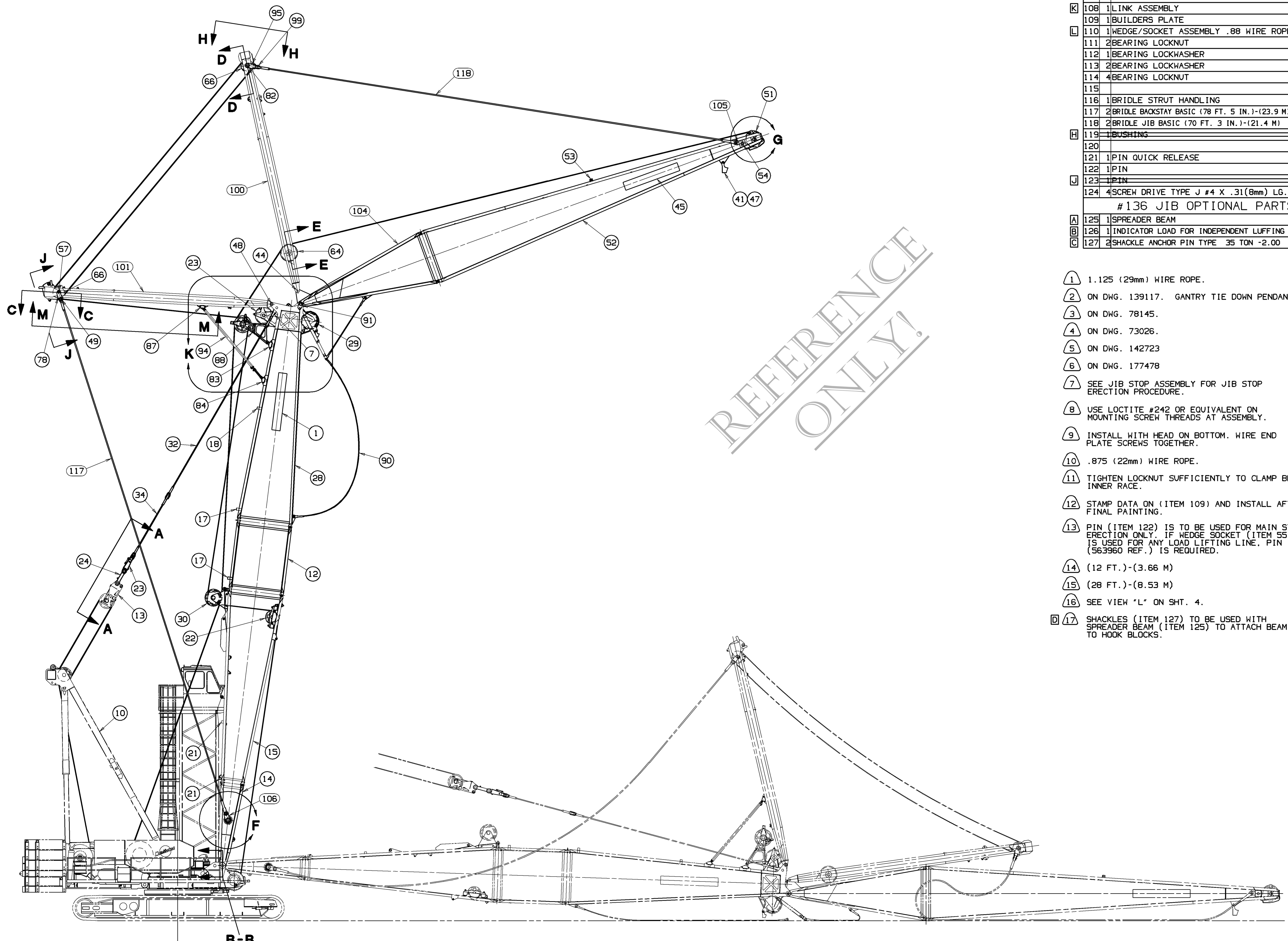


BOOM HANDLING INSTRUCTIONS				
TRAVEL SPEED NOT TO EXCEED 1/2 MPH (.80 km/h) BOOM ANGLE AT 10° OR LESS.				
GANTRY POSITION	MAX. LENGTH OF BOOM HANDLED		BOOM MAKE UP	BOOM CONDITIONS OR LIMITATIONS
	FEET	METERS		
DOWN	40	12.19	BUTT ONLY	EQUALIZER PINNED TO RAILS
UP	50	15.24	BUTT & INSERT	EQUALIZER PINNED TO RAILS. CAN CANTILEVER 10 FT. (3.07 M) INSERT.



REFERENCE ONLY!

BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	MATERIAL	QTY
87	1	STRUT SUPPORT BEAM		172947
88	1	LUFFING ROPE GUIDE ASSEMBLY		172986
89				
90	1	JIB STOP ASSEMBLY		173017
91	1	PIN R.H.		173035
92	1	PIN L.H.		173045
93	1	ROPE GUARD		173292
94	2	STRUT STOP TUBE ASSEMBLY		173649
95	2	LINK		173739
96	1	TIE LINK		173740
97	2	PIN		173741
98				
99	2	PIN		174228
100	1	JIB STRUT		174953
101	1	MAIN STRUT		174954
102				
103	2	STRUT		176445
104	1	JIB BUTT (20 FT.)-(6.10 M)		177437
105	2	LINK		177476
106	2	LINK		177477
107	2	BACKSTAY PIN		177501
108	1	LINK ASSEMBLY		179956
109	1	BUILDERS PLATE		181503
110	1	WEDGE/SOCKET ASSEMBLY .88 WIRE ROPE		646245
111	2	BEARING LOCKNUT		225105
112	1	BEARING LOCKWASHER		225111
113	2	BEARING LOCKWASHER		225144
114	4	BEARING LOCKNUT		225145
115				
116	1	BRIDLE STRUT HANDLING		277293
117	2	BRIDLE BACKSTAY BASIC (78 FT. 5 IN.)-(23.9 M)		277433
118	2	BRIDLE JIB BASIC (70 FT. 3 IN.)-(21.4 M)		277434
119	1	BUSHING		290028
120				
121	1	PIN QUICK RELEASE		563803
122	1	PIN		564094
123	1	PIN		564096
124	4	SCREW DRIVE TYPE J #4 X .31(8mm) LG.		620656

- #136 JIB OPTIONAL PARTS
- 1 1.125 (29mm) WIRE ROPE.
 - 2 ON DWG. 139117. GANTRY TIE DOWN PENDANT.
 - 3 ON DWG. 78145.
 - 4 ON DWG. 73026.
 - 5 ON DWG. 142723
 - 6 ON DWG. 177478
 - 7 SEE JIB STOP ASSEMBLY FOR JIB STOP ERECTION PROCEDURE.
 - 8 USE LOCTITE #242 OR EQUIVALENT ON MOUNTING SCREW THREADS AT ASSEMBLY.
 - 9 INSTALL WITH HEAD ON BOTTOM. WIRE END PLATE SCREWS TOGETHER.
 - 10 .875 (22mm) WIRE ROPE.
 - 11 TIGHTEN LOCKNUT SUFFICIENTLY TO CLAMP BEARING INNER RACE.
 - 12 STAMP DATA ON (ITEM 109) AND INSTALL AFTER FINAL PAINTING.
 - 13 PIN (ITEM 122) IS TO BE USED FOR MAIN STRUT ERECTION ONLY. IF WEDGE SOCKET (ITEM 55) IS USED FOR ANY LOAD LIFTING LINE, PIN (563960 REF.) IS REQUIRED.
 - 14 (12 FT.)-(3.66 M)
 - 15 (28 FT.)-(8.53 M)
 - 16 SEE VIEW "L" ON SHT. 4.
 - 17 SHACKLES (ITEM 127) TO BE USED WITH SPREADER BEAM (ITEM 125) TO ATTACH BEAM TO HOOK BLOCKS.

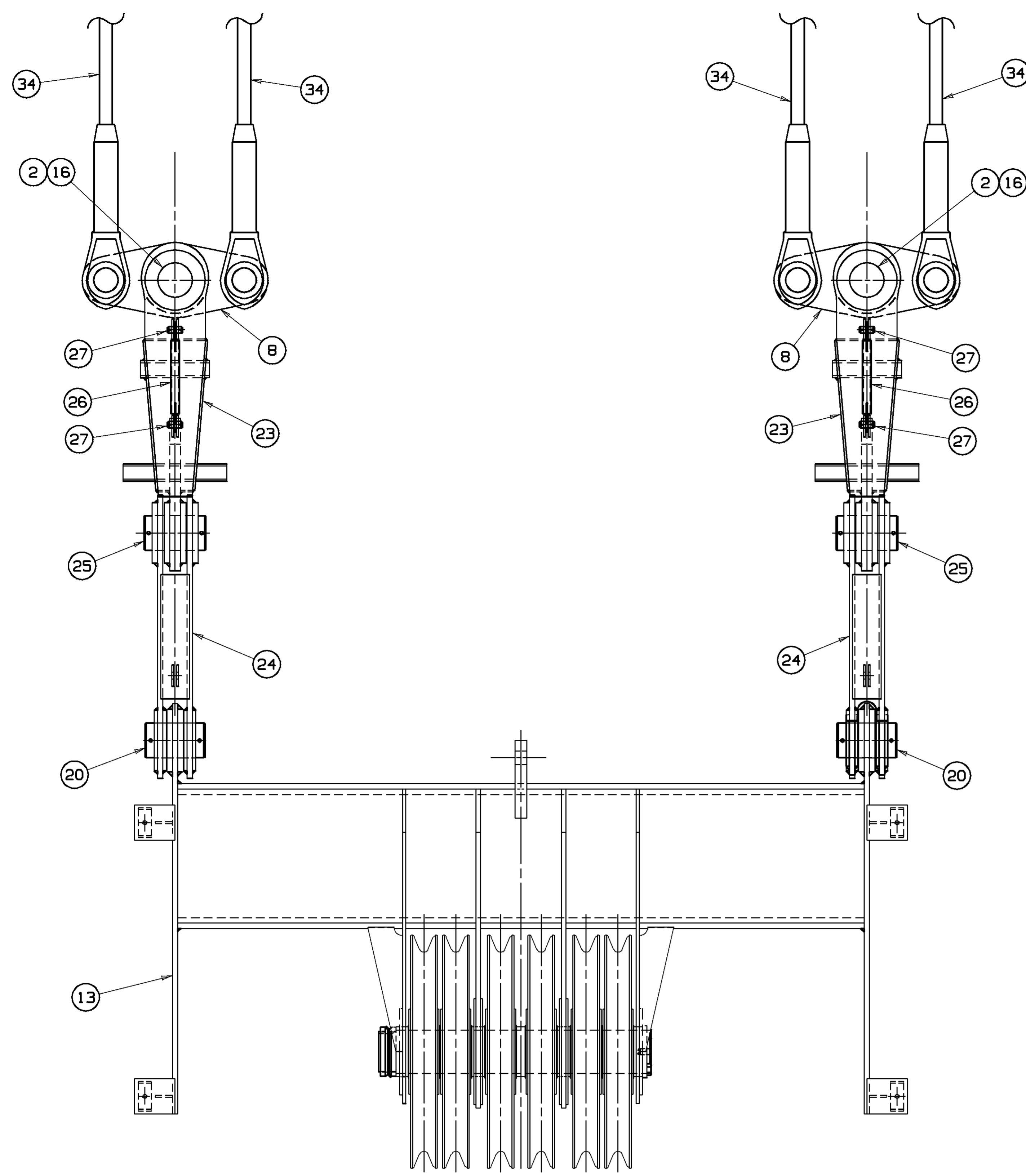
BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	MATERIAL	QTY
80 FT. (24.4 M) #44 BOOM BASIC PARTS				
1	2	BOOM SIGN		22656
2	2	END PLATE		76095
3	2	WASHERS		137502
4				
5	2	PIN		160720
6	1	BOOM ANGLE INDICATOR ASSEMBLY		168779
7	2	PENDANT LINK		169785
8	2	EQUALIZER PENDANT LINK		169834
9				
10	1	GANTRY ASSEMBLY		170418
11	4	PIN		170690
12	1	10 FT. (3.05 M) INSERT		171227
13	1	EQUALIZER ASSEMBLY		171248
14	1	40 FT. (12.19 M) BUTT LOWER SECTION		171283
15	2	40 FT. (12.19 M) BUTT UPPER SECTION		171284
16	2	PIN		171500
17	2	TIMBER (WIRE ROPE)		171697
18	1	TIMBER (WIRE ROPE)		171704
19				
20	2	PIN		172132
21	2	TIMBER		172478
22	1	WIRE ROPE GUIDE ASSEMBLY		172559
23	2	PENDANT LINK		172669
24	2	PENDANT LINK		172670
25	2	PIN		172675
26	2	LINK		172676
27	4	PIN		172677
28	1	BOOM TOP (30 FT.)-(9.14 M)		172878
29	1	BOOM POINT SHAFT ASSEMBLY (LOWER)		172960
30	1	WIRE ROPE GUIDE ASSEMBLY		173412
31				
32	4	BASIC PENDANT (30 FT.)-(9.14 M)		276826
33	2	PENDANT		277369
34	4	PENDANT (10 FT. 1)-(3.07 M)		277382

#44 BOOM OPTIONAL PARTS				
35				
36				
37				
38				
39				
40				

70 FT. (21.3 M) #136 JIB BASIC PARTS				
41	2	SOCKET		13204
42	4	PIN		14902-3
43	2	KEEPER		15275
44	2	PIN		18302-2
45	2	BOOM SIGN		22656
46	2	PIN KEEPER		72737
47	2	WEDGE		75610
48	2	PIN		138402
49	2	PIN		143490
50				
51	1	JIB POINT SHAFT ASSEMBLY		161363
52	1	JIB TOP (50 FT.)-(15.24 M)		161388
53	1	WIRE ROPE ROLLER GUIDE ASSEMBLY		161399
54	2	PIN		161440
55	1	SOCKET		162233
56	1	WEDGE		162234
57	2	PIN		165513
58	1	SOCKET		165547
59	1	WEDGE		169576
60	2	KEEPER		169810
61				
62	2	END PLATE		170671
63	2	PIN		170673
64	2	SHEAVE ASSEMBLY		171250
65	1	SPACER		171407
66	10	SHEAVE ASSEMBLY		171932
67				
68				
69	2	SPACER		172082
70	1	SHAFT		172497
71	1	SHAFT		172498
72	2	SPACER		172500
73	4	SPACER		172501
74	1	SPACER		172502
75	1	SLEEVE		172503
76	1	LINK		172504
77	1	THRUST WASHER		172505
78	2	LINK		172508
79	1	SHAFT		172511
80	1	SPACER		172512
81				
82	2	PIN		172688
83	1	ROPE GUIDE BEAM		172883
84	1	STRUT SUPPORT BEAM		172884
85	8	PIN		172935
86	8	PIN		172937

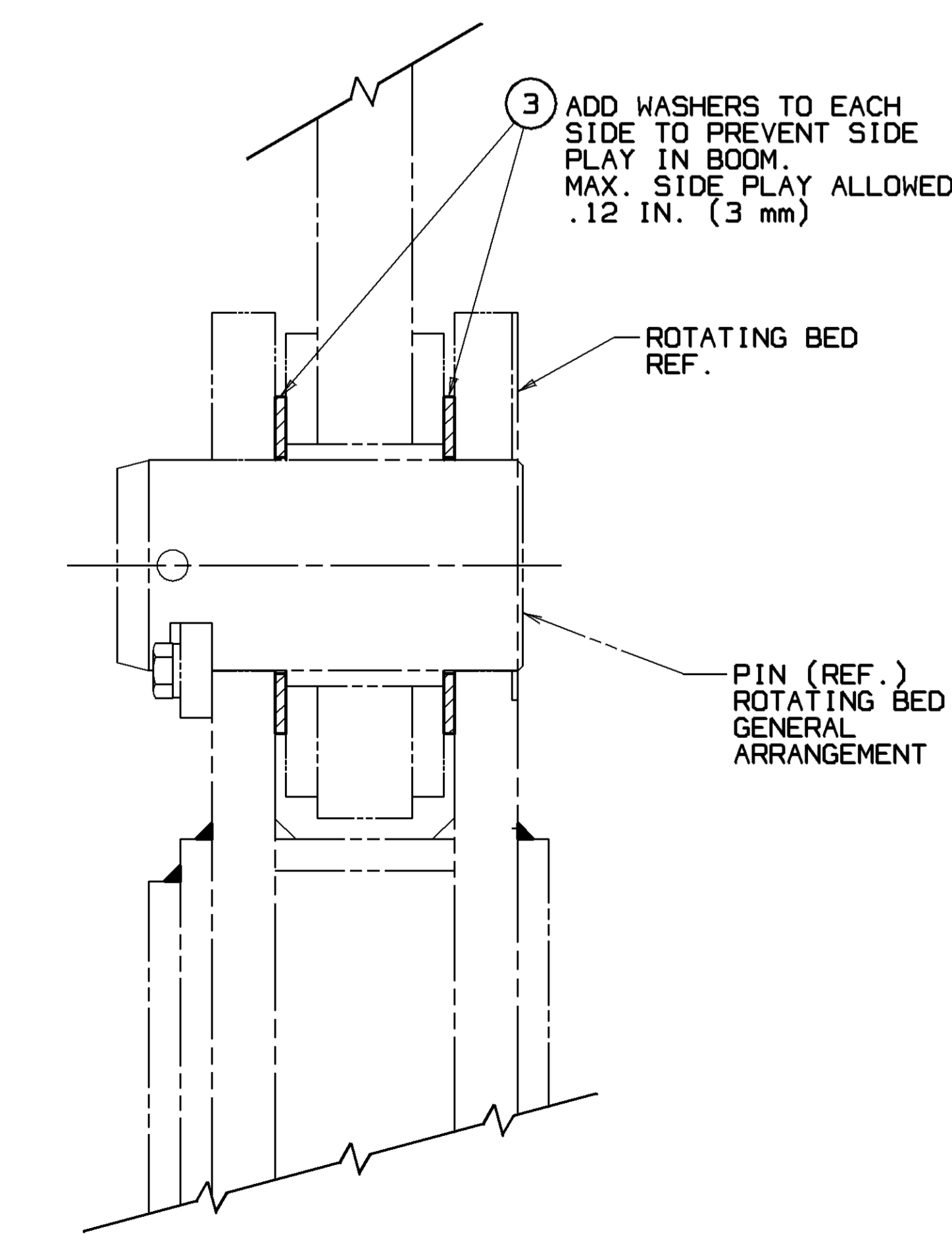
FIRST ON S.O. 1507

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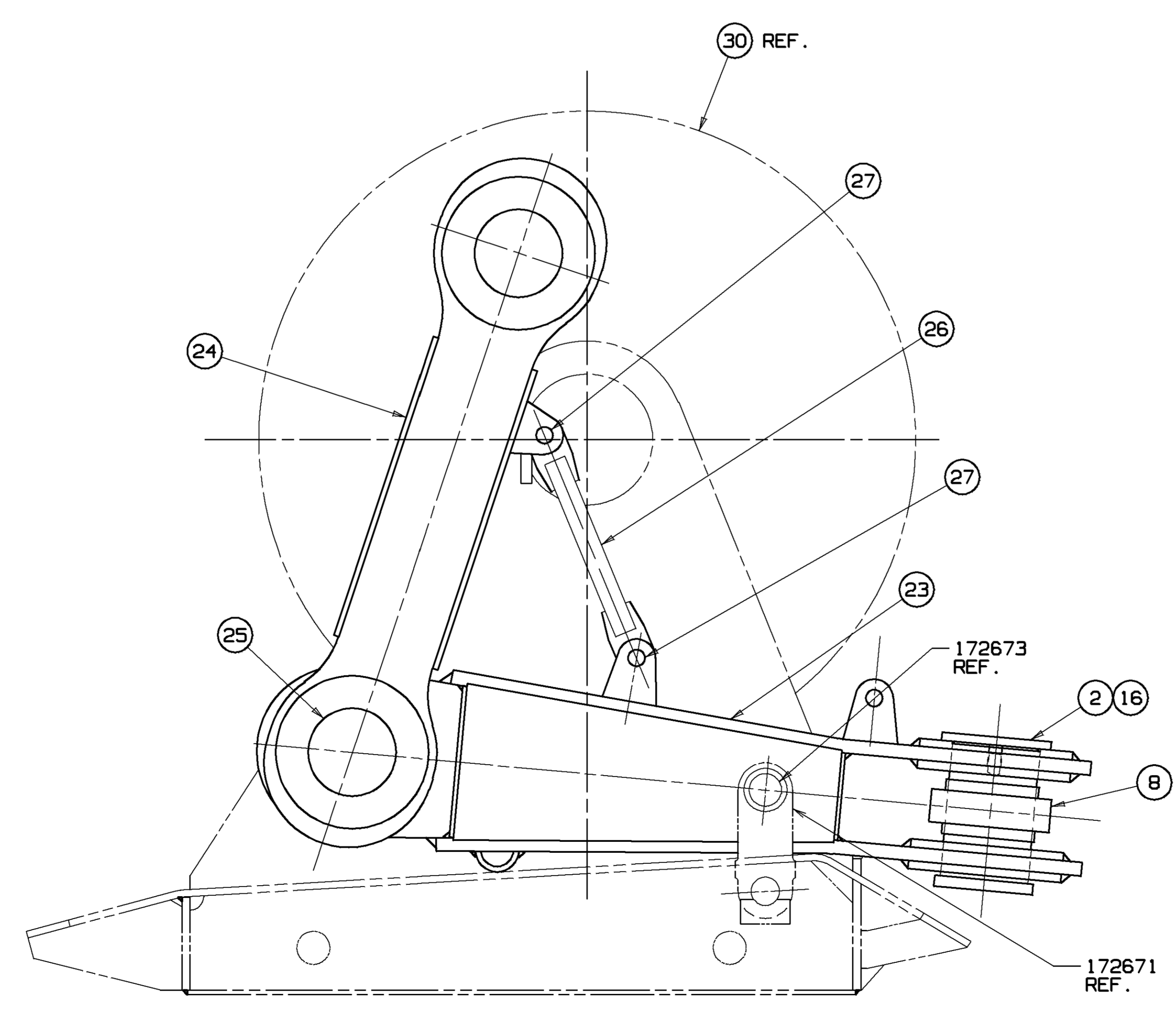


VIEW "A" - "A"
SCALE: 1.5 = 1 FT.

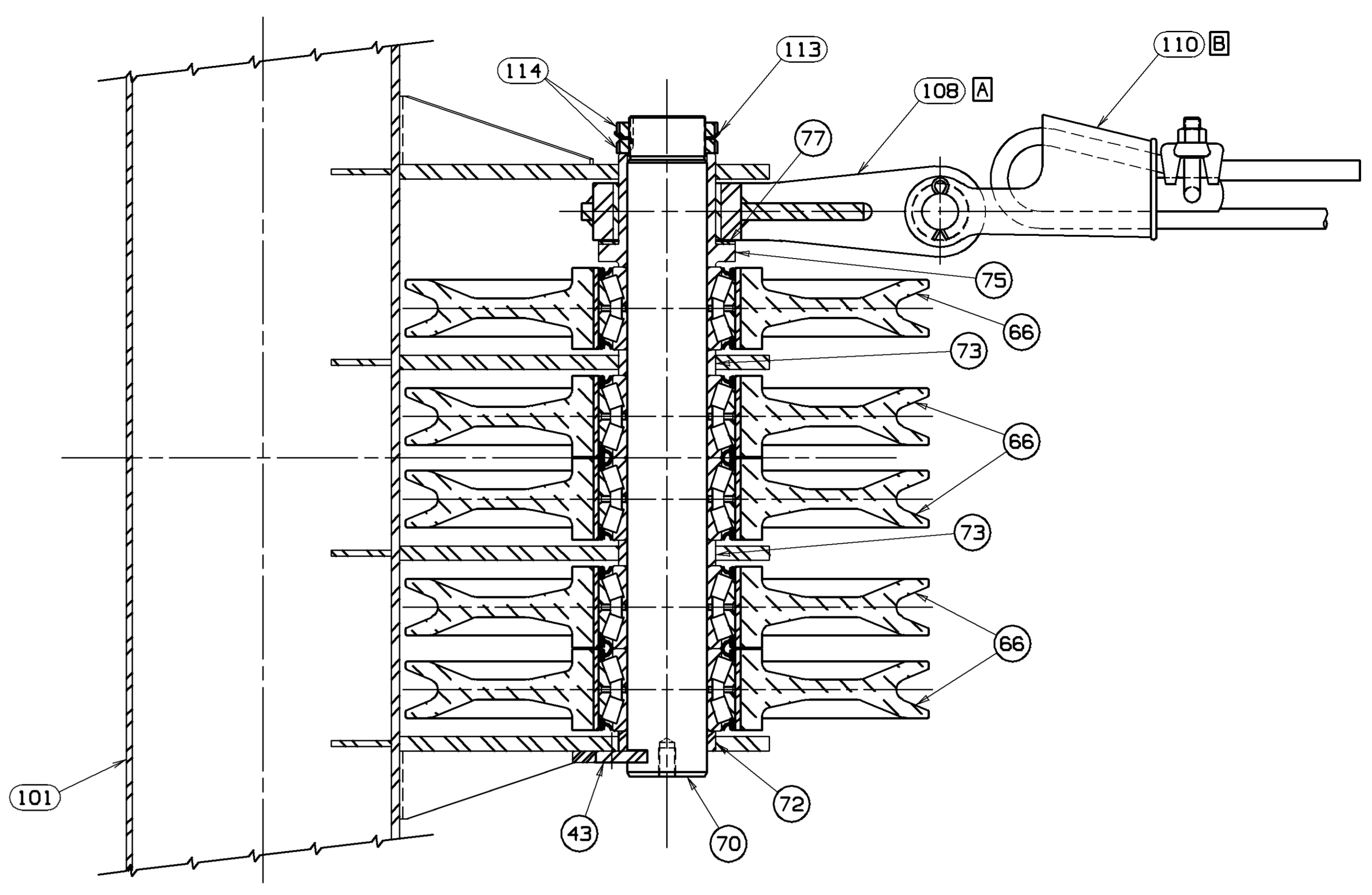
REFERENCE ONLY!



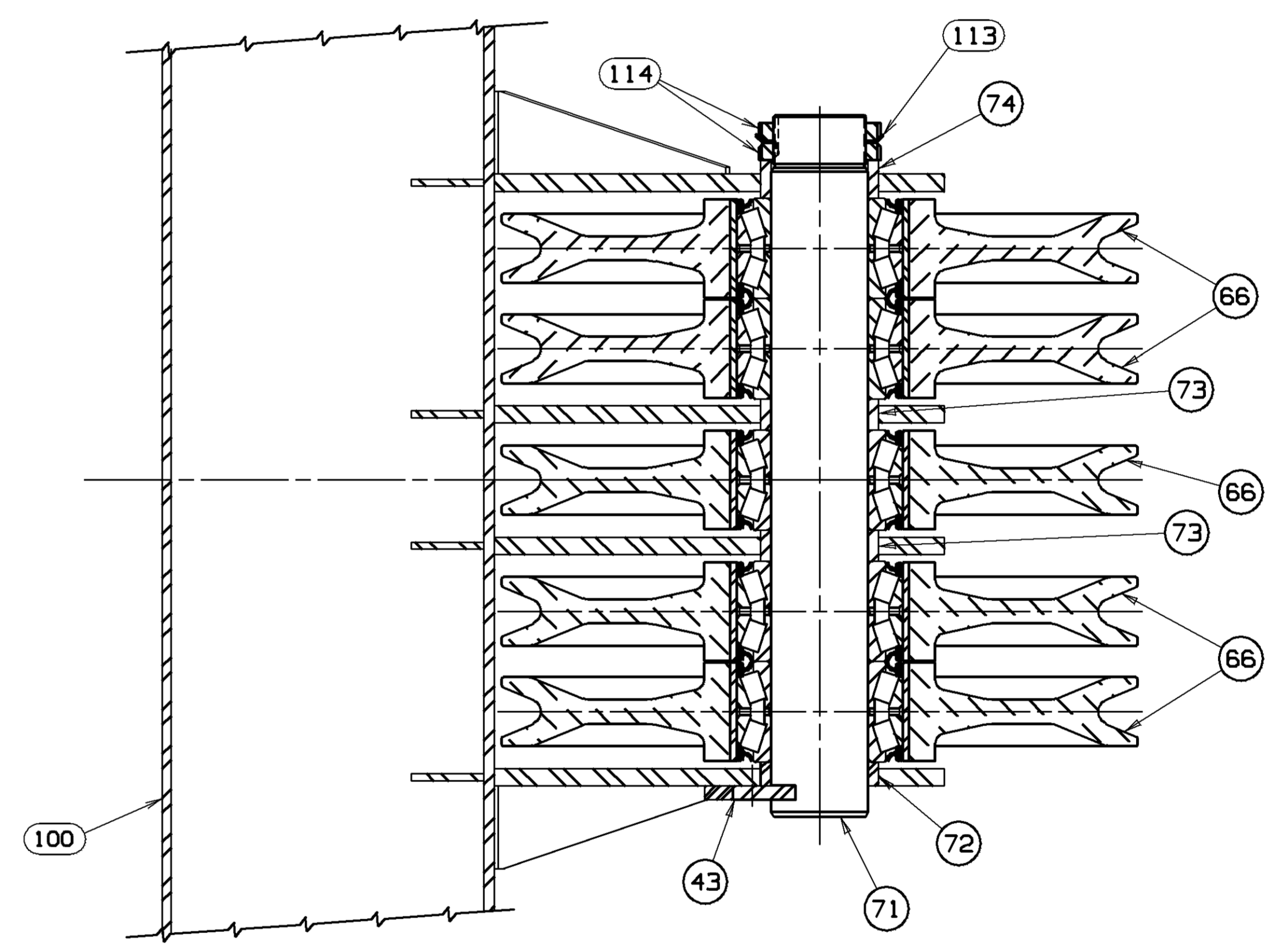
SECTION "B" - "B"
SCALE: 4 = 1 FT.



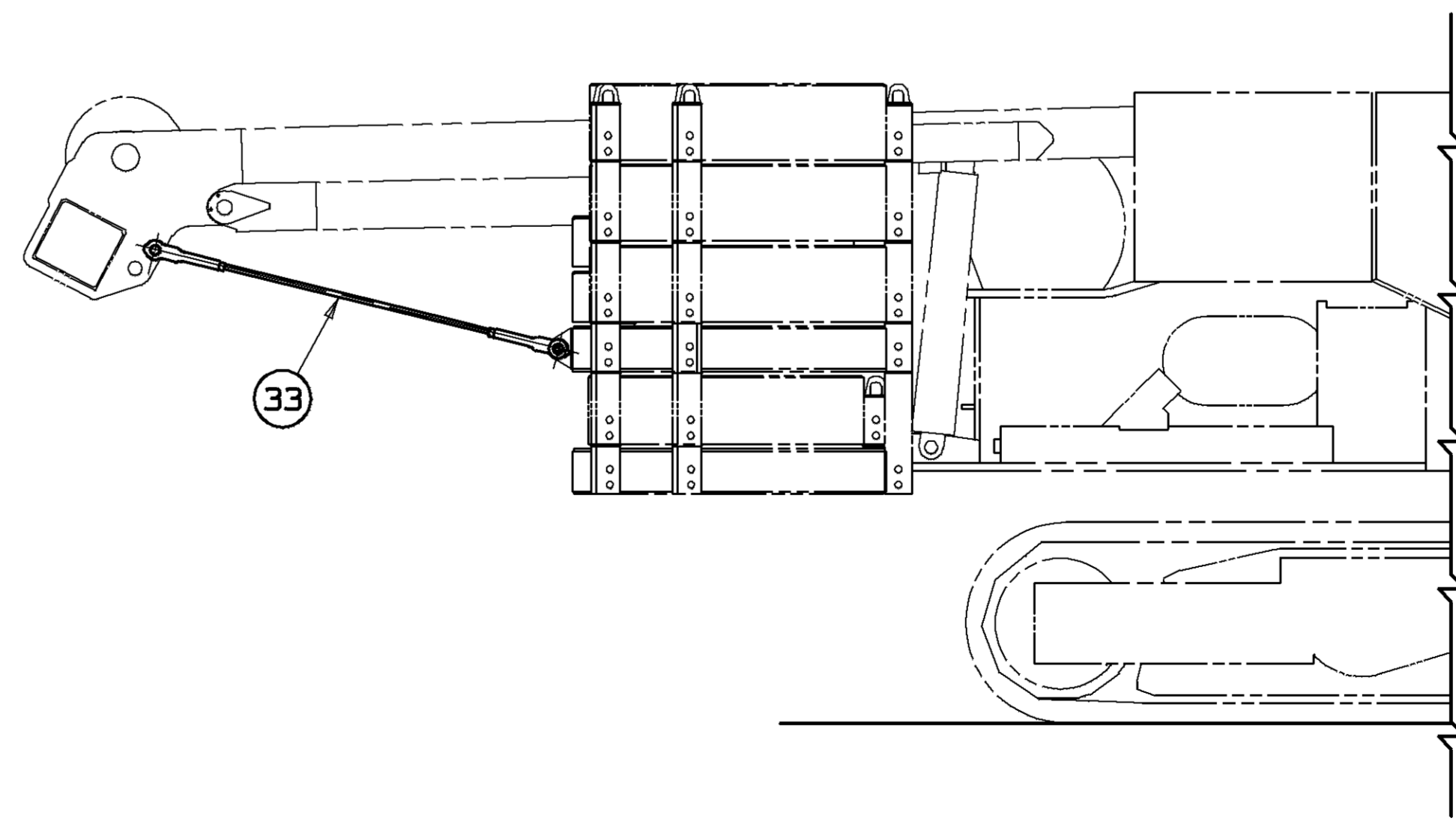
LINK STORAGE FOR SHIPPING



SECTION "C" - "C"
SCALE: 3 = 1 FT.



SECTION "D" - "D"
SCALE: 3 = 1 FT.



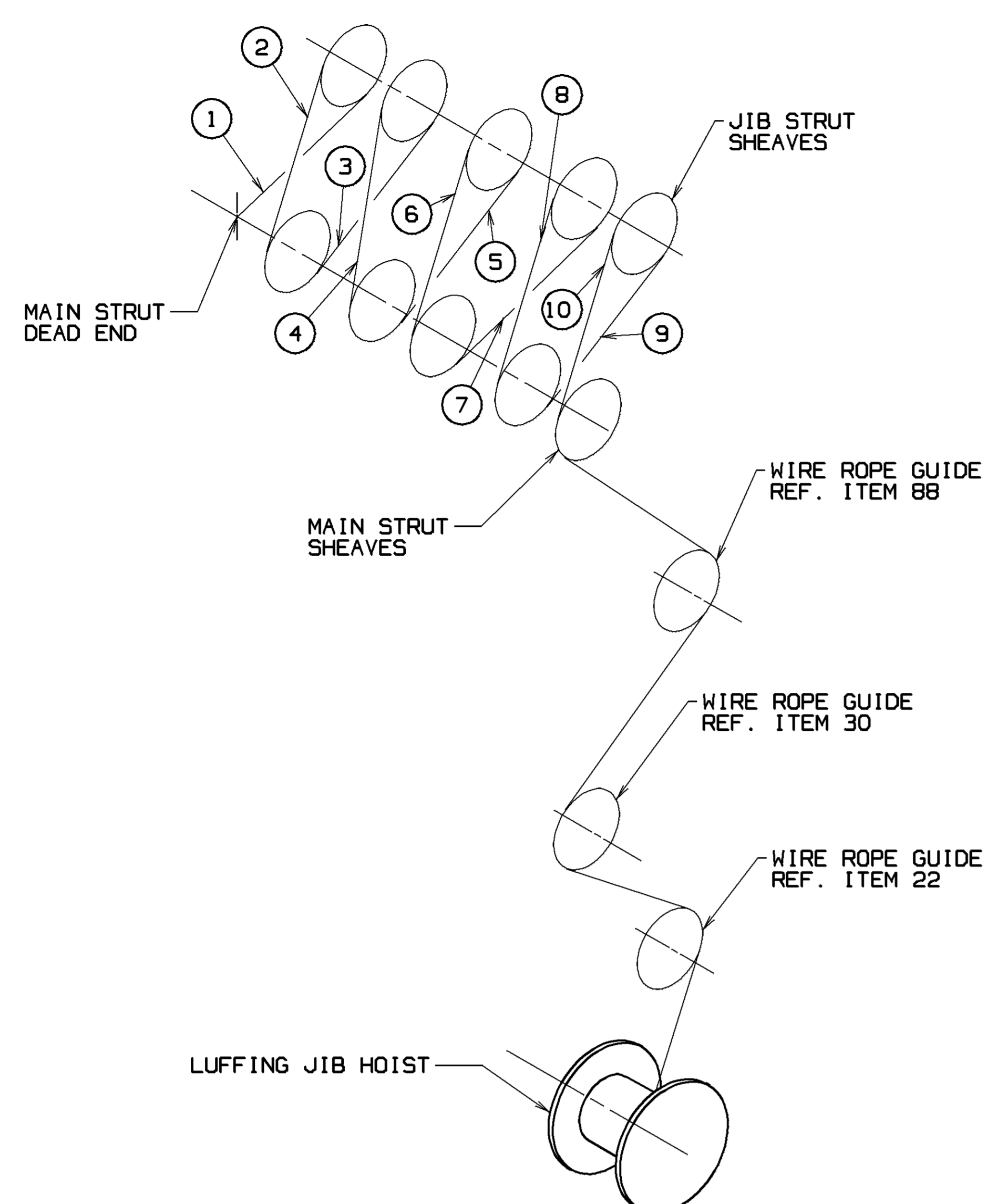
VIEW SHOWING GANTRY TIE-DOWN

BILL OF MATERIAL				ASSEMBLIES USED ON
QTY	ITEM NO.	DESCRIPTION	MATERIAL	QTY

REV	DATE	DESCRIPTION
12-17-97	PGD	AS WAS ITEMS 75 AND 113.
12-17-97	PGD	AS WAS ITEMS 58, 59 & 123

177438
SHT 2 OF 4

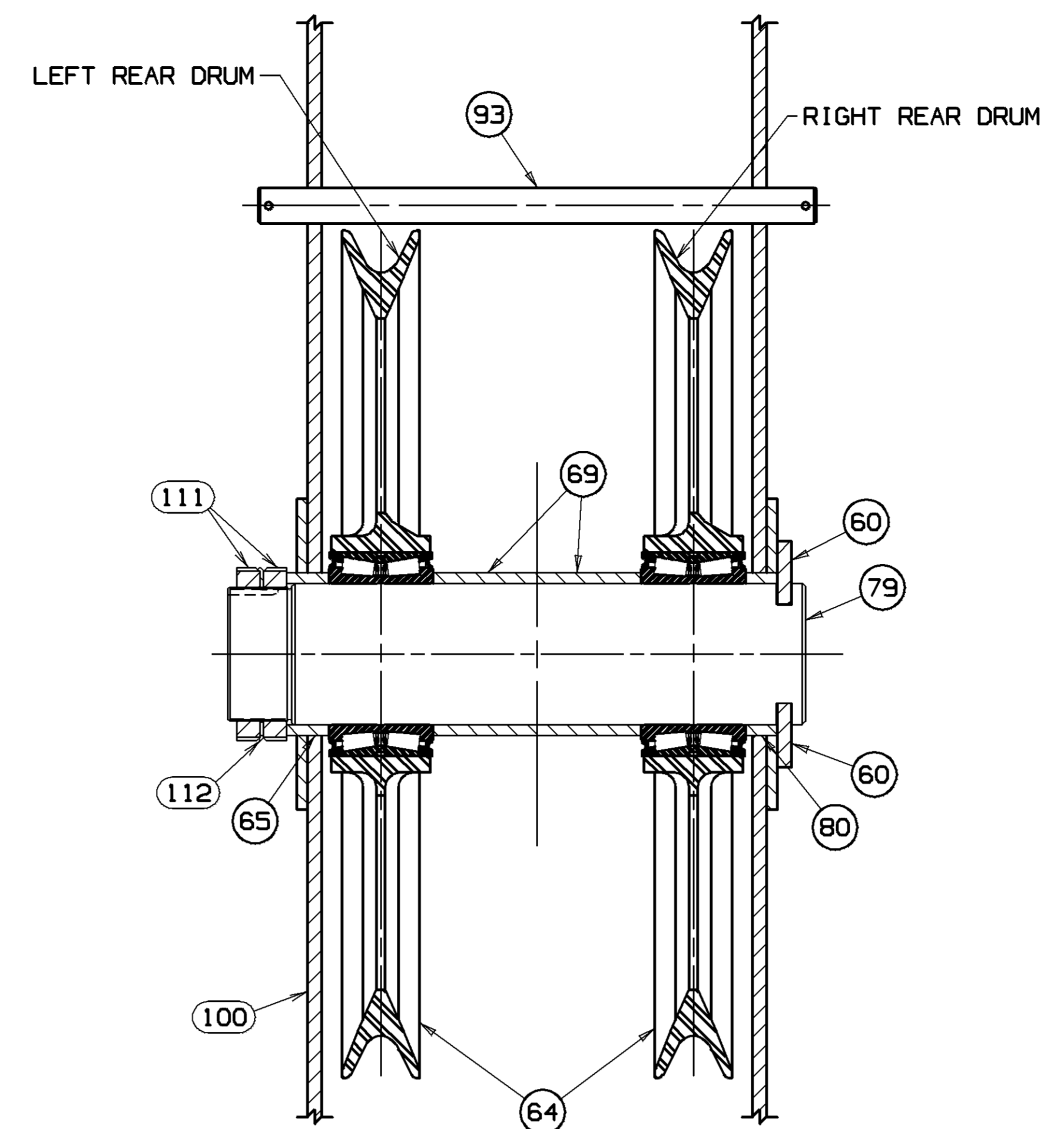
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DECIMAL PLACES	FABRICATION	MACHINING	DR: DP	DR: DP	MOD: M-250	APP: GMP	DATE: 12-5-95	PATTERN NO.	
(1) PLACE 0.0	± 1.50	± 1.50						177438	
(2) PLACE 0.50	± 0.00	± 1.20						SHT 2 OF 4	
(3) PLACE 0.000	± 0.00	± 0.015							
ANGLES	± 1.50	± 0.30							



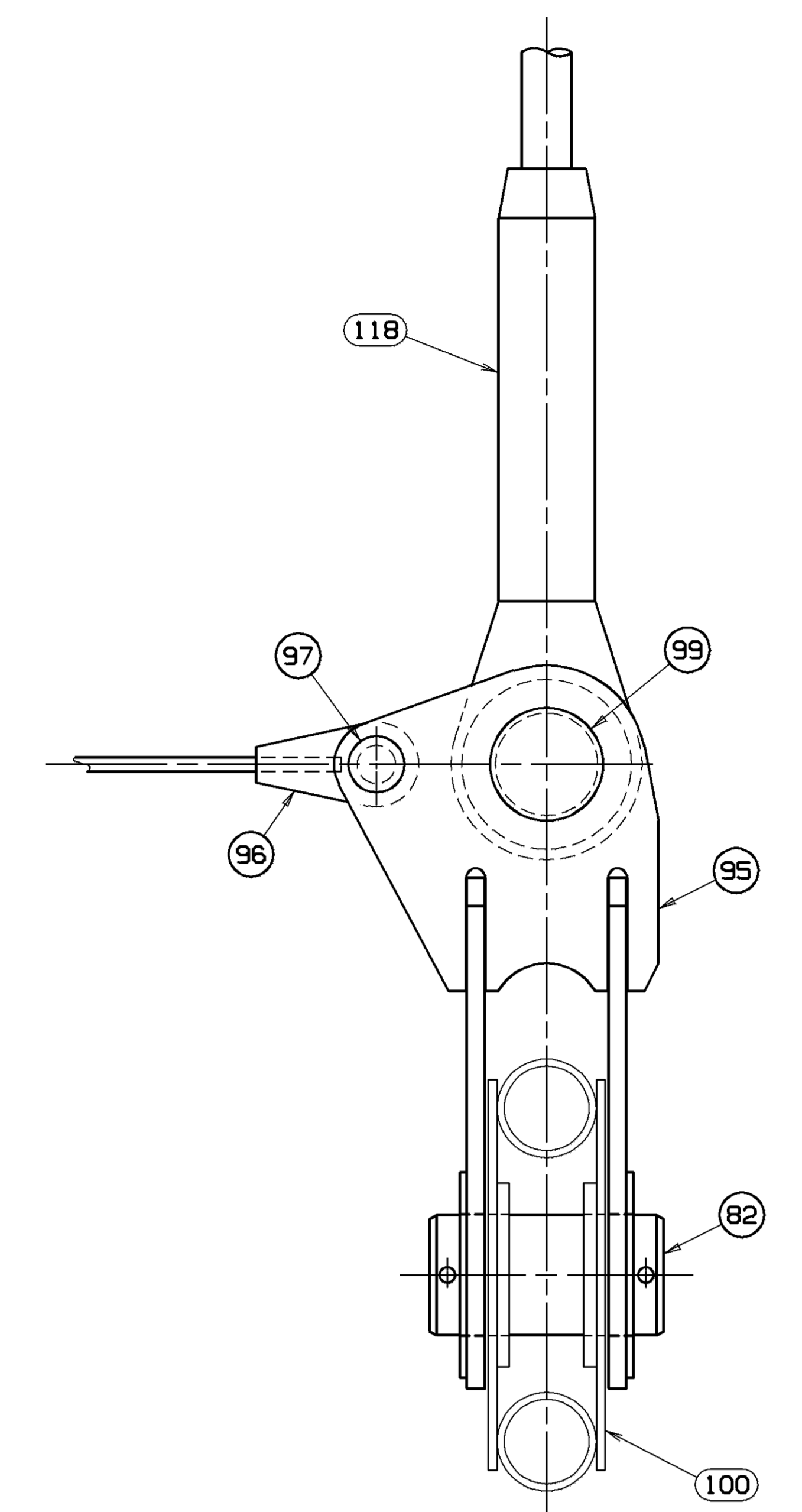
LUFFING JIB HOIST REEVING DIAGRAM FOR 10 PART LINE

760 FEET (231.7 M) OF .875" (22mm)-6 X 26 WARRINGTON SEALE, EXTRA EXTRA IMPROVED PLOW STEEL, ALTERNATE LAY, IWRC (719283) - B.S. 87,600 LBS. (39 735 kg)

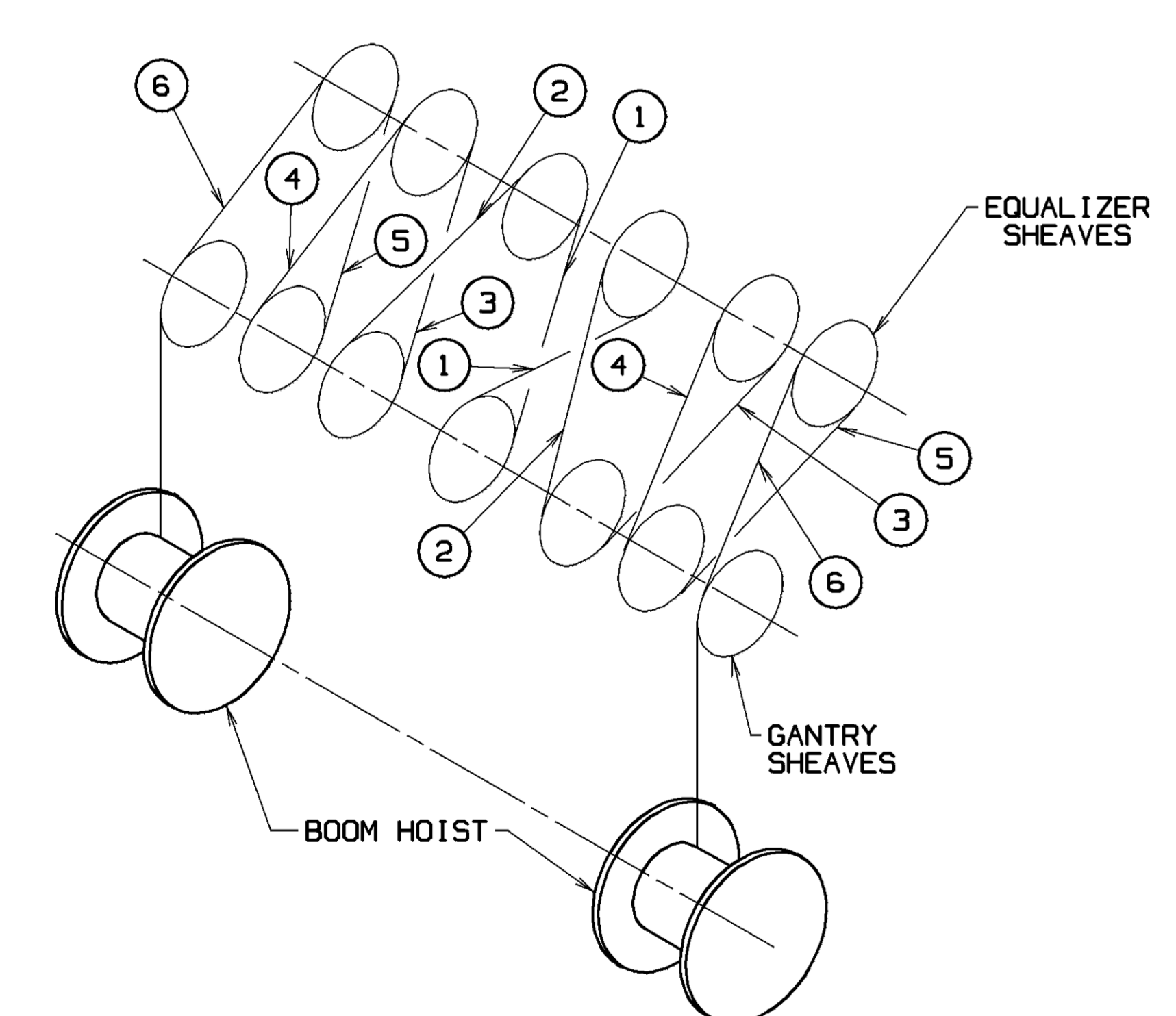
OR
ALTERNATE WIRE ROPE
760 FEET (228.6 M) OF .875" (22mm) DYFORM-6 (719335) - B.S. 87,600 LBS. (39 735 kg)



SECTION "E" - "E"
SCALE: 3 = 1 FT.



VIEW "H" - "H"
SCALE: 3 = 1 FT.

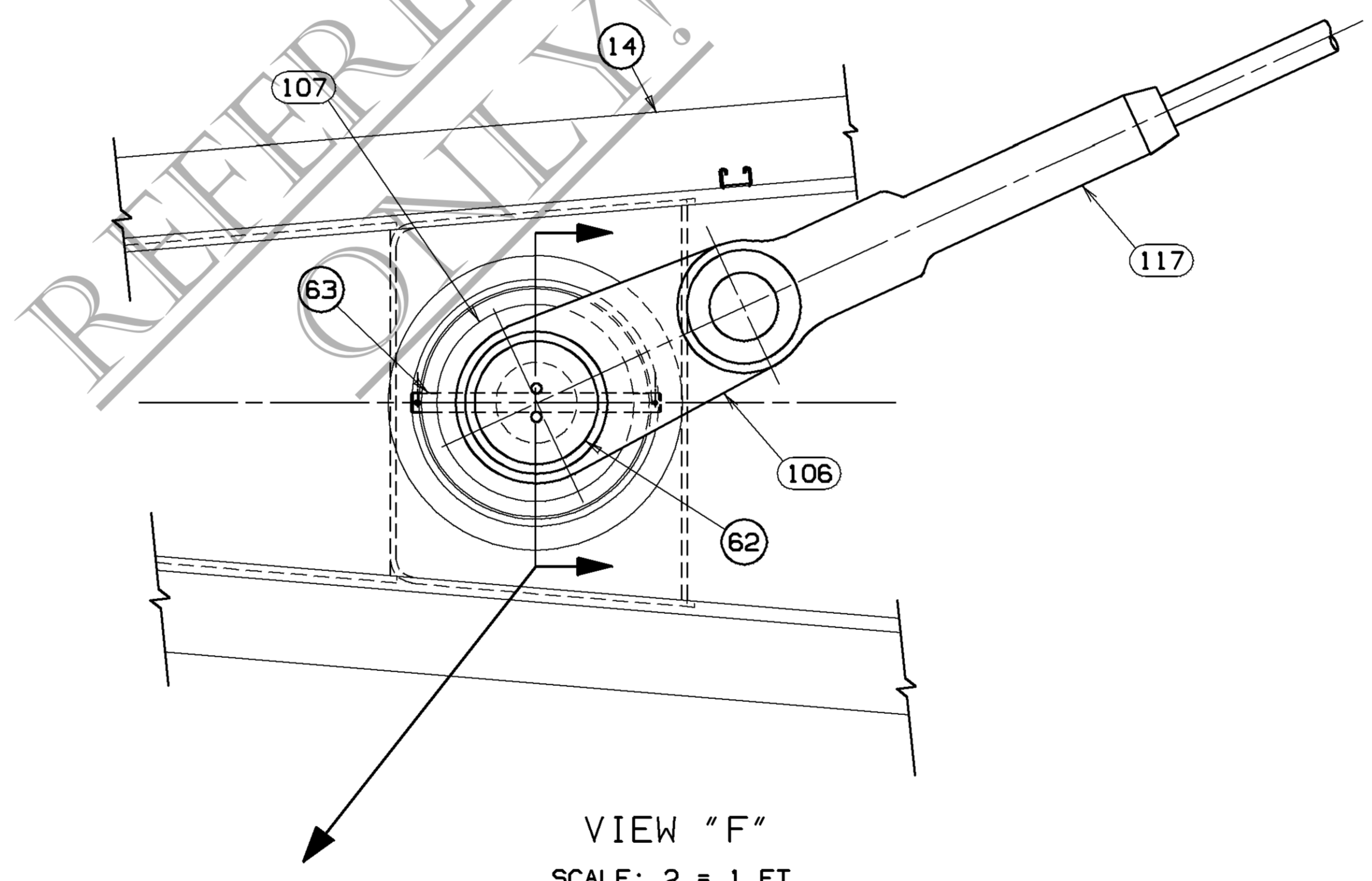


BOOM HOIST REEVING DIAGRAM FOR 12 PART LINE

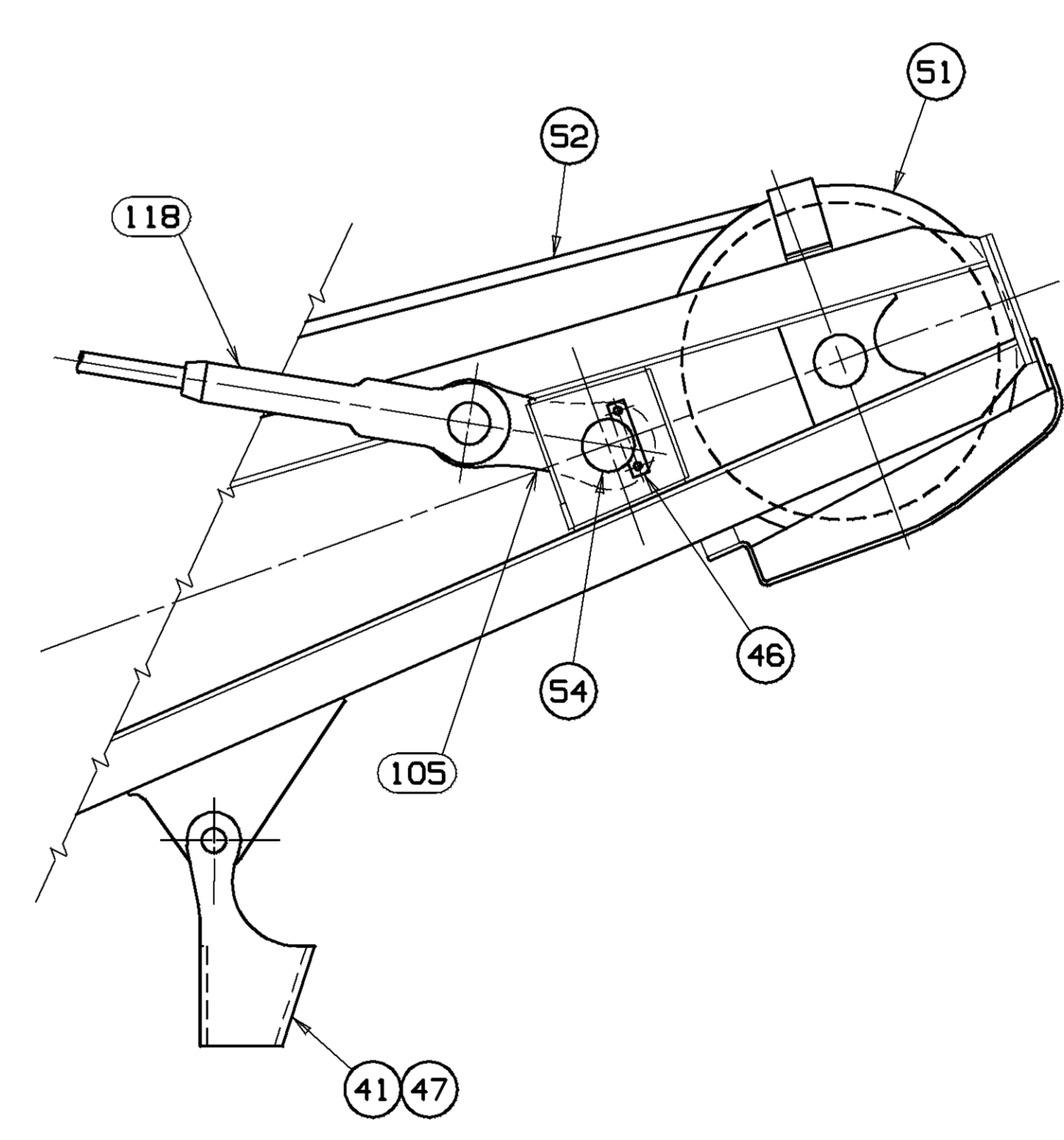
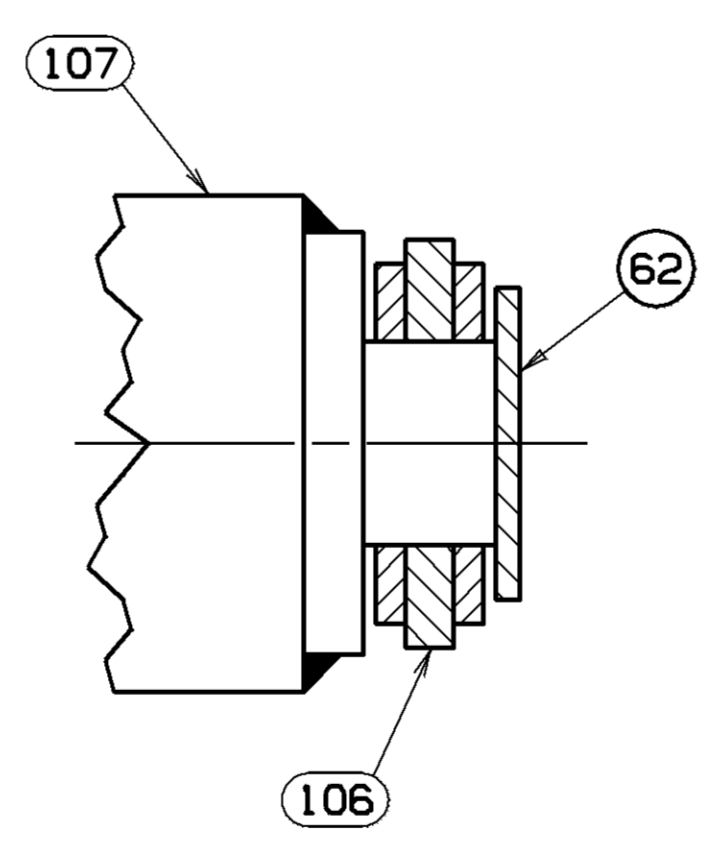
975 FEET (297.2 M) OF 1.00" (26mm)-6 X 26 WARRINGTON SEALE, EXTRA IMPROVED PLOW STEEL, ALTERNATE LAY, IWRC (719095) - B.S. 103,400 LBS. (46 900 kg)

OR
ALTERNATE WIRE ROPE
975 FEET (297.2 M) OF 1.00" (26mm)-6 X 26 WARRINGTON SEALE, EXTRA IMPROVED PLOW STEEL, REGULAR LAY, IWRC (719276) - B.S. 103,400 LBS. (46 900 kg)

OR
ALTERNATE WIRE ROPE
975 FEET (297.2 M) OF 1.00" (26mm) DYFORM-6 (719359) - B.S. 113,800 LBS. (51 620 kg)



VIEW "F"
SCALE: 2 = 1 FT.

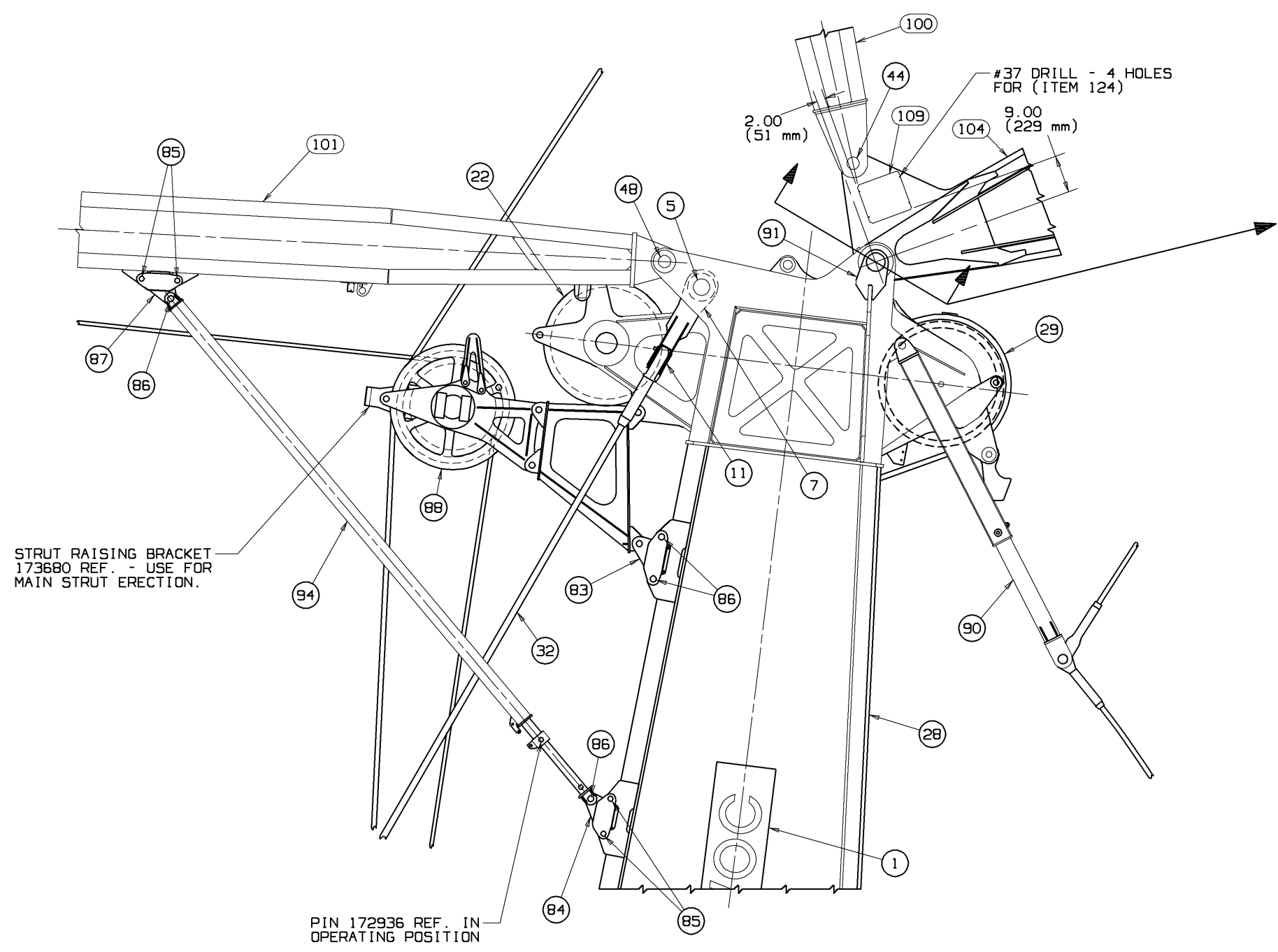


VIEW "G"
SCALE: 1 = 1 FT.

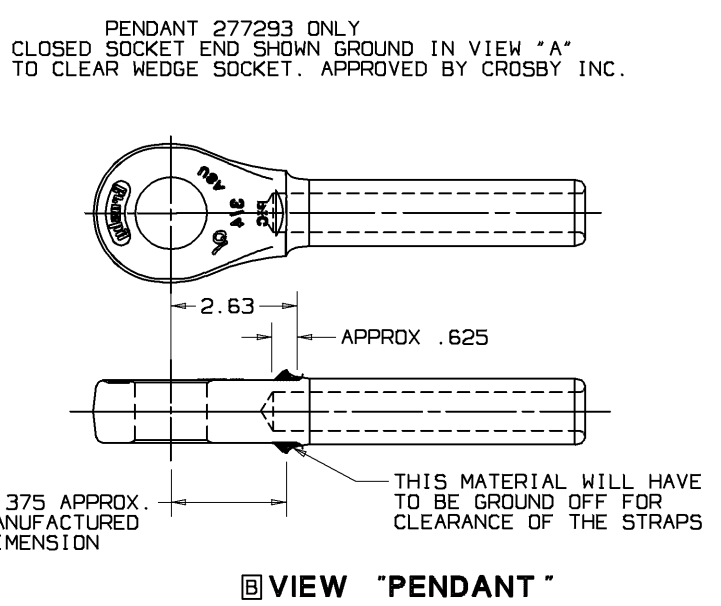
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DECIMAL PLACES	FABRICATION	MACHINING	DR: DP	MOD: M-250	APP: GMP	#44 BOOM/#136 JIB WITH	CONTAINER HANDLING TOP	DATE	12-5-95
(1) PLACE 0.0	±.150	±.120						PATTERN NO.	
(2) PLACE 0.50	±.080	±.015						REV. NO.	
(3) PLACE 0.000	±.005	±.002						177438	
ANGLES	±1.50	±0.30							

MAIN STRUT ERECTION PROCEDURE

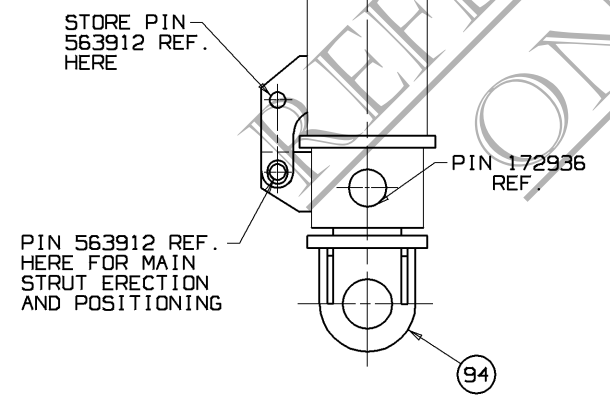
1. ATTACH LINK (ITEM 78) AND BASIC BACKSTAY PENDANT (ITEM 117) TO MAIN STRUT. ATTACH STRUT STOP TUBE ASSEMBLY (ITEM 94) TO STRUT SUPPORT BEAM (ITEM 87). STRUT STOP TUBE ASSEMBLY SHOULD BE IN ITS RETRACTED POSITION WITH PIN 563912 REF. IN THE STRUT ERECTION AND POSITIONING LOCATION. (SEE VIEW "N"- "N"). ATTACH GUY LINES OR OTHER MEANS TO STRUT STOP TUBE ASSEMBLY TO AID STRUT POSITIONING DURING STRUT ERECTION.
 DANGER:
 DO NOT STAND UNDER MAIN STRUT DURING ERECTION.
2. RUN A 1.125 (29 mm) ROPE FROM LEFT REAR DRUM OVER THE TOP OF THE STRUT RAISING BRACKET (173680 REF.) ON WIRE ROPE GUIDE ASSEMBLY (ITEM 88).
3. ATTACH ROPE TO SOCKET (ITEM 55) & WEDGE (ITEM 56) AND PIN SOCKET (ITEM 55) TO PENDANT (ITEM 116) WITH PIN (ITEM 122).
4. RAISE MAIN STRUT WITH LOAD LINE WHILE PAYING OUT LUFFING JIB HOIST LINE (DO NOT ALLOW LUFFING JIB HOIST LINE TO GO INTO TENSION UNTIL MAIN STRUT IS NEAR VERTICAL).
5. WHEN MAIN STRUT HAS BEEN RAISED TO A POSITION WHERE RETRACTED STRUT STOP TUBE ASSEMBLY (ITEM 94) CONTACTS THE BOOM TOP PLATEWORK, REMOVE PIN 563912 (REF.) FROM STRUT STOP TUBE ASSEMBLY. STORE AS SHOWN IN VIEW "N"- "N". EXTEND STRUT STOP TUBE ASSEMBLY TO STRUT SUPPORT BEAM (ITEM 84) AND CONNECT USING PIN (ITEM 86).
6. SUPPORT MAIN STRUT WITH LUFFING JIB HOIST LINE AND MOVE INTO A POSITION SUPPORTED BY RETRACTED STRUT STOP TUBE ASSEMBLY (ITEM 94). AND REINSTALL PIN 563912 (REF.) IN STRUT ERECTION AND POSITIONING LOCATION (REF. VIEW "N"- "N").
7. WITH STRUT RESTING ON STRUT STOP TUBE ASSEMBLY (ITEM 94), DISCONNECT SOCKET (ITEM 55) AND PIN PENDANT (ITEM 116) TO STRUT USING PIN (ITEM 121). (REF. VIEW "M"- "M")
8. CONNECT ALL BACKSTAY PENDANTS AND LINKS.
9. AFTER ALL BACKSTAY PENDANTS AND LINKS ARE IN PLACE AND BACKSTAY IS PINNED TO BACKSTAY PIN (ITEM 107) IN BOOM BUTT, REMOVE PIN 172936 (REF.) AND RAISE MAIN STRUT USING LUFFING JIB HOIST LINE UNTIL PIN HOLES IN STRUT STOP TUBE ASSEMBLY (ITEM 94) ALIGN IN OPERATING POSITION. (REF. VIEW "K")
 NOTE: IF THE JIB STRUT (ITEM 100) BEGINS TO RAISE BEFORE THE HOLES IN STRUT STOP TUBE ASSEMBLY (ITEM 94) ALIGN, SECURE JIB STRUT TO JIB.
10. INSERT PIN 172936 (REF.), RELAX LUFFING JIB HOIST LINE. DISCONNECT JIB STRUT FROM JIB, AND REMOVE AND STORE PIN 563912 (REF.). SEE VIEW "N"- "N".
11. REVERSE PROCEDURE FOR LOWERING MAIN STRUT.



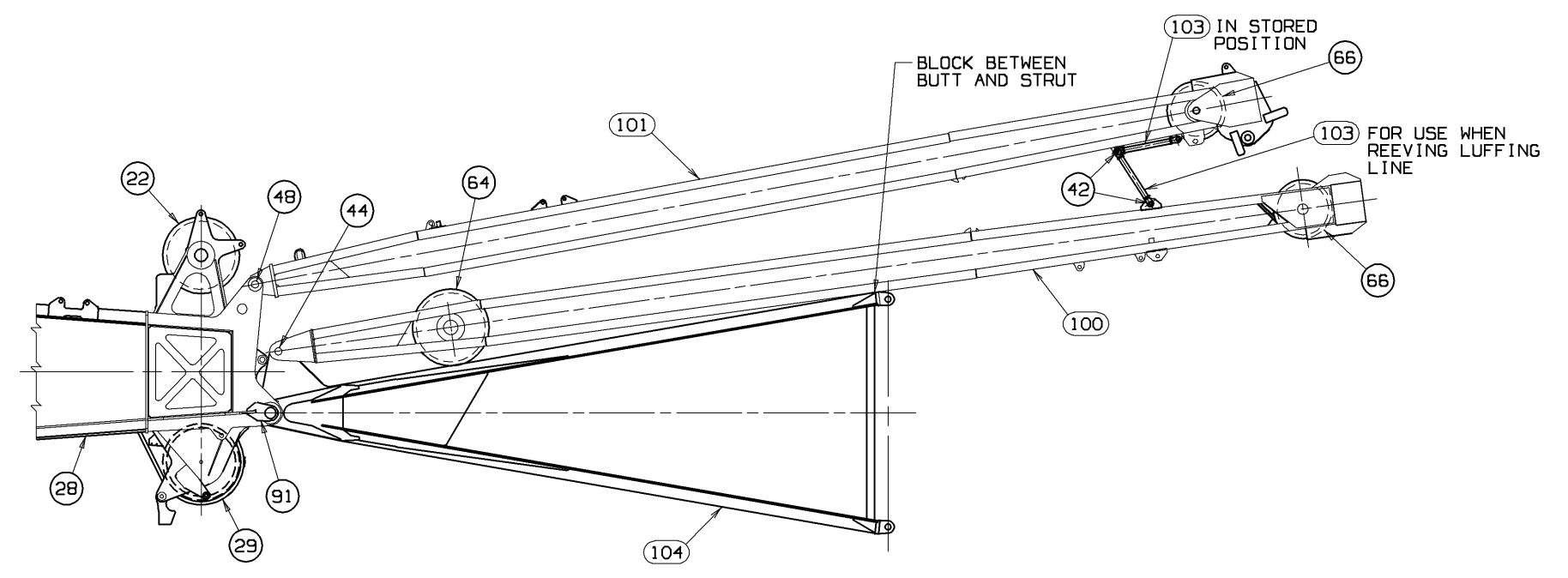
VIEW "K"
 SCALE: .75 = 1 FT.



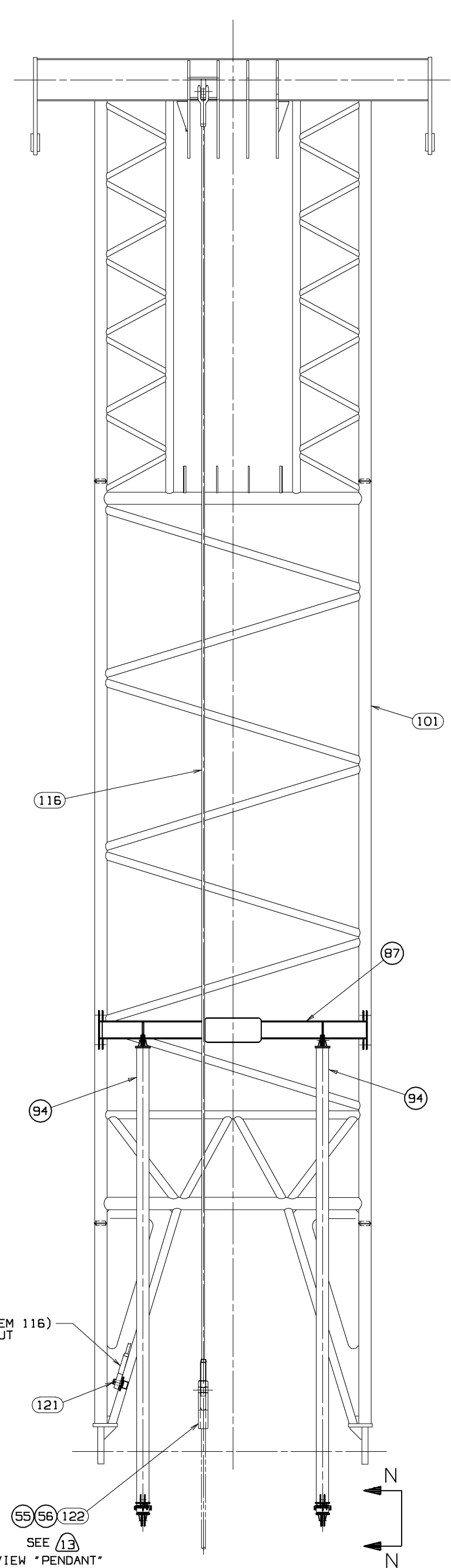
VIEW "PENDANT"



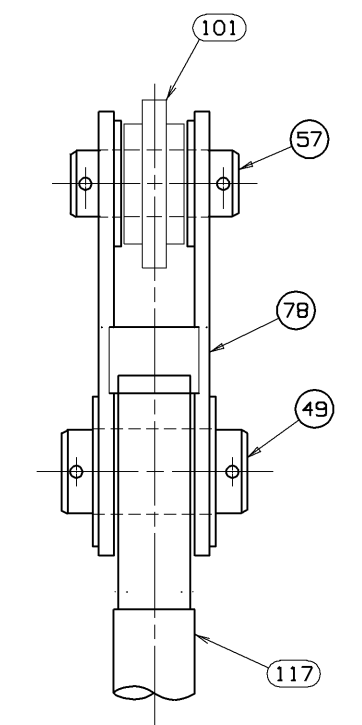
VIEW "N" - "N"
 SCALE: 4 = 1 FT.



VIEW "L"
 SCALE: .375 = 1 FT.



VIEW "M" - "M"
 SCALE: .75 = 1 FT.



VIEW "J" - "J"
 SCALE: 3 = 1 FT.

DECIMAL PLACES	FABRICATION	MACHINING	SCALE	MANUFACTURER	DESCRIPTION
(1) PLACE 0.0	±.12	±.18	±.03	Manitowoc Cranes, Inc.	LUFFING JIB RIGGING ASSEMBLY
(2) PLACE 0.00	±.06	±.12	±.015	Manitowoc, Wisconsin	#44 BOOM/#136 JIB WITH
(3) PLACE 0.000	±.003	±.005	±.0005	Manitowoc Cranes, Inc.	CONTAINER HANDLING TOP

REVISIONS
 01-25-10 JAS
 AT ADDED NOTE
 AT ADDED NOTE
 AT ADDED NOTE

DATE: 12-5-95
 DRAWING NO.: 177438
 SHEET: 4 OF 4

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6629103794 FOR COMPONENTS LISTED IN 605000-00-036