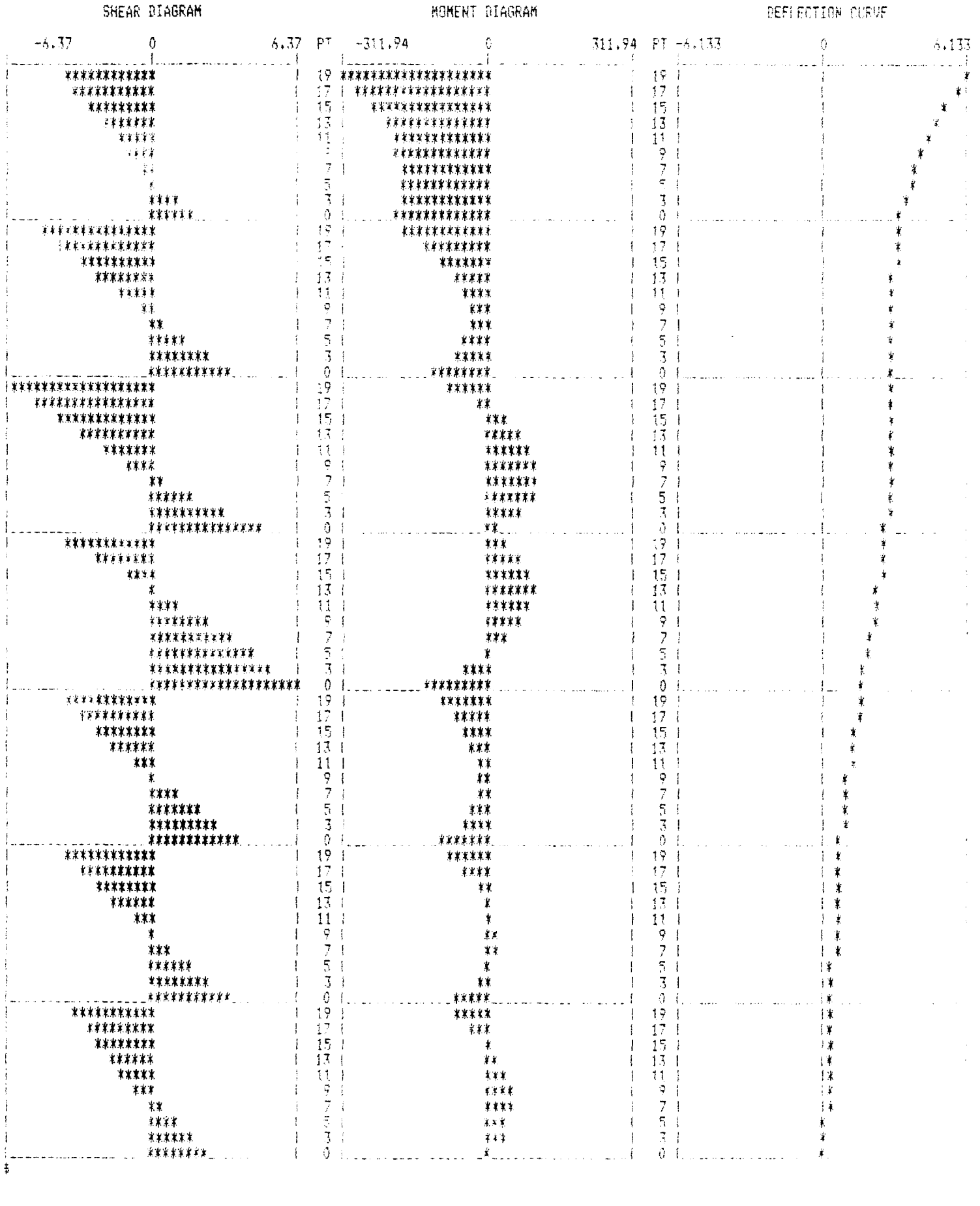
VLISSIDES 666' Guyed Tower REVISED ANALYSIS - 75 Mph Basic Vel.+ EIA . WIND C 2-20-92 BALTIMOR2.PLT

OUTPUT: DATA PLOTS



CONTROL PARAMETERS

7 GUY LEVELS
NGED BASE
ND LOADING DIRECTION 'A'
TWO-WAY BENDING CONSIDERED
WIND LOADS ARE INPUT ITEMS

ANALYSIS PARAMETERS

0.000 INCH RADIAL ICE ON GUYS (SP WT 56.0 LB/CUFT)
AMBIENT TEMPERATURE = 30.00 DEG F
NORMAL TEMPERATURE = 70.00 DEG F
HEIGHT TO TOWER BASE = 0.0 FT
TOWER SHAFT MODULUS OF ELASTICITY = 29000.

INPUT ECHO: GUY DATA AND RELATED INFORMATION

%	GUY #	DISTANCE (FT) HORIZ	DISTANCE (FT) VERT	TENS (KIPS)	UNIT WT (LB/FT)	DIAM (IN)	AE (KIPS)	LEV ARM (FT)	WIND ANGLES (DEG) WIND TO GUY	WIND ANGLES (DEG) WIND TO LEV ARM	INSULATORS ON GUY WEIGHT (LBS)	INSULATORS ON GUY AREA (SQFT)	INSULATORS ON GUY LENGTH (FT)	ANCHOR PIN FT ABV GND (FT)
1	1	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	60.00	60.00	0.00	0.00	0.000	
1	2	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	180.00	180.00	0.00	0.00	0.000	
1	3	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	300.00	300.00	0.00	0.00	0.000	
2	1	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	60.00	60.00	0.00	0.00	0.000	
2	2	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	180.00	180.00	0.00	0.00	0.000	
2	3	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	300.00	300.00	0.00	0.00	0.000	
3	1	260.00	294.00	6.00	1.1550	0.7500	6720.	2.500	60.00	60.00	0.00	0.00	0.000	

OUTPUT: WIND LOADS

SPAN	TOWER WIND LOAD (KIPS)	LEVEL	INSULATOR CLUSTERS WIND LOAD (KIPS)
1	4.50	1	0.00
2	6.51	2	0.00
3	7.56	3	0.00
4	8.31	4	0.00
5	8.53	5	0.00
6	8.53	6	0.00
7	7.53	7	0.00

OUTPUT: GUY WEIGHTS, LENGTHS AND FORCES

LVL	GUY #	EFF D (IN)	TOTAL WT (KIPS)	UNSTRESSED LENGTH (FT)	FORCES AT TOWER (KIPS) TENSION	WINDWARD	NORMAL	VERT	FORCES AT ANCHORAGE (KIPS) UPLIFT	M	N	TWIST (KIP-FT)
1	1	0.6250	0.227	279.56	8.43	3.85	6.77	3.23	3.04	7.97	0.06	-0.140
1	2	0.6250	0.227	279.56	2.09	-1.91	0.00	0.85	0.66	1.90	0.00	0.000

OUTPUT: TOWER BEHAVIOR AT GUY LEVELS

LVL	DEFLECTION (FT) WINDWARD	DEFLECTION (FT) NORMAL	TWIST (DEG)	REACTIONS (KIPS) WINDWARD	REACTIONS (KIPS) NORMAL	REACTIONS (KIPS) VERT	REACTIONS (KIP-FT) WINDWARD	REACTIONS (KIP-FT) NORMAL	REACTIONS (KIP-FT) TWIST	AXIAL FORCE (KIPS)	PHI
1	0.324	0.000	0.000	5.78	0.00	7.30	5.93	0.00	0.00	257.04	1.56060
2	0.712	0.000	0.000	7.11	0.00	13.48	14.20	0.00	0.00	242.35	1.54137
3	1.614	0.000	0.000	9.77	0.00	24.42	29.28	0.00	0.00	222.29	1.47741
4	2.738	0.000	0.000	7.93	0.00	18.01	21.34	0.00	0.00	190.76	1.38560
5	2.924	0.000	0.000	8.73	0.00	27.16	30.29	0.00	0.00	165.60	1.31530
6	3.628	0.000	0.000	6.98	0.00	30.31	30.98	0.00	0.00	131.80	1.31511
7	7.289	0.000	0.000	17.78	0.00	74.88	83.71	0.00	0.00	95.07	1.23008

OUTPUT: BEHAVIOR AT TOWER EXTREMITIES

BASE MOMENTS (KIP-FT) WINDWARD	BASE MOMENTS (KIP-FT) NORMAL	BASE SHEAR (KIPS) WINDWARD	BASE SHEAR (KIPS) NORMAL	BASE VERTICAL (KIPS)	CANTILEVER DEFL (FT) WINDWARD	CANTILEVER DEFL (FT) NORMAL	MOMENT ABOVE TOP GL (KIP-FT) WINDWARD	MOMENT ABOVE TOP GL (KIP-FT) NORMAL
0.00	0.00	0.88	0.00	260.61	7.289	0.000	-393.60	0.00

OUTPUT: SPAN PARAMETERS

SPAN	BENDING MOMENTS (KIP-FT) WINDWARD TOP	BENDING MOMENTS (KIP-FT) WINDWARD BOTTOM	BENDING MOMENTS (KIP-FT) NORMAL TOP	BENDING MOMENTS (KIP-FT) NORMAL BOTTOM	TOTAL SHEARS (KIPS) WINDWARD TOP	TOTAL SHEARS (KIPS) WINDWARD BOTTOM	TOTAL SHEARS (KIPS) NORMAL TOP	TOTAL SHEARS (KIPS) NORMAL BOTTOM
1	-50.11	0.00	0.00	0.00	-2.96	2.23	0.00	0.00
2	-94.09	-56.04	0.00	0.00	-3.39	2.78	0.00	0.00
3	-95.54	-108.30	0.00	0.00	-3.09	3.34	0.00	0.00
4	49.08	-124.81	0.00	0.00	-3.53	6.29	0.00	0.00
5	-88.11	27.74	0.00	0.00	-5.96	4.22	0.00	0.00
6	-216.87	-118.40	0.00	0.00	-4.43	2.77	0.00	0.00
7	-309.89	-247.85	0.00	0.00	-3.03	1.65	0.00	0.00

OUTPUT: TOTAL FORCES AT GUY ANCHORS

ANCHOR #	LOCATION REF ANGLE (DEG)	LOCATION HORIZ DIST (FT)	TOTAL FORCES (KIPS) UPLIFT	TOTAL FORCES (KIPS) H	TOTAL FORCES (KIPS) RESULT	ELEV ANGLE (DEG)
1	60.00	260.00	20.66	26.66	33.73	37.77
2	180.00	260.00	1.01	2.31	2.52	23.62
3	300.00	260.00	20.66	26.66	33.73	37.77
4	60.00	400.00	69.91	51.88	87.06	53.42
5	180.00	400.00	4.25	1.87	4.64	66.25
6	300.00	400.00	69.91	51.87	87.05	53.43

CONTROL PARAMETERS

7 GUY LEVELS
[illegible]NGED BASE
[illegible]ND LOADING DIRECTION "B"
TWO-WAY BENDING CONSIDERED
WIND LOADS ARE INPUT ITEMS

ANALYSIS PARAMETERS

0.000 INCH RADIAL ICE ON GUYS (SP WT 56.0 LB/CUFT)
AMBIENT TEMPERATURE = 30.00 DEG F
NORMAL TEMPERATURE = 70.00 DEG F
HEIGHT TO TOWER BASE = 0.0 FT
TOWER SHAFT MODULUS OF ELASTICITY = 29000.

INPUT ECHO: LOCAL LOADS AT GUY LEVELS AND PULL-OFF DATA

LVL	WIND VEL (MI/HR)	CONCENTRATED LOADS (KIPS) VERTICAL	HORIZONTAL WINDWARD	HORIZONTAL NORMAL	MOMENTS (KIP-FT) WINDWARD	MOMENTS NORMAL	MOMENTS TWIST	INSULATOR CLUSTERS WEIGHT (KIPS)	INSULATOR CLUSTERS DRAG (KIPS)
1	81.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	87.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	92.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	96.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	99.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	101.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	103.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOP		17.00	8.90	0.00	393.60	0.00	0.00		

INPUT ECHO: SPAN LOADS CONCENTRATED AT PANEL POINTS

SPAN	POINT	VERTICAL (KIPS)	HORIZONTAL (KIPS) WINDWARD	HORIZONTAL NORMAL	MOMENTS (KIP-FT) WINDWARD	MOMENTS NORMAL	MOMENTS TWIST
1	6	0.10	0.08	0.00	0.00	0.00	0.00
2	1	0.10	0.09	0.00	0.00	0.00	0.00
2	5	0.10	0.09	0.00	0.00	0.00	0.00
2	13	0.10	0.09	0.00	0.00	0.00	0.00
2	15	0.10	0.09	0.00	0.00	0.00	0.00
2	17	0.10	0.09	0.00	0.00	0.00	0.00
2	19	0.10	0.25	0.00	0.00	0.00	0.00
3	8	0.20	0.30	0.00	0.00	0.00	0.00
4	1	0.10	0.14	0.00	0.00	0.00	0.00
4	16	0.10	0.15	0.00	0.00	0.00	0.00
4	18	0.10	0.15	0.00	0.00	0.00	0.00
5	3	0.10	0.15	0.00	0.00	0.00	0.00
5	5	0.10	0.16	0.00	0.00	0.00	0.00
5	5	0.10	0.16	0.00	0.00	0.00	0.00
6	2	0.10	0.16	0.00	0.00	0.00	0.00
6	5	0.10	0.16	0.00	0.00	0.00	0.00
6	7	0.10	0.16	0.00	0.00	0.00	0.00
6	10	0.10	0.17	0.00	0.00	0.00	0.00
6	13	0.10	0.17	0.00	0.00	0.00	0.00
6	15	0.15	0.24	0.00	0.00	0.00	0.00
6	19	0.15	0.24	0.00	0.00	0.00	0.00
7	4	0.15	0.24	0.00	0.00	0.00	0.00
7	8	0.15	0.24	0.00	0.00	0.00	0.00
7	12	0.15	0.24	0.00	0.00	0.00	0.00
7	14	0.15	0.20	0.00	0.00	0.00	0.00
7	16	0.15	0.20	0.00	0.00	0.00	0.00
7	16	0.10	0.18	0.00	0.00	0.00	0.00

INPUT ECHO: SPAN DATA

SPAN	LENGTH (FT)	FACE WD (FT)	PANEL TYPE	PANEL HT (FT) TOP	PANEL HT BOTTOM	PANEL HT UNIFORM	# UNIF PANELS	SPAN MOM OF INER (INFT)**2	SPAN TORS STIFFNESS (KIP-FT)	SPAN WEIGHT (KIPS)	SPAN WIND LOAD (KIPS)
1	93.500	4.000	N	5.000	3.500	5.000	17	24.21	104.23	7.01	4.496
2	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	7.72	6.511
3	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	6.97	7.558
4	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	6.87	8.312
5	94.500	4.000	N	4.750	4.750	5.000	17	24.21	104.23	6.60	8.531
6	95.167	4.000	N	5.084	5.083	5.000	17	18.55	104.23	5.87	8.526
7	94.432	4.000	N	4.716	4.716	5.000	17	17.89	104.23	5.35	7.533

INPUT ECHO: GUY DATA AND RELATED INFORMATION

GUY #		DISTANCE (FT) HORIZ	VERT	TENS (KIPS)	UNIT WT (LB/FT)	DIAM (IN)	AE (KIPS)	LEV ARM (FT)	WIND ANGLES (DEG) WIND TO GUY	WIND TO LEV ARM	INSULATORS ON GUY WEIGHT (LBS)	AREA (SQFT)	LENGTH (FT)	ANCHOR PIN HT ABV GND (FT)
1	1	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	0.00	0.00	0.00	0.00	0.000	
1	2	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	120.00	120.00	0.00	0.00	0.000	
1	3	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	240.00	240.00	0.00	0.00	0.000	
2	1	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	0.00	0.00	0.00	0.00	0.000	
2	2	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	120.00	120.00	0.00	0.00	0.000	
2	3	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	240.00	240.00	0.00	0.00	0.000	
3	1	260.00	294.00	6.00	1.1550	0.7500	6720.	2.500	0.00	0.00	0.00	0.00	0.000	
3	2	260.00	294.00	6.00	1.1550	0.7500	6720.	2.500	120.00	120.00	0.00	0.00	0.000	
3	3	260.00	294.00	6.00	1.1550	0.7500	6720.	2.500	240.00	240.00	0.00	0.00	0.000	
4	1	400.00	393.50	4.00	0.8130	0.6250	4700.	2.500	0.00	0.00	0.00	0.00	0.000	
4	2	400.00	393.50	4.00	0.8130	0.6250	4700.	2.500	120.00	120.00	0.00	0.00	0.000	
4	3	400.00	393.50	4.00	0.8130	0.6250	4700.	2.500	240.00	240.00	0.00	0.00	0.000	
5	1	400.00	488.00	6.00	1.1550	0.7500	6720.	2.500	0.00	0.00	0.00	0.00	0.000	
5	2	400.00	488.00	6.00	1.1550	0.7500	6720.	2.500	120.00	120.00	0.00	0.00	0.000	
5	3	400.00	488.00	6.00	1.1550	0.7500	6720.	2.500	240.00	240.00	0.00	0.00	0.000	
6	1	400.00	583.00	6.00	1.1550	0.7500	6720.	2.500	0.00	0.00	0.00	0.00	0.000	
6	2	400.00	583.00	6.00	1.1550	0.7500	6720.	2.500	120.00	120.00	0.00	0.00	0.000	
6	3	400.00	583.00	6.00	1.1550	0.7500	6720.	2.500	240.00	240.00	0.00	0.00	0.000	
7	1	400.00	678.00	12.00	2.0730	1.0000	11940.	2.500	0.00	0.00	0.00	0.00	0.000	
7	2	400.00	678.00	12.00	2.0730	1.0000	11940.	2.500	120.00	120.00	0.00	0.00	0.000	
7	3	400.00	678.00	12.00	2.0730	1.0000	11940.	2.500	240.00	240.00	0.00	0.00	0.000	

OUTPUT: WIND LOADS

SPAN	TOWER WIND LOAD (KIPS)	LEVEL	INSULATOR CLUSTERS WIND LOAD (KIPS)
1	4.50	1	0.00
2	6.51	2	0.00
3	7.56	3	0.00
4	8.31	4	0.00
5	8.53	5	0.00
6	8.53	6	0.00
7	7.53	7	0.00

OUTPUT: GUY WEIGHTS, LENGTHS AND FORCES

LVL	GUY #	EFF D (IN)	TOTAL WT (KIPS)	UNSTRESSED LENGTH (FT)	FORCES AT TOWER (KIPS) TENSION	WINDWARD	NORMAL	VERT	FORCES AT ANCHORAGE (KIPS) UPLIFT	M	N	TWIST (KIP-FT)
1	1	0.6250	0.227	279.56	11.11	10.29	0.00	4.19	4.00	10.30	0.00	0.000
1	2	0.6250	0.227	279.56	4.09	-1.98	3.21	1.59	1.40	3.75	0.11	-0.272
1	3	0.6250	0.227	279.56	4.09	-1.98	-3.21	1.59	1.40	3.75	-0.11	0.272
2	1	0.6250	0.266	326.78	12.83	10.16	0.00	7.84	7.69	10.25	0.00	0.000
2	2	0.6250	0.266	326.78	3.68	-1.58	2.42	2.27	2.09	2.82	0.16	-0.386
2	3	0.6250	0.266	326.78	3.68	-1.58	-2.42	2.27	2.09	2.82	-0.16	0.386
3	1	0.7500	0.453	392.15	19.54	12.85	0.00	14.72	14.51	13.12	0.00	0.000
3	2	0.7500	0.453	392.15	4.38	-1.65	2.36	3.30	3.00	2.70	0.26	-0.633
3	3	0.7500	0.453	392.15	4.38	-1.65	-2.35	3.30	3.00	2.70	-0.26	0.633
4	1	0.6250	0.456	560.75	16.20	11.47	0.00	11.44	11.28	11.75	0.00	0.000
4	2	0.6250	0.456	560.75	3.90	-1.65	2.22	2.75	2.48	2.56	0.34	-0.810
4	3	0.6250	0.456	560.75	3.90	-1.65	-2.22	2.75	2.48	2.56	-0.34	0.810
5	1	0.7500	0.728	630.54	22.55	14.12	0.00	17.58	17.30	14.67	0.00	0.000
5	2	0.7500	0.728	630.54	5.90	-2.26	2.98	4.56	4.11	3.38	0.49	-1.175
5	3	0.7500	0.728	630.54	5.90	-2.26	-2.98	4.56	4.11	3.38	-0.49	1.175
6	1	0.7500	0.816	706.52	20.91	11.55	0.00	17.42	17.15	12.34	0.00	0.000
6	2	0.7500	0.816	706.52	6.98	-2.47	3.15	5.71	5.21	3.51	0.58	-1.400
6	3	0.7500	0.816	706.52	6.98	-2.47	-3.15	5.71	5.21	3.51	-0.58	1.400
7	1	1.0000	1.630	786.50	47.71	23.76	0.00	41.38	40.56	25.15	0.00	0.000
7	2	1.0000	1.630	786.50	10.82	-3.49	4.33	9.28	8.11	4.72	0.91	-2.149
7	3	1.0000	1.630	786.50	10.81	-3.49	-4.32	9.28	8.11	4.72	-0.91	2.149

OUTPUT: TOWER BEHAVIOR AT GUY LEVELS

LVL	DEFLECTION (FT) WINDWARD	DEFLECTION (FT) NORMAL	TWIST (DEG)	REACTIONS (KIPS) WINDWARD	REACTIONS (KIPS) NORMAL	REACTIONS (KIPS) VERT	REACTIONS (KIP-FT) WINDWARD	REACTIONS (KIP-FT) NORMAL	REACTIONS (KIP-FT) TWIST	AXIAL FORCE (KIPS)	PHI
1	0.339	0.000	0.000	6.34	0.00	7.36	6.50	0.00	0.00	235.96	1.49457
2	0.638	0.000	0.000	7.00	0.00	12.38	13.93	0.00	0.00	221.22	1.47433
3	1.165	0.000	0.000	9.55	0.00	21.33	28.56	0.00	0.00	201.26	1.41576
4	2.111	0.000	0.000	8.16	0.00	16.93	21.74	0.00	0.00	172.82	1.33927
5	2.513	-0.001	0.000	9.59	0.00	26.71	32.34	0.00	0.00	148.74	1.27531
6	2.827	-0.001	0.000	6.62	0.00	28.85	29.28	0.00	0.00	115.39	1.24655

CONTROL PARAMETERS

7 GUY LEVELS
NGED BASE
ND LOADING DIRECTION 'C'
WO-WAY BENDING CONSIDERED
WIND LOADS ARE INPUT ITEMS

ANALYSIS PARAMETERS

0.000 INCH RADIAL ICE ON GUYS (SP WT 56.0 LB/CUFT)
AMBIENT TEMPERATURE = 30.00 DEG F
NORMAL TEMPERATURE = 70.00 DEG F
HEIGHT TO TOWER BASE = 0.0 FT
TOWER SHAFT MODULUS OF ELASTICITY = 29000.

INPUT ECHO: LOCAL LOADS AT GUY LEVELS AND PULL-OFF DATA

LVL	WIND VEL (MI/HR)	CONCENTRATED LOADS (KIPS) VERTICAL	HORIZONTAL WINDWARD	HORIZONTAL NORMAL	MOMENTS (KIP-FT) WINDWARD	MOMENTS (KIP-FT) NORMAL	MOMENTS (KIP-FT) TWIST	INSULATOR CLUSTERS WEIGHT (KIPS)	INSULATOR CLUSTERS DRAG (KIPS)
1	81.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	87.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	92.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	96.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	99.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	101.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	103.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOP		17.00	8.90	0.00	393.60	0.00	0.00		

INPUT ECHO: GUY DATA AND RELATED INFORMATION

%	GUY #	DISTANCE (FT) HORIZ	DISTANCE (FT) VERT	TENS (KIPS)	UNIT WT (LB/FT)	DIAM (IN)	AE (KIPS)	LEV ARM (FT)	WIND ANGLES (DEG) WIND TO GUY	WIND ANGLES (DEG) WIND TO LEV ARM	INSULATORS ON GUY WEIGHT (LBS)	INSULATORS ON GUY AREA (SQFT)	INSULATORS ON GUY LENGTH (FT)	ANCHOR PTN HT ABV GND (FT)
1	1	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	30.00	30.00	0.00	0.00	0.000	
1	2	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	150.00	150.00	0.00	0.00	0.000	
1	3	260.00	103.50	5.00	0.8130	0.6250	4700.	2.500	270.00	270.00	0.00	0.00	0.000	
2	1	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	30.00	30.00	0.00	0.00	0.000	
2	2	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	150.00	150.00	0.00	0.00	0.000	
2	3	260.00	198.50	5.00	0.8130	0.6250	4700.	2.500	270.00	270.00	0.00	0.00	0.000	
3	1	260.00	294.00	6.00	1.1550	0.7500	6720.	2.500	30.00	30.00	0.00	0.00	0.000	
3	2	260.00	294.00	6.00	1.1550	0.7500	6720.	2.500	150.00	150.00	0.00	0.00	0.000	
3	3	260.00	294.00	6.00	1.1550	0.7500	6720.	2.500	270.00	270.00	0.00	0.00	0.000	
4	1	400.00	393.50	4.00	0.8130	0.6250	4700.	2.500	30.00	30.00	0.00	0.00	0.000	
4	2	400.00	393.50	4.00	0.8130	0.6250	4700.	2.500	150.00	150.00	0.00	0.00	0.000	
4	3	400.00	393.50	4.00	0.8130	0.6250	4700.	2.500	270.00	270.00	0.00	0.00	0.000	
5	1	400.00	488.00	6.00	1.1550	0.7500	6720.	2.500	30.00	30.00	0.00	0.00	0.000	
5	2	400.00	488.00	6.00	1.1550	0.7500	6720.	2.500	150.00	150.00	0.00	0.00	0.000	
5	3	400.00	488.00	6.00	1.1550	0.7500	6720.	2.500	270.00	270.00	0.00	0.00	0.000	
6	1	400.00	583.00	6.00	1.1550	0.7500	6720.	2.500	30.00	30.00	0.00	0.00	0.000	
6	2	400.00	583.00	6.00	1.1550	0.7500	6720.	2.500	150.00	150.00	0.00	0.00	0.000	
6	3	400.00	583.00	6.00	1.1550	0.7500	6720.	2.500	270.00	270.00	0.00	0.00	0.000	
7	1	400.00	678.00	12.00	2.0730	1.0000	11940.	2.500	30.00	30.00	0.00	0.00	0.000	
7	2	400.00	678.00	12.00	2.0730	1.0000	11940.	2.500	150.00	150.00	0.00	0.00	0.000	
7	3	400.00	678.00	12.00	2.0730	1.0000	11940.	2.500	270.00	270.00	0.00	0.00	0.000	

OUTPUT: WIND LOADS

SPAN	TOWER WIND LOAD (KIPS)	LEVEL	INSULATOR CLUSTERS WIND LOAD (KIPS)
1	4.50	1	0.00
2	6.51	2	0.00
3	7.56	3	0.00
4	8.31	4	0.00
5	8.53	5	0.00
6	8.53	6	0.00
7	7.53	7	0.00

OUTPUT: GUY WEIGHTS, LENGTHS AND FORCES

LVL	GUY #	EFF D (IN)	TOTAL WT (KIPS)	UNSTRESSED LENGTH (FT)	FORCES AT TOWER (KIPS) TENSION	WINDWARD	NORMAL	VERT	FORCES AT ANCHORAGE (KIPS) UPLIFT	M	N	TWIST (KIP-FT)
1	1	0.6250	0.227	279.56	10.29	8.26	4.75	3.89	3.72	9.62	-0.01	-0.141
1	2	0.6250	0.227	279.56	2.65	-2.13	1.18	1.05	0.88	2.41	0.04	-0.153
1	3	0.6250	0.227	279.56	6.08	-0.14	-5.61	2.35	2.12	5.61	-0.13	0.242
2	1	0.6250	0.266	326.78	12.08	8.27	4.77	7.41	7.26	9.72	0.00	-0.175
2	2	0.6250	0.266	326.78	1.43	-1.00	0.50	0.89	0.75	1.02	0.07	-0.203
2	3	0.6250	0.266	326.78	6.81	-0.19	-5.35	4.21	3.95	5.35	-0.20	0.359
3	1	0.7500	0.453	392.15	19.18	10.90	6.29	14.48	14.25	12.94	0.04	-0.283
3	2	0.7500	0.453	392.15	1.56	-0.97	0.41	1.15	0.93	0.78	0.13	-0.350
3	3	0.7500	0.453	392.15	10.48	-0.28	-6.83	7.94	7.49	6.83	-0.32	0.560
4	1	0.6250	0.456	560.75	15.51	9.47	5.47	11.00	10.82	11.36	0.04	-0.275
4	2	0.6250	0.456	560.75	1.55	-1.05	0.42	1.05	0.88	0.84	0.16	-0.431
4	3	0.6250	0.456	560.75	8.16	-0.38	-5.70	5.83	5.38	5.70	-0.42	0.802
5	1	0.7500	0.728	630.54	21.10	11.36	6.61	16.51	16.20	13.83	0.10	-0.471
5	2	0.7500	0.728	630.54	2.73	-1.68	0.69	2.04	1.73	1.29	0.25	-0.660
5	3	0.7500	0.728	630.54	11.17	-0.55	-6.90	8.77	8.04	6.90	-0.60	1.185
6	1	0.7500	0.816	706.52	20.16	9.55	5.63	16.85	16.52	11.97	0.16	-0.550
6	2	0.7500	0.816	706.52	3.62	-2.05	0.84	2.86	2.54	1.48	0.31	-0.809
6	3	0.7500	0.816	706.52	12.37	-0.65	-6.81	10.31	9.50	6.81	-0.70	1.432
7	1	1.0000	1.630	786.50	48.34	20.79	12.05	41.94	41.05	25.51	0.29	-0.694
7	2	1.0000	1.630	786.50	4.90	-2.60	0.95	4.05	3.16	1.47	0.49	-1.243

OUTPUT: TOWER BEHAVIOR AT GUY LEVELS

LVL	DEFLECTION (FT) WINDWARD	DEFLECTION (FT) NORMAL	TWIST (DEG)	REACTIONS (KIPS) WINDWARD	REACTIONS (KIPS) NORMAL	REACTIONS (KIPS) VERT	REACTIONS (KIP-FT) WINDWARD	REACTIONS (KIP-FT) NORMAL	REACTIONS (KIP-FT) TWIST	AXIAL FORCE (KIPS)	PHI
1	0.316	0.027	-0.443	5.99	0.32	7.29	6.15	-0.32	-0.05	250.33	1.53899
2	0.677	-0.027	-0.472	7.08	-0.09	12.51	14.11	0.16	-0.02	235.66	1.51954
3	1.439	-0.234	-0.510	9.65	-0.13	23.57	28.86	0.32	-0.07	215.57	1.45731
4	2.483	-0.323	-0.589	8.05	0.18	17.88	21.53	-0.49	0.10	184.88	1.37076
5	2.755	-0.218	-0.615	9.13	0.40	27.32	31.32	-1.25	0.05	159.85	1.30140
6	3.299	-0.428	-0.611	6.85	-0.34	30.02	30.28	1.15	0.07	125.89	1.29724
7	6.176	-1.347	-0.566	17.32	-0.30	69.27	82.03	0.73	-0.08	89.45	1.21389

OUTPUT: BEHAVIOR AT TOWER EXTREMITIES

BASE MOMENTS (KIP-FT) WINDWARD	BASE MOMENTS (KIP-FT) NORMAL	BASE SHEAR (KIPS) WINDWARD	BASE SHEAR (KIPS) NORMAL	BASE VERTICAL (KIPS)	CANTILEVER DEFL (FT) WINDWARD	CANTILEVER DEFL (FT) NORMAL	MOMENT ABOVE TOP GU (KIP-FT) WINDWARD	MOMENT ABOVE TOP GU (KIP-FT) NORMAL
0.00	0.00	0.91	-0.04	253.90	6.176	-1.347	-393.60	0.00

OUTPUT: SPAN PARAMETERS

SPAN	BENDING MOMENTS (KIP-FT) WINDWARD TOP	BENDING MOMENTS (KIP-FT) WINDWARD BOTTOM	BENDING MOMENTS (KIP-FT) NORMAL TOP	BENDING MOMENTS (KIP-FT) NORMAL BOTTOM	TOTAL SHEARS (KIPS) WINDWARD TOP	TOTAL SHEARS (KIPS) WINDWARD BOTTOM	TOTAL SHEARS (KIPS) NORMAL TOP	TOTAL SHEARS (KIPS) NORMAL BOTTOM
1	-51.94	0.00	2.80	0.00	-2.95	2.18	-0.01	0.05
2	-82.12	-57.99	16.15	2.48	-3.41	3.00	-0.10	0.31
3	-100.10	-96.23	-10.31	16.31	-3.32	3.31	-0.27	-0.15
4	31.27	-128.96	-20.93	-9.99	-3.44	5.99	0.15	-0.34
5	-75.20	9.74	18.19	-21.42	-5.64	4.43	0.37	0.32
6	-172.44	-106.52	51.58	16.94	-4.58	3.47	-0.14	0.74
7	-311.57	-202.72	-0.73	52.73	-3.81	1.56	-0.74	-0.25

OUTPUT: TOTAL FORCES AT GUY ANCHORS

ANCHOR #	LOCATION REF ANGLE (DEG)	LOCATION HORIZ DIST (FT)	TOTAL FORCES (KIPS) UPLIFT	TOTAL FORCES (KIPS) M	TOTAL FORCES (KIPS) RESULT	ELEV ANGLE (DEG)
1	30.00	260.00	25.23	32.28	40.97	38.01
2	150.00	260.00	2.56	4.21	4.93	31.30
3	270.00	260.00	13.56	17.79	22.37	37.32
4	30.00	400.00	84.59	62.67	105.28	53.47
5	150.00	400.00	8.31	5.07	9.73	58.61
6	270.00	400.00	44.57	32.73	55.30	53.71

OUTPUT: APPLIED AND ALLOWABLE LEG LOADS

SECT	TYPE	DIMENSIONS (IN)	MODE	LOAD (KIPS) MIN APPL	MAX APPL	ALLOW	% OVER
1	PIPE	3.500x 0.300	CMPR1	75.91 B	90.57 C	96.13	

OUTPUT: GUY TENSIONS AND SAFETY FACTORS

LVL	STRAND TYPE	DIAM (IN)	TOT WT (KIPS)	BREAK STR (KIPS)	MAX TENS (KIPS)	SAFETY FACTOR
1	EHS7	0.6250	0.68	42.40	[illegible]	3.82

OUTPUT: APPLIED AND ALLOWABLE DIAGONAL AND HORIZONTAL LOADS

DIAGONALS

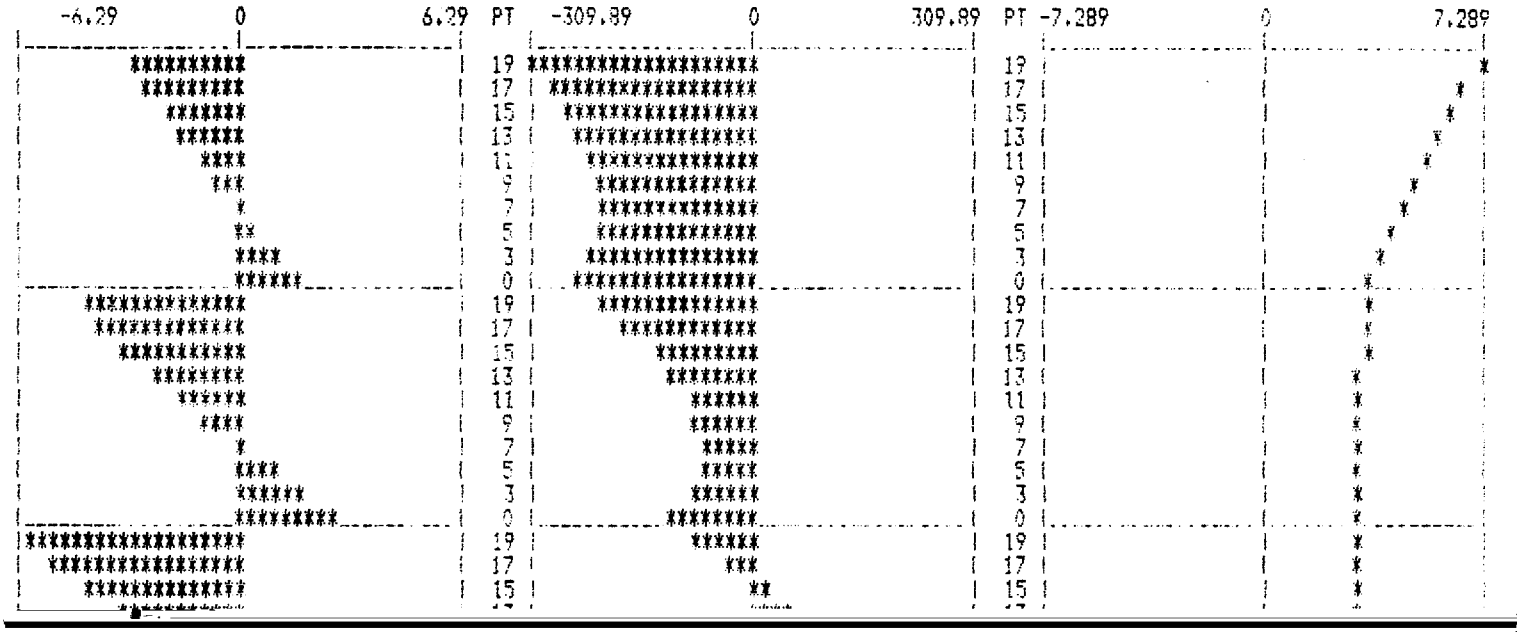
SECT	TYPE	DIMENSIONS (IN)	MODE	LOAD (KIPS) MAX APPL		ALLOW	% OVER
1	ROD	0.625	TENSN	1.86	C	12.28	
2	ROD	0.625	TENSN	0.93	C	12.28	
3	ROD	0.625	TENSN	1.45	C	12.28	
4	ROD	0.625	TENSN	2.55	C	12.28	
5	ROD	0.625	TENSN	3.14	C	12.28	
6	ROD	0.625	TENSN	2.50	C	12.28	
7	ROD	0.625	TENSN	1.16	B	12.28	
8	ROD	0.625	TENSN	1.60	C	12.28	
9	ROD	0.625	TENSN	3.06	C	12.28	
10	ROD	0.625	TENSN	3.70	C	12.28	
11	ROD	0.625	TENSN	2.57	C	12.28	
12	ROD	0.625	TENSN	1.13	A	12.28	
13	ROD	0.625	TENSN	2.03	B	12.28	
14	ROD	0.625	TENSN	3.29	C	12.28	
15	ROD	0.625	TENSN	6.08	C	12.28	
16	ROD	0.625	TENSN	4.72	C	12.28	
17	ROD	0.625	TENSN	2.77	C	12.28	
18	ROD	0.625	TENSN	1.21	C	12.28	
19	ROD	0.625	TENSN	3.78	C	12.28	
20	ROD	0.625	TENSN	4.09	C	12.28	
21	ROD	0.625	TENSN	2.01	B	12.28	
22	ROD	0.625	TENSN	2.63	C	12.28	
23	ROD	0.625	TENSN	4.74	C	12.28	
24	ROD	0.625	TENSN	5.86	C	12.28	
25	ROD	0.625	TENSN	3.29	B	12.28	
26	ROD	0.625	TENSN	1.41	B	12.28	
27	ROD	0.625	TENSN	2.36	C	12.28	
28	ROD	0.625	TENSN	4.27	C	12.28	
29	ROD	0.625	TENSN	4.94	C	12.28	
30	ROD	0.625	TENSN	1.01	A	12.28	
31	ROD	0.625	TENSN	1.86	B	12.28	
32	ROD	0.625	TENSN	3.03	B	12.28	
33	ROD	0.625	TENSN	4.34	B	12.28	

HORIZONTALS

SECT	TYPE	DIMENSIONS (IN)	MODE	LOAD (KIPS) MAX APPL		ALLOW	% OVER
1	ROD	1.000	CMPR1	1.33	C	4.82	
2	ROD	1.000	CMPR1	0.58	C	4.82	
3	ROD	1.000	CMPR1	0.91	C	4.82	
4	ROD	1.000	CMPR1	1.59	C	4.82	
5	ROD	1.000	CMPR1	1.86	C	4.82	
6	ROD	1.000	CMPR1	1.56	C	4.82	
7	ROD	1.000	CMPR1	0.72	B	4.82	
8	ROD	1.000	CMPR1	1.00	C	4.82	
9	ROD	1.000	CMPR1	1.91	C	4.82	
10	ROD	1.000	CMPR1	2.14	C	4.82	
11	ROD	1.000	CMPR1	1.61	C	4.82	
12	ROD	1.000	CMPR1	0.71	A	4.82	
13	ROD	1.000	CMPR1	1.27	B	4.82	
14	ROD	1.000	CMPR1	2.06	C	4.82	
15	ROD	1.000	CMPR1	3.76	C	4.82	
16	ROD	1.000	CMPR1	2.95	C	4.82	
17	ROD	1.000	CMPR1	1.73	C	4.82	
18	ROD	1.000	CMPR1	0.76	C	4.82	
19	ROD	1.000	CMPR1	1.90	C	4.82	
20	ROD	1.000	CMPR1	2.63	C	4.82	
21	ROD	1.000	CMPR1	1.25	B	4.82	
22	ROD	1.000	CMPR1	1.65	C	4.82	
23	ROD	1.000	CMPR1	2.96	C	4.82	
24	ROD	1.000	CMPR1	3.53	C	4.82	
25	ROD	1.000	CMPR1	2.06	B	4.82	
26	ROD	1.000	CMPR1	0.88	B	4.82	
27	ROD	1.000	CMPR1	1.48	C	4.82	
28	ROD	1.000	CMPR1	2.67	C	4.82	
29	ROD	1.000	CMPR1	2.86	C	4.82	
30	ROD	1.000	CMPR1	0.63	A	4.82	
31	ROD	1.000	CMPR1	1.16	B	4.82	
32	ROD	1.000	CMPR1	1.99	B	4.82	
33	ROD	1.000	CMPR1	2.71	B	4.82	

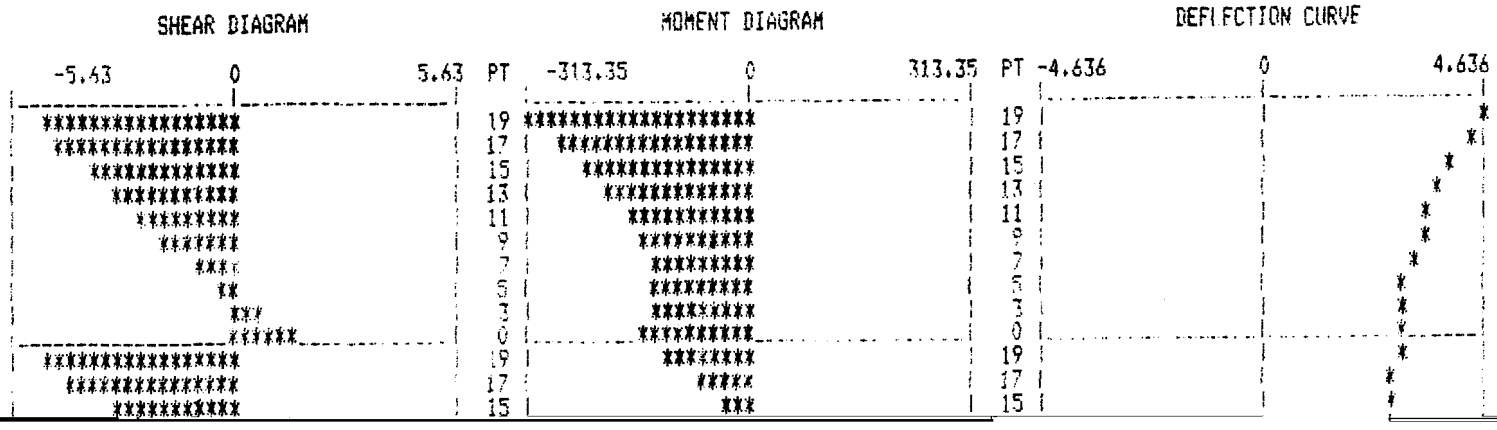
VLISSIDES 666' Guyed Tower ONE BUNDLE XMSN LINE - 75 Mph Basic Vel., [222E WIND A 2-23-92 BALTIMOR3.PLT

OUTPUT: DATA PLOTS



ULISSIDES 466' Guyed Tower - ONE BUNDLE XMSN LINE - 75 Mph Basic Vel.; ' 222E WIND B 2-23-92 BALTIMOR3.PLT

OUTPUT: DATA PLOTS



VLISSIDES 666' Guyed Tower ONE BUNDLE XMSN LINE - 75 Mph Basic Vel., 222E WIND C 2-23-92 BALTIMOR3.PLT

OUTPUT: DATA PLOTS

SHEAR DIAGRAM			MOMENT DIAGRAM			DEFLECTION CURVE		
-5.99	0	5.99 PT	-311.57	0	311.57 PT	-6.176	0	6.176

Exhibit D

Four Tracks
Owns Tower

[redacted]

IN REPLY REFER TO
AERONAUTICAL STUDY
NO. 92-ASW-0200-OE

Exhibit E

Baltimore County Government
Department of Permits and Licenses

111 West Chesapeake Avenue
Towson, MD 21204

887-3610

February 20, 1992

Four Jacks Broadcasting, Inc.
c/o Mr. Martin R. Leader, Esq.
1255 23rd Street, N.W.
Washington, D.C. 20037

Re: Broadcasting tower
1200 North Rolling Road

Gentlemen:

My office has recently been made aware of an engineering study done by Vlissedes Enterprises in which a structural analysis and evaluation of the 666' guyed tower at the above address was studied. The study, done for the purpose of evaluating the effect of additional apparatus on the tower, indicates that portions of the tower could be overstressed at the present time.

Therefore, Four Jacks Broadcasting, Inc. is directed to obtain the services of a professional engineer to review the report and make any recommendations for corrections necessary. Please contact my office no later than February 28, 1992 with your plan to address this problem.

Very truly yours,

John R. Reisinger, P.E.
Buildings Engineer

JRR/nmg

Exhibit F

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MAGAZINE

Pittsburgh Post-Gazette

Thursday
January 30, 1992
Page 15

WPTT, WPGH under scrutiny by FCC

By Barbara Vancheri
Post-Gazette Staff Writer

The enforcement arm of the FCC will be taking a closer look at the operations of WPGH-TV and WPTT-TV since both were sold last year.

A group of 10 current and former employees from both stations has sent a letter to the Federal Communications Commission and to a dozen politicians asking them to examine whether overlapping, illegal interests exist between the two stations.

They level the serious allegation that Pittsburgh's two independent stations are, in effect, often acting as one. If true, that would be a violation of FCC rules, which prohibit any company from having an interest in more than one TV station in the same market.

The issues stem from the fact that the owners of WPGH financed the purchase of WPTT, and because WPGH is buying nine hours of air time daily on WPTT in a time-brokering arrangement.

At the very least, the unsigned letter suggests that some Channel 53 employees feel overworked, underpaid and wary of the station's new owner, Sinclair Broadcast Group. Some of the conditions they cite — pay cuts, higher health-care costs, extra work, increased use of free-lancers — may not fall under the province of the FCC.

But other charges have the potential to warrant close scrutiny from the FCC. The letter raises questions but provides no documentation about WPGH paying the utility bills of WPTT and WPGH employees handling payrolls, bills and invoices at WPTT.

Richard Smith, chief of the FCC's field operations bureau who received a copy of the letter, said last week, "We will start looking at it fairly soon. It's impossible to predict what might come of it. . . .

"In general, the main issue of time-brokerage has to do with the element of transfer of control of the station."

Smith described his office as the FCC's enforcement arm. The FCC is an independent government agency responsible for regulating radio, television, wire and cable communications.

Alan Frank, general manager of WPGH since mid-September, said this week he was not worried about the letter. He has no proof of authorship but suspects it was written by unhappy former and current workers.

"It's a consortium of disgruntled ex-employees and possibly some employees here right now who are giving out information," Frank said. "We feel that there's possible slander here with this letter, and someone's trying to give Sinclair Broadcasting a bad name."

In the meantime, he said he has been trying to bring WPGH in line with other Sinclair stations in terms of personnel and salaries. He said the station's 57 full- and part-time employees represent a 10 percent cutback. Asked if more jobs will be trimmed, he said possibly.

"We run a lean, mean machine," he said, adding that employees unhappy with job or salary reductions have the option of leaving.

In another development that shows possible employee dissatisfaction at WPGH, 21 technical employees will vote on Valentine's Day to certify or reject an IBEW local as their bargaining unit. A simple majority is needed for approval.

Meanwhile at WPTT, owner Eddie Edwards, who bought the station from Sinclair in August, said, "The FCC has reviewed us extremely carefully. I'm here to operate as a television station owner. . . . Everything is 100 percent legit. We've been looked at through a microscope."

As to suggestions that his actions are being controlled by Sinclair, he said, "I'm a big boy. Whenever there's change, it's hard to accept, no matter what the change is."

WPTT once had a staff of 43 employees, a number that has been cut by two-thirds because of a change in programming that largely depends on a Home Shopping Network feed.

SEE STATIONS, PAGE 17

FCC will examine