

ANNEX I - MORRIS CRANE DRAWINGS 1992

MECHANICAL DRAWINGS

<u>Title</u>	<u>Morris Drg No.</u>
Crane Arrangement	5752-0330
Long Travel Drive Arrangement	P139910
Bridge Lubrication	G000401
Long Travel Limit Switch Arrgt.	J005850
Cross Traverse Drive Arrgt.	P139890
Trolley Lubrication Arrgt.	G000400
Cross Traverse Limit Switch Layout	P220770
Trolley Arrangement	J005280
Hoist Bottom Block Arrgt.	P214660
Down Shop Lead Feed Arrgt.	J005130
Trolley Cross Bridge Feed Arrgt.	J005090
Compensating	
Sheave and Load Cell Arrgt.	P139960
Key Plan to Limit Switches	G000404
Rope Retaining Limit Switch Arrgt.	J005070

ELECTRICAL DRAWINGS

Panel Layout	J006220
Cubicle and Terminal Layouts	P308280
Interconnection Wiring Diagram (Crane A)	J006160
Interconnection Wiring Diagram (Crane B)	J006180
Operators Remote Control Desk Wiring Diagram Crane "A"	P308250
Operators Remote Control Desk Wiring Diagram Crane "B"	P308260
Site Wiring Armchair Control Unit Crane "B"	J006170
Site Wiring Armchair Control Unit Crane "A"	J006150
Main Protection Circuit Diagram Sht 1	J006230
Hoist C.T. Circuit Sht 2	J006240
L.T. Circuit Sht 3	J006250
Relay Circuit	J006260



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PROJECTION



INDIVIDUAL LUBRICATION POINTS

- GRAB PIVOT PINS ETC.
- BOTTOM BLOCK SHEAVE BEARING
- CROSS HEAD BEARING.
- HOIST MOTOR
- CT. MOTORS
- HOIST DISC BRAKE
- REELING DRUM DRIVE SHAFT BEARINGS
- CHAIN DRIVES.

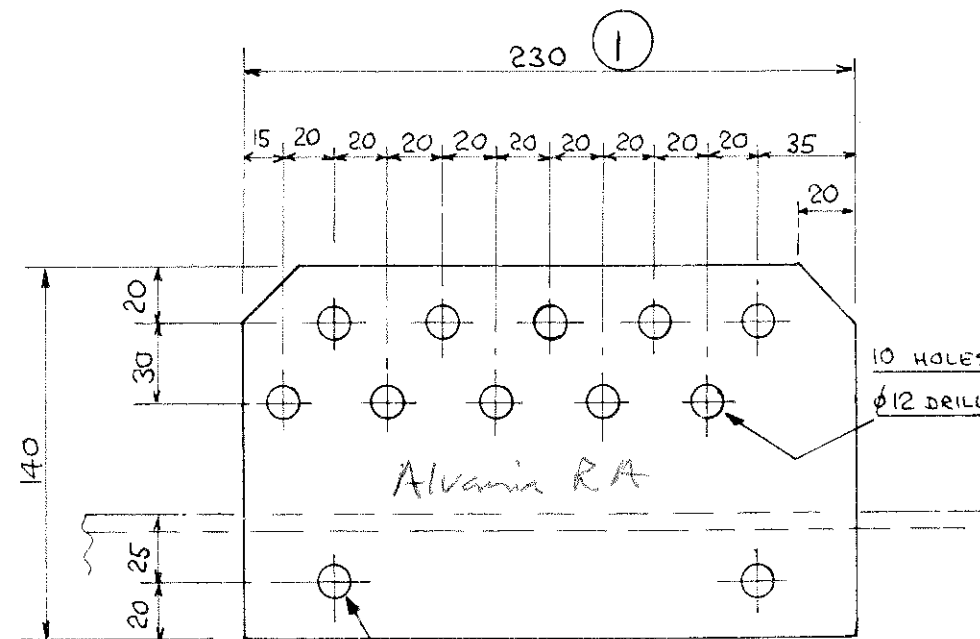
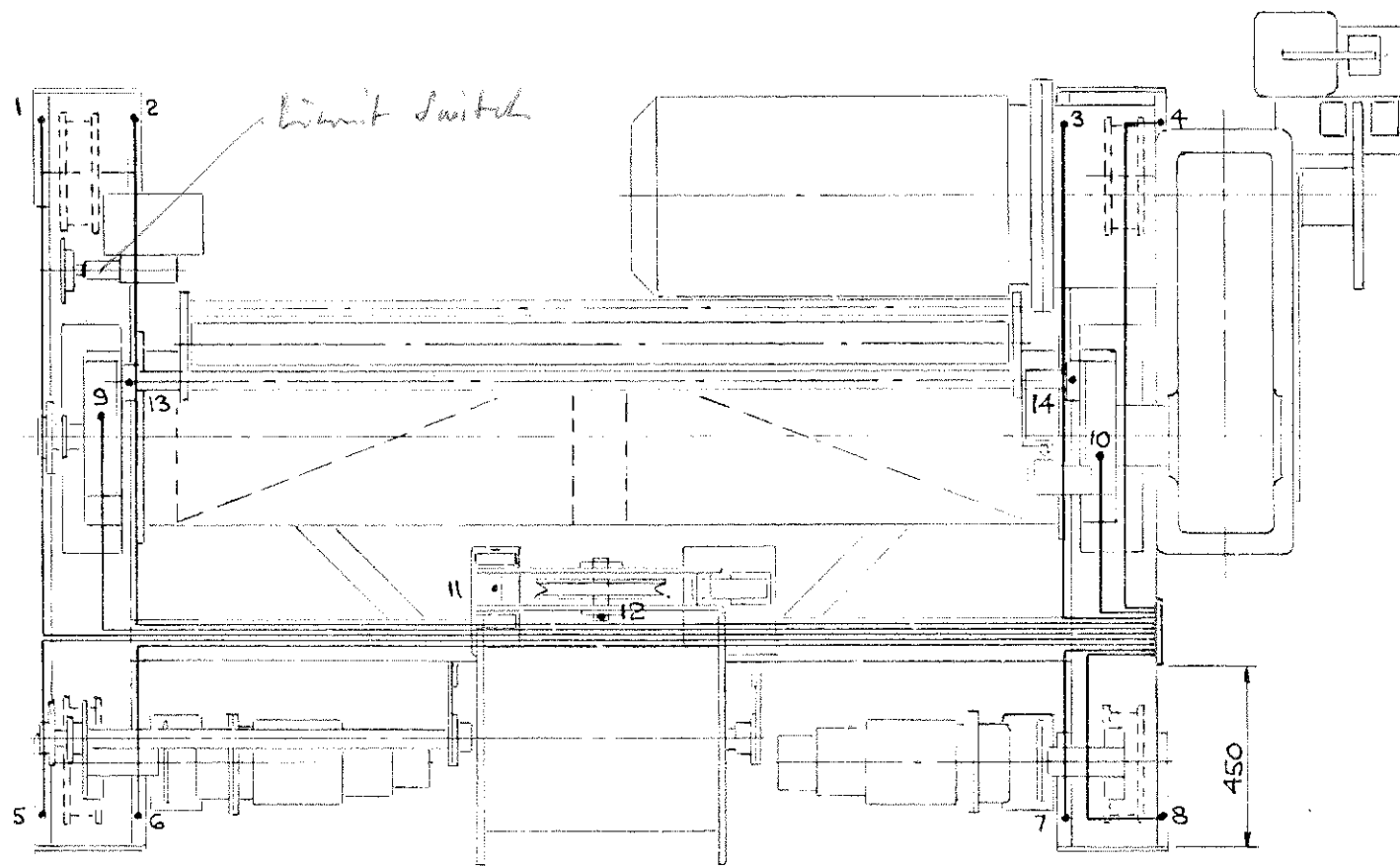
ARRGT. OF PIPING IS DIAGRAMMATIC ONLY.

WORKS TO MODIFY RUN OF PIPING WHERE NECESSARY TO CLEAR ANY POINTS OF OBSTRUCTION.

PIPING TO BE RUN IN A NEAT & WORKMANLIKE MANNER.

WHERE POSSIBLE ALL PIPEWORK TO BE RUN ON VERTICAL FACES OR BE PROTECTED FROM DAMAGE.

WHERE PIPES ARE RUN THROUGH A WEB DRILL 9/16" HOLE AND FIT A RUBBER GROMMET.



OILING POINTS.

- 11 AND 12 COMPENSATING GEAR
- 13 AND 14 ROPE RETAINING ROLLER PIVOT.

GROUPED LUBRICATION POINTS

- 1 TO 8 AXLE BEARINGS. Tram wheel
- 9 AND 10 DRUM PEDESTAL BEARINGS.

THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

DO NOT SCALE

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED		SCALE	NAME	DATE	TITLE
FOR FABRICATION, UNLESS OTHERWISE STATED: -	FOR MACHINING, UNLESS OTHERWISE STATED: -	MATERIAL	DRAWN	M. GAMBLE	3-11-89
	SURFACE FINISH: 6.3µm Ra (N9)	C.62533	CHECKED		
LINEAR DIMENSIONS:	LINEAR DIMENSIONS:	WEIGHT	APPROVED		3-11-89
XX.XX ±0.5mm	XX.XX ±0.25mm		CUSTOMER APPROVED	YES	NO
XX.X ±1.0mm	XX.X ±0.5mm	FINISH			
XX ±3.0mm	XX ±1.0mm				
ANGLES: ±1°	FILLET RADIUS: 1.6mm MAX.				
	SQUARENESS: 1 IN 500				
	PARALLELISM: 1 IN 500				
	RUNOUT: 0.1mm				
	ANGLES: ±1°				

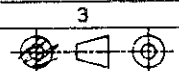
MATERIAL		NAME	DATE	TITLE
C.62533		M. GAMBLE	3-11-89	6.3 TONNE GRABBING CRANE.
WEIGHT				CRAB LUBRICATION.
FINISH				
DAVY MORRIS		FROM	ORDER NUMBER	SIZE
ASSEMBLY DRG.			503251+3/57	G
			DRAWING NUMBER	REV
			000400	

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. No.

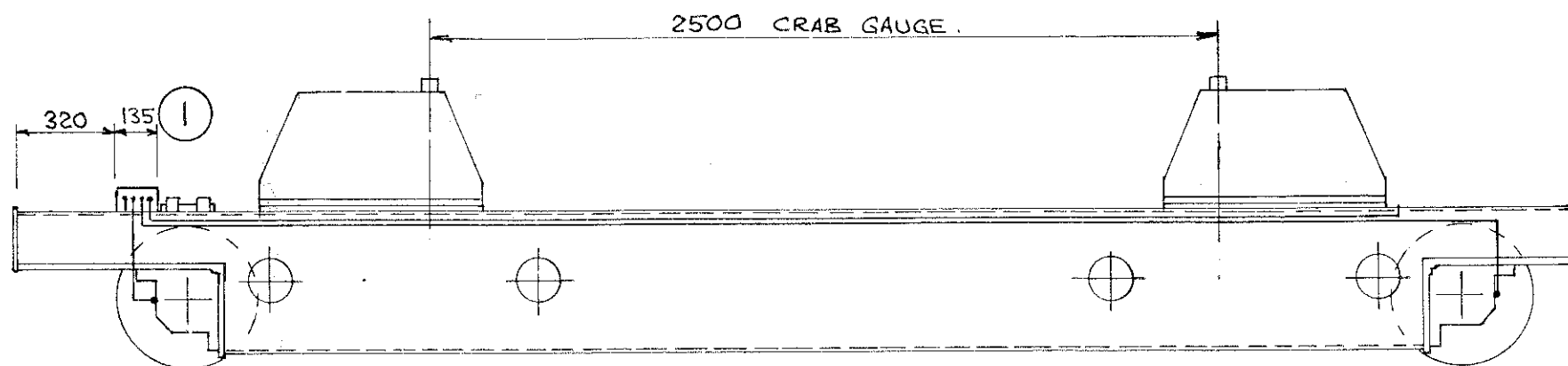
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PROJECTION

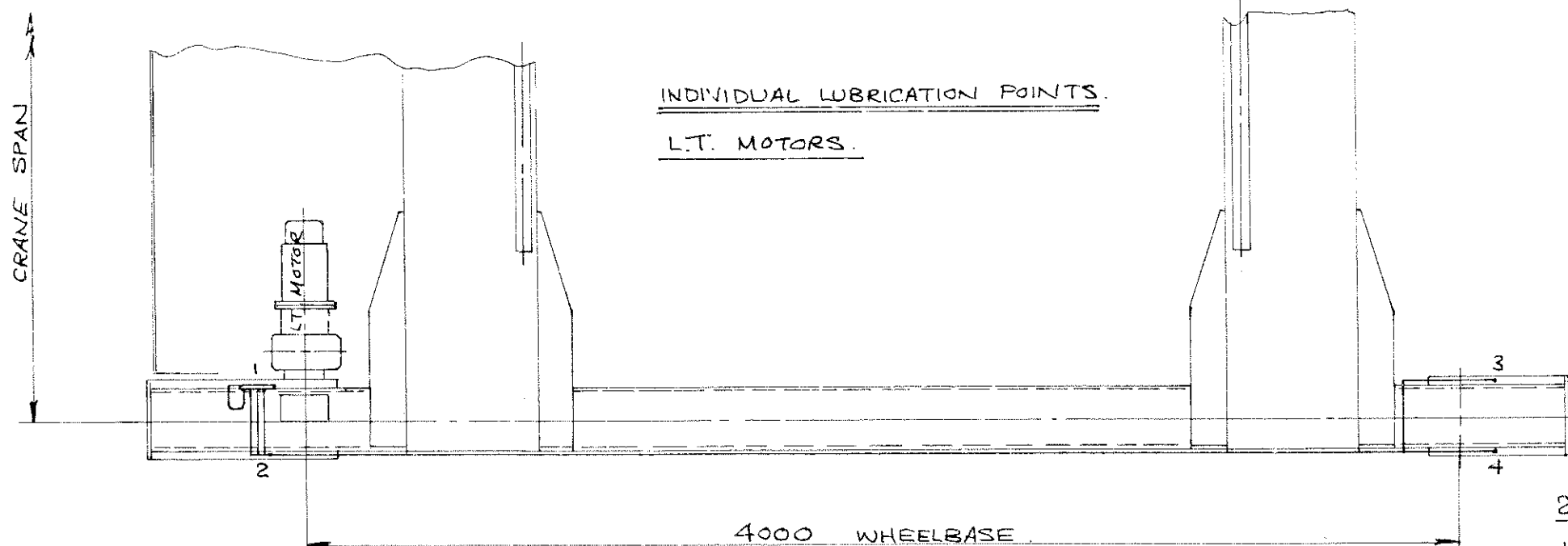


ARRGT. OF PIPING IS DIAGRAMMATIC ONLY.
WORKS TO MODIFY RUN OF PIPING WHERE NECESSARY
TO CLEAR ANY POINTS OF OBSTRUCTION.
PIPING TO BE RUN IN A NEAT & WORKMANLIKE MANNER.
WHERE POSSIBLE ALL PIPEWORK TO BE RUN ON VERTICAL
FACES OR BE PROTECTED FROM DAMAGE.
WHERE PIPES ARE RUN THROUGH A WEB DRILL
3/16" HOLE AND FIT A RUBBER GROMMET.

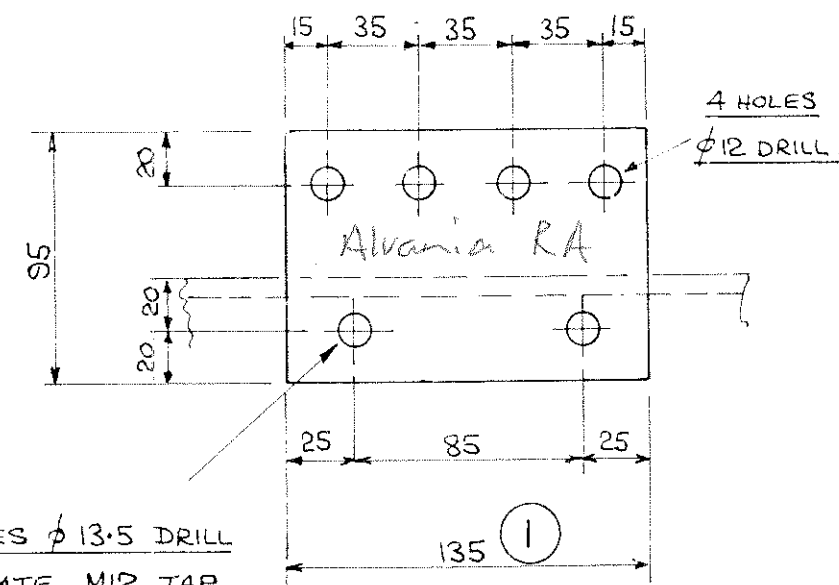


GROUPED LUBRICATION POINTS
1 TO 4 AXLE BEARINGS.

ONE LAYOUT REQUIRED AS DRAWN.
ONE LAYOUT REQUIRED OPP. HAND.



INDIVIDUAL LUBRICATION POINTS.
L.T. MOTORS.



2 HOLES ϕ 13.5 DRILL
IN PLATE M12 TAP
IN CRAB FRAME.

THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

DO NOT SCALE

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED		SCALE	NAME	DATE	TITLE
FOR FABRICATION, UNLESS OTHERWISE STATED: -	FOR MACHINING, UNLESS OTHERWISE STATED: -	MATERIAL	DRAWN	7-11-89	G.3 TONNE GRABBING CRANE.
OTHERWISE STATED: -	SURFACE FINISH: 6.3 μ Ra (N9)	C.6253G	CHECKED		BRIDGE LUBRICATION.
LINEAR DIMENSIONS:	LINEAR DIMENSIONS:	WEIGHT	APPROVED	7-11-89	
XX.XX \pm 0.5mm	XX.XX \pm 0.25mm		CUSTOMER APPROVED	YES NO	
XX.X \pm 1.0mm	XX.X \pm 0.5mm	FINISH			ORDER NUMBER
XX \pm 3.0mm	XX \pm 1.0mm				SIZE
ANGLES: \pm 1°	ANGLES: \pm 1°				DRAWING NUMBER
					REV

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. No.

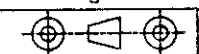


FROM ASSEMBLY ORG. 503251+3/57 G 000401

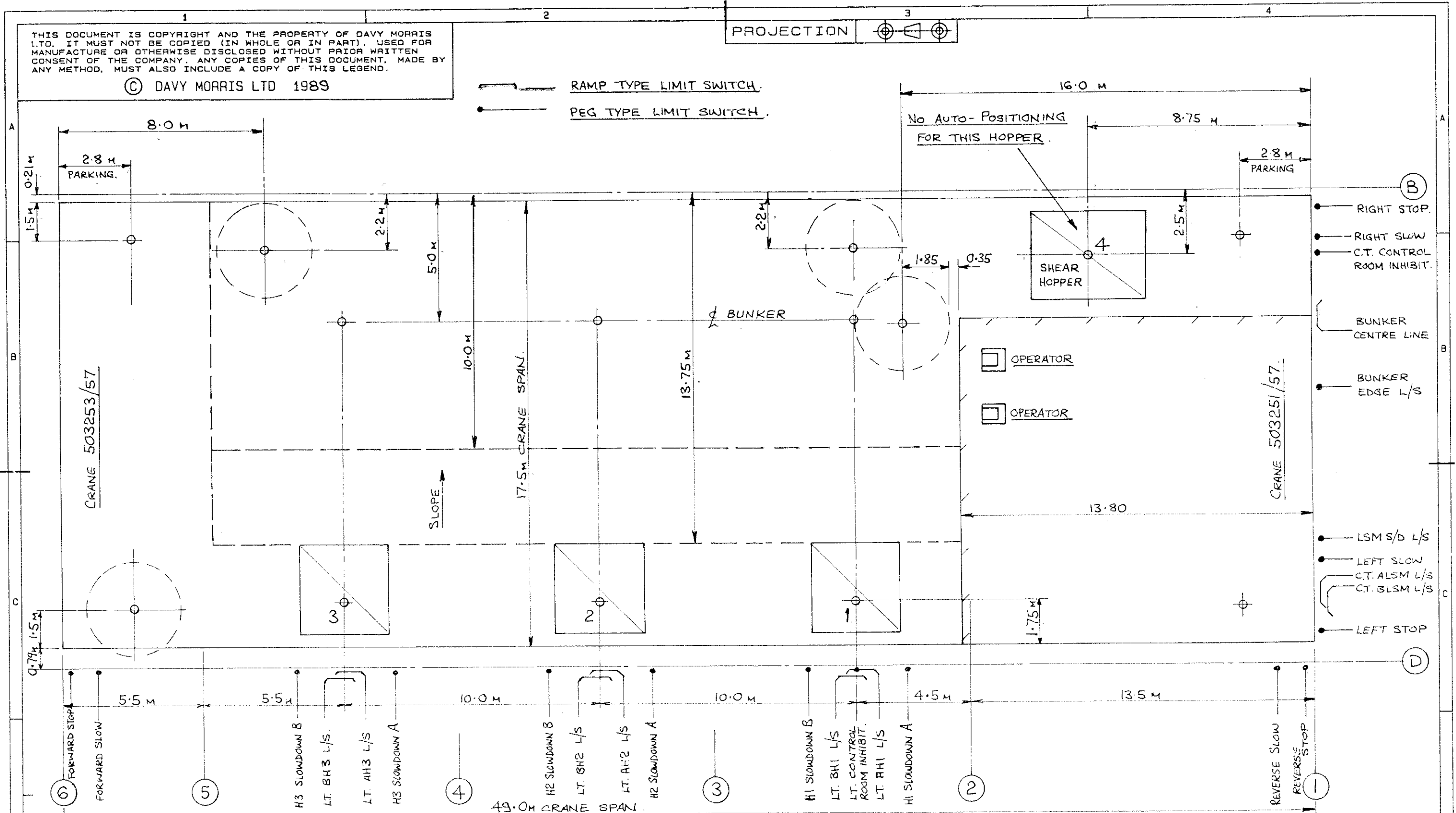
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PROJECTION



RAMP TYPE LIMIT SWITCH.
 PEG TYPE LIMIT SWITCH.



THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

DO NOT SCALE

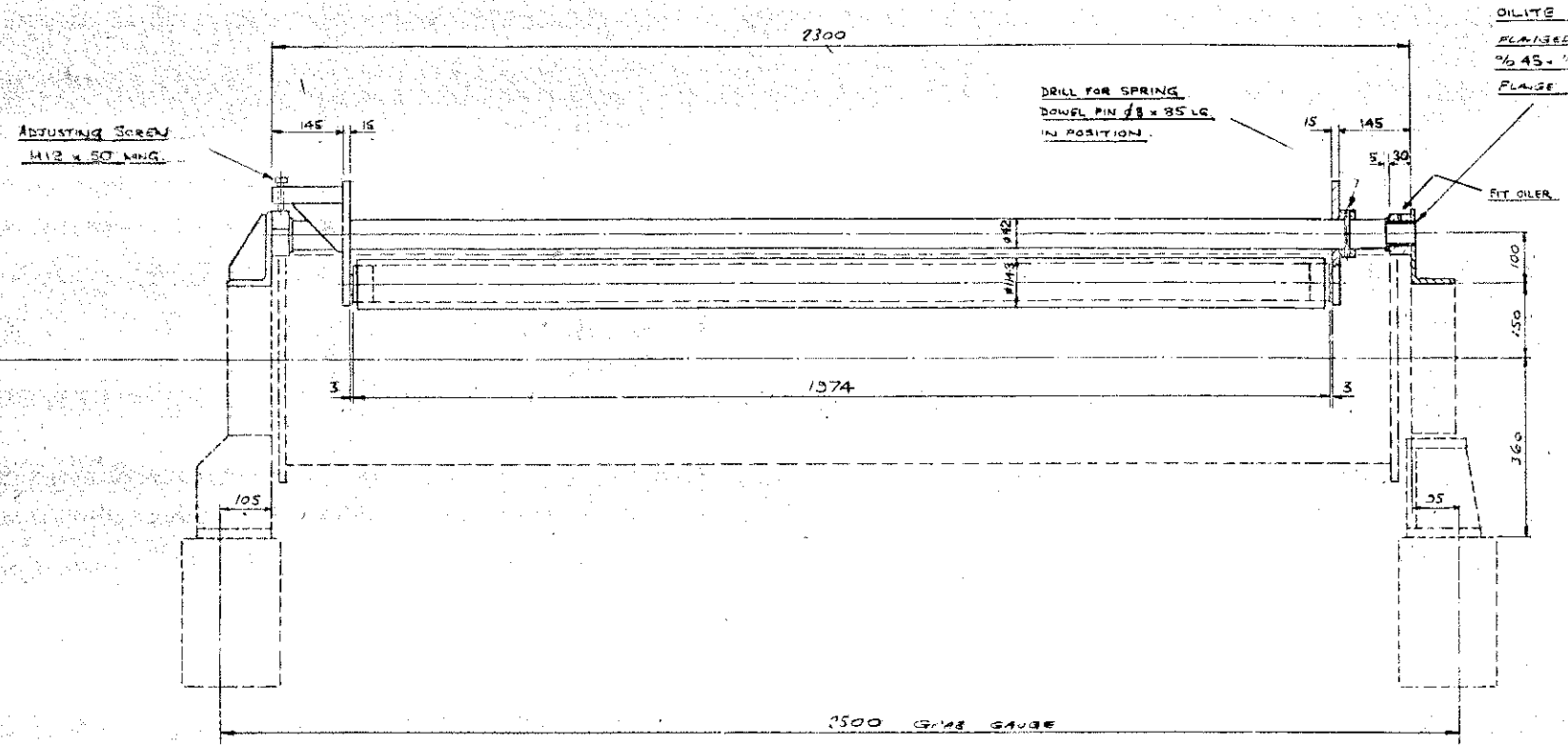
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED

FOR FABRICATION, UNLESS OTHERWISE STATED: -	FOR MACHINING, UNLESS OTHERWISE STATED: -	FILLET RADIUS: 1.6mm MAX.
LINEAR DIMENSIONS:	LINEAR DIMENSIONS:	SQUARENESS: 1 IN 500
XX.XX ±0.5mm	XX.XX ±0.25mm	PARALLELISM: 1 IN 500
XX.X ±1.0mm	XX.X ±0.5mm	RUNOUT: 0.1mm
XX ±3.0mm	XX ±1.0mm	ANGLES: ±1°
ANGLES: ±1°		

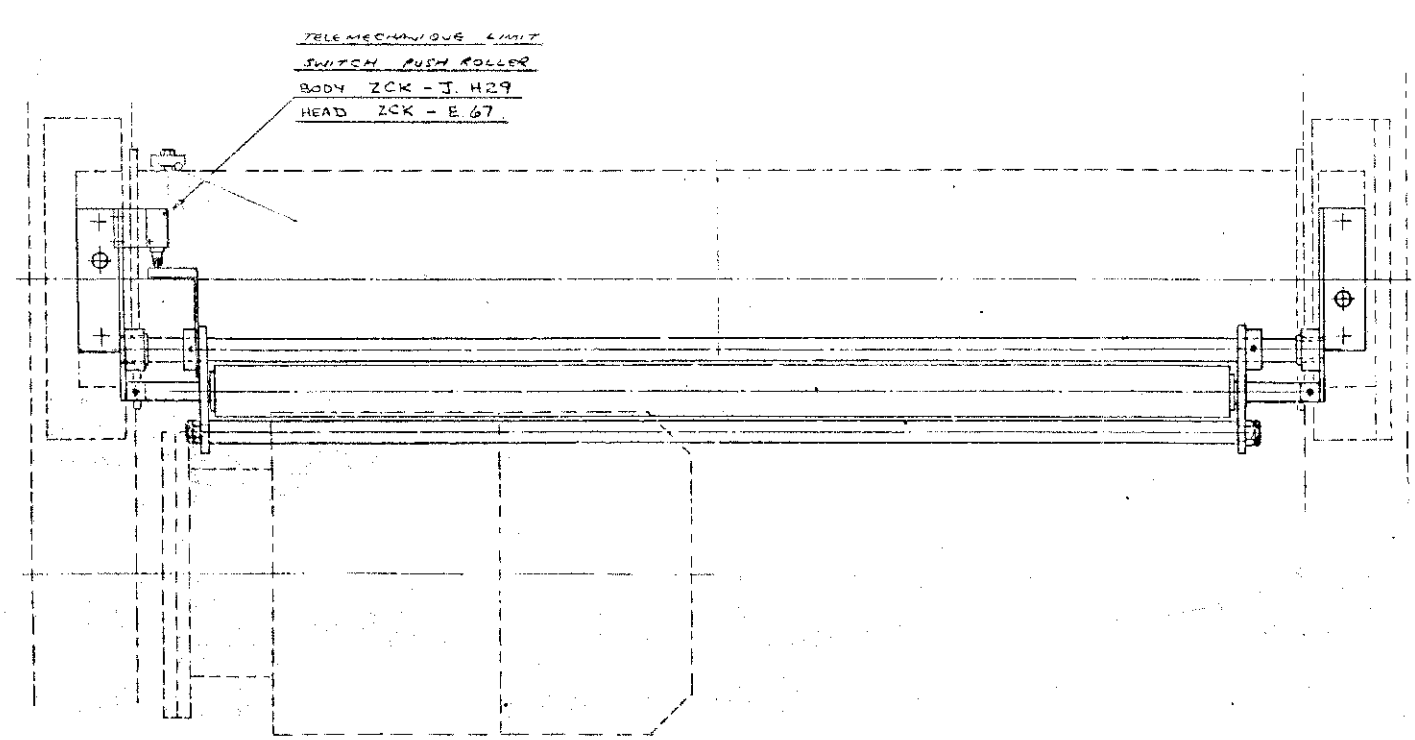
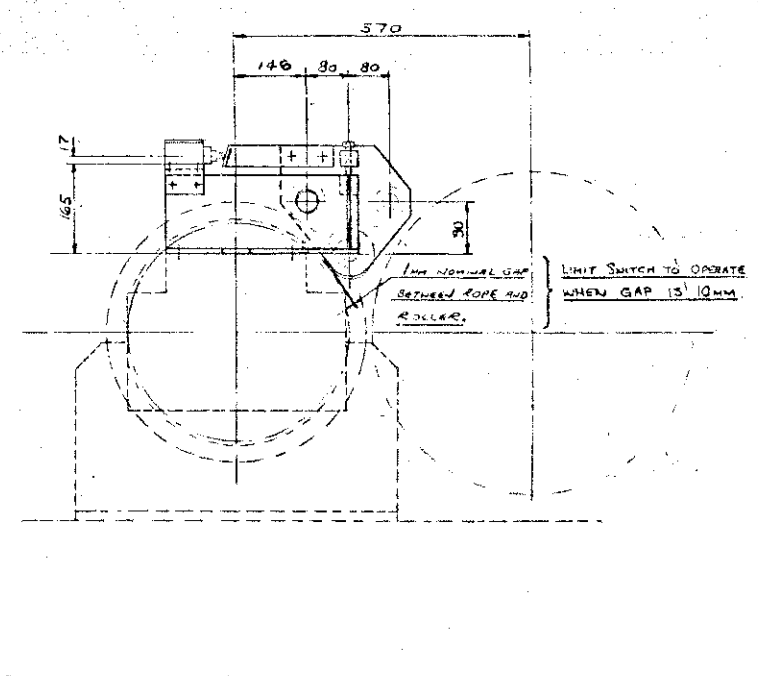
SCALE	1:100	NAME	M. GAMBLE	DATE	16-11-89
MATERIAL		DRAWN		CHECKED	
WEIGHT		APPROVED	<i>[Signature]</i>	23.11.89	
FINISH		CUSTOMER APPROVED	YES	NO	
		FROM		ORDER NUMBER	50325143/57
		ASSEMBLY DRG.		SIZE	G
				DRAWING NUMBER	0000404
				REV	

TITLE	6.3 TONNE GRABBING CRANES	
	KEY PLAN TO LIMIT SWITCHES.	
ORDER NUMBER	50325143/57	SIZE
DRAWING NUMBER	0000404	REV

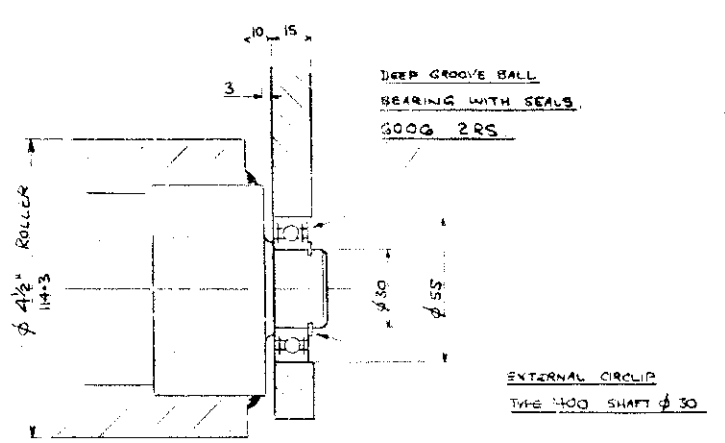
REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. No.
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OILITE AMF 3545
 FINISHED BUSH
 $\frac{1}{16}$ 45 - $\frac{1}{16}$ 35 x 45 LG
 FLANGE ϕ 55 x 5 THK



1. ASSEMBLE ROLLER AND SIDEPLATE WITH WEIGHT BAR AND BOLTS THAT ROLLER IS FREE TO TURN
2. FIT SIDE BRACKET TO ROLLER ASSEMBLY AND FIX TO CRAN BEAM AT 5MM TO SUIT, ENSURE THAT WHOLE ASSEMBLY IS FREE TO PIVOT
3. POSITION LIMIT SWITCH TO DETECT ROPE LEAVING OUT OF GROOVE. ENSURE MOVEMENT OF OPERATING ARM DOES NOT EXCEED MAXIMUM STROKE OF LIMIT SWITCH.



ROLLER END DETAIL

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED FOR FABRICATION UNLESS OTHERWISE STATED:		SCALE	1:1	NAME	DATE	TITLE
SURFACE FINISH: 6.3 μ Ra (N9)		MATERIAL	0.62520	DRAWN	11/11/88	5-24 GRIPPING CRANE
LINEAR DIMENSIONS: XX XX 10.5mm XX X 11.0mm XX 13.0mm ANGLES: 11°		HEIGHT	C2530	CHECKED		ARRANGEMENT OF ROPE RETAINING ROLLER AND DETECTION LIMIT SWITCH
FILLET RADIUS: 1.5mm MAX. SQUARENESS: 1 IN 500 PARALLELISM: 1 IN 500 RUNOUT: 0.1mm ANGLES: 11°		APPROVED				
		CUSTOMER APPROVED	YES	NO		
		FINISH	FRONT			ORDER NUMBER: 50352143/57
		DAVY MORRIS ASSEMBLY DRG				SIZE: J
						DRAWING NUMBER: 005070
						REV: A

DO NOT SCALE

DESIGN ALTD	M. GAMBLE	DATE	APPROVED	REF. No
REV	DESCRIPTION	DRAWN	DATE	APPROVED

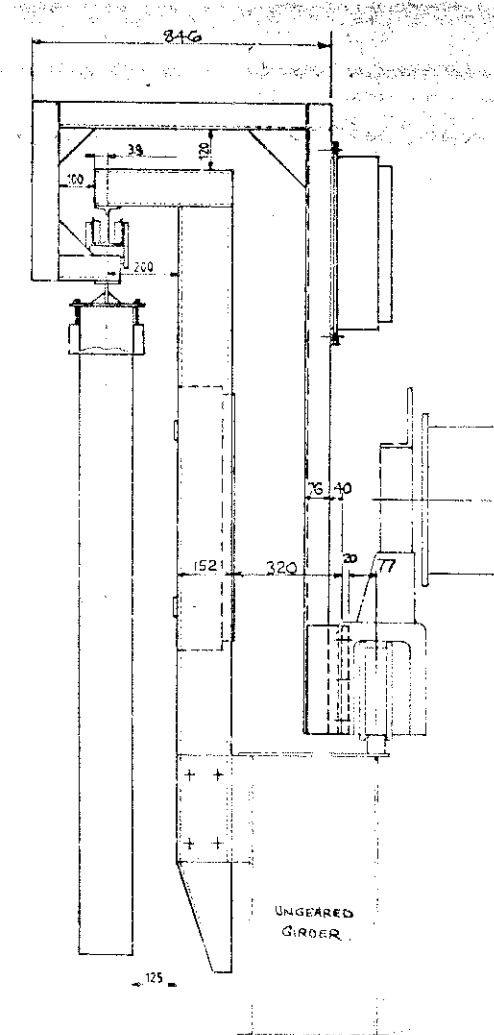
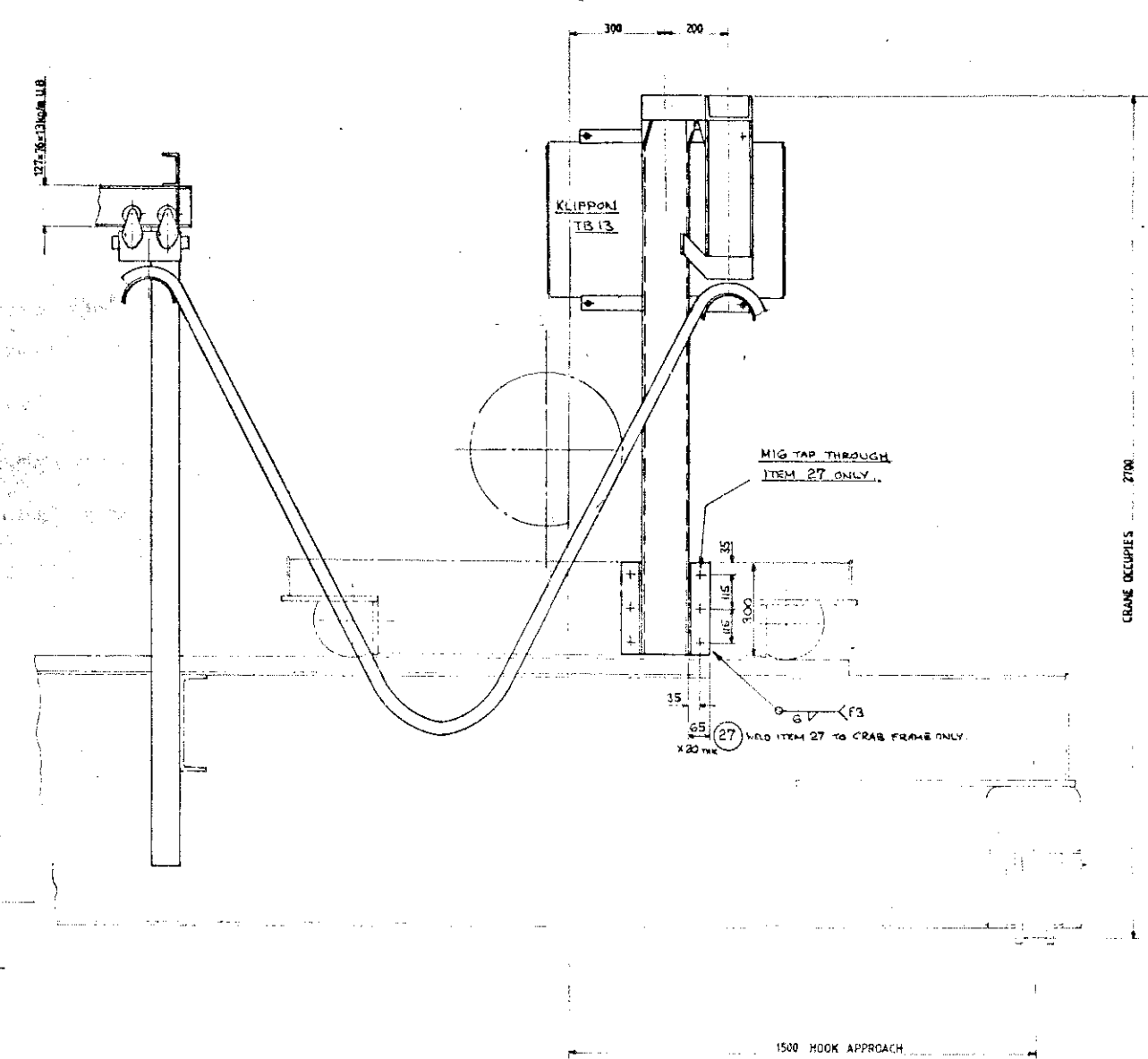
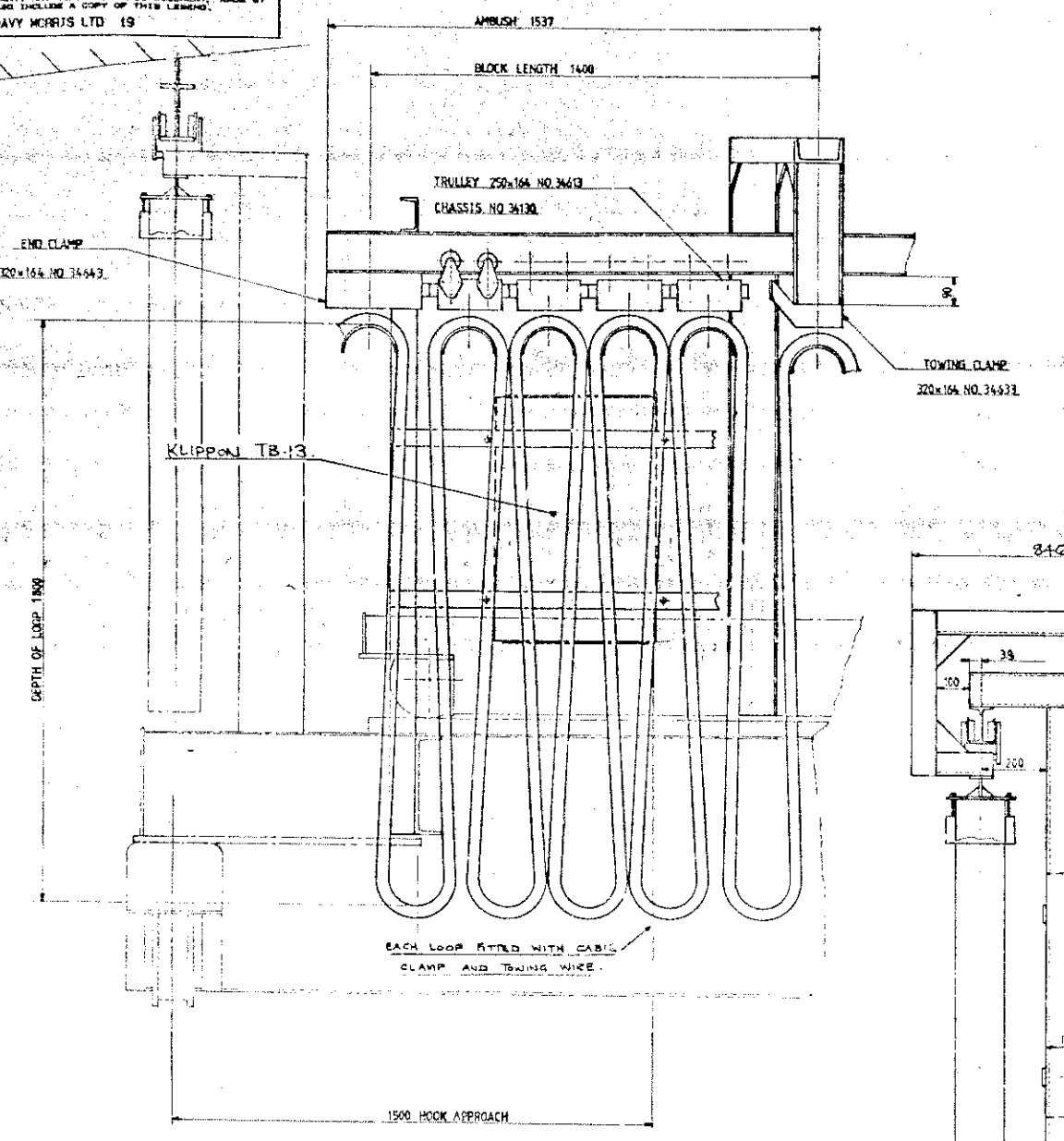
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PROJECTION

TRAVEL DISTANCE 14500



164

6x18	6x16	6x18	6x18	6x18
6x34	6x34	6x34	6x34	6x34
137x456	137x456	137x456	137x456	137x456
137x456	137x456	137x456	137x456	137x456

CABLE STACKING
FULL SIZE

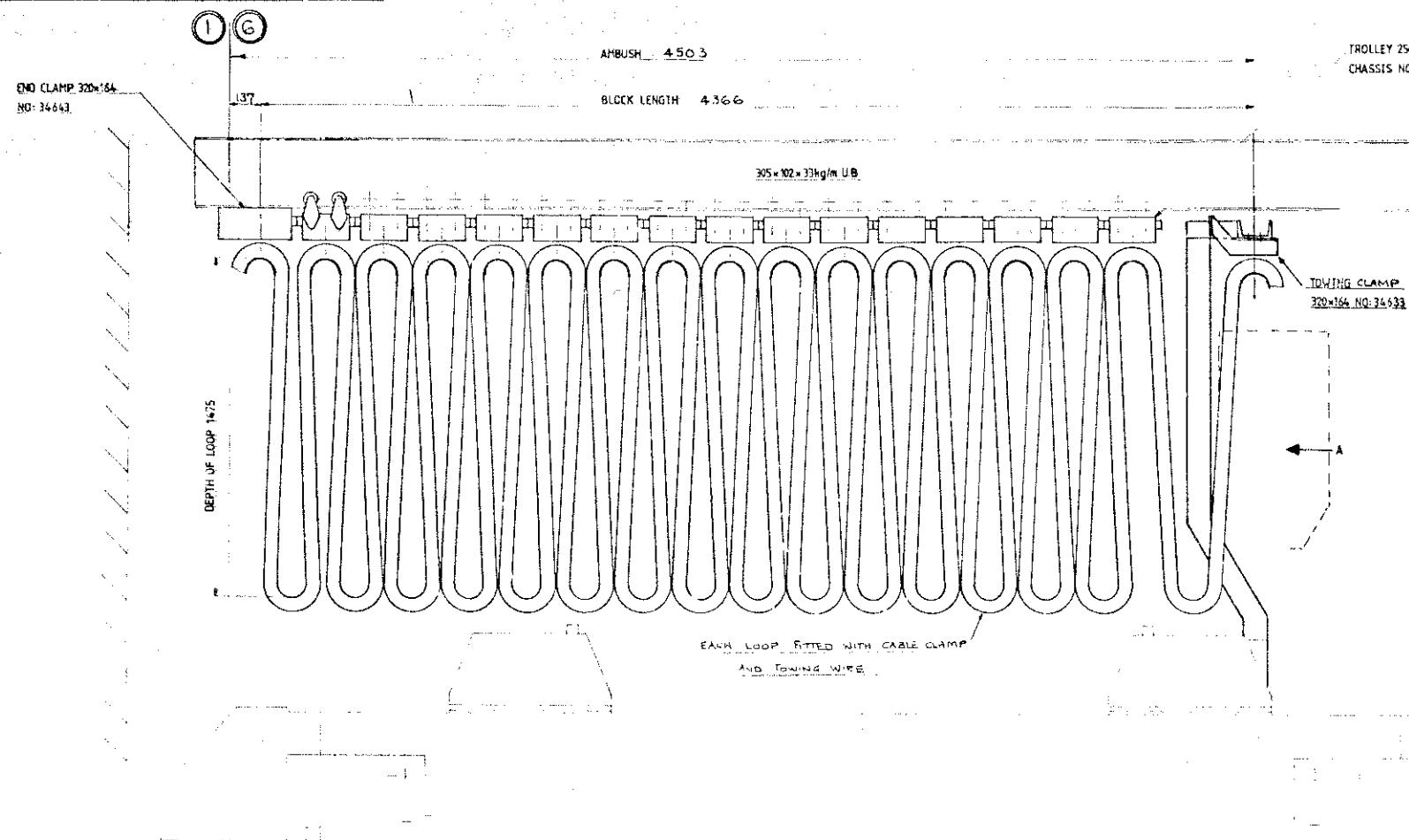
AS DRAWN 503251/57
OPPOSITE HAND 503253/57
FOR TRACK SEE DRG J.005080
FOR PUSHER BAR SEE DRG G.000094

B	NOTE ADDED RE CABLE CLAMP & TOWING WIRES	M GAMBLE			E3
A	BRIDGE AND CRAB TERMINAL BOXES KLIPPON TB13 ADDED TO DRG.	M GAMBLE	27/09/89		
REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. NO.

THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

DO NOT SCALE

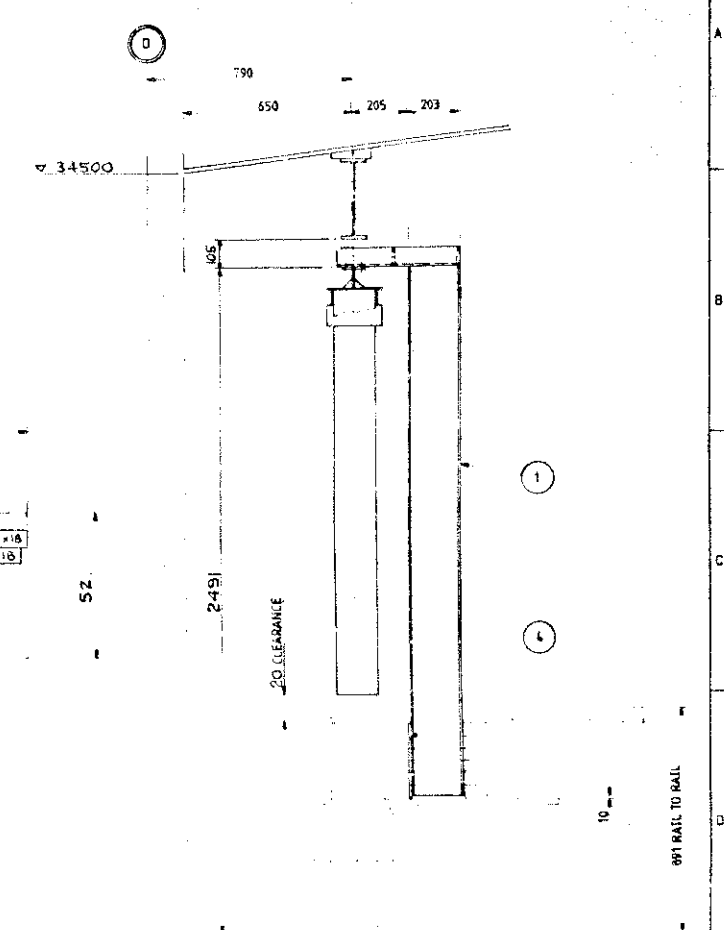
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED FOR FABRICATION UNLESS OTHERWISE STATED -	FOR MACHINING UNLESS OTHERWISE STATED - SURFACE FINISH 6.3 Ra (NS)	SCALE 1:75	NAME	DATE	TITLE
LINEAR DIMENSIONS: XX XX 10.0mm XX X 11.0mm XX 13.0mm ANGLES: 11°	LINEAR DIMENSIONS: FILLET RADIUS: 1.0mm MAX. SQUARENESS: 1 IN 500 PARALLELISM: 1 IN 500 RUNOUT: 0.1mm ANGLES: 11°	MATERIAL C 60 450 C 62 438	DRAWN AROSTER	72-10-88	TWO 63 TONNE REFUSE CRANES HO OUTY
		WEIGHT	CHECKED 4/2/88	10-9-89	CROSS BRIDGE FEED ARRANGEMENT
		FINISH	APPROVED	CUSTOMER APPROVED	YES NO
			FROM	ASSEMBLY DRG	ORDER NUMBER 503251/57
					SIZE J
					DRAWING NUMBER 005090
					REV B



TROLLEY 250x164 NO: 34613
CHASSIS NO: 34130

65x48	65x48	6x36	6x18	6x18
65x48	65x48	65x48	65x48	6x18
8x38	8x38	8x38	8x38	8x38
147x496	147x496	147x496		
147x496	147x496	147x496		

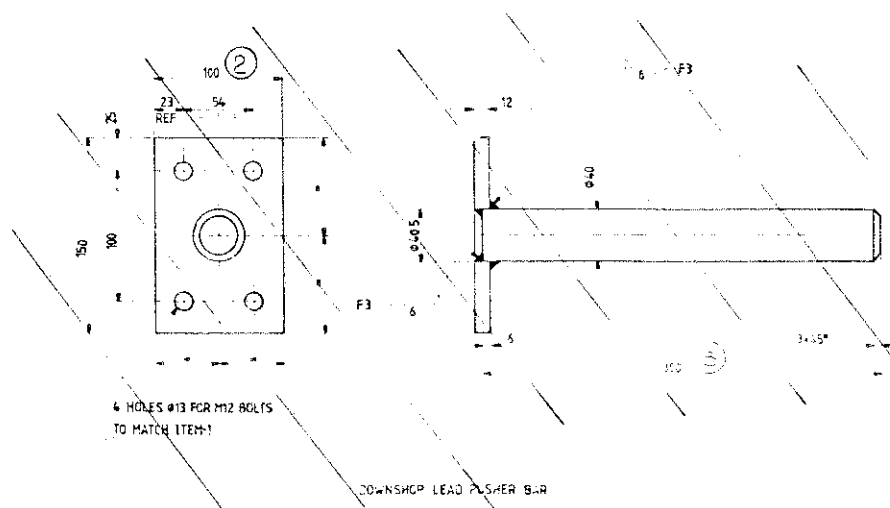
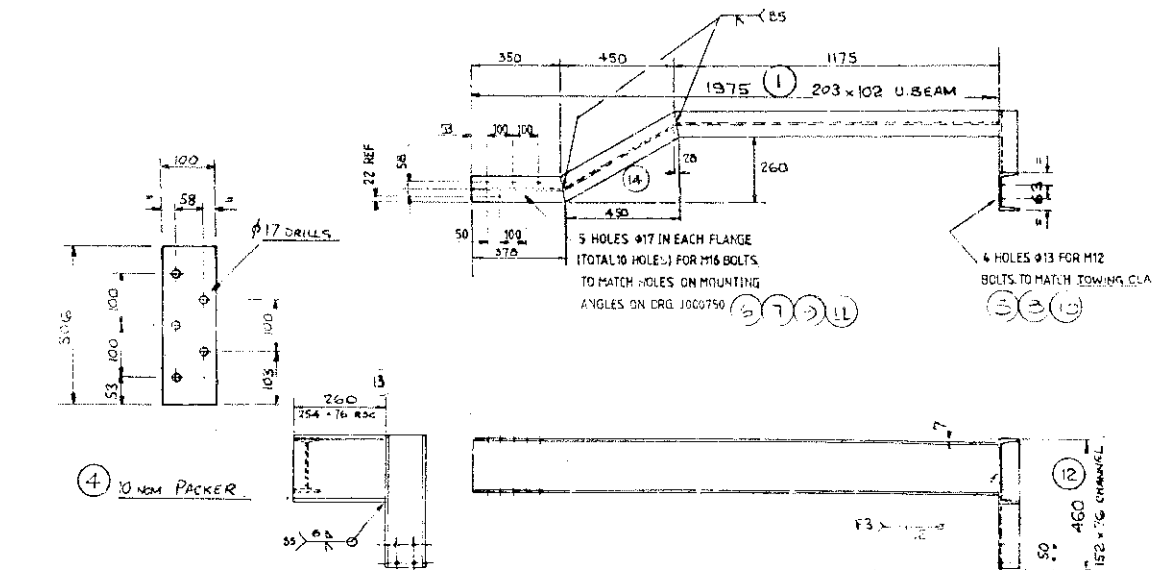
CABLE STACKING
FULL SIZE



VIEW ON ARROW A

2770 HOOK APPROACH

VIEW OF DOWNSHIP LEAD BUNCHING FOR CRANE 503253 AT COLUMN 1 END OF GANTRY.
NOTE: ASSY REQD. OPPOSITE HAND FOR CRANE 503251 AT COLUMN 6 END OF GANTRY



ONE TOWING ARM REQD. 1/5 DESIGN FOR 503253
ONE TOWING ARM REQD. OP. HAND FOR 503251

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. NO.
E	NOTES ADDED.	A. TARRY	10/1/89		
D	FINISH AND BLOCK LENGTH AMENDED. NOTE ADDED RE TOWING WIRES.	A. TARRY	10/1/89		A3/4 D 4
C	SAFETY AREA AMENDED TO CLERE HOIST BRACK.	A. TARRY	10/1/89		F4
B	TOWING ARM ITEM 1 SHORTENED.	M. GAMBLE	24/1/89		F4
A	TOWING TROLLEY ALTD TO TOWING CLAMP. TOWING ARM MODIFIED TO SUIT.	M. GAMBLE	5/0/89		

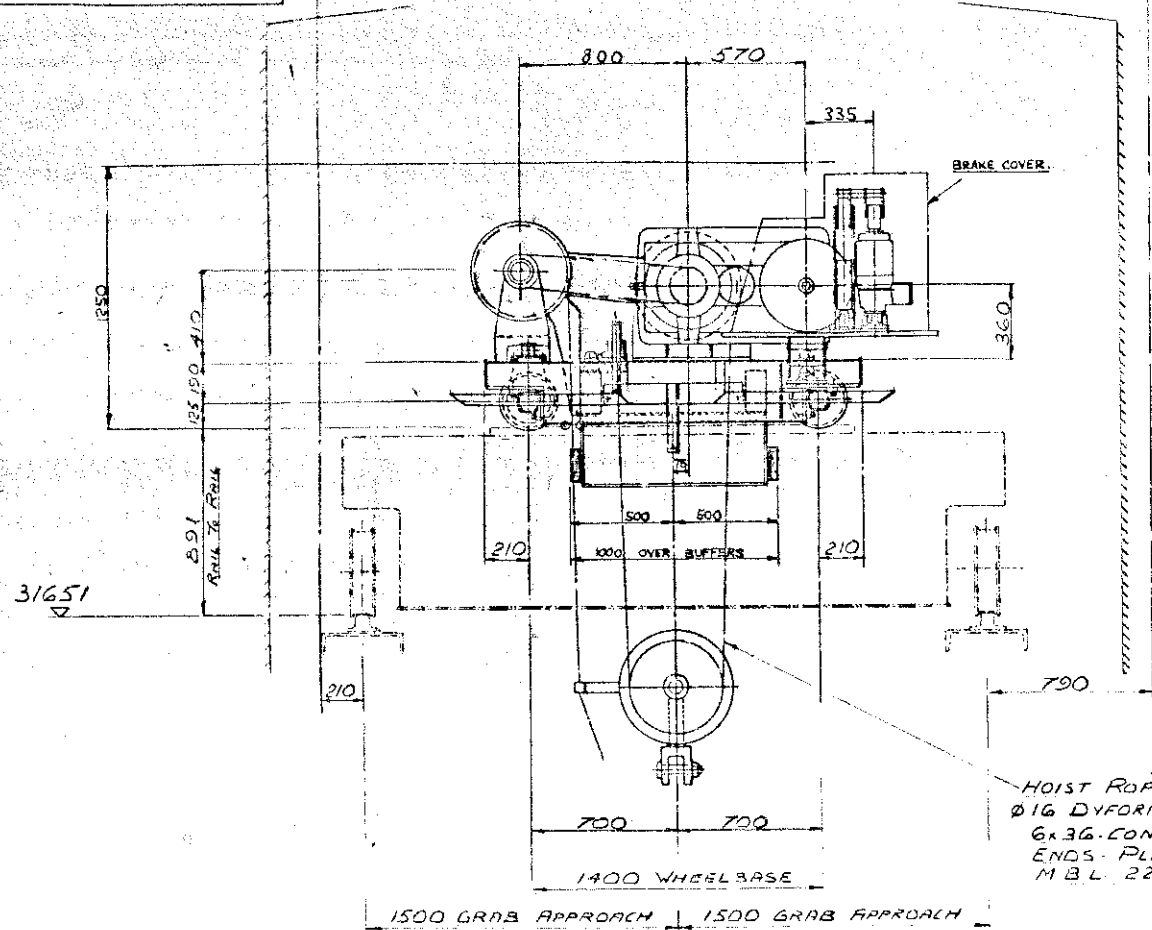
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FOR FABRICATION UNLESS OTHERWISE STATED:	FOR MACHINING UNLESS OTHERWISE STATED:	SURFACE FINISH: 5 Ra Pa 100	DRAWN	A. FOSTER	10/1/88
			CHECKED		20/7/89
			APPROVED		
			CUSTOMER APPROVED	YES	NO
LINEAR DIMENSIONS:	LINEAR DIMENSIONS	FILLET RADII	1.5mm MAX		
XX XX 10.0mm	XX XX 10.0mm	SQUARENESS	1 IN 500		
XX X 21.0mm	XX X 10.0mm	PARALLELISM	1 IN 500		
XX 13.0mm	XX 10.0mm	ROUND.	0.15		
ANGLES: 11'		ANGLES	11'		

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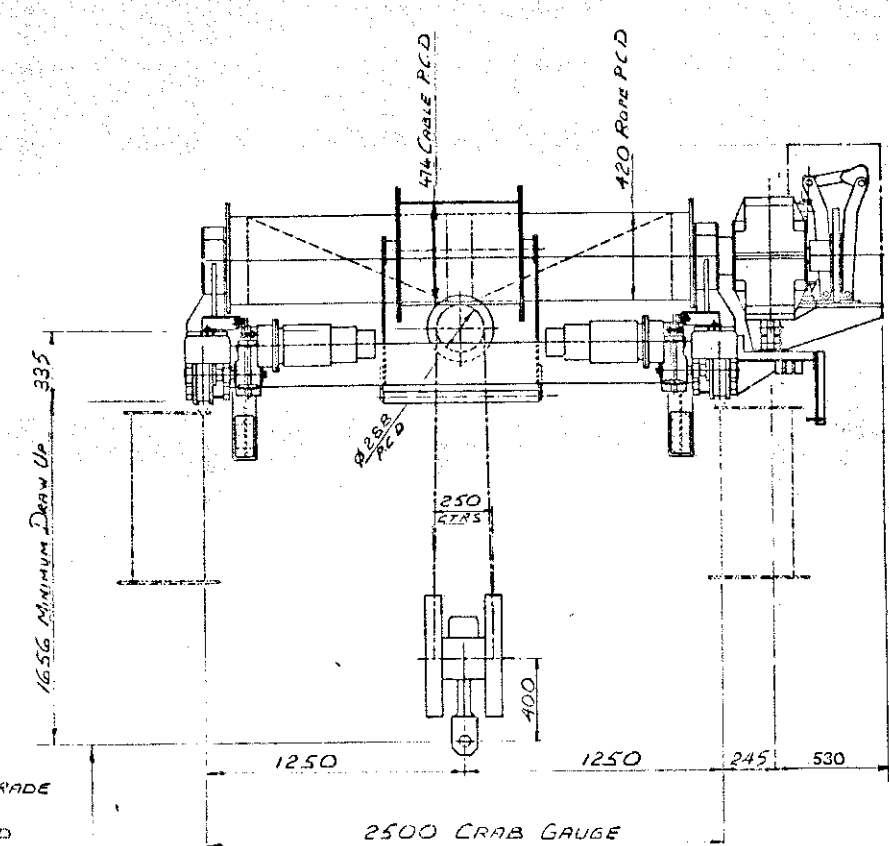
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PROJECTION



HOIST ROPES
 Ø16 DYFORM G 1960 GRADE
 6x36 CONSTRUCTION
 ENDS PLAIN & BOUND
 M.B.L. 221 T2

MAINTENANCE PLATFORMS FITTED BETWEEN
 GAUGE EACH SIDE OF TROLLEY.



HOIST MOTOR
 46 KW @ 1770 RPM
 FRAME DW 280 SD

D-P 1/4" OIL LIMIT SWITCH
 REF SVT 25 BBL
 RATIO 36:1
 MAX REVS 31

HOIST BRAKE
 BUBENZER DISC BRAKE RIK SB14/1
 ACTUATOR REF EA 5016-DISC Ø450

HOIST GEARBOX
 SANTISALO 3TC 250 E
 RATIO 28.535

COMPENSATING SHEAVE
 FITTED WITH -PIN B' SHEAR
 BEAM LOADCELL TYPE PM20

ROPE RETAINING ROLLER
 WITH TELEMECHANIQUE
 LIMIT SWITCH

2 STEPHAN GEAR UNITS
 REF ZFS0-100
 RATIO 34.85:1
 MOTOR 0.75 KW FRAME DW100
 1770 REVS

SPECIMAS CHAIN DRIVEN CABLE REEL DRUM
 REF TA 45N 0305 600 4/10
 SHAFT EXTENDED AS-G 0000 G2

FULL LOAD SPEED
 HOIST SPEEDS - FAST 40.0 MPM SLOW 6.0 MPM
 CROSS TRANSVERSE - FAST 40.0 MPM SLOW 6.0 MPM

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. NO.
C	NOTE INDICATING MAINTENANCE PLATFORMS ADDED.	M. GAMBLE	29/1/89	M. GAMBLE	
B	CT. LIMIT KNOCK-OFF PEG AND RAMPS ADDED.	M. GAMBLE	29/1/89	M. GAMBLE	
A	CABLE REELING DRUM ALTERED CRAB BUFFERS ALTERED HOIST BRAKE TUNED SOUND	M. GAMBLE	29/1/89	M. GAMBLE	

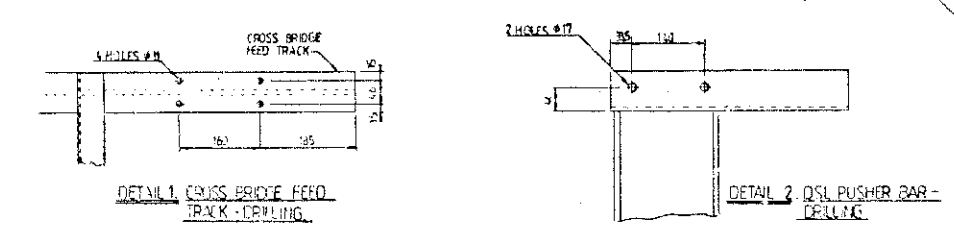
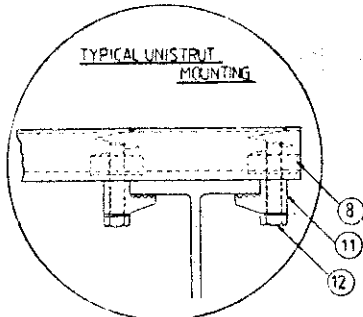
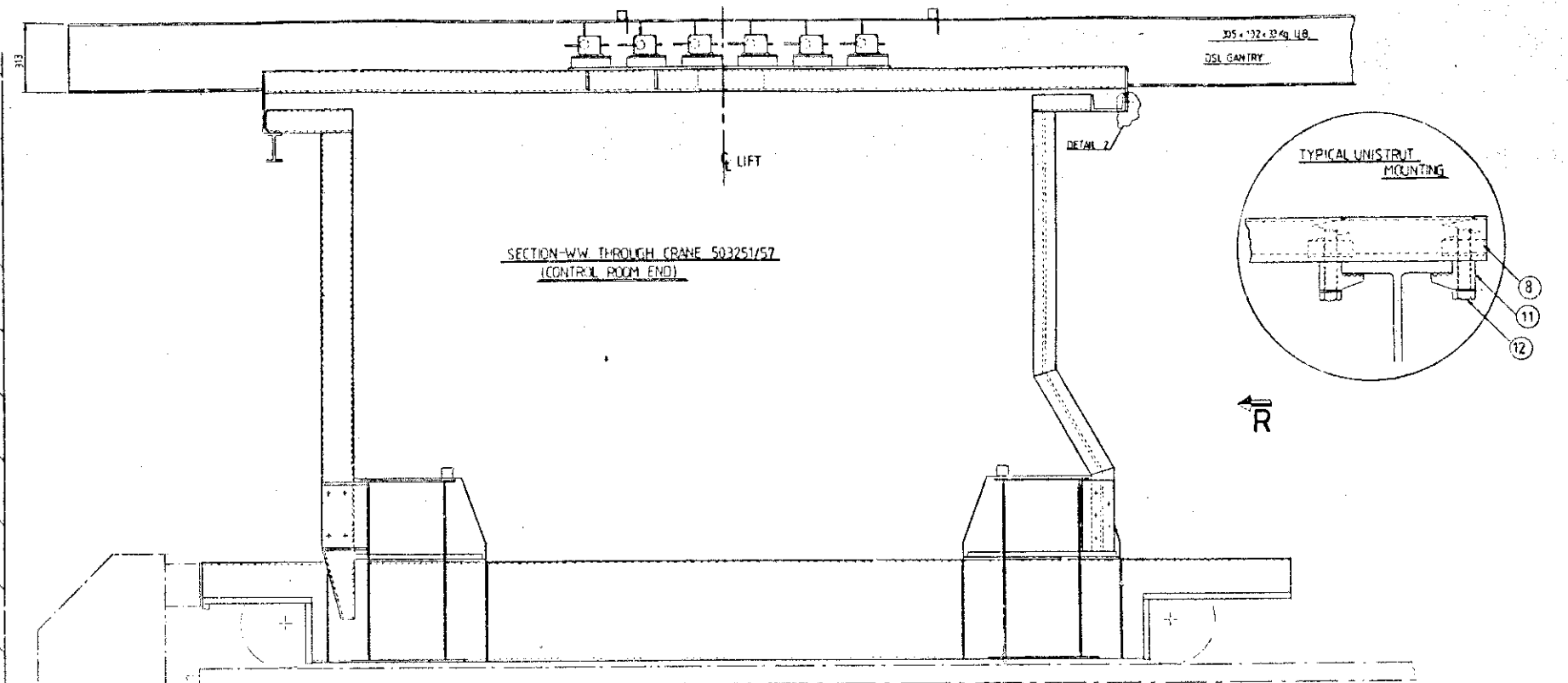
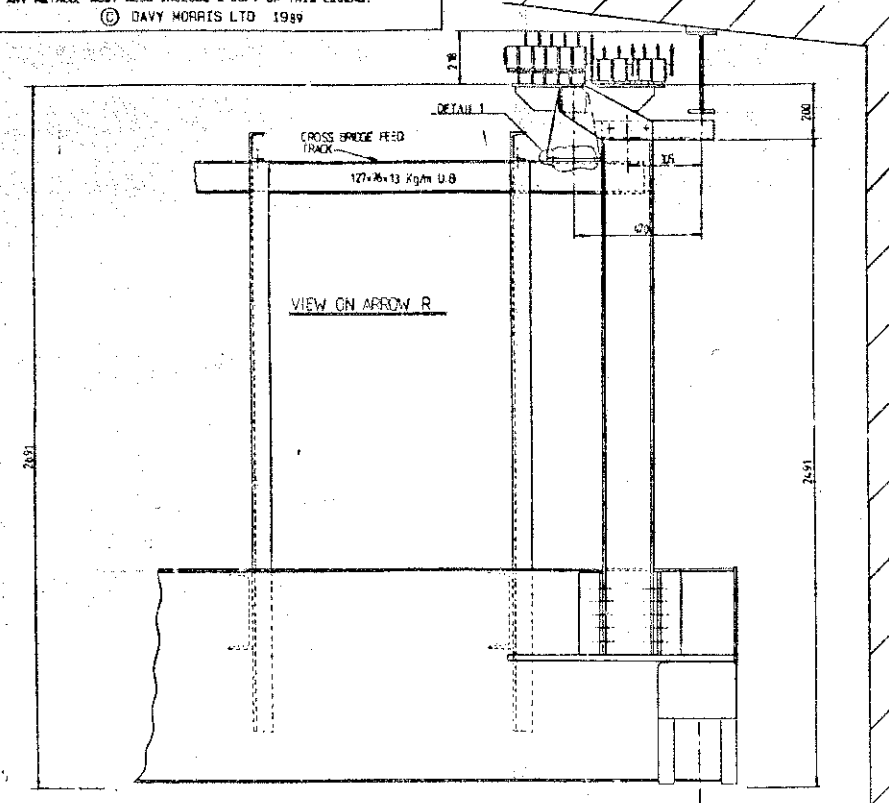
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DO NOT SCALE

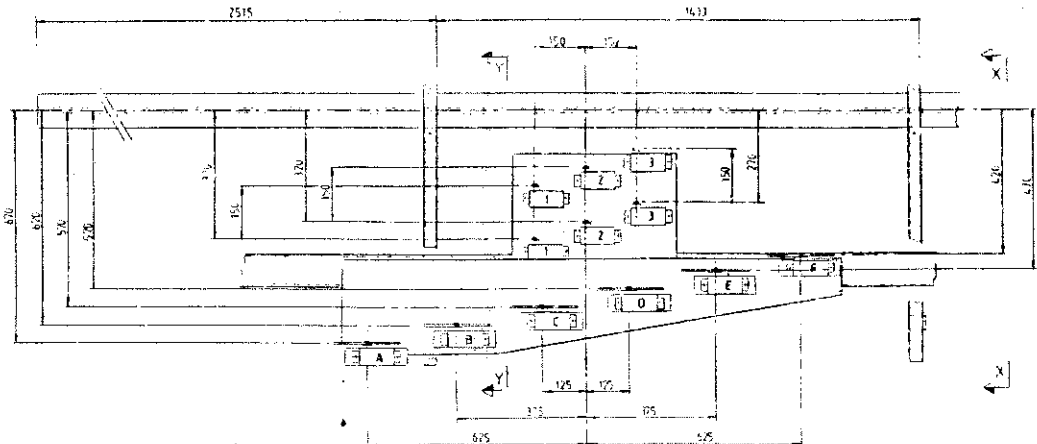
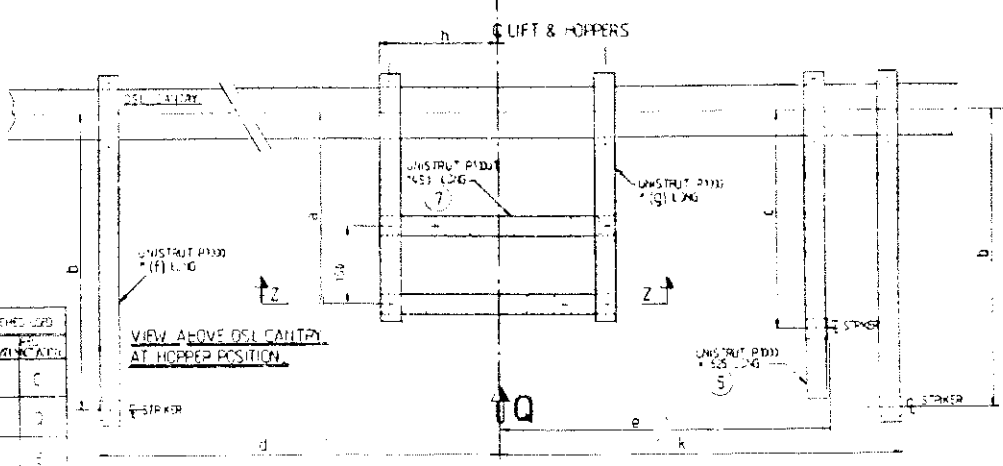
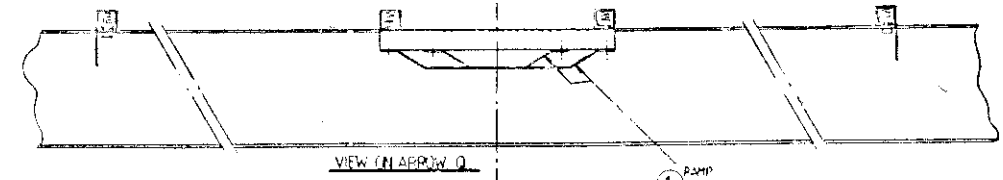
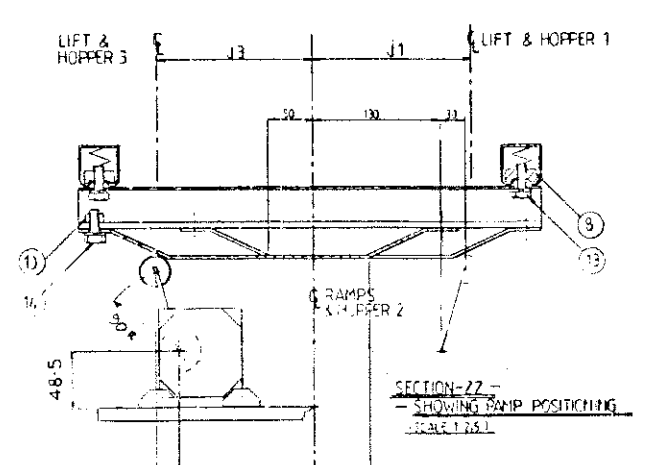
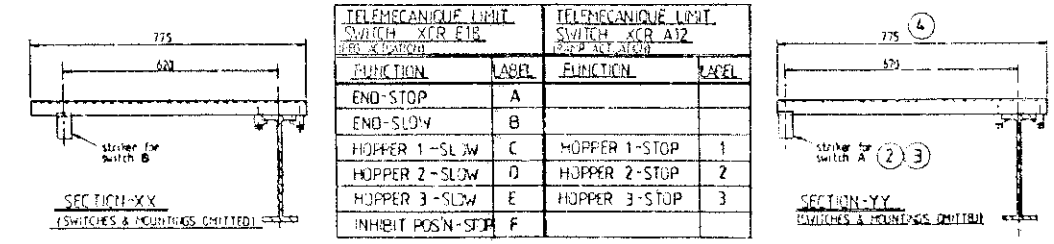
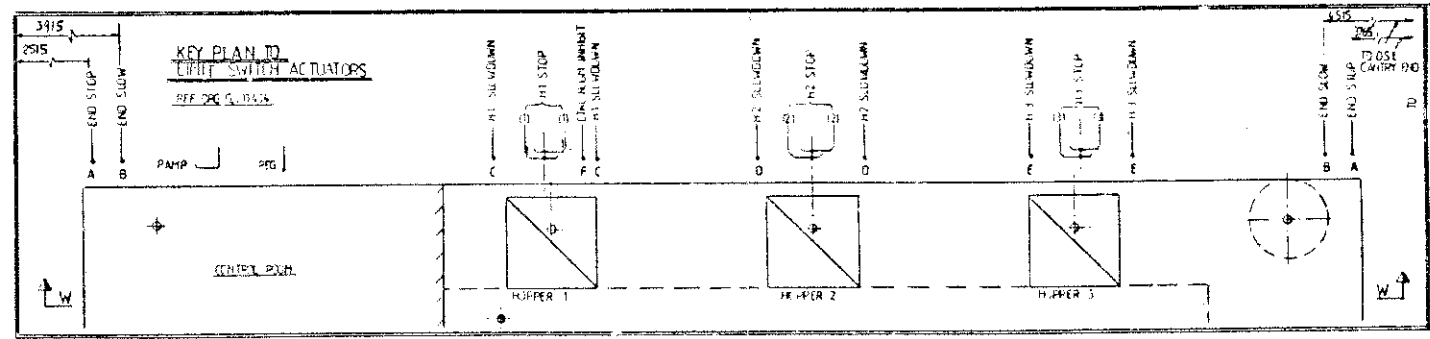
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED		SCALE	NAME	DATE	TITLE
FOR FABRICATION, UNLESS OTHERWISE STATED:-	FOR MACHINING, UNLESS OTHERWISE STATED:-	1/125	M. GAMBLE	29/1/89	6.3 Tc GRABBING CRANE M8 DUTY
LINEAR DIMENSIONS: XX XX 16.0mm XX X 11.0mm XX 23.0mm ANGLES: 11°	SURFACE FINISH: 6.3µm Ra (IN3) LINEAR DIMENSIONS: XX XX 10.25mm XX X 10.0mm XX 21.0mm FILLET RADIUS: 1.5mm MAX. SQUARENESS: 1 IN 500 PARALLELISM: 1 IN 500 RUNOUT: 0.1mm ANGLES: 11°	MATERIAL	DRAWN	CHECKED	APPROVED
			WEIGHT	CUSTOMER APPROVED	YES NO
			FINISH	FROM	ASSEMBLY DRG
			ORDER NUMBER	SIZE	DRAWING NUMBER
			503251-3/57	J	005280

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PROJECTION



NOTES
 DIMENSIONS J.B.A.K ARE NOMINAL & SHOULD BE ADJUSTED TO SUIT AS REQD ON ASSEMBLY
 RAMP SHOULD BE SET TO ENSURE THAT THE GRAB IS POSITIONED WITHIN ± 50mm OF EACH HOPPER CENTERLINE
 REF DBC'S
 KEY PLAN TO LIMIT SWITCHES G 000404
 ITEM NOS REFER TO PARTS LIST C.6303B



HOPPER	DIMENSION												SWITCH	LIFT	
	a	b	c	d	e	f	g	h	i	j	k	l			
HOPPER 1	170	170	170	170	170	170	170	170	170	170	170	170	170	1	C
HOPPER 2	170	170	170	170	170	170	170	170	170	170	170	170	170	2	C
HOPPER 3	170	170	170	170	170	170	170	170	170	170	170	170	170	3	C

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED

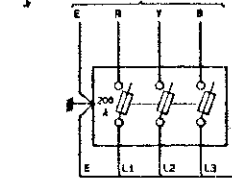
SCALE: 1:10	NAME: []	DATE: []	TITLE: 503251/3 CRIBBING LINE
MATERIAL: []	CHECKED: []	APPROVED: []	DEPARTMENT: []
HEIGHT: []	CUSTOMER APPROVED: []	FROM: []	PARTS LIST: C.63031-2-3
FINISH: []	ASSEMBLY DRG: []	ORDER NUMBER: 503251/3/57	DRAWING NUMBER: J005850

DO NOT SCALE

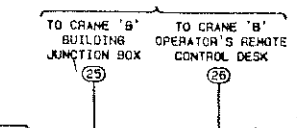
THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. NO.

CURRENT SUPPLY
3Ph., 440V., ±10%, 50Hz



SEE D.M. LTD. DRG. No. J006170
D.M. LTD. ORDER No. 503253/57

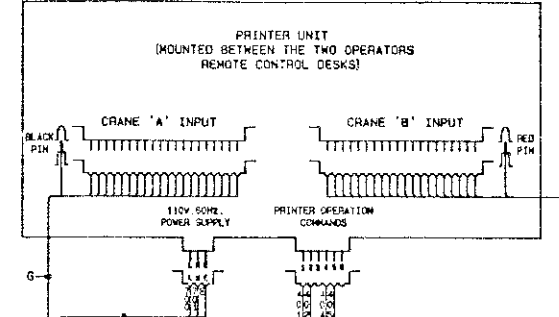
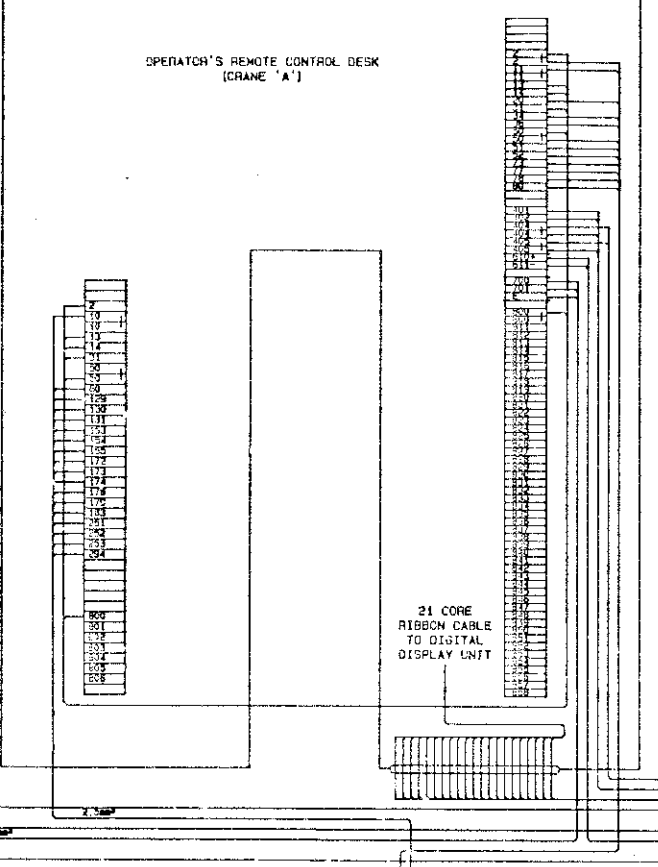


TO CRANE 'D' OPERATOR'S
REMOTE CONTROL DESK
SEE D.M. LTD. DRG. No. J006170
D.M. LTD. ORDER No. 503253/57

TO CRANE 'B' OPERATOR'S
REMOTE CONTROL DESK
SEE D.M. LTD. DRG. No. J006170
D.M. LTD. ORDER No. 503253/57

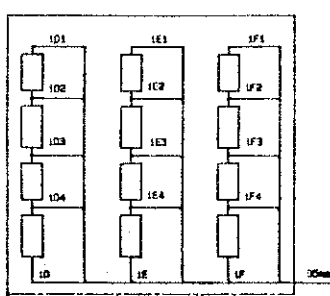
21 CORE RIBBON CABLE
TO CRANE 'B' OPERATOR'S
REMOTE CONTROL DESK
(DIGITAL DISPLAY UNIT)
SEE D.M. LTD. DRG. No. J006170
D.M. LTD. ORDER No. 503253/57

OPERATOR'S REMOTE CONTROL DESK
(CRANE 'A')

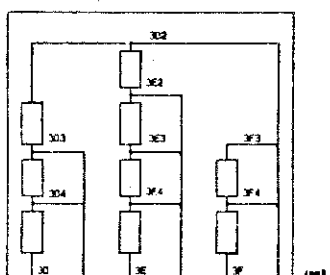


21 CORE RIBBON CABLE
TO DIGITAL
DISPLAY UNIT

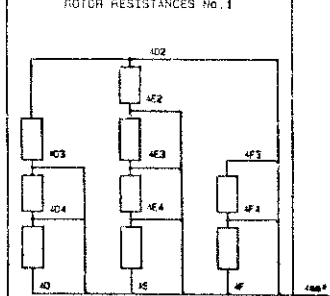
LOAD WEIGHING SYSTEM
110V. POWER SUPPLY UNIT



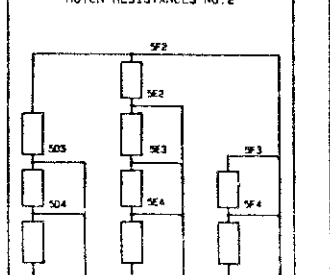
HOIST ROTOR RESISTANCES



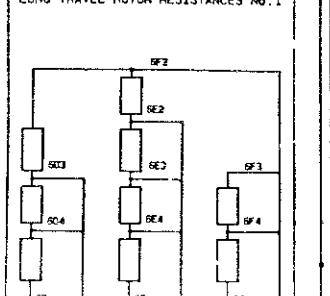
CROSS TRAVERSE ROTOR RESISTANCES No. 1



CROSS TRAVERSE ROTOR RESISTANCES No. 2



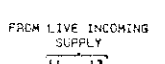
LONG TRAVEL ROTOR RESISTANCES No. 1



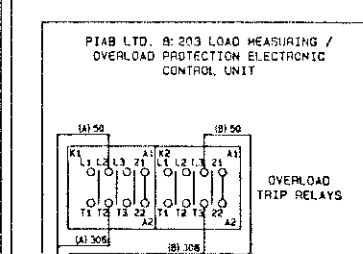
LONG TRAVEL ROTOR RESISTANCES No. 2

COMBINED PROTECTION, HOIST, CROSS TRAVERSE & LONG TRAVEL CONTROL PANEL

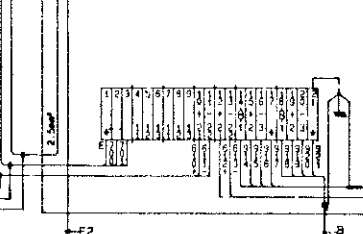
	D. L. M. DRG. No.	D. M. L. DRG. No.
SCHEMATIC DIAGRAM - PROTECTION	1C012617 SHT. 1	J006230
SCHEMATIC DIAGRAM - HOIST & C.T.	1C012617 SHT. 2	J006240
SCHEMATIC DIAGRAM - LONG TRAVEL	1C012617 SHT. 3	J006250
SCHEMATIC DIAGRAM - RELAY CONTROLS	1C012617 SHT. 4	J006260
PANEL LAYOUT (INTERNAL)	GHO13340	J006220
PANEL OUTLINE (EXTERNAL) & TERM. LAYOUT	1W013469	P308280



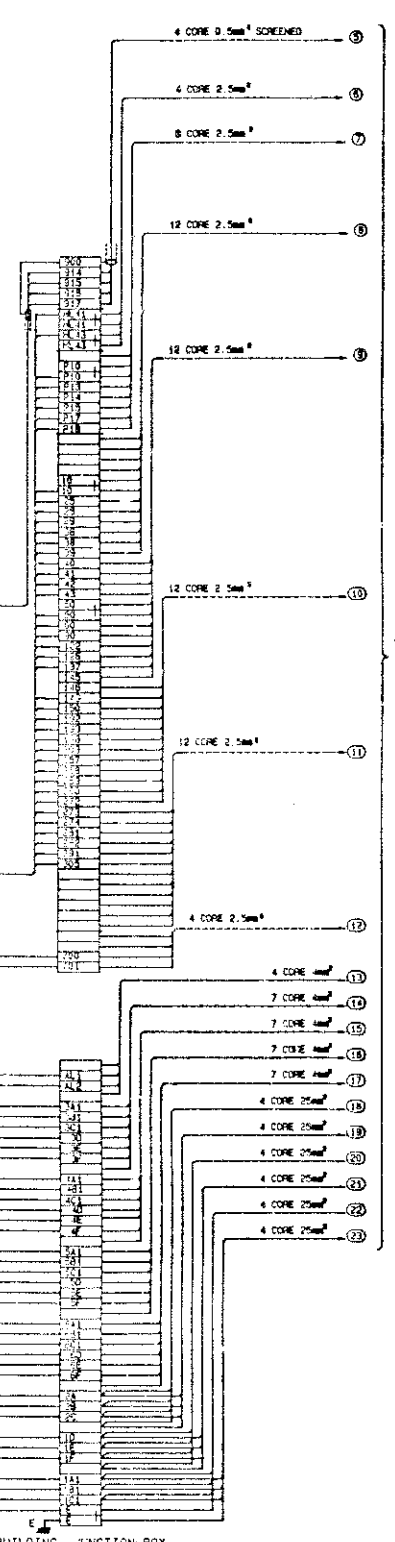
FROM LIVE INCOMING
SUPPLY
440V.
AUXILIARY SERVICES
SUPPLY FUSES



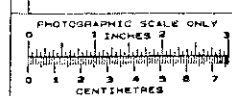
PIAB LTD. 8:203 LOAD MEASURING /
OVERLOAD PROTECTION ELECTRONIC
CONTROL UNIT



OVERLOAD
TRIP RELAYS



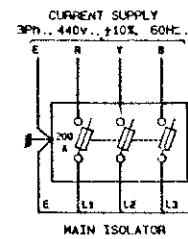
FLEXIBLE 'DOWNSHOP'
CABLES TO CRANE
SEE D.M. LTD. DRG. No.
J006160



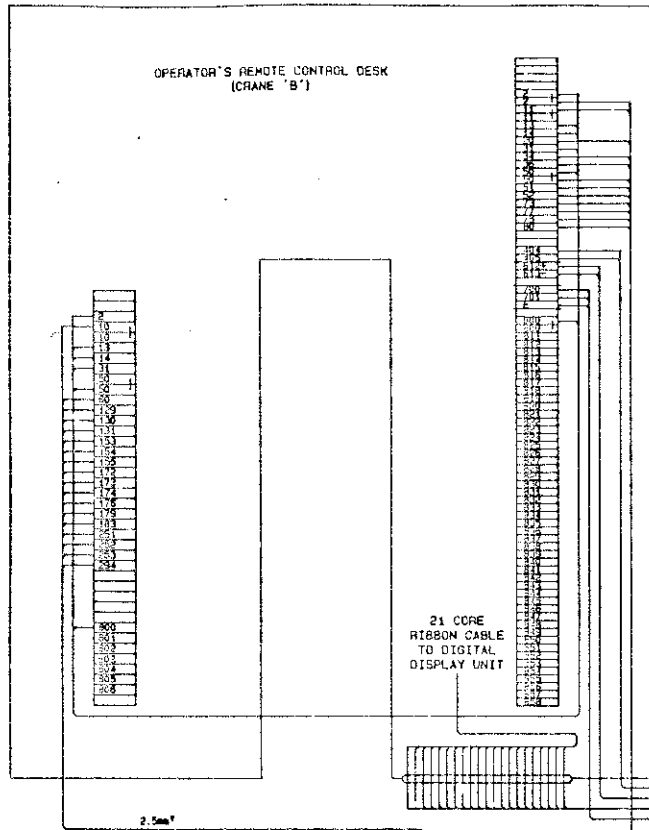
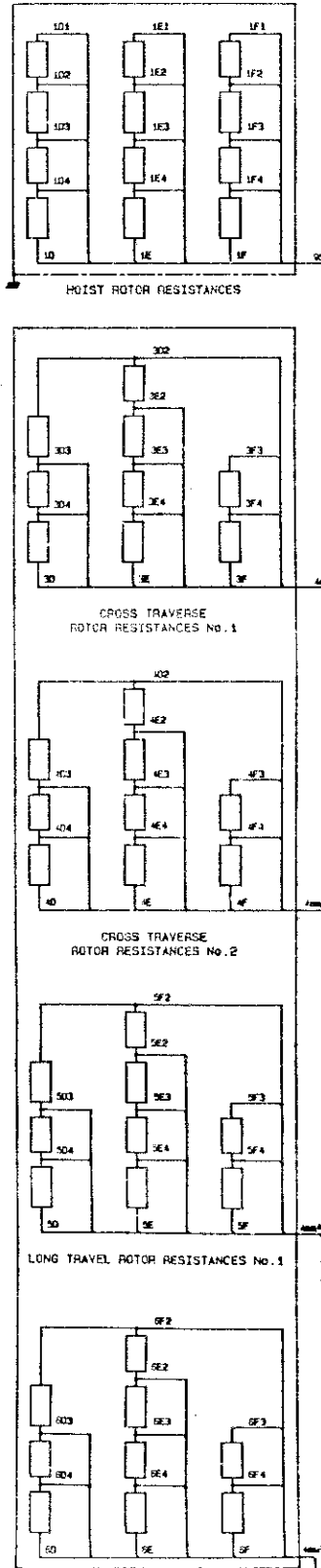
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REV	DATE	ORN	APP	REV	DATE	ORN	APP	REV	DATE	ORN	APP	REV	DATE	ORN	APP	REV	DATE	ORN	APP
A	22	B	C	5/7															

TITLE 6.3 CRANE REFUSE GRABBING CRANE SITE WIRING OF CONTROL EQUIPMENT, ARMCHAIR CONTROL UNIT & WEIGHING CONTROL EQUIPMENT (CRANE 'A')	
ORDER NUMBER 503251/57	DRAWING NUMBER J006150
SHEET 1	REV 1



4 CORE 0.5mm² PVC/SH/PVC/SH/PVC



TO LOAD WEIGHING SYSTEM 110V. POWER SUPPLY UNIT
SEE D.M.L.D. DRG. No. J006150
D.M. LTD. ORDER No. 503251/57

TO CRANE 'A' OPERATOR'S REMOTE CONTROL DESK
SEE D.M.L.D. DRG. No. J006150
D.M. LTD. ORDER No. 503251/57

TO PIAB LTD. B-203 LOAD MEASURING/OVERLOAD PROTECTION ELECTRONIC CONTROL PANEL
SEE D.M.L.D. DRG. No. J006150
D.M. LTD. ORDER No. 503251/57

TO LOAD WEIGHING SYSTEM 110V. POWER SUPPLY UNIT
SEE D.M.L.D. DRG. No. J006150
D.M. LTD. ORDER No. 503251/57

21 CORE RIBBON CABLE TO CRANE 'B' INPUT PORT ON PRINTER UNIT
SEE D.M.L.D. DRG. No. J006150
D.M.L.D. ORDER No. 503251/57

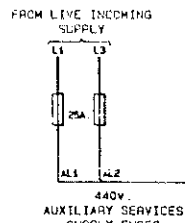
21 CORE RIBBON CABLE TO DIGITAL DISPLAY UNIT

21 CORE RIBBON CABLE

FLEXIBLE 'DOWNSHOP' CABLES TO CRANE
SEE D.M.L.D. DRG. No. J006180

COMBINED PROTECTION, HOIST, CROSS TRAVERSE & LONG TRAVEL CONTROL PANEL

	D.M.L. DRG. No.	D.M.L. DRG. No.
SCHEMATIC DIAGRAM - PROTECTION	1C012617 SHT. 1	J006220
SCHEMATIC DIAGRAM - HOIST & C.T.	1C012617 SHT. 2	J006240
SCHEMATIC DIAGRAM - LONG TRAVEL	1C012617 SHT. 3	J006259
SCHEMATIC DIAGRAM - RELAY CONTROLS	1C012617 SHT. 4	J006280
PANEL LAYOUT (INTERNAL)	0M013340	J006220
PANEL OUTLINE (EXTERNAL) & TERM. LAYOUT	1M013459	P308230

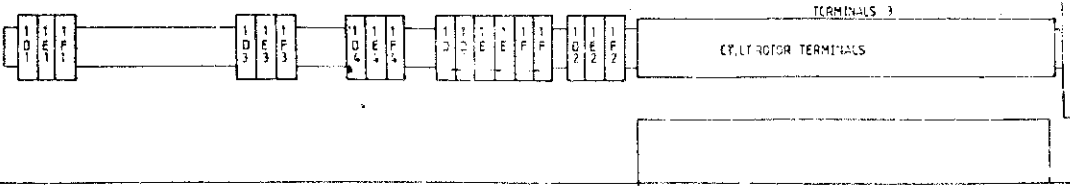
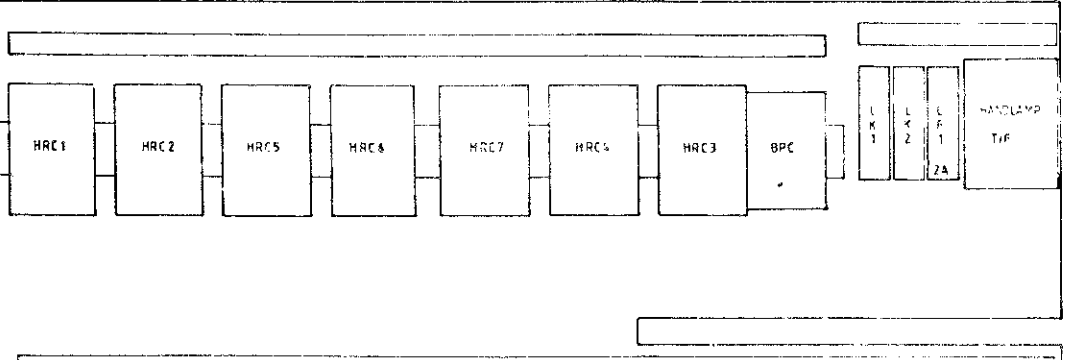
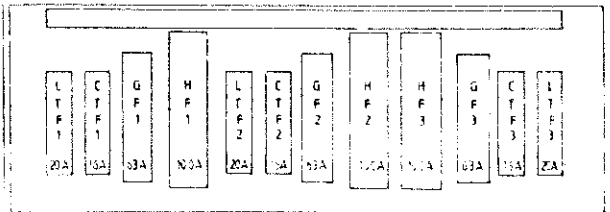
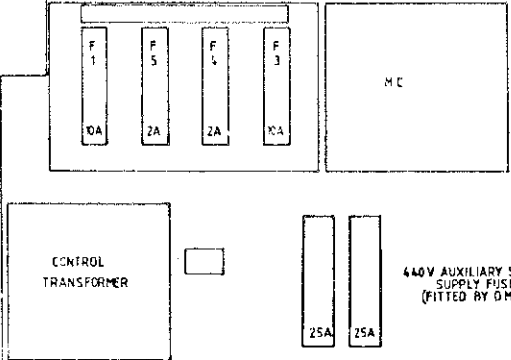
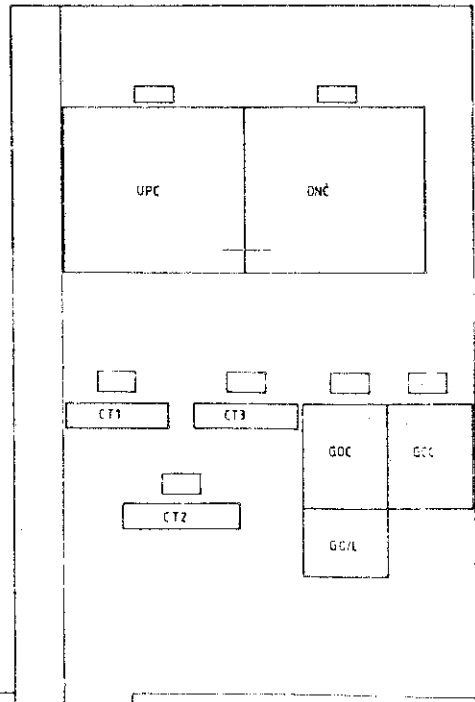
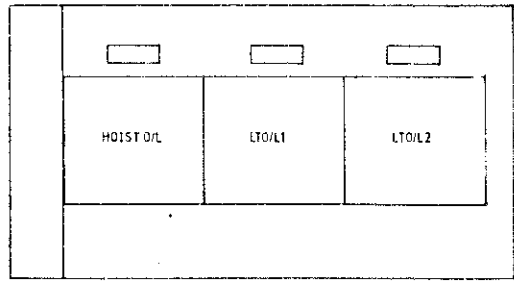
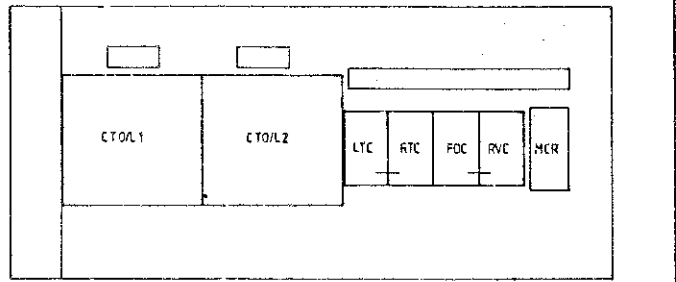
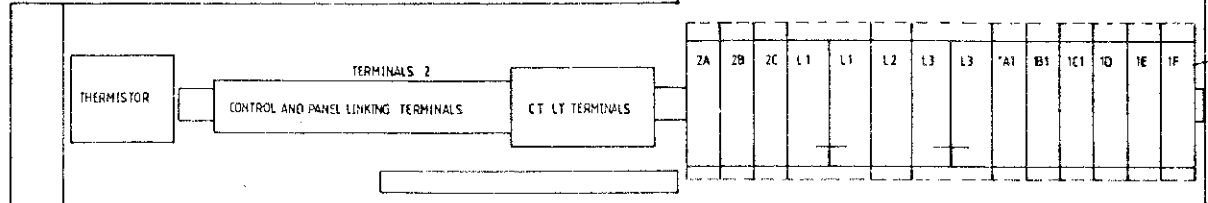
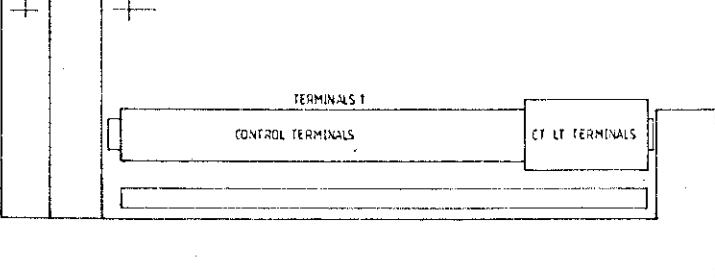
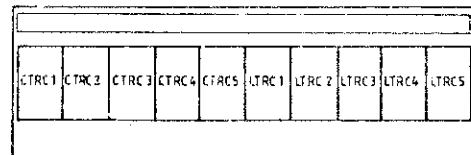
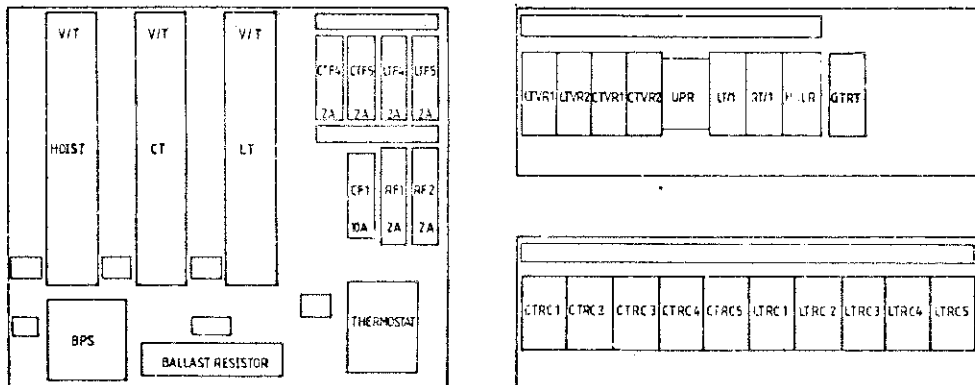
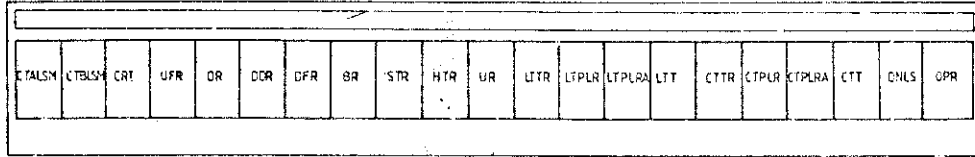
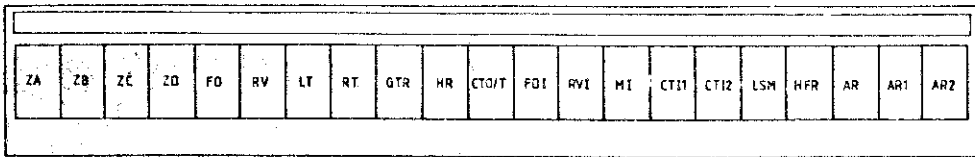
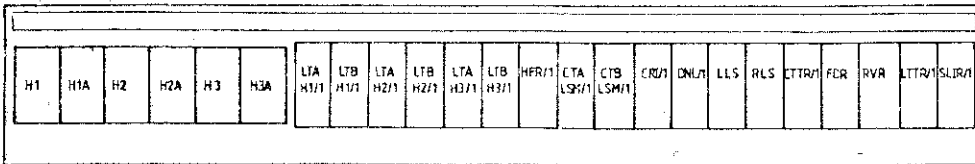
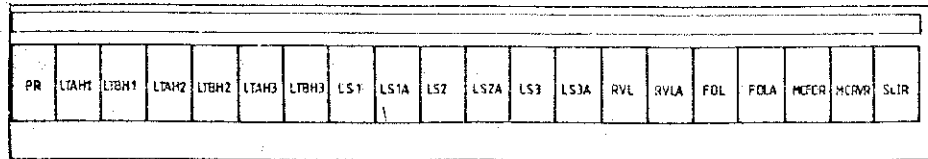


TO TRIP RELAY K2 IN PIAB B-203 LOAD MEASURING / OVERLOAD PROTECTION ELECTRONIC CONTROL PANEL
SEE D.M.L.D. DRG. No. J006150
D.M.L.D. ORDER No. 503251/57

TO PIAB B-203 LOAD MEASURING / OVERLOAD PROTECTION ELECTRONIC CONTROL PANEL
SEE D.M.L.D. DRG. No. J006150
D.M.L.D. ORDER No. 503251/57

FOR BLOCK DIAGRAM OF SITE EQUIPMENT & CABLING SEE MORRIS DRG. No. J006450.
CABLE REFS. e.g. 'B' REFER TO CABLING MEDIUM & ROUTE DETAILED THEREON.

DAVY MORRIS
TITLE: 6.3 TONNE REEFER GRABBING CRANE SITE WIRING OF CONTROL EQUIPMENT & ARMCHAIR CONTROL UNIT (CRANE 'B')

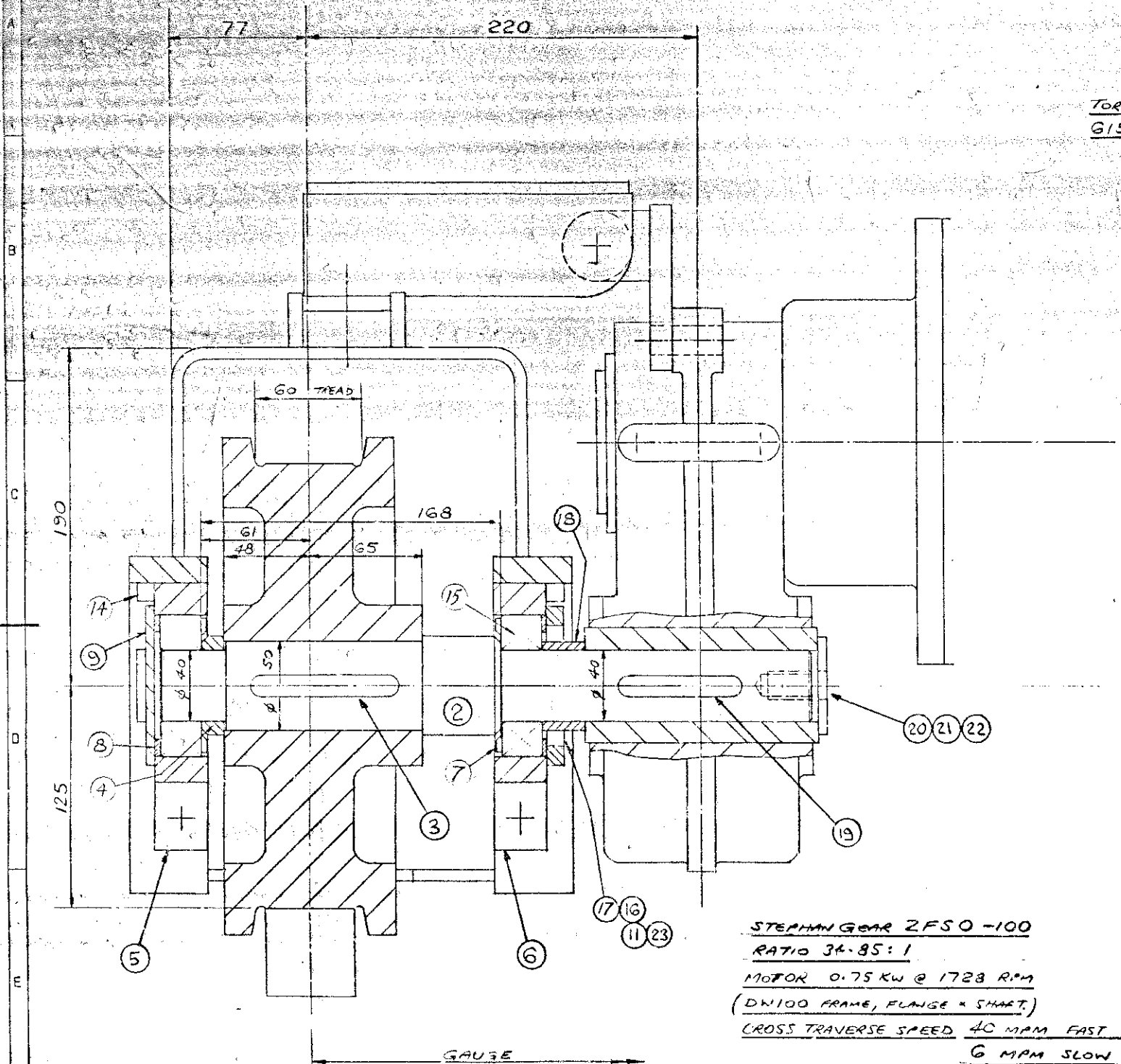


COVER AND WARNING LABEL

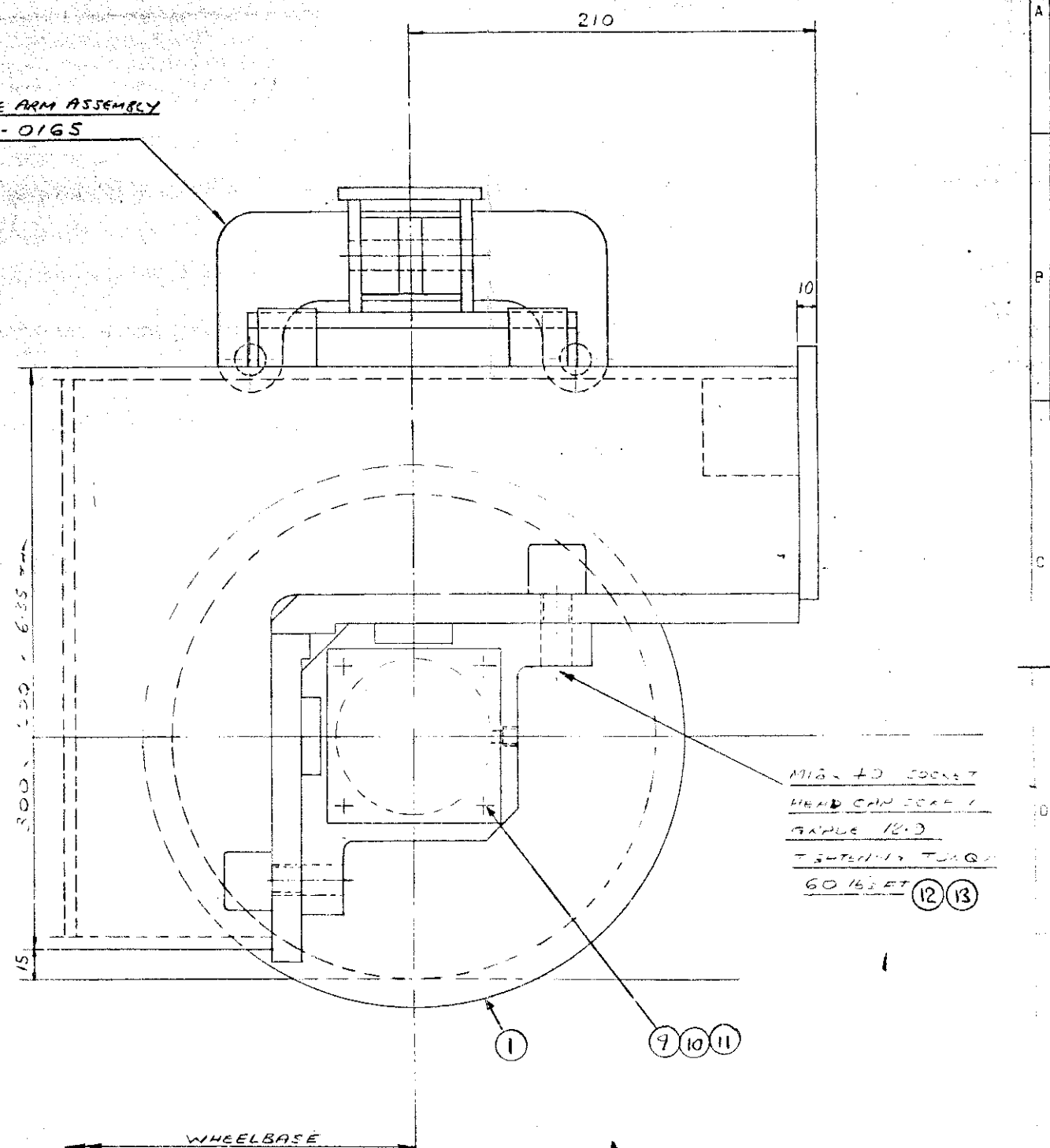
CUBICLE MAY BE SPLIT FOR SHIPPING
 TERMINAL AND CUBICLE LAYOUT.DWG 2M013469
 SCHEMES 0C012617 1-4

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PROJECTION



TORQUE ARM ASSEMBLY
6159-0165



STEPHAN GEAR ZFSO-100
 RATIO 34.85:1
 MOTOR 0.75 KW @ 1728 RPM
 (DW100 FRAME, FLANGE = SHART)
 CROSS TRANSVERSE SPEED 40 MPM FAST
 6 MPM SLOW

- ⑤ SPHERICAL ROLLER BEARING 22208 WITH GREASE GROOVE IN OUTER RACE
- ⑦ NILOS RING AV 22208
- ⑧ BEARING SHIM 3142-0994
- ④ RUNNER SPACER
- ⑭ 10 SQ SNUGS - WELD IN POSITION TO SUIT ON ASSEMBLY 3D ON THREE SIDES
- ⑮ OIL SEAL 50x68x12-R4
- ⑱ GEARBOX SPACER

THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

DO NOT SCALE

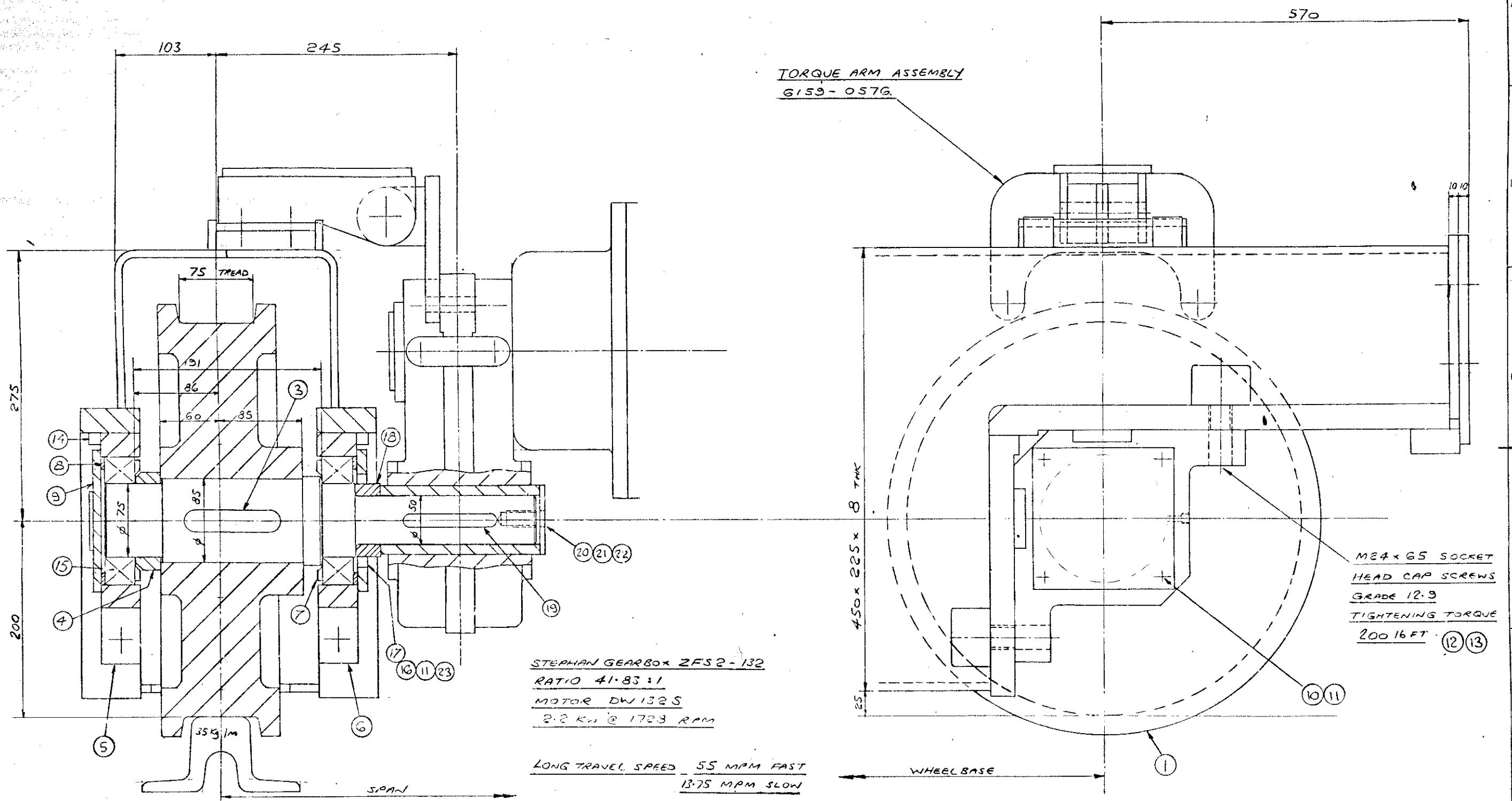
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED		SCALE	NAME	DATE	TITLE
FOR FABRICATION, UNLESS OTHERWISE STATED: -	FOR MACHINING, UNLESS OTHERWISE STATED: -	1:1.5	D. RADLEY	3/10/88	6.3 TONNE GRABBING CRANE
LINEAR DIMENSIONS: XX.XX ±0.5mm XX.X ±1.0mm XX ±3.0mm ANGLES: ±1°	SURFACE FINISH: 6.3µm Ra (M9) FILLET RADIUS: 1.6mm MAX. SQUARENESS: 1 IN 500 PARALLELISM: 1 IN 500 RUNOUT: 0.1mm ANGLES: ±1°	MATERIAL C. 61546	DRAWN D. RADLEY	3/10/88	φ250C/T GEARED RUNNER ASSEMBLY
		WEIGHT	CHECKED H. P. [Signature]	6-9-89	
		FINISH	APPROVED D. [Signature]	11-9-89	
			CUSTOMER APPROVED	YES NO	
REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. NO.

ORDER NUMBER	SIZE	DRAWING NUMBER
503251-3/57	P	139890

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PROJECTION



STEPHAN GEARBOX ZFS2-132
 RATIO 41.83 : 1
 MOTOR DW 132S
 2.2 Kw @ 1728 RPM

LONG TRAVEL SPEED 55 MPM FAST
 13.75 MPM SLOW

- 15 SPHERICAL ROLLER } WITH GREASE GROOVE
 BEARING 2215 } IN OUTER RACE
- 7 NUCOS RING AV 2215
- 8 BEARING SHIM 3142-1025
- 4 RUNNER SPACER
- 12 12 SQ SNUGS WELDED IN POSITION TO SUIT
 ON ASSEMBLY 3D ON THREE SIDES.
- 17 OILSEAL 75 x 35 x 13 R4
- 18 GEARBOX SPACER

THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

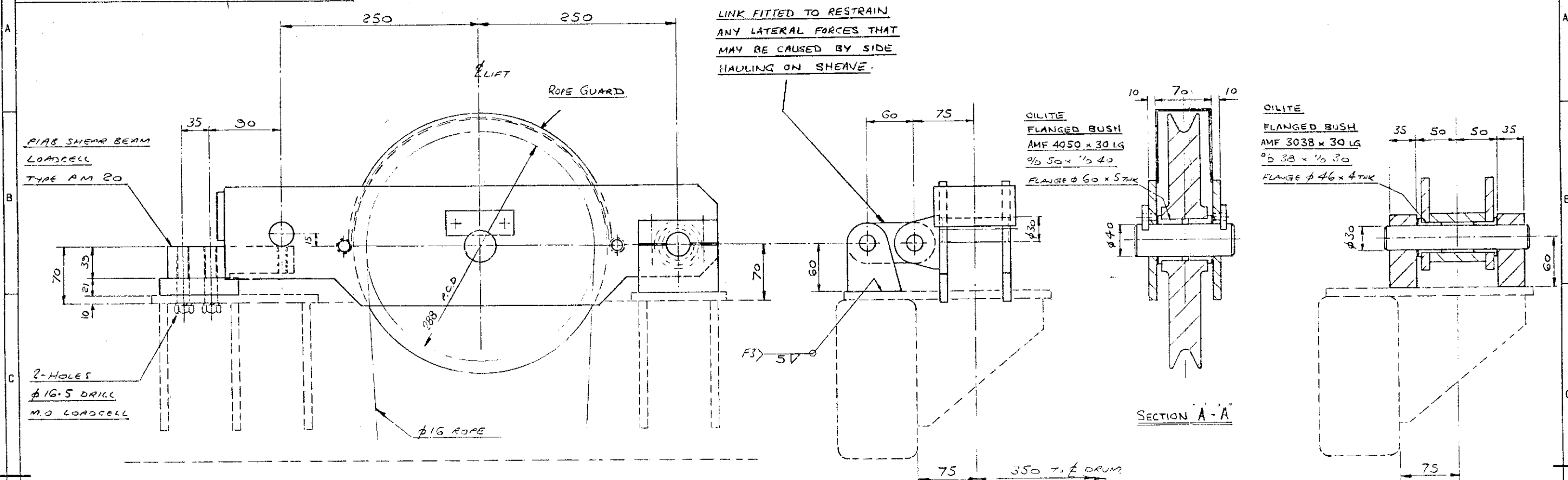
DO NOT SCALE

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED		SCALE	NAME	DATE	TITLE
FOR FABRICATION, UNLESS OTHERWISE STATED: -	FOR MACHINING, UNLESS OTHERWISE STATED: -	1:2	D. Radley	5/10/88	6.36 REFUSE CRANE
	SURFACE FINISH: 6.3µm Ra (N9)	MATERIAL	CHECKED	W. Jumble	5-9-89
LINEAR DIMENSIONS: XX.XX ±0.5mm XX.X ±1.0mm XX ±3.0mm ANGLES: ±1°	LINEAR DIMENSIONS: XX.XX ±0.25mm XX.X ±0.5mm XX ±1.0mm	C.61548	APPROVED	W. Jumble	11-9-89
	FILLET RADIUS: 1.6mm MAX. SQUARENESS: 1 IN 500 PARALLELISM: 1 IN 500 RUNOUT: 0.1mm ANGLES: ±1°	WEIGHT	CUSTOMER APPROVED	YES	NO
		FINISH	FROM	ORDER NUMBER	SIZE
		DAVY MORRIS	ASSEMBLY DRG	503251-3	P/139910
REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. NO

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PROJECTION



LINK FITTED TO RESTRAIN ANY LATERAL FORCES THAT MAY BE CAUSED BY SIDE HAULING ON SHEAVE.

OILITE
FLANGED BUSH
AMF 4050 x 30 LG
9/16 50 x 1/2 40
FLANGE Ø 60 x 5 THK

OILITE
FLANGED BUSH
AMF 3038 x 30 LG
9/16 38 x 1/2 30
FLANGE Ø 46 x 4 THK

SECTION A-A

SECTION B-B

ENDVIEW (LOADCELL REMOVED)

1. SET UP COMPENSATING SHEAVE ASSEMBLY AND WELD PIVOT BLOCKS IN POSITION TO SUIT
2. M.O HOLES FROM LOADCELL AND DRILL Ø 16.5
3. SET UP RETAINING LINK AND WELD SUPPORT PLATE IN POSITION TO SUIT.

FOR COMPENSATING GEAR PARTS SEE P220590 + P2205600

WORKS TO ENSURE THAT PIN MAKES CONTACT ACROSS FULL FACE OF LOADCELL

THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

DO NOT SCALE

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED	
FOR FABRICATION, UNLESS OTHERWISE STATED: -	FOR MACHINING, UNLESS OTHERWISE STATED: -
SURFACE FINISH: 6.3µm Ra (N9)	
LINEAR DIMENSIONS:	LINEAR DIMENSIONS:
XX.XX ±0.5mm	XX.XX ±0.25mm
XX.X ±1.0mm	XX.X ±0.5mm
XX ±3.0mm	XX ±1.0mm
ANGLES: ±1°	ANGLES: ±1°

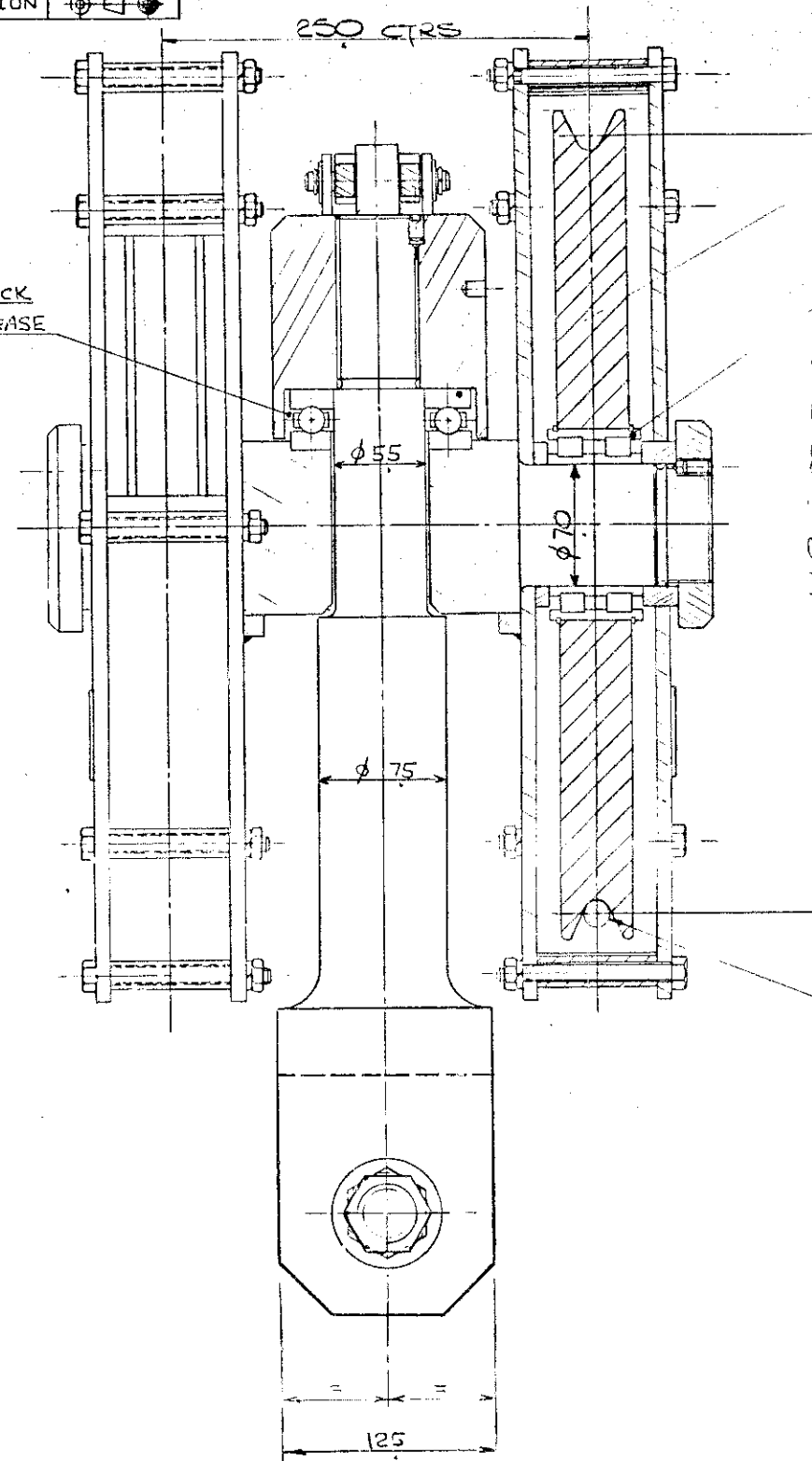
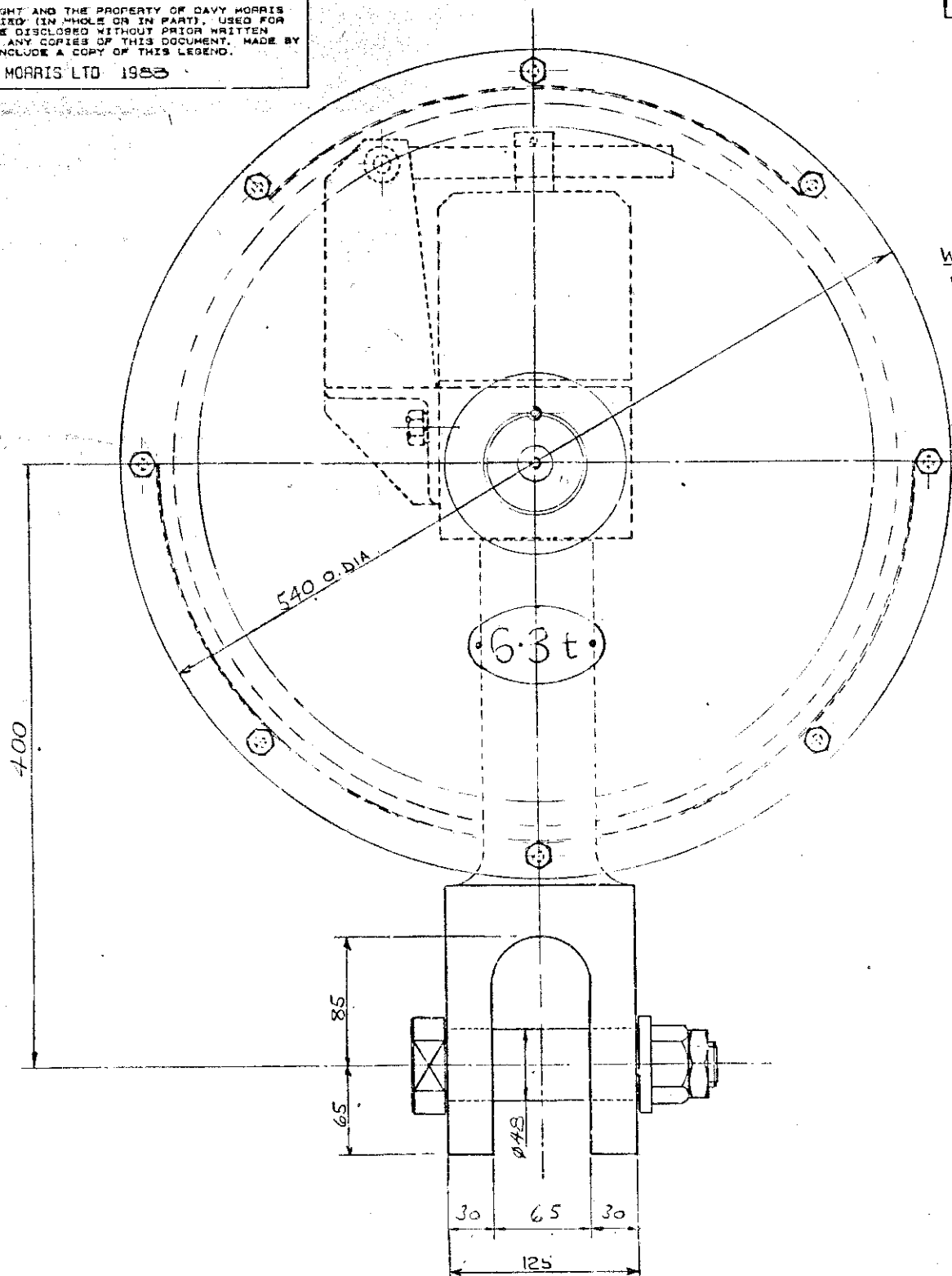
SCALE: 1:1	NAME:	DATE:	TITLE:
MATERIAL: C.62516	DRAWN: D. J. B.	26/10/89	8.3 Tonne COMPENSATING SHEAVE
WEIGHT:	CHECKED: H. F. L.	10-10-89	COMPENSATING & SHEAVE AND LOAD CELL ARRANGEMENT
FINISH:	APPROVED:		
	CUSTOMER APPROVED:	YES	NO
	FROM:	ORDER NUMBER:	SIZE:
	ASSEMBLY DRG:	503251-3/57	P
		DRAWING NUMBER:	REV:
		139960	

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. No.

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PROJECTION



THRUST BEARING
SKF 5111

SHEAVE BEARING
SKF NNF-5014-ADA-2LSV

SNAP RINGS SKF SW110

THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED		SCALE	NAME	DATE	TITLE
FOR FABRICATION, UNLESS OTHERWISE STATED: -	FOR MACHINING, UNLESS OTHERWISE STATED: -	MATERIAL	DRAWN	CHECKED	APPROVED
OTHERWISE STATED: -	SURFACE FINISH: 6.3µm Ra (N9)	C.61523	A. Smith	J. Smith	J. Smith
LINEAR DIMENSIONS:	LINEAR DIMENSIONS:	WEIGHT	APPROVED	CUSTOMER APPROVED	YES NO
XX.XX ±0.5mm	XX.XX ±0.25mm	231 kg	J. Smith	YES NO	
XX.X ±1.0mm	XX.X ±0.5mm	FINISH			
XX ±3.0mm	XX ±1.0mm				
ANGLES: ±1°	FILLET RADIUS: 1.6mm MAX.				
	SQUARENESS: 1 IN 500				
	PARALLELISM: 1 IN 500				
	RUNOUT: 0.1mm				
	ANGLES: ±1°				

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. NO.
B	FORK CUT OUT AUTO AT WORKS REQUEST	M GAMBLE	20/7/89	<i>[Signature]</i>	
A	HOOK REPLACED BY LINK	D PROLET	24/1/88	<i>[Signature]</i>	

ORDER NUMBER	SIZE	DRAWING NUMBER	REV
50325143	P	214660	B

DAVY MORRIS

ASSEMBLY ORG

FILED 15/09/88

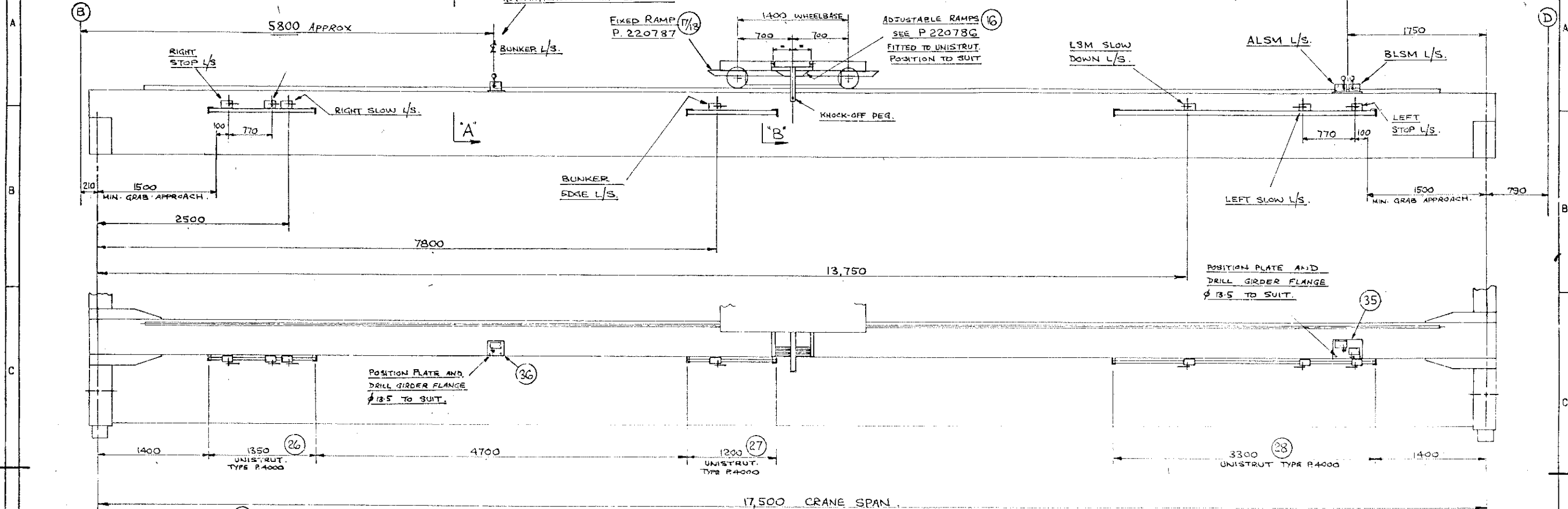
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WORKS TO POSITION THIS LIMIT SWITCH TO STOP THE GRAB ON $\frac{1}{4}$ OF BUNKER SHOWN ON DRG G.000404 WHEN TRAVELLING AUTOMATICALLY IN THIS DIRECTION

PROJECTION

DOWN SHOP CONDUCTORS FITTED THIS END.

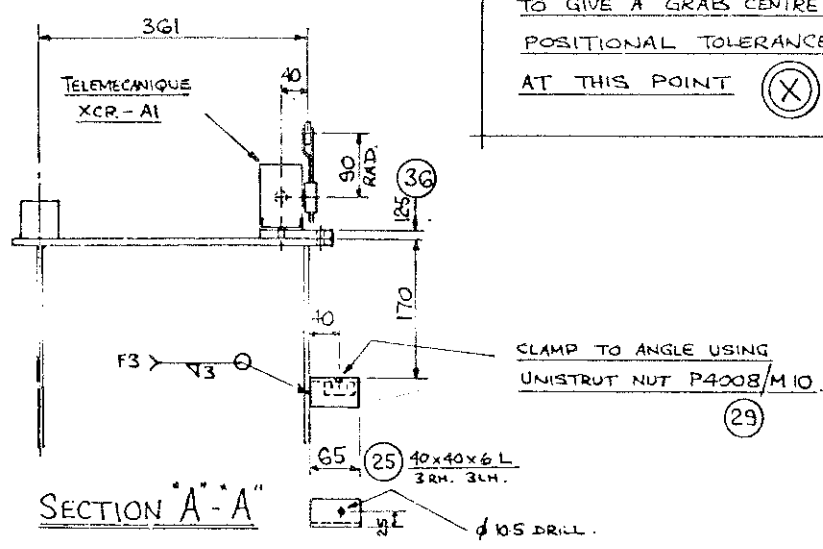
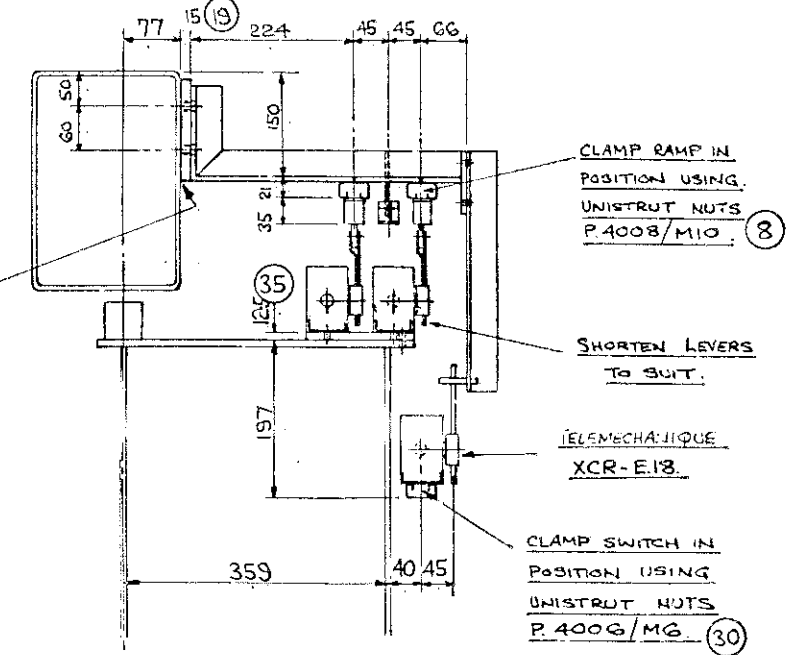


WORKS ARE TO ADJUST RAMP TO GIVE A GRAB CENTRE LINE POSITIONAL TOLERANCE ± 50 AT THIS POINT (X)

ONE LAYOUT AS DRAWN FOR 503251/57

ONE LAYOUT OPP. HAND FOR 503253/57

FOR KEY PLAN OF C.T. AND LT. LIMITS SEE G.000404



THIS IS THE MINIMUM ACCEPTABLE CHARACTER HEIGHT (3.5mm) FOR MICROFILMING PURPOSES

DO NOT SCALE

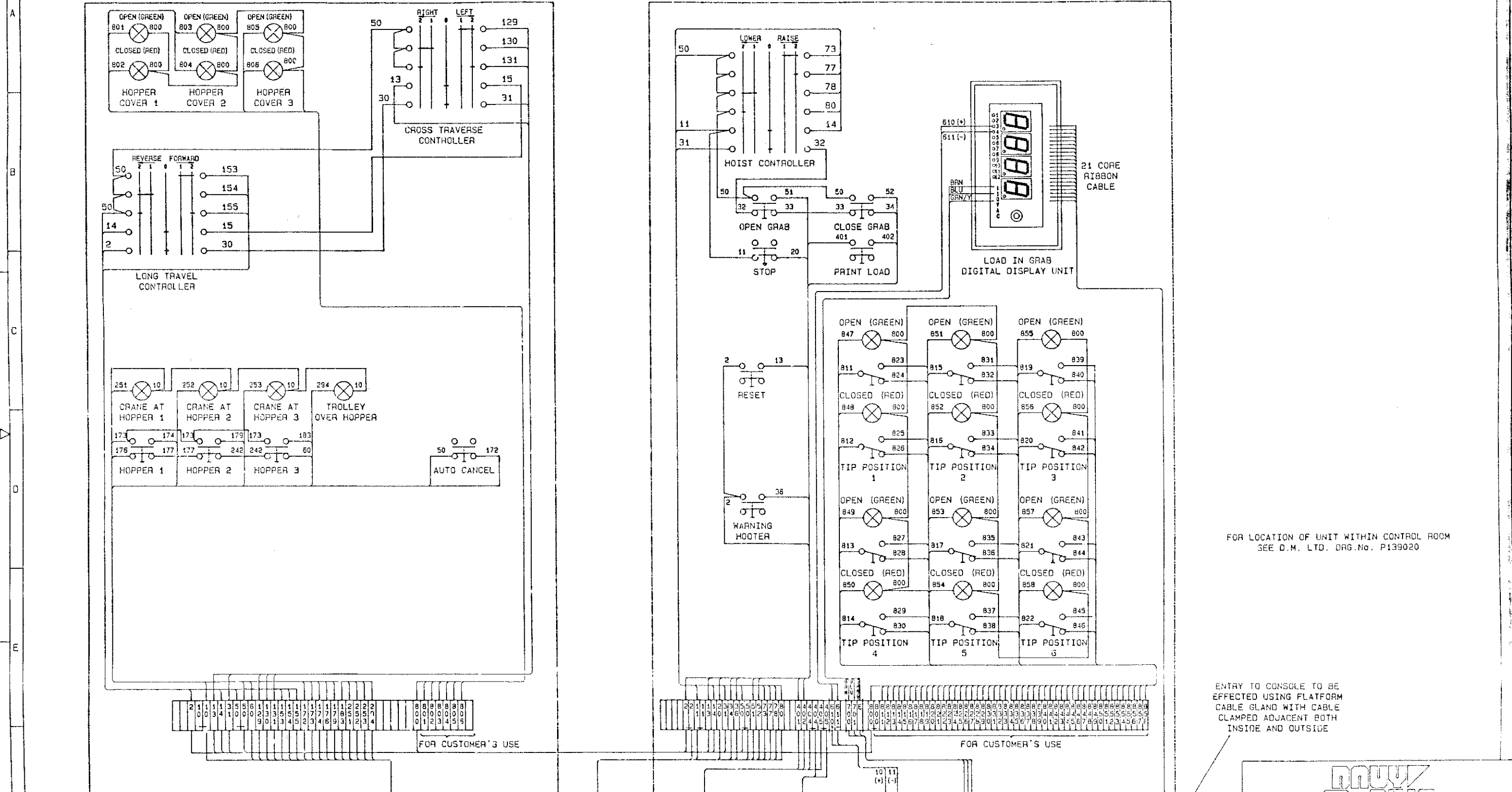
ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED		SCALE 1:25 1:5	NAME	DATE	TITLE
FOR FABRICATION, UNLESS OTHERWISE STATED: -		MATERIAL CRAB C625GG BRIDGE C625GG	DRAWN	M. GABLE	4-11-83
FOR MACHINING, UNLESS OTHERWISE STATED: -		WEIGHT	CHECKED		0.3 TONNE GRABBING CRANES
SURFACE FINISH: 6.3µm Ra (N9)		APPROVED		13-1-87	LAYOUT OF C.T. LIMIT SWITCHES
LINEAR DIMENSIONS: XX.XX ± 0.5 mm XX.X ± 1.0 mm XX ± 3.0 mm ANGLES: $\pm 1^\circ$		FILLET RADIUS: 1.6mm MAX. SQUARENESS: 1 IN 500 PARALLELISM: 1 IN 500 RUNOUT: 0.1mm ANGLES: $\pm 1^\circ$	CUSTOMER APPROVED	YES NO	ORDER NUMBER 503251+3/57
		FINISH	FROM		SIZE P
			ASSEMBLY DRG		DRAWING NUMBER 220770
					REV

REV	DESCRIPTION	DRAWN	DATE	APPROVED	REF. No

FLUED 23/11/89

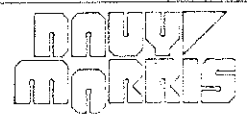
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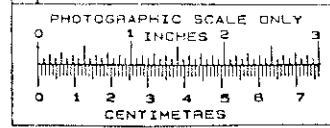


FOR LOCATION OF UNIT WITHIN CONTROL ROOM
SEE D.M. LTD. DRG.No. P139020

ENTRY TO CONSOLE TO BE
EFFECTED USING PLATFORM
CABLE GLAND WITH CABLE
CLAMPED ADJACENT BOTH
INSIDE AND OUTSIDE



TITLE
6.3 TONNE REFUSE GRABBING CRANE
OPERATOR'S REMOTE CONTROL DESK
WIRING DIAGRAM



REV	DATE	DRN	APP	REV	DATE	DRN	APP	REV	DATE	DRN	APP	REV	DATE	DRN	APP	REV	DATE	DRN	APP	
A	13/79	B.C.																		

WIRE NO 242 IDENTIFIED
TERMINAL NO. 155 IN
L.H. CONSOLE WAS 156.

SURFACE FINISH INDICATION
FIRST ANGLE PROJECTION
MACHINING SYMBOL

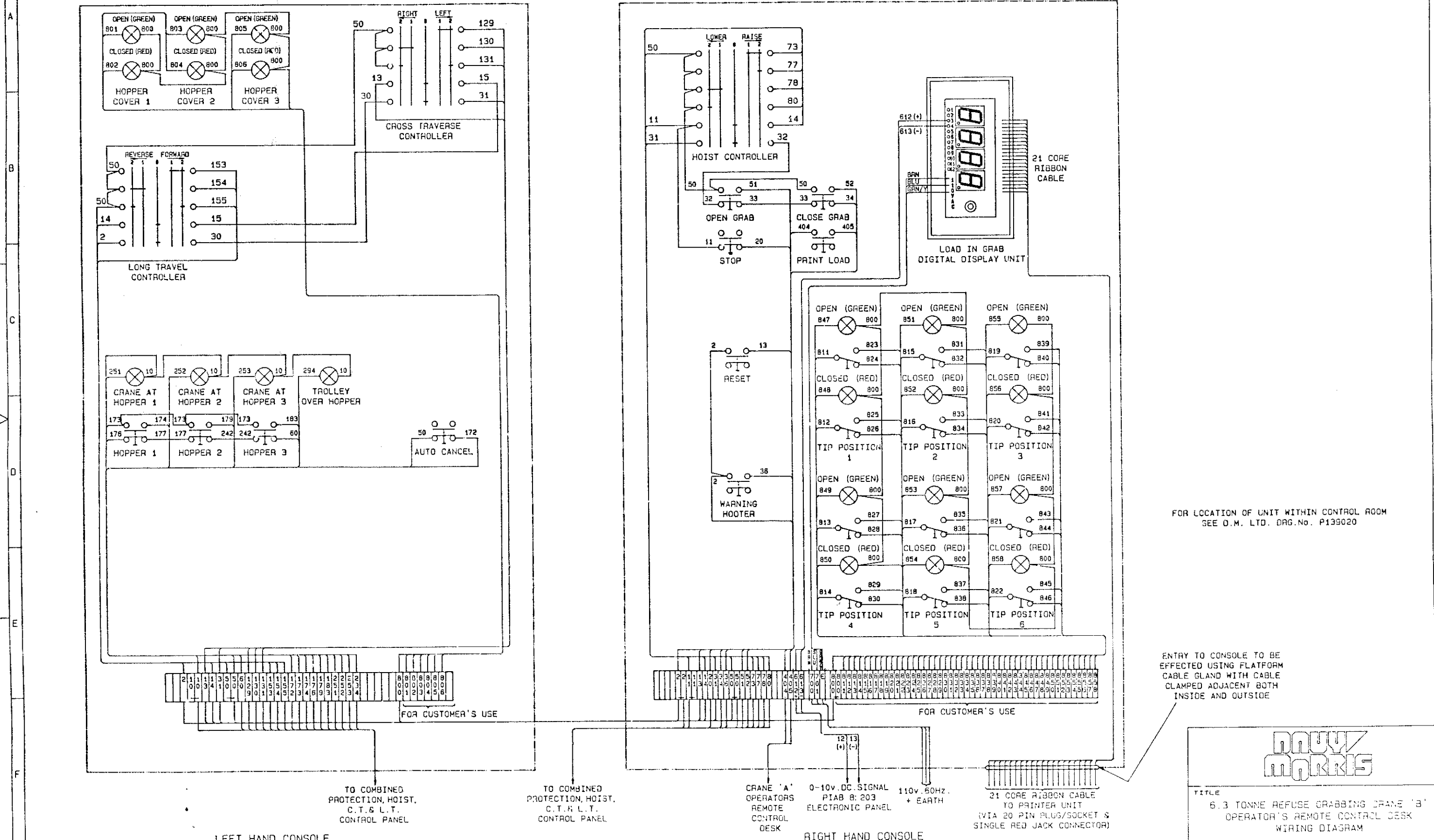
CRAWL BEVEL DEWS PASSED
DATE 5-1-90

GENL. APPROT. FROM WEIGHT

ORDER NUMBER 503251/57	DRAWING NUMBER P308250	SHEET NO. 1	REV. A
A1 594# 841	SCALE N.T.S.		

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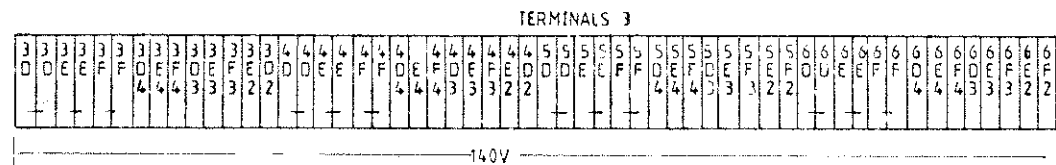
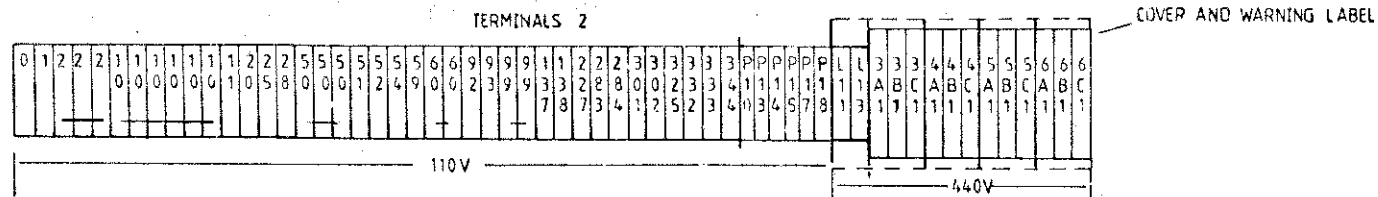
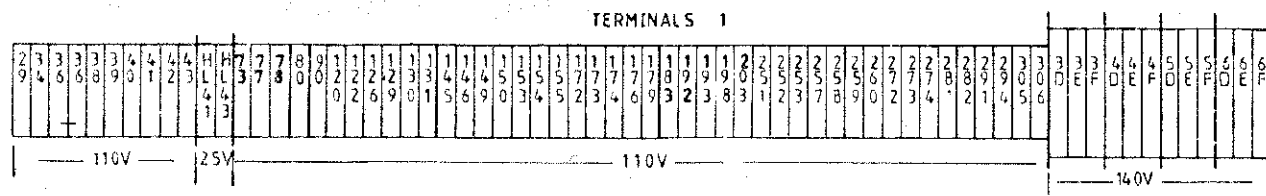
FOR LOCATION OF UNIT WITHIN CONTROL ROOM
SEE O.M. LTD. DRG. No. P139020

ENTRY TO CONSOLE TO BE
EFFECTED USING PLATFORM
CABLE GLAND WITH CABLE
CLAMPED ADJACENT BOTH
INSIDE AND OUTSIDE

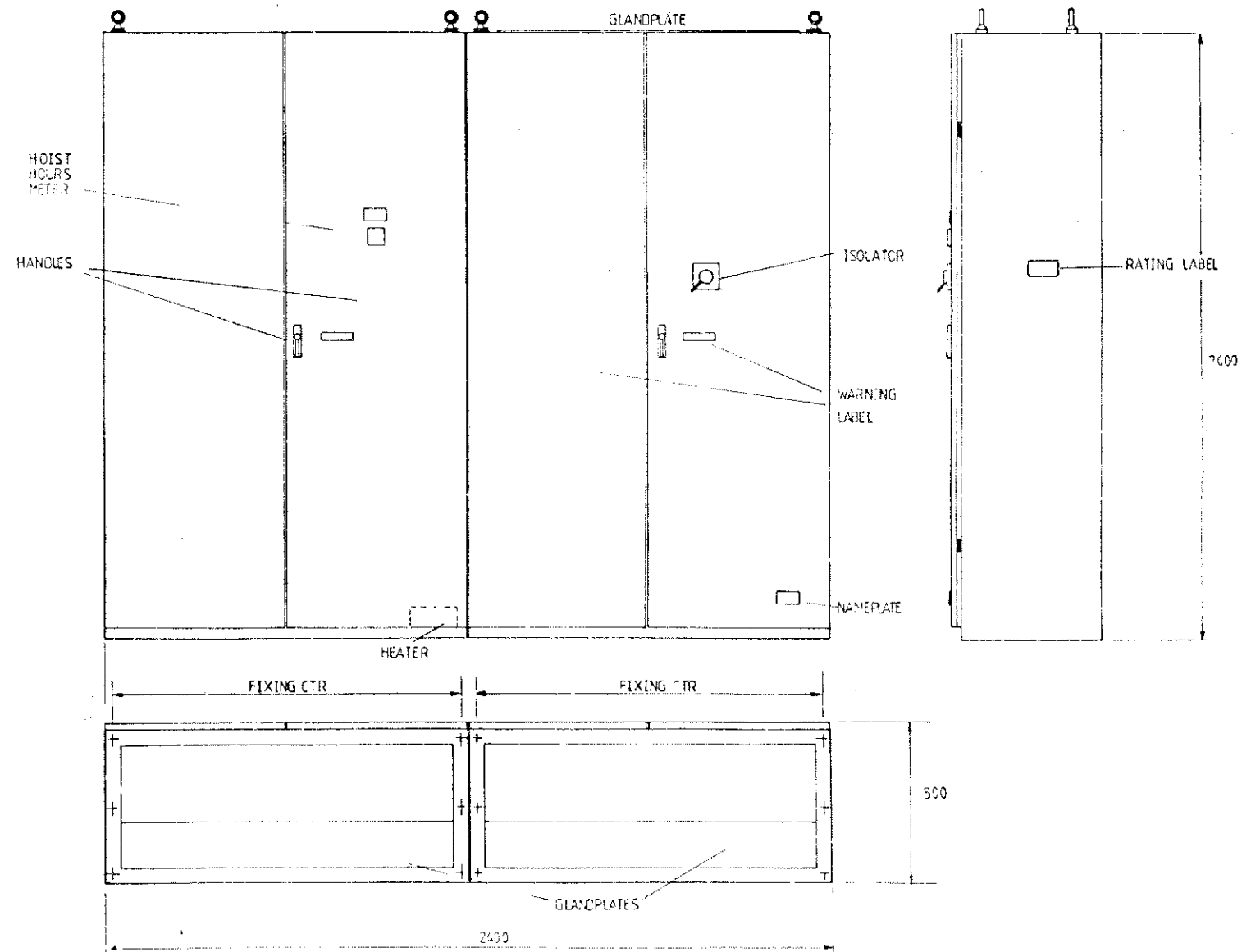


TITLE
6.3 TONNE REFUSE GRABBING CRANE 'B'
OPERATOR'S REMOTE CONTROL DESK
WIRING DIAGRAM

PHOTOGRAPHIC SCALE ONLY 1 INCHES 2 CENTIMETRES	REV DATE DRN APP A 23-90 B.C.	REV DATE DRN APP 1 11-90 B.C.	REV DATE DRN APP 2 11-90 B.C.	REV DATE DRN APP 3 11-90 B.C.	REV DATE DRN APP 4 11-90 B.C.	REV DATE DRN APP 5 11-90 B.C.	REV DATE DRN APP 6 11-90 B.C.	REV DATE DRN APP 7 11-90 B.C.	REV DATE DRN APP 8 11-90 B.C.	REV DATE DRN APP 9 11-90 B.C.	REV DATE DRN APP 10 11-90 B.C.	REV DATE DRN APP 11 11-90 B.C.	REV DATE DRN APP 12 11-90 B.C.	REV DATE DRN APP 13 11-90 B.C.	REV DATE DRN APP 14 11-90 B.C.	REV DATE DRN APP 15 11-90 B.C.	REV DATE DRN APP 16 11-90 B.C.	REV DATE DRN APP 17 11-90 B.C.	REV DATE DRN APP 18 11-90 B.C.	REV DATE DRN APP 19 11-90 B.C.	REV DATE DRN APP 20 11-90 B.C.	WIRE NO 242 IDENTIFIED TERMINAL NO 155 IN L.H. CONSOLE HAS 156	SURFACE FINISH INDICATION MACHINING SYMBOL	FIRST ANGLE PROJECTION	DRAWN BY CLEWS PASSED DATE 5-1-90	GEN. ARRGT. FROM	MATERIAL WEIGHT	ORDER NUMBER 503253/57	DRAWING NUMBER P308260	SHEET 1 OF 1	REV A
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CUBICLE MAY BE SPLIT FOR SHIPPING
 COLOUR - LIGHT AIRCRAFT GREY 627



REV	DESCRIPTION	DATE
A	TERMINALS ADDED	08/79

DM DAVY LINEAR MOTORS LIMITED
 Empress Road, Loughborough

VON ROLL CUBICLE AND
 TERMINAL LAYOUT

JB 2.3.89

1:10 37769/70 1M013469A
 503251 & 3/57 D.M.LTD.DRG.NO.P308280