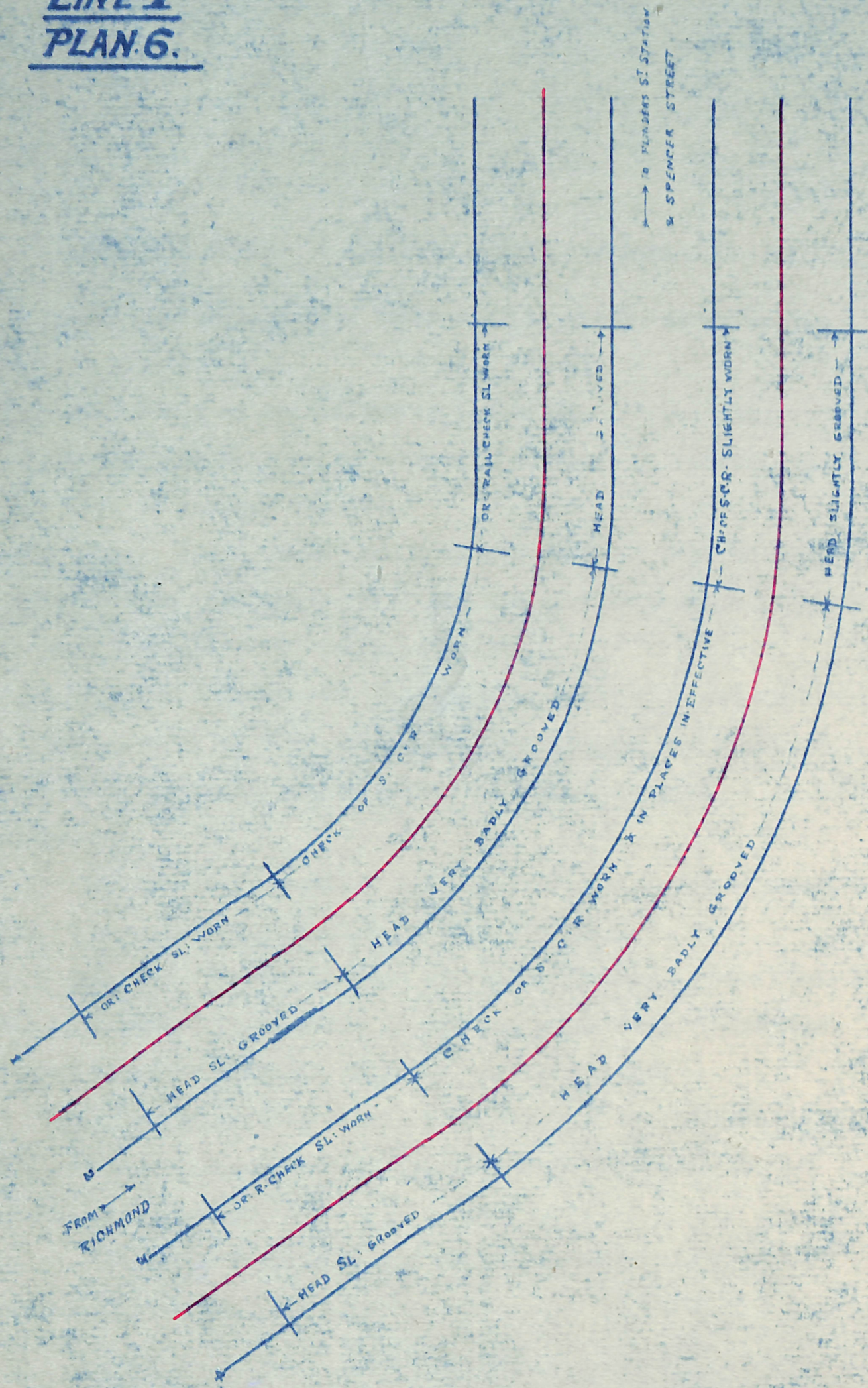


CURVE · WELLINGTON PARADE ·

— OPPOSITE SPRING STREET —

LINE 1
PLAN 6.



EM: SHUNT. FLINDER'S ST

— OPP: RUTTER'S SHOP. —

LINE 1.

DESCRIPTION 7.

EMERGENCY SHUNT.

FLINDERS STREET

(Opposite Rutter's Shop)

1. The Special Check to Curved Inner rail of Shunt, is loose and ineffective in places.
2. Three of 4 heels of Points are of loose fit, and rocking. There is also diagonal wear on rail-treads, adjacent to Points. Tongues are worn to varying amounts.
3. On No. 3 Rail (Down Track) for a length of about 5'0" on each side of intersection with Shunt-rail, the ordinary rail-check is badly worn. In one place the Rail-check is broken.
4. No. 3 Rail Main Track-rail (adjacent to Point of Shunt-rail) is bottoming for a length of 5'0" and slight corrugations are apparent.
4. No. 2 Rail (Up Track) adjacent to Point of Shunt-Rail, - is $\frac{3}{16}$ " out of Alignment.
At the intersections of Tram-rails, and Slot-rails with the Points and Crossings, in many cases, hammering is taking place.
5. No. 1 Rail (Up-Track) The head of rail (opposite intersection of No. 3 rail with curved Shunt-rail) is grooved in places, whilst the Rail-check of opposite rail, is slightly worn in places.
6. 15 of the Joints of tram rails, adjacent to rail crossings and points and at other places are wide, varying from $\frac{1}{4}$ " to $\frac{1}{2}$ ", and in several cases are hammered.
7. Paving, (adjacent to Points, and rail-intersections) in five places is loose and blocks are pumping.

Date of 1st. Inspection - May 11th. 1916.

Date of last Inspection - July 4th. 1916.

EM: SHUNT. FLINDER'S ST

OPP: RUTTER'S SHOP.

LINE 1.
PLAN. 7.

A Tongue Worn.

B Heel Rocking. Tongue Worn.
Diagonal Grooving on Thread of
Point - Cherting. Paving Loose.

C Points Hammered, Adjacent Paving
Loose

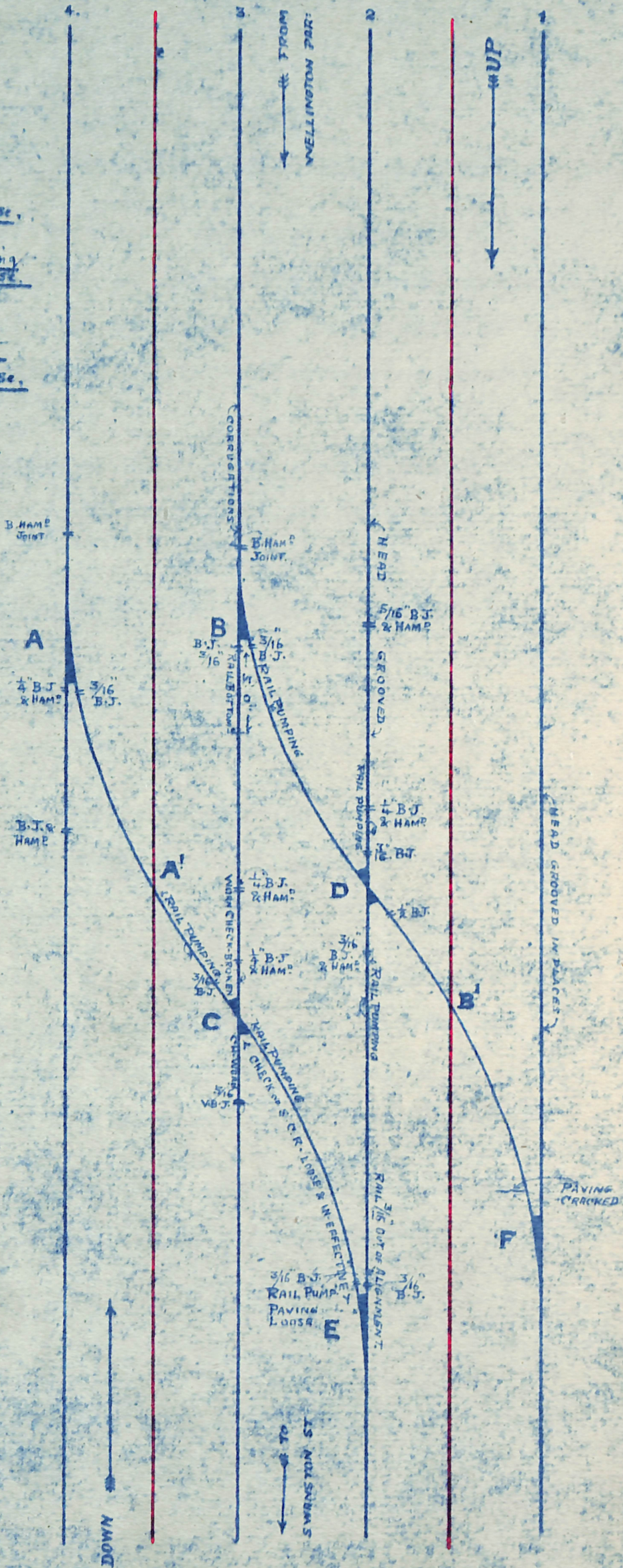
D Points Badly Hammered. Adjacent
Paving Loose.

E. Heel Rocking. Tongue Worn
Diagonal Grooving on Thread of
Point-Casting. Paving Loose.

F Heel Rocking. Tongue Worn.

A¹ Points Slightly Hammered.

B¹ Points Slightly Hammered.



EMERGENCY SHUNT - FLINDERS STREET.

OPP. METROPOLITAN GAS CO'S OFFICES.

LINE 1.
PLAN 8.

DESCRIPTION 8.

A Tongue Worn

EMERGENCY SHUNT.

FLINDERS STREET.

B. Heel Rocking, Tongue Worn.

(opposite Metropolitan Gas Co.'s Office)

Diagonal Grooving on Tread of

No. 1 Rail (Up Track). The Point of Shunt, also a short length of adjacent rail (East side) are pumping and Fishplates presumably loose.

No. 2 Rail (Up-Track). The Point of Shunt, also a short length of rail adjacent to Point (East side) are pumping and fishplates presumably loose.

No. 3 Rail (Down Track) The Point of Shunt, also a short length of adjacent curved rail, are pumping, and ~~xxx~~ fishplates presumably loose.

No. 4 Rail (Down Track) A 3" length of cheek of Point is broken and missing.

Paving blocks on each side of pumping rails and Points, also at several other places are loose, and tarred surface shattered.

Two of the four Heels of Points are of loose fit, and rocking. The treads of these two Points are diagonally worn. Tongues of the four Points are worn to varying amounts.

Seventeen of the joints of Tram-rails, adjacent to rail-crossings and Points, and at other places are wide, varying from $1/8"$ to $3/8"$, and in several cases are badly hammered. There is also hammering of some of the other joints and want of lineability of the Tread surfaces.

At the Crossing Intersections, also at the intersections of slot-rails with tram-rails, hammering is taking place to varying degrees.

Date of First Inspection - May 11th. 1916.

Date of Last Inspection - July 4th. 1916.

EMERGENCY SHUNT. FLINDERS STREET.

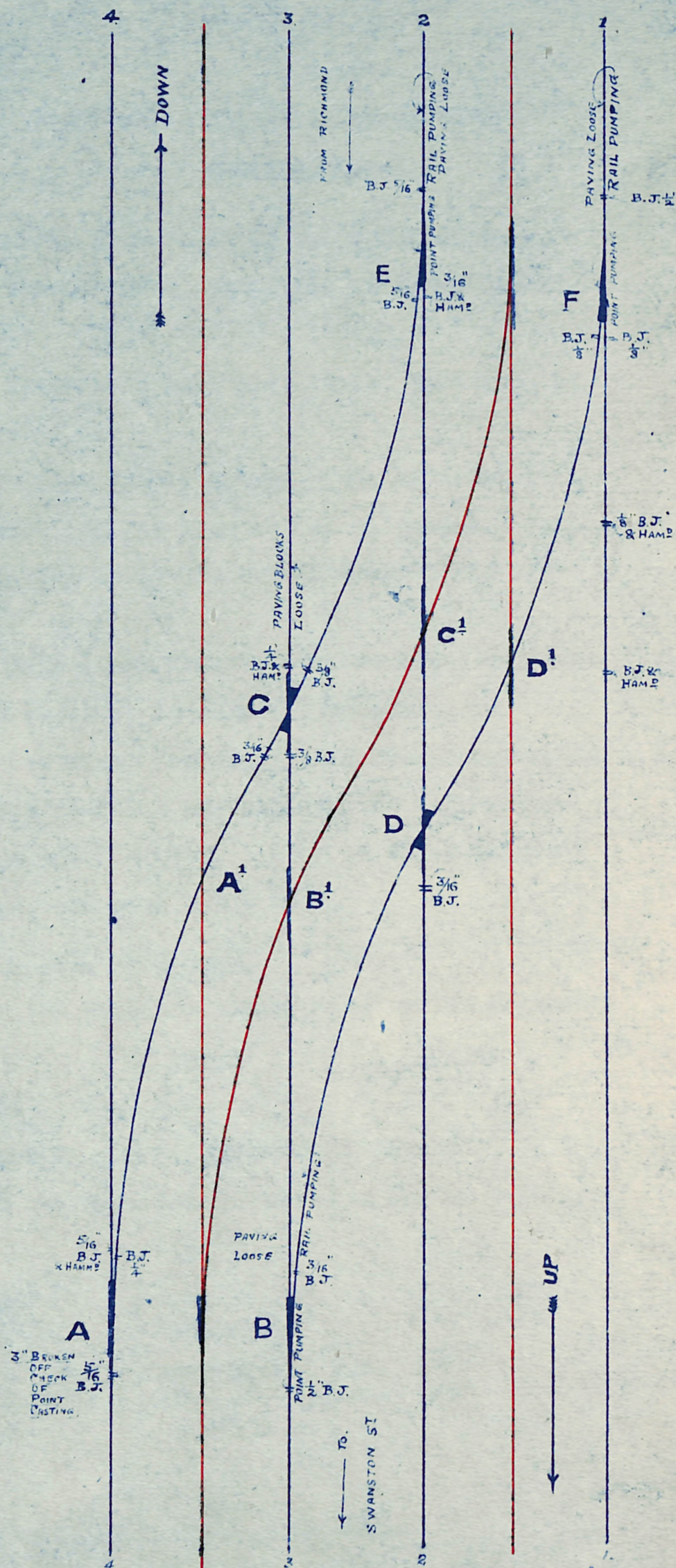
OPP: METROPOLITAN GAS CO'S OFFICES.

LINE 1.
PLAN. 8.

- A Tongue Worn.
B Heel Rocking. Tongue Worn.
Diagonal Grooving on Tread of
Point-Casting.
C Points Hammered.
D Points Hammered.
E Heel Rocking Slightly.
Tongue Worn.
Diagonal Grooving on Tread of
Point-Casting.
F Tongue Worn.

- A¹ Points Slightly Hammered.
B¹ D¹ Hammered.
C¹ D¹ Hammered.
D¹ D¹ Slightly Hammered.

W
W



RIGHT-ANGLE CROSSING

FLINDERS ST WITH SWANSTON ST

LINE PLAN 9.

LINE 1.

DESCRIPTION 9.

Tram-Rail Intersections. Excessive Hammering Apparent.

Tram-Rail and Slot-Rail Intersections. Hammering Apparent.

RIGHT-ANGLE CROSSING Junction of Flinders Street with
Swanston Street.

Fish Plates Evidence of being in fairly good condition, loose in places.

1. There is considerable wear on Tram-rails at the Intersections, and at some places it is very considerable, resulting in excessive hammering.

At the intersections of Tram-rails with slot rails, hammering is taking place to varying degrees.

2. The length of ^{Trail} No. 2 Rail (Down track) Toorak Line, adjacent to No. 4 Rail (Down Track) Richmond Line, is $1/8"$ out of alignment. This rail is pumping and adjacent paving is loose, and fishplates are presumably loose.
3. A short length of No. 3 Rail (Down Track) Richmond Line, adjacent to No. 4 Rail (Down Track) Toorak Line, is pumping, resulting in loosening of adjacent paving, and ~~xxxxx~~ fishplates are presumably loose.
4. Fifteen of the joints of Tram-rails adjacent to the rail-intersections are wide (varying from $3/8"$ to $1\frac{1}{4}"$). Many of these joints are hammered to varying amounts, and some badly so.

CLEARANCES between flange and bottom of groove.

The two sets of Tests on the Flinders Street Line are as follows:-

No. 1 Rail	No. 2	No. 3	No. 4.
S.E. .318"	S.E. .326"	N.E. .279"	N.E. .279"
S.W. .318"	S.W. .295"	N.W. .480"	N.W. .302"
Super-Elev: Level		Super-Elev: Level	

The two sets of Tests on the Swanston Street Line are as follows:-

No. 1 Rail	No. 2	No. 3	No. 4
S.W. .302"	N.W. .333"	N.E. .310"	N.E. .287"
S.W. .310"	S.W. .310"	S.E. .310"	S.E. .279"
Super-Elev: $3/4"$		Super-Elev: N.E. 1"	S.E. $7/8"$
" " $3/4"$		" " "	

Date of First Inspection - April 30th. 1916.

Date of Last Inspection - July 4th. 1916.

RIGHT-ANGLE CROSSING

FLINDERS ST^E WITH SWANSTON ST^E

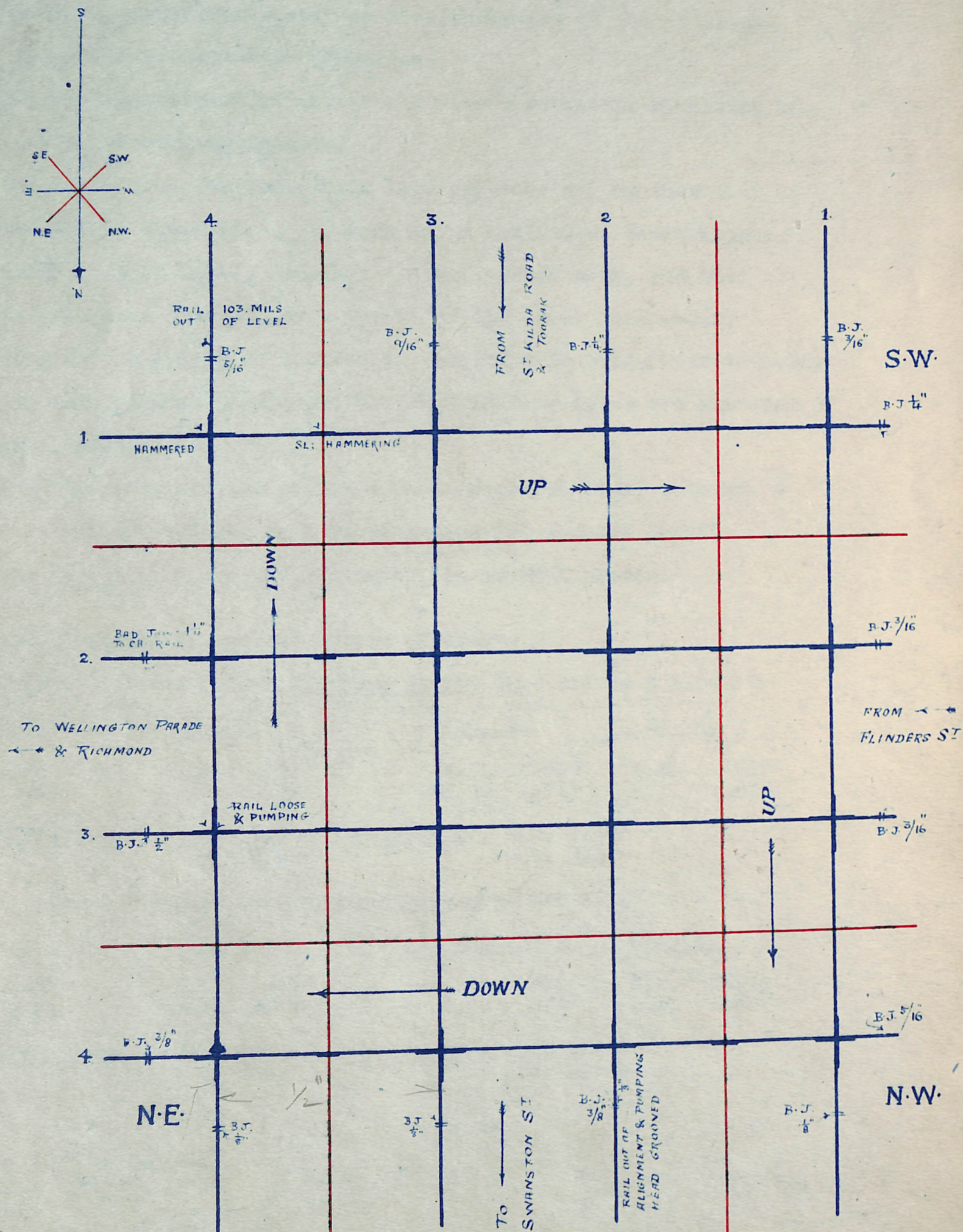
LINE 1. PLAN. 9.

Tram Rail Intersections. *Excessive Hammering Apparent.*

Tram-Rail and Slot-Rail Intersections. *Hammering Apparent.*

Paving. *In Fairly Good Order*

Fish-Plates. *Evidence of being in Fairly Good Condition, though loose in places.*



RIGHT-ANGLE CROSSING

FLINDERS ST WITH MARKET ST

LINE 1. LINE 1.
DESCRIPTION 10. PLAN 10.

RIGHT-ANGLE CROSSING Junction of Market Street with Flinders Street.

1. There is considerable wear on the Tram-rails at the intersections, resulting in excessive hammering.
At the intersection of tram-rails with slot-rails, hammering is taking place, to varying degrees.
2. The Tram-rails, between their intersections and on each side of intersections of slot-rails, are worn for a portion of their length, (about 2'6" in each case), and have the rail-check worn, and the opposite rail head grooved, as a result of the above check-wear.
3. Nine of the Joints of Tram-rails, adjacent to rail-intersections, are wide, varying from $\frac{3}{16}$ " to $\frac{5}{16}$ ", and in many cases are hammered to varying amounts.
4. Near the intersection of No. 4 Rail (Richmond line) with No. 4 Rail (Port Melbourne Line, rail is bottoming for a short length.
5. The Paving is loose and shattered, in several places.

CLEARANCES between flange and bottom of Groove.

The two sets of Tests on the Flinders Street Line are as follows :-

<u>No. 1 Rail</u>	<u>No. 2.</u>	<u>No. 3.</u>	<u>No. 4.</u>
S.E. .124	S.E. .202"	N.E. .140"	N.E. .132"
S.W. .124"	S.W. .101"	N.W. .171"	N.W. .109"
<u>Super-Elevations</u>	S.E. $\frac{3}{8}$ "	<u>Super-Elev.</u> N.E. $\frac{1}{4}$ "	
	S.W. $\frac{5}{8}$ "	" " N.W. $\frac{3}{8}$ "	

The two Sets of Tests on the Market Street Line are as follows :-

<u>No. 1 Rail</u>	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4.</u>
S.W. .163"	S.W. .093"	S.E. .078"	S.E. .124"
N.W. .171"	N.W. .062"	N.E. .070"	N.E. .132"
<u>Super-Elevations</u>	S.W. Level	<u>Super-Elev.</u> S.E. $\frac{1}{4}$ "	
	N.W. do	" " N.E. Level	

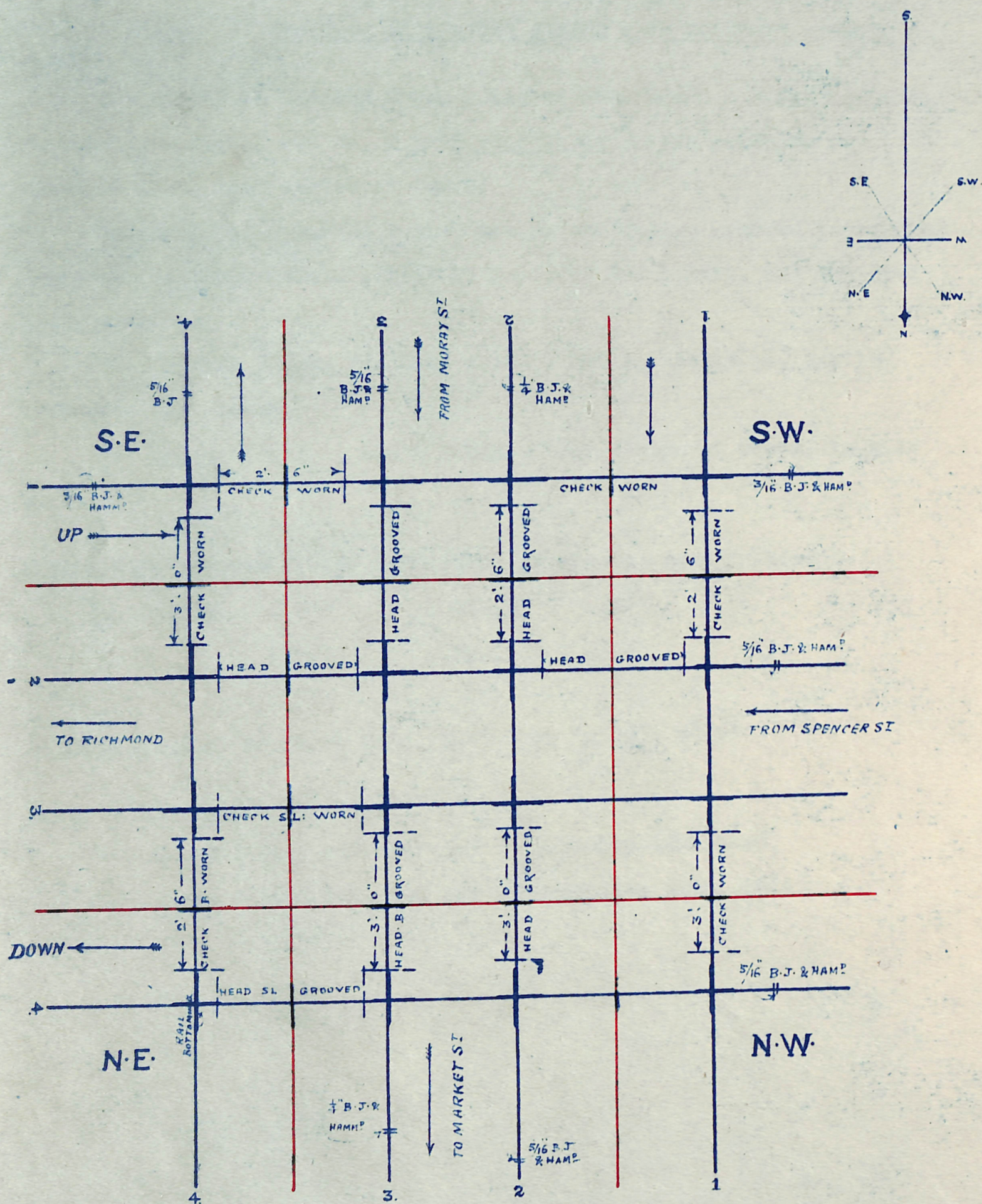
Date of First Inspection - May 28th.1916.

Date of Last Inspection - July 4th.1916.

RIGHT-ANGLE CROSSING ·

FLINDERS ST WITH MARKET ST

LINE 1.
PLAN 10.



CURVE JUNCTION OF FLINDERS ST WITH SPENCER STREET

LINE 1.
PLAN 11.

LINE 1.

DESCRIPTION 11.

CURVE, at JUNCTION of SPENCER STREET with FLINDERS STREET.

1. The Checks of Special Check-rails of Nos. 2 and 4 Rails are worn to varying amounts, and No. 2 Rail very badly so for a length of about 24 feet, near centre of Curve.

The Heads of opposite rails, Nos. 1 and 3, are grooved to varying degrees. A short length (about 15 feet) of No. 1 Rail, has the head badly grooved.

The Special Checks (to Nos. 2 and 4 Rails) are loose, and ineffective, in places.

2. The Gauge of Nos. 3 and 4 Rails - near centre of Curve, is wide up to $\frac{3}{8}$ ".

CLEARANCES between flange and bottom of Groove areas follows :-

<u>No. 1 Rail</u>	.194"	<u>No. 2</u>	.326"
<u>No. 3</u>	.250"	<u>No. 4</u>	.372"

Super-Elevation on No. 1 Rail $2\frac{1}{2}$ " on No. 3, $2\frac{7}{16}$ "

Dates of Curve Rail Renewals -

Nos. 1 and 2 ($6\frac{1}{2}$ " out, $5\frac{1}{2}$ " in) February 16th. 1908.

Nos. 3 and 4 ($6\frac{1}{2}$ " Out, $5\frac{1}{2}$ " In) September 30th. 1914.

Date of First Inspection - May 4th. 1916.

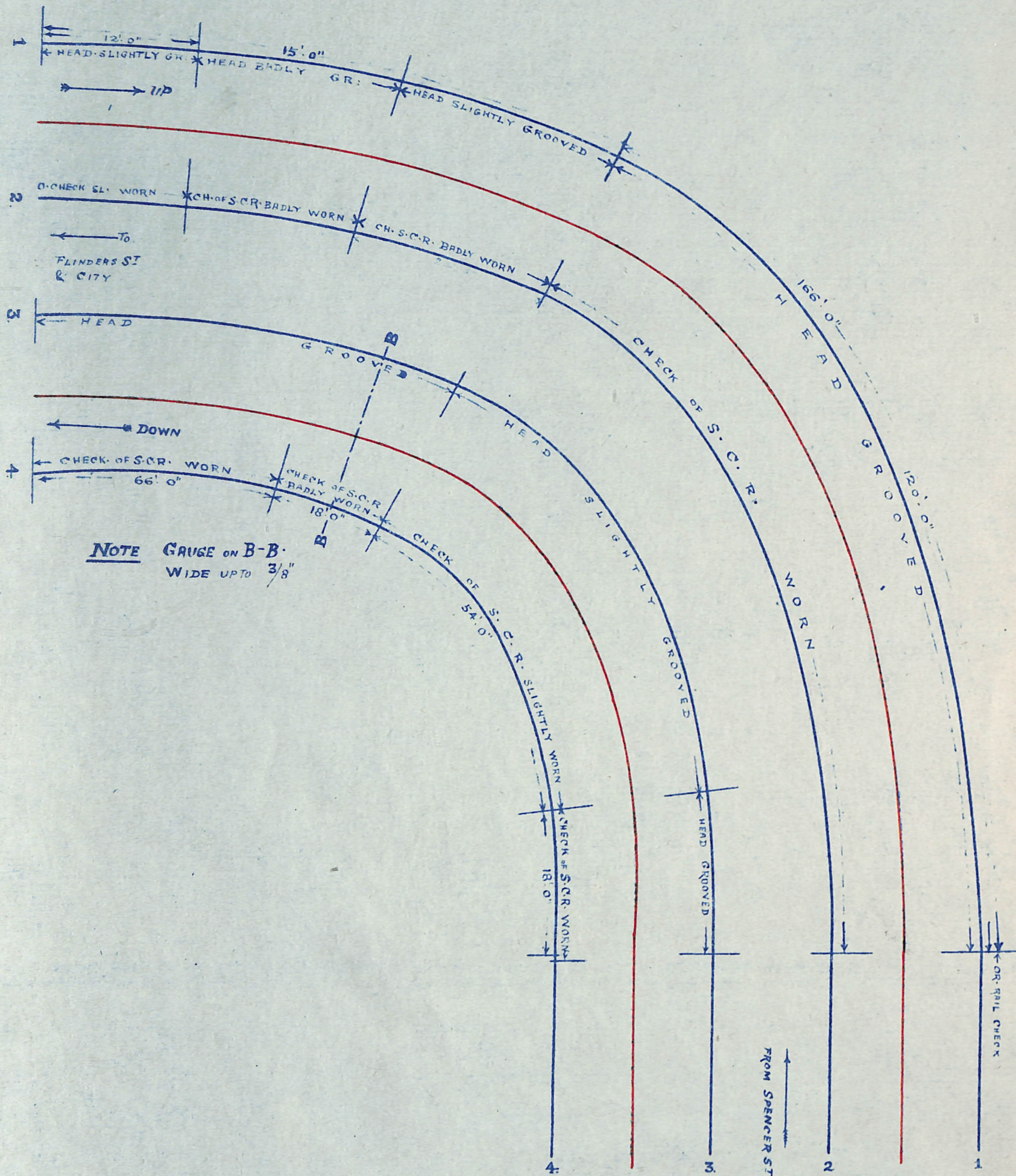
Date of Last Inspection - July 4th. 1916.

CURVE

JUNCTION OF FLINDERS ST

WITH SPENCER STREET

LINE 1. PLAN 11.



LINE 1. PLAN 12.

SHUNTS AT TERMINUS. (RICHMOND LINE)

SPENCER STREET.

LINE 1.

DESCRIPTION 12.

SHUNTS (THREE) AT TERMINUS OF RICHMOND LINE - SPENCER STREET.

SHORT SHUNT.

1. The curved rails of each of the Dummy and Trailer Shunts (three in all) are worn to varying amounts; on five of the six inner curves the checks of Special check-rails are worn.

The special checks are loose and ineffective in places.

On five of the six Outer Curves, the sides of heads are grooved to varying degrees, as a result of above check-wear.

2. Length of straight rail (No. 3 Down Track) between Point of No. 1 Trailer Shunt and rail-intersection of No. 2 Trailer-shunt, has the ordinary rail-check slightly worn, whilst the head of opposite rail (No. 4) is slightly grooved as a result of the above check-wear.

3. At the Crossing intersections, also at the intersections of slot-rails with tram-rails, hammering is taking place to varying degrees.

4. Twenty-two of the joints of Tram-rails adjacent to rail-crossings and Points are wide (varying from $1/8"$ to $1/2"$) and in many cases are hammered.

5. Seven heels of the twelve Points are of loose fit and rocking. The rail-treads of four of the point castings are diagonally grooved. Tongues are worn to varying amounts.

V Tongue Slightly Worn.

Date of First Inspection - May 4th. 1916.

W Heel loose fit, and Rocking.

Date of Last Inspection - July 4th. 1916.

Tongue Worn.

DUMMY SHUNT.

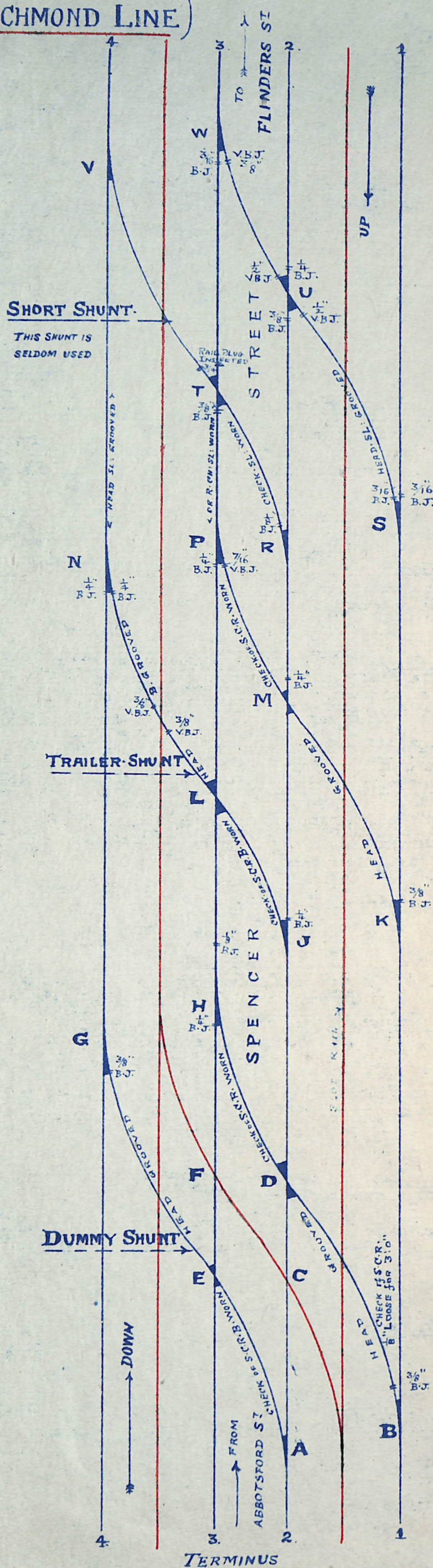
TERMINUS

LINE 1. PLAN 12.

SHUNTS AT TERMINUS. (RICHMOND LINE)

SPENCER STREET.

- A: Heel below level of Rail, and Rocking.
Tongue Worn.
- B Heel Rocking. Tongue Worn
- C Points Slightly Hammered.
- D Points Hammered.
- E
- F
- G Heel loose fit, and Rocking.
Tongue Worn
- H Fixed Point Worn.
- J. Heel Rocking.
Tongue Slightly Worn.
- K Heel Rocking.
Tongue Worn
- L Points Hammered.
- M Points Badly Hammered.
- N Tongue Slightly Hammered.
- P
- R Heel Rocking. Tongue Worn.
- S
- T
- U
- V Tongue Slightly Worn.
- W Heel loose fit, and Rocking
Tongue Worn.



SHUNTS (2) AT TERMINUS

SCHEDULE OF SHUNTS, CROSSINGS AND CURVES.

COLLINS STREET LINE.

No. 2.

- (A). Collins St. Terminus to Junction of Brunswick St. with Vict. Pde.
(B). Victoria St. Terminus " Vict. Parade ... opposite Brunswick St.
(C) North Fitzroy ... " St. George's Rd. Terminus to do do
at junction with Victoria Parade.

1. Double Shunts at Terminus .. Collins Street
2. Right-Angle Crossing Collins St. with Elizabeth Street.
3. do do Collins St. with Swanston Street.
4. Curve ... Junction of Collins Street with Spring Street.
5. Double Shunts. Gisborne Street (near R.C. Cathedral)
6. Curve opposite Grey St. W. (" ")
- (A) 7. Curve, Junction of Gisborne Street with Victoria Parade.

- (B) 1. Double Shunts at Terminus ... Victoria Street.
 " 2. "Turn-In" and "Turn-Out", to Tramcar Depot.
 " 3. Curve ... between Tramcar Depot and corner of Burnley St.
 " 4. Curve ... in Victoria Street opposite " "
 " 5. Curve ... " " " " Hoddle Street
 " 6. Curve " " " " Hengle's Shop (near Hoddle St.Cr.)
 B. 7. * Slight Curve in " " " Engine House (Cr.Brunswick St.)
 * (Included on Plan C. 7)

- C. {(Shunt at Terminus ... St. George's Road) ... to varying degrees.
" 1. {"Turn-In" to Tramcar Depot " " " } adjacent to rail-crossings
2 Railway Double Crossing .. St. George's Rd.(N. Fitz. Box) /8- to 3/8-)
" 3 Railway Single do " " There are other joints where hammer-
" 4 Curve St.George's Road (opp. St.Luke's Ch.)
" 5 Right-Angle Crossing Brunswick St. with Johnston St. and racking, and
C. 6 do do Brunswick St. " Gertrude St. ... other heels is racking
7 Curve and) Junction of do " " Victoria Pde.
Junction }

~~TOTAL 20 Separate Sketch Plans.~~

NOTE. - This defect was found upon inspection July 18, 1916.

July 18, 1916.

SHUNTS (2) AT TERMINUS COLLINS STREET.

LINE 2

PLAN A.I.

LINE 2.

DESCRIPTION A1.

SHUNTS (2) at TERMINUS COLLINS STREET.

1. The curved rails of each of the Dummy and Trailer-Shunts are worn to varying amounts; the special checks to ordinary rails of the 4 Inner curves being worn, whilst the heads of opposite rails (4 Outer curves) are grooved, as a result of the above check-wear. The rail-treads of three of the Inner curves are in places beaded over, presumably from heavy traffic.
2. Special Checks are loose, and ineffective in places.
3. No. 2 Rail (Up-Track) a 5'0" length of rail between intersection of curved Shunt-rail and Point of Trailer-Shunt, is pumping, resulting in loosening of adjacent paving. The fish-plates are presumably loose.
4. No. 3 Rail (Down-Track) two short lengths of Rail (7'0" and 5'0" respectively) between intersection of Dummy Shunt-rail, and Point of Trailer-Shunt, are pumping, and rail-check for about 5 feet, is very badly worn, whilst the head of opposite rail (No. 4) is grooved.
5. No. 4 Rail (Down Track) adjacent to Point of Dummy Shunt, is $\frac{1}{8}$ " out of alignment, resulting in excessive wear at the side of tread.
6. Paving blocks are loose in several places, and tarred surface shattered.
7. At the Crossing intersections, also at the intersections of slot-rails with tram-rails, hammering is taking place, to varying degrees.
8. Fourteen of the joints of Tram-rails, adjacent to rail-crossings and Points, and at other places, are wide (varying from $\frac{1}{8}$ " to $\frac{3}{8}$ ") and in many cases are hammered. There are other joints where hammering is taking place, and fishplates, presumably, loose.
9. Six of the eight heels of Points are of bad fit and rocking, and tongues are worn to varying amounts. One of the other heels is rocking slightly, and tongue is slightly worn.

The fixed Point is worn very badly.

Date of First Inspection - May 4th. 1916.

Date of Last Inspection - July 4th. 1916.

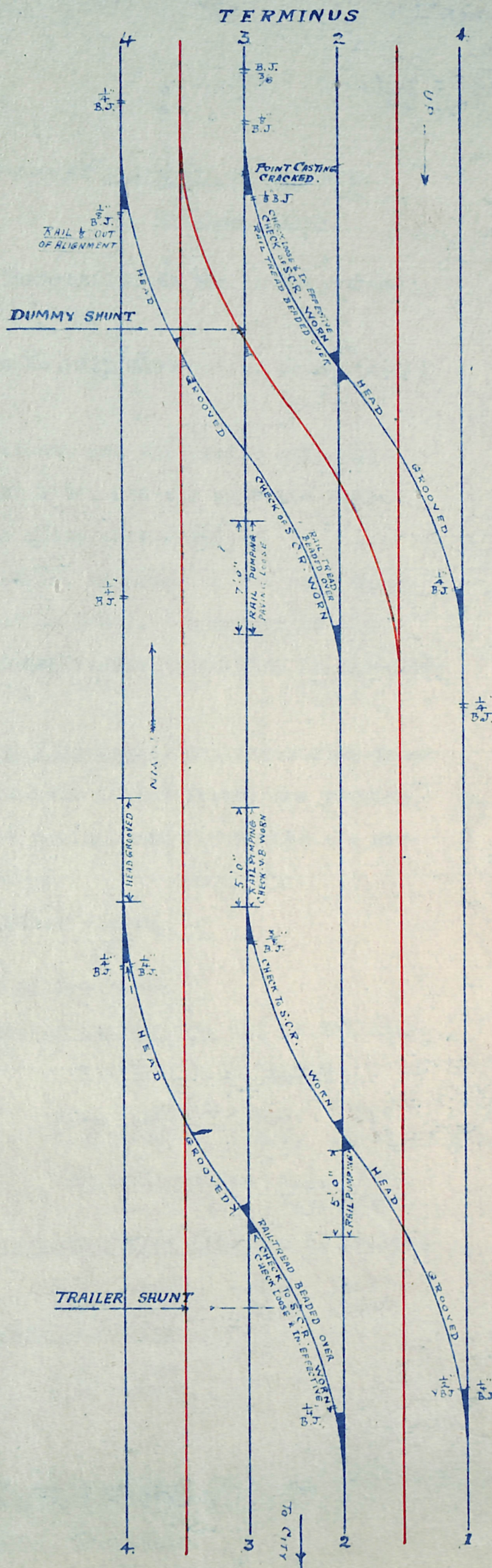
10. The Point-Casting of Dummy Shunt on No. 2 Rail is cracked through about the centre of its length.

July 18 1916

SHUNTS (2) AT TERMINUS COLLINS STREET.

LINE 2
PLAN A.1.

- A. Heel below level of Rail, and Rocking
Tongue Worn
- B. Heel Rocking. Tongue Worn.
- C. Bad Hammering at Intersections.
- D. Hammering at Intersections.
- E. Heel Rocking.
Tongue Worn
- F. Fixed Point V. Badly Worn.
- G. Lipped Heel Rocking.
- H. ---
- J. Bad Hammering at Intersections.
- K. Hammering at Intersections.
- L. Heel Rocking Slightly.
Tongue Slightly Worn.
- M. Heel Bad Fit, and Rocking
Tongue Badly Worn



RIGHT-ANGLE CROSSING · JUNCTION OF COLLINS STREET WITH ELIZABETH ST

LINE 2.

LINE 2.

PLAN A.2.

DESCRIPTION A.2.

RIGHT-ANGLE CROSSING Junction of Elizabeth Street with
Collins Street.

1. There is considerable wear on Tram-rails, at the intersections, resulting in excessive hammering.

At the intersections of Tram-rails with Slot-rails, hammering is taking place, to varying degrees.

2. The Tram-rails between intersections and slot-rails have the rail-checks worn for a length of about 2'6", and the opposite rail-heads are grooved, as a result of the above check-wear.

3. Fifteen of the Joints of Tram-rails, adjacent to the rail intersections are wide, (varying from 3/16" to 5/8"). A number of the Trail-rails are out of level with adjacent rails, resulting in excessive hammering.

4. Two lengths of rails (Nos. 1 and 2 Up-Rails) Collins Street Track (between No. 1 Rail and Slot Rail, Elizabeth Street Track) are pumping, resulting in ~~xxx~~ loosening of adjacent paving, and fishplates are presumably loose.

5. The paving is loose in several other places.

CLEARANCES between flange and bottom of Groove :-

The two sets of Tests on the Collins Street Line are as follows:-

No. 1 Rail	No. 2	No. 3	No. 4	
S.E. .140"	S.E. .217"	N.E. .186"	N.E. .302"	
S.W. .171"	S.W. .186"	N.W. .217"	N.W. .240"	N.W.
<u>Super-Elevation</u>		<u>Super-Elevation</u>		
S.E. 5/8"		N.E. 5/8"		
S.W. 1/2"		N.W. 1/2"		

The two Sets of Tests on the Elizabeth Street Line are as follows:-

N.E. .279"	N.E. .217"	N.W. .155"	N.W. .140"
S.E. .124"	S.E. .171"	E.W. .202"	S.W. .194"
<u>Super-Elevation</u>		<u>Super-Elevation</u>	
N.E. 1/4"		N.W. 1/4"	
S.E. 1/2"		S.W. Level.	

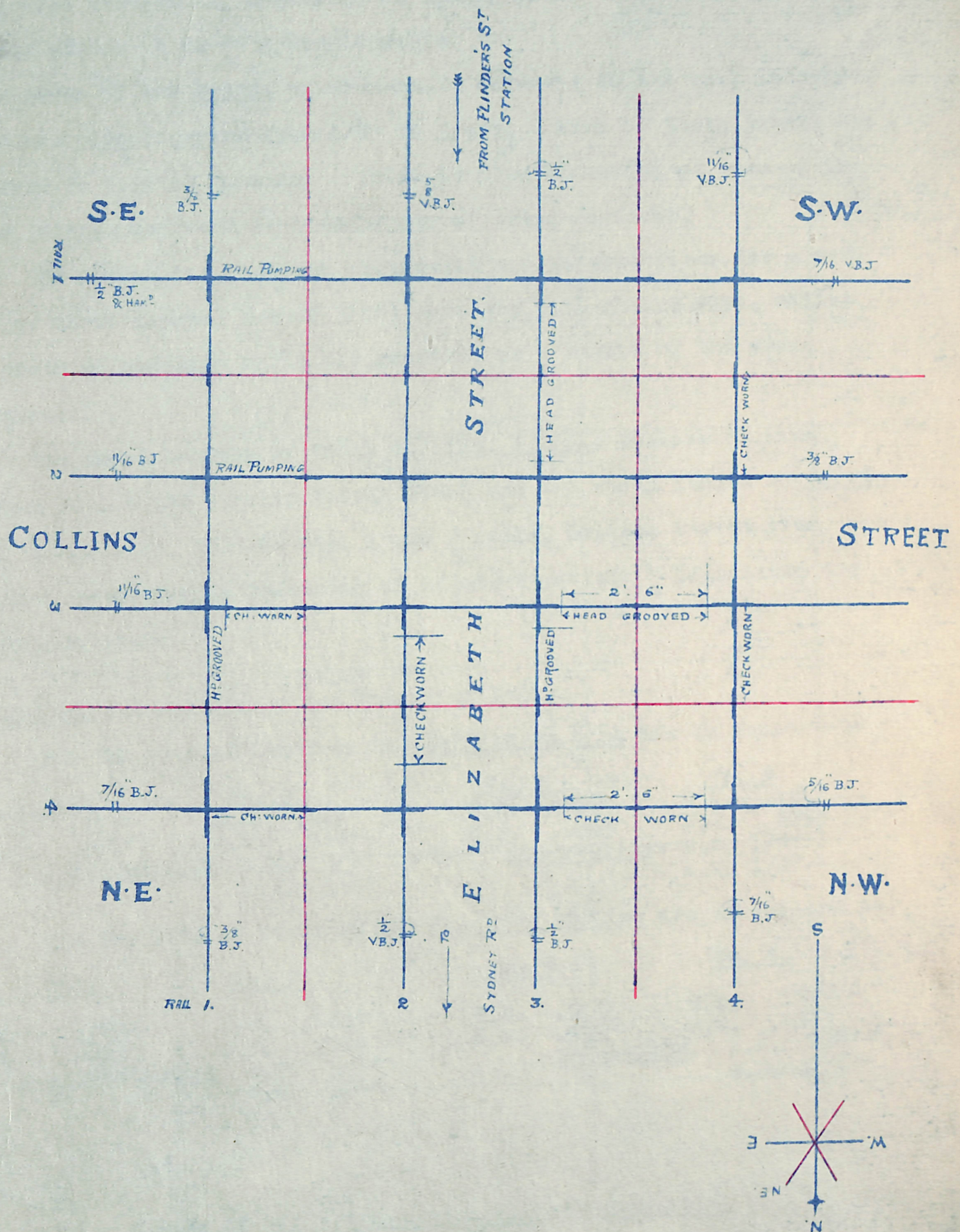
Date of First Inspection - April 30th. 1916.

Date of Last Inspection - July 4th. 1916.

RIGHT-ANGLE CROSSING · JUNCTION OF
COLLINS STREET WITH ELIZABETH ST

LINE 2.

PLAN A2.



RIGHT-ANGLE CROSSING JUNCTION OF

COLLINS ST WITH SWANSTON ST

LINE 2.

PLAN A.3.

Tram-Rail Intersection.

Excessive Hammering at all Intersections.

LINE 2.

Int. sections.

D°

D°

D°

DESCRIPTION A.3.

RIGHT-ANGLE CROSSING at Junction of SWANSTON STREET with

COLLINS STREET.

1. At the Tram-rail intersections, also at the intersections of slot-rails with tram-rails, hammering is taking place to varying degrees; at some places it is very considerable.
2. Seven of the Joints of Tram-rails adjacent to the rail intersections are wide (varying from $1/8"$ to $3/8"$). Many of these joints are hammered to varying amounts. There is also hammering of some of the other joints, and want of lineability of tread-surfaces.
3. The Tram-rails, between slot-rails and intersections, for a portion of their length, (about $3'0"$) have the rail-checks worn, whilst the Heads of opposite rails are grooved, as a result of the above check-wear.
4. Two short lengths of rails (1) (No. 1 rail, Collins St. Line, between Nos. 2 and 3 rails Toorak Line) and (2) short length of No. 3 Rail Toorak Line, between Nos. 1 and 2 rails, Collins Street Line, are pumping, resulting in loosening of adjacent paving. Fishplates are presumably loose.

CLEARANCES between flange and bottom of Groove -

The two Sets of Tests on the Collins St. Line are as follows :-

<u>No. 1 Rail</u>	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
S.E. .225"	S.E. .217"	N.E. .155"	N.E. .101"
S.W. .078"	S.W. .062"	N.W. .186"	N.W. .209"
<u>Super-Elevation</u>	S.E. $3/8"$	<u>Super-Elev:</u>	N.E. $1/4"$
" "	S.W. $3/8"$	" "	N.W. $1/2"$

The two Sets of Tests on the Swanston St. Line are as follows :-

<u>No. 1 Rail</u>	<u>No. 2</u>	<u>No. 3</u>	<u>No. 4</u>
N.W. .093"	N.W. .140"	N.E. .015"	N.E. .155"
S.W. .033"	S.W. .202"	S.E. .132"	S.E. .085"
<u>Super-Elevation</u>	N.W. $5/8"$	<u>Super-Elev.</u>	N.E. $7/8"$
" "	S.W. $3/4"$	" "	S.E. $7/8"$

Date of First Inspection - April 30th. 1916.

Date of Last Inspection - July 4th. 1916.

RIGHT-ANGLE CROSSING JUNCTION OF

COLLINS ST WITH SWANSTON ST

LINE 2.

PLAN A.3.

Tram-Rail Intersections.

Excessive Hammering at all Intersections.

Tram-Rail & }
Slot-Rail } Intersections.

D°

D°

D°

Putting.

In Fairly Good Order, except where Rails are pumping, where putting is bad, but turned surface is straight.

Fish plates.

In Fairly Good Order, but loose in places.

