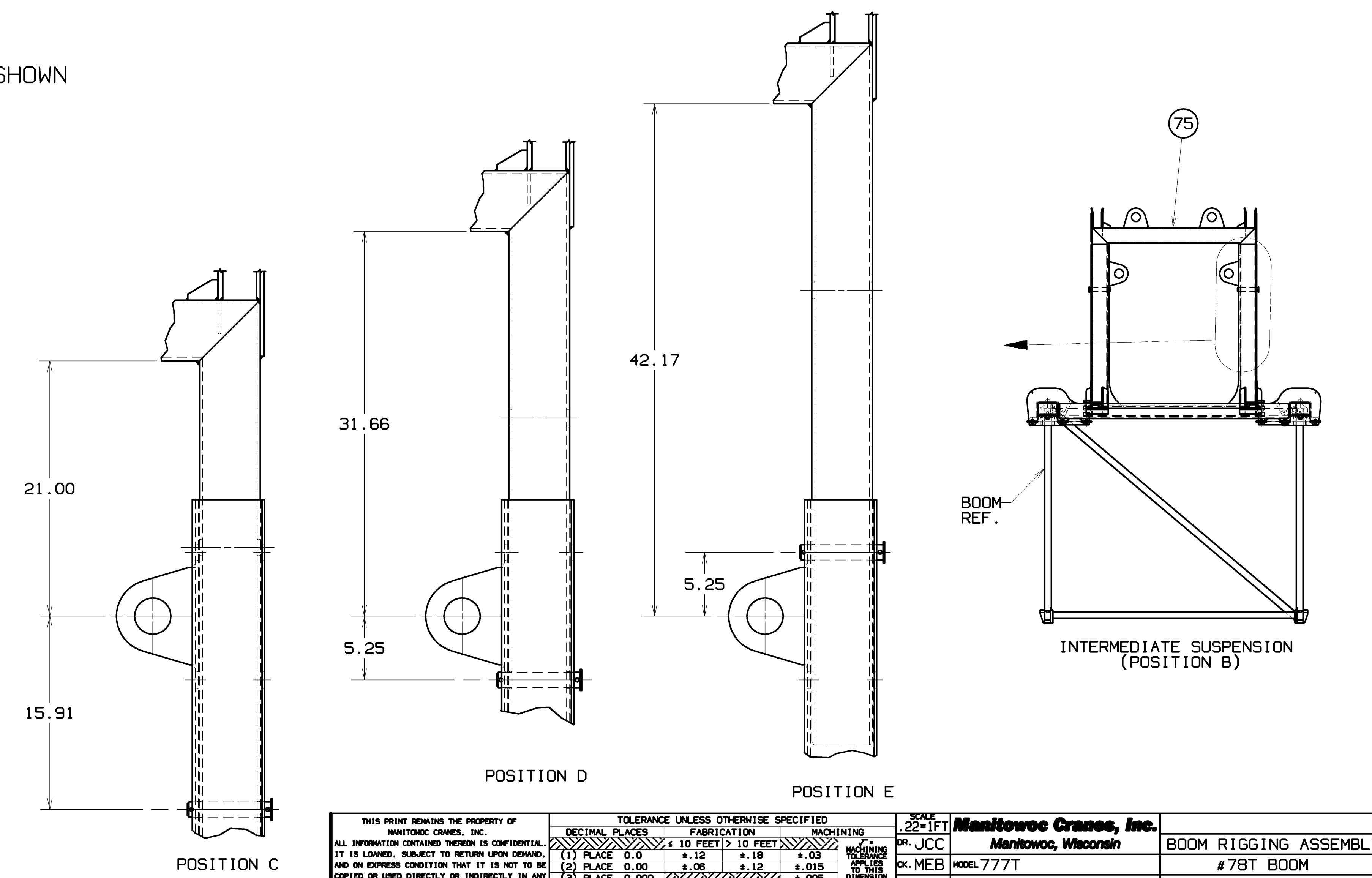
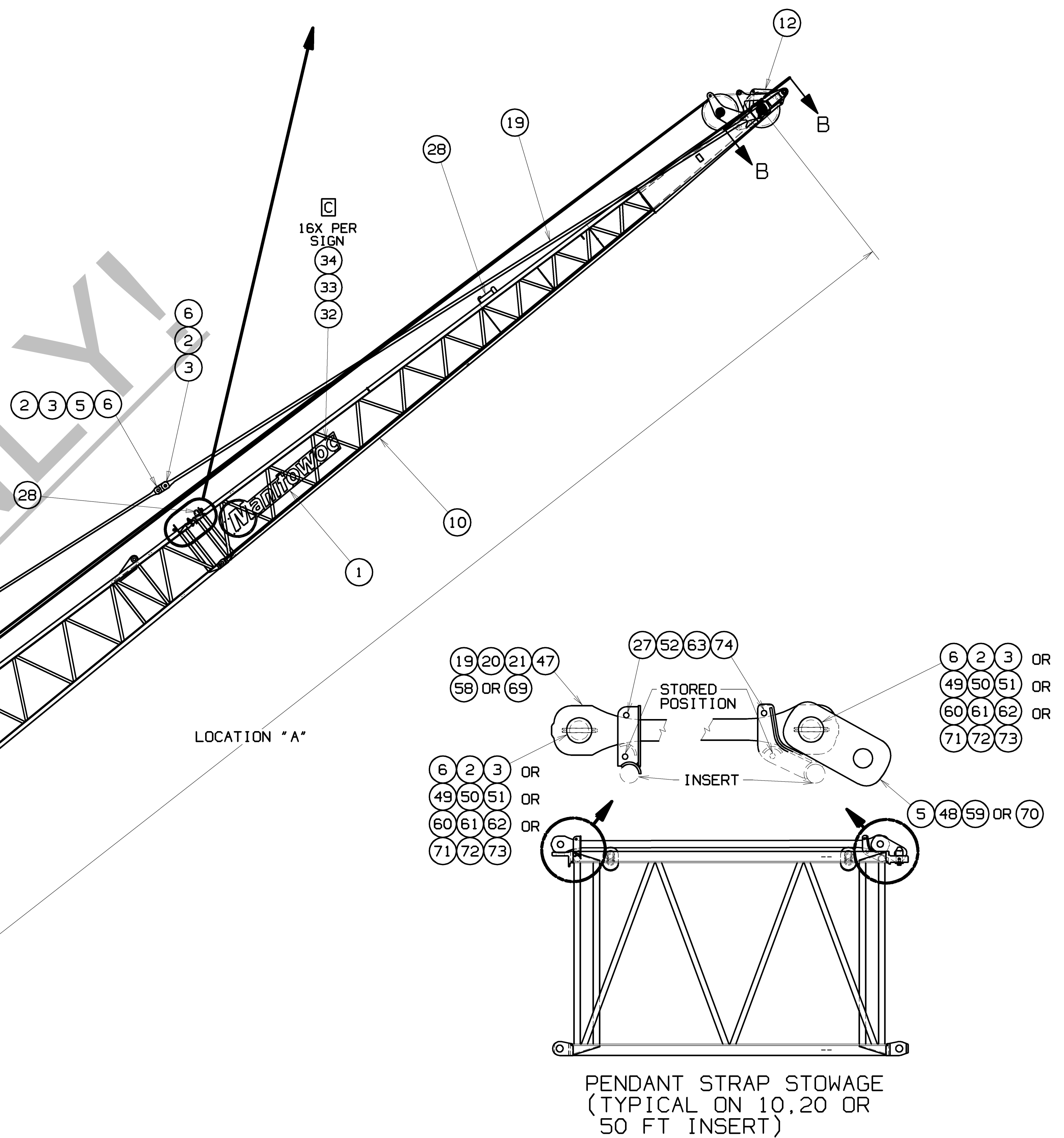
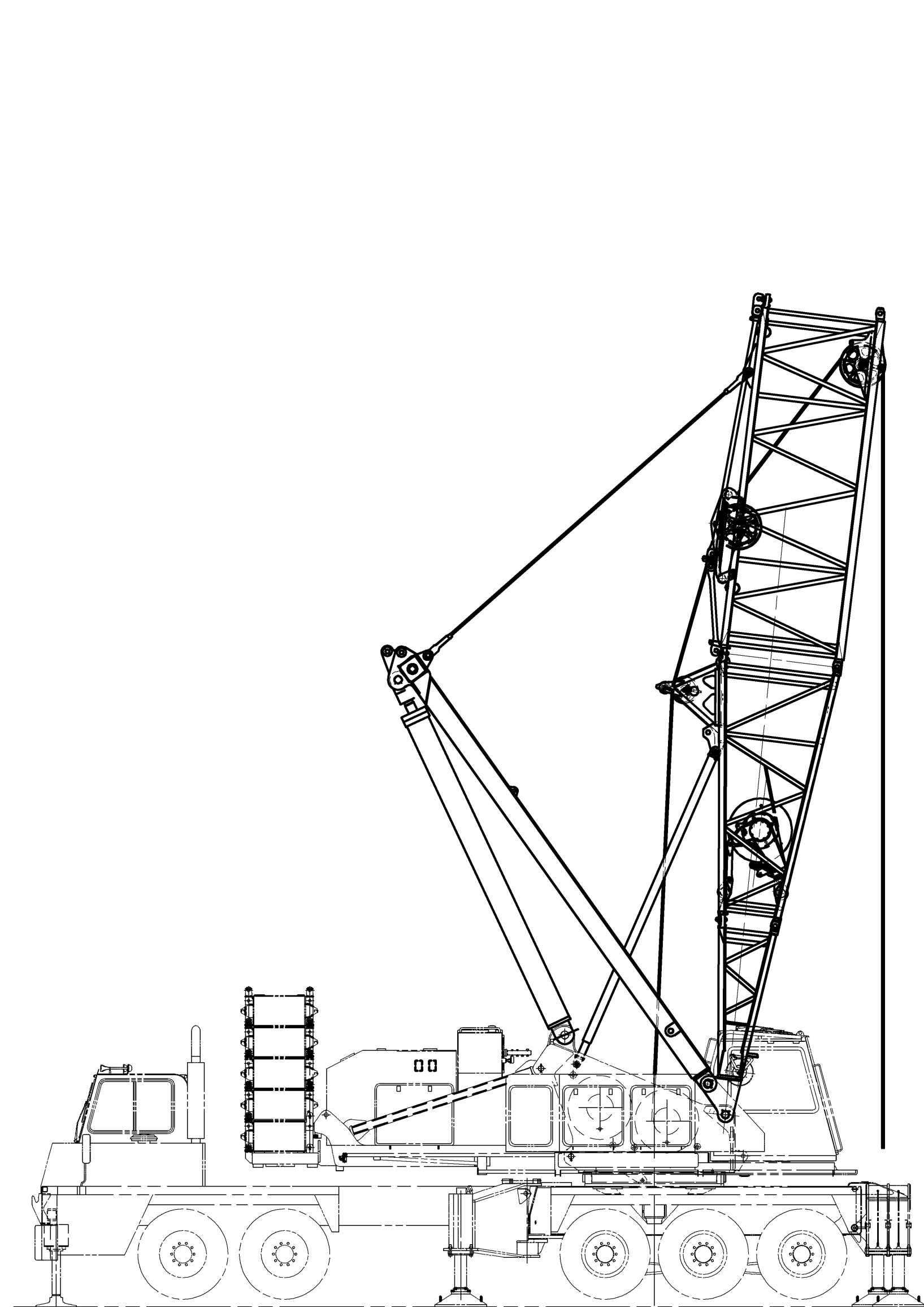


REQUIRED FOR VARIOUS BOOM LENGTHS																			
ITEM NO.		46	56	67	47	58	69	57 OR 68	75			17		5, 48, 59, OR 70	6, 49, 60, OR 71	3, 50, 61, OR 72	2, 51, 62, OR 73	27, 52, 63, OR 74	
BOOM LENGTH Ⓐ Ⓑ Ⓒ Ⓓ		10 FT 3.05 M INSERT	20 FT 6.10 M INSERT	30 FT 15.24 M INSERT	9 FT 5.00 2.87 M STRAP	19 FT 5.00 5.92 M STRAP	49 FT 5.00 15.06 M STRAP	TIMBER (PERMA POLY)	INTERMEDIATE SUSPENSION ASSEMBLY			LINK		LINK	PIN	COLLAR	PIN	STRAP STORAGE PIN	
FEET METERS									LOCATION "A"		POSITION "B"		421399 SHT. 1 (16.00 IN.)						421399 SHT. 2 (22.00 IN.)
									FEET	METERS	"C", "D" OR "E"	"C", "D" OR "E"							
138 BASIC	42.1	0	0	0	0	0	0	0	-	-	-	2	0	0	0	0	0	0	
148	45.1	1	0	0	2	0	0	0	-	-	-	2	0	4	4	4	4	4	
158	48.2	OR 2	0	0	4	0	0	0	-	-	-	2	0	8	8	8	8	8	
		0	1	0	0	2	0	1	-	-	-	2	0	4	4	4	4	4	
168	51.2	1	1	0	2	2	0	1	98	29.9	E	2	0	8	8	8	8	8	
178	54.3	OR 2	1	0	4	2	0	1	98	29.9	E	2	0	12	12	12	12	12	
		0	2	0	0	4	0	2	98	29.9	E	2	0	8	8	8	8	8	
188	57.3	OR 0	0	1	0	0	2	2	98	29.9	D	2	0	4	4	4	4	4	
		1	2	0	2	4	0	2	98	29.9	D	2	0	12	12	12	12	12	
198	60.4	OR 1	0	1	2	0	2	2	98	29.9	C	2	0	8	8	8	8	8	
		2	2	0	4	4	0	2	98	29.9	C	2	0	16	16	16	16	16	
208	63.4	OR 0	1	1	0	2	2	3	98	29.9	B	2	0	8	8	8	8	8	
		2	0	1	4	0	2	2	98	29.9	B	2	0	12	12	12	12	12	
218	66.4	1	1	1	2	2	2	3	98	29.9	B	2	0	12	12	12	12	12	
228	69.5	OR 0	2	1	0	4	2	4	98	29.9	B	2	0	12	12	12	12	12	
		2	1	1	4	2	2	3	98	29.9	B	2	0	16	16	16	16	16	
238	72.5	OR 0	0	2	0	0	4	4	98	29.9	B	2	0	8	8	8	8	8	
		1	2	1	2	4	2	4	98	29.9	B	2	0	16	16	16	16	16	
248	75.6	OR 1	0	2	2	0	4	4	148	45.1	E	2	0	12	12	12	12	12	
		2	2	1	4	4	2	4	148	45.1	E	2	0	20	20	20	20	20	
258	78.6	OR 0	1	2	0	2	4	5	148	45.1	D	2	0	12	12	12	12	12	
		2	0	2	4	0	4	4	148	45.1	D	2	0	16	16	16	16	16	
268	81.7	1	1	2	2	2	4	5	148	45.1	D	2	0	16	16	16	16	16	
278	84.7	OR 2	1	2	4	2	4	5	148	45.1	C	2	0	20	20	20	20	20	
		0	2	2	0	4	4	6	148	45.1	C	2	0	16	16	16	16	16	
288	87.8	OR 0	0	3	0	0	6	6	148	45.1	C	2	0	12	12	12	12	12	
		1	2	2	2	4	4	6	148	45.1	C	2	0	20	20	20	20	20	
298	90.8	OR 1	0	3	2	0													

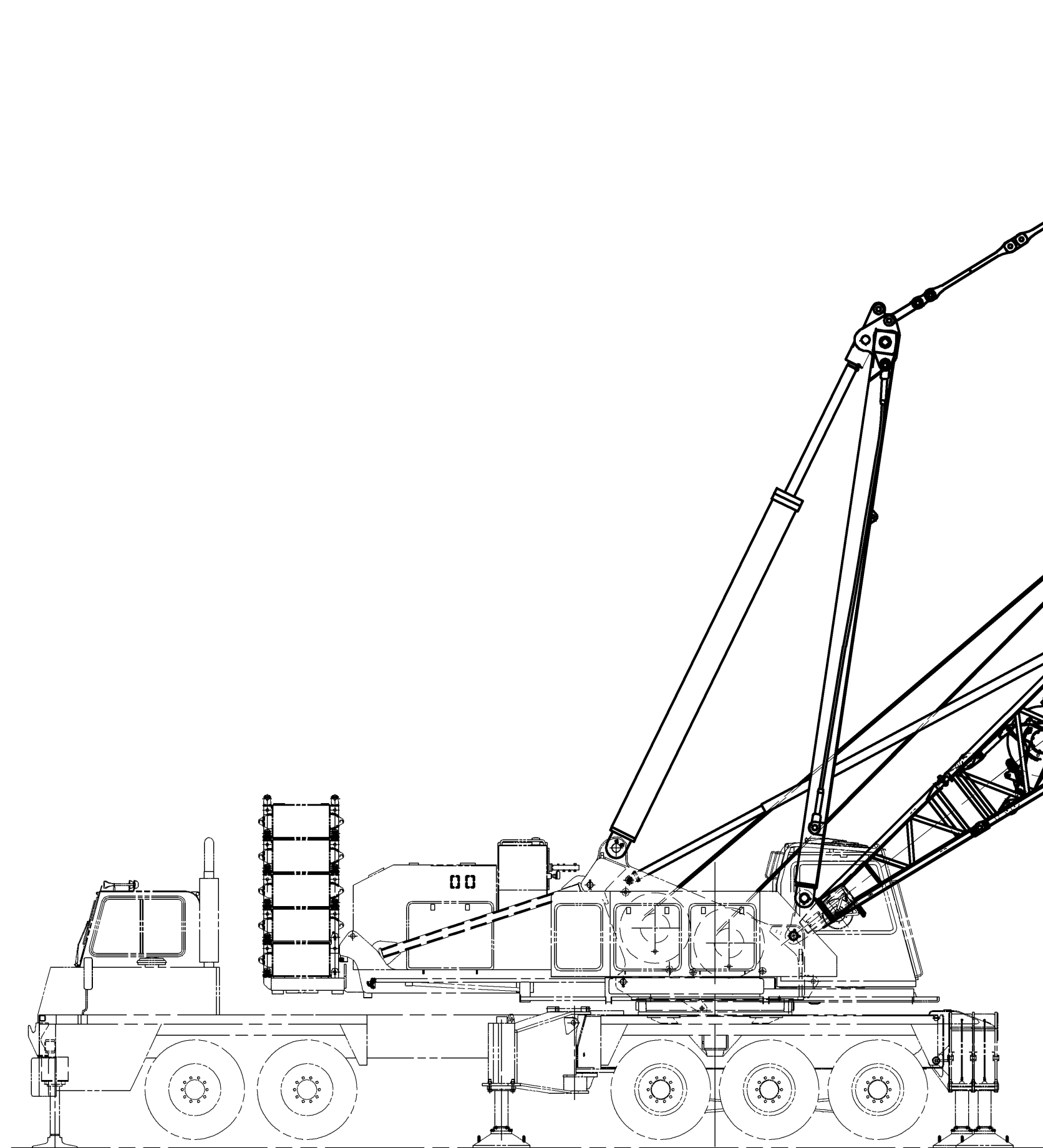


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DECIMAL PLACES	FABRICATION	MACHINING																			
(1) PLACE 0.0	$\pm .12$	$\pm .18$																			
(2) PLACE 0.00	$\pm .06$	$\pm .12$																			
(3) PLACE 0.000	$\pm .03$	$\pm .06$																			
MINUTES	SECONDS	THIRDS																			
$\pm 30"$	$\pm 30"$	$\pm 30"$																			

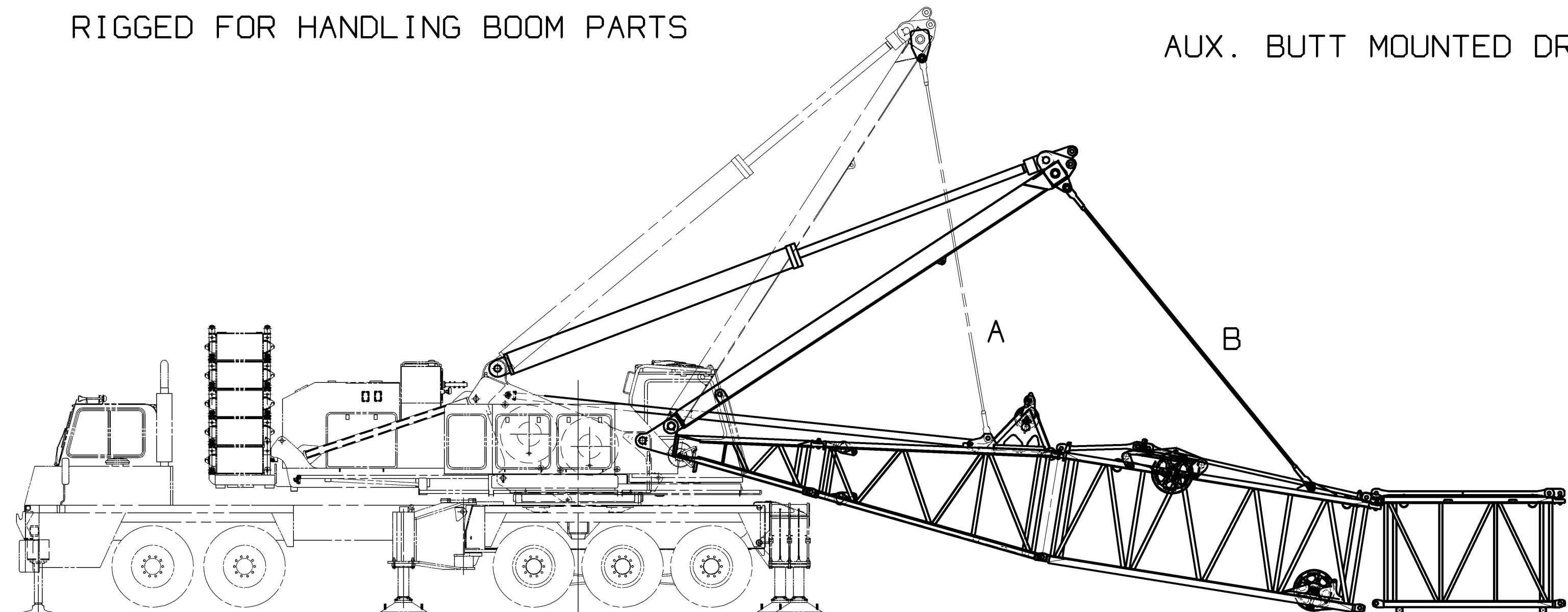
ASSEMBLIES USED ON	
REVISIONS	
3-6-00 JCC A DELETED 7-30-01 GAO B WAS SHT 1 OF 2 05-11-12 EWB C ADDED	
Dwg. No.	
192093	
SHT 1 OF 3	
DATE	
12-22-99	
PATTERN NO.	
192093	



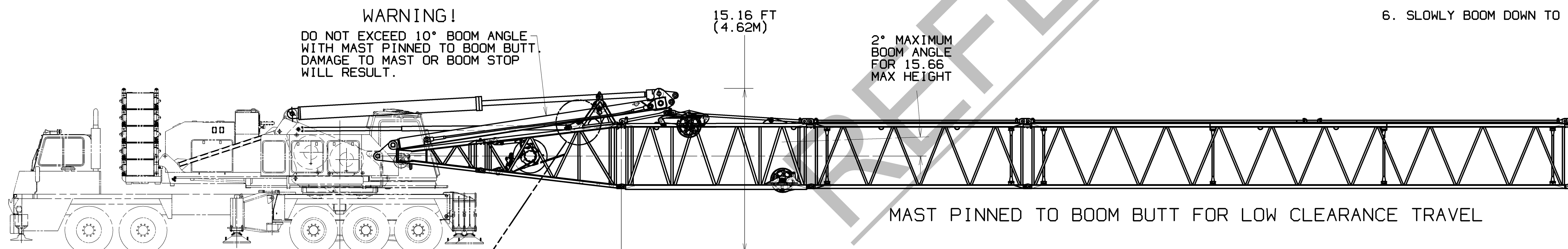
RIGGED FOR HANDLING BOOM PARTS



AUX. BUTT MOUNTED DRUM RIGGING



A - ONLY 17.5' INSERT ASSEMBLY WITH MAST
B - BOOM ASSEMBLY WITH MAST

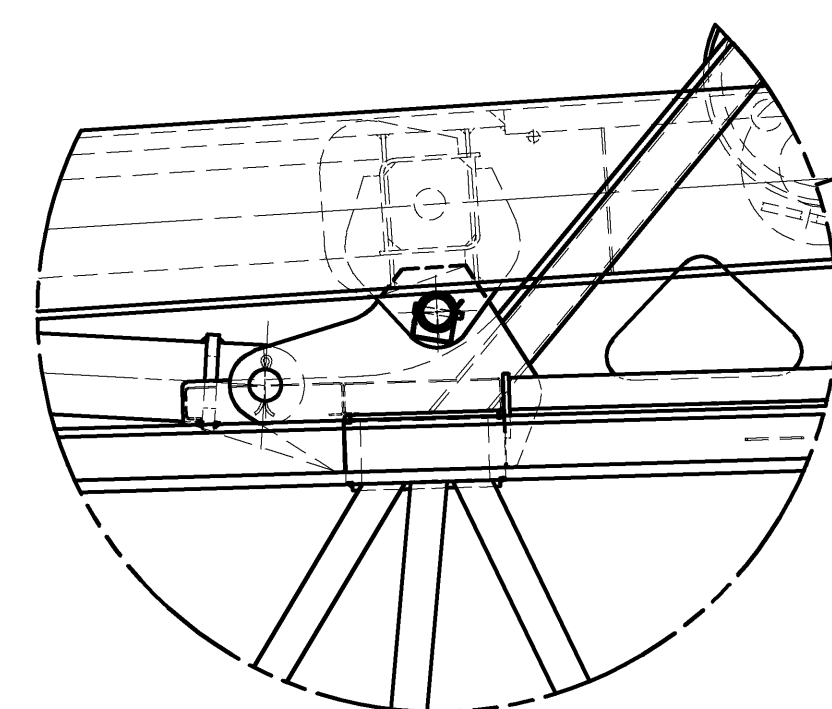


WARNING!
DO NOT EXCEED 10° BOOM ANGLE
WITH MAST PINNED TO BOOM BUTT.
DAMAGE TO MAST OR BOOM STOP
WILL RESULT.

15.16 FT
(4.62M)
2° MAXIMUM
BOOM ANGLE
FOR 15.65
MAX HEIGHT

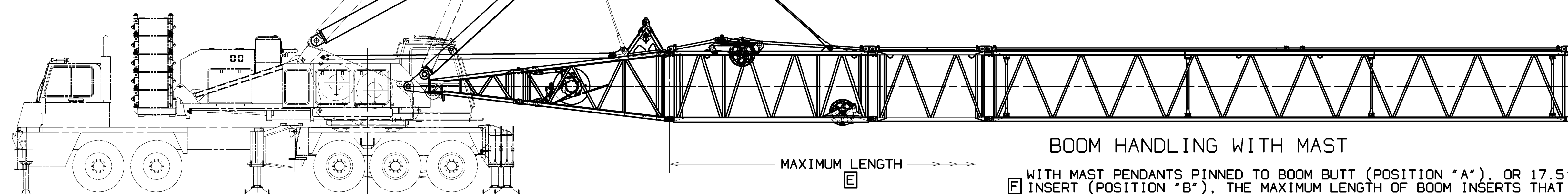
MAST PINNED TO BOOM BUTT FOR LOW CLEARANCE TRAVEL

WITH MAST PINNED TO BOOM BUTT FOR LOW CLEARANCE TRAVEL:
MAXIMUM BOOM THAT CAN BE CANTILEVERED FROM
BOOM BUTT IS 87.5 FT OF INSERTS.



POSITION "A"

POSITION "B"



BOOM HANDLING WITH MAST

WITH MAST PENDANTS PINNED TO BOOM BUTT (POSITION "A"), OR 17.5'
INSERT (POSITION "B"), THE MAXIMUM LENGTH OF BOOM INSERTS THAT
CAN BE CARRIED IS 87.5 FT.

BOOM ASSEMBLY PROCEDURE

1. ATTACH 17.5' INSERT TO BOOM BUTT. ATTACH RIGGING PENDANTS TO LUGS ON 17.5' INSERT.
2. ASSEMBLE TOP AND INSERTS. (SEE TABLE SHEET 1)
3. ATTACH STRAPS, INTERMEDIATE SUSPENSION, LINKS AND PINS AS REQ'D.
4. POSITION MACHINE TO ALIGN UPPER FACT PIN CONNECTOR HOLES ON 17.5' INSERT WITH UPPER PIN CONNECTOR HOLES ON TOP OR BOOM INSERT.
5. ENGAGE UPPER FACT PINS. CONTINUE BOOMING UP SLOWLY TO ALIGN LOWER PIN CONNECTOR HOLES ON 17.5' INSERT WITH LOWER PIN CONNECTOR HOLES IN TOP OR BOOM INSERT AND INSTALL PINS.

WARNING: DO NOT BOOM UP AFTER LOWER FACT CONNECTORS MAKE CONTACT. IF BOOMING UP CONTINUES AFTER CONNECTORS BOTTOM OUT OR AFTER PINS ARE INSERTED, DAMAGE TO ROPE GUIDE AND BOOM BUTT WILL OCCUR.

6. BOOM DOWN TO DISCONNECT RIGGING PENDANT FROM 17.5' INSERT AND STOW.
7. ATTACH BOOM STRAPS TO MAST LINK.
8. SEE INTERMEDIATE SUSPENSION DIAGRAMS ON SHEET 1 FOR 168 AND 298 FT. BOOMS.
9. BOOM UP TO DESIRED BOOM ANGLE.

TO DISASSEMBLE BOOM

1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
2. DISCONNECT BOOM STRAPS FROM MAST LINKS.
3. CONNECT RIGGING PENDANTS TO LUGS ON 17.5' INSERT.
4. BOOM UP SLOWLY TO SUPPORT WEIGHT OF BOOM BUTT WITH RIGGING PENDANTS.

WARNING: BOOMING UP TO SUPPORT FULL WEIGHT OF BOOM WILL DAMAGE ROPE GUIDE AND BOOM BUTT.

5. REMOVE LOWER PIN CONNECTING 17.5' INSERT TO TOP OR INSERT.

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

6. SLOWLY BOOM DOWN TO DISENGAGE UPPER FACT CONNECTOR PINS AND BACK AWAY.

1. MAXIMUM NO. OF 10 FT. (3.05 M) INSERTS = 2.
2. MAXIMUM NO. OF 20 FT. (6.10 M) INSERTS = 2.
3. 17.5 FT (5.33M) INSERT MUST BE INSTALLED ADJACENT TO BOOM BUTT.
4. STARTING WITH THE 17.5 FT INSERT, INSERTS MUST BE INSTALLED IN ORDER OF ASCENDING LENGTH.
5. 3 - 30.00 DIA SHEAVES FOR 138'-288' BOOMS. 1 - 30.00 DIA. CENTER SHEAVE AND SPACERS FOR 298' BOOM.
6. WHEN AUX. BUTT MOUNTED DRUM SHAFT ASSEMBLY (ITEM 76) IS REQUIRED, WIRE ROPE GUIDE ASSEMBLY FOR AUX. DRUM (ITEM 15) IS ALSO REQUIRED.
7. 192448 FOR S/O 7770
8. CAN USE 192337 IN PLACE OF 192336.
9. CAN USE 192073 IN PLACE OF 192072.
10. WHEN INTERMEDIATE SUSPENSION IS USED, PIN AND COLLAR FROM INTERMEDIATE SUSPENSION ASSEMBLY IS USED AT THIS LOCATION.

11. EACH ITEM 1 REQUIRES A MINIMUM OF 10 SETS OF ITEMS 32, 33 AND 34.

BILL OF MATERIAL				ASSEMBLIES USED ON
QTY	ITEM NO.	DESCRIPTION	QTY	
7775-0000 BASIC BOOM 138 FT. (42.1M)				
1	2	SIGN BOOM MANITOWOC	81008829	
2	14	PIN	179959	
3	14	COLLAR	179862	
4	2	PIN	192870	
5	12	LINK	192284	
6	12	PIN	179863	
7	2	PIN	192869	
8	2	COLLAR	179195	
9	2	PIN	179194	
10	1	BOOM TOP (48 FT) (14.63 M)	192676	
11	1	INSERT TAPERED 50 FT (15.27 M)	192677	
12	1	BOOM POINT ASSEMBLY	193658	
13	1	MAST ASSEMBLY	192746	
14	2	TIMBER (PERMA POLY)	192330	
15	1	WIRE ROPE GUIDE ASSEMBLY	195403	
16	4	LINK	192325	
17	2	LINK	421399	
18	1	INSERT (17.50 FT) (5.33M)	192171	
19	2	STRAP	193683	
20	2	STRAP	192345	
21	2	STRAP	192385	
22	1	SHEAVE	176712	
23	1	SHAFT	192173	
24	2	PIN	172277	
25	1	WIRE ROPE GUARD	193284	
26	2	PIN	192871	
27	16	PIN	78292	
28	2	TIMBER (PERMA POLY)	193148	
29	2	STRAP BRACKET	193665	
30	2	STRAP BRACKET	193666	
31	2	STRAP	192295	
32	32	SCR M8 X 30. 4.8 ZINC PLT	7121171301	
33	32	NUT HEX M8-1.25 10 PLN	7661170004	
34	32	WASHER LOCK M8	7951170210	
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45				
7775-0010 INSERT 10 FT (3.05M)				
46	1	INSERT 10 FT (3.05M)	192335	
47	2	STRAP	192293	
48	4	LINK	192284	
49	4	PIN	179863	
50	4	COLLAR	179862	
51	4	PIN	179959	
52	4	PIN	78292	
53				
54				
55				
7775-0020 INSERT 20 FT (6.10M)				
56	1	INSERT 20 FT (6.10M)	192336	
57	1	TIMBER (PERMA POLY)	192330	
58	2	STRAP	192294	
59	4	LINK	192284	
60	4	PIN	179863	
61	4	COLLAR	179862	
62	4	PIN	179959	
63	4	PIN	78292	
64				
65				
66				
7775-0030 INSERT 50 FT (15.24M)				
67	1	INSERT 50 FT (15.24M)	192072	
68	2	TIMBER (PERMA POLY)	192330	
69	2	STRAP	192295	
70	4	LINK	192284	
71	4	PIN	179863	
72	4	COLLAR	179862	
73	4	PIN	179959	
74	4	PIN	78292	
75				
7775-0050 INTERMEDIATE SUSPENSION ASSEMBLY				
75	1	INTERMEDIATE SUSPENSION ASSEMBLY	194266	
7775-0070 OPTIONAL ASSEMBLY LIST				
76	1	DRUM SHAFT ASSEMBLY - AUX.	179491	
77	1	BOOM ASSEMBLY LADDER STORAGE	179678	
78				
79				
80				
81				

PRIVATE LABELING
REQUIREMENT TO
CONFORM TO
ENGINEERING
SPECIFICATION
6829103794 FOR
COMPONENTS LISTED
IN 682901-06-006

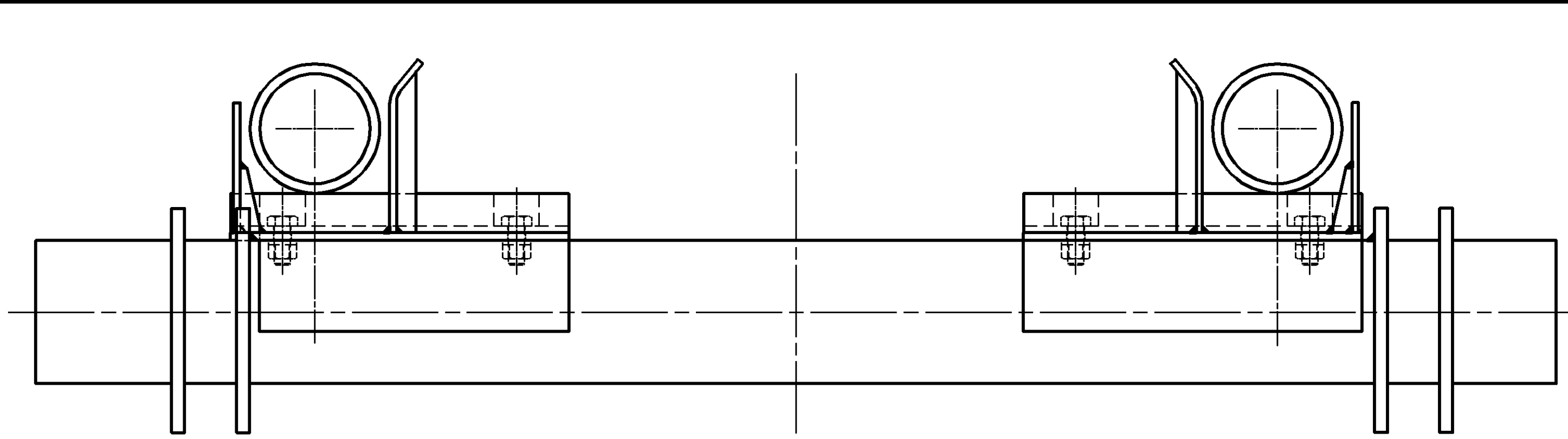
DATE
12-22-99

PATTERN NO.

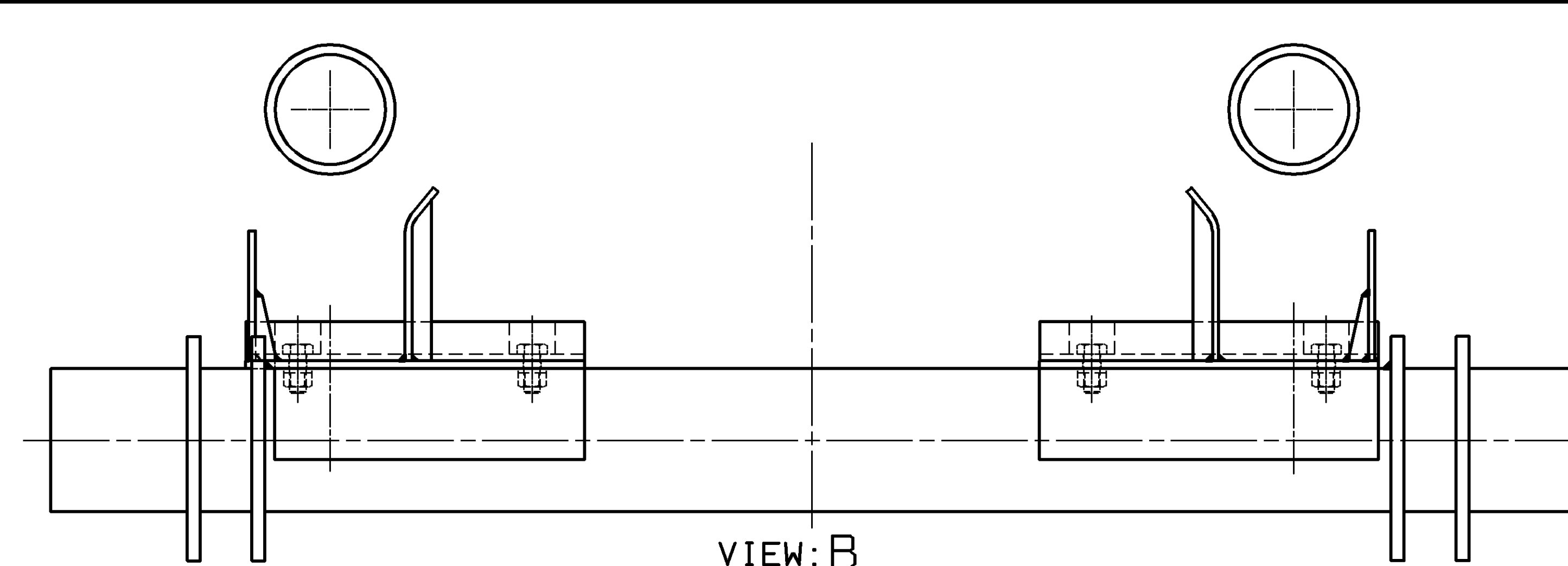
QTY

192093

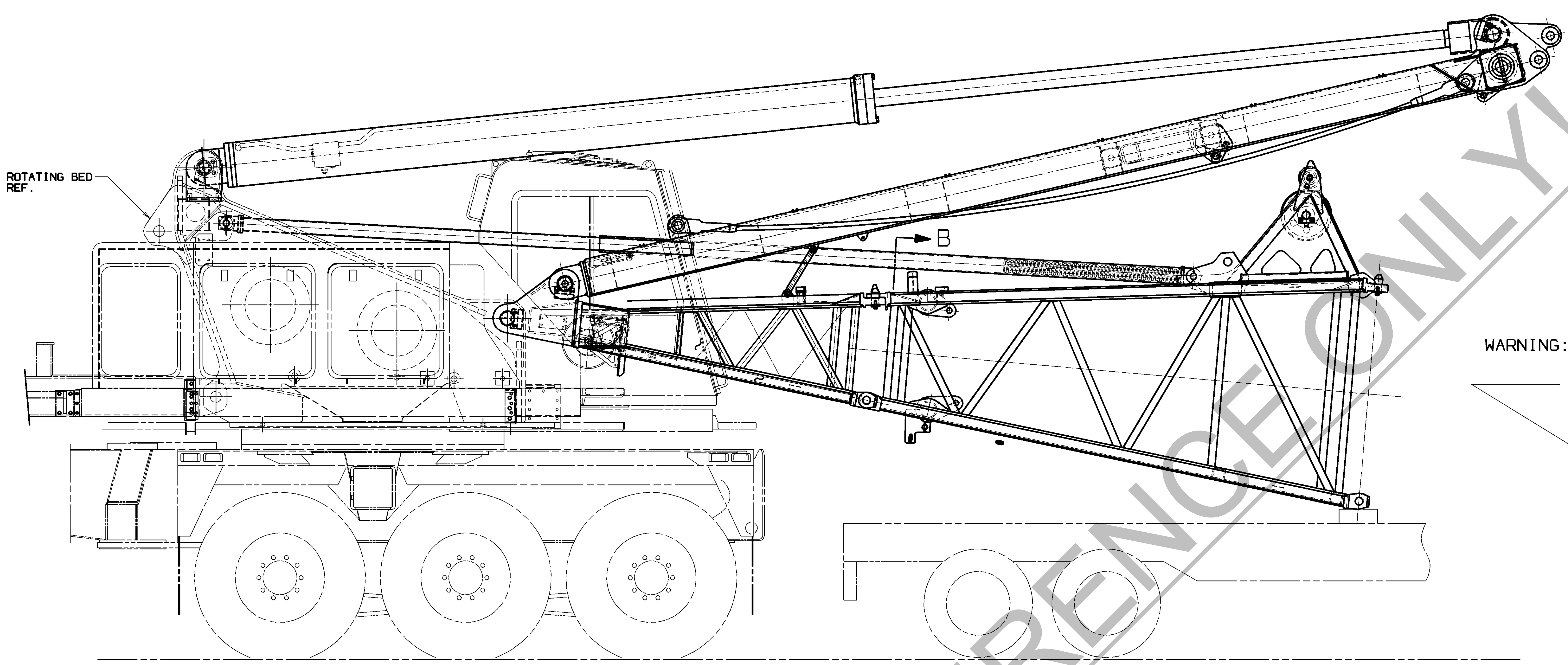
SHT 2 OF 3



VIEW: A
SETUP POSITION
SCALE: 3=1FT

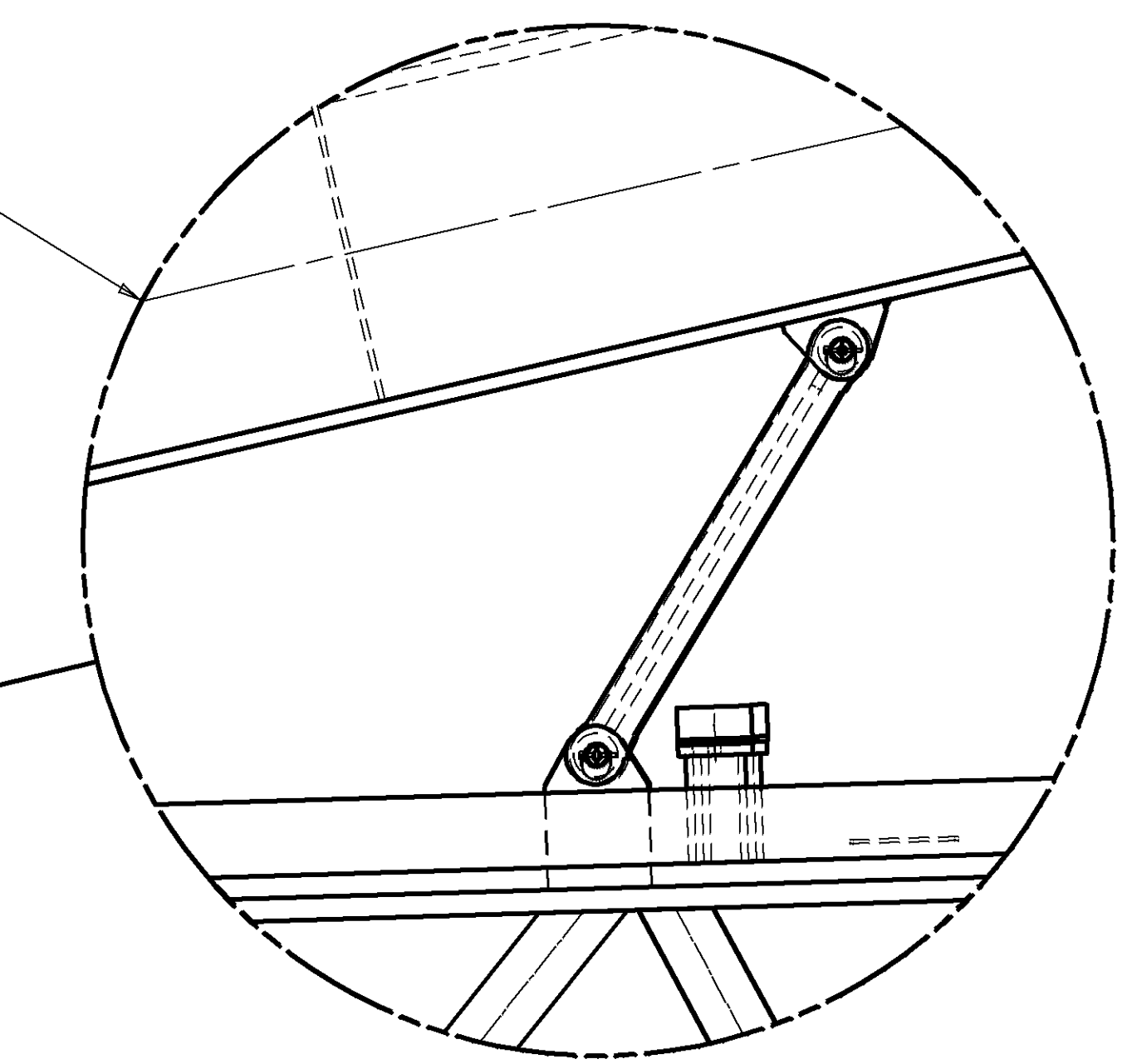


VIEW: B
OPERATING POSITION:
POSITION AFTER BOOM STOPS
ARE PINNED TO ROTATING BED.
SCALE: 3=1FT

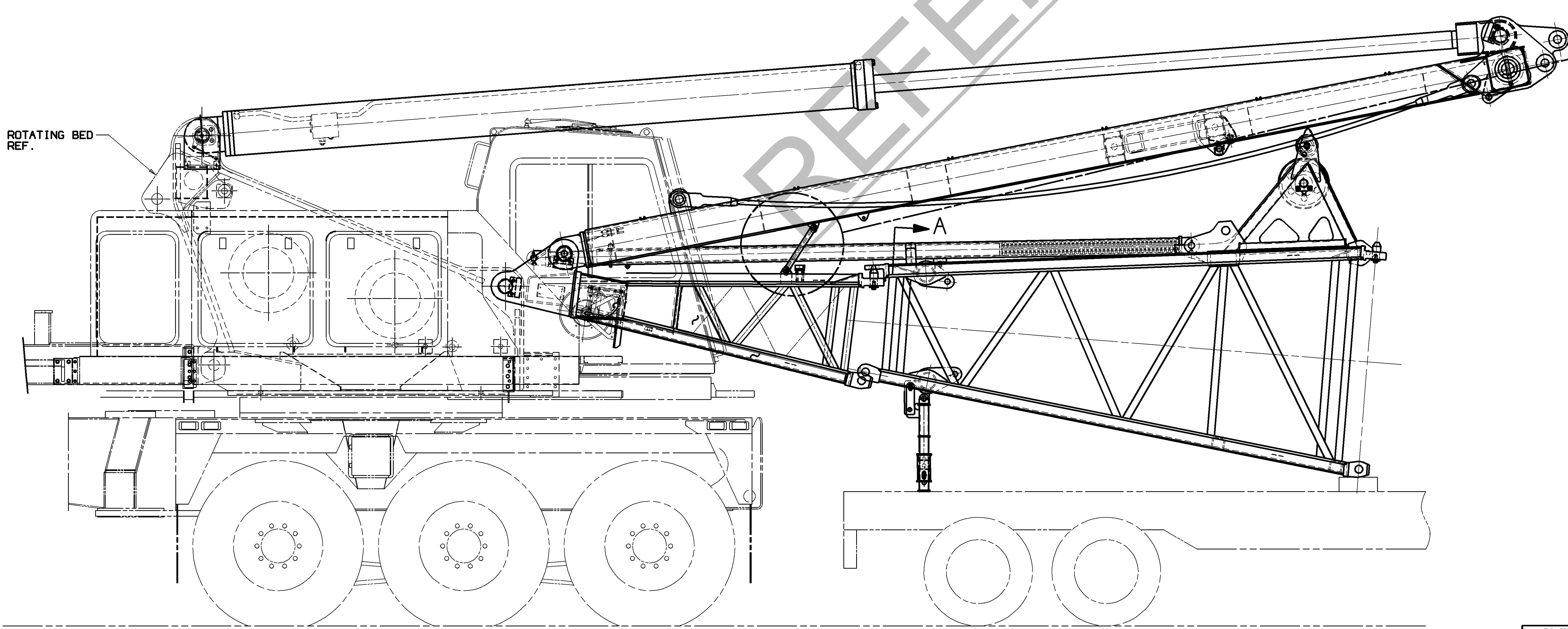


OPERATING POSITION

WARNING: LINK (193144) MUST BE INTALLED WHEN BOOM BUTT TOP (179548) IS NOT. BODILY INJURY AND OR DAMAGE TO MACHINE MAY OCCUR. PLEASE REF. DRAWING 192746 (MAST ASSEMBLY) FOR PROPER INTALLATION.



BOOM STOP AND STRAPS REMOVED FOR CLARITY



SETUP POSITION

DO NOT SCALE THIS DRAWING

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TOLERANCE UNLESS OTHERWISE SPECIFIED										Mantowoc Cranes, Inc.	
DECIMAL PLACES ± 10 PERCENT										Mantowoc, Wisconsin	
(1) PLACE 0.0 ± 1.00 ± 0.05										BOOM RIGGING ASSEMBLY	
(2) PLACE 0.00 ± 0.00 ± 0.01										#78T BOOM	
(3) PLACE 0.000 ± 0.00 ± 0.005										W/LONG REACH TOP	
ANGLES ± 1° ± 30'										192093	
JAZ										SHEET 3 OF 3	
TLP										SHEET 3 OF 3	