

MELBOURNE AND METROPOLITAN TRAMWAYS BOARD
MELBOURNE. VICTORIA. AUSTRALIA.

DESIGN, MANUFACTURE AND DELIVERY
OF
100 ONLY ALL-ELECTRIC TRAMS.

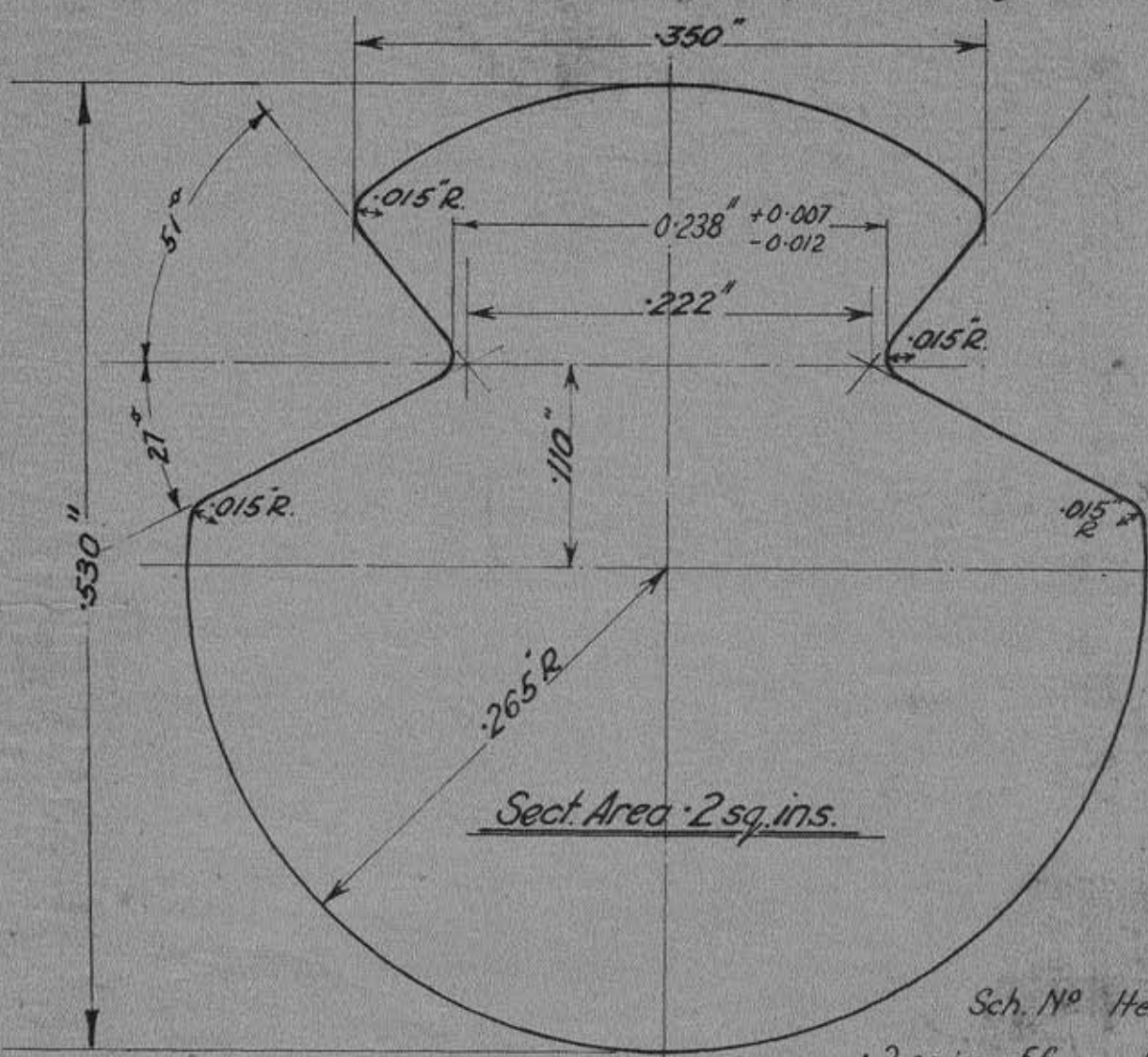
DRAWINGS SUPPLIED BY THE BOARD

<u>Drawing Number</u>	<u>Title</u>
O.6887A	CROSS-SECTIONS OF TROLLEY WIRES.
P.13855	GLENFERRIE ROAD ROUTE - LONGITUDINAL SECTION.
P.13856	WATTLE PARK ROUTE - LONGITUDINAL SECTION.
P.13857	EAST PRESTON ROUTE - LONGITUDINAL SECTION.
P.13858	CONCRETE TRACK CONSTRUCTION.
P.13859	OPEN TRACK CONSTRUCTION.
P.13860	PAVED BALLAST TRACK CONSTRUCTION.
P.13887	TRAM ROUTES, LOCATION OF SUBSTATIONS AND SECTION SWITCHES.
P.13888	MINIMUM RADIUS SERVICE CURVES TO GIVE MINIMUM CLEARANCE BETWEEN TRAMCARS.
P.13889	GROOVED RAIL, 102 POUNDS PER YARD, AND TIRE PROFILE.
R.10-301	COLLECTOR HARP AND CARBON INSERT SHOE, TRAMCARS.
R.10-502	LOADING GAUGE, PROPOSED ELECTRIC TRAMCARS.
R.9706K	ROLLING STOCK DATA, TRAMCARS.
E.10306	COLLINS POINT SHIFTER - WIRING DIAGRAM.

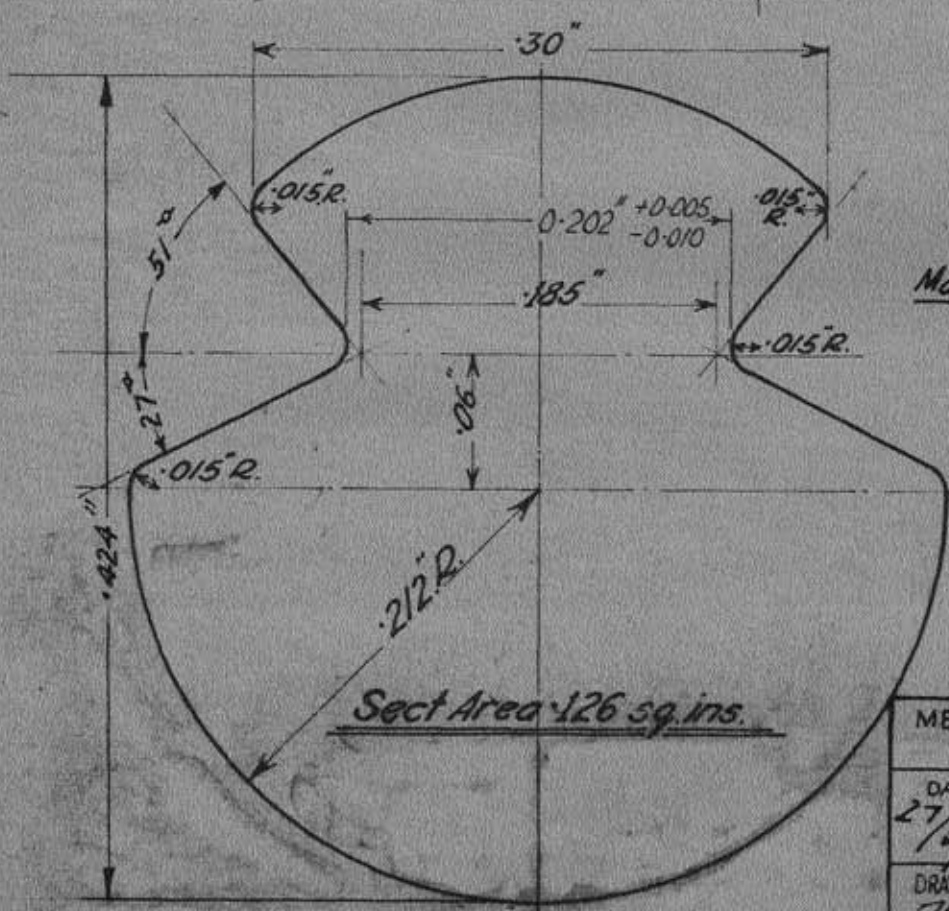
A3 size extract of drawings with title block

MELBOURNE & METROPOLITAN TRAMWAYS BOARD

Cross-sections of .2sq.in & .126sq.in. Trolley Wire.



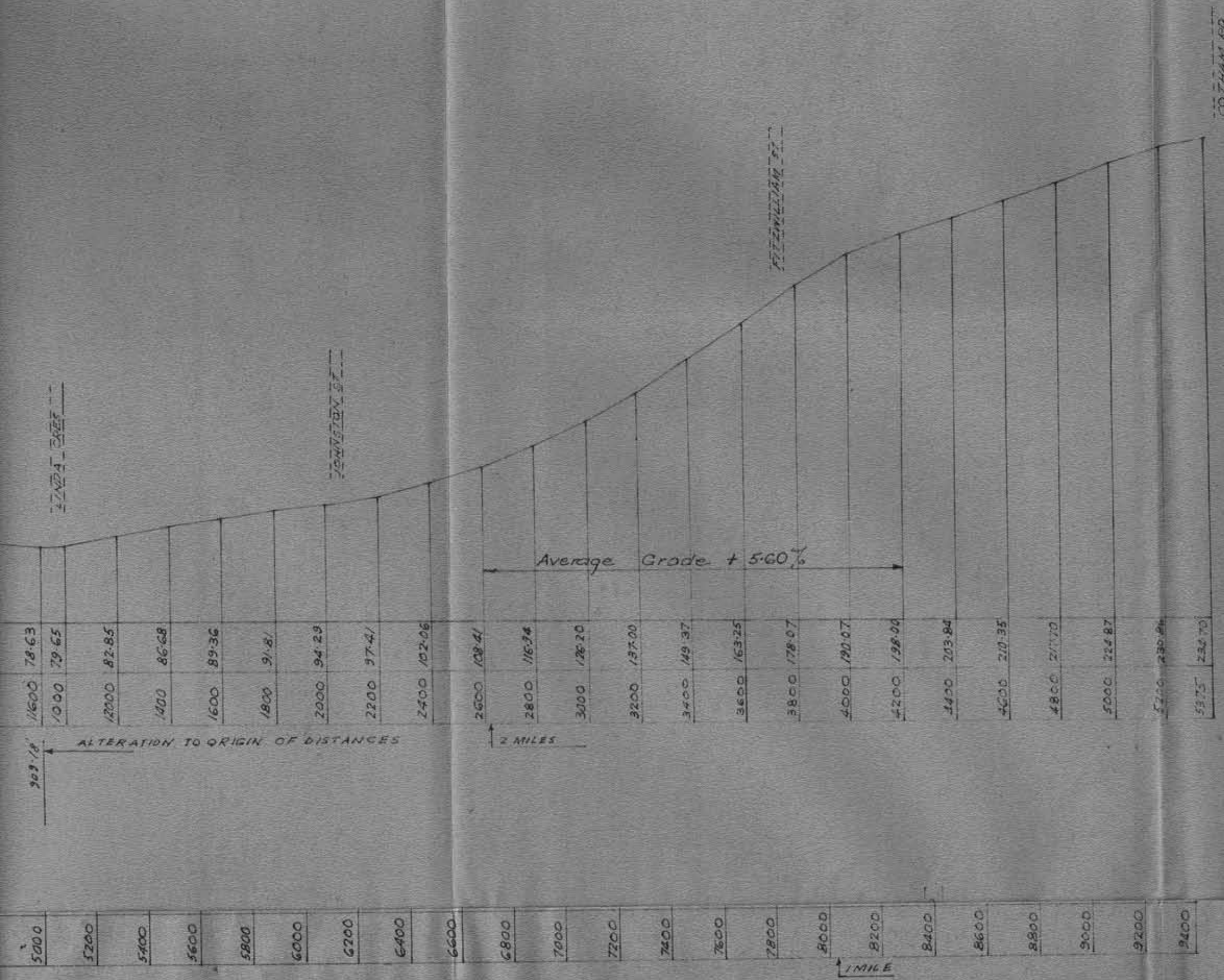
Sch. No. Item No.
 .2 sq. ins. 56 803



Material: Hard Drawn Cadmium
 Copper

Sch. No. Item No.
 .126 sq. ins. 56 801

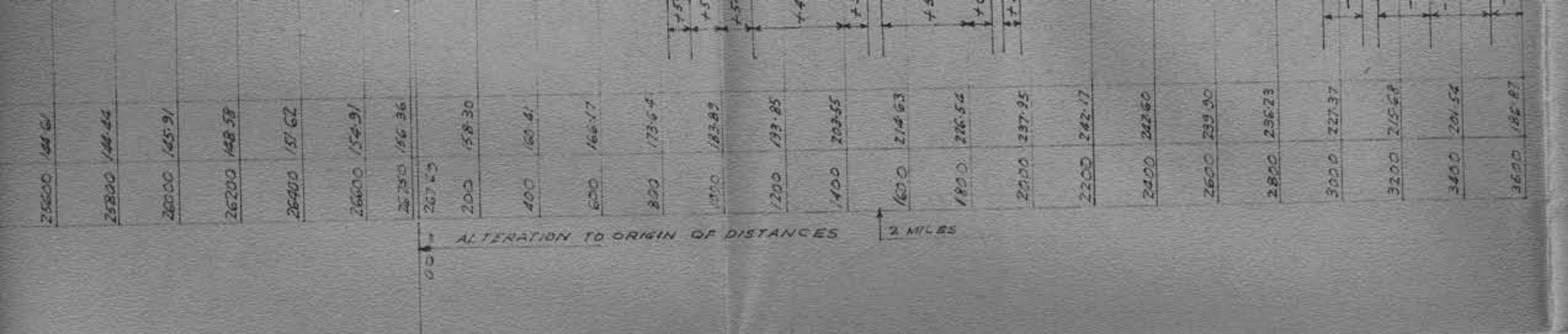
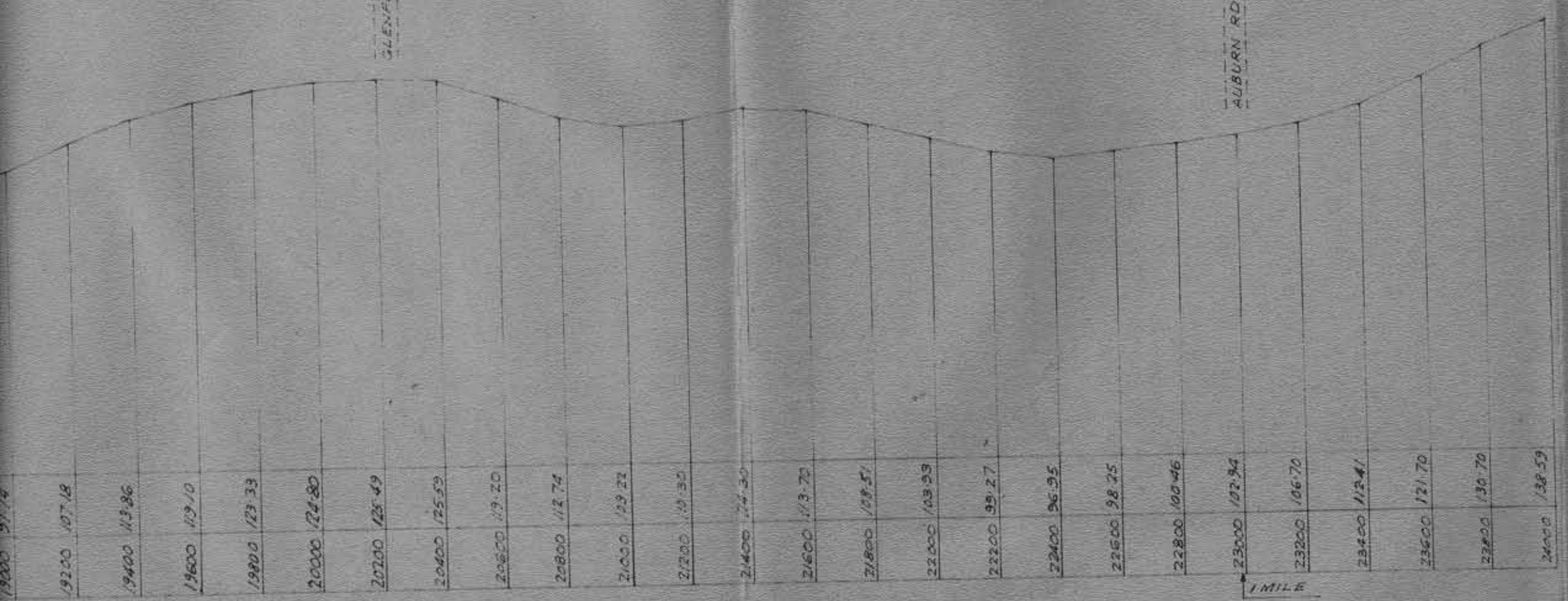
MELBOURNE & METROPOLITAN TRAMWAYS BOARD				
DATE	F. P. Kelly			
27/5/65	DEPUTY CHAIRMAN			
DRAWN	TRACED	CHECKED	PASSED	APPROVED
J.H.				S.K.
SCALE 10" = 1"				0.6887A

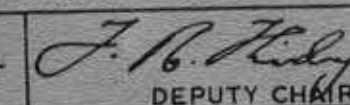
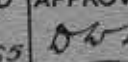


ERIE ROAD ROUTE
LONGITUDINAL SECTION
FROM ... TO COTHAM RD

DATE 18-5-65		F. B. Hurley DEPUTY CHAIRMAN		
DRAWN W.H.L.	TRACED 19-1-65	CHECKED	PASSED K.C.P. 18.5.65	APPROVED D.W.H.
SCALE: HOR. 400' TO 1" VER. 40' TO 1"		P. 13855		

**WATTLE PARK ROUTE
LONGITUDINAL SECTION
POWER ST TO ELGAR RD**



MELBOURNE AND METROPOLITAN TRAMWAYS BOARD				
DATE		 DEPUTY CHAIRMAN		
18-5-65				
DRAWN	TRACED	CHECKED	PASSED	APPROVED
W.H.L.	10-1-65		K.C.P. 14. 5. 65	
SCALE: HOR. 400' TO 1"			VER. 40' TO 1"	
				P.13856

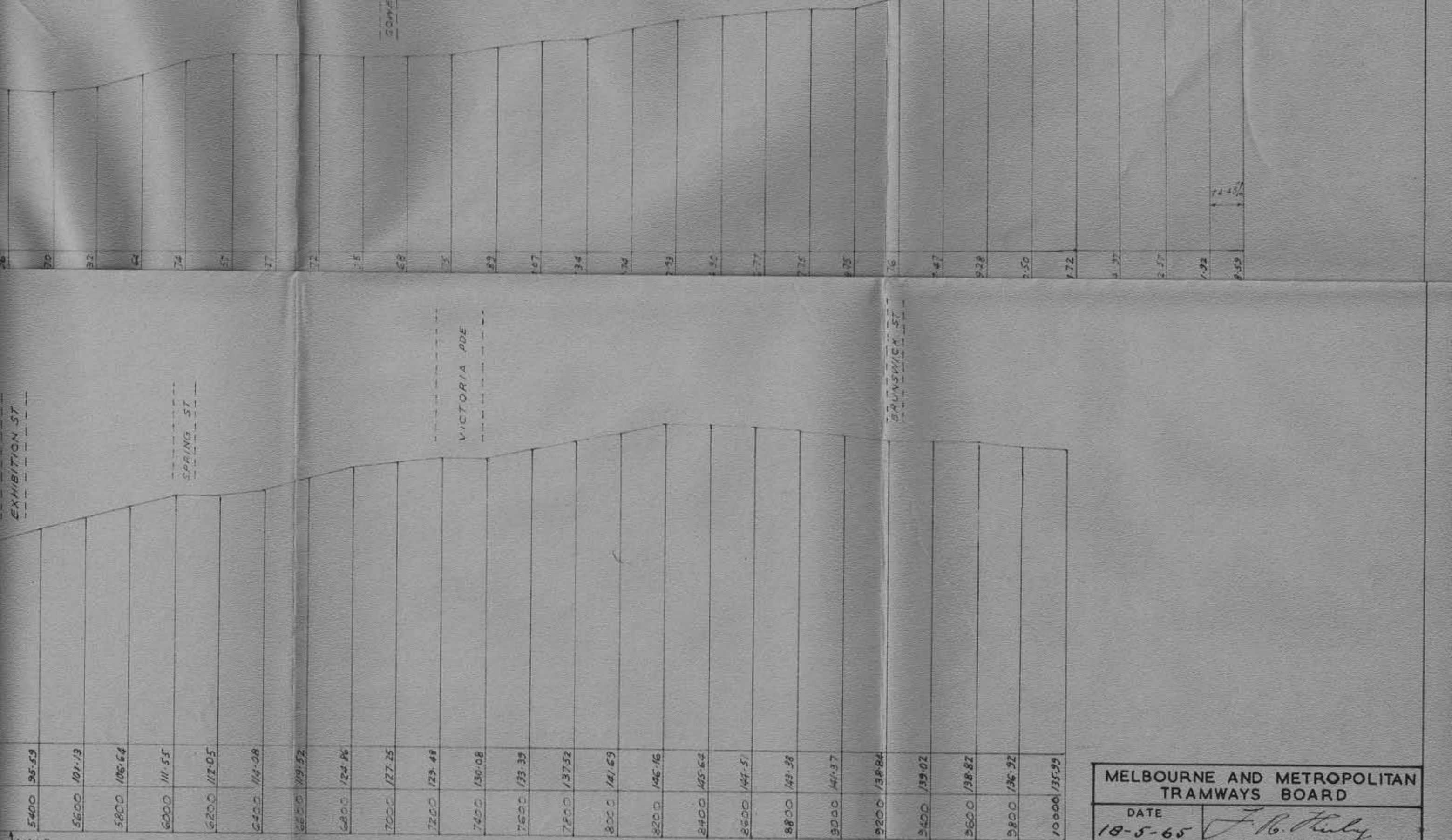
EXHIBITION ST

SPRING ST

VICTORIA PDE

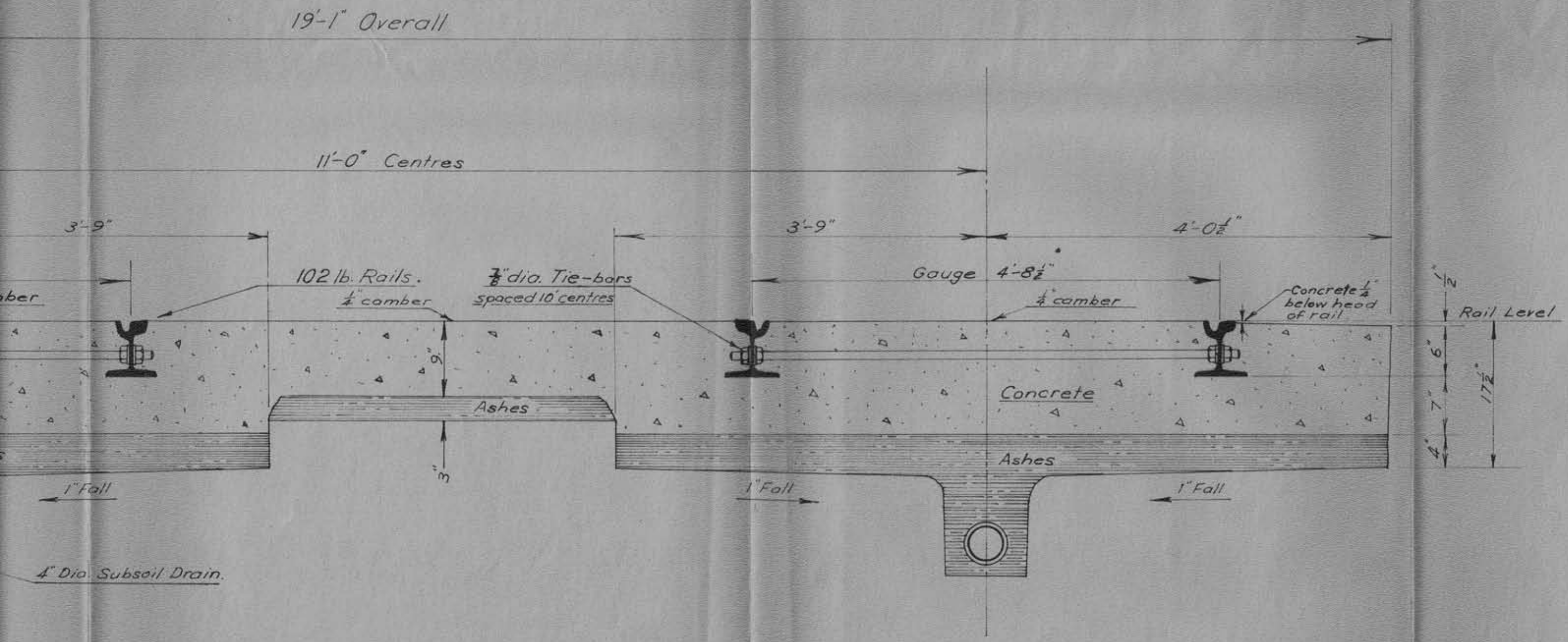
BRUNSWICK ST

STON ROUTE
INAL SECTION



MELBOURNE AND METROPOLITAN TRAMWAYS BOARD				
DATE		<i>J. H. Healy</i>		
18-5-65		DEPUTY CHAIRMAN		
DRAWN	TRACED	CHECKED	PASSED	APPROVED
W.H.L.	17-1-65		K.C.P.	<i>J.H.</i>
			12.5.65	
SCALE: HOR. 400' TO 1"				P. 13857
VER. 40' TO 1"				

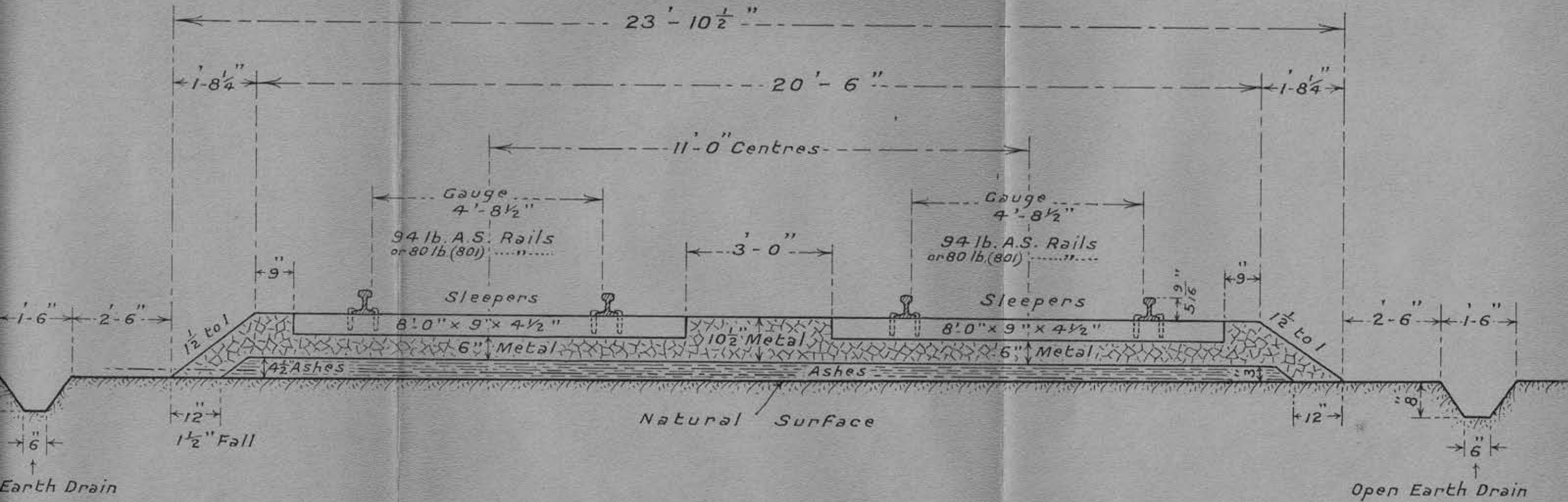
CONCRETE TRACK CONSTRUCTION



CURRIE & METROPOLITAN ENGINEERS & ARCHITECTS			
<i>J. H. Hilkey</i> DEPUTY CHAIRMAN			
13/5/05 P.12789	CHECKED R.C.P.	PASSED R.C.P. 12.5.05	APPROVED N.H. 11/5/05
P.13858			
1" = 1'-0"			

MELBOURNE & METROPOLITAN TRAMWAYS BOARD

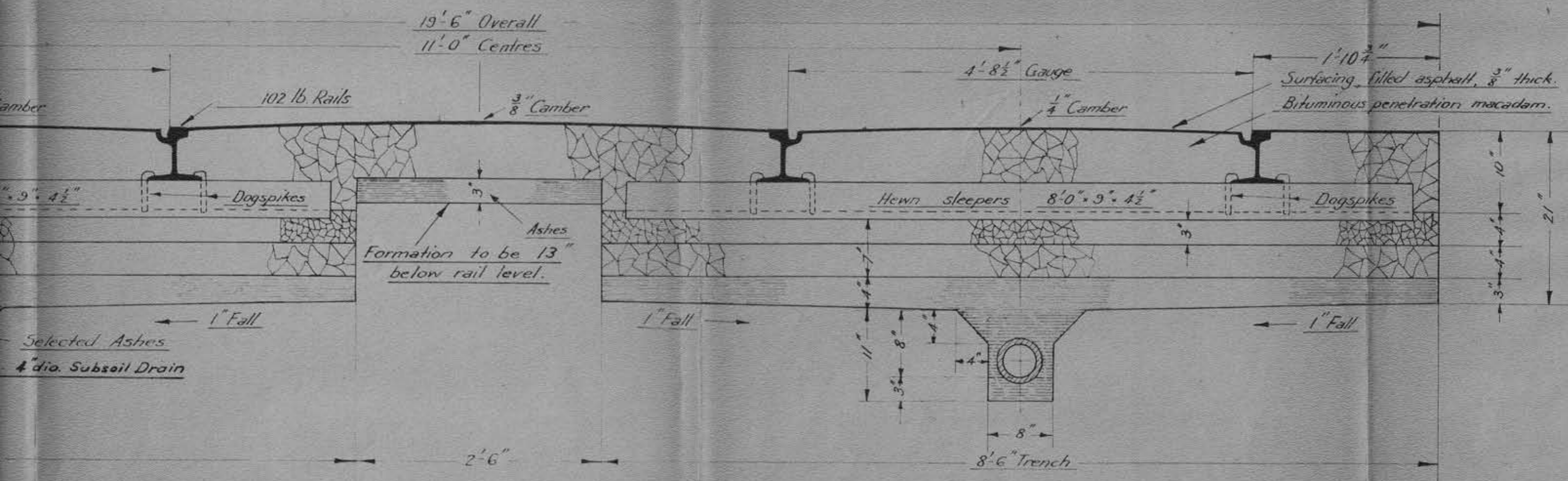
OPEN TRACK CONSTRUCTION



MELBOURNE & METROPOLITAN TRAMWAYS BOARD	
LTS	
13/10/06	F. B. Kelly DEPUTY CHAIRMAN
P. 2023	KCP
12.6.65	12.6.65
P13859	
1/2-1-0	

RED BALLAST TRACK CONSTRUCTION

Note - Camber between all rails to be omitted between kerb lines of intersecting streets.



MELBOURNE METROPOLITAN
TRAMWAY BOARD

13/1/25

J. B. Kelly
DEPUTY CHAIRMAN

P.12864

B.W.N.
22-1-25

K.C.P.
12-5-25






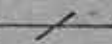
APPROVED
1/11/25

P.13860

1'-1'0"

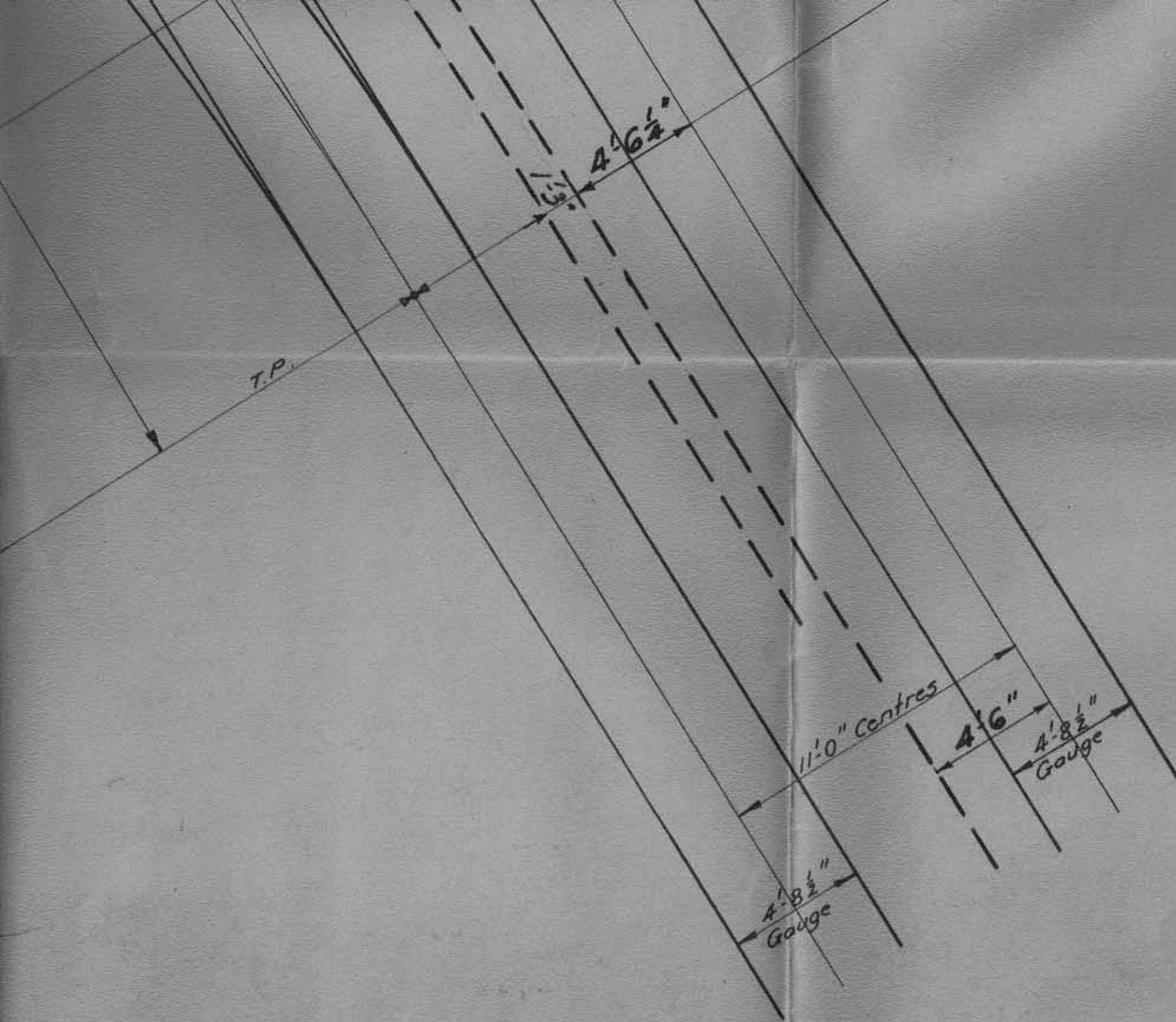


REFERENCE

- Tram Tracks 
- Substations 
- Tie Substation 
- Control Room 
- Auto. Sect. Switches  A
- No. of converting units in Sub. 2 CU.
- No. of feeder panels " " 2 FP.
- Crossover between tracks 

TRAM ROUTES,
LOCATION OF SUBSTATIONS
AND SECTION SWITCHES.

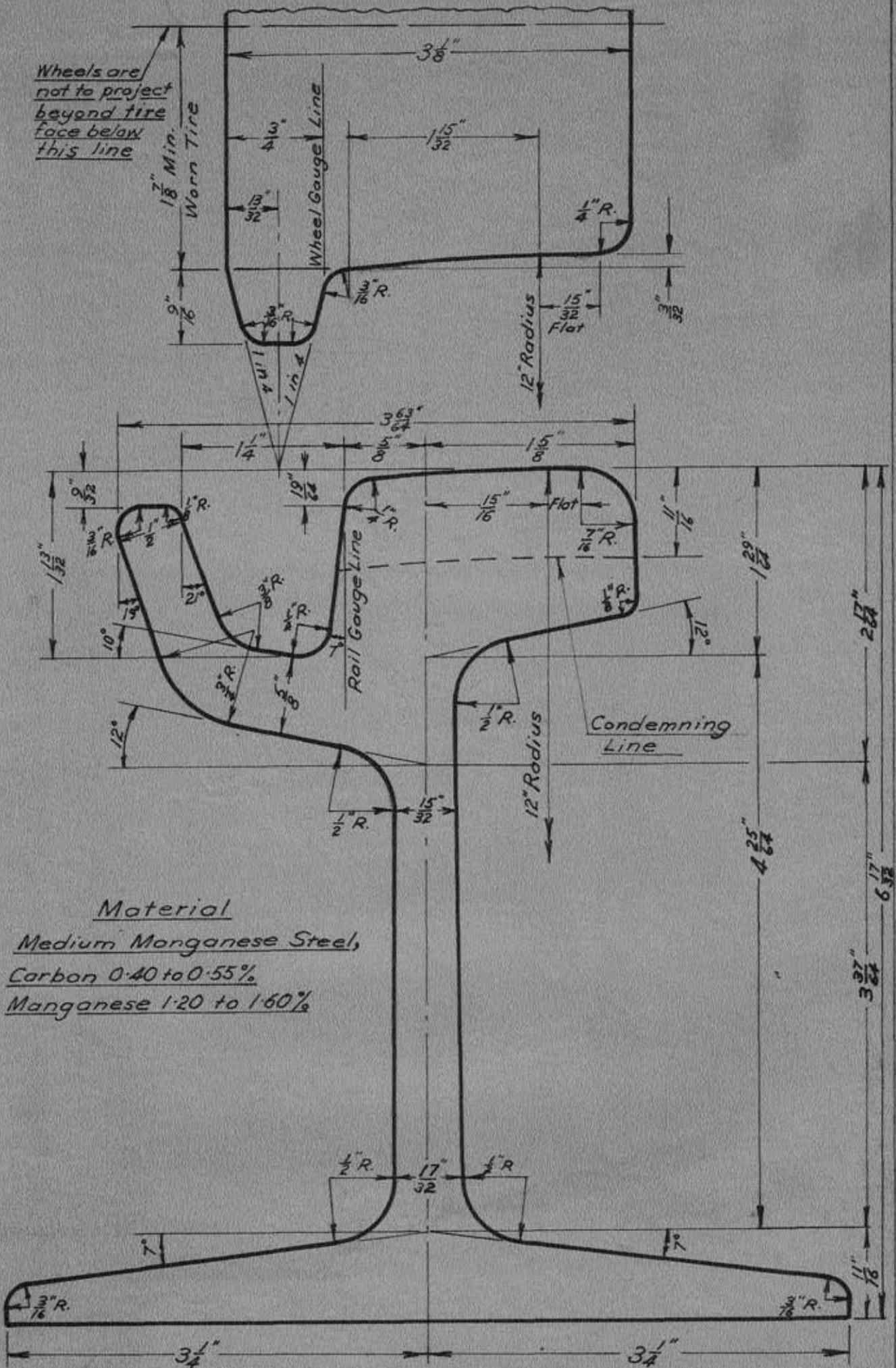
MELBOURNE & METROPOLITAN TRAMWAYS BOARD				
DATE 13/5/65	J. R. Kelly DEPUTY CHAIRMAN			
DRAWN P.12191 512-513	TRACED BNM 10-54	CHECKED J.R.G.	PASSED K.C.P. 12.5.65	APPROVED 5/5/65
SCALE, 2 1/2" TO 1 MILE			P.13887	



MINIMUM RADIUS SERVICE CURVES TO GIVE
MINIMUM CLEARANCE BETWEEN TRAMS

MELBOURNE & METROPOLITAN TRAMWAYS BOARD				
DATE	<i>J. B. Kelly</i>			
	DEPUTY CHAIRMAN			
DRAWN	TRACED	CHECKED	PASTED	APPROVED
<i>J.R.G.</i>	<i>12.5.65</i>	<i>K.G.P.</i>	<i>K.G.P.</i>	<i>D.W.G.</i>
		<i>16.5.65</i>	<i>16.5.65</i>	
SCALE 1" = 4'-0" TO 1"				P.13888

Wheels are not to project beyond tire face below this line



Material

Medium Manganese Steel,

Carbon 0.40 to 0.55%

Manganese 1.20 to 1.60%

Condemning Line

GROOVED RAIL

102 LB. PER YARD

AND TIRE PROFILE

MELBOURNE & METROPOLITAN TRAMWAYS BOARD

DATE

18/5/65

J. N. Hilly
DEPUTY CHAIRMAN

DRAWN

B.W.N.

TRACED

18-5-65

CHECKED

J.R.C.

PASSED

K.C.P.

APPROVED

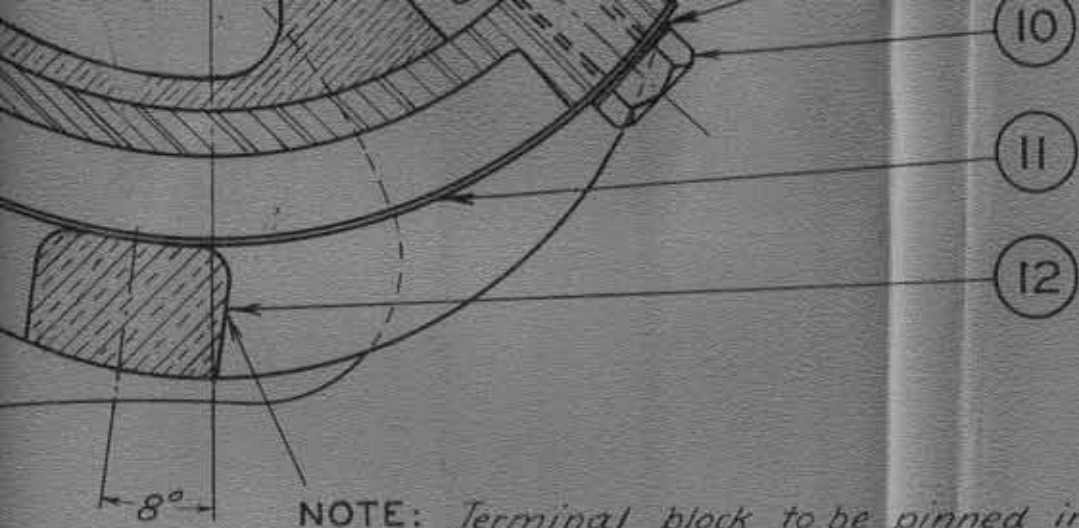
18.5.65

APPROVED

W.H. Hilly

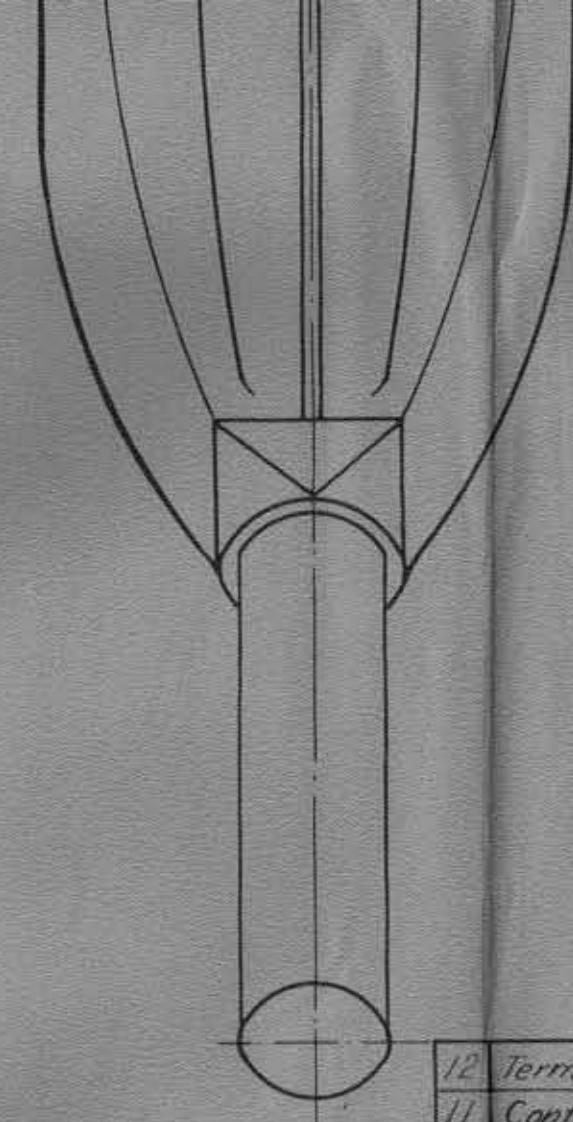
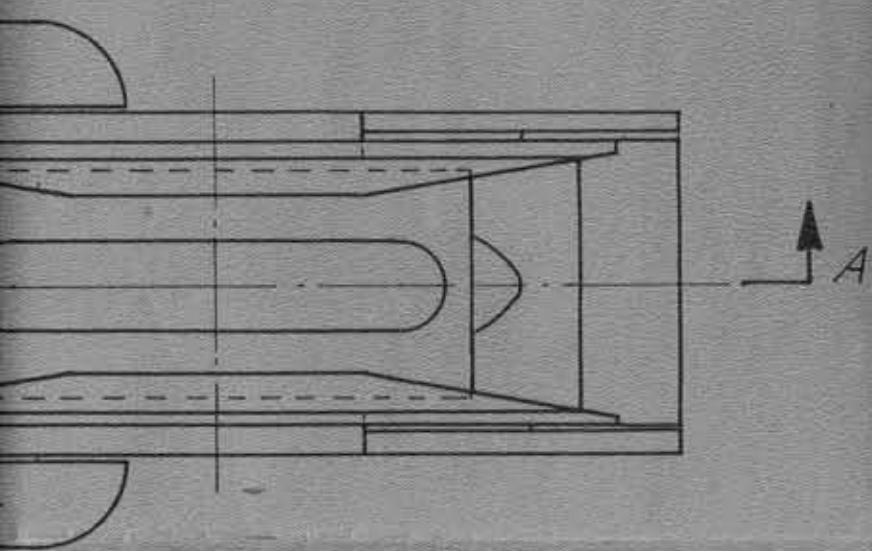
SCALE: FULL SIZE

P.13889



NOTE: Terminal block to be pinned in position, bronze-oxy welded at each corner and then shaped off to profile of saddle. Phosphor bronze spring added and clearance between block & harp base to be $\frac{3}{64}$ "

Section A-A



Schedule & Item No 45/21

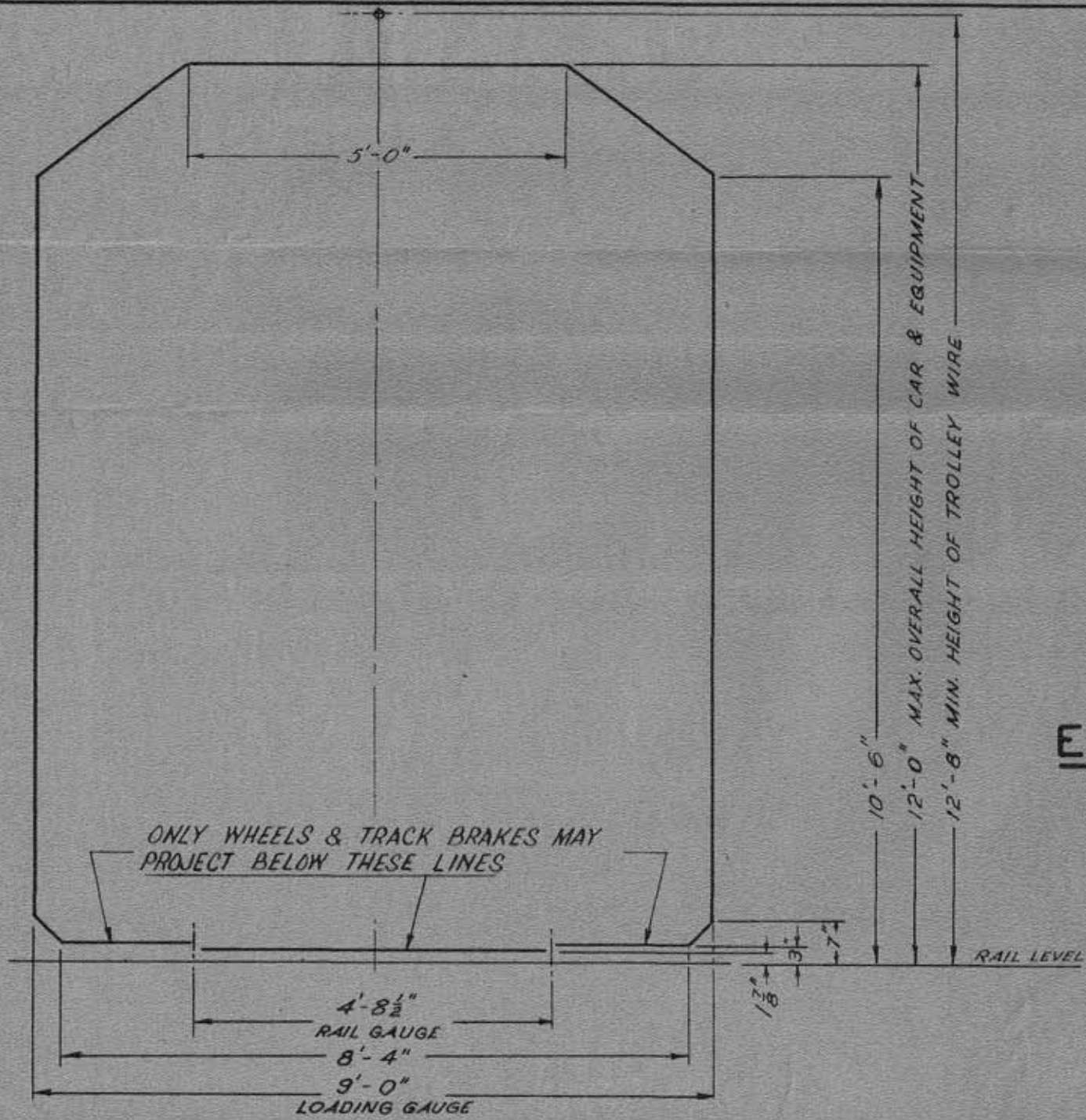
12	Terminal Block	1	G.M.	R 9363	
11	Contact Spring	1	Phos.Br.	R 9934	45/20
10	$\frac{5}{16}$ " d. B.S.W. Hex. Head set screw $\frac{1}{4}$ " long	2	M.S.		
9	Locking Plate (20 B.G.)	1	M.S.	R 10-144	45/19
8	$\frac{3}{32}$ " dia. Split Pin 2" long	1	M.S.		
7	$\frac{5}{16}$ " d. 26 T.P.I. B.S. Brass Thread Hex. Head screw $\frac{1}{4}$ " long	1	M.S.	R 10-146	45/18
6	$\frac{3}{16}$ " dia. Rivet, $\frac{1}{4}$ " long	2	M.S.		
5	Shroud	1 L.H. 1 R.H.	Alumi- nium	R 10-355	
4	Harp Base	1	C.S.	R 9357	45/23
3	Saddle	1	G.M.	R 9334	45/22
2	Carbon Insert	1	Carbon	R 9441	49/1
1	Shoe	1	G.M.	R 9354	45/24
N ^o	Part	N ^o off	Mat ^l	Detail Drg. N ^o	Schedule Item N ^o

REFERENCE
This Drg. supersedes R 10-145

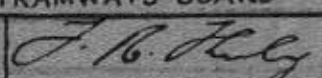

COLLECTOR HARP & CARBON INSERT SHOE
 - TRAMCARS -
GENERAL ARRANGEMENT

MELBOURNE & METROPOLITAN TRAMWAYS BOARD
 DATE 13-5-65 *J. B. Kelly*
 DEPUTY CHAIRMAN
 DRAWN 12-12-61 E.H. TRACED CHECKED 20-1-65 D.E.W. PASSED APPROVED
R. 10-301
 SCALE Full Size

R.10-502



LOADING GAUGE
PROPOSED
ELECTRIC TRAMCARS

MELBOURNE & METROPOLITAN TRAMWAYS BOARD				
DATE 12/5/65	 DEPUTY CHAIRMAN			
DRAWN E.H.	TRACED	CHECKED K.C.L.	PASSED 	APPROVED 
R.10-502				
SCALE: 1/2" = 1'-0"				

CLASS	TRAMCAR NUMBERS	N° IN SERVICE	TYPE	CAPACITY SEATED CRUSH	TRUCKS	WHEEL & TRUCK CENTRES	MOTORS H.P.	TARE TONS	CONTROLLERS	COMPRESSORS	LENGTH OVER BUMPERS
L	101-106	6	28" Wheel Bogies	48 (150)	77E	5'-1 1/2" 24'-6"	GE 247A (4x40)	17.5	K35AA(6) K35J (1)	DH16	45'-6"
W2	219-230, 232-234, 239, 263, 267-270, 272, 273, 277-284, 286, 288-290, 292-309, 311, 312, 314, 315, 319-324, 326-338, 340-355, 357-360, 362-399, 401-403, 405-418, 421, 422, 424, 425, 427-429, 431, 433-435, 437-451, 453-456, 470-477, 479-493, 495-518, 520-609, 624-643, 645-653.	372	26 1/2" Wheel Bogies being converted to 28" Wheel Bogies	52 (145)	N°1A 1B N°7 (2 Cars)	5'-3" 26'-0" 5'-4" 26'-0"	MV 101A MV 101AN MV 101AR MV 101AX GE 247A GE 288A BTH 265D BTH 265P (4x40)	16.7 16.8 16.2 16.4	K35J (363 Cars) Q2G1 (20 Cars) Q2CK1 (1 Car) RC 2 (12 Cars)	CP25 CP27 DH16	48'-0"
SW2	275 426, 432 436, 478 644	1 4 6 1	26 1/2" Wheel Bogies being converted to 28" Wheel Bogies	48 (145) 52 (145) 48 (145)	N°1B	5'-3" 26'-0"	MV 101A MV 101AN GE 247 GE 288A BTH 265D (4x40)	17.0	K35J (4 Cars) RC1 (1 Car) Q2G1 (1 Car)	CP27 DH16	48'-0"
W3	654-669	16	33" Wheel Bogies	52 (145)	N°9 B	5'-9" 28'-0"	MV 101AZ (4x40)	15.7	K35J	CP25 CP27 DH16	47'-0"
W4	670-674	5	33" Wheel Bogies	48 (150)	N°9 C	5'-9" 27'-6"	MV 101AZ (4x40)	16.4	K35J	DH16	46'-0"
W5	681-685 720-784 786 788-802 804-839	122	28" Wheel Bogies	52 (150)	N°15	5'-2" 28'-0"	GE 247AX2 (4x40)	15.8	Q2CK1 (70 Cars) RC1 (38 Cars) RC2 (12 Cars) GE.PCM (2 Cars)	DH16	46'-6"
SW5	785, 787 840-849	12	28" Wheel Bogies	52 (150)	N°15	5'-2" 28'-0"	GE 247AX2 (4x40)	16.9	Q2CK1 (1 Car) RC2	DH16	46'-6"
SW6	850-889 890-969	40 80	28" Wheel Bogies	48 (150) 52 (150)	N°15	5'-2" 28'-0"	GE 247AX2 (4x40)	17.2	RC1 (1 Car) RC2 RC3 (1 Car 955)	DH16	46'-6"
W6	970-1000 (Except 980)	30	28" Wheel Bogies	52 (150)	N°15	5'-2" 28'-0"	GE 247AX2 (4x40)	17.4	RC2	DH16	46'-6"
W7	1001-1040	40	28" Wheel Bogies	48 (150)	N°15	5'-2" 28'-0"	GE 247AX2 (4x40)	17.7	RC2	DH16	46'-6"
Y	469	1	26 1/2" Wheel Bogies	53 (128)	N°1C	5'-3" 24'-0"	MV 101A (4x40)	16.5	K35J	CP27	45'-6"
Y1	610 611-613	4	33" Wheel Bogies 28" Wheel Bogies	53 (128)	N°11 N°15	5'-10" 22'-0"	MV 101AZ GE 247AX2 (4x40)	Mean 17.7	K35J	CP27	45'-0"
PCC	980	1	25" Wheel Bogies	48 (150)	S. Louis B-3	6'-3" 28'-0"	GE 1220E (4x55)	17.02	GE P.C.C. Equipment	CP25	46'-6"
VR	52, 53	2	28" Wheel Bogies	48 (150)	N°15	5'-2" 26'-0"	GE 247AX2 (4x40)	17.8	K35GR2	CP27	45'-0"

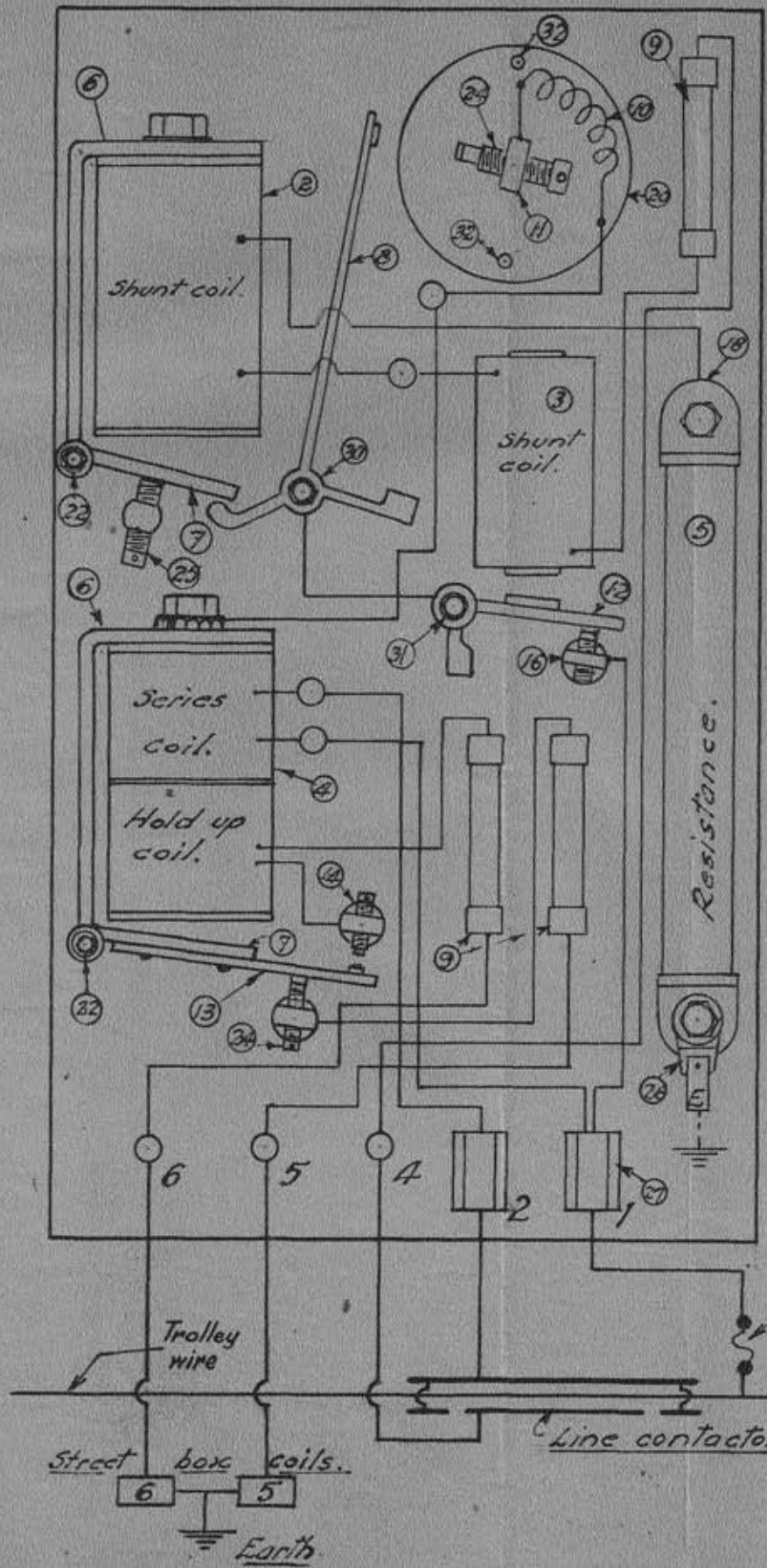
ROLLING STOCK DATA TRAMCARS

MELBOURNE & METROPOLITAN TRAMWAYS BOARD				
DATE	11/5/65 <i>J. H. Shirley</i> DEPUTY CHAIRMAN			
DRAWN 11-1-65 BTW	TRACED	CHECKED A.G.B.	PASSED <i>[Signature]</i>	APPROVED <i>[Signature]</i>
R.9706 K				
SCALE				

K Revised & retraced 11-1-65 BTW

MELBOURNE & METROPOLITAN TRAMWAYS BOARD.

Parts list.



- ② Delayed release shunt coil.
- ③ Quick
- ④ Series coil
- ⑤ 2000 Ohm resistance
- ⑥ M.I. Yoke for 2 & 4.
- ⑦ M.I. Armature for 6.
- ⑧ Arc break contact arm.
- ⑨ Cartridge fuse & clips
- ⑩ Blow out coil
- ⑪ Fixed contact holder
- ⑫ Quick release armature
- ⑬ Series armature exten.
- ⑭ Series top contact holder
- ⑮ Quick release fixed contact.
- ⑯ Resistance holder
- ⑰ Arc shield.
- ⑱ Spindle
- ⑲ Contact screw.
- ⑳ stop screw.
- ㉑ Lug terminal
- ㉒ Block terminal
- ㉓ spindle
- ㉔ spindle
- ㉕ Holding screw.

**COLLINS POINT SHIFTER
WIRING DIAGRAM**

MELBOURNE & METROPOLITAN TRAMWAYS BOARD				
DATE	J. B. Hilley			
27/5/65	DEPUTY CHAIRMAN			
DRAWN	TRACED	CHECKED	PASSED	APPROVED
F.J.C.				H
SCALE DIAGRAM				E.10306