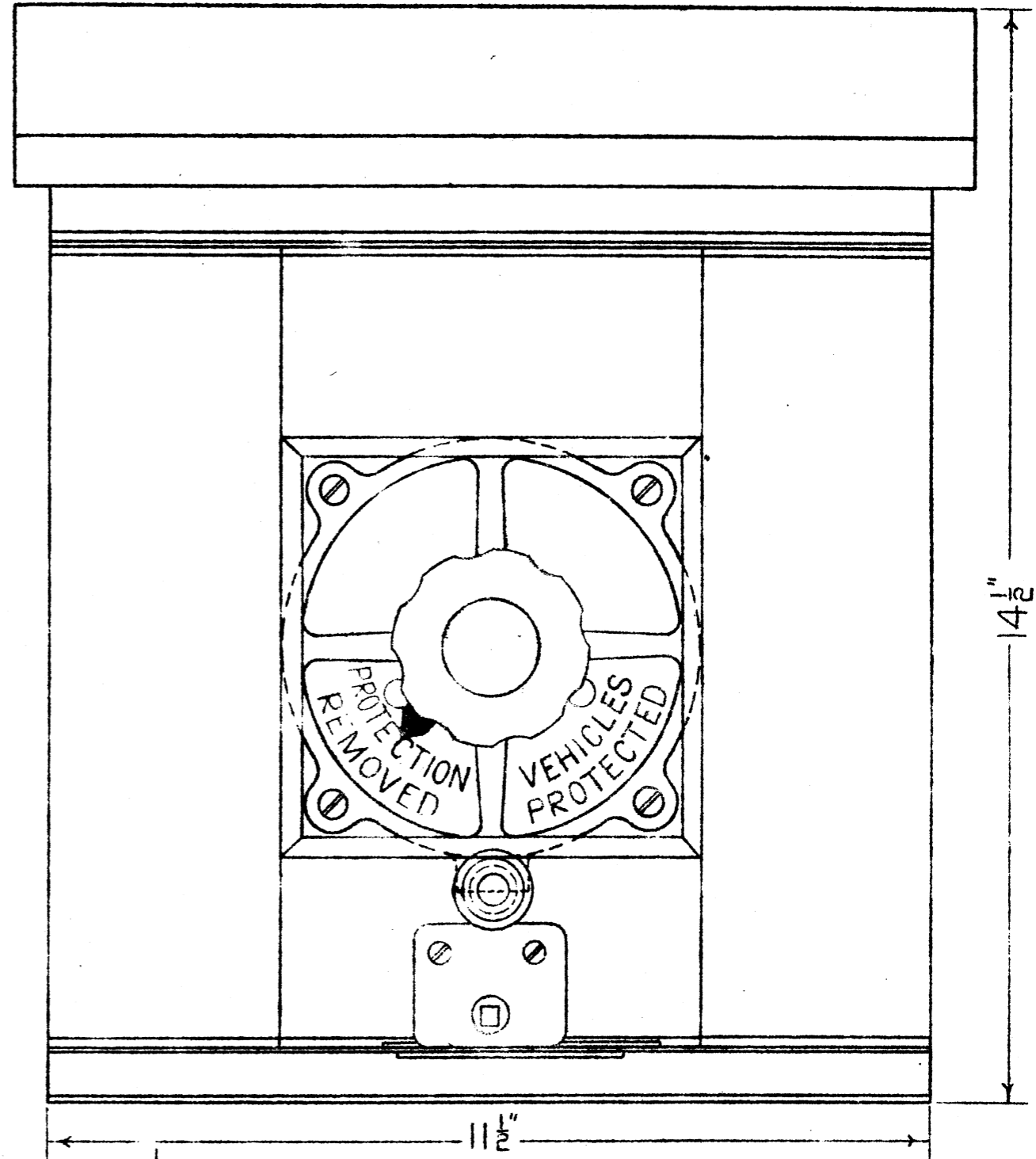
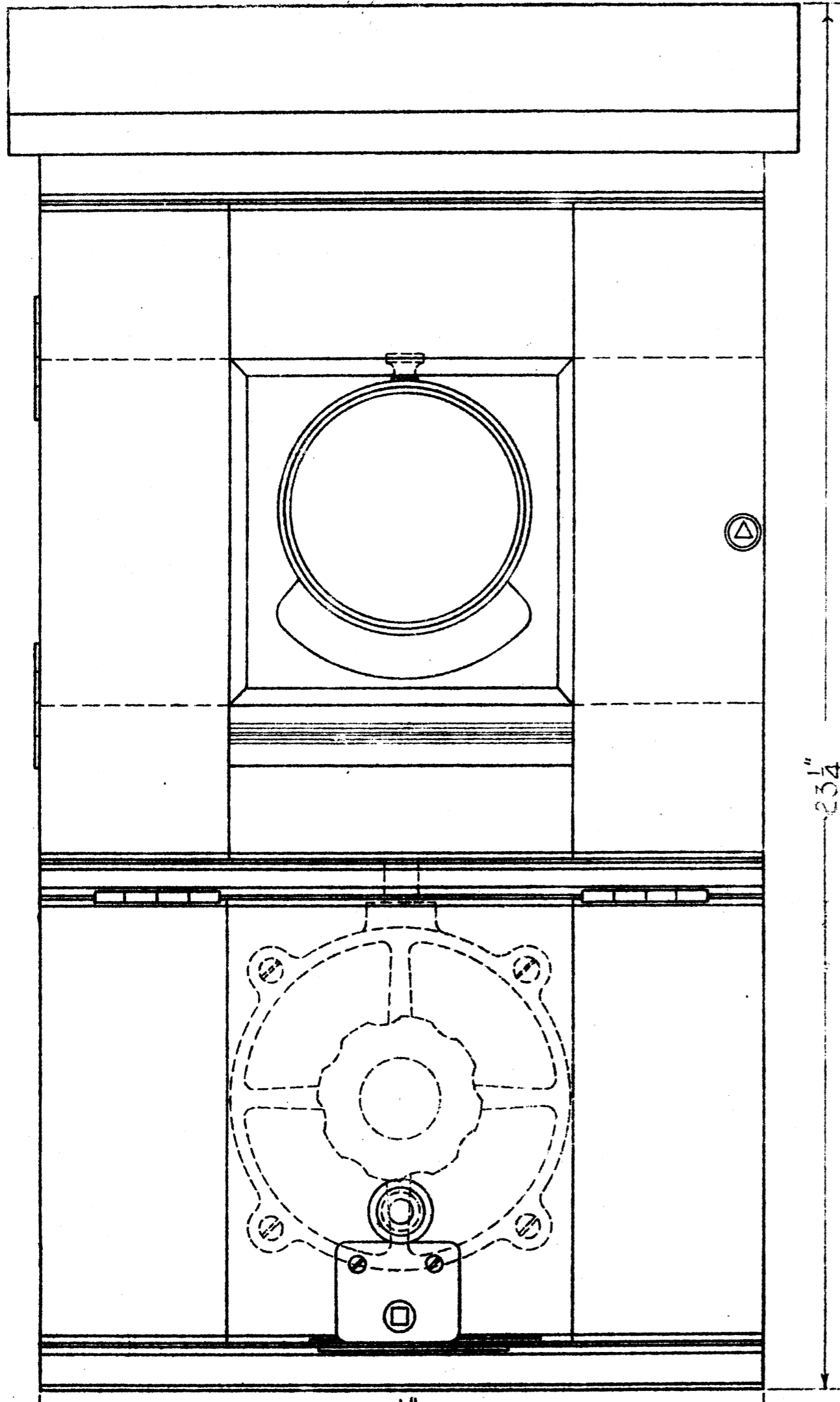


**L.M. & S. A.**  
 SIGNAL & TELEGRAPH  
 14 JAN 1947  
 ENGINEER'S OFFICE,  
 D. O.  
 EUSTON



23 1/4"

14 1/2"

11 1/2"

CUPBOARDS 7" DEEP (OUTSIDE)

CUPBOARD N°1. T.D.37047. CAT. N°38/70005.  
 TO HOLD 1 V.O.L. SWITCH 28. CAT. N°62/3192.

CUPBOARD N°2. T.D.37060. CAT. N°38/70006.  
 TO HOLD 1 V.O.L. SWITCH 27. CAT. N°62/3191, & 1 IND. N°220.

EXAMINED BY	
INDOOR ASST	
ELECTRICAL "	
MATERIALS "	

DRAWN BY	FAC
TRACED BY	PH
CHECKED BY	FAC

**V.O.L. CUPBOARDS.**  
 SCALE: HALF FULL SIZE.

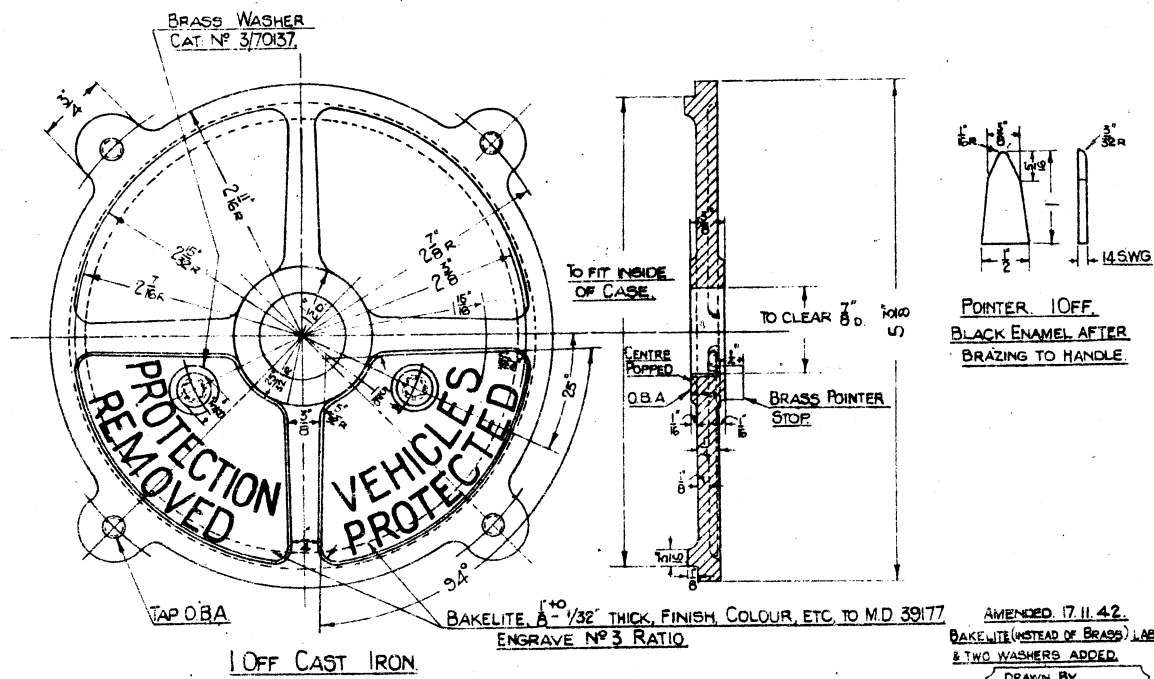
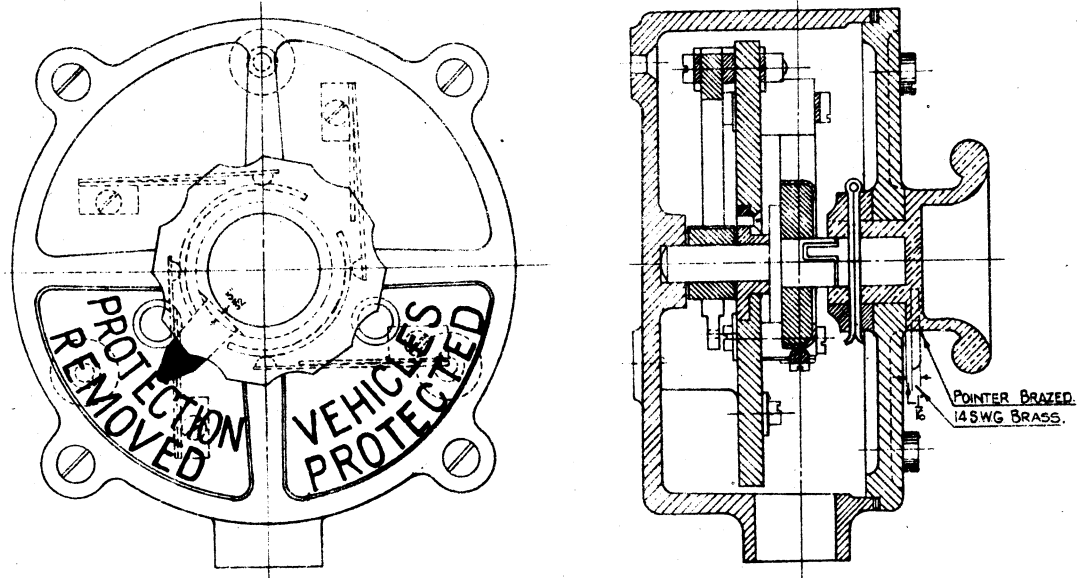
L.M.S. RAILWAY COMPANY  
 SIGNAL & TELEGRAPH ENG<sup>S</sup>  
 OFFICE, EUSTON, L.M.S.I.  
 PLAN N° I.D.37066  
 PLAN DATE 13-5-37

**V.O.L. SWITCH.**

SWITCH 28.

FOR USE WITHOUT INDICATOR.

CAT: N° 62/3192



NOTE - FOR COMPLETE DETAILS SEE ORG. T.D. 30173 & 30174.

REFERENCES:-  
ENGINEERING SERIALS 86 AND 101.  
DIAGRAMS TO T.D. 37057, T.D. 37059.  
VOL. CUPBOARD N°1, T.D. 37047, CAT. N° 38/70005.

POINTER 10FF.  
BLACK ENAMEL AFTER BRAZING TO HANDLE.

AMENDED 17.11.42.  
BAKELITE (INSTEAD OF BRASS) LABELS, & TWO WASHERS ADDED.

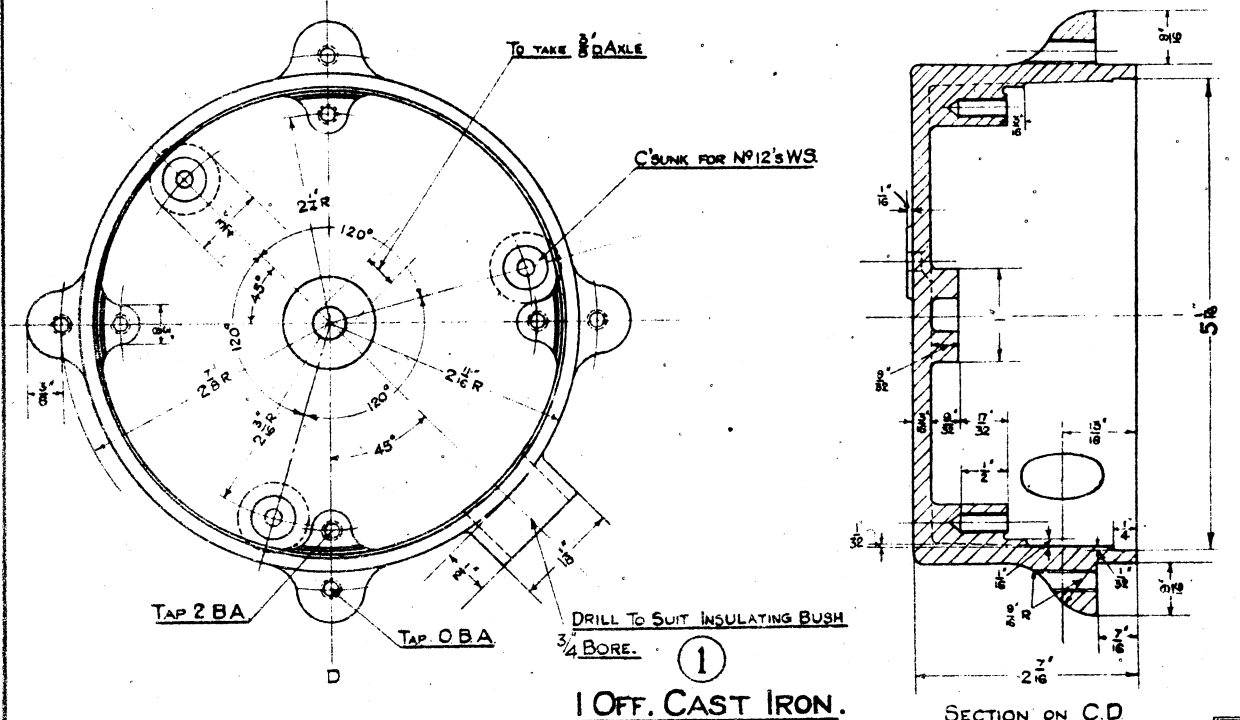
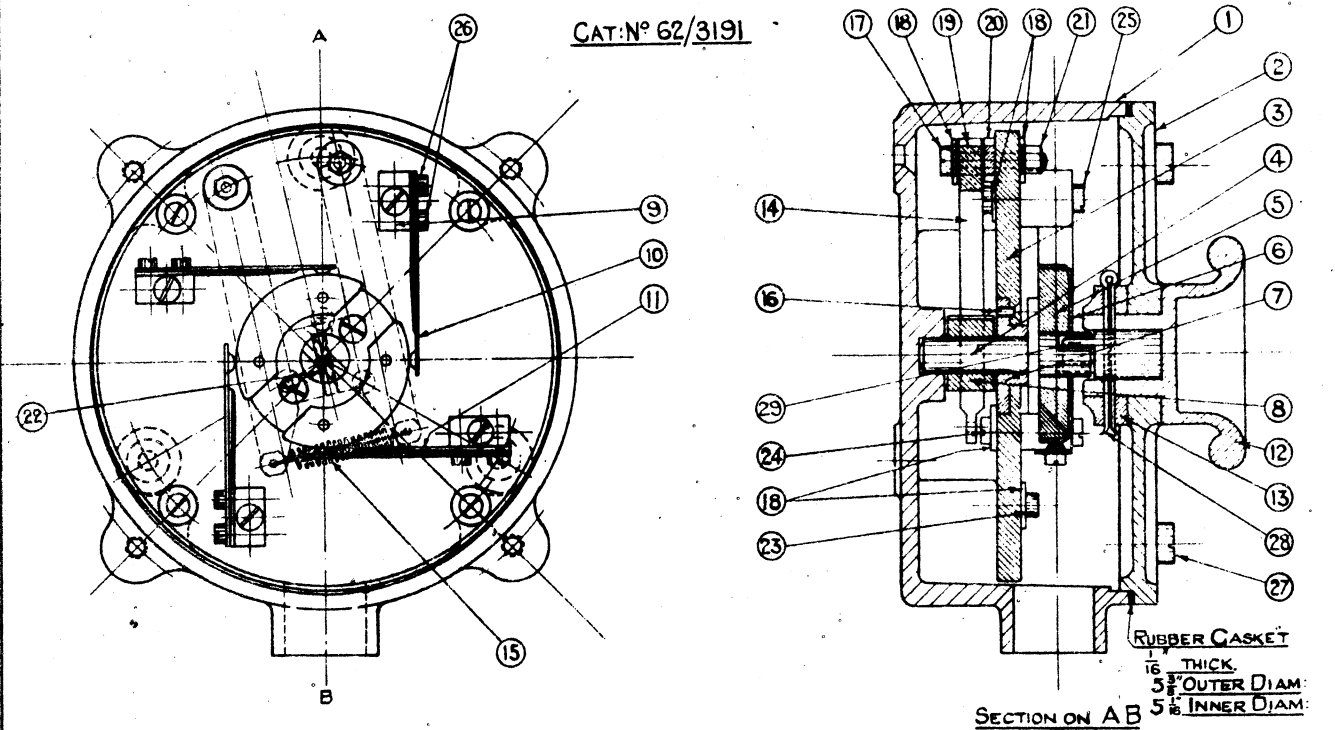
DRAWN BY: BH  
TRACED BY: BH  
CHECKED BY:  
LONDON MIDLAND AND SCOTLAND RAILWAY COMPANY  
SIGNAL AND TELEGRAPH ENGINEERS OFFICE, EUSTON, L.M.S.I.  
PLAN N° T.D. 37054  
PLAN DATE 15-4-37  
DATE ISSUED

**V.O.L. SWITCH.**

SWITCH 27.

FOR USE WITH INDICATOR.

CAT: N° 62/3191

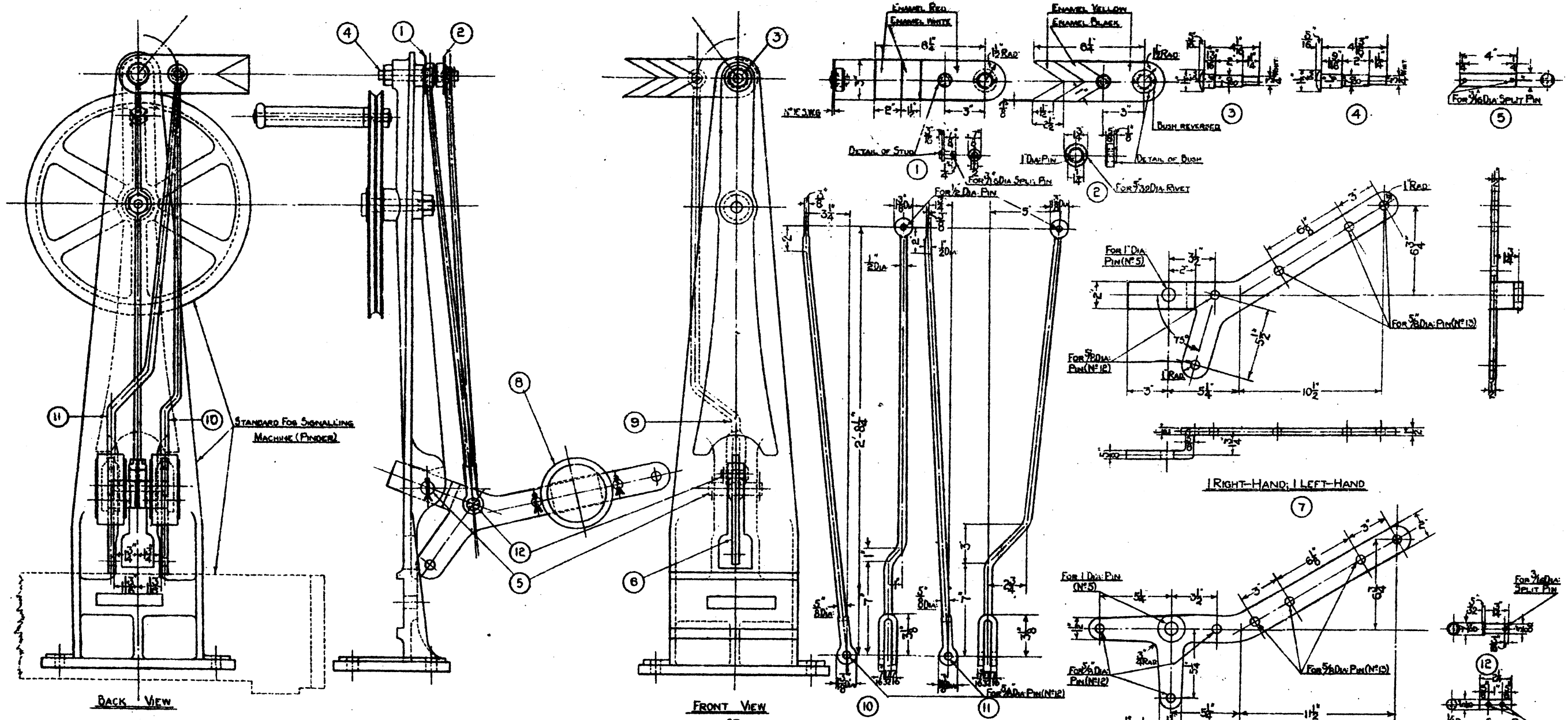


DRILL TO SUIT INSULATING BUSH 3/4 BORE. 1  
1 OFF CAST IRON.

AMENDED 30-11-31.

SHEET 1.  
2 SHEETS.

DRAWN BY: J.S.  
TRACED BY: A.B.  
CHECKED BY: Y.M.  
LONDON MIDLAND AND SCOTLAND RAILWAY COMPANY  
SIGNAL AND TELEGRAPH ENGINEERS OFFICE, EUSTON, L.M.S.I.  
PLAN N° T.D. 30173  
PLAN DATE 18-6-30  
DATE ISSUED



STANDARD FOR SIGNALLING MACHINE (PINDER)

FRONT VIEW OF CAST IRON STANDARD EQUIPPED FOR REPEATING ONE SIGNAL ARM. (MINUS WEIGHT)

NOTE: WHEN ORDERING STATE WHETHER REPEATER SIGNAL IS FOR STOP OR DISTANT OR STOP AND DISTANT ARMS

CAST IRON STANDARD EQUIPPED FOR REPEATING ONE STOP SIGNAL ARM AND ONE DISTANT SIGNAL ARM

NO	DESCRIPTION	MATERIAL	SPECIFICATION	REMARKS	STORES CATY
1	ARM WITH W.I. STUD AND BUSH	SHEET IRON		STOP SIGNAL ARM REPEATER	
2				DISTANT	
3	ARM CENTRE PIN & HEX. NUT	MILD STEEL	BESA 32 (2)	USE WITH ONE ARM	
4			BESA 32 (2)	TWO ARMS	
5	3-ARM T CRANK PIN		BESA 32 (2)		
6	3-ARM T CRANK	WROUGHT IRON	BESA 51A	USE WITH ONE ARM	
7	3-ARM T CRANK (L. I.R.)		BESA 51A	USE WITH TWO ARMS	
8	WEIGHT	CAST IRON	BESA 70	TWO REQUIRED WITH TWO ARMS	
9	DOWN ROD	WROUGHT IRON	BESA 51A	USE WITH ONE ARM	
10			BESA 51A	USE WITH TWO ARMS	
11			BESA 51A		
12	PIN	MILD STEEL	BESA 32 (2)		
13	PIN	WROUGHT IRON	BESA 51A		

**FOG SIGNALLING**  
**REPEATER FOR STOP SIGNAL ARM AND/OR DISTANT SIGNAL ARM WHERE PINDER FOG SIGNALLING MACHINE IS IN USE.**

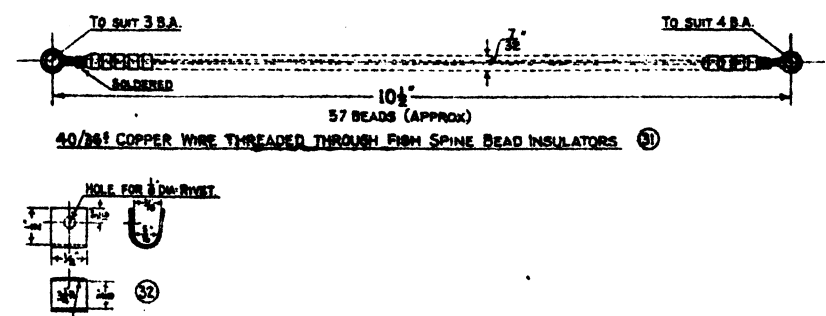
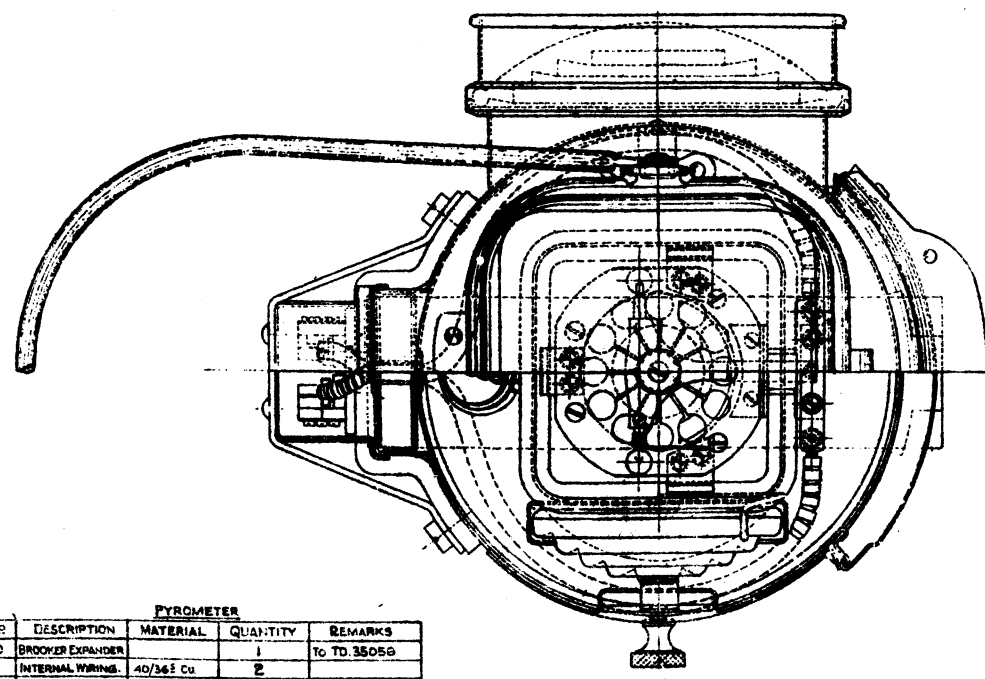
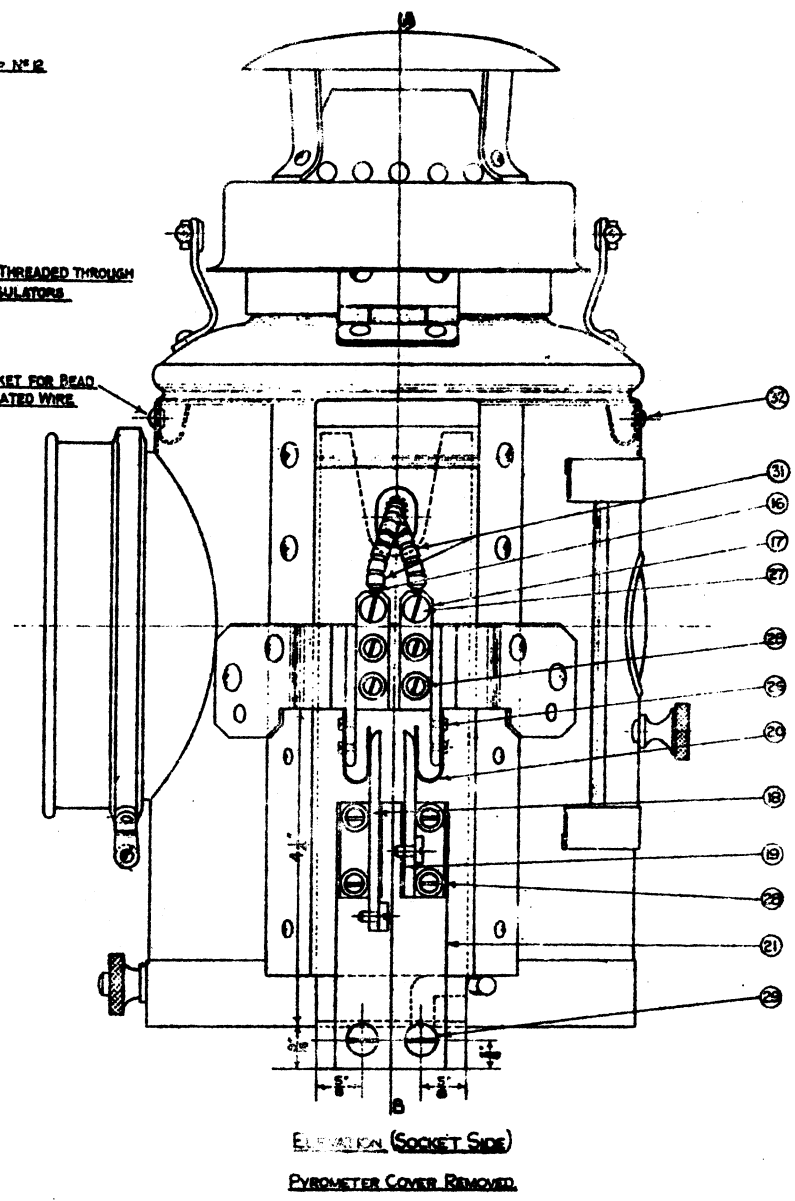
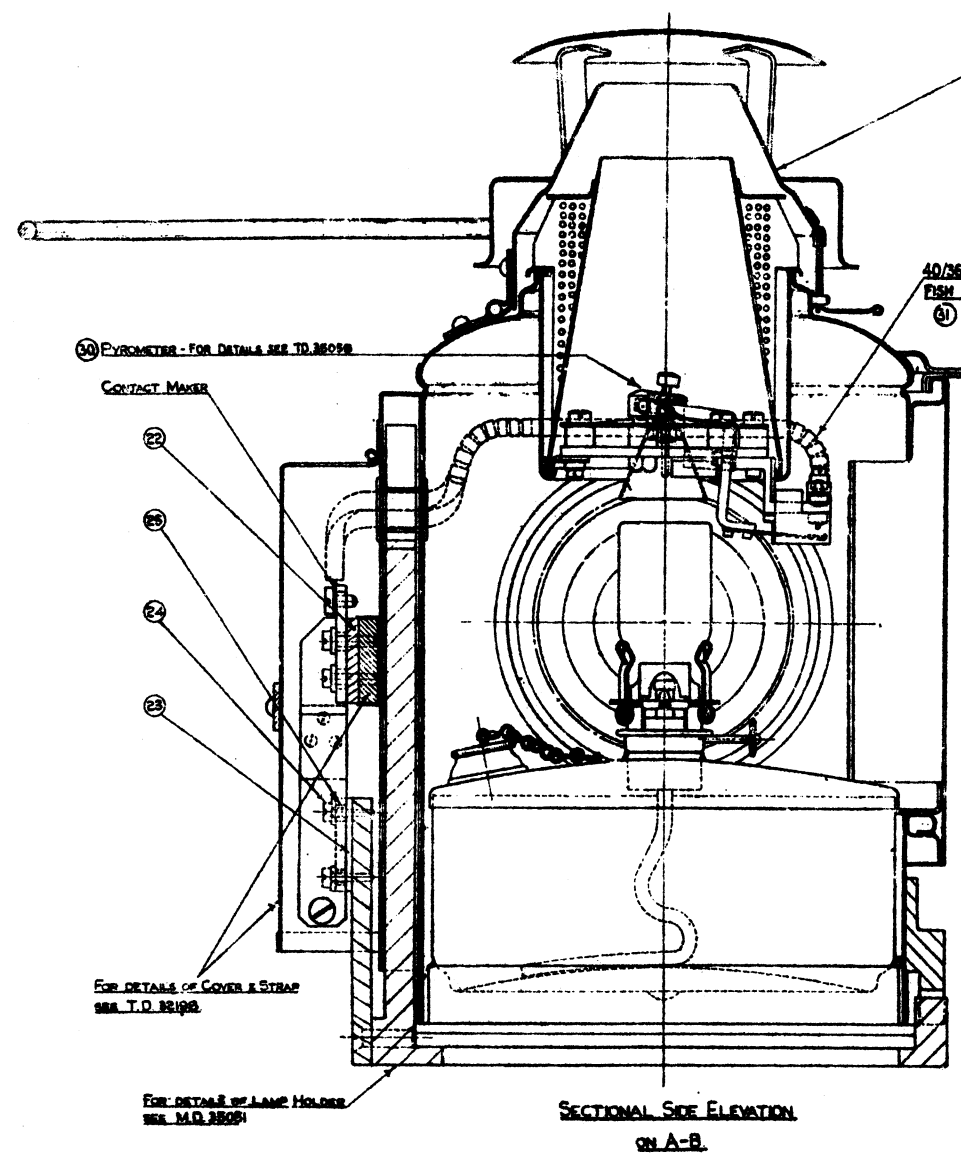
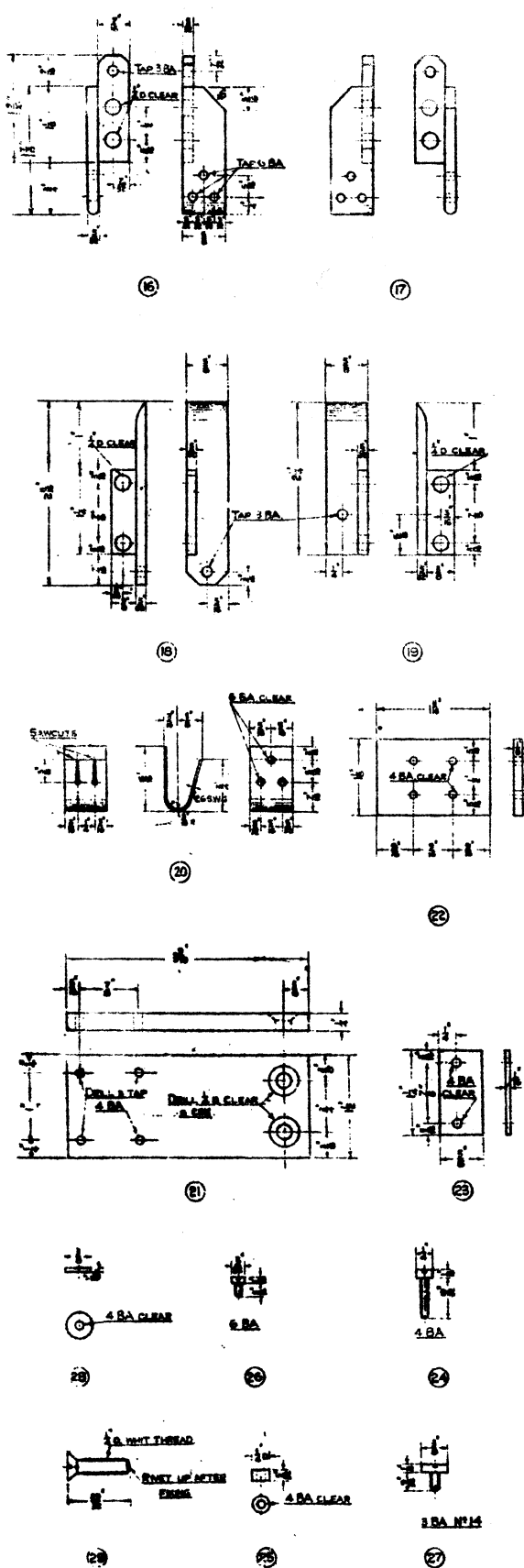
EXAMINED BY  
 INDOOR ASST. [Signature]  
 ELECTRICAL ASST. [Signature]  
 MATERIALS ASST. [Signature]

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER

REPEATER FOR	N° OFF. ITEM N°												
	1	2	3	4	5	6	7	8	9	10	11	12	13
STOP ARM	1	-	1	-	1	1	-	1	1	-	-	1	2
DISTANT ARM	-	1	1	-	1	1	-	1	1	-	-	1	2
STOP AND DISTANT ARMS	1	1	-	1	1	-	1	2	-	1	1	2	4

DRAWN BY [Signature]  
 CHECKED BY [Signature]  
 LONDON & SCOTLAND RAILWAY CO.  
 SIGNAL & TELEGRAPH ENGINEER'S OFFICE  
 EUSTON, L.M.S.  
 PLAN N° MD 34061  
 PLAN DATE 14-8-34  
 DATE ISSUED 23 OCT 1934





**ADLAK LAMP N° 12.**  
**PYROMETER &**  
**CONTACT MAKER BETWEEN LAMP & LAMP BRACKET.**  
**DETAILS & GENERAL ARRANGEMENT.**

CONTACT MAKER				
NO.	DESCRIPTION	MATERIAL	QUANTITY	REMARKS
16	LAMP PLATE	BRASS, CAST	1	L. HAND.
17	LAMP PLATE	BRASS, CAST	1	R. HAND.
18	BRACKET PLATE	BRASS, CAST	1	
19	BRACKET PLATE	BRASS, CAST	1	
20	CONTACT SPRING	PI. BRONZE	2	
21	PLATE	W. IRON	1	
22	INSULATION	PAPER	1	
23	INSULATION	PAPER	2	
24	SCREW	BRASS	0	
25	INSULATING COLLET	BRASS	0	
26	SCREW	BRASS	0	DRY OVER
27	TERMINAL SCREW	BRASS	1	
28	INSULATING WRENCH	BRASS	1	
29	SCREW	BRASS	2	DRY OVER

PYROMETER				
NO.	DESCRIPTION	MATERIAL	QUANTITY	REMARKS
30	BROOKER EXPANDER		1	TO TD. 3509G
31	INTERNAL WIRING	40/36 Cu.	2	
32	CLIP FOR "	21SW6 STAIN.	2	

CAT. NO. LAMP & CONTACT MAKER WITHOUT EXPANDER 20/35280

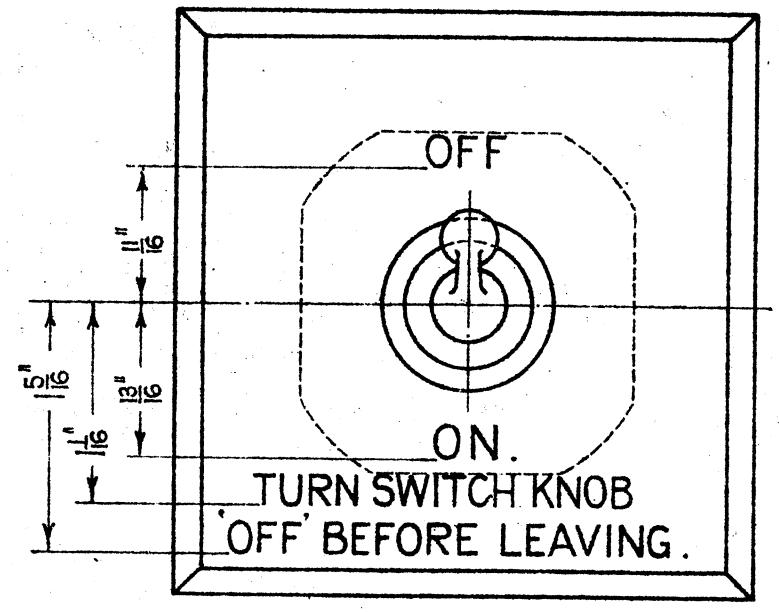
EXAMINED BY  
 HODOR ASST  
 ELECTRICAL -  
 MATERIALS -  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

COPY OF STANDARD DRAWING ISSUED BY THE SIGNAL & TELEGRAPH ENGINEER

PLAN NO. TD. 3509  
 PLAN DATE 5-4-36

SUPERSEDES TD. 3509

FACE PLATE (BRASS) TO BE OXIDISED,  
ENGRAVED N°6 RATIO, & COLOURLESS LACQUERED.



5 AMP, 1 WAY FLUSH TYPE TUMBLER  
SWITCH.

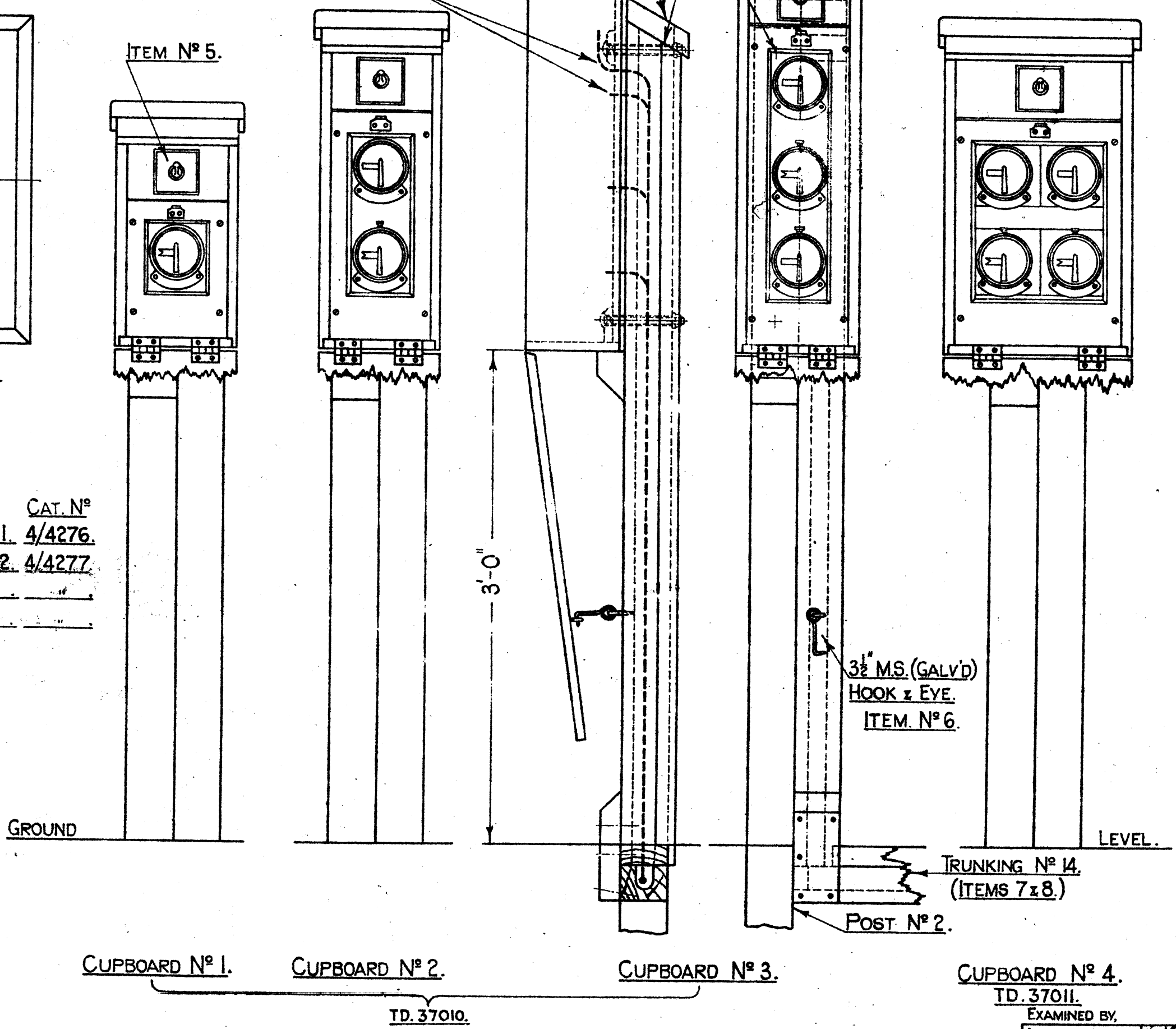
ITEM N° 5.

CUPBD N° 1.	CAT. N° 38/69703	POST N° 1.	CAT. N° 4/4276.
" " 2.	38/69704	" " 2.	4/4277.
" " 3.	38/69705	" " "	" "
" " 4.	38/69706	" " "	" "
ITEM N° 5.	54/67042		
" " 6.	11/19712		
" " 7.	38/68131.	CASING.	
" " 8.	38/67292.	CAPPING.	
" " 9.	3/47836.		
" " 10.	3/75189.		
INDIC'R N° 212.			
" " 213.			
" NAME PLATE	62/19413.		
BRACKET " "	62/8741.		
SCREW, NUT & WASHER	35/16741.		
SCREWS, 5/8 N° 8 R.H. JAP'ND	35/15430.		

HOLES IN CUPBD BACK TO  
FIT INDIVIDUAL WIRES.

POST & CAPPING LEVEL.

ITEM 9, BOLT (5 1/2 x 1/2) & NUT. ITEM 10, WASHER.



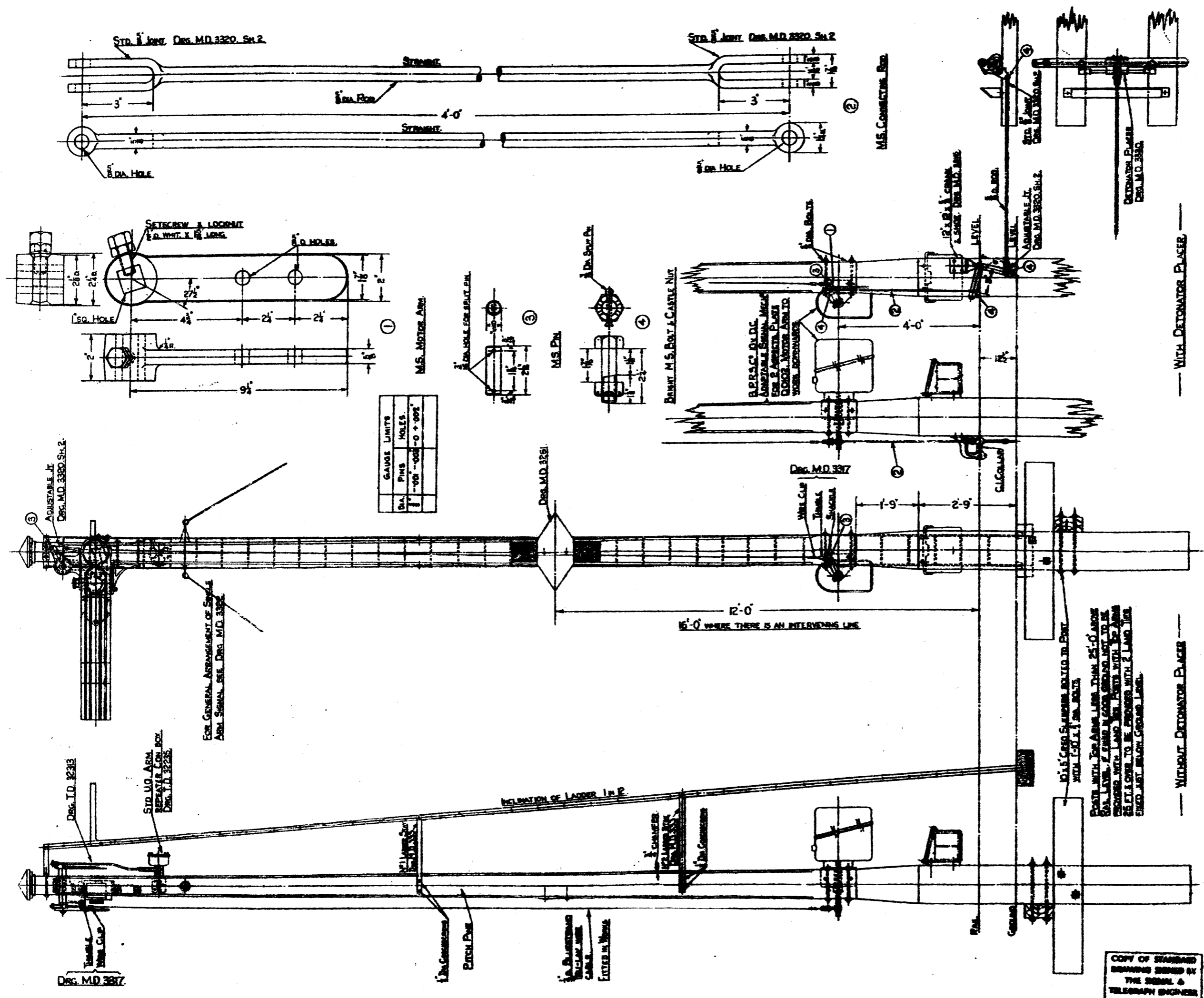
# FIXING STANDARD FOGMANS REPEATERS.

SCALE :- 1/8 AND FULL SIZE.

DRAWN BY *710*  
TRACED BY N. D. A.  
CHECKED BY *710*

EXAMINED BY  
INDOOR ASST. *[Signature]*  
ELECTRICAL " *[Signature]*  
MATERIALS " *[Signature]*

L. M & S. R.  
SIGNAL & TELEGRAPH ENGRS  
OFFICE. EUSTON. L.M.S.I  
PLAN N° T.D. 37046.  
PLAN DATE 19-3-37.



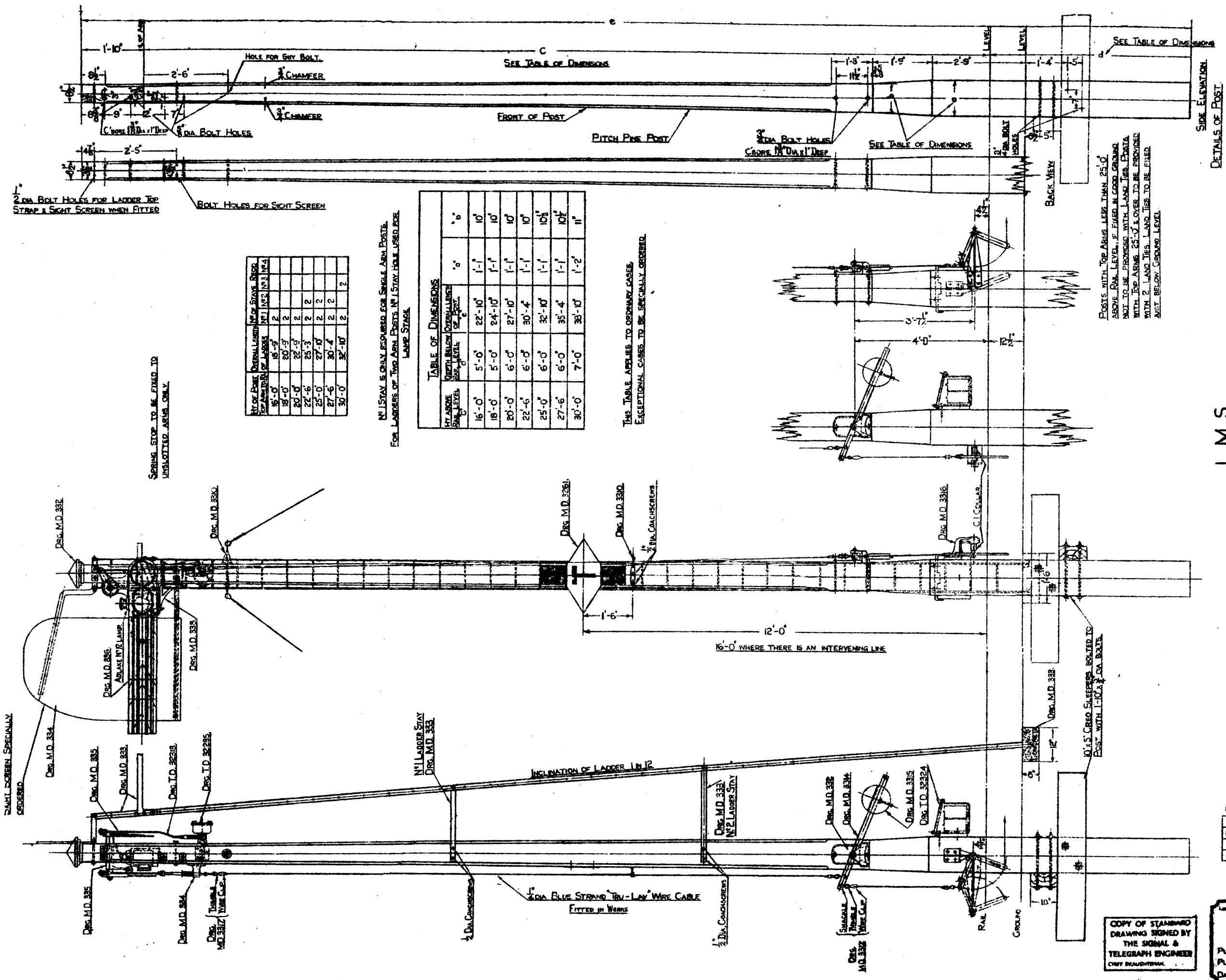
GAUGE LIMITS	
SIZE	HOLES
1/8"	-.001 - .002 - 0 + .001"

CAT. N°	DETAIL	MATERIAL	QTY	ASSEMBLY
1	MOTOR ARM	M.S. STEEL	1	SEE DETAIL 1
2	CONNECTING ROD	WHITIRON	1	SEE DETAIL 2
3	1/8" DIA. PIN	STEEL	1	SEE DETAIL 3
4	1/4" DIA. BOLT	STEEL	1	SEE DETAIL 4

L.M.S.  
MOTOR OPERATED U.O. SIGNAL

COPY OF STANDARD DRAWING ISSUED BY THE SIGNAL & TELEGRAPH ENGINEER

SIGNAL & TELEGRAPH ENGINEER'S OFFICE  
CAMP LMS 48  
PLAN N° RD 325  
PLAN DATE 15/1/25  
DATE ISSUED



2" DIA. BOLT HOLES FOR LADDER TOP STRAP & SIGHT SCREEN WHEN FITTED

1" DIA. BOLT HOLES FOR SIGHT SCREEN

SPRING STOP TO BE FINED TO UNSLITTED ARMS ONLY.

HT. ABOVE RAIL LEVEL	OVERALL LENGTH OF LADDER	NO. OF STAYS	NO. OF STAYS PER SIDE
16'-0"	18'-3"	2	2
18'-0"	20'-3"	2	2
20'-0"	22'-3"	2	2
22'-6"	25'-3"	2	2
25'-0"	27'-10"	2	2
27'-6"	30'-4"	2	2
30'-0"	32'-10"	2	2

NO. 1 STAY IS ONLY REQUIRED FOR SINGLE ARM POSTS. FOR LADDERS OF TWO ARM POSTS NO. 1 STAY HOLE USED FOR LAMP STAY.

TABLE OF DIMENSIONS			
HT. ABOVE RAIL LEVEL	WIDTH BELOW OVERALL LENGTH OF POST	"o"	"b"
16'-0"	5'-0"	22'-10"	1'-1"
18'-0"	5'-0"	24'-10"	1'-1"
20'-0"	6'-0"	27'-10"	1'-1"
22'-6"	6'-0"	30'-4"	1'-1"
25'-0"	6'-0"	32'-10"	1'-1"
27'-6"	6'-0"	35'-4"	1'-1"
30'-0"	7'-0"	38'-10"	1'-2"

THIS TABLE APPLIES TO ORDINARY CASES. EXCEPTIONAL CASES TO BE SPECIALLY ORDERED.

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER

EXAMINED BY  
 INSUR. ASST. [Signature]  
 ELECTRICAL WORKS [Signature]  
 MATERIALS [Signature]

DRAWN BY [Signature]  
 CHECKED BY [Signature]

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER  
 SIGNAL & TELEGRAPH ENGINEER'S OFFICE  
 DERBY, L.M.S. 49  
 PLAN NO. MD. 3322  
 PLAN DATE 11-1-59  
 DATE ISSUED

L.M.S.  
**STANDARD ONE-ARM SEMAPHORE SIGNAL**

POSTS WITH TOP ARMS LESS THAN 25'-0" ABOVE RAIL LEVEL, TO BE FIRED IN GOOD GROUND. NOT TO BE PROVIDED WITH LAMP TIES. POSTS WITH TOP ARMS 25'-0" & OVER TO BE PROVIDED WITH 2 LAMP TIES. LAMP TIES TO BE FIRED JUST BELOW GROUND LEVEL.

SIDE ELEVATION  
 DETAILS OF POST

SEE TABLE OF DIMENSIONS

SEE TABLE OF DIMENSIONS

SEE TABLE OF DIMENSIONS

16'-0" WHERE THERE IS AN INTERVENING LINE

INCLINATION OF LADDER 1 IN 12

1/4" DIA. BLUE STRAND TRIP-LAY WIRE CABLE FITTED IN WIRE

10 1/2" CROCO SLIPPERS BOLTED TO POST WITH 1-10 X 3/4 DIA. BOLTS

GROUND

RAIL

1/2" DIA. CONCHSCREWS

1/2" DIA. CONCHSCREWS

1/2" DIA. CONCHSCREWS

DES. M.D. 3316

DES. M.D. 3316

DES. M.D. 3315  
 DES. I.D. 32324

DES. M.D. 332  
 DES. M.D. 3314

DES. M.D. 333  
 NP2 LADDER STAY

DES. M.D. 3310

DES. M.D. 3351

NP1 LADDER STAY  
 DES. M.D. 333

DES. M.D. 3310

DES. I.D. 32285

DES. I.D. 32285

DES. M.D. 333

DES. M.D. 336

DES. M.D. 332

DAINT SCREEN SPECIALLY ORDERED

DES. M.D. 334

DES. M.D. 335

DES. M.D. 333

DES. I.D. 32285

DES. I.D. 32285

DES. M.D. 335

DES. M.D. 334

DES. M.D. 337

DES. M.D. 337

DES. M.D. 332

DES. M.D. 334

DES. M.D. 335

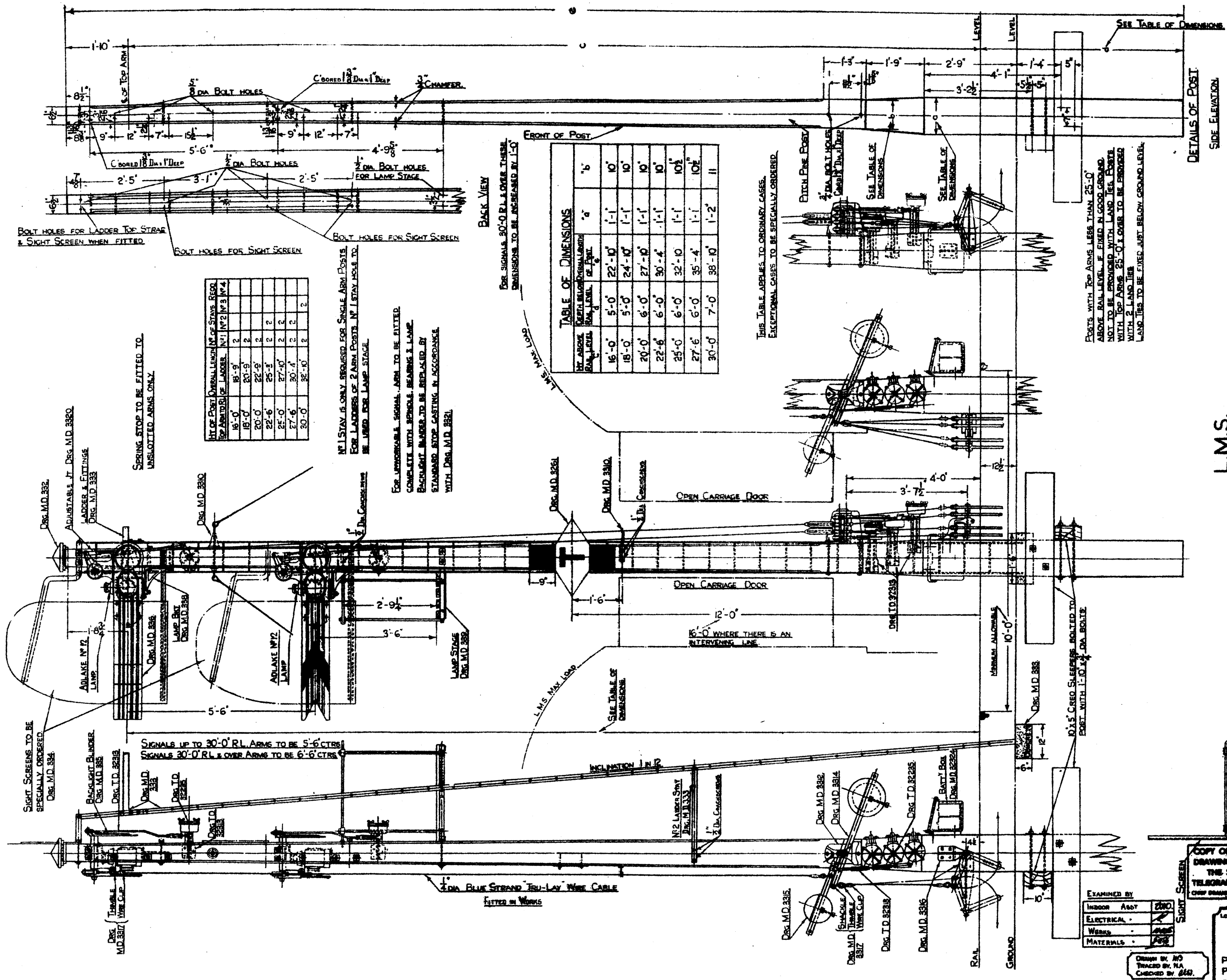
DES. I.D. 32324

DES. M.D. 332

DES. M.D. 334

DES. M.D. 335

DES. I.D. 32324



HT OF POST	OVERALL LENGTH OF STAYS	REQD. TOP ANCHOR	HT OF LAMP	HT OF STAYS	REQD. TOP ANCHOR
16'-0"	18'-9"	2	18'-9"	2	2
18'-0"	20'-9"	2	20'-0"	2	2
20'-0"	22'-6"	2	22'-6"	2	2
25'-0"	27'-6"	2	27'-6"	2	2
27'-6"	30'-4"	2	30'-4"	2	2
30'-0"	32'-10"	2	32'-10"	2	2

TABLE OF DIMENSIONS

HT ABOVE RAIL LEVEL	CENTRAL SIGNAL	ARM LENGTH	ARM LEVEL	ARM DIA.
16'-0"	5'-0"	22'-10"	1'-1"	10"
18'-0"	5'-0"	24'-10"	1'-1"	10"
20'-0"	6'-0"	27'-10"	1'-1"	10"
22'-6"	6'-0"	30'-4"	1'-1"	10"
25'-0"	6'-0"	32'-10"	1'-1"	10 1/2"
27'-6"	6'-0"	35'-4"	1'-1"	10 1/2"
30'-0"	7'-0"	38'-10"	1'-2"	11"

NO. 1 STAY IS ONLY REQUIRED FOR SINGLE ARM POSTS. FOR LADDERS OF 2 ARM POSTS NO. 1 STAY HOLES TO BE USED FOR LAMP STAGE.

FOR UNWORKABLE SIGNAL ARM TO BE FITTED COMPLETE WITH RENDLE, BEARING & LAMP. BACKLIGHT BLINDER TO BE REPLACED BY STANDARD STOP CASTING IN ACCORDANCE WITH DRG. M.D. 332.

THIS TABLE APPLIES TO ORDINARY CASES. EXCEPTIONAL CASES TO BE SPECIALLY ORDERED.

POSTS WITH TOP ARMS LESS THAN 25'-0" ABOVE RAIL LEVEL TO BE FIXED IN GOOD GROUND. NOT TO BE PROVIDED WITH LAND TIER POSTS. WITH TOP ARMS 25'-0" OVER TO BE PROVIDED WITH 2 LAND TIERS. LAND TIERS TO BE FIXED JUST BELOW GROUND LEVEL.

L.M.S.

STANDARD TWO-ARM SEMAPHORE SIGNAL

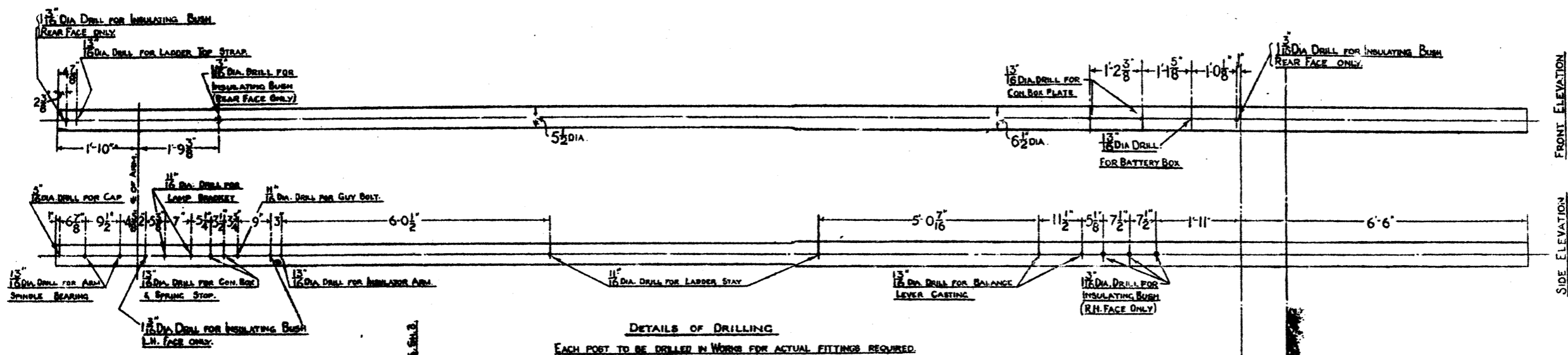
EXAMINED BY  
 INDOOR ASST. [Signature]  
 ELECTRICAL [Signature]  
 WORKS [Signature]  
 MATERIALS [Signature]

DRAWN BY: M.D.  
 TRACED BY: N.A.  
 CHECKED BY: 660.

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF BRANCHMAN.

LONDON MIDLAND & SCOTLAND RAILWAY  
 SIGNAL & TELEGRAPH ENGINEERS OFFICE  
 DERBY, L.M.S. 48.  
 PLAN NO. M.D. 3323  
 PLAN DATE 9-1-21  
 DATE ISSUED





DETAILS OF DRILLING  
EACH POST TO BE DRILLED IN WORKS FOR ACTUAL FITTINGS REQUIRED.

SPRING STOP TO BE FIXED TO UNSETTLED ARMS ONLY.

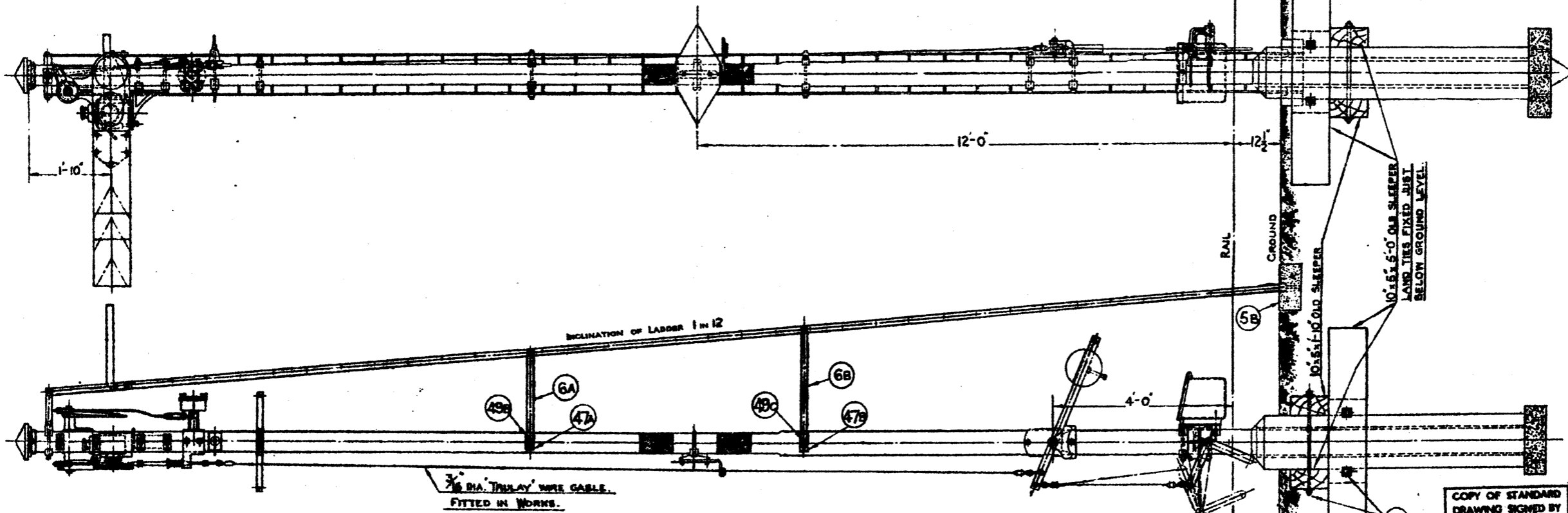
FOR UNSETTLED SIGNAL ARM TO BE FITTED COMPLETE WITH SPINDLE, WASHERS & LOCKWASHER. IN WORKS TO BE REPLACED BY STANDARD STOP CARTING IN ACCORDANCE WITH DWS. M.D. 3321.

FOR STANDARD STOP OF PORTS SEE DWS. M.D. 2602P.

- Assembly of Stop & Carting/Arms see - DWS. M.D. 3321.

- Rail, Ladders, Con. Boxes & Carriers see DWS. M.D. 3316, 3317, 3318.

- SCHEDULES see DWS. M.D. 3319.



L.M.S.  
TUBULAR STEEL SIGNAL POST  
ONE-ARM SIGNAL

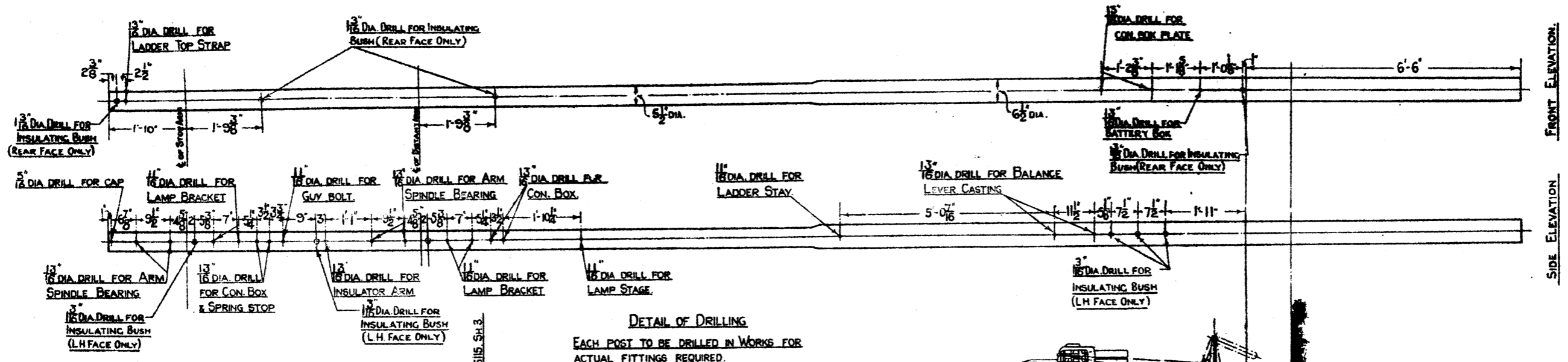
EXAMINED BY  
INSPECTOR ASST. [initials]  
ELECTRICAL [initials]  
MATERIALS [initials]

DRAWN BY [initials]  
CHECKED BY [initials]

LONDON MIDLAND & SCOTTISH R.L.  
SIGNAL & TELEGRAPH  
ENGINEER'S OFFICE,  
EUSTON L.M.S.I.  
PLAN NO. M.D. 3316  
PLAN DATE. 15.7.35  
DATE ISSUED.

COPY OF STANDARD  
DRAWING SIGNED BY  
THE SIGNAL &  
TELEGRAPH ENGINEER  
CHIEF ENGINEER.

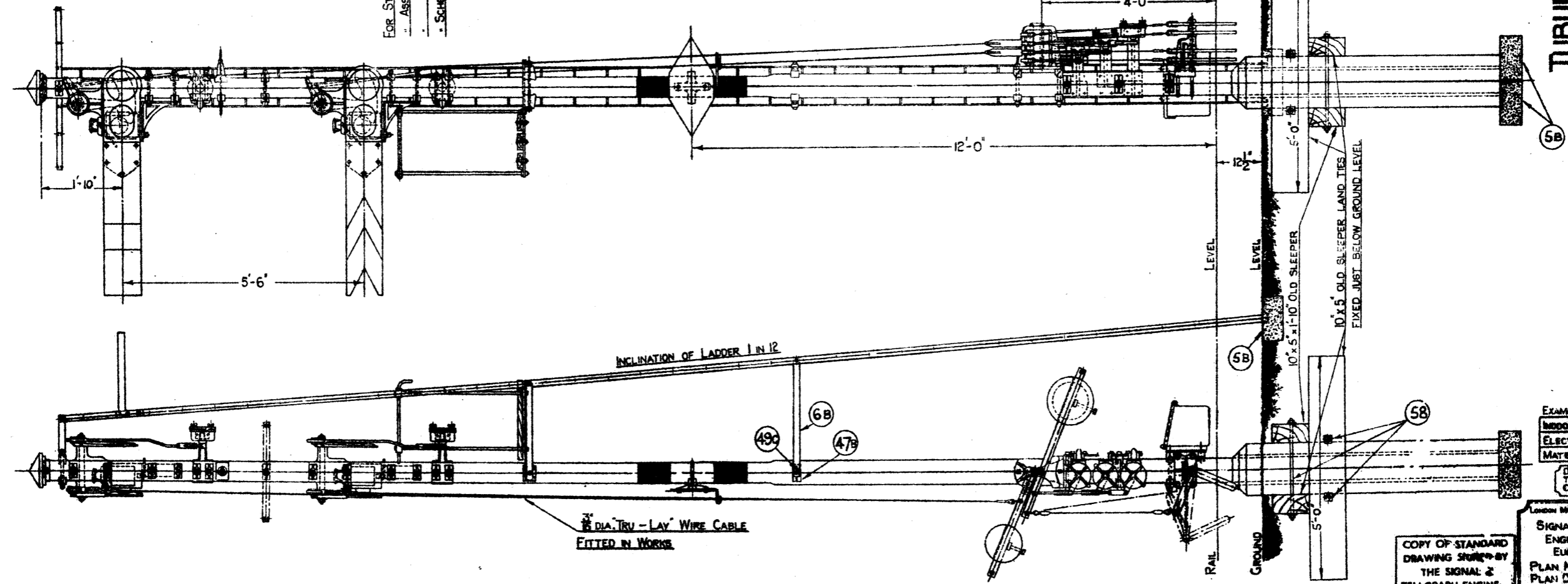




SPRING STOP TO BE FIXED TO UNSLOTTED ARMS ONLY

FOR UNWORKABLE SIGNAL ARM TO BE FITTED COMPLETE WITH SPINDLE BEARING & LAMP BACKLIGHT BLINDER TO BE REPLACED BY STANDARD STOP CASTING IN ACCORDANCE WITH DRG. M.D. 3321

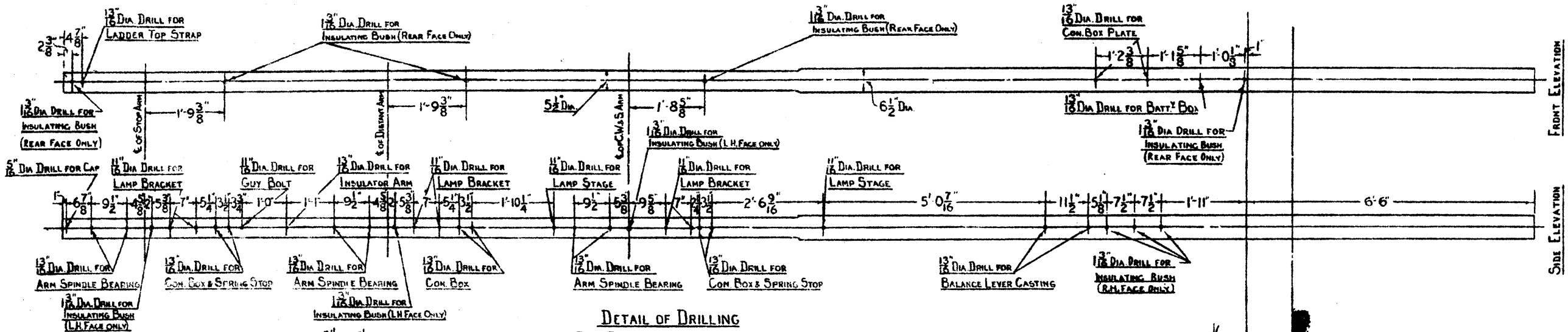
FOR STANDARD SIZES OF POSTS SEE DRG. M.D. 35029  
ASSEMBLY OF STOP & DET. ARMS - DRG. M.D. 35115 SH. 3  
BAL. LEVERS, CON. BOXES & CRANES SEE DRG. M.D. 35115 SH. 3  
SCHEDULE - SEE DRG. M.D. 35119



**L.M.S.**  
**TUBULAR STEEL SIGNAL POST**  
**TWO-ARM SIGNAL**

EXAMINED BY	INDOOR ASST	25
	ELECTRICAL	30
	MATERIALS	
DRAWN BY TRACED BY CHECKED BY		
LONDON SIGNAL & TELEGRAPH ENGINEERS OFFICE EUSTON, L.M.S. PLAN NO. M.D. 35117 PLAN DATE 19-7-25 DATE ISSUED		

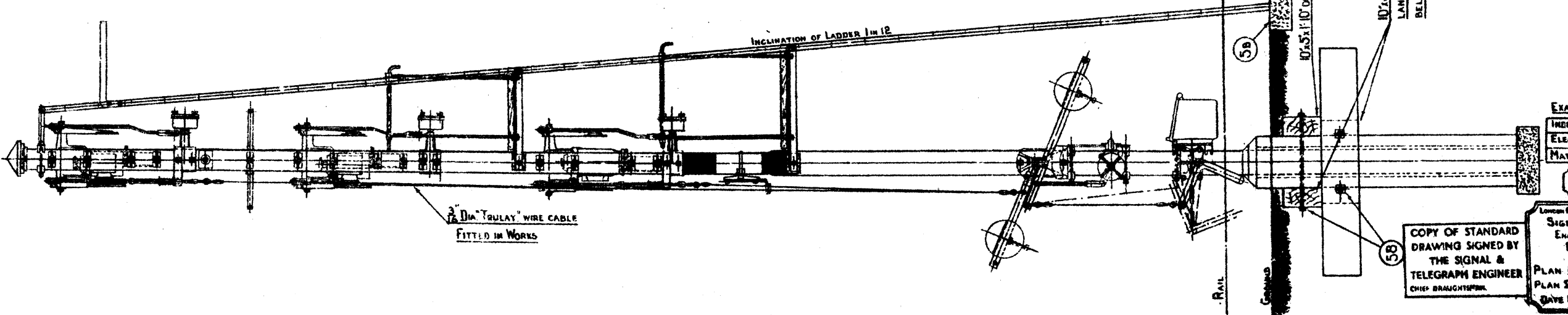
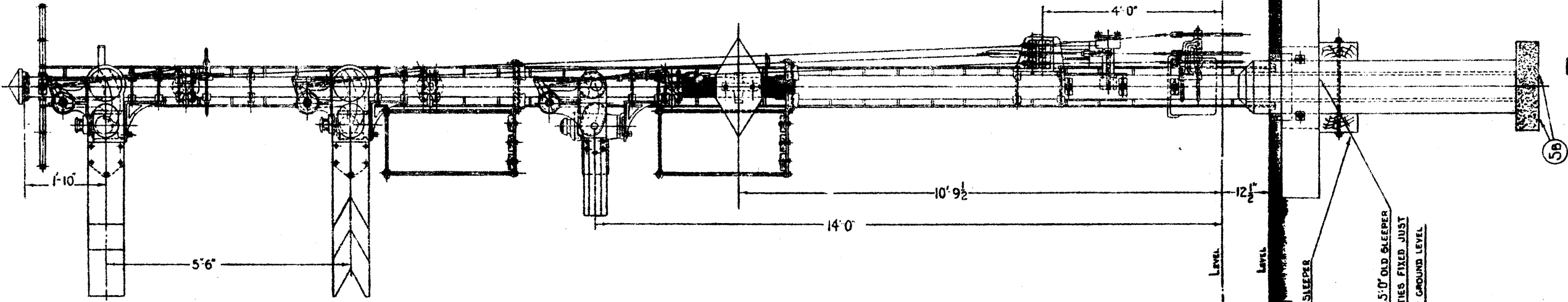
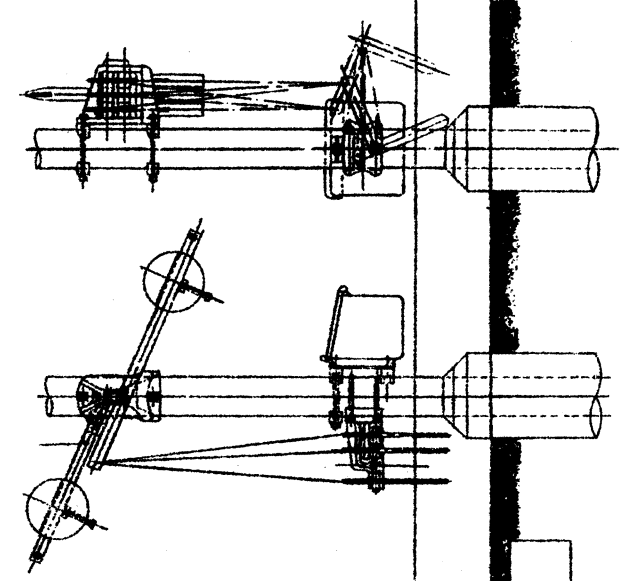
COPY OF STANDARD DRAWING SUPPLIED BY THE SIGNAL & TELLGRAPH ENGINEERS OFFICE



SPRING STOP TO BE FIXED TO UNSLOTTED ARMS ONLY

FOR UNWORKABLE SIGNAL ARM TO BE FITTED COMPLETE WITH SPINDLE, BEARING & LAMP BACKLIGHT BLINDER TO BE REPLACED BY STANDARD STOP CASTING IN ACCORDANCE WITH DRG. M.D.3521.

FOR STANDARD SIZES OF POSTS SEE DRG. M.D.35029  
 ASSEMBLY OF STOPPE DIST. ARMS - M.D.35115 S.M.L.  
 C. W. S. ARM - "DO" S.M.L.  
 BAL. LEVERS, COM. BOXES & CRANKS - SEE DRG. M.D.35115 S.M.S.  
 SCHEDULE SEE DRG. M.D.35119

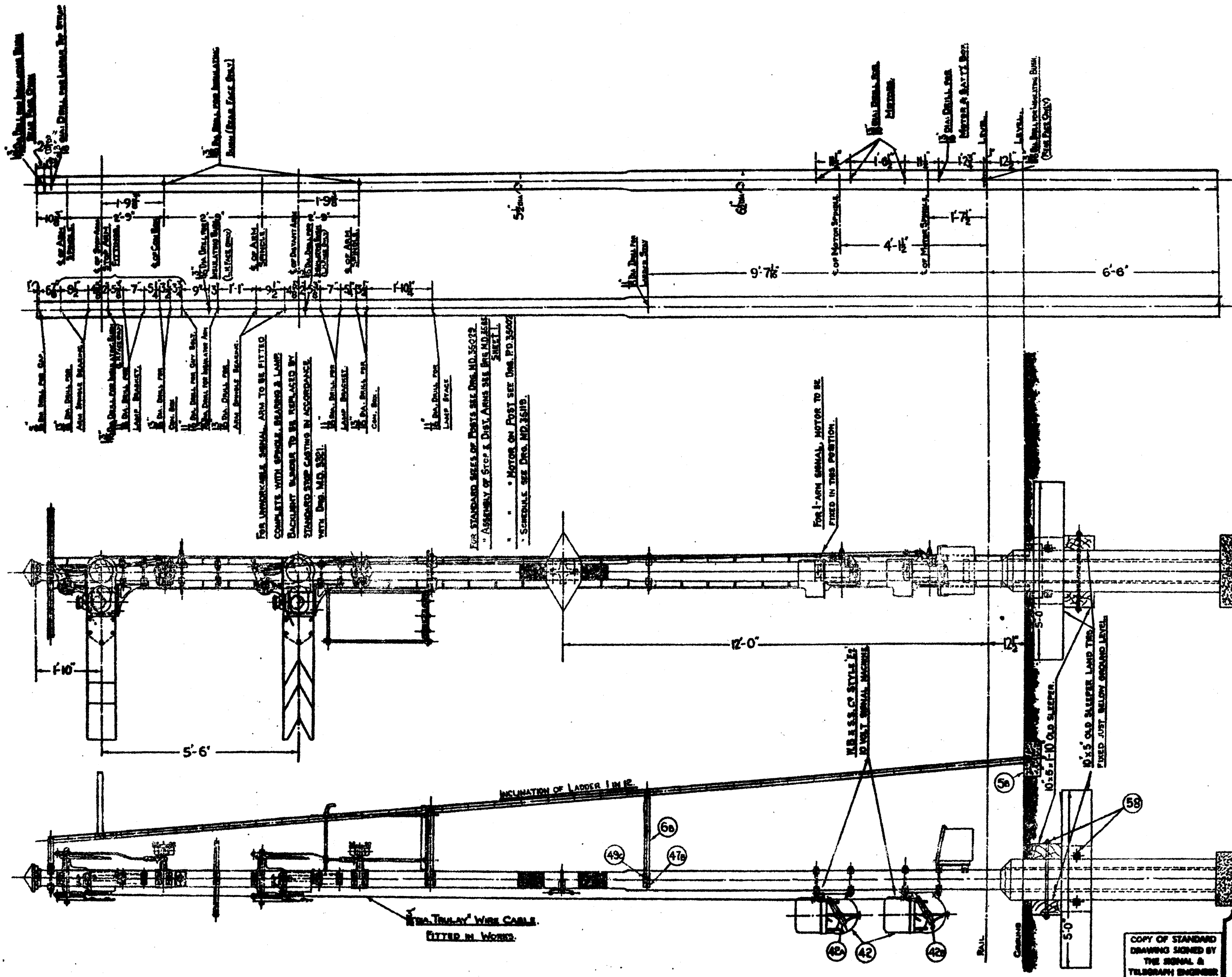


**L.M.S.**  
**TUBULAR STEEL SIGNAL POST**  
**THREE-ARM SIGNAL**

EXAMINED BY  
 INDOOR ASST. ELECTRICAL MATERIALS  
 DRAWN BY  
 CHECKED BY

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER  
 CHIEF DRAUGHTSMAN

LONDON AND TELEGRAPH ENGINEER'S OFFICE  
 LONDON L.M.S.  
 PLAN NO. M.D.35116  
 PLAN DATE 16-7-36  
 DATE ISSUED



FOR UNREMOVABLE SIGNAL ARM TO BE FITTED COMPLETE WITH SPINDLE BEARINGS & LAMP BACKLIGHT NUMBER TO BE REPLACED BY STANDARD STEP CASTING IN ACCORDANCE WITH DES. NO. M.D. 3521.

FOR STANDARD SIZES OF POSTS SEE DES. NO. M.D. 35072.  
 ASSEMBLY OF STEP & DIST. ARMS SEE DES. NO. M.D. 35071. SHEET 1.  
 MOTOR ON POST SEE DES. NO. P.D. 35002.  
 SCHEDULES SEE DES. NO. M.D. 35119.

FOR 1-ARM SIGNAL MOTOR TO BE FIRED IN THIS POSITION.

M.B.S.S.C. STYLE 22 RIVET SIGNAL MACHINE

2 NO. TRILAY WIRE CABLE FITTED IN WORKS.

FOR ACTUAL FITTINGS REQUIRED.

**L.M.S.**  
**TUBULAR STEEL SIGNAL POST**  
**MOTOR WORKED SIGNAL**

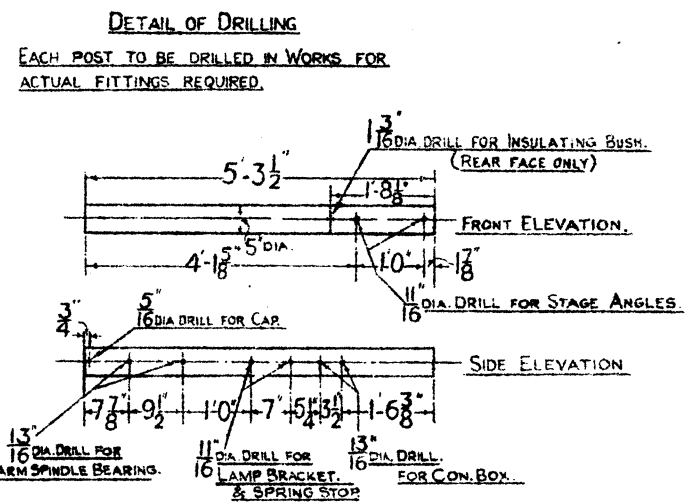
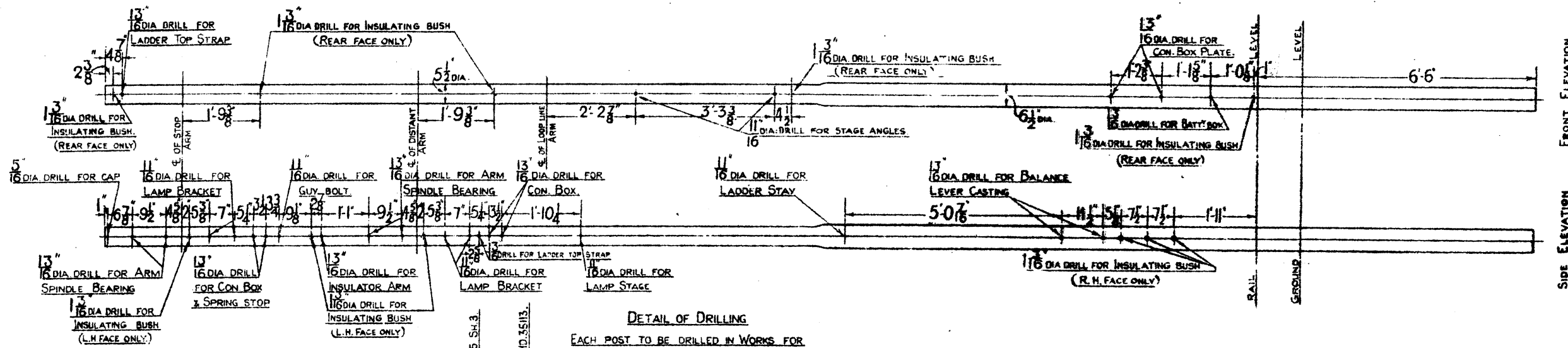
EXAMINED BY

INDOOR ASST.	
ELECTRICAL	
MATERIALS	

DRAWN BY  
 CHECKED BY

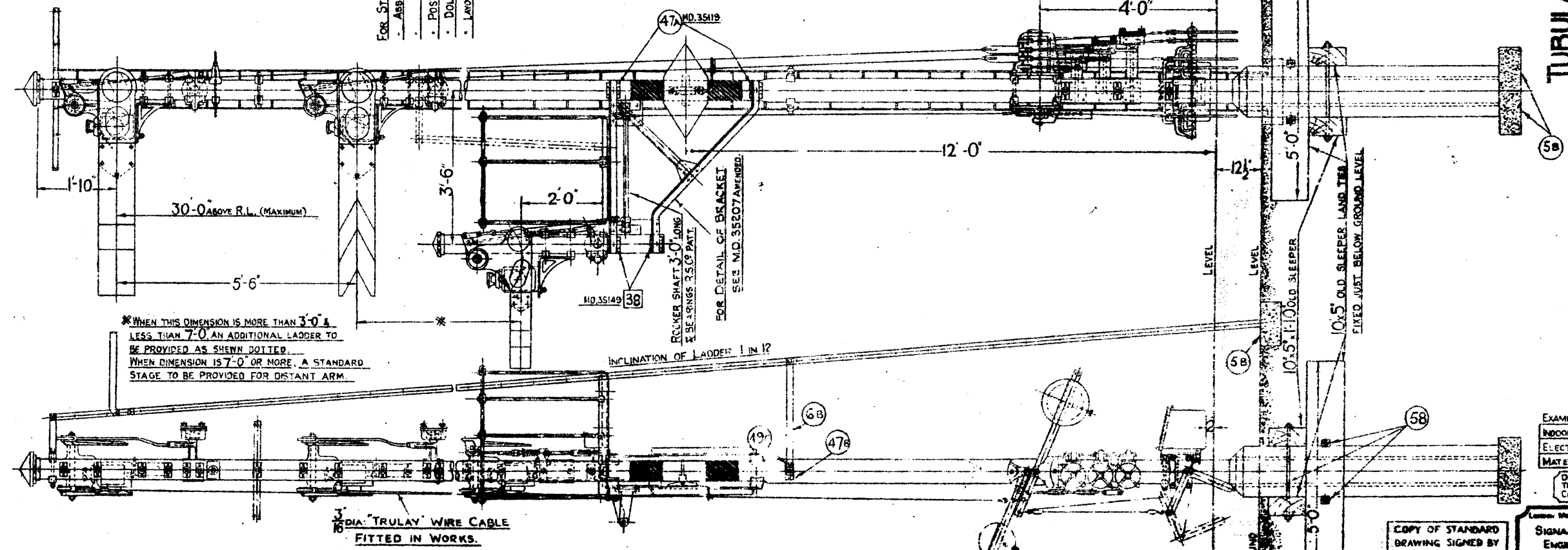
COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER

SIGNAL & TELEGRAPH ENGINEER'S OFFICE  
 EUSTON, L.M.S.  
 PLAN NO. P.D. 35002  
 PLAN DATE 12-2-28  
 DATE ISSUED



- SPRING STOP TO BE FIXED TO UNSLOTTED ARMS ONLY
- FOR UNWORKABLE SIGNAL ARM TO BE FITTED COMPLETE WITH SPINDLE BEARING & LAMP BACKLIGHT BLINDER TO BE REPLACED BY STANDARD STOP CASTING IN ACCORDANCE WITH DRG. M.D. 3321
- FOR STANDARD SIZES OF POSTS SEE DRG. M.D. 35029
- ASSEMBLY OF STOP & DIST ARMS SEE DRG. M.D. 35115 SH. 3
- BAL. LEVER CON. BOXES & CRANES SEE DRG. M.D. 35115 SH. 3
- POST SCHEDULE SEE DRG. M.D. 35119
- DOLL SEE DRG. M.D. 35149
- LAYOUT OF HOLES FOR INSULATING BUSHES (REPEATER WIRING) SEE DRG. M.D. 35113.

**DOLL - DETAIL OF DRILLING**



**L.M.S.**  
**TUBULAR STEEL SIGNAL POST**  
**RUNNING LINE TO LOOP. L.H. BRACKET.**

EXAMINED BY:

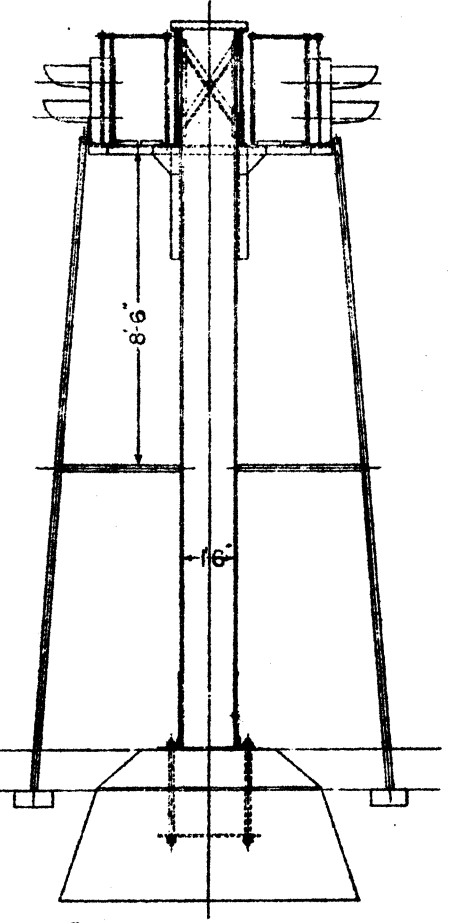
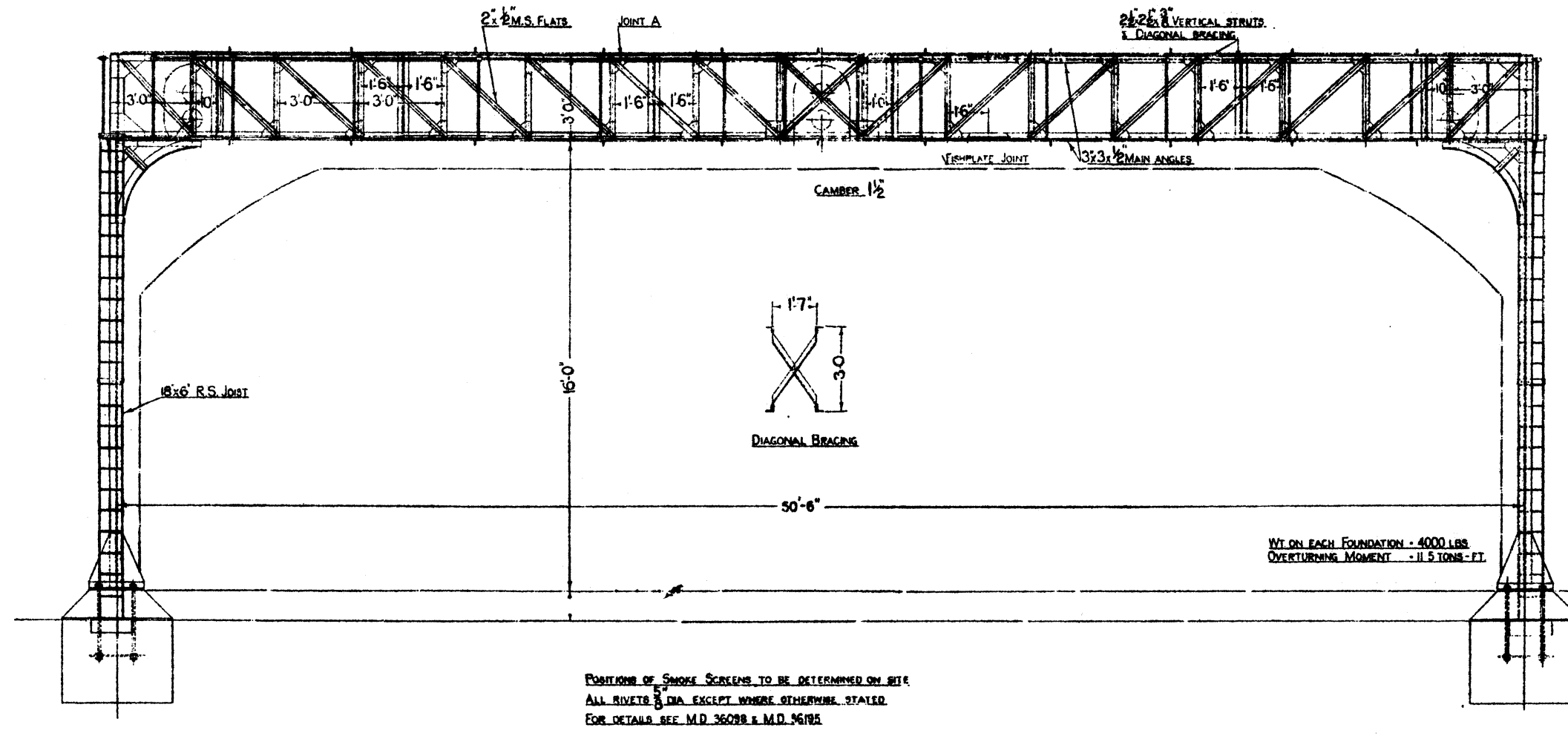
INDOOR ASST	
ELECTRICAL	
MATERIALS	

DRAWN BY: [Signature]  
 TRACED BY: [Signature]  
 CHECKED BY: [Signature]

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF BRISTOL

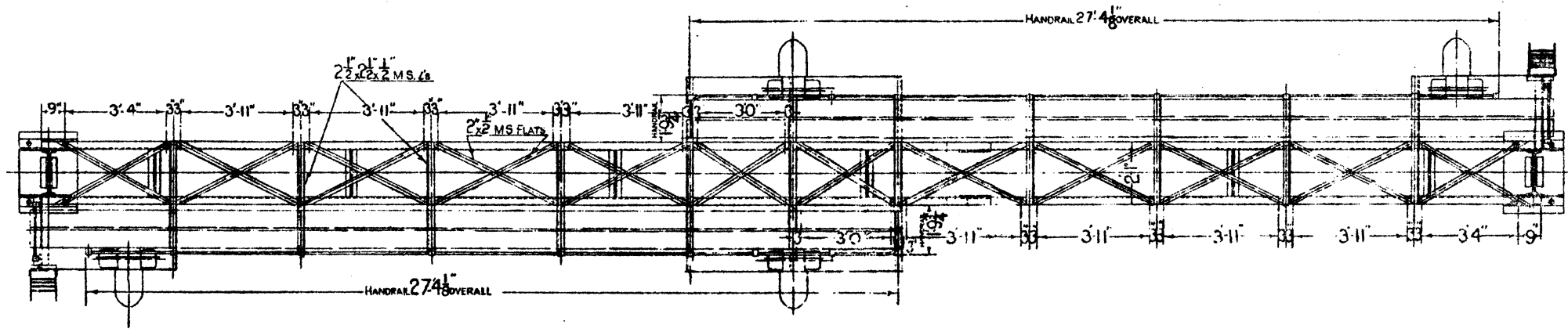
LONDON, BRISTOL & GLOUCESTER RANGES  
 SIGNAL & TELEGRAPH ENGINEERS OFFICE  
 EUSTON, L.M.S.  
 PLAN NO. M.D. 35206  
 PLAN DATE 30-4-26  
 DATE ISSUED





SIZE & SHAPE OF CONCRETE FOUNDATION TO BE DETERMINED ON SITE

POSITIONS OF SMOKE SCREENS TO BE DETERMINED ON SITE  
ALL RIVETS 5/8" DIA EXCEPT WHERE OTHERWISE STATED  
FOR DETAILS SEE M.D. 36098 & M.D. 96195



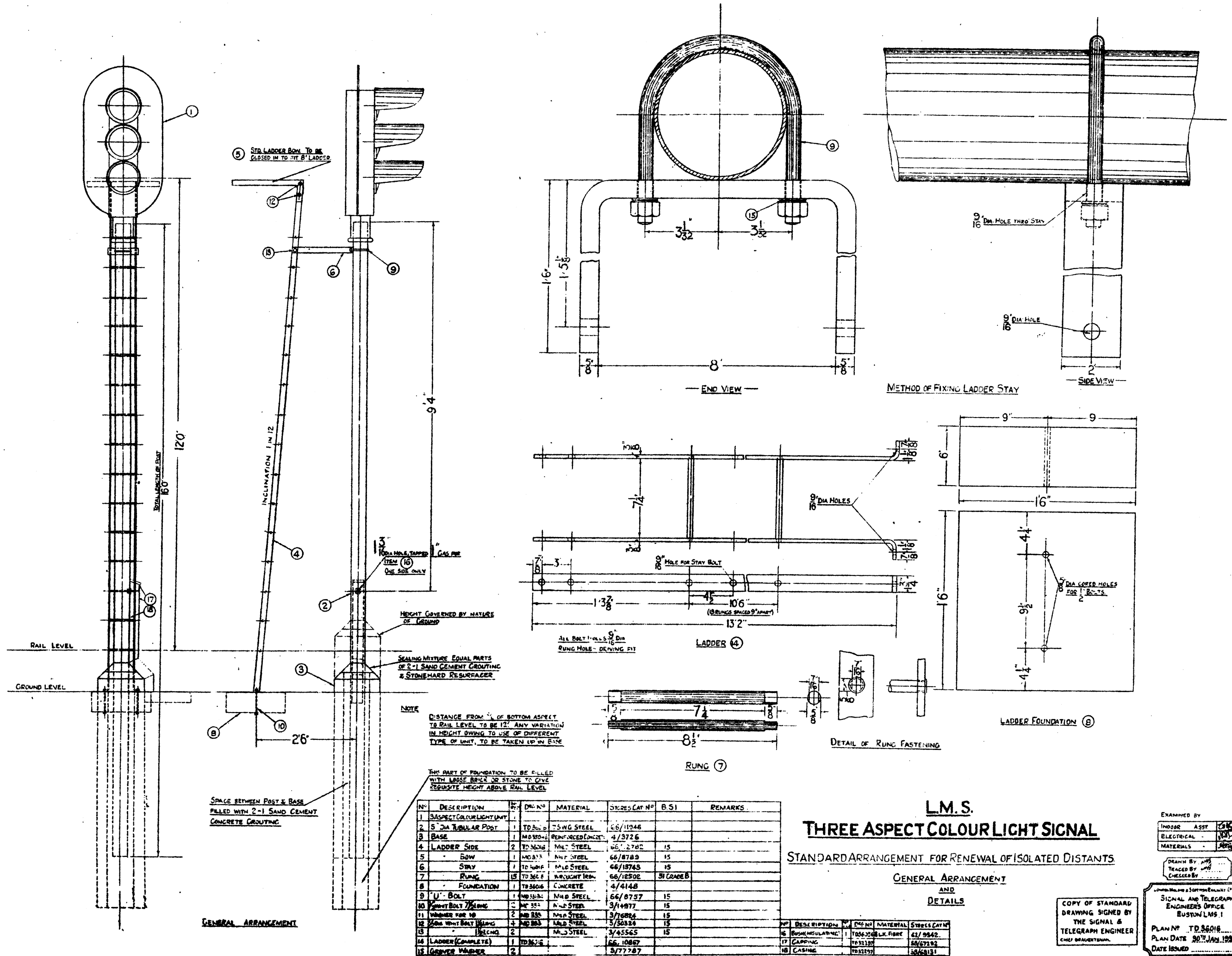
L.M.S.  
STANDARD COLOUR LIGHT SIGNAL  
GANTRY FOR "TWO-ASPECT"  
"STOP" SIGNALS.

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER  
ENCLY BRUGHTONMAN

SIGNAL & TELEGRAPH ENGINEERS OFFICE  
EUBTON L.M.S. 1  
PLAN NO. M.D. 36194  
PLAN DATE 5-10-96  
DATE ISSUED







N <sup>o</sup>	DESCRIPTION	QTY	DRW. NO.	MATERIAL	STRES. CAT. N <sup>o</sup>	B.S.I.	REMARKS
1	3 ASPECT COLOUR LIGHT UNIT	1	TD 301.0	75 W.G. STEEL	66/11346		
2	5" DIA TUBULAR POST	1	TD 301.0	75 W.G. STEEL	66/11346		
3	BASE	1	MD 301.0	REINFORCED CONCRETE	4/3726		
4	LADDER SIDE	2	TD 301.0	MILD STEEL	66/2782	15	
5	BOW	1	MD 313	MILD STEEL	66/1878	15	
6	STAY	1	TD 301.0	MILD STEEL	66/1874S	15	
7	RUNG	15	TD 301.0	WROUGHT IRON	66/1250E	31 GRADE B	
8	FOUNDATION	1	TD 301.0	CONCRETE	4/4148		
9	U-BOLT	1	MD 313.0	MILD STEEL	66/1875	15	
10	WASHER FOR U-BOLT	2	MD 313	MILD STEEL	3/1497	15	
11	WASHER FOR RUNG	2	MD 313	MILD STEEL	3/1684	15	
12	WASHER FOR BOLT	4	MD 313	MILD STEEL	3/50324	15	
13	WASHER FOR BOLT	2	MD 313	MILD STEEL	3/45545	15	
14	LADDER COMPLETE	1	TD 301.0		66/10867		
15	GRINDER WASHER	2	TD 301.0		3/77787		

**L.M.S.**  
**THREE ASPECT COLOUR LIGHT SIGNAL**  
 STANDARD ARRANGEMENT FOR RENEWAL OF ISOLATED DISTANTS  
 GENERAL ARRANGEMENT AND DETAILS

EXAMINED BY

INDOR ASST. [Signature]

ELECTRICAL [Signature]

MATERIALS [Signature]

DRAWN BY [Signature]

CHECKED BY [Signature]

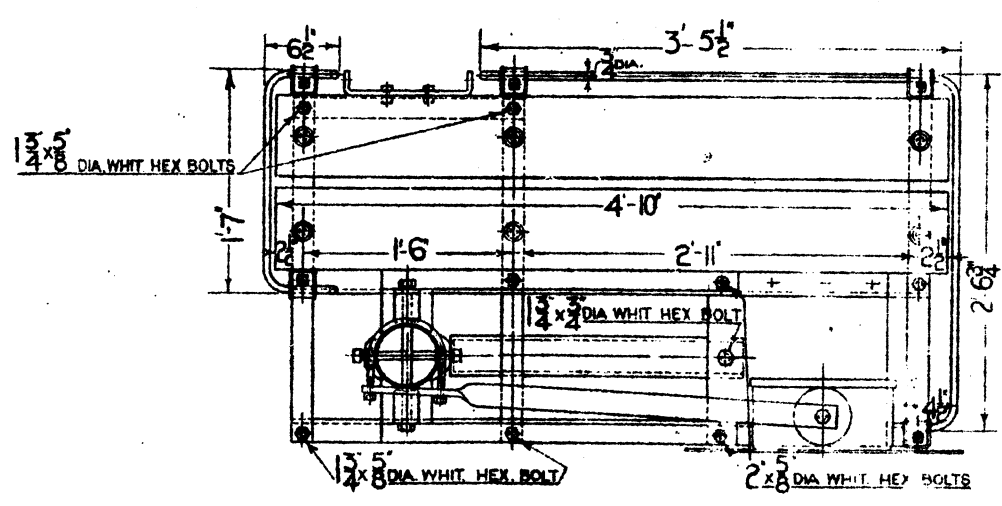
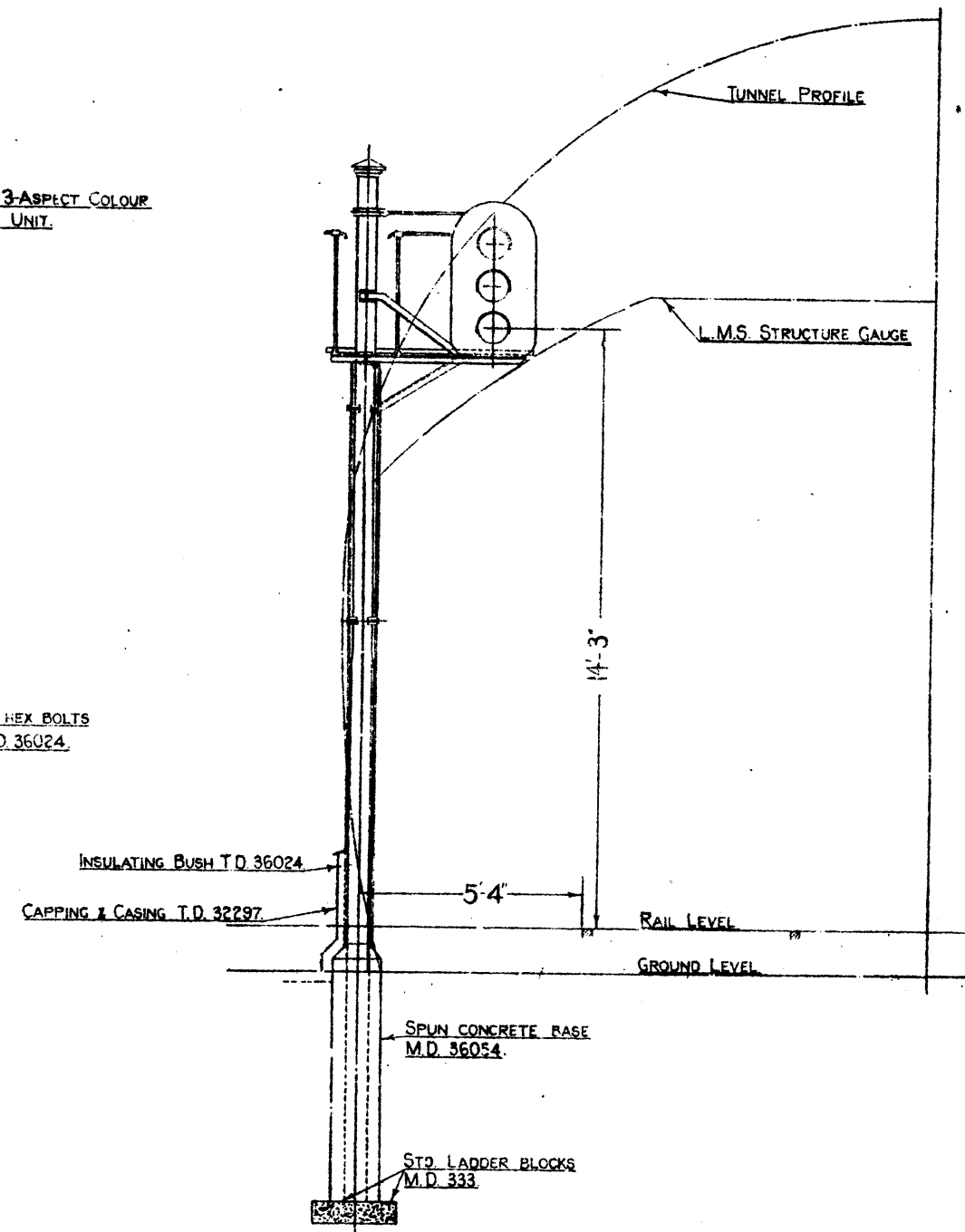
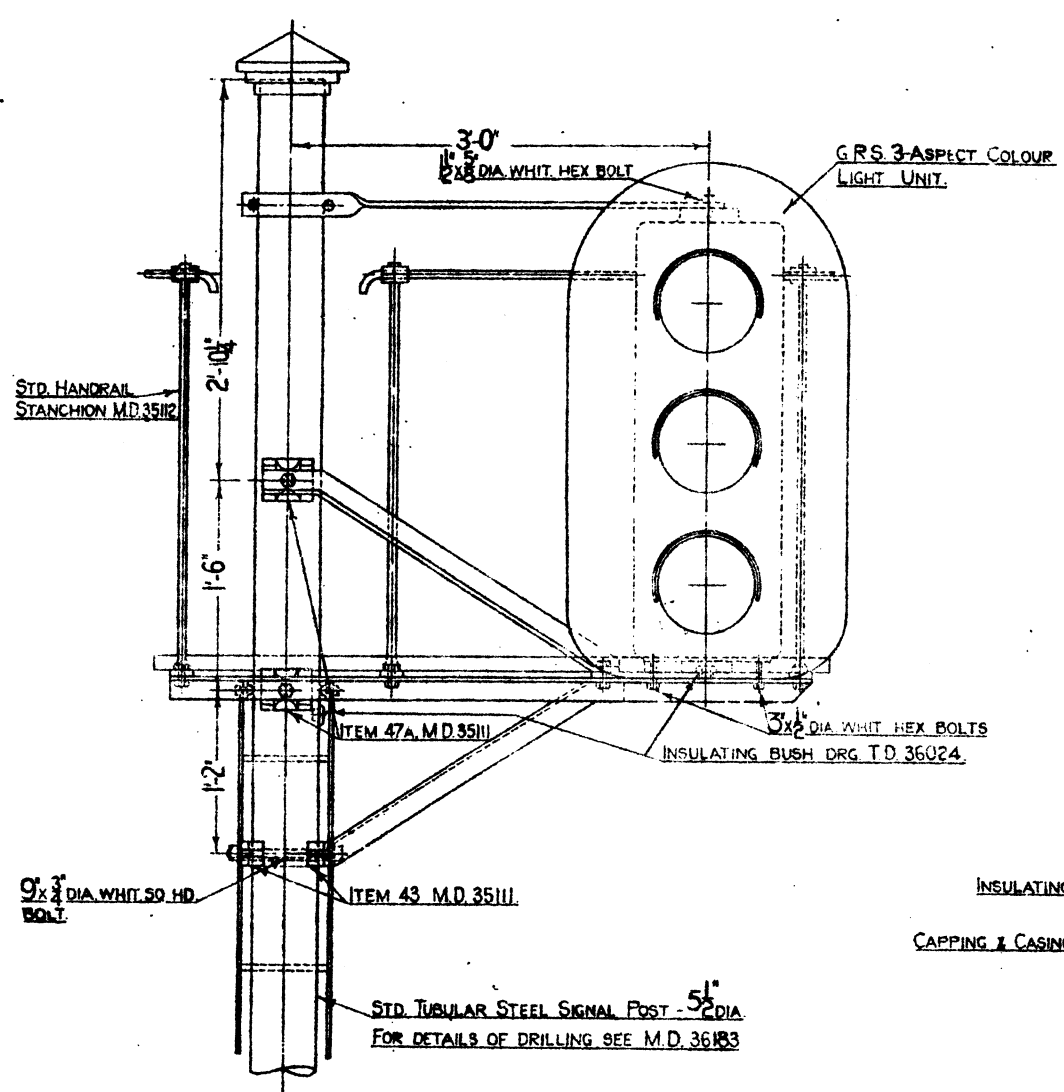
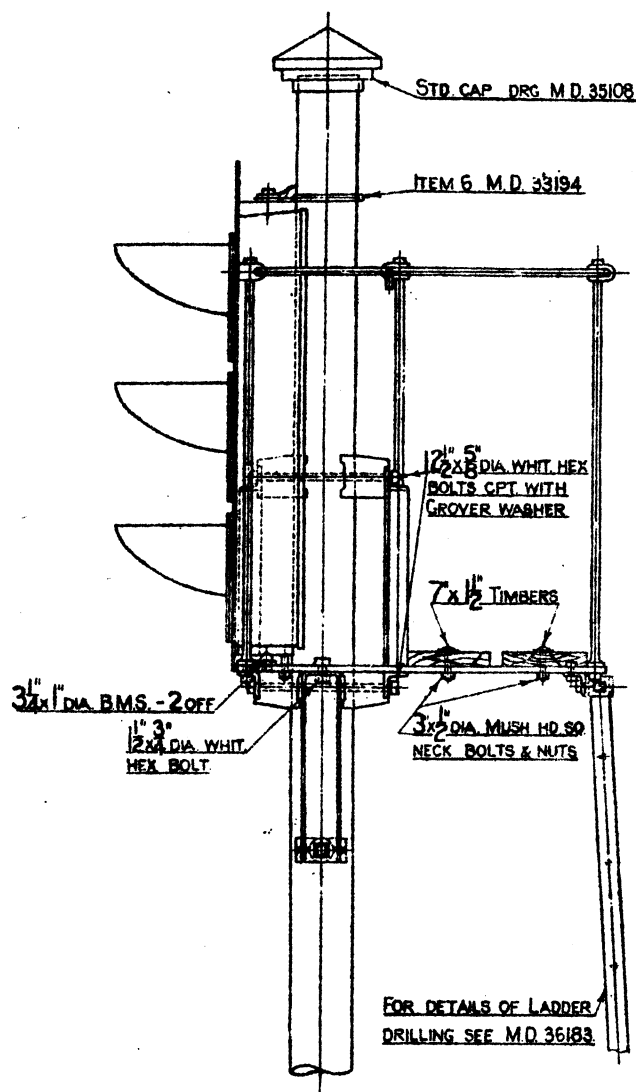
COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF DRAWINGMAN.

SIGNAL AND TELEGRAPH ENGINEERS OFFICE BOSTON LMS. 1

PLAN NO. TD 36016

PLAN DATE 30<sup>th</sup> JAN 1936

DATE ISSUED



ALL ANGLES 2x2x3/8 L.M.S.  
ALL RIVETS 5/8 DIA. SNAP HD.

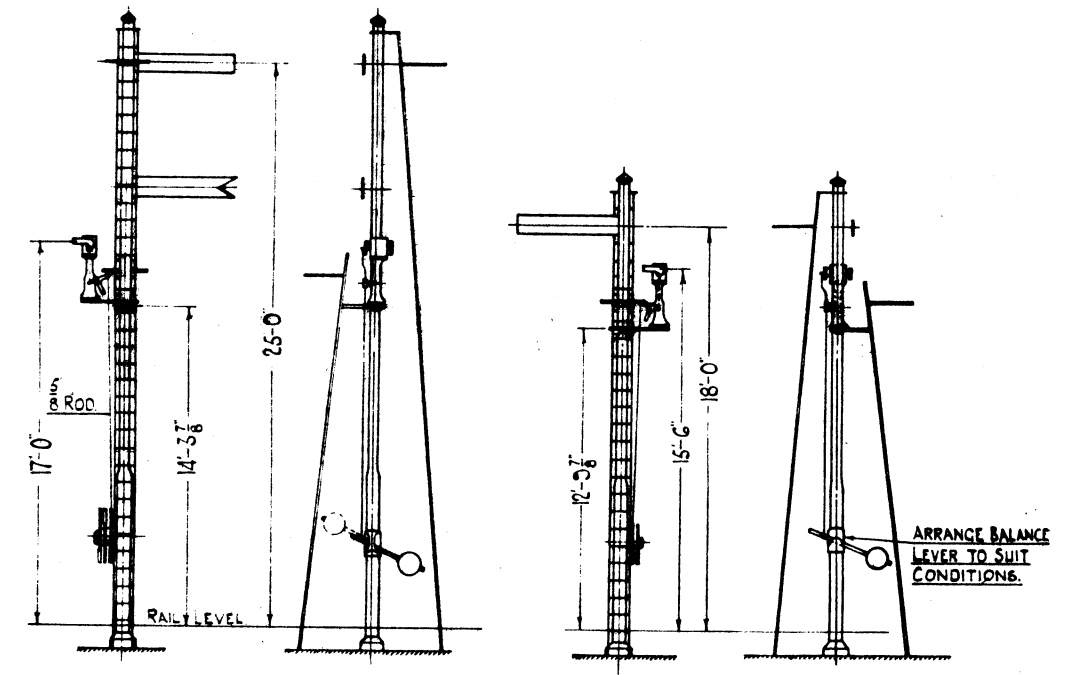
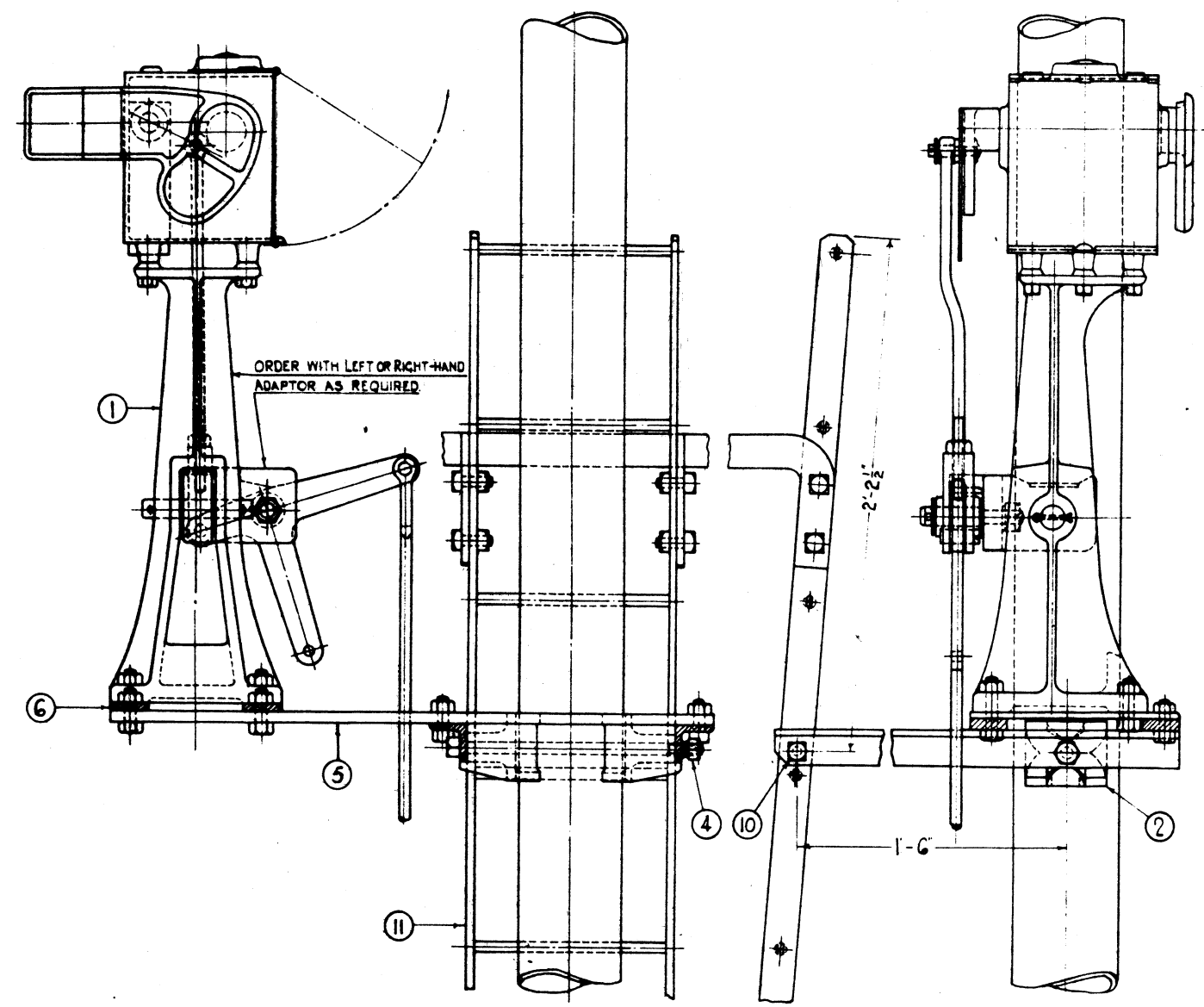
L.M.S.  
STD. SIDE BRACKET COLOUR LIGHT SIGNAL.

DRONE BY...  
TRACED BY... N.D.A.  
CHECKED BY... F.M.V.

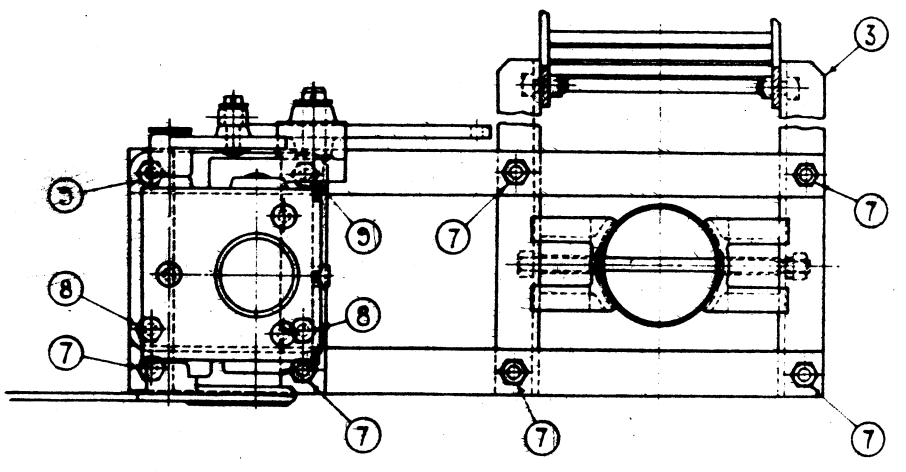
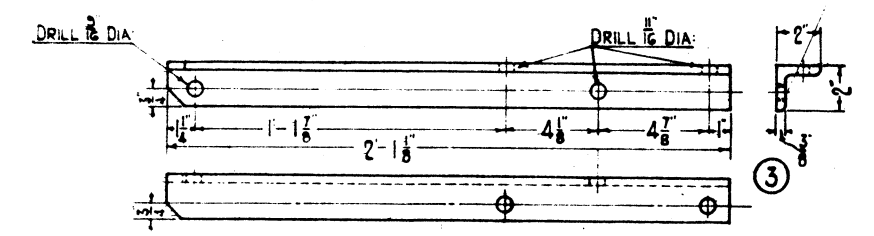
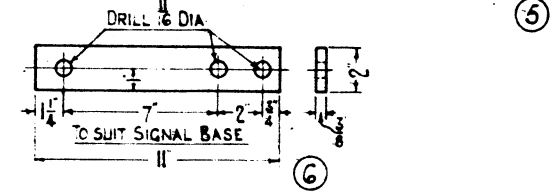
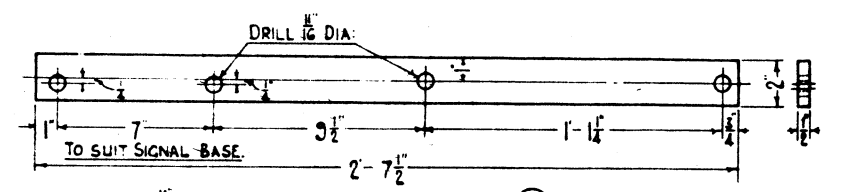
COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER

LONDON MIDLAND & SCOTLAND RAILWAY  
SIGNAL & TELEGRAPH ENGINEERS OFFICE  
EUSTON. L.M.S.I.  
PLAN NO. M.D. 36182  
PLAN DATE 3-9-26  
DATE ISSUED





TYPICAL EXAMPLES  
SCALE 4" = 1 FT.



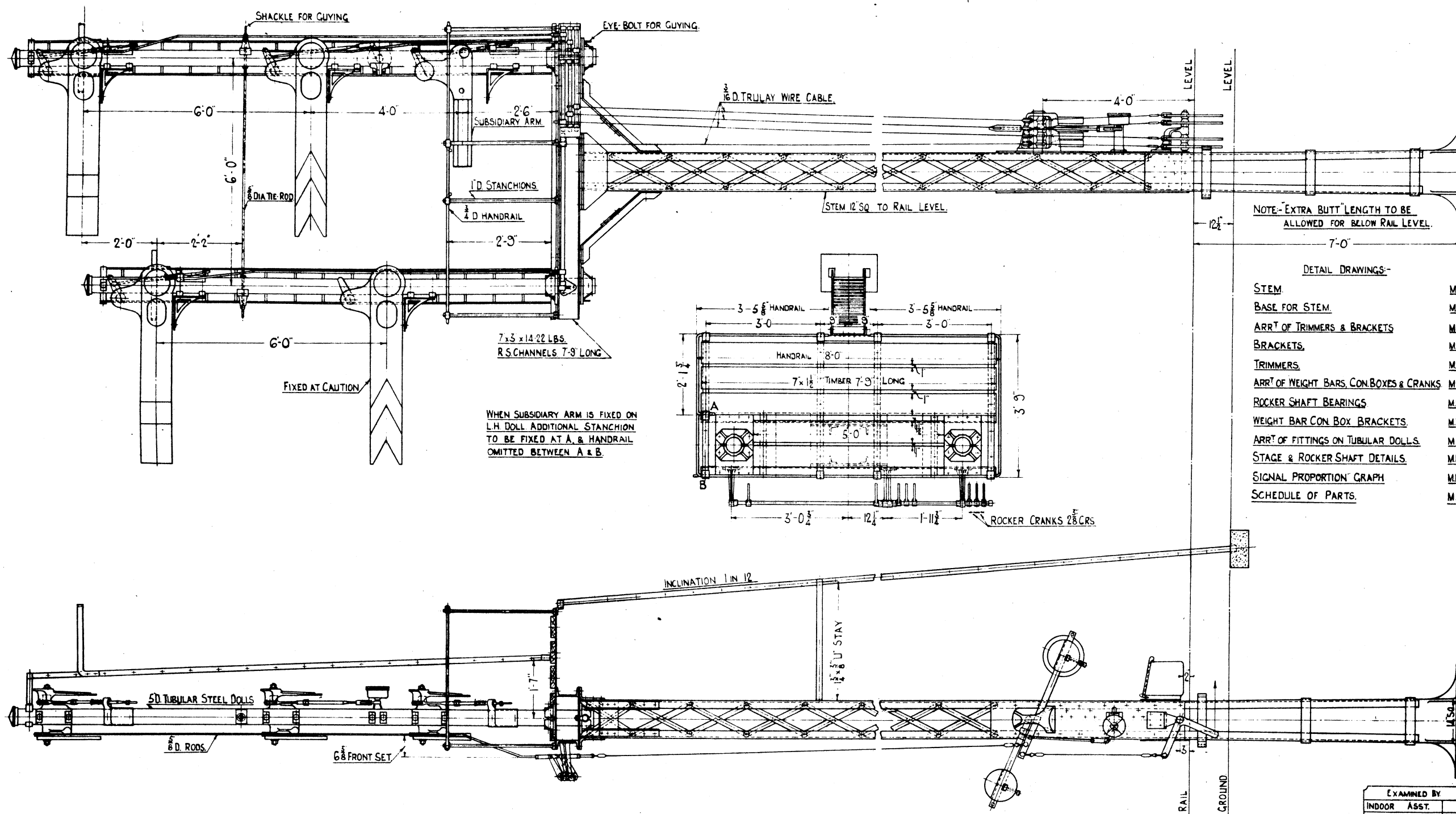
NO	STORES CAT NO	DESCRIPTION	MATERIAL	QTY	REMARKS	APPROV	BSI SPECIFN
1		EX L&N W MINIATURE SIGNAL		1	ADAPTED FOR ELEVATED WORKING TO MD3103		
2	66/7472	ADAPTOR FOR 5/2 D TUBS POLE	C.I.	2	TO MD 35111 DETAIL 47A		
3		ANGLE STAY 2" x 2" x 3/8"	M.S.	2			15
4	3/46713	BOLT 5/8 D x 1 1/2"	M.S.	1	HEX. HD. & NUT GROVER WASHER		15
5		BEARER FOR SIGNAL	M.S.	2			15
6		STRAP	M.S.	2			15
7	3/45657	BOLT 5/8 D x 1 3/4"	M.S.	6	WITH HEX HD. & NUT		15
8		" " " " x 2"	M.S.	2			15
9		" " " " x 2 1/2"	M.S.	2			15
10	3/50324	" " " " x 1 1/4"	M.S.	6	SQ " " " " (AS MD333 DET 15)		
11		LADDER & BOW		1	TO N.D. 333		

L.M.S.  
SINGLE ARM MINIATURE SIGNAL ON TUBULAR POST.

EXAMINED BY	
INDOOR ASST.	
ELECTRICAL "	
MATERIALS "	

DRAWN BY  
TRACED BY  
CHECKED BY

LONDON SIGNAL AND TELEGRAPH ENGINEER'S OFFICE  
EUSTON LMS. I.  
PLAN NO MD. 4715  
PLAN DATE 19-4-27



NOTE - EXTRA BUTT LENGTH TO BE ALLOWED FOR BELOW RAIL LEVEL.

DETAIL DRAWINGS:-

STEM	MD.37271
BASE FOR STEM	MD.37279
ARR'T OF TRIMMERS & BRACKETS	MD.37270
BRACKETS	MD.37274
TRIMMERS	MD.37275
ARR'T OF WEIGHT BARS, CON. BOXES & CRANKS	MD.37276
ROCKER SHAFT BEARINGS	MD.37277
WEIGHT BAR CON. BOX BRACKETS	MD.37278
ARR'T OF FITTINGS ON TUBULAR DOLLS	MD.37280
STAGE & ROCKER SHAFT DETAILS	MD.37284
SIGNAL PROPORTION GRAPH	MD.37402
SCHEDULE OF PARTS	MD.37285

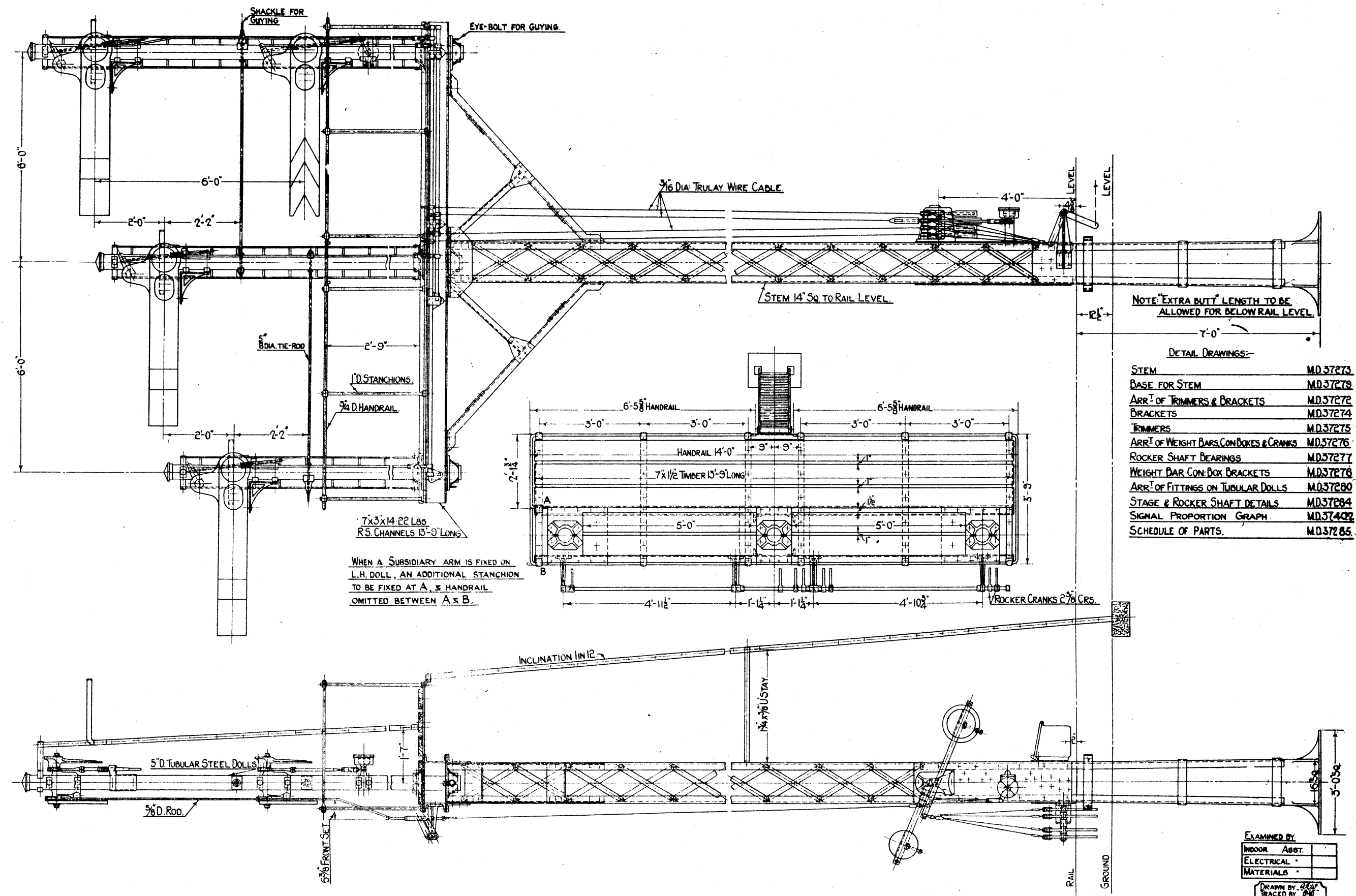
L.M.S.  
 STD 2-DOLL SEMAPHORE BRACKET SIGNAL.  
 GENERAL ARRANGEMENT

EXAMINED BY	
INDOOR ASST.	
ELECTRICAL	
MATERIALS	

DRAWN BY	<i>[Signature]</i>
TRACED BY	<i>[Signature]</i>
CHECKED BY	<i>[Signature]</i>

LONDON MIDLAND & SCOTTISH RAILWAYS CO.	
SIGNAL AND TELEGRAPH ENGINEER'S OFFICE	
EUSTON L.M.S.I.	
PLAN NO.	M.D. 37281
PLAN DATE	14-8-37
DATE ISSUED	





NOTE: EXTRA BUTT LENGTH TO BE ALLOWED FOR BELOW RAIL LEVEL.

DETAIL DRAWINGS:-

STEM	M.D.37273
BASE FOR STEM	M.D.37275
ARR <sup>Y</sup> OF TRIMMERS & BRACKETS	M.D.37272
BRACKETS	M.D.37274
TRIMMERS	M.D.37275
ARR <sup>Y</sup> OF WEIGHT BARS, CON BOXES & CRANKS	M.D.37276
ROCKER SHAFT BEARINGS	M.D.37277
WEIGHT BAR CON. BOX BRACKETS	M.D.37278
ARR <sup>Y</sup> OF FITTINGS ON TUBULAR DOLLS	M.D.37280
STAGE & ROCKER SHAFT DETAILS	M.D.37284
SIGNAL PROPORTION GRAPH	M.D.37402
SCHEDULE OF PARTS.	M.D.37285

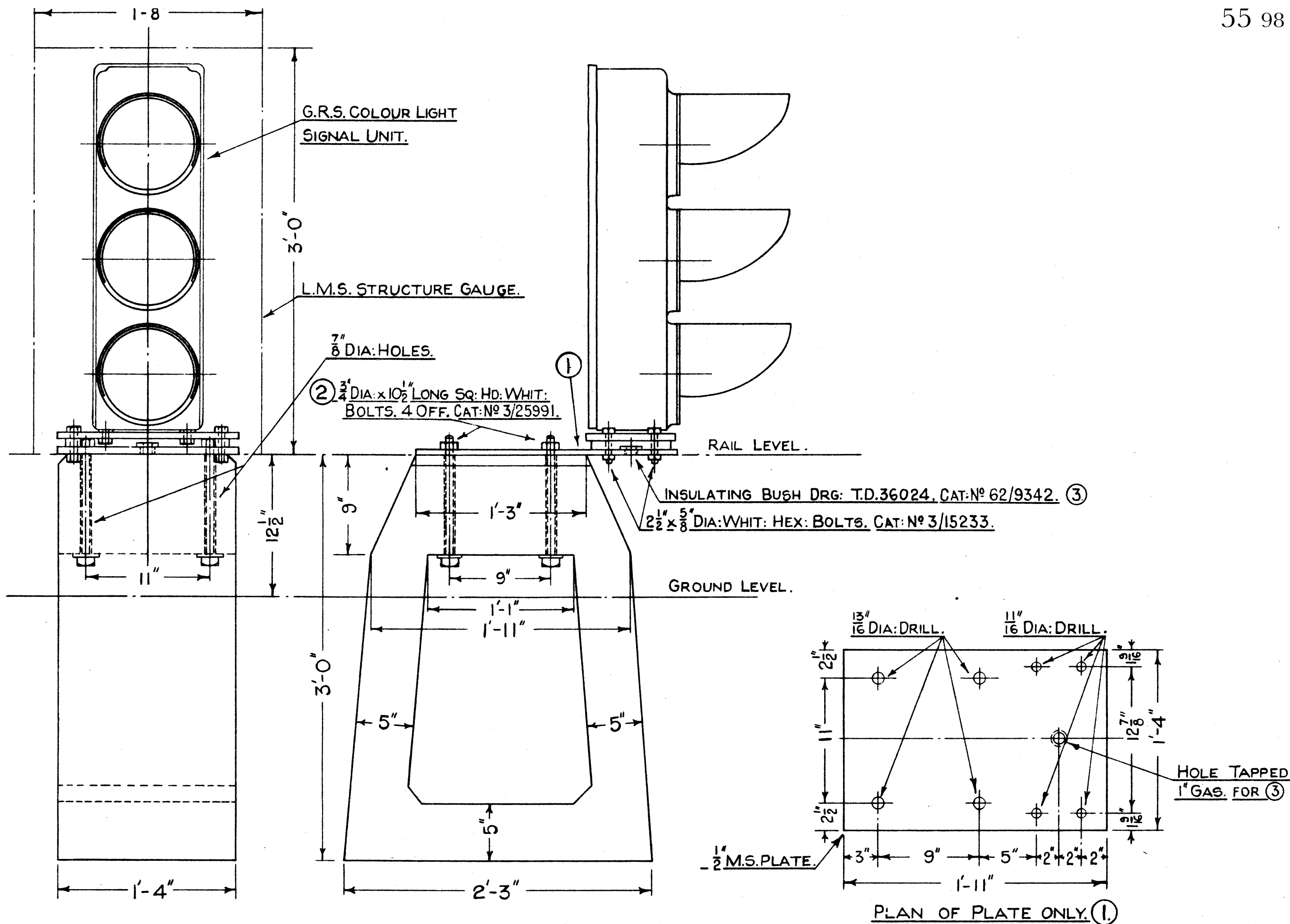
WHEN A SUBSIDIARY ARM IS FIXED ON L.H. DOLL, AN ADDITIONAL STANCHION TO BE FIXED AT A, & HANDRAIL OMITTED BETWEEN A & B.

**L.M.S.**  
**STD. 3-DOLL SEMAPHORE BRACKET SIGNAL.**  
**GENERAL ARRANGEMENT.**  
 SCALE  $\frac{3}{4} = 1' 0''$

EXAMINED BY:  
 INDOOR ASST. \_\_\_\_\_  
 ELECTRICAL \_\_\_\_\_  
 MATERIALS \_\_\_\_\_  
 DRAWN BY: *222*  
 TRACED BY: *222*  
 CHECKED BY: *222*

LONDON, MANCHESTER & SCOTLAND RAILWAY CO.  
 SIGNAL & TELEGRAPH  
 ENGINEER'S OFFICE  
 EUSTON, L.M.S.I.  
 PLAN NO. *M.D.37282*  
 PLAN DATE *14-8-37*  
 DATE ISSUED \_\_\_\_\_

COPY OF STANDARD  
 DRAWING SIGNED BY  
 THE SIGNAL &  
 TELEGRAPH ENGINEER  
 CHIEF DRAUGHTSMAN

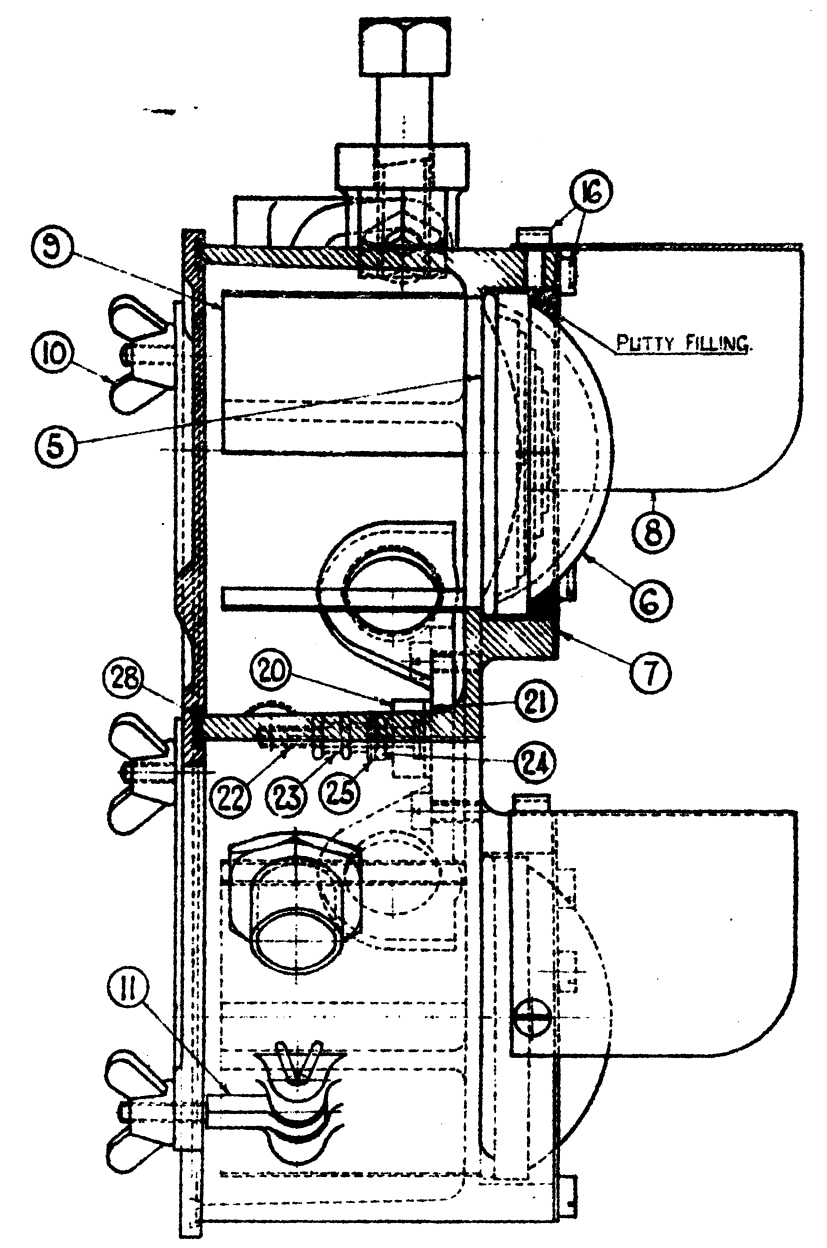
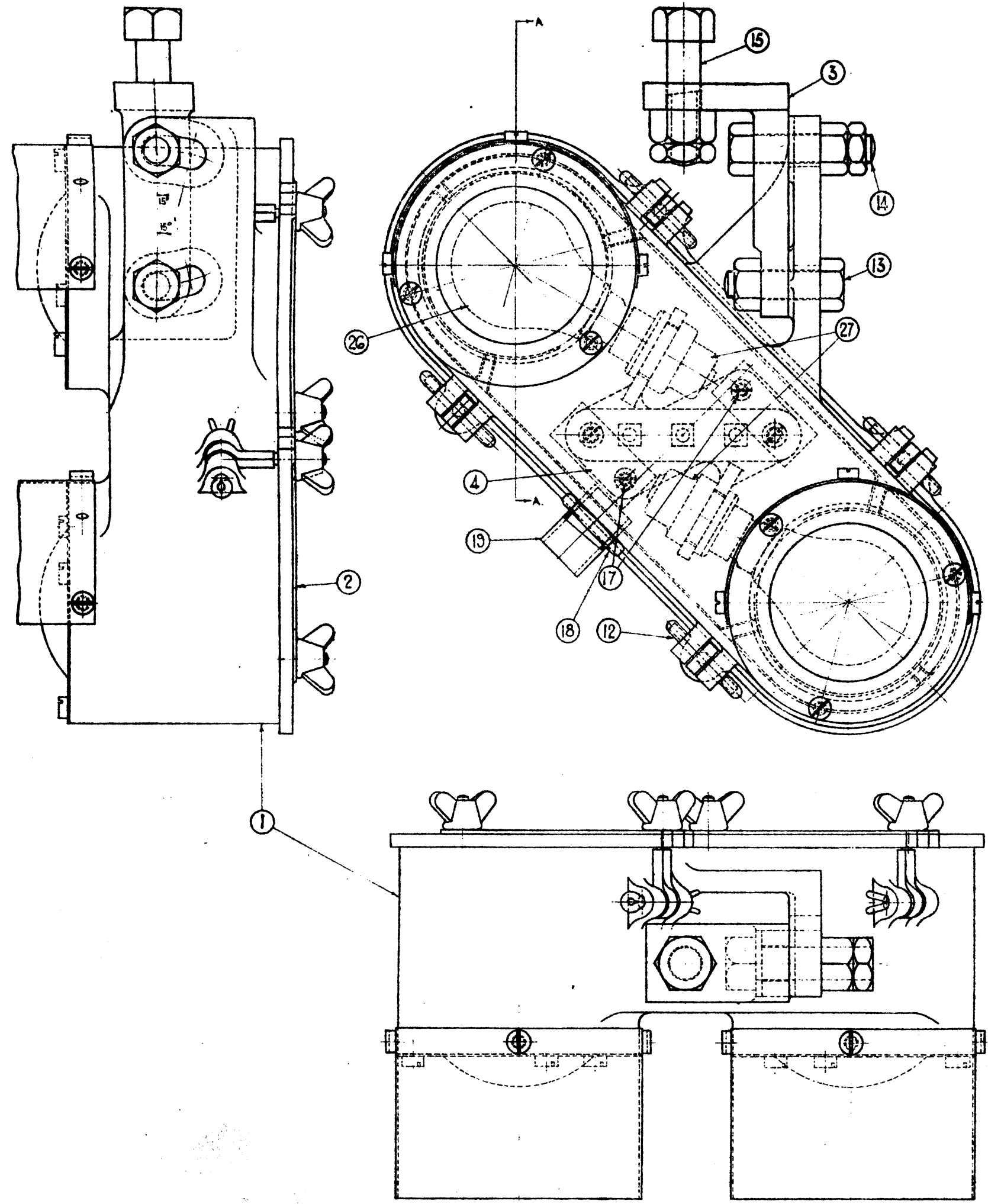


CONCRETE BASE. APPROX 700 LBS.  
CAT: N° 4/3733.

3 ASPECT COLOUR LIGHT DISTANT SIGNAL  
FOR ERECTION IN 6 FT. WAY.  
SCALE = 1/2" TO 1 FT.

CONCRETE BASE  
AMENDED 17-12-40.

EXAMINED BY:	
INDOOR ASST	<i>W.A.</i>
ELECTRICAL "	<i>N.C.</i>
MATERIALS "	
DRAWN BY: <i>F.B.</i>	
TRACED BY: <i>K.B.</i>	
CHECKED BY: <i>F.B.</i>	
L.M.S. RAILWAY COMPANY.	
SIGNAL & TELEGRAPH ENG <sup>55</sup>	
OFFICE. EUSTON. L.M.S.I.	
PLAN N° MD. 37299.	
PLAN DATE. 24-6-37.	



SECTION 'A-A'

UNIT SUPPLIED COMPLETE TO CAT. 66/12862

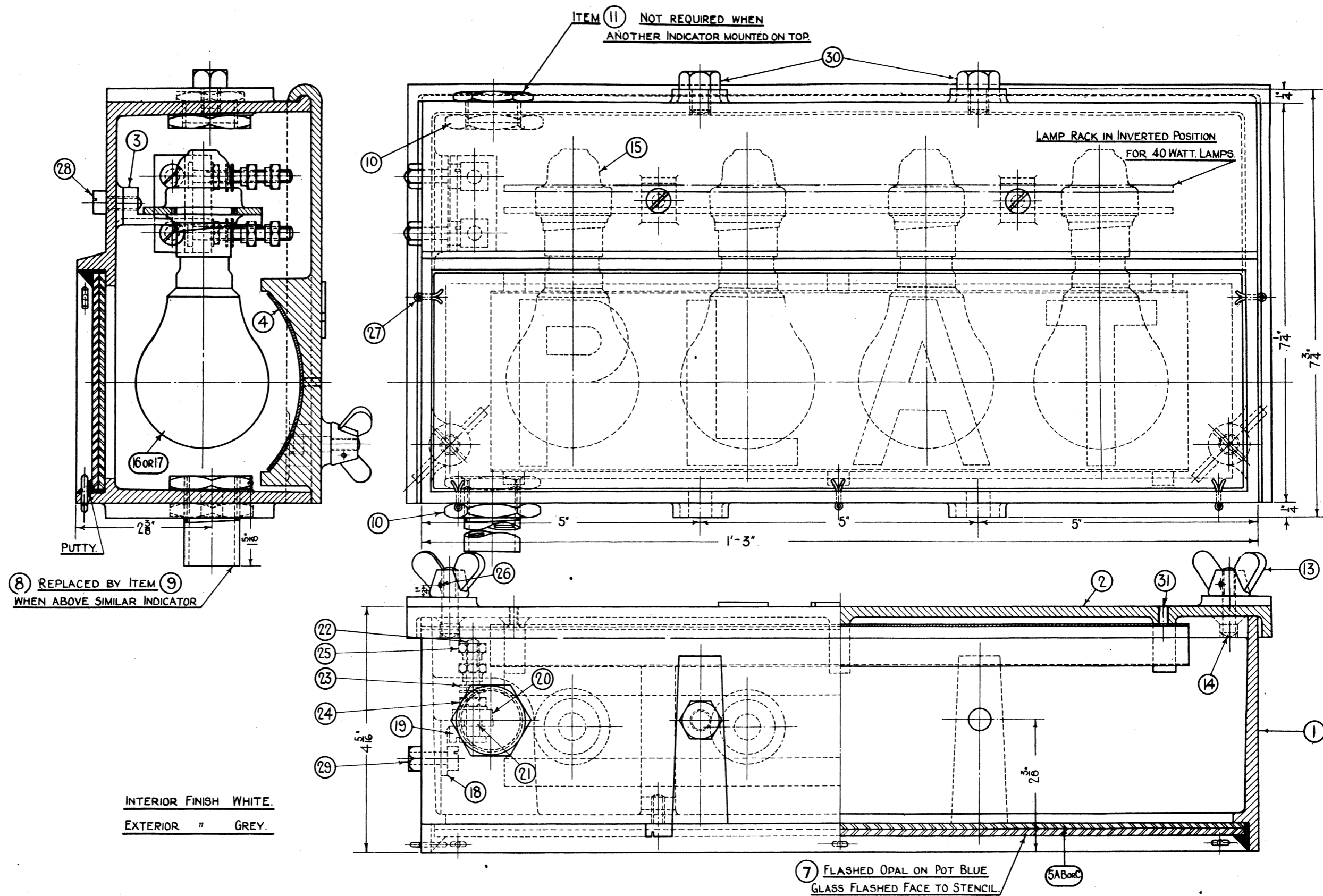
**L.M.S.**  
**SUBSIDIARY POSITION LIGHT SIGNAL.**

4 SHEETS SHEET 1.  
 FOR SCHEDULE OF PARTS SEE DRG.  
 NO PD.37009 SHEET 4.

EXAMINED BY	
INDOOR ASST.	
ELECTRICAL	
MATERIALS	
DRAWN BY	
TRACED BY	
CHECKED BY	

COPY OF STANDARD  
 DRAWING SIGNED BY  
 THE SIGNAL &  
 TELEGRAPH ENGINEER  
 CHIEF BRILLIANTMAN.

SIGNAL AND TELEGRAPH  
 ENGINEER'S OFFICE,  
 EUSTON L.M.S.I.  
 PLAN NO. PD.37009  
 PLAN DATE 9-11-57  
 DATE ISSUED



**L. M. S.**  
**ILLUMINATED WORD INDICATOR.**  
**FULL SIZE.**

EXAMINED BY	
INDOOR ASST.	200
ELECTRICAL "	200
MATERIALS "	200

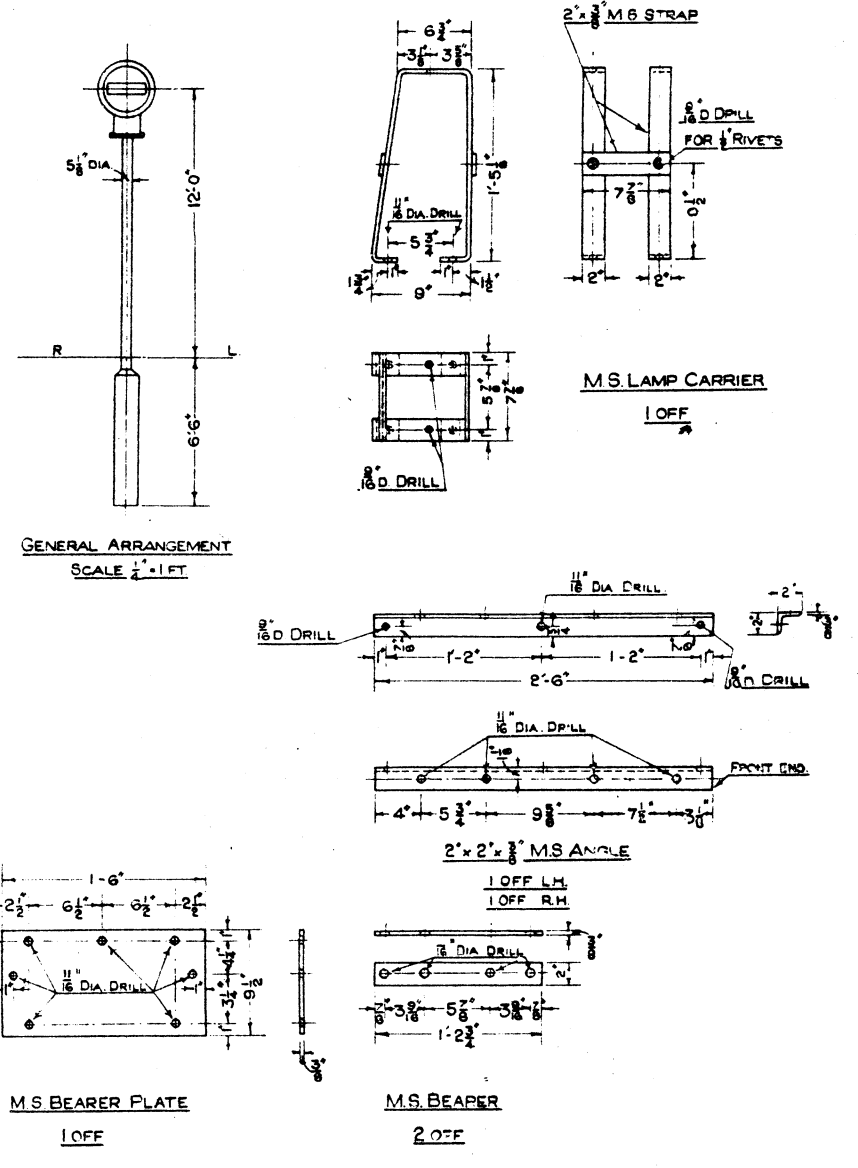
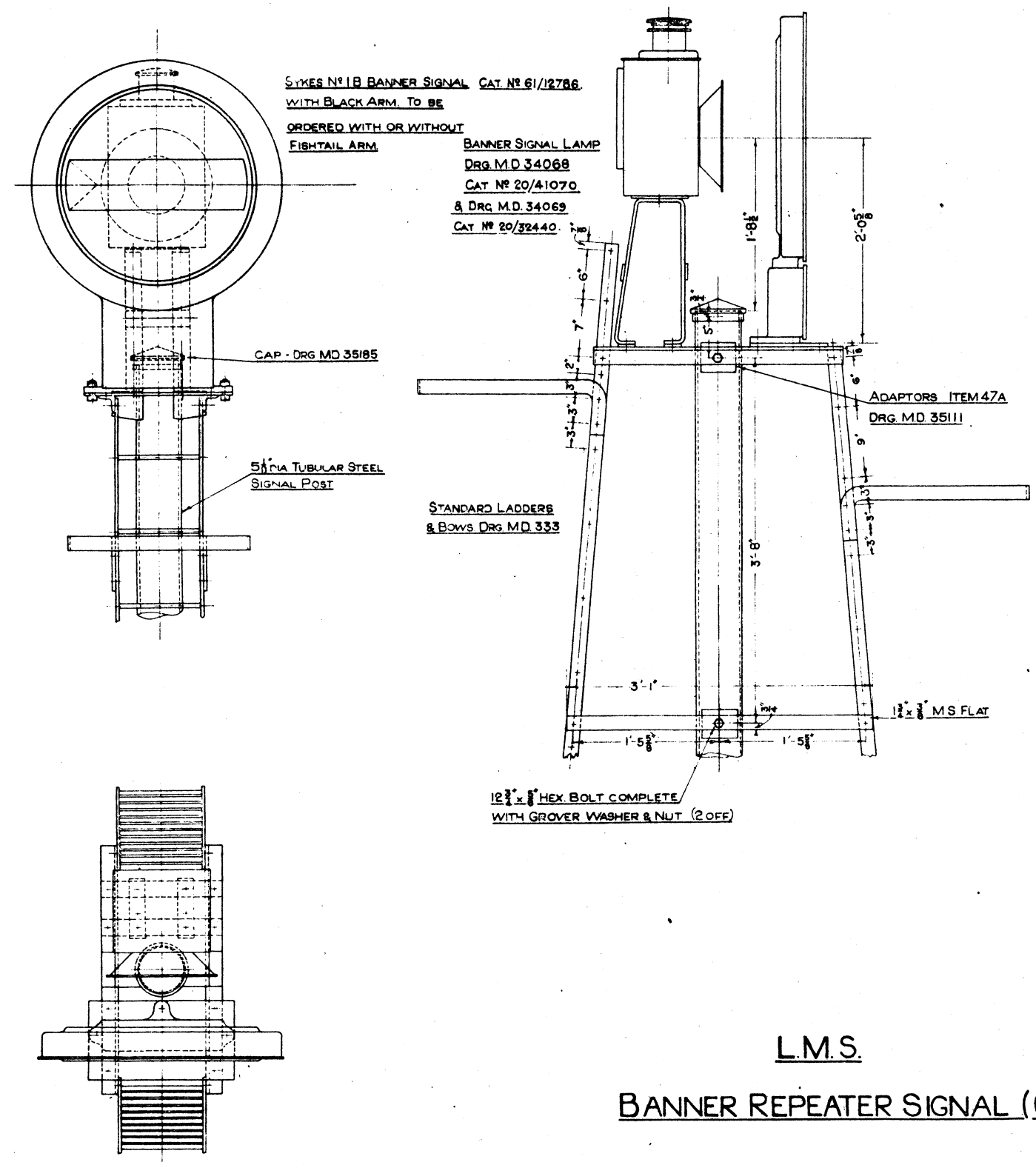
COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF DRAUGHTSMAN

DRAWN BY	200
TRACED BY	200
CHECKED BY	200

LONDON MIDLAND & SCOTTISH RAILWAY CO  
SIGNAL AND TELEGRAPH ENGINEER'S OFFICE  
EUSTON L.M.S.I.

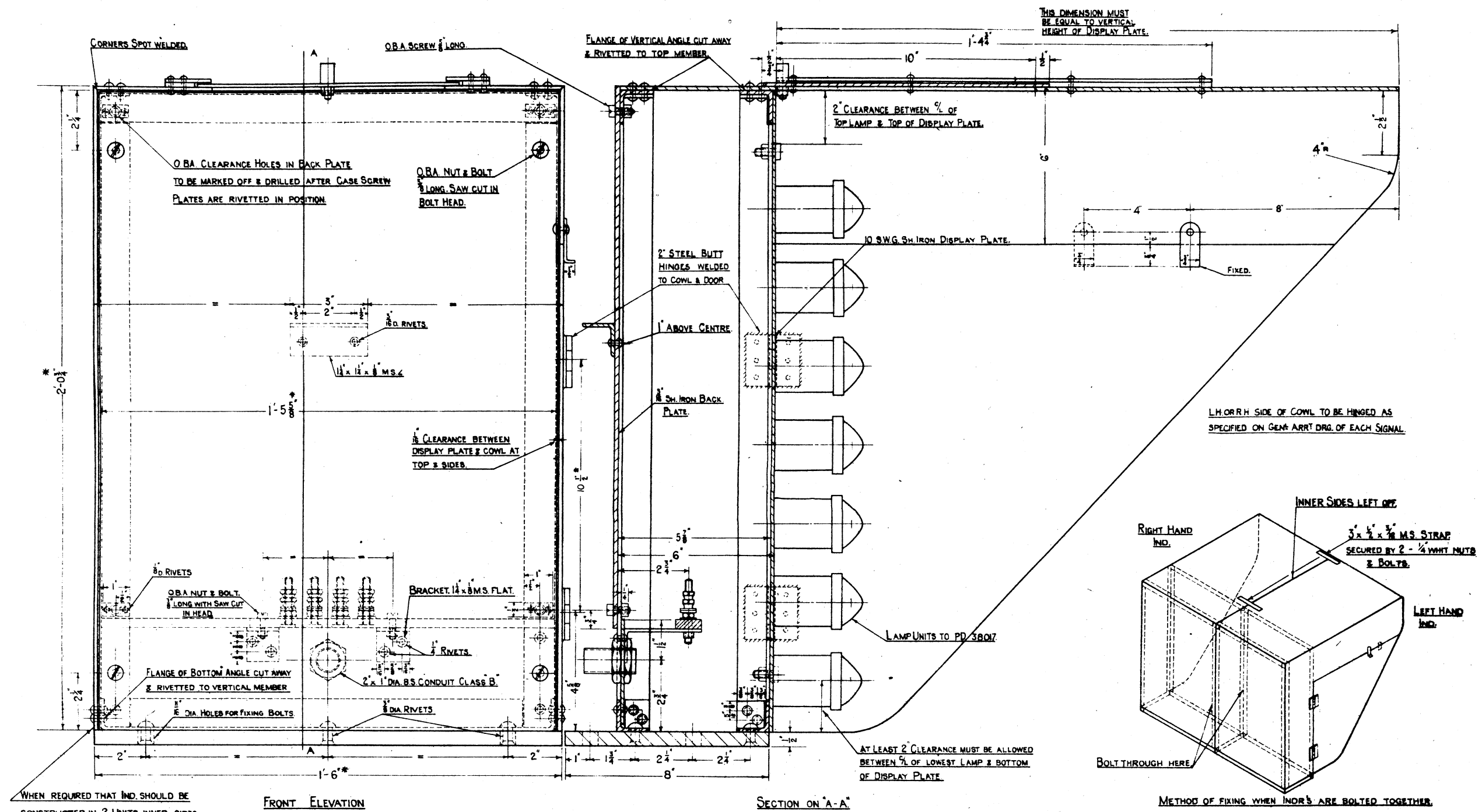
4 SHEETS SHEET 1.

PLAN No PD.37010  
PLAN DATE 30-4-36  
DATE ISSUED

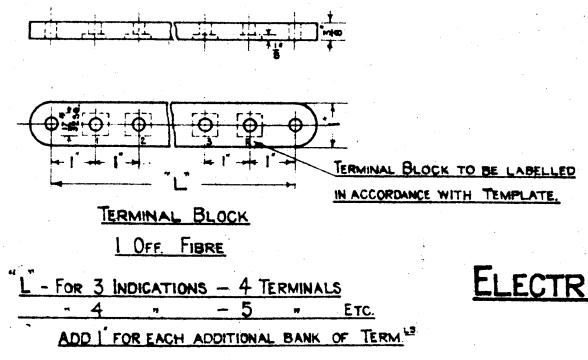
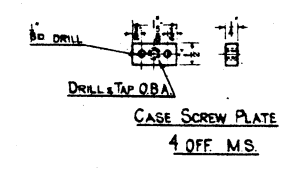
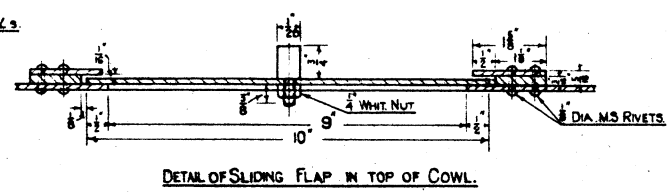


L.M.S.  
BANNER REPEATER SIGNAL (OIL-LIT)

INDOOR ASST. ELEC. TRACED BY WJW		
DRAWN BY WJW		
NATURE OF AMENDMENT		
2-2-42	BANNER FIXING HOLE CENTRES INCREASED FROM 3 1/2" TO 4"	
COPY N°	SHEET NO.	
PLAN N°	MD.38411	SHEET OF SHEETS
DATE 2-12-38 ISSUED		
DRAWN BY WJW		
CHECKED BY WJW		
DESIGNED BY WJW		
APPROVED BY WJW		



WHEN REQUIRED THAT IND. SHOULD BE CONSTRUCTED IN 2 UNITS, INNER SIDES MAY BE LEFT OFF & THE UNITS BOLTED TOGETHER WITH 4- $\frac{3}{8}$ " DIA. BOLTS THRO SIDE L.S. (SEE OTHER VIEW)



NOTES:  
DIMENSIONS MARKED THUS \* WILL VARY IN ACCORDANCE WITH TEMPLATE.  
FINISH BLACK INSIDE & OUT.  
ALL ANGLES 1/2 x 1/4 x 1/8  
HOOD - 16 SWG SHEET METAL.

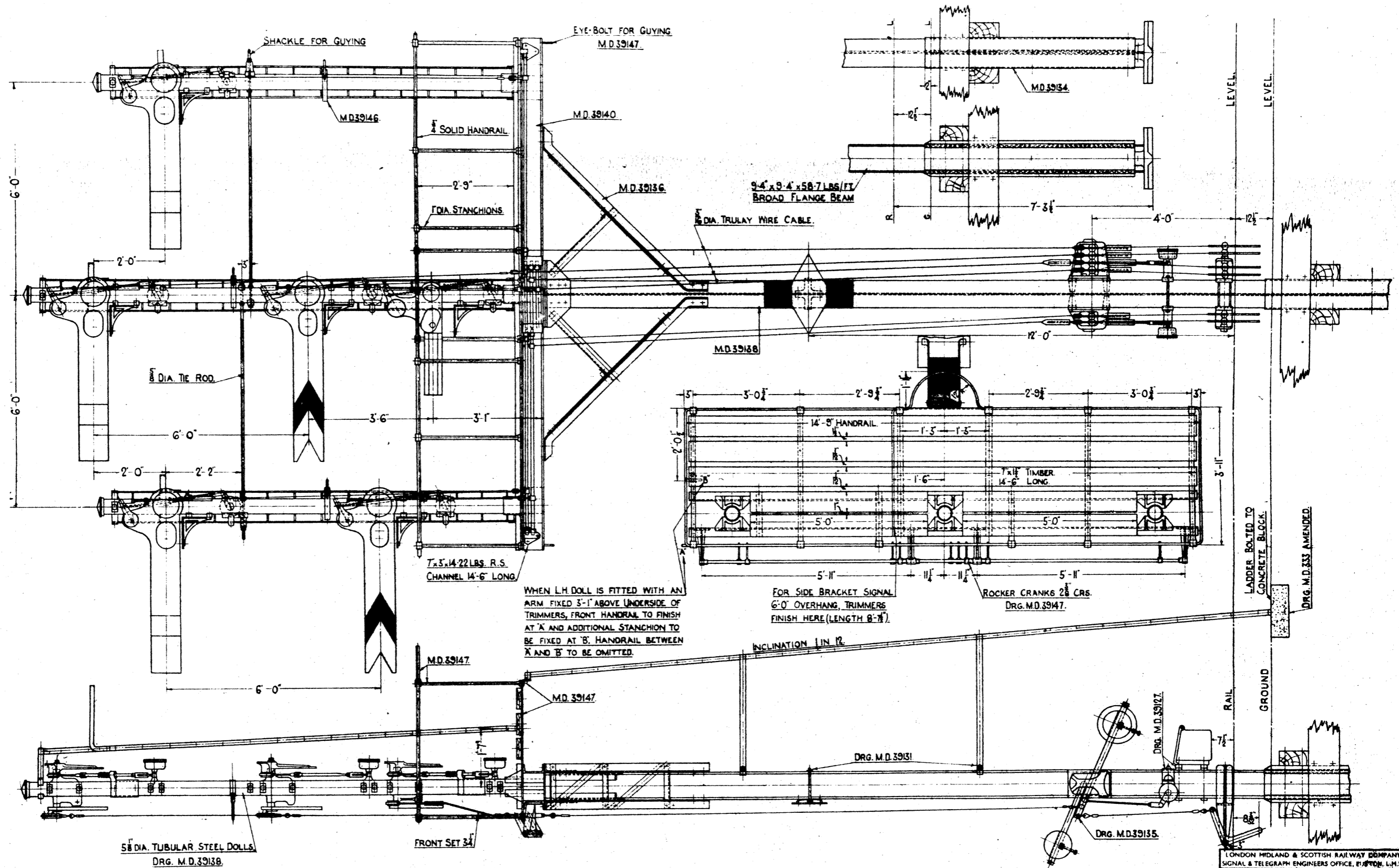
L.M.S.  
ELECTRICAL ROUTE INDICATOR.  
18" SIZE

LONDON MIDLAND & SCOTTISH RAILWAY COMPANY. SIGNAL & TELEGRAPH ENGINEERS OFFICE, EUSTON, L.M.S.I.			
PLAN N <sup>o</sup> PD. 38016. REVISED.			
PLAN DATE 4.10.39. ISSUED			
COPY N <sup>o</sup> SUPERSEDES			
DATE	ITEM NO.	NATURE OF AMENDMENT	
9-4-41	HOOD	RE-DESIGN MATERIAL ALTERED TO 16 SWG.	
1. MACHINE	2. INSTR.	3. INDOOR ASST	4. DRAWN BY R.R.
5. O.G. DRAWING	6. ELECTRICAL	7. MATERIALS	8. TRACED BY B.A.
9. RED. TO COPY	10. AVAILABLE	DRAWER 55 N <sup>o</sup> 133	









WHEN LH DOLL IS FITTED WITH AN ARM FIXED 3'-1" ABOVE UNDERSIDE OF TRIMMERS, FRONT HANDRAIL TO FINISH AT 'A' AND ADDITIONAL STANCHION TO BE FIXED AT 'B'. HANDRAIL BETWEEN 'A' AND 'B' TO BE OMITTED.

FOR SCHEDULE OF PARTS SEE M.D.39137

L. M. S.  
3 DOLL BROAD FLANGE BEAM BRACKET SIGNAL.

LONDON MIDLAND & SCOTTISH RAILWAY COMPANY  
SIGNAL & TELEGRAPH ENGINEERS OFFICE, BOSTON, L.M.S.

PLAN N<sup>o</sup> M.D.39142 SHEET OF SHEETS  
PLAN DATE 30-6-39 ISSUED  
COPY N<sup>o</sup> SUPERSEDES

NO.	ITEM NO.	NATURE OF AMENDMENT.

F. MACHINE DRAWING  
 P. P. ELECTRICAL  
 D.G. DRG. GRND  
 FF. FILE FINISH  
 REDUCED COPY:

INDOOR ASST.  
 ELECTRICAL  
 MATERIALS

DRAWN BY L.M.S.  
 TRACED BY E.M.  
 CHECKED BY

DRAWER 55 N<sup>o</sup> 159





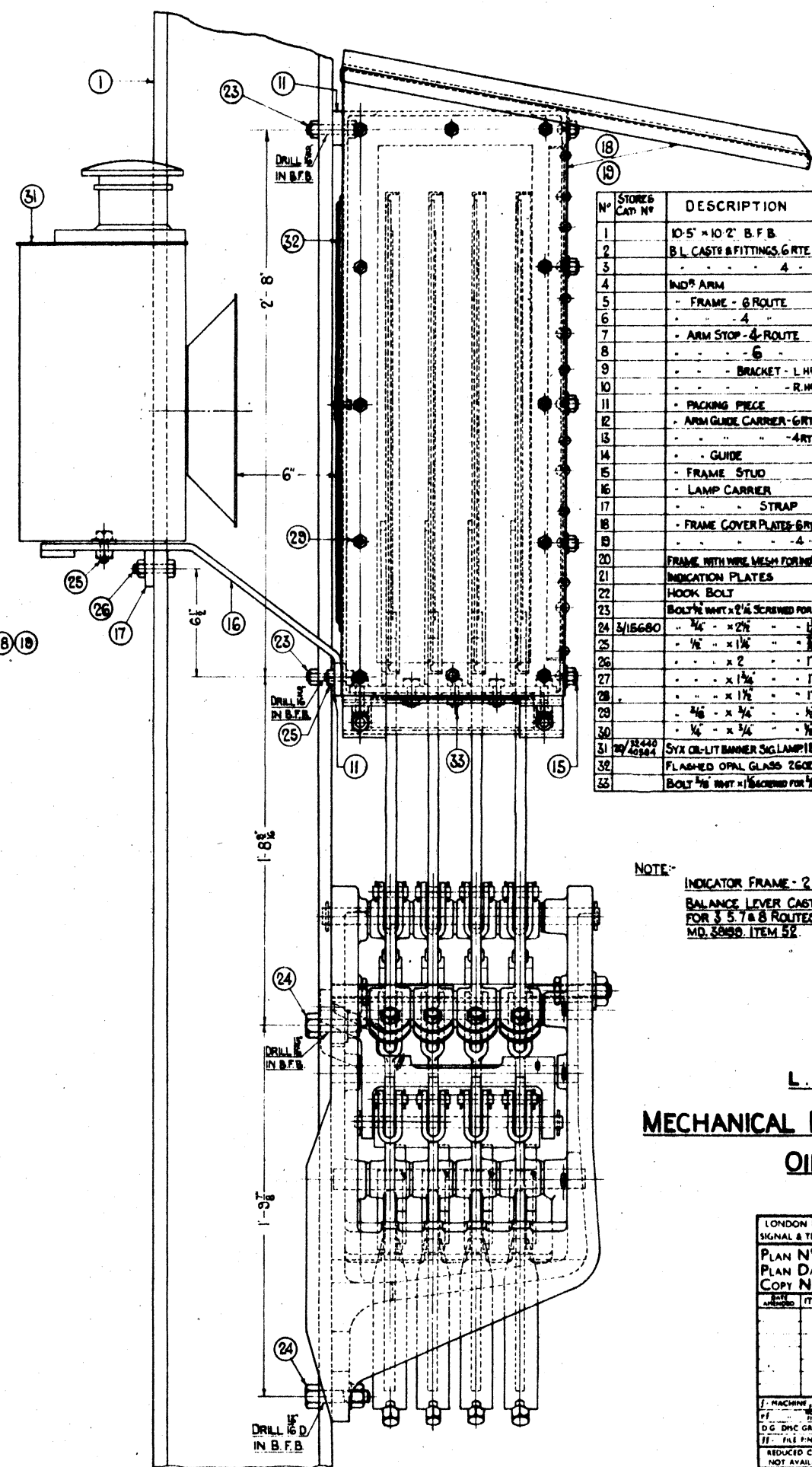
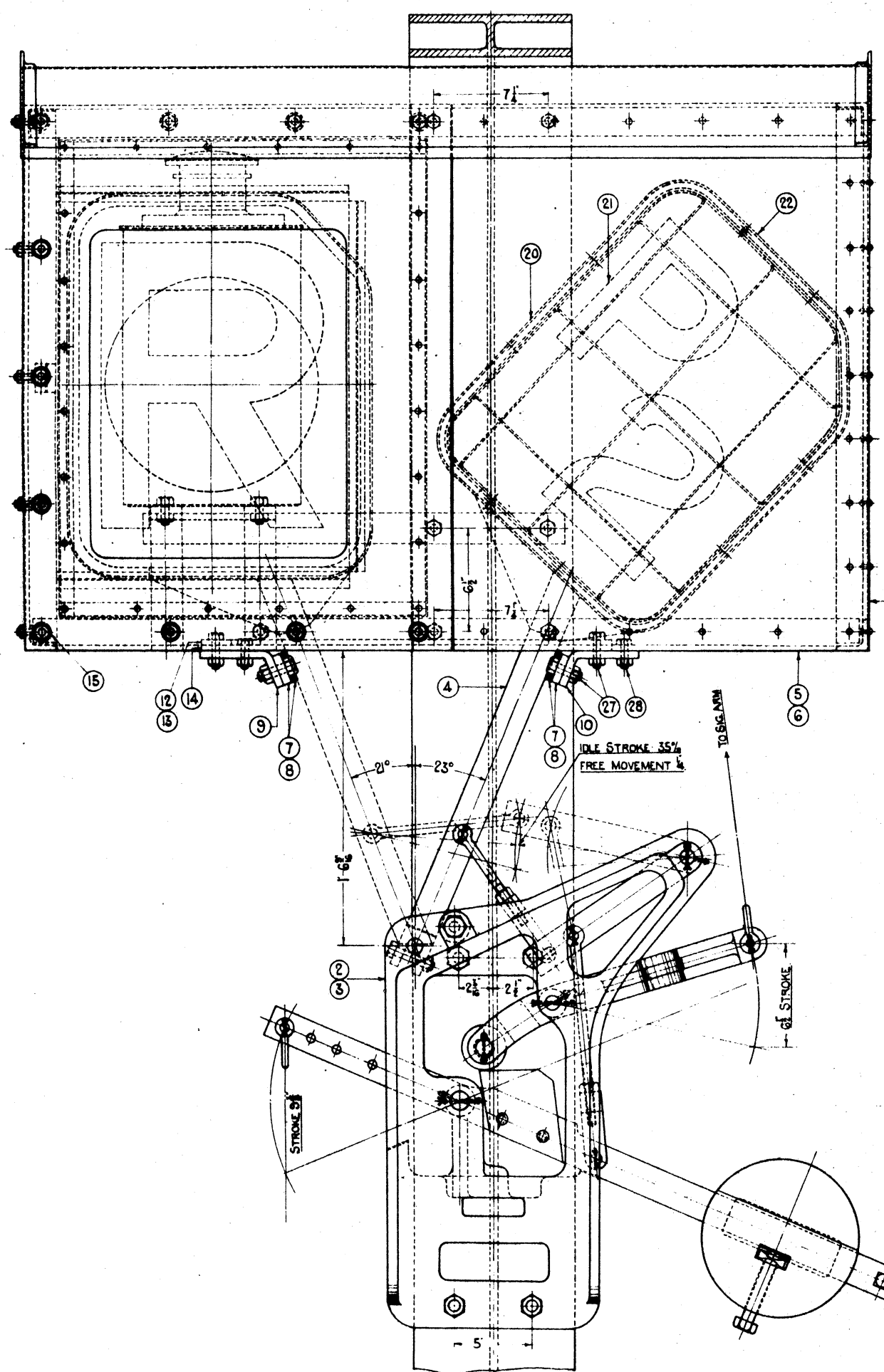












N <sup>o</sup>	STORES CAT <sup>n</sup> N <sup>o</sup>	DESCRIPTION	MAT <sup>l</sup>	N <sup>o</sup> REQ <sup>d</sup>	REMARKS	APP <sup>d</sup> W <sup>o</sup> RT <sup>h</sup>	B. S. I. SPEC <sup>n</sup>	SHEET N <sup>o</sup>
1		10'5" x 10'2" B.F.B.		1	TOMD 3065			
2		B.L. CASTS & FITTINGS, GRITE		1	EXCEPT ITEM 4			
3				4	REPLACES ITEM 4			4
4		IND <sup>o</sup> ARM	M.S.	2	REPLACES ITEM 4			
5		FRAME - 6 ROUTE	M.S.	1	2" x 2" x 1/4" Δ WELDED JOINTS		15	2
6				4				
7		ARM STOP - 4 ROUTE	M.S.	2	SUPPLIED BY T. & A. ANDERSON RUBBER COY		15	2
8				2				
9		BRACKET - L.H.P.	M.S.	2	BENT AT 60°		15	2
10				2				
11		PACKING PIECE	M.S.	2			15	2
12		ARM GUIDE CARRIER - GRITE	M.S.	2			15	2
13				2				
14		GUIDE	M.S.	2			15	2
15		FRAME STUD	M.S.	11	WITH HELIX NUT 1/4" x 1/2" W/SHIM		15	2
16		LAMP CARRIER	M.S.	1			15	2
17		STRAP	M.S.	1			15	2
18		FRAME COVER PLATE - GRITE	M.S.	1			15	3
19				4				
20		FRAME WITH WIRE MESH FORM <sup>o</sup>		1	INDICATOR PLATES			4
21		INDICATION PLATES		1	SPECIALLY GROUP			4
22		HOOK BOLT	M.S.	1	WITH HELIX NUT 1/4" x 1/2" W/SHIM		15	4
23		BOLT 1/2" WHT x 2" SCREWED FOR <sup>o</sup>	M.S.	4	WITH HEX NUTS		15	-
24	3/15660	1/4" x 1/2" - 1/4"	M.S.	4	- D & S W/SHIM		15	-
25		1/2" x 1 1/4" - 1/4"	M.S.	4	WITH HEX NUT		15	-
26		1/2" x 2" - 1/4"	M.S.	2			15	-
27		1/2" x 1 1/2" - 1/4"	M.S.	8			15	-
28		1/2" x 1 1/2" - 1/4"	M.S.	4			15	-
29		1/2" x 1 1/4" - 1/4"	M.S.	4			15	-
30		1/4" x 3/4" - 1/4"	M.S.	1			15	3
31	3/4440 40944	5/8" OIL-LIT BANNER SIG LAMP B		1	TO MD.3065			
32		FLASHED OPAL GLASS 260E		1	2'0" x 1'7 1/4"			
33		BOLT 1/2" WHT x 1" SCREWED FOR <sup>o</sup>	M.S.	2	WITH HEX NUT		15	-

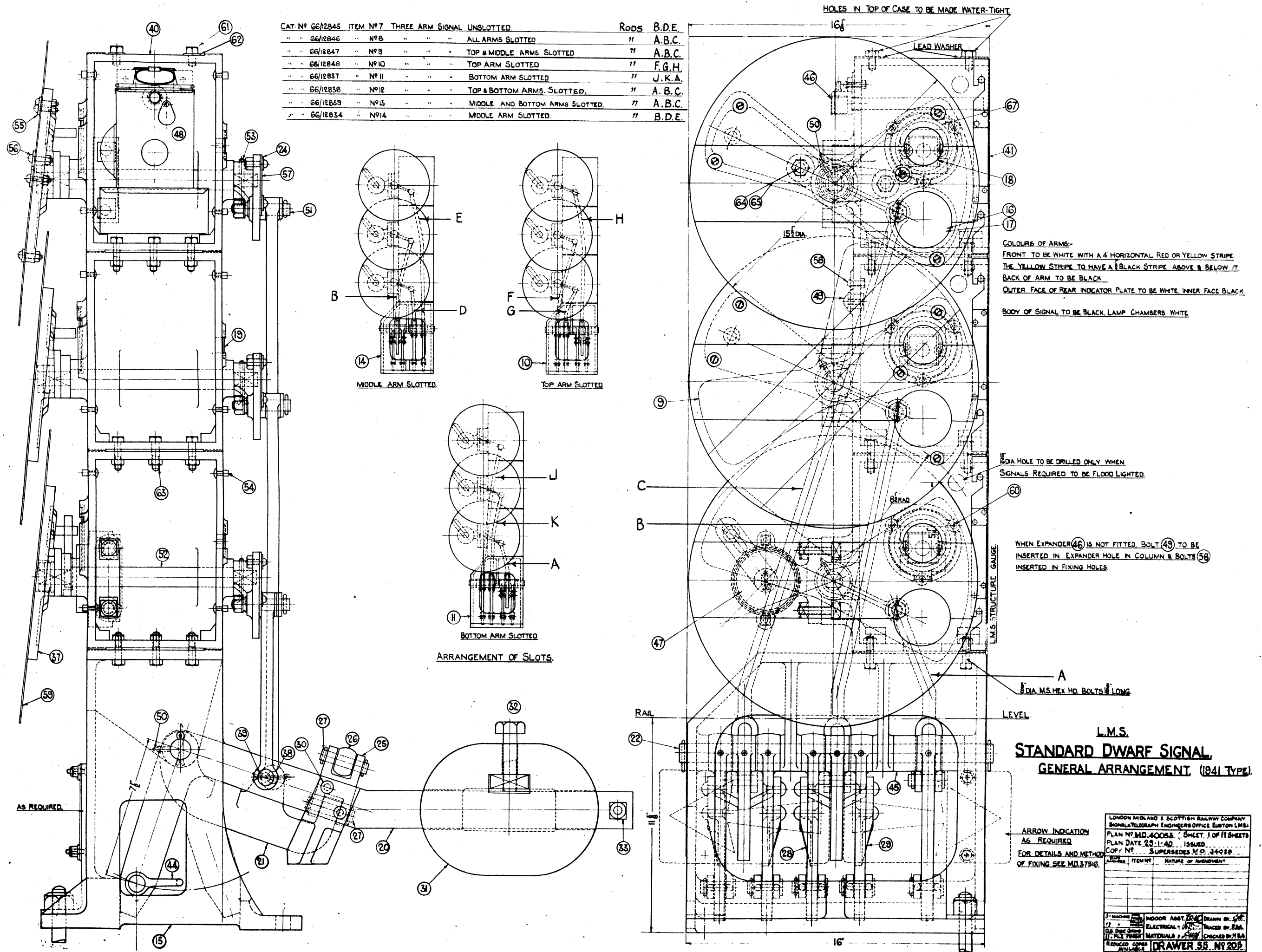
NOTE:-  
INDICATOR FRAME - 2 COATS MATT BLACK.  
BALANCE LEVER CASTINGS MADE FOR 4 G-9 ROUTES  
FOR 3, 5, 7 & 8 ROUTES USE PACKING PIECE TO DRG  
MD. 3065, ITEM 52.

L. M. S.  
**MECHANICAL ROUTE INDICATOR.**  
**OIL-LIT.**

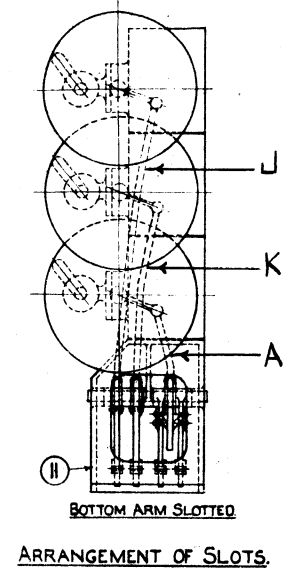
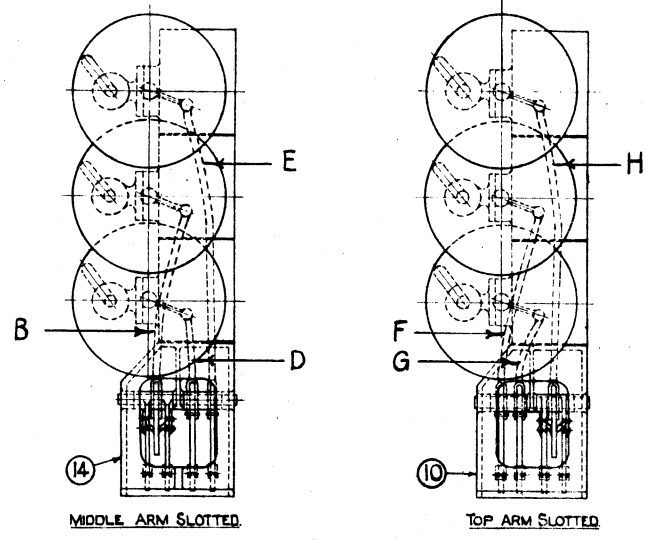
LONDON MIDLAND & SCOTTISH RAILWAY COMPANY.  
SIGNAL & TELEGRAPH ENGINEERS OFFICE, LUSHTON, L.M.S.  
PLAN N<sup>o</sup> MD.40257 SHEET 1 OF 4 SHEETS  
PLAN DATE 8-11-40 ISSUED  
COPY N<sup>o</sup> SUPERSEDES

ITEM N <sup>o</sup>	NATURE OF AMENDMENT

INDOOR ASST  
ELECTRICAL  
MATERIALS  
DRAWN BY  
TRACED BY FM  
CHECKED BY  
REDUCED COPIES NOT AVAILABLE  
**DRAWER 65 N<sup>o</sup> 202.**



CAT. N°	ITEM N°	THREE ARM SIGNAL UNSLOTTED	Rods	B.D.E.
66/12846	N°8	ALL ARMS SLOTTED	"	A.B.C.
66/12847	N°9	TOP & MIDDLE ARMS SLOTTED	"	A.B.C.
66/12848	N°10	TOP ARM SLOTTED	"	F.G.H.
66/12837	N°11	BOTTOM ARM SLOTTED	"	J.K.A.
66/12838	N°12	TOP & BOTTOM ARMS SLOTTED	"	A.B.C.
66/12839	N°13	MIDDLE AND BOTTOM ARMS SLOTTED	"	A.B.C.
66/12834	N°14	MIDDLE ARM SLOTTED	"	B.D.E.



HOLES IN TOP OF CASE TO BE MADE WATER-TIGHT

COLOURS OF ARMS:-  
 FRONT TO BE WHITE WITH A 4" HORIZONTAL RED OR YELLOW STRIPE.  
 THE YELLOW STRIPE TO HAVE A BLACK STRIPE ABOVE & BELOW IT.  
 BACK OF ARM TO BE BLACK.  
 OUTER FACE OF REAR INDICATOR PLATE TO BE WHITE, INNER FACE BLACK.  
 BODY OF SIGNAL TO BE BLACK, LAMP CHAMBERS WHITE.

1/2" DIA HOLE TO BE DRILLED ONLY WHEN SIGNALS REQUIRED TO BE FLOOD LIGHTED.

WHEN EXPANDER (46) IS NOT FITTED, BOLT (49) TO BE INSERTED IN EXPANDER HOLE IN COLUMN & BOLTS (58) INSERTED IN FIXING HOLES.

1/2" DIA. MS. HEX HD. BOLTS 1/2" LONG

L.M.S.  
**STANDARD DWARF SIGNAL**  
 GENERAL ARRANGEMENT (1841 TYPE)

ARROW INDICATION AS REQUIRED FOR DETAILS AND METHOD OF FIXING SEE MD.37918.

REVISED	ITEM N°	NATURE OF AMENDMENT

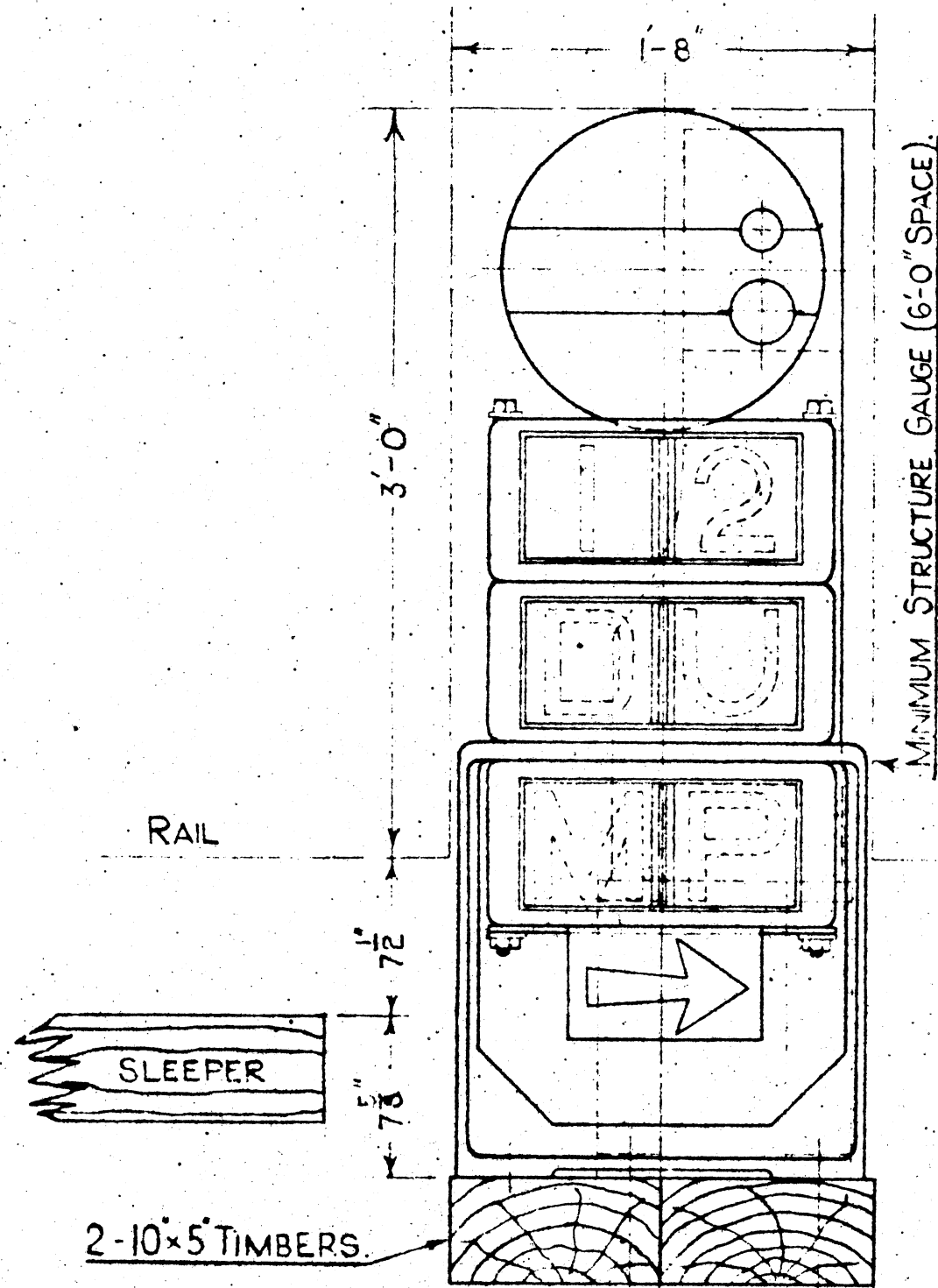
LONDON MIDLAND & SCOTTISH RAILWAY COMPANY  
 SIGNALS TELEGRAPH ENGINEERS OFFICE EUSTON LMS.  
 PLAN N° MD.4005.3. SHEET 1 OF 11 SHEETS  
 PLAN DATE 23.1.40. ISSUED  
 COPY N° SUPERSEDES M.O. 34089

3" MACHINE DRAWING INDOOR ASST. 22/40 DRAWN BY S.P.  
 1/2" ELECTRICAL 1/2" TRACED BY E.M.  
 O.B. Dwg. Group MATERIALS 1/2" CHECKED BY H.B.A.  
 1/2" FILE PREPARED 1/2" REDUCED COPIES AVAILABLE

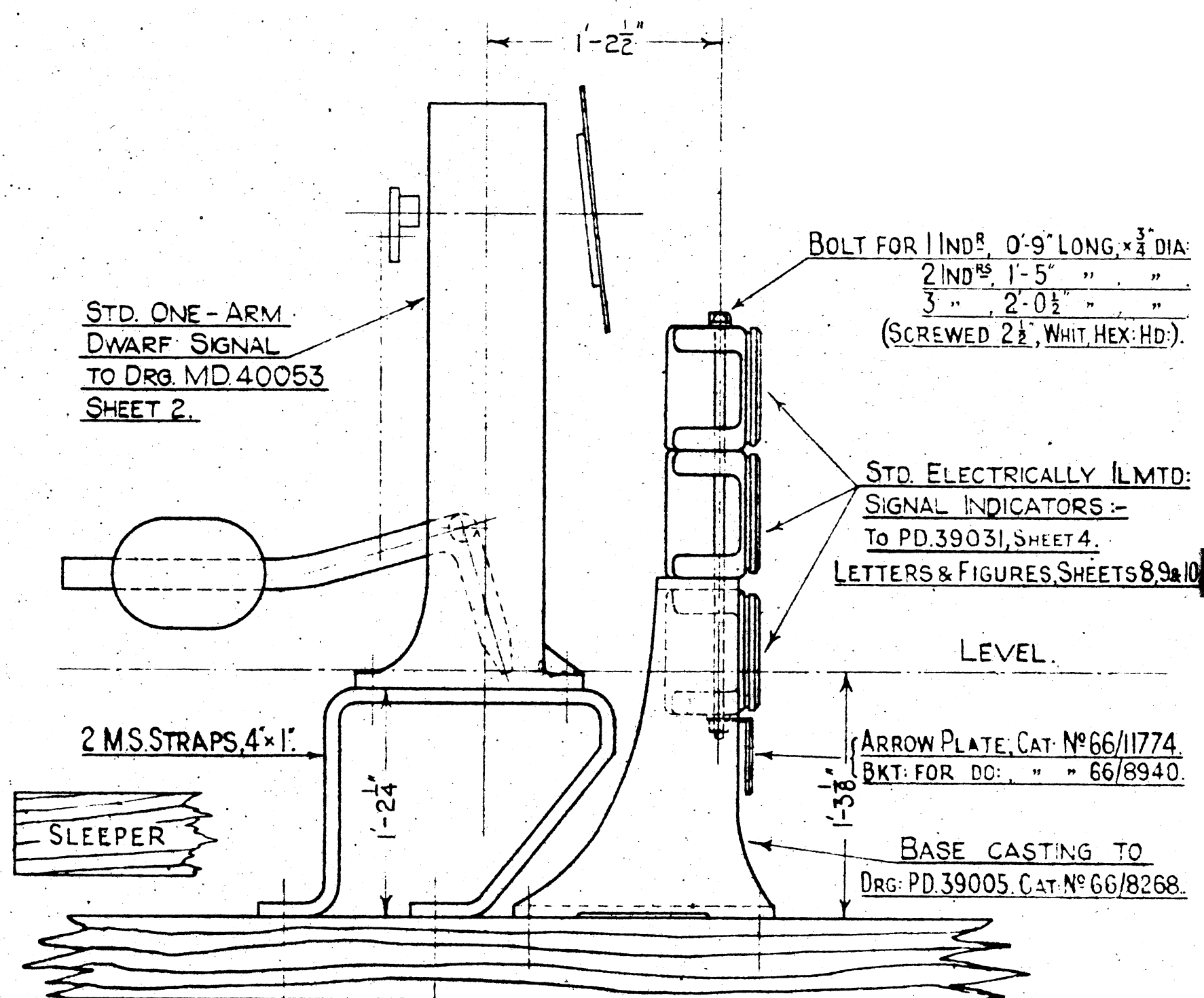
**DRAWER 55. N° 205**







FRONT ELEVATION.



SIDE ELEVATION.

STD. ONE-ARM DWARF SIGNAL TO DRG. MD.40053 SHEET 2.

BOLT FOR 1 IND<sup>R</sup>, 0'-9" LONG, x 3/4" DIA:  
2 IND<sup>R</sup>, 1'-5" " " "  
3 " 2'-0 1/2" " " "  
(SCREWED 2 1/2", WHIT, HEX. HD.)

STD. ELECTRICALLY LM.TD. SIGNAL INDICATORS :-  
To PD.39031, SHEET 4.  
LETTERS & FIGURES, SHEETS 8, 9 & 10

ARROW PLATE, CAT. N<sup>o</sup> 66/11774.  
BKT. FOR DO: " " 66/8940.

BASE CASTING TO  
DRG: PD.39005, CAT. N<sup>o</sup> 66/8268.

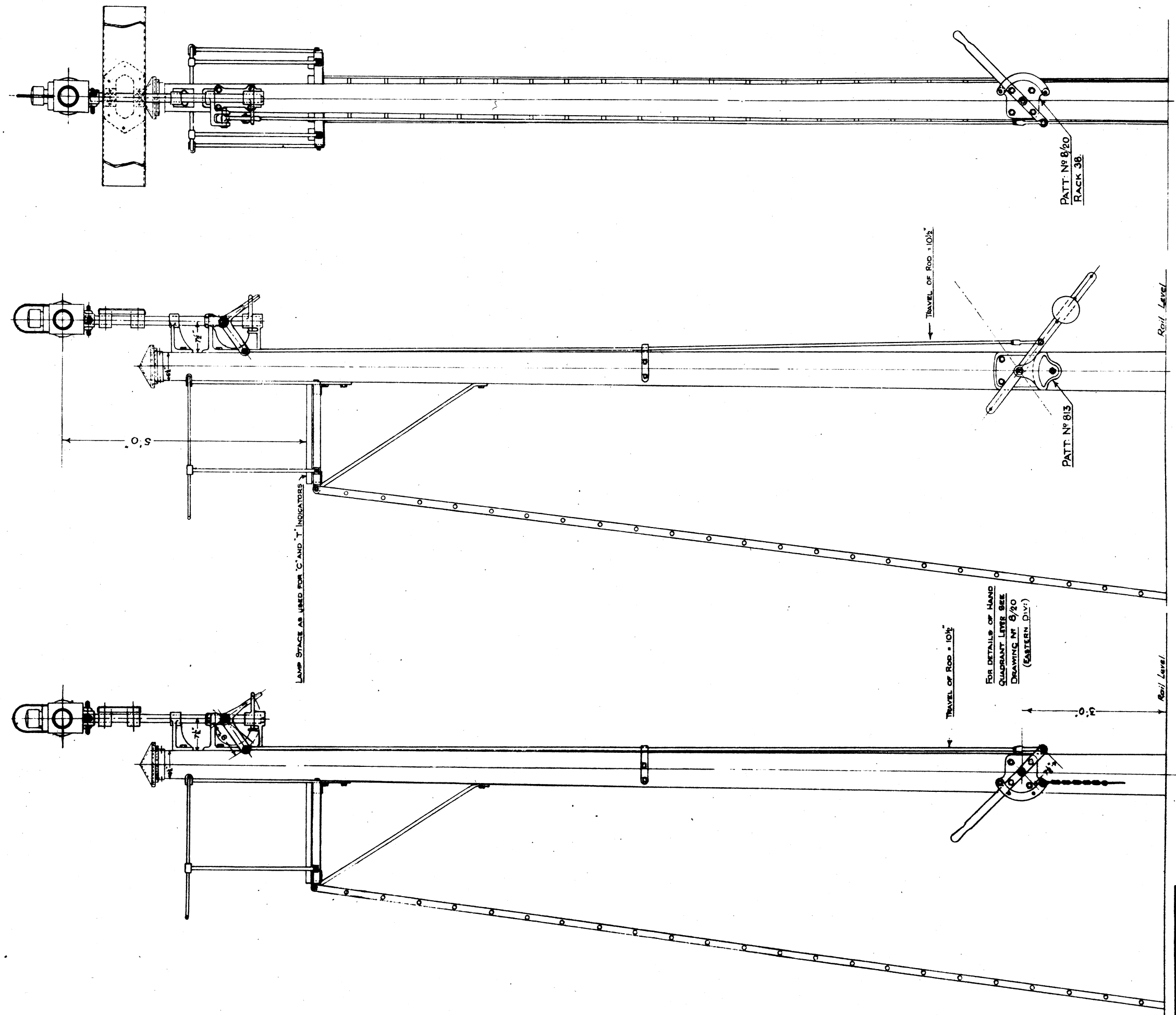
L.M.S.

ARRANGEMENT OF MECH: DWARF SIGNAL WITH 6-WAY ELECT: INDICATOR (FIXED IN 6'-0" SPACE)

SCALE 1/2" = 1'-0"

LMS RAILWAY COMPANY  
SIGNAL & TELEGRAPH ENG<sup>S</sup>  
OFFICE EUSTON L.M.S.I.  
PLAN N<sup>o</sup> PD.42014.  
PLAN DATE 18-10-42





**FRONT ELEVATION**  
 SHEWING HAND QUADRANT  
 LEVER FIXED ON FRONT OF POST

**SIDE ELEVATION.**  
 SHEWING BALANCE LEVER  
 FIXED ON SIDE OF POST

FOR USE AS BLASTING SIGNALS  
 AND IN DOCK AREAS.

**SIDE ELEVATION.**  
 SHEWING HAND QUADRANT LEVER  
 FIXED ON SIDE OF POST

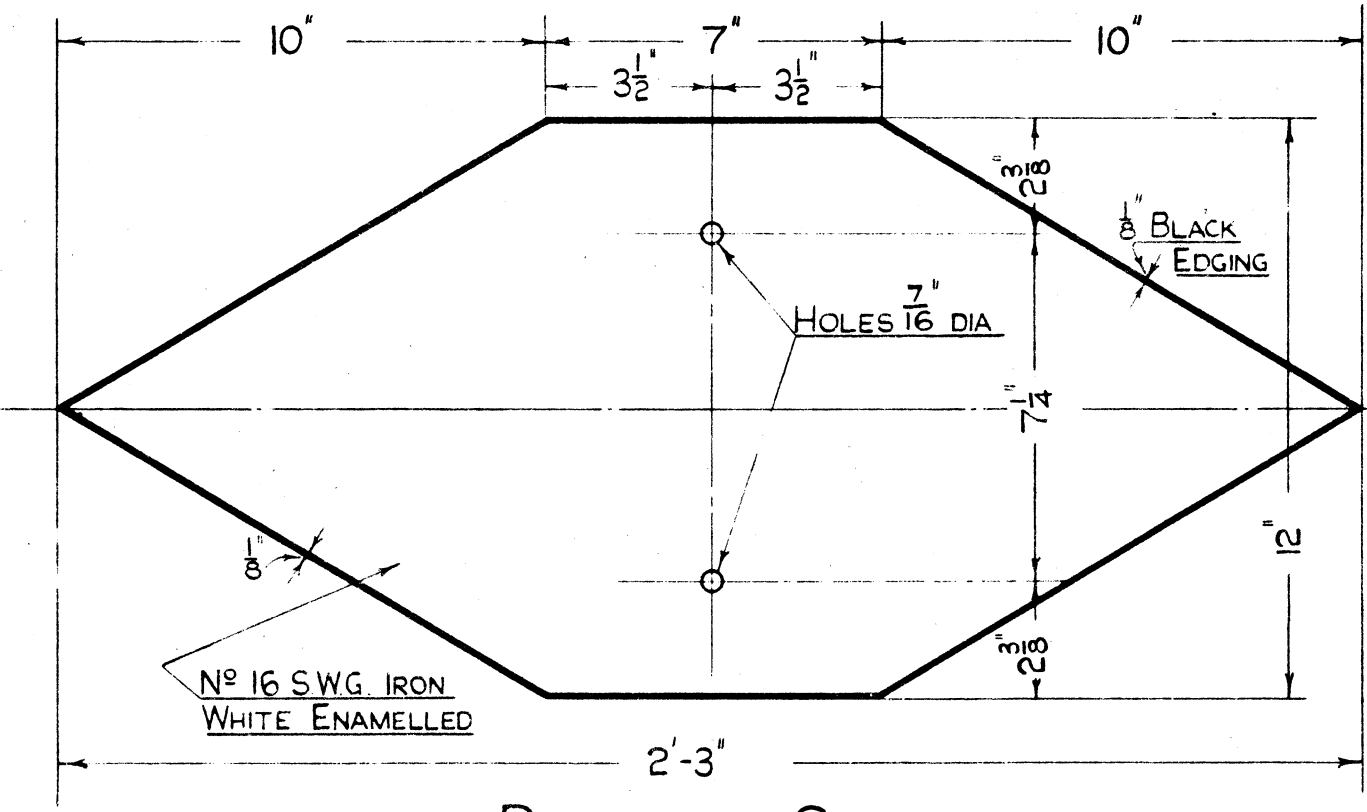
L.M.S.  
**CROSS BAR SIGNAL.**

LONDON MIDLAND & SCOTTISH RAILWAY COMPANY.  
 SIGNAL & TELEGRAPH ENGINEERS OFFICE, EUSTON, L.M.S.I.

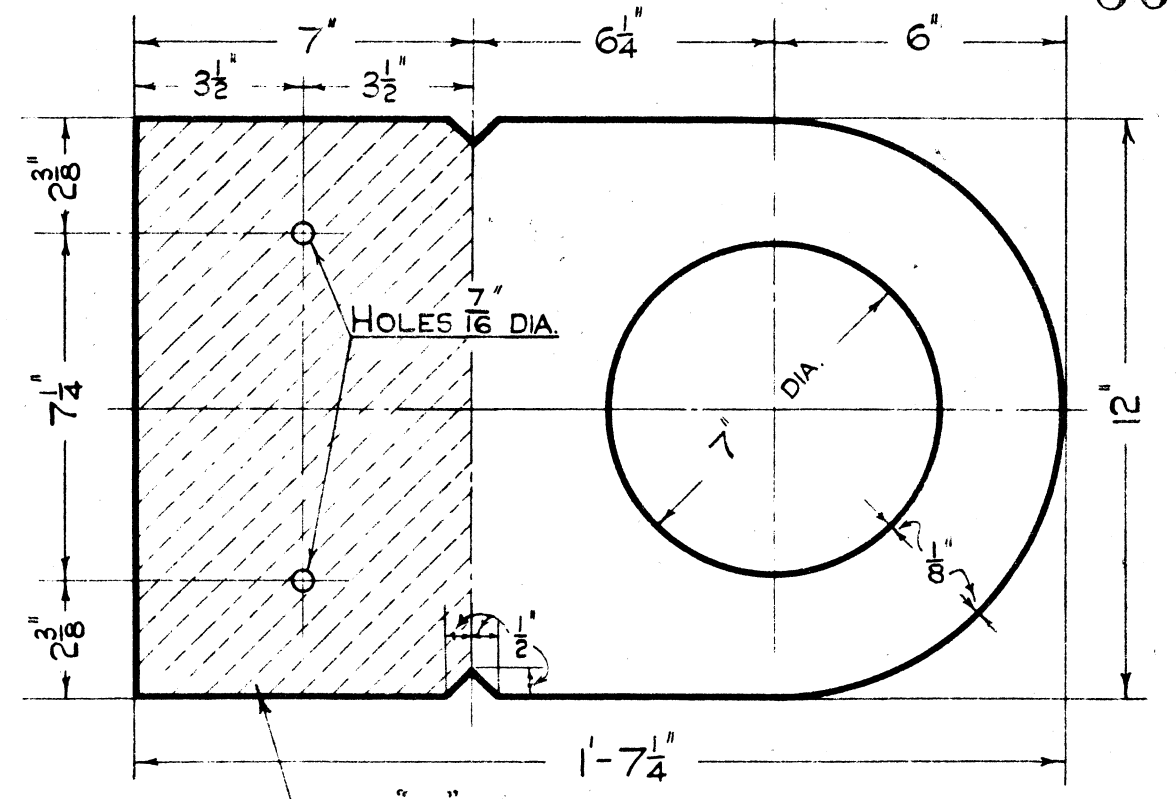
PLAN N<sup>o</sup> M.D. 43116 SHEET OF SHEETS  
 PLAN DATE 14.12.45 ISSUED  
 COPY N<sup>o</sup> SUPersedes

REV.	ITEM NO.	NATURE OF AMENDMENT

F. MACHINE	INDOOR ASST	DRAWN BY G.H.
B. & DISC GRIND	ELECTRICAL	TRACED BY G.H.
FILE FINISH	MATERIALS	CHECKED BY G.H.
REDUCED COPIES NOT AVAILABLE	DRAWER 55 N <sup>o</sup> 231	

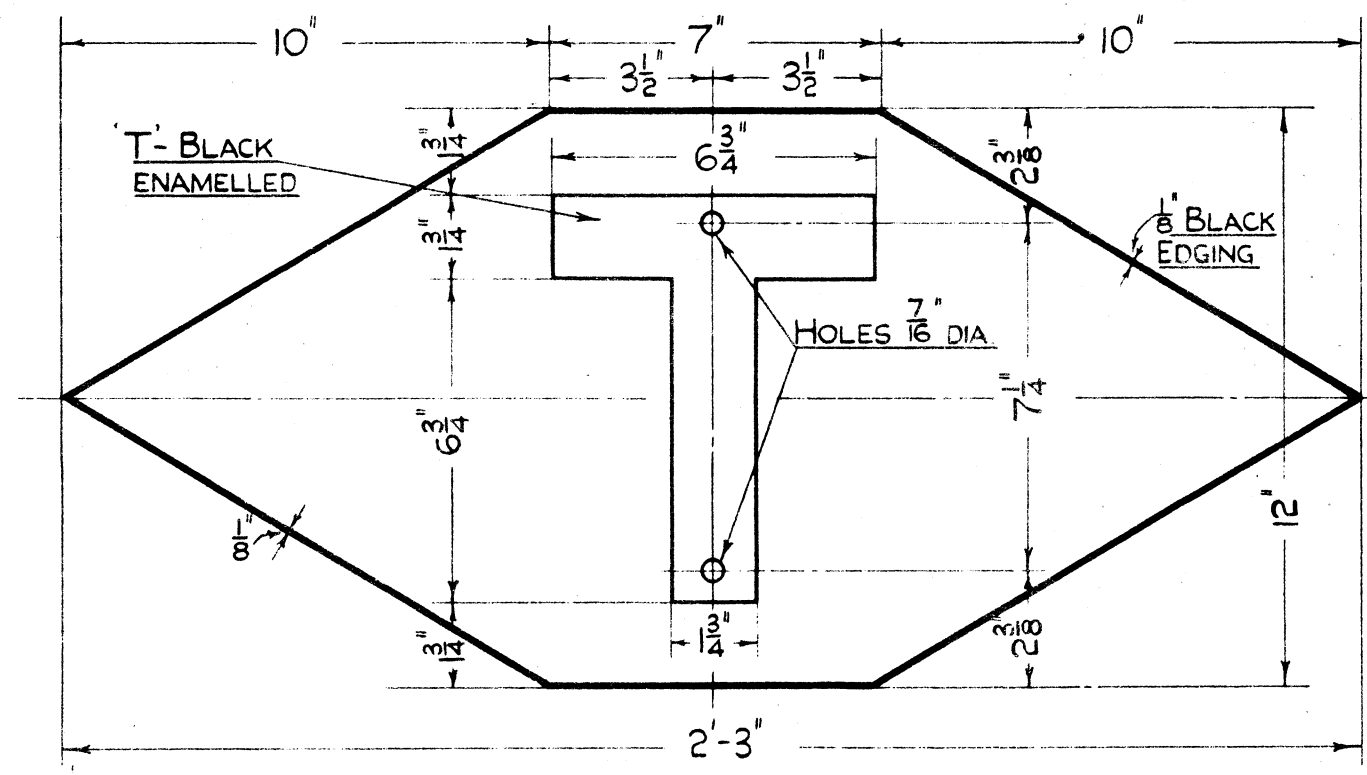


**DIAMOND SIGN.**  
CAT: No 66/12895.

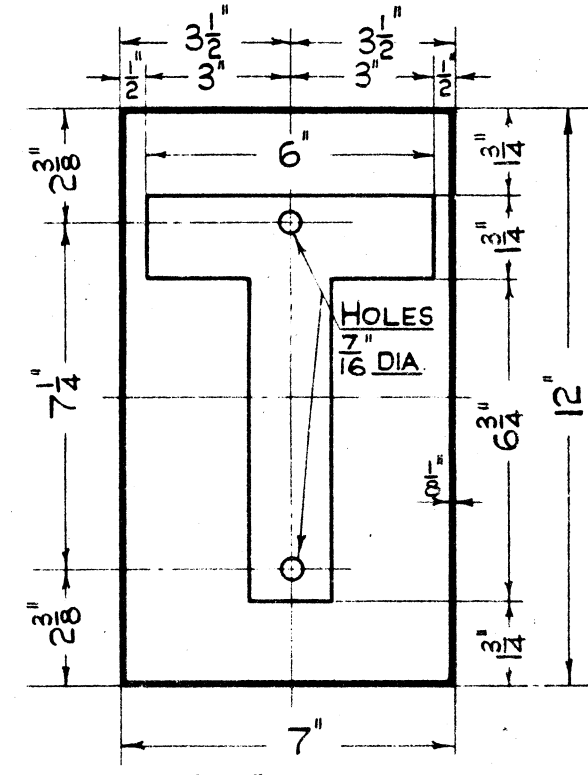


**"D" SIGN.**  
CAT: No 66/12874.

NOTE:- WHEN 'T' SIGN REQUIRED WITH 'D' SIGN, 'T' PLATE TO BE SUPERIMPOSED



**DIAMOND & "T" SIGN.**  
CAT: No 66/12908.



**"T" SIGN.**  
CAT: No 66/12920.

PLATES, No 16 S.W.G. IRON, WHITE ENAMELLED, WITH BLACK EDGING 1/8" WIDE & BACK BLACK.

T- BLACK ENAMELLED

PLATES SECURED TO POST BY 2 1/2" x 3/8" GALVANISED COACH SCREWS WITH COPPER ASBESTOS WASHERS

WHEN FIXING PLATES WITH T SIGN, SCREW HEADS

& WASHERS TO BE FINISHED BLACK ON SITE.

ALL ENAMEL TO BE VITREOUS ENAMEL.

ROUND THE FIXING HOLES, ENAMEL TO BE LEFT CLEAR TO GROUND COAT, FOR A DIAMETER OF 3/4".

FOR DETAILS OF HEIGHTS & FIXINGS SEE M.D. 3260.

L.M.S.  
**DIAMOND & "D" SIGNS USED FOR EXEMPTION OF  
RULE 55, ALSO 'T' (TELEPHONE) SIGN.**

SCALE 3 INCHES = 1 FOOT.

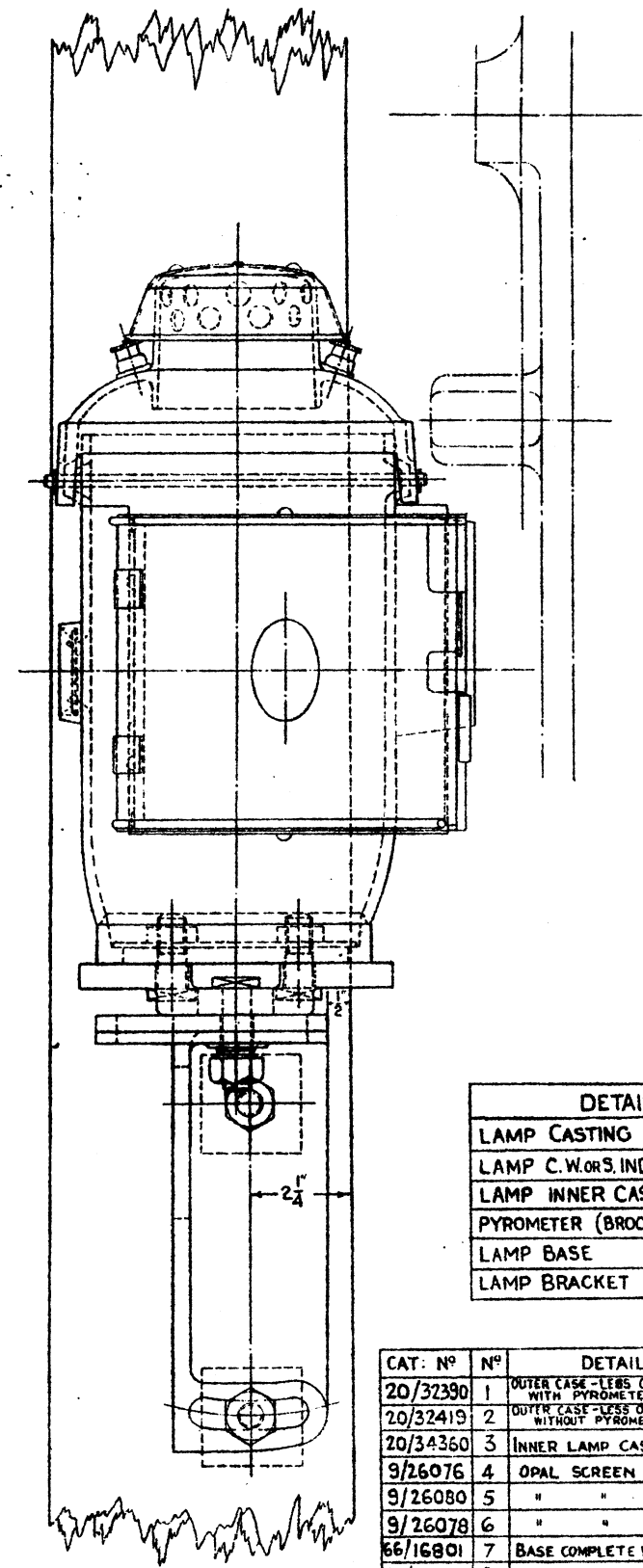
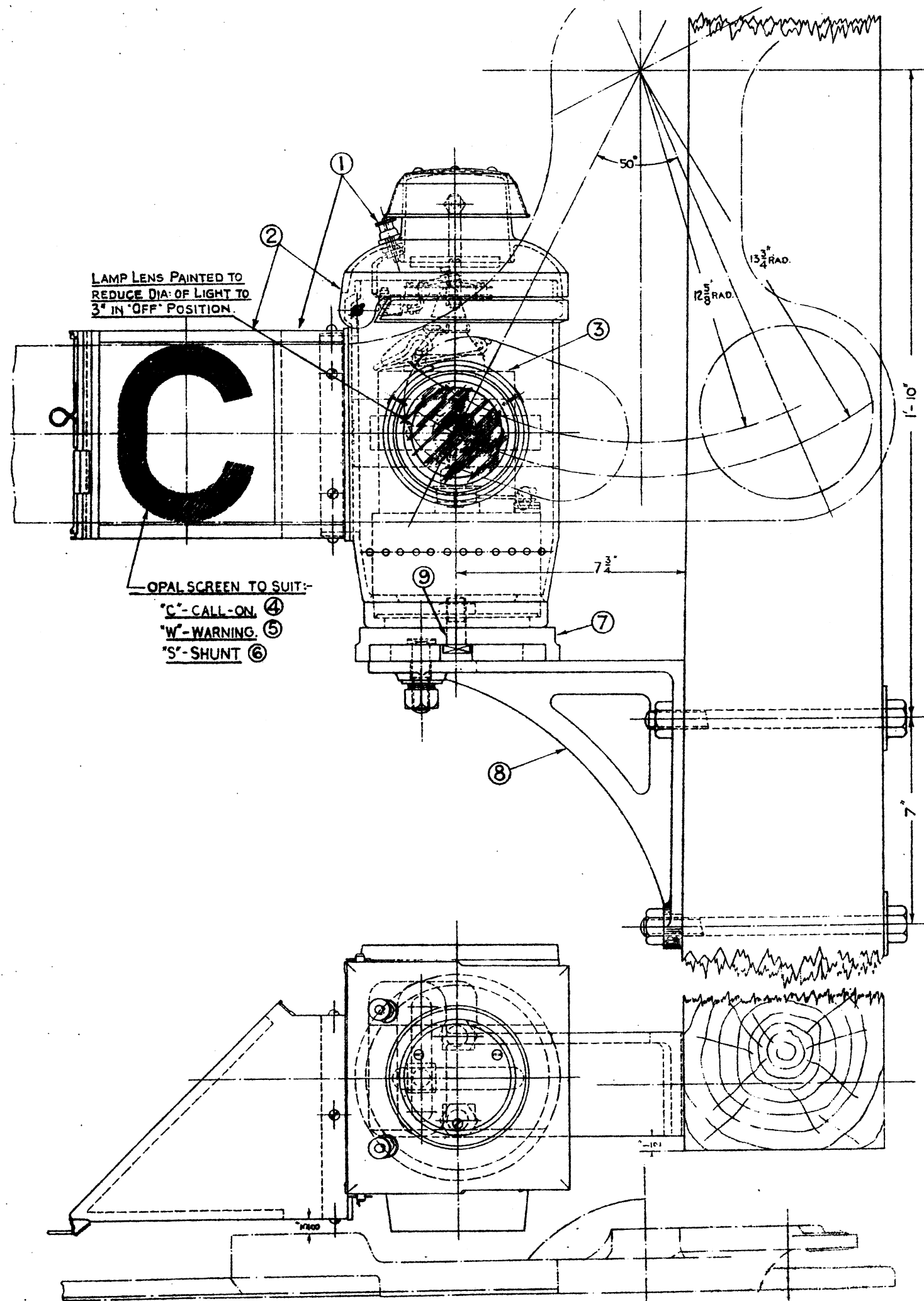
EXAMINED BY

INDOOR ASST.	ZJKO.
ELECTRICAL "	
WORKS "	PLW
MATERIALS "	PLW

DRAWN BY  
TRACED BY N.A.  
CHECKED BY

L.M.S. RAILWAY COMPANY  
SIGNAL & TELEGRAPH  
ENGINEER'S OFFICE  
DERBY L.M.S. 49

PLAN No. MD. 3261  
PLAN DATE 20-10-82  
DATE ISSUED



DETAIL	DRAWING N <sup>o</sup>
LAMP CASTING	MD.31128. SHEET 1.
LAMP C.W.O.R.S. INDICATION	MD.31128 SHEET 2.
LAMP INNER CASE	MD. 327
PYROMETER (BROOKER EXPANDER)	TD. 3253.
LAMP BASE	MD.33119
LAMP BRACKET	MD. 338

CAT. N <sup>o</sup>	N <sup>o</sup>	DETAIL	REMARKS.
20/32390	1	OUTER CASE - LESS OPAL SCREEN. WITH PYROMETER.	
20/32419	2	OUTER CASE - LESS OPAL SCREEN. WITHOUT PYROMETER.	
20/34360	3	INNER LAMP CASE COMPLETE.	
9/26076	4	OPAL SCREEN 'C'	
9/26080	5	" " " 'W'	
9/26078	6	" " " 'S'	
66/16801	7	BASE COMPLETE WITH BOLT ⑨	
66/16911	8	BRACKET COMPLETE.	ORG. MD. 338. ITEMS 1, 3, 4, 5
3/48838	9	BOLT 3/8" DIA. WHIT.	USED WITH ⑦

L.M.S.  
**STANDARD SIGNAL LAMP FOR CALL-ON,  
 WARNING & SHUNT INDICATIONS.**

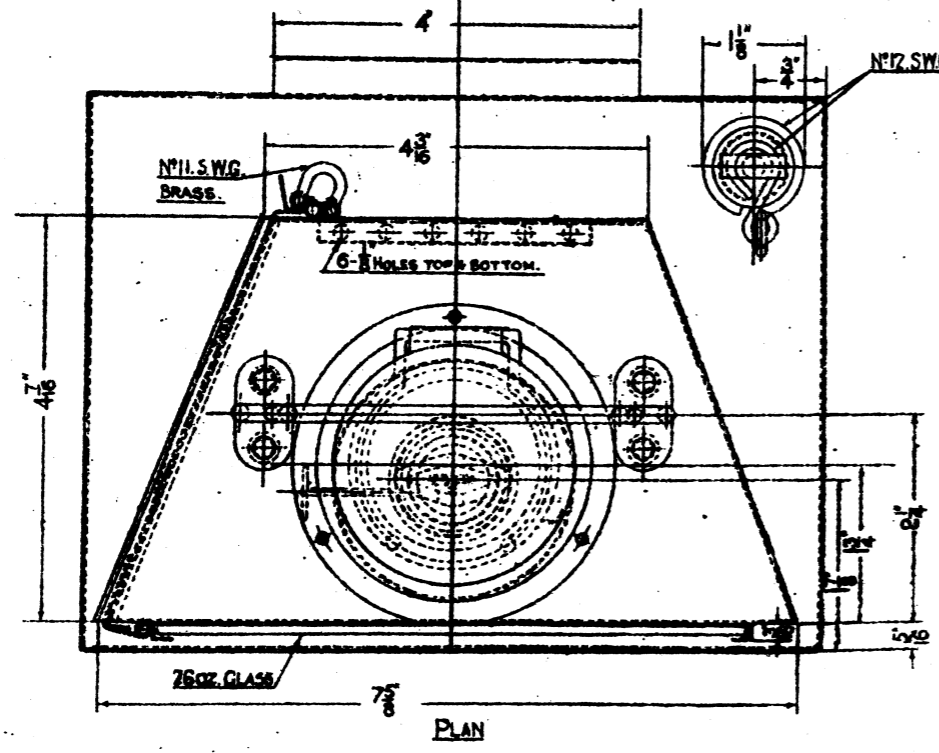
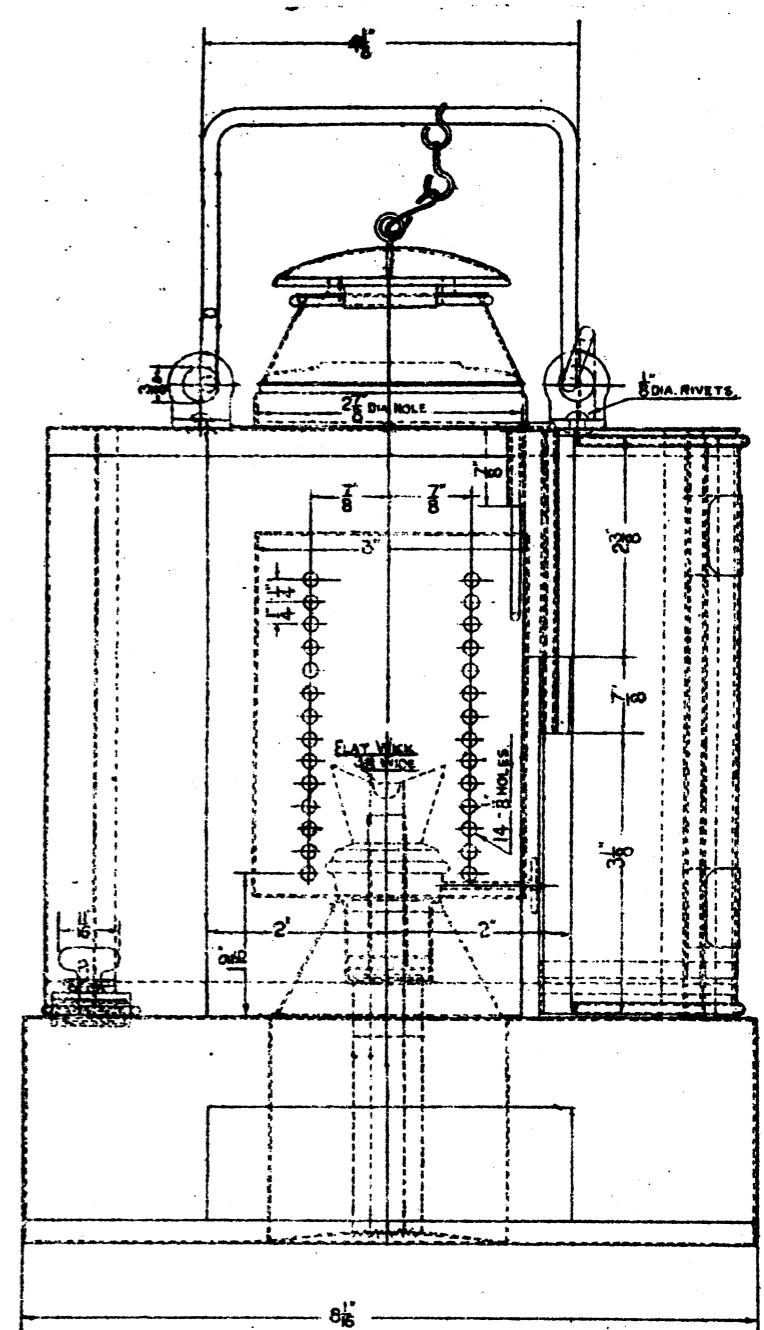
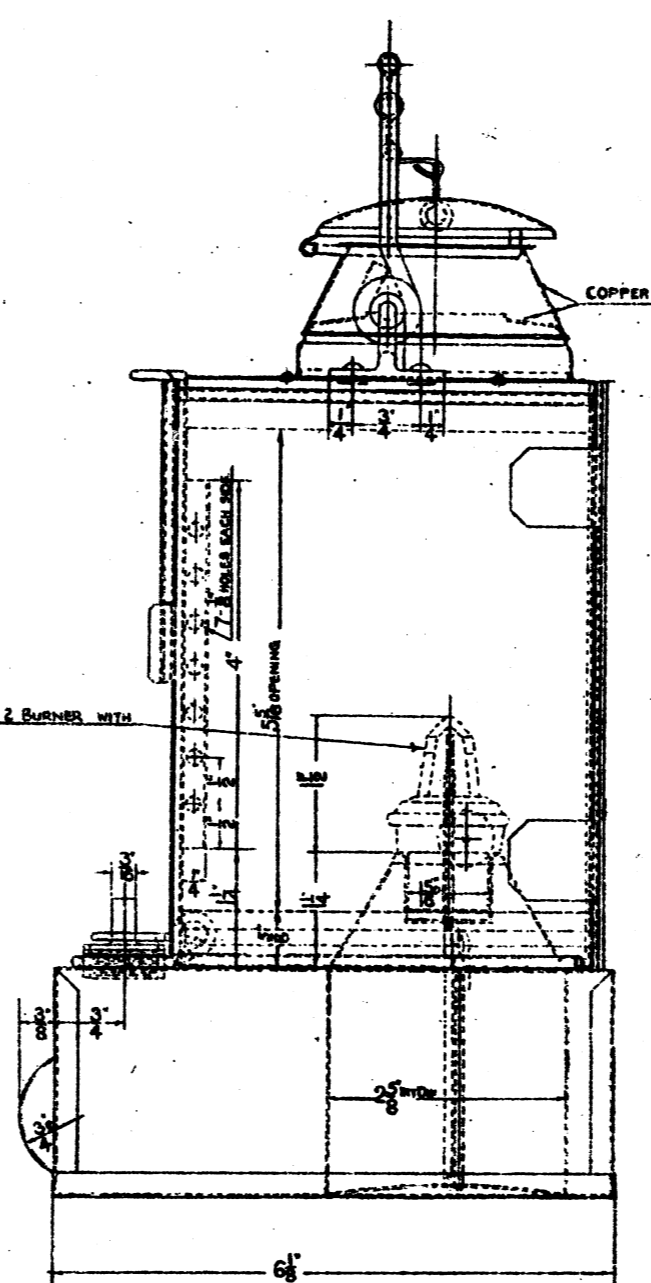
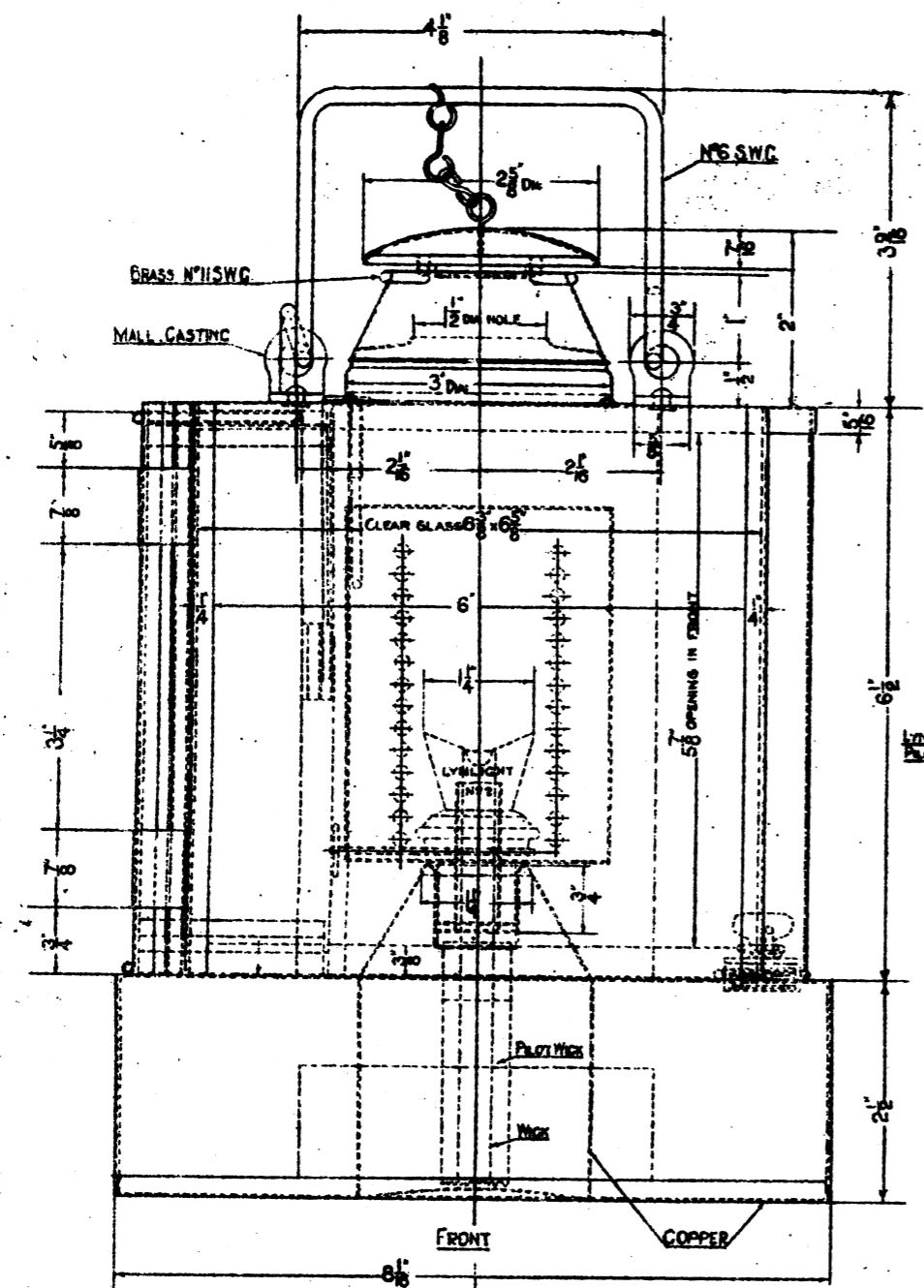
SUPERSEDES MD.3333  
 DATED 8-3-33.

COPY OF STANDARD  
 DRAWING SIGNED BY  
 THE SIGNAL &  
 TELEGRAPH ENGINEER  
 CHIEF DRAWING OFFICE.

EXAMINED BY:  
 INDOOR ASST. *100*  
 ELECTRICAL " *P*  
 WORKS " *MLC*  
 MATERIALS " *PCW*

DRAWN BY *MLC*  
 TRACED BY *MLC*  
 CHECKED BY *PCW*

LONDON MIDLAND & SCOTTYE RAILWAY CO.  
 SIGNAL & TELEGRAPH  
 ENGINEER'S OFFICE  
 DERBY. L.M.S. 49.  
 PLAN N<sup>o</sup> M.D. 3333  
 PLAN DATE 28-4-37  
 DATE ISSUED



BODY OF LAMP TEMPLATE

FOR DETAILS OF LAMP CASE, SEE DRG MD 34053

L.M.S.  
**STANDARD SHUNT LIMIT INDICATOR**  
**DETAILS OF LAMP INTERIOR**  
 —WELCH PATENT.—

EXAMINED BY	
INDOOR ASST.	2540
ELECTRICAL ASST.	
MATERIALS ASST.	2540

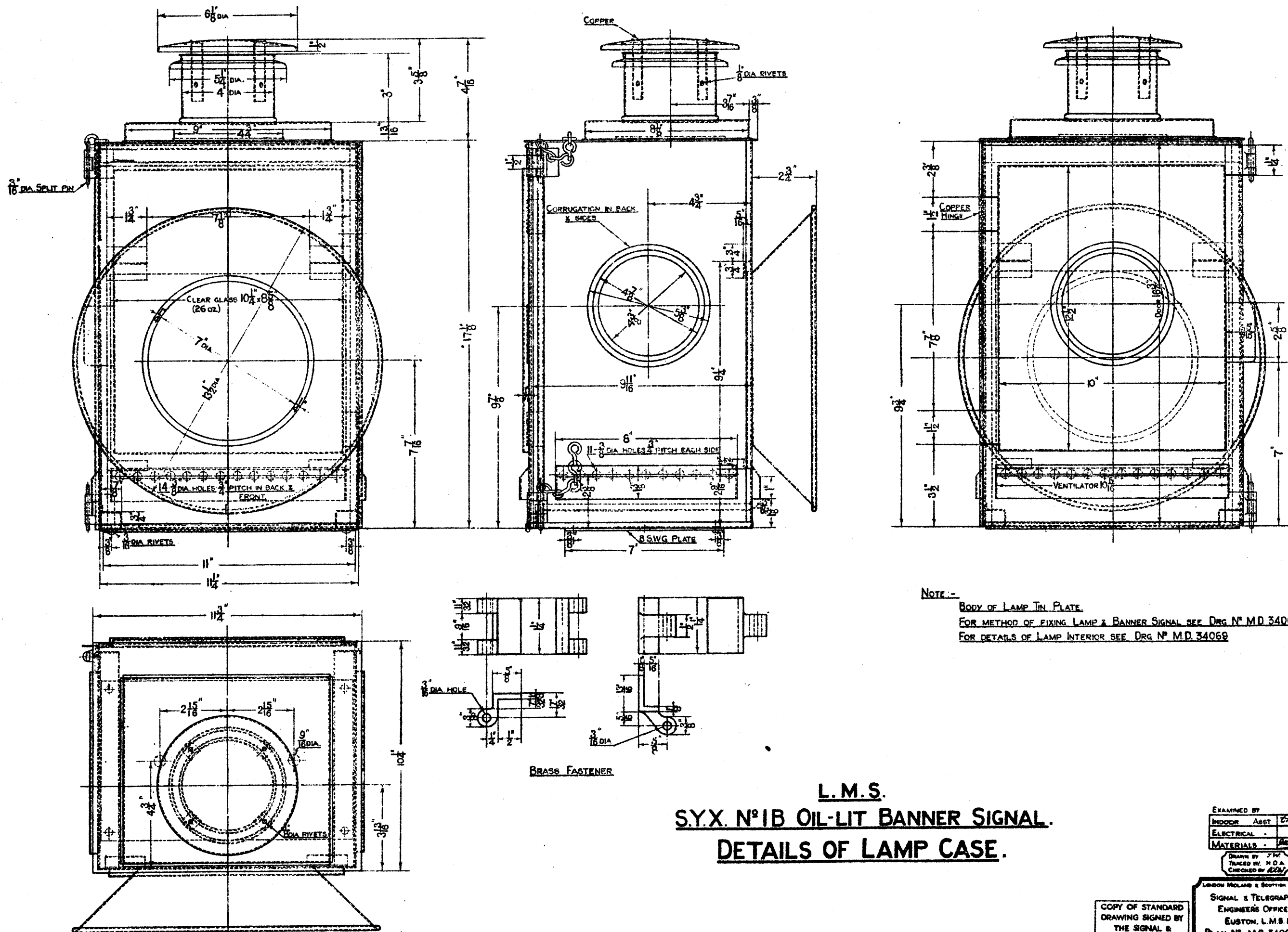
Drawn By: J.F.  
 Traced By: A.K.  
 Checked By: J.W.

COPY OF STANDARD  
 DRAWING SIGNED BY  
 THE SIGNAL &  
 TELEGRAPH ENGINEER  
 CHIEF SIGNAL OFFICE

Location and Service Branch Office  
 SIGNAL AND TELEGRAPH  
 ENGINEER'S OFFICE  
 EUSTON L.M.S.  
 PLAN NO. MD 34054.  
 PLAN DATE. 1-8-34.  
 DATE ISSUED.





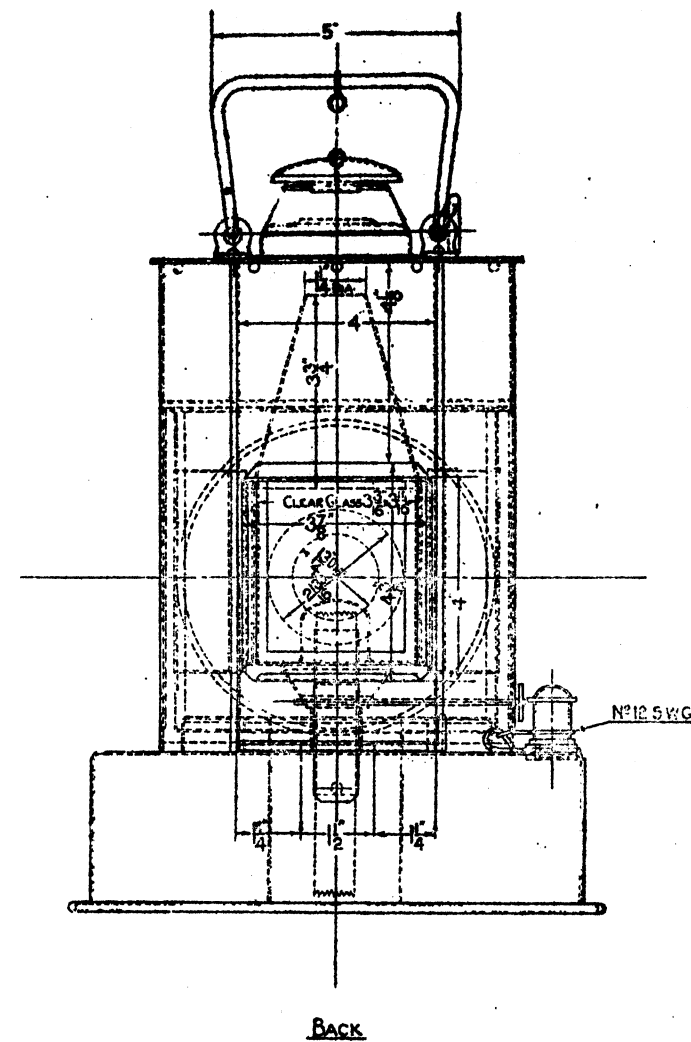
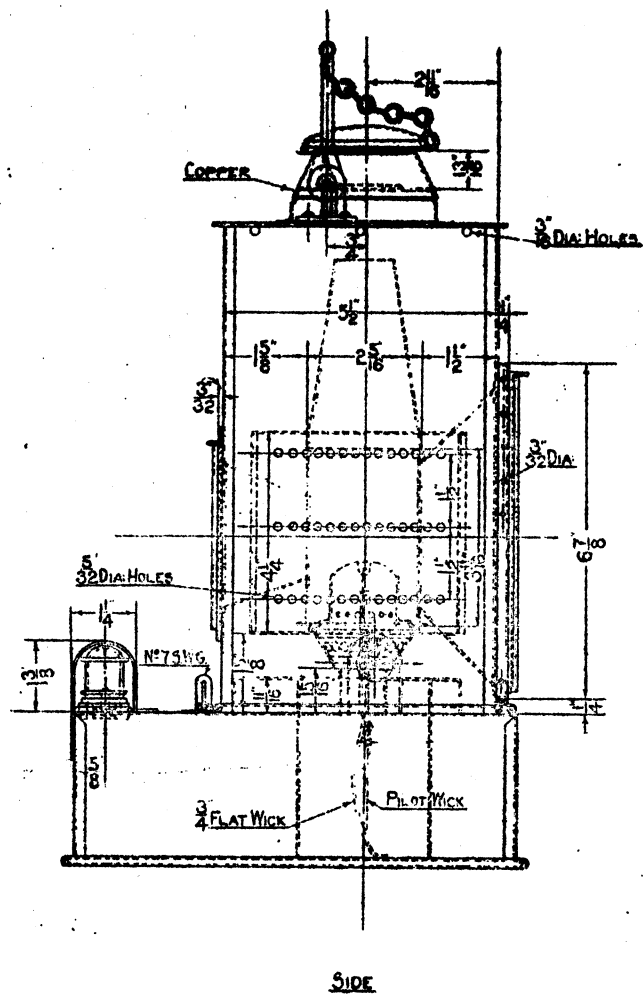
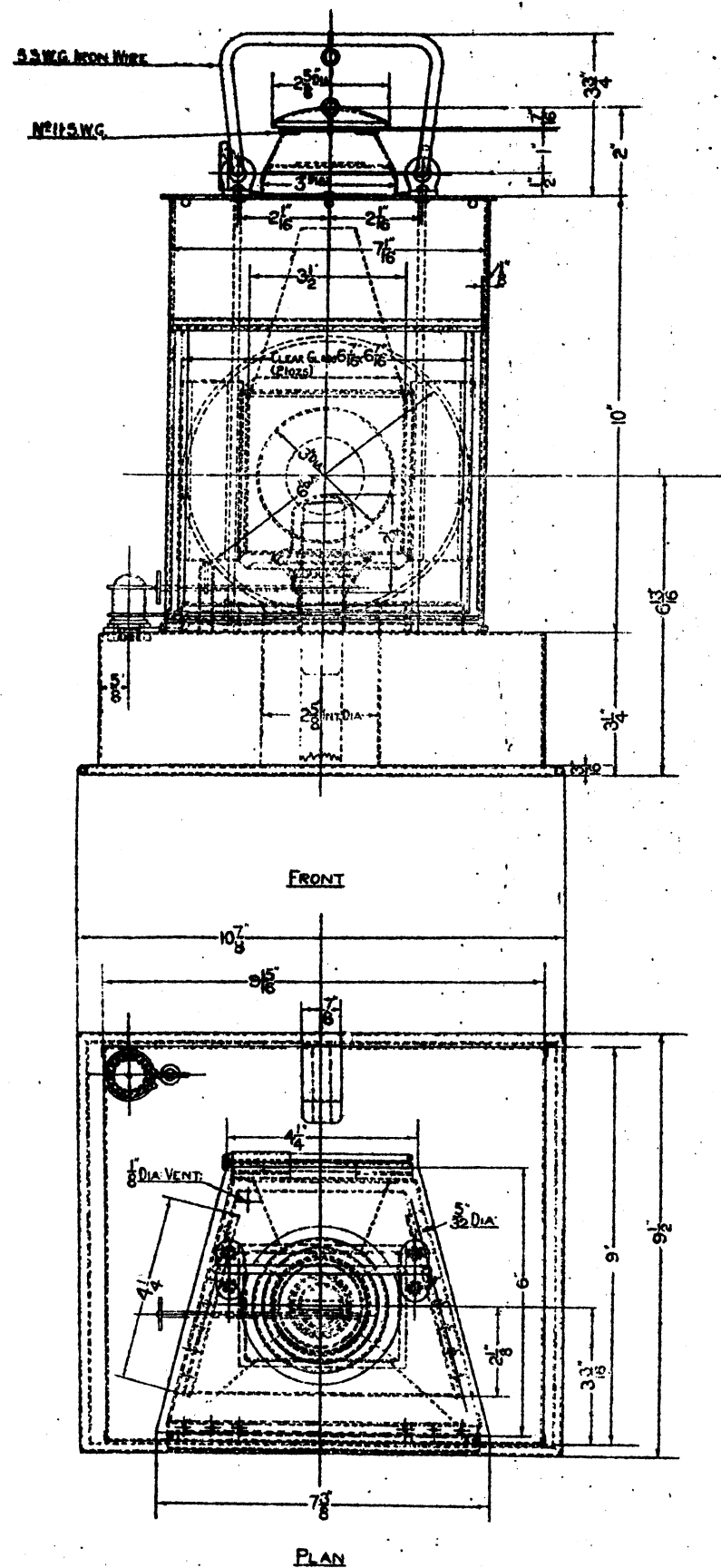


NOTE -  
 BODY OF LAMP TIN PLATE.  
 FOR METHOD OF FIXING LAMP & BANNER SIGNAL SEE DRG N° M.D. 34060.  
 FOR DETAILS OF LAMP INTERIOR SEE DRG N° M.D. 34069.

**L.M.S.**  
**S.Y.X. N° 1B OIL-LIT BANNER SIGNAL.**  
**DETAILS OF LAMP CASE.**

EXAMINED BY	INDOOR ASST	270
ELECTRICAL		
MATERIALS		200
DRAWN BY 7 1/2		
TRACES BY H.O.A.		
CHECKED BY 220		
LONDON MILNERS & SCOTTISH RLY		
SIGNAL & TELEGRAPH		
ENGINEERS OFFICE		
EUSTON, L.M.S. 1		
PLAN N° M.D. 34068		
PLAN DATE 28-10-34		
DATE ISSUED		

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER



NOTE—FOR METHOD OF FIXING LAMP & BANNER SIGNAL SEE DRG N° M.D.34060  
 FOR DETAILS OF LAMP CASE SEE DRG N° M.D.34068

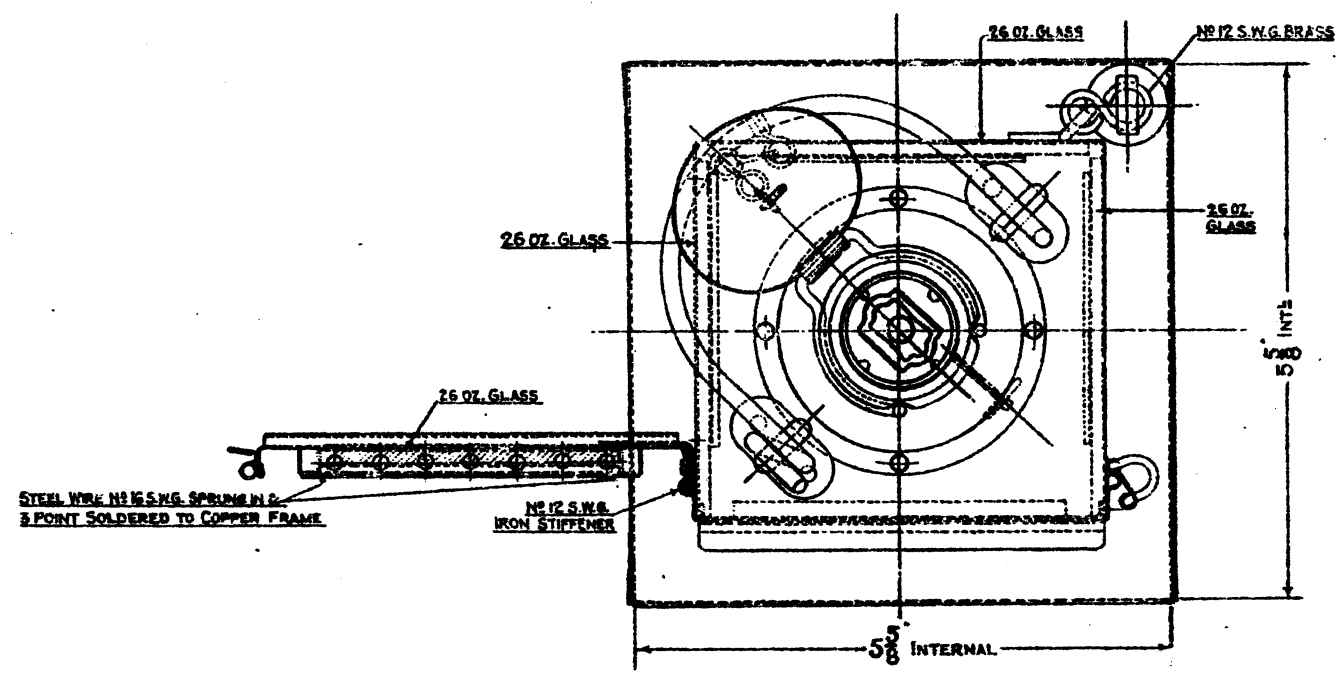
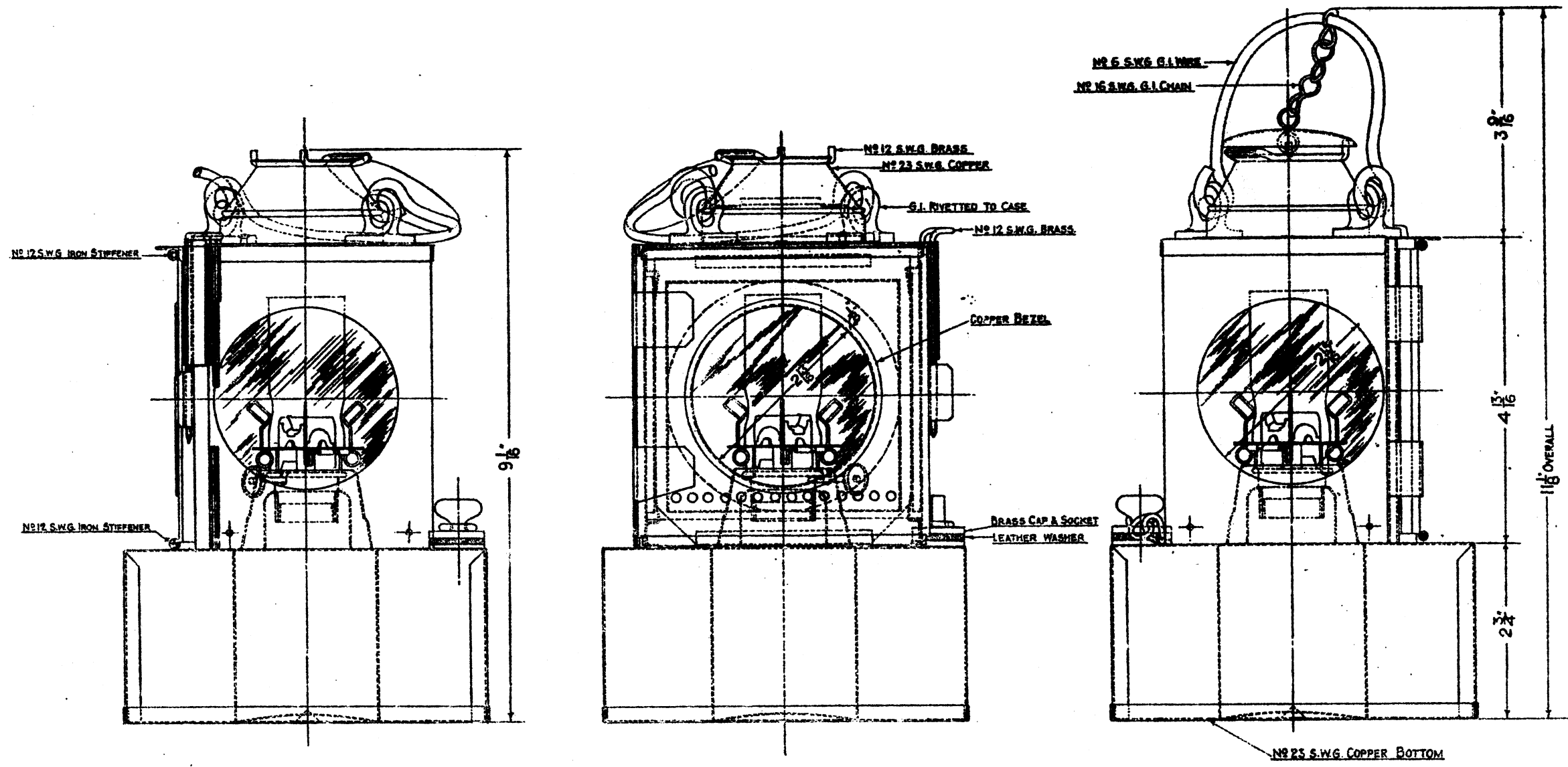
**L.M.S.**  
**S.Y.X. N°1B OIL-LIT BANNER SIGNAL**  
**DETAILS OF LAMP INTERIOR**

EXAMINED BY	
INDOOR ASST	DND
ELECTRICAL "	
MATERIALS "	AB
DRAWN BY J.M.	
TRACED BY AB	
CHECKED BY AB	

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF DRAUGHTSMAN.

LONDON MIDLAND & SCOTTISH RAILWAY CO.  
 SIGNAL & TELEGRAPH ENGINEER'S OFFICE  
 EUSTON, L.M.S.I.

PLAN N° M.D.34069  
 PLAN DATE 1-11-34  
 DATE ISSUED



All parts Mark IXXXX Tin, unless otherwise stated.  
 All joints sweated.  
 For General Arrangement see MD.3333  
 Manufactured by the Lamp Manufacturing Co. Ltd.

L.M.&S.R.  
**SIGNAL LAMP FOR USE WITH 'C', 'W' & 'S' INDICATIONS.**  
**WELCH PATENT INNER CASE.**  
 FITTED WITH No 90 'ADLAKE' BURNER.

COPY OF STANDARD  
 DRAWING SIGNED BY  
 THE SIGNAL &  
 TELEGRAPH ENGINEER  
CHIEF BRANCHMAN

EXAMINED BY	
INDOOR ASSIST.	
ELECTRICAL	
MATERIALS	

DRAWN BY	
TRACED BY	
CHECKED BY	

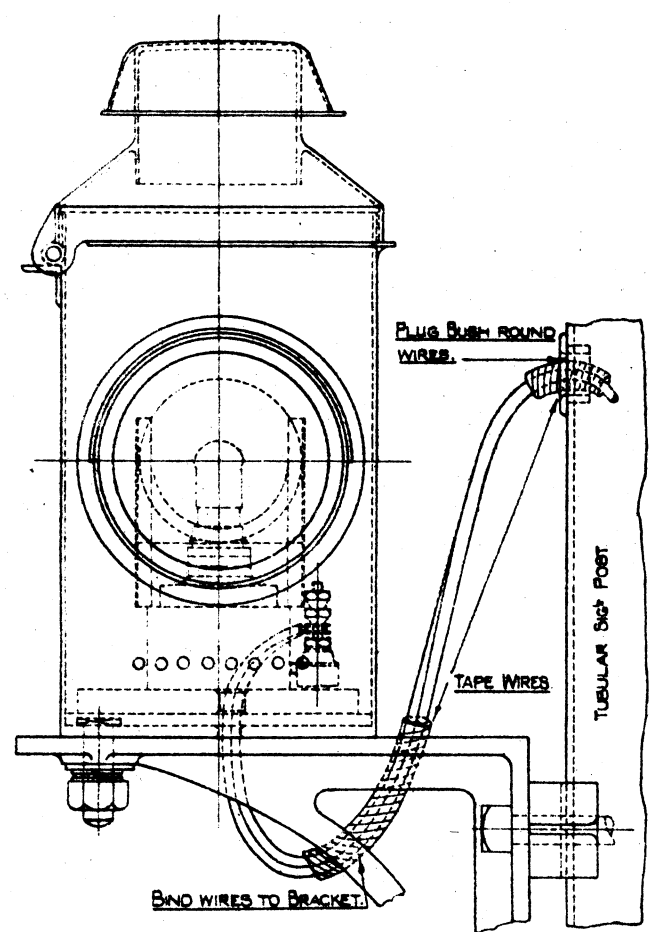
LONDON SIGNAL AND TELEGRAPH ENGINEERS  
 SIGNAL AND TELEGRAPH  
 ENGINEERS OFFICE  
 EUSTON, L.M.S.I.

PLAN No. **MD.35215**  
 PLAN DATE **25-1-36**  
 DATE ISSUED

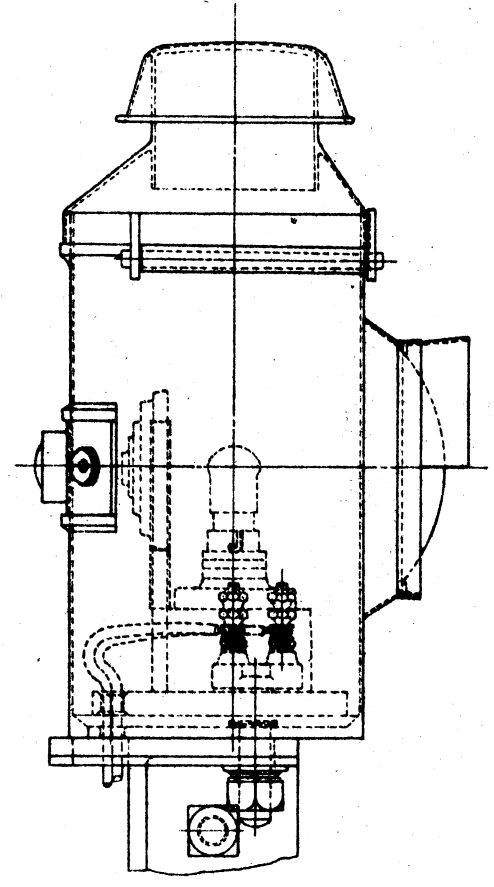
SUPERSEDES MD.327



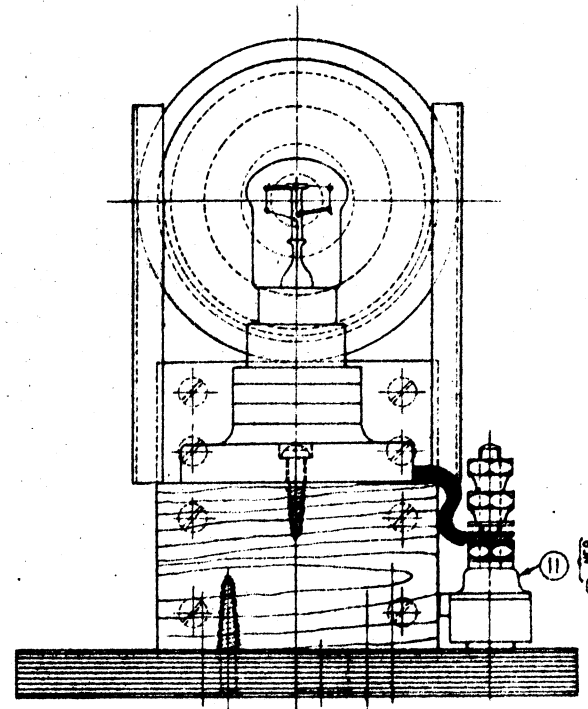




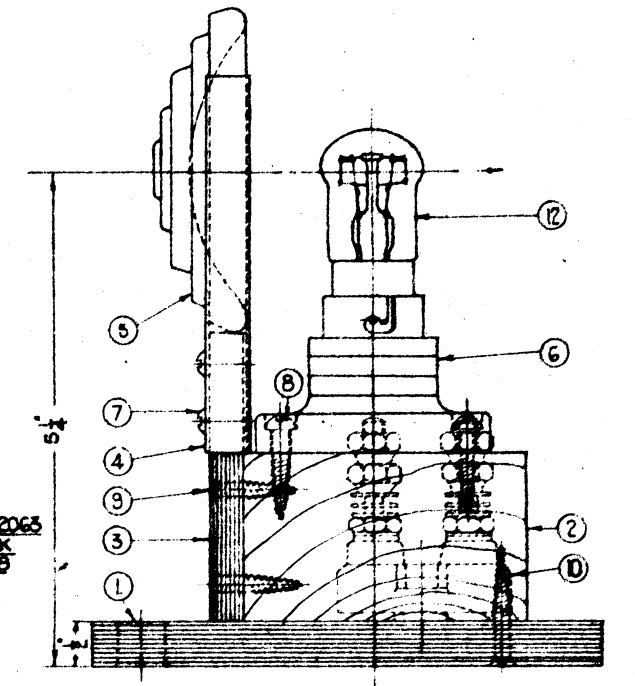
FRONT ELEVATION.



LEFT SIDE ELEVATION

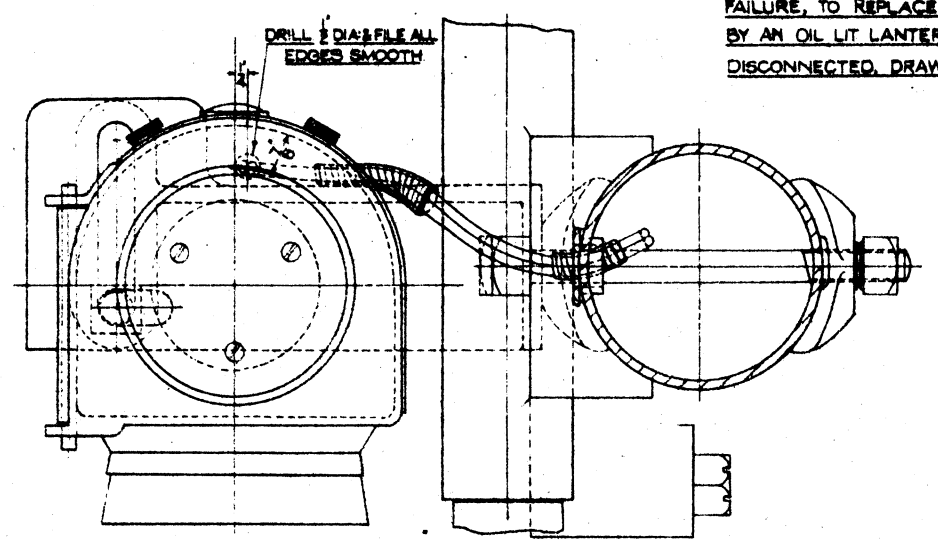


FRONT ELEVATION.

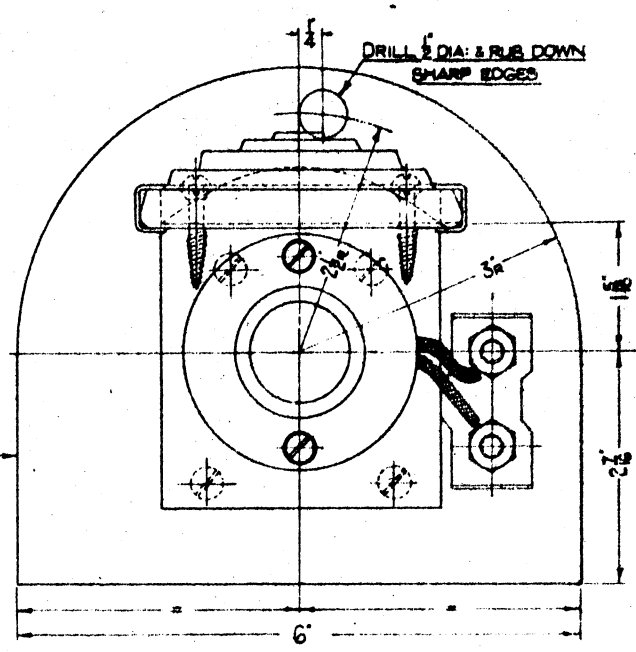


SIDE ELEVATION

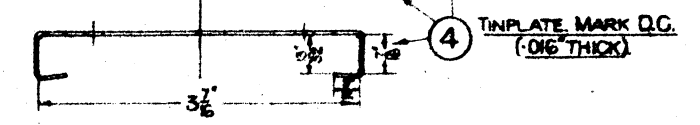
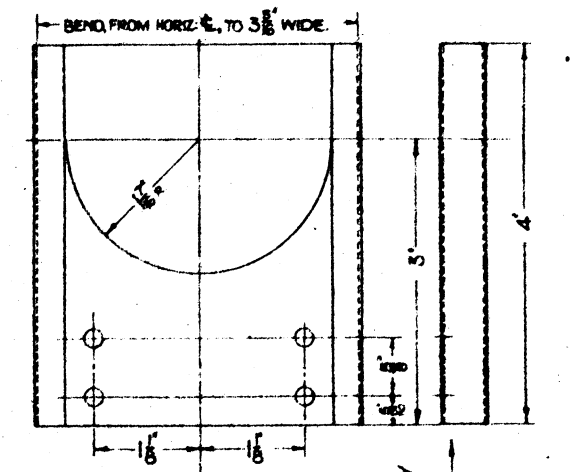
WHEN IT IS REQUIRED, BY REASON OF A POWER FAILURE, TO REPLACE THE ELECTRIC ADAPTOR BY AN OIL LIT LANTERN, THE WIRES ARE TO BE DISCONNECTED, DRAWN BACK AND TAPED.



PLAN



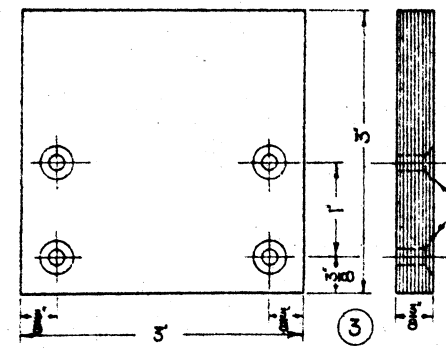
PLAN



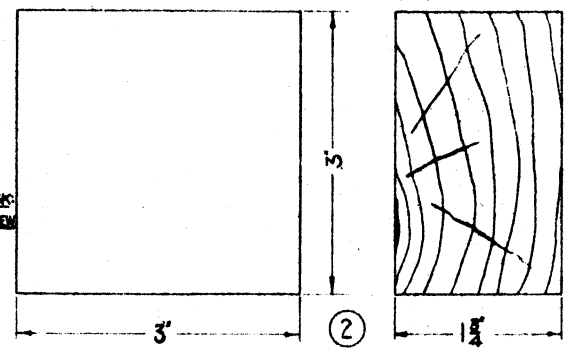
ITEM	CAT N°	DESCRIPTION	QTY	MATERIAL	REMARKS
5	9/37912	ADLAKES PRISMATIC REFLECTOR	1	GLASS	
6	54/45467	BATTEN LAMP HOLDER	1	INSULATION	
7		WOOD SCREW No. 8	4	STEEL 1/4\"/>	
8	35/15402		2	N° 6 1/2\"/>	
9	35/13244		4	N° 8 1/2\"/>	
10	35/13246		4	N° 8 1/2\"/>	
12	54/43663	PIGMY LAMP 110° 15'	1	CLEAR	

RESIN BONDED PLYWOOD 1/2 THICK.

INTERIOR (ITEMS 1 TO 11) CAT. N° 20/48600.



RESIN BONDED PLYWOOD



SEASONED HARD WOOD

L.M.S.  
ELECTRICALLY ILLUMINATED ADLAKES N° 22 LAMP.

LONDON MIDLAND & SCOTTISH RAILWAY COMPANY  
SIGNAL & TELEGRAPH ENGINEERS OFFICE, EUSTON, L.M.S.

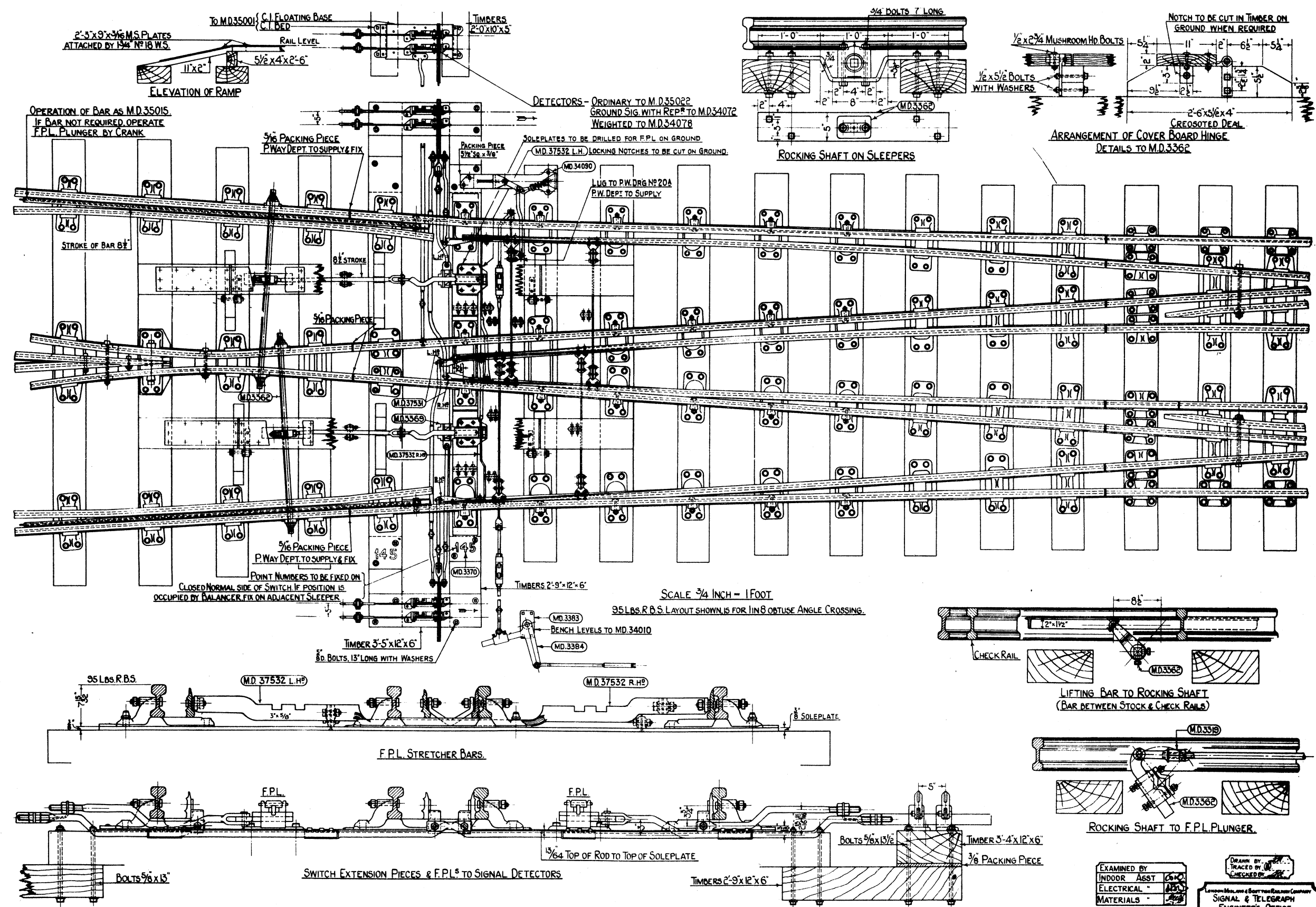
PLAN N° P.D. 44003 SHEET - OF - SHEETS  
PLAN DATE 13-6-44. ISSUED  
COPY N° SUPERSEDES

DATE	ITEM NO.	NATURE OF AMENDMENT

DRAWN BY [initials]  
TRACED BY [initials]  
CHECKED BY [initials]

DRAWER 57 N° 30.





L.M.S.  
F.P.L. LAYOUT FOR DOUBLE SLIPS.

EXAMINED BY	INDOOR ASST	6/20
ELECTRICAL		
MATERIALS		

DATE AMENDED: 1-5-40

NATURE OF AMENDMENT: F.P.L. STRETCHER BARS, ETC. ALTERED, CONSEQUENT UPON REARRANGEMENT OF SWITCHES BY ENGINEER'S DEPT.

DRAWN BY: [Signature]

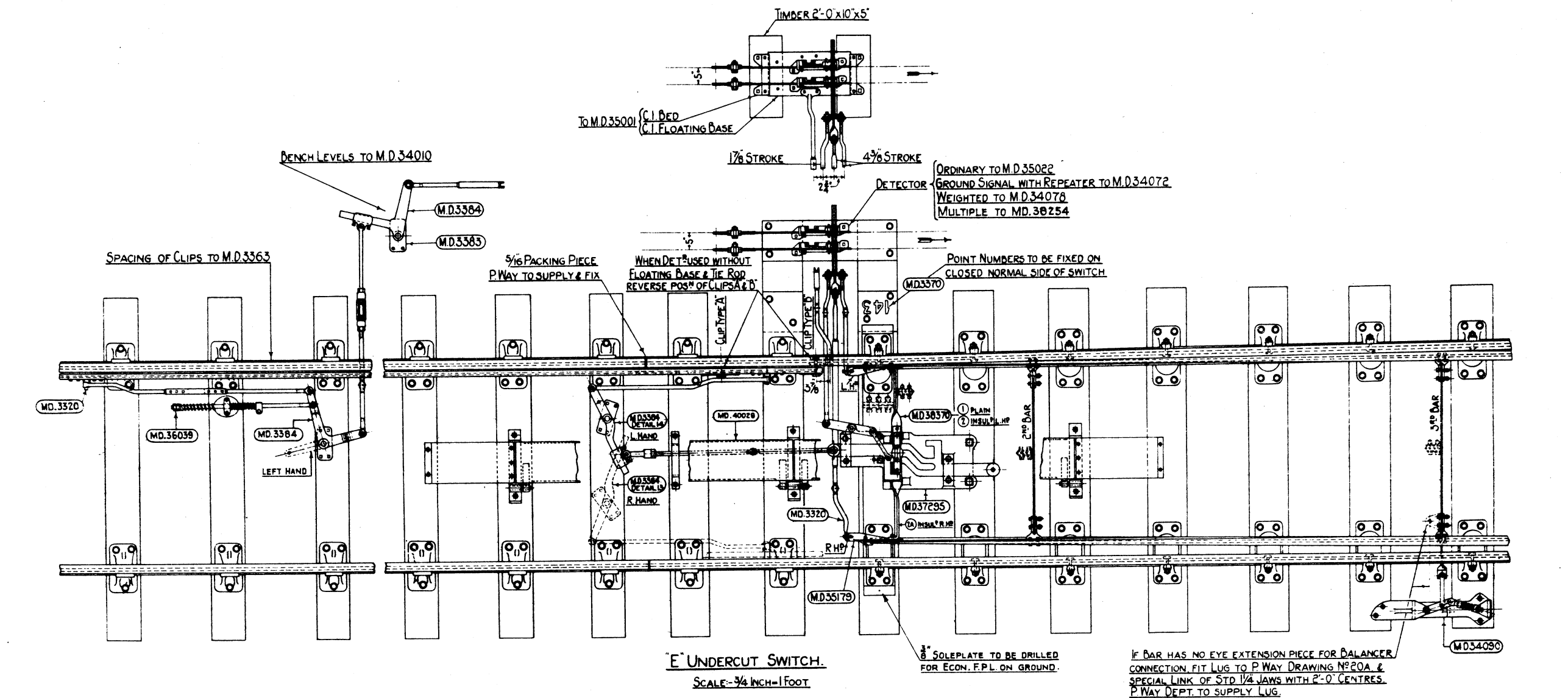
CHECKED BY: [Signature]

London, Man., and a South Western Railway Company  
SIGNAL & TELEGRAPH  
ENGINEERS' OFFICE  
EUSTON, L.M.S.I.

PLAN NO. M.D.37530

PLAN DATE: 19-1-38

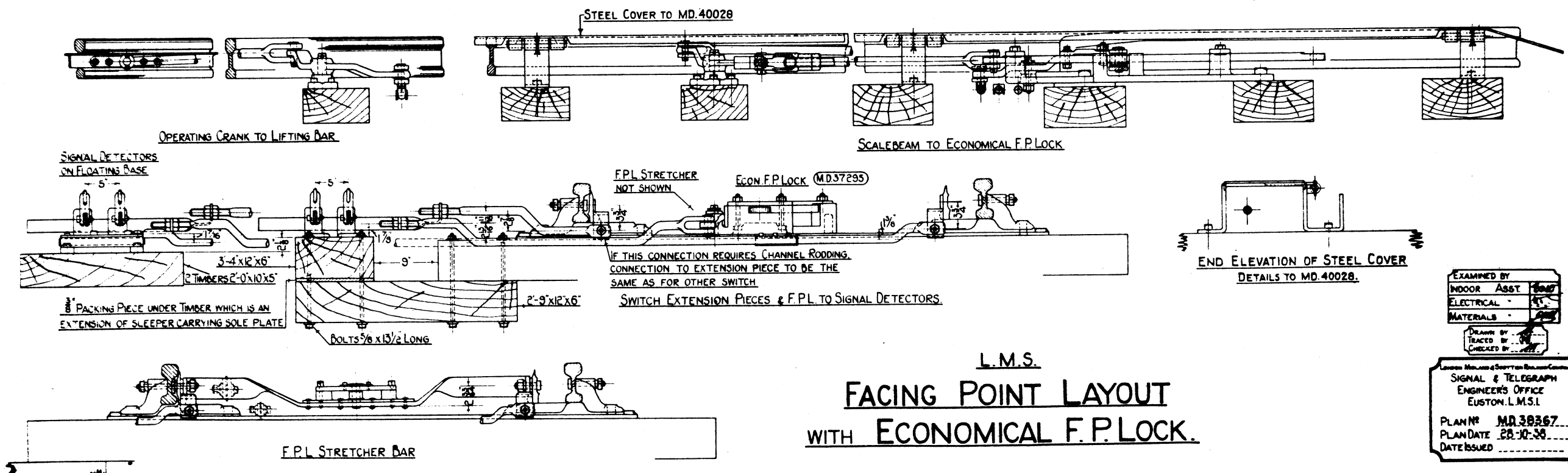
DATE ISSUED: [Blank]



**'E' UNDERCUT SWITCH.**  
SCALE: 3/4 INCH=1 FOOT

SOLEPLATE TO BE DRILLED FOR ECON. F.P.L. ON GROUND.

IF BAR HAS NO EYE EXTENSION PIECE FOR BALANCER CONNECTION FIT LUG TO P.WAY DRAWING N°20A & SPECIAL LINK OF STD 1/4" JAWS WITH 2'-0" CENTRES. P.WAY DEPT. TO SUPPLY LUG.

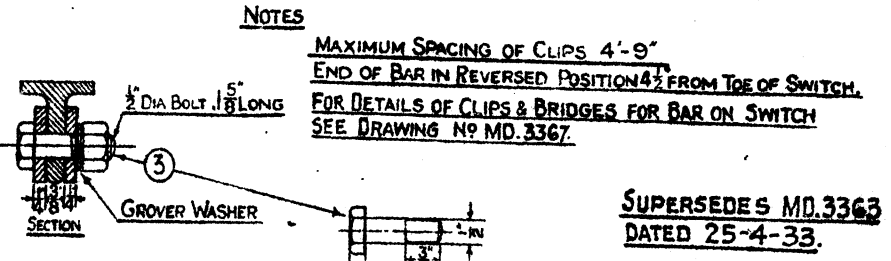
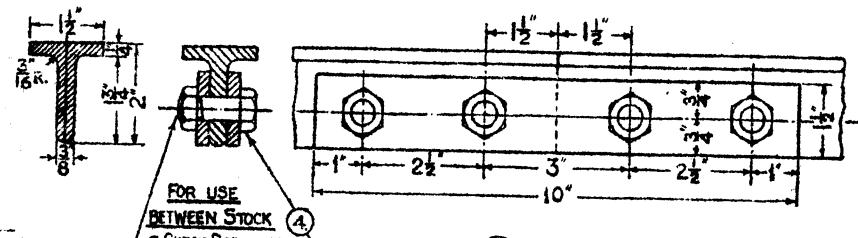
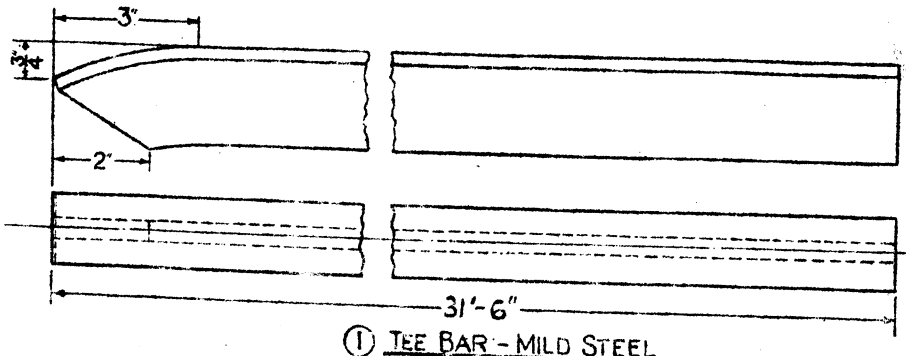
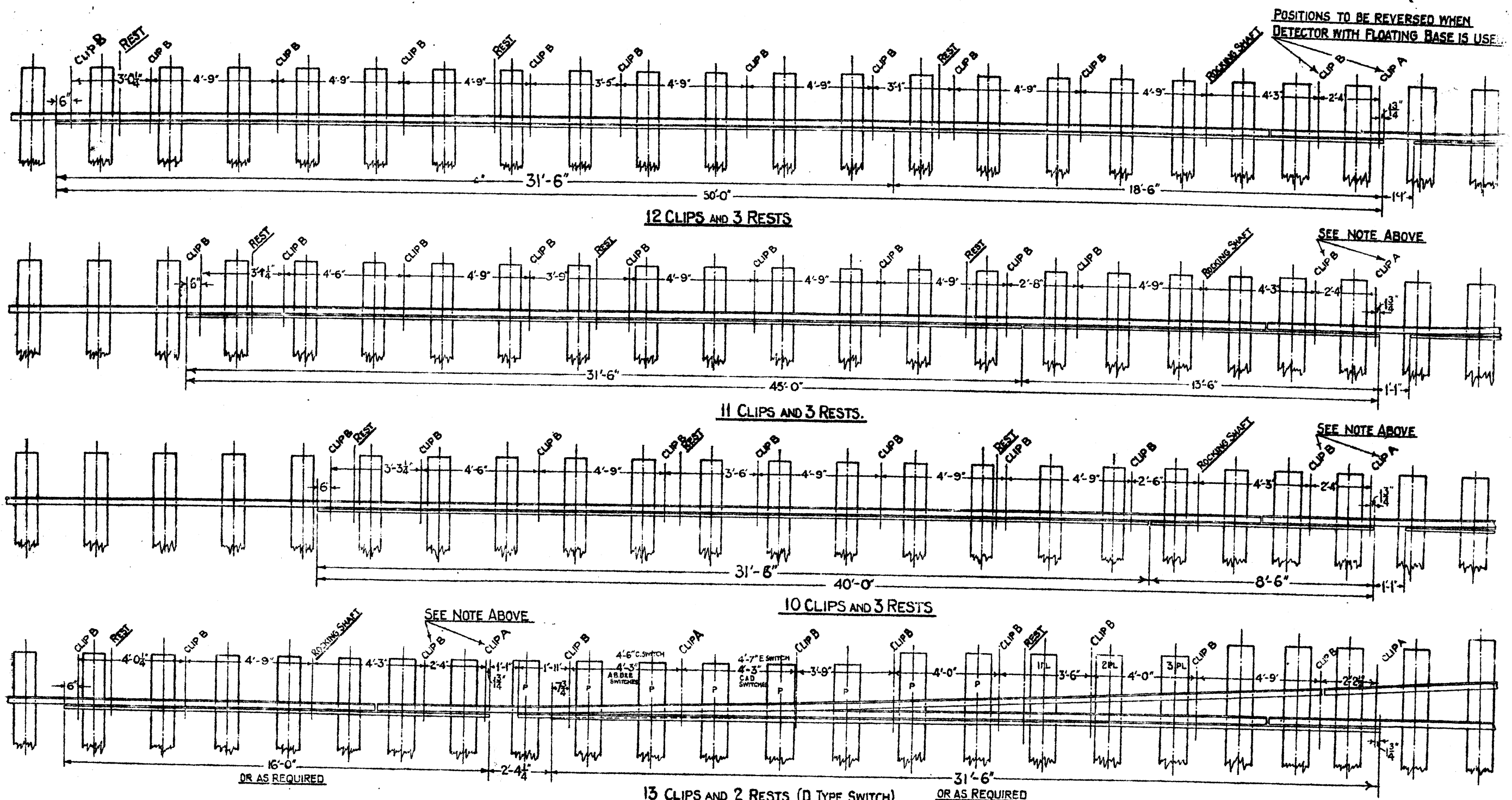


L.M.S.  
**FACING POINT LAYOUT**  
WITH **ECONOMICAL F.P. LOCK.**

EXAMINED BY  
INDOOR ASST. [Signature]  
ELECTRICAL [Signature]  
MATERIALS [Signature]  
DRAWN BY [Signature]  
TRACED BY [Signature]  
CHECKED BY [Signature]

LONDON: Messrs. G. & S. [Signature]  
SIGNAL & TELEGRAPH  
ENGINEER'S OFFICE  
EUSTON, L.M.S.I.  
PLAN N° **MD.38367**  
PLAN DATE **28-10-38**  
DATE ISSUED





FOR DETAILS OF CLIP A SEE DRAWING MD.3364

• • • B • • • 3365

• • • REST • • • 3362

• ARRANGEMENT OF F.P. LAYOUTS SEE MD. 3366 & MD.35015

• DETAILS OF ROCKING SHAFT SEE MD.3362

L.M.S.

# F.P.L. LIFTING BAR

SPACING OF JOINTS, CLIPS & RESTS (60'-0" RAIL)

STORES CAT. NO	NO	DESCRIPTION	MATERIAL	Nº REQ	REMARKS	APPROX WEIGHT	SPECIFICATION
SEE BELOW	1	TEE BAR	M.S.				B.S.I. 15
66/25081	2	FISH PLATE	M.S.	2			B.S.I. 15
	3	BOLT 1/2 x 1 5/8	M.S.	4	COMPLETE WITH NUT & GROVER WASHER		B.S.I. 15
66/25082	4	BOLT 1/2 x 1 1/4	M.S.	4	COMPLETE WITH NUT & GROVER WASHER		B.S.I. 15
66/24297		BAR 13'-6"					
66/24299		• 18'-6"					
66/24300		• 31'-6"					

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF DRAUGHTSMAN

SUPERSEDES MD.3363 DATED 25-4-33.

EXAMINED BY

INDOOR ASST. *[Signature]*

ELECTRICAL WORKS *[Signature]*

MATERIALS *[Signature]*

DRAWN BY *[Signature]*

CHECKED BY *[Signature]*

LONDON MIDLAND & SCOTLAND RAILWAY

SIGNAL & TELEGRAPH ENGINEERS' OFFICE EUSTON, L.M.S. 1.

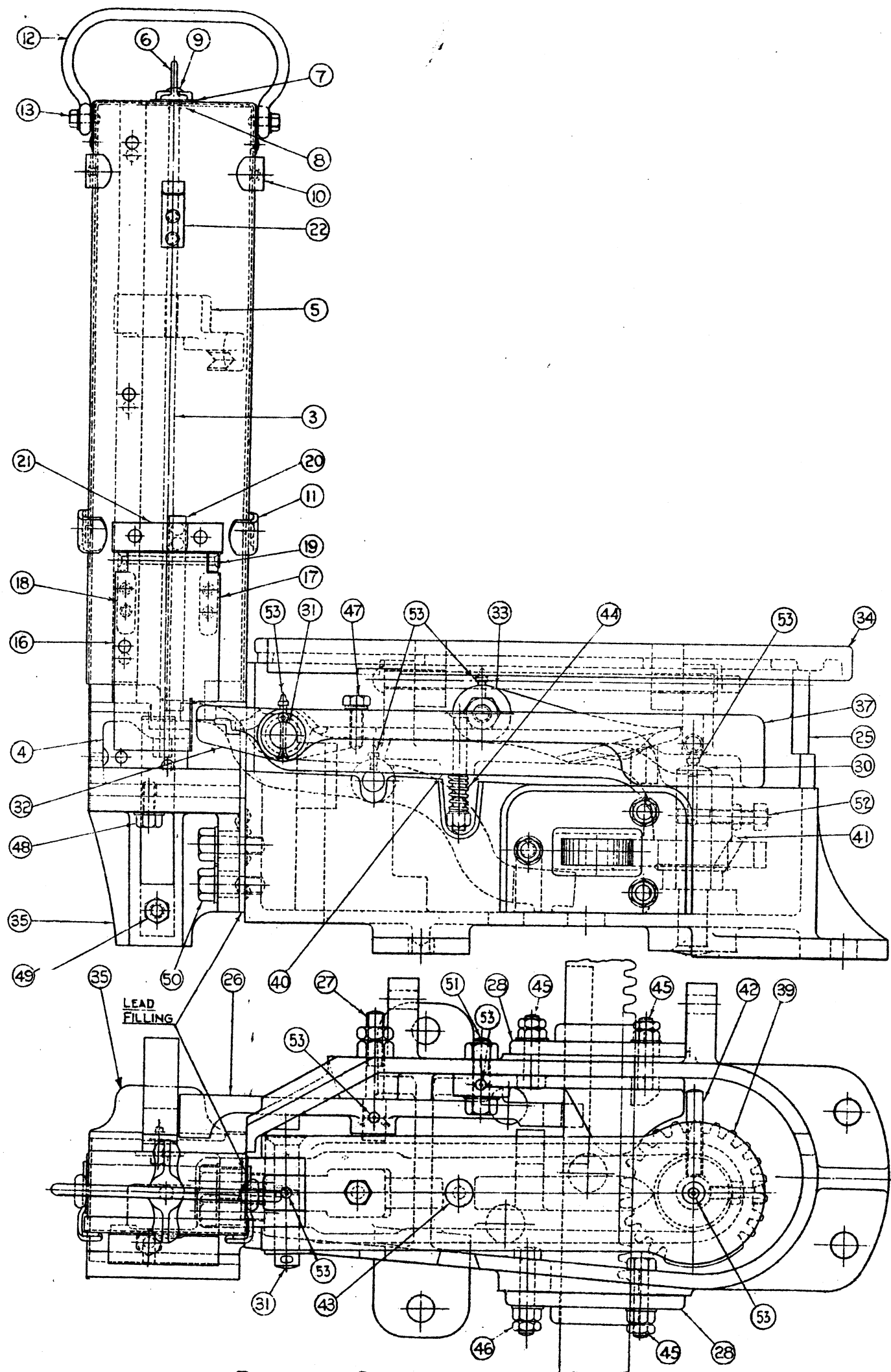
PLAN NO MD.3363

PLAN DATE 29-12-36.

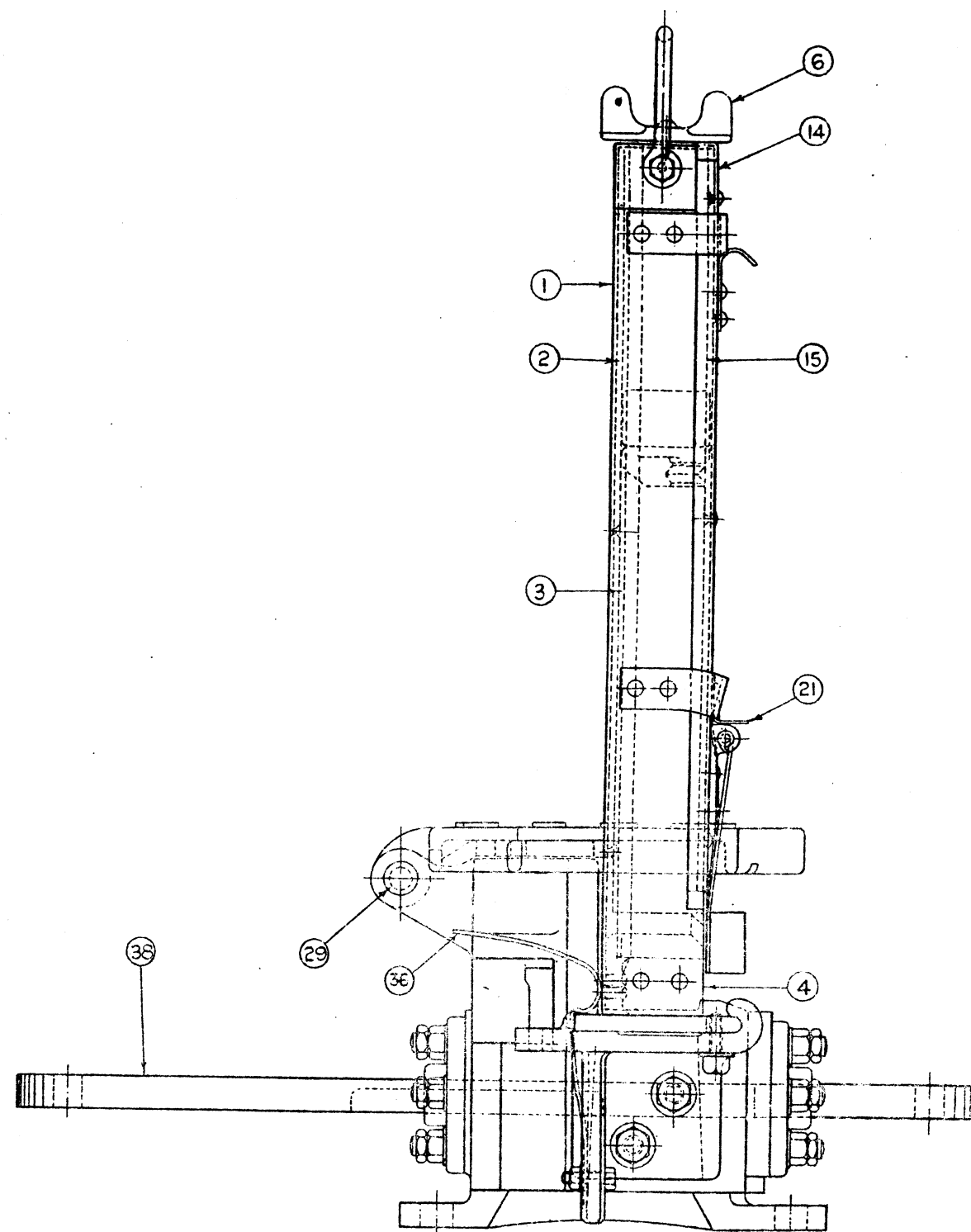
DATE ISSUED







PLAN WITH COVER REMOVED



NOTE:-

FOR DETAILS OF ITEMS 1 TO 52, SEE SHEETS 2 TO 5

FOR DETAILS OF ITEM 53, SEE DRAWING NO. MD. 33115 (DETAIL 50)

L.M. & S.R.

# FOG SIGNALLING MACHINE (CLAYTON'S)

COPY OF STANDARD  
DRAWING SIGNED BY  
THE SIGNAL &  
TELEGRAPH ENGINEER  
CHIEF DRAUGHTSMAN

5 SHEETS  
SHEET 1

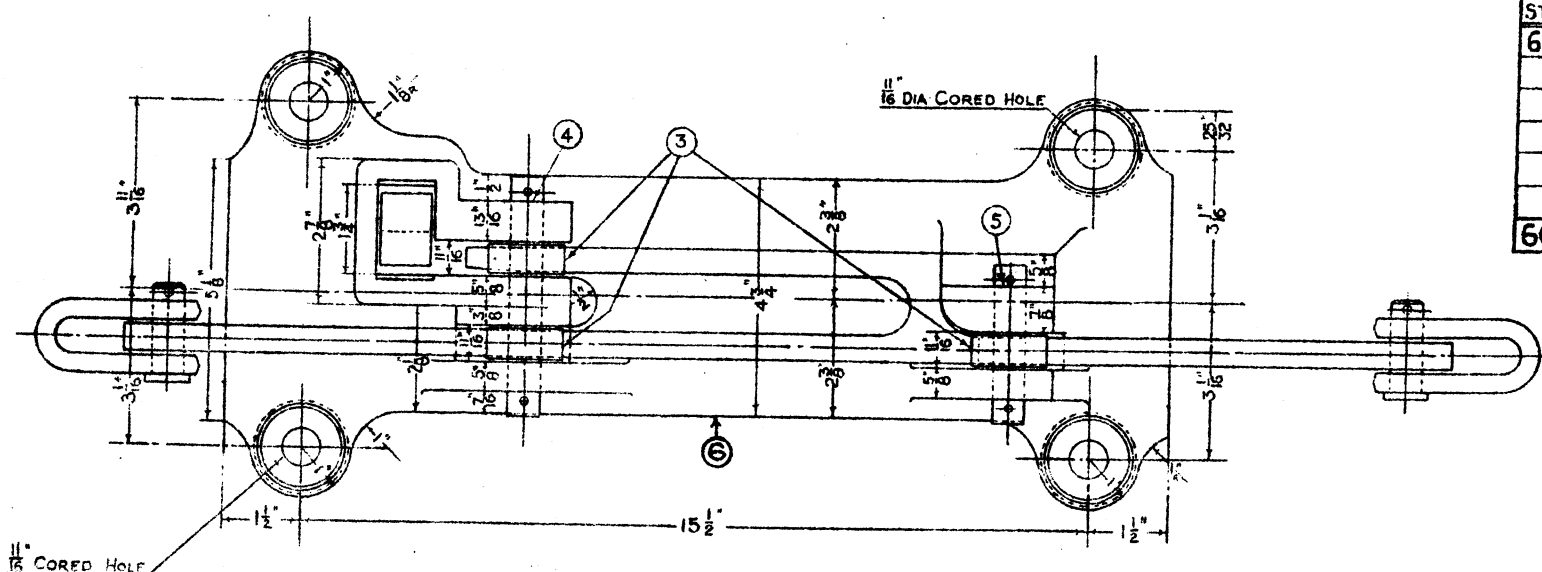
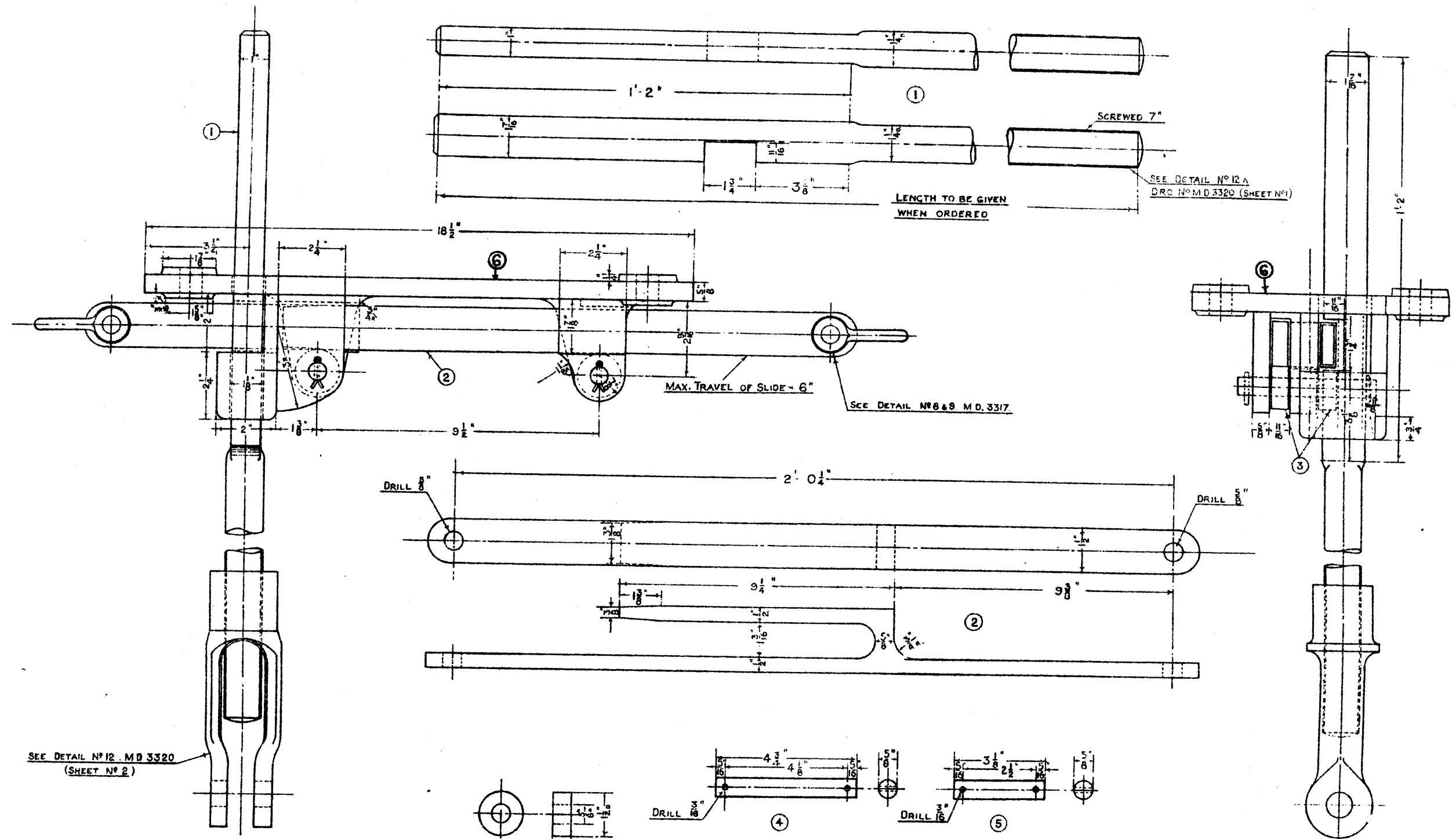
EXAMINED BY		
INDOOR ASST.		Z110
ELECTRICAL "		
WORKS "		RWS
MATERIALS "		RUB

DRAWN BY... J.A.  
TRACED BY... J.A.  
CHECKED BY...

LONDON MIDLAND & SCOTTISH RAILWAY  
SIGNAL & TELEGRAPH  
ENGINEERS OFFICE  
DERBY LMS 49

PLAN NO. M.D. 33103  
PLAN DATE 22-5-33  
DATE ISSUED





STORES CAT N°	N°	DETAIL	MATERIAL	NUMBER REQUIRED	REMARKS	B.S.I SPECIFICATION	
66/ 8751	1	BOLT	MILD STEEL	1		15	
12958	2	SLIDE	M. IRON.	1		308 or 310.	
12448	3	ROLLER	MILD STEEL	3		32 GRADE 2.	
29062	4	" PIN	MILD STEEL	1	COMPLETE WITH SPLIT PINS.	32 GRADE 2	
29057	5	" "	" "	1	" "	" "	
9380	6	UNDER BOLT CASTING	CAST IRON	1		321 " A.	
66/14340	UNDERBOLT COMPLETE						

TOLERANCES		
DIA.	HOLE	PIN
3/8"	-.000" +.002"	-.001" +.003"

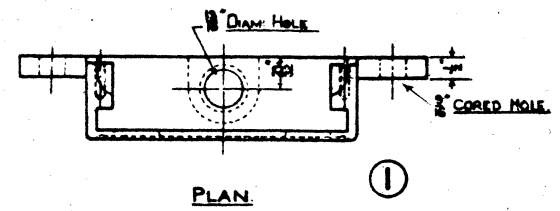
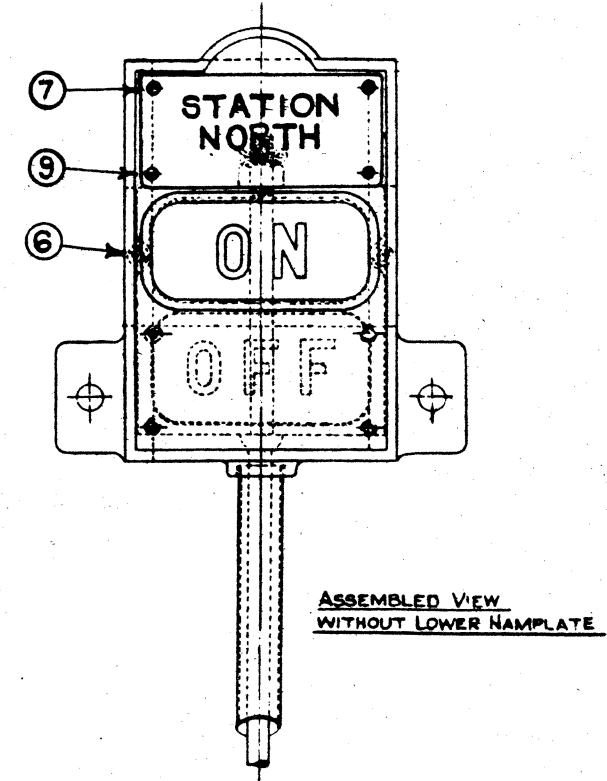
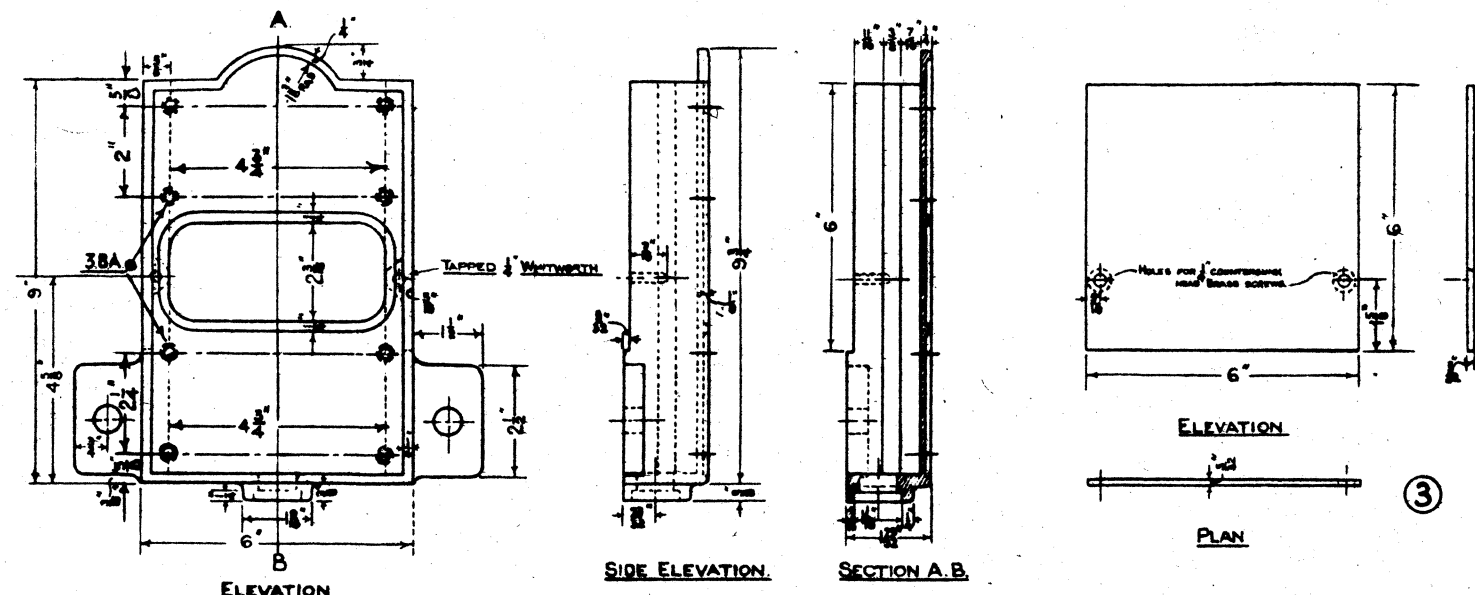
EXAMINED BY	
INDOOR ASST.	CHD
ELECTRICAL	
WORKS	AMS
MATERIALS	

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER  
 DERBY L.M.S. 48  
 CHIEF DRAUGHTSMAN.

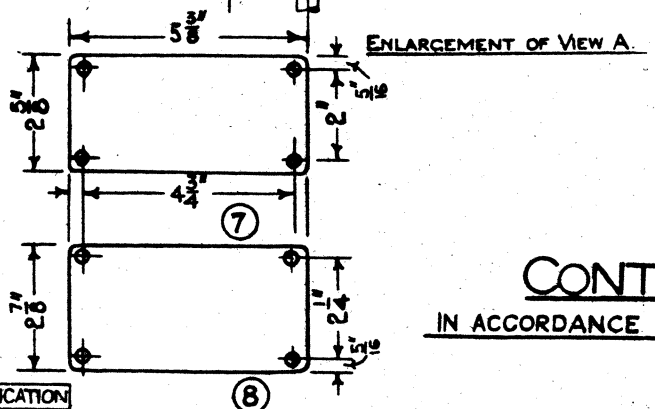
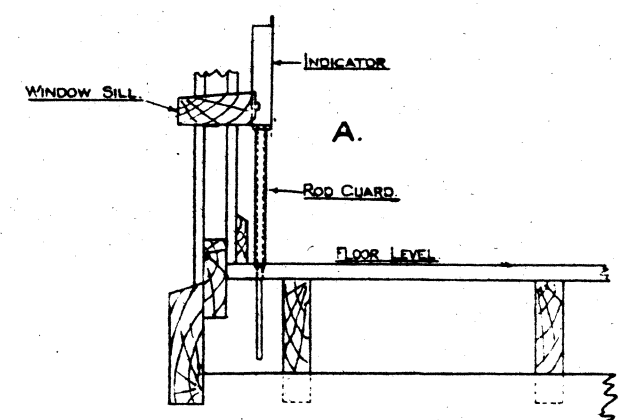
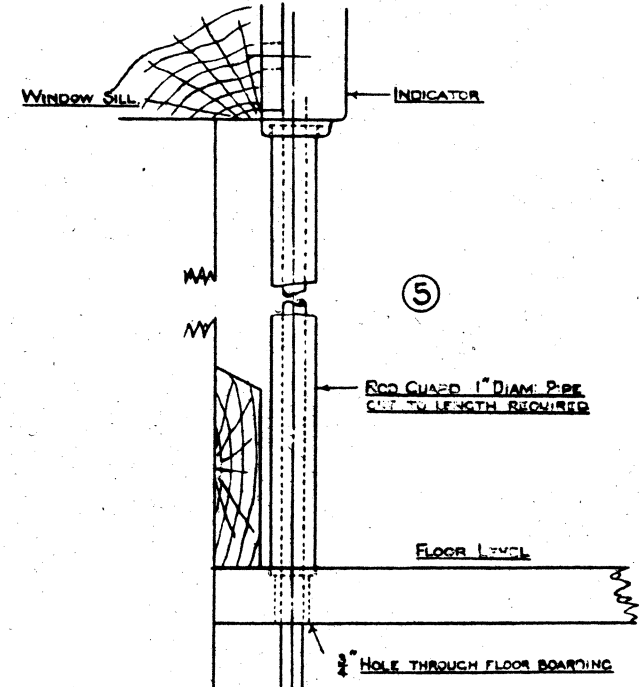
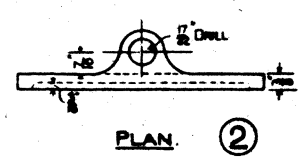
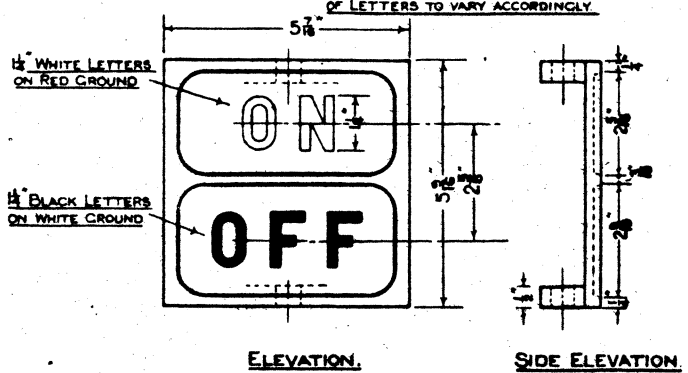
DRAWN BY...  
 TRACED BY...  
 CHECKED BY...

L.M.S.  
**UNDERBOLT FOR LEVER FRAME**

LONDON AND NORTH EASTERN RAILWAY SIGNAL & TELEGRAPH ENGINEERS OFFICE DERBY L.M.S. 48	
PLAN N°	M.D. 3319Z
PLAN DATE	25-2-36
DATE ISSUED	



NOTE: NAMING TO BE AS REQUIRED, I.E. ON, OFF, BATTERY, FREE, LOCKED, UNLOCKED, ETC. SIZE OF LETTERS TO VARY ACCORDINGLY.



**L.M.S.**  
**CONTROL INDICATOR.**  
 IN ACCORDANCE WITH R.E.C. STANDARD DRAWING N° B.167.

AMENDED 16-3-42-DETAIL 1 (3 B.A. HOLES ADDED AND LETTERING REMOVED) AND DETAILS 7/9 ADDED.

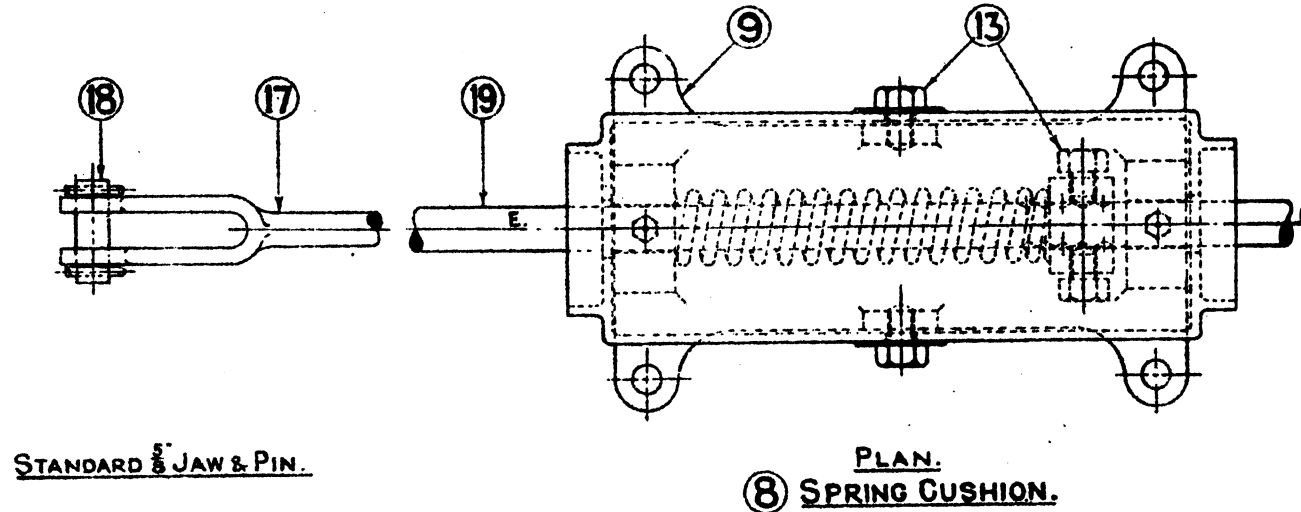
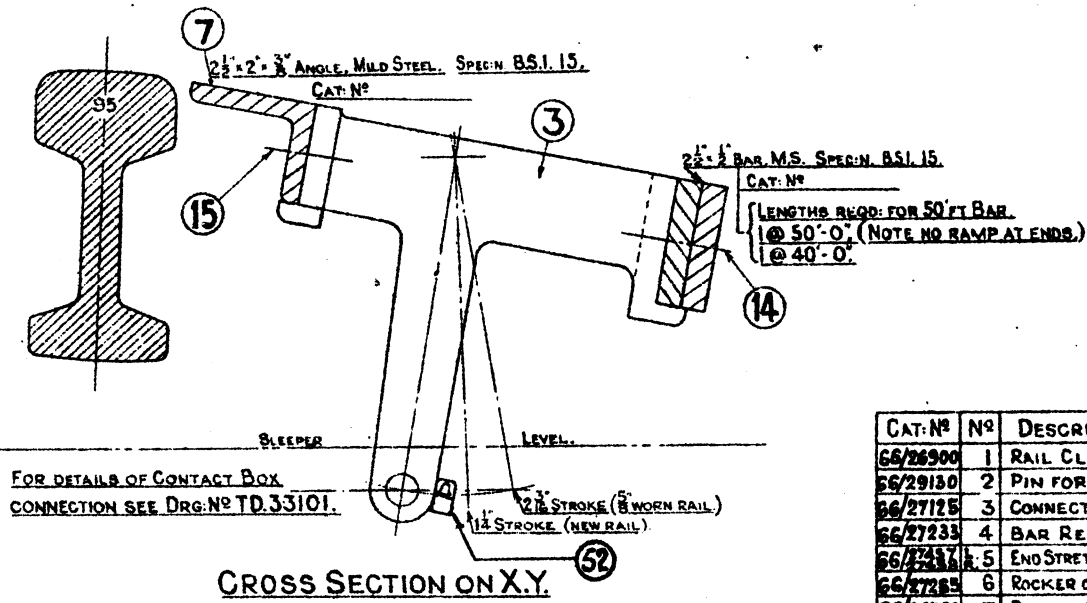
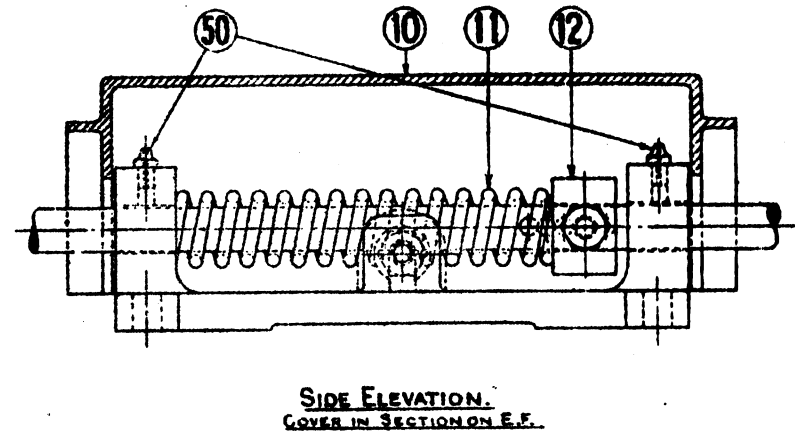
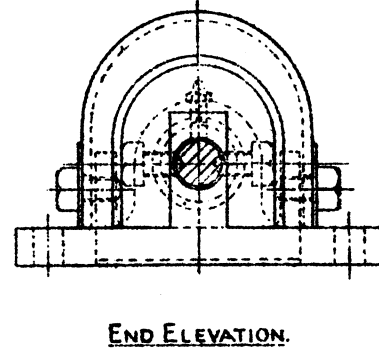
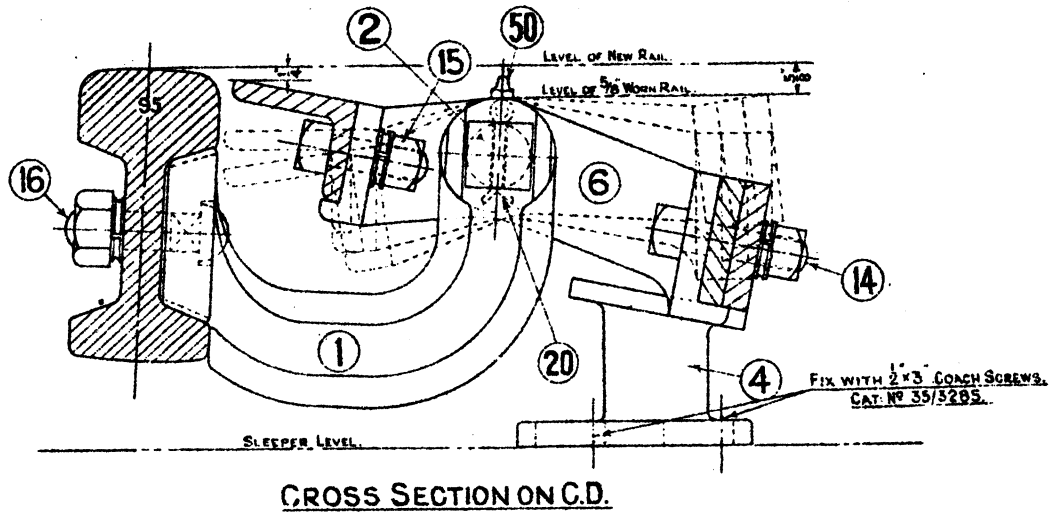
STORES CAT. N°	DETAIL	MATERIAL	NUMBER REQUIRED	REMARKS	APPROX. WEIGHT	B.S.I. SPECIFICATION
1	CASE	CAST IRON	1			321 GRADE A
2	INDICATOR PLATE	-	1			
3	BACK PLATE FOR CASE	MILD STEEL PLATE	1			15
4	ROD FOR INDICATOR PLATE	WROUGHT IRON	1			51 GRADE B
5	ROD GUARD	IRON PIPE	1			35/4024
6	SCREW C <sup>3/8</sup> HEAD	BRASS	2			
7	NAMING PLATE (FOR NAME OF PLACE.)	BAKELITE SHY. 1/8 THK	1			
8	NAMING PLATE (FOR NAME OF APPARATUS RELEASE)	" " "	1			
9	RD. HEAD SCREW	BRASS	8			N° 3 B.A. x 5/16 LONG.

EXAMINED BY	
INDOOR ASST	60
ELECTRICAL	
WORKS	110
MATERIALS	110

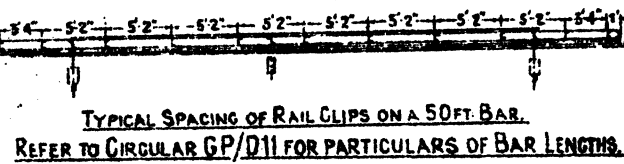
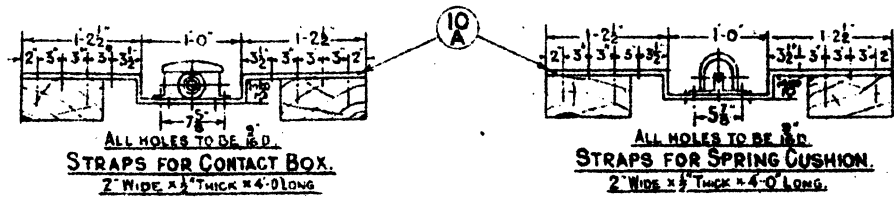
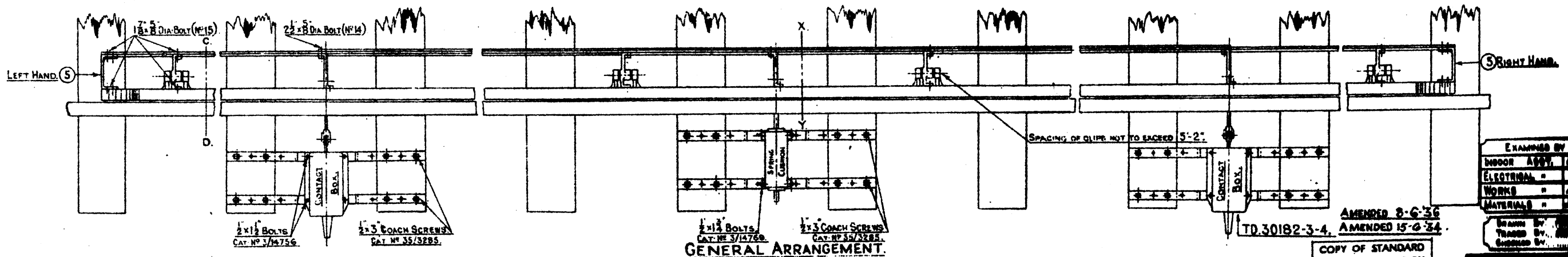
DRAWN BY  
 TRACED BY  
 CHECKED BY

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER

SIGNAL & TELEGRAPH ENGINEERS OFFICE, DERBY LMS 49  
 PLAN N° M.D. 33198  
 PLAN DATE 24.11.35  
 DATE ISSUED



CAT. NO	NO	DESCRIPTION.	MATERIAL	NO REQ	REMARKS.	APPROX Wt	SPECIFICATION	NO	DESCRIPTION.	MATERIAL	NO REQ	REMARKS.	APPROX Wt	SPECIFICATION	CAT. NO
66/26900	1	RAIL CLIP	CAST IRON	11	FOR 50' BAR.		B.S.I. 321 A	11	SPRING. FOR ABOVE (8)	STEEL.	1				66/27350
66/29130	2	PIN FOR ROCKER	MILD STEEL	1	" " "		" 32 1/2"	12	COLLAR.	WROTE IRON	1				B.S.I. 51
66/27125	3	CONNECTION PIECE.	MAL. C.I.	3	" " "		" 310"	13	SET SCREWS.	BRIGHT MS	4	LONG. & DIA.			" 32 1/2" / 26940
66/27233	4	BAR REST.	CAST IRON	3	FOR 50' BAR.		" 32 1/2"	14	BOLTS & SPRING WASHERS	BLACK MS	24	" " " Sq. Hd.			" 15 1/2" / 27378
66/27317	5	END STRETCHER	MILD STEEL	1	FOR 50' BAR.		" 15"	15	BOLTS	"	12	" " " Sq. Hd.			Do. / 27378
66/27265	6	ROCKER OR STRETCHER	MAL. C.I.	1	FOR 50' BAR.		" 310"	16	BOLTS	"	12	" " " Sq. Hd.			Do. / 27378
66/26700	7	BAR. 2 1/2" x 3" ANGLE	MILD STEEL	1	WITH RAMP AS DETAILED		" 15"	17	JAW.	WROTE IRON	1	WELDED TO NO 17.			B.S.I. 51 / 27285
66/26995	8	SPRING CUSHION	CAST IRON	1			" 32 1/2"	18	PIN FOR CONNECTING JAW	WROTE IRON	1				" 32 1/2" / 27285
66/26735	9	BASE. FOR ABOVE (8)	CAST IRON	1			" 32 1/2"	19	CUSHION SLIDE ROD.	WROTE IRON	1				" 51" / 27285
66/26935	10	COVER.	"	1			DO.	50	GREASE NIPPLE.	MILD STEEL	1	MD. 33115 ITEM 50.			B.S.I. 32 / 2940028
66/27416	10A	FIXING STRAPS.	MILD STEEL	6			" 15"	20	PIN, COTTER, SPLIT.	BRIGHT S.	6	CAT. NO 29/2910. (2)			29/2910 / 3514630
								21	GREASE NIPPLE	MILD STEEL	6				

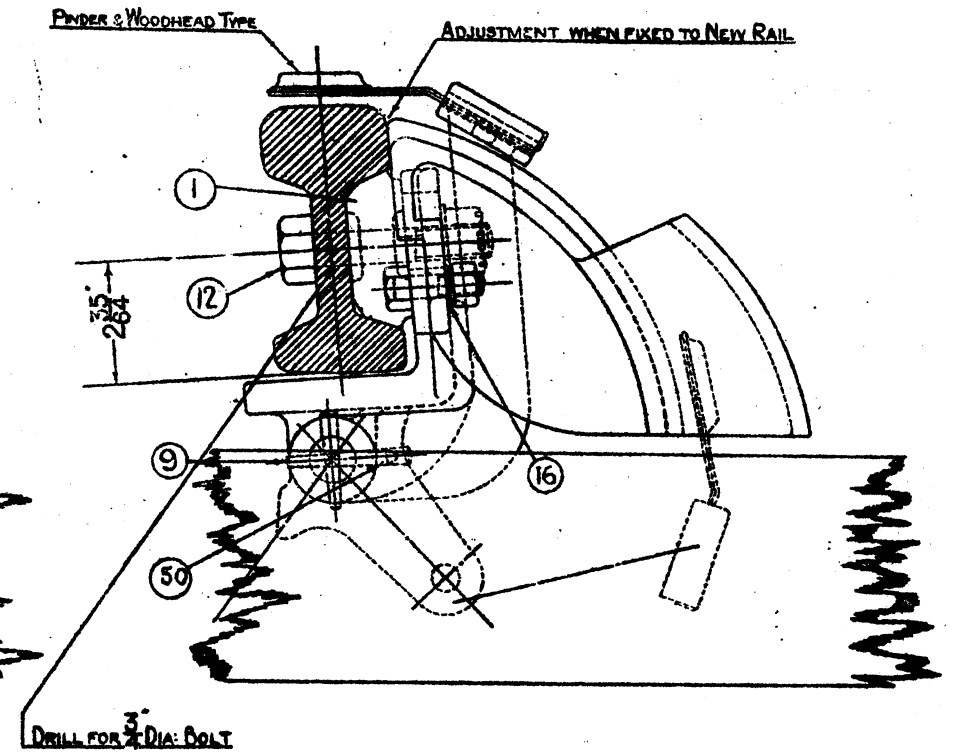
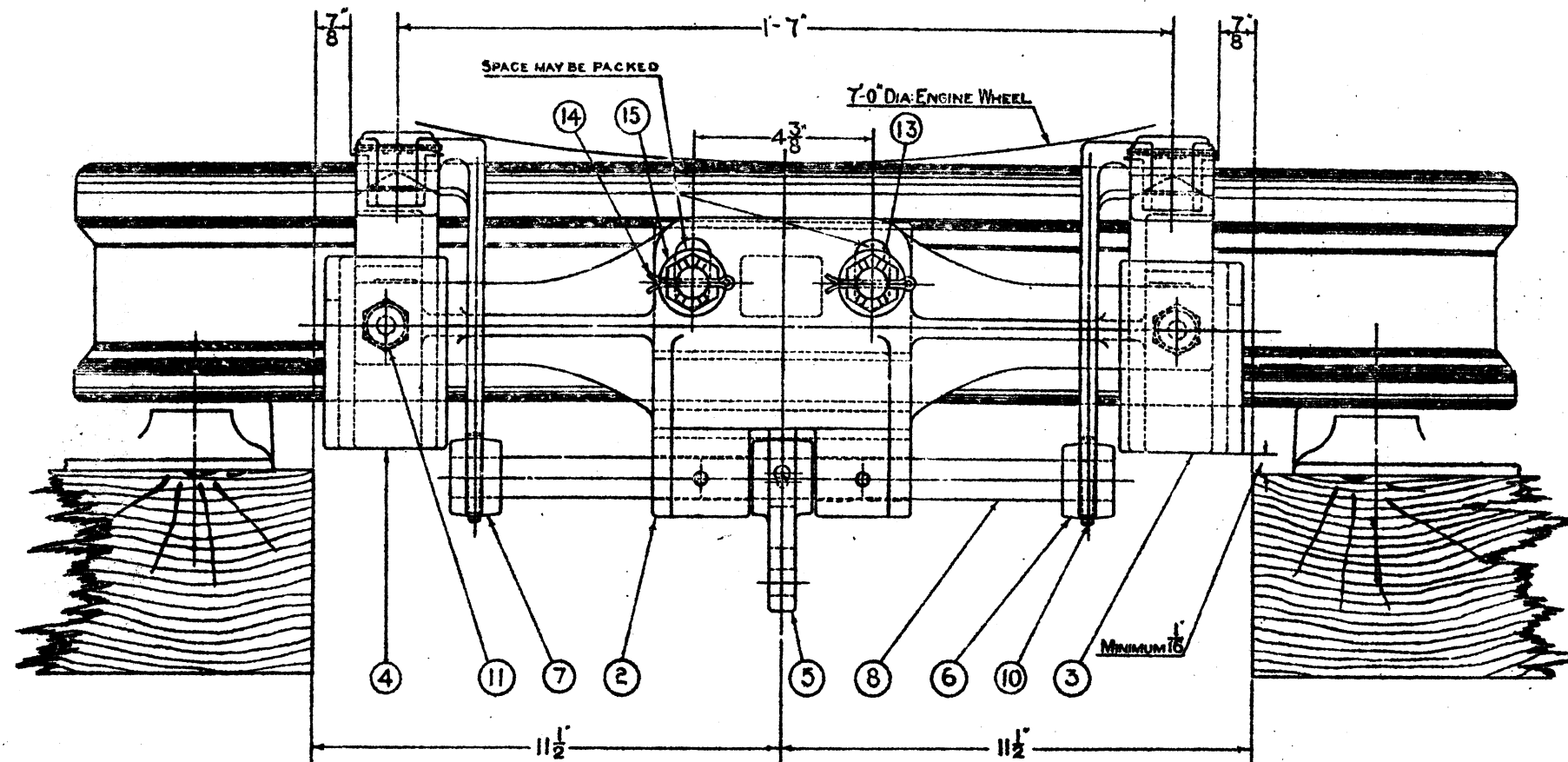


L.M.S.  
DEPRESSION BAR.  
SHEET 1. 2 SHEETS.

AMENDED 8-6-36  
AMENDED 15-6-34.  
TD. 30182-3-4.  
COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF DRAUGHTSMAN.

EXAMINED BY  
INDOOR ASST. ENG.  
ELECTRICAL  
WORKS  
MATERIALS

Drawn by  
Traced by  
Checked by  
L.M.S. SIGNAL AND TELEGRAPH ENGINEERS' OFFICE, DERBY, L48 4Q.  
PLAN NO. MD. 33110  
PLAN DATE. 3-5-33  
DATE ISSUED



SLEEPERS TO BE MOVED WHERE NECESSARY  
(FROM THE VIEW-POINT OF RAIL CREEP  
THESE DIMENSIONS MAY BE VARIED SO AS  
TO GIVE GREATER LATERAL CLEARANCE  
FROM THE DETONATOR TO THE SLEEPER  
TOWARDS WHICH THE PLACER WOULD MOVE).

CAT. NO.	NO.	DETAIL	MATERIAL	NO. REQ.	REMARKS	APP. WT.	B.S.I. SPECIFICATION
66/36634	1	PACKING PIECE	CAST IRON	1	FOR B.S. RAIL		321 GRADE A
66/35988	2	RAIL CLIP	"	1			Do
66/36946	3	SHIELD - RIGHT HAND	"	1			Do
66/36848	4	" - LEFT	"	1			Do
66/35960	5	DRIVING ARM	"	1			Do
66/36789	6	HOLDER - RIGHT HAND	MALL: CAST IRON	1			310
66/36791	7	" - LEFT	"	1			310
66/36908	8	SPINDLE	B. D. MILD STEEL	1			32 GRADE 2
29/3924	9	PEG PIN - SOLID	STEEL - BRIGHT	1	3/8" DIA. THICK END X 2 1/2" LONG		
29/3921	10	" " " "	" " " "	2	3/8" " " " X 2" "		
3/45565	11	HEX. HEAD BOLT & NUT	STEEL	2			
3/15783	12	" " BOLT	"	2			
3/61338	13	CASTLE NUT	"	2			
29/3424	14	SPLIT PIN	"	2			
3/75246	15	WASHER	"	2			
3/77787	16	SPRING WASHER	"	2			
39/40638	50	GREASE NIPPLE	MILD STEEL	2	DR <sup>c</sup> M.D.33115		

COMPLETE DETONATOR PLACER CAT N° 66/36638.

**L.M.S.**  
**DETONATOR PLACER.**  
**GENERAL ARRANGEMENT.**

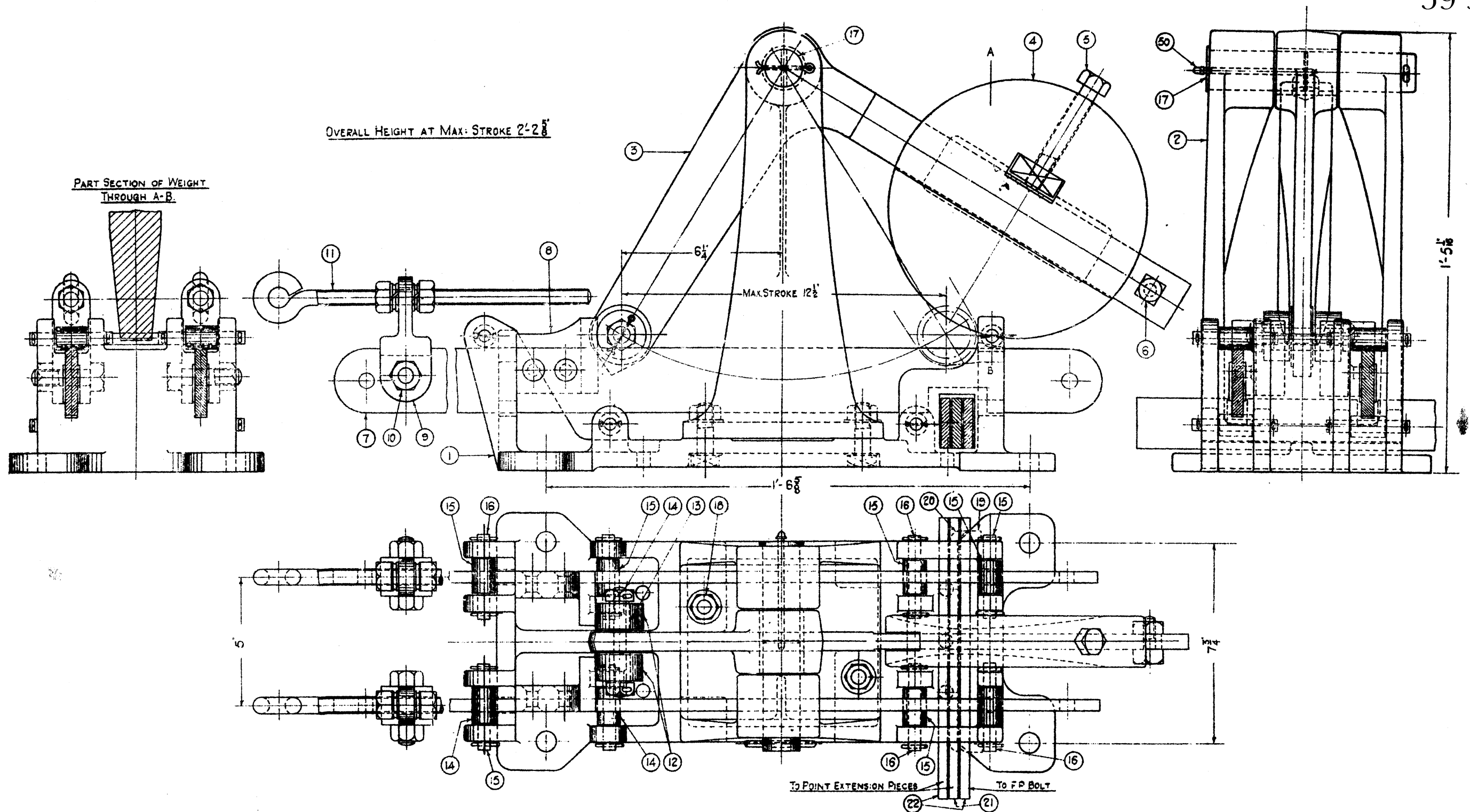
EXAMINED BY  
INDOOR ASST. [Signature]  
ELECTRICAL - [Signature]  
MATERIALS - [Signature]

DRAWN BY  
PLACED BY  
CHECKED BY

COPY OF STANDARD  
DRAWING SIGNED BY  
THE SIGNAL &  
TELEGRAPH ENGINEER  
CHIEF SIGNALS OFFICER

LONDON & NORTH-EASTERN RAILWAY CO.  
SIGNAL & TELEGRAPH  
ENGINEER'S OFFICE  
EUSTON, L.M.S.I.  
PLAN N° M.D.35023  
PLAN DATE 8-9-36  
DATE ISSUED

2 SHEETS  
SHEET 1



OVERALL HEIGHT AT MAX. STROKE 2'-2 5/8"

PART SECTION OF WEIGHT THROUGH A-B.

MAX. STROKE 12 1/2"

1-5 1/8"

TO POINT EXTENSION PIECES TO F.P. BOLT

No.	STORES CAT. No.	DESCRIPTION	MATERIAL	No. REQ.	REMARKS	APPROX. WEIGHT	BSI SPECIFICATION	No.	STORES CAT. No.	DESCRIPTION	MATERIAL	No. REQ.	REMARKS	APPROX. WEIGHT	BSI SPECIFICATION
1	66/6222	BODY	CAST IRON	1			321 GRADE A	13	66/6290	CRANK ROLLER BUSH	MILD STEEL	2			32 GRADE 2
2	6830	PEDESTAL	"	1			"	14	29058	CRANK ROLLER PIN	MS BR DRAWN	1	COMP WITH NUTS & PINS		"
3	6480	CRANK	MILD STEEL	1			15	15	7030	SLIDE ROLLER	MILD STEEL	8			"
4	16572	WEIGHT - 10'	CAST IRON	1	TO MD 3315, DETAIL 11	30LBS		16	28990	" PIN	MS BR DRAWN	8	COMPLETE WITH SPL. PINS		"
5	3/47374	" FIXING BOLT	MILD STEEL	1	REPLACES DET-12, MD 3315	15		17	26663	CRANK PIN	MILD STEEL	1	COMP WITH GRIPPLE & PIN		"
6	50324	" STOP BOLT	"	1	COMPLETE WITH NUT	15		18	3/48843	PEDESTAL BOLT	"	2	COMP WITH NUT & WASHER		15
7	66/7213 L.H.	SLIDE	"	1	IR.H. & I.L.H.	15		19	66/6890	PACKING PIECE 3/8" THICK	CAST IRON	1	SUPPLIED ONLY WHEN SPECIALLY ORDERED		321 GRADE A
8	7214 R.H.	SLIDE STOP	"	1	IR.H. & I.L.H.	15		20	6891	"	"	1	"		"
9	6035	CONNECTOR ARM	"	2		15		21	66/6715	DETECTOR BLADE (MIDDLE)	MILD STEEL	1			15
10	3/45663	CONNECTOR ARM BOLT	"	2	COMPLETE WITH NUT	15		22	66/6720	" (OUTSIDES)	"	2			15
11	53296	ADJUSTING EYE BOLT	"	2	COMPLETE WITH NUTS & WASHERS	15		50	39/40628	GREASE NIPPLE	"	1	TO MD 3315		
12	66/7038	CRANK ROLLER	"	2			32 GRADE 2		66/6578	DETECTOR COMPLETE					

FOR DETAILS 1 TO 6 SEE DRG. NO. MD. 34079 SHEET 1  
 " " 7 TO 22 " " " " " " " " 2

L.M.S.  
**WEIGHTED SIGNAL DETECTOR**

EXAMINED BY:  
 INDOOR ASST. *[Signature]*  
 ELECTRICAL *[Signature]*  
 MATERIALS *[Signature]*

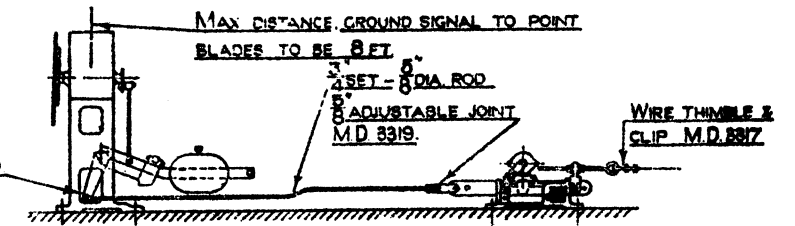
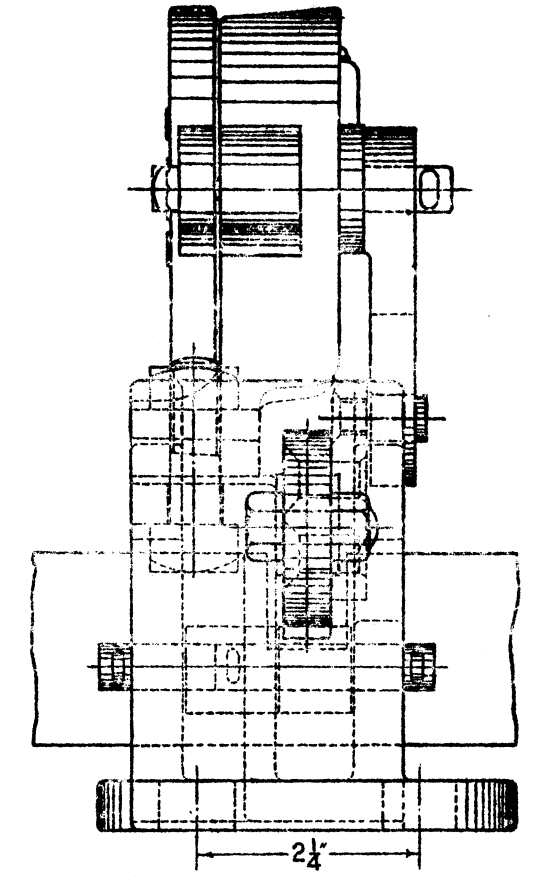
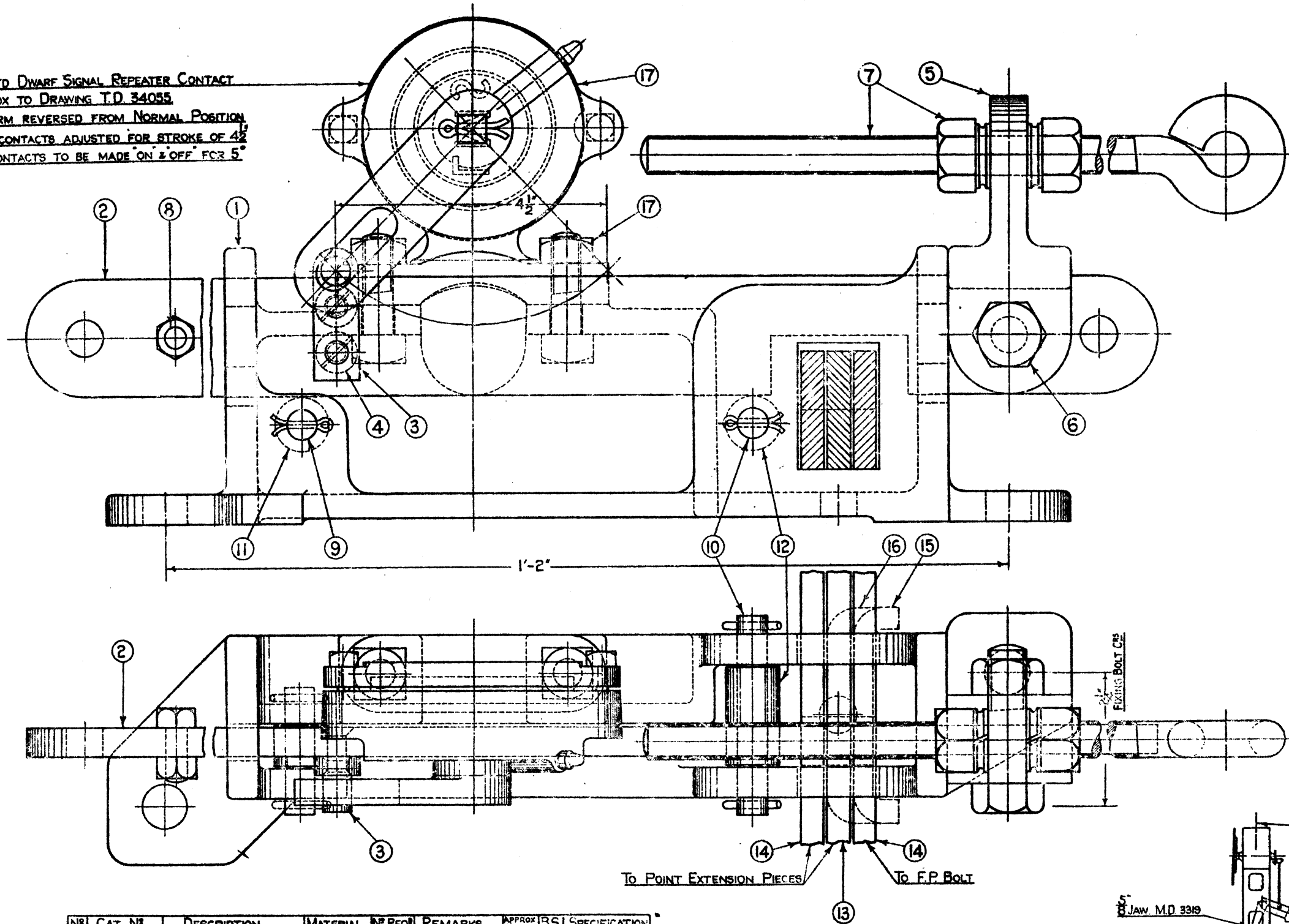
DRAWN BY: *[Signature]*  
 TRACED BY: *[Signature]*  
 CHECKED BY: *[Signature]*

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF BRANCH OFFICIAL.

LONDON SIGNALS AND TELEGRAPH ENGINEER'S OFFICE EUSTON L.M.S.I.  
 PLAN No. MD. 34078  
 PLAN DATE 14-10-36  
 DATE ISSUED



STD DWARF SIGNAL REPEATER CONTACT  
 BOX TO DRAWING T.D. 34055  
 ARM REVERSED FROM NORMAL POSITION  
 & CONTACTS ADJUSTED FOR STROKE OF 42  
 CONTACTS TO BE MADE ON & OFF FOR 5°



Nº	CAT. Nº	DESCRIPTION	MATERIAL	Nº REQ.	REMARKS	APPROX. WEIGHT	B.S.L. SPECIFICATION
1	66/6220	BODY	CAST IRON	1			321 GRADE A
2	7208	SLIDE	MILD STEEL	1			15
3	6270	BRACKET & STUD	"	1			15
4	3/4563	" BOLT	"	2			15
5	66/6085	CONNECTOR ARM	"	1	SEE M.D.34079 DET. 3		15
6	3/4563	" BOLT	"	1	M.D.34079 - 10		15
7	53286	ADJUSTING EYE BOLT	"	1	M.D.34079 - 11		15
8	45449	SLIDE STOP BOLT	"	1	COMPLETE WITH HEX NUT		15
9	66/28989	SLIDE ROLLER PIN	M.S. BRIGHT DR.	1	" - 28 PINS		32 GRADE 2
10	28991	"	"	1	"		32 - 2
11	7029	"	"	1	"		32 - 2
12	7031	"	"	1	"		32 - 2
13	6158-3-6171-5	DETECTOR BLADE (MIDDLE)	MILD STEEL	1	SEE M.D.34079 DET. 21		15
14	6157-651-5-6200	" (OUTSIDE)	"	2	M.D.34079 - 22		15
15	6892	PACKING PIECE 3/16 THICK	CAST IRON	1	SUPPLIED ONLY WHEN SPECIALLY ORDERED		321 GRADE A
16	6896	" 1/8 "	"	1	"		321 - A
17	62/3452	DWARF SIGNAL REPEATER CONBOX	"	1	15 PINS COMPLETE WITH 28 PINS NO. 28989		
	66/6580	DETECTOR COMPLETE					

FOR DETAILS SEE DRAWING M.D. 34089 & M.D. 34079 (SHEET 2)

THIS MAY BE USED AS A STANDARD DETECTOR WHEN THE REPEATER & DETAILS 3, 4 & 8, WILL NOT BE REQUIRED. ALSO THE SLIDE, DETAIL 2 WILL BE REPLACED BY DETAIL 18, SEE M.D. 35022.

L.M.S.

**GROUND SIGNAL DETECTOR WITH REPEATER**

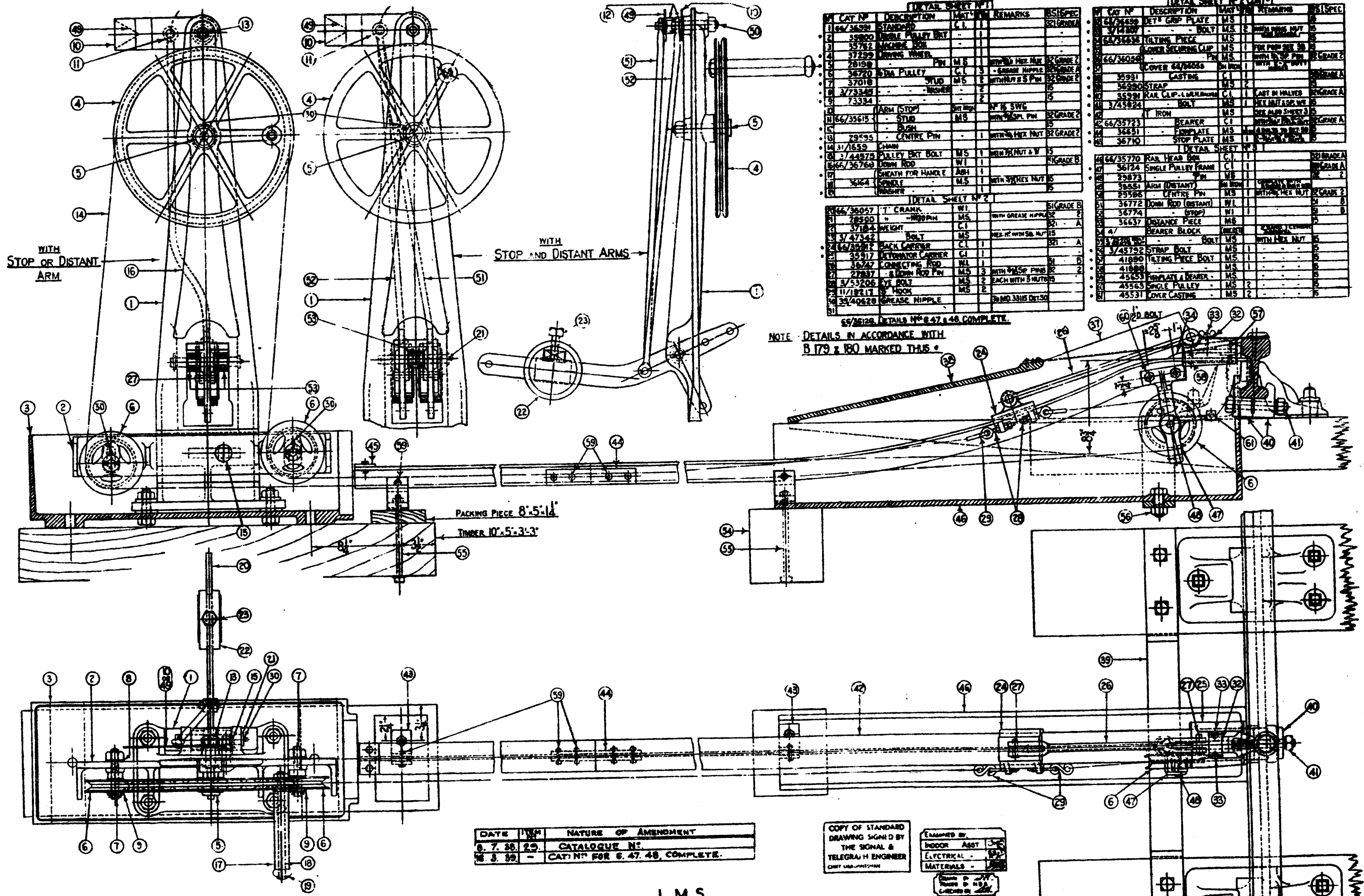
EXAMINED BY  
 INDOOR ASST. [Signature]  
 ELECTRICAL [Signature]  
 MATERIALS [Signature]

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF BRANCHMAN.

DRAWN BY [Signature]  
 CHECKED BY [Signature]

LONDON MILNERS & SCOTTISH RAILWAY  
 SIGNAL & TELEGRAPH ENGINEERS' OFFICE  
 EUSTON, L.M.S. I.  
 PLAN Nº M.D. 34072  
 PLAN DATE 16-10-35  
 DATE ISSUED





DETAIL SHEET N° 1

CAT N°	DESCRIPTION	MAT.	REMARKS	QTY	SPEC.
1	STANDARD	C.I.		1	21GRADE
2	DOUBLE PULLEY BOLT			1	
3	WAGNER BOX			1	
4	DRIVING WHEEL			1	
5	PIN	M.S.	WITH HEX NUT	2	21GRADE
6	WIRE PULLEY	C.I.	- GREASE NIPPLE	1	21GRADE
7	FLUID	M.S.	WITH NUT & S PIN	2	21GRADE
8	WASHER			2	
9				2	
10	ARM (STOP)	W.T. IRON	N° 16 SWG	1	
11	STOP	M.S.	WITH 1/2" PIN	1	21GRADE
12	BUSH			1	
13	CENTRE PIN			1	
14	CHAIN			1	
15	PULLEY BOLT	M.S.	WITH NUT & W	1	
16	DOWN ROD	W.I.		1	21GRADE
17	SHEATH FOR HANDLE	ASH		1	
18	SCREW	M.S.	WITH HEX NUT	1	
19	WASHER			1	

DETAIL SHEET N° 2 (CONT)

CAT N°	DESCRIPTION	MAT.	REMARKS	QTY	SPEC.
20	DET GRIP PLATE	M.S.		1	
21	BOLT	M.S.	WITH PIN	1	
22	LIFTING PIECE	M.S.		1	
23	LOWER SEPARING CLIP	M.S.	FOR PIN SEE 24	1	
24	COVER 64/2055	SH IRON	WITH 1/2" BOLT	1	21GRADE
25	LASTING	C.I.		1	
26	STRAP	M.S.		1	
27	RAIL CLIP - L. 1/2" x 1/2"	C.I.	LAST IN HALVER	1	21GRADE
28	BOLT	M.S.	FOR NUT & W	1	
29	IRON	M.S.	SEE ALSO SHEET 3	1	
30	BEARER	C.I.		1	21GRADE
31	FLY PLATE	M.S.	WITH 1/2" PIN	1	
32	STOP PLATE	M.S.	WITH 1/2" PIN	1	
33	STOP PLATE	M.S.	WITH 1/2" PIN	1	

DETAIL SHEET N° 2

CAT N°	DESCRIPTION	MAT.	REMARKS	QTY	SPEC.
34	T. CRANK	W.I.		1	21GRADE
35	WASHER	M.S.	WITH GREASE NIPPLE	2	
36	WEIGHT	C.I.		1	21GRADE
37	BOLT	M.S.	WITH NUT & W	1	
38	BACK LASSER	C.I.		1	21GRADE
39	CONNECTING ROD	W.I.		1	
40	DOWN ROD PIN	M.S.	WITH 1/2" PIN	2	
41	WASHER	M.S.	EACH WITH 3 NUTS	2	
42	HOOK	M.S.		2	
43	GREASE NIPPLE		TO MD 3315 DTS 30	1	

DETAIL SHEET N° 3

CAT N°	DESCRIPTION	MAT.	REMARKS	QTY	SPEC.
44	RAIL HEAD BOX	C.I.		1	21GRADE
45	SINGLE PULLEY FRAME	C.I.		1	21GRADE
46	PIN	M.S.		1	
47	ARM (DISTANT)	W.T. IRON		1	
48	CENTRE PIN	M.S.	WITH HEX NUT	1	21GRADE
49	DOWN ROD (DISTANT)	W.I.		1	
50	STOP	M.S.		1	
51	INSTANCE PIECE	M.S.		1	
52	BEARER BLOCK	BRONZE	WITH 1/2" PIN	1	
53	BOLT	M.S.	WITH HEX NUT	1	
54	STRAP BOLT	M.S.		1	
55	LIFTING PIECE BOLT	M.S.		1	
56		M.S.		1	
57	FLY PLATE & BEARER	M.S.		1	
58	SINGLE PULLEY	M.S.		2	
59	COVER CASTING	M.S.		2	

DATE	BY	NATURE OF AMENDMENT
9. 7. 39.	29	CATALOGUE N°.
18. 3. 39.	-	CAT N° FOR 6. 47. 48. COMPLETE.

COPY OF STANDARD DRAWING SIGNED BY THE SIGNAL & TELEGRAPH ENGINEER

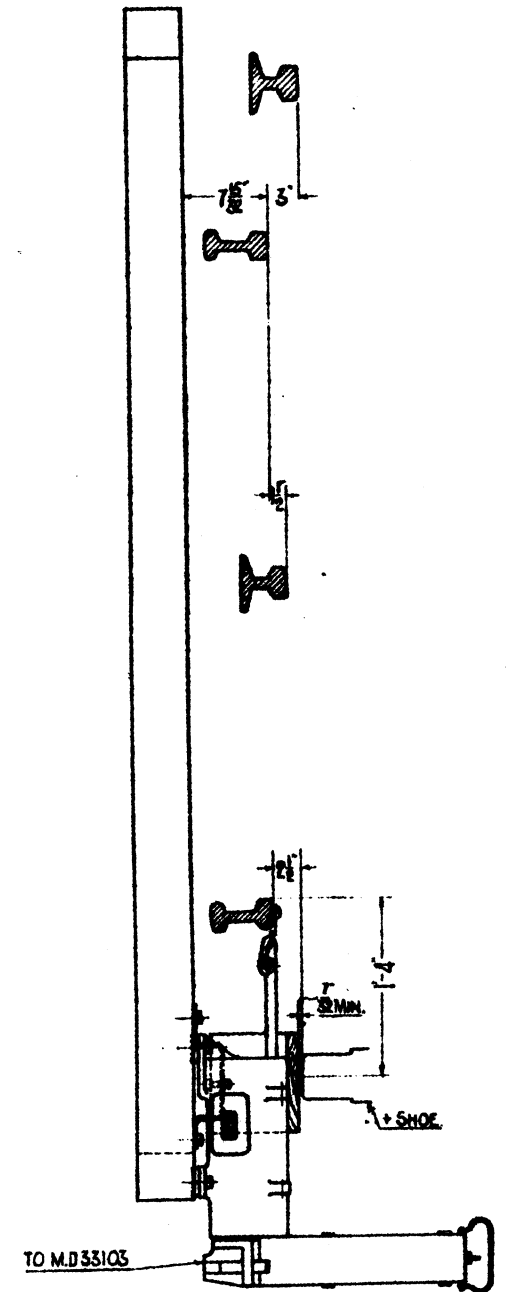
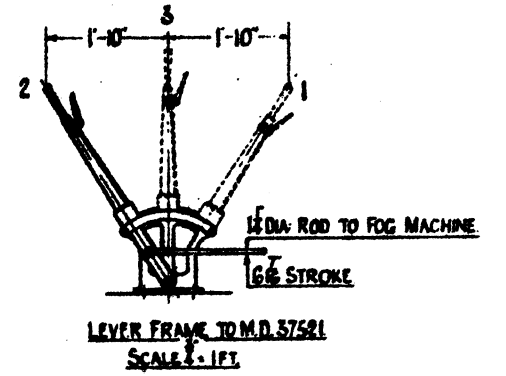
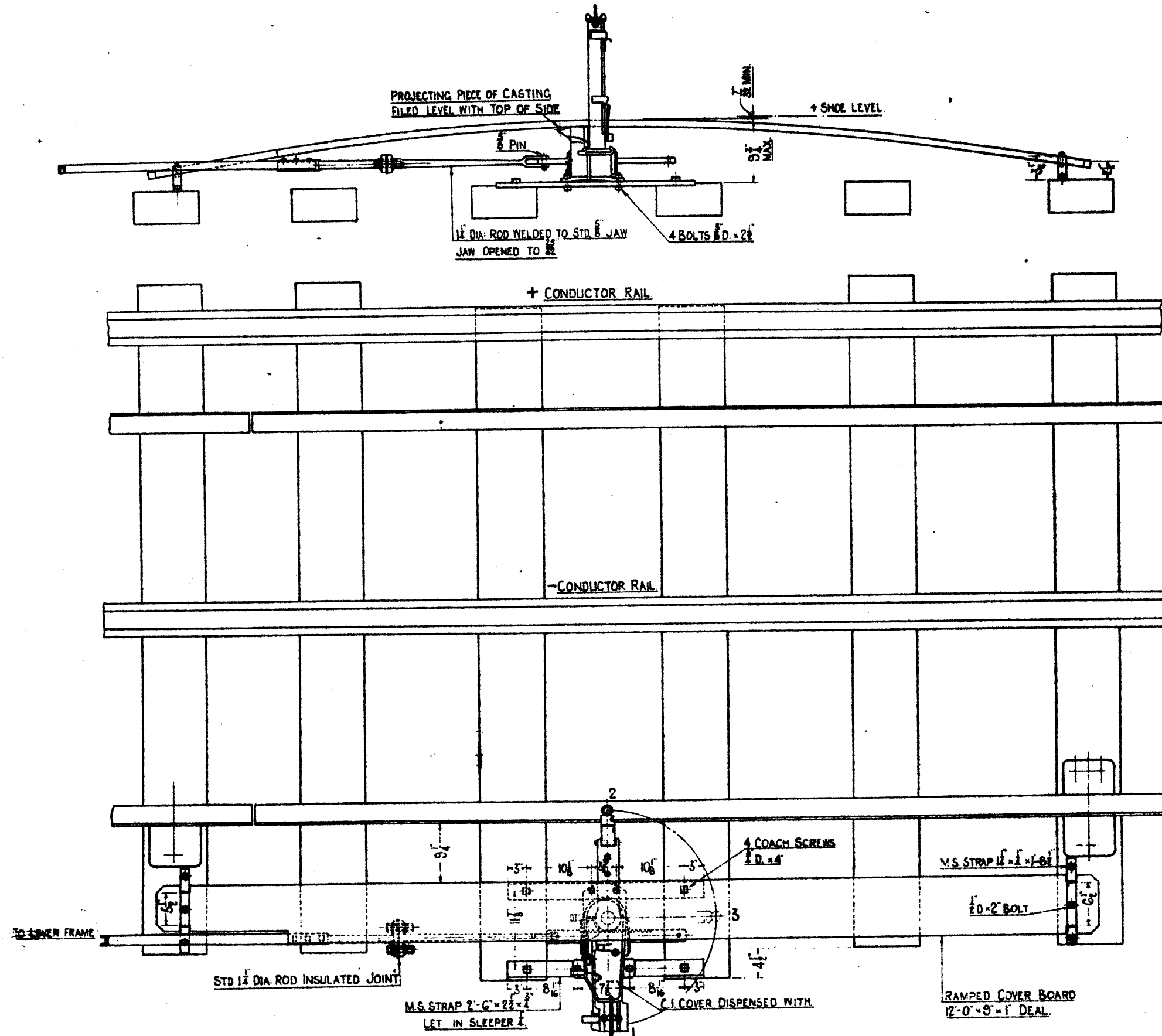
EXAMINED BY:  
INDOOR ASST  
ELECTRICAL  
MATERIALS

SIGNAL & TELEGRAPH ENGINEERS OFFICE  
EUSTON. M.S.I.  
PLAN N° M.D. 33105  
PLAN DATE N. 12. 39.  
DATE ISSUED.

L.M.S.  
**FOG SIGNALLING MACHINE.**  
**(PINDER)**

FOR DETAILS SEE MD 33106. SHEETS 1, 2 & 3

SUPERSEDES B.179 & 180.



L.M.S.  
**CLAYTON'S FOG SIGNALLING MACHINE ON ELECTRIFIED LINES.**

FOR APPLICATION TO ORDINARY LINES SEE M.D.37520.

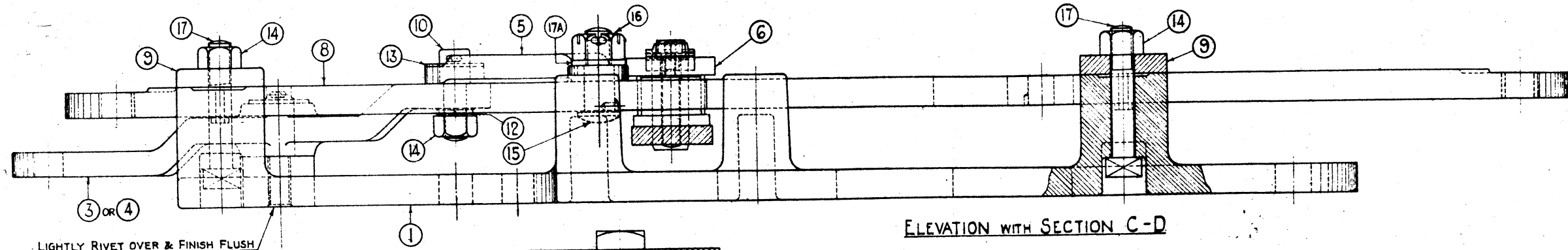
COPY OF STANDARD DRAWING ORIGINATED BY THE SIGNAL & TELEGRAPH ENGINEER CHIEF DRAUGHTSMAN

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 CHECKED BY: [Signature]

EXAMINED BY: [Signature]  
 INDOOR ASST. [Signature]  
 ELECTRICAL [Signature]  
 MATERIALS [Signature]

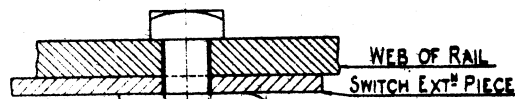
LONDON & NORTH EASTERN RAILWAY COMPANY  
 SIGNAL AND TELEGRAPH ENGINEER'S OFFICE  
 EUSTON L.M.S.I.  
 PLAN NO. M.D.37437  
 PLAN DATE 30-11-37  
 DATE ISSUED



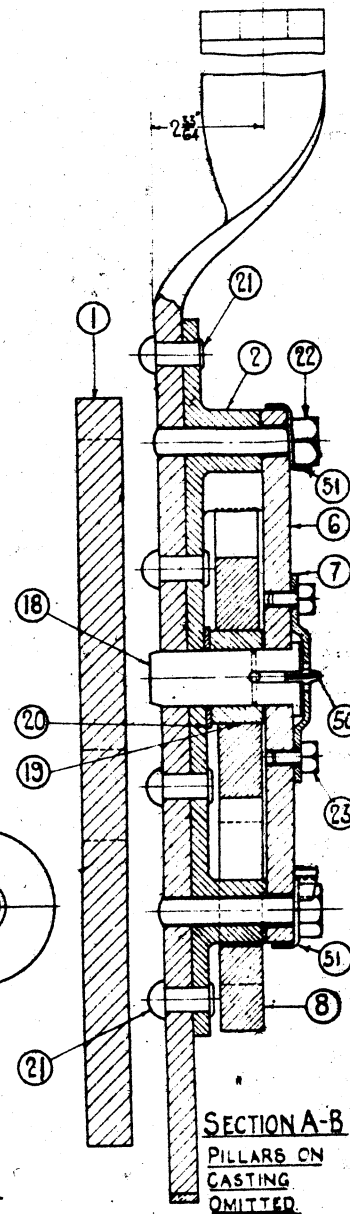
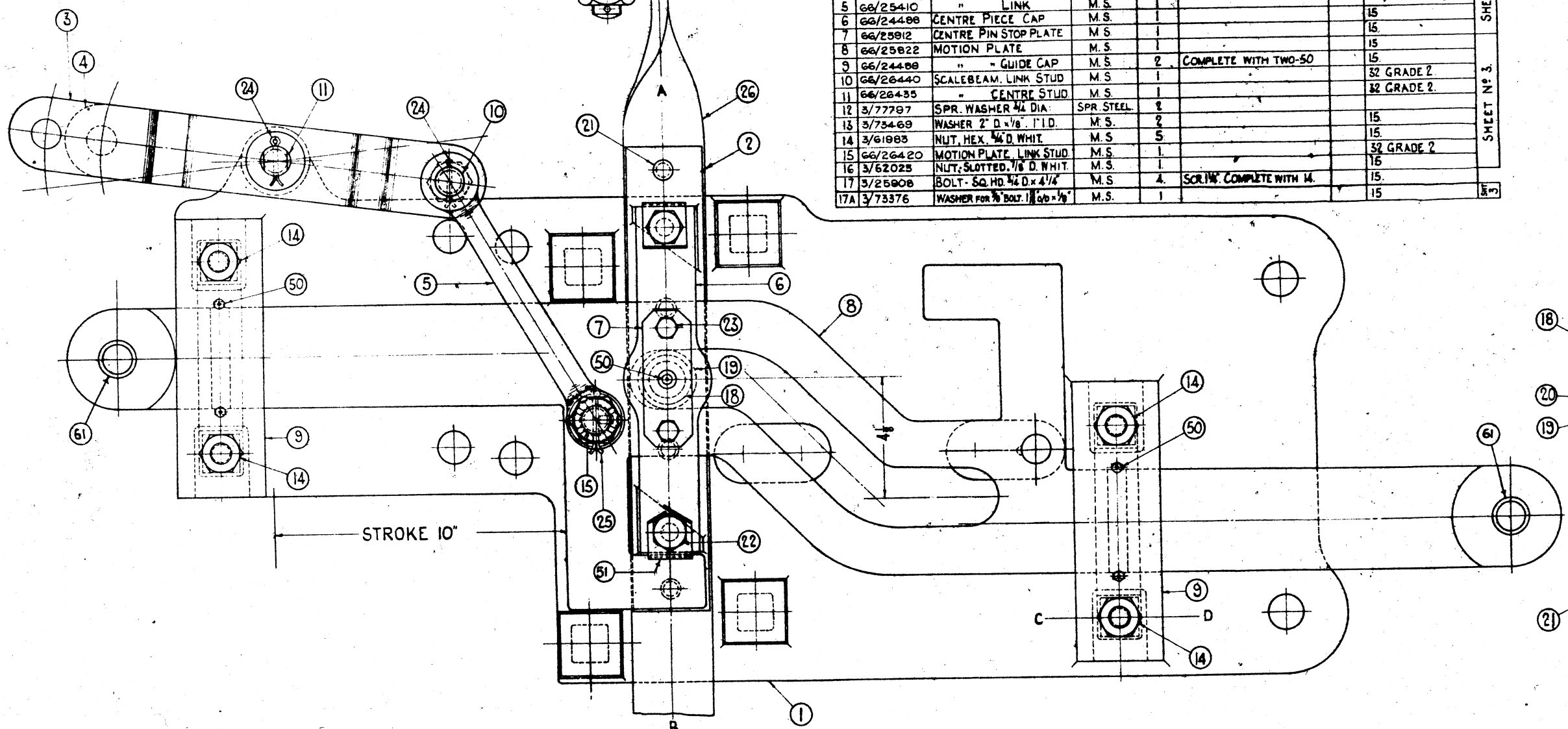


ELEVATION WITH SECTION C-D

LIGHTLY RIVET OVER & FINISH FLUSH



NO	STORES CAT. NO	DESCRIPTION	MATERIAL	NO REQ	REMARKS	APPROX WEIGHT	B.S.I. SPECIFICATION
1	66/25815	LOCK PLATE	C.I.	1	RIVET TO 26		S21 GRADE A.
2	66/25859	CENTRE PIECE	M.I.	1			310
3	66/28185	SCALE BEAM - MECH. DETEC	M.S.	1			REP 24: PART 6: SPEC 18
4	66/26108	" - E.L.I.C. "	M.S.	1			
5	66/25410	" LINK "	M.S.	1			15
6	66/24488	CENTRE PIECE CAP	M.S.	1			15
7	66/25812	CENTRE PIN STOP PLATE	M.S.	1			15
8	66/25822	MOTION PLATE	M.S.	1			15
9	66/24488	" " GLIDE CAP	M.S.	2	COMPLETE WITH TWO-50		15
10	66/26440	SCALE BEAM LINK STUD	M.S.	1			S2 GRADE 2
11	66/26435	" CENTRE STUD	M.S.	1			S2 GRADE 2
12	3/77787	SPR. WASHER 1/4 DIA.	SPR STEEL	2			
13	3/73469	WASHER 2" D. x 1/8" I.D.	M.S.	2			15
14	3/61983	NUT, HEX. 1/4 D. WHIT.	M.S.	5			15
15	66/26420	MOTION PLATE LINK STUD	M.S.	1			S2 GRADE 2
16	3/62025	NUT, SLOTTED, 1/8 D. WHIT.	M.S.	1			15
17	3/25908	BOLT - SQ. HD. 1/4 D. x 4 1/4	M.S.	4	SCRW. COMPLETE WITH 14.		15
17A	3/73376	WASHER FOR 1/4 BOLT. 1 1/2 D. x 1/4	M.S.	1			15



NO	STORES CAT. NO	DESCRIPTION	MATERIAL	NO REQ	REMARKS	APPROX WEIGHT	B.S.I. SPECIFICATION
18	66/28600	CENTRE PIN	M.S.	1	COMPLETE WITH 50.		S2 GRADE 2
19	66/28140	ROLLER	M.S.	1	HARDENED.		S2 GRADE 2
20	3/73660	WASHER 2" D. x 1/8" I.D. x 1/8	M.S.	1			15
21	30/6072	RIVET - SNAP HEAD 1/4 D. x 1 1/2		4			15
22	3/15274	BOLT. 5/8 D. WHIT. x 3. SCREWS	M.S.	4			15
23	3/14467	BOLT. 3/8 D. WHIT. x 5/8 SCREWS	M.S.	2			15
24	29/2908	SPLIT PIN 3/16 D. x 1 3/4	M.S.	2			
25	29/2911	SPLIT PIN 3/16 D. x 2 1/4	M.S.	1			
26		STRETCHER BAR.			SEE M.D. 38370		
50	39/40628	GREASE NIPPLE		5	TO M.D. 3316.		
51	66/26838	LOCK WASHER	DXXXXIN PLATE	2			
61	66/21265	SPLIT BUSH	HARDENED STL	2	TO M.D. 33189		

L.M.S.  
ECONOMICAL FACING POINT LOCK.

SUPERSEDES M.D. 31138

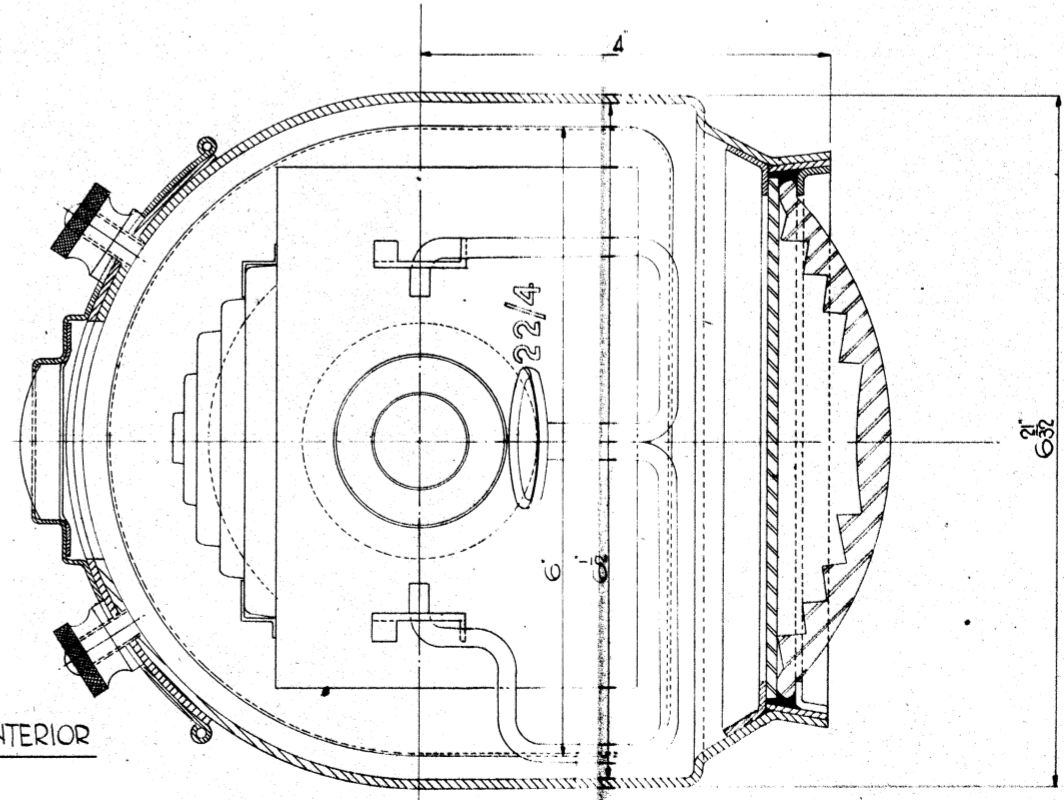
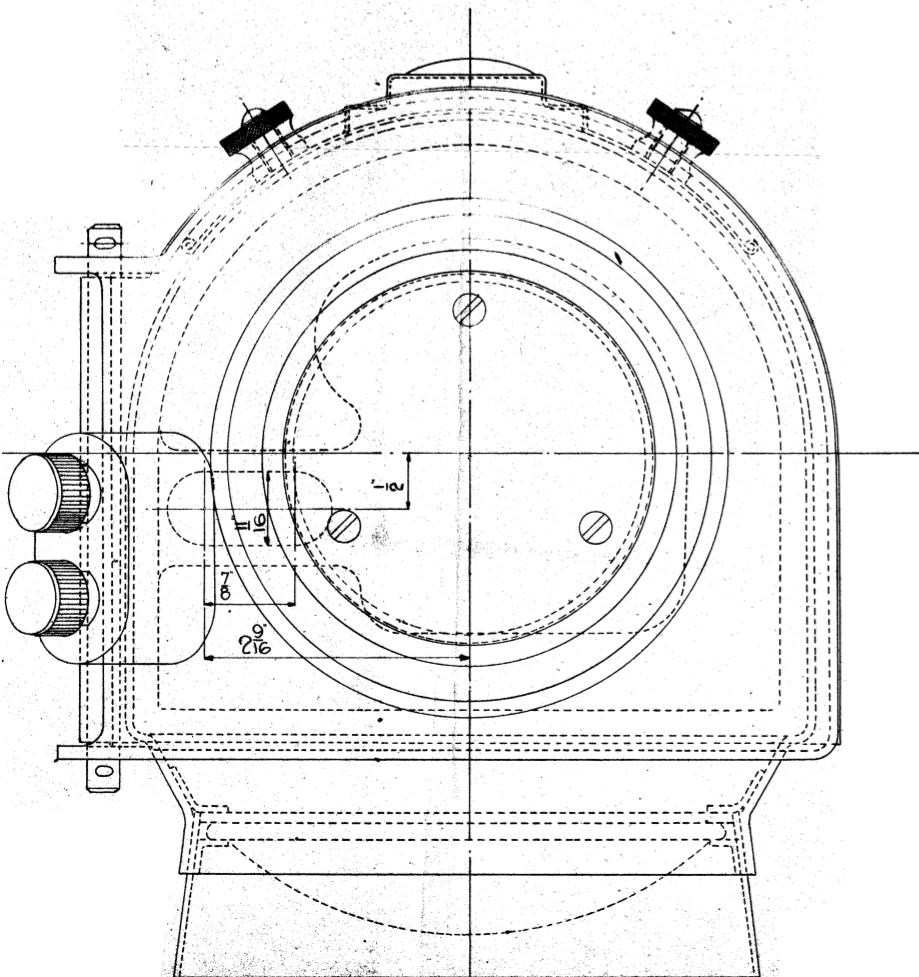
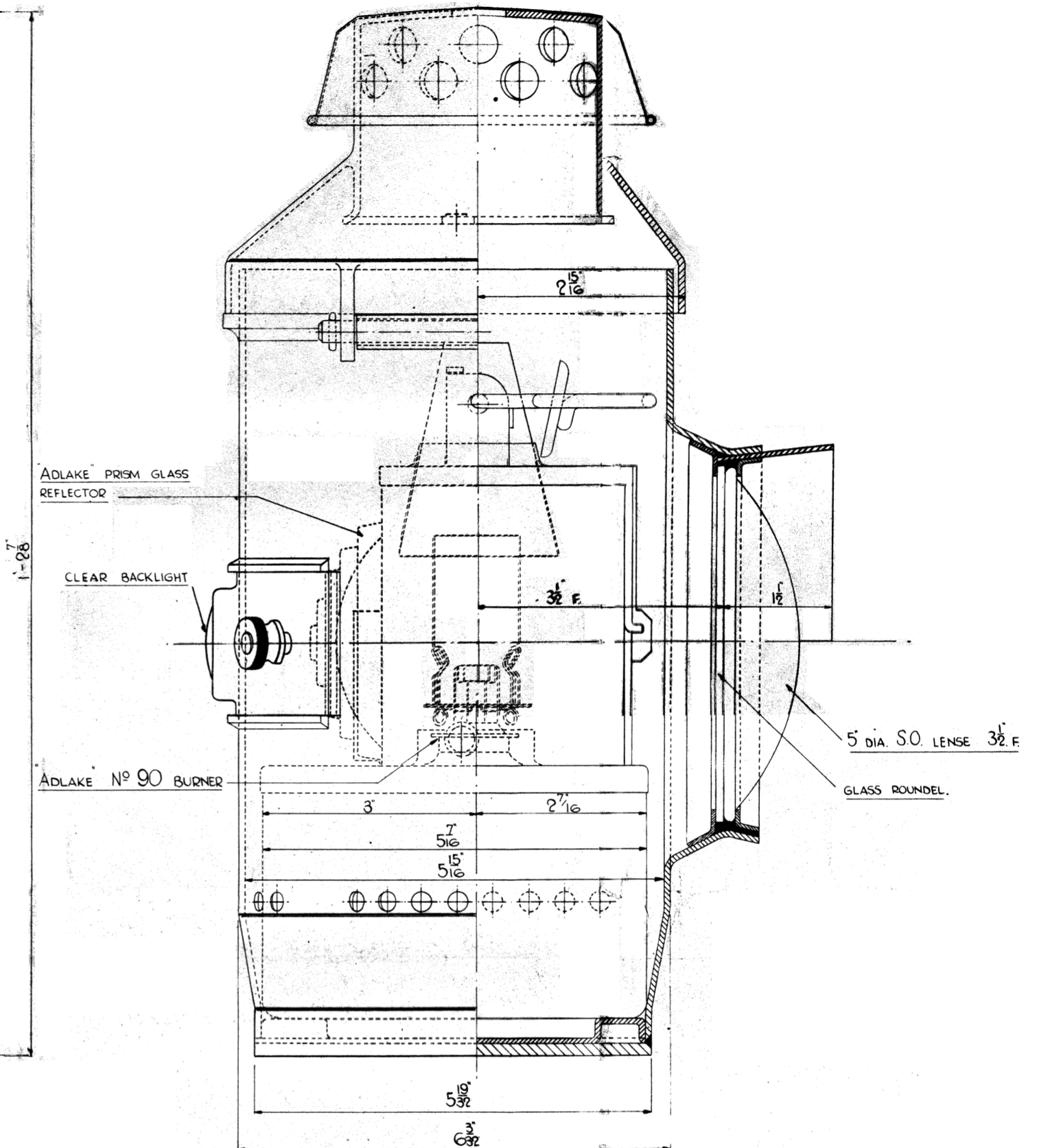
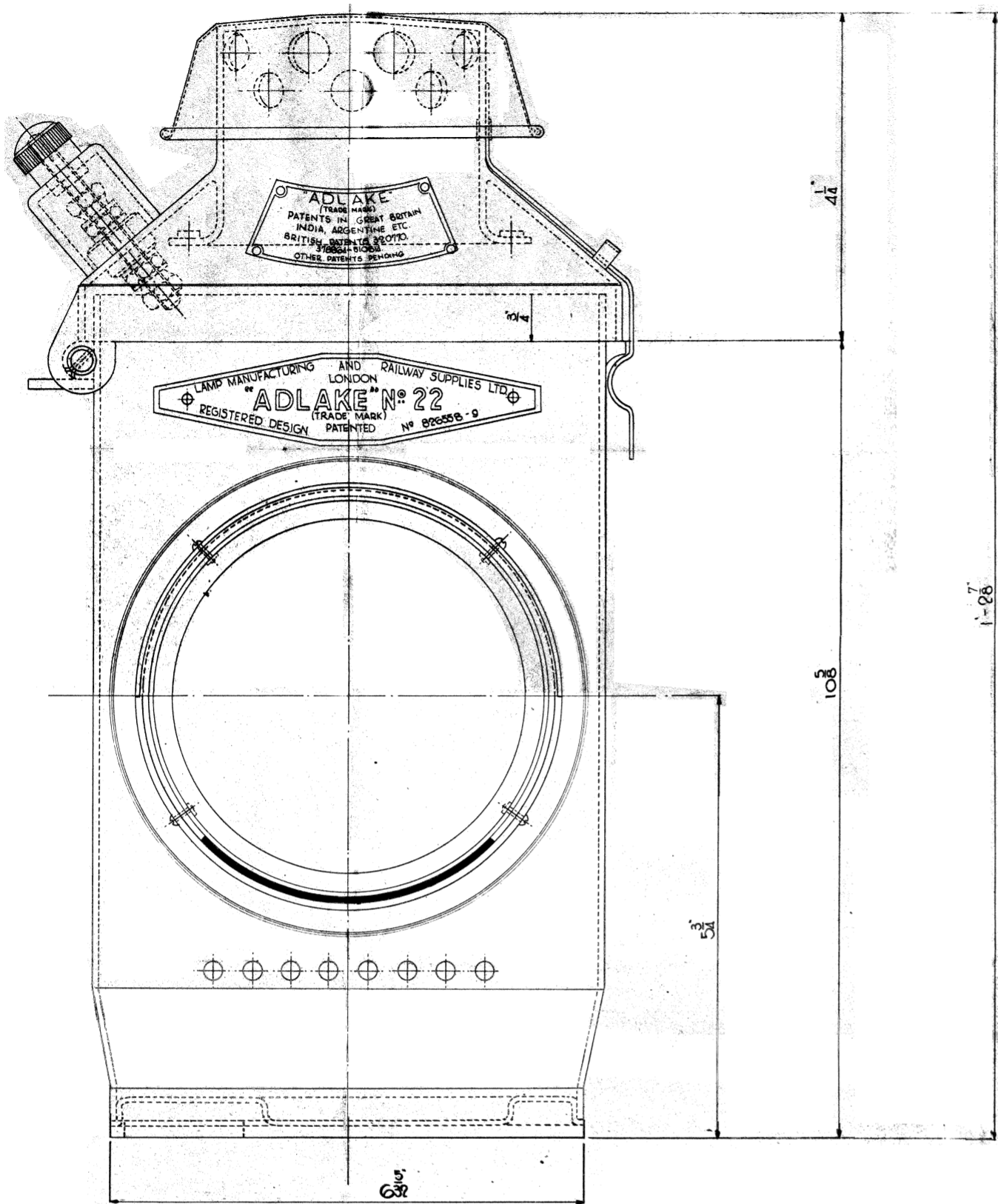
EXAMINED BY  
INDOOR ASST. *CMC*  
ELECTRICAL - *CMC*  
MATERIALS - *CMC*

DRAWN BY *F.M.*  
CHECKED BY *F.M.*

LONDON MIDLAND & SCOTLAND RAILWAY CO.  
SIGNAL AND TELEGRAPH  
ENGINEERS OFFICE  
EUSTON L.M.S.I.  
PLAN NO. M.D. 37205  
PLAN DATE 17-3-38  
DATE ISSUED

3 SHEETS, SH. 1.1





N° 22 ADLAKE SIGNAL LAMP, WITH N° 22/4 INTERIOR

THIS DRAWING SUPERSEDES ALL OTHERS BEFORE FEBRUARY 1944

LAMP MANUFACTURING & RAILWAY SUPPLIES LTD.

DRG N° 8362

PG. 22/2/44