

INSERTS ASSEMBLIES REQ'D. FOR VARIOUS BOOM LENGTHS

ITEM NO.	12	13	14	15	TABLE 1
BOOM LENGTH	10 FT 3.05 M INSERT ASSEMBLY	20 FT 6.10 M INSERT ASSEMBLY	40 FT 12.19 M INSERT ASSEMBLY	40 FT 12.19 M INSERT W/BACKSTAY ASSEMBLY	STRAP POSITION
FEET	METERS				
80	24.4	1	0	0	A
90	27.4	OR 2	0	0	A
100	30.5	1	1	0	A
110	33.5	OR 2 OR 0	1 0	0 0	A
120	36.6	OR 1	2 0	0 0	A
130	39.6	OR 2 OR 0	0 1	0 1	A
140	42.7	1	1	0	A
150	45.7	OR 2 OR 0	1 0	0 1	A
160	48.8	OR 1	2 0	0 1	A
170	51.8	OR 2 OR 0	0 1	1 1	A
180	54.9	1	1	1	A
190	57.9	OR 2 OR 0	1 0	1 2	B
200	61.0	OR 1	2 0	1 2	B
210	64.0	OR 2 OR 0	0 1	2 2	B
220	67.1	1	1	2	B
230	70.1	OR 2 OR 0	1 0	2 3	B
240	73.2	OR 1	0	3	B
250	76.2	OR 2 OR 0	0 1	3 3	B
260	79.2	1	1	3	B
270	82.3	OR 2 OR 0	1 0	3 4	B
280	85.3	OR 1	2 0	3 4	B
290	88.4	OR 2	0	4	B

M 13 TOP 40 FT I.D. TAG #A01025, 81003574, 81010799, 81012546, OR 81016478.

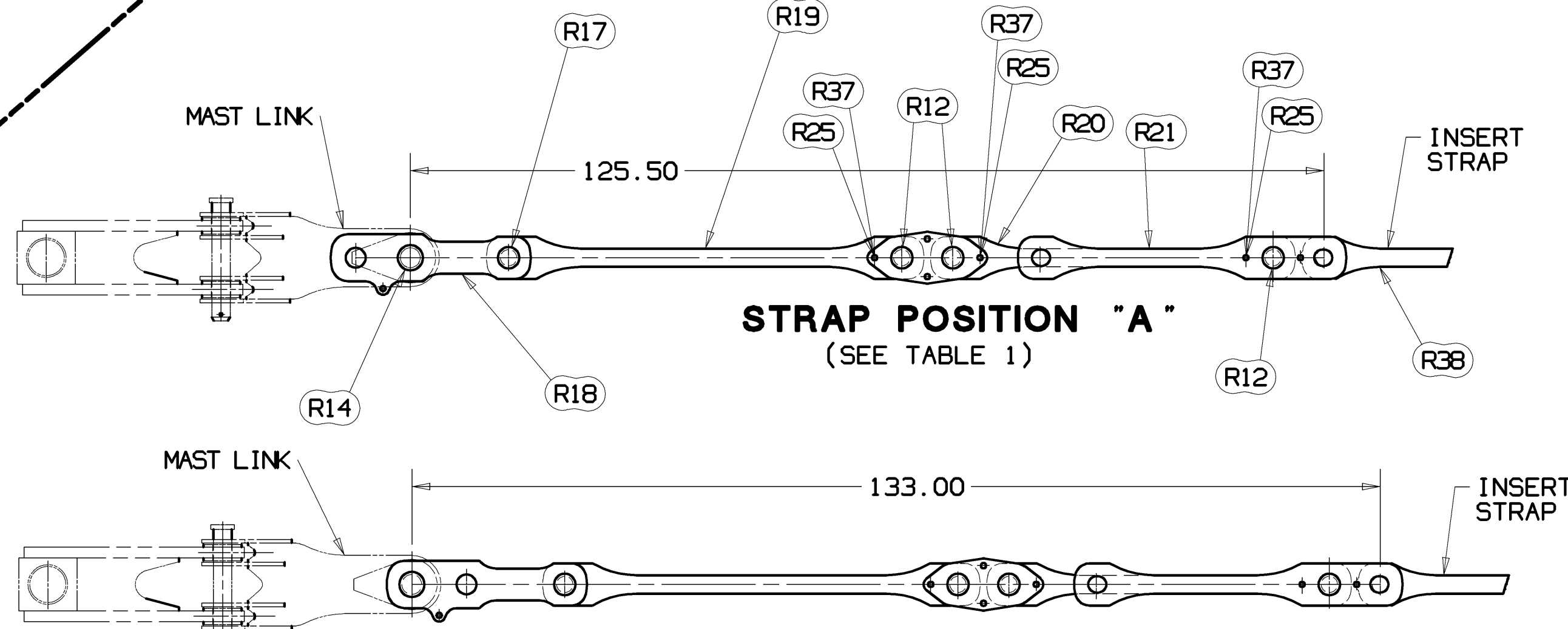
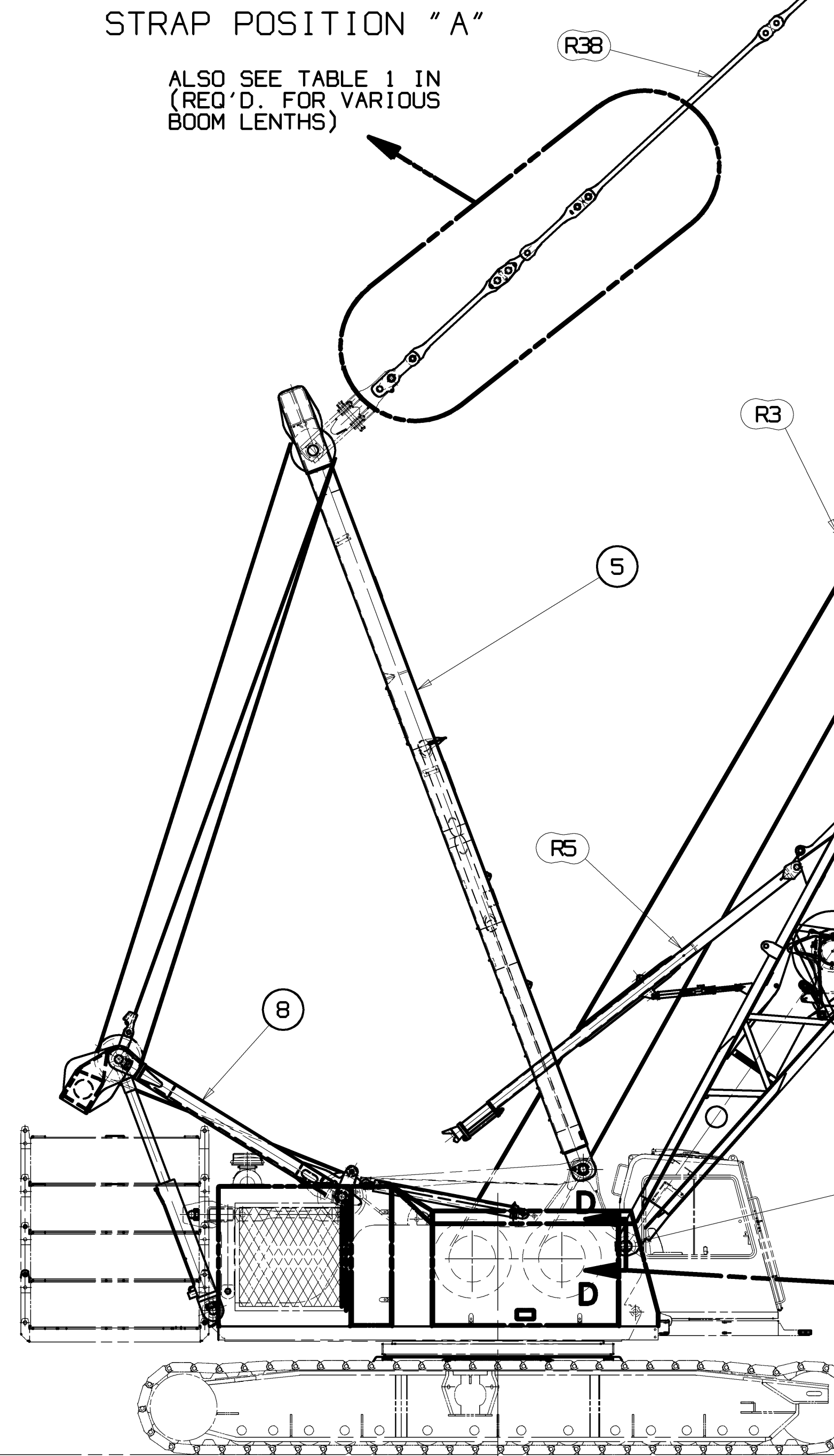
AB 15 40 FT INSERT ID TAG 195457 OR A01021 OR 81017782

AH 16 A01019 CAN BE REPLACED BY 81019327.

BOOM SECTION ASSEMBLY	BOOM SECTION WELDMENT (THIS NUMBER APPEARS ON NAMEPLATE) BOOM ONLY, BOOM WITH #134 FIXED JIB, OR BOOM WITH #135 LUFFING JIB	BOOM WITH #149 LUFFING JIB
10FT. INSERT A01018	A01019	A01019
20FT. INSERT 195463	195455	195455
40FT. INSERT 195464(A)	195456	195456
40FT. INSERT 195465(B)	195457	195457
40FT. TOP A01024	A01025	A01025
30FT. BUTT 196398	195453	195453
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	A01014 OR A01015
10FT. INSERT (D)	A01122, 196006, A01016 OR A01017	A01122, A01016 OR A01017
20FT. INSERT	A01020	A01020
40FT. INSERT (A)	A01022	A01022
40FT. INSERT (B)	195457, A01021, 81017782	195457, A01021, 81017782
40FT. TOP	A01093, 195458, A01023 OR 81003574	A01093, A01023 OR 81003574
30FT. BUTT	81003575	81003575

(A) WITHOUT JIB BACKSTAY LUGS
(B) WITH JIB BACKSTAY LUGS
(C) WITH SHEAVE FRAME WELDED TO INSERT
(D) WITHOUT SHEAVE FRAME

140 FT.
(42.67M)
BOOM



STRAP POSITION "A"
(SEE TABLE 1)

STRAP POSITION "B"
(SEE TABLE 1)

8984-2050 40 FT (12.19M) INSERT WITH BACKSTAY LUG ASSEMBLY

15	40 FT INSERT W/ BACKSTAY LUG ASSEMBLY	195465	1,12,14
R10	4PIN	179959	
R11	4COLLAR	179862	
R12	4PIN, STRAP	179863	
R39	4STRAP LINK	195984	
R40	4PIN	78292	
R45	2TIMBER 44.25 IN X 3.5 IN X 2.5 IN	81017123	
R51			
R48	2STRAP	195460	
R52	140 FT INSERT FOR #82 BOOM	195457	15
R53			
R42	2 BOOM JOINT PIN	170362	

8984-1200 BOOM TOP ASSEMBLY

16	1BOOM TOP ASSEMBLY	A01024	13,14
R10	4PIN	179959	
R11	4COLLAR	179862	
R12	4PIN	179863	
R40	6PIN	78292	
R45	1TIMBER 44.25 IN X 3.5 IN X 2.5 IN	81017123	
R59			
R54	2BOOM SIGN	22656	
R55	1LOWER BOOM POINT SHAFT ASSEMBLY	177042	
R56	2SPACER	162576	
R57	1WIRE ROPE GUIDE ASSEMBLY	177191	
R58	2STRAP, BASIC	195472	
R42	2BOOM JOINT PIN	170362	
R60	2PIN	196028	
R61	1BOOM TOP	A01025	

OPTIONAL ASSEMBLY LIST

17	1UPPER BOOM POINT ASSEMBLY	170419	2
18	1DRUM SHAFT ASSEMBLY, AUXILIARY	A08116	3
19	1WIRE ROPE GUIDE ASSEMBLY	196189	3
20	1WIRE ROPE GUIDE ASSEMBLY	177612	3
21	1BOOM ASSEMBLY LADDER STORAGE	177969	
22	1WIRE ROPE GUIDE ASSEMBLY	179663	11
23	1MOD. TO ADD WIRE ROPE GUARD	194164	
24	1BOOM BUTT SUPPORT ASSEMBLY	195946	
25	1MAST RIGGING ASSY WITH AUX BLOCK	195869	
26	1CAT WALK ASSY 30FT # 82 BOOM BUTT	81017212	14
27	1CAT WALK ASSY 10FT #22 OR #82 INSERT	81016900	14
28	1CAT WALK ASSY 20FT #22 OR #82 INSERT	81016901	14
29	1CAT WALK ASSY 40FT #22 OR #82 INSERT	81016902	14
30	1CAT WALK ASSY 40FT #22L OR #82 TOP	81016898	14

- MAXIMUM NO. OF 10 FT (3.05 M) INSERT ASSEMBLIES = 2.
- MAXIMUM NO. OF 20 FT (6.10 M) INSERT ASSEMBLIES = 2.
- COMBINATION OF 10 FT (3.05 M) AND 20 FT (6.10 M) INSERT ASSEMBLIES CANNOT EXCEED 2 - 10 FT (3.05 M) PLUS 1 - 20 FT (6.10 M) OR 1 - 10 FT (3.05 M) PLUS 2 - 20 FT (6.10 M).
- SEE 1, 4 AND 6.
- SEE 1, 5 AND 6.
- STARTING WITH BOOM BUTT ASSEMBLY, INSERT ASSEMBLIES MUST BE INSTALLED IN ASCENDING LENGTH.
- STRAPS ATTACHED TO MAST TOP LINKS ARE CALLED FOR ON BOOM BUTT ASSEMBLY (ITEM 11).
- REQ'D FOR CLAM. UPPER BOOM POINT CANNOT BE USED WITH THIS ASSEMBLY.
- EITHER (ITEM 14) 40 FT. (12.19M) INSERT ASSEMBLY OR (ITEM 15) 40 FT. (12.19M) INSERT ASSEMBLY WITH BACKSTAY LUG MAY BE USED IF NO JIB IS REQUIRED. ITEM 15 MUST BE USED IF A JIB IS REQUIRED.
- OPTIONAL CAT WALK ASSEMBLY QTY 1 CAT WALK ASSY PER BOOM SECTION ASSY REQUIREMENTS

BOOM SECTION ASSY	OPTIONAL CAT WALK ASSY
196398	81017212
A01018	81016900
195463	81016901
195464,	81016902
195465	
A01024	81016898

ITEM NO.	DESCRIPTION	QTY	UNIT	REVISIONS
1	8984-2000 BOOM RIGGING ASSEMBLY			
2	SHIM 14 GA (.074 IN)	A16907		
3				
4				
5	MAST ASSEMBLY	196381	10	
6				
7				
8	GANTRY ASSEMBLY	195845		
9				
10				

8984-2010 BOOM BUTT ASSEMBLY

11	1BOOM BUTT ASSEMBLY	196398	14
R1	1BOOM ANGLE INDICATOR	168779	
R2	1TIMBER	176831	
R3	1WIRE ROPE GUIDE ASSEMBLY	196383	
R4	1BOOM BUTT	195453	
R5	1BOOM STOP ASSEMBLY	195467	
R6	6CLAMP	345678	
R7	4SCREW CAP .50-13UNC X 5.50 LG	612583	
R8			
R9			
R10	8PIN	179959	
R11	8COLLAR	179862	
R12	6PIN	179863	
R13			
R14	2PIN	196066	
R15	2COLLAR	196067	
R16	2PIN	196068	
R17	2PIN	196069	
R18	4LINK	196384	
R19	2STRAP	196385	
R20	2STRAP	196386	
R21	4LINK	196387	
R22	4LINK	196388	
R23	1SUPPORT R.H.	196389	
R24	1	196390	
R25	6PIN	196392	
R26	4PIN	196399	
R27	4LINK	196505	
R28	1PLATFORM	196580	
R29	6NUT HEX .50-13UNC	546056	
R30	1WASHER FLAT .50	709460	
R31	2NUT ELAS. STOP .75-10UNC	548346	
R32	8PIN-SNAP	563823	
R33	14SCREW CAP .50-13UNC X 2.00 LG	612561	
R34	2SCREW CAP .75-10UNC X 5.50 LG	612741	
R35	8WASHER SAE FLAT .50	709702	
R36	1WASHER LOCK .50	710306	
R37	6SNAP PIN	563823	

8984-1010 10 FT (3.05M) INSERT ASSEMBLY

12	10 FT INSERT ASSEMBLY	A01018	7,14
R10	4PIN	179959	
R11	4COLLAR	179862	
R12	4PIN, STRAP	179863	
R38	2STRAP	192293	
R39	4STRAP LINK	195984	
R40	4PIN	78292	
R41	110 FT INSERT FOR #82 BOOM	A01019	
R42	2BOOM JOINT PIN	170362	

8984-2030 20 FT (6.10M) INSERT ASSEMBLY

13	20 FT INSERT ASSEMBLY	195463	8,14
R10	4PIN	179959	
R11	4COLLAR	179862	
R12	4PIN, STRAP	179863	
R39	4STRAP LINK	195984	
R40	4PIN	78292	
R44	2STRAP	192294	
R45	1TIMBER 44.25 IN X 3.5 IN X 2.5 IN	81017123	
R51			
R46	120 FT INSERT FOR #82 BOOM	195455	
R47			
R42	2 BOOM JOINT PIN	170362	

8984-2040 40 FT (12.19M) INSERT ASSEMBLY

14	40 FT INSERT ASSEMBLY	195464	1,12,14
R10	4PIN	179959	
R11	4COLLAR	179862	
R12	4PIN, STRAP	179863	
R39	4STRAP LINK	195984	
R40	4PIN	78292	
R45	2TIMBER 44.25 IN X 3.5 IN X 2.5 IN	81017123	
R51			
R48	2STRAP	195460	
R49	140 FT INSERT FOR #82 BOOM	195456	
R50			
R42	2 BOOM JOINT PIN	170362	

- SEE CHART FOR NO. REQ'D.
- JIB CANNOT BE USED WITH THIS ASSEMBLY.
- WHEN AUXILIARY DRUM SHAFT ASSEMBLY (ITEM 18) IS USED, THE BOOM BUTT ASSEMBLY (ITEM 11) 20 WIRE ROPE GUIDE ASSEMBLY (ITEM 12) 20 AND 10 FT (3.05M) INSERT ASSEMBLY (ITEM 12) ARE REQUIRED. THE 10 FT. (3.05M) INSERT ASSEMBLY (ITEM 12) MUST BE ADJACENT TO THE BOOM BUTT AT ALL TIMES. MINIMUM BOOM LENGTH USING THESE COMPONENTS IS 80 FT. (24.2M).

SUPERSEDES 195459
SHT 1 OF 5 OF 08-08-06

ITEM NO.	DESCRIPTION	QTY	UNIT	REVISIONS
1	8984-2000 BOOM RIGGING ASSEMBLY			
2	SHIM 14 GA (.074 IN)	A16907		
3				
4				
5	MAST ASSEMBLY	196381	10	
6				
7				
8	GANTRY ASSEMBLY	195845		
9				
10				

PRIVATE LABELING
REQUIREMENT TO
CONFORM TO
ENGINEERING
SPECIFICATION
8629103794 FOR
COMPONENTS LISTED
IN 8629103794

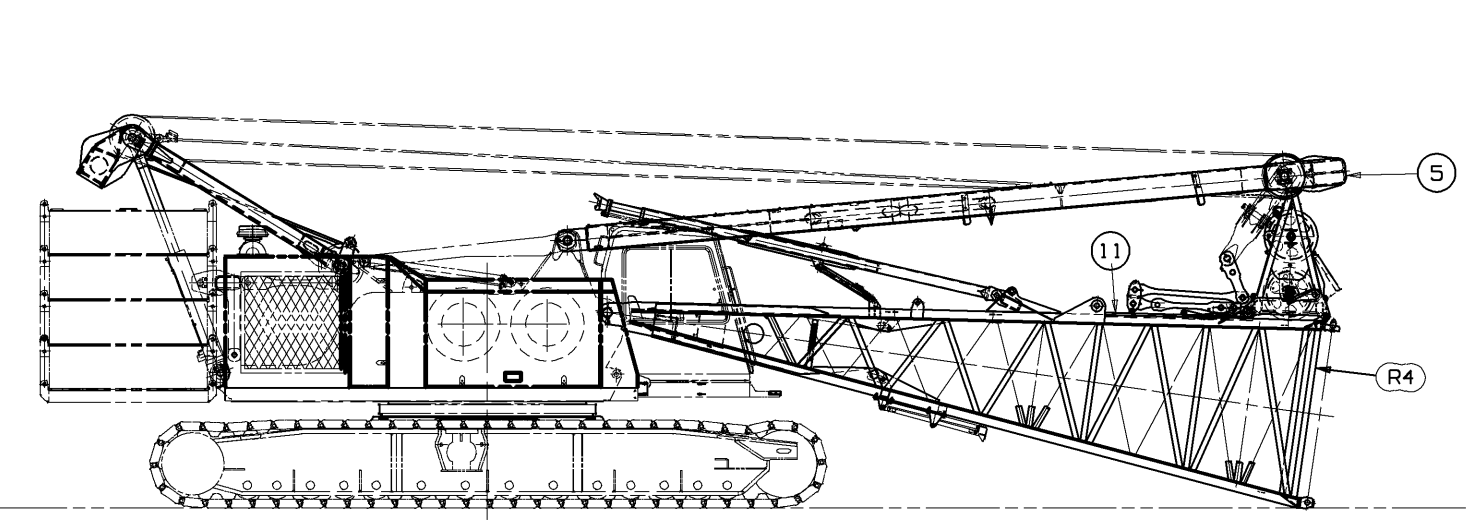
BOOM ASSEMBLY PROCEDURE

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

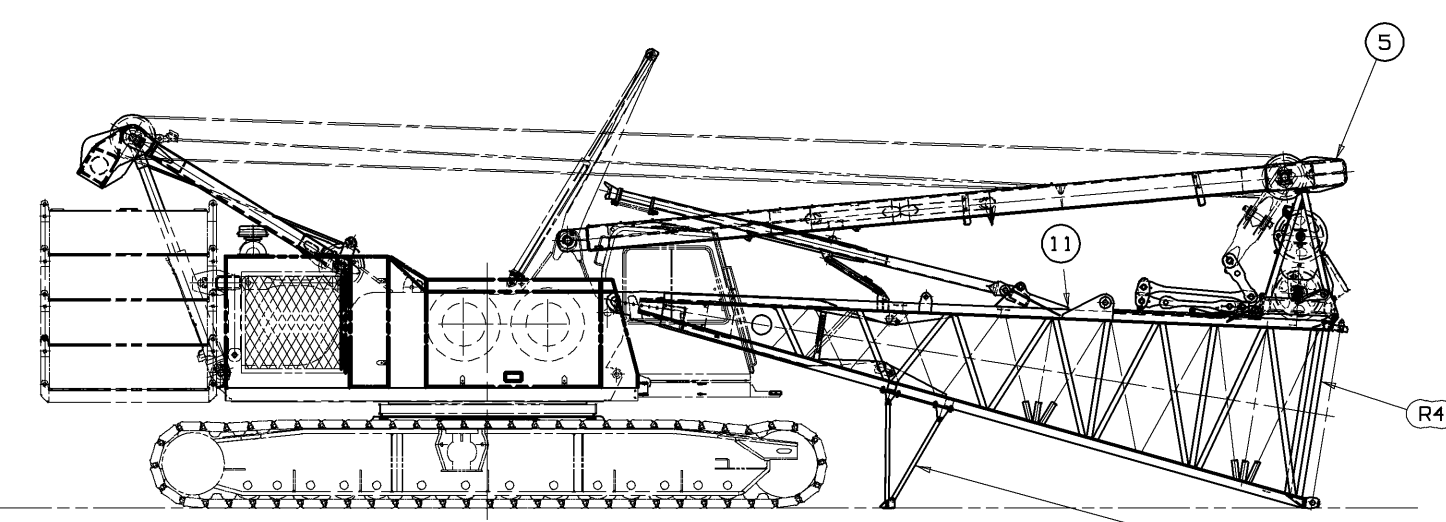
1. ASSEMBLE BOOM COMPLETE, WITHOUT BUTT.
2. ATTACH ROPE GUIDES, STRAPS, LINKS AND PINS AS REQ'D. [A]
3. IF BUTT IS TO BE INSTALLED WITH AUXILIARY BLOCK (ITEM 25), DO THAT NEXT. IF NOT, PROCEED TO STEP 4.
4. ATTACH BOOM BUTT STRAPS TO MAST LINKS. SEE APPROPRIATE VIEWS AT LEFT. ALSO SEE CHART AND VIEWS ON SHEET 1 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 "C"-"C" & "E"-"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 C-C) 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.
7. WITH BUTT STRAPS ATTACHED TO BOOM HANDLING LINK ON ROPE GUIDE. (SEE VIEW "C"-"C") 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 3)
12. BOOM UP TO DESIRED BOOM ANGLE.

TO DISASSEMBLE BOOM

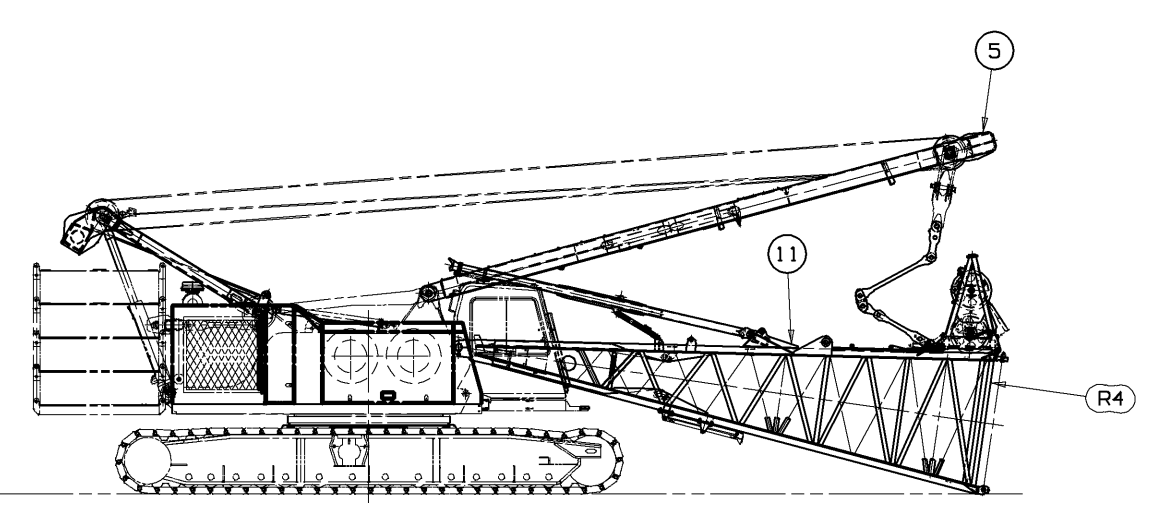
1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
2. DISCONNECT BUTT STRAPS FROM BOOM INSERT STRAPS.
3. CONNECT MAST STRAPS TO HANDLING LINK ON ROPE GUIDE (SEE VIEW "C"-"C").
4. BOOM UP TO REMOVE SLACK FROM BUTT STRAPS.
WARNING:
DO NOT BOOM UP TO PUT TENSION INTO BUTT STRAPS. (REMOVE SLACK ONLY) TENSION IN 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.



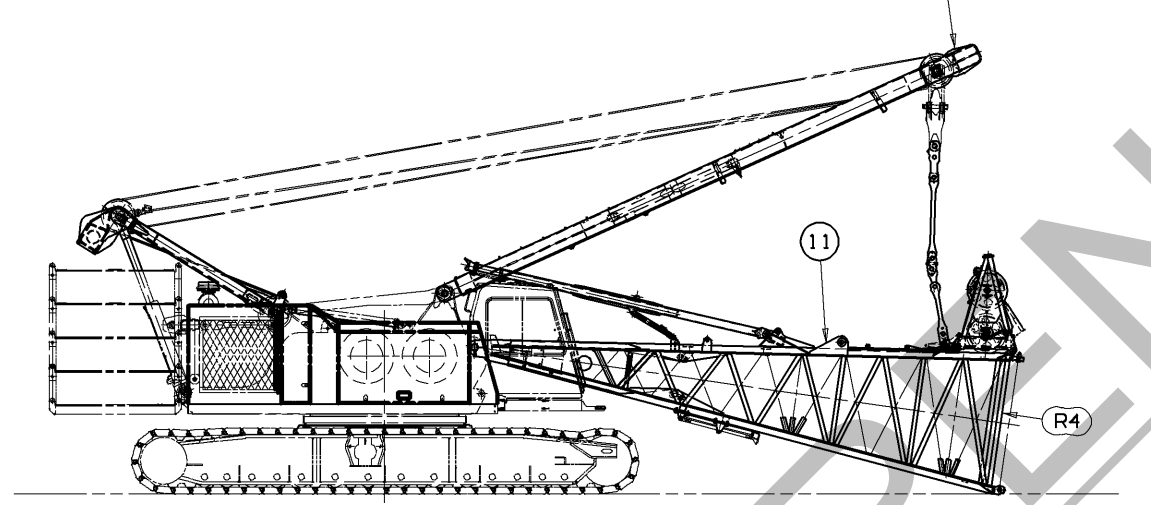
BOOM BUTT PINNED TO ROTATING BED.
MAST RESTING ON BOOM BUTT WIRE ROPE GUIDE.
ATTACH OR DISCONNECT BOOM BUTT STRAPS FROM MAST LINKS.



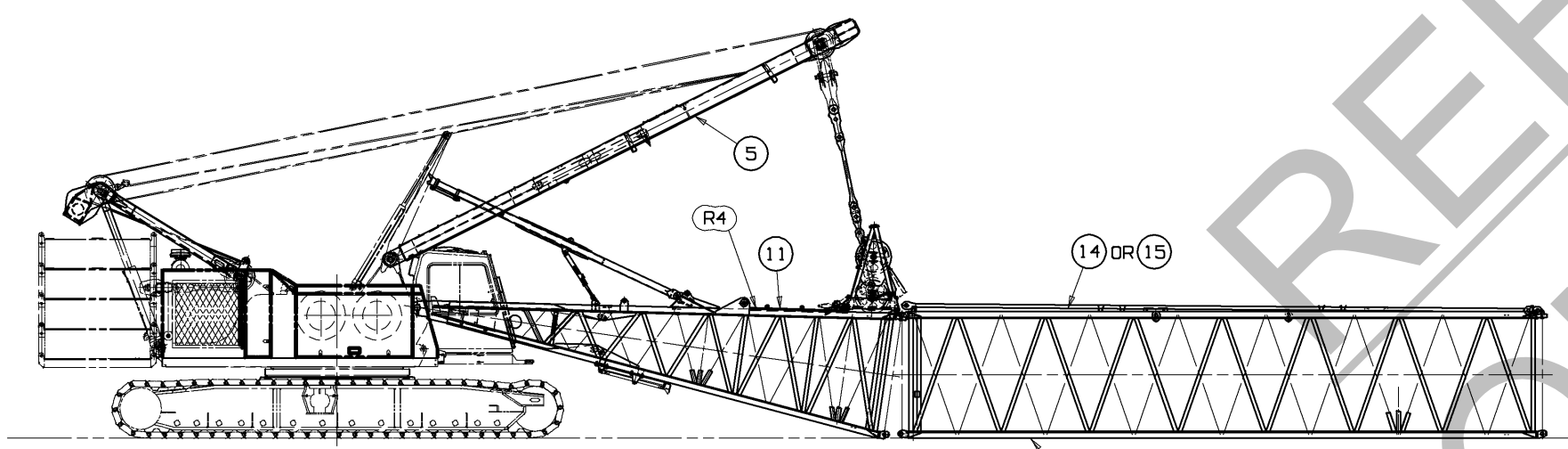
BOOM BUTT SUPPORTED BY OPTIONAL BUTT ATTACHING ASSEMBLY.
MAST LOWERED TO, BUT NOT SUPPORTED BY, ROPE GUIDE.
ATTACH OR DISCONNECT BOOM BUTT STRAPS FROM MAST LINKS.



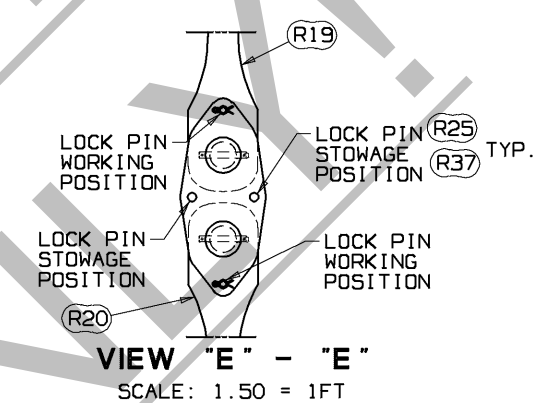
RAISE OR LOWER MAST WITH STRAPS



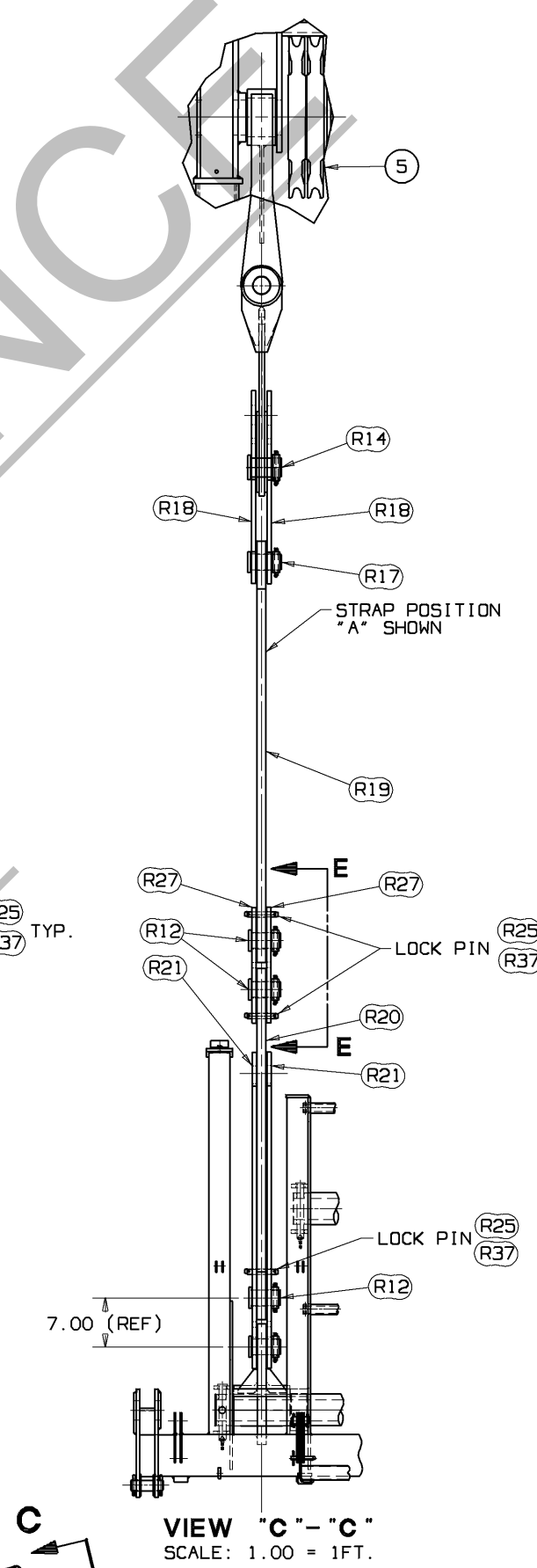
ATTACH OR DISCONNECT STRAPS FROM STOWAGE LUG ON BOOM BUTT



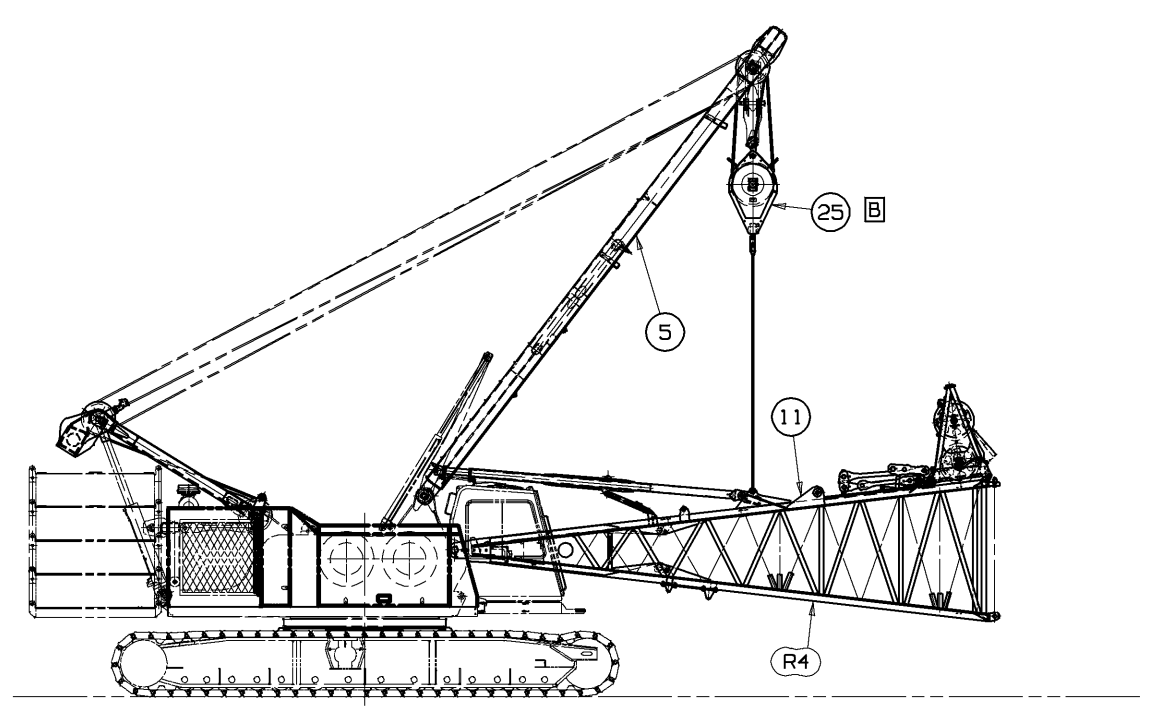
BOOM ASSEMBLY WITH MAST



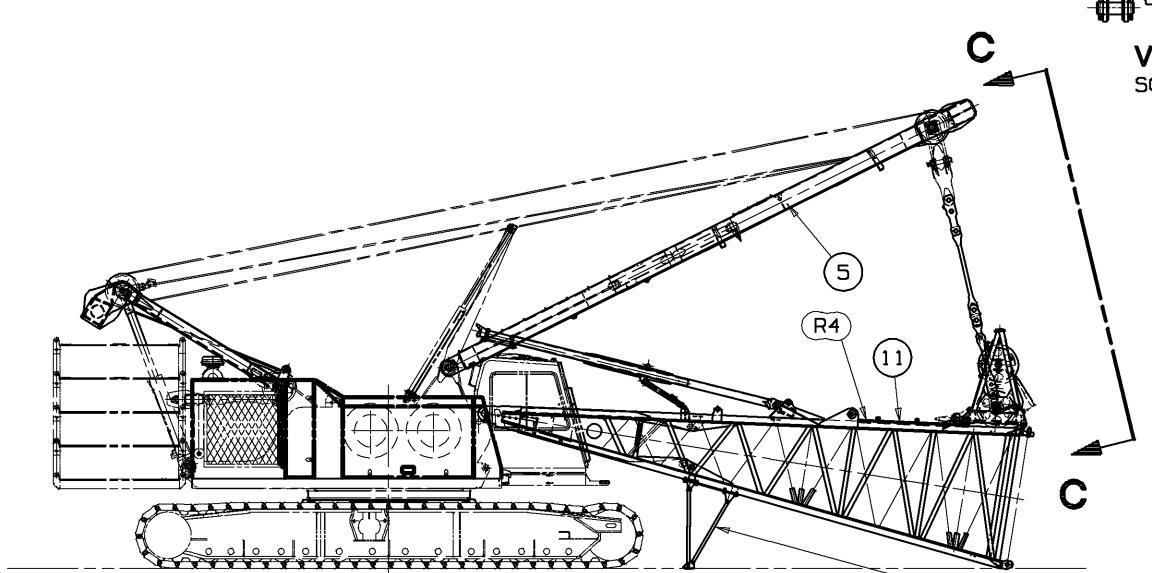
VIEW "E" - "E"
SCALE: 1.50 = 1FT



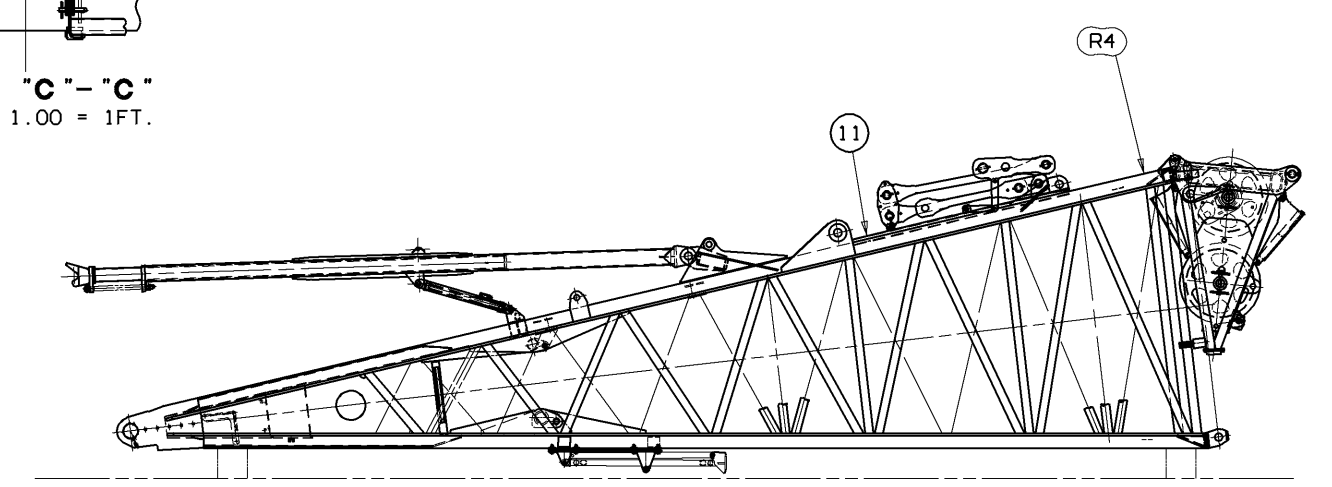
VIEW "C" - "C"
SCALE: 1.00 = 1FT.



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



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



BOOM BUTT SHIPPING ARRANGEMENT

SUPERSEDES 195459 SHT 2 OF 5 OF 02-09-01

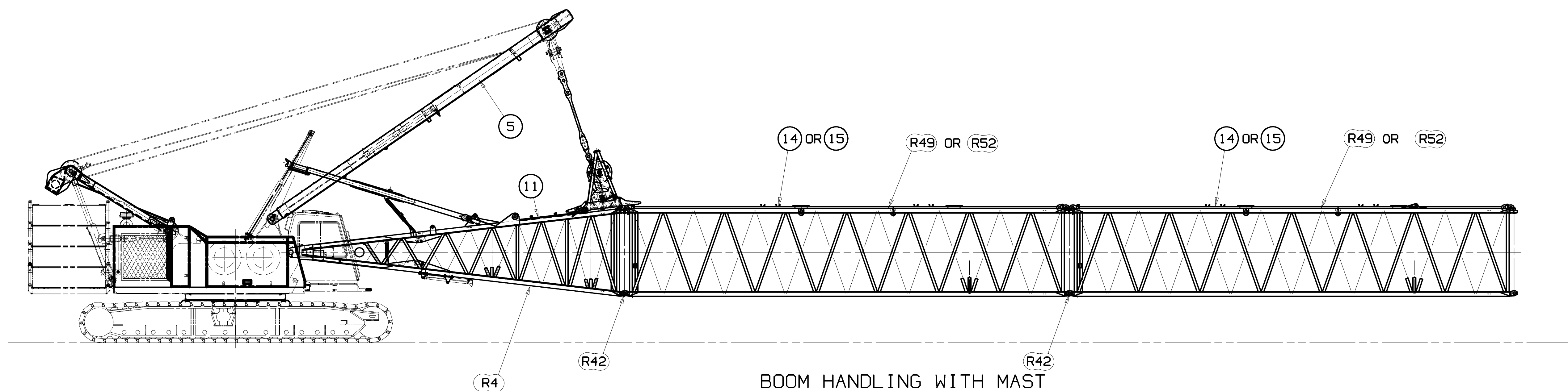
TOLERANCE UNLESS OTHERWISE SPECIFIED				SCALE		Manitowoc Cranes, Inc.		BOOM RIGGING ASSEMBLY	
DECIMAL PLACES	FABRICATION	MACHINING		DR. JMM	MODEL 999	Manitowoc, Wisconsin		#82 BOOM	
(1) PLACE 0.0	± .12	± .18		CK. TSC		WITH STRAPS STOWED			
(2) PLACE 0.00	± .06	± .12	± .015	APP. TSC		ON BOOM BUTT			
(3) PLACE 0.000	± .003	± .005	± .001						
ANGLES	± .25	± .50							

REVISIONS
03-23-11 JAS
A11 ADDED
ITEM 25

ENG. NO.
195459
SHT 2 OF 5

PRIVATE LABELING
REQUIREMENT TO
CONFORM TO
ENGINEERING
SPECIFICATION
6629103794 FOR
COMPONENTS LISTED
IN 662900-06-005

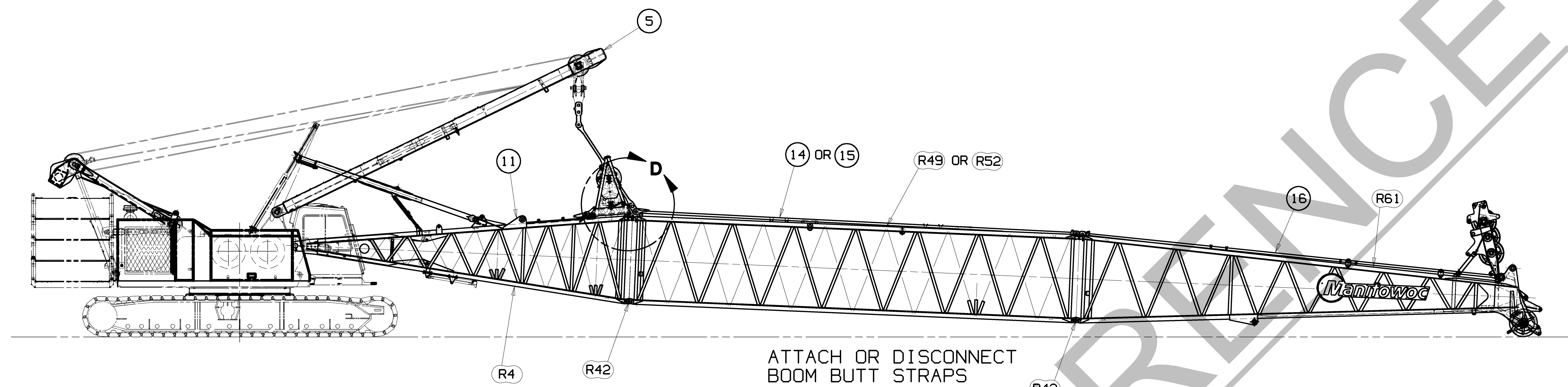
DATE
08-09-01
PATTERN NO.



BOOM HANDLING WITH MAST

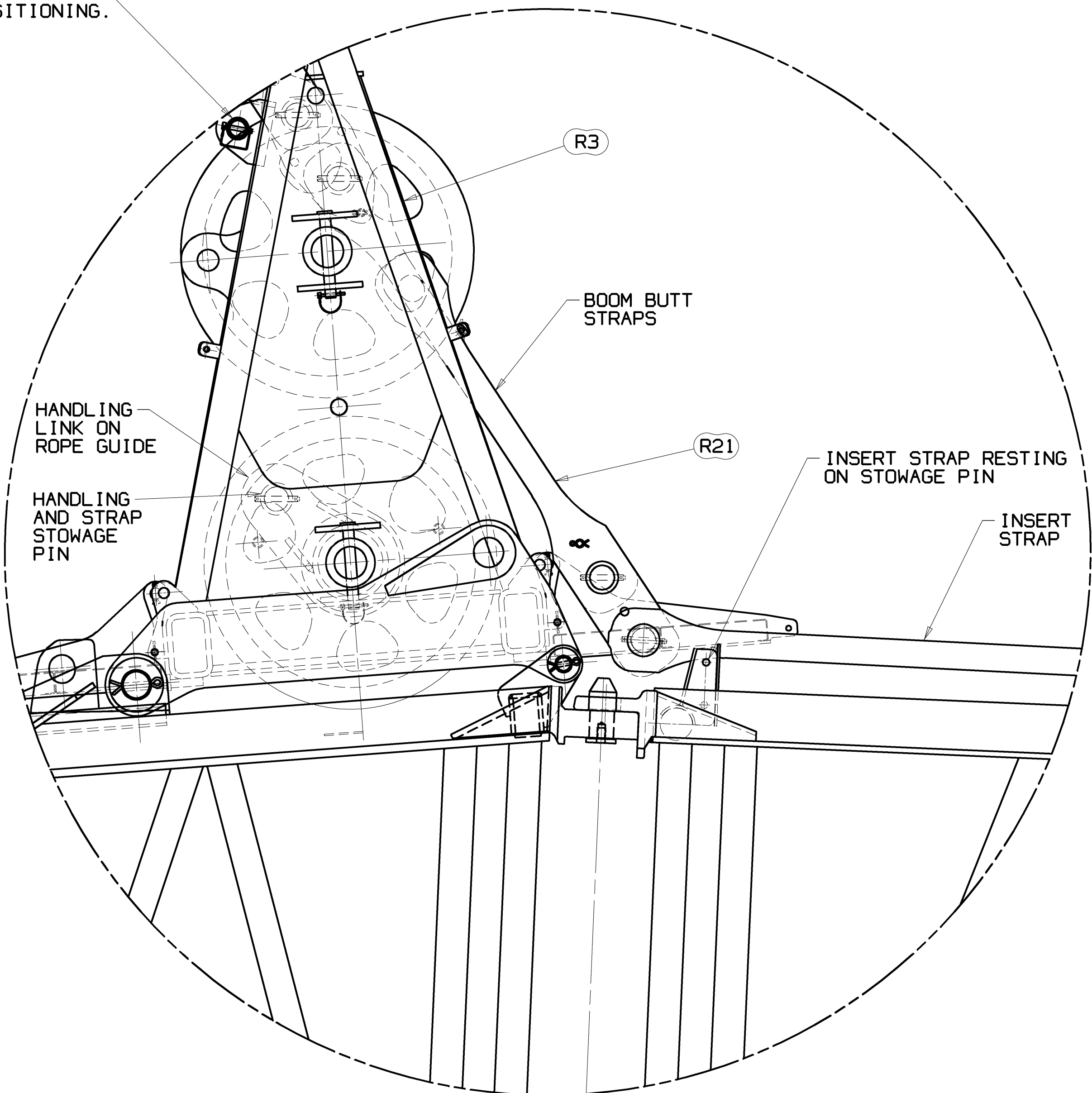
BOOM HANDLING WITH MAST
WITH MAST STRAPS PINNED TO ROPE GUIDE
LINKS: MAXIMUM BOOM THAT CAN BE
CANTILEVERED IS AS FOLLOWS:

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
70 FT. (21.3 M)	1	1	1
80 FT. (24.4 M)	0	0	2



ATTACH OR DISCONNECT
BOOM BUTT STRAPS
FROM INSERT STRAPS

THIS PIN CAN BE
USED TO AID IN
STRAP POSITIONING.



VIEW "D"

SCALE: 1.50 = 1FT

REFERENCE ONLY!

BILL OF MATERIAL					ASSEMBLIES USED ON
ITEM NO.	REV.	DESCRIPTION	QUANTITY	MATERIAL	DATE
REVISIONS 1-22-02 TSC A ADDED 70FT 02-03-10 JAS UPDATED BOOM SIGN					
ENG. NO. 195459 SHT 3 OF 5					
PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN 68290-08-026 DATE 08-09-01 PATTERN NO.					

TOLERANCE UNLESS OTHERWISE SPECIFIED				SCALE 1/16"=1'-0"	DR. JMM	Manitowoc Cranes, Inc.	BOOM RIGGING ASSEMBLY
DECIMAL PLACES	FABRICATION	MACHINING	WELDING	DR. JMM	Manitowoc, Wisconsin	#82 BOOM	
(1) PLACE 0.0	± .12	± .18	± .05	CK. TSC	MODEL 999	WITH STRAPS STOWED	
(2) PLACE 0.00	± .06	± .12	± .015	APP. TSC		ON BOOM BUTT	
(3) PLACE 0.000	± .003	± .005	± .0005				
ANGLES	± 1° 30'						

SUPERSEDES 195459 SHT 3 OF 5 OF 02-09-01

195459

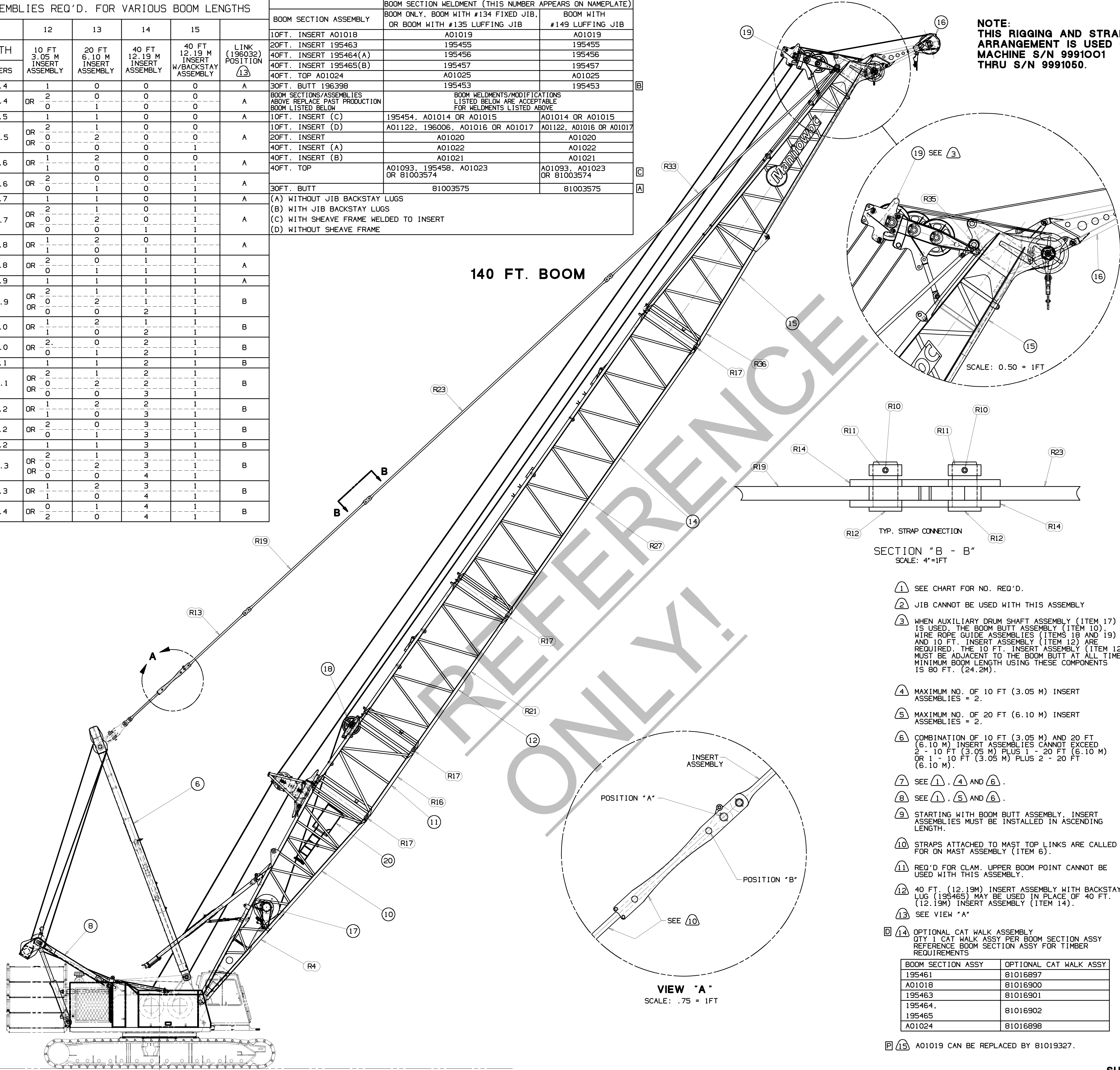
SHT 3 OF 5

INSERTS ASSEMBLIES REQ'D. FOR VARIOUS BOOM LENGTHS

ITEM NO.		12	13	14	15	LINK (196032) POSITION 13
BOOM LENGTH		10 FT 3.05 M INSERT ASSEMBLY	20 FT 6.10 M INSERT ASSEMBLY	40 FT 12.19 M INSERT ASSEMBLY	40 FT 12.19 M INSERT W/BACKSTAY ASSEMBLY	
FEET	METERS					
80	24.4	1	0	0	0	A
90	27.4	OR 2	0	0	0	A
100	30.5	1	1	0	0	A
110	33.5	OR 2	1	0	0	A
		OR 0	2	0	0	
120	36.6	OR 1	2	0	0	A
		OR 0	0	0	1	
130	39.6	OR 2	0	0	1	A
		OR 0	1	0	1	
140	42.7	1	1	0	1	A
		OR 2	1	0	1	
150	45.7	OR 0	2	0	1	A
		OR 0	0	1	1	
160	48.8	OR 1	2	0	1	A
170	51.8	OR 1	0	1	1	A
		OR 0	1	1	1	
180	54.9	1	1	1	1	A
190	57.9	OR 2	1	1	1	B
		OR 0	2	1	1	
200	61.0	OR 1	2	1	1	B
		OR 0	0	2	1	
210	64.0	OR 2	0	2	1	B
		OR 0	1	2	1	
220	67.1	1	1	2	1	B
		OR 2	1	2	1	
230	70.1	OR 0	2	2	1	B
		OR 0	0	3	1	
240	73.2	OR 1	2	2	1	B
		OR 0	0	3	1	
250	76.2	OR 2	0	3	1	B
		OR 0	1	3	1	
260	79.2	1	1	3	1	B
		OR 2	1	3	1	
270	82.3	OR 0	2	3	1	B
		OR 0	0	4	1	
280	85.3	OR 1	2	3	1	B
		OR 0	0	4	1	
290	88.4	OR 0	1	4	1	B
		OR 2	0	4	1	

BOOM SECTION ASSEMBLY	BOOM SECTION WELDMENT (THIS NUMBER APPEARS ON NAMEPLATE)	
	BOOM ONLY, BOOM WITH #134 FIXED JIB, OR BOOM WITH #135 LUFFING JIB	BOOM WITH #149 LUFFING JIB
10FT. INSERT A01018	A01019	A01019
20FT. INSERT 195463	195455	195455
40FT. INSERT 195464(A)	195456	195456
40FT. INSERT 195465(B)	195457	195457
40FT. TOP A01024	A01025	A01025
30FT. BUTT 196398	195453	195453
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	A01014 OR A01015
10FT. INSERT (D)	A01122, 196006, A01016 OR A01017	A01122, A01016 OR A01017
20FT. INSERT	A01020	A01020
40FT. INSERT (A)	A01022	A01022
40FT. INSERT (B)	A01021	A01021
40FT. TOP	A01093, 195458, A01023 OR 81003574	A01093, A01023 OR 81003574
30FT. BUTT	81003575	81003575
(A) WITHOUT JIB BACKSTAY LUGS		
(B) WITH JIB BACKSTAY LUGS		
(C) WITH SHEAVE FRAME WELDED TO INSERT		
(D) WITHOUT SHEAVE FRAME		

140 FT. BOOM



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

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

- SEE CHART FOR NO. REQ'D.
- JIB CANNOT BE USED WITH THIS ASSEMBLY
- WHEN AUXILIARY DRUM SHAFT ASSEMBLY (ITEM 17) IS USED, THE BOOM BUTT ASSEMBLY (ITEM 10) AND 10 FT. INSERT ASSEMBLY (ITEM 12) ARE REQUIRED. THE 10 FT. INSERT ASSEMBLY (ITEM 12) MUST BE ADJACENT TO THE BOOM BUTT AT ALL TIMES. MINIMUM BOOM LENGTH USING THESE COMPONENTS IS 80 FT. (24.2M).
- MAXIMUM NO. OF 10 FT (3.05 M) INSERT ASSEMBLIES = 2.
- MAXIMUM NO. OF 20 FT (6.10 M) INSERT ASSEMBLIES = 2.
- COMBINATION OF 10 FT (3.05 M) AND 20 FT (6.10 M) INSERT ASSEMBLIES CANNOT EXCEED 2 - 10 FT (3.05 M) PLUS 1 - 20 FT (6.10 M) OR 1 - 10 FT (3.05 M) PLUS 2 - 20 FT (6.10 M).
- SEE 1, 4, AND 6.
- SEE 1, 5, AND 6.
- STARTING WITH BOOM BUTT ASSEMBLY, INSERT ASSEMBLIES MUST BE INSTALLED IN ASCENDING LENGTH.
- STRAPS ATTACHED TO MAST TOP LINKS ARE CALLED FOR ON MAST ASSEMBLY (ITEM 6).
- REQ'D FOR CLAM. UPPER BOOM POINT CANNOT BE USED WITH THIS ASSEMBLY.
- 40 FT. (12.19M) INSERT ASSEMBLY WITH BACKSTAY LUG (195465) MAY BE USED IN PLACE OF 40 FT. (12.19M) INSERT ASSEMBLY (ITEM 14).
- SEE VIEW "A"

BOOM SECTION ASSY	OPTIONAL CAT WALK ASSY
195461	81016897
A01018	81016900
195463	81016901
195464,	81016902
195465	81016898
A01024	

A01019 CAN BE REPLACED BY 81019327.

BILL OF MATERIAL				ASSEMBLIES USED ON
ITEM NO.	QTY	DESCRIPTION	MATERIAL	
1				
2				
6	1	MAST ASSEMBLY	195449	
7				
8	1	GANTRY ASSEMBLY	195845	
9				
8984-2010 BOOM BUTT ASSEMBLY				REVISIONS
10	1	BOOM BUTT ASSEMBLY	195461	04-10-08 BDR ABIC/UPDATED
R1	1	BOOM ANGLE INDICATOR	168779	02-03-10 JAS UPDATED BOOM SIGN
R2	1	TIMBER	176831	05-25-11 JMS ADDED NOTE EFFECTIVE DATE 155240
R3	1	WIRE ROPE GUIDE ASSEMBLY	176985	03-23-12 RTS ADDED NOTE
R4	1	BOOM BUTT	195453	
R5	1	BOOM STOP ASSEMBLY	195467	
R6	2	CLAMP	345678	
R7	4	SCREW CAP .50-13UNC X 5.50 LG.	612583	
R8	4	WASHER FLAT .50	709460	
R9				
8984-1010 10 FT (3.05M) INSERT ASSEMBLY				
11		10 FT INSERT ASSEMBLY	A01018	
R10	4	PIN	179959	
R11	4	COLLAR	179862	
R12	4	PIN, STRAP	179863	
R13	2	STRAP	192293	
R14	4	STRAP LINK	195984	
R15	4	PIN	78292	
R16	1	10 FT INSERT FOR #82 BOOM	A01019	
R17	2	BOOM JOINT PIN	170362	
8984-2030 20 FT (6.10M) INSERT ASSEMBLY				
12		20 FT INSERT ASSEMBLY	195463	
R10	4	PIN	179959	
R11	4	COLLAR	179862	
R12	4	PIN, STRAP	179863	
R14	4	STRAP LINK	195984	
R15	4	PIN	78292	
R19	2	STRAP	192294	
R20	1	TIMBER 44.25IN X 3.5IN X 2.5IN	81017123	
R18				
R21	1	20 FT INSERT FOR #82 BOOM	195455	
R17	2	BOOM JOINT PIN	170362	
8984-2040 40 FT (12.19M) INSERT ASSEMBLY				
13		40 FT INSERT ASSEMBLY	195464	
R10	4	PIN	179959	
R11	4	COLLAR	179862	
R12	4	PIN, STRAP	179863	
R14	4	STRAP LINK	195984	
R15	4	PIN	78292	
R20	2	TIMBER 44.25IN X 3.5IN X 2.5IN	81017123	
R18				
R23	2	STRAP	195460	
R24	1	40 FT INSERT FOR #82 BOOM	195456	
R17	2	BOOM JOINT PIN	170362	
8984-2050 40 FT (12.19M) INSERT WITH BACKSTAY LUG ASSEMBLY				
14		40 FT INSERT W/ BACKSTAY LUG ASSEMBLY	195465	
R10	4	PIN	179959	
R11	4	COLLAR	179862	
R12	4	PIN, STRAP	179863	
R14	4	STRAP LINK	195984	
R15	4	PIN	78292	
R20	2	TIMBER 44.25IN X 3.5IN X 2.5IN	81017123	
R18				
R23	2	STRAP	195460	
R27	1	40 FT INSERT FOR #82 BOOM	195457	
R17	2	BOOM JOINT PIN	170362	
8984-1200 BOOM TOP ASSEMBLY				
15		1 BOOM TOP ASSEMBLY	A01024	
R10	4	PIN	179959	
R11	4	COLLAR	179862	
R12	4	PIN	179863	
R15	6	PIN	78292	
R20	1	TIMBER 44.25IN X 3.5IN X 2.5IN	81017123	
R34				
R29	2	BOOM SIGN	22656	
R30	1	LOWER BOOM POINT SHAFT ASSEMBLY	177042	
R31	2	SPACER	162576	
R32	1	WIRE ROPE GUIDE ASSEMBLY	177191	
R33	2	STRAP, BASIC	195472	
R17	2	BOOM JOINT PIN	170362	
R35	2	PIN	196028	
R36	1	BOOM TOP	A01025	
OPTIONAL ASSEMBLY LIST				
16	1	UPPER BOOM POINT ASSEMBLY	170419	
17	1	DRUM SHAFT ASSEMBLY, AUXILIARY	179491	
18	1	WIRE ROPE GUIDE ASSEMBLY	196189	
19	1	WIRE ROPE GUIDE ASSEMBLY	177612	
20	1	BOOM ASSEMBLY LADDER STORAGE	177969	
21	1	WIRE ROPE GUIDE ASSEMBLY	179663	
22	1	MOD. TO ADD WIRE ROPE GUARD	194164	
23	1	BOOM BUTT SUPPORT ASSEMBLY	195946	
E 24		CAT WALK ASSY 30FT #22E OR #82 BUTT	81016897	
F 25		CAT WALK ASSY 10FT #22 OR #82 INSERT	81016900	
G 26		CAT WALK ASSY 20FT #22 OR #82 INSERT	81016901	
H 27		CAT WALK ASSY 40FT #22 OR #82 INSERT	81016902	
J 28		CAT WALK ASSY 40FT #22L OR #82 TOP	81016898	

SUPERSEDES 195459 SHT 4 OF 5 OF 08-09-06

TOLERANCE UNLESS OTHERWISE SPECIFIED	
DECIMAL PLACES	FRACTIONS
0.12	1/8
0.06	1/16
0.03	1/32
0.015	1/64
0.005	1/128
0.002	1/256

MACHINING	
FINISH	TOOTH
0.005	0.005
0.010	0.010
0.015	0.015
0.020	0.020
0.025	0.025
0.030	0.030
0.035	0.035
0.040	0.040
0.045	0.045
0.050	0.050

MATERIAL	
ITEM NO.	DESCRIPTION
1	10 FT INSERT ASSEMBLY
2	20 FT INSERT ASSEMBLY
3	40 FT INSERT ASSEMBLY
4	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
5	BOOM BUTT ASSEMBLY
6	BOOM ANGLE INDICATOR
7	TIMBER
8	WIRE ROPE GUIDE ASSEMBLY
9	BOOM BUTT
10	BOOM STOP ASSEMBLY
11	CLAMP
12	SCREW CAP .50-13UNC X 5.50 LG.
13	WASHER FLAT .50
14	10 FT INSERT FOR #82 BOOM
15	20 FT INSERT FOR #82 BOOM
16	40 FT INSERT FOR #82 BOOM
17	BOOM JOINT PIN
18	20 FT INSERT FOR #82 BOOM
19	40 FT INSERT FOR #82 BOOM
20	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
21	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
22	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
23	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
24	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
25	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
26	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
27	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
28	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY

MATERIAL	
ITEM NO.	DESCRIPTION
1	10 FT INSERT ASSEMBLY
2	20 FT INSERT ASSEMBLY
3	40 FT INSERT ASSEMBLY
4	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
5	BOOM BUTT ASSEMBLY
6	BOOM ANGLE INDICATOR
7	TIMBER
8	WIRE ROPE GUIDE ASSEMBLY
9	BOOM BUTT
10	BOOM STOP ASSEMBLY
11	CLAMP
12	SCREW CAP .50-13UNC X 5.50 LG.
13	WASHER FLAT .50
14	10 FT INSERT FOR #82 BOOM
15	20 FT INSERT FOR #82 BOOM
16	40 FT INSERT FOR #82 BOOM
17	BOOM JOINT PIN
18	20 FT INSERT FOR #82 BOOM
19	40 FT INSERT FOR #82 BOOM
20	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
21	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
22	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
23	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
24	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
25	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
26	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
27	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY
28	40 FT INSERT WITH BACKSTAY LUG ASSEMBLY

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 25) 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 "B"-"B")
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 "B"-"B").
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:

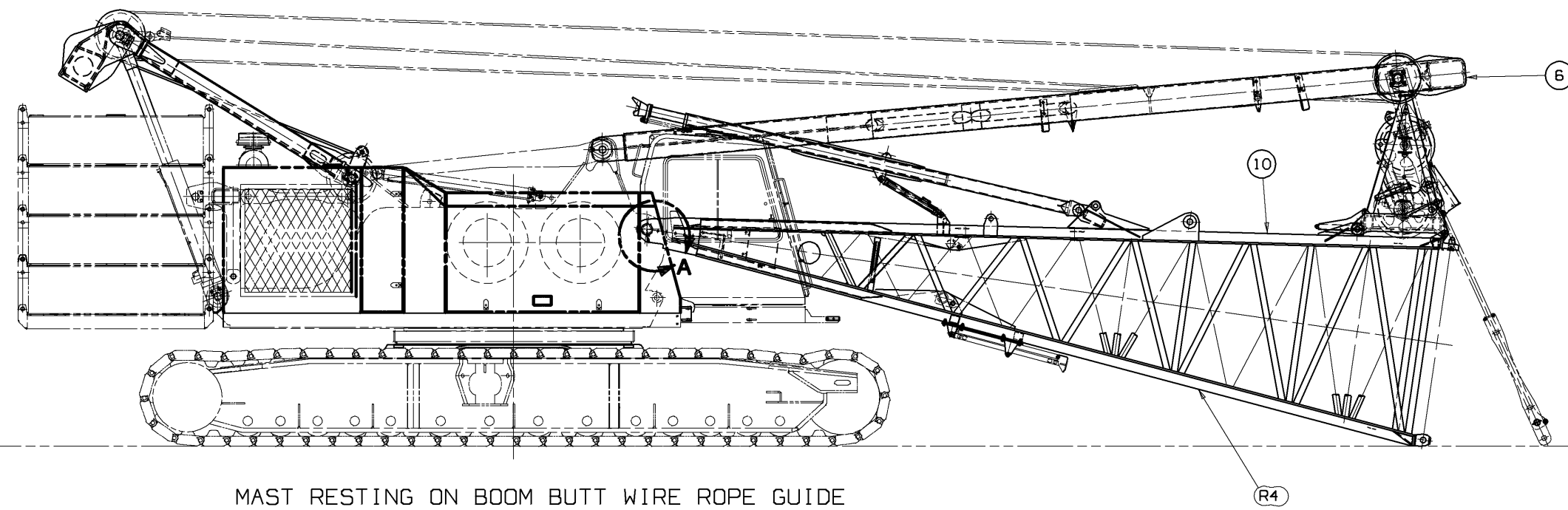
BOOM MUST BE PROPERLY BLOCKED TO PREVENT SHIFTING DURING PIN REMOVAL.

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

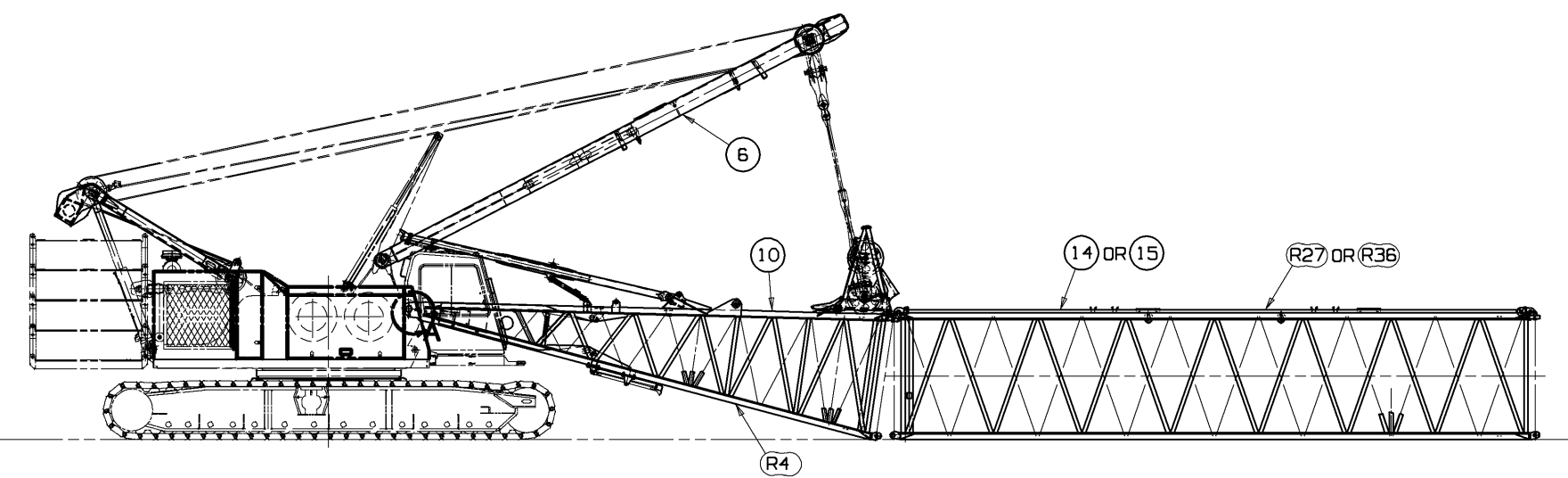
BOOM HANDLING WITH MAST
WITH MAST STRAPS PINNED TO ROPE GUIDE
LINKS: MAXIMUM BOOM THAT CAN BE
CANTILEVERED IS AS FOLLOWS:

	LENGTH	10 FT. (3.05 M) INSERT	20 FT. (6.10 M) INSERT	40 FT. (12.2 M) INSERT
A	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
	70 FT. (21.3 M)	1	1	1
	80 FT. (24.4 M)	0	0	2

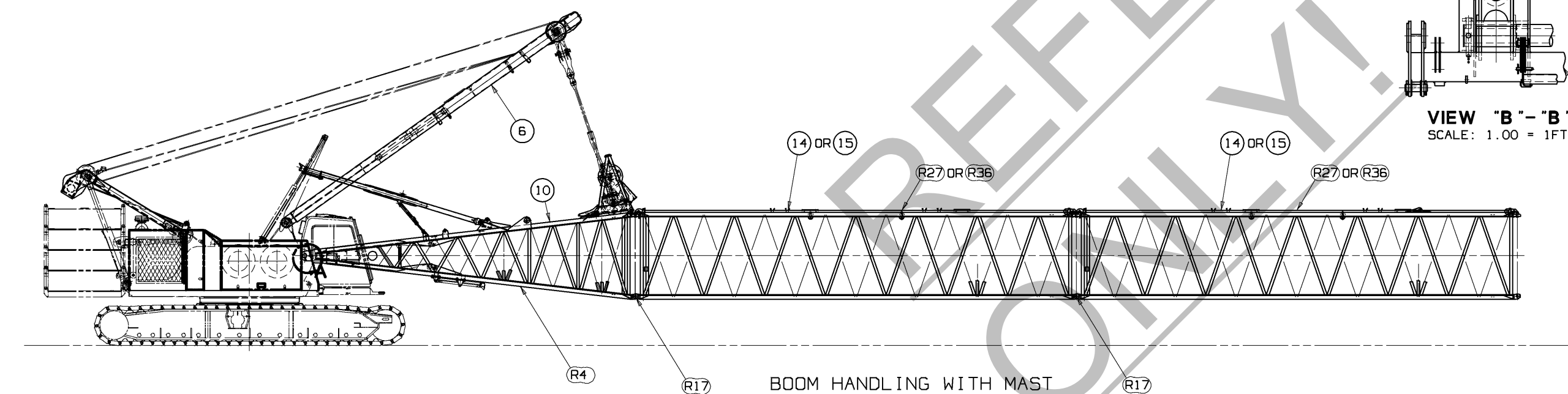
NOTE:
THIS RIGGING AND STRAP
ARRANGEMENT IS USED ON
MACHINE S/N 9991001
THRU S/N 9991050.



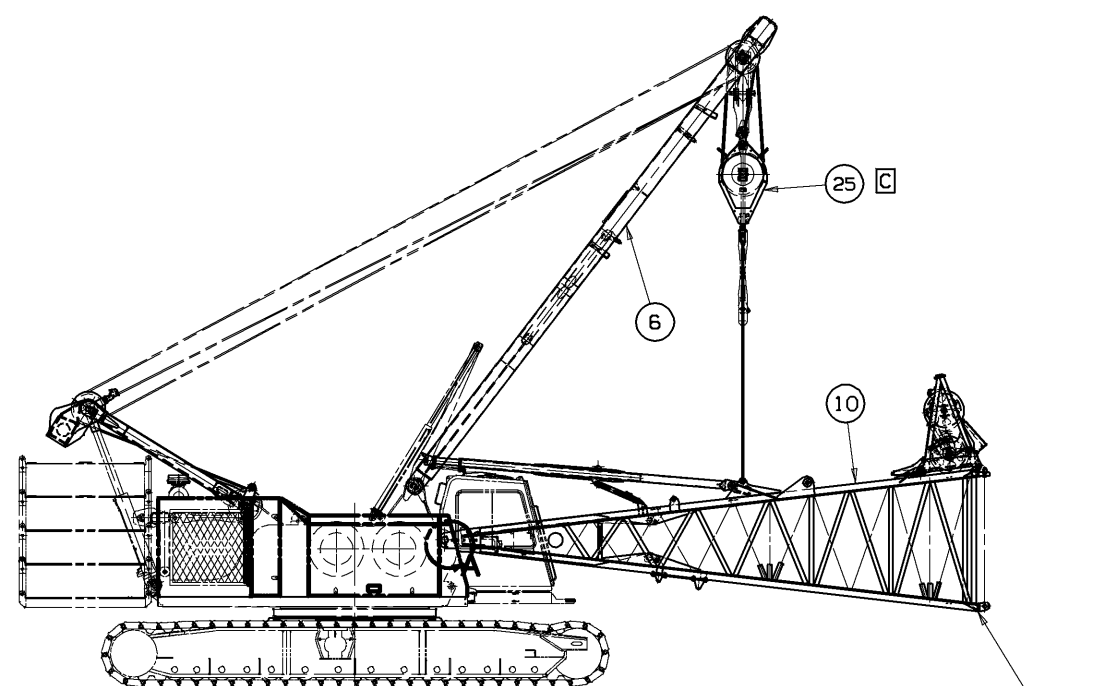
MAST RESTING ON BOOM BUTT WIRE ROPE GUIDE



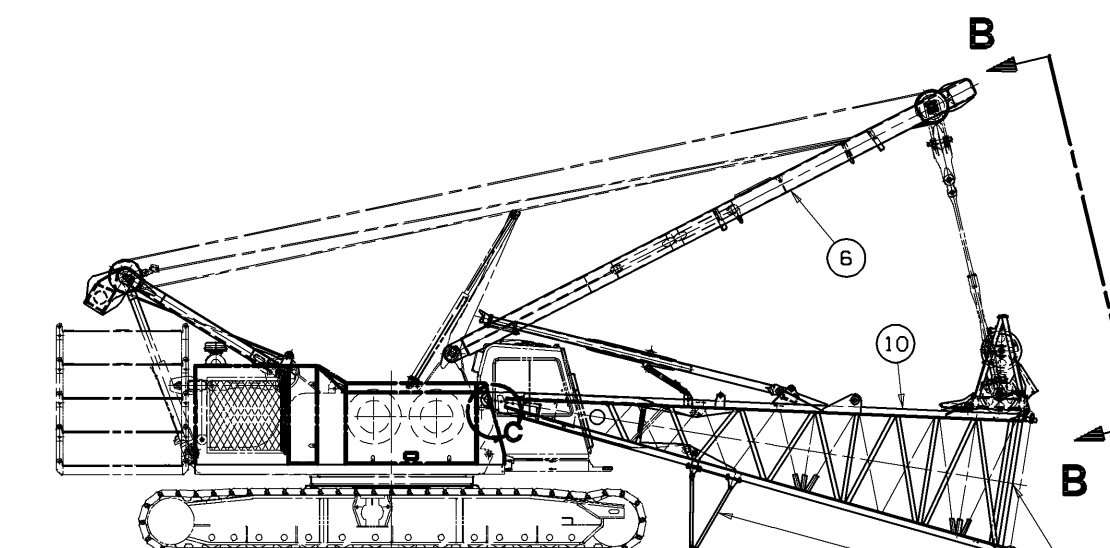
BOOM ASSEMBLY WITH MAST



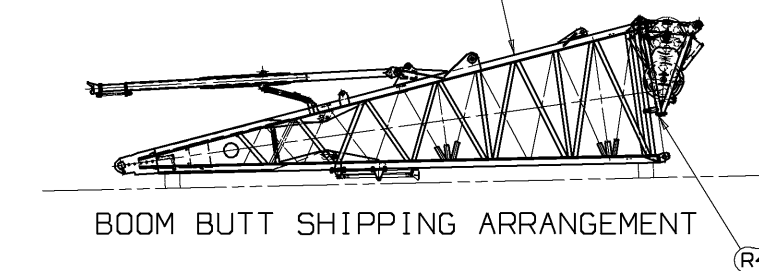
BOOM HANDLING WITH MAST



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



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



BOOM BUTT SHIPPING ARRANGEMENT

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	FINISH DECIMAL PLACES $\leq 10^{-1}$ $\leq 10^{-2}$ $\leq 10^{-3}$ $\leq 10^{-4}$		DR. JMM	#82 BOOM	WITH STRAPS STOWED ON MAT (SEE NOTE)	19545
	(1) PLACE 0.0 .06 .12 .18 .03		CK. TSC	MODEL 999		
	(2) PLACE 0.00 .06 .12 .015		APP. TSC	MODEL 999		
	(3) PLACE 0.000 .006 .012 .0015		APP. TSC	MODEL 999		