2	" "	№4 " 10½ "	" " DEF " " " " "
2	" "	№5 " 13½ "	" " " " " " "
2	" "	№6 ⅞ dia. 17½ "	" " F " " " " "
2	" "	№7 " 14⅜ "	" " " " " " "
1	Steel bedplate	№1 18"x11"x⅜"	
16	⅞ dia. bolts & nuts	3" long	
1	⅞ dia. Steel rivets		

List of Materials for 1 End №9 Crossing of Single Slip Switch Annexed to Drawing Sheet №4.

No of Pieces	Description		Remarks
1	Wing rail	№1 9'-10"	
1	" "	№2 9'-10"	
1	Side wase rail	№3 7'-0½"	"
1	Main wase rail	№4 9'-10"	
1	Cast iron check	№5 9"	
1	" " "	№6 9"	
1	" " "	№7 9"	
1	" " "	№8 9"	
1	" " "	№9 9"	
1	Cast iron fixed check	№10 11"	
1	Steel bolts	№11 1⅛ length	for check №s with lock nut washer & bevel washers
1	Steel bolt	№12 " 4½ "	" " " " " " " "
1	" "	№13 " 7½ "	" " " " " " " "
1	" "	№14 " 10½ "	" " №13 " " " " "
1	" "	№15 " 13½ "	" " " " " " " "
1	" "	№16 ⅞ dia. 17½ "	" " №15 " " " " "
1	" "	№17 " 14⅜ "	" " " " " " " "
1	Steel bed Plate	9'-10½"x11"x⅜"	
3	⅞ dia. one end counter sunk Steel rivets		
3	⅞ dia. Steel rivets		

List of Materials for 1 Guard Rail of №9 Single Slip Switch Annexed to Drawing Sheet №2.

No of Pieces	Description		Remarks
1	Guard rail	10'-0"	Curved at both ends
4	Rail braces		
4	Checks		
12	Fang bolts for braces ⅞ dia. 8" length		
4	Bolts for Checks	1⅛ "	With square washers & lock nut Washers

List of Rails for №9 Single Slip Switch Annexed to Drawing Sheet №7

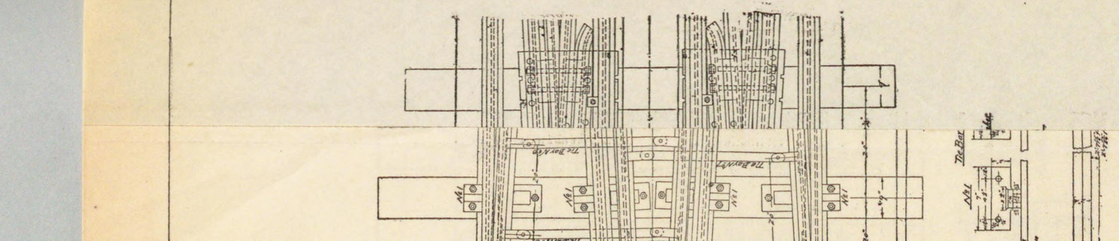
No of Pieces	Description		Remarks
2	Side wase rails	5'-1"	for №9 end crossing
2	Main wase rails	8'-8½"	" " " "
4	Wing rails	9'-10"	" " " "
1	Check rail	18'-0½"	for №9 Centre Crossing №1
1	" "	18'-0"	" " " " " "
2	Side wase rails	5'-1"	" " " " " "
2	Main wase rails	8'-8½"	" " " " " "
2	Point rails	10'-0"	Centre point rails
2	" "	10'-0"	Side point rails
2	Check rails	21'-0½"	Both Curved
1	" "	18'-0"	Curved
2	" "	17'-10½"	
2	" "	11'-7½"	
4	" "	14'-9⅜"	
4	Guard rails	18'-0"	

List of Sleepers for №9 Single Slip Switch Annexed to Drawing Sheet №7

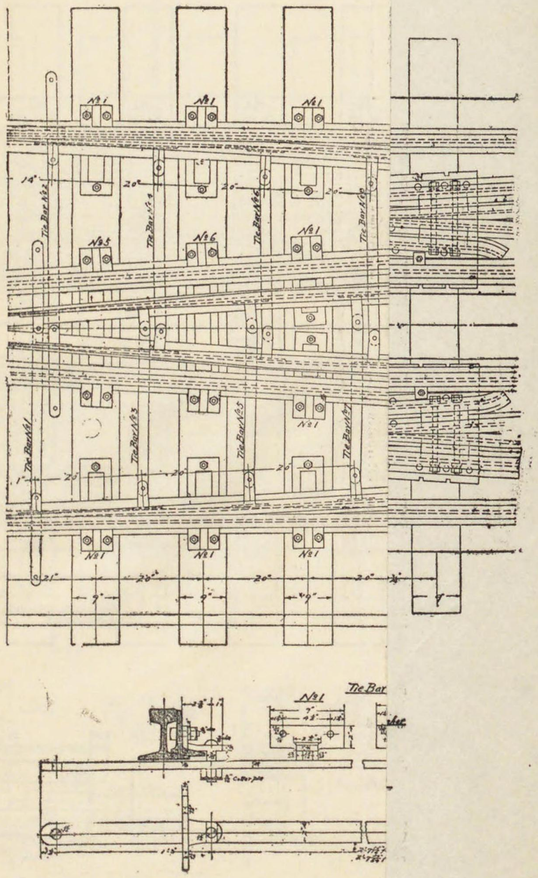
No of Pieces	Description		Remarks
8	Sleepers	№1 9'-5"x8"x4½"	
16	"	№2 10'-5"x8"x4½"	
12	"	№3 11'-5"x8"x4½"	
4	"	№4 12'-5"x8"x4½"	
8	"	№5 13'-0"x8"x4½"	

第一八號圖

七十五封度軌條製九番ダブルスリップスウキッチ定規　明四三、一二　建一〇五八

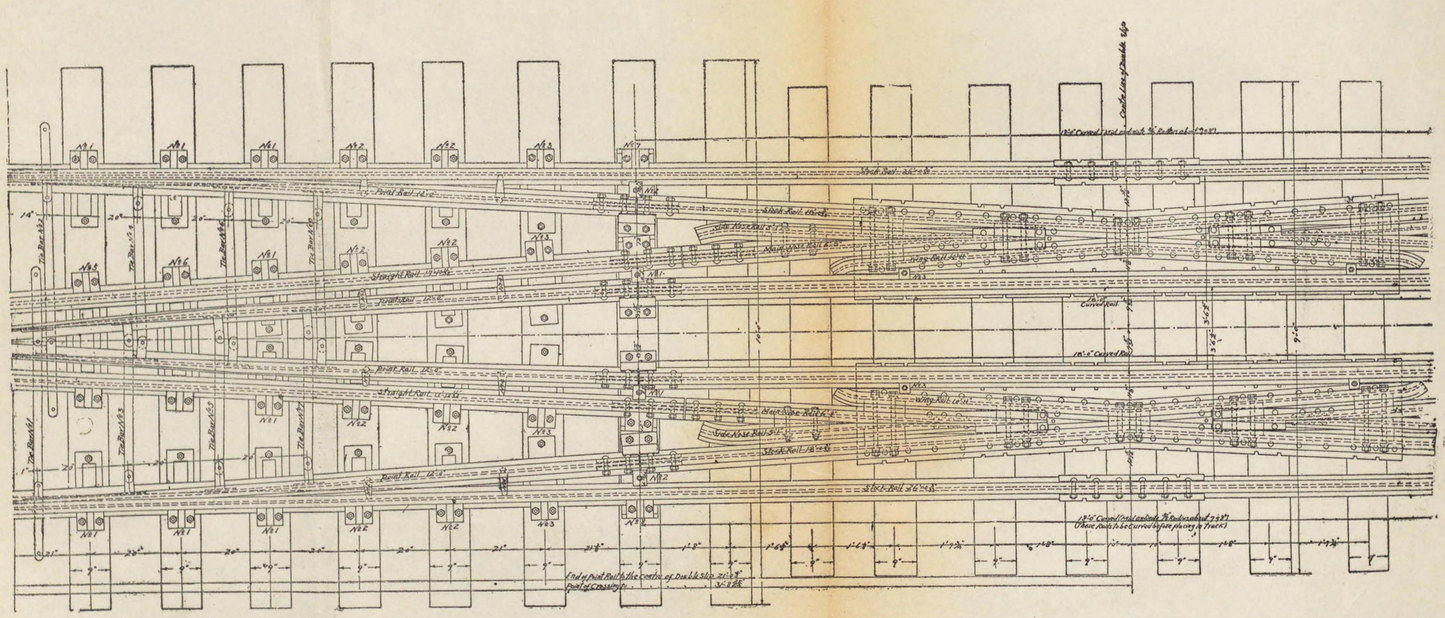


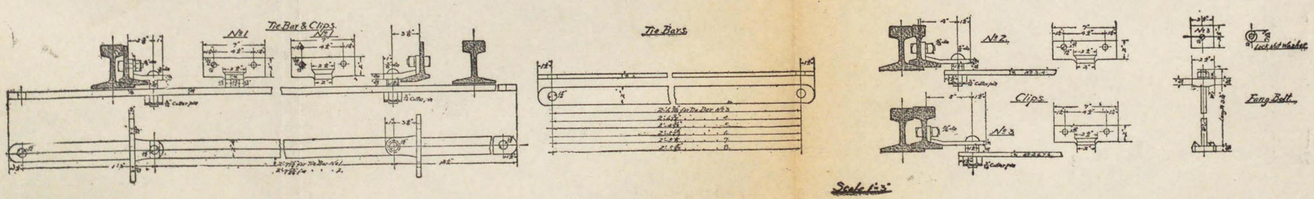
圖第一八號（一）



七十五封度軌條製九番ダブルスリップスウキッチ定規　明四三、一二　達一〇五八

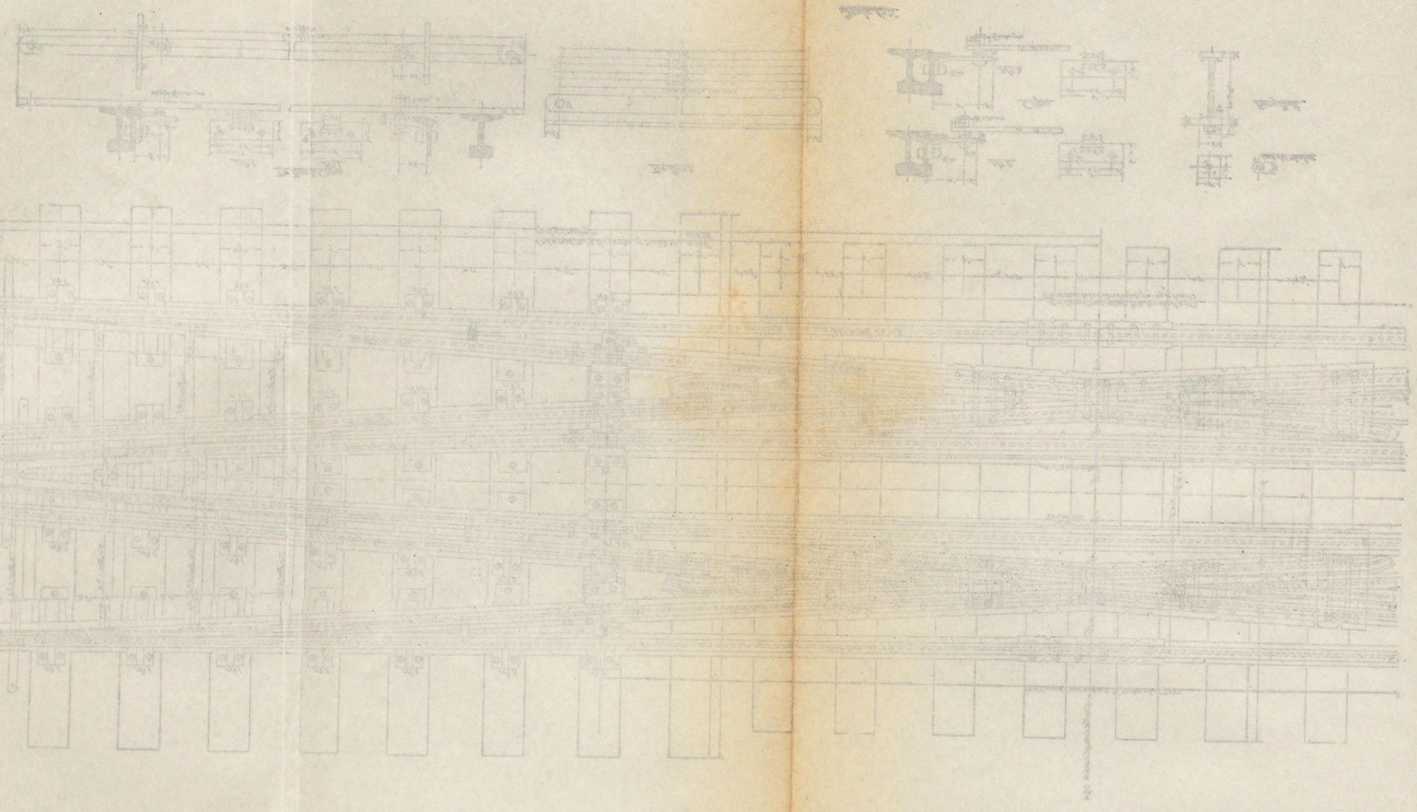
GENERAL PLAN OF № 9 DOUBLE SLIP SWITCH. (1)



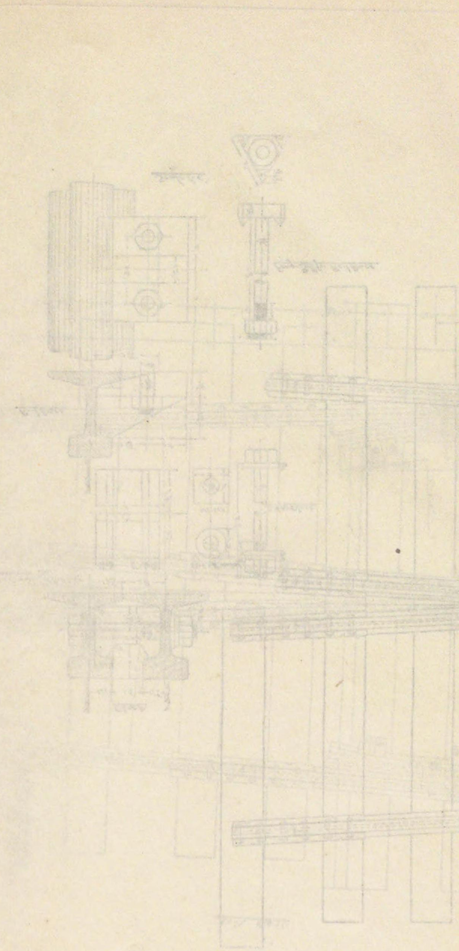


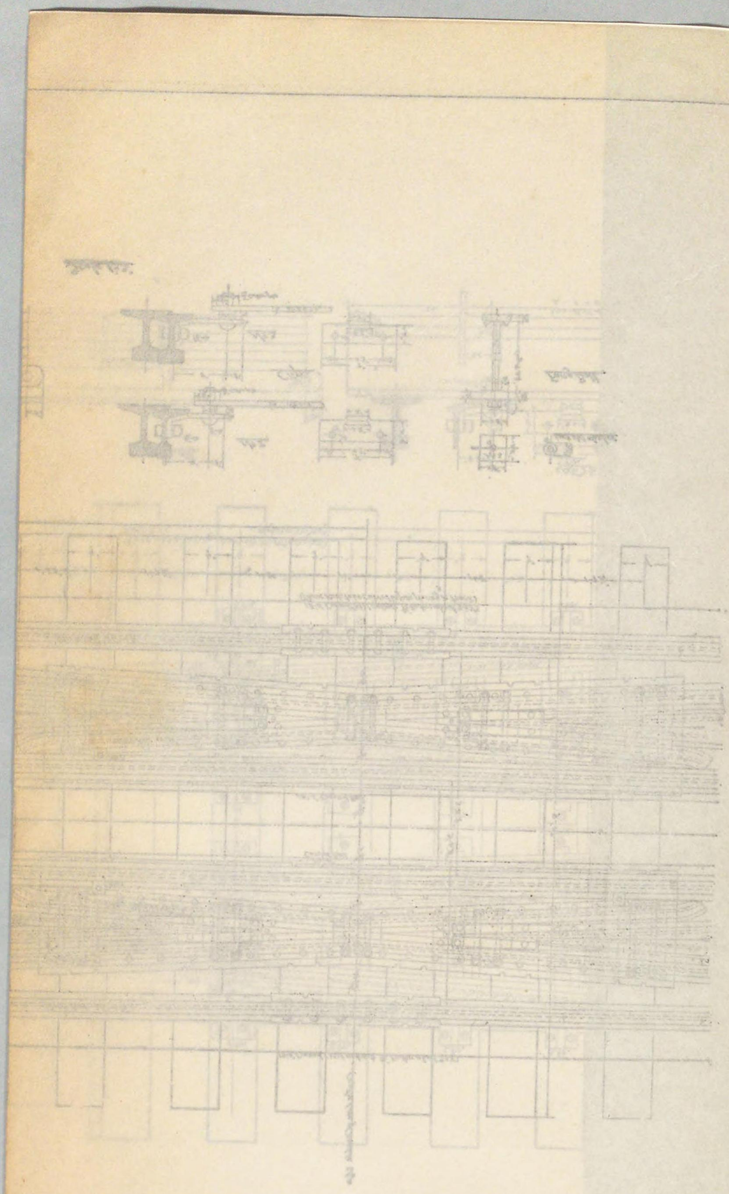
圖第一八號（一）

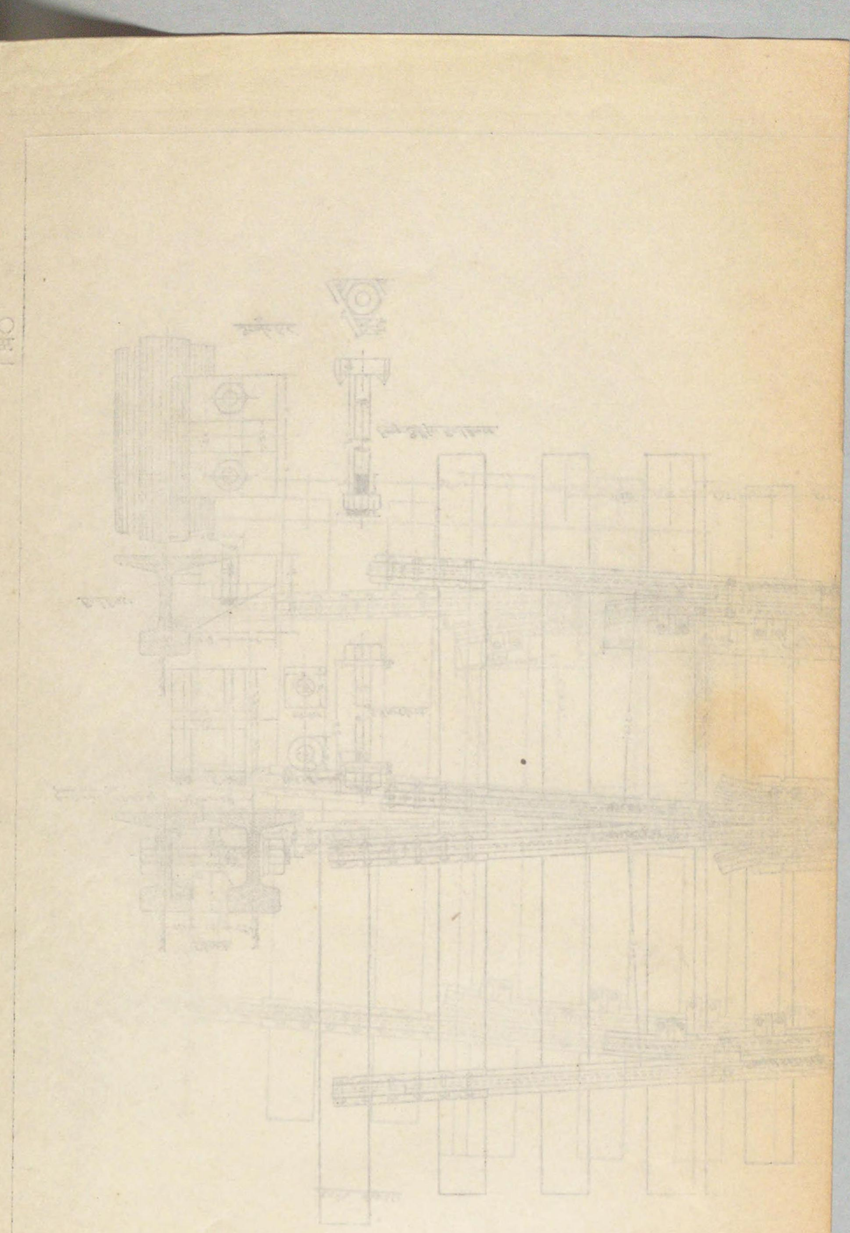
七十五封度軌條製九番ダブルスリップスウキッチ定規　明四三、一二　達一〇五八



GENERAL PLAN OF 2º & DOUBLE SIDE SWITCH (1)

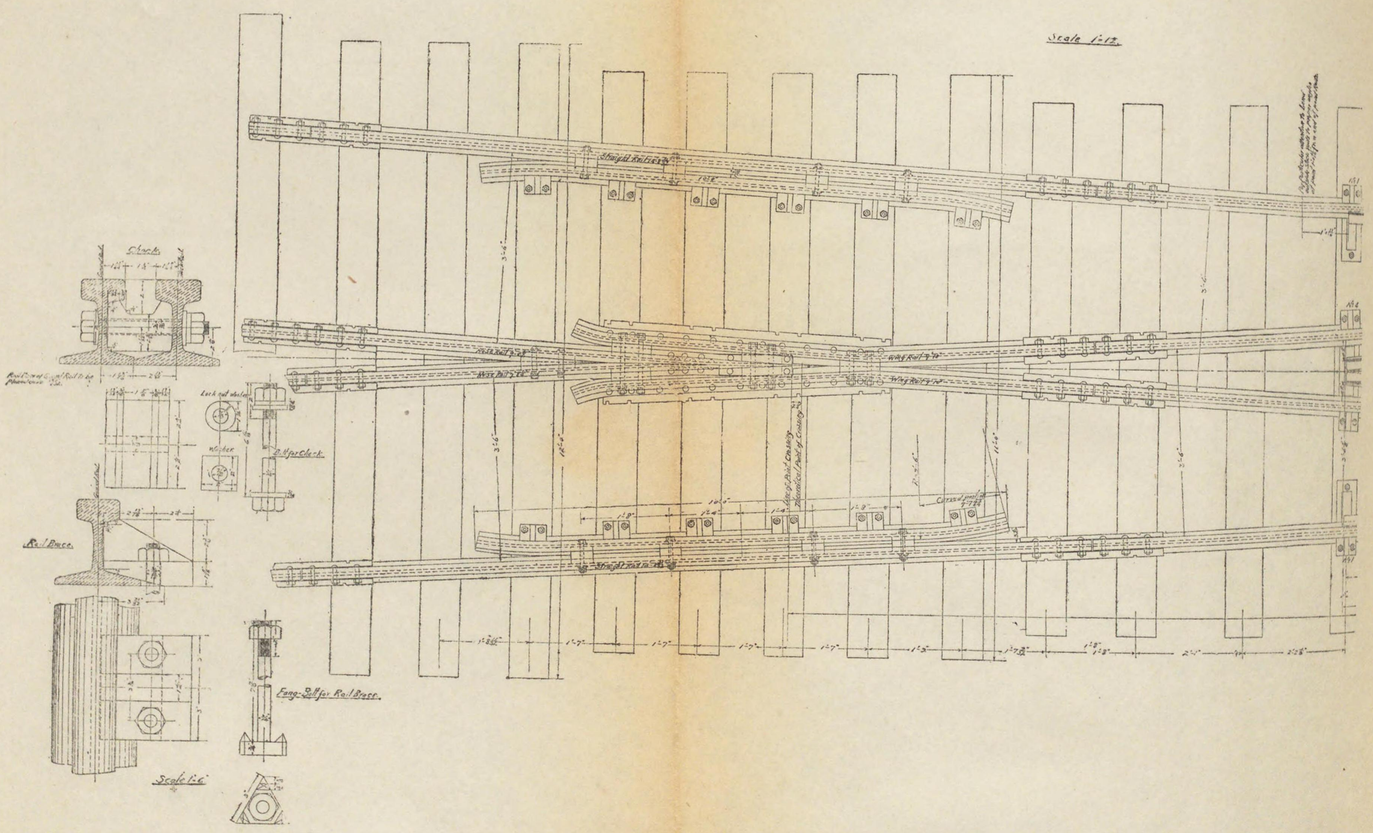


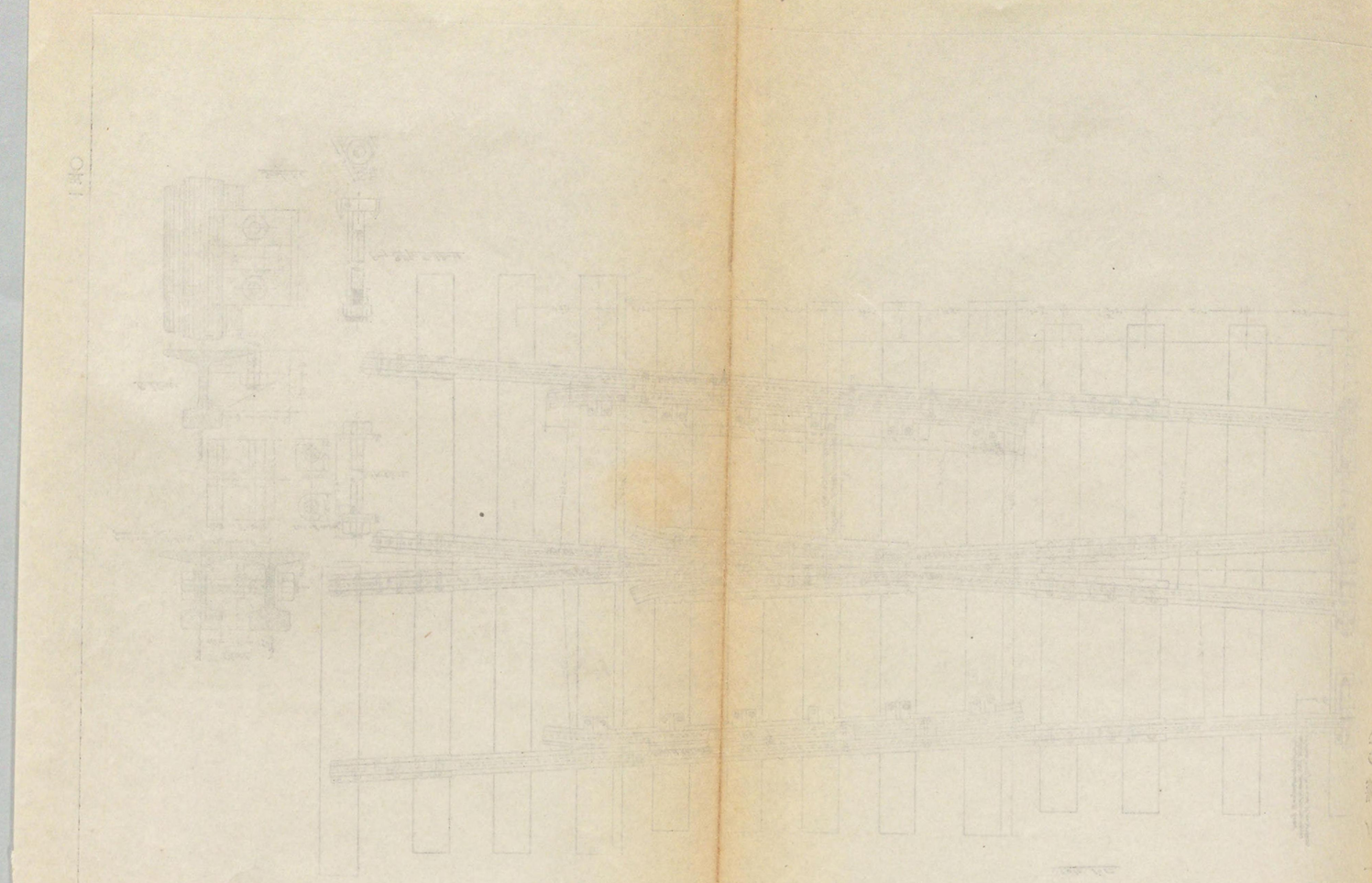




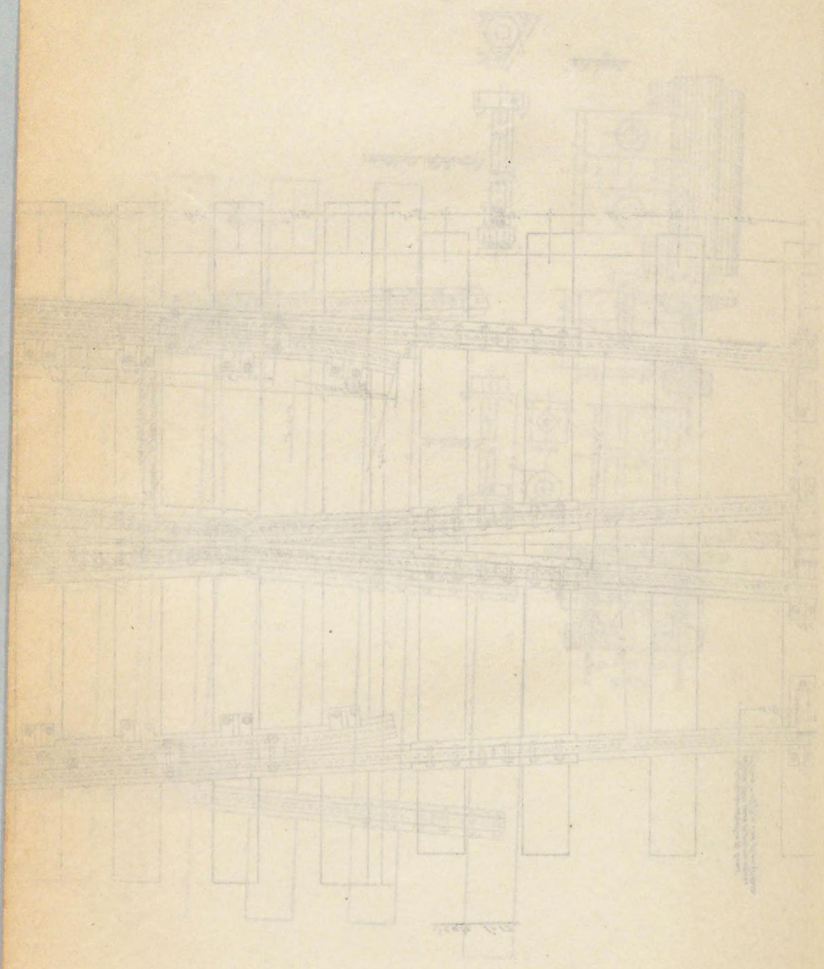
GENERAL PLAN OF NO 9 DOUBLE SILP SWITCH. (2)

圖第一八號(二)

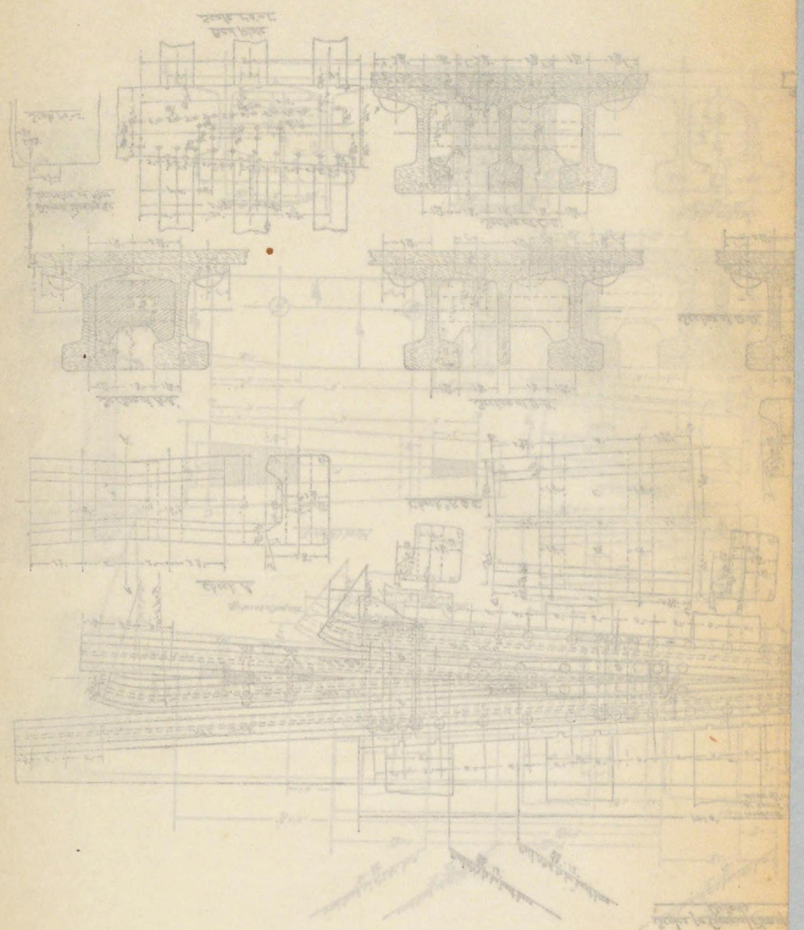




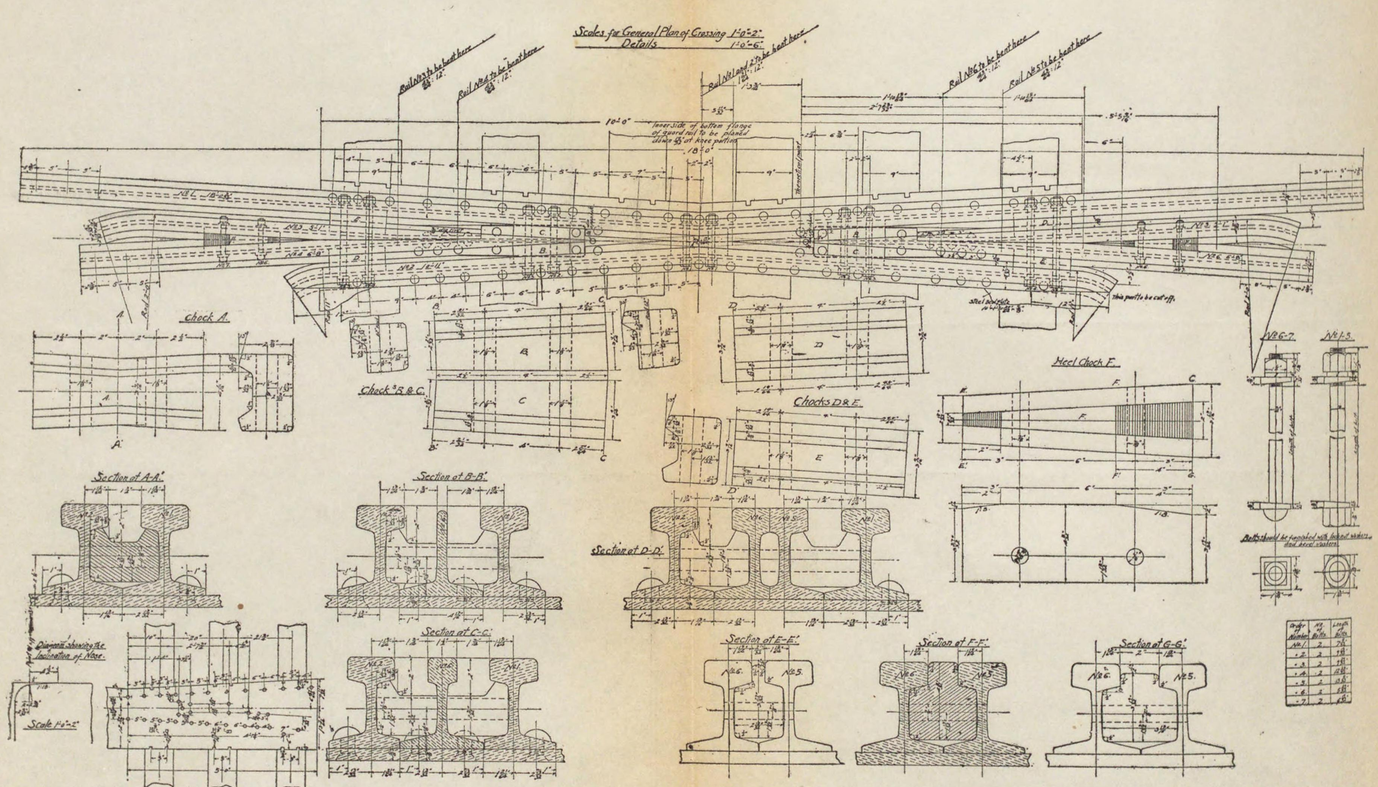
GENERAL DATA OF NO 5 DOUBLE SLIP SWITCH (5)



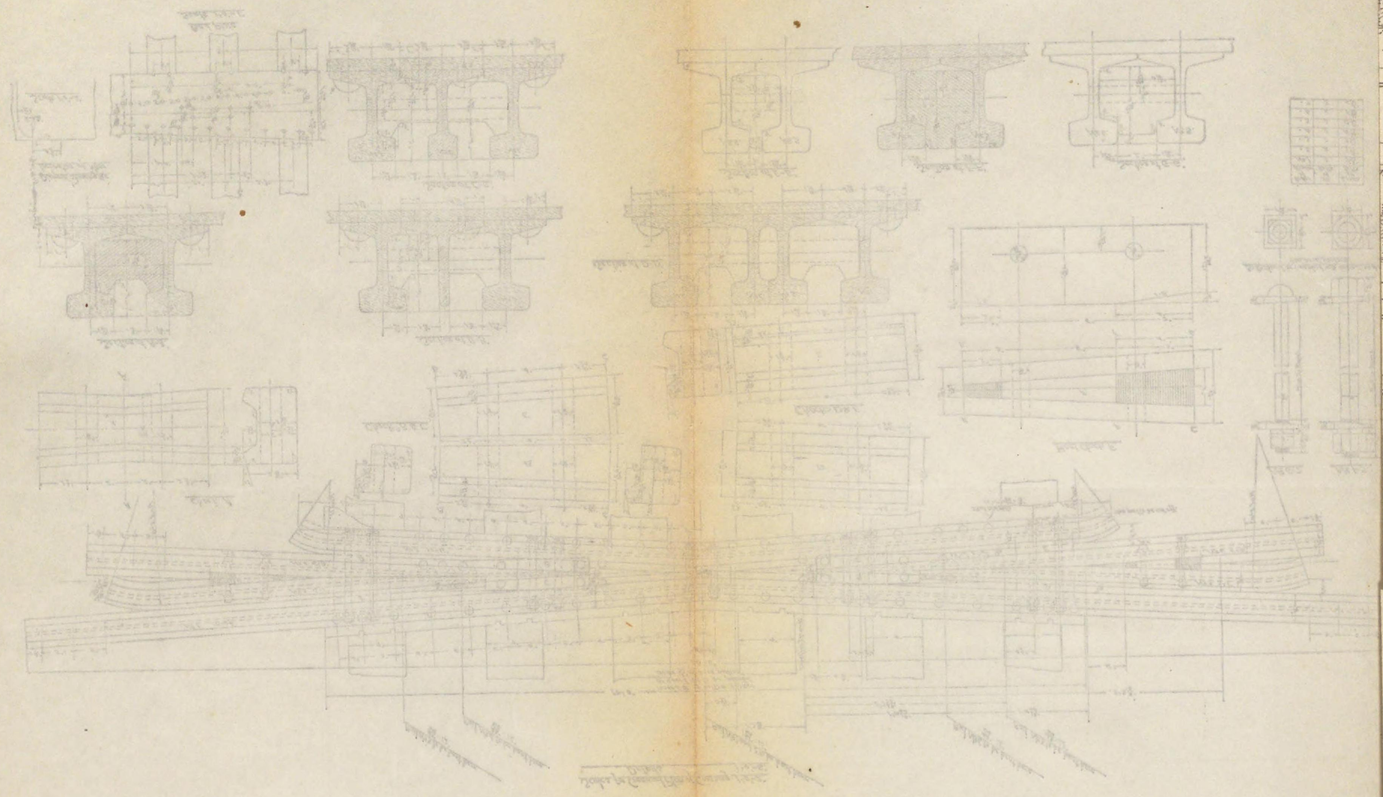
(5) DOUBLE SLIP SWITCH



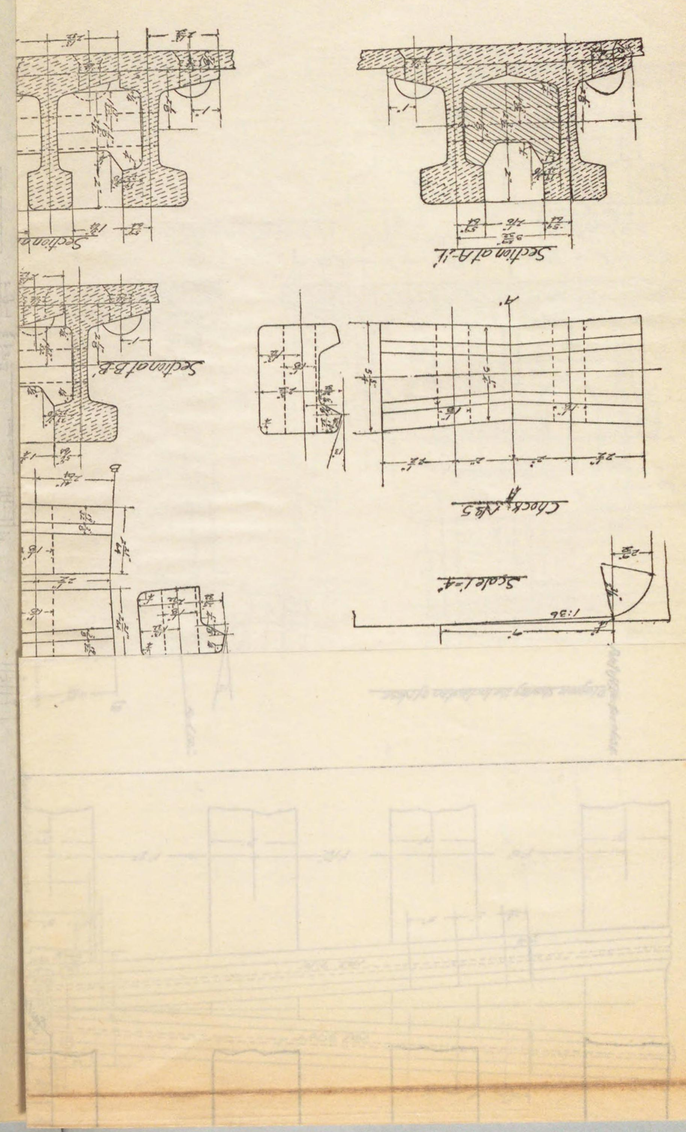
No 9 CENTER CROSSING FOR 75LBS RAIL.

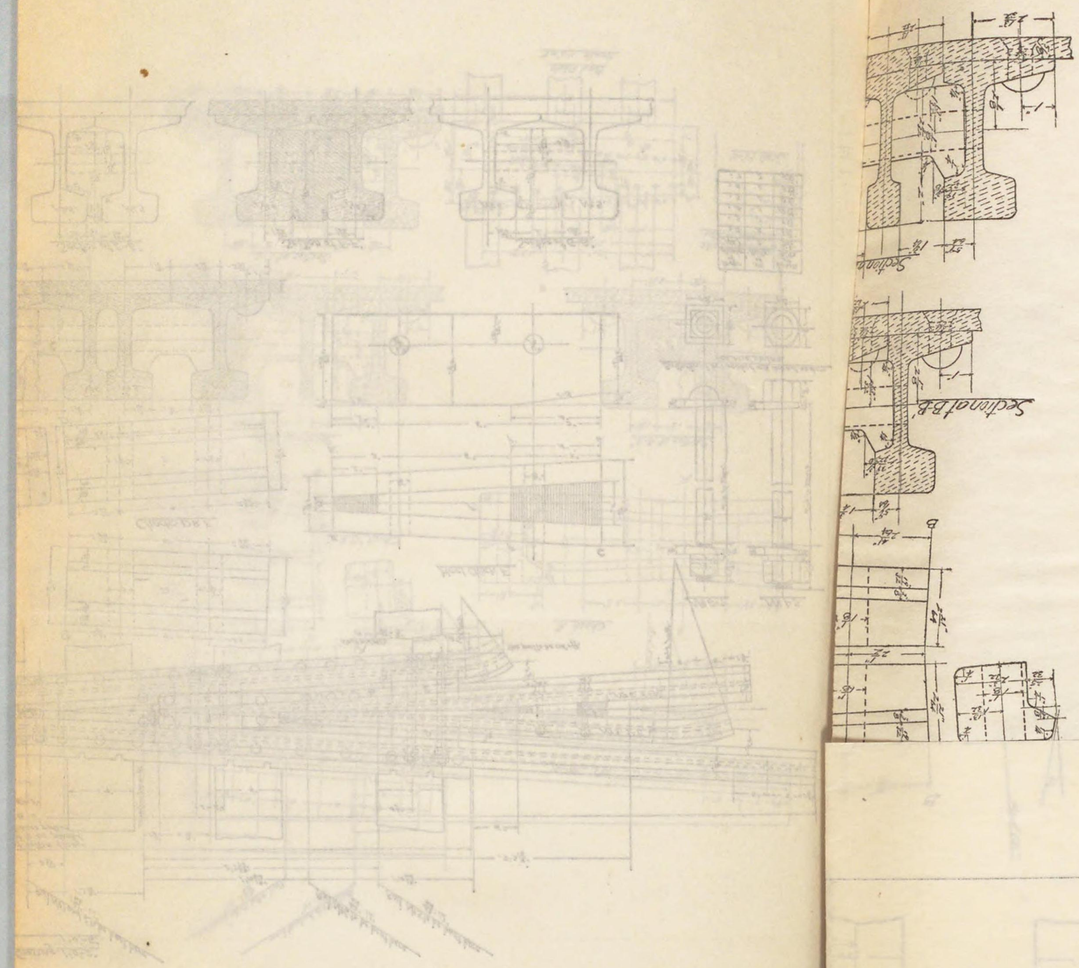


圖第一八號 (111)

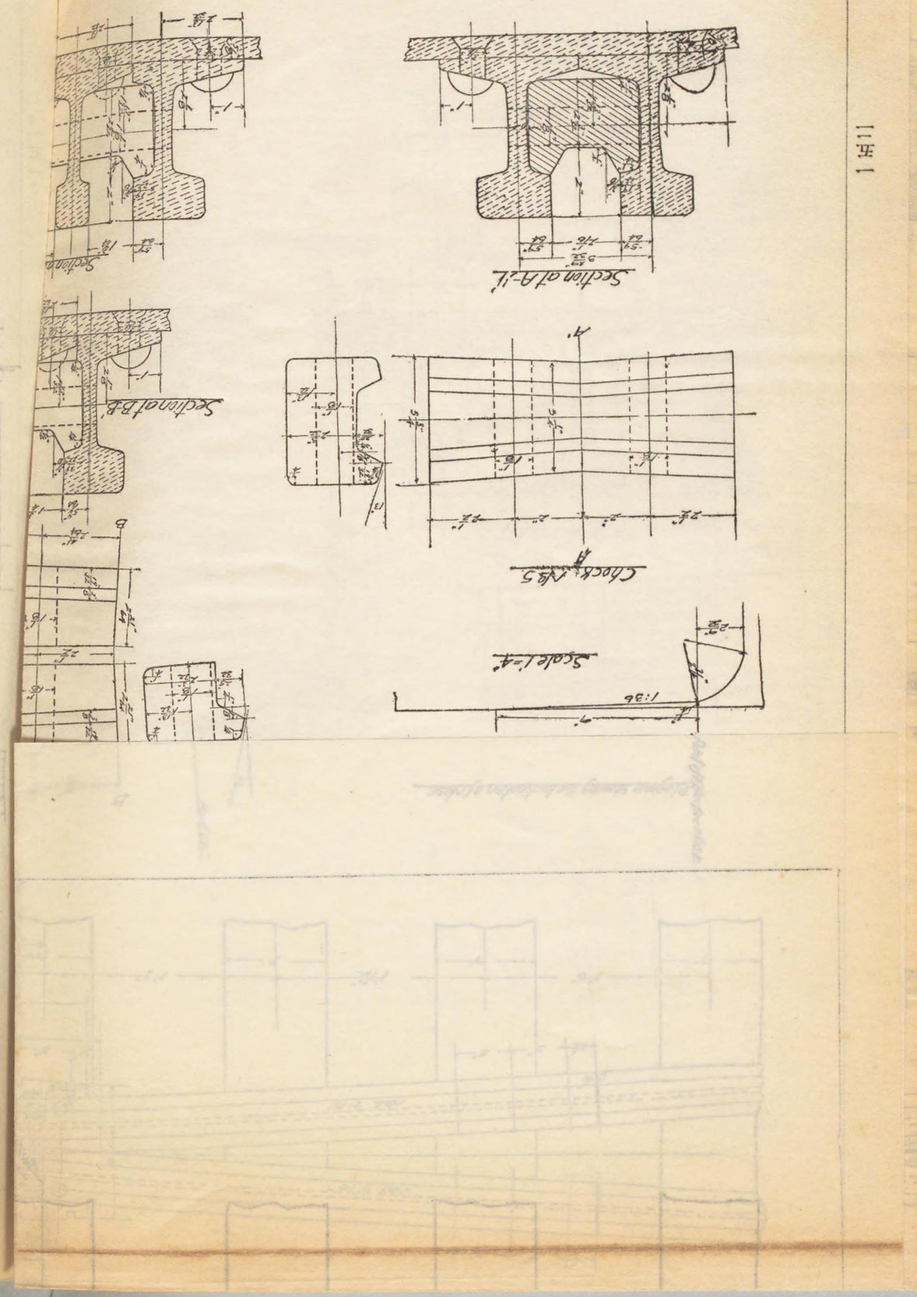


No 9 CENTER CROSSING FOR 45LBS RAIL.

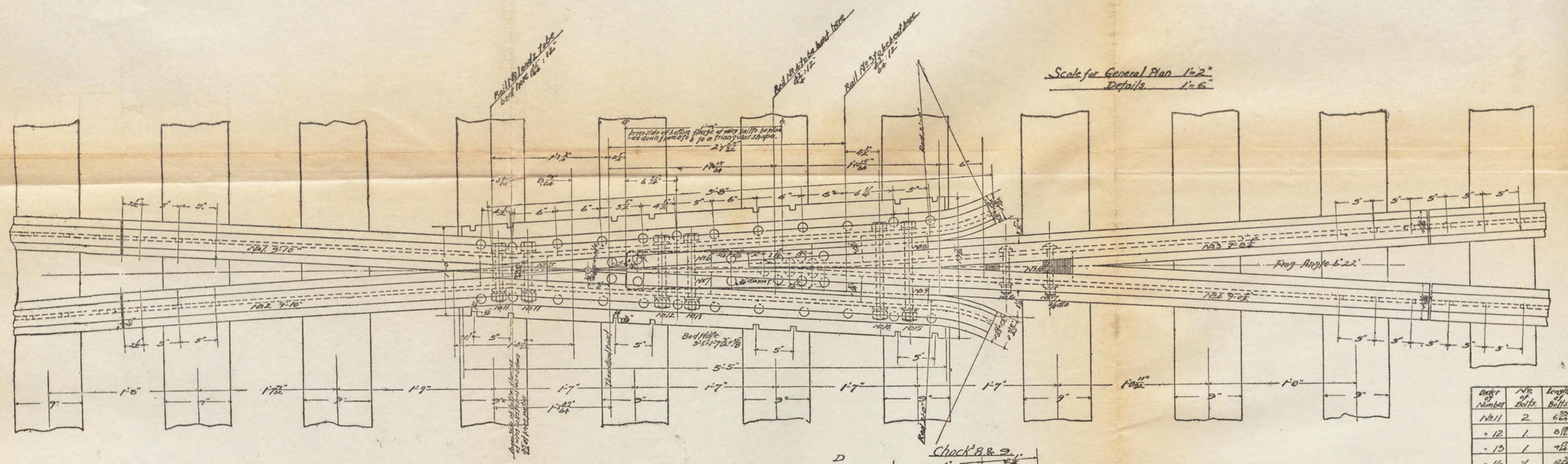




SPINC FOR 127LBS. RAIL.

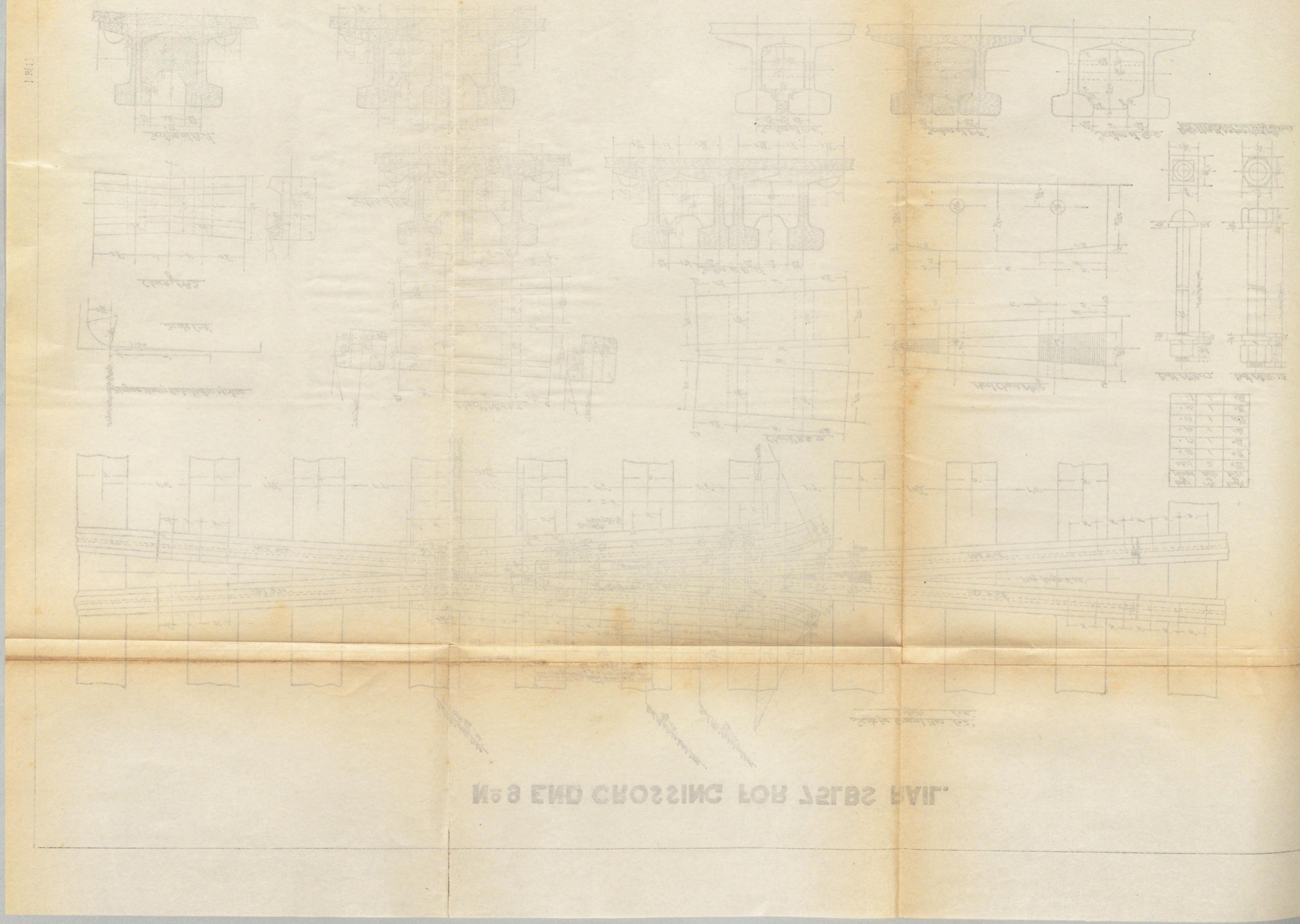


No 9 END CROSSING FOR 75LBS RAIL.

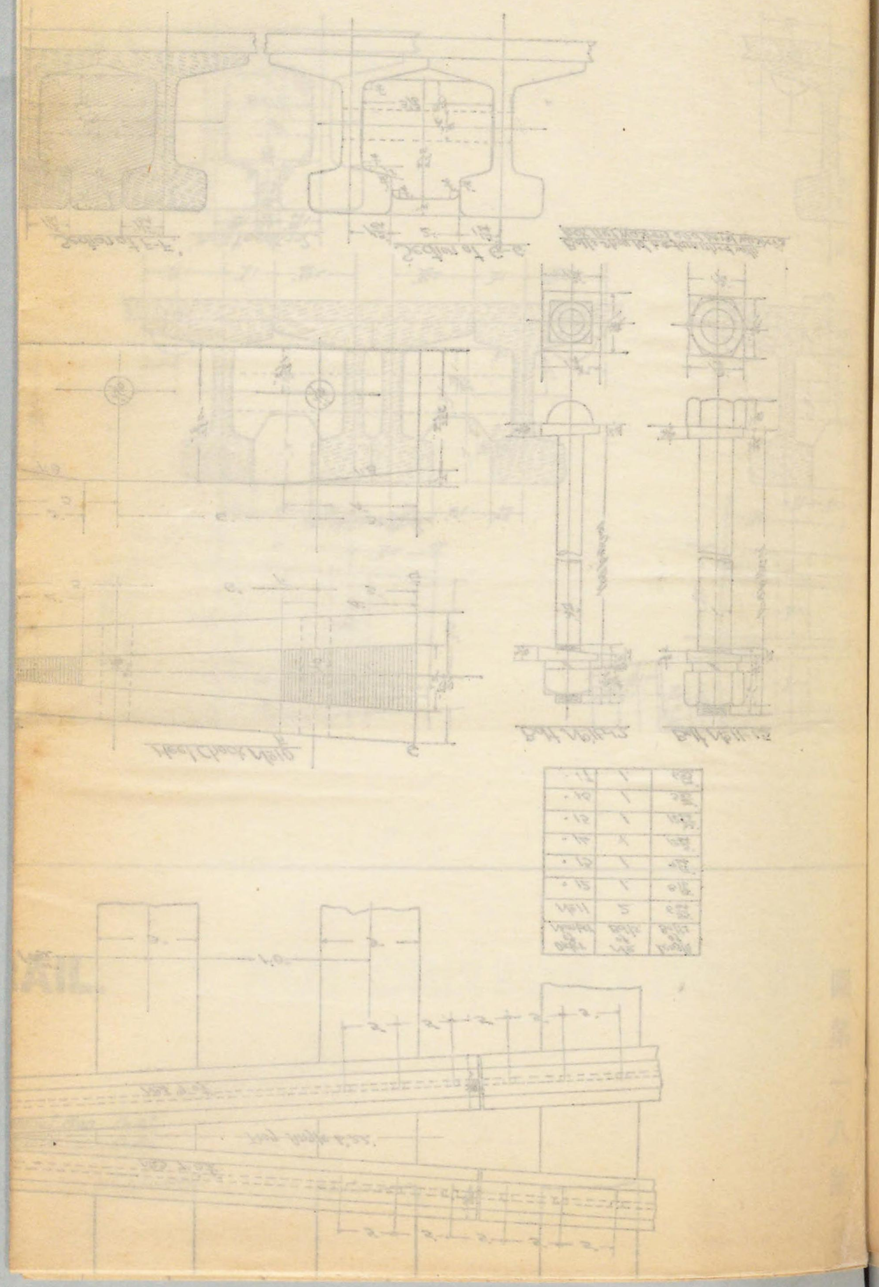


Bolt Number	No of Bolts	Length of Bolts
No 11	2	6 22/64"
" 12	1	8 1/2"
" 13	1	9 1/4"
" 14	4	10 1/4"
" 15	1	10 1/2"
" 16	1	5 32/64"
" 17	1	6 3/4"

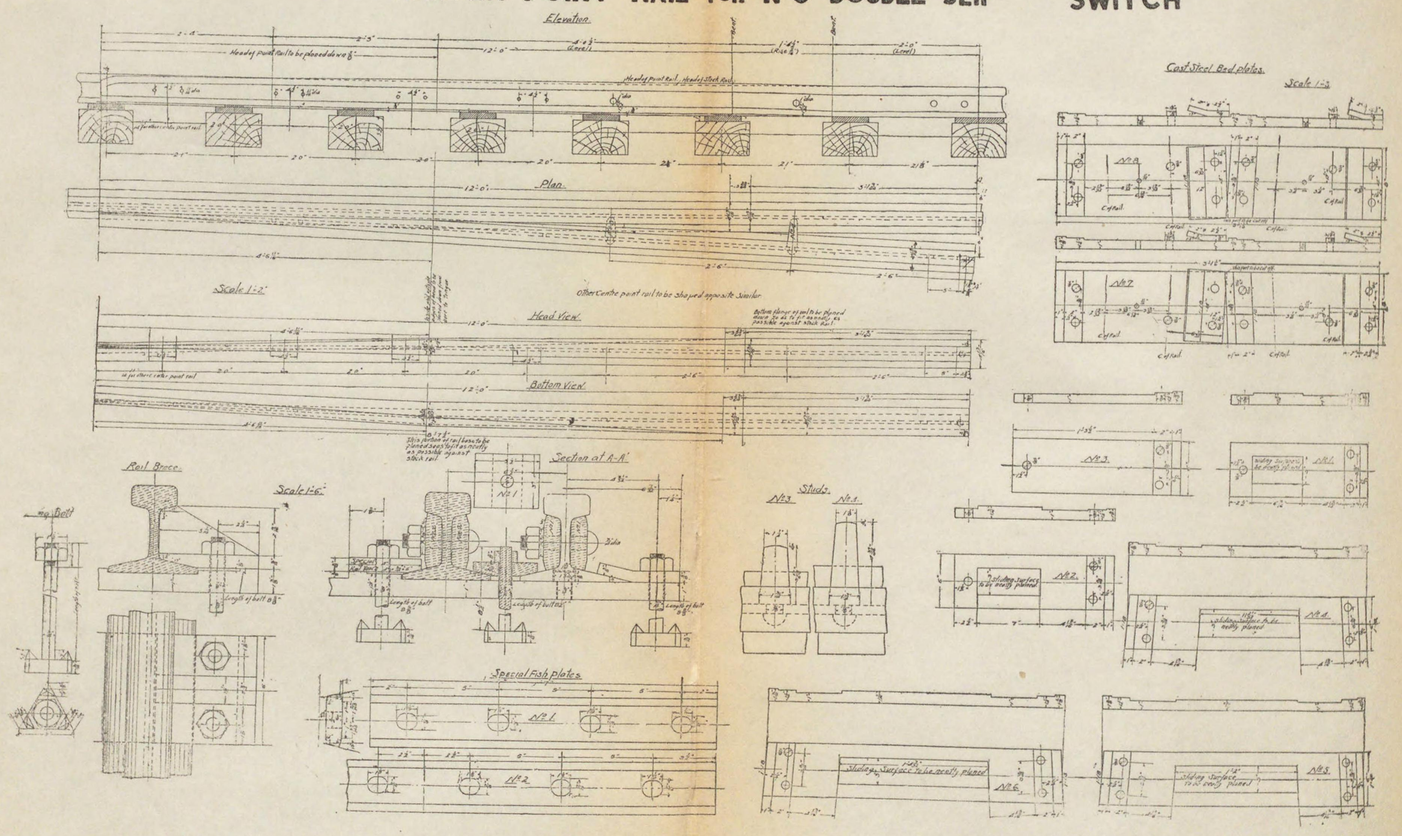
圖第一八號(四)



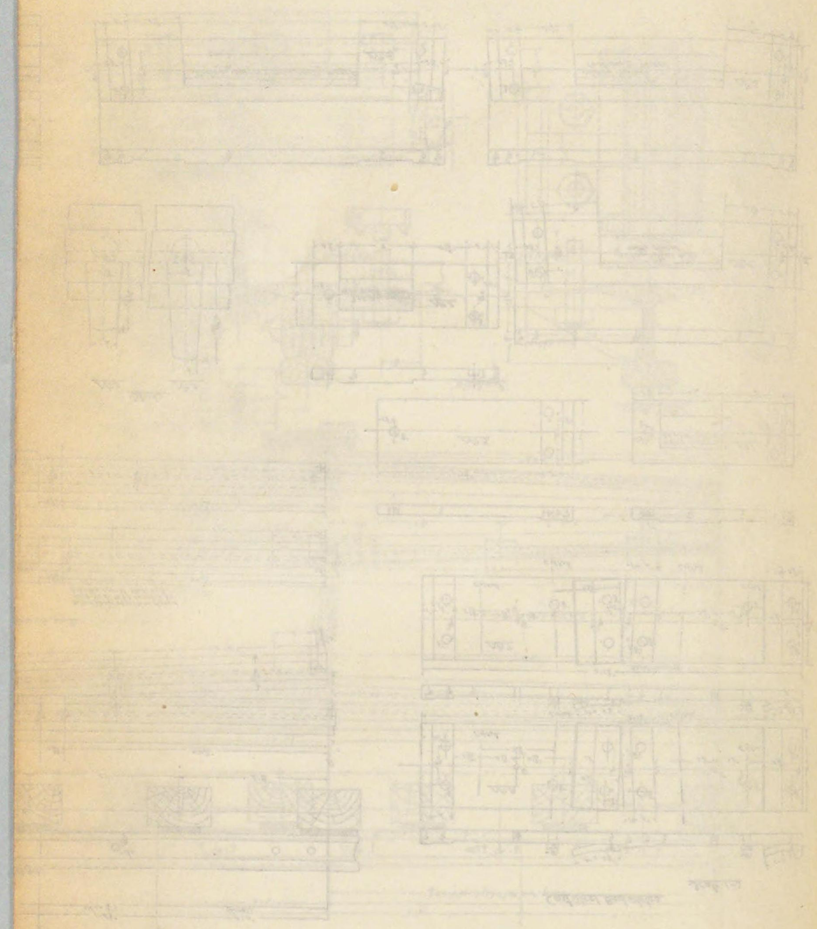
No 9 END CROSSING FOR 75LBS RAIL.



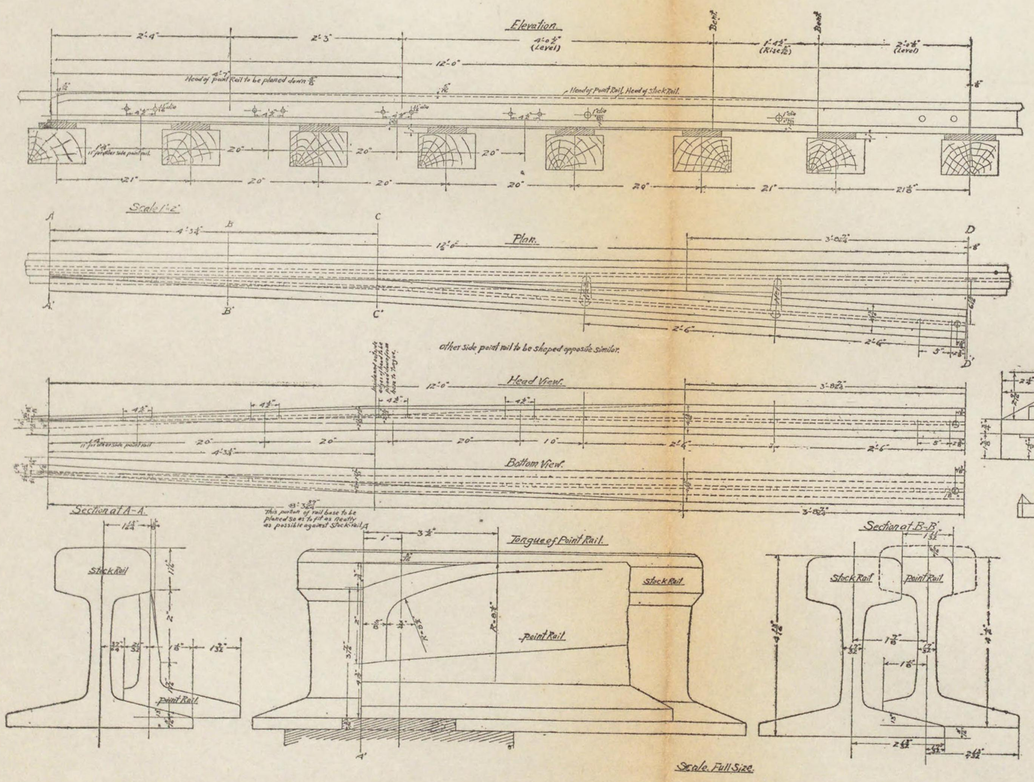
12FT CENTER POINT RAIL FOR No9 DOUBLE SLIP SWITCH



圖第一八號（五）

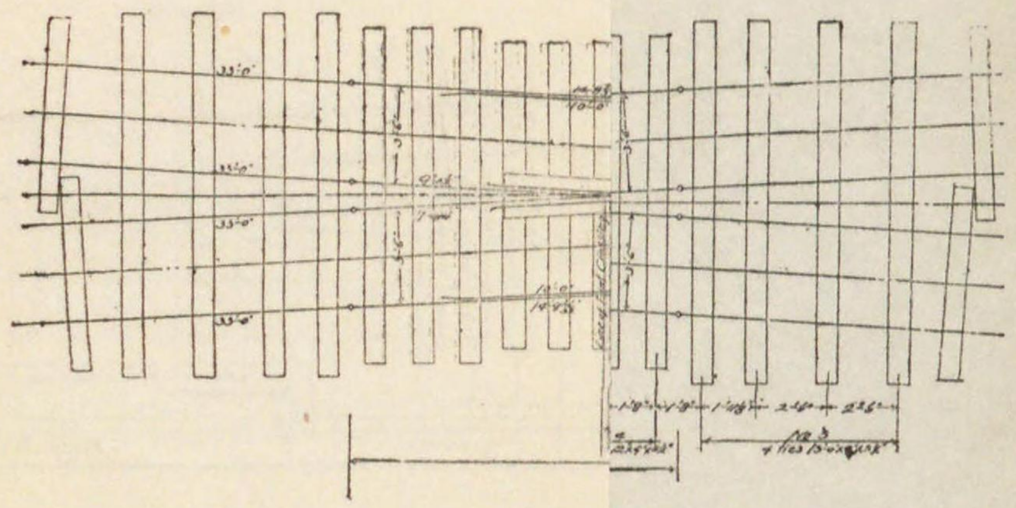


12FT SIDE POINT RAIL FOR Nº9 DOUBLE SLIP SWITCH.



圖第一八號(六)

圖第一八號（七）



No. of Pieces	Description
	List of Materials for … Annexed to Drawing …
2	Centre Crossings
2	No 4 End Crossings
4	Centre Point Rails
4	Side . .
4	Guard Rails
4	Stock Rails
4	.
4	.
2	. .
2	Steel Tie Bars No 1
2	 2
2	 3
2	 4
2	 5
2	 6
2	 7
2	 8
8	Clips 4 No 1 & 4 No 1
8	. . 2
16	. . 3
20	Cast Steel Bed Plate No 1
16	 2
8	 3
2	 4
2	 5
2	 6
2	 7
2	 8
60	Rail Braces
4	. . (Special)
4	Washers No 1
4	. . 2
4	. . 3
8	Pins
144	Fang bolts
44	. .
8	. .
4	. .
8	Washers
16	Special fish Plate No 1
8	 2
4	Wrought Iron studs No 1
4	 2
4	 3
4	 4
36	Steel angle splice bars
300(about)	Spikes
1	Complete Switch Connection

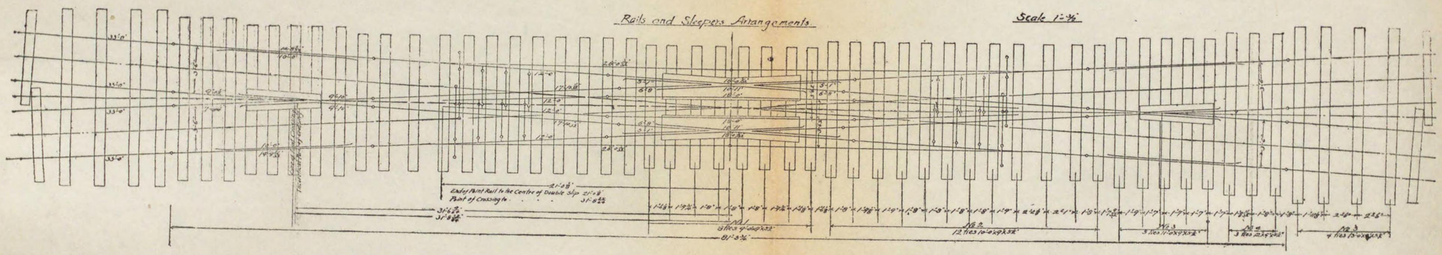
List of Materials for drawing
Annexed to Drawing

No.	Materials	Remarks
1	Centre Passage	
1	No 9 Fish Chairs	
4	Centre Point Rails	
4	Side	
4	Guard Rails	
4	Main Rails	
1		
2	Steel Ke Plate No 1	
2		
2		
2		
2		
2		
2		
2		
2		
2	Clips No 1 & No 1	
2		
16	Cast Steel End Plate No 1	
16		
2		
2		
2		
2		
2		
2		
2		
2	Rail Brace No 1	Curved
4		
4	Plan	
4		
4		
4

No 9 DOUBLE SLIP SWITCH FOR 75LBS RAIL.

Rails and Sleepers Arrangements

Scale 1"=1'



List of Materials for No 9 Crossing Double Slip Switch Annexed to Drawing Sheet No 1 2 3 4 5 & 7

No of Pieces	Description		Remarks
2	Centre Crossings		Complete with checks bolts etc
2	No 4 End Crossings		
4	Centre Point Rails	13'0	
4	Stub	12'0	
4	Guard Rails	10'0	Complete with Checks Keepers etc
4	Stock Rails	16'3½	
4	"	22'0½	
2	"	17'0½	
2	"	18'0	Curved
2	Steel Tie Bars No 1		Complete with 2-¾ dia bolt etc
2	" " " 2		
2	" " " 3		
2	" " " 4		
2	" " " 5		
2	" " " 6		
2	" " " 7		
2	Clips No 1 & 2 No 1		Complete with 2-¾ dia bolts etc
16	" " 2		
16	" " 3		
20	Cast Steel Bed Plate No 1		With Sliding surface
16	" " " 2		
8	" " " 3		Without "
2	" " " 4		With "
2	" " " 5		" "
2	" " " 6		" "
2	" " " 7		Without "
2	" " " 8		" "
60	Rail Keepers (Special)		Cast iron
4	"		To fit at the end of 12'0½ Rails
4	Misses No 1	3'0½	
4	" " 2	2'0½	Bends - Point Rails
4	" " 3	4'6½	
8	Pins 7/8		Near the ends of 22'0 Rails To fit at the bends of Point Rails
104	Fang bolts	¾ dia length 6½	
40	"	¾ " " 8"	
8	"	¾ " " 6½	
8	"	¾ " " 8½	
72	Washers		With lock and washer
16	Special Fish Plate No 1		To fit at the bends of Point Rails
2	" " " 2		Complete with bolts nuts etc
4	Elongated Iron Plate No 1		
4	" " " 2		
4	" " " 3		
4	" " " 4		
16	Steel angle splice bars		Complete with 3-¾ dia bolts & Washers
2	Switchrod Springs		
1	Compleat Setting Connection		

List of Materials for 1-Centre No 9 Crossing of Double Slip Switch Annexed to Drawing Sheet No 3.

No of Pieces	Description		Remarks
1	Stock Rail No 1	18'0½	
1	Wing Rail No 2	12'1"	
2	Bottle nose Rail No 3 & 3	5'1"	
2	Mitre " No 4 & 5	6'8"	
1	Cast iron check A	9"	
2	" " " B	9"	
2	" " " C	9"	
2	" " " D	9"	
2	" " " E	9"	
2	" heel check F	1'0"	
2	Steel bolts No 1	1 dia 7½	For check A With lock nut washer & oval square
2	" " 2	5½	" " " " " "
2	" " 3	4½	" " " " " "
2	" " 4	2½	" B-E " " " " "
2	" " 5	2½	" " " " " "
2	" " 6	½ " 4½	" F " " " " "
2	" " 7	" 4½	" " " " " "
1	¾ Thick Steel bed plate	26½ x 21½	
62	¾ dia rivet end counter sunk Steel rivets		
6	" " steel rivets		

List of Materials for 1-End No 9 Crossing of Double Slip Switch Annexed to Drawing Sheet No 4.

No of Pieces	Description		Remarks
1	Wing rail No 1	9'1"	
1	" " " 2	9'10"	
1	Side nose Rail " 3	7'6"	
1	Point nose Rail " 4	9'1½	
1	Cast iron check A	9"	
1	" " " B	9"	
1	" " " C	9"	
1	" " " D	9"	
1	" heel " E	1'0"	
1	Steel bolt No 11	1 dia length 6½	For check No 3 With lock nut washer & oval shoulder
1	" " " 12	" " 8½	" " " " " " " "
1	" " " 13	" " 7½	" " " " " " " "
1	" " " 14	" " 11½	" " " " " " " "
1	" " " 15	" " 12½	" " " " " " " "
1	" " " 16	¾ " 3½	" " " 10 " " " "
1	" " " 17	" " 6½	" " " " " " " "
1	" heel plate	2½ x 1½ x ⅜	
36	¾ dia rivet end counter sunk Steel rivets		
2	¾ dia steel rivets		

List of Sleepers for No 9 Double Slip Switch Annexed to Drawing Sheet No 7

No of Pieces	Description		Remarks
9	Sleepers No 1	9'0 x 10 x 5	
24	" " 2	10'0 x 9 x 5	
10	" " 3	11'6 x 9 x 5	
16	" " 4	12'6 x 10 x 5	
6	" " 5	13'6 x 9 x 5	

List of Rails for No 9 Double Slip Switch Annexed to Drawing Sheet No 7

No of Pieces	Description		Remarks
2	Side nose rails	7'8½"	For No 9 End Crossing
2	Mitre "	4'0½	" " " "
2	Stock Rails	18'3½	" " Centre
2	Wing rails	12'1"	" " " "
2	Side nose rails	5'1"	" " " "
4	Mitre "	6'8	" " " "
4	Point Rails	13'0	Centre Point Rails
4	" "	13'0	Stub "
4	Stock rails	16'3½	" " " "
4	" "	22'0½	Points Curved
2	" "	18'0"	Curved "
4	Wing rails	17'0½	" " " "
4	" "	7'10"	For No 9 End Crossing
4	Guard rails	10'0"	

List of Materials for 1-Guard Rail of No 9 Double Slip Switch Annexed to Drawing Sheet No 2.

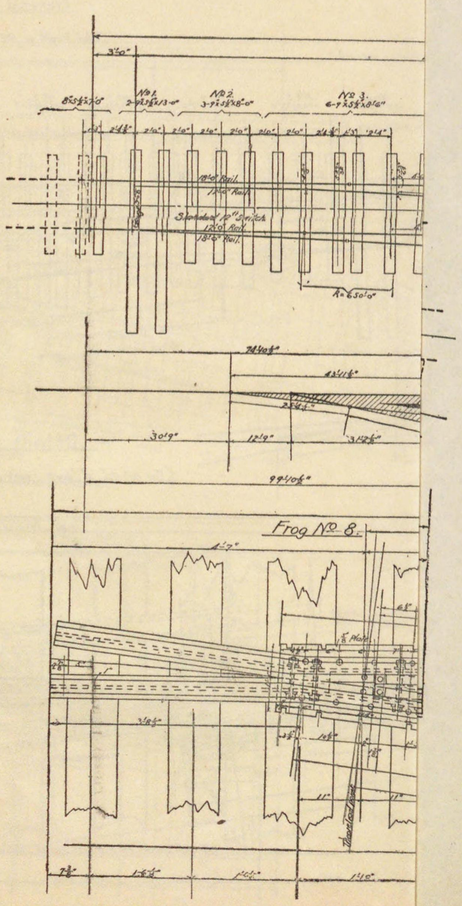
No of piece	Description		Remarks
1	Guard rail	10'0"	Chamfered both ends
6	Rail keepers	6"	
4	Checks	9"	
16	Fang bolts for keepers	¾ dia length 7½	
4	Bolts " checks	" " 6½	With square washers & fish tail washer

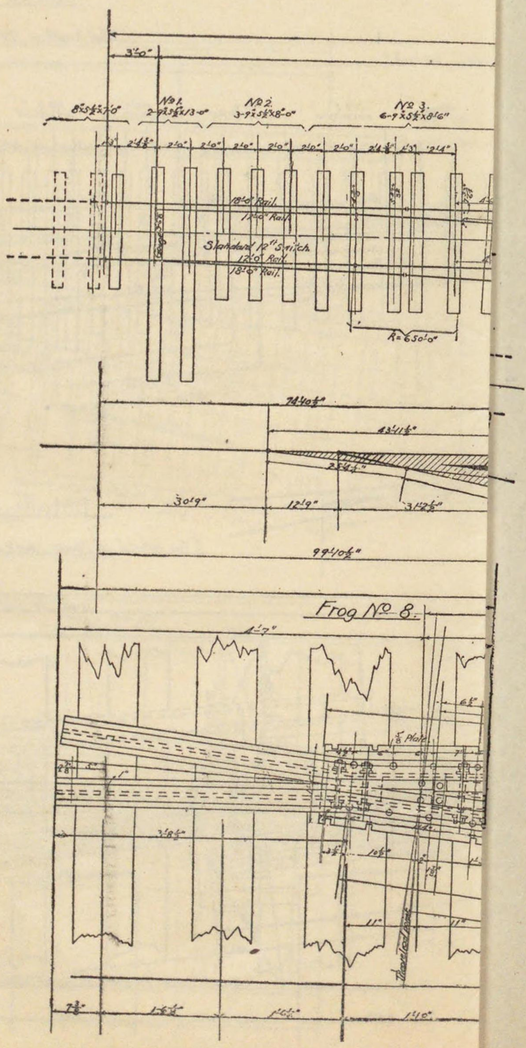
圖第一八號(七)

1556

圖第一九號（一）

第三種六十封度軌條製ダブルスウキツチ定規　明四三、一一　達九四二





圖第一九號（一）

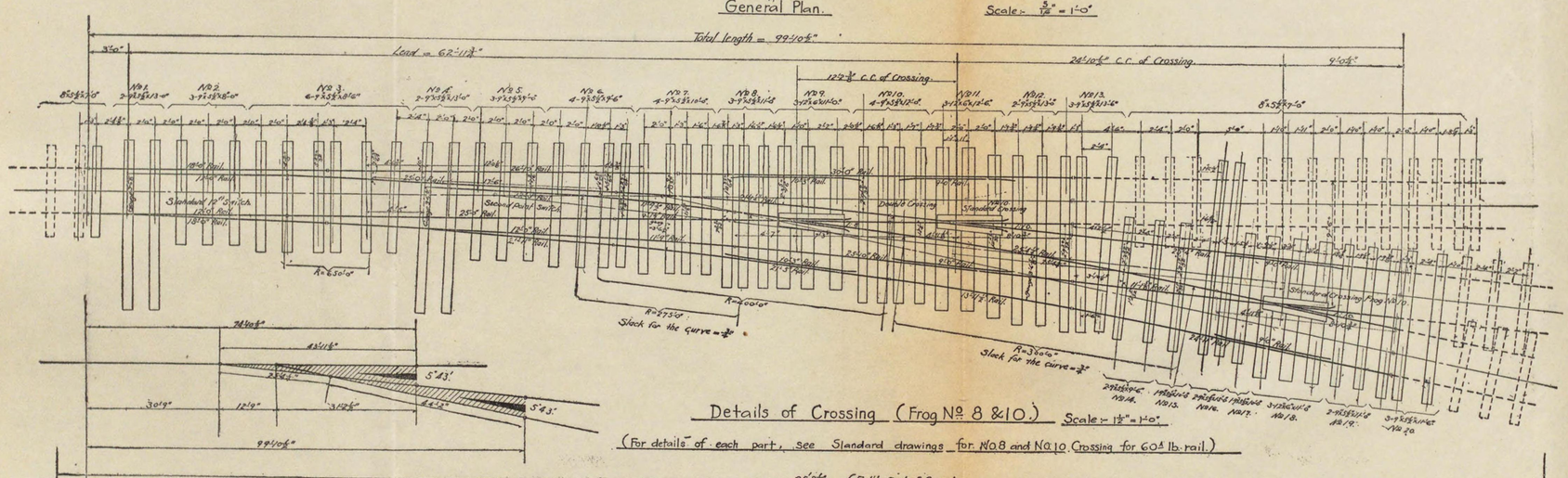
第三種六十封度軌條製ダブルスウヰツチ定規　明四三、一一　達九四二

I G. R.

STANDARD DOUBLE SWITCH FOR 60LB. RAIL

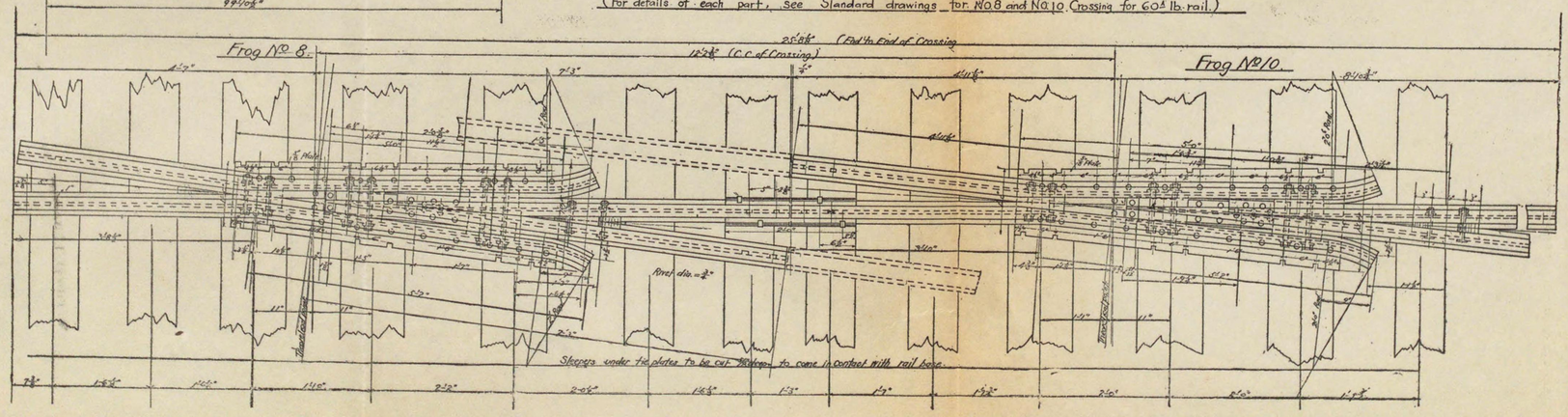
LENGTH OF SWITCH RAIL 12 FT, FROG NO. 8 & 10

General Plan. Scale:- 5/128" = 1'-0"



Details of Crossing (Frog Nº 8 &10.) Scale:- 1½" = 1'-0"

(For details of each part, see Standard drawings for No.8 and No.10 Crossing for 60lb. rail.)

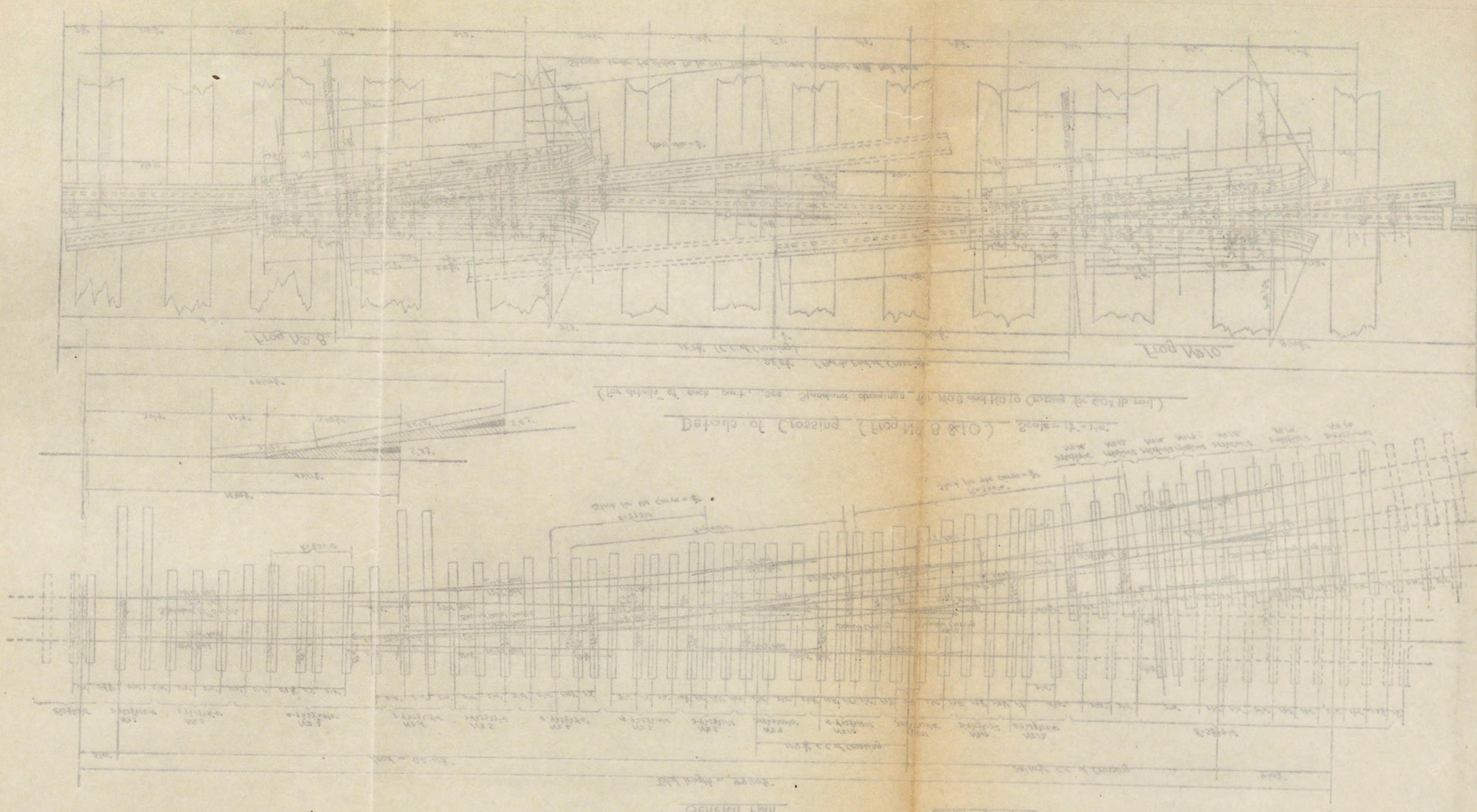


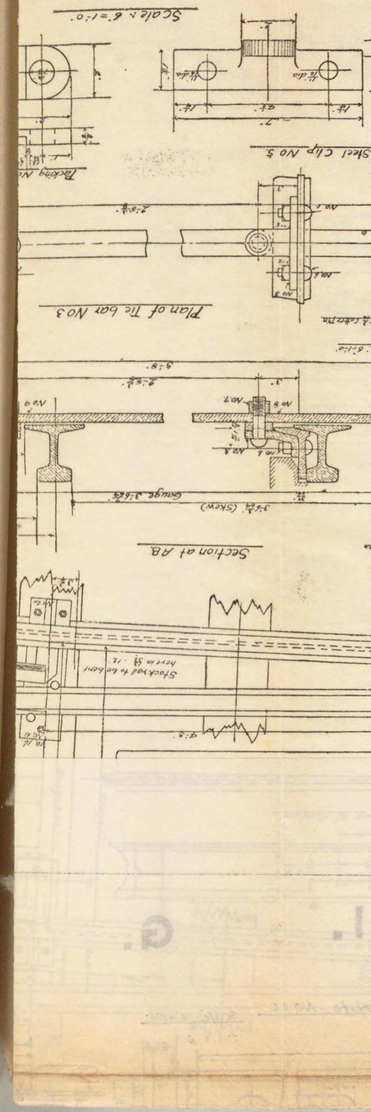
圖第一九號（二）

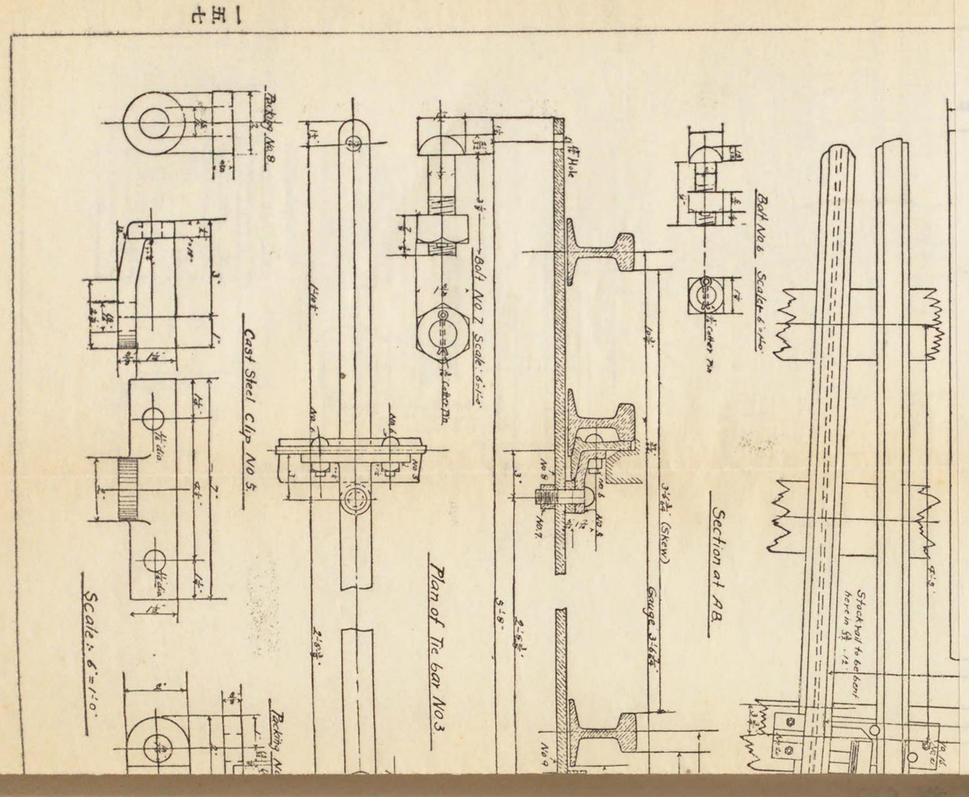
第三種六十封度軌條製ダブルスウヰツチ定規 明四三、一一 建九四二

STANDARD DOUBLE SWITCH FOR COAL RAIL

LENGTH OF SWITCH RAIL 15 FT. FROG NO. 8 & 10






Section at AB.
Plan of Tie bar No 3.
Cast Steel Clip No 5.
Packing No 8.
Scale: 6" = 1'-0"

I. G. R. STANDARD DOUBLE SWITCH FOR GO⅄LB. RAIL.

SECOND POINT SWITCH.

Sheet 2.

Special Fishplate No 22. Scale:- 6"=1'-0"

Sectional elevation at CD. Scale:- 1½"=1ft for elevation and plan, except where otherwise noted. 3"=1'-0" for detail drawing.

Section at EF. Scale:- 6"=1'-0"

Tongue of Point rail

Length of Point rail 12'-0"

Length of Stock rail 21'-11"

Stock rail to be bent here in 39'-12"

Inside and outside edges of heads of Point rails to be planed

Both ends of Point rails to be planed in the reverse way as in the case of Standard 12'-0" Point switch for 60 lb rail so as to fit as neatly as possible against check rails

Cast iron Rail brace No 18

Bolt No 6. Scale:- 6"=1'-0"

Section at AB.

Gauge 3'-6⅛"

Bolt No 7 Scale:- 6"=1'-0"

Plan of Tie bar No 3

Tie Bar No 10.

Wrought iron Studs

Tie plate No 17.

Cast Steel Bed Plates

Screw Spike and Tong bolt Scale:- 6"=1'-0"

Packing No 8

Cast Steel Clip No 5.

Packing No 9

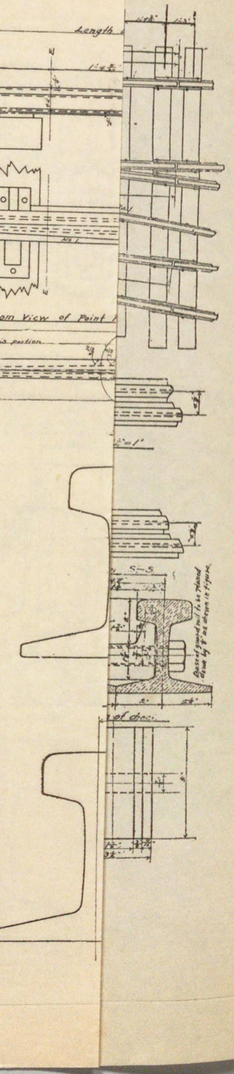
Cast steel clip No 4

Scale:- 6"=1'-0"

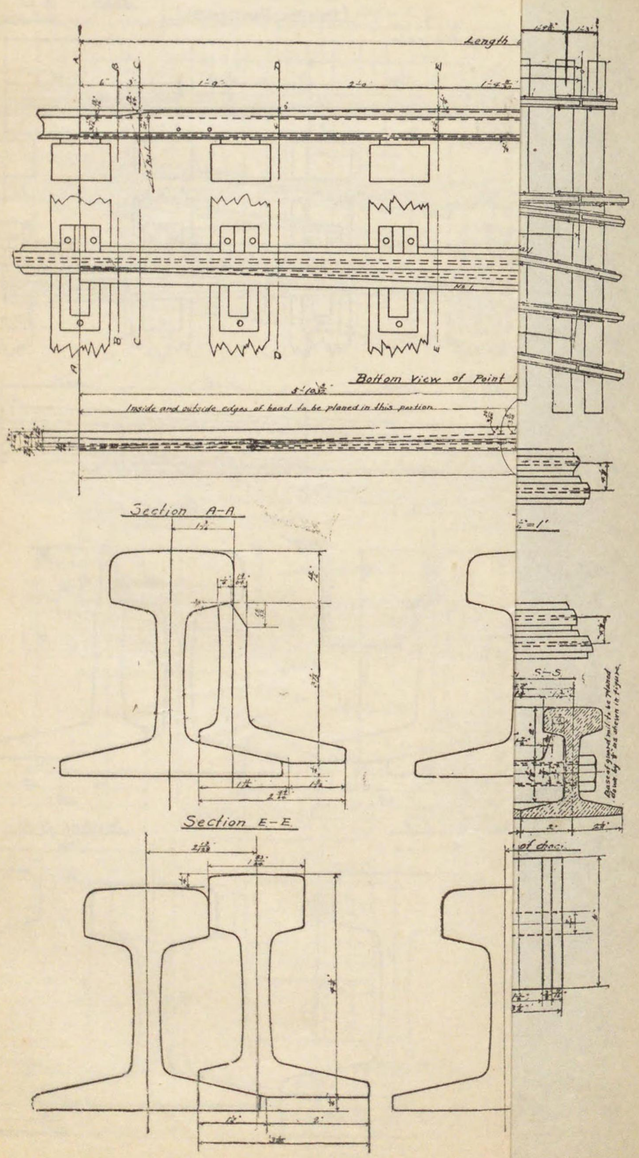
一五七

圖第一九號

圖第一九號(三)



STANDARD



圖第一九號（三）

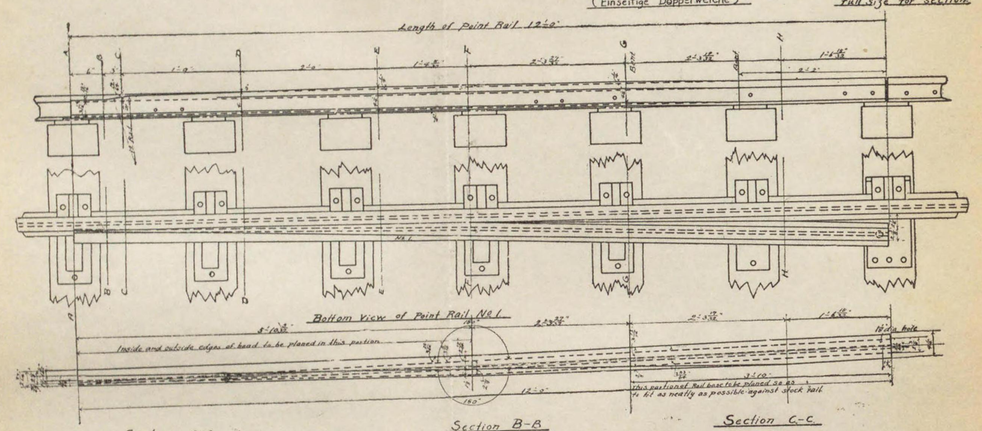
I. G. R.

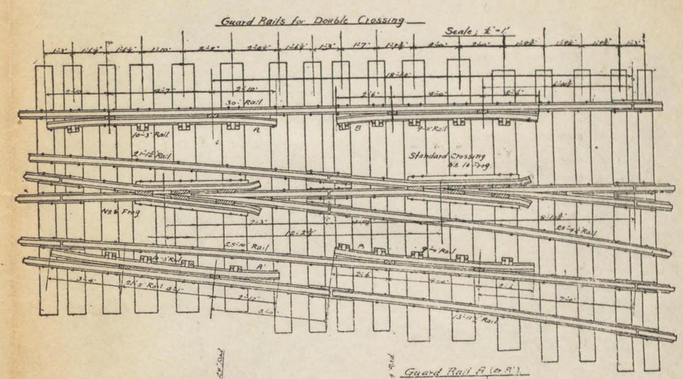
STANDARD DOUBLE SWITCH FOR GO⁴LB. RAIL.

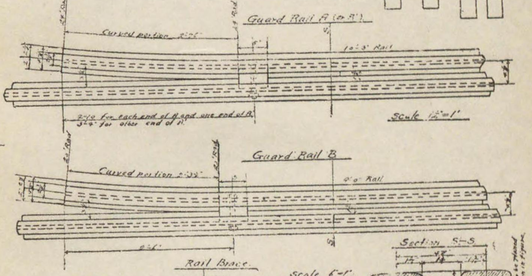
DETAILS OF POINT RAIL.

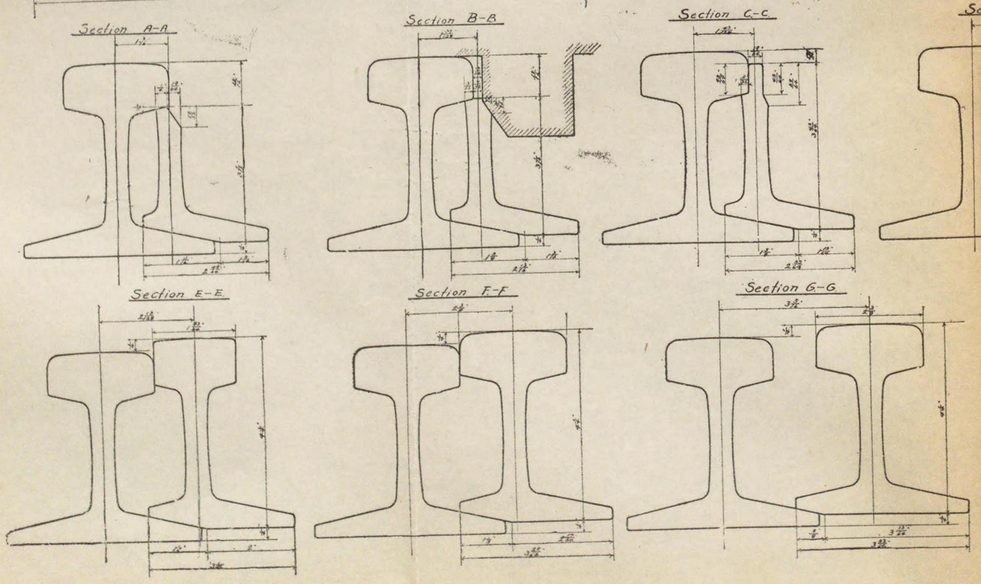
(Einseitige Doppelweiche)

Scale:- 1½"-1' for general
Full size for section









I. C. R.

STANDARD DOUBLE SWITCH FOR COAL. RAIL.

DETAILS OF POINT RAIL.

圖第一九號（四）

圖第一九號（四）

List of Rails and ... for Crossings and Guard Rails.
Annexed to drawing ... nexed to drawing sheet 3.

Rails					... 8 Crossing
Kinds of rails	No. of Rails				... for the No. 8 Crossing are the same as ... ndard No. 8 Crossing for 60 lb. rail except
	Standard 12th Point Switch	Second 12th Point Switch	No. 8 Crossing with Guard rails	No. 10 Crossings with Guard rails	
18' Rail				6 { 4-9'-0" Wing rails; 2-7'-1½" Nose rails; 2-8'-8¼" Nose rails; 4-9'-0" Guard rails }	7'-1"; 6'-0" } For this crossing.
24' Rail		2 { 2-12'-0" Point rails; 1-21'-11" Stock rail Partly Curved }			...rd Rails
26' Rail		1-25'-0 Stock rail Partly Curved	1 { 2-8'-10½" Wing rails; 1-7'-1" Nose rail }		
28' Rail			1 { 1-6'-0" Nose rail; 2-10'-3" Guard rails }		
30' Rail	2 { 2-12'-0" Point rails; 2-18'-0" Stock rails }				
33' Rail					

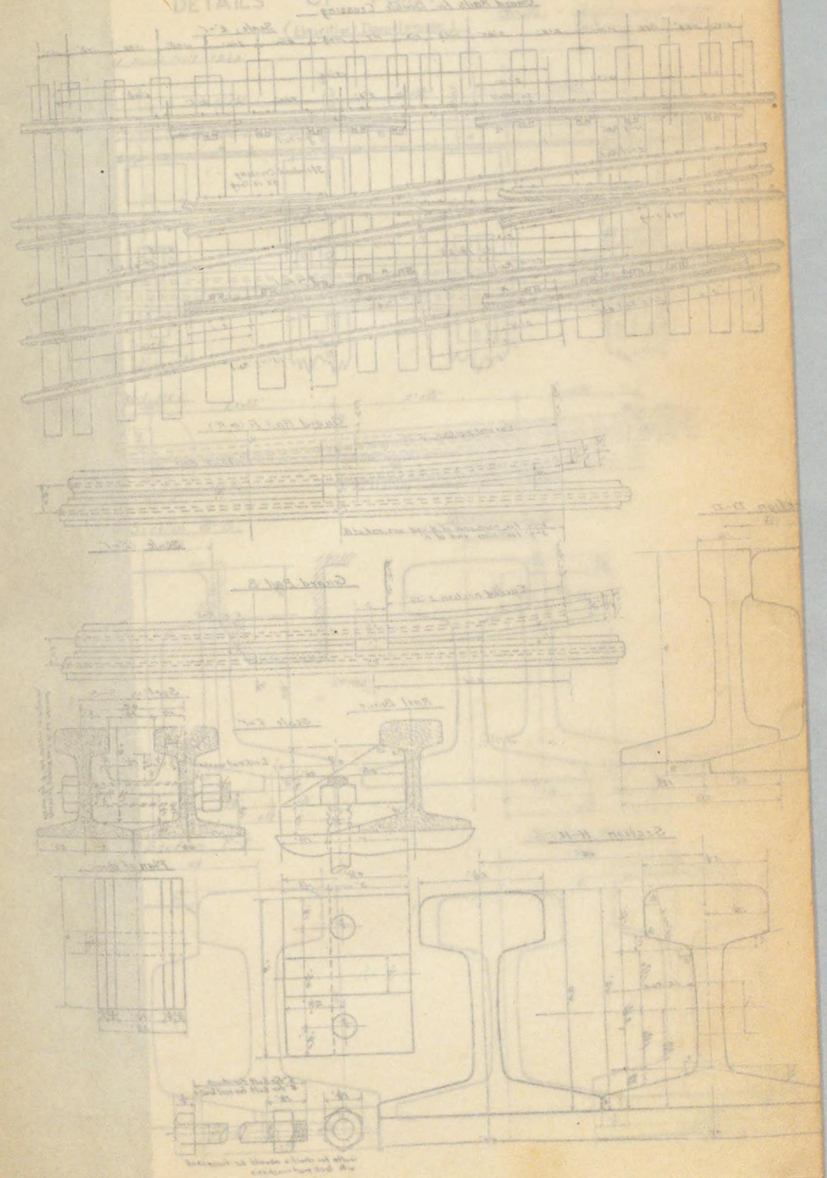
...rd Rails	
Length	Remarks
10'-3"	1-6'-0" Nose rail and these 2 rails made from 1-28'-0" rail.
5"	
6"	With lock-nut washers
8"	With hex nuts.

...10 Crossings
...r 2 sets of No. 10 Crossings are the same ...tandard No. 10 Crossing for 60 lb. rail.

...d Rails (for 1 set of Crossing)	
Length	Remarks
9'-0"	made from 18'-0" rail
5"	
6"	With lock-nut washers
8"	With hex. nuts

Total Materials

	Remarks
...int Switch	
...nt Switch	
...h guard rails	
...h guard rail	
...ls	2-26', 6-21½', 1-28', 1-30', and 1-33' rails



I. G. R.
STANDARD DOUBLE SWITCH FOR 60 LB. RAIL.

LIST OF MATERIALS.

圖第一九號(四)

List of Rails and Sleepers
Annexed to drawing Sheet 1.

Rails							Sleepers		
Kinds of rails	No of Rails					No of pairs	No of order	Dimension	Length	No of Pieces
	Standard 12ft Point Switch	Second 12ft Point Switch	No 8 Crossing with Guard rails	No 10 Crossings with Guard rails	Remaining rails					
10' Rail				4-7'-6" Wing rails 2-7'-6" Nose rails 2-0'-6" Nose rails 4-7'-6" Guard rails		6	1	9"×5½"	13'-0"	2
							2	Do	8'-6"	3
							3	Do	8'-6"	6
							4	Do	13'-0"	2
24' Rail		2 (2-12'-6" Point rails, 1-7'-11" Stock rail Partly Curved)			2 (1-21'-5" Partly Curved, 1-11'-6" Curved, 1-7'-1⅛")	4	5	Do	9'-6"	3
							6	Do	9'-6"	4
							7	Do	10'-6"	4
26' Rail		1-25'-0" Stock rail Partly Curved	2-8'-6" Wing rails, 1-7'-1" Nose rail		6 (1-25'-6", 1-25'-0", 1-23'-6" Partly Curved, 1-21'-6" Partly Curved, 1-11'-8", 1-10'-9" Curved)	8	8	Do	11'-0"	3
							9	12"×6"	11'-0"	3
							10	9"×5⅝"	12'-0"	4
28' Rail			1 (1-6'-6" Nose rail, 2-10'-3" Guard rails)		1-26'-10"	2	11	12"×6"	12'-6"	3
							12	9"×5⅝"	13'-0"	2
							13	Do	13'-6"	3
30' Rail	2 (1-12'-0" Point rails, 2-10'-6" Stock rails)				1-30'-0"	3	14	Do	9'-6"	2
							15	Do	10'-0"	1
							16	Do	15'-0"	2
							17	Do	10'-0"	1
33' Rail					1 (1-25'-8½" Curved, 1-11'-9" Curved)	1	18	12"×6"	11'-0"	3
							19	9"×5⅝"	11'-0"	2
							20	Do	11'-6"	3
Total No						24	Total No			56

List of Materials for the 2nd Point Switch.
Annexed to drawing Sheet 2

No of Pieces	No of Order	Description.	Length	Remarks
1		Stock rail	25'-0"	Partly Curved (made from 24 rail)
1		Do of opposite Side	21'-11"	Rental and points rail partly Curved (made from 24 rail)
1	1	Point rail	12'-0"	(2-24 rail)
1	2	Do of opposite side	12'-0"	
1	3	Steel tie bar 2"×⅜"	5'-11"	
1	4	Cast steel clip		Attached at Tongue of point rail No 2
3	5	Do		
8	6	Bolts and square nuts ⅞ dia	2"	With cotter pins (Connecting clips to the Point Rails)
4	7	Bolts and Nuts ⅞" dia	3½"	With do (Connecting clips to the Stock Rails)
3	8	Packings 2"dia × ⅜"		Between clips and the bars
1	9	Do 2"×⅜"		Between clip No 8 and the bar.
1	10	Steel tie bar 2"×⅜"	3'-6⅝"	
7	11	Cast steel bed plate 6⅝×⅜"	1'-6"	With Sliding Surface 6⅜×3"
2	12	Do 6⅝×⅜"	1'-6"	Without Do.
2	13	Do 8¼×⅜"	1'-6"	With Pin 1⅛"×⅜"×⅜" Pivots Projections and ⅞" dia Rivets
1	14	Do 6⅝×⅜"	1'-11"	With Sliding Surface 6⅜×3"
1	15	Do 6⅝×⅜"	1'-9"	With do
1	16	Do 6⅝×⅜"	1'-9"	With do
11	17	Steel tie plates 6⅝×⅜"	8"	
14	18	Cast iron rail brace		
41	19	Screw spikes ⅞" dia	6½"	For the plates
30	20	Fang bolts ⅞" dia	8½"	With hex nuts
10	21	Do ⅞" dia	7½"	With do
4	22	Special fish plates ⅜" thick	1'-7"	
8	23	Fish bolts ⅞" dia	4"	With lock-nut Washers (These bolts are the same as those for the Standard 60 lb rail)
2	24	Wrought iron Stools	2⅜	
2	25	Do	3½	
2	26	Bolts ⅞" dia	2⅜	With square nut (for bed plates No 13)
12	27	Cast Steel Square washers 2½×2"	2	For bed plates No 13.

List of Materials for Crossings and Guard Rails.
Annexed to drawing Sheet 3.

No 8 Crossing

The materials for the No 8 Crossing are the same as those for the Standard No 8 Crossing for 60 lb. rail except as follows:

Nose rail 7'-1" } For this Crossing
Do 6'-0" }

Guard Rails

No of Pieces	Description	Length	Remarks
2	Guard rails	10'-3"	(1-8'-0" Cast rail and these points made from 1-28'-0" rail)
4	Cast iron chocks	3"	
8	Cast iron rail bases		
2	Bolts for chocks	6"	With lock-nut washers
16	Bolts for rail bases	8"	With hex nuts.

No 10 Crossings

The materials for 2 sets of No 10 Crossings are the same as those for the Standard No 10 Crossing for 60 lb. rail.

Guard Rails (for 1 set of Crossing)

No of Pieces	Description	Length	Remarks
2	Guard rails	9'-0"	made from 18'-0" rail
4	Cast iron chocks	5"	
10	Cast iron rail bases		
4	Bolts for chocks	6"	With lock-nut Washers
20	Bolts for rail bases	8"	With hex nuts

List of Total Materials

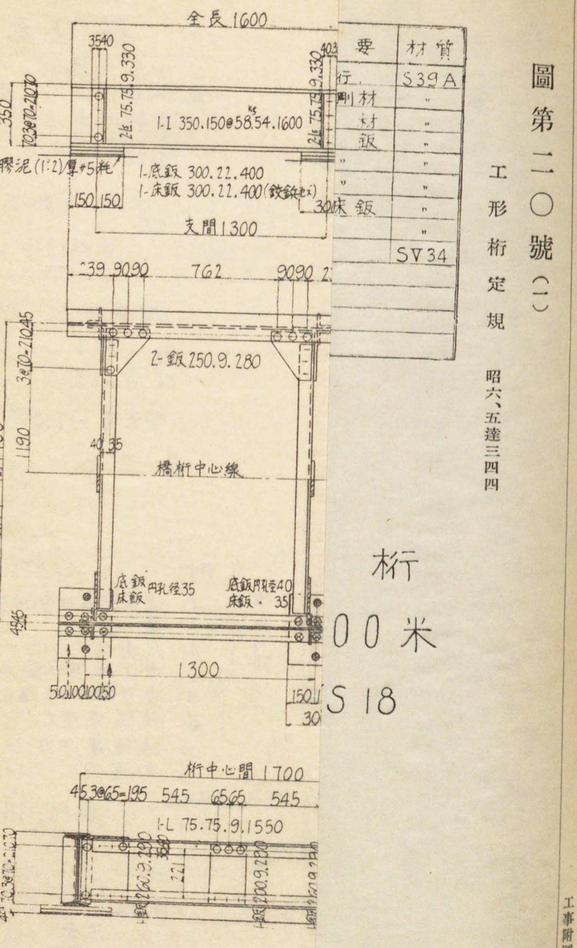
Number	Description	Remarks
56	Sleepers	
1 Set	Standard 12" Point Switch	
1 Set	Second 12" Point Switch	
2 Sets	No 10 Crossings with guard rails	
1 Set	No 8 Crossing with guard rail	
11	Remaining Rails	2-26', 6-25', 1-24', 1-30' 1-25' and 1-33' rails

一五九

圖第二〇號（一）

工形桁定規

昭六、五達三四四



桁

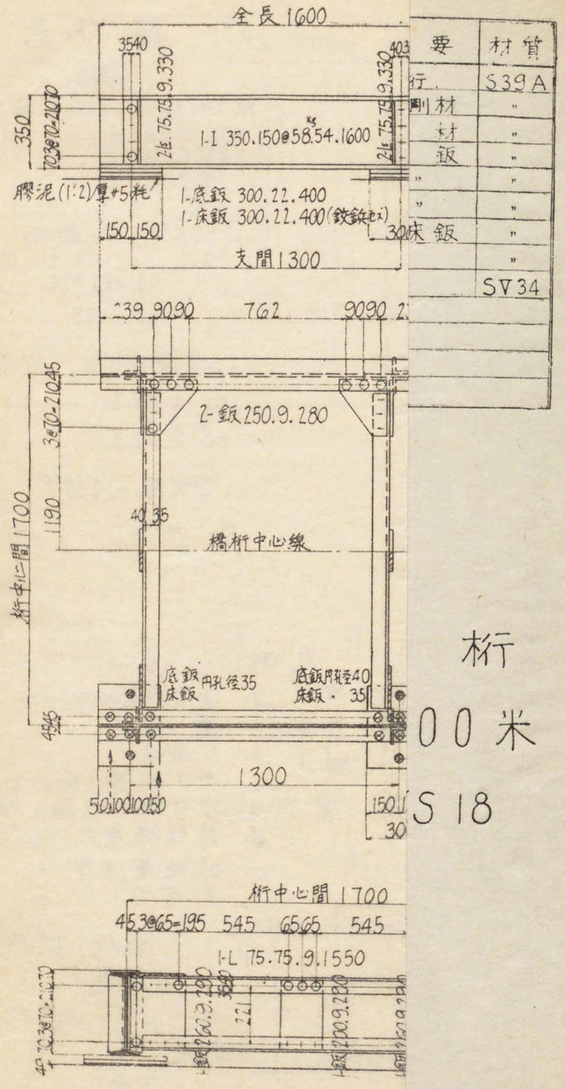
00米

S18

工事附圖第四號

圖第二一〇號(一)

工形桁定規　昭六、五達三四四

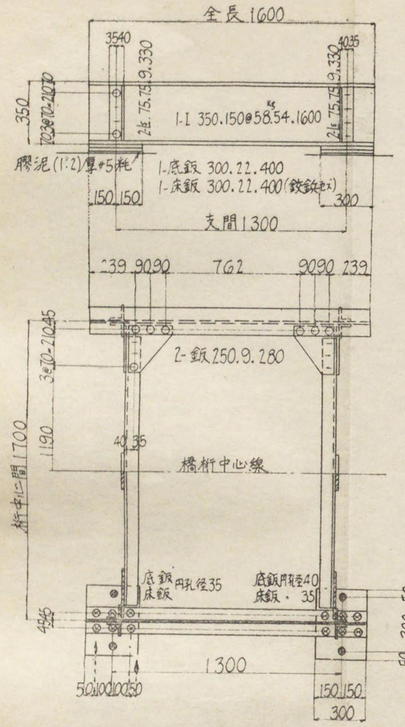


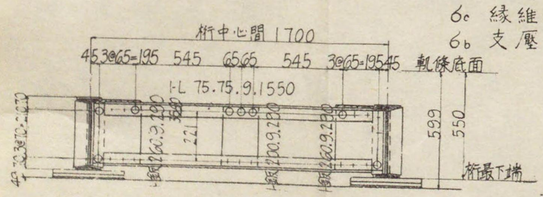
工形桁

一〇〇米

SS18

一六〇





應力表

桁

最大彎曲率		最大剪力	
358 000	ℓ	11 000	ℓ
348 000	i	10 700	i
10 200	d	310	d

中央断面

I = 15 236
y = 17.5

實應力		許容應力	
σ_t	+ 82.3		+ 1200
σ_c	− 823		− 1038

剪支面 = 1200 cm²

σ_b	− 18	− 35

凡例

ℓ	活荷重彎曲率(cm Kg)及剪力(Kg)
i	衝撃 〃
d	死荷重 〃
I	中立軸ノ周リノ總斷面二次率(cm⁴)
y	中立軸ヨリ縁維迄ノ距離(cm)
σ_t	縁維張應力(Kg/cm²)
σ_c	縁維壓應力 〃
σ_b	支壓力 〃

鉄徑 19 粍
符號
○ + 工場鉸ノ普通鉄
⊗ 仝 裏側皿鉄削リ均ス

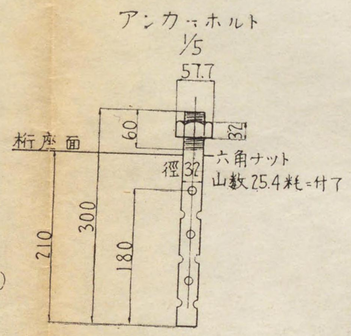
注意
鉄孔中心ヨリ剪斷縁ニ至ル距離ハ
32粍以上タルヘシ

材料表

種別	寸法		數量	重量(瓲)	摘要	材質
二形	350.150@58.54	1600	2	187	桁	S39A
山形	75.75.9	330	8	26	補剛材	〃
〃	〃	1550	4	62	支材	〃
鈑	260.9	290	4	21	繋鈑	〃
〃	250.9	280	4	20	〃	〃
〃	200.9	290	2	8	〃	〃
〃	300.22	400	8	166	底床鈑	〃
アンカーボルト	徑32	300	8	18		〃
鉄頭	徑19		208	10		SV34
				518		
總重量 518 瓲 = 0.518 瓲						

ペンキ塗面積 7.5 平米

アンカーボルト
1/5



工形桁
支間 1.300 米
活荷重 KS 18
1/20

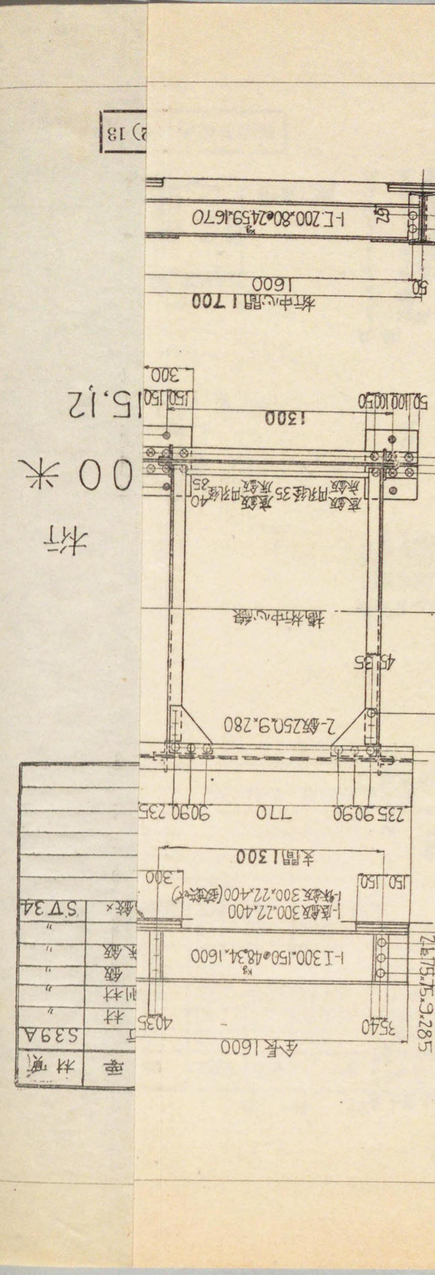
圖面番號 あ 813

圖第二一〇號(一)
工形桁定規
昭六、五達三四四

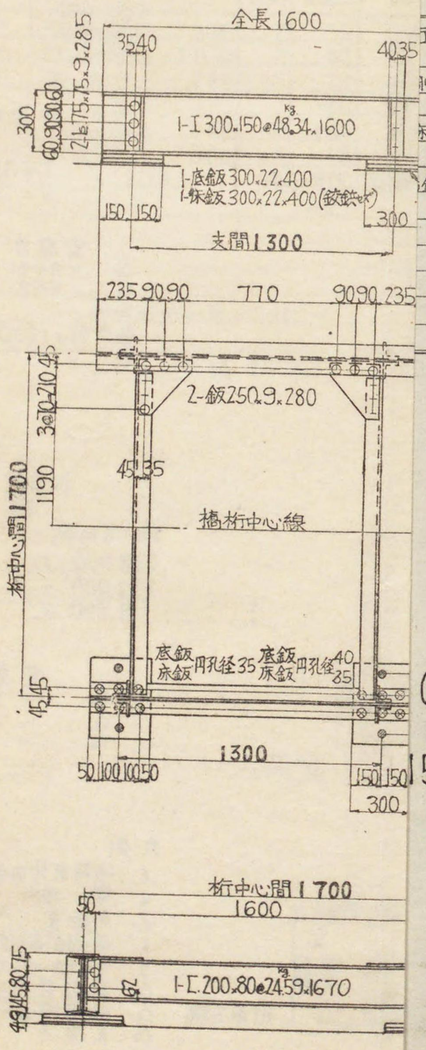
工事附圖第四號

図第 11 ○ 1 (1) 號

桁行 *00 mm



圖第二〇號（二）



要	材質
行	S39A
材	〃
剛材	〃
鈑	〃
床鈑	〃
	〃
鉸×	SV34

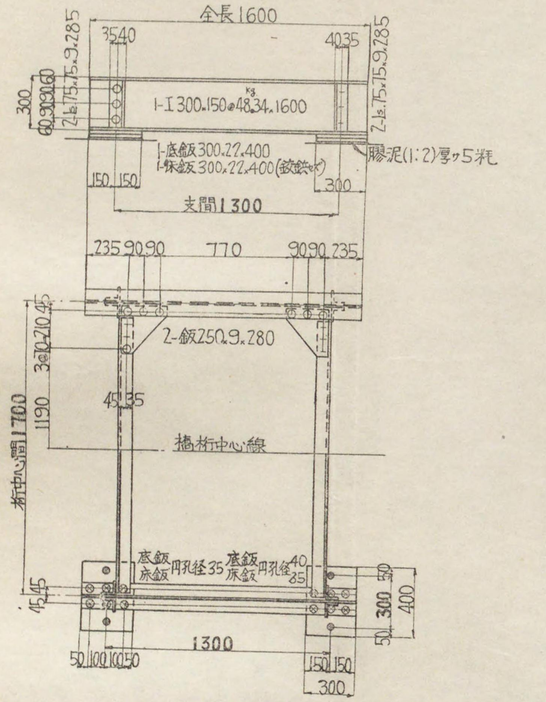
桁

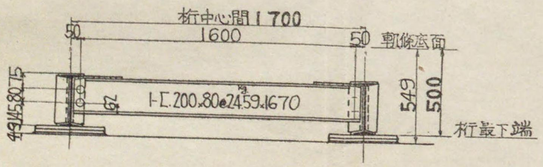
00米

15,12

2) 13

工事附圖第四號





應力表

KS 15

桁

最大彎曲率		最大剪力	
298 000	l	9 170	l
290 000	i	8 910	i
8 810	d	310	d

中央断面

$I = 9500$
$y = 15$

	實應力	許容應力
σ_t	+ 942	+ 1200
σ_c	- 942	- 1037

剪支面 = 1200 cm²
σ_b - 15 - 35

KS 12

桁

最大彎曲率		最大剪力	
238 000	l	7 330	l
232 000	i	7 120	i
8 280	d	250	d

	實應力
σ_t	+ 755
σ_c	- 755
σ_b	- 12

凡例

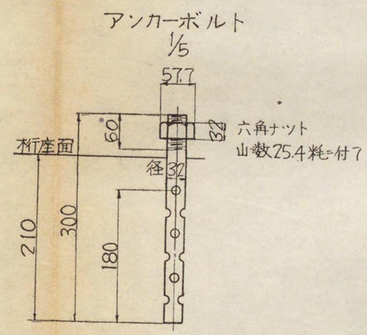
l	活荷重彎曲率(cmkg)及剪力(kg)
i	衝撃 〃
d	死荷重 〃
I	中立軸ノ周リノ總斷面二次率(cm⁴)
y	中立軸ヨリ縁維迄ノ距離(cm)
σ_t	縁維張應力(kg/cm²)
σ_c	縁維壓應力 〃
σ_b	支壓力 〃

材料表

種別	寸法		数量	重量(粍)	摘要	材質
工形	300×150@48.34	1600	2	155	桁	S39A
溝形	200×80@24.59	1670	2	82	支材	〃
山形	75×75×9	285	8	73	補剛材	〃
鈑	250×9	280	4	20	繋鈑	〃
〃	300×22	400	8	166	底床鈑	〃
アンカーボルト	径32	300	8	18		〃
鉄頭	径19		112	5	工場鈑×	SV34
				469		

總重量 469粍 = 0.469瓲

ペンキ塗面積 76 平米



鉄径 19粍
符號
○,+ 工場鈑× 普通鉄
⊗ 〃 裏側皿鉄削リ均シ

注意.
鉄孔中心ヨリ剪断縁ニ至ル距離ハ
32粍以上タルベシ

工形桁

支間 1.300 米

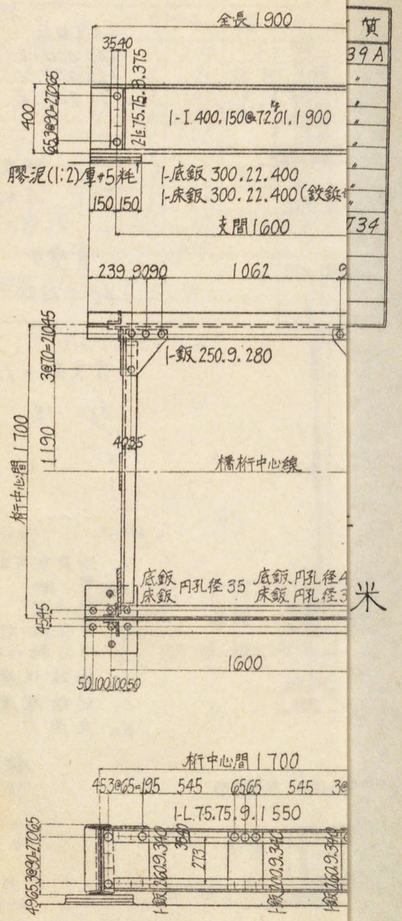
活荷重 KS15,12

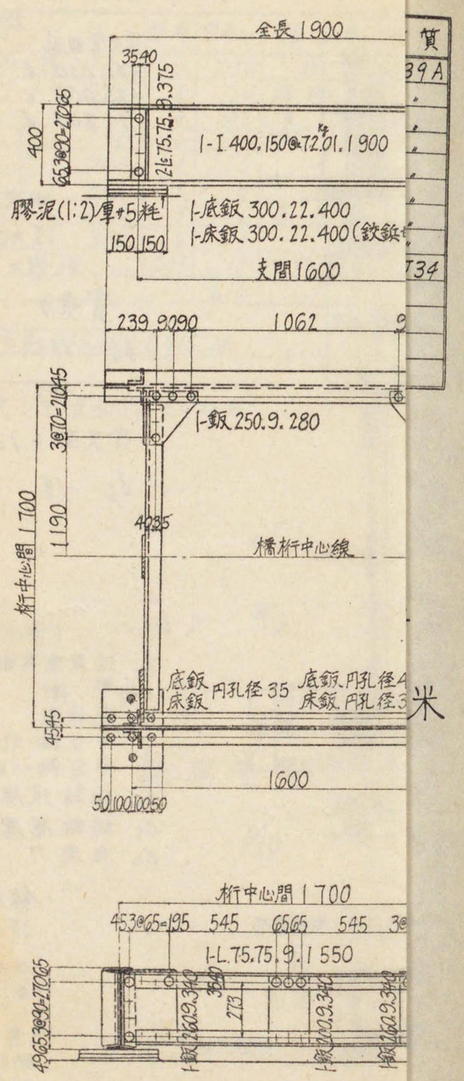
1/20

圖面番號 あ(52) 13

圖第二〇號(二)

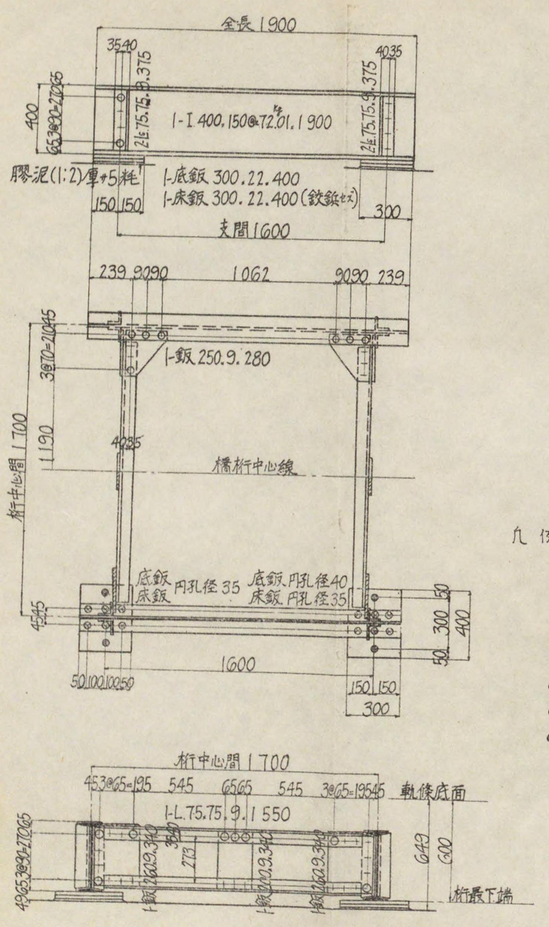
工事説明第四號


全長1900
35 40
375
400
1-I 400.150@72.01.1900
腰泥(1:2)厚+5耗
150 150
1-底鈑 300.22.400
1-床鈑 300.22.400(鈸鉚
支間1600
239 3090 1062
1-鈑 250.9.280
3870=2045
4285
1190
橋桁中心線
桁中心間1700
底鈑 底鈑 円孔径35 底鈑.円孔径4
床鈑 床鈑.円孔径3
4545
1600
50 100 100 50
桁中心間1700
453@65=135 545 6565 545 3@
1-L.75.75.9.1550
4905 3834 2705
272
350



圖第二〇號(三)

工事附圖第四號



應力表

桁

最大彎曲率		最大剪力	
440 000	l	11 000	l
425 000	i	10600	i
14 800	d	370	d

中央斷面

$I = 24000$

$y = 20$

實應力		許容應力
σ_t	+733	+1200
σ_c	−733	−1010

省支面 = 1200 cm²

σ_b	−18	−35

凡例

- l 活荷重彎曲率(cm.kg)及剪力(kg)
- i 擊衝 〃
- d 死荷重 〃
- I 中立軸ノ周リノ總斷面二次率(cm⁴)
- y 中立軸ヨリ縁維迄ノ距離(cm)
- σ_t 縁維張應力(kg/cm²)
- σ_c 縁維壓應力 〃
- σ_b 支壓力 〃

鉚徑 19粍

符號

- ○＋ 工場鉸メ普通鉚
- ⊗ 仝 裏側皿鉚削リ均シ

注意

鉚孔ノ中心ヨリ剪斷縁ニ至ル距離ハ32粍以上タルベシ

材料表

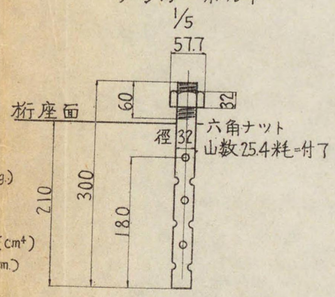
種別	寸法		數量	重量(瓲)	摘要	材質
工形	400.150@72.01	1900	2	274	桁	S39A
山形	75.75.9	375	8	30	補剛材	〃
〃	〃	1550	4	62	支材	〃
鈑	250.9	280	4	20	繋鈑	〃
〃	260.9	340	4	25	〃	〃
〃	200.9	340	2	10	〃	〃
〃	300.22	400	8	166	底床鈑	〃
アンカーボルト	径32	300	8	18		〃
鉄頭	径19		208	10	工場鉸メ	S-T34
				615		

總重量 615 瓲 = 0.615 瓲

ペンキ塗面積 9.4 平米

アンカーボルト

1/5



工形桁

支間 1.600 米

活荷重 KS18

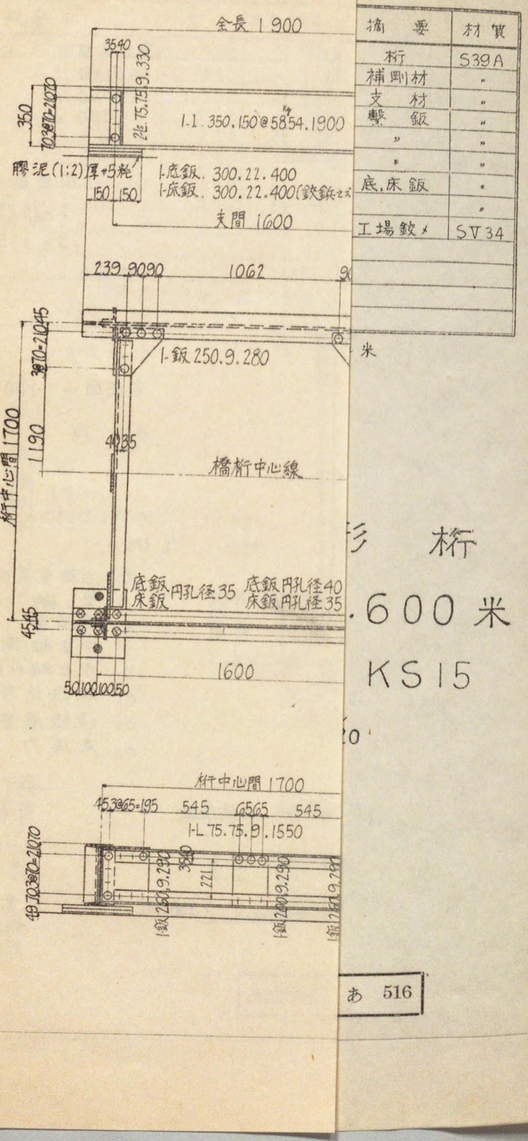
1/20

圖面番號 あ 816

圖第二一〇號(三)

工事設計第四號

一六二


全長 1900
3540
1-L 350.150@5854.1900
2L 75.75.9.330
350
コンクリート
腸泥(1:2)厚サ5粍
150 150
上底鈑. 300.22.400
上床鈑. 300.22.400(鉄鉄ニテ
支間 1600
239 9090 1062
1-鈑 250.9.280
4035
橋桁中心線
桁中心間 1700
1190
4545
底鈑 円孔径35 底鈑 円孔径40
床鈑 円孔径35 床鈑 円孔径35
1600
50 100 100 50
桁中心間 1700
45 3065 195 545 565 545
1-L 75.75.9.1550
490 700 800 2070
鈑 250 9.280
鈑 250 9.280
鈑 250 9.280