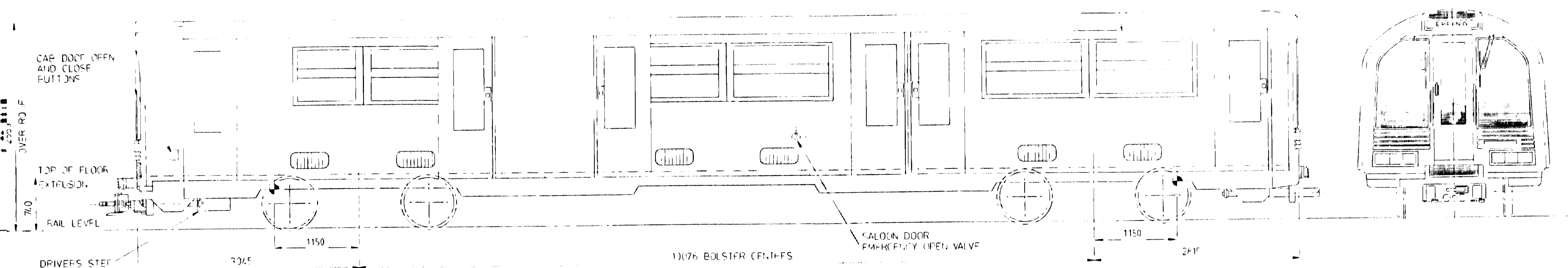
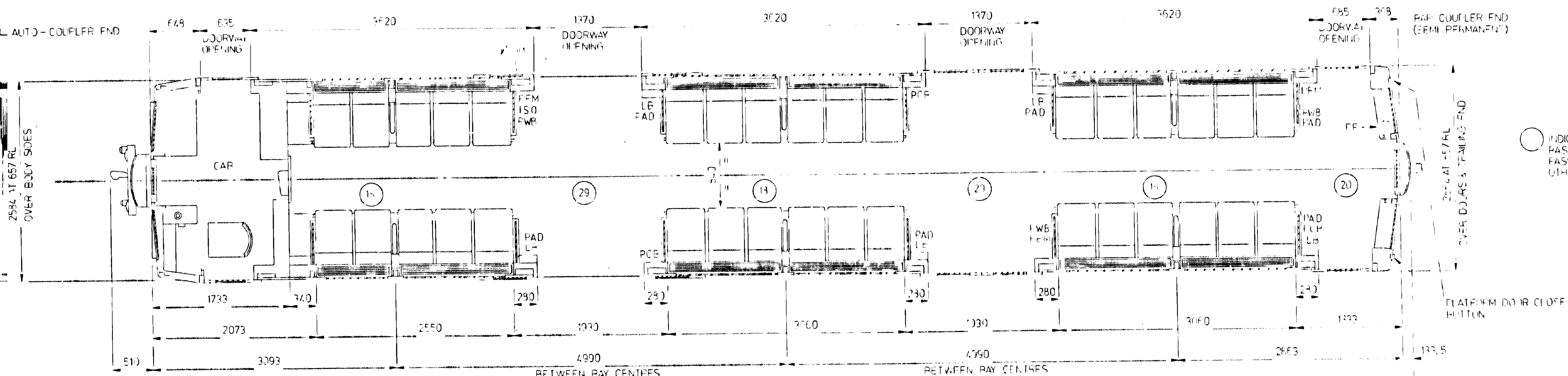


15936
OVER BODY FLD PANELS

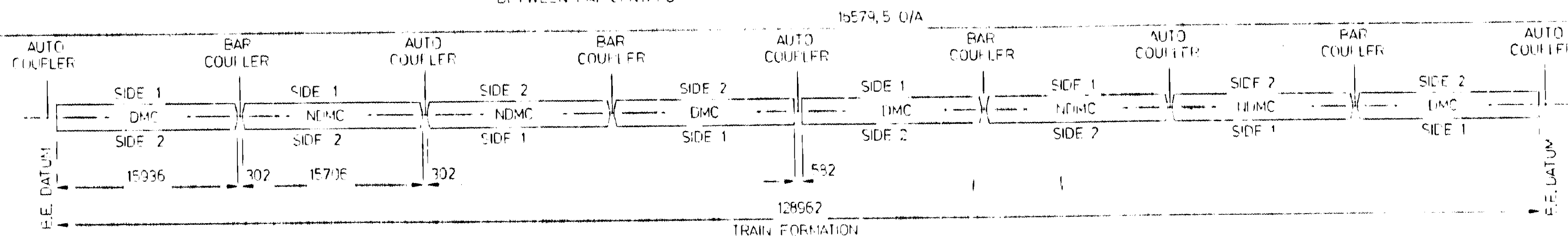


⬤ INDICATES RECOMMENDED LIFTING POINTS



NO OF PASSENGERS	
STANDING	132
SEATING	34
TOTAL	166

○ INDICATES NO OF STANDING PASSENGERS
BASED ON LTR RATIOS OF 0.14m²/
PASSENGER IN DOORWAY AND 0.18m²/IN
OTHER AREAS



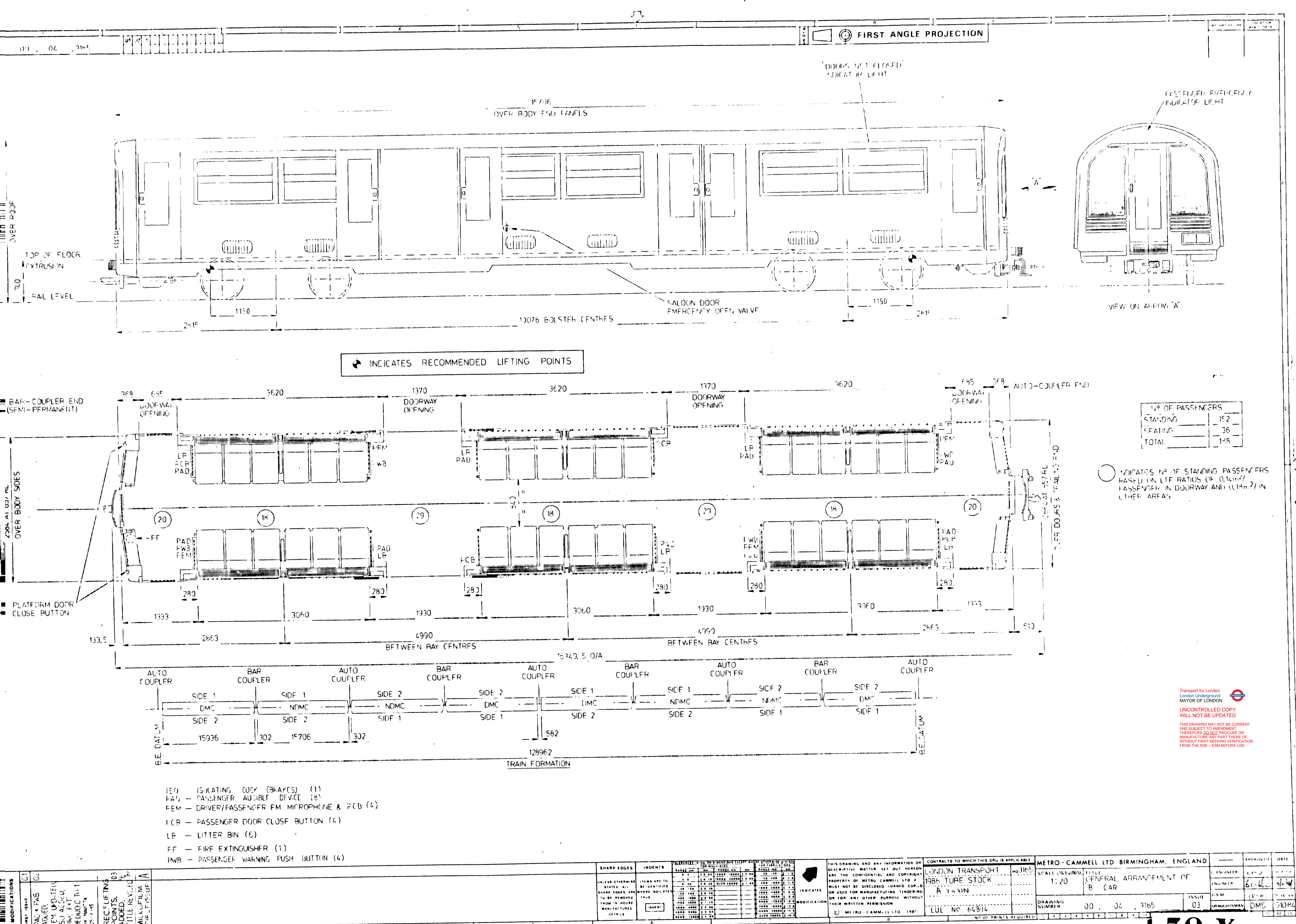
```

ISO - ISOLATING LOCK (BRAKES) (1)
PAD - PASSENGER AUDIBLE DEVICE '6
FEM - DRIVER/FASSENGER FM MICROPHONE & PLB (3)
PDB - PASSENGER DOOR CLOSE BUTTION (3)
LB -- LITTER BIN (5)
FE - FIRE EXTINGUISHER (1)
FWE - PASSENGER WARNING PUSH BUTTON (3)

```

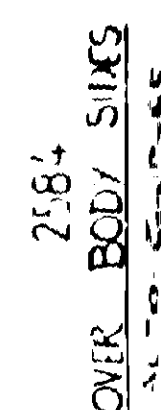
MODIFICATIONS 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 	
--	--

30 X



30 X

15936
OVER BODY END PANFLS



2584
OVER BODY SIDES

4007
COVER DOORS & TRAILING ENDS

2664

DRIVING CAR
SEATING CAPACITY 34

Transport for London
London Underground
MAYOR OF LONDON

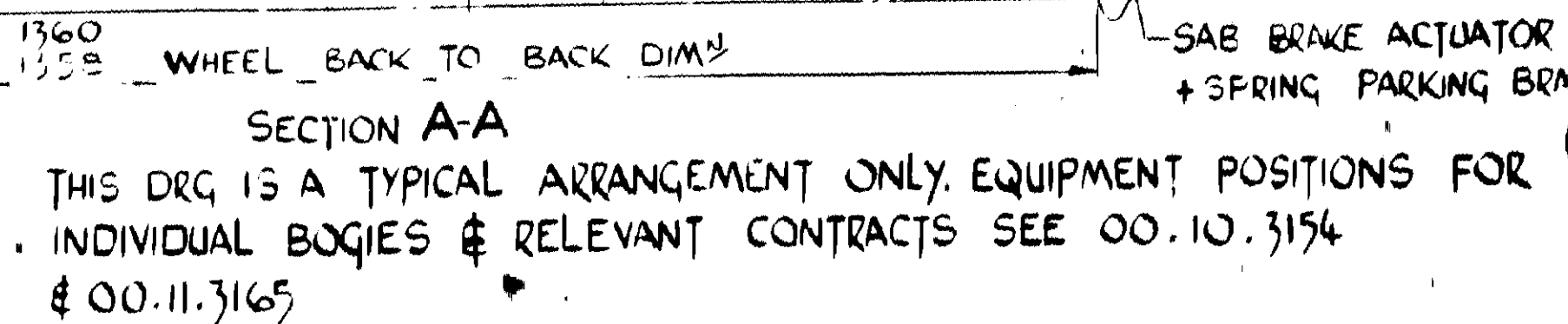
UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT,
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF,
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE – ERM BEFORE USE

NON DRIVING CAR
SEATING CAPACITY: 36

[illegible]

30 X



REFERENCE DRAWINGS		
1	BLOCK PLAN OF BODIES - BROWN BOVERI EQUIP	00. 10. 3154
	- GEC EQUIP	00. 11. 3165
2	ARRANGEMENT OF BOGIE FRAME WITH TRIPCOCK	11. 05. 3154
3	ARRANGEMENT OF BOGIE FRAME WITHOUT TRIPCOCK	11. 17. 3154
4	CENTRE PIVOT ARRANGEMENTS	12. 06. 3154 - 12. 15. 3154 - 12. 16.
5	ARRANGEMENT OF SECONDARY SUSPENSION	12. 09. 3154 - 12. 20.
6	ARRANGEMENT OF PRIMARY SUSPENSION	12. 01. 3154
7	BRAKE GEAR ASSEMBLIES	14. 03. 3154 - 14. 06. 3154 - 14. 11. 3154
		14. 08. 3165 - 14. 09. 3165 - 14. 10. 3165
8	TRACTION MOTOR SUSPENSION	16. 01. 3154 - 16. 06. 3165
9	GEAR CASE SUSPENSION	16. 09. 3154 - 16. 10. 3165
10	POSITIVE SHOE GEAR	18. 02. 3164 - 18. 20. 3154
11	SHOE BEAM MOUNTING	PIVOT END 18. 03. 3154
		SLIDING END 18. 02. 3154
12	POSITIVE SLEET BRUSH	NOT FITTED
13	NEGATIVE SLEET BRUSH	NOT FITTED
14	NEGATIVE SHOE GEAR	18. 24. 3154 - 18. 25. 3154
15	EARTH BONDS	18. 20. 3165
16	LEVELLING VALVE	12. 17. 3154 - 12. 11. 3165
17	TRIP COCK	16. 05. 3154
18	DROP HOSE MANIFOLD	45. 10. 3154 - 45. 11. 3154
19	TORSION BAR ARRANGEMENT	12. 19. 3165 - 12. 21. 3154
20	ARRANGEMENT OF WHEELS & AXLES	17. 01. 3154 - 17. 04. 3165
21	ADAPT OF GEC SLIP SLIDE SENSOR	12. 05. 3165

BCCIE HALF SHOWING GEC
MOJOR TURNING BLAKE
ACTUATOR AS 3165 CONTACT

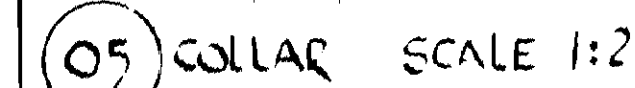
KNORR BRAKE ACTUATOR
WESTINGHOUSE LEVELLING WAVE
IN THIS POSITION DIRECTION
OPPOSITE

Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT,
THEREFORE **DO NOT** PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - FIRM BEFORE USE

[illegible]



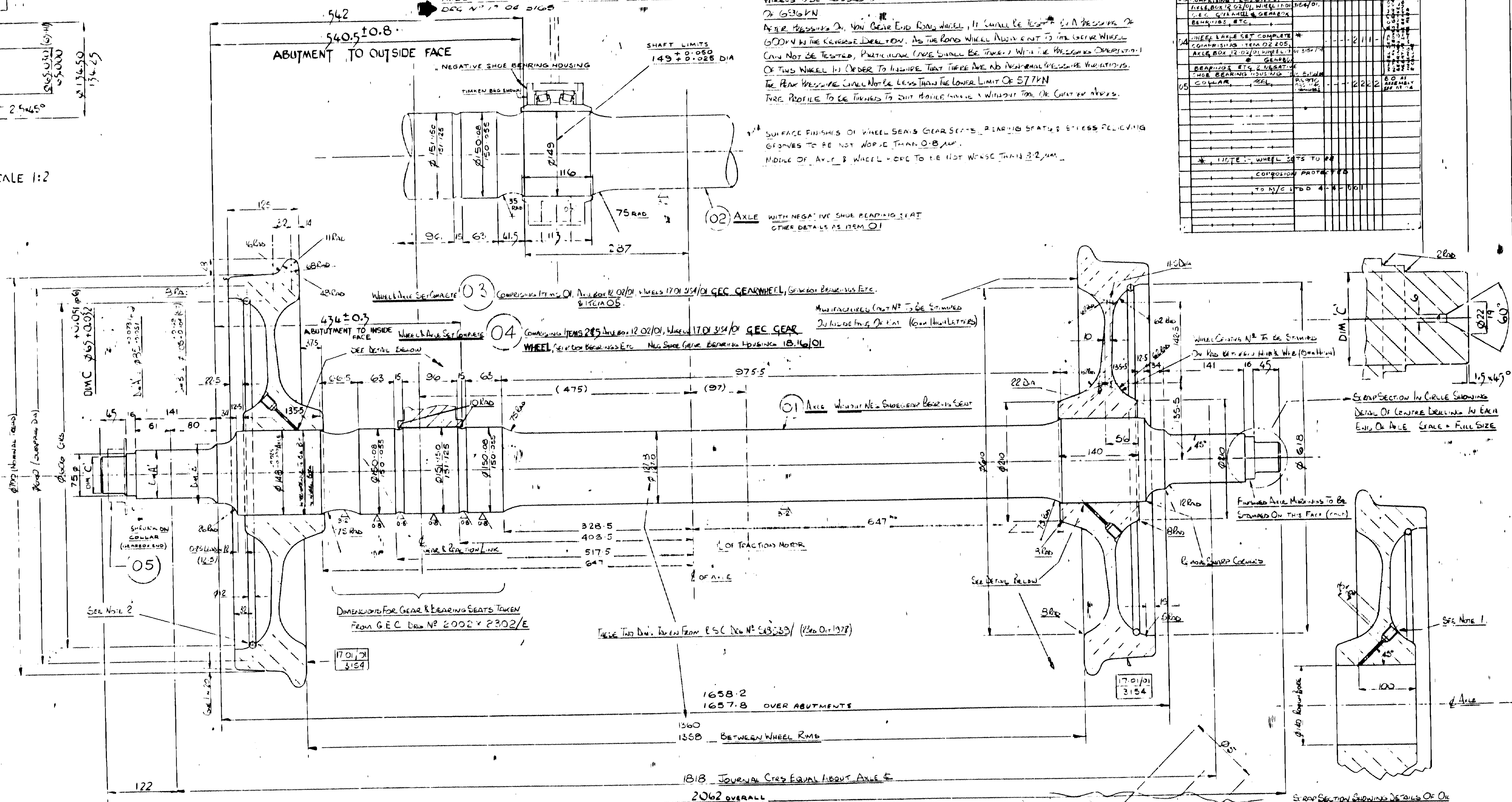
AXLE PROTECTION FROM ELECTRICAL BURNING TO
DEC N° 17 06 2165

WHEELS :- WHEELS TO L.T. SPECIFICATION KME 2500 (LATEST ISSUE). WHEELS TO BE LOW NOISE TURNED SMOOTH WITHOUT TOOL OR CHATTER MARKS, THE RIMS OF WHEELS TO BE WITHIN ± 0.1 OF DIMENSION QUOTED. FINISHED WHEELS TO BE MINIMALLY WORN, SMOOTH & WITHOUT TOOL OR CHATTER MARKS. GRIPPING SIZE OF WHEEL 650 DIAMETER IN LEAD. WHEELS TO BE PRESSURED ON AT A MINIMUM PRESSURE OF 577kN & A MAXIMUM PRESSURE OF 633kN.

After pressing on, non gear end road wheel, it shall be tested in a pressure of 600kN in the reverse direction. As the road wheel is in contact to the gear wheel, can not be tested, particularly care shall be taken with the pressures observations of this wheel in order to insure that there are no abnormal pressure variations. The peak pressure shall not be less than the lower limit of 577kN.

The profile to be turned to suit profile having a without tool or chatter marks.

SURFACE FINISHES OF WHEEL SHAFTS GEAR SETS, REARING SPATS & STRESS RELIEVING GROOVES TO BE NOT WORSE THAN 0.8 μ M.
MIDDLE OF AXLE & WHEEL HRC TO BE NOT WORSE THAN 3.2 μ M.

[illegible]

DETAILS OF WHEEL PROFILE TAKEN FROM
LTC BURN# 15E00021

NOTES


1. OIL INJECTION HOLE :- ONE HOLE (5 DIA) DRILLED THROUGH, SPOTFACE 22 DIA TO CLEAN UP, COUNTER DRILL 15 DIA (SMOOTH FINISH - 118 PT) x 25 DEEP (FULL DIA), TAP $\frac{3}{8}$ BSP x 20 DEEP (FULL THREAD), CLEAN HOLE & FIT $\frac{3}{8}$ BSP PLUG.
2. NOISE DEADENING RING :- TO BE SPRUNG INTO POSITION & ENDS WELDED, CARE MUST BE TAKEN THAT THE RING IS NOT WELDED TO THE WHEEL & THAT IT DOES NOT FIT TOO TIGHTLY IN THE GROOVE SO THAT THE RING RETAINS ITS OWN NATURAL VIBRATION PERIODICITY
3. THE DRAWING SHOWS TWO HUBS SIZES, ALL SURFACES TO BE MACHINED
4. ALLOWING FOR WHEELS TO BE TO LT DIMS N° 369330
5. OTHER REQUIREMENTS IN ACCORDANCE WITH LT ORIGINALLY SPECIFICATIONS

6. THE PRESSING ON TONNAGE FOR THE GEARWHEEL SHOULD BE IN THE RANGE 240KN TO 47KN. ALTERNATIVELY THE GEARWHEEL MAY BE SHRUNK ON BY HEATING IN OIL AT 150°/160°C

7. AFTER FITTING THE GEARWHEEL SHALL BE TESTED BY A REVERSE FORCE OF 320KN.

SCRAP SECTION SHOWING DETAILS OF OIL
INJECTION HOLE & ROUGH BORE DIA

Transport for London
London Underground
MAYOR OF LONDON



**UNCONTROLLED COPY
WILL NOT BE UPDATED**

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT.
THEREFORE **DO NOT** PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE – ERM BEFORE USE

MODIFICATIONS	START DATE	END DATE	STATUS	REMARKS
1. MOVED FROM 10/10/86 TO 10/11/86	10/10/86	10/11/86	COMPLETED	MOVED FROM 10/10/86 TO 10/11/86
2. MOVED FROM 10/11/86 TO 10/12/86	10/11/86	10/12/86	COMPLETED	MOVED FROM 10/11/86 TO 10/12/86
3. MOVED FROM 10/12/86 TO 10/13/86	10/12/86	10/13/86	COMPLETED	MOVED FROM 10/12/86 TO 10/13/86
4. MOVED FROM 10/13/86 TO 10/14/86	10/13/86	10/14/86	COMPLETED	MOVED FROM 10/13/86 TO 10/14/86
5. MOVED FROM 10/14/86 TO 10/15/86	10/14/86	10/15/86	COMPLETED	MOVED FROM 10/14/86 TO 10/15/86
6. MOVED FROM 10/15/86 TO 10/16/86	10/15/86	10/16/86	COMPLETED	MOVED FROM 10/15/86 TO 10/16/86
7. MOVED FROM 10/16/86 TO 10/17/86	10/16/86	10/17/86	COMPLETED	MOVED FROM 10/16/86 TO 10/17/86
8. MOVED FROM 10/17/86 TO 10/18/86	10/17/86	10/18/86	COMPLETED	MOVED FROM 10/17/86 TO 10/18/86
9. MOVED FROM 10/18/86 TO 10/19/86	10/18/86	10/19/86	COMPLETED	MOVED FROM 10/18/86 TO 10/19/86
10. MOVED FROM 10/19/86 TO 10/20/86	10/19/86	10/20/86	COMPLETED	MOVED FROM 10/19/86 TO 10/20/86
11. MOVED FROM 10/20/86 TO 10/21/86	10/20/86	10/21/86	COMPLETED	MOVED FROM 10/20/86 TO 10/21/86
12. MOVED FROM 10/21/86 TO 10/22/86	10/21/86	10/22/86	COMPLETED	MOVED FROM 10/21/86 TO 10/22/86
13. MOVED FROM 10/22/86 TO 10/23/86	10/22/86	10/23/86	COMPLETED	MOVED FROM 10/22/86 TO 10/23/86
14. MOVED FROM 10/23/86 TO 10/24/86	10/23/86	10/24/86	COMPLETED	MOVED FROM 10/23/86 TO 10/24/86
15. MOVED FROM 10/24/86 TO 10/25/86	10/24/86	10/25/86	COMPLETED	MOVED FROM 10/24/86 TO 10/25/86
16. MOVED FROM 10/25/86 TO 10/26/86	10/25/86	10/26/86	COMPLETED	MOVED FROM 10/25/86 TO 10/26/86
17. MOVED FROM 10/26/86 TO 10/27/86	10/26/86	10/27/86	COMPLETED	MOVED FROM 10/26/86 TO 10/27/86
18. MOVED FROM 10/27/86 TO 10/28/86	10/27/86	10/28/86	COMPLETED	MOVED FROM 10/27/86 TO 10/28/86
19. MOVED FROM 10/28/86 TO 10/29/86	10/28/86	10/29/86	COMPLETED	MOVED FROM 10/28/86 TO 10/29/86
20. MOVED FROM 10/29/86 TO 10/30/86	10/29/86	10/30/86	COMPLETED	MOVED FROM 10/29/86 TO 10/30/86
21. MOVED FROM 10/30/86 TO 10/31/86	10/30/86	10/31/86	COMPLETED	MOVED FROM 10/30/86 TO 10/31/86
22. MOVED FROM 10/31/86 TO 11/01/86	10/31/86	11/01/86	COMPLETED	MOVED FROM 10/31/86 TO 11/01/86
23. MOVED FROM 11/01/86 TO 11/02/86	11/01/86	11/02/86	COMPLETED	MOVED FROM 11/01/86 TO 11/02/86
24. MOVED FROM 11/02/86 TO 11/03/86	11/02/86	11/03/86	COMPLETED	MOVED FROM 11/02/86 TO 11/03/86
25. MOVED FROM 11/03/86 TO 11/04/86	11/03/86	11/04/86	COMPLETED	MOVED FROM 11/03/86 TO 11/04/86
26. MOVED FROM 11/04/86 TO 11/05/86	11/04/86	11/05/86	COMPLETED	MOVED FROM 11/04/86 TO 11/05/86
27. MOVED FROM 11/05/86 TO 11/06/86	11/05/86	11/06/86	COMPLETED	MOVED FROM 11/05/86 TO 11/06/86
28. MOVED FROM 11/06/86 TO 11/07/86	11/06/86	11/07/86	COMPLETED	MOVED FROM 11/06/86 TO 11/07/86
29. MOVED FROM 11/07/86 TO 11/08/86	11/07/86	11/08/86	COMPLETED	MOVED FROM 11/07/86 TO 11/08/86
30. MOVED FROM 11/08/86 TO 11/09/86	11/08/86	11/09/86		

[illegible]

541016 541116 541216 541316 541416 541516 541616 541716 541816 541916 542016 542116 542216 542316 542416 542516 542616 542716 542816 542916 543016 543116 543216 543316 543416 543516 543616 543716 543816 543916 544016 544116 544216 544316 544416 544516 544616 544716 544816 544916 545016 545116 545216 545316 545416 545516 545616 545716 545816 545916 546016 546116 546216 546316 546416 546516 546616 546716 546816 546916 547016 547116 547216 547316 547416 547516 547616 547716 547816 547916 548016 548116 548216 548316 548416 548516 548616 548716 548816 548916 549016 549116 549216 549316 549416 549516 549616 549716 549816 549916 550016	05 06 07 08 09 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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
--	---

ITEM NO	QTY	UNIT	DESCRIPTION
1	1	EA	WHEEL SHALL BE
2	1	EA	FORCE OF 320 KN.
3	1	EA	WHEEL SHALL BE
4	1	EA	FORCE OF 320 KN.
5	1	EA	WHEEL SHALL BE
6	1	EA	FORCE OF 320 KN.

[illegible][illegible]

DATE	BY	REMARKS
1968	1	
1968	2	
1968	3	
1968	4	
1968	5	
1968	6	
1968	7	
1968	8	
1968	9	
1968	10	

INDICATES

MODIFICATION

THIS DRAWING IS A Y INFORMATION
DISSCRIPTIVE MATTER SET OUT IN
ARE THE CONFIDENTIAL ID COPY
PROPERTY OF METRO - CAMMELL LTD
MUST NOT BE DISCLOSED LOANED
OR USED FOR MANUFACTURING TIME
OR FOR ANY OTHER PURPOSE WITH
THEIR WRITTEN PERMISSION

(C) METRO - CAMMELL LTD

ON OR RIGHT TO AND COPIED DURING THOUT	CONTRACTS TO WHICH THIS DRG IS APPLICABLE	MR
936	L.T. 1336 STOCK (BOOK) H03162 A.T. RAIN LUL N° 65867	SC / DR NU
	NO OF PRINTS REQUIRED	Y

ON FULL SIZE

11

WITHOUT
FROM THE

ETRO - CAMMELL LTD. BIRMINGHAM. EN

AWING
MBER

17 . 04 . 3165

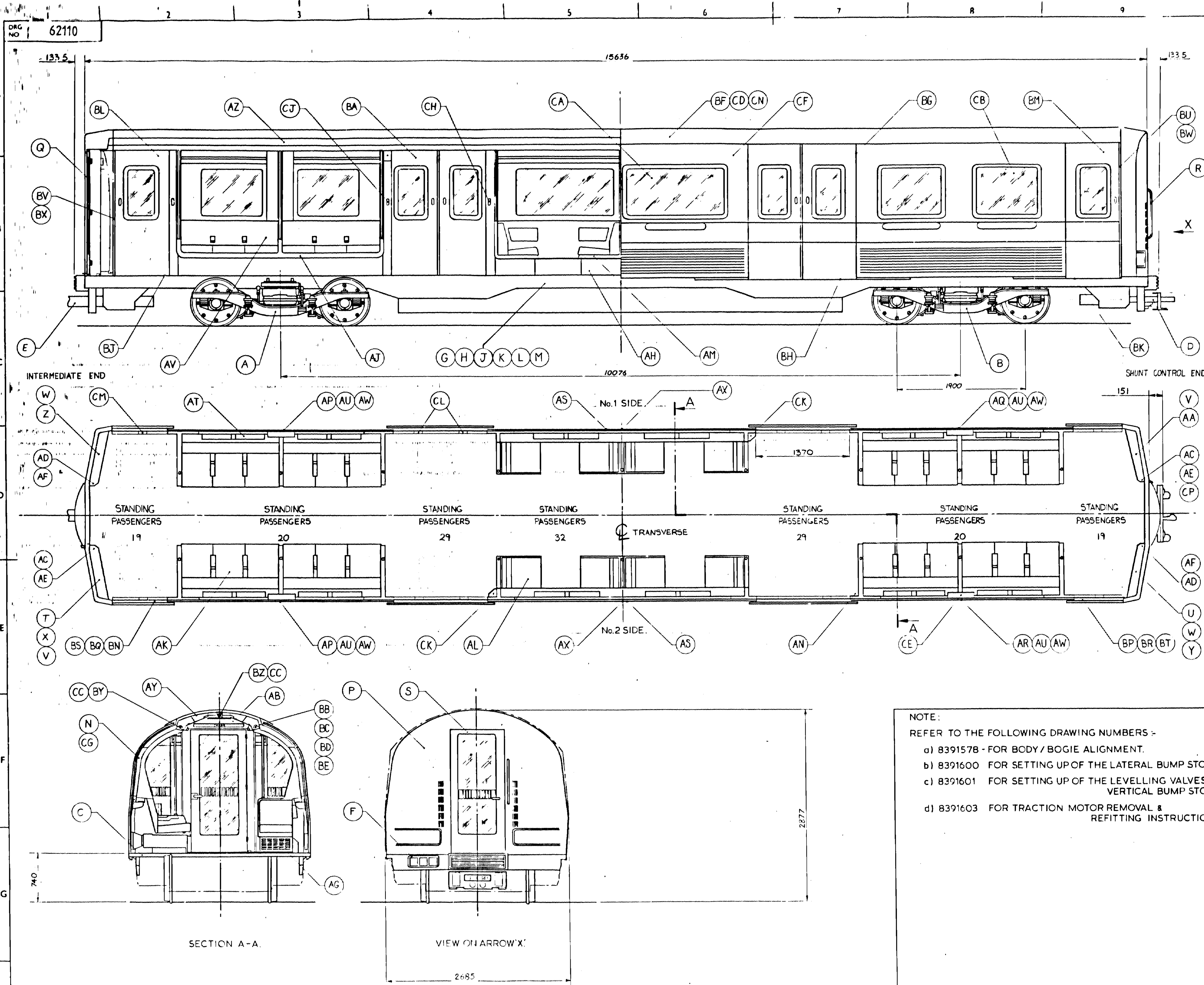
1 2 3 4 5 6 7 8 9 10 11 12 13

FIRST SEEKING VERIFICATION
 E-RSE - ERM BEFORE USE

ENGLAND. _____ APPROVED _____

AXLES
 ENGINEER J. H. S. 6/11/50 20
 ENGINEER G. W. H. 20
 DSM RFB 1-
 J. H. S. 20
 ISSUE
 00
 '4 '5
 130V

[illegible]



NOTE:
REFER TO THE FOLLOWING DRAWING NUMBERS -
a) 8391578 - FOR BODY / BOGIE ALIGNMENT.
b) 8391600 FOR SETTING UP OF THE LATERAL BUMP STOPS.
c) 8391601 FOR SETTING UP OF THE LEVELLING VALVES & VERTICAL BUMP STOPS.
d) 8391603 FOR TRACTION MOTOR REMOVAL & REFITTING INSTRUCTIONS.

ISSUE		REF		ALTERATION	
A		FIRST ISSUE.			

Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT.
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THEREOF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE.

FOR PARTS LIST SEE 8391735

Y	Z	PER	REF	DESCRIPTION	CAT / PART NO	MATERIAL SPEC. ETC	WT
		ASSY					kg

LONDON UNDERGROUND LIMITED.
DEPARTMENT OF MECHANICAL ENGINEERING.

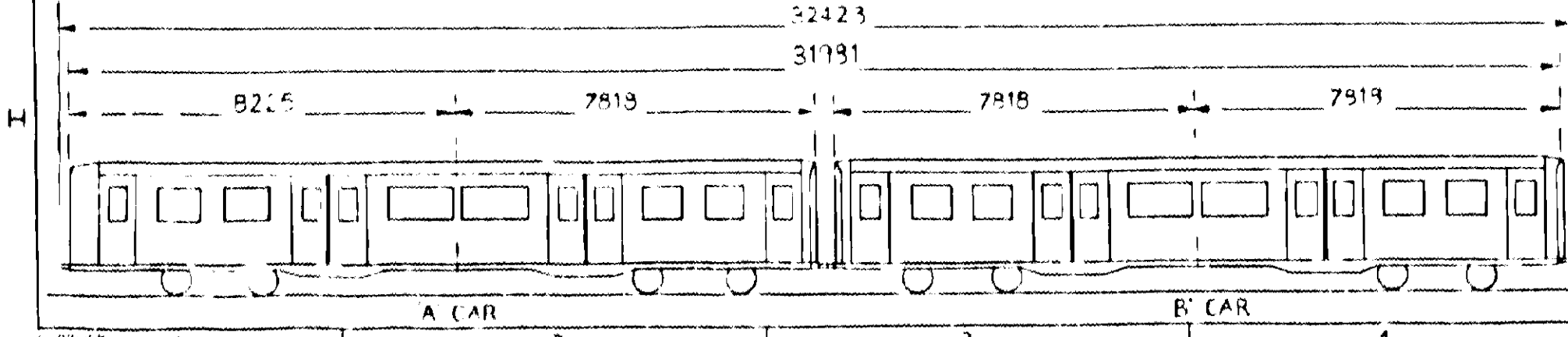
DATE	ORDER	SEE	NO	NUMBERS	CLASS

DATE 17/2/86

CLASS A

62110

SCALE 1:20



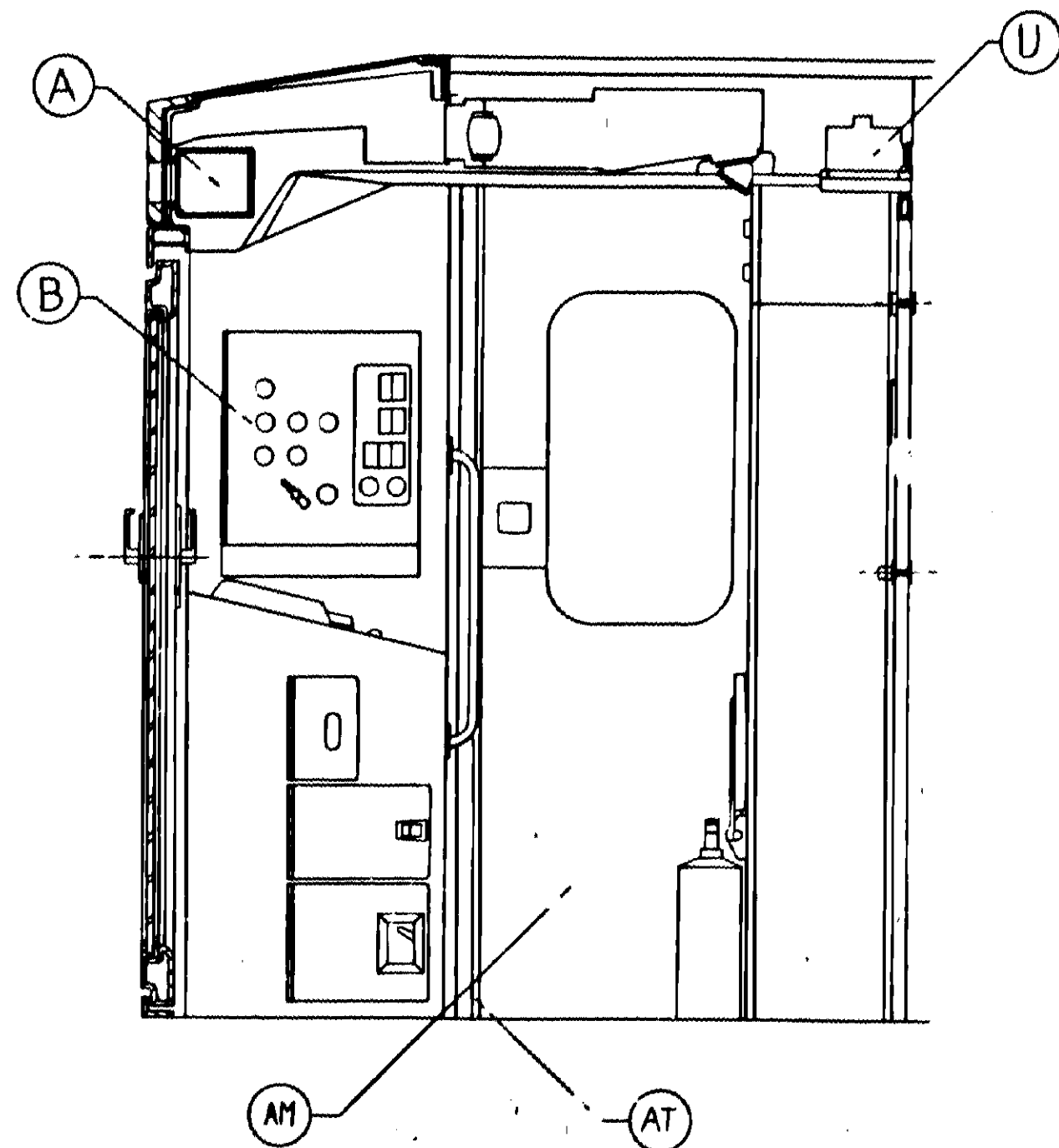
THE TOLERANCE ON DIMENSIONS FOR WHICH NO LIMITS ARE GIVEN SHALL BE AS SHOWN BELOW									
NOMINAL SIZE	TO	0	6	30	120	300	1000		
MACHINED		0	0.15	0.30	0.60	1.00	1.50		
FABRICATED		0	0.30	0.60	1.20	2.00	3.00		
NOMINAL SIZE	TO	4000	8000	12000	16000	20000			
MACHINED		0.15	0.30	0.60	1.00	1.50			
FABRICATED		0.30	0.60	1.20	2.00	3.00			

UNLESS OTHERWISE STATED
SCREW THREADS ARE TO BS 1643
CLASS 6H/6f
MACHINED SURFACES TO BE 25/
BS1134
WELDING TO BE TO BS 5456
EXPOSED EDGES OF GAS CUT PLATE
TO BE TO BS 5456 QUALITY
LEVEL 2

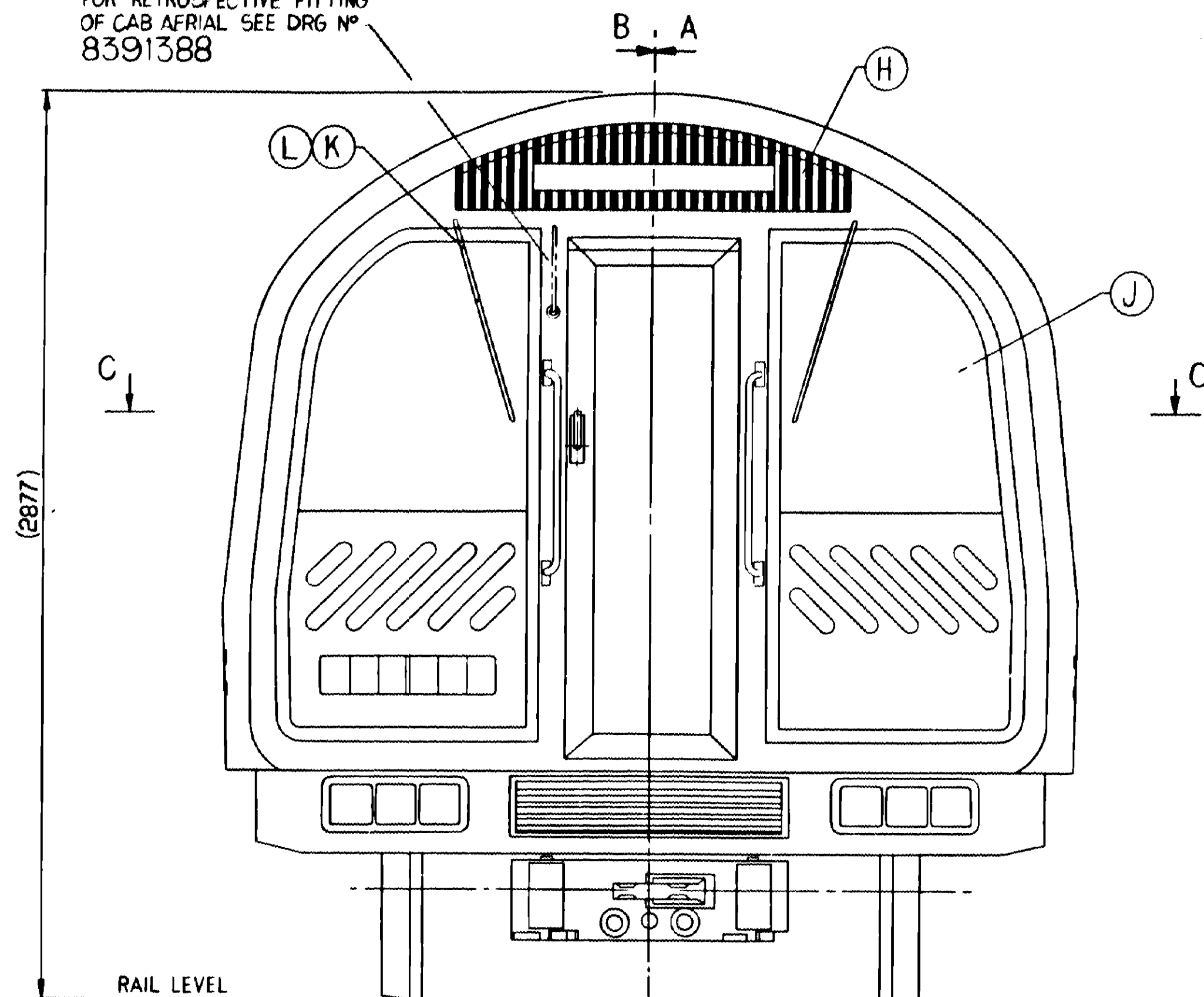
SHARP EDGES TO BE DEBURRED
TEMPORARY OR PERMANENT
CONNECTIONS OR ATTACHMENTS
OTHER THAN THOSE SHOWN ON
THE DRAWING ARE NOT PERMITTED
WITHOUT THE APPROVAL OF
THE DESIGN DIRECTOR
BRITISH RAIL ENGINEERING LTD
DIMENSIONS ARE IN MILLIMETRES

B.R.E.L. DRG. NO.
8300217

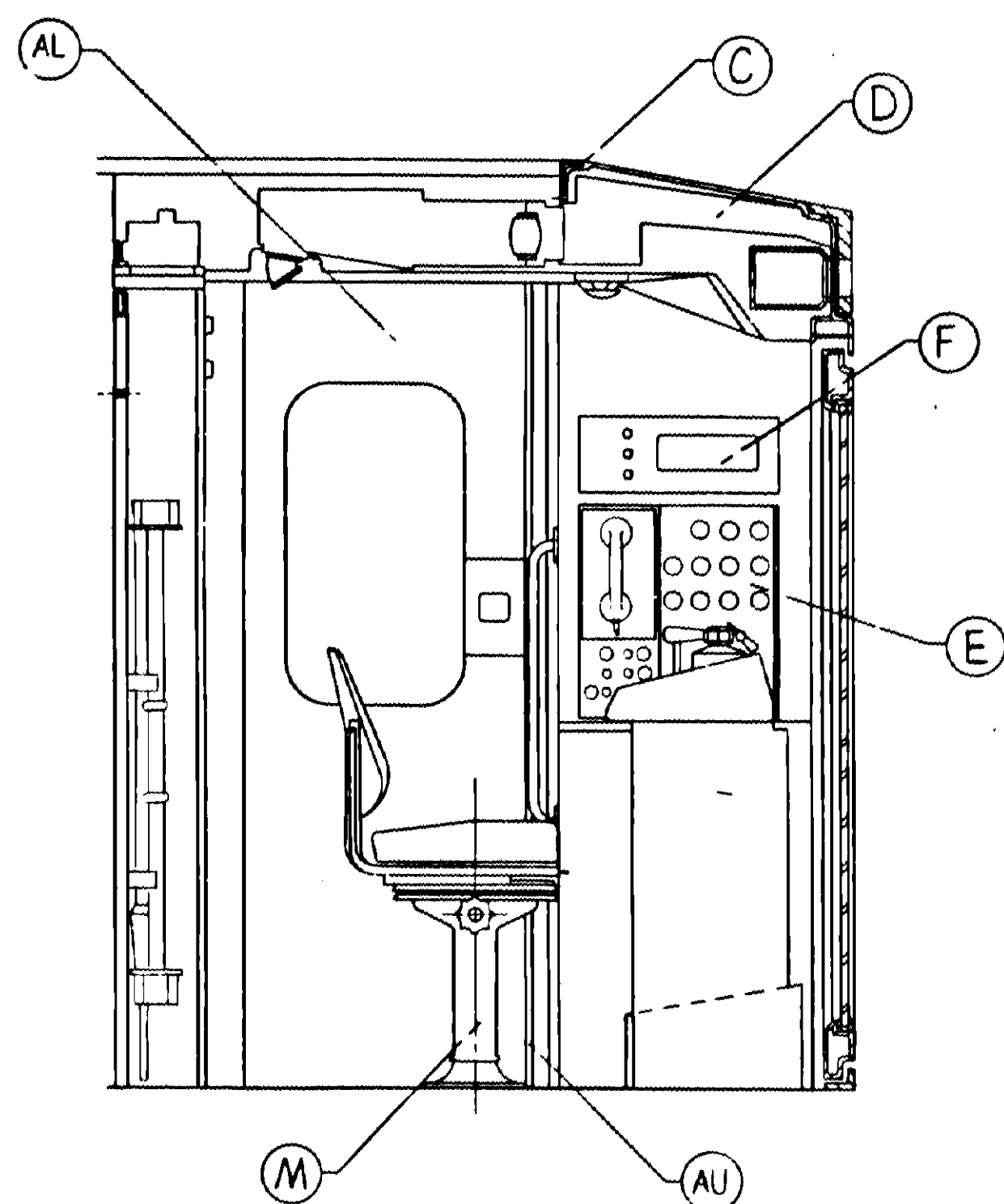
FOR RETROSPECTIVE FITTING
OF CAB AFRIAL SEE DRG N°
8391388



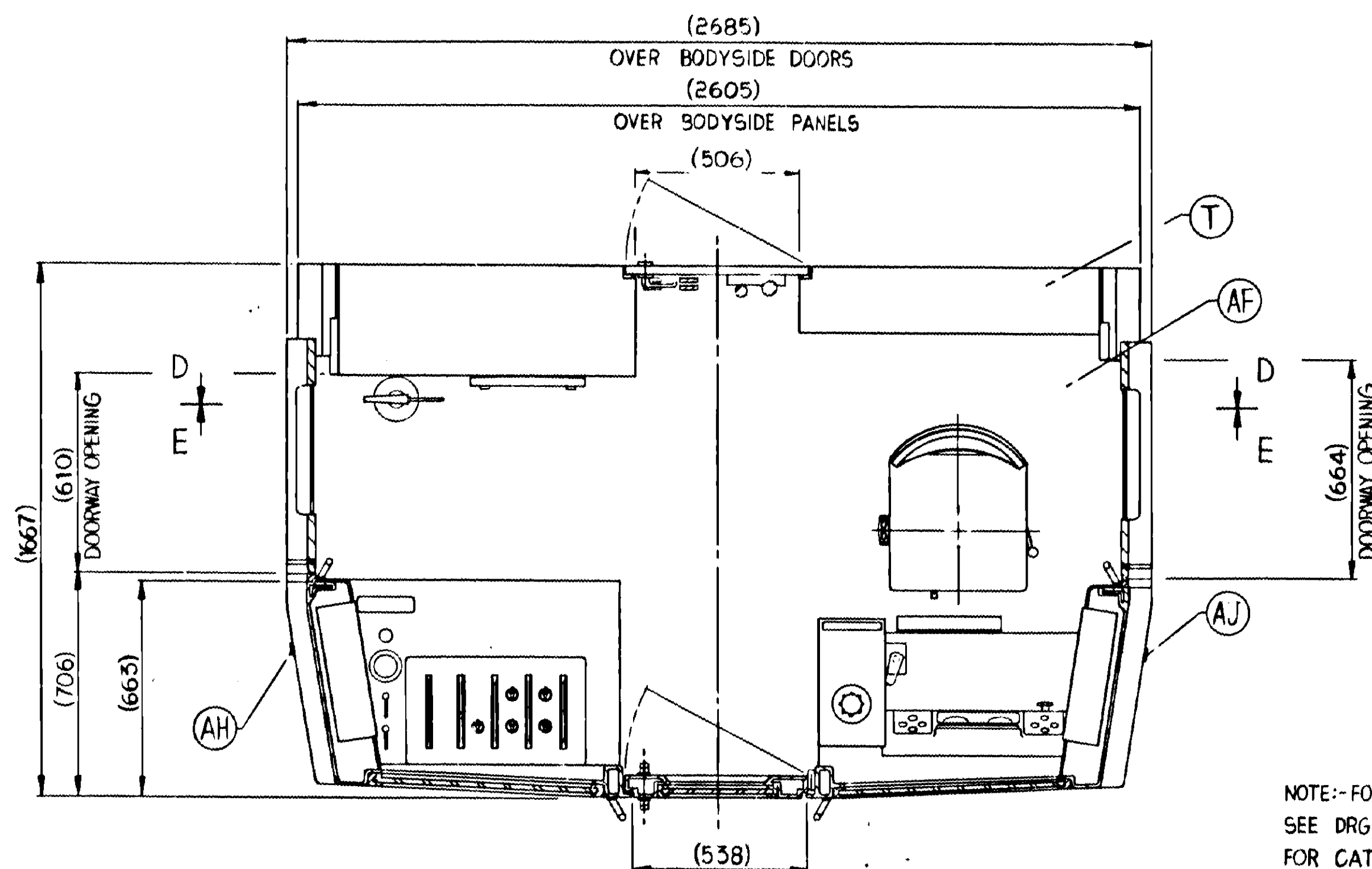
SECTION A-A



01 ARRANGEMENT



SECTION B-B



SECTION C-C

NOTE:- FOR SECTIONS D-D AND E-E
SEE DRG N° E-AO-8300560.
FOR CAT/PART NOS LIST SEE
DRG N° 8390267.

THE TOLERANCE ON DIMENSIONS FOR WHICH NO LIMITS ARE GIVEN SHALL BE AS SHOWN BELOW									
NOMINAL SIZE	OVER TO	0-6	6-30	30-120	120-400	400-1000	1000-2000	2000-4000	4000-10000
MACHINED		± 0.2	± 0.5	± 0.8	± 1.2	± 2	± 3	± 4	± 6
FABRICATED		± 1	± 1	± 1.5	± 2	± 3	± 4	± 6	± 10

UNLESS OTHERWISE STATED:

SCREW THREADS ARE TO BS 3643 CLASS 6H/6g

MACHINED SURFACES TO BE N8 (BS 1134)

WELDING TO BE TO BR SPEC 528

EXPOSED EDGES OF GAS CUT PLATE TO BE TO BR SPEC 539 QUALITY LEVEL 2

SHARP EDGES TO BE DEBURRED

TEMPORARY OR PERMANENT CONNECTIONS OR ATTACHMENTS OTHER THAN THOSE SHOWN ON THE DRAWING ARE NOT PERMITTED WITHOUT THE APPROVAL OF THE BRITISH RAILWAYS BOARD

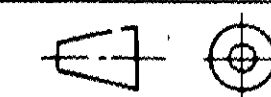
DIMENSIONS ARE IN MILLIMETRES

DRAWING PRACTICE IS TO BR PUBLICATION MT/216

B.I.E.L. DRG. NO.

8300559

PROJECTION



DO NOT SCALE

ISSUE	GRID REF	ALTERATION
A		FIRST ISSUE

Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT.
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE

Y	Z	PER ASSY	REF	DESCRIPTION	CAT./PART NO	MATERIAL SPEC. ETC	WT kg

LONDON UNDERGROUND LIMITED.
DEPARTMENT OF MECHANICAL ENGINEERING.

DATE	ORDER	SEE IN J OF	NUMBERS	CLASS

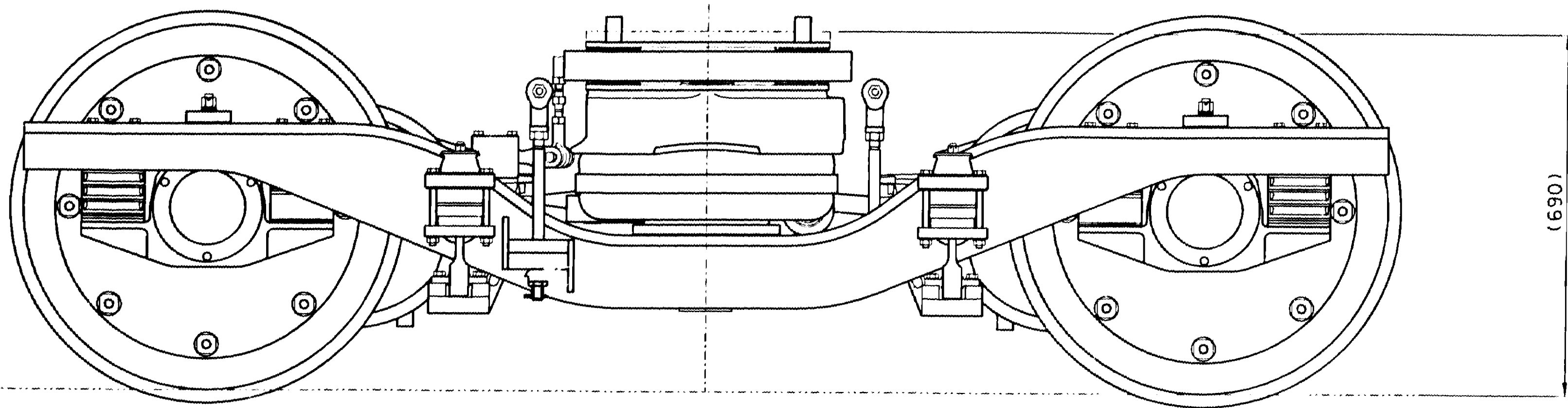
TITLE
CAB ARRANGEMENT

ISSUE	DATE	DRAWN	CHECK	ENDORS	APPRV
A	10-12-84	NC	CHARIS	MMV	

DRG NO. 62097

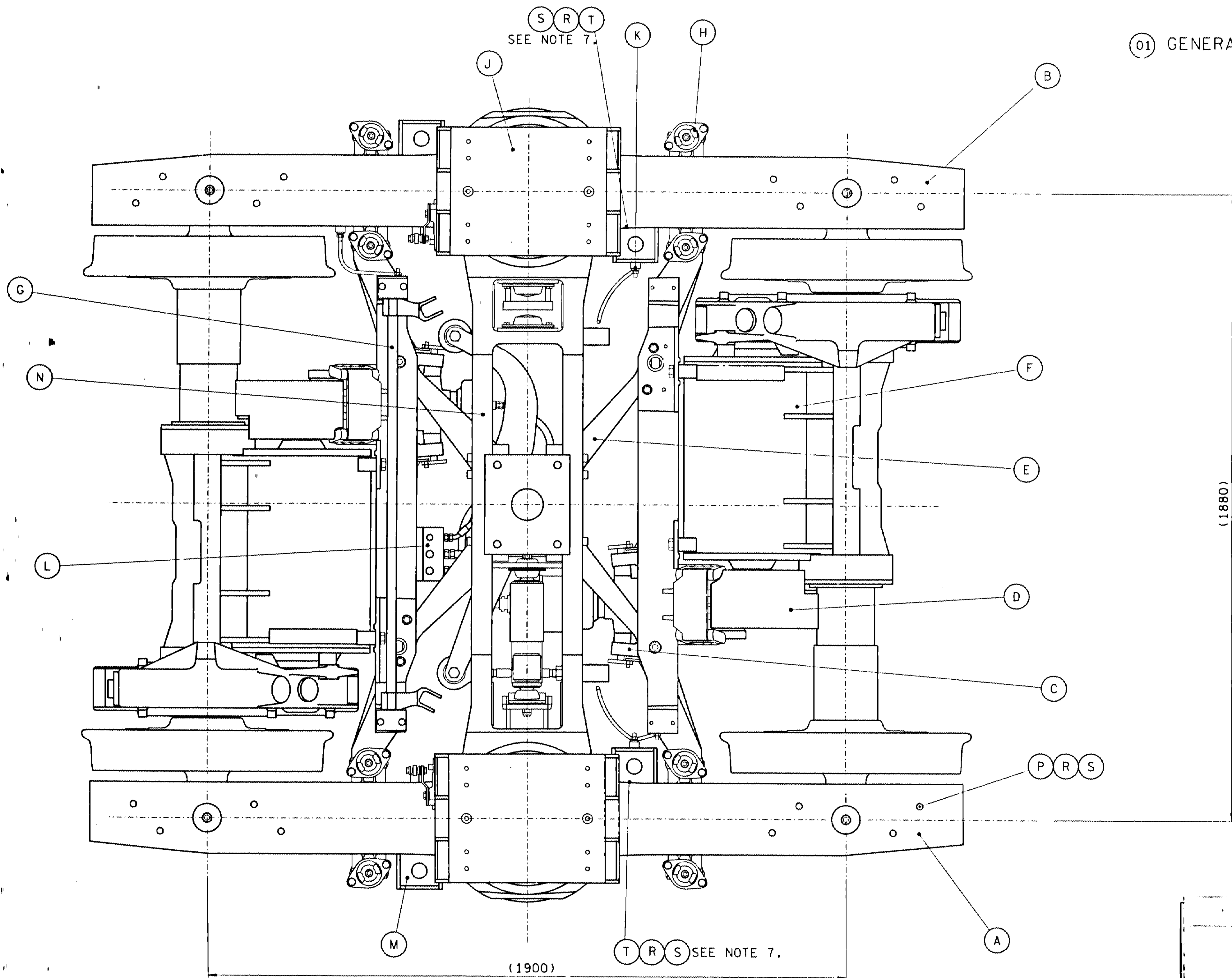
SCALE 1:10

24/1



- NOTE: 1. FOR ATTACHMENT OF SECONDARY STEERING RODS TO TRACTION ARM SEE 8391486
2. PAINTING TO SPECIFICATION BRE 8/148
3. STEEL BS 3692 GRADE 8.8
4. STEEL (FORM A) BS 4320 TABLE 1
5. WEIGHT SUPPORTED BY BOGIE AT TARE=5645kg.
6. FOR BOGIE IDENTIFICATION PLATE ARRGT. SEE DRG. Nos. 8391590 & 8391594
7. HOLE BLANKING SCREW.

01 GENERAL ARRANGEMENT

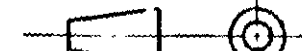


SHARP EDGES TO BE DEBURRED
TEMPORARY OR PERMANENT
CONNECTIONS OR ATTACHMENTS
OTHER THAN THOSE SHOWN ON
THE DRAWING ARE NOT PERMITTED
WITHOUT THE APPROVAL OF THE
DESIGN DIRECTOR.
DIMENSIONS ARE IN MILLIMETRES
DRAWING PRACTICE IS TO
BR PUBLICATION M1/216

B.R.E.L. DRG. NO.

8391396

PROJECTION



DO NOT SCALE

ISSUE		GRID REF		ALTERATION	
A	-	-	-	FIRST ISSUE	

Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE

ASSOCIATED DRAWINGS

GENERAL ARRANGEMENT	PS1-1a BOGIE	8391393-01
GENERAL ARRANGEMENT	PS1-1b BOGIE	8391394-01
GENERAL ARRANGEMENT	PS1-1c BOGIE	8391395-01

QTY	REF	DESCRIPTION	PART NO.	WT KG.
2	T	SCREW HEX HD M10 X 16	SEE NOTE 3	
18	S	NUTLOCK 241 (LOCTITE)		
18	R	WASHER BRIGHT M10	SEE NOTE 4	
16	P	BOLT M10 x 60	SEE NOTE 3	
1	N	AIR PIPEWORK ON DUMMY BOLSTER	8391460-01	
4	M	ANTI OVER-INFLATION LINK INST.	8390817-01	
1	L	BRAKE HOSE ARRANGEMENT	8391-74-01	
1	K	EARTHING INSTALLATION	8391462-01	
2	J	SECONDARY SUSPENSION ASSEMBLY	8390699-01	
4	H	MOTORBEAM SWING LINKS ARRANGEMENT	8390685-01	
1	G	ANTI-ROLL BAR INSTALLATION	8390500-01	
2	F	MOTOR ASSEMBLY	8390788-01	
1	E	CROSS BRACING ASSEMBLY	8390622-01	
2	D	BRAKE GUARD ASSEMBLY	8391404-01	
1	C	BRAKE INSTALLATION	8390935-01	
1	B	SIDEFRAME FABRICATION	8390816-01	
1	A	SIDEFRAME FABRICATION	8390813-01	
-	01	GENERAL ARRANGEMENT	8391396-01	4569

LONDON UNDERGROUND LIMITED. DEPARTMENT OF MECHANICAL ENGINEERING.											
					PS1-1d						
DATE	ORDER	NO. OF	NUMBERS	CLASS		A	25.02.85	G.N.B.	N.A.	JMM	
						ISS	DATE	DRAWN	CHECK	ENDRS	APPRV
TITLE GENERAL ARRANGEMENT CROSS BRACED STEERED BOGIE (L.R.T. 1986)						DRG NO.	61848				
						SCALE 1 : 5					

57819

ON
DRG

NOTES

1. FOR ATTACHMENT OF SECONDARY STEERING RODS TO TRACTION ARM SEE 8391486
2. STEEL BS 3692 GRADE 8.8
3. BS 4929 PART 1 PROP. CLASS 8 BENT BEAM TYPE
4. STEEL (FORM A) BS 4320 TABLE 1
5. PAINTING TO SPECIFICATION BRE 8/148
6. FOR POSITIVE & NEGATIVE SHOE GEAR LIFTING ARRANGEMENTS SEE DRG. No. 8391496
7. WEIGHT SUPPORTED BY BOGIE AT TARE=7030kg.
8. FOR BOGIE IDENTIFICATION PLATE ARRGT. SEE DRG. Nos. 8391590 & 8391594
9. HOLE BLANKING SCREW.

Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT.
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF,
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE

01 GENERAL ARRANGEMENT

ASSOCIATED DRAWINGS

GENERAL ARRANGEMENT PSI-1b BOGIE 8391394-01
GENERAL ARRANGEMENT PSI-1c BOGIE 8391395-01
GENERAL ARRANGEMENT PSI-1d BOGIE 8391396-01

2	AJ	SCREW HEX HD M10 X 16	SEE NOTE 2
1	AH	TRIPCOCK PIPE BRACKET	8391499-07
18	AF	WASHER BRIGHT M10	SEE NOTE 4
4	AE	BOLT M10 x 65	SEE NOTE 2
12	AD	BOLT M10 x 60	SEE NOTE 2
8	AC	WASHER BRIGHT M12	SEE NOTE 4
8	AB	NUT M12 PREVAILING TORQUE (HIGH)	SEE NOTE 3
4	AA	BOLT M12 X 80	SEE NOTE 2
4	Z	BOLT M12 X 90	SEE NOTE 2
1	Y	SHOE BEAM	8391512-03
1	X	SHOE BEAM	8391512-04
1	W	SHOE GEAR CABLES	8391493-01
2	V	CLAMP PLATE	8391416-05
2	U	CLAMP PLATE	8391416-06
1	T	TRIPCOCK ARRANGEMENT	8391498-01
1	S	POSITIVE SHOE GEAR ASSEMBLY	8391306-03
1	R	POSITIVE SHOE GEAR ASSEMBLY	8391306-02
1	P	NEGATIVE SHOE GEAR ARRANGEMENT	8390469-01
1	N	AIR PIPING ON DUMMY ROLLER	8391457-01
4	M	ANTI OVER-INFLATION LINK INST.	8390817-01
1	L	BRAKE HOSE ARRANGEMENT	8391475-01
1	K	EARTHING INSTALLATION	8391462-01
2	J	SECONDARY SUSPENSION ASSEMBLY	8390699-01
4	H	MOTORBEAM SWING LINKS ARRANGEMENT	8390685-01
1	G	ANTI-ROLL BAR INSTALLATION	8390500-01
2	F	MOTOR ASSEMBLY	8390788-01
1	E	CROSS BRACING ASSEMBLY	8390622-01
2	D	BRAKE GUARD ASSEMBLY	8391404-01
1	C	BRAKE INSTALLATION	8390935-01
1	B	SIDEFR. E FABRICATION	8390811-01
1	A	SIDEFRAME FABRICATION	8390814-01
-	01	GENERAL ARRANGEMENT	8391393-01 4821

Y	Z	PER ASSY	REF	DESCRIPTION	PART NO.	WT kg.
QUANTITY						

LONDON UNDERGROUND LIMITED.
DEPARTMENT OF MECHANICAL ENGINEERING.

SHARP EDGES TO BE DEBURRED
TEMPORARY OR PERMANENT
CONNECTIONS OR ATTACHMENTS
OTHER THAN THOSE SHOWN ON
THE DRAWING ARE NOT PERMITTED
WITHOUT THE APPROVAL OF THE
DESIGN DIRECTOR.
DIMENSIONS ARE IN MILLIMETRES
DRAWING PRACTICE IS TO
BR PUBLICATION MT/216

B.R.E.L. DRG. NO.

8391393

PROJECTION

DO NOT SCALE

TITLE

GENERAL ARRANGEMENT

CROSS BRACED STEERED
BOGIE (L.R.T. 1986)

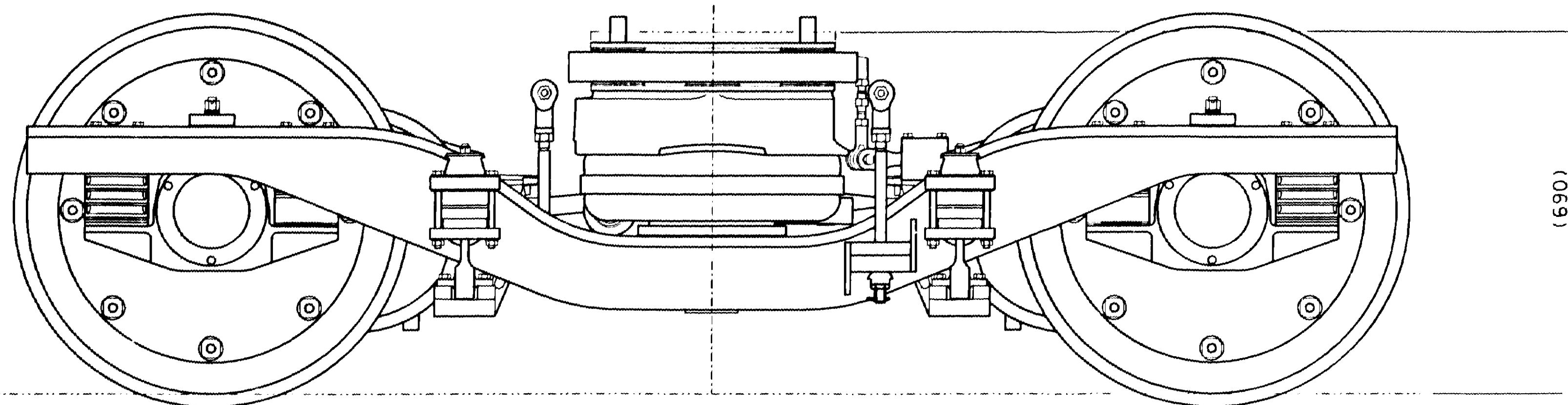
ISS DATE	DRAWN	CHECK	ENDRS	APPRV
----------	-------	-------	-------	-------

DRG. NO. 61845

SCALE 1 : 5

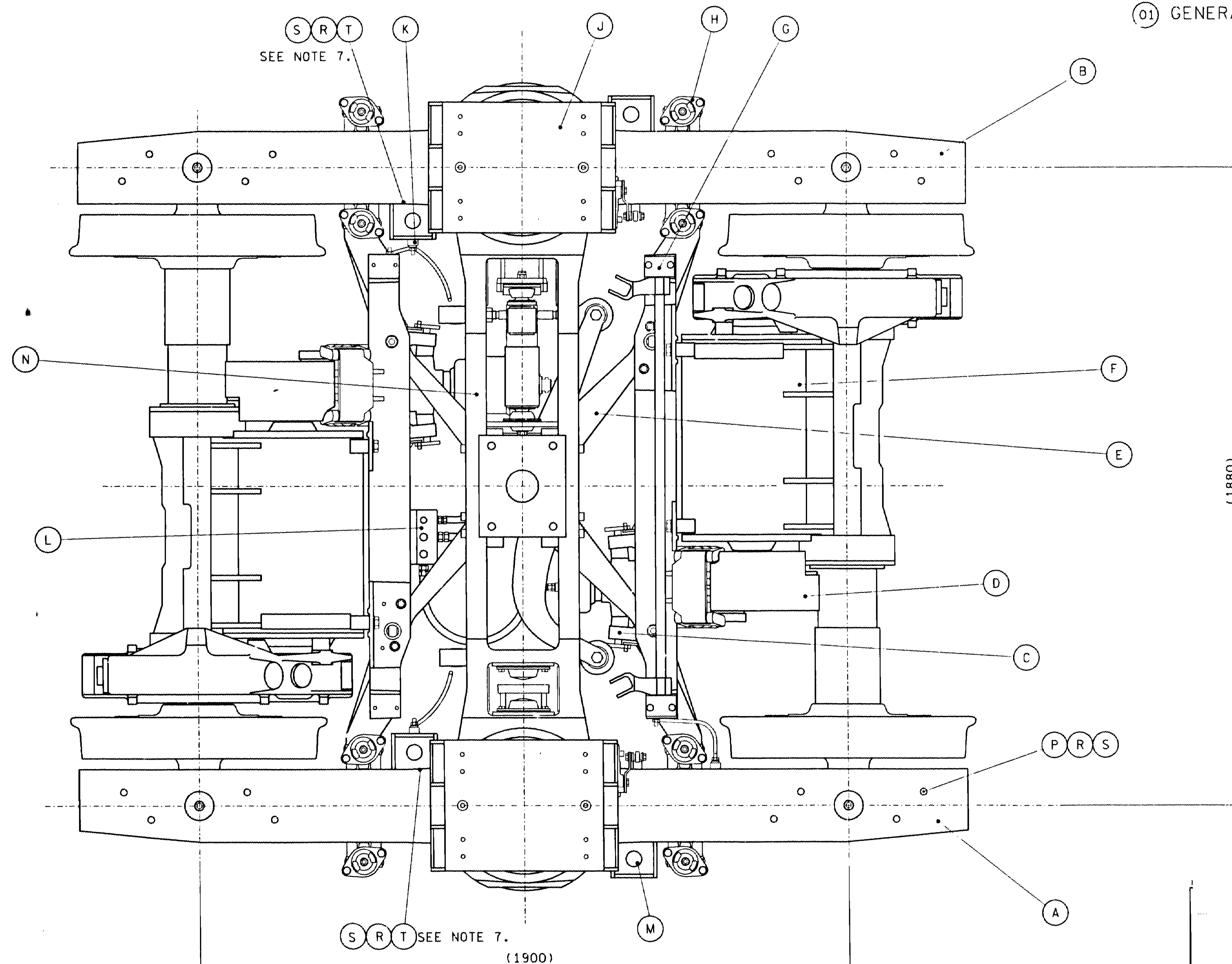
47819

ON
DRG



- NOTES: 1. FOR ATTACHMENT OF SECONDARY STEERING RODS TO TRACTION ARM SEE 8391486
2. PAINTING TO SPECIFICATION BRE 8/148
3. STEEL BS 3692 GRADE 8.8
4. STEEL (FORM A) BS 4320 TABLE 1
5. WEIGHT SUPPORTED BY BOGIE AT TARE=5101kg.
6. FOR BOGIE IDENTIFICATION PLATE ARRGT. SEE DRG. Nos. 8391590 & 8391594
7. HOLE BLANKING SCREW.

(01) GENERAL ARRANGEMENT



Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED
THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE

ASSOCIATED DRAWINGS

GENERAL ARRANGEMENT	PS1-1a BOGIE	8391393-01
GENERAL ARRANGEMENT	PS1-1b BOGIE	8391394-01
GENERAL ARRANGEMENT	PS1-1d BOGIE	8391396-01

2	T	SCREW HEX HD M10 X 16.	SEE NOTE 3
18	S	NUTLOCK 241 (LOCTITE)	
18	R	WASHER BRIGHT M10	SEE NOTE 4
16	P	BOLT M10 X 60	SEE NOTE 3
1	N	AIR PIPING ON DUMMY BOLSTER	8391459-01
4	M	ANTI OVER-INFLATION LINK INST.	8390817-01
1	L	BRAKE HOSE ARRANGEMENT	839.475-02
1	K	EARTHING INSTALLATION	8391462-01
2	J	SECONDARY SUSPENSION ASSEMBLY	8390699-01
4	H	MOTORBEAM SWING LINKS ARRANGEMENT	8390685-01
1	G	ANTI-ROLL BAR INSTALLATION	8390500-01
2	F	MOTOR ASSEMBLY	8390788-01
1	E	CROSS BRACING ASSEMBLY	8390622-01
2	D	BRAKE GUARD ASSEMBLY	8391404-01
1	C	BRAKE INSTALLATION	8390935-01
1	B	SIDEFRAME FABRICATION	8390813-01
1	A	SIDEFRAME FABRICATION	8390816-01
01		GENERAL ARRANGEMENT	8391395-01

Y	Z	PER ASSY	REF	DESCRIPTION	PART NO.	WT Kg.
---	---	-------------	-----	-------------	----------	-----------

LONDON UNDERGROUND LIMITED.
DEPARTMENT OF MECHANICAL ENGINEERING.

SHARP EDGES TO BE DEBURRED
TEMPORARY OR PERMANENT
CONNECTIONS OR ATTACHMENTS
OTHER THAN THOSE SHOWN ON
THE DRAWING ARE NOT PERMITTED
WITHOUT THE APPROVAL OF THE
DESIGN DIRECTOR.
DIMENSIONS ARE IN MILLIMETRES
DRAWING PRACTICE IS TO
BR PUBLICATION M1/216

B.R.E.L. DRG. NO.

8391395

PROJECTION



DO NOT SCALE

GENERAL ARRANGEMENT

CROSS BRACED STEERED
BOGIE (L.R.T. 1986)

DATE	ORDER	ISS NO.	NO. OF	NUMBERS	CLASS
25.02.85					
ISS	DATE	DRAWN	CHECK	ENDRS	APPRV
DRG NO.					
61847					
SCALE	1	:	5		

97819

ON
DRG

NOTES

1. FOR ATTACHMENT OF SECONDARY STEERING RODS TO TRACTION ARM SEE 8391486
2. STEEL BS 3692 GRADE 8.8
3. BS 4929 PART 1 PROP. CLASS 8 BENT BEAM TYPE
4. STEEL (FORM A) BS 4320 TABLE 1
5. PAINTING TO SPECIFICATION BRE 8/148
6. FOR POSITIVE & NEGATIVE SHOE GEAR LIFTING ARRANGEMENT See Drg.8391496
7. WEIGHT SUPPORTED BY BOGIE AT TARE = 5534kg.
8. FOR BOGIE IDENTIFICATION PLATE ARRGT. SEE DRG. Nos. 8391590 & 8391594
9. HOLE BLANKING SCREW.

Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT.
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE

ASSOCIATED DRAWINGS

GENERAL ARRANGEMENT PS1-1a BOGIE 8391393-01
GENERAL ARRANGEMENT PS1-1c BOGIE 8391395-01
GENERAL ARRANGEMENT PS1-1d BOGIE 8391396-01

01 GENERAL ARRANGEMENT

(1880)

SHARP EDGES TO BE DEBURRED
TEMPORARY OR PERMANENT
CONNECTIONS OR ATTACHMENTS
OTHER THAN THOSE SHOWN ON
THE DRAWING ARE NOT PERMITTED
WITHOUT THE APPROVAL OF THE
DESIGN DIRECTOR.
DIMENSIONS ARE IN MILLIMETRES
DRAWING PRACTICE IS TO
BR PUBLICATION M1/216

P R.E.L. DRG. NO.

8391394

PROJECTION

DO NOT SCALE

ISSUE		GRID		ALTERATION	
A	REF	A	REF	A	REF
1					
2					
3					
4					
5					
6					
7					
8					
9					
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					
51					
52					
53					
54					
55					
56					
57					
58					
59					
60					
61					
62					
63					
64					
65					
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
78					
79					
80					
81					
82					
83					
84					
85					
86					
87					
88					
89					
90					
91					
92					
93					
94					
95					
96					
97					
98					
99					
100					

Y	Z	PER	REF	DESCRIPTION	PART NO.	WT
QUANTITY	ASSY					KG.
2	AG	SCREW HEX HD M10 X 16		SEE NOTE 2		
18	AE	NUTLOCK 241 (LOCTITE)				
4	AD	BOLT M10 X 65		SEE NOTE 4		
12	AC	BOLT M10 X 60		SEE NOTE 2		
8	AB	WASHER BRIGHT M12		SEE NOTE 4		
8	AA	NUT M12 PREVAILING TORQUE (HIGH)		SEE NOTE 3		
4	Z	BOLT M12 X 80		SEE NOTE 2		
4	Y	BOLT M12 X 90		SEE NOTE 2		
1	X	SHOE BEAM		8391512-03		
1	W	SHOE BEAM		8391512-04		
1	V	SHOE GEAR CABLES		8391494-01		
2	U	CLAMP PLATE		8391416-05		
2	T	CLAMP PLATE		8391416-06		
1	S	POSITIVE SHOE GEAR ASSEMBLY		8391306-01		
1	R	POSITIVE SHOE GEAR ASSEMBLY		8391306-02		
1	P	NEGATIVE SHOE GEAR ASSEMBLY		8390469-01		
1	N	AIR PIPING ON DUMMY BOLSTER		8391458-01		
4	M	ANTI OVER-INFLATION LINK INST.		8390817-01		
1	L	BRAKE HOSE ARRANGEMENT		8391474-01		
1	K	EARTHING INSTALLATION		8391462-01		
2	J	SECONDARY SUSPENSION ARRANGEMENT		8390699-01		
4	H	MOTORBEAM SWING LINKS ARRANGEMENT		8390685-01		
1	G	ANTI-ROLL BAR INSTALLATION		8390500-01		
2	F	MOTOR ASSEMBLY		8390788-01		
1	E	CROSS BRACING ASSEMBLY		8390622-01		
2	D	BRAKE GUARD ASSEMBLY		8391404-01		
1	C	BRAKE INSTALLATION		8390935-01		
1	B	SIDEFRAME FABRICATION		8390815-01		
1	A	SIDEFRAME FABRICATION		8390812-01		
1	01	GENERAL ARRANGEMENT		8391394-01	4754	

DATE	ORDER	NO. OF	NUMBERS	CLASS
26.02.85				

ISS	DATE	G.N.B.	N.A.	J.M.W.
1				

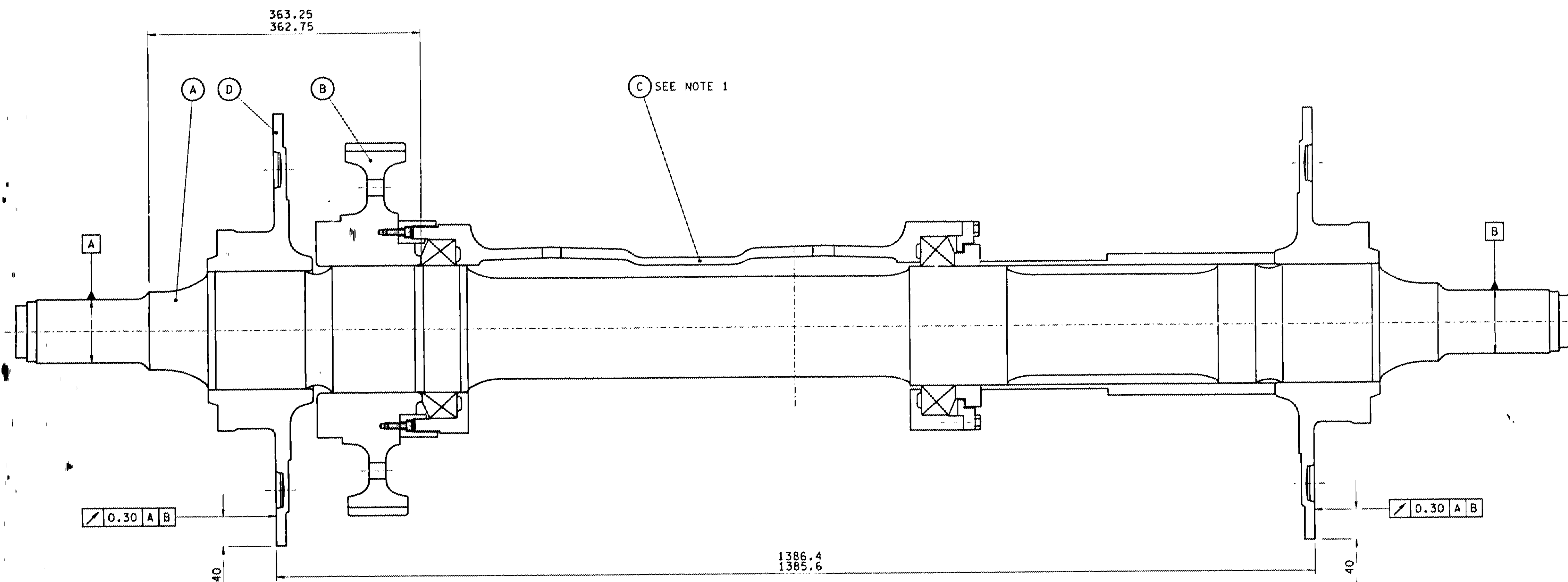
DRG NO.	61846
---------	-------

SCALE	1 : 5
-------	-------

85819

ON
DRG

ISSUE	GRID REF	ALTERATION
A	-	FIRST ISSUE



NOTE:-

1. ALL ITEMS BETWEEN GEAR WHEEL AND RH HUB TO BRUSH DRG No AO 1763036.
2. ASSEMBLY OF MOTOR SUSPENSION UNIT TO CONFORM TO BRITISH TIMKEN INSTRUCTIONS 734-S-2.

WEIGHT FOR ITEM D IS INCLUDED IN THE WHEEL WEIGHT, ITEM B DRG. No. 8390254.

Transport for London
London Underground
MAYOR OF LONDON

UNCONTROLLED COPY
WILL NOT BE UPDATED

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT.
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE

THE TOLERANCE ON DIMENSIONS FOR WHICH NO LIMITS ARE GIVEN SHALL BE AS SHOWN BELOW							
NOMINAL SIZE	OVER	TO	0	6	30	120	400
			0	0.05	0.15	0.30	0.60
MACHINED			0.2	0.5	0.8	1.2	2
FABRICATED			1	1.5	2.5	4	6

UNLESS OTHERWISE STATED:
SCREW THREADS ARE TO BS 3643
CLASS 6H/6g
MACHINED SURFACES TO BE \sqrt{R}
(BS 1134)
WELDING TO BE TO BR SPEC 528
EXPOSED EDGES OF GAS CUT PLATE
TO BE TO BR SPEC 5.3 QUALITY
LEVEL 2

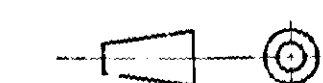
SHARP EDGES TO BE DEBURRED
TEMPORARY OR PERMANENT
CONNECTIONS OR ATTACHMENTS
OTHER THAN THOSE SHOWN ON
THE DRAWING ARE NOT PERMITTED
WITHOUT THE APPROVAL OF BREL

DIMENSIONS ARE IN MILLIMETRES
DRAWING PRACTICE IS TO
BR PUBLICATION M1/216

F R.E.L. DRG. NO.

8390253

PROJECTION



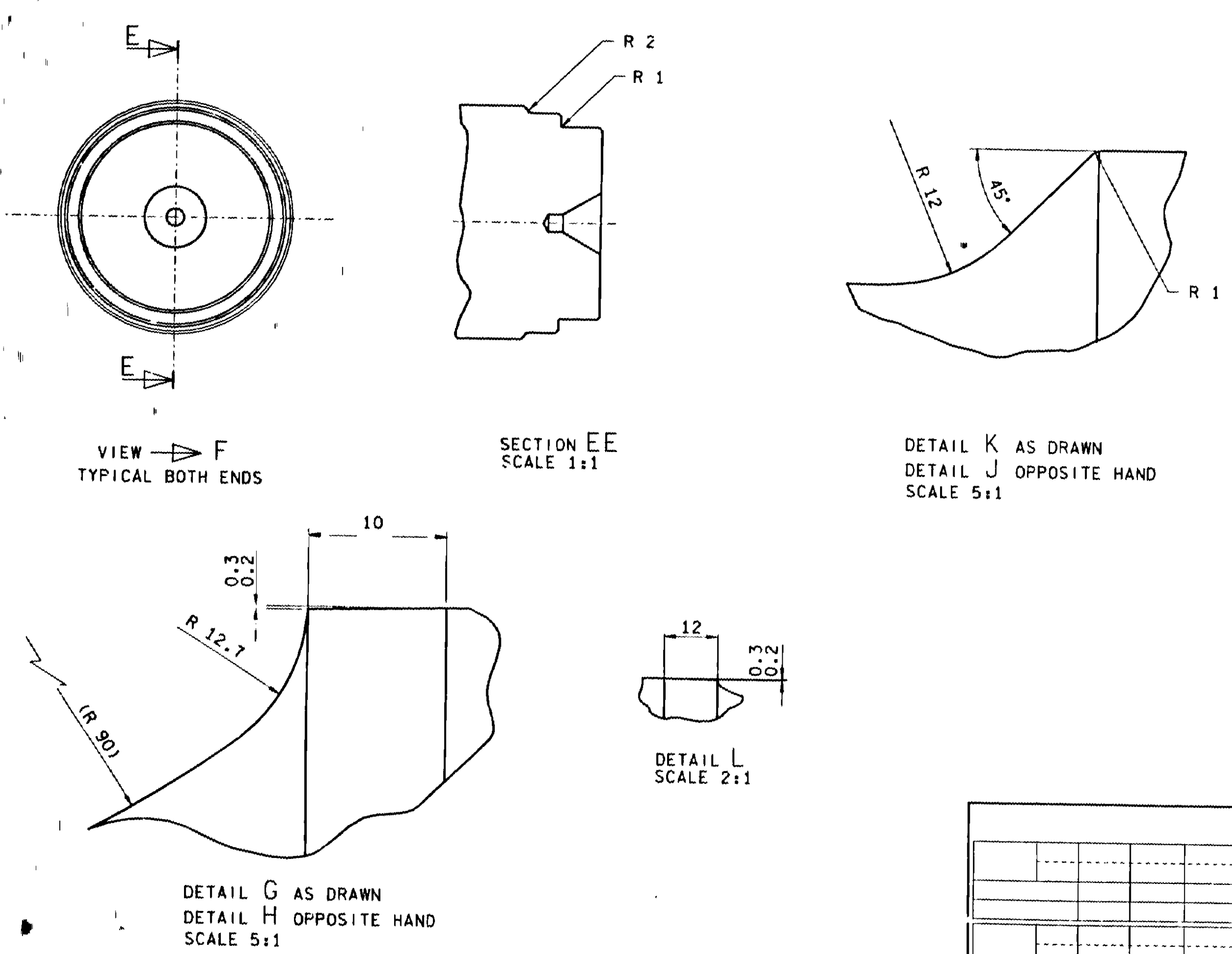
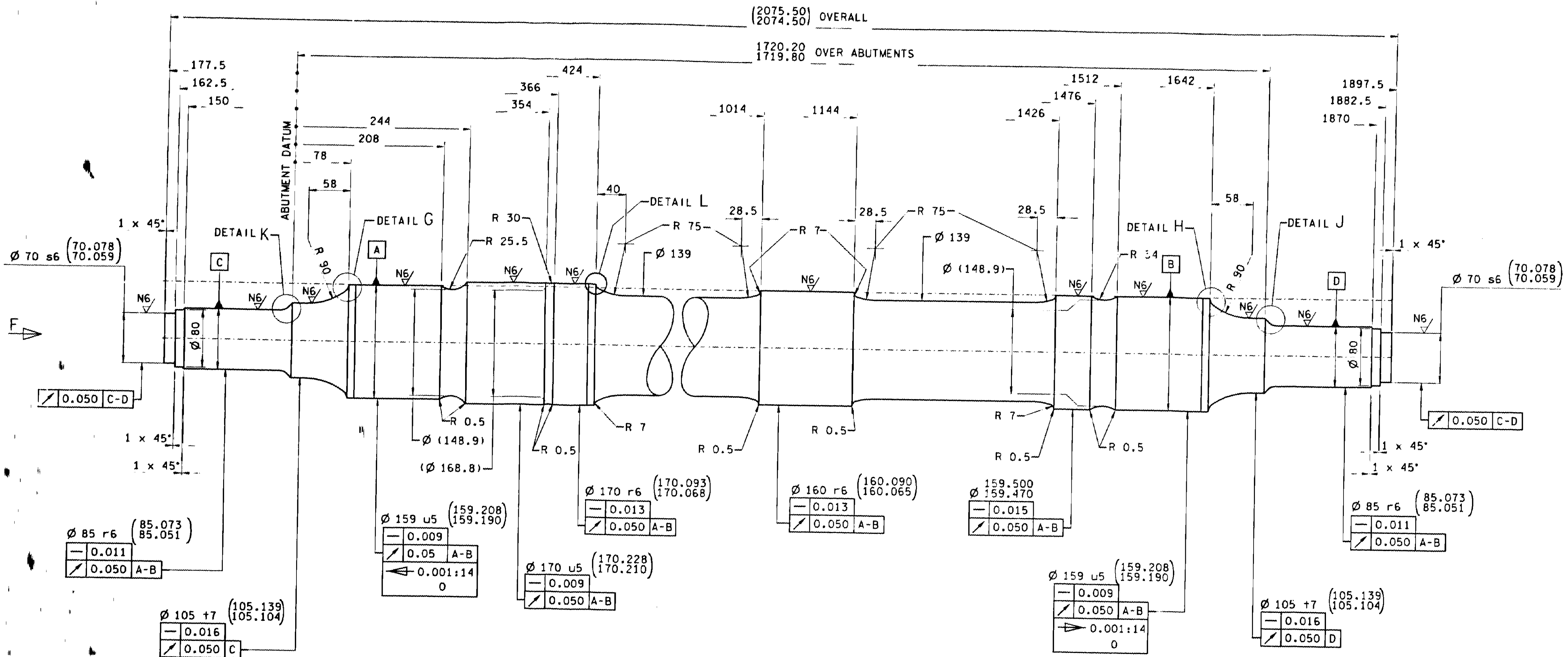
DO NOT SCALE

DATE	ORDER	NO. OF VEHICLES/BOGIES	CLASS	TITLE	ISS DATE	DRAWN	CHECK	ENDRS	APPRV
				WHEELSET SUB ASSEMBLY	12.09.84	P.S.	F.H.	JMW	
				CROSS BRACED STEERED BOGIE (L.R.T. 1986)					

DRG NO. 61858

SCALE 1:2.5

SCHED SECT. /



- NOTES
- ITEM 01 TO BE MANUFACTURED IN ACCORDANCE WITH BS 5992 (EXCLUDING AXLE MARKINGS) & L.R.T. SPEC. RME 7M (EXCLUDING COLD ROLLING)
 - FOR AXLE MARKINGS SEE 8390787
 - SHARP EDGES TO BE RADIUS 0.5 MAX.
 - ANGULAR TOLERANCE $\pm 0^\circ 30'$
 - ALL SURFACE FINISHES TO BE MAINTAINED AT LEVEL SPECIFIED OR SMOOTHER
 - TOLERANCE ON ALL DIMENSIONS TO BE ± 0.25 UNLESS OTHERWISE STATED

UNLESS OTHERWISE STATED:	
SCREW THREADS ARE TO BS 3643 CLASS 6H/6g	SHARP EDGES TO BE DEBURRED
MACHINED SURFACES TO BE $\sqrt{1.6}$ (BS 1134)	TEMPORARY OR PERMANENT CONNECTIONS OR ATTACHMENTS OTHER THAN THOSE SHOWN ON THE DRAWING ARE NOT PERMITTED WITHOUT THE APPROVAL OF BREL
WELDING TO BE TO BR SPEC 528	DIMENSIONS ARE IN MILLIMETRES
EXPOSED EDGES OF GAS CUT PLATE TO BE TO BR SPEC 539 QUALITY LEVEL 2	DRAWING PRACTICE IS TO BR PUBLICATION M1/216

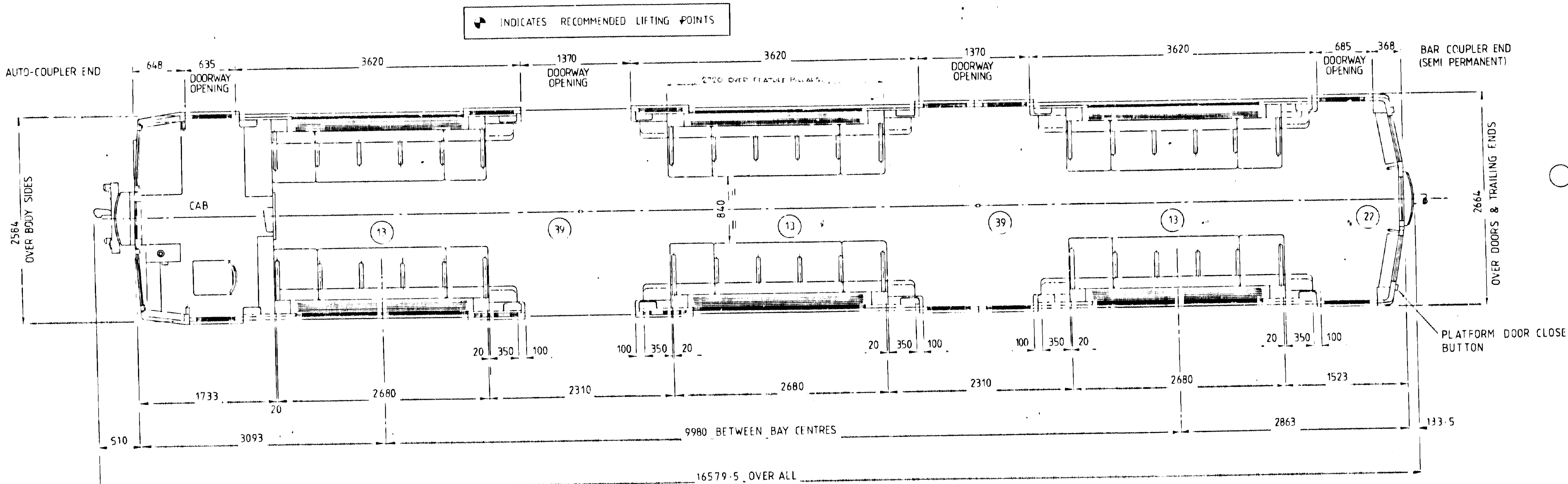
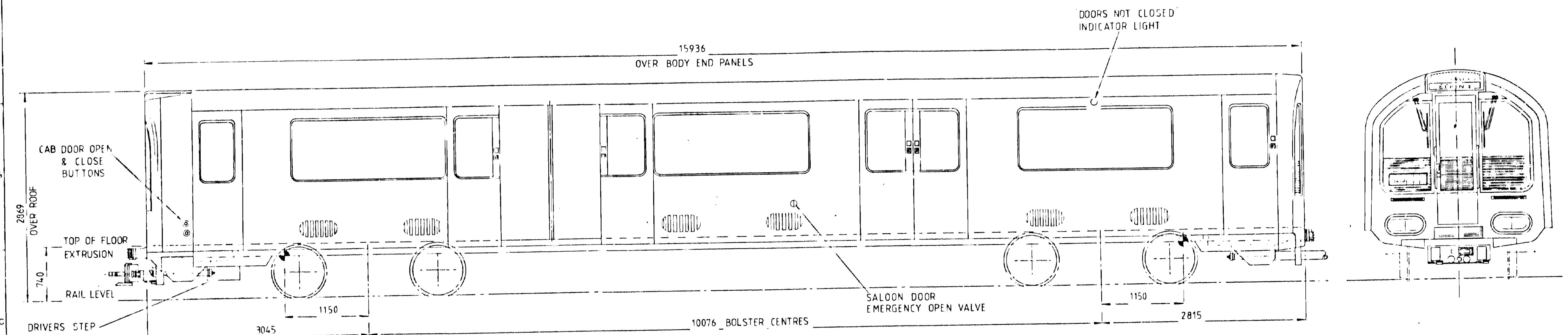
B.R.T.L. DRG. NO.

8390252

PROJECTION DO NOT SCALE

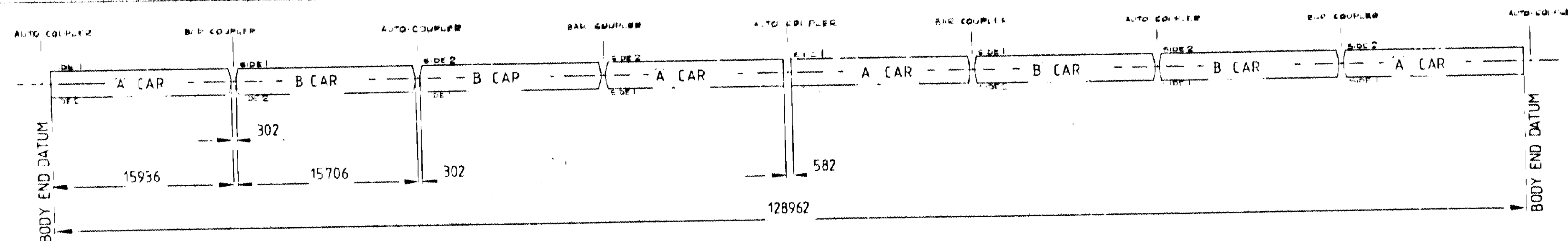
ISSUE		GRID REF		ALTERATION	
A	REF	FIRST ISSUE			
<p>Transport for London London Underground MAYOR OF LONDON</p> <p>UNCONTROLLED COPY WILL NOT BE UPDATED</p> <p>THIS DRAWING MAY NOT BE CURRENT AND SUBJECT TO AMENDMENT THEREFORE DO NOT PRODUCE OR MANUFACTURE ANY PART THERE OF WITHOUT FIRST SEEKING VERIFICATION FROM THE RSE - BRM BEFORE USE</p>					
Y	Z	PER	AS	EST.	
QUANTITY	REF	DESCRIPTION	CAT./PART NO.	MATERIAL SPEC. ETC	WT Kg.
LONDON UNDERGROUND LIMITED. DEPARTMENT OF MECHANICAL ENGINEERING.					
DATE	ORDER	NO. OF	NUMBERS	CLASS	
ISS DATE		DRAWN		F.H. EJS	
DRG NO.		61857		SCHED SECT.	
SCALE 1:2.5 1:1 5:1 2:1					

FIRST ANGLE PROJECTION



NO OF PASSENGERS	
STANDING INCL	139
PERCH SEATING	
SEATING	30
TOTAL	169

○ INDICATES NO OF STANDING PASSENGERS
BASED ON LUL RATIOS OF 0,14m²/
PASSENGER IN DOORWAY AND 0,18m² IN
OTHER AREAS



TRAIN FORMATION

MODIFICATIONS		101		102		103		104		105		106		107		108		109		110		111		112		113		114		115		116		117		118		119		120		121		122		123		124		125		126		127		128		129		130		131		132		133		134		135		136		137		138		139		140		141		142		143		144		145		146		147		148		149		150		151		152		153		154		155		156		157		158		159		160		161		162		163		164		165		166		167		168		169		170		171		172		173		174		175		176		177		178		179		180		181		182		183		184		185		186		187		188		189		190		191		192		193		194		195		196		197		198		199		200		201		202		203		204		205		206		207		208		209		210		211		212		213		214		215		216		217		218		219		220		221		222		223		224		225		226		227		228		229		230		231		232		233		234		235		236		237		238		239		240		241		242		243		244		245		246		247		248		249		250		251		252		253		254		255		256		257		258		259		260		261		262		263		264		265		266		267		268		269		270		271		272		273		274		275		276		277		278		279		280		281		282		283		284		285		286		287		288		289		290		291		292		293		294		295		296		297		298		299		300		301		302		303		304		305		306		307		308		309		310		311		312		313		314		315		316		317		318		319		320		321		322		323		324		325		326		327		328		329		330		331		332		333		334		335		336		337		338		339		340		341		342		343		344		345		346		347		348		349		350		351		352		353		354		355		356		357		358		359		360		361		362		363		364		365		366		367		368		369		370		371		372		373		374		375		376		377		378		379		380		381		382		383		384		385		386		387		388		389		390		391		392		393		394		395		396		397		398		399		400		401		402		403		404		405		406		407		408		409		410		411		412		413		414		415		416		417		418		419		420		421		422		423		424		425		426		427		428		429		430		431		432		433		434		435		436		437		438		439		440		441		442		443		444		445		446		447		448		449		450		451		452		453		454		455		456		457		458		459		460		461		462		463		464		465		466		467		468		469		470		471		472		473		474		475		476		477		478		479		480		481		482		483		484		485		486		487		488		489		490		491		492		493		494		495		496		497		498		499		500		501		502		503		504		505		506		507		508		509		510		511		512		513		514		515		516		517		518		519		520		521		522		523		524		525		526		527		528		529		530		531		532		533		534		535		536		537		538		539		540		541		542		543		544		545		546		547		548		549		550		551		552		553		554		555		556		557		558		559		560		561		562		563		564		565		566		567		568		569		570		571		572		573		574		575		576		577		578		579		580		581		582		583		584		585		586		587		588		589		590		591		592		593		594		595		596		597		598		599		600		601		602		603		604		605		606		607		608		609		610		611		612		613		614		615		616		617		618		619		620		621		622		623		624		625		626		627		628		629		630		631		632		633		634		635		636		637		638		639		640		641		642		643		644		645		646		647		648		649		650		651		652		653		654		655		656		657		658		659		660		661		662		663		664		665		666		667		668		669		670		671		672		673		674		675		676		677		678		679		680		681		682		683		684		685		686		687		688		689		690		691		692		693		694		695		696		697		698		699		700		701		702		703		704		705		706		707		708		709		710		711		712		713		714		715		716		717		718		719		720		721		722		723		724		725		726		727		728		729		730		731		732		733		734		735		736		737		738		739		740		741		742		743		744		745		746		747		748		749		750		751		752		753		754		755		756		757		758		759		760		761		762		763		764		765		766		767		768		769		770		771		772		773		774		775		776		777		778		779		780		781		782		783		784		785		786		787		788		789		790		791		792		793		794		795		796		797		798		799		800		801		802		803		804		805		806		807		808		809		810		811		812		813		814		815		816		817		818		819		820		821		822		823		824		825		826		827		828		829		830		831		832		833		834		835		836		837		838		839		840		841		842		843		844		845		846		847		848		849		850		851		852		853		854		855		856		857		858		859		860		861		862		863		864		865		866		867		868		869		870		871		872		873		874		875		876		877		878		879		880		881		882		883		884		885		886		887		888		889		890		891		892		893		894		895		896		897		898		899		900		901		902		903		904		905		906		907		908		909		910		911		912		913		914		915		916		917		918		919		920		921		922		923		924		925		926		927		928		929		930		931		932		933		934		935		936		937		938		939		940		941		942		943		944		945		946		947		948		949		950		951		952		953		954		955		956		957		958		959		960		961		962		963		964		965		966		967		968		969		970		971		972		973		974		975		976		977		978		979		980		981		982		983		984		985		986		987		988		989		990		991		992		993		994		995		996		997		998		999		1000		1001		1002		1003		1004		1005		1006		1007		1008		1009		1010		1011		1012		1013		1014		1015		1016		1017		1018		1019		1020		1021		1022		1023		1024		1025		1026		1027		1028		1029		1030		1031		1032		1033		1034		1035		1036		1037		1038		1039		1040		1041		1042		1043		1044		1045		1046		1047		1048		1049		1050		1051		1052		1053		1054		1055		1056		1057		1058		1059		1060		1061		1062		1063		1064		1065		1066		1067		1068		1069		1070		1071		1072		1073		1074		1075		1076		1077		1078		1079		1080		1081		1082		1083		1084		1085		1086		1087		1088		1089		1090		1091		1092		1093		1094		1095		1096		1097		1098		1099		1100		1101		1102		1103		1104		1105		1106		1107		1108		1109		1110		1111		1112		1113		1114		1115		1116		1117		1118		1119		1120		1121		1122		1123		1124		1125		1126		1127		1128		1129		1130		1131		1132		1133		1134		1135		1136		1137		1138		1139		1140		1141		1142		1143		1144		1145		1146		1147		1148		1149		1150		1151		1152		1153		1154		1155		1156		1157		1158		1159		1160		1161		1162		1163		1164		1165		1166		1167		1168		1169		1170		1171		1172		1173		1174		1175		1176		1177		1178		1179		1180		1181		1182		1183		1184		1185		1186		1187		1188		1189		1190		1191		1192		1193		1194		1195		1196		1197		1198		1199		1200		1201		1202		1203		1204		1205		1206	
---------------	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	-----	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--

30 X

[illegible]

30.X

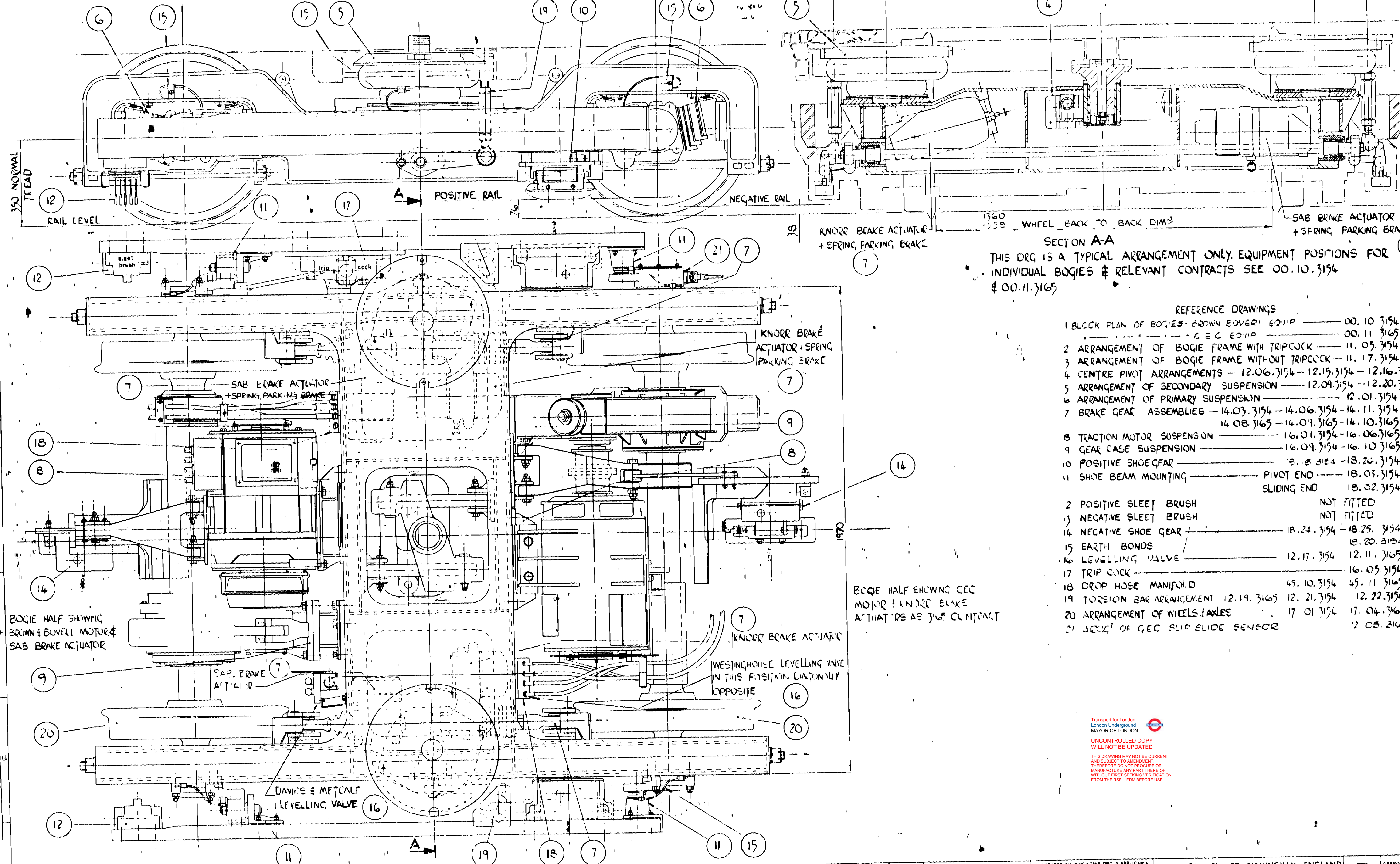
11. 01. 3154

FIRST ANGLE PROJECTION

1900 AXLE CRS

2156 TORSION BAR LINK CRS

1730 AIR BAG CRS



SECTION A-A

THIS DRG IS A TYPICAL ARRANGEMENT ONLY. EQUIPMENT POSITIONS FOR INDIVIDUAL BOGIES & RELEVANT CONTRACTS SEE 00.10.3154 & 00.11.3165

REFERENCE DRAWINGS

- | | |
|---|--------------------------------------|
| 1 BLOCK PLAN OF BOGIES - BROWN BOVERI EQUIP | 00.10.3154 |
| 2 ARRANGEMENT OF BOGIE FRAME WITH TRIPCOCK | 00.11.3165 |
| 3 ARRANGEMENT OF BOGIE FRAME WITHOUT TRIPCOCK | 11.05.3154 |
| 4 CENTRE PIVOT ARRANGEMENTS | 12.06.3154 - 12.15.3154 - 12.16.3154 |
| 5 ARRANGEMENT OF SECONDARY SUSPENSION | 12.09.3154 - 12.20.3154 |
| 6 ARRANGEMENT OF PRIMARY SUSPENSION | 12.01.3154 |
| 7 BRAKE GEAR ASSEMBLIES | 14.03.3154 - 14.06.3154 - 14.11.3154 |
| 8 TRACTION MOTOR SUSPENSION | 14.08.3165 - 14.09.3165 - 14.10.3165 |
| 9 GEAR CASE SUSPENSION | 16.01.3154 - 16.06.3165 |
| 10 POSITIVE SHOE GEAR | 16.09.3154 - 16.10.3165 |
| 11 SHOE BEAM MOUNTING | 18.03.3154 - 18.02.3154 |
| 12 POSITIVE SLEET BRUSH | NOT FITTED |
| 13 NEGATIVE SLEET BRUSH | NOT FITTED |
| 14 NEGATIVE SHOE GEAR | 18.24.3154 - 18.25.3154 |
| 15 EARTH BONDS | 18.20.3154 |
| 16 LEVELLING VALVE | 12.17.3154 - 12.11.3165 |
| 17 TRIP COCK | 16.05.3154 |
| 18 DROP HOSE MANIFOLD | 45.10.3154 - 45.11.3165 |
| 19 TORSION BAR ARRANGEMENT | 12.19.3165 - 12.21.3154 - 12.22.3154 |
| 20 ARRANGEMENT OF WHEEL AXLES | 17.01.3154 - 17.04.3165 |
| 21 ADJUST OF GEC SLIP SLIDE SENSOR | 2.05.3165 |

BOGIE HALF SHOWING GEC MOTOR & KNORR BRAKE ACTUATOR AS JIVE CONTRACT

Transport for London
London Underground
MAYOR OF LONDON
UNCONTROLLED COPY
WILL NOT BE UPDATED
THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THERE OF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE

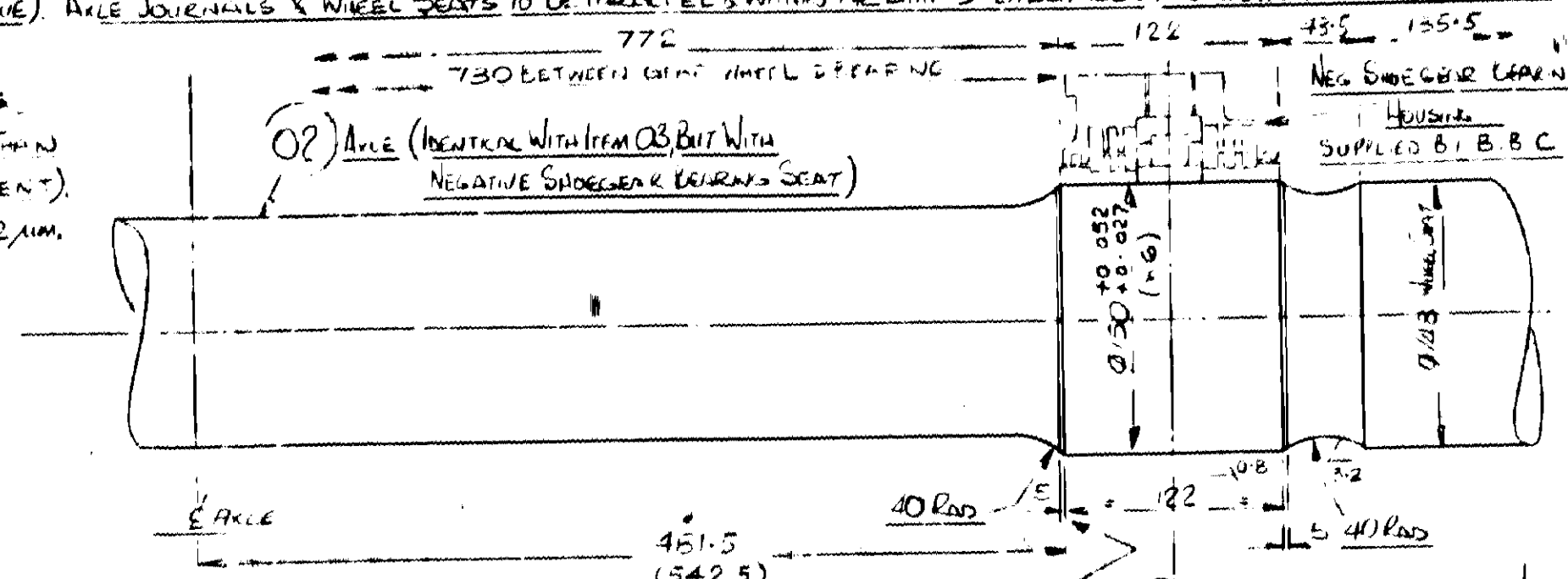
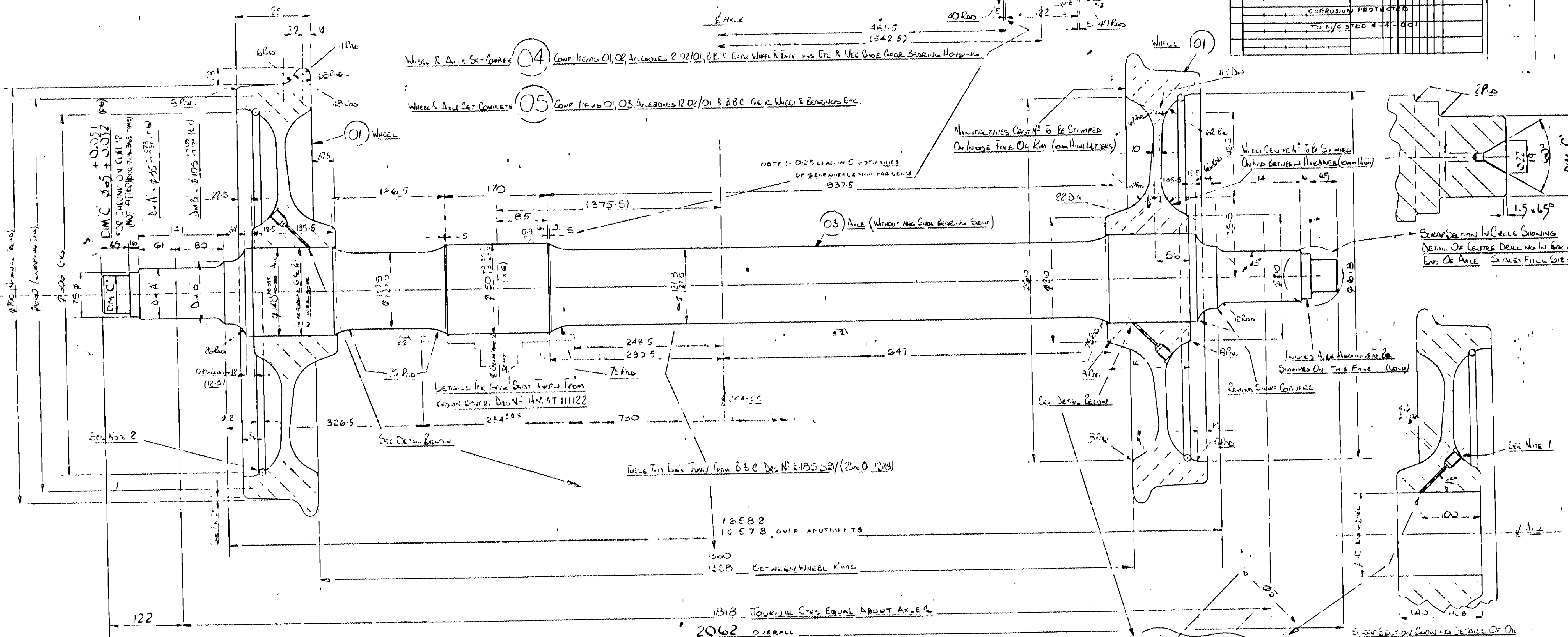
<p>MODIFICATIONS</p> <p>1. 01. 3154</p> <p>2. 01. 3154</p> <p>3. 01. 3154</p> <p>4. 01. 3154</p> <p>5. 01. 3154</p> <p>6. 01. 3154</p> <p>7. 01. 3154</p> <p>8. 01. 3154</p> <p>9. 01. 3154</p> <p>10. 01. 3154</p> <p>11. 01. 3154</p> <p>12. 01. 3154</p> <p>13. 01. 3154</p> <p>14. 01. 3154</p> <p>15. 01. 3154</p> <p>16. 01. 3154</p> <p>17. 01. 3154</p> <p>18. 01. 3154</p> <p>19. 01. 3154</p> <p>20. 01. 3154</p> <p>21. 01. 3154</p> <p>22. 01. 3154</p> <p>23. 01. 3154</p> <p>24. 01. 3154</p> <p>25. 01. 3154</p> <p>26. 01. 3154</p> <p>27. 01. 3154</p> <p>28. 01. 3154</p> <p>29. 01. 3154</p> <p>30. 01. 3154</p> <p>31. 01. 3154</p> <p>32. 01. 3154</p> <p>33. 01. 3154</p> <p>34. 01. 3154</p> <p>35. 01. 3154</p> <p>36. 01. 3154</p> <p>37. 01. 3154</p> <p>38. 01. 3154</p> <p>39. 01. 3154</p> <p>40. 01. 3154</p> <p>41. 01. 3154</p> <p>42. 01. 3154</p> <p>43. 01. 3154</p> <p>44. 01. 3154</p> <p>45. 01. 3154</p> <p>46. 01. 3154</p> <p>47. 01. 3154</p> <p>48. 01. 3154</p> <p>49. 01. 3154</p> <p>50. 01. 3154</p> <p>51. 01. 3154</p> <p>52. 01. 3154</p> <p>53. 01. 3154</p> <p>54. 01. 3154</p> <p>55. 01. 3154</p> <p>56. 01. 3154</p> <p>57. 01. 3154</p> <p>58. 01. 3154</p> <p>59. 01. 3154</p> <p>60. 01. 3154</p> <p>61. 01. 3154</p> <p>62. 01. 3154</p> <p>63. 01. 3154</p> <p>64. 01. 3154</p> <p>65. 01. 3154</p> <p>66. 01. 3154</p> <p>67. 01. 3154</p> <p>68. 01. 3154</p> <p>69. 01. 3154</p> <p>70. 01. 3154</p> <p>71. 01. 3154</p> <p>72. 01. 3154</p> <p>73. 01. 3154</p> <p>74. 01. 3154</p> <p>75. 01. 3154</p> <p>76. 01. 3154</p> <p>77. 01. 3154</p> <p>78. 01. 3154</p> <p>79. 01. 3154</p> <p>80. 01. 3154</p> <p>81. 01. 3154</p> <p>82. 01. 3154</p> <p>83. 01. 3154</p> <p>84. 01. 3154</p> <p>85. 01. 3154</p> <p>86. 01. 3154</p> <p>87. 01. 3154</p> <p>88. 01. 3154</p> <p>89. 01. 3154</p> <p>90. 01. 3154</p> <p>91. 01. 3154</p> <p>92. 01. 3154</p> <p>93. 01. 3154</p> <p>94. 01. 3154</p> <p>95. 01. 3154</p> <p>96. 01. 3154</p> <p>97. 01. 3154</p> <p>98. 01. 3154</p> <p>99. 01. 3154</p> <p>100. 01. 3154</p>		<p>SHARP EDGES</p> <p>INDENTS</p> <p>ITEMS ARE TO BE IDENTIFIED BY INDENTED THUS</p> <p>INDENT</p>	<p>THIS DRAWING AND ANY INFORMATION OR DESCRIBING MATTER SET OUT HEREON ARE THE CONFIDENTIAL AND COPYRIGHT PROPERTY OF METRO-CAMMELL LTD AND MUST NOT BE DISCLOSED, LOANED, COPIED OR USED FOR MANUFACTURING, TENDERING OR FOR ANY OTHER PURPOSE WITHOUT THEIR WRITTEN PERMISSION</p> <p>© METRO-CAMMELL LTD 1984</p>	<p>CONTRACTS TO WHICH THIS DRG IS APPLICABLE</p> <p>1980. TBS. STOCK</p> <p>NO. 3154</p> <p>NO. 3165</p> <p>A. & C. T. R. Ltd.</p> <p>LUL No. 65833</p>	<p>METRO-CAMMELL LTD. BIRMINGHAM, ENGLAND.</p> <p>SCALE 1:5</p> <p>TITLE ARRANGEMENT OF BOGIE</p> <p>DRAWING NUMBER 11. 01. 3154</p> <p>05</p> <p>NO. OF PRINTS REQUIRED</p>	<p>APPROVED</p> <p>C. ENGINEER</p> <p>ENGINEER</p> <p>ISSUE</p> <p>U.S.M.</p> <p>RE</p>
--	--	--	---	---	--	---

NOTES:-

- Axle To LT SPECIFICATIONS RME TM (OR LATEST ISSUE). Axle JOURNALS & WHEEL SEATS TO BE PHOSPHORIZED WITHIN THE LIMITS SPECIFIED.
- NUTS AND BOLTS TO BE GALV.
ROLLED TO THE REQUIREMENTS OF LT.

772 126 489 1555
~~TRACTION SPRING MECHANISM~~ NE SWAYBAR MOUNTING

SURFACE FINISHES OF WHEEL SEATS, GEAR SEATS, BEARING SEATS & STRESS RELIEVING GROOVES TO BE 1.375 MICRO IN. OR B.Y.M. GEAR SPAT TO F.C. GROUND (E.E.C. REQUIREMENT)
MIDDLE OF AXLE & WHEEL BORE TO BE NOT WORSE THAN 3.2 MIC.

[illegible]

NOTES

1. OIL INJECTION HOLE :- ONE HOLE (2 Dia) DRILLED THROUGH SPOTFACE 22 DIA TO CLEAN UP, CENTER DIA 15 DIA (SMOOTH FINISH - 113 PT) \times 25 DEEP (FULL DIA), TAP $\frac{9}{16}$ BSP \times 20 DEEP (FULL THRU), CLEAN HOLES & FIT $\frac{9}{16}$ BSP PLUG.
2. NOISE DAMPENING RINGS :- THREE SPRINGS IN 3 POSITIONS & ENDS WELDED, CARE MUST BE TAKEN THAT THE RINGS ARE NOT WELDED TO THE WHEELS & THAT IT DOES NOT FIT TOO TIGHTLY IN THE GROOVE SO THAT THE RINGS PREVENT THE OWN NATURAL VIBRATION PERIODICITY.
3. THE DRUMMING SHOULD FINISHED SURFACE ALL SURFACES TO BE MACHINED.
4. MOUNTING ON WHEELS & AXLES TO BE TO I.T DESIGN S233D
5. OTHER REQUIREMENTS TO BE IN ACCORDANCE WITH I.T OVERALL SPECIFICATION.

CONTRACT HO 2154	ALYF NOS 15250 TO 15365 INCL	WINKEL NOS 46106 TO 46127 INCL
---------------------	------------------------------------	--------------------------------------

THIS DRAWING MAY NOT BE CURRENT
AND SUBJECT TO AMENDMENT,
THEREFORE DO NOT PROCURE OR
MANUFACTURE ANY PART THEREOF
WITHOUT FIRST SEEKING VERIFICATION
FROM THE RSE - ERM BEFORE USE.

FROM THE ROE LITERATURE BEFORE 1900

01 02 03 04 05 06 07 08 09 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 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200		201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300		301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400		401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500		501 502 503 504 505 506 507 508 509 510 511 512 513 51	
---	--	--	--	--	--	--	--	--	--	---	--

30x