

SUPERSEDES 172894 SHT 1 OF 9-21-98

BILL OF MATERIAL						
ITEM NO.	REV.	DESCRIPTION	LENGTH IN.	MATERIAL	CODE NO. OR DES. NO.	QTY
70 FT. (21.3 M) #133 JIB						
BASIC PARTS						
ALSO SEE REQ'D FOR VARIOUS JIB LENGTHS TABLE						
		2PIN			18302-2	
		2PIN			138402	
		2PIN			167015	
		1SOCKET			162233	
		1WEDGE			162234	
		4PIN			165513	
		2KEEPER			169810	
		1JIB POINT SHAFT ASSEMBLY (LOWER)			170422	1
		2END PLATE			170671	
		2PIN			170673	
		1LUFFING JIB UPPER POINT ROLLER ASSEMBLY			172147	1
		2BACKSTAY PIN			172194	
		2RATCHET LINK			172195	
		2RATCHET LINK			172197	
		1THRUST WASHER			172505	
		2LINK			172507	
		1SHAFT			172511	
		2PIN			172688	
		1ROPE GUIDE BEAM			172883	19
		1STRUT SUPPORT BEAM			172884	19
		8PIN			172937	
		1LUFFING ROPE GUIDE ASSEMBLY			172986	19
		1JIB STOP ASSEMBLY			173017	7
		1PIN R.H.			173035	
		1PIN L.H.			173045	
		1JIB BUTT (30 FT.)-(9.14 M)			173066	
		1ROPE GUARD			173292	
		2SPACER			173374	
		2STRUT STOP TUBE ASSEMBLY			173649	
		2LINK			173738	
		1TIE LINK			173740	
		2PIN			173741	
		2PIN			173742	
		1BUILDERS PLATE			181503	26
		1JIB TOP (40 FT.)-(12.19 M)			192062	32
		1JIB STRUT LUFFING JIB ASS'Y			192132	33
		1MAIN STRUT LUFFING JIB ASS'Y			192133	33
		2BASIC JIB PENDANT (71 FT. 3 IN.)-(21.7 M)			277146	3
		2BASIC BACKSTAY PENDANT (73 FT. 6 IN.)-(22.4 M)			277147	3
		1PIN			564094	27
		4#4 X .31(8mm) LG. TYPE J DRIVE SCREW			620656	26

#133 JIB OPTIONAL PARTS			
		TIMBER (JIB STOWAGE)	17166018
		PENDANT TIE DOWN STRAP	66685230

BILL OF MATERIAL				
ITEM NO.	REQ'D	DESCRIPTION	LENGTH	MATERIAL
NO.	REQ'D		FT.	
80 FT. (24.4 M) #44 BOOM				
BASIC PARTS				
ALSO SEE REQ'D FOR VARIOUS BOOM LENGTHS TABLE				
2		BOOM SIGN		22656
2		END PLATE		76095
4		WASHERS		137502
2		PIN		160720
1		BOOM ANGLE INDICATOR ASSEMBLY		168779
2		PENDANT LINK		169785
2		EQUALIZER PENDANT LINK		169834
1		BOOM TOP (30 FT.)-(9.14 M)		172878
1		GANTRY ASSEMBLY		170418
4		PIN		170690
1		BOOM BUTT (40 FT.)-(12.19 M)		171230
1		EQUALIZER ASSEMBLY		171248
2		PIN		171500
1		TIMBER (WIRE ROPE)		171697
1		TIMBER (WIRE ROPE)		171704
2		PIN		172132
1		BOOM POINT SHAFT ASSEMBLY (LOWER)		172960
1		WIRE ROPE GUIDE ASSEMBLY		172559
2		PENDANT LINK		172669
2		PENDANT LINK		172670
2		PIN		172675
2		LINK		172676
4		PIN		172677
1		WIRE ROPE GUIDE ASSEMBLY		173242
4		BASIC PENDANT (30 FT.)-(9.14 M)		276826
2		PENDANT		277369
# 44 BOOM OPTIONAL PARTS				
4		KEEPER		164479
1		40 FT. (12.19 M) BUTT UPPER SECTION		171283
1		40 FT. (12.19 M) BUTT UPPER SECTION		171284
1		LINK		171522
1		WIRE ROPE GUIDE ASSEMBLY		171621
		TIMBER (JIB STORAGE)		171697
1		RIGGING WINCH ASSEMBLY		172577
1		CYLINDER SUPPORT		174825
2		PIN		172111
1		PIN		172112
2		PIN		139128
2		TIMBER		172478
4		BUSHING		290026
1		CYLINDER		385413
4		PENDANT TIE DOWN STRAP		666852

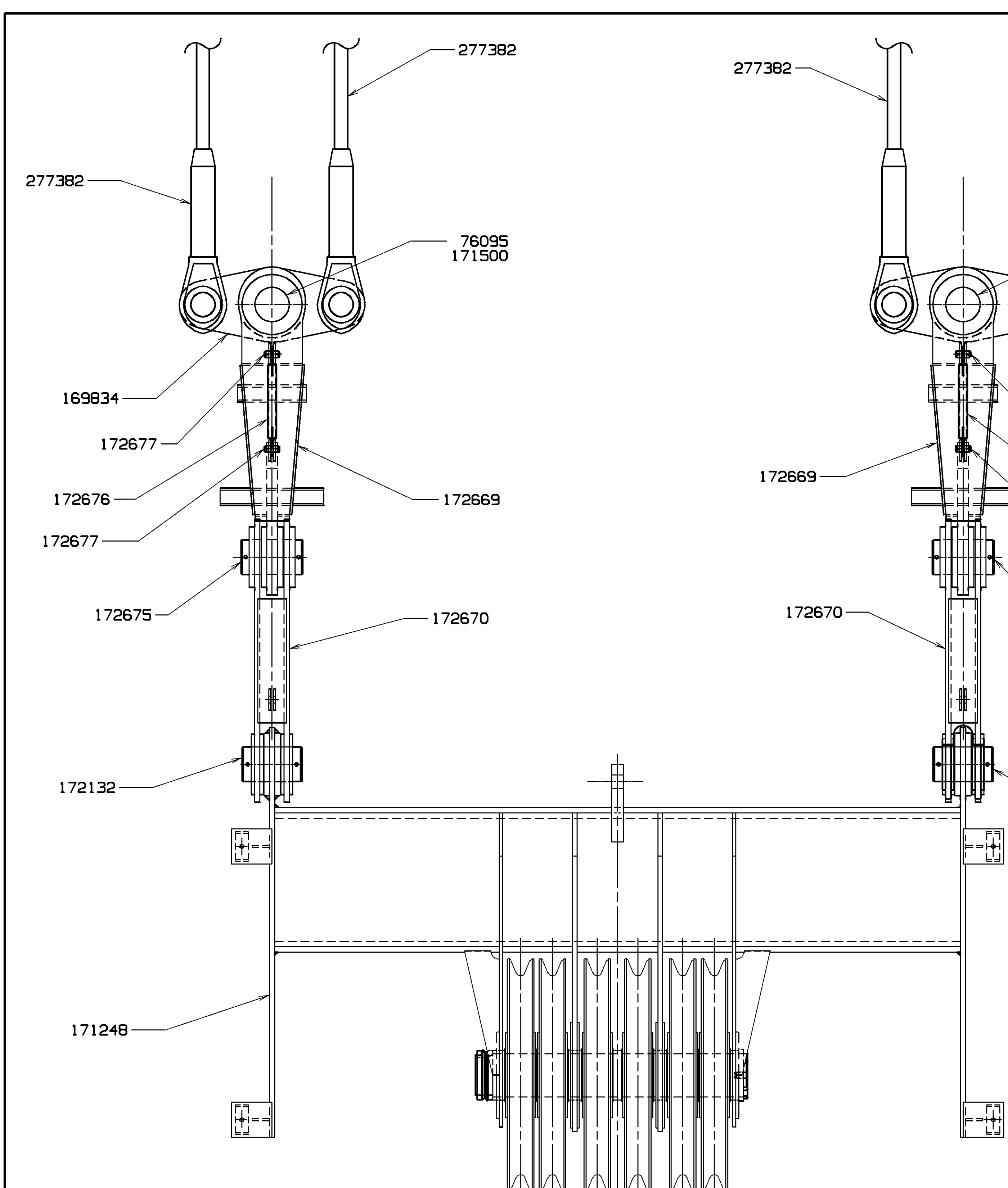
INSERT NOTES:

1. THE SHORTER INSERTS MUST BE CLOSEST TO THE BOOM BUTT AND JIB BUTT (10 FT. (3.05 M) INSERT FIRST. THEN THE 20 FT. (6.10 M) INSERTS.)
2. SEE CRANE ASSEMBLY AND RIGGING GUIDE IN THE OPERATORS MANUAL FOR INSTRUCTIONS ON JIB STOWAGE.

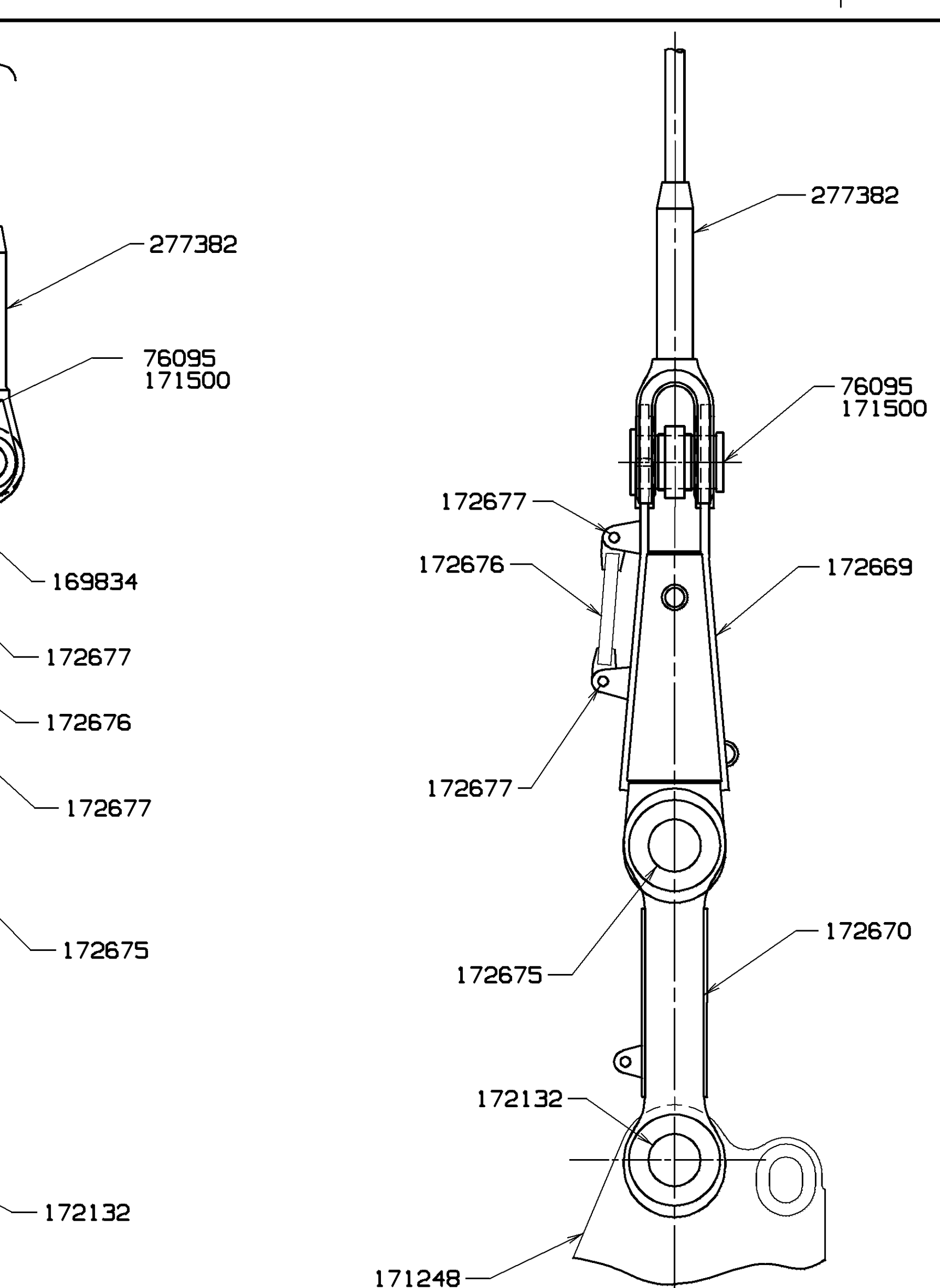
PENDANT NOTES:

1. THE SHORTER PENDANTS MUST BE CLOSED TO THE BOOM BUTT AND JIB BUTT. (THE 10 FT. (3.05 M) PENDANTS FIRST THEN THE 20 FT. (6.10 M) PENDANTS.)

[illegible]

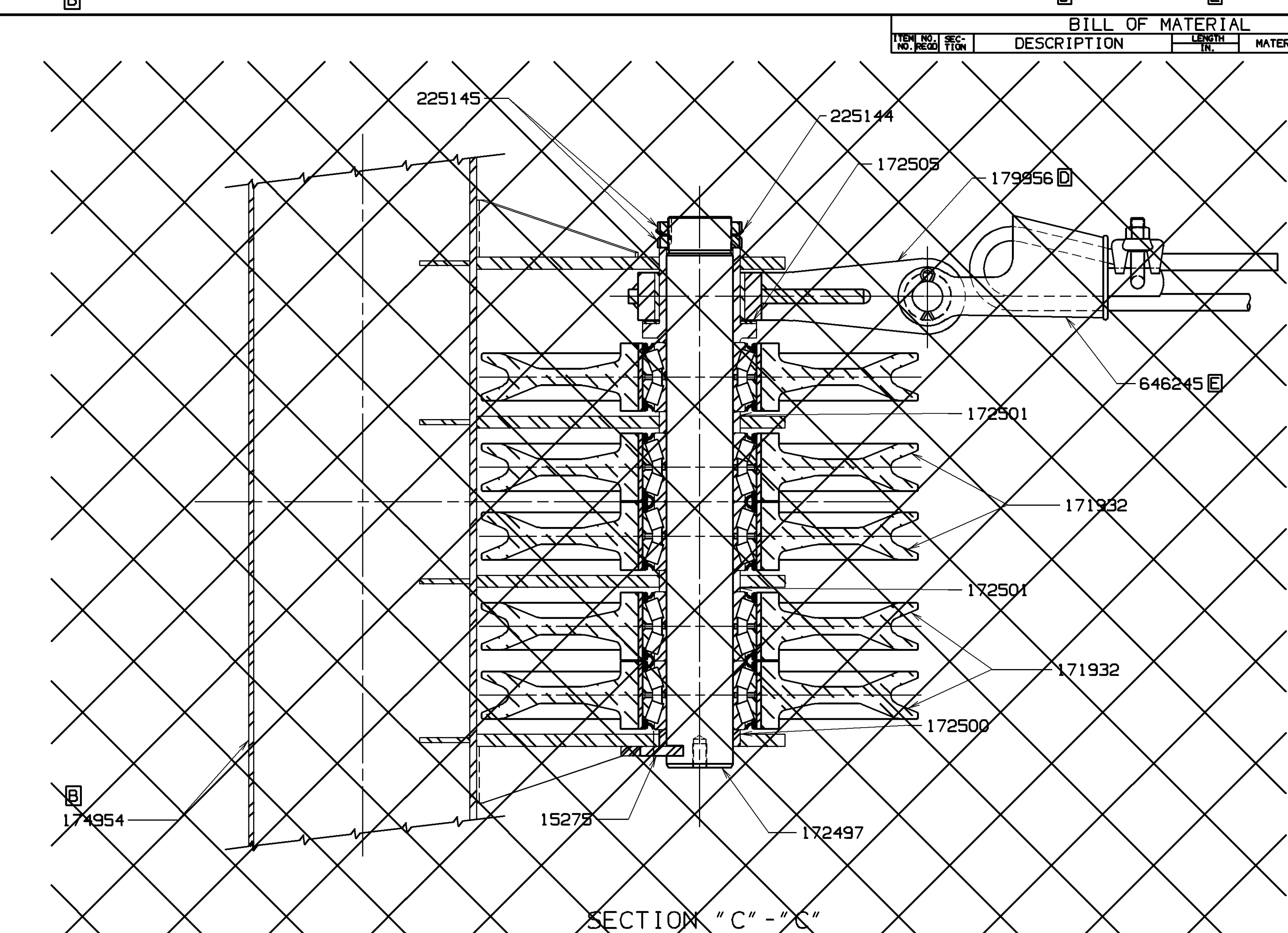


VIEW "A" - "A"

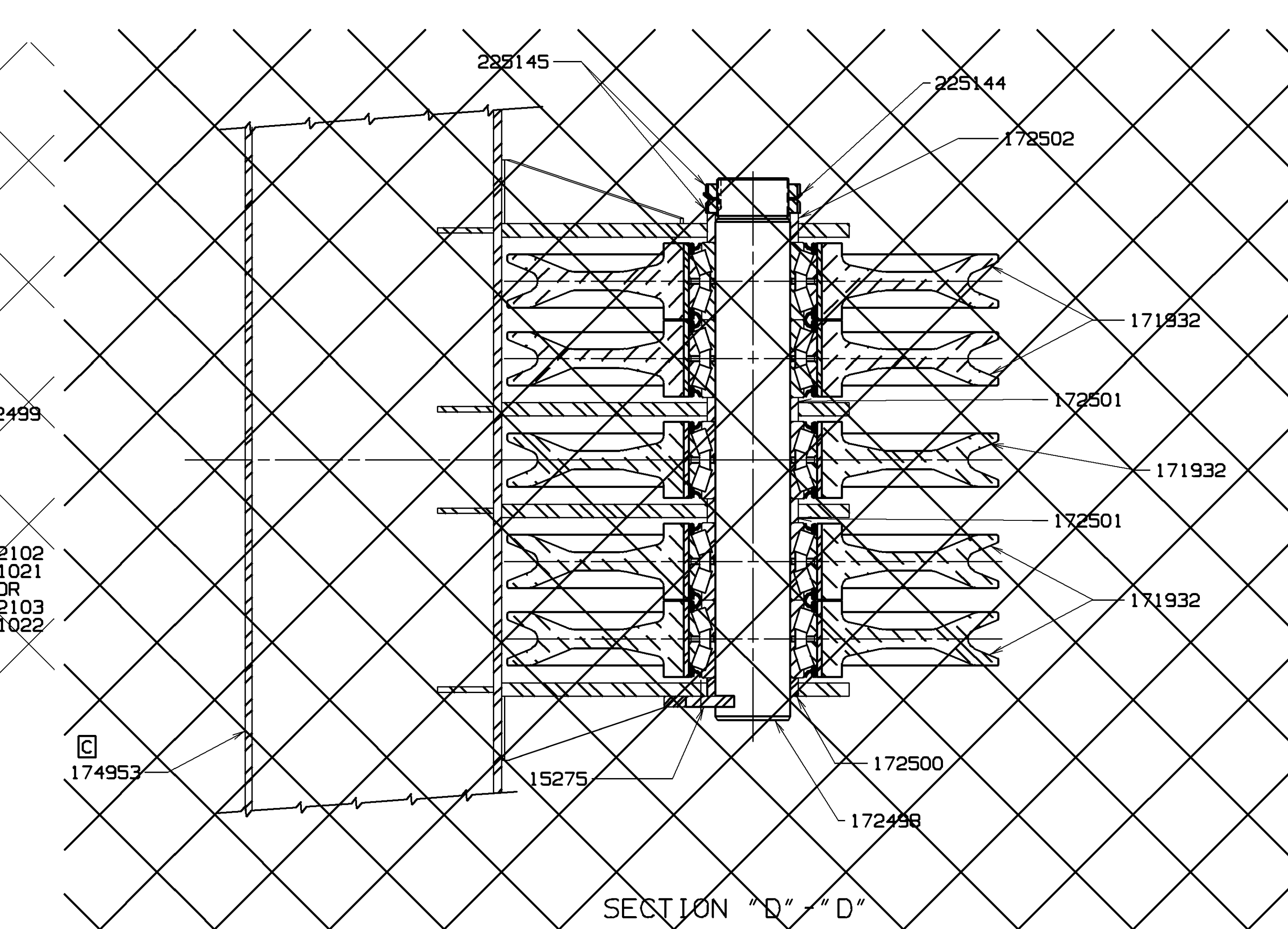


SECTION IS THE SAME FOR 172102 & 172103

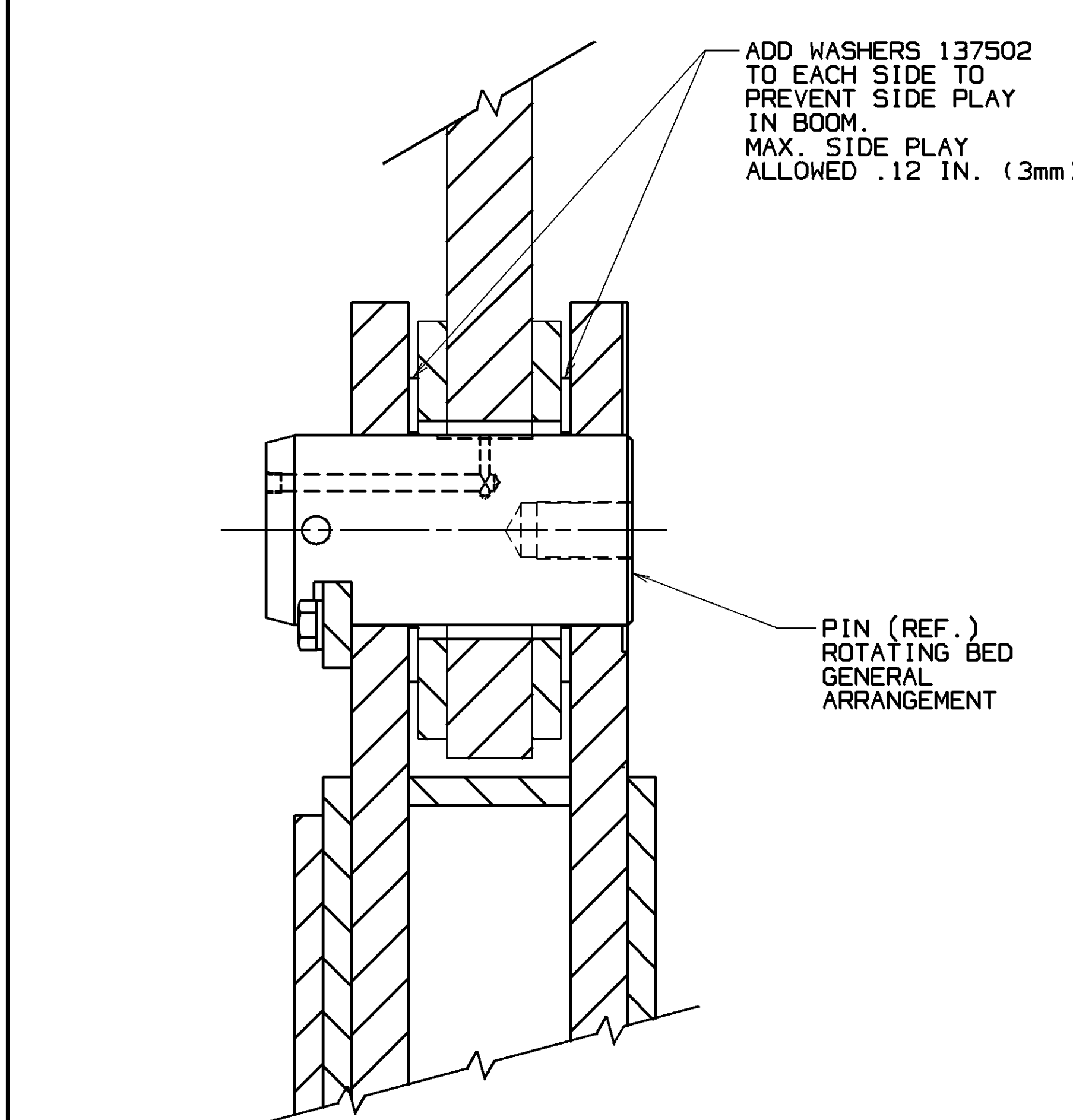
SECTION "F" - "F"



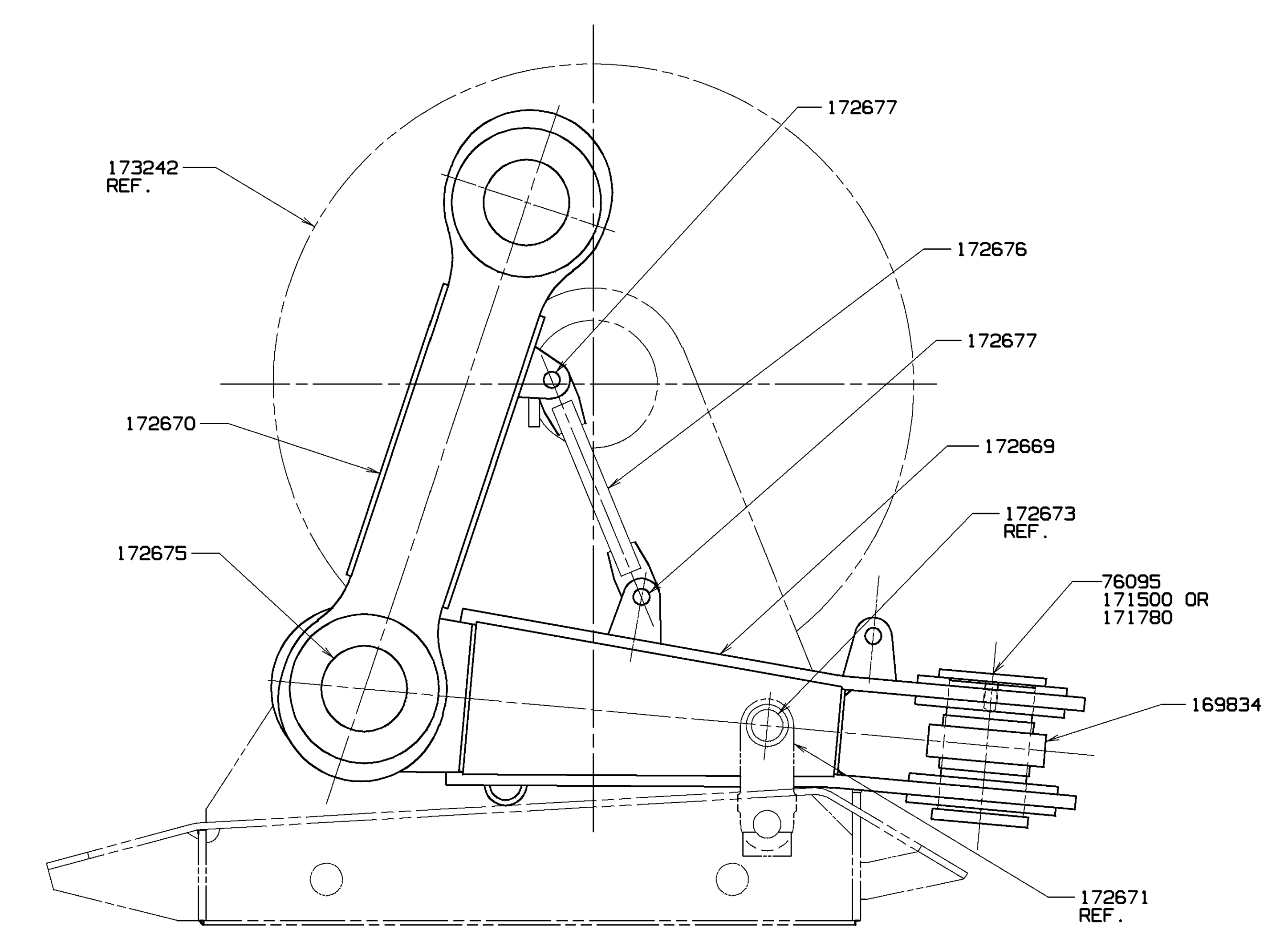
SECTION "C" - "C"



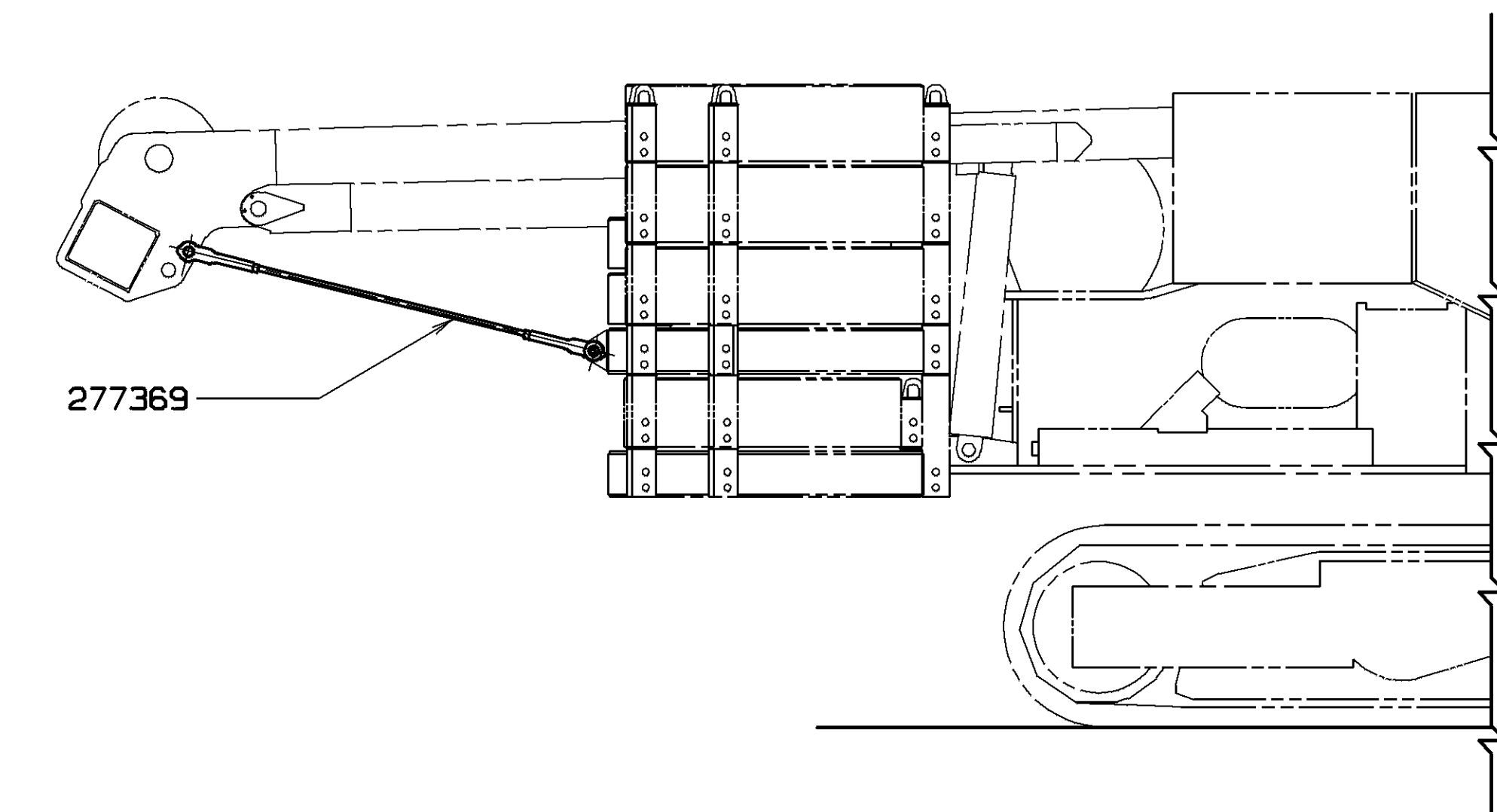
SECTION "D" - "D"



SECTION "B" - "B"



LINK STORAGE FOR SHIPPING



VIEW SHOWING GANTRY TIE-DOWN

SUPERSEDES 172894 SHT 3 OF 3 OF 10-23-92

THIS PRINT REMAINS THE PROPERTY OF WHITWOCK CRANES, INC. IT IS LOANED, SUBJECT TO RETURN WHEN DEMAND. AND ON EXPRESS CONDITION THAT IT IS NOT TO BE COPIED OR USED DIRECTLY OR INDIRECTLY IN ANY MANNER DETRIMENTAL TO OUR INTERESTS.										TOLERANCE UNLESS OTHERWISE SPECIFIED										SCALE										MATERIAL										DATE									
DECIMAL PLACES		FABRICATION		MACHINING		WELDING		DECIMAL PLACES		FABRICATION		MACHINING		WELDING		1/4"		1/2"		3/4"		1"		1/4"		1/2"		3/4"		1"		1/4"		1/2"		3/4"		1"											
(1) .10		± .10		± .10		± .10		(1) .10		± .10		± .10		± .10		1/4"		1/2"		3/4"		1"		1/4"		1/2"		3/4"		1"		1/4"		1/2"		3/4"		1"											
(2) .05		± .05		± .05		± .05		(2) .05		± .05		± .05		± .05		1/8"		3/8"		1/2"		3/4"		1/8"		3/8"		1/2"		3/4"		1/8"		3/8"		1/2"		3/4"											
(3) .01		± .01		± .01		± .01		(3) .01		± .01		± .01		± .01		1/16"		1/8"		3/16"		1/4"		1/16"		1/8"		3/16"		1/4"		1/16"		1/8"		3/16"		1/4"											
(4) .005		± .005		± .005		± .005		(4) .005		± .005		± .005		± .005		1/32"		1/16"		3/32"		1/8"		1/32"		1/16"		3/32"		1/8"		1/32"		1/16"		3/32"		1/8"											
(5) .002		± .002		± .002		± .002		(5) .002		± .002		± .002		± .002		1/64"		1/32"		1/16"		3/32"		1/64"		1/32"		1/16"		3/32"		1/64"		1/32"		1/16"		3/32"											
(6) .001		± .001		± .001		± .001		(6) .001		± .001		± .001		± .001		1/128"		1/64"		1/32"		1/16"		1/128"		1/64"		1/32"		1/16"		1/128"		1/64"		1/32"		1/16"											
(7) .0005		± .0005		± .0005		± .0005		(7) .0005		± .0005		± .0005		± .0005		1/256"		1/128"		1/64"		1/32"		1/256"		1/128"		1/64"		1/32"		1/256"		1/128"		1/64"		1/32"											
(8) .0002		± .0002		± .0002		± .0002		(8) .0002		± .0002		± .0002		± .0002		1/512"		1/256"		1/128"		1/64"		1/512"		1/256"		1/128"		1/64"		1/512"		1/256"		1/128"		1/64"											
(9) .0001		± .0001		± .0001		± .0001		(9) .0001		± .0001		± .0001		± .0001		1/1024"		1/512"		1/256"		1/128"		1/1024"		1/512"		1/256"		1/128"		1/1024"		1/512"		1/256"		1/128"											
(10) .00005		± .00005		± .00005		± .00005		(10) .00005		± .00005		± .00005		± .00005		1/2048"		1/1024"		1/512"		1/256"		1/2048"		1/1024"		1/512"		1/256"		1/2048"		1/1024"		1/512"		1/256"											
(11) .00002		± .00002		± .00002		± .00002		(11) .00002		± .00002		± .00002		± .00002		1/4096"		1/2048"		1/1024"		1/512"		1/4096"		1/2048"		1/1024"		1/512"		1/4096"		1/2048"		1/1024"		1/512"											
(12) .00001		± .00001		± .00001		± .00001		(12) .00001		± .00001		± .00001		± .00001		1/8192"		1/4096"		1/2048"		1/1024"		1/8192"		1/4096"		1/2048"		1/1024"		1/8192"		1/4096"		1/2048"		1/1024"											
(13) .000005		± .000005		± .000005		± .000005		(13) .000005		± .000005		± .000005		± .000005		1/16384"		1/8192"		1/4096"		1/2048"		1/16384"		1/8192"		1/4096"		1/2048"		1/16384"		1/8192"		1/4096"		1/2048"											
(14) .000002		± .000002		± .000002		± .000002		(14) .000002		± .000002		± .000002		± .000002		1/32768"		1/16384"		1/8192"		1/4096"		1/32768"		1/16384"		1/8192"		1/4096"		1/32768"		1/16384"		1/8192"		1/4096"											
(15) .000001		± .000001		± .000001		± .000001		(15) .000001		± .000001		± .000001		± .000001		1/65536"		1/32768"		1/16384"		1/8192"		1/65536"		1/32768"		1/16384"		1/8192"		1/65536"		1/32768"		1/16384"		1/8192"											
(16) .0000005		± .0000005		± .0000005		± .0000005		(16) .0000005		± .0000005		± .0000005		± .0000005		1/131072"		1/65536"		1/32768"		1/16384"		1/131072"		1/65536"		1/32768"		1/16384"		1/131072"		1/65536"		1/32768"		1/16384"											
(17) .0000002		± .0000002		± .0000002		± .0000002		(17) .0000002		± .0000002		± .0000002		± .0000002		1/262144"		1/131072"		1/65536"		1/32768"		1/262144"		1/131072"		1/65536"		1/32768"		1/262144"		1/131072"		1/65536"		1/32768"											
(18) .0000001		± .0000001		± .0000001		± .0000001		(18) .0000001		± .0000001		± .0000001		± .0000001		1/524288"		1/262144"		1/131072"		1/65536"		1/524288"		1/262144"		1/131072"		1/65536"		1/524288"		1/262144"		1/131072"		1/65536"											
(19) .00000005		± .00000005		± .00000005		± .00000005		(19) .00000005		± .00000005		± .00000005		± .00000005		1/1048576"		1/524288"		1/262144"		1/131072"		1/1048576"		1/524288"		1/262144"		1/131072"		1/1048576"		1/524288"		1/262144"		1/131072"											
(20) .00000002		± .00000002		± .00000002		± .00000002		(20) .00000002		± .00000002		± .00000002		± .00000002		1/2097152"		1/1048576"		1/524288"		1/262144"		1/2097152"		1/1048576"		1/524288"		1/2097152"		1/1048576"		1/2097152"		1/1048576"		1/524288"											
(21) .00000001		± .00000001		± .00000001		± .00000001		(21) .00000001		± .00000001		± .00000001		± .00000001		1/4194304"		1/2097152"		1/1048576"		1/524288"		1/4194304"		1/2097152"		1/1048576"		1/524288"		1/4194304"		1/2097152"		1/1048576"		1/524288"											
(22) .000000005		± .000000005		± .000000005		± .000000005		(22) .000000005		± .000000005		± .000000005		± .000000005		1/8388608"		1/4194304"		1/2097152"		1/1048576"		1/8388608"		1/4194304"		1/2097152"		1/1048576"		1/8388608"		1/4194304"		1/2097152"		1/1048576"											
(23) .000000002		± .000000002		± .000000002		± .000000002		(23) .000000002		± .000000002		± .000000002		± .000000002		1/16777216"		1/8388608"		1/4194304"		1/2097152"		1/16777216"		1/8388608"		1/4194304"		1/2097152"		1/16777216"		1/8388608"		1/4194304"		1/2097152"											
(24) .000000001		± .000000001		± .000000001		± .000000001		(24) .000000001		± .000000001		± .000000001		± .000000001		1/33554432"		1/16777216"		1/8388608"		1/4194304"		1/33554432"		1/16777216"		1/8388608"		1/4194304"		1/33554432"		1/16777216"		1/8388608"		1/4194304"											
(25) .0000000005		± .0000000005		± .0000000005		± .0000000005		(25) .0000000005		± .0000000005		± .0000000005		± .0000000005		1/67108864"		1/33554432"		1/16777216"		1/8388608"		1/67108864"		1/33554432"		1/16777216"		1/8388608"		1/67108864"		1/33554432"		1/16777216"		1/8388608"											
(26) .0000000002		± .0000000002		± .0000000002		± .0000000002		(26) .0000000002		± .0000000002		± .0000000002		± .0000000002		1/134217728"		1/67108864"		1/33554432"		1/16777216"		1/134217728"		1/67108864"		1/33554432"		1/134217728"		1/67108864"		1/33554432"		1/134217728"		1/67108864"											
(27) .0000000001		± .0000000001		± .0000000001		± .0000000001		(27) .0000000001		± .0000000001		± .0000000001		± .0000000001		1/268435456"		1/134217728"		1/67108864"		1/33554432"		1/268435456"		1/134217728"		1/67108864"		1/33554432"		1/268435456"		1/134217728"		1/67108864"													
(28) .00000000005		± .00000000005		± .00000000005		± .00000000005		(28) .00000000005		± .00000000005		± .00000000005		± .00000000005		1/536870912"		1/268435456"		1/134217728"		1/67108864"		1/536870912"		1/268435456"		1/134217728"		1/67108864"		1/536870912"		1/268435456"		1/134217728"		1/67108864"											
(29) .00000000002		± .00000000002		± .00000000002		± .00000000002		(29) .00000000002		± .00000000002		± .00000000002		± .00000000002		1/1073741824"		1/536870912"		1/268435456"		1/134217728"		1/1073741824"		1/536870912"		1/268435456"		1/134217728"		1/1073741824"		1/536870912"		1/268435456"		1/134217728"											
(30) .00000000001		± .00000000001		± .00000000001		± .00000000001		(30) .00000000001		± .00000000001		± .00000000001		± .00000000001		1/2147483648"		1/1073741824"		1/536870912"		1/268435456"		1/2147483648"		1/1073741824"		1/536870912"		1/2147483648"		1/1073741824"		1/536870912"		1/2147483648"		1/1073741824"											
(31) .000000000005		± .000000000005		± .000000000005		± .000000000005		(31) .000000000005		± .000000000005		± .000000000005		± .000000000005		1/4294967296"		1/2147483648"		1/1073741824"		1/536870912"		1/4294967296"		1/2147483648"		1/1073741824"		1/536870912"		1/4294967296"		1/2147483648"		1/1073741824"		1/536870912"											
(32) .000000000002		± .000000000002		± .000000000002		± .000000000002		(32) .000000000002		± .000000000002		± .000000000002		± .000000000002		1/8589934592"		1/4294967296"		1/2147483648"		1/1073741824"		1/8589934592"		1/4294967296"		1/2147483648"		1/1073741824"		1/8589934592"		1/4294967296"		1/2147483648"		1/1073741824"											
(33) .000000000001		± .000000000001		± .000000000001		± .000000000001		(33) .000000000001		± .000000000001		± .000000000001		± .000000000001		1/17179869184"		1/8589934592"		1/4294967296"		1/2147483648"		1/17179869184"		1/8589934592"		1/4294967296"		1/2147483648"		1/17179869184"		1/8589934592"		1/4294967296"		1/2147483648"											
(34) .0000000000005		± .0000000000005		± .0000000000005		± .0000000000005		(34) .0000000000005		± .0000000000005		± .0000000000005		± .0000000000005		1/34359738368"		1/17179869184"		1/8589934592"		1/4294967296"		1/34359738368"		1/17179869184"		1/8589934592"		1/34359738368"		1/17179869184"		1/8589934592"		1/34359738368"		1/17179869184"											
(35) .0000000000002		± .0000000000002		± .0000000000002		± .0000000000002		(35) .0000000000002		± .0000000000002		± .0000000000002		± .0000000000002		1/68719476736"		1/34359738368"		1/17179869184"		1/8589934592"		1/68719476736"		1/34359738368"		1/17179869184"		1/68719476736"		1/34359738368"		1/17179869184"		1/8589934592"													
(36) .0000000000001		± .0000000000001		± .0000000000001		± .0000000000001		(36) .0000000000001		± .0000000000001		± .0000000000001		± .0000000000001		1/137438953472"		1/68719476736"		1/34359738368"		1/17179869184"		1/137438953472"																									

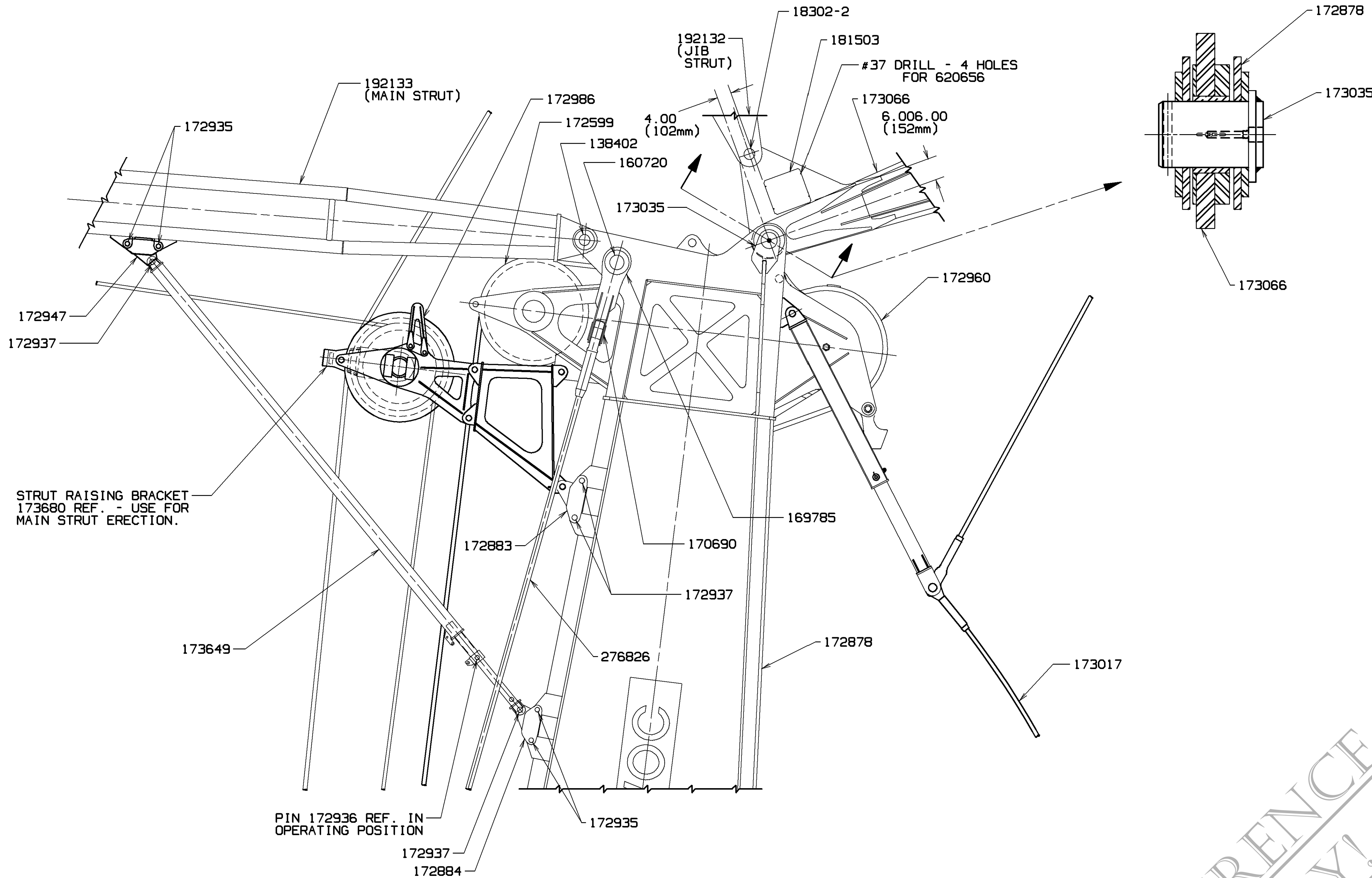
MAIN STRUT ERECTION PROCEDURE

1. ATTACH LINK 172507 AND BASIC BACKSTAY PENDANT 277147 TO MAIN STRUT. ATTACH STRUT STOP TUBE ASSEMBLY 173649 TO STRUT SUPPORT BEAM ON MAIN STRUT ASSEMBLY. STRUT STOP TUBE ASSEMBLY SHOULD BE IN ITS RETRACTED POSITION W/ PIN 563912 REF. IN THE STRUT ERECTION AND POSITIONING LOCATION. (SEE VIEW "N"- "N"). ATTACH GUY LINES OR OTHER MEANS TO STRUT STOP TUBE ASSEMBLY TO AID STRUT POSITIONING DURING STRUT ERECTION.

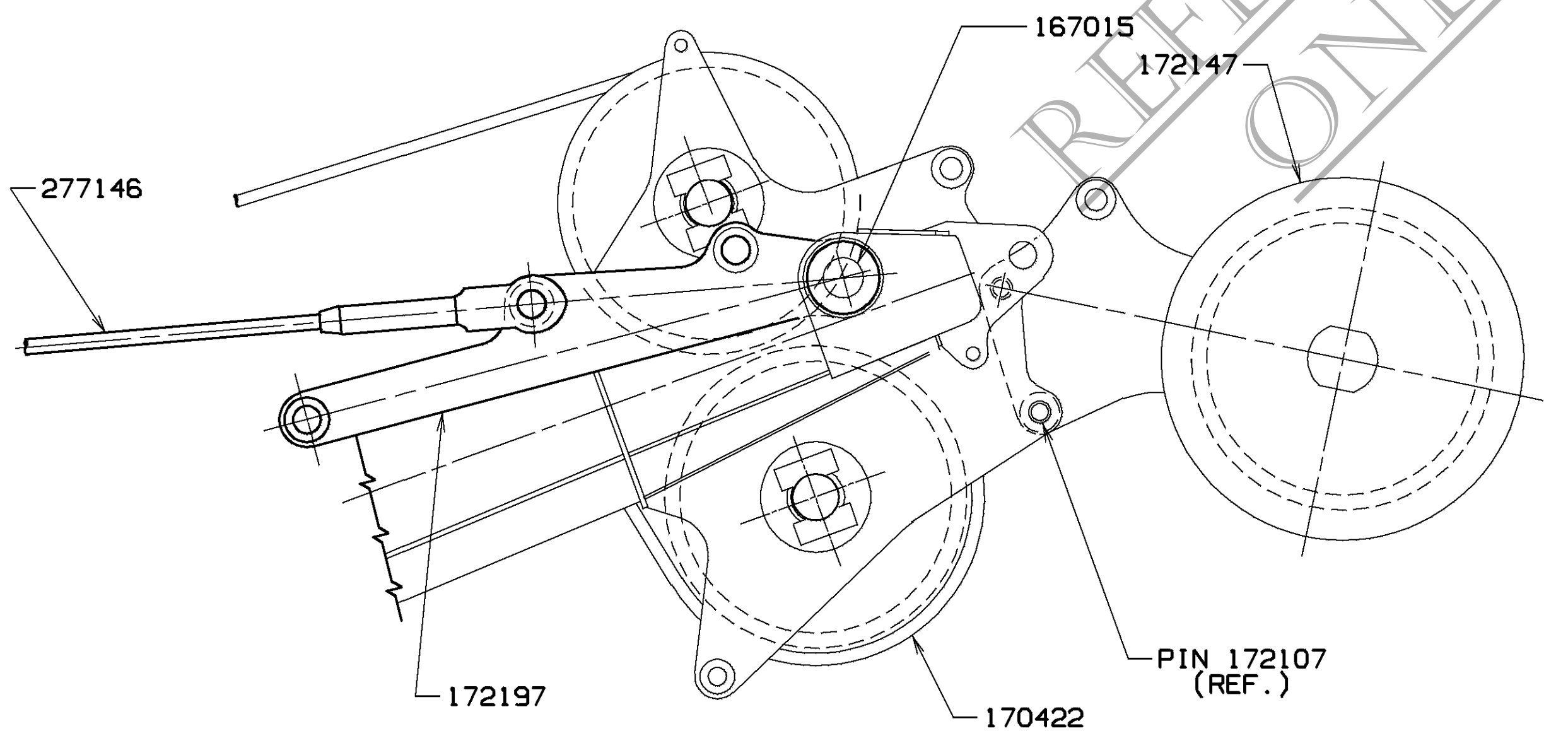
DANGER:

DO NOT STAND UNDER MAIN STRUT DURING ERECTION.

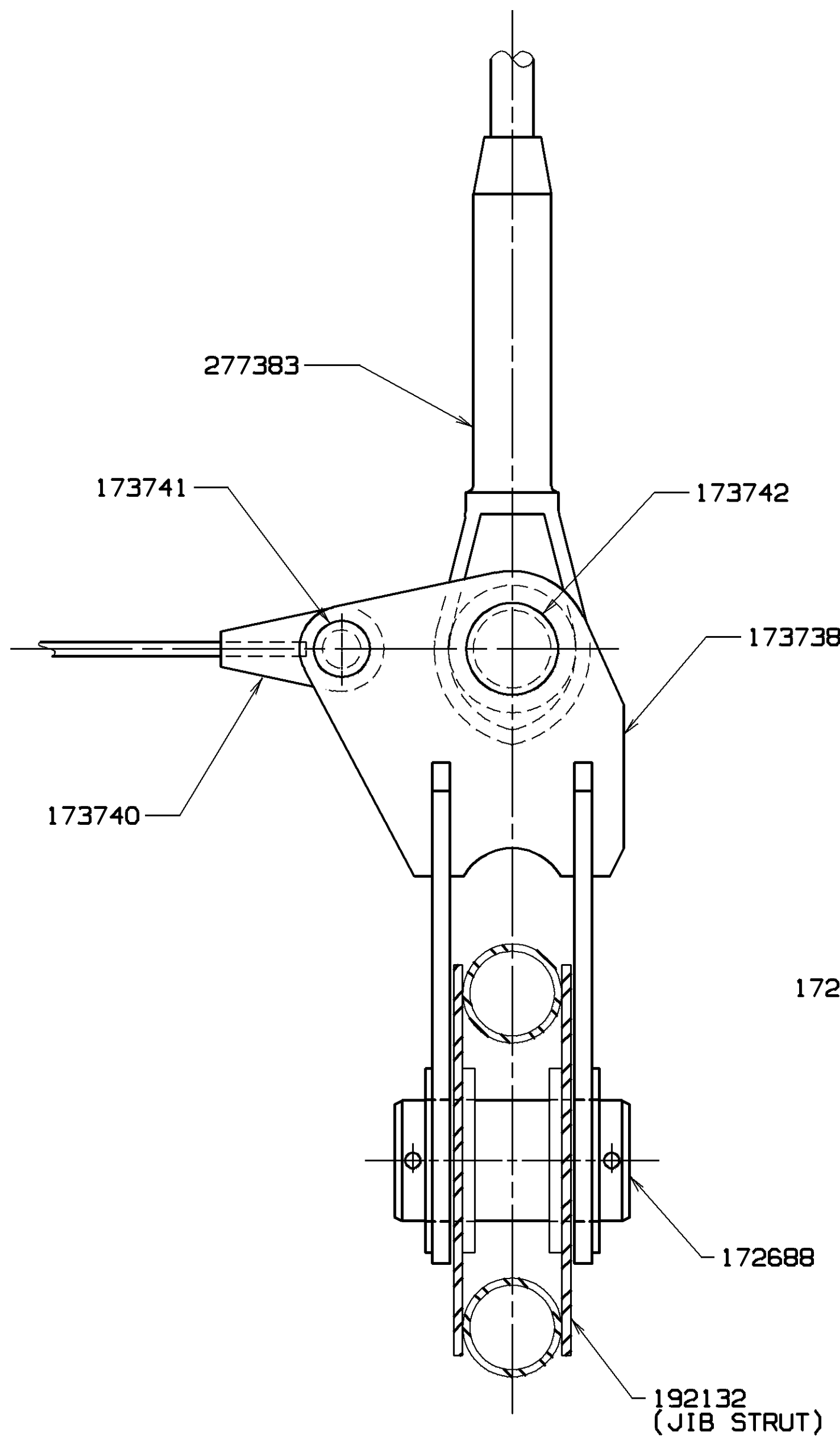
2. RUN A 1.125 (29 mm) ROPE FROM LEFT REAR DRUM OVER THE TOP OF THE STRUT RAISING BRACKET (173680 REF.) ON WIRE ROPE GUIDE ASSEMBLY 172986.
3. ATTACH ROPE TO SOCKET 162233 & WEDGE 162234 AND PIN SOCKET 162233 TO RIGGING PENDANT FROM MAIN STRUT WITH PIN 564094.
4. RAISE MAIN STRUT WITH LOAD LINE WHILE PAYING OUT LUFFING JIB HOIST LINE (DO NOT ALLOW LUFFING JIB HOIST LINE TO GO INTO TENSION UNTIL MAIN STRUT IS NEAR VERTICAL).
5. WHEN MAIN STRUT HAS BEEN RAISED TO A POSITION WHERE RETRACTED STRUT STOP TUBE ASSEMBLY 173649 CONTACTS THE BOOM TOP PLATEWORK, REMOVE PIN 563912 (REF.) FROM STRUT STOP TUBE ASSEMBLY. STORE AS SHOWN IN VIEW "N"- "N". EXTEND STRUT STOP TUBE ASSEMBLY TO STRUT SUPPORT BEAM 172884 AND CONNECT USING PIN 172937.
6. SUPPORT MAIN STRUT WITH LUFFING JIB HOIST LINE AND MOVE INTO A POSITION SUPPORTED BY RETRACTED STRUT STOP TUBE ASSEMBLY 173649, AND REINSTALL PIN 563912 (REF.) IN STRUT ERECTION AND POSITIONING LOCATION (REF. VIEW "N"- "N").
7. WITH STRUT RESTING ON STRUT STOP TUBE ASSEMBLY 173649, DISCONNECT SOCKET 162233 AND PIN PENDANT 277293 TO STRUT USING PIN 563803. (REF. VIEW "M"- "M").
8. CONNECT ALL BACKSTAY PENDANTS AND LINKS.
9. AFTER ALL BACKSTAY PENDANTS AND LINKS ARE IN PLACE AND BACKSTAY IS PINNED TO BACKSTAY PIN 172194 IN BOOM BUTT, REMOVE PIN 172936 (REF.) AND RAISE MAIN STRUT USING LUFFING JIB HOIST LINE UNTIL PIN HOLES IN STRUT STOP TUBE ASSEMBLY 173649 ALIGN IN OPERATING POSITION. (REF. VIEW "K")
- NOTE: IF THE JIB STRUT 174953 BEGINS TO RAISE BEFORE THE HOLES IN STRUT STOP TUBE ASSEMBLY 173649 ALIGN, SECURE JIB STRUT TO JIB.
10. INSERT PIN 172936 (REF.), RELAX LUFFING JIB HOIST LINE, DISCONNECT JIB STRUT FROM JIB, AND REMOVE AND STORE PIN 563912 (REF.). SEE VIEW "N"- "N".
11. REVERSE PROCEDURE FOR LOWERING MAIN STRUT.



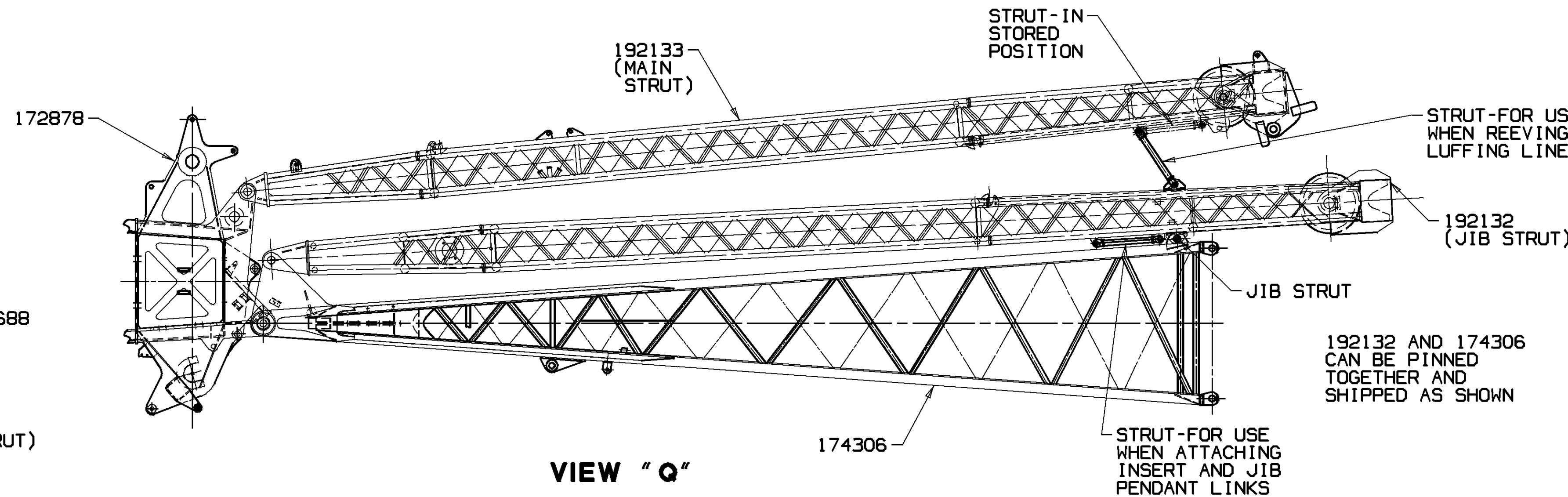
VIEW "K"



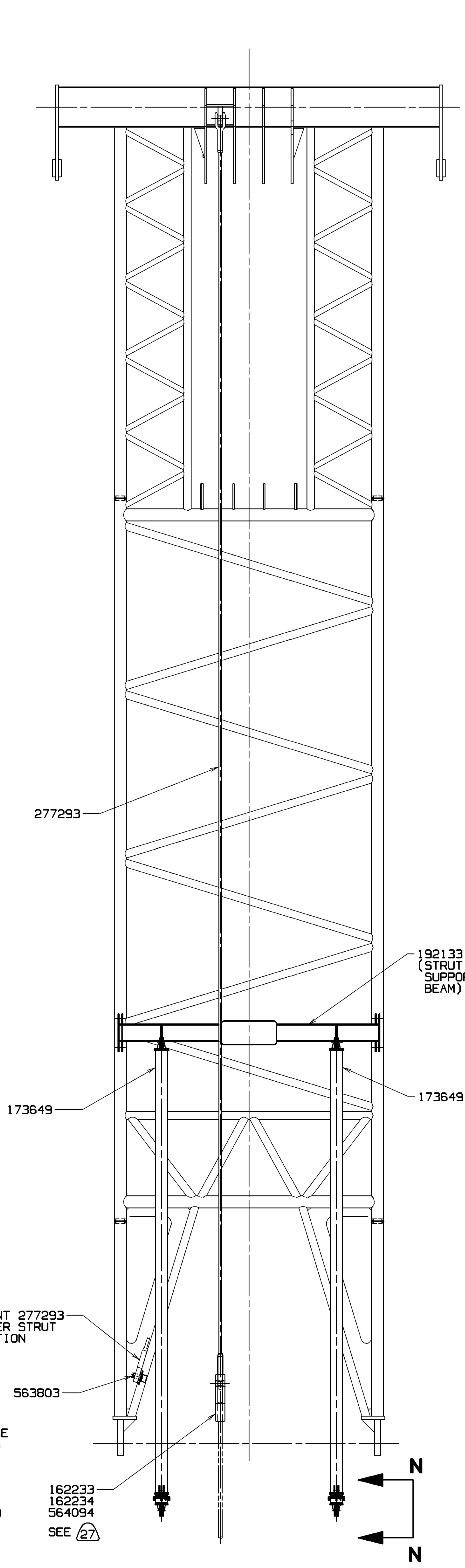
VIEW "L"



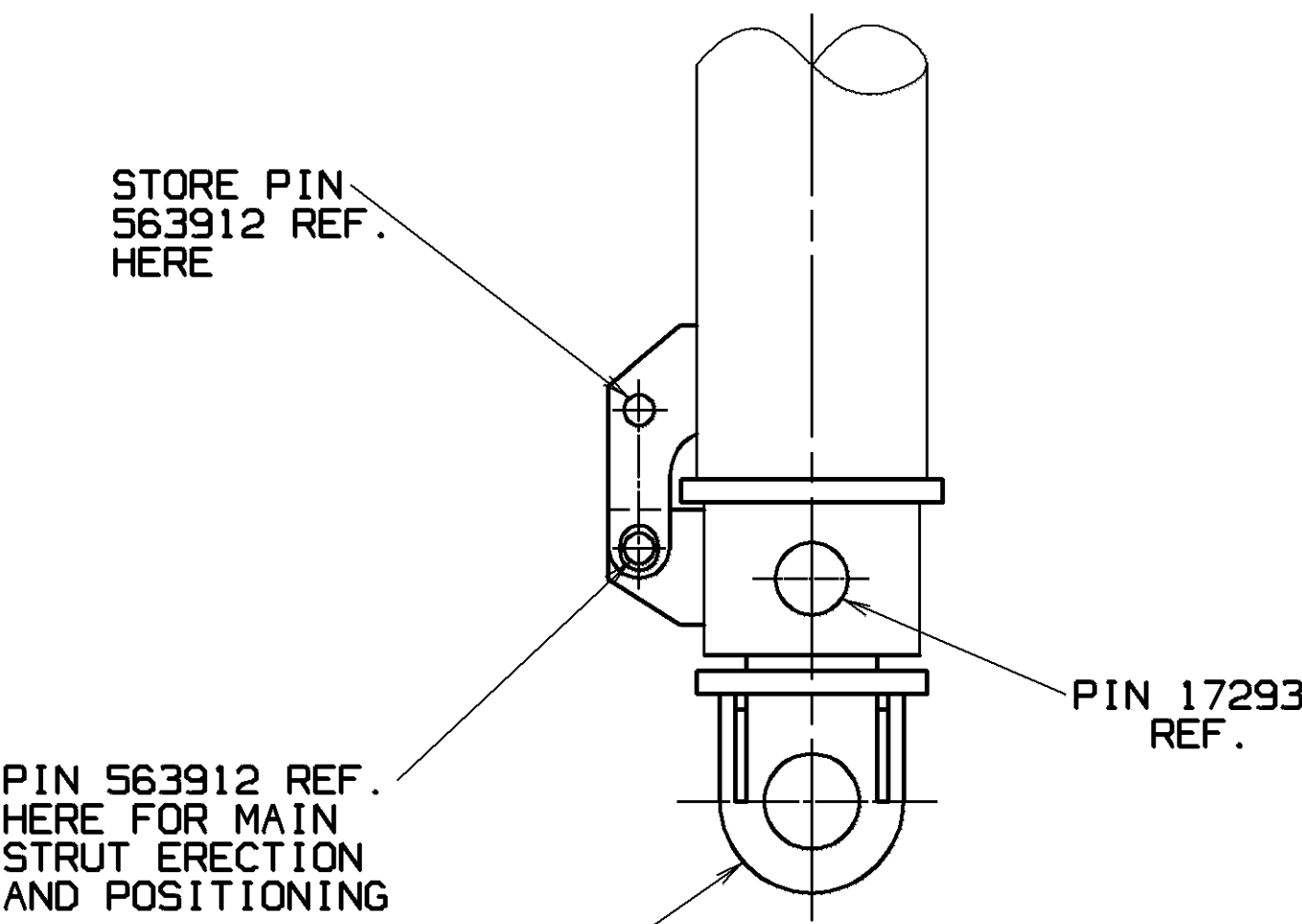
VIEW "H" - "H"



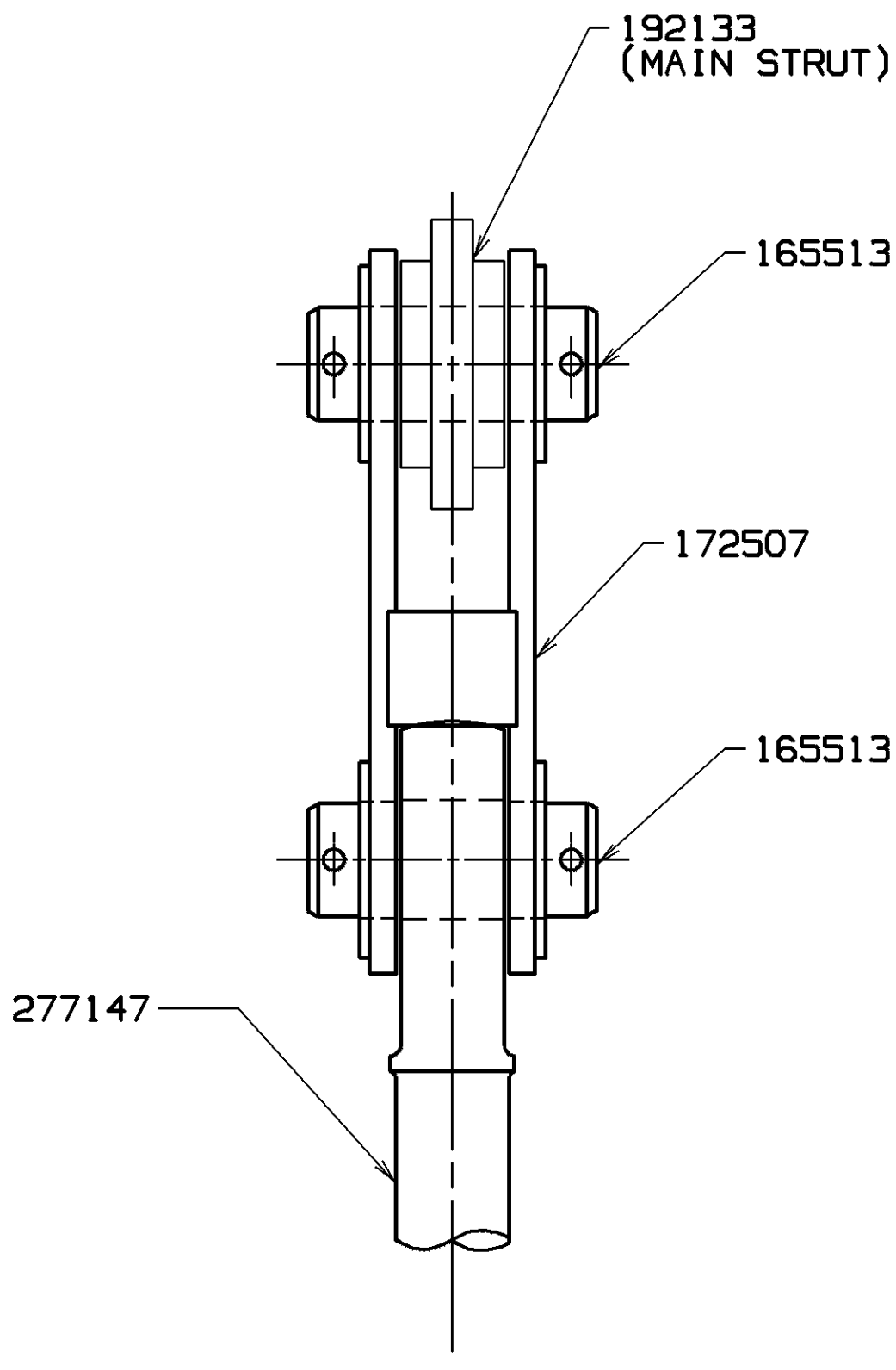
VIEW "Q"



VIEW "M" - "M"



VIEW "N" - "N"



VIEW "G" - "G"

SUPERSEDES 172894 SHT 4 OF 6-17-93

THIS PRINT REMAINS THE PROPERTY OF WHITING CRANES, INC. ALL INFORMATION CONTAINED HEREON 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 MANNER DETRIMENTAL TO OUR INTERESTS.		TOLERANCE UNLESS OTHERWISE SPECIFIED		FABRICATION		MACHINING		SCALE		Mantowoc Cranes, Inc. Mantowoc, Wisconsin		LUFFING JIB RIGGING ASSEMBLY	
DECIMAL PLACES		1/16	1/32	1/64	1/128	1/256	1/512	1/1024	1/2048	1/4096	1/8192	1/16384	1/262144
(1) PLACE	0.0	±.150	±.180	±.210	±.240	±.270	±.300	±.330	±.360	±.390	±.420	±.450	±.480
(2) PLACE	0.00	±.010	±.015	±.020	±.025	±.030	±.035	±.040	±.045	±.050	±.055	±.060	±.065
(3) PLACE	0.000	±.005	±.008	±.010	±.012	±.015	±.018	±.020	±.022	±.025	±.028	±.030	±.032
ANGLES		±1°30'	±1°30'	±1°30'	±1°30'	±1°30'	±1°30'	±1°30'	±1°30'	±1°30'	±1°30'	±1°30'	±1°30'
DR: CJW		Mantowoc Cranes, Inc.		#44 BOOM/#133 JIB		1.50 SWAGED PENDANTS		(USA)		172894		DATE: 6-01-99	
DR: JAZ		Mantowoc Cranes, Inc.		#44 BOOM/#133 JIB		1.50 SWAGED PENDANTS		(USA)		172894		DATE: 6-01-99	
APP: GMP		M-250 SERIES 2		#44 BOOM/#133 JIB		1.50 SWAGED PENDANTS		(USA)		172894		DATE: 6-01-99	