

BF-11A, BF-11B, BF-12A,
BF-12B, BF-14A,
AND BF-14B

FM PYLON ANTENNAS



INSTRUCTIONS

IB-30181

**BF-11A, BF-11B,
BF-12A, BF-12B, BF-14A AND BF-14B
FM PYLON ANTENNAS**

INSTRUCTIONS

Manufactured by
RADIO CORPORATION OF AMERICA
ENGINEERING PRODUCTS DEPARTMENT
Camden, N. J., U. S. A.

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DESCRIPTION

The RCA Type BF-11A, BF-11B, BF-12A, BF-12B, BF-14A, and BF-14B Pylon Antennas are intended for use with frequency-modulated

radio broadcast transmitters. The frequency range and number of sections for each antenna are listed in the following table:

TYPE	FREQ. RANGE	NO. OF SECTIONS	MASTER ITEM
BF-11A	88 to 97.4 mc	1	28221-A
BF-11B	96.4 to 108 mc	1	28221-B
BF-12A	88 to 95 mc	2	28222-A
BF-12B	95 to 108 mc	2	28222-B
BF-14A	91 to 97.6 mc	4	28224-A
BF-14B	97.6 to 108 mc	4	28224-B

EQUIPMENT

Each Pylon Antenna is stocked as an individually numbered Master Item. The parts of each antenna are listed as separate items of the respective Master Item. Each box or package containing antenna parts is labeled as containing Items 1, 2, 3, 4, etc., as the case may be, of the individual Master Item.

For example, Item 10, MI-28222A refers to that item listed in the "List of Contents of Master Item 28222A." All parts not crated are adequately tagged or stenciled. The Master Item lists for each antenna are as follows:

SHEET #1

LIST OF CONTENTS OF MASTER ITEM 28221-A

MI-28221-A BF-11A PYLON ANTENNA (1-SECTION, 88-97 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP
1	1	ANTENNA TUBE ASSEMBLY, COMPRISING ASSEMBLED AS PER 735809-1:		
		(A) 1 TUBE	735809	2
		(B) 4 MOLDINGS		34
		(C) 4 MOLDINGS		35
		(D) 1 BRACKET - HOISTING		26
		(E) 2 SCREWS 3/4-10x2-1/2 CAP		20
		(F) 32 SCREWS 1/4-20x1/2 WH		38
		(G) 2 WASHERS 3/4		21
		(H) 2 LOCKWASHERS 3/4		40
		(I) 32 LOCKWASHERS 1/4		40
		(J) 2 NUTS 3/4-10		23
2	1	PLATE, TOP		13
3	2	COVER, SLOT		36
4	2	COVER, SLOT		37
5	1	STRAP, GROUND (FEED)		4
6	1	STRAP, GROUND		12
7	1	STRAP, CONNECTOR		11
8	12	STEP, POLE		24
9	1	BAR, SHORTING		25
10	1	GRILLE		33
11	1	SUITABLE CONTAINER, CONTAINING:		
		(A) 1 SHACKLE, PIN ANCHOR SCREW		31
		(B) 6 SPACERS 3/4 I.D. x 1-1/2		29
		(C) 3 SCREWS 5/16-18x5/8 CAP		5
		(D) 1 SCREW 1/4-20x5/8 CAP		15
		(E) 1 SCREW 1/4-20x1/2 CAP		16
		(F) 6 SCREWS 3/4-10x6-1/2 CAP		30
		(G) 16 SCREWS 3/4-10x3 CAP		32
		(H) 2 SCREWS 1/4-20x1-1/4 WH		39
		(CONTINUED ON SHEET #2)		
			735809	

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SHEET #2

LIST OF CONTENTS OF MASTER ITEM 28221-A

MI-28221-A BF-11A PYLON ANTENNA (1-SECTION, 88-97 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP
11		(CONTINUED)		
		(I) 3 SCREWS 3/8-16x5/8 CAP	735809	45
		(J) 2 BOLTS 5/8-11x6 HEX H		42
		(K) 1 WASHER 1/4		19
		(L) 3 WASHERS 5/16		6
		(M) 12 WASHERS 5/8		26
		(N) 24 WASHERS 3/4		21
		(O) 4 LOCKWASHERS 1/4		16
		(P) 3 LOCKWASHERS 5/16		7
		(Q) 24 LOCKWASHERS 3/4		22
		(R) 14 LOCKWASHERS 5/8		43
		(S) 3 LOCKWASHERS 3/8		46
		(T) 3 NUTS 1/4-20		17
		(U) 3 NUTS 5/16-18		8
		(V) 24 NUTS 5/8-11		27
		(W) 24 NUTS 3/4-10		25
		(X) 2 NUTS 5/8-11		44
		(Y) 1 CAN OF CAULKING COMPOUND (1 PT. CAN)	735809	41
12	0	TRANSMISSION LINE (NOTE) ONE IS SUPPLIED, ORDERED & SHIPPED SEPARATELY.	MI-28220-1	
13	1	INSTRUCTIONS (ASSEMBLY), INCLUDING TWO BLUEPRINTS 735809	IB-30181	
14	1	PACKING LIST	THIS MI, SHEETS 1&2	
		NOTE #1 ITEMS 1 THRU 11 MAY BE ORDERED AS 735809-501, BUT UNASSEMBLED AS DETAILED BY THE SUBJECT MI.		
		FOR ASSEMBLY DETAILS SEE 735809-501.		
		NOTE #2 PACK IN BOXES AS DESIGNATED. STENCIL BOX & MI NUMBER ON EACH BOX.		

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LIST OF CONTENTS OF MASTER ITEM 28221-B					
MI-28221-B 8F-11B PYLON ANTENNA (1-SECTION, 97-108 MC)					
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
1	1	ANTENNA TUBE ASSEMBLY, COMPRISING ASSEMBLED AS PER 735809-1:	735809	2	
		(A) 1 TUBE		28	
		(B) 4 MOLDINGS		29	
		(C) 4 MOLDINGS		35	
		(D) 1 BRACKET - HOISTING		20	
		(E) 2 SCREWS 3/4-10x2-1/2 CAP		38	
		(F) 32 SCREWS 1/4-20x1/2 RH		21	
		(G) 2 WASHERS 3/4		22	
		(H) 2 LOCK WASHERS 3/4		40	
		(I) 32 LOCK WASHERS 1/4		23	
		(J) 2 NUTS 3/4x10			
2	1	PLATE, TOP		13	
3	2	COVER, SLOT		36	
4	2	COVER, SLOT		37	
5	1	STRAP, GROUND (FEED)		4	
6	2	STRAP, GROUND		12	
7	1	STRAP, CONNECTOR		11	
8	12	STEP, POLE		24	
9	2	BAR, SHORTING		25	
10	1	GRILLE		33	
11	1	SUITABLE CONTAINER, CONTAINING:			
		(A) 1 SHACKLE, PIN ANCHOR SCREW		31	
		(B) 6 SPACERS 3/4 I.D. x 4-1/2		29	
		(C) 3 SCREWS 5/16-18x5/8 CAP		5	
		(D) 1 SCREW 1/4-20x5/8 CAP		15	
		(E) 1 SCREW 1/4-20x1/2 CAP		18	
		(F) 6 SCREWS 3/4-10x5-1/2 CAP		30	
		(G) 18 SCREWS 3/4-10x3 CAP		32	
		(H) 2 SCREWS 1/4-20x1-1/4 RH		39	
(CONTINUED ON SHEET #2)					
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS
APPROVED BY					

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LIST OF CONTENTS OF MASTER ITEM 28222-A					
MI-28222-A 8F-12A PYLON ANTENNA (2-SECTION, 88-96.5 MC)					
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
1	1	ANTENNA TUBE ASSEMBLY (TOP) COMPRISING ASSEMBLED AS PER 619982-1:	619982	2	
		(A) 1 TUBE		28	
		(B) 1 BRACKET, HOISTING		29	
		(C) 1 BRACKET, HOISTING (INSIDE)		35	
		(D) 4 MOLDINGS		36	
		(E) 4 MOLDINGS		20	
		(F) 4 SCREWS 3/4-10x2-1/2 CAP		39	
		(G) 32 SCREWS 1/4-20x1/2 RH		21	
		(H) 4 WASHERS 3/4		22	
		(I) 4 LOCK WASHERS 3/4		41	
		(J) 32 LOCK WASHERS 1/4		23	
		(K) 4 NUTS 3/4-10			
2	1	ANTENNA TUBE ASSEMBLY (BOTTOM), COMPRISING ASSEMBLED AS PER 619982-1:			
		(A) 1 TUBE		2	
		(B) 4 MOLDINGS		35	
		(C) 4 MOLDINGS		36	
		(D) 32 SCREWS 1/4-20x1/2 RH		39	
		(E) 32 LOCK WASHERS 1/4		41	
3	1	PLATE, TOP		13	
4	4	COVER, SLOT		37	
5	4	COVER, SLOT		38	
6	2	STRAP, GROUND (FEED)		4	
7	11	STRAP, GROUND		12	
8	2	STRAP, CONNECTOR		11	
9	24	STEP, POLE		24	
10	4	BAR, SHORTING		25	
11	1	GRILLE		33	
(CONTINUED ON SHEET #2)					
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS
APPROVED BY					

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LIST OF CONTENTS OF MASTER ITEM 28221-B					
MI-28221-B 8F-11B PYLON ANTENNA (1-SECTION, 97-108 MC)					
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
11		(CONTINUED)	735809	45	
		(I) 3 SCREWS 3/8-16x5/8 CAP		42	
		(J) 2 BOLTS 5/8-11x6 HEX H			
		(K) 1 WASHER 1/4		19	
		(L) 3 WASHERS 5/16		6	
		(M) 12 WASHERS 5/8		26	
		(N) 24 WASHERS 3/4		21	
		(O) 4 LOCK WASHERS 1/4		16	
		(P) 3 LOCK WASHERS 5/16		7	
		(Q) 24 LOCK WASHERS 3/4		22	
		(R) 14 LOCK WASHERS 5/8		43	
		(S) 3 LOCK WASHERS 3/8	46		
		(T) 3 NUTS 1/4-20	17		
		(U) 5 NUTS 5/16-18	8		
		(V) 24 NUTS 5/8-11	27		
		(W) 24 NUTS 3/4-10	23		
		(X) 2 NUTS (HEX) 5/8-11	44		
		(Y) 1 CAN OF CAULKING COMPOUND (1PT. CAN)		41	
12		TRANSMISSION LINE	MI-28220-2		
		*(NOTE) ONE IS SUPPLIED, ORDERED & SHIPPED SEPARATELY.			
13	1	INSTRUCTIONS (ASSEMBLY), INCLUDING TWO BLUEPRINTS 735809	IB-30181		
14	1	PACKING LIST	THIS MI, SHEETS 1&2		
NOTE #1		ITEMS 1 THRU 11 MAY BE ORDERED AS 735809-501, BUT UNASSEMBLED AS DETAILED BY THE SUBJECT MI.			
NOTE #2		FOR ASSEMBLY DETAILS SEE 735809-502.			
		PACK IN BOXES AS DESIGNATED. STENCIL BOX & MI NUMBER ON EACH BOX.			
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS
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LIST OF CONTENTS OF MASTER ITEM 28222-A					
MI-28222-A 8F-12A PYLON ANTENNA (2-SECTION, 88-96.5 MC)					
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
12	1	SUITABLE CONTAINER, CONTAINING:	619982	30	
		(A) 2 SHACKLES, PIN ANCHOR SCREW			
		(B) 6 SPACERS 3/4 I.D. x 4-1/2			31
		(C) 2 SCREWS 1/4-20x1/2 CAP			18
		(D) 2 SCREWS 1/4-20x5/8 CAP			15
		(E) 13 SCREWS 5/16-18x5/8 CAP			5
		(F) 18 SCREWS 3/4-10x2-1/2 CAP			20
		(G) 6 SCREWS 3/4-10x5-1/2 CAP			32
		(H) 18 SCREWS 3/4-10x3 CAP			33
		(I) 5 SCREWS 3/8-16x5/8 CAP			47
		(J) 2 SCREWS 1/4-20x1-1/4 RH			40
		(K) 2 BOLTS 5/8-11x6-3/4 HEX H		43	
		(L) 2 BOLTS 5/8-11x6		46	
		(M) 2 WASHERS 1/4		19	
		(N) 7 WASHERS 5/16		6	
		(O) 24 WASHERS 5/8		26	
		(P) 42 WASHERS 3/4		21	
		(Q) 6 LOCK WASHERS 1/4		16	
		(R) 7 LOCK WASHERS 5/16		7	
		(S) 42 LOCK WASHERS 3/4		22	
		(T) 28 LOCK WASHERS 5/8		44	
		(U) 5 LOCK WASHERS 3/8		46	
		(V) 4 NUTS 1/4-20		17	
		(W) 13 NUTS 5/16-18		8	
		(X) 48 NUTS 5/8-11		27	
		(Y) 42 NUTS 3/4-10		23	
		(Z) 4 NUTS 5/8-11		46	
		(AA) 2 CANS OF CAULKING COMPOUND (1 PT. PER CAN)		42	
(CONTINUED ON SHEET #3)					
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS
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SHEET #1

LIST OF CONTENTS OF MASTER ITEM

26222-A

MI-26222-A BF-12A PYLON ANTENNA (2-SECTION, 86-96.5 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP										
13	*	TRANSMISSION LINE *(NOTE) ONE IS SUPPLIED, ORDERED & SHIPPED SEPARATELY.	MI-26220-3											
14	1	INSTRUCTIONS (ASSEMBLY), INCLUDING TWO BLUEPRINTS 619982 } PACK IN BOX #1	IB-30161											
15	1	PACKING LIST	THIS MI, SHEETS 1,2 & 3											
<p>NOTE #1 ITEMS 1 THRU 12 ABOVE MAY BE ORDERED AS 619982-501, BUT UNASSEMBLED AS DETAILED BY THE SUBJECT MI.</p> <p>FOR ASSEMBLY DETAILS SEE 619982-501.</p> <p>NOTE #2 PACK IN BOXES AS DESIGNATED. STENCIL BOX & MI NUMBER ON EACH BOX.</p>														
(CONTINUED ON SHEET #2)														
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SHEET #2

LIST OF CONTENTS OF MASTER ITEM

26222-B

MI-26222-B BF-12B PYLON ANTENNA (2-SECTION, 96.5-106 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP										
12	1	SUITABLE CONTAINER, CONTAINING: (A) 2 SHACKLES, PIN ANCHOR SCREW (B) 6 SPACERS 3/4 I.D. x 4-1/2 (C) 2 SCREWS 1/4-20x1/2 CAP (D) 2 SCREWS 1/4-20x5/8 CAP (E) 13 SCREWS 5/16-16x5/8 CAP (F) 18 SCREWS 3/4-10x2-1/2 CAP (G) 6 SCREWS 3/4-10x6-1/2 CAP (H) 18 SCREWS 3/4-10x3 CAP (I) 6 SCREWS 3/8-16x5/8 CAP (J) 2 SCREWS 1/4-20x1-1/4 RH (K) 2 BOLTS 5/8-11x6-3/4 HEX H (L) 2 BOLTS 5/8-11x6 (M) 2 WASHERS 1/4 (N) 13 WASHERS 5/16 (O) 24 WASHERS 5/8 (P) 42 WASHERS 3/4 (Q) 6 LOCKWASHERS 1/4 (R) 7 LOCKWASHERS 5/16 (S) 42 LOCKWASHERS 3/4 (T) 26 LOCKWASHERS 5/8 (U) 5 LOCKWASHERS 3/8 (V) 4 NUTS 1/4-20 (W) 13 NUTS 5/16-16 (X) 46 NUTS 5/8-11 (Y) 42 NUTS 3/4-10 (Z) 4 NUTS 5/8-11 (AA) 2 CANS OF CAULKING COMPOUND (1 PT. PER CAN)	619982	30 31 18 15 5 20 32 33 47 40 43 45 19 6 26 21 16 7 22 44 48 17 8 27 23 46 42										
(CONTINUED ON SHEET #3)														
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SHEET #1

LIST OF CONTENTS OF MASTER ITEM

26222-B

MI-26222-B BF-12B PYLON ANTENNA (2-SECTION, 96.5-106 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP										
1	1	ANTENNA TUBE ASSEMBLY (TOP), COMPRISING ASSEMBLED AS PER 619982-9: (A) 1 TUBE (B) 1 BRACKET, HOISTING (C) 1 BRACKET, HOISTING (INSIDE) (D) 4 MOLDINGS (E) 4 MOLDINGS (F) 4 SCREWS 3/4-10x2-1/2 CAP (G) 32 SCREWS 1/4-20x1/2 RH (H) 4 WASHERS 3/4 (I) 4 LOCKWASHERS 3/4 (J) 32 LOCKWASHERS 1/4 (K) 4 NUTS 3/4-10	619982	2 26 29 29 35 36 20 39 21 22 41 23										
2	1	ANTENNA TUBE ASSEMBLY (BOTTOM), COMPRISING ASSEMBLED AS PER 619982-9: (A) 1 TUBE (B) 4 MOLDINGS (C) 4 MOLDINGS (D) 32 SCREWS 1/4-20x1/2 RH (E) 32 LOCKWASHERS 1/4		2 35 36 39 41										
3	1	PLATE, TOP		13										
4	4	COVER, SLOT		37										
5	4	COVER, SLOT		38										
6	2	STRAP, GROUND (FEED)		4										
7	11	STRAP, GROUND		12										
8	2	STRAP, CONNECTOR		11										
9	4	BAR, SHORTING		25										
10	24	STEP, POLE		24										
11	1	GRILLE	519982	34										
(CONTINUED ON SHEET #2)														
<table border="1" style="width: 100%;"> <tr> <td>COMPILED BY</td> <td>THIS MI IS USED FOR</td> <td>DISTRIBUTION</td> <td>REQUISITIONS</td> <td>REQUISITIONS</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>					COMPILED BY	THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS					
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SHEET #3

LIST OF CONTENTS OF MASTER ITEM

26222-B

MI-26222-B BF-12B PYLON ANTENNA (2-SECTION, 96.5-106 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP										
13	*	TRANSMISSION LINE *(NOTE) ONE IS SUPPLIED, ORDERED & SHIPPED SEPARATELY.	MI-26220-3											
14	1	INSTRUCTIONS (ASSEMBLY), INCLUDING TWO BLUEPRINTS 619982 } PACK IN BOX #1	IB-30161											
15	1	PACKING LIST	THIS MI, SHEETS 1,2 & 3											
<p>NOTE #1 ITEMS 1 THRU 12 ABOVE MAY BE ORDERED AS 619982-501, BUT UNASSEMBLED AS DETAILED BY THE SUBJECT MI.</p> <p>FOR ASSEMBLY DETAILS SEE 619982-502.</p> <p>NOTE #2 PACK IN BOXES AS DESIGNATED. STENCIL BOX & MI NUMBER ON EACH BOX.</p>														
(CONTINUED ON SHEET #2)														
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LIST OF CONTENTS OF MASTER ITEM 26224-A					
MI-26224-A BP-14A PYLON ANTENNA (4-SECTION, 66-99 MC)					
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
1	1	ANTENNA TUBE ASSEMBLY (SECTION 1), COMPRISING ASSEMBLED AS PER 309267-19:	309267	51	
		(A) 1 TUBE		39	
		(B) 6 MOLDINGS		40	
		(C) 2 MOLDINGS		41	
		(D) 32 SCREWS 1/4-20x1/2 RH		44	
		(E) 32 LOCKWASHERS 1/4			
		PACK IN BOX #1			
2	1	ANTENNA TUBE ASSEMBLY (SECTION 2), COMPRISING ASSEMBLED AS PER 309267-19:	309267	2	
		(A) 1 TUBE		39	
		(B) 6 MOLDINGS		40	
		(C) 2 MOLDINGS		41	
		(D) 32 SCREWS 1/4-20x1/2 RH		44	
		(E) 32 LOCKWASHERS 1/4			
		PACK IN BOX #2			
3	1	ANTENNA TUBE ASSEMBLY (SECTION 3), COMPRISING ASSEMBLED AS PER 309267-19:	309267	3	
		(A) 1 TUBE		38	
		(B) 4 MOLDINGS		39	
		(C) 2 MOLDINGS		42	
		(D) 32 SCREWS 1/4-20x1/2 RH		44	
		(E) 32 LOCKWASHERS 1/4			
		PACK IN BOX #3			
(CONTINUED ON SHEET #2)					
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS
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LIST OF CONTENTS OF MASTER ITEM 26224-A					
MI-26224-A BP-14A PYLON ANTENNA (4-SECTION, 66-99 MC)					
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
17	1	SUITABLE CONTAINER, CONTAINING:	309267	29	
		(A) 2 BRACKETS, PIN ANCHOR SCREW		30	
		(B) 6 SPACERS 3/4 I.D. x 1-1/2		31	
		(C) 6 SCREWS 3/4-10x6-1/2 CAP		32	
		(D) 18 SCREWS 3/4-10x4 CAP		10	
		(E) 39 SCREWS 5/16-18x3/4 CAP		52	
		(F) 9 SCREWS 3/8-16x3/4 CAP		53	
		(G) 2 SCREWS 3/8-16x5/8 CAP		14	
		(H) 54 SCREWS 3/4-10x2-1/2 CAP		42	
		(I) 2 SCREWS 1/4-20x1-1/4 RH			
		(J) 6 BOLTS 5/8-11x6-3/4		47	
		(K) 2 BOLTS 5/8-11x6		49	
		HEX B			
		(L) 39 WASHERS 5/16		11	
		(M) 48 WASHERS 5/8		23	
		(N) 78 WASHERS 3/4		15	
		(O) 39 LOCKWASHERS 5/16		12	
		(P) 78 LOCKWASHERS 3/4		16	
		(Q) 2 LOCKWASHERS 1/4		43	
		(R) 56 LOCKWASHERS 5/8		48	
		(S) 11 LOCKWASHERS 3/8		54	
		(T) 39 NUTS 5/16-18		13	
		(U) 96 NUTS 5/8-11		28	
		(V) 78 NUTS 3/4-10		17	
		(W) 2 NUTS 1/4-20		45	
		(X) 8 NUTS 5/8-11		50	
		(Y) 4 CANS OF CAULKING COMPOUND (1 PT. PER CAN)	46		
(CONTINUED ON SHEET #4)					
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS
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LIST OF CONTENTS OF MASTER ITEM 26224-A						
MI-26224-A BP-14A PYLON ANTENNA (4-SECTION, 66-99 MC)						
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP		
4	1	ANTENNA TUBE ASSEMBLY (SECTION 4), COMPRISING ASSEMBLED AS PER 309267-19:	309267	3		
		(A) 1 TUBE		38		
		(B) 4 MOLDINGS		39		
		(C) 4 MOLDINGS		27		
		(D) 1 BRACKET, HOISTING		28		
		(E) 1 BRACKET, HOISTING (INSIDE)		14		
		(F) 4 SCREWS 3/4-10x2-1/2 CAP		41		
		(G) 32 SCREWS 1/4-20x1/2 RH		15		
		(H) 4 WASHERS 3/4		44		
		(I) 32 LOCKWASHERS 1/4		16		
		(J) 4 LOCKWASHERS 3/4		17		
		(K) 4 NUTS 3/4-10				
		PACK IN BOX #4				
5	1	PLATE, TOP			9	
6	4	COVER, SLOT			34	
7	8	COVER, SLOT			35	
8	3	COVER, SLOT			36	
9	1	COVER, SLOT		37		
10	4	STRAP, FEED		6		
11	23	STRAP, GROUND		7		
12	10	STRAP, CONNECTOR		8		
13	2	STRAP, GROUND (FEED)		55		
14	8	BAR, SHORTING		18		
15	48	STEP, POLE		22		
16	1	GRILLE	309267	33		
(CONTINUED ON SHEET #3)						
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS	
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LIST OF CONTENTS OF MASTER ITEM 26224-A					
MI-26224-A BP-14A PYLON ANTENNA (4-SECTION, 66-99 MC)					
ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
16	•	TRANSMISSION LINE (LOWER, LONG)	MI-26220-5 MI-26220-6		
19	•	TRANSMISSION LINE (UPPER, SHORT) *(NOTE) ONE EACH IS SUPPLIED, ORDERED & SHIPPED SEPARATELY.			
20	1	INSTRUCTIONS (ASSEMBLY), INCLUDING TWO BLUEPRINTS 309267	PACK IN BOX #4	IS-30181	
21	1	PACKING LIST		THIS MI, SH.1 THRU 4	
<p>NOTE #1 ITEMS 1 THRU 17 MAY BE ORDERED AS 309267-501, BUT UNASSEMBLED AS DETAILED BY THE SUBJECT MI.</p> <p>FOR ASSEMBLY DETAILS SEE 309267-501.</p> <p>NOTE #2 PACK IN BOXES AS DESIGNATED. STENCIL BOX & MI NUMBERS ON EACH BOX.</p>					
COMPILED BY		THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS
4					
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SHEET #1

LIST OF CONTENTS OF MASTER ITEM 26224-B

NI-26224-B BF-148 PYLON ANTENNA (4-SECTION, 99-108 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
1	1	ANTENNA TUBE ASSEMBLY (SECTION 1), COMPRISING ASSEMBLED AS PER 309267-1:	309267	51 39 40 41 42	
		(A) 1 TUBE			PACK IN BOX #1
		(B) 6 MOULDINGS			
		(C) 2 MOULDINGS			
		(D) 32 SCREWS 1/4-20x1/2 RH			
		(E) 32 LOCKWASHERS 1/4			
2	1	ANTENNA TUBE ASSEMBLY (SECTION 2), COMPRISING ASSEMBLED AS PER 309267-1:	309267	2 39 41 42	
		(A) 1 TUBE			PACK IN BOX #2
		(B) 6 MOULDINGS			
		(C) 32 SCREWS 1/4-20x1/2 RH			
		(D) 32 LOCKWASHERS 1/4			
3	1	ANTENNA TUBE ASSEMBLY (SECTION 3), COMPRISING ASSEMBLED AS PER 309267-1:	309267	3 38 39 41 42	
		(A) 1 TUBE			PACK IN BOX #3
		(B) 4 MOULDINGS			
		(C) 4 MOULDINGS			
		(D) 32 SCREWS 1/4-20x1/2 RH			
		(E) 32 LOCKWASHERS 1/4			

(CONTINUED ON SHEET #2)

COMPILED BY	THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS	REQUISITIONS

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SHEET #3

LIST OF CONTENTS OF MASTER ITEM 26224-B

NI-26224-B BF-148 PYLON ANTENNA (4-SECTION, 99-108 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP	
17	1	SUITABLE CONTAINER, CONTAINING:	309267	29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	
		(A) 2 SHACKLES, PIN ANCHOR SCREW			
		(B) 6 SPACERS 3/4 I.D. x 1/2			
		(C) 6 SCREWS 3/4-10x2-1/2 CAP			
		(D) 18 SCREWS 3/4-10x4 CAP			
		(E) 37 SCREWS 5/16-18x3/4 CAP			
		(F) 54 SCREWS 3/4-10x2-1/2 CAP			
		(G) 2 SCREWS 1/4-20x1-1/4 RH			
		(H) 9 SCREWS 3/8-16x3/4 CAP			
		(I) 2 SCREWS 3/8-16x5/8 CAP			
		(J) 6 BOLTS 5/8-11x6-3/4			
		(K) 2 BOLTS 5/8-11x6 HEX H			
		(L) 37 WASHERS 5/16			PACK IN BOX #4
		(M) 48 WASHERS 5/8			
		(N) 78 WASHERS 3/4			
		(O) 37 LOCKWASHERS 5/16			PACK IN BOX #4
		(P) 78 LOCKWASHERS 3/4			
		(Q) 2 LOCKWASHERS 1/4			
		(R) 56 LOCKWASHERS 5/8			PACK IN BOX #4
		(S) 11 LOCKWASHERS 3/8			
		(T) 37 NUTS 5/16-18			
		(U) 96 NUTS 5/8-11			PACK IN BOX #4
		(V) 78 NUTS 3/4-10			
		(W) 2 NUTS 1/4-20			
		(X) 8 NUTS 5/8-11			PACK IN BOX #4
		(Y) 4 CANS OF CAULKING COMPOUND (1 PT. PER CAN)			

(CONTINUED ON SHEET #4)

COMPILED BY	THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS	REQUISITIONS

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SHEET #2

LIST OF CONTENTS OF MASTER ITEM 26224-B

NI-26224-B BF-148 PYLON ANTENNA (4-SECTION, 99-108 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP			
4	1	ANTENNA TUBE ASSEMBLY (SECTION 4), COMPRISING ASSEMBLED AS PER 309267-1:	309267	3 38 39 27 28 14 41 15 42 16 17			
		(A) 1 TUBE			PACK IN BOX #4		
		(B) 4 MOULDINGS					
		(C) 4 MOULDINGS					
		(D) 1 BRACKET, HOISTING					
		(E) 1 BRACKET, HOISTING (INSIDE)					
		(F) 4 SCREWS 3/4-10x2-1/2 CAP					
		(G) 32 SCREWS 1/4-20x1/2 RH					
		(H) 4 WASHERS 3/4					
		(I) 32 LOCKWASHERS 1/4					
		(J) 4 LOCKWASHERS 3/4					
		(K) 4 NUTS 3/4-10					
5	1	PLATE, TOP				309267	9
6	4	COVER, SLOT	PACK IN BOX #4				
7	8	COVER, SLOT					
8	3	COVER, SLOT					
9	1	COVER, SLOT					
10	4	STRAP, FEED		309267	6 7 8 55 18 22 33		
11	23	STRAP, GROUND					
12	8	STRAP, CONNECTOR					
13	2	STRAP, GROUND (FEED)					
14	8	BAR, SHORTING					
15	48	STEP, POLE					
16	1	GRILLE					

(CONTINUED ON SHEET #3)

COMPILED BY	THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS	REQUISITIONS

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SHEET #4

LIST OF CONTENTS OF MASTER ITEM 26224-B

NI-26224-B BF-148 PYLON ANTENNA (4-SECTION, 99-108 MC)

ITEM	QUAN	DESCRIPTION	REFERENCE	PART OR GROUP
18	*	TRANSMISSION LINE (LOWER, LONG)	NI-26220-7	
19	*	TRANSMISSION LINE (UPPER, SHORT)		
		*(NOTE) ONE EACH IS SUPPLIED, ORDERED & SHIPPED SEPARATELY.		
20	1	INSTRUCTIONS (ASSEMBLY), INCLUDING TWO BLUEPRINTS 309267	IS-30161	
21	1	PACKING LIST		
		THIS MI, BR.1 THRU 4		
		NOTE #1 ITEMS 1 THRU 17 MAY BE ORDERED AS 309267-501, BUT UNASSEMBLED AS DETAILED BY THE SUBJECT MI.		
		FOR ASSEMBLY DETAILS SEE 309267-502.		
		NOTE #2 PACK IN BOXES AS DESIGNATED. STENCIL BOX & MI NUMBERS ON EACH BOX.		

COMPILED BY	THIS MI IS USED FOR	DISTRIBUTION	REQUISITIONS	REQUISITIONS	REQUISITIONS

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INSTALLATION PROCEDURE

GENERAL

The antenna tubes and transmission line harness are carefully inspected and tested electrically at the factory before shipment. Any damage due to shipping or uncrating can be detected by careful inspection of the antenna components before assembly. Damage to the antenna tubes will be fairly obvious, but the transmission line harness should be carefully examined for dents, loose or missing studs, damaged clamps, cracked or loose end seals, and longitudinal or circumferential cracks in the line, especially in the vicinity of the flanges. Broken ceramic insulators inside the harness can be detected by shaking each section of line and listening for rattles.

CAUTION: THE TRANSMISSION LINE HARNESS SHOULD BE CAREFULLY HANDLED AT ALL TIMES. MECHANICAL STRAIN, OR JOLTS AND JARS OF ANY KIND ARE TO BE AVOIDED.

The transmission line harness has a series of studs and clamps welded to its outer surface. The clamps serve the dual purpose of physically supporting the harness in correct position and of providing electrical bonding between the antenna tube and the harness. The connector (feed) straps, ground straps (feed), and ground straps which later bolt to the studs, serve only to make electrical contact and to electrically bond the harness to the antenna tube. **IT IS ABSOLUTELY NECESSARY THAT THE CLAMPS AND STRAPS MENTIONED ABOVE MAKE PERFECT ELECTRICAL CONTACT WITH THE SLOT LIP OF THE ANTENNA TUBE, OTHERWISE THE ELECTRICAL CHARACTERISTICS OF THE ANTENNA WILL BE ALTERED.** It is extremely important that those points at which the clamps and straps make contact with the slot lip be thoroughly cleaned of paint or other foreign matter by carefully filing or sandpapering to make certain that the clamps, straps, and nuts, make inti-

mate contact with a clean, shiny, aluminum surface. Similarly, if the operating frequency is such that a shorting bar is to be used, the surface of the slot face must be thoroughly clean and free of paint, etc., at the point where the shorting bar is to make contact with the aluminum surface. After these connections have been made, the joints should be carefully caulked and then painted.

Caulking, where indicated, serves to keep moisture, etc., from the interface of two dissimilar metals. It is important that the caulking be done with great care. An adequate supply of a special zinc chromate caulking compound is shipped with the antenna.

The assembly and erection of the RCA Pylon Antenna is simple and straight-forward. The antenna may be completely assembled on the ground or on top of the tower. Varying amounts of the work may be performed on the ground or atop the tower, depending on the amount of hoisting equipment available. It is strongly recommended (where adequate hoisting facilities are available, and circumstances permit) that the antenna be assembled on the ground and then raised into position for bolting to the tower top. Where this is done, the transmission line harness should be completely assembled and mounted inside the assembled antenna tubes before hoisting to the tower top. During assembly of the transmission line harness, extreme care should be taken to see that the inner conductor plugs fit snugly and are properly inserted and seated.

The following assembly instructions assume that a minimum of hoisting and rigging equipment are available. In any case, the sequence of assembly given in the chart should be followed. The capitalized items in the text of the INSTALLATION PROCEDURE column refer to the item numbers of the individual Master Items. Reference should be made to the MASTER ITEM column pertaining to the antenna being installed.

INSTALLATION CHART

INSTALLATION PROCEDURE	MASTER ITEMS											
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B	
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware
<p>1. Remove the POLY-ETHELENE STRIPS from the slots of the antenna tubes by loosening all screws and removing the upper and lower screws from each section of moulding on the left-hand side of the slot (facing the slot). Withdraw both edges of POLYETHELENE STRIP from beneath the moulding. Leave the mounting hardware, moulding, etc., attached to the tubes.</p>	3 4		3 4		4 4 5 5		4 4 5 5		6 6 6 7 7 8 8 9 9		6 6 6 7 7 8 8 9 9	
<p>2. Dip the threaded ends of the POLE STEPS into the CAULKING COMPOUND and mount the POLE STEPS on each side of the ANTENNA TUBE slots using the HARDWARE supplied. The points at which the nuts make contact with the cylinder (both inside and outside) should be well caulked.</p>	8 11-Y 8 1-A	11-M 11-R 11-V	8 11-Y 8 1-A	11-M 11-R 11-V	9 12-AA 9 1-A 2-A	12-O 12-T 12-X	9 12-AA 9 1-A 2-A	12-O 12-T 12-X	15 17-Y 10 1-A 2-A 3-A 4-A	17-N 17-P 17-V	15 17-Y 10 1-A 2-A 3-A 4-A	17-N 17-P 17-V
<p>3. Bolt the BEACON TOP PLATE to the top of the ANTENNA TUBE used for the antenna top. Use SPACERS and HARDWARE furnished.</p>	2 1-A	11-B 11-F 11-N 11-Q 11-W	2 1-A	11-B 11-F 11-N 11-Q 11-W	3 *	12-B 12-G 12-P 12-S 12-Y	3 *	12-B 12-G 12-P 12-S 12-Y	5 4-A	17-B 17-C 17-N 17-P 17-V	5 4-A	17-B 17-C 17-N 17-P 17-V
<p>4. Bolt the two sections of ANTENNA TUBE together using the bolt circle HARDWARE and slot stiffener HARDWARE furnished. The slot stiffener is that part of the flange casting which reinforces the slot.</p>	**		**		1-A 2-A	12-S 12-Y 12-F 12-O 12-T 12-X 12-K	1-A 2-A	12-S 12-Y 12-F 12-O 12-T 12-X 12-K	**		**	

INSTALLATION CHART

INSTALLATION PROCEDURE	MASTER ITEMS											
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B	
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware
4a. Bolt the top of AN-TENNA TUBE number 1 to the bottom of AN-TENNA TUBE number 2 using bolt circle HARDWARE and slot stiffener HARDWARE furnished.†	**		**		**		**		1-A 2-A		1-A 2-A	
									17-F 17-L 17-Q 17-V 17-S 17-X		17-F 17-L 17-Q 17-V 17-S 17-X	
4b. Bolt the top of AN-TENNA TUBE number 3 to the bottom of AN-TENNA TUBE number 4 using the procedure described in the preceding step.†	**		**		**		**		3-A 4-A		3-A 4-A	
5. Assemble the three sections of TRANSMISSION LINE which make up the lower long portion of the transmission line harness. This is accomplished by joining A-A and B-B† as shown in FIGURE	**		**		**		**		18		18	
The necessary hardware items are on the sections of the line.	**		**		**		**		4B		4B	
6. Attach the CONNecTOR (FEED) STRAP to the end seal of the transmission line.	7		7		8		8		10		10	
7. Loosely bolt the GROUND STRAPS and GROUND STRAP (FEED) to the appropriate studs on the TRANSMISSION LINE. The necessary hardware is assembled on the studs. See FIGURE SECTION	6		6		6		6		11		11	
	5		5		5		5		13		13	
	12		12		12		12		18		18	
	6 9 A-A, B-B, C-C		6 9 A-A, B-B, C-C		7 10 B-B, C-C, D-D		7 10 B-B, C-C, D-C		8 11 B-B, C-C		8 11 B-B, C-C	

INSTALLATION CHART

INSTALLATION PROCEDURE	MASTER ITEMS												
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B		
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	
<p>8. After the surface of the antenna tube has been thoroughly cleaned at those points where the transmission line harness is to make contact, mount the previously assembled section of TRANSMISSION LINE into position in the ANTENNA TUBES assembled in step 4a. The transmission line clamps to the slot lip by means of the clamps welded to the line. Attach the ground straps (feed), ground straps, and connector straps (previously assembled to the transmission line) to the slot lip through the appropriate holes using the HARDWARE supplied.</p> <p>See FIGURE SECTION</p> <p>After the foregoing has been accomplished a length of transmission line will protrude beyond the top of antenna tube number 2.</p> <p>See FIGURE</p> <p>This length of line should extend exactly 12¼ inches beyond the end of the tube. In the event the length is slightly different, it can be</p>	12 1-A		12 1-A		13 1-A 2-A		13 1-A 2-A		18 1-A 2-A		18 1-A 2-A		
		11-E 11-K 11-O 11-C 11-L 11-P 11-U		11-E 11-K 11-O 11-C 11-L 11-P 11-U		12-E 12-N 12-R 12-W 12-Q 12-C 12-M		12-E 12-N 12-R 12-W 12-Q 12-C 12-M		17-E 17-M 17-P 17-T 17-J 17-K 17-L		17-E 17-M 17-P 17-T 17-J 17-K 17-L	
		6 9 A-B, B-C, C-C		6 9 A-A, B-B, C-C		7 10 B-B, C-C, D-D		7 10 B-B, C-C, D-D		8 11 B-B, C-C		8 11 B-B, C-C	
	4-1		4-1		4-1		4-1		4-1		4-1		

INSTALLATION CHART

INSTALLATION CHART												
INSTALLATION PROCEDURE	MASTER ITEMS											
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B	
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware
<p>made exactly 12¼ inches by loosening the nuts on the clamps and studs and pushing or pulling (whichever is required) on the harness to obtain the required length. The holes in the slot lips are oversize to permit slight adjustments in the positioning of the harness.</p> <p>NOTE: IT IS VERY IMPORTANT THAT POINTS AT WHICH THE CLAMP, FEED, AND GROUND STRAPS (AND THE SCREWS AND NUTS HOLDING THEM) MAKING CONTACT WITH THE SLOT LIP BE COMPLETELY CAULKED ON BOTH SIDES OF THE SLOT LIP. THE SCREW CAP AS WELL AS THE NUT END MUST BE CAULKED AFTER ALL CONNECTIONS HAVE BEEN MADE. CAULKING MUST NOT INTERFERE WITH THE PERFECT ELECTRICAL AND MECHANICAL CONTACT WHICH MUST EXIST AT THESE POINTS.</p>												
<p>9. Assemble the two sections of TRANSMISSION LINE which comprise the short upper section† of the transmission line harness by joining the line as shown in</p>	**		**		**		**		19		19	
<p>FIGURE SECTION</p>	**		**		**		**		11 D-D		11 D-D	
<p>The necessary couplings are shipped as part of the transmission line.</p>												

INSTALLATION CHART

INSTALLATION PROCEDURE	MASTER ITEMS											
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B	
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware
<p>10. Attach the connector straps, ground straps, and ground straps (feed) to this section of transmission line using the same procedure as outlined in steps 6 and 7.</p>	**		**		**		**					
<p>11. Mount the section of harness assembled in step 10 into the two upper sections of the ANTENNA TUBE assembled in step 4B. As a temporary step, this section of harness should be pulled toward the top of ANTENNA TUBE number 4 until the lower section of the harness is at least 12 3/8 inches above the bottom of ANTENNA TUBE number 3. See</p> <p style="text-align: center;">FIGURE</p> <p>This is necessary to prevent damage to the transmission line harness when the upper two sections of antenna are raised into position for bolting to the lower two sections. If the measurements given here and in step 8 are not observed, then (when in step 15) the upper two sections are lowered into position the entire weight of the upper two sections of the antenna will be supported by the harness, resulting in buckling and damage to the harness.</p>	**		**		**		**		3-A 4-A		3-A 4-A	
	4-J		4-J		4-J		4-J		4-A		3-A	
<p>12. Mount a beacon to the BEACON TOP PLATE installed in step 3.</p>	2		2		3		3		5		5	

INSTALLATION CHART

INSTALLATION PROCEDURE	MASTER ITEMS											
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B	
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware
<p>2 to guide the upper two sections of antenna into place. If the preceding steps have been rigidly adhered to, the upper two sections of antenna tube will be resting on top of ANTENNA TUBE number 2 and there will be no strain on the harness. Bolt into place using the HARDWARE supplied for the bolt circle and the HARDWARE supplied for the slot stiffener.</p>	**		**		**		**		2-A		2-A	
<p>16. Loosen the screws holding the section of harness clamped to the two upper sections of antenna tube and lower (it may be necessary to apply considerable force) the harness into position. It is absolutely necessary that the upper section of harness be brought to rest firmly on the lower section before making any effort to tighten the coupling. If this cannot be brought about by lowering the upper section of harness far enough to rest against the lower section of harness, then the studs and clamps holding the lower section of harness in position should be loosened and the lower section of harness pulled up until it butts firmly against the upper section. It is desirable to leave the upper clamp on the lower section of transmission line and the lower clamp on the upper section of harness loose to assist in</p>												

INSTALLATION CHART

INSTALLATION PROCEDURE	MASTER ITEMS											
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B	
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware
aligning the outer conductors perfectly before tightening the coupling. Tighten the nuts on the clamps and studs, and lastly, tighten the coupling between the upper and lower sections of harness. It must be remembered that this coupling must be gas tight as well as electrically perfect. See FIGURE SECTION After all connections have been permanently made, caulk as outlined in Note of step 8.												
	6 9 **		6 9 **		7 10 **		7 10 **		8 11 G		8 11 G	
17. Before proceeding, reference should be made to FIGURE to see at what frequencies shorting bars are to be used. After the surface of the slot face has been thoroughly cleaned at those points where the SHORTING BARS are to make contact, mount the SHORTING BARS into position. See FIGURE SECTION There are two SHORTING BARS for each antenna tube. Hardware is supplied as part of each shorting bar. The correct position for each shorting bar measured from the ends of the slot is given in the chart of FIGURE After the shorting bars have been bolted into position, the points												
	1		1		2		2		3		3	
	9		9		10		10		14		14	
	9		9		10		10		9		14	
	6 9 E-E		6 9 E-E		7 10 E-E		7 10 E-E		8 11 E-E		8 11 E-E	
9		9		10		10		14		14		
1		1		2		2		3		3		

INSTALLATION CHART

INSTALLATION PROCEDURE	MASTER ITEMS											
	28221-A		28221-B		28222-A		28222-B		28224-A		28224-B	
	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware	Item	Hardware
<p>where the edges of the shorting bars make contact with the antenna tubes should be carefully caulked. CAUTION:—Caulking must be done after each shorting bar has been bolted into place. CAULKING MUST NOT INTERFERE WITH THE PERFECT ELECTRICAL AND MECHANICAL CONTACT WHICH THE SHORTING BAR MUST MAKE WITH THE ANTENNA TUBE.</p>												
<p>18. Replace the POLY-ETHELENE STRIPS which were removed in step 1. Note that these covers are not identical in size and must be mounted in correct sequence.</p>	3 4		3 4		4 4 5 5		4 4 5 5		6 6 6 7 7 8 8 9 9		6 6 6 7 7 8 8 9 9	
<p>19. Install beacon wiring as outlined on page 20.</p>												

* Either tube of the MI-28222-A, or MI-28222-B antenna may be used for the top section.

** Does not apply.

† The four antenna tubes are shipped separately and are marked "Top 1," "Top 2," etc. This indicates the sequence in which they stack to the tower top (Figure 4-A), and hence governs the order in which the tubes are assembled and mounted. Likewise, transmission line harness is shipped disassembled. The order in which the various sections are assembled is indicated by the lettering stencilled on those ends of the individual sections which are joined to make up the complete harness. For example, "A" of one section joins to "A" of another, "B" joins to "B," etc. Assembling the transmission line harness consists of making the four junctions, A-A, B-B, C-C, and D-D, shown in Figure 4-B.

INSTALLATION OF FEED LINES

The following text serves only to emphasize basic principles which should be borne in mind when planning the installation of the feed line from the transmitter to a Pylon Antenna. Since no two installations will be exactly alike the following instructions are not specific and must be adapted to the individual installation.

The RCA Pylon Antenna transmission line harness terminates in a three and one-eighth inch flanged

line to which the line running down the tower is to be connected. A pair of 45-degree or 90-degree flanged elbows should be connected to carry the line to the tower leg from which the transmission line is to be suspended. Use the required lengths of short, straight flanged sections of transmission line between the elbows. See Figures 6, 7 or 8. With the Communications Products Co. type of line and accessories, the upper 20-foot section of

standard flanged transmission line should first be installed. It is recommended that the line be firmly anchored at the top of the tower by properly installing the top hanger. Subsequent hangers should be installed so that the line is hung by the springs provided. Each section of line should be fastened to the tower leg with transmission line spring hangers spaced 10 feet apart. The springs should be adjusted initially to eight and one-half inches for a one and five-eighths inch line and 24 inches for a three and one-eighth inch line. As each additional 20-foot section of line is installed it should be suspended by hangers. The hangers should support the section of line to which they are attached. The lower end of the last 20-foot section of line should not be fastened to the tower. If the hangers have been installed and adjusted as recommended, all vertical expansion will take place towards the base of the tower. (Differential expansion on the inner conductor is provided by virtue of the fact that an eighth of one-inch movement per 20-foot section can take place at each inner plug connection.) In making the flanged connections, first insert the inner conductor connector plug and synthetic rubber ring which rests in the groove of the flange. When the flange faces are drawn together, a mechanically strong, electrically good, as well as positive gas tight joint is formed. The strength of the joint is as great as the tubing itself. Only small hand wrenches are required for making these flanged connections. No special tools, torches, or other soldering equipment are required.

If Andrew Co. type line and accessories are used, the bottom section of transmission line should be installed first and subsequent sections added to it so that all sections are supported by the bottom one and all couplings are in compression, rather than tension. In connecting the expansion joint between the last section of the line and the antenna, it should be compressed slightly below its normal length for the temperature at the time of installation, to permit inserting the inner connector. The expansion joints are installed at 200-foot intervals, and the bottom ends of each 200-foot run are supported by brackets which anchor the line firmly to the tower. The remaining supports should be of a type which permits vertical motion (as from expansion or contraction) but prevent lateral motion. A 90-degree flanged elbow should carry the line from the lower end of the last vertical section to the horizontal section of transmission line. The horizontal section of line should be anchored at the transmitter building. (Care should be exercised that no undue strain is placed on the transmitter connections inside the building.) Horizontal line expansion will then be directed toward the tower.

In cases where the tower leg has a moderate taper, it will be found that the line has sufficient flexibility to follow the contour of the tower leg without the use of any fitting. For those cases where the tower leg has an extreme flare, it may be necessary to provide a special bend.

Immediately upon completion of the line installation, the entire system should be gassed using

either dry compressed air or nitrogen to a pressure of 5 to 15 pounds per square inch. It is very desirable that this be done before the system acquires moisture through condensation or any other means. In the event the system should acquire moisture, the moist air may be removed by pumping dry air into the line and slowly bleeding the air from the line by opening the bleeder valve (which is an integral part of the Pylon harness) and by loosening the end seals on the transmission line harness. To make certain dry air is pumped into the line, the air may be filtered with silica gel or other dehydrating compound. The length of time required to completely purge the line of moisture will depend on the amount of moisture originally present, and upon the rate at which dry air is pumped through the line. After this has been accomplished the bleeder valve should be closed and the end seals tightened.

CAUTION: IT IS EXTREMELY IMPORTANT THAT THE LINE AND HARNESS BE COMPLETELY FREE OF MOISTURE BEFORE FEEDING R-F POWER TO THE LINE. OTHERWISE, ARCING WILL OCCUR WHICH WILL SERIOUSLY DAMAGE THE LINE AND NECESSITATE LOWERING THE HARNESS TO THE GROUND FOR REPAIR.

ELECTRICAL CHECKS

After installation, it is desirable to check the insulation resistance of the transmission line.

1. Disconnect the transmission line as near the antenna harness as possible.
2. With a high resistance ohmmeter or bridge connected between the inner and outer conductors of the transmission line (at the transmitter termination of the line) a leakage resistance of the order of 50-megohms should be measured. Lower leakage resistance indicates the presence of moisture, or foreign matter in the line.

After complete assembly the d-c resistance should be measured between the inner and outer conductors of the transmission line (at the transmitter termination of the line). The d-c resistance of the overall antenna installation should be of the order of 0.05-ohms. Resistance appreciably higher than this indicates poor connection between sections of inner conductor at some place in the antenna transmission line system.

INSTALLATION OF BEACON WIRING

When installing the beacon wiring, the flexible cable or conduit (whichever is used) must be run along the outer edge of the antenna tube diametrically opposite the slot. This is shown in Figure 4-C. Flexible rubber covered cable as supplied with Beacon Kit, MI-28216, may be clamped at various points along the back of each antenna tube. The clamps may be fastened by screws for which tapped ($\frac{1}{4}$ inch, 20 thread) holes are provided. See Figure 4-D. If conduit is used, it may be supported by brackets or clamps (not provided) which may be mounted by bolting to the antenna tube flange at each flange level. This is most con-

veniently done by removing one of the bolts from the bolt circle and using it to fasten the supporting bracket to the flange (as shown in Figure 4-H).

NOTE: If steel cable or rope is used in conjunction with the shackle at the top of the antenna tube and it is desired to leave this cable in place for future use, it is extremely important to keep the cable away from the slot face of the antenna tubes. IN NO CASE MUST THIS CABLE BE PERMITTED TO CROSS THE SLOT. The pre-

ferred method of running this cable down to the Pylon base (where it may be fastened), is to weave the rope down the climbing steps on one side of the slot. (See Figure 4-F). This serves the dual purpose of keeping the cable from the slot face and effectively anchoring the cable along the length of Pylon and thus preventing the cable from flapping in windy weather. If these precautions are not observed, the electrical characteristics of the antenna may be seriously altered.

MAINTENANCE

It is recommended that antennas be inspected twice yearly. Nuts and bolts should be checked and tightened where necessary. Shorting bars should be checked for tightness. All caulking should be thoroughly inspected. Re-caulk all

points showing chipping or wear. Rust spots should be carefully cleaned and a coat of red lead applied to prevent spread of rust. Paint should be applied where and when required.

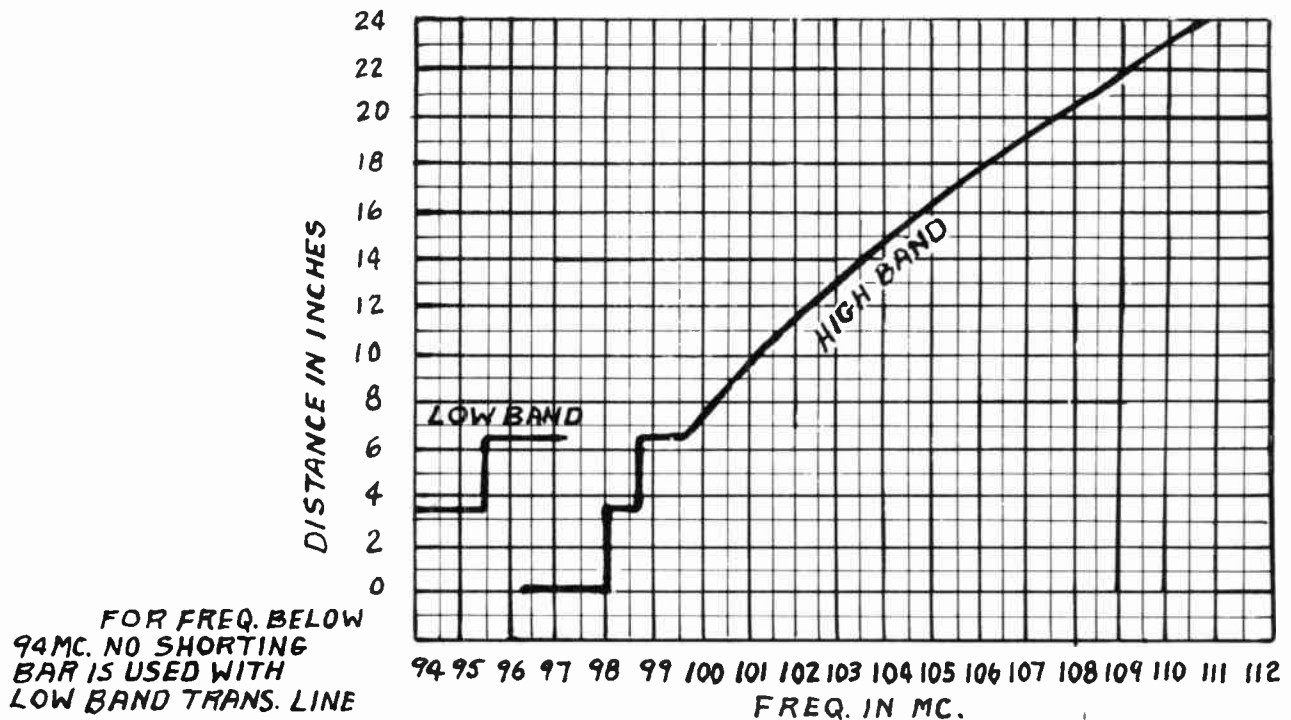


Figure 1—Shorting Bar Chart for BF-11

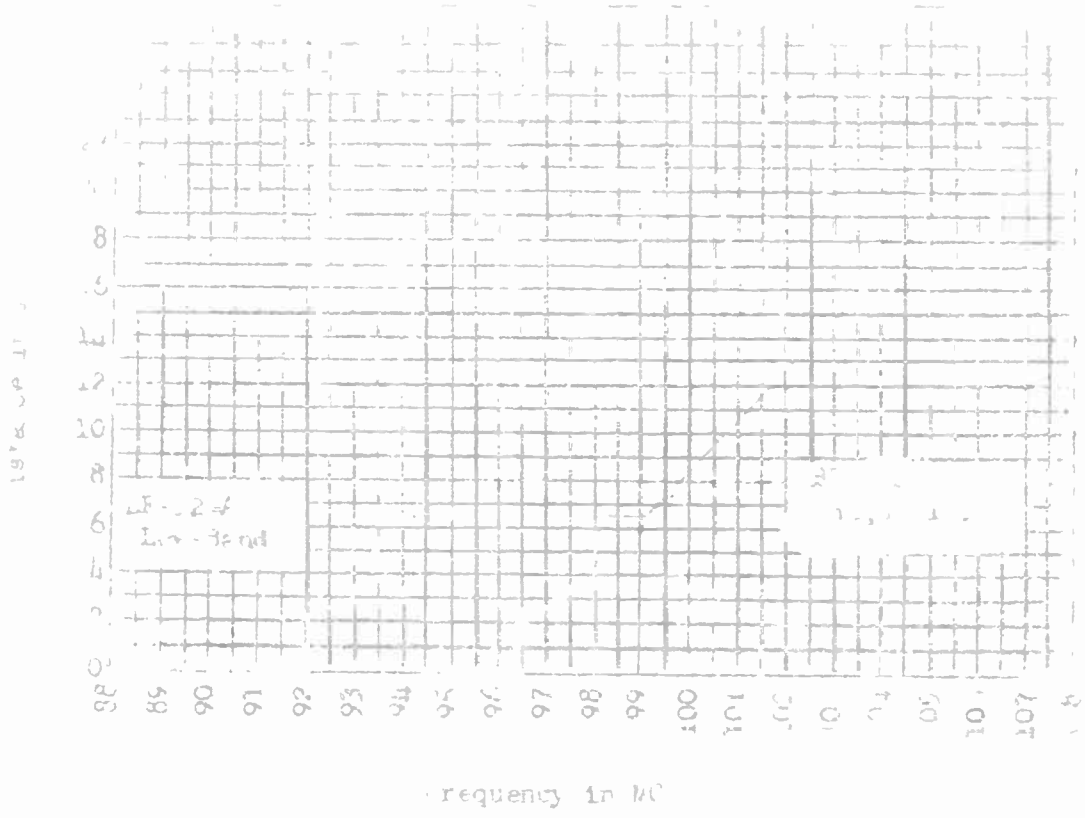
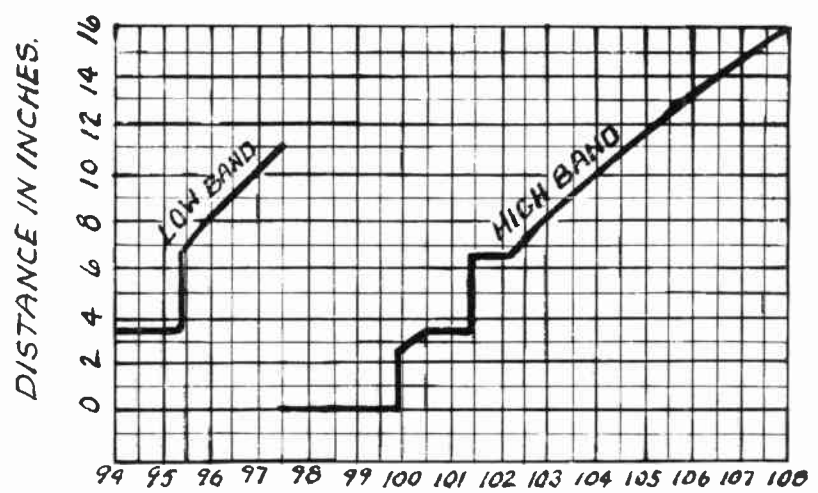


Chart for Determining
Location of Shorting Bar



FOR FREQ. BELOW 94 MC.
NO SHORT. BAR IS USED WITH LOW BAND TRANS. LINE.

Figure 3—Shorting Bar Chart for BF-14

Figure 4—Antenna Assembly Details

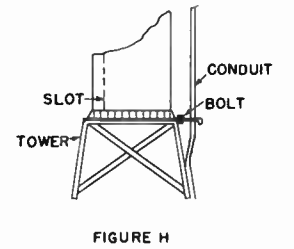
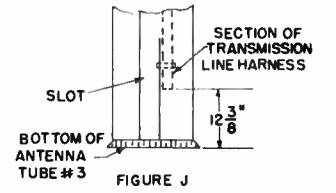
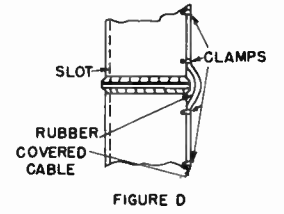
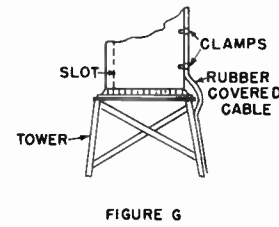
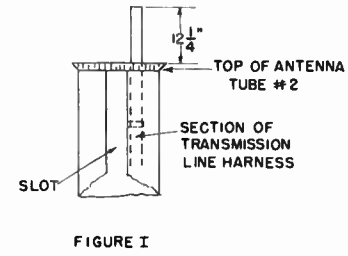
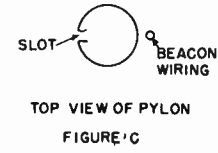
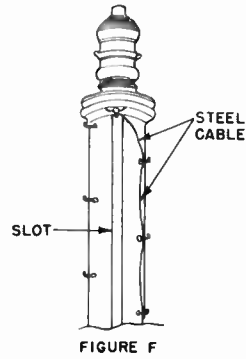
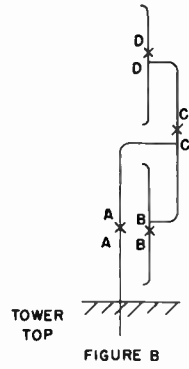
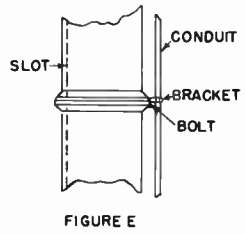
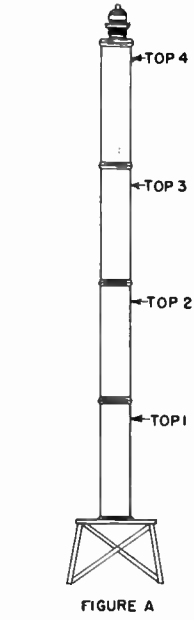
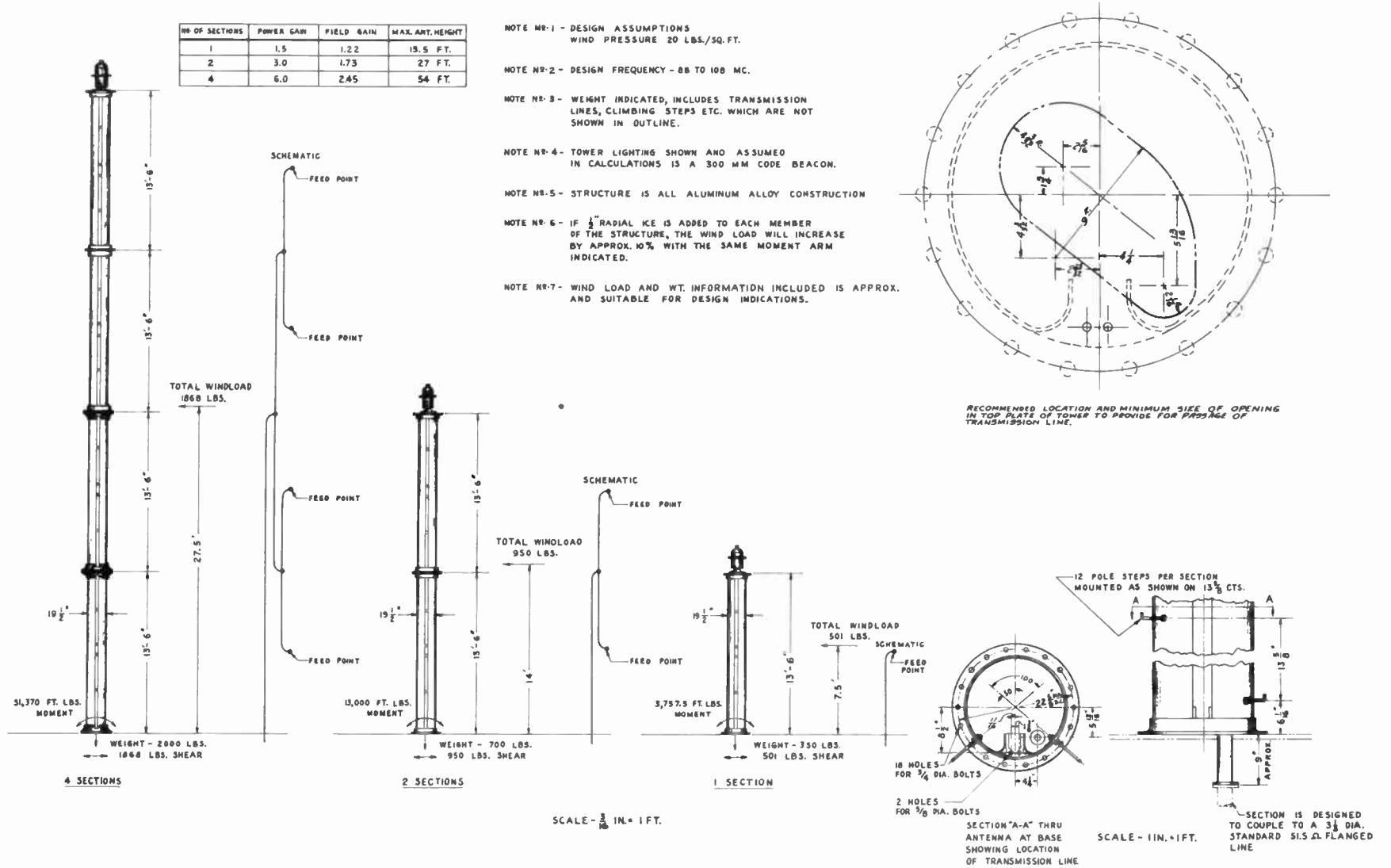


Figure 5—Antenna Mounting Detail



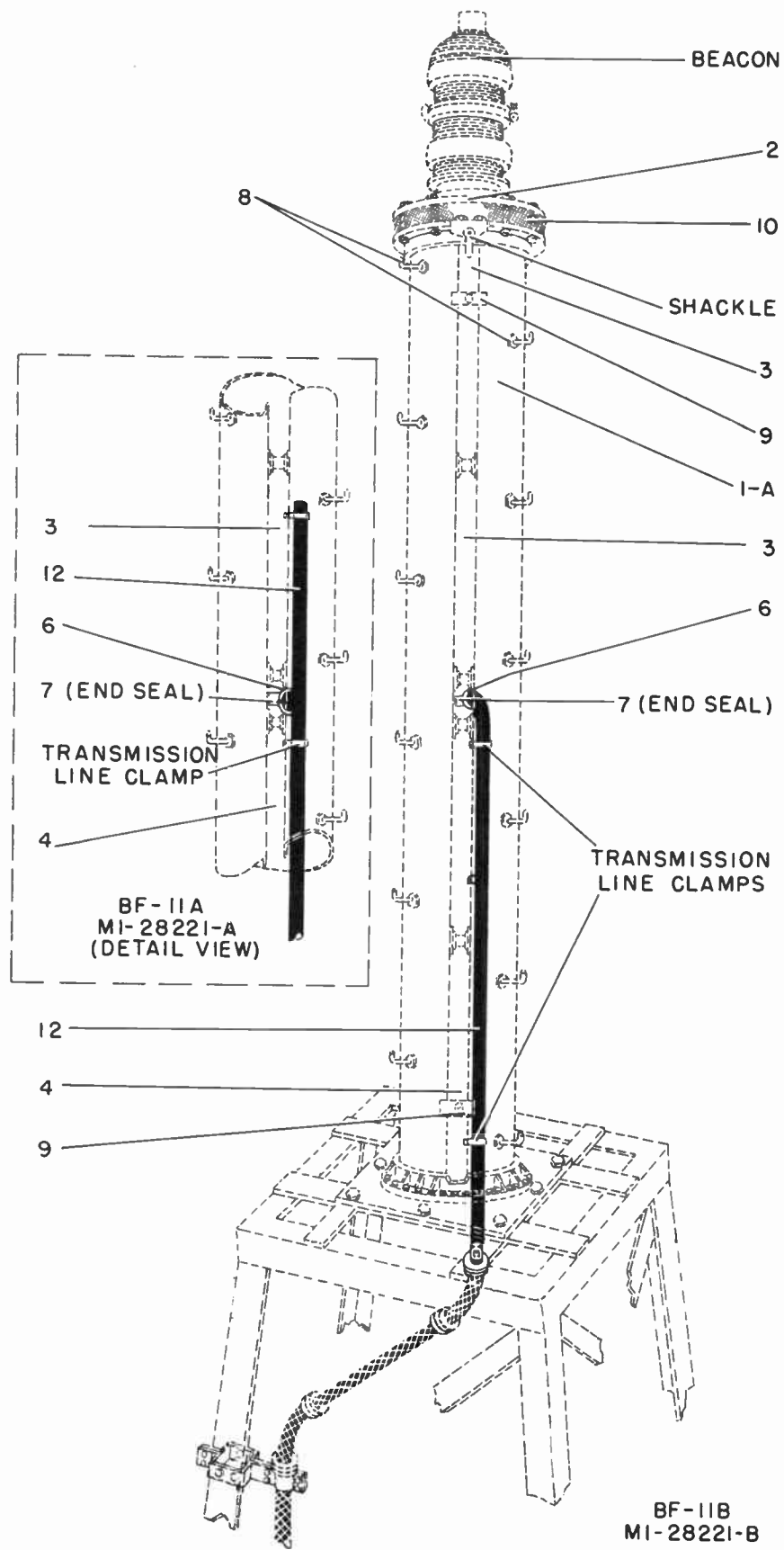


Figure 6—BF-11 Line Drawing

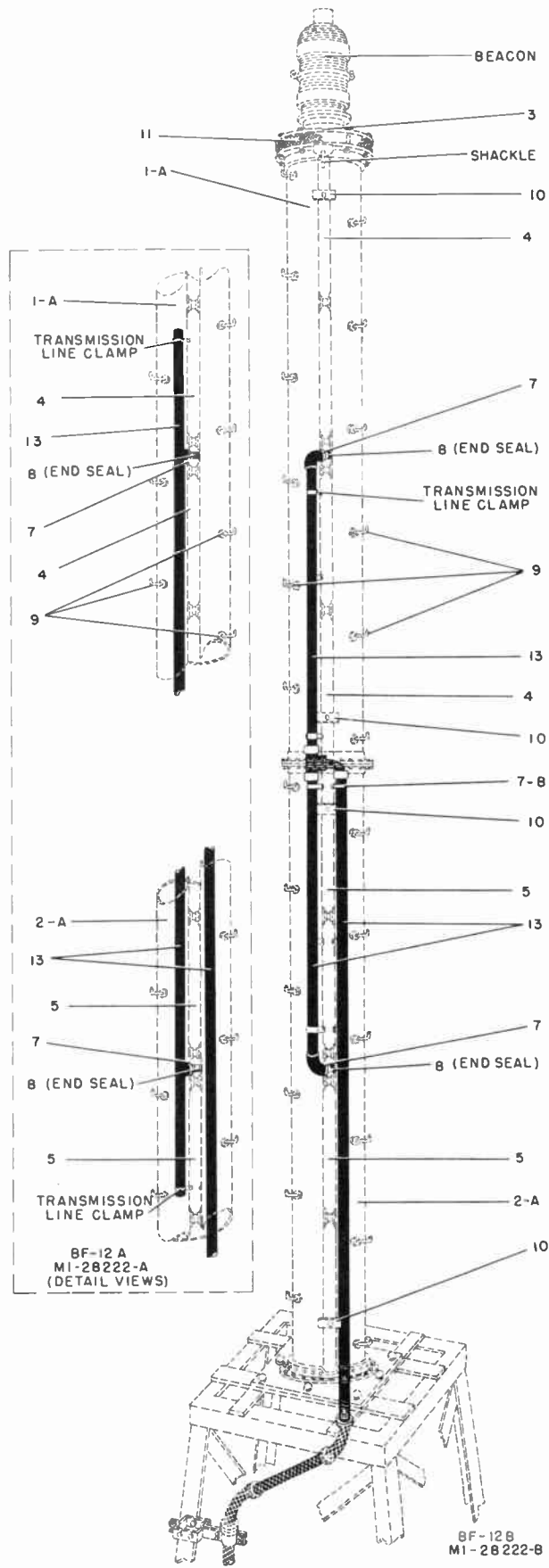


Figure 7—BF-12 Line Drawing

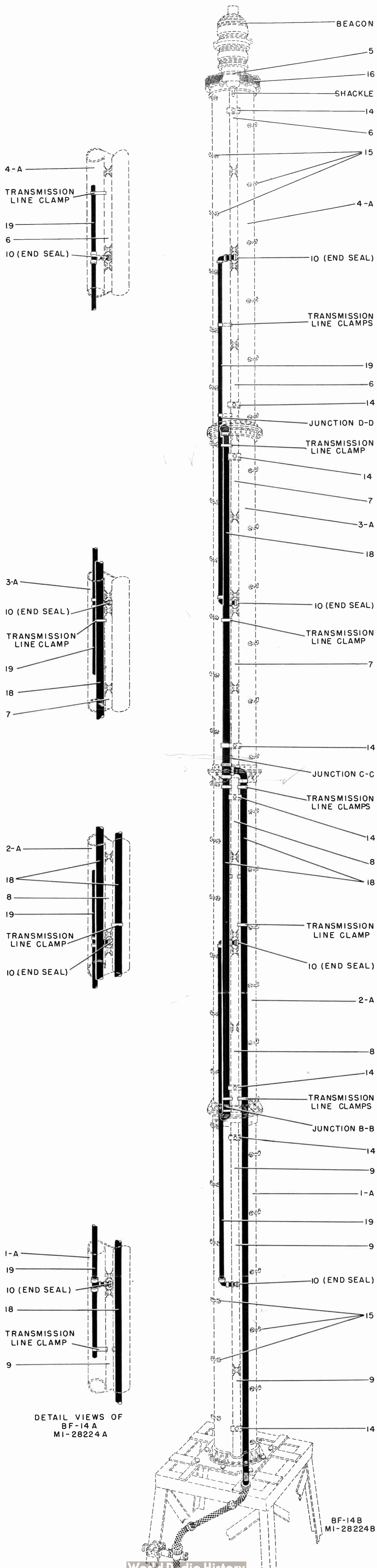


Figure 8—BF-14 Line Drawing

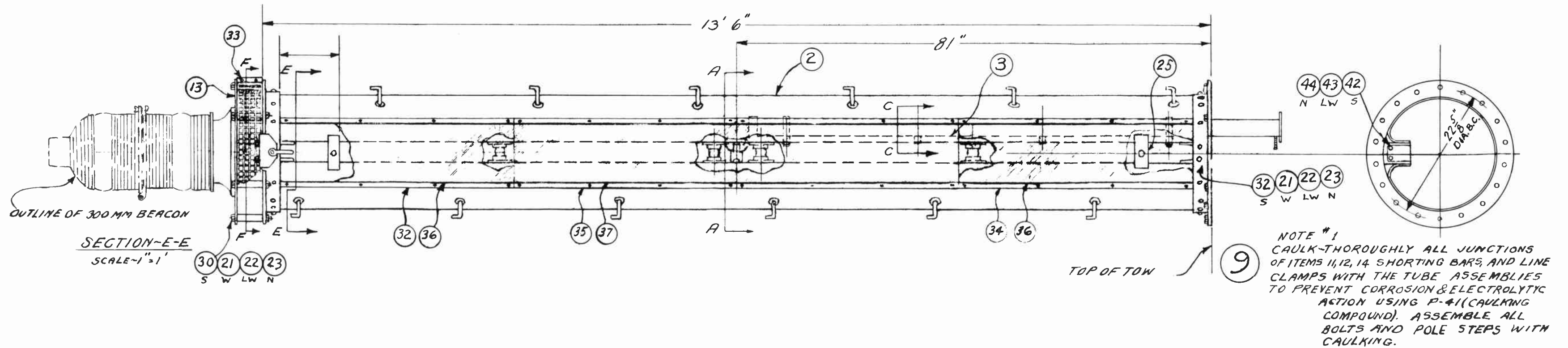
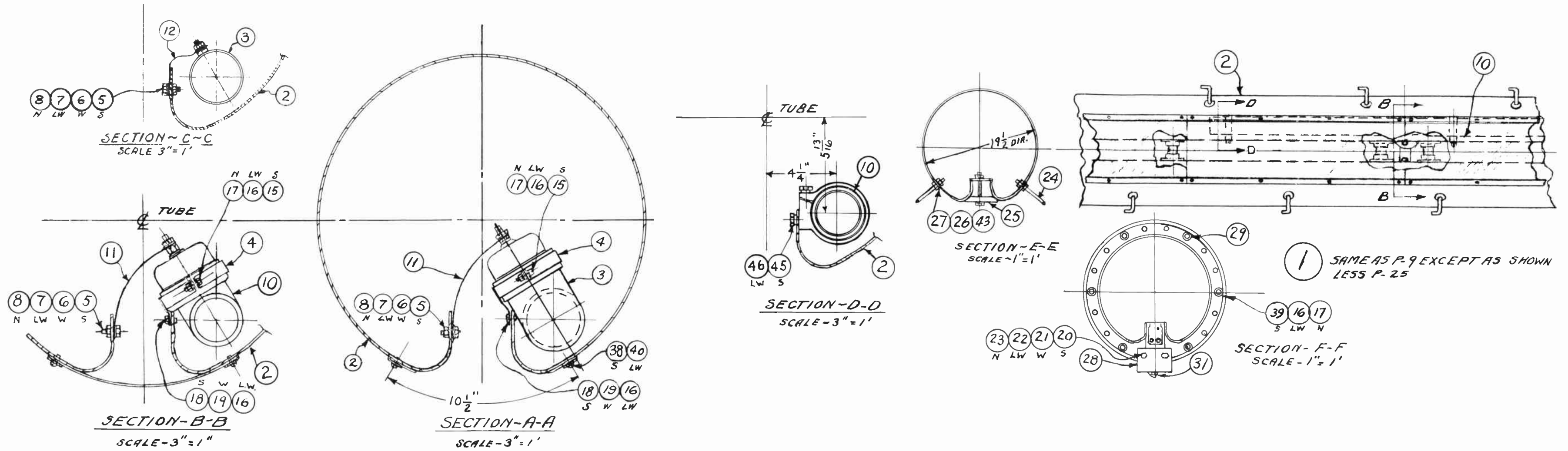


Figure 9—BF-11 Assembly Drawing

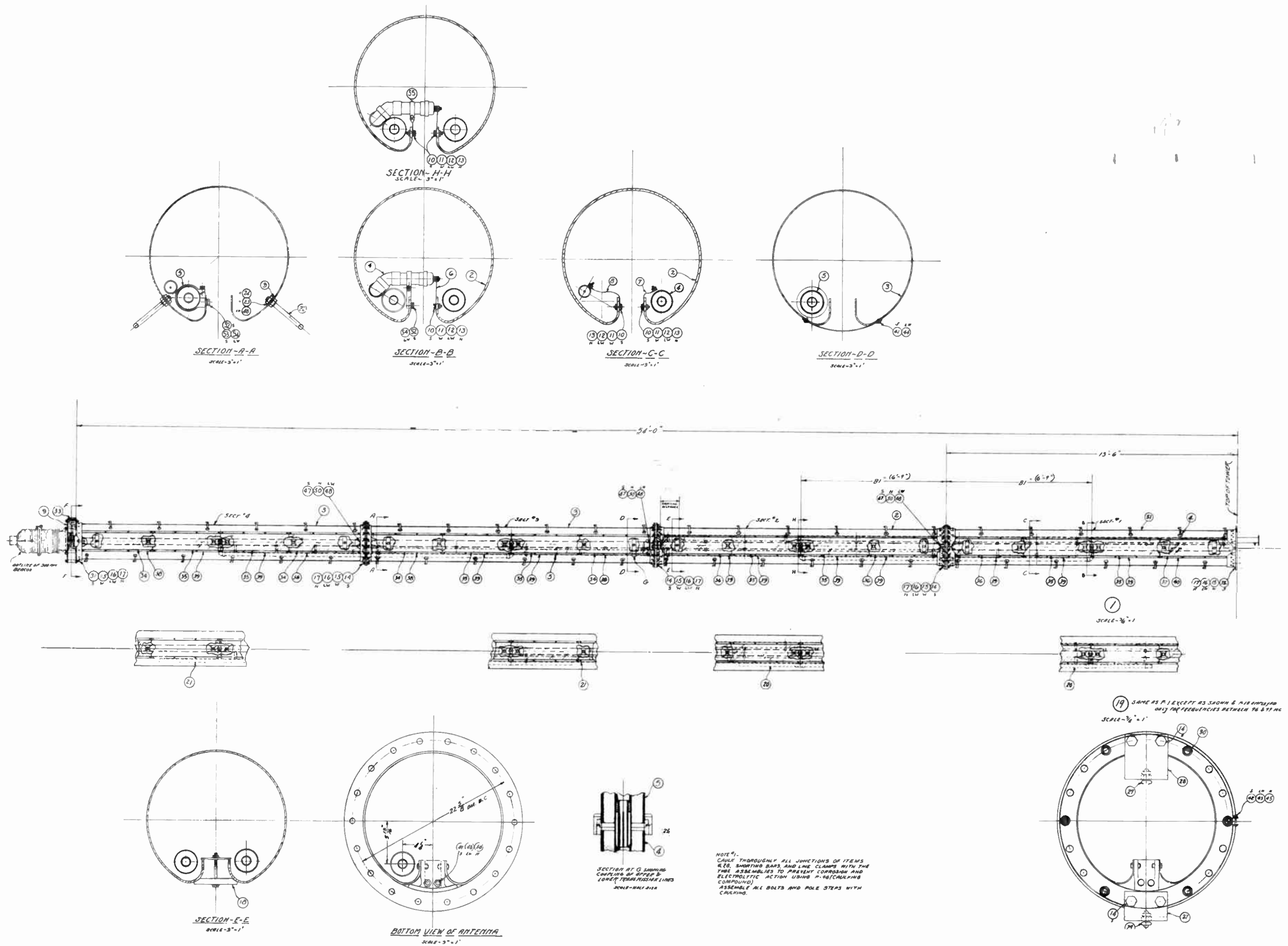


Figure 11—BF-14 Assembly Drawing

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