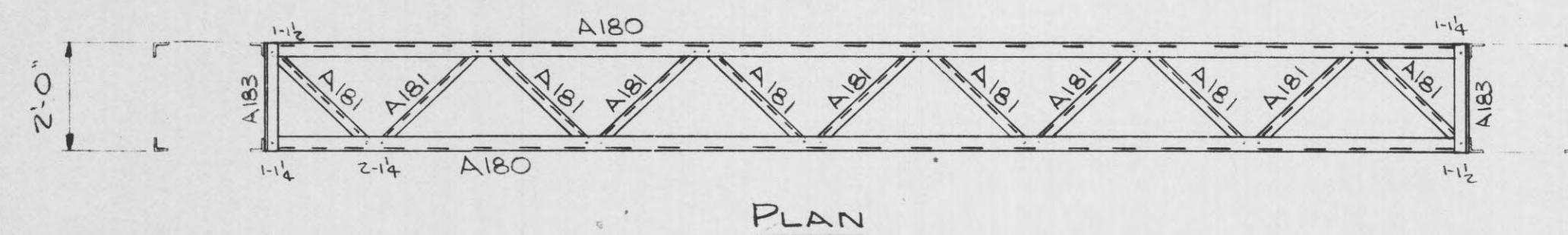
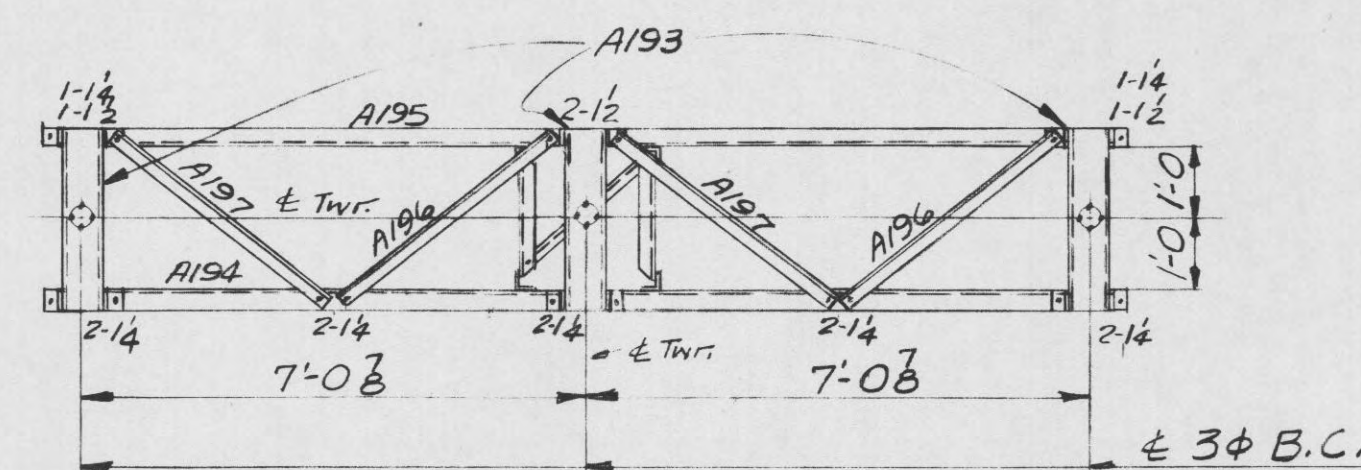


BILL OF MATERIAL

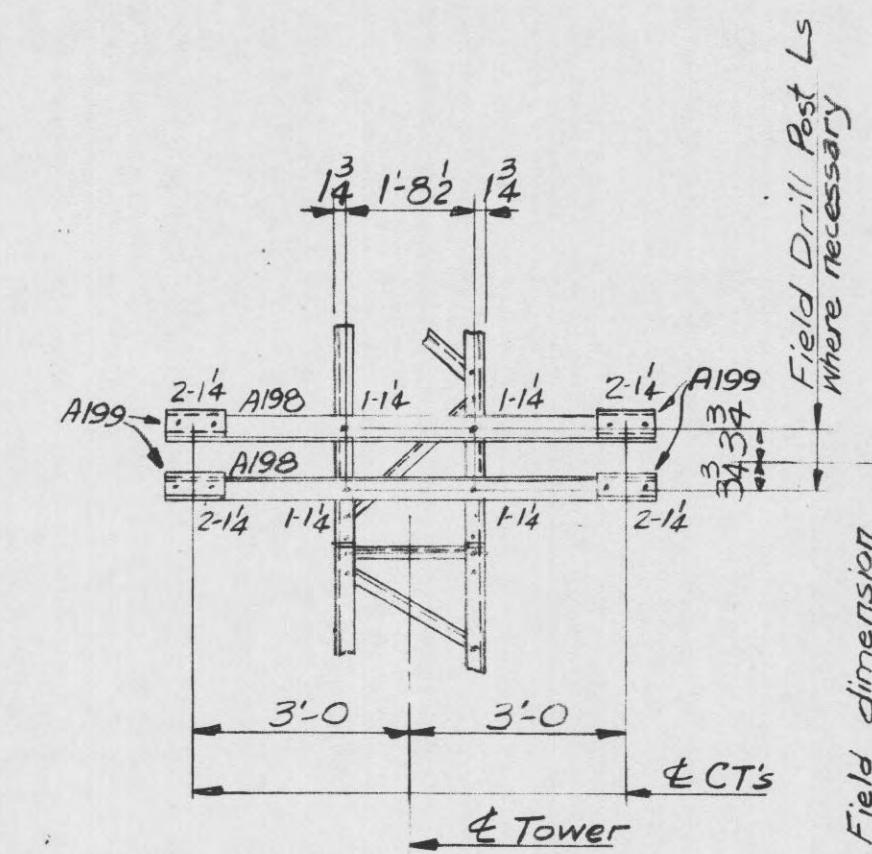
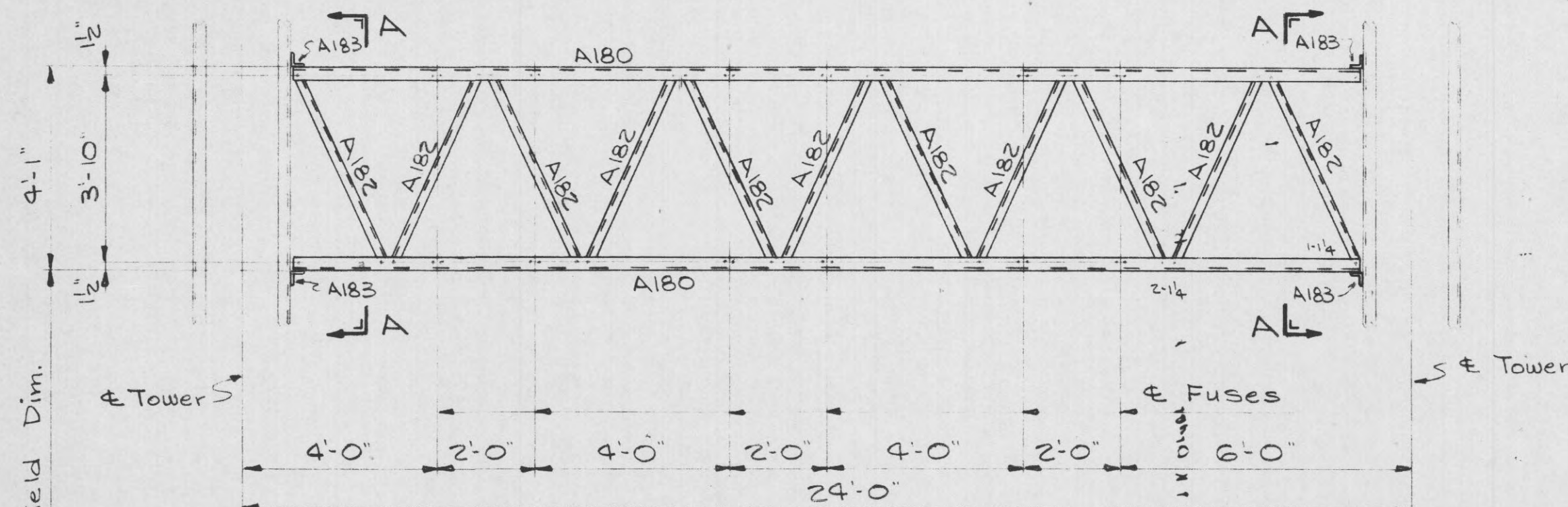
NO. REQUIRED	MARK	DESCRIPTION	LENGTH		WT.
			FT.	IN.	
4	A180	L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$	21	11	70
22	A181	L1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x $\frac{3}{16}$	2	7 $\frac{1}{2}$	5
22	A182	Do.	4	4 $\frac{1}{2}$	8
4	A183	L3 x 3 x $\frac{1}{4}$	2	0	10
3	A193	Welded 1-C7x9.8 4-L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$	2	5 $\frac{1}{2}$	27
1	A194	L3 x 3 x $\frac{3}{16}$	15	1 $\frac{3}{4}$	58
1	A195	Do	15	1 $\frac{3}{4}$	58
2	A196	L2 x 2 x $\frac{3}{16}$	3	10 $\frac{1}{4}$	10
2	A197	Do	3	10 $\frac{1}{4}$	10
2	A198	L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$	6	10	22
4	A199	Do	0	10	3
2	A200	Do	1	10 $\frac{1}{4}$	6
2	A201	Do	7	6 $\frac{1}{4}$	24
2	A202	Do	7	6 $\frac{1}{4}$	24
13	22	106	8"	14	0.27
9	5		Do.	12	0.285
ONE BRACKET BU TOTAL WT. = 60#					
ONE BRACKET BT TOTAL WT. = 353#					
ONE GIRDER G2 TOTAL WT. = 636#					



PLAN

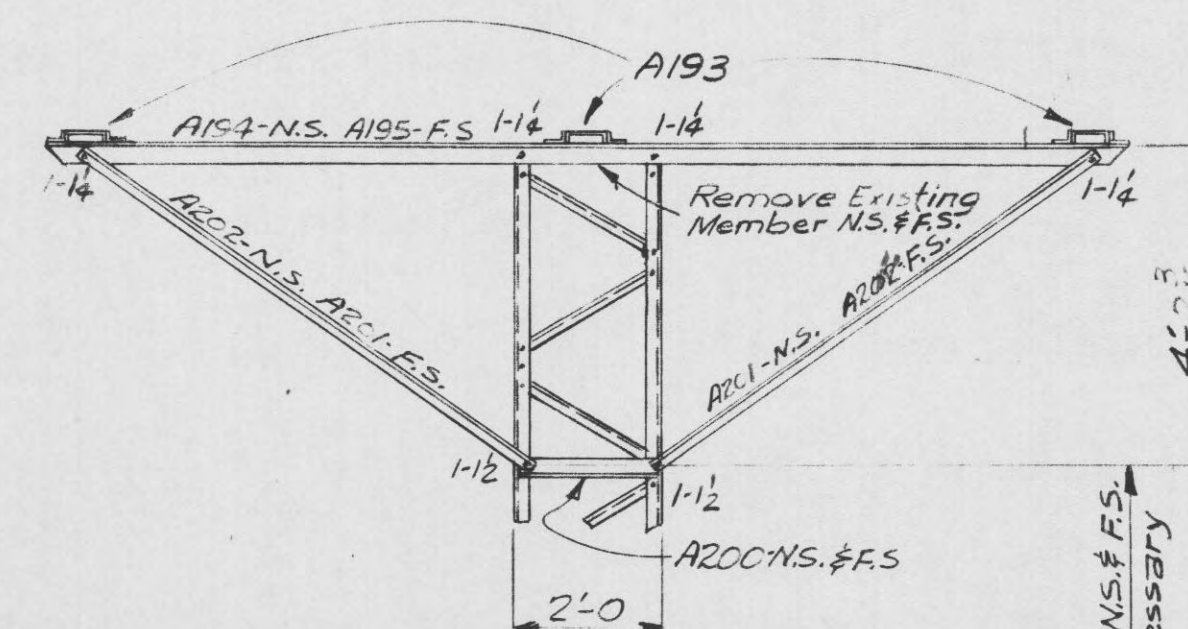
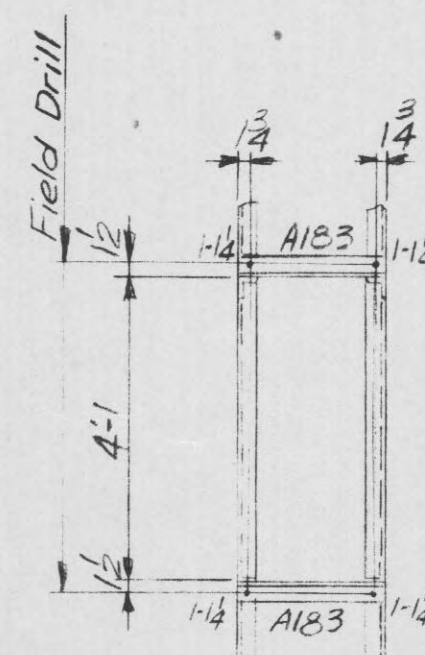


PLAN

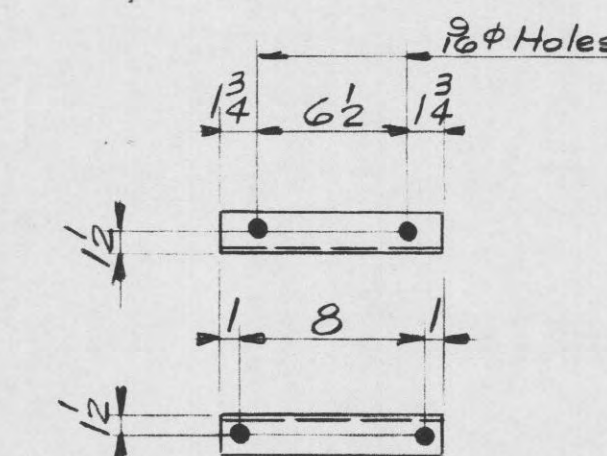
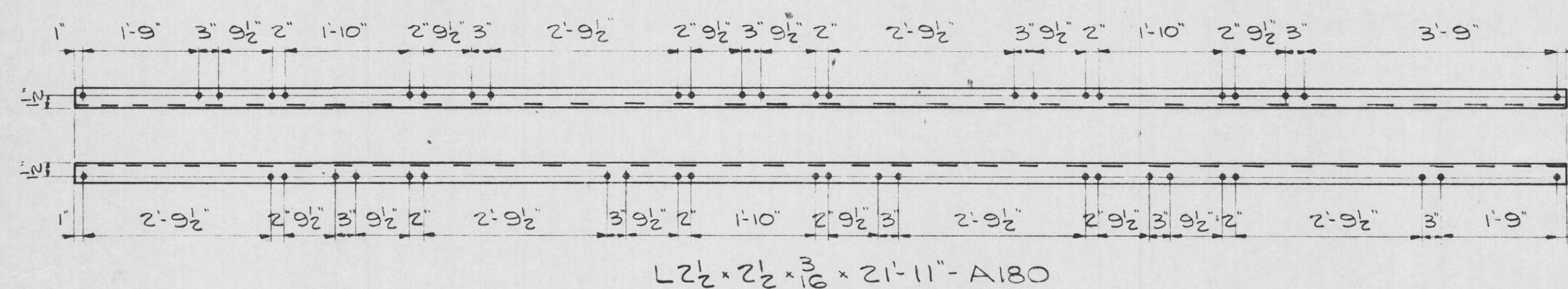
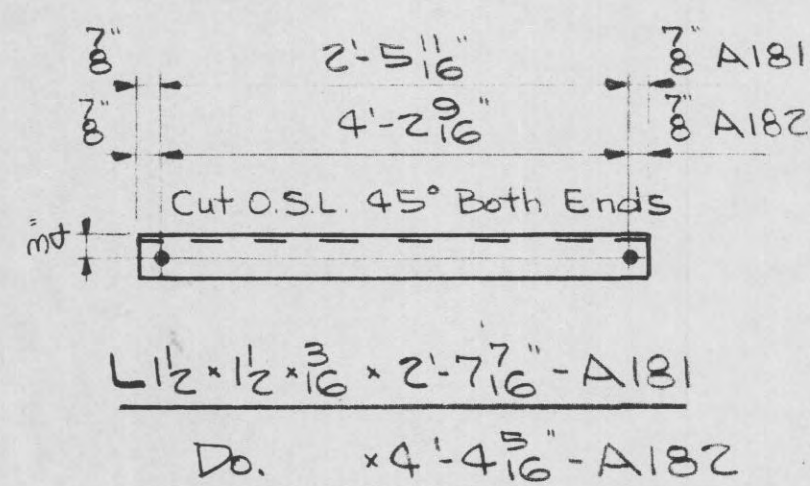
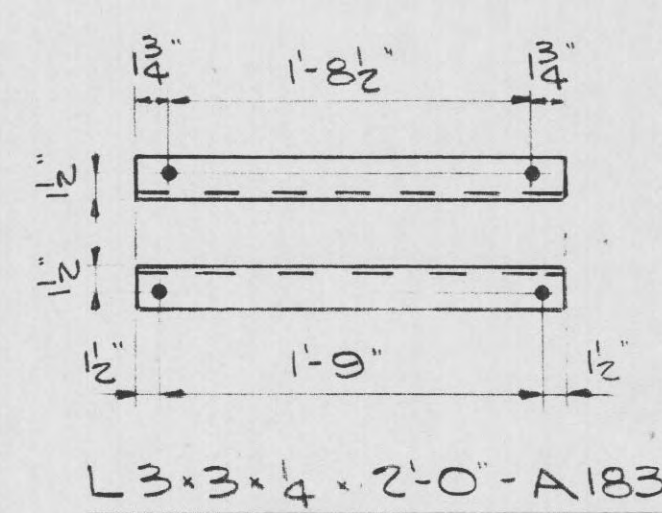
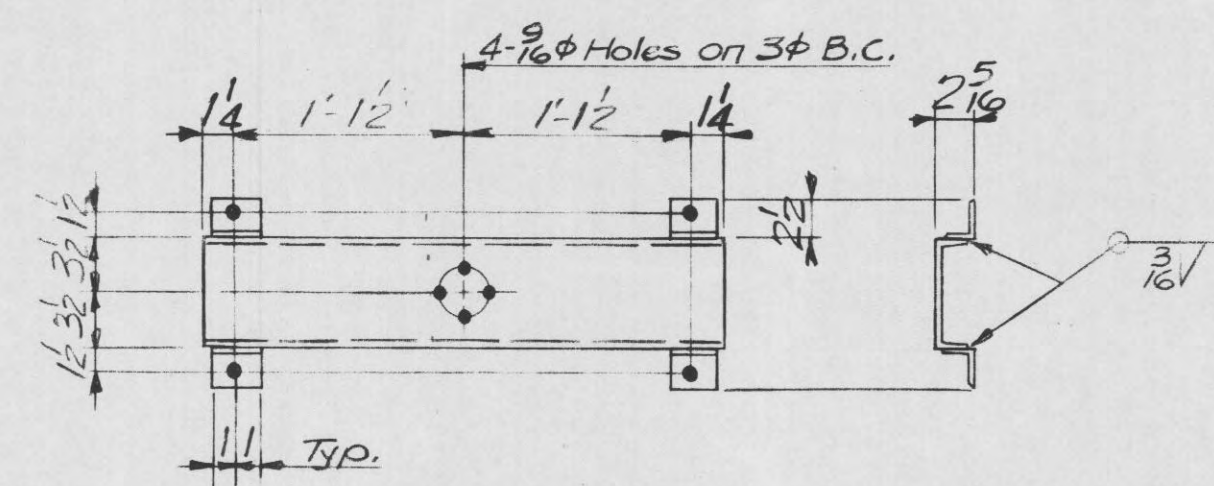
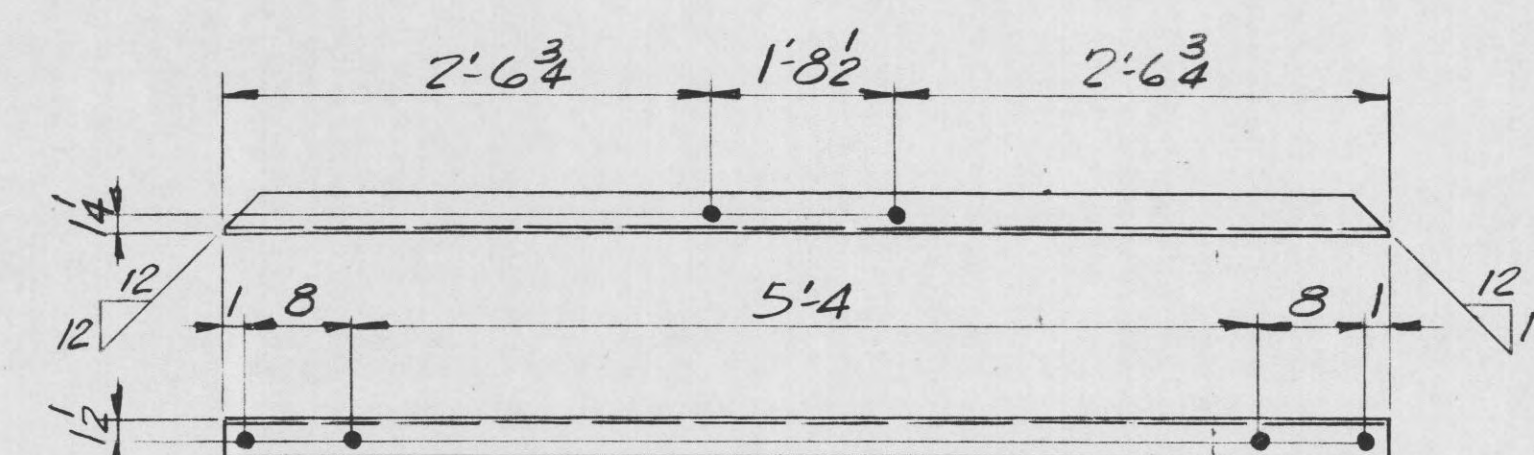
PARTIAL ELEVATION
BRACKET BU

PARTIAL ELEVATION

GIRDER G2

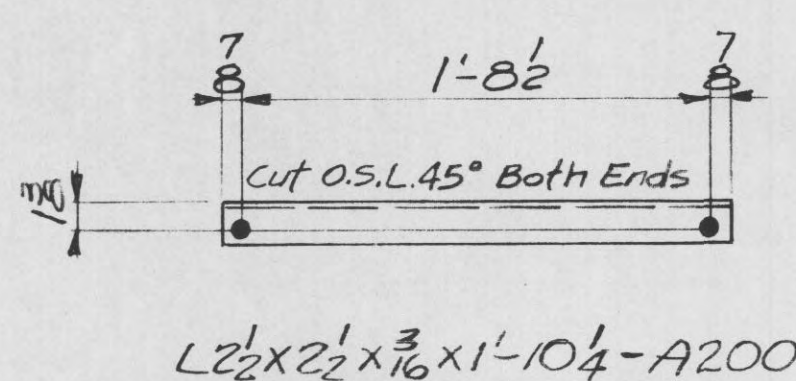
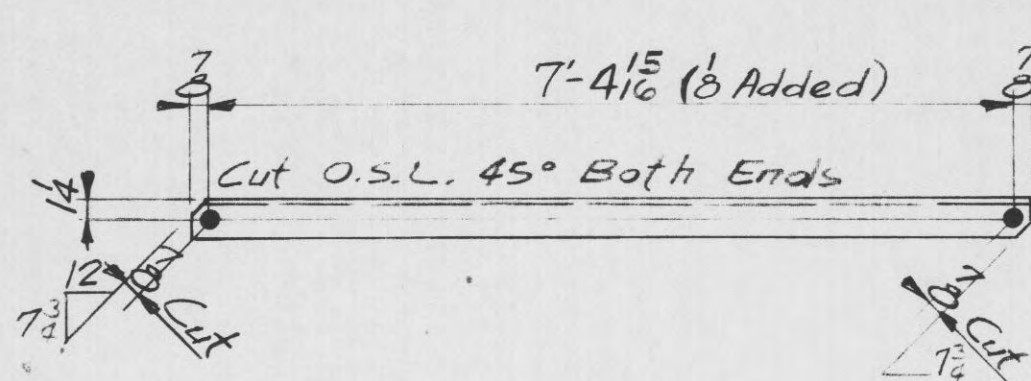
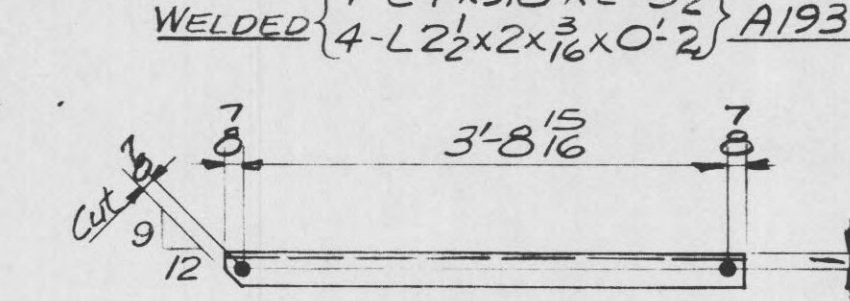
PARTIAL ELEVATION
BRACKET BT

SECTION A-A

L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$ x 0'-10"-A199L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$ x 21'-11"-A180L1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x $\frac{3}{16}$ x 2'-7 $\frac{1}{2}$ "-A181
Do. x 4'-4 $\frac{1}{2}$ "-A182L3 x 3 x $\frac{1}{4}$ x 2'-0"-A183WELDED 1-C7x9.8 x 2'-5 $\frac{1}{2}$ "
4-L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$ x 0'-2"-A193L3 x 3 x $\frac{3}{16}$ x 15'-1 $\frac{3}{4}$ "-A194
A195L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$ x 6'-10"-A198

NOTES:

Holes $\frac{1}{16}$ " unless noted
 Piece marks to be die stamped before galvanizing.
 Material to be hot dip galvanized after fabrication.

L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$ x 1'-10 $\frac{1}{4}$ "-A200L2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x $\frac{3}{16}$ x 7'-6 $\frac{1}{2}$ "-A201-As Shown
A202-OPR HANDL2 x 2 x $\frac{3}{16}$ x 3'-10 $\frac{1}{2}$ "-A196-As Shown
A197-OPR HAND

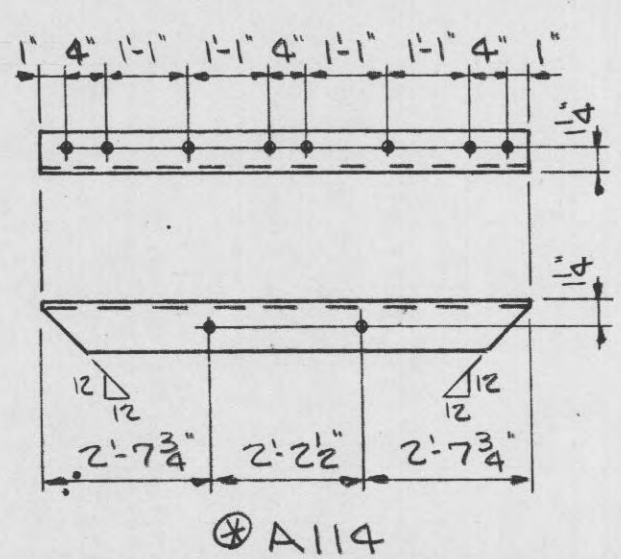
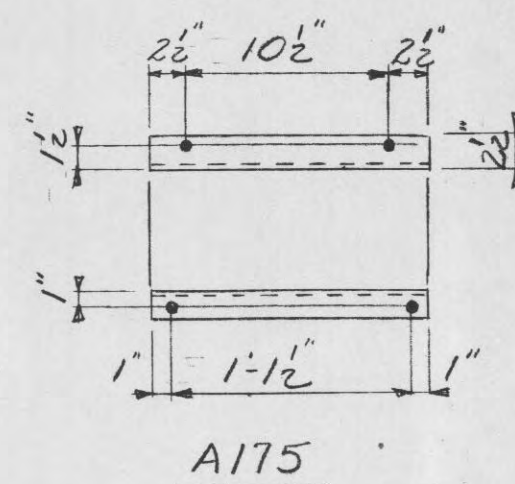
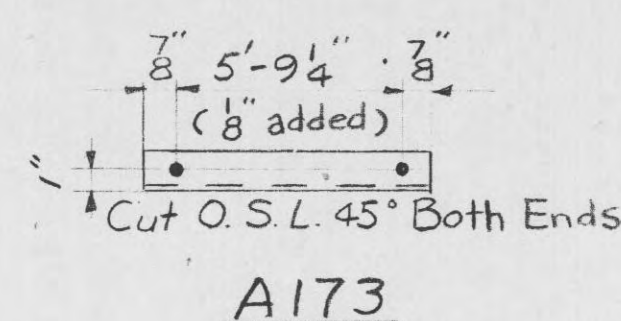
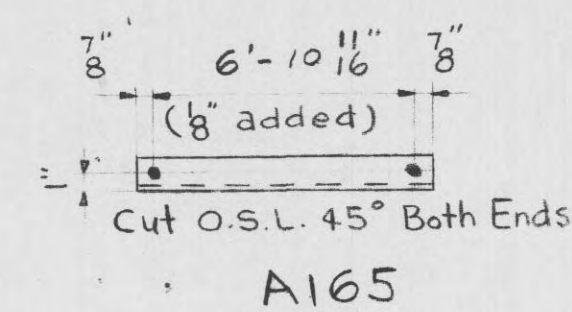
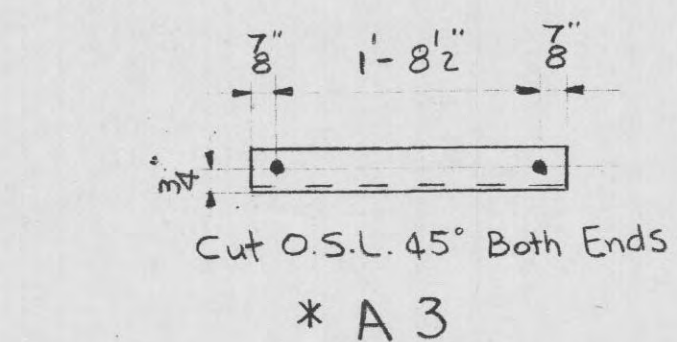
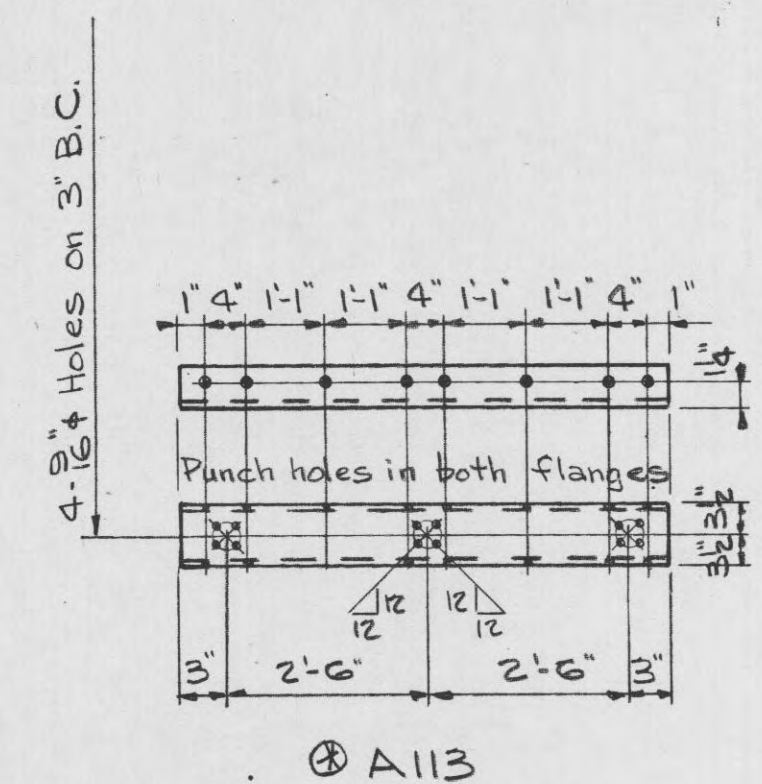
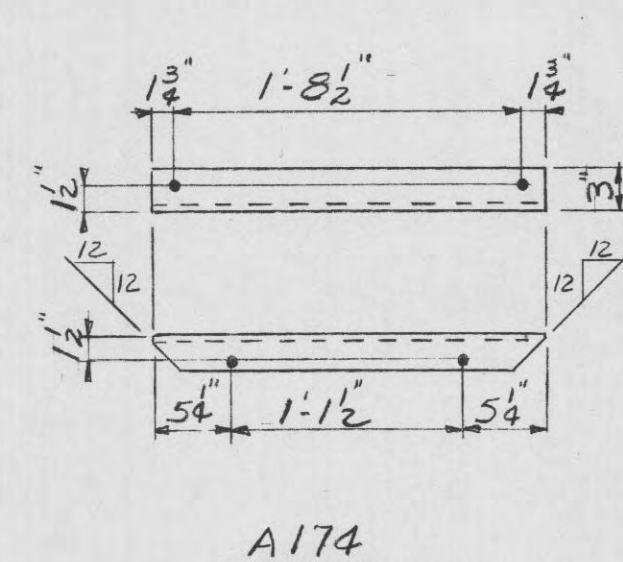
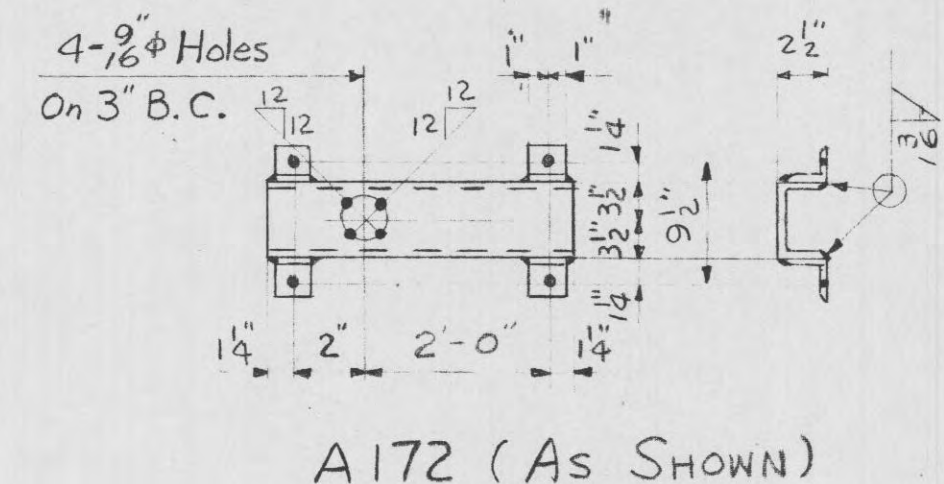
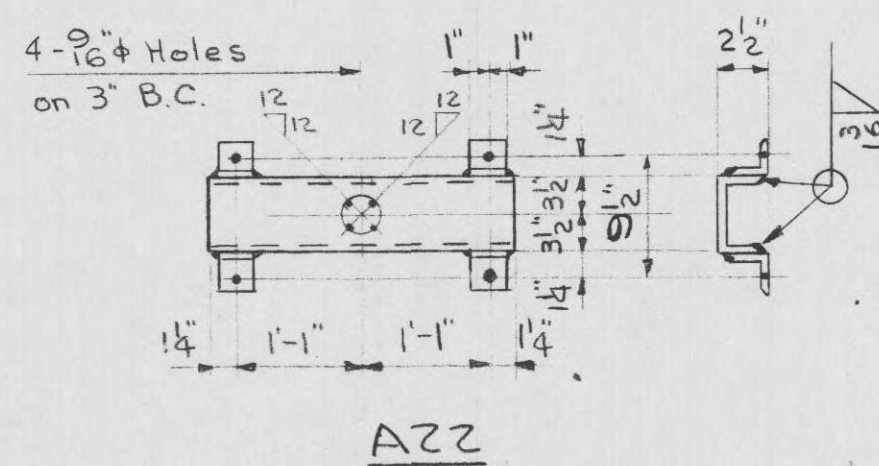
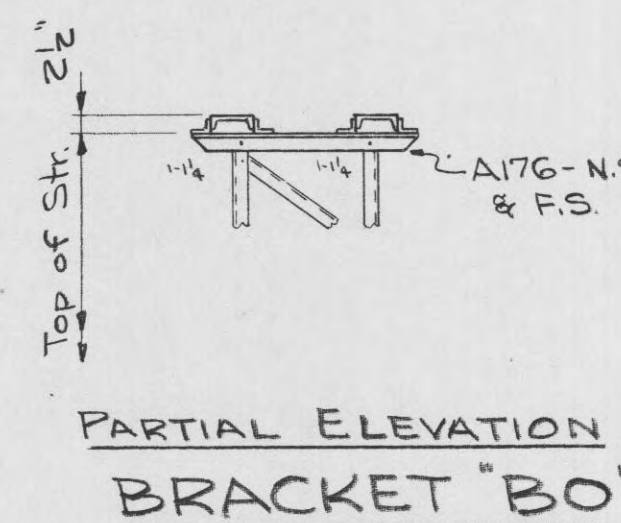
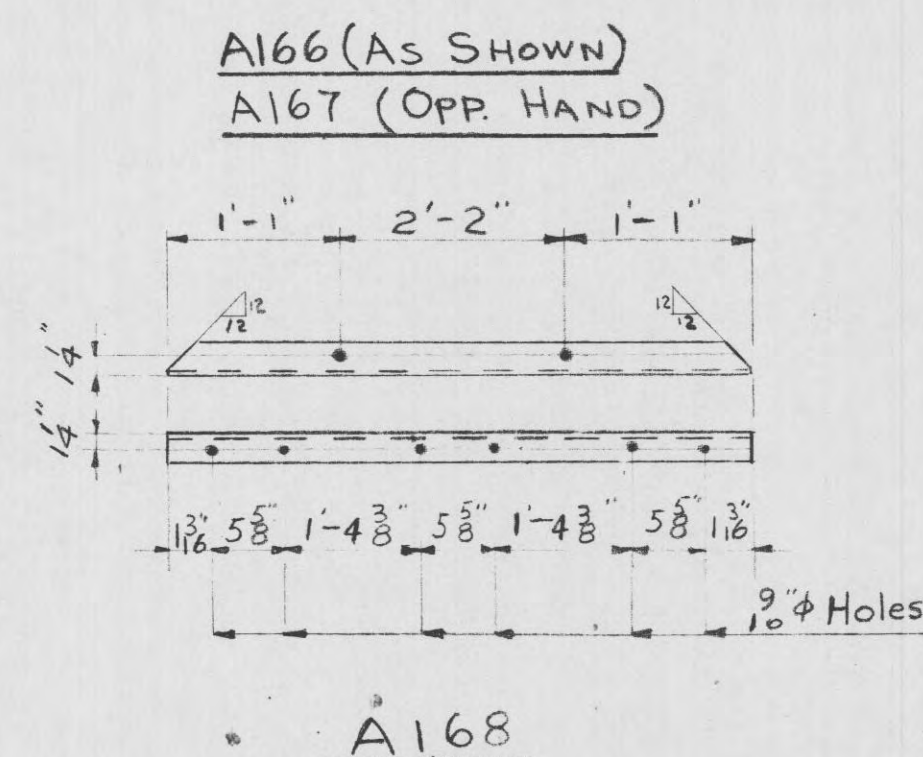
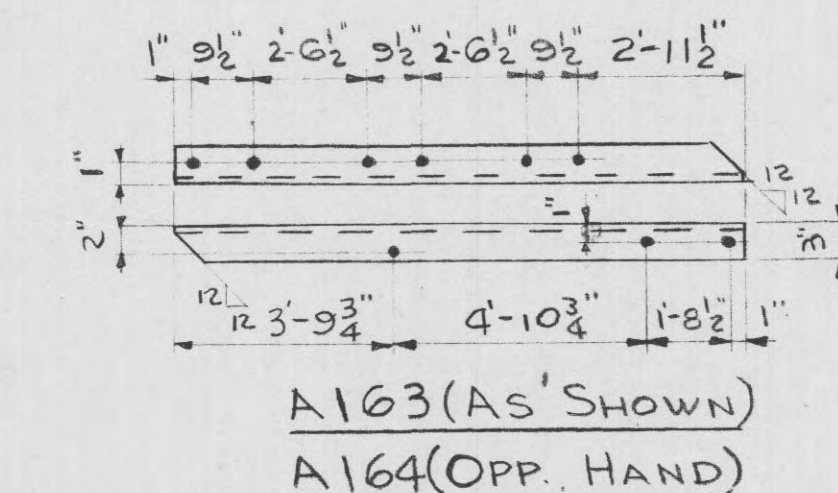
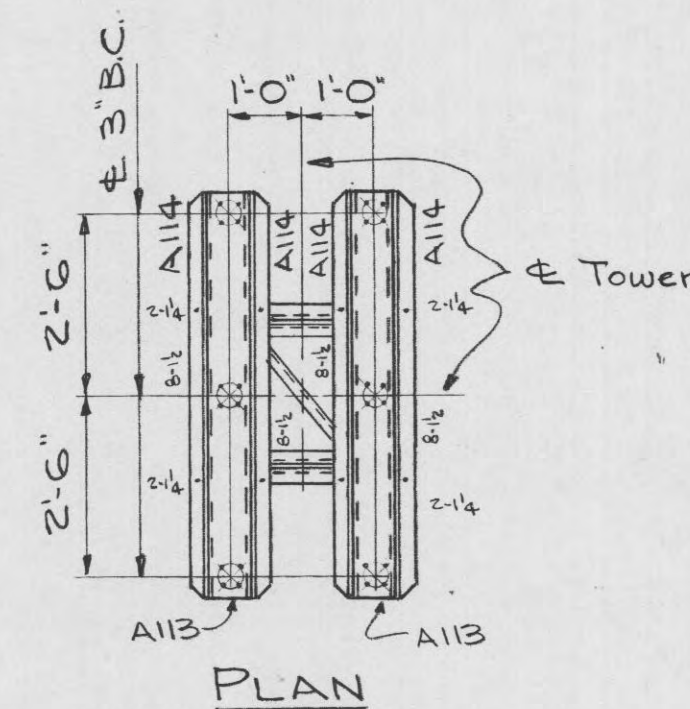
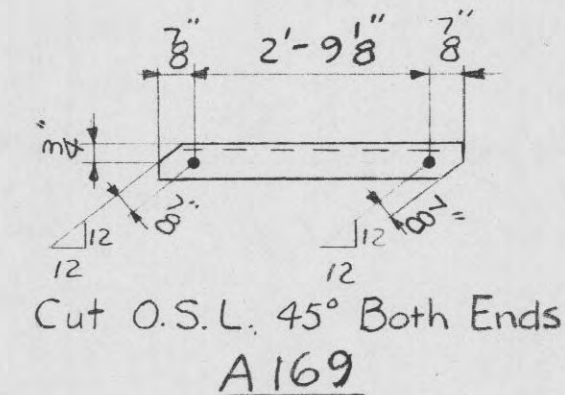
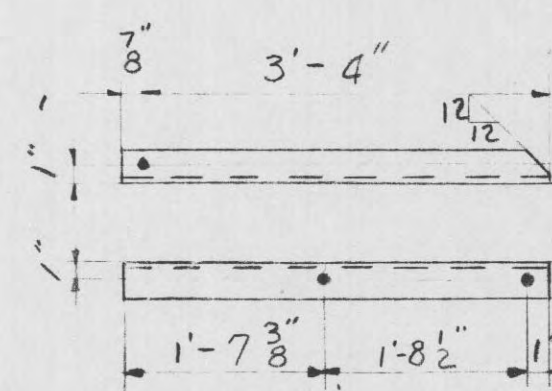
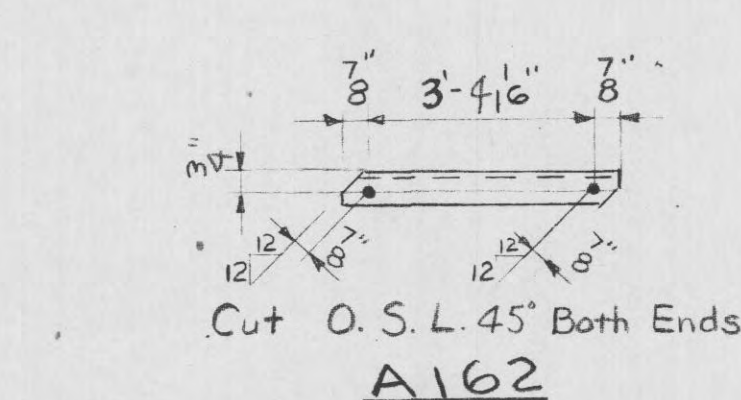
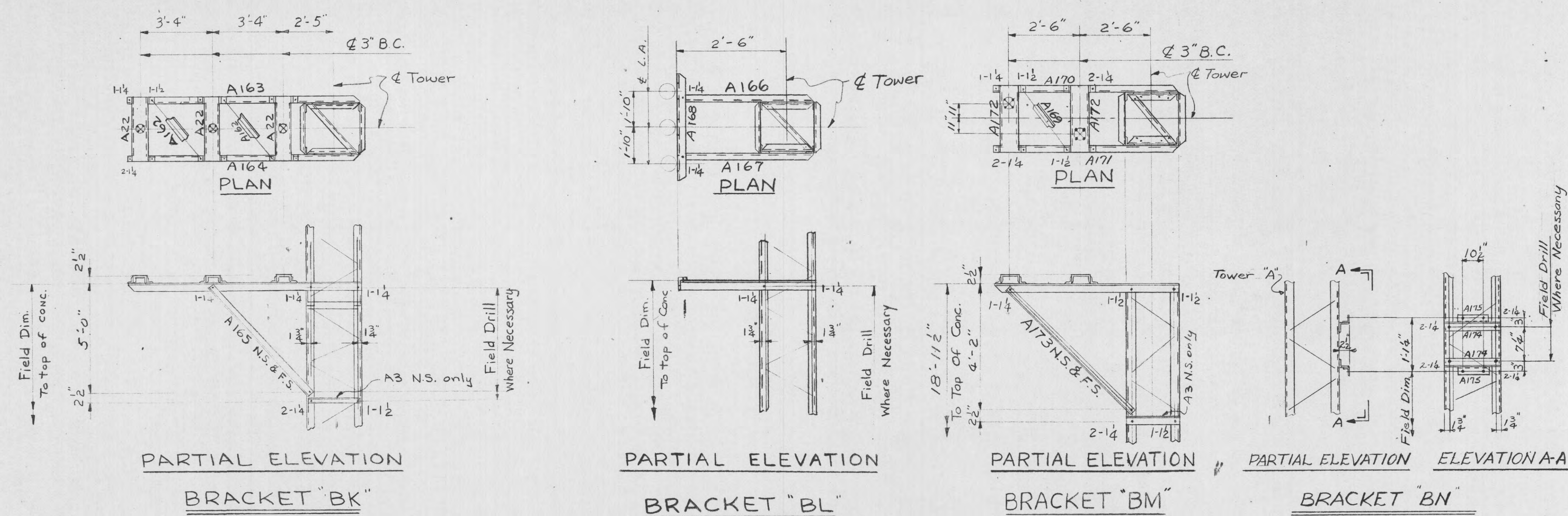
Added Brackets BT & BU					
REV.	DATE	WORK ORDER	DESIGN	DRWN	CHKD.
4-3-73			JTE	RHW	WSC
DESIGN	DIA	SUPV.	RWR	W.O.	
DRWN	JBR	PROJ. ENGR.	WST		
CHKD.					

DATE	SUBMITTED	APPROVED	SHEET	OF	SHEETS
9-12-63	9-12-63	9-12-63	9	10	
SCALE	CLASS. CODE				
NTS	8021P				

TENNESSEE VALLEY AUTHORITY
 DIVISION OF POWER PLANNING AND ENGINEERING
 SUBSTATIONS GENERAL
 15KV BUS SUPPORT TOWER
 EXTENSION & BRACKETS

LC-38700R-1

BILL OF MATERIAL



No. REQUIRED	BKT. BO					MARK	DESCRIPTION	LENGTH		WT.
	BKT. BO	BKT. BN	BKT. BM	BKT. BL	BKT. BK			FT.	IN.	
1						A3	L 1 1/2 x 1 1/2 x 3/8	1	10 1/2	3
3						A22	11-7" C @ 9.8" Welded	2	4 1/2	26
							4-15 2x2x3/8	0	2	
2						A162	L 1 1/2 x 1 1/2 x 3/8	3	5 1/2	7
1						A163	L 3 x 2 x 1/4	10	6	44
1						A164	Do	10	6	44
2						A165	L 2 x 2 x 3/8	7	0 1/2	18
						A166	L 3 x 2 x 1/4	3	4 1/2	15
						A167	Do	3	4 1/2	15
						A168	L 2 1/2 x 2 1/2 x 3/8	4	4	14
						A169	L 1 1/2 x 1 1/2 x 3/8	2	10 1/2	5
						A170	L 3 x 2 x 1/4	6	5	27
						A171	Do	6	5	27
						A172	11-7" C @ 9.8" Welded	2	4 1/2	26
							4-15 2x2x3/8	0	2	
						A173	L 2 x 2 x 3/8	5	11	15
						A174	L 3 x 2 x 1/4	2	0	9
						A175	L 2 1/2 x 2 1/2 x 3/8	1	3 1/2	4
						A176	L 2 1/2 x 2 1/2 x 3/8	2	11 1/2	9
2						A113	7" C @ 9.8"	5	6	56
4						A114	L 2 x 2 x 3/8	5	6	14
13	9	11	7	19		5/8" Φ Bolts		0	1 1/4	0.27
35		9		6		Do		0	1 1/2	0.285
199	28	150	46	226		TOTAL WEIGHT				

* This member is also detailed on sheet 1
 @ This member is also detailed on sheet 5

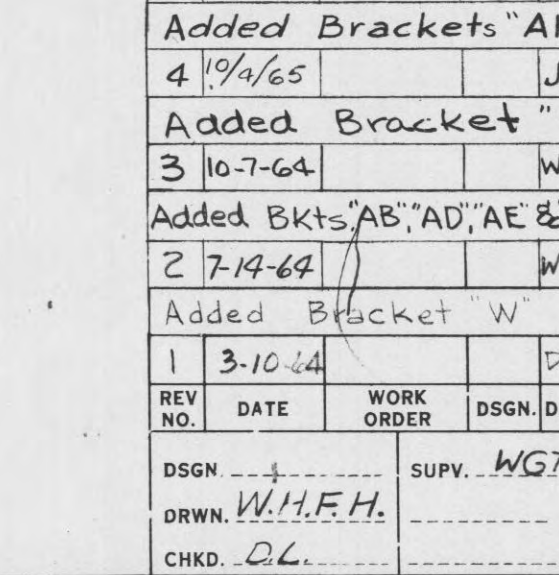
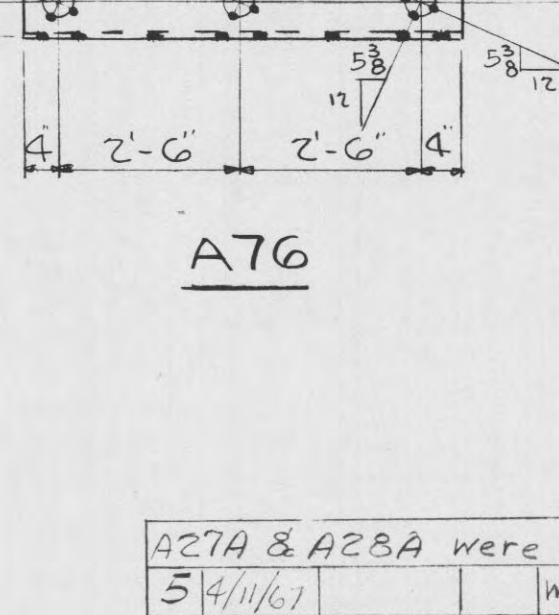
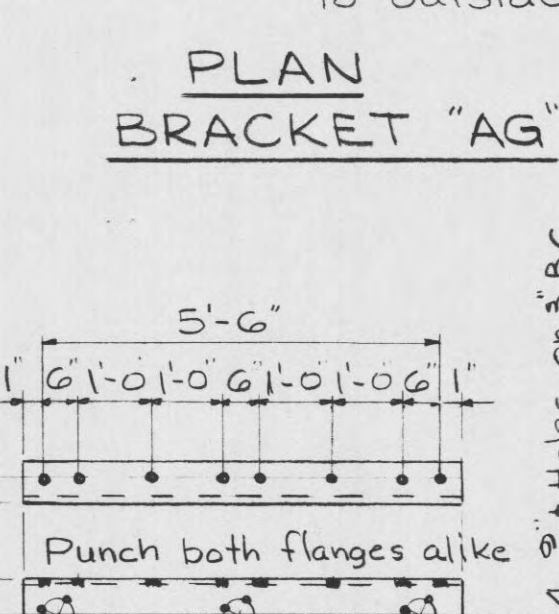
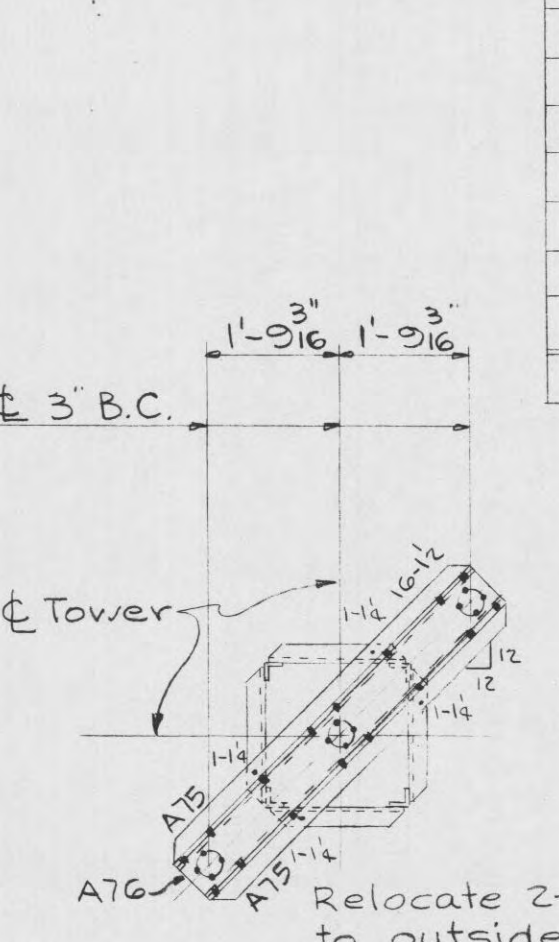
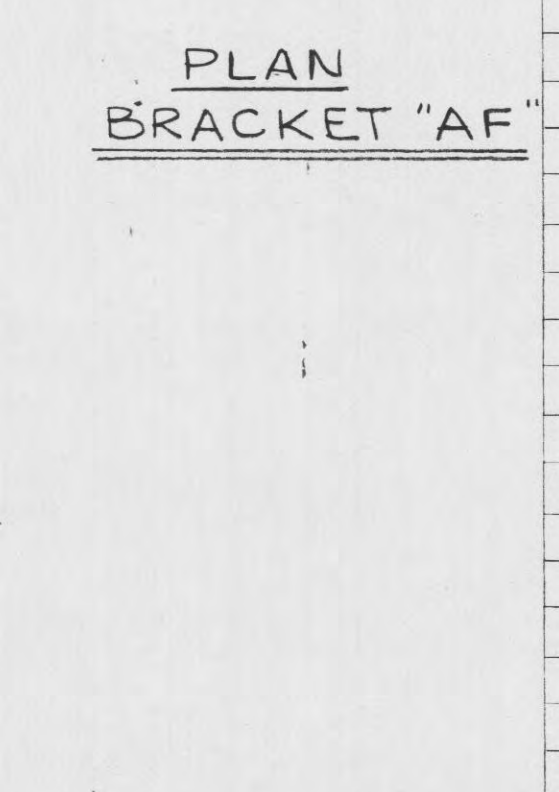
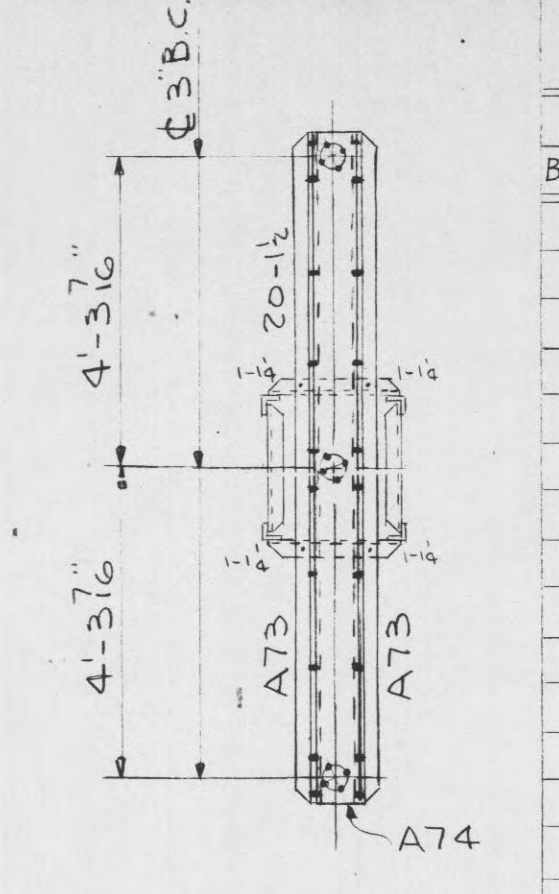
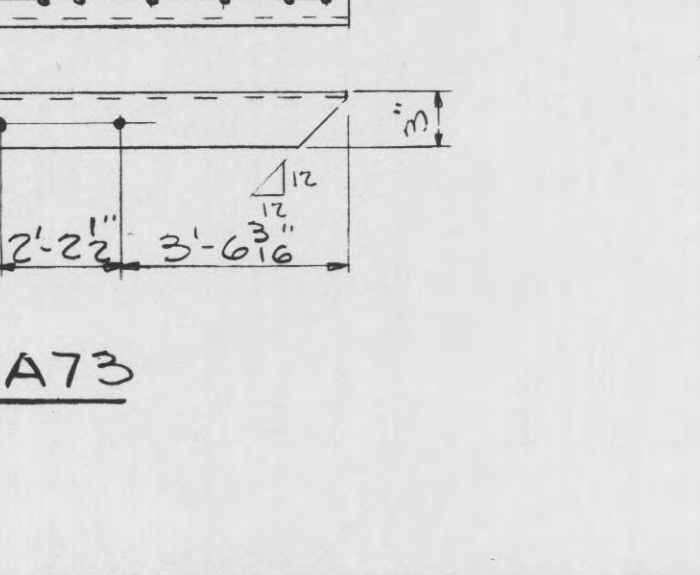
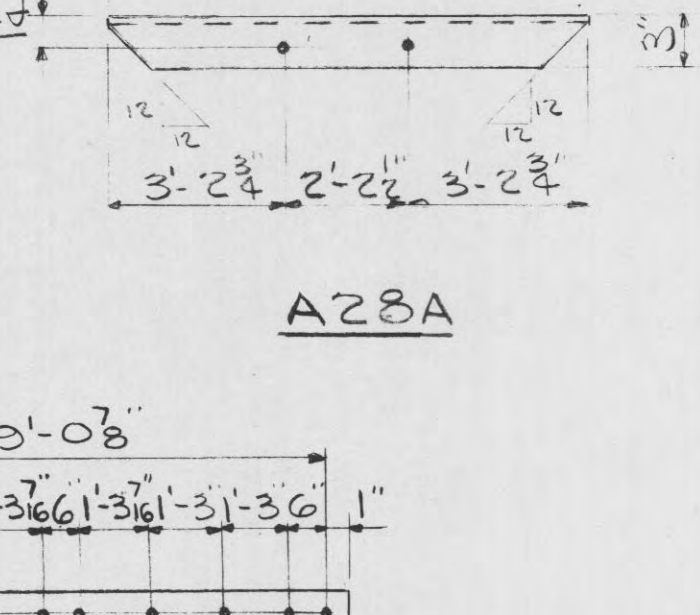
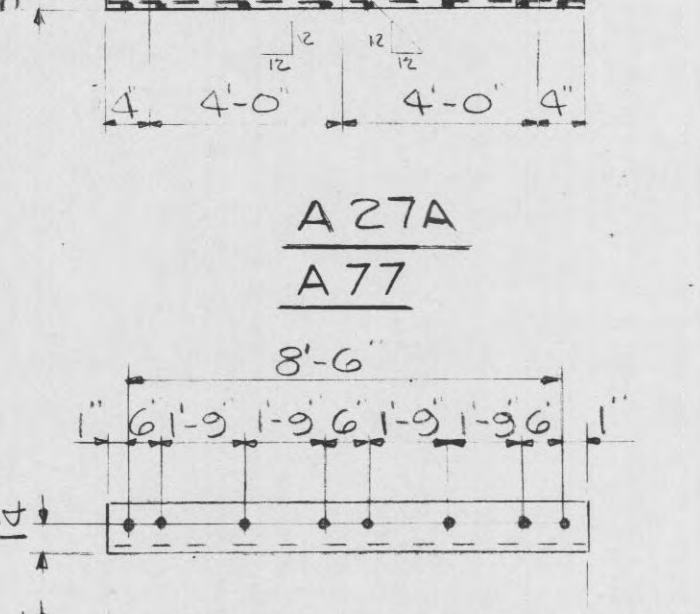
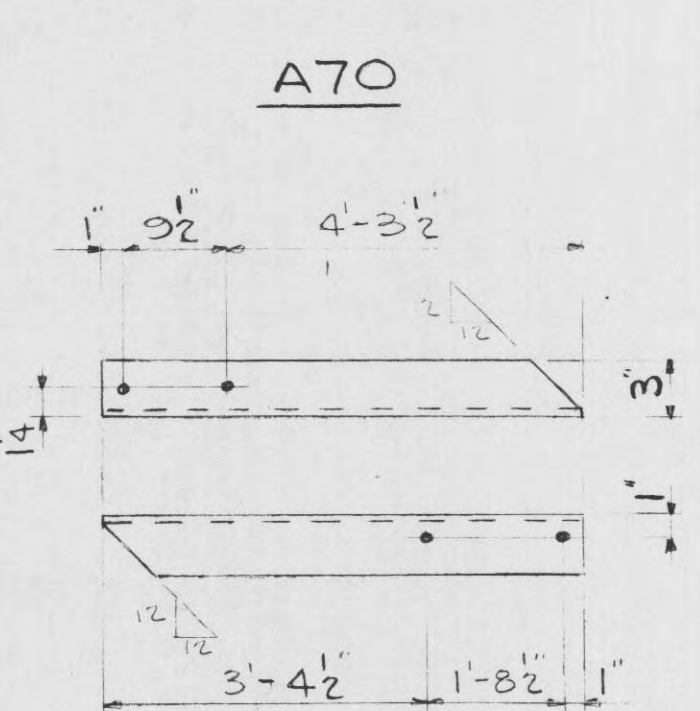
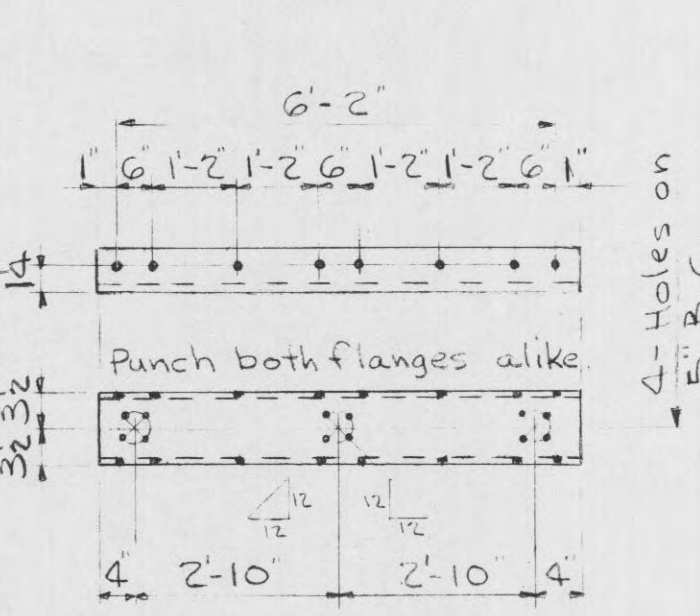
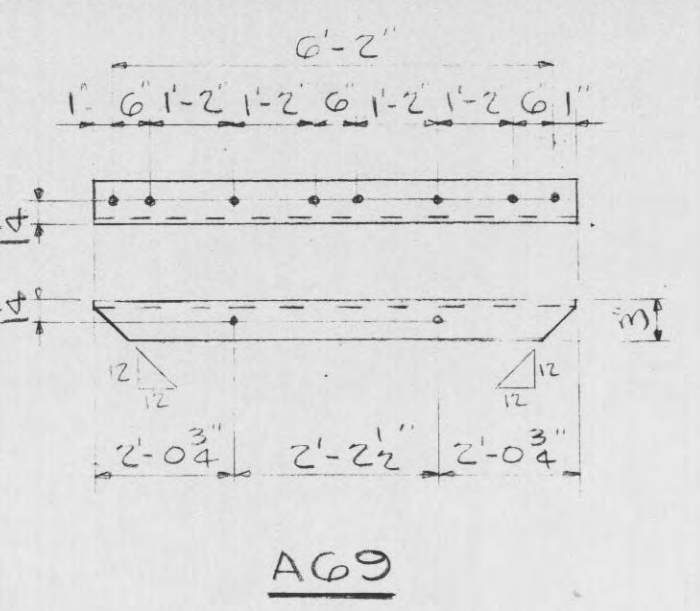
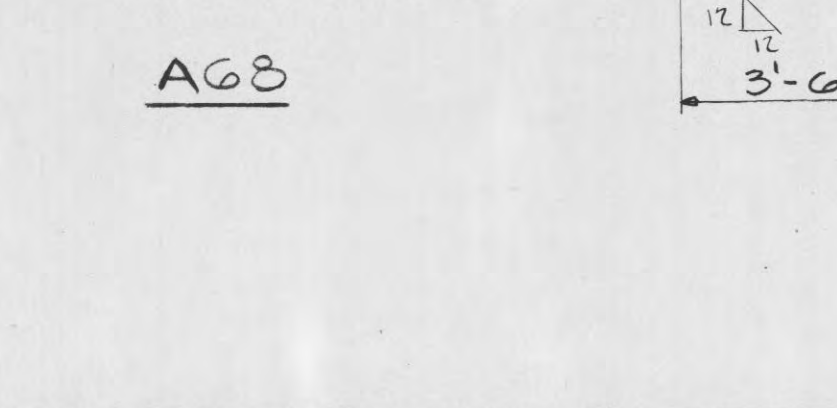
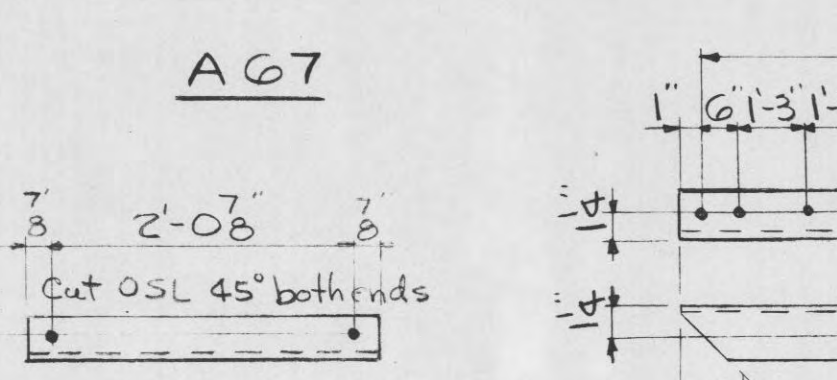
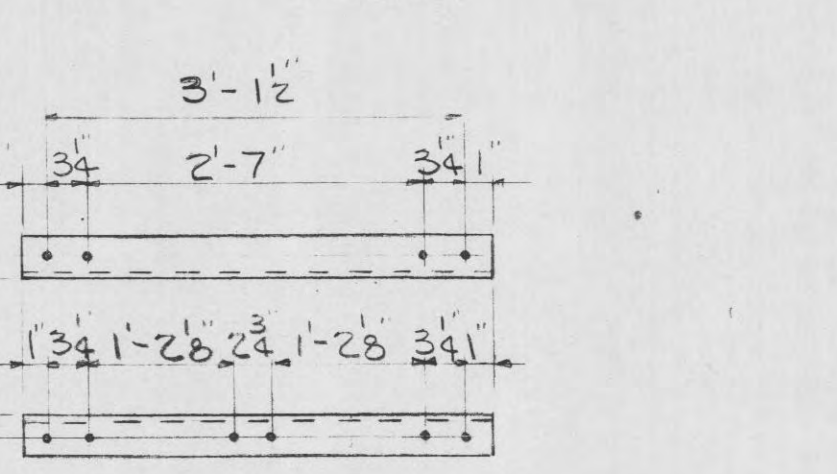
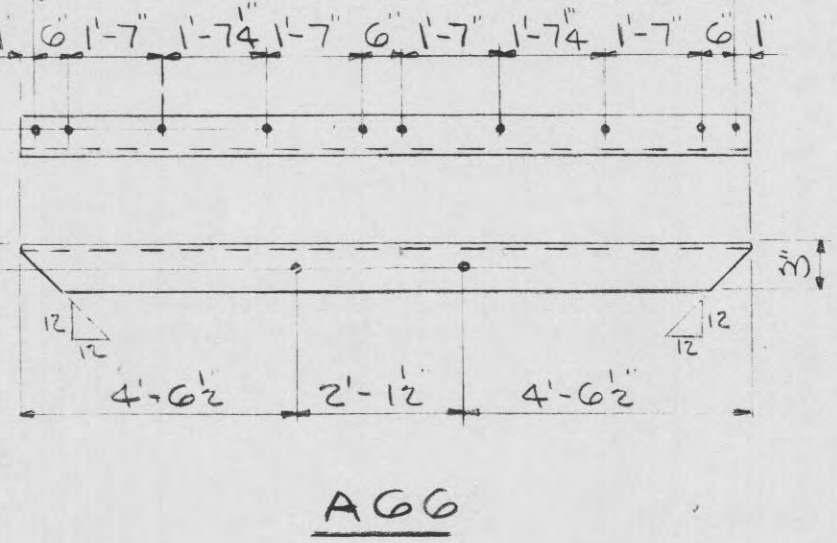
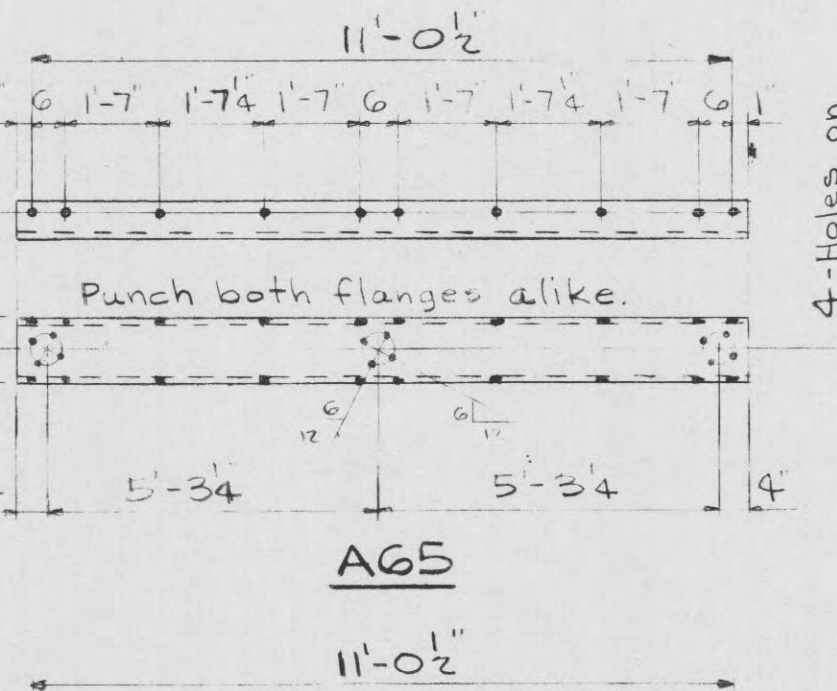
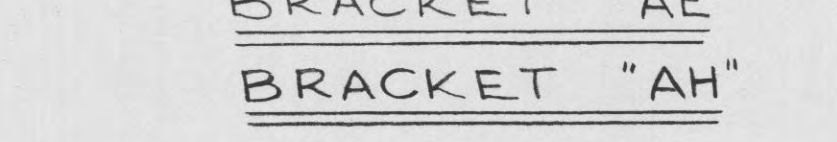
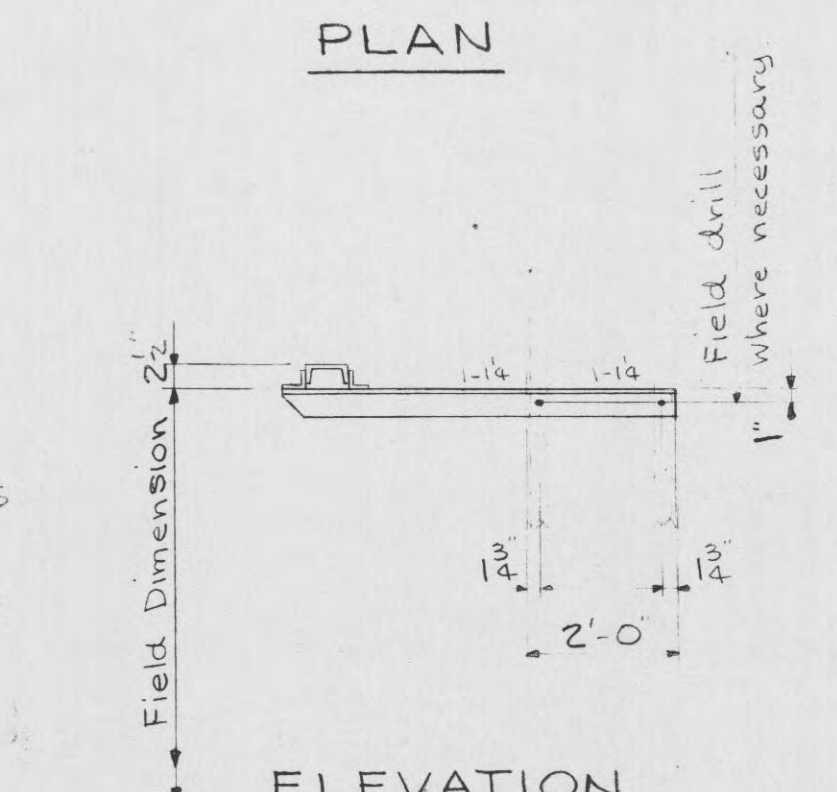
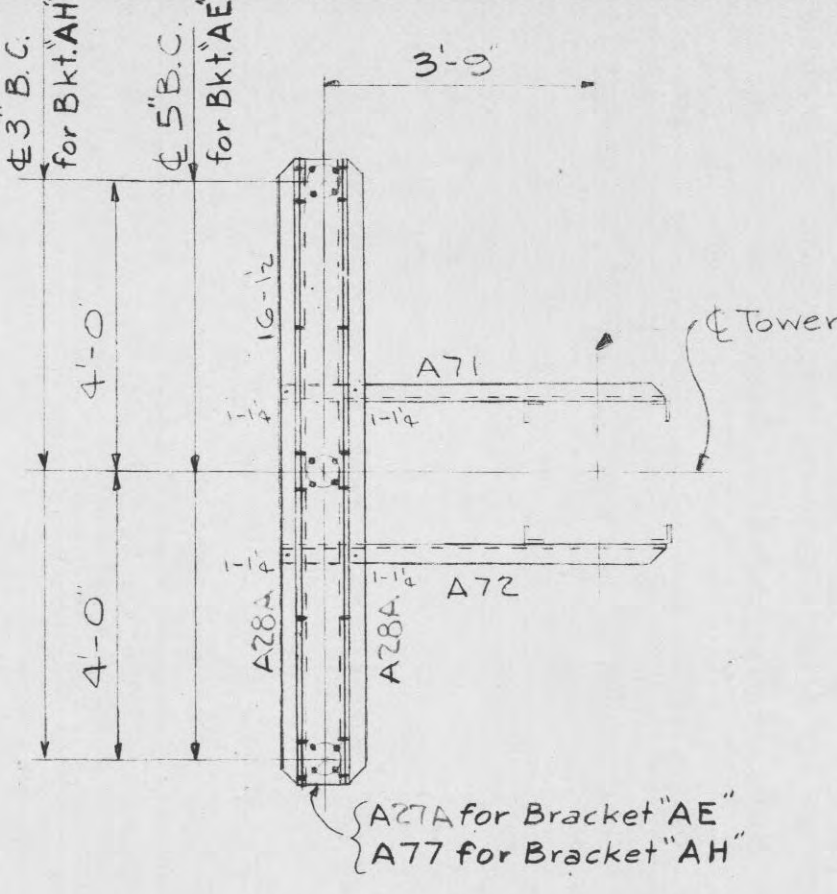
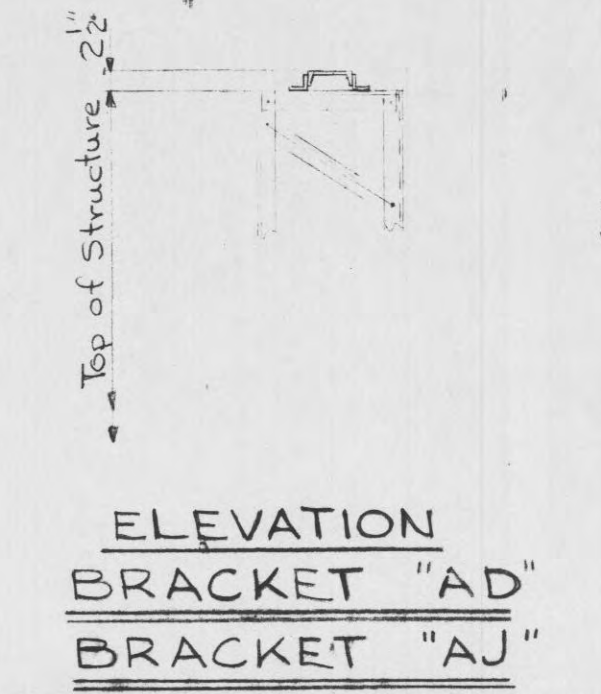
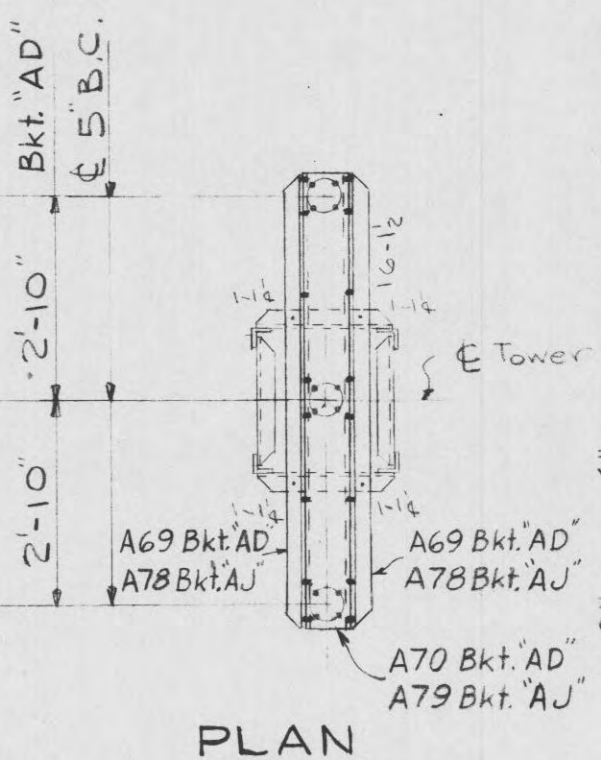
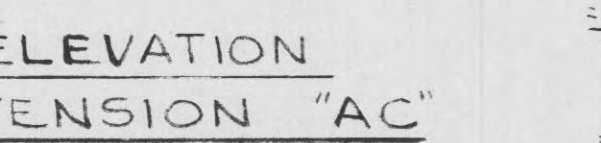
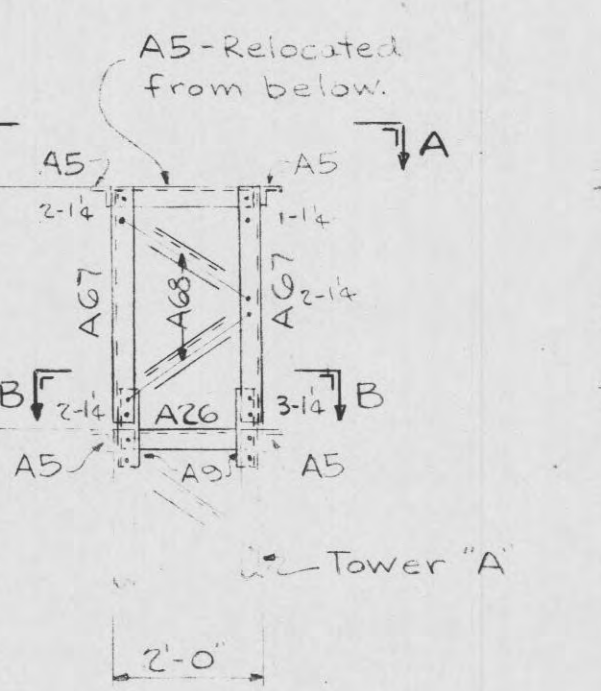
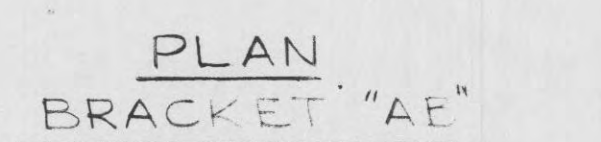
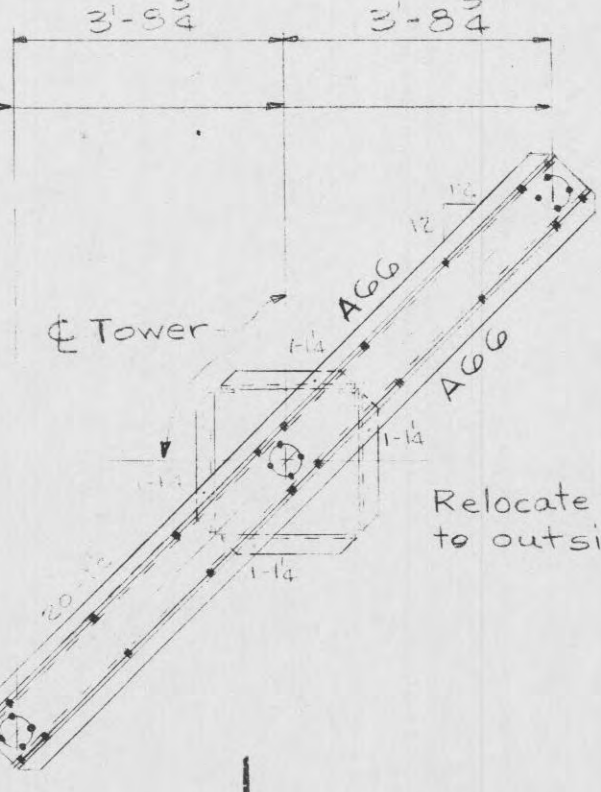
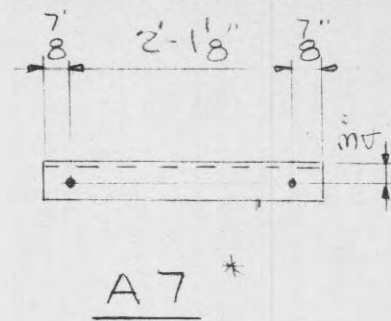
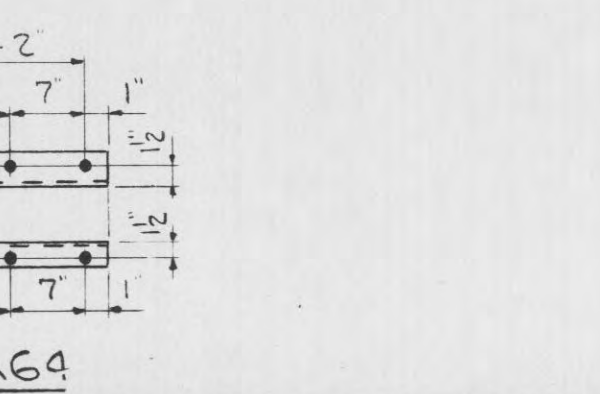
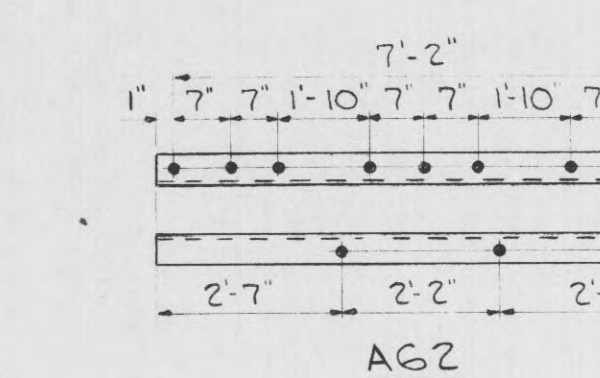
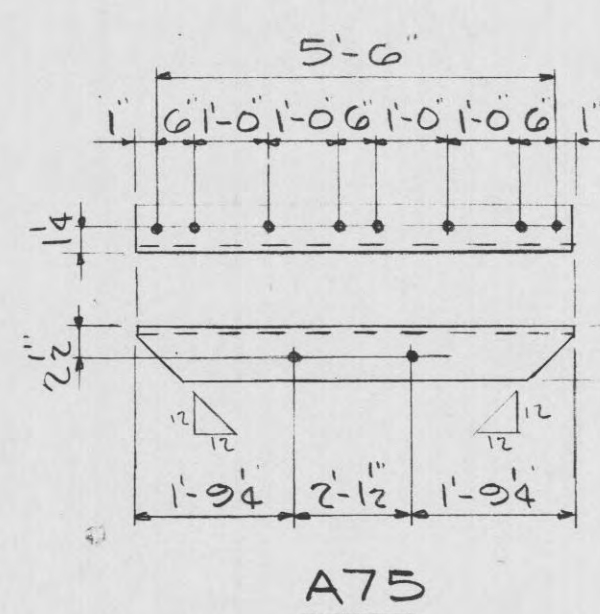
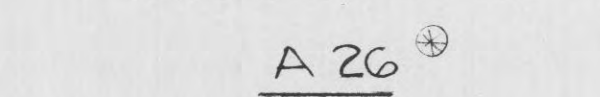
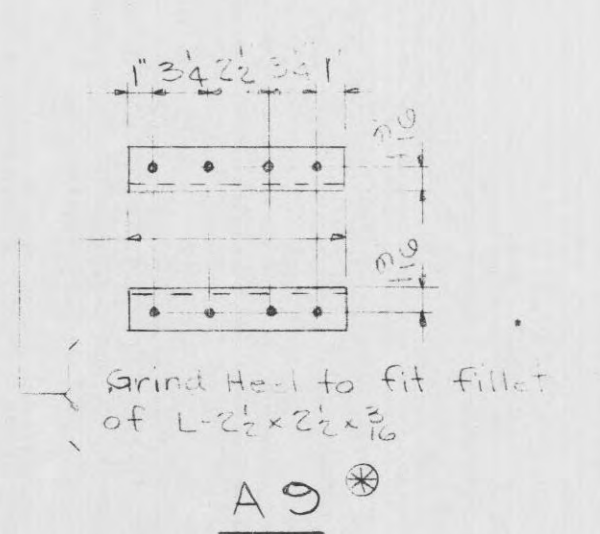
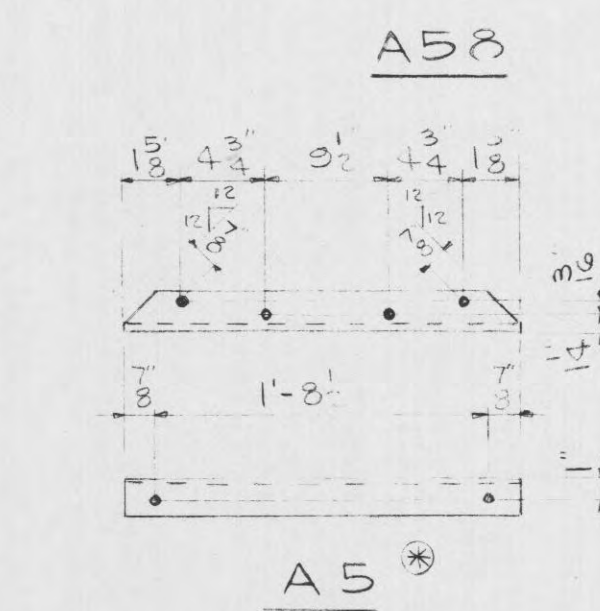
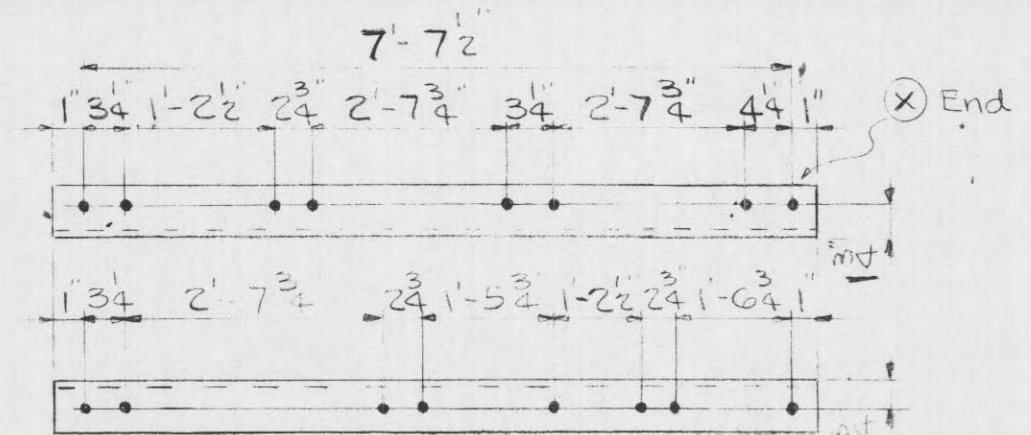
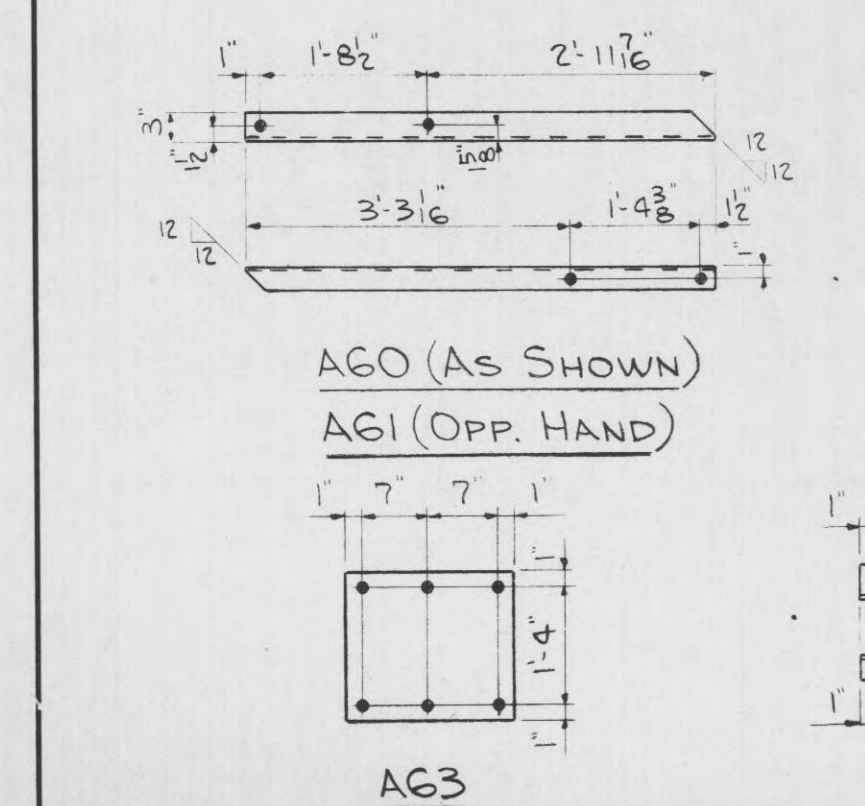
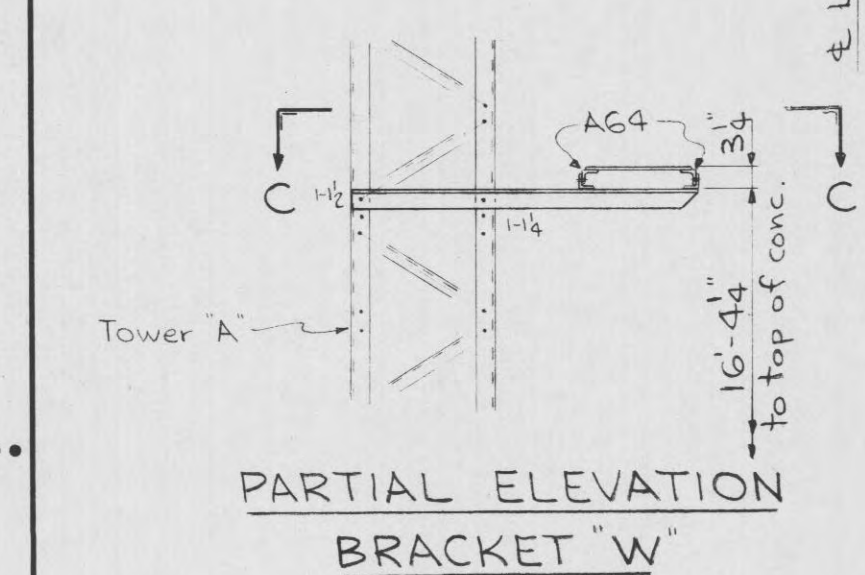
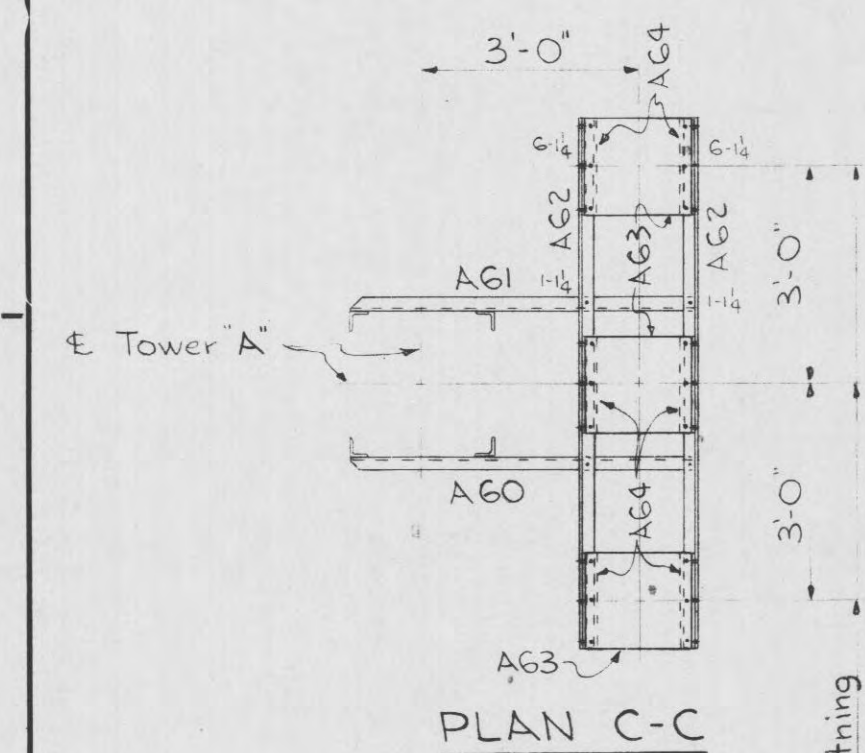
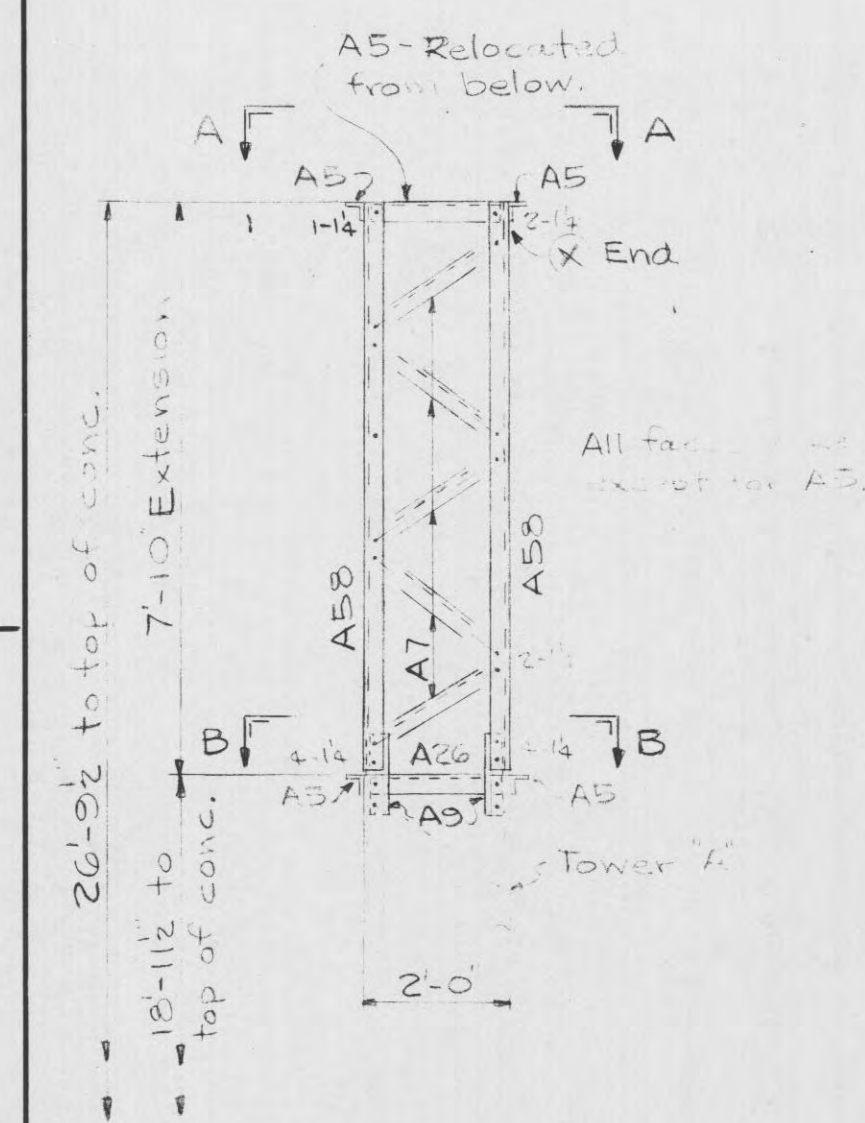
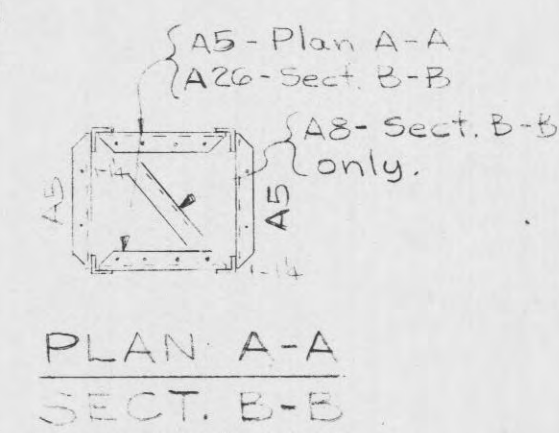
NOTES:
 Holes 11/16" unless noted.
 Piece marks to be die stamped before galvanizing.
 Material to be hot dip galvanized after fabrication.

SPECIFICATION:
 Structural Steel-ASTM A36

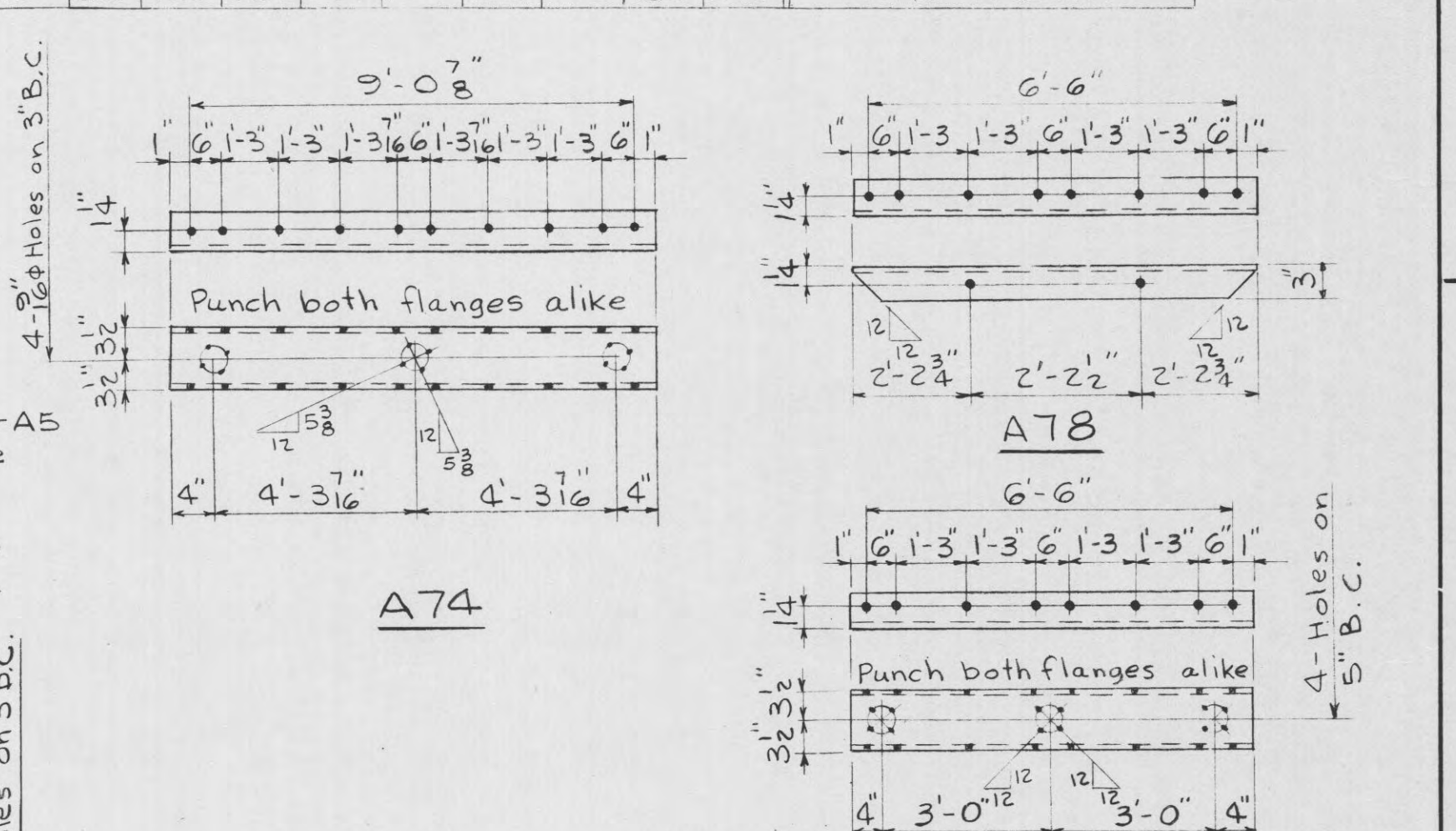
3	Added Bracket "BO"		6-25-69	DTA	DL	RWR	WGT
2	Added Bracket "BN"		4-23-69	HHH	JBR	RWR	WGT
1	Added Bracket "BM"		8-20-69	PF	RWR	RWR	WGT
Rev. No.	DATE	WORK ORDER	DSGN	DRWN	CHKD	SUPV	APPV
			DSGN	SUPV <i>RWR</i>		W. O.	
	DRWN	<i>PF</i>				PROJ. ENGR.	<i>WGT</i>
	CHKD	<i>HHH</i>					

- * This member is also detailed on sheets 1 & 5
- ⊗ This member is also detailed on sheet 5
- ⊗ This member is also detailed on sheet 1

0018657



BILL OF MATERIAL										No. REQUIRED FOR ONE		MARK	DESCRIPTION	LENGTH		WT.
Bkt. A	Bkt. A	Bkt. A	Bkt. A	Bkt. A	Bkt. A	Bkt. A	Bkt. A	Bkt. A	Bkt. A	FT.	IN.			FT.	IN.	
2										2		A5	L-2 1/2 x 2 1/2 x 3/8	1	10 1/2	6
												A7	L-1 1/2 x 1 1/2 x 1/8	2	27	4
												A9	L-2 1/2 x 2 1/2 x 1/8	0	11	3
												A26	L-Do.	1	10 1/2	6
												A58	L-Do.	7	9 1/2	25
												AG0	L-3 x 2 x 1/4	4	8 1/2	20
												AG1	L-Do.	4	8 1/2	20
												AG2	L-2 1/2 x 2 1/2 x 1/8	7	4	23
												AG3	R 1/8 x 4	1	6	21
												AG4	L-2 1/2 x 2 1/2 x 3/8	1	4	4
												A7A	7" C @ 9.8"	8	8	88
												A7B	L-3 x 2 x 1/4	8	8	37
												AG5	8" C @ 11.5"	11	2 1/2	133
												AG6	L-3 x 2 x 1/4	11	2 1/2	52
												AG7	L-2 1/2 x 2 1/2 x 1/8	3	3 1/2	10
												AG8	L-1 1/2 x 1 1/2 x 3/8	2	2 1/2	4
												AG9	L-3 x 2 x 1/4	6	4	27
												A70	7" C @ 9.8"	6	4	67
												A71	L-4 x 3 x 1/4	5	2	31
												A72	L-Do.	5	2	31
												A73	L-3 x 2 x 1/4	9	2 1/2	39
												A74	7" C @ 9.8"	9	2 1/2	94
												A75	L-3 1/2 x 2 1/2 x 1/4	5	8	29
												A76	7" C @ 9.8"	5	8	57
												A77	Do.	8	8	88
												A78	L-3 x 2 x 1/4	6	8	28
												A79	7" C @ 9.8"	6	8	68
5	9	5	5	9	5	44	5	46	86							
18	18	18	22	18	13		22	3								
131	233	122	181	233	125	122	246	188	243							
													TOTAL WEIGHT			
														0	14	0.31
														0	12	0.33



NOTES:
 1. 1/8" holes unless otherwise noted.
 2. 3/8" bolts, sq. hd., hex. nut, std. thd.
 3. B.M. includes 10% excess bolts.
 4. Piece marks to be die stamped before galvanizing.
 5. Material to be hot dip galvanized after fabrication.

* This member is also detailed on Sh. 1, this drawing.
 * These members are also detailed on Sh. 1 and Sh. 2, this drawing.

A27A & A28A were A27 & A28			
5/4/11/61	WHA RWR	WGT	
Added Brackets "AH" & "AJ"			
4/19/65	JBR WGT	WGT	WGT
Added Bracket "AG"			
3/10/64	WHA RWR	RWR	WGT
Added Brackets "AB", "AD", "AE" & "AF" & Ext'n "AC"			
2/7/64	WHA RWR	RWR	WGT
Added Bracket "W"			
1/3/64	DIA JBR	WGT	WGT
REV. NO.	DATE	WORK ORDER	DSGN. DRWN. CH'D. SUPV. APPD.
DSGN.	W.H.F.H.	SUPV.	W.G.T.
CH'D.	D.L.	PROJ. ENGR.	G.M.W.

TENNESSEE VALLEY AUTHORITY			
DIVISION OF POWER PLANNING AND ENGINEERING			
SUBSTATIONS GENERAL			
15 KV. BUS SUPPORT TOWER			
EXTENSION & BRACKETS			
DATE 2-20-64	SUBMITTED 3-4-64	APPROVED	SHEET 3 OF 3
DRWN. W.H.F.H.	CLASS. CODE		LC-38700 R-5
SCALE N.T.S.			

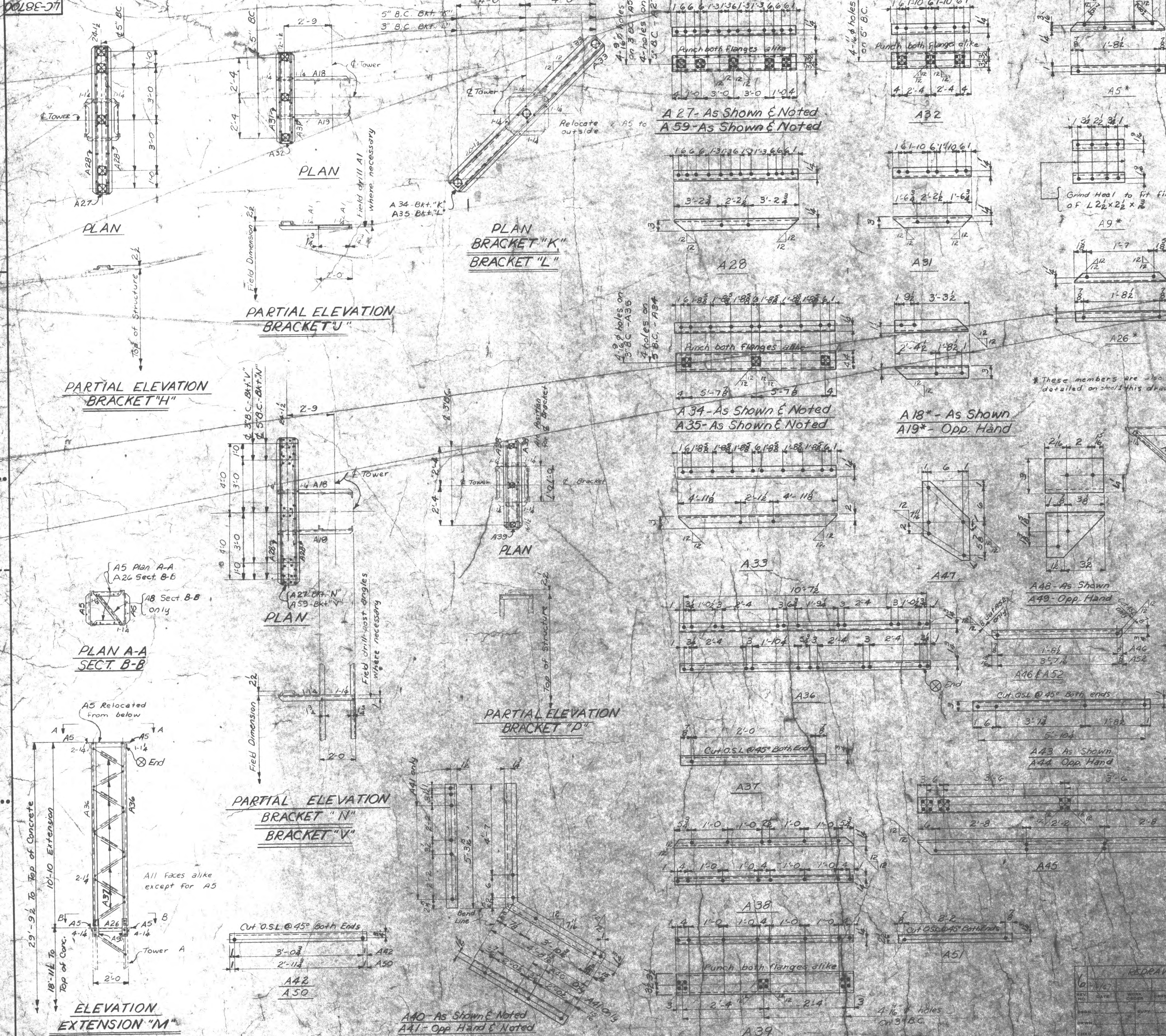
R

COPY 1 OF 4

0019E-37

BILL OF MATERIAL

NO REQUIRED FOR ONE										MARK	DESCRIPTION	LENGTH		WT.
EXT.	INT.	EXT.	INT.	EXT.	INT.	EXT.	INT.	EXT.	INT.			FT.	IN.	
1										A59	TL @ 3.8"	8	8	87
										A27	DO.	8	8	87
2										A28	L-3x2x1/2	8	8	37
1										A18	DO.	4	2	18
1										A19	DO.	4	2	18
										A31	L-2x2x1/2	5	4	13
										A32	TL @ 9.8"	5	4	54
										A33	L-3x2x1/2	11	11	56
										A34	8" @ 11.5"	11	11	142
										A35	DO.	11	11	142
										A36	L-2x2x1/2	10	9	34
										A37	L-1/2x1/2x1/2	2	1	4
										A38	L-2x2x1/2	1	10	6
										A39	DO.	0	11	3
										A26	DO.	1	10	9
										A38	DO.	5	2	16
										A39	TL @ 9.8"	5	2	52
										A40	Bent L3x3x1/2	10	0	51
										A41	DO opp HAND	10	0	51
										A42	L1/2x1/2x1/2	3	2	6
										A43	L3x2x1/2	6	0	26
										A44	DO opp HAND	6	0	26
										A45	L4x1x1/2	8	6	38
										A46	L1/2x1/2x1/2	1	10	3
										A47	L8x1/2	1	1	8
										A48	L4x1x1/2	0	5	3
										A49	DO opp HAND	0	5	3
										A50	L1/2x1/2x1/2	3	1	8
										A51	L2x2x1/2	2	8	7
										A52	L1/2x1/2x1/2	3	9	7
											8" Bolts	0	1	0.31
											DO.	0	1	0.33
9	35	5	9	95	5	5	9	5						
27	7	18	27	22	22	13	27							
209	295	91	209	329	263	263	123	171			TOTAL WEIGHT			



NOTES:
 5" bolts
 Piece Marks to be die stamped before galvanizing.
 Material to be hot dip galvanized after fabrication.
 All holes 1/2" unless noted.

REDRAWN

DATE: 6-19-61 BY: J. H. HARRIS

APPROVED: J. H. HARRIS

PROJECT: 15KV BUS SUPPORT TOWER BRACKETS

SHEET 2 OF 2

LC38700-6