

TABLE FOR OPTIONAL I.D. TAG NO. PER SPECIFIC SERIAL NUMBER

STANDARD I.D. TAG	OPTIONAL I.D. TAG PER S/N	SERIAL NUMBERS
81027804	81027805	689535- 799165 1791826-1802759
81027809	81027810	663556- 796718 1780713-1782931 757034- 806114
81027812	81027813	1757058-1757065 731934- 799166
81027815	81027816	1692815-1781150 699764- 799167
81027818	81027819	1777200-1780235 668416- 797214
81027821	81027822	1778722-1778448

BILL OF MATERIAL

ITEM NO.	DESCRIPTION	MATERIAL	QTY	UNIT
BOOM RIGGING B85:505-500				
1	POINT ASSY EXT UPPER #58	A1199312		
2	BUTT ASSY #500 8.00 M	81028036	4	
3				
4				
5	TOP ASSY #500W, 3.0 M	84052213	2	

NO. REQ'D FOR THE FOLLOWING ITEMS ARE IN THE BOOM LENGTH TABLE

100	INSERT ASSY 12M H #500	81027803	3
101	INSERT ASSY 12M #500	81027808	5
102	INSERT ASSY 12M ED M #500	81027811	6
103	INSERT ASSY 6M #500	81027820	9
104	INSERT ASSY 3M M #500	80107712	27
105	INSERT ASSY #505 12M H	84048758	18
106	SUSPENSION WIRE ROPE #500	80139828	11
107	INSERT ASSY #505/500 12M H	84047995	7
108	INSERT ASSY 12M H #500/505	84048000	8
110	INSERT ASSY #500/505 12M H	80111376	28
111	INSERT ASSY #505/500 12M H	80111380	29
112	INSERT ASSY #505/500 12M H	80126409	30
113	INSERT ASSY #500/505 12M H	80126413	31
114	INSERT ASSY #505 12M H	80137011	33
115	GUIDE ASSY #500	84048777	
116			
117			
118	INSERT ASSY 12M #500 L	81027814	34
119	INSERT ASSY #500 12M W/SUSP	81027817	35

OPTION 1: HOOK BLOCKS

210	HOOK BLOCK SHIP LOOSE OPTIONS	80136699	17
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BASIC REFERENCE ITEMS

R1	ESI WARNING LIGHT	80102557	22
R2	LOAD CELL LINK 145,150 KGS	84038493	
R3	MAST RIGGING M11:503	84045340	38
R4	STRAP #500 BOOM	84052200	
R5	STRAP #500 BOOM	84052201	
R6	STRAP .62M #500	84052203	
R7	STRAP .62M #500	84052203	
R8			
R9	EQUALIZER ASSY	81029205	
R10			
R11	PIN 1 HOLE W/HD 100.0 DIA X 94.3 LG	81029670	
R12	PIN 1 HOLE W/HD 89.5 DIA X 94.3 LG	81029688	
R13	COLLAR 70.50MM I.D.	81029689	
R14	PIN 2 HOLE 12.7 DIA X 98.0 LG	81029708	
R15	LINK ED TO BOOM STRAP	81036487	
R16			
R17			
R18	COLLAR 101MM I.D.	A12945	
R19	PIN 2 HOLE 12.7 DIA X 128.0 LG	A12946	
R20			
R21	PIN 1 HOLE W/HD 2.25 DIA X 4.02 LG	A10870	16
R22	PIN COTTER 1/2 DIA X 3.50 LG	562171	16
R23	LINK CROSS, 58.8 DIA HOLE	80102833	16
R24	LINK ASSY DEAD END	81042356	16

NO. REQ'D FOR THE FOLLOWING REFERENCE ITEMS ARE IN THE BOOM LENGTH TABLE (SHEET 2)

R100	PIN COTTER 3/16 DIA X 1.50 LG	562085	
R101	PIN 1 HOLE W/HD 85.0 DIA X 94.3 LG	81024951	
R102	LINK #500 BOOM	81024955	
R103	STRAP 11.78M #500	81027401	
R104	STRAP 5.78M #500	81029621	
R105	STRAP 2.78M #500	80107907	
R106	STRAP 10.22M #500	81032003	
R107	LINK #505 BOOM	84051117	20
R108	LINK #500 BOOM	81032298	
R109	STRAP 8.07M #500	81036552	
R110	STRAP 1.69M #500	81036553	
R111	LINK #500 BOOM	81036554	
R112	PIN 2 HOLES 12.7 DIA X 93.0 LG	A11799	
R113	COLLAR 68MM I.D.	A11800	
R114	PIN 1 HOLE W/HD 75.80 DIA X 180.4 LG	A13294	23
R115	PIN SAFETY .243 OD X 5.00	563840	
R116	PIN 2 HOLE 75.80 X 171.9 LG	84026091	
R117	STRAP .68M #500	81032002	
R118	LINK #500 SUSPENSION	81032170	

REFERENCE ITEMS FOR ASSEMBLY AND RIGGING PURPOSE ONLY

R200			
R201			
R202			
R203	SLING 50000 LBS 6.15FT	84018961	14
R204	SLING 13.0 (FT) 40000 (LBS)	84026655	15
R205	SHACKLE 25MT	624759	15
R206			
R207	SLING LIFTING 1 LEG X 40000(LBS) X 9.0(FT)	81038423	15
R208	SHACKLE 20.5T SLINGS	81041163	15

- 1 WIRE ROPE GUIDE PARTS IN THIS INSERT ARE REQUIRED FOR USE OF AUXILIARY DRUMS #2, #3 AND #5. WHEN DRUMS #2, #3 AND #5 ARE NOT USED OR ARE NOT PRESENT, WIRE ROPE GUIDE MAY REMAIN IN SHIPPING POSITION DURING OPERATION.
- 2 WIRE ROPE GUIDE ASSY'S FOR DRUMS #2, #3 AND #5 CAN BE REUSED FROM 12M INSERT ITEM 100 (81027803) IF AVAILABLE.
- 3 TOP 3.0M (ITEM 6) I.D. TAG #84052214
- 4 INSERT 12.00M HEAVY (ITEM 100) I.D. TAG #81027804. OR OPTIONAL I.D. TAG TABLE. SEE DELTA NOTES 23 & 25.
- 5 BUTT 8.0M (ITEM 3) I.D. TAG #81028037
- 6 INSERT 12.00M MEDIUM (ITEM 101) I.D. TAG #81027809. SEE OPTIONAL I.D. TAG TABLE. SEE DELTA NOTE 23.
- 7 INSERT 12.00M MEDIUM W/EQUALIZER (ITEM 102) I.D. TAG #81027812. SEE OPTIONAL I.D. TAG TABLE. SEE DELTA NOTE 23.
- 8 INSERT 12.00M H (ITEM 108) I.D. TAG #80126329.
- 9 INSERT 12.00M H W/SHVS (ITEM 109) I.D. TAG #80126330.
- 10 INSERT 6.00M MEDIUM (ITEM 103) I.D. TAG #81027821. SEE OPTIONAL I.D. TAG TABLE. SEE DELTA NOTE 23.
- 11 JIB BACKSTAY STRAPS AND LINKS MUST BE REMOVED FROM BOOM ASSY. (SEE VIEW E-E ON SHEET 3).
- 12 REFER TO BOOM LENGTH TABLE (SHEET 2) FOR SUSPENSION PENDANT BUTTON NUMBER. SEE SHEET 13 FOR OPERATIONAL INSTRUCTIONS.
- 13 POINT EXT UPPER I.D. TAG #81012081. SEE DELTA NOTE 16.
- 14 FOR BOOM STRAP COMPONENTS ON OPTIONAL INSERT REFER TO BOOM LENGTH TABLE ON SHEET 2.
- 15 STOWS IN PARTS BOX 81028769 AS OPTION EQUIPPED.
- 16 FOR ASSEMBLY AND RIGGING PURPOSE ONLY. STOWS IN PARTS BOX 81028769 AS SELF RIGGING KIT 81038439.
- 17 REFER TO DETAIL C ON SHEET 1 FOR COMPONENT CONFIGURATION. STOWS IN PARTS BOX 81028769 AS OPTION EQUIPPED.
- 18 SEE BLOCK REEVING DRAWING 80101417 FOR 1 DRUM RIGGING CONFIGURATION OPTIONS AND INSTRUCTIONS. SEE RIGGING WINCH ASSY 81024072 FOR BLOCK AND WIRE ROPE ASSEMBLY.
- 19 INSERT 12.00M HEAVY W/EQUALIZER (ITEM 105) I.D. TAG #84051324 OR MODIFICATION I.D. TAG #80136939.
- 20 SUSPENSION PENDANT MAY APPEAR SLACK DURING RAISING AND OPERATION. CHECK SUSPENSION LOCATION AND PENDANT BUTTON NUMBER AND CONTINUE OPERATION.
- 21 REPLACE (4) EXISTING STRAP LINKS ITEM R102 WITH (4) SUSPENSION LINKS R107 ON SUSPENSION WIRE ROPE ITEM 106. (SEE SUSPENSION ASSEMBLY SEQUENCE ON SHEET 13).
- 22 QUANTITIES OF LINK (ITEM R102) IN BOOM LENGTH TABLE (SHEET 2) REFLECT REMOVAL OF LINKS ITEM R102 PER DELTA NOTE 20.
- 23 RELOCATE ITEM R2 FROM SHIPPING LOCATION ON TOP ASSY ITEM 5. (SEE DETAIL 5B ON SHEET 2) REFERENCE ESI EXT UPPER POINT 84051036 TO REPOSITION ITEMS FROM TOP ASSY ITEM 5 TO THE EXTEND UPPER POINT ITEM 1.
- 24 IF INSERT ITEMS 100, 101, 102, 103, 118 & 119 ARE SUPPLIED WITH 1 HOLE PIN W/HD (ITEM R114) INSTEAD OF ITEM R116, WHEN ONLY (1) SAFETY PIN (ITEM R115) IS REQUIRED PER PIN ITEM R114.
- 25 THESE COMPONENTS ON WIRE ROPE SUSPENSION ITEM 106 CAN BE REUSED FROM INSERT ASSY #500 W/SUSPENSION 81027817 IF AVAILABLE.
- 26 ALL WIRE ROPE GUIDE ASSY'S IN 12M INSERT ITEM 100 (81027803) MUST BE REMOVED DURING BOOM OPERATION.
- 27 QUANTITIES OF LOWER CONNECTOR PINS ITEM R114 & R115 AND SAFETY PINS ITEM R115 IN BOOM LENGTH TABLE (SHEET 2) REFLECT THE NON-USE OF THESE COMPONENTS AT JOINT WHERE SUSPENSION WIRE ROPE ITEM 106 IS USED.

(DELTA NOTES CONTINUE ON SHEET 2)

BOOM HOIST REEVING DIAGRAM FOR 10 PART LINE FOR REFERENCE ONLY

83.0 M (272.3 FT) #505-500 BOOM SHOWN

ITEMS REQ'D FOR VARIOUS BOOM LENGTHS - SEE SHEETS 4, 5, 6 & 7 FOR BOOM MAKE-UP

BILL OF MATERIAL

ITEM NO.	HEAVY				MEDIUM				LIGHT		STRAP						LINK				PIN		COTTER	COLLAR	SUSPENSION	LOWER CONN PIN	SAFETY PIN	GUIDE	SUSPENSION	AS PART OF 119 (19)	
	108 OR 111 OR 112	109 OR 110 OR 113	105 OR 114	100	101	102	103	104	118	119	R103	R104	R105	R106	R109	R110	R117	R102	R107	R108	R111	R118	R101	R112	R100	R113	106 (19)	R114 AND /OR R116	R115		115
BOOM LENGTH METERS FEET	INSERT 12M (39.4FT) ASSY 505/500	INSERT 12H (39.4FT) ASSY 505/505 W/SHEAVE	INSERT 12M (39.4FT) ASSY	INSERT 12M (39.4FT) ASSY	INSERT 12M (39.4FT) ASSY	INSERT 12M (39.4FT) ASSY	INSERT 6M (19.7FT) ASSY	INSERT 3M (9.8FT) ASSY	INSERT 12M (39.4FT) ASSY	INSERT 12M (39.4FT) ASSY	STRAP 12M (39.4FT)	STRAP 6M (19.7FT)	STRAP 3M (9.8FT)	STRAP LONG W/SUSP	STRAP LONG W/EQUAL	STRAP SHORT W/EQUAL	STRAP SHORT W/SUSP	LINK SEE (21)	LINK CONN W/SUSP	LINK W/SUSP	LINK W/EQUAL	LINK CONN W/SUSP	PIN	PIN	COTTER	COLLAR	PENDANT BUTTON NO. SEE (11)	PIN SEE (23) (26)	SAFETY PIN SEE (23) (28)	WIRE ROPE GUIDE UPPER	PENDANT BUTTON NO. SEE (41)
83	272.3	1	1	1	OR 1 2	1 0	0	0	0	0	6 8	0	0	0	2 0	4 2	0	20	0	0	4 0	0	28 24	28 24	72 64	28 24	---	14	28	0	---
86	282.2	1	1	1	OR 1 2	1 0	0	1	0	0	6 8	0	2	0	2 0	4 2	0	24	0	0	4 0	0	32 28	32 28	80 72	24 28	---	16	32	0	---
89	292.0	1	1	1	OR 1 2	1 0	1	0	0	0	6 8	2	0	0	2 0	4 2	0	24	0	0	4 0	0	32 28	32 28	80 72	32 28	---	16	32	1	---
92	301.8	1	1	1	OR 1 2	1 0	1	1	0	0	6 8	2	2	0	2 0	4 2	0	24	4	0	4 0	0	36 32	36 32	88 80	36 32	2	16	32	1	---
95	311.7	1	1	1	OR 2 3	1 0	0	0	0	0	8 10	0	0	0	2 0	4 2	0	20	4	0	4 0	0	32 28	32 28	80 72	32 28	3	14	28	1	---
98	321.5	1	1	1	OR 2 3	1 0	0	1	0	0	8 10	0	2	0	2 0	4 2	0	24	4	0	4 0	0	36 32	36 32	88 80	36 32	3	16	32	1	---
101	331.4	1	1	1	OR 2 3	1 0	1	0	0	0	8 10	2	0	0	2 0	4 2	0	24	4	0	4 0	0	36 32	36 32	88 80	36 32	4	16	32	1	---
104	341.2	1	1	1	OR 2 3	1 0	1	1	0	0	8 10	2	2	0	2 0	4 2	0	28	4	0	4 0	0	40 36	40 36	96 88	40 36	4	18	36	1	---
107	351.0	1	1	1	OR 2 3	1 0	0	0	1	0	10 12	0	0	0	2 0	4 2	0	24	4	0	4 0	0	36 32	36 32	88 80	36 32	4	16	32	1	---
110	360.9	1	1	1	OR 2 3	1 0	0	1	1	0	10 12	0	2	0	2 0	4 2	0	28	4	0	4 0	0	40 36	40 36	96 88	40 36	4	18	36	1	---
113	370.7	1	1	1	OR 2 3	1 0	1	0	1	0	10 12	2	0	0	2 0	4 2	0	28	4	0	4 0	0	40 36	40 36	96 88	40 36	4	18	36	1	---
116	380.6	1	1	1	OR 2 3	1 0	1	1	1	0	10 12	2	2	0	2 0	4 2	0	32	4	0	4 0	0	44 40	44 40	104 96	44 40	5	20	40	1	---
119	390.4	1	1	1	OR 2 3	1 0	0	0	1 2	1 0	10 14	0	0	2 0	2 0	4 2	2 0	32 28	4 0	4 0	4 0	2 0	48 36	48 36	112 88	48 36	5	18	36	1	---
122	400.3	1	1	1	OR 2 3	1 0	0	1	1 2	1 0	10 14	0	2	0	2 0	2 0	4 2	36 32	4 0	4 0	4 0	2 0	52 48	52 48	120 112	52 48	5	20	40	1	---
125	410.1	1	1	1	OR 2 3	1 0	1	0	1 12	1 0	10 12	2	0	2 0	2 0	4 2	2 36	4 4	4 4	4 0	2 2	52 48	52 48	120 112	52 48	6	20	40	1	4	
128	419.9	1	1	1	OR 2 3	1 0	1	1	1 12	1 0	10 12	2	2	2 0	2 0	4 2	2 40	4 4	4 4	4 0	2 2	56 52	56 52	128 120	56 52	7	22	44	1	3	
131	429.8	1	1	1	OR 2 3	1 0	0	0	2 12	1 0	10 14	0	0	2 0	2 0	4 2	2 36	4 4	4 4	4 0	2 2	52 48	52 48	120 112	52 48	7	20	40	1	5	

(DELTA NOTES CONTINUED FROM SHEET 1)

- (27) INSERT 3.00M MEDIUM (ITEM 104) I.D. TAG #80107718.
- (28) INSERT 12.00M HEAVY W/SHEAVES (ITEM 110) I.D. TAG #80126392.
- (29) INSERT 12.00M H (ITEM 111) I.D. TAG #80126391.
- (30) INSERT 12.00M H (ITEM 112) I.D. TAG #80126410 (POST-MACHINED) OR I.D. TAG #80137841 (PRE-MACHINED).
- (31) INSERT 12.00M HEAVY W/SHEAVES (ITEM 113) I.D. TAG #80126414 (POST-MACHINED) OR I.D. TAG #80138021 (PRE-MACHINED).
- (32) INSERT 12.00M XHEAVY (ITEM 116) I.D. TAG #80134703.
- (33) INSERT 12.00M HEAVY W/EQUALIZER (ITEM 114) I.D. TAG #80135490.
- (34) INSERT 12.00M LIGHT (ITEM 118) I.D. TAG #81027815. SEE OPTIONAL I.D. TAG TABLE. SEE DELTA NOTE 23.
- (35) INSERT 12.00M LIGHT W/SUSPENSION (ITEM 119) I.D. TAG #81027818. SEE OPTIONAL I.D. TAG TABLE. SEE DELTA NOTES 23, 39 AND 41.
- (36) EQUALIZER SPACER LINKS TO BE LOCATED IN STORAGE POSITION DURING WORKING CONDITIONS. (SEE DETAIL G ON SHEET 7).
- (37) BOOM STRAPS AND LINKS ON 12M HEAVY INSERT (ITEM 109 OR 110 OR 113) AND 12M EQUALIZER INSERT (ITEM 105 OR 117) UP TO EQUALIZER (R9) MAY REMAIN ON INSERTS DURING WORKING CONDITIONS. (SEE DETAIL G ON SHEET 7). (UNUSED STOWED BOOM STRAPS, LINKS & HARDWARE ARE NOT ACCOUNTED FOR IN BOOM LENGTH TABLE ON SHEET 2).
- (38) MAST RIGGING M11:503 (R4) CONTAINS MAST BUTT ASSY 84041201 WITH 'ACTIVE' FIXED MAST STOP.
- (39) IF INTERMEDIATE SUSPENSION PENDANT IN ITEM 119 IS NOT USED, DISCONNECT PENDANT FROM BOOM STRAPS AND STOW IN INSERT.
- (40) BOOM BLOCKING TO BE PLACED AT INSERT NEXT TO SUSPENSION BEAM (ITEM 106 AND 114).
- (41) REFER TO BOOM LENGTH TABLE (SHEET 2) FOR SUSPENSION PENDANT BUTTON NUMBER. SEE SHEET 14 FOR OPERATIONAL INSTRUCTIONS.

DO NOT SCALE THIS DRAWING

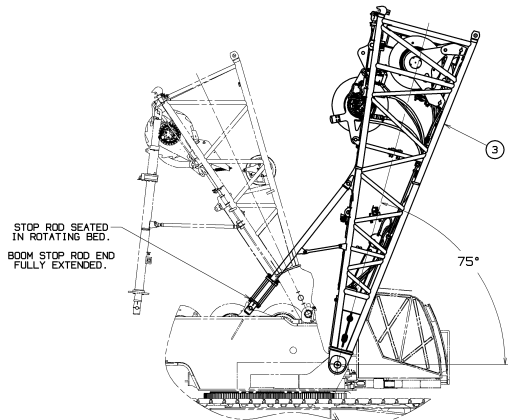
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PRIVATE LABELING
RESTRICTIONS TO
CAPTIONED
ENGINEERING
SPECIFICATIONS
80134736 FOR
COMPONENTS LISTED
IN 005000-05-035

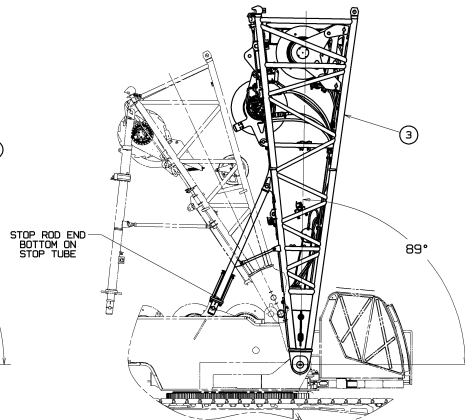
05-12-22
REV. 1
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80134736
SHT 2 OF 13

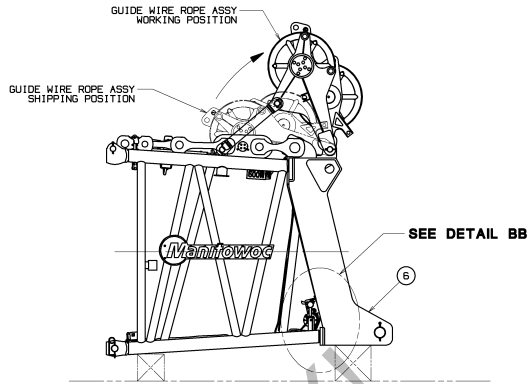
BILL OF MATERIAL			
ITEM NO.	DESCRIPTION	QUANTITY	MATERIAL



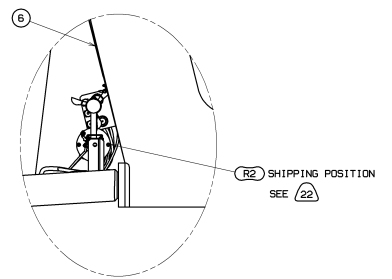
BOOM STOP
START OF CUSHION
SCALE 0.025



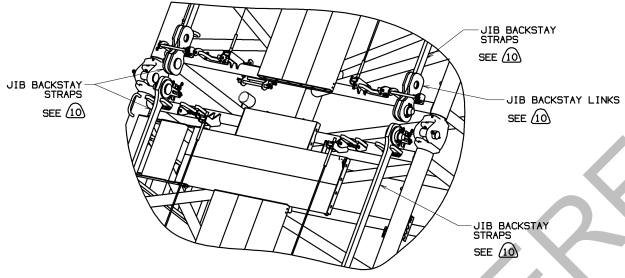
BOOM STOP
PHYSICAL STOP
SCALE 0.025



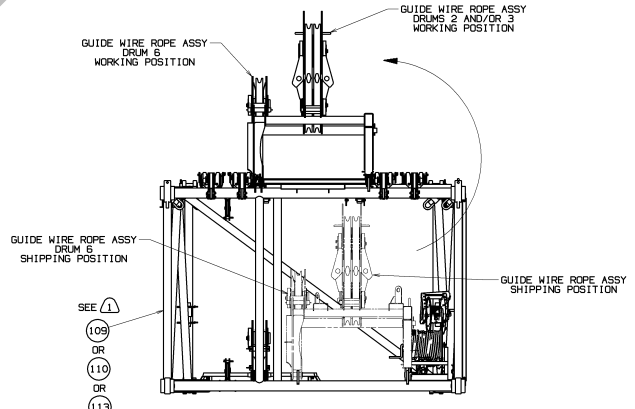
BOOM TOP WIRE ROPE GUIDE ARRANGEMENT
SCALE 0.050



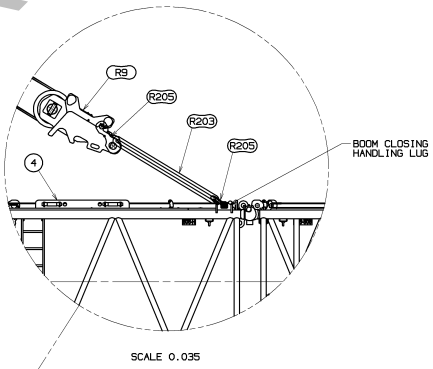
DETAIL BB
SCALE 0.125



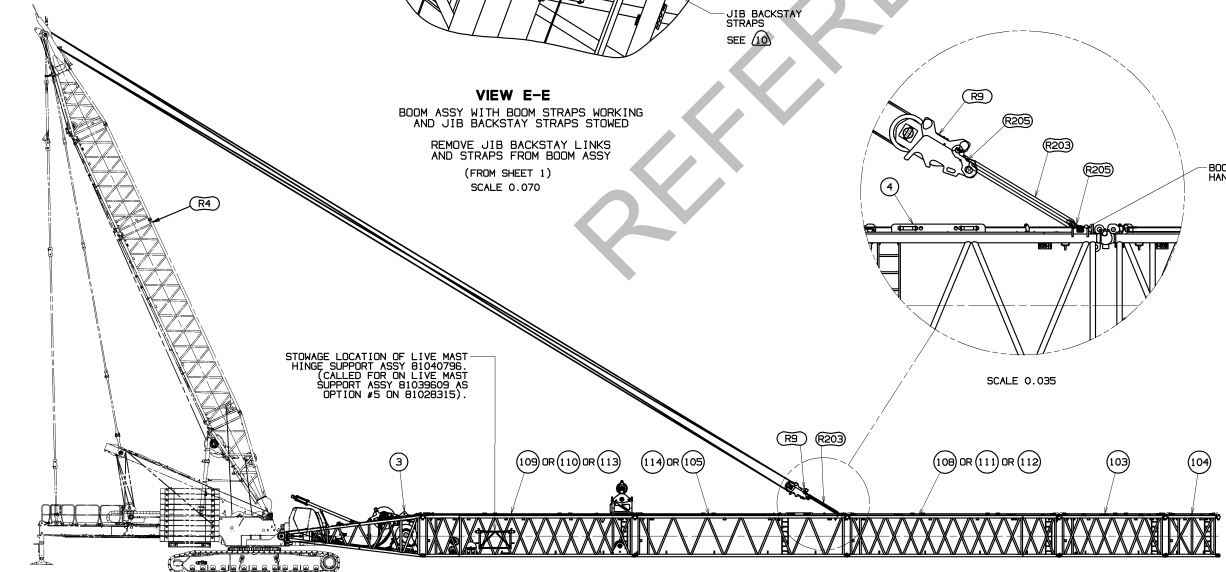
VIEW E-E
BOOM ASSY WITH BOOM STRAPS WORKING AND JIB BACKSTAY STRAPS STOWED
REMOVE JIB BACKSTAY LINKS AND STRAPS FROM BOOM ASSY
(FROM SHEET 1)
SCALE 0.070



SECTION D-D
12M 3.5M WIDE HEAVY INSERT (ITEM 109 OR 110 OR 113)
ROPE GUIDE ARRANGEMENT
(FROM SHEET 1)
SCALE 0.050



SCALE 0.035



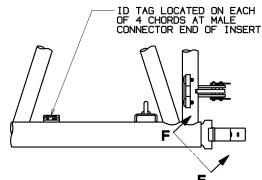
BOOM HANDLING WITH EQUALIZER
(SEE TABLE)

LENGTH	BOOM HANDLING WITH EQUALIZER WITH EQUALIZER ATTACHED TO BOOM INSERTS		
	3M (9.8FT) INSERT 80107717	6M (19.7FT) INSERT 81027820	12M (39.4FT) INSERT 84047955 OR 80111380 OR 80126409
12M (39.4FT)	0	0	1
15M (49.2FT)	1	0	1
18M (59.1FT)	0	1	1
21M (68.9FT)	1	1	1

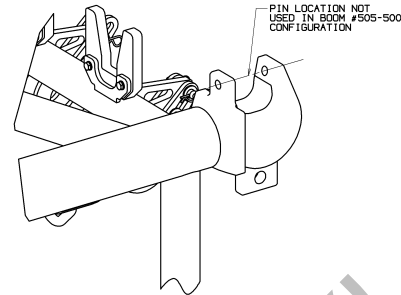
MAXIMUM BOOM INSERTS THAT CAN BE CANTILEVERED BEYOND 12M EQUALIZER INSERT IS AS FOLLOWS

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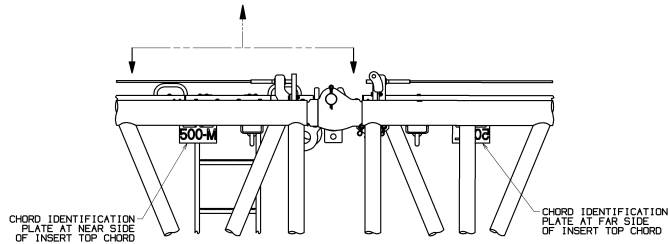
BILL OF MATERIAL			
ITEM NO.	DESCRIPTION	MATERIAL	QUANTITY



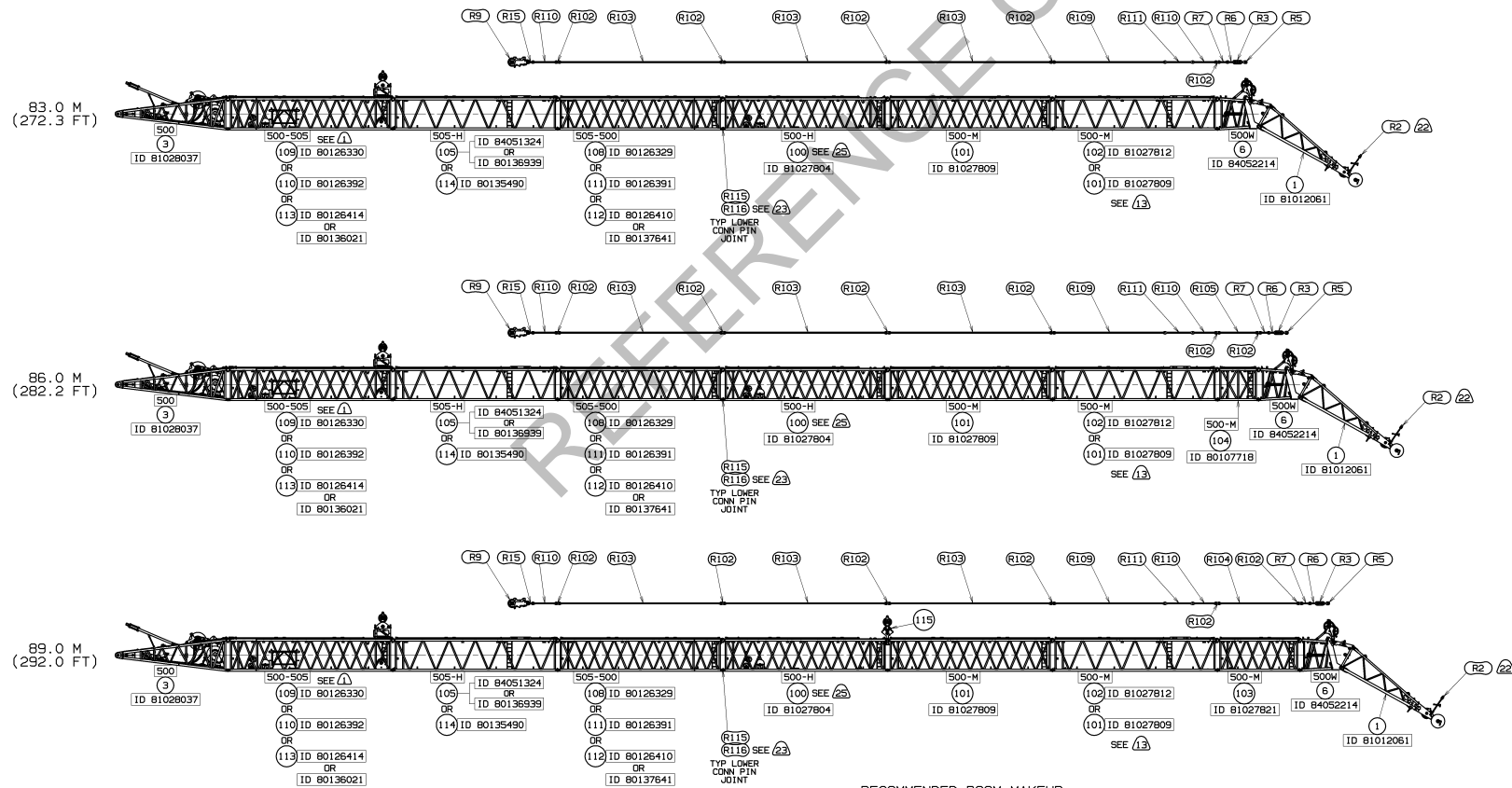
TYPICAL LOCATION OF INSERT ID TAGS
SCALE 0.100



VIEW F-F
UPPER MALE CONNECTOR PIN HOLE
SCALE 0.250



TYPICAL LOCATION OF BOOM CHORD IDENTIFICATION PLATE
SCALE 0.100



RECOMMENDED BOOM MAKEUP
FOR TYP STRAP PIN JOINT SEE SECTION B-B
AND DETAILS H, J, K & L

TOLERANCES UNLESS OTHERWISE SPECIFIED		FABRICATION		WELDING		MATERIALS	
FINISH	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN	AS SHOWN

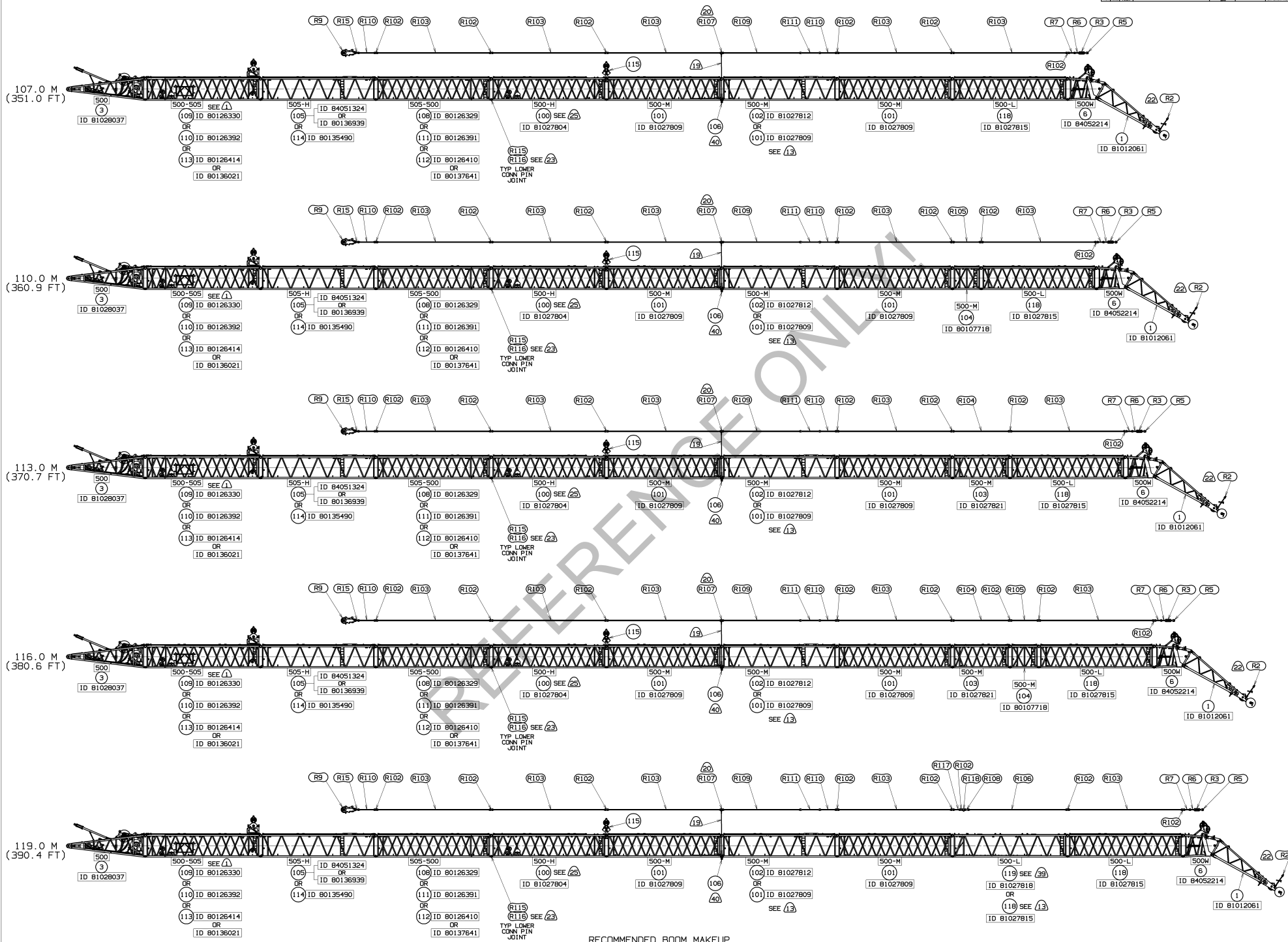
PRIVATE LABELING
RESTRICTED TO
CAPTIONED
ENGINEERING
SPECIFIC FOR
880134736
COMPONENTS LISTED
IN 025500-05-035

DATE	05-12-22
REV	A
DESIGNED BY	DR. DHV
CHECKED BY	DR. DLG
DATE	05-12-22
BY	PP. JRR

MANUFACTURED BY	Martinsco Cranes, Inc.	BOOM RIGGING
MODEL	MMMLC300	B85:505-500

DO NOT SCALE THIS DRAWING

BILL OF MATERIAL			
ITEM NO.	QTY	DESCRIPTION	MATERIAL



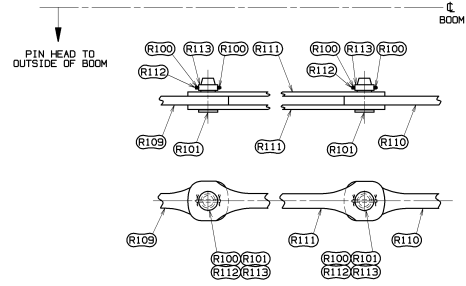
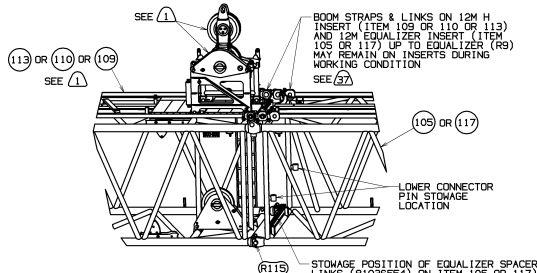
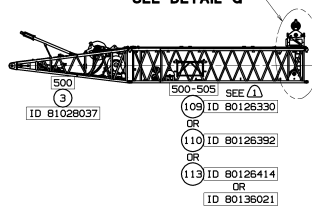
RECOMMENDED BOOM MAKEUP
FOR TYP STRAP PIN JOINT SEE SECTION B-B
AND DETAILS H, J, K & L

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			<small>DESCRIPTION: BOOM RIGGING</small>	<small>QUANTITY: BBS:505-500</small>	<small>DATE: 05-12-22</small>

PRIVATE LABELING
RESTRICTED TO
ENGINEERING
SPECIFIC FOR
80134736
COMPANIES LISTED
IN 025500-05-035

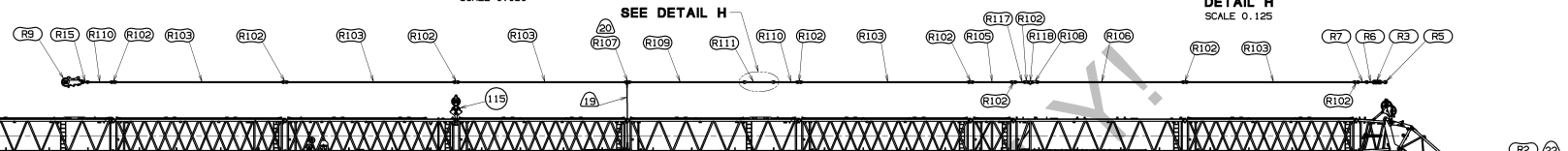
BILL OF MATERIAL			
ITEM NO.	DESCRIPTION	MATERIAL	QUANTITY

SEE DETAIL G

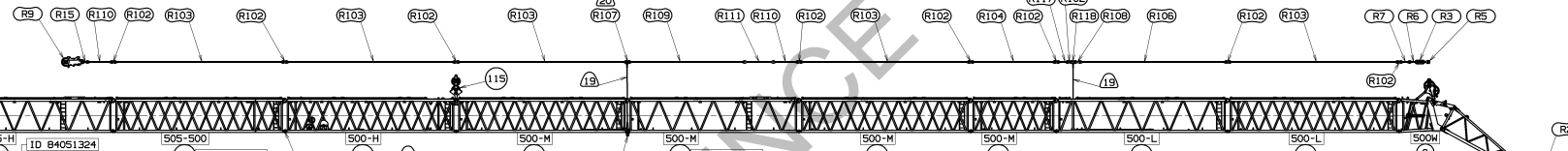


DETAIL G
SEE DELTA NOTES 36 & 37
SCALE 0.030

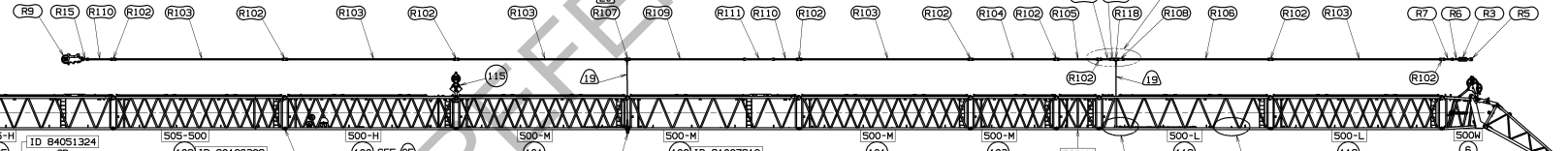
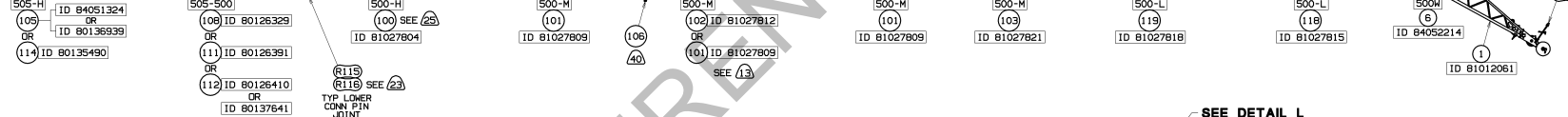
DETAIL H
SCALE 0.125



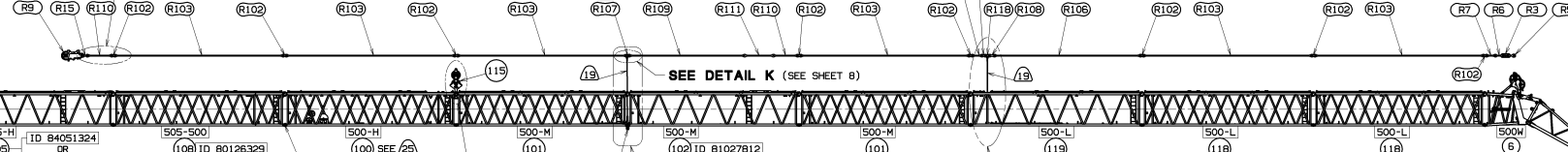
122.0 M
(400.3 FT)



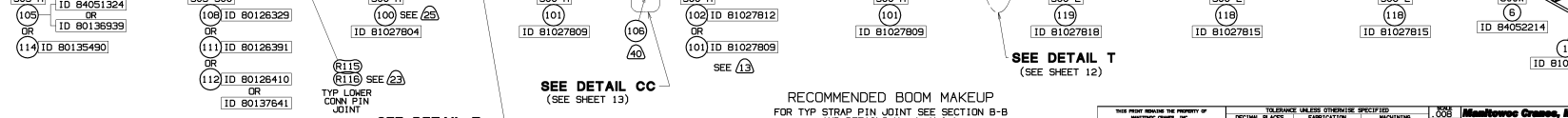
125.0 M
(410.1 FT)



128.0 M
(419.9 FT)



131.0 M
(429.8 FT)



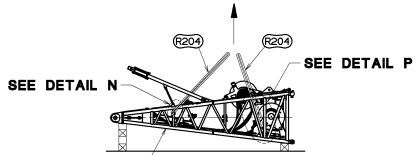
SEE DETAIL J
(SEE SHEET B)

SEE DETAIL CC
(SEE SHEET 13)

SEE DETAIL Z
(SEE SHEET B)

RECOMMENDED BOOM MAKEUP
FOR TYP STRAP PIN JOINT SEE SECTION B-B
AND DETAILS H, J, K & L

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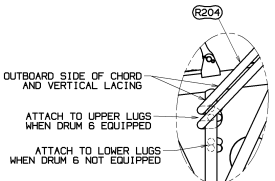
SEE DETAIL N

SEE DETAIL P

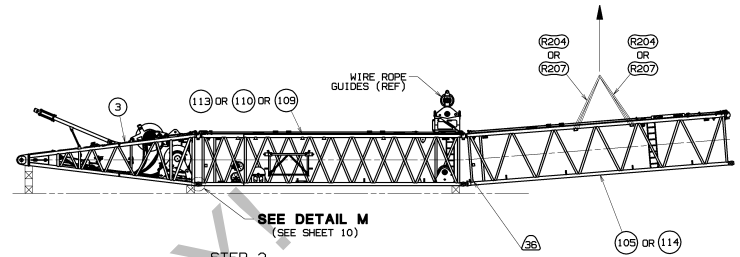
INSERT CONFIGURATION		PARTIAL BOOM LIFT TABLE									
		R205		BACK/HINGE SLING				FRONT/TOP SLING			
		SLINGS (4)	SHACKLE (25 MT)	LEFT		RIGHT		LEFT		RIGHT	
WITHOUT LUFFING JIB BACKSTAYS WITH DRUM 6	R207	POST	SHACKLE (20.5 T)	WRAP ON CHORD	SHACKLE (20.5 T)	WRAP ON CHORD	POST	SHACKLE (20.5 T)	WRAP ON CHORD	SHACKLE (20.5 T)	WRAP ON CHORD
	R204	2	1	0	0	0	0	3	1	0	0
	R207	2	1	0	0	0	0	4	2	0	0
WITHOUT LUFFING JIB BACKSTAYS OR DRUM 6	R204	2	2	0	0	0	0	4	1	0	1
	R207	2	2	0	0	0	0	4	1	0	1

BILL OF MATERIAL		REVISIONS	
ITEM NO.	DESCRIPTION	MATERIAL	QUANTITY

- STEP 1**
BOOM BUTT PREP
BLOCK AND POSITION BOOM BUTT (ITEM 3) TO HANG APPROXIMATELY LEVEL PICK AS FOLLOWS:
- ROUTE SLINGS (R204) ON THE INBOARD SIDE OF THE BOOM STOPS.
 - ROUTE SLINGS (R204) NEAREST BOOM HINGE OVER THE OUTBOARD SIDE OF THE BOOM BUTT CHORDS AND THE OUTBOARD SIDE OF THE VERTICAL LACINGS THAT THE SLING LUGS ARE WELDED TO. (SEE DETAIL N)
 - WHEN DRUM 6 EQUIPPED USE UPPER BUTT SLING LUGS NEAREST BOOM HINGE AND LOWER BUTT SLING LUGS TOWARD CONNECTOR END. (SEE DETAILS N & P)
- WHEN DRUM 6 NOT EQUIPPED USE LOWER BUTT SLING LUGS NEAREST BOOM HINGE AND UPPER BUTT SLING LUGS TOWARD CONNECTOR END. (SEE DETAILS N & P)



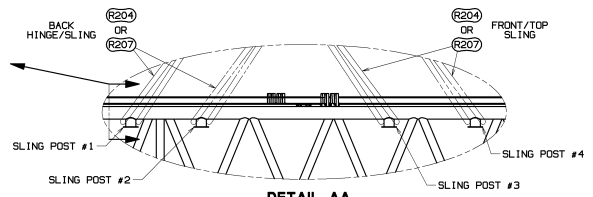
DETAIL N
SCALE 0.075



SEE DETAIL M
(SEE SHEET 10)

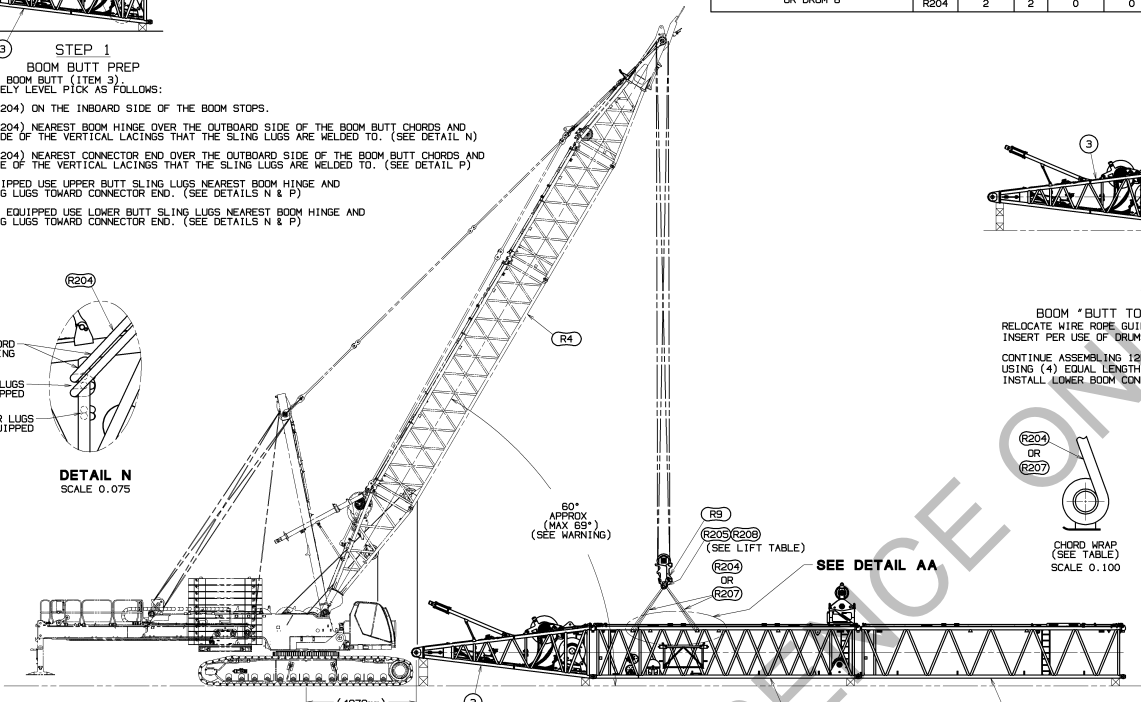
STEP 2
BOOM "BUTT" TO EQUALIZER INSERT ASSEMBLY
RELOCATE WIRE ROPE GUIDES IN 12M INSERT (ITEM 109 OR 110 OR 113) TO TOP OF INSERT PER USE OF DRUMS 2, 3 AND 6. (SEE SECTION D-D ON SHEET 3)

CONTINUE ASSEMBLING 12M INSERTS (ITEM 109 OR 110 OR 113 AND 105 OR 114) TO BUTT (ITEM 3) USING (4) EQUAL LENGTH LIFTING SLINGS (R207 OR R204).
INSTALL LOWER BOOM CONNECTOR PINS. (SEE DETAIL M ON SHEET 10).



DETAIL AA
SCALE 0.050

SEE PARTIAL BOOM LIFT TABLE FOR VARIOUS INSERT CONFIGURATIONS



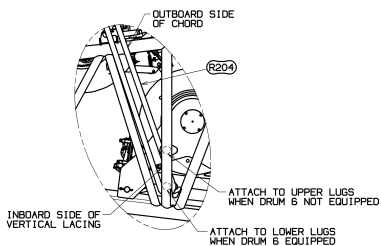
STEP 3A
BOOM HANDLING WITH FIXED MAST

USING PREVIOUSLY ASSEMBLED FIXED MAST (R4) PER ASSEMBLY INSTRUCTIONS 84045340, POSITION FIXED MAST AT APPROXIMATELY 60° FROM HORIZONTAL WITH BUTT BETWEEN CRAWLERS. INSTALL COUNTERWEIGHT BOXES TO TRAY.

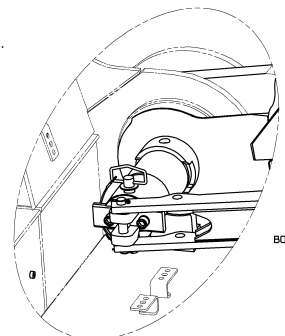
NOTE: THE COUNTERWEIGHT TRAY IS TO BE AT THE MINIMUM POSITION.

WARNING: DO NOT RAISE THE MAST BEYOND 69° IF COUNTERWEIGHT IS INSTALLED WITHOUT ATTACHING BOOM TO MACHINE AND CONNECTING EQUALIZER TO BOOM STRAPS. CRANE COULD TIP.

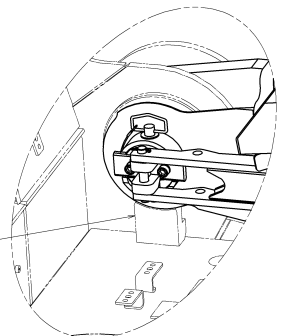
USE (4) EQUAL LENGTH LIFTING SLINGS (R207 OR R204) TO HANDLE THE PARTIAL BOOM WITH THE FIXED MAST. ATTACH SLINGS WITH SHACKLES (R205 & R206) TO EQUALIZER (R3) AND APPROPRIATE SLING POSTS ON 12M INSERT (ITEM 109 OR 110 OR 113). (LIFTING POINTS AND COMPONENTS VARY ON 12M INSERT (ITEM 109 OR 110 OR 113) PER WITH DRUM 6 OR WITHOUT DRUM 6. SEE DETAIL AA AND PARTIAL BOOM LIFT TABLE).



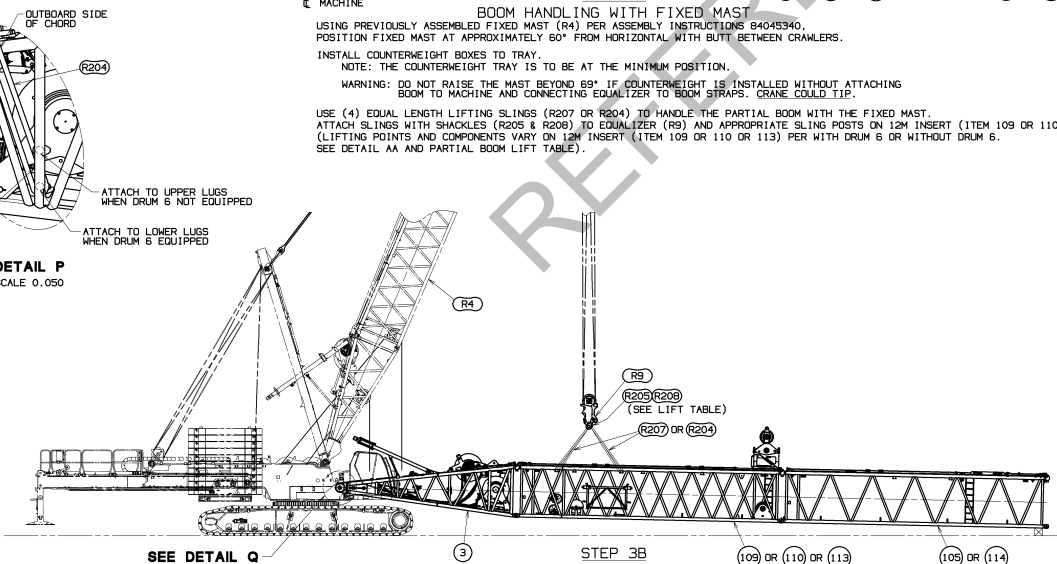
DETAIL P
SCALE 0.050



DETAIL Q
BOOM HINGE INSTALLATION
PIN PULLER RETRACTED
(VIEW LOOKING FROM CENTERLINE, BOOM TOWARD FAR SIDE HINGE PIN)
SCALE 0.200



DETAIL Q
BOOM HINGE INSTALLATION
PIN PULLER EXTENDED
(VIEW LOOKING FROM CENTERLINE, BOOM TOWARD FAR SIDE HINGE PIN)
SCALE 0.200



STEP 3B
INSTALL PARTIAL BOOM

RAISE PARTIAL BOOM AND SET INNER PLATE OF BUTT HINGE ON ALIGNMENT TAB OF ROTATING BED. (SEE DETAIL Q). ACTIVATE HINGE PIN CYLINDER TO INSTALL HINGE PIN INTO BUTT (ITEM 3). LOWER PARTIAL BOOM ONTO BLOCKING. DETACH LIFTING SLINGS (R207 OR R204) FROM 12M INSERT (ITEM 109 OR 110 OR 113).

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FABRICATION	FINISHING													
111 PLACE 0.005	111 PLACE 0.005													
112 PLACE 0.005	112 PLACE 0.005													
113 PLACE 0.005	113 PLACE 0.005													
114 PLACE 0.005	114 PLACE 0.005													

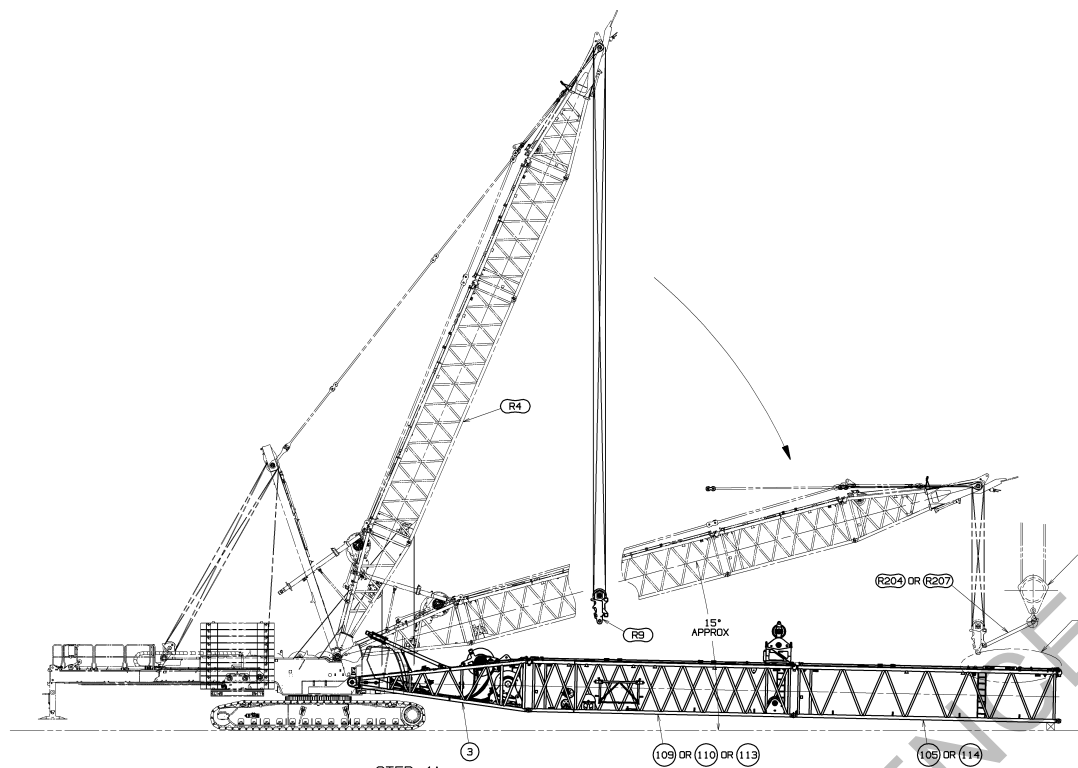
PRIVATE LABELING RIGHTS RESERVED TO CAPRIUM ENGINEERING SPECIFIC FOR B851007M FOR COMPONENTS LISTED IN 802500-05-035

05-12-22

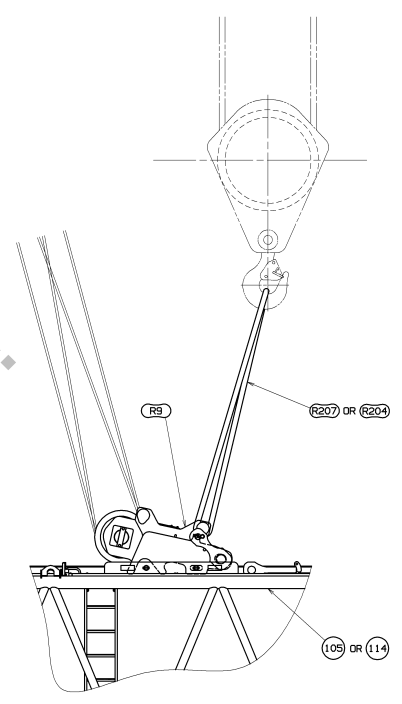
80134736

SHT 9 OF 13

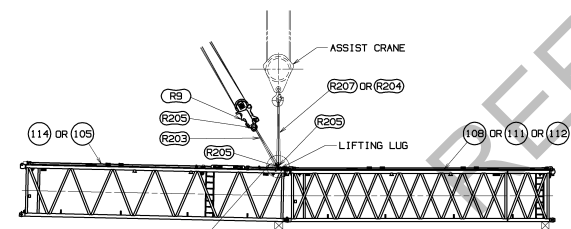
BILL OF MATERIAL				
ITEM NO.	QTY	DESCRIPTION	MATERIAL	APPROX. QTY



STEP 4A
EQUALIZER TO INSERT ALIGNMENT
 LOWER FIXED MAST TO APPROXIMATELY 15° WITH EQUALIZER (R9) SLIGHTLY ABOVE EQUALIZER INSERT (ITEM 105 OR 114).
 ATTACH ASSIST CRANE TO EQUALIZER (R9) LOWER SLING POSTS WITH LIFTING SLINGS (R207 OR R204).



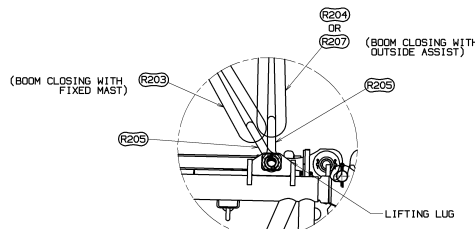
STEP 4B
 RELOCATE REAR ALIGNMENT PINS FROM STORAGE TUBES TO THE REAR OF THE EQUALIZER RAILS. (SEE DETAIL S ON SHEET 11).
 USE ASSIST CRANE TO POSITION EQUALIZER (R9) HORIZONTALLY.
 LOWER EQUALIZER ONTO RAILS OF EQUALIZER INSERT (ITEM 105 OR 114) AND SECURE WITH FRONT EQUALIZER PINS. (SEE DETAIL S ON SHEET 11).
 REMOVE SLINGS (R207 OR R204) FROM EQUALIZER LOWER SLING POSTS.
 SCALE 0.050



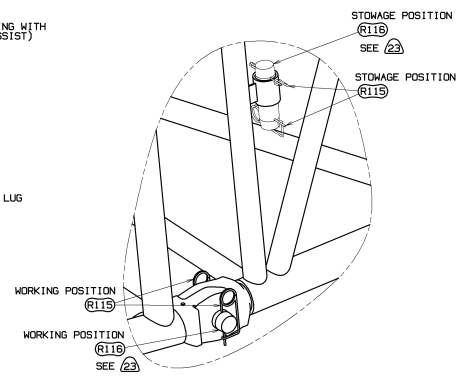
STEP 5
BOOM CLOSING
 ASSEMBLE DESIRED BOOM LENGTH CONFIGURATION PER SHEETS 4 THRU 7 OR CANTILEVERED INSERTS VIEW ON SHEET 3 FOR BOOM HANDLING WITH EQUALIZER.

BOOM CLOSING WITH OUTSIDE ASSIST
 ATTACH ASSIST CRANE TO LIFTING LUGS ON EQUALIZER INSERT (ITEM 105 OR 114) USING EQUAL LENGTH LIFTING SLINGS (R207 OR R204) AND SHACKLES (R205). (SEE DETAIL R) LIFT UP ON EQUALIZER INSERT AND INSTALL LOWER BOOM CONNECTOR PINS (R116 OR R114) AND SAFETY PINS (R115). (SEE DETAIL M). DETACH SLINGS AND SHACKLES.

BOOM CLOSING WITH FIXED MAST
 ATTACH HORIZONTALLY POSITIONED EQUALIZER (R9) TO EQUALIZER INSERT (ITEM 105 OR 114) WITH SLINGS (R203) USING SHACKLES (R205) AT BOTH ENDS. (SEE DETAIL R ON SHEET 10 AND DETAIL S ON SHEET 11) POSITION MAST AT 28° ABOVE HORIZONTAL.
 REMOVE FRONT EQUALIZER PINS SECURING EQUALIZER TO INSERT RAILS. (SEE DETAIL S ON SHEET 11)
 PAY IN BOOM HOIST WIRE ROPE TO RAISE THE EQUALIZER (R9) AND THE EQUALIZER INSERT UNTIL THE BOTTOM CONNECTING HOLES BETWEEN THE INSERTS ARE ALIGNED.
 INSTALL LOWER BOOM CONNECTOR PINS (R116) AND SAFETY PINS (R115). (SEE DETAIL M)
 LOWER EQUALIZER ONTO RAILS OF EQUALIZER INSERT AND REMOVE SLINGS (R203) AND SHACKLES (R205) FROM BOTH ENDS.
 SECURE EQUALIZER TO RAILS WITH FRONT EQUALIZER PINS. (SEE DETAIL S ON SHEET 11).

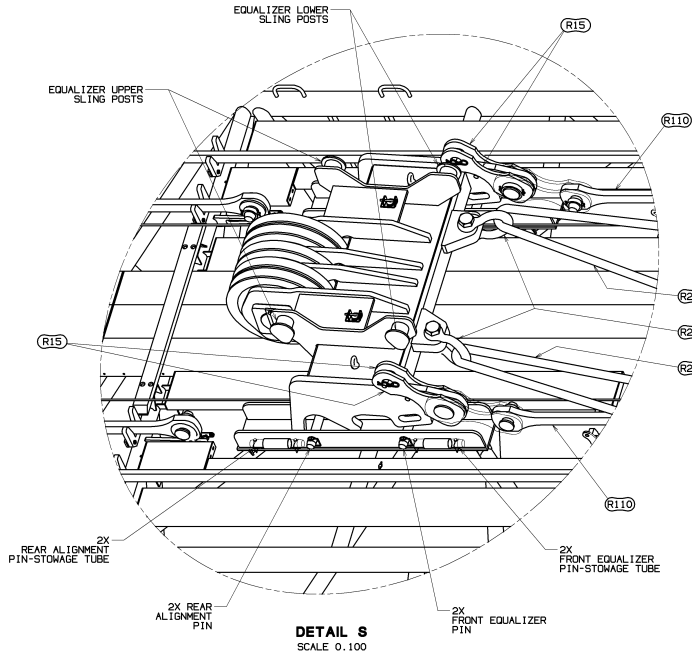


DETAIL R
 SCALE 0.100



DETAIL M
 SCALE 0.150
 (FROM SHEET 9)

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MANUFACTURED UNDER THE		FABRICATION		BY		Manufacture Cranes, Inc.		REV	
ALL INFORMATION CONTAINED HEREIN IS CONFIDENTIAL		1 (1) PLACE 0.005		2 (1) PLACE 0.010		DR: RHY		BOOM RIGGING	
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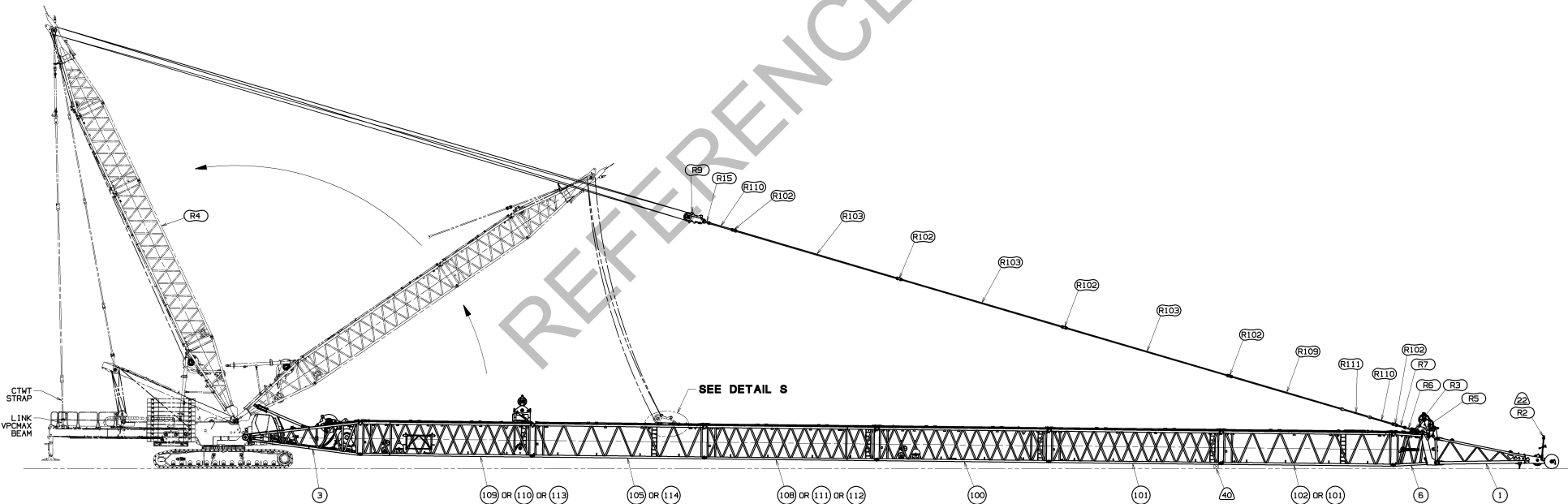


PROCEDURE TO DISASSEMBLE BOOM

1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
 2. BOOM FIXED MAST (R4) 1" TOWARD MAST STOPS AND DISCONNECT MAST COUNTERWEIGHT STRAPS FROM LINKS ON VPC-MAX BEAM.
 3. ROTATE FIXED MAST VERTICAL PER FIXED MAST ASSEMBLY INSTRUCTIONS 84045340.
 4. PAY OUT BOOM HOIST TO LOWER EQUALIZER (R9) ONTO INSERT RAILS AND SECURE WITH EQUALIZER PIN. (SEE DETAIL S).
 5. DISCONNECT LINKS (R15) FROM EQUALIZER STRAPS (R110) AND PIN LINKS (R15) INTO STORAGE POSITION. (SEE DETAIL S).
 6. DISCONNECT BOOM STRAPS/LINKS AT EACH JOINT.
 7. WITH PROPER BLOCKING IN PLACE AND SUPPORT FROM ASSIST CRANE REMOVE INSERT LOWER CONNECTOR PINS AND DISENGAGE UPPER CONNECTOR PINS FROM INSERTS TOWARD BOOM TOP FROM EQUALIZER INSERT.
- WARNING: BOOM MUST BE PROPERLY BLOCKED TO PREVENT SHIFTING DURING PIN REMOVAL
8. REMOVE VPC-MAX COUNTERWEIGHT
- WARNING: DO NOT RAISE THE MAST BEYOND 69° IF COUNTERWEIGHT IS INSTALLED WITHOUT ATTACHING BOOM TO MACHINE AND CONNECTING EQUALIZER TO BOOM STRAPS. CRANE COULD TIP.
9. REMOVE PINS SECURING EQUALIZER TO INSERT IF INSTALLED. (SEE DETAIL S)
 10. FOR REMOVAL OF BOOM BUTT/EQUALIZER INSERT ASSEMBLY REVERSE INSTALLATION STEPS 1 THRU 3 ON SHEET 5.

PROCEDURE TO DISASSEMBLE BOOM FOR BOOM MAKE UP RECONFIGURATIONS

1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
 2. PAY OUT BOOM HOIST TO LOWER EQUALIZER (R9) ONTO INSERT RAILS AND SECURE WITH EQUALIZER PIN. (SEE DETAIL S).
 3. FOR ALL BOOM LENGTHS LEAVE EQUALIZER LINKS (R15) AND STRAPS (R110) PINNED TOGETHER.
 4. SECURE EQUALIZER (R9) TO EQUALIZER RAILS USING FRONT EQUALIZER PIN (SEE DETAIL S).
 5. DISCONNECT BOOM STRAPS/LINKS NECESSARY FOR BOOM RECONFIGURATION.
 6. WITH PROPER BLOCKING IN PLACE AND SUPPORT FROM ASSIST CRANE REMOVE INSERT LOWER CONNECTOR PINS AND DISENGAGE UPPER CONNECTOR PINS PER REQUIRED CONFIGURATION.
- WARNING: BOOM MUST BE PROPERLY BLOCKED TO PREVENT SHIFTING DURING PIN REMOVAL



**STEP 6
EQUALIZER TO STRAPS ASSEMBLY**

CONNECT BOOM STRAPS/LINKS FROM BOOM TOP TO EQUALIZER INSERT (ITEM 105 OR 114) IF NOT PREVIOUSLY DONE.
CONNECT EQUALIZER LINKS (R15) TO BOOM STRAPS (R110). (SEE DETAIL S).
REMOVE PINS SECURING EQUALIZER (R9) TO INSERT IF INSTALLED. (SEE DETAIL S).
(PINS SECURING EQUALIZER TO INSERT ARE ONLY REQUIRED WHEN CHANGING BOOM LENGTHS AND THE EQUALIZER IS NOT SUPPORTED BY AN ASSIST CRANE OR CONNECTED TO THE BOOM STRAPS).

RAISE FIXED MAST (R4) AND CONNECT MAST COUNTERWEIGHT STRAPS TO LINKS ON VPC-MAX BEAM PER FIXED MAST ASSEMBLY INSTRUCTIONS 84045340.

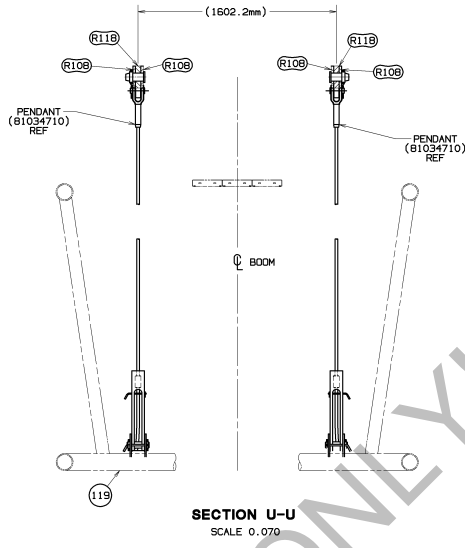
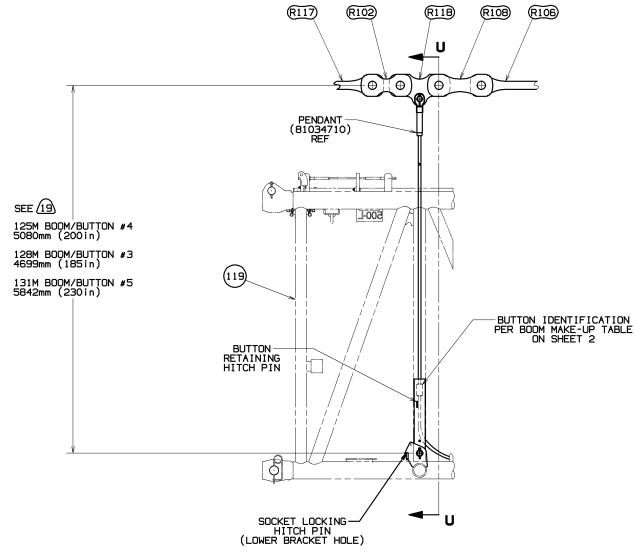
BOOM UP TO DESIRED ANGLE.

PRIVATE LABELING
RESTRICTED TO
CAPTIONED
ENGINEERING
SPECIFIC FOR
86501007M FOR
COMPONENTS LISTED
IN 005500-05-035

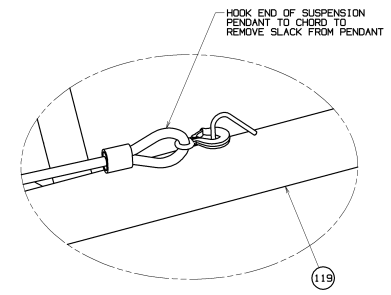
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DO NOT SCALE THIS DRAWING

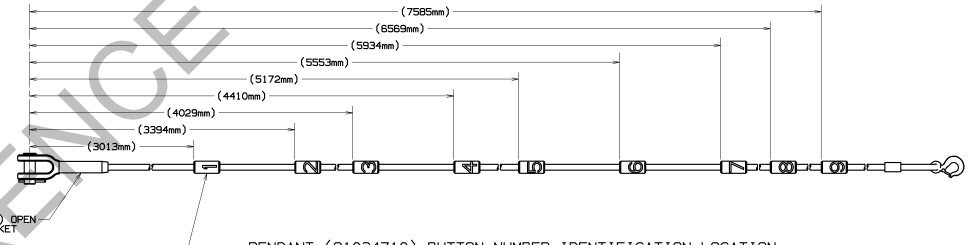
BILL OF MATERIAL				ASSEMBLY STEP BY
ITEM NO.	DESCRIPTION	MATERIAL	QTY REQ.	



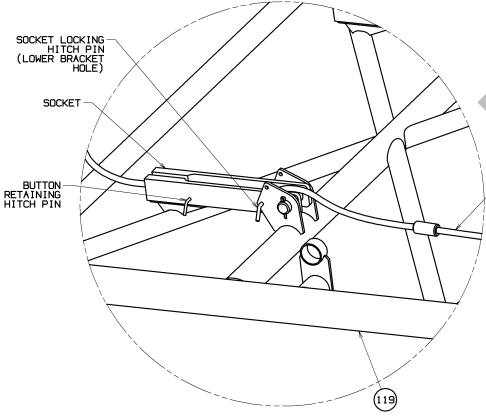
DETAIL T
(FROM SHEET 7)
SCALE 0.070



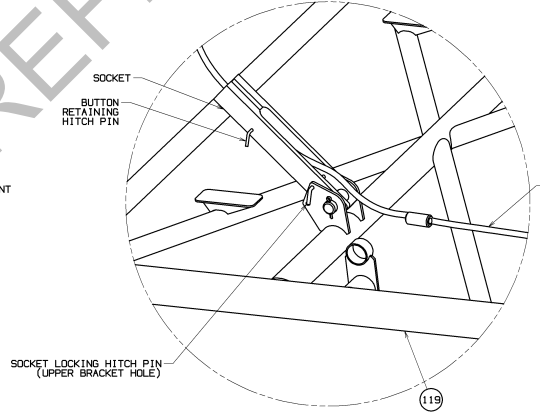
DETAIL W
(FROM SHEET 7)



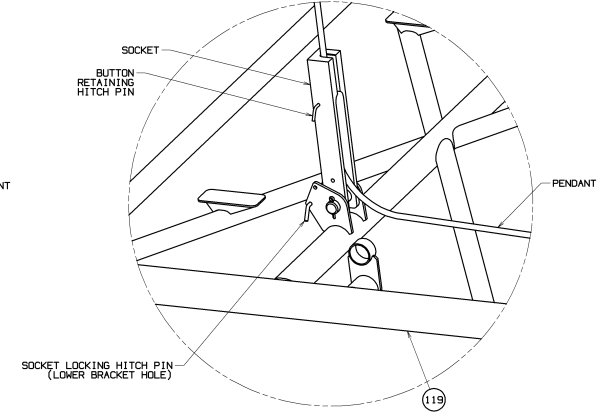
SCALE 0.150



DETAIL V - STOWED
(FROM SHEET 7)



DETAIL V - ASSEMBLY PREP
(FROM SHEET 7)



DETAIL V - WORKING
(FROM SHEET 7)

INTERMEDIATE SUSPENSION OPERATIONAL INSTRUCTIONS

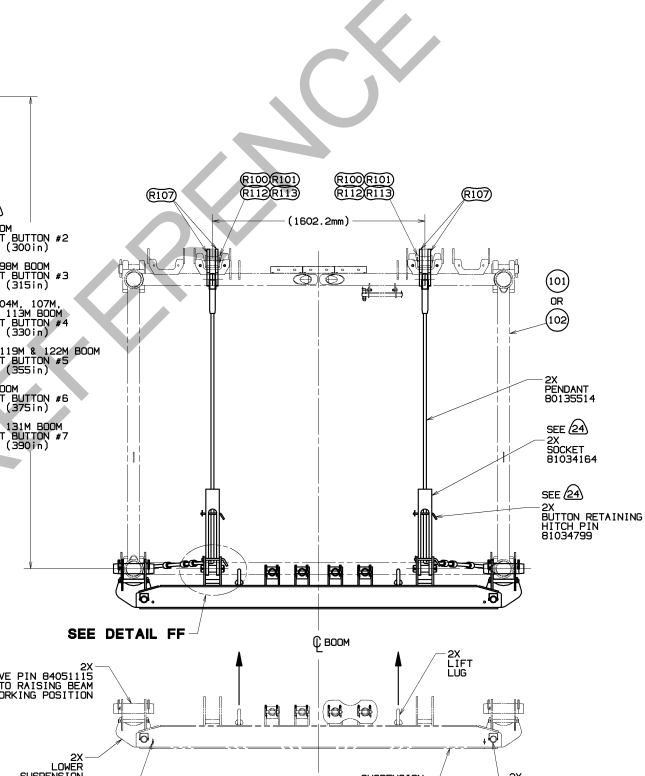
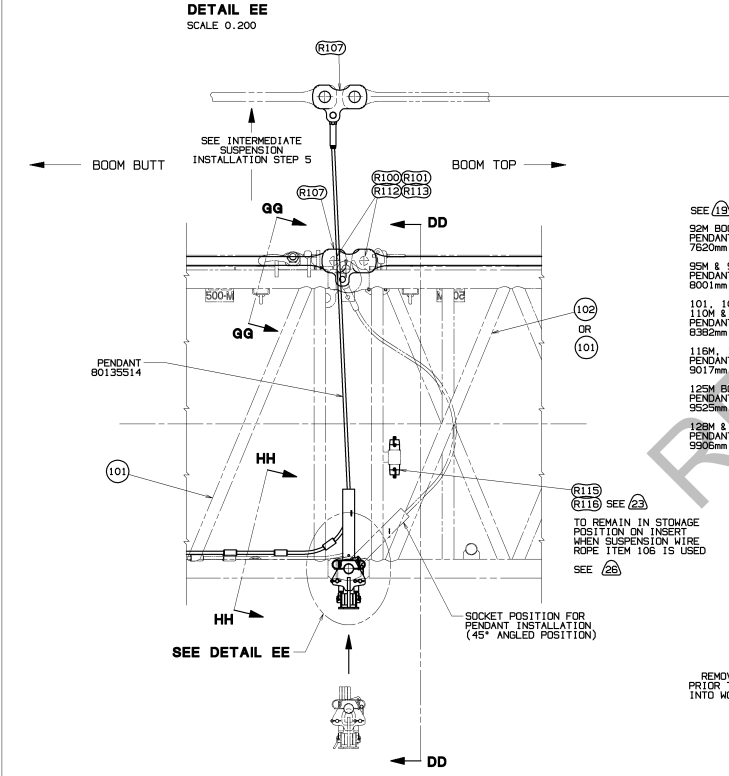
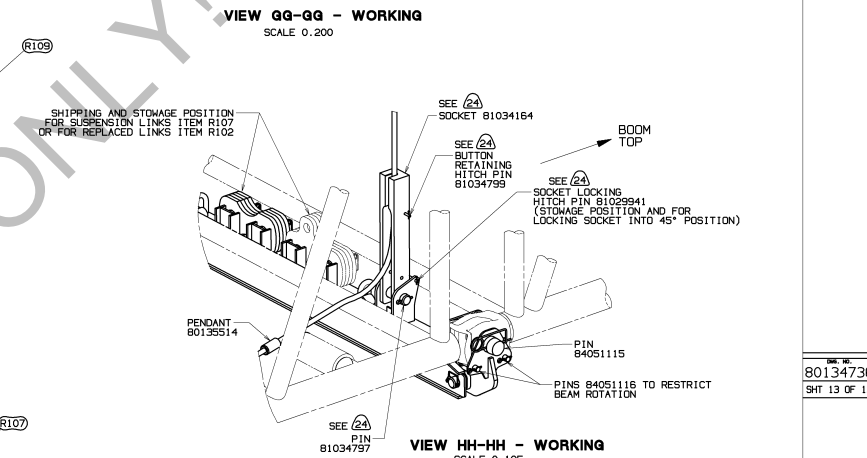
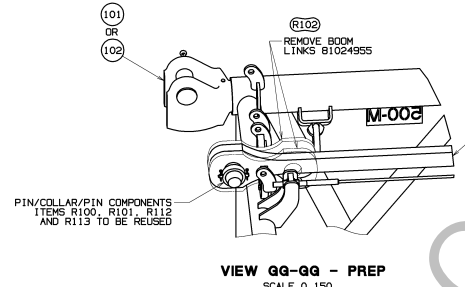
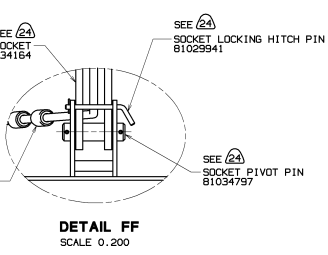
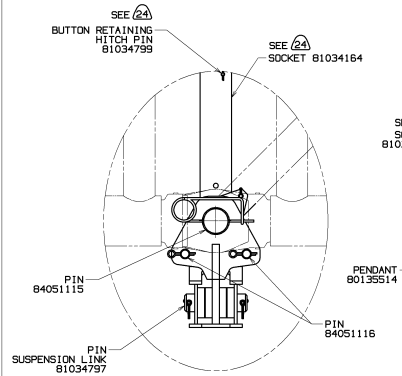
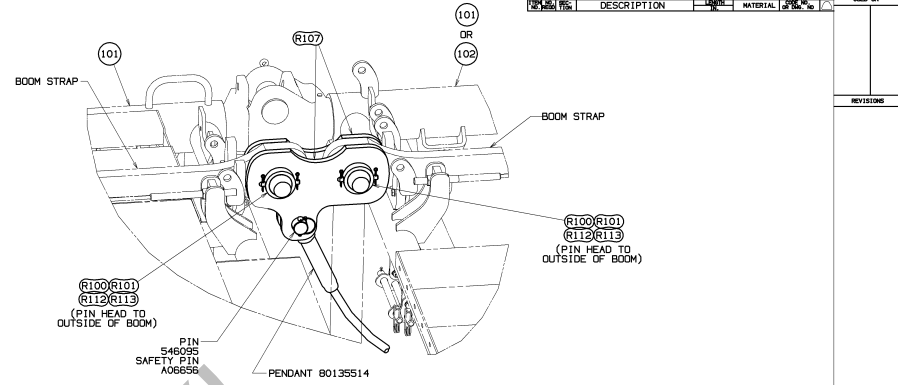
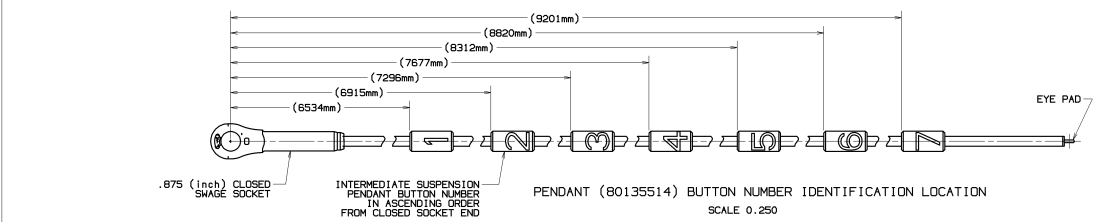
SEE BOOM MAKEUP VIEWS ON SHEET 7 AND BOOM LENGTH TABLE ON SHEET 2 FOR REQUIRED SUSPENSION AND WIRE ROPE BUTTON IDENTIFICATION LOCATION.

- FROM STOWED POSITION REMOVE SOCKET LOCKING HITCH PIN FROM SOCKET AND LOWER BRACKET HOLE. (SEE DETAIL V - STOWED)
PIVOT SOCKET INTO ASSEMBLY PREP POSITION AND REINSTALL SOCKET LOCKING HITCH PIN INTO SOCKET AND UPPER BRACKET HOLE. (SEE DETAIL V - ASSEMBLY PREP)
- VERIFY THAT CORRECT PENDANT BUTTON IS INSTALLED IN SOCKET. IF NEEDED 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 V - ASSEMBLY PREP)
- RELOCATE SOCKET LOCKING HITCH PIN FROM SOCKET AND UPPER BRACKET HOLE TO LOWER BRACKET HOLE. (SEE DETAIL V - WORKING)
- BOOM UP SLOWLY AS PENDANT BECOMES TIGHT AND SOCKET PIVOTS INTO WORKING POSITION. (SEE DETAIL V - WORKING)

FOR STORAGE OF INTERMEDIATE SUSPENSION REVERSE SETUP INSTRUCTION STEPS 1 THRU 4, ASSURING SOCKET PIVOTS TOWARD STORAGE POSITION.
VERIFY THAT SLACK IN PENDANT ALLOWS FOR SOCKET TO PIVOT INTO STOWED POSITION. (SEE DETAIL W).

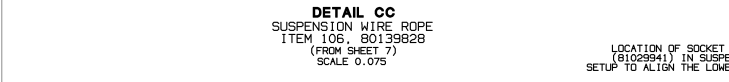
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	FABRICATION:	DRAWN BY:	Martinsburg Cranes, Inc.	SCALE:	AS SHOWN
	(1) PLACE ± 0.005	(1) PLACE ± 0.005	BY:	D.L.G.	REV:
131 PLACE ± 0.005	131 PLACE ± 0.005	APP:	J.R.R.	PART NO.:	80134736
				PROJECT:	BOOM RIGGING
				ITEM NO.:	BBS:505-500
				SHEET:	80134736

BILL OF MATERIAL				ASSEMBLY SHEET NO.
ITEM NO.	DESCRIPTION	MATERIAL	QTY	REV.



INTERMEDIATE SUSPENSION (ITEM 106) INSTALLATION

- SEE BOOM MAKEUP VIEWS ON SHEETS 5, 6 & 7 AND BOOM LENGTH TABLE ON SHEET 2 FOR REQUIRED SUSPENSION & WIRE ROPE BUTTON IDENTIFICATION LOCATION. REFERENCE SUSPENSION ASSEMBLY 80135528 FOR ADDITIONAL INFORMATION. (REFER TO VIEW OF PENDANT 80135514 ON THIS SHEET FOR BUTTON NUMBER I.D. LOCATION).
1. FROM MATING INSERT (ITEM 101 OR 102) TOWARD BOOM TOP, REMOVE (4) BOOM LINKS (R102) AND STORE IN PARTS BOX 81028769 OR ON SUSPENSION BEAM AFTER SUSPENSION LINKS (R107) HAVE BEEN REMOVED. (SEE HH-HH - WORKING). PIN/COLLAR/PIN COMPONENTS (ITEMS R100, R101, R112 & R113) WILL BE REUSED WITH SUSPENSION LINK PER STEP 4 BELOW. (SEE VIEW GG-GG - PREP).
 2. POSITION SUSPENSION BEAM AND LOWER SUSPENSION LINK UNDER APPROPRIATE INSERT AT MALE CONNECTOR END. ASSEMBLE UPPER CONNECTOR OF MATING INSERT AND PIVOT INSERT TO ALIGN LOWER CONNECTOR HOLES. WITH SOCKETS 81034164 AND LOWER CONNECTOR PINS 84051115 REMOVED FROM SUSPENSION BEAM, USE AN ASSIST TO RAISE SUSPENSION BEAM ASSY TO ALIGN LOWER CONNECTOR AND LOWER SUSPENSION LINK HOLES. REINSTALL PIN 84051115. (SEE DETAIL CC AND SECTION DD-DD).
 3. REINSTALL SOCKET INTO SUSPENSION BEAM AND PIVOT SOCKET INTO 45° POSITION. REINSTALL SOCKET LOCKING PIN THRU BRACKET AND SOCKET (ANGLED POSITION). (SEE DETAIL CC).
 4. ATTACH INTERMEDIATE BOOM STRAPS WITH DOUBLE LINKS (R107) USING EXISTING PIN/COLLAR/PIN COMPONENTS (ITEMS R100, R101, R112 & R113) REMOVED IN VIEW GG-GG - PREP. ATTACH CLOSED SOCKET END OF PENDANT 80135514 TO LINKS R107. (SEE VIEW GG-GG - WORKING).
 5. WITH SOCKET LOCKED IN 45° POSITION, SLOWLY RAISE BOOM. AS THE STRAPS RISE, GUIDE THE INTERMEDIATE SUSPENSION PENDANTS THROUGH THE OPENING BETWEEN THE BOOM INSERTS. STOP THE BOOM RAISING PROCEDURE WHEN THE REQUIRED PENDANT BUTTON NEARS THE SOCKET. REMOVE BUTTON RETAINING HITCH PIN FROM SOCKET IN IDENTIFIED PENDANT (BUTTON OF THE MULTI-BUTTON PENDANT 80135514 INTO SOCKET AND REINSTALL BUTTON RETAINING HITCH PIN INTO SOCKET, LOCKING PENDANT IN POSITION). (SEE DETAIL CC).
 6. PRIOR TO CONTINUATION OF BOOM RAISING, REMOVE SOCKET LOCKING HITCH PIN FROM 45° POSITIONED SOCKET AND BRACKET. STOW IN BRACKET HOLE (STORAGE POSITION) ALLOWING SOCKET TO PIVOT AS BOOM STRAPS RAISE. (SEE VIEW HH-HH - WORKING).
 7. BOOM UP SLOWLY AS PENDANT BECOMES TIGHT AND SOCKET PIVOTS INTO WORKING POSITION.
- FOR REMOVAL OF DROP-DOWN INTERMEDIATE SUSPENSION (ITEM 106) REVERSE INSTALLATION STEPS 1 THRU 7, ASSURING SOCKET PIVOTS TOWARD 45° POSITION WHEN LOWERING BOOM STRAPS.



REV.	DESCRIPTION	DATE	BY	CHKD.

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05-12-22

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