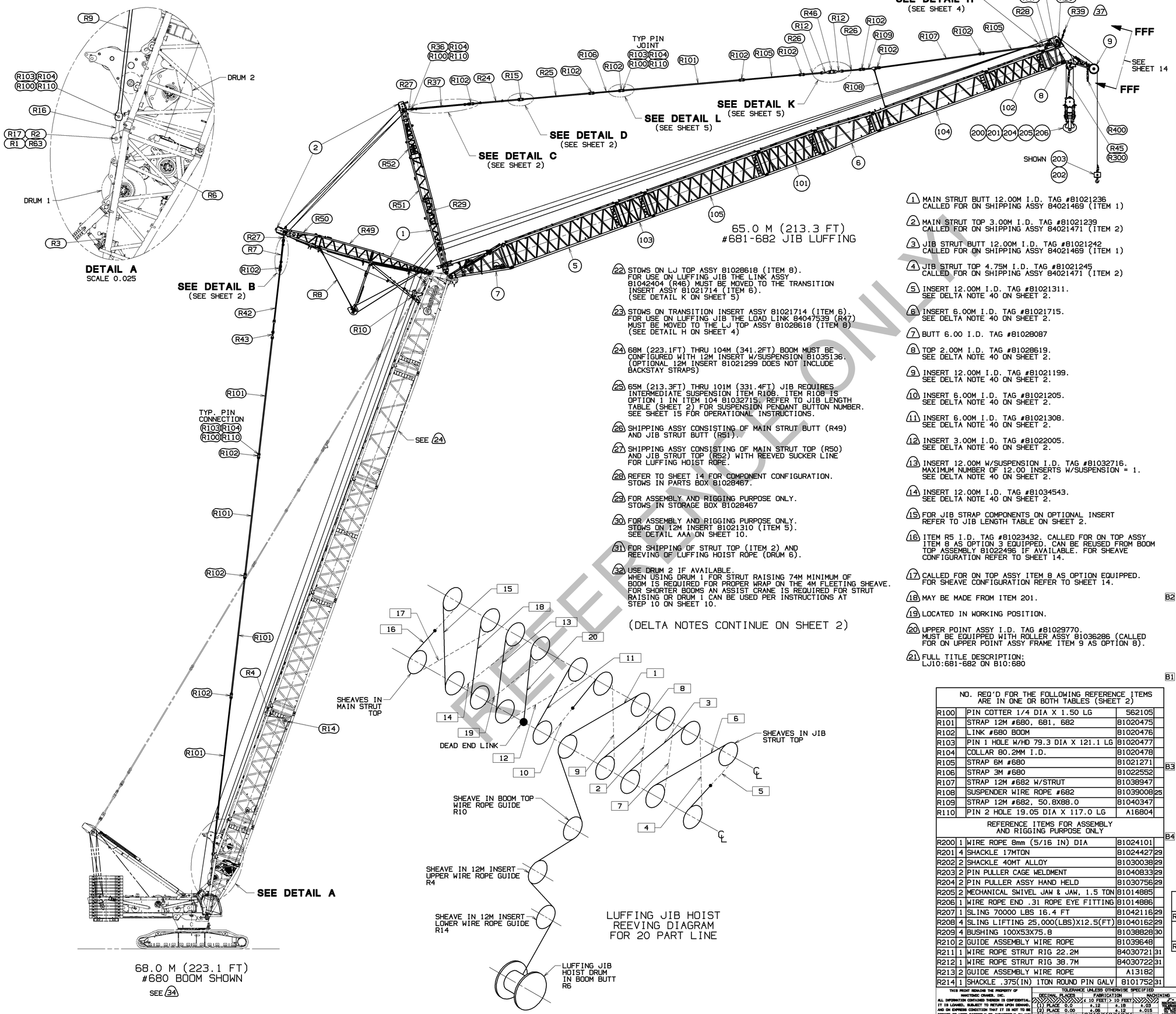


(DELTA NOTES CONTINUE ON SHEET 2)

1. MAIN STRUT BUTT 12.00M I.D. TAG #81021236 CALLED FOR ON SHIPPING ASSY 84021469 (ITEM 1)
2. MAIN STRUT TOP 3.00M I.D. TAG #81021239 CALLED FOR ON SHIPPING ASSY 84021471 (ITEM 2)
3. JIB STRUT BUTT 12.00M I.D. TAG #81021242 CALLED FOR ON SHIPPING ASSY 84021469 (ITEM 1)
4. JIB STRUT TOP 4.75M I.D. TAG #81021245 CALLED FOR ON SHIPPING ASSY 84021471 (ITEM 2)
5. INSERT 12.00M I.D. TAG #81021311. SEE DELTA NOTE 40 ON SHEET 2.
6. INSERT 6.00M I.D. TAG #81021715. SEE DELTA NOTE 40 ON SHEET 2.
7. BUTT 6.00 I.D. TAG #81028087
8. TOP 2.00M I.D. TAG #81028619. SEE DELTA NOTE 40 ON SHEET 2.
9. INSERT 12.00M I.D. TAG #81021199. SEE DELTA NOTE 40 ON SHEET 2.
10. INSERT 6.00M I.D. TAG #81021205. SEE DELTA NOTE 40 ON SHEET 2.
11. INSERT 6.00M I.D. TAG #81021308. SEE DELTA NOTE 40 ON SHEET 2.
12. INSERT 3.00M I.D. TAG #81022005. SEE DELTA NOTE 40 ON SHEET 2.
13. INSERT 12.00M W/SUSPENSION I.D. TAG #81032716. MAXIMUM NUMBER OF 12.00 INSERTS W/SUSPENSION = 1. SEE DELTA NOTE 40 ON SHEET 2.
14. INSERT 12.00M I.D. TAG #81034543. SEE DELTA NOTE 40 ON SHEET 2.
15. FOR JIB STRAP COMPONENTS ON OPTIONAL INSERT REFER TO JIB LENGTH TABLE ON SHEET 2.
16. ITEM R5 I.D. TAG #81023432. CALLED FOR ON TOP ASSY ITEM 8 AS OPTION 3 EQUIPPED. CAN BE REUSED FROM BOOM TOP ASSEMBLY 81022496 IF AVAILABLE. FOR SHEAVE CONFIGURATION REFER TO SHEET 14.
17. CALLED FOR ON TOP ASSY ITEM 8 AS OPTION EQUIPPED. FOR SHEAVE CONFIGURATION REFER TO SHEET 14.
18. MAY BE MADE FROM ITEM 201.
19. LOCATED IN WORKING POSITION.
20. UPPER POINT ASSY I.D. TAG #81029770. MUST BE EQUIPPED WITH ROLLER ASSY 81036286 (CALLED FOR ON UPPER POINT ASSY FRAME ITEM 9 AS OPTION 8).
21. FULL TITLE DESCRIPTION: LJ10:681-682 ON B10:680
22. STOWS ON LJ TOP ASSY 81028618 (ITEM 8). FOR USE ON LUFFING JIB THE LINK ASSY 81042404 (R46) MUST BE MOVED TO THE TRANSITION INSERT ASSY 81021714 (ITEM 6). (SEE DETAIL K ON SHEET 5)
23. STOWS ON TRANSITION INSERT ASSY 81021714 (ITEM 6). FOR USE ON LUFFING JIB THE LOAD LINK 84047539 (R47) MUST BE MOVED TO THE LJ TOP ASSY 81028618 (ITEM 8) (SEE DETAIL H ON SHEET 4)
24. 68M (223.1FT) THRU 104M (341.2FT) BOOM MUST BE CONFIGURED WITH 12M INSERT W/SUSPENSION 81035136. (OPTIONAL 12M INSERT 81021299 DOES NOT INCLUDE BACKSTAY STRAPS)
25. 65M (213.3FT) THRU 101M (331.4FT) JIB REQUIRES INTERMEDIATE SUSPENSION ITEM R108. ITEM R108 IS OPTION 1 IN ITEM 104 81032715. REFER TO JIB LENGTH TABLE (SHEET 2) FOR SUSPENSION PENDANT BUTTON NUMBER. SEE SHEET 15 FOR OPERATIONAL INSTRUCTIONS.
26. SHIPPING ASSY CONSISTING OF MAIN STRUT BUTT (R49) AND JIB STRUT BUTT (R51).
27. SHIPPING ASSY CONSISTING OF MAIN STRUT TOP (R50) AND JIB STRUT TOP (R52) WITH REEVED SUCKER LINE FOR LUFFING HOIST ROPE.
28. REFER TO SHEET 14 FOR COMPONENT CONFIGURATION. STOWS IN PARTS BOX 81028467.
29. FOR ASSEMBLY AND RIGGING PURPOSE ONLY. STOWS IN STORAGE BOX 81028467
30. FOR ASSEMBLY AND RIGGING PURPOSE ONLY. STOWS ON 12M INSERT 81021310 (ITEM 5). SEE DETAIL AAA ON SHEET 10.
31. FOR SHIPPING OF STRUT TOP (ITEM 2) AND REEVING OF LUFFING HOIST ROPE (DRUM 6).
32. USE DRUM 2 IF AVAILABLE. WHEN USING DRUM 1 FOR STRUT RAISING 74M MINIMUM OF BOOM IS REQUIRED FOR PROPER WRAP ON THE 4M FLEETING SHEAVE. FOR SHORTER BOOMS AN ASSIST CRANE IS REQUIRED FOR STRUT RAISING OR DRUM 1 CAN BE USED PER INSTRUCTIONS AT STEP 10 ON SHEET 10.

NO. REQ'D FOR THE FOLLOWING REFERENCE ITEMS ARE IN ONE OR BOTH TABLES (SHEET 2)

R100		PIN COTTER 1/4 DIA X 1.50 LG	562105
R101		STRAP 12M #680, 681, 682	81020475
R102		LINK #680 BOOM	81020476
R103		PIN 1 HOLE W/HD 79.3 DIA X 121.1 LG	81020477
R104		COLLAR 80.2MM I.D.	81020478
R105		STRAP 6M #680	81021271
R106		STRAP 3M #680	81022552
R107		STRAP 12M #682 W/STRUT	81038947
R108		SUSPENDER WIRE ROPE #682	81039008 25
R109		STRAP 12M #682, 50.8X88.0	81040347
R110		PIN 2 HOLE 19.05 DIA X 117.0 LG	A16804

REFERENCE ITEMS FOR ASSEMBLY AND RIGGING PURPOSE ONLY

R200	1	WIRE ROPE 8mm (5/16 IN) DIA	81024101
R201	4	SHACKLE 17MTON	81024427 29
R202	2	SHACKLE 40MT ALLOY	81030038 29
R203	2	PIN PULLER CAGE WELDMENT	81040833 29
R204	2	PIN PULLER ASSY HAND HELD	81030756 29
R205	2	MECHANICAL SWIVEL JAW & JAW, 1.5 TON	81014885
R206	1	WIRE ROPE END .31 ROPE EYE FITTING	81014886
R207	1	SLING 70000 LBS 16.4 FT	81042116 29
R208	4	SLING LIFTING 25,000(LBS)X12.5(FT)	81040162 29
R209	4	BUSHING 100X53X75.8	81038828 30
R210	2	GUIDE ASSEMBLY WIRE ROPE	81039648
R211	1	WIRE ROPE STRUT RIG 22.2M	84030721 31
R212	1	WIRE ROPE STRUT RIG 38.7M	84030722 31
R213	2	GUIDE ASSEMBLY WIRE ROPE	A13182
R214	1	SHACKLE .375(IN) 1TON ROUND PIN GALV	81017523 31

BILL OF MATERIAL

ASSEMBLIES USED ON: 81018136

LUFFING JIB RIGGING LJ on B10

ITEM NO.	REQ. QTY.	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR SPEC. NO.	
1	1	STRUT #683 SHIPPING ASSY-BUTT			84021469	26
2	1	STRUT #683 SHIPPING ASSY-TOP			84021471	27
3						
4						
5	1	INSERT ASSY #680/681, 12.00M			81021310	5
6	1	TRANSITION INSERT ASSY #681/682, 6M			81021714	6
7	1	BUTT ASSY #680A, 6.0M			81028086	7
8	1	TOP ASSY #682, 2.0M			81028618	8
9	1	UPPER POINT ASSY FRAME			81029769	20
		NO. REQ'D FOR THE FOLLOWING ITEMS ARE IN THE JIB LENGTH TABLE				
100		INSERT ASSY #682, 12.00M			81021198	9
101		INSERT ASSY #681, 6.00M			81021204	10
102		INSERT ASSY #682, 6.00M			81021307	11
103		INSERT ASSY #681, 3.00M			81022004	12
104		INSERT ASSY #682, 12M STRUT			81032715	13
105		INSERT ASSY #681, 12.00M			81034541	14
106						
		OPTION 1: HOOK BLOCKS				
200	1	BLOCK HOOK 135MT 32MM WR 3 SHEAVES			81023461	
201	1	BLOCK HOOK 450MT 32MM WR 10 SHEAVES			81029960	
202	1	BLOCK HOOK 100MT 28MM WR 3 SHEAVES			81031987	38
203	1	WEIGHT BALL SWIVEL 22.2MT, 28MM & 32MM WR			81033344	
204	1	BLOCK HOOK 325MT 32MM WR 7 SHEAVES			81033345	33
205	1	BLOCK HOOK 225MT 32MM WR 5 SHEAVES			81033346	18
206	1	HOOK BLOCK 160MT 3SH 32WR			84039500	
		OPTION 2: UPPER BOOM POINT				
300						
301						
		BASIC REFERENCE ITEMS				
R1	4	PIN COTTER 3/16 DIA X 2.00 LG			562087	
R2	2	COLLAR 103.0 I.D.			81009827	
R3	1	WINCH RIGGING			81009957	
R4	1	FRAME ASSY LJ WRG-UPPER			81022256	19
R5	1	BOOM POINT LOWER ASSY 8 SHEAVE			81023433	16
R6	1	DRUM ASSY LUFFING JIB			81023464	
R7	1	SPREADER ASSY #683 LJ BACKSTAY			81023808	
R8	2	ARM RAISING ASSY #683			81023848	
R9	2	STRAP 4M #680			81023853	
R10	1	FRAME ASSY LJ WRG #680 TOP			81024976	19
R11	4	LINK #680 BOOM STRAP			81025609	
R12	8	LINK #680 BOOM STRAP			81025610	
R13						
R14	1	FRAME ASSY LJ WRG-LOWER			81027187	
R15	4	LINK #680, 4M INSERT			81027236	
R16	4	STRAP 25.4X272.3X969.8			81027282	
R17	2	PIN 1 HOLE W/HD 101.6 DIA X 122.5 LG			81027283	
R18	8	PIN 1 HOLE W/HD 105.0 DIA X 121.1 LG			81028258	
R19	2	PIN 1 HOLE W/HD 127.0 DIA X 121.1 LG			81028259	
R20	8	COLLAR 106.5 MM I.D.			81028260	
R21	8	PIN 2 HOLE 19.05 DIA X 142.0 LG			81028262	
R22	2	COLLAR 128.2 MM I.D.			81028264	
R23	2	PIN 2 HOLE 19.05 DIA X 167.8 LG			81028265	
R24	2	STRAP 12M #680/681			81030485	
R25	2	STRAP 12M #680/681			81030486	
R26	4	STRAP 6M #681/682 TRNSN			81030487	
R27	8	LINK STRUT SHAFT #683			81031790	
R28	4	LINK #682 JIB TOP STRAP			81032029	
R29	1	LADDER ASSY			81034258	
B2 R30	1	GUIDE WIRE ROPE ASSY #682			84045801	B2
R31	2	CYLINDER HYDR MAIN STRUT STOP			81035271	
R32	2	GUIDE STRUT STOP ROLLER			81036409	
R33	2	JIB STOP ASSY			81037121	
R34	2	SUPPORT STRUT			81037910	
R35	2	STRUT SUPPORT			81039015	
R36	4	PIN 1 HOLE W/HD 79.3 DIA X 205.1 LG			81039254	
R37	1	SPREADER ASSY #683 FRONTSTAY			81039526	
B1 R38						B1
R39	1	ESI POSITION LIGHT AND ANEMOMETER			81031642	37
R40	1	TOP OPTION #682 SEALED			81040338	17
R41	1	TOP OPTION #682 GREASED			81040339	17
R42	2	STRAP #683 BUTT			81041146	
R43	4	LINK #683 BUTT			81041147	
R44	2	TUBE STRAP STOWAGE			81041200	
R45	1	LINK ASSY DEAD END			81042356	28
R46	2	LINK ASSY			81042404	22
B3 R47	2	LINK ASSY LOAD			84047539	23 B3
R48	1	PENDANT 0.313 DIA X 54.0(FT)			81040473	
R49	1	STRUT ASSY #683, 12M BUTT			81021235	1
R50	1	STRUT ASSY #683, 3.0M TOP			81021238	2
R51	1	STRUT ASSY #683, 12M BUTT			81021241	3
R52	1	STRUT ASSY #683, 4.75M JIB TOP			81021244	4
R53	2	STAND #683 RAISING STRUT			81032296	
B4 R54	2	CYL HYD JIB STOP SUPPORT			84027345	B4
R55	2	BRACKET JIB STOP SUPPORT			81039610	
R56	2	PIN 2 HOLE 22.2 DIA X 152.0 LG			A15390	
R57	4	PIN 2 HOLE 2.25 DIA X 3.89 LG (IN)			81031296	
R58						
R59						
		OPTION 3: JIB TOP DEAD END				
R300	1	LINK ASSY DEAD END			81042356	28
		OPTION 4: UPPER POINT DEAD END				
R400	1	LINK ASSY DEAD END			81042356	28

REVISIONS

	04-18-17 RHV
B1	R38 DELETED WAS 81039648 (B/M)
B2	R30 WAS 81030880 (B/M)
B3	R47 WAS 81042405 (B/M)
B4	R54 WAS 81038830 (B/M)
8586	DELTA NOTES 35 & 36 REVISED (SHT 2)
6788	DELTA NOTES 39 & 40 ADDED (SHT 2)
B5	R211 & R212 SWAPPED REEVING LOCATION (SHT 8)
B10	STEP 10 UPDATED W/MANUAL PINS (SHT 10)
B11	DETAIL HHH RELOCATED TO SHEET 12 (SHT 11)
B12	DETAIL HHH RELOCATED FROM SHEET 11 (SHT 12)
B13	DETAIL LLL ADDED (SHT 12)
B14	VIEW FFF-FFF UPDATED WITH ROLLERS (SHT 14)
B15	REVISED STEP 3 (SHT 15)

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 8829103794 FOR COMPONENTS LISTED IN GS500-05-035

DWG. NO. 81018143

SHT 1 OF 15

DATE 05-23-16

REV. LTR. B

TOLERANCE UNLESS OTHERWISE SPECIFIED

DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING
(1) PLACE	±.12	±.19	±.03
(2) PLACE	±.06	±.12	±.015
(3) PLACE			±.005
ANGLES	±1°30'		±0°30'

MACHINING TOLERANCE APPLIES TO MACHINED SURFACES ONLY

SCALE .008

DR. AJB	Manitowoc Cranes, Inc.
CK. RHV	Manitowoc, Wisconsin
APP TJA	MODEL MLC650

LUFFING JIB RIGGING
LJ on B10

DWG. NO. 81018143

SHT 1 OF 15

DO NOT SCALE THIS DRAWING

21

B5B6

ITEMS REQ'D FOR VARIOUS JIB LENGTHS - SEE SHEETS 4 & 5 FOR JIB MAKE-UP

		#681 INSERTS			#682 INSERTS			STRAP					LINK	PIN		COTTER	COLLAR	SUSPENSION
ITEM NO.		105	101	103	100	104	102	R101	R107	R109	R105	R106	R102	R103	R110	R100	R104	R108 (39)
JIB LENGTH METERS	JIB LENGTH FEET	INSERT 12M (39.4FT) ASSY	INSERT 6M (19.7FT) ASSY	INSERT 3M (9.8FT) ASSY	INSERT 12M (39.4FT) ASSY	INSERT 12M (39.4FT) SUSP ASSY	INSERT 6M (19.7FT) ASSY	STRAP 12M (39.4FT)	STRAP LONG W/SUSP	STRAP SHORT W/SUSP	STRAP 6M (19.7FT)	STRAP 3M (9.8FT)	LINK	PIN	PIN	COTTER	COLLAR	PENDANT BUTTON NUMBER SEE (25)
26	85.3	0	0	0	0	0	0	0	0	0	0	0	8	18	20	60	20	-
29	95.1	0	0	1	0	0	0	0	0	0	0	2	12	22	24	68	24	-
32	105.0	0	1	0	0	0	0	0	0	0	2	0	12	22	24	68	24	-
35	114.8	0	1	1	0	0	0	0	0	0	2	2	16	26	28	76	28	-
38	124.7	1	0	0	0	0	0	2	0	0	0	0	12	22	24	68	24	-
41	134.5	1	0	1	0	0	0	2	0	0	0	2	16	26	28	76	28	-
44	144.4	1	1	0	0	0	0	2	0	0	2	0	16	26	28	76	28	-
47	154.2	1	1	1	0	0	0	2	0	0	2	2	20	30	32	84	32	-
50	164.0	1	1	0	0	0	1	2	0	0	4	0	20	30	32	84	32	-
53	173.9	1	1	1	0	0	1	2	0	0	4	2	24	34	36	92	36	-
59	193.6	1	1	1	OR 0 / 1	1 / 0	0	2 / 4	2 / 0	2 / 0	2	2	28 / 24	38 / 34	40 / 36	100 / 92	40 / 36	-
65	213.3	1	1	1	0	1	1	2	2	2	4	2	32	42	44	108	44	4
71	232.9	1	1	1	1	1	0	4	2	2	2	2	32	42	44	108	44	2
77	252.6	1	1	1	1	1	1	4	2	2	4	2	36	46	48	116	48	3
83	272.3	1	1	1	2	1	0	6	2	2	2	2	36	46	48	116	48	3
89	292.0	1	1	1	2	1	1	6	2	2	4	2	40	50	52	124	52	1
95	311.7	1	1	1	3	1	0	8	2	2	2	2	40	50	52	124	52	2
101	331.4	1	1	1	3	1	1	8	2	2	4	2	44	54	56	132	56	3

ITEMS REQ'D FOR VARIOUS BOOM LENGTHS - SEE SHEET 3 FOR BOOM MAKE-UP

			STRAP		LINK	PIN		COTTER	COLLAR	
	ITEM NO.		R101	R105	R102	R103	R110	R100	R104	JIB BACKSTAY ADJUSTMENT HOLE SEE DETAIL F ON SHEET 3
B5 B6	BOOM LENGTH METERS	BOOM LENGTH FEET	STRAP 12M (39.4FT)	STRAP 6M (19.7FT)	LINK	PIN	PIN	COTTER	COLLAR	
	38	124.7	2	2	12	18	20	40	20	A
	44	144.4	4	0	12	18	20	40	20	A
B7	50	164.0	4	2	16	22	24	48	24	A
B8	56	183.7	6	0	16	22	24	48	24	A
	62	203.4	6	2	20	26	28	56	28	B
	68	223.1	8	0	20	26	28	56	28	B

(DELTA NOTES CONTINUED FROM SHET 1)

(33) CAN BE MADE FROM 81029961

(34) FOR MAKEUP OF BOOM SEE BOOM RIGGING B10:680 DRAWING 81018141

B5 (35) SEE BLOCK REEVING DRAWING 84029919 FOR 1 DRUM RIGGING CONFIGURATION OPTIONS AND INSTRUCTIONS. SEE RIGGING WINCH ASSY 81026267 FOR BLOCK AND WIRE ROPE ASSEMBLY.

B6 (36) SEE BLOCK REEVING DRAWING 84029920 FOR 2 DRUM RIGGING CONFIGURATION OPTIONS AND INSTRUCTIONS. SEE RIGGING WINCH ASSY 81026267 FOR BLOCK AND WIRE ROPE ASSEMBLY.

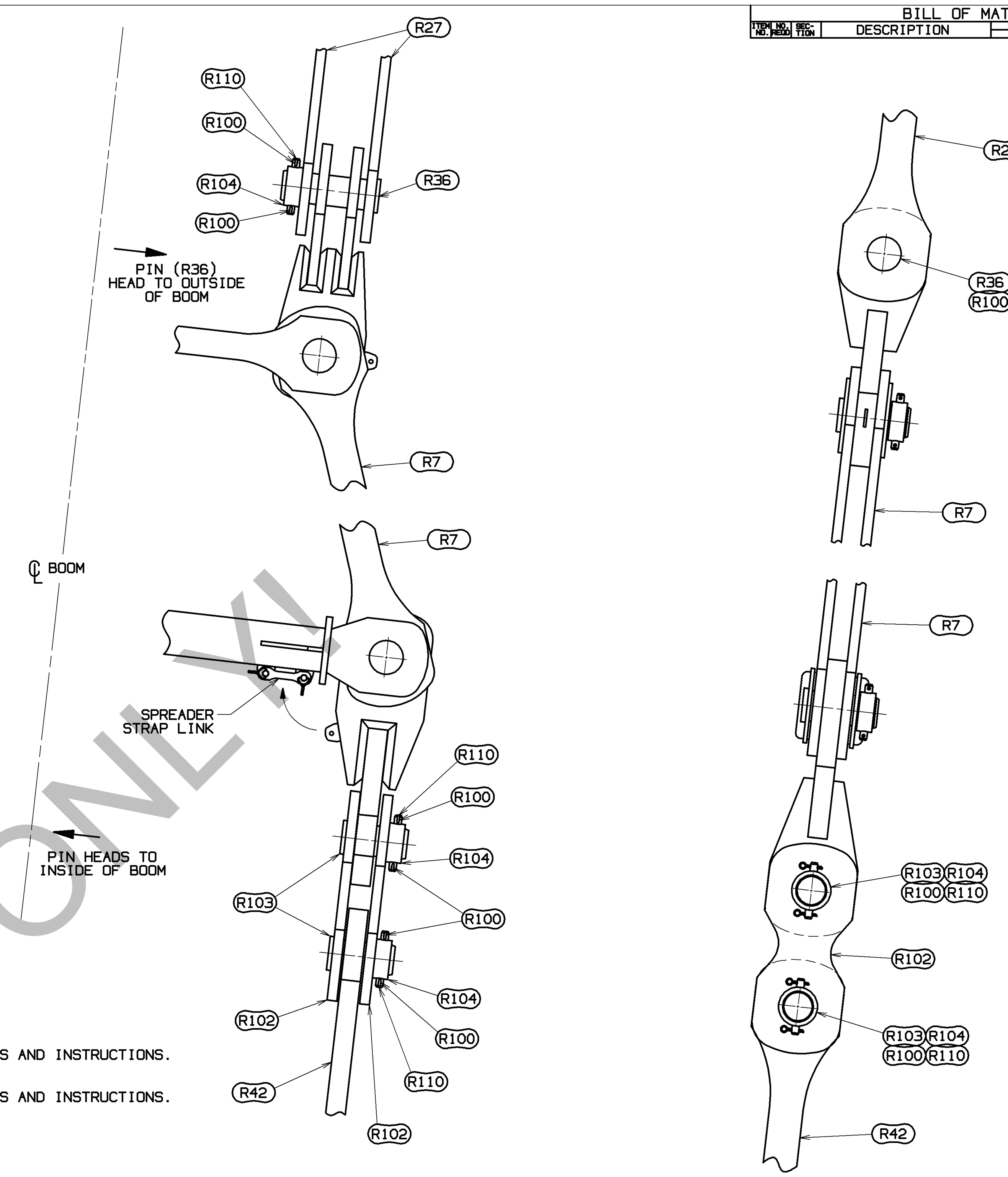
(37) RELOCATE FROM MAIN BOOM. (STOWS ON #680 BOOM INSERT 81021996).

(38) USE FOR 2 PART LINE ON UPPER BOOM POINT. CAN BE USED WITH 28MM ROPE ONLY.

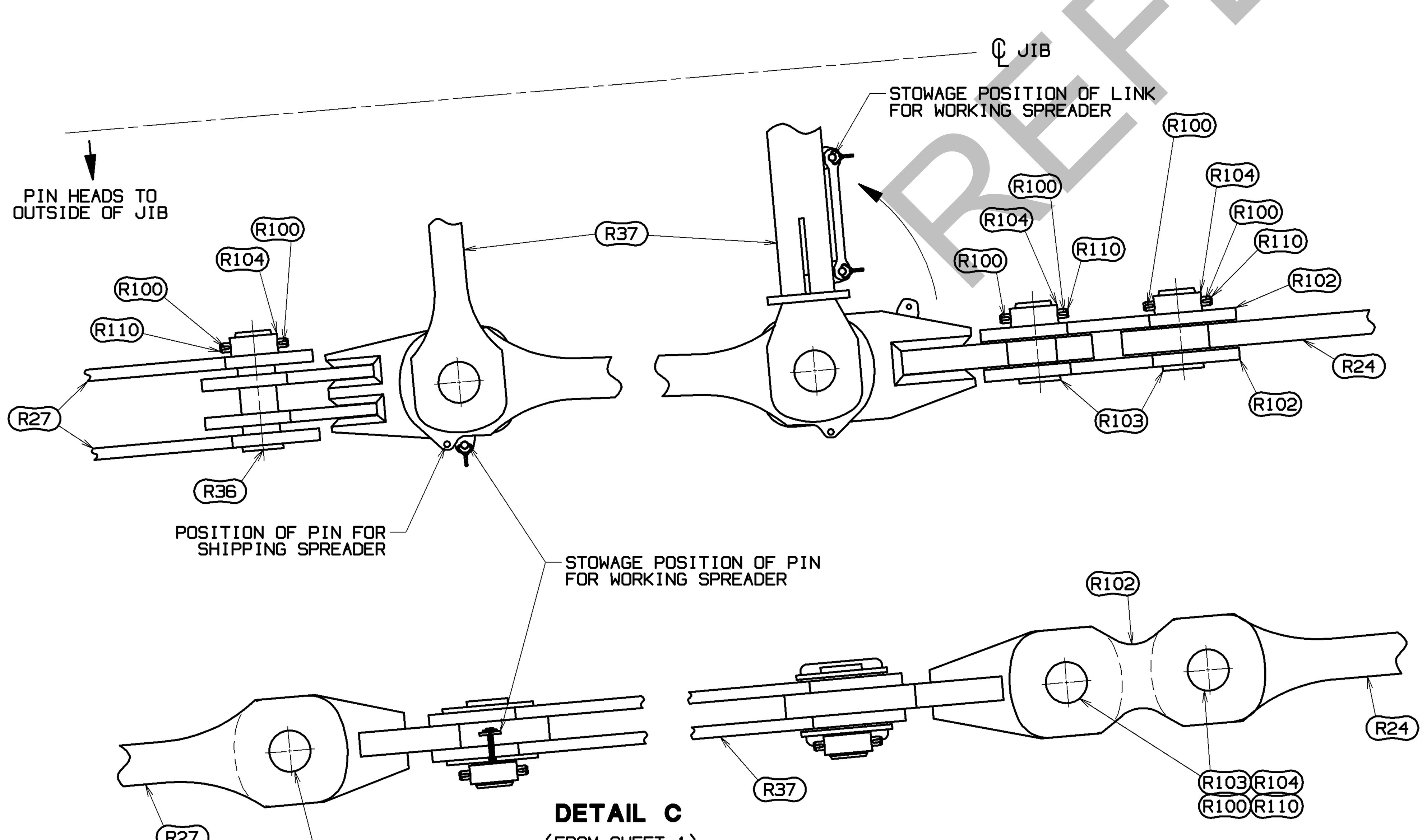
B7 (39) SUSPENSION PENDANT MAY APPEAR SLACK DURING RAISING AND OPERATION. CHECK SUSPENSION LOCATION AND PENDANT BUTTON NUMBER AND CONTINUE OPERATION.

B8 (40) IF EQUIPPED WITH LOWER BOOM CONNECTOR PIN COMPONENTS USED WITH HAND HELD CYLINDER (R204) 81030768, SEE DETAIL HHH ON SHEET 12.

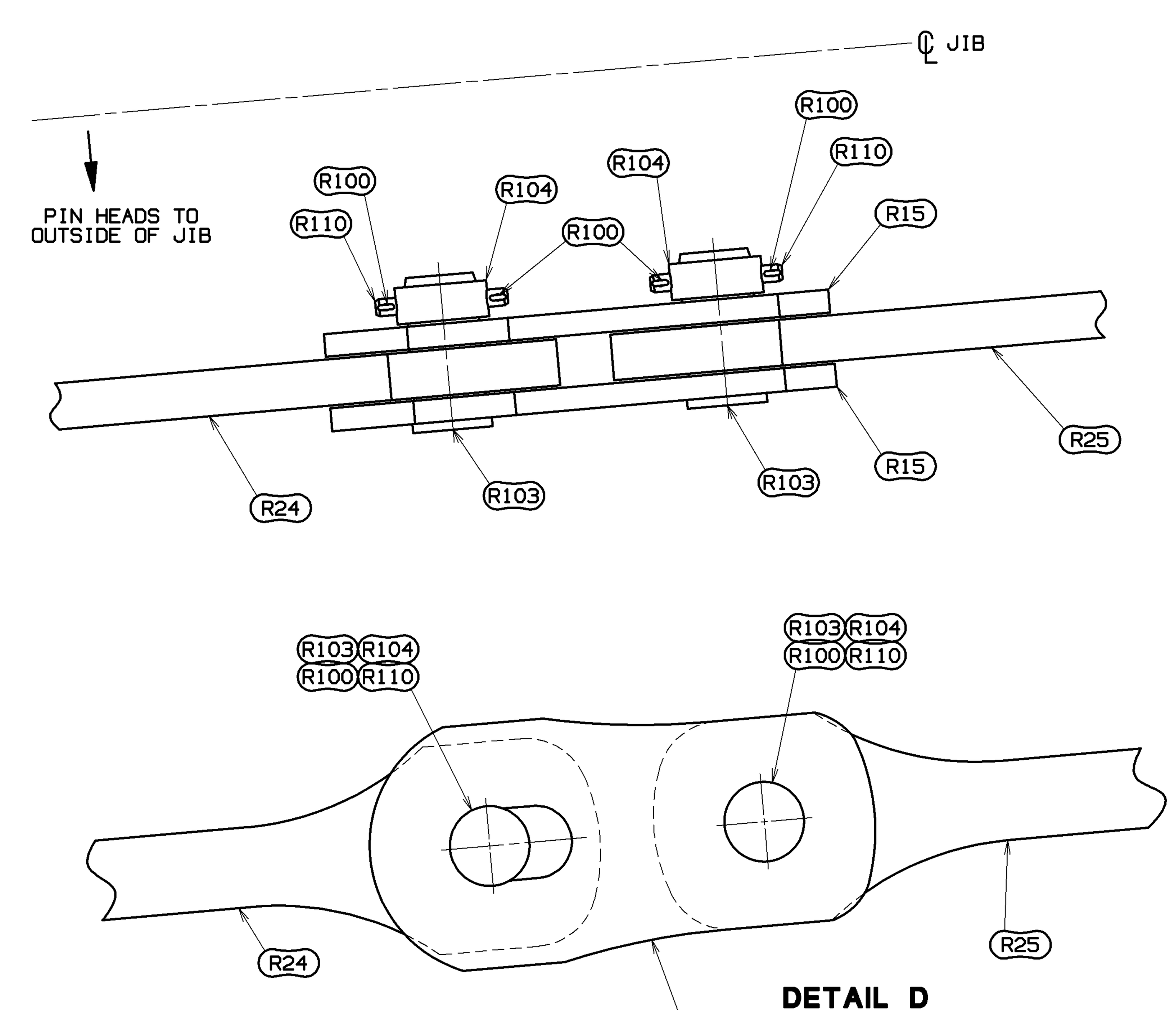
IF EQUIPPED WITH MANUAL LOWER BOOM CONNECTOR PINS, SEE DETAIL LLL ON SHEET 12.



DETAIL B
(FROM SHEET 1)
SCALE 0.100



DETAIL C
(FROM SHEET 1)
SCALE 0.150



DETAIL D
(FROM SHEET 1)
SCALE 0.250

BILL OF MATERIAL
ITEM NO. | REC. ITEM | DESCRIPTION | LENGTH IN | MATERIAL | CODE NO. OR DWG. NO

ASSEMBLIES USED ON

REVISIONS

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN GDS500-05-035

TOLERANCE UNLESS OTHERWISE SPECIFIED	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING
(1) PLACE 0.0	±.12	±.18	±.03
(2) PLACE 0.00	±.06	±.12	±.015
(3) PLACE 0.000			±.005
ANGLES	±1°30'		±0°30'

MACHINING TOLERANCE APPLIES TO THIS DIMENSION AND/OR SURFACE

SCALE NOTED
DR. AJB
CK. RHV
APP TJA

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin

MODEL MLC650

LUFFING JIB RIGGING
LJ on B10

DATE 05-23-16
REV. LTR. B
DWG. NO. 81018143

(21)

DO NOT SCALE THIS DRAWING

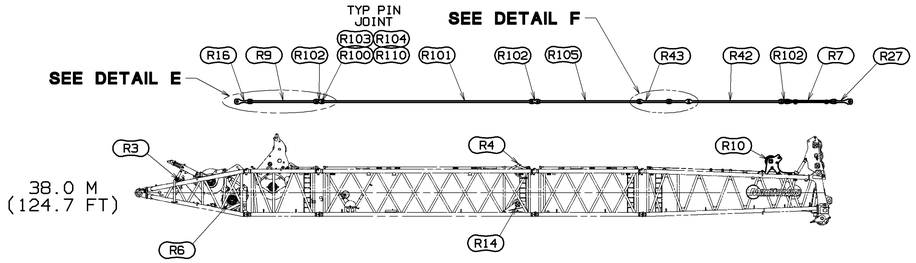
B7B8

BILL OF MATERIAL					
ITEM NO. / SEC. NO. / PRESS / TTCH	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR STAND. NO.	

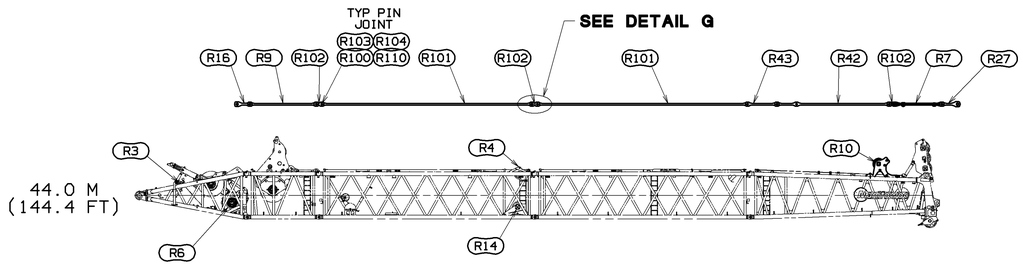
ASSEMBLIES USED ON

REVISIONS

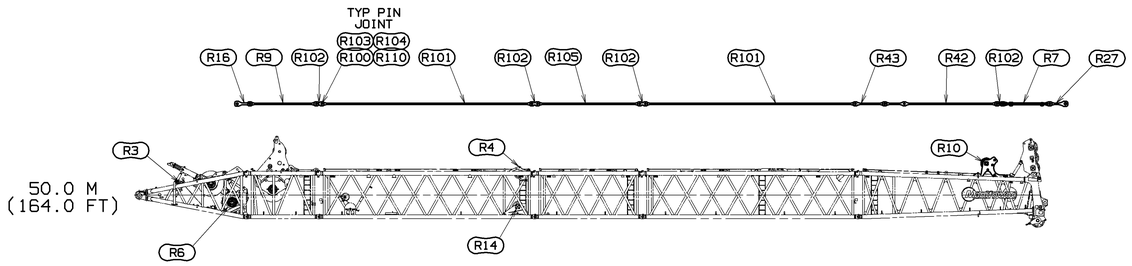
38.0 M (124.7 FT)



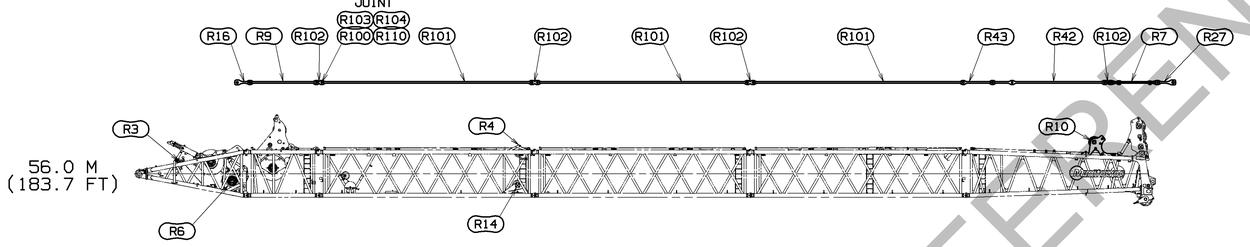
44.0 M (144.4 FT)



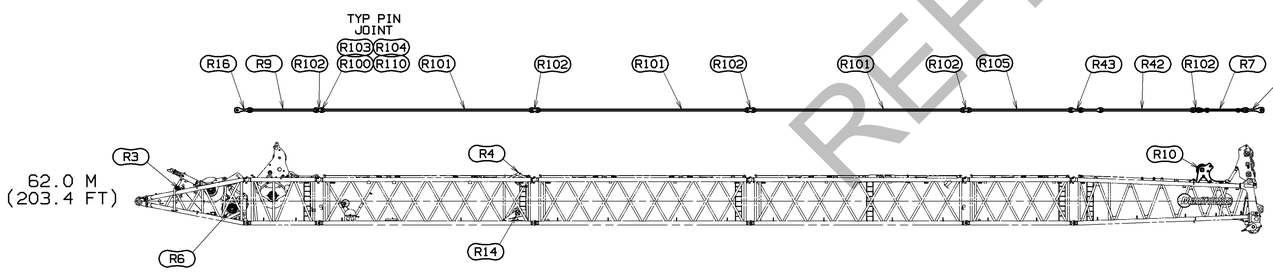
50.0 M (164.0 FT)



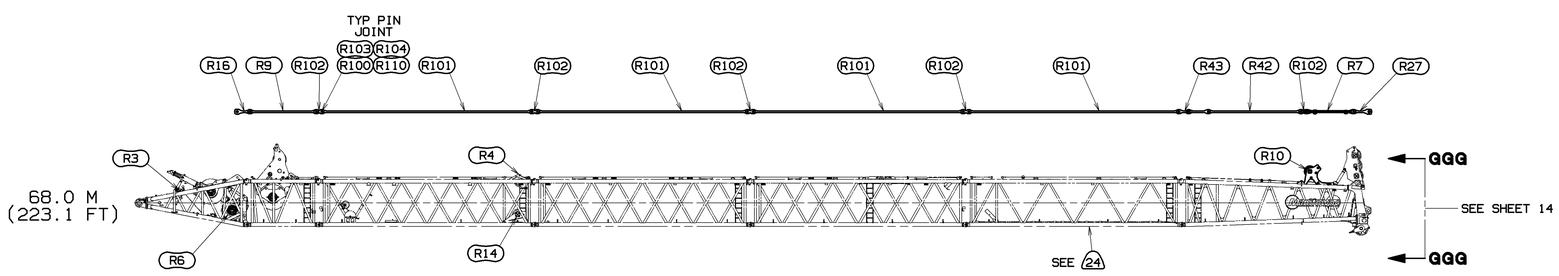
56.0 M (183.7 FT)



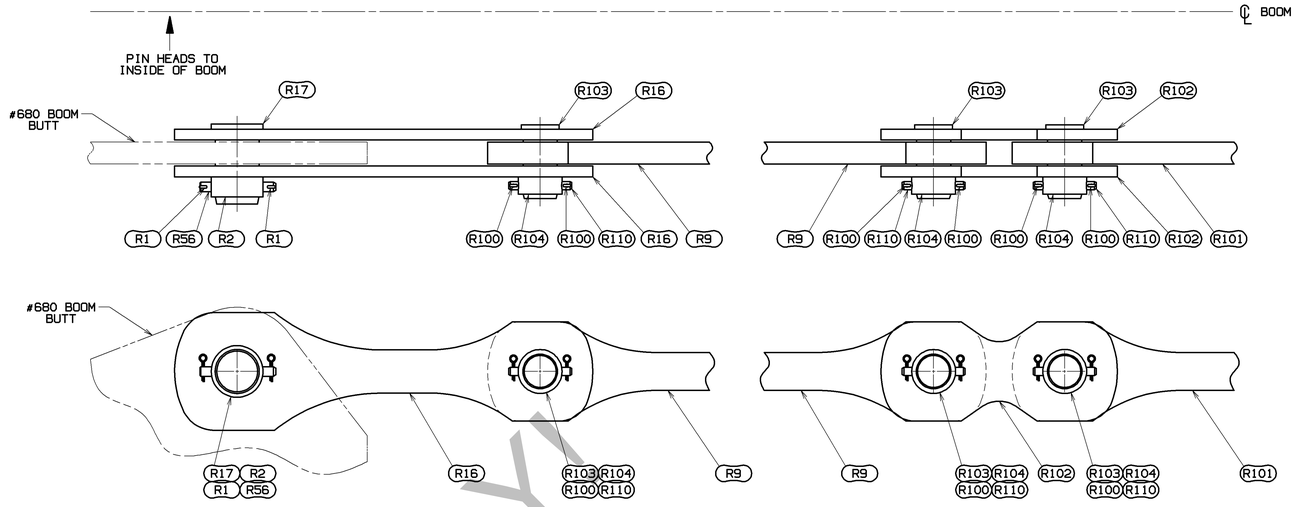
62.0 M (203.4 FT)



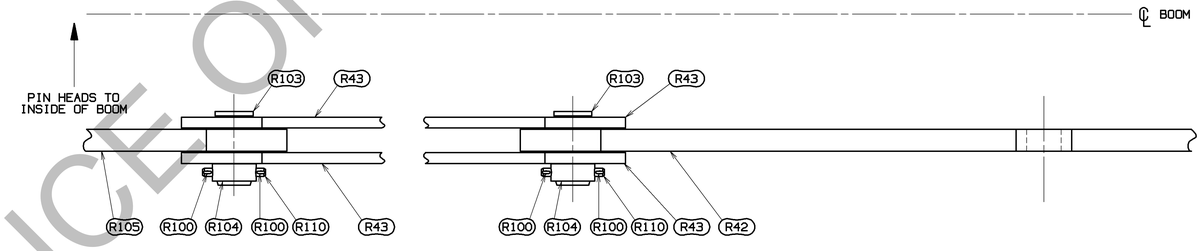
68.0 M (223.1 FT)

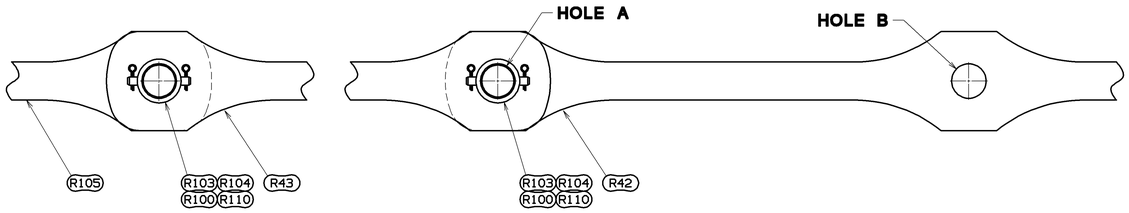


REQ'D. #680 BOOM/BACKSTAY STRAP ASSEMBLY
SEE TABLE ON SHEET 2
FOR TYP PIN JOINT SEE DETAILS A, B, E, F & G
SEE 34

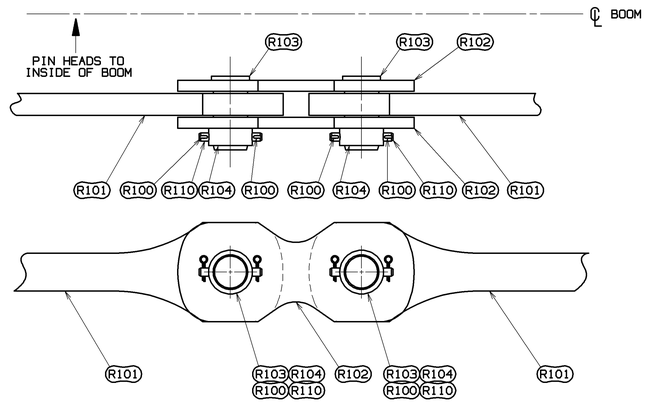


DETAIL E
SCALE 0.200





DETAIL F
JIB BACKSTAY ADJUSTMENT
SEE TABLE (SHEET 2) FOR HOLE "A" OR HOLE "B" ATTACHMENT FOR VARIOUS BOOM LENGTHS
SCALE 0.200



DETAIL G
SCALE 0.200

DWG. NO. 81018143
SHT 3 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 8829102794 FOR COMPONENTS LISTED IN GS5500-05-035

DATE 05-23-16
REV. LTR. B

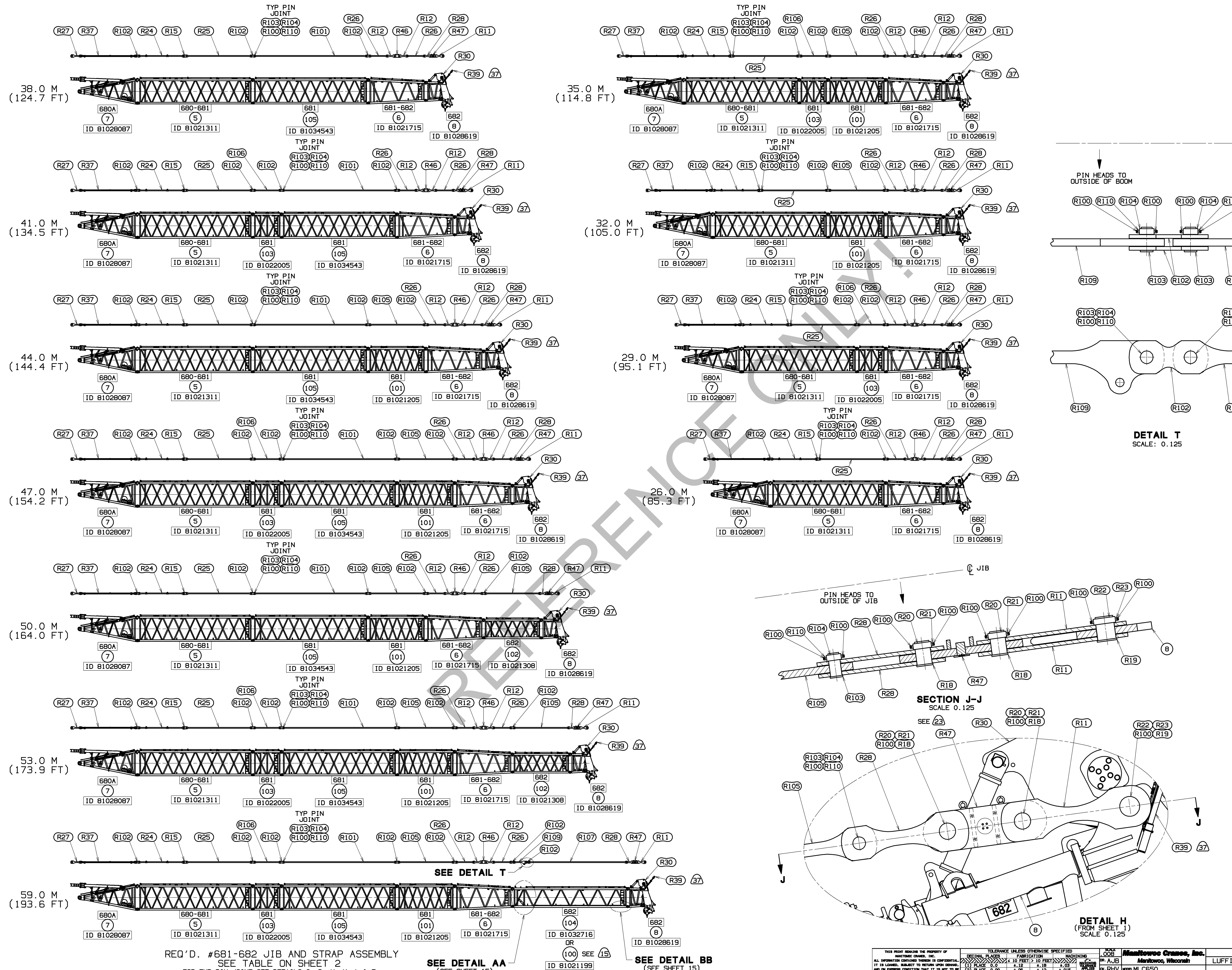
TOLERANCE UNLESS OTHERWISE SPECIFIED

DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING
(1) PLACE	0.0 ±.12	±.18	±.03
(2) PLACE	0.00 ±.06	±.12	±.015
(3) PLACE	0.000		±.005
ANGLES	±1°30'		±0°30'

UNLESS OTHERWISE SPECIFIED DIMENSIONS APPLY AFTER FINISH

CODE 008	Manitowoc Cranes, Inc.		
DR. AJB	Manitowoc, Wisconsin	LUFFING JIB RIGGING	
CK. RHV	MODEL MLC650	LJ on B10	
APP TJA			DWG. NO. 81018143

DO NOT SCALE THIS DRAWING



DO NOT SCALE THIS DRAWING

BILL OF MATERIAL							
ITEM NO.	NO. REQD	SEC-TION	DESCRIPTION	LENGTH IN.	MATERIAL	CODE NO. OR DWG. NO	

ASSEMBLIES USED ON

REVISIONS

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN GDS500-05-035

TOLERANCE UNLESS OTHERWISE SPECIFIED				
DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING	
(1) PLACE 0.0	±.12	±.18	±.03	√ = MACHINING TOLERANCE APPLIES TO THIS DIMENSION AND/OR SURFACE
(2) PLACE 0.00	±.06	±.12	±.015	
(3) PLACE 0.000			±.005	
ANGLES	±1°30′		±0°30′	

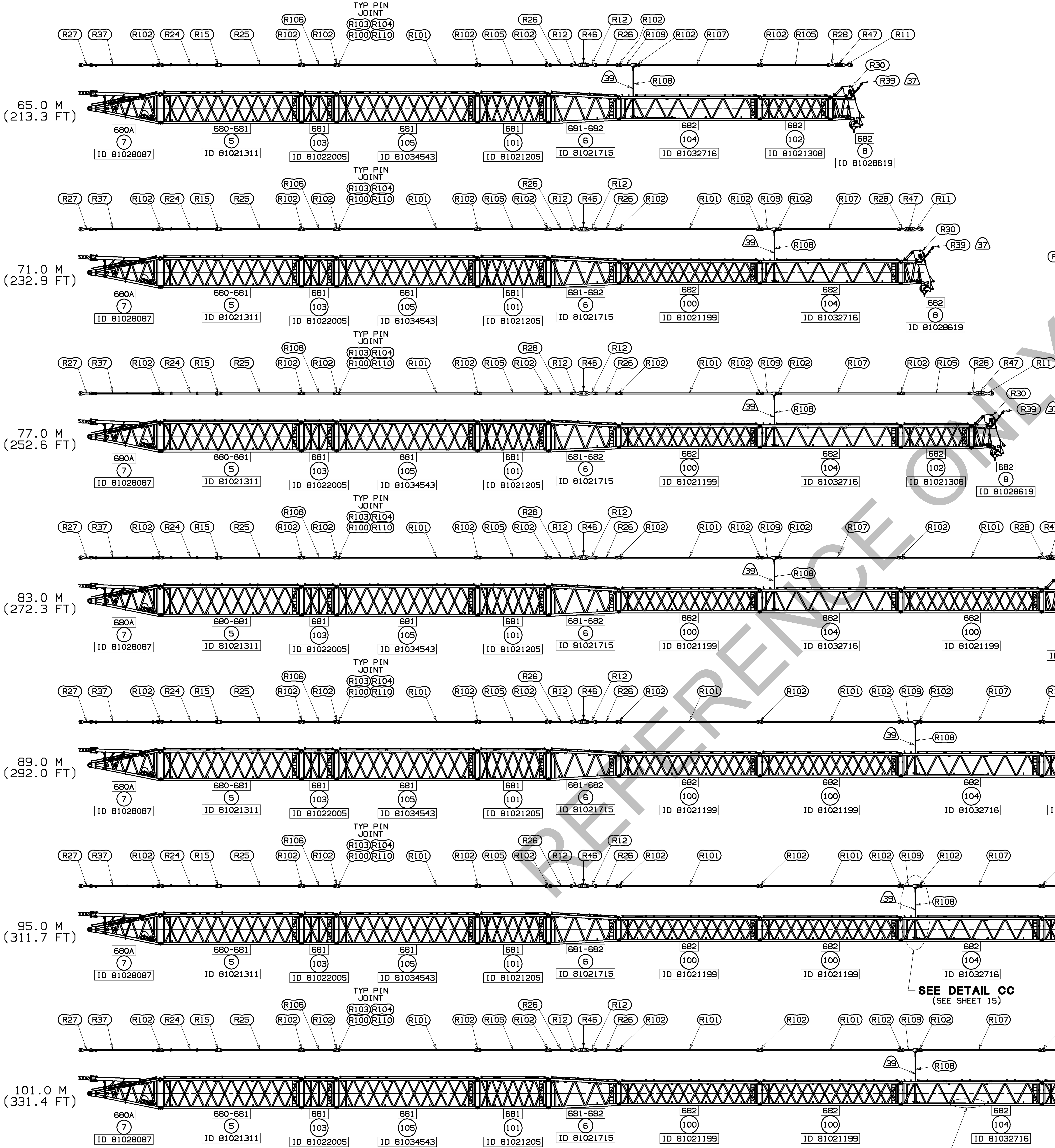
SCALE .008	Manitowoc Cranes, Inc.		DATE 05-23-16
DR. AJB	Manitowoc, Wisconsin	LUFFING JIB RIGGING	REV. LTR. B
CK. RHV	MODEL MLC650	LJ on B10	
APP TJA			DWG. NO. 81018143

21

BILL OF MATERIAL					
TYPE NO.	DESCRIPTION	LENGTH	MATERIAL	CODE NO.	

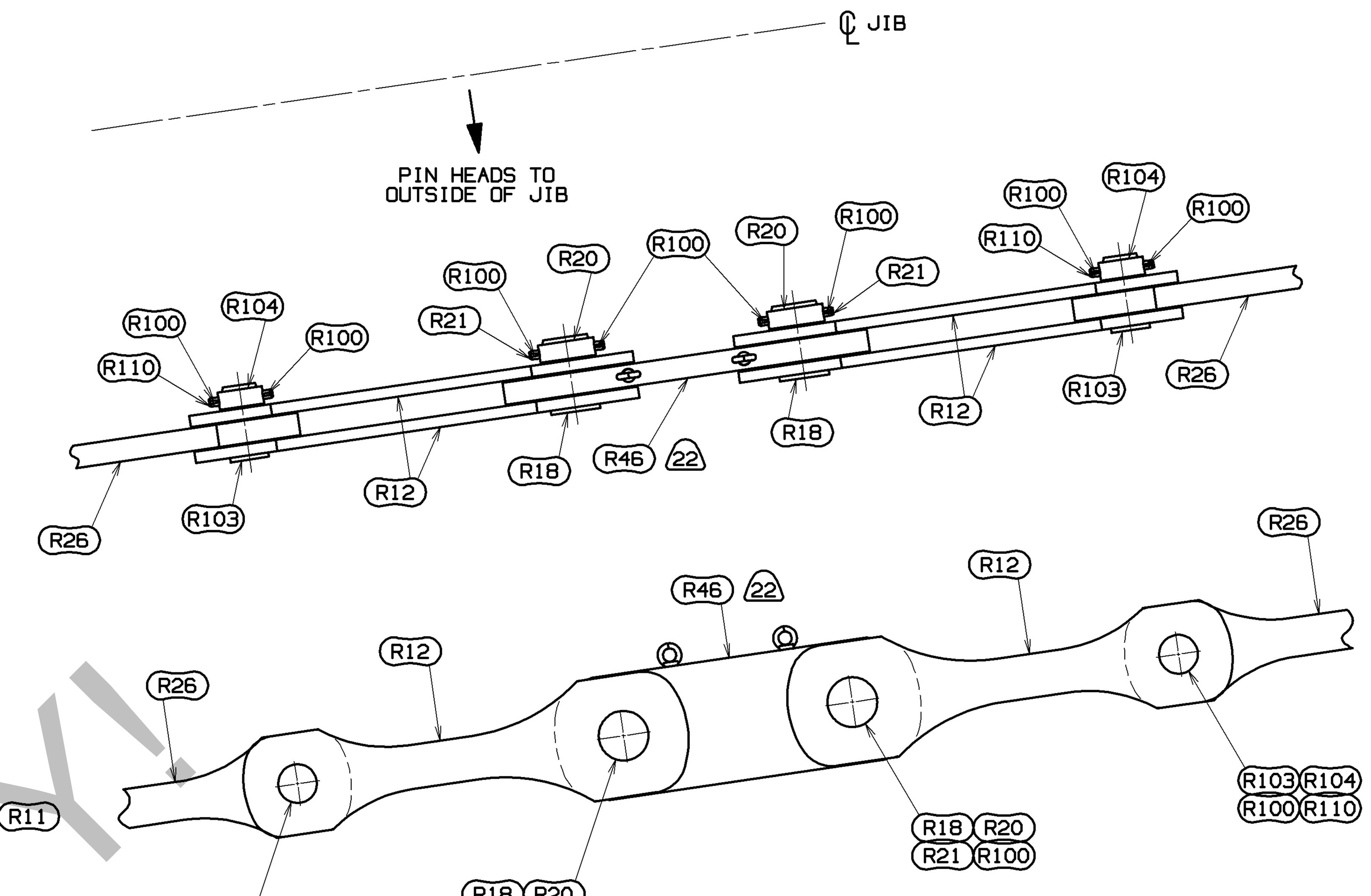
ASSEMBLIES USED ON

REVISIONS

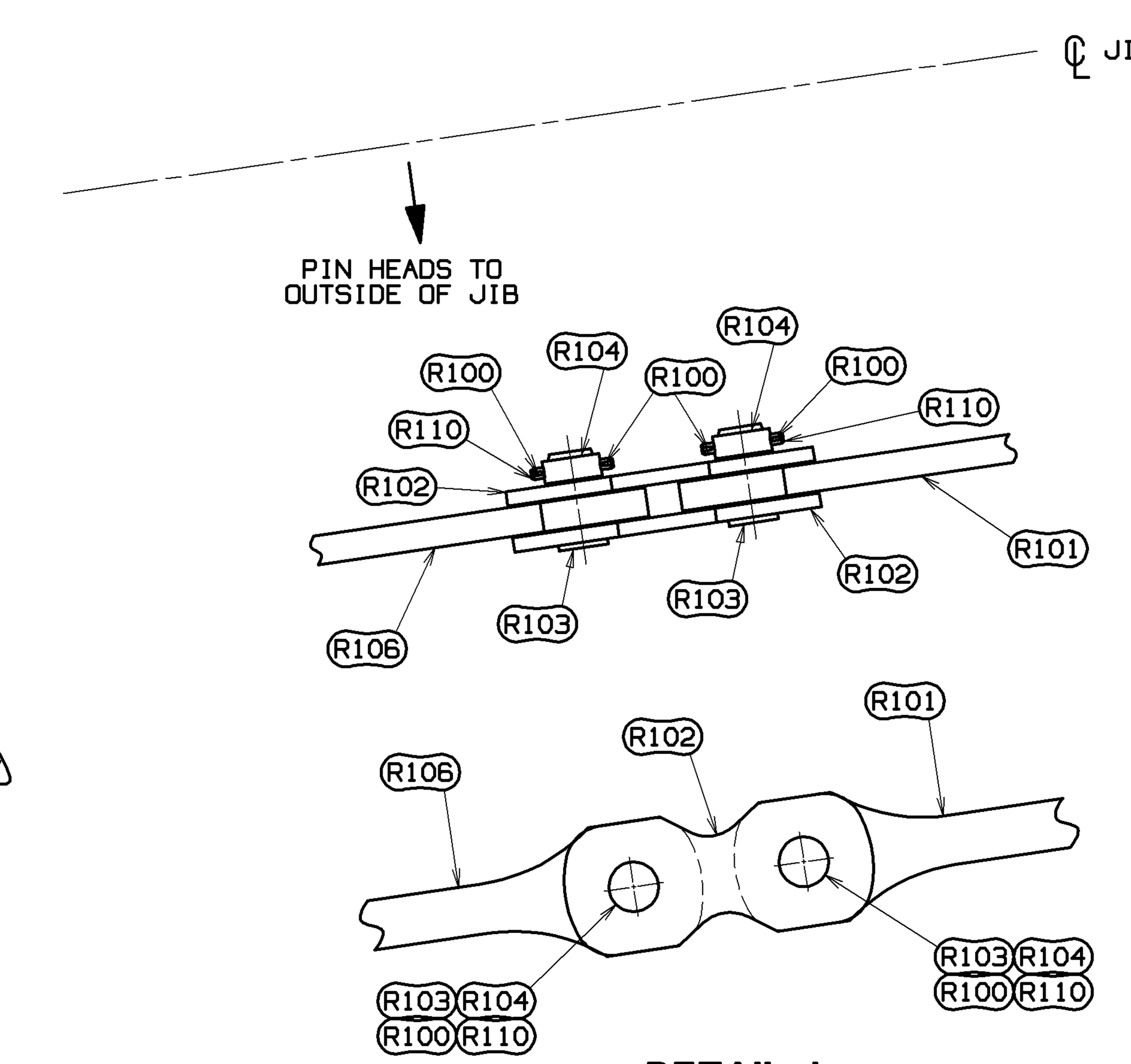


SEE DETAIL CC
(SEE SHEET 15)

SEE DETAIL DD
(SEE SHEET 15)



DETAIL K
(FROM SHEET 1)
SCALE 0.120



DETAIL L
(FROM SHEET 1)
SCALE 0.120

REQ'D. #681-682 JIB AND STRAP ASSEMBLY
SEE TABLE ON SHEET 2
FOR TYP PIN JOINTS SEE DETAILS C, D, H, K, L & T

DO NOT SCALE THIS DRAWING

TOLERANCE UNLESS OTHERWISE SPECIFIED				
DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING	
(1) PLACE 0.0	±.12	±.18	±.03	√= MACHINING TOLERANCE APPLIES TO THIS DIMENSION AND/OR SURFACE
(2) PLACE 0.00	±.06	±.12	±.015	
(3) PLACE 0.000			±.005	
ANGLES	±1°30′		±0°30′	

SCALE .008
DR. AJB
CK. RHV
APP TJA

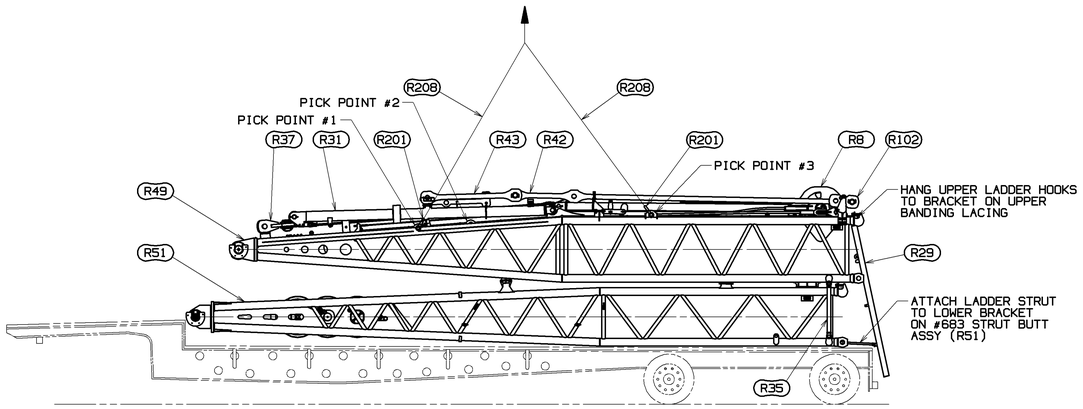
Manitowoc Cranes, Inc.
Manitowoc, Wisconsin
MODEL MLC650

LUFFING JIB RIGGING
LJ on B10

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN GDS500-05-035

DATE 05-23-16
REV. LTR. B
DWG. NO. 81018143

(21)

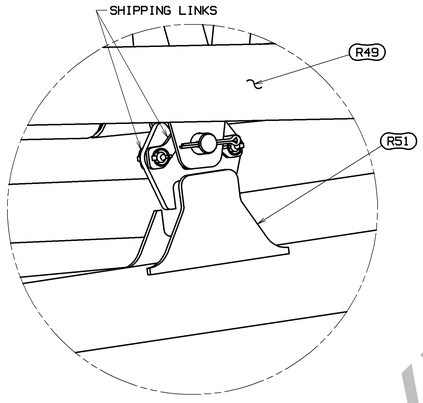


STEP 1

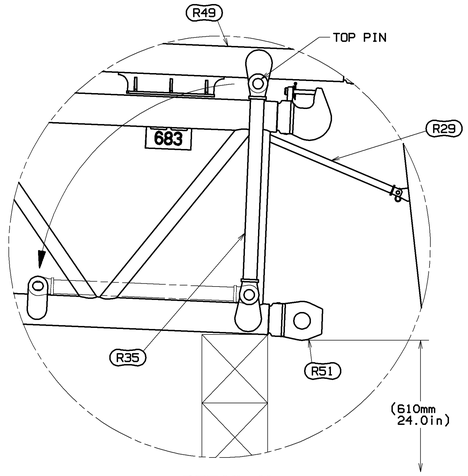
UNLOAD

REMOVE LADDER (R29) FROM STOWAGE LOCATION ON JIB STRUT BUTT ASSY (R51).
PLACE UPPER LADDER HOOKS ON BRACKET OF UPPER BANDING LACING ON MAIN STRUT BUTT ASSY (R49).
ATTACH LADDER STRUT TO LOWER BRACKET ON JIB STRUT BUTT ASSY (R51).

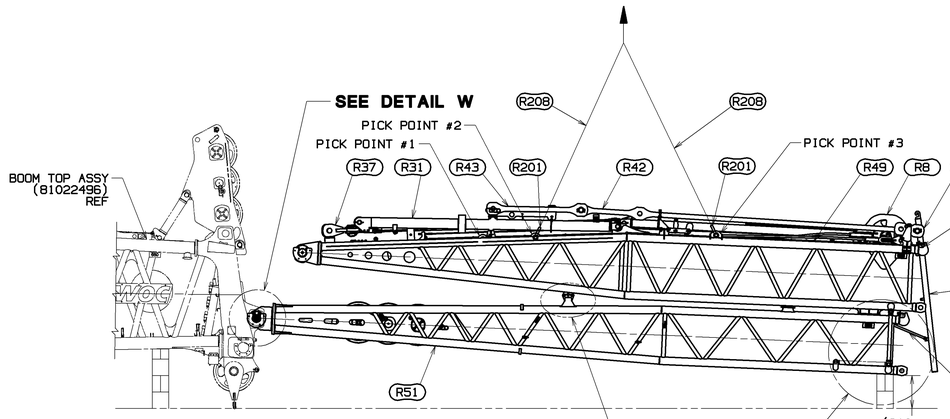
USING LADDER (R29) FOR ACCESS, ATTACH STRUT BUTT SHIPPING ASSY (ITEM 1) TO ASSIST CRANE WITH (4) SLINGS (R208) AND (4) SHACKLES (R201) ATTACHED TO PICK POINTS #1 AND #3 OF MAIN STRUT BUTT.
LIFT BOTH STRUT BUTTS (ITEM 1) FROM TRAILER AND PROCEED TO STEP 2.



DETAIL U
SCALE 0.250



DETAIL V
SCALE 0.100



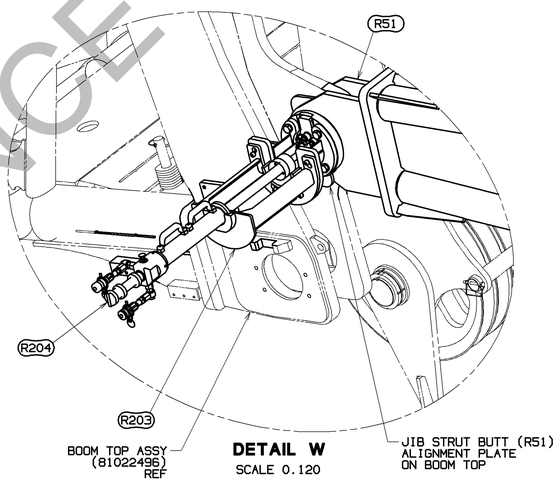
STEP 2

JIB STRUT BUTT ASSEMBLY

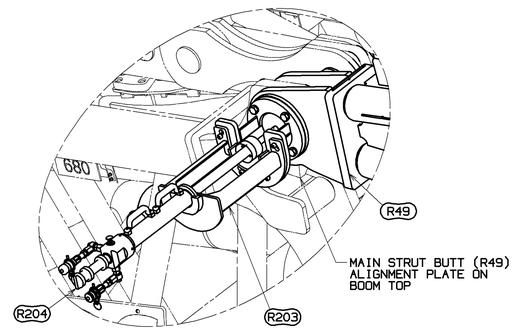
USING ASSIST CRANE POSITION JIB STRUT BUTT (R51) ON BOOM TOP ALIGNMENT PLATES. (SEE DETAIL W).
ATTACH PIN PULLER CAGE WELDMENT (R203) 2-PLACES AND POSITION PIN PULLER ASSY (R204).
ACTIVATE CYLINDER TO INSTALL HINGE PIN INTO JIB STRUT BUTT (R51).

BLOCK JIB STRUT BUTT (R51) APPROXIMATELY AS INDICATED TO ACCOMMODATE PROPER FIT OF JIB STRUT TOP (R52) IN STEP 5 ON SHEET 7.
HANG LADDER HOOKS ON BRACKET OF UPPER BANDING LACING. REATTACH LADDER STRUT TO UPPER BRACKET ON STRUT BUTT ASSY (R51).
USING LADDER (R29) FOR ACCESS, REPOSITION TO LIFTING POINTS #2 AND #3 TO HANDLE MAIN STRUT BUTT ASSY (R49) INDEPENDANT FROM JIB STRUT BUTT ASSY (R51). WHEN COMPLETED RETURN LADDER (R29) TO STOWAGE POSITION ON JIB STRUT BUTT ASSY (R51).

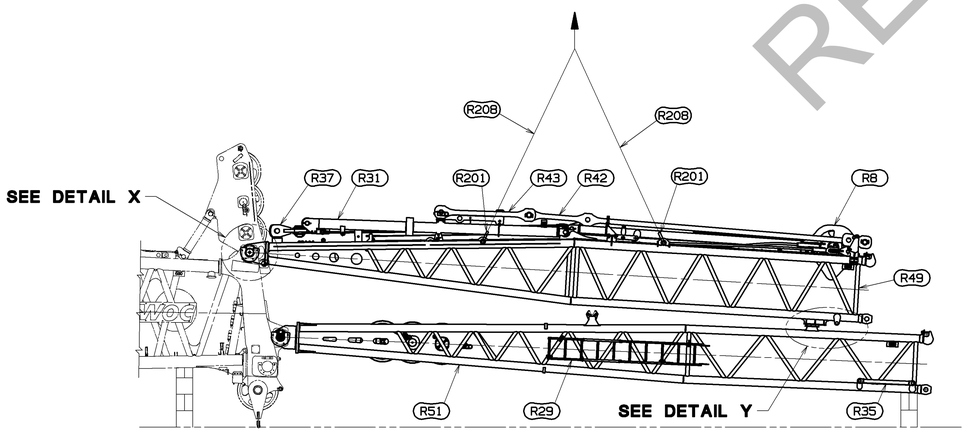
REMOVE SHIPPING LINKS (SEE DETAIL U). REMOVE TOP PIN OF STRUT SUPPORT (R35) AND ROTATE STRUT INTO HORIZONTAL OR STOWAGE POSITION ON JIB STRUT BUTT (R51). (SEE DETAIL V)



DETAIL W
SCALE 0.120



DETAIL X
SCALE 0.120

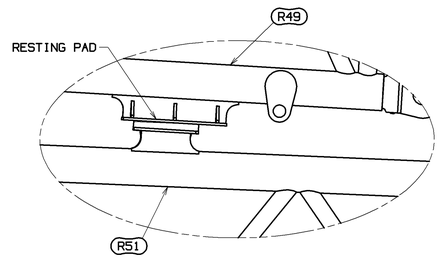


STEP 3

MAIN STRUT BUTT ASSEMBLY

USING ASSIST CRANE POSITION MAIN STRUT BUTT ASSY (R49) ON BOOM TOP ALIGNMENT PLATES (SEE DETAIL X).
ATTACH PIN PULLER CAGE WELDMENT (R203) 2-PLACES AND POSITION PIN PULLER ASSY (R204).
ACTIVATE CYLINDER TO INSTALL HINGE PIN INTO MAIN STRUT BUTT (R49).

LOWER MAIN STRUT BUTT (R49) ON JIB STRUT BUTT (R51) AT RESTING PAD. (SEE DETAIL Y).



DETAIL Y
SCALE 0.120

BILL OF MATERIAL

ITEM NO. / PIECE NO.	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR STAND. NO.

ASSEMBLIES USED ON

REVISIONS

DWG. NO. 81018143
SHT 6 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 88291037?4 FOR COMPONENTS LISTED IN GS5500-05-036

DATE 05-23-16
REV. LTR. B

TOLERANCE UNLESS OTHERWISE SPECIFIED

DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING	MACHINING TOLERANCE APPLIES TO ALL DIMENSION ON THE DRAWING
(1) PLACE 0.0	±.12	±.18	±.03	
(2) PLACE 0.00	±.06	±.12	±.015	
(3) PLACE 0.000			±.005	
ANGLES	±1°30'		±0°30'	

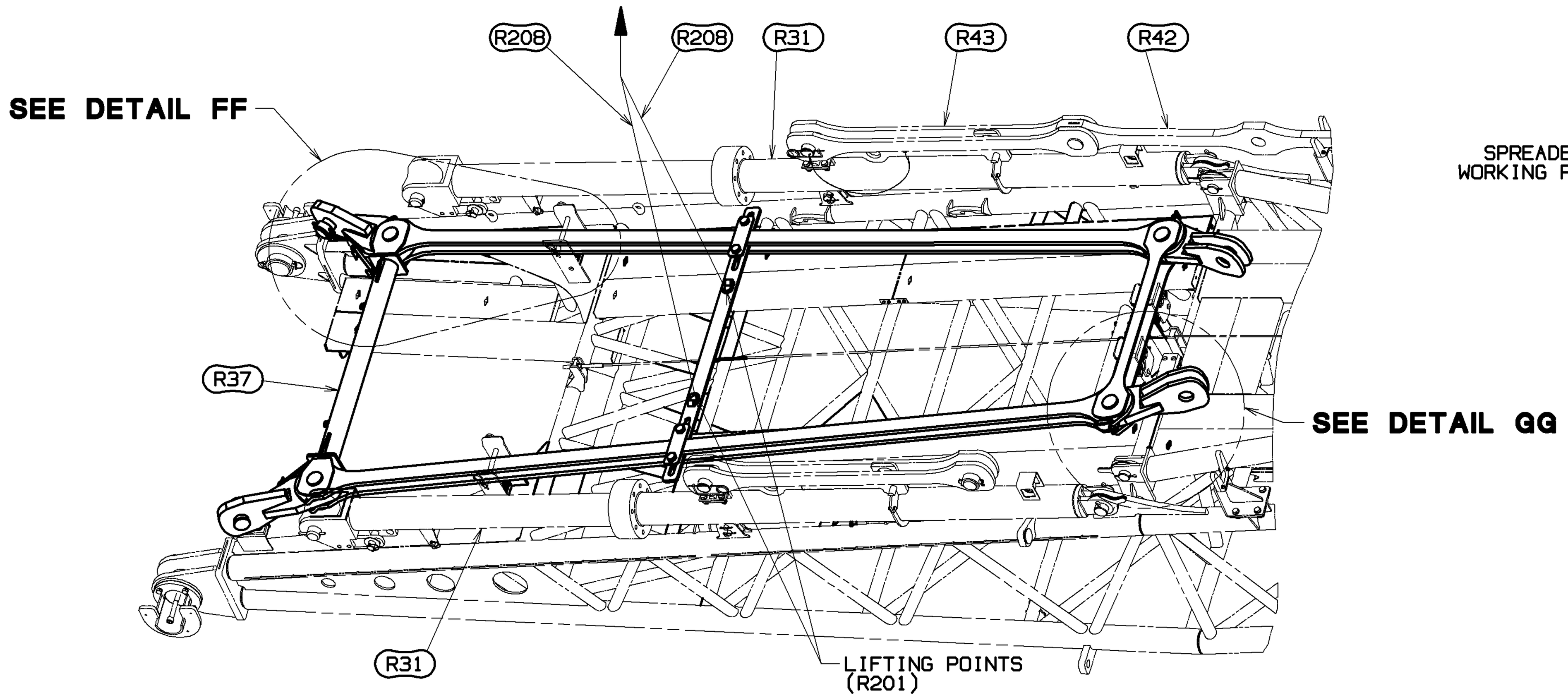
DES. .025
DR. AJB
CK. RHV
APP TJA

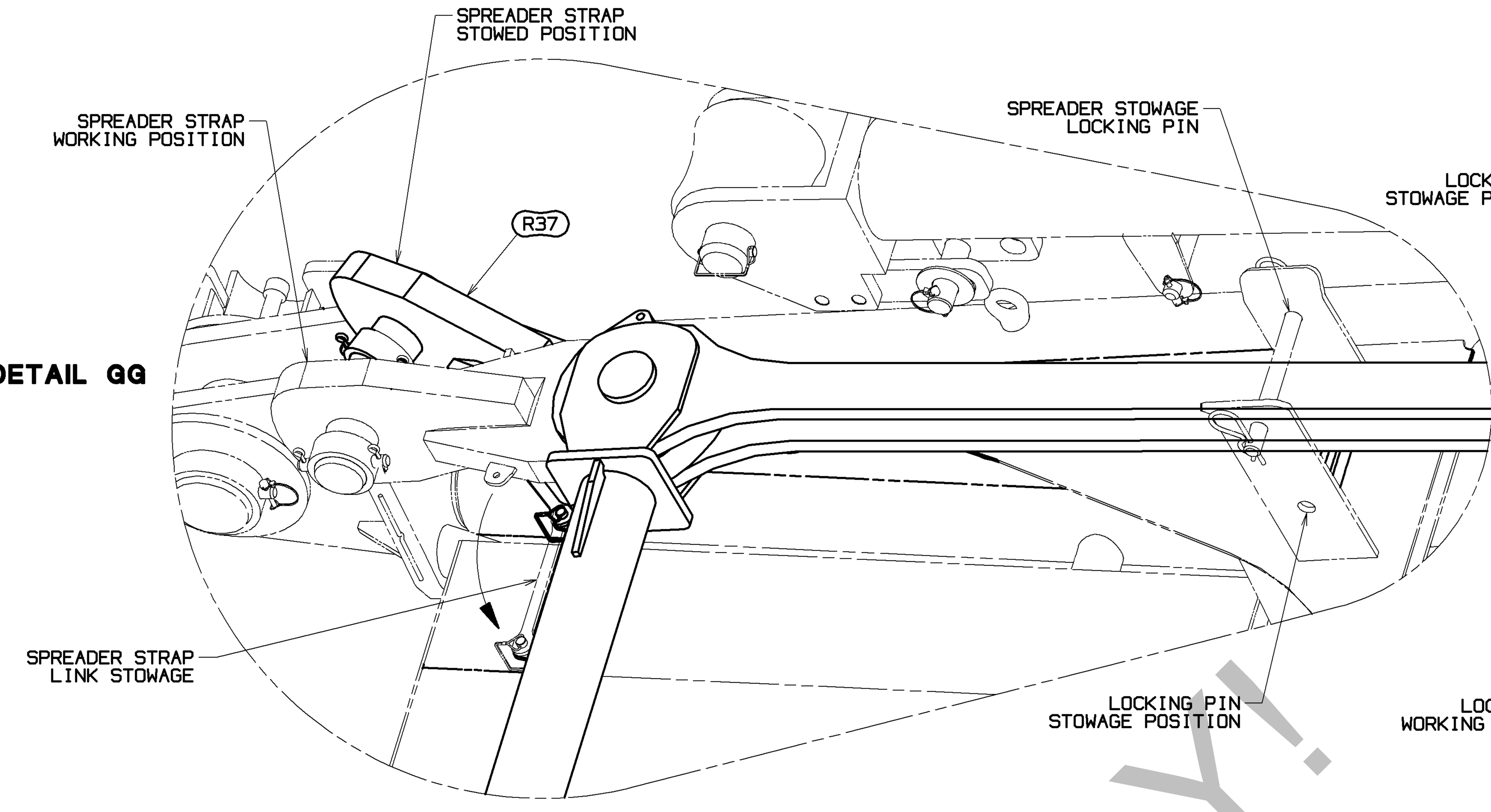
Manitowoc Cranes, Inc.
Manitowoc, Wisconsin

MODEL MLC650

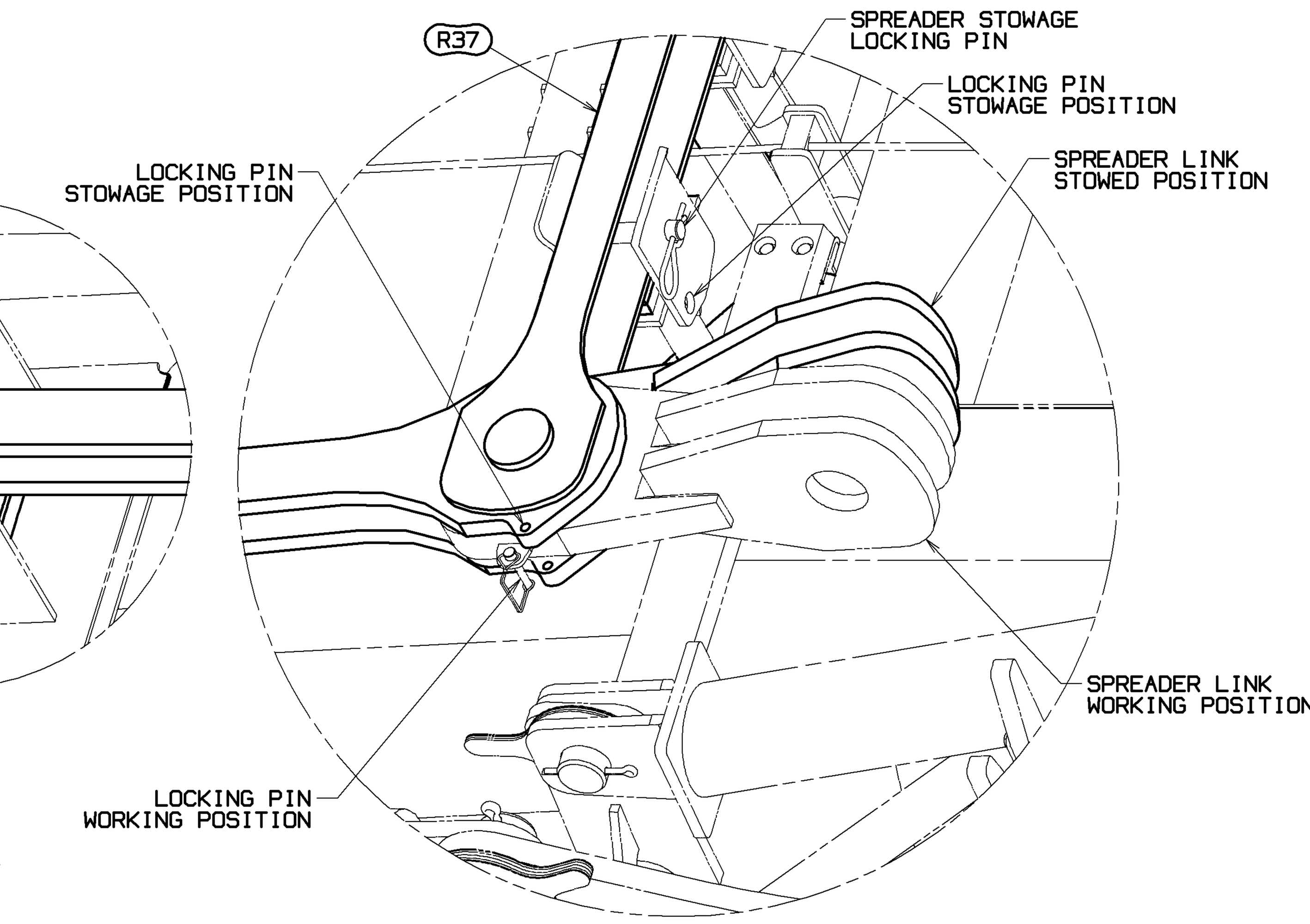
LUFFING JIB RIGGING
LJ on B10

DWG. NO. 81018143

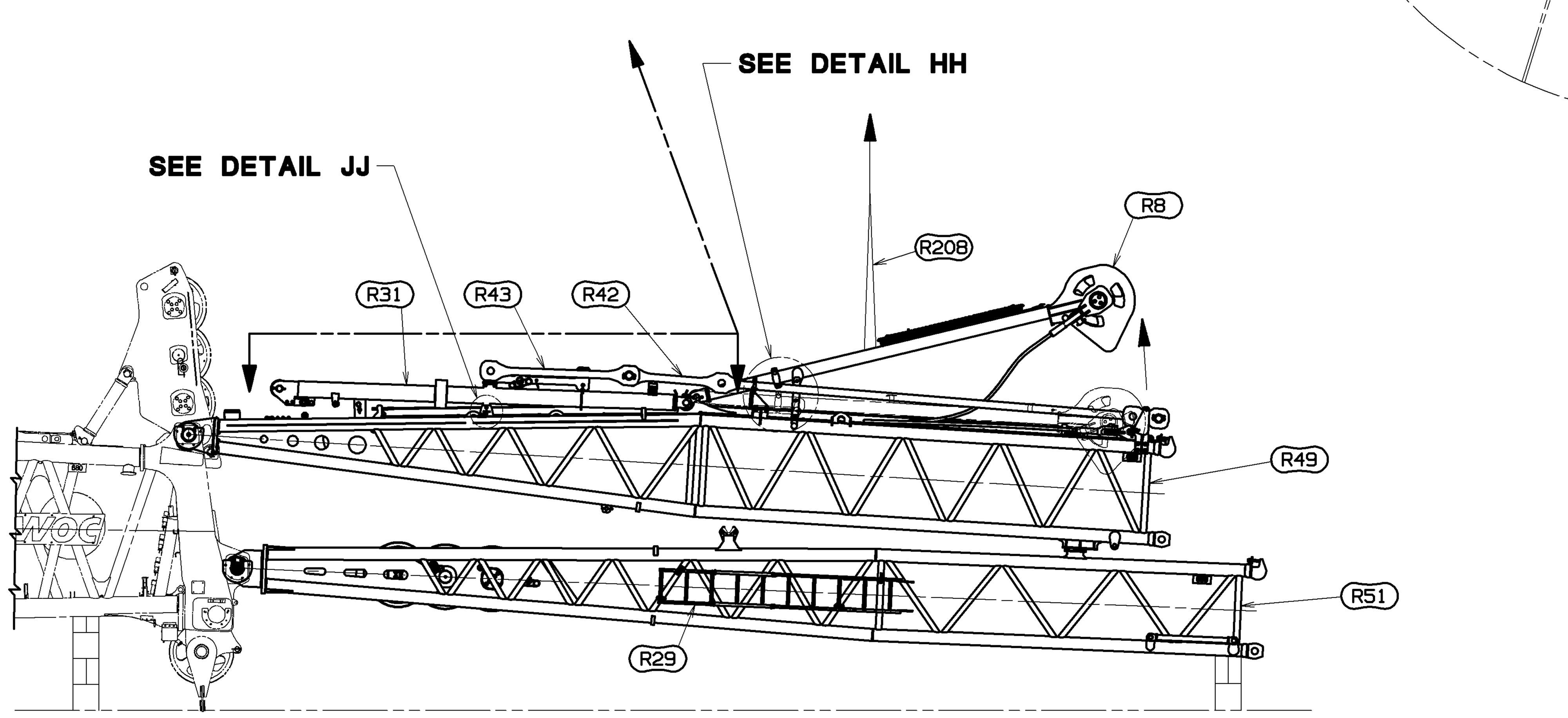




DETAIL FF
SCALE 0.200



DETAIL GG
SCALE 0.200



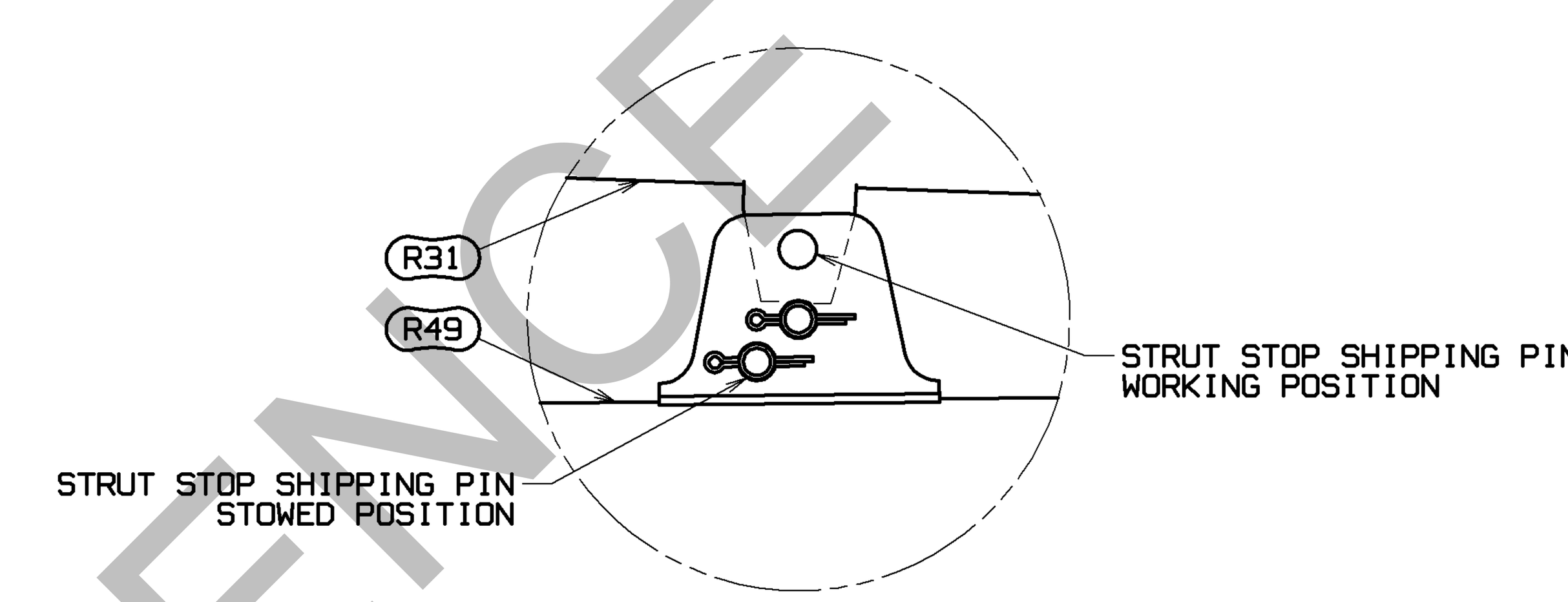
STEP 4

STRUT RAISING ARM ERECTION

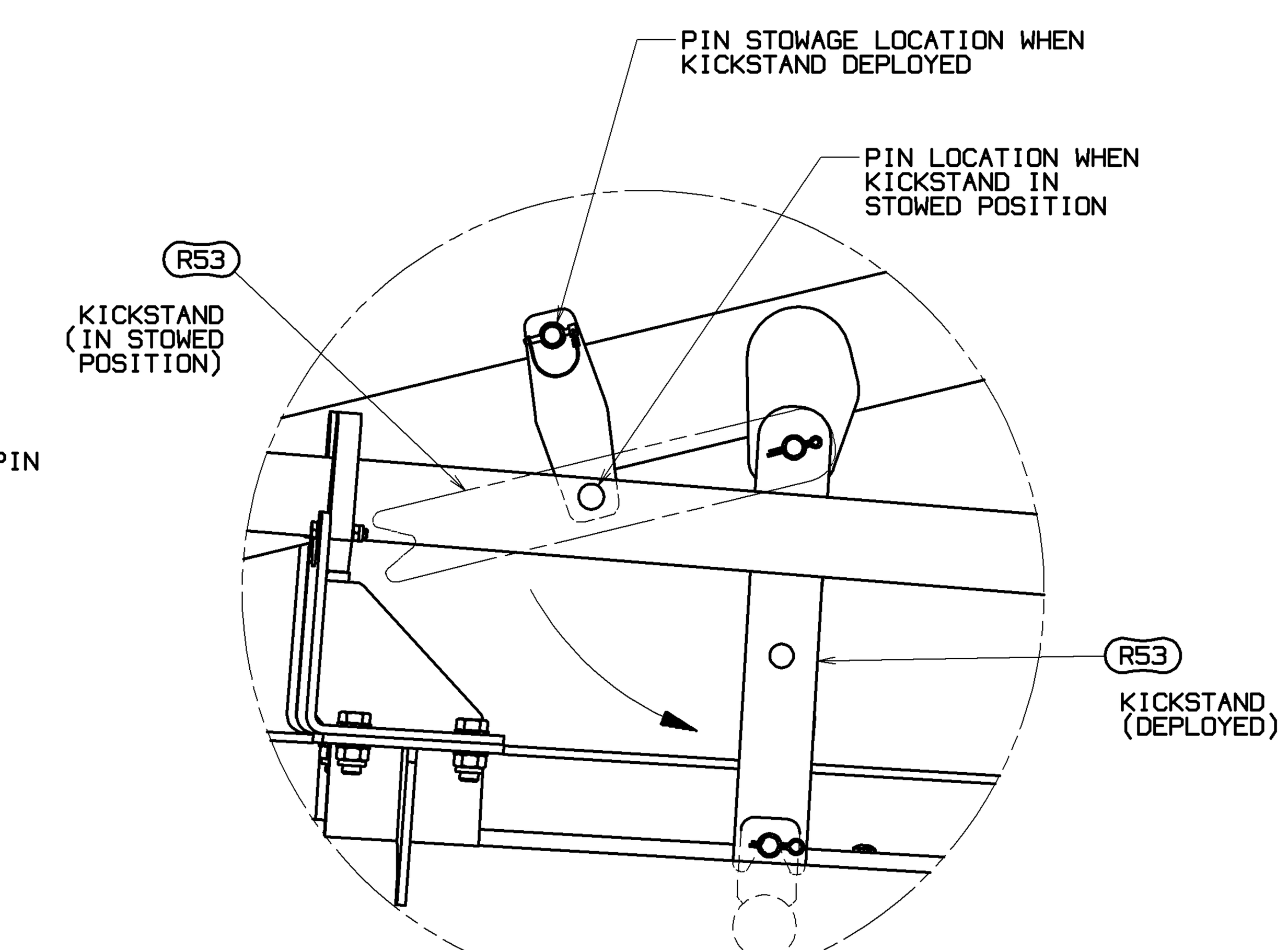
USING LIFTING POINTS PROVIDED REMOVE FRONTSTAY SPREADER ASSY (R37) FROM MAIN STRUT BUTT ASSY (R49). PLACE SPREADER ASSY (R37) IN A LOCATION TO BE USED FOR ASSEMBLY STEP 8. (SEE SHEET 10). POSITION SPREADER STRAPS (SEE DETAIL FF) AND SPREADER LINKS (SEE DETAIL GG) IN WORKING POSITION.

USING ASSIST CRANE BASKET A SLING (R208) AROUND THE HORIZONTAL SUPPORT MIDWAY UP THE STRUT RAISING ARM (R8) RAISE STRUT RAISING ARM (R8) TO DEPLOY KICKSTAND (R53). (SEE DETAIL HH).

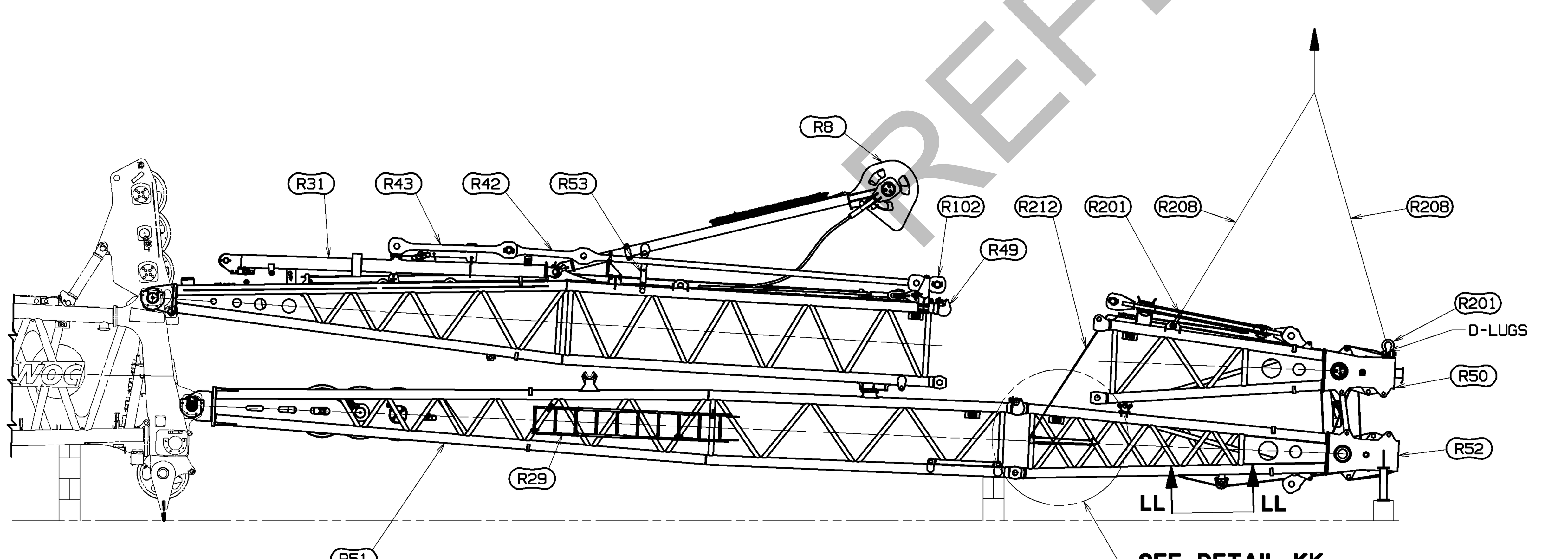
REMOVE STRUT STOP (R31) SHIPPING PIN AND LOCATE IN STOWED POSITION. (SEE DETAIL JJ). STRUT STOP (R31) IS NOW FREE TO PIVOT INTO POSITION AT STEP 13 ON SHEET 11.



DETAIL JJ
SCALE 0.250



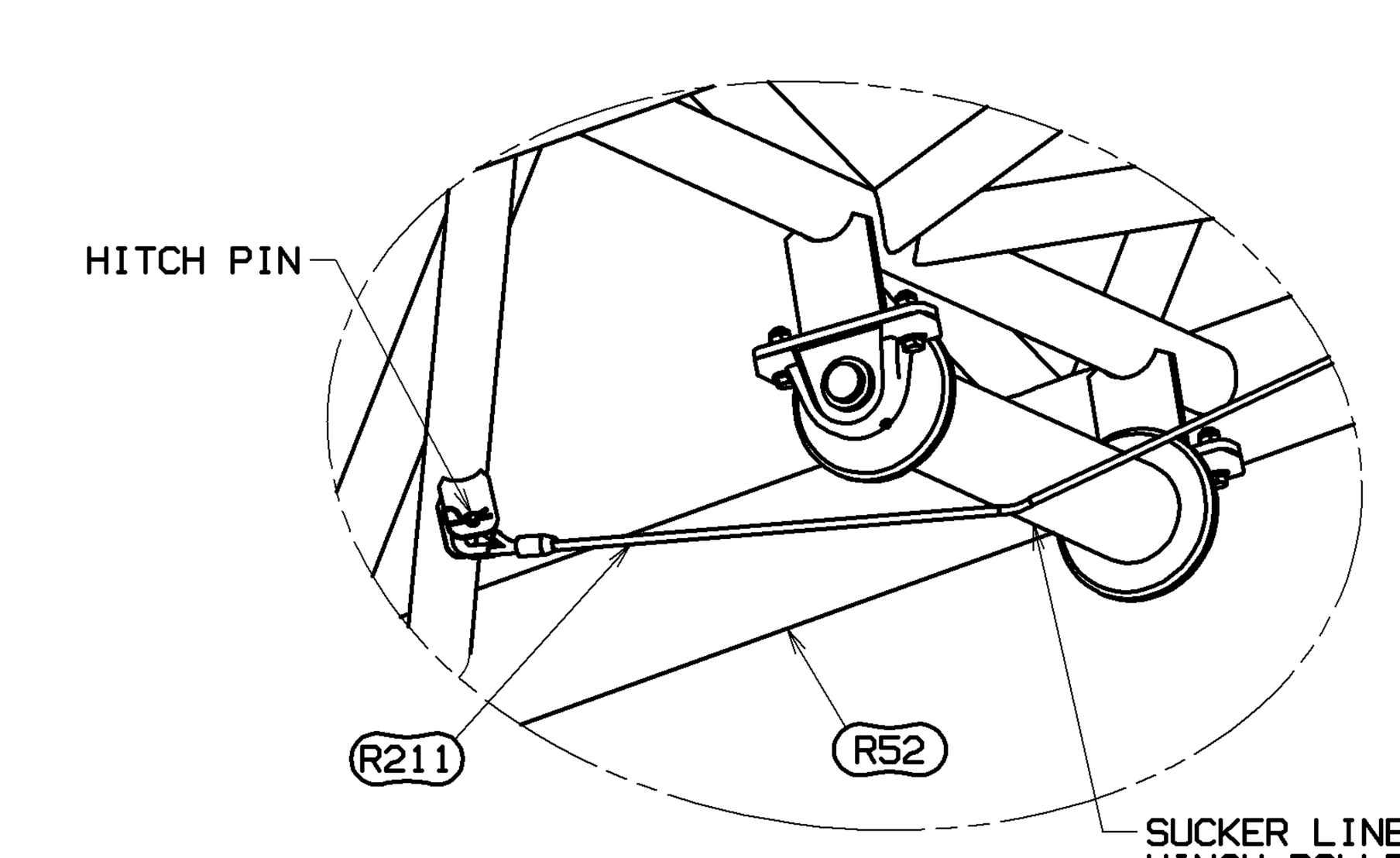
DETAIL HH
SCALE 0.200



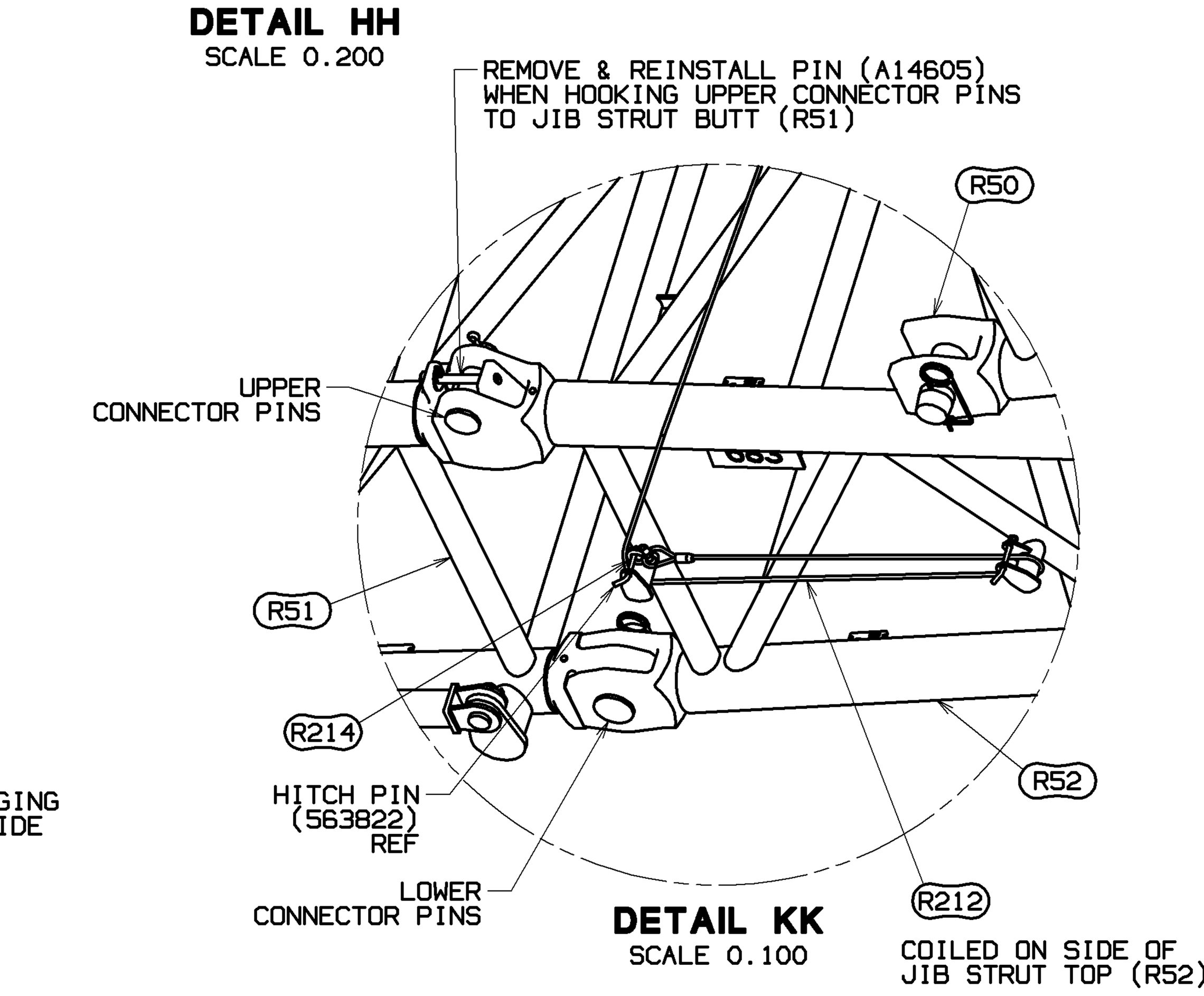
STEP 5

JIB STRUT TOP ASSEMBLY

USING ASSIST CRANE ATTACH (4) SLINGS (R208) AND (4) SHACKLES (R201) TO MAIN STRUT TOP (R50) AT CHAIN LIFTING LUGS AND D-LUGS. LIFT JIB STRUT TOP ASSEMBLY (ITEM 2) FROM TRAILER AND POSITION LOWER PORTION OF JIB STRUT TOP ASSY (R52) TO ALIGN UPPER PIN CONNECTOR WITH UPPER PIN CONNECTOR ON JIB STRUT BUTT ASSY (R51) AND ENGAGE PINS. LOWER JIB STRUT TOP ASSEMBLY (ITEM 2) TO ALIGN LOWER PIN CONNECTOR HOLES AND INSTALL LOWER CONNECTOR PINS. (SEE DETAIL KK).



VIEW LL-LL
SCALE 0.150



DETAIL KK
SCALE 0.100

TYPE NO.	SEC-TION	DESCRIPTION	LENGTH	MATERIAL	CODE NO. OR DWG. NO

BILL OF MATERIAL

ASSEMBLIES USED ON

REVISIONS

DWG. NO. 81018143
SHT 7 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN GDS500-05-035

DATE 05-23-16
REV. LTR. B

TOLERANCE UNLESS OTHERWISE SPECIFIED				
DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING	√ = MACHINING TOLERANCE APPLIES TO THIS DIMENSION AND/OR SURFACE
(1) PLACE 0.0	±.12	±.18	±.03	
(2) PLACE 0.00	±.06	±.12	±.015	
(3) PLACE 0.000			±.005	
ANGLES	±1°30′		±0°30′	

SCALE .025
DR. AJB
CK. RHV
APP TJA

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin
MODEL MLC650

LUFFING JIB RIGGING
LJ on B10

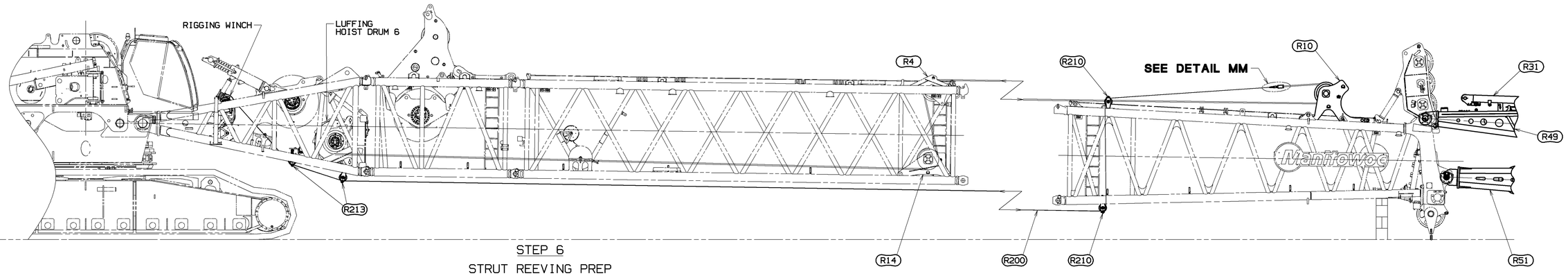
DWG. NO. 81018143

BILL OF MATERIAL

ITEM NO. / SEC. NO. / PREV. ITEM	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR STAND. NO.

ASSEMBLIES USED ON

REVISIONS



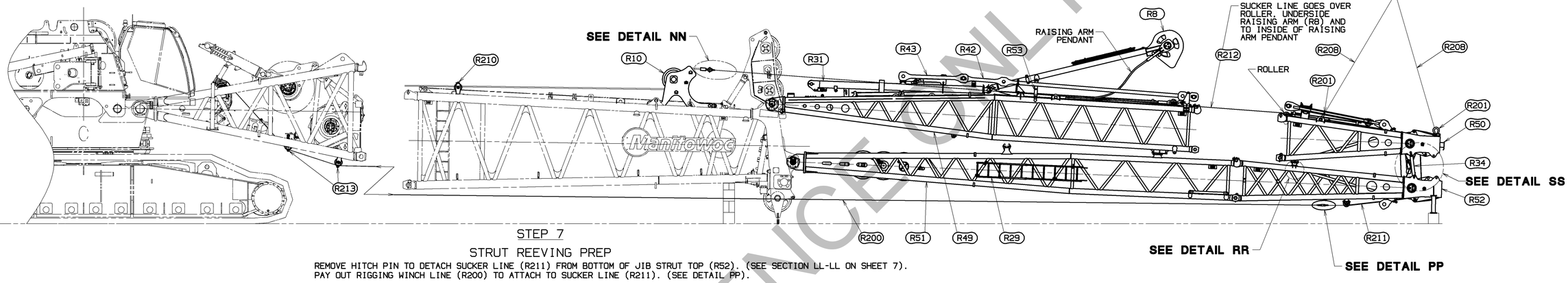
STEP 6

STRUT REEVING PREP

VERIFY THAT ALL RIGGING WINCH WIRE ROPE GUIDE ASSY'S (R210 & R213) ARE IN WORKING POSITION.
ROUTE RIGGING WINCH LINE (R200) AS SHOWN. RIGGING WINCH LINE (R200) TO ROUTE THRU ROPE GUIDES (R213 & R210), UNDER BOOM TOP LJ WRG (R10), OVER UPPER WIRE ROPE GUIDE (R4) AND UNDER LOWER WIRE ROPE GUIDE (R14).

ATTACH RIGGING WINCH LINE (R200) TO 28mm LUFFING HOIST LINE (DRUM 6) AND PAY IN RIGGING WINCH UNTIL LUFFING HOIST LINE IS OVER TOP OF WIRE ROPE GUIDE (R10). (SEE DETAIL MM).

DETACH RIGGING WINCH LINE (R200) FROM 28mm LUFFING HOIST LINE AND PAY IN PAST LOWER WIRE ROPE GUIDE ASSY (R210).
RETURN LOWER WIRE ROPE GUIDE ASSY (R210) TO SHIPPING POSITION AT BOTTOM OF BOOM TOP.



STEP 7

STRUT REEVING PREP

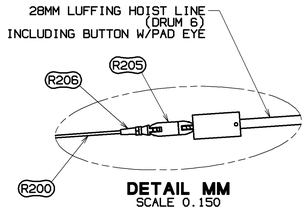
REMOVE HITCH PIN TO DETACH SUCKER LINE (R211) FROM BOTTOM OF JIB STRUT TOP (R52). (SEE SECTION LL-LL ON SHEET 7).
PAY OUT RIGGING WINCH LINE (R200) TO ATTACH TO SUCKER LINE (R211). (SEE DETAIL PP).

REMOVE HITCH PIN TO DETACH SUCKER LINE (R212) W/SHACKLE (R214) FROM COILED STOWAGE LOCATION ON JIB STRUT TOP (R52). (SEE DETAIL KK ON SHEET 7). POSITION THIS END OF SUCKER LINE (R212) ONTO MAIN STRUT BUTT (R49) AND CONNECT TO 28mm LUFFING HOIST LINE (DRUM 6) FROM OVER TOP OF ROLLER ON WIRE ROPE GUIDE (R10). (SEE DETAIL NN).

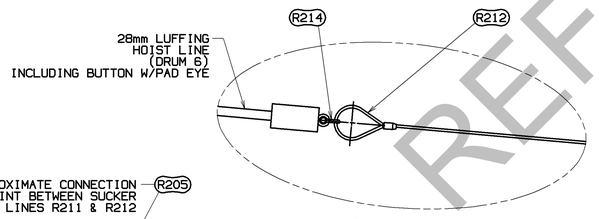
PAY IN RIGGING WINCH LINE (R200) TO PULL 28mm LUFFING HOIST LINE (DRUM 6) INTO REEVING OF MAIN AND JIB STRUT SHEAVES. PULL LUFFING HOIST LINE FAR ENOUGH TO MANUALLY RE-REEVE LAST SHEAVE AND ATTACH TO DEAD END LOCATED IN THE MAIN STRUT (R50).
NOTE:
FOR BOOM LENGTHS LESS THAN 56M REMOVE SUCKER LINE (R211) WHEN IT REACHES SHEAVE (R213) IN BOOM BUTT.
PAY OUT RIGGING WINCH LINE (R200) AND RECONNECT TO REMAINING SUCKER LINE (R212).

STORE/COIL SUCKER LINES (R211 & R212) AT SIDE OF JIB STRUT TOP (R52). (SEE DETAIL JJJ ON SHEET 9).

REATTACH (IF PREVIOUSLY DETACHED) ASSIST CRANE TO LIFTING POINTS ON MAIN STRUT TOP ASSEMBLY (ITEM 2) OR R50. REMOVE SHIPPING LINKS (SEE DETAIL RR) AND UNPIN TOP PIN OF SUPPORT STRUT (R34) AND ROTATE STRUT INTO HORIZONTAL OR STOWAGE POSITION ON JIB STRUT TOP (R52). (SEE DETAIL SS).



DETAIL MM
SCALE 0.150



DETAIL NN
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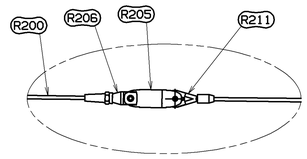
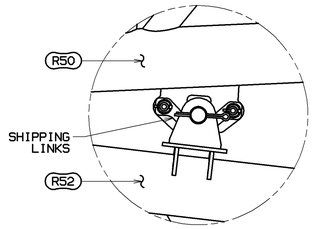


DETAIL PP
SCALE 0.200



DETAIL RR
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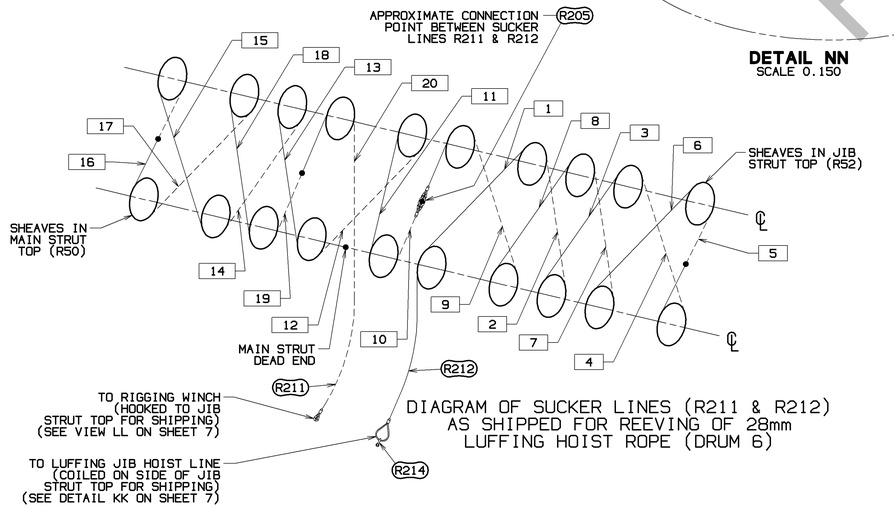


DIAGRAM OF SUCKER LINES (R211 & R212)
AS SHIPPED FOR REEVING OF 28mm
LUFFING HOIST ROPE (DRUM 6)

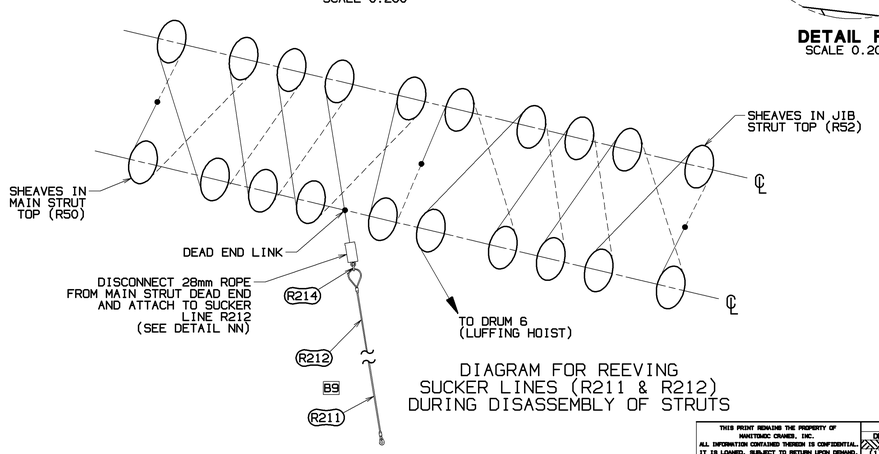
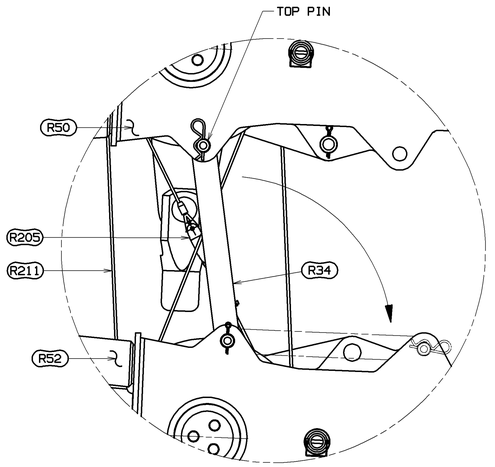


DIAGRAM FOR REEVING
SUCKER LINES (R211 & R212)
DURING DISASSEMBLY OF STRUTS



DETAIL SS
SCALE 0.150

TOLERANCE UNLESS OTHERWISE SPECIFIED				
DECIMAL PLACES	FABRICATION		MACHINING	
	≤ 10 FEET	> 10 FEET		
(1) PLACE 0.0	±.12	±.18	±.03	MACHINING TOLERANCE IS THE SAME AS THE DIMENSION ON THE DRAWING
(2) PLACE 0.00	±.06	±.12	±.015	
(3) PLACE 0.000			±.005	
ANGLES	±1°30'		±0°30'	

SCALE .025
DR. AJB
CK. RHV
APP TJA

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin
MODEL MLC650

LUFFING JIB RIGGING
LJ on B10

DWG. NO. 81018143
SHT 8 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829107794 FOR COMPONENTS LISTED IN GDS500-05-035 B9

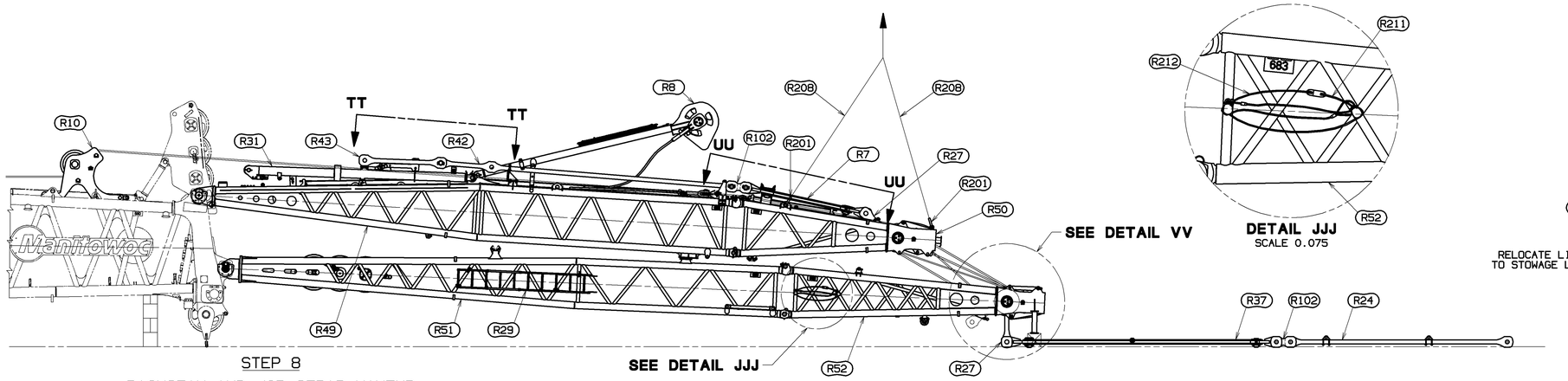
DATE 05-23-16
REV. LTR. B

DO NOT SCALE THIS DRAWING

B9

21

DWG. NO. 81018143
SHT 8 OF 15



STEP 8

BACKSTAY AND JIB STRAP MAKEUP

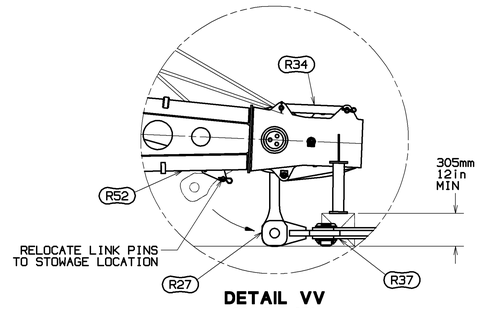
USING ASSIST CRANE LIFT MAIN STRUT TOP ASSY (R50) AND ALIGN UPPER PIN CONNECTOR WITH UPPER PIN CONNECTOR ON MAIN STRUT BUTT ASSY (R49) AND ENGAGE PINS.
LOWER MAIN STRUT TOP ASSY (R50) TO ALIGN LOWER PIN CONNECTOR HOLES AND INSTALL LOWER CONNECTOR PINS.

REMOVE HOLD DOWN PIN (R44) FROM LINKS (R43) AND PLACE IN STORED POSITION. (SEE VIEW TT). VERIFY ADJUSTABLE BACKSTAY STRAP LOCATION PER BOOM LENGTH TABLE ON SHEET 2 AND DETAIL F ON SHEET 3.

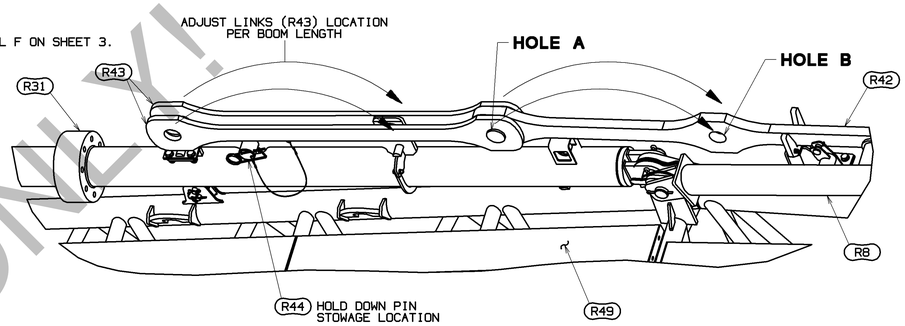
REMOVE ADJUSTABLE BACKSTAY STRAP (R42) HOLD DOWN PINS AND LOCATE IN STOWED POSITION. (SEE VIEW UU). REMOVE LJ BACKSTAY SPREADER (R7) HOLD DOWN PINS AND LOCATE IN STOWED POSITION. (SEE VIEW UU). REMOVE SHAFT STRUT LINK (R27) PINS AND LOCATE IN STOWED POSITION. (SEE VIEW UU). POSITION SPREADER STRAPS AND SPREADER LINKS IN WORKING POSITION AND CONNECT SPREADER STRAPS TO LINKS (R102). (SEE VIEW UU AND DETAIL B ON SHEET 2).

WITH JIB STRUT TOP (R52) ADEQUATELY BLOCKED REMOVE STRUT SHAFT LINK (R27) RETAINING PIN AND LOCATE IN STOWED POSITION. (SEE DETAIL VV).
WITH STRUT SHAFT LINK (R27) IN VERTICAL POSITION LOCATE AND PIN TO FRONTSTAY SPREADER ASSY (R37)(SEE DETAIL VV)
WHICH WAS PREVIOUSLY REMOVED FROM MAIN STRUT BUTT (R49) AT STEP 4 ON SHEET 7.
REMOVE STRAPS (R24) AND LINKS (R102) FROM #680/681 12M INSERT (ITEM 5) AND CONNECT TO FRONTSTAY SPREADER ASSY (R37).

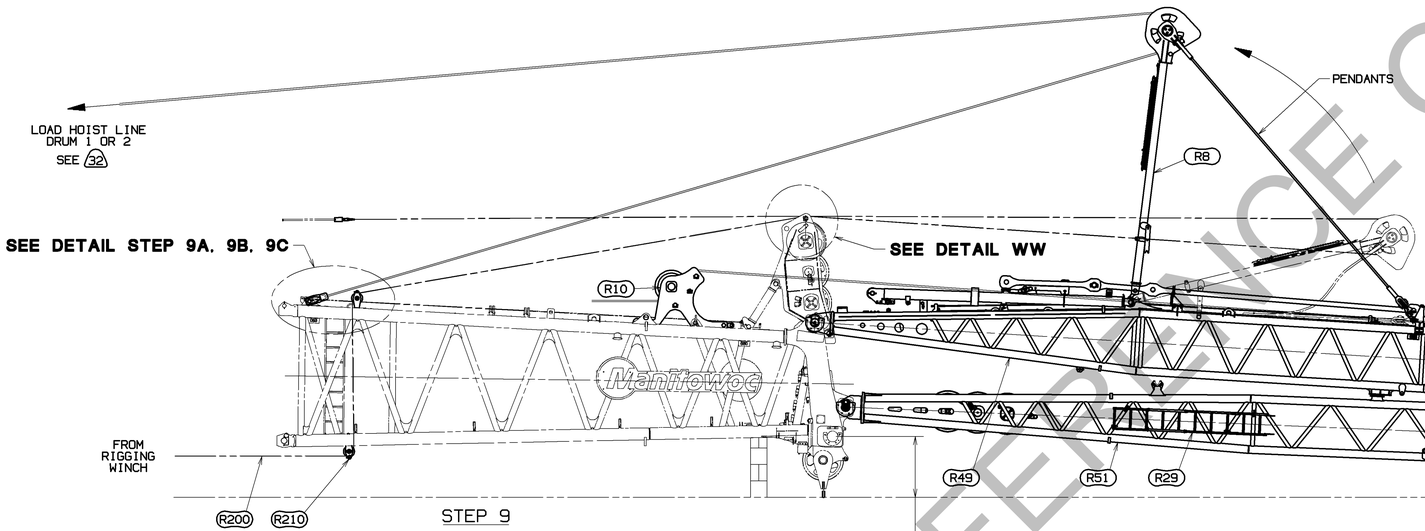
DETAIL JJJ
SCALE 0.075



DETAIL VV
SCALE 0.050
BLOCK ADEQUATELY TO ALLOW SHAFT
LINKS TO PIVOT VERTICALLY



VIEW TT
SCALE 0.100



STEP 9

STRUT RAISING ARM REEVING

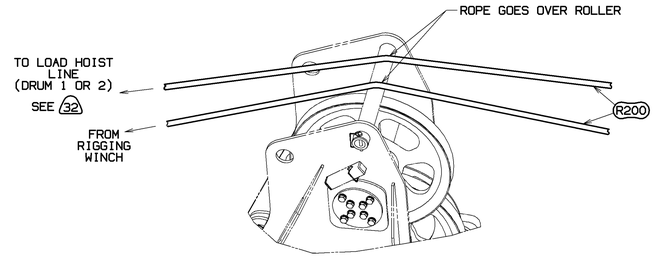
ROUTE RIGGING WINCH LINE (R200) AROUND BOTTOM BOOM TOP WIRE ROPE GUIDE ASSY (R210)
AND UPPER BOOM TOP WIRE ROPE GUIDE ASSY (R210) AS SHOWN IN "DETAIL STEP 9A".
ATTACH RIGGING WINCH LINE TO LOAD HOIST LINE (DRUM 1 OR 2, SEE DELTA NOTE 32).
PAY IN RIGGING WINCH LINE (R200) TO PULL LOAD HOIST LINE TO BOOM TOP AND DETACH RIGGING WINCH LINE.

REROUTE RIGGING WINCH LINE (R200) AROUND BOOM TOP WIRE ROPE GUIDE ASSY (R210) AS SHOWN IN "DETAIL STEP 9B". OVER BOOM TOP WIRE ROPE GUIDE ROLLER (SEE DETAIL WW) AND UNDER TO OVER STRUT RAISING ARM SHEAVE (R8). ATTACH RIGGING WINCH LINE TO LOAD HOIST LINE. PAY IN RIGGING WINCH LINE (R200) TO PULL LOAD HOIST LINE PAST BOOM TOP WIRE ROPE GUIDE ASSY (R210) AND DETACH RIGGING WINCH LINE.

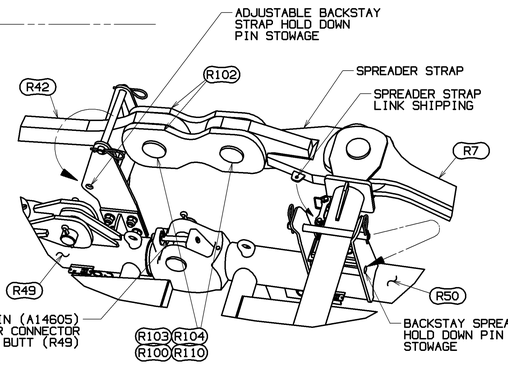
ATTACH SOCKET BUTTON (A06278) FROM LOWER BOOM POINT LINK ASSY DEAD END (R45) TO LOAD HOIST LINE. ATTACH LOAD HOIST LINE TO BOOM TOP BRACKET AS SHOWN IN "DETAIL STEP 9C".

PAY IN LOAD HOIST RAISING THE STRUT RAISING ARM (R8) UNTIL PENDANTS PULL TIGHT.

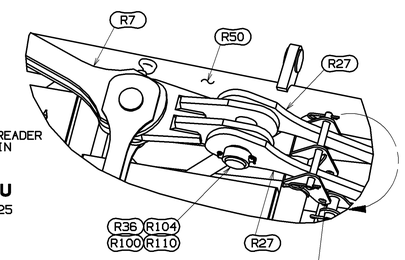
NOTE: REQUIRED MINIMUM BLOCK HEIGHT TO ASSEMBLE LUFFING JIB (STEP 10) EQUAL 1700mm FROM JIB HINGE ℄ TO GROUND. (ASSUMES APPROX. 305mm UNDER LJ BUTT CONNECTOR).

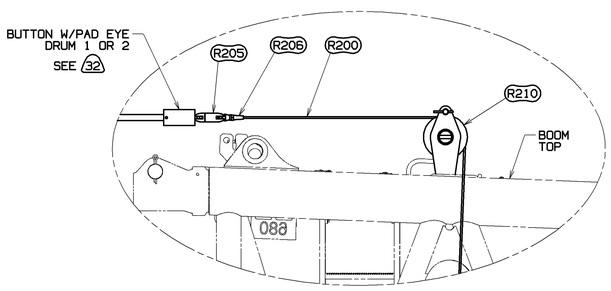


DETAIL WW
SCALE 0.100

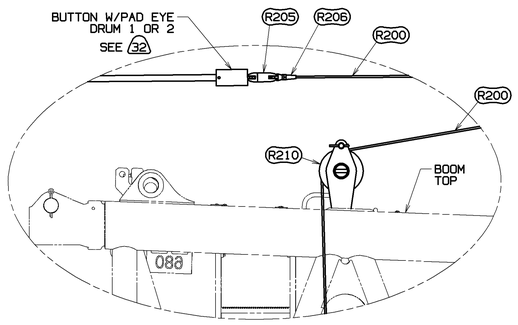


VIEW UU
SCALE 0.125

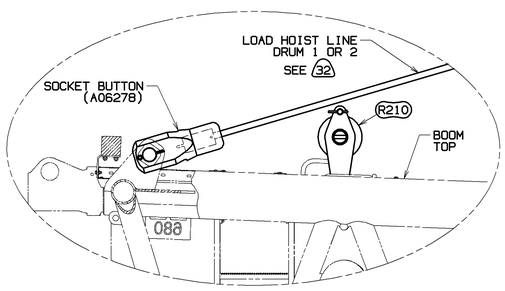




DETAIL STEP 9A
SCALE 0.100



DETAIL STEP 9B
SCALE 0.100



DETAIL STEP 9C
SCALE 0.100

BILL OF MATERIAL

ITEM NO. / REC. NO. PRESS FITTN	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR STAD. NO.

ASSEMBLIES USED ON

REVISIONS

DWG. NO. 81018143
SHT 9 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN 6DS500-05-035

DATE 05-23-16
REV. LTR. B

THIS PRINT REMAINS THE PROPERTY OF MANITOWOC 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 WAY WHATSOEVER DETRIMENTAL TO OUR INTERESTS.	TOLERANCE UNLESS OTHERWISE SPECIFIED					PLANT 025	Manitowoc Cranes, Inc. Manitowoc, Wisconsin	
	DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING	∠ MACHINING SURFACE TO BE 90° TO NOTED DIMENSION SURFACE	DR. AJB		LUFFING JIB RIGGING
	(1) PLACE 0.0	±.12	±.18	±.03		CK. RHV	MODEL MLC650	LJ on B10
	(2) PLACE 0.00	±.06	±.12	±.015		APP TJA		
	(3) PLACE 0.000			±.005				
	ANGLES	±1°30'		±0°30'				

DO NOT SCALE THIS DRAWING

21

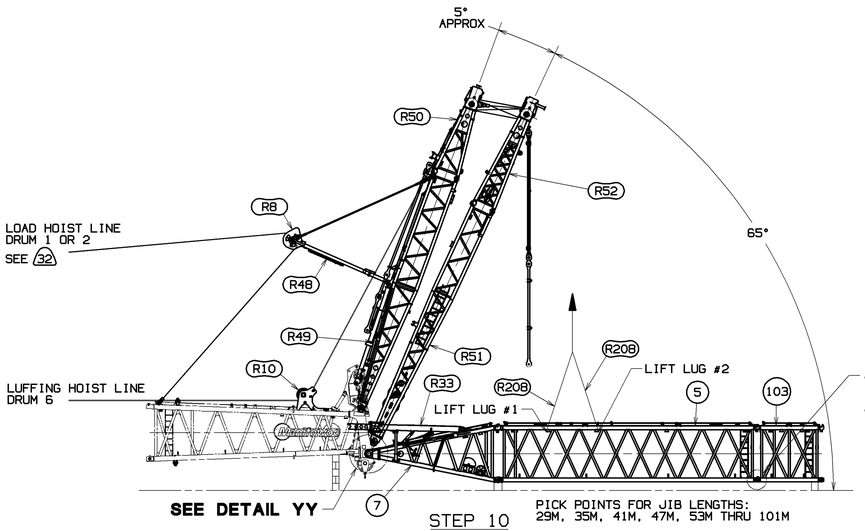
DWG. NO. 81018143
SHT 9 OF 15

BILL OF MATERIAL

ITEM NO. / SEC. NO. / PIECE MARK	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR SPEC. NO.

ASSEMBLIES USED ON

REVISIONS



PICK POINTS FOR JIB LENGTHS: 29M, 35M, 41M, 47M, 53M THRU 101M

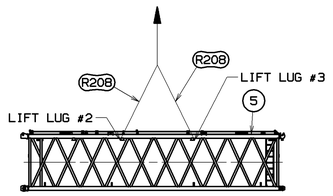
STEP 10
STRUT RAISING AND JIB BUTT ASSEMBLY

FROM STEP 9 WHEN USING DRUM 2 (PREFERRED) AS LOAD HOIST CONTINUE TO HOIST IN RAISING BOTH STRUTS. STRUTS WILL AUTOMATICALLY SEPARATE. WHEN USING DRUM 1 FOR STRUT RAISING USE AN ASSISTANT TO MONITOR THE ROPE WRAP ON THE 4M FLEETING SHEAVE. THE ROPE WILL LEAVE THE SHEAVE AND RETURN. THE LOCATION OF THE FLEETING SHEAVE MUST BE POSITIONED TO ALLOW THE ROPE TO RETURN INTO THE SHEAVE. STOP HOISTING IN AT 65° JIB STRUT ANGLE.

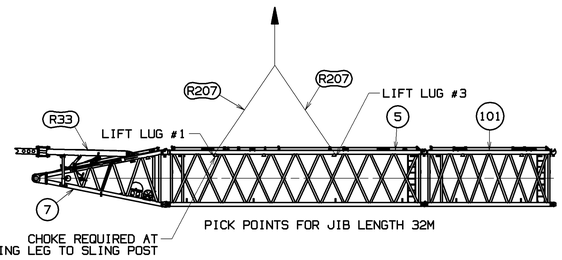
ASSEMBLE 12M #680/681 INSERT (ITEM 5) AND NEXT INSERT (PER CONFIGURATION) TO JIB BUTT (ITEM 7). (REFER TO APPROPRIATE PICK POINT VIEWS FOR HANDLING OF VARIOUS JIB LENGTHS).
B10 (FOR LOWER CONNECTOR PIN INSTALLATION SEE DETAIL HHH OR DETAIL LLL ON SHEET 12 - SEE 40).

NOTE: JIB STOPS (R33) MUST BE LOWERED (STOWAGE POSITION) PRIOR TO ATTACHING JIB TO BOOM TOP.

USING ASSIST CRANE POSITION JIB SECTION ONTO BOOM TOP. ATTACH PIN PULLER CAGE WELDMENT (R203) 2-PLACES AND POSITION PIN PULLER ASSY (R204). ACTIVATE CYLINDER TO INSTALL HINGE PIN INTO JIB BUTT (ITEM 7). (SEE DETAL YY).



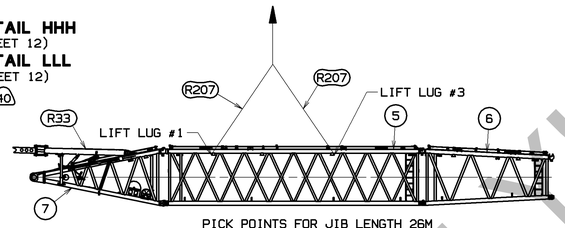
PICK POINTS FOR ITEM 5 ONLY



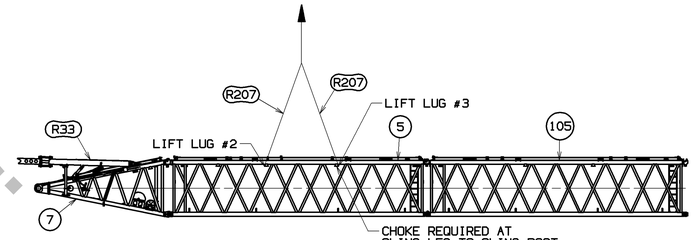
CHOKE REQUIRED AT SLING LEG TO SLING POST

PICK POINTS FOR JIB LENGTH 32M

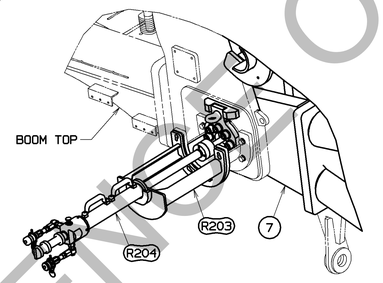
SEE DETAIL HHH (SEE SHEET 12)
SEE DETAIL LLL (SEE SHEET 12)
SEE 40



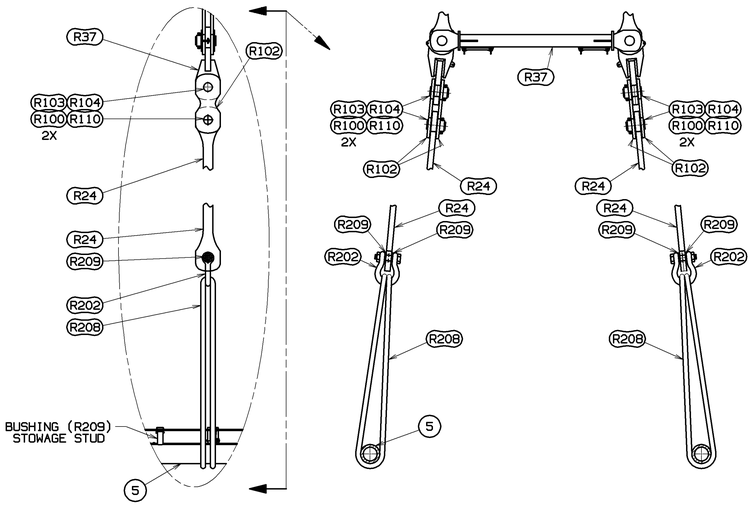
PICK POINTS FOR JIB LENGTH 26M



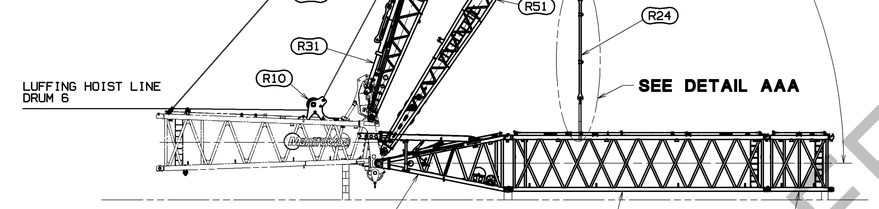
PICK POINTS FOR JIB LENGTHS: 38M, 44M & 50M



DETAIL YY
SCALE 0.100

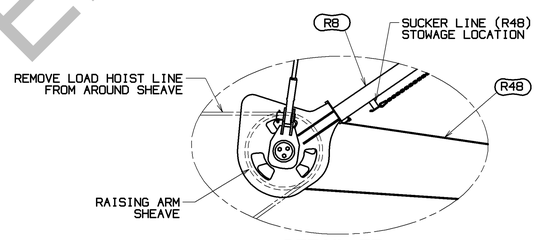


DETAIL AAA
SCALE 0.075

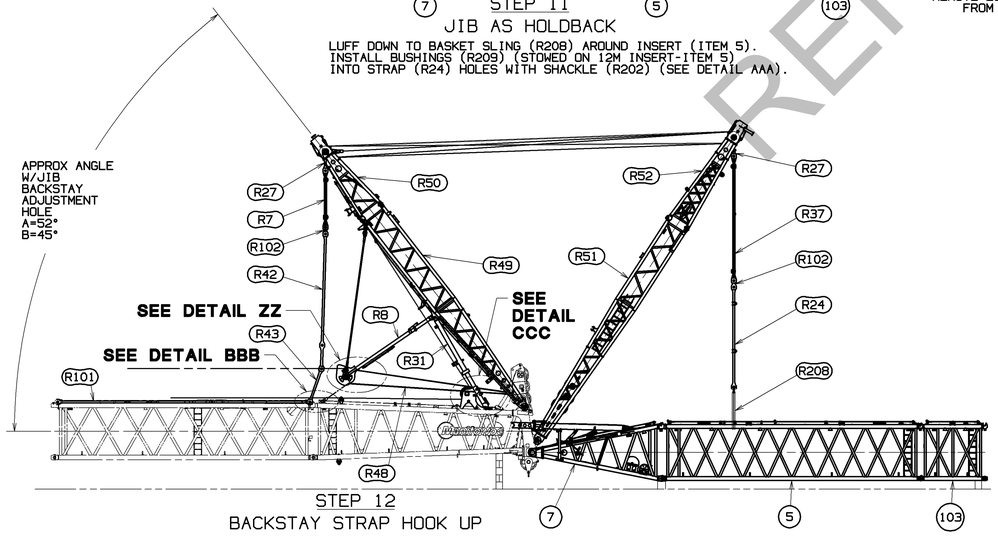


STEP 11
JIB AS HOLDBACK

LUFF DOWN TO BASKET SLING (R208) AROUND INSERT (ITEM 5). INSTALL BUSHINGS (R209) (STOWED ON 12M INSERT-ITEM 5) INTO STRAP (R24) HOLES WITH SHACKLE (R202) (SEE DETAIL AAA).



DETAIL ZZ
SCALE 0.050

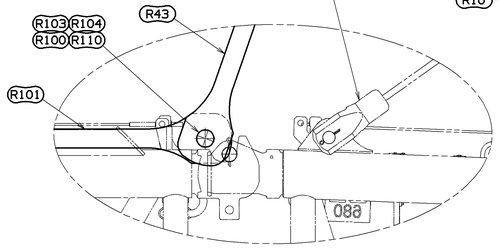


STEP 12
BACKSTAY STRAP HOOK UP

PAY IN LOAD HOIST, RAISING THE MAIN STRUT (R49 & R50) OVER VERTICAL, ENSURING THAT THE LUFFING HOIST REEVING DOES NOT BECOME SLACK. LUFF HOIST OUT AS NECESSARY AS TO NOT LIFT JIB SECTION OFF OF BLOCKING. WITH THE MAIN STRUT BEYOND VERTICAL, CONTROL OF ITS ANGLE WILL TRANSITION FROM THE LOAD LINE (ATTACHED TO THE STRUT RAISING ARM R8) TO THE LUFFING HOIST (DRUM 6).

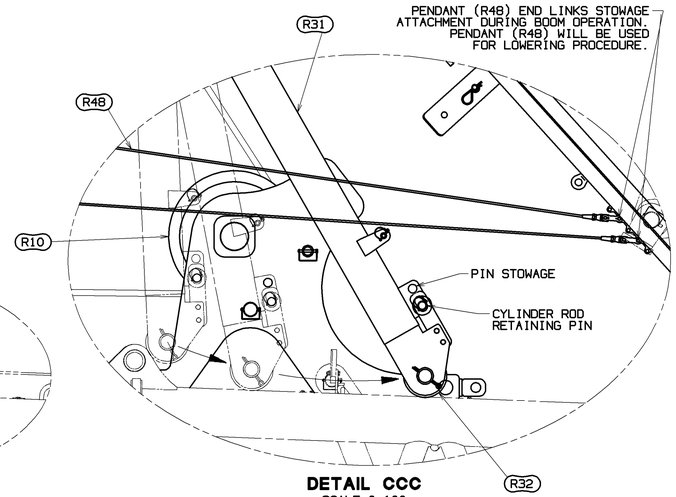
AS THE MAIN STRUT PASSES BEYOND VERTICAL, THE BACKSTAY STRAPS (R27 & R42), LINKS (R102 & R43) AND SPREADER (R7) WILL BEGIN TO HANG VERTICALLY. RAISE THE MAIN STRUT UNTIL THE BACKSTAY LINKS (R43) HANG IN POSITION OVER THE LUFFING JIB BACKSTAY STRAPS LOCATED ON THE MAIN BOOM AND ATTACH. (SEE DETAIL BBB). THE STRUT STOP (R31) WITH ROLLER (R32) WILL RIDE ON STOP LUG AND CHORD AS THE MAIN STRUT CONTINUES TO ROTATE BACK. (SEE DETAIL CCC).

DISCONNECT LOAD HOIST LINE AND REMOVE FROM SHEAVE ON STRUT RAISING ARM (R8)



DETAIL BBB
SCALE 0.100

PENDANT (R48) END LINKS STOWAGE ATTACHMENT DURING BOOM OPERATION. PENDANT (R48) WILL BE USED FOR LOWERING PROCEDURE.



DETAIL CCC
SCALE 0.100

TOLERANCE UNLESS OTHERWISE SPECIFIED

	DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING
(1) PLACE	0.0	±.12	±.18	±.03
(2) PLACE	0.00	±.06	±.12	±.015
(3) PLACE	0.000			±.005
ANGLES		±1°30'		±0°30'

MACHINING TOLERANCE FOR HOLE DIAMETERS AND SURFACE FINISH

SCALE .010
DR. AJB
CK. RHV
APP TJA

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin

MODEL ML C650

LUFFING JIB RIGGING

LJ on B10

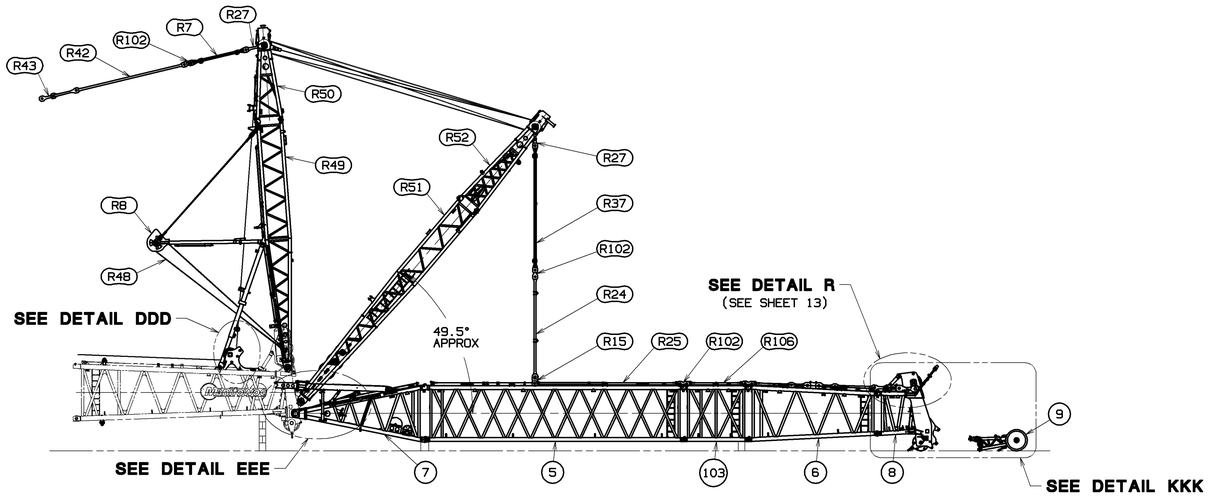
DWG. NO. 81018143

SHT 10 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN GDS500-05-035

DATE 05-23-16

REV. LTR. B



STEP 13

STRUT STOP, JIB STRAP AND STOP PENDANT ATTACHMENT

PAY IN LUFFING HOIST TO PULL THE MAIN STRUT (R49 & R50) BACK TOWARDS CENTER AND STRUT STOP (R31) TOWARDS ATTACHMENT LUGS ON BOOM TOP. WITH STRUT STOP NEAR VERTICAL REMOVE STOP ROLLER (R32) AND PLACE IN STOWAGE LOCATION AND PIN STRUT STOP (R31) TO LUG ON BOOM TOP. (SEE DETAIL DDD). PAY OUT LUFFING HOIST SLIGHTLY TO ALLOW MAIN STRUT ACCUMULATOR ROD TO BE UNPINNED FROM STRUT STOP CYLINDER (R31) AND RELOCATED TO STOWAGE POSITION. (SEE DETAIL DDD).

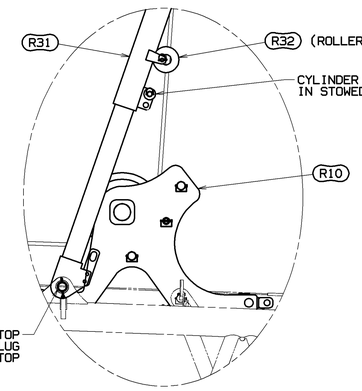
DETACH LOAD HOIST LINE FROM BOOM TOP BRACKET AND REMOVE FROM SHEAVE ON STRUT RAISING ARM (R8). (SEE DETAIL BBB ON SHEET 10). REMOVE LOAD HOIST BUTTON FROM SOCKET BUTTON (A06278) AND RETURN IT TO LOWER BOOM POINT LINK ASSY DEAD END (R45).

REMOVE SUCKER LINE (R48) FROM STOWAGE LOCATION (SEE DETAIL ZZ ON SHEET 10) AND REEVE AROUND RAISING ARM SHEAVE (SEE DETAIL ZZ ON SHEET 10) AND ATTACH END LINKS TO BRACKETS ON ARM RAISING ASSY (R8). (SEE DETAIL CCC ON SHEET 10)

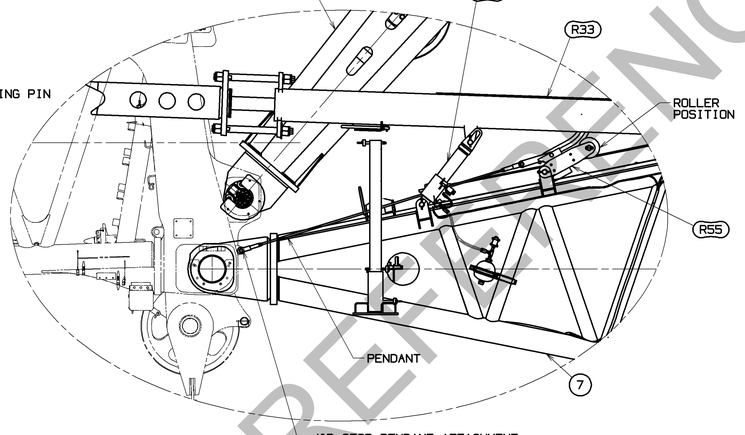
LUFF DOWN TO REMOVE SHACKLES AND SLINGS (FROM STEP 11 ON SHEET 10) USED FOR HOLDBACK. REMOVE BUSHINGS (R209) FROM STRAP (R24) AND LOCATE TO STOWAGE STUD ON 12M INSERT (ITEM 5). (SEE DETAIL AAA ON SHEET 10).

COMPLETE JIB ASSEMBLY CONFIGURATION PER SHEETS 5 & 6. (SEE DETAIL R ON SHEET 13). CONNECT JIB STRAPS/LINKS FROM JIB TOP (ITEM 8) TO 12M INSERT (ITEM 5). WITH A JIB STRUT TO JIB ANGLE OF APPROX 49.5° ATTACH STRAPS (R24) TO LINKS (R15). (SEE DETAIL D ON SHEET 2).

ATTACH JIB STOP PENDANT FROM JIB STOP RAISING ROLLER (R55) TO BOOM TOP LUG. PENDANTS TO BE SLACK WITH ROLLER ROTATED AWAY FROM BOOM TOP. (SEE DETAIL EEE).

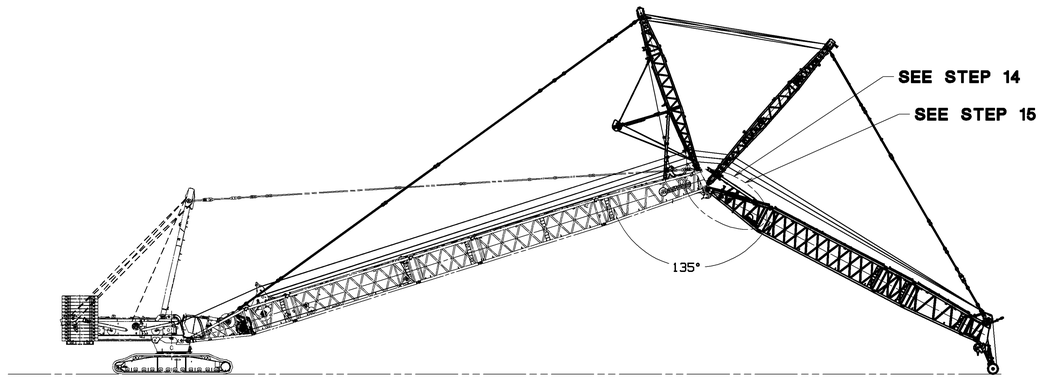


DETAIL DDD
SCALE 0.060



JIB STOP PENDANT ATTACHMENT
AT BOOM TOP LUG

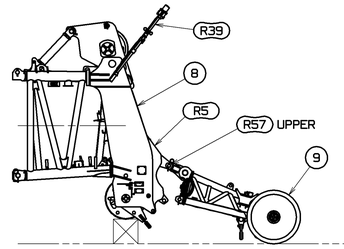
DETAIL EEE
SCALE 0.060



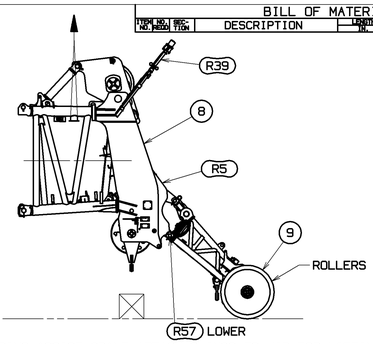
50.0 M (164.0 FT)
#680 BOOM SHOWN

JIB STOP JACKKNIFE POSITION
SCALE 0.005

29.0 M (95.1 FT)
#681-682 JIB LUFFING
SHOWN

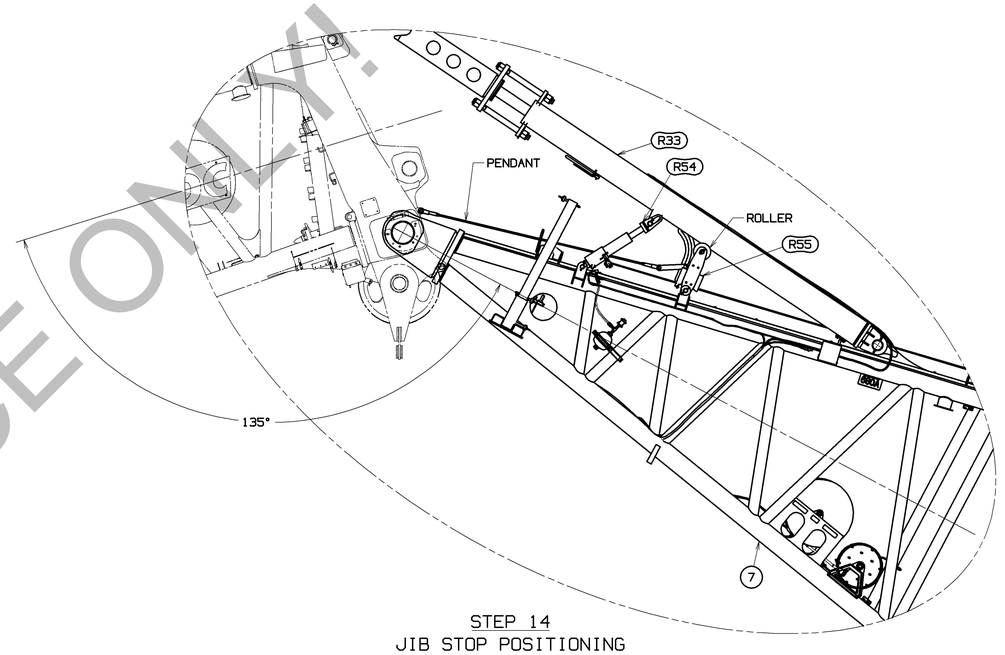


ALIGN UPPER BOOM POINT (ITEM 9) UPPER HOLES WITH HOLES IN 8-SHEAVE LOWER BOOM POINT (R5) AND INSTALL (2) PINS (R57) AND SAFETY PINS.



USING ASSIST CRANE ATTACH SLINGS TO JIB TOP LIFTING LUGS AND LIFT JIB TOP TO ALIGN THE LOWER HOLES IN THE UPPER BOOM POINT (ITEM 9) WITH THE HOLES IN THE 8-SHEAVE LOWER BOOM POINT (R5). INSTALL (2) PINS (R57) AND SAFETY PINS. LOWER JIB TOP TO ALLOW ROLLERS TO CONTACT GROUND. REMOVE SLINGS.

DETAIL KKK
UPPER BOOM POINT INSTALLATION
SCALE 0.025

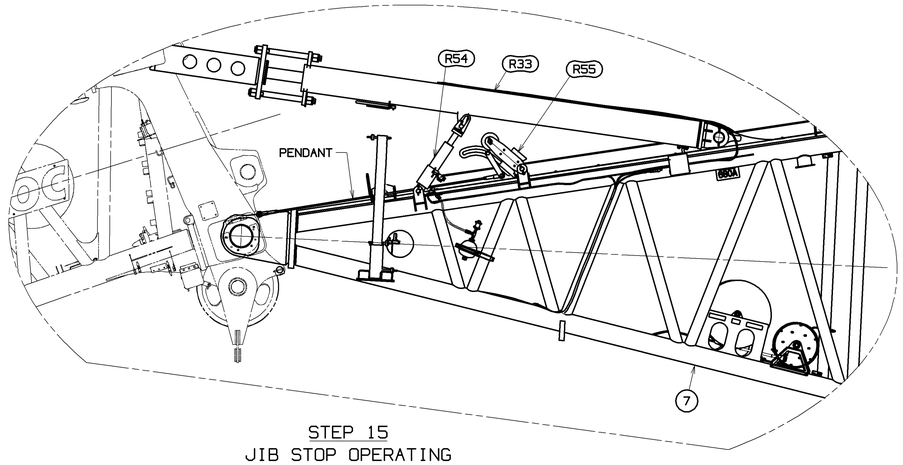


STEP 14

JIB STOP POSITIONING

JACKKNIFE TO 135° INCLUDED ANGLE. JIB STOP PENDANT BECOMES TIGHT AND PULLS JIB STOP BRACKET (R55) WITH ROLLER RAISING JIB STOP (R33) TO OPERATING POSITION AND EXTENDING SUPPORT CYLINDER (R54).

(JIB STRUT (R51) NOT SHOWN FOR CLARITY).
SCALE 0.050



STEP 15

JIB STOP OPERATING

LUFF OUT TO DECREASE INCLUDED ANGLE TO <135°. JIB STOP SUPPORT BRACKET (R55) WITH ROLLER WILL REMAIN FLIPPED OVER CENTER WITH PENDANT SLACK DURING FULL RANGE OF JIB ANGLE. THE SUPPORT CYLINDERS (R54) REMAIN EXTENDED, HOLDING STOPS IN OPERATING POSITION. JIB COMES INTO ITS STOPS MAKING CONTACT AT 20° JIB OFFSET, STOPS FULLY BOTTOM OUT AT 7° JIB OFFSET.

(JIB STRUT (R51) NOT SHOWN FOR CLARITY).
SCALE 0.050

BILL OF MATERIAL

ITEM NO. / REC. NO. / POSITION	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR STAND. NO.

ASSEMBLIES USED ON

REVISIONS

TOLERANCE UNLESS OTHERWISE SPECIFIED

DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING (INCLUDING WELDMENTS AFTER MACHINING)
(1) PLACE 0.0	±.12	±.19	±.03
(2) PLACE 0.00	±.06	±.12	±.015
(3) PLACE 0.000			±.005
ANGLES	±1°30'		±0°30'

SCALE .010

DR. AJB

CK. RHV

APP TJA

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin

MODEL MLC650

LUFFING JIB RIGGING

LJ on B10

DWG. NO. 81018143

SHT 11 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 8829103794 FOR COMPONENTS LISTED IN GS9500-05-035

DATE 05-23-16

REV. LTR. B

DWG. NO. 81018143

SHT 11 OF 15

			BILL OF MATERIAL				
ITEM NO.	NO. REQD	SEC-TION	DESCRIPTION	LENGTH IN.	MATERIAL	CODE NO. OR DWG. NO	

ASSEMBLIES USED ON

REVISIONS

DISASSEMBLY PROCEDURE 1

JIB STOP LOWERING

(SEE ILLUSTRATION FOR STEP 15 ON SHEET 11)
JACKKNIFE TO 150° MAX INCLUDED ANGLE TO ALLOW JIB STOP (R33) TO BE LOWERED INTO STOWAGE POSITION.

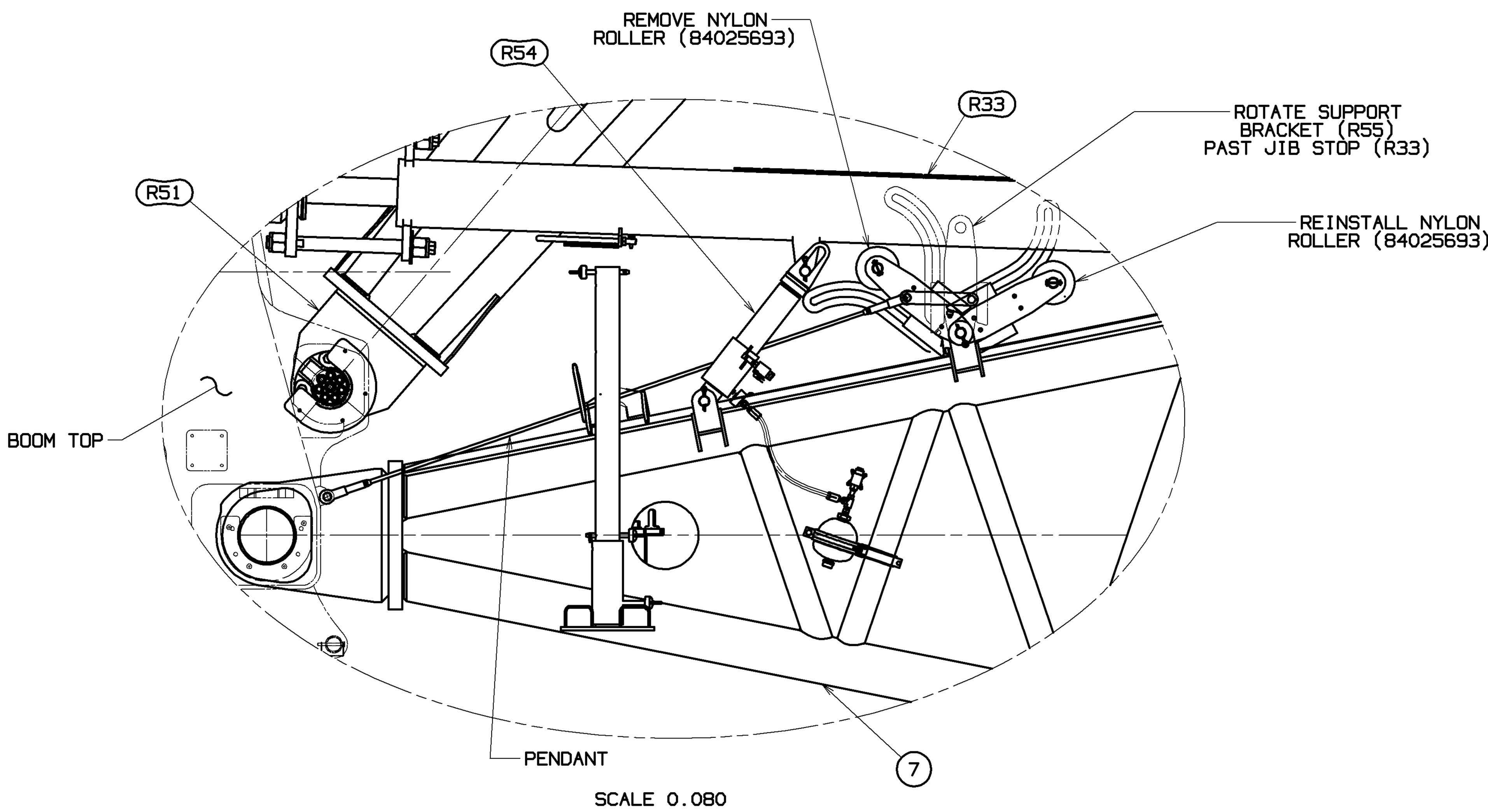
ACTIVATE ELECTRONIC VALVE IN SUPPORT CYLINDER (R54) TO ALLOW CYLINDER TO RETRACT UNDER
WEIGHT OF THE JIB STOP (R33).
BOOM DOWN UNTIL BOOM AND JIB ARE HORIZONTAL.

DISASSEMBLY PROCEDURE 2

JIB STRUT TIE OFF

(SEE ILLUSTRATION FOR STEP 13 ON SHEET 11)
LUFF DOWN TO DETACH STRAPS (R24) FROM LINKS (R15) AT 12M INSERT (ITEM 5).

(SEE ILLUSTRATION FOR STEP 11 ON SHEET 10)
TIE OFF JIB STRAPS TO LUFFING JIB (ITEM 5) WITH SLINGS, SHACKLES AND
BUSHING FOR HOLD BACK (SAME AS STEP 11 ON SHEET 10).



SCALE 0.080

DISASSEMBLY PROCEDURE 3

JIB STOP RAISING ROLLER (R55) RESET

REMOVE NYLON ROLLER (84025693) FROM JIB STOP SUPPORT BRACKET (R55).
FLIP BRACKET (R55) OVER CENTER (AWAY FROM BOOM TOP) AND REASSEMBLE NYLON ROLLER TO BRACKET (R55).
DETACH JIB STOP PENDANTS FROM BOOM TOP LUG IF REMOVING JIB BUTT.

DISASSEMBLY PROCEDURE 4

MAIN STRUT ARM REEVING

(SEE ILLUSTRATION FOR STEPS 11 AND 12 ON SHEET 10)
DETACH PENDANT (R48) AT MAIN STRUT BUTT (R49) (SEE DETAIL CCC ON SHEET 10)
AND ATTACH TO LOAD HOIST LINE AND RIGGING WINCH LINE (R200).

PAY IN RIGGING WINCH LINE (R200) UNTIL ABLE TO ATTACH LOAD HOIST LINE W/SOCKET BUTTON (A06278)
TO BOOM TOP BRACKET AS SHOWN IN "DETAIL STEP 9C" ON SHEET 9.

OPEN MAIN STRUT STOP (R31) BYPASS VALVES VIA CRANE CONTROLS TO ALLOW STRUT TO ROTATE BACK.
LUFF DOWN TO RETRACT STRUT STOP TUBES. RELOCATE CLYINDER ROD RETAINING PIN SO
CYLINDERS DO NOT EXTEND. (SEE DETAIL CCC ON SHEET 10).

LUFF UP WITH LUFFING HOIST TO TAKE LOAD OFF OF OUTER TUBE LOWER PINS.
REMOVE STRUT STOP PINS AT LUG ON BOOM TOP (SEE DETAIL DDD ON SHEET 11).
CONTINUE TO LUFF UP UNTIL STOP (R31) CAN BE SWUNG TOWARD MAIN STRUT TO
REATTACH STOP ROLLER (R32) TO ROD END OF STRUT STOP (R31)

DISASSEMBLY PROCEDURE 5

DETACH BACKSTAYS

(SEE ILLUSTRATION FOR STEP 12 OF SHEET 10)
PAY IN LOAD HOIST ROTATING THE MAIN STRUT (R49 & R50) REARWARD TO DETACH STRUT LINKS (R43)
FROM BOOM BACKSTAY (R101). (SEE DETAIL BBB ON SHEET 10).

AS MAIN STRUT ROTATES BACK THE STRUT STOP (R31) WITH ROLLER (R32) WILL RIDE ON BOOM TOP STOP LUG
AND CHORD AS THE MAIN STRUT CONTINUES TO ROTATE BACK (SEE DETAIL CCC ON SHEET 10).

DISASSEMBLY PROCEDURE 6

STRUT LOWERING

PAY OUT LOAD HOIST LINE WHILE PAYING IN LUFFING HOIST TO BRING MAIN AND JIB STRUTS TOGETHER.
WHEN MAIN STRUT (R49 & R50) IS APPROXIMATELY 62° FROM JIB CENTERLINE DETACH SLINGS (R208),
SHACKLE (R202), BUSHING (R209), AND SLING (R207).
(REVERSE OF STEP 11 ON SHEET 10).

LOAD HOIST IN UNTIL JIB STRUT (R51 & R52) IS APPROXIMATELY 65° FROM HORIZONTAL.
USE PIN PULLER ASSY (R204) TO REMOVE JIB HINGE PINS AND ASSIST CRANE TO DISASSEMBLE LUFFING JIB.
(REVERSE OF STEP 10 ON SHEET 10).

(SEE ILLUSTRATIONS FOR STEP 9 ON SHEET 9 AND STEP 10 ON SHEET 10)
PAY OUT LOAD HOIST TO LOWER STRUTS TO BLOCKING AT GROUND.
DETATCH AND REMOVE JIB STRUT STRAPS (R24), LINKS (R102) AND SPREADER (R37).
RETURN STRAPS (R24) AND LINKS (R102) TO #680/681 12M INSERT (ITEM 5) FOR SHIPPING LOCATION.
ROTATE STRUT SHAFT LINK (R27) INTO STOWED POSITION AND SECURE WITH LINK PINS. (SEE DETAIL VV ON SHEET 9)

DISASSEMBLY PROCEDURE 7

LOWER STRUT RAISING ARM

(SEE ILLUSTRATION FOR STEP 9 ON SHEET 9)
PAY OUT LOAD HOIST TO LOWER STRUT RAISING ARM (R8).
VERIFY THAT PENDANTS LAY PROPERLY AND THAT KICKSTAND (R53) IS DEPLOYED TO HOLD
UP STRUT RAISING ARM (R8). UNREEVE LOAD HOIST LINE FROM STRUT RAISING ARM (R8).

DISASSEMBLY PROCEDURE 8

STRUT TOPS SUCKER LINE REEVING AND TRAILERING

(SEE ILLUSTRATION FOR STEP 7 ON SHEET 8)
USING ASSIST CRANE DETACH MAIN STRUT TOP (R50) FROM MAIN STRUT BUTT (R49) AND RELOCATE TO SHIPPING POSITION
ON JIB STRUT TOP (R52). (SEE DETAILS RR & SS ON SHEET 8)
REMOVE SUCKER LINES (R211) & (R212) FROM STOWAGE LOCATION ON JIB STRUT TOP (R52) (SEE DETAIL KK ON SHEET 7)
AND REEVE TO RIGGING WINCH LINE (R200) (SEE DETAIL PP ON SHEET 8) AND LUFFING JIB HOIST LINE (SEE DETAIL NN ON SHEET 8).

(SEE ILLUSTRATION FOR STEP 5 ON SHEET 7)
BRING SUCKER LINES (R211) & (R212) INTO REEVING. COIL EXCESS SUCKER LINE ON JIB STRUT TOP (R52) AND STOW BOTH ENDS.
(SEE DETAIL KK AND SECTION LL-LL ON SHEET 7).
DETACH JIB STRUT TOP (R52) FROM JIB STRUT BUTT (R51).
TRAILER #683 STRUT TOP ASSY ITEM 2 (R50 & R52).

DISASSEMBLY PROCEDURE 9

LOWERING OF STRUT RAISING ARM

(REVERSE OF STEP 4 ON SHEET 7)
SECURE STRUT STOP (R31) IN STOWED POSITION. (SEE DETAIL JJ ON SHEET 7).

USING ASSIST CRANE BASKET A SLING (R208) AROUND THE HORIZONTAL SUPPORT MIDWAY UP THE STRUT RAISING ARM (R8).
LIFT STRUT RAISING ARM ENOUGH TO DISENGAGE AND SECURE KICKSTAND (R53) IN STOWED POSITION (SEE DETAIL HH ON SHEET 7).
LOWER STRUT RAISING ARM TO REST ON MAIN STRUT BUTT (R49).

LIFT FRONTSTAY SPREADER ASSY (R37), FROM DISASSEMBLY PROCEDURE 5, TO STOWED POSITION ON MAIN STRUT BUTT ASSY (R49).
POSITION SPREADER STRAPS (SEE DETAIL FF ON SHEET 7) AND SPREADER LINKS (SEE DETAIL GG ON SHEET 7) IN STOWAGE POSITION.

DISASSEMBLY PROCEDURE 10

MAIN STRUT BUTT DISASSEMBLY

(REVERSE OF STEP 3 AND STEP 2 ON SHEET 6)
USING ASSIST CRANE TO SUPPORT MAIN STRUT BUTT (R49) REMOVE HINGE PINS (SEE DETAIL X ON SHEET 6).
POSITION MAIN STRUT BUTT (R49) ON TOP OF JIB STRUT BUTT (R51). INSTALL SHIPPING LINKS
(SEE DETAIL U ON SHEET 6) AND POSITION STRUT SUPPORT (R35) TO ATTACH TO MAIN STRUT BUTT ASSY (R49)
(SEE DETAIL V ON SHEET 6).

DISASSEMBLY PROCEDURE 11

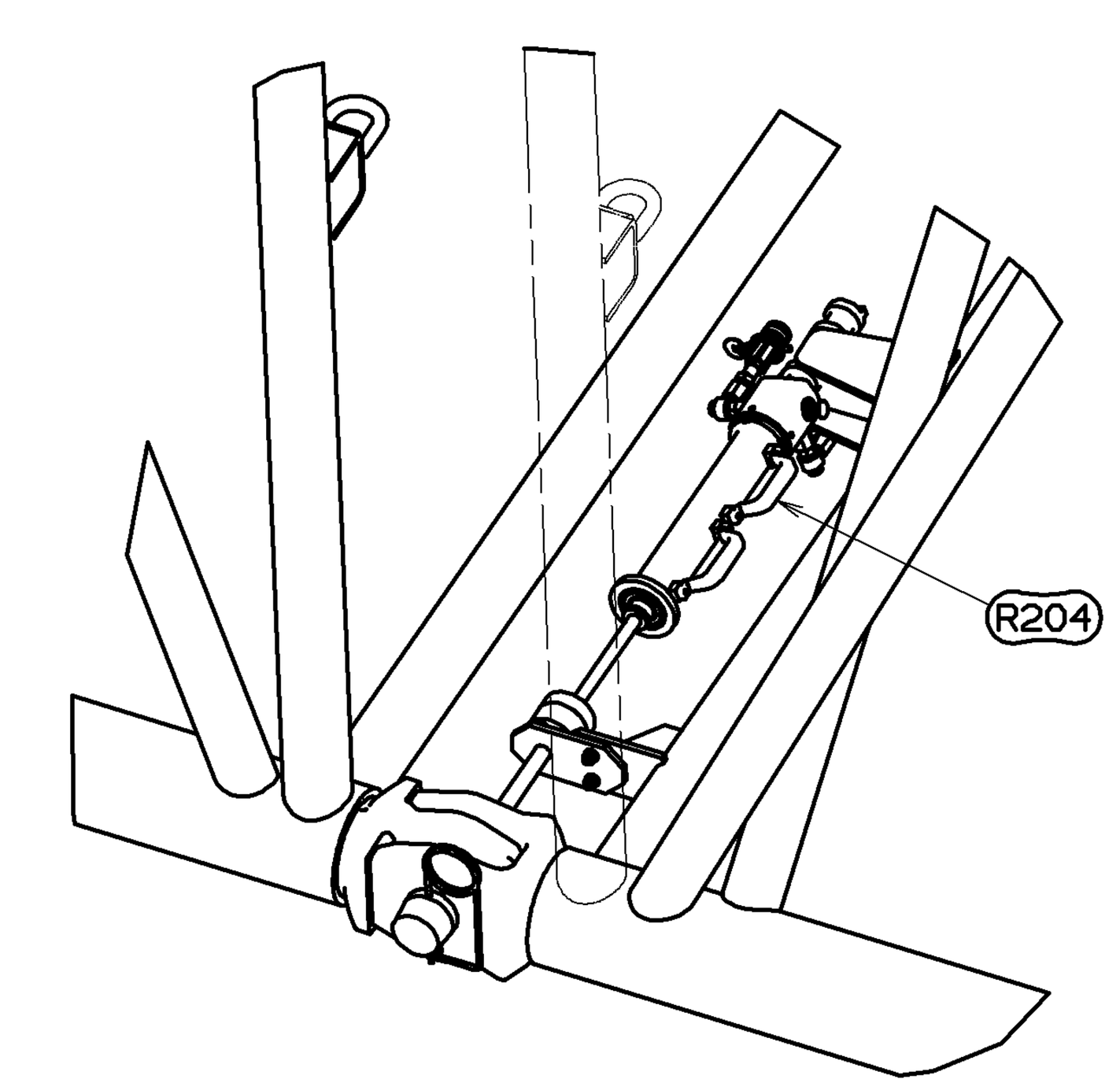
JIB STRUT BUTT DISASSEMBLY

(REVERSE OF STEP 2 ON SHEET 6)
USING ASSIST CRANE TO SUPPORT JIB STRUT BUTT (R51) REMOVE HINGE PINS (SEE DETAIL W ON SHEET 6).
POSITION LADDER (R29) ON STRUT BUTT SHIPPING ASSY (ITEM 1) TO PROVIDE ACCESS TO POINTS TOWARD HINGE PIN.

DISASSEMBLY PROCEDURE 12

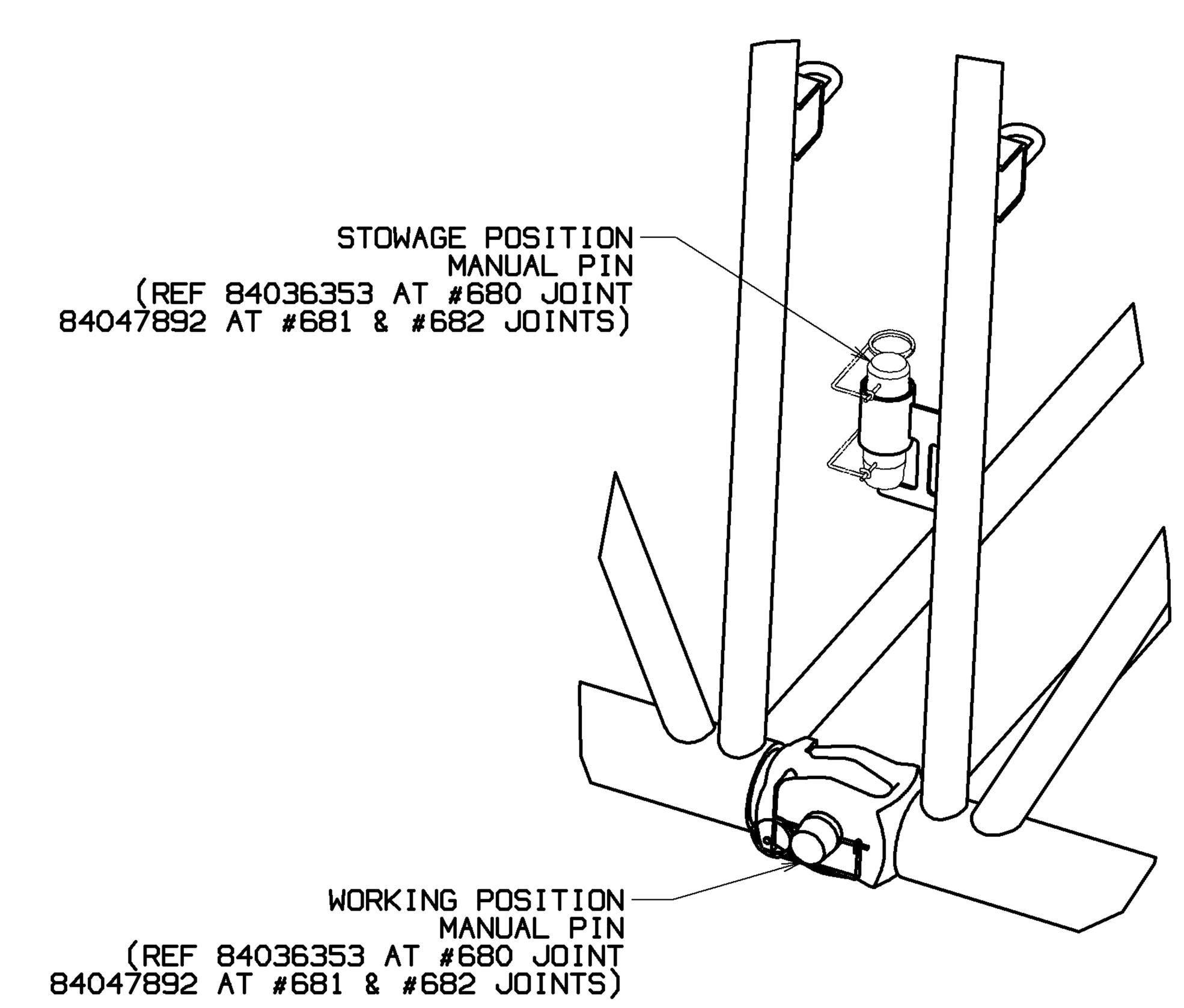
LOADING STRUT BUTT ASSEMBLY

(REVERSE OF STEP 1 ON SHEET 6)
USING ASSIST CRANE LIFT BOTH STRUT BUTTS (ITEM 1) ON TRAILER.
WHEN COMPLETED RETURN LADDER (R29) TO STOWAGE POSITION ON JIB
STRUT BUTT ASSY (R51).



DETAIL HHH
TYPICAL LOWER JIB CONNECTOR
HYDRAULIC PIN INSTALLATION
(FROM SHEET 10)
SCALE 0.100
SEE 40

B12



DETAIL LLL
TYPICAL LOWER JIB CONNECTOR
MANUAL PIN INSTALLATION
(FROM SHEET 10)
SCALE 0.100
SEE 40

B13

DWG. NO. 81018143
SHT 12 OF 15

B12
B13

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN GDS500-05-035

DATE 05-23-16

REV. LTR. B

TOLERANCE UNLESS OTHERWISE SPECIFIED					
DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING		
				√ = MACHINING TOLERANCE APPLIES TO THIS DIMENSION AND/OR SURFACE	
(1) PLACE 0.0	±.12	±.18	±.03		
(2) PLACE 0.00	±.06	±.12	±.015		
(3) PLACE 0.000			±.005		
ANGLES	±1°30′		±0°30′		

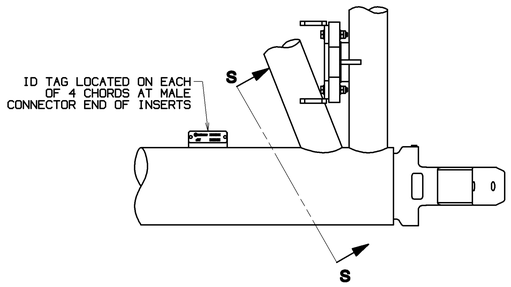
SCALE NOTED	Manitowoc Cranes, Inc.	
DR. AJB	Manitowoc, Wisconsin	LUFFING JIB RIGGING
CK. RHV	MODEL MLC650	LJ on B10
APP TJA		

DWG. NO. 81018143

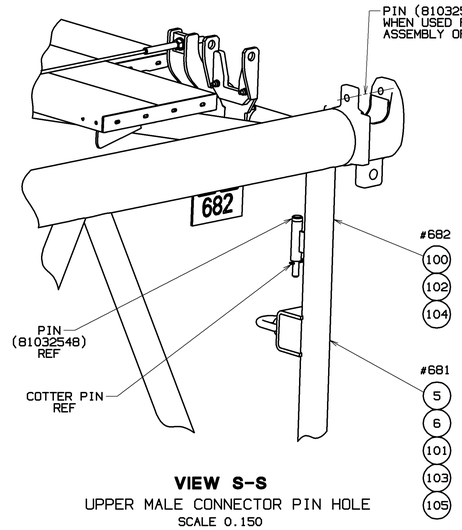
BILL OF MATERIAL					
ITEM NO. / DWG. NO. / PATTERN NO.	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR STAND. NO	

ASSEMBLIES USED ON

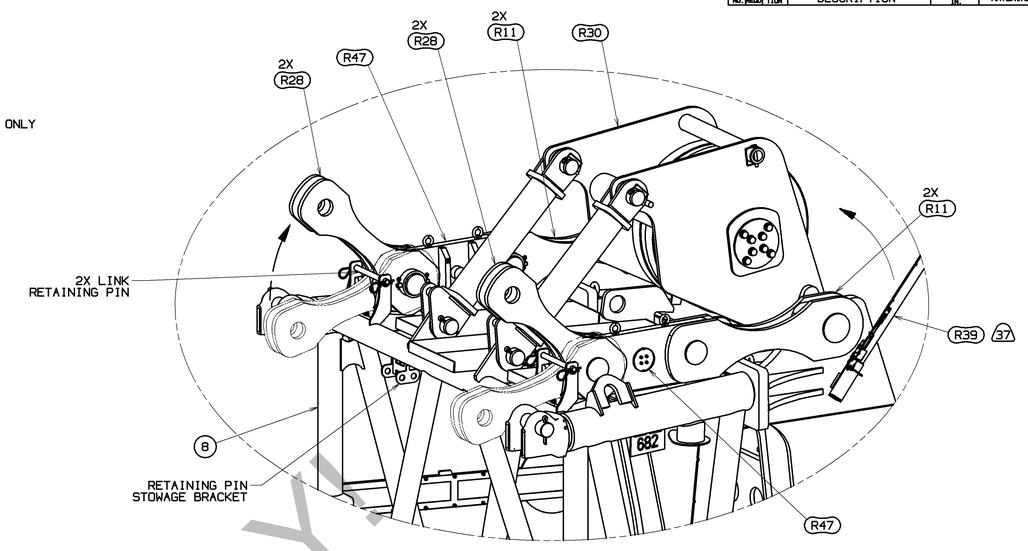
REVISIONS



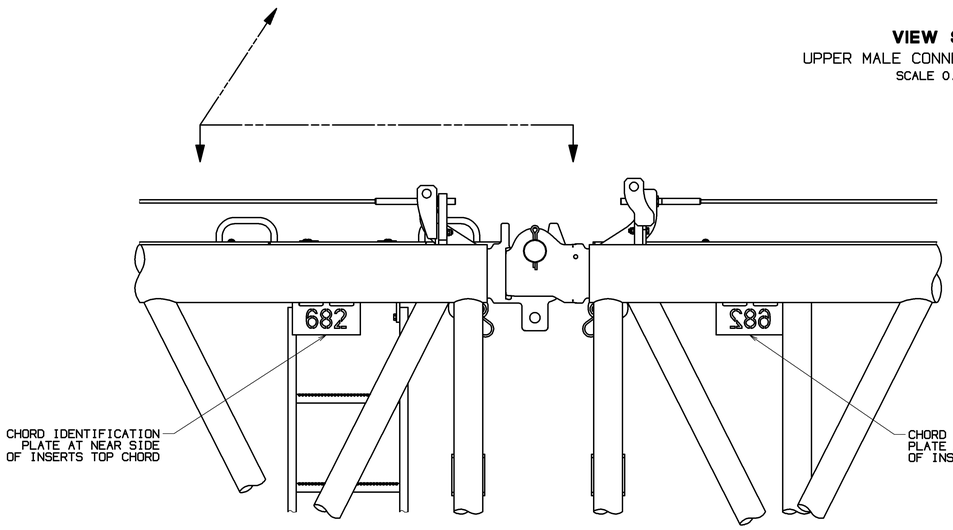
TYPICAL LOCATION OF INSERT IDENTIFICATION TAGS
SCALE 0.200



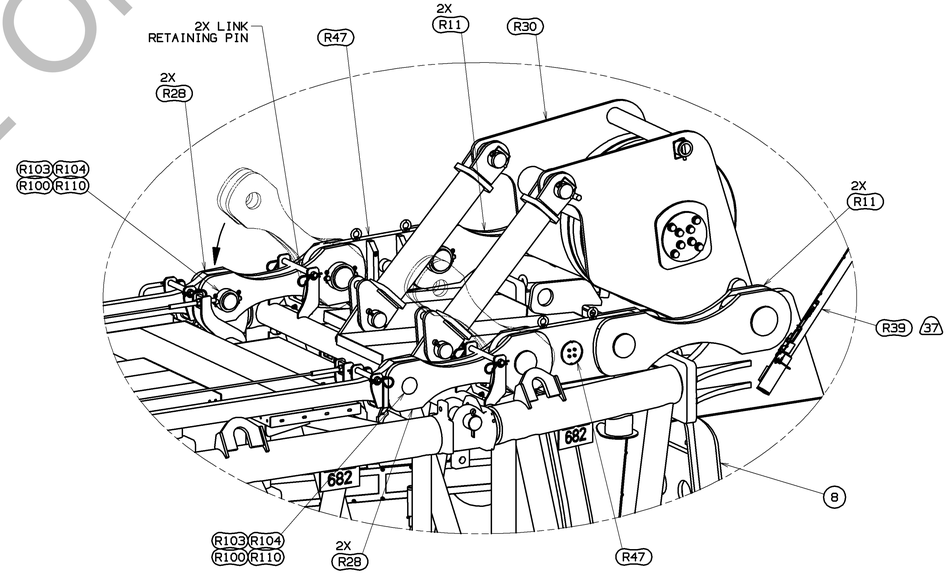
VIEW S-S
UPPER MALE CONNECTOR PIN HOLE
SCALE 0.150



DETAIL R
(FROM SHEET 11)
JIB TOP LINK PREP
SCALE 0.100

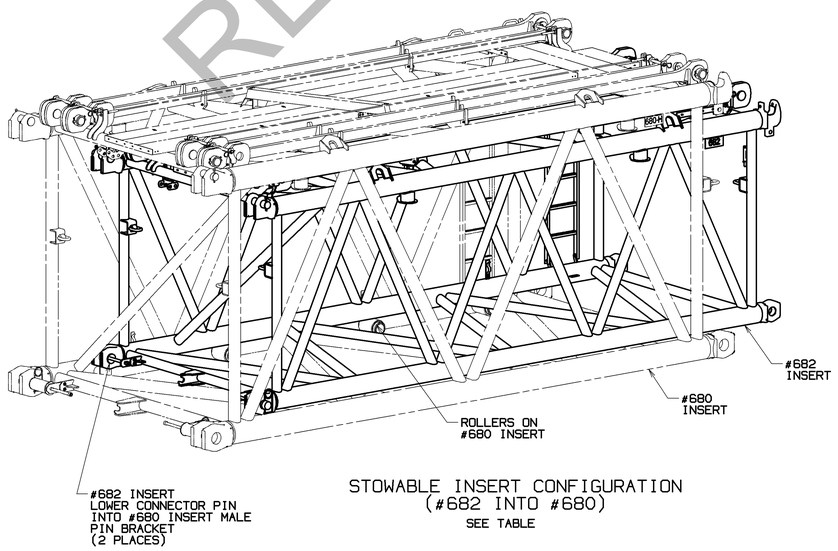


TYPICAL LOCATION OF JIB CHORD IDENTIFICATION PLATE
SCALE 0.150



DETAIL R
(FROM SHEET 11)
JIB TOP LINK TO INSERT STRAP CONNECTION
SCALE 0.100

STOWABLE INSERT CONFIGURATION (#682 INTO #680)		
#680 INSERT W/STOWABLE #682 INSERT FEATURE	#682 (6M) STOWABLE INSERT	#682 (12M) STOWABLE INSERT
81020427 (6M)	81021307 (ITEM 102)	-----
81020424 (12M)	-----	81021198 (ITEM 100) 81032715 (ITEM 104)
81021299 (12M)	-----	81021198 (ITEM 100) 81032715 (ITEM 104)
81034977 (12M)	-----	81021198 (ITEM 100) 81032715 (ITEM 104)



STOWABLE INSERT CONFIGURATION
(#682 INTO #680)
SEE TABLE

JIB TOP ASSY LINKS TO INSERT STRAP INSTALLATION

(SEE DETAIL R-JIB TOP LINK PREP)

ROTATE WIRE ROPE GUIDE (R30) INTO WORKING POSITION AND ATTACH WITH STRUTS.

1. PRIOR TO ASSEMBLING INSERT TO JIB TOP ITEM 8 REMOVE LINK RETAINING PIN FROM SHIPPING POSITION.
2. ROTATE LINKS R28 TO NEAR VERTICAL POSITION AND REINSTALL LINK RETAINING PIN.
3. ROTATE LINKS R28 TO REST ON LINK RETAINING PIN.

(SEE DETAIL R-JIB TOP LINK TO INSERT STRAP CONNECTION)

4. WITH INSERT ASSEMBLED TO JIB TOP ITEM 8, REMOVE LINK RETAINING PIN, ROTATE LINKS R28 TO ALIGN INSERT STRAPS AND INSTALL PIN (R103), COLLAR (R104), PIN (R110) AND COTTERS (R100).
5. STOW LINK RETAINING PINS IN PIN STOWAGE BRACKET (SEE DETAIL R-JIB TOP LINK PREP)

TOLERANCE UNLESS OTHERWISE SPECIFIED

DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING
(1) PLACE 0.0	±.12	±.18	±.03
(2) PLACE 0.00	±.06	±.12	±.015
(3) PLACE 0.000			±.005
ANGLES	±1°30'		±0°30'

MACHINING TOLERANCE DOES NOT APPLY TO RAW MATERIAL DIMENSIONS ON SERVICE

SCALE NOTED
DR. AJB
CK. RHV
APP TJA

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin

LUFFING JIB RIGGING
LJ on B10
MODEL MLC650

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 8829103794 FOR COMPONENTS LISTED IN 628500-05-035

DATE 05-23-16
REV. LTR. B

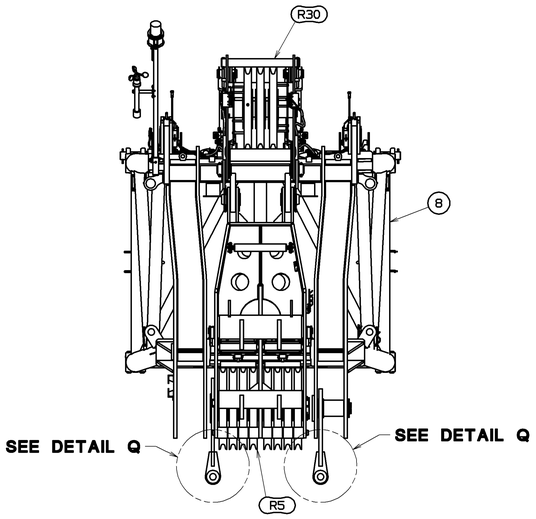
DWG. NO. 81018143
SHT 13 OF 15

BILL OF MATERIAL

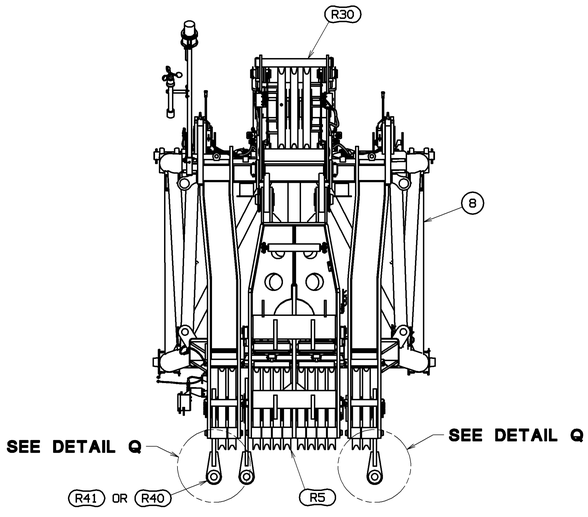
ITEM NO. / SPEC. NO. / MODIFICATION	DESCRIPTION	LENGTH IN.	MATERIAL	DWG. NO. OR SPEC. NO.

ASSEMBLIES USED ON

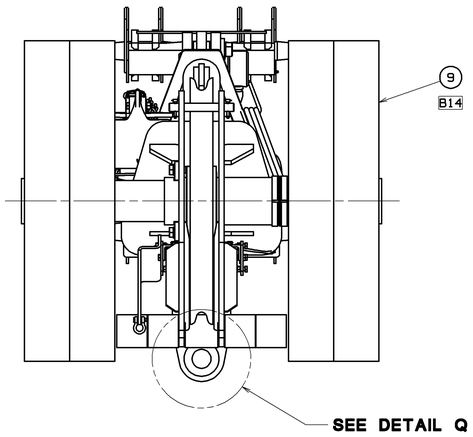
REVISIONS



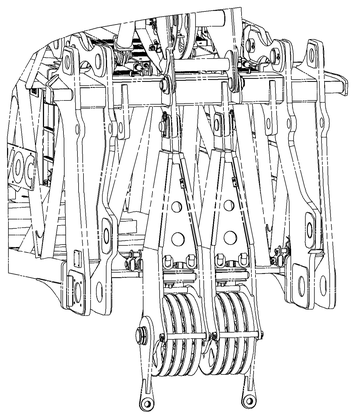
VIEW N-N
(FROM SHEET 5)
ALLOWS FOR REEVINGS UP TO 16 PARTS OF HOIST LINE
SCALE 0.050



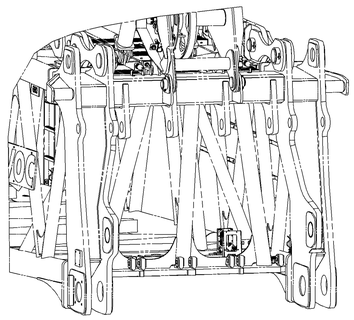
VIEW N-N
(FROM SHEET 5)
ALLOWS FOR REEVINGS UP TO 24 PARTS OF HOIST LINE
SCALE 0.050



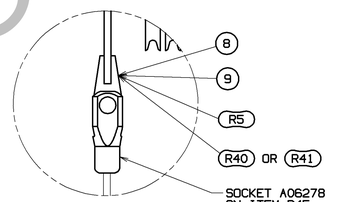
VIEW FFF-FFF
(FROM SHEET 1)
SCALE 0.150



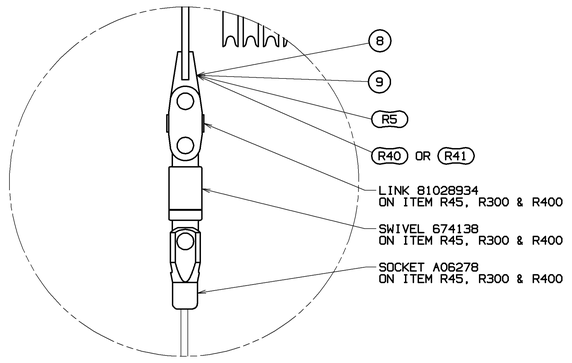
VIEW GGG
(FROM SHEET 3)
OPTION W/O BASIC CONFIGURATION
FOR BOOM W/LUFFING JIB
(2) 4 SHEAVE CENTER PACKS
SCALE 0.050



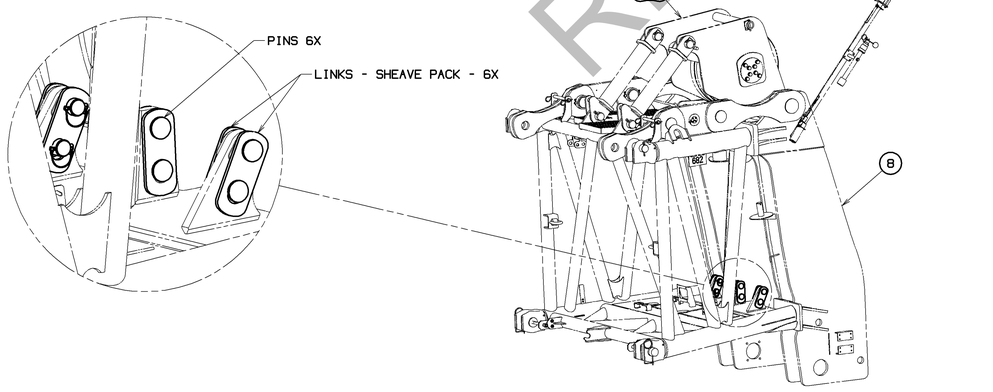
VIEW GGG
(FROM SHEET 3)
W/O BASIC AND OPTION CONFIGURATION
FOR BOOM W/LUFFING JIB
WITHOUT SHEAVE PACKS
SCALE 0.050



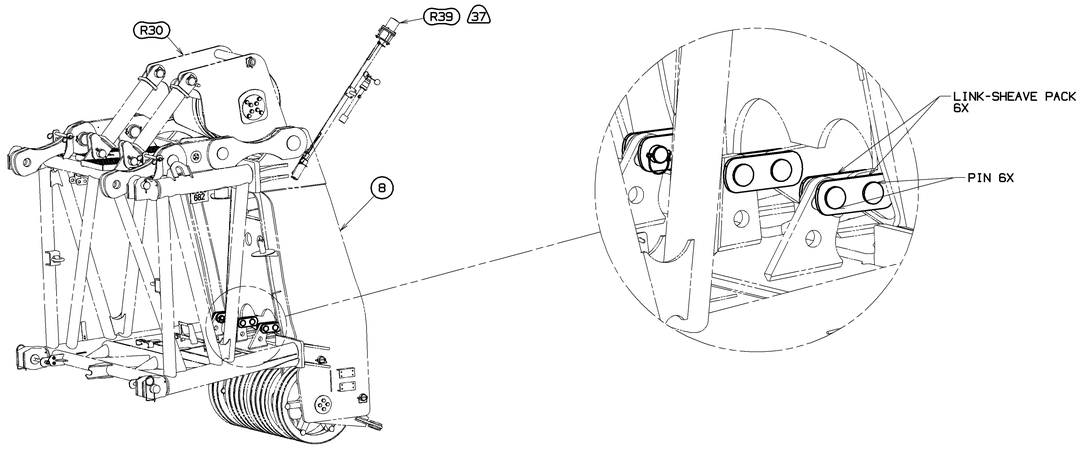
DETAIL Q
ITEM R45, R300 & R400
DEAD END W/O SWIVEL
SCALE 0.100



DETAIL Q
ITEM R45, R300 & R400
DEAD END W/SWIVEL
SCALE 0.100



POSITION OF LOWER SHEAVE POINT
PINS AND LINKS WITHOUT OPTIONAL SHEAVE PACK
SCALE 0.050



POSITION OF LOWER SHEAVE POINT
PINS AND LINKS WITH OPTIONAL SHEAVE PACK
SCALE 0.050

TOLERANCE UNLESS OTHERWISE SPECIFIED

DECIMAL PLACES	FABRICATION ≤ 10 FEET	FABRICATION > 10 FEET	MACHINING
(1) PLACE	±.12	±.18	±.03
(2) PLACE	±.06	±.12	±.015
(3) PLACE			±.005
ANGLES	±1°30'		±0°30'

MACHINING TOLERANCE DO NOT APPLY TO CASTING OR FORGING SURFACE

SCALE NOTED
DR. AJB
CK. RHV
APP TJA

Manitowoc Cranes, Inc.
Manitowoc, Wisconsin
MODEL MLC650

LUFFING JIB RIGGING
LJ on B10

DWG. NO. 81018143
SHT 14 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN GDS500-05-035

DATE 05-23-16
REV. LTR. B

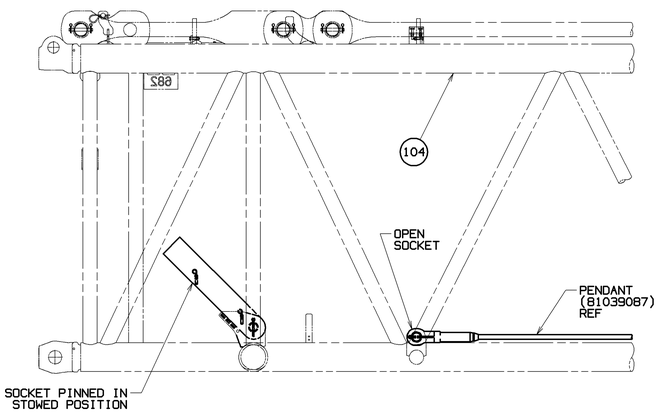
DWG. NO. 81018143

DO NOT SCALE THIS DRAWING

BILL OF MATERIAL					
ITEM NO. / REC. NO. / PRINT ITEM	DESCRIPTION	LENGTH IN	MATERIAL	DWG. NO. OR SPEC. NO.	ASSEMBLIES USED ON

REVISIONS

B15



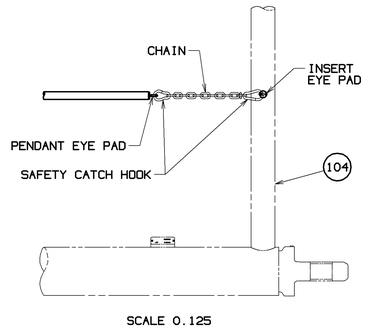
DETAIL AA - STOWED SHIPPING

SUSPENSION WIRE ROPE #682
ITEM R108, 81039008

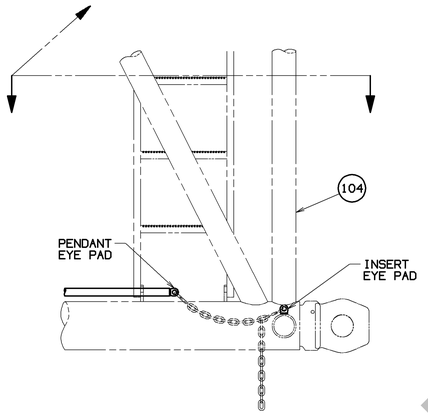
(FROM SHEET 4)

SUSPENSION PENDANTS STOWED POSITION FOR SHIPPING OR WHEN INSERT WORKING W/O SUSPENSION (59M JIB ONLY)

SCALE 0.075



SCALE 0.125



DETAIL BB - STOWED SHIPPING

SUSPENSION WIRE ROPE #682
ITEM R108, 81039008

(FROM SHEET 4)

SUSPENSION PENDANTS STOWED POSITION FOR SHIPPING OR WHEN INSERT WORKING W/O SUSPENSION (59M JIB ONLY)

SCALE 0.125

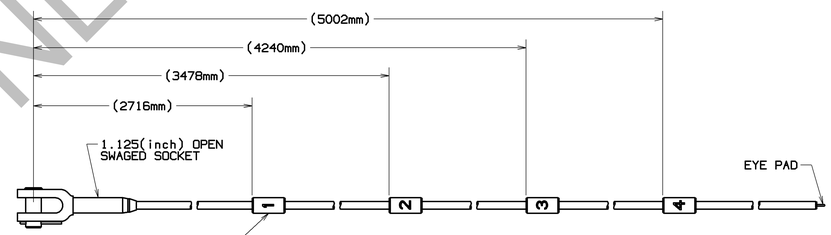
INTERMEDIATE SUSPENSION (R108) INSTALLATION

SEE JIB MAKEUP VIEWS ON SHEETS 4 & 5, AND JIB LENGTH TABLE ON SHEET 2 FOR REQUIRED SUSPENSION & WIRE ROPE BUTTON IDENTIFICATION LOCATION.

1. REMOVE MULTI-BUTTON PENDANT FROM STOWED SHIPPING POSITION. (SEE DETAIL AA & BB)
2. ATTACH OPEN SOCKET END OF PENDANT TO CONNECTING LINK R109 AT TOP OF INSERT ITEM 104. (SEE DETAIL CC - PREPPED NON-WORKING)
3. SLOWLY RAISE JIB. AS THE STRAPS RISE, GUIDE THE INTERMEDIATE SUSPENSION PENDANTS THROUGH THE OPENINGS IN THE JIB INSERT. STOP THE JIB RAISING PROCEDURE WHEN THE REQUIRED PENDANT BUTTON NEARS THE SOCKET. FROM STOWED POSITION REMOVE BUTTON RETAINING HITCH PIN FROM SOCKET AND POSITION THE IDENTIFIED PENDANT BUTTON INTO SOCKET. REINSTALL BUTTON RETAINING HITCH PIN INTO SOCKET, LOCKING PENDANT IN POSITION. (SEE DETAIL CC-PREPPED NON-WORKING)
4. RELOCATE SOCKET LOCKING HITCH PIN FROM SOCKET AND UPPER BRACKET HOLE TO LOWER BRACKET HOLE. (SEE DETAIL CC - WORKING)
5. ATTACH PENDANT EYE PAD TO INSERT EYE PADS USING A SAFETY CATCH HOOK AT EACH END OF CHAIN. ADJUST PENDANT TENSION BY POSITIONING SAFETY CATCH HOOK IN APPROPRIATE CHAIN LINK. (SEE DETAIL DD)
6. JIB UP SLOWLY AS PENDANT BECOMES TIGHT AND SOCKET PIVOTS INTO WORKING POSITION. (SEE DETAIL CC - WORKING)

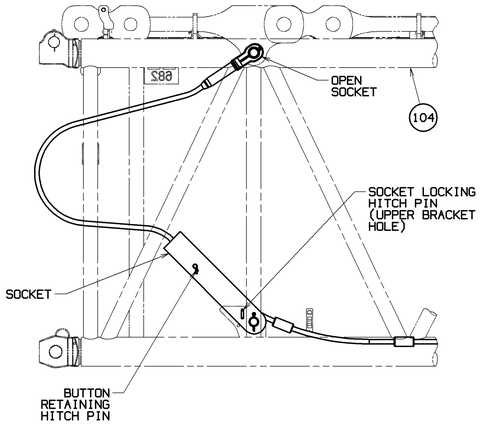
FOR REMOVAL OF INTERMEDIATE SUSPENSION REVERSE INSTALLATION STEPS 1 THRU 6, ASSURING SOCKET PIVOTS TOWARD STOWAGE POSITION.

VERIFY THAT SLACK IN PENDANT CHAIN ALLOWS FOR SOCKET TO PIVOT INTO STOWED POSITION.



PENDANT (81039087) BUTTON NUMBER IDENTIFICATION LOCATION

SCALE 0.125



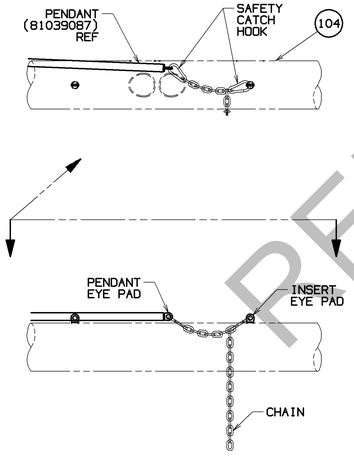
DETAIL CC - PREPPED NON-WORKING

SUSPENSION WIRE ROPE #682
ITEM R108, 81039008

(FROM SHEET 5)

SUSPENSION SOCKET & ROPE LOCATION FOR PREPPED NON-WORKING JIB LENGTHS 65M THRU 101M

SCALE 0.075

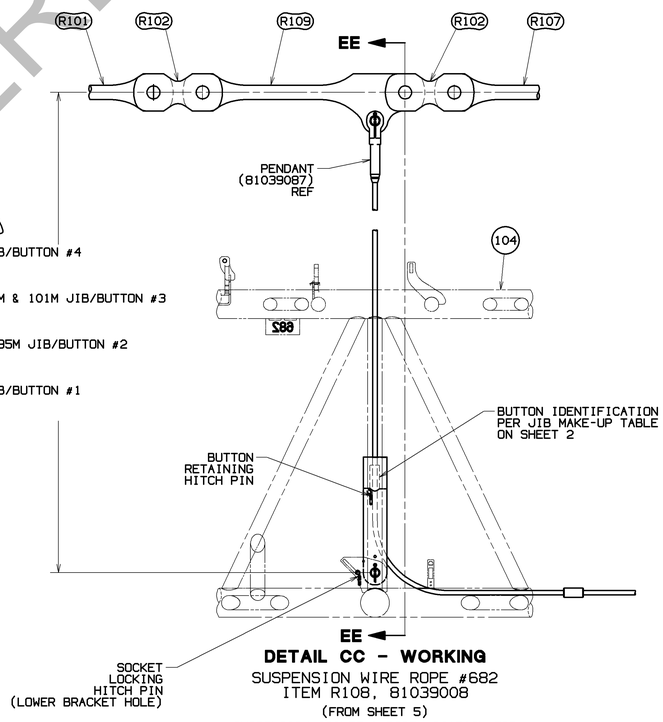


DETAIL DD

SUSPENSION WIRE ROPE #682
ITEM R108, 81039008

(FROM SHEET 5)

SCALE 0.125



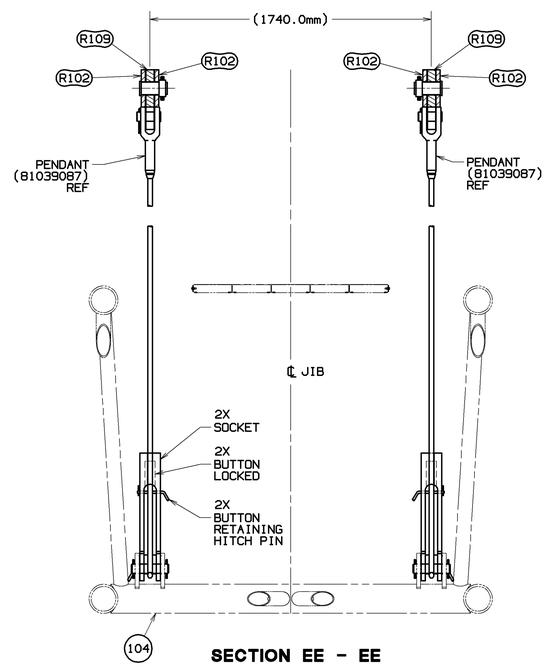
DETAIL CC - WORKING

SUSPENSION WIRE ROPE #682
ITEM R108, 81039008

(FROM SHEET 5)

SUSPENSION SOCKET & ROPE LOCATION FOR WORKING JIB LENGTHS 65M THRU 101M

SCALE 0.075



SECTION EE - EE

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	DECIMAL PLACES	FABRICATION		MACHINING	WELDMENT MACHINING ALLOWANCE ON ALL MACHINED SURFACES	DR. AJB	Manitowoc, Wisconsin	LUFFING JIB RIGGING	
		≤ 10 FEET	> 10 FEET			CK. RHV	MODEL MLC650	LJ on B10	
	(1) PLACE 0.0	±.12	±.18	±.03		APP TJA			
	(2) PLACE 0.00	±.06	±.12	±.015					
	(3) PLACE 0.000			±.005					
	ANGLES	±1°30'		±0°30'					

DO NOT SCALE THIS DRAWING

21

DWG. NO. 81018143

SHT 15 OF 15

PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 88291102794 FOR COMPONENTS LISTED IN GDS500-05-035

DATE 05-23-16

REV. LTR. B

DWG. NO. 81018143

SHT 15 OF 15