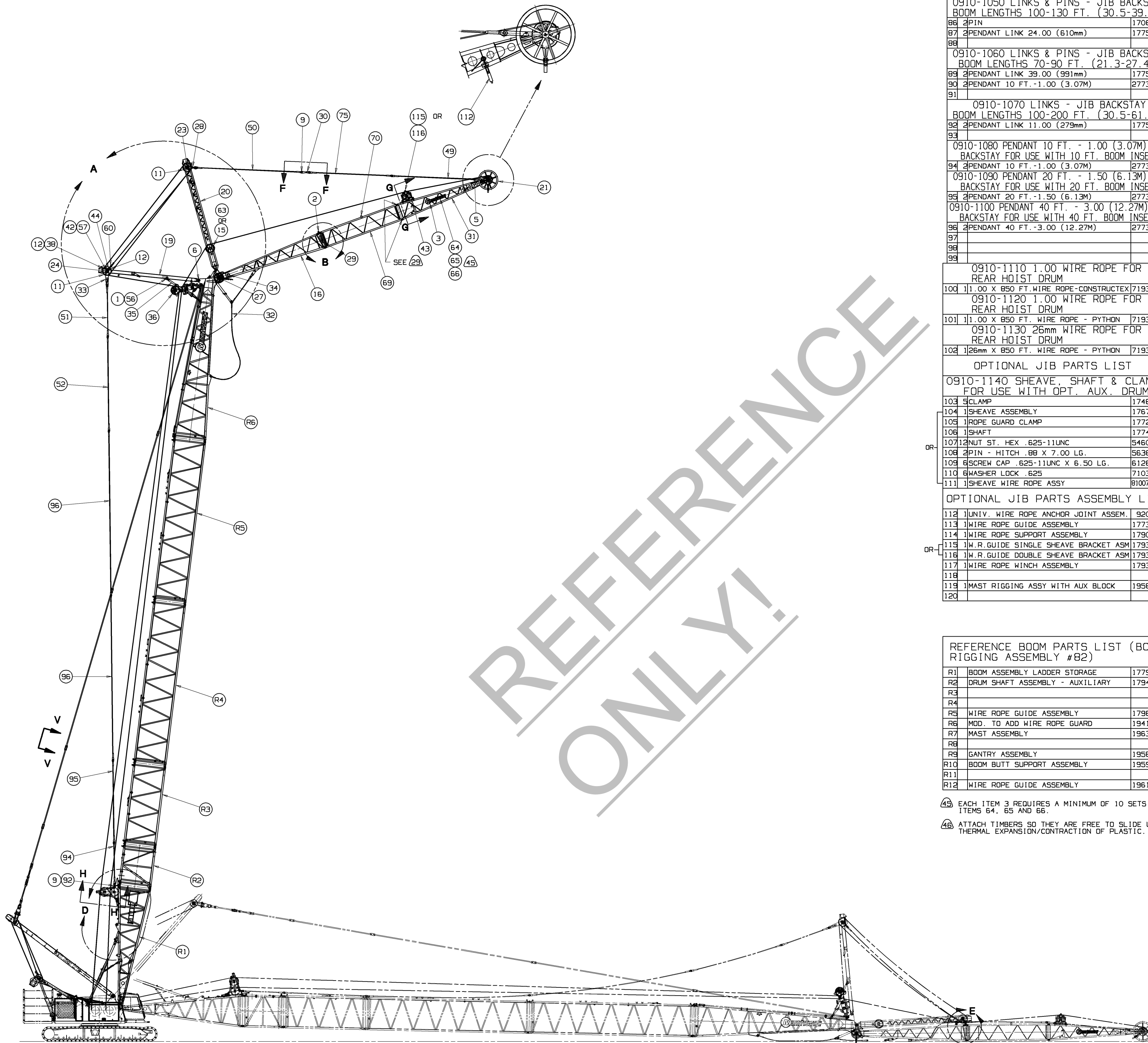




BILL OF MATERIAL				
ITEM NO.	QTY.	DESCRIPTION	LENGTH	MATERIAL
0910-1050 LINKS & PINS - JIB BACKSTAY BOOM LENGTHS 100-130 FT. (30.5-39.6M)				
86	2	PIN		17069015
87	2	PENDANT LINK 24.00 (610mm)		17755315
88				
0910-1060 LINKS & PINS - JIB BACKSTAY BOOM LENGTHS 70-90 FT. (21.3-27.4M)				
89	2	PENDANT LINK 39.00 (991mm)		17756922
90	2	PENDANT 10 FT. -1.00 (3.07M)		27738217
91				
0910-1070 LINKS - JIB BACKSTAY BOOM LENGTHS 100-200 FT. (30.5-61.0M)				
92	2	PENDANT LINK 11.00 (279mm)		17757022
93				
0910-1080 PENDANT 10 FT. - 1.00 (3.07M) JIB BACKSTAY FOR USE WITH 10 FT. BOOM INSERT				
94	2	PENDANT 10 FT. -1.00 (3.07M)		27738217
0910-1090 PENDANT 20 FT. - 1.50 (6.13M) JIB BACKSTAY FOR USE WITH 20 FT. BOOM INSERT				
95	2	PENDANT 20 FT. -1.50 (6.13M)		27738317
0910-1100 PENDANT 40 FT. - 3.00 (12.27M) JIB BACKSTAY FOR USE WITH 40 FT. BOOM INSERT				
96	2	PENDANT 40 FT. -3.00 (12.27M)		27738417
97				
98				
99				
0910-1110 1.00 WIRE ROPE FOR REAR HOIST DRUM				
100	1	1.00 X 850 FT. WIRE ROPE-CONSTRUCTEX		71939426
0910-1120 1.00 WIRE ROPE FOR REAR HOIST DRUM				
101	1	1.00 X 850 FT. WIRE ROPE - PYTHON		71939527
0910-1130 26mm WIRE ROPE FOR REAR HOIST DRUM				
102	1	26mm X 850 FT. WIRE ROPE - PYTHON		71939628
OPTIONAL JIB PARTS LIST				
0910-1140 SHEAVE, SHAFT & CLAMPS FOR USE WITH OPT. AUX. DRUM				
103	5	CLAMP		174844
104	1	SHEAVE ASSEMBLY		176799
105	1	ROPE GUARD CLAMP		177223
106	1	SHAFT		177455
107	12	NUT ST. HEX .625-11UNC		546058
108	2	PIN - HITCH .88 X 7.00 LG.		563699
109	6	SCREW CAP .625-11UNC X 6.50 LG.		61269134
110	6	WASHER LOCK .625		710307
111	1	SHEAVE WIRE ROPE ASSY		81007542
OPTIONAL JIB PARTS ASSEMBLY LIST				
112	1	UNIV. WIRE ROPE ANCHOR JOINT ASSEM.		92046
113	1	WIRE ROPE GUIDE ASSEMBLY		17736431
114	1	WIRE ROPE SUPPORT ASSEMBLY		17902736
115	1	W.R. GUIDE SINGLE SHEAVE BRACKET ASM		17938041
116	1	W.R. GUIDE DOUBLE SHEAVE BRACKET ASM		17938142
117	1	WIRE ROPE WINCH ASSEMBLY		17938340
118				
119	1	MAST RIGGING ASSY WITH AUX BLOCK		195869
120				

REFERENCE BOOM PARTS LIST (BOOM RIGGING ASSEMBLY #82)		
ITEM	DESCRIPTION	QTY.
R1	BOOM ASSEMBLY LADDER STORAGE	177969
R2	DRUM SHAFT ASSEMBLY - AUXILIARY	17949118
R3		
R4		
R5	WIRE ROPE GUIDE ASSEMBLY	17966335
R6	MOD. TO ADD WIRE ROPE GUARD	194164
R7	MAST ASSEMBLY	196381
R8		
R9	GANTRY ASSEMBLY	195845
R10	BOOM BUTT SUPPORT ASSEMBLY	195946
R11		
R12	WIRE ROPE GUIDE ASSEMBLY	196189

- 45 EACH ITEM 3 REQUIRES A MINIMUM OF 10 SETS OF ITEMS 64, 65 AND 66.
- 46 ATTACH TIMBERS SO THEY ARE FREE TO SLIDE UNDER THERMAL EXPANSION/CONTRACTION OF PLASTIC.

BILL OF MATERIAL				
ITEM NO.	QTY.	DESCRIPTION	LENGTH	MATERIAL
0910-1000 BASIC JIB 70 FT. (21.3M)				
1	1	PIN		13368
2	2	PIN		14902-3
3	2	BOOM SIGN		81012433
4	1	PIN		75368
5	2	PENDANT PIN		13791921
6	2	PIN		143491
7	6	PIN KEEPER		169810
8	4	SPACER		170677
9	4	PIN		17069015
10	2	SPACER		171554
11	8	SHEAVE ASSEMBLY		171693
12	4	PIN		172937
13	4	CLAMP		174844
14	2	PIN		176155
15	1	SHEAVE ASSEMBLY		176799
16	1	27 FT. BUTT		177053
17	1	SLEEVE		177107
18	1	WASHER		177108
19	1	MAIN STRUT		177439
20	1	JIB STRUT		177443
21	1	JIB POINT ROLLER ASSEMBLY-2 SHEAVE		177448
22	1	SHAFT		177456
23	1	SHAFT		177457
24	1	SHAFT		177458
25	1	SPACER		177471
26	1	SPACER		177472
27	2	PIN		177479
28	1	LINK SUB-ASSEMBLY		177481
29	1	ADAPTER ASSEMBLY		177493
30	2	PENDANT LINK 24.00 (610mm)		17755315
31	1	23 FT. TOP		1775601
32	1	JIB STOP ASSEMBLY		177561
33	1	LINK SUB-ASSEMBLY		177565
34	1	JIB STOP & ANGLE IND. ASSEM. (AUTO)		195706
35	2	STRUT STOP TUBE ASSEMBLY		177590
36	1	WIRE ROPE GUIDE ASSEMBLY		177612
37	2	CLAMP		177633
38	2	STRUT		177634
39	1	24.00 DIA. SHEAVE ASSEMBLY		177636
40	1	LINK		177639
41	1	ROLLER		177640
42	1	SHAFT		178149
43	1	WIRE ROPE GUIDE FRAME ASSEMBLY		17937939
44	1	LINK SUB-ASSEMBLY		179958
45	2	BAR - .50 X 1.00 X 6.00 LG.		22100934
46	4	BEARING LOCKNUT		2251056
47	2	BEARING LOCKWASHER		225111
48	1	PENDANT 11 FT. -3.00 (3.43M)		277241
49	2	PENDANT 20 FT. -1.50 (6.13M)		27738315
50	2	PENDANT 25 FT. -1.10 (7.90M)		27743720
51	2	PENDANT 12 FT. -3.00 (3.73M)		2774393
52	2	PENDANT 23 FT. (7.01M)		2774403
53	12	NUT ST. HEX .625-11UNC		546058
54	1	PIN COTTER STEEL .375 X 3.00 LG.		562150
55	2	PIN - HITCH .88 X 7.00 LG.		563699
56	3	ROLLER		602162
57	1	ROLLER		602170
58	2	SCREW CAP HEX .625-11UNC X 6.00 LG.		61268932
59	4	SCREW CAP .625-11UNC X 6.50 LG.		61269132
60	1	WEDGE/SOCKET ASSEMBLY 1.00 WIRE ROPE		646246
61	6	WASHER LOCK .625		710307
62	10	SHIM		A0003843
63	1	SHEAVE WIRE ROPE ASSY		81007542
64	32	SCR MB X 30, 4.8 ZINC PLT		712117130145
65	32	NUT HEX MB-1.25 10 PLN		766117000445
66	32	WASHER LOCK MB		795117021045
NO. REQD. FOR THE FOLLOWING ITEMS ARE FOUND IN THE JIB LENGTH TABLE				
67	BOOM JOINT PIN			70366
68	INSERT 10 FT. (3.05M)			18013612
69	INSERT 20 FT. (6.10M)			18013712
70	TIMBER 55.00 LG X 3.50 W			8101773546
71	HHCS 5/8-11UNC X 5.00 GR 5			612685
72	HEX LOCK NUT 5/8-11UNC Gr5.2			7660201601
73	F WASHER SHIM 5/8 ST F436			709747
74	PENDANT 10 FT. -1.00 (3.07M)			27738217
75	PENDANT 20 FT. -1.50 (6.13M)			27738317
INSERT 40 FT. (12.19M) WITHOUT JIB BACKSTAY LUGS NO. REQD. FOR THE FOLLOWING ITEMS ARE FOUND IN THE JIB LENGTH TABLE				
76	INSERT 40 FT. (12.19M)			46208-212
77	INSERT 40 FT. (12.19M)			46208-312
78	BOOM JOINT PIN			70366
79	TIMBER 55.00 LG X 3.50 W			8101773546
80	PENDANT 40 FT. -3.00 (12.27M)			27738417
81	HHCS 5/8-11UNC X 5.00 GR 5			612685
82	HEX LOCK NUT 5/8-11UNC Gr5.2			7660201601
83	F WASHER SHIM 5/8 ST F436			709747

SUPERSEDES 196200 SHEET 1 OF 11-10-10

TOLERANCE UNLESS OTHERWISE SPECIFIED		
DECIMAL PLACES	FRACTION	MACHINING
(1) PLACE 0.0	1/16	1/16
(2) PLACE 0.00	1/32	1/32
(3) PLACE 0.000	1/64	1/64
ANGLES	1/2	1/2

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MANITOWOC CRANES, INC.	LUFFING JIB RIGGING
ASSEMBLY #82 BOOM #135	
JIB (WITH STRAPS)	
STOWED ON BOOM BUTT	

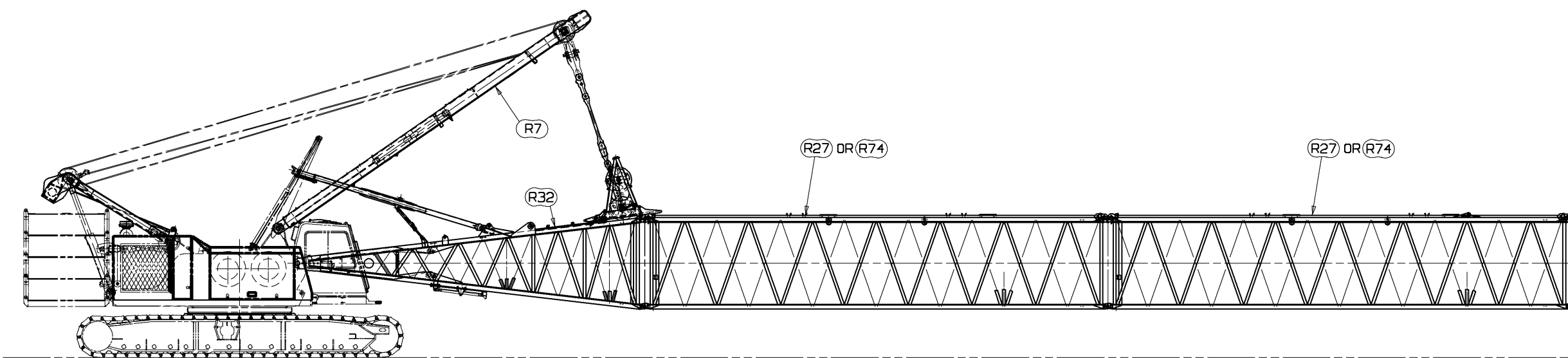
PRIVATE LABELING REQUIREMENT TO CONFORM TO SPECIFICATION 6629103794 FOR COMPONENTS LISTED IN 6629103794-06-066

DATE: 11-01-11

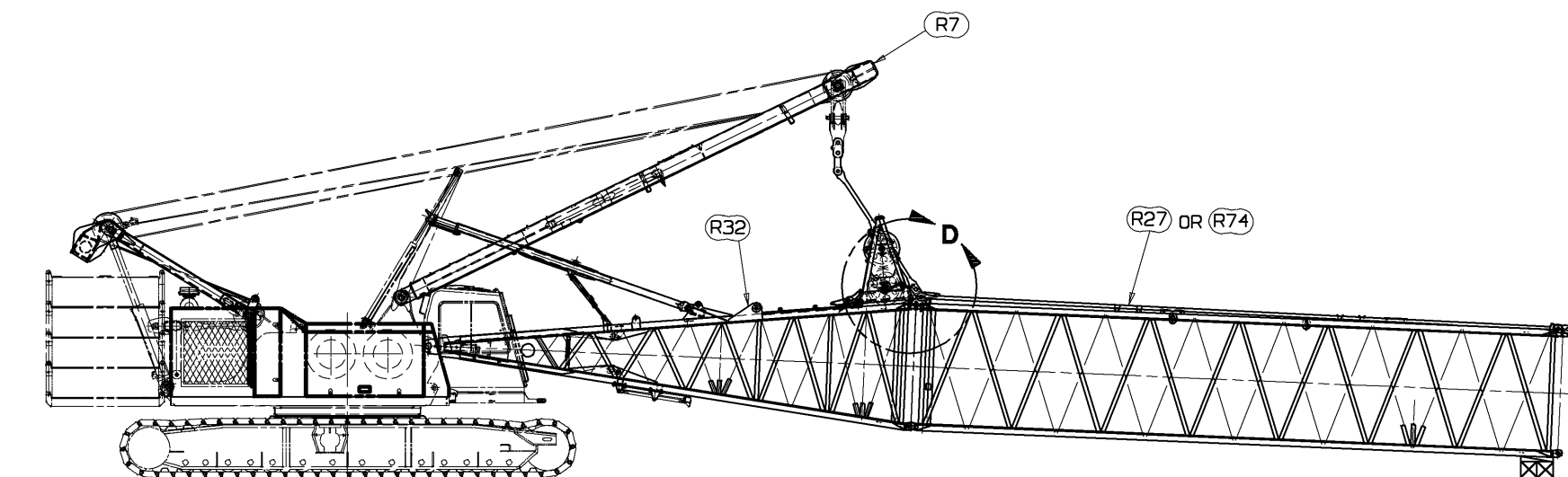
PATTERN NO.

196200

SHT 1 OF 8

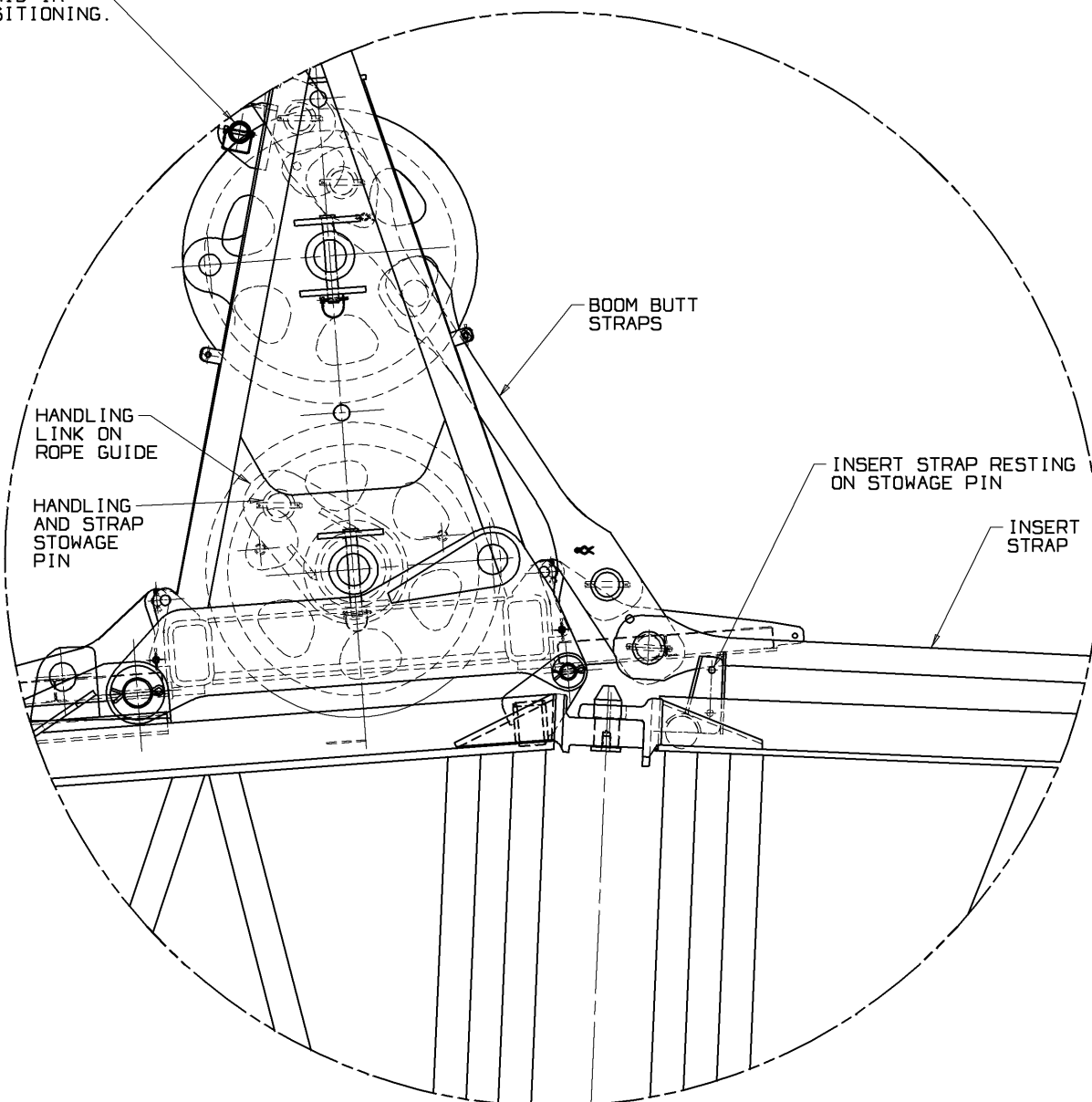


BOOM HANDLING WITH MAST



ATTACH OR DISCONNECT
BOOM BUTT STRAPS
FROM INSERT STRAPS

THIS PIN CAN BE
USED TO AID IN
STRAP POSITIONING.



VIEW "D"
SCALE: 1.50 = 1 FT

BOOM HANDLING WITH MAST WITH MAST STRAPS PINNED TO ROPE GUIDE LINKS: MAXIMUM BOOM THAT CAN BE CANTILEVERED IS AS FOLLOWS:			
LENGTH	10 FT. (3.05 M) INSERT	20 FT. (6.10 M) INSERT	40 FT. (12.2 M) INSERT
40 FT. (12.2 M)	2	1	0
50 FT. (15.2 M)	1	2	0
60 FT. (18.3 M)	2	0	1
60 FT. (18.3 M)	0	1	1
80 FT. (24.4 M)	0	0	2

ITEM NO.	DESCRIPTION	QTY
R1	BOOM BUTT ASSEMBLY	196396
R2	10 FT INSERT ASSEMBLY	A01018
R3	20 FT INSERT ASSEMBLY	195463
R4	40 FT INSERT ASSEMBLY	195464
R5	40 FT INSERT W/ BACKSTAY LUG ASSEMBLY	195465
R6	BOOM TOP ASSEMBLY	A01024

BOOM SECTION WELDMENT (THIS NUMBER APPEARS ON NAMEPLATE)	
BOOM SECTION ASSEMBLY	BOOM ONLY, BOOM WITH #134 FIXED JIB, OR BOOM WITH #135 LUFFING JIB
10FT. INSERT A01018	A01019
20FT. INSERT 195463	195455
40FT. INSERT 195464(A)	195456
40FT. INSERT 195465(B)	195457
40FT. TOP A01024	A01025
BOOM SECTIONS/ASSEMBLIES ABOVE REPLACE PAST PRODUCTION BOOM LISTED BELOW	
BOOM WELDMENTS/MODIFICATIONS LISTED BELOW ARE ACCEPTABLE FOR WELDMENTS LISTED ABOVE	
10FT. INSERT (C)	195454, A01014 OR A01015
10FT. INSERT (D)	A01122, 196006, A01016 OR A01017
20FT. INSERT	A01020
40FT. INSERT (A)	A01022
40FT. INSERT (B)	A01021
40FT. TOP	A01093, 195458, OR A01023
(A) WITHOUT JIB BACKSTAY LUGS (B) WITH JIB BACKSTAY LUGS (C) WITH SHEAVE FRAME WELDED TO INSERT (D) WITHOUT SHEAVE FRAME	

INSERTS, PENDANTS, ROLLER GUIDES, LINKS & PINS REQ'D. FOR VARIOUS JIB LENGTHS

ITEM NO.	68	69	76 OR 77	70 DWG. 78145	74 DWG. 78145	79 OR 84 DWG. 78145	70 OR 79	71 OR 81	72 OR 82	73 OR 83	67 OR 78	87	86
JIB LENGTHS	10 FT 3.05 M INSERT	20 FT 6.10 M INSERT	40 FT 12.19 M INSERT	10 FT-1.0 3.07 M PENDANT	20 FT-1.5 6.13 M PENDANT	40 FT-3.0 12.27 M PENDANT	WIRE ROPE TIMBER	HHCS	LOCK NUT	FLAT WASHER	BOOM JOINT PIN	PENDANT LINK 24.00 (610mm)	PIN
70	21.3	0	1	0	2	0	1	4	4	4	4	2	2
80	24.4	1	1	0	2	0	2	8	8	8	8	2	2
90	27.4	OR 0	2	0	4	0	2	8	8	8	8	2	2
100	30.5	OR 1	2	0	4	0	3	12	12	12	12	2	2
110	33.5	0	1	1	0	2	3	12	12	12	8	0	0
120	36.6	1	1	2	2	2	4	16	16	16	12	0	0
130	39.6	OR 0	2	1	0	4	4	16	16	16	12	0	0
140	42.7	OR 1	2	1	2	4	5	20	20	20	16	0	0
150	45.7	0	1	2	0	2	4	5	20	20	12	0	0
160	48.8	1	1	2	2	4	6	24	24	24	16	0	0
170	51.8	OR 0	2	2	0	4	6	24	24	24	16	0	0

INSERTS, PENDANTS, AND ROLLER GUIDES
REQUIRED FOR VARIOUS BOOM LENGTHS

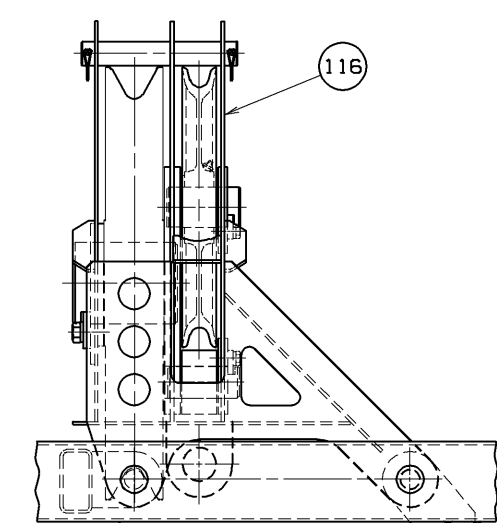
ITEM NO.	R2	R3	R4	STRAP POSITION	90 & 94	95	96	89	92	87	86
BOOM LENGTH	10 FT 3.05 M INSERT ASSEMBLY SEE (10)	20 FT 6.10 M INSERT ASSEMBLY SEE (11)	40 FT 12.19 M INSERT ASSEMBLY SEE (12)	STRAP POSITION (2)	10 FT-1.0 3.07 M PENDANT SEE (30)	20 FT-1.5 6.13 M PENDANT SEE (30)	40 FT-3.0 12.27 M PENDANT SEE (30)	PENDANT LINK 39.00 (991mm)	PENDANT LINK 11.00 (279mm)	PENDANT LINK 24.00 (610mm)	PIN
80	24.4	1	0	0	A	OR 4	0	0	0	0	2
90	27.4	OR 2	0	0	A	OR 2	0	0	0	0	2
100	30.5	1	1	0	A	2	2	0	0	2	4
110	33.5	OR 2	1	0	A	OR 4	2	0	0	2	4
120	36.6	OR 1	2	0	A	OR 2	4	0	0	2	4
130	39.6	OR 2	0	1	A	OR 4	0	0	0	2	4
140	42.7	1	1	1	A	2	2	0	0	2	2
150	45.7	OR 2	1	1	A	OR 0	0	4	0	0	2
160	48.8	OR 0	0	2	A	OR 4	2	0	0	0	2
170	51.8	OR 1	2	1	A	OR 2	4	0	0	0	2
180	54.9	OR 2	0	2	A	OR 4	0	4	0	0	2
190	57.9	OR 0	1	2	B	OR 0	0	4	0	0	2
200	61.0	OR 1	2	3	B	OR 2	4	0	0	0	2

SUPERSEDES 196200 SHT 6 OF 2-14-01

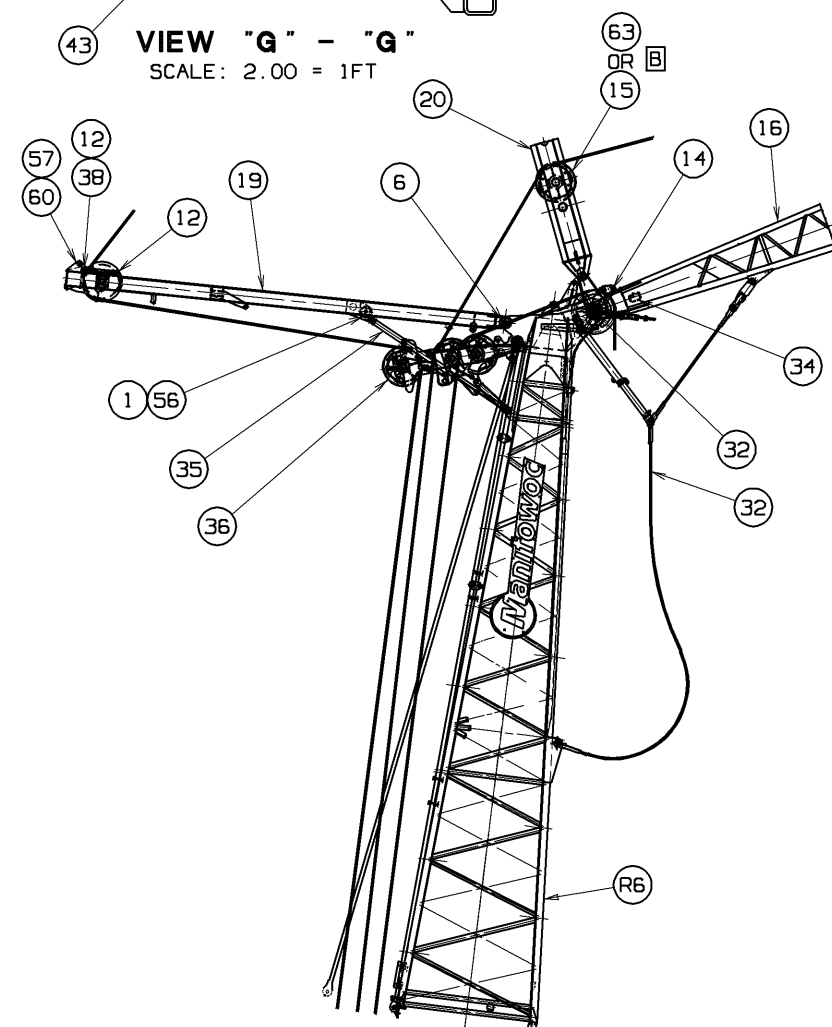
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DATE 08-22-01		DRAWN GAD		CHECKED TSC		APPROVED TSC		MODEL 999		JIB (WITH STRAPS) STOWED ON BOOM BUTT		196200	

PRIVATE LABELING
REQUIREMENT TO
CONFORM TO
ENGINEERING
SPECIFICATION
6629103794 FOR
COMPONENTS LISTED
IN 662902-06-026

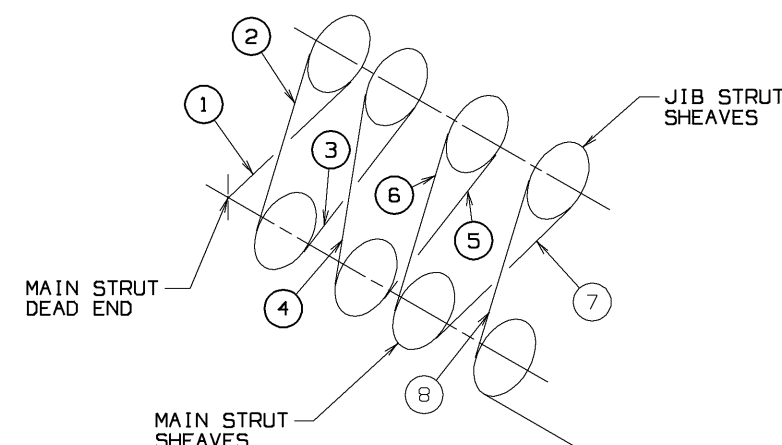
BILL OF MATERIAL					ASSEMBLIES USED BY
ITEM NO.	QTY.	DESCRIPTION	LENGTH	MATERIAL	QTY. REQ.



VIEW "G" - "G"
SCALE: 2.00 = 1 FT



VIEW "H" - "H"
SCALE: 2.00 = 1 FT



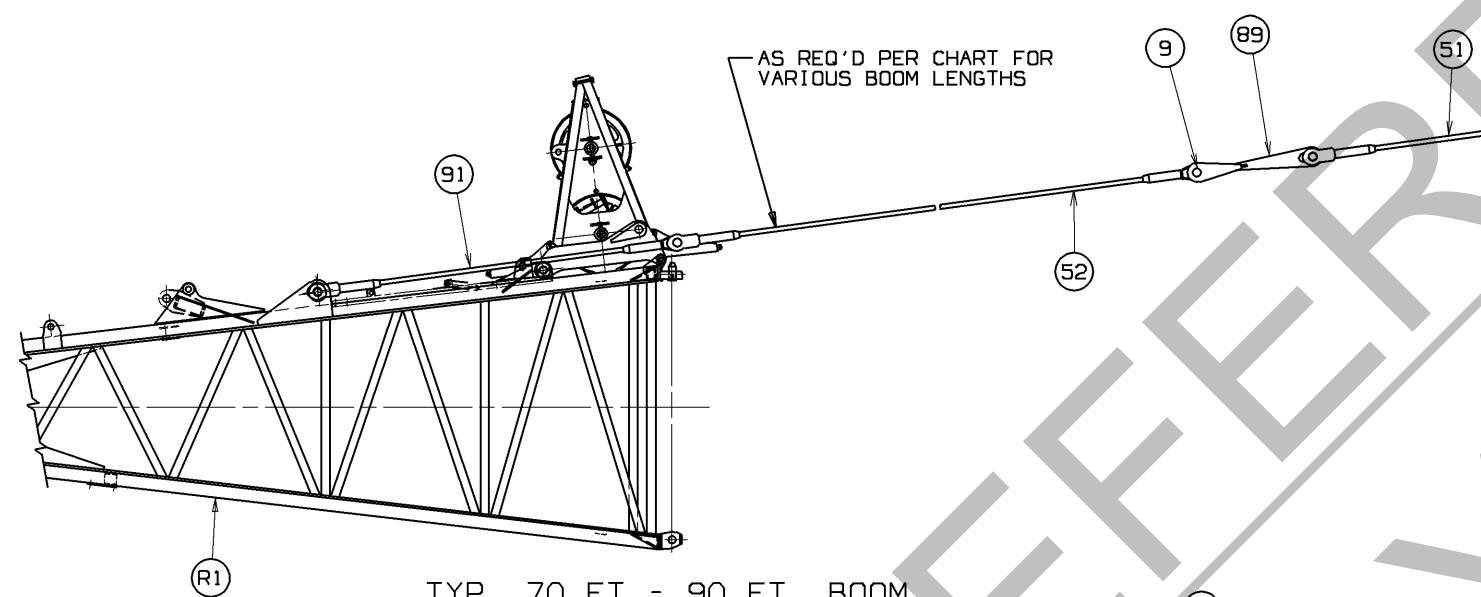
JIB STRUT SHEAVES

MAIN STRUT DEAD END

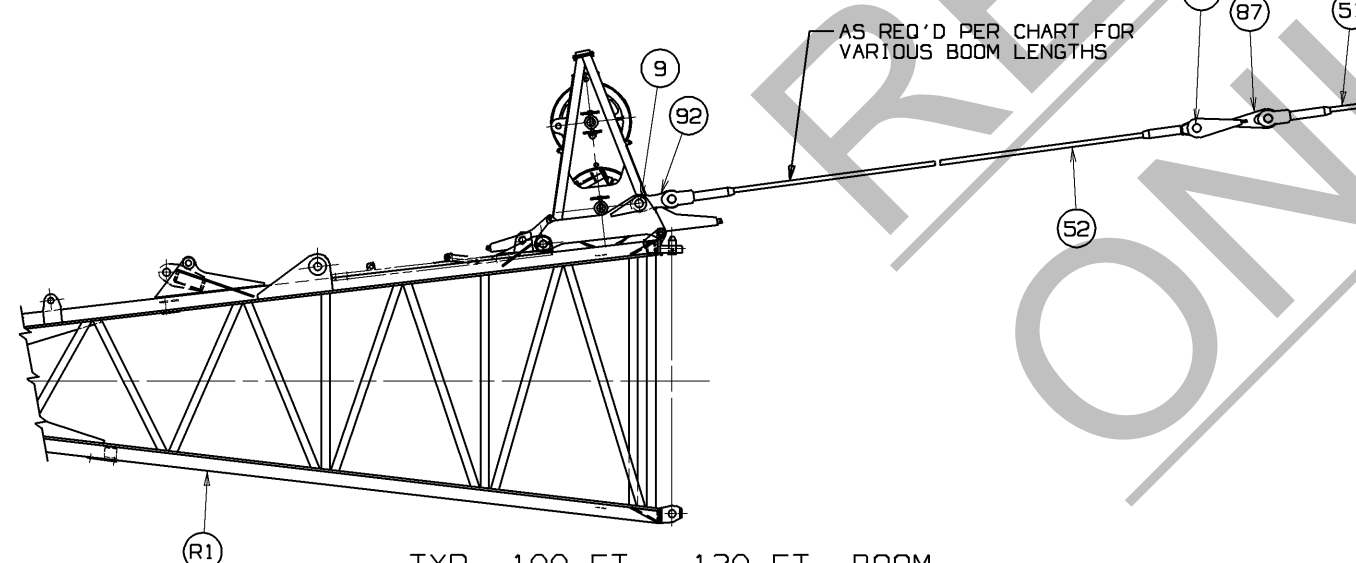
WIRE ROPE GUIDE ASSEM. (ITEM 10)

WIRE ROPE GUIDE ASSEM. (ITEM 121)

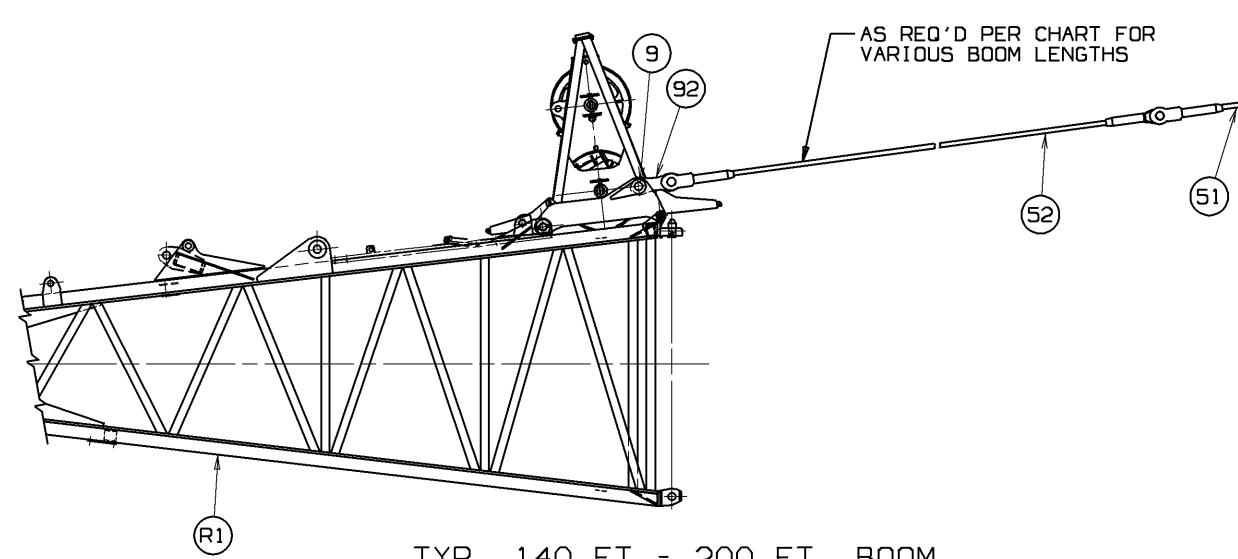
LUFFING JIB HOIST REEVING
DIAGRAM FOR 8 PART LINE - SEE 34, 35 AND 36



TYP. 70 FT. - 90 FT. BOOM



TYP. 100 FT. - 130 FT. BOOM



TYP. 140 FT. - 200 FT. BOOM

#82 BOOM/#135 JIB ASSEMBLY
WITH AUX. DRUM SHAFT ASSEMBLY

VIEW "D"
BASIC JIB BACKSTAY PENDANT ARRANGEMENTS
SCALE: .375 = 1 FT

DO NOT SCALE THIS DRAWING

- 41 WIRE ROPE GUIDE SINGLE SHEAVE BRACKET ASSEMBLY (ITEM 115) IS OPTIONAL FOR LAYOUT OR FOLD-UNDER LUFFING JIB.
- 42 WIRE ROPE GUIDE DOUBLE SHEAVE BRACKET ASSEMBLY (ITEM 116) IS OPTIONAL FOR LAYOUT OR FOLD-UNDER LUFFING JIB BUT IS REQUIRED FOR USE WITH THE #135 JIB.
- 43 ADD SHIMS (ITEM 62) AS REQUIRED (IN AREA SHOWN) TO LIMIT LATERAL MOVEMENT OF JIB BUTT. USE AN EQUAL AMOUNT OF SHIMS ON BOTH SIDES TO CENTER JIB BUTT WITH BOOM TOP.
- 44 NOTE: DELTA 44 CALLED OUT ON SHEET 1 FOR JIB SIGN HARDWARE

- 1 IF #23 BOOM TOP (191029) IS TO BE USED AS THE #135 LUFFING JIB TOP, MODIFY PER (421224).
- 2 SEE VIEW "C".
- 3 ON DRAWING (78145).
- 4 ON DRAWING (147109).
- 5 ON DRAWING (79335).
- 6 TIGHTEN BEARING LOCKNUT (ITEM 46) SUFFICIENTLY TO CLAMP BEARING INNER RACE.
- 7 MAXIMUM NO. OF 10 FT. (3.05M) BOOM INSERTS = (2)
- 8 MAXIMUM NO. OF 20 FT. (6.10M) BOOM INSERTS = (2)
- 9 COMBINATIONS OF 10 FT. (3.05M) AND 20 FT. (6.10M) BOOM INSERTS CANNOT EXCEED (2) - 10 FT. (3.05M) PLUS (1) - 20 FT. (6.10M) OR (1) - 10 FT. (3.05M) PLUS (2) - 20 FT. (6.10M).
- 10 SEE 7, 9 AND 24
- 11 SEE 8, 9 AND 24
- 12 STARTING WITH THE BOOM OR JIB BUTT, INSERTS AND STRAPS/PENDANTS MUST BE ASSEMBLED IN ORDER OF ASCENDING LENGTH. THE SHORTER INSERTS AND STRAPS/PENDANTS MUST BE CLOSEST TO THE BOOM OR JIB BUTT.
- 13 REQUIRED FOR BASIC BACKSTAY PENDANT. ATTACHES TO LINK SUB-ASSEMBLY (ITEM 33).
- 14 REQUIRED FOR BASIC JIB PENDANT. ATTACHES TO THE JIB TOP (ITEM 31) LINK.
- 15 (ITEMS 67, 71, 77, 82) ARE THE SAME PART NO. (70366)
- 16 (ITEMS 69, 73, 78, 83) ARE THE SAME PART NO. (19622)
- 17 (ITEMS 9 & 86) ARE THE SAME PART NO. (170680)
- 18 (ITEMS 30 & 87) ARE THE SAME PART NO. (177859)
- 19 (ITEMS 70, 90 & 94) ARE THE SAME PART NO. (277382)
- 20 (ITEMS 49, 74 & 95) ARE THE SAME PART NO. (277383)
- 21 (ITEMS 75, 84 & 96) ARE THE SAME PART NO. (277384)
- 22 SEE 8, 21 AND 22
- 23 SEE 8, 19 AND 22
- 24 WHEN AUXILIARY DRUM SHAFT ASSEMBLY (ITEM R2) IS USED, #82 BOOM BUTT ASSEMBLY (ITEM R32), WIRE ROPE GUIDE ASSEMBLY (ITEM R12) AND 10 FT. (3.05M) #82 INSERT ASSEMBLY (ITEM R16) ARE REQUIRED. THE 10 FT. INSERT MUST BE ADJACENT TO THE BOOM BUTT AT ALL TIMES. MINIMUM BOOM LENGTH USING THESE COMPONENTS IS 80 FT. (24.38M).
- 25 ATTACHES TO BASIC PENDANT (ITEM 50) 25 FT.-11 (7.90M).
- 26 ATTACHES TO JIB STRUT LINK SUB-ASSEMBLY (ITEM 28).
- 27 INSTALL WITH HEAD OF PENDANT PIN (ITEM 5) TO THE INSIDE.
- 28 SEE VIEW "D" (ON SHEET 3) FOR VARIOUS JIB BACKSTAY PENDANT (ITEM 52) AND PENDANT LINK (ITEMS 87, 89 AND 92) ARRANGEMENTS.
- 29 STRAPS SHOWN - SEE VIEW "C" (SHEET 1) ARE CALLED FOR ON BOOM BUTT ASSEMBLY (ITEM R32). STRAPS SHOWN - SEE VIEW "C" (SHEET 2) ARE CALLED FOR ON THE MAST ASSEMBLY (ITEM R39).
- 30 REFER TO SPECIFIC CAPACITY CHART FOR APPROPRIATE BOOM AND JIB COMBINATIONS.
- 31 REFER TO LUFFING JIB RAISING PROCEDURE (8248A) FOR RAISING AND LOWERING BOOM AND JIB.
- 32 WIRE ROPE - 1.00 INCH X 850 FT. CONSTRUCTEX. BREAKING STRENGTH OF 125,000 LBS. FOR USE ON REAR HOIST DRUM.
- 33 WIRE ROPE - 1.00 INCH X 850 FT. PYTHON 8F7KV RIGHT HAND REGULAR LAY. BREAKING STRENGTH OF 120,600 LBS. FOR USE ON REAR HOIST DRUM.
- 34 WIRE ROPE - 26MM X 850 FT. PYTHON 8F7KV RIGHT HAND REGULAR LAY. BREAKING STRENGTH OF 126,400 LBS. FOR USE ON REAR HOIST DRUM.
- 35 USE (4) PINS (70366) FROM INSERT ADJACENT TO ADAPTER ASSEMBLY (ITEM 29) FOR JIB TOP CONNECTION.
- 36 10 FT. (3.05M) PENDANT (276823), 20FT. (6.10M) PENDANT (276825) AND 40 FT. (12.19M) PENDANT (276892) MAY BE USED IN PLACE OF 10 FT.-1.00 (3.07M) PENDANT (277382), 20 FT.-1.50 (6.13M) PENDANT (277383) AND 40 FT.-3.00 (12.27M) PENDANT (277384) FOR JIB/JIB BACKSTAY.
- 37 DO NOT MIX PENDANTS OF DIFFERENT LENGTHS.
- 38 PENDANTS MUST BE INSTALLED IN MATCHED SETS (PENDANTS ON ONE SIDE OF BOOM MUST MATCH LENGTH OF PENDANTS ON OTHER SIDE OF BOOM). FAILING TO OBSERVE THIS PRECAUTION WILL CAUSE MAST TO TWIST EXCESSIVELY WHEN BOOM IS RAISED. STRUCTURAL DAMAGE TO MAST OR BOOM WILL OCCUR.
- 39 REQUIRED FOR FOLD UNDER LUFFING JIB - MUST BE REMOVED FOR RAISING MAXIMUM BOOM/JIB COMBINATIONS. REFER TO LUFFING JIB RAISING PROCEDURE (8248A).
- 40 TIGHTEN EACH SIDE EQUALLY TO PROVIDE AN EQUAL GAP. TORQUE (ITEMS 59, 58 AND 109) TO 120 FT. LBS. AND ADD SECOND (ITEM 54 OR 107) AS A LOCKNUT. SEE VIEW E-E AND SECTION N-N.
- 41 ATTACHES TO BACKSTAY LUG ON BOOM BUTT.
- 42 MATERIAL - A-514
- 43 REQUIRED FOR CLAM. UPPER BOOM POINT CANNOT BE USED WITH THIS ASSEMBLY.
- 44 FOR USE WITH FOLD UNDER LUFFING JIB WHEN BLOCK IS ATTACHED TO LOWER BOOM POINT / JIB BUTT ITEM 16.
- 45 (421256) AND (421262) ARE #22E BOOM BUTT MODIFICATIONS FOR USE AS #22EL JIB BUTTS.
- 46 SEE 12 OR 24
- 47 BOLT TORQUE: (WITH LOCTITE #271)
- 48 APPLY LOCTITE #271 (MCC CODE NO. 622292) TO THREADS OF CAPSCREWS WITH (ITEM 43) - SEE VIEWS "T" & "V" AND TORQUE TO 180 FT. LBS.
- 49 WIRE ROPE WINCH ASSEMBLY (ITEM 117) IS REQUIRED FOR FOLD-UNDER LUFFING JIB AND CAN ONLY BE USED WITH WIRE ROPE GUIDE SINGLE SHEAVE BRACKET ASSEMBLY (ITEM 115).

SUPERSEDES 196200 SHT 3 OF 4-20-01

TOLERANCE UNLESS OTHERWISE SPECIFIED					SCALE		Manitowoc Cranes, Inc.		LUFFING JIB RIGGING	
DECIMAL PLACES	FRACTIONS	INCHES	FEET	FEET	DR. GAO	MANITOWOC	MANITOWOC	MANITOWOC	MANITOWOC	MANITOWOC
(1) PLACE 0.00	1/16	1/16	1/16	1/16	DR. TSC	MANITOWOC	MANITOWOC	MANITOWOC	MANITOWOC	MANITOWOC
(2) PLACE 0.00	1/32	1/32	1/32	1/32	APP. TSC	MANITOWOC	MANITOWOC	MANITOWOC	MANITOWOC	MANITOWOC
(3) PLACE 0.000	1/64	1/64	1/64	1/64						

PRIVATE LABELING
REQUIREMENT TO
CONFORM TO
ENGINEERING
SPECIFICATION
6629103794 FOR
COMPONENTS LISTED
IN 6629103794

FOLD-UNDER LUFFING JIB RAISING CONDITIONS

(SEE LUFFING JIB RAISING PROCEDURE 8248A)

NOTE: THE FOLLOWING IS REQUIRED FOR FOLD-UNDER OPERATION.

- A) WIRE ROPE GUIDE ASSEMBLY (ITEM 113) MUST BE INSTALLED.
B) ADAPTER ASSEMBLY (ITEM 29) MUST BE EQUIPPED WITH PIN PULLER COMPONENTS CALLED FOR ON (ITEM 29 REF.).
C) WIRE ROPE WINCH ASSEMBLY (ITEM 117) AND WIRE ROPE GUIDE SINGLE SHEAVE BRACKET ASSEMBLY (ITEM 115) MUST BE INSTALLED.

NOTE: WHEN JIB BUTT IS FOLDED UNDER BOOM TOP (JIB PENDANTS NOT ATTACHED) USE CAUTION DURING ASSEMBLY AND RAISING OR LOWERING OF JIB THAT JIB STRUT DOES NOT CRASH INTO WIRE ROPE GUIDE ON FRONT OF BOOM TOP OR DAMAGE WILL OCCUR (SEE VIEW "S").

BOOM UP UNTIL THERE IS ENOUGH CLEARANCE FOR WIRE ROPE GUIDE MOUNTED TO THE JIB TOP TO BE LOWERED WITH THE POSITIONING WINCH AND PINNED IN ITS WORKING POSITION. CONTINUE TO BOOM UP UNTIL JIB STRUT CAN HANG APPROXIMATELY VERTICAL. CONNECT JIB PENDANTS AND LINKS TO JIB POINT AND JIB STRUT TOP (EXCESS PENDANT SLACK SHOULD BE AT THE JIB STRUT END). LUFF UP TO REMOVE EXCESS JIB PENDANT SLACK ONLY (NEVER PUT JIB PENDANTS INTO TENSION). CONTINUE TO BOOM UP AND PERIODICALLY LUFF UP TO REMOVE EXCESS JIB PENDANT SLACK.

CAUTION: FAILURE TO MAINTAIN A MINIMUM ANGLE OF 74° BETWEEN JIB BUTT AND JIB STRUT WHILE RAISING MAY CAUSE JIB STRUT TO SNAP OVER CENTER AND CRASH THE JIB BUTT CAUSING DAMAGE.

NOTE: MAXIMUM BOOM ANGLE ALLOWED WITH JIB HANGING VERTICAL IS 75°.

INSTALL BLOCK/HOOK AND WEIGHT BALL. CONTINUE TO BOOM UP TO DESIRED ANGLE AND LUFF UP TO DESIRED WORKING RADIUS (SEE LUFFING JIB RAISING PROCEDURE 8248A FOR BOOM TO JIB ANGLE REQUIREMENTS).

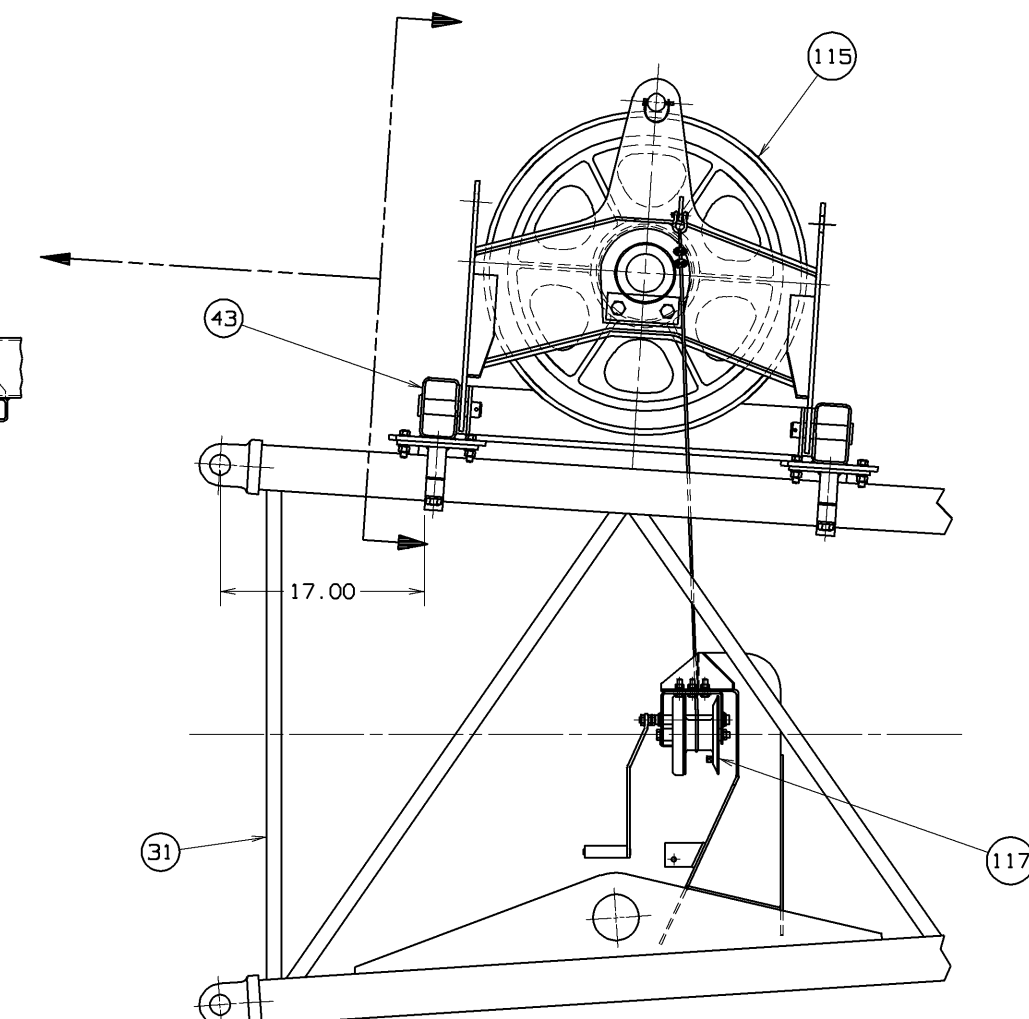
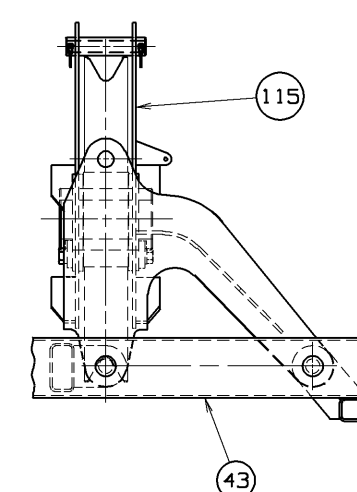
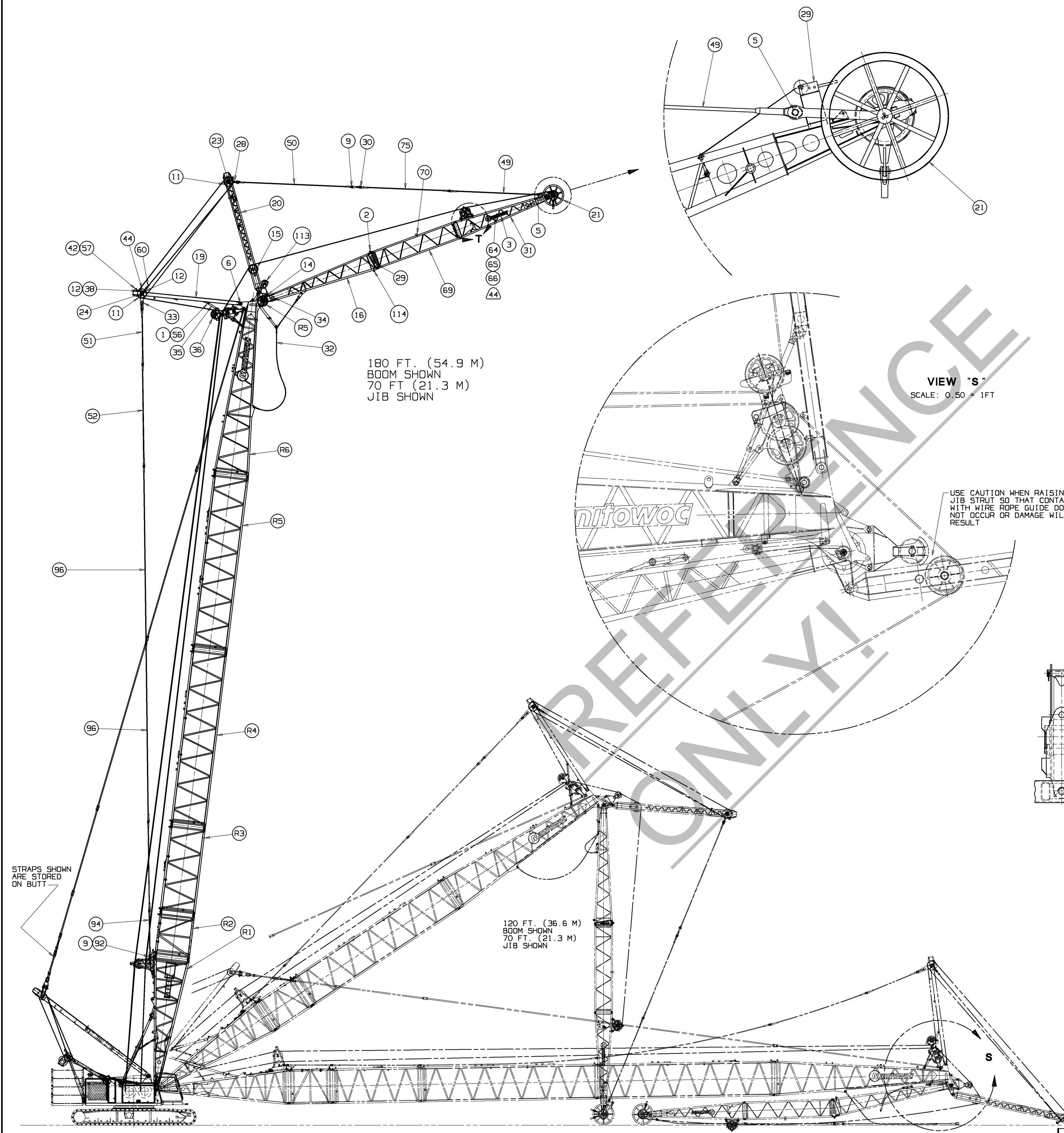
NOTE: REVERSE SEQUENCE TO LOWER AND FOLD LUFFING JIB. BOOM TO JIB CLEARANCE WILL DETERMINE TO WHAT DEGREE BOOM AND JIB CAN BE LOWERED. CLEARANCE POINTS WILL VARY DEPENDING ON BOOM/JIB COMBINATION, GROUND CONDITIONS AND BLOCKING USED. CLEARANCE POINTS AT JIB STOP STRUT TO JIB BUTT AND BOOM TOP, JIB INSERT TO BOOM LACING, JIB POINT WHEEL TO BOOM LACING AND JIB TOP WIRE ROPE GUIDE ASSEMBLY TO GROUND SHOULD BE MONITORED AS BOOM/JIB IS LOWERED. A MEANS TO START JIB UNDER BOOM WHEN FOLDING MAY BE REQUIRED.

REVISIONS
08-28-01 GAO
A WAS 8-25-00
05-08-10 JAS
UPDATED BOOM
AND JIB SIGNS
11-01-11 RDA
UPDATED
BALLOONS
01-03-12 RDA
WAS SHIT
5 OF 9

ENG. NO.
196200
SHT 4 OF 8

PRIVATE LABELING
REQUIREMENT TO
CONFORM TO
ENGINEERING
SPECIFICATION
6629103794 FOR
COMPONENTS LISTED
IN 662902-06-026
DATE
8-22-01
PATTERN NO.

ENG. NO.
196200
SHT 4 OF 8



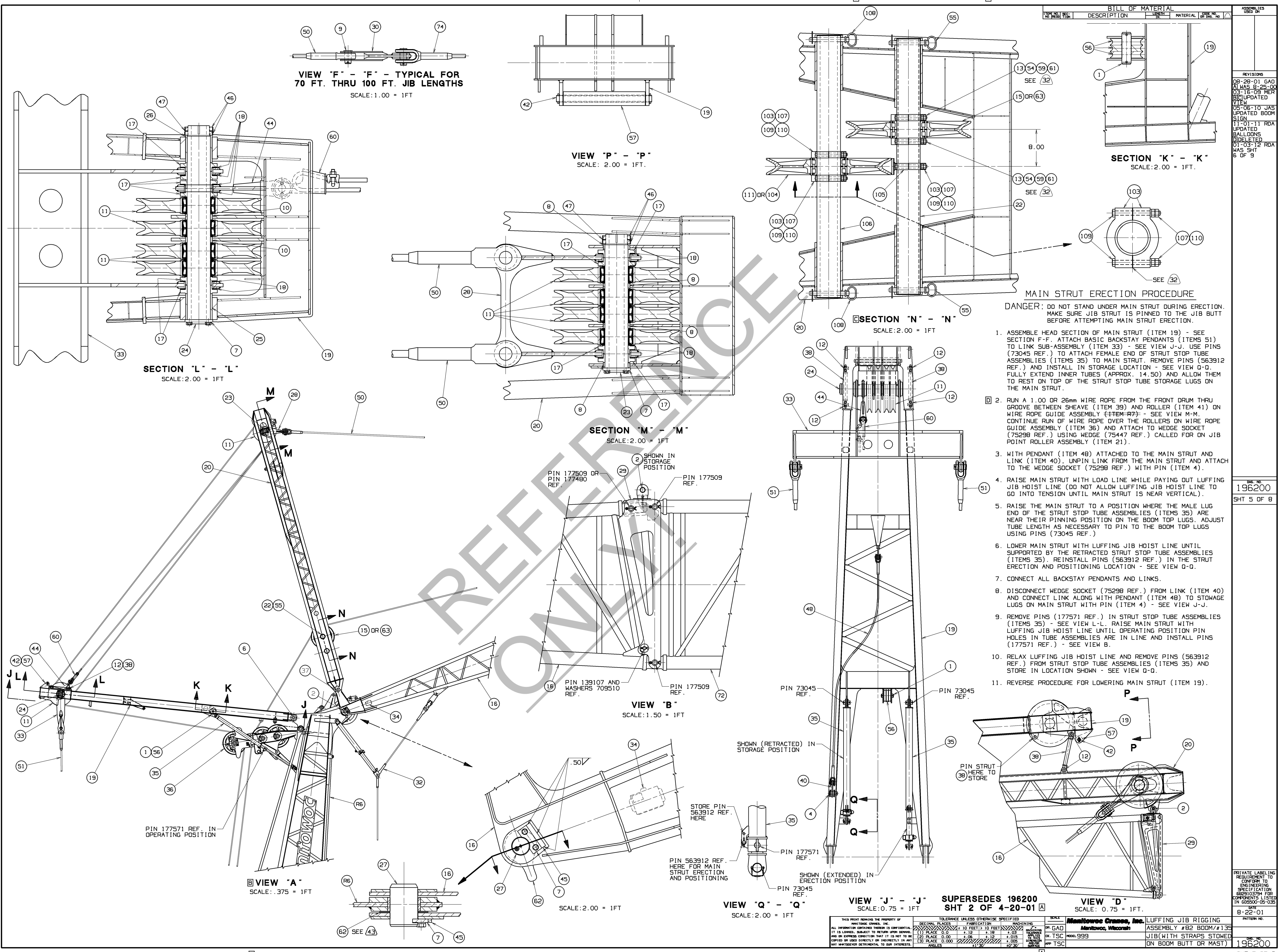
VIEW "T"
SCALE: 1.50 = 1FT

SUPERSEDES 196200 SHT 5 OF 2-14-01

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MANNER DETRIMENTAL TO OUR INTERESTS.

DECIMAL PLACES	FABRICATION	MACHINING
(1) PLACE 0.0	± .12 ± .18 ± .015	± .015
(2) PLACE 0.00	± .06 ± .12 ± .005	± .005
(3) PLACE 0.000	± .03 ± .06 ± .001	± .001
ANGLES	± 1° ± 30'	± 30'

MANITOWOC CRANES, INC.	LUFFING JIB RIGGING
ASSEMBLY #82 BOOM/#135	
JIB(WITH STRAPS STOWED	
ON BOOM BUTT OR MAST)	



VIEW "F" - "F" - TYPICAL FOR 70 FT. THRU 100 FT. JIB LENGTHS
SCALE: 1.00 = 1 FT.

VIEW "P" - "P"
SCALE: 2.00 = 1 FT.

SECTION "L" - "L"
SCALE: 2.00 = 1 FT.

SECTION "M" - "M"
SCALE: 2.00 = 1 FT.

VIEW "B"
SCALE: 1.50 = 1 FT.

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

SCALE: 2.00 = 1 FT.

VIEW "Q" - "Q"
SCALE: 2.00 = 1 FT.

VIEW "J" - "J"
SCALE: 0.75 = 1 FT.

SUPERSEDES 196200
SHT 2 OF 4-20-01

VIEW "D"
SCALE: 0.75 = 1 FT.

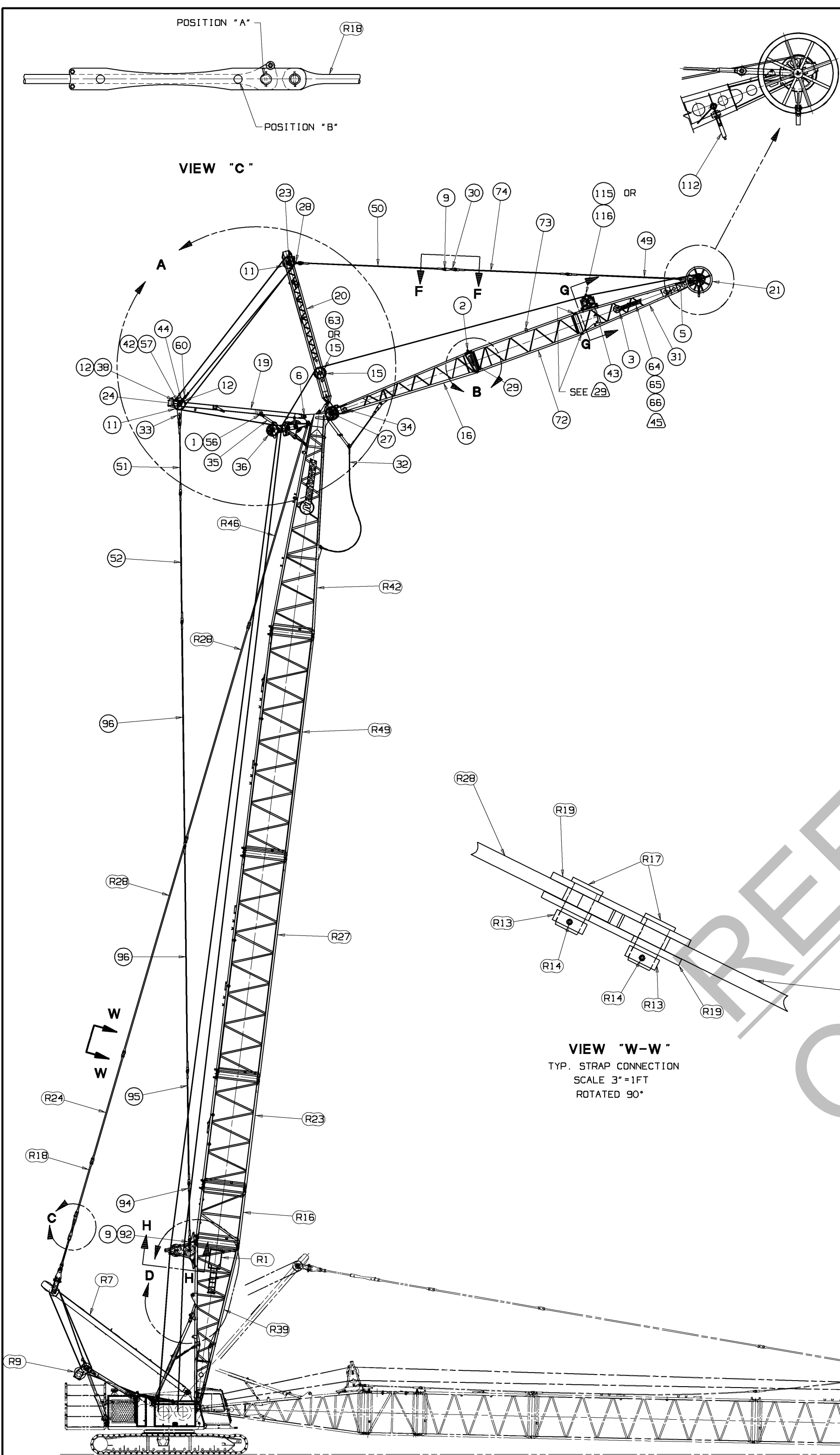
SECTION "K" - "K"
SCALE: 2.00 = 1 FT.

MAIN STRUT ERECTION PROCEDURE

DANGER: DO NOT STAND UNDER MAIN STRUT DURING ERECTION. MAKE SURE JIB STRUT IS PINNED TO THE JIB BUTT BEFORE ATTEMPTING MAIN STRUT ERECTION.

1. ASSEMBLE HEAD SECTION OF MAIN STRUT (ITEM 19) - SEE SECTION F-F. ATTACH BASIC BACKSTAY PENDANTS (ITEMS 51) TO LINK SUB-ASSEMBLY (ITEM 33) - SEE VIEW J-J. USE PINS (73045 REF.) TO ATTACH FEMALE END OF STRUT STOP TUBE ASSEMBLIES (ITEMS 35) TO MAIN STRUT. REMOVE PINS (563912 REF.) AND INSTALL IN STORAGE LOCATION - SEE VIEW O-O. FULLY EXTEND INNER TUBES (APPROX. 14.50) AND ALLOW THEM TO REST ON TOP OF THE STRUT STOP TUBE STORAGE LUGS ON THE MAIN STRUT.
2. RUN A 1.00 OR 26mm WIRE ROPE FROM THE FRONT DRUM THRU GROOVE BETWEEN SHEAVE (ITEM 39) AND ROLLER (ITEM 41) ON WIRE ROPE GUIDE ASSEMBLY (ITEM 47) - SEE VIEW M-M. CONTINUE RUN OF WIRE ROPE OVER THE ROLLERS ON WIRE ROPE GUIDE ASSEMBLY (ITEM 36) AND ATTACH TO WEDGE SOCKET (75298 REF.) USING WEDGE (75447 REF.) CALLED FOR ON JIB POINT ROLLER ASSEMBLY (ITEM 21).
3. WITH PENDANT (ITEM 48) ATTACHED TO THE MAIN STRUT AND LINK (ITEM 40), UNPIN LINK FROM THE MAIN STRUT AND ATTACH TO THE WEDGE SOCKET (75298 REF.) WITH PIN (ITEM 4).
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. RAISE THE MAIN STRUT TO A POSITION WHERE THE MALE LUG END OF THE STRUT STOP TUBE ASSEMBLY (ITEMS 35) ARE NEAR THEIR PINNING POSITION ON THE BOOM TOP LUGS. ADJUST TUBE LENGTH AS NECESSARY TO PIN TO THE BOOM TOP LUGS USING PINS (73045 REF.).
6. LOWER MAIN STRUT WITH LUFFING JIB HOIST LINE UNTIL SUPPORTED BY THE RETRACTED STRUT STOP TUBE ASSEMBLIES (ITEMS 35). REINSTALL PINS (563912 REF.) IN THE STRUT ERECTION AND POSITIONING LOCATION - SEE VIEW O-O.
7. CONNECT ALL BACKSTAY PENDANTS AND LINKS.
8. DISCONNECT WEDGE SOCKET (75298 REF.) FROM LINK (ITEM 40) AND CONNECT LINK ALONG WITH PENDANT (ITEM 48) TO STORAGE LUGS ON MAIN STRUT WITH PIN (ITEM 4) - SEE VIEW J-J.
9. REMOVE PINS (177571 REF.) IN STRUT STOP TUBE ASSEMBLIES (ITEMS 35) - SEE VIEW L-L. RAISE MAIN STRUT WITH LUFFING JIB HOIST LINE UNTIL OPERATING POSITION PIN HOLES IN TUBE ASSEMBLIES ARE IN LINE AND INSTALL PINS (177571 REF.) - SEE VIEW B.
10. RELAX LUFFING JIB HOIST LINE AND REMOVE PINS (563912 REF.) FROM STRUT STOP TUBE ASSEMBLIES (ITEMS 35) AND STORE IN LOCATION SHOWN - SEE VIEW O-O.
11. REVERSE PROCEDURE FOR LOWERING MAIN STRUT (ITEM 19).

BILL OF MATERIAL				ASSEMBLIES USED IN	
ITEM NO.	QTY.	DESCRIPTION	MATERIAL	QTY.	ITEM NO.
REVISIONS					
08-28-01 GAO					
03-18-09 MER					
05-06-10 JAS					
11-01-11 RDA					
01-03-12 RDA					
01-03-12 RDA					
WAS SHIT					
6 OF 9					
PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6629103794 FOR COMPONENTS LISTED IN 6629103794					
DATE 8-22-01					
PATTERN NO.					
SUPERSEDES 196200					
SHT 2 OF 4-20-01					
Montoware Cranes, Inc.					
Waukegan, Wisconsin					
MODEL 999					
JIB (WITH STRAPS STOWED ON BOOM BUTT OR MAST)					
DATE 8-22-01					
PATTERN NO.					
SUPERSEDES 196200					
SHT 2 OF 4-20-01					
Montoware Cranes, Inc.					
Waukegan, Wisconsin					
MODEL 999					
JIB (WITH STRAPS STOWED ON BOOM BUTT OR MAST)					
DATE 8-22-01					
PATTERN NO.					



BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	LENGTH	MATERIAL
REFERENCE BOOM PARTS LIST (BOOM RIGGING ASSEMBLY #82)				
R1		BOOM ASSEMBLY LADDER STORAGE		177969
R2		DRUM SHAFT ASSEMBLY - AUXILIARY		179491
R3				
R4				
R5		WIRE ROPE GUIDE ASSEMBLY		179663
R6		MOD. TO ADD WIRE ROPE GUARD		194164
R7		MAST ASSEMBLY		195449
R8				
R9		GANTRY ASSEMBLY		195845
R10		BOOM BUTT SUPPORT ASSEMBLY		195946
R11				
R12		WIRE ROPE GUIDE ASSEMBLY		196189
10 FT (3.05M) INSERT ASSEMBLY				
R13		4 COLLAR		179862
R14		4 PIN		179959
R15		4 PIN		78292
R16		10 FT INSERT ASSEMBLY		A01018
R17		4 PIN, STRAP		179863
R18		2 STRAP		192293
R19		4 STRAP LINK		195984
R20		1 10 FT INSERT FOR #82 BOOM		A01019
R21		2 BOOM JOINT PIN		170362
20 FT (6.10M) INSERT ASSEMBLY				
R13		4 COLLAR		179862
R14		4 PIN		179959
R15		4 PIN		78292
R17		4 PIN, STRAP		179863
R19		4 STRAP LINK		195984
R21		2 BOOM JOINT PIN		170362
R23		20 FT INSERT ASSEMBLY		195463
R24		2 STRAP		192294
R25		1 TIMBER		195840
R26		1 20 FT INSERT FOR #82 BOOM		195455
40 FT (12.19M) INSERT ASSEMBLY				
R13		4 COLLAR		179862
R14		4 PIN		179959
R15		4 PIN		78292
R17		4 PIN, STRAP		179863
R19		4 STRAP LINK		195984
R21		2 BOOM JOINT PIN		170362
R25		2 TIMBER		195840
R27		40 FT INSERT ASSEMBLY		195464
R28		2 STRAP		195460
R29		1 40 FT INSERT FOR #82 BOOM		195456
BOOM BUTT ASSEMBLY				
R31		1 BOOM ANGLE INDICATOR		168779
R32		1 TIMBER		176831
R33		1 WIRE ROPE GUIDE ASSEMBLY		176985
R34		1 BOOM BUTT		195453
R35		1 BOOM STOP ASSEMBLY		195467
R36		2 CLAMP		345678
R37		4 SCREW CAP HEX .50-13UNC X 5.50 LG.		612583
R38		4 WASHER FLAT .50		709460
R39		1 BOOM BUTT ASSEMBLY		195461
BOOM TOP ASSEMBLY				
R13		4 COLLAR		179862
R14		4 PIN		179959
R15		2 PIN		78292
R17		4 PIN		179863
R21		2 BOOM JOINT PIN		170362
R25		1 TIMBER		195840
R41		2 BOOM SIGN		22856
R42		BOOM TOP ASSEMBLY		A01024
R43		1 LOWER BOOM POINT SHAFT ASSEMBLY		177042
R44		2 SPACER		162576
R45		1 WIRE ROPE GUIDE ASSEMBLY		177191
R46		2 STRAP, BASIC		195472
R47		2 PIN		196028
R48		1 BOOM TOP		A01025
40 FT (12.19M) INSERT WITH BACKSTAY LUG ASSEMBLY				
R13		4 COLLAR		179862
R14		4 PIN		179959
R15		4 PIN		78292
R17		4 PIN, STRAP		179863
R19		4 STRAP LINK		195984
R21		2 BOOM JOINT PIN		170362
R25		2 TIMBER		195840
R28		2 STRAP		195460
R49		40 FT INSERT W/ BACKSTAY LUG ASSEMBLY		195465
R50		1 40 FT INSERT FOR #82 BOOM		195457

BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	LENGTH	MATERIAL
1910-1040 INSERT 40 FT. (12.19M) WITH JIB BACKSTAY LUGS				
81		1 INSERT 40 FT. (12.19M)		48208-3
82		4 BOOM JOINT PIN		77090
83		2 TIMBER 55.00 LG X 3.50 W		81017735
84		2 PENDANT 40 FT.-3.00 (12.27M)		277384
85		4 HHCS 5/8-11UNC X 5.00 GR 5		612685
AK129		8 HEX LOCK NUT 5/8-11UNC Gr5.2		7660201601
AK130		8 F WASHER SHIM 5/8 ST F436		709747
1910-1050 LINKS & PINS - JIB BACKSTAY BOOM LENGTHS 100-130 FT. (30.5-39.6M)				
86		2 PIN		170690
87		2 PENDANT LINK 24.00 (610mm)		177553
88				
1910-1060 LINKS & PINS - JIB BACKSTAY BOOM LENGTHS 70-90 FT. (21.3-27.4M)				
89		2 PENDANT LINK 39.00 (991mm)		177569
90		2 PENDANT 10 FT.-1.00 (3.07M)		277382
91				
1910-1070 LINKS - JIB BACKSTAY BOOM LENGTHS 100-200 FT. (30.5-61.0M)				
92		2 PENDANT LINK 11.00 (279mm)		177570
93				
1910-1080 PENDANT 10 FT. - 1.00 (3.07M) JIB BACKSTAY FOR USE WITH 10 FT. BOOM INSERT				
94		2 PENDANT 10 FT.-1.00 (3.07M)		277382
1910-1090 PENDANT 20 FT. - 1.50 (6.13M) JIB BACKSTAY FOR USE WITH 20 FT. BOOM INSERT				
95		2 PENDANT 20 FT.-1.50 (6.13M)		277383
1910-1100 PENDANT 40 FT. - 3.00 (12.27M) JIB BACKSTAY FOR USE WITH 40 FT. BOOM INSERT				
96		2 PENDANT 40 FT.-3.00 (12.27M)		277384
97				
98				
99				
1910-1110 1.00 WIRE ROPE FOR REAR HOIST DRUM				
100		1 1.00 X 850 FT. WIRE ROPE-CONSTRUCTEX		719394
1910-1120 1.00 WIRE ROPE FOR REAR HOIST DRUM				
101		1 1.00 X 850 FT. WIRE ROPE - PYTHON		719395
1910-1130 26mm WIRE ROPE FOR REAR HOIST DRUM				
102		1 26mm X 850 FT. WIRE ROPE - PYTHON		719396
OPTIONAL JIB PARTS LIST				
1910-1140 SHEAVE, SHAFT & CLAMPS FOR USE WITH OPT. AUX. DRUM				
103		5 CLAMP		174944
104		1 SHEAVE ASSEMBLY		176799
105		1 ROPE GUARD CLAMP		177223
106		1 SHAFT		177455
107		12 NUT ST. HEX .625-11UNC		546058
108		2 PIN - HITCH .88 X 7.00 LG.		563699
109		6 SCREW CAP .625-11UNC X 6.50 LG.		612691
110		6 WASHER LOCK .625		710307
111		1 SHEAVE WIRE ROPE ASSY		81007542
OPTIONAL JIB PARTS ASSEMBLY LIST				
112		1 UNIV. WIRE ROPE ANCHOR JOINT ASSEM.		92046
113		1 WIRE ROPE GUIDE ASSEMBLY		177364
114		1 WIRE ROPE SUPPORT ASSEMBLY		179027
115		1 W.R.GUIDE SINGLE SHEAVE BRACKET ASM		179380
116		1 W.R.GUIDE DOUBLE SHEAVE BRACKET ASM		179381
117		1 WIRE ROPE WINCH ASSEMBLY		179383
118				
119		1 MAST RIGGING ASSY WITH AUX BLOCK		195869

NOTE: THIS RIGGING AND STRAP ARRANGEMENT IS USED ON MACHINE S/N 9991001 THRU S/N 9991050.

BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	LENGTH	MATERIAL
1910-1000 BASIC JIB 70 FT. (21.3M)				
1		1 PIN		13368
2		2 PIN		14902-3
3		2 BOOM SIGN		81012433
4		1 PIN		73568
5		2 PENDANT PIN		137919
6		2 PIN		143491
7		6 PIN KEEPER		169810
8		4 SPACER		170677
9		4 PIN		170690
10		2 SPACER		171554
11		8 SHEAVE ASSEMBLY		171693
12		4 PIN		172937
13		4 CLAMP		174844
14		2 PIN		176155
15		1 SHEAVE ASSEMBLY		176799
16		1 27 FT. BUTT		177053
17		10 SLEEVE		177107
18		10 WASHER		177108
19		1 MAIN STRUT		177439
20		1 JIB STRUT		177443
21		1 JIB POINT ROLLER ASSEMBLY-2 SHEAVE		177448
22		1 SHAFT		177456
23		1 SHAFT		177457
24		1 SHAFT		177458
25		1 SPACER		177471
26		1 SPACER		177472
27		2 PIN		177479
28		1 LINK SUB-ASSEMBLY		177481
29		1 ADAPTER ASSEMBLY		177493
30		2 PENDANT LINK 24.00 (610mm)		177553
31		1 23 FT. TOP		177560
32		1 JIB STOP ASSEMBLY		177561
33		1 LINK SUB-ASSEMBLY		177565
34		1 JIB STOP & ANGLE IND. ASSEM. (AUTO)		195706
35		2 STRUT STOP TUBE ASSEMBLY		177590
36		1 WIRE ROPE GUIDE ASSEMBLY		177612
37		2 CLAMP		177633
38		2 STRUT		177634
39		1 24.00 DIA. SHEAVE ASSEMBLY		177636
40		1 LINK		177639
41		1 ROLLER		177640
42		1 SHAFT		178149
43		1 WIRE ROPE GUIDE FRAME ASSEMBLY		179379
44		1 LINK SUB-ASSEMBLY		179958
45		2 BAR -.50 X 1.00 X 6.00 LG.		221009
46		4 BEARING LOCKNUT		225105
47		2 BEARING LOCKWASHER		225111
48		1 PENDANT 11 FT.-3.00 (3.43M)		277241
49		2 PENDANT 20 FT.-1.50 (6.13M)		277383
50		2 PENDANT 25 FT.-1.10 (7.90M)		277437
51		2 PENDANT 12 FT.-3.00 (3.73M)		277439
52		2 PENDANT 23 FT. (7.01M)		277440
53		12 NUT ST. HEX .625-11UNC		546058
54		1 PIN COTTER STEEL .375 X 3.00 LG.		562150
55		2 PIN - HITCH .88 X 7.00 LG.		563699
56		3 ROLLER		602162
57		1 ROLLER		602170
58		2 SCREW CAP HEX .625-11UNC X 6.00 LG.		612689
59		4 SCREW CAP .625-11UNC X 6.50 LG.		612691
60		1 WEDGE/SOCKET ASSEMBLY 1.00 WIRE ROPE		646246
61		6 WASHER LOCK .625		710307
62				
63		1 SHEAVE WIRE ROPE ASSY		81007542
64		32 SCR MB X 30. 4.8 ZINC PLT		7121171301
65		32 NUT HEX MB-1.25 10 PLN		7661170004
66		32 WASHER LOCK MB		7951170210
0910-1010 INSERT 10 FT. (3.05M)				
67		4 BOOM JOINT PIN		70366
68		1 INSERT 10 FT. (3.05M)		180136
69		1 TIMBER 55.00 LG X 3.50 W		81017735
70		2 PENDANT 10 FT.-1.00 (3.07M)		277382
71		4 HHCS 5/8-11UNC X 5.00 GR 5		612685
72		4 HEX LOCK NUT 5/8-11UNC Gr5.2		7660201601
73		4 F WASHER SHIM 5/8 ST F436		709747
1910-1020 INSERT 20 FT. (6.10M)				
71		4 BOOM JOINT PIN		70366
72		1 INSERT 20 FT. (6.10M)		180137
73		1 TIMBER 55.00 LG X 3.50 W		81017735
74		2 PENDANT 20 FT.-1.50 (6.13M)		277383
75		4 HHCS 5/8-11UNC X 5.00 GR 5		612685
76		4 HEX LOCK NUT 5/8-11UNC Gr5.2		7660201601
77		4 F WASHER SHIM 5/8 ST F436		709747
1910-1030 INSERT 40 FT. (12.19M) WITHOUT JIB BACKSTAY LUGS				
76		1 INSERT 40 FT. (12.19M)		48208-2
77		4 BOOM JOINT PIN		70366
78		2 TIMBER 55.00 LG X 3.50 W		81017735
79		2 PENDANT 40 FT.-3.00 (12.27M)		277384
80		4 HHCS 5/8-11UNC X 5.00 GR 5		612685
81		4 HEX LOCK NUT 5/8-11UNC Gr5.2		7660201601
82		4 F WASHER SHIM 5/8 ST F436		709747

BOOM ASSEMBLY PROCEDURE

(MAST CAN BE USED TO ASSEMBLE ALL RIGGING COMPONENTS.)

1. ASSEMBLE BOOM COMPLETE, WITHOUT BUTT.
2. ATTACH ROPE GUIDES, STRAPS, LINKS AND PINS AS REQ'D.
3. USING THE MAST WITH AUXILIARY BLOCK (ITEM 119) OR THE OPTIONAL BOOM BUTT SUPPORT, INSTALL THE BOOM BUTT WITH ROPE GUIDE AND BOOM STOPS TO ROTATING BED. (BOOM STOPS MUST BE IN SHIPPING (LOWER) POSITION.)
4. BOOM DOWN AND ATTACH MAST STRAPS TO BOOM HANDLING LINK ON ROPE GUIDE.
(SEE VIEW "R"-"R")
5. BOOM UP TO CLEAR GROUND WITH BUTT.
6. POSITION MACHINE TO ALIGN UPPER PIN CONNECTOR PINS ON BOOM BUTT WITH UPPER PIN CONNECTOR HOLES ON FIRST BOOM INSERT AND ENGAGE PINS.
7. SLOWLY BOOM UP TO ALIGN LOWER PIN CONNECTOR HOLES ON BOOM BUTT WITH LOWER PIN CONNECTOR HOLES IN FIRST BOOM INSERT AND INSERT PINS.

WARNING:

DO NOT BOOM UP PAST LOWER CONNECTOR HOLES. IF BOOMING UP CONTINUES AFTER CONNECTORS BOTTOM OUT OR AFTER PINS ARE INSERTED, DAMAGE TO ROPE GUIDE AND BOOM BUTT WILL OCCUR.

8. BOOM DOWN TO DISCONNECT MAST STRAPS FROM ROPE GUIDE LINKS.
9. ATTACH BOOM STOP HANDLING PENDANTS TO BOOM STOP TUBES, RAISE AND PIN BOOM STOPS IN WORKING POSITION AND STOW HANDLING PENDANTS ON MAST.
10. ATTACH MAST STRAPS TO BOOM INSERT STRAPS.
11. BOOM UP TO DESIRED BOOM ANGLE.

TO DISASSEMBLE BOOM

1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
2. DISCONNECT MAST STRAPS FROM BOOM INSERT STRAPS.
3. LOWER BOOM STOPS TO SHIPPING POSITION.
4. CONNECT MAST STRAPS TO HANDLING LINK ON ROPE GUIDE
(SEE VIEW "R"-"R")
5. BOOM UP TO REMOVE SLACK FROM MAST STRAPS.

WARNING:

DO NOT BOOM UP TO PUT TENSION INTO MAST STRAPS. (REMOVE SLACK ONLY)
TENSION IN MAST STRAPS WILL DAMAGE ROPE GUIDE AND BOOM BUTT.

6. REMOVE LOWER BUTT TO INSERT PINS AND BOOM DOWN TO DISENGAGE UPPER BOOM BUTT TO INSERT PINS.

WARNING:

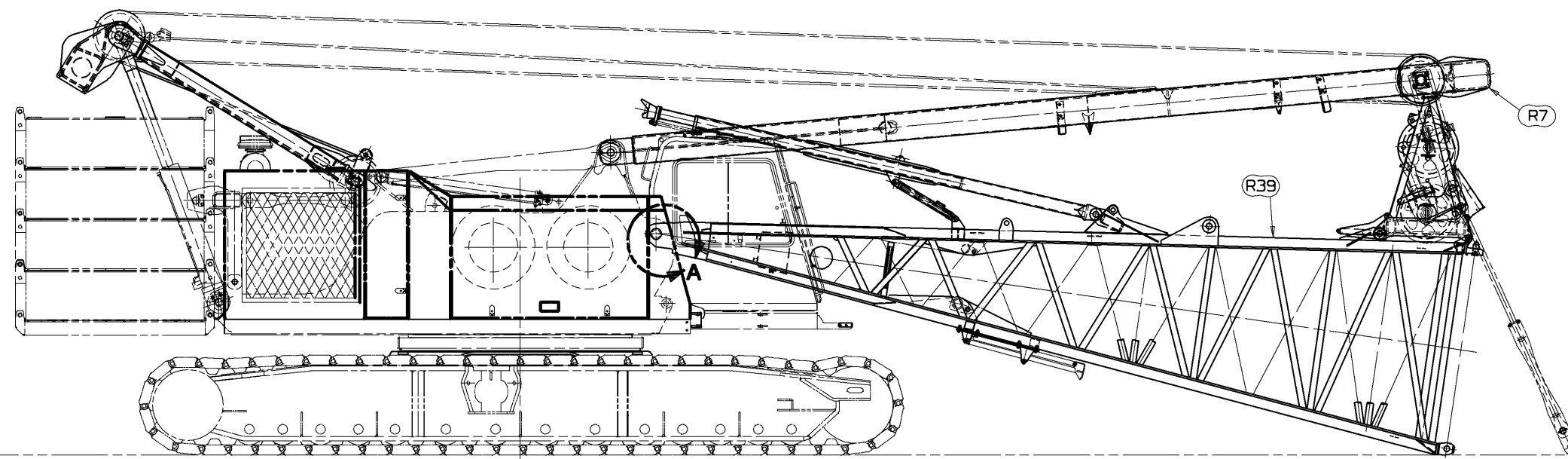
BOOM MUST BE PROPERLY BLOCKED TO PREVENT SHIFTING DURING PIN REMOVAL.

7. SLOWLY BACK AWAY FROM BOOM.
8. REMOVE BOOM BUTT FROM ROTATING BED WITH MAST.
9. DISASSEMBLE BOOM WITH MAST.

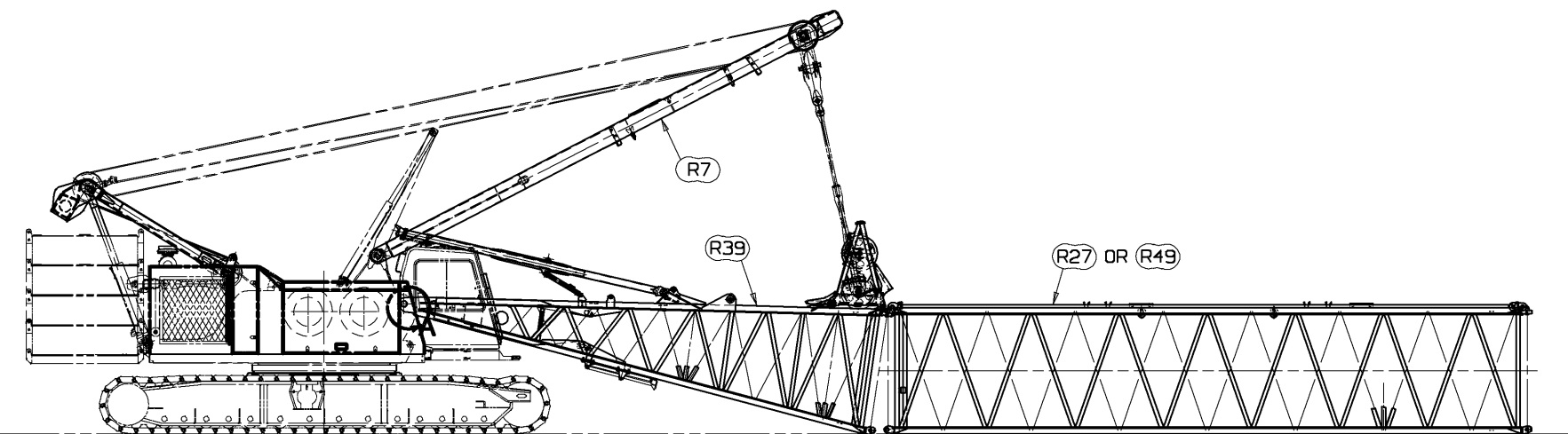
BOOM HANDLING WITH MAST			
WITH MAST STRAPS PINNED TO ROPE GUIDE LINKS: MAXIMUM BOOM THAT CAN BE CANTILEVERED IS AS FOLLOWS:			
LENGTH	10 FT. (3.05 M) INSERT	20 FT. (6.10 M) INSERT	40 FT. (12.2 M) INSERT
40 FT. (12.2 M)	2	1	0
50 FT. (15.2 M)	1	2	0
60 FT. (18.3 M)	2	0	1
60 FT. (18.3 M)	0	1	1
80 FT. (24.4 M)	0	0	2

NOTE:
THIS RIGGING AND STRAP
ARRANGEMENT IS USED ON
MACHINE S/N 9991001
THRU S/N 9991050.

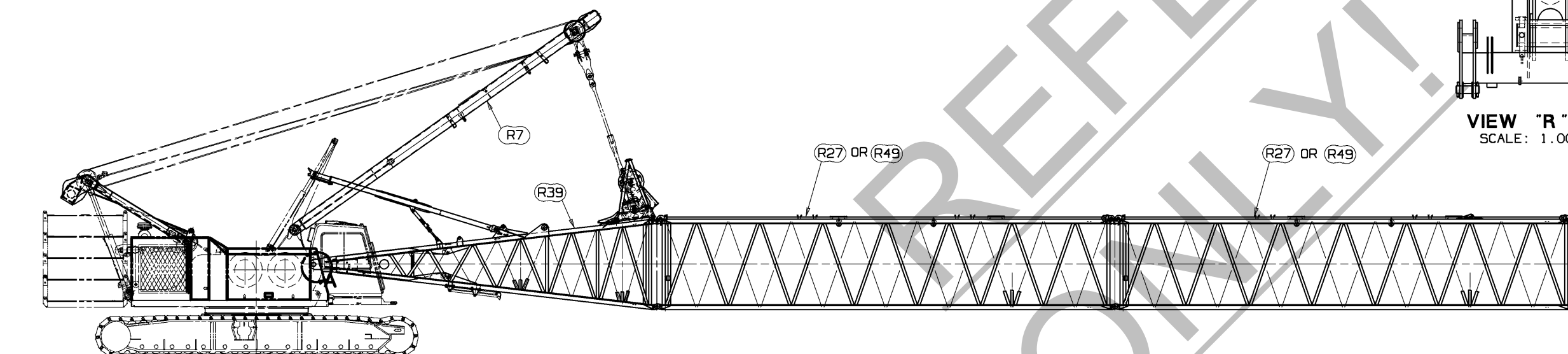
- NOTE:**
FOR ALL INFORMATION ON
THIS SHEET REFERENCE BOM
ON 196200 SHEET 7 OF 9.



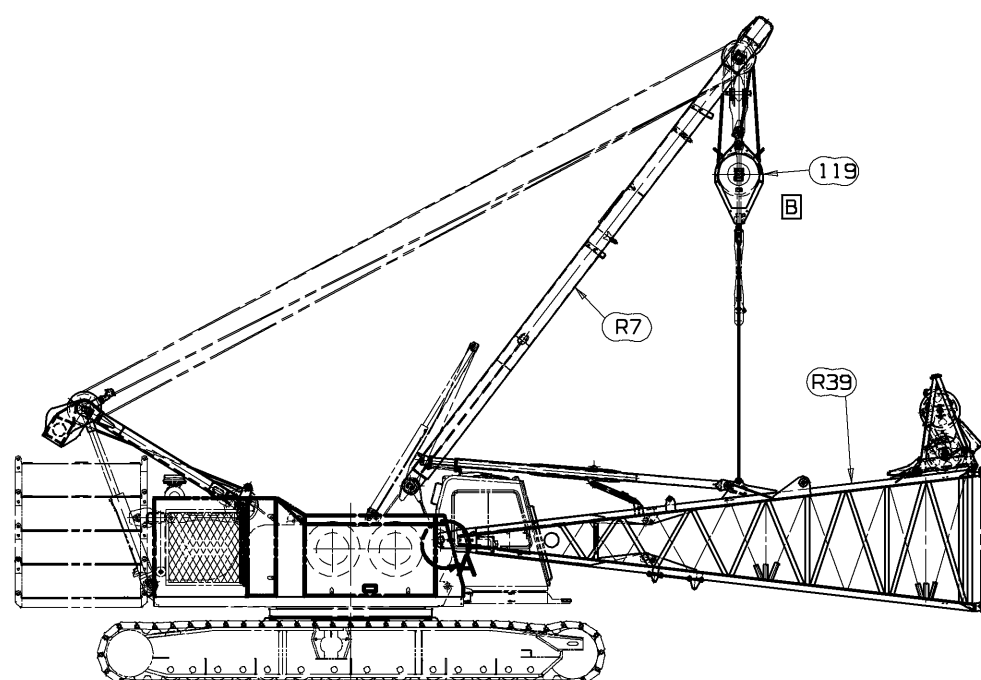
MAST RESTING ON BOOM BUTT WIRE ROPE GUIDE



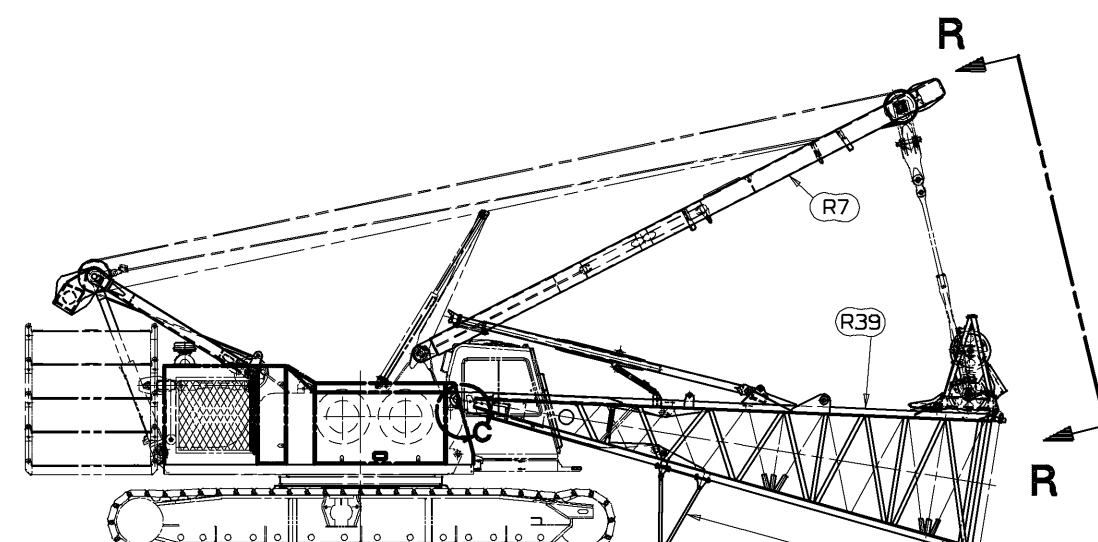
BOOM ASSEMBLY WITH MAST



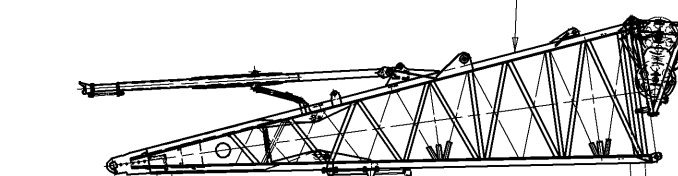
BOOM HANDLING WITH MAST



ATTACHING BOOM BUTT TO ROTATING BED USING AUXILIARY BLOCK IN MAST.



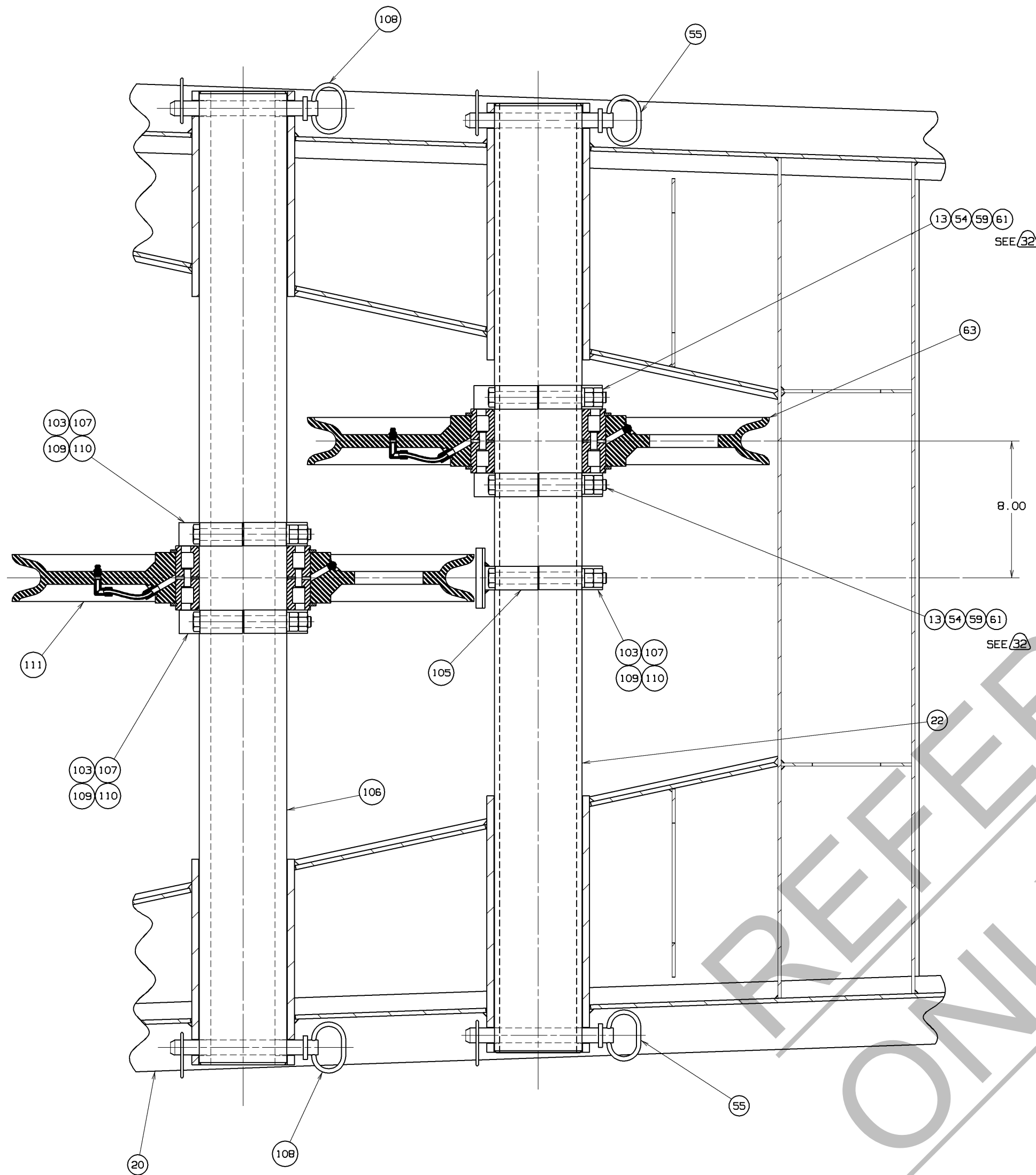
ATTACHING BOOM BUTT TO ROTATING BED (R10)
USING OPTIONAL BUTT ATTACHING ASSEMBLY.



BOOM BUTT SHIPPING ARRANGEMENT

SUPERSEDES 196200 SHT 8 OF 2-14-01

THIS PRINT PROVIDES THE PROPERTY OF MANITOWOC CRANES, INC. ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL IT IS LOANED, SUBJECT TO RETURN UPON DEMAND, AND ON EXPRESS CONDITION THAT IT IS NOT TO BE COPIED OR IN ANY MANNER REPRODUCED OR DISCLOSED TO ANY OTHER PERSONS OR ORGANIZATIONS WITHOUT THE WRITTEN	TOLERANCE UNLESS OTHERWISE SPECIFIED		SCALE 1/8"=1'	Manitowoc Cranes, Inc.	LUFFING JIB RIGGING	PATTERN NO. 622-01
	DECIMAL PLACES ≤ 10 FEET > 10 FEET		FINISHING	DR. GAO	Manitowoc, Wisconsin	ASSEMBLY #82 800M/135
	(1) PLACE 0.0 $\pm$.12 $\pm$.18 $\pm$.03		* MACHINING TOLERANCE APPLIES TO ALL DIMENSIONS	CK. TSC	MODEL 999	JIB(WITH STRAPS STOWED)
	(2) PLACE 0.000 $\pm$.006 $\pm$.012 $\pm$.005 (3) PLACE 0.0000 $\pm$.0012 $\pm$.0025		* MACHINING TOLERANCE APPLIES TO ALL DIMENSIONS	APP. TSC	ON MAST - SEE NOTE	196201



BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
BOOM SECTION ASSEMBLY	BOOM ONLY, BOOM WITH #134 FIXED JIB, OR BOOM WITH #135 LUFFING JIB
10FT. INSERT A01018	A01019
20FT. INSERT 195463	195455
40FT. INSERT 195464(A)	195456
40FT. INSERT 195465(B)	195457
40FT. TOP A01024	A01025
BOOM SECTIONS/ASSEMBLIES ABOVE REPLACE PAST PRODUCTION BOOM LISTED BELOW	BOOM WELDMENTS/MODIFICATIONS LISTED BELOW ARE ACCEPTABLE FOR WELDMENTS LISTED ABOVE
10FT. INSERT (C)	195454, A01014 OR A01015
10FT. INSERT (D)	A01122, 196006, A01016 OR A01017
20FT. INSERT	A01020
40FT. INSERT (A)	A01022
40FT. INSERT (B)	A01021
40FT. TOP	A01093, 195458, OR A01023
(A) WITHOUT JIB BACKSTAY LUGS	
(B) WITH JIB BACKSTAY LUGS	
(C) WITH SHEAVE FRAME WELDED TO INSERT	
(D) WITHOUT SHEAVE FRAME	

INSERTS, PENDANTS, ROLLER GUIDES, LINKS & PINS REQ'D. FOR VARIOUS JIB LENGTHS

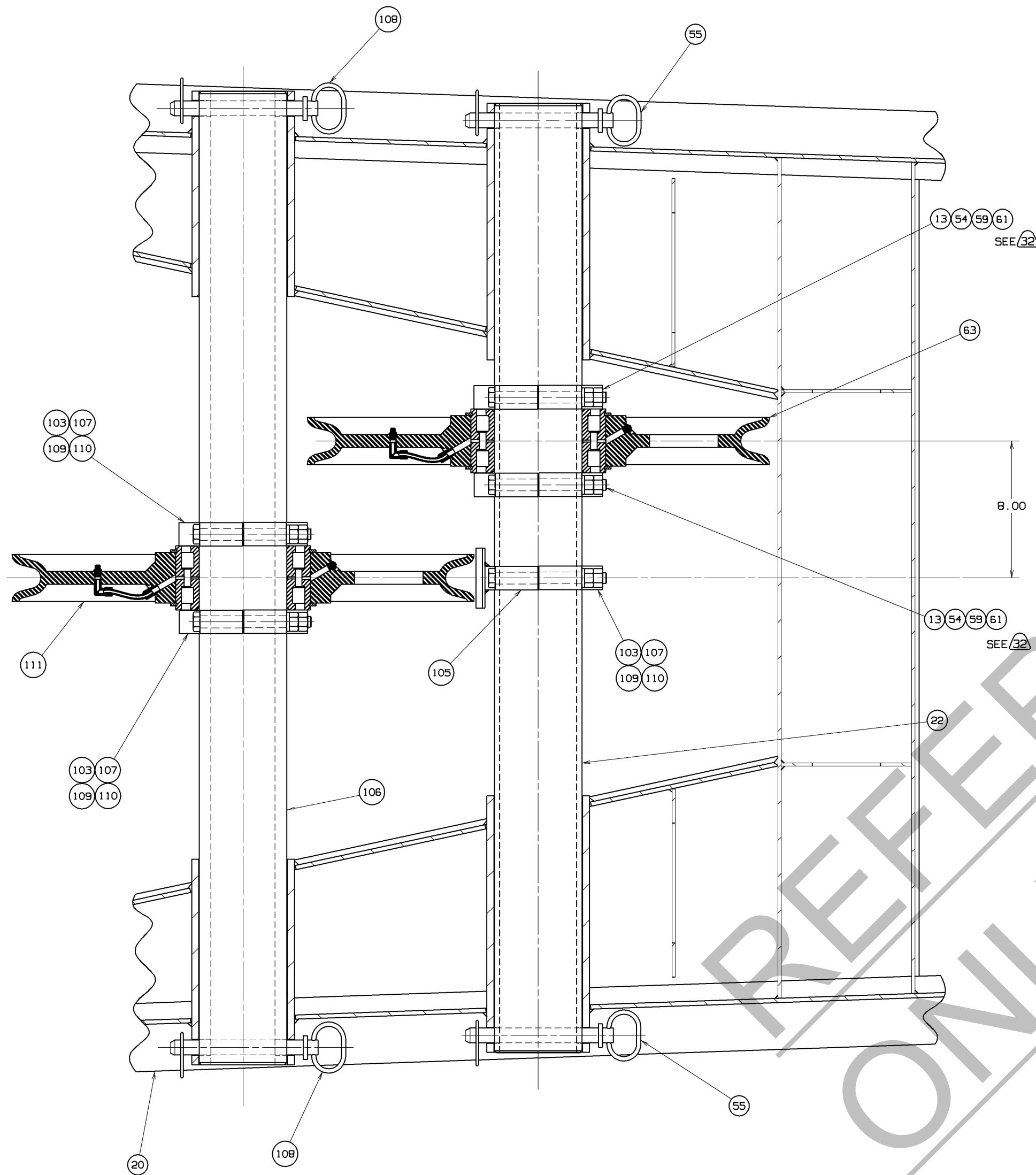
ITEM NO.	68	72	76 OR 81	70 DWG. 78145	74 DWG. 78145	79 OR 84 DWG. 78145	69, 73, 78 OR 83	71, 77 OR 82	87	86
JIB LENGTHS	10 FT 3.05 M INSERT	20 FT 6.10 M INSERT	40 FT 12.19 M INSERT	10 FT-1.0 3.07 M PENDANT	20 FT-1.5 6.13 M PENDANT	40 FT-3.0 12.27 M PENDANT	WIRE ROPE JOINT	BOOM JOINT PIN	PENDANT LINK 24.00 (610mm)	PIN
70	21.3	0	1	0	0	0	1	4	2	2
80	24.4	1	1	0	2	0	2	8	2	2
90	27.4	OR 0	2	0	4	0	2	8	2	2
100	30.5	OR 1	2	0	2	0	3	12	2	2
110	33.5	0	1	1	0	2	3	8	0	0
120	36.6	1	1	1	2	2	4	12	0	0
130	39.6	OR 0	2	1	0	4	4	12	0	0
140	42.7	OR 1	2	1	2	4	5	16	0	0
150	45.7	0	1	2	0	2	5	12	0	0
160	48.8	1	1	2	2	4	6	16	0	0
170	51.8	OR 0	2	2	0	4	6	16	0	0

INSERTS, PENDANTS, AND ROLLER GUIDES REQUIRED FOR VARIOUS BOOM LENGTHS

ITEM NO.	R16	R23	R27	LINK (196032) POSITION	90 & 94	95	96	89	92	87	9 & 86
BOOM LENGTH	10 FT 3.05 M INSERT ASSEMBLY SEE (10)	20 FT 6.10 M INSERT ASSEMBLY SEE (11)	40 FT 12.19 M INSERT ASSEMBLY		10 FT-1.0 3.07 M PENDANT SEE (30)	20 FT-1.5 6.13 M PENDANT SEE (30)	40 FT-3.0 12.27 M PENDANT SEE (30)	PENDANT LINK 39.00 (991mm)	PENDANT LINK 11.00 (279mm)	PENDANT LINK 24.00 (610mm)	PIN
80	24.4	1	0	0	A	OR 4	0	0	2	0	2
90	27.4	OR 2	0	0	A	OR 6	0	0	2	0	2
100	30.5	1	1	0	A	2	2	0	2	2	4
110	33.5	OR 2	1	0	A	OR 4	2	0	2	2	4
120	36.6	OR 1	2	0	A	OR 2	4	0	2	2	4
130	39.6	OR 2	0	1	A	OR 4	0	2	2	2	4
140	42.7	1	1	1	A	2	2	0	2	2	4
150	45.7	OR 2	1	1	A	OR 0	4	0	2	0	2
160	48.8	OR 1	2	1	A	OR 2	4	2	2	0	2
170	51.8	OR 2	0	2	A	OR 4	0	4	2	0	2
180	54.9	1	1	2	A	2	2	4	0	2	2
190	57.9	OR 2	1	2	B	OR 4	2	4	0	2	2
200	61.0	OR 1	2	2	B	OR 2	4	4	0	2	2

NOTE:
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ARRANGEMENT IS USED ON
MACHINE S/N 9991001
THRU S/N 9991050.

NOTE:
TABLES ON THIS SHEET
REFERENCE BOM ON
196200 SHEET 7 OF 9.



SECTION "N" - "N"
SHOWN ITEMS 63 & 111, FOR ORIENTATION OF GREASING ONLY
SCALE: 4 = 1 FT

BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
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40FT. INSERT (A)	A01022
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40FT. TOP	A01093, 195458, OR A01023
(A) WITHOUT JIB BACKSTAY LUGS	
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70	21.3	0	1	0	0	0	1	4	2	2
80	24.4	1	1	0	2	0	2	8	2	2
90	27.4	OR 0	2	0	4	0	2	8	2	2
100	30.5	OR 1	2	0	2	0	3	12	2	2
110	33.5	0	1	1	0	2	3	8	0	0
120	36.6	1	1	1	2	2	4	12	0	0
130	39.6	OR 0	2	1	0	4	4	12	0	0
140	42.7	OR 1	2	1	2	4	5	16	0	0
150	45.7	0	1	2	0	2	5	12	0	0
160	48.8	1	1	2	2	4	6	16	0	0
170	51.8	OR 0	2	2	0	4	6	16	0	0

INSERTS, PENDANTS, AND ROLLER GUIDES REQUIRED FOR VARIOUS BOOM LENGTHS

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80	24.4	1	0	0	A	OR 4	0	0	2	0	2
90	27.4	OR 2	0	0	A	OR 6	0	0	2	0	2
100	30.5	1	1	0	A	2	2	0	2	2	4
110	33.5	OR 2	1	0	A	OR 4	2	0	2	2	4
120	36.6	OR 1	2	0	A	OR 2	4	0	2	2	4
130	39.6	OR 2	0	1	A	OR 4	0	2	2	2	4
140	42.7	1	1	1	A	2	2	0	2	2	4
150	45.7	OR 2	1	1	A	OR 0	4	0	2	0	2
160	48.8	OR 1	2	1	A	OR 2	4	0	2	0	2
170	51.8	OR 2	0	2	A	OR 4	0	4	0	2	2
180	54.9	1	1	2	A	2	2	4	0	2	2
190	57.9	OR 2	1	2	B	OR 4	2	4	0	2	2
200	61.0	OR 1	2	2	B	OR 2	4	0	2	0	2

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