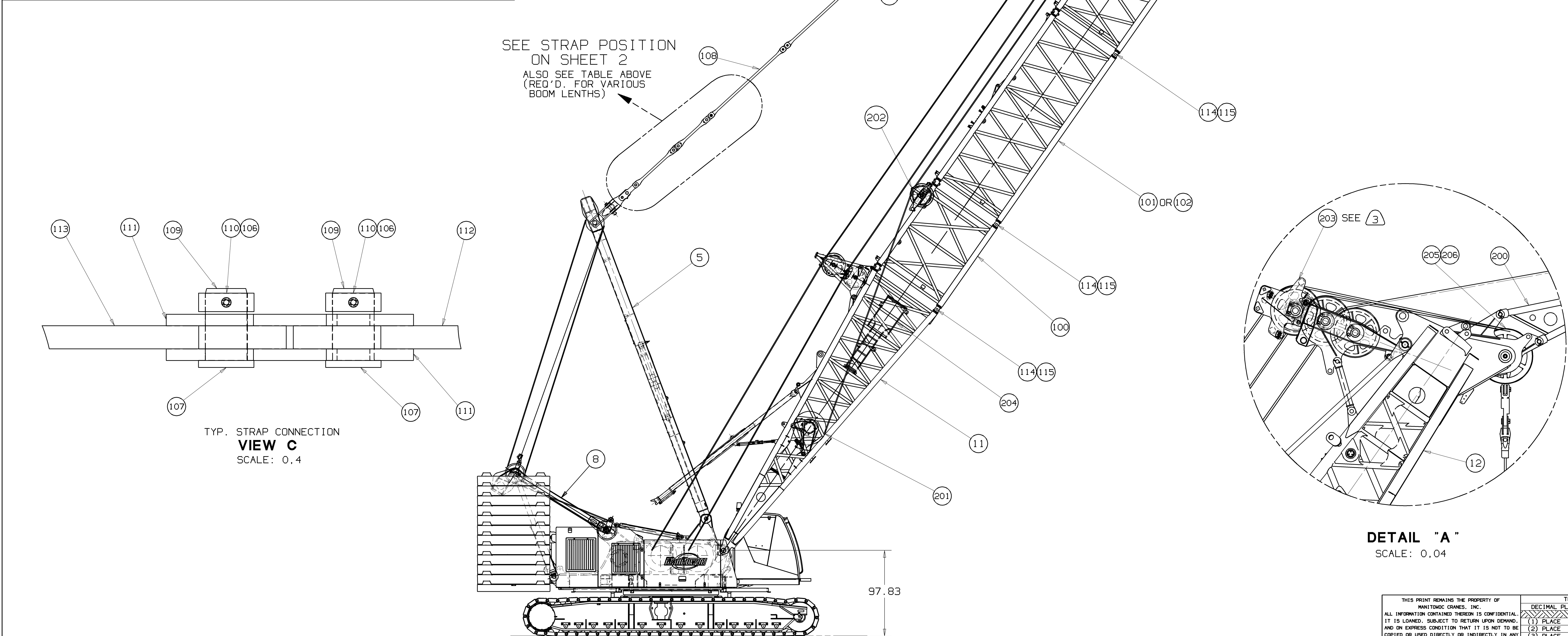


ITEM NO.	100	101	102	103	104	106	107	108	109	110	111	112	113	114	115	TABLE 1
BOOM LENGTH	3.00M INSERT ASSEMBLY	6.00M INSERT ASSEMBLY	6.00M INSERT W/BACKSTAY ASSEMBLY	12.00M INSERT ASSEMBLY	12.00M INSERT W/BACKSTAY ASSEMBLY	SPLIT COTTER PIN 4-25/STEEL	PIN 1 HOLE W/HD 57 DIA X 73 LG	STRAP BOOM SUPPORT	COLLAR 58 ID X 25 LG	PIN 2 HOLE 13 DIA X 81 LG	LINK BOOM SUPPORT	STRAP BOOM SUPPORT	STRAP BOOM SUPPORT	PIN 1 HOLE W/HD 60 DIA X 134 LG	SAFETY PIN 4.88 X 127 LG	STRAP POSITION
METERS																
24.5	1	0	0	0	0	32	12	2	14	14	4	0	0	2	2	A
27.5	OR 2 0	0	0	0	0	40	16	4	18	18	8	0	0	4	4	A
30.5	1	0	1	0	0	40	16	2	18	18	8	0	2	4	4	A
33.5	OR 2 0 OR 0	0	1	0	0	48	20	4	22	22	12	0	2	6	6	A
		0	1	0	0	40	16	0	18	18	8	0	4	4	4	
		0	0	0	1	32	12	0	14	14	4	2	0	2	2	
36.5	OR 1 1	1	1	0	0	48	20	2	22	22	12	0	4	6	6	A
		0	0	0	1	40	16	2	18	18	8	2	0	4	4	
39.5	OR 2 0	0	0	0	0	48	20	4	22	22	12	2	0	6	6	A
		0	1	0	1	40	16	0	18	18	8	2	2	4	4	
42.5	1	0	1	0	1	48	20	2	22	22	12	2	2	6	6	A
45.5	OR 2 0 OR 0	0	1	0	1	56	24	4	26	26	16	2	2	8	8	A
		0	1	0	1	48	20	0	22	22	12	2	4	6	6	
		0	0	0	1	40	16	0	18	18	8	4	0	4	4	
48.5	OR 1 1	1	1	0	1	56	24	2	26	26	16	2	4	8	8	A
		0	0	1	1	48	20	2	22	22	12	4	0	6	6	
51.5	OR 2 0	0	0	1	1	56	24	4	26	26	16	4	0	8	8	A
		0	1	1	1	48	20	0	22	22	12	4	2	6	6	
54.5	1	0	1	1	1	56	24	2	26	26	16	4	2	8	8	A
57.5	OR 2 0 OR 0	0	1	1	1	64	28	4	30	30	20	4	2	10	10	B
		0	1	1	1	56	24	0	26	26	16	4	4	8	8	
		0	0	2	1	48	20	0	22	22	12	6	0	6	6	
60.5	OR 1 1	1	1	1	1	64	28	2	30	30	20	4	4	10	10	B
		0	0	2	1	56	24	2	26	26	16	6	0	8	8	
63.5	OR 2 0	0	0	2	1	64	28	4	30	30	20	6	0	10	10	B
		0	1	2	1	56	24	0	26	26	16	6	2	8	8	
66.5	1	0	1	2	1	64	28	2	30	30	20	6	2	10	10	B
69.5	OR 2 0 OR 0	0	1	2	1	72	32	4	34	34	24	6	2	12	12	B
		0	1	2	1	64	28	0	30	30	20	6	4	10	10	
		0	0	3	1	56	24	0	26	26	16	8	0	8	8	
72.5	OR 1 1	1	1	2	1	72	32	2	34	34	24	6	4	12	12	B
		0	0	3	1	64	28	2	30	30	20	8	0	10	10	

	BOOM SECTION WELDMENT (THIS NUMBER APPEARS ON NAMEPLATE)	
BOOM SECTION ASSEMBLY	BOOM ONLY, BOOM WITH #134 FIXED JIB,	BOOM WITH #149A LUFFING JIB
3.00M INSERT A07855	A07856	A07856
6.00M INSERT A08787(A)	A08788	A08788
6.00M INSERT A07857(B)	A07858	A07858
12.00M INSERT A07859(A)	A07860	A07860
12.00M INSERT A07861(B)	A07862	A07862
12.25M TOP A07853	A07854	A07854
(A) WITHOUT JIB BACKSTAY LUGS		
(B) WITH JIB BACKSTAY LUGS		



DETAIL "A"

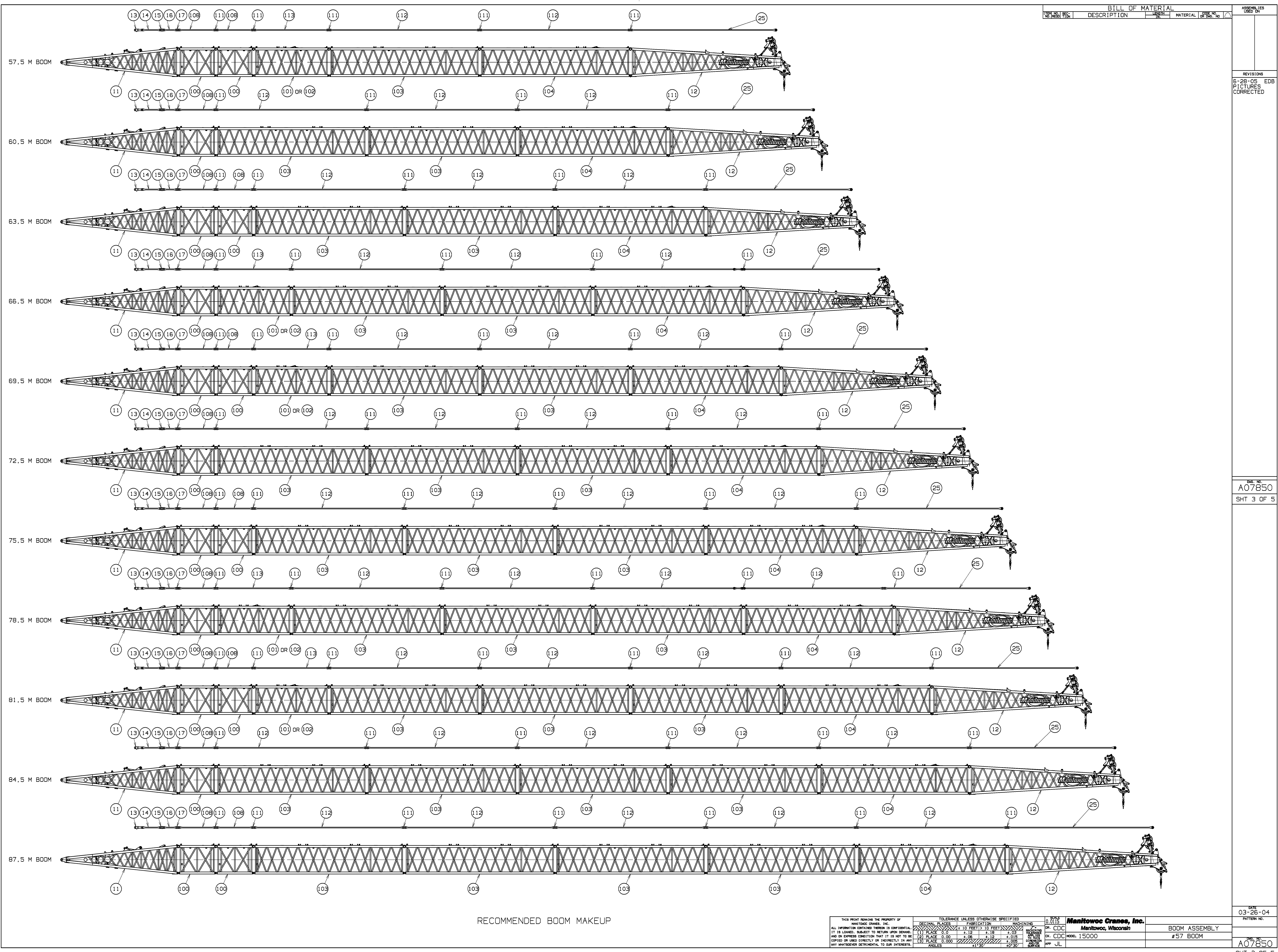
SCALE: 0,04

THIS PRINT REMAINS THE PROPERTY OF MANTODOC CRANES, INC.	THIS PRINT IS THE PROPERTY OF MANTODOC CRANES, INC.
ALL INFORMATION CONTAINED THEREIN IS CONFIDENTIAL. IT IS LOANED, SUBJECT TO RETURN UPON DEMAND, AND ON EXPRESS CONDITION THAT IT IS NOT TO BE COPIED OR USED DIRECTLY OR INDIRECTLY IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF MANTODOC CRANES, INC.	ALL INFORMATION CONTAINED THEREIN IS CONFIDENTIAL. IT IS LOANED, SUBJECT TO RETURN UPON DEMAND, AND ON EXPRESS CONDITION THAT IT IS NOT TO BE COPIED OR USED DIRECTLY OR INDIRECTLY IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF MANTODOC CRANES, INC.

BILL OF MATERIAL							ASSEMBLIES USED IN	
ITEM NO.	REV.	SEC.	DESCRIPTION	LENGTH IN.	MATERIAL	QTY OR ENG. NO.		
BOOM RIGGING ASSEMBLY								
1								
2								
3								
4								
5	1		MAST ASSEMBLY			196381	10	
6								
7								
8	1		GANTRY ASSEMBLY			195845		
9								
10								
11	1		BUTT 9.25M ASSY #57 BOOM			A07851		
12	1		BOOM 12.25M TOP ASSY #57 BOOM			A07853		
13	4		LINK			A09579		
14	2		STRAP			A09580		
15	4		LINK			A09578		
16	2		STRAP			A09581		
17	4		LINK			A09582		
18	2		PIN / HOLE W/HD 2.75 DIA X 3.38 LG			196066		
19	2		COLLAR 3.75 OD X 2.50 ID TUBE			196067		
20	2		PIN 2 HOLE .50 DIA X 4.03 LG.			196068		
21	2		PIN / HOLE W/HD 57 DIA X 80 LG			A10077		
22	6		PIN 2 HOLE .75 DIA X 3.35 LG			196392		
23	6		SPLIT COTTER PIN 6.3-40/STEEL			7690151500		
24	6		PIN COTTER 6 X 42 MM			A10097		
25	2		STRAP BOOM SUPPORT BASIC			A08100		
NO. REOD. FOR THE FOLLOWING ITEMS ARE IN TABLE								
100			INSERT 3.00M ASSY #57 BOOM			A07855	7	
101			INSERT 6.00M ASSY #57 BOOM			A08787	7	
102			INSERT 6.00M ASSY #57 BOOM W/BACKSTAY LUG			A07857	8	
103			INSERT 12.00M ASSY #57 BOOM			A07859	1	
104			INSERT 12.00M ASSY #57 BOOM W/BACKSTAY LUG			A07861	1	
105								
106			SPLIT COTTER PIN 4-25/STEEL			7691111200		
107			PIN / HOLE W/HD 57 DIA X 73 LG			A08088		
108			STRAP BOOM SUPPORT			A08273		
109			COLLAR 58 ID X 25 LG			A09213		
110			PIN 2 HOLE 13 DIA X 81 LG			A09560		
111			LINK BOOM SUPPORT			A08090		
112			STRAP BOOM SUPPORT			A08094		
113			STRAP BOOM SUPPORT			A08092		
114			PIN / HOLE W/HD 60 DIA X 134 LG			A10166		
115			SAFETY PIN 4.88 OD X 127 LG			A09535		
116								
117								
118								
119								
120								
OPTIONAL ASSEMBLY LIST								
200	1		BOOM POINT UPPER ASSEMBLY			A08493	2	
201	1		DRUM SHAFT ASSEMBLY, AUXILIARY			A08116	3	
202	1		GUIDE WIRE ROPE ASSEMBLY			A09490	3	
203	1		GUIDE WIRE ROPE ASSEMBLY			A09575	3	
204	1		BOOM ASSY LADDER STORAGE			A09680		
205	1		WIRE ROPE GUIDE SUPPORT ASSEMBLY			179663	11	
206	1		MOD. TO ADD WIRE ROPE GUARD			194164		
207	1		SUPPORT ASSEMBLY			A09736		
							ENG. NO.	
							A07850	
							SHT 1 OF 5	

- (1) SEE TABLE FOR NO. REQ'D.
- (2) JIB CANNOT BE USED WITH THIS ASSEMBLY.
- (3) WHEN AUXILIARY DRUM SHAFT ASSEMBLY (ITEM 201) IS USED, THE BOOM BUTT ASSEMBLY (ITEM 11), WIRE ROPE GUIDE ASSEMBLIES (ITEMS 202 AND 203) AND 3.00 M INSERT ASSEMBLY (ITEM 100) ARE REQUIRED. THE 3.00 M INSERT ASSEMBLY (ITEM 100) MUST BE ADJACENT TO THE BOOM BUTT AT ALL TIMES. MINIMUM BOOM LENGTH USING THESE COMPONENTS IS 24.5M.
- (4) MAXIMUM NO. OF 3.00 M INSERT ASSEMBLIES = 2.
- (5) MAXIMUM NO. OF 6.00 M INSERT ASSEMBLIES = 2.
- (6) COMBINATION OF 3.00 M AND 6.00 M INSERT ASSEMBLIES CANNOT EXCEED
 $2 - 3.00 \text{ M PLUS } 1 - 6.00 \text{ M}$
 $\text{OR } 1 - 3.00 \text{ M PLUS } 2 - 6.00 \text{ M}.$
- (7) SEE (1), (4) AND (6).
- (8) SEE (1), (5) AND (6).
- (9) STARTING WITH BOOM BUTT ASSEMBLY, INSERT ASSEMBLIES MUST BE INSTALLED IN ASCENDING LENGTH.
- (10) STRAPS ATTACHED TO MAST TOP LINKS ARE CALLED FOR ON BOOM BUTT ASSEMBLY (ITEM 11).
- (11) REQ'D FOR CLAM. UPPER BOOM POINT CANNOT BE USED WITH THIS ASSEMBLY.
- (12) 12.00 M INSERT ASSEMBLY WITH BACKSTAY LUG (ITEM 104) MAY BE USED IN PLACE OF 12.00 M INSERT ASSEMBLY (ITEM 103).
- (13) ALL JIB BACKSTAY STRAPS, LINKS AND PINS STOWED WITH INSERTS AND BOOM TOP MUST BE REMOVED FOR USE WITH THIS ASSEMBLY.

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN G05500-05-035
DATE 03-26-04
PATTERN NO.
DWG. NO. A07850



BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	LENGTH	MATERIAL

ASSEMBLIES USED ON

REVISIONS
6-28-05 EDB
PICTURES
CORRECTED

DWG. NO.
A07850
SHT 3 OF 5

DATE
03-26-04
PATTERN NO.

DWG. NO.
A07850
SHT 3 OF 5

RECOMMENDED BOOM MAKEUP

TOLERANCE UNLESS OTHERWISE SPECIFIED		MANUFACTURING		MACHINING	
DECIMAL PLACES	FABRICATION	± 10 FEET	± 10 FEET	± 10 FEET	± 10 FEET
(1) PLACE 0.0	± .12	± .18	± .05	± .015	± .005
(2) PLACE 0.00	± .06	± .12	± .015	± .005	± .005
(3) PLACE 0.000	± .03	± .06	± .005	± .005	± .005
ANGLES	± 1° 30'	± 1° 30'	± 1° 30'	± 1° 30'	± 1° 30'

DR. CDC

CK. CDC

APP. JL

MANITOWOC CRANES, INC.

Manitowoc, Wisconsin

MODEL 15000

BOOM ASSEMBLY

#57 BOOM

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. IF BUTT IS TO BE INSTALLED WITH AUXILIARY BLOCK, DO THAT NEXT. IF NOT PROCEED TO STEP 4.
4. ATTACH BOOM BUTT STRAPS TO MAST LINKS. SEE APPROPRIATE VIEWS AT LEFT. ALSO SEE TABLE ON SHEET 1 AND VIEWS ON SHEET 2 FOR PROPER PIN/LINK POSITION. LINKS MAY BE PINNED IN POSITION "A" OR "B" FOR BOOM ASSEMBLY OR HANDLING.
WITH BUTT PINNED TO ROTATING BED, LOWER MAST TO ROPE GUIDE ON BUTT.
OR
WITH BUTT SUPPORTED BY BUTT ATTACHING ASSEMBLY, LOWER MAST DOWN TO: BUT NOT SUPPORTED BY WIRE ROPE GUIDE ON BUTT.
REMOVE STOWAGE LINKS, ATTACH BUTT LINKS TO MAST LINKS AND REMOVE SMALL STOWAGE PINS.
BOOM UP SLOWLY TO RAISE STRAPS FROM STOWED POSITION. (DO NOT PUT STRAPS IN TENSION) REMOVE STOWAGE PIN BETWEEN LINKS AND SUPPORTS ON BUTT, WITH STRAPS HANGING VERTICAL, INSERT LOCKING PINS AS SHOWN IN VIEW "B" & "E".
5. IF BOOM BUTT WAS NOT INSTALLED IN STEP 3, INSTALL IT NOW USING THE OPTIONAL BOOM BUTT SUPPORT. ATTACH THE BUTT STRAPS TO THE HANDLING LINK ON THE ROPE GUIDE (AS SHOWN IN VIEW B) AND INSTALL THE BOOM BUTT WITH THE ROPE GUIDE AND BOOM STOPS TO THE ROTATING BED. (BOOM STOPS MUST BE IN THE SHIPPING/LOWER POSITION).
6. ATTACH BOOM STOP HANDLING PENDANTS TO BOOM STOP TUBES. RAISE AND PIN BOOM STOPS IN WORKING POSITION AND STOW HANDLING PENDANTS ON MAST. SEE VIEW ON SHEET 5.
7. WITH BUTT STRAPS ATTACHED TO BOOM HANDLING LINK ON ROPE GUIDE. (SEE VIEW "B") BOOM UP TO CLEAR GROUND WITH BUTT.
8. POSITION MACHINE TO ALIGN UPPER PIN CONNECTOR PINS ON BOOM BUTT WITH UPPER PIN CONNECTOR HOLES ON FIRST BOOM INSERT AND ENGAGE PINS.
9. 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.

10. BOOM DOWN TO DISCONNECT MAST STRAPS FROM ROPE GUIDE LINKS.
11. ATTACH BOOM BUTT STRAPS TO INSERT STRAPS. (SEE VIEW "D" ON SHT 5)
12. BOOM UP TO DESIRED BOOM ANGLE.

TO DISASSEMBLE BOOM

1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
2. DISCONNECT BUTT STRAPS FROM BOOM INSERT STRAPS.
3. CONNECT MAST STRAPS TO HANDLING LINK ON ROPE GUIDE (SEE VIEW "B")
4. BOOM UP TO REMOVE SLACK FROM BUTT STRAPS.

WARNING:

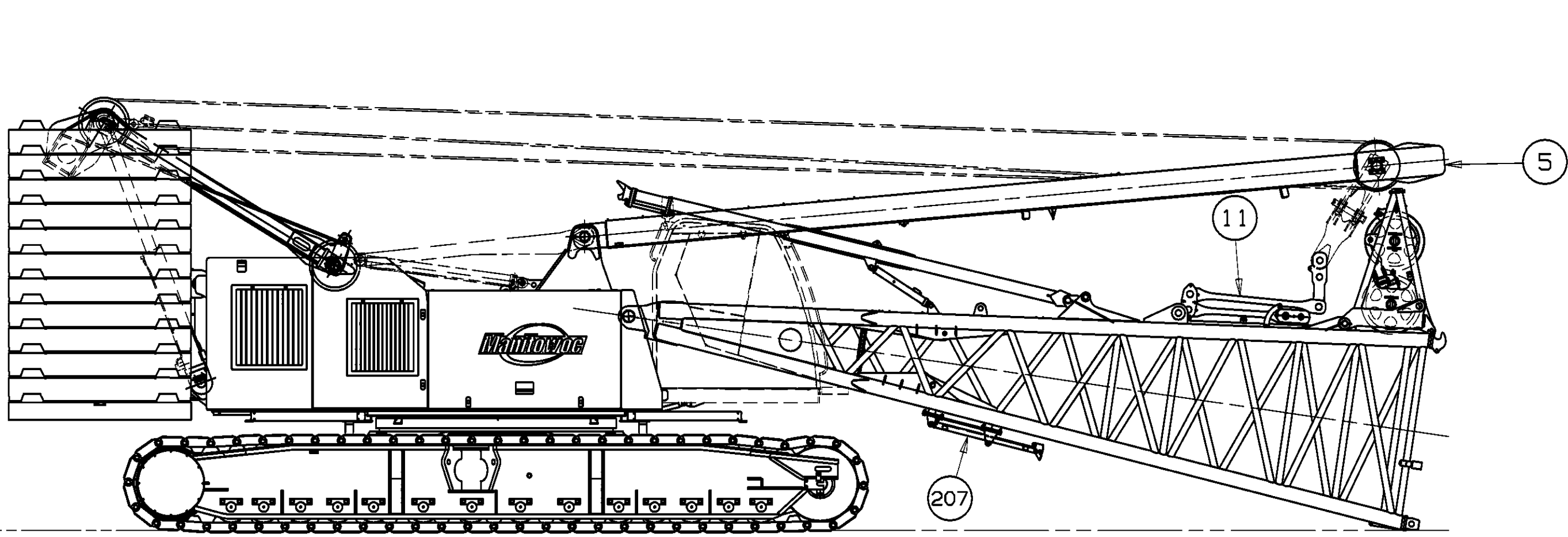
DO NOT BOOM UP TO PUT TENSION INTO BUTT STRAPS. (REMOVE SLACK ONLY) TENSION IN BUTT STRAPS WILL DAMAGE ROPE GUIDE AND BOOM BUTT.

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

WARNING:

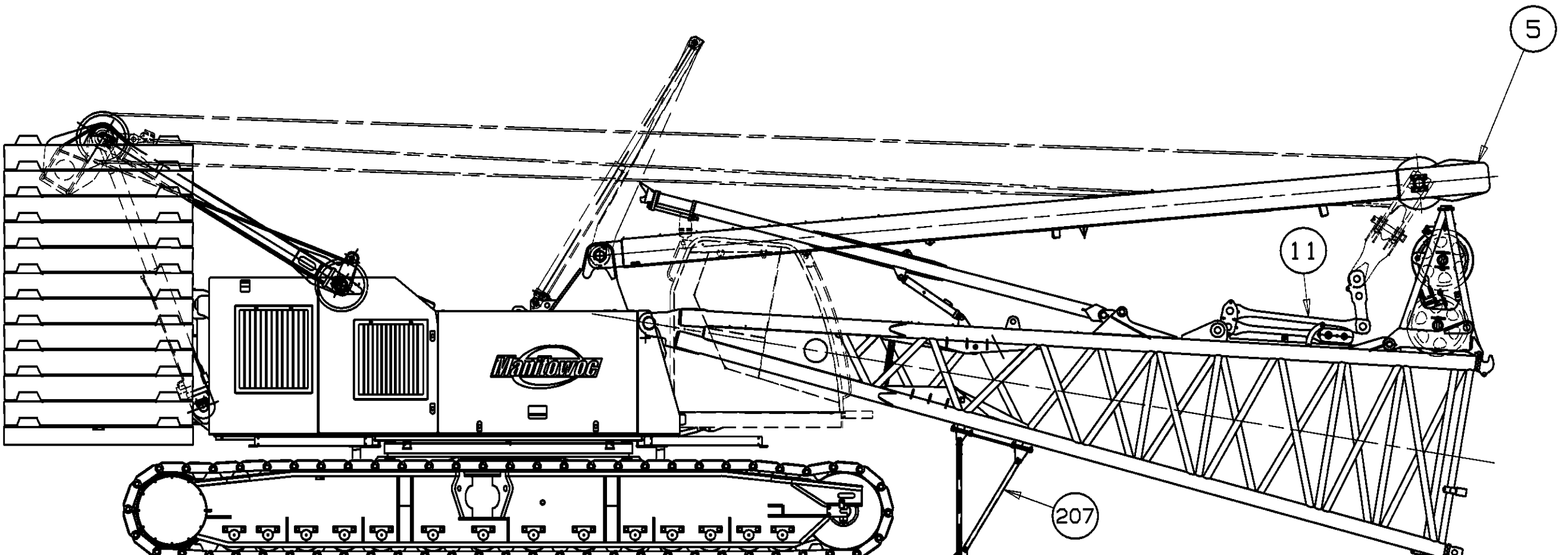
BOOM MUST BE PROPERLY BLOCKED TO PREVENT SHIFTING DURING PIN REMOVAL.

6. SLOWLY BACK AWAY FROM BOOM.
7. LOWER BOOM STOPS TO SHIPPING POSITION.
8. REMOVE BOOM BUTT FROM ROTATING BED AND STOW BUTT STRAPS.
9. DISASSEMBLE BOOM WITH MAST.
10. SEE SHEET 5 FOR BOOM BUTT SHIPPING ARRANGEMENT



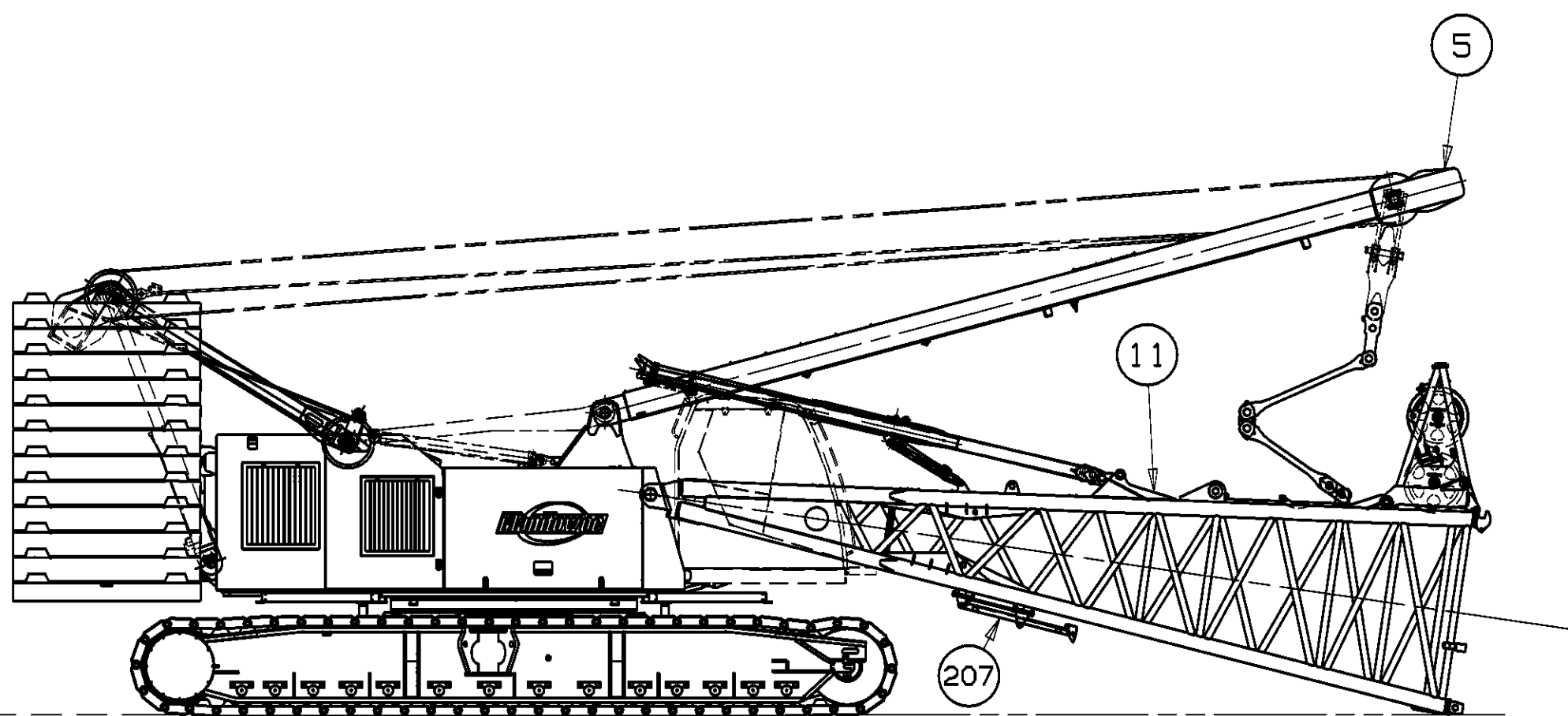
BOOM BUTT PINNED TO ROTATING BED.
MAST RESTING ON BOOM BUTT WIRE ROPE GUIDE.
ATTACH OR DISCONNECT BOOM BUTT STRAPS FROM MAST LINKS.

SCALE: 0.02

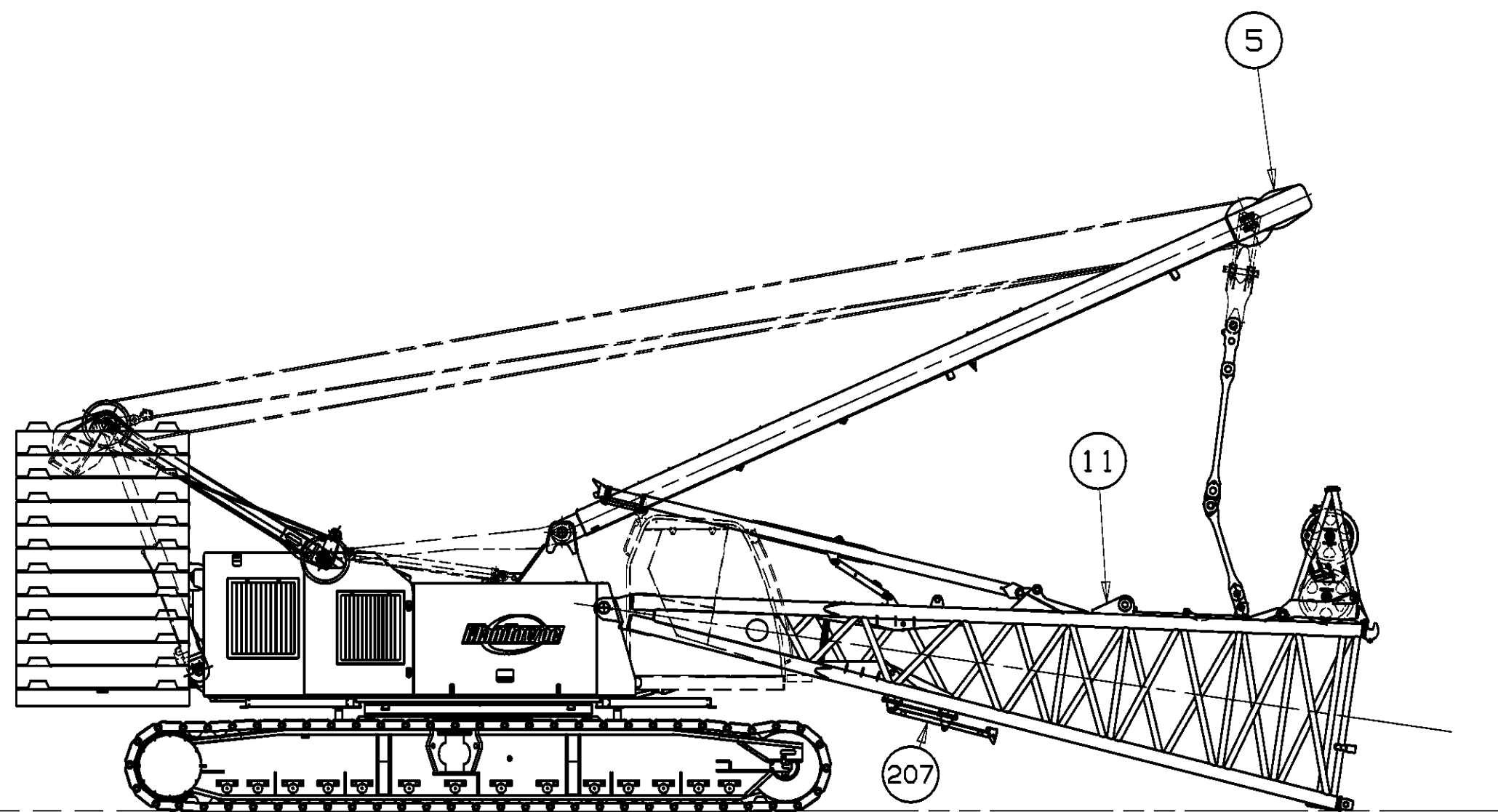


BOOM BUTT SUPPORTED BY OPTIONAL BUTT ATTACHING ASSEMBLY.
MAST LOWERED TO, BUT NOT SUPPORTED BY, ROPE GUIDE.
ATTACH OR DISCONNECT BOOM BUTT STRAPS FROM MAST LINKS.

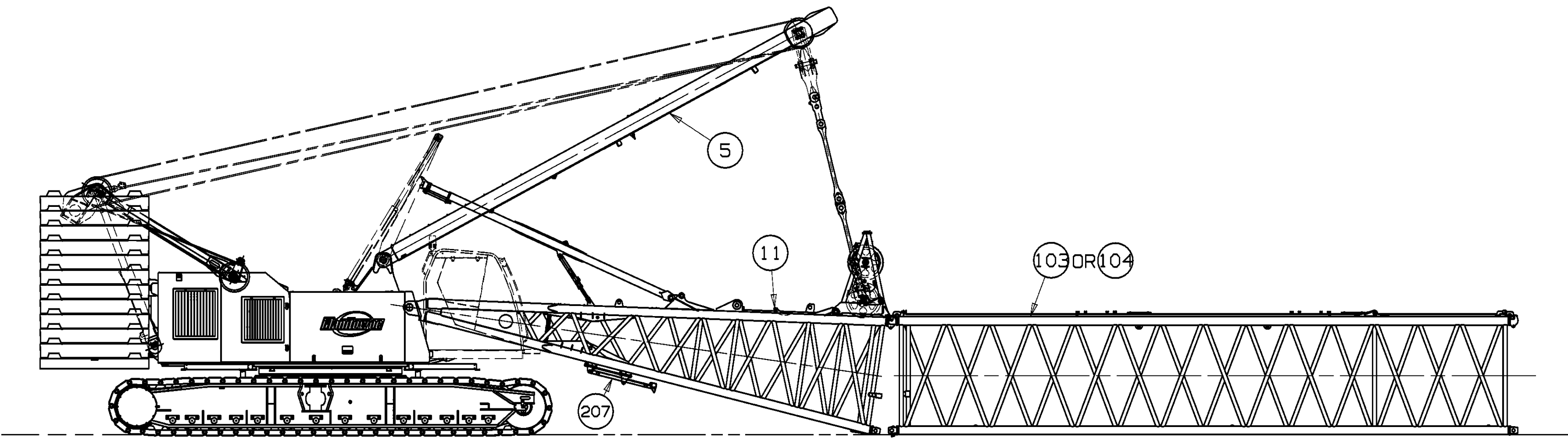
SCALE: 0.02



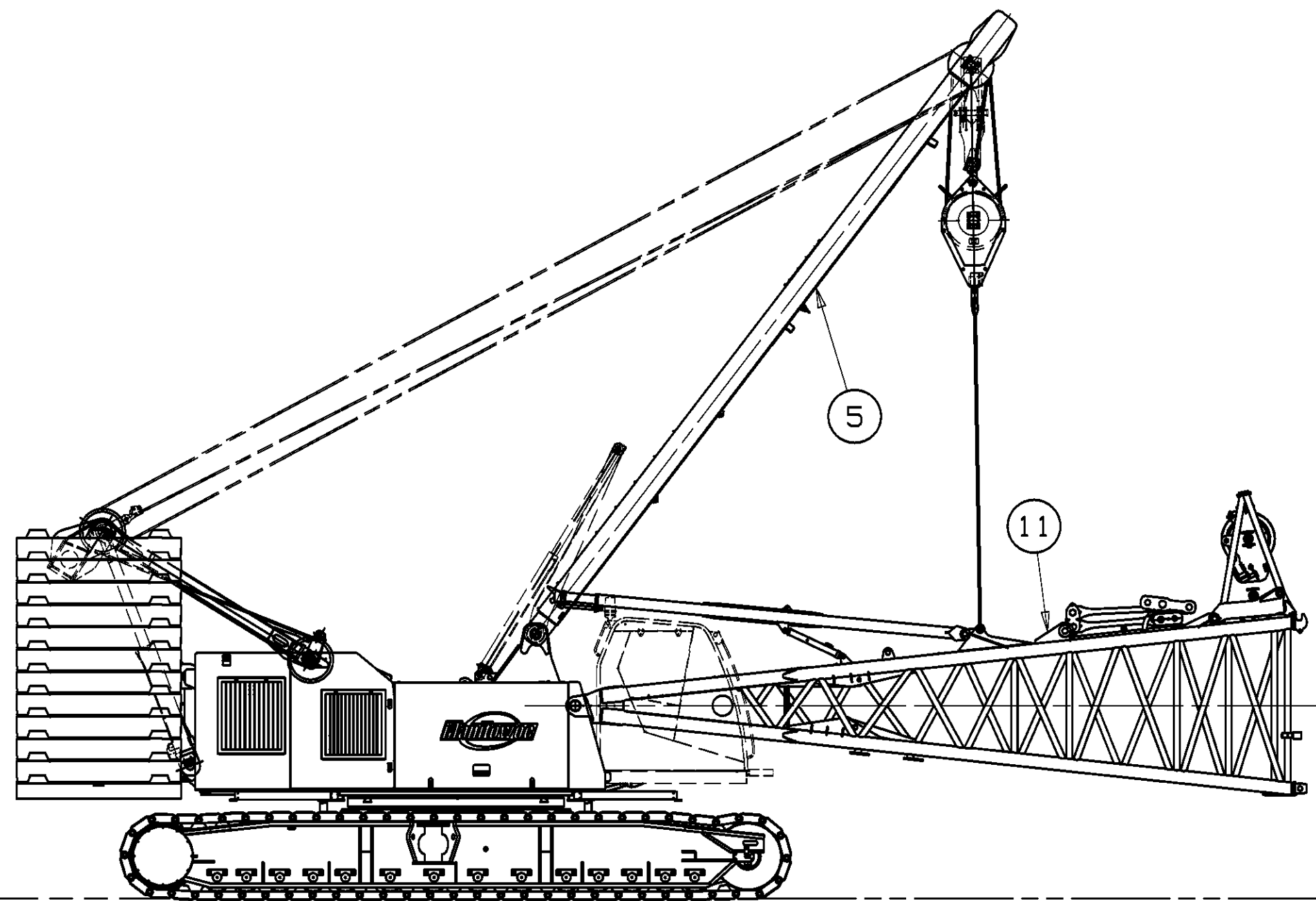
RAISE OR LOWER MAST WITH STRAPS



ATTACH OR DISCONNECT STRAPS FROM STOWAGE LUG ON BOOM BUTT

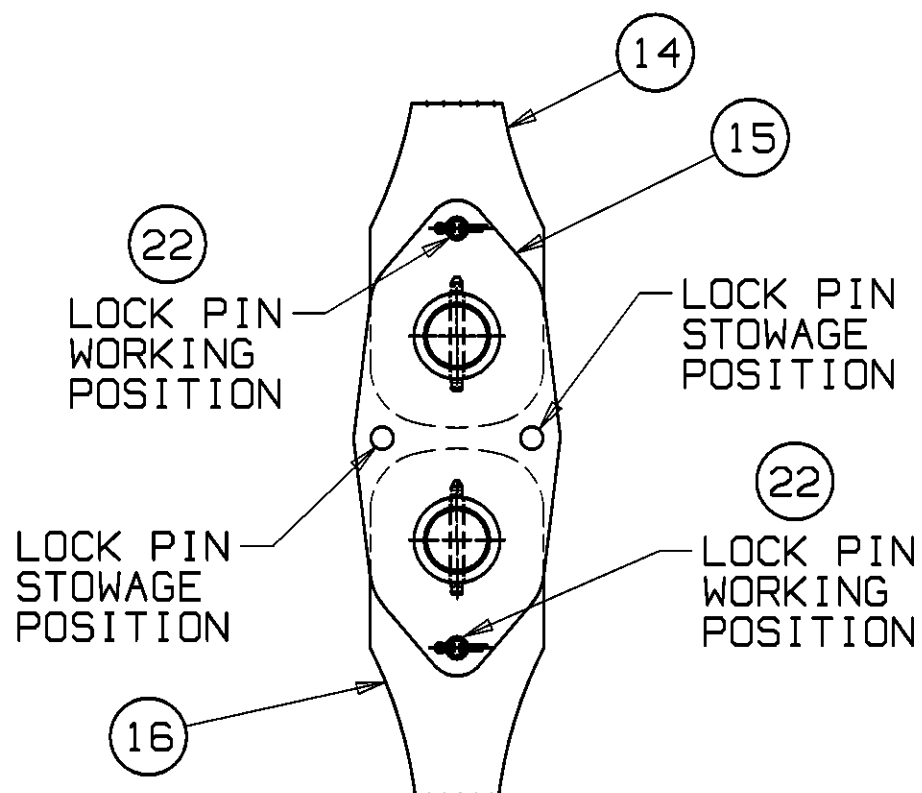


BOOM ASSEMBLY WITH MAST

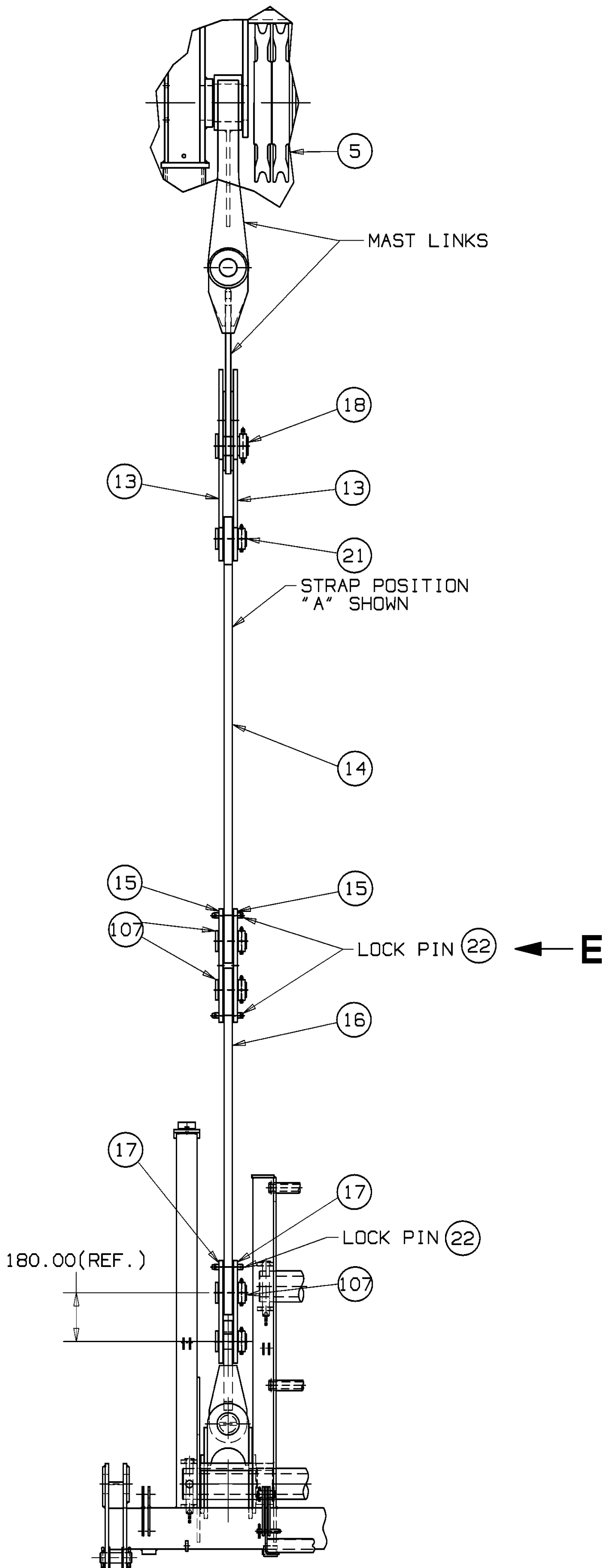


ATTACHING BOOM BUTT TO ROTATING BED
USING AUXILIARY BLOCK IN MAST.

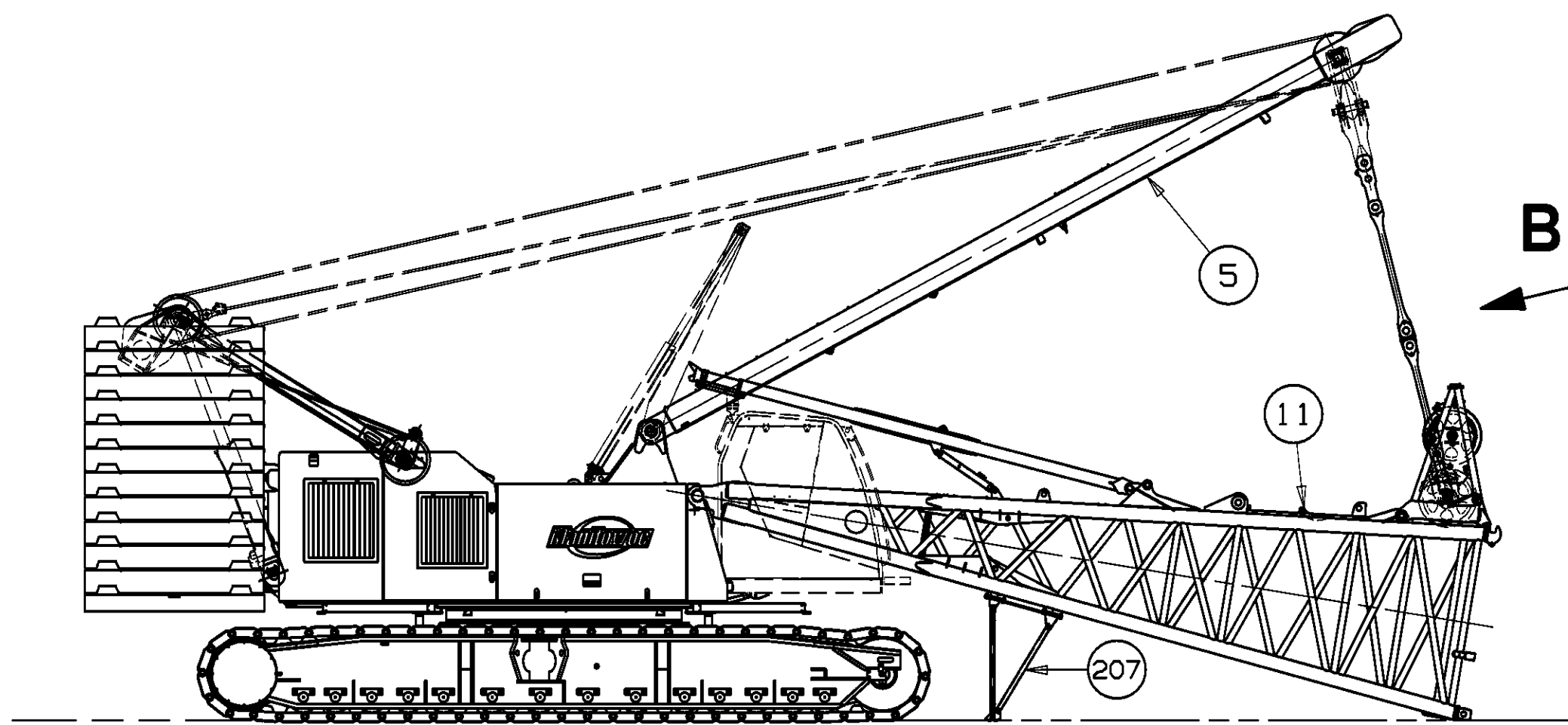
DO NOT SCALE THIS DRAWING



VIEW E
SCALE: 0.15



VIEW B
SCALE: 0.15



ATTACHING BOOM BUTT TO ROTATING BED
USING OPTIONAL BUTT ATTACHING ASSEMBLY.

