

195'-6" UTC 380 SR AM
T.I.A. / E.I.A. - F
85 MPH, NO ICE
75 MPH, 1/2" ICE
ADAMS COUNTY, CO



Utility Tower

www.utilitytower.com

405 831 6898

OKLAHOMA CITY, OKLAHOMA

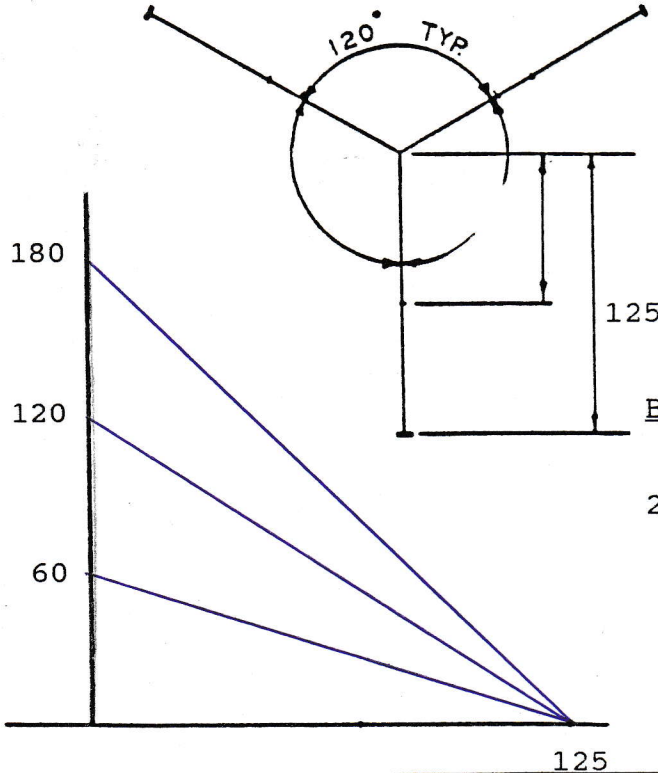
(405) 946-5551

DATA

195'-6" UTC TYPE 380 SR AM
TIA/EIA-F 85 MPH NO ICE 75 MPH 1/2" ICE
BRIGHTON, COLORADO

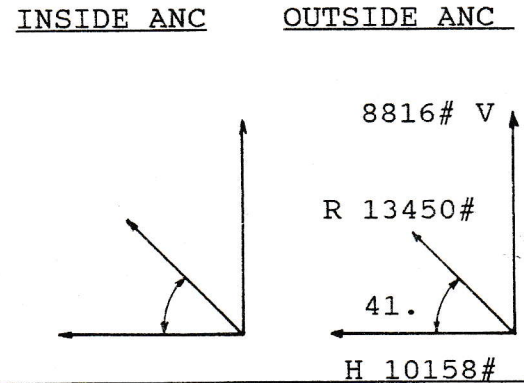
W.L. 85 75
ICE 0 1/2
TIA/EIA-F X
UBC _____

LAYOUT



CNM 3882
CNV 498
CNW 605
AWL 12, 12, 12
AWT 2, 2, 2
PL AM ONLY

REACTIONS



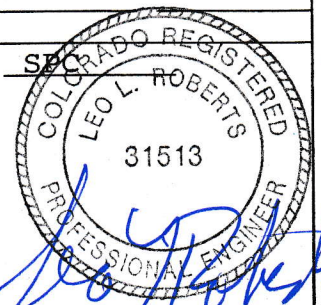
SUMMARY

BAYS PER	SEC	FYL	FYD	FYG	LEG	CONN.	BOLTS	STYLE
SPAN	WT/FT	LEGS	DIAGS.	GIRTS	GUY	TNBLKS	IN	TENS
0-60	37.8	1-1/2 SR	3/4 SR	3/4" SR	5/16 EHS	5/8x12	1540	
60-120	"	"	"	"	"	"	"	"
120-180	"	"	"	"	"	"	"	"
CANT.	"	"	"	"	"	"	"	"

This drawing was produced by
and/or under the direct supervision
of Leo L. Roberts, P.E.

ANCHORS NO. BEAM STD. FOUNDATION NO. SEC
IN 125 SPC S3 X 5.7# x 10 ft.
MID _____
OUT _____

ENG. NUMBER 05-107

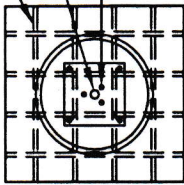


Leo L. Roberts
4-21-05

(6) - #6 BARS 4'-6" LG. EACH WAY
12-BARS TOTAL - EQUALLY SPACED

LOCATE PIER IN
CENTER OF PAD

(3) 5/8" X 12 BOLTS
SET BY TEMPLATE



13.4K
10.1K
8.8K
23.3K
7.4K

BASE REACTIONS ANCHOR REACTIONS

125'

(12) #6 VERT. BARS
6'-6" x 1'-0"
EQUALLY SPACED

3'-0" ϕ

3'-0"

4'-0"

1'-0"

(7) #4 TIES 2'-6" ϕ
EQUALLY SPACED

(7) #6 BARS 5'-6"
EQUALLY SPACED

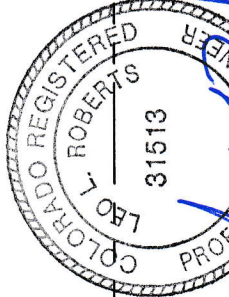
FILL

3'-0"

GENERAL NOTES:

1. THE BOTTOM & FRONT SURFACES OF ANCHOR SHOULD BEAR ON UNDISTURBED SOIL.
2. BACKFILL EXCAVATION IN 12" LIFTS AND COMPACT.
3. CONCRETE MUST HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. AT 28 DAYS CURE. CONCRETE TO BE PLACED PER ACI-318 CODE.
4. REINFORCING BARS TO BE GRADE 60 STEEL (TIES MAY BE GRADE 40) WITH ASTM A615 DEFORMATIONS.
5. CONCRETE REQUIRED - BASE - 2.4 CU. YDS. ANCHOR - 2.0 CU. YDS. PER ANCHOR.
6. ALL REINFORCING STEEL TO HAVE 3" MIN. CONCRETE COVER.
7. DESIGN BASED ON GEOTECHNICAL REPORT BY GOODSON & ASSOC., INC. WHEAT RIDGE, CO. - GAI PROJECT # 66411.01.

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Leo L. Roberts
4-21-05

Utility Tower

OKLAHOMA CITY, OKLAHOMA

FOUNDATION DESIGN

195' - 6" UTC 380 SR AM
ADAMS COUNTY, COLORADO

DRAWN BY MK

DATE 04-21-05

JOB#

NO	DATE	REVISION	BY
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DRAWING NO. ACOU0405F

UTILITY TOWER COMPANY

AM ONLY EIA-F 85 MPH NO ICE, 75 MPH 1/2" ICE
 195'6" UTC TYPE 380 SR AM BRIGHTON, CO.

 HEIGHT= 196.FT ANC1= 125.FT ANC2= 0.FT ANC3= 0.FT
 FY=50.KSI CANT MOM= 3982.FT LB CANT V= 498.LBS CANT WT= 605.LBS

SPAN	WIDTH	WIND LOAD	STYLE	BAYS	GL	DL	LU
1	24.	28.	1	8	22.50	36.31	28.50
2	24.	28.	1	8	22.50	36.31	28.50
3	24.	28.	1	8	22.50	36.31	28.50

LEG SIZES

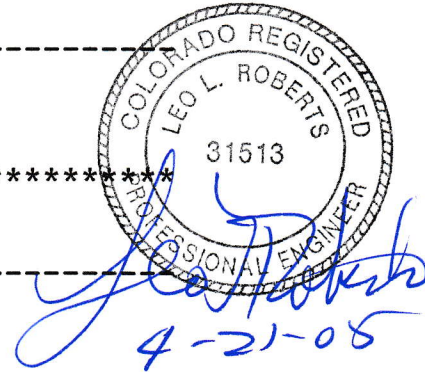
SPAN	DESCRIPTION
1	1.5000 OD SOLID ROD
2	1.5000 OD SOLID ROD
3	1.5000 OD SOLID ROD

DIAGONAL SIZES

SPAN	DESCRIPTION
1	0.7500 OD SOLID ROD
2	0.7500 OD SOLID ROD
3	0.7500 OD SOLID ROD

GIRT SIZES

SPAN	DESCRIPTION
1	0.7500 OD SOLID ROD
2	0.7500 OD SOLID ROD
3	0.7500 OD SOLID ROD



SPAN	LENGTH	WIND PLF	WT PLF	FEMB	FEMT	VB	VT
1	60.0	31.1	37.8	0.	-14001.	933.	-933.
2	60.0	31.1	37.8	9334.	-9334.	933.	-933.
3	60.0	31.1	37.8	9334.	-9334.	933.	-933.

DISTRIBUTION FACTORS

0.00 -0.43 -0.50 -1.00
 -1.00 -0.57 -0.50 0.00

SPAN NO	DISTRIBUTED MOMENTS		SHEARS		REACTIONS
	MOM B	MOM T	VB	VT	LBS
1	0.	-11466.	742.	-1124.	2080.
2	11466.	-10139.	956.	-911.	1947.
3	10139.	-3982.	1036.	-831.	1329.

GUY ELEV	GUY LENGTH	ANCHOR DIST	GUY AREA	GUY WT	INITIAL TENSION
60.	138.7	125.00	0.05946	0.2023	1120.
120.	173.3	125.00	0.05946	0.2023	1120.
180.	219.1	125.00	0.05946	0.2023	1120.

 TOWER ANALYZED AS A CONTINUOUS BEAM ON YIELDING SUPPORTS
 1 INCH UNIT DEFLECTION AT THE 60. FT LEVEL

SPAN NO	DISTRIBUTED MOMENTS		SHEARS		REACTIONS
	MOM B	MOM T	VB	VT	LBS
1	0.	8761.	146.	146.	-402.
2	-8761.	-6571.	-256.	-256.	365.
3	6571.	0.	110.	110.	-110.

 1 INCH UNIT DEFLECTION AT THE 120. FT LEVEL

SPAN NO	DISTRIBUTED MOMENTS		SHEARS		REACTIONS
	MOM B	MOM T	VB	VT	LBS
1	0.	-5749.	-96.	-96.	338.
2	5749.	8761.	242.	242.	-388.
3	-8761.	0.	-146.	-146.	146.

 1 INCH UNIT DEFLECTION AT THE 180. FT LEVEL

SPAN NO	DISTRIBUTED MOMENTS		SHEARS		REACTIONS
	MOM B	MOM T	VB	VT	LBS
1	0.	821.	14.	14.	-82.
2	-821.	-3285.	-68.	-68.	123.
3	3285.	0.	55.	55.	-55.

MOMENTS FROM NON-LINEAR DEFLECTIONS

GUY LEVEL	DEF MOM	RIGID BM MOM	FINAL MOM	DEF	EMOM
0.	0.	0.	0.	0.0000	
60.	-569.	-11466.	-12035.	4.4507	1997.
120.	2124.	-10139.	-8014.	8.9121	3950.
180.	0.	-3982.	-3982.	14.2175	5104.

ELEV	SPG	Q	REACTION	DEF
60.	572.	-543.	2004.	4.4507
120.	280.	-462.	2035.	8.9121
180.	134.	-610.	1301.	14.2175

GUY STRESS

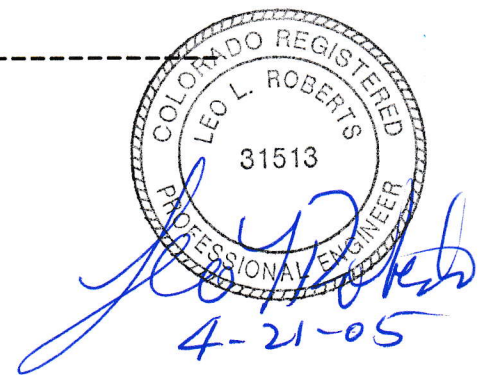
GUY ELEV	CABLE FORCE	BREAK STR	SAFETY FACTOR	1
60.	3737.	11200.	2.9973	0.8341
120.	4900.	11200.	2.2857	1.0937
180.	5073.	11200.	2.2079	1.1323

ANCHOR REACTIONS

ANCHOR AT 125. FT FROM BASE + 0.00 FROM BASE GRADE
 HORIZ= 10158. VERT= 8816. RESULT= 13450. RES. ANG= 40.96DEG
 LATERAL= 0.

LEG STRESS

HEIGHT	FA	FB	ALLOW	% STRESS
0.	4402.	0.	19800.	0.2223
36.	4402.	2819.	19800.	0.3647
60.	3974.	4258.	19800.	0.4158
60.	3437.	3606.	19800.	0.3557
88.	3437.	1323.	19800.	0.2404
120.	3009.	3264.	19800.	0.3168
120.	1967.	1973.	19800.	0.1990
148.	1967.	2638.	19800.	0.2326



180. 1539. 2135. 19800. 0.1855

BASE LOAD= 23336.4 LBS

DIAGONAL STRESS

SPAN	FORCE	FA	ALLOW	% STRESS
1	1220.	2762.	6289.	0.4391
2	1076.	2436.	6289.	0.3874
3	1077.	2437.	6289.	0.3874

GIRT STRESS

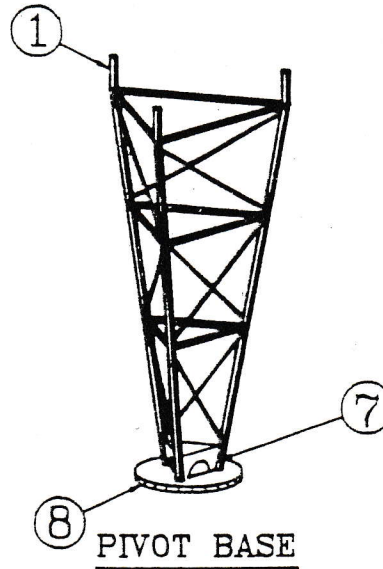
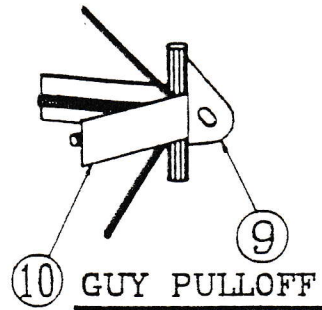
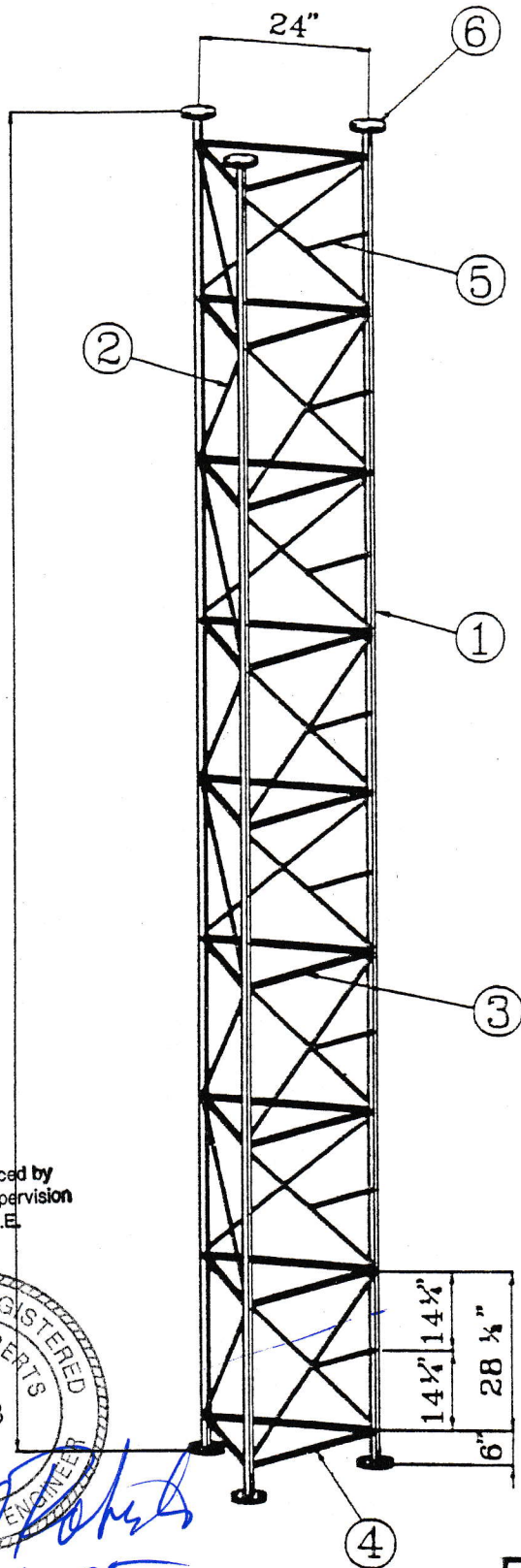
SPAN	FORCE	FA	ALLOW	% STRESS
1	756.	1711.	10347.	0.1654
2	667.	1510.	10347.	0.1459
3	667.	1510.	10347.	0.1459



Leo L. Roberts
4-21-05

NOTE:

ALL TOWERS FABRICATED
WITH SOLID STEEL MEMBERS



MATERIAL

ITEM	DESCRIPTION	MINIMUM SIZE
1	LEG	1-1/2" O.D. S.R.
2	DIAGONAL	3/4" O.D. S.R.
3	GIRT	3/4" O.D. S.R.
4	END GIRT	1" O.D. S.R.
5	STEP	3/4" O.D. S.R.
6	FLANGE	PLATE 3/4" X 6" DIA.
7	BASE STRAPS	BAR 4 X 3/8"
8	BASE PLATE	PLATE 1 X 18" DIA.
9	GUY LUG	PLATE 1/2"
10	GUY STRAP	BAR 4 X 3/8"

ACTUAL SIZES MAY VARY, AND WILL BE DETERMINED BY A STRUCTURAL STRESS ANALYSIS

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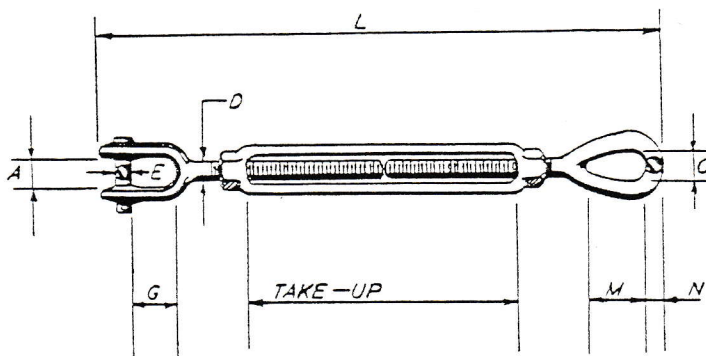


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4-21-05

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DATE 01-15-91
DRAWING NO. 91010

TYPE 380 DETAILS
Utility Tower
COMPANY
OKLAHOMA CITY, OK.



SIZE (D)	A	E	G	M	N	O	ALLOWABLE LOAD
1/4	13/32	1/4	21/32	13/16	7/32	11/32	980
5/16	1/2	1/4	27/32	15/16	9/32	7/16	1630
3/8	17/32	5/16	7/8	1 1/8	11/32	17/32	2420
1/2	21/32	7/16	1 1/8	1 7/16	7/16	23/32	4400
5/8	25/32	1/2	1 5/16	1 3/4	1/2	7/8	7000
3/4	1	5/8	1 9/16	2 1/8	5/8	1	10350
7/8	1 3/16	3/4	1 13/16	2 3/8	3/4	1 1/4	14200
1	1 1/4	7/8	2 1/16	3	7/8	1 7/16	18550
1 1/4	1 13/16	1 1/8	2 7/16	3 9/16	1 1/8	1 13/16	29360
1 1/2	2 1/8	1 3/8	2 13/16	4 1/8	1 1/4	2 1/8	42150

NOTE: ALLOWABLE LOADS ARE WITH A 2.5/1 SAFETY FACTOR.

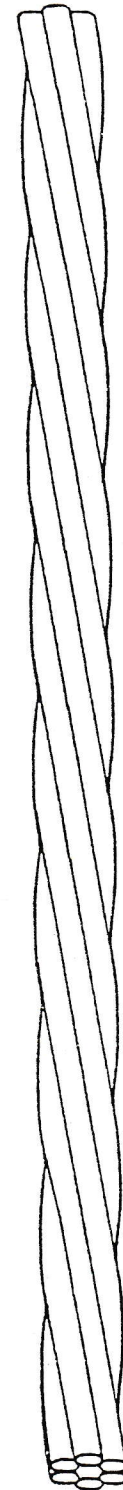
NO. TB-68

STANDARD TURNBUCKLES

Utility Tower
COMPANY



SIZE	GUY AREA	BREAK STRENGTH	GUY DIAMETER	APPROX WT. PER FT.
1/4 EHS	.03519	6,650	.2500	.121
5/16 EHS	.05946	11,200	.3125	.205
3/8 EHS	.07917	15,400	.3750	.273
7/16 EHS	.11560	20,800	.4373	.399
1/2 EHS	.14970	26,900	.5000	.517
9/16 EHS	.19430	35,000	.5625	.671
5/8 EHS	.23560	42,400	.6250	.813
5/8 BS	.23400	48,000	.6250	.820
3/4 EHS	.33580	58,300	.7500	1.155
3/4 BS	.33800	68,000	.7500	1.180
7/8 EHS	.45900	87,400	.8750	1.610
7/8 BS	.45900	92,000	.8750	1.610
1 BS	.60000	122,000	1.000	2.100
1-1/16 BS	.67700	138,000	1.0625	2.370
1-1/8 BS	.75900	156,000	1.1250	2.660
1-3/16 BS	.84600	172,000	1.18750	2.960
1-1/4 BS	.93800	192,000	1.2500	3.280
1-5/16 BS	1.0300	212,000	1.3125	3.620
1-3/8 BS	1.1300	232,000	1.3750	3.970
1-7/16 BS	1.2400	252,000	1.4275	4.340
1-1/2 BS	1.3500	276,000	1.5000	4.730
1-9/16 BS	1.4700	300,000	1.5625	5.130
1-5/8 BS	1.5900	324,000	1.6250	5.555
1-11/16 BS	1.7100	352,000	1.6875	5.980
1-3/4 BS	1.8400	376,000	1.7500	6.430
1-13/16 BS	1.9700	404,000	1.8125	6.900



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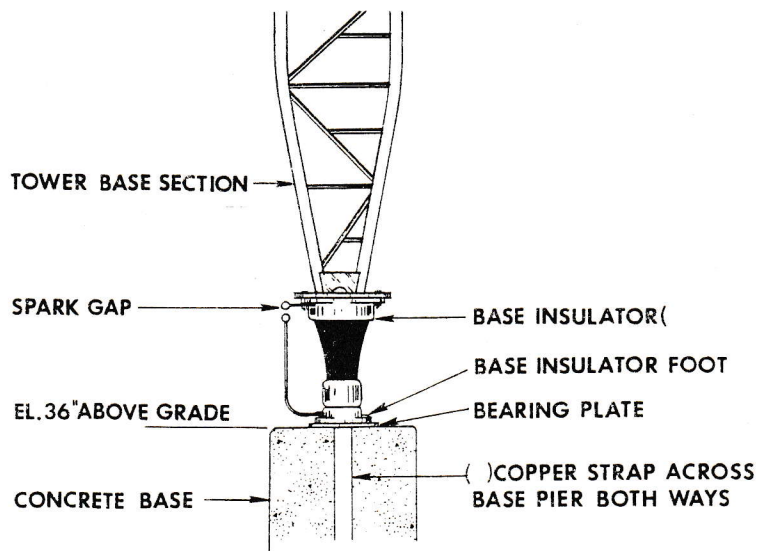
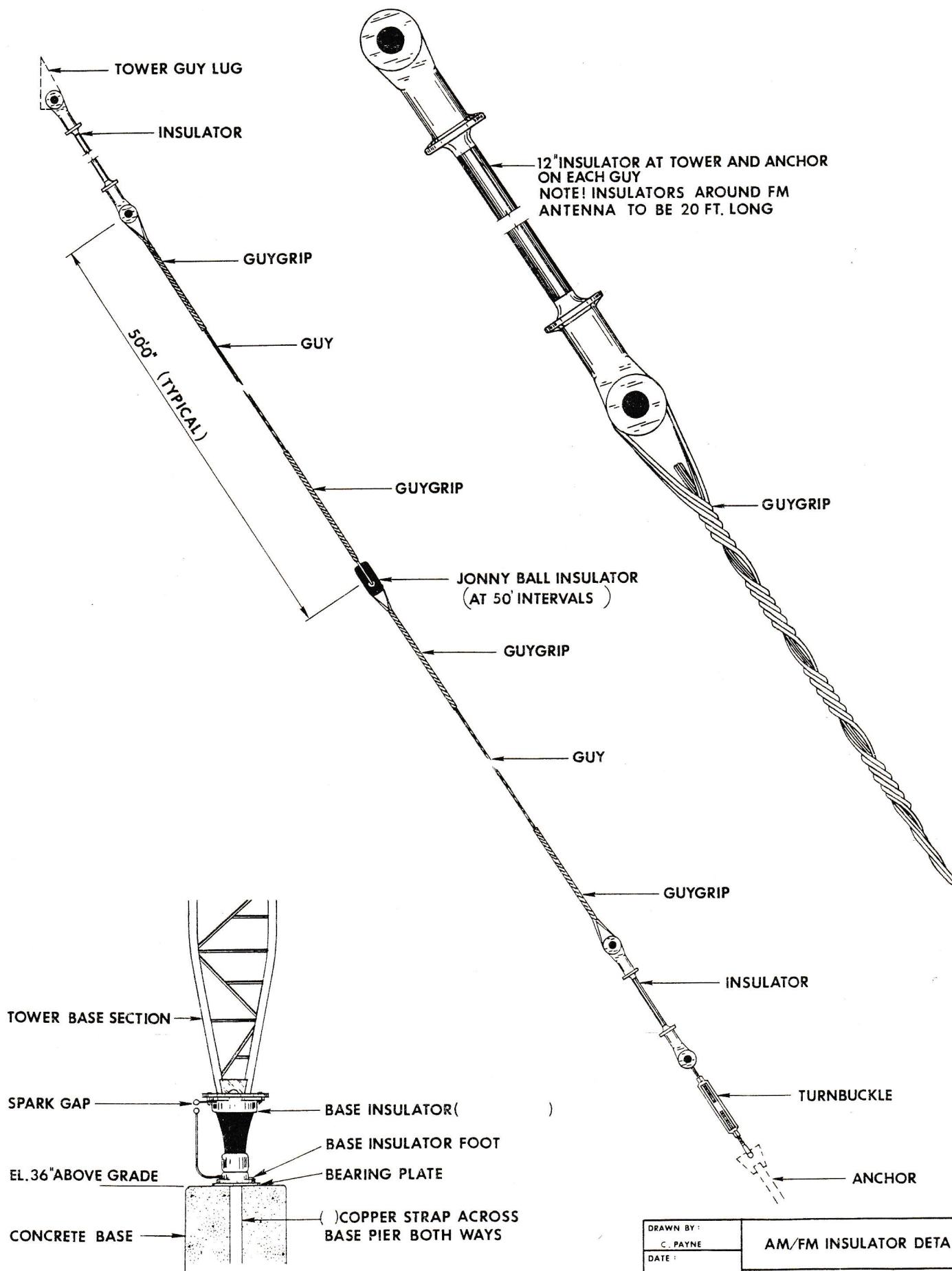
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GUY CABLES

Utility Tower
COMPANY

OKLAHOMA CITY, OK



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DATE: 14 MAR 83		
DRAWING NO.:		