

NOTES:-

- 1. INSPECT PER HAARP ANTENNA SYSTEM INSTALLATION INSPECTION PROCEDURE, ITEM 114.
- 2. INSPECT DIPOLES PER DIPOLE GEOMETRY TEST PROCEDURES, ITEM 115.
- 3. SEE SHEET 3.
- 4. SEE SHEET 16.
- 5. SEE SHEET 16.
- 6. SEE SHEET 18.

48	129	06032	SCD	2077-6453-009	0003-7239-202	BOLT, HEX HD, TAP, .38-16 UNC X 2.50 LG, GALV
384	128		SCD	2310-0416-001	0003-6854-203 & -204	WASHER, FLAT, .38, SST
192	127		SCD	2100-2244-001	0003-6854-203 & -204	NUT, HEX, FIBERLOCK, .38-16 UNC-2A, SST
384	126		SCD	2100-2251-001	0003-6859-202	NUT, HEX, FIBERLOCK, .75-10 UNC-2A, SST
384	125		SCD	2078-4213-001	0003-6859-202	BOLT, HEX HEAD, .75-10 UNC-2B X 2.50 LG, SST
1440	124			0003-7133-201	0003-7216-201	TUBE, PROTECTIVE (.25 ID)
384	123			0003-7133-202	0003-7216-201	TUBE, PROTECTIVE (.38 ID)
96	122			0003-7240-301	0003-6410-201	ANGLE, LATTICE, SAFETY CLIMB
1324	121		SCD	2076-4288-001	0003-6867-201	BOLT, .38-16 UNC X 1.50 LG, HS, GALV
48	120		SCD	2450-0802-002	0003-7216-201	WRAPLOCK STRAP, 100 FT ROLL
48	119		SCD	2450-0801-002	0003-7216-201	WRAPLOCK, INSTALLATION TOOL (RATCHET)
2400	118		SCD	2450-0801-001	0003-7216-201	WRAPLOCK, "D" RING
96	117			0003-7130-301	0003-7216-201	LEG, CABLE MOUNT #2
96	116			0003-7129-301	0003-7216-201	LEG, CABLE MOUNT #1
REF	115		PRO	0910-1031-101		HAARP DIPOLE GEOMETRY TEST PROCEDURE
REF	114		PRO	0910-1022-101		HAARP ANTENNA SYSTEM INSTALLATION INSPECTION PROCEDURE
I	113			0090-0140-201	1500-0394-201	INSTALLATION SPARES, HAARP
288	112		SCD	2100-0219-001	0003-6186-201/0003-7084-201	NUT, HEX, .25-20 UNC, SST
288	111		SCD	2300-0909-001	0003-6186-201/0003-7084-201	WASHER, SPLITLOCK, .25, SST
672	110		SCD	2310-0433-001	0003-6186-201/0003-7084-201 0003-6854-203 & -204	WASHER, FLAT, .25, SST
96	109		SCD	0003-7131-201	0003-7216-201	SPLICE, CABLE MOUNT
784	108	06032		0003-7215-201	0003-7216-201	MOUNT, CABLE
784	107			MS9350-15	0003-7216-201	CABLE, LOOP
784	106	06032	SCD	2077-6408-001	0003-7216-201	BOLT, HEX HD, .25-20 UNC X 1.25 LG, GALV
384	105			0003-6365-301	0003-7218-201	COAX ASSY, MONITOR TO AMUS
96	104			0003-6348-303	0003-7217-201	CONTROL CABLE, BALUN TO MONITOR
192	103			0003-6348-302	0003-7217-201	CONTROL CABLE, LB AMU TO BALUN
192	102			0003-6348-301	0003-7217-201	CONTROL CABLE, HB AMU TO BALUN
96	101			0003-6347-301	0003-7217-201	CONTROL CABLE, CONTROL BOX TO BALUN
192	100			0003-6341-301	0003-7218-201	CABLE ASSY, 7/8
192	99			0003-6346-301	0003-7218-201	CABLE ASSY, 7/8
I	98			0003-6506-401	1000-1565-201	MOUNT, MARKER
240	97		SCD	8910-0501-001	0003-6505-201	MARKER, YELLOW
1056	96		SCD	2076-4282-001	0003-6507-201	BOLT, HEX HD, .38-16 UNC X .75, GALV, HS
196	95		SCD	2076-4380-001	0003-6859-202	BOLT, HEX HD, .75-10 UNC X 4.25 LG, GALV, HS
480	94		SCD	2310-0144-001	0003-7216-201	WASHER, FLAT, .50, GALV
480	93		SCD	2077-7307-001	0003-7216-201	BOLT, HEX HD, .50-13 UNC X 1.50 LG, GALV
1176	92			0003-6518-401	0003-6856-201 THRU -203	INSULATOR ASSY NO. 2
784	91			0003-6517-401	0003-6858-201	INSULATOR ASSY NO. 1
672	90		SCD	2078-2406-001	0003-6854-203 & -204 0003-6186-201/0003-7084-201	BOLT, HEX HD, .25-20 UNC X 1.00 LG, SST
196	89			0003-6247-201	0003-6854-202	SPACER, HINGE, HB
576	88		SCD	2102-0002-006	0003-6854-201 & 202	NUT, HEX, LOCK (ANCO), .75-10 UNC, GALV
384	87		SCD	2076-4376-001	0003-6854-201 & 202	BOLT, HEX HD, .75-10 UNC X 3.25 LG, GALV, HS
192	86			0003-7236-301	0003-6854-203	FEED STRAP, LOW BAND
192	85			0003-7237-301	0003-6854-204	FEED STRAP, HIGH BAND
192	84		SCD	2078-2453-003	0003-6854-203 & -204	BOLT, HEX HD, .38-16 UNC X 1.00 LG, SST
5612	83			2350-3016-001	0003-6836-401/0003-6834-401	TAP, CRIMPIT
REF	82			0003-7228-201	0003-6836-401/0003-6834-401	SLEEVE, OFFSET
480	81		SCD	2100-0127-001	0003-7216-201	NUT, HEX, .50-13 UNC, GALV
480	80		SCD	2300-0155-001	0003-7216-201	WASHER, SPLITLOCK, .50, GALV
284	79		SCD	2077-6453-013	0003-7239-201	BOLT, HEX HD, TAP, .38-16 UNC X 3.50 LG, GALV
28	78			0003-6838-402	1500-0394-201	GROUND SCREEN CATENARY, INTERIOR
8	77			0003-6839-401	1500-0394-201	GROUND SCREEN CATENARY, CORNER
35	76			0003-6836-401	1000-1555-201	INTERIOR GROUND SCREEN ASSY
24	75			0003-6835-401	1000-1557-201	PERIMETER GROUND SCREEN ASSY
4	74			0003-6834-401	1000-1556-201	CORNER GROUND SCREEN ASSY
82	73			0003-6838-401	1500-0394-201	GROUND SCREEN CATENARY, INTERIOR
24	72			0003-6837-401	1500-0394-201	GROUND SCREEN CATENARY, PERIMETER
192	71			0003-6309-401	1000-1562-201	CHIN WELDMENT, LB
192	70			0003-6303-402	1000-1562-201	CORNER WELDMENT, LOWER, LB
192	69			0003-6303-401	1000-1562-201	CORNER WELDMENT, LOWER, LB
192	68			0003-6300-402	1000-1562-201	CORNER WELDMENT, UPPER, LB
192	67			0003-6300-401	1000-1562-201	CORNER WELDMENT, UPPER, LB
192	66			0003-6400-401	1000-1562-201	BACKBONE WELDMENT, LB
384	65			0003-6310-409	1000-1562-201	ELEMENT ASSY
192	64			0003-6310-408	1000-1562-201	ELEMENT ASSY
384	63			0003-6310-407	1000-1562-201	ELEMENT ASSY
192	62			0003-6310-406	1000-1562-201	ELEMENT ASSY
384	61	06032		0003-6310-405	1000-1562-201	ELEMENT ASSY
QTY RECD	ITEM NO.	CAGE CODE	SYM	PART OR IDENTIFYING NO.	KIT NUMBER	NOMENCLATURE OR DESCRIPTION
-401						PARTS LIST

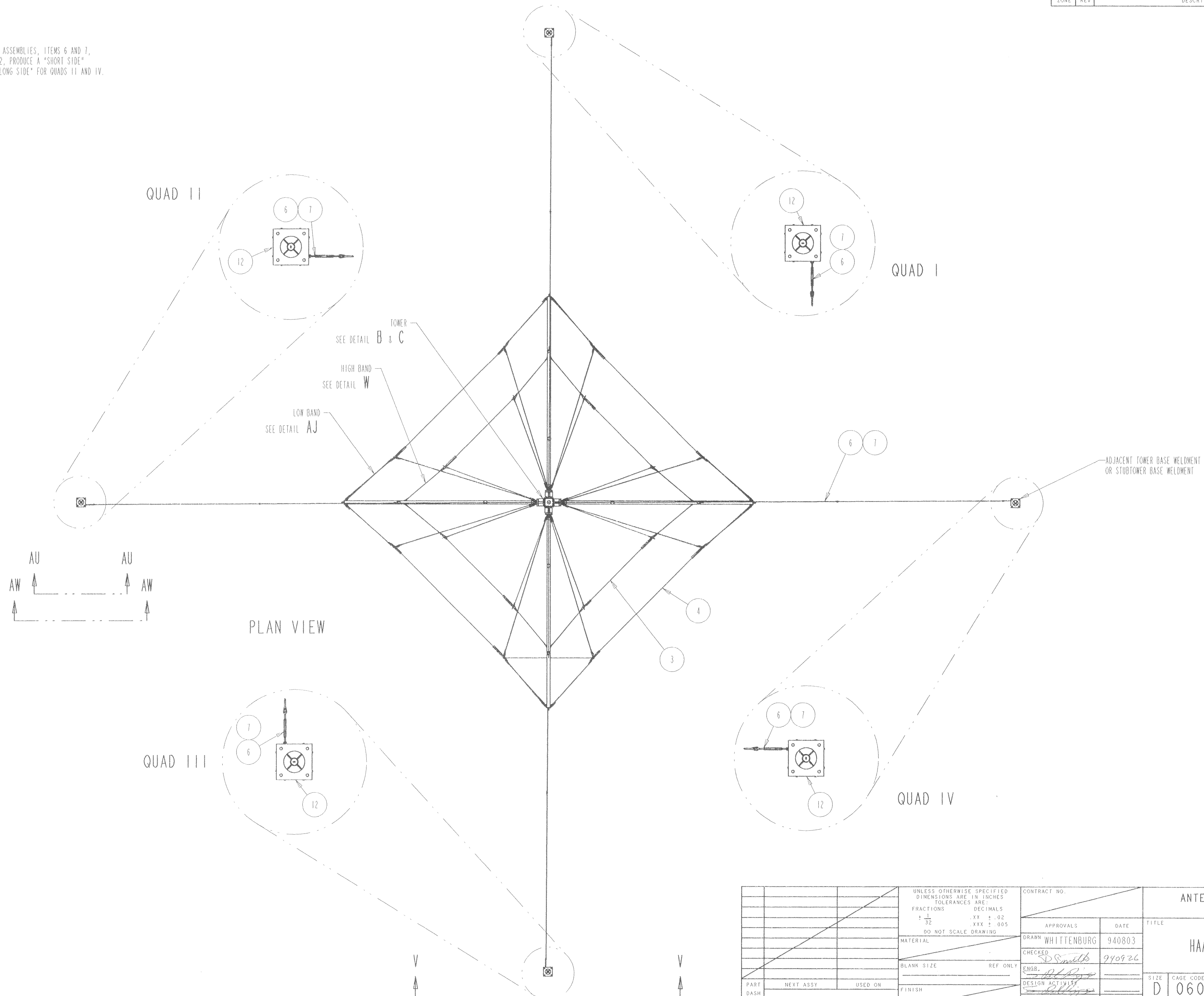
384	60	06032		0003-6310-404	1000-1562-201	ELEMENT ASSY
192	59			0003-6242-401	1000-1563-201	FRONT JOINT WELDMENT, HB
192	58			0003-6294-401	1000-1563-201	PLATE, CORNER, HB
284	57			0003-6514-401	1000-1563-201	FEED POINT ASSY, HB
9680	56		SCD	2100-2248-001	0003-6854-201 & -202	NUT, HEX, FIBERLOCK, .50-13 UNC, SST
5760	55			0003-6306-201	0003-6854-201 & -202	BEARING, METALLIC
5760	54			0003-6305-201	0003-6854-201 & -202	BEARING, NONMETALLIC
5760	53			0003-6304-301	0003-6854-201 & -202	WASHER, NYLON
9680	52		SCD	2078-3311-001	0003-6854-201 & -202 0003-6459-201 & -202	BOLT, HEX HD, .50-13 UNC, 2.00 L, SST
192	51			0003-6310-403	1000-1563-201	ELEMENT ASSY
384	50			0003-6310-402	1000-1563-201	ELEMENT ASSY
384	49			0003-6310-401	1000-1563-201	ELEMENT ASSY
246	48		SCD	2300-0325-001	0003-6413-201	WASHER, LOCK, HEAVY, 1.25, GALV
246	47		SCD	2100-0882-001	0003-6413-201	NUT, HEX, 1.25-7 UNC, GALV, HS
246	46		SCD	2079-7161-011	0003-6413-201	BOLT, HEX, 1.25-7 UNC X 6.50 L, GALV, HS
343	45			0003-7134-301	0003-6410-201	PLATE, LATTICE, SAFETY CLIMB
686	44			0003-6865-301	0003-6410-201	BRACKET, LATTICE, SAFETY CLIMB
539	43			0003-6419-301	0003-6410-201	BRACKET, ANGLE, SAFETY CLIMB
48	42			0001-9480-302	0003-6410-201	STOP, TOP
144	41			0001-9679-302	0003-6410-201	STRAP, CONNECTING
3594	40		SCD	2076-4284-001	0003-6867-201	BOLT, HEX HD, .38-16 UNC X 1.00, GALV, HS
384	39			0003-6136-401	0003-7220-201	PIVOT WELDMENT
384	38			0003-6133-401	0003-7220-201	BRACKET, PIVOT, HIGH BAND
1539	37		SCD	2310-0598-001	0003-7220-201	WASHER, FLAT, 3/8, HS
96	36			0003-6184-401	0003-6185-201	MOUNT, MONITOR BALUN
96	35			1000-1572-401	1000-1625-201	SWITCH/MONITOR ASSY
1580	34		SCD	2300-0153-001	0003-6343-201/0003-7239-201	WASHER, SPLITLOCK, .38, GALV
1580	33		SCD	2310-0597-001	0003-6343-201/0003-7239-201	WASHER, FLAT, .38, GALV
1580	32		SCD	2100-0123-001	0003-6343-201/0003-7239-201	NUT, HEX, .38-16 UNC, GALV
1152	31		SCD	2077-6810-001	0003-6343-201	BOLT, HEX HD, .38-16 UNC X 1.50 L, GALV
48	30			0003-6326-401	1000-1625-201	CONTROL BOX ASSY
2112	29		SCD	2100-0119-001	0003-7084-201/0003-6184-201	NUT, HEX, .25-20 UNC, GALV
2112	28		SCD	2310-0591-001	0003-7084-201/0003-6184-201	WASHER, FLAT, .25, GALV
2112	27		SCD	2300-0151-001	0003-7084-201/0003-6184-201	WASHER, SPLITLOCK, .25, GALV
1056	26		SCD	2450-0505-003	0003-7084-201/0003-6184-201	U-BOLT, .25-20 UNC, GALV
960	25			0003-6319-401	0003-6343-201	MOUNT, TOWER
4	24			0003-6409-401	1000-1558-201	STUB TOWER WELDMENT, CORNER
28	23			0003-6407-401	1000-1559-201	STUB TOWER WELDMENT, PERIMETER
4992	22		SCD	2102-0002-003	0003-6411-201	NUT, LOCK, HEAVY HEX, .375-16 UNC, GALV
1920	21		SCD	2076-4289-401	0003-6411-201	BOLT, HEX, .375-16 UNC X 1.75, GALV, HS
698	20		SCD	2102-0002-010	0003-6412-201	NUT, LOCK (ANCO), HEAVY HEX, 1.25-7 UNC, GALV
698	19		SCD	2310-0784-007	0003-6412-201	WASHER, FLAT, 1.25, GALV, HS
502	18			2076-4492-001	0003-6412-201	BOLT, HEX, 1.25-7 UNC X 4.00, GALV, HS
48	17			0003-7083-301	0003-7082-201	MOUNT, CONTROL BOX
96	16			0001-9690-402	003-6410-201	RAIL, CARRIER (20 FT)
48	15			0003-6863-401	0003-6410-201	RAIL, RADIUS
48	14			0001-9690-414	0003-6410-201	RAIL, GALV (5 FT)
48	13			0003-6132-401	1000-1565-201	LATTICE ASSY
81	12			0003-6119-401	1000-1565-201/1000-155889-201	BASE WELDMENT
192	11			1000-1569-401	1000-1625-201	LOW BAND MATCHING UNITS
192	10			1000-1568-401	1000-1625-201	HIGH BAND MATCHING UNIT
96	9			1000-1570-401	1000-1625-201	10 KW BALUN ASSY
48	8			0003-6284-401	1000-1565-201	MAST WELDMENT
192	7			0003-6861-402	0003-6858-201	GUY ASSY, UPPER
192	6			0003-6861-401	1000-1565-201	GUY ASSY, LOWER
192	5			0003-6866-401	0003-6858-201	GUY ASSY, ELEMENT
384	4			0003-6857-401	0003-6856-201	INTERELEMENT GUY ASSY LOW BAND
192	3			0003-6857-402	0003-6856-202	INTERELEMENT GUY ASSY HIGH BAND
192	2			0003-6866-402	0003-6858-201	GUY ASSY, ELEMENT
X	1	06032		-401		HAARP INSTALLATION DRAWING
QTY RECD	ITEM NO.	CAGE CODE	SYM	PART OR IDENTIFYING NO.	KIT NUMBER	NOMENCLATURE OR DESCRIPTION
-401						PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ± .1 ± .02 ± .03 ± .005 DO NOT SCALE DRAWING		CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
MATERIAL		APPROVALS		TITLE	
BLANK SIZE		DRAWN WHITTENBURG		HAARP INSTALLATION DRAWING	
REF ONLY		CHECKED <i>D. Smith</i> 9/10/94		ENGR <i>D. DelPrincipe</i> 9/26/94	
FINISH		DESIGN ACTIVITY <i>D. DelPrincipe</i> 9/26/94		SIZE CAGE CODE DWG. NO. REV.	
PART DASH NO.	NEXT ASSY	USED ON	APPLICATION	D 06032	0980-0334 -
SCALE NONE RELEASE			SHEET 1 OF 20		

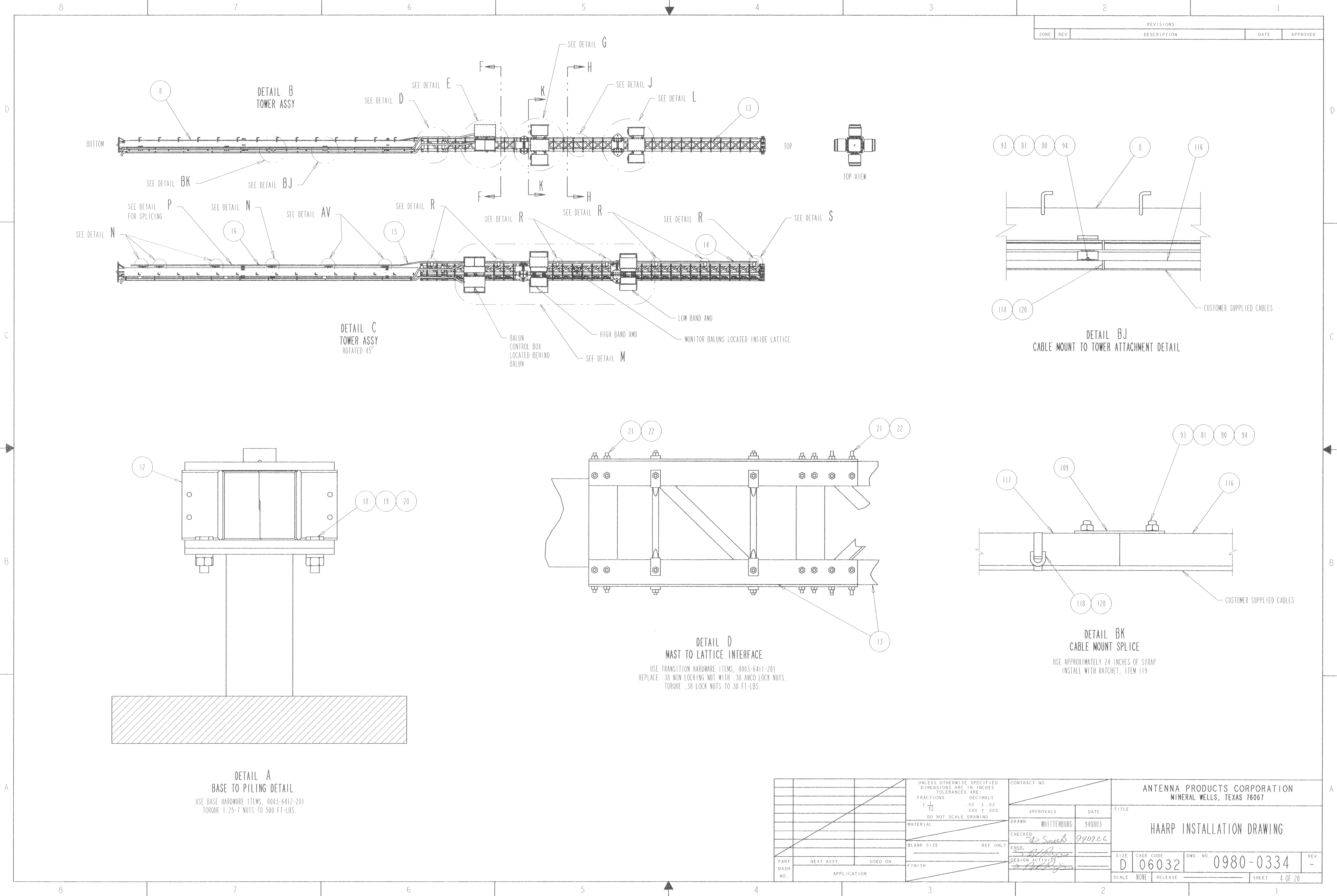
REVISIONS			
ZONE	REV	DESCRIPTION	DATE
			APPROVED

NOTES:

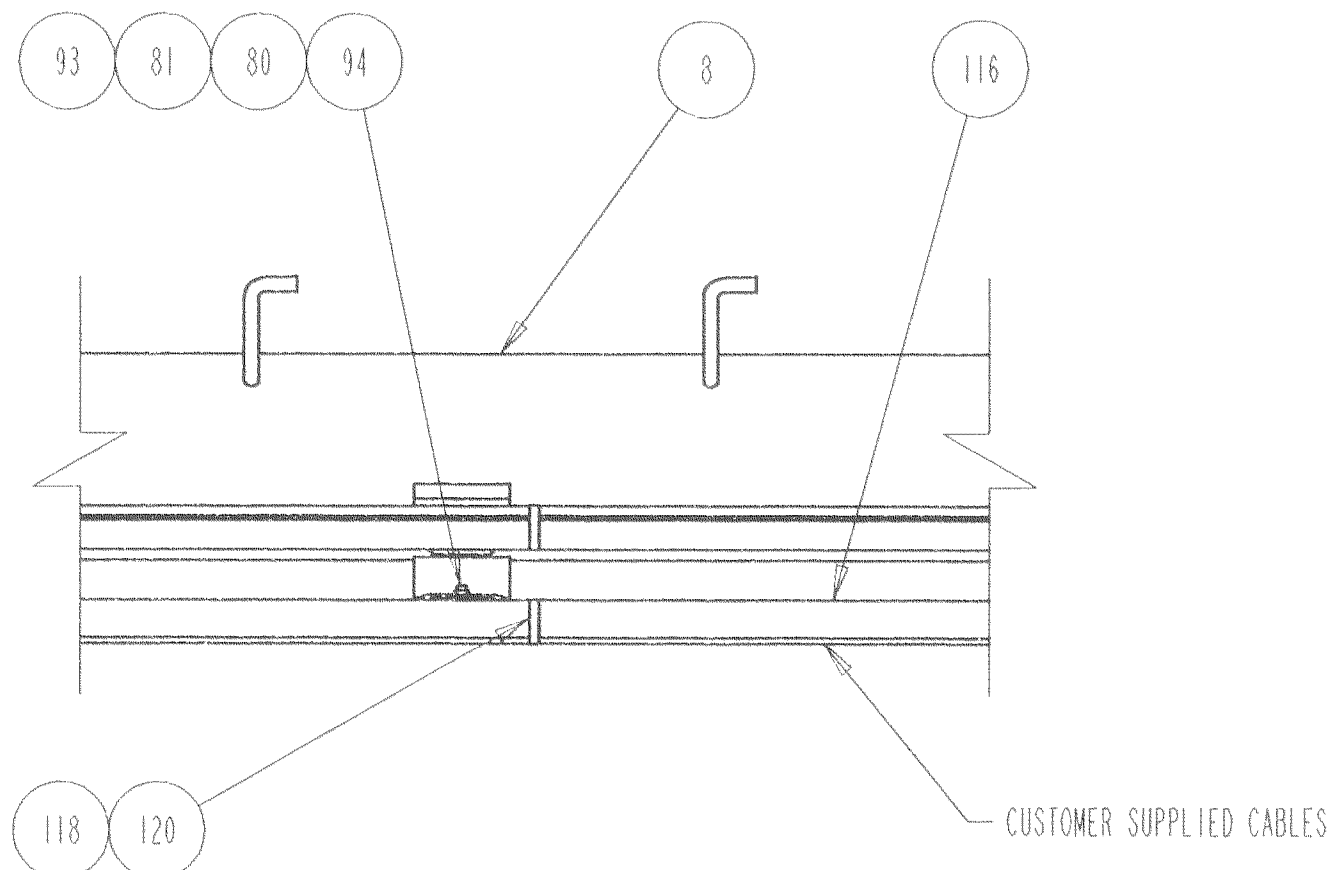
3. ATTACHMENT LOCATIONS FOR GUY ASSEMBLIES, ITEMS 6 AND 7, TO THE BASE WELDMENT, ITEM 12, PRODUCE A "SHORT SIDE" FOR QUADS I AND III, AND A "LONG SIDE" FOR QUADS II AND IV.



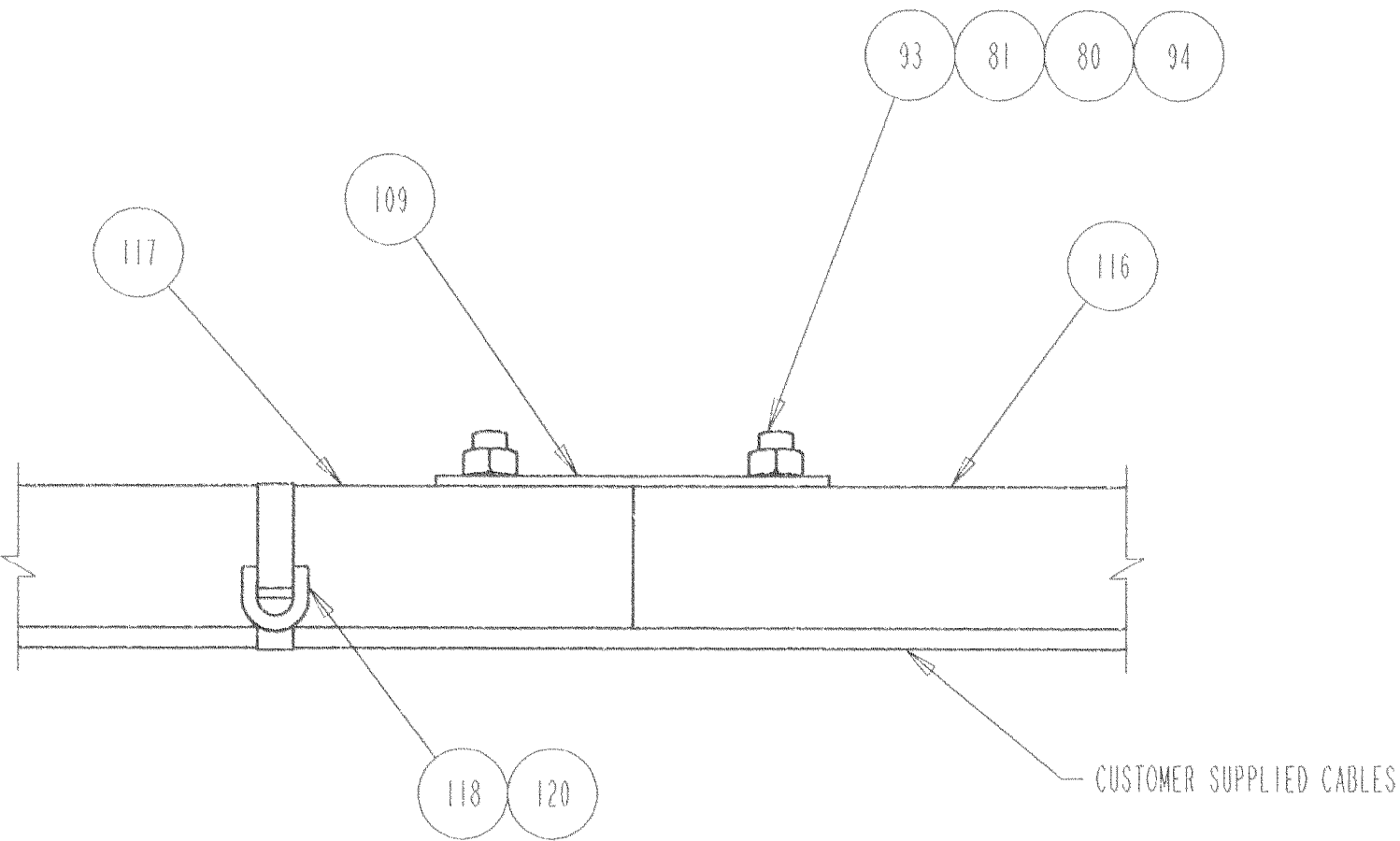
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS .XX ± .02 DECIMALS .XXX ± .005 DO NOT SCALE DRAWING		CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
MATERIAL		APPROVALS	DATE	TITLE	
BLANK SIZE		DRAWN WHITTENBURG	940803	HAARP INSTALLATION DRAWING	
FINISH		CHECKED <i>D. Smith</i>	940926	SIZE CAGE CODE DWG. NO. REV.	
PART DASH NO.		ENGR. <i>DLB</i>		D 06032 0980-0334 -	
APPLICATION		DESIGN ACTIVITY		SCALE NONE RELEASE SHEET 3 OF 20	



REVISIONS			
ZONE	REV	DESCRIPTION	DATE
		APPROVED	

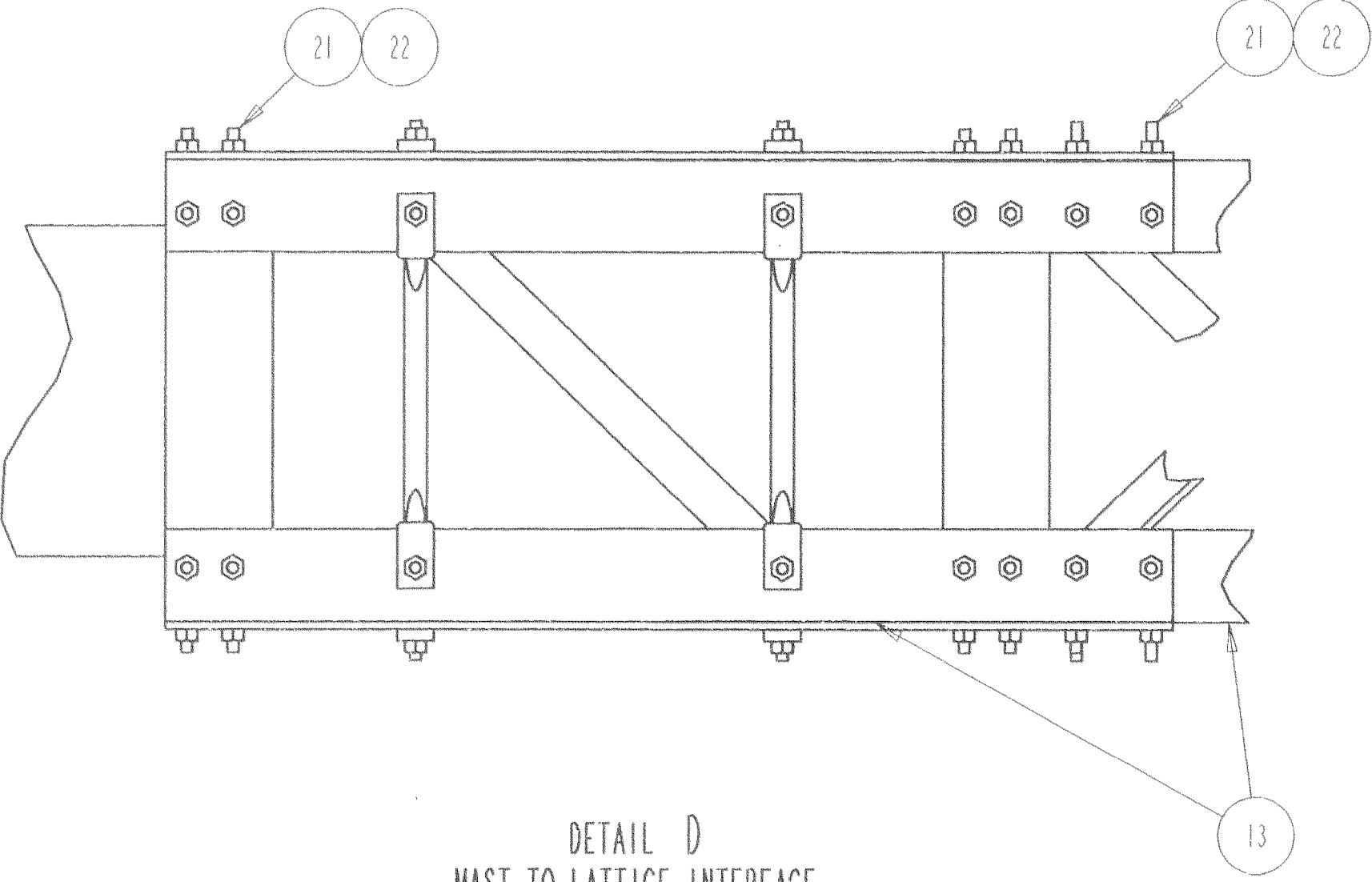


DETAIL BJ
CABLE MOUNT TO TOWER ATTACHMENT DETAIL



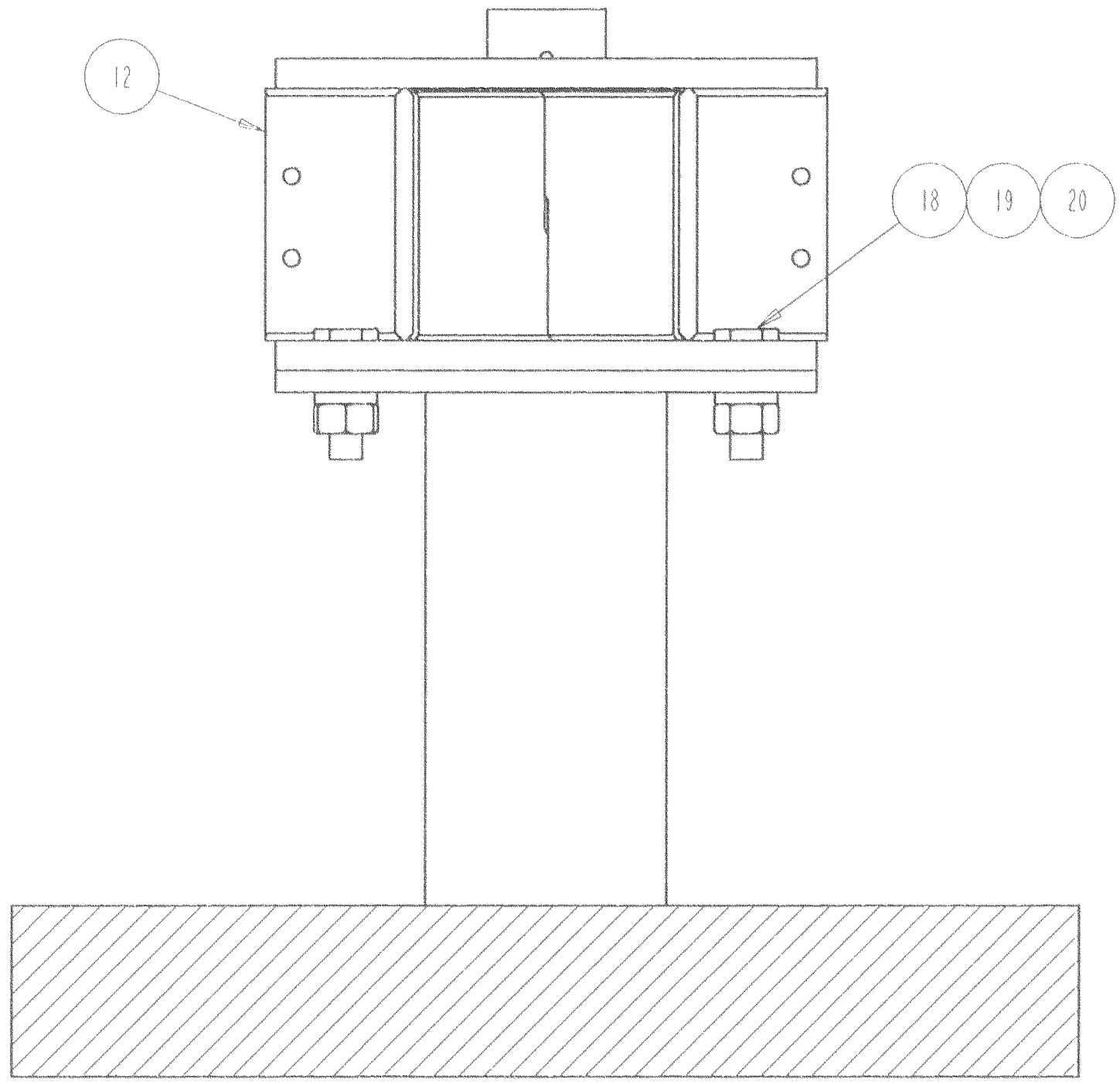
DETAIL BK
CABLE MOUNT SPLICE

USE APPROXIMATELY 24 INCHES OF STRAP
INSTALL WITH RATCHET, ITEM 119



DETAIL D
MAST TO LATTICE INTERFACE

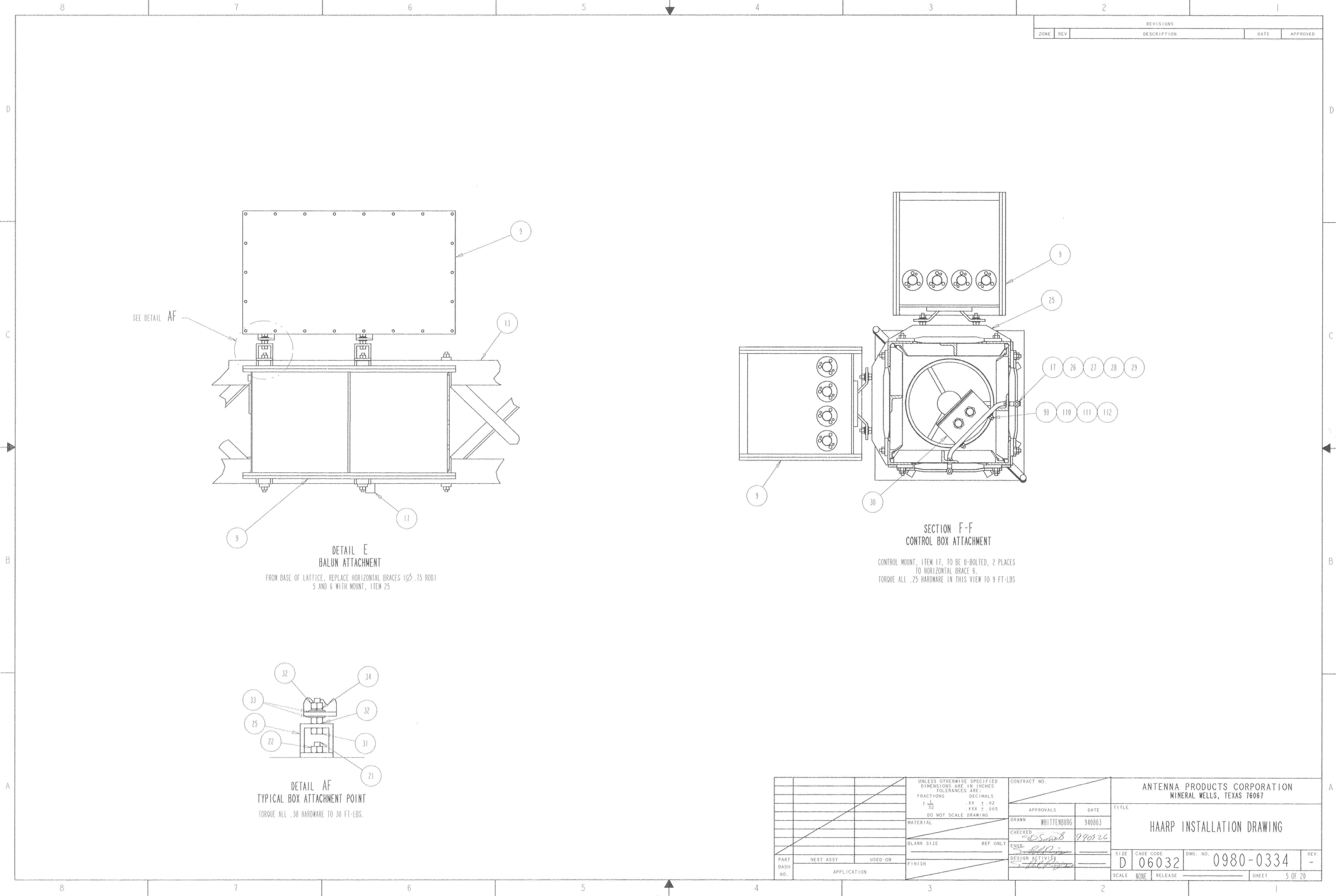
USE TRANSITION HARDWARE ITEMS, 0003-6411-201
REPLACE .38 NON LOCKING NUT WITH .38 ANCO LOCK NUTS.
TORQUE .38 LOCK NUTS TO 30 FT-LBS.



DETAIL A
BASE TO PILING DETAIL

USE BASE HARDWARE ITEMS, 0003-6412-201
TORQUE 1.25-7 NUTS TO 500 FT-LBS.

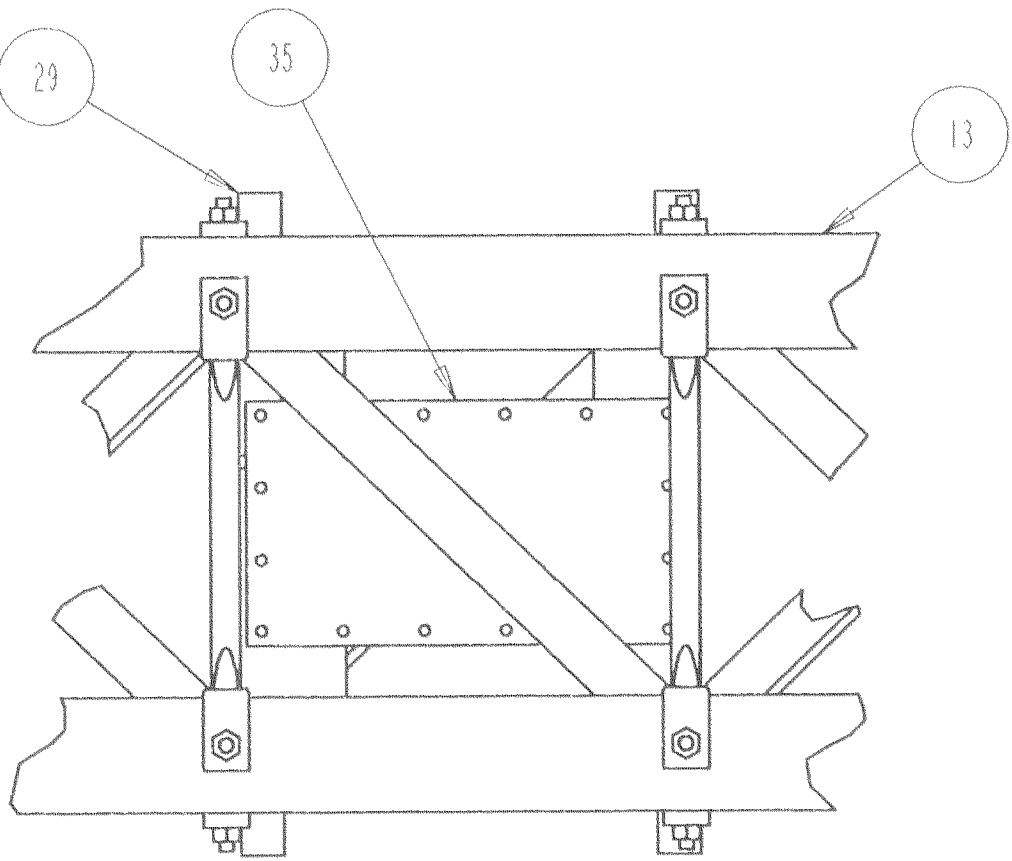
			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ± 1/32 .XX ± .02 .XXY ± .005 DO NOT SCALE DRAWING		CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067										
			MATERIAL		APPROVALS		DATE		TITLE HAARP INSTALLATION DRAWING								
			DRAWN WHITTENBURG		940803												
			CHECKED <i>D. Smith</i>		940926												
			BLANK SIZE		REF ONLY		ENGR.				SIZE		CAGE CODE		DWG. NO.		REV.
PART DASH NO.		NEXT ASSY		USED ON		FINISH		DESIGN ACTIVITY <i>D. Smith</i>		D		06032		0980-0334		-	
APPLICATION										SCALE		NONE		RELEASE		SHEET 4 OF 20	



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

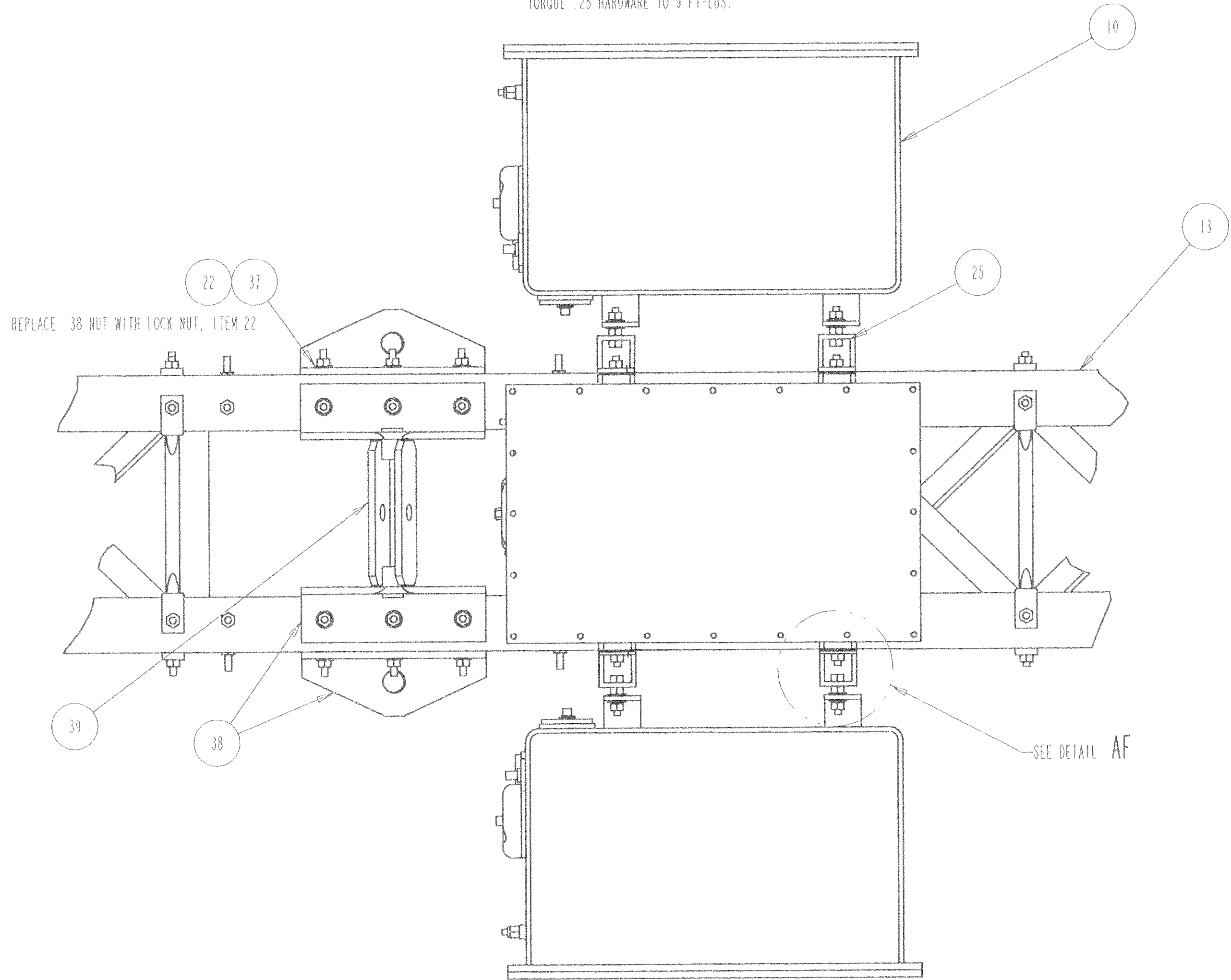
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS 1/32 .XX ± .02 DO NOT SCALE DRAWING			CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
			APPROVALS	DATE	TITLE	
MATERIAL			DRAWN	WHITTENBURG	940803	HAARP INSTALLATION DRAWING
BLANK SIZE			CHECKED	<i>D. Smith</i>	940926	
FINISH			ENGR.	<i>RAP</i>		
PART DASH NO.	NEXT ASSY	USED ON	DESIGN ACTIVITY	<i>S. H. H. H.</i>		SIZE D 06032
APPLICATION		FINISH		DWG. NO. 0980-0334		REV. -
				SCALE	NONE	RELEASE
				SHEET		5 OF 20

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



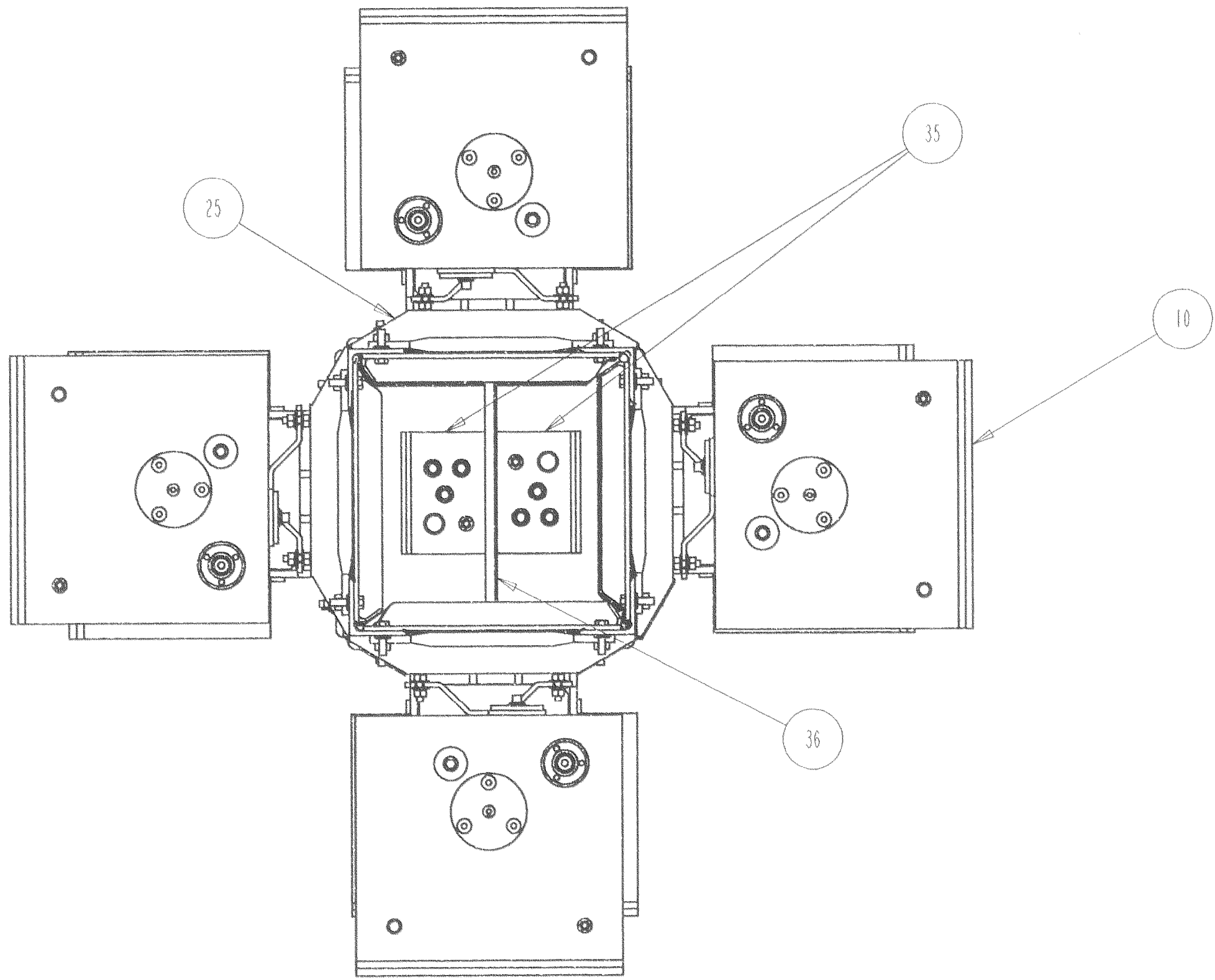
DETAIL J
MONITOR BALUN ATTACHMENT

TORQUE ALL .38 HARDWARE TO 30 FT-LBS
FASTEN MOUNTING BRACKET, ITEM 36, TO HORIZONTAL
BRACES 14 AND 15 WITH .25 U-BOLTS, ITEM 26.
TORQUE .25 HARDWARE TO 9 FT-LBS.



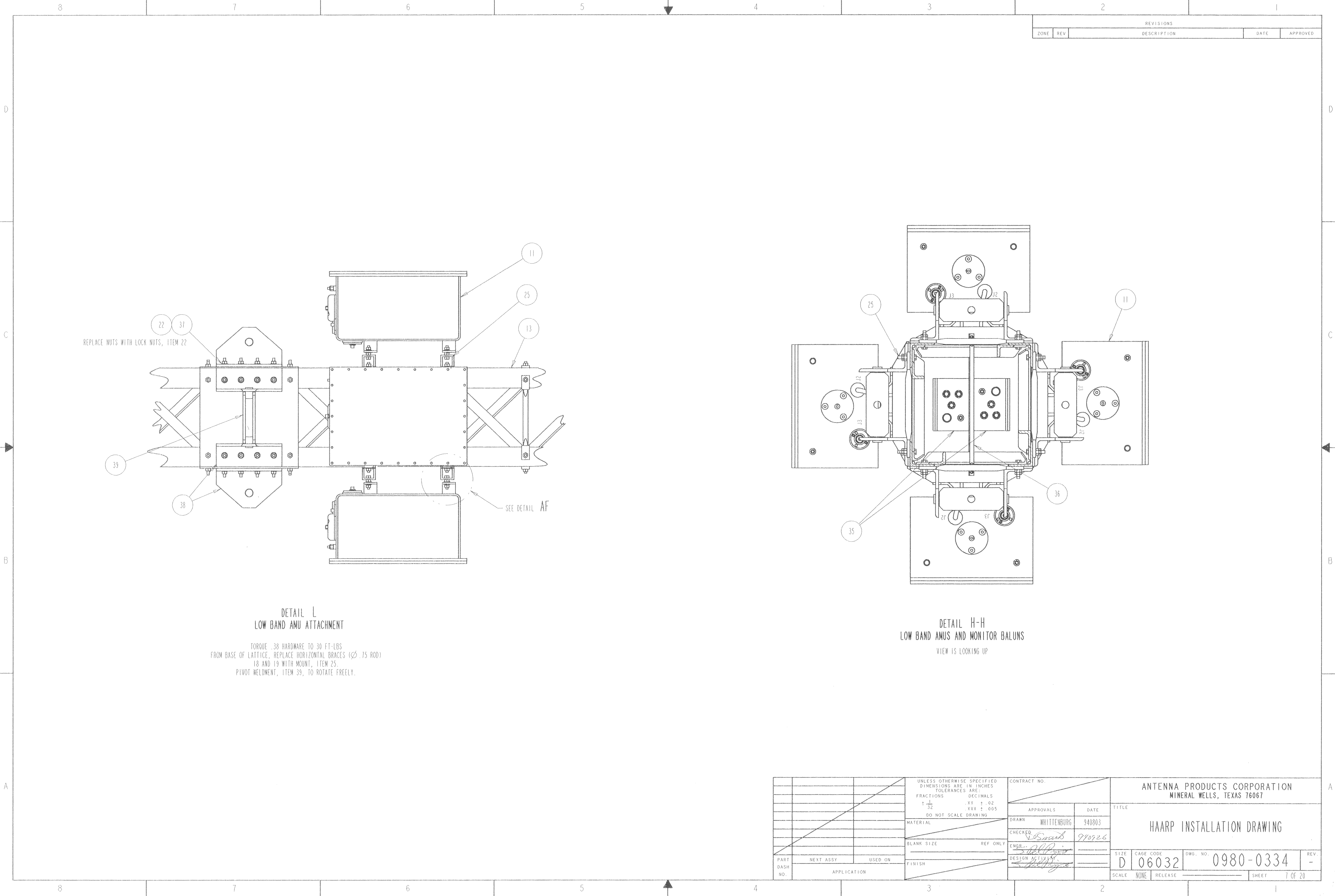
DETAIL G
HIGH BAND AMU ATTACHMENT

TORQUE ALL .38 HARDWARE TO 30 FT-LBS
PIVOT WELDMENT, ITEM 39, TO ROTATE FREELY
FROM BASE OF LATTICE, REPLACE HORIZONTAL BRACES (Ø .75 ROD)
10 AND 11 WITH MOUNT, ITEM 25.



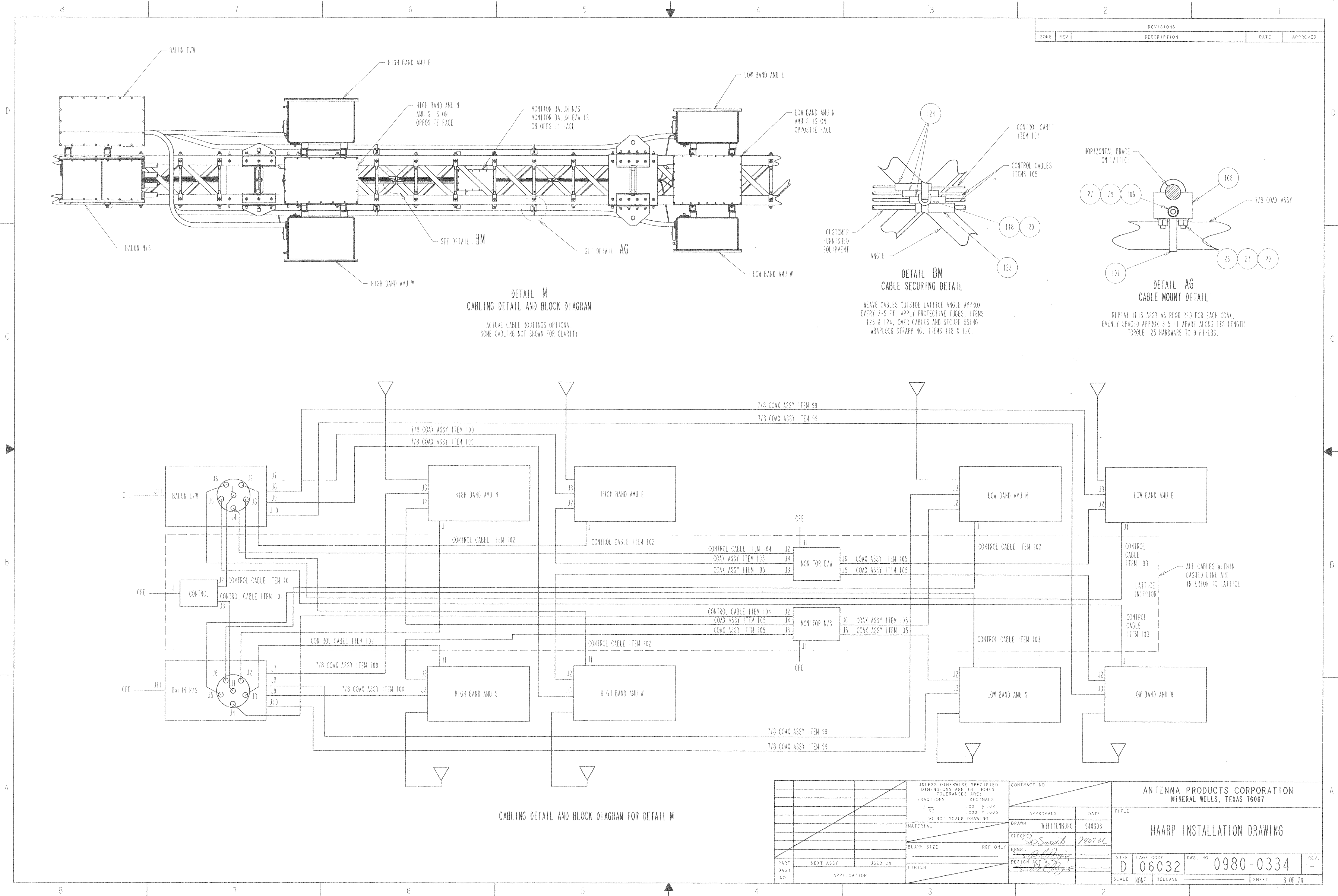
SECTION K-K
HIGH BAND AMUS AND MONITOR BALUNS
VIEW LOOKING UP

PART DASH NO. NEXT ASSY USED ON APPLICATION			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS $\pm \frac{1}{32}$.XX $\pm .02$.XXX $\pm .005$ DO NOT SCALE DRAWING		CONTRACT NO. APPROVALS DATE WHITTENBURG 940803		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
			MATERIAL BLANK SIZE FINISH		CHECKED ENGR. DESIGN ACTIVITIES		TITLE HAARP INSTALLATION DRAWING	
SIZE D 06032			CAGE CODE 0980-0334		DWG. NO. 0980-0334		REV. -	
SCALE NONE			RELEASE		SHEET 6 OF 20			

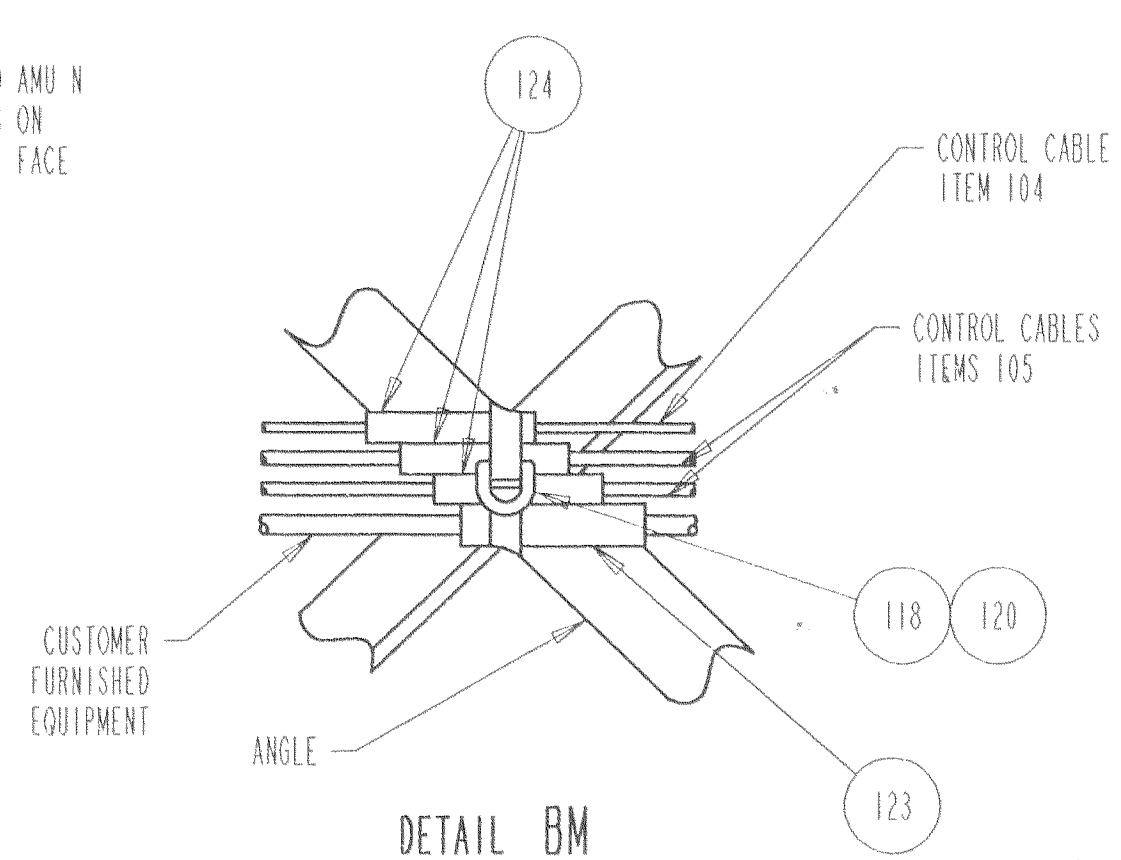


REVISIONS			
ZONE	REV	DESCRIPTION	DATE
			APPROVED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS 1/32 .005 DO NOT SCALE DRAWING	CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
	APPROVALS	DATE	TITLE	
	DRAWN WHITTENBURG	940803	HAARP INSTALLATION DRAWING	
	CHECKED <i>[Signature]</i>	940926		
MATERIAL			SIZE	CAGE CODE
BLANK SIZE			D	06032
FINISH			SCALE	RELEASE
PART DASH NO.			NONE	RELEASE
NEXT ASSY			DWG. NO.	REV.
APPLICATION			0980-0334	-
			SHEET	7 OF 20

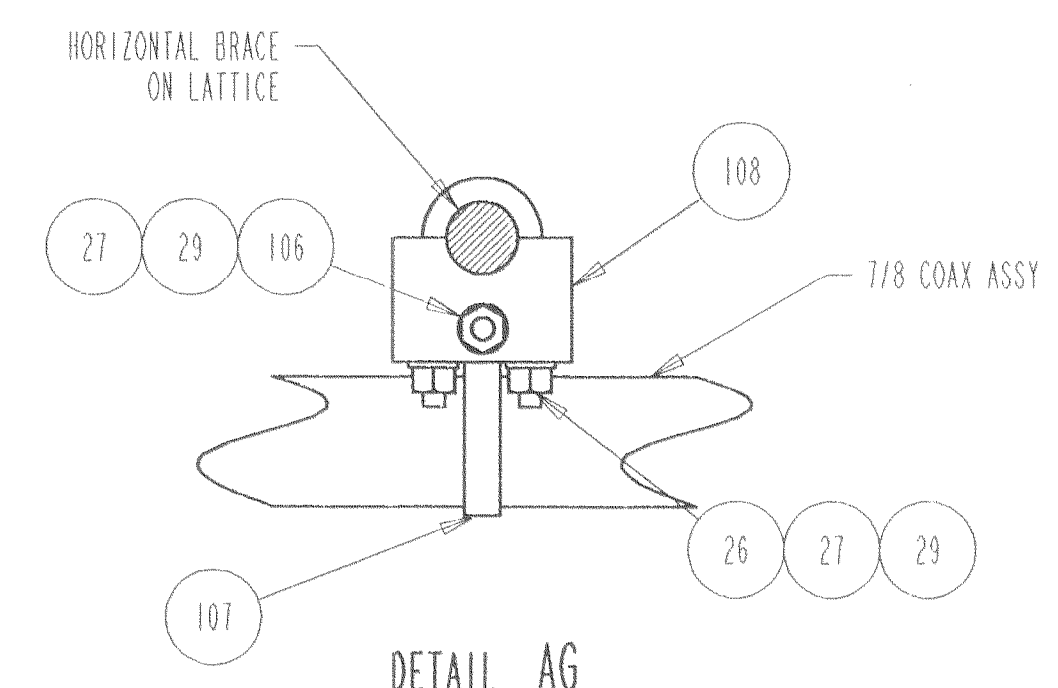


REVISIONS			
ZONE	REV	DESCRIPTION	DATE
		APPROVED	



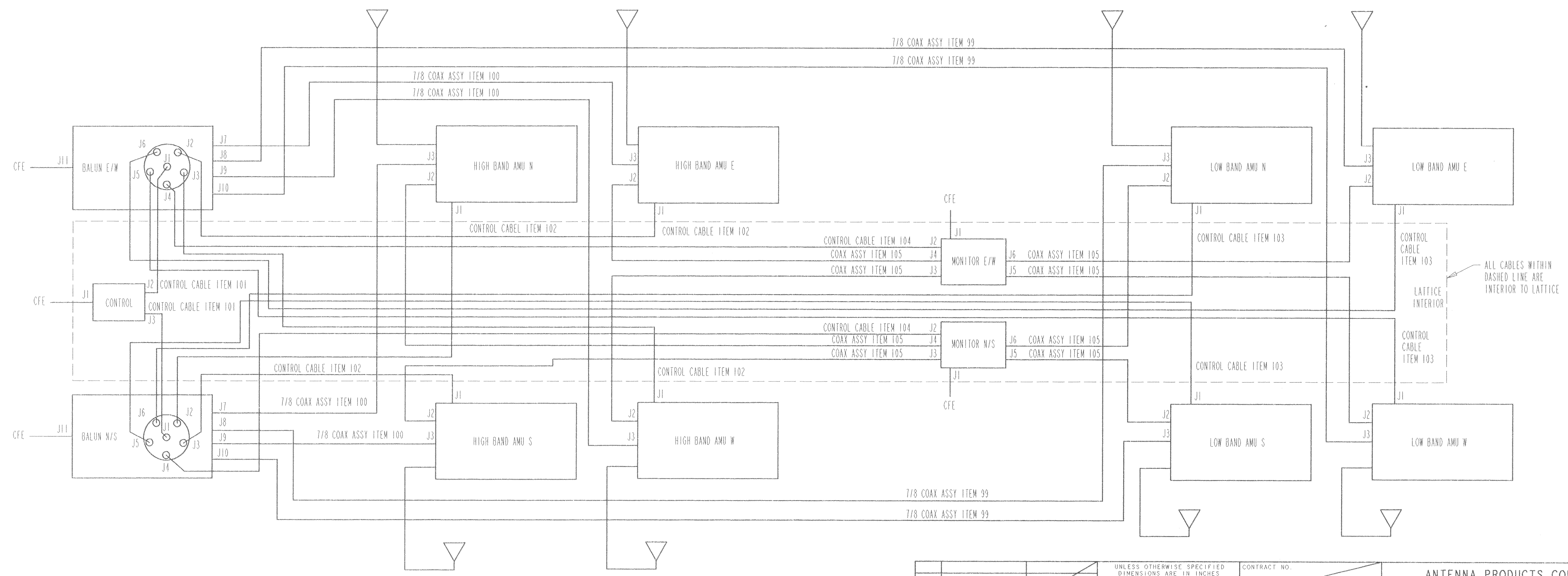
DETAIL BM
CABLE SECURING DETAIL

WEAVE CABLES OUTSIDE LATTICE ANGLE APPROX EVERY 3-5 FT. APPLY PROTECTIVE TUBES, ITEMS 123 & 124, OVER CABLES AND SECURE USING WRAPLOCK STRAPPING, ITEMS 118 & 120.



DETAIL AG
CABLE MOUNT DETAIL

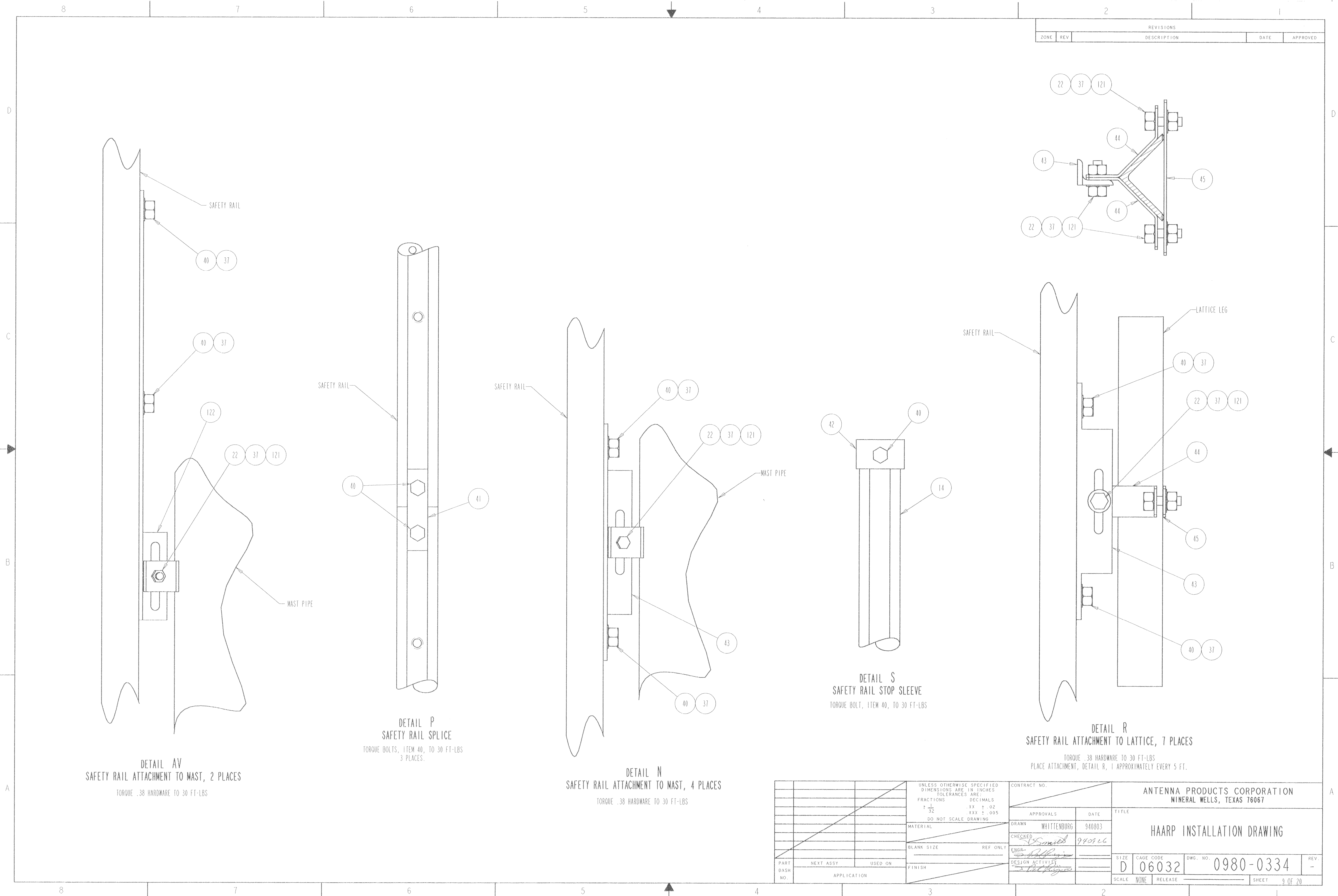
REPEAT THIS ASSY AS REQUIRED FOR EACH COAX, EVENLY SPACED APPROX 3-5 FT APART ALONG ITS LENGTH TORQUE .25 HARDWARE TO 9 FT-LBS.



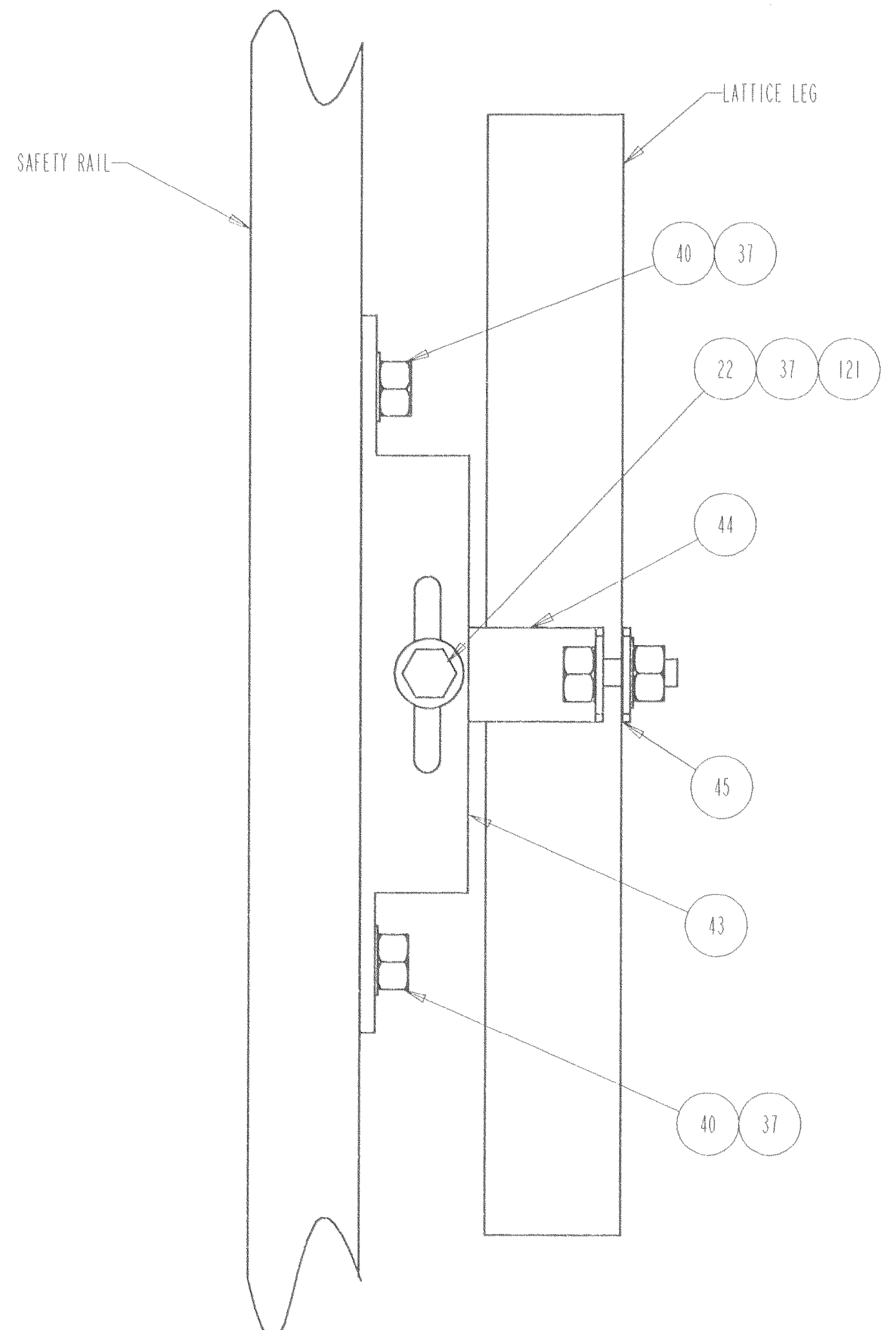
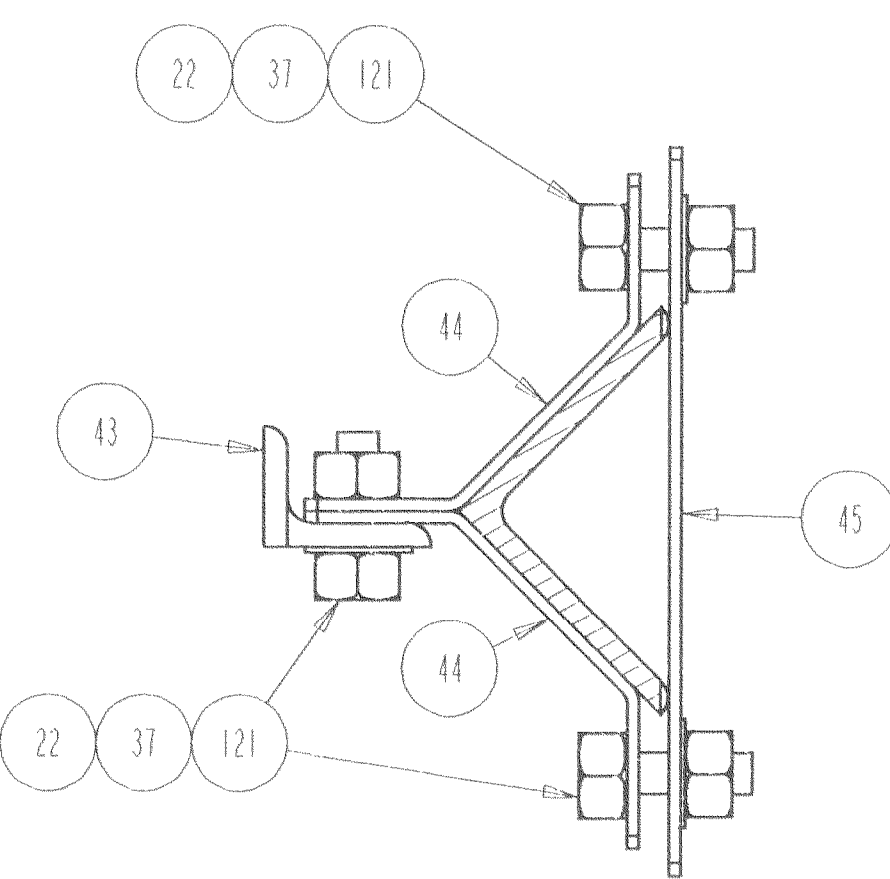
CABLING DETAIL AND BLOCK DIAGRAM FOR DETAIL M

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ± 1/32 ± .02 ± .005 ± .005 DO NOT SCALE DRAWING		CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
MATERIAL		APPROVALS		DATE	
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FINISH		CHECKED		940922	
PART DASH NO.		ENGR.		DESIGN ACTIVITY	
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SHEET		8 OF 20		REV.	

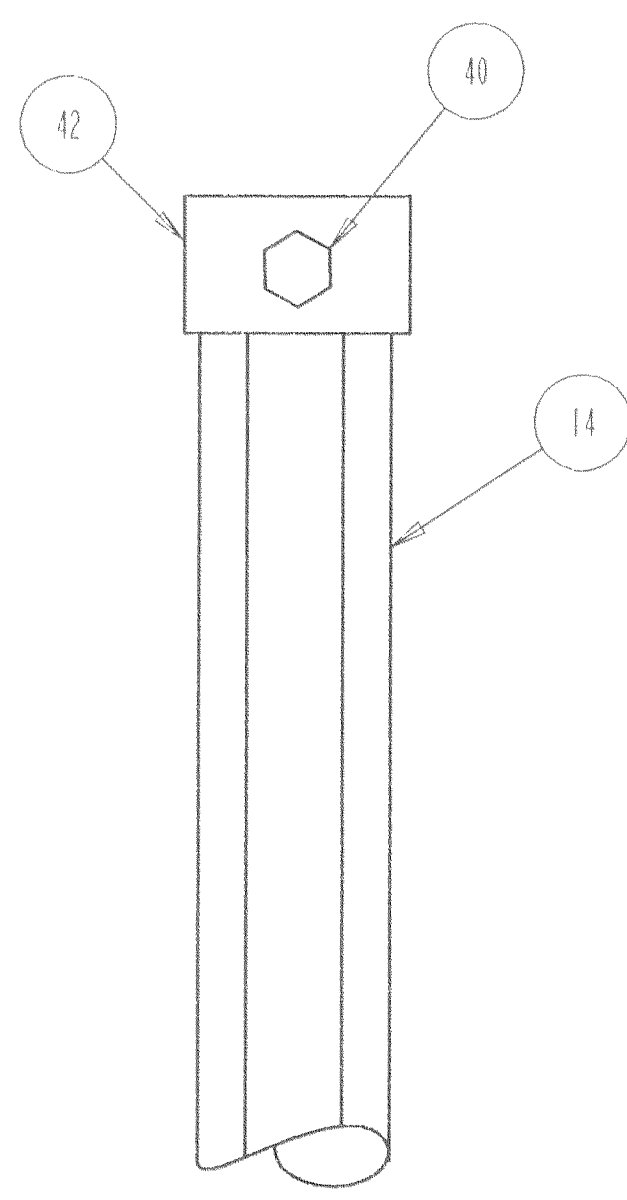
SIZE	CAGE CODE	DWG. NO.	REV.
D	06032	0980-0334	-



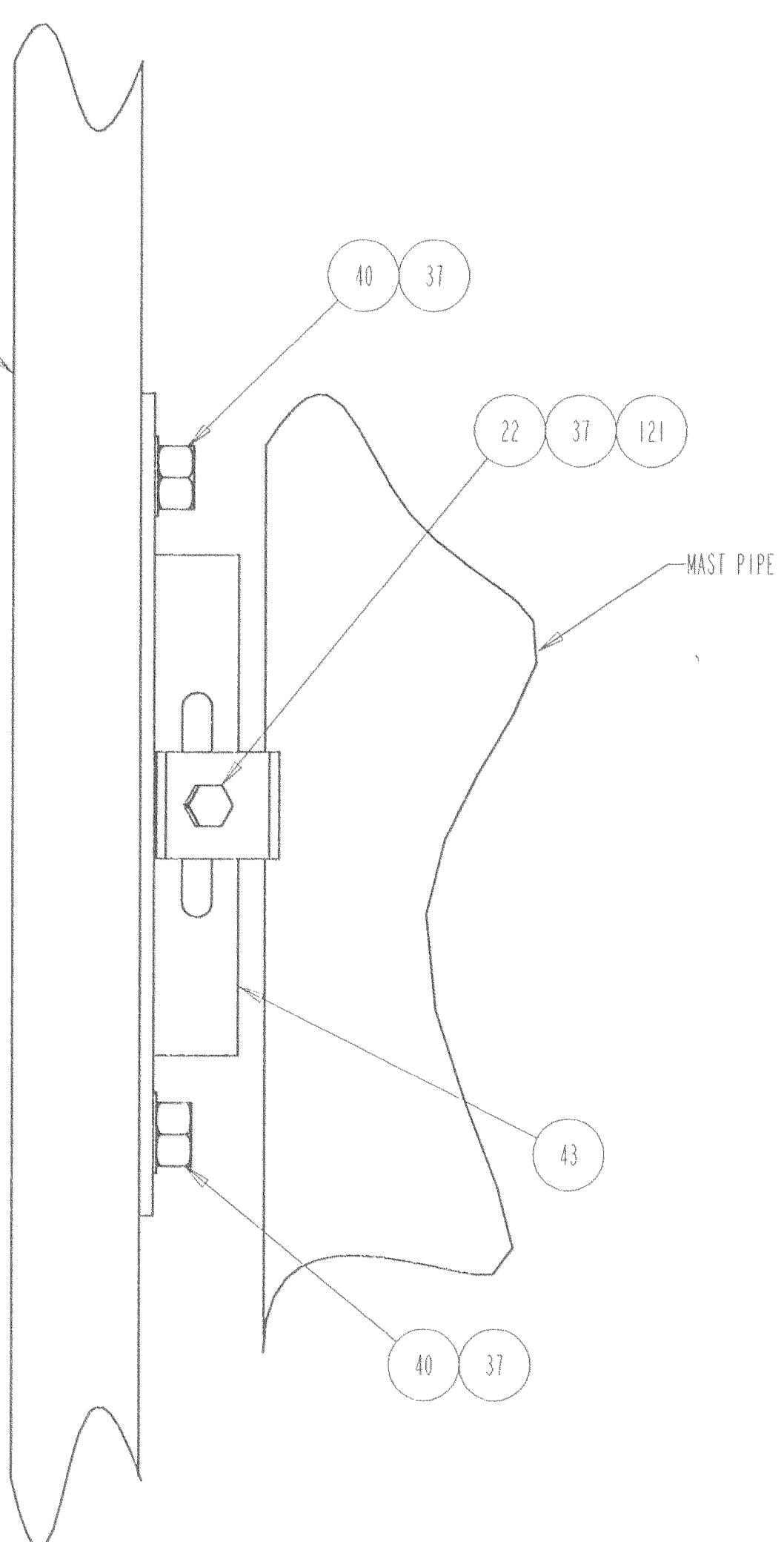
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



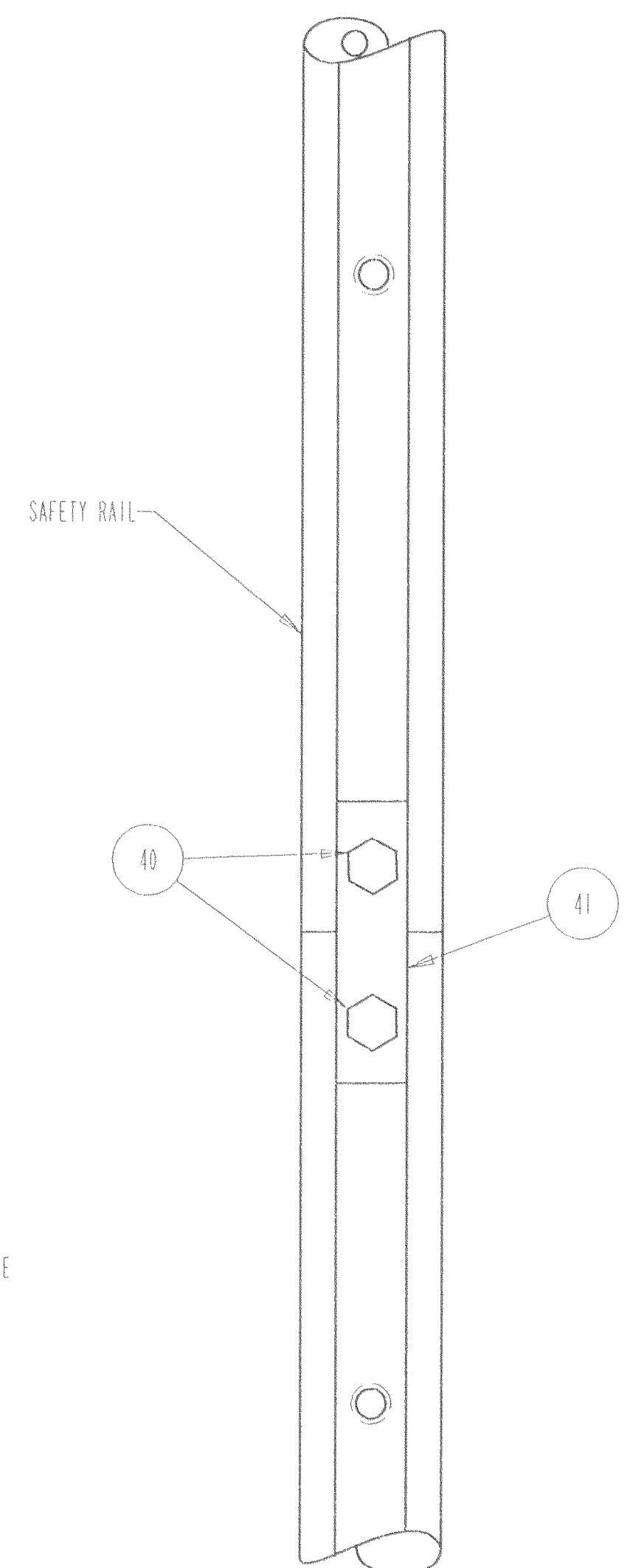
DETAIL R
SAFETY RAIL ATTACHMENT TO LATTICE, 7 PLACES
TORQUE .38 HARDWARE TO 30 FT-LBS
PLACE ATTACHMENT, DETAIL R, 1 APPROXIMATELY EVERY 5 FT.



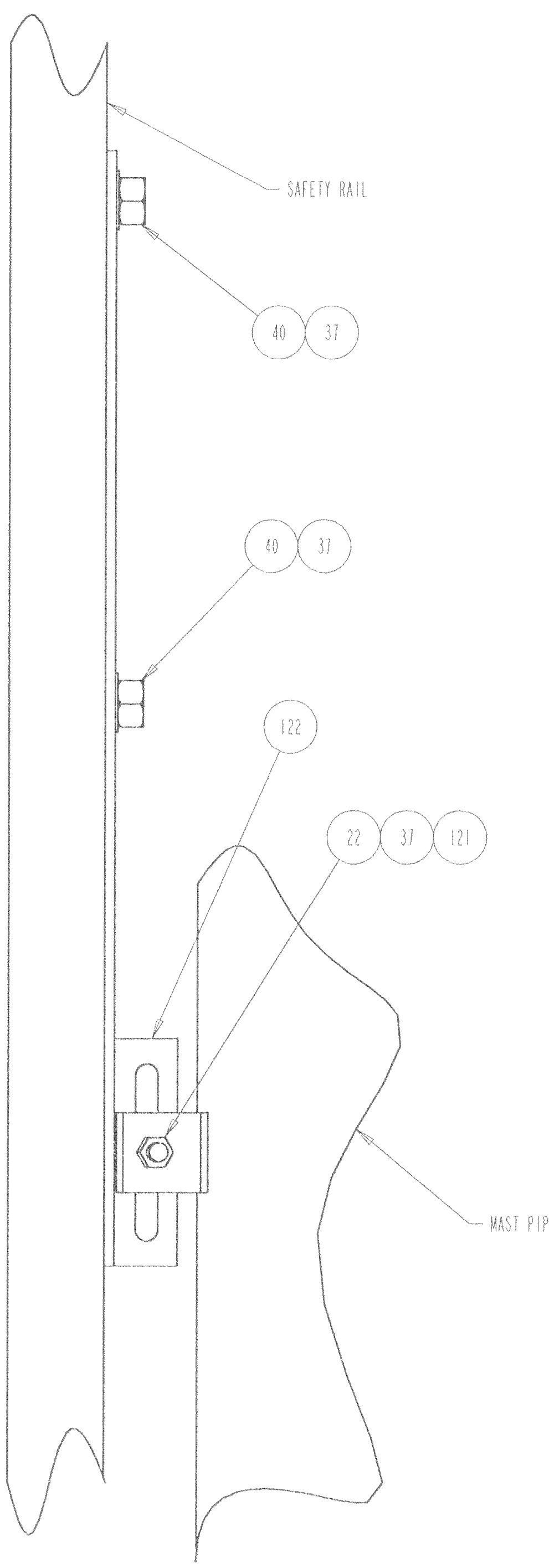
DETAIL S
SAFETY RAIL STOP SLEEVE
TORQUE BOLT, ITEM 40, TO 30 FT-LBS



DETAIL N
SAFETY RAIL ATTACHMENT TO MAST, 4 PLACES
TORQUE .38 HARDWARE TO 30 FT-LBS

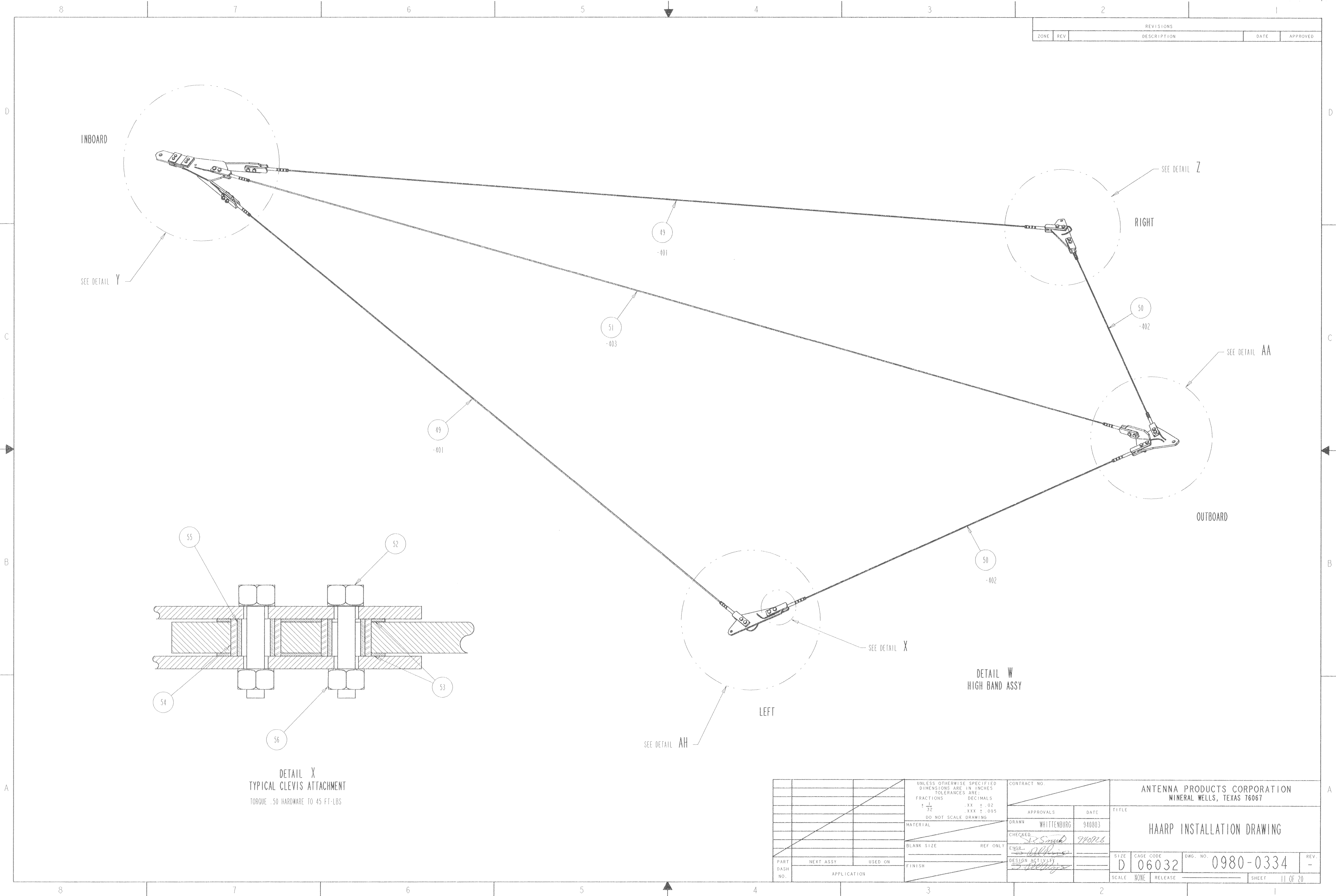


DETAIL P
SAFETY RAIL SPLICE
TORQUE BOLTS, ITEM 40, TO 30 FT-LBS
3 PLACES.



DETAIL AV
SAFETY RAIL ATTACHMENT TO MAST, 2 PLACES
TORQUE .38 HARDWARE TO 30 FT-LBS

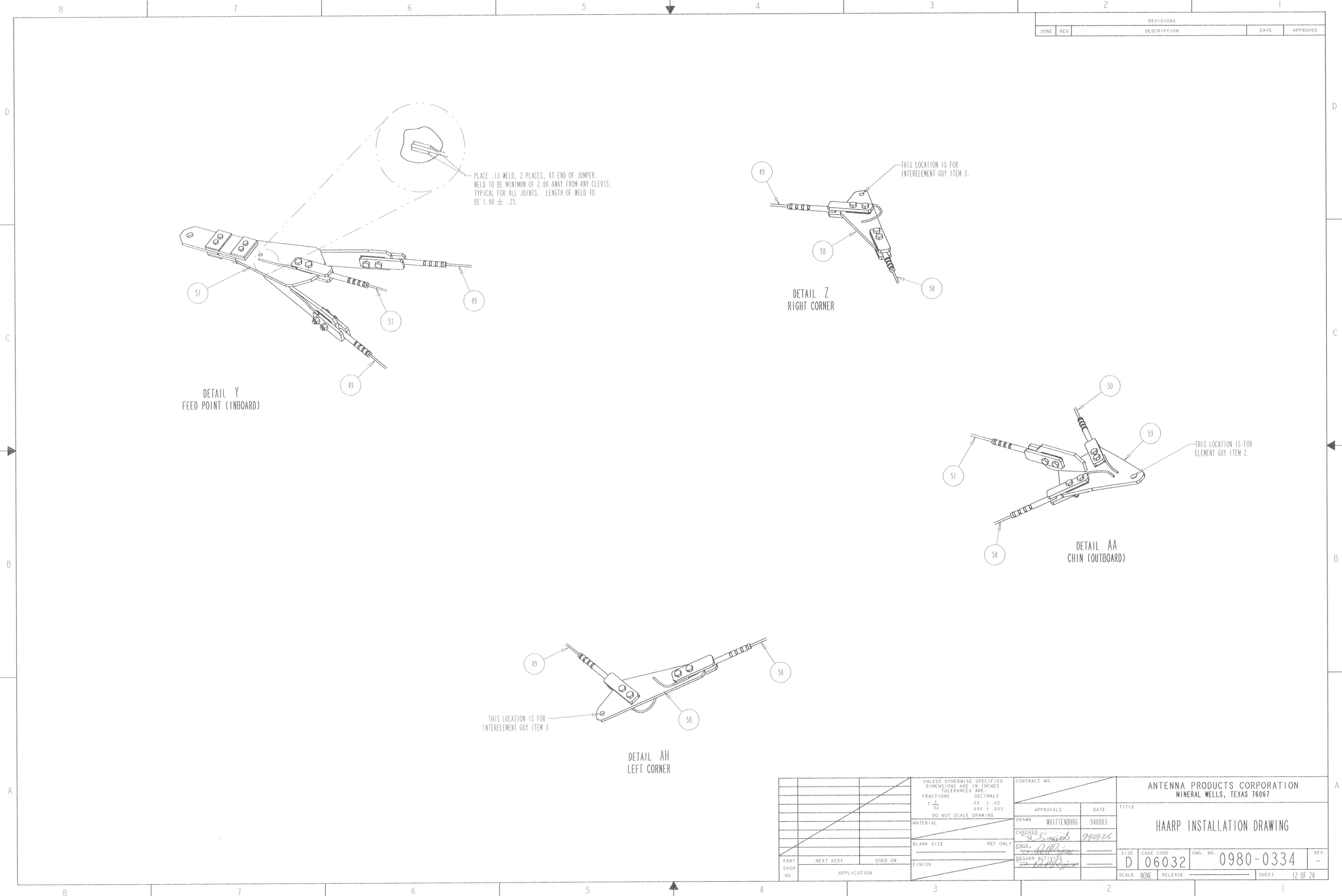
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APPLICATION							DESIGN ACTIVITY <i>[Signature]</i>		SCALE		NONE		RELEASE		SHEET	
															9 OF 20	



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

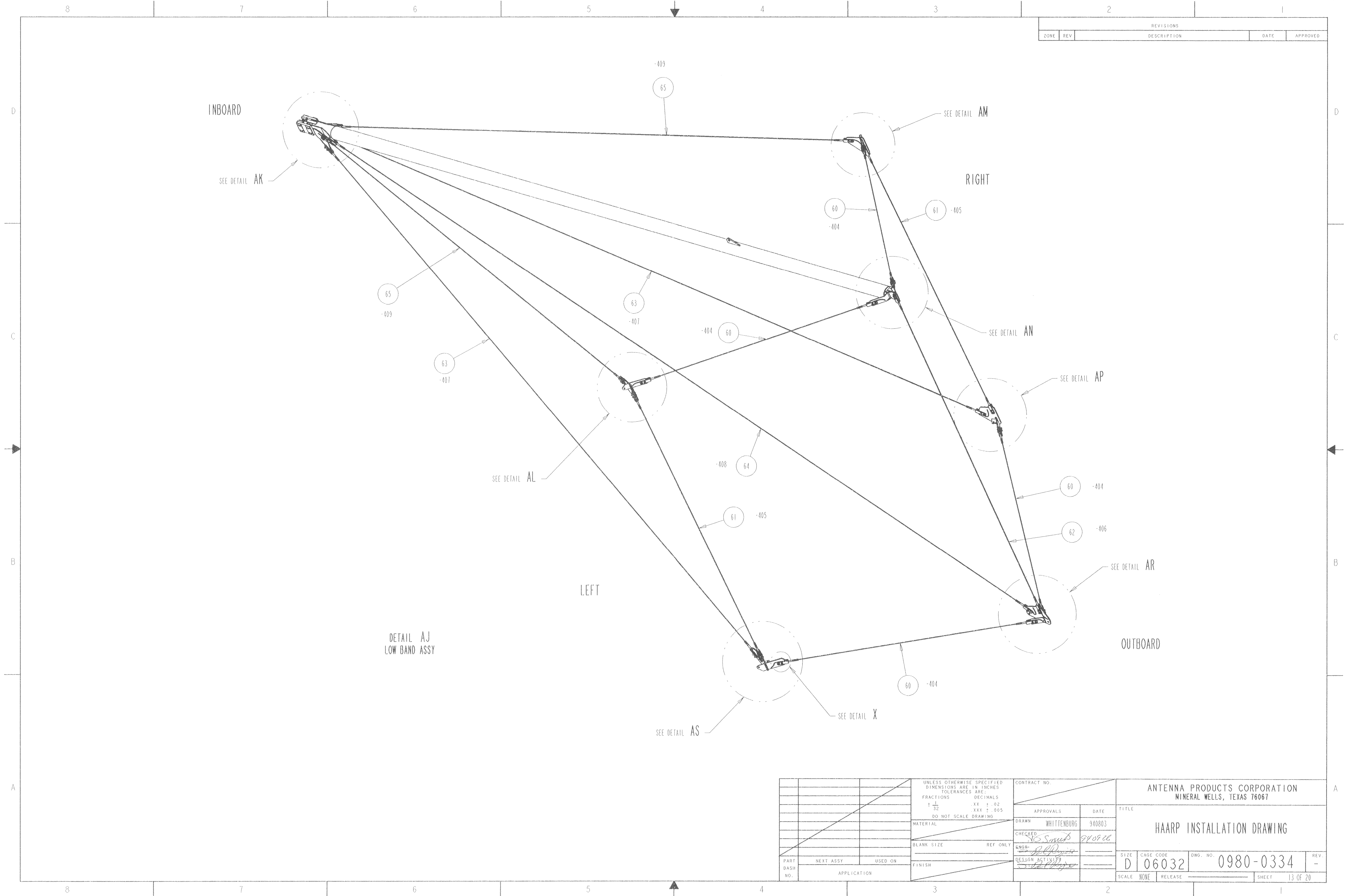
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS .XX ±.02 DECIMALS .XX ±.02 XXX ±.005 DO NOT SCALE DRAWING			CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
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MATERIAL			DRAWN	WHITTENBURG	940803	HAARP INSTALLATION DRAWING
BLANK SIZE			CHECKED	<i>[Signature]</i>	940926	
FINISH			ENGR.	<i>[Signature]</i>		
DESIGN ACTIVITY			<i>[Signature]</i>			
PART DASH NO.	NEXT ASSY	USED ON	SCALE		NONE	RELEASE
APPLICATION		SHEET		11 OF 20		

SIZE	CAGE CODE	DWG. NO.	REV.
D	06032	0980-0334	-



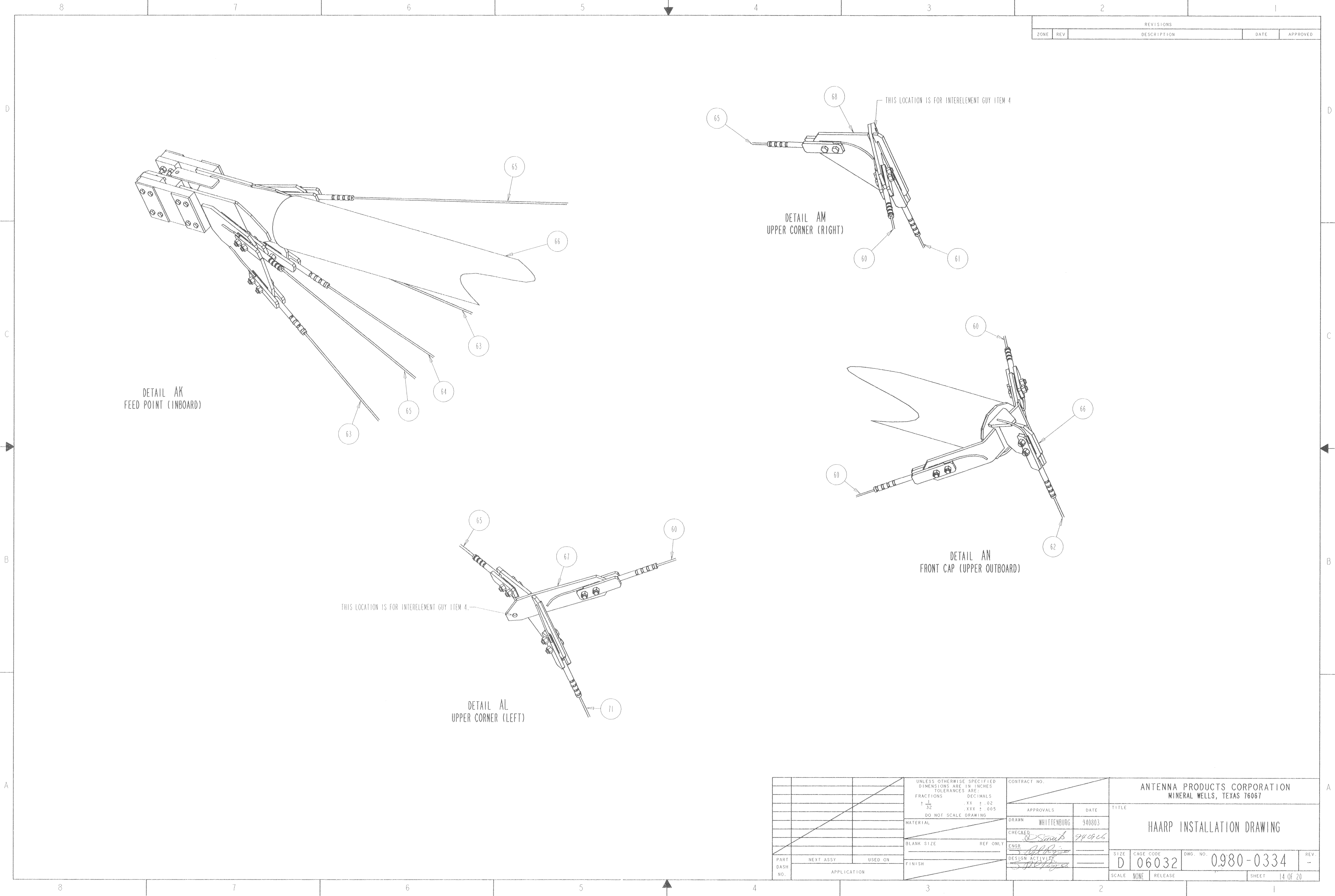
REVISIONS			
ZONE	REV	DESCRIPTION	DATE
			APPROVED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS $\pm \frac{1}{32}$.XX $\pm .02$ XXX $\pm .005$ DO NOT SCALE DRAWING	CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
	APPROVALS		DATE	
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	CHECKED		940926	
NEXT ASSY		USED ON		SIZE D 06032
APPLICATION		FINISH		
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				SHEET 12 OF 20



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

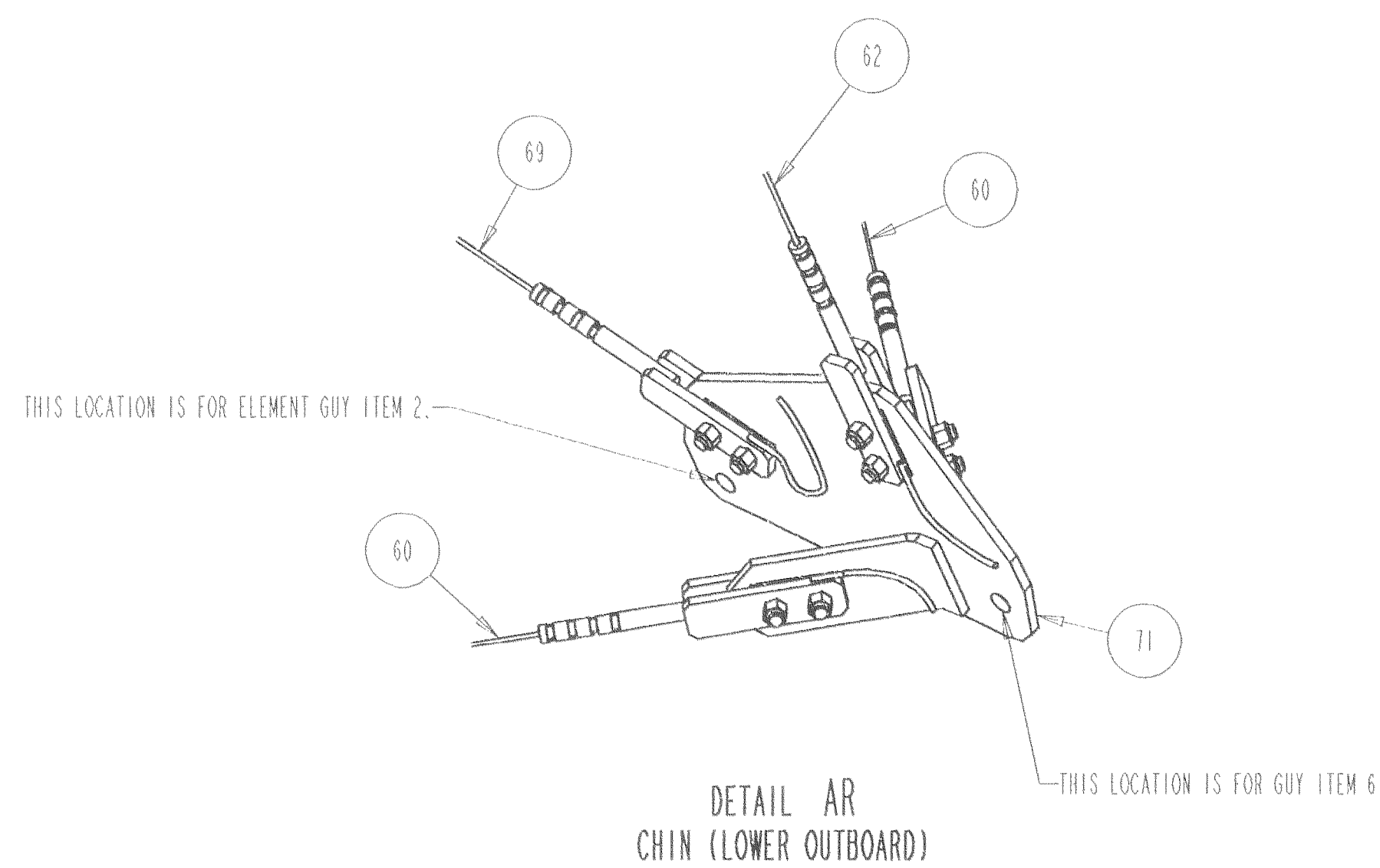
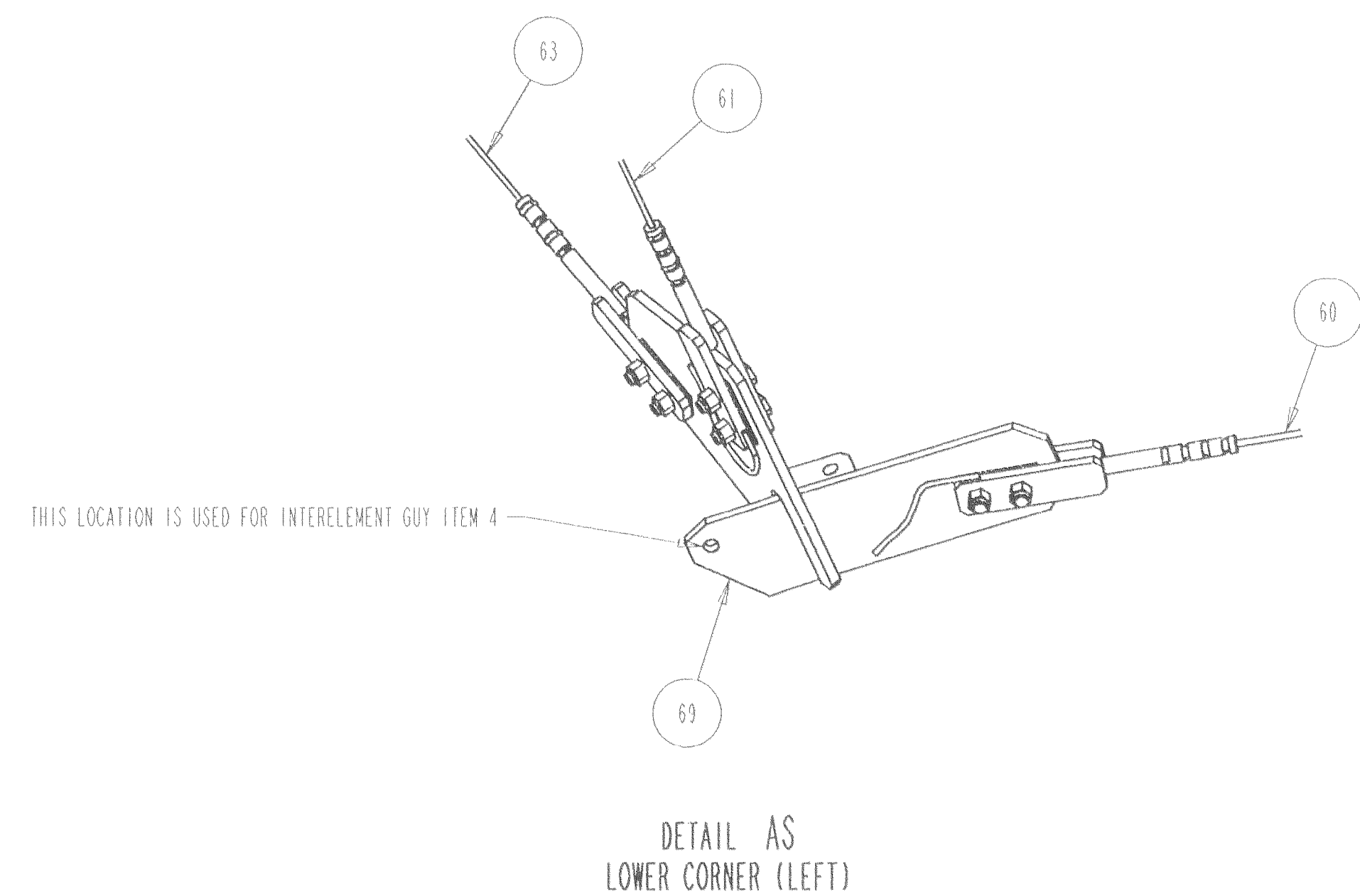
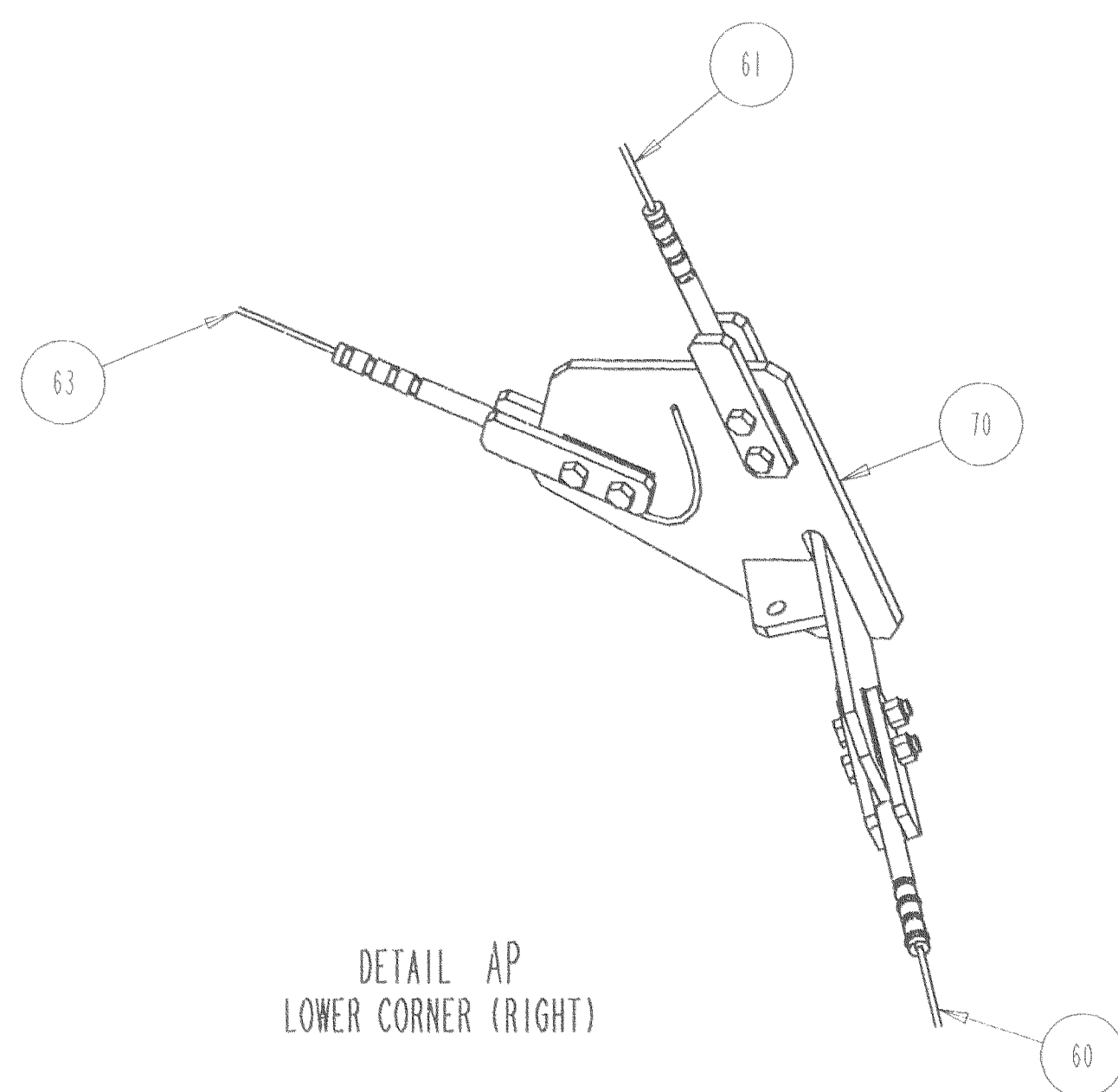
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APPLICATION								



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS 1/32 .XX ±.02 XXX ±.005 DO NOT SCALE DRAWING			CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067			
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



			UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS $\pm \frac{1}{32}$.XX $\pm$.02 .XXX $\pm$.005 DO NOT SCALE DRAWING			CONTRACT NO. _____		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067					
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			FINISH _____			CHECKED <i>D. Smith</i> _____		940826 _____		SIZE _____ CAGE CODE _____ DWG. NO. 0980-0334 REV. -			
PART DASH NO. _____ NEXT ASSY _____ USED ON _____ APPLICATION _____			ENGR. <i>D. Smith</i> _____		DESIGN ACTIVITY <i>D. Smith</i> _____		SCALE NONE _____ RELEASE _____		SHEET 2 OF 20				

NOTES:

4. THE SLEEVES AT THE ENDS OF THE GROUND SCREEN WIRES ARE TO BE MAINTAINED IN AN "UP" ON ONE SCREEN TOWARD "DOWN" ON AN ADJACENT SCREEN ORIENTATION AT ALL INTERIOR GROUND SCREEN CATENARIES. THE CORNER SCREENS AND SOME GROUND SCREENS MUST BE ROTATED AND/OR "FLIPPED" TO ACHIEVE THE NECESSARY ORIENTATION.
5. SEE FOLLOWING DETAILS FOR GROUND SCREEN ATTACHMENTS:
DETAIL AY: CATENARY TO TOWER ATTACHMENT.
DETAIL AZ: PERIMETER AND CORNER CATENARY TO GROUND SCREEN.
DETAIL BF: INTERIOR CATENARY TO GROUND SCREENS.

LEGEND

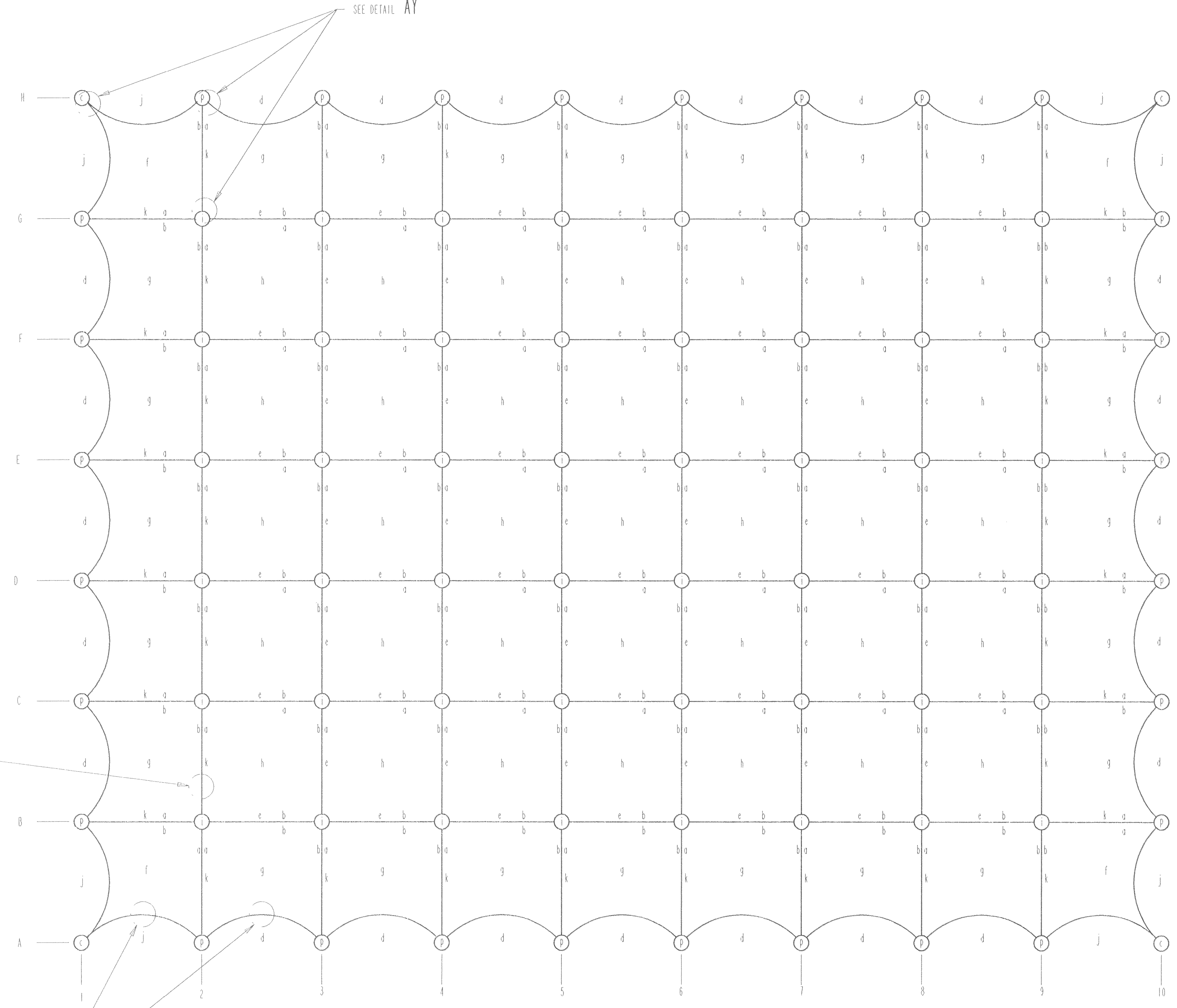
ID	FIND NO.	DESCRIPTION
a	-	INDICATES LOCATION OF SCREEN SIDE WITH THE SHORT ("A") TAG
b	-	INDICATES LOCATION OF SCREEN SIDE WITH THE LONG ("B") TAG
c	24	CORNER STUB TOWER
d	72	PERIMETER GROUND SCREEN CATENARY
e	73	INTERIOR GROUND SCREEN CATENARY -401
f	74	CORNER GROUND SCREEN ASSY
g	75	PERIMETER GROUND SCREEN ASSY
h	76	INTERIOR GROUND SCREEN ASSY
i	-	ANTENNA TOWER
j	77	CORNER GROUND SCREEN CATENARY
k	85	INTERIOR GROUND SCREEN CATENARY -402
p	23	PERIMETER TOWER

DETAIL AT
GROUND SCREEN LAYOUT

SEE DETAIL BF

SEE DETAIL AZ

SEE DETAIL AY

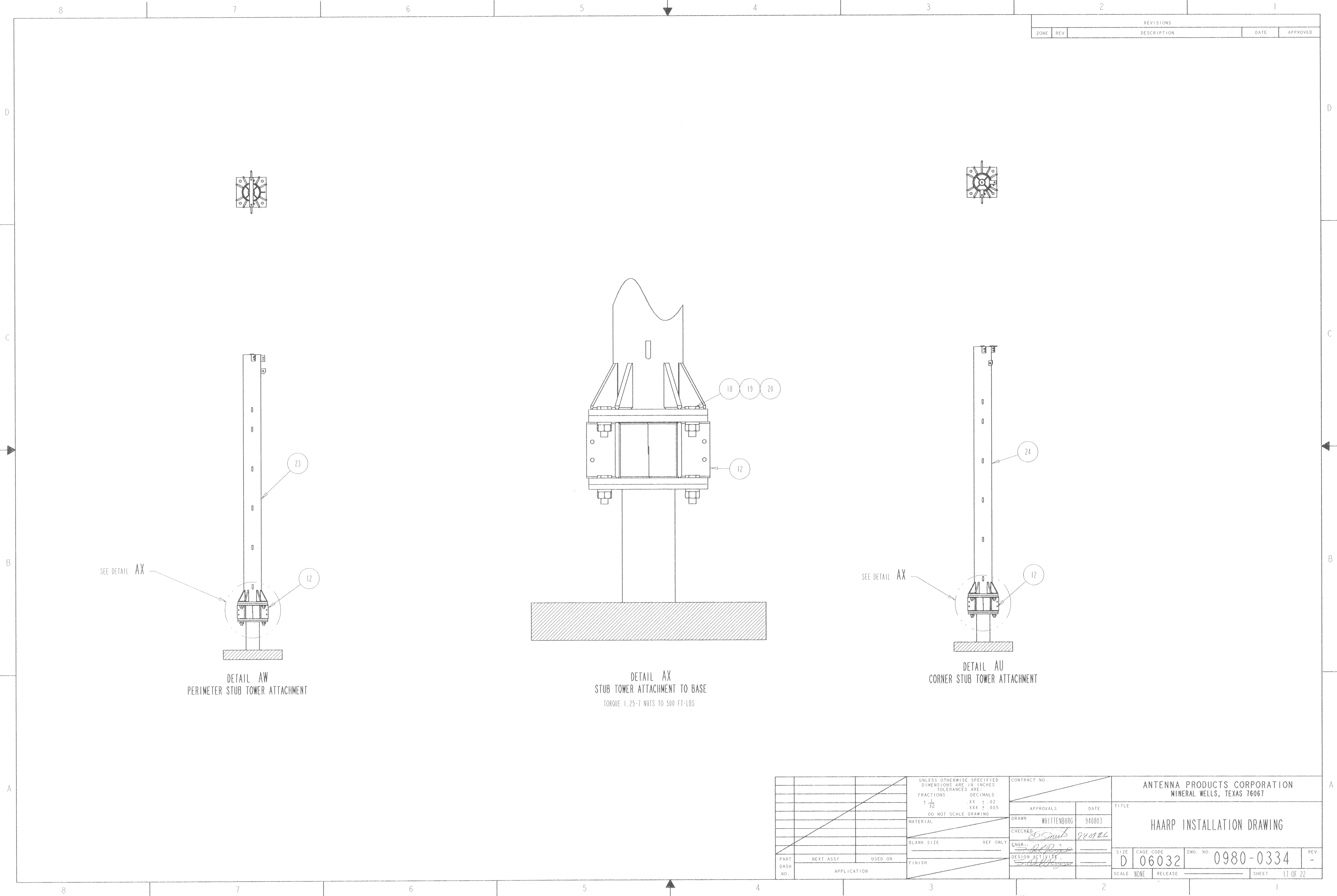


REVISIONS			
ZONE	REV	DESCRIPTION	DATE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS 1/32 .02 XXX .005 DO NOT SCALE DRAWING	CONTRACT NO. APPROVALS DRAWN WHITTENBURG CHECKED [Signature] ENGR [Signature] DESIGN ACTIVITY [Signature]	DATE 940803	TITLE HAARP INSTALLATION DRAWING		
PART DASH NO.	NEXT ASSY	USED ON	SCALE NONE	RELEASE	SHEET 16 OF 20

ANTENNA PRODUCTS CORPORATION
MINERAL WELLS, TEXAS 76067

SIZE CAGE CODE DWG. NO. 0980-0334 REV. -



REVISIONS			
ZONE	REV	DESCRIPTION	DATE

DETAIL AW
PERIMETER STUB TOWER ATTACHMENT

DETAIL AX
STUB TOWER ATTACHMENT TO BASE
TORQUE 1.25-1 NUTS TO 500 FT-LBS

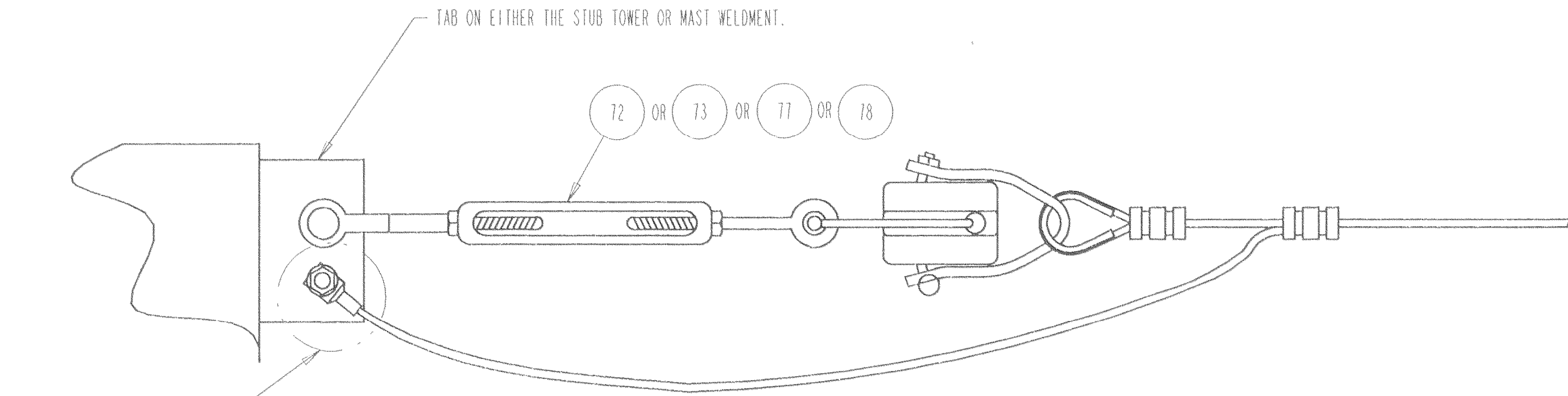
DETAIL AU
CORNER STUB TOWER ATTACHMENT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS 1/32 .XX ± .02 XXX ± .005 DO NOT SCALE DRAWING			CONTRACT NO.		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
			APPROVALS			
			DATE			
			TITLE			
MATERIAL			DRAWN WHITTENBURG		940803	
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FINISH			ENGR. <i>RLR</i>			
DESIGN ACTIVITY			<i>RLR</i>			
PART DASH NO.	NEXT ASSY	USED ON	SCALE NONE		RELEASE	SHEET 17 OF 22

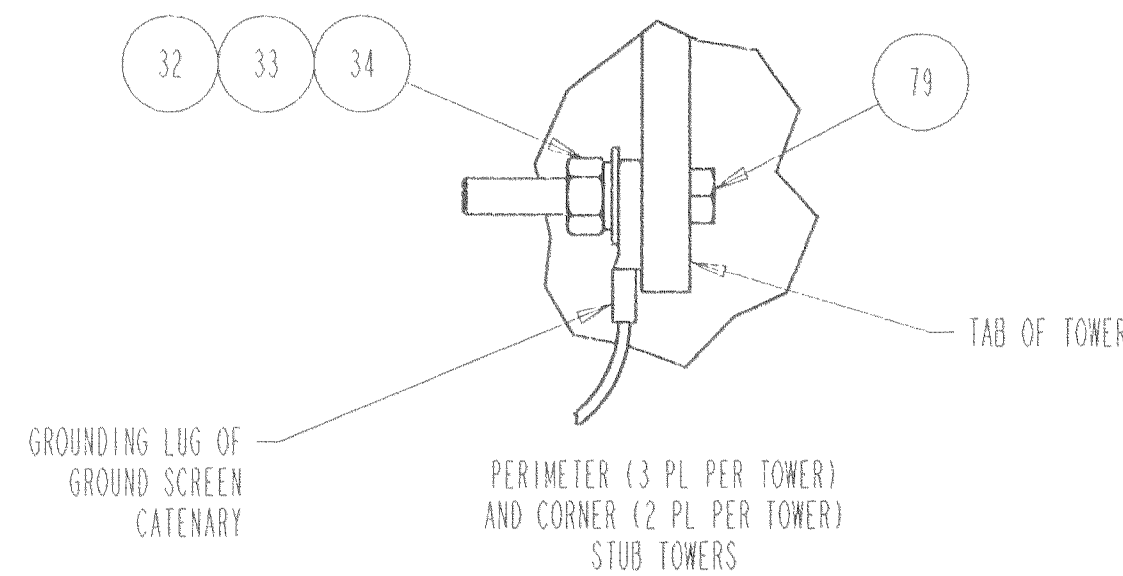
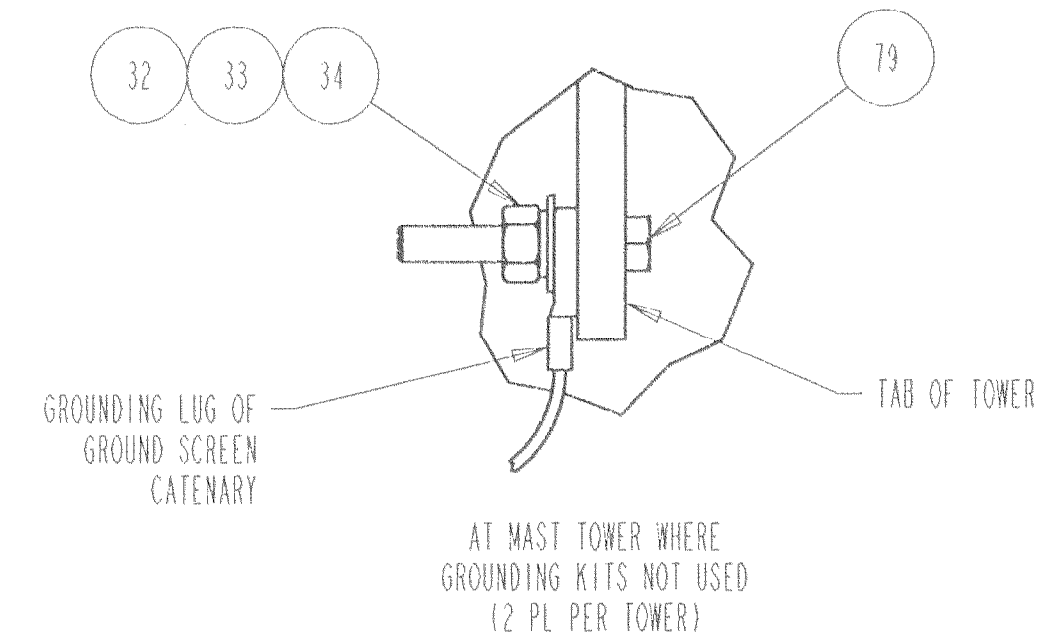
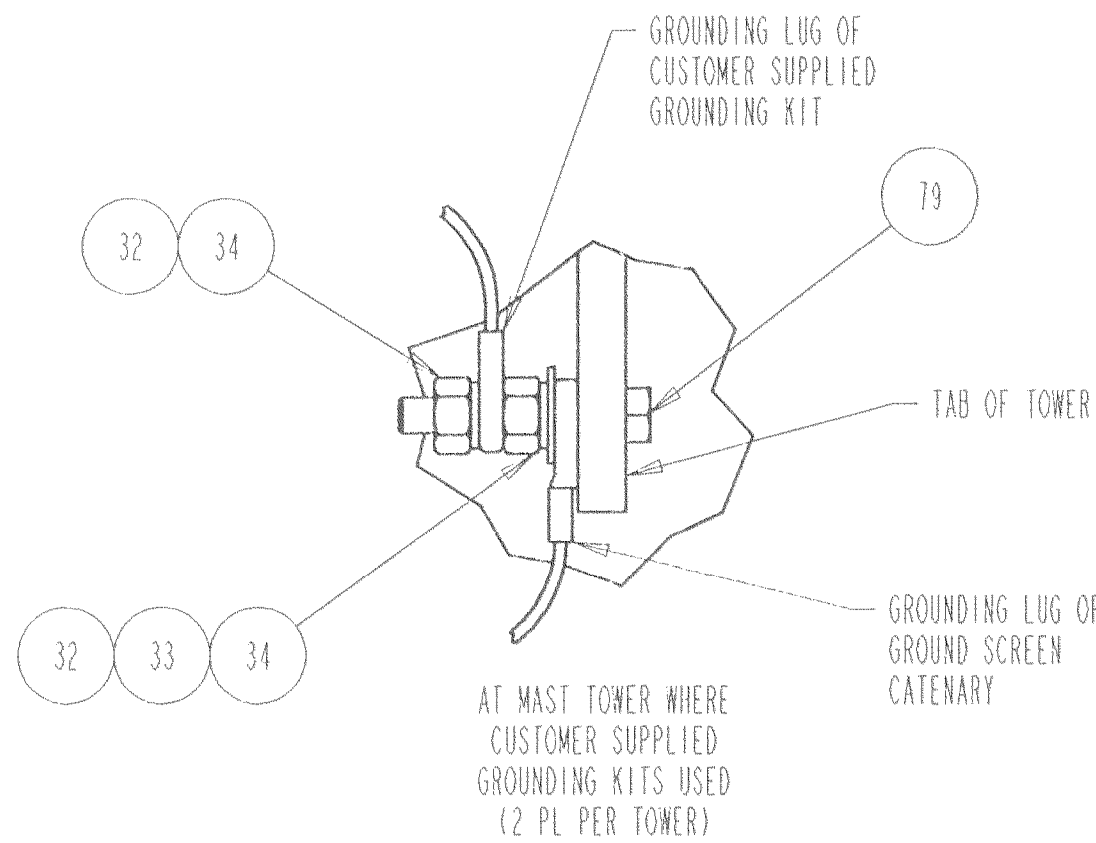
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D	06032	0980-0334	-

NOTES:

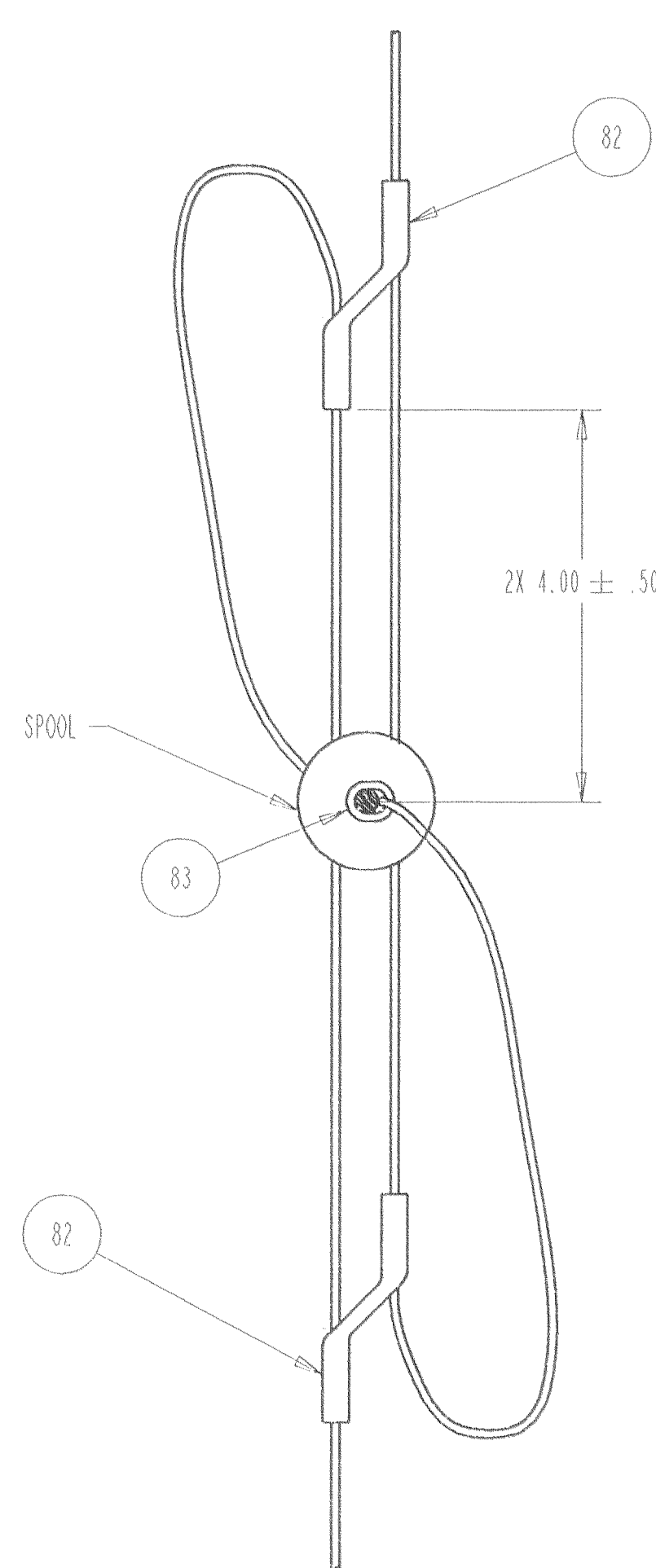
6. PRIOR TO CRIMPING SLEEVE, ITEM 82, AND TAP, ITEM 83, CLEAN WIRE WITH DENATURED ALCOHOL TO REMOVE ALL FOREIGN RESIDUE. ABRASE CLEANED SURFACE OF WIRE WITH SCOTCH-BRITE TO REMOVE ALUMINUM OXIDE LAYER ONLY. CRIMP PER DETAIL AZ AND/OR BF.



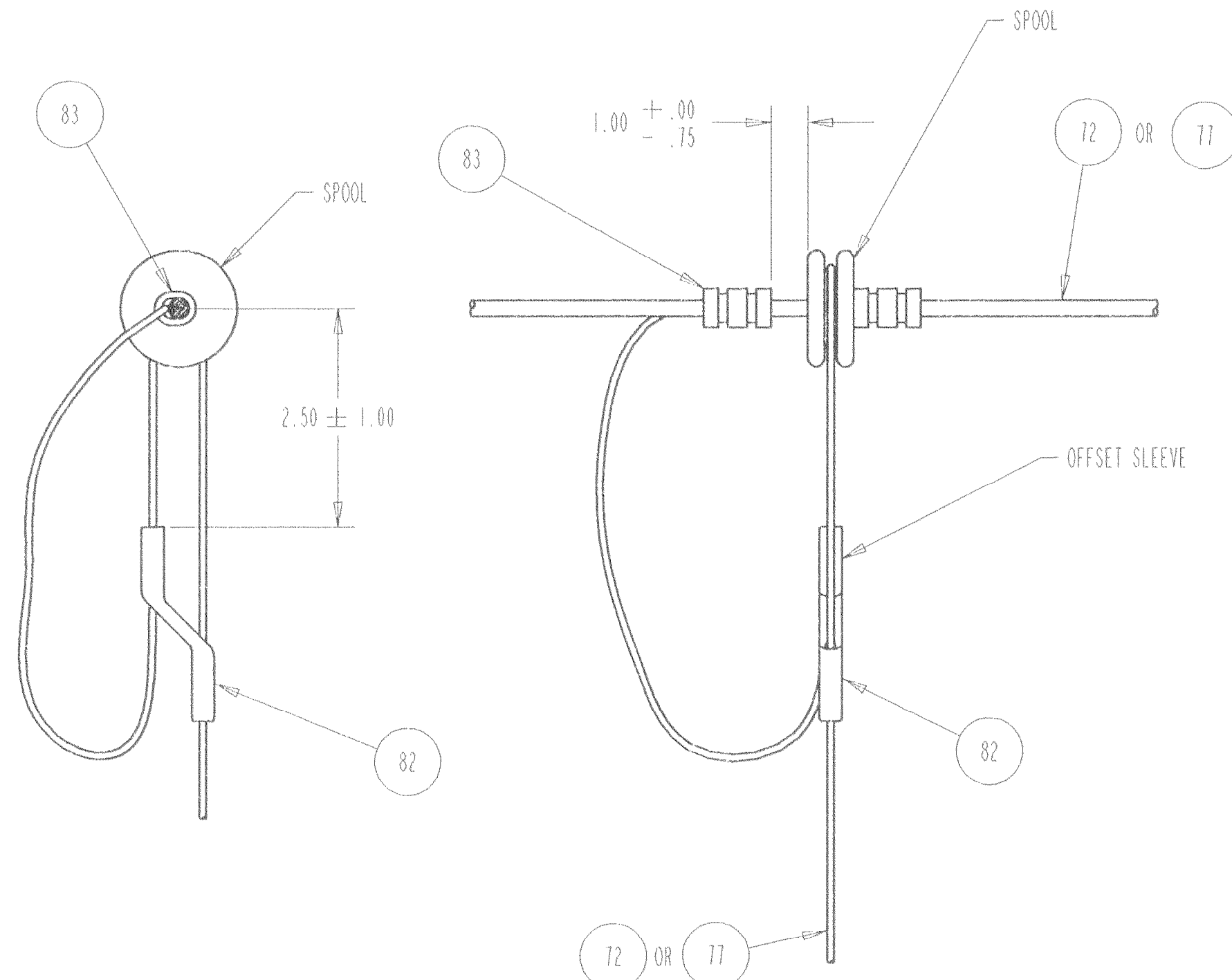
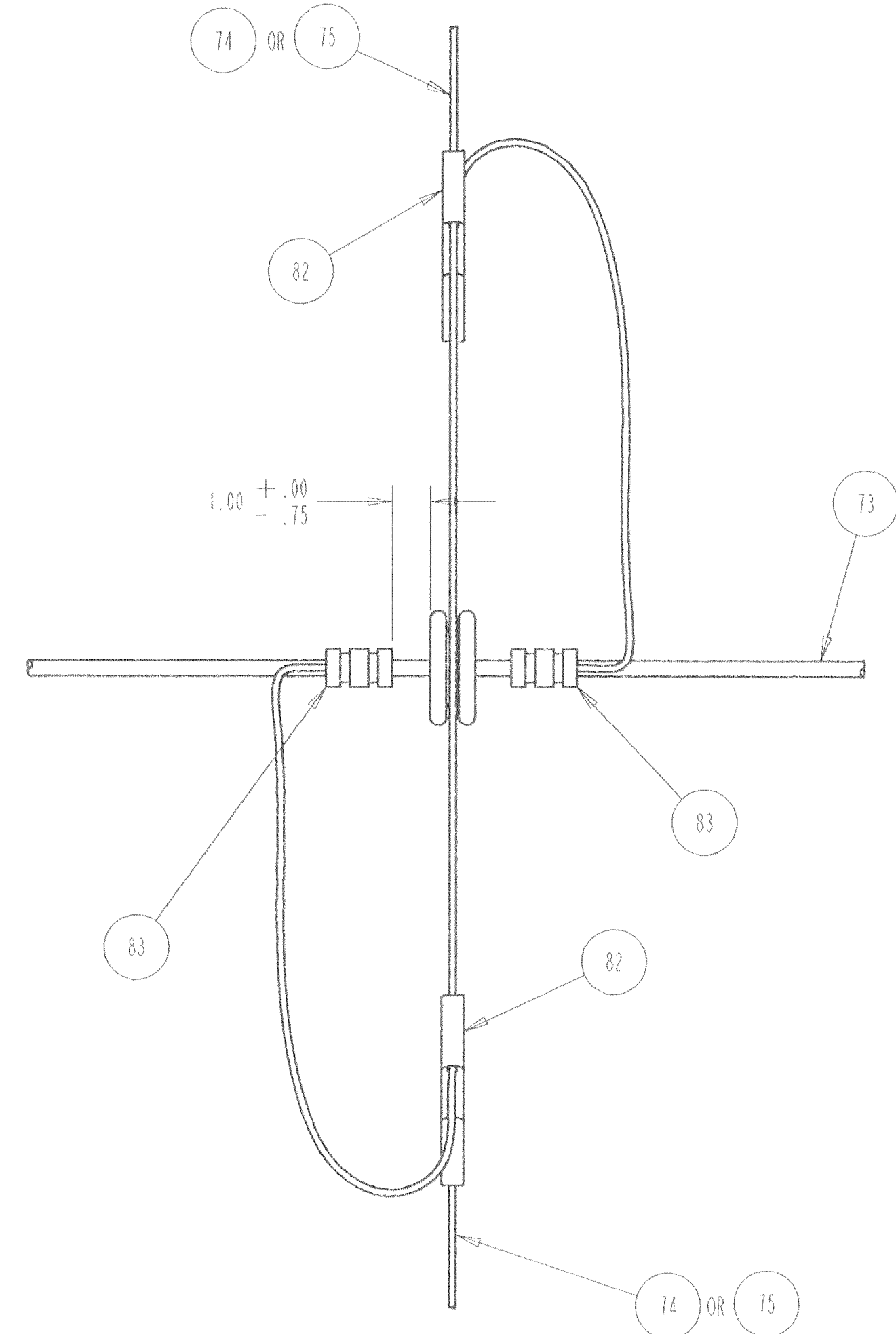
DETAIL AY
CATENARY TO TOWER ATTACHMENT
TORQUE .38 HARDWARE TO 30 FT-LBS.



DETAIL BN
GROUNDING CONFIGURATIONS
ROTATED 90°



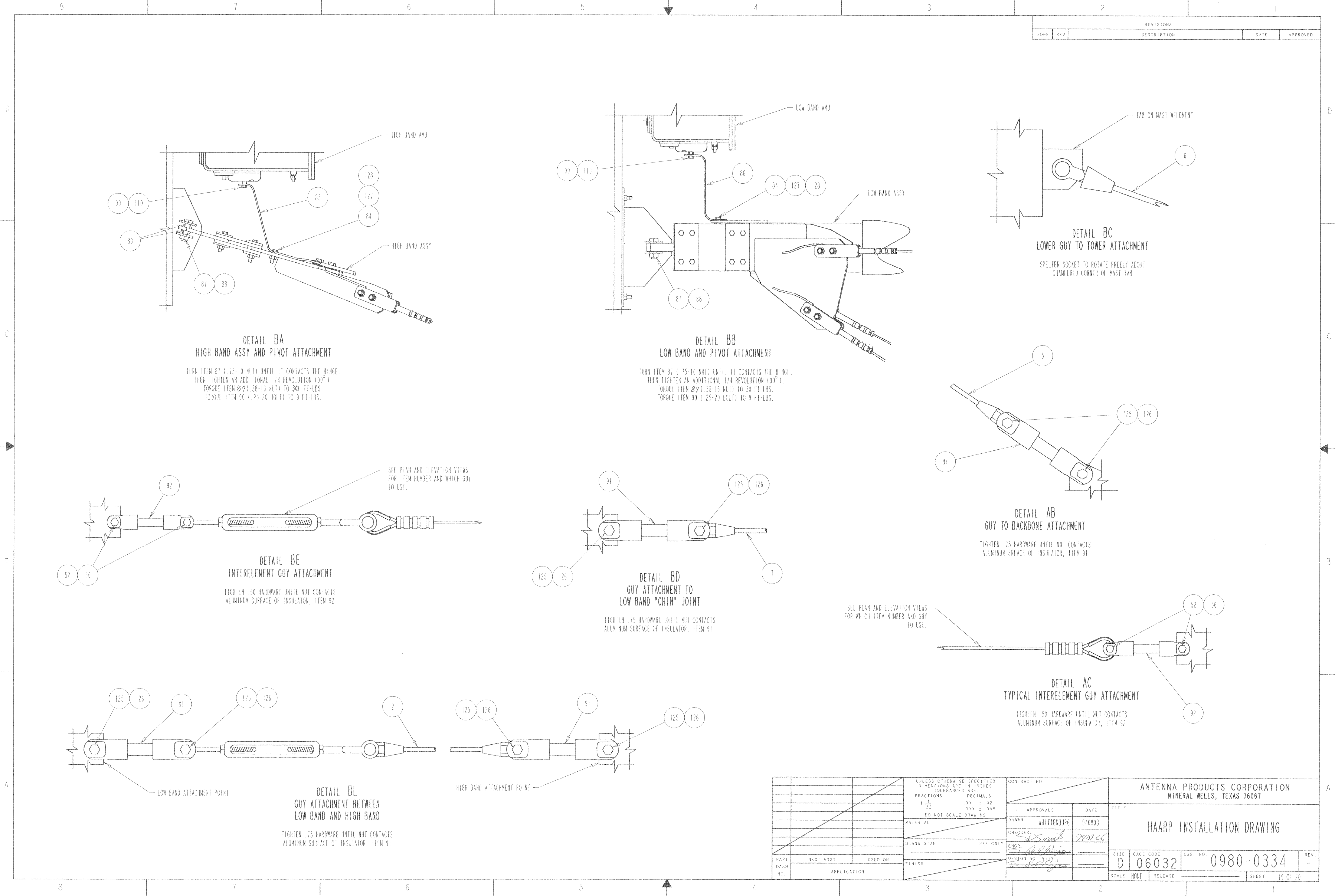
DETAIL BF
INTERIOR GROUNDSCREEN TO CATENARY ATTACHMENT



DETAIL AZ
PERIMETER GROUND SCREEN TO CATENARY ATTACHMENT

PART DASH NO.		NEXT ASSY.	USED ON	APPLICATION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS 1/32 .005 DO NOT SCALE DRAWING		CONTRACT NO.		APPROVALS		DATE	TITLE	
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												REV. -	
												SCALE NONE	
												SHEET 18 OF 20	

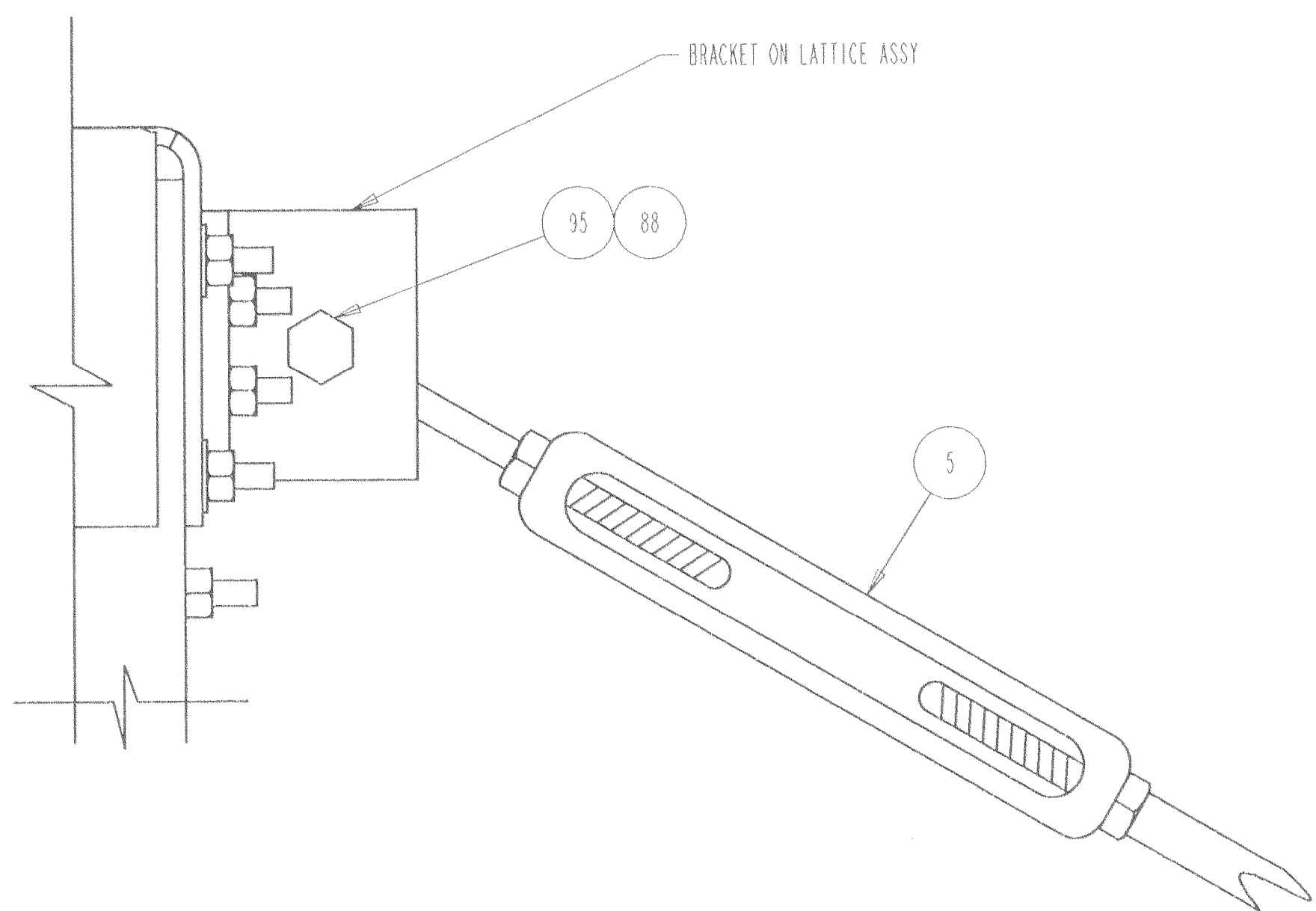
ANTENNA PRODUCTS CORPORATION
MINERAL WELLS, TEXAS 76067



REVISIONS			
ZONE	REV	DESCRIPTION	DATE
			APPROVED

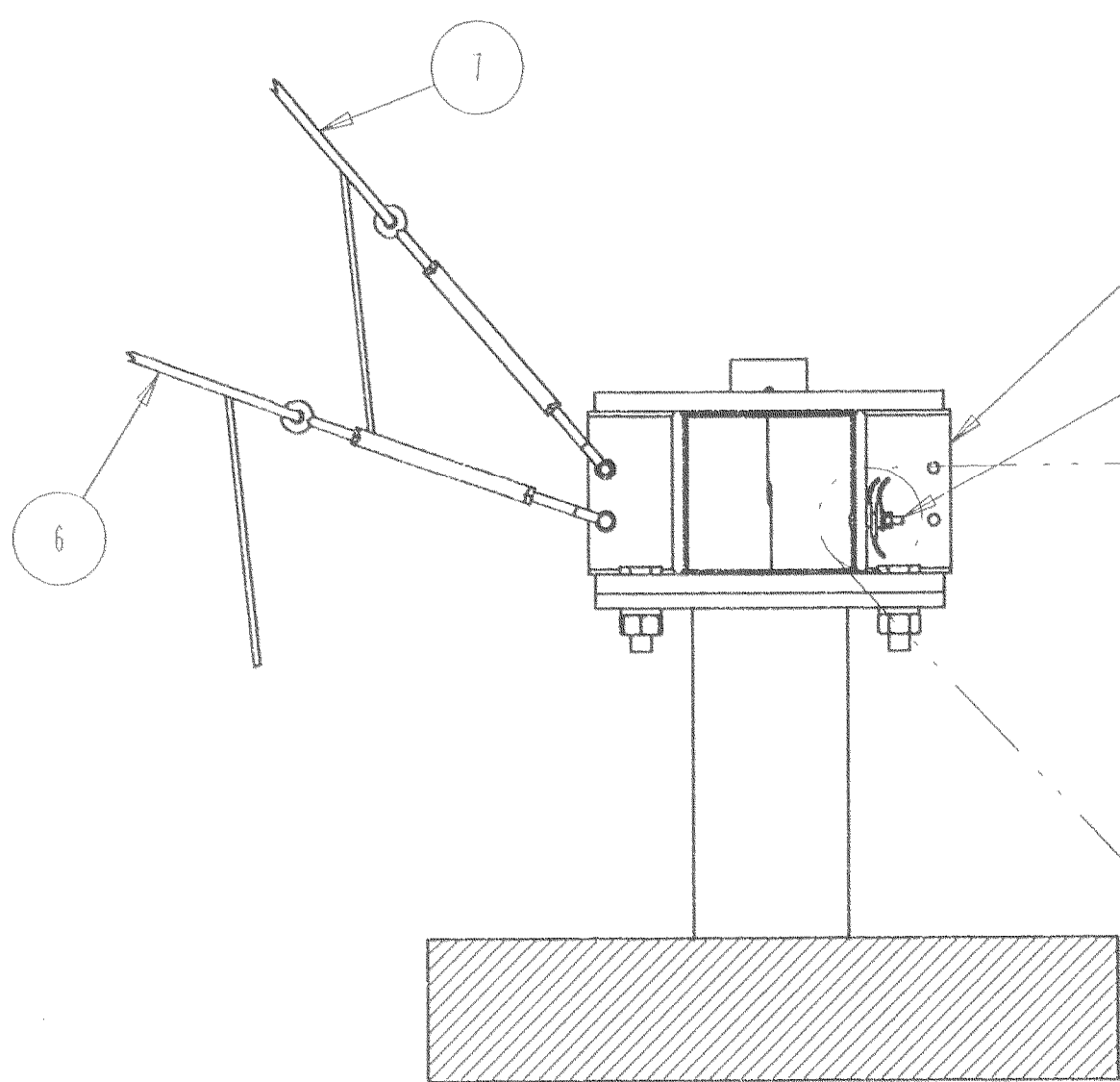
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS 1/32 .XX ±.02 DO NOT SCALE DRAWING	CONTRACT NO.	ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
	APPROVALS	DATE	TITLE
	DRAWN WHITTENBURG	940803	HAARP INSTALLATION DRAWING
	CHECKED <i>US mub</i>	940806	
MATERIAL	ENGR. <i>W. J. Hines</i>	DESIGN ACTIVITY <i>W. J. Hines</i>	SIZE CAGE CODE DWG. NO. REV.
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FINISH			SCALE NONE RELEASE SHEET 19 OF 20

REVISIONS				DATE	APPROVED
ZONE	REV	DESCRIPTION			

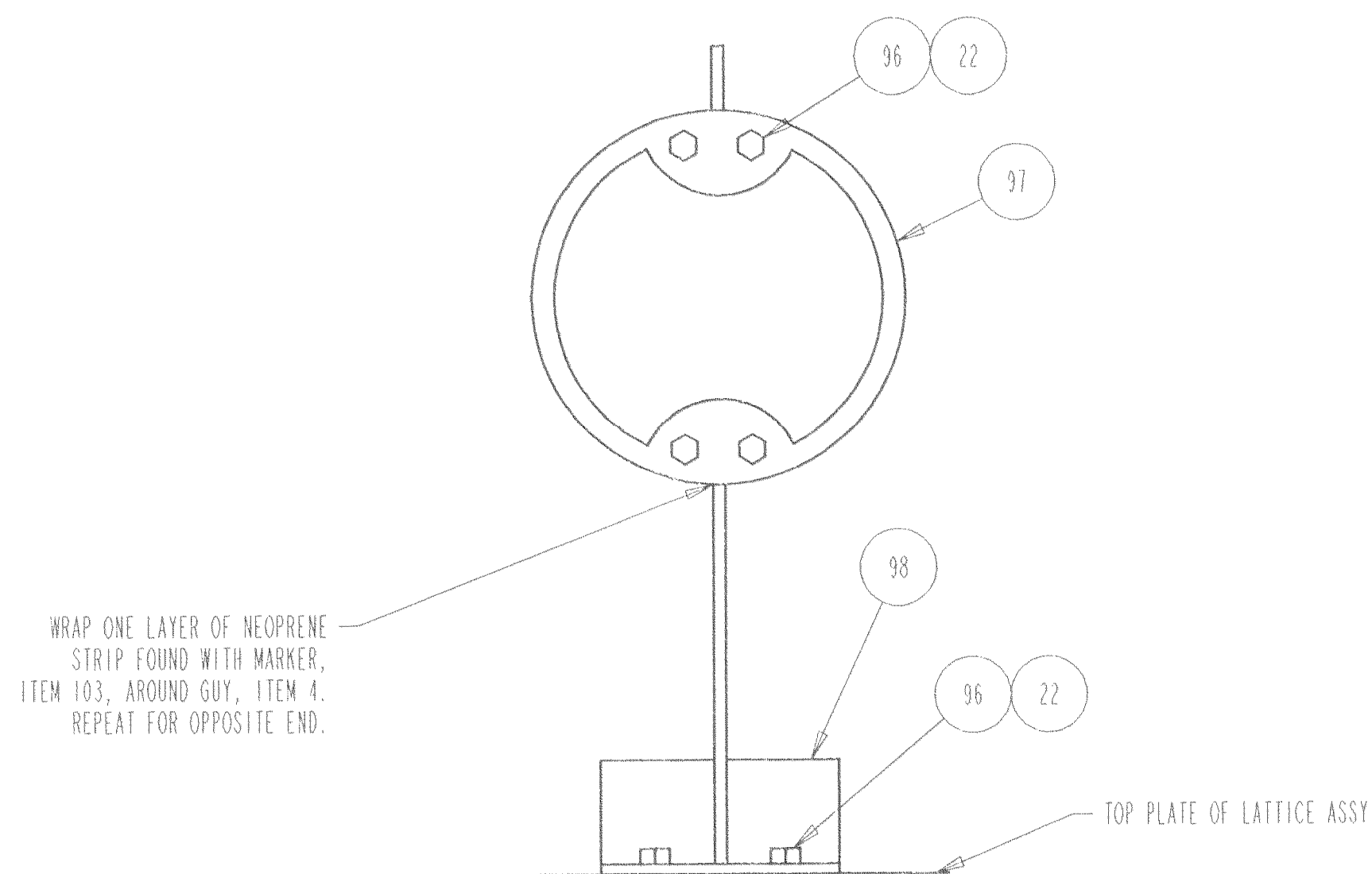
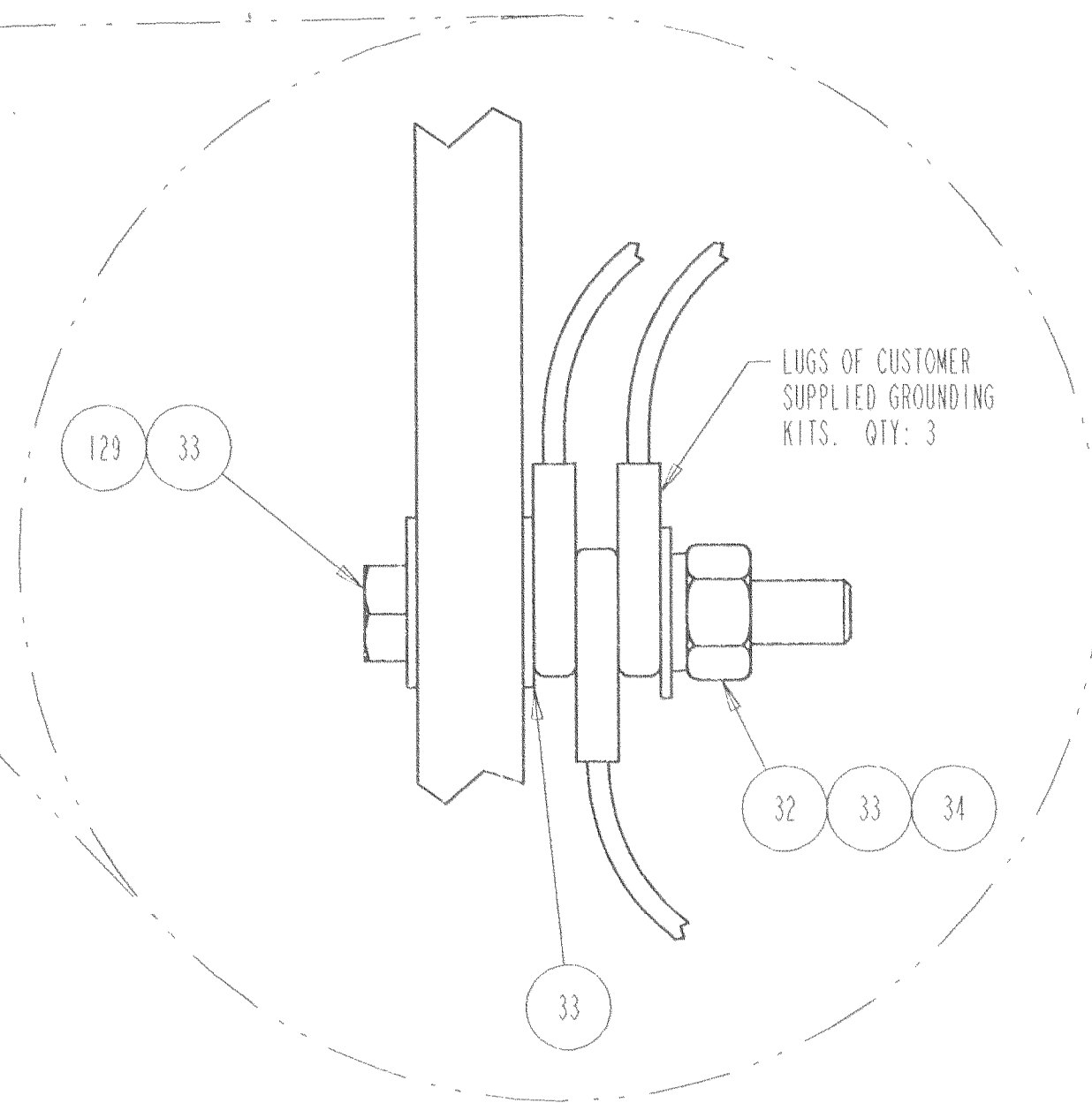


DETAIL BH
LATTICE TOWER GUY ATTACHMENT FOR
LOW BAND BACKBONE ELEMENT

TURN ITEM 88 (.75-10 NUT) UNTIL IT CONTACTS THE BRACKET,
THEN TIGHTEN AN ADDITIONAL 1/4 REVOLUTION (90°)

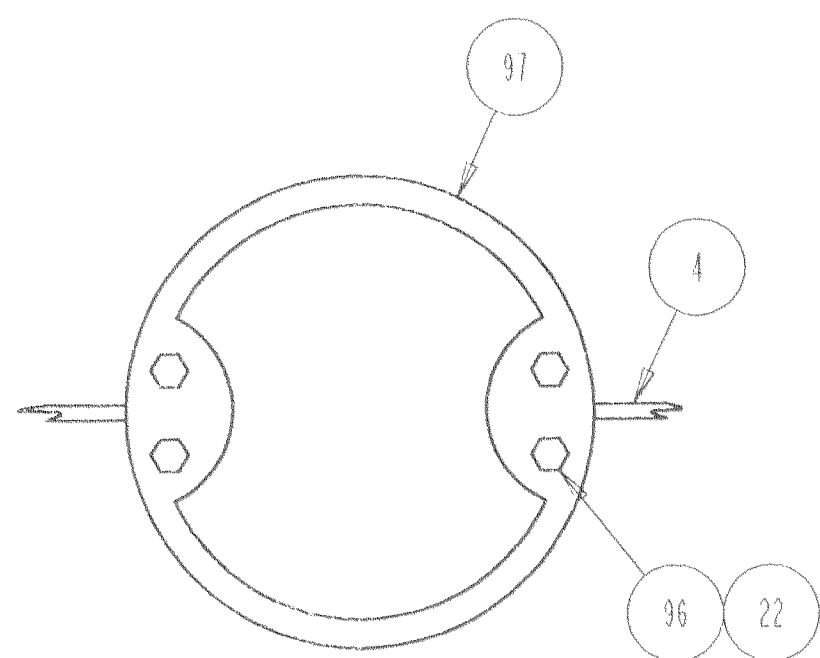


DETAIL BG
UPPER AND LOWER GUY ATTACHMENTS TO BASE



DETAIL AE
YELLOW MARKER MOUNT ATTACHMENT
TO LATTICE TOP PLATE

TORQUE .38 HARDWARE AT TOP PLATE TO 30 FT-LBS.
SECURE MARKER HALVES USING .38 HARDWARE



DETAIL AD
YELLOW MARKER AND GUY ATTACHMENT
SECURE MARKER HALVES USING .38 HARDWARE

PART DASH NO. NEXT ASSY USED ON APPLICATION		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS $\pm \frac{1}{32}$.XX $\pm .02$.XXX $\pm .005$ DO NOT SCALE DRAWING	CONTRACT NO. APPROVALS DATE		ANTENNA PRODUCTS CORPORATION MINERAL WELLS, TEXAS 76067	
			DRAWN CHECKED ENGR DESIGN ACTIVITY		TITLE HAARP INSTALLATION DRAWING	
SCALE NONE		RELEASE		SIZE D 06032		DWG. NO. 0980-0334
SHEET 20 OF 20		REV. -		SCALE NONE		RELEASE