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	0.476	0.000	0.000	7.48	0.00	7.89	7.60	0.00	0.00	278.57	1.63385
2	1.214	0.000	0.000	8.61	0.00	14.31	16.98	0.00	0.00	263.07	1.61268
3	2.436	0.000	0.000	12.93	0.00	31.13	37.86	0.01	0.00	240.93	1.53667
4	3.630	0.000	0.000	9.80	0.00	21.44	25.76	0.00	0.00	202.44	1.41909
5	3.205	0.000	0.000	9.32	0.00	28.41	32.02	0.00	0.00	173.60	1.33509
6	3.248	0.000	0.000	8.52	0.00	36.00	37.61	0.00	0.00	138.30	1.33532
7	7.200	0.000	0.000	17.59	0.00	74.34	82.97	0.00	0.00	95.64	1.23174

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	0.60	0.00	282.25	7.200	0.000	-393.80	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	-85.55	0.00	0.00	0.00	-3.67	2.44	0.00	0.00
2	-99.03	-93.16	0.00	0.00	-3.84	3.72	0.00	0.00
3	-103.30	-116.01	-0.01	0.00	-4.05	4.29	0.00	0.00
4	98.92	-141.16	-0.01	-0.01	-4.52	8.30	0.00	0.00
5	-83.97	73.16	0.02	-0.01	-7.58	5.17	0.00	0.00
6	-299.41	-115.98	0.00	0.02	-5.14	2.06	0.00	0.00
7	-310.83	-337.02	0.00	-0.01	-2.25	2.48	0.00	0.00

CONTROL PARAMETERS

7 GUY LEVELS
IGED BASE
ID LOADING DIRECTION "B"
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		18.00	8.90	0.00	393.80	0.00	0.00		

INPUT ECHO: SPAN LOADS CONCENTRATED AT PANEL POINTS

SPAN	POINT	VERTICAL (KIPS)	HORIZONTAL (KIPS) WINDWARD	HORIZONTAL (KIPS) NORMAL	MOMENTS (KIP-FT) WINDWARD	MOMENTS (KIP-FT) NORMAL	MOMENTS (KIP-FT) 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 (FT) BOTTOM	PANEL HT (FT) 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	7.23	5.734
2	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	7.47	8.291
3	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	7.22	9.310
4	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	7.11	10.093
5	94.500	4.000	N	4.750	4.750	5.000	17	24.21	104.23	6.85	9.967
6	95.167	4.000	N	5.084	5.083	5.000	17	19.55	104.23	6.12	9.567
7	94.432	4.000	N	4.716	4.716	5.000	17	17.89	104.23	5.60	8.388

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	4.00	0.8130	0.6250	4700.	2.500	0.00	0.00	0.00	0.00	0.000	
2	2	260.00	198.50	4.00	0.8130	0.6250	4700.	2.500	120.00	120.00	0.00	0.00	0.000	
2	3	260.00	198.50	4.00	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	7.00	1.5810	0.8750	9340.	2.500	0.00	0.00	0.00	0.00	0.000	
6	2	400.00	583.00	7.00	1.5810	0.8750	9340.	2.500	120.00	120.00	0.00	0.00	0.000	
6	3	400.00	583.00	7.00	1.5810	0.8750	9340.	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	5.73	1	0.00
2	8.29	2	0.00
3	9.31	3	0.00
4	10.09	4	0.00
5	9.97	5	0.00
6	9.57	6	0.00
7	8.39	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	12.60	11.67	0.00	4.74	4.55	11.69	0.00	0.000
1	2	0.6250	0.227	279.56	3.61	-1.75	2.82	1.41	1.23	3.30	0.11	-0.271
1	3	0.6250	0.227	279.56	3.61	-1.75	-2.82	1.41	1.23	3.30	-0.11	0.271
2	1	0.6250	0.266	326.86	13.87	10.99	0.00	8.47	8.32	11.08	0.00	0.000
2	2	0.6250	0.266	326.86	2.76	-1.21	1.79	1.71	1.54	2.09	0.16	-0.387
2	3	0.6250	0.266	326.86	2.76	-1.21	-1.79	1.71	1.54	2.09	-0.16	0.387
3	1	0.7500	0.453	392.15	22.63	14.91	0.00	17.02	16.81	15.18	0.00	0.000
3	2	0.7500	0.453	392.15	3.94	-1.51	2.11	2.98	2.67	2.41	0.26	-0.630
3	3	0.7500	0.453	392.15	3.94	-1.51	-2.10	2.97	2.67	2.41	-0.26	0.630
4	1	0.6250	0.456	560.75	18.36	13.02	0.00	12.94	12.78	13.30	0.00	0.000
4	2	0.6250	0.456	560.75	3.67	-1.57	2.08	2.59	2.33	2.40	0.34	-0.807
4	3	0.6250	0.456	560.75	3.67	-1.57	-2.08	2.59	2.33	2.40	-0.34	0.807
5	1	0.7500	0.728	630.54	23.47	14.71	0.00	18.29	18.02	15.26	0.00	0.000
5	2	0.7500	0.728	630.54	5.79	-2.23	2.92	4.48	4.02	3.31	0.49	-1.174
	3	0.7500	0.728	630.54	5.79	-2.23	-2.92	4.48	4.03	3.31	-0.49	1.174
6	1	0.8750	1.117	706.67	25.49	14.06	0.00	21.27	20.78	14.98	0.00	0.000
6	2	0.8750	1.117	706.67	8.24	-2.89	3.70	6.78	6.03	4.12	0.68	-1.639
6	3	0.8750	1.117	706.67	8.24	-2.89	-3.70	6.78	6.03	4.12	-0.68	1.639
7	1	1.0000	1.630	786.50	47.65	23.73	0.00	41.32	40.51	25.12	0.00	0.000
7	2	1.0000	1.630	786.50	10.82	-3.49	4.33	9.29	8.12	4.72	0.91	-2.149
7	3	1.0000	1.630	786.50	10.82	-3.49	-4.33	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	0.435	0.000	0.000	8.17	0.00	7.55	8.32	0.00	0.00	247.55	1.53022
2	0.834	0.000	0.000	8.56	0.00	11.89	16.89	0.00	0.00	232.39	1.50908
3	1.439	0.001	0.000	11.90	0.00	22.97	35.12	0.00	0.00	212.67	1.44871
4	2.477	0.000	0.000	9.87	0.00	18.12	25.89	0.00	0.00	182.34	1.36401
5	2.653	-0.001	0.000	10.25	0.00	27.25	34.54	0.00	0.00	156.82	1.29419
6	2.606	-0.001	0.000	8.28	0.00	34.82	36.22	0.00	0.00	122.68	1.28772
7	4.629	0.001	0.000	16.75	0.00	59.89	80.10	-0.01	0.00	81.20	1.19079

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	1.07	0.00	251.24	4.629	0.001	-393.80	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	-66.30	0.00	-0.03	0.00	-3.74	2.74	0.00	0.00
2	-71.29	-74.62	-0.03	-0.03	-4.35	4.36	0.00	0.00
3	-134.96	-88.18	0.09	-0.03	-4.57	3.88	0.00	0.00
4	24.99	-170.07	0.05	0.08	-3.89	7.03	0.00	0.00
5	-42.93	-0.90	-0.10	0.05	-6.26	5.79	0.00	0.00
6	-169.36	-77.48	-0.08	-0.10	-5.66	4.09	0.00	0.00
7	-313.70	-205.57	0.01	-0.08	-4.46	2.19	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) M	TOTAL FORCES (KIPS) RESULT	ELEV ANGLE (DEG)
1	0.00	260.00	29.68	37.95	48.18	38.03
2	120.00	260.00	5.44	7.80	9.51	34.89
3	240.00	260.00	5.44	7.80	9.51	34.89
4	0.00	400.00	92.09	68.66	114.87	53.29
5	120.00	400.00	20.50	14.55	25.14	54.63
6	240.00	400.00	20.50	14.55	25.14	54.63

CONTROL PARAMETERS

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

ANALYSIS PARAMETERS

0.000 INCH RADIAL ICE ON GUYS (SP WT 56.0 LB/CUFT)
AMRIENT 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		18.00	8.90	0.00	393.80	0.00	0.00		

INPUT ECHO: SPAN LOADS CONCENTRATED AT PANEL POINTS

SPAN	POINT	VERTICAL (KIPS)	HORIZONTAL (KIPS) WINDWARD	HORIZONTAL (KIPS) NORMAL	MOMENTS (KIP-FT) WINDWARD	MOMENTS (KIP-FT) NORMAL	MOMENTS (KIP-FT) 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 (FT) BOTTOM	PANEL HT (FT) 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	7.23	5.734
2	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	7.47	8.291
3	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	7.22	9.310
4	95.167	4.000	N	5.084	5.083	5.000	17	24.21	104.23	7.11	10.093
5	94.500	4.000	N	4.750	4.750	5.000	17	24.21	104.23	6.85	9.967
6	95.167	4.000	N	5.084	5.083	5.000	17	19.55	104.23	6.12	9.567
7	94.432	4.000	N	4.716	4.716	5.000	17	17.89	104.23	5.60	8.388

OUTPUT: WIND LOADS

SPAN	TOWER WIND LOAD (KIPS)	LEVEL	INSULATOR CLUSTERS WIND LOAD (KIPS)
1	5.73	1	0.00
2	8.29	2	0.00
3	9.31	3	0.00
4	10.09	4	0.00
5	9.97	5	0.00
6	9.57	6	0.00
7	8.39	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	11.66	9.36	5.38	4.40	4.22	10.89	-0.01	-0.145
1	2	0.6250	0.227	279.56	1.89	-1.52	0.83	0.77	0.60	1.71	0.04	-0.138
1	3	0.6250	0.227	279.56	6.30	-0.14	-5.82	2.43	2.20	5.82	-0.15	0.238
2	1	0.6250	0.266	326.86	13.71	9.40	5.40	8.39	8.24	11.01	0.00	-0.151
2	2	0.6250	0.266	326.86	0.87	-0.62	0.27	0.55	0.41	0.58	0.07	-0.194
[illegible]	3	0.6250	0.266	326.86	7.20	-0.18	-5.66	4.45	4.19	5.66	-0.20	0.338
3	1	0.7500	0.453	392.15	23.62	13.49	7.74	17.79	17.56	15.91	0.04	-0.216
3	2	0.7500	0.453	392.15	1.24	-0.78	0.30	0.91	0.69	0.57	0.13	-0.344
3	3	0.7500	0.453	392.15	13.15	-0.25	-8.61	9.94	9.49	8.61	-0.32	0.459
4	1	0.6250	0.456	560.75	18.21	11.16	6.41	12.88	12.70	13.29	0.04	-0.239
4	2	0.6250	0.456	560.75	1.35	-0.92	0.35	0.91	0.74	0.70	0.16	-0.427
4	3	0.6250	0.456	560.75	9.36	-0.36	-6.56	6.67	6.21	6.56	-0.42	0.748
5	1	0.7500	0.728	630.54	22.12	11.93	6.93	17.30	16.99	14.49	0.10	-0.451
5	2	0.7500	0.728	630.54	2.59	-1.60	0.64	1.93	1.63	1.19	0.25	-0.656
[illegible]	3	0.7500	0.728	630.54	11.64	-0.54	-7.19	9.13	8.40	7.20	-0.60	1.167
6	1	0.8750	1.117	706.67	24.39	11.52	6.79	20.39	19.85	14.41	0.18	-0.659
6	2	0.8750	1.117	706.67	4.16	-2.33	0.94	3.31	2.77	1.65	0.36	-0.943
6	3	0.8750	1.117	706.67	14.73	-0.76	-8.07	12.30	11.19	8.07	-0.82	1.683
7	1	1.0000	1.630	786.50	48.08	20.68	11.99	41.72	40.83	25.38	0.29	-0.703
7	2	1.0000	1.630	786.50	4.94	-2.61	0.96	4.08	3.19	1.49	0.49	-1.262
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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	0.429	0.010	-0.418	7.71	0.39	7.60	7.85	-0.39	-0.05	268.31	1.59819
2	1.046	-0.172	-0.443	8.60	0.01	13.39	16.96	-0.04	-0.01	253.10	1.57764
3	2.053	-0.509	-0.472	12.45	-0.57	28.64	36.54	1.48	-0.10	231.89	1.50750
4	3.182	-0.619	-0.556	9.88	0.20	20.46	25.90	-0.56	0.08	195.89	1.40070
5	3.001	-0.331	-0.595	9.79	0.38	28.36	33.26	-1.21	0.06	168.03	1.32126
6	3.001	-0.375	-0.601	8.43	-0.33	36.01	36.98	1.12	0.08	132.78	1.31813
7	6.106	-1.293	-0.562	17.18	-0.19	68.80	81.48	0.27	-0.07	90.11	1.21575

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	0.82	0.11	272.00	6.106	-1.293	-393.80	0.00

OUTPUT: SPAN PARAMETERS

'AN	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	-81.75	0.00	12.94	0.00	-3.69	2.49	-0.07	0.26
2	-89.62	-89.60	14.33	12.55	-3.98	3.94	-0.31	0.34
3	-111.78	-106.58	-14.84	14.28	-4.22	4.20	-0.22	-0.23
4	67.92	-148.31	-40.28	-13.37	-4.32	7.75	0.24	-0.68
5	-68.17	42.02	20.75	-40.85	-7.04	5.41	0.67	0.39
6	-242.34	-101.43	63.24	19.54	-5.37	2.98	-0.19	0.94
7	-312.31	-279.33	-0.27	64.37	-3.23	2.37	-0.90	-0.29

'TPUT: 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	30.02	37.81	48.28	38.45
2	150.00	260.00	1.70	2.86	3.33	30.73
3	270.00	260.00	15.88	20.09	25.61	38.32
4	30.00	400.00	90.37	67.57	112.84	53.21
5	150.00	400.00	8.33	5.03	9.73	58.87
6	270.00	400.00	47.17	34.99	58.73	53.43

OUTPUT: APPLIED AND ALLOWABLE DIAGONAL AND HORIZONTAL LOADS

DIAGONALS

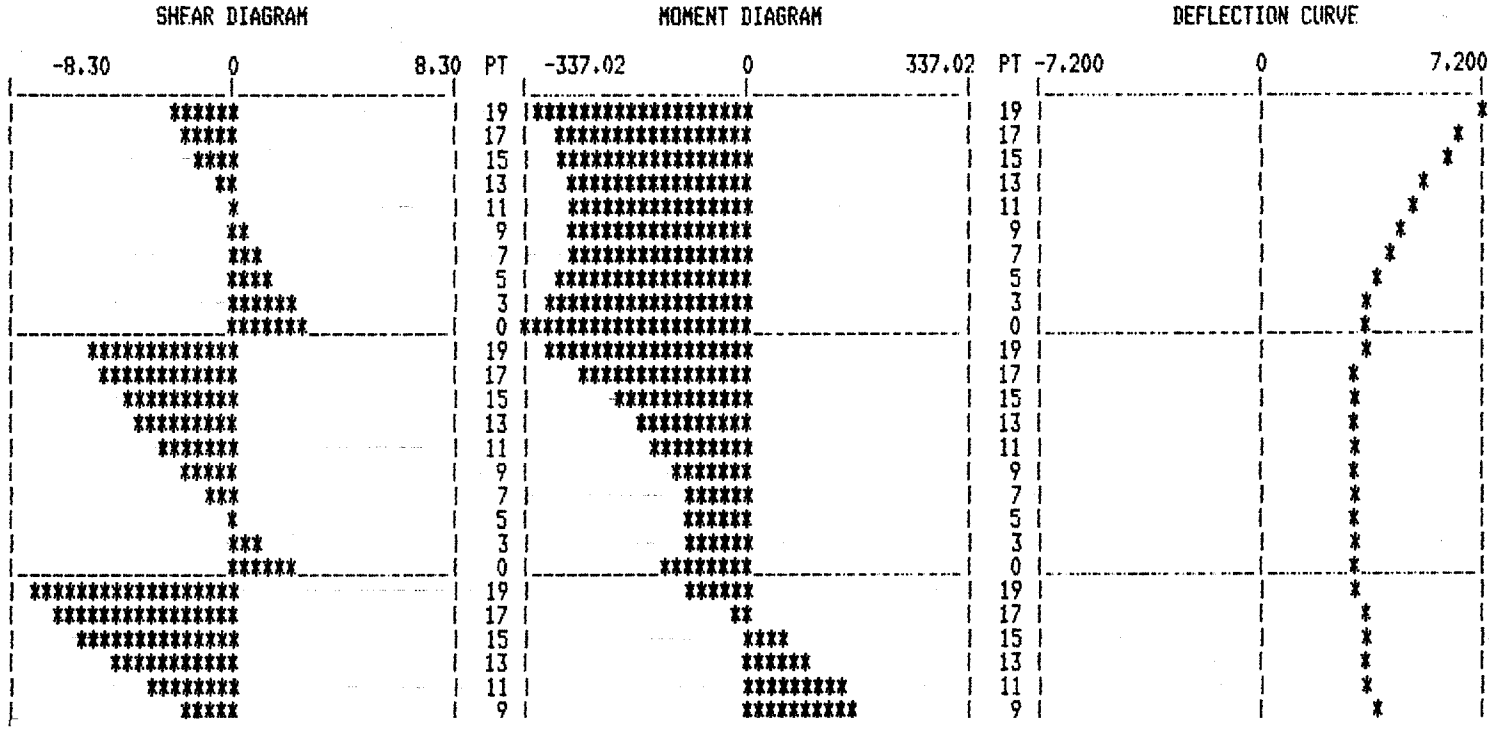
SECT	TYPE	DIMENSIONS (IN)	MODE	LOAD (KIPS) MAX APPL		ALLOW	% OVER
1	ROD	0.625	TENSN	2.07	C	12.28	
2	ROD	0.625	TENSN	1.00	B	12.28	
3	ROD	0.625	TENSN	2.01	C	12.28	
4	ROD	0.625	TENSN	3.29	C	12.28	
5	ROD	0.625	TENSN	3.94	C	12.28	
6	ROD	0.625	TENSN	3.42	C	12.28	
7	ROD	0.625	TENSN	1.67	C	12.28	
8	ROD	0.625	TENSN	1.65	C	12.28	
9	ROD	0.625	TENSN	3.50	C	12.28	
10	ROD	0.625	TENSN	4.32	C	12.28	
11	ROD	0.625	TENSN	3.28	C	12.28	
12	ROD	0.625	TENSN	1.40	A	12.28	
13	ROD	0.625	TENSN	2.54	B	12.28	
14	ROD	0.625	TENSN	4.18	C	12.28	
15	ROD	0.625	TENSN	7.90	C	12.28	
16	ROD	0.625	TENSN	6.23	C	12.28	
17	ROD	0.625	TENSN	3.72	C	12.28	
18	ROD	0.625	TENSN	1.48	C	12.28	
19	ROD	0.625	TENSN	4.73	C	12.28	
20	ROD	0.625	TENSN	4.97	C	12.28	
21	ROD	0.625	TENSN	2.49	B	12.28	
22	ROD	0.625	TENSN	3.40	A	12.28	
23	ROD	0.625	TENSN	5.95	C	12.28	
24	ROD	0.625	TENSN	7.31	C	12.28	
25	ROD	0.625	TENSN	2.95	B	12.28	
26	ROD	0.625	TENSN	1.73	A	12.28	
27	ROD	0.625	TENSN	3.33	C	12.28	
28	ROD	0.625	TENSN	5.18	C	12.28	
29	ROD	0.625	TENSN	5.79	C	12.28	
30	ROD	0.625	TENSN	1.87	C	12.28	
31	ROD	0.625	TENSN	1.21	B	12.28	
32	ROD	0.625	TENSN	2.49	B	12.28	
33	ROD	0.625	TENSN	3.98	B	12.28	

HORIZONTALS

SECT	TYPE	DIMENSIONS (IN)	MODE	LOAD (KIPS) MAX APPL		ALLOW	% OVER
1	ROD	1.000	CMPR1	1.51	C	4.82	
2	ROD	1.000	CMPR1	0.62	B	4.82	
3	ROD	1.000	CMPR1	1.26	C	4.82	
4	ROD	1.000	CMPR1	2.06	C	4.82	
5	ROD	1.000	CMPR1	2.42	C	4.82	
6	ROD	1.000	CMPR1	2.14	C	4.82	
7	ROD	1.000	CMPR1	1.04	C	4.82	
8	ROD	1.000	CMPR1	1.03	C	4.82	
9	ROD	1.000	CMPR1	2.19	C	4.82	
10	ROD	1.000	CMPR1	2.55	C	4.82	
11	ROD	1.000	CMPR1	2.05	C	4.82	
12	ROD	1.000	CMPR1	0.88	A	4.82	
13	ROD	1.000	CMPR1	1.59	B	4.82	
14	ROD	1.000	CMPR1	2.61	C	4.82	
15	ROD	1.000	CMPR1	4.88	C	4.82	1.2
16	ROD	1.000	CMPR1	3.89	C	4.82	
17	ROD	1.000	CMPR1	2.33	C	4.82	
18	ROD	1.000	CMPR1	0.92	C	4.82	
19	ROD	1.000	CMPR1	2.39	C	4.82	
20	ROD	1.000	CMPR1	3.20	C	4.82	
21	ROD	1.000	CMPR1	1.56	B	4.82	
22	ROD	1.000	CMPR1	2.12	A	4.82	
23	ROD	1.000	CMPR1	3.72	C	4.82	
24	ROD	1.000	CMPR1	4.41	C	4.82	
25	ROD	1.000	CMPR1	1.84	B	4.82	
26	ROD	1.000	CMPR1	1.08	A	4.82	
27	ROD	1.000	CMPR1	2.08	C	4.82	
28	ROD	1.000	CMPR1	3.23	C	4.82	
29	ROD	1.000	CMPR1	3.41	C	4.82	
30	ROD	1.000	CMPR1	1.17	C	4.82	
31	ROD	1.000	CMPR1	0.76	B	4.82	
32	ROD	1.000	CMPR1	1.56	B	4.82	
33	ROD	1.000	CMPR1	2.46	B	4.82	

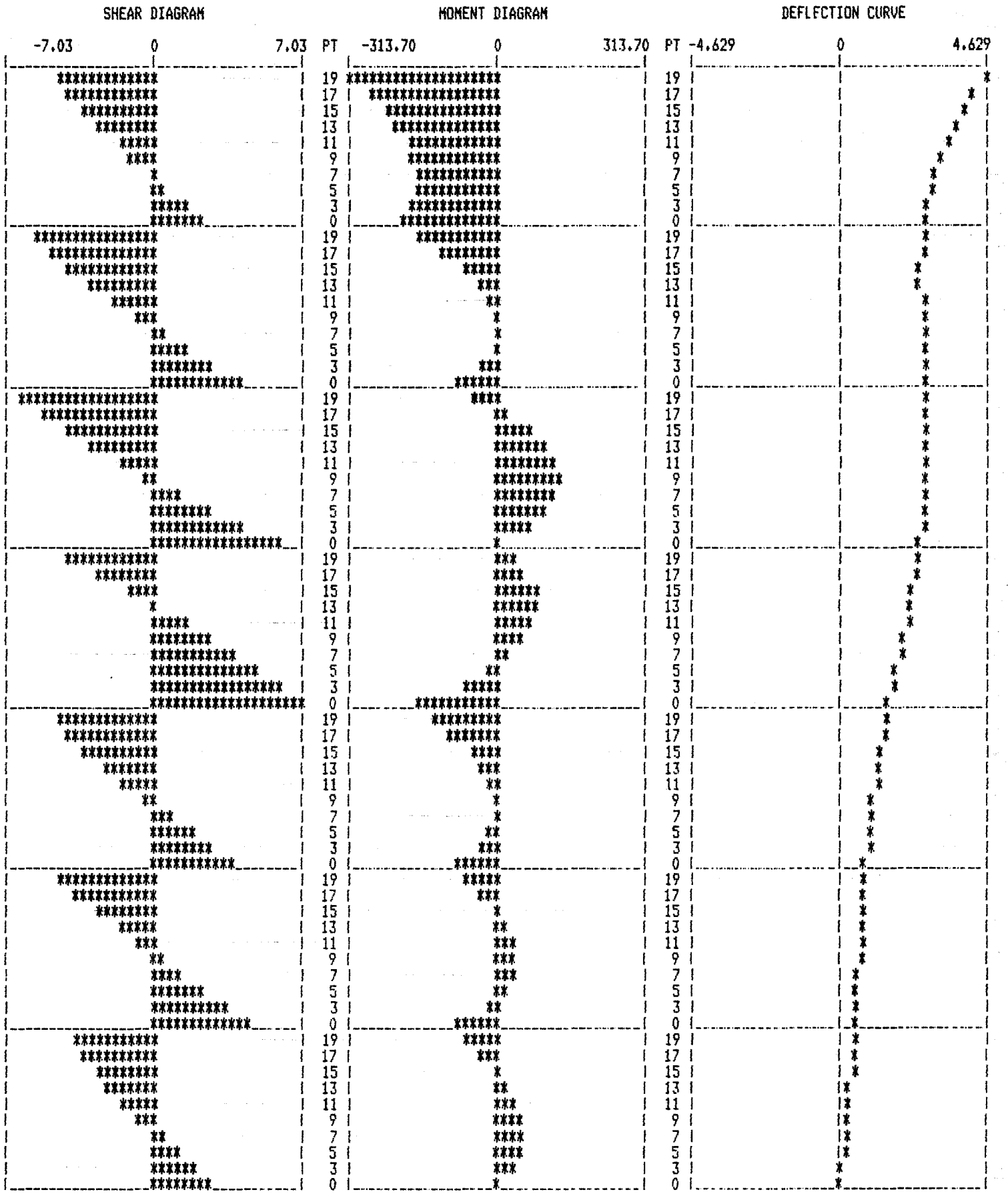
VLISSIDES 666' Guyed Tower, REVISED ANALYSIS, 75 Mph Basic Vel., EIA/TIA 222E WIND A 1-24-92 BALTIMOR2.PLT

OUTPUT: DATA PLOTS



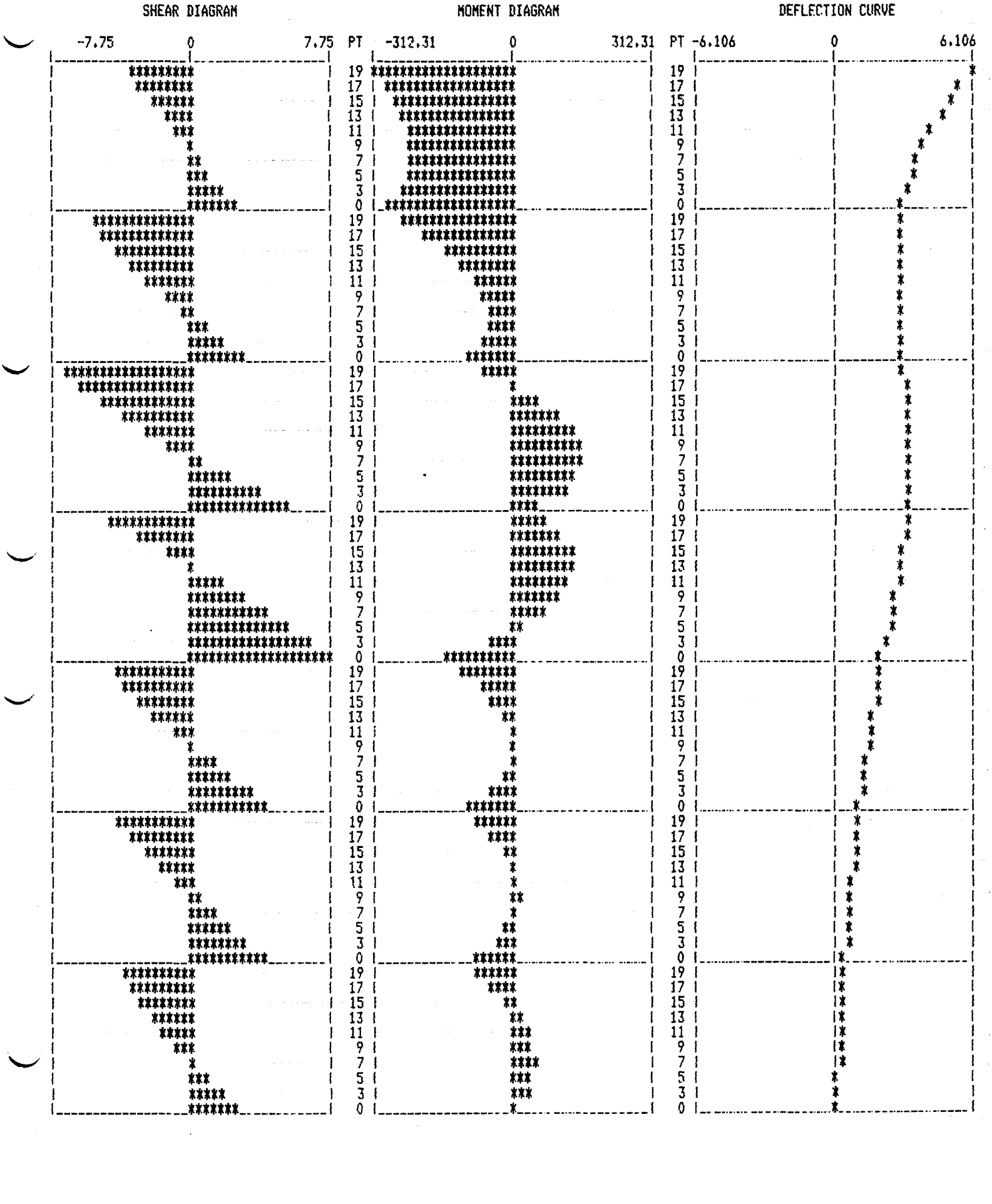
VLISSIDES 666' Guyed Tower, REVISED ANALYSIS, 75 Mph Basic Vel., EIA/TIA 222E WIND B 1-24-92 BALTIMOR2.PLT

OUTPUT: DATA PLOTS



VLISSIDES 666' Guyed Tower, REVISED ANALYSIS, 75 Mph Basic Vel., EIA/TIA 222E WIND C 1-24-92 BALTIMOR2.PLT

OUTPUT: DATA PLOTS



PHILIP K. CROSS
JOHN F. ETZEL
WILLIAM G. ULRICH
GORDON T. LANGDON
DAVID E. RANSONE

GERHOLD, CROSS & ETZEL
Registered Professional Land Surveyors
412 DELAWARE AVENUE
TOWSON, MARYLAND 21204
823-4470

EMERITUS
PAUL G. DOLLENBERG
FRED H. DOLLENBERG
CARL L. GERHOLD

January 24, 1992

I, Donald R. Hall, being duly sworn upon my oath, depose and state that:

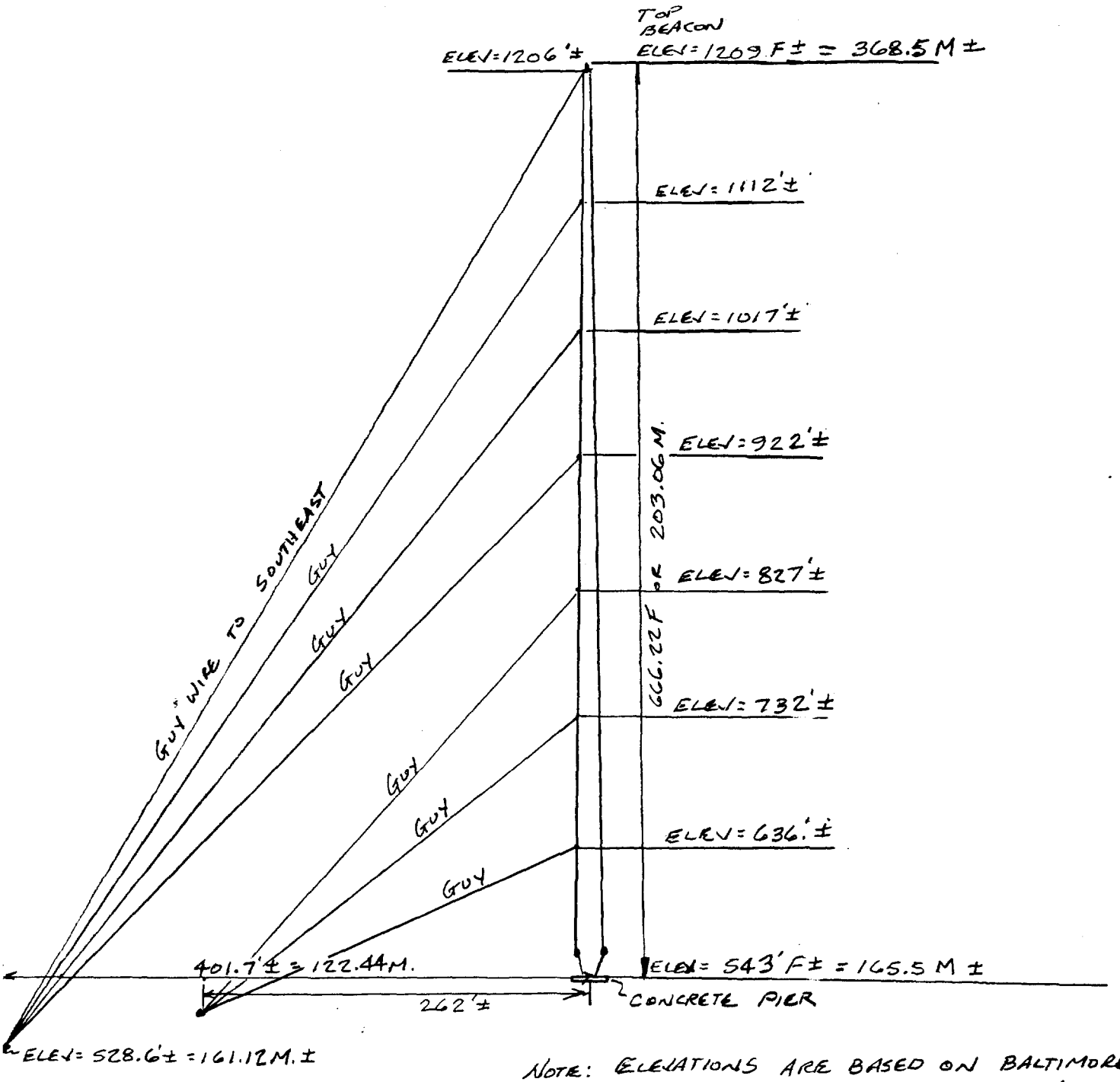
I am a Registered Property Line Surveyor in the State of Maryland and employed with the firm of Gerhold, Cross and Etzel of Towson, Maryland.

That on January 9, 1992, I performed the following determination of the tower located at 1200 N. Rolling Road, Catonsville, Maryland, for the purpose of establishing the elevations of the guy wires attached to the said tower and the distances from the centerline of said tower to one of the three sets of guy anchors attached to the tower. The results of the determinations are shown on the attached Exhibit A entitled "Sketch of Tower at 1200 N. Rolling Road, Catonsville, Md.". The elevations stated thereon are based on mean sea level (Baltimore County datum). All elevations stated thereon are within a tolerance of two feet (more or less). All elevations are based on Baltimore County Control Monuments No. X-7798 (elevation 518.18 feet) and No. 12138 (elevation 527.58 feet). All horizontal dimensions thereon are within a tolerance of one foot (more or less).

I certify, under penalty of perjury, the facts noted and shown hereon are true to the best of my professional knowledge, information and belief.

Donald R. Hall

Donald R. Hall
Property Line Surveyor
Md. Reg. No. 221



NOTE: ELEVATIONS ARE BASED ON BALTIMORE COUNTY CONTROL MONUMENTS X-7798 (ELEV. 518.18) AND No. 12138 (ELEV. 527.58) AND WITHIN A TOLERANCE OF 2' (MORE OR LESS)

EXHIBIT A

SKETCH OF TOWER
@ 1200 N. ROLLING ROAD
CATONSVILLE, MD.

REVISED 1/24/92
12/30/91 - REVISED 1/20/92
NOT TO SCALE

GERHOLD, CROSS & ETZEL
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823-4470

EMERITUS
PAUL G. DOLLENBERG
FRED H. DOLLENBERG
CARL L. GERHOLD

January 24, 1992

I, Donald R. Hall, being duly sworn upon my oath, depose and state that:

I am a Registered Property Line Surveyor in the State of Maryland and employed with the firm of Gerhold, Cross and Etzel of Towson, Maryland.

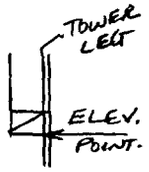
That on January 9, 1992, I performed the following determination of the tower located at 1200 N. Rolling Road, Catonsville, Maryland, for the purpose of establishing the elevations and the nature of the antennae (with the exception of the antennae not yet determined) attached to the said tower. The results of the determinations are shown on the attached Exhibits A and B entitled "Antenna Details and Elevations, Tower located at 1200 N. Rolling Road, Catonsville, Md.". The elevations stated thereon are based on mean sea level (Baltimore County datum). All elevations stated thereon are within a tolerance of two feet (more or less). All elevations are based on Baltimore County Control Monuments No. X-7798 (elevation 518.18 feet) and No. 12138 (elevation 527.58 feet).

I certify, under penalty of perjury, the facts noted and shown hereon are true to the best of my professional knowledge, information and belief.

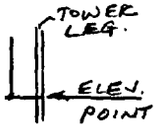
Donald R. Hall

NOTE: ALL OBSERVATIONS ARE FROM A POINT EAST NORTHEAST

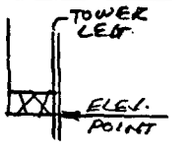
NOTE: ALL OBSERVATIONS ARE FROM A POINT EAST NORTHEAST OF THE TOWER



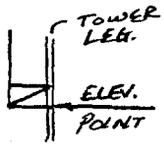
WHIP ELEVATION = 945' ± 2'



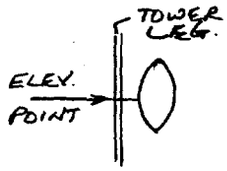
WHIP ELEVATION = 935' ± 2'



WHIP ELEVATION = 918' ± 2'

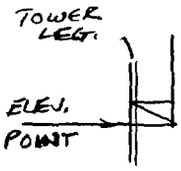


WHIP ELEVATION = 906' ± 2'

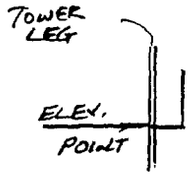


CENTER OF DISH ELEVATION = 774' ± 2'

NOTE: OBSERVATIONS ARE FROM A POINT NORTH OF THE TOWER.



WHIP ELEVATION = 832' ± 2'



WHIP ELEVATION = 945' ± 2'

EXHIBIT 'B'

ANTENNA DETAILS & ELEVATIONS

Date 1/24/92

GERHOLD, CROSS & ETZEL