ANDREW

ANDREW CALIFORNIA CORPORATION

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Claremont, California, U.S.A. 91711
Phone (714) 626 3505   Telex 67 0426

Customer ____KCET_____   Channel __28_____

Location ____LOS ANGELES, CA_____   Quote No. S-3589_____

Antenna Type	Slotted Tube Array, Radome enclosed Cardioid
Peak Gain	50.01 (16.99 dBd)
Gain at Horizontal	
Frequency Range	554-550 MHz
Beam Tilt	1.5 Deg Electrical
Input Power	55 K.W.
Input	6 1/8 in. 75 ohm
VSWR	1.05 Visual Carrier 1.08 Color Subcarrier 1.10 Overband
Overall Height (H1)	63 ft.
Height of Antenna (H2) Over Top of Tower	61 ft.
Height of Center (H3) of Radiation	29.5 ft.
Wind Load at 50/33 PSF	3090 lbs.
Center of Pressure	29.5
Overturning Moment	91,200 ft-lbs.
Weight	Approx. 8,800 lbs.
Antenna Diameter	18 in.

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CLIMBING
POLE
NOT
APPLICABLE

H_1

H_2

RADOME DIAMETER

H_3

TOP OF
TOWER

INPUT
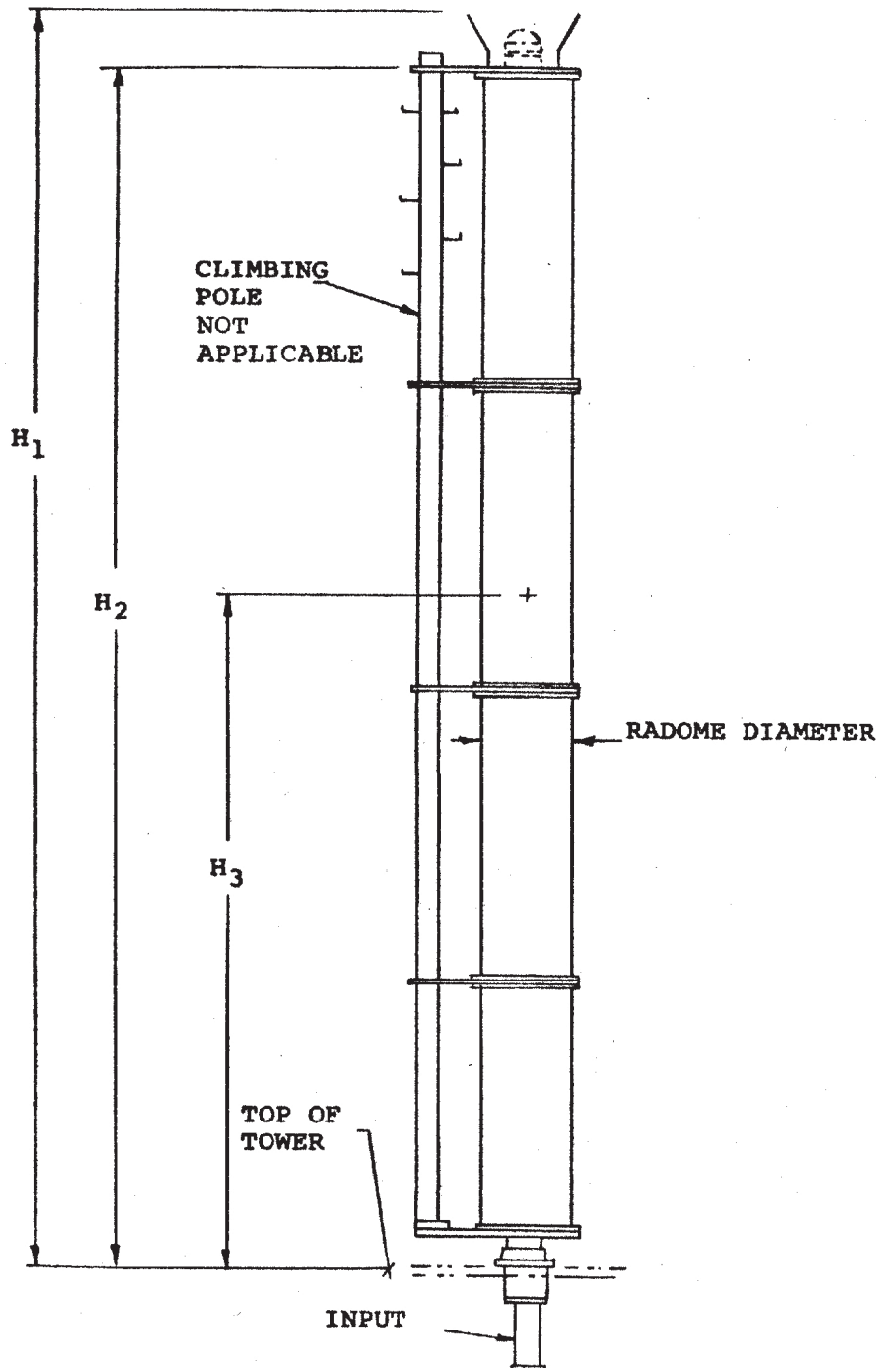
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UHF TV Slot Array
Azimuth Pattern

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CH26HU
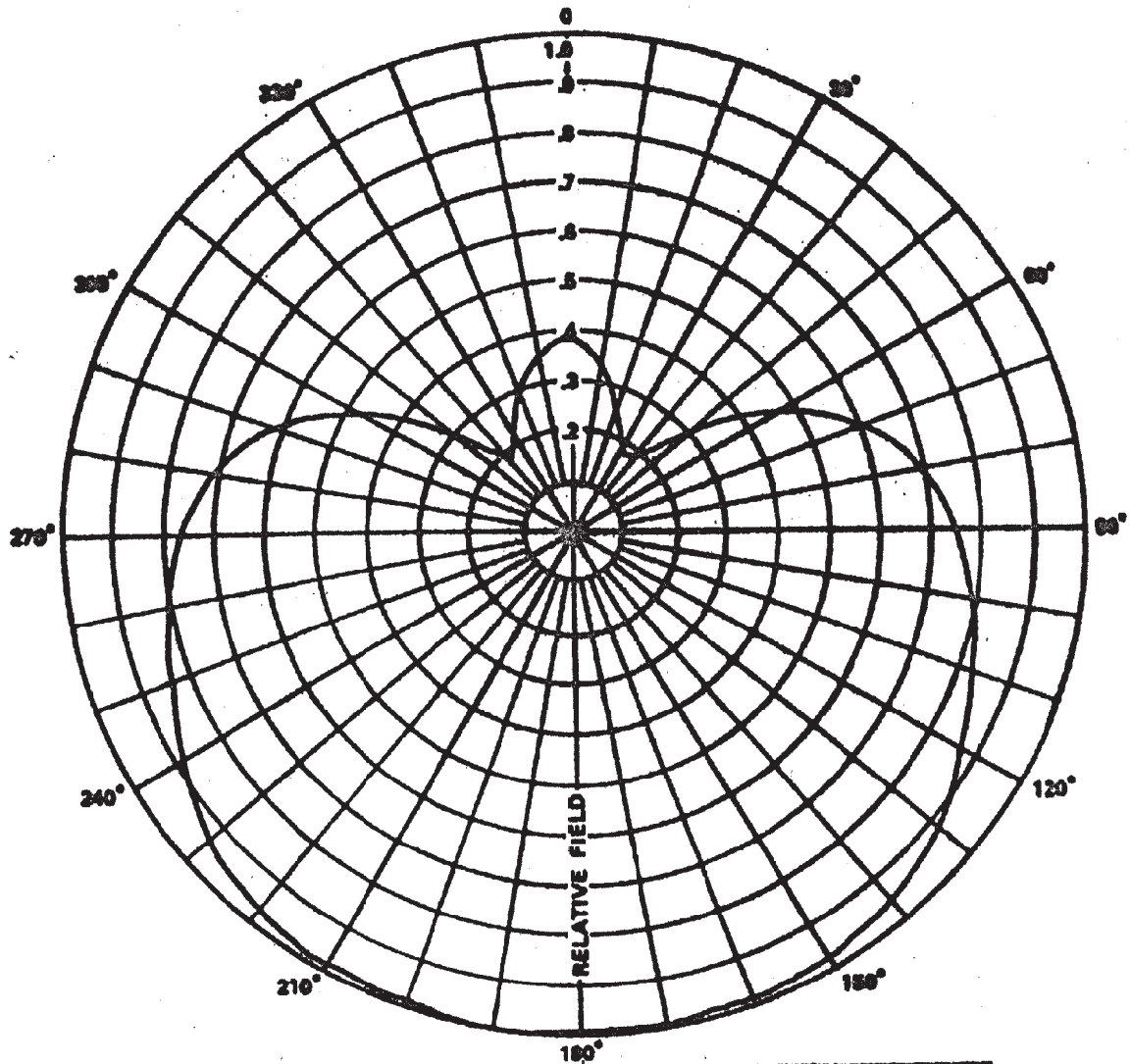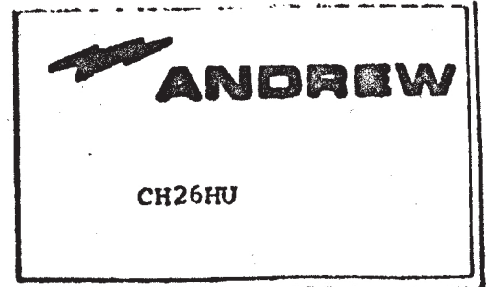
CUSTOMER	KCET		
CHANNEL	28 Los Angeles		
HORIZONTAL DIRECTIVITY	1.9 195°T	2.79	dB
DIRECTION OF PEAK	195 deg. true		

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Calculated Visual Radiation

Main Beam Azimuth Pattern

	Calculated Radiation			
	At Main Beam		At Horizontal Plane	
Azimuth (1)	Field Factor Normal to Antenna Axis (2)	Beam Tilt (3)	Horizontal Field Factor (4)	Effective Radiated Power, dBk (5)	Unattenuated Radiation, mV/m at one Mile (6)	Effective Radiated Power, dBk (7)	Unattenuated Radiation, mV/m at one Mile (8)

Azimuth (1)	Field Factor Normal to Antenna Axis (2)	Beam Tilt (3)	Horizontal Field Factor (4)	Effective Radiated Power, dBk (5)	Unattenuated Radiation, mV/m at one Mile (6)	Effective Radiated Power, dBk (7)	Unattenuated Radiation, mV/m at one Mile (8)
N 0°E	0.33	0.05°	0.98	24.27	2253	24.09	2207
10	0.37	0.01	0.98	25.26	2525	25.09	2476
20	0.37	0.01	0.98	25.26	2525	25.09	2476
30	0.29	0.05	0.98	23.15	1980	22.97	1940
40	0.21	0.14	0.97	20.34	1433	20.08	1391
50	0.18	0.27	0.96	19.01	1230	18.65	1180
60	0.24	0.44	0.90	21.50	1638	20.59	1475
70	0.39	0.64	0.82	25.72	2662	24.00	2184
80	0.54	0.87	0.68	28.55	3688	25.20	2508
90	0.65	1.11	0.51	30.29	4506	24.44	2297
100	0.72	1.37	0.35	31.05	4918	21.93	1721
110	0.77	1.63	0.24	31.63	5257	19.23	1261
120	0.81	1.89	0.19	32.07	5530	17.64	1050
130	0.85	2.13	0.22	32.49	5804	19.34	1277
140	0.90	2.36	0.24	32.98	6141	20.59	1475
150	0.94	2.56	0.22	33.36	6416	20.21	1412
160	0.97	2.73	0.20	33.64	6626	19.66	1325
170	0.98	2.86	0.18	33.72	6687	18.83	1204
180	0.99	2.95	0.16	33.81	6757	17.90	1082
190	1.00	2.99	0.15	33.90	6827	17.42	1024
200	1.00	2.99	0.15	33.90	6827	17.42	1024
210	0.99	2.95	0.16	33.81	6757	17.90	1082
220	0.98	2.86	0.18	33.72	6687	18.83	1204
230	0.97	2.73	0.20	33.64	6626	19.66	1325
240	0.96	2.56	0.22	33.55	6558	20.39	1441
250	0.92	2.36	0.24	33.18	6284	20.78	1507
260	0.86	2.13	0.22	32.59	5872	19.44	1292
270	0.82	1.89	0.19	32.18	5601	17.75	1064
280	0.79	1.63	0.24	31.85	5392	19.46	1295
290	0.75	1.37	0.35	31.40	5120	22.28	1792
300	0.67	1.11	0.51	30.42	4574	24.57	2332
310	0.56	0.87	0.68	28.86	3822	25.51	2599
320	0.40	0.64	0.82	25.94	2731	24.22	2240
330	0.23	0.44	0.90	21.13	1569	20.22	1413
340	0.19	0.27	0.96	19.48	1298	19.12	1245
350	0.26	0.14	0.97	22.20	1775	21.93	1721

(1) Azimuth every 10°
(2) Main beam field factor, from antenna specifications in Figure 3 attached
(3) Main beam depression angle due to electrical and mechanical tilt
(4) Field factor at horizontal plane
(5) 10 log (2455 kW maximum ERP x (2)^2)
(6) (Maximum field of 6827 mV/m for 2455 kW) x (2)
(7) 10 log (2455 kW x (2)^2 x (4)^2)
(8) 6827 mV/m x (2) x (4)

Horizontal Plane Pattern
Horizontal plane relative field =
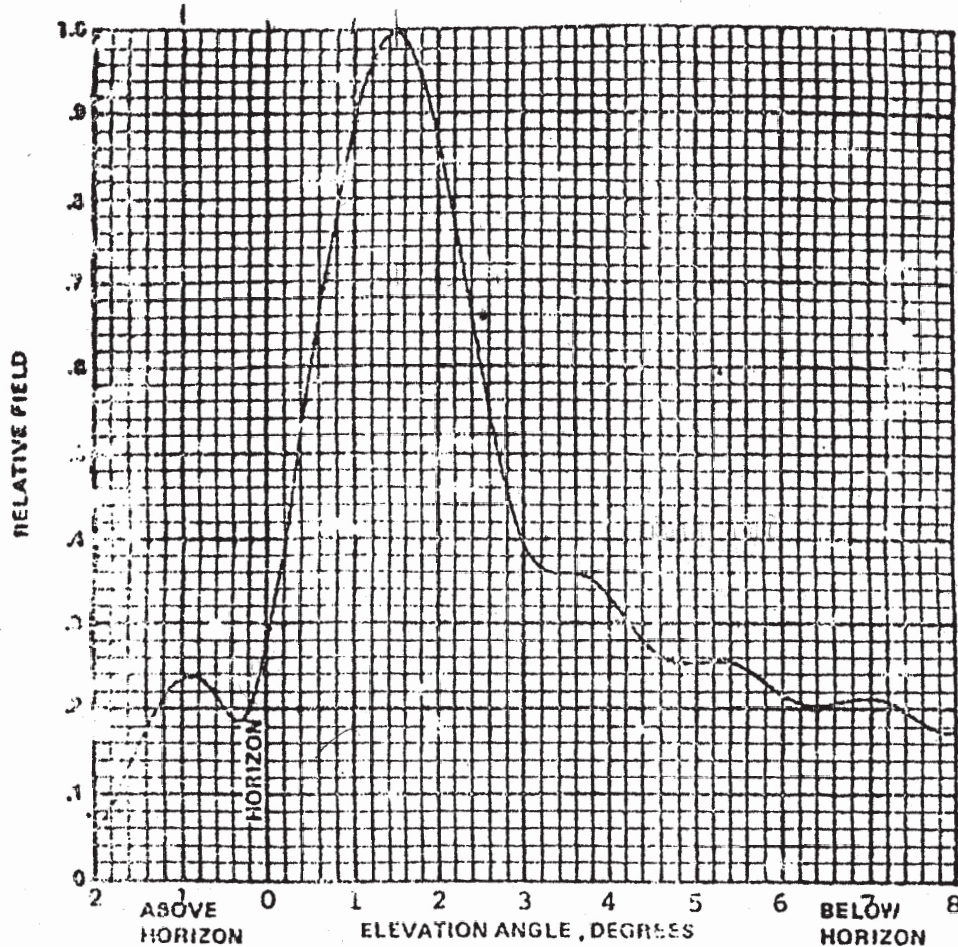$$10^{\left[\frac{\text{column7}-25.51}{20}\right]}$$

UHF Slot Array
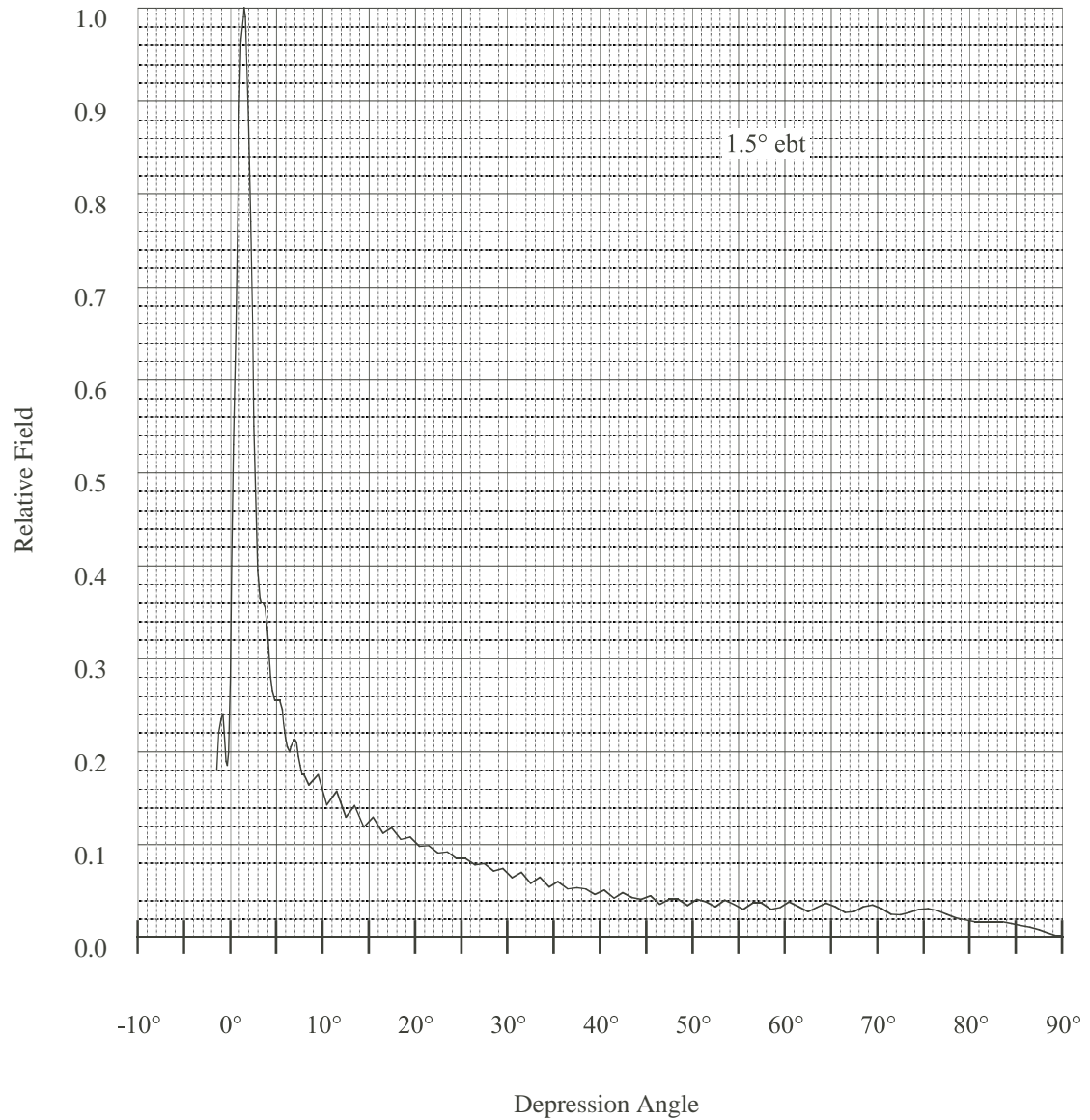**Elevation Pattern**

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CHANNEL ___28___

PATTERN TYPE __35E4__
(CH28T8)

CUSTOMER	KCET		
BEAM TILT	1.5 deg. elec.		
ELEVATION DIRECTIVITY	26.32	14.20	dbd
ANTENNA GAIN MAIN LOBE	50	16.99	dbd
ANTENNA GAIN AT HORIZONTAL	30.	14.83	dbd

HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

080309
Exhibit 33E

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Andrew 35E4 Elevation Pattern

1.5° ebt

Relative Field

Depression Angle

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Andrew 35E4 Normalized Elevation Pattern

Depression Angle	Relative Field	Depression Angle	Relative Field	Depression Angle	Relative Field
-2.9	0.180	5.9	0.195	49	0.041
-2.7	0.220	6.1	0.185	50	0.038
-2.5	0.235	6.3	0.175	51	0.033
-2.3	0.240	6.5	0.175	52	0.040
-2.1	0.220	7	0.164	53	0.036
-1.9	0.190	8	0.175	54	0.030
-1.8	0.185	9	0.143	55	0.037
-1.7	0.200	10	0.157	56	0.037
-1.5	0.280	11	0.129	57	0.030
-1.3	0.400	12	0.142	58	0.032
-1.1	0.530	13	0.119	59	0.038
-0.9	0.660	14	0.129	60	0.033
-0.7	0.780	15	0.112	61	0.028
-0.5	0.890	16	0.118	62	0.032
-0.3	0.965	17	0.105	63	0.037
-0.1	0.990	18	0.108	64	0.033
0	1.000	19	0.098	65	0.027
0.1	0.990	20	0.099	66	0.028
0.2	0.975	21	0.091	67	0.033
0.3	0.950	22	0.092	68	0.035
0.5	0.880	23	0.085	69	0.031
0.7	0.770	24	0.085	70	0.025
0.9	0.660	25	0.078	71	0.024
1.1	0.550	26	0.079	72	0.027
1.5	0.395	27	0.071	73	0.030
1.7	0.365	28	0.074	74	0.031
1.9	0.360	29	0.064	75	0.029
2.1	0.360	30	0.070	76	0.025
2.3	0.355	31	0.058	77	0.021
2.5	0.330	32	0.065	78	0.019
2.7	0.310	33	0.054	79	0.017
2.9	0.280	34	0.060	80	0.017
3.1	0.265	35	0.052	81	0.017
3.3	0.255	36	0.053	82	0.017
3.5	0.255	37	0.052	83	0.015
3.7	0.255	38	0.046	84	0.013
3.9	0.255	39	0.051	85	0.011
4.1	0.245	40	0.042	86	0.008
4.3	0.230	41	0.048	87	0.005
4.5	0.215	42	0.043	88	0.002
4.7	0.205	43	0.041	89	0.002
4.9	0.200	44	0.045	90	0.002
5.1	0.205	45	0.036		
5.3	0.210	46	0.041		
5.5	0.213	47	0.041		
5.7	0.210	48	0.034		

Based on information from manufacturer.

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Andrew Model 35E4 HPLANE Pattern

- Relative Field -
North
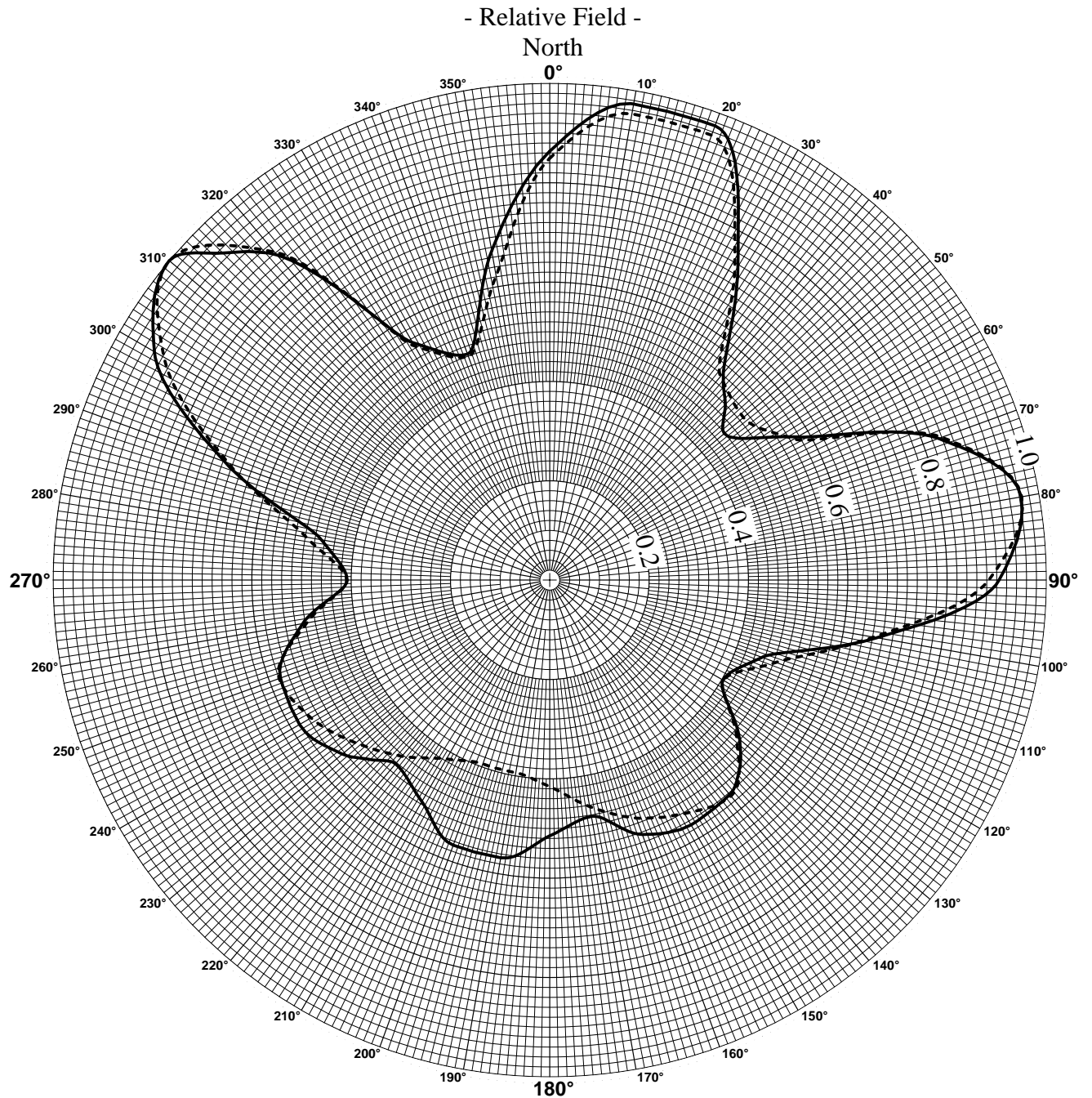
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————————— = HPLANE pattern as reported in the KCET October 6, 2004, data correction
            letter, and now updated CDBS Pattern 17555
- - - - - - - - = HPLANE pattern as derived from Figure 4A, Column 7, of the February 8, 1980,
            KCET(TV), N28, CP application
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