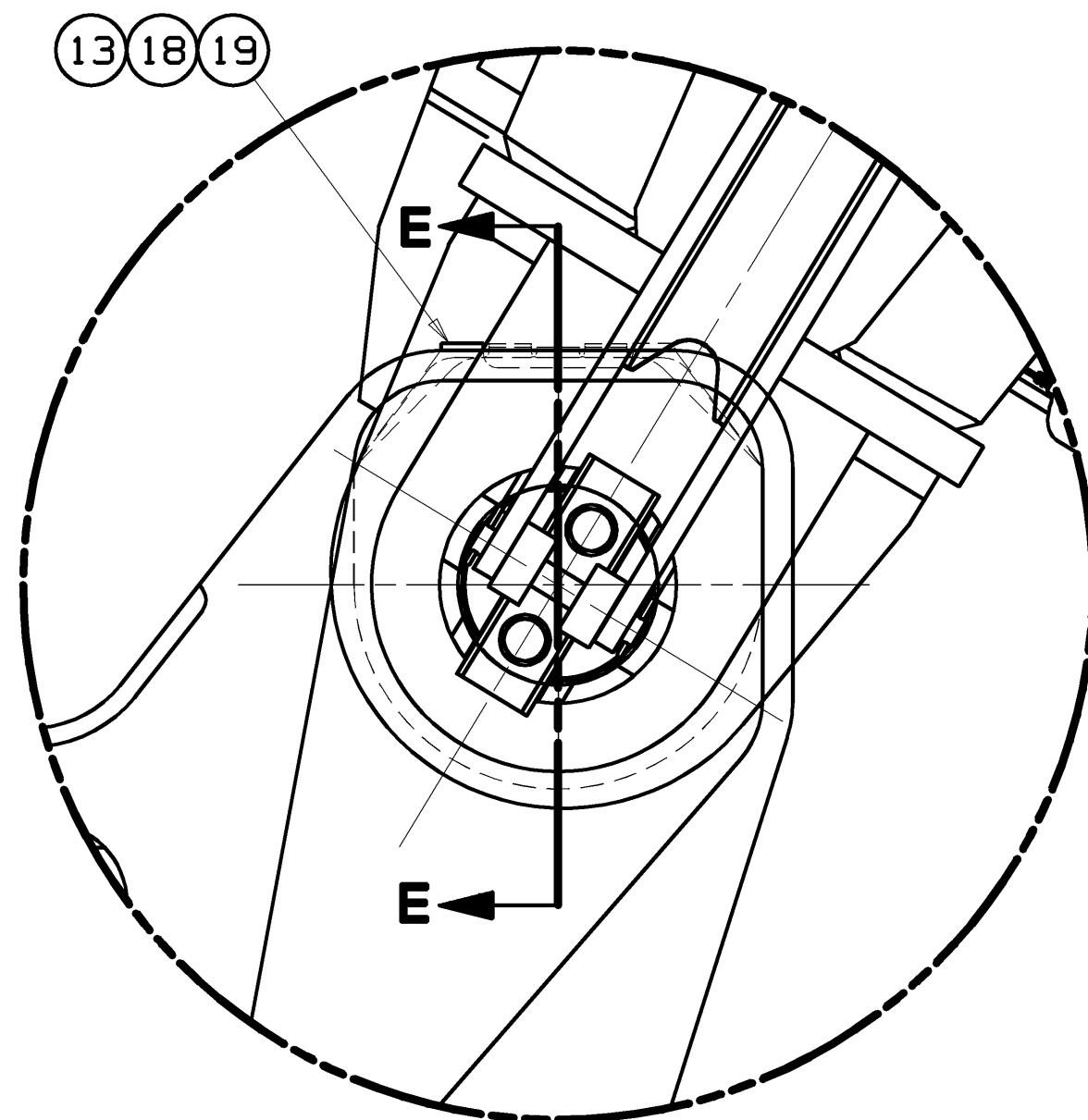
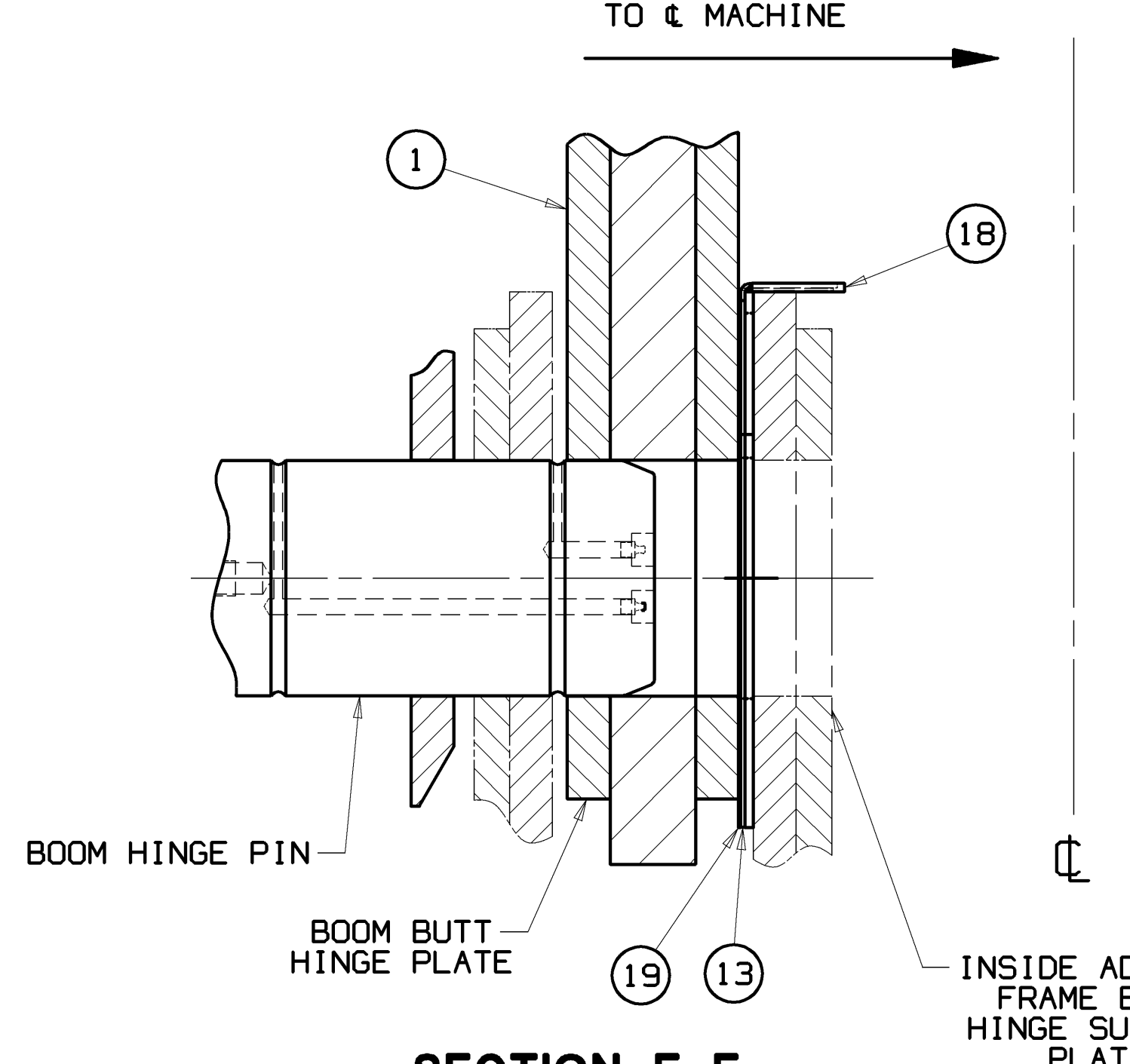


B		A														
REQ'D. FOR VARIOUS BOOM LENGTHS																
ITEM NO.		103	104	102	107	105	108	109	113	101	110	112	111	100	106	114
BOOM LENGTH		INSERT 3 M (9.8 FT) ASSY	STRAP 3 M (9.8 FT)	INSERT 6 M (19.7 FT) ASSY	STRAP 6 M (19.7 FT)	INSERT 12 M (39.4 FT) ASSY	STRAP 12 M (39.4 FT)	LINK	PIN	PIN SAFETY	PIN	COLLAR	PIN	PIN COTTER	INTER- MEDIATE SUSPENSION SEE (1)	PARTS BOX SEE (16)
METERS	FEET															
30	98.4	0	0	0	0	0	2	8	6	6	12	12	12	40	0	0
33	108.3	1	2	0	0	0	2	12	8	8	16	16	16	48	0	0
36	118.1	0	0	1	2	0	2	12	8	8	16	16	16	48	0	0
39	128.0	1	2	1	2	0	2	16	10	10	20	20	20	56	0	0
42	137.8	0	0	0	0	1	4	12	8	8	16	16	16	48	0	0
45	147.6	1	2	0	0	1	4	16	10	10	20	20	20	56	0	0
48	157.5	0	0	1	2	1	4	16	10	10	20	20	20	56	0	0
51	167.3	1	2	1	2	1	4	20	12	12	24	24	24	64	0	0
54	177.2	0	0	0	0	2	6	16	10	10	20	20	20	56	0	0
57	187.0	1	2	0	0	2	6	20	12	12	24	24	24	64	0	0
60	196.9	0	0	1	2	2	6	20	12	12	24	24	24	64	0	0
63	206.7	1	2	1	2	2	6	24	14	14	28	28	28	72	0	0
66	216.5	0	0	0	0	3	8	20	12	12	24	24	24	64	0	0
69	226.4	1	2	0	0	3	8	24	14	14	28	28	28	72	0	0
72	236.2	0	0	1	2	3	8	24	14	14	28	28	28	72	1	1
75	246.1	1	2	1	2	3	8	28	16	16	32	32	32	80	1	1
78	255.9	0	0	0	0	4	10	24	14	14	28	28	28	72	1	1
81	265.8	1	2	0	0	4	10	28	16	16	32	32	32	80	1	1
84	275.6	0	0	1	2	4	10	28	16	16	32	32	32	80	1	1
87	285.4	1	2	1	2	4	10	32	18	18	36	36	36	88	1	1
90	295.3	0	0	0	0	5	12	28	16	16	32	32	32	80	1	1



DETAIL D
SCALE: 2=1FT

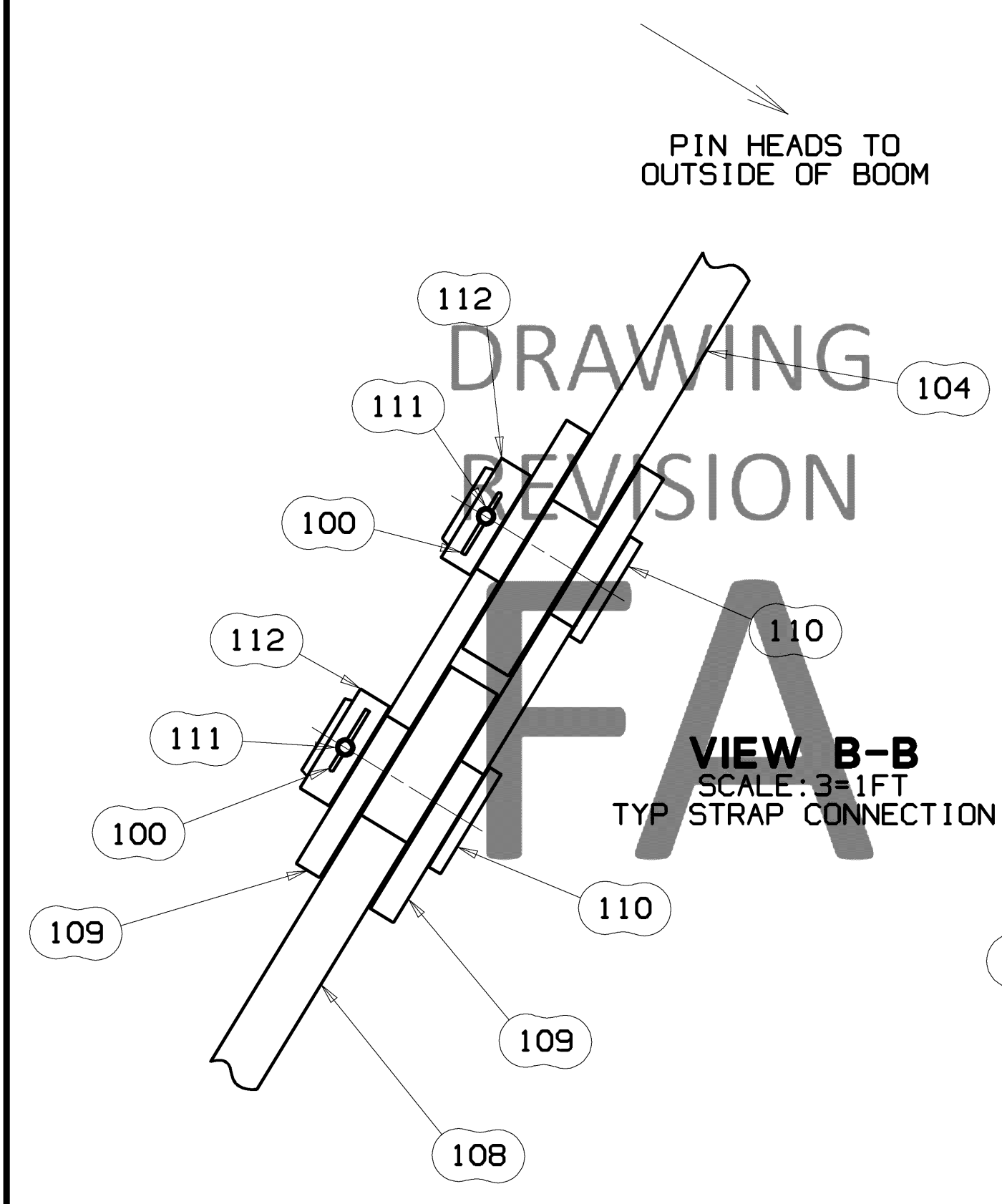
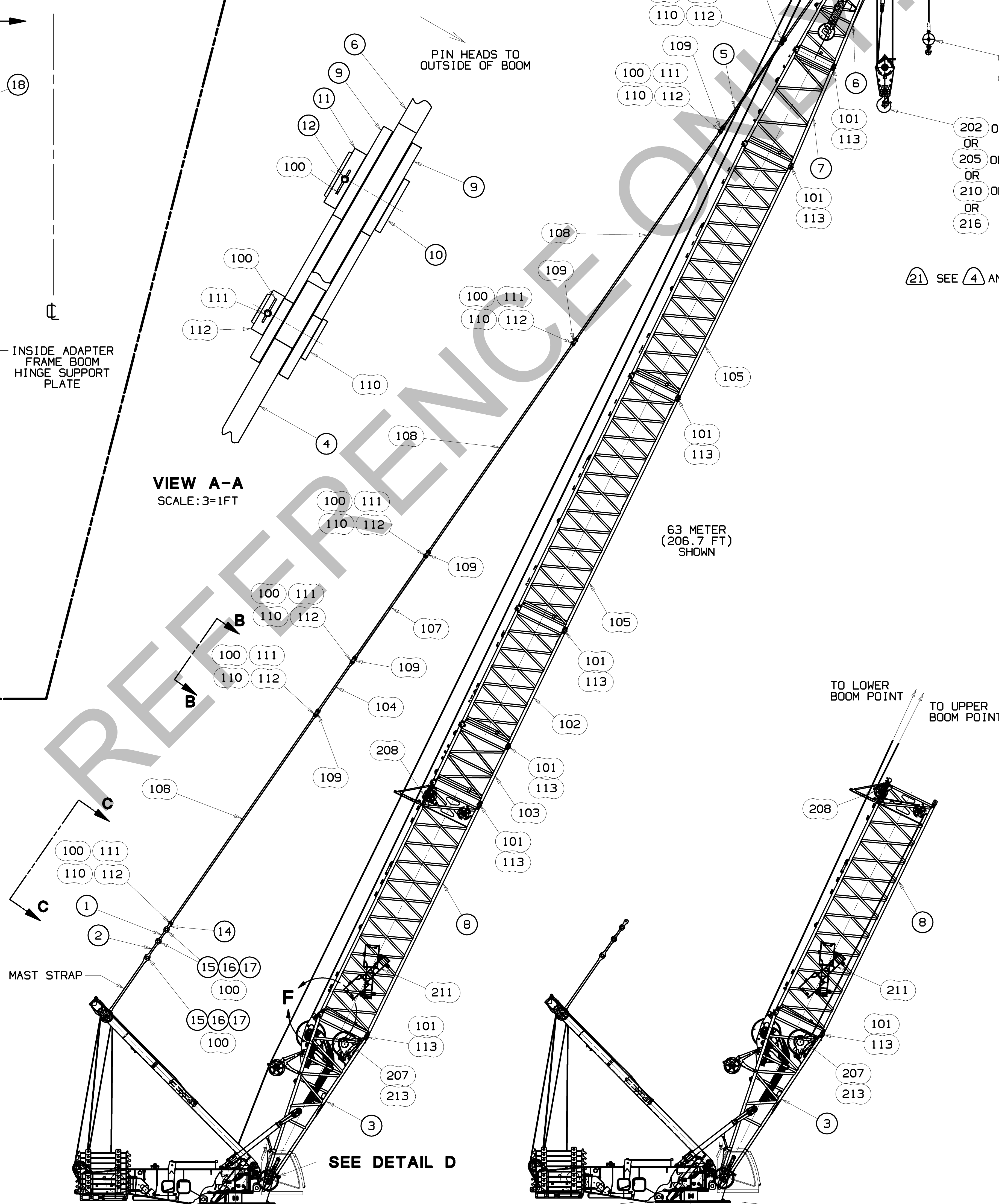


SECTION E-E
SCALE: 3=1 FT

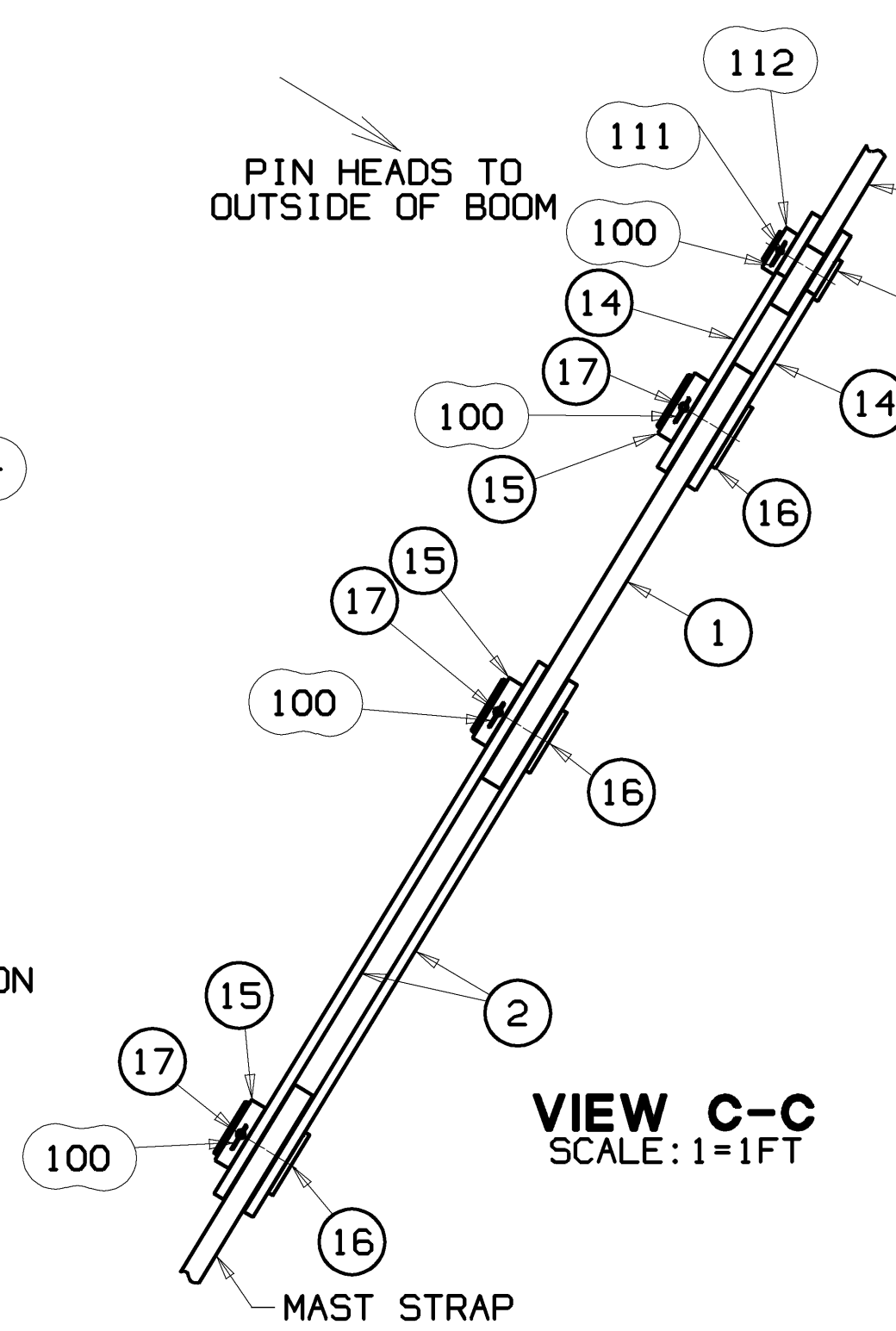
BOOM BUTT SHIM INSTALLATION PROCEDURE

1. CENTER BOOM BUTT ON ROTATING BED.
2. INSERT THE THICKEST SHIM POSSIBLE BETWEEN THE BUTT HINGE PLATE AND THE INSIDE ADAPTER FRAME LUGS ON EACH SIDE OF THE MACHINE.
3. INSERT THE NEXT THICKEST SHIM POSSIBLE BETWEEN THE BUTT HINGE PLATE AND THE FIRST SHIM ON EACH SIDE OF THE MACHINE.
4. INSERT THE LAST SHIM IF POSSIBLE BETWEEN THE BUTT HINGE PLATE AND THE PREVIOUS SHIM ON BOTH SIDES OF THE MACHINE.
5. WITH THE SHIM TABS TO THE TOP SIDE RESTING ON THE ADAPTER FRAME HINGE SUPPORT PLATES, THE MAXIMUM BOOM BUTT SIDE PLAY IS TO BE 2mm.
6. ENGAGE BOOM HINGE PIN COMPLETELY.

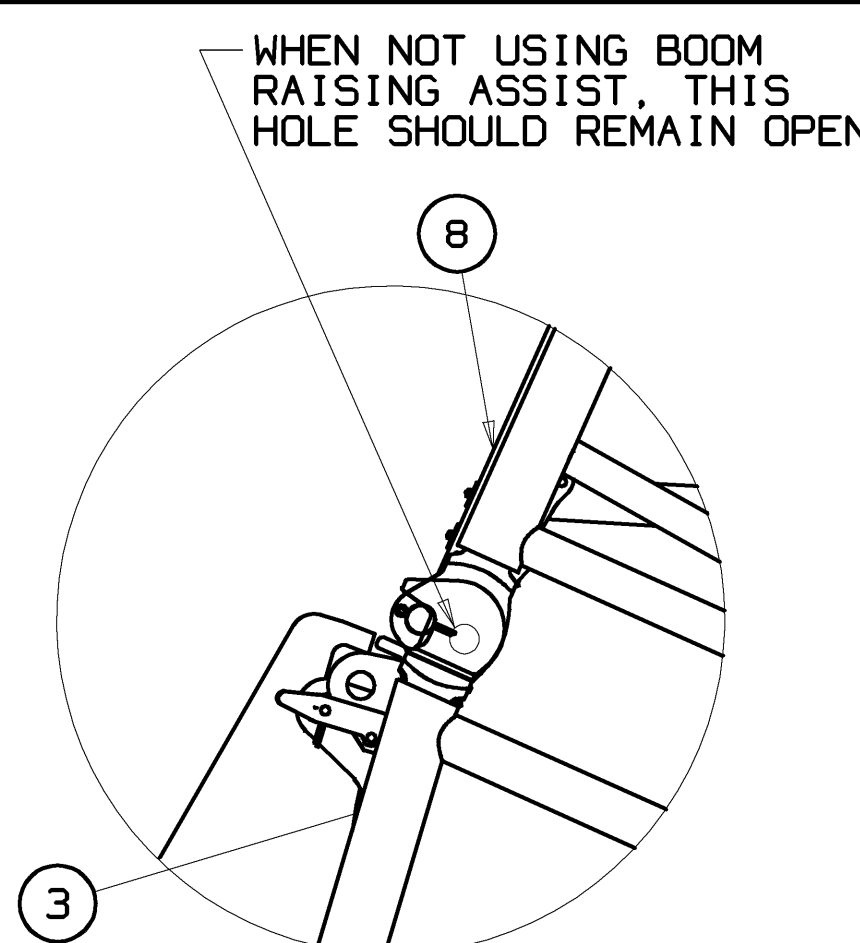
VIEW A-A
SCALE: 3=1FT



VIEW B-B
SCALE: 3=1FT
TYP STRAP CONNECTION



VIEW C-C
SCALE: 1=1FT



DETAIL F
SCALE: .75=1FT

- 16 81007957 TO BE SHIPPED AS A LOOSE ITEM CONTAINING PARTS FOR THE INTERMEDIATE SUSPENSION IF REQUIRED.
- 17 ITEMS 207, 208 AND 213 ARE TO BE USED FOR THE AUX DRUM OPTION
- 18 INSERT ASSY #58 12.00M W/ EO RAILS 81011592 WITH ID TAG #81011593 OR 81011594 CANNOT BE USED ON THE 72M OR 75M #58WA BOOM
- 19 INSERT ASSY #58 12.00M W/ EO RAILS 81011592 WITH ID TAG #81011593 OR 81011594 MAY BE USED IN PLACE OF INSERT #58 (HEAVY) 81011915 AS FIRST 12M INSERT AFTER 12M INSERT ASSY W/ AUX SHEAVES (ITEM 8)
- 20 OPTIONAL CAT WALK ASSEMBLY QTY 1 CAT WALK ASSY PER BOOM SECTION ASSY REFERENCE BOOM SECTION ASSY FOR TIMBER REQUIREMENTS

BOOM SECTION ASSY	OPTIONAL CAT WALK ASSY
A10882	81017121
A11388	81016890
A11396	81016683
A11543	81016888
81009834	81016887
81009839	81016889
81011915	81016684

BILL OF MATERIAL				ASSEMBLIES USED ON
ITEM NO.	QTY	DESCRIPTION	LOGS	
1	2	STRAP #58WA BOOM 40 X 83	81010227	A10740
2	4	LINK #58WA BOOM STRAP	81010676	
3	1	BUTT ASSY #58 8.0 M	A10882	10.20
4	2	STRAP TOP #58 BOOM 40 X 83	A10917	
5	2	STRAP 5 METER #58	A10919	10.20
6	1	TOP ASSY #58 5.0M	A11388	
7	1	INSERT TRANSITION ASSY #58 5.0M	A11396	11.20
8	1	INSERT 12.0M ASSY #58 W/AUX SHEAVES	A11543	
9	4	LINK #58 BOOM TOP	A11676	11.20
10	2	PIN 1 HOLE W/HD 100.0 DIA X 92.3 LG	A12944	
11	2	COLLAR 101MM ID	A12945	11.20
12	2	PIN 2 HOLE 12.7 DIA X 128.0 LG	A12946	
13	2	SHIM .119 (IN) THK	A13178	11.20
14	4	LINK #58 BOOM STRAP	A14907	
15	6	COLLAR	A14925	11.20
16	6	PIN 1 HOLE W/HD 115.0 DIA X 92.0 LG	A14926	
17	6	PIN 2 HOLE 12.7 DIA	A14929	11.20
18	2	SHIM .059 (IN) THK	A15521	
19	2	SHIM .059 (IN) THK	A15522	11.20

NO. REQ'D. FOR THE FOLLOWING ITEMS ARE IN TABLES

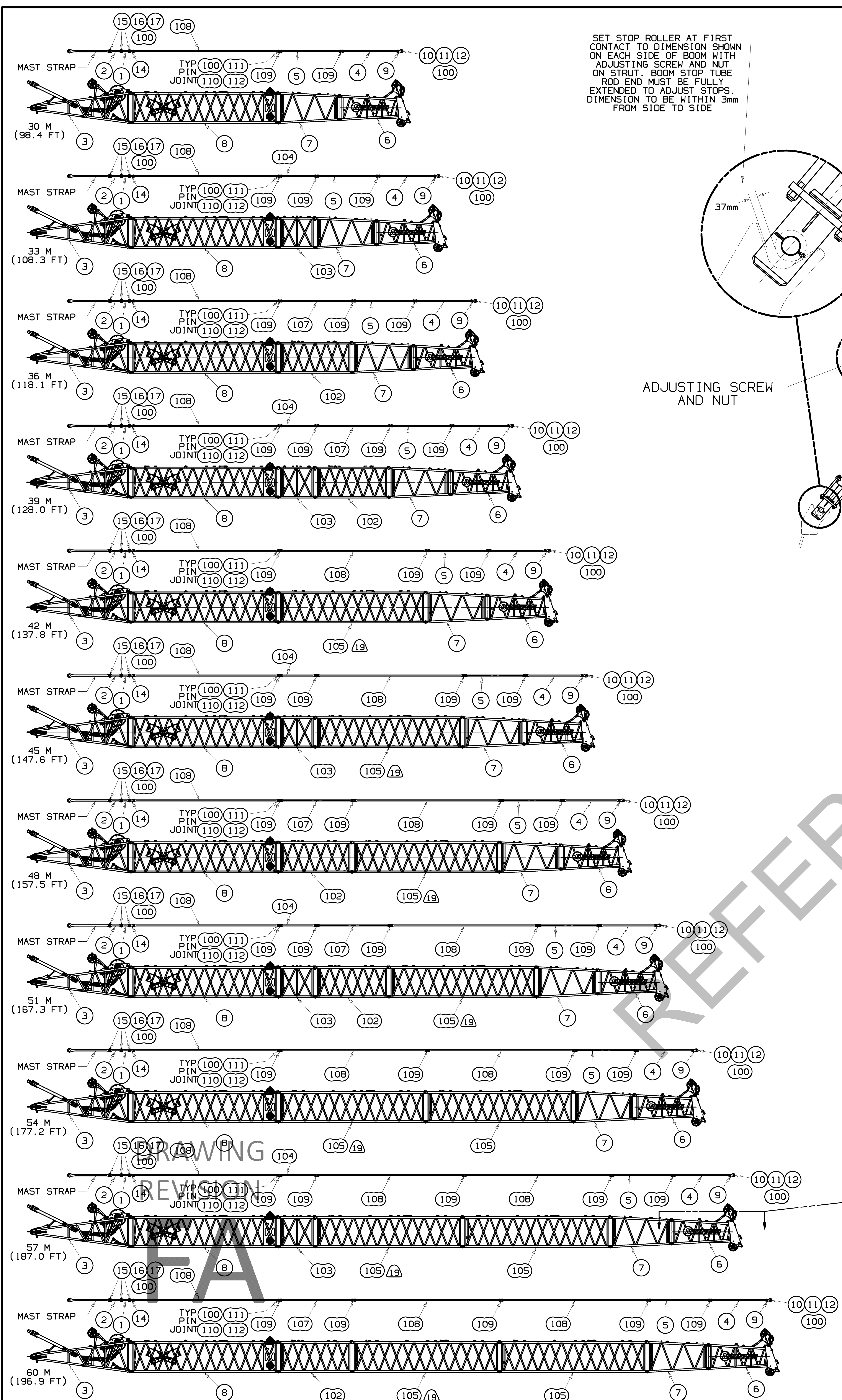
100	PIN COTTER .188 X 1.50	562085	8
101	PIN SAFETY .234 OD X 5.00	563640	1
102	INSERT 6 M ASSY #58 (HEAVY)	81009834	5.20
103	INSERT 3 M ASSY #58 (HEAVY)	81009836	2.20
104	STRAP 3 METER #58 BOOM 40 X 83	81009924	1
105	INSERT 12 M ASSY #58 (HEAVY)	81011915	20.20
106	BOOM ASSY #58WA INTERMEDIATE SUSPENSION	81017593	1
107	STRAP 6 METER #58 BOOM 40 X 83	810918	1
108	STRAP 12 METER #58 BOOM 40 X 83	A10920	1
109	LINK #58 BOOM STRAP	A11539	1
110	PIN 1 HOLE W/HD 65.0 DIA X 92.0 LG	A11798	8
111	PIN 2 HOLE 12.7 DIA X 93.0 LG	A11799	8
112	COLLAR 66.0 ID	A11800	8
113	PIN 1 HOLE W/HD 75.8 DIA X 160.4 LG	A13294	1
114	PARTS BOX FOR PART STORAGE	81007957	16

OPTIONAL PARTS

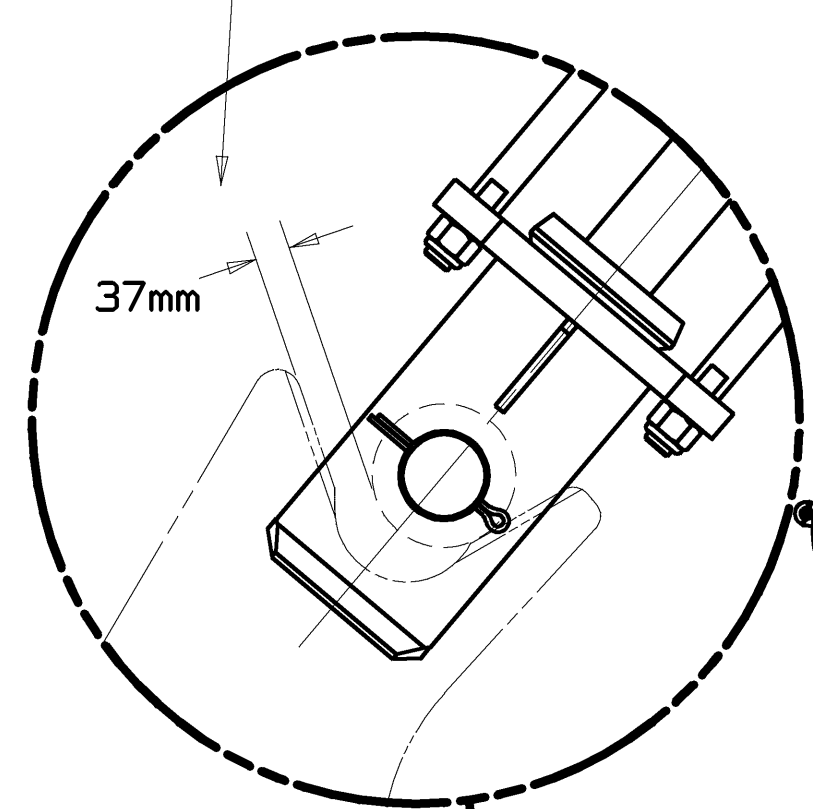
200	1	UPPER BOOM POINT ASSY	170419
201	1	HOOK BLOCK ASSY 41 MT (45 US)	236503
202	1	HOOK BLOCK ASSY DUPLEX 180 MT (200 US)	81007437
203	1	BLOCK 226 METRIC TON DUPLEX HOOK	81015106
204	1	BLOCK DUPLEX 100MTON 28MM 3 SHEAVE	81016673
205	1	HOOK BLOCK ASSY 408 MT (450 US)	A07752
206	1	HOOK BLOCK ASSY 317 MT (350 US)	A08833
207	1	DRUM ASSY LUFFING/AUX	A10888
208	1	GUIDE WIRE ROPE ASSY LUFFING/AUX LINE	A11946
209	1	HOOK BLOCK ASSY 100 MT (110 US)	A13154
210	1	HOOK BLOCK ASSY 226 MT (250 US)	A13155
211	1	BOOM ASSY #58 LADDER STORAGE	A13170
212	1	HOOK AND WEIGHT BALL ASSY 18 MT (20 US)	A13737
213	1	PAWL ASSEMBLY LUFFING DRUM	A13917
214	1	HOOK BLOCK ASSY 181 MT (200 US)	A14824
215	1	BLOCK 100 METRIC TON 28 MM ROPE	A15927
216	1	BLOCK 100 MT 3 SHEAVE	A17740
217	1	CAT WALK ASSY 5M #58 INSERT TRANSITION	81016683
218	1	CAT WALK ASSY 12M #58 INSERT	81016684
219	1	CAT WALK ASSY 6M #58 INSERT	81016687
220	1	CAT WALK ASSY 12M #58 INSERT	81016688
221	1	CAT WALK ASSY 3M #58 INSERT	81016689
222	1	CAT WALK ASSY 5M #58 TOP	81016890
223	1	CAT WALK ASSY 6M #58 BUTT	81017121

- 1 72 M (236.2 FT) THROUGH 90 M (295.3 FT) BOOM REQUIRES INTERMEDIATE SUSPENSION ITEM 106. (SEE SHT 3 AND 5)
- 2 MAXIMUM NUMBER OF 6 METER INSERTS = 1
MAXIMUM NUMBER OF 3 METER INSERTS = 1
- 3 AFTER 12 METER INSERT W/ AUX SHEAVES, INSERT ASSEMBLIES MUST BE INSTALLED IN ASCENDING LENGTH.
- 4 INSERT 12M ASSY #58 (HEAVY) A14543 WITH ID TAG #A14544 MAY BE USED IN PLACE OF INSERT 12M ASSY #58 (HEAVY) 81011915 (ITEM 105) BUT CANNOT BE LOCATED DIRECTLY BELOW THE INTERMEDIATE SUSPENSION (ITEM 106)
- 5 SEE 2 AND 3 AND 13
- 6 SEE 2 AND 3 AND 14
- 7 ALL LUFFING JIB AND BACKSTAY STRAPS, LINKS AND PINS STOWED WITH INSERTS MUST BE REMOVED FOR USE WITH THIS ASSEMBLY
- 8 ITEMS 100, 110, 111, AND 112 QUANTITIES INCLUDE ITEMS THAT ARE STOWED WHEN INTERMEDIATE SUSPENSION IS USED (SEE SHT 5)
- 9 USE FOR 2 PART LINE ON UPPER BOOM POINT. ALSO USED FOR MACHINE ASSEMBLY WITH 9.75 M (32 FT) LIVE MAST
- 10 BUTT 8 METER ID TAG #A10883 OR 81006893 OR 81017385
- 11 INSERT 5 METER TRANSITION ID TAG #A11352 OR 81005868 OR 81006897
- 12 INSERT 12 METER W/AUX SHEAVES (HEAVY) ID TAG #A11544 OR A17834 OR 81006890 OR 81017393
- 13 INSERT 6 METER (HEAVY) ID TAG #81009835 OR 81010114
- 14 INSERT 3 METER (HEAVY) ID TAG #81009840 OR 81010111
- 15 INSERT 12 METER (HEAVY) ID TAG #81011916 OR 81011870

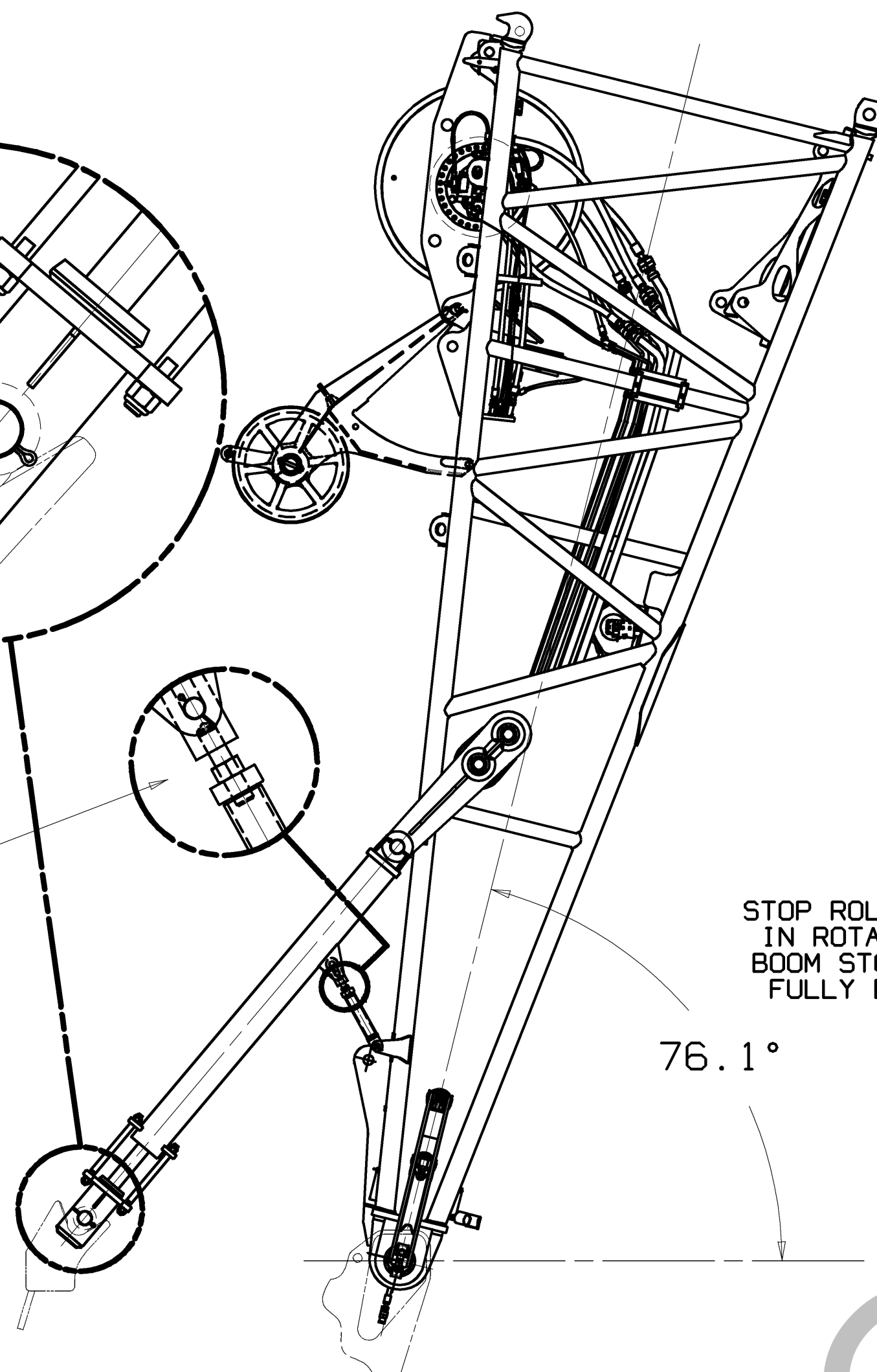
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Manitowoc Cranes, Inc. Manitowoc, Wisconsin		BOOM ASSY		81020381		
MODEL 16000		#58WA W/HEAVY LIFT TOP		SHT 1 OF 6		



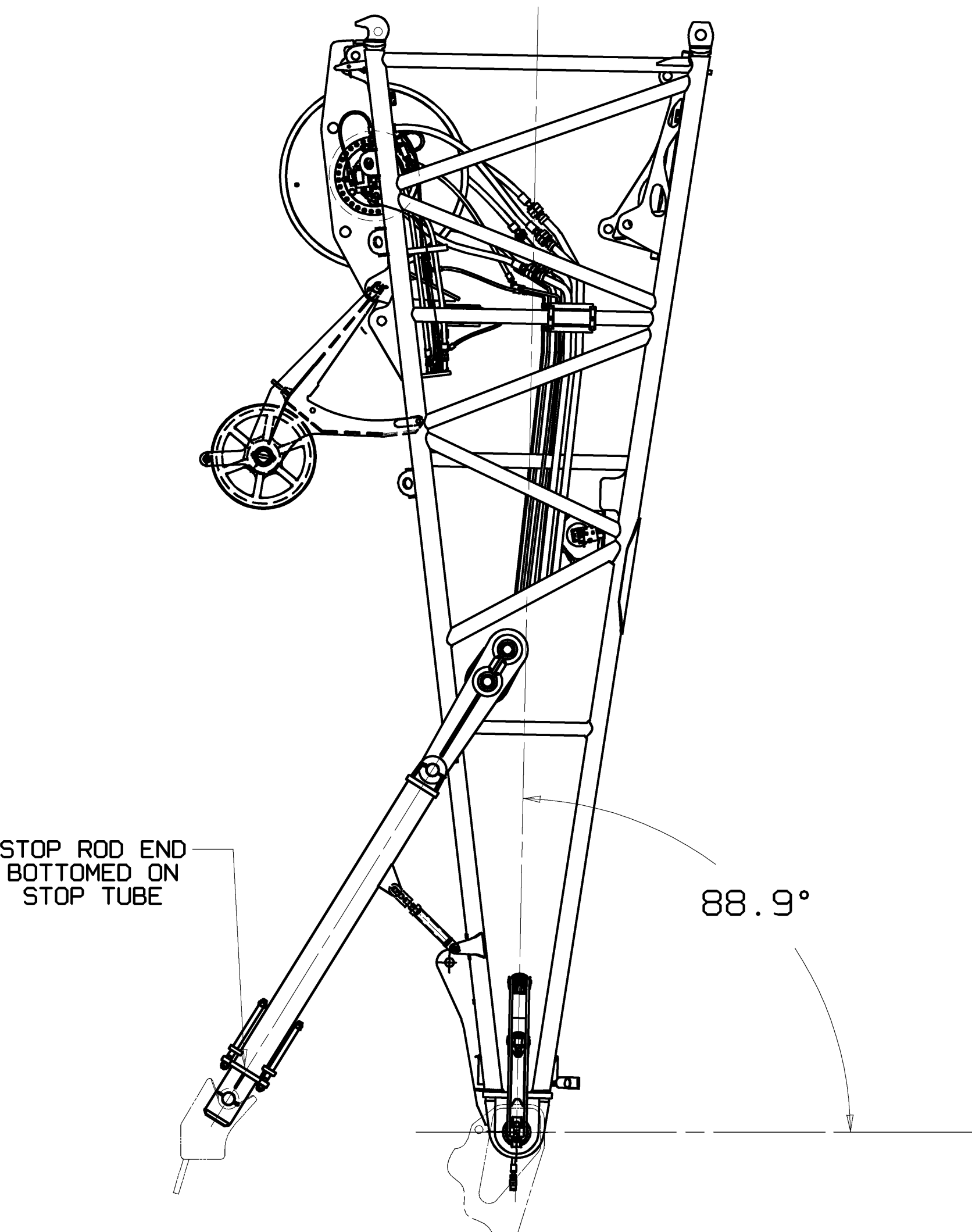
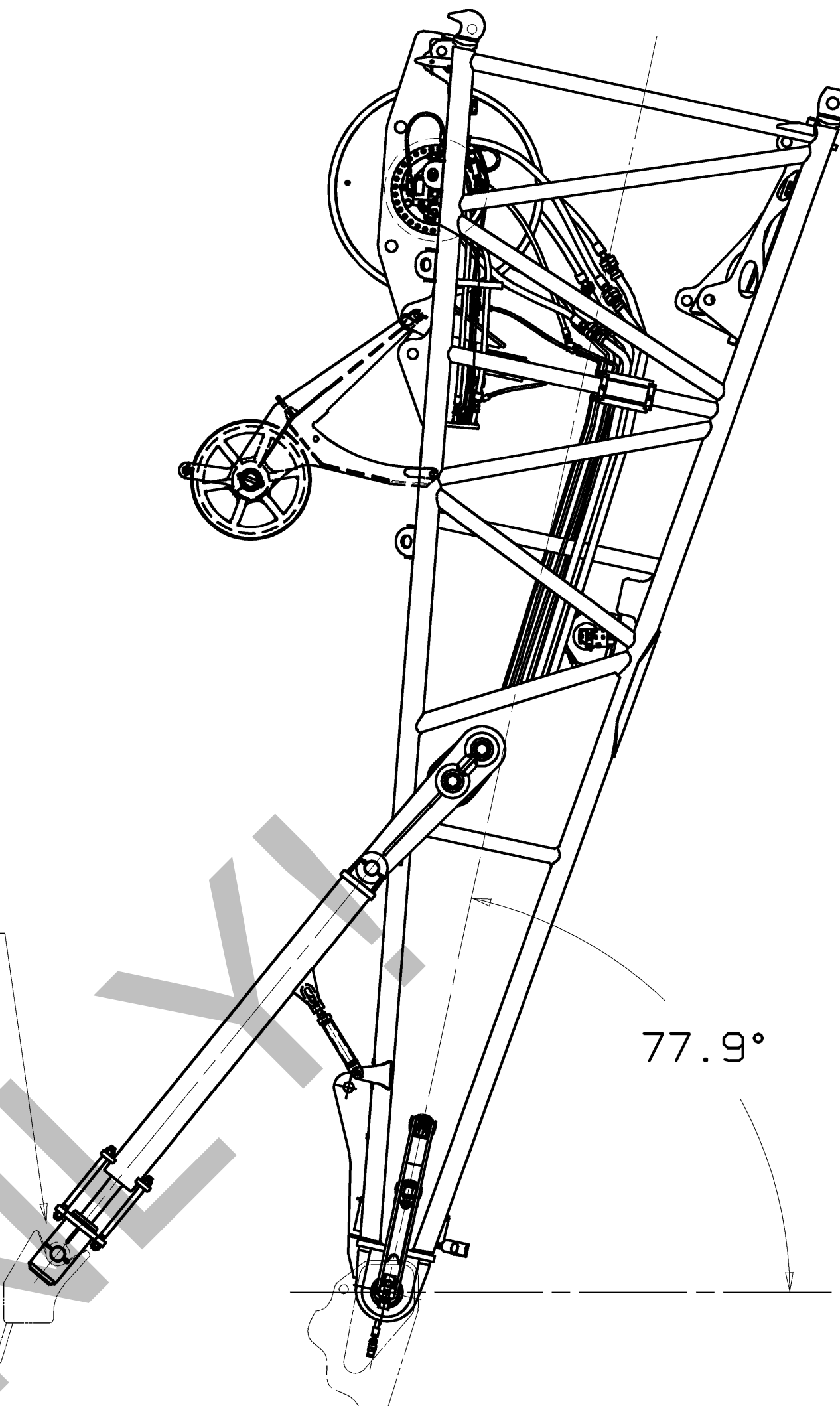
SET STOP ROLLER AT FIRST CONTACT TO DIMENSION SHOWN ON EACH SIDE OF BOOM WITH ADJUSTING SCREW AND NUT ON STRUT. BOOM STOP TUBE ROD END MUST BE FULLY EXTENDED TO ADJUST STOPS. DIMENSION TO BE WITHIN 3mm FROM SIDE TO SIDE



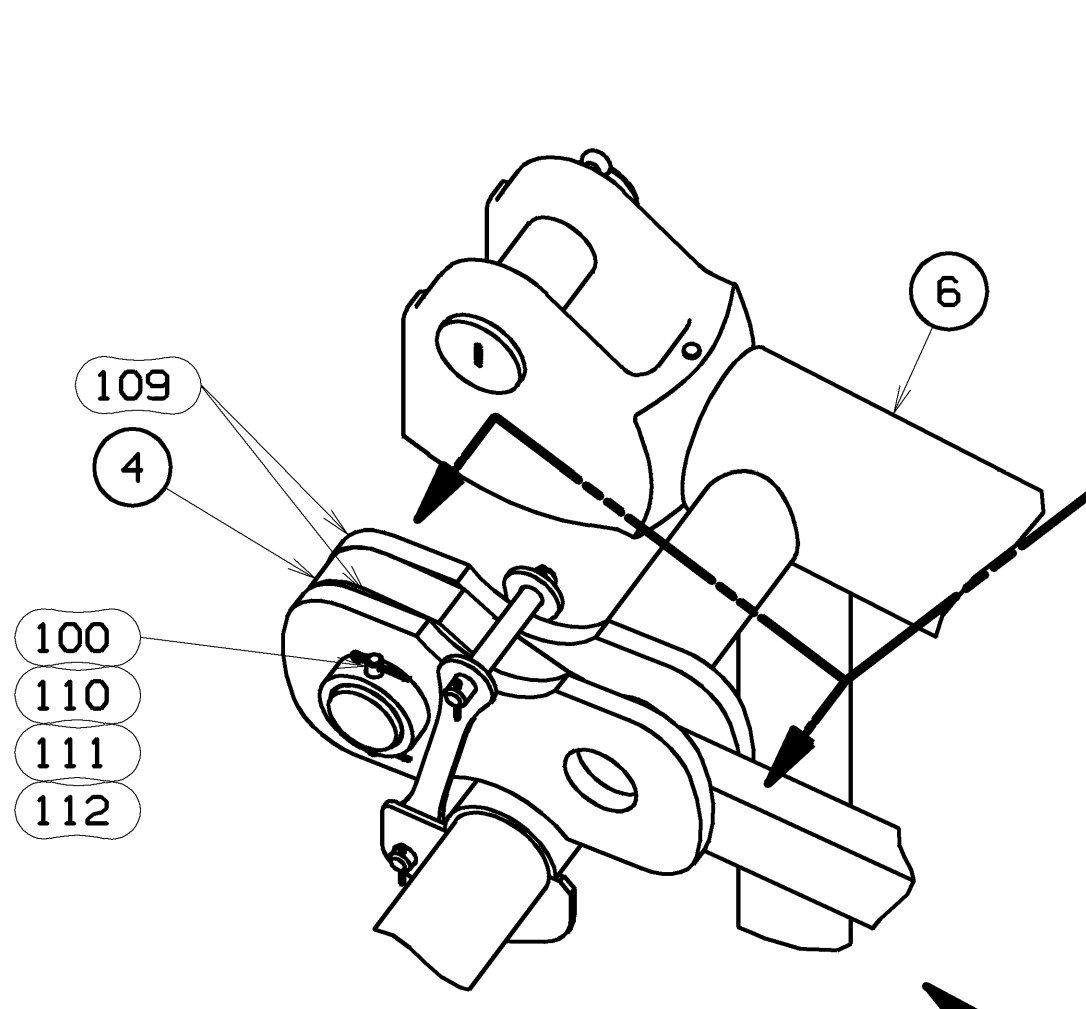
ADJUSTING SCREW AND NUT



STOP ROLLER SEATED IN ROTATING BED. BOOM STOP ROD END FULLY EXTENDED.

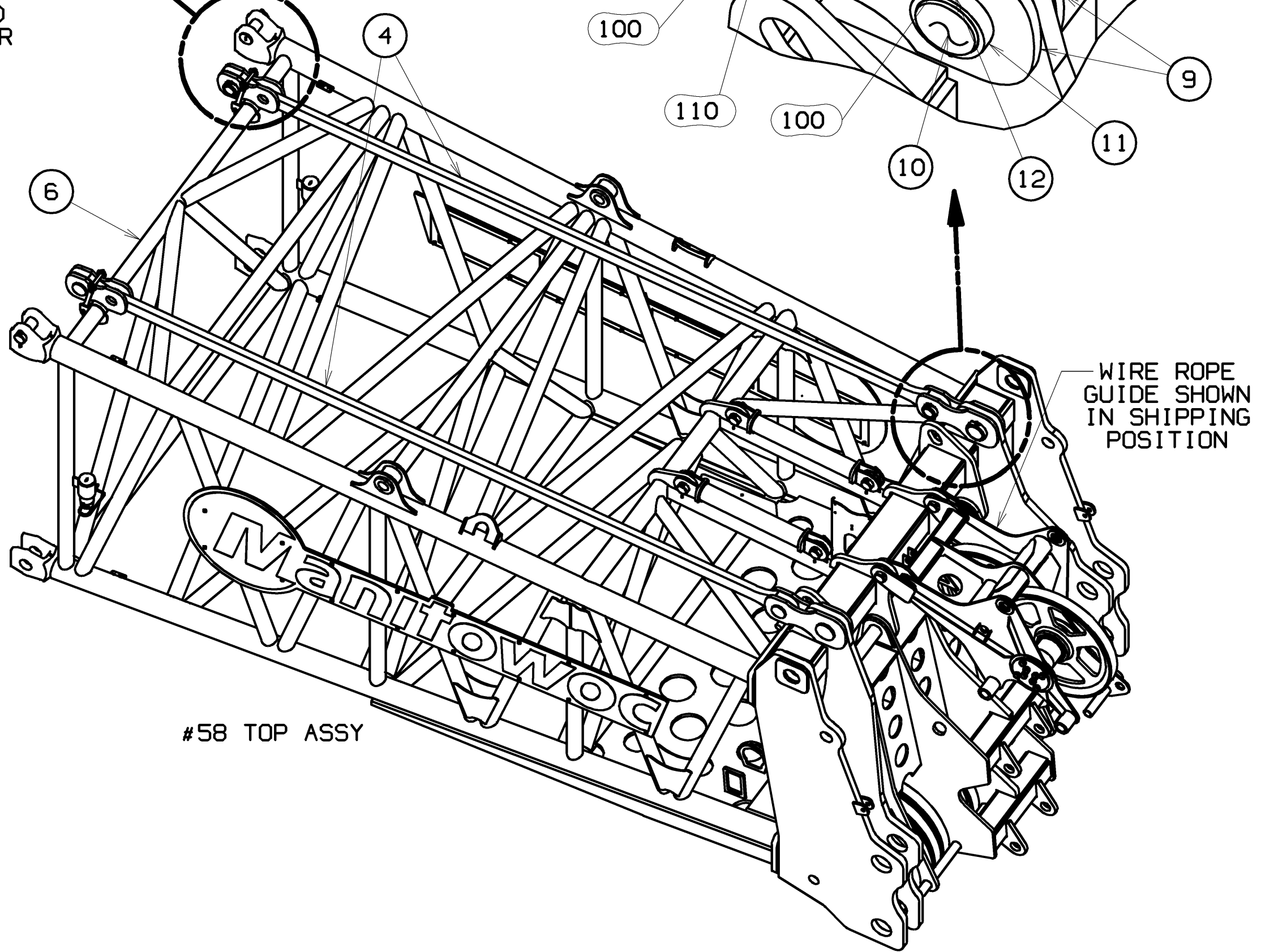
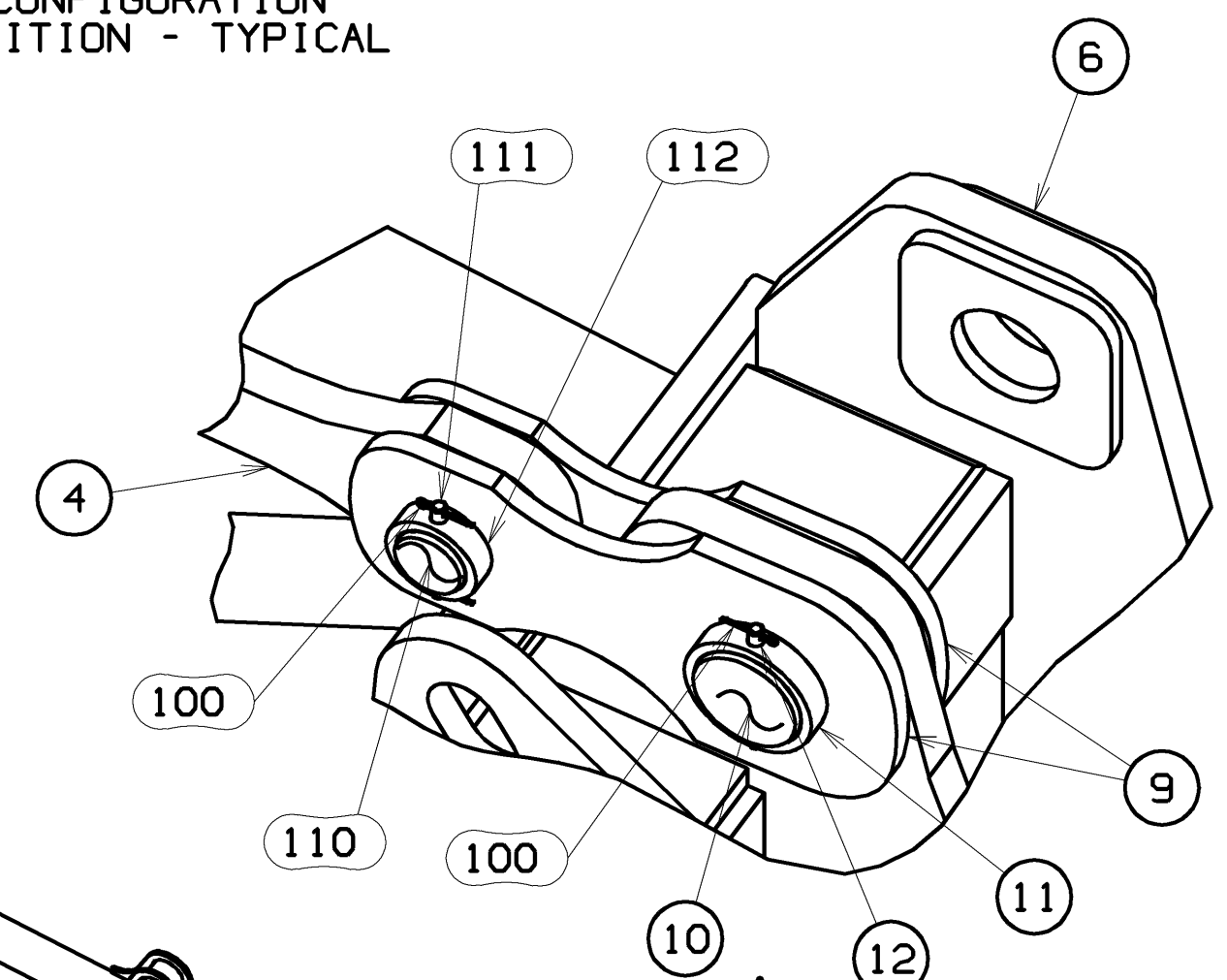


BOOM STOP SETUP AND ADJUSTMENT
SCALE: .375=1FT



TYPICAL LINK AND STRAP STORAGE FOR SHIPPING

STRAP STORAGE LINK: PIN IN THIS CONFIGURATION FOR WORKING POSITION - TYPICAL



#58 TOP ASSY

WIRE ROPE GUIDE SHOWN IN SHIPPING POSITION

BILL OF MATERIAL				
QTY	UOM	ITEM	DESCRIPTION	MATERIAL

ASSEMBLIES USED ON

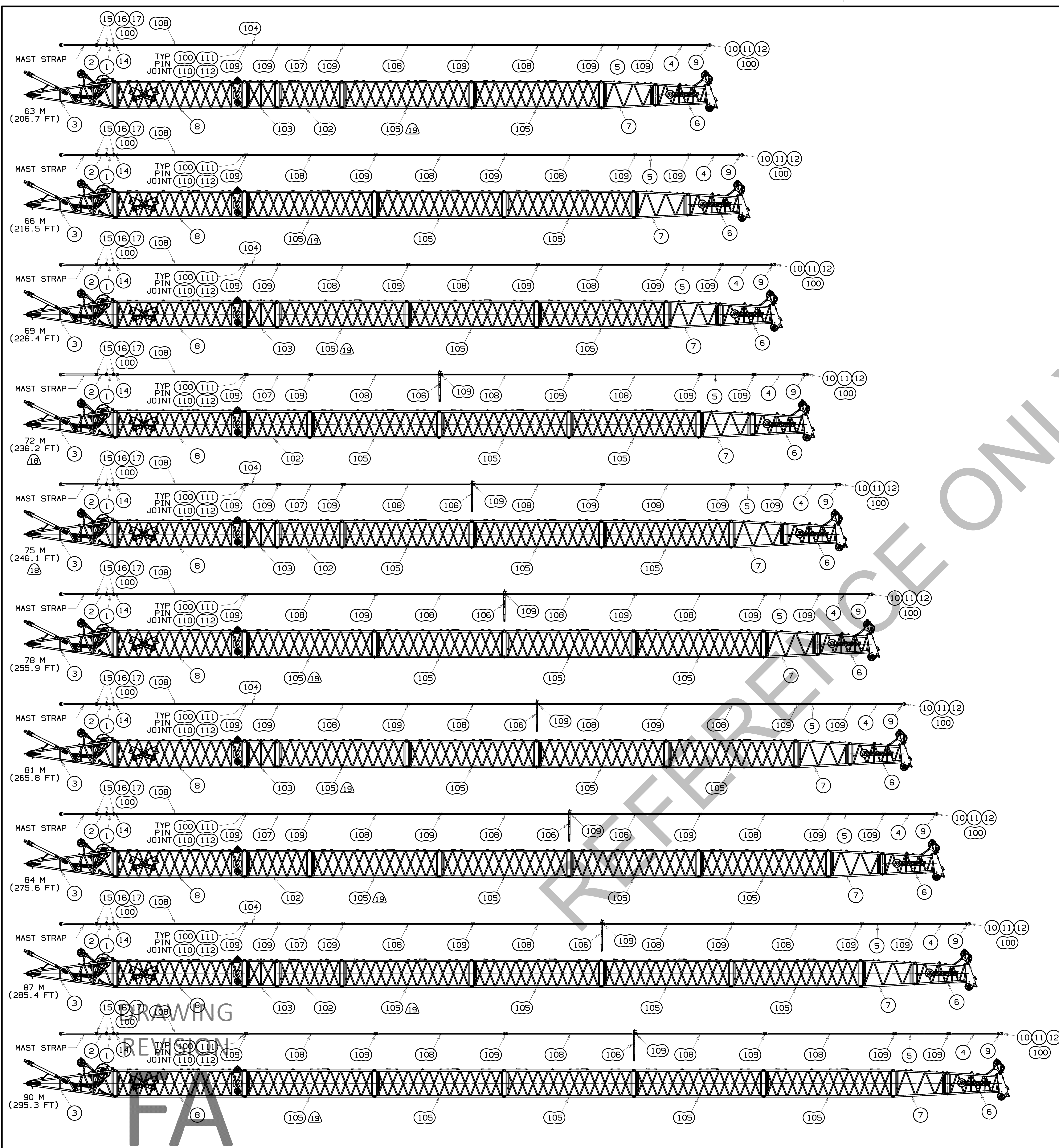
REVISIONS

DWG. NO.
81020381
SHT 2 OF 6

DATE
06-21-12
PATTERN NO.

DWG. NO.
81020381
SHT 2 OF 6

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BILL OF MATERIAL				ASSEMBLIES USED ON	
ITEM NO.	QTY	DESCRIPTION	UNIT	MATERIAL	DATE
100	1	BOOM ASSY	EA	100	06-21-12
101	1	MAST STRAP	EA	101	06-21-12
102	1	TYP PIN JOINT	EA	102	06-21-12
103	1	100	EA	103	06-21-12
104	1	101	EA	104	06-21-12
105	1	102	EA	105	06-21-12
106	1	103	EA	106	06-21-12
107	1	104	EA	107	06-21-12
108	1	105	EA	108	06-21-12
109	1	106	EA	109	06-21-12
110	1	107	EA	110	06-21-12
111	1	108	EA	111	06-21-12
112	1	109	EA	112	06-21-12
113	1	110	EA	113	06-21-12
114	1	111	EA	114	06-21-12
115	1	112	EA	115	06-21-12
116	1	113	EA	116	06-21-12
117	1	114	EA	117	06-21-12
118	1	115	EA	118	06-21-12
119	1	116	EA	119	06-21-12
120	1	117	EA	120	06-21-12
121	1	118	EA	121	06-21-12
122	1	119	EA	122	06-21-12
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124	1	121	EA	124	06-21-12
125	1	122	EA	125	06-21-12
126	1	123	EA	126	06-21-12
127	1	124	EA	127	06-21-12
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196	1	193	EA	196	06-21-12
197	1	194	EA	197	06-21-12
198	1	195	EA	198	06-21-12
199	1	196	EA	199	06-21-12
200	1	197	EA	200	06-21-12

TO ASSEMBLE BOOM

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

1. ASSEMBLE BOOM COMPLETE, WITHOUT BUTT.
2. ATTACH ROPE GUIDES, STRAPS, LINKS AND PINS AS REQ'D.
3. INSTALL BUTT WITH MAST AND ASSEMBLY BLOCK.
4. ATTACH BOOM BUTT HANDLING PENDANTS TO LUGS ON BOOM BUTT. BOOM UP TO CLEAR GROUND WITH BUTT.
5. POSITION MACHINE TO ALIGN UPPER PIN CONNECTOR ON BOOM BUTT WITH UPPER PIN CONNECTOR PINS ON FIRST BOOM INSERT AND ENGAGE PINS.
6. SLOWLY BOOM UP TO ALIGN LOWER PIN CONNECTOR HOLES ON BOOM BUTT WITH LOWER PIN CONNECTOR HOLES IN FIRST BOOM INSERT AND INSERT PINS.

WARNING:

DO NOT BOOM UP PAST LOWER CONNECTOR HOLES. IF BOOMING UP CONTINUES AFTER CONNECTORS BOTTOM OUT OR AFTER PINS ARE INSERTED, DAMAGE TO MAST AND/OR BOOM BUTT WILL OCCUR.

7. BOOM DOWN TO DISCONNECT BOOM HANDLING PENDANTS FROM BUTT AND STOW PENDANTS.
8. BOOM DOWN TO ATTACH BOOM STRAPS ON MAST TO INSERT STRAPS.

WARNING:

DO NOT BOOM DOWN MAST BEYOND 156° WITHOUT ATTACHING ASSIST CRANE OR MAST CAN FALL. UNDER SOME CONDITIONS IT MAY BE NECESSARY TO BLOCK UP STRAPS ON INSERT TO AID STRAP CONNECTION.

9. BOOM UP TO DESIRED BOOM ANGLE.

TO DISASSEMBLE BOOM

1. BOOM DOWN AND SUPPORT BOOM ON BLOCKING.
2. DISCONNECT MAST STRAPS FROM BOOM INSERT STRAPS.
3. CONNECT BOOM BUTT HANDLING PENDANTS FROM MAST TO BOOM BUTT LUGS.
4. BOOM UP TO REMOVE SLACK FROM BUTT HANDLING PENDANTS.

WARNING:

DO NOT BOOM UP TO PUT EXCESSIVE TENSION INTO BUTT HANDLING PENDANTS. (ENOUGH TENSION IS REQUIRED TO SUPPORT BOOM BUTT WHEN LOWER PINS ARE REMOVED.) LIFTING BOOM WITH HANDLING PENDANTS WILL DAMAGE MAST AND/OR BOOM BUTT.

5. REMOVE LOWER PINS CONNECTING BUTT AND 12M INSERT W/AUX SHEAVES. BOOM DOWN TO BLOCKING TO DISENGAGE UPPER PINS CONNECTING BUTT AND 12M INSERT W/ AUX SHEAVES.

WARNING:

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

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

TO ATTACH ASSEMBLY BLOCK

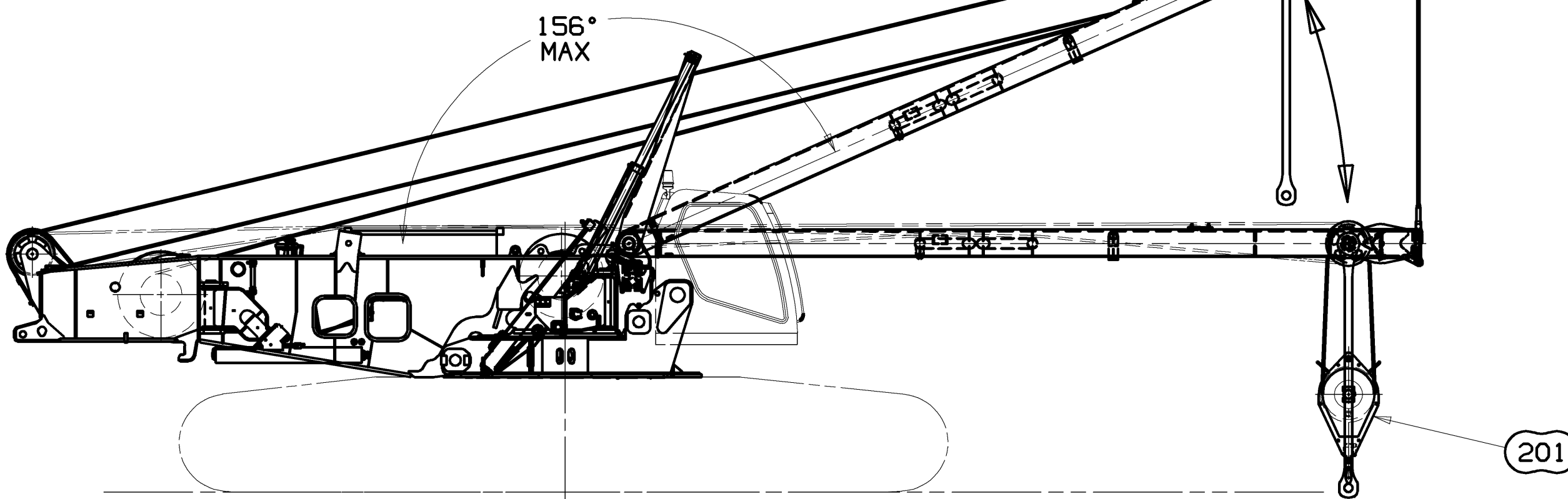
WITH MACHINE ON PEDESTALS FOR MACHINE ASSEMBLY
OR ON CRAWLERS FOR MACHINE DISASSEMBLY

1. BOOM DOWN MAST TO 156° MAXIMUM.

WARNING:

DO NOT BOOM DOWN MAST BEYOND 156° WITHOUT ATTACHING ASSIST CRANE OR MAST CAN FALL.

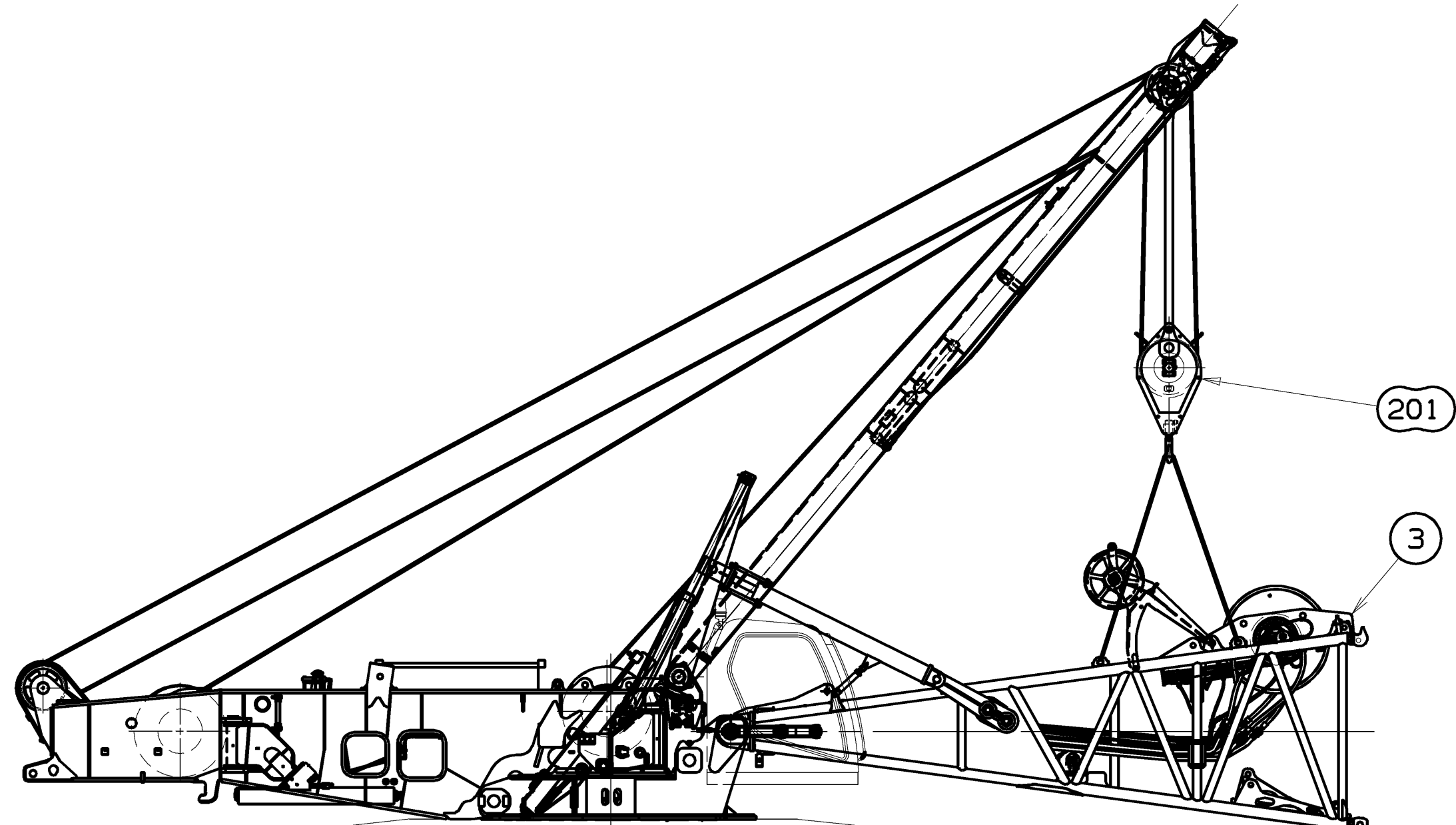
2. ATTACH ASSIST CRANE TO ONE OF THE BOOM BUTT HANDLING PENDANTS.
3. LOWER MAST WITH ASSIST CRANE WHILE BOOMING DOWN WITH BOOM HOIST TO LOWER MAST TO HORIZONTAL AND INSTALL BLOCK.
4. RAISE MAST WITH ASSIST CRANE WHILE BOOMING UP WITH BOOM HOIST TO RAISE MAST TO 156° OR LESS.
5. DISCONNECT ASSIST CRANE AND STOW PENDANT.



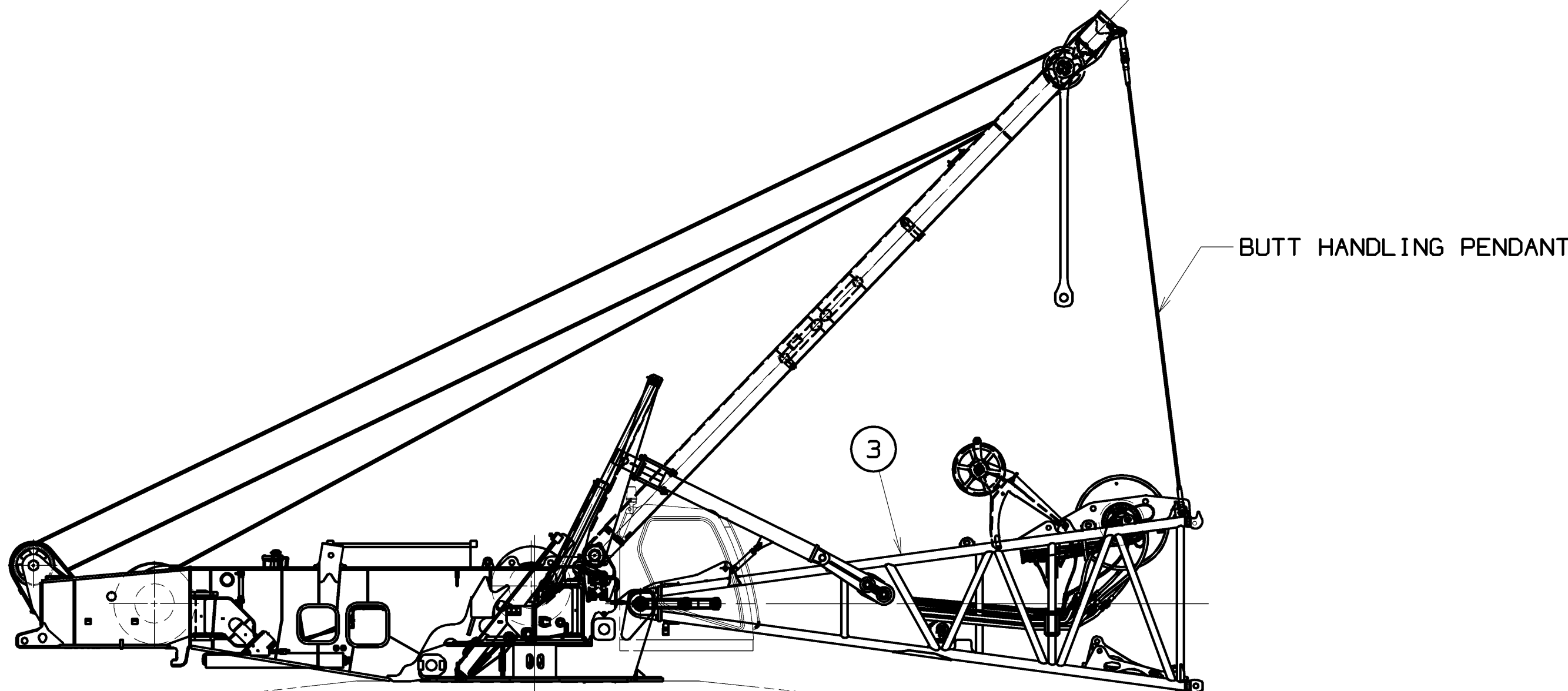
MAST LOWERING TO HORIZONTAL FOR ASSEMBLY BLOCK HOOKUP

BOOM HANDLING WITH MAST
WITH BOOM HANDLING PENDANTS ON MAST
ATTACHED TO LUG ON BOOM BUTT; MAXIMUM BOOM
THAT CAN BE CANTILEVERED IS AS FOLLOWS.

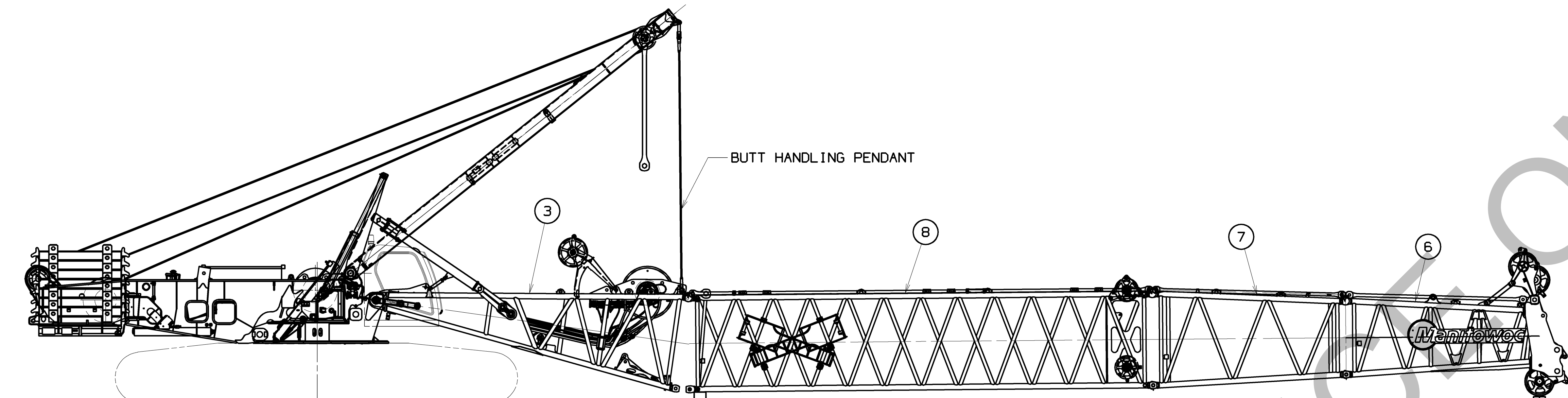
LENGTH	3 M (9.8 FT) INSERT	6 M (19.7 FT) INSERT	12 M (39.4 FT) INSERT
12 M (39.4 FT)	0	0	1
15 M (49.3 FT)	1	0	1
18 M (59.1 FT)	0	1	1
21 M (69.0 FT)	1	1	1



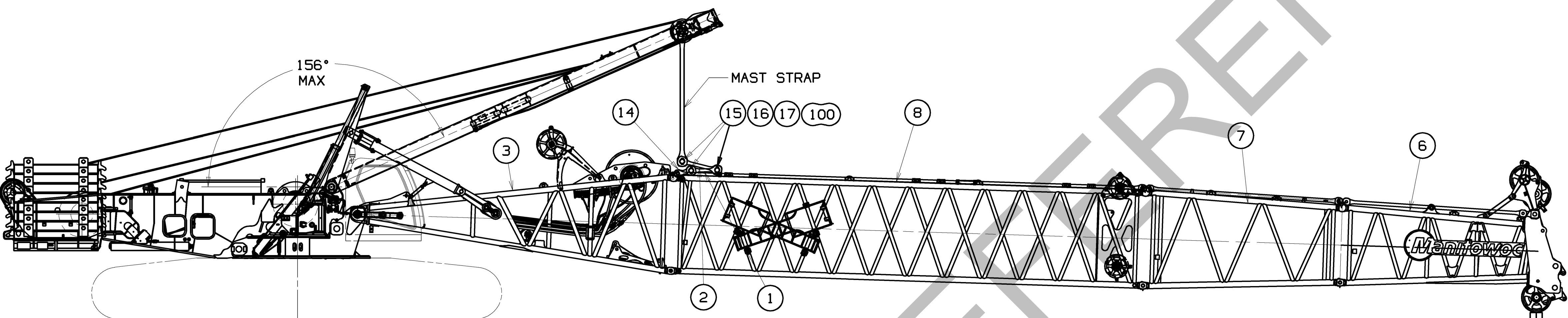
BOOM BUTT INSTALLATION WITH MAST



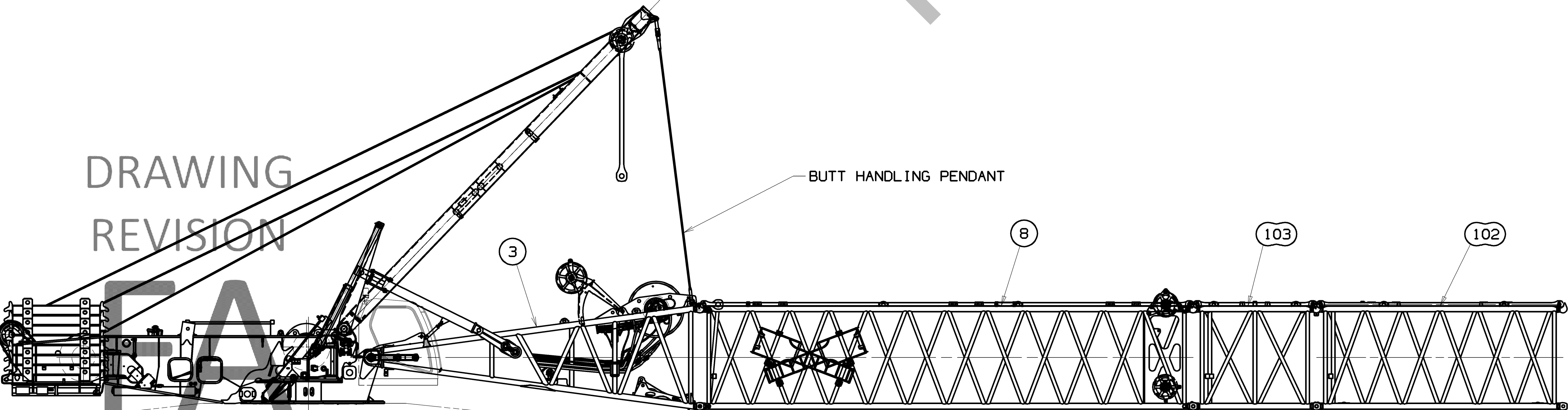
BOOM BUTT HANDLING WITH MAST



BOOM CLOSING

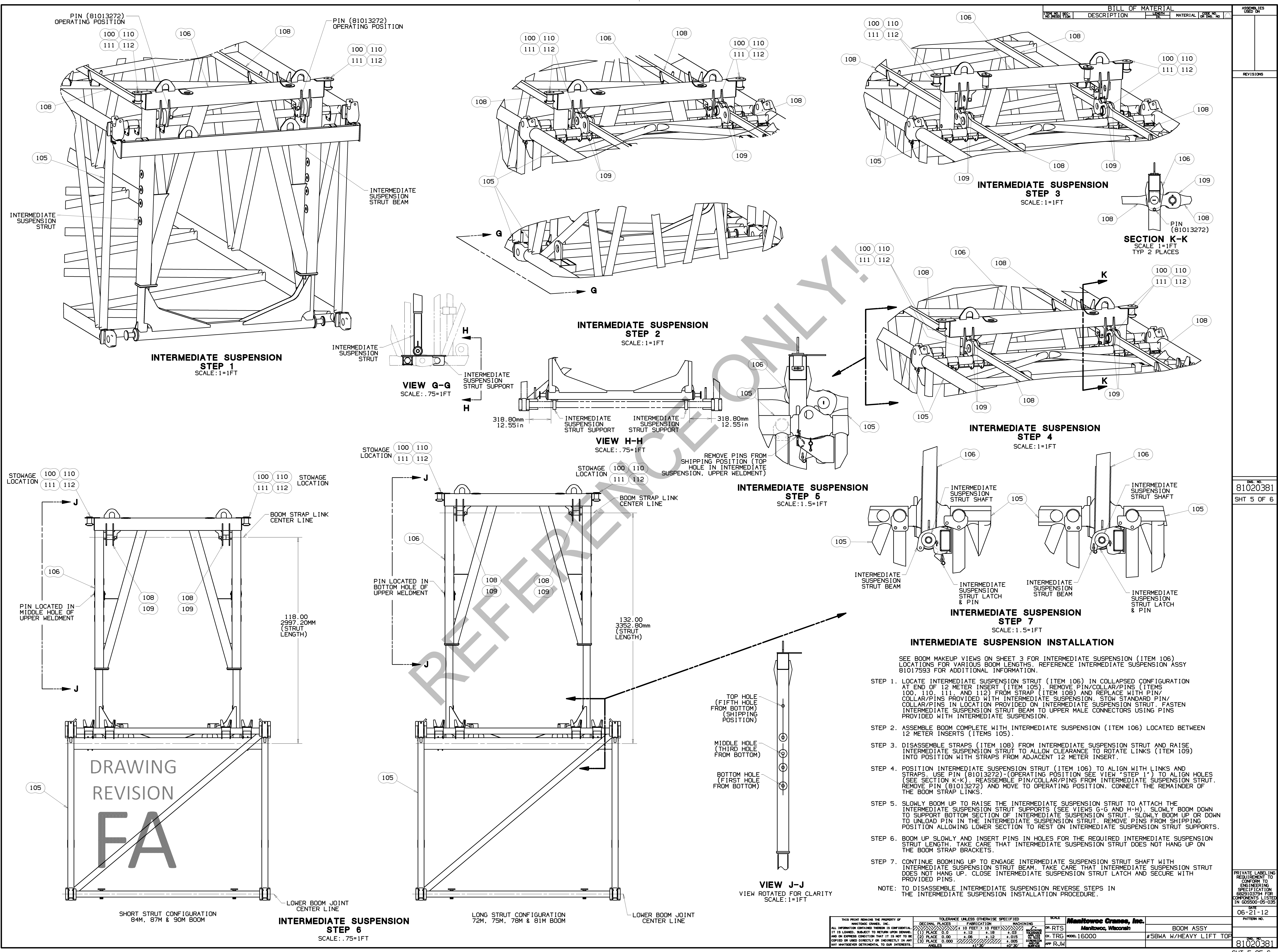


STRAP HOOKUP



BOOM HANDLING WITH MAST

DRAWING
REVISION



BILL OF MATERIAL

ITEM NO.	QTY	DESCRIPTION	UNIT	MATERIAL	DATE	NO.
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ASSEMBLIES USED ON

REVISIONS

DWG. NO.

81020381

SHT 5 OF 6

PRIVATE LABELING

REQUIREMENT TO

CONFORM TO

ENGINEERING

SPECIFICATION

8229103794 FOR

COMPONENTS LISTED

IN 82520-05-025

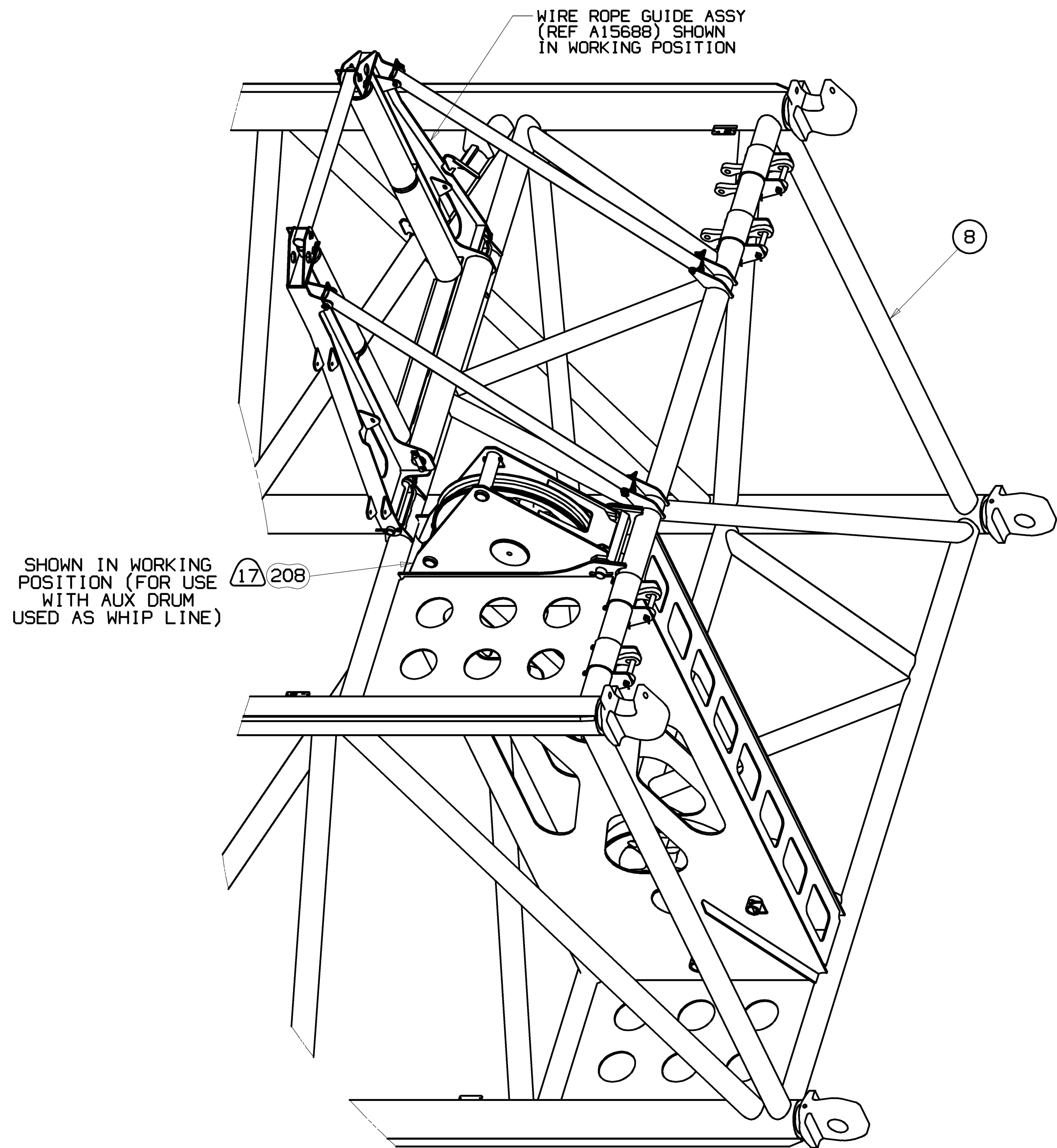
DATE

06-21-12

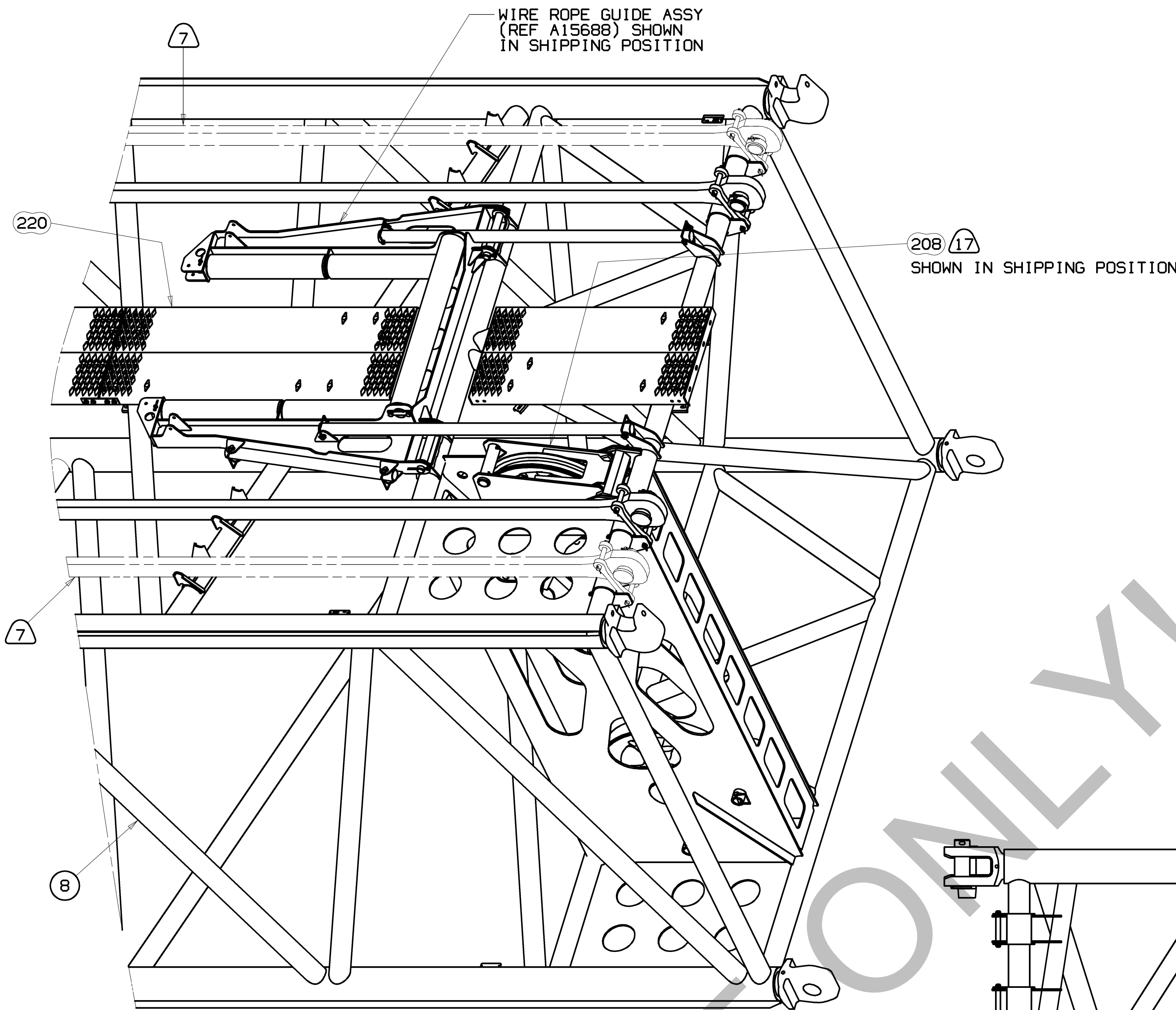
PATTERN NO.

81020381

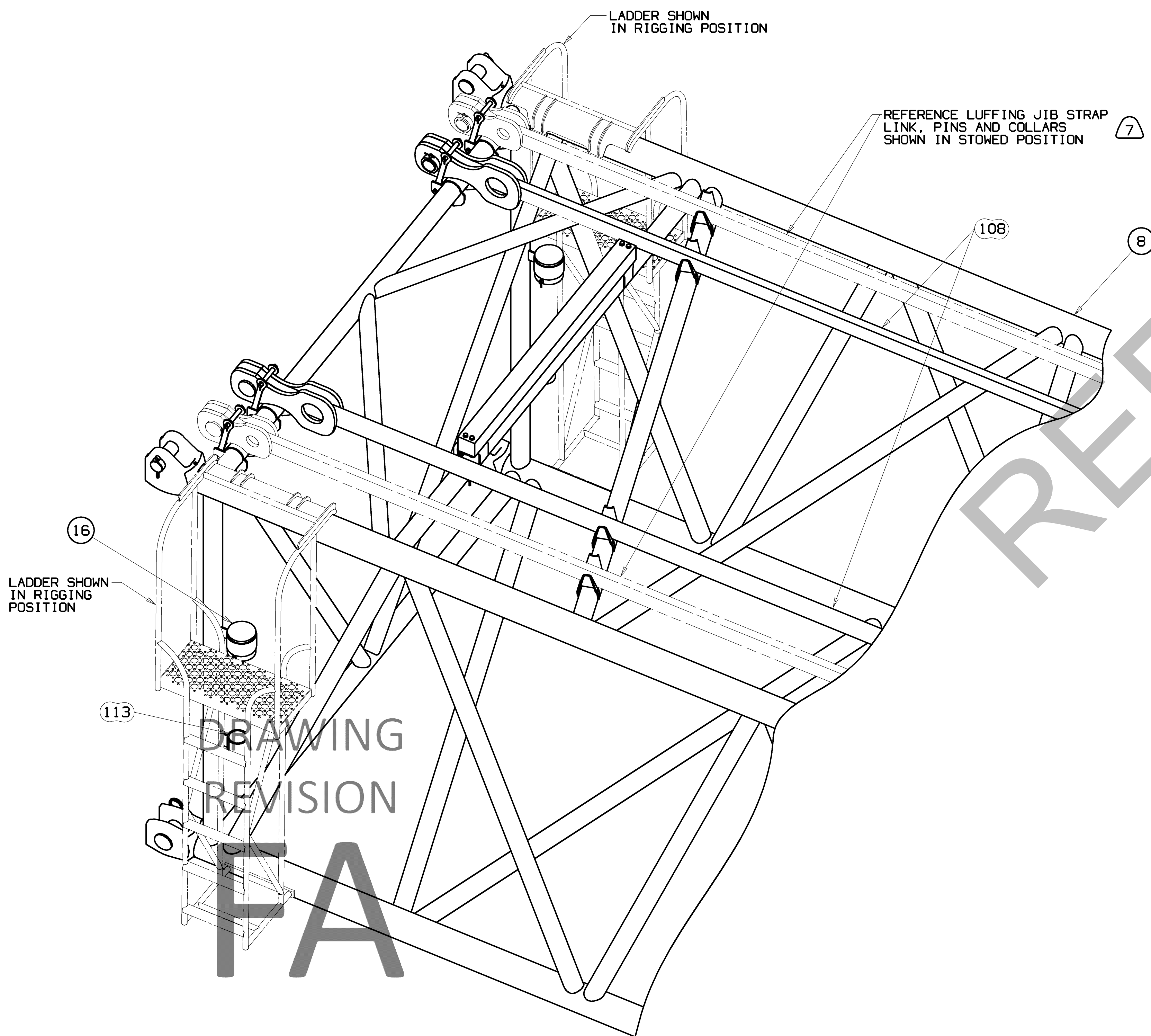
SHT 5 OF 6



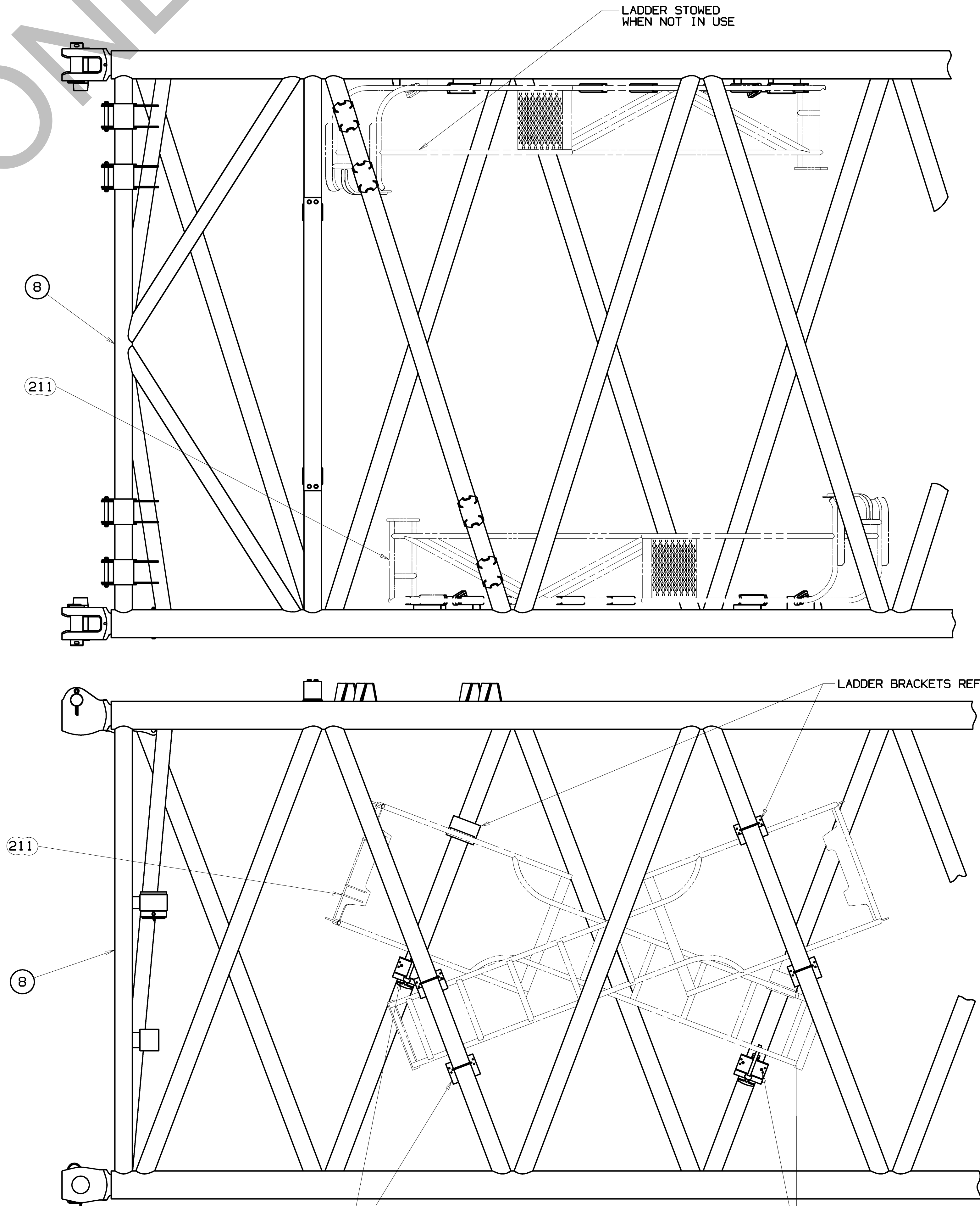
WIRE ROPE GUIDES IN WORKING POSITION



WIRE ROPE GUIDES IN SHIPPING POSITION



REFER TO INSERT ASSEMBLY FOR DETAILED ITEMS



SECURE LADDERS IN BRACKETS FOR STORAGE AND SHIPPING

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DATE 06-21-12				PATTERN NO.				DWG. NO. 81020381				SHT 6 OF 6				PRIVATE LABELING REQUIREMENT TO CONFORM TO ENGINEERING SPECIFICATION 6829103794 FOR COMPONENTS LISTED IN 6829103794			