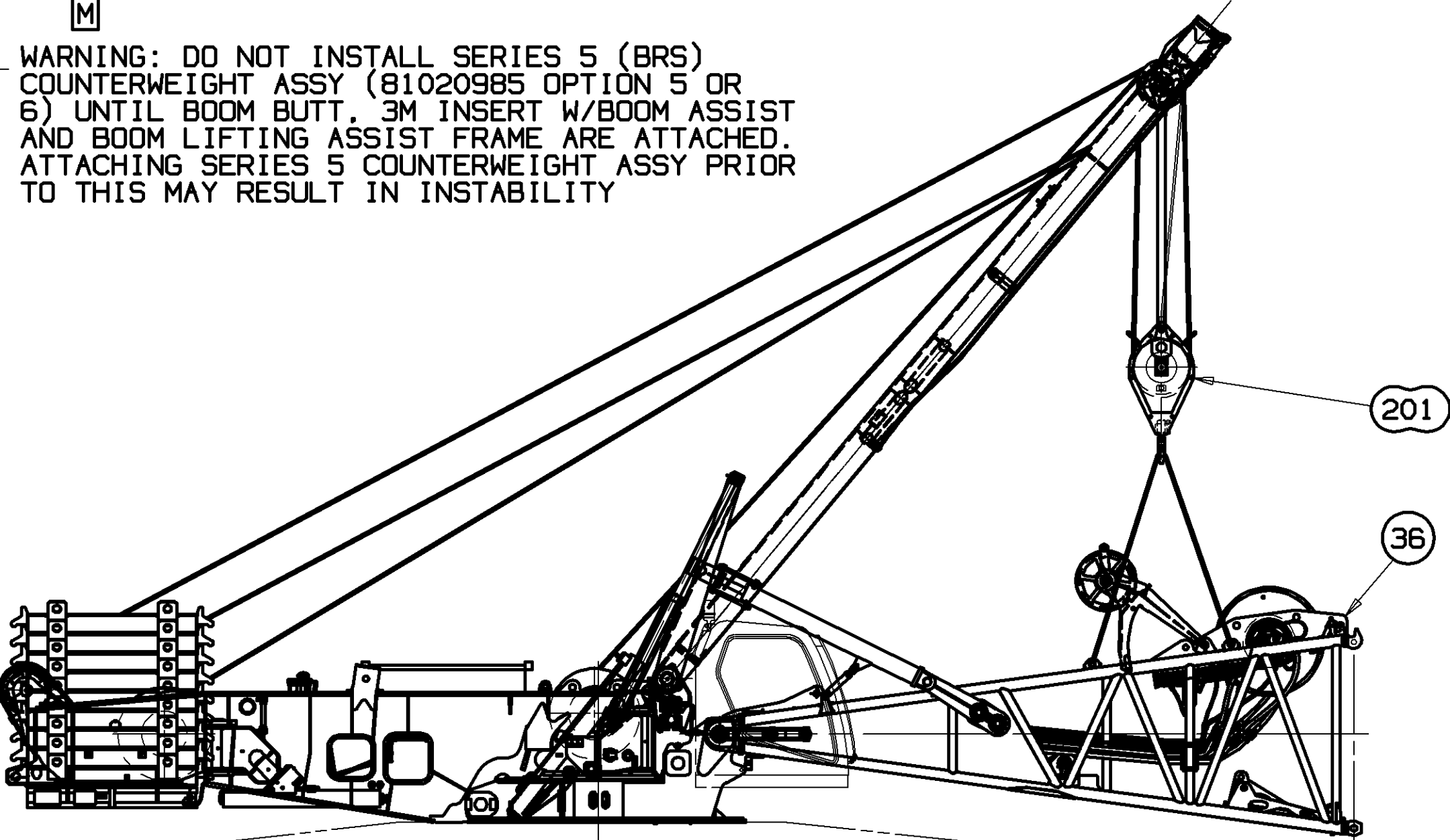
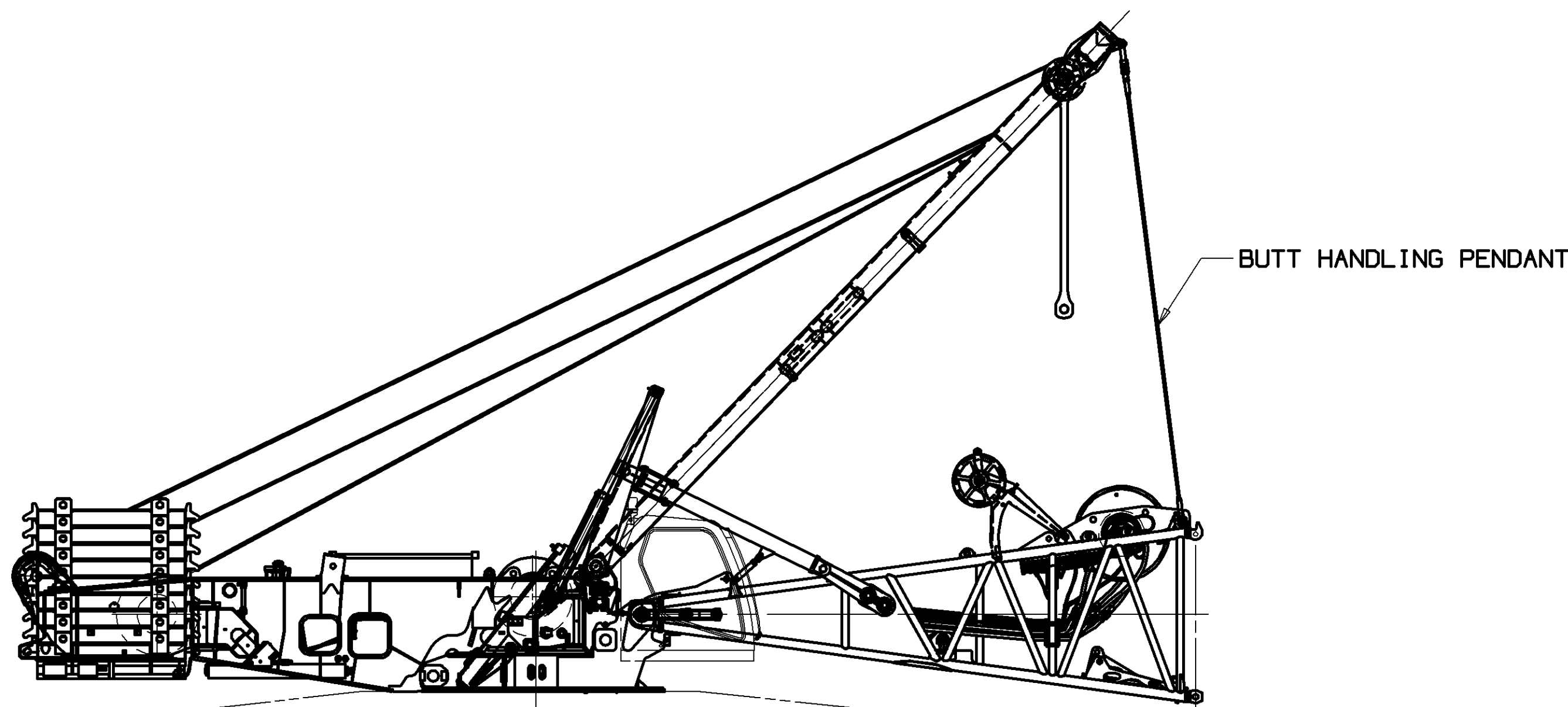


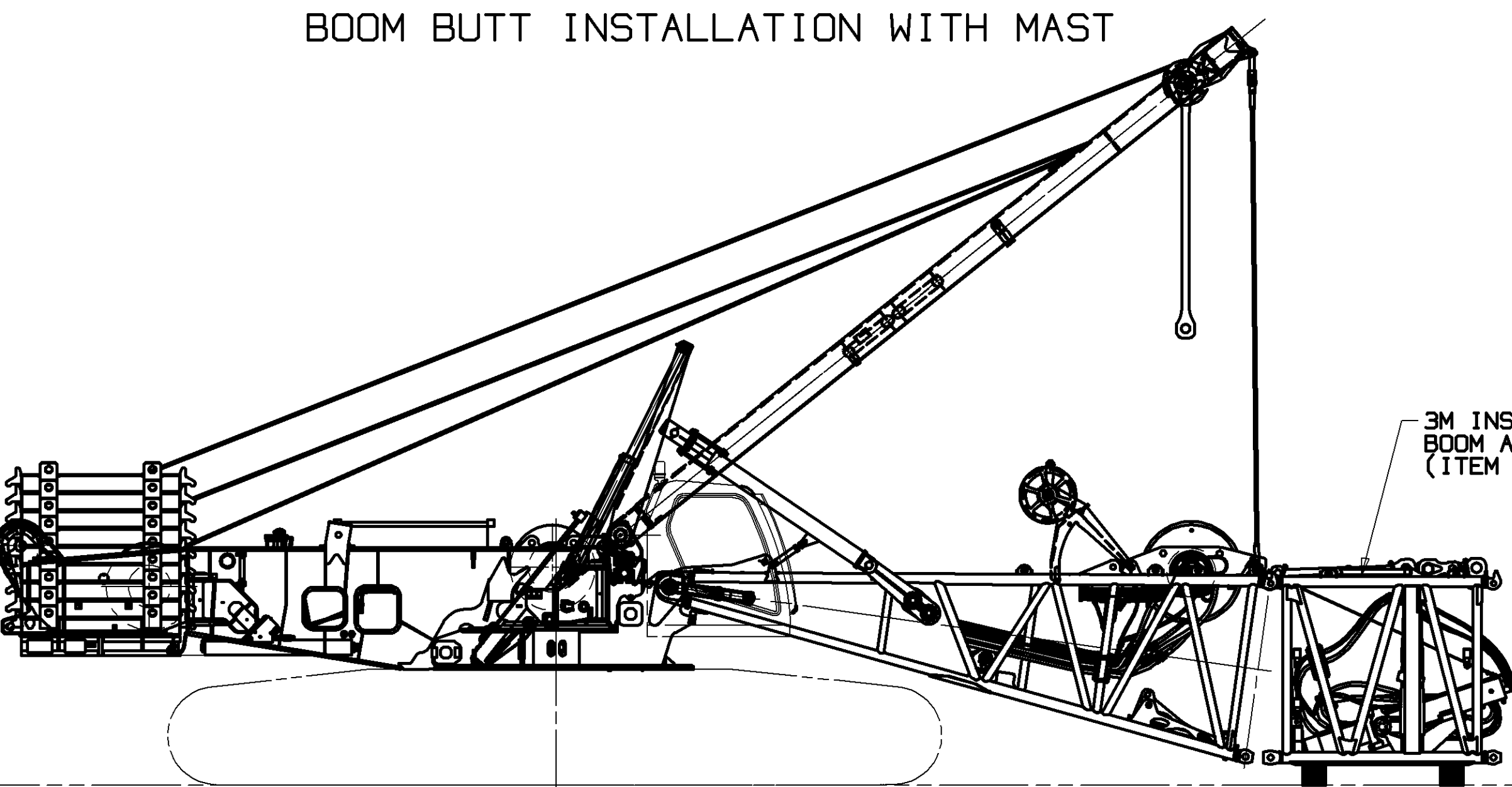
WARNING: DO NOT INSTALL SERIES 5 (BRS) COUNTERWEIGHT ASSY (81020985 OPTION 5 OR 6) UNTIL BOOM BUTT, 3M INSERT W/BOOM ASSIST AND BOOM LIFTING ASSIST FRAME ARE ATTACHED. ATTACHING SERIES 5 COUNTERWEIGHT ASSY PRIOR TO THIS MAY RESULT IN INSTABILITY



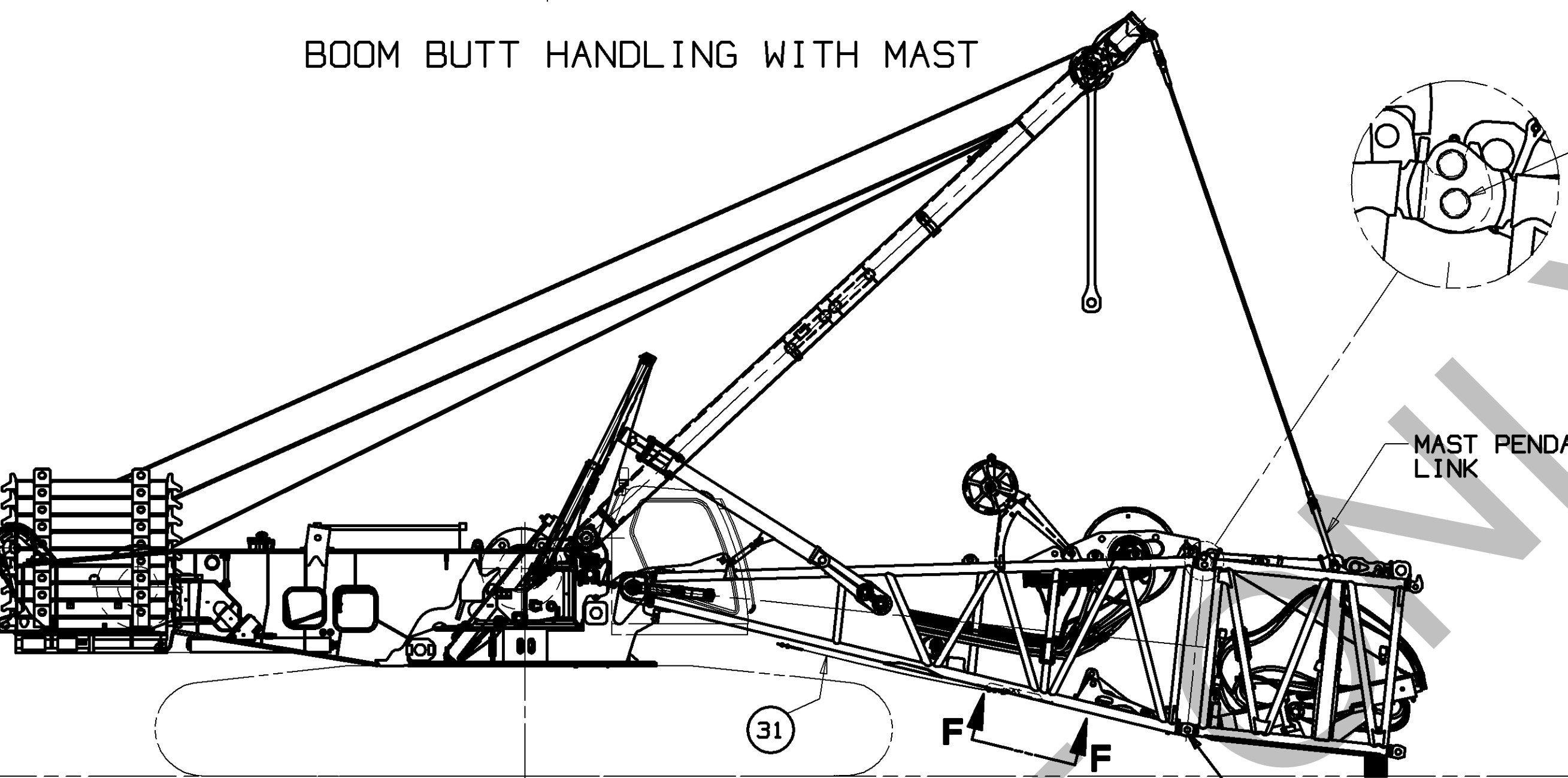
BOOM BUTT INSTALLATION WITH MAST



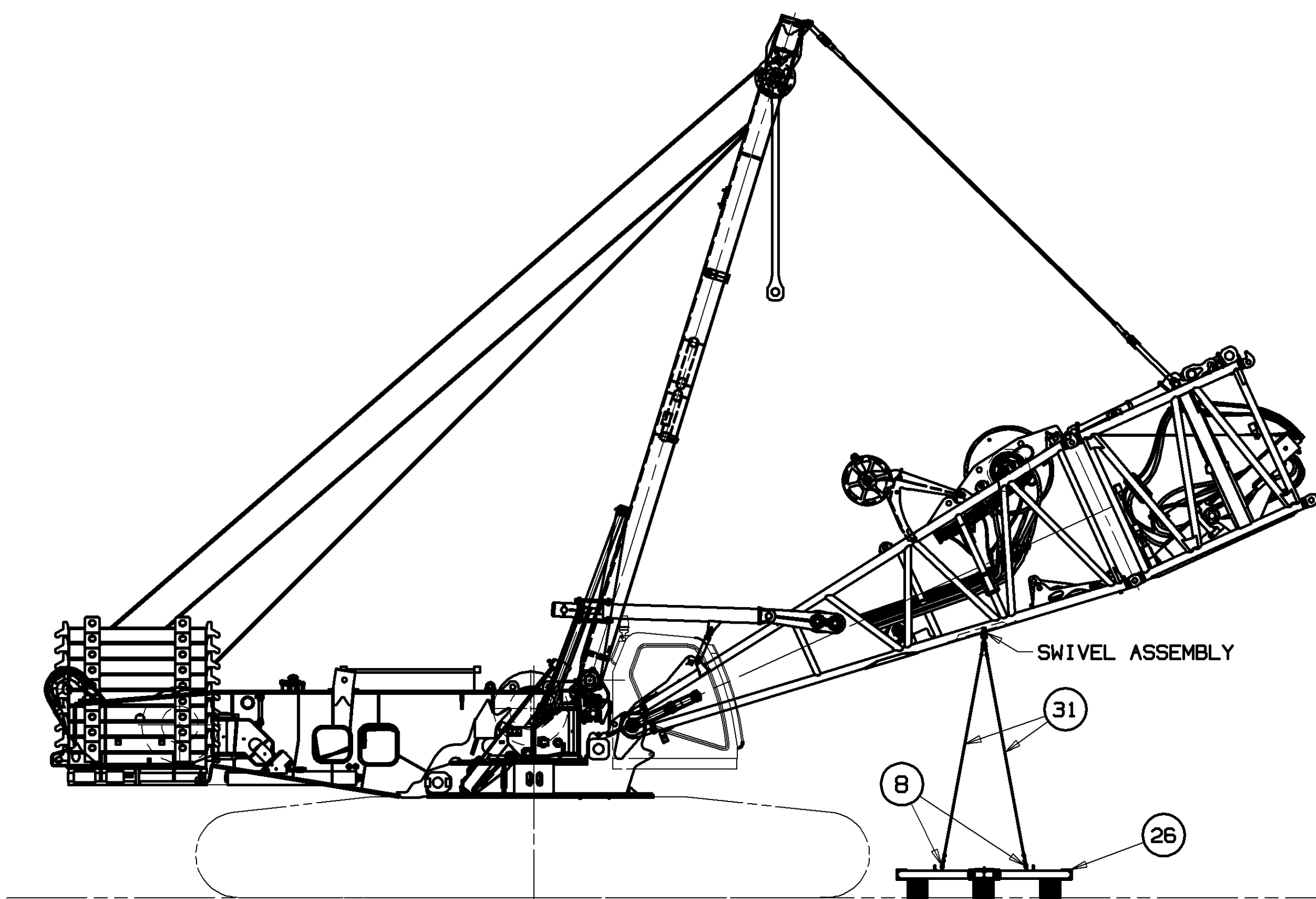
BOOM BUTT HANDLING WITH MAST



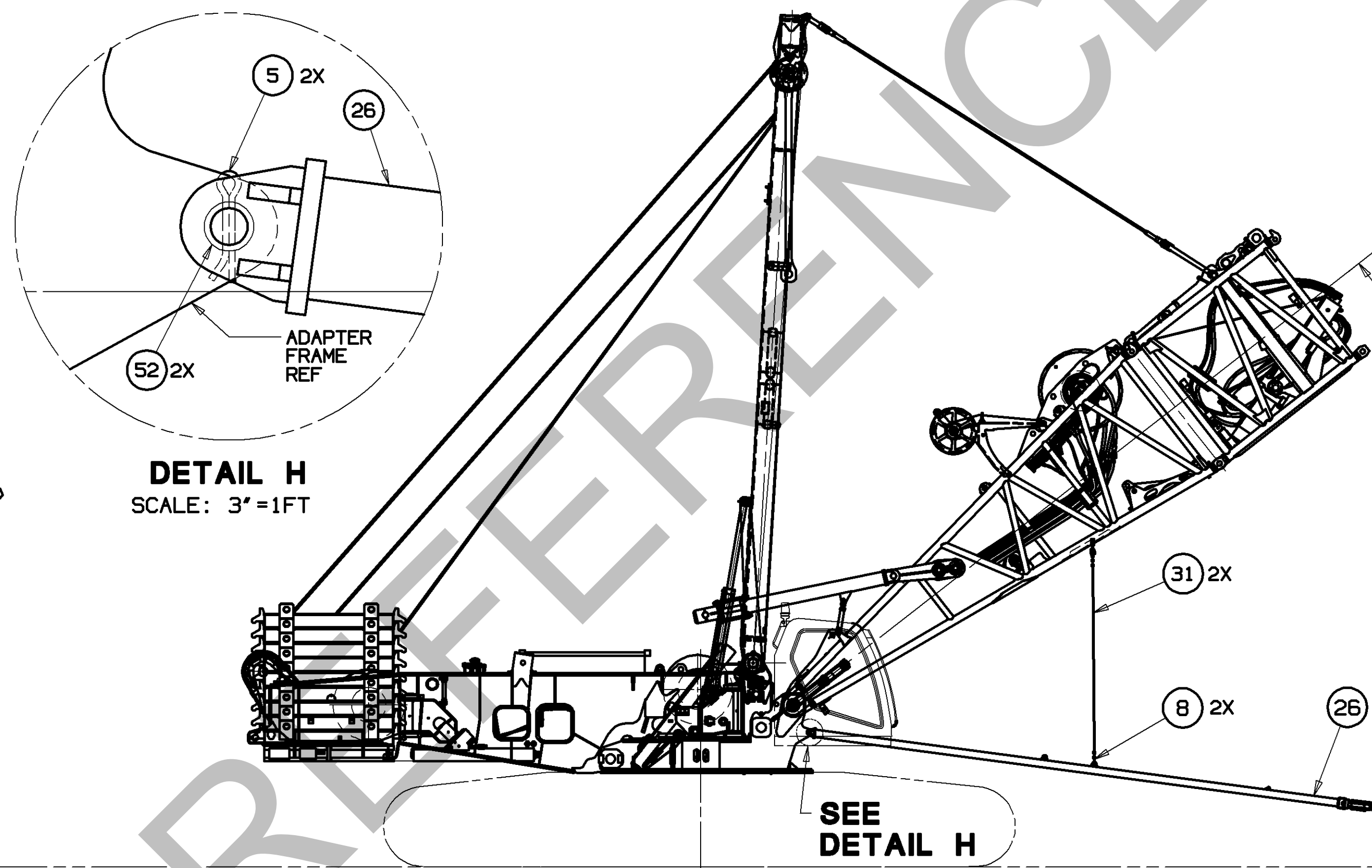
ATTACHING 3M INSERT WITH BOOM ASSIST



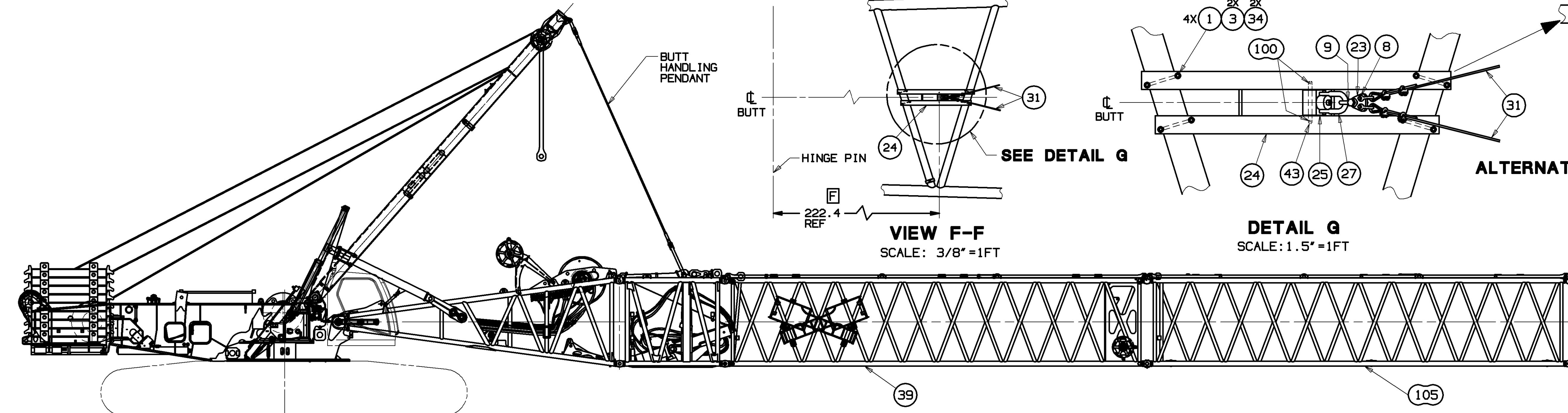
REATTACHING BOOM HANDING PENDANT TO 3M INSERT WITH BOOM ASSIST



PICKING UP BOOM LIFTING ASSIST FRAME FROM BLOCKING



BOOMING UP WITH BOOM LIFTING ASSIST FRAME TO POSITION FRAME TO BE PINNED INTO ADAPTER FRAME



BOOM HANDLING WITH MAST (SHOWN WITH 2-12M INSERTS, SEE TABLE FOR HANDLING CAPACITIES)

TO ATTACH ASSEMBLY BLOCK
WITH MACHINE ON PEDESTALS FOR MACHINE ASSEMBLY
OR ON CRAWLERS FOR MACHINE DISASSEMBLY

1. BOOM DOWN MAST TO 156° MAXIMUM.
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 BUTT HANDLING PENDANT.

TO ASSEMBLE BOOM

NOTE: FOR INITIAL FIELD INSTALLATION OF BRS COMPONENTS TO MACHINES THAT ARE NOT BRS PREPARED IT IS IMPORTANT THAT ALL MODIFICATIONS ARE MADE PER DRAWING 81017863 (ASSY BRS MOD)

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

1. ASSEMBLE BOOM COMPLETE WITHOUT BUTT OR 3M BRS INSERT ON A MINIMUM OF 18 INCHES (458 MM) OF BLOCKING. ENSURE THAT THE INSERTS ADJACENT TO INTERMEDIATE SUSPENSION ARE BLOCKED. SEE TABLE BELOW FOR HANDLING CAPACITIES.
2. ATTACH ROPE GUIDES, INTERMEDIATE SUSPENSION, 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 CONNECTOR PINS ON BLOCKED 3M BOOM RAISING ASSIST INSERT. LIFT AND ENGAGE PINS.
6. SLOWLY BOOM UP TO ALIGN LOWER PIN CONNECTOR HOLES ON BOOM BUTT WITH LOWER PIN CONNECTOR HOLES IN 3M BOOM RAISING ASSIST INSERT AND INSERT PINS. INSERT ADDITIONAL CONNECTOR PINS (ITEM 29) IN HOLES IN UPPER CONNECTORS.
7. BOOM DOWN TO BLOCK 3M INSERT WITH BOOM ASSIST. ONCE 3M INSERT IS BLOCKED THE BOOM HANDLING PENDANT WILL BECOME SLACK, DISCONNECT THE PENDANT FROM THE BOOM BUTT AND RECONNECT IT TO THE MAST PENDANT LINK (STOWED ON 3M INSERT).
8. IF NOT ALREADY INSTALLED ON BOOM BUTT, INSTALL BOOM RAISING SWIVEL ASSEMBLY (SEE VIEW F-F AND DETAIL G) WHILE 3M INSERT W/BOOM ASSIST IS BLOCKED, WRAP AND TIE OFF WIRE ROPE SLINGS (ITEM 31) AROUND BOOM RAISING SWIVEL BRACKET (ITEM 24).
9. CONNECT ALL HYDRAULIC AND ELECTRICAL COMPONENTS MOUNTED IN THE 3M INSERT W/ BOOM ASSIST.
10. ATTACH WIRE ROPE SLINGS (ITEM 31) TO BOOM LIFTING ASSIST FRAME (ITEM 26) LUGS TOWARD NARROW END USING SHACKLES (ITEM 8).
11. FROM BLOCKS OR A TRAILER, LIFT THE BOOM LIFTING ASSIST FRAME BY BOOMING UP UNTIL BOOM BUTT AND 3M BOOM INSERT W/BOOM ASSIST ARE AT APPROXIMATELY 38°.
12. SWIVEL THE BOOM LIFTING ASSIST FRAME AND CONNECT TO ADAPTER FRAME USING PIN (ITEM 5 & 52)

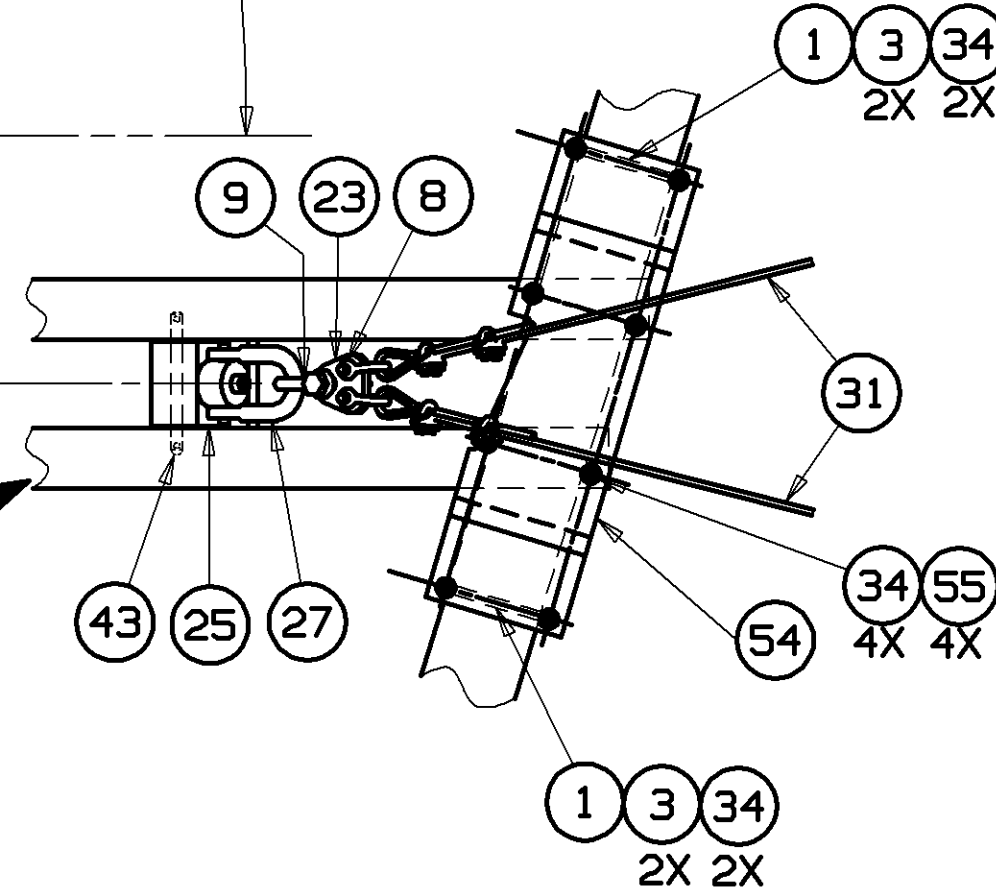
CONTINUED ON NEXT SHEET

BOOM HANDLING WITH MAST

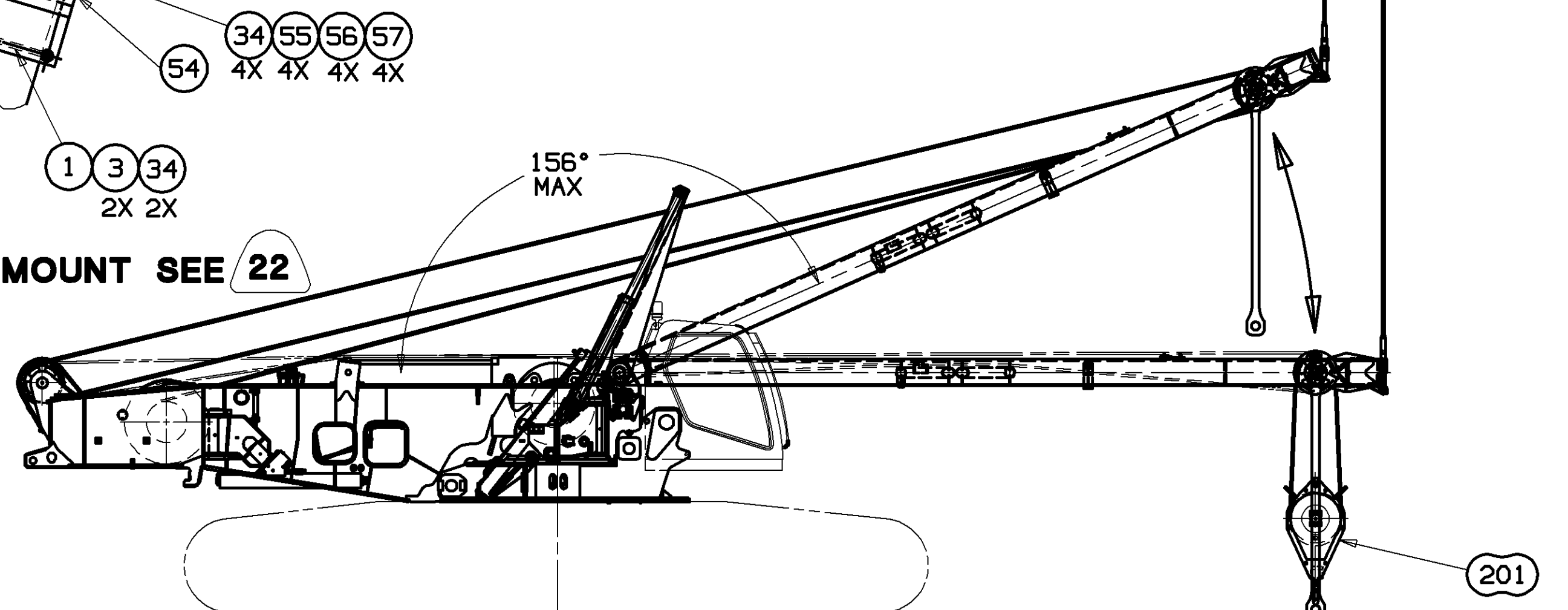
WITH BOOM HANDLING PENDANTS ON MAST ATTACHED TO MAST PENDANT LINK ON 3M INSERT W/BOOM ASSIST AND WITHOUT BOOM LIFTING ASSIST FRAME (ITEM 26) ATTACHED: MAXIMUM BOOM THAT CAN BE CANTILEVERED IS AS FOLLOWS.

LENGTH	3 M (9.8 FT) INSERT (ITEM 103)	6 M (19.7 FT) INSERT (ITEM 102)	ANY 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
24 M (78.8 FT)	0	0	2

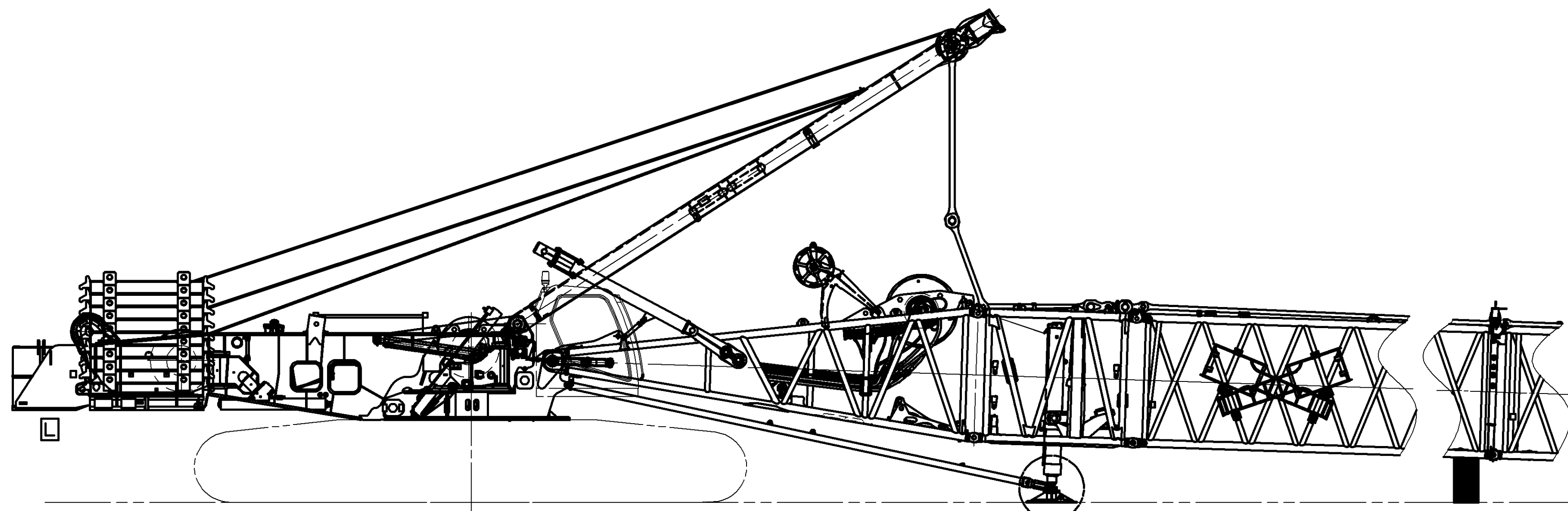
NOTE: 3M INSERT COLUMN ABOVE DOES NOT INCLUDE 3M INSERT W/BOOM ASSIST (ITEM 16).



ALTERNATE BRACKET MOUNT SEE 22

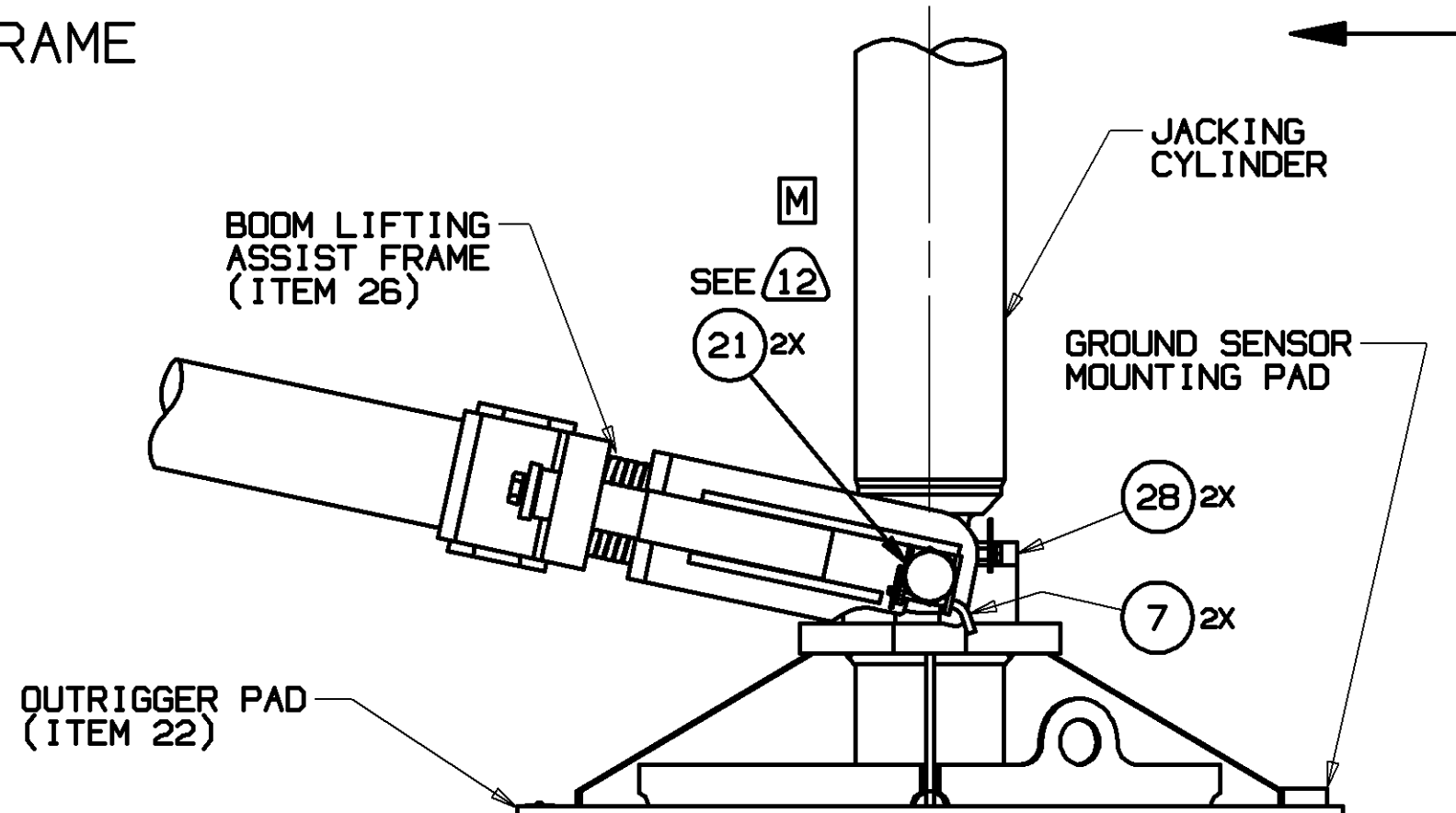
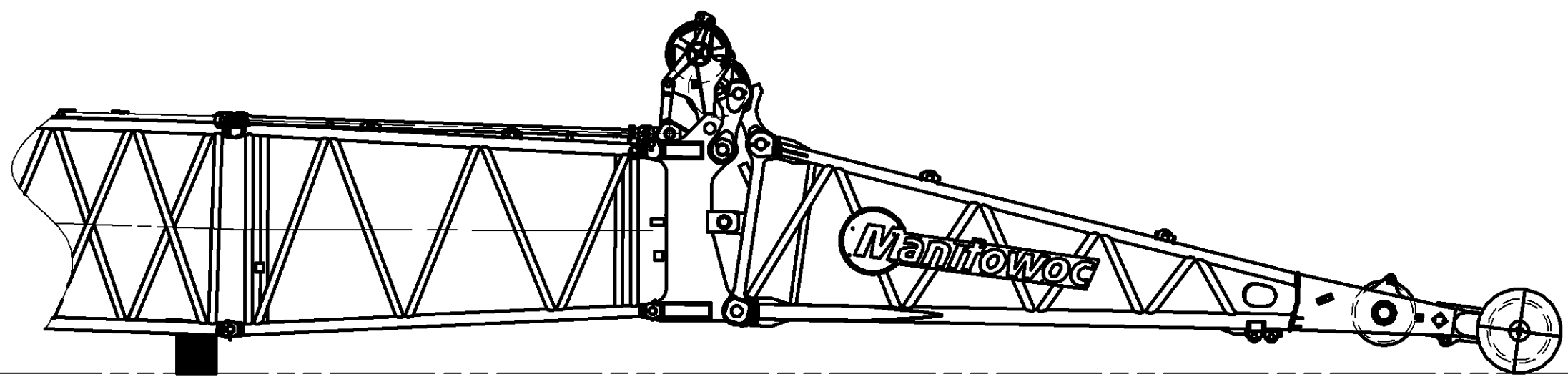


MAST LOWERING TO HORIZONTAL FOR ASSEMBLY BLOCK HOOKUP

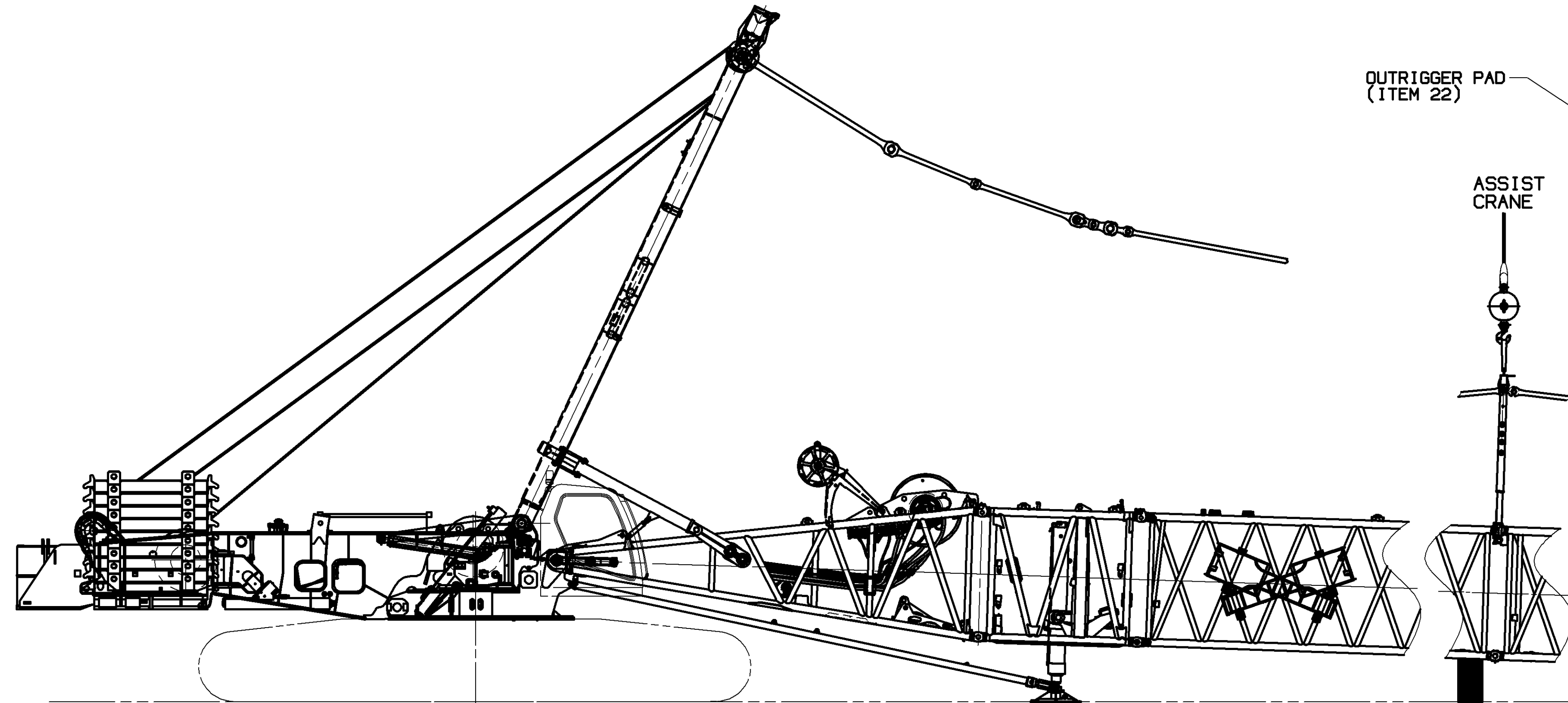
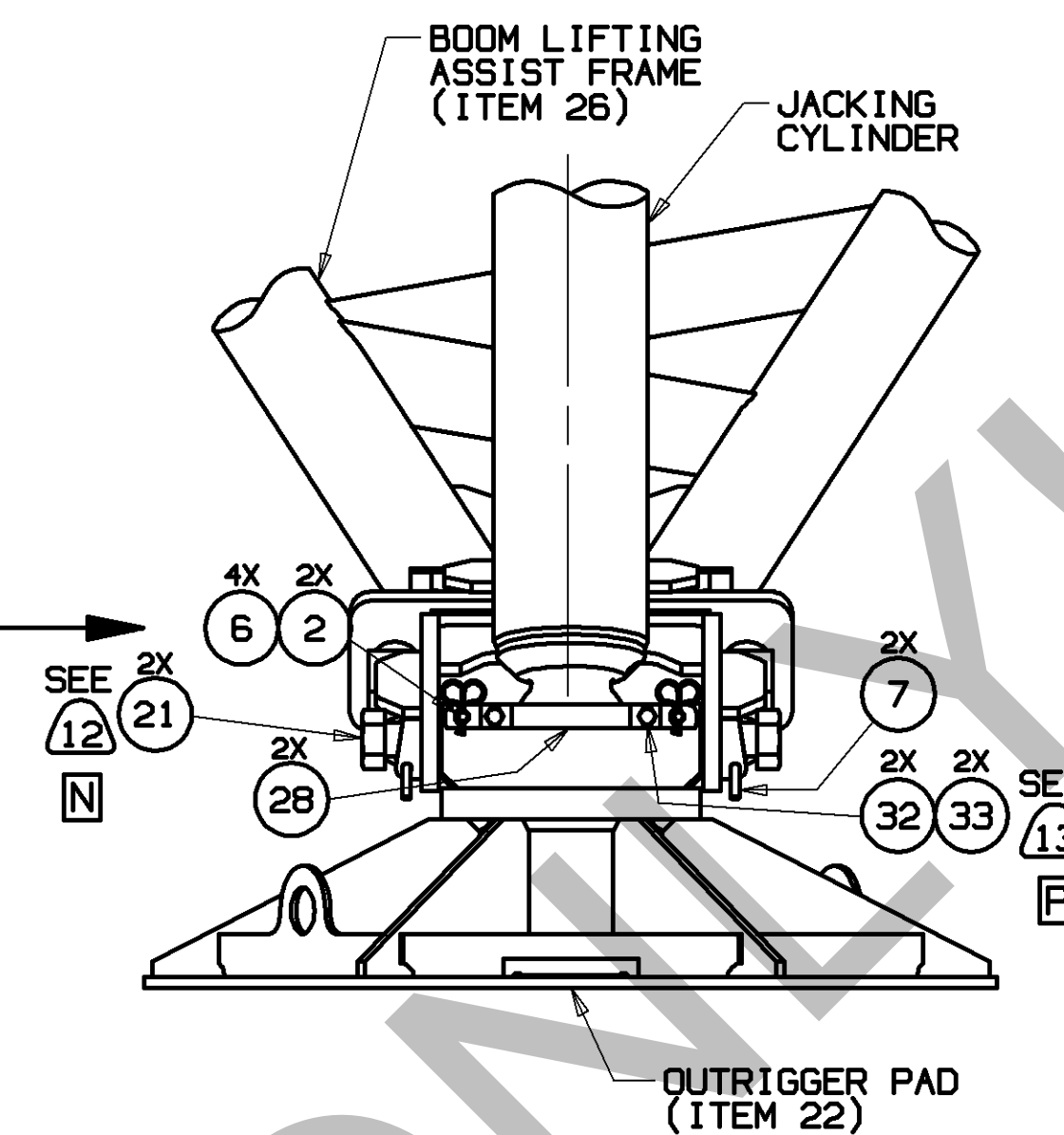


SEE DETAIL K

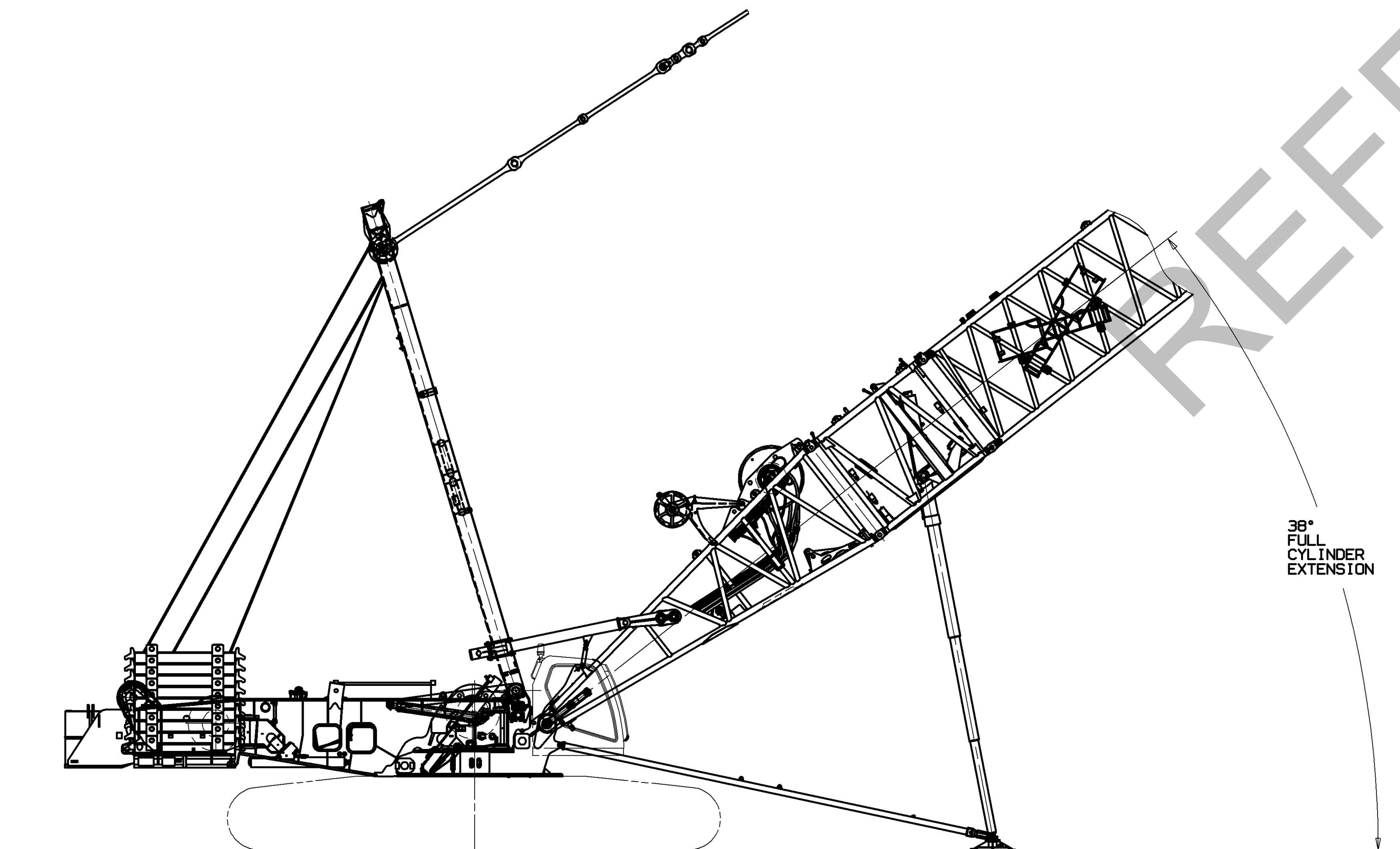
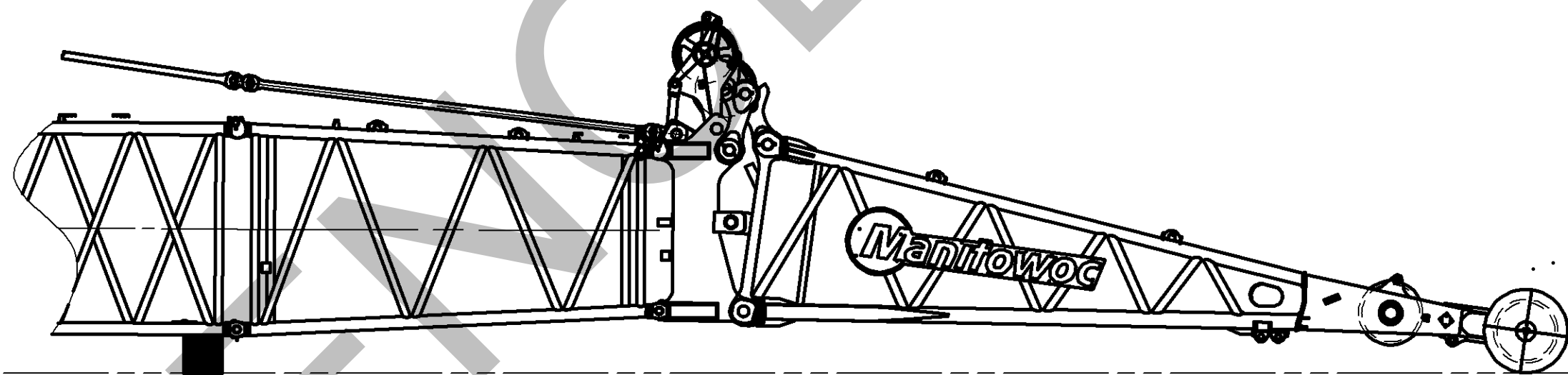
ATTACHING OUTRIGGER PAD TO JACKING CYLINDER AND BOOM LIFTING ASSIST FRAME



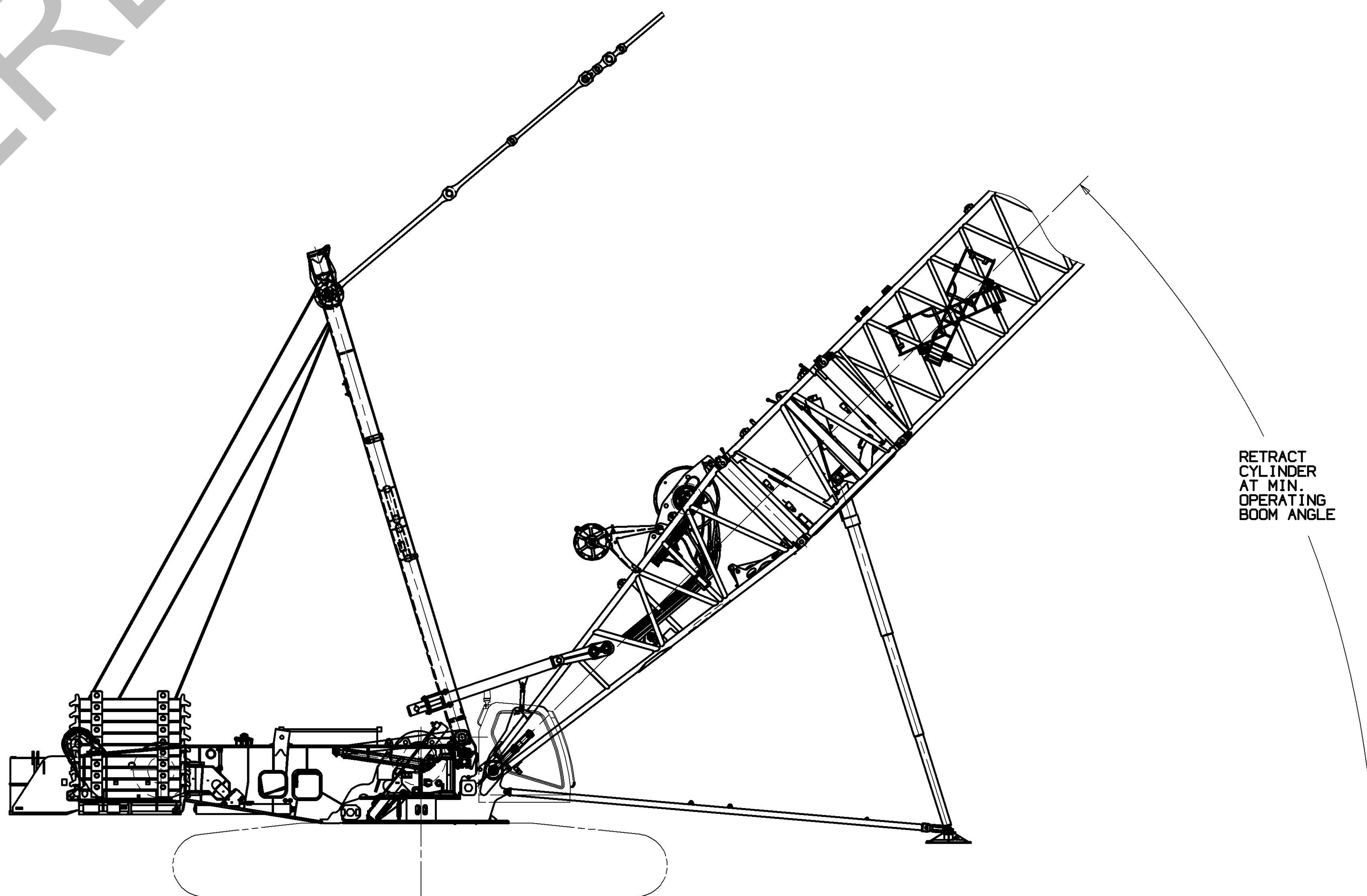
DETAIL K
SCALE: 1.5"=1 FT



BOOMING UP TO TENSION STRAPS AND USING ASSIST CRANE TO LATCH INTERMEDIATE SUSPENSION



RAISING BOOM WITH BOOM RAISING ASSIST AND BOOM HOIST TO FULL CYLINDER EXTENSION AT 38° BOOM ANGLE



FULLY RETRACT CYLINDER AT MINIMUM OPERATING BOOM ANGLE AND BEFORE SWINGING BOOM OR TRAVELING

TO ASSEMBLE BOOM (CONTINUED FROM PREVIOUS SHEET)

23. DISCONNECT HAND WINCH ROPE FROM THE BOOM LIFTING ASSIST FRAME AND REMOVE BLOCK (ITEM 53) AND ROUTE THE HAND WINCH ROPE THROUGH THE UPPER SHEAVE IN 3M INSERT AND CONNECT TO LUG ON THE END OF JACKING CYLINDER. WINCH CYLINDER UNTIL IN VERTICAL POSITION. EXTEND JACKING CYLINDER UNTIL IT IS MATED WITH OUTRIGGER PAD. ASSEMBLE RETAINERS (ITEM 28) USING ITEMS 2,6,32,33 AND 35 TO CONNECT THE JACKING CYLINDER TO THE OUTRIGGER PAD (SEE DETAIL K).
24. DISCONNECT HAND WINCH ROPE FROM CYLINDER AND REEL IN ROPE UNTIL IT BOTTOMS OUT ON UPPER SHEAVE.

WARNING:

FAILURE TO DISCONNECT HAND WINCH ROPE FROM CYLINDER WILL RESULT IN DAMAGE DURING OPERATION OF BOOM RAISING SYSTEM.

BOOM RAISING PROCEDURE

1. ENSURE THAT ALL BRS COMPONENTS ARE PROPERLY ASSEMBLED AND ALL HYDRAULIC AND ELECTRICAL CONNECTIONS HAVE BEEN COMPLETED. BRS PAD MUST BE SITUATED ON A FIRM UNIFORMLY SUPPORTING SURFACE.
2. BOOM UP TO LIFT STRAPS OFF OF INSERTS. USE AN ASSIST CRANE TO PULL UP ON INTERMEDIATE SUSPENSION ENOUGH TO LATCH INTO INTERMEDIATE SUSPENSION BEAM. SEE NEXT PAGE FOR INTERMEDIATE SUSPENSION INSTALLATION INSTRUCTIONS.

WARNING:

FAILURE TO ENGAGE LATCH ON INTERMEDIATE SUSPENSION BEFORE LIFTING BOOM OFF OF THE GROUND WILL RESULT IN BUCKLING OF THE BOOM.

3. SLOWLY BOOM UP OVER FRONT OF BLOCKED CRAWLERS WHILE USING THE JACKING CYLINDER TO AID IN LIFTING THE BOOM. AT A BOOM ANGLE OF APPROXIMATELY 38° THE JACKING CYLINDER WILL BE FULLY EXTENDED AND THE OUTRIGGER PAD SHOULD LIFT OFF OF THE GROUND. CONTINUE BOOMING UP TO MINIMUM OPERATING BOOM ANGLE. AT MINIMUM OPERATING BOOM ANGLE, FULLY RETRACT JACKING CYLINDER, CONTINUE TO BOOM UP TO DESIRED OPERATING BOOM ANGLE.

WARNING:

MACHINE MUST BE ON BLOCKED CRAWLERS (SEE FOLIO 2081) FOR BOOM RAISING/LOWERING. DO NOT LEAVE BLOCKING OR SWING BOOM WHILE BELOW MINIMUM OPERATING BOOM ANGLE (SEE CAPACITY CHART).

WARNING:

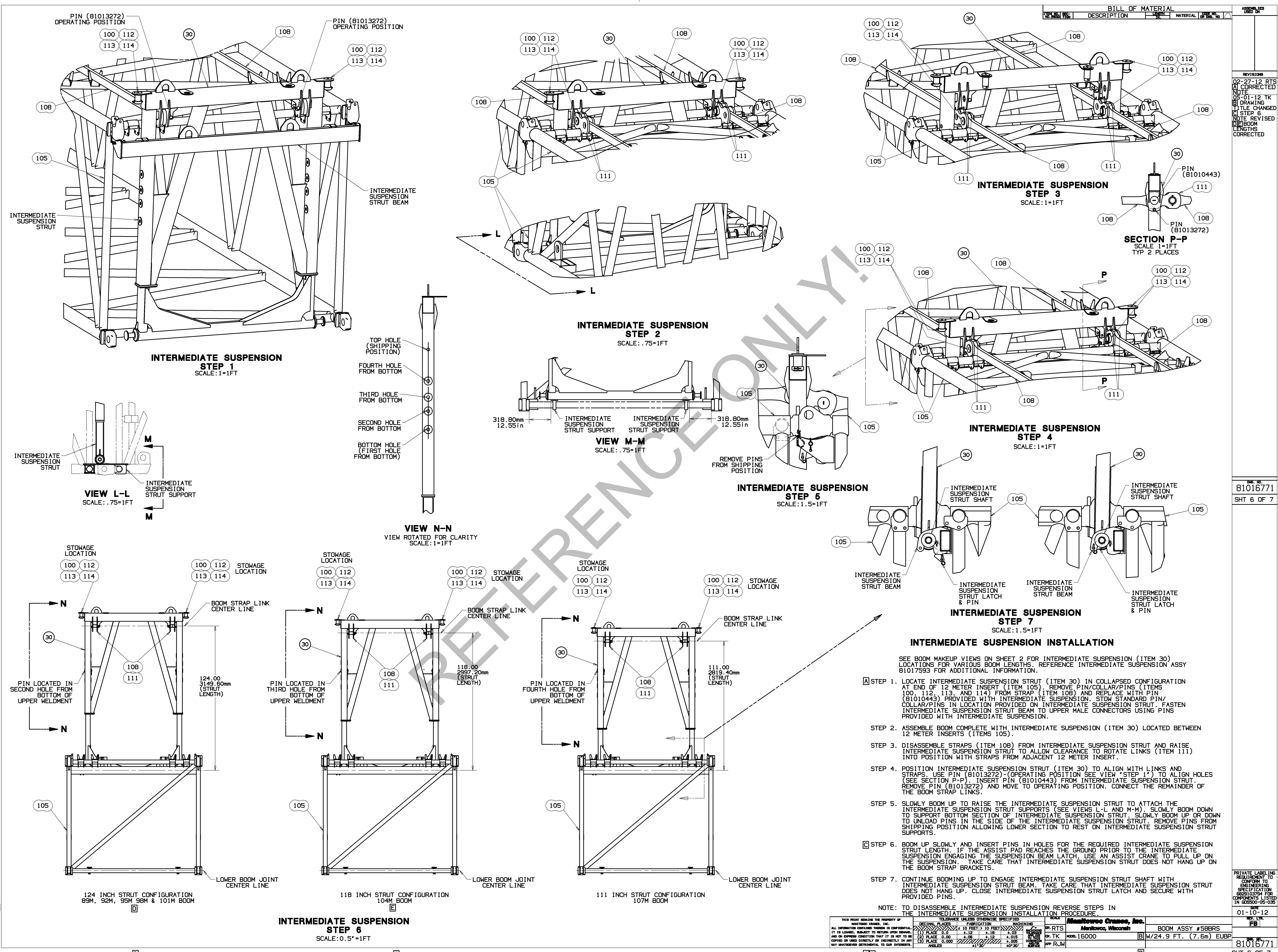
LOAD BLOCK(S) MUST BE ON GROUND FOR BOOM RAISING/LOWERING. DO NOT RAISE LOAD BLOCK(S) UNTIL BOOM IS WITHIN CAPACITY CHART.

BOOM LOWERING PROCEDURE

1. WITH CRANE UPPERWORKS ORIENTED OVER FRONT OF BLOCKED CRAWLERS AND LOAD BLOCK(S) ON THE GROUND, LOWER BOOM TO THE MINIMUM OPERATING BOOM ANGLE. FULLY EXTEND CYLINDER.
2. SLOWLY BOOM DOWN WITH SUPPORT OF JACKING CYLINDER ONTO BLOCKING. BLOCKING UNDER INTERMEDIATE SUSPENSION MUST BE THE FIRST TO MAKE CONTACT WITH BOOM. ADD BLOCKING IF NEEDED.
3. DISASSEMBLY PROCESS IS THE REVERSE OF THE ASSEMBLY PROCESS.

WARNING:

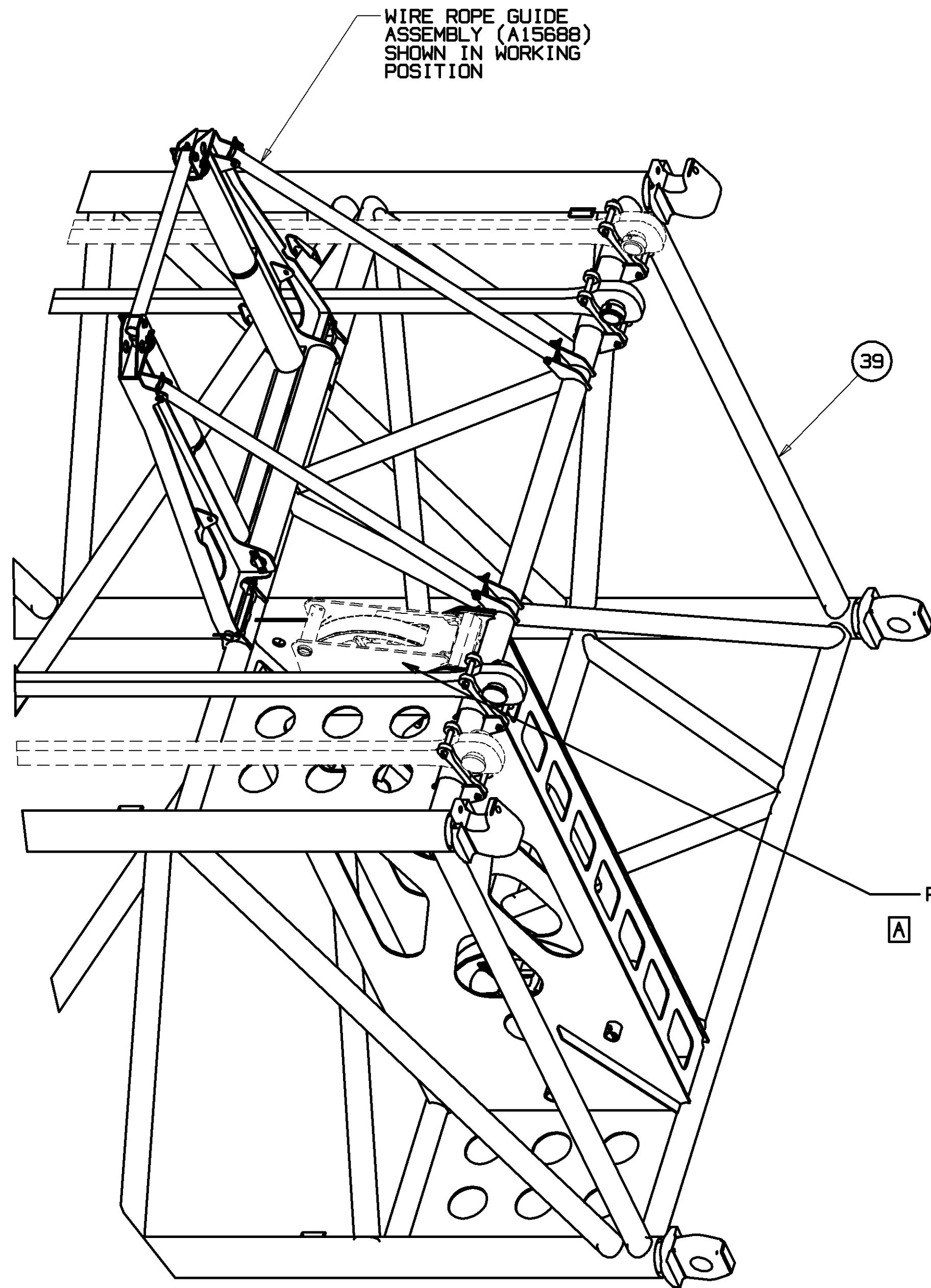
DURING DISASSEMBLY DO NOT BOOM UP TO PUT EXCESSIVE TENSION INTO BUTT HANDLING PENDANTS (ENOUGH TENSION IS REQUIRED TO SUPPORT BOOM BUTT AND 3M BRS INSERT WHEN LOWER PINS ARE REMOVED). LIFTING BOOM WITH BUTT HANDLING PENDANTS WILL DAMAGE MAST AND/OR 3M INSERT.



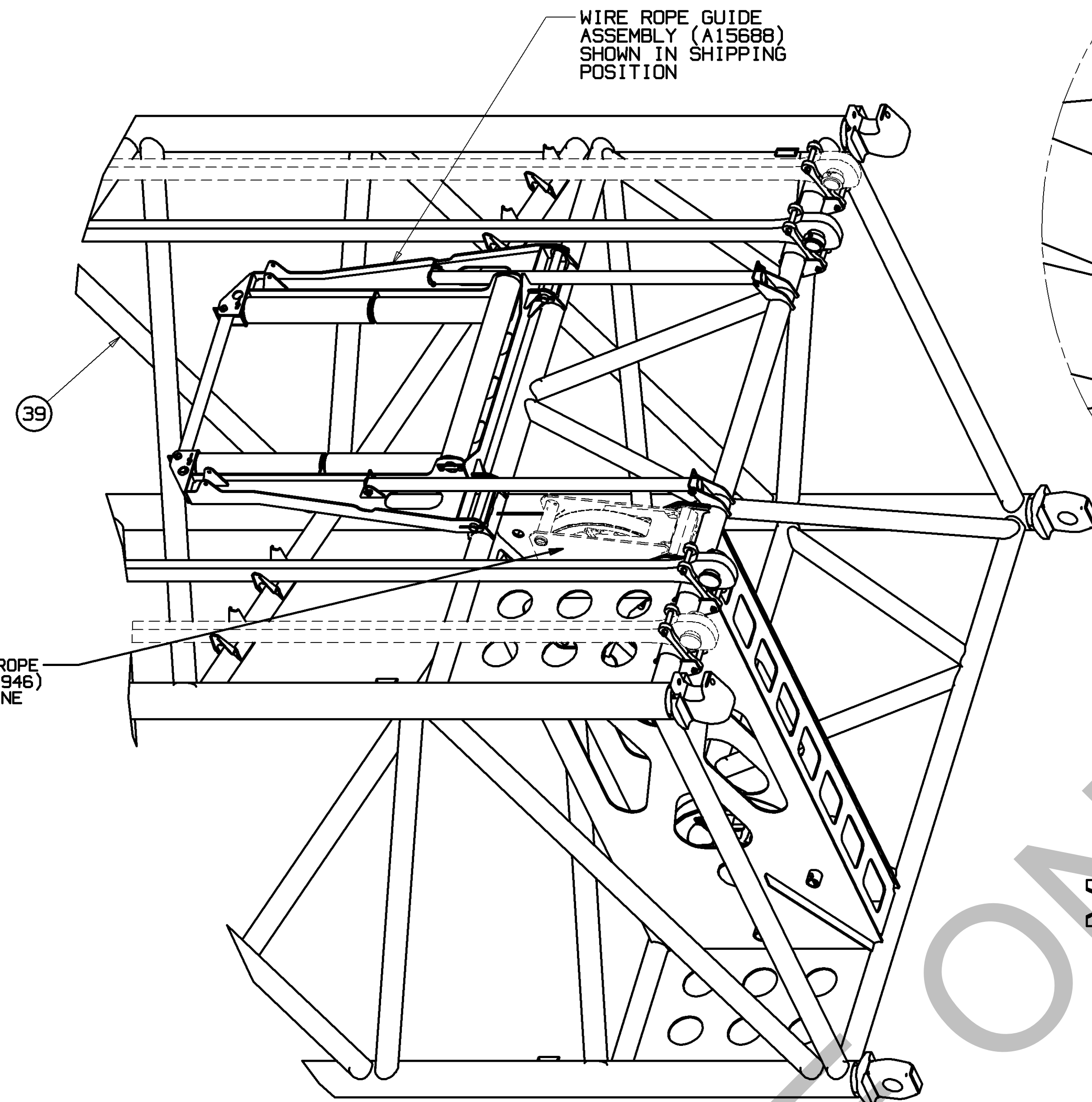
BILL OF MATERIAL				ASSEMBLIES USED IN	
ITEM NO.	DESCRIPTION	QUANTITY	MATERIAL	DATE	BY
REVISIONS					
02-27-12 RTS A1 CORRECTED NOTE 05-01-12 TK B1 DRAWING TITLE CHANGED C1 STEP 6 NOTE REVISED D1 BOOM LENGTHS CORRECTED					
02-27-12 81016771 SHT 6 OF 7					
DATE: 02-27-12 BY: FB					
81016771					

REVISIONS

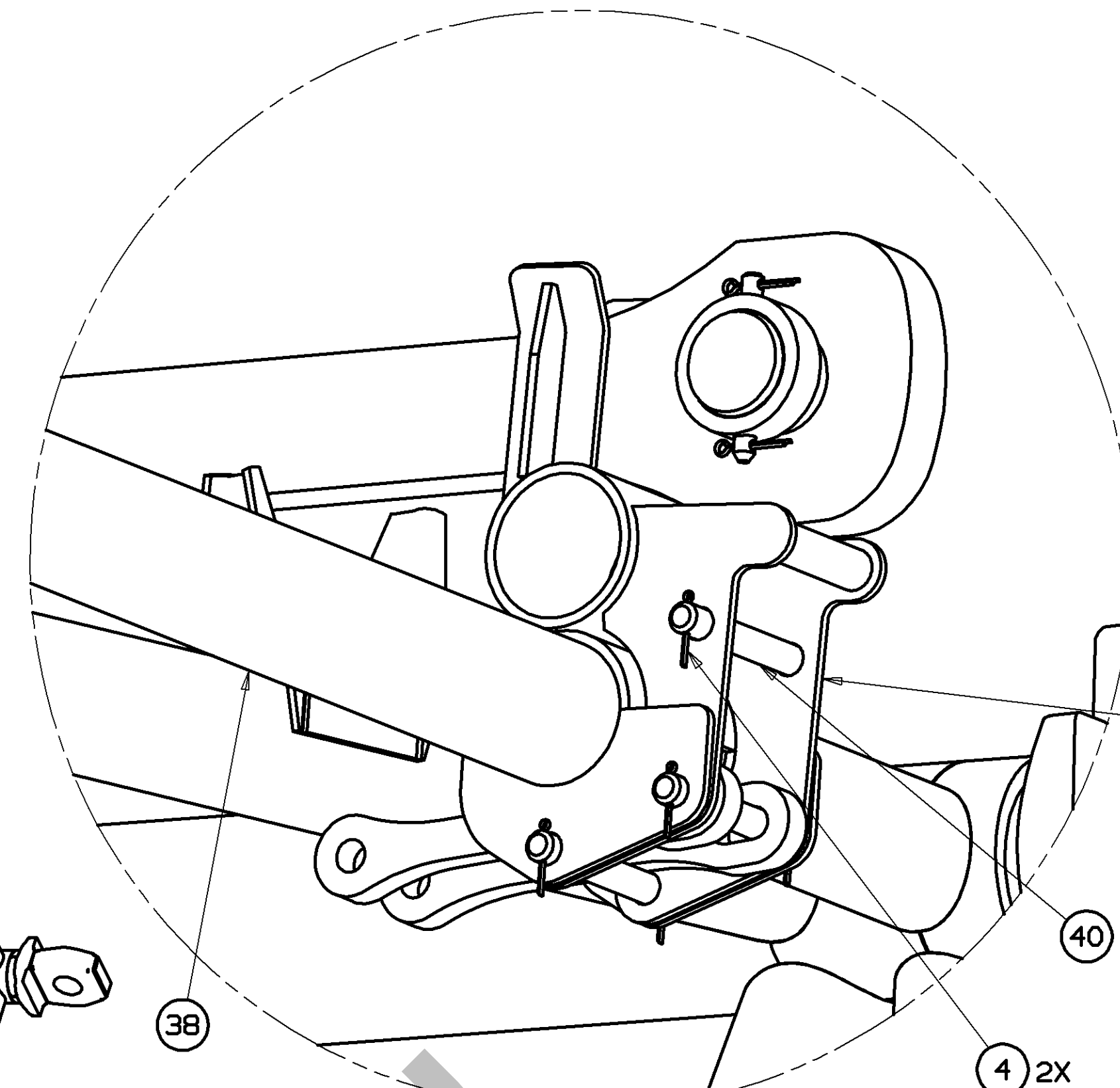
NO.	DATE	DESCRIPTION
02-27-12	RTS	DELETED
05-01-12	TK	DELTA NOTE 4
08-14-14	CMB	DRAWING TITLE CHANGED
08-14-14	CMB	WAS ITEM 205



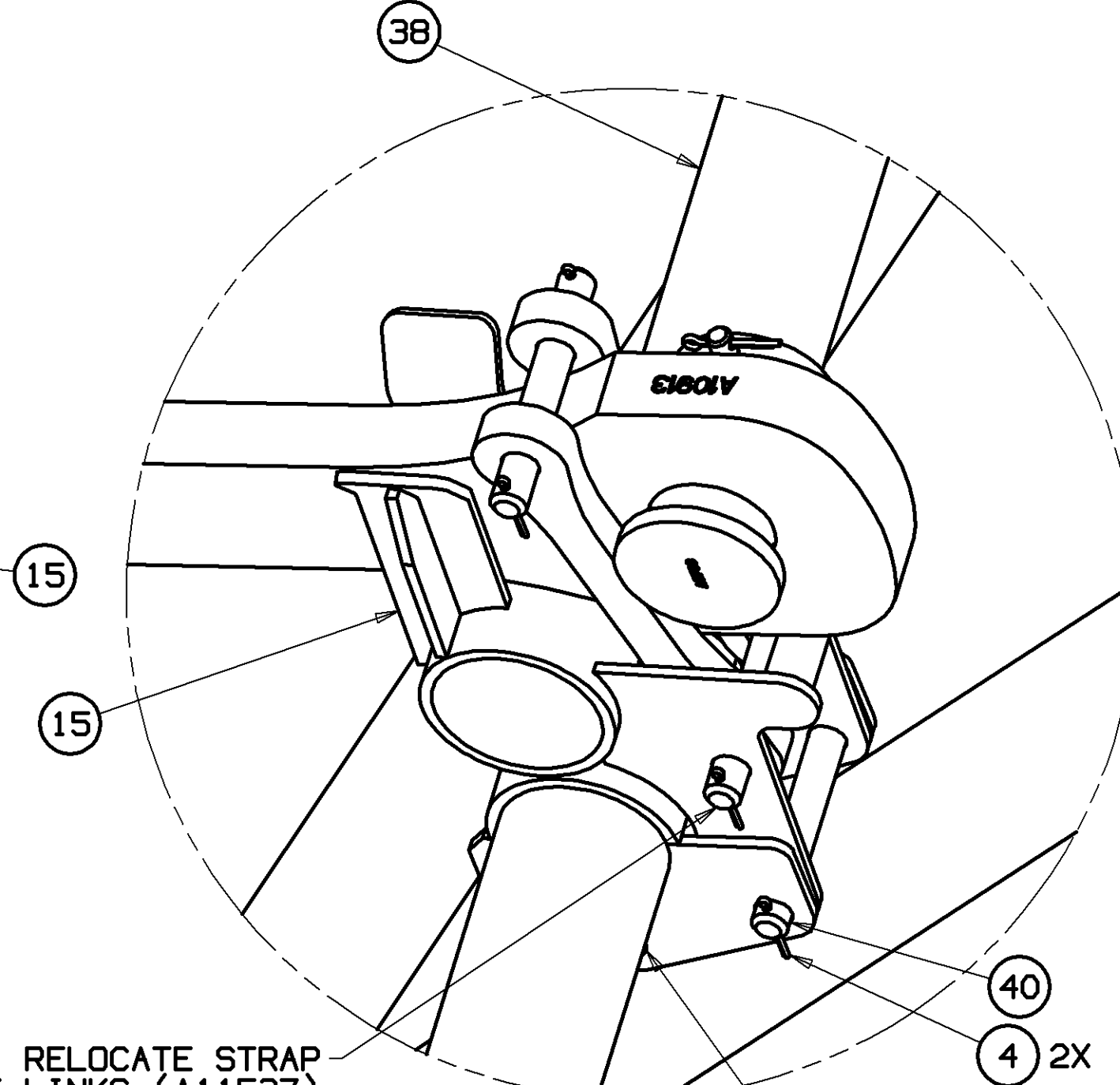
WIRE ROPE GUIDE IN WORKING POSITION



WIRE ROPE GUIDE IN SHIPPING POSITION

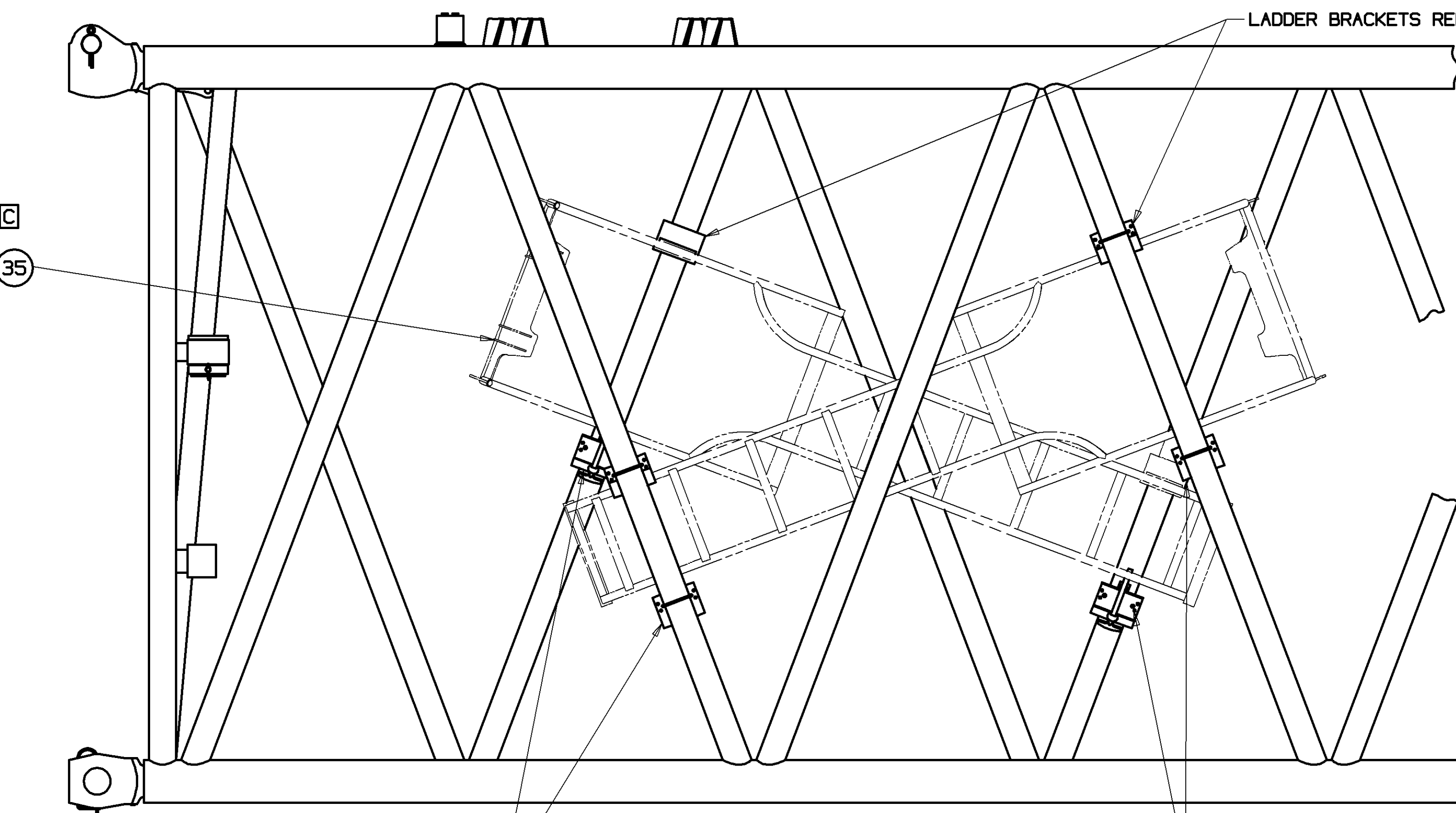
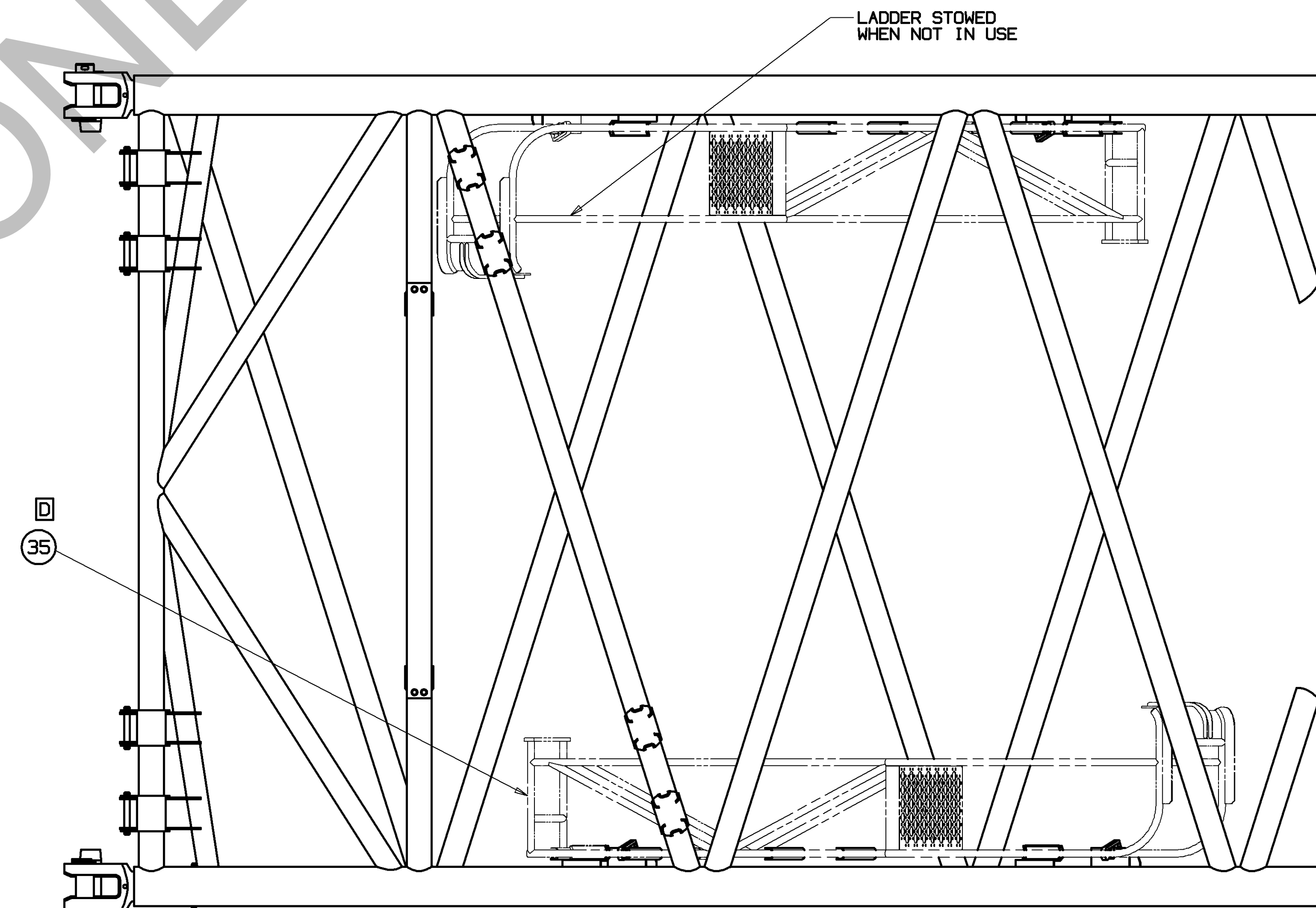


DETAIL R
SCALE 4=1FT
TYP 2 PLACES

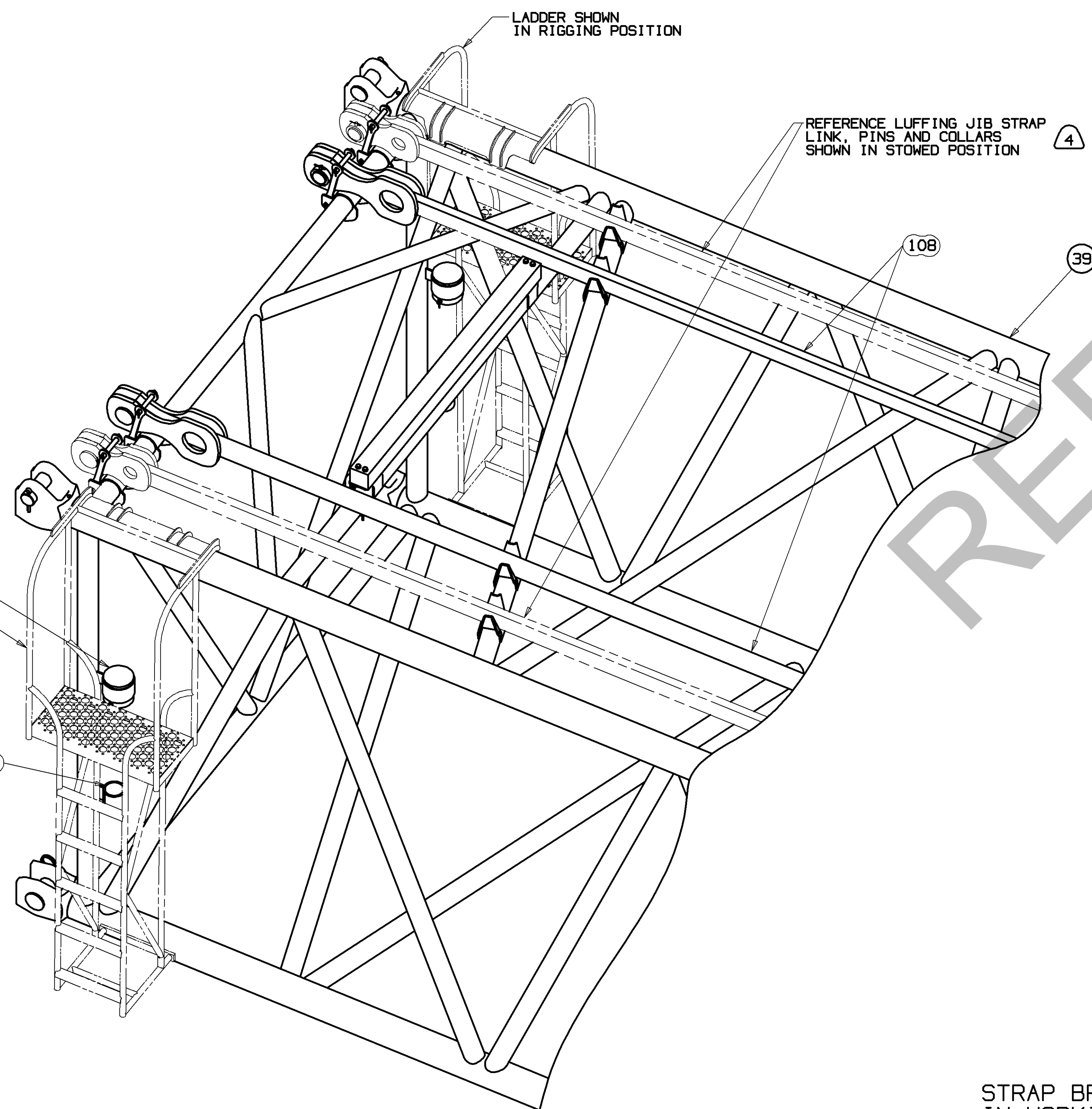


DETAIL S
SCALE 4=1FT
TYP 2 PLACES

PIN A11795 AND QTY 2 COTTER PINS (S62045) FROM BOOM CAP ASSY 81009868 (NOT SHOWN)



SECURE LADDERS IN BRACKETS FOR STORAGE AND SHIPPING



LADDER SHOWN IN RIGGING POSITION

DETAIL S

DETAIL R

STRAP BRACKET 81011868 STORED ON BOOM CAP IN WORKING POSITION ON TRANSITION INSERT

REFER TO INSERT ASSEMBLY FOR DETAILED ITEMS

THIS PRINT BEHIND THE PROPERTY OF WALTMORE CRANES, INC.				TOLERANCE UNLESS OTHERWISE SPECIFIED				SCALE 1:19=1"		Mantowee Cranes, Inc.					
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				≤ 10 FEET		10 FEET				DR-TK		Mantowee, Wisconsin			
				(1) PLACE 0.0		+/- .12		+/- .08		+/- .03		MODEL 16000		B W/24.9 FT. (7.6M) EUBP	
				(2) PLACE 0.0		+/- .06		+/- .12		+/- .015					
				(3) PLACE 0.000				+/- .02		+/- .005					
										APP RJW					