

3'-6" 2'-9"  
6'-3"  
WHEELBASE.

2'-9" 3'-6"  
6'-3"  
WHEELBASE.

9'-9<sup>7</sup>/<sub>8</sub>"

33'-6" BOGIE CENTRES.

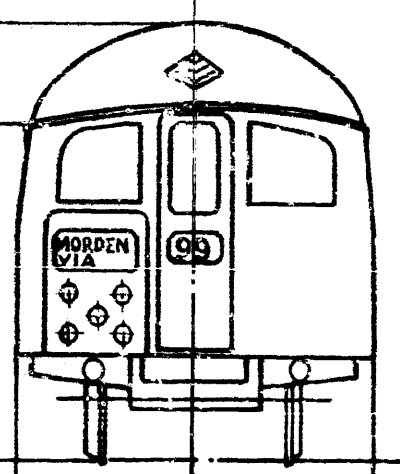
8'-11<sup>7</sup>/<sub>8</sub>"

52'-3<sup>3</sup>/<sub>4</sub>" OVERALL LENGTH.

53'-3<sup>3</sup>/<sub>4</sub>" OVER BUFFERS.(FREE)

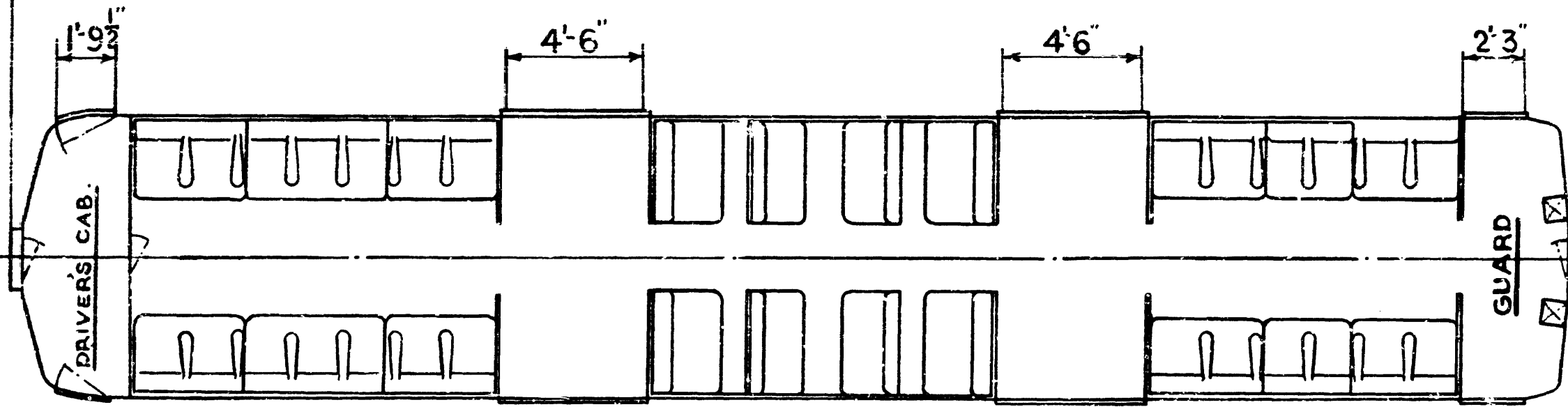
9'-6"

7'-4<sup>1</sup>/<sub>2</sub>"  
TO TOP OF CANT RAIL



8'-6<sup>3</sup>/<sub>16</sub>"

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London Underground  
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1'-9<sup>1</sup>/<sub>2</sub>"

4'-6"

4'-6"

2'-3"

DRIVER'S CAB.

GUARD

42 SEATS.

1938 TUBE STOCK.  
DRIVING MOTOR CAR.

LONDON TRANSPORT EXECUTIVE.

**FOILED.**  
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ARE ENTERED ON DUPLICATE CO.

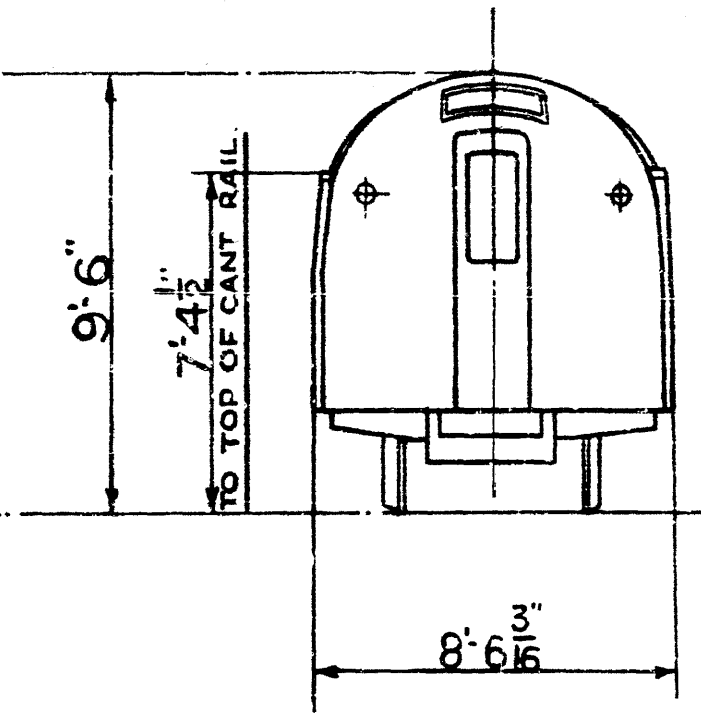
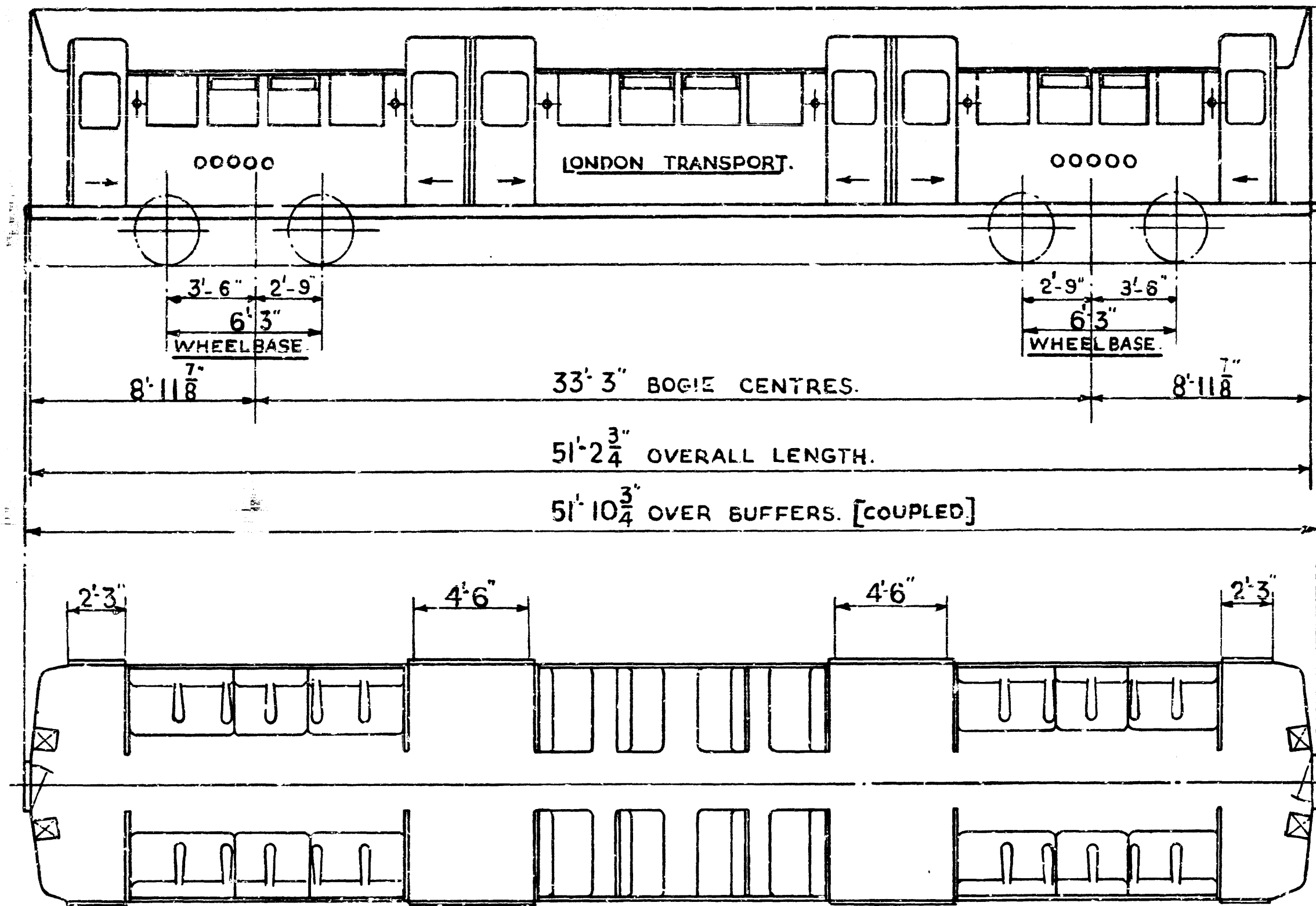
DRG. No 36038  
C.M.E.'S OFFICE.  
DRG. No 36038  
DATE. 6.1.50

TRACED *bar*

DRAWER No 31/205.

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MAYOR OF LONDON



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**40 SEATS.**

**FOILED.**  
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1938 TUBE STOCK.  
NON DRIVING MOTOR CAR  
& TRAILER CAR.

LONDON TRANSPORT EXECUTIVE.

DRG. N<sup>o</sup> 36039  
C.M.E.'S OFFICE.  
DRG. N<sup>o</sup> 36039  
DATE. 6.1.50.

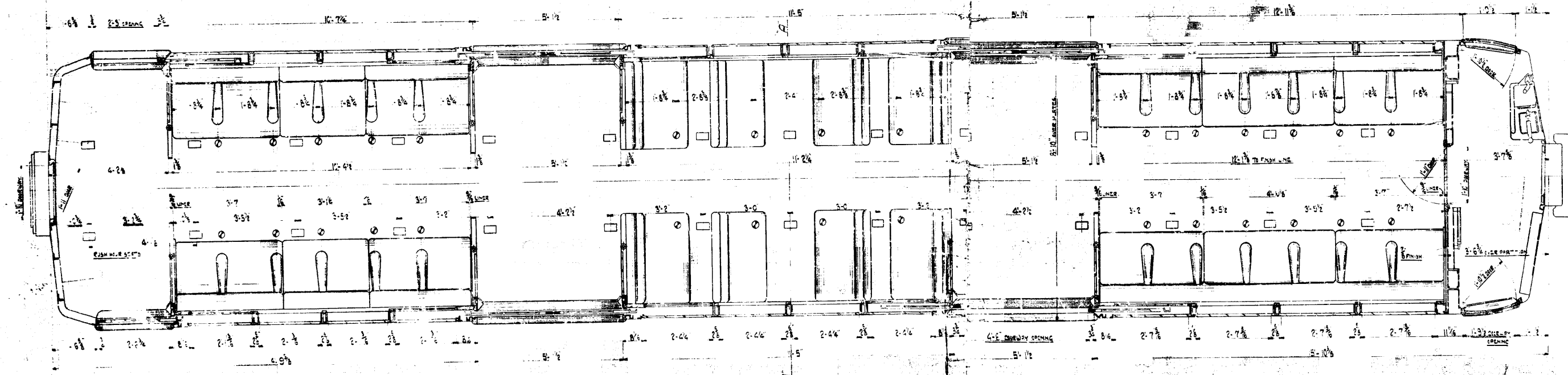
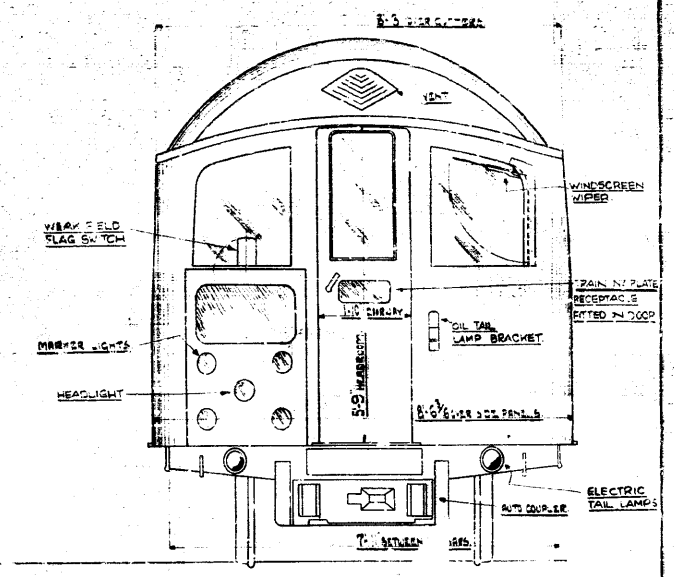
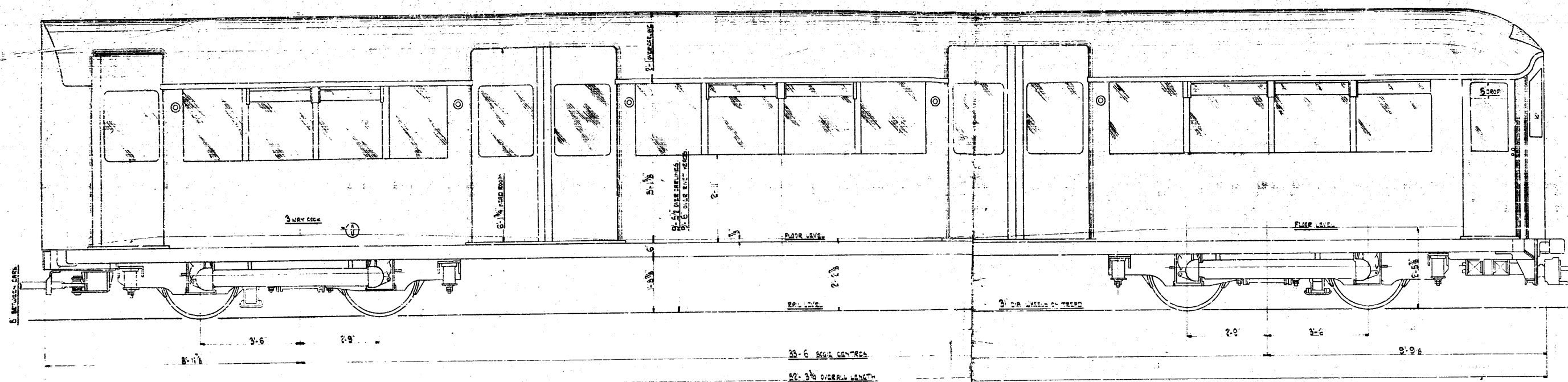
TRACED *600*

DRAWER N<sup>o</sup> 31/205.

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	SEAT'S	8-6" HOUS
DRIVING MOTOR	22	2
TRAILER	40	6
DRIVING MOTOR SEATING	CC	C
DRIVING MOTOR SEATING	NON	NON
TRAILER	NON	NON

	T	C	G	LBS
TOTAL WEIGHT OF CAR	27	8	2	21
DRIVING END	14	3	3	7
TRAILING	13	4	3	14

FOR WEIGHTS & COMPARATIVE DIMENSIONS  
 OF ALL ROLLING STOCK,  
 SEE DRG Nos 44429 & 39100

GENERAL ARRANGEMENT OF DRIVING MOTOR CAR  
 19.15 TUBE STOCK

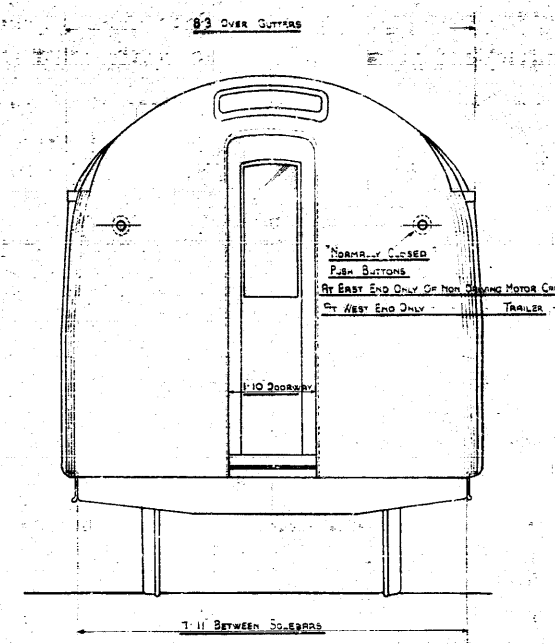
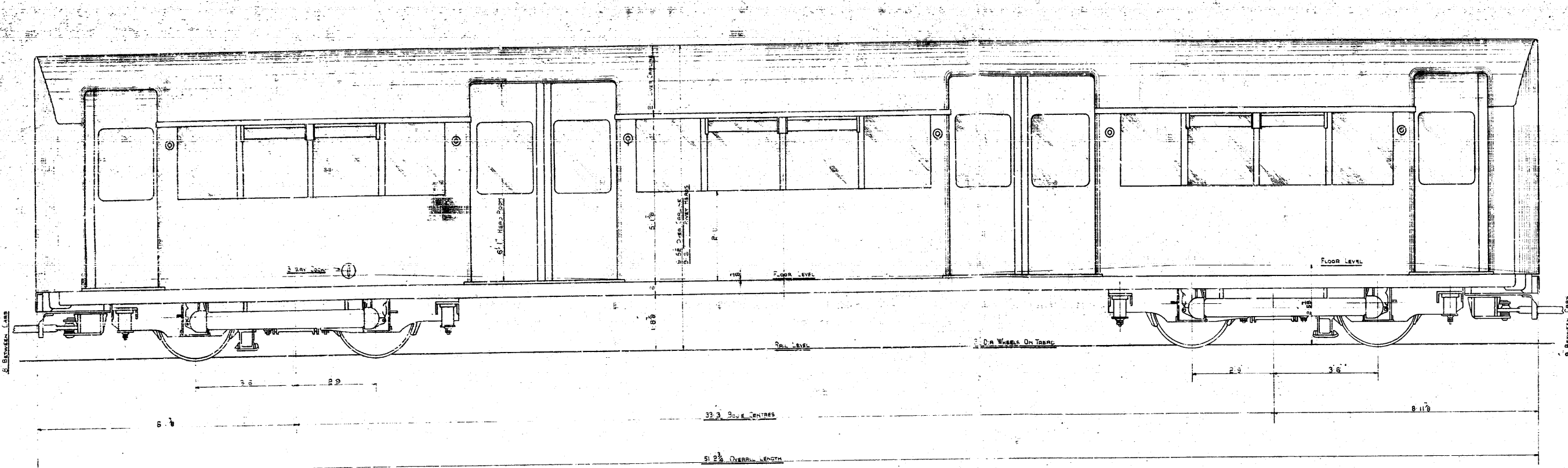
CONTRACTORS DRG. No. 76/102

DRAWER No. OFFICE 20 FILING ROOM 10

CLASS OF STOCK: SCALING IN INCHES TO THE FOOT

LONDON PASSENGER TRANSPORT BOARD  
 CHIEF MECH. ENGINEERS OFFICE  
 DRAWING No 28533  
 DATE 6-10-87



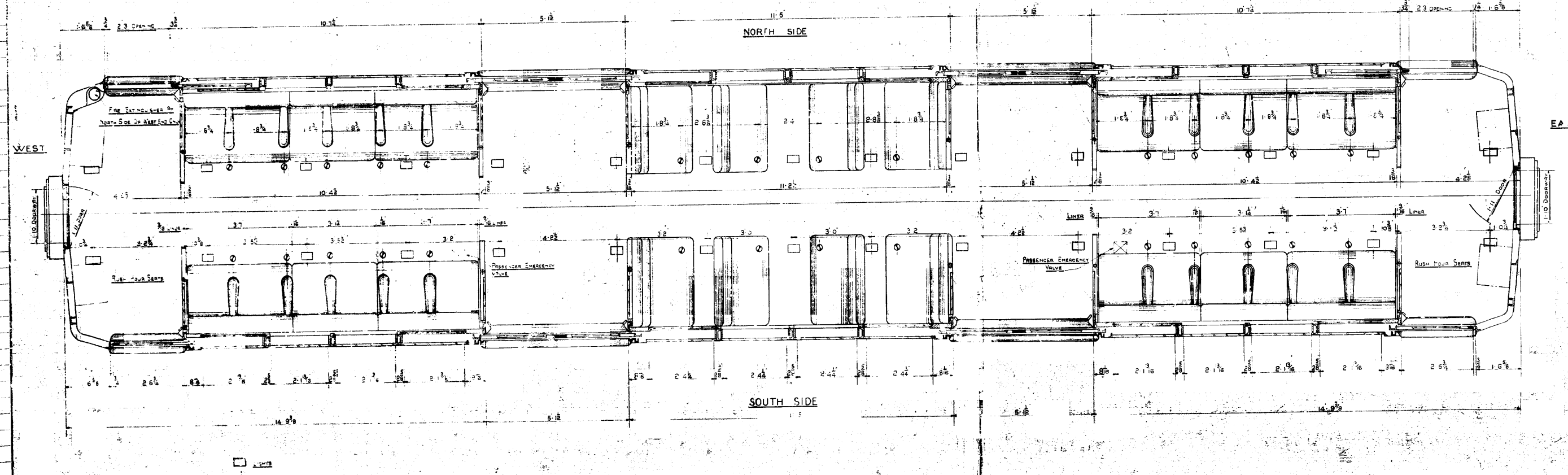


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	SEATS	RUSH HOUR	STANDING	TOTAL
Non Driving Motor	40	4	112	156
Trailer	40	4	112	156



FOR WEIGHTS & COMPARATIVE DIMENSIONS  
OF ALL ROLLING STOCK,  
SEE DRG. Nos 44429 & 39100.

**GENERAL ARRANGEMENT OF NON-DRIVING MOTOR CAR**  
**193S TUBE STOCK**

CONTRACTORS DRG. No. 76403

DRAWER No  
OFFICE 20 FILING ROOM 13

CLASS OF STOCK SCALE NOTIFICATIONS INCHES TO THE FOOT

LONDON PASSENGER TRANSPORT BOARD  
CHIEF MECH. ENGINEERS OFFICE  
DRAWING No 28534  
DATE 2-20

COILED  
PLEASE USE THIS INDICATION  
DATE 2-20 1938

15 20 21.2 36X6 30

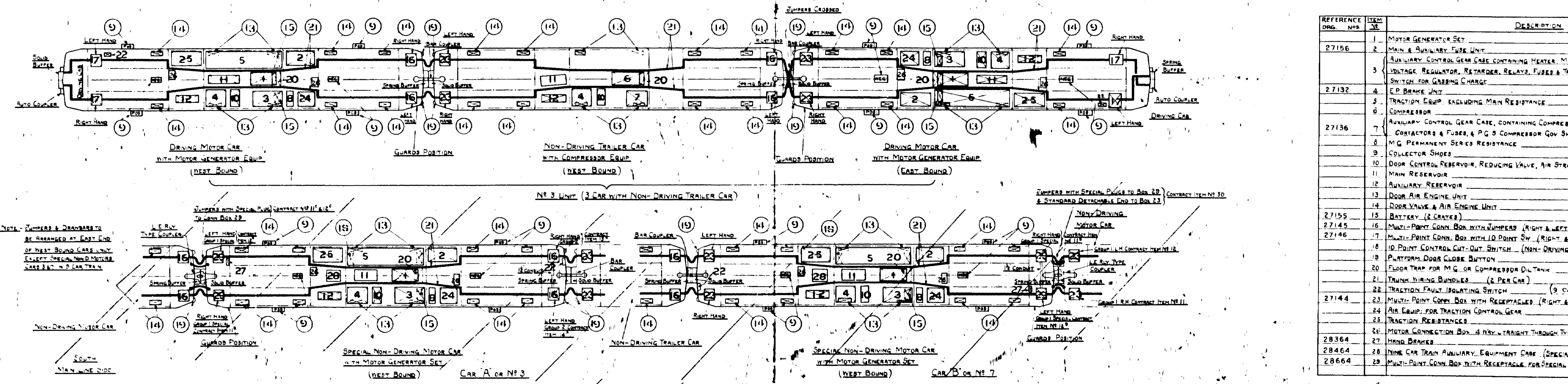
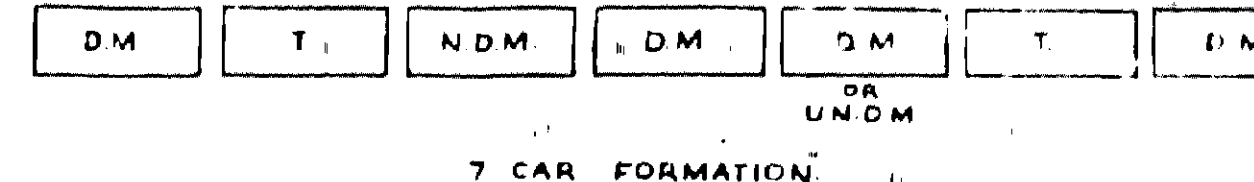
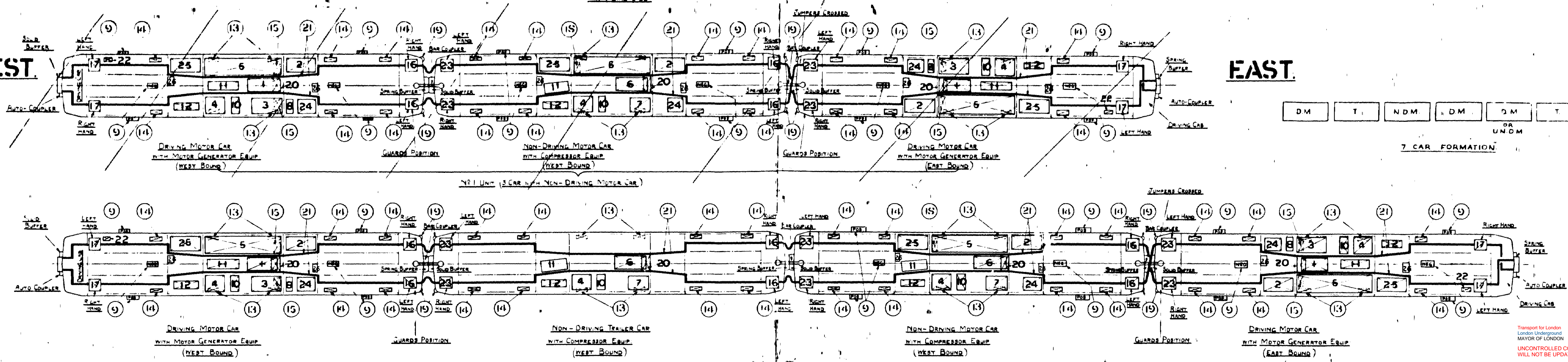


NORTH

TRAIN LINE SIDE

WEST

EAST



NOTE - COUPLERS & DRAWBARS TO BE ARRANGED AT EAST END OF WEST BOUND CARS AND EAST END OF EAST BOUND CARS. EXCEPT SPECIAL NON-DRIVING MOTOR CARS IN 7 CAR TRAIN.

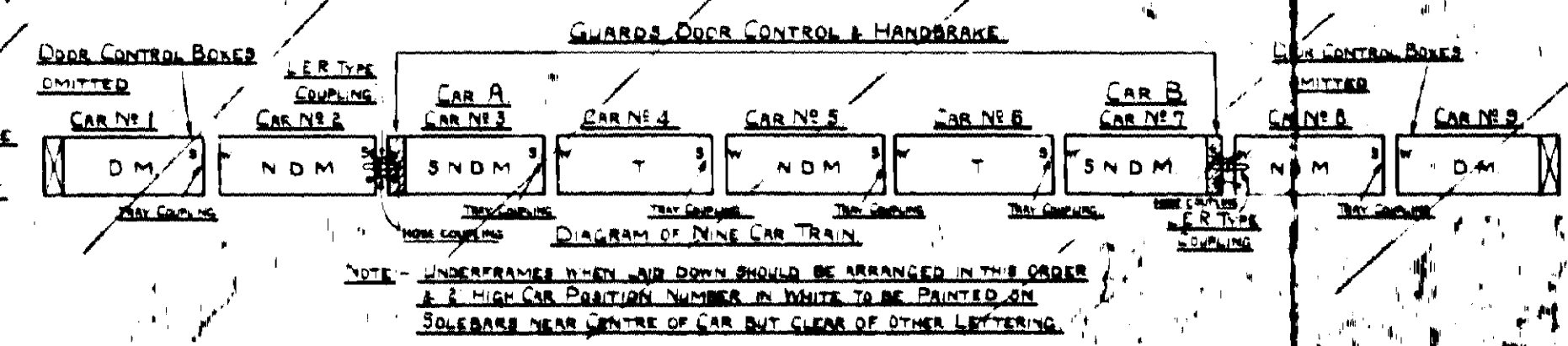
NOTE - AUXILIARY EQUIPMENT (L.P.T.B. LETTER 17-11-37) PAT. LIGHTING C'S HAVE BEEN INSTRUCTED BY L.P.T.B. THIS TO MARK ALL ITEMS REGULAR TO WESTBOUND DRIVING MOTOR CARS WITH THE LETTER 'A' TO EASTBOUND 'D'. ALL ITEMS REGULAR TO NON-DRIVING CARS WHICH ARE ALL WESTBOUND TO BE LEFT UNMARKED.

REFERENCE DRG. NOS.	ITEM NO.	DESCRIPTION
	1	MOTOR GENERATOR SET
27156	2	MAIN & AUXILIARY FUSE UNIT
	3	AUXILIARY CONTROL GEAR CASE CONTAINING HEATER, M.G. & LIGHTING C. VOLTAGE REGULATOR, RETARDERS, RELAYS, FUSES & TRIPLE POLE SWITCH FOR GABBING CHANGE
27132	4	E.P. BRAKE UNIT
	5	TRACTION EQUIP. INCLUDING MAIN RESISTANCE
	6	COMPRESSOR
27136	7	AUXILIARY CONTROL GEAR CASE, CONTAINING COMPRESSOR & HEATER
	8	CONTACTORS & FUSES, & P.G. S. COMPRESSOR GOV. SWITCH
	9	M.G. PERMANENT SERIES RESISTANCE
	10	COLLECTOR SHOES
	11	DOOR CONTROL RESERVOIR, REDUCING VALVE, AIR STRAINER, ETC.
	12	MAIN RESERVOIR
	13	AUXILIARY RESERVOIR
	14	DOOR AIR ENGINE UNIT
	15	DOOR VALVE & AIR ENGINE UNIT
27155	16	BATTERY (2 GRATES)
27145	17	MULTI-POINT CONN. BOX WITH JUMPERS (RIGHT & LEFT HAND) GROUP
27146	18	MULTI-POINT CONN. BOX WITH 10 POINT SW. (RIGHT & LEFT HAND)
	19	10 POINT CONTROL CUT-OUT SWITCH (NON-DRIVING MOTOR CARR)
	20	PLATFORM DOOR CLOSE BUTTON
	21	FLOOR TRAP FOR M.G. OR COMPRESSOR OIL TANK
	22	TRACTION FAULT ISOLATING SWITCH (9 CAR TRAIN DRG)
27144	23	MULTI-POINT CONN. BOX WITH RECEPTACLES (RIGHT & LEFT HAND) G
	24	AIR EQUIP. FOR TRACTION CONTROL GEAR
	25	TRACTION RESISTANCES
	26	MOTOR CONNECTION BOX - 4 WAY - TRIGHT THROUGH TYPE
28364	27	HAND BRAKES
28464	28	NINE CAR TRAIN AUXILIARY EQUIPMENT CASE (SPECIAL NON-DRIVING
28664	29	MULTI-POINT CONN. BOX WITH RECEPTACLE FOR SPECIAL COUPLING POINTS

**BLOCK PLAN OF TRAIN FORMATIONS**

**F1 OF 2**

1938 & 1949 TUBE STOCK



WHEN OPERATING A SEVEN CAR TRAIN ONE OF THE CENTRAL DRIVING MOTOR CARS MAY BE REPLACED BY A 1949 TUBE STOCK UNCOUPLING NON-DRIVING MOTOR CAR

CONTRACTORS DRG. NO. 79451

DRAWER NO. 64

LONDON PASSENGER TRANSPORT

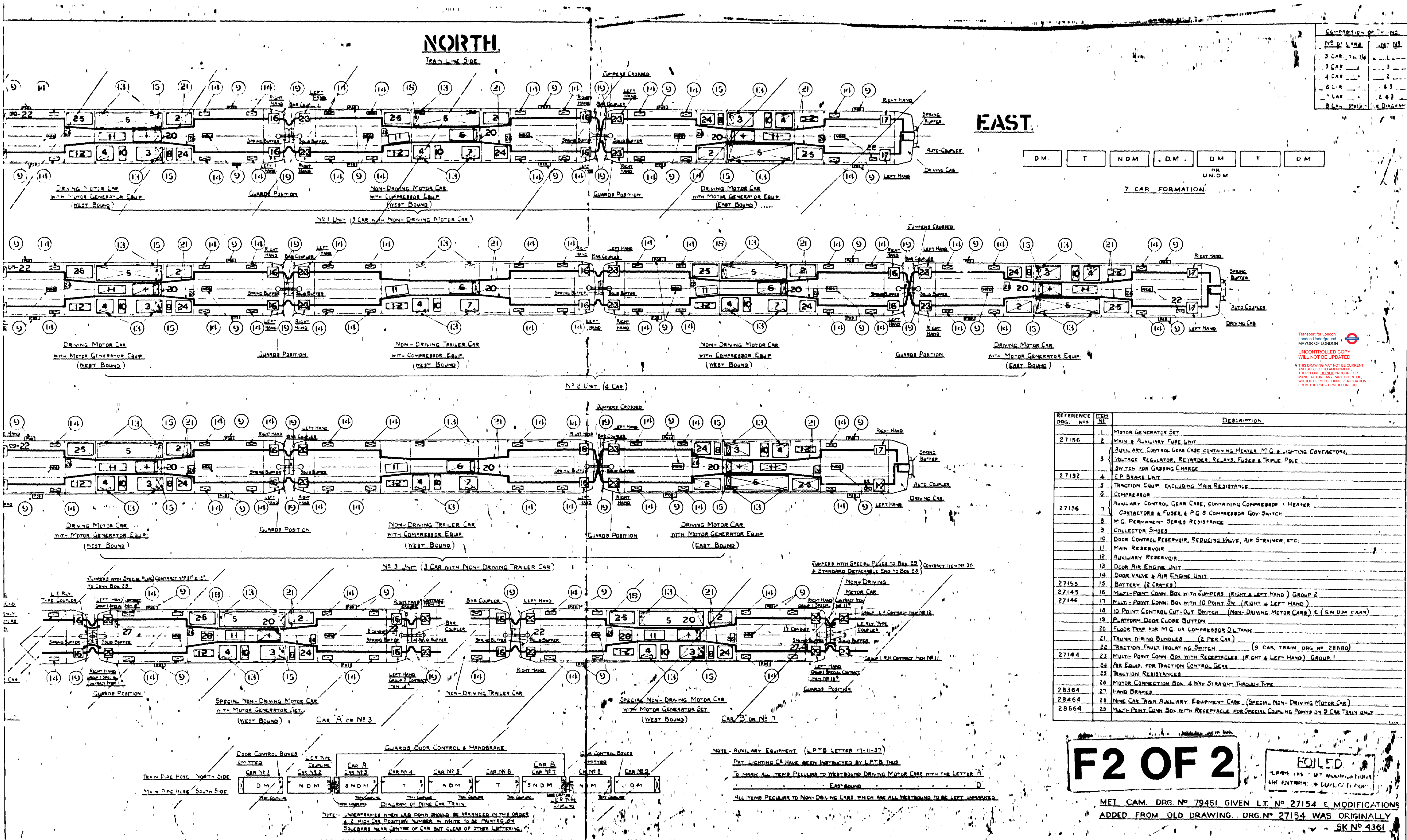
CHIEF MECH. ENGINEERS

DRAWING NO. 27

DATE 12 1 50

30X





**COMPOSITION OF TRAINS**

NO. OF CARS	UNIT NO.
3 CAR	1
3 CAR	2
4 CAR	3
6 CAR	1 & 3
7 CAR	2 & 3
8 CAR	1 & 2

REFERENCE DRG. NOS.	ITEM NO.	DESCRIPTION
	1	MOTOR GENERATOR SET
27156	2	MAIN & AUXILIARY FUSE UNIT
	3	AUXILIARY CONTROL GEAR CASE CONTAINING HEATER, M.G. & LIGHTING CONTACTORS, VOLTAGE REGULATOR, REWARDERS, RELAYS, FUSES & TRIPLE POLE SWITCH FOR GEARING CHANGE
27132	4	E.P. BRAKE UNIT
	5	TRACTION EQUIP. EXCLUDING MAIN RESISTANCE
	6	COMPRESSOR
27136	7	AUXILIARY CONTROL GEAR CASE, CONTAINING COMPRESSOR & HEATER CONTACTORS & FUSES, & P.G. 3 COMPRESSOR GOV. SWITCH
	8	M.G. PERMANENT SERIES RESISTANCE
	9	COLLECTOR SHOES
	10	DOOR CONTROL RESERVOIR, REDUCING VALVE, AIR STRAINER, ETC.
	11	MAIN RESERVOIR
	12	AUXILIARY RESERVOIR
	13	DOOR AIR ENGINE UNIT
	14	DOOR VALVE & AIR ENGINE UNIT
27155	15	BATTERY (2 CRATES)
27145	16	MULTI-POINT CONN. BOX WITH JUMPER (RIGHT & LEFT HAND) GROUP 2
27146	17	MULTI-POINT CONN. BOX WITH I.O. POINT SW. (RIGHT & LEFT HAND)
	18	I.O. POINT CONTROL CUT-OUT SWITCH (NON-DRIVING MOTOR CARS) & (S.M.D.M. CARS)
	19	PLATFORM DOOR CLOSURE BUTTON
	20	FLOOR TRAP FOR M.G. OR COMPRESSOR OIL TANK
	21	TRACTION DRIVING BUNDLES (2 PER CAR)
	22	TRACTION FAULT ISOLATING SWITCH (9 CAR TRAIN DRG. NO 28680)
27144	23	MULTI-POINT CONN. BOX WITH RECEPTACLES (RIGHT & LEFT HAND) GROUP 1
	24	AIR EQUIP. FOR TRACTION CONTROL GEAR
	25	TRACTION RESISTANCES
	26	MOTOR CONNECTION BOX 4 WAY STRAIGHT THROUGH TYPE
28364	27	HAND DRIVES
28464	28	NINE CAR TRAIN AUXILIARY EQUIPMENT CASE (SPECIAL NON-DRIVING MOTOR CAR)
28664	29	MULTI-POINT CONN. BOX WITH RECEPTACLE FOR SPECIAL COUPLING POINTS ON 9 CAR TRAIN ONLY

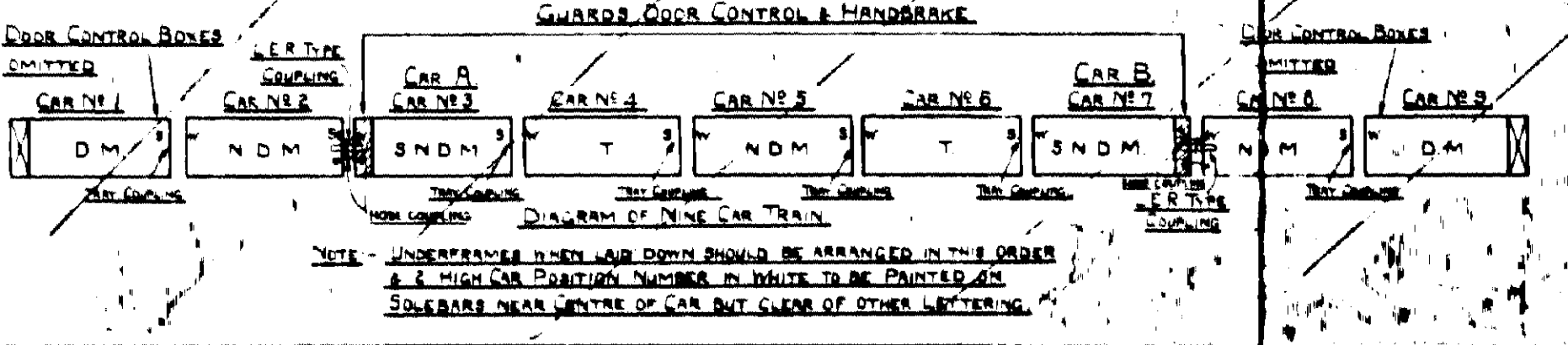
**F2 OF 2**

**FILED**

MET CAM. DRG. NO 79451 GIVEN L.T. NO 27154 & MODIFICATIONS  
ADDED FROM OLD DRAWING. DRG. NO 27154 WAS ORIGINALLY  
SK NO 4361

**BLOCK PLAN OF TRAIN FORMATIONS**

1938 & 1949 TIME STOCK



DRAWER NO 64

**LONDON PASSENGER TRANSPORT BOARD**

**CHIEF MECH. ENGINEERS OFFICE**

**DRAWING NO 27154**

DATE 13-1-50

C	POSITION OF 17th I.L. CHANGES & ITEM OR ALIAS	
B	POSITION OF ITEM 22 FOR 9 CAR TRAIN CHANGES	
A	HOW CAR TRAIN DIAGRAM & BLOCK PLAN ADDED	
MODIFICATIONS TO DRG NO 27154		
G	ITEM 11 TRANSFERRED TO WEST BOUND ON ALL 9 CAR TRAINS	
F	POSITION OF 19 CHANGES	
E	ITEM 21 ADDED TO WEST BOUND ON ALL 9 CAR TRAINS	
D	POSITION OF 18 CHANGES	
C	POSITION OF 17 CHANGES	

**30X**







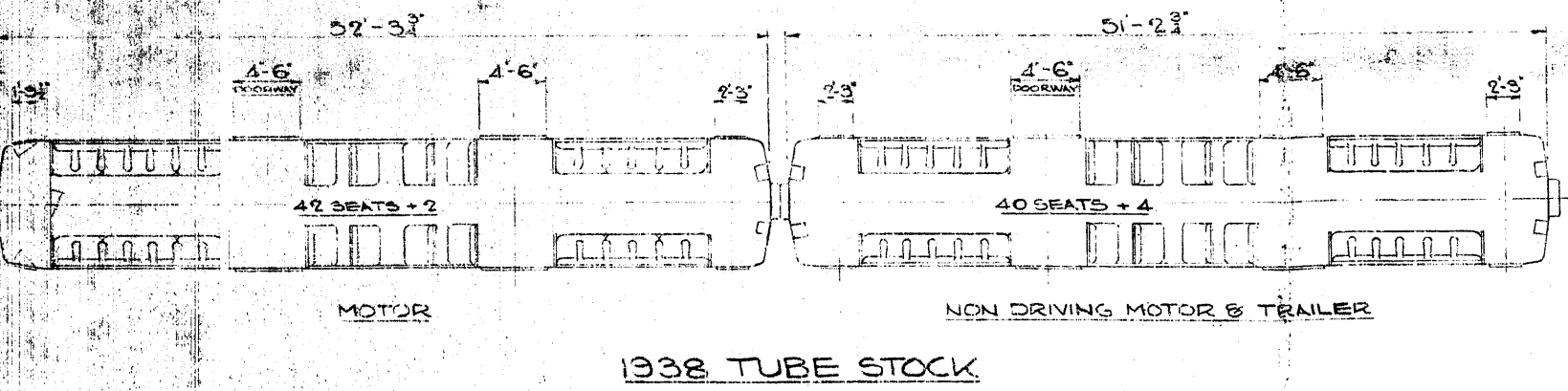
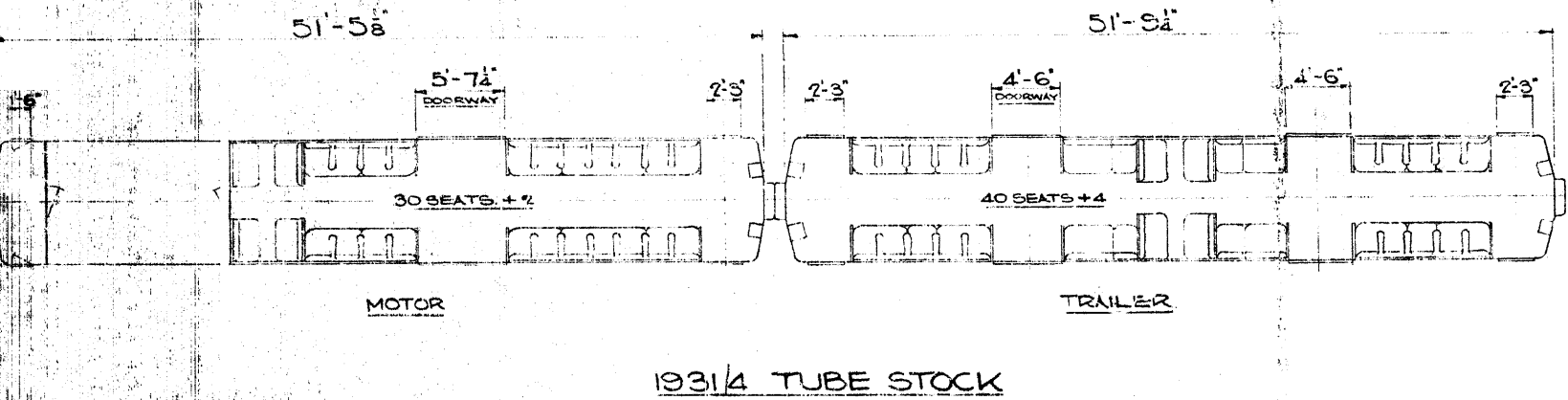
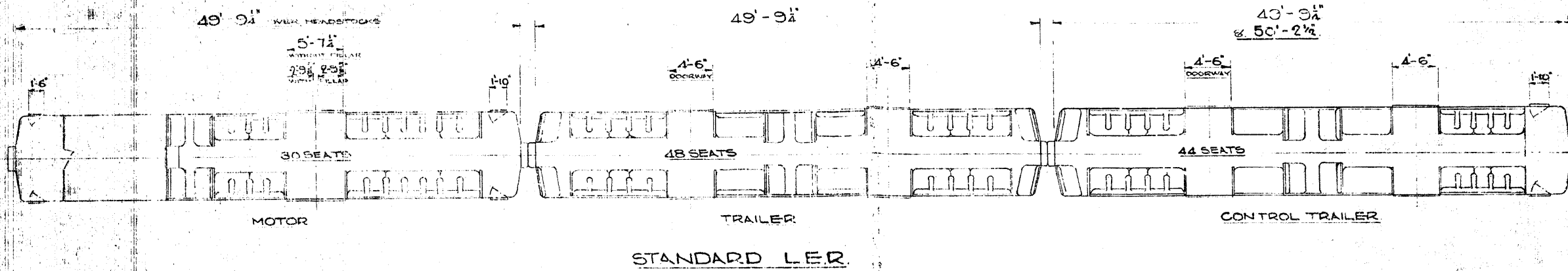


DIAGRAM SHEWING ARRGT.  
OF SEATING & DOORWAYS

LONDON TRANSPORT  
CHIEF MECH. ENGRS. OFFICE

DRG No 33824  
DATE 22-5-46

TUBE STOCK

FOILED

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31/205

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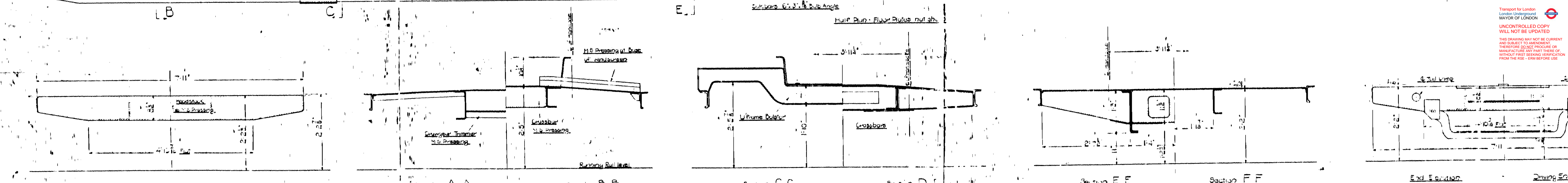
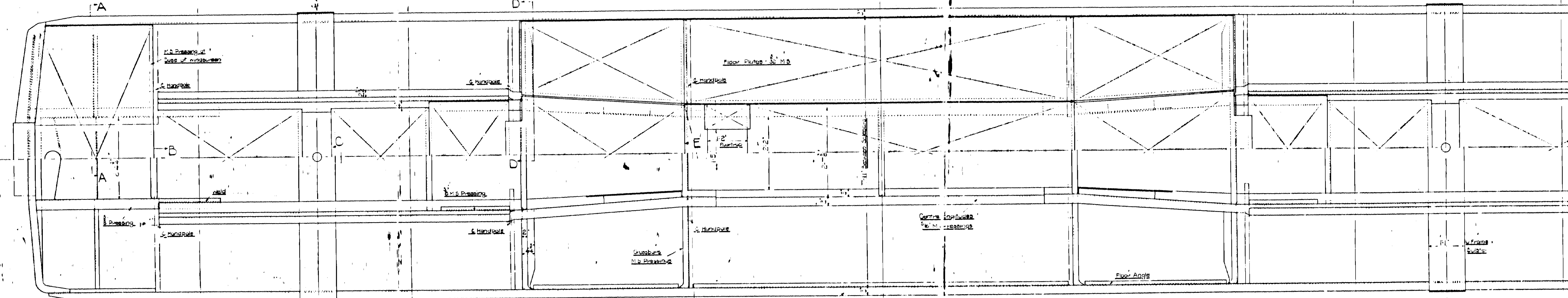
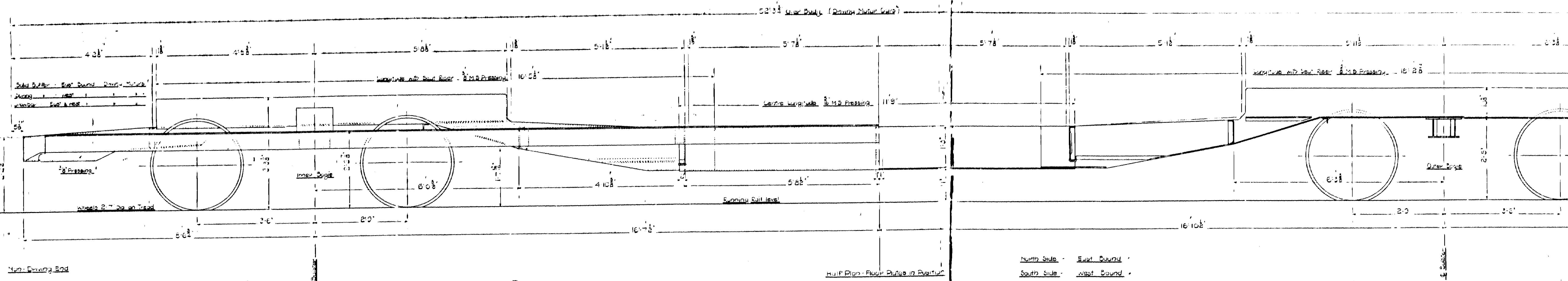
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46 44 42 40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46

5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

INCHES





ARRANGEMENT OF UNDERFRAME (DRIVING MOTOR CAR)

**F1 OF 2**

CONTRACTORS' DRAWING No 75S45

28397

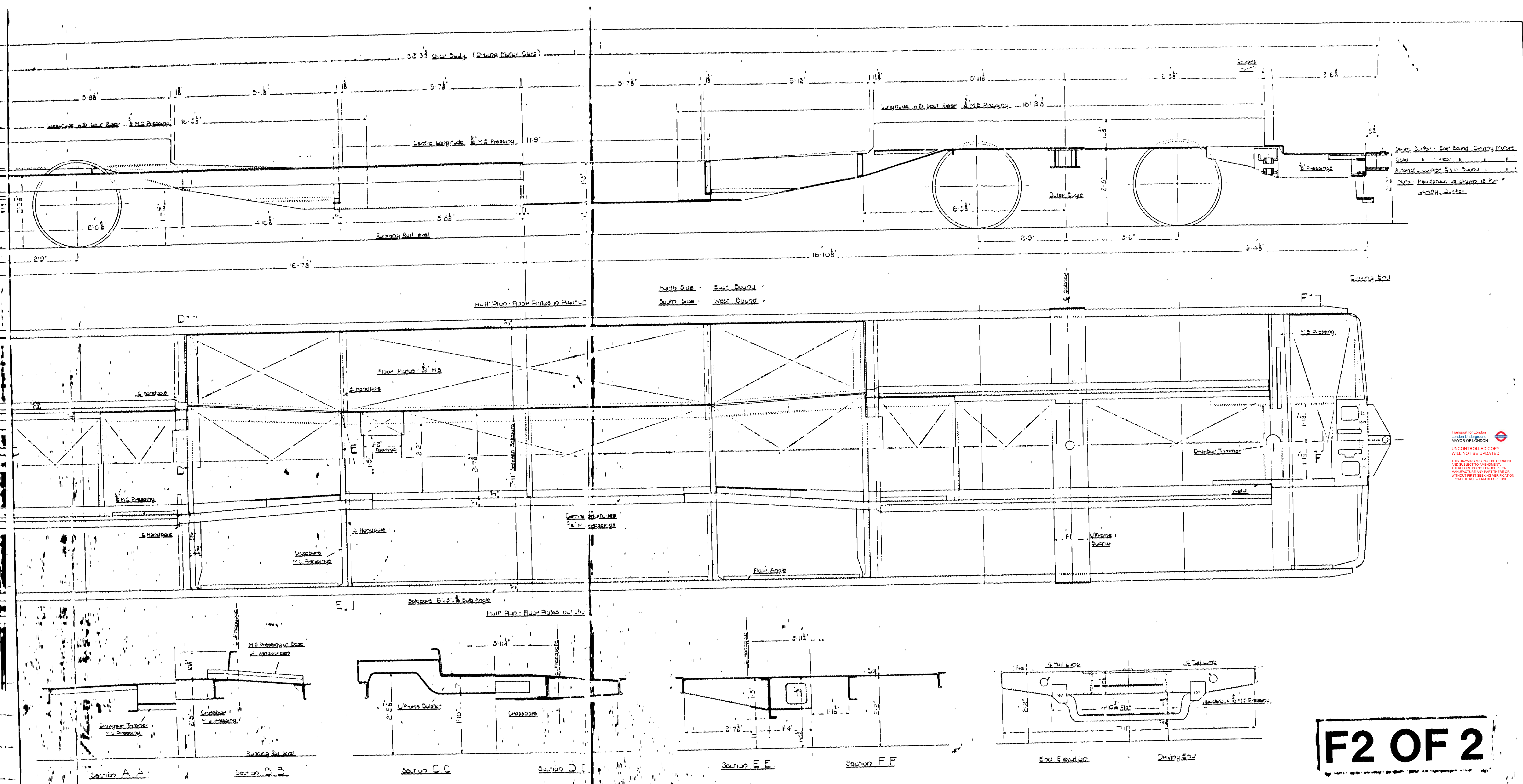
DRAWER No  
OFFICE 43 FILING ROOM 114

CLASS OF STOCK  
SCALE THREE INCHES TO THE FOOT

**30X**

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**F2 OF 2**

**ARRANGEMENT OF UNDERFRAME (DRIVING MOTOR CAR)**

LONDON PASSENGER TRANSPORT BOARD  
 CHIEF MECH. ENGINEERS OFFICE  
 DRAWING NO 28397  
 DATE 17-11-31

FACTORS DRG. NO 75845

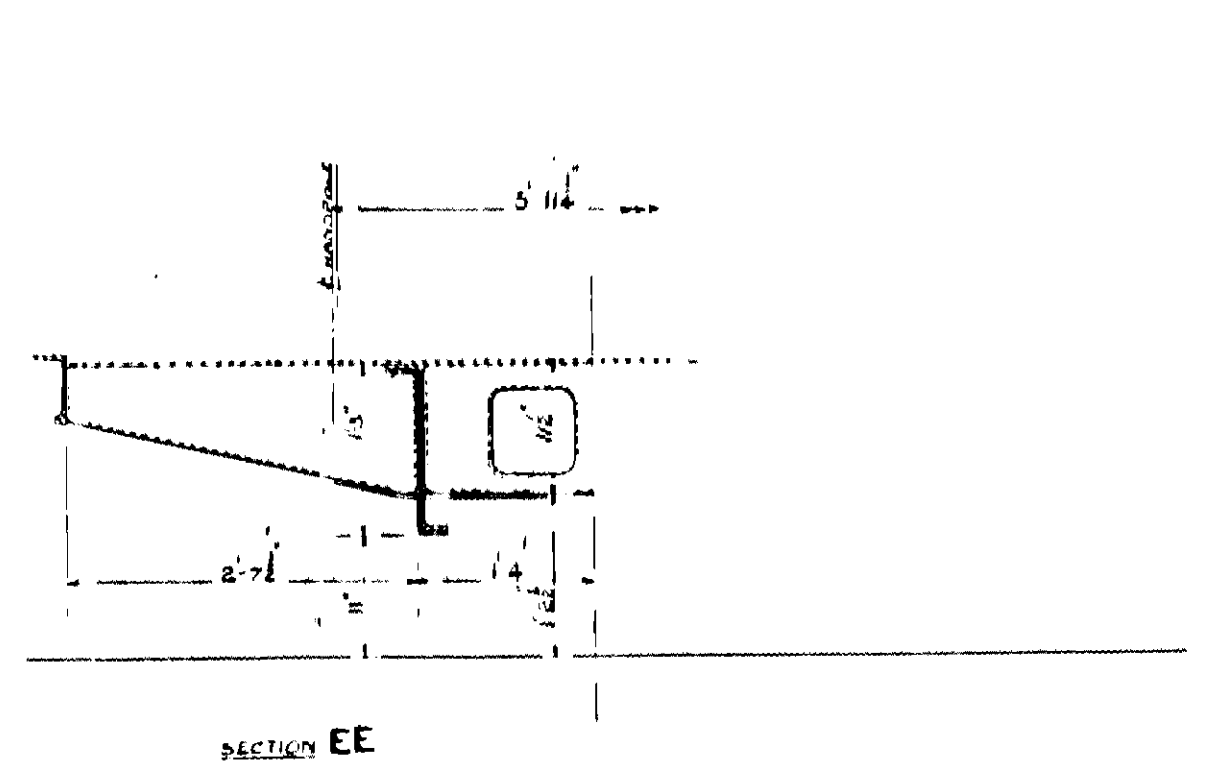
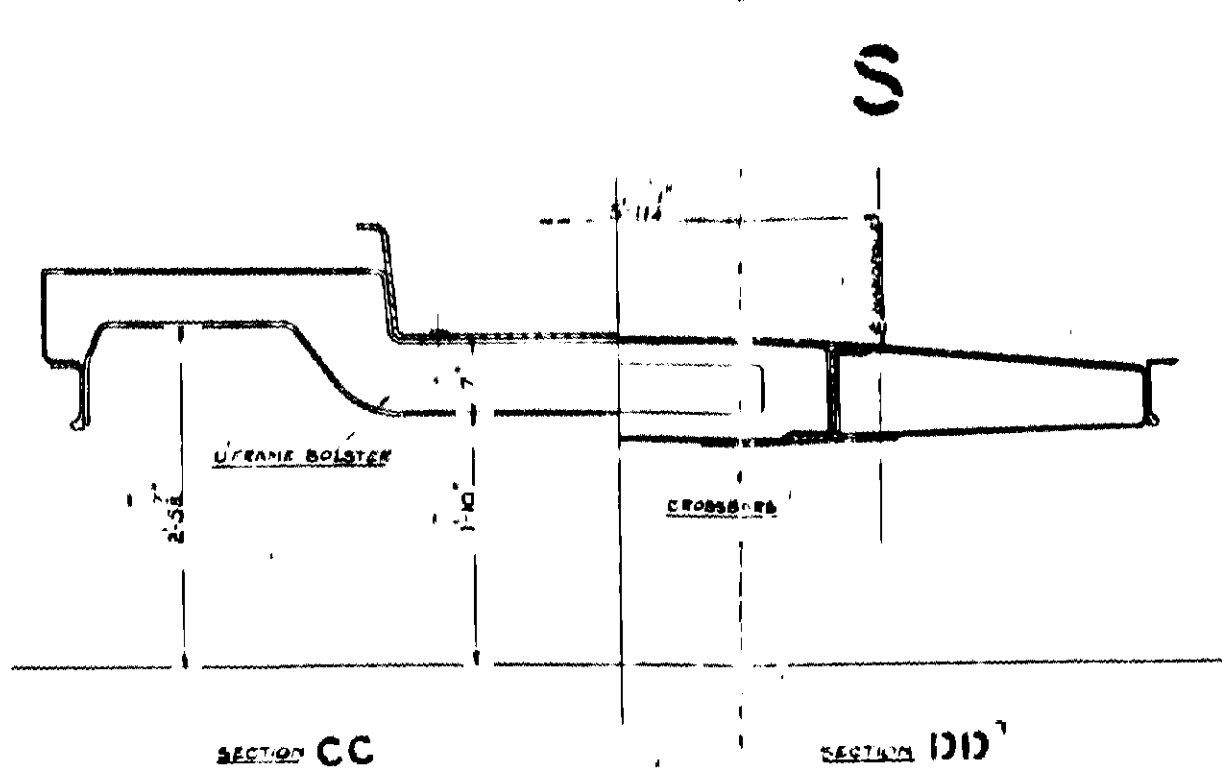
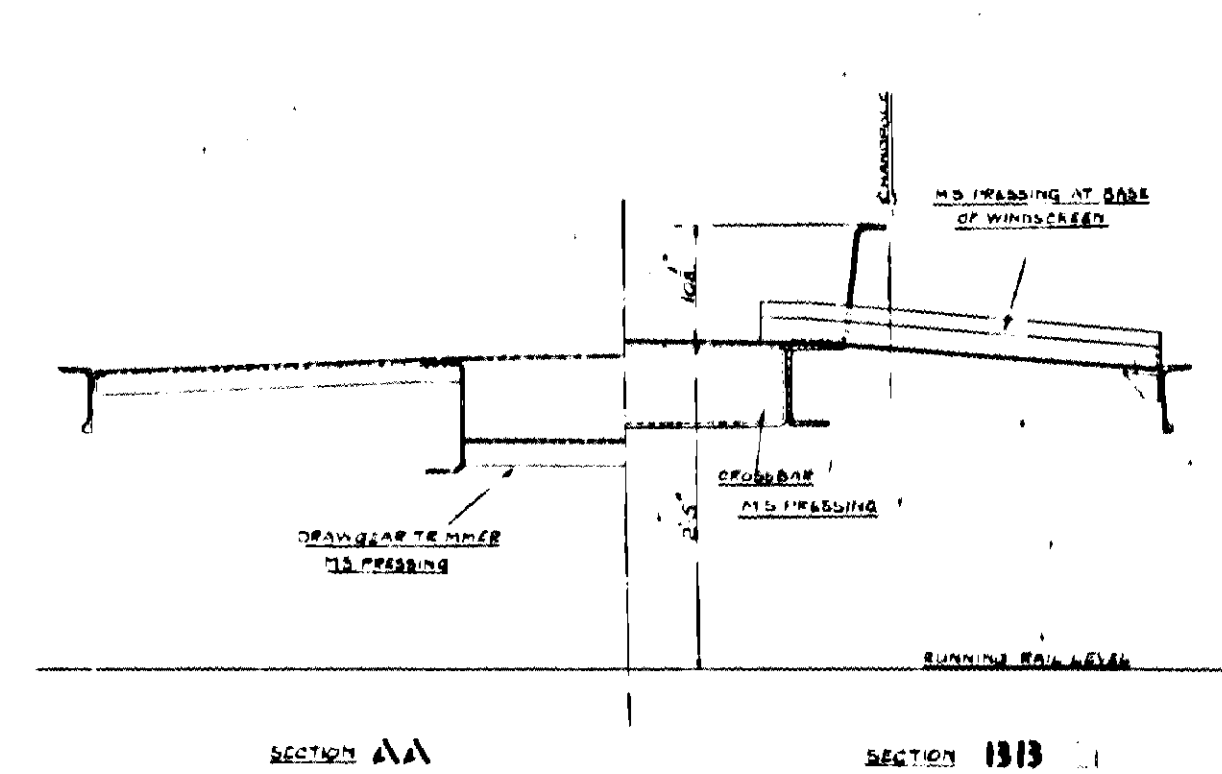
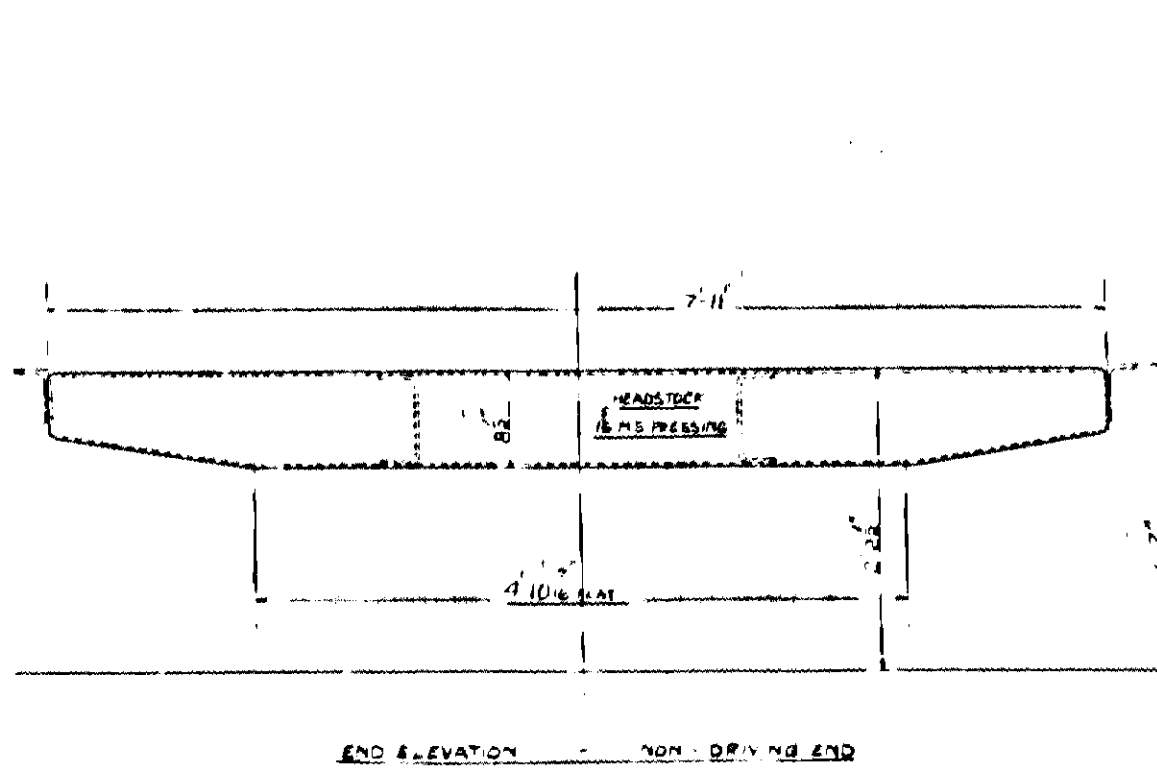
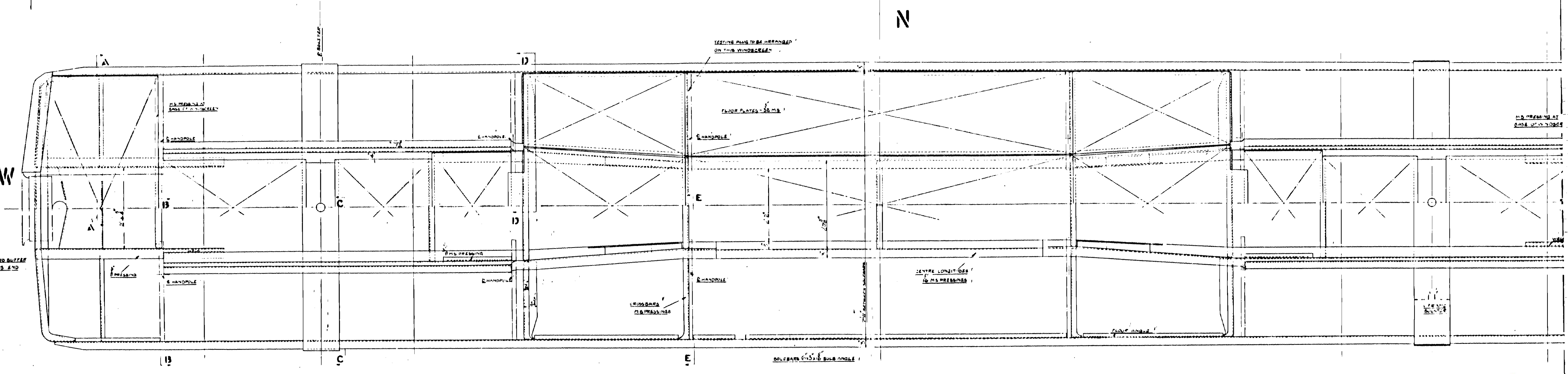
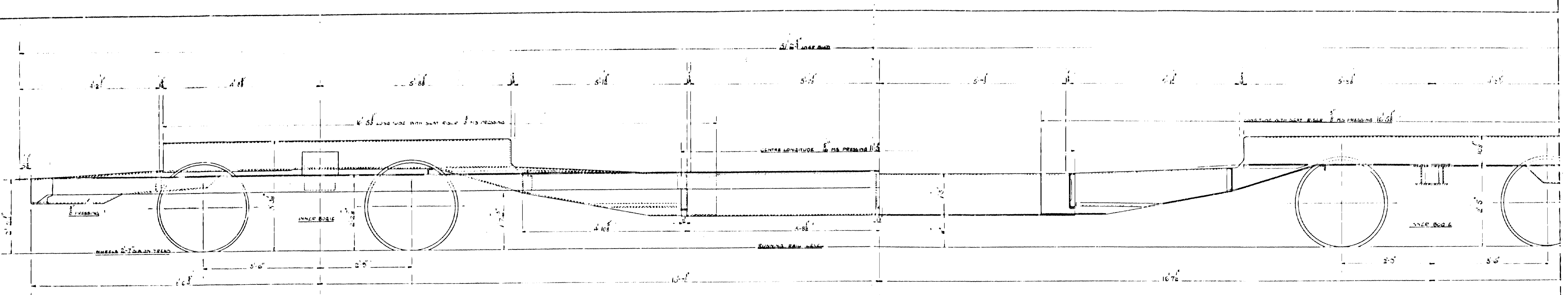
DRAWER NO  
 OFFICE 143 FILING ROOM 164

CLASS OF STOCK

SCALE: 1/4" = 1'-0"

**30X**





128398

**F1 OF 2**

**ARRANGEMENT OF UNDERFRAME (NON-DRIVING MOTOR CAR WEST BOUND)**

CONTRACTORS DRG No 76016

DRAWER NO  
OFFICE 113 FILING ROOM 104

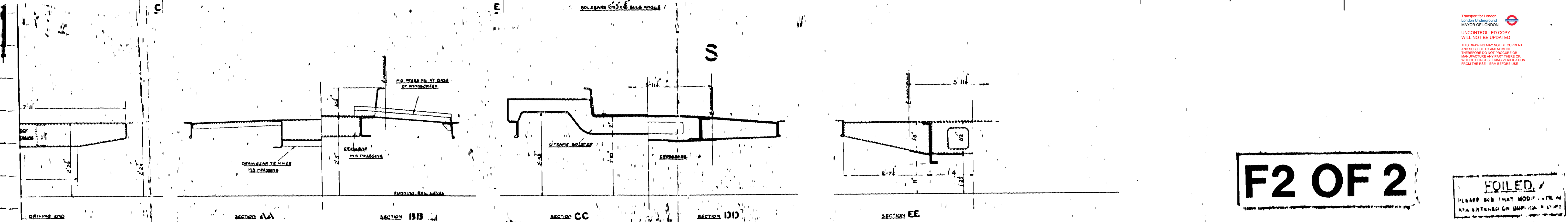
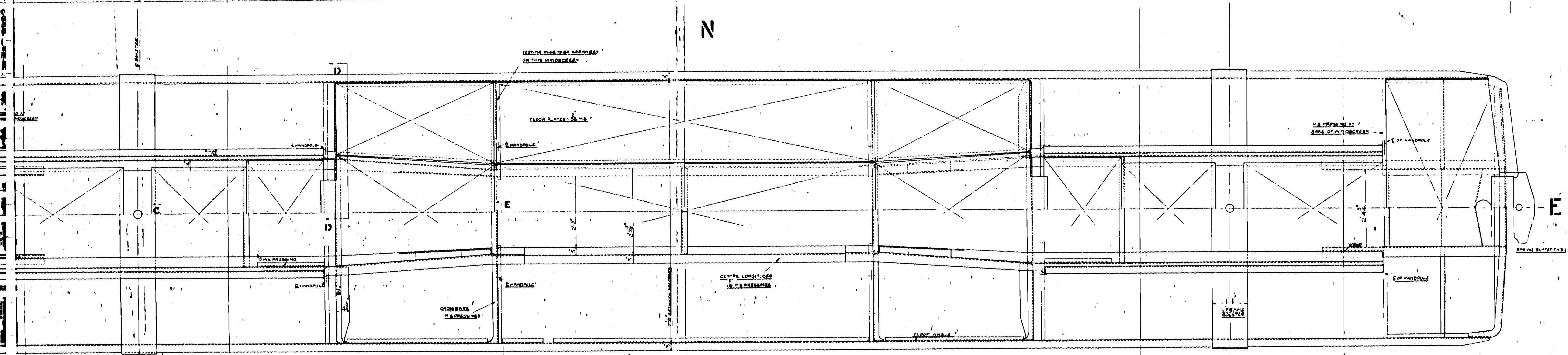
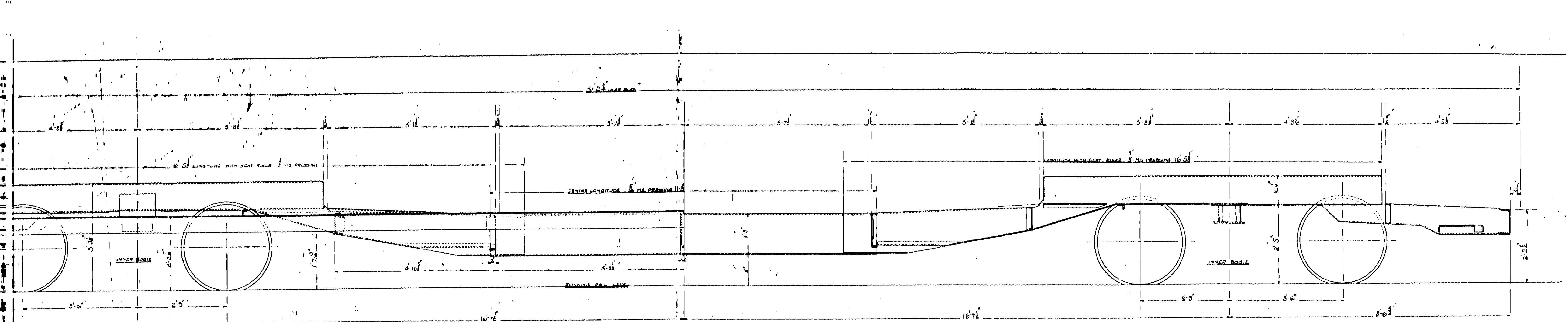
MODIFICATIONS  
SCALE 1 INCH TO THE FOOT

LONDON PAS  
CHIEF S  
DRAW  
DATE

**30X**

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**F2 OF 2**

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ARE ENTERED ON DUPLICATION SHEET

**ARRANGEMENT OF UNDERFRAME (NON DRIVING MOTOR CAR) WEST BOUND**

LONDON PASSENGER TRANSPORT BOARD

CHIEF MECH. ENGINEERS OFFICE

DRAWING No 28398

DATE

CONTRACTORS DRG. No 76016

DRAWER No  
OFFICE 173 FILING ROOM 104

1939 Tube S-00A  
CLASS OF STOCK

MODIFICATIONS  
SCALE 1 INCH TO THE FOOT

**30X**



B A

FUS. FUSE BOX  
SEE S. N° 4276

NOTE: KEY BOXES REMOVED.  
STARTING PLATE (SEE 2759/3)  
FITTED OVER HOLE - KEYS TO BE  
LEFT IN DRIVER'S TOOL BOX.

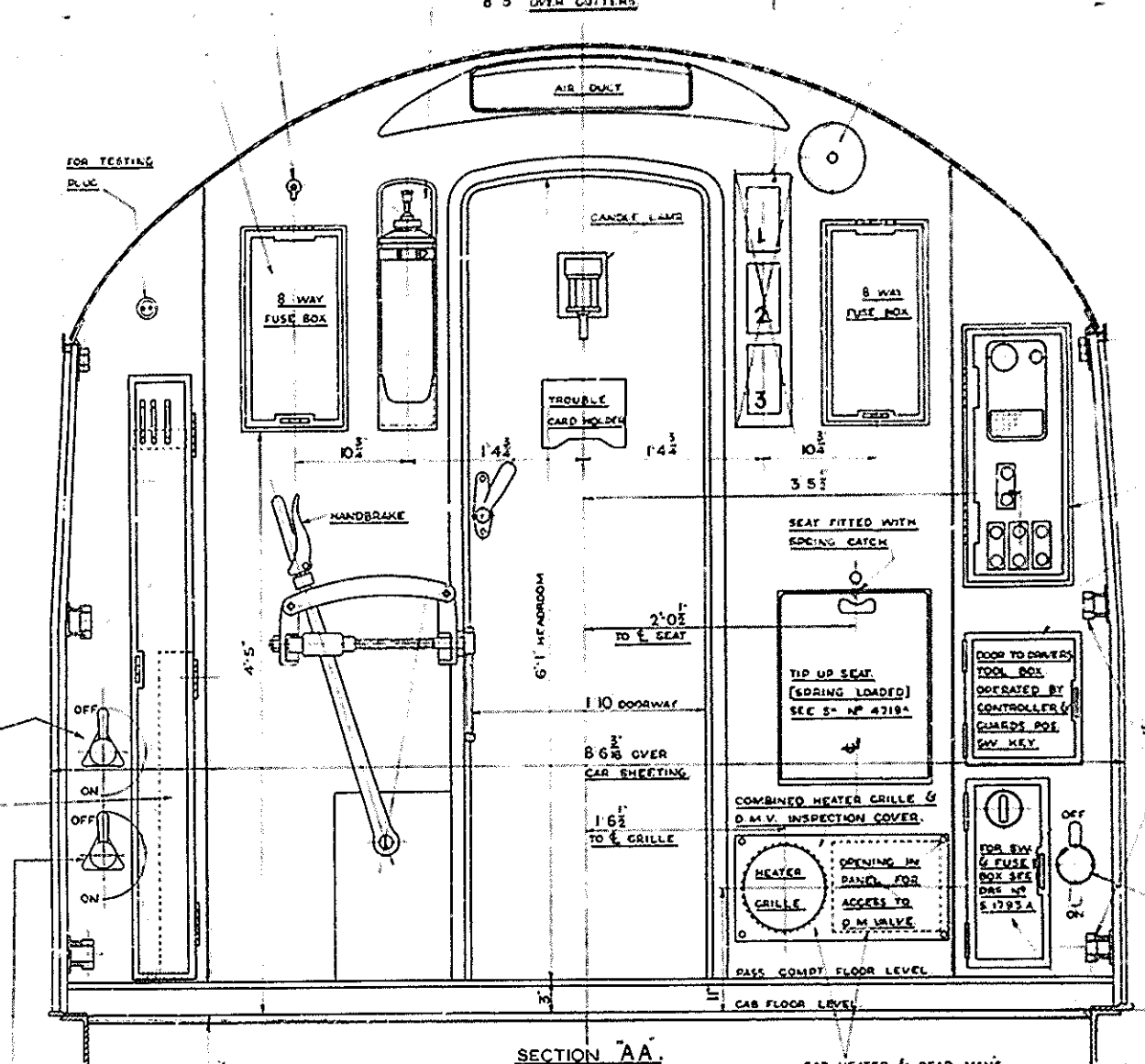
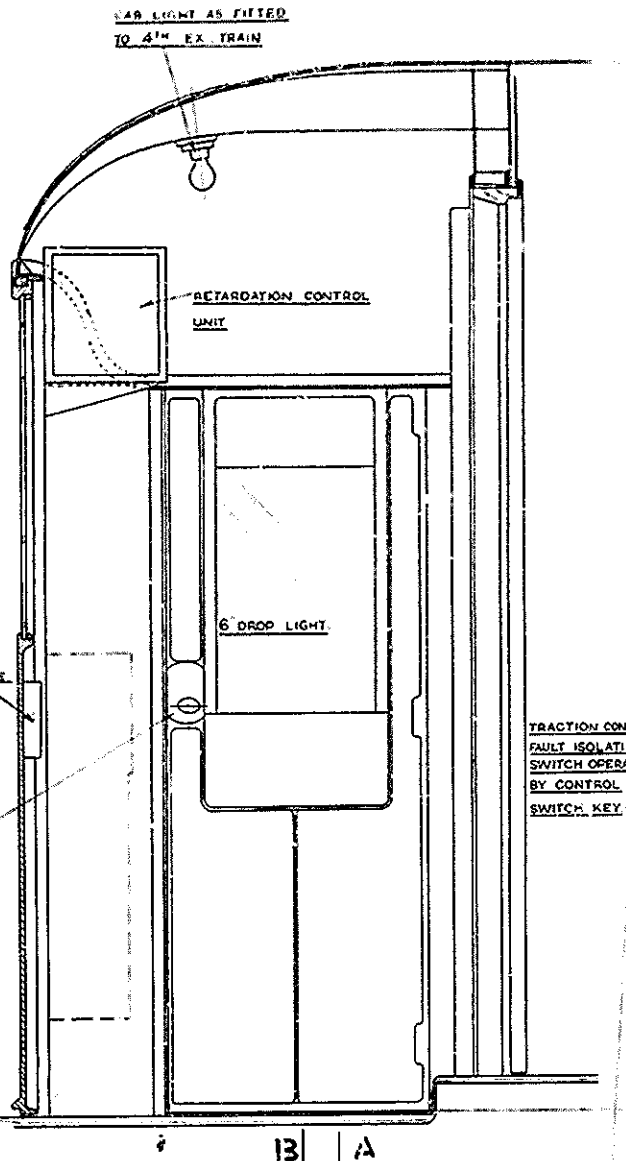
1. CONTROL SW. KEY  
2. POSITION SW. KEY  
3. CONTROLLER KEY

PNEUMATIC FLOOR  
FIT BY BATTERY POSITION  
INTERNALLY

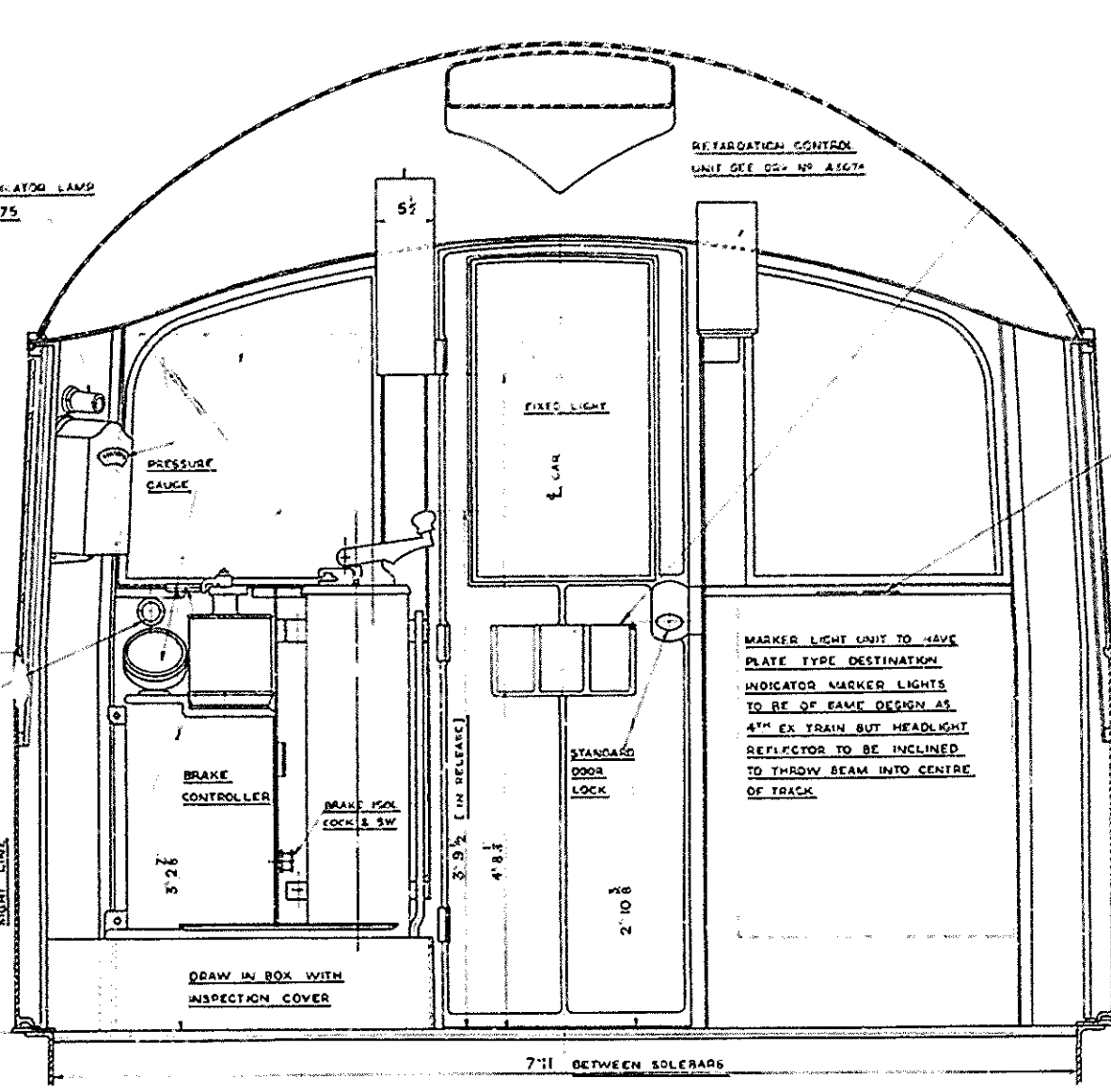
SEE S. N° 4276  
FOR WINDOW WIDTH

AUX. CONTROL SW. KEY  
CONTAINED IN THIS BOX (ALL OPERATED BY  
PUSH BUTTONS ARE) OVERLOAD TRIP & CIRCUIT BREAKER  
SEE AUTOMATIC STOP SW. KEY (SEE S. N° 4276)  
SEE LIGHT (UNCONTROLLED & M.C. TRIP ON A CARD  
M.C. TRIP ON B CARD) & COUPLER

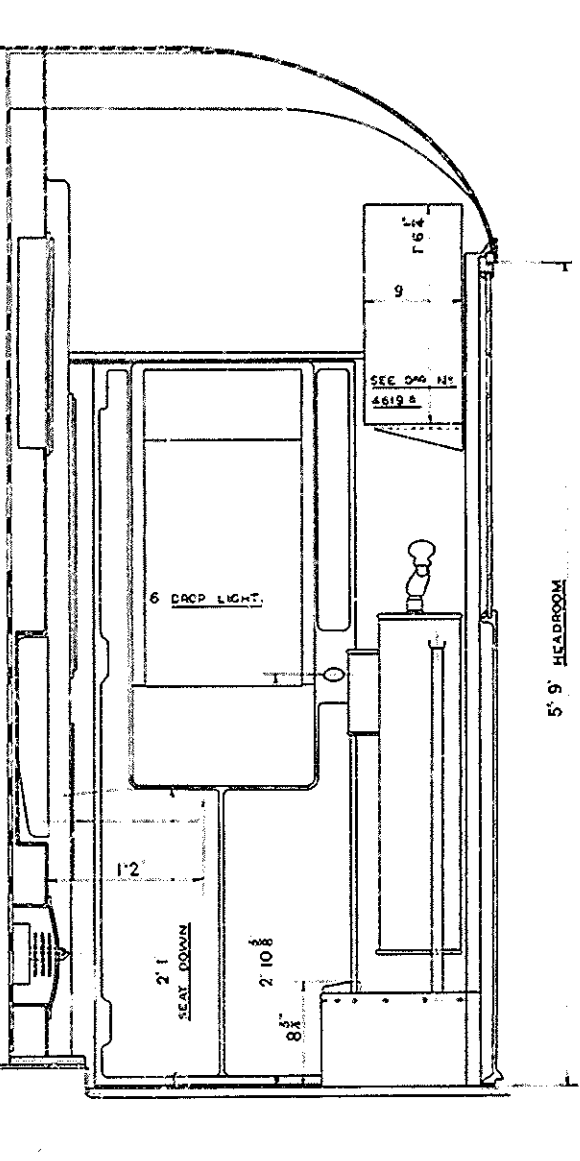
TRAIN AIR PLATE REVERSIBLE  
FITTED IN DOOR  
SEE S. N° 4282/2



EMERGENCY SW. KEY  
STARTING HILL  
8' 3" OVER OUTERS  
AIR DUCT  
HANDBRAKE  
TIP UP SEAT (LOADING POSITION) SEE S. N° 4218  
COMBINED HEATER GRILLE & 0 M.V. INSPECTION COVER  
HEATER GRILLE  
DOOR TO DRIVER'S TOOL BOX OPERATED BY CONTROLLER'S SW. KEY  
FOR SW. KEY SEE S. N° 4276  
CAB HEATER & DEAD MAN'S VALVE WITHIN PARTITION FRONT PANEL DISHED TO TAKE HEATER & D.M.S.V.



WEAR FIELD FLAG SWITCH  
FITTED WITHIN MARKER  
LIGHT UNIT SEE S. N° 4283A

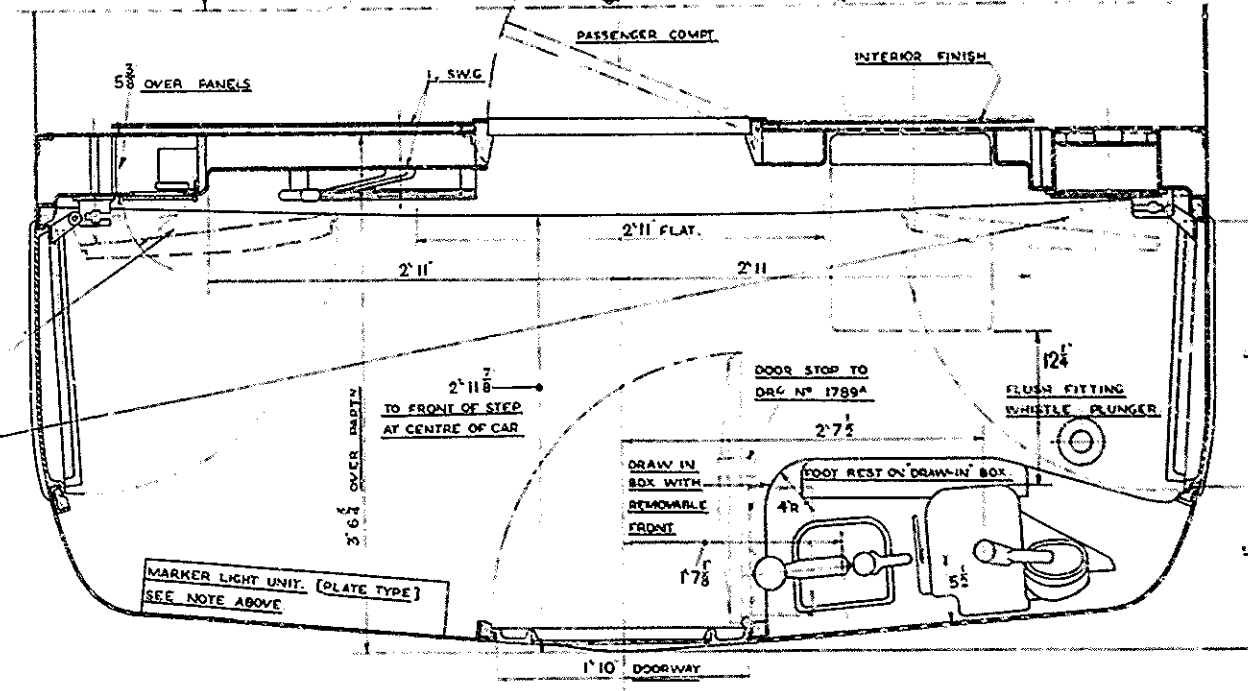


SECTION ON E.  
SHOWING SIDE ODD CONTROLLER.

SECTION AA.

SECTION B.B.

SECTION ON E.  
SHOWING CONTROLLER SIDE OF CAB.



SECTIONAL PLAN, C.C.

CAB HEATER SW. KEY  
BOX WITHIN PARTITION  
CAB DOOR OPENED BY  
BOTH CONTROLLER'S & POS.  
SW. KEY

NOTE: TIMBER RAIL CUT AWAY  
LOCALLY TO ALLOW TOP  
PLATE OF E.D. BRAKE TO  
BE EASILY REMOVED.

NOTE: CONTROLLER & E.D. CONTROLLER TO BE FITTED  
IN SIMILAR POSITIONS TO LAYOUT ON 4TH EX. TRAIN  
BUT CONTROL SW. TO BE FITTED ON BULKHEAD IN  
POSITION SHOWN.  
TAIL LAMP BRACKET ON OUTSIDE OF CAR STEEL CHROM.  
PLATED NO FIXING BOLTS TO BE VISIBLE ON OUTSIDE.  
EMERGENCY TAIL LAMP BRACKET TO BE FITTED IN SUITABLE  
POSITION IN CAR.  
ALL EXTERIOR HANDLES BLACK BRASS OR INTERIOR HANDLES  
& LOCK BODIES GUNMETAL BRONZE FINISHED.  
CAB DOORS TO FINISH AT CENTRAL AS SHOWN & HINGED  
BULKHEAD SIDE.  
TAIL LIGHTS ON HEADSTOCK AS ON PREVIOUS TRAINS.  
CAB LIGHT TO BE IN POSITION SIMILAR TO 4TH EX TRAINS.  
DEAD MAN'S VALVE FITTED WITHIN PARTITION ADJACENT  
TO CAB HEATER PANEL ON DRIVERS SIDE OF BULKHEAD  
TO EXTEND TO ROOF AS SHOWN.

NOTE: IT IS IMPORTANT THAT  
ALL CUPBOARD DOOR CATCHES  
SHOULD BE OPERATED EASILY BY  
BOTH POSITION SWITCH KEY &  
CONTROLLER KEY. (SEE D. N° 5627  
& 216ED FOR KEYS.)

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DESCRIPTION	MATERIAL	DRG. NO.	STOCK LIST NO.	QTY PER SET
MATERIAL LIST				

CONTRACTOR'S DRG. NO.

ARRANGEMENT OF DRIVING CAB.

DRAWER NO  
OFFICE 143 FILING ROOM 104

1918 TRICE STOCK  
CLASS. OF STOCK

NO.	DESCRIPTION	DATE
J	NOTE ADDED RE. EMERGENCY KEY BOX	15.10.57
H	CAB INTERLOCK & DRIVER'S PRIVATE LOCK DELETED	15.10.57
G	DOOR BODIES FINISHED TO GUNMETAL BRONZE FINISH & HINGED BULKHEAD SIDE	15.10.57
F	KEYS POSITION OF DEAD MAN'S VALVE & CAB HEATER SW. KEY	15.10.57
E	DOOR TO DRIVER'S TOOL BOX	15.10.57
D	DOOR TO DRIVER'S TOOL BOX	15.10.57
C	CIRCUIT WINDOW WATER NOT FITTED	15.10.57
B	NOTE RE. CAB HEATER & DEAD MAN'S VALVE SW. KEY	15.10.57
A	ORIGINAL DRAWING	15.10.57

LONDON PASSENGER TRANSPORT BOARD

CHIEF MECH. ENGINEERS OFFICE

DRAWING NO 28121

TRACED FROM SR. NO 4621 H. 28.7.38

DATE 1.4.37.

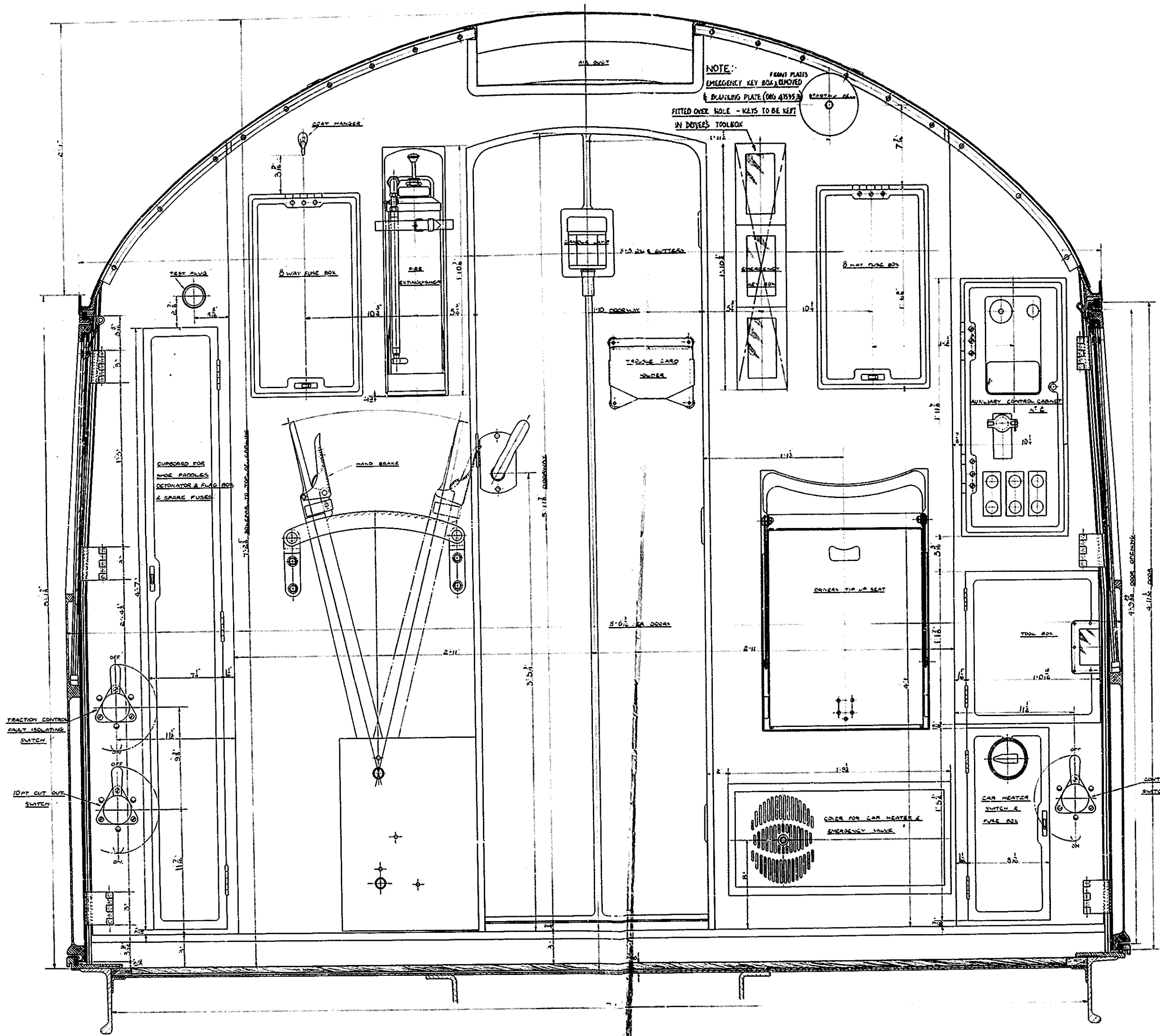
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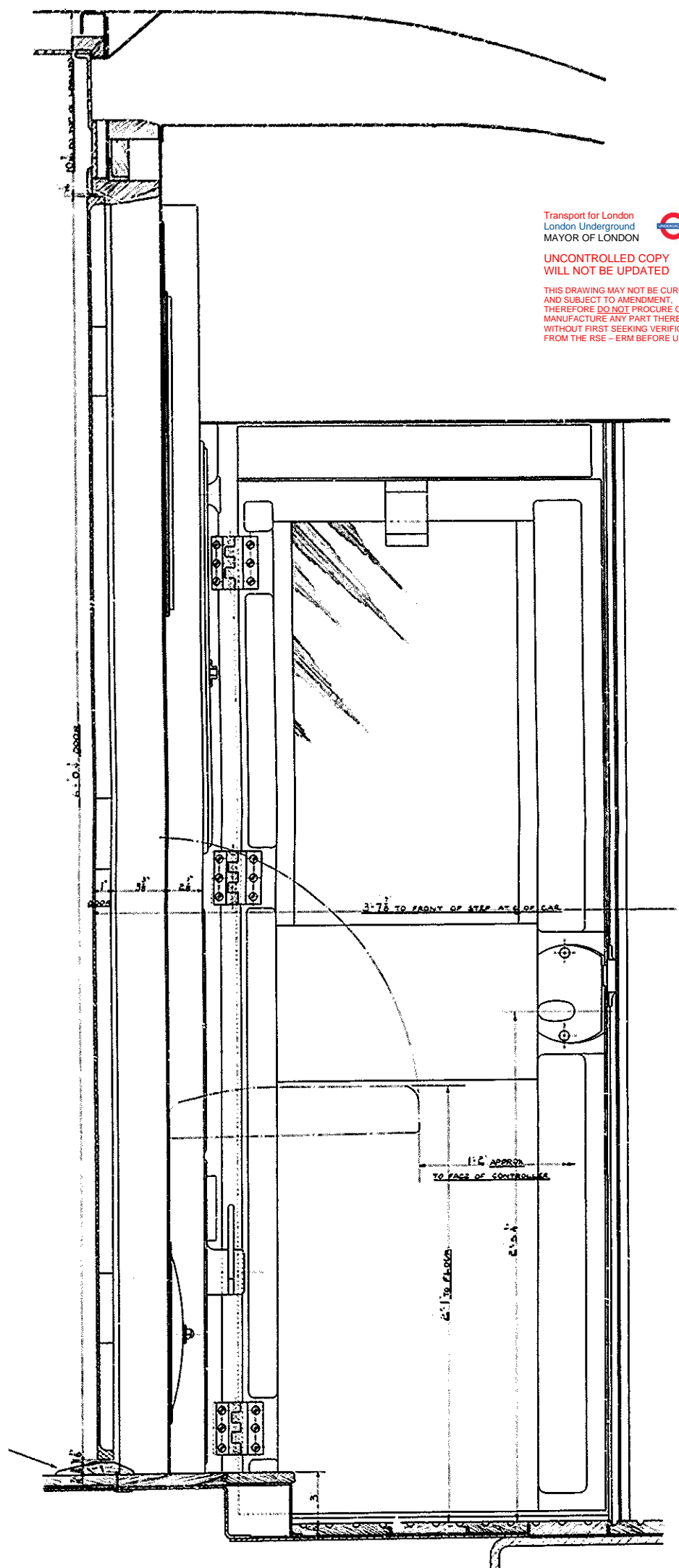
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DOOR REDUCED FROM  
 6'-1" TO 5'-0" & 2" DOLL  
 INTRODUCED ON A FROM  
 THE 25' CAR



ARRANGEMENT OF EQUIPMENT ON DRIVERS PARTITION

**F1 OF 2**

CONTRACTORS DRG. No: 77082

DRAWER No  
 OFFICE 143 FILING ROOM. 104

1929 Tube Stock  
 CLASS OF STOCK

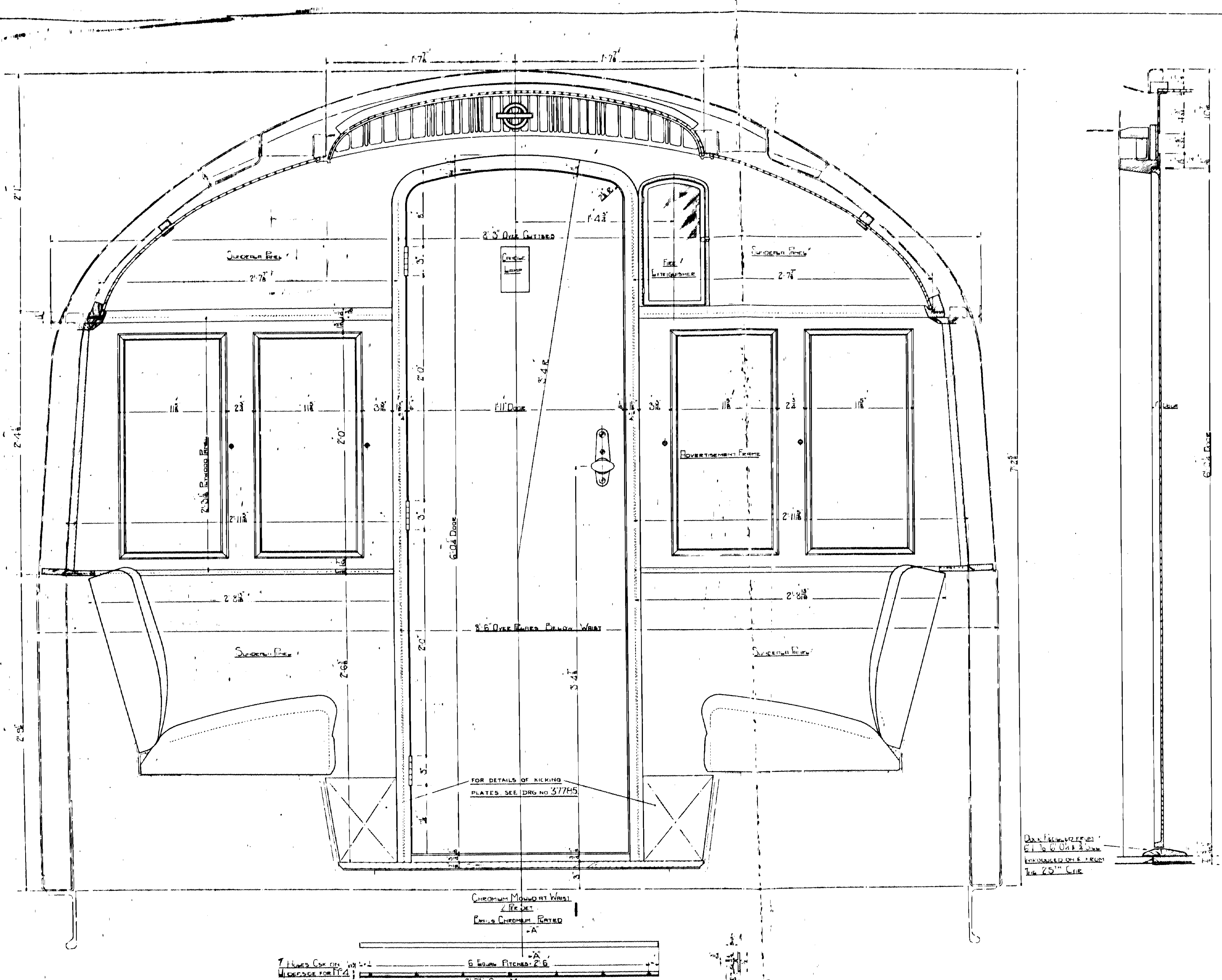
NOTE ADDED RE: EMERGENCY KEY BOX  
 MODIFICATIONS.  
 SCALE, THREE INCHES TO THE FOOT

LONDON PASSE  
 CHIEF MECH  
 DRAWING  
 DATE

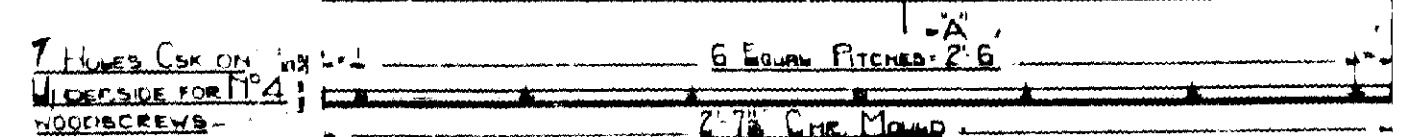
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ADD'L OF INTERIOR FINISH ON DRIVERS PARTITION

(INDICATING MOTOR)

DRAWER NO  
 OFFICE 143 FILING ROOM 104

1948 TUBE STOCK  
 CLASS OF STOCK

MODIFICATIONS  
 SCALE 3/8 & 1/2 INCHES TO THE FOOT

LONDON PASSENGER TRANSPORT BOARD

CHIEF MECH. ENGINEERS OFFICE

DRAWING NO 28543

DATE 6-12-38

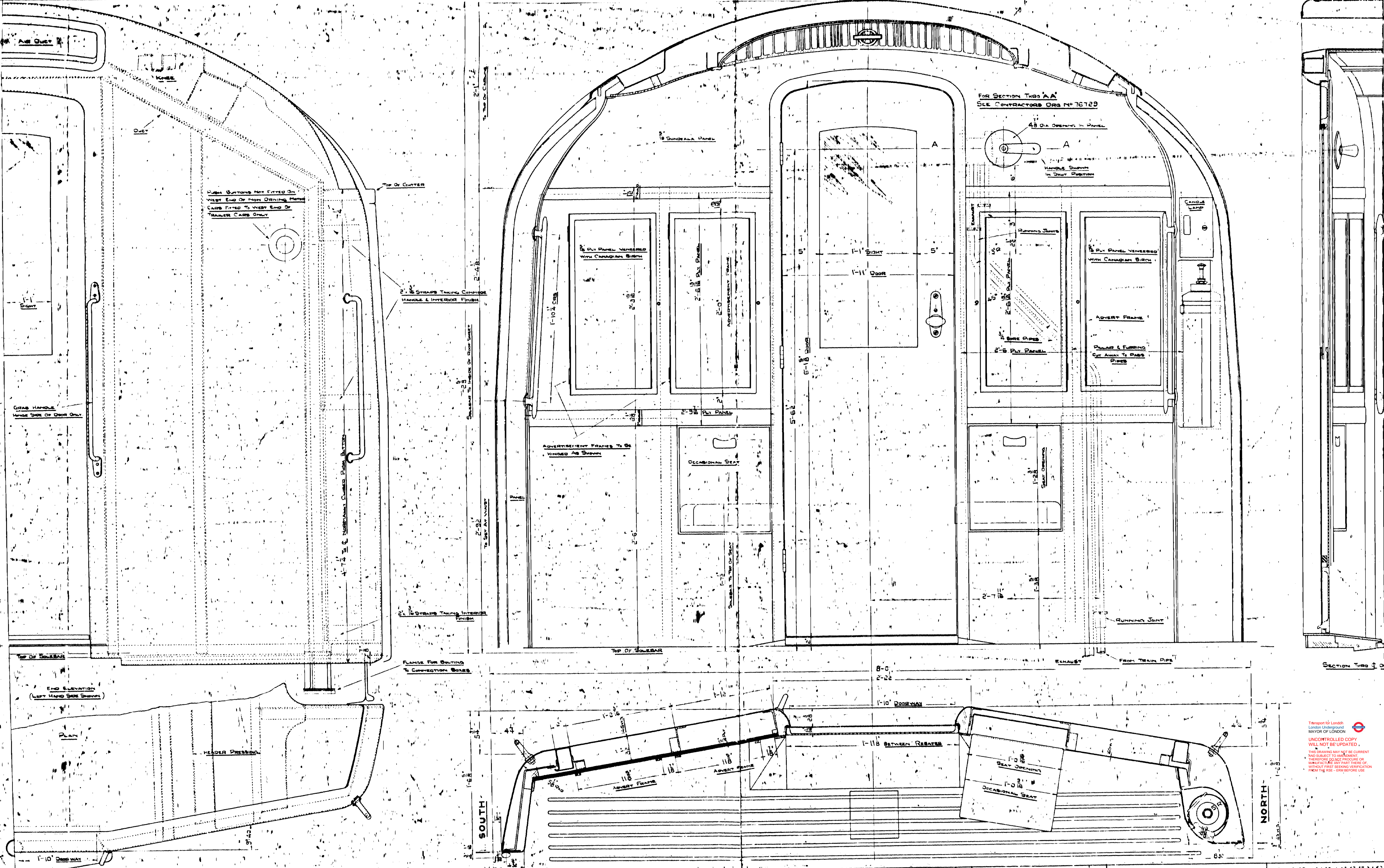
ITEM	DESCRIPTION	MATERIAL	DRG NO	STOCK LIST NO	PER SET
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**F1 OF 2** 28403

**GENERAL ARR'G OF WEST END OF  
NON-DRIVING MOTOR CARS**

CONTRACTORS' ORG. No. 75779

DRAWER No. 103  
OFFICE 17P  
ROOM 103

CLAS. OF STOCK  
SCALE: HALF IN. = 1 FT. TO THE FOOT

LONDON PASSENGER  
CHIEF MECHANICAL  
DRAWING  
DATE 7

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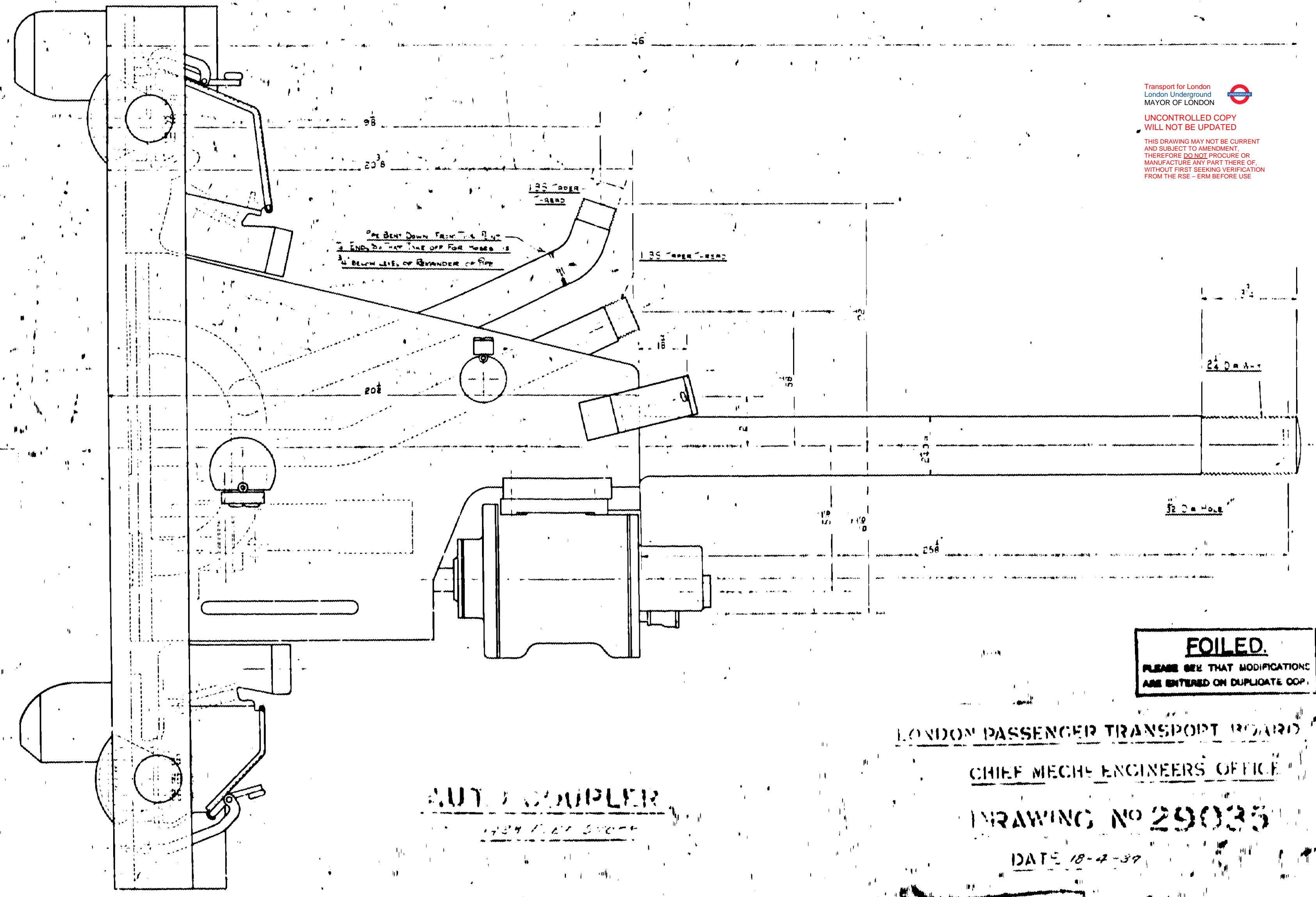
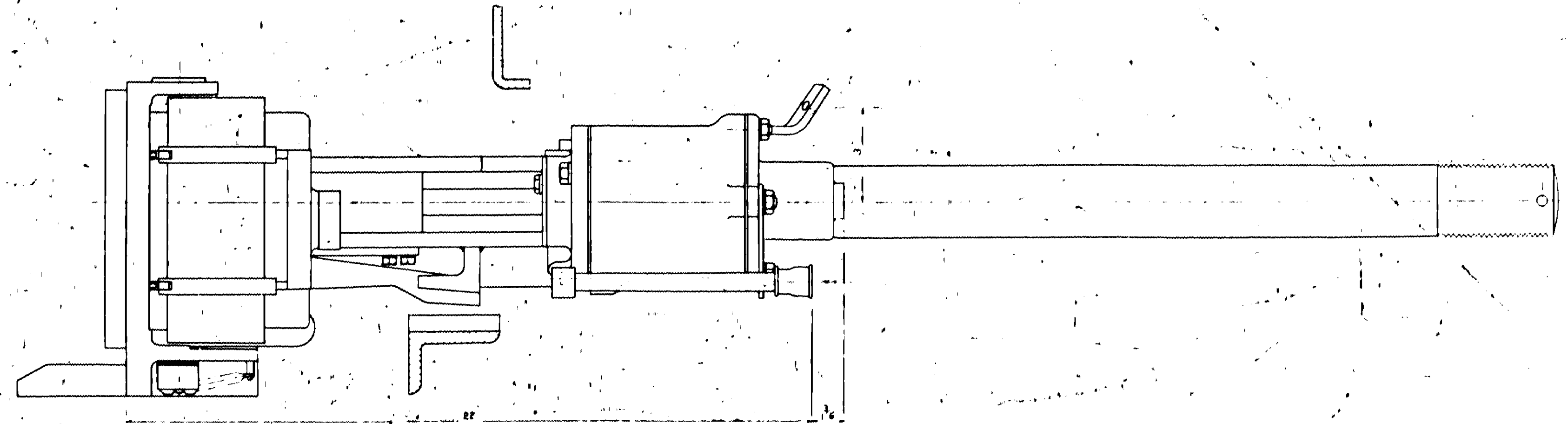
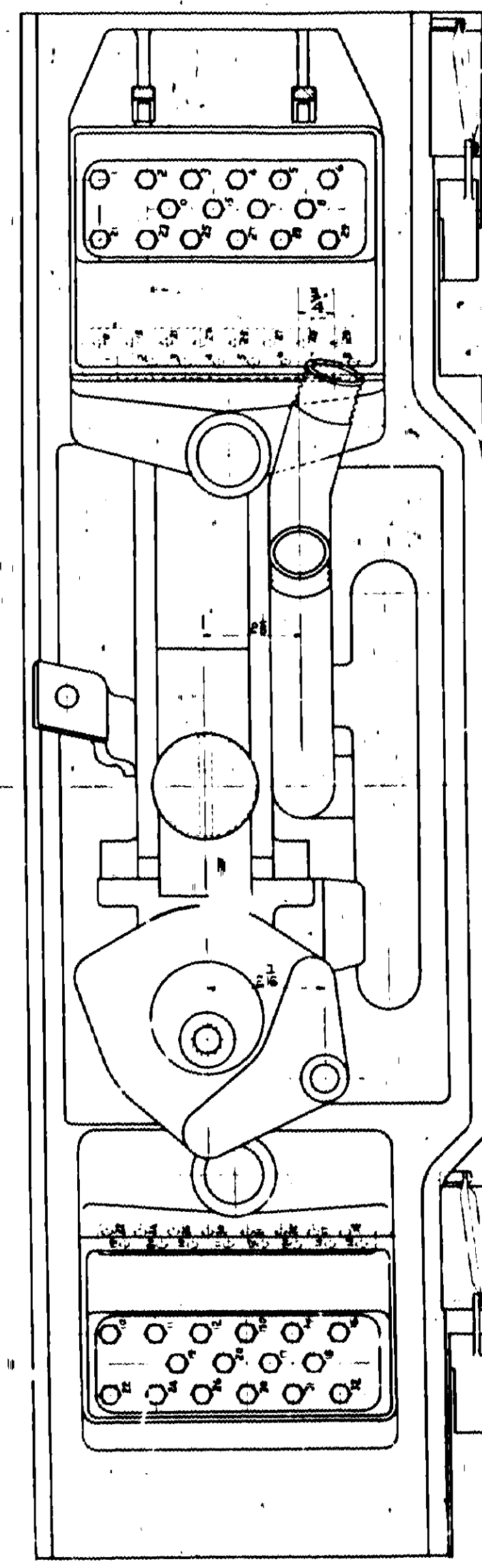
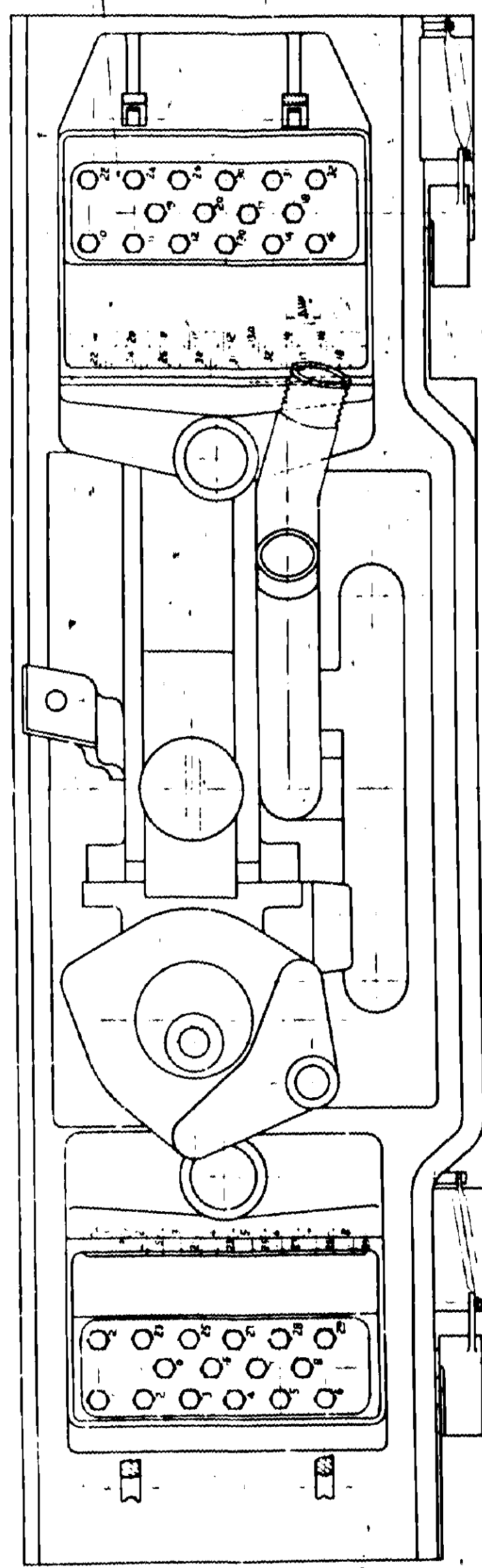






N.M.G.

Track No. 548 Rev 1  
Date: 10-2-39



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LONDON PASSENGER TRANSPORT BOARD  
CHIEF MECH. ENGINEERS' OFFICE  
DRAWING NO 29035  
DATE 10-2-39

AUT. COUPLER  
1939 10-2-39

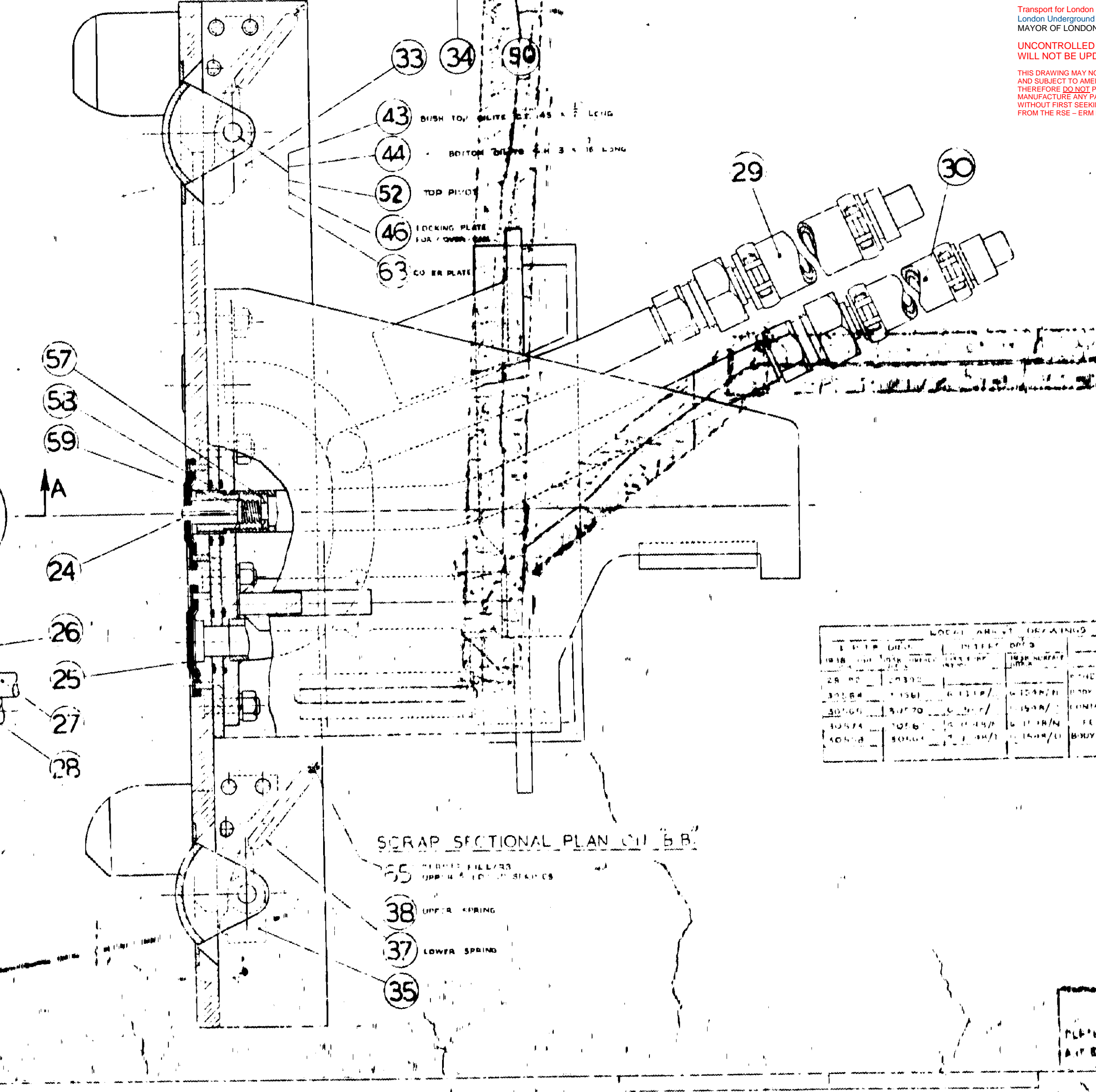
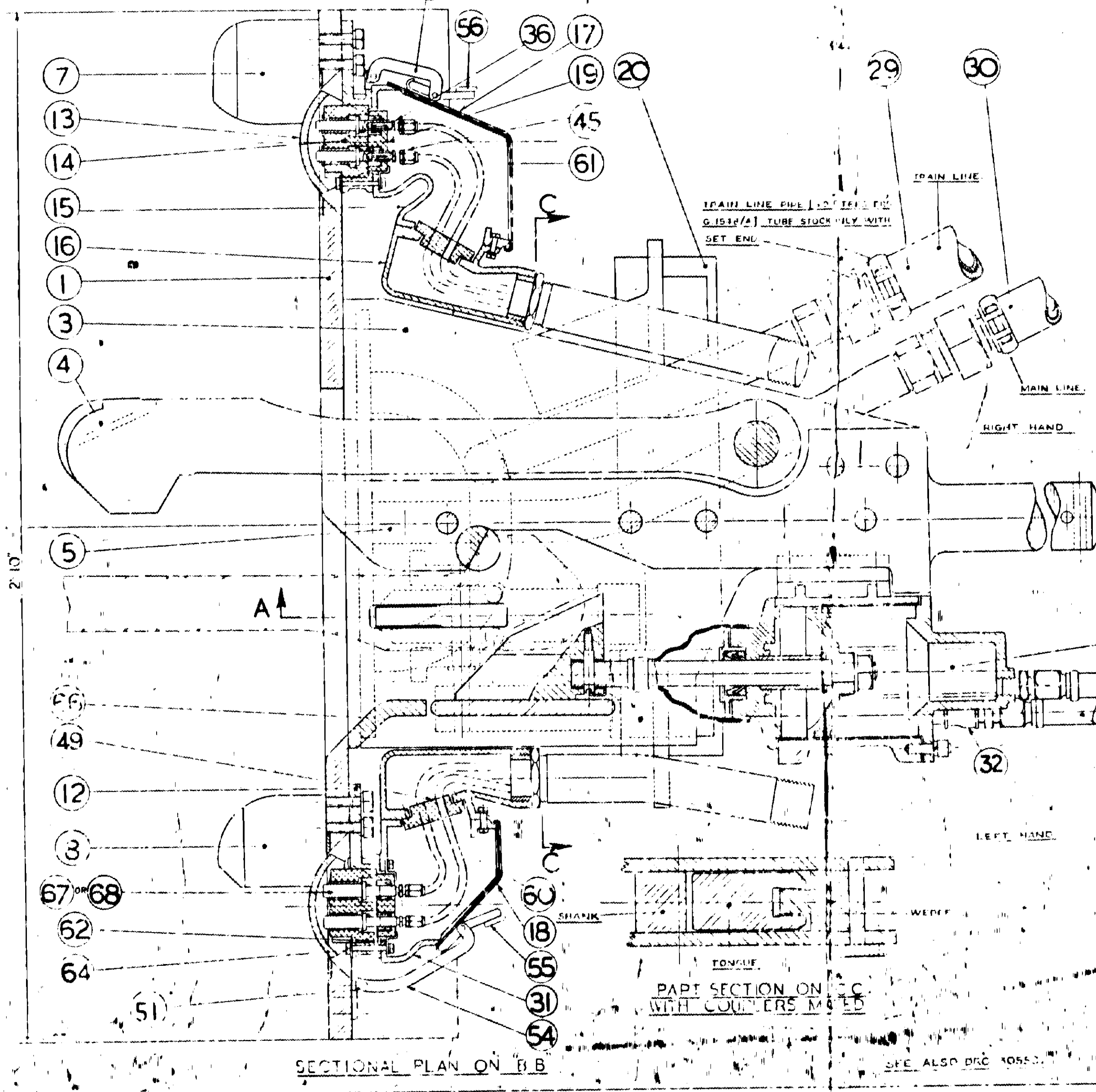
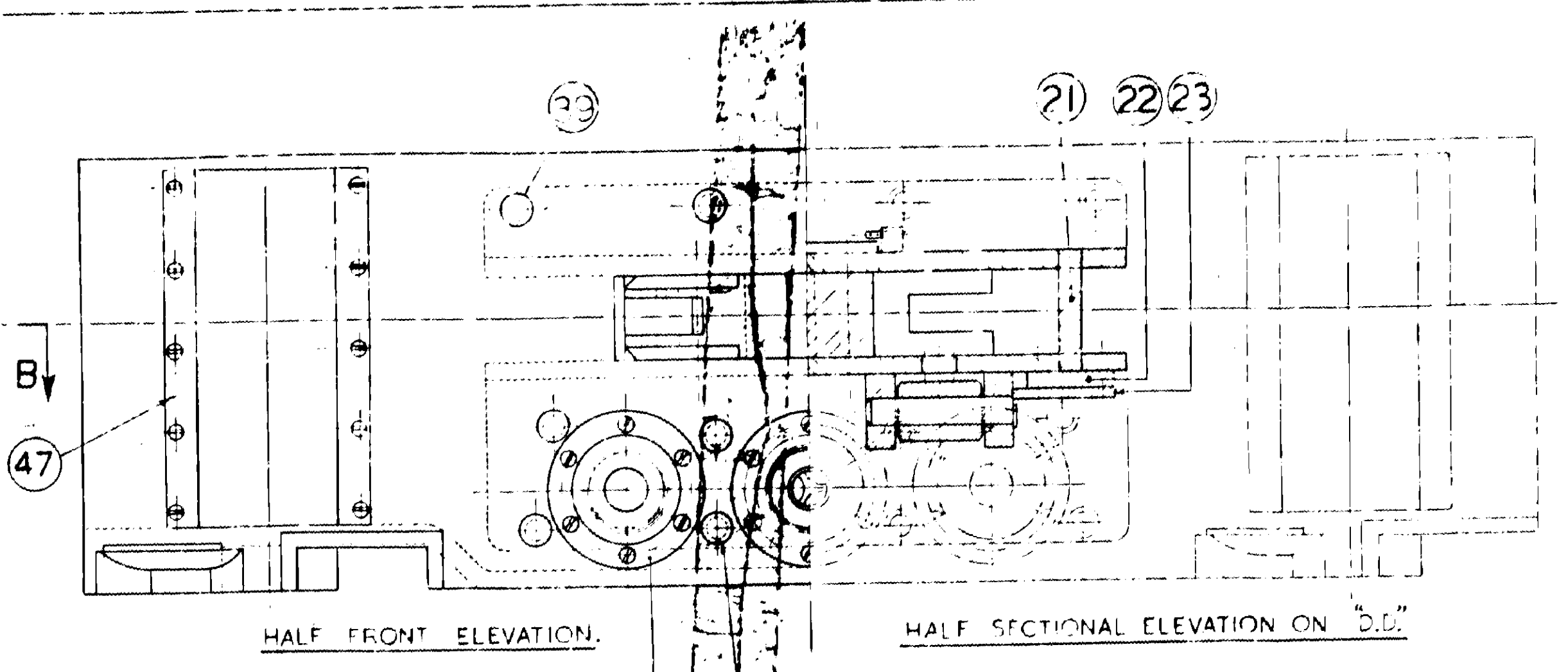
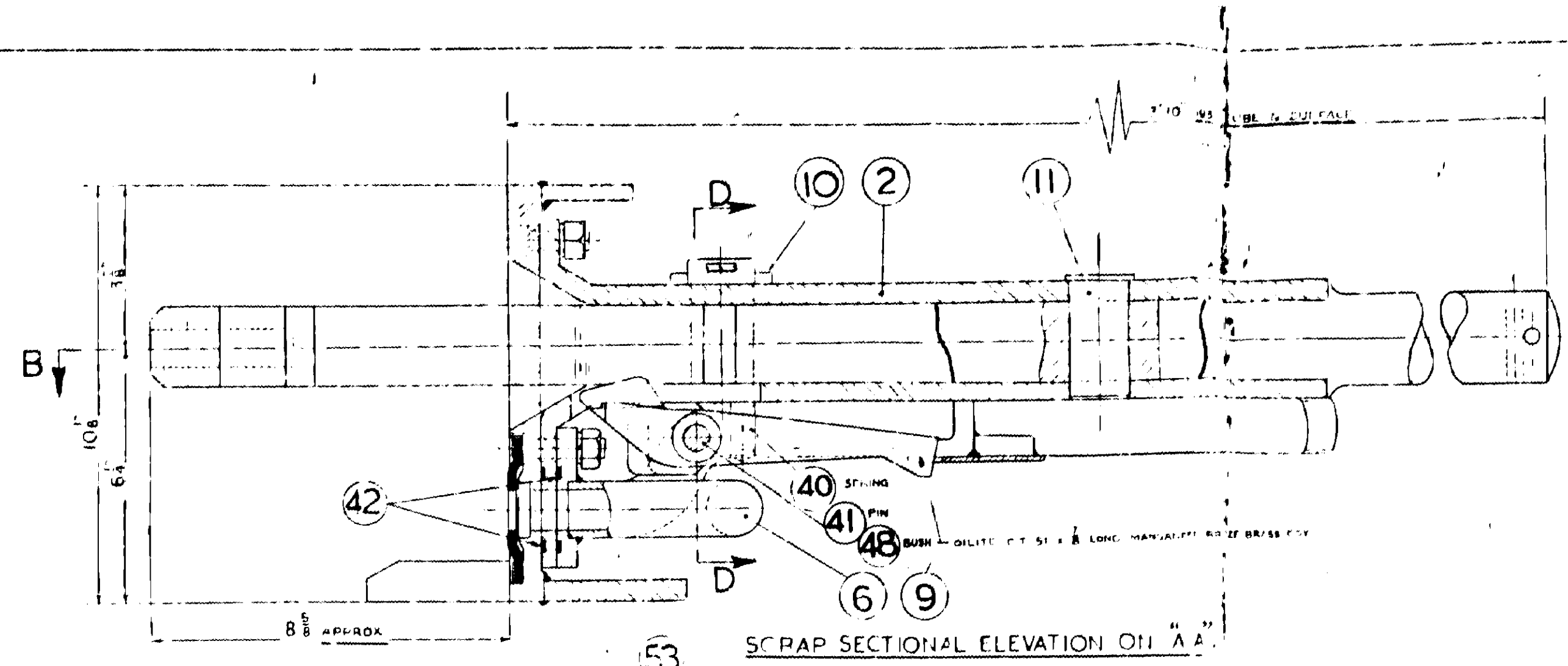
35/62



**30X**



TOOL LIST	ITEM NO.	ASSET NO.
TOOL	8 E 31	B/8971
ITEM	8 E 30	H/8972
ITEM	8 E 32	K/8973



ITEM NO.	DESCRIPTION	QTY	UNIT	ASSET NO.	DATE
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**AUTOMATIC COUPLER**

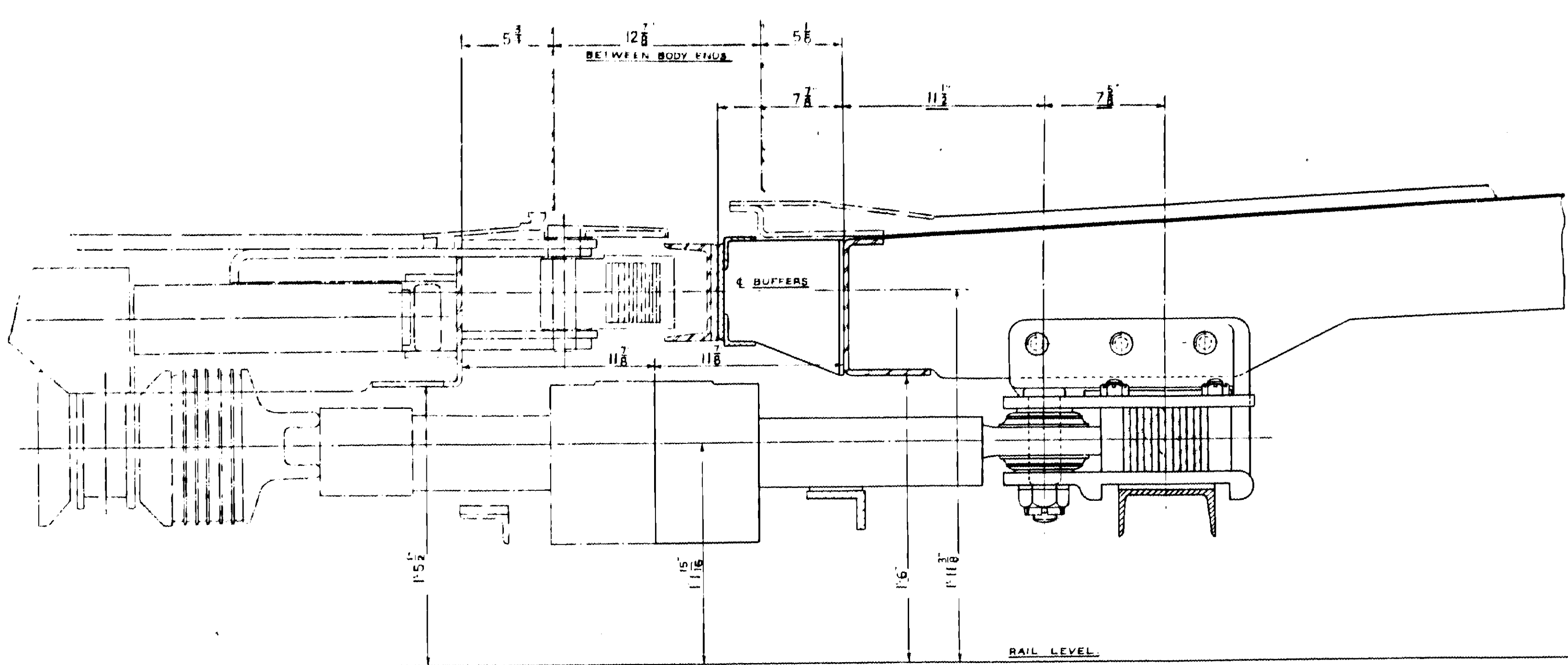
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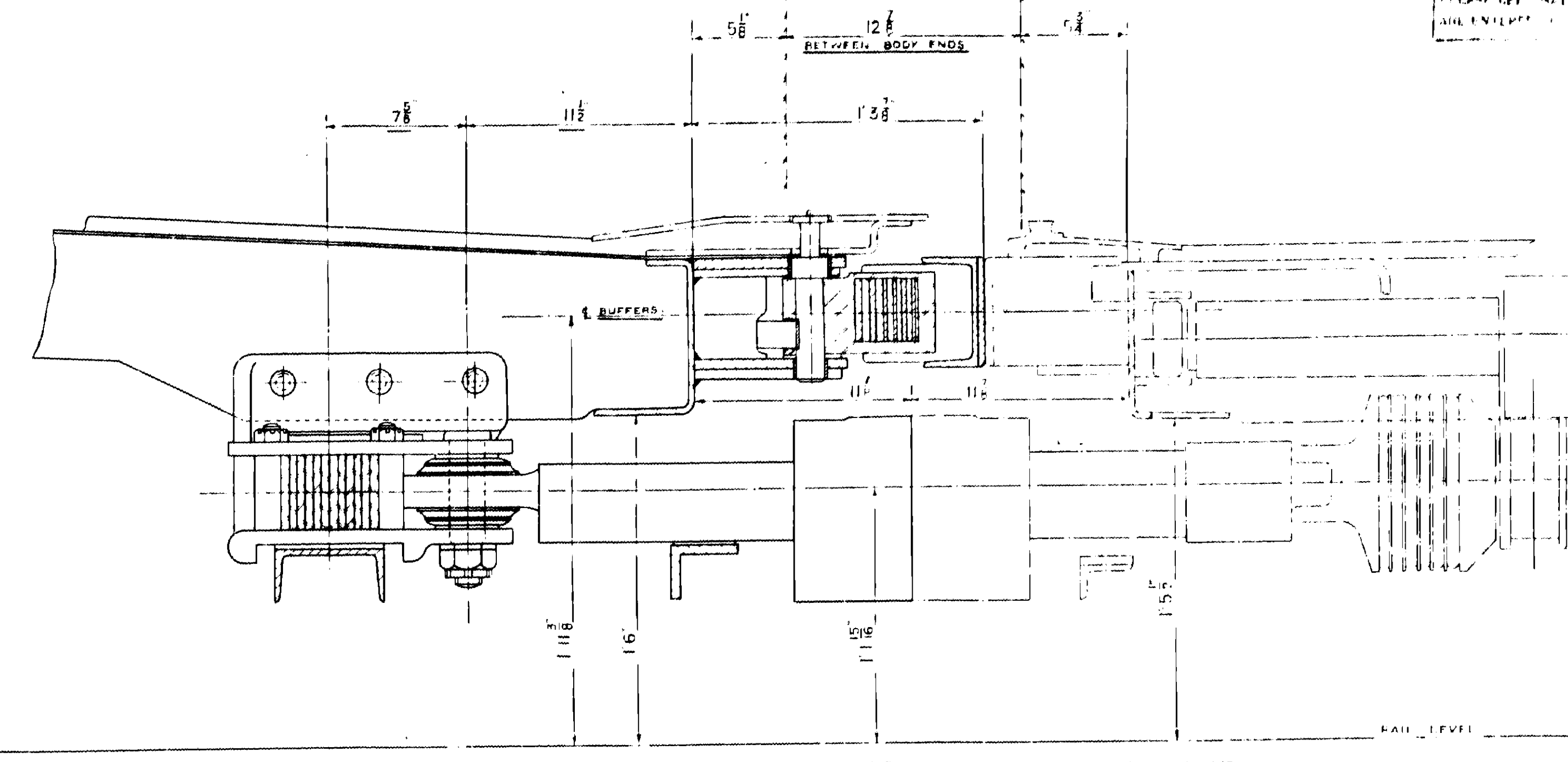
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DATE







1938 TUBE STOCK DM. EAST BOUND, CONNECTED TO 1949 TUBE STOCK UNDM. WEST BOUND.

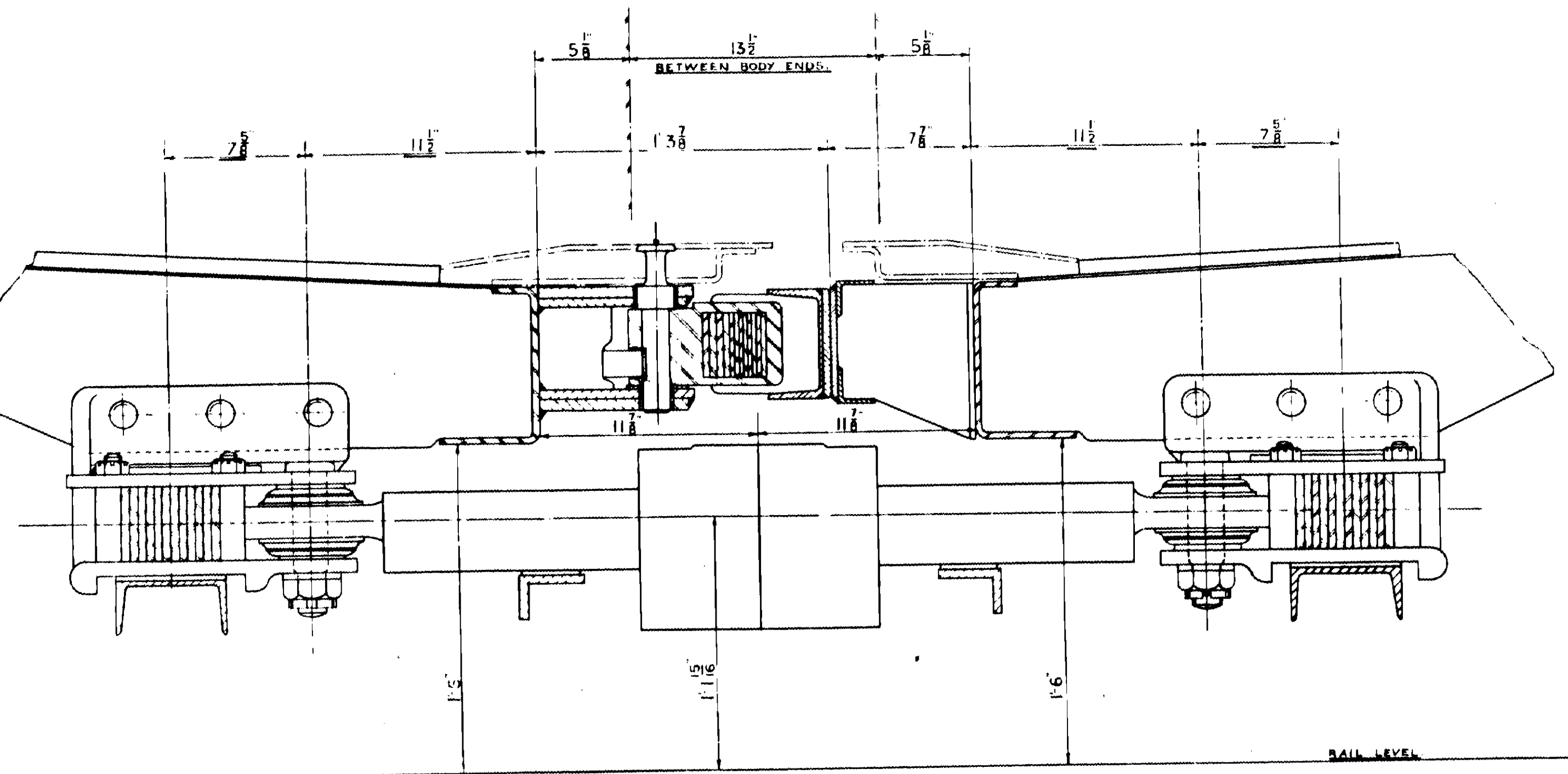


1949 TUBE STOCK UNDM. EAST BOUND, CONNECTED TO 1938 TUBE STOCK DM. WEST BOUND.

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1949 TUBE STOCK UNDM. EAST BOUND, CONNECTED TO UNDM. WEST BOUND.

NOTE:  
 HEIGHT OF BUFFERS ON END OF UNDM WITH AUTO  
 COUPLERS, TO BE THE SAME AS ON FAIRING DRIVING  
 MOTORS - OTHER END AS STANDARD.

PLAN OF AUTO COUPLER: BBT DPG. N° 35720  
 ELEVATION OF AUTO COUPLER: 35751  
 HOLE IN CONDUIT ABB: 35926

DRAWN: J.A.F.  
 TRACED: Gaf  
 CHECKED: R.F.S.  
 APPROVED:  
 DRAWER N°  
 86-187

COUPLING ARRANGEMENT OF U.N.D.M.'s.



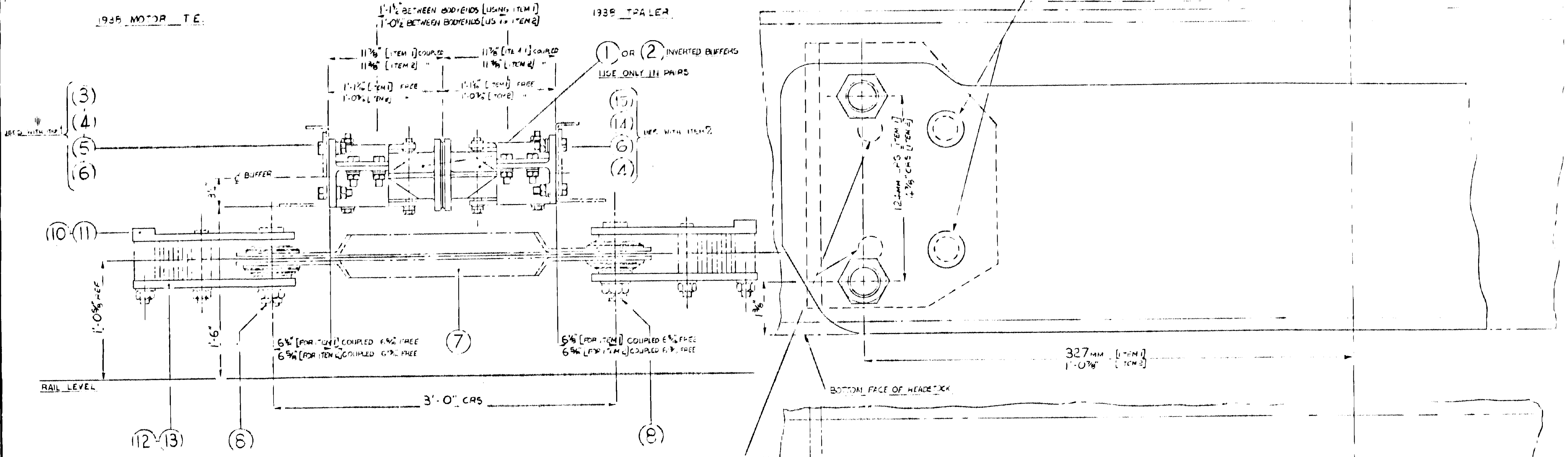
L C.M.	
DRA 35	
DATE:	
TRACED:	
1949 TUBE STOCK.	NOTIFICATIONS
CLASS OF STOCK:	SCALE: 3" = 10' 1"



1935 MOTOR T.E.

1938 TRALER

ROUND HEAD PIVETS TO BE REPLACED BY CSY HEAD PIVETS AT THESE POSITIONS

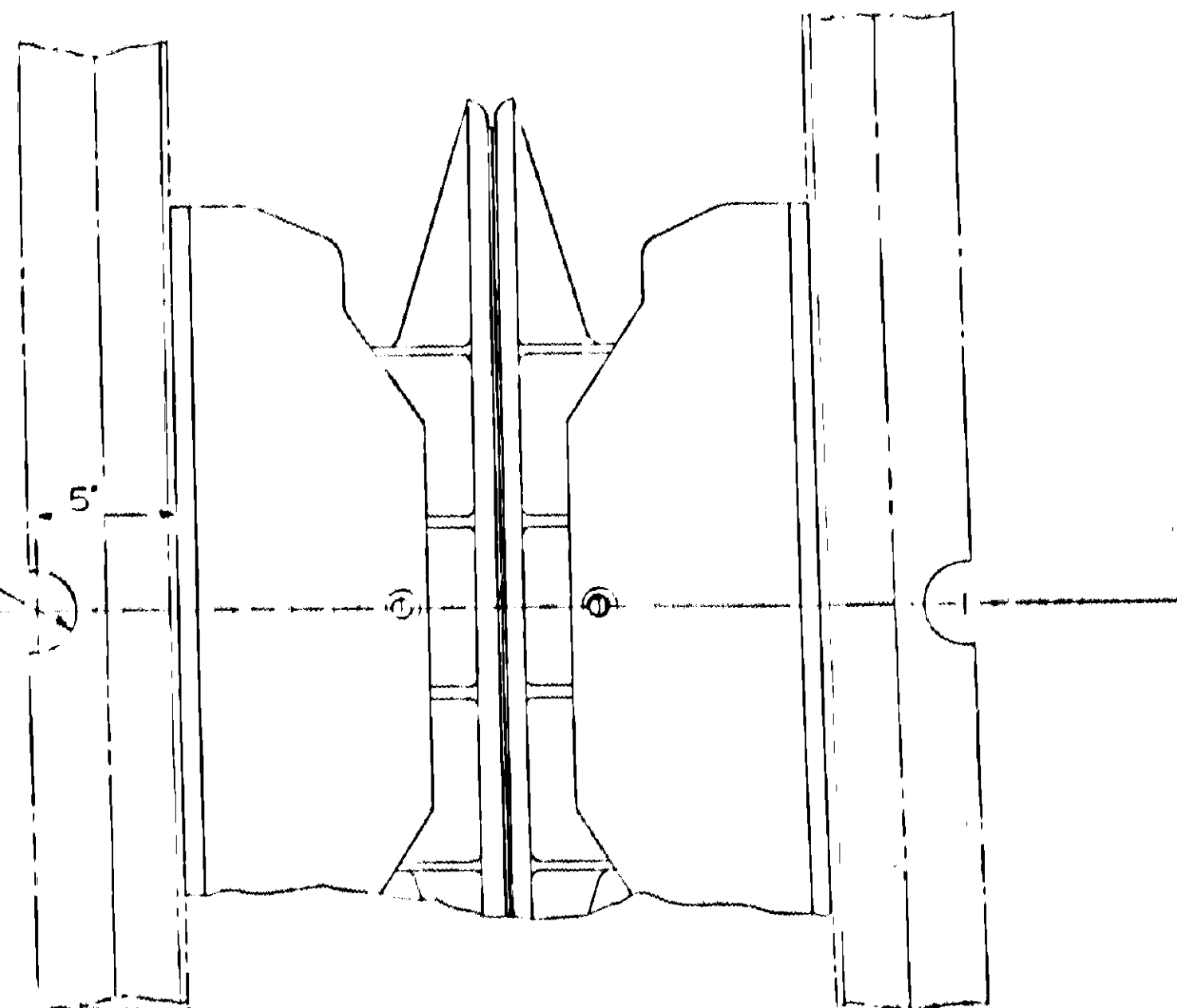


NOTE!

ALL EXISTING BUFFER & COUPLING PARTS TO BE REMOVED TOGETHER WITH SILL PLATE EXTENSIONS

NOTE!

CUT-OUT IN HEADSTOCKS TO ENABLE COUPLING PIN TO BE REMOVED



PLAN VIEW OF INVERTED BUFFERS

ROUND HEAD PIVETS REMOVED FROM THESE POSITIONS

4 HOLES - DRILL & REAM FOR M20 BOLTS [ITEM 2] WHEN BUFFER ITEM 1 IS USED.  
4 HOLES - DRILL & REAM FOR 7/8\"/>

BUFFERS & DRAWGEAR TO THIS DRG. FITTED AT THESE POSITIONS



BLOCK PLAN OF 1935 T.E. - 4 CAR UNIT

FOR EXISTING LARGEST OF BUFFERS AT NON-DRIVING END SEE DRG No 31173  
FOR ARRANGEMENT OF DRAWING EQUIPMENT AT TRAILER TO RUN WITH 1938 TUBE STOCK CHG. SEE DRG No 50243.

ITEM	DESCRIPTION	MAT.	DRGN.	SILN.	NO.	QTY	REMARKS
15	WASHING PIN	MS				2	USE WITH ITEM 2
14	WASHING PIN 1/2 LONG	MS				2	FOR USE WITH ITEM 2
13	DRAWSPRING BOTTOM PLATE	50234 B				2	FOR USE WITH ITEM 2
12	DRAWSPRING BOTTOM PLATE	50234 B				2	FOR USE WITH ITEM 1
11	DRAWSPRING TOP PLATE	50234 A				2	FOR USE WITH ITEM 2
10	DRAWSPRING TOP PLATE	50234 A				2	FOR USE WITH ITEM 1
9	DRAWSPRING COMPLETE	4031				2	EXISTING
8	DRAWGEAR PIVOT PIN	4032				2	EXISTING
7	DRAWGEAR ASSY	4031				1	EXISTING
6	WASHER FULL NUT	MS				2	USE WITH ITEM 1
5	WASHER FULL NUT	MS				2	ALTERNATIVE TO ITEM 1
4	SPRING WASHER	SP STEEL				2	USE WITH ITEM 1
3	ROUND HEAD BOLT 7/8 LONG	A4-70				2	ALTERNATIVE TO ITEM 1
2	BUFFER ASSY (1935 TYPE)	4031				1	ALTERNATIVE TO ITEM 1
1	BUFFER ASSY (1938 TYPE)	4031				1	ALTERNATIVE TO ITEM 1

ARRG & DETAILS OF BUFFERS & DRAWGEAR

1938 TUBE STOCK [FOAM ARRESTOR BED TRIALS]

SCALE 1/4

143/104

LONDON TRANSPORT EXECUTIVE

DESIGN OFFICE (RAIL)

DRG No 52298

5 APRIL 1975

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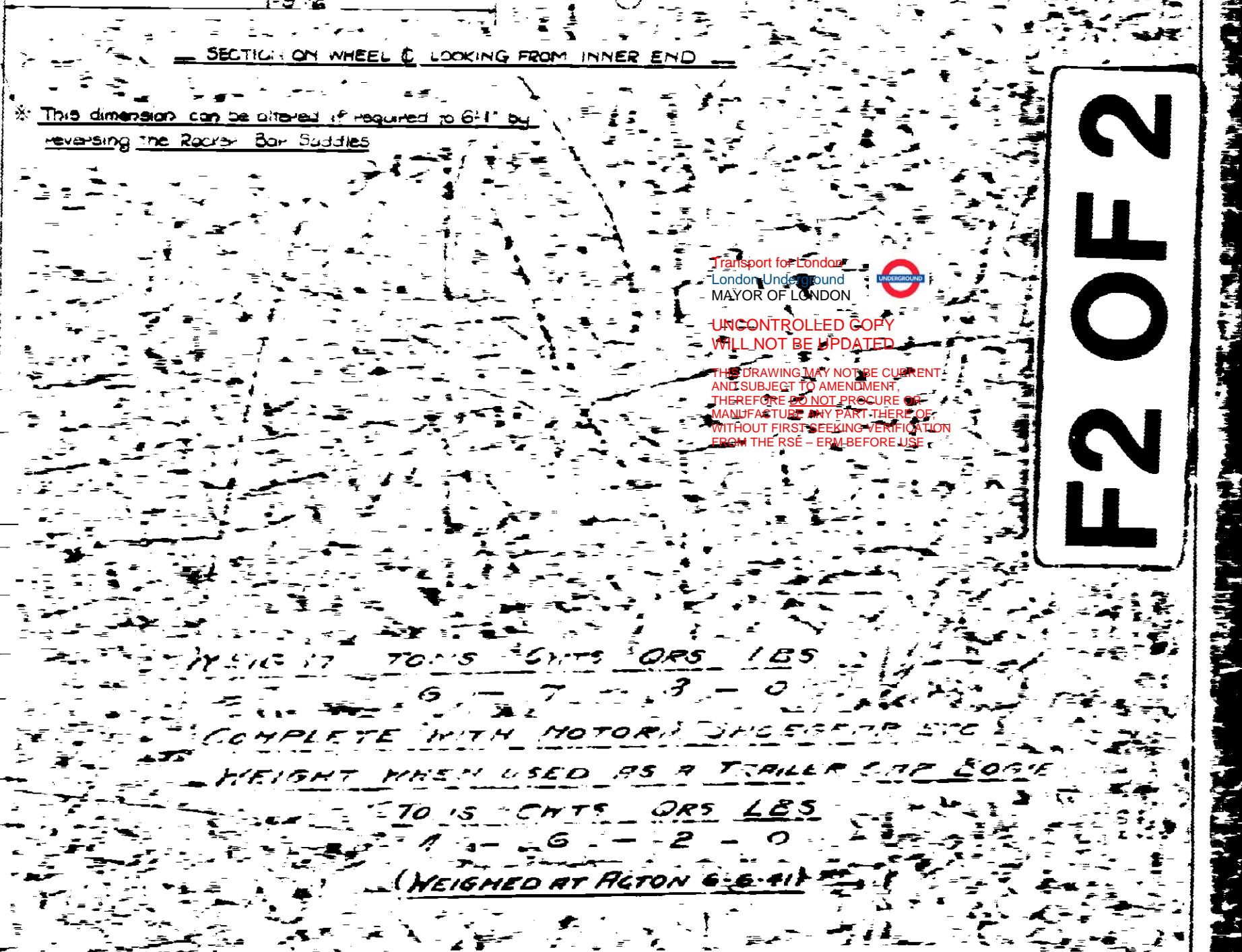
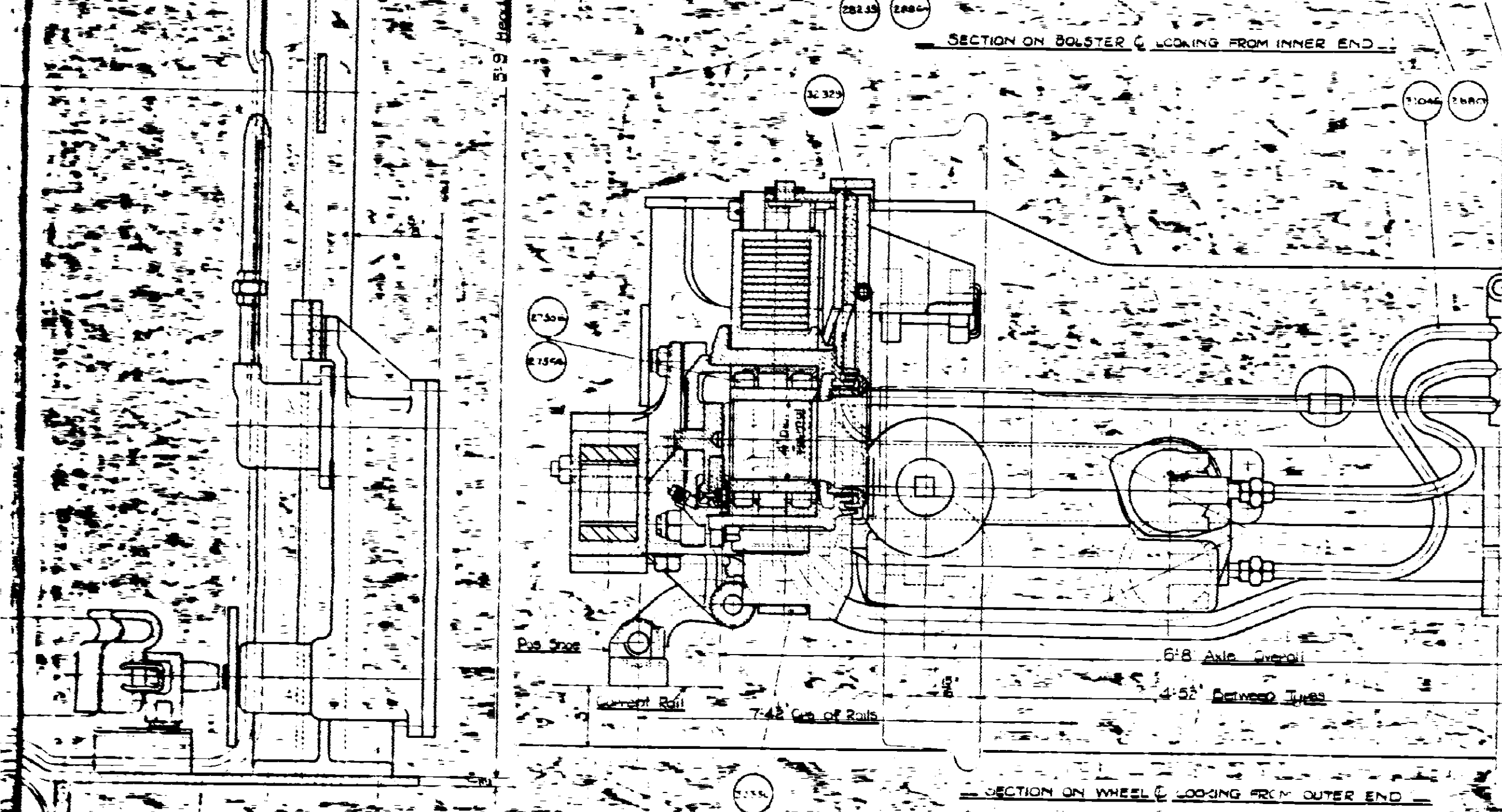
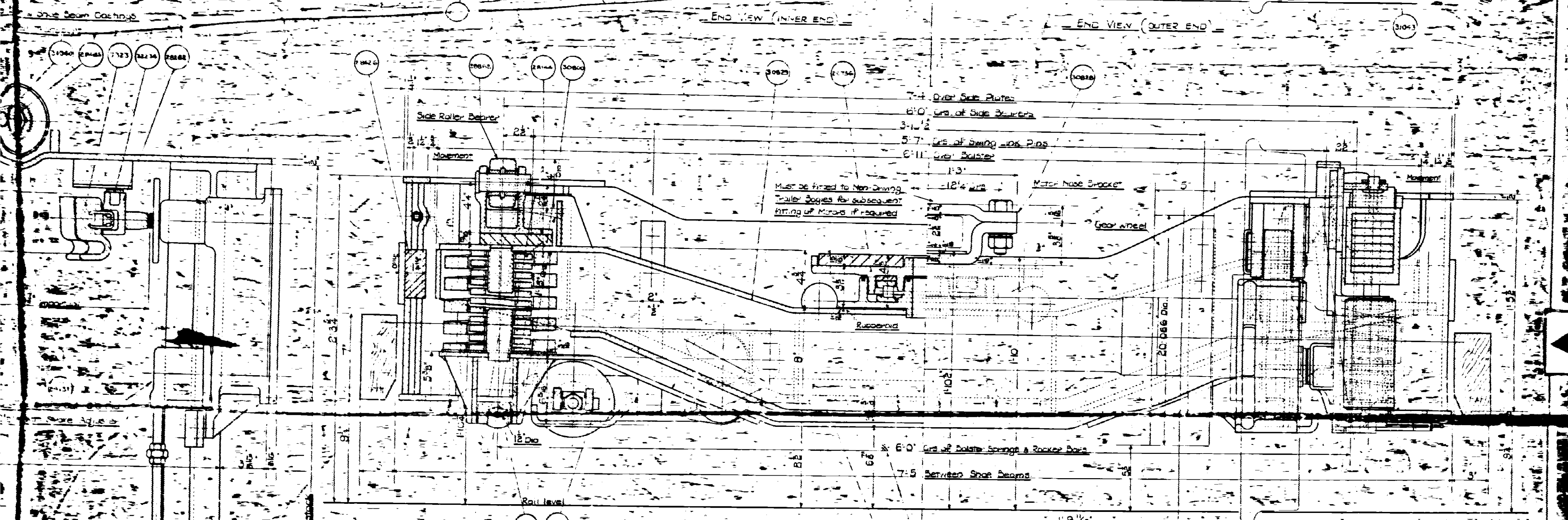
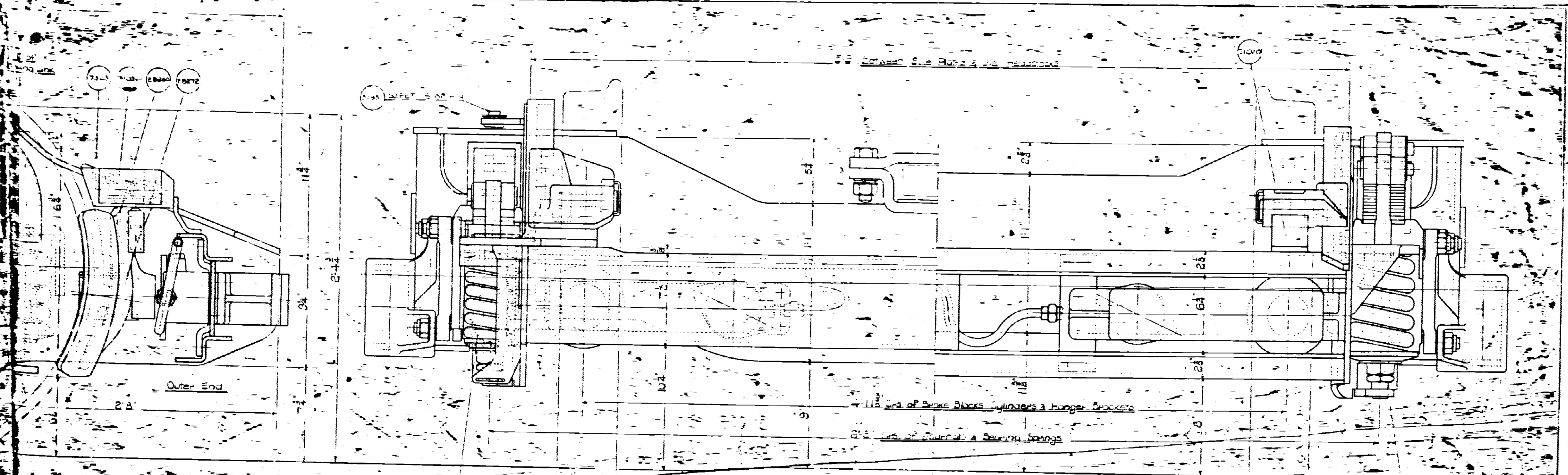
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**F2 OF 2**

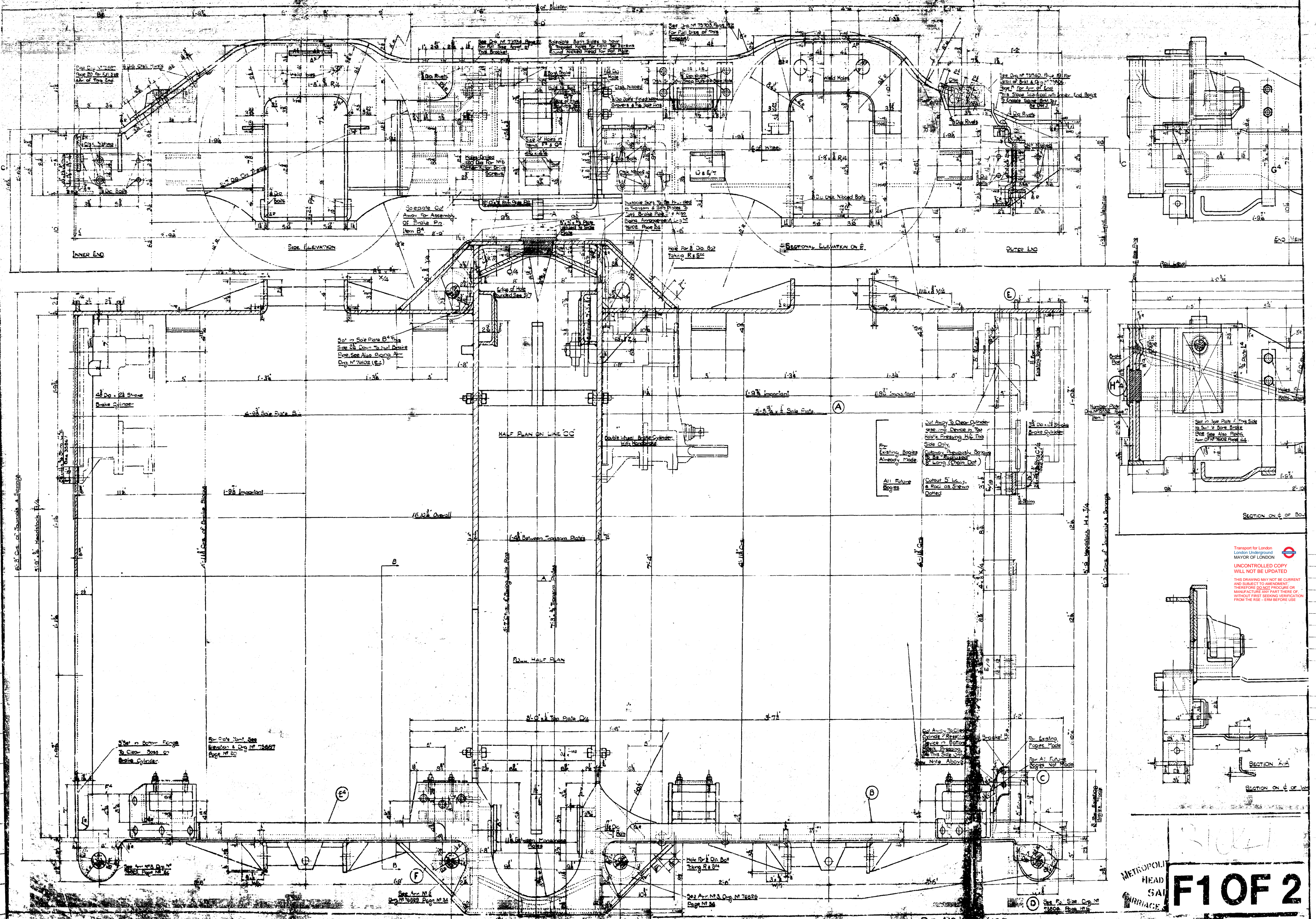
PATENT No 487617

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DRAWER No OFFICE 22	FILING ROOM	1826 TUBE STOCK CLASS OF STOCK	MODIFICATIONS	SCALE THREE INCHES TO THE FOOT	LONDON PASSENGER TRANSPORT BOARD
					CHIEF MECHL ENGINEERS OFFICE
					DRAWING No 28405
					DATE 7-11-38

X1E





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METROPOLITAN  
 HEAD  
 SAIL  
 CARRIAGE

**F1 OF 2**

**30X**

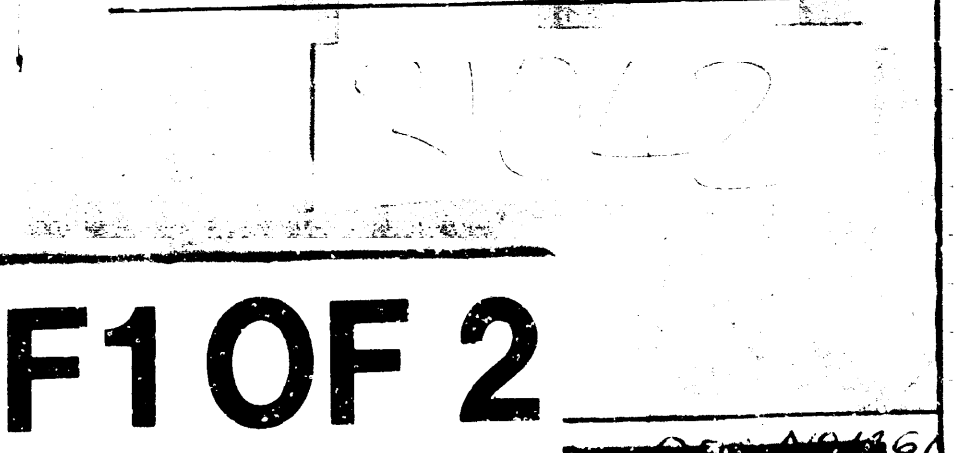
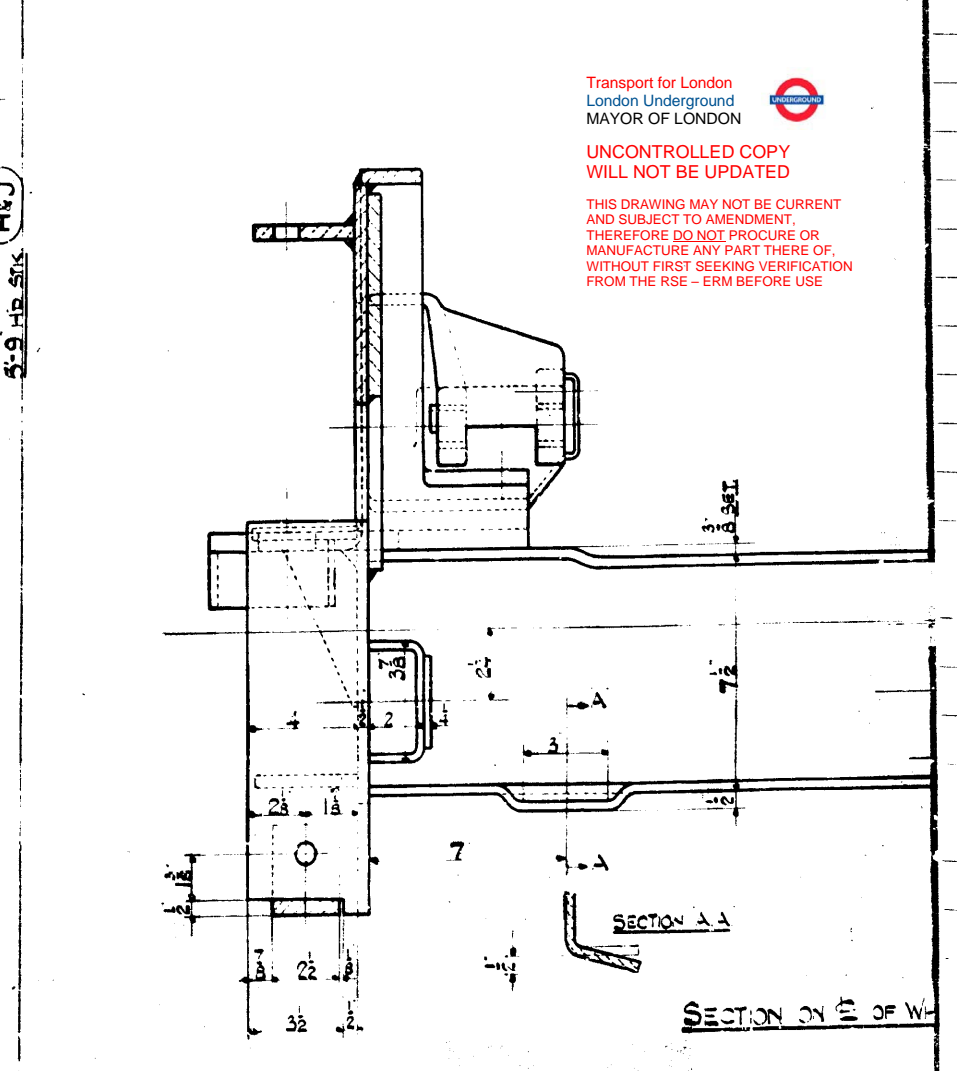
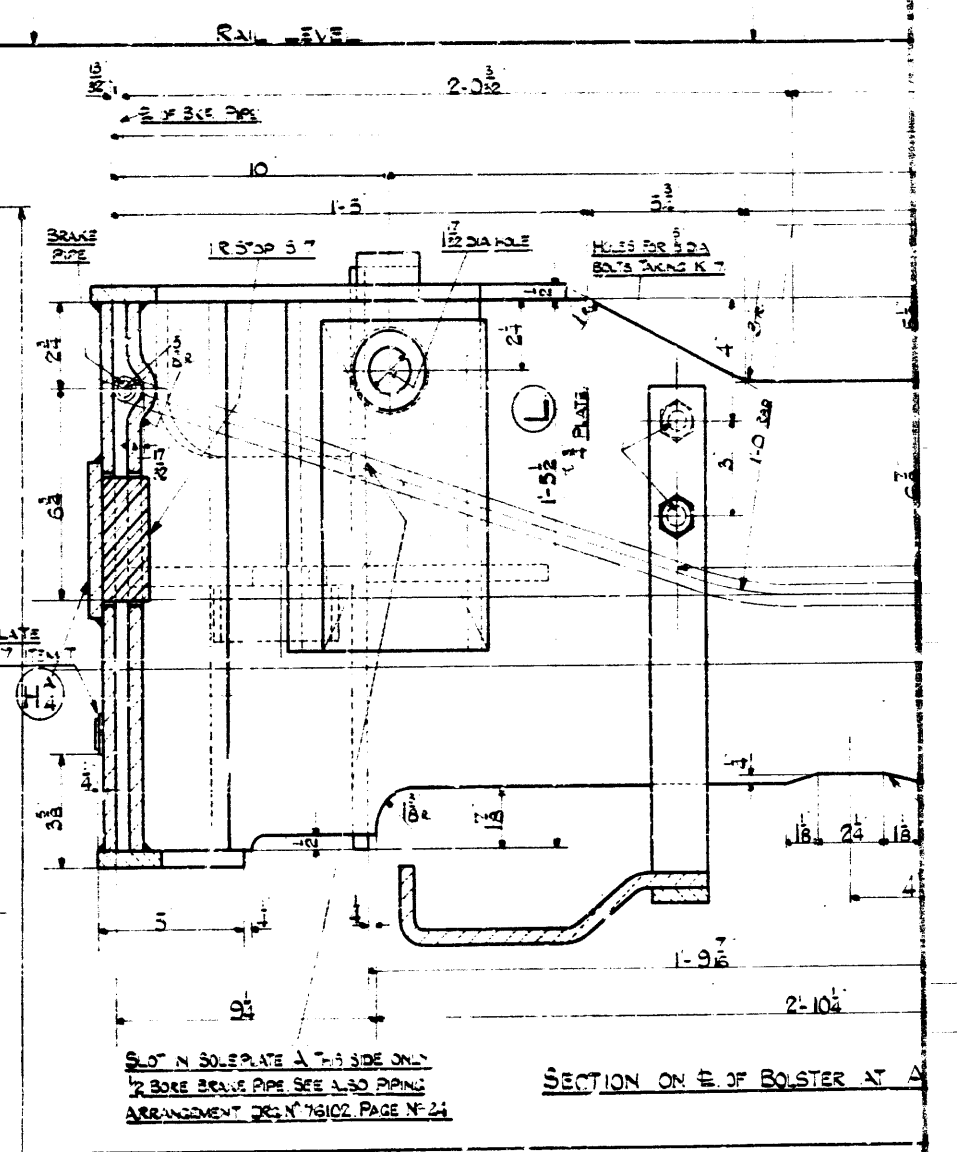
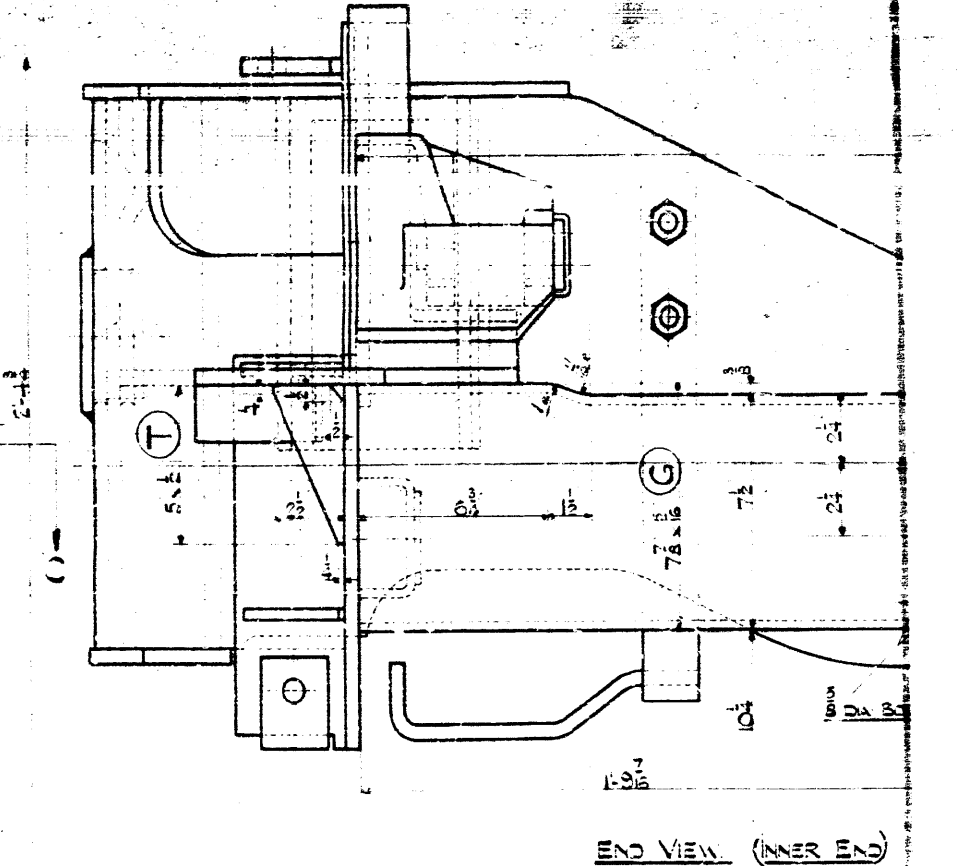
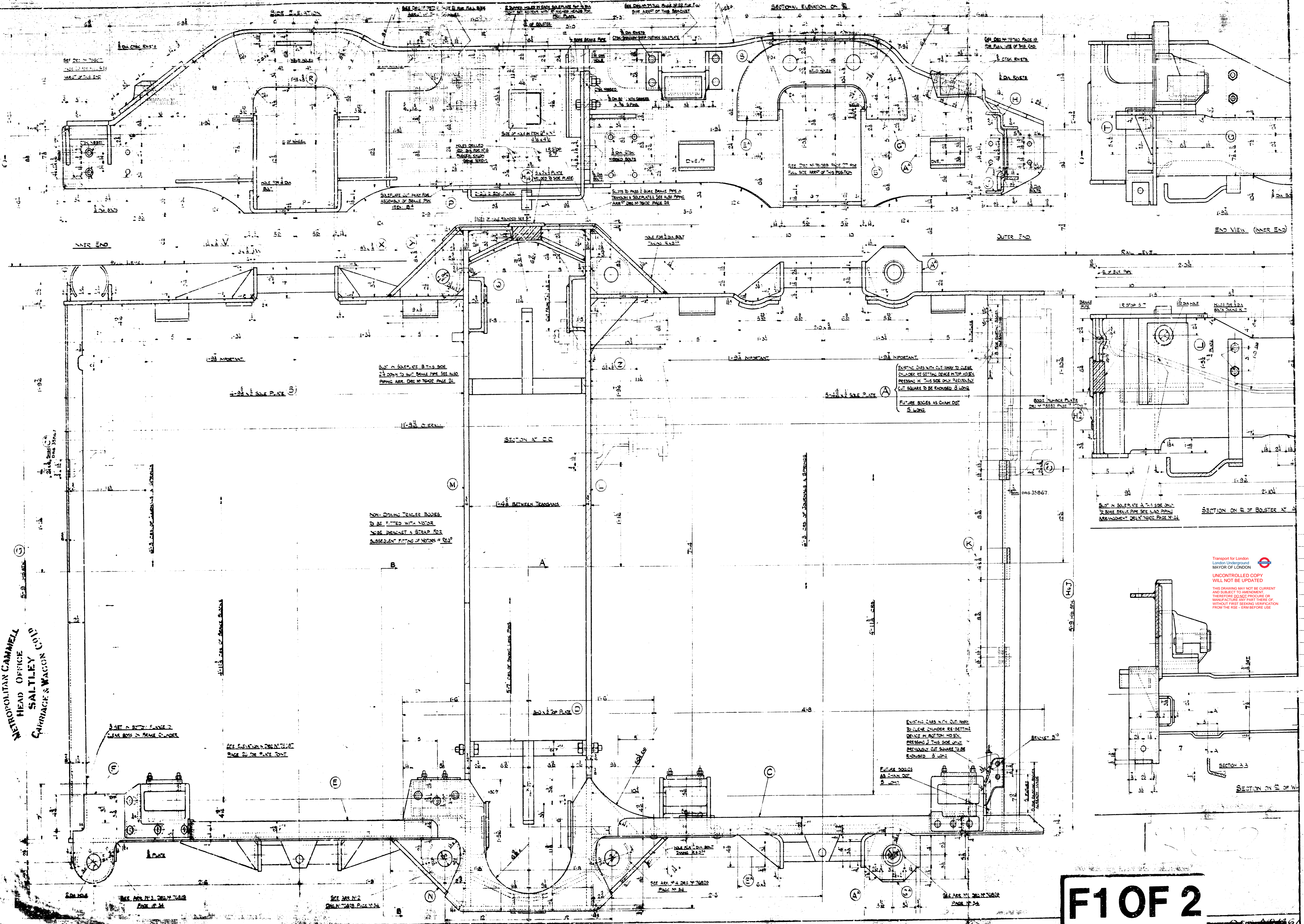
DR N2 1107







METROPOLITAN CAMELL  
HEAD OFFICE  
SALTLEY  
CARRIAGE & WAGON

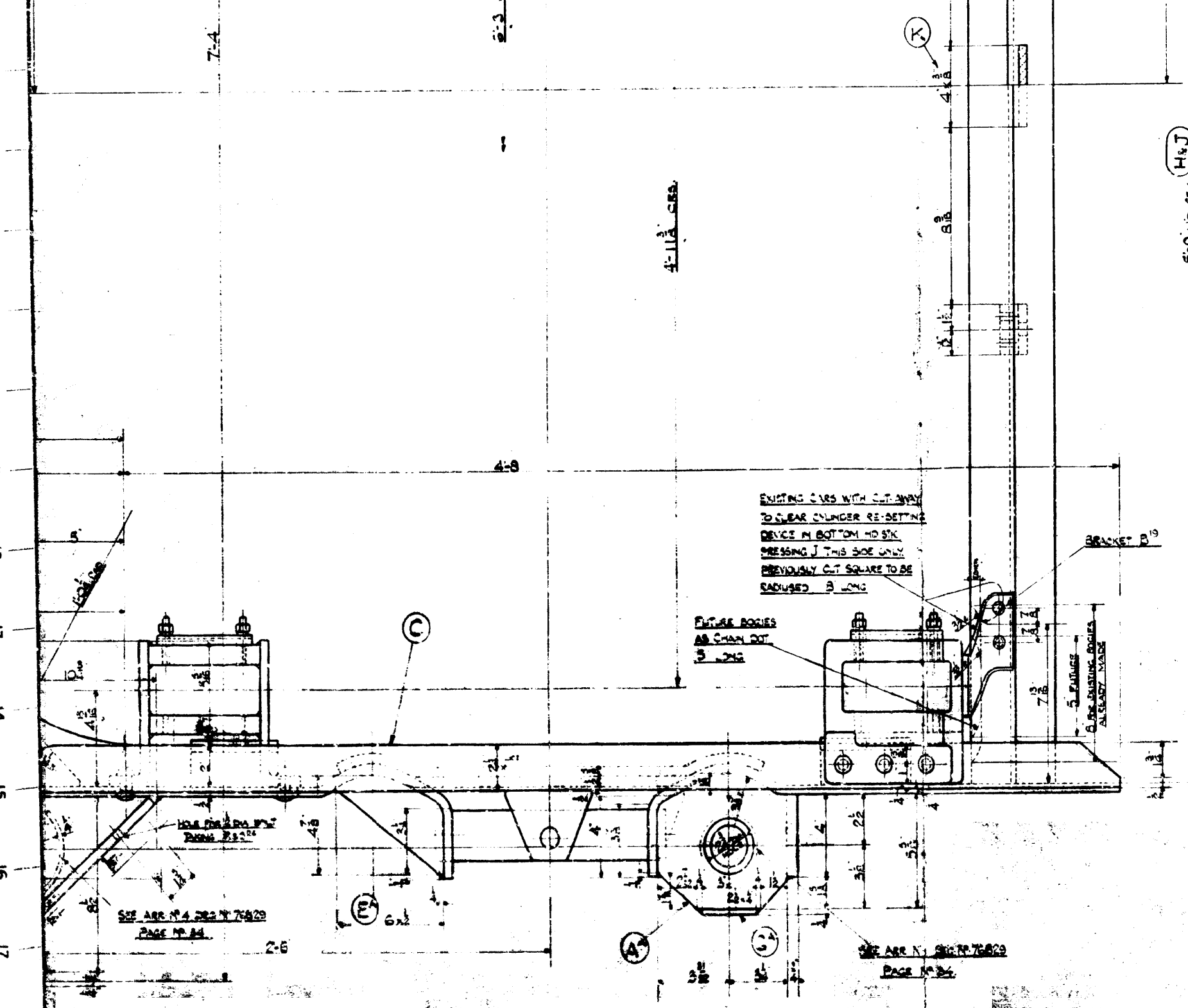
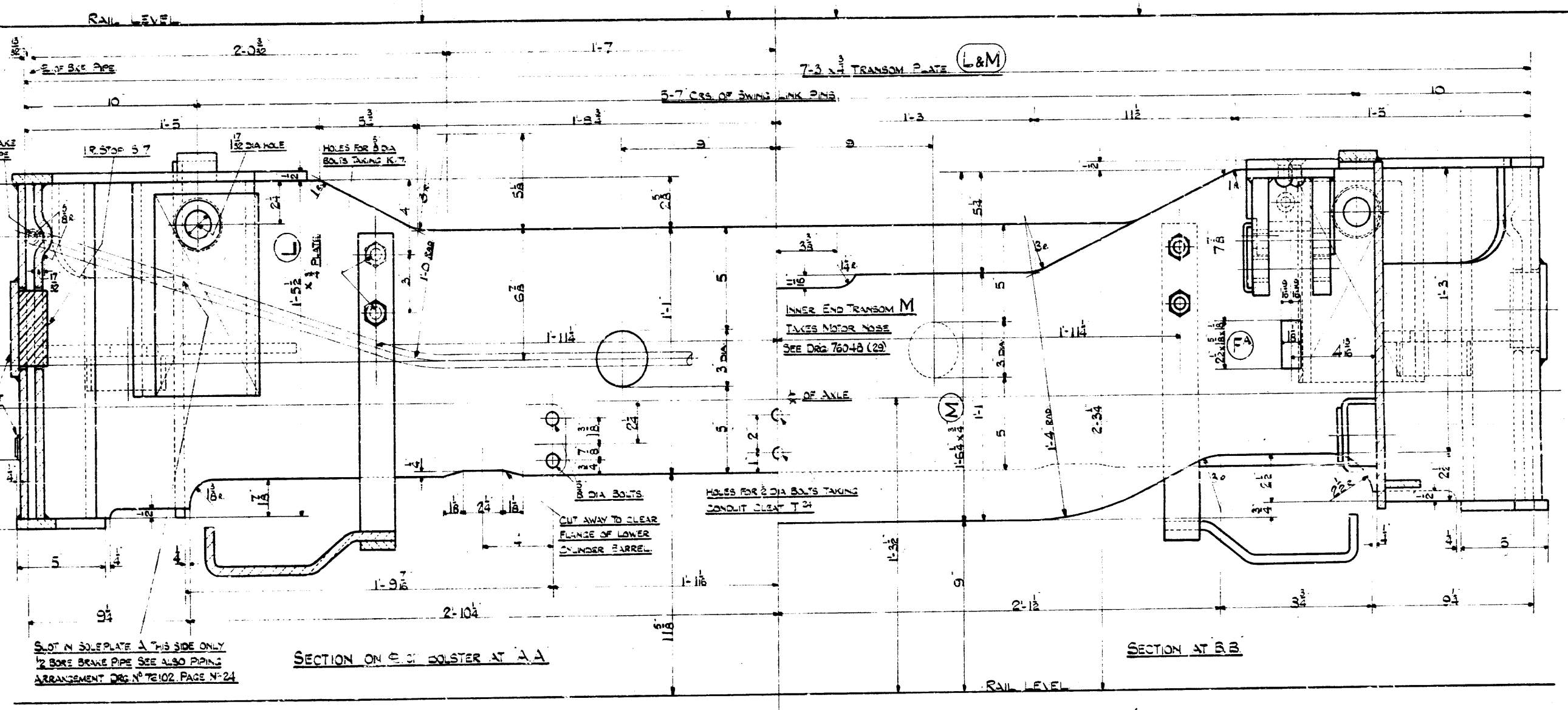
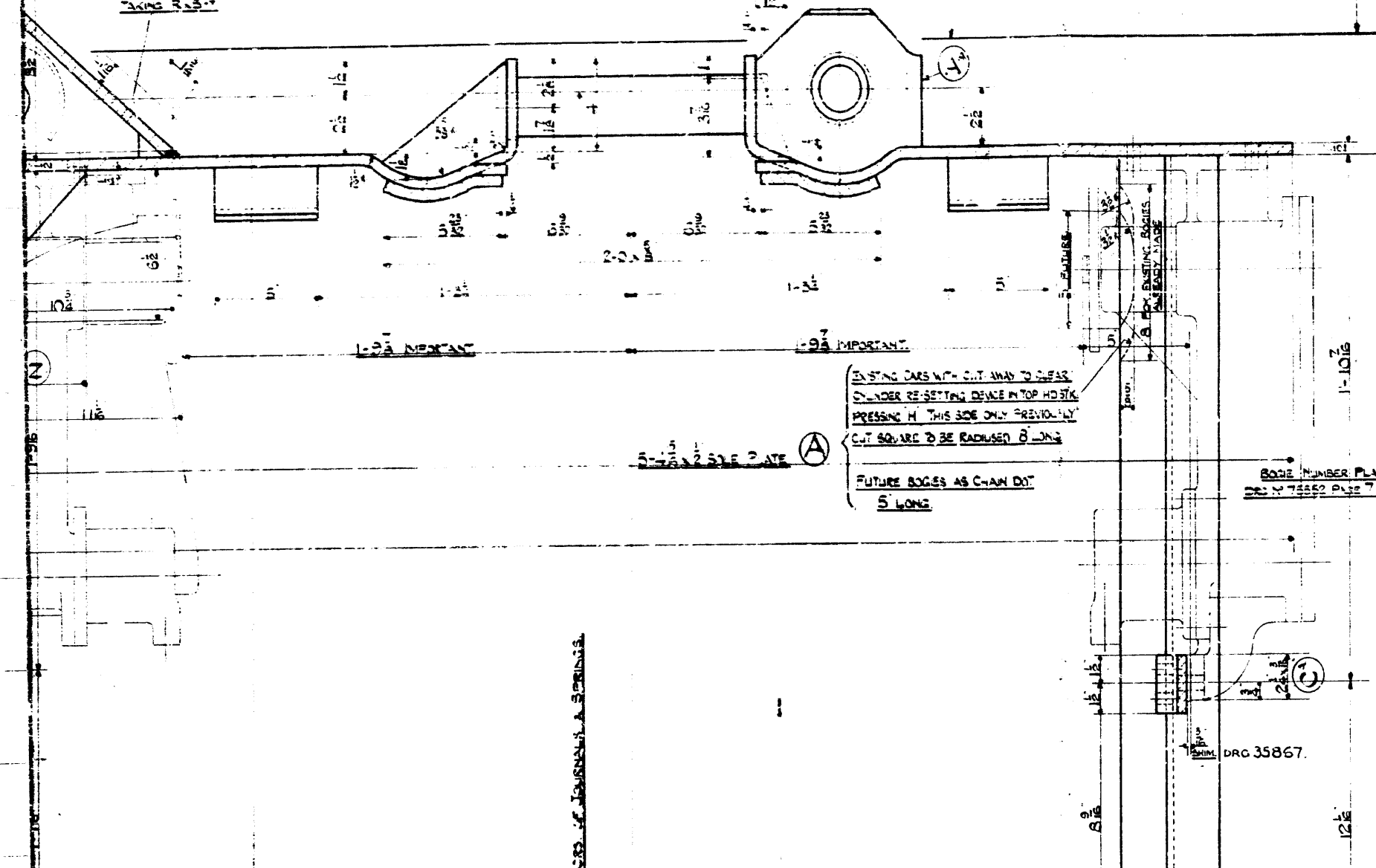
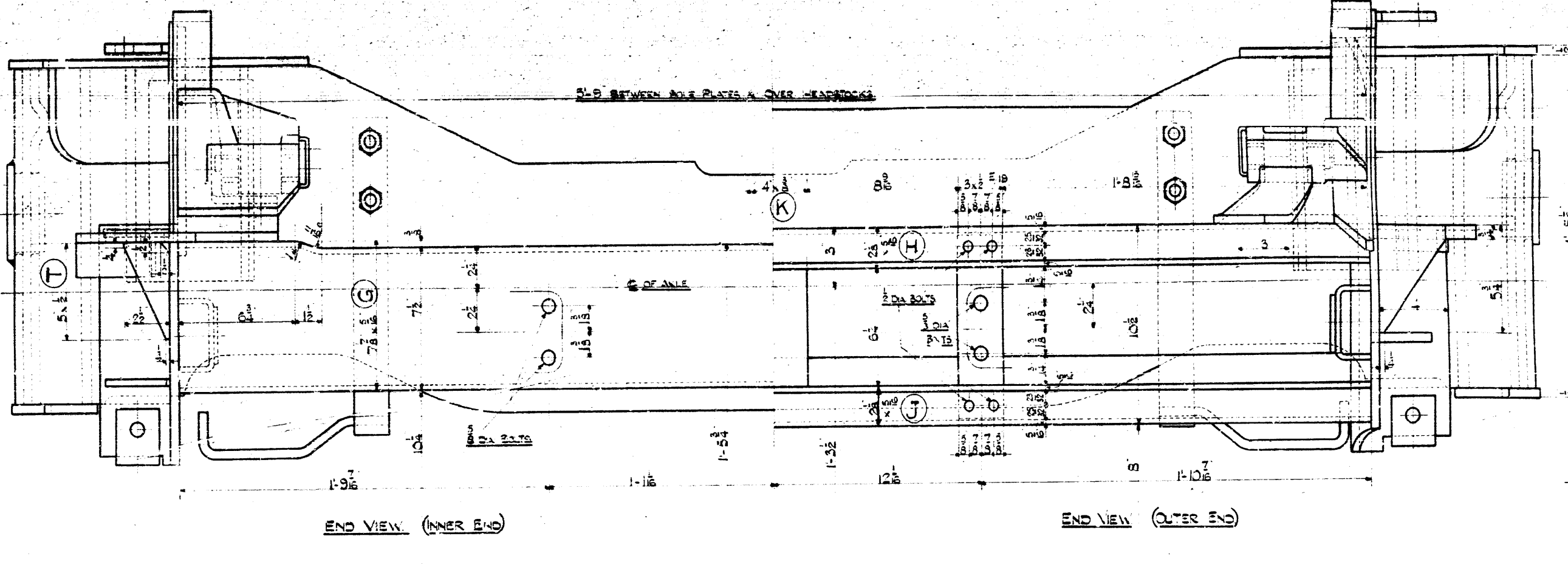
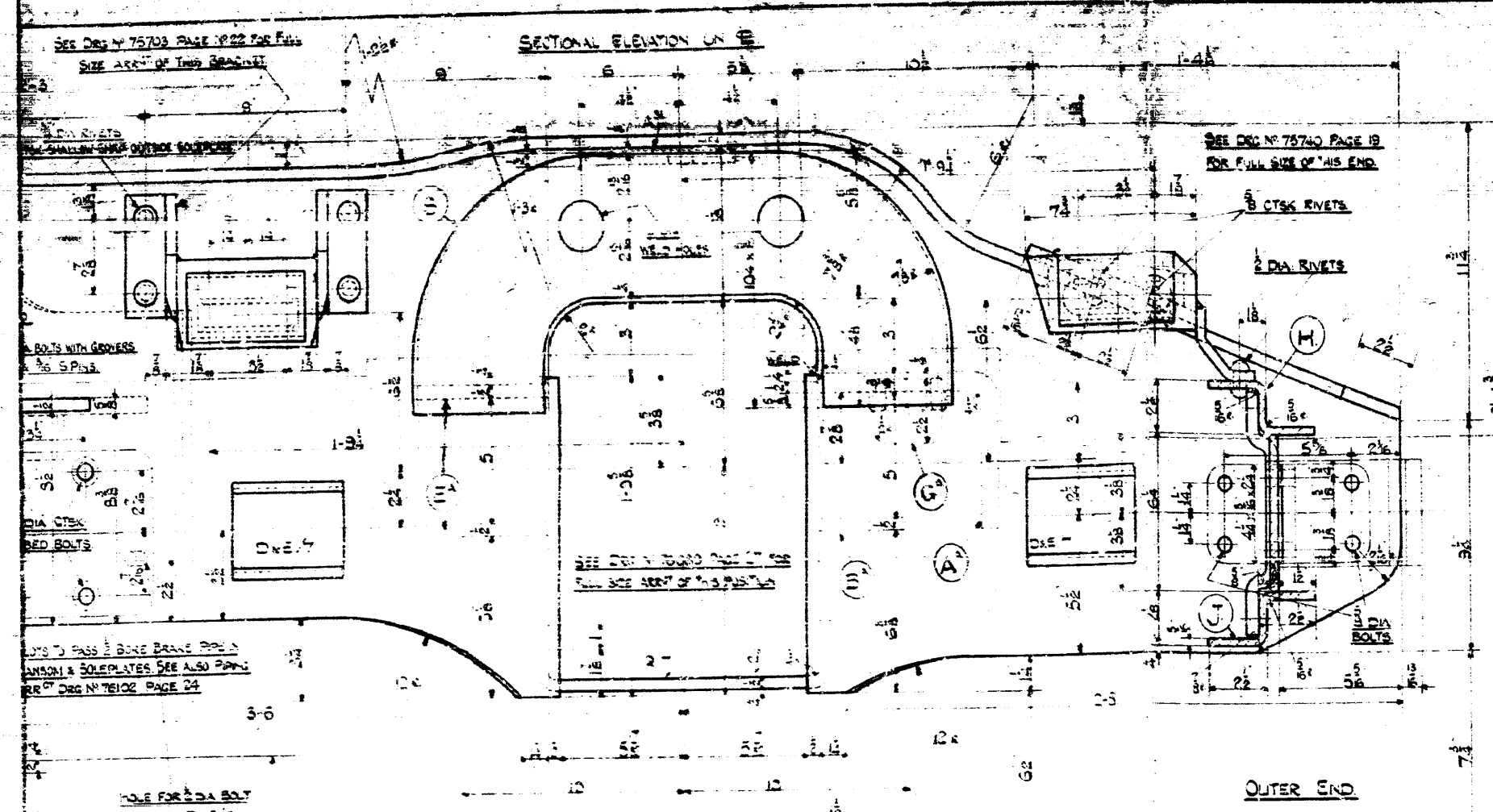


F1 OF 2  
30X

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London Underground  
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TOOL LIST				
ITEM	TYPE OF TOOL	TOOL OR MFG NO	ASSET NO	APPLN
1	PH GAUGE	5856 M	8/282	
2	WEIGHT	5856 M	8/282	
3	FILE	5856 M	8/282	
4	BOTTOM	501 TL	BU1660	
5		501 TL	BU1661	



REF	DESCRIPTION	QTY	MATERIAL	REMARKS
1	SOLE PLATE OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
2	SOLE PLATE INNER END	2	2 1/2" x 1/2" x 1/8" MS	
3	TOP PLATE OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
4	AT BOLSTER	2	2 1/2" x 1/2" x 1/8" MS	
5	INNER END	2	2 1/2" x 1/2" x 1/8" MS	
6	FR	2	2 1/2" x 1/2" x 1/8" MS	
7	HEADSTOCK PRESSING	1	1 1/2" x 1/2" x 1/8" MS	
8	TOP PRESSING OUTER END	1	1 1/2" x 1/2" x 1/8" MS	
9	BTM	1	1 1/2" x 1/2" x 1/8" MS	COMPLETE HOSE
10	STIFFENER	1	1 1/2" x 1/2" x 1/8" MS	
11	TRANSOM PLATE OUTER END	1	1 1/2" x 1/2" x 1/8" MS	
12	TRANSOM PLATE INNER END	1	1 1/2" x 1/2" x 1/8" MS	
13	SOLE SIDE PLATE AT BOLSTER	2	2 1/2" x 1/2" x 1/8" MS	
14	TRANSOM SIDE PLATE	2	2 1/2" x 1/2" x 1/8" MS	
15	TRANSOM INNER PLATE	2	2 1/2" x 1/2" x 1/8" MS	
16	SOLE PLATE STIFFENER INNER END	4	2 1/2" x 1/2" x 1/8" MS	
17	OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
18	LAMINATED SPRING BRG AT OUTER END	4	4 1/2" x 1/2" x 1/8" MS	
19	ANGLEWARD STIFFENER RES INNER END	2	2 1/2" x 1/2" x 1/8" MS	
20	ANGLEWARD STIFFENER RES OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
21	ANGLEWARD STIFFENER OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
22	LAMINATED SPRING BRG AT TRANSOM	4	4 1/2" x 1/2" x 1/8" MS	
23	TRANSOM SOLE PLATE OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
24	SPRING BRACKET OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
25	ANGLEWARD STIFFENER OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
26	FRAME CYLINDER SHIM	4	4 1/2" x 1/2" x 1/8" MS	DRG 75061
27	ANGLEWARD STIFFENER OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
28	ANGLEWARD STIFFENER OUTER END	2	2 1/2" x 1/2" x 1/8" MS	
29	BRACE LEVER GUIDE ON TRANSOM	2	2 1/2" x 1/2" x 1/8" MS	
30	SPRING SAFETY PLATE	2	2 1/2" x 1/2" x 1/8" MS	
31	BOLSTER STOP PLATE	2	2 1/2" x 1/2" x 1/8" MS	

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**F2 OF 2**

FOR GENERAL LAYOUT OF BOGIE (INNER) SEE DRG NO. 28408  
FOR COMPLETE LIST OF DRAWING NO. 75697

**L. P. T. B.**  
1938 TUBE STOCK  
INNER BOGIE ARRANGEMENT  
INNER & OUTER BOGIE (DETAILS)  
ARRGT & DETAILS OF BOGIE FRAME  
SCALE 3 INCHES TO FOOT  
DRG. NO. 75697

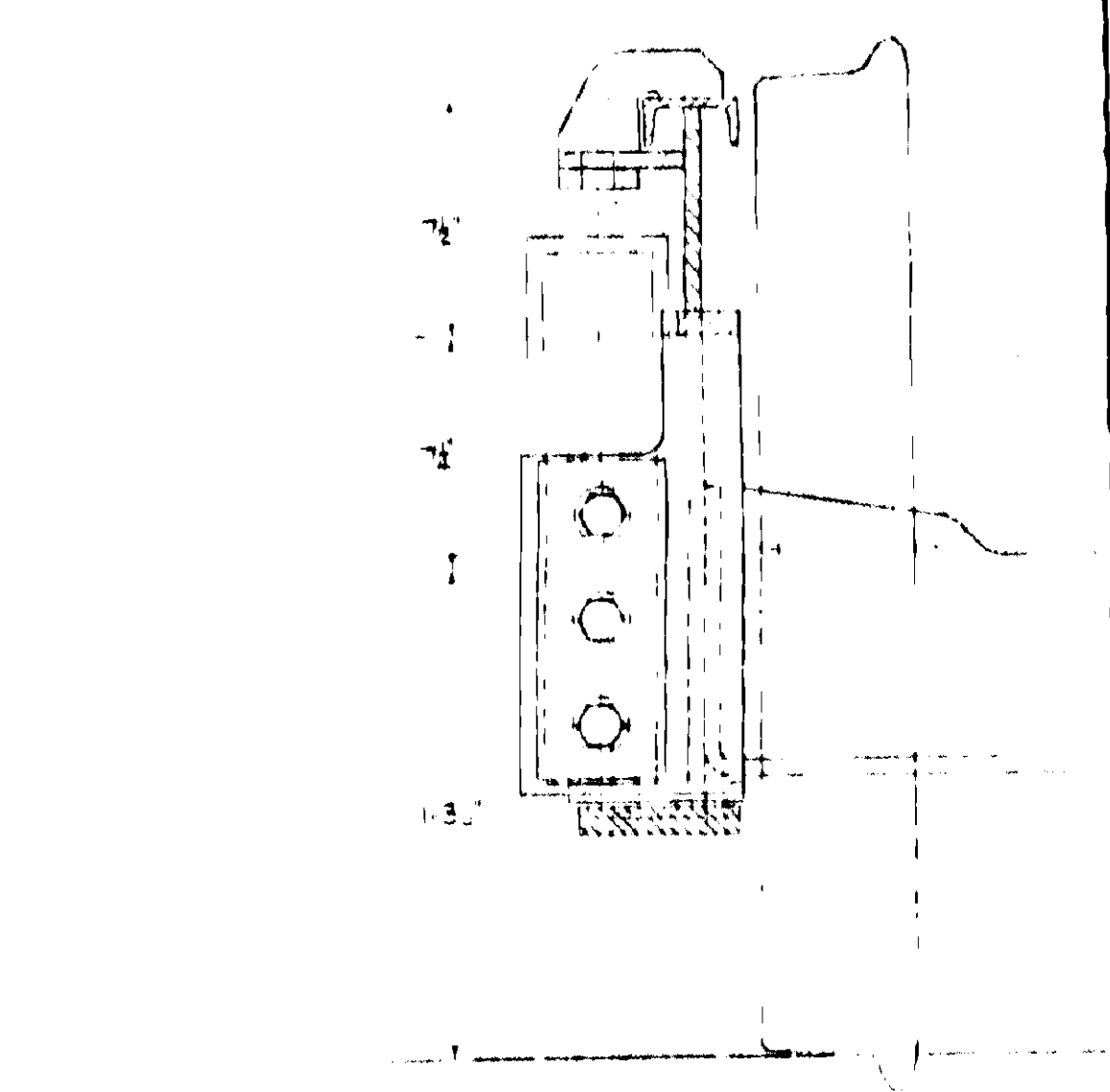
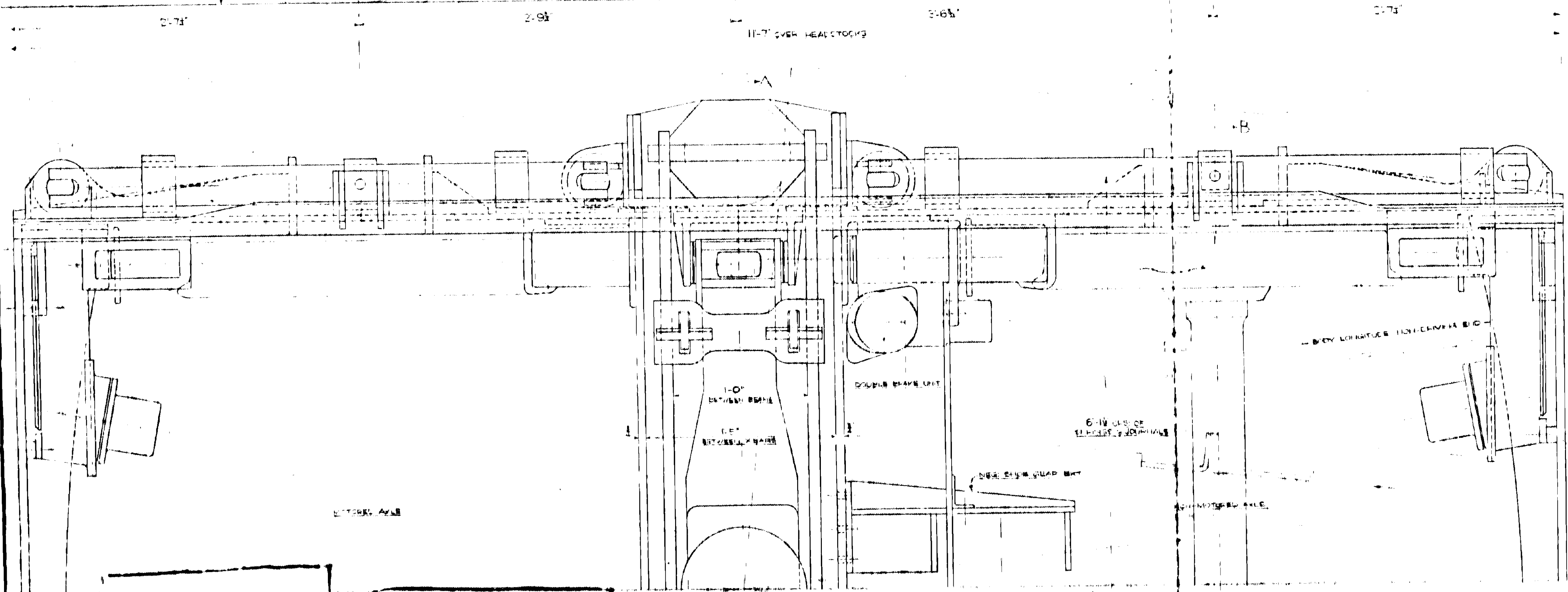
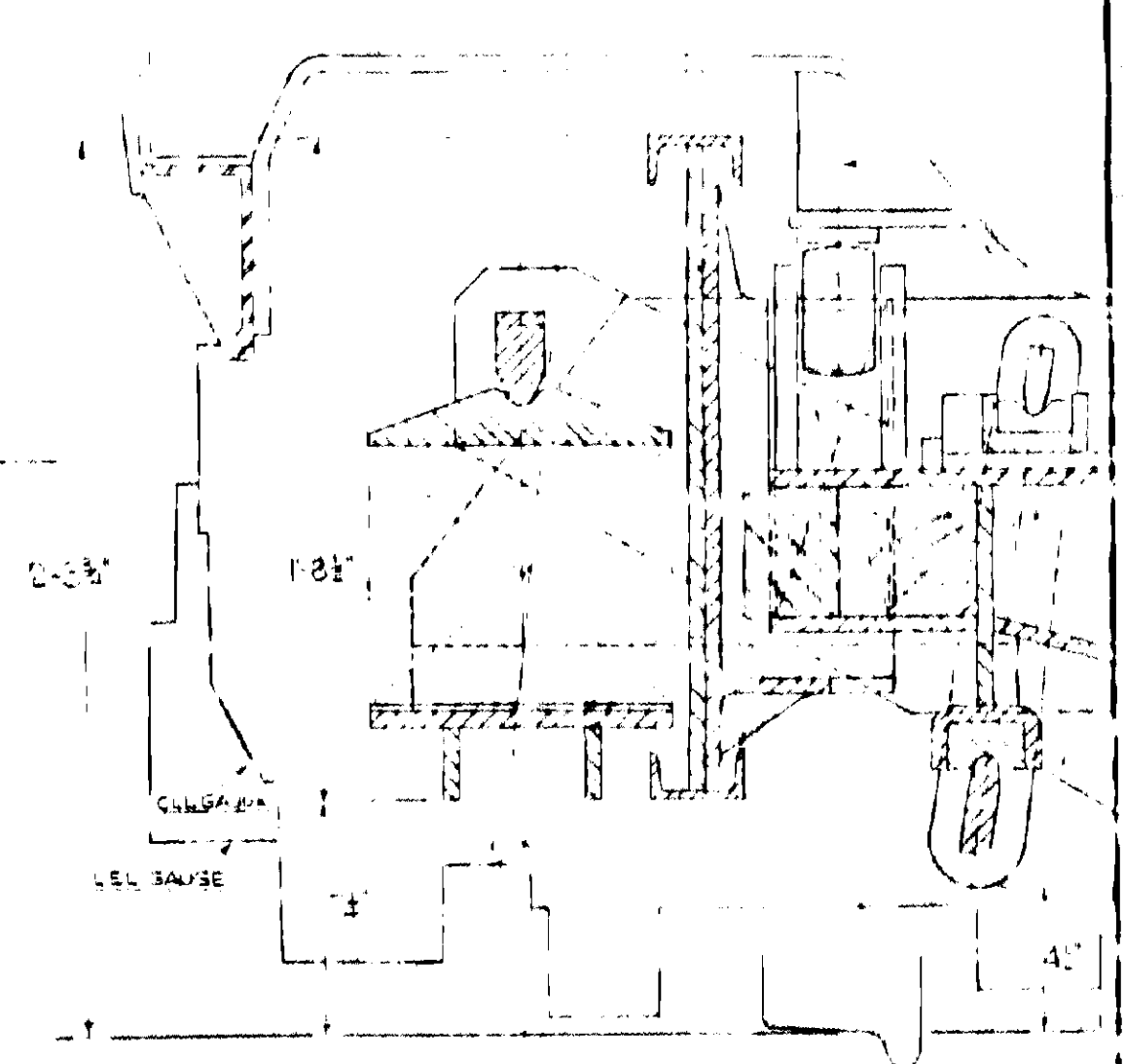
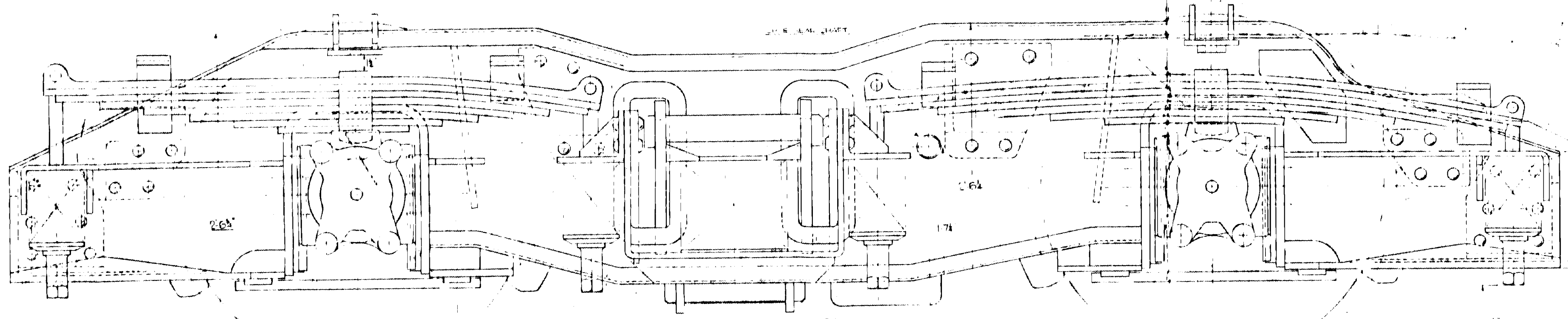
PROVISIONAL PATENT NO 5770/37  
PATENT NO 45767

FOILED  
CARE MUST BE TAKEN TO PREVENT  
DAMAGE TO ORIGINAL DRAWING  
BY ENTRY TO OR DUPLICATION

**30X**

DR. NO 146/107





34832

F1 OF 2

ARRGT. OF BOGIE  
@38 TURE - MK1, STOCK.

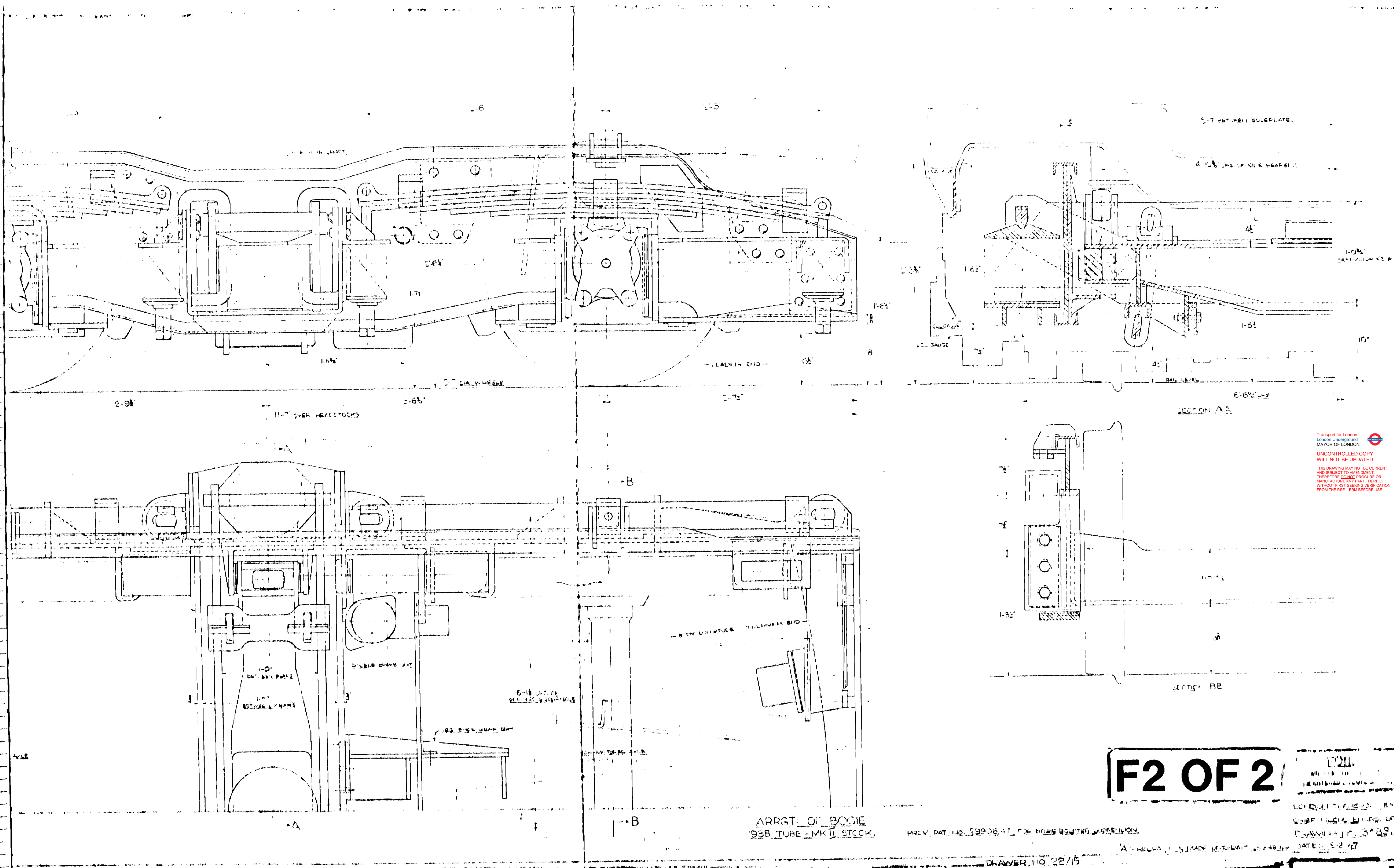
PREV. PAT. NO. 29909 AT FOR BOGIE 42/10/11/12/13/14/15/16/17/18/19/20/21/22/23/24/25/26/27/28/29/30/31/32/33/34/35/36/37/38/39/40/41/42/43/44/45/46/47/48/49/50

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N.M.C.

N.M.C.



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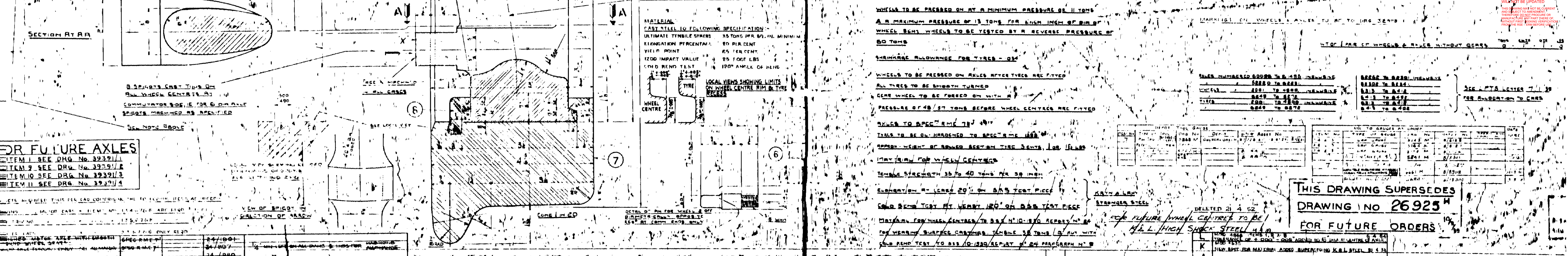
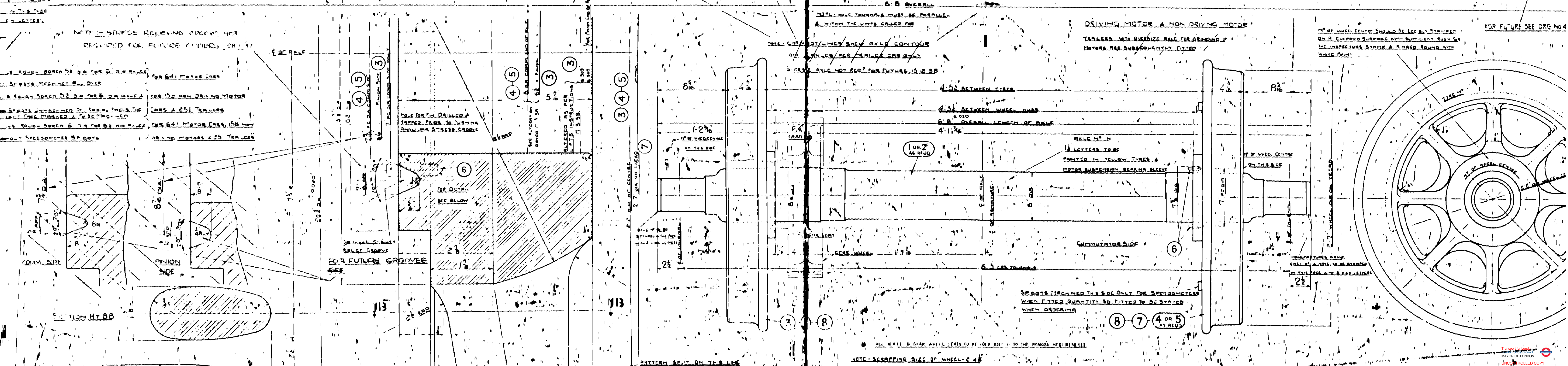
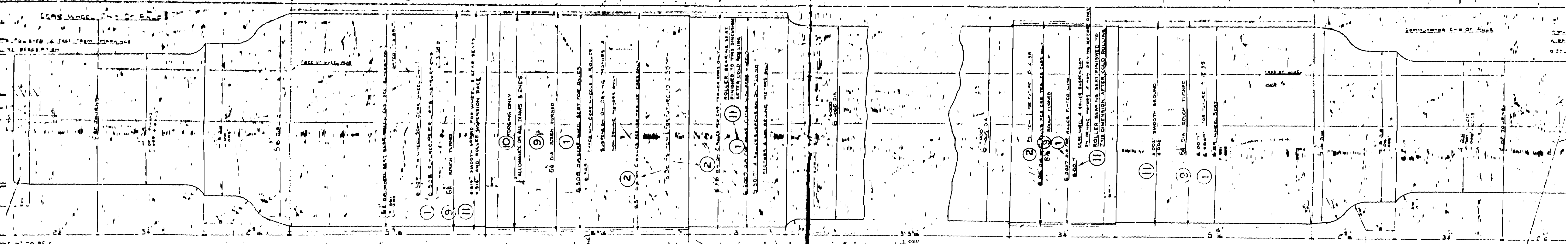
**F2 OF 2**

ARRGT. OF BOGIE  
 1938 TUBE - MK II STOCK.  
 PROV. PAT. NO. 19906/47 FOR BOGIE BOWLING SUPERVISION.

DRAWER NO. 22/15

1947  
 LONDON TRANSPORT BOARD  
 SHEET NO. 1001/1002 OF 1001  
 DRAWING NO. 1001/1002  
 DATE 1947





REV.	DATE	DESCRIPTION
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100	14/10/37	ISSUED FOR WORK

**WHEEL & AXLE (MOTOR E 12)**  
**F1 OF 2**  
 (PAGE FOR 1938 TUBE STOCK)

**F1 OF 2**

DRAWER NO. 16  
 OFFICE 16

THIS DRAWING SUPERSEDES  
 DRAWING No 26925  
 FOR FUTURE ORDERS

LONDON PASSENGER TRAN  
 CHIEF MECH. ENGINEER

DRAWING No 25

DATE 16-2-39

30X







WHEEL SEATS TO BE COLD ROLLED TO THE L.P.T.B.S. REQUIREMENTS

MANUFACTURERS NAME  
CAST NO. & DATE TO BE STAMPED IN THIS FACE WITH 3 HIGH LETTERS

AXLE NO. TO BE STAMPED IN THIS FACE WITH 4 HIGH LETTERS

6-28 SMOOTH TURNED

ETCHED LINE VV2 W & W2 WHEEL HUB

4-32 SMOOTH TURNED

NOTE: STRESS RELIEVING GROOVE NOT REQUIRED FOR FUTURE ORDERS 28.1.47

MANUFACTURERS NAME  
CAST NO. & DATE TO BE STAMPED IN THIS FACE WITH 3 HIGH LETTERS

AXLE NO. TO BE STAMPED IN THIS FACE WITH 4 HIGH LETTERS

NO. OF SOLID WHEELS ON THIS SIDE

AXLE NO.

TO BE PAINTED ON WITH 1/2" STRIPS IN YELLOW

4-32 SMOOTH TURNED

6'-8" OVERALL LENGTH OF AXLE +.020

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NOTE: ITEMS 6 FORGING ENDED AND CENTRED WITH MAX ALLOWANCE ABOVE FINISHED SIZES OF 1/8 ON DIA. OF WHEEL SEATS & JOURNALS & 1/16 ON DIA. OF MIDDLE BETWEEN WHEEL SEATS & WITH MAX. ALLOWANCE OF 1/8 ON OVERALL LENGTH.

NOTE: ALL WHEEL SEATS COLD ROLLED TO THE BOARD'S REQUIREMENTS WHEELS TO BE PRESSED ON AT A MINIMUM PRESSURE OF 10 TONS AND A MAXIMUM PRESSURE OF 12 TONS FOR EACH INCH DIA. OF WHEEL SEAT WHEELS TO BE TESTED BY A REVERSE PRESSURE OF 45 TONS ALL TREADS TO BE SMOOTH TURNED AXLES MUST BE PARALLEL AND WITHIN THE LIMITS CALLED FOR AXLE TO SPEC. R.M.S. 78 SCRAPING OF WHEEL 2-42 2-42 WHEELS TO BE SPECIFICATION 'D' REVISOR MARKINGS WHEELS & AXLE TO BE TO DRG. 32264

1938 TUBE STOCK

	AXLES NUMBERED	WHEELS
BIRMINGHAM CARR.	81400 TO 82099 INCLUSIVE	82136 TO 82155
	82246 TO 82265	
METRO	80,000 TO 81,370 INCLUSIVE	82124 TO 82135
	8110 TO 8209	82110 TO 82120
	10358 TO 10381	10358 TO 10381

FOR FUTURE REPLACEMENTS FOR ITEM 2 USE D.C. 35307, S.F.E. D.M. 20955

FOR FUTURE REPLACEMENTS FOR ITEM 1 USE D.M. 16715

**F1 OF 2** 32264

NON-DRIVING WHEELS & AXLE (RE-TYRING TYPE SOLID WHEEL)  
1938 TUBE STOCK BOGIE  
TYPES V V2 W & W2 BOGIES - AXLE

ITEM	DESCRIPTION	SPECIFICATION	DATE	BY	REVISION
6	AXLE FORGING ENDED AND CENTRED	SPEC. R.M.S. 78	24/8/19	WILE DRG. 32264	
5	AXLE WITH SMOOTH TURNED WHEEL SEATS	SPEC. R.M.S. 78	24/8/19	VV2 W & W2	
4	AXLE WITH SMOOTH TURNED WHEEL SEATS	SPEC. R.M.S. 78	24/8/19	1938 TUBE	
3	AXLE WITH SMOOTH TURNED WHEEL SEATS	SPEC. R.M.S. 78	4/2/1922		
2	AXLE WITH SMOOTH TURNED WHEEL SEATS	SPEC. R.M.S. 78	24/8/19		
1	AXLE WITH SMOOTH TURNED WHEEL SEATS	SPEC. R.M.S. 78	24/8/19		

REV.	DESCRIPTION	DATE	BY
K	MOD. 8818 NOTE ADDED RE-LATHE CENTRES FOR		
J	MOD. 8818 LIMITS ADDED TO TURNING CENTRES		
H	MOD. 8818 DIA INCREASED TO 2-42		
G	MOD. 8818 DIA INCREASED TO 2-42		
F	MOD. 8711 KEAD ON THE WHEELS 3/16" DIA. 1/16" DIA.		
E	MOD. 8711 JOURNAL DIA. WAS 4-2 8/16		
D	MOD. 8711 JOURNAL DIA. WAS 4-2 8/16		
C	MOD. 8711 JOURNAL DIA. WAS 4-2 8/16		
B	MOD. 8711 JOURNAL DIA. WAS 4-2 8/16		
A	MOD. 8711 JOURNAL DIA. WAS 4-2 8/16		

30X



