980-1000

Station	Main Studio	Freq	Power	Date
NEW	Sherwood Park, AB	980	10/5 kW	5/4/82
NEW	St. John's, NF	980	0.5 kW/ND	8/26/66
CBV	Quebec, PQ	980	5 kW/DA-1	10/11/54
CBV	Quebec, PQ	980	50 kW/DA-1	6/24/76
CFPL	London, ON	980	5/10 kW/DA-2	1/8/59
CHEX	Peterborough, ON	980	10/5 kW/DA-2	4/28/66
CKGM	Montreal, QU	980	10 kW/DA-2	2/2/59
CKNW	New Westminister, BC	980	50 kW/DA-1	5/27/65
CKRM	Regina, Sask.	980	10/5 kW/DA-2	7/8/58
CKTY	Salinas, CA	980	1 kW/DA-D	7/26/61
KDSJ	Deadwood, SD	980	1/5 kW/DA-N	3/19/51
KICA	Clovis, NM	980	1 kW/DA-N	9/18/51
KINS	Eureka, CA	980	0.5/5 kW/DA-N	4/16/57
KMBZ	Kansas City, MO	980	5 kW/DA-N	9/41
KSGM	Chester, IL	980	0.5 kW/DA-N	9/20/61
KSVC	Richfield, UT	980	1 kW/DA-N	5/27/53
WCAP	Lowell, MA	980	5 kW/DA-2	9/28/79
WFHG	Bristol, VA	980	1 kW/DA-N	9/22/49
WILK	Wilkes Barre, PA	980	1/5 kW/DA-2	12/15/48
WITY	Danville, IL	980	1 kW/DA-2	9/25/58
WONE	Dayton, OH	980	5 kW/DA-2	7/6/48
WPIP	Pompano Beach, FL	980	0.5/2.5 kW/DA-2	8/30/78
WRC		980		
WRIP	Rossville, GA	980	0.5 kW/DA-2	8/30/78
WSIX	Nashville, TN	980	5 kW/DA-N	10/2/74
WTRY	Troy, NY	980	5 kW/DA-N	11/24/71
WYCL	York, SC	980	1 kW/DA-D	10/28/66

980-1000

Station	Main Studio	Freq	Power	Date
WYOO	Richfield, MN	980	5 kW/DA-1	9/20/61
NEW	Cheyenne, WY	980	0.5 kWDA-D	2/28/64
XEQG	Queretaro, QU	980	0.15/1 kW/DA-D	8/27/65
KETU	Tampico, Tams.	980	1/10 kW/DA-D	7/18/61
CBW	Winnipeg, MB	990	50 kW	5/10/72
CBY	Corner Brook, NF	990	10 kW	5/25/62
KKIS	Pittsburg, CA	990	5 kW/DA-2	2/10/77
KNIN	Wichita Falls, TX	990	1/10 kW/DA-2	4/28/65
KTKT	Tucson, AZ	990	1/10 kW/DA-2	8/22/61
KTRM	Beaumont, TX	990	1 kW/DA-1	5/27/70
KTYD	Santa Barbara, CA	990	1 kW/DA-D	7/27/62
KWAM	Memphis, TN	990	10 kW/DA-D	8/22/61
KXRB	Sioux Falls, SD	990	10 kW/DA-D	1/30/67
WCRM	Clare, MI	990	0.25 kW/DA-D	9/25/57
WERK	Muncie, IN	990	0.25 kW/DA-D	5/27/65
WFAB	South Miami, FL	990	5 kW/DA-1	3/8/61
WHOO	Bristol, TN	990	5/50 kW/DA-2	5/28/68
WHOO	Bristol, TN	990	5/10 kW/DA-2	4/29/68
WIBG	Philadelphia, PA	990	10 kW/DA-2	2/27/46
WIBG	Philadelphia, PA	990	10/50 kW/DA-2	9/11/58
WLKW	Providence, RI	990	50 kW/DA-D	5/8/61
WNOX	Knoxville, TN	990	10 kW/DA-N	11/7/41
WNTY	Southington, CT	990	0.5 kW/DA-D	3/27/70
WTIG	Massillon, OH	990	0.25 kW/DA-D	11/27/64
WVSC	Somerset, PA	990	5 kW/DA-D	3/29/67
XET	Monterrey, MX	990	50 kW/DA-N	1/10/58
XETG	Tuxtla Gutierrez, Chis.	990	10 kW/DA-N	

980-1000

Station	Main Studio	Freq	Power	Date
CFLP	Rimouski, QU	1000	10 kW/DA-2	7/5/83
CKBW	Bridgewater, NS	1000	10 kW/DA-N	11/30/61
KMLO	Vista, CA	1000	1/5 kW/DA-2	10/19/79
KOMO	Seattle, WA	1000	50 kW/DA-N	4/8/48
KOTD	Plattsmouth, NE	1000	0.25 kW/DA-D	11/24/70
KOTD	Plattsmouth, NE	1000	1 kW/DA-D	12/27/68
KTOK	Oklahoma City, OK	1000	1/5 kW/DA-2	8/19/49
KXRB	Sioux Falls, SD	1000	10 kW/DA-D	3/28/69
WCFL	Chicago, IL	1000	50 kW/DA-2	12/28/50
WHTH	Heath, OH	1000	0.25 kW/DA-D	3/27/70
WKBQ	Garner, NC	1000	0.25 kW/DA-D	10/26/70
WOOP	Danville, KY	1000	1 kW	10/19/79
WRNJ	Hackettstown, NJ	1000	1 kW/DA-D	6/18/75
WRYZ	Jupiter, FL	1000	1 kW/DA-D	11/24/71
WVOV	Huntsville, AL	1000	10 kW/DA-D	12/28/67
NEW	Centreville, VA	1000	1 kW/DA-D	2/6/74
NEW	Danville, KY	1000	1 kW/DA-D	5/12/77

NEW
980 kHz

IFRB Serial No.

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

CHARACTERISTICS OF A REGION 2 BROADCASTING STATION IN THE BAND 535 – 1605 kHz

PART I GENERAL INFORMATION

(01) Administration: CANADA Sheet No.: 412 Date: 820504

Assigned frequency (kHz)	(02)	980
Transmitting station — Name of the station	(03)	SHERWOOD PARK
Transmitting station — Call sign	(04)	
Transmitting station — Additional identification	(05)	AB
Transmitting station — Station class	(06)	B
Transmitting station — Operational Status	(07)	P
Country	(08)	CAN
Geographical coordinates of the transmitting station	(09)	113 W 13.6 53 N 28 39

(11) a) New assignment [✓] b) Modification of characteristic of an assignment recorded in the plan [ ] c) Cancellation of an assignment [ ]

(12) Modification under Section 4.2.14 Yes [ ] No [ ]

(13) Date of bringing into service or cessation of operation: 83 06 01 (Year Month Day)

STATION PARAMETERS		DAYTIME OPERATION		NIGHT-TIME OPERATION
Station power (kW)	(21)	10.0	(31)	5.
r.m.s. value of radiation for station power (mV/m at 1 km)	(25)		(35)	
Antenna type	(26)	B	(36)	B
Simple vertical antenna electrical height (degrees)	(27)		(37)	

(44) Remarks

COORDINATION UNDER ARTICLE 4:

COUNTRY	USA
IN PROGRESS	X
ACCEPTANCE OBTAINED	

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT
CHARACTERISTICS OF A REGION 2 BROADCASTING STATION IN THE BAND 535 - 1605 kHz

IFRB Serial No.

PART II Section I

Description of a directional antenna consisting of vertical conductors

4-12
Sheet No.

82 05 04
Date

(01) SHERWOOD PARK
Name of transmitting station

(02) CAN
Country

(03) H/N
Hours of operation

(04) 3
Total number of towers

(05) Tower No.	(06) Tower field ratio	(07) Phase difference of the field (± degrees)	(08) Electrical tower spacing (degrees)	(09) Angular tower orientation (degrees)	(10) Reference tower indicator	(11) Electrical height of tower (degrees)	(12) Tower attributes
1	1.83	0.	0.	0.		90.	
2	1.	-126.	110.	358.		90.	
3	.32	108.	210.	358.		90.	

(14) r.m.s value of radiation: 675.8 mV/m at 1 km

(15) Type of pattern: E

(16) Special quadrature factor: mV/m at 1 km

(17) SUPPLEMENTARY INFORMATION

NEW
980 kHz

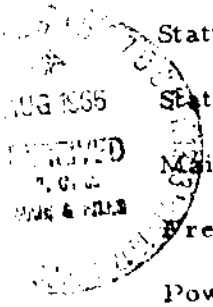
216

Description Sheet
(8-26-66ct)

New Station
St. John's, Newfoundland

500w,U,Class III
980 kc

2.5 Description Sheet - Omnidirectional Antenna



Station Call:	NEW
Station Location:	St. John's, Newfoundland
Main Studio:	St. John's, Newfoundland
Frequency:	980 Kc/s
Power:	500 watts
Class:	III
Time:	full time (ND)

Notification List No. 216 Date: July 26, 1966

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:

North Latitude: 47° 34' 12"

West Longitude: 52° 45' 29"

ANTENNA CHARACTERISTICS:

Physical Height:	170 feet
Electrical Height:	61°
Type of Element:	Uniform cross section, base insulated, series fed, guyed.
Ground System	120 radials of No. 10 B & S bare copper wire equally spaced around the tower extending to property limits (equivalent 0.4 wavelength), buried 6 to 8 inches.
Expected Efficiency:	127 mv/m at 1 mile for .5kw or 180 mv/m at 1 mile for 1kw.

CBV

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CBV — Main Studio: Quebec, P.Q.

Frequency: 980 Kc. — Power: 5 Kw. — Class: III

Notification List No.: 85 — Date: July 14, 1954

Geographical Location of the Centre of the Antenna System: North Latitude: 46° 43' 43"

West Longitude: 71° 12' 12"

Antenna: Mode of Operation: DA-1
Tow elements, uniform cross-section, guyed, base insulated for series feed.

Tower:	SW	NE
Height above Insulators:	250' (94° Elec.)	250'
Spacing:	251' (90°)	
Phasing:	95.4° (lead)	0°
Field Ratio:	1.5	1

Ground System: 120 radials per tower. Radials spaced 3° and extending to a distance of 400 ft. except where property boundaries limit radial lengths to 350 ft. Shorter radials between towers will be joined along a line quidistant from each tower.

Predicted effective field: 429 mv/m (192 mv/m for 1 kw.)

Orientation: Centre line of towers (SW tower to NE) has azimuth 52.5°.

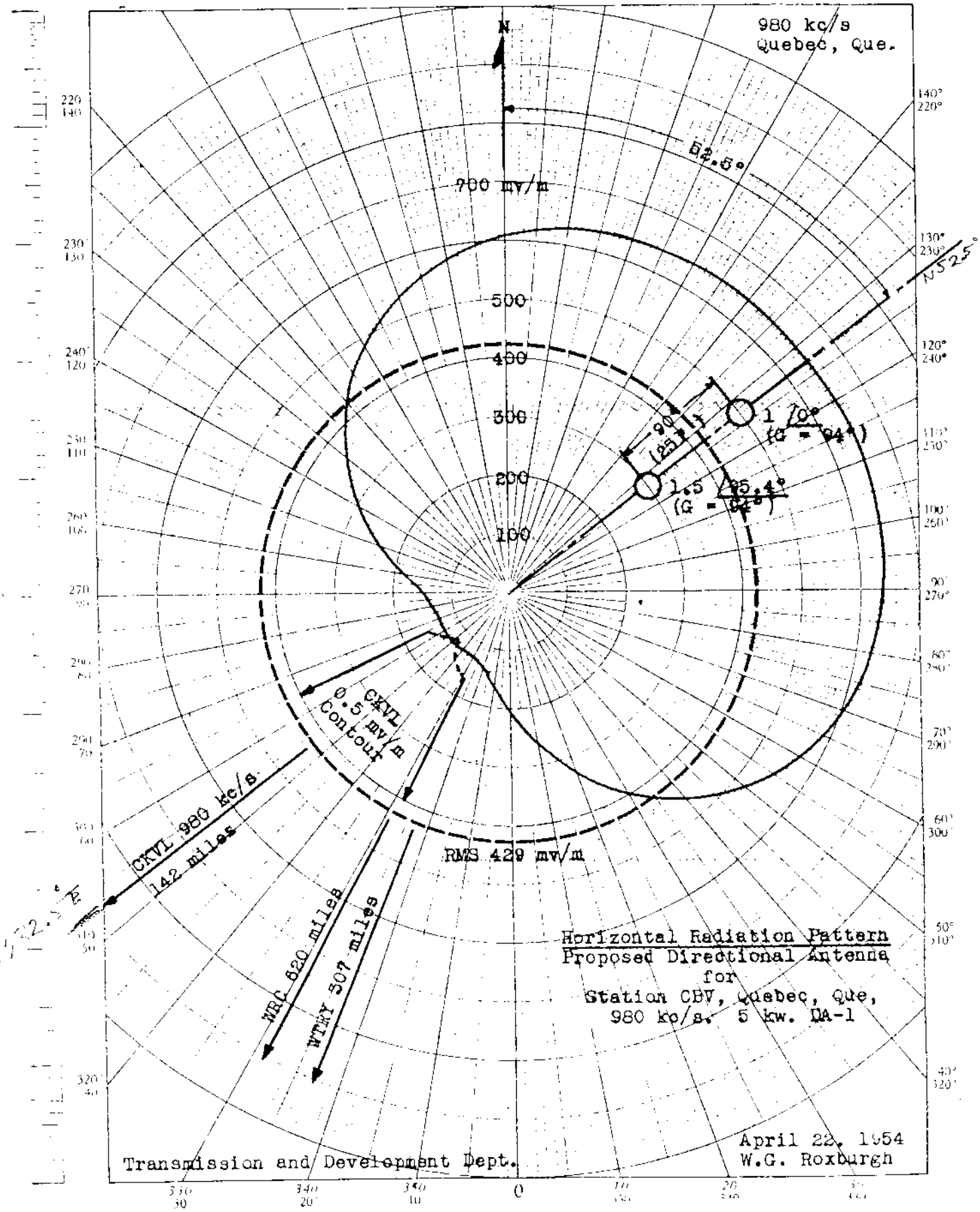
from FCC file 130 mv/m at 17.09 E

from Fred Kear Sept 15, 1954

#85

CBV

PROPOSED (10/11/54 G) | STATION CBV QUEBEC, P. Q. | 5 KW, CLASS III LIST NO. 85 DA-1 | 980 KC



DATE: July 14, 1954 | STATION CBV, Quebec, P. Q. | 980 KC

ANTENNA DESCRIPTION:

STATION: CBV
FREQUENCY: 980 kHz
NOTIFICATION LIST: 357
GEOGRAPHICAL LOCATION:

LOCATION: Quebec
POWER: 50 kW
DATE: June 24, 1976
Latitude - 46° 41' 06" N.
Longitude - 71° 23' 55" W.

ANTENNA CHARACTERISTICS:

Mode of operation: DA-1
Number of elements: 3 (three)
Type of elements: Guyed steel towers, uniform cross-section, base insulated for series feed.

TOWER ELEMENT:	No.1 (SW)	No.2 (C)	No.3 (NE)
Height above base insulator	89.60° (250 feet)	89.60°	89.60°
Overall height	260 feet	260 feet	260 feet
Field ratio	0.503	1.000	0.503
Phasing	+ 90.0°	+ 2.6°	- 90.0°

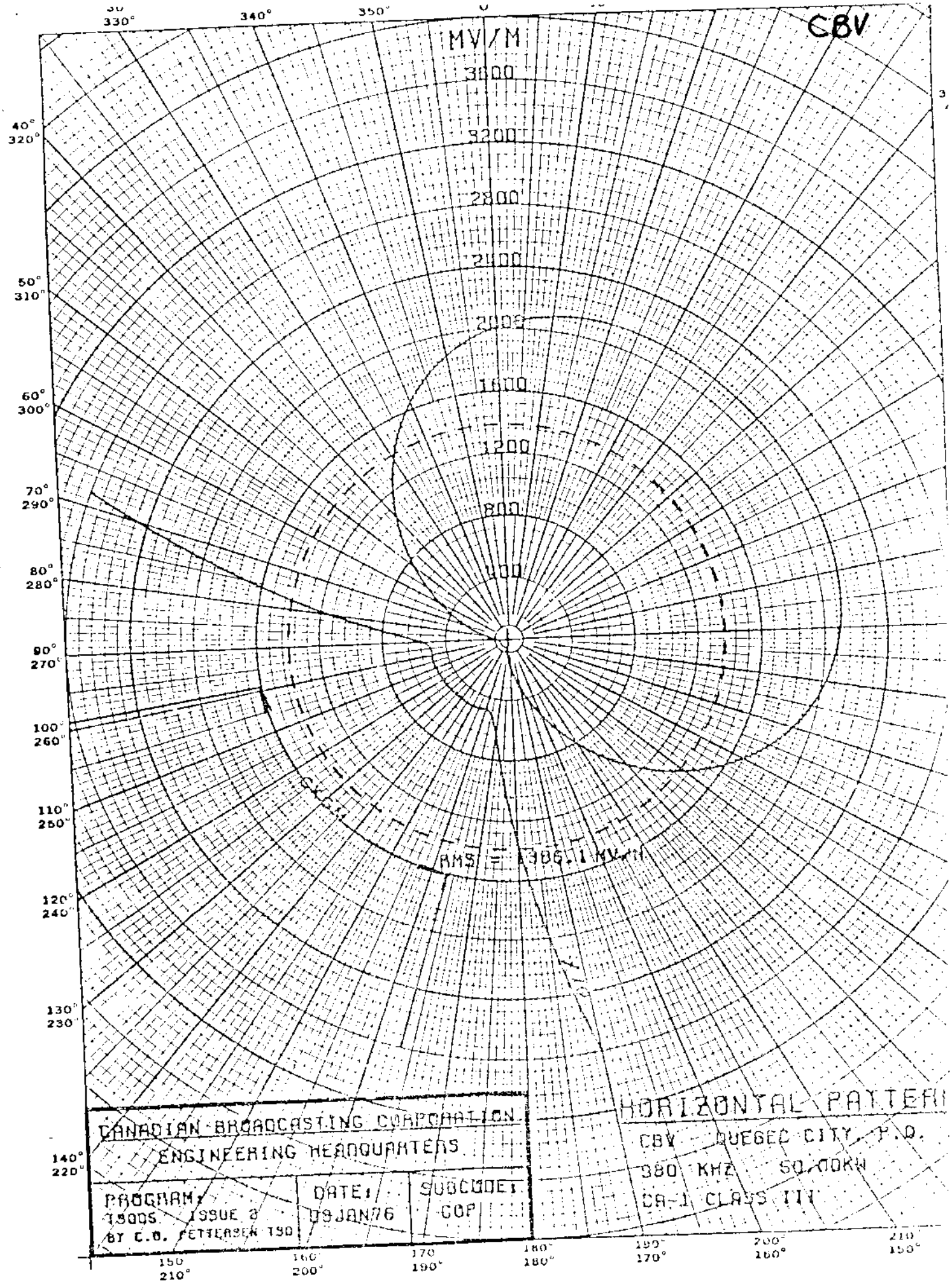
GROUND SYSTEM: 120 copper wire (No. 10 AWG) radials equi-spaced about each tower and buried 8 to 12 inches deep. Radial lengths are 0.4λ (400 feet) long excepting those bonded to the common chords.

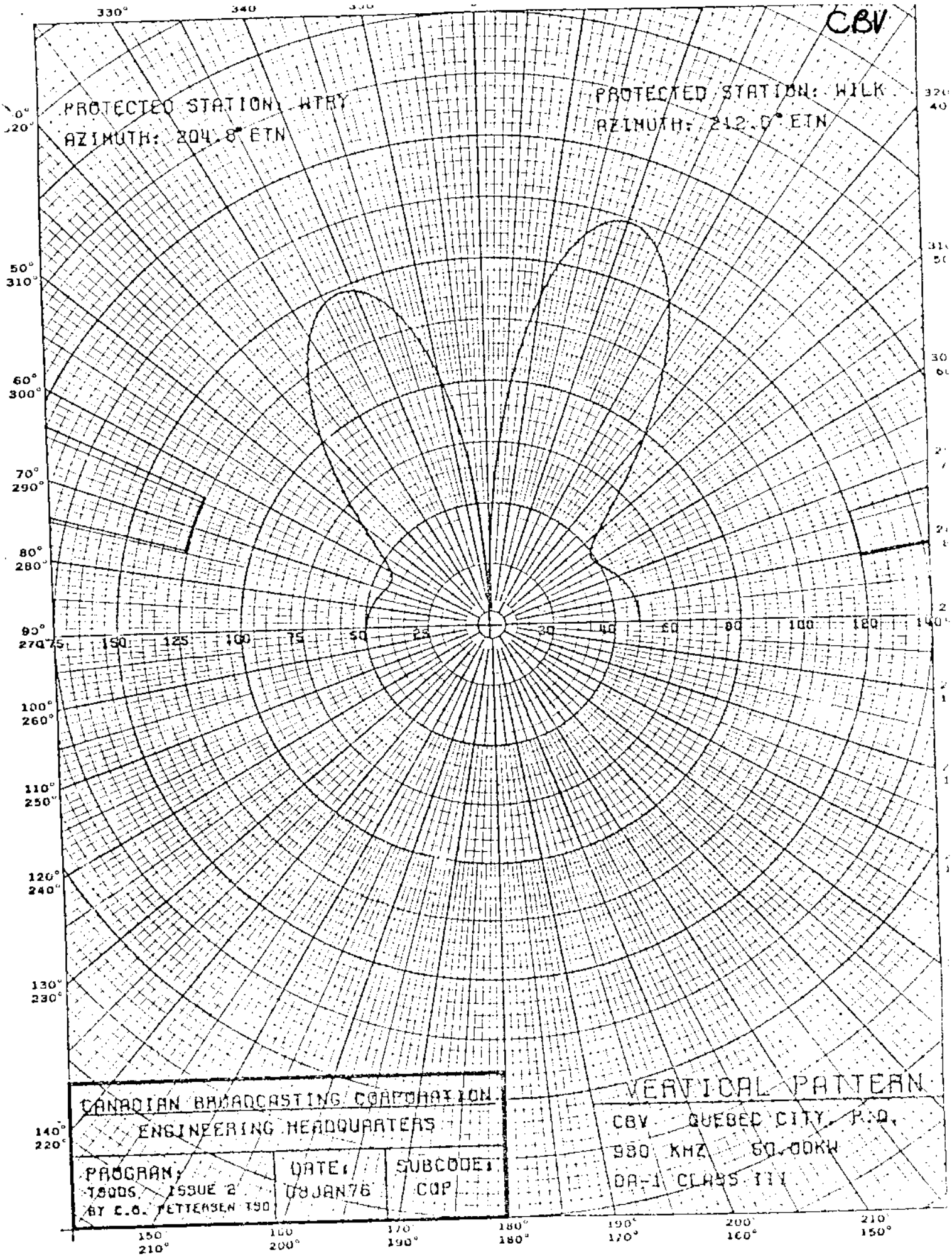
SPACING & ORIENTATION: The element spacing is 98.0° (273.40 feet) along a line bearing 51° true.

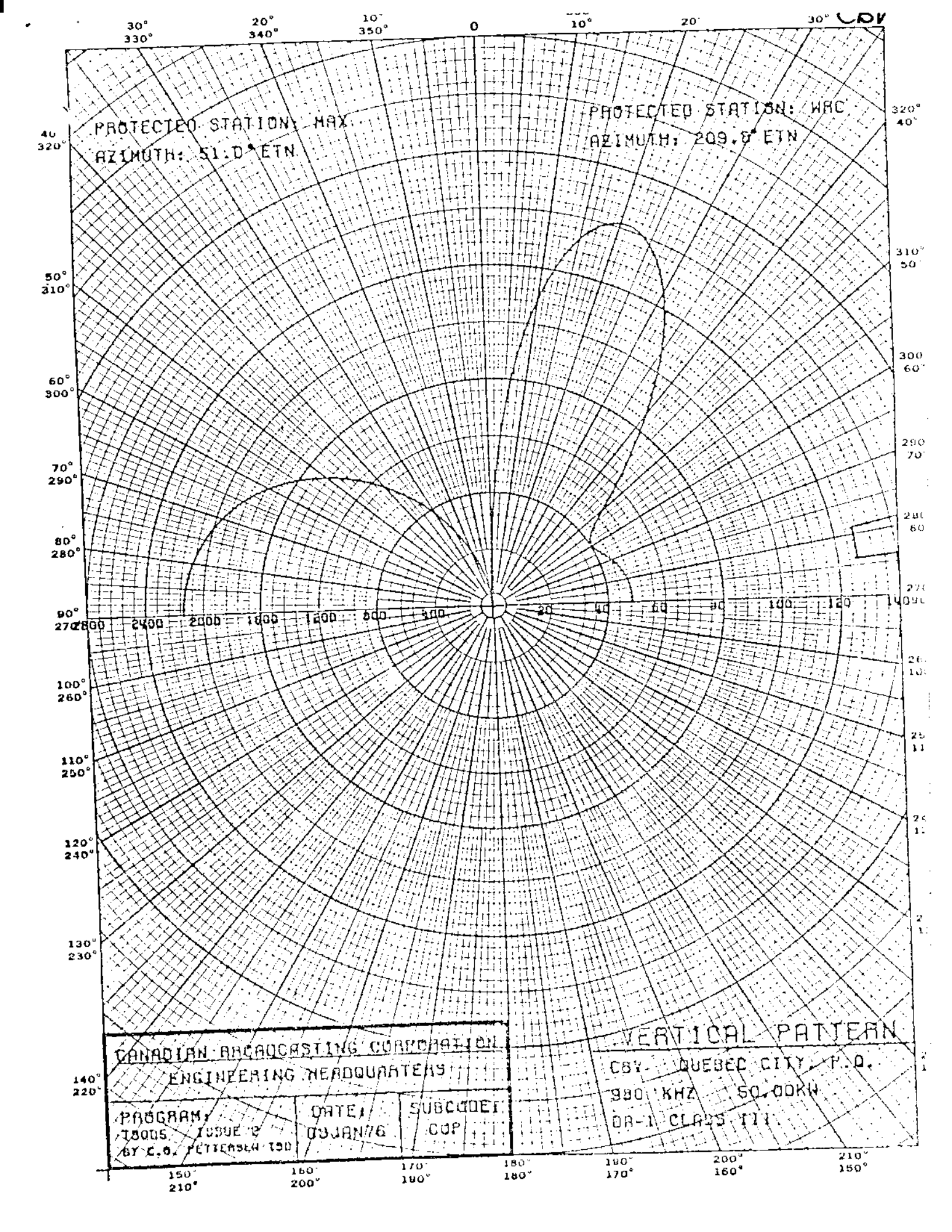
PREDICTED EFFECTIVE FIELD:

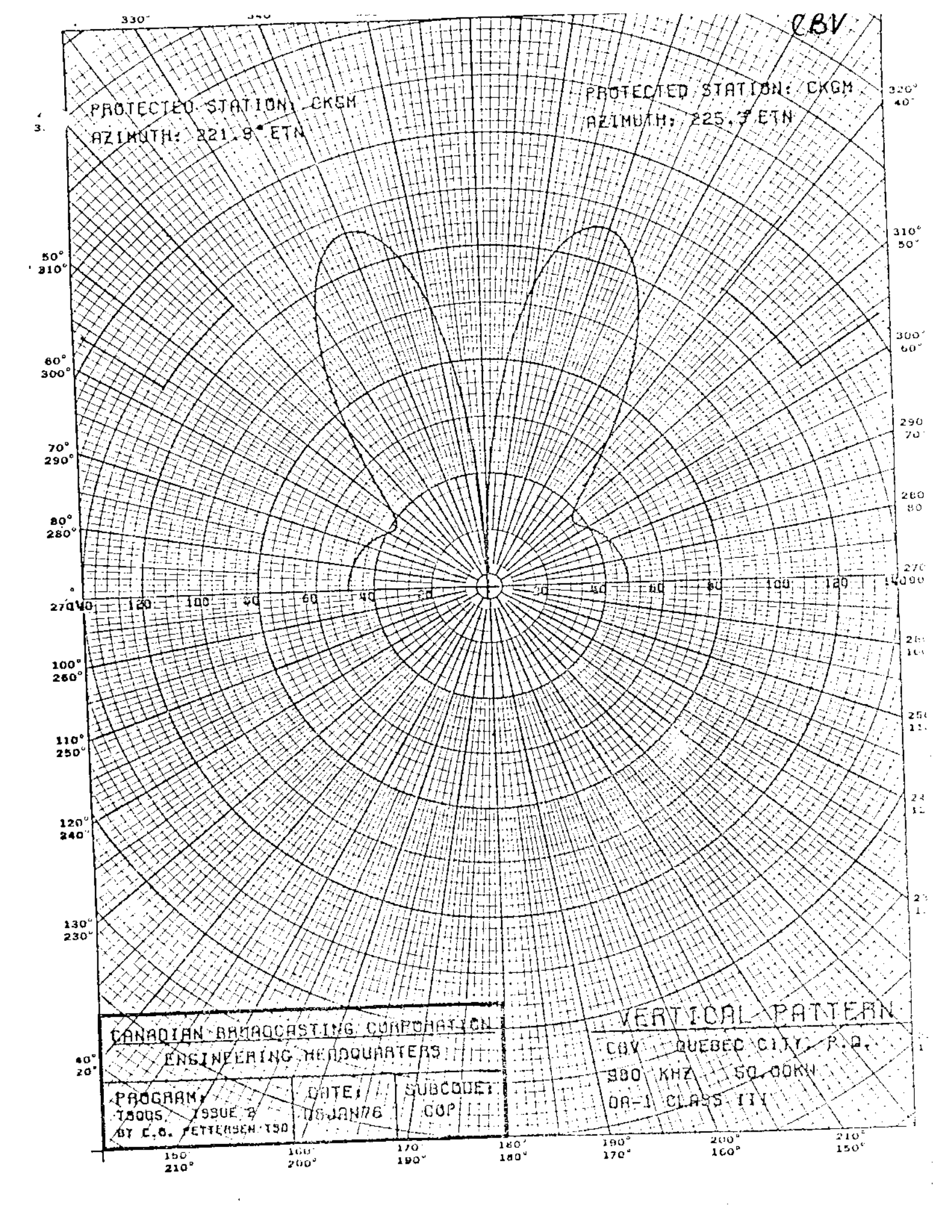
1386 mV/m for 50 kW (196 mV/m for 1 kW).

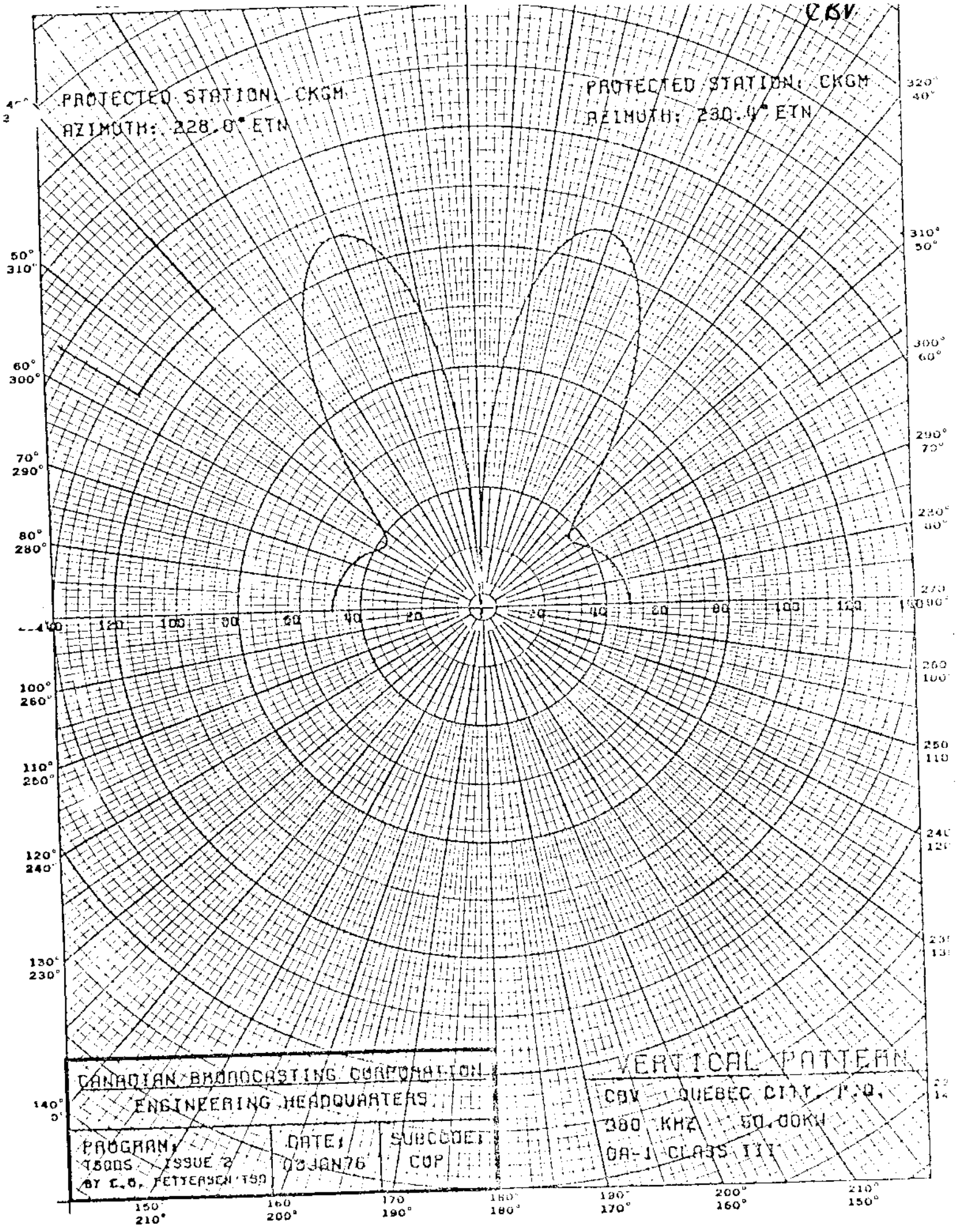
December 31, 1975

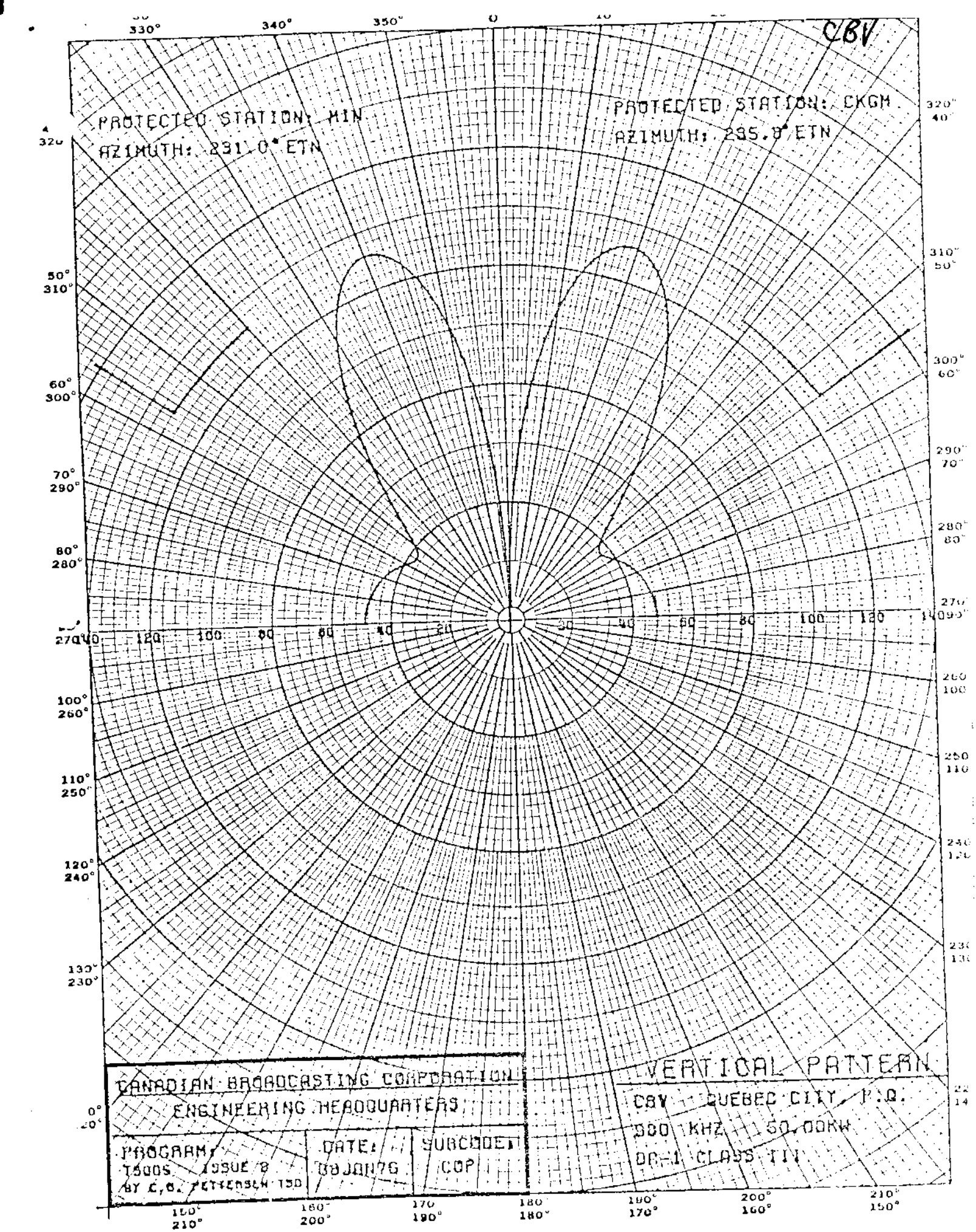

CBV
MV/M
3600
3200
2800
2400
2000
1600
1200
800
400
RMS = 1306.1 MV/M
330° 340° 350°
40° 320°
50° 310°
60° 300°
70° 290°
80° 280°
90° 270°
100° 260°
110° 250°
120° 240°
130° 230°
140° 220°
150° 210°
160° 200°
170° 190°
180° 180°
190° 170°
200° 160°
210° 150°
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM: 1900S ISSUE 8 BY C.O. PETTERSEN 190
DATE: 09JAN76
SUBCODE: COP
HORIZONTAL PATTERN
CBV QUEBEC CITY P.Q.
980 KHZ 50.00KW
CA-1 CLASS IIN

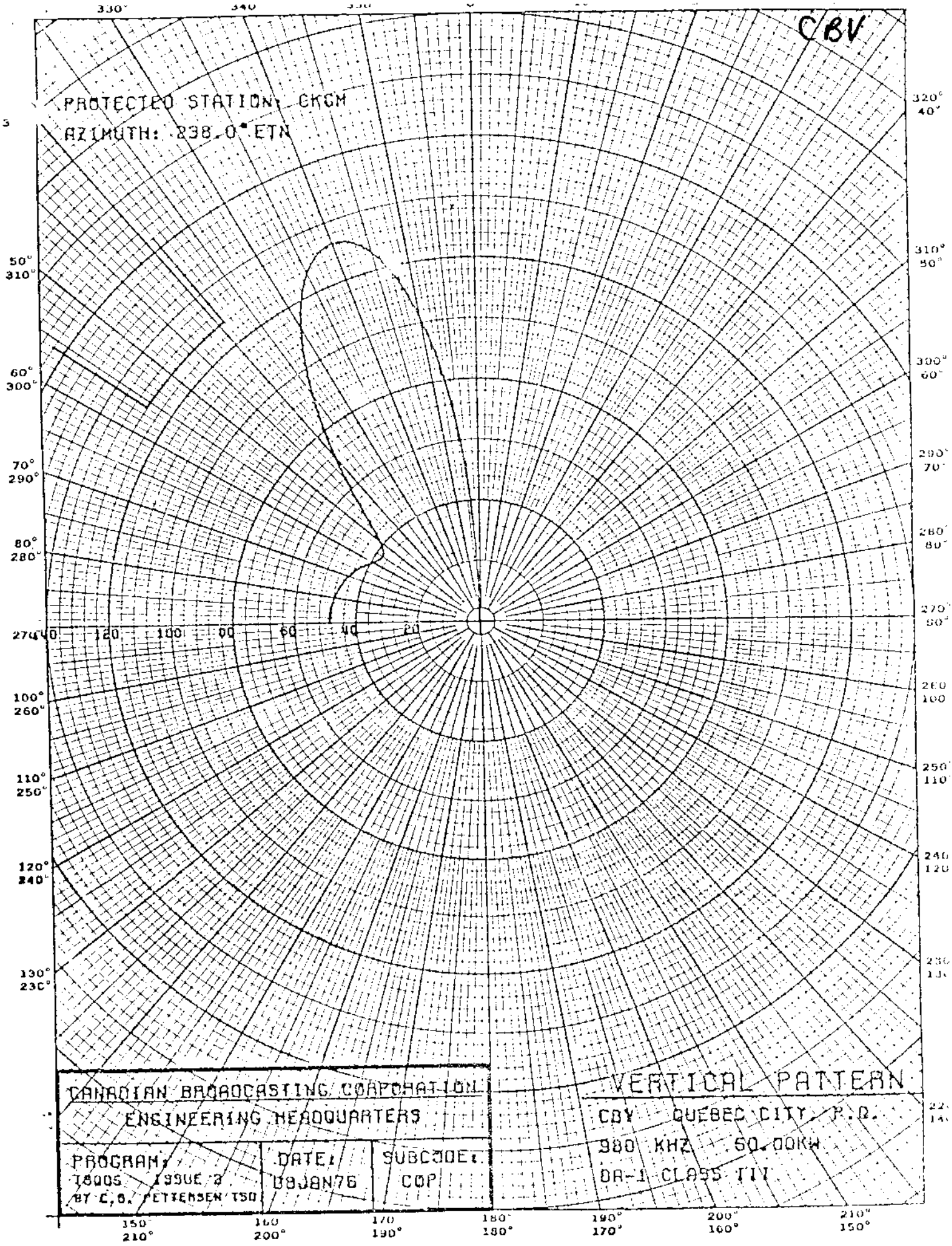

CBV
PROTECTED STATION: WTRY
AZIMUTH: 204.8° ETN
PROTECTED STATION: WILK
AZIMUTH: 212.0° ETN
330°
340
0°
320°
50°
310°
60°
300°
70°
290°
80°
280°
90°
270°
100°
260°
110°
250°
120°
240°
130°
230°
140°
220°
150
210°
160
200°
170°
190°
180°
180°
190°
170°
200°
160°
210°
150°
75
150
125
100
75
50
25
30
40
50
60
100
120
140
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM: 1800S ISSUE 2
BY C.O. PETTERSEN TSD
DATE: 09JAN76
SUBCODE: COP
VERTICAL PATTERN
CBV QUEBEC CITY, P.Q.
980 KHZ 50.00KW
DA-1 CLASS 1A


PROTECTED STATION: MAX
AZIMUTH: 51.0° ETN
PROTECTED STATION: WRC
AZIMUTH: 209.0° ETN
VERTICAL PATTERN
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM: TBOOS ISSUE 2 BY C.O. PETTERSEN 190
DATE: 00JAN/76
SUBCODE: COP
CBY QUEBEC CITY, P.Q.
980 KHZ 50.00KW
DA-1 CLASS III


CBV
PROTECTED STATION: CKGM
AZIMUTH: 221.9° ETN
PROTECTED STATION: CKGM
AZIMUTH: 225.3° ETN
VERTICAL PATTERN
CBV QUEBEC CITY, P.Q.
980 KHZ 50.00KW
DA-1 CLASS IV
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM: T500S ISSUE 8
BY C.G. PETTERSEN T50
DATE: 06JAN76
SUBCODE: COP


CBV
PROTECTED STATION: CKGM
AZIMUTH: 228.0° ETN
PROTECTED STATION: CKGM
AZIMUTH: 230.0° ETN
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
VERTICAL PATTERN
CBV QUEBEC CITY, P.Q.
980 KHZ 50.00KW
DA-1 CLASS II
PROGRAM: 1500S ISSUE 2
BY C.G. PETTERSEN T&D
DATE: 03JAN76
SUBCODE: COP


CBV
PROTECTED STATION: MIN
AZIMUTH: 231.0° ETN
PROTECTED STATION: CKGM
AZIMUTH: 295.8° ETN
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM: T5005 ISSUE 8
BY C.G. PETERSEN 150
DATE: 88JAN26
SUBCODE: COP
VERTICAL PATTERN
CBV QUEBEC CITY, P.Q.
980 KHZ 50.00KW
DA-1 CLASS II


CBV
PROTECTED STATION: CKGM
AZIMUTH: 238.0° ETN
330°
340°
320°
40°
310°
50°
310°
60°
300°
300°
60°
70°
290°
290°
70°
80°
280°
280°
80°
270°
90°
270°
0
120
100
80
60
40
20
100°
260°
260
100
110°
250°
250°
110°
120°
240°
240
120
130°
230°
150°
210°
160°
200°
170°
190°
180°
180°
190°
170°
200°
160°
210°
150°
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
VERTICAL PATTERN
CBY QUEBEC CITY, P.Q.
980 KHZ 50.00KW
DA-1 CLASS IV
PROGRAM: 19005 ISSUE 3
BY C.G. PETERSEN TSD
DATE: 09JAN76
SUBCODE: COP

CFPL

126

DESCRIPTION SHEET (1-8-59g) | Station CFPL London, Ontario, Canada | 5kw, 10kw-LS, DA-2, U, Class III 980 KC

DESCRIPTION SHEET

DIRECTIONAL ANTENNA SYSTEM

STATION: CFPL — MAIN STUDIO: London, Ontario

POWER: 10KW-D/5KW-N — FREQUENCY: 980 KC/S CLASS III

NOTIFICATION LIST NO. 126 — DATE: October 30, 1958

GEOGRAPHICAL LOCATION OF CENTRE OF ANTENNA SYSTEM:
NORTH LAT: 42° 53' 29"
WEST LONG: 81° 12' 02"

ANTENNA:

MODE OF OPERATION: DA-2 (Different pattern day and night)

ELEMENTS: Four uniform cross section guyed steel towers, base insulated for series feed.

TOWER:		# 1 (SW)	# 2 (NW)	# 3 (NE)	# 4 (SE)
Height above insulators:		160'(67.4°)	160'(67.4°)	160'(67.4°)	160'(67.4°)
Phasing:	Day	0	-106°	-74°	+31°
	Night	0	-116°	-96°	+19°
Field Ratio:	Day	1	.7	1.4	1.95
	Night	1	.92	.865	.94
Spacing from Tower #1		0	250.9'(90°)	566'(203°)	507.4'(182°)
Orientation (Bearing East of true North as seen from Tower #1)			355°	58.7°	85°

Ground System: 120 equiangularly spaced radials extend from the base of each tower to a distance of 401 feet (0.4 wavelength) with the exception of those radials joined along the common chords. The ground wires consist of solid copper wire #10 B & S gauge and are buried to a depth of approximately 8 inches.

PREDICTED EFFECTIVE FIELD: Day: 561 MV/M @ 1 mile (177.5 MV/M for 1 KW)

Night: 396 MV/M @ 1 mile (177 MV/M for 1 KW)

126

CFPL

PROPOSED DAY (1-8-59g)

Station CFPL
London, Ontario, Canada

5kw, 10kw-LS, DA-2, U, Class III
980 KC

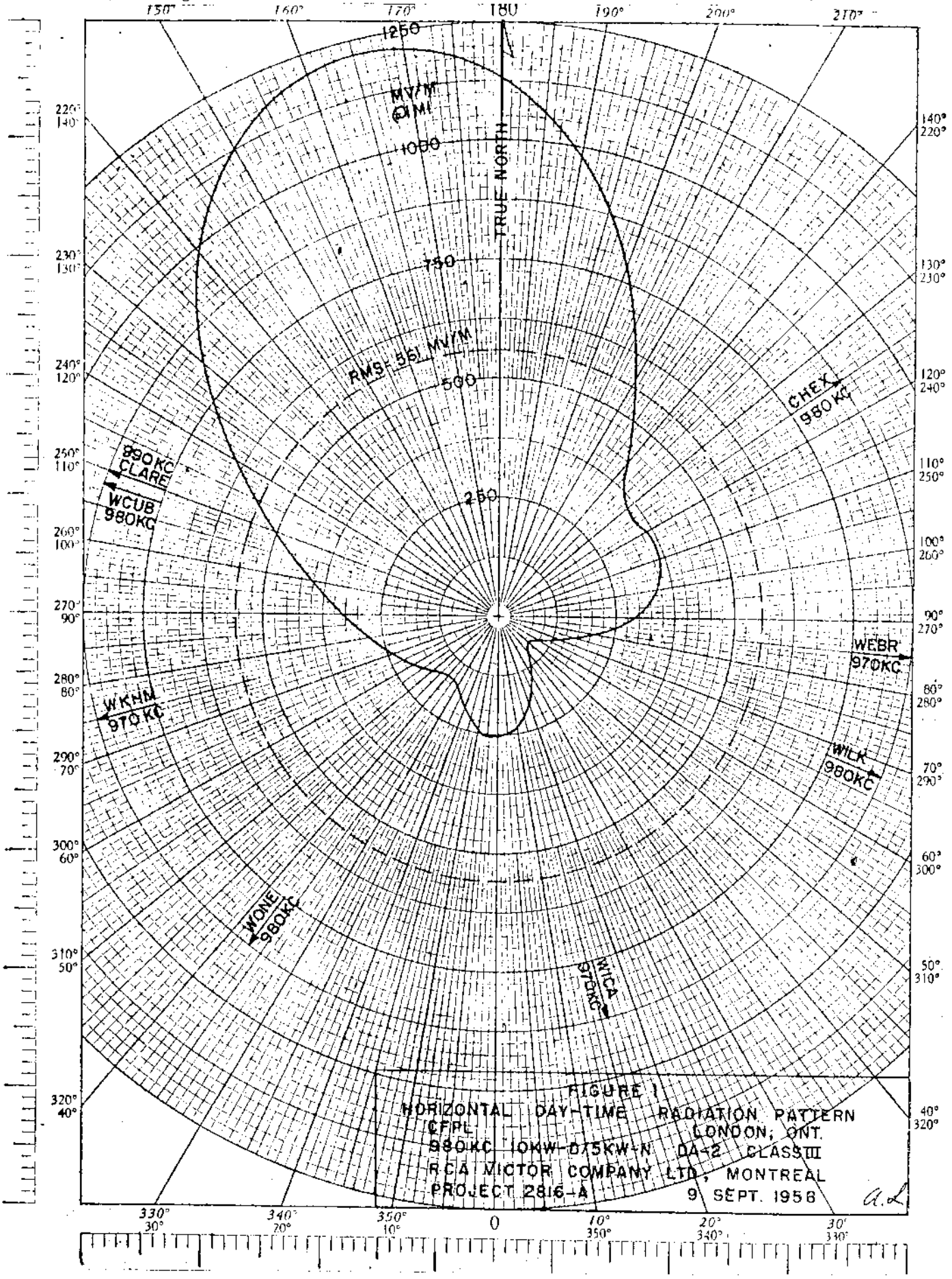


FIGURE 1
HORIZONTAL DAY-TIME RADIATION PATTERN
CFPL LONDON, ONT.
980KC 10KW-0.75KW-N DA-2 CLASS III
RCA VICTOR COMPANY LTD, MONTREAL
PROJECT 2816-A 9 SEPT. 1958

A.L

CFPL

#126

PROPOSED DAY-TIME PROTECTION (1-8-59g)

Station CFPL 5kw, 10kw-LS, DA-2, U,
London, Ontario, Canada 980 KC

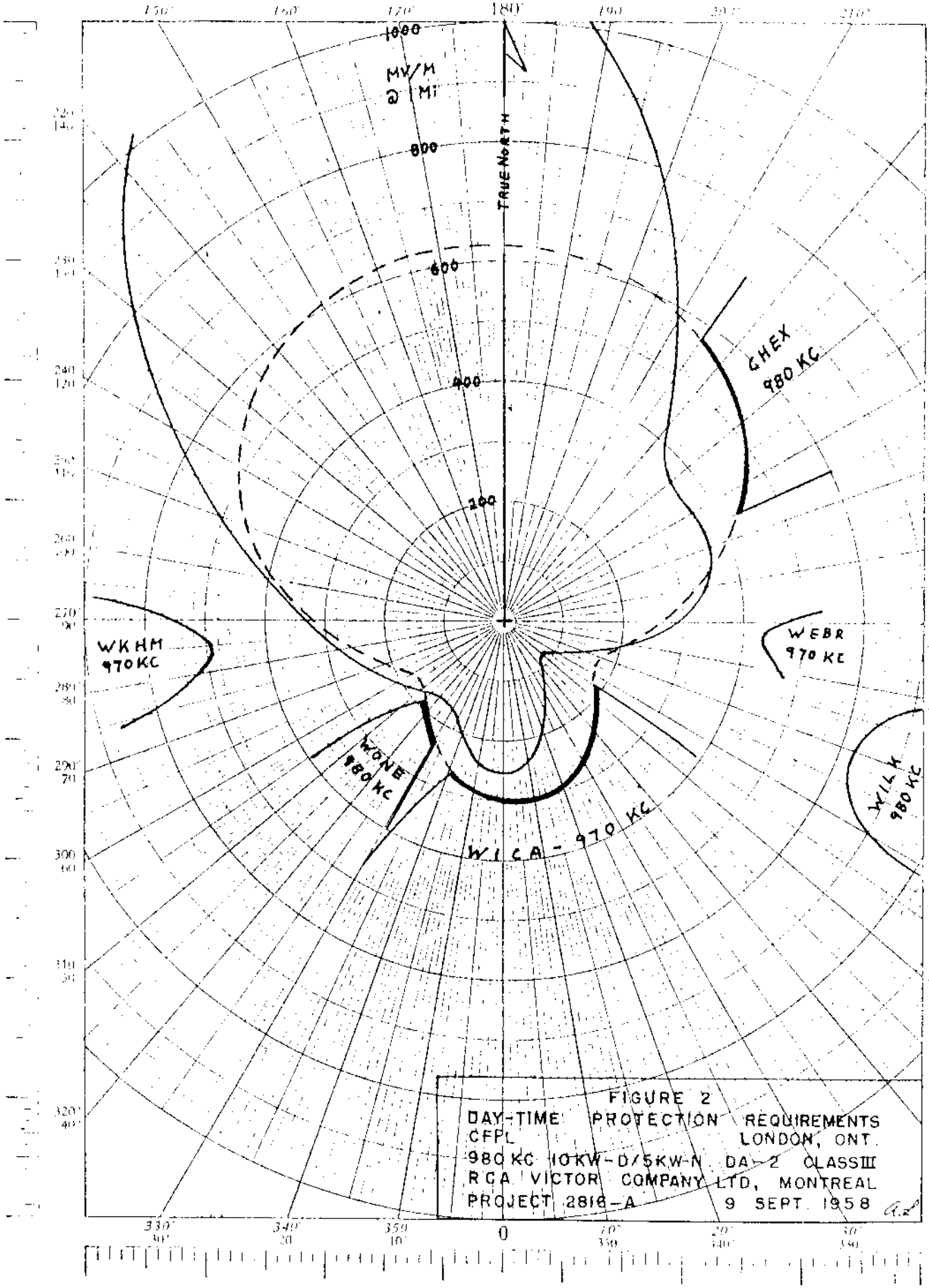


FIGURE 2
DAY-TIME PROTECTION REQUIREMENTS
CFPL LONDON, ONT.
980 KC 10KW-D/5KW-N DA-2 CLASS III
RCA VICTOR COMPANY LTD, MONTREAL
PROJECT 2816-A 9 SEPT 1958

CFPL

#126

PROPOSED NIGHT (1-8-59g)

Station CFPL
London, Ontario, Canada

5kw, 10kw-LS, DA-2, U, Class III
980 KC

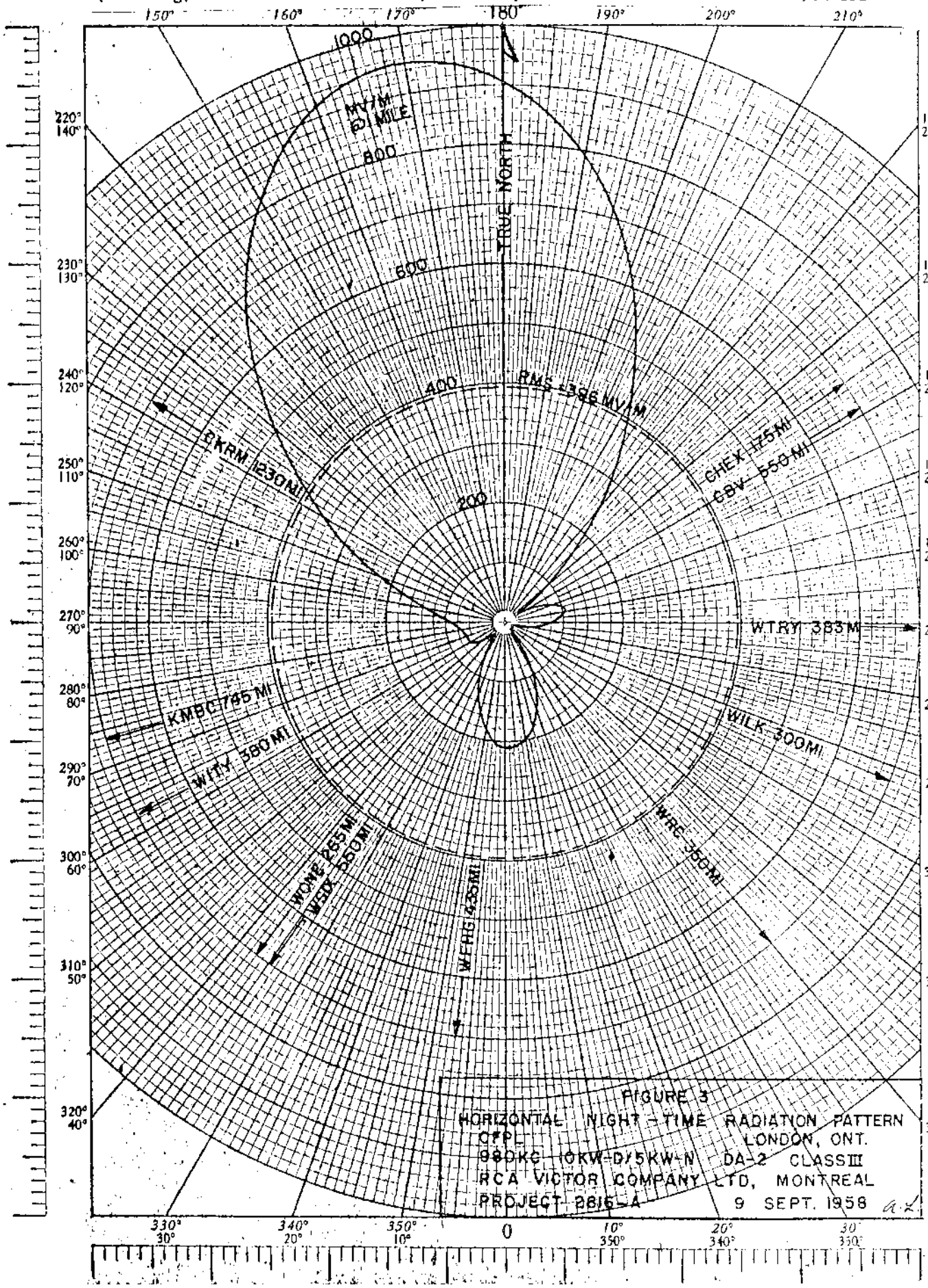


FIGURE 3
HORIZONTAL NIGHT-TIME RADIATION PATTERN
CFPL LONDON, ONT.
980KC 10KW-D/5KW-N DA-2 CLASS III
RCA VICTOR COMPANY LTD, MONTREAL
PROJECT 2815-A
9 SEPT. 1958

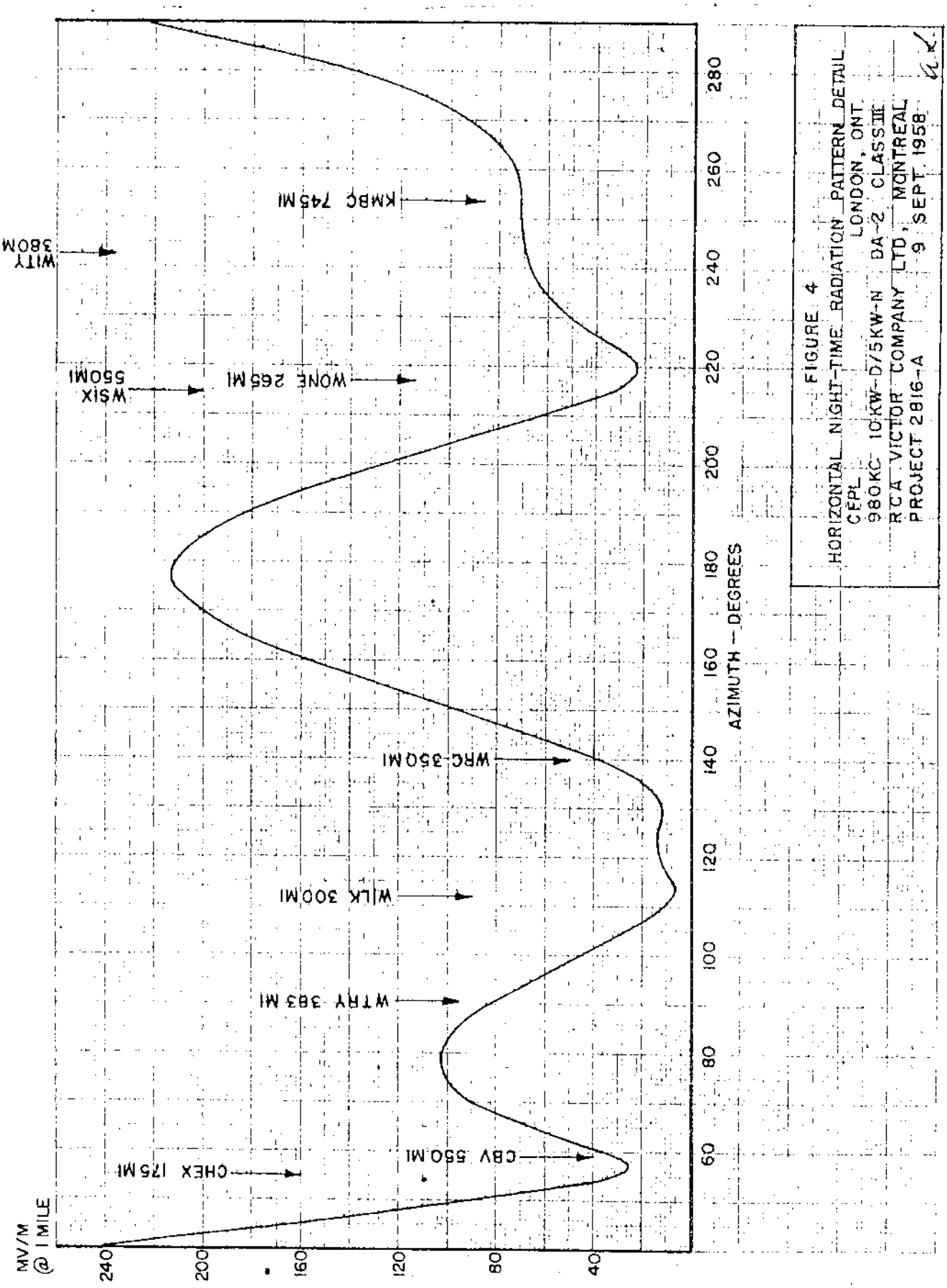
#126

CFPL

PROPOSED NIGHT NULLS
(1-8-59g)

Station CFPL
London, Ontario, Canada

5kw, 10kw-LS, DA-2, U, Class III
980 KC



#208

CHEX

ANTENNA DESCRIPTION SHEET

DIRECTIONAL DA-2

STATION CALL	C H E X
MAIN STUDIO	Peterborough, Ontario
FREQUENCY	980 kc/s
POWER	Day 10 kw, 5 kw Night
CLASS	III
TIME	Unlimited
NOTIFICATION REFERENCE 208	DATE February 25, 1966
GEOGRAPHICAL LOCATION	Lat 44°17'12", Lon 78°16'30"
ARRAY CHARACTERISTICS	Four elements, guyed, uniform cross section, base insulated, series feed, no top loading, height 250 feet (90 degrees)

ELEMENT	ONE	TWO	THREE	FOUR
spacing	ref	251' 90°	251' 90°	335' 120°
bearing	ref	150.5°	230.5°	220.0°
Day R	1.00	0.40		1.02
ø	00°	+78°		+93°
Night R	1.55	1.00	1.00	
ø	00°	+135°	-135°	

Ground System: 120 radials per tower, #10 AWG bare soft copper wire, uniformly spaced, depth approximately 8 inches. Radials bonded along line between towers and bonded to soft copper strap at tower base. Maximum radial lenght 502 feet.

Predicted RMS: Day 586 mv/m at 1 mile for 10 kw
185 mv/m at 1 mile for 1 kw

Night 403 mv/m at 1 mile for 5 kw
180 mv/m at 1 mile for 1 kw

Jan 1966 # 5

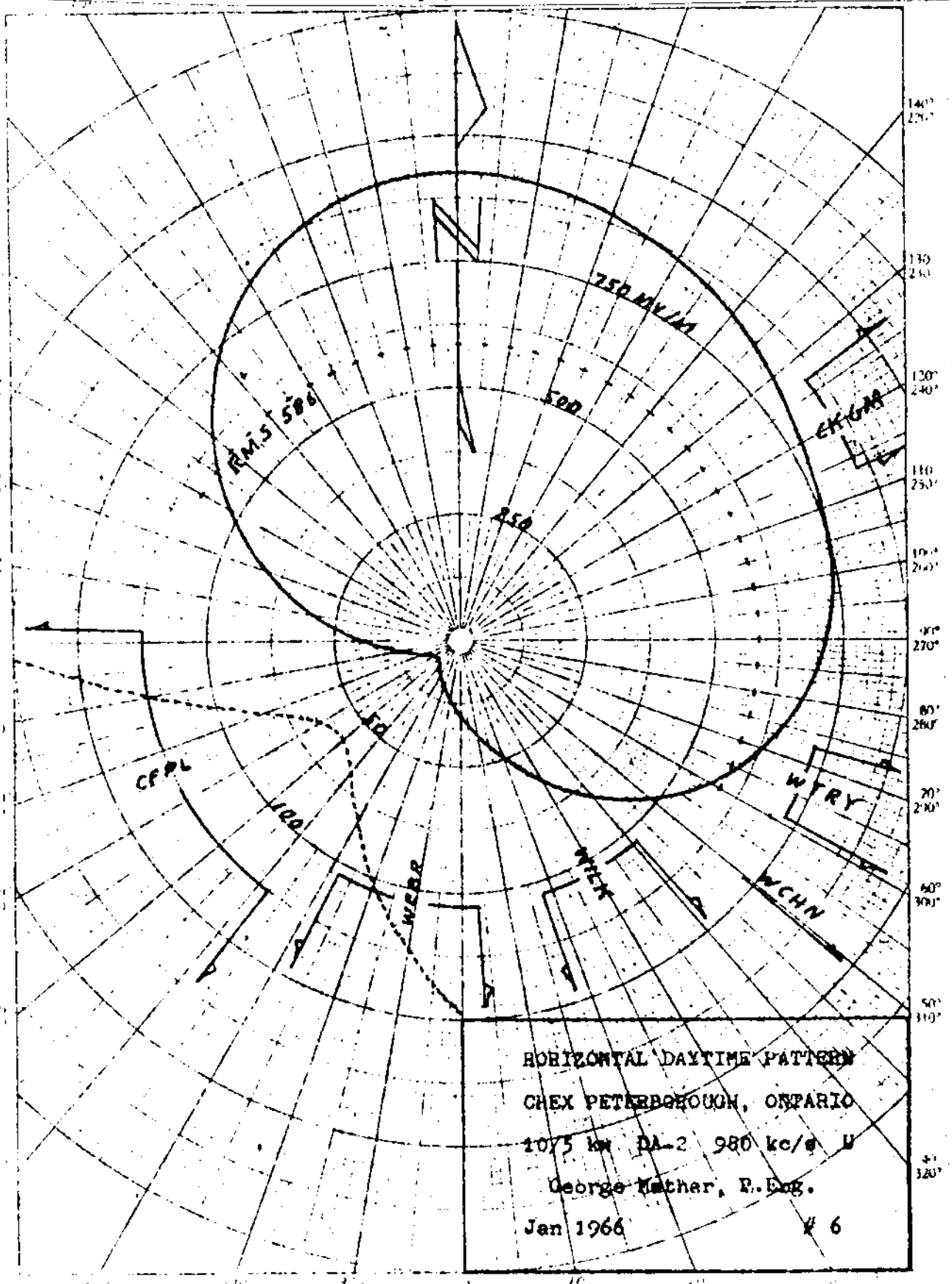
F208

CHEX

Proposed Day
(4-28-66ct)

Station CHEX
Peterborough, Ontario

5kw,10kw-LS,DA-2,U,Class III
980 kc



HORIZONTAL DAYTIME PATTERN
CHEX PETERBOROUGH, ONTARIO
10/5 kw DA-2 980 kc/s U
George Hatcher, P.Eng.
Jan 1966 # 6

#175

CHEX

Description Sheet (2-26-63ct) | Station CHEX Petersborough, Ontario | 5kw,DA-2,U,Class III 980 kc

ANTENNA DESCRIPTION SHEET

DIRECTIONAL DA-2

STATION CALL:	C H E X
MAIN STUDIO:	Petertorough, Ontario.
FREQUENCY:	980 kc/s
POWER:	Day 5 kw - 5 kw Night
CLASS:	III
TIME:	Unlimited
NOTIFICATION REFERENCE: 175	December 21, 1962
GEOGRAPHICAL LOCATION:	Lat 44°17'12", Lon 78°16'30"
ARRAY CHARACTERISTICS:	Four elements, guyed, uniform cross section, base insulated, height 450 feet, series feed, no top loading.

ELEMENT	ONE	TWO	THREE	FOUR
Spacing	ref	251' 90°	251' 90°	335' 120°
Azimuth	ref	150.5°	330.5°	220°
Day R	0.79			1.00
ø	-64°			00°
Night R	1.55	1.00	1.00	
ø	00°	135°	-135°	

Ground system: 120 radials per tower, #10 AWG bare, soft copper wire, uniformly spaced, depth approximately 8 inches. Radials bonded along line between towers and bonded to soft copper strap at tower base. Maximum radial length 502 feet.

Predicted RMS: Day 427 mv/m at 1 mile for 5 kw
191 mv/m at 1 mile for 1 kw

Night 403 mv/m at 1 mile for 5 kw
180 mv/m at 1 mile for 1 kw

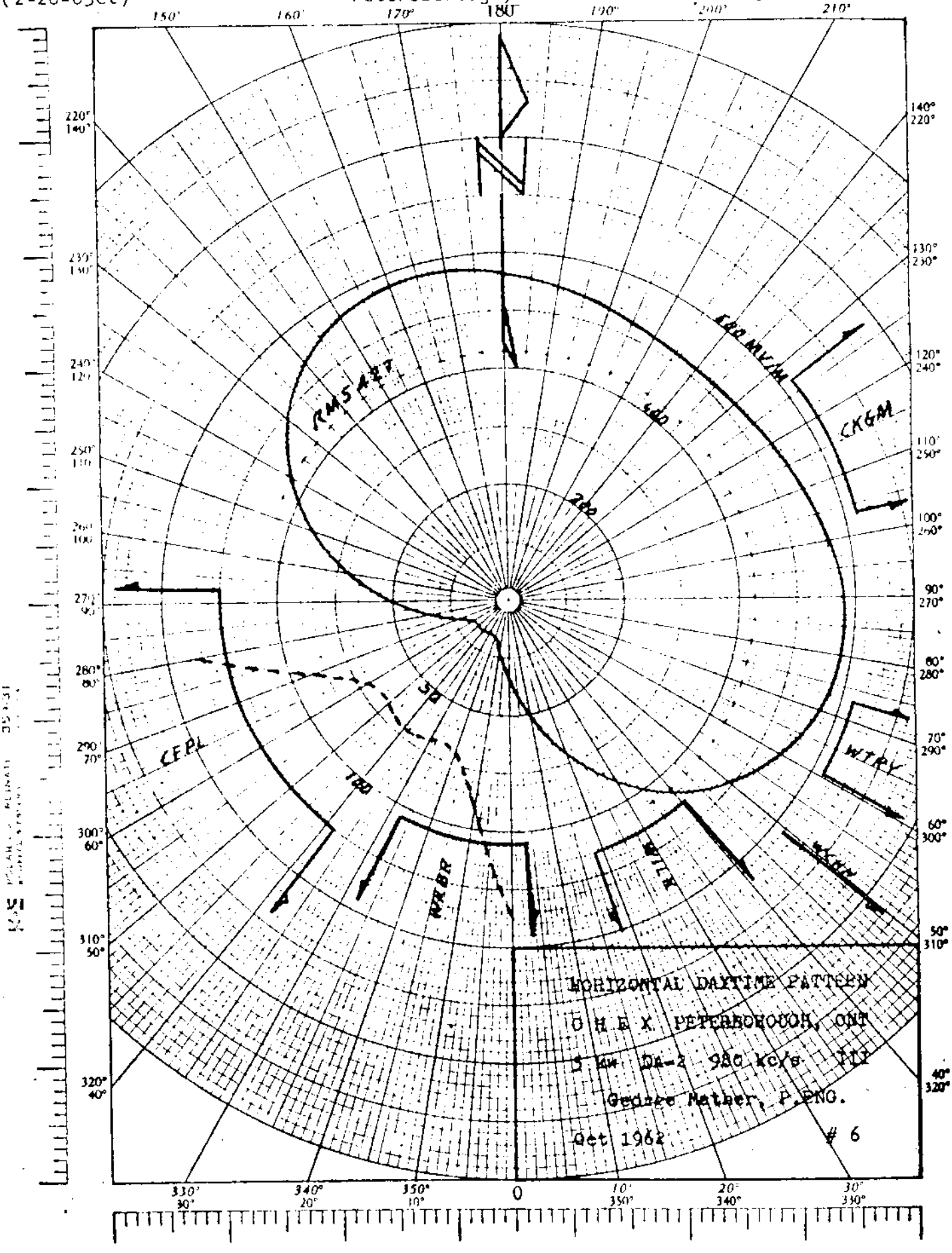
#75

CHEX

Proposed Day
(2-26-63ct)

Station CHEX
Petersborough, Ontario

5kw,DA-2,U,Class III
980 kc



HORIZONTAL DAYTIME PATTERN

C H E X PETERBOROUGH, ONT

5 Kw Da-2 980 Kc/s III

George Nather, P.ENG.

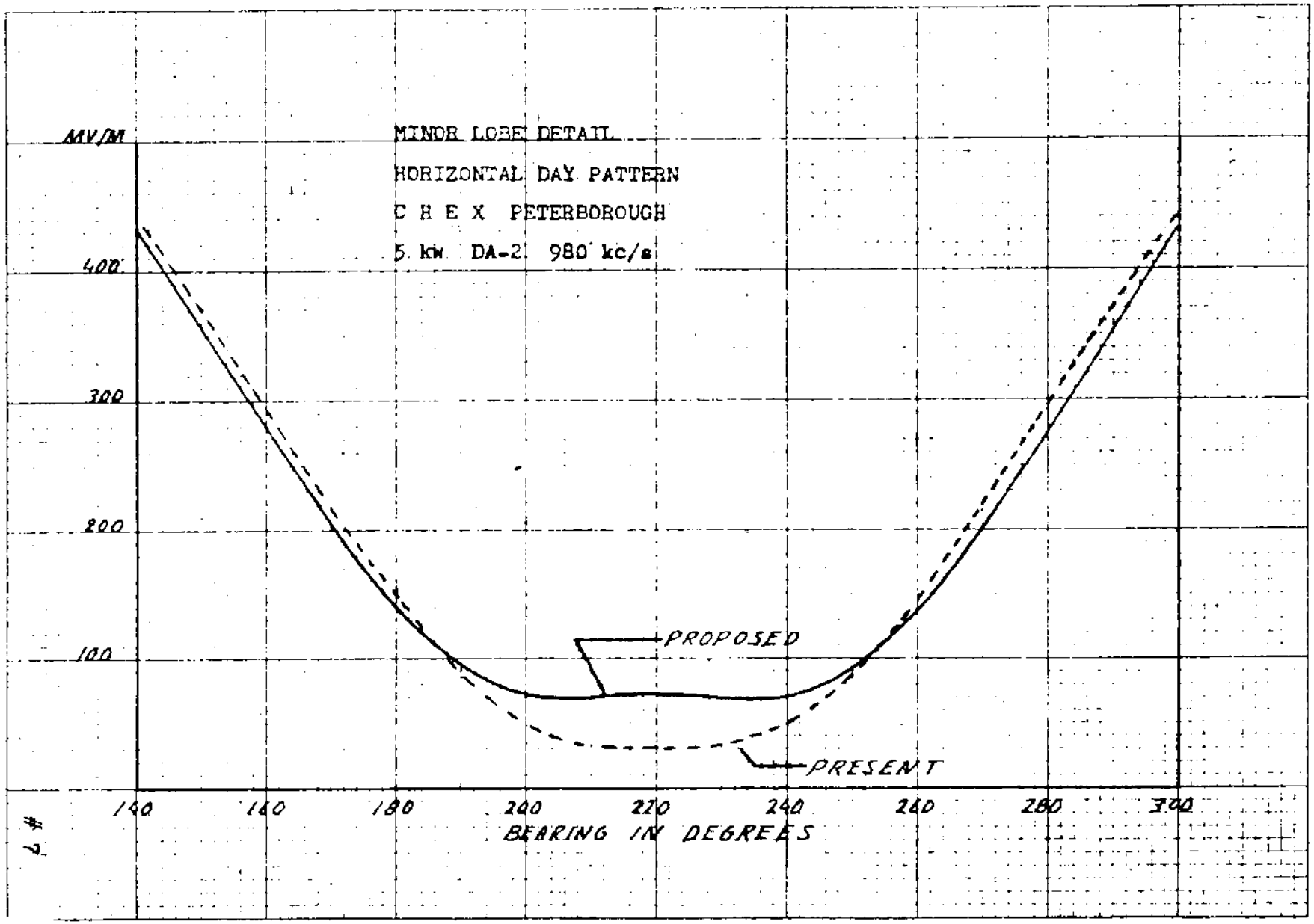
Oct 1962

6

Proposed Day Nulls
(2-26-63ct)

Station CHEX
Petersborough, Ontario

5kw,DA-2,U,Class III
980 kc



DAY PATT.

CHEX
980KC

CKGM

ANTENNA DESCRIPTION SHEET

DIRECTIONAL DA-2

FREQUENCY:	980 kc/s
STATION CALL:	C K G M
LOCATION:	Montreal, Quebec.
POWER:	10,000 watts
CLASS:	III
TIME:	Unlimited

GEOGRAPHICAL COORDINATES: Lat 45°22'05", Lon 73°37'23"

NOTIFICATION REFERENCE: List No. 333

ARRAY CHARACTERISTICS: Six elements, guyed, uniform cross section, base insulated, series feed. Height 226 feet or 81 degrees. No top loading.

ELEMENT		ONE	TWO	THREE	FOUR	FIVE	SIX
spacing		ref	84° 234.4'	168° 468.7'	187.88° 524.4'	124.87° 384.4'	100° 279'
bearing		ref	315°	315°	347.02°	07.92°	50°
Day	R	0.925	2.060	0.990	1.075	2.060	1.070
	ø	.00°	-177°	+09°	-115°	+62°	-124°
Night	R	1.000	1.975	1.000	1.000	1.975	1.000
	ø	00°	-167°	+26°	-91°	+76°	-117°

Ground System: 120 radials per tower, #10 AWG bare, soft copper wire, spaced uniformly, depth approximately 8 inches. Radials bonded along line between towers and bonded to soft copper straps at bases Maximum radial length 402 feet

Predicted RMS: 585 mv/m at 1 mile for 10 kw

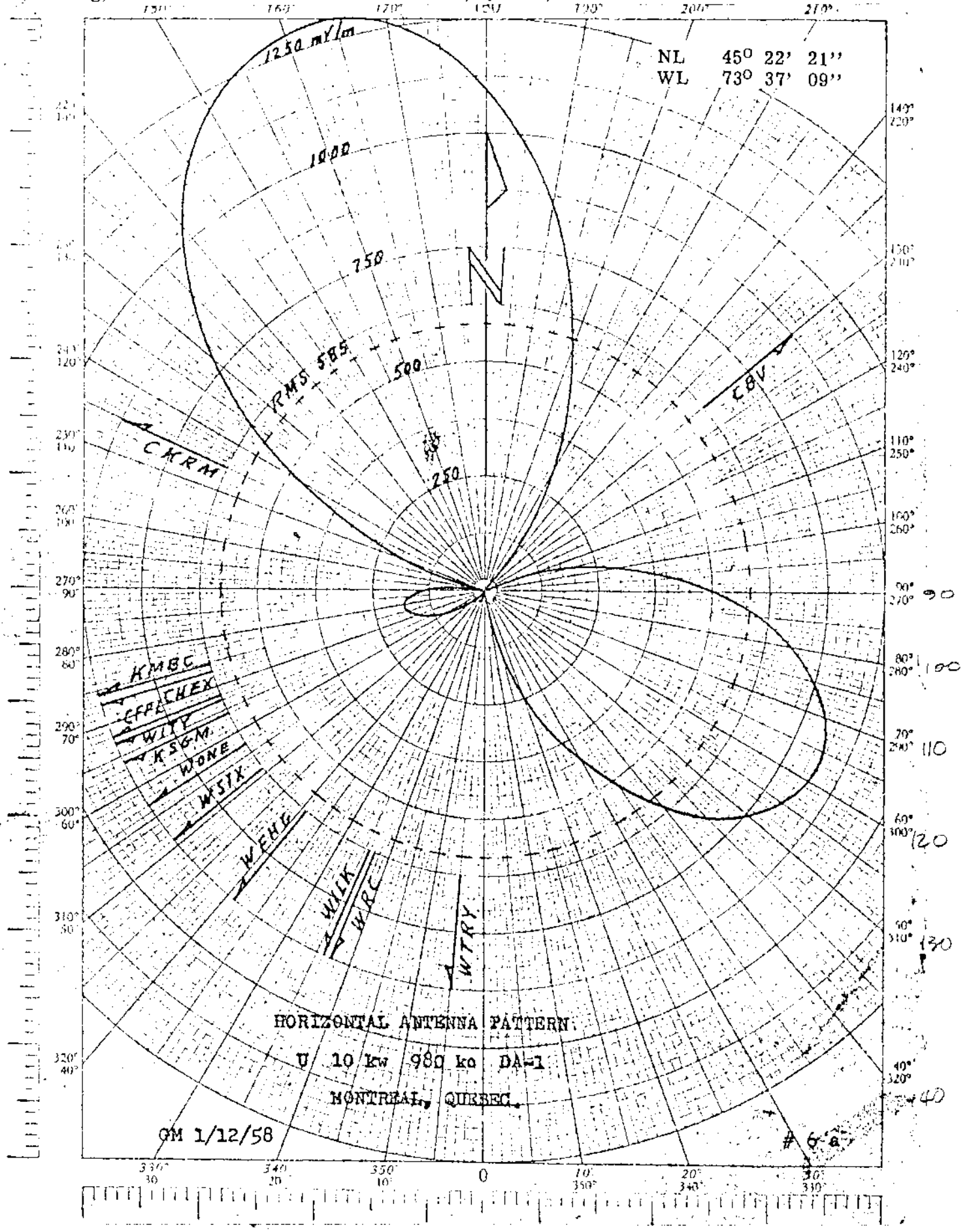
185 mv/m at 1 mile for 1 kw

Montreal, Quebec, Can. CKGM

PROPOSED DAY & NIGHT (2-2-59g)

New Station
Montreal, Quebec, Canada

10kw, DA-1,U, Class III
980 KC



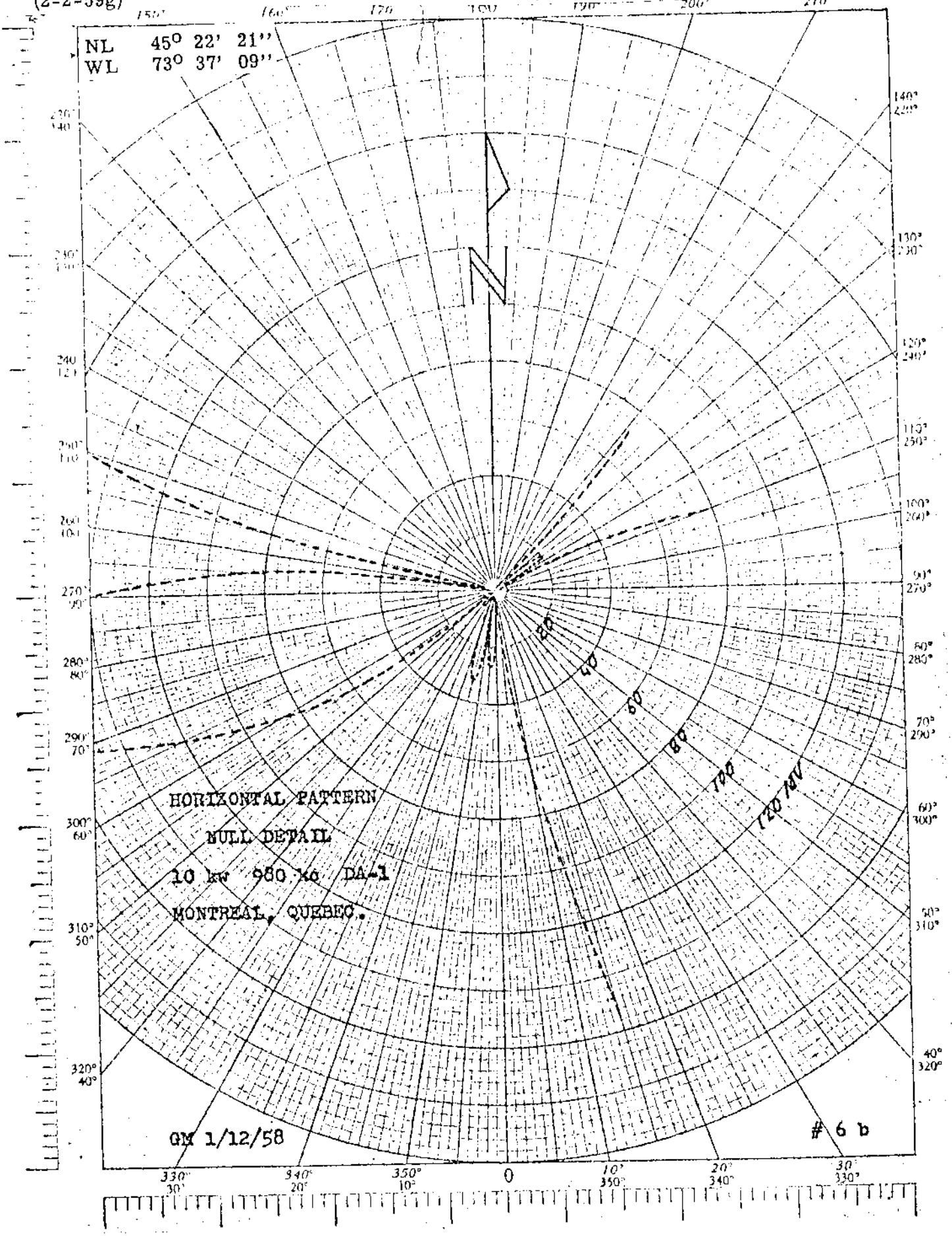
Montreal, Quebec, Can. CKGM

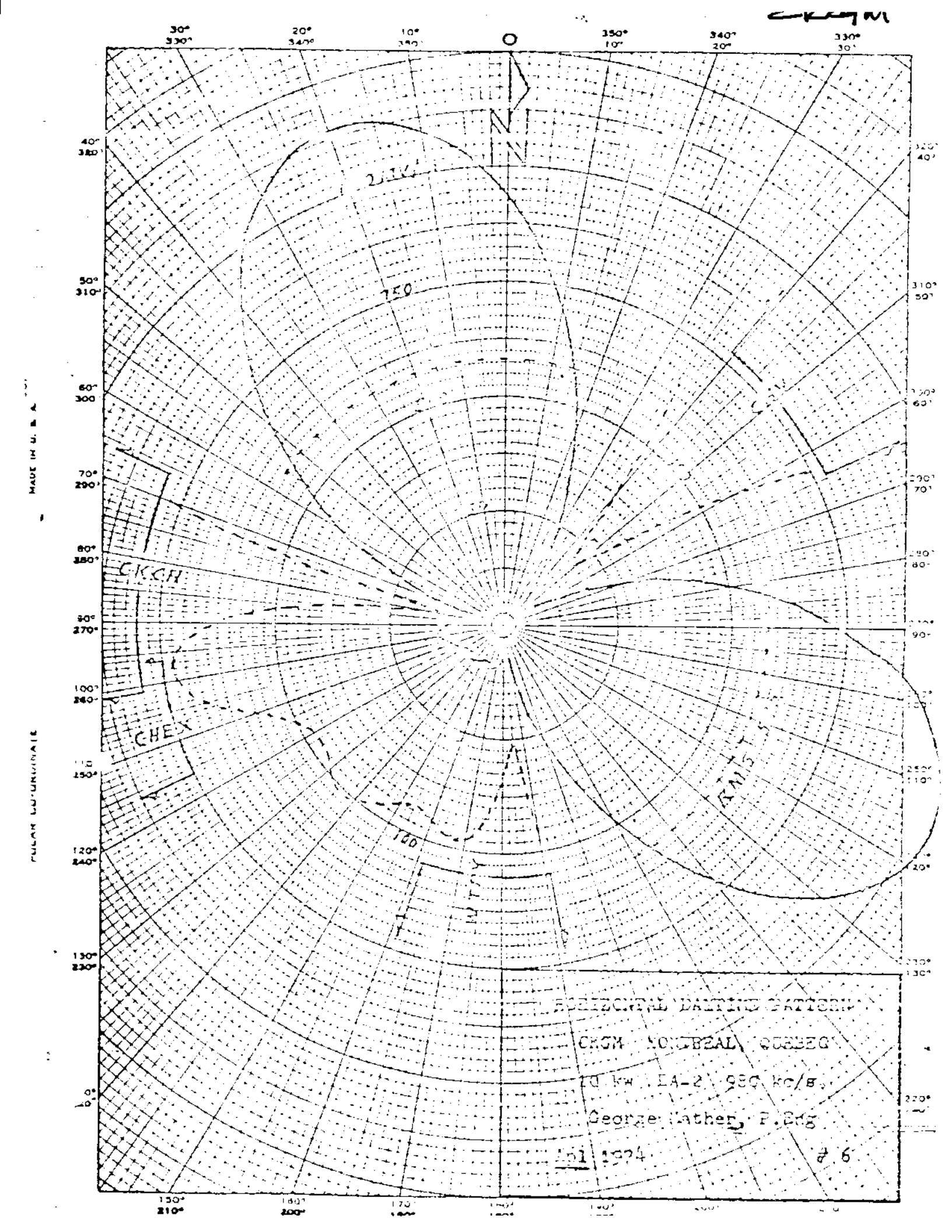
#128

PROPOSED DAY & NIGHT NULLS
(2-2-59g)

New Station
Montreal, Quebec, Canada

10kw, DA-1,U, Class III
980 KC




CKGM
N
250
750
1500
CKCH
CHEX
RADIAL DATING PATTERN
CKGM MONTREAL, QUEBEC
10 kW, EA-2, 980 KC/S
George Luther, P.Eng
Jul 1974
6

CKNW

198

Description Sheet
(5-27-65ct)

Station CKNW
New Westminster, B. C.

50kw,DA-1,U,Class III
980 kc

DESCRIPTION SHEET

Station: CKNW

Main Studio: New Westminster, B.C.

Power: 50 kw

Frequency: 980 kc/s Class III

Notification List No. 198

Date: April 5, 1965

Location: 49° 09' 40" North Latitude
122° 43' 50" West Longitude

Antenna

Mode of Operation: DA-1

Elements: Four uniform cross section guyed steel towers with base insulated and fitted for series feed.

Towers	1(NE)	2(N)	3(S)	4(SW)
Height above insulators	292 (105°)	292 (105°)	292 (105°)	292 (105°)
Overall height	298'	298'	298'	298'
Phasing	0	-111°	-25°	-136°
Field ratio	1.0	0.74	0.6	0.444

Orientation: The towers are located at the vertices of a parallelogram having long sides of 195° (544') oriented on 23.5° True and short side of 90° (251') oriented on 118.5° True.

Ground system: The ground system shall consist of 120 - 0.4 radials about each tower buried approximately 8" to 14" below grade with a 10' x 10' groundmesh about each tower base. The radials shall be shortened between the towers and bonded to transverse straps along the common cords between the towers.

Predicted effective field: 1300 mv/m for 50 kw
184 mv/m for 1 kw

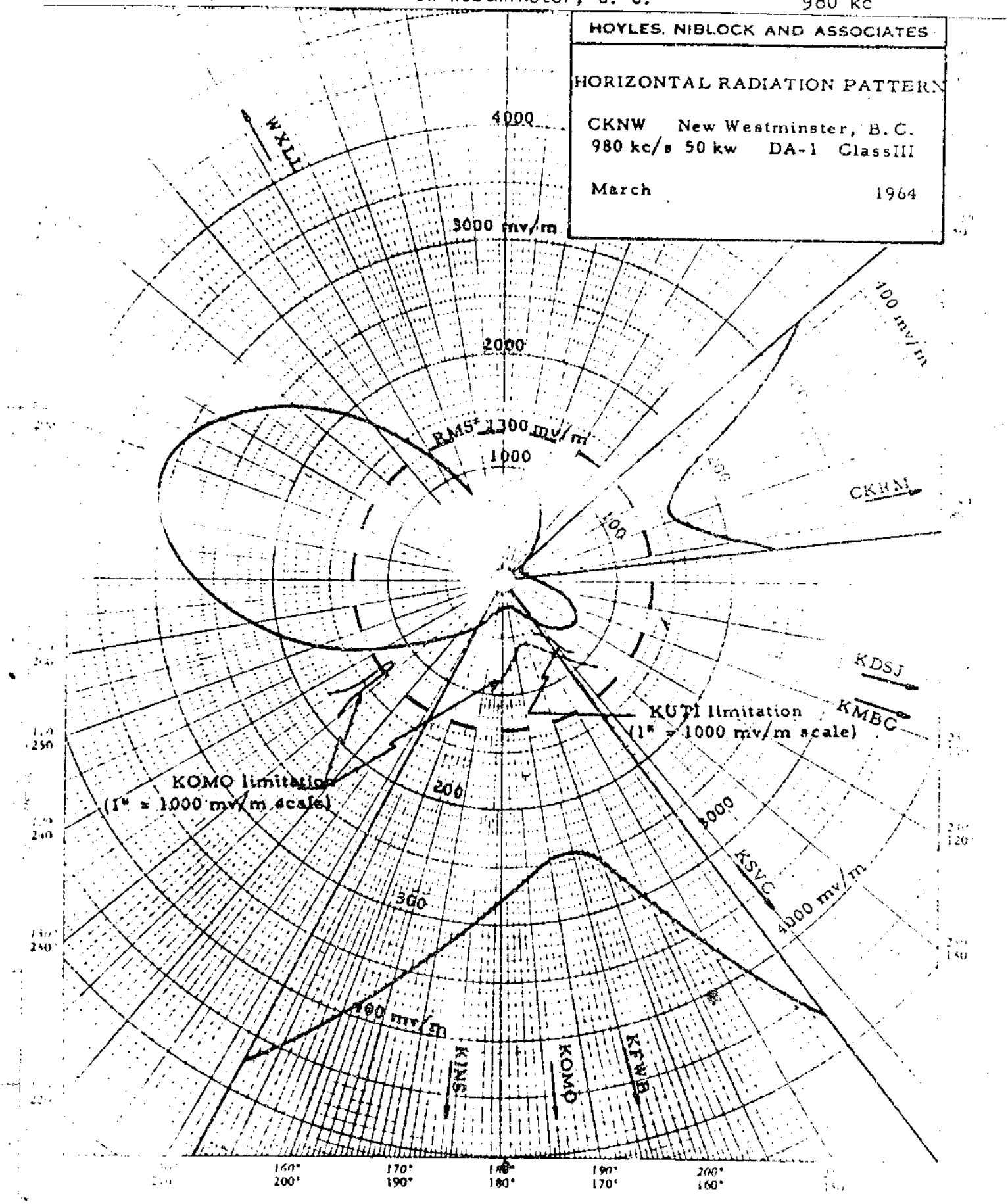
Note: This supplementary data supersedes that notified on Change List #183 dated December 16, 1963.

CKNW

Proposed Day & Night
(5-27-65ct)

Station CKNW
New Westminster, B. C.

50kw, DA-1, U, Class III
980 kc



CKRM

#122

DESCRIPTION SHEET (7-8-58g) | Station CKRM Regina, Saskatchewan | 5kw, 10kw, DA-2,U, Cl III 980 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: C K R M | Main Studio: Regina, Saskatchewan,

Frequency: 980 kcs | Power: 10 kw-D/5 kw-N

Notification List No. 122 | Date: May 27, 1958 | Class: III

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:

North Latitude: 50° 21' 13"

West Longitude: 104° 37' 18"

ANTENNA CHARACTERISTICS

Mode of Operation: DA-2,
Number of elements: Three,
Type of elements: guyed, uniform cross section, base insulated, series feed.

ELEMENT:	NORTH	WEST	SOUTH
Height	250'(90o)	250'(90°)	250'(90°)
Spacing:	Ref.	250'(90°)	419'(150°)
Bearing:	Ref.	278°	208°
Day Ratio:	1.0	0.3	
Day Phasing:	0°	-95°	
Night Ratio:	0.58		1.0
Night Phasing:	-110°		0°

Ground System: 120 radials per tower, #10 AWG bare, soft copper wire, uniformly spaced, depth approximately 8". Radials joined along line between the towers and bonded to a soft copper strap at the tower bases. Maximum radial length 400'.

Predicted R.M.S. Day 600 mv/m at 1 mile for 10 kw.
Night 470 mv/m at 1 mile for 5 kw.

NOTE: Please retain the directional antenna radiation patterns previously notified for this station, and attach to this revised description sheet and daytime pattern. This notification is for the purpose of indicating a change in the daytime operation only.

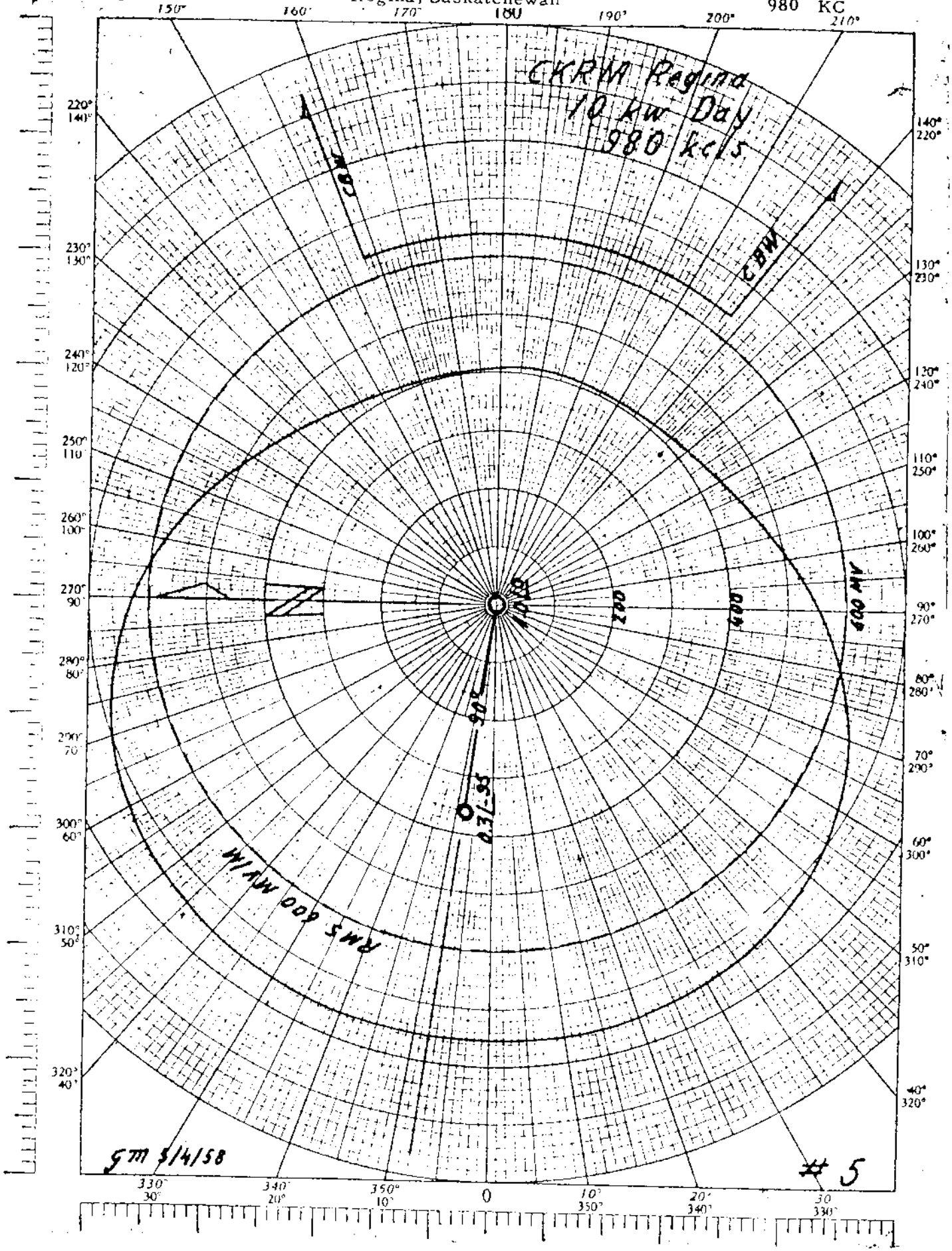
CKRM

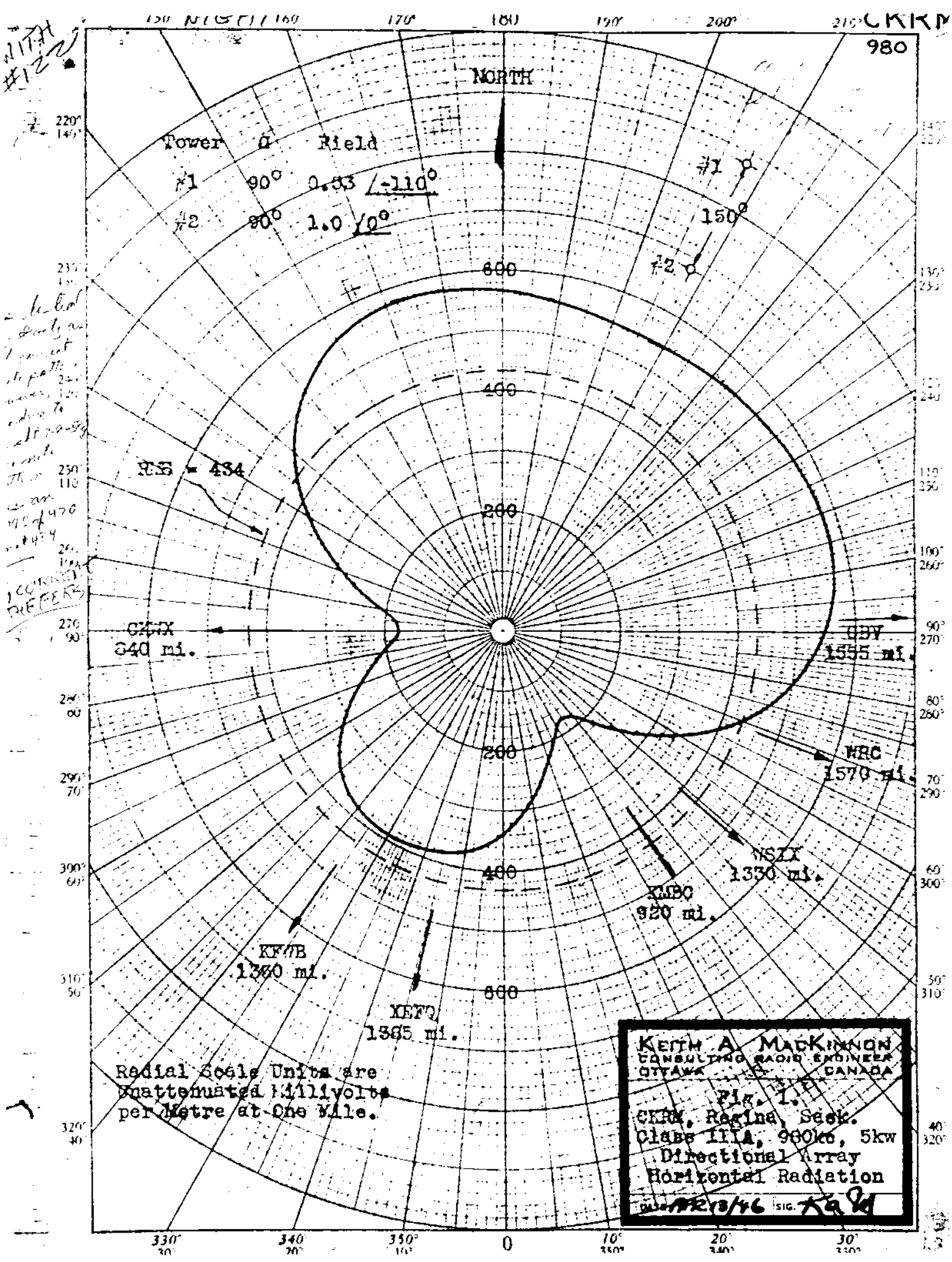
#122

PROPOSED DAY
(7-8-58g)

Station CKRM
Regina, Saskatchewan

5kw, 10kw, DA-2, U, Class III
980 KC



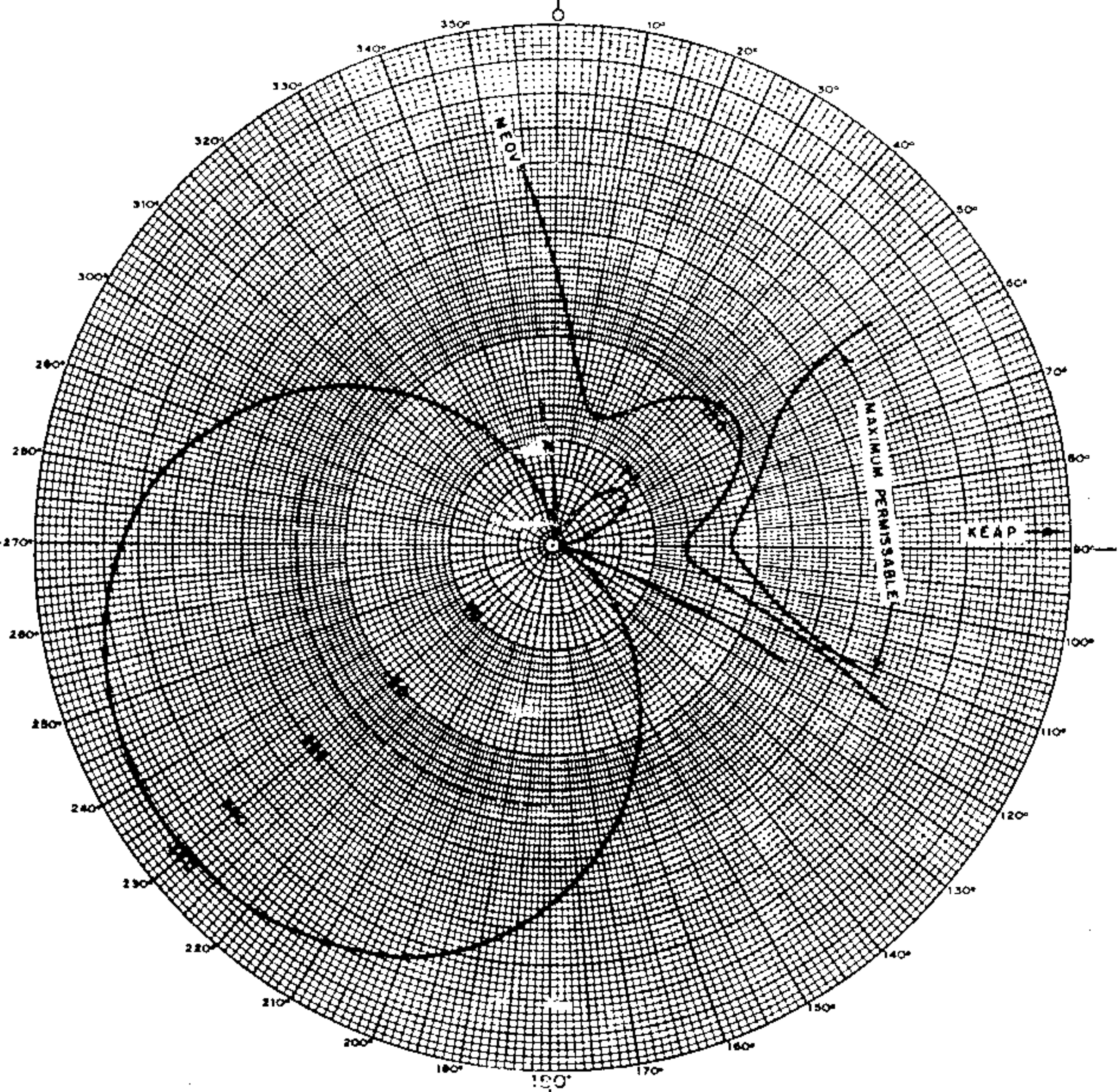

CKRM
980
NORTH
Tower Q Field
#1 90° 0.33 /-110°
#2 90° 1.0 /0°
#1
150°
#2
600
400
200
200
400
600
RSS - 434
CHFX
340 mi.
CBV
1555 mi.
WRC
1570 mi.
WSIX
1330 mi.
KMBC
920 mi.
KFIB
1360 mi.
KEFQ
1365 mi.
Radial Scale Units are
Unattenuated Millivolts
per Metre at One Mile.
KEITH A. MACKINNON
CONSULTING RADIO ENGINEER
OTTAWA CANADA
Fig. 1.
CKRM, Regina, Sask.
Class IIIA, 960kc, 5kw
Directional Array
Horizontal Radiation
SIG.

KCTY

PROPOSED DAY
(7-26-61ct)

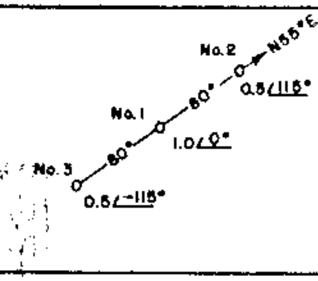
New; Allen C. Bigham, Jr.   1kw, DA-D,D
Salinas, California   980 KC

166- 10/25/61
amend to make changes in DA system - decrease ht & top-load - (new ht is 222/228 overall)
8-28-62 granted CP for new station



---- RMS

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

Tower No.	Electrical Height	True Tower Orientation	Spacing	Phasing	Horizontal Field	Field Ratio	Elev Angle	Elevation RMS Field
1	90°	—	—	0°	189	1.0	0	186
2	90°	N55°E	80°	+115	94.5	0.5	10	
3	90°	N235°E	90°	−115	94.5	0.5	20	
4							30	
5							40	
6							50	
7							60	
8							70	
9							80	
10								

DAYTIME OPERATION ■ NIGHTTIME OPERATION □

STATION DATA

CALL	NEW
FREQUENCY	980 kc
POWER	1.0 kw
TIME OF OPERATION	DAY
TYPE OF OPERATION	DA-D
DAYTIME TOWERS	3
NIGHTTIME TOWERS	--
No. RADIALS PER TOWER	120
LENGTH OF RADIALS	90 - 251 ft
GROUND SCREEN DIMENSION	48' x 48'
LAT.	36° 42' 31.6"
LONG.	121° 36' 46"
SUPERSEDES	
PATTERN No.	060161

A. C. BIGHAM, JR.
SALINAS, CALIF.

GEORGE P. ADAIR ENGINEERING COMPANY — WASHINGTON, D. C.

FIGURE 1

FCC File No. BP-14891
Accepted 6-30-61

Allen C. Bigham, Jr.
Salinas, California   980 KC

KCTY

Measured Day
(8-23-63ct)

Station KCTY
Salinas, California

1kw,DA-D,D
980 kc

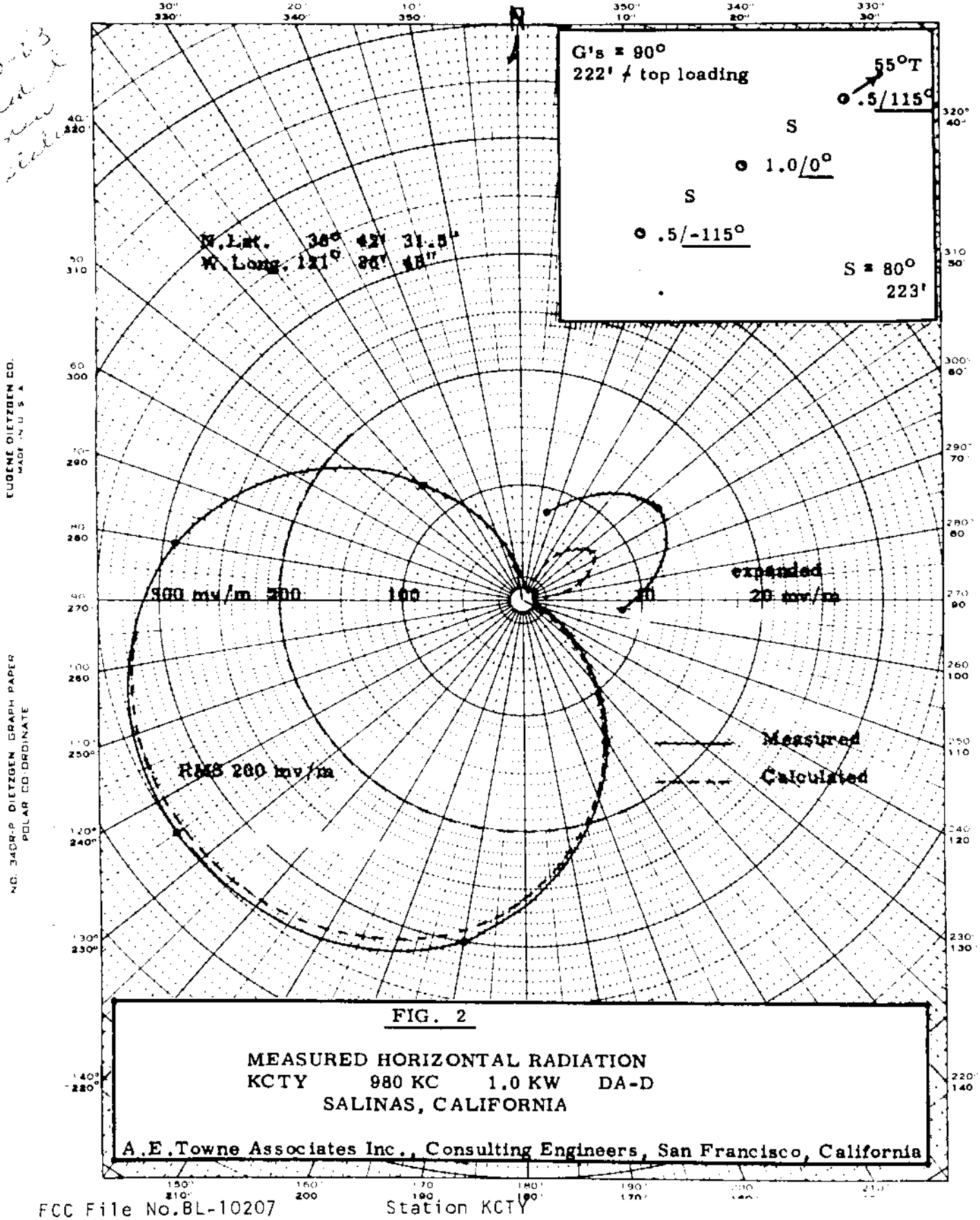


FIG. 2

MEASURED HORIZONTAL RADIATION
KCTY 980 KC 1.0 KW DA-D
SALINAS, CALIFORNIA

A.E.Towne Associates Inc., Consulting Engineers, San Francisco, California

FCC File No.BL-10207
Accepted 8-12-63

Station KCTY
Salinas, California

980 kc

KCTY

Measured Non-DA
(8-23-63ct)

Station KCTY
Salinas, California

1kw,DA-D,D
980 kc

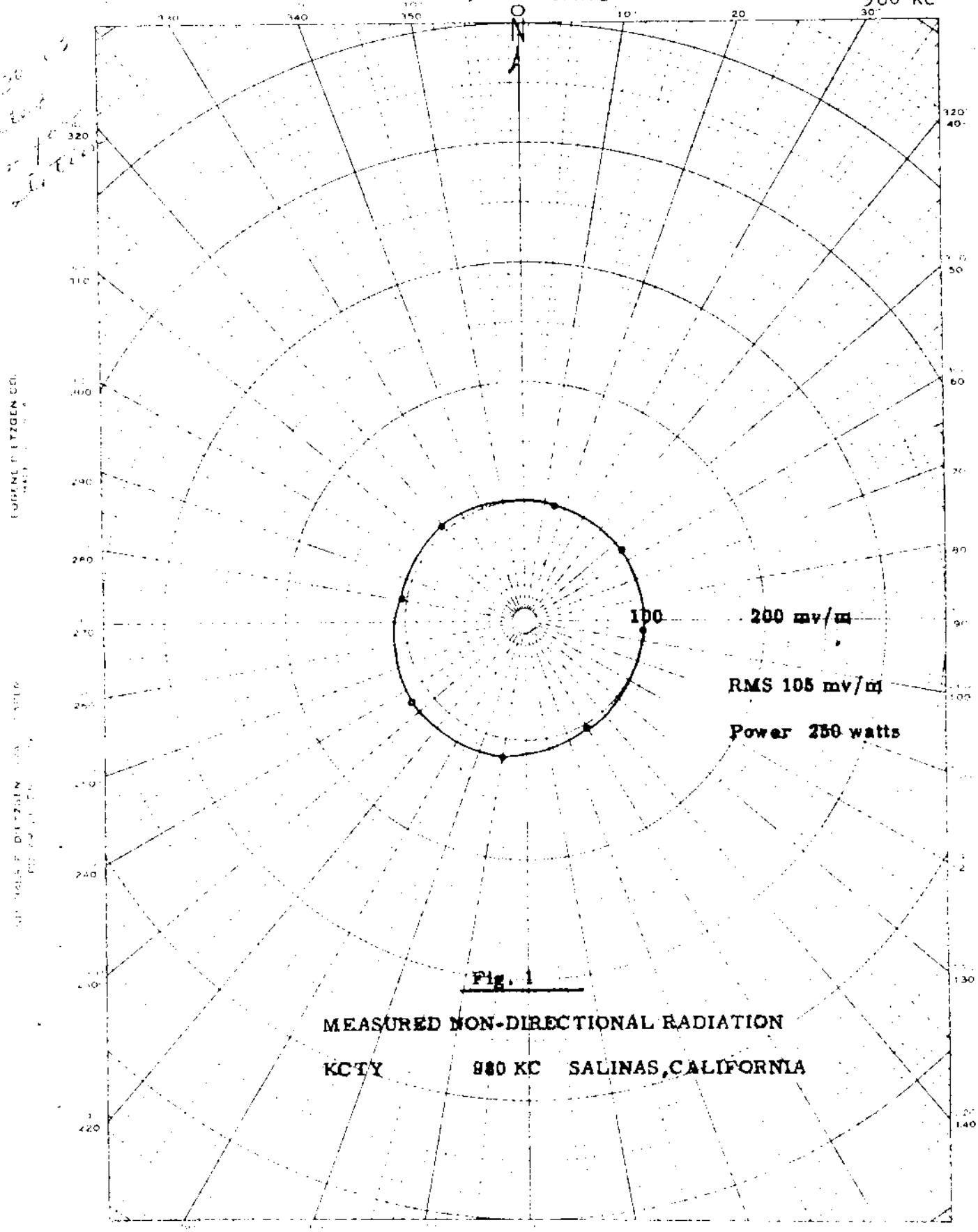


Fig. 1

MEASURED NON-DIRECTIONAL RADIATION

KCTY 980 KC SALINAS, CALIFORNIA

FCC File No.BL-10207
Accepted 8-12-63

Station KCTY
Salinas, California

980 kc

KDSJ

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : KDSJ Main Studio: Deadwood, South Dakota

Frequency : 980 KHz Power : 1 kW Night 5 kW Day

Notification : 1780 Date : Sept. 28, 1979 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude:	44	23	09
West Longitude:	103	40	09

PREDICTED EFFECTIVE DAY FIELD: (omnidirectional 183 mv/m at rated power

---

Note: Please retain the description sheet and directional antenna radiation patterns notified for station in United States Change List Number KDSJ, dated May 3, 1951 and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only correction in the geographical coordinates of the center of the antenna system.

KDSJ

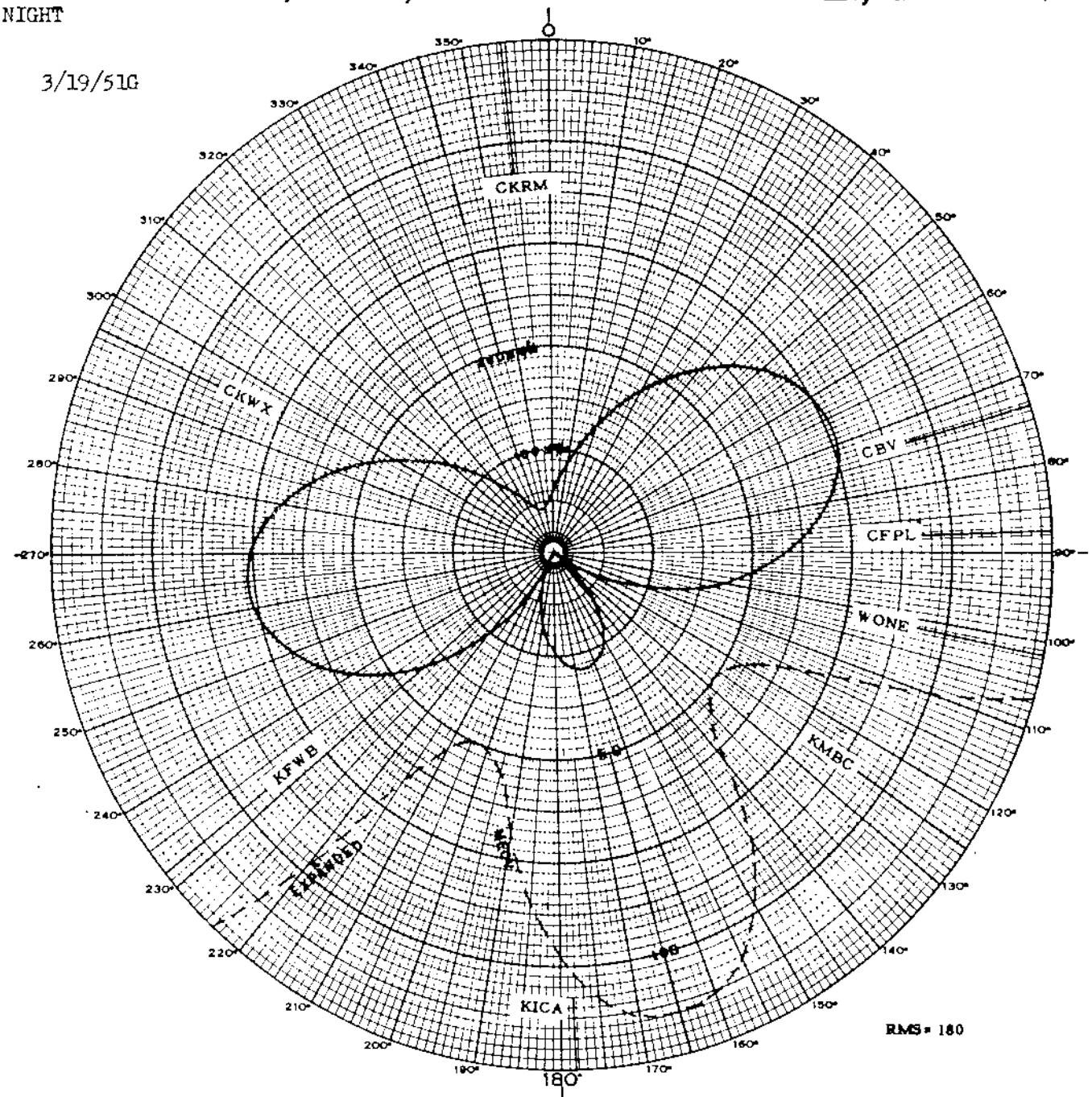
PROPOSED NIGHT

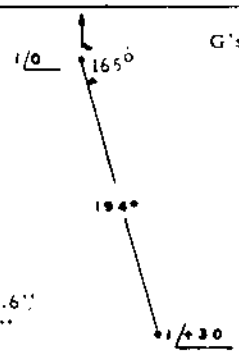
KDSJ, DEADWOOD, S. D.

1kw, DA-N

980 kc

3/19/51G





Coordinates:
LAT 44°22' 56.6"
LONG 103°39' 44"

FIGURE 1a
NIGHT HORIZONTAL RADIATION PATTERN
KDSJ 980kc 1kw U DA-N
The Heart of the Black Hills Station
VE February 1951

E C PAGE
CONSULTING RADIO ENGINEERS
BOND BUILDING
WASHINGTON D. C.

AMENDMENT RECD 3/12/51 BP-7597

KDSJ, Deadwood, S. D. 980 kc

KDSJ

MEASURED NIGHT (7/14/53G)

KDSJ, DEADWOOD, S.D. 1KW, U, DA-N

980 kc

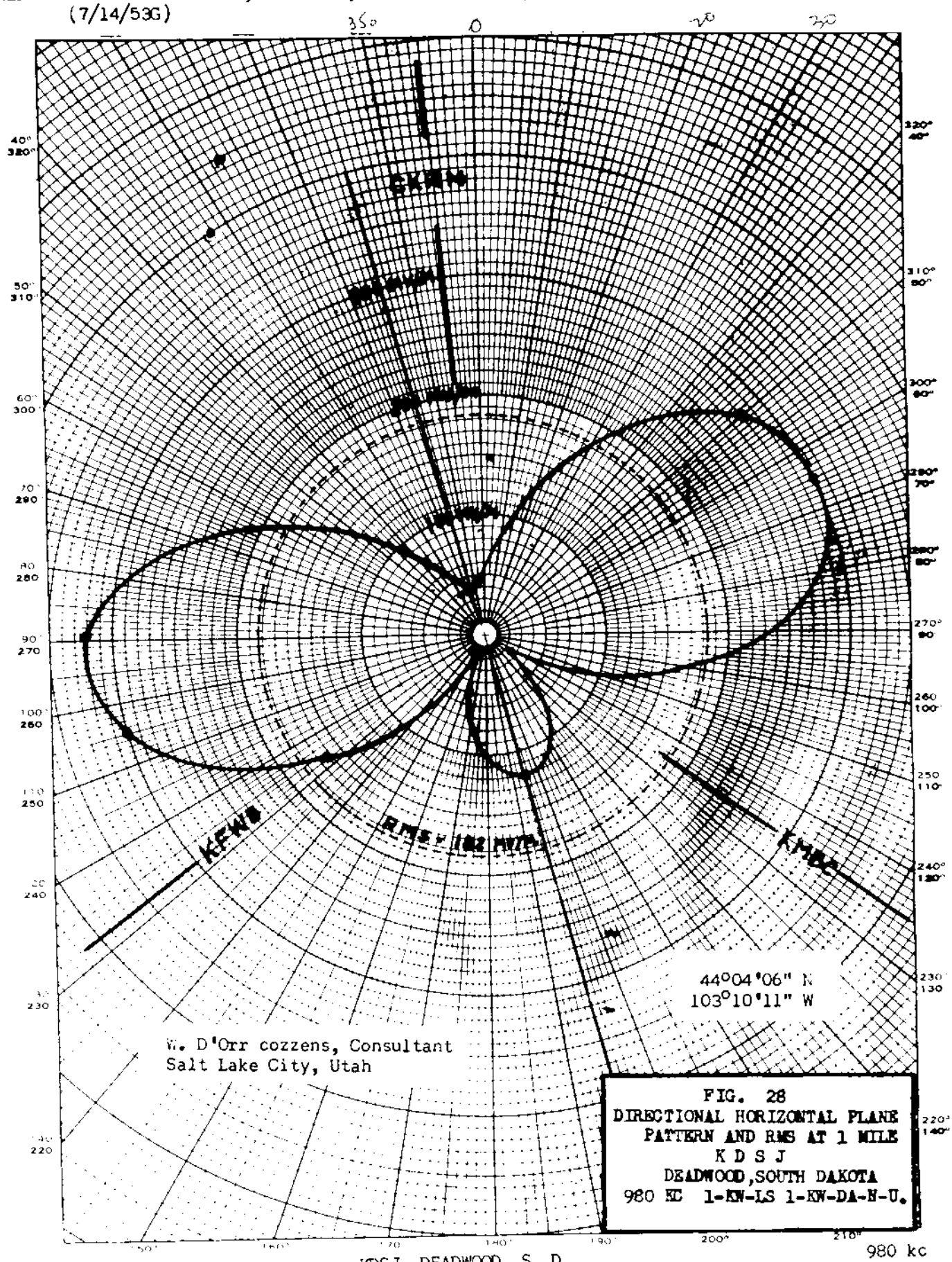


FIG. 28
DIRECTIONAL HORIZONTAL PLANE PATTERN AND RMS AT 1 MILE
K D S J
DEADWOOD, SOUTH DAKOTA
980 KC 1-KW-LS 1-KW-DA-N-U.

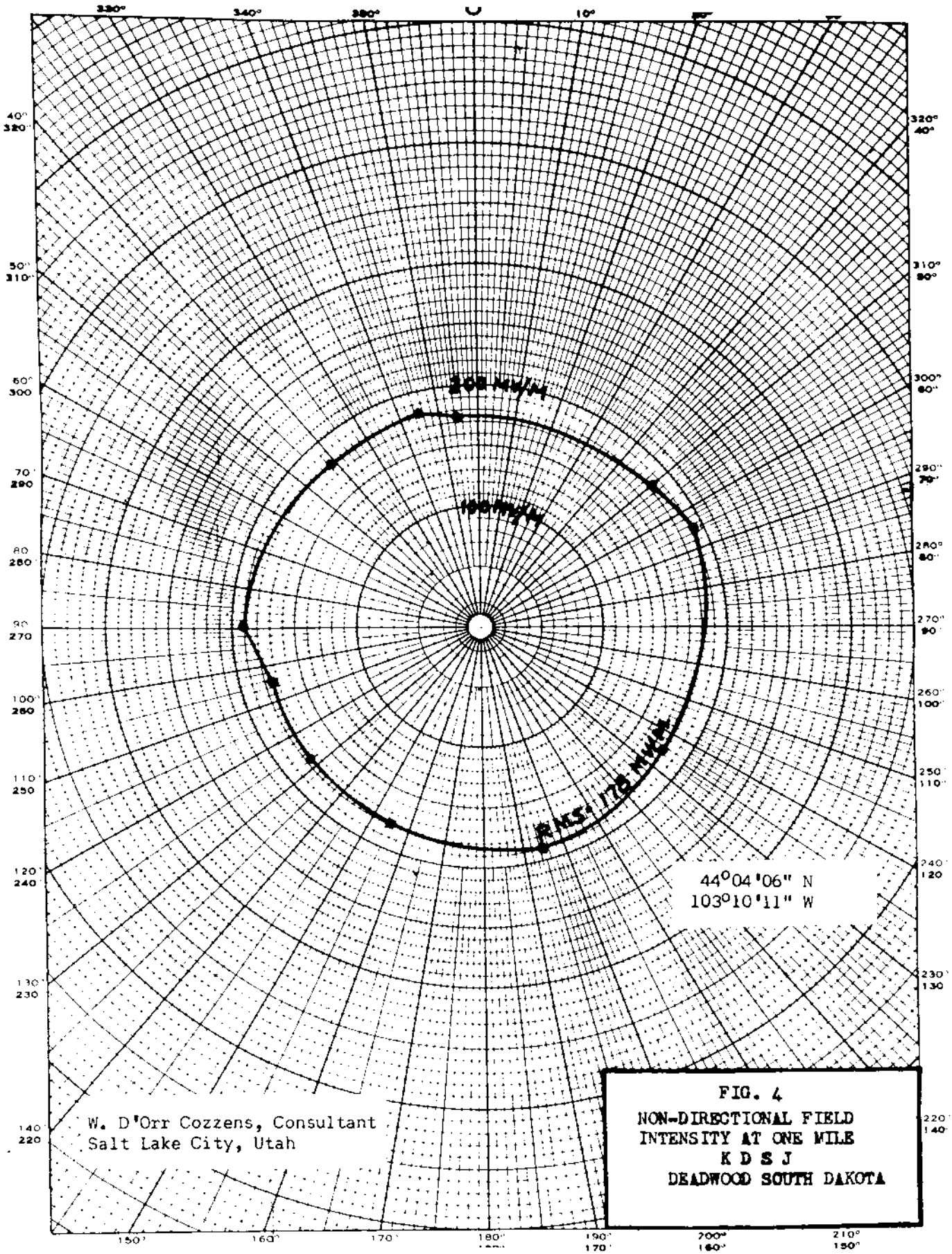
980 kc

KDSJ, DEADWOOD, S. D.

FCC File No. BL-4926

KDSJ

MEASURED DAY (7/14/53G) KDSJ, DEADWOOD, S. D. 1KW, U, DA-N 980 kc

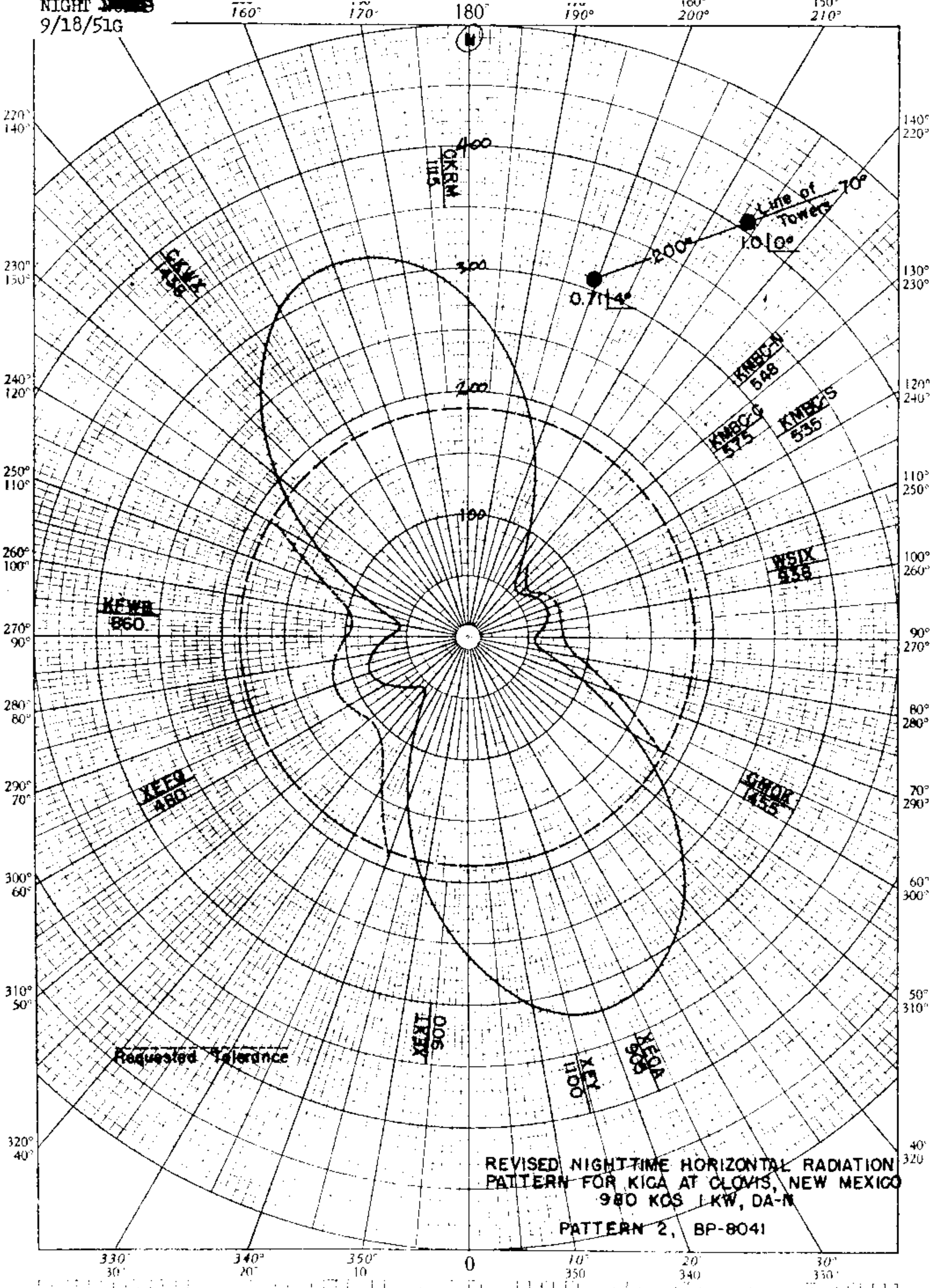


FCC File No. BL-4926 KDSJ, DEADWOOD, S. D. 980 kc

980KC | KICA

PROPOSED NIGHT [redacted] 9/18/51G

KICA, CLOVIS, N. MEX. 1 KW, U, DA-N

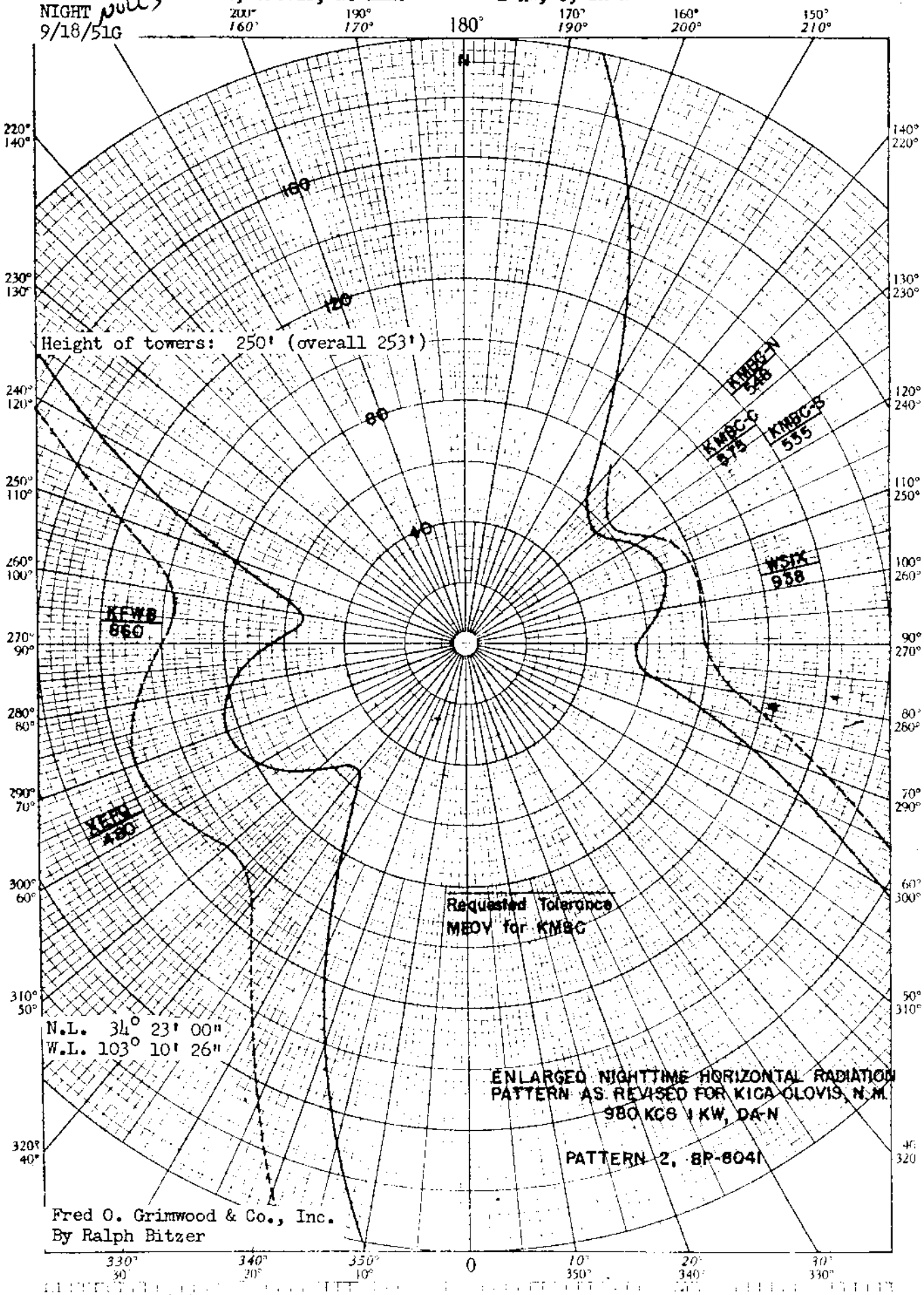


KICA, CLOVIS, NEW MEXICO 980 KC

980KC KICA

PROPOSED NIGHT pull 9/18/51G

KICA, CLOVIS, N. MEX. 1 KW, U, DA-N



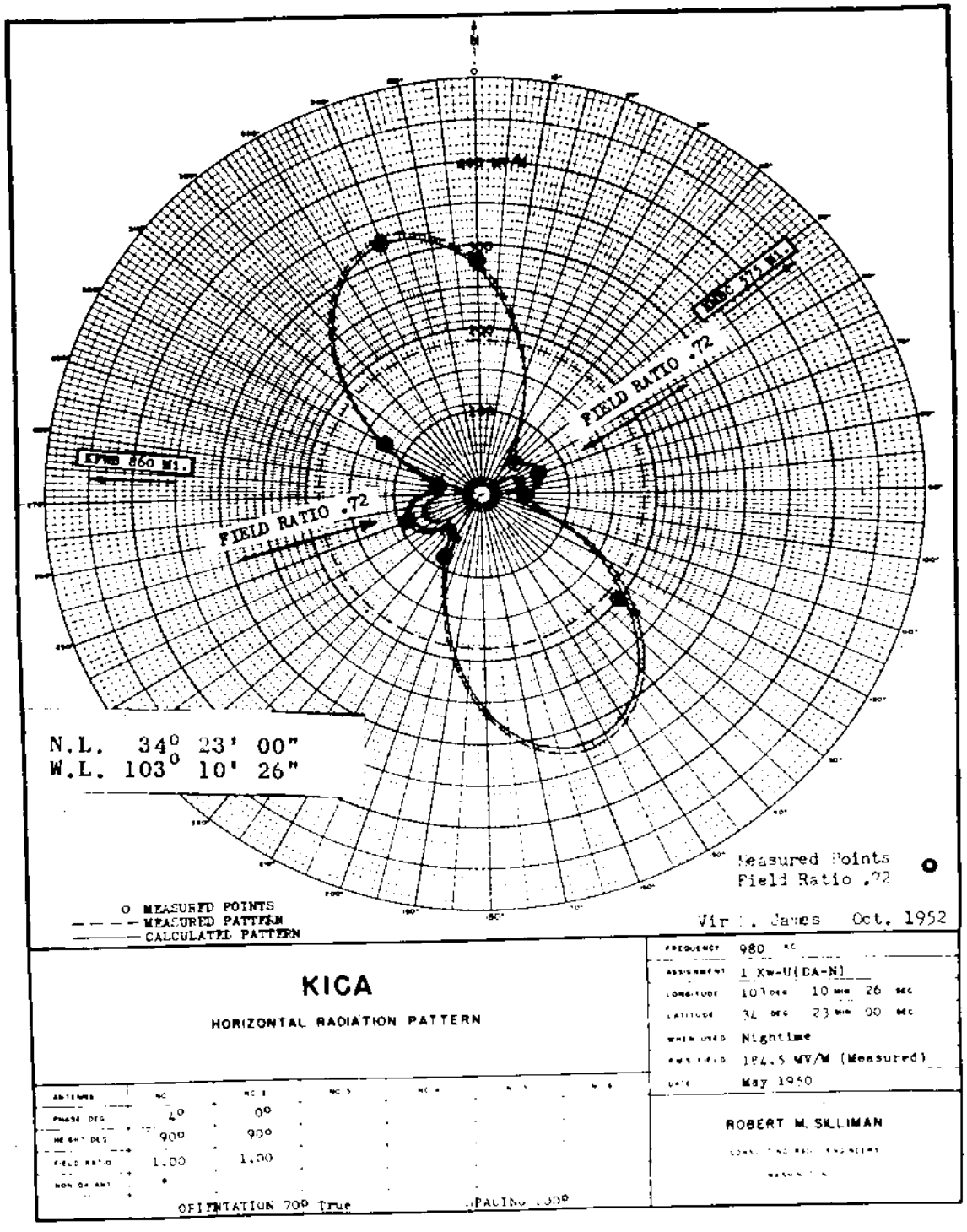
Fred O. Grimwood & Co., Inc.
By Ralph Bitzer

APPL RECD 8/6/51 BP-8041 KICA, CLOVIS, NEW MEXICO 980 KC

KICA

MEASURED NIGHT — KICA, CLOVIS, N. MEX. — 1 KA, U, DA-N
12/9/52G

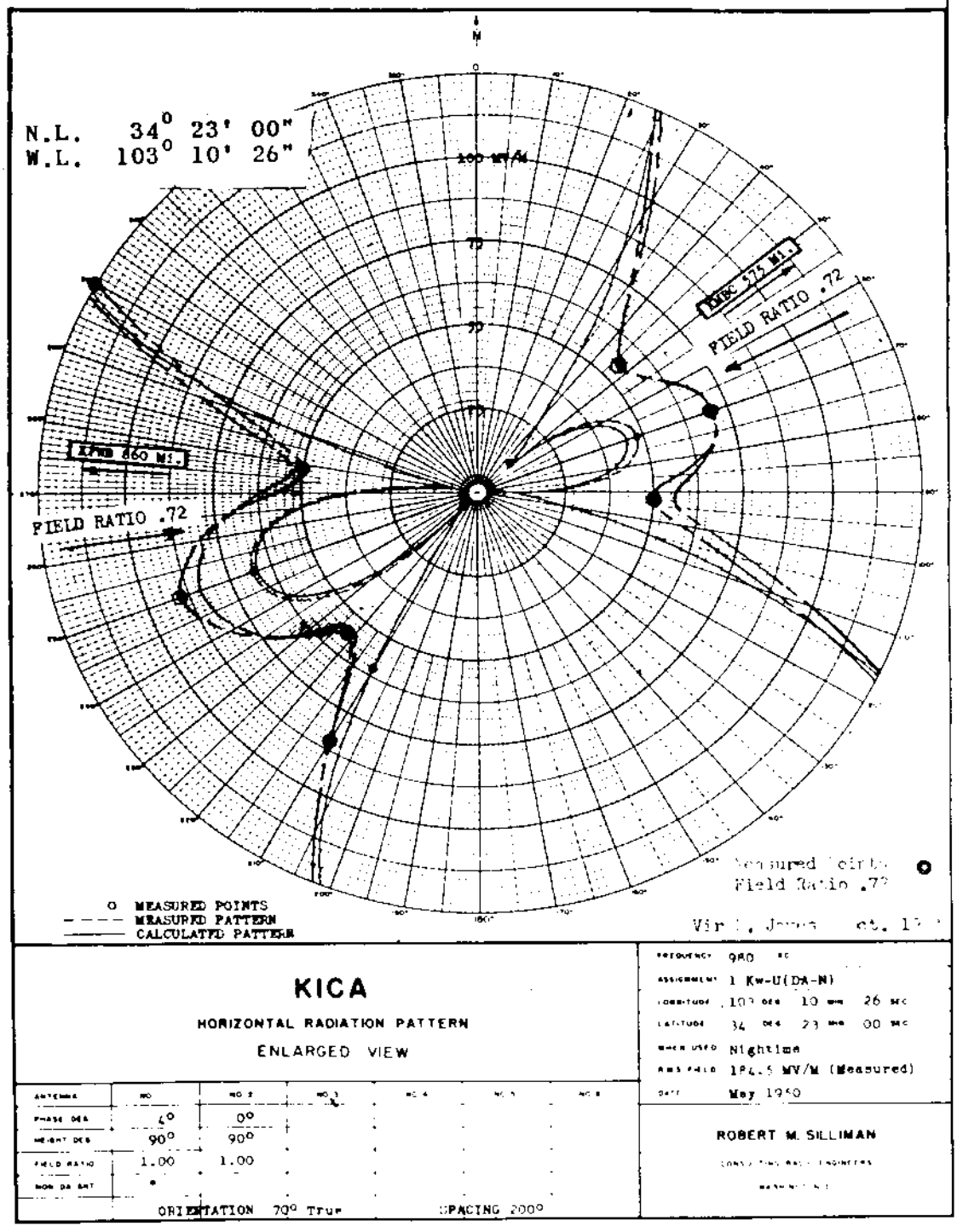
980 KC



RECD FCC 10/26/52 ACC 11/19/52 BL-4824 KICA, CLOVIS, N. MEX. 980 KC

KICA

MEASURED KICA, CLOVIS, N. MEX. 1 KW, U, DA-N 980 KC
NIGHT NULLS 12/9/52G



granted CP 4/23/57
for change in directional
antenna system (tower array)

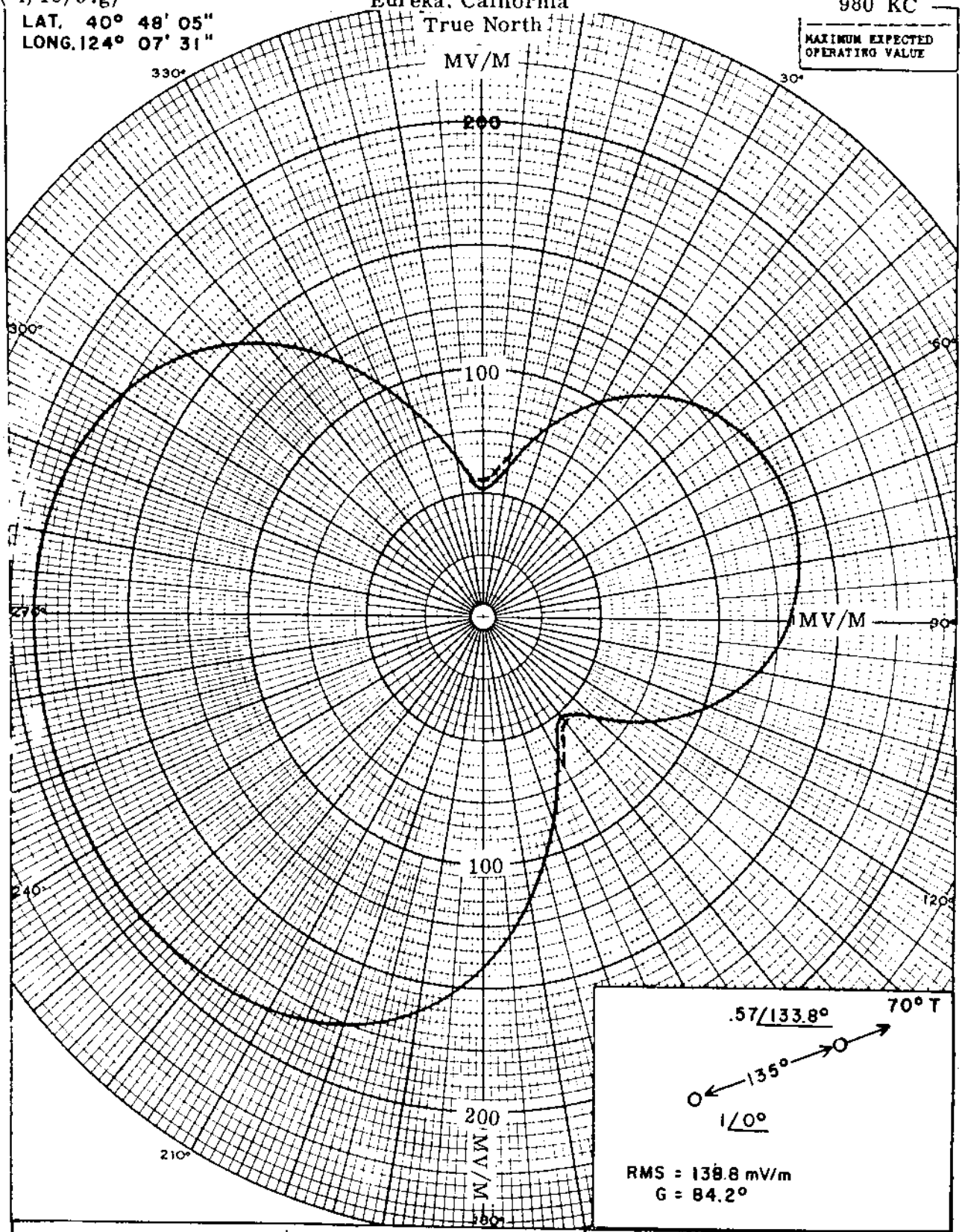
~~KHUM~~ KINS

PROPOSED NIGHT
(4/16/57g)

LAT. 40° 48' 05"
LONG. 124° 07' 31"

Station KHUM
Eureka, California

500w, 5kw-LS, DA-N, U
980 KC



COMMERCIAL RADIO EQUIPMENT CO.
RADIO ENGINEERING CONSULTANTS
KANSAS CITY WASHINGTON, D. C.

PATTERN: PROPOSED NIGHTTIME
FOR: KHUM, EUREKA, CALIF.
POWER: 500 W FREQ: 980 KC
DATE: 1-28-57

FCC File No. BP-11.181
Accepted 4/3/57

KHUM
Eureka, California

980 KC

~~KHUM~~
KINS

MEASURED NIGHT (9/25/57g) | Station KHUM Eureka, California | 500w, DA-N, U 980 KC

Granted license 11/22/57 for change of DA-N

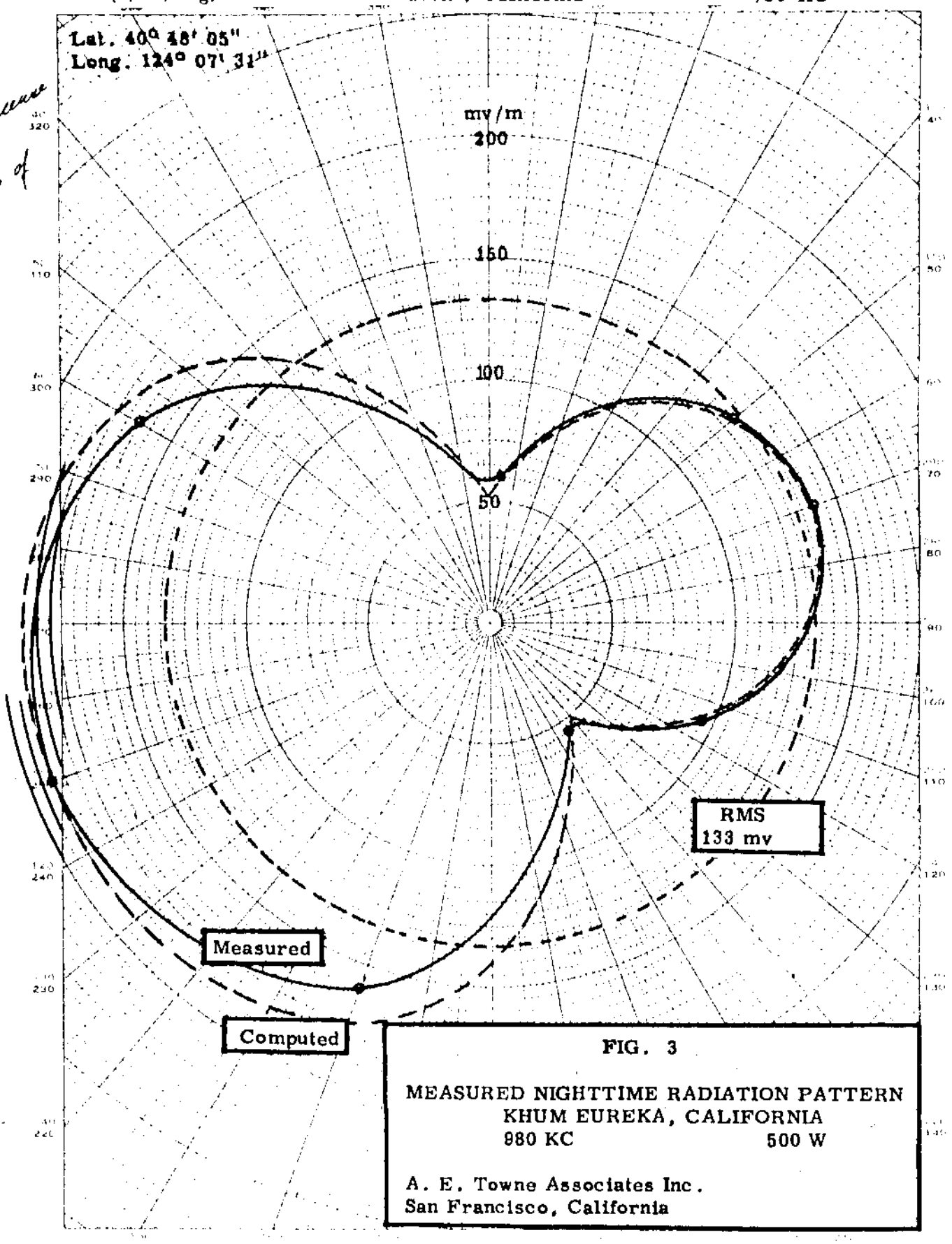


FIG. 3

MEASURED NIGHTTIME RADIATION PATTERN
KHUM EUREKA, CALIFORNIA
980 KC 500 W

A. E. Towne Associates Inc.
San Francisco, California

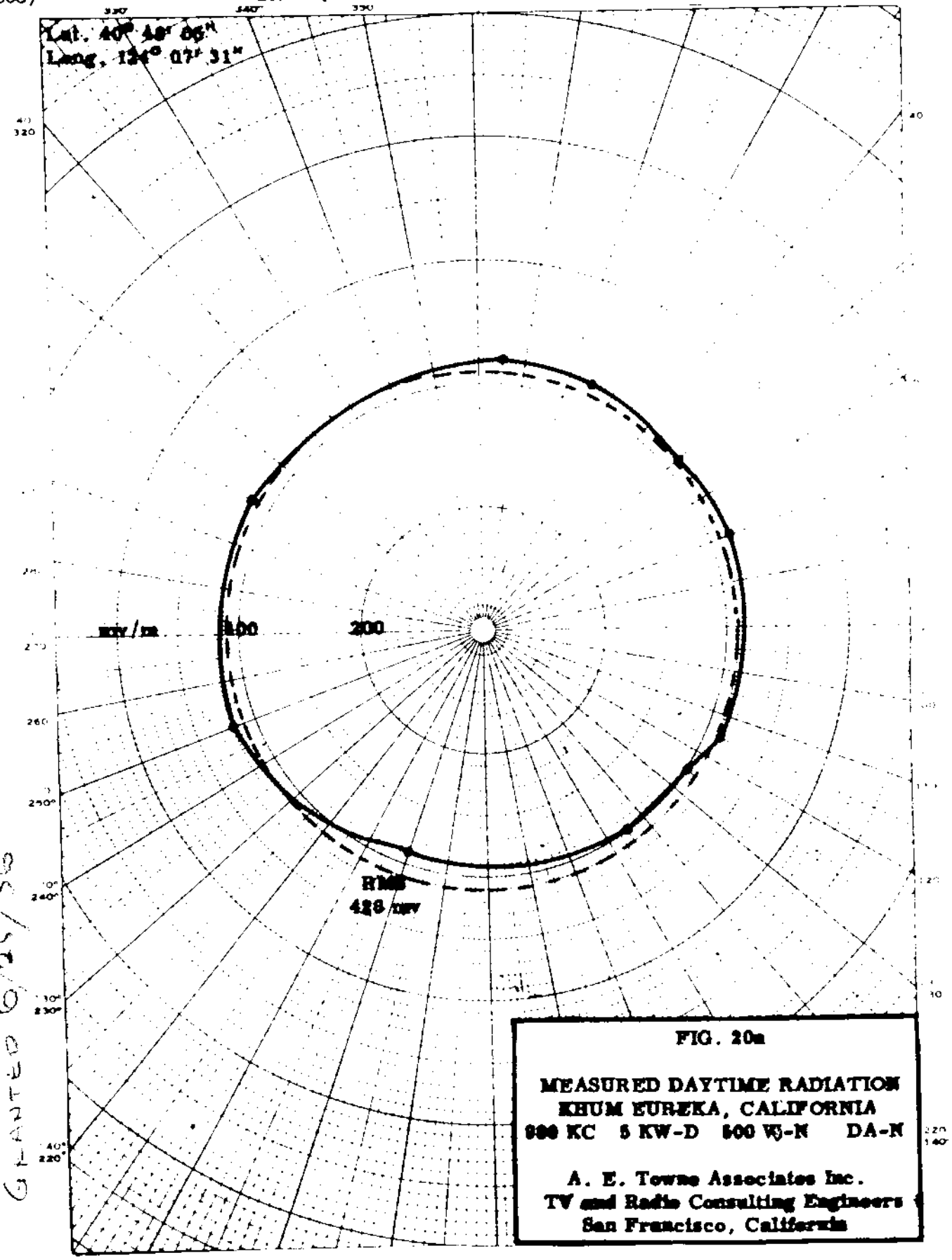
KHUM KINS

MEASURED NON-DIRECTIONAL (5-1-56G)

STATION KHUM
EUREKA, CALIFORNIA

500W-N, 5KW-D
DA-N, U

980 KC



GRANTED 6/25/56

FIG. 20a

MEASURED DAYTIME RADIATION
KHUM EUREKA, CALIFORNIA
980 KC 5 KW-D 500 W-N DA-N

A. E. Towne Associates Inc.
TV and Radio Consulting Engineers
San Francisco, California

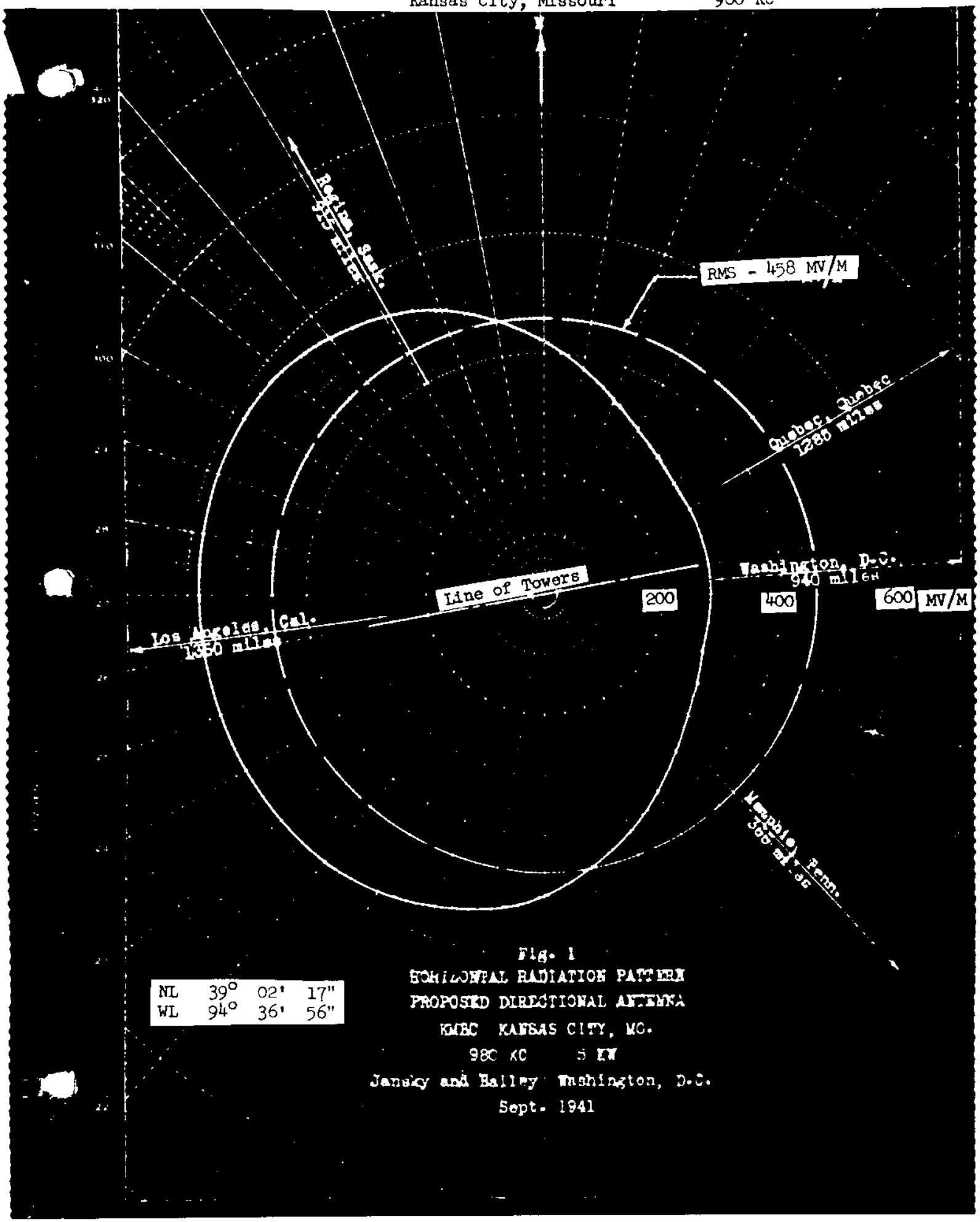
FILE NO. BL-6119

ACCEPTED 4-26-56 FCC

KHUM, Eureka, Calif.

980 KC

PROPOSED NIGHT | Station KMBC, Kansas City, Missouri | 5kw, DA-N,U, 980 KC | KMBZ ~~KMBC~~



NL	39°	02'	17"
WL	94°	36'	56"

Fig. 1
HORIZONTAL RADIATION PATTERN
PROPOSED DIRECTIONAL ANTENNA
KMBC KANSAS CITY, MO.
980 KC 5 KW
Jansky and Bailey Washington, D.C.
Sept. 1941

KTBC ~~KMBC~~ 980 KC

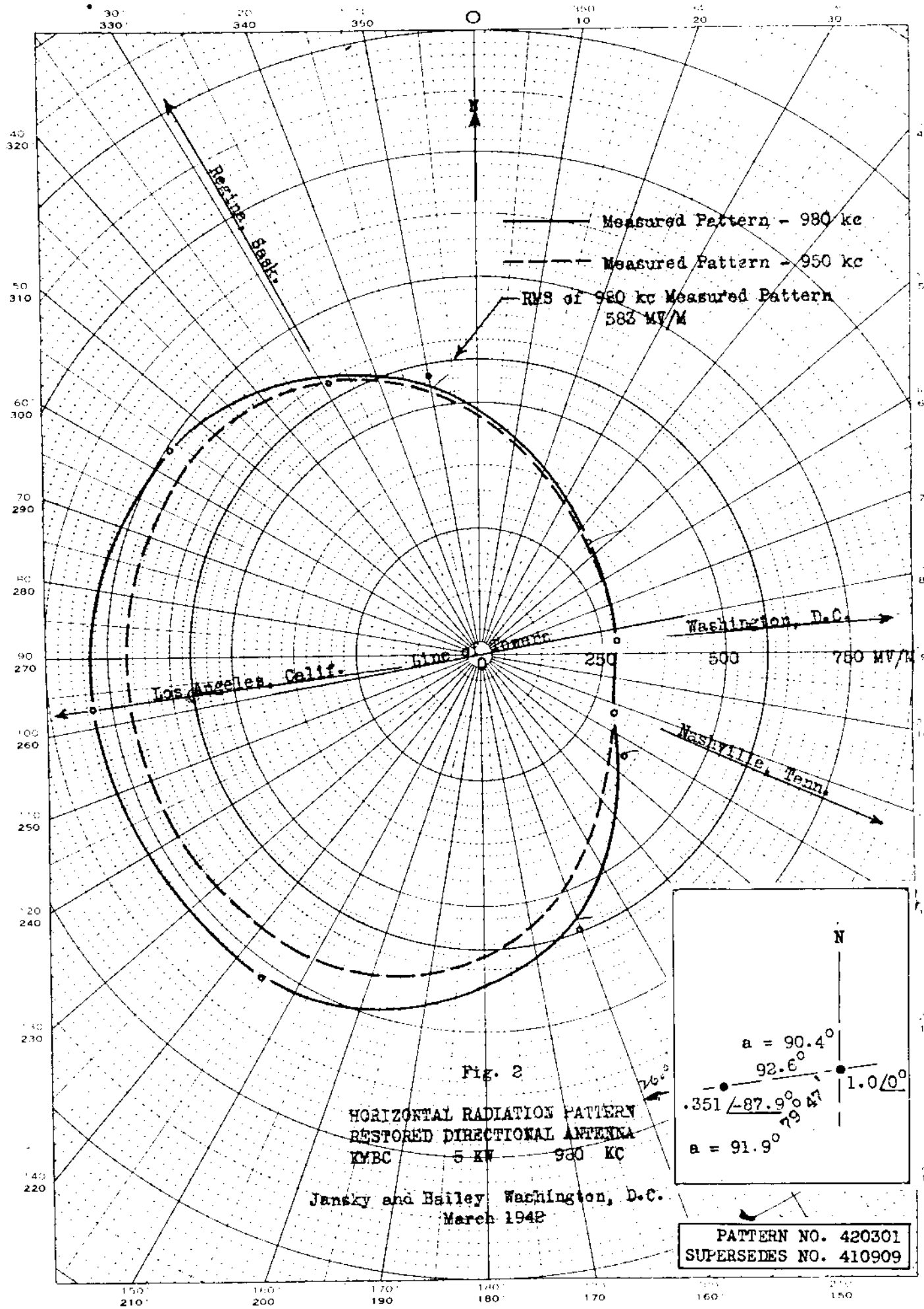


Fig. 2

HORIZONTAL RADIATION PATTERN
RESTORED DIRECTIONAL ANTENNA
KMBC 5 KW 980 KC

Jansky and Bailey, Washington, D.C.
March 1942

PATTERN NO. 420301
SUPERSEDES NO. 410909

KSGM

PROPOSED NIGHT
(9-20-61 ct.)

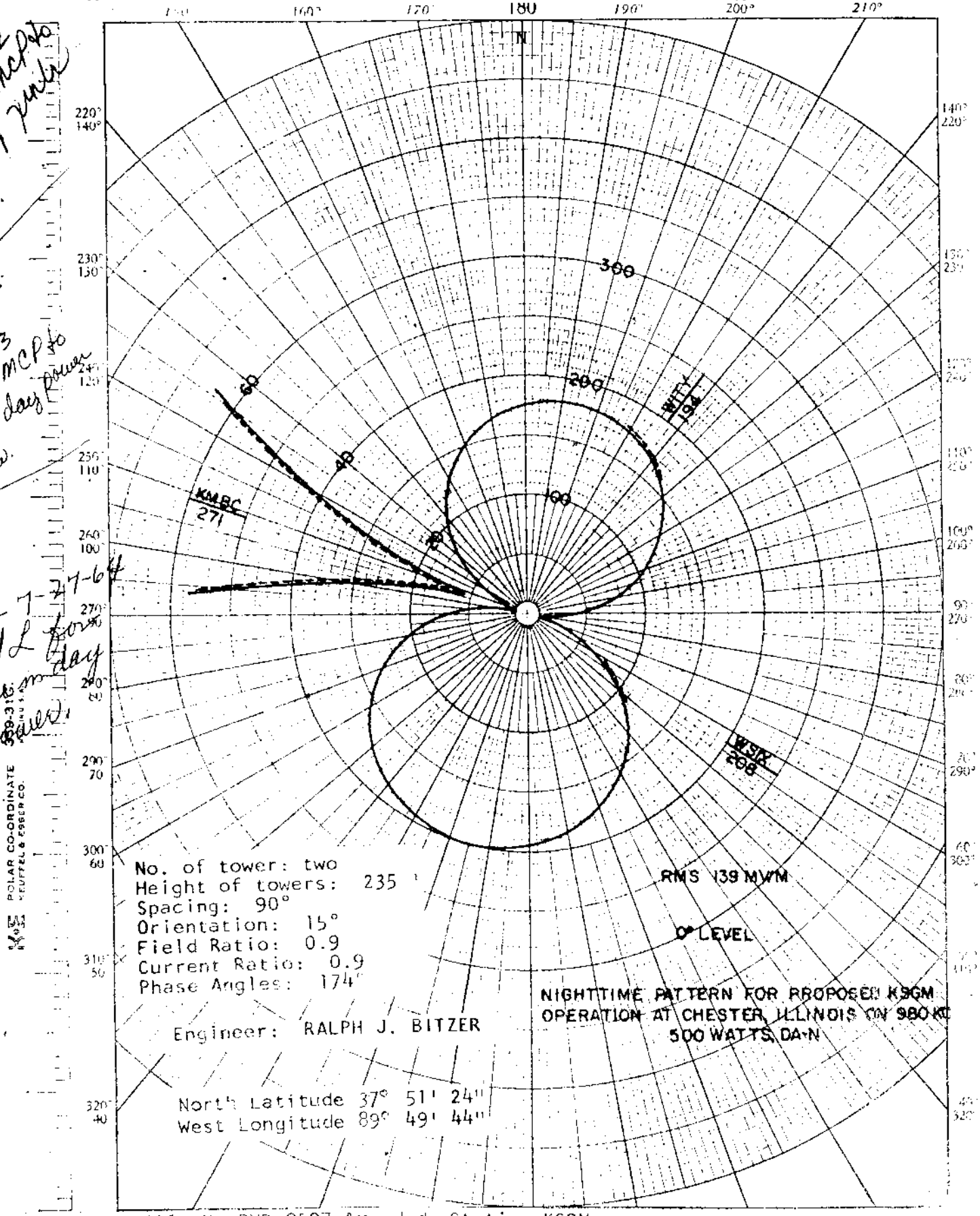
Station KSGM
Chester, Illinois

500w, DA-N, U
980 kc

1-26-62 granted MCP to change ✓ point of location. over

6-18-63 granted MCP to increase day power to 1 kw.

+200-7-27-64 granted L for increase in day (ND) power



POLAR CO-ORDINATE
KEUFFEL & ESSER CO.

No. of tower: two
Height of towers: 235'
Spacing: 90°
Orientation: 15°
Field Ratio: 0.9
Current Ratio: 0.9
Phase Angles: 174°

Engineer: RALPH J. BITZER

North Latitude 37° 51' 24"
West Longitude 89° 49' 44"

RMS 139 MVM

0° LEVEL

NIGHTTIME PATTERN FOR PROPOSED KSGM OPERATION AT CHESTER, ILLINOIS ON 980 KC 500 WATTS, DA-N

FCC File No. BMP-9597 Amended
Accepted 8-21-61

Station KSGM
Chester, Illinois

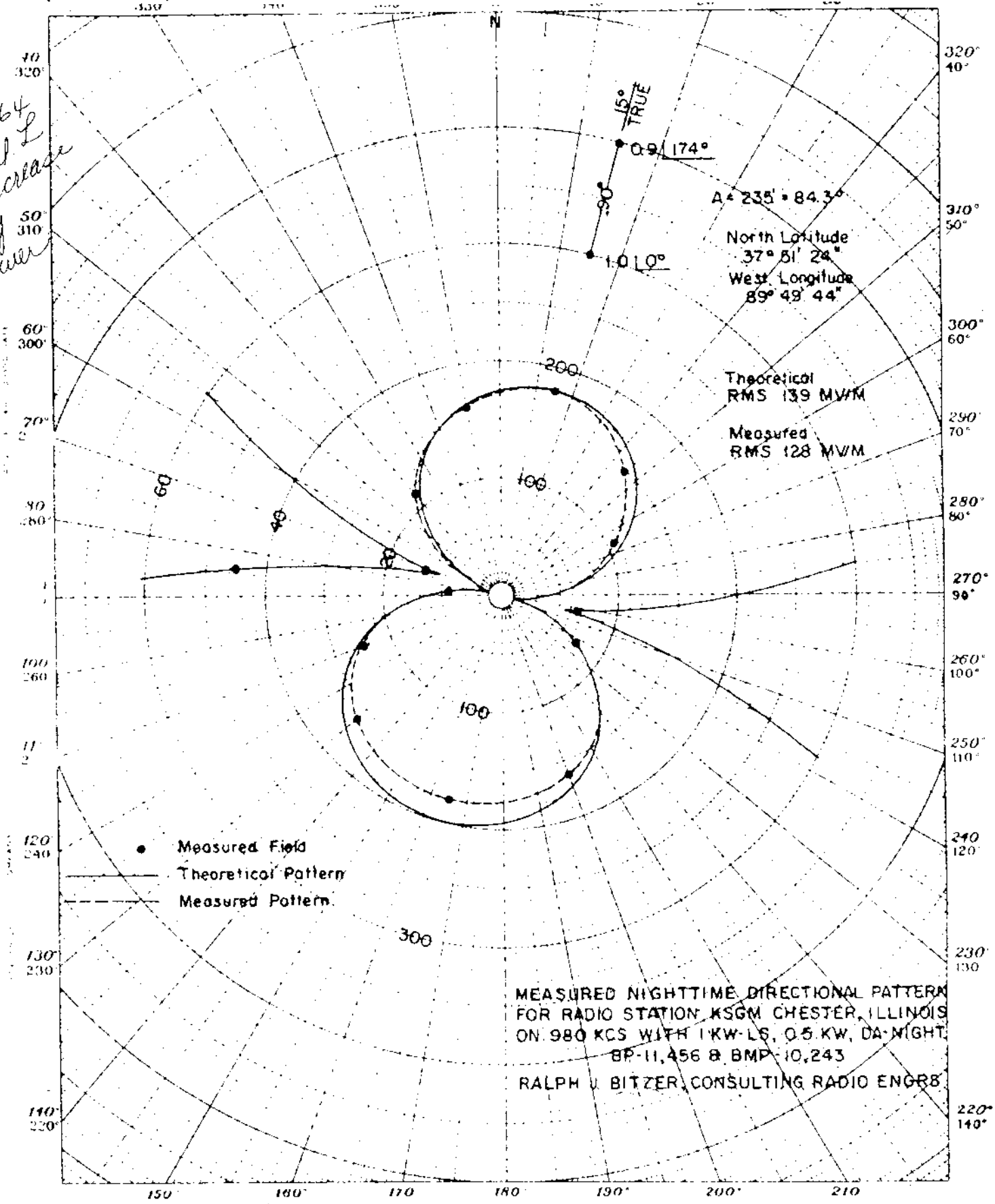
980 kc

KSGM

Measured Night
(8-28-64ct)

Station KSGM
Chester, Illinois

500w, 1kw-LS, DA-N, U
980 kc



FCC File No. BL-10627
Accepted

Station KSGM
Chester, Illinois

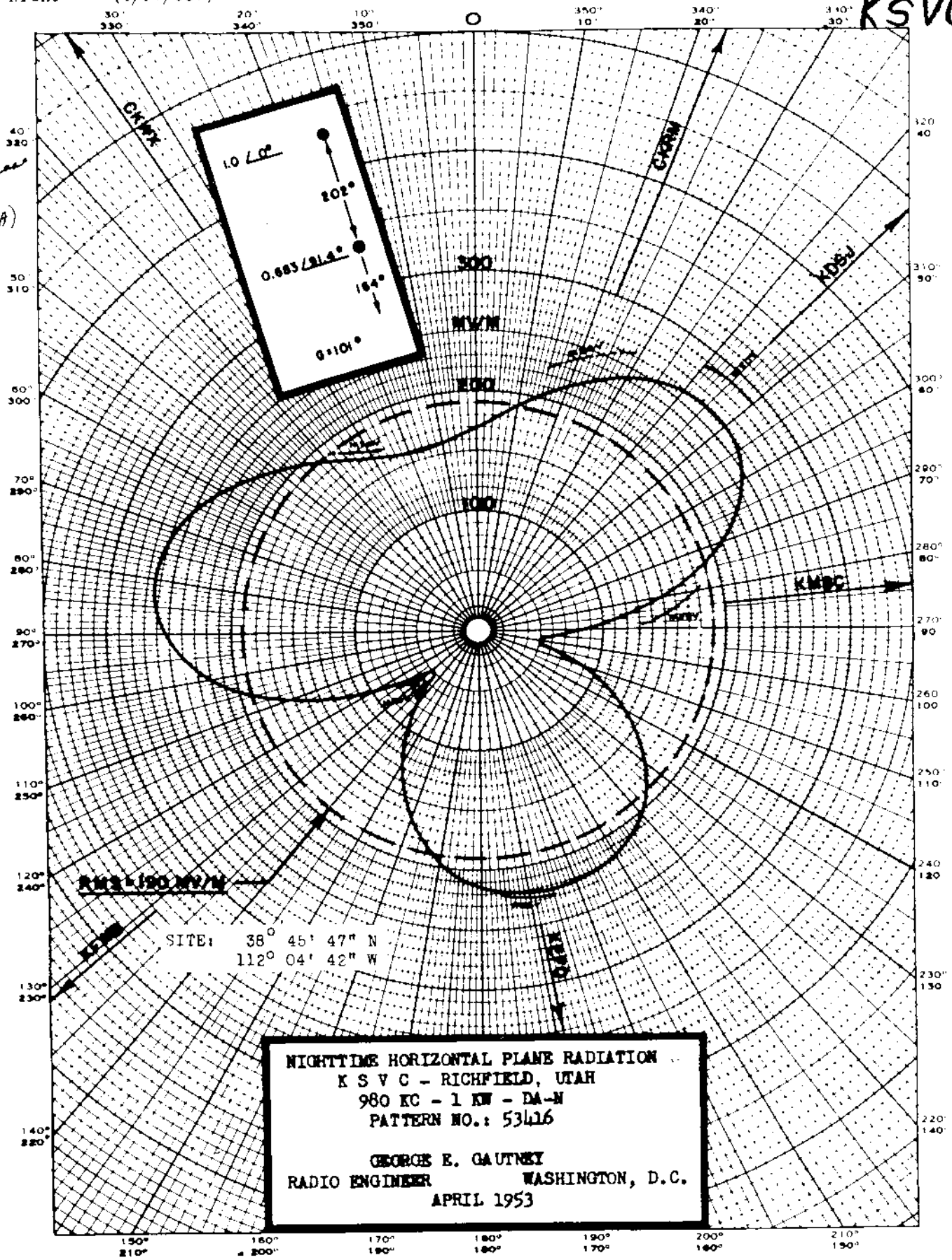
980 kc

PROPOSED NIGHT (5/27/53G)

KSVC, RICHFIELD, UTAH 1kw, U, DA-N 980 kc

KSVC

Granted increase (7/2/58) of day (non-DA) power



NIGHTTIME HORIZONTAL PLANE RADIATION
K S V C - RICHFIELD, UTAH
980 KC - 1 KW - DA-N
PATTERN NO.: 53416

GEORGE E. GAUTNEY
RADIO ENGINEER WASHINGTON, D.C.
APRIL 1953

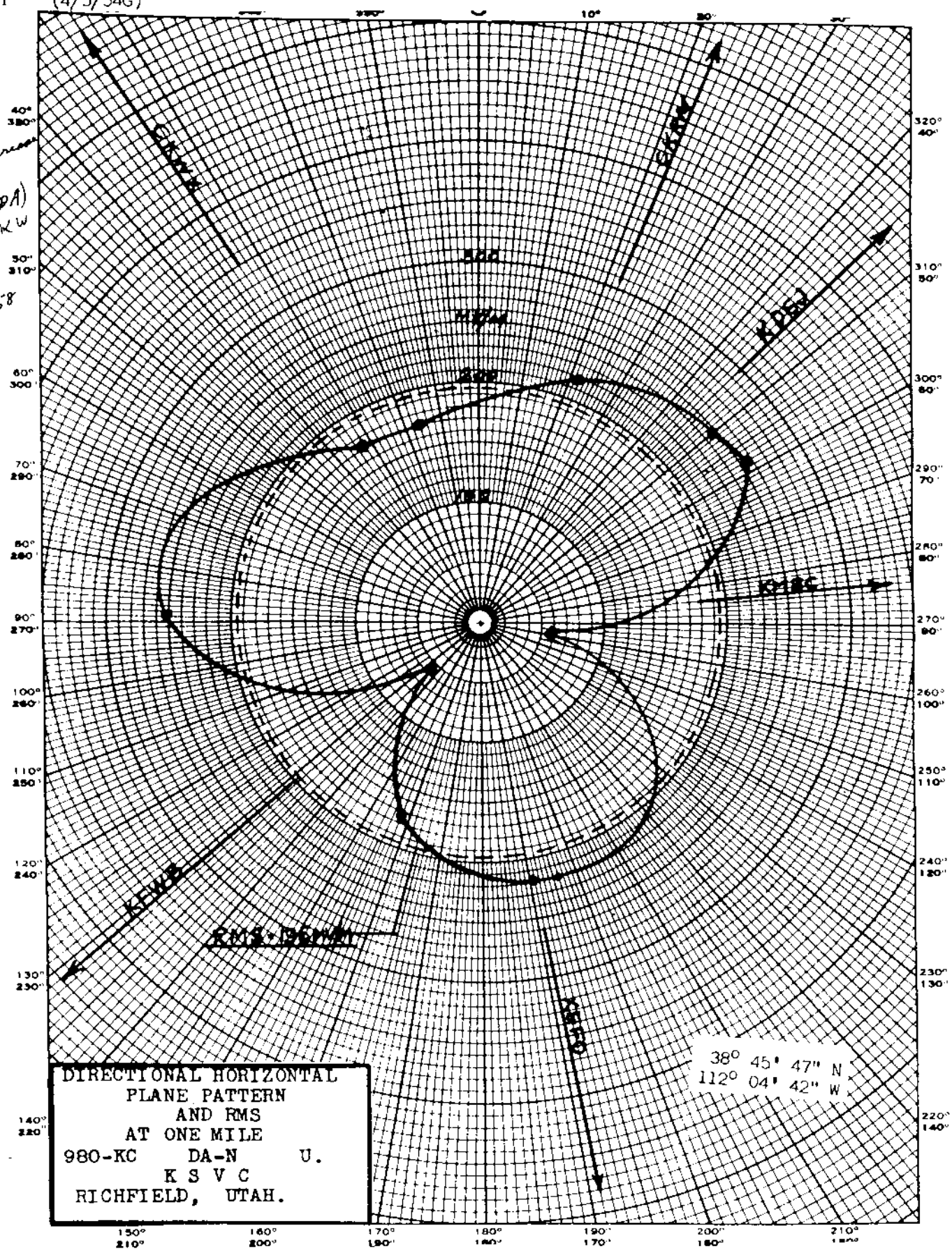
KSVC

MEASURED
NIGHT

KSVC, Richfield, Utah (4/5/54G) 1KW, U, DA-N 980 kc

Granted increase (7/7/58) of day (non-DA) power to 5 KW
Granted license 11/12/58

OVER:



DIRECTIONAL HORIZONTAL
PLANE PATTERN
AND RMS
AT ONE MILE
980-KC DA-N U.
K S V C
RICHFIELD, UTAH.

38° 45' 47" N
112° 04' 42" W

FCC File No. BL-5199 KSVC, Richfield, Utah 980 kc

KSVC

MEASURED KSVC, Richfield, Utah 1KW, U, DA-N 980 kc
NON-DA (4/5/54G)

Granted increase (7/7/58) of day (non DA) power

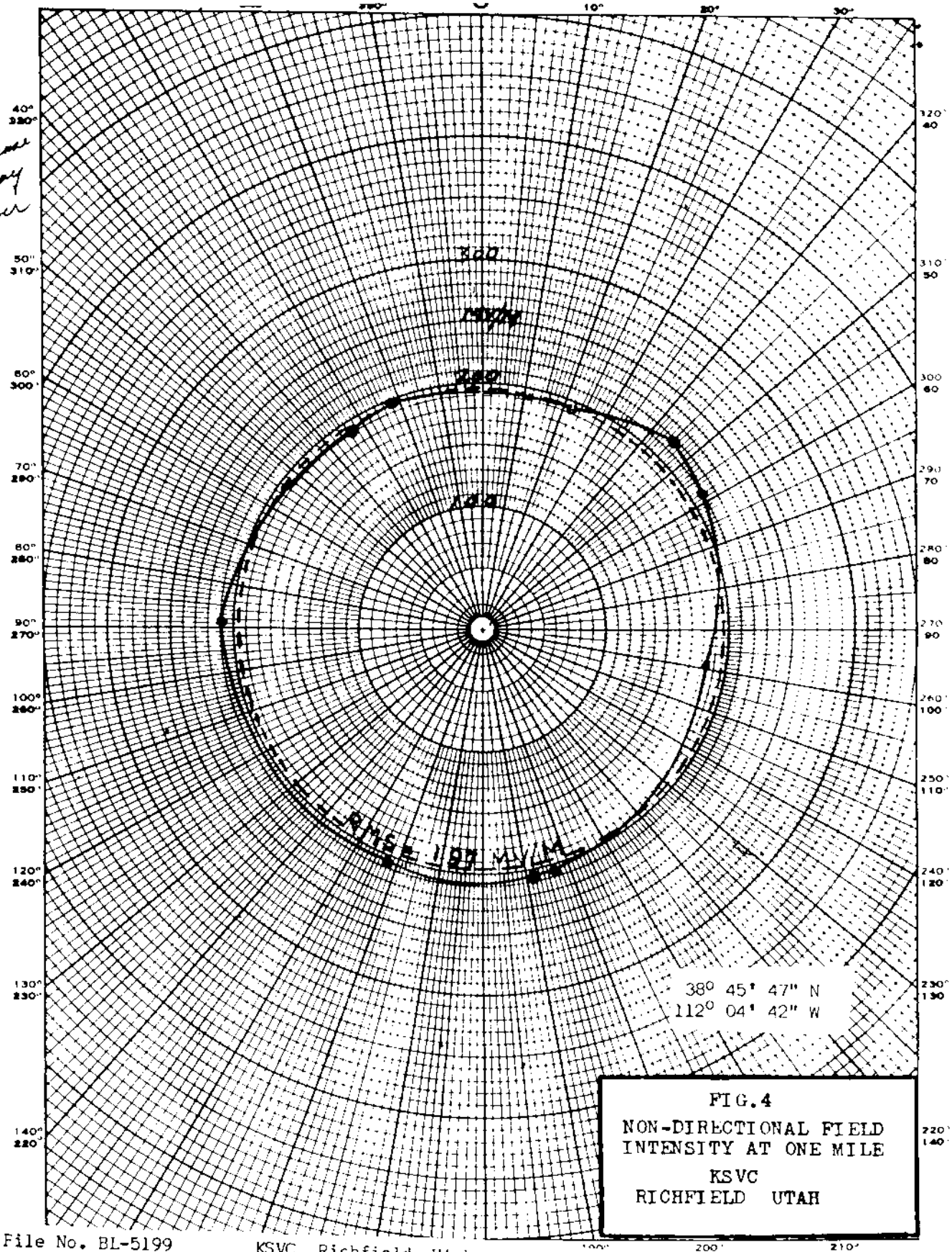


FIG. 4
NON-DIRECTIONAL FIELD INTENSITY AT ONE MILE
KSVC
RICHFIELD UTAH

FCC File No. BL-5199 KSVC, Richfield, Utah 980 kc

WCAP

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : WCAP Main Studio: Lowell, Massachusetts

Frequency : 980 KHz Power : 5 kW Night 5 kW Day

Notification : 1780 Date : Sept. 28, 1979 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42 39 16

West Longitude: 71 21 43

ANTENNA CHARACTERISTICS

Authorized for Nighttime and Daytime operation. (DA-2)

Number of elements: 4

Type of elements : Series excited, uniform cross-section, guyed, Shunt excited, Self supporting, tapered, vertical steel towers.

TOWER :	NW(#1)	WC(#2)	S(#3)	N(#4)		
HEIGHT ABOVE INSULATORS :	250.9'	250.9'	250.9'	250.9'	(90°)	
NIGHT PHASING :	0°	-125.1 -123.84°	112.2 +112.31°			
NIGHT FIELD RATIO:	1	1.51 1.6806	.65 0.810			
DAY PHASING :			+114°	0°		
DAY FIELD RATIO :			0.28	1		

SPACING AND ORIENTATION : With the S(#3) tower as reference the north (#4) tower is spaced 250.9' (90°) a line bearing 353° true, the west center tower is spaced 250.9 (90°) on a line bearing 298° true, and the northwest (#1) tower is spaced 501.8' (180°) on a line bearing 298° true.

GROUND SYSTEM : 120 - 250 equally spaced copper radials plus a 24' square ground screen about each tower. Radials are shortened and bonded to a transverse straps along intersections between towers. Centers of system are bonded together.

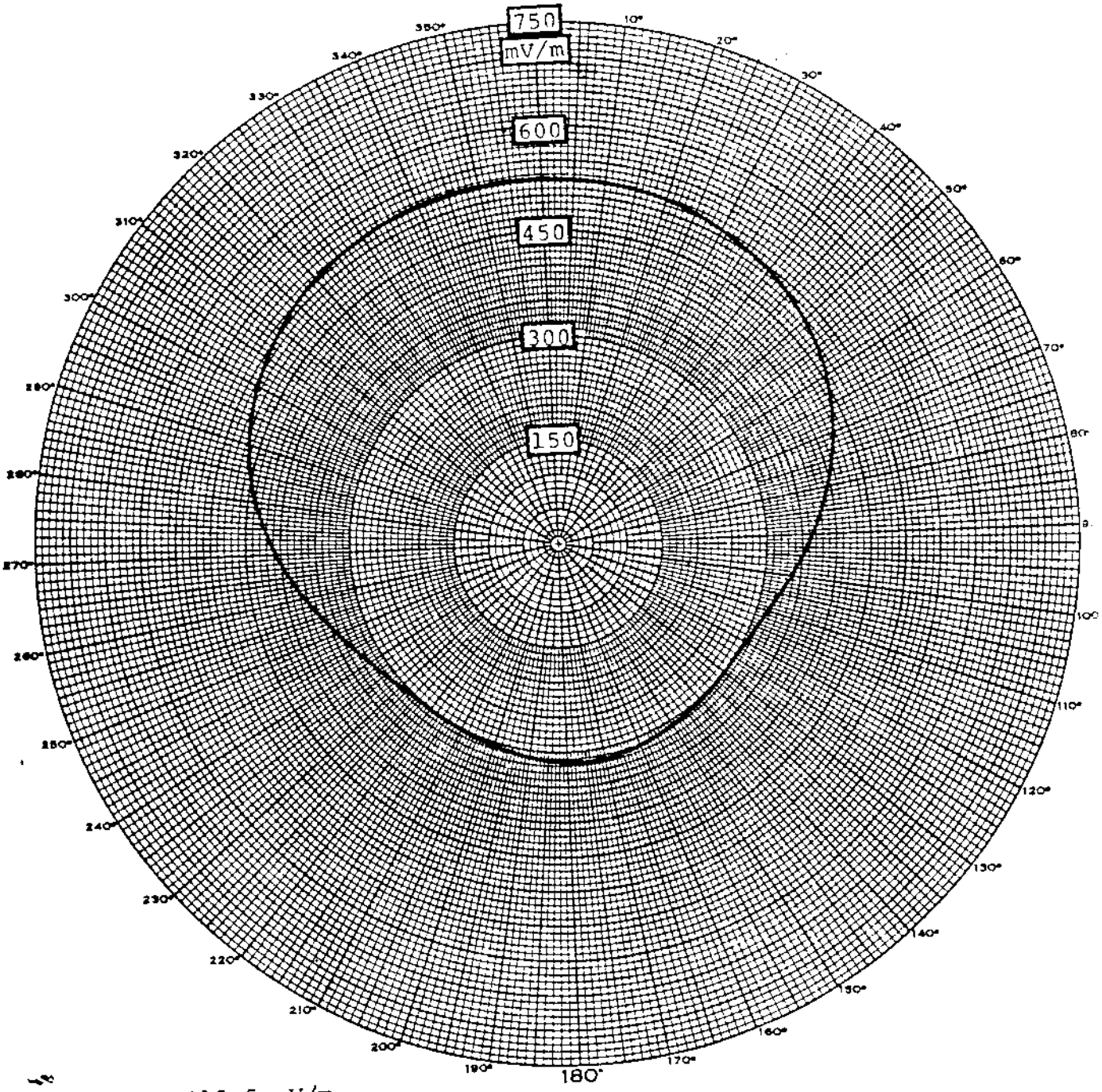
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day 1/	391.4 mV/m	412.5 mV/m	411.2 mV/m
Night	454.6 mV/m	549.3 mV/m	477.6 mV/m
	454.48	549.61	477.43

1/ By adjustment of input power.

Note:

WCAP



* E_{rss} = 412.5 mV/m
* Erms TH = 391.4 mV/m
* Erms STD = 411.2 mV/m

*By Adjustment of Input Power

#4 ● 1/0

90°

#3 ● .28/114

173°T

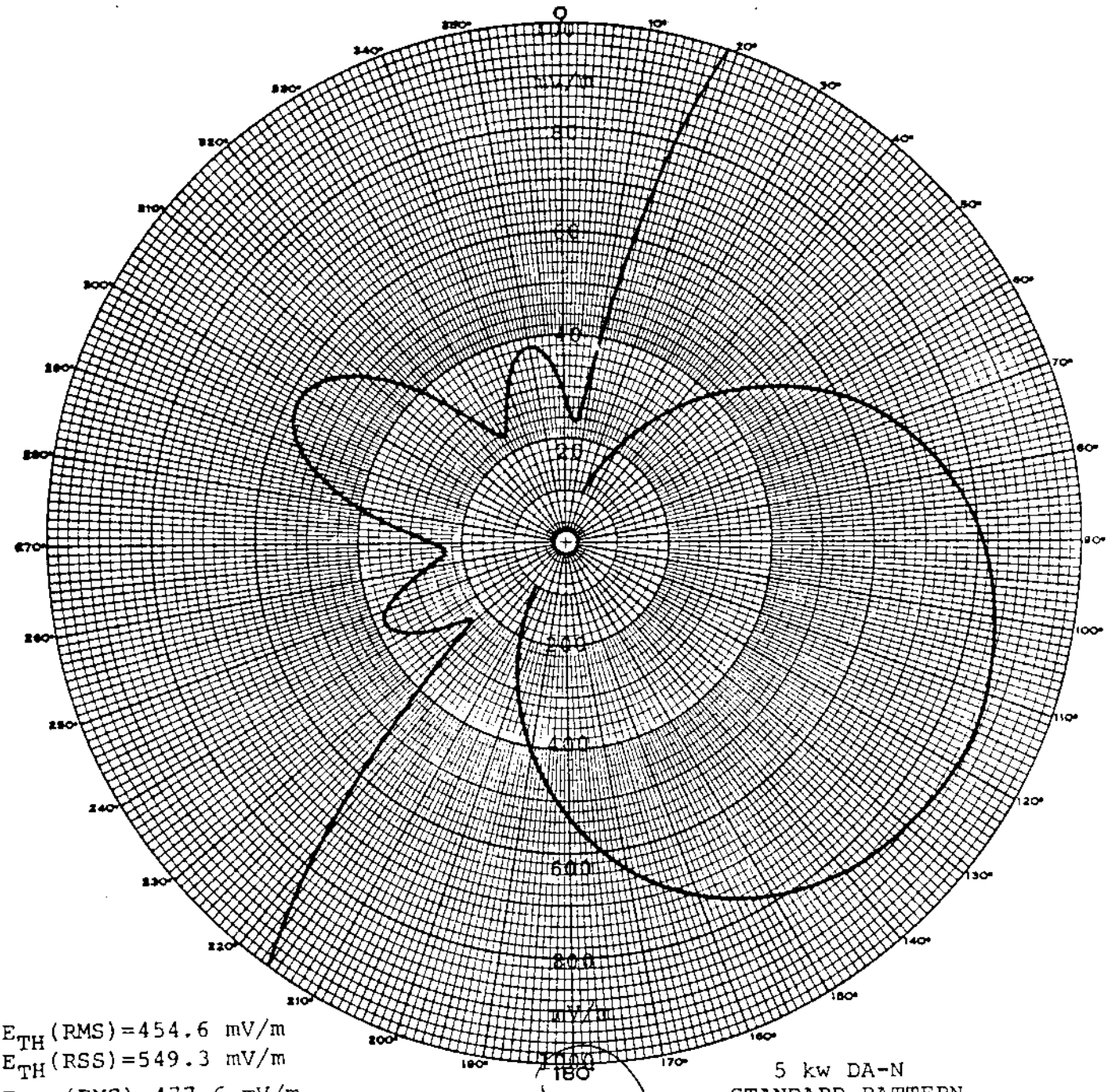
G3 = G4 = 90°

SITE: N 42° 39' 16" W 71° 21' 43"

FIG. 3.1
PROPOSED WCAP DAYTIME
5kw STANDARD PATTERN
Northeast Radio, Inc.
Lowell, Massachusetts

Carl E. Smith
CONSULTING RADIO ENGINEERS
8200 SNOWVILLE ROAD
CLEVELAND, OHIO • 44141

WCAP



E_{TH}(RMS)=454.6 mV/m
E_{TH}(RSS)=549.3 mV/m
E_{STD}(RMS)=477.6 mV/m

5 kw DA-N
STANDARD PATTERN

1/0°
90°
1.68/-123.84°
G's = 250.9' = 90° 90°
0.81/112.31°
118°T
N 42°39'16"
W 71°21'43"

FIG. 3.0
PROPOSED WCAP NIGHTTIME
HORIZONTAL PATTERN
Northeast Radio, Inc.
Lowell, Massachusetts

Carl E. Smith
CONSULTING RADIO ENGINEERS
8200 SNOWVILLE ROAD
CLEVELAND, OHIO • 44141

780601

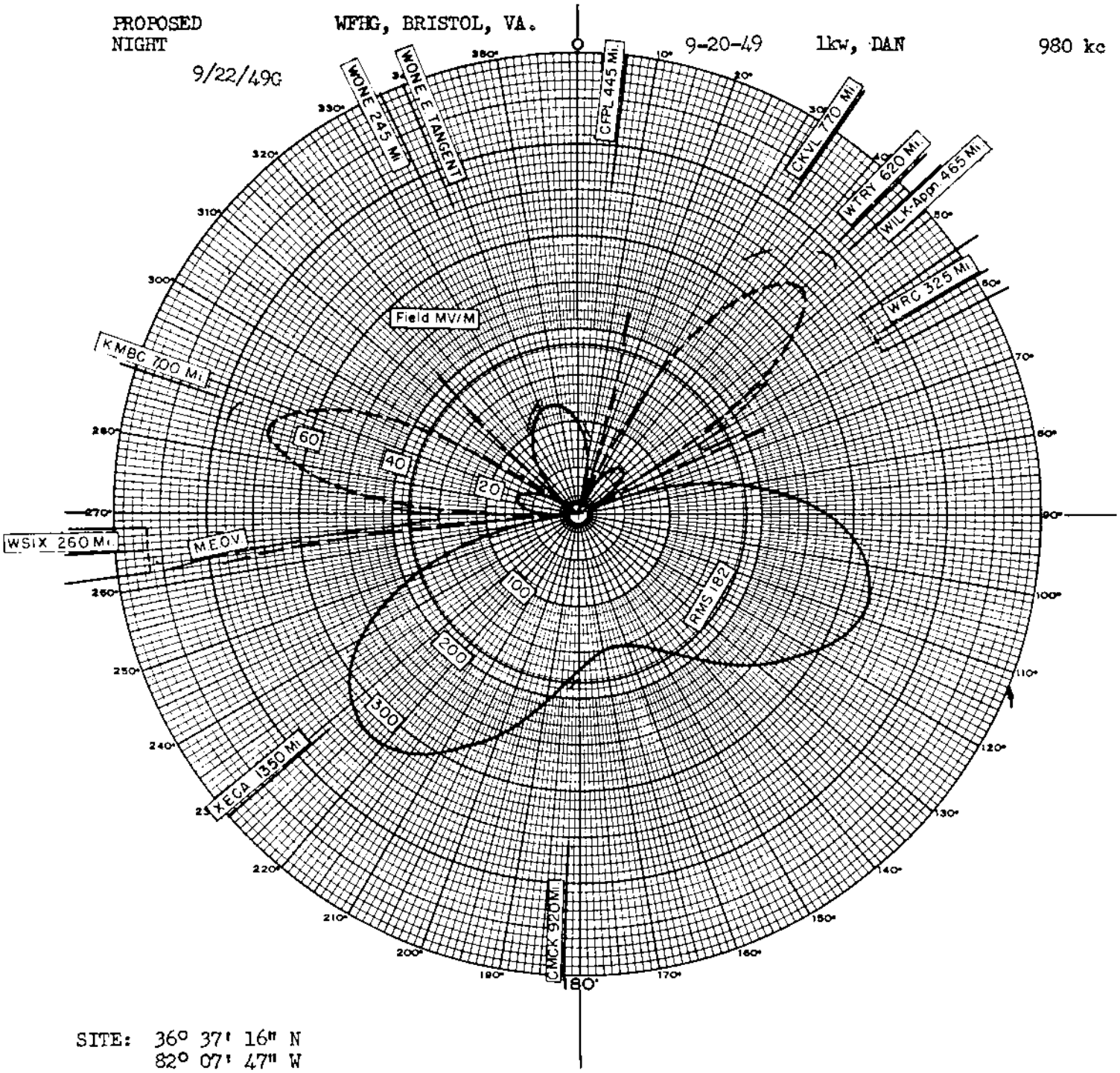
WFHG

PROPOSED NIGHT

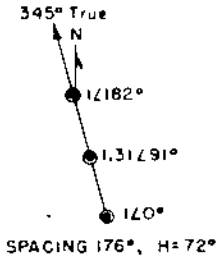
WFHG, BRISTOL, VA.

9-20-49 1kw, DAN 980 kc

9/22/49G



SITE: 36° 37' 16" N
82° 07' 47" W



BRISTOL BROADCASTING CO., INC. BRISTOL, VIRGINIA	Figure 1 Series CW490812
	980 KC 1 KW, DA-N
PROPOSED DIRECTIONAL ANTENNA PATTERN	McINTOSH & INGLIS *Consulting Radio Engineers* Washington, D.C.

WFHG, Bristol, Va. 980 kc

WFHG

MEASURED
NIGHT

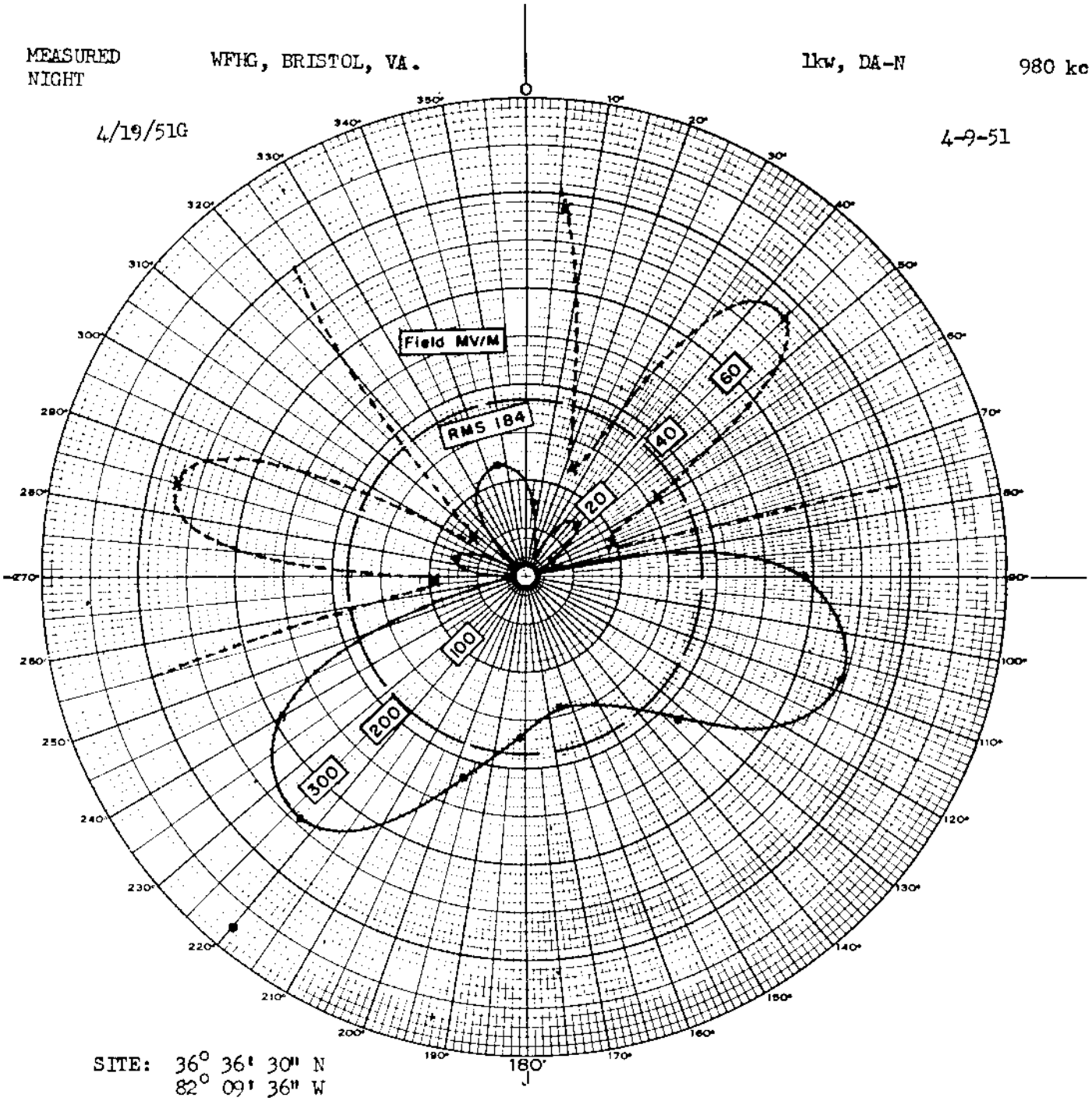
WFHG, BRISTOL, VA.

1kw, DA-N

980 kc

4/19/51G

4-9-51



SITE: 36° 36' 30" N
82° 09' 36" W

STATION WFHG BRISTOL, VIRGINIA	FIGURE 7 SERIES C 510330
	980 KC 1000 WATTS DA-N
MEASURED DIRECTIONAL PATTERN	McINTOSH & INGLIS *Consulting Radio Engineers* Washington, D.C.

WFHG, Bristol, Va. 980 kc

WFHG

MEASURED
DAY(NON-DA)

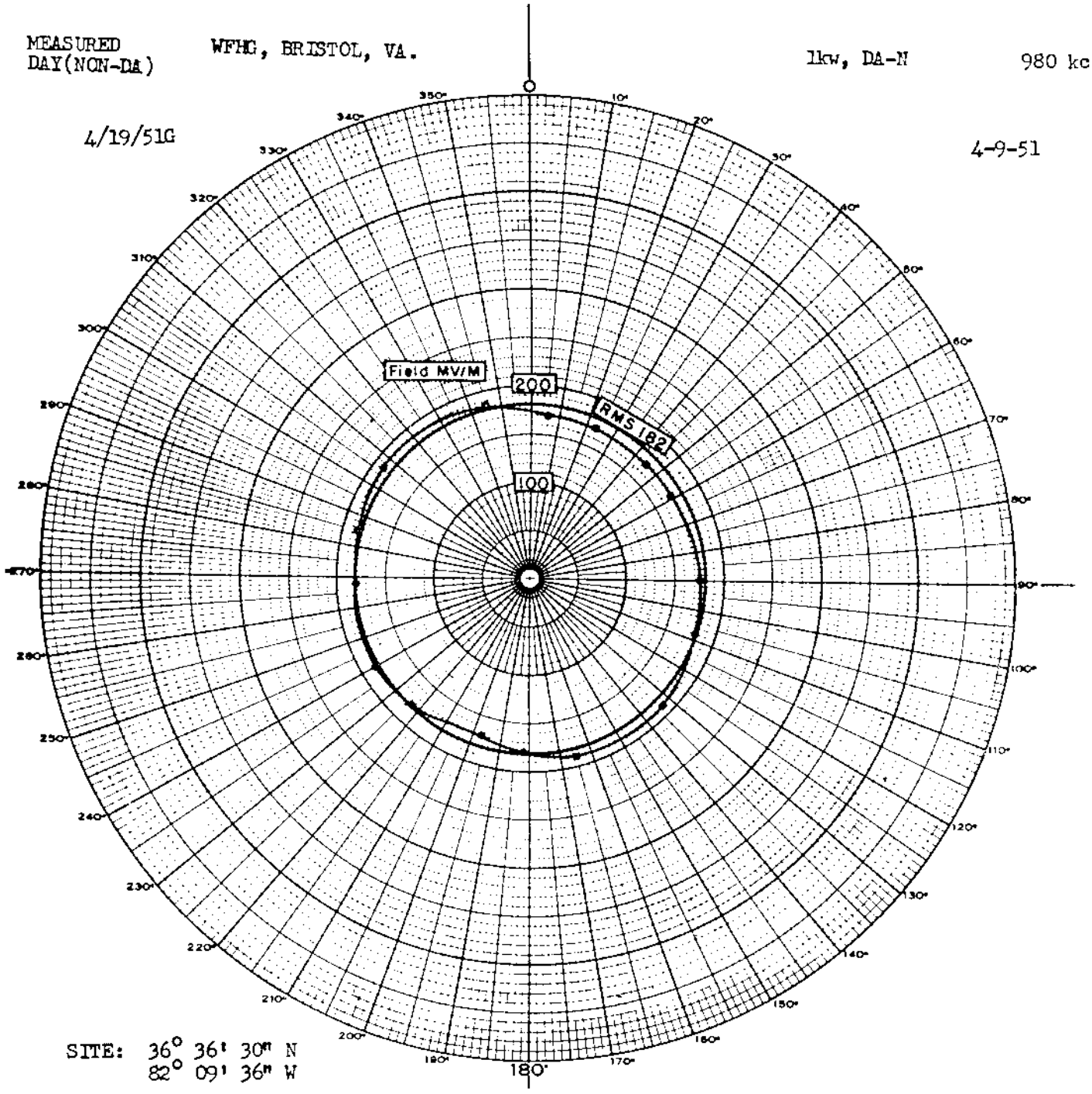
WFHG, BRISTOL, VA.

1kw, DA-N

980 kc

4/19/51G

4-9-51



SITE: 36° 36' 30" N
82° 09' 36" W

STATION WFHG BRISTOL, VIRGINIA	FIGURE 6 SERIES C 510328
	980 KC 1000 WATTS DA-N
MEASURED NON-DIRECTIONAL PATTERN	McINTOSH & INGLIS *Consulting Radio Engineers* Washington, D. C.

WTHG, Bristol, Va. 980 kc

WILK

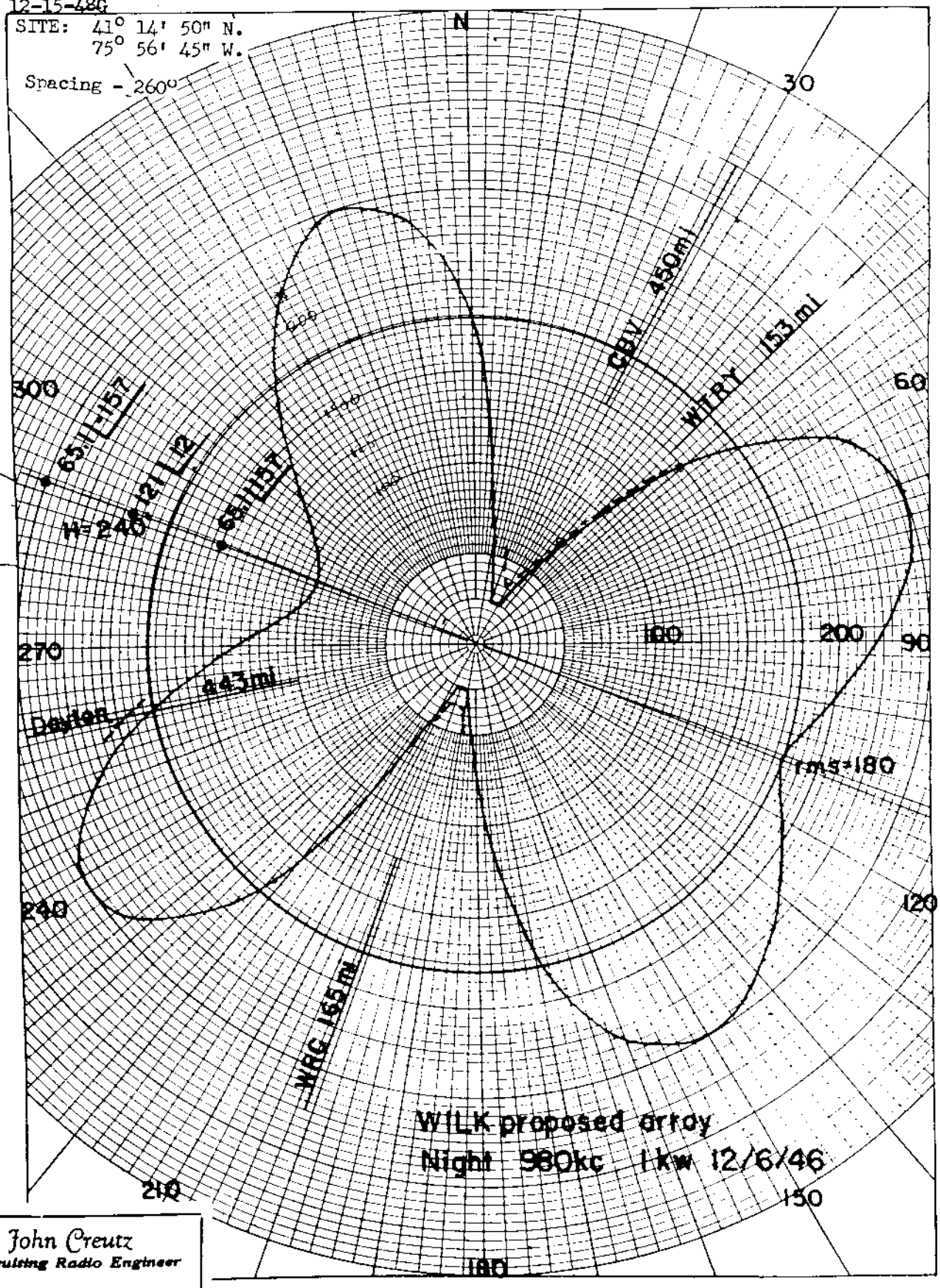
PROPOSED NIGHT

WILK, WILKES-BARRE, PA. 12-15-48 1kw, 5kw-LS, DA2 980

12-15-48G

SITE: 41° 14' 50" N.
75° 56' 45" W.

Spacing - 260°



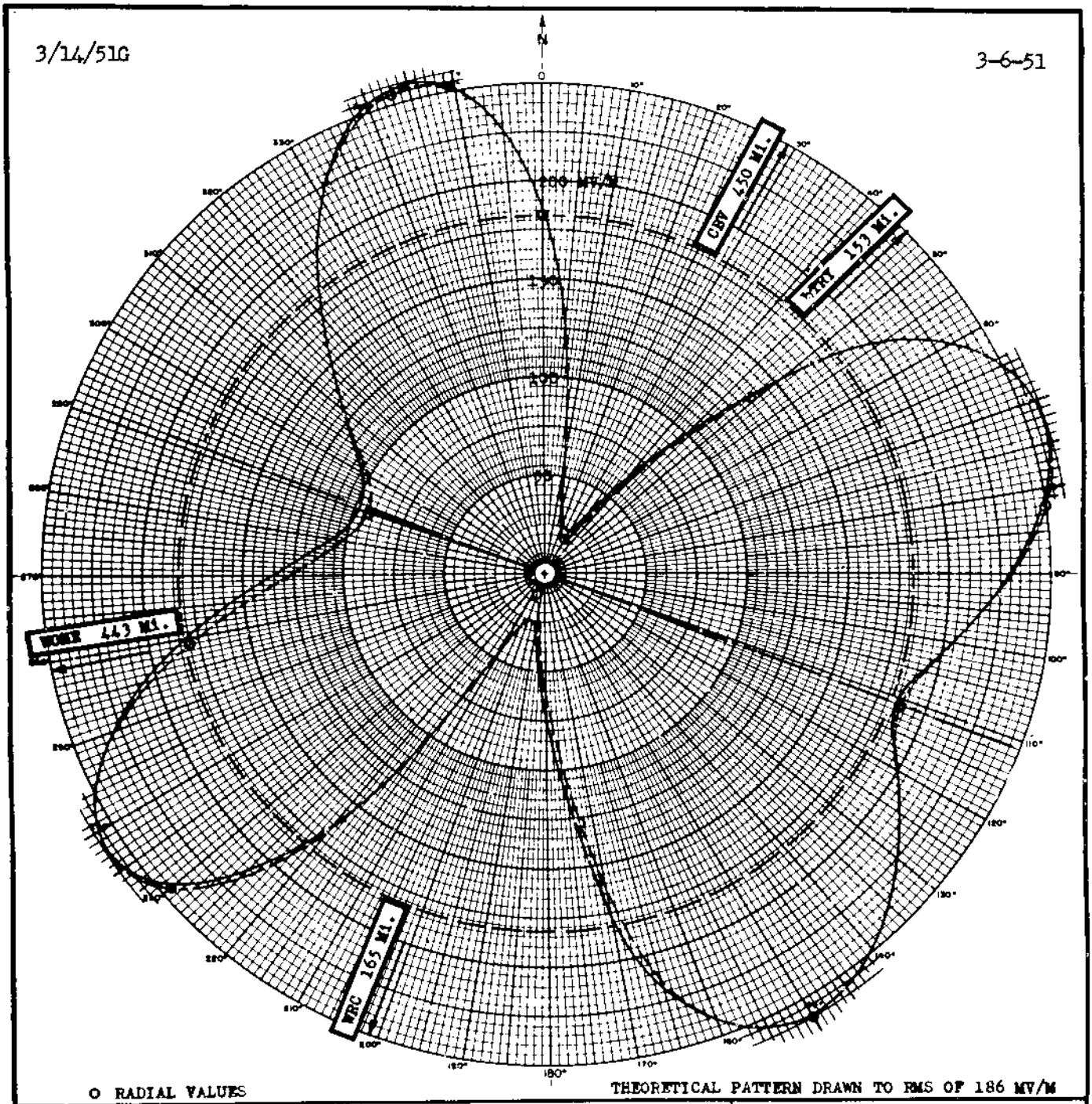
John Creutz
Consulting Radio Engineer
319 Bond Bldg. REpublic 3161
Washington, D. C.

KEUFFEL & ESSER CO. N.Y. NO. 343A
POLAR CO-ORDINATE
MADE IN U.S.A.

WILK, WILKES BARRE, PENNA. 980 kc

WILK

MEASURED NIGHT WILK, WILKES-BARRE, PA. 1kw, 5kw-LS, DA-2 980 kc



O RADIAL VALUES

THEORETICAL PATTERN DRAWN TO RMS OF 186 MV/M

WILK

HORIZONTAL RADIATION PATTERN

MEASURED - - - - - - CALCULATED ——

N.W. S.E.

ANTENNA	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
PHASE DEG.	-169°	0°	145°			
HEIGHT DEG.	86°	86°	86°			
FIELD RATIO	0.54	1.00	0.54			
NON-DA ANT.						

FREQUENCY: 980 KC.

ASSIGNMENT: 5 Kw-LS, 1 Kw-N U(DA-2)

LONGITUDE: 75 DEG. 56 MIN. 45 SEC.

LATITUDE: 41 DEG. 15 3/4 MIN. 50 SEC.

WHEN USED: Nighttime

R.M.S. FIELD: 182 MV/M (Measured)

DATE: February 1951

ROBERT M. SILLIMAN

CONSULTING RADIO ENGINEERS

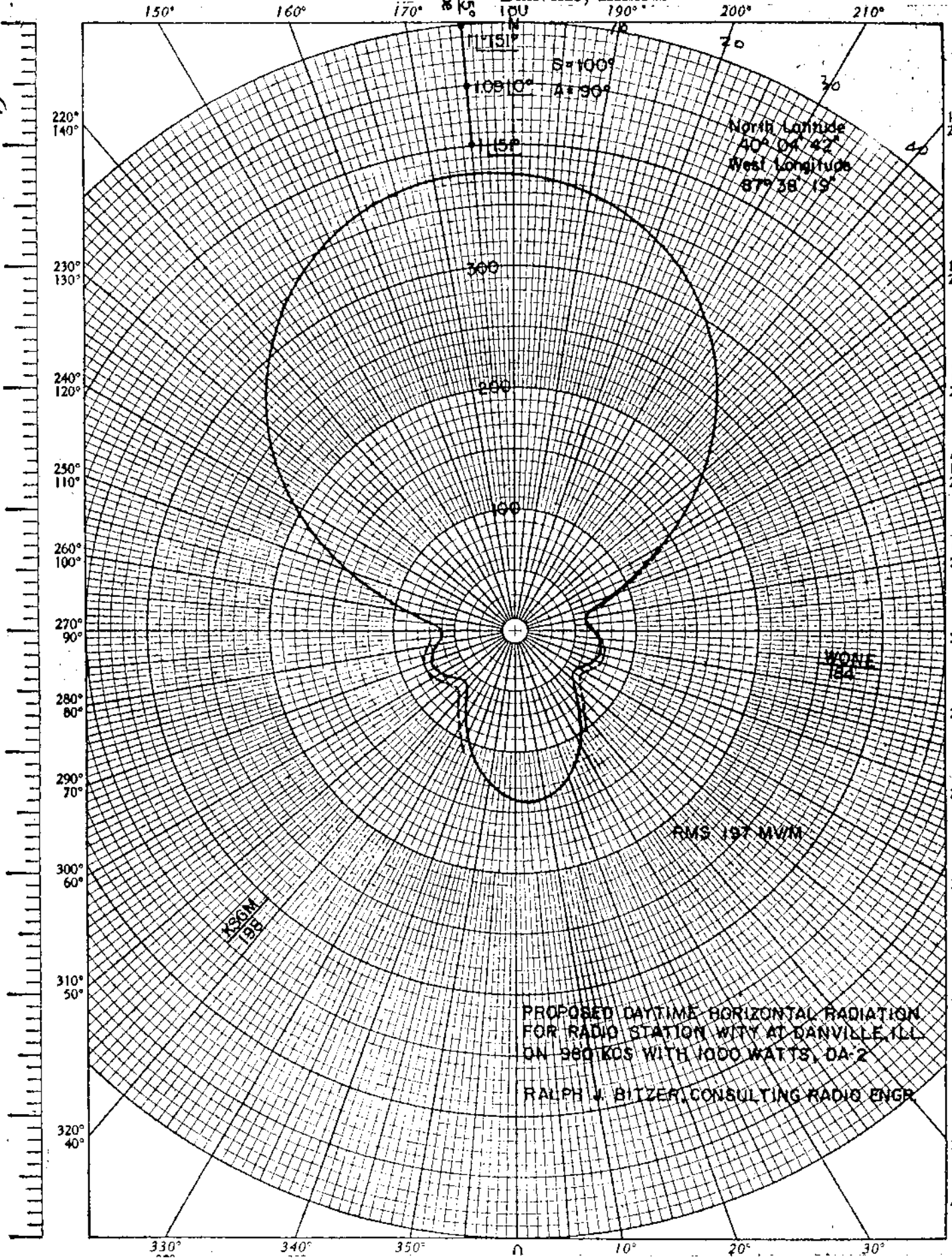
WASHINGTON, D. C.

WITY

PROPOSED DAY
(9-25-58g)

Station WITY
Danville, Illinois

1kw, DA-2,U
980 KC



granted application for DA-2 operation (10-21-57)

Granted for DA-2 operation 9-28-61

FCC File No. BP-12,226
Accepted 9-10-58

WITY
Danville, Illinois

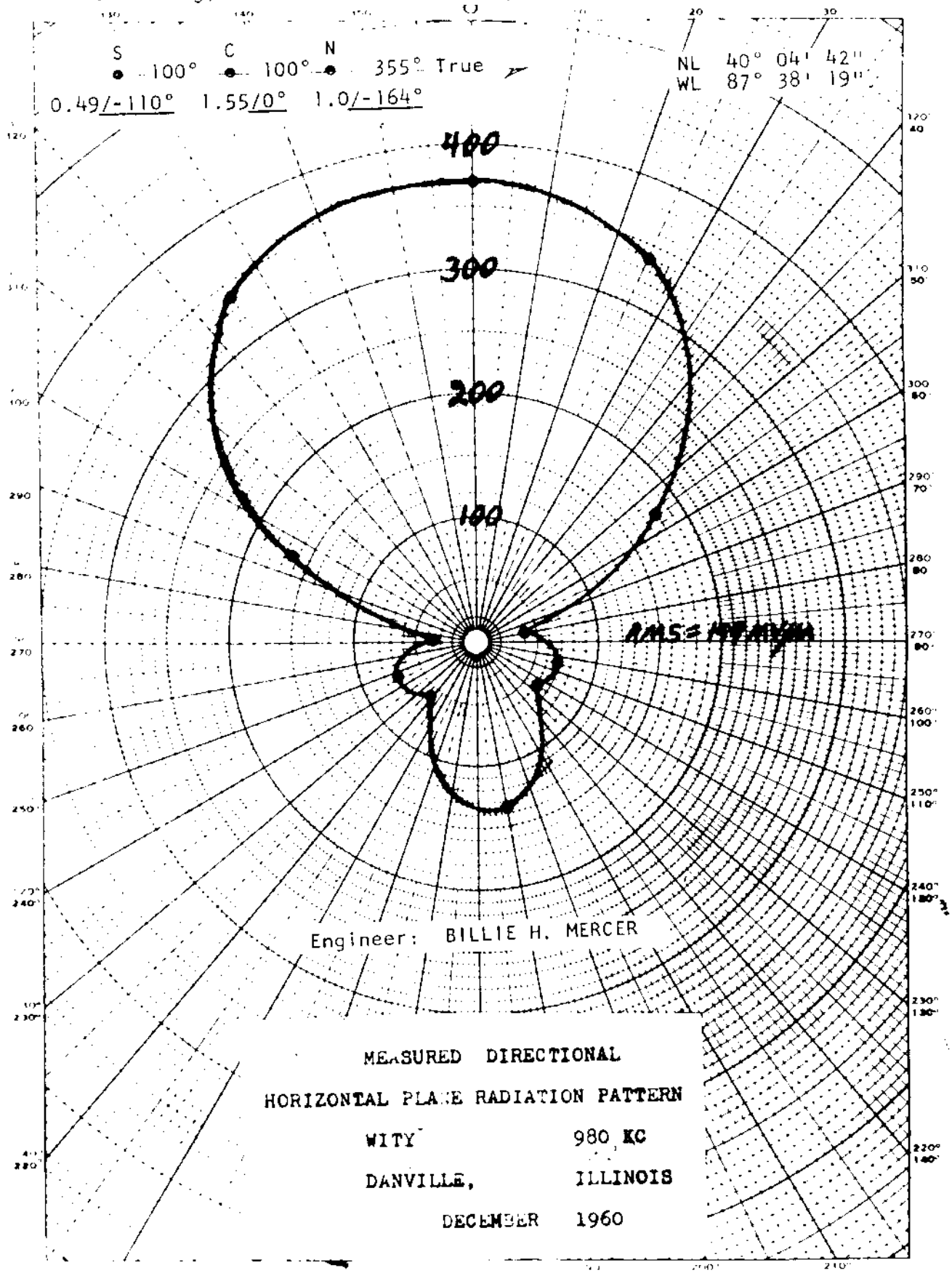
980 KC

WITY

MEASURED DAY
(6-14-61g)

Station WITY
Danville, Illinois

1kw, DA-2,U
980 KC

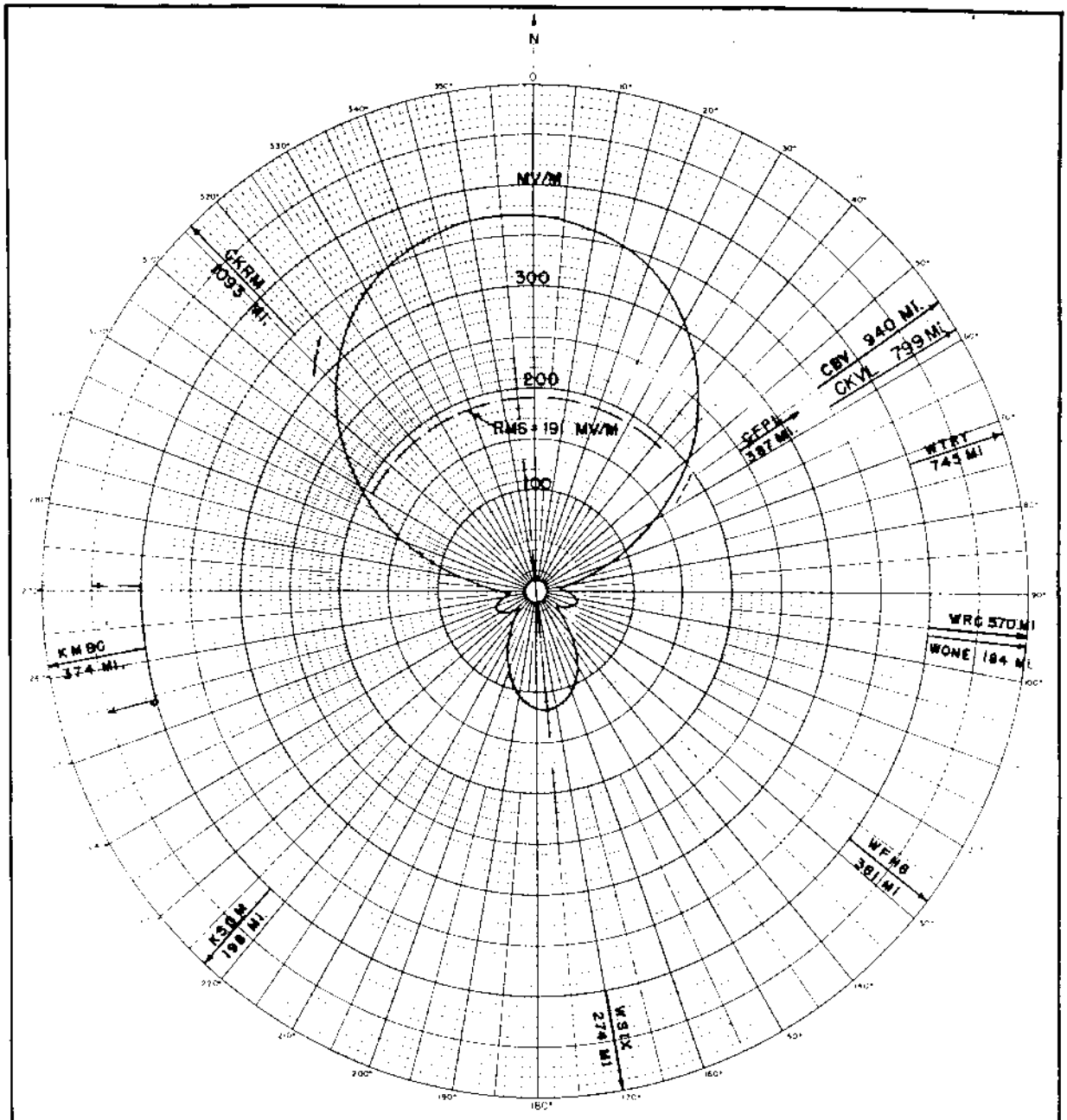


FCC File No. BL-8330
Accepted 5-11-61

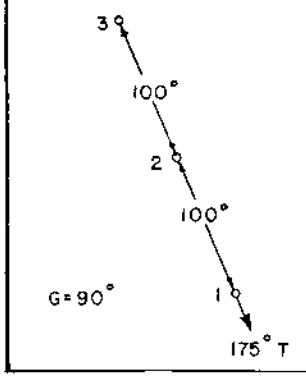
WITY
Danville, Illinois 980 KC

WITY

PROPOSED
~~WJBC~~ NIGET (5/27/53G) WITY, DANVILLE, ILLINOIS 1kw, U, DA-1 980 kc



Vermillion Broadcasting Corp.



LATITUDE N 40° 04' 45"
LONGITUDE W 87° 38' 25"

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	—	—	148	1	180	90
2	355	100	6.7	1.713	180	90
3	355	200	-148	1	180	90

CALCULATED
HORIZONTAL PLANE PATTERN
FOR
PROPOSED STATION
DANVILLE, ILLINOIS
980 KC 1 KW U, DA-1

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D C

SIGNED

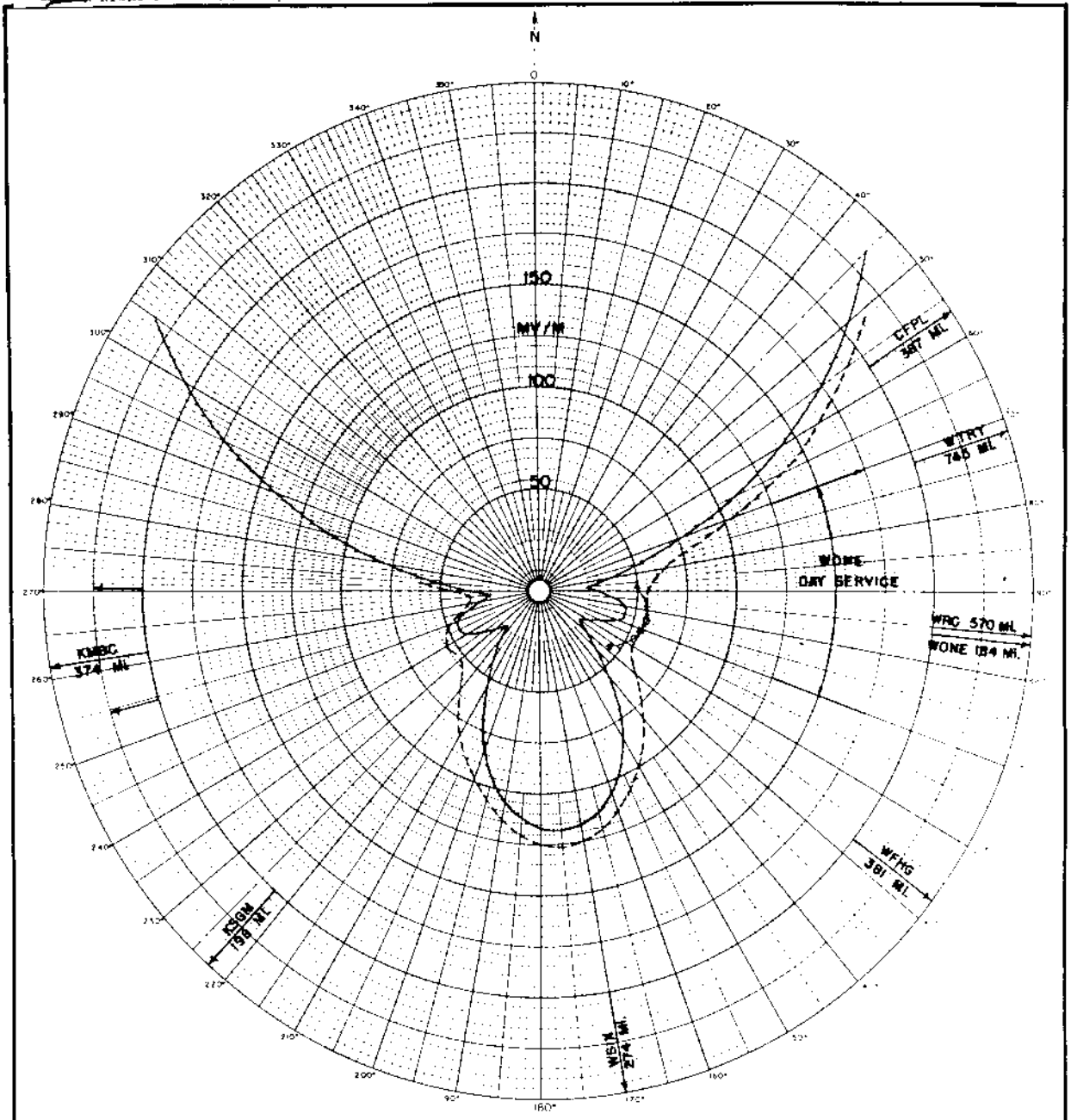
FCC File No. BP-7114 Accepted 1/22/51
(Docket No. 9496 Now granted.)

WITY, Danville, Ill. 980 kc

WITY

PROPOSED
NIGHT NULLS (5/27/53G)

WITY, DANVILLE, ILLINOIS 1kw, U, DA-1 980 kc



---- MEOV

Vermillion Broadcasting Corp.

ANTENNA NUMBER	AZIMUTH DEG.	SPACING DEG.	PHASING DEG.	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG.

LATITUDE
LONGITUDE

EXPANDED SCALE
CALCULATED
HORIZONTAL PLANE PATTERN
FOR
PROPOSED STATION
DANVILLE, ILLINOIS

980 KC 1 KW U, DA-1

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.

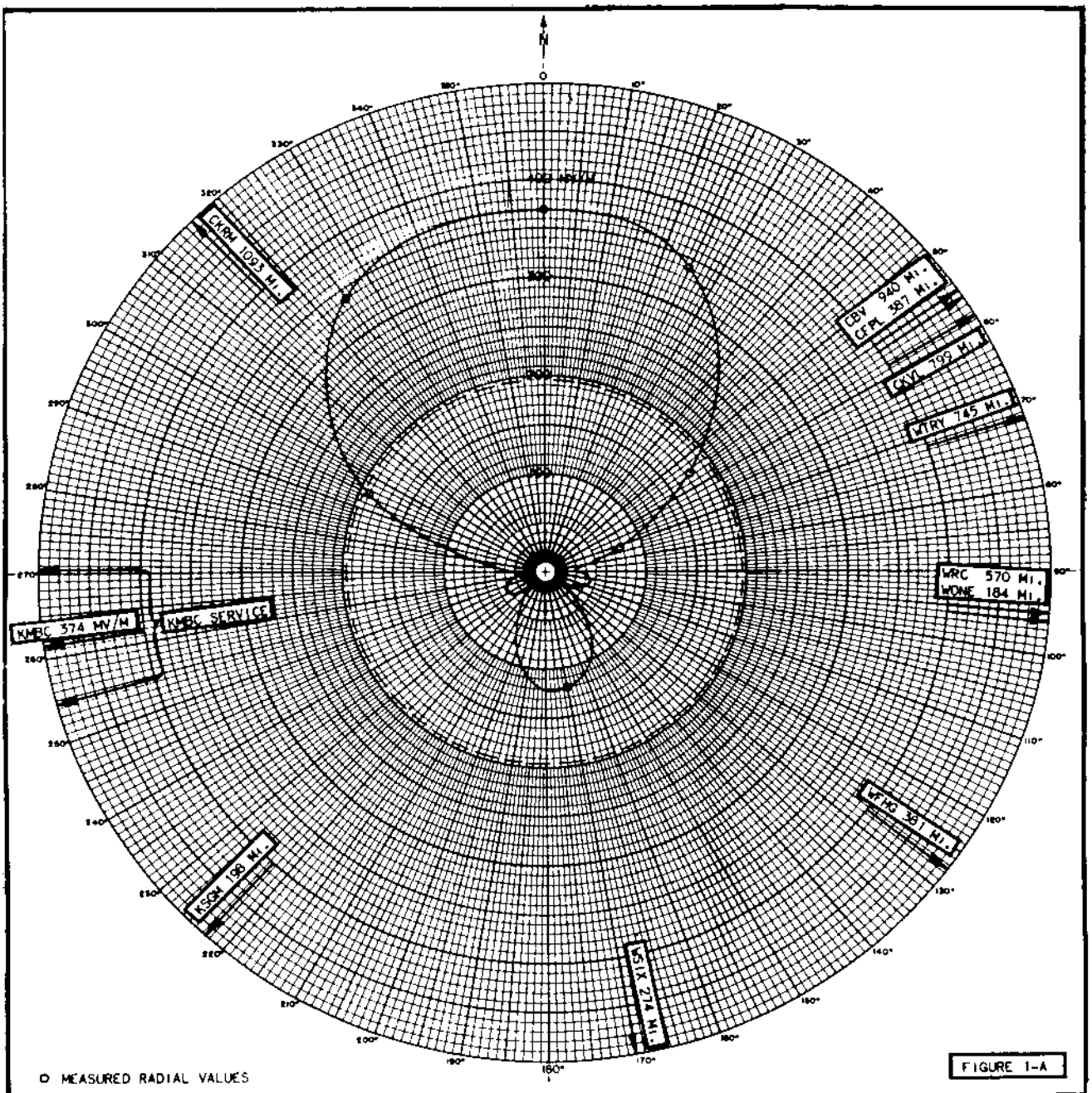
51011?

FCC FILE NO. B-7114 Accepted 1/28/51
Docket No. 9498 Now Granted.

WITY, Danville, Ill. 980 kc

MEASURED [redacted]IGHT (2/11/54G) WITY, DANVILLE, ILLINOIS 1KW, DA-1, U 980 kc

granted CP exchange to DA-2 (10-21-59)



O MEASURED RADIAL VALUES

FIGURE 1-A

WITY

HORIZONTAL RADIATION PATTERN

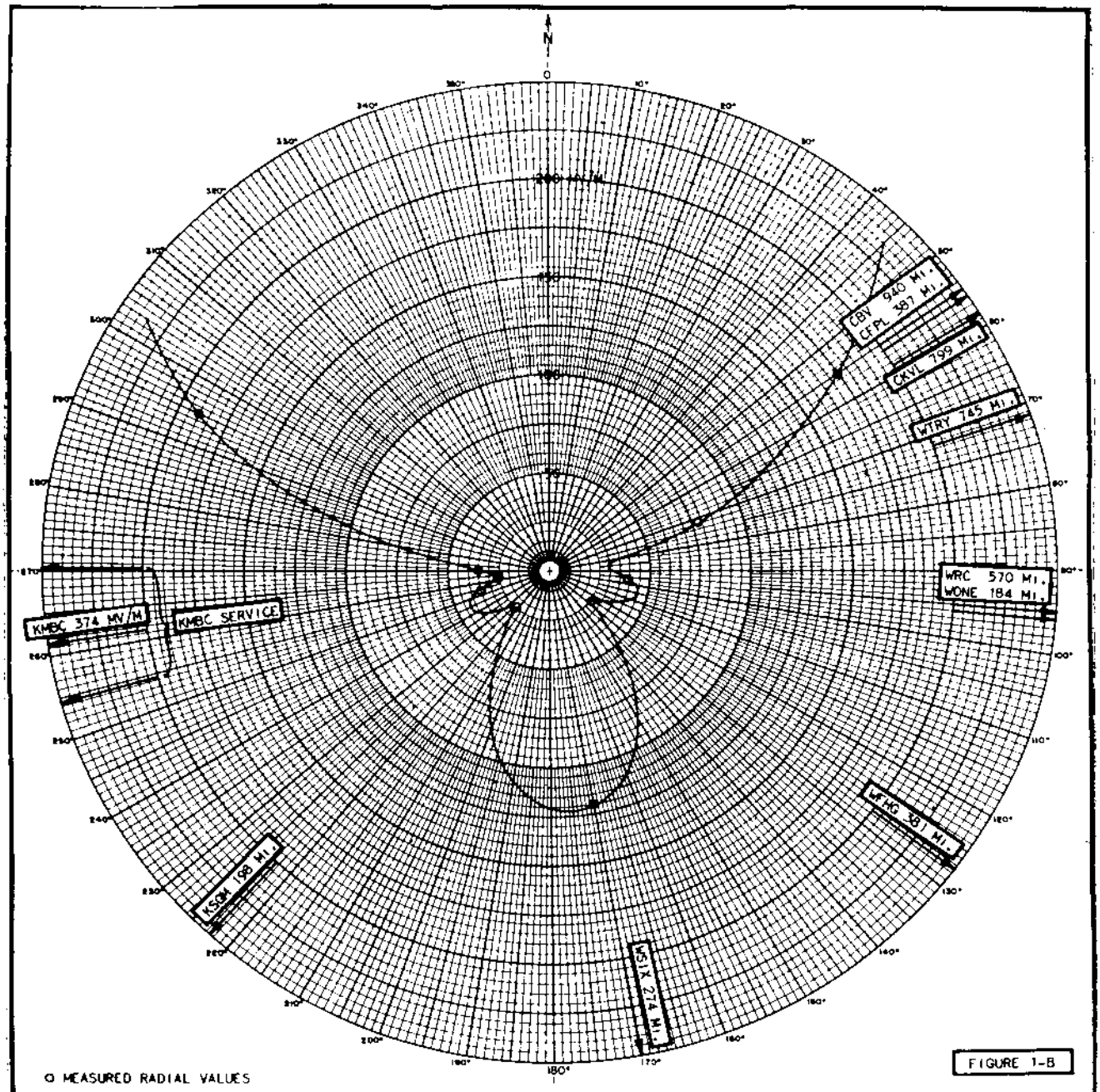
	SOUTH	CENTER	NORTH			
ANTENNA	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
PHASE DEG.	+148°	+6.7°	-148°			
HEIGHT DEG.	90°	90°	90°			
FIELD RATIO	1.00	1.713	1.00			
NON-DA ANT.						
		SPACING 278.8' (100°)		ORIENTATION N 175° E		

FREQUENCY:	980 KC.
ASSIGNMENT:	1 KW-U(DA-1)
LONGITUDE:	87 DEG. 38 MIN. 19 SEC.
LATITUDE:	40 DEG. 04 MIN. 42 SEC.
WHEN USED:	DAYTIME & NIGHTTIME
R.M.S. FIELD:	197 MV/M (MEASURED)
DATE:	NOVEMBER 1953

ROBERT M. SILLIMAN
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

WITY

MEASURED & NIGHT NULLS WITYM DANVILLE, ILLINOIS (2/11/54/G) 1KW, DA-1, U 980 kc



O MEASURED RADIAL VALUES

FIGURE 1-B

WITY

HORIZONTAL RADIATION PATTERN

EXPANDED VIEW

	SOUTH	CENTER	NORTH			
ANTENNA	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
PHASE DEG.	+148°	+6.7°	-148°			
HEIGHT DEG.	90°	90°	90°			
FIELD RATIO	1.00	1.713	1.00			
NON-DA ANT.						
	SPACING 278.8' (100°)			ORIENTATION N 175° E		

FREQUENCY:	980 KC
ASSIGNMENT:	1 KW-U(DA-1)
LONGITUDE:	87 DEG. 38 MIN. 19 SEC.
LATITUDE:	40 DEG. 04 MIN. 42 SEC.
WHEN USED:	DAYTIME & NIGHTTIME
R.M.S. FIELD:	197 MV/M (MEASURED)
DATE:	NOVEMBER 1953

ROBERT M. SILLIMAN

CONSULTING RADIO ENGINEERS

WASHINGTON, D. C.

WITY

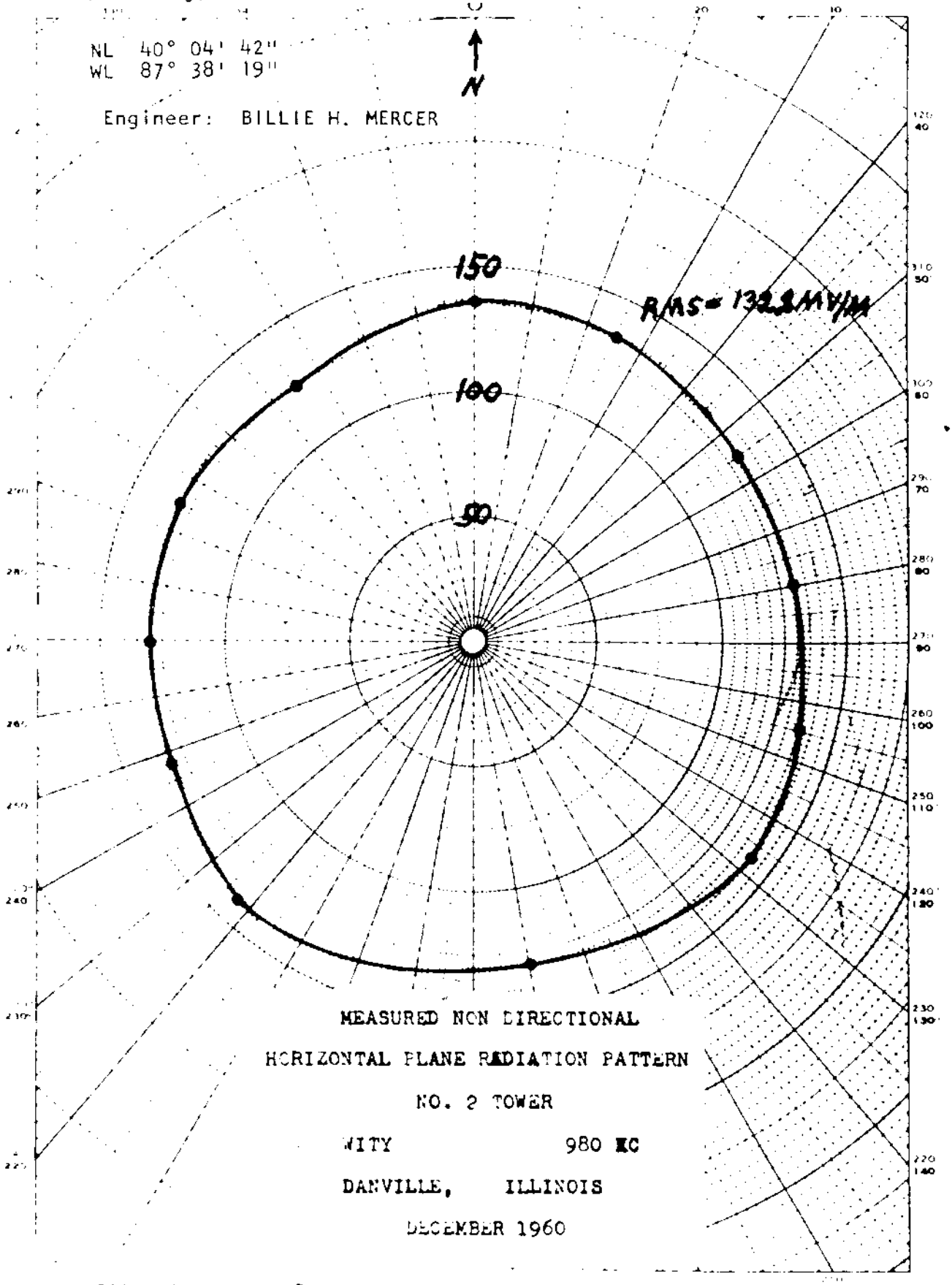
MEASURED NON-DA
(6-14-61g)

Station WITY
Danville, Illinois

1kw, DA-2,U
980 KC

NL 40° 04' 42"
WL 87° 38' 19"

Engineer: BILLIE H. MERCER



MEASURED NON DIRECTIONAL

HORIZONTAL PLANE RADIATION PATTERN

NO. 2 TOWER

WITY 980 KC

DANVILLE, ILLINOIS

DECEMBER 1960

FCC File No. BL-8330
Accepted 5-11-61

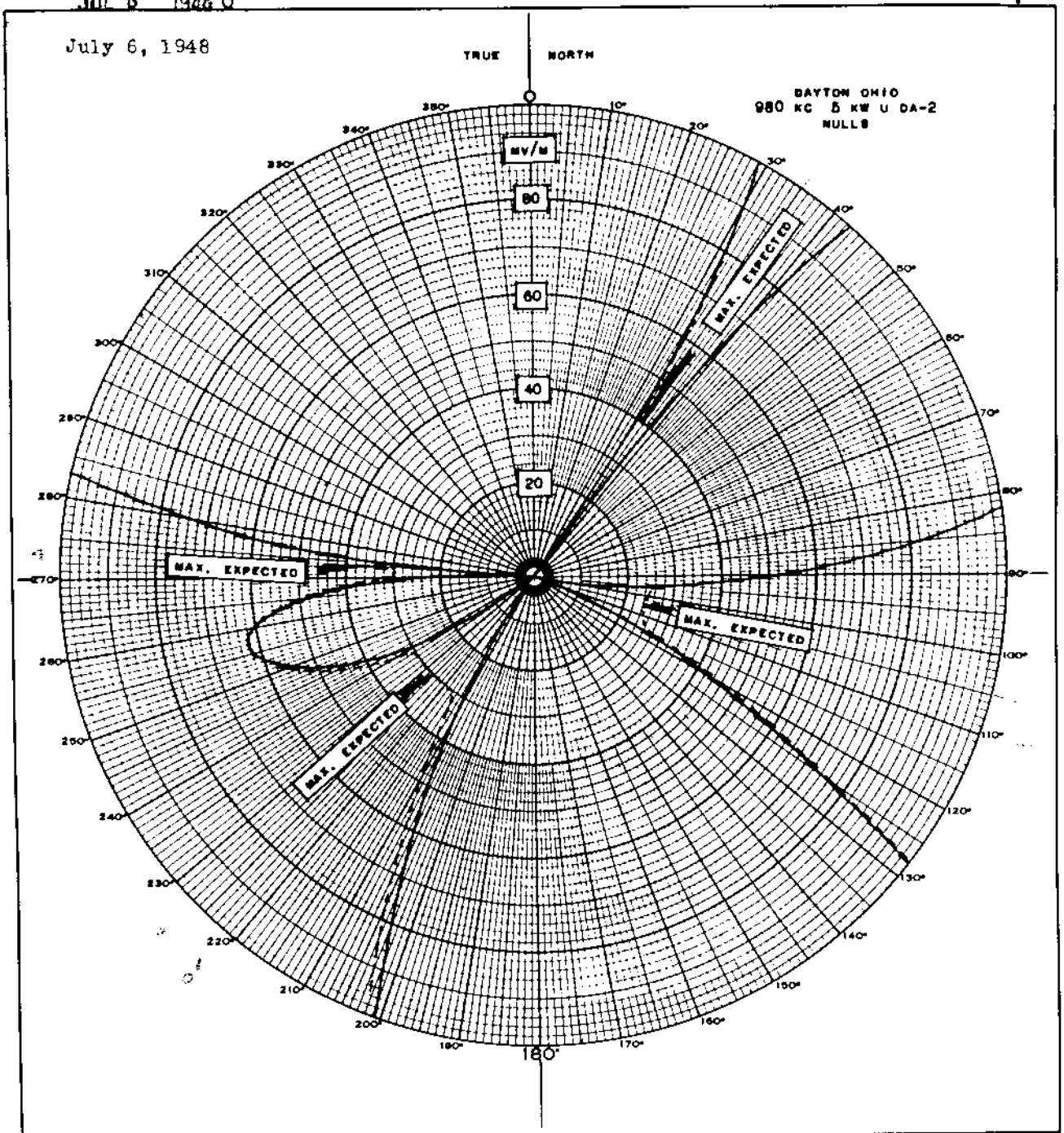
WITY
Danville, Illinois 980 KC

BP-18130 GRANTED (10-1-69) APPLICATION TO CHANGE OPERATION FROM DIRECTIONAL ANTENNA DAY & NIGHT TO DIRECTIONAL ANTENNA NIGHTTIME ONLY.

JUL 8 1948 G

~~WPLT~~ WONE

FIGURE 4.1



CALCULATED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION

DETAIL IN NULLS	Skyland Broadcasting Corporation ~~WPLT~~ DAYTON OHIO	PROPOSED NEW OPERATION ~~WPLT~~ WONE DAYTON OHIO 980 KC 5 KW U DA-2 480615 B
	WELDON & CARR CONSULTING RADIO ENGINEERS WASHINGTON DC	

BP-18130 Granted 10-1-64
Application to change
Operation from directional antenna
day & night to directional antenna
Nighttime only

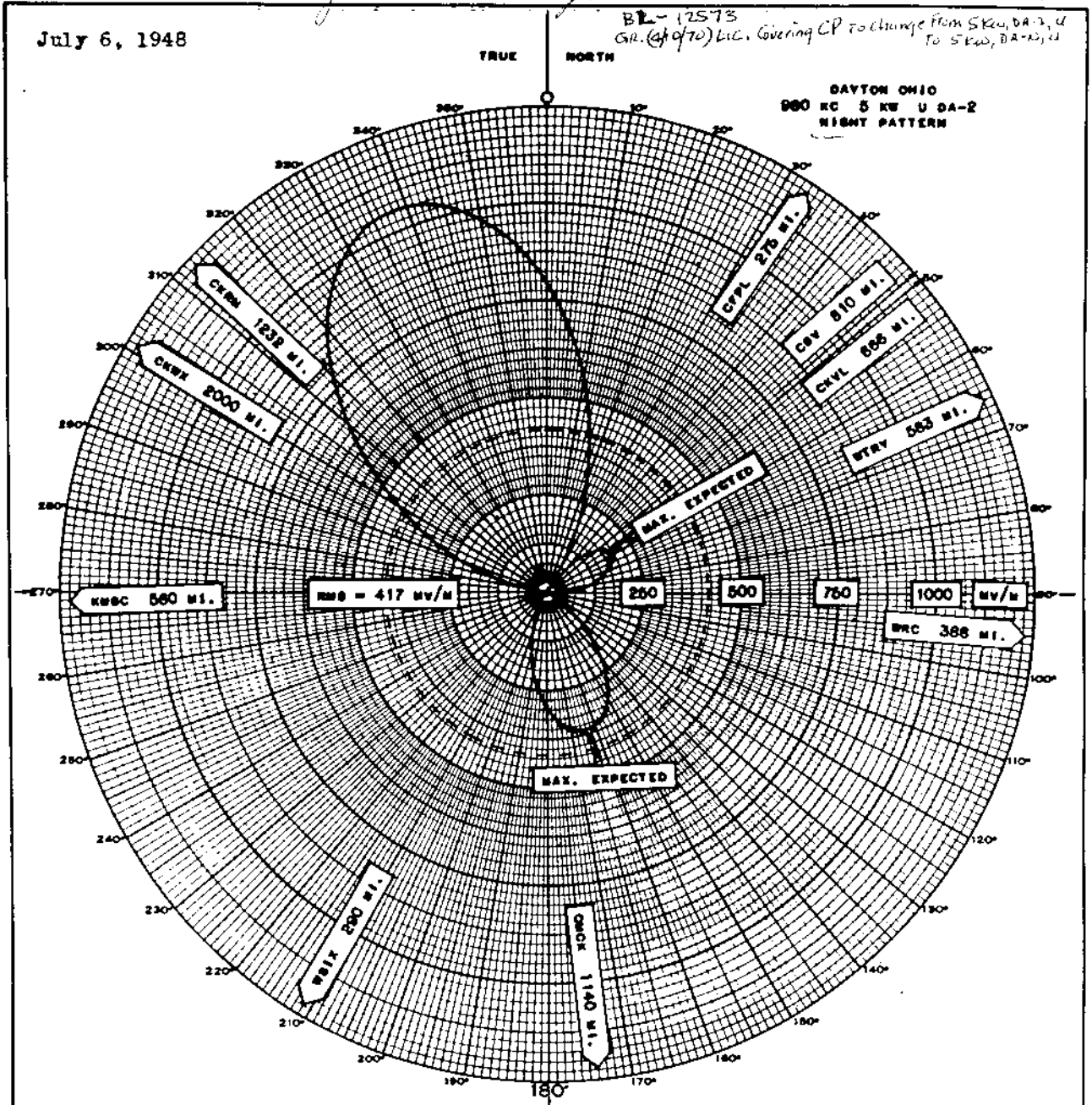
WPLT
980
WONE

JUL 8 1948 G

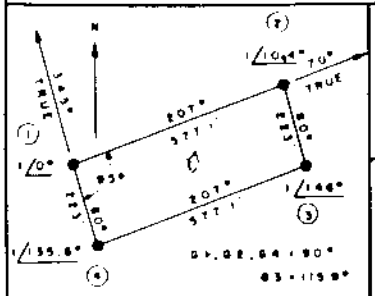
FIGURE 4.0

July 6, 1948

BL-12573
GR. (4/9/70) Lic. Covering CP to change from 5 kw, DA-2, U to 5 kw, DA-N, U



CALCULATED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION



Skyland Broadcasting Corporation
WPLT
DAYTON OHIO

WELDON & CARR
CONSULTING RADIO ENGINEERS
WASHINGTON DC

PROPOSED NEW OPERATION
WPLT
DAYTON OHIO
980 KC 5 KW U DA-2

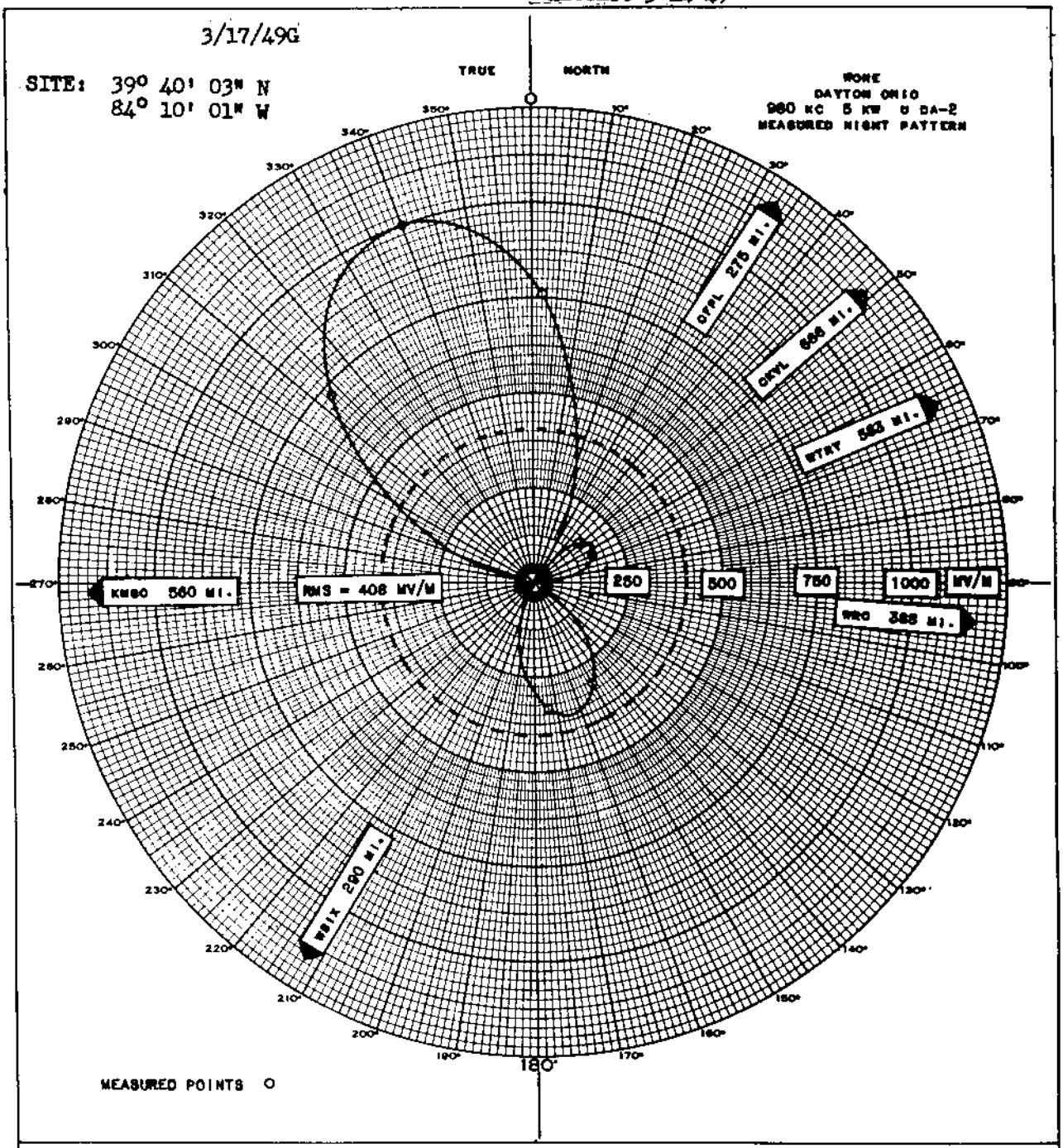
480615 A

SP-1-1-30 Granted 10-1-69 application to change WONE operation from directional antenna day & night to directional antenna nighttime only.

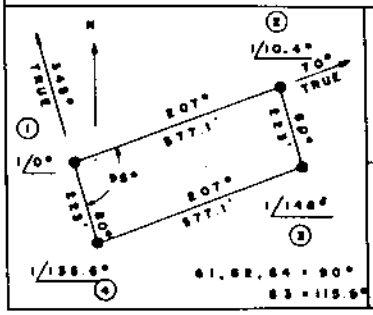
MEASURED NIGHT — WONE, DAYTON, O. — License 3-14-49 — 5kw, DA2 — FIGURE 8 — 980 kc

3/17/49G

SITE: 39° 40' 03" N
84° 10' 01" W



MEASURED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION



SKYLAND BROADCASTING CORPORATION
DAYTON OHIO

WELDON & CARR
CONSULTING RADIO ENGINEERS
WASHINGTON DC DALLAS TEXAS

WONE
DAYTON OHIO
980 KC 5 KW U DA-2

W 490309 X

WONE

MEASURED NULLS

WONE, DAYTON, O.

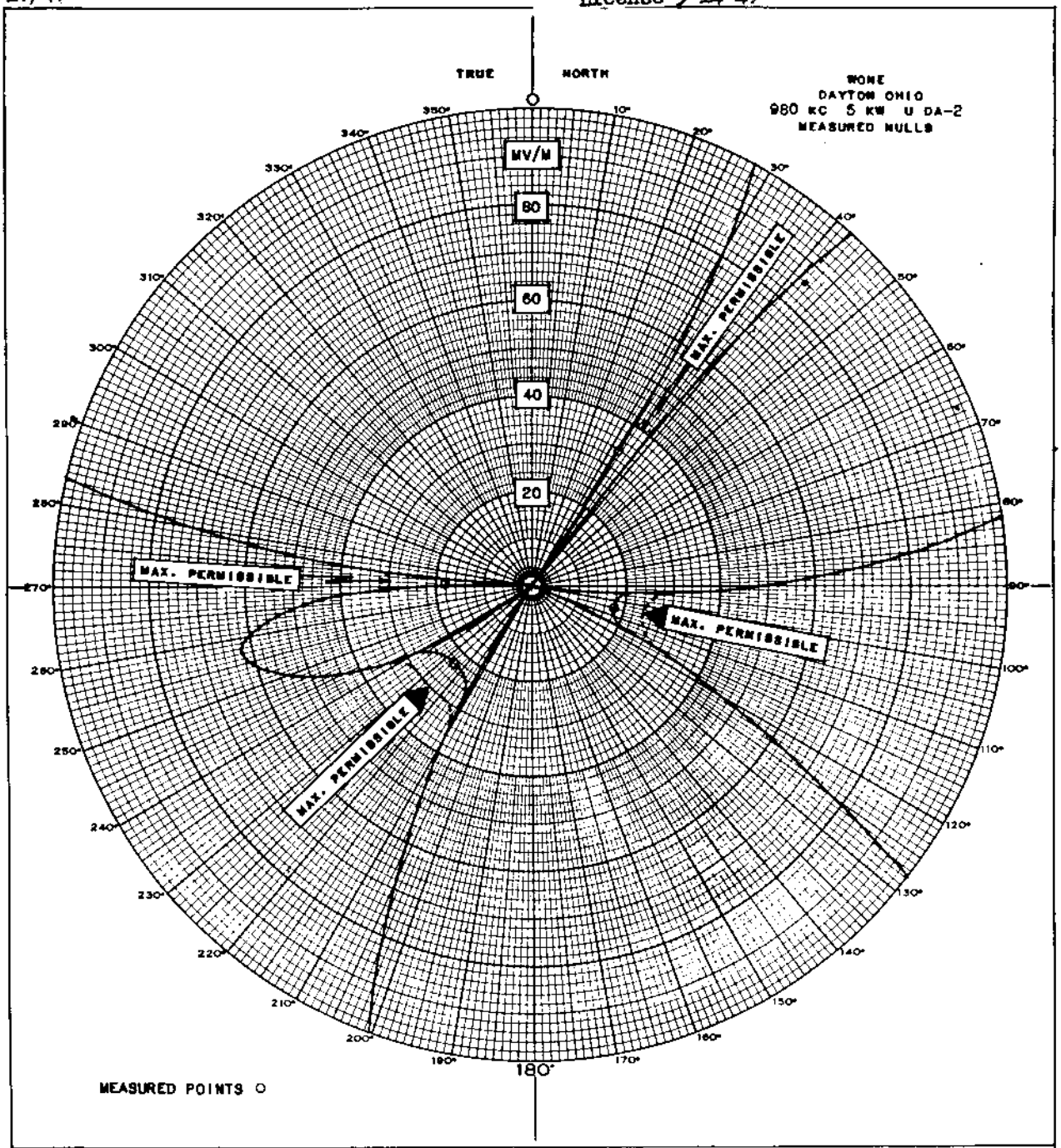
5kw, DA2

980 kc

3/17/49G

License 3-14-49

FIGURE 9



MEASURED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION

DETAIL IN NULLS	SKYLAND BROADCASTING CORPORATION DAYTON OHIO	WONE DAYTON OHIO 980 KC 5 KW U DA-2
	WELDON & CARR CONSULTING RADIO ENGINEERS WASHINGTON DC DALLAS TEXAS	W 490309 Z

WPIP
980KHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WPIP — Main Studio: Pompano Beach, Florida

Frequency: 980 KHz — Power: 0.5 Kw Night 2.5 Kw Day

Notification: 1778 — Date: August 30, 1978 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 26° 14' 26"
West Longitude: 80° 10' 06"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-2)
Number of elements: 3
Type of elements: Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER :	W (#1)	E (#2)	N (#3)			
HEIGHT ABOVE INSULATORS :	250'	250'	(89.7°)	200'	(71.7°)	
NIGHT PHASING :	0	-	-76.9°			
NIGHT FIELD RATIO:	1	-	0.93			
DAY PHASING :	0°	-104°	-			
DAY FIELD RATIO :	1	0.9	-			

SPACING AND ORIENTATION : The towers are located at the vertices of triangle with W (#1) tower as reference the E (#2) tower is spaced 251' (90°) on a line bearing 65° true and the N (#3) tower is spaced 337.3' (121°) on a line bearing 6° true.

WPIP

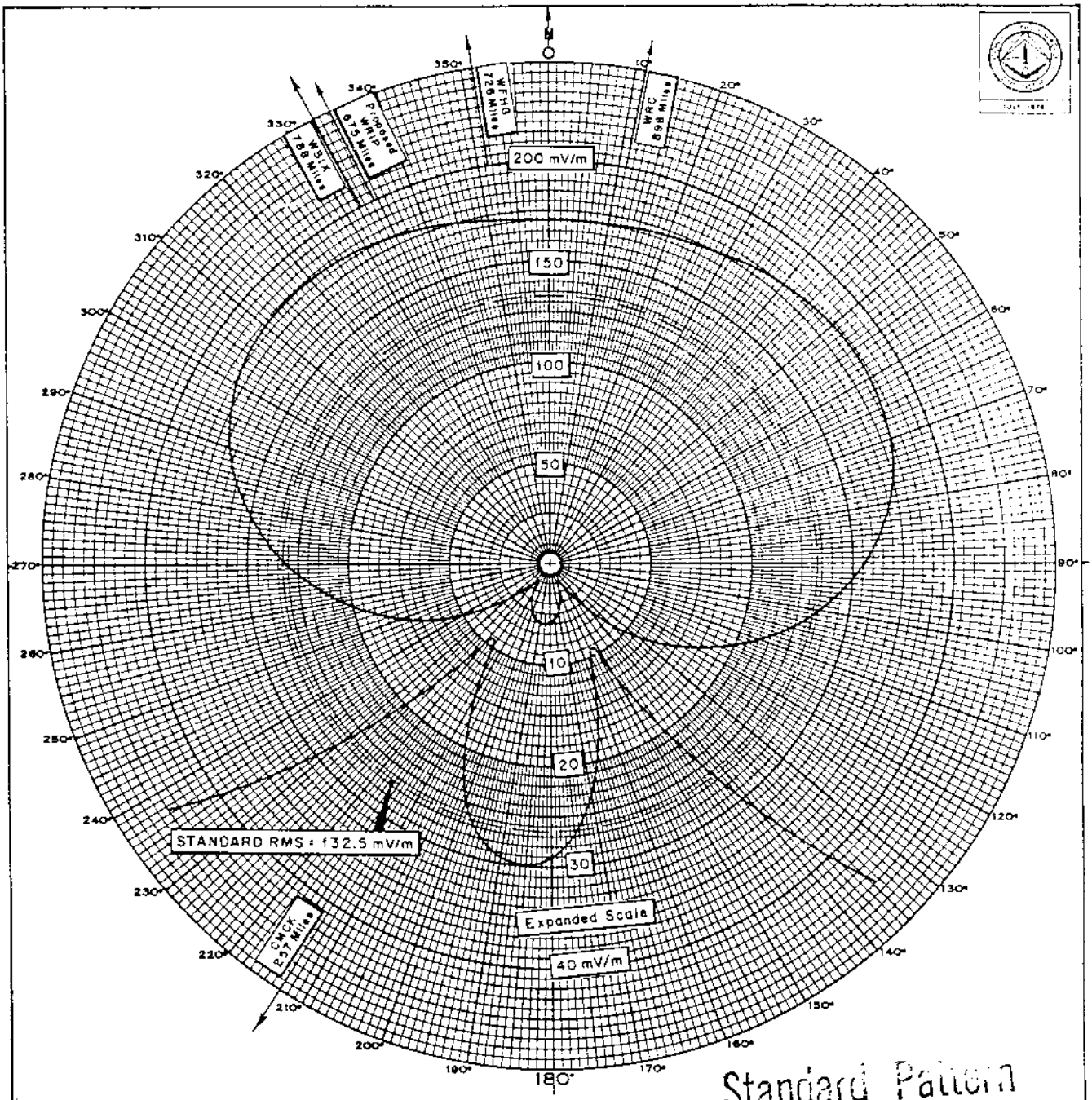
GROUND SYSTEM: 120 - 250' (except where shortened by property boundary) equally spaced copper about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	306.7 mv/m	325.8 mv/m	322.2 mv/m
Night	126 mv/m	123.8 mv/m	132.5 mv/m

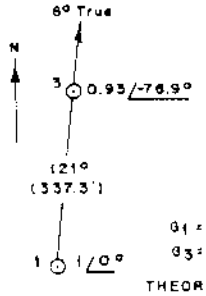
Note: Please retain the Daytime directional antenna radiation pattern notified for Station WLOD (now WPIP) in United States Change List Number 1775 dated 5-31-78 and attach to this Revised Description Sheet and Nighttime pattern. This notification concerns only a change in the Nighttime operation of the station with Daytime operation continued as previously notified.

WPIP



Standard Pattern

LATITUDE 26° 14' 26" NORTH
LONGITUDE 80° 10' 06" WEST



$\theta_1 = 250° \times 89.7°$
$\theta_3 = 200° \times 71.7°$

THEORETICAL RMS = 126 mV/m
STANDARD RMS = 132.5 mV/m
RSS = 123.8 mV/m

BL-790222AC

FIGURE 1

PROPOSED NIGHTTIME
HORIZONTAL PLANE STANDARD
RADIATION PATTERN
STATION WLOD
SUNRISE BROADCASTING CORPORATION
POMPANO BEACH, FLORIDA

PRESENT CP:	980 kHz	2.5 kW-D, 0.5 kW-N	DA-2
MODIFIED CP:	980 kHz	2.5 kW-D, 0.5 kW-N	DA-2

A. D. RING & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON D. C.

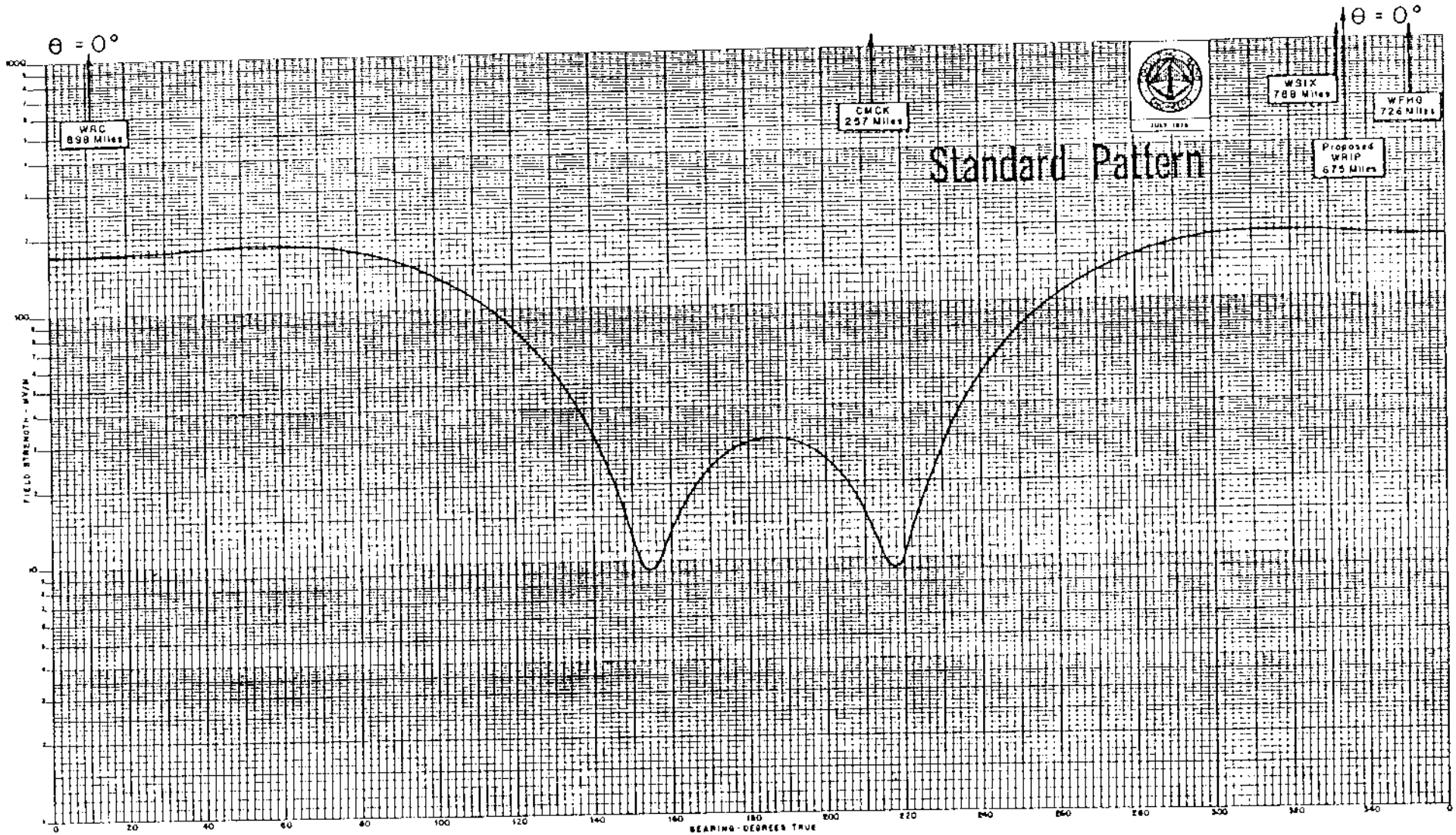


FIGURE 2-A

WRIP

WLOD
WPIP

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WLOD — Main Studio: Pompano Beach, Florida

Frequency: 980 kHz — Power 0.5 Night 2.5kw Day

Notification List No. 1775 — Date: May 31, 1978 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 26° 14' 26"
West Longitude: 80° 10' 06"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-2)
Number of elements: 3
Type of elements: Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	W(#1)	N(#3)	E(#2)
HEIGHT ABOVE INSULATORS:	250' (89.7°)	200' (71.7°)	250'
NIGHT PHASING:	0°	-74.3°	-62°
NIGHT FIELD RATIO:	1.0	0.96	0.18
DAY PHASING:	0°	---	-104°
DAY FIELD RATIO:	1	---	0.9

SPACING AND ORIENTATION: The towers are located at the vertices of a triangle with W(#1) tower as reference the E(#2) tower is spaced 251' (90.0° on a line bearing 65° true. And the N(#3) tower is spaced 379' (136°) on a line bearing 5° true.

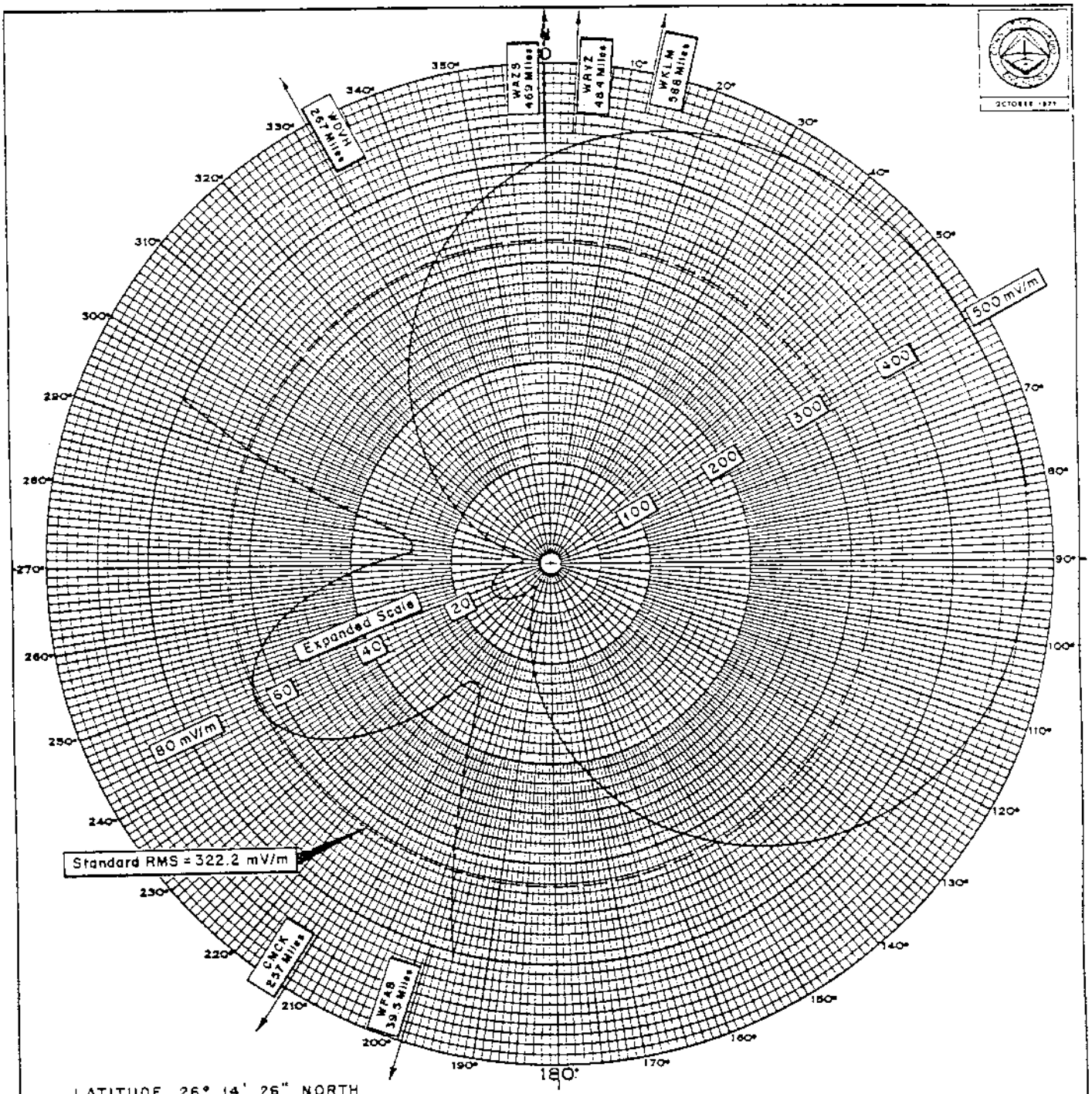
GROUND SYSTEM: 120 - 250' (except where shortened by property boundary) equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

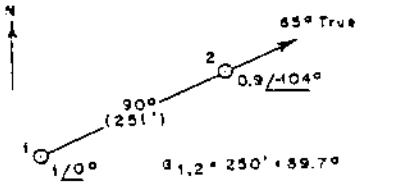
	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	306.7 mv/m	325.8 mv/m	322.2 mv/m
Night	128 mv/m	123.5 mv/m	134.6 mv/m

Note: This notification concerns a change in the Daytime operation of the station and the addition of Nighttime operation.

WLOD



LATITUDE 26° 14' 26" NORTH
LONGITUDE 80° 10' 06" WEST



THEORETICAL RMS = 306.7 mV/m
STANDARD RMS = 322.2 mV/m
RSS = 325.8 mV/m

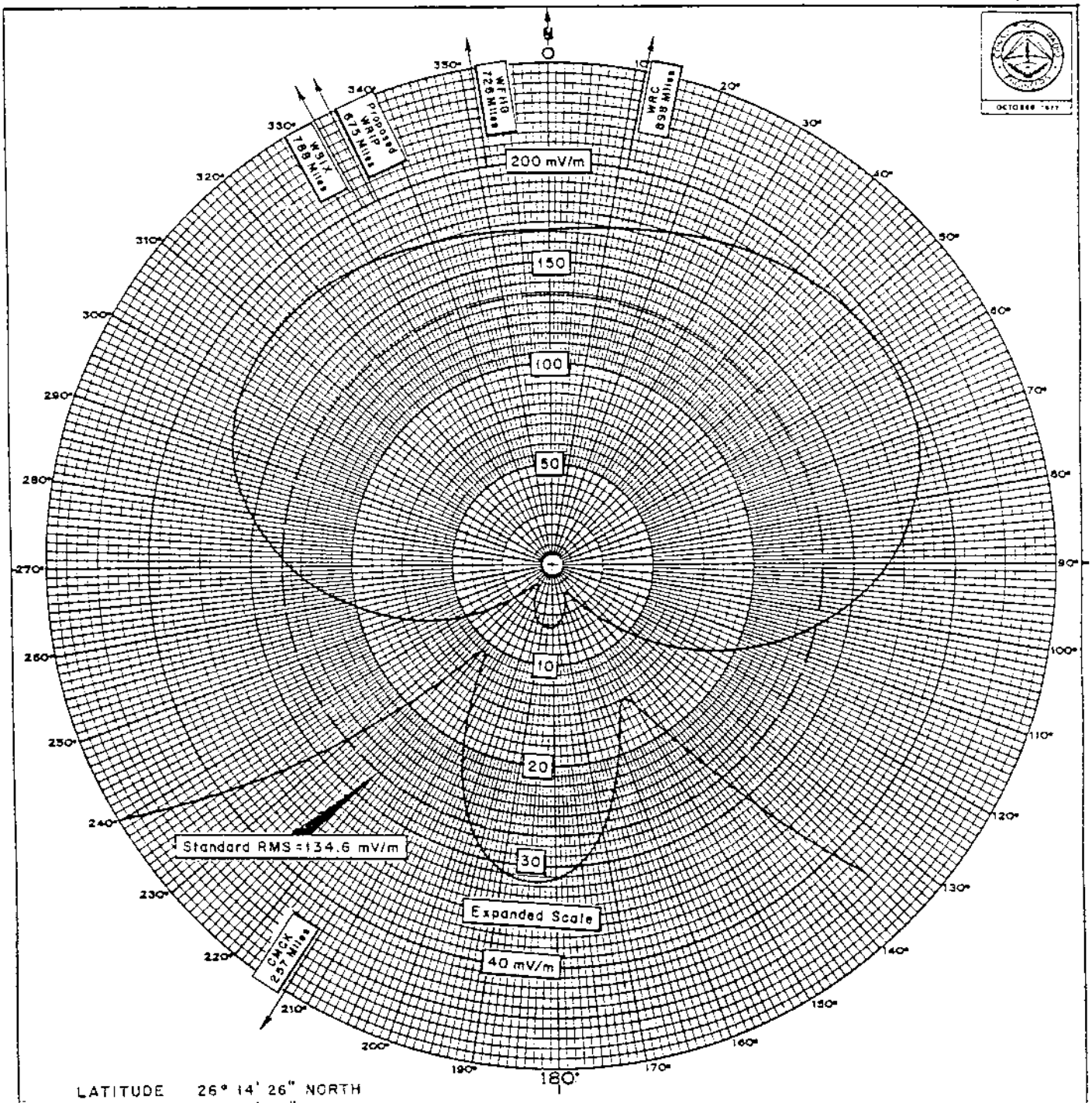
FIGURE 1

PROPOSED DAYTIME
HORIZONTAL PLANE STANDARD
RADIATION PATTERN
STATION WLOD
SUNRISE BROADCASTING CORPORATION
POMPANO BEACH, FLORIDA

PRESENT : 980 kHz	1 kW	DA - D
PROPOSED: 980 kHz	2.5kW-D,0.5kW-N	DA - 2

A. D. RING & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

WPIP
WLOD



LATITUDE 26° 14' 26" NORTH
LONGITUDE 80° 10' 06" WEST

Standard Pattern

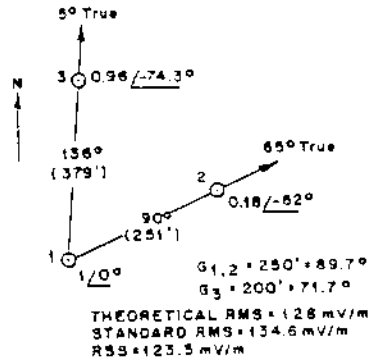


FIGURE 2

PROPOSED NIGHTTIME
HORIZONTAL PLANE STANDARD
RADIATION PATTERN
STATION WLOD
SUNRISE BROADCASTING CORPORATION
POMPANO BEACH, FLORIDA

PRESENT: 980 kHz	1 kW	DA-D
PROPOSED: 980 kHz	2.5kW-D, 0.5kW-N	DA-2

A. D. RING & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

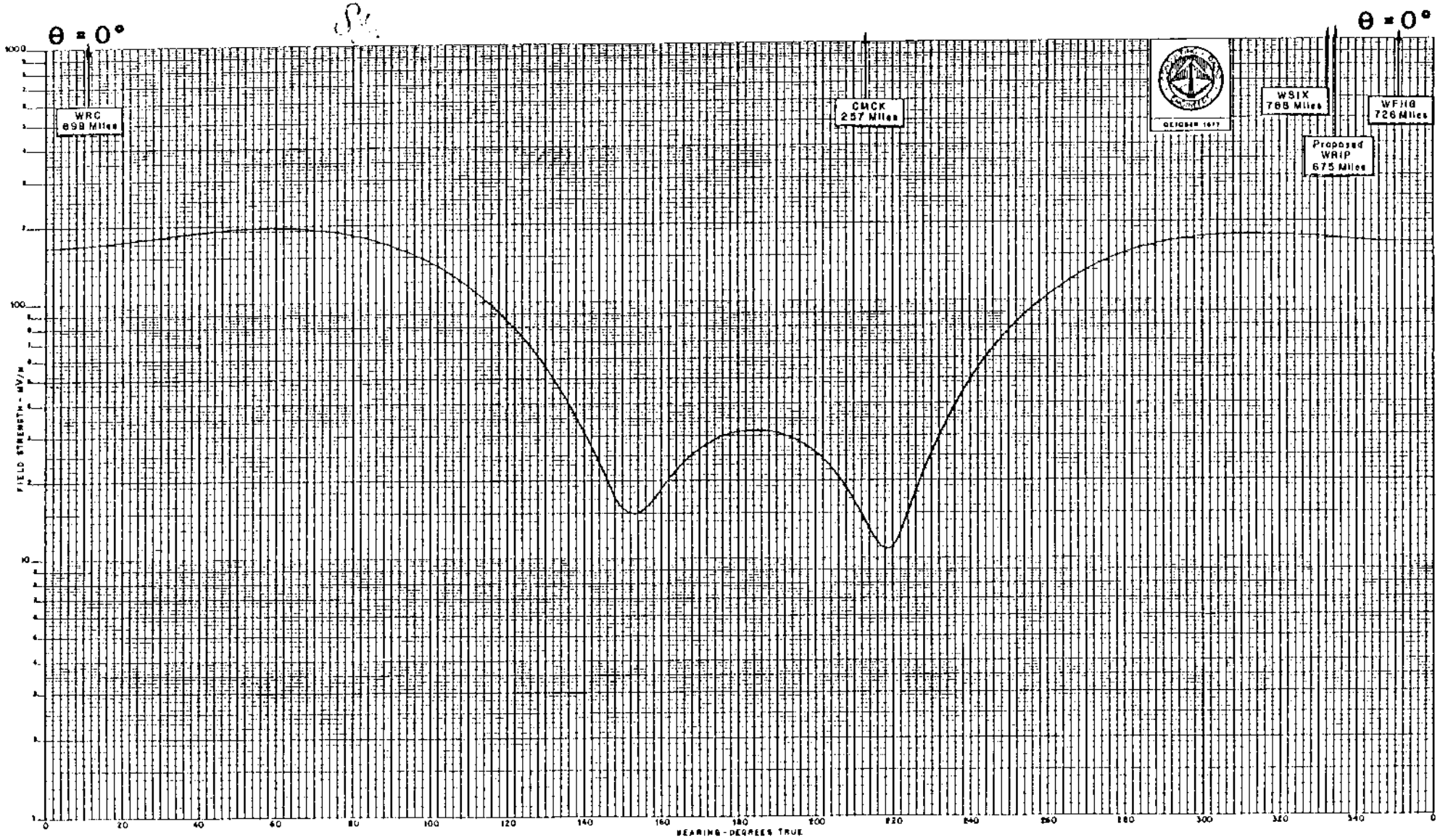

θ = 0°
θ = 0°
WRC
698 Miles
CHCK
257 Miles
WSIX
768 Miles
WFHG
726 Miles
Proposed
WRIP
675 Miles
OCTOBER 1977
FIELD STRENGTH - MV/M
1000
100
10
1
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
0
BEARING - DEGREES TRUE

FIGURE 3 -A

~~WLOL~~
WPIP

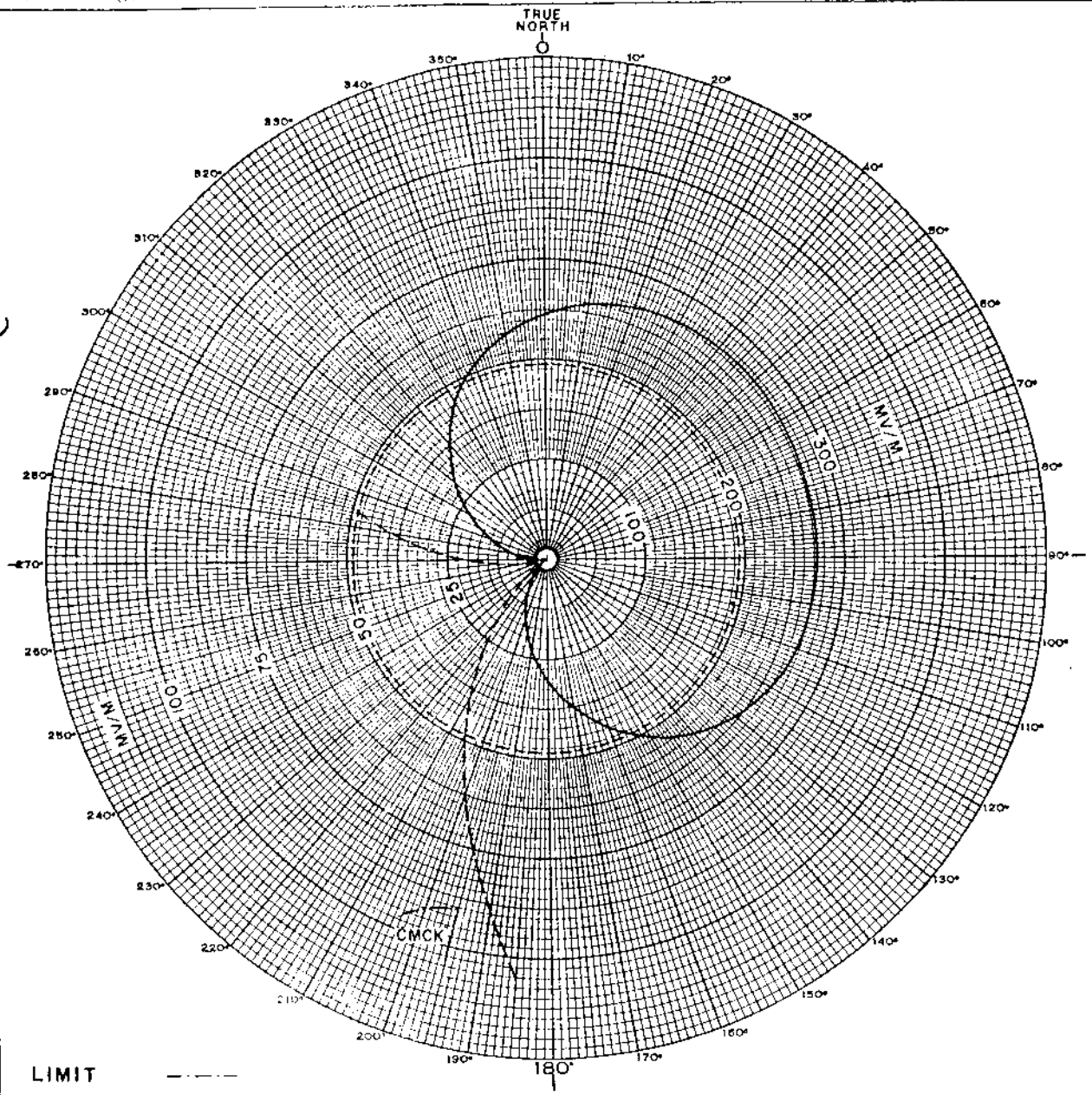
PROPOSED DAY
(1-8-59g)

Station WLOD
Pompano Beach, Florida

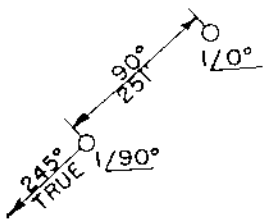
1kw, DA-D, D
980 KC

granted Mod of CP 12/8/58 for change in antenna, trans. location

granted license 1-16-59



ANTENNA HEIGHT = 251' = 90°



FIELD INTENSITY VERSUS AZIMUTH

ELEVATION ANGLE 0°	
RMS 194 MV/M	
N. LATITUDE	26° 14' 25"
W. LONGITUDE	80° 10' 06"
SUPERSEDES	670420
PATTERN NO.	681202

POMPANO BEACH
BROADCASTING CORPORATION
PROPOSED
980 KC - 1 KW - DAYTIME
POMPANO BEACH, FLORIDA
HORIZONTAL PATTERN

RUSSELL P. MAY
CONSULTING RADIO ENGINEER
WASHINGTON 5, D.C.

FIGURE NO. 1A

FCC File No. BMP-8330
Accepted 12-9-58

WLOD
Pompano Beach, Florida

980 KC

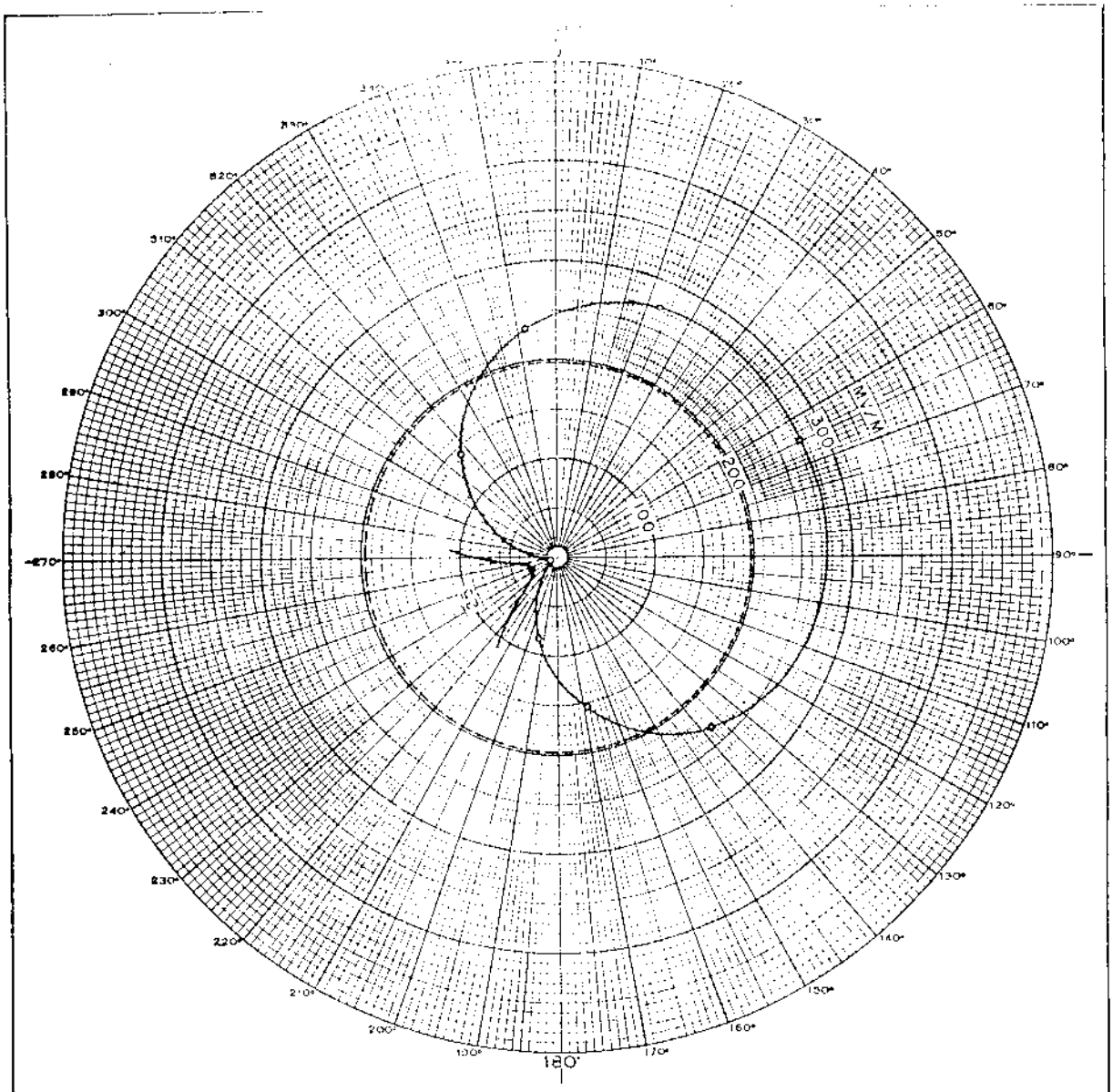
~~WLOD~~
WPIP

MEASURED DAY
(6-16-59$_D$)

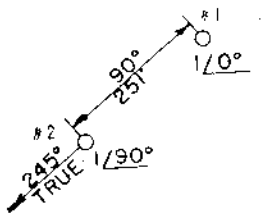
Station WLOD
Pompano Beach, Florida

1kw, DA-D, D
980 KC

granted license
7-16-59



ANTENNA HEIGHT = 251' = 90°



FIELD INTENSITY VERSUS AZIMUTH

ELEVATION ANGLE	0°
RMS	186 MV/M
N. LATITUDE	26° 14' 25"
W. LONGITUDE	80° 10' 06"
SUPERSEDES	
PATTERN NO	581202

POMPANO BEACH
BROADCASTING CORPORATION
POMPANO BEACH, FLORIDA
980 KC - 1 KW - DA-D

MEASURED DIRECTIONAL PATTERN

RUSSELL P. MAY
CONSULTING RADIO ENGINEER
WASHINGTON 5, D.C.

FIGURE NO. 5

FCC File No. BL-7474
Accepted 6-2-59

WLOD
Pompano Beach, Florida

980 KC

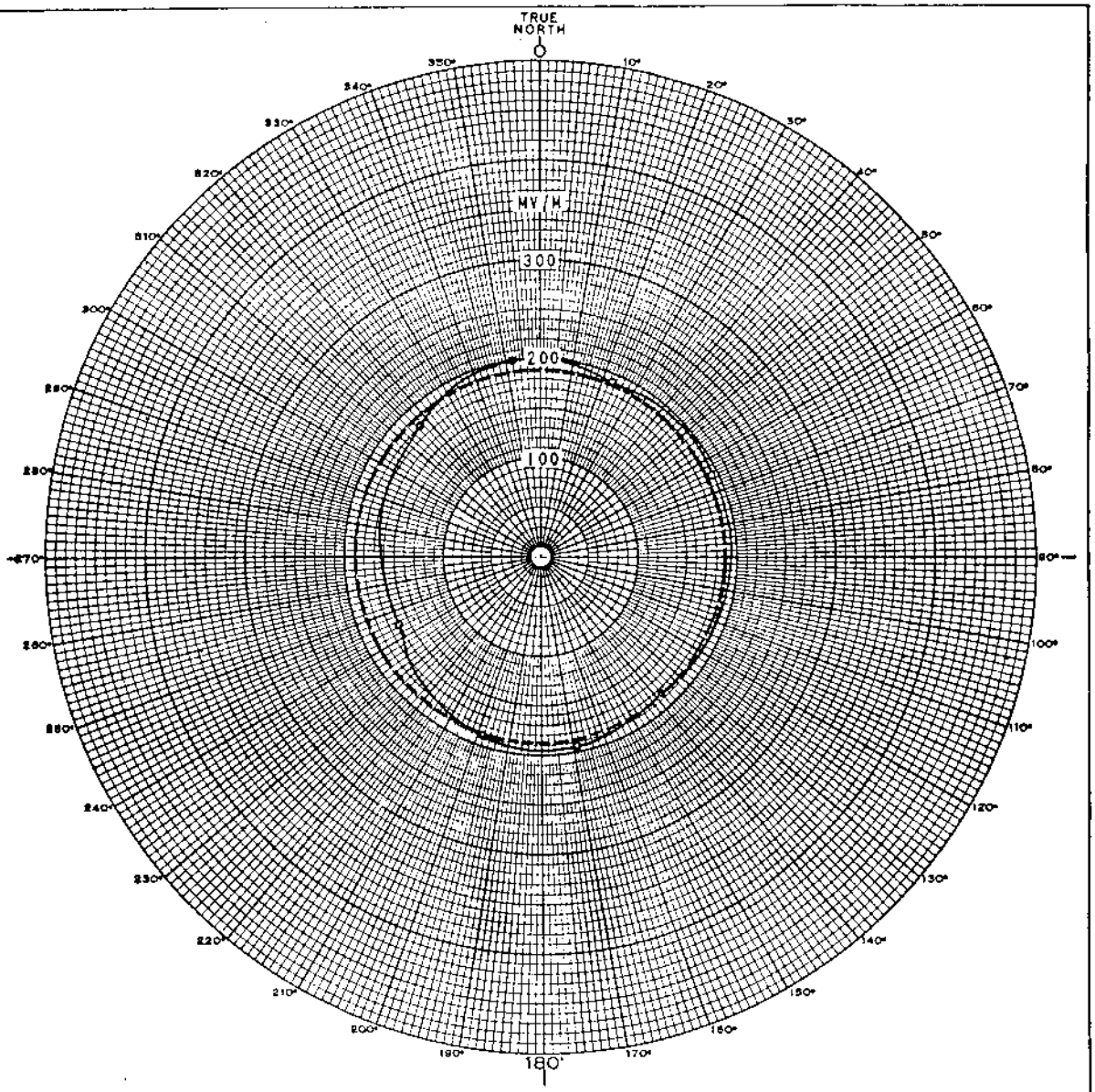
~~WLOD~~
WPIP

MEASURED NON-DA
(6-16-59g)

Station WLOD
Pompano Beach, Florida

1kw, DA-D, D
980 KC

granted license
7-16-59



FIELD INTENSITY VERSUS AZIMUTH	
ELEVATION ANGLE 0° RMS 187 MV/M	POMPANO BEACH BROADCASTING CORPORATION POMPANO BEACH, FLORIDA 980 KC - 1 KW - DA-D MEASURED NON-DIRECTIONAL PATTERN
N. LATITUDE 26° 14' 25" W. LONGITUDE 80° 10' 06"	
SUPERSEDES PATTERN NO.	
RUSSELL P. MAY CONSULTING RADIO ENGINEER WASHINGTON 5, D.C.	FIGURE NO. 4

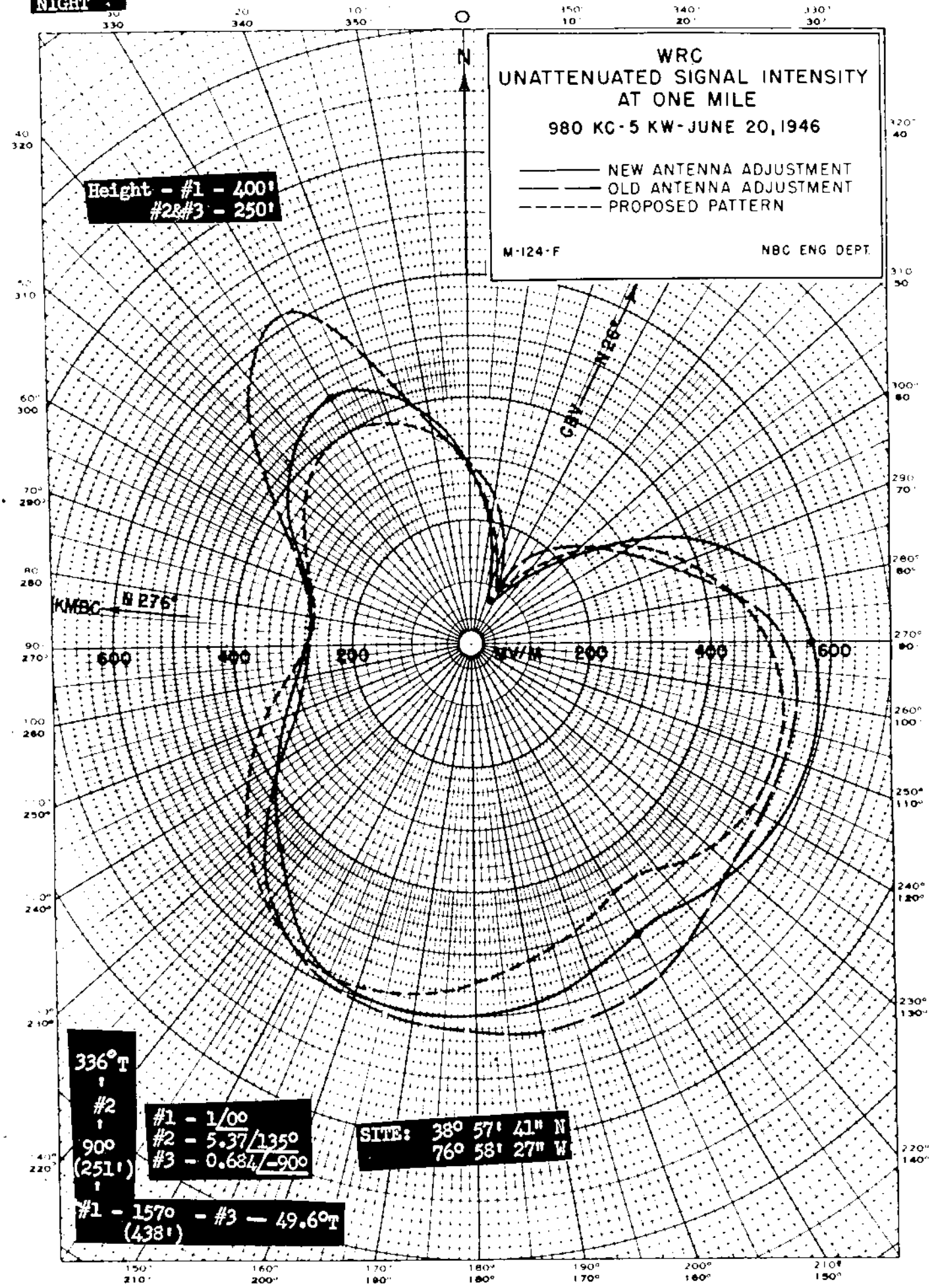
FCC File No. BL-7474
Accepted 6-2-59

WLOD
Pompano Beach, Florida

980 KC

MEASURED NIGHT

WRC



WRIP

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WRIP — Main Sutdio: Rossville, Georgia

Frequency: 980 KHz — Power: 0.5 Kw Night 0.5 Kw Day

Notification List No. 1778 — Date: August 30, 1978 — Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 34° 57' 54"
West Longitude: 85° 18' 00"

ANTENNA CHARACTERISTICS

Authorized for Daytime Nighttime operation. (DA-2)
Number of elements: 4
Type of elements: Series excited, uniform cross-section guyed, vertical steel towers.

TOWER:	SW (#1)	NW(#3)	NE(#2)	SE(#4)
HEIGHT ABOVE INSULATORS:	210' (75.3°)	260' (93.3°)	210'(75.3°)	260' (93.3°)
NIGHT PHASING:	-320.6°	-167°	0°	-153.6°
NIGHT FIELD RATIO:	0.916	0.710	1.00	1.290
DAY PHASING:	0°	---	+180	---
DAY FIELD RATIO:	1	---	0.55	---

SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 227' (81.42°) in length on a line bearing 268° true. The short sides are 205' (73.53°) in length on a line bearing 187° true.

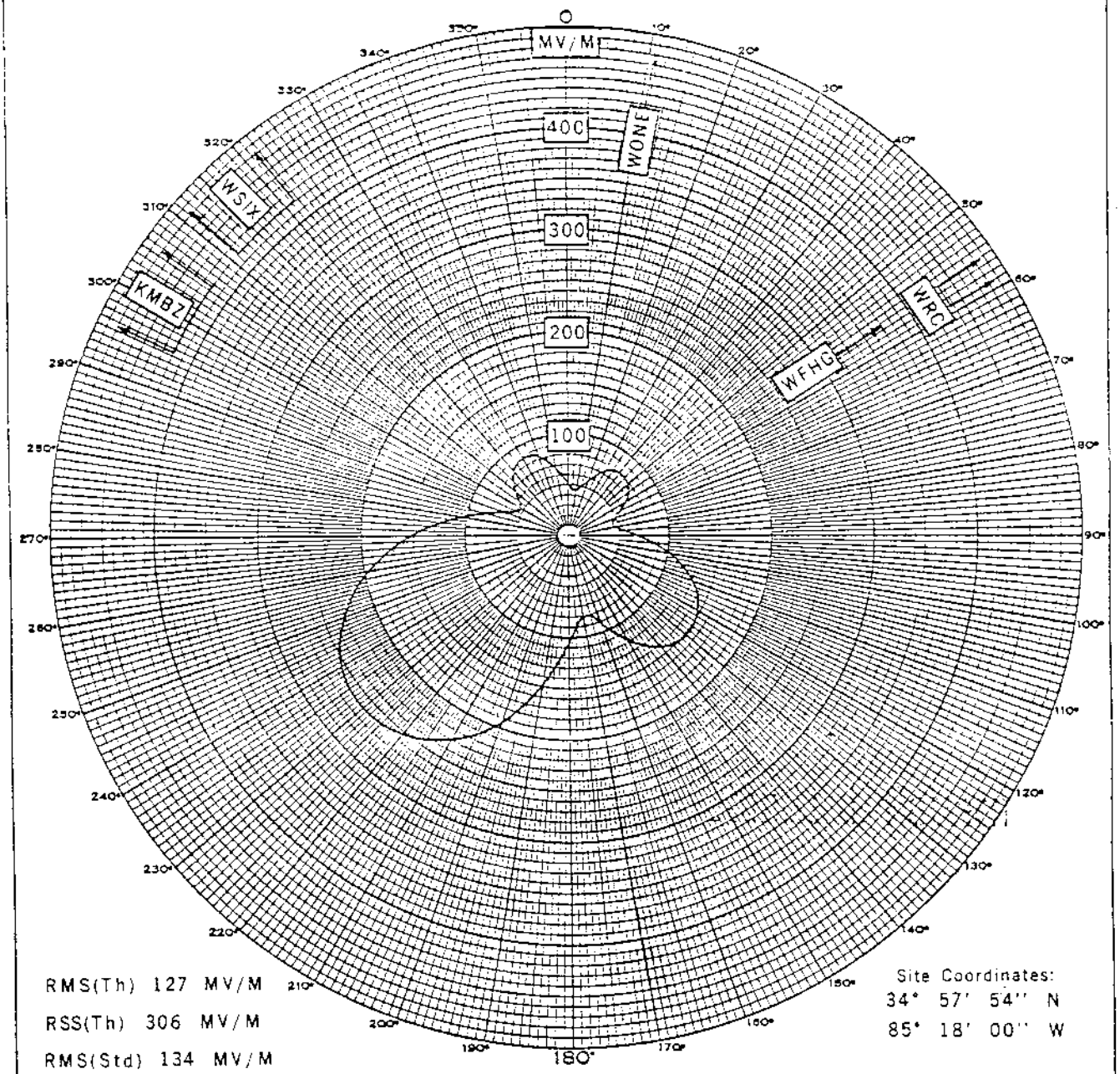
WRIP

GROUND SYSTEM: 120 - 250' (except where shortened by property boundary) equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

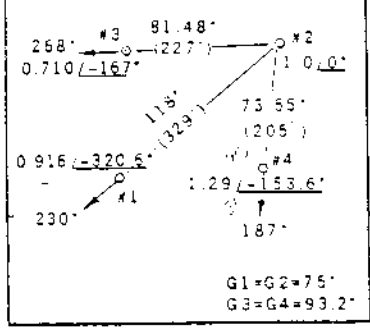
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	130 mv/m		
Night	127 mv/m	306 mv/m	134 mv/m

Note: Please retain the Daytime directional antenna radiation pattern notified for Station (new) Rossville, Georgia in United States Change List Number 742 dated January 22, 1958 and attach to this Revised Description Sheet and Nighttime pattern. This notification concerns only a change in the Nighttime operation of the station with Daytime operation continued as previously notified. Geographical coordinates of center of directional antenna system have corrected to take into account the addition of two towers used for the nighttime directional antenna operation.



NIGHTTIME HORIZONTAL PLANE STANDARD RADIATION PATTERN



JAY SADOW

ROSSVILLE, GEORGIA

Jules Cohen & Associates
Consulting Electronics Engineers

STATION WRIP

980 KHZ

0.5 KW U DA-2

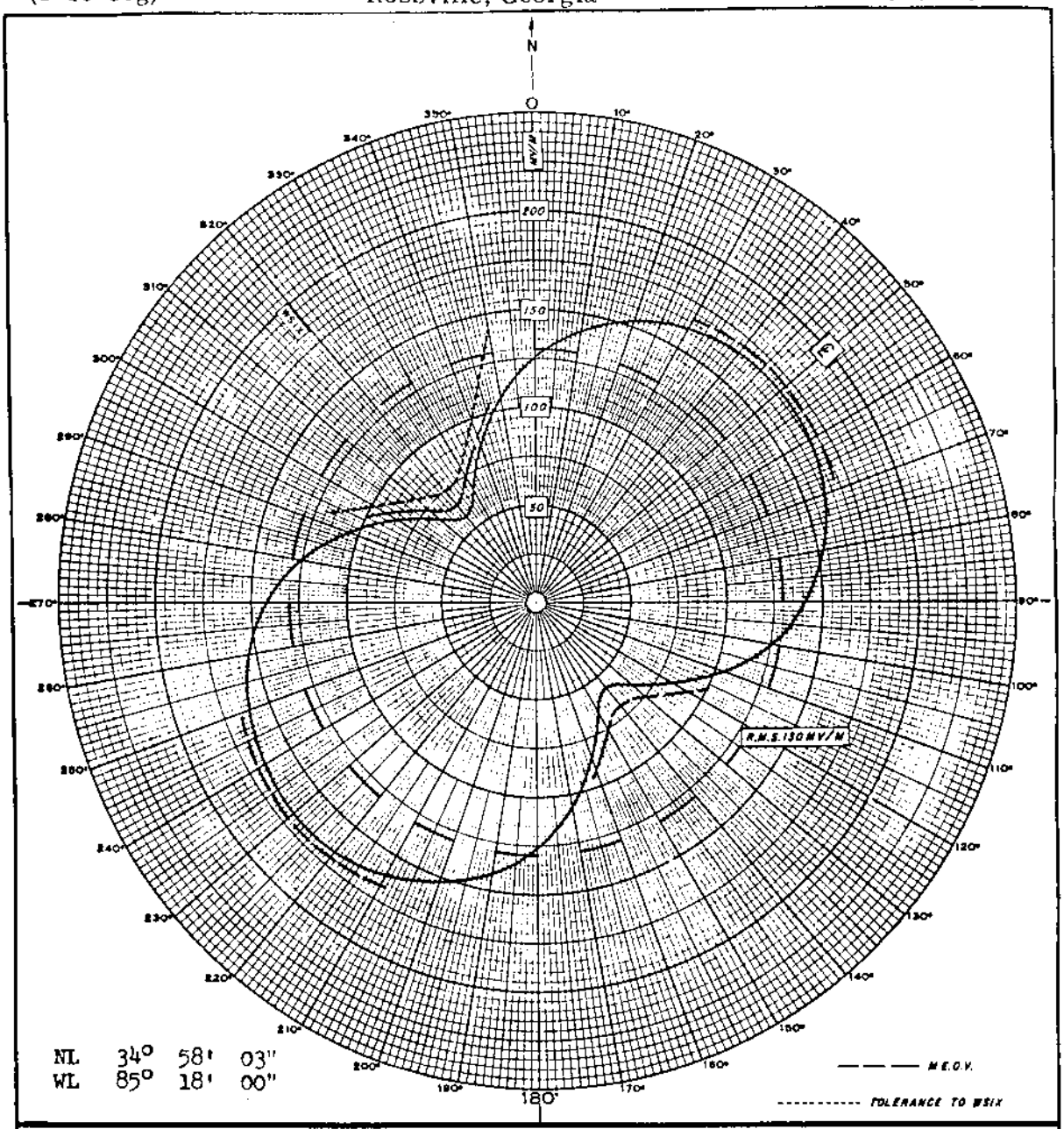
Pattern 780214AN

Rossville, Ga

WRIP

PROPOSED DAY (1-10-58g) | New; Jay Sadow, Rossville, Georgia | 500w, DA-D,D 980 KC

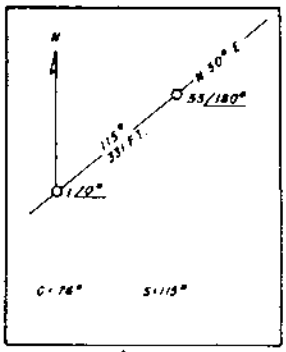
Granted CP 1/22/58 for new station



HORIZONTAL RADIATION PATTERN

ROSSVILLE, GA.

980KC.-0.5KW-D.A.-D.



W.J. HOLEY
ATLANTA, GA.

PATTERN NO 11-13-57
SUPERSEDES
APP

FCC File No. BP-10,827
Accepted 12-23-57

Jay Sadow
Rossville, Georgia

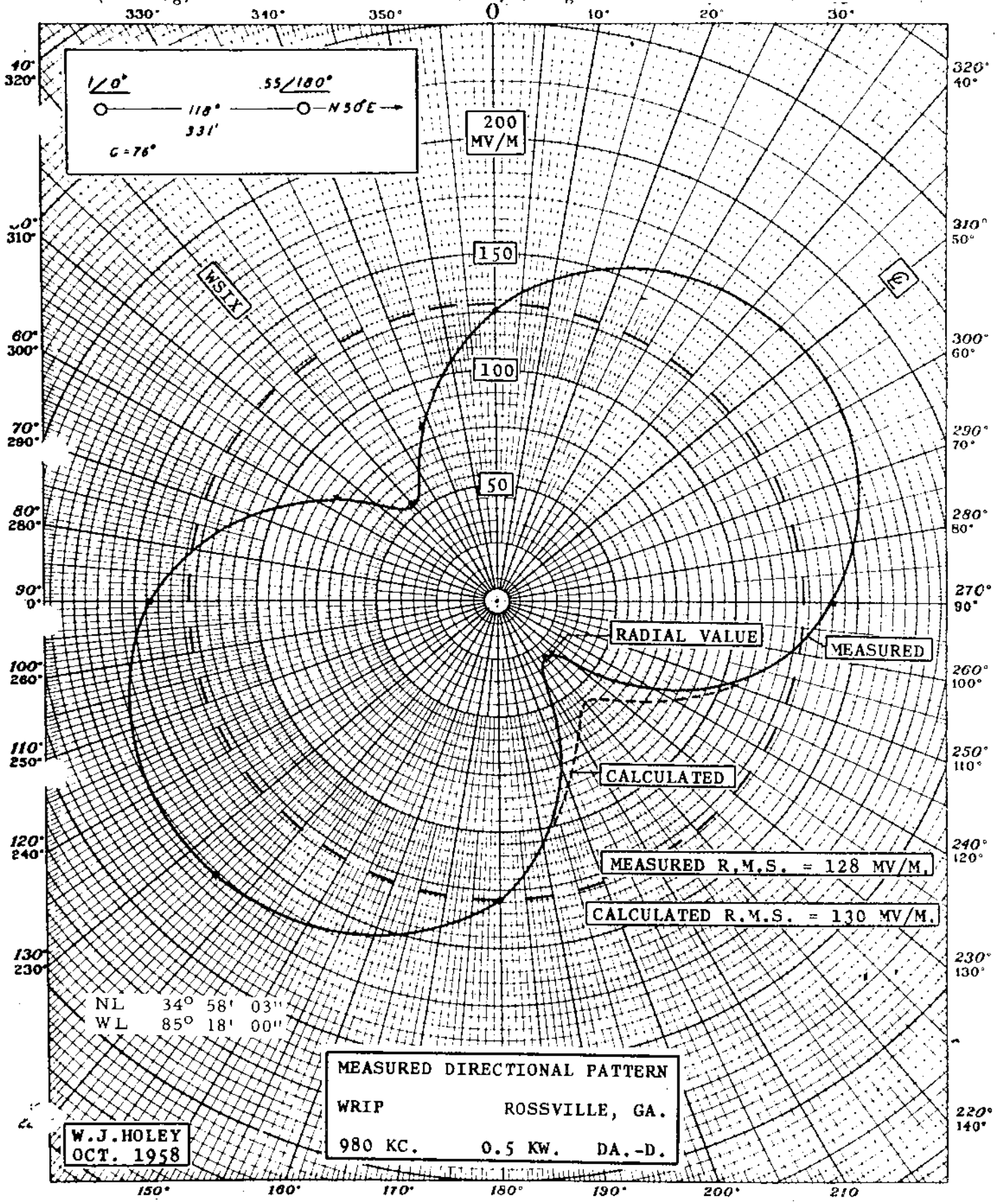
980 KC

WRIP

MEASURED DAY
(1-8-59g)

Station WRIP
Rossville, Georgia

500w, DA-D, D
980 KC



FCC File No. BL-7299
Accepted 12-8-58

WRIP
Rossville, Georgia

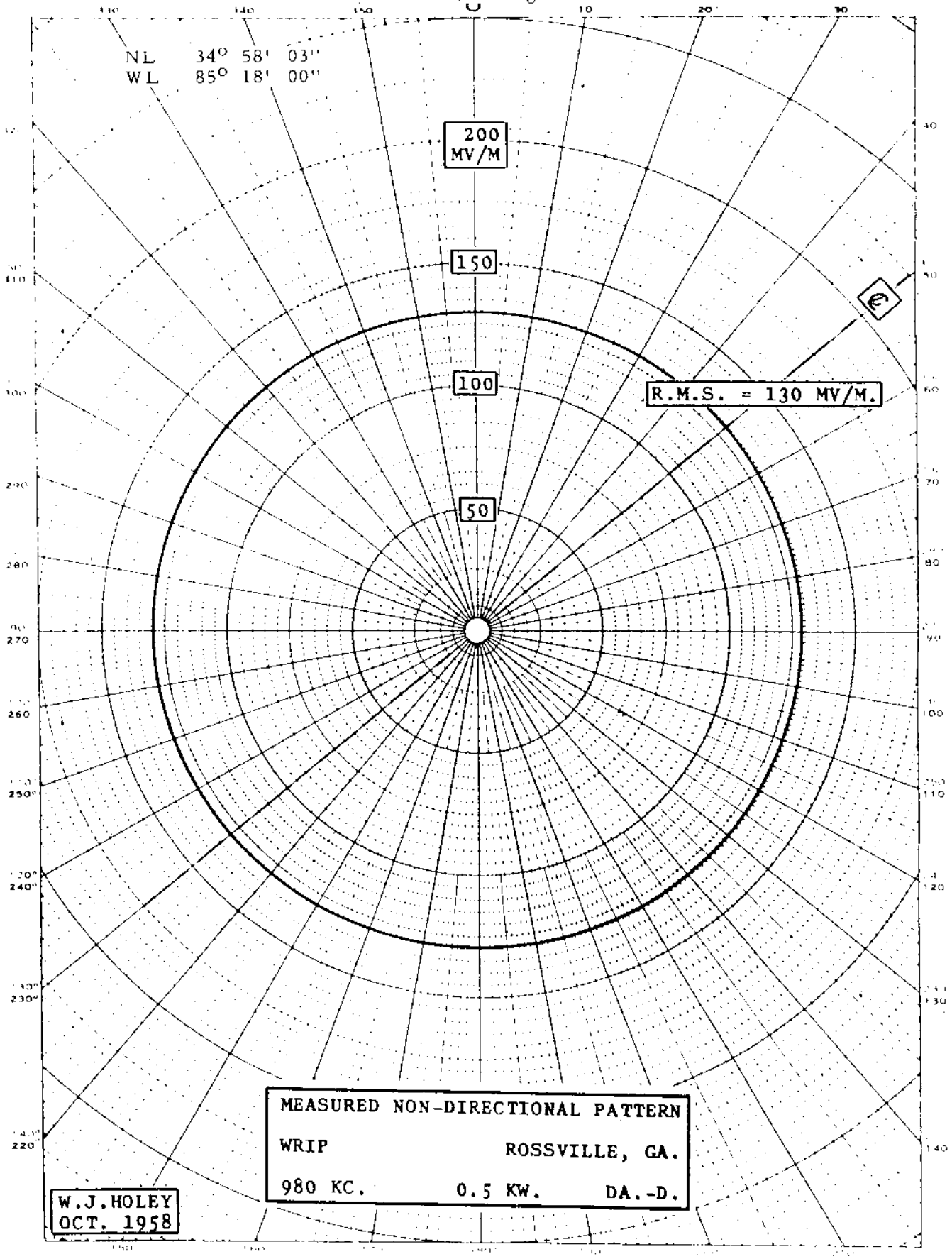
980 KC

WRIP

MEASURED NON-DA
(1-8-59g)

Station WRIP
Rossville, Georgia

500w, DA-D, D
980 KC



FCC File No. BL-7299
Accepted 12-8-58

WRIP
Rossville, Georgia

980 KC

WSIX

SUPPLEMENTAL DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WSIX

Main Studio: Nashville, Tennessee

Frequency: 980 kHz

Power: 5 kW

Notification List No. 1600

Date: October 2, 1974 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 36° 12' 25"

West Longitude: 86° 40' 25"

Authorized for Nighttime operation (DA-N).

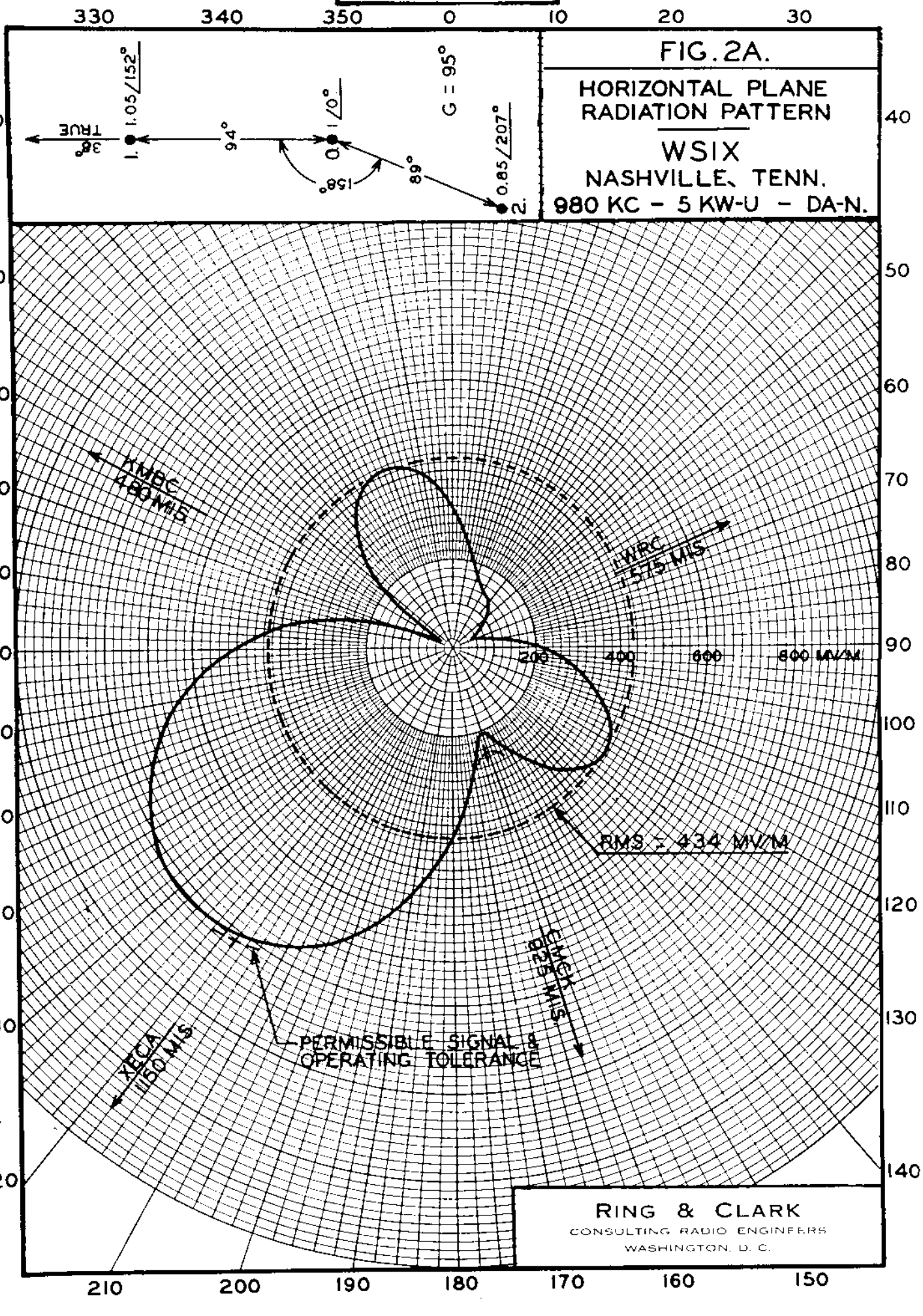
Predicted effective Day Field: (omnidirectional) 428 mv/m at rated power.

Note: Please retain the description sheet and directional antenna radiation patterns notified for station WSIX in United States Change List Number 46, dated March 12, 1942 and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only a correction in the geographical coordinates of the center of the antenna system.

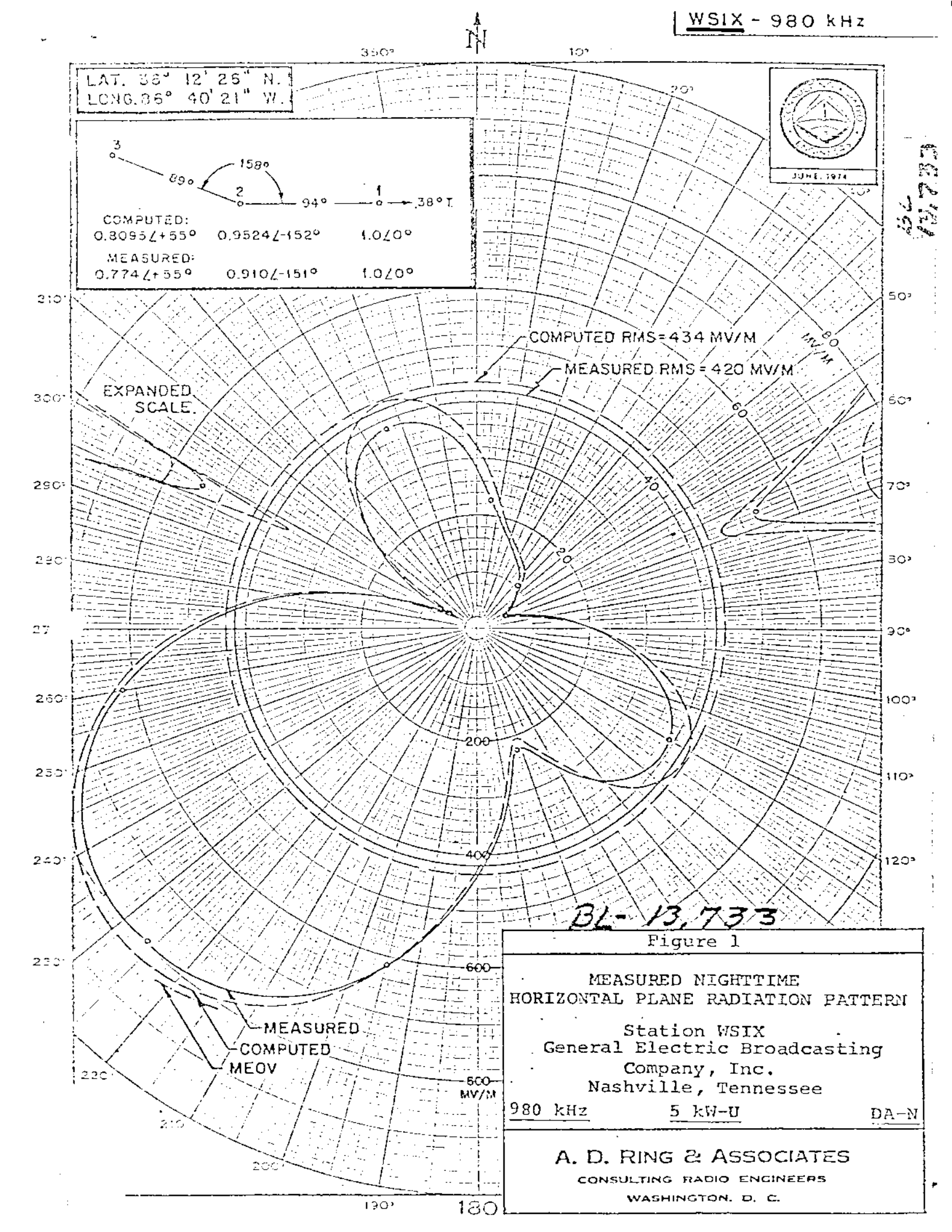
CTR NO 30839A5

PATTERN No.: 420306
SUPERSEDES: 420223

WSIX – 980



WSIX - 980 kHz



BL-13,733

Figure 1

MEASURED NIGHTTIME
HORIZONTAL PLANE RADIATION PATTERN

Station WSIX
General Electric Broadcasting
Company, Inc.
Nashville, Tennessee

980 kHz 5 kW-U DA-N

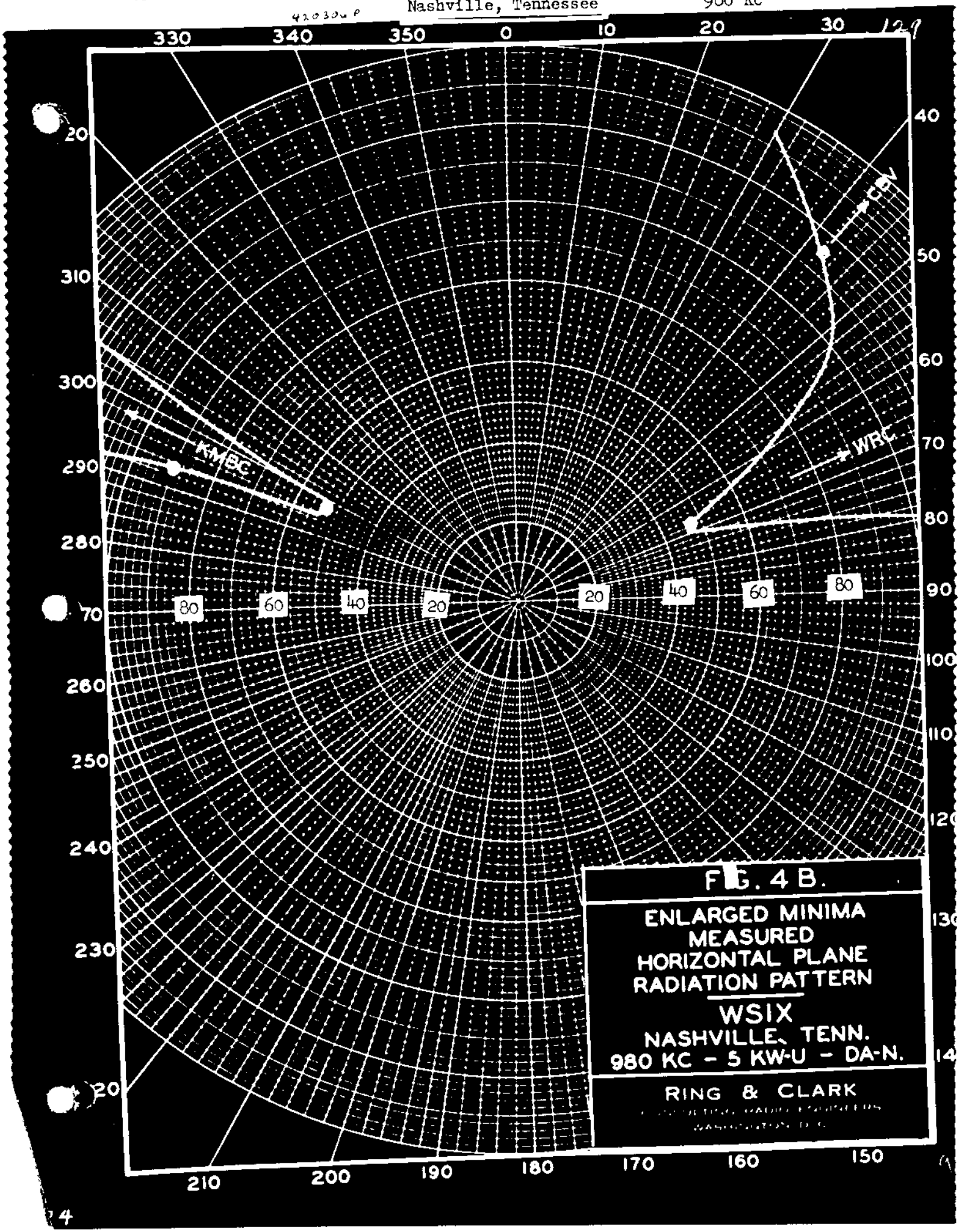
A. D. RING & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

MEASURED NIGHT NULLS

Station WSIX
Nashville, Tennessee

980 KC

WSIX



PATTERN No 420610
SUPERSEDES

WSIX - 980

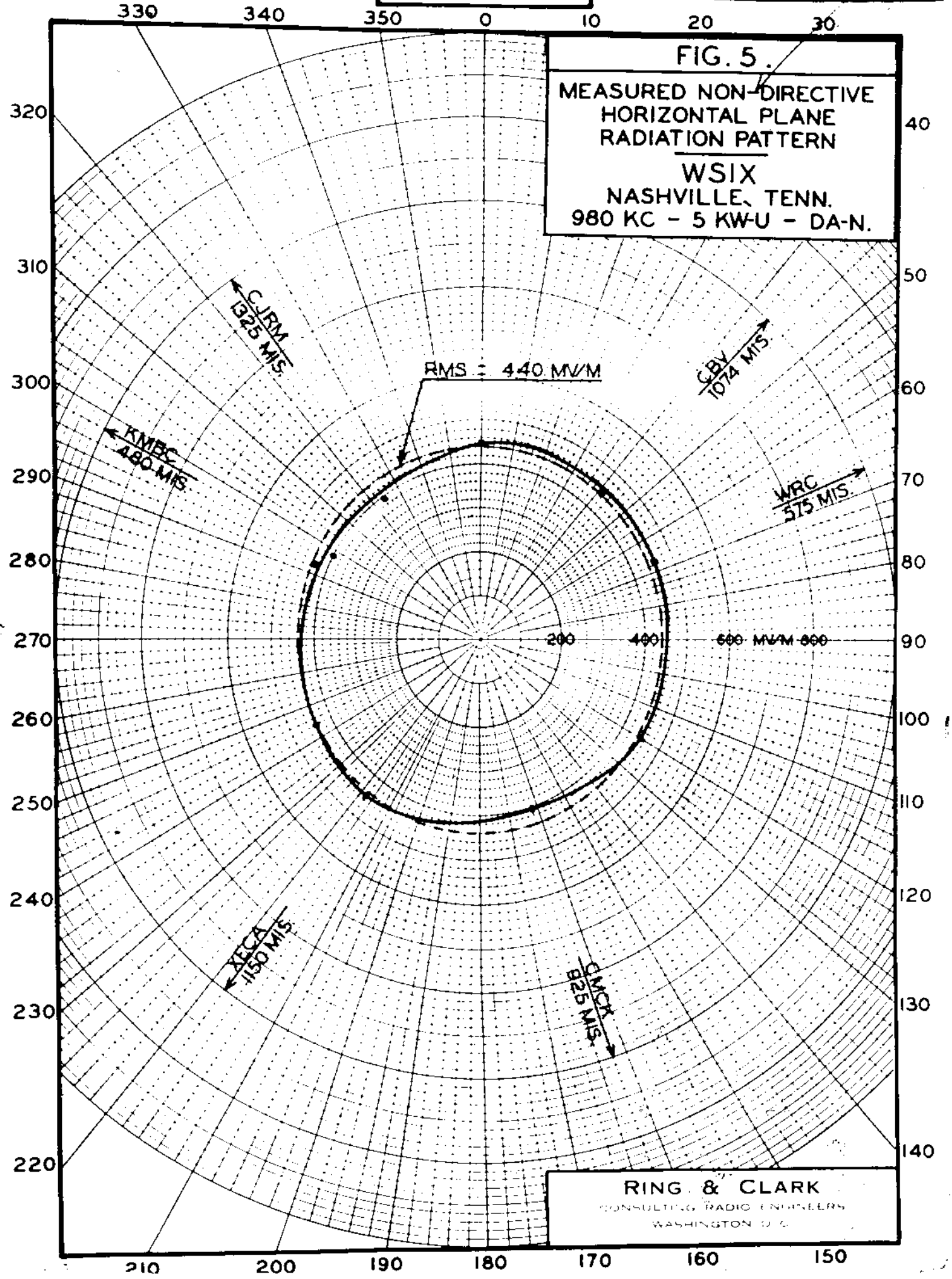


FIG. 5.

MEASURED NON-DIRECTIVE HORIZONTAL PLANE RADIATION PATTERN

WSIX
NASHVILLE, TENN.
980 KC - 5 KW-U - DA-N.

RING & CLARK
CONSULTING RADIO ENGINEERS
WASHINGTON D. C.

WTRY

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WTRY

Main Studio: Troy, New York

Frequency: 980 kHz

Power: 5kw

Notification List No. 1452

Date: November 24, 1971

Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42 ° 46 ' 56 "
West Longitude: 73 ° 50 ' 07 "

ANTENNA CHARACTERISTICS

Authorized for Nighttime operation. (DA-N)
Number of elements: 3
Type of elements: Series-excited, Self-supporting, tapered, vertical steel towers.

TOWER:	NW(#1)	C(#2)	SE(#3)	
HEIGHT ABOVE INSULATORS:	251'	251'	251'	(90°)
PHASING:	+265°	+144.4°	0°	
FIELD RATIO:	0.438	1.115	1.0	

SPACING AND ORIENTATION: Adjacent elements are spaced 259.46' (93°) on a line bearing 118° true.

GROUND SYSTEM: 120 - 251' equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers. Centers of systems are bonded together.

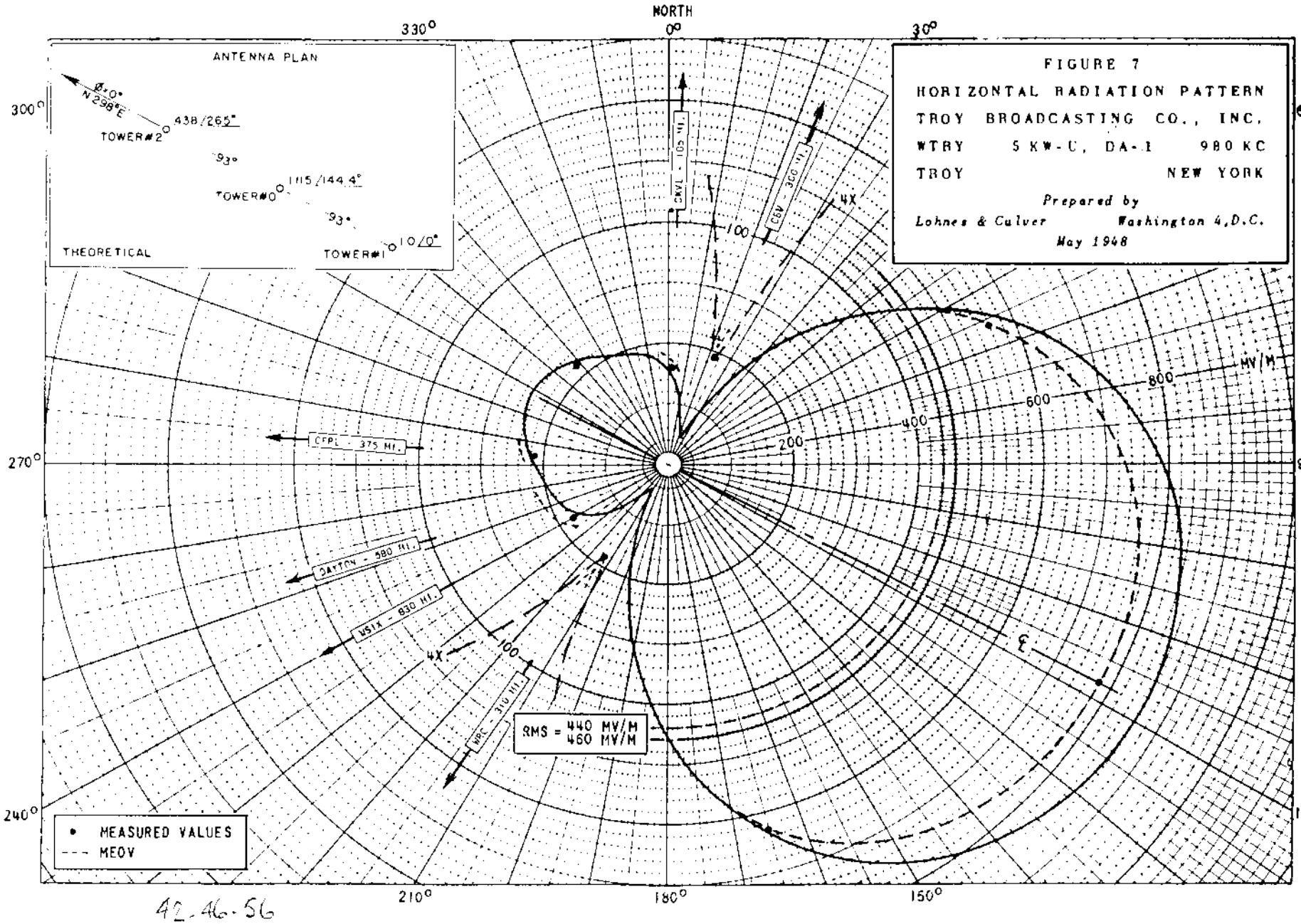
Predicted effective Night Field: 460 mv/m at rated power.

Predicted effective Day Field: (omnidirectional) 425 mv/m at rated power.

Note: Please retain the directional antenna radiation patterns notified for Station WTRY in United States Change List Number 273 dated April 29, 1948 and attach to this Revised Description Sheet. This notification concerns only a change in the Daytime operation of the station with Nighttime operation continued as previously notified.

CTR NO 30835A3

measured day and night

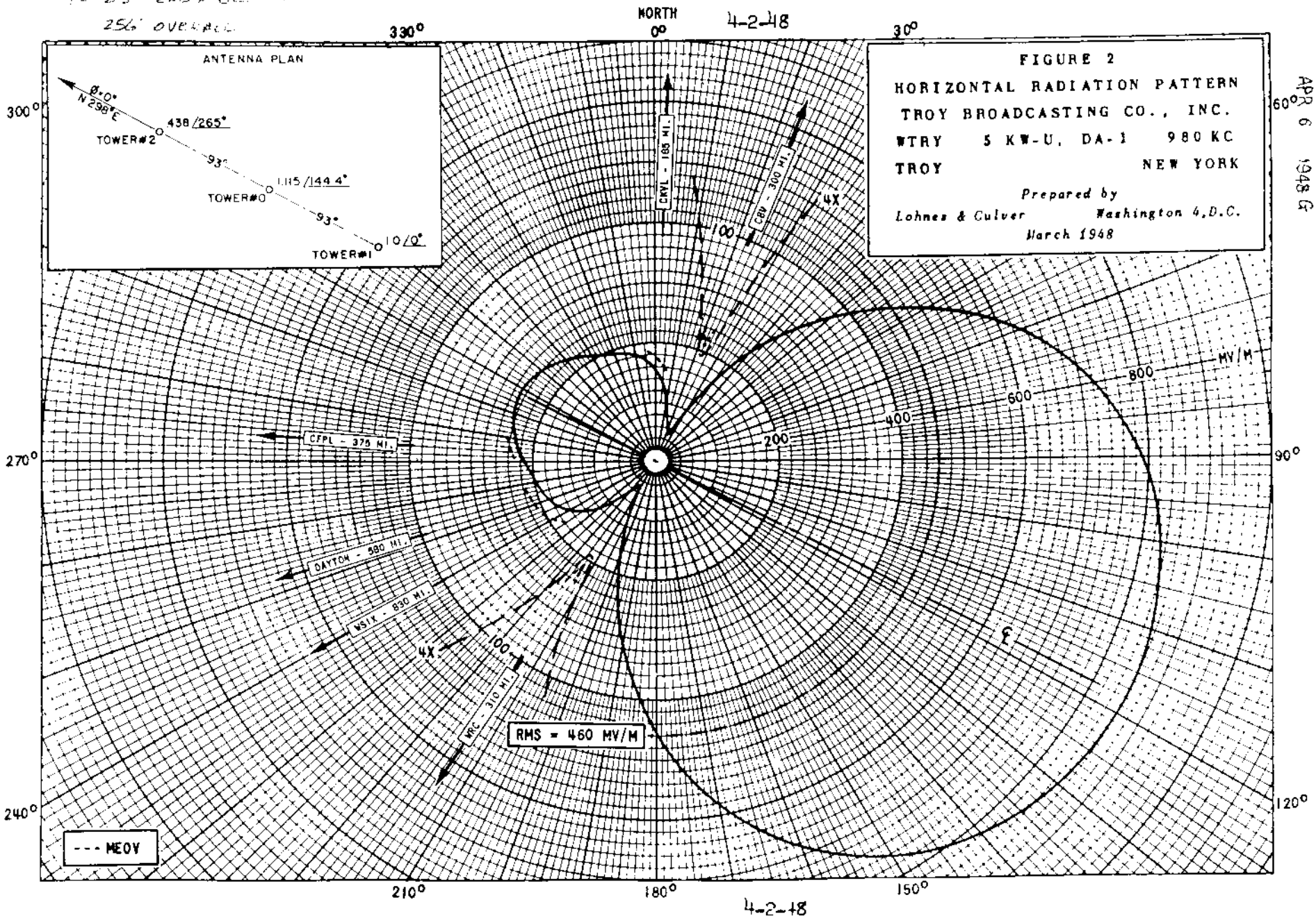


42-46-56
73-50-07

WTRY
980

proposed day and night

+ 25° RADIUS = 50°
256' OVERALL



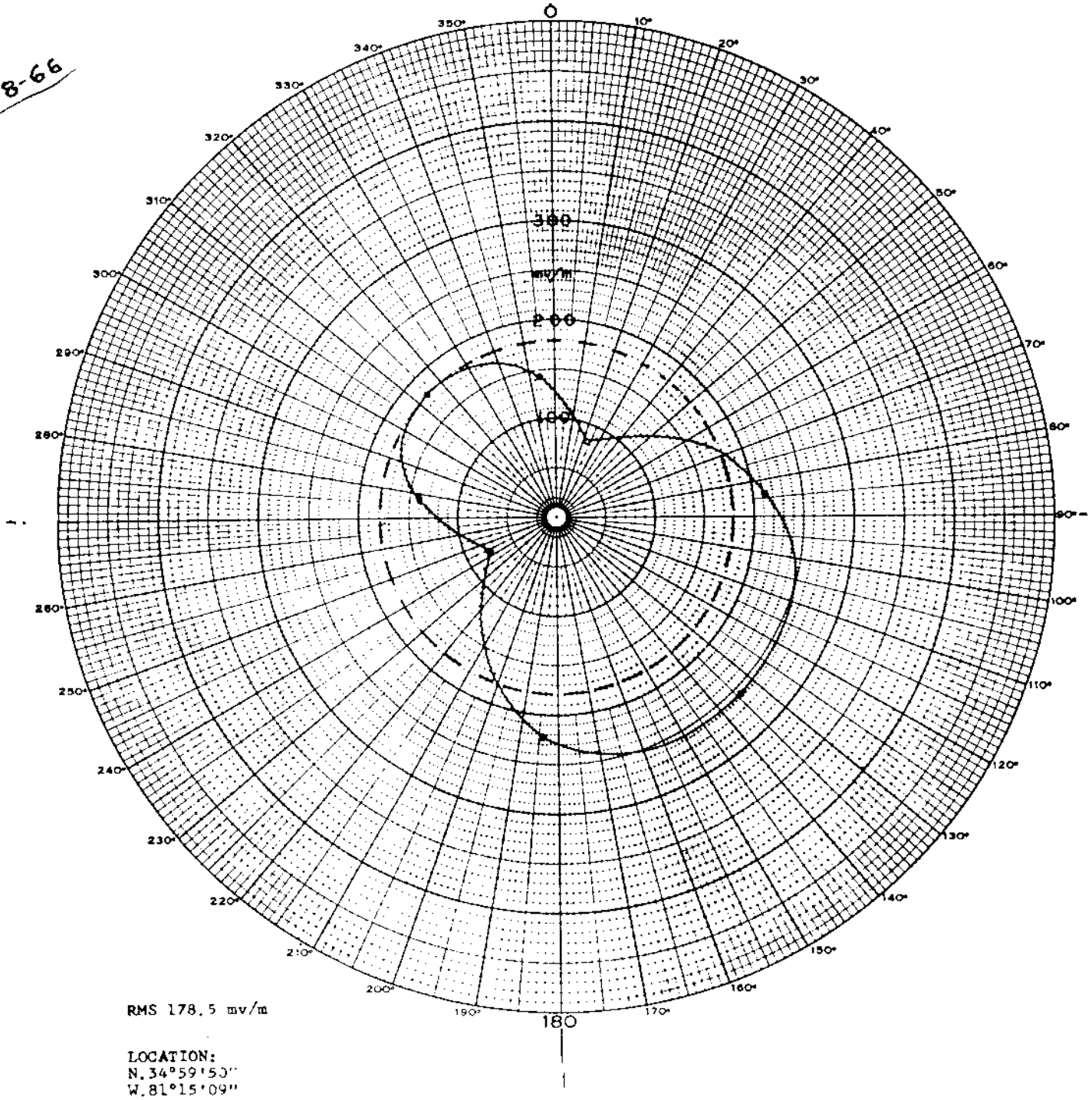
WYCL

Measured Day
(10-28-66ct)

Station WYCL
York, South Carolina

1kw,DA-D,D
980 kc

LIC 10-18-66



RMS 178.5 mv/m

LOCATION:
N.34°59'50"
W.81°15'09"

G1=G2=70°=195'

314°

#2NW 1.85/151° Theo & Meas

100°
287'

#1SE 1.0/0°

PALMER A. GREER

FIG. 3		
YORK-CLOVER BROADCASTING CO. INC. WYCL, YORK, S.C.		
1.0 KW.	DAYTIME	DA-D.
MEASURED DIRECTIONAL FIELD.		

FCC File No. BL-11407
Accepted

Station WYCL
York, South Carolina

980 kc

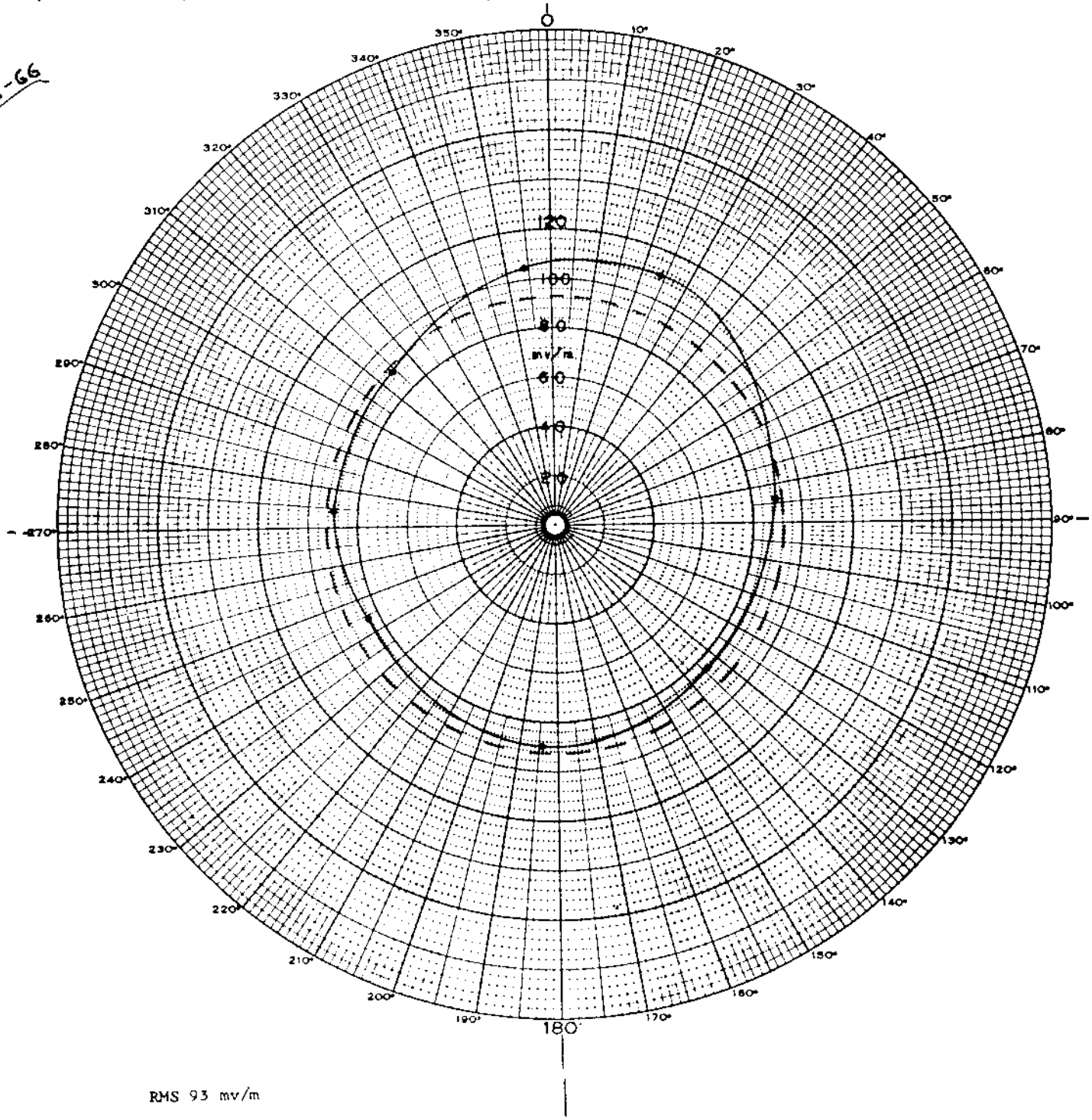
WYCL

Measured Non-DA
(10-28-66ct)

Station WYCL
York, South Carolina

1kw,DA-D,D
980 kc

LIC 10-18-66



RMS 93 mv/m

#1 (SE) TOWER
#2 TOWER OPEN
POWER 250 WATTS

PALMER A. GREER
ROUTE 1, WHITE HORSE ROAD

FCC File No.BL-11407
Accepted

Station WYCL
York, South Carolina

FIG.1
YORK-CLOVER BROADCASTING CO. INC. WYCL, YORK, S.C.
1.0 KW. DAYTIME DA-D,
MEASURED NON-DIRECTIONAL FIELD.

980 kc

WYCL

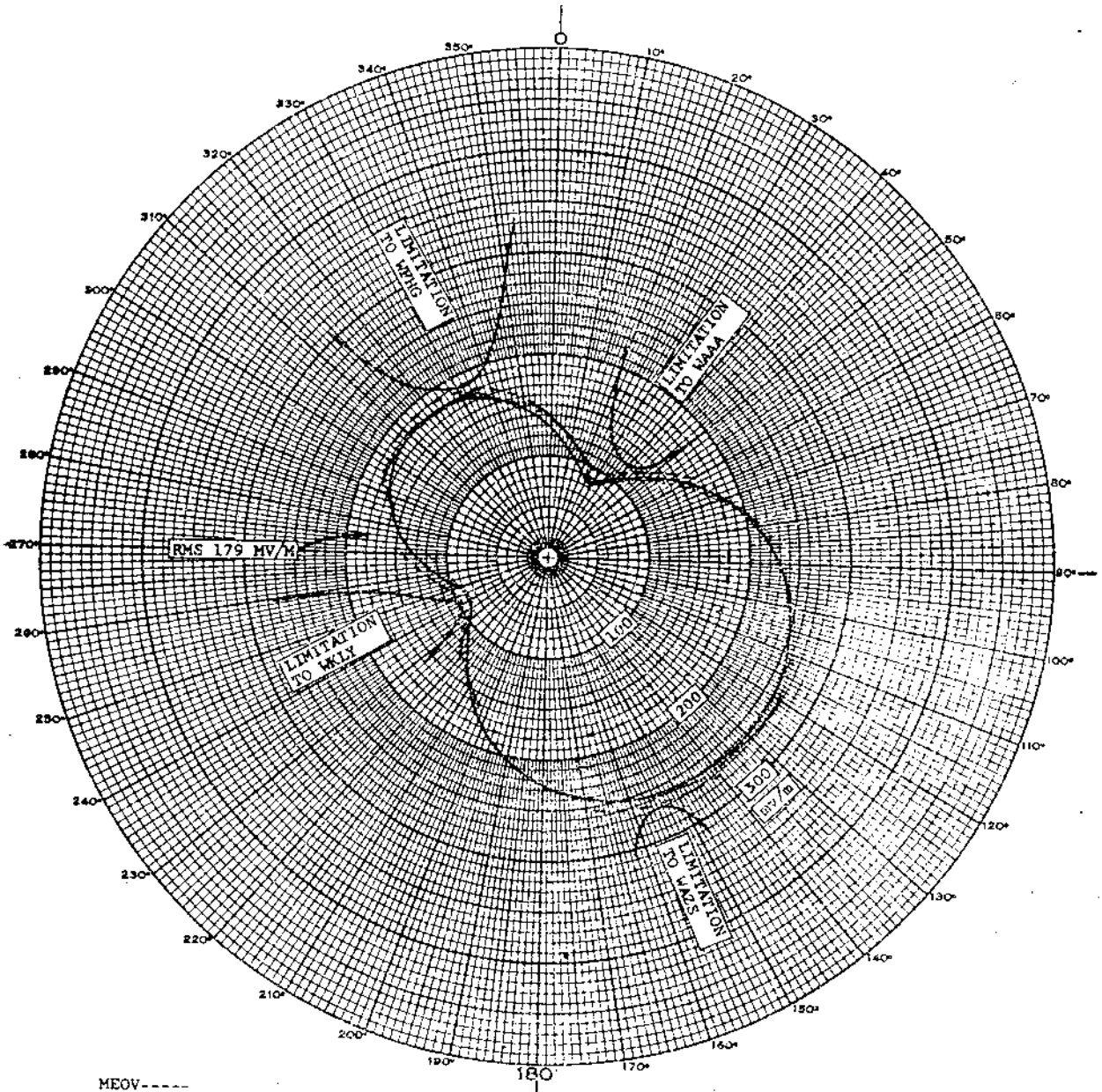
Proposed Day
(5-27-65ct)

Station WYCL
York, South Carolina

1kw, DA-D, D
980 kc

POLAR CO-ORDINATE MADE IN U.S.A. NO. 10 BP CLEVELAND INSTITUTE OF RADIO ELECTRONICS CLEVELAND OHIO

CP 2-14-66



MEOV-----

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS									STATION DATA	
	TOWER No.	ELECTRICAL HEIGHT θ°	TRUE TOWER ORIENTATION θ°	SPACING s°	PHASING s°	HORIZONTAL FIELD mV/M E	FIELD RATIO F	ELEV. ANGLE θ°	ELEVATION RMS FIELD mV/M Eθ	CALL	WYCL
314° #2 1.85/151° 100° 287° #1 1/0°	1	70°		0°	0°		1.0	0	179	FREQUENCY	980 kc
	2	70°	314°	100°	151°		1.85	10		POWER	1.0 kw
	3							20		TIME OF OPERATION	DAY
	4							30		TYPE OF OPERATION	DA-D
	5							40		DAYTIME TOWERS	2
	6							50		NIGHTTIME TOWERS	---
	7							60		NO. RADIALS PER TOWER	120
	8							70		LENGTH OF RADIALS	90 °/250 ft.
	9							80		GROUND SCREEN DIMENSION	24x24
	10							F_0°	mV/M	LAT.	34 ° 59 ' 50 "
DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐								F_{10}°	mV/M	LONG.	81 ° 15 ' 09 "
										SUPERSEDES	
										PATTERN No.	

PALMER A. GREER
ROUTE 1, WHITE HORSE ROAD
GREENVILLE, S.C.

FIG. 4
YORK-CLOVER BROADCASTING CO., INC.
(RADIO STATION WYCL)
YORK, S.C.
980 KCS. DAYTIME 1.0 KW(DA-D)
THE PROPOSED HORIZONTAL RADIATION PATTERN.

FCC File No. BP-16626
Accepted 5-19-65

Station WYCL
York, South Carolina

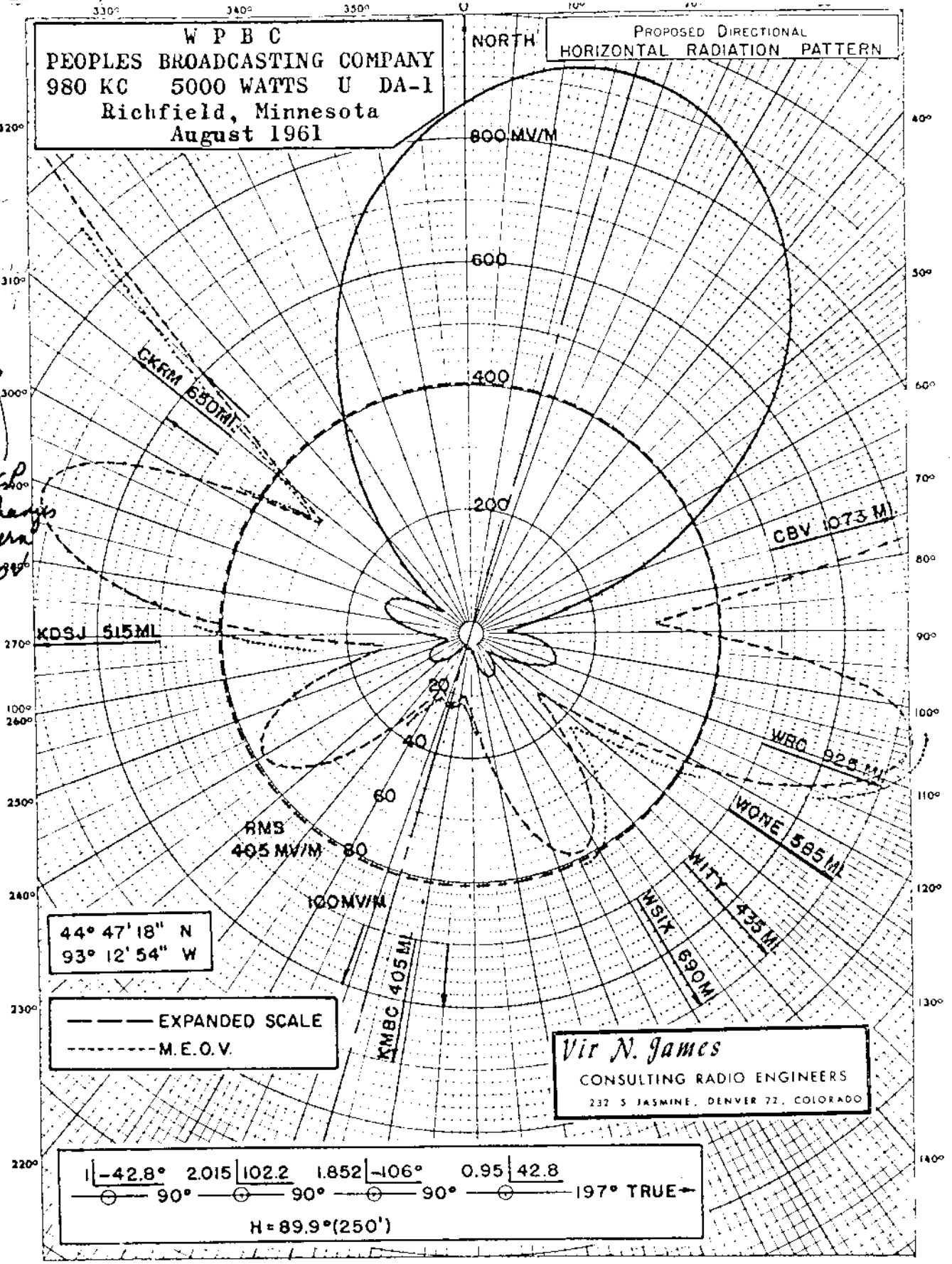
980 kc

WY00

PROPOSED DAY
(9-20-61ct)

Station WPBC
Richfield, Minnesota

5kw, DA-1, U
980 kc



BP-11337
MEOV DIRECT
CKRM 307°
74 MV/M

#202 -
10-1-64
granted MCP
to make changes
in DA pattern
(change MEOV)

FCC File No. BP-13692
Accepted 9-13-61

Station WPBC
Richfield, Minnesota

980 kc

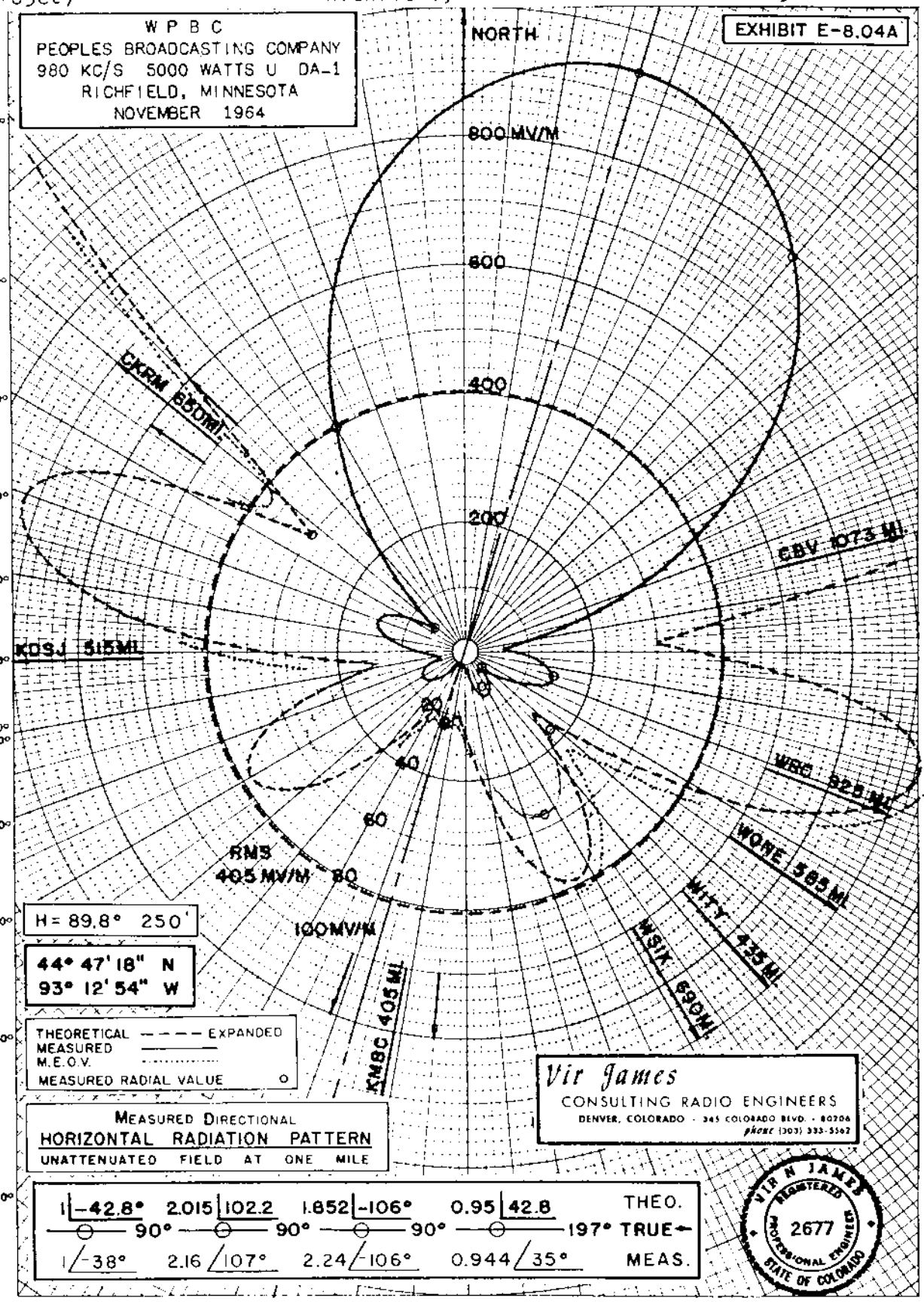
WY00

Measured Day & Night
(4-28-65ct)

Station WPBC
Richfield, Minnesota

5kw, DA-1, U
980 kc

-1C, 5-27-65
DA-1, U



FCC File No. BL-10833
Accepted 3-24-65

Station WPBC
Richfield, Minnesota

980 kc

WY00

Measured Non-DA
(4-28-65ct)

Station WPBC
Richfield, Minnesota

5KW, DA-1, U
980 kc

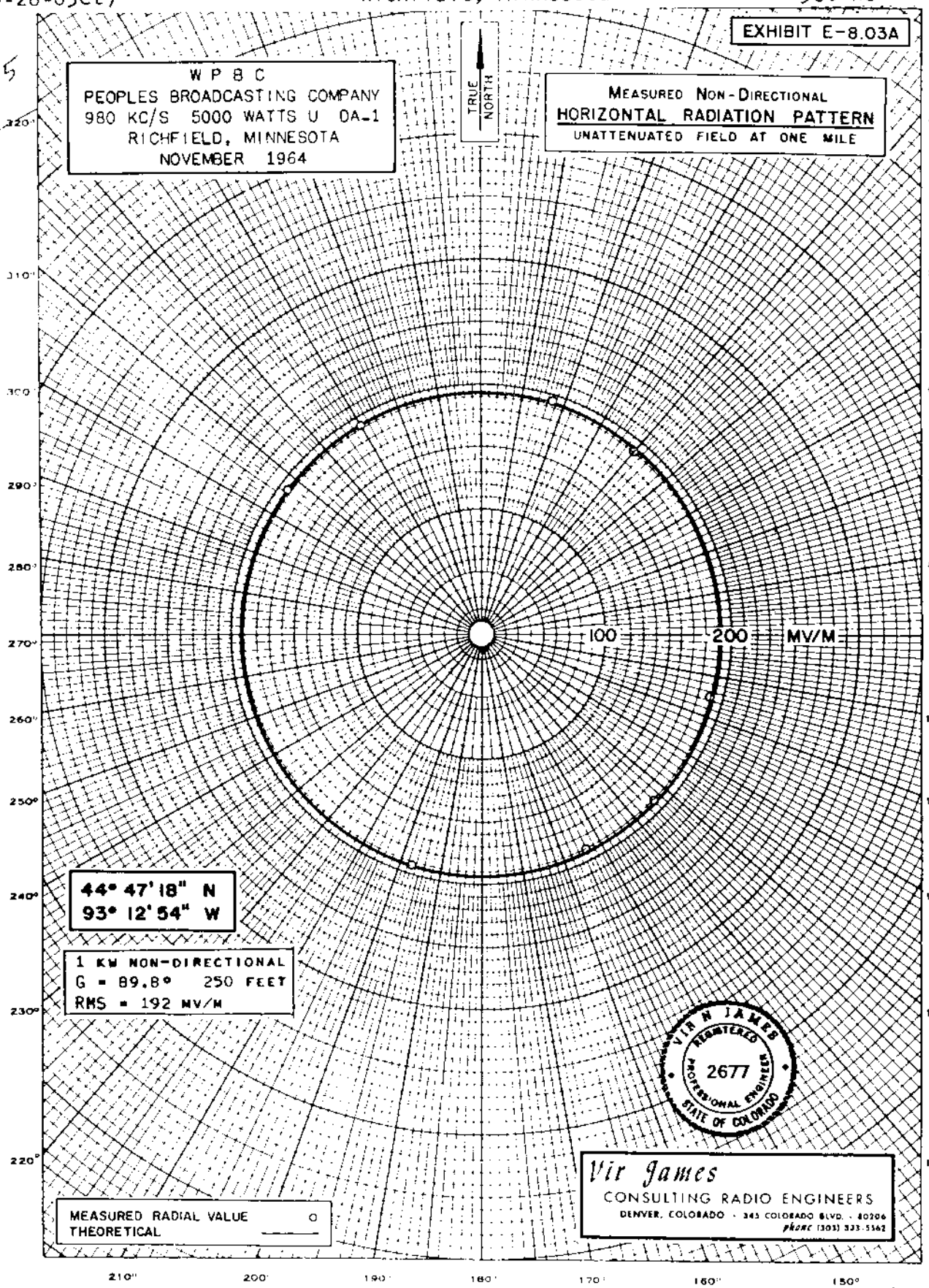
LIC. 5-27-65
DA-1, U

EXHIBIT E-8.03A

W P B C
PEOPLES BROADCASTING COMPANY
980 KC/S 5000 WATTS U DA-1
RICHFIELD, MINNESOTA
NOVEMBER 1964

TRUE NORTH

MEASURED NON-DIRECTIONAL
HORIZONTAL RADIATION PATTERN
UNATTENUATED FIELD AT ONE MILE



44° 47' 18" N
93° 12' 54" W

1 KW NON-DIRECTIONAL
G = 89.8° 250 FEET
RMS = 192 MV/M

VIR N JAMES
REGISTERED
PROFESSIONAL ENGINEER
2677
STATE OF COLORADO

MEASURED RADIAL VALUE o
THEORETICAL ——

Vir James
CONSULTING RADIO ENGINEERS
DENVER, COLORADO · 345 COLORADO BLVD. · 80206
phone (303) 333-5562

FCC File No. BL-10833
Accepted 3-24-65

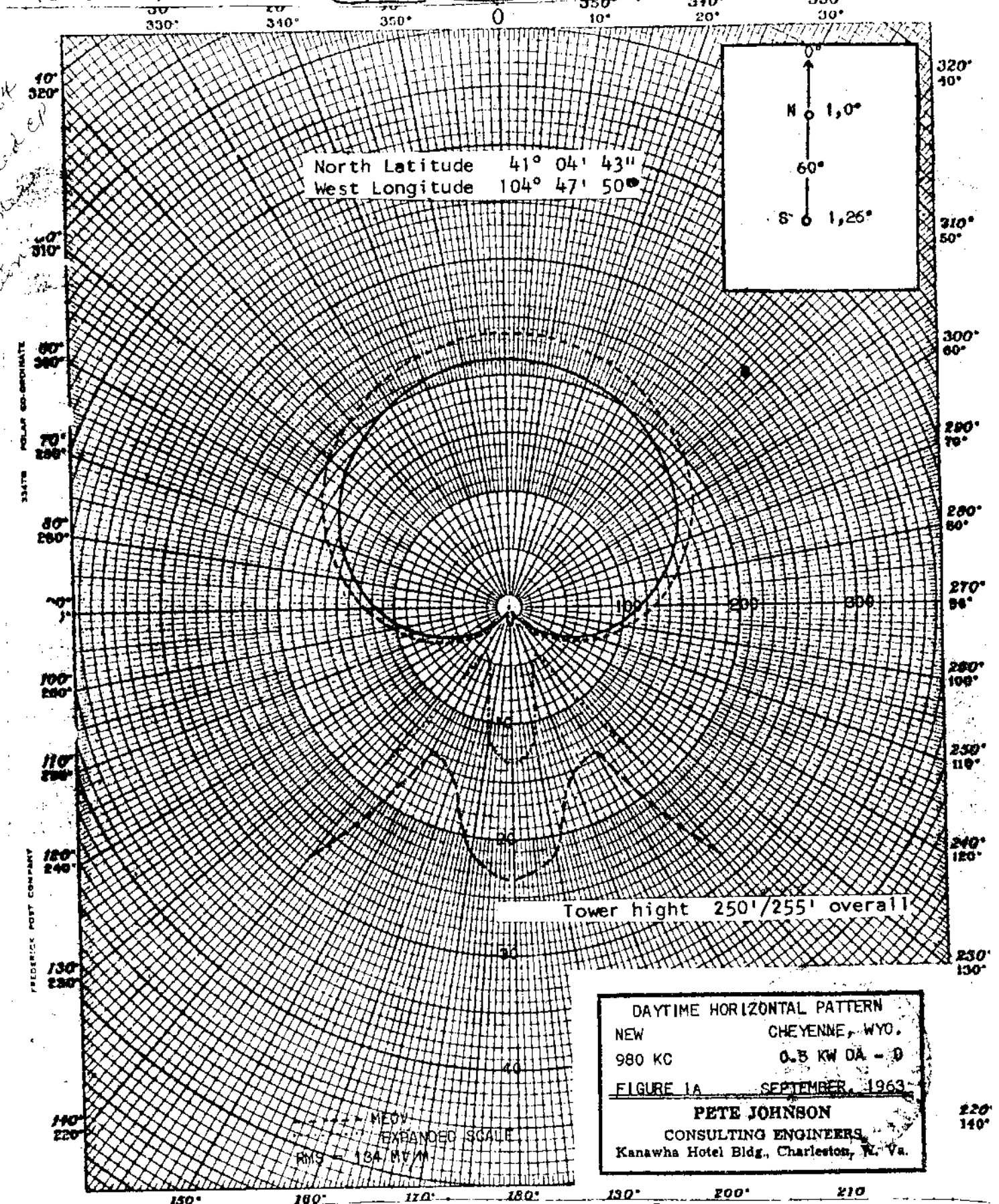
Station WPBC
Richfield, Minnesota

980 kc

Proposed Day
(2-28-64ct)

New; Western Broadcasters, Inc.
Cheyenne, Wyoming

500w,DA-D,D
980 kc



FCC Fil No.BP-13343
Accepted 2-13-64

New; Western Broadcasters, Inc.
Cheyenne, Wyoming

980 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET
(Issued July 21, 1965)

Station: XEQG

Main Studio: Queretaro, Queretaro

Frequency: 980 kc/s

Power: 0.15kw Night 1kw Day

Notification List No. (*)

Class: III - Day / IV - Night

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 20° 27' 00"

West Longitude: 100° 24' 00"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation. (DA-D)
Number of elements: 2
Type of elements: Guyed, vertical steel towers.

TOWER:	West	East	
HEIGHT ABOVE INSULATORS:	251.1'	251.1'	(90°)
PHASING:	0°	-90°	
FIELD RADIO:	1	1	

SPACING AND ORIENTATION: Elements are spaced 167.4' (60°) on a line bearing 280° true.

GROUND SYSTEM: 120 - 251.1' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

Predicted effective Day Field: 175 mv/m at rated power.

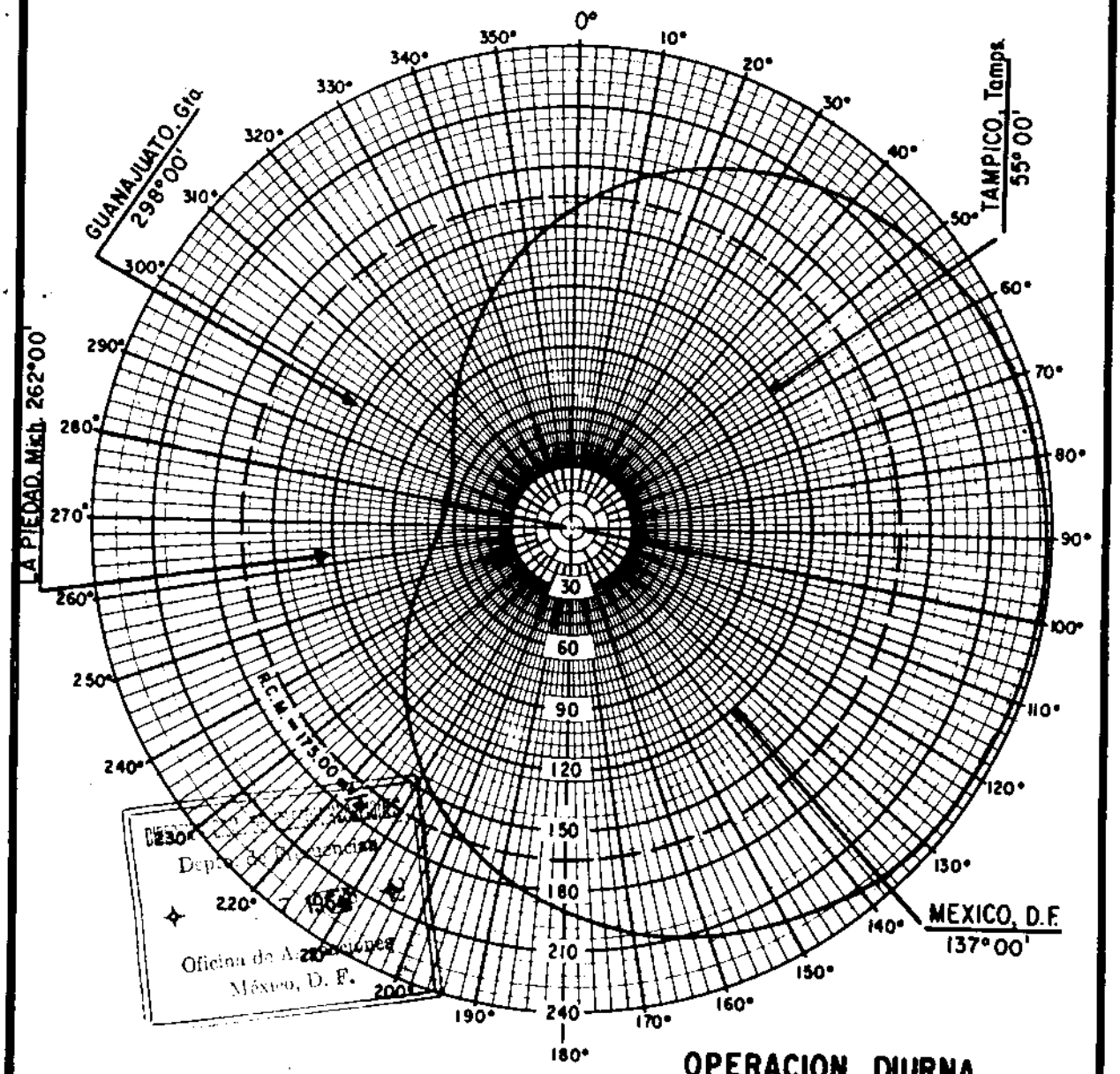
(*) FCC Note: This "supplementary" information corresponds to a new station assignment concerning which official notification has not been received in the Commission as of July 21, 1965.

XEQG

Proposed Day
(8-27-65ct)

Station XEQG
Queretaro, Queretaro

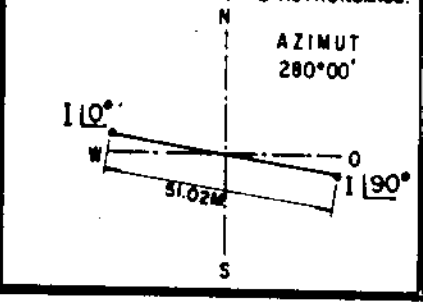
150w, 1kw-LS, DA-D, D, Class III
980 kc



OPERACION DIURNA

PATRON DE RADIACION HORIZONTAL CALCULADO EN mV/M. A 1609 Mts.

ESQUEMA DE LAS TORRES Y SU ORIENTACION CON RESPECTO AL NORTE ASTRONOMICO.



RADIODIFUSORA

XEQG

QUERETARO, Qro.

980 KHz.
1000 W-DIA
150 W-NOCHE

DISEÑO:
ING. J. JOSE DORANTES R. LUGO.
CEDULA PROFESIONAL No. 104808.

DIBUJO. E. Sesma.

XETU

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XETU — Main Studio: Tampico, Tams.

Frequency: 980 kHz — Power: 1 kW Night 10 kW Day

Notification List No. 223 — Date: July 18, 1961 — Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 22° 12' 43"
West Longitude: 97° 49' 53"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation. (DA-D)
Number of elements: 2
Type of elements: Guyed, vertical steel towers.

TOWER:	N	S
HEIGHT ABOVE INSULATORS:	251	251 (90°)
PHASING:	+135°	0°
FIELD RATIO:	1	1

SPACING AND ORIENTATION: Elements are spaced 292.83' (105°) on a line bearing 80° true.

GROUND SYSTEM: 120-251' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

Predicted effective Day Field: 630.310 mv/m at rated power.

FCC Note: This supplementary information was transmitted by letter from Mexico dated June 29, 1976.

XETU

DESCRIPCION DEL SISTEMA DIRECCIONAL DE RADIACION

OPERACION DIURNA NOCTURNA.

ESTACION:	X E T U	ESTUDIOS EN:	TAMPICO, TAMS.
FRECUENCIA	980 KHz.	POTENCIA:	10,000 W DIA 1,000 W NOCHE
LISTA DE MODFICACION No	223	CLASE:	III
FECHA:	18 julio 1961		
LOCALIZACION GEOGRAFICA DEL SISTEMA RADIADOR		LONGITUD O:	97° 49' 53"
		LATITUD N:	22° 12' 43"

CARACTERISTICAS DEL SISTEMA.

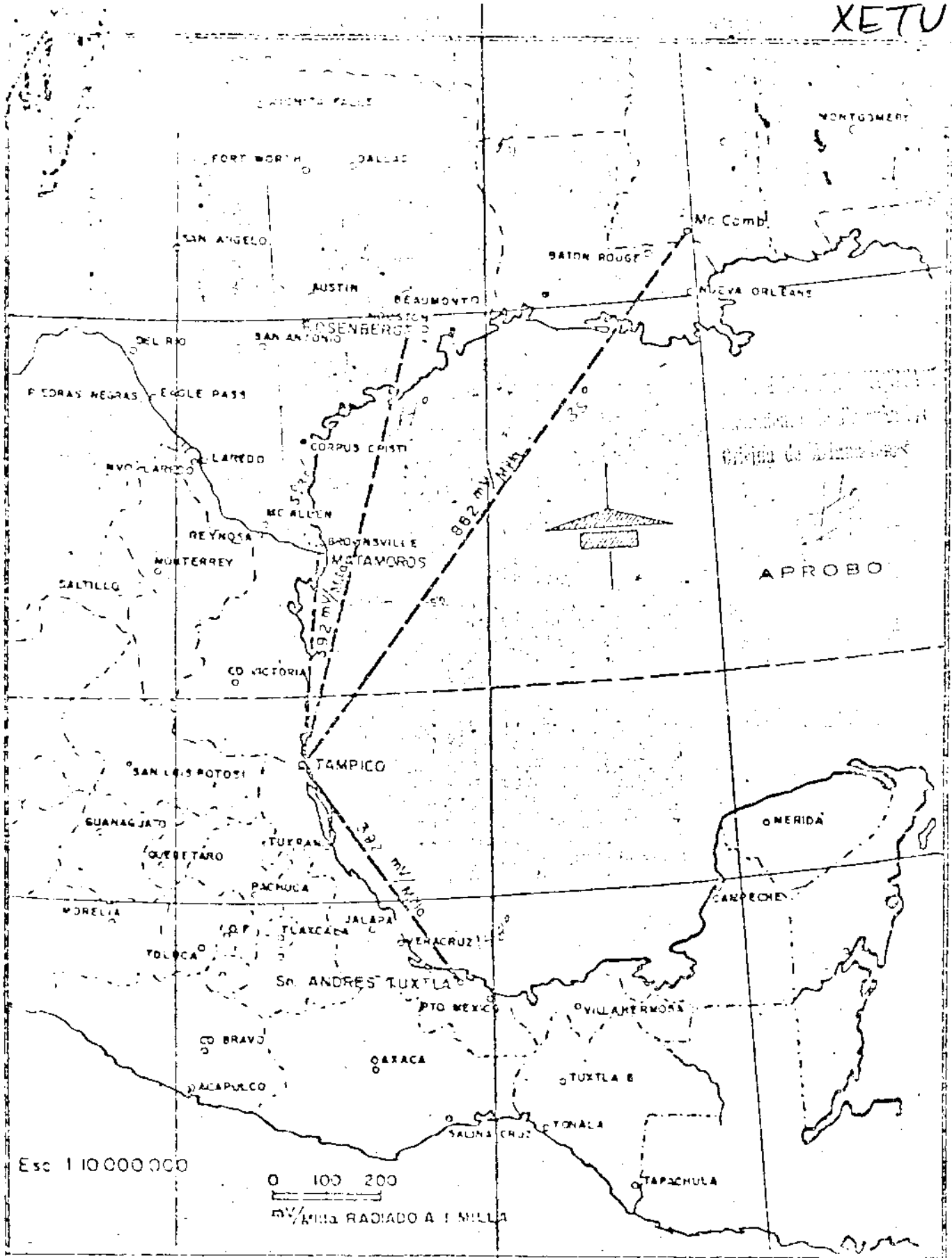
AUTORIZADO PARA OPERACION:	AD-D.	
NUMERO DE ELEMENTOS RADIADORES:	DOS.	
TIPO DE ELEMENTOS RADIADORES:	TORRES VERTICALES.	
TORRES:	DOS TORRES CON RETENIDAS.	
	NORTE.	SUR.
ALTURA SOBRE LOS AISLADORES:	90° (76.5 M)	90° (76.5 M)
SEPARACION ENTRE TERRES:	105° (89.25 M)	
MAGNITUDES RELATIVAS DE CORIENTES	1	1
DEFASAMIENTO:	+135°	0°
AZIMUT DEL EJE DE LAS TORRES:	80°	
RAIZ CUADRATICA MEDIA TEORICA	630.310 mV/M	

INTENSIDAD DE CAMPO RCN NO ATENUANDO A UN KILOMETRO POR KILOWATT DE POTENCIA RADIADA. 194.897 mV/M

Carlos Cortés G.

PERITO No. 17 D.G.T.

XETU



PROTECCIONES PARA EL SERVICIO DIURNO

FRECUENCIA 980KHz POTENCIA DIURNA 10Kw

ESTACION RADIODIFUSORA COMERCIAL

X E T U

Tampico, Tamps.

Departamento de Permisos
Oficina de Asignaciones XETU

PATRON DE RADIACION HORIZONTAL TABULADO
OPERACION DIURNA.

XETU Carlos Cortés G. 10,000 Watts,

980 KHz. Poste No. 17 A.S.T. Tampico, Tamps.

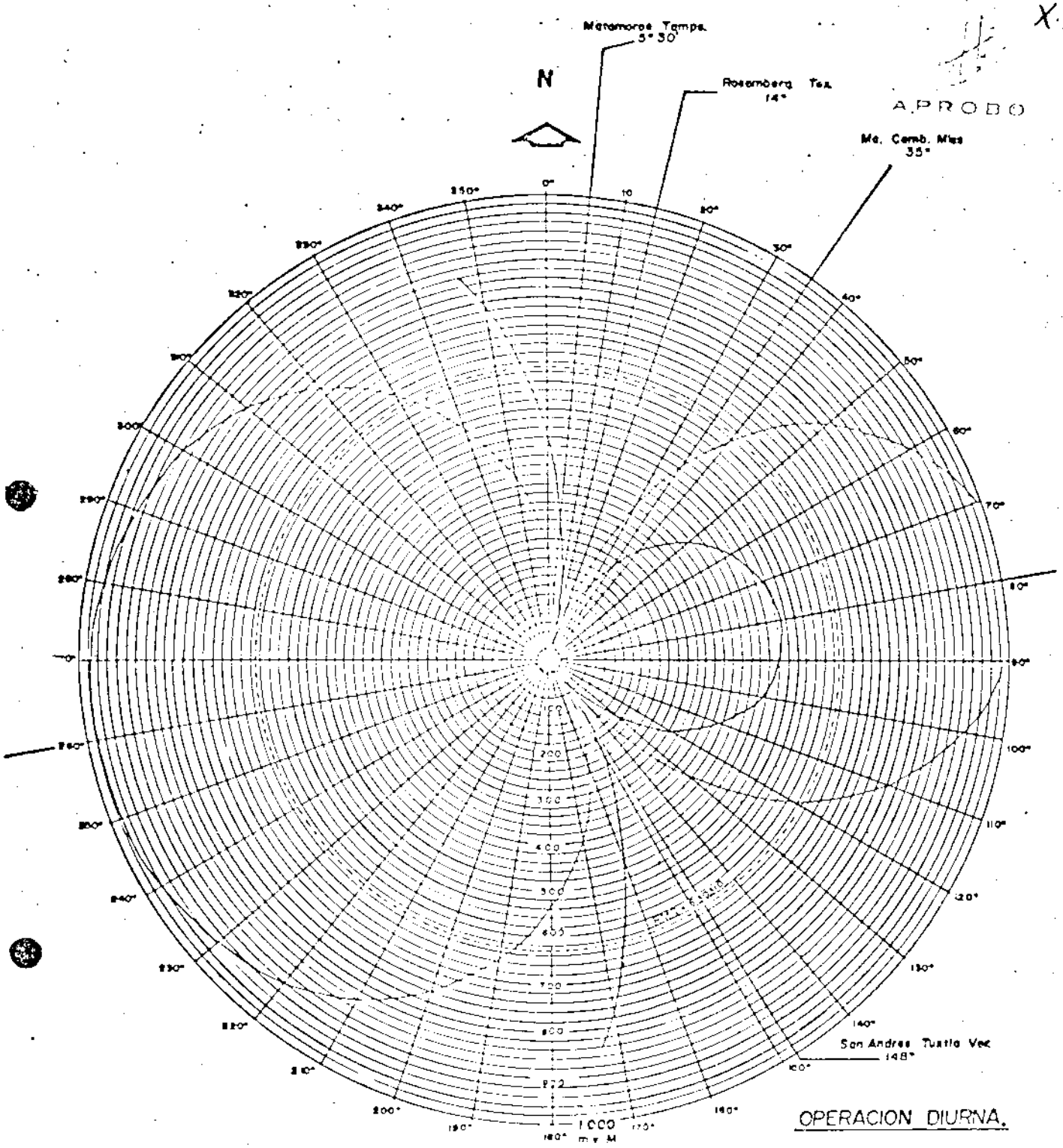
$E = 1012 \cos (52.5 \cos \beta + 67° 30')$

AZIMUT. φ_0	φ	A $52.5 \cos \varphi$	B $A + 67.5°$	C $\cos B$	D mV/M $1012 \times C$
80°	0°	52.50000	120.00000	-0.50000	-506.000
90°	10°	51.70253	119.20253	-0.48789	-493.744
100°	20°	49.33373	116.83373	-0.45140	-456.866
110°	30°	45.46667	112.96667	-0.39029	-394.882
120°	40°	40.21710	107.71710	-0.30432	-307.970
130°	50°	33.74647	101.24647	-0.19503	-197.370
140°	60°	26.25000	93.75000	-0.06540	-66.184
150°	70°	17.95605	85.45605	0.07922	80.170
160°	80°	9.11663	76.61663	0.23146	234.237
170°	90°	0.00000	67.50000	0.38268	387.272
180°	100°	-9.11663	58.38337	0.52423	530.520
190°	110°	-17.95605	49.54395	0.67887	656.656
200°	120°	-26.25000	41.25000	0.75184	760.862
210°	130°	-33.74847	33.75353	0.83144	841.417
220°	140°	-40.21710	27.28290	0.88875	899.417
230°	150°	-45.46667	22.03343	0.92697	938.093
240°	160°	-49.33373	18.16626	0.95015	961.551
250°	170°	-51.70253	15.79747	0.96223	973.776
260°	180°	-52.50000	15.00000	0.9659	977.490
148°	68°	19.66610	87.16650	0.04943	49.588
58° 30'	286° 30'	14.90552	87.41052	0.04517	149.330
14°	294°	21.35332	88.85332	0.02001	20.24
35°	315°	37.12275	104.62275	0.25244	-255.428

Dirección General de Telecomunicaciones
Oficina de Ingenieros

XETU

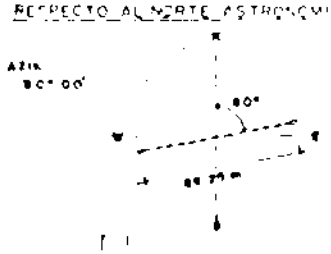
APROBO



OPERACION DIURNA.

PATRON DE RADIACION HORIZONTAL CALCULADO EN mV/M A 1609 Mts.

MA DE LAS TORRES Y SU ORIENTACION CON RESPECTO AL NORTE ASTRONOMICO



RADIODIFUSORA

XETU

Tampico. Tamps.

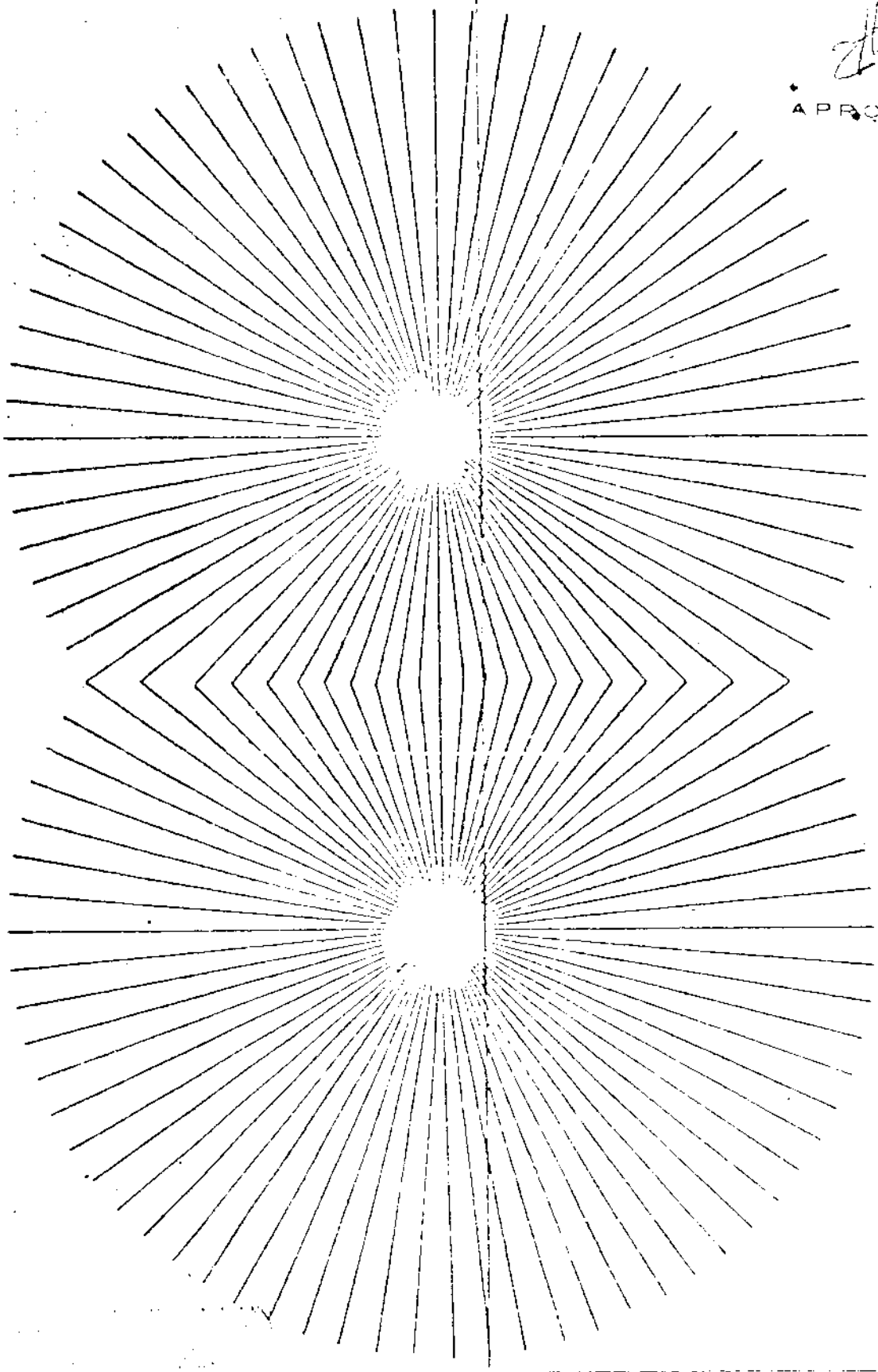
980 KHz.

10.000 Watts.

DISEÑO

XET

APROBO



SISTEMA DE TIERRAS

NUMERO DE RADIALES 120 c/u de ¼"

Alambre de cobre Nº 10 B S enterrado 25 cm.

XE T U

Tampico, Tamps

Nov 22 52

CBW
990

Air Services
Telecommunications Division
(5-10-7)

CANADA

DEPARTMENT OF TRANSPORT
OTTAWA

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CBW

Main Studio: Winnipeg, Manitoba.

Frequency: 990 Kc/s.

Power: 50 Kw.

Class: I-A

Time: U

Notification Reference: NARBA Annex 3

Geographical Location:

North Latitude: 49° 31' 15"

West Longitude: 97° 58 23"

Antenna Characteristics:

Height: 570 ft. 216 degrees

Expected Efficiency: 1875 mv/m at 1 mi. for 50 Kw.

or: 265 mv/m at 1 mi. for 1 Kw.

Ground System:

120 radials, 400 feet long.

Type of Element:

One element, uniform cross-section, guyed.

November 22, 1952

CBY

#170

Description Sheet
(5-25-62ct)

Station CBY
Corner Brook, Nfld.

10kw,U,Class II
990 kc

OMNIDIRECTIONAL ANTENNA DESCRIPTION SHEET

Station Call:	CBY
Main Studio:	Corner Brook, Nfld.
Frequency:	990 kc/s
Power:	10 kw
Class:	II
Time:	Day and Night
Notification:	#170 dated April 24, 1962
Geographical Location:	Latitude: 48° 56' 00" N.
	Longitude: 57° 54' 32" W.

Antenna Characteristics:

Electrical Height:	225 ft. (85.6 degrees)
Type of Element:	Vertical uniform cross-section tower, guyed base-insulated, series-fed, presently in use.
Ground System:	120 equally spaced copper radials each 330 feet (120 degrees) long, presently in use.
Expected Efficiency:	580 mv/m for 10 kw
	183 mv/m for 1 kw

KKIS

SUPPLEMENTAL DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KKIS — Main Studio: Pittsburg, California

Frequency: 990 kHz — Power: 5 kW

Notification List No. 1720 — Date: February 10, 1977 — Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 38° 04' 49"
West Longitude: 121° 50' 33"

Authorized for Day and Night operation (DA-2)

Note: Please retain the description sheet notified for station KKIS in United States Change List Number 1056, dated April 15, 1964 and the Daytime and Nighttime directional antenna radiation patterns notified in U.S. Change List No. 589 dated December 22, 1954 and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only a correction in the geographical coordinates of the center of the antenna system.

CTR NO 30842A4

~~KATT~~
KKIS

14596

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KECC — Main Studio: Pittsburg, California

Frequency: 990 kc/s — Power: 5kw

Notification List No. 589 — Date: December 22, 1954 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 38° 04' 50"

West Longitude: 121° 50' 40"

granted license 1-15-58 for increase in power & change from DA-N to DA-2

ANTENNA CHARACTERISTICS

Authorized for Day and Night operation. (DA-2)
Number of elements: Three (3)
Type of elements: Series-fed, uniform cross-section, guyed vertical steel towers.

TOWER:	West	Center	East
HEIGHT ABOVE INSULATORS:	236'	236'	236' (85.5°)
SPACING:	248.5' or 90° between adjacent towers		
NIGHT PHASING:	-130°	0°	130°
NIGHT FIELD RATIO:	0.526	1.0	0.526
DAY PHASING:	0°	196°	40°
DAY FIELD RATIO:	1.0	0.58	0.72

ORIENTATION: Elements on a line bearing 61° true.

GROUND SYSTEM: 120-250' equally spaced radials, plus a 50' square ground screen about each tower. Radials are shortened and bonded at intersections between towers.

Predicted effective Night Field: 468 mv/m (at rated power)

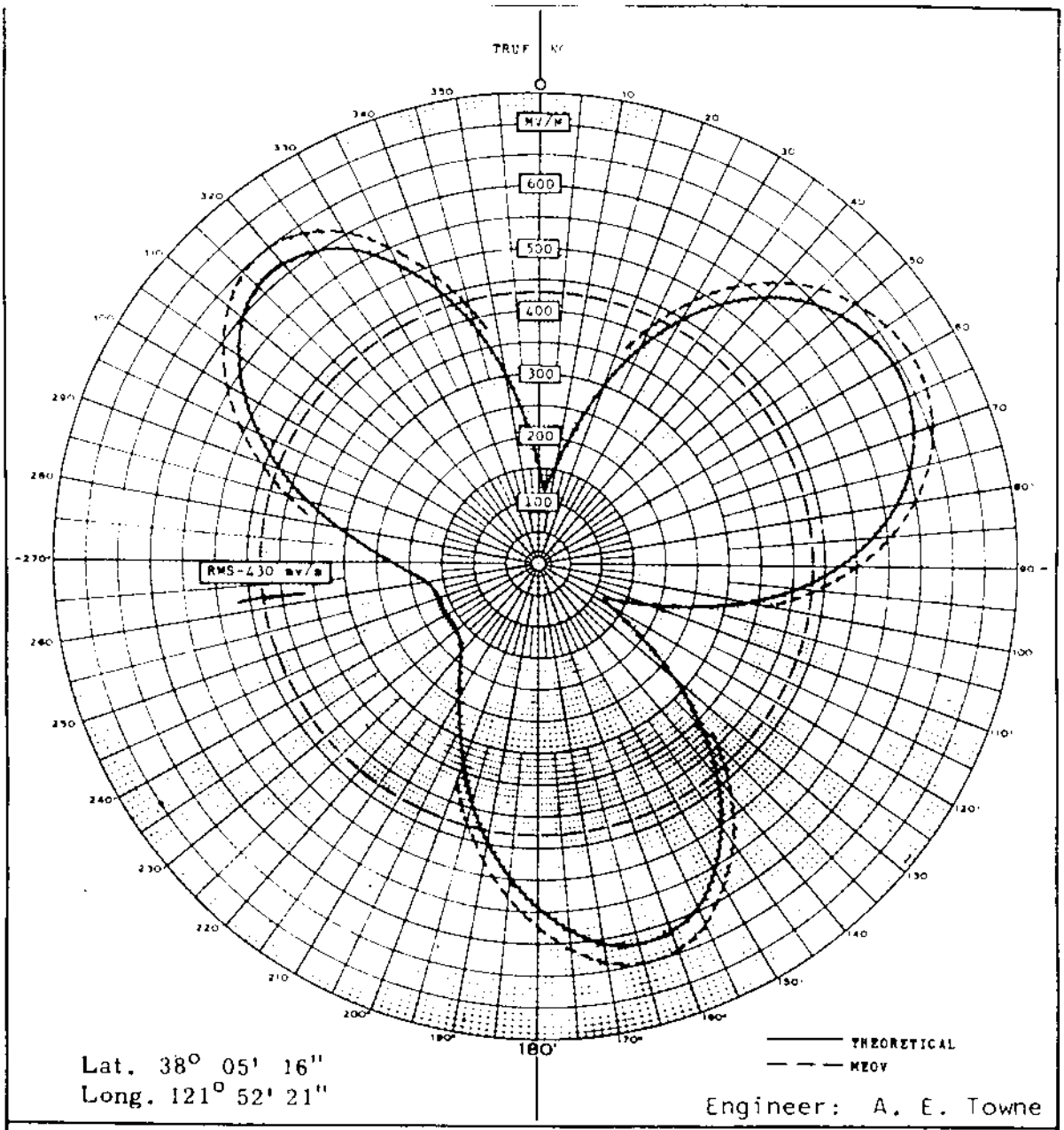
Predicted effective Day Field: 430 mv/m (at rated power)

KKIS

Proposed Day
(3-30-64)

Station KKIS
Pittsburgh, California

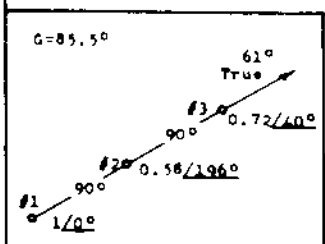
5kw,DA-2,U
990kc



Lat. 38° 05' 16"
Long. 121° 52' 21"

Engineer: A. E. Towne

PROPOSED DAYTIME HORIZONTAL PLANE RADIATION PATTERN



KKIS
PITTSBURG CALIFORNIA

Fig. 2

PROPOSED OPERATION
990 KC
5 KW DA-2

FCC File No. BP-16111
Accepted 3-4-64

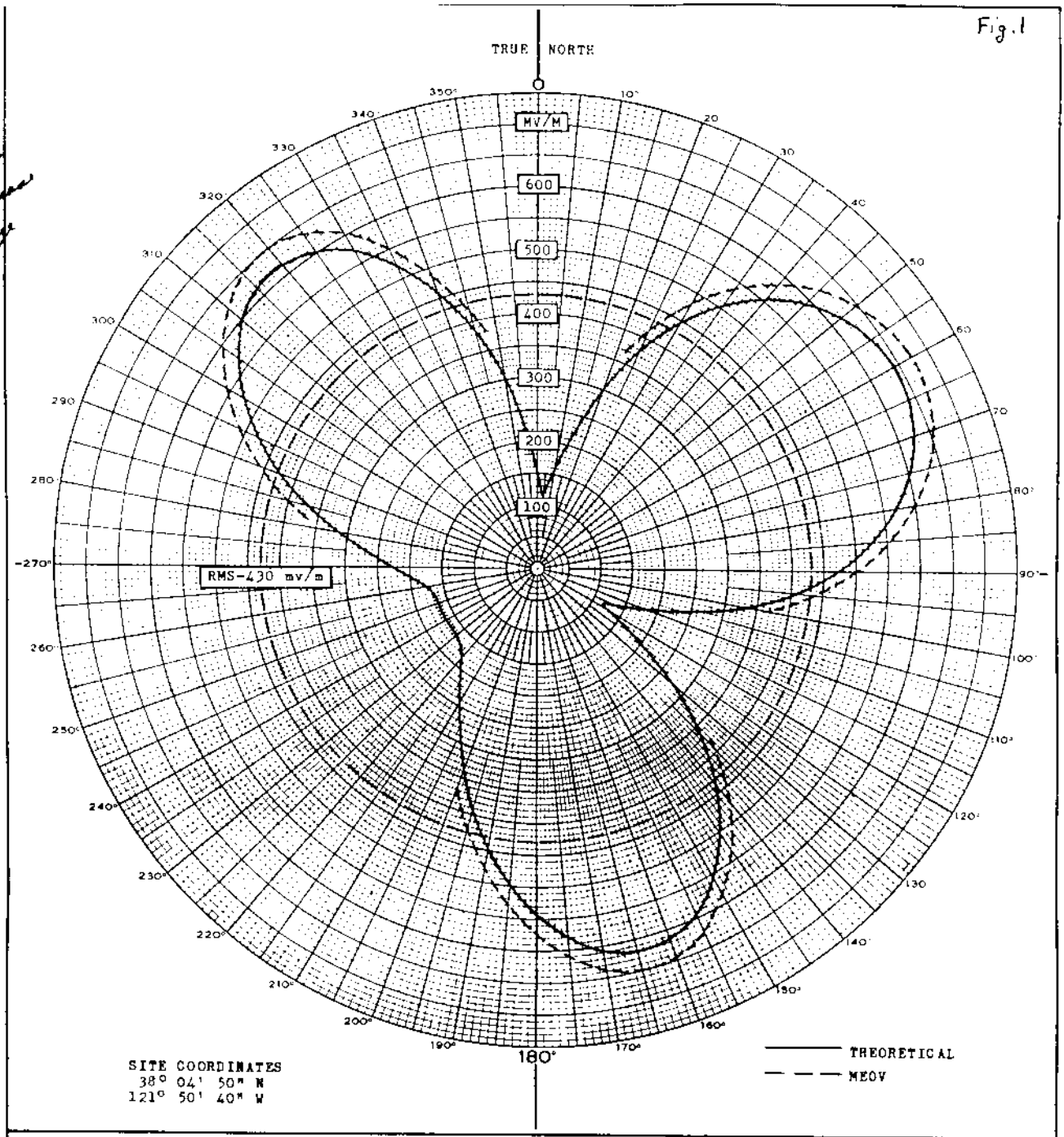
Station KKIS
Pittsburgh, California

990kc

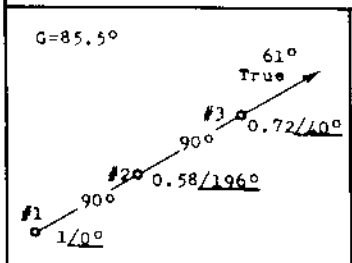
~~KATT~~ ~~KECC~~
KKIS 990 kc

PROPOSED KECC, Pittsburg, California 5KW, U, DA-2
DAY (6/11/54C)

Fig. 1



PROPOSED DAYTIME HORIZONTAL PLANE RADIATION PATTERN



KECC, INC.
PITTSBURG CALIFORNIA

Vandivere, Cohen and Wearn
Consulting Electronic Engineers

PROPOSED OPERATION

KECC	990 KC
5 KW	DA-2

FCC File No. BP-8529 Amended Accepted 6/1/54 KECC, Pittsburgh, Calif. 990 kc

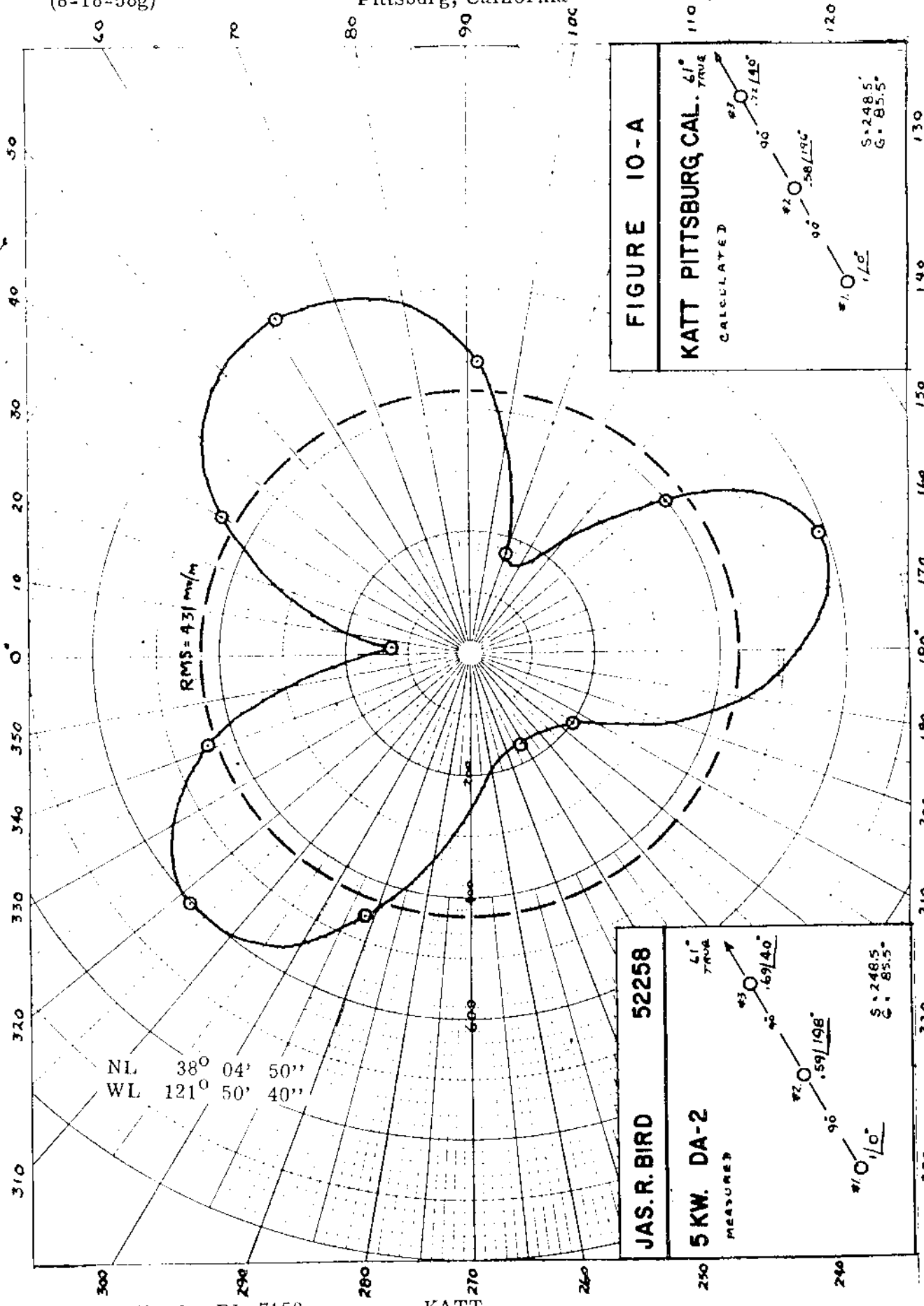
KATT
KKIS

MEASURED DAY
(8-18-58g)

Station KATT
Pittsburg, California

5kw, DA-2, U
990 KC

Granted license 9-15-58 for increase in power & change from DA-N to DA-2



FCC File No. BL-7150
Accepted 8-6-58

KATT
Pittsburg, California

990 KC

KKIS

Proposed Night
(3-30-64ct)

Station KKIS
Pittsburgh, California

5kw,DA-2,U
990kc

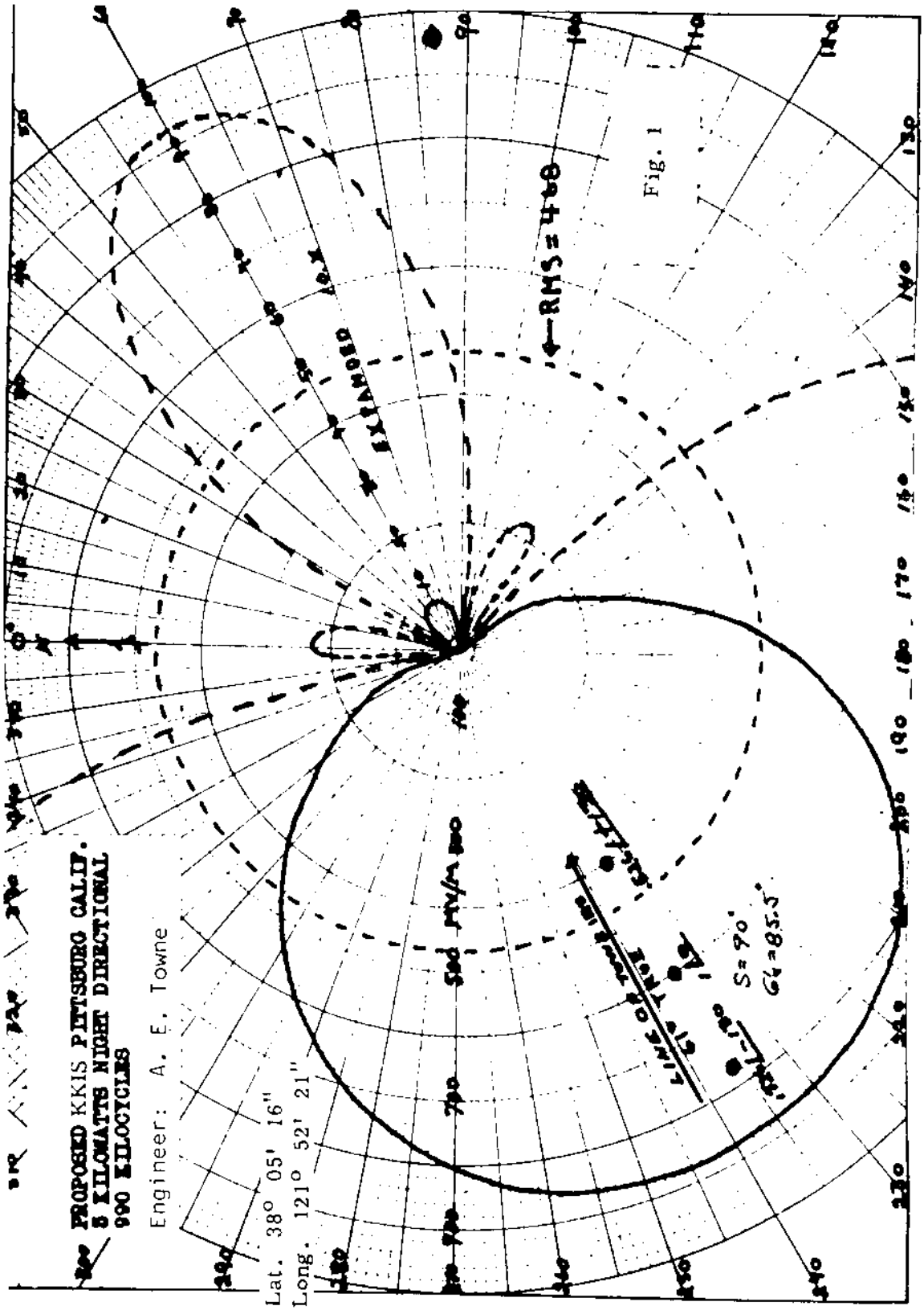


Fig. 1

FCC File No. BP-16111
Accepted 3-4-64

Station KKIS
Pittsburgh, California

990kc

PROPOSED KECC, PITTSBURGH, CALIF. 5 kw, 10 kw-LS, U, DA-2 990 KC
NIGHT 9/17/52G

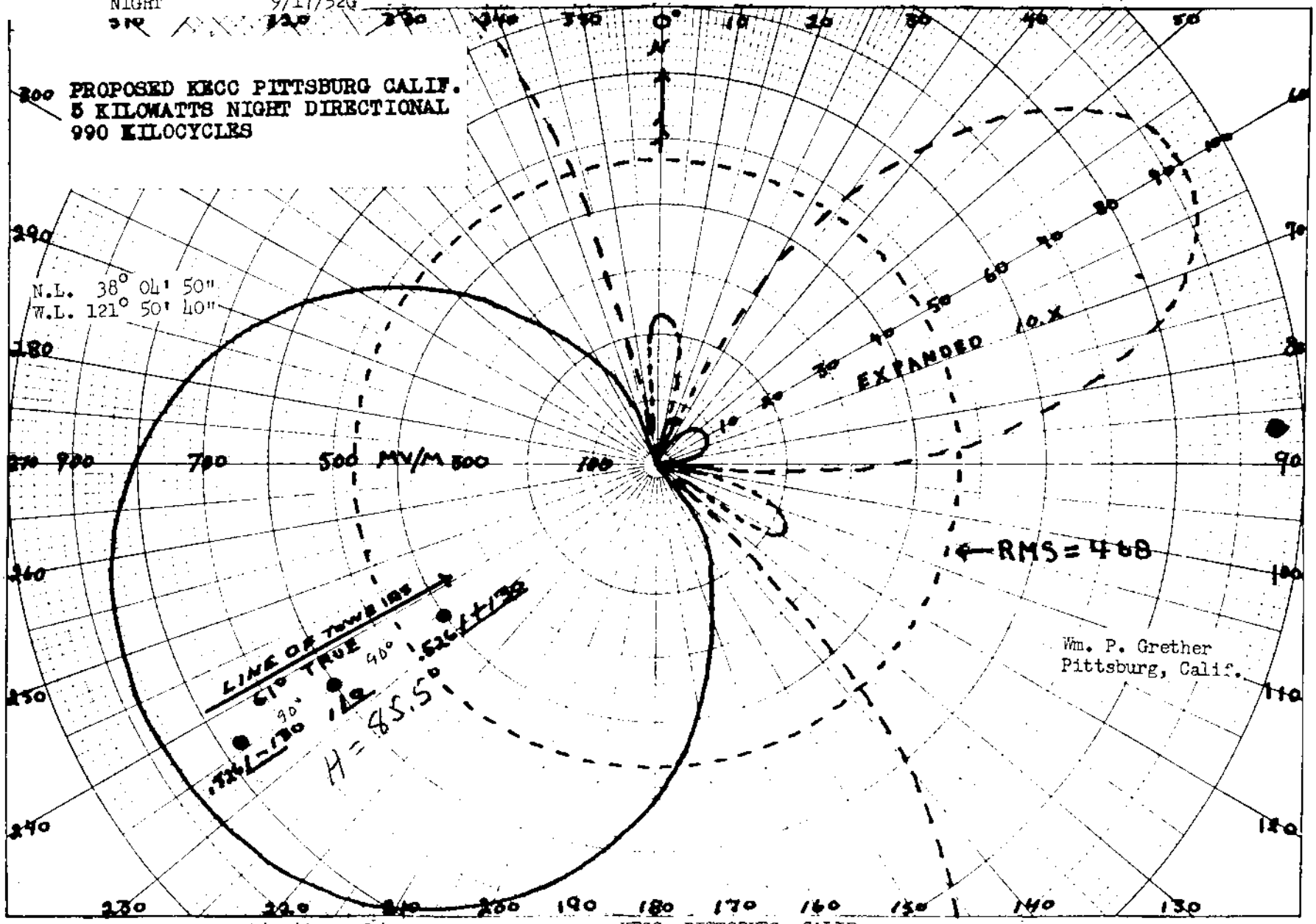


Fig. 2

APPL RECD 6/27/52 BP-8529 KECC, PITTSBURG, CALIF. 990 KC

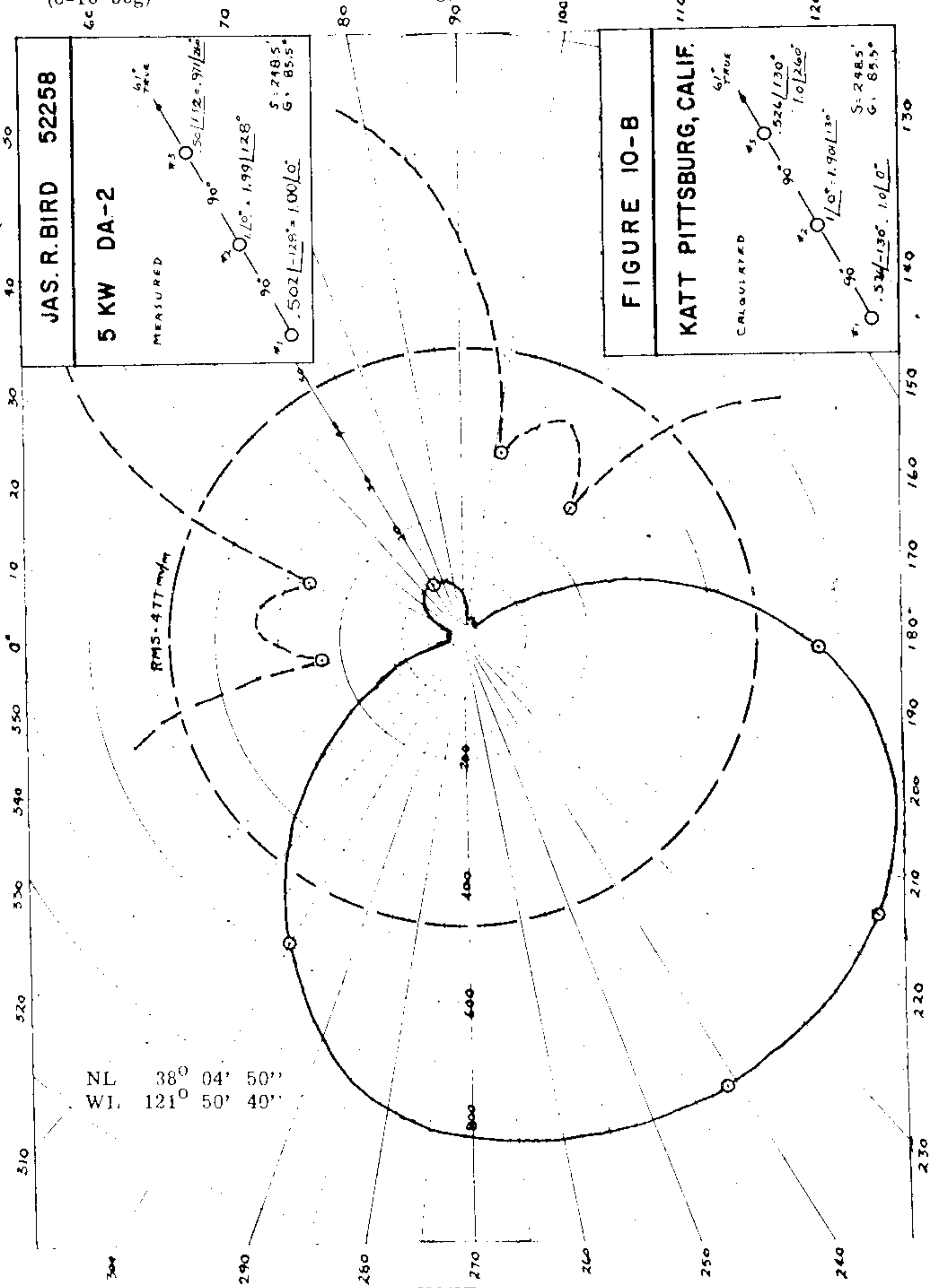
~~KATT~~ KKIS

MEASURED NIGHT
(8-18-58g)

Station KATT
Pittsburg, California

5kw, DA-2,U
990 KC

Granted license 1-15-58 for increase in power - change from DA-N to DA-2



FCC File No. BL-7150
Accepted 8-6-58

KATT
Pittsburg, California 990 KC

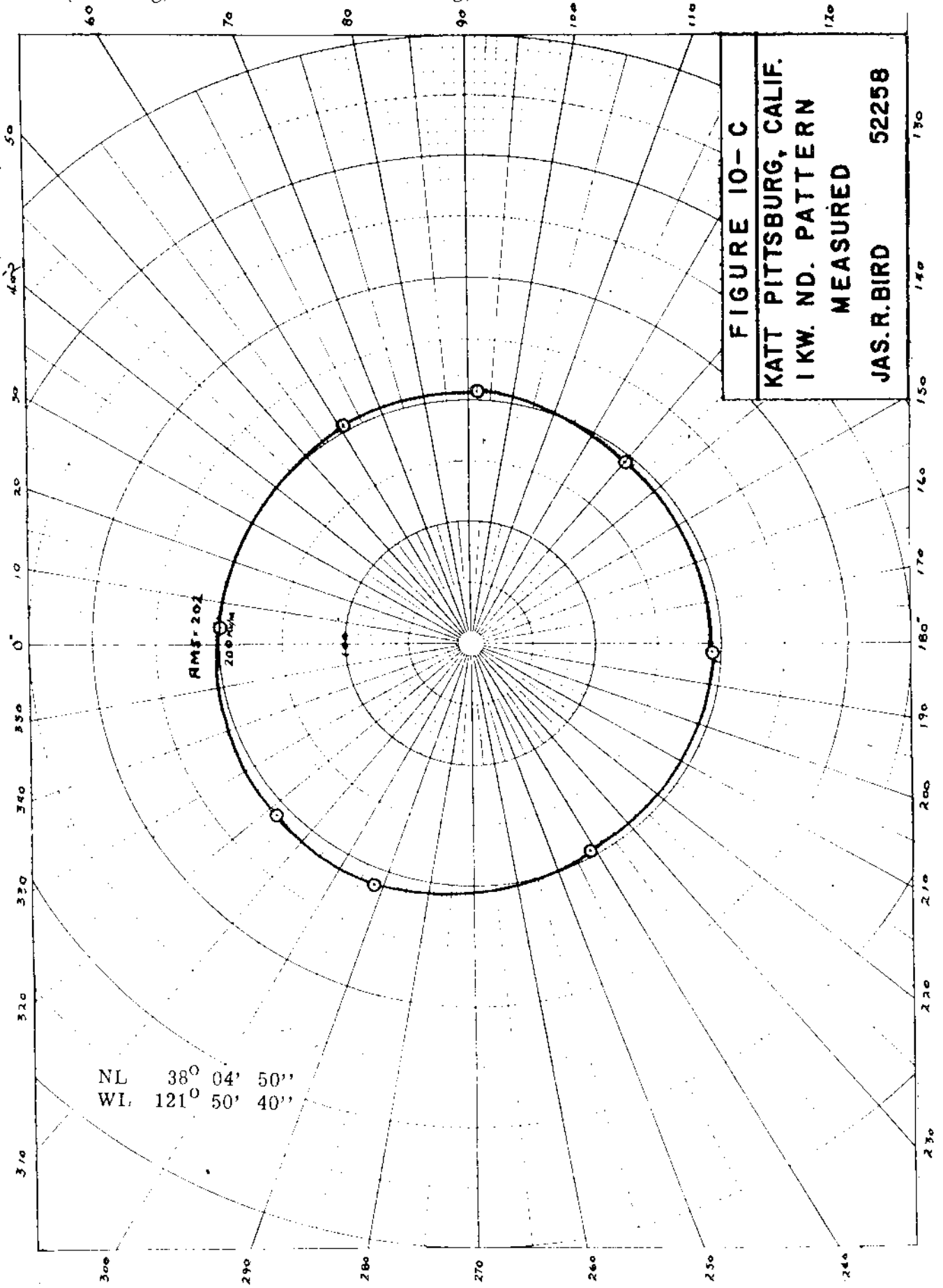
~~KATT~~
KKIS

MEASURED NON-DA
(8-18-58g)

Station KATT
Pittsburg, California

5kw, DA-2,U
990 KC

granted license
8-15-58 for
increase in
power & change
from DA-N to DA-2



FCC File No. BL-7150
Accepted 8-6-58

KATT
Pittsburg, California

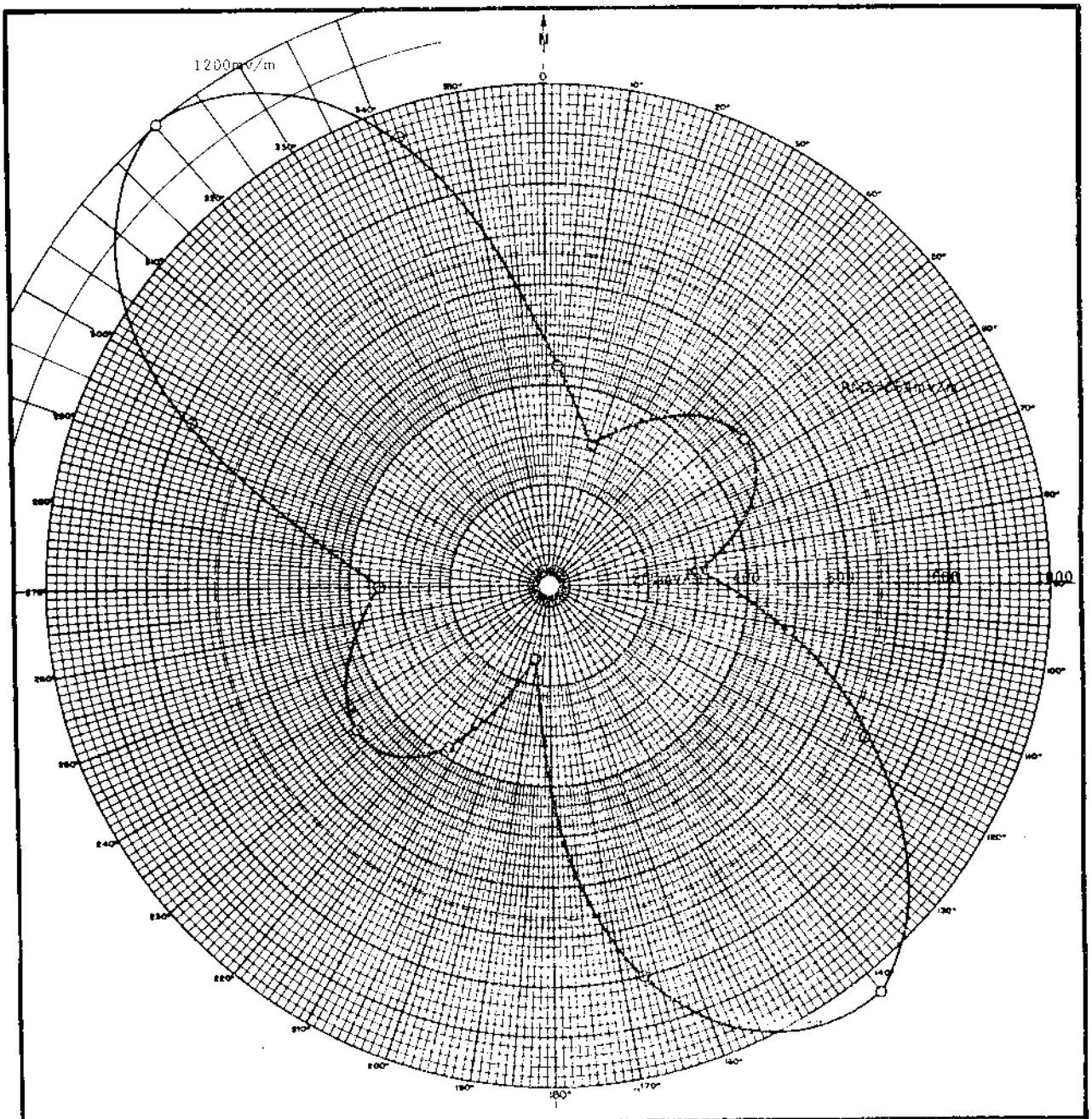
990 KC

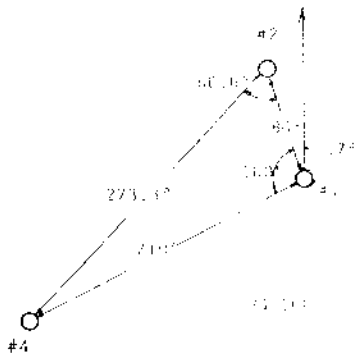
KNIN

Measured Day
(4-28-65ct)

Station KNIN
Wichita Falls, Texas

1kw,10kw-LS,DA-2,U
990 kc





APPLICANT	WICHITA BROADCASTING CORPORATION
LOCATION	Wichita Falls, Texas
FREQUENCY	990 kc/s
POWER	10 kw
LATITUDE	33° 55' 40"
LONGITUDE	98° 34' 10"
WHEN USED	Daytime
RMS FIELD	664 mv/m
DATE	01/164

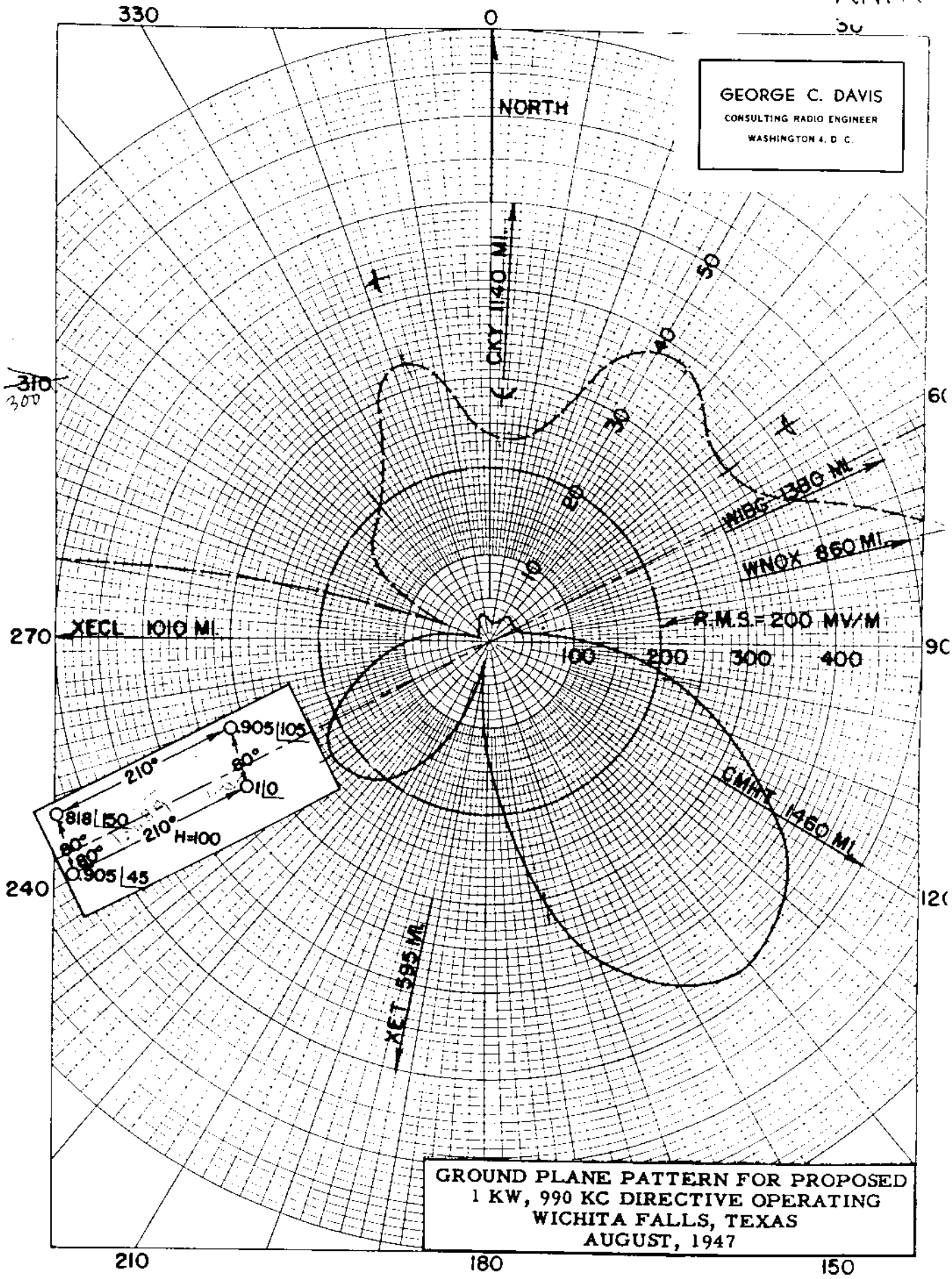
William B. Carr
CONSULTING ENGINEER
FORT WORTH, TEXAS

FCC File No. BZ-5489
Accepted 4-14-65

Station KNIN
Wichita Falls, Texas

990 kc

KNEN



GROUND PLANE PATTERN FOR PROPOSED
1 KW, 990 KC DIRECTIVE OPERATING
WICHITA FALLS, TEXAS
AUGUST, 1947

KEUFFEL & ESSER CO., N. Y. NO. 3438
POLAR CO-ORDINATE

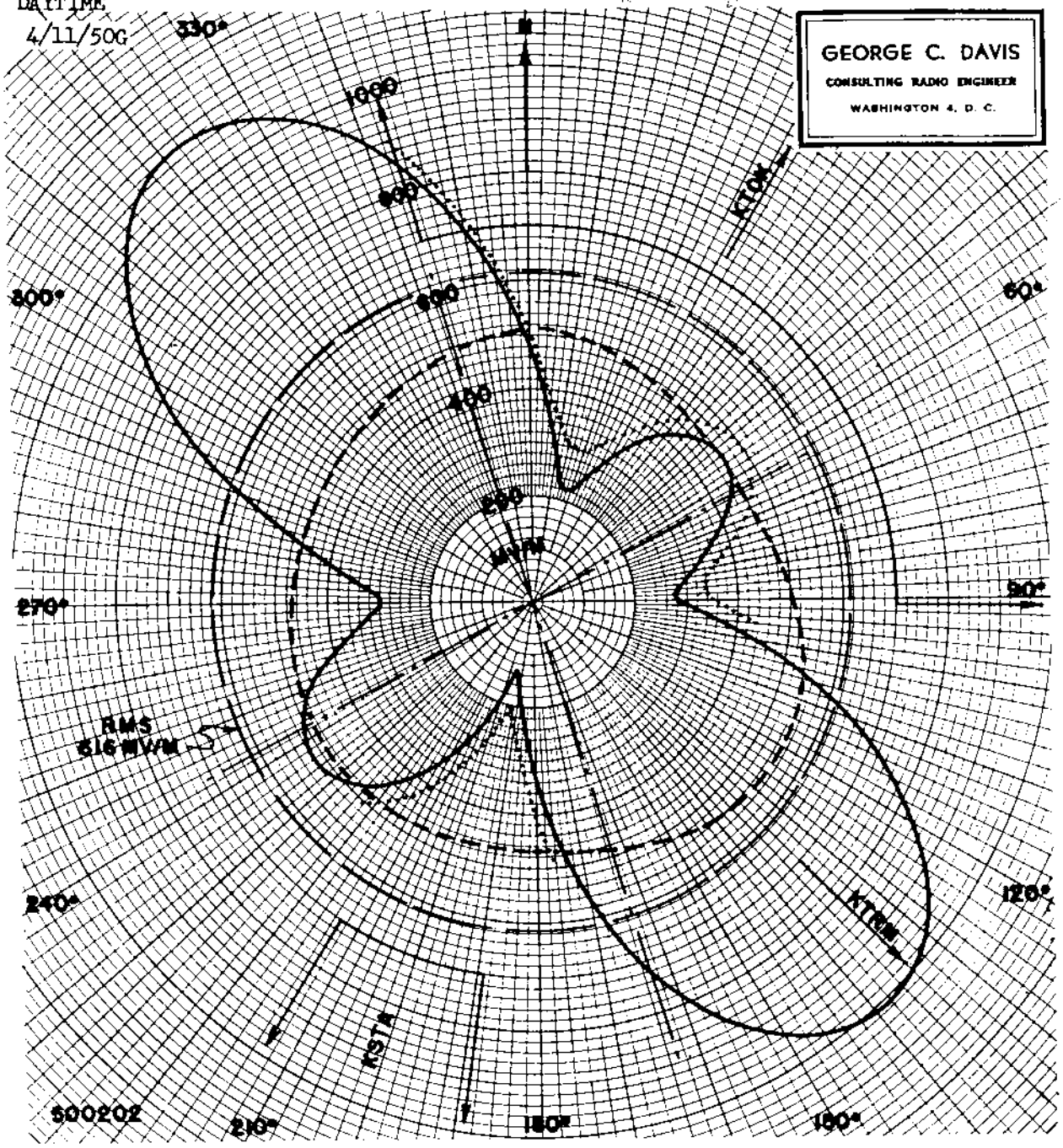
KNIN

PROPOSED DAYTIME 4/11/50G

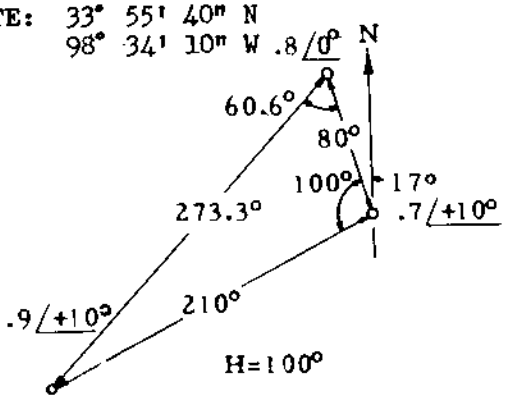
KFDX, WICHITA FALLS, TEX.

1kw, 10kw-LS, DA-2 990 kc

GEORGE C. DAVIS
CONSULTING RADIO ENGINEER
WASHINGTON 4, D. C.



SITE: 33° 55' 40" N
98° 34' 10" W



HORIZONTAL PLANE PATTERN FOR
PROPOSED DAYTIME OPERATION
UNATTENUATED FIELD AT ONE MILE
KFDX - 990 KC - 10 KW
WICHITA FALLS, TEXAS
MARCH 1950

..... MAXIMUM EXPECTED OPERATING VALUES

– – – – PRESENT 5 KW - ND
KFDX, Wichita Falls, Tex. 990 kc

AMENDMENT RECD 3-31-50 ACC 4-7-50 BP-6938

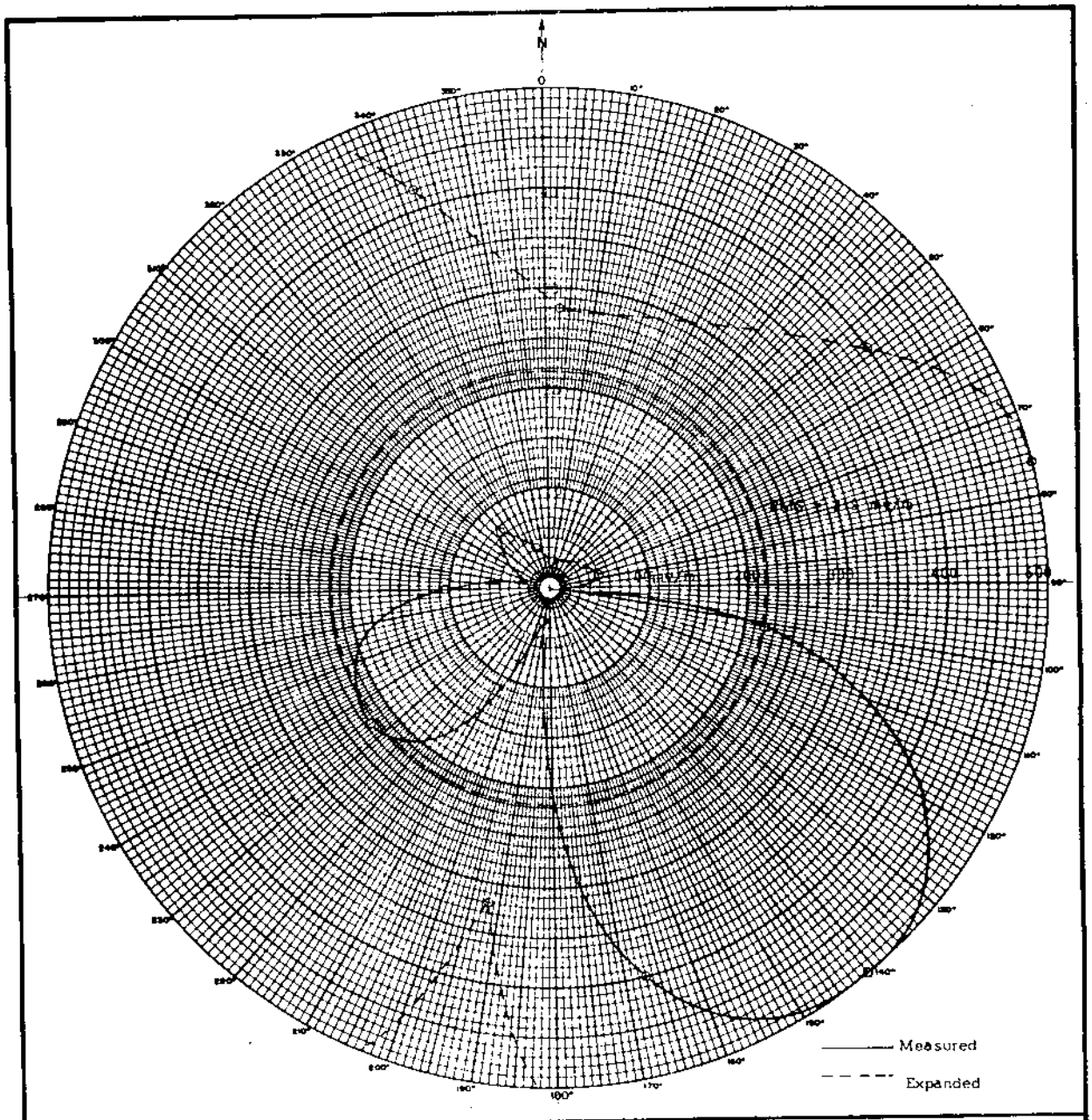
KNIN

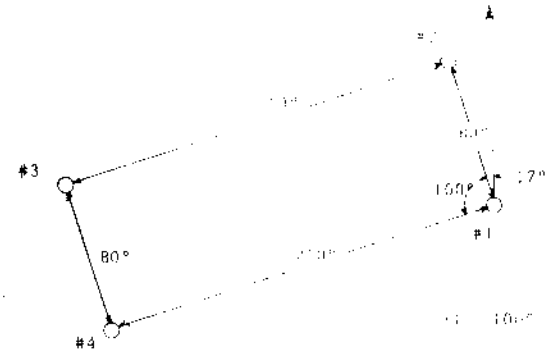
Measured Night
(4-28-65ct)

Station KNIN
Wichita Falls, Texas

1kw, 10kw-LS, DA-2, U
990 kc

FIGURE B





APPLICANT	WICHITA BROADCASTING CORPORATION
LOCATION	Wichita Falls, Texas
FREQUENCY	990 kc/s
POWER	1 kw
LATITUDE	33° 55' 40"
LONGITUDE	98° 34' 10"
WHEN USED	Nighttime
RMS FIELD	219 mv/m
DATE	011164

William B. Carr
CONSULTING ENGINEER
FORT WORTH, TEXAS

FCC File No. BZ-5489
Accepted 4-14-65

Station KNIN
Wichita Falls, Texas

990 kc

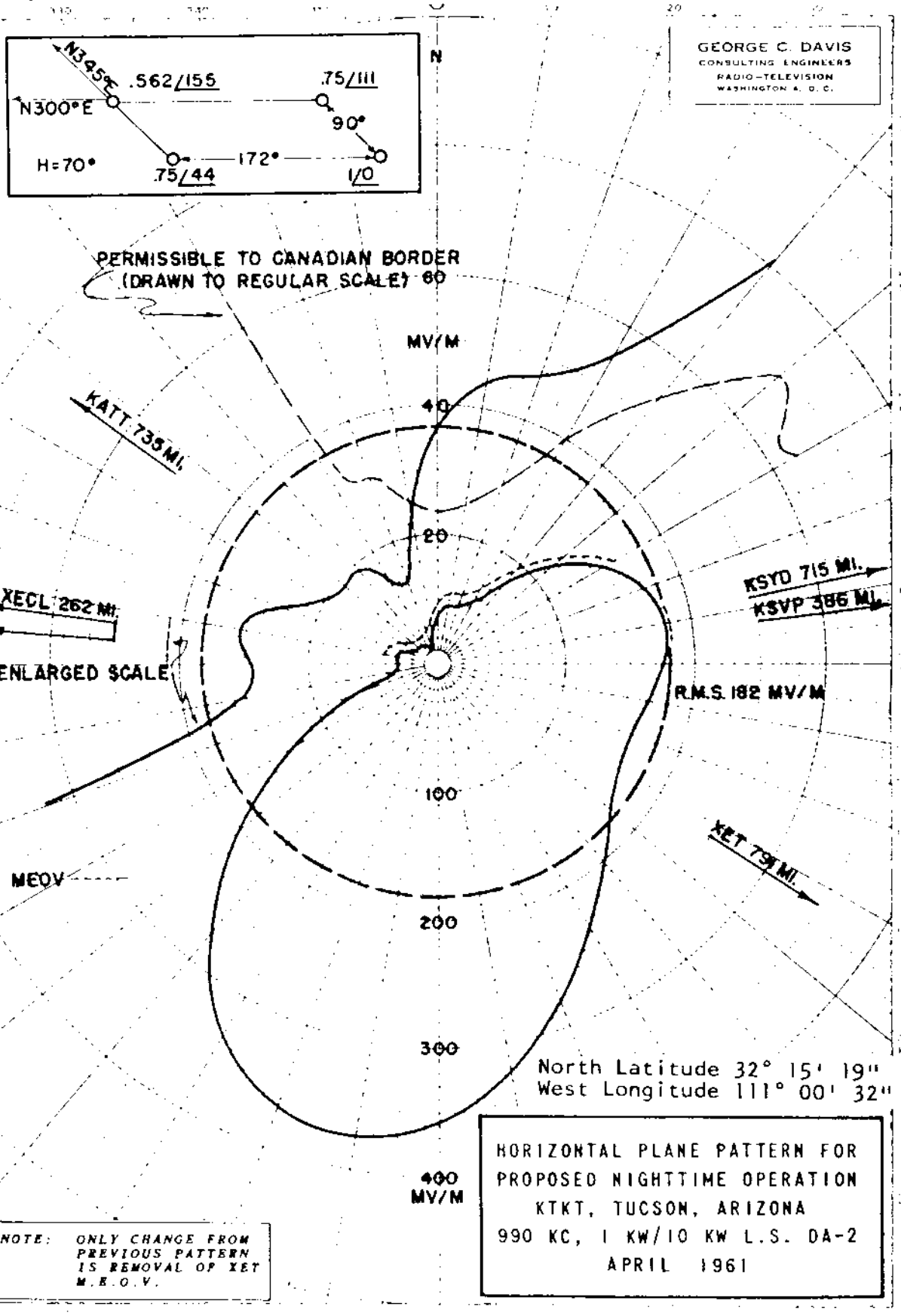
KTKT

PROPOSED NIGHT
(8-22-61ct)

Station KTKT
Tucson, Arizona

1kw, 10kw-LS, DA-2, U
990 KC

5-4-62 granted L for changes in DA sys.



FCC File No. BP-14978
Accepted 7-31-61

Station KTKT
Tucson, Arizona

990 KC

KTKT

MEASURED NIGHT
(5-27-60g)

Station KTKT
Tucson, Arizona

1kw, 10kw-LS, DA-2,U
990 KC

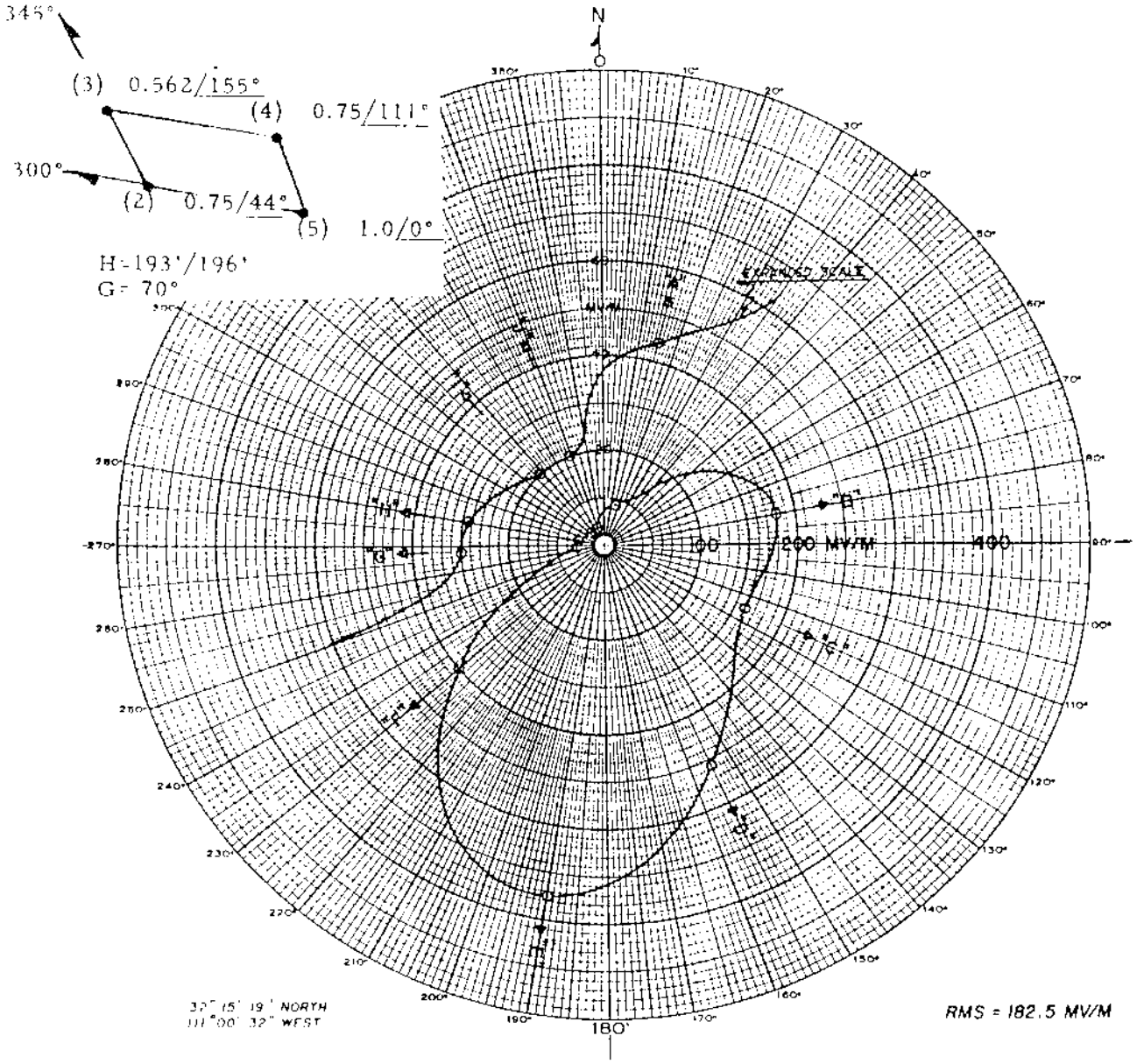


FIGURE NO. 14

NIGHT TIME DIRECTIONAL RADIATION PATTERN

BASED ON FIELD INTENSITY MEASUREMENTS

990 KC • 1.0 KW-NIGHT • DA-2

STATION KTKT —— TUCSON, ARIZONA

—— FEBRUARY —1960

FCC File No. BL-7897.
Accepted 4-27-60

KTKT
Tucson, Arizona

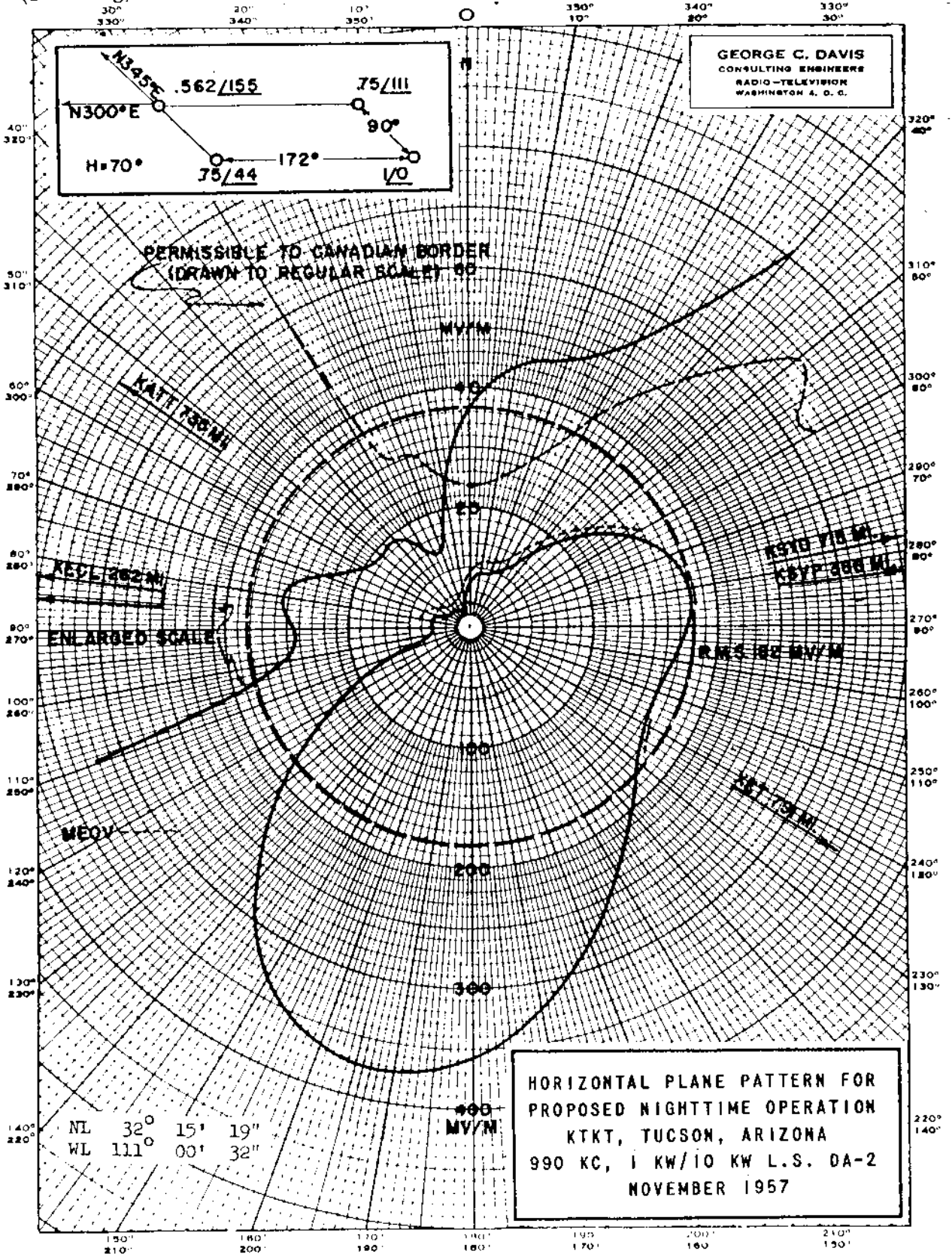
990 KC

KTKT

PROPOSED NIGHT
(1-10-58g)

Station KTKT
Tucson, Arizona

1kw,10kw-LS, DA-2,U
990 KC



FCC File No. BP-11,730
Accepted 12-31-57

KTKT
Tucson, Arizona

990 KC

KTKT

MEASURED NON-DA
(5-27-60g)

Station KTKT
Tucson, Arizona

1kw, 10kw-LS, DA-2,U
990 KC

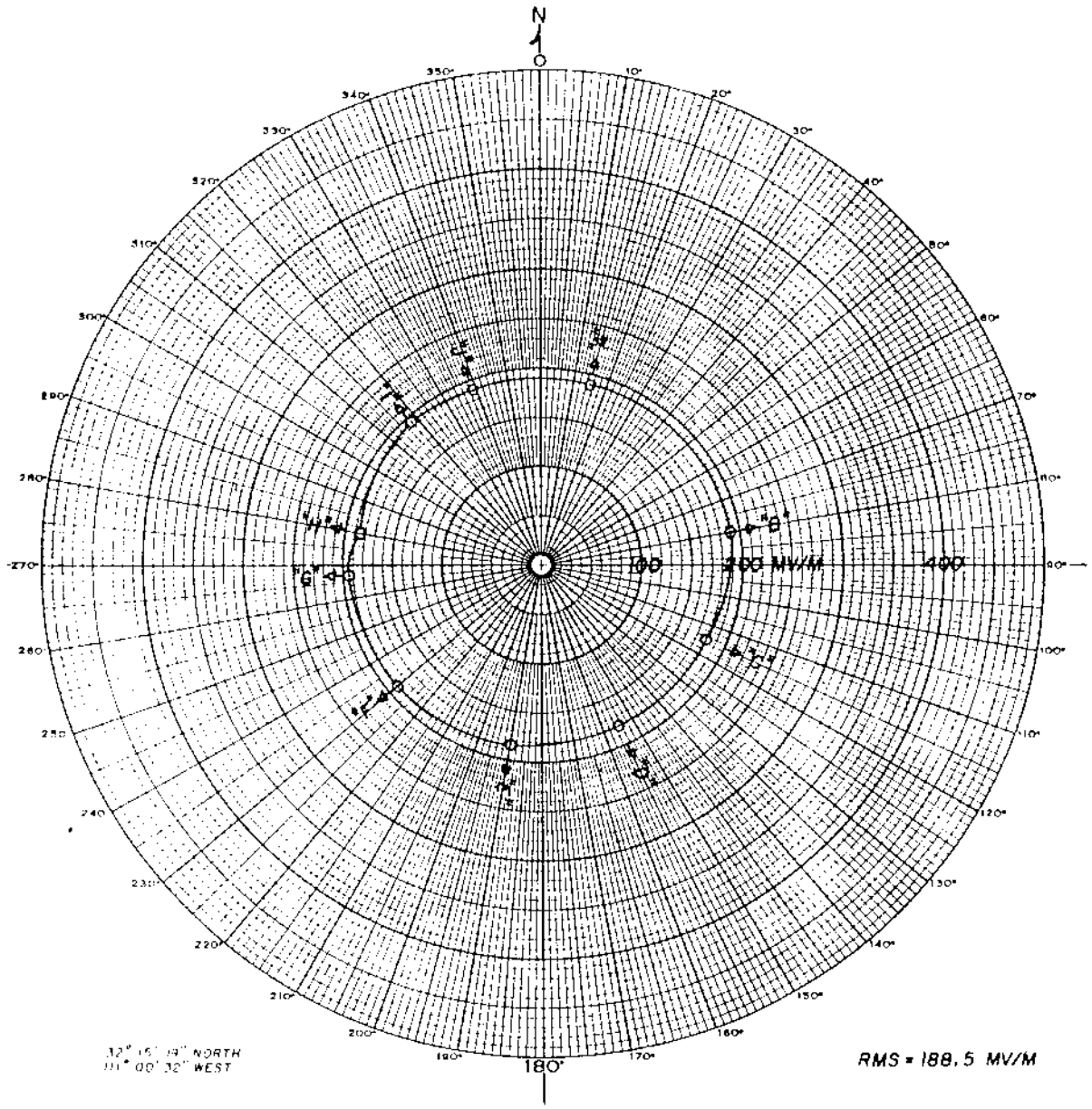


FIGURE NO. 13

NON-DIRECTIONAL RADIATION PATTERN
BASED ON FIELD INTENSITY MEASUREMENTS

990 KC • 1.0 KW • DA-2

STATION KTKT — TUCSON, ARIZONA

FEBRUARY — 1960

FCC File No. BL-7897
Accepted 4-27-60

KTKT
Tucson, Arizona

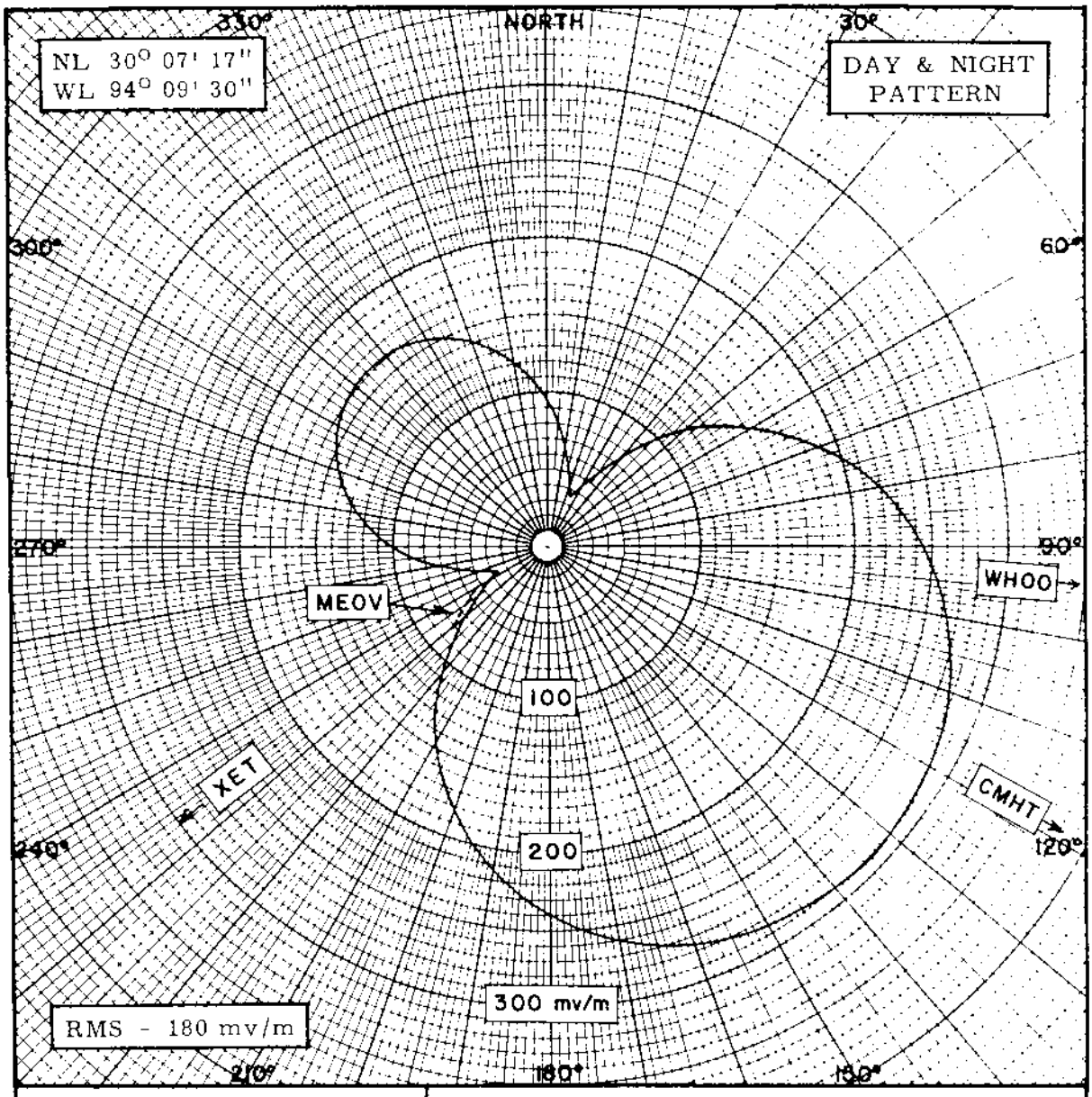
990 KC

KTRM

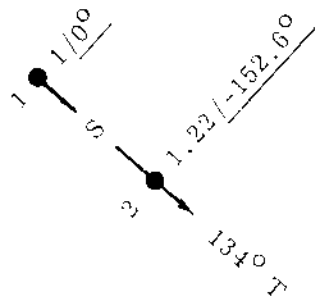
Proposed Day & Night
(5-27-70ct)

Station KTRM
Beaumont, Texas

1kw,DA-1,U
990 kc



Theoretical



G - 84.4° - 233'
S - 80° - 221'

KTRM, INCORPORATED
RADIO STATION KTRM
BEAUMONT, TEXAS

COMPUTED DIRECTIONAL
HORIZONTAL PLANE RADIATION PATTERN
990 KHZ 1000 WATTS

031370

FIGURE B

MERL SAXON
CONSULTING RADIO ENGINEER
LUFKIN, TEXAS

FCC File No.BP-18775
Accepted 5-21-70

Station KTRM
Beaumont, Texas

990 kc

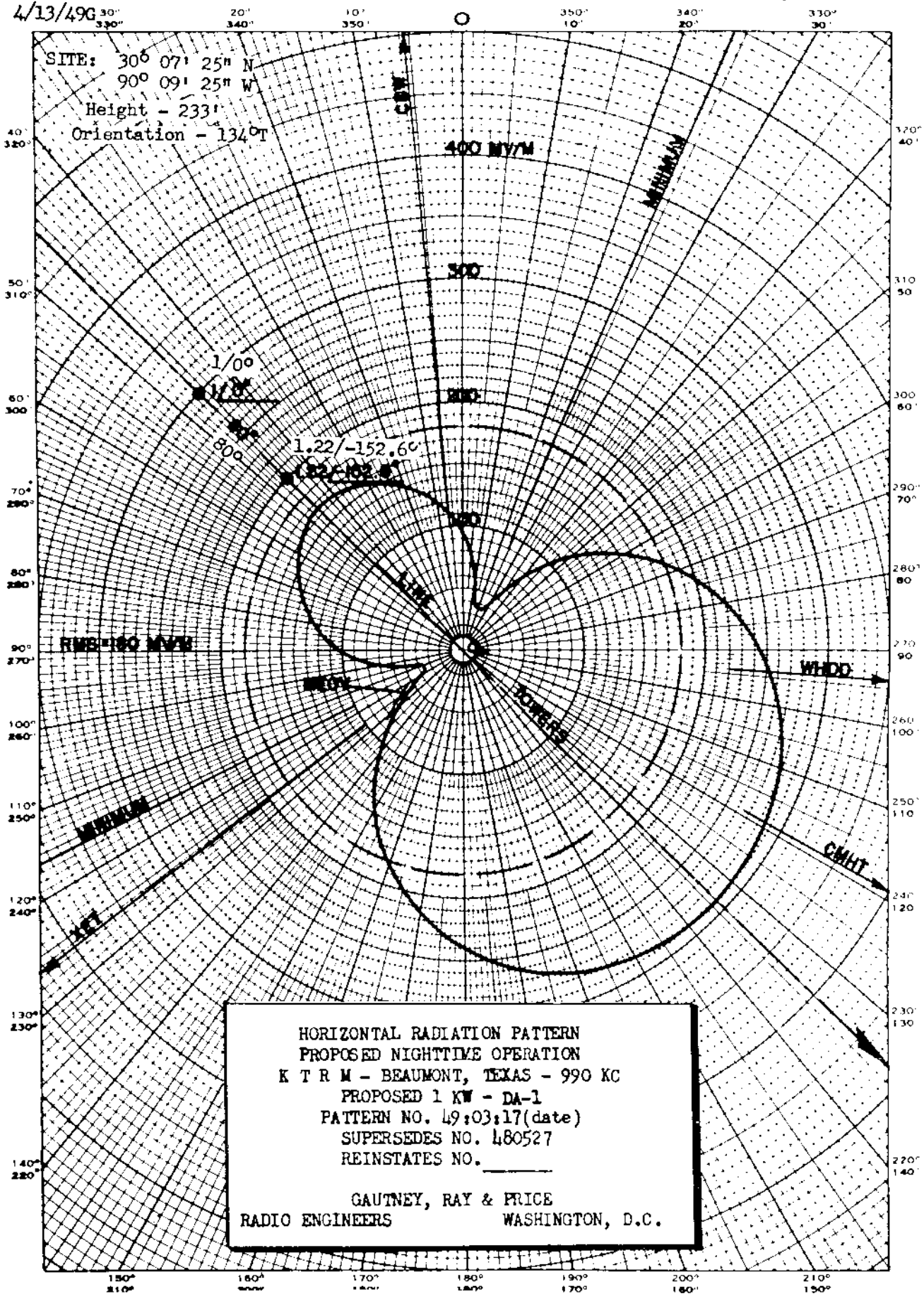
KTRM

PROPOSED NIGHT&DAY

KTRM, BEAUMONT, TEX.

1kw, DA1 990kc

4/13/49G



HORIZONTAL RADIATION PATTERN
PROPOSED NIGHTTIME OPERATION
K T R M - BEAUMONT, TEXAS - 990 KC
PROPOSED 1 KW - DA-1
PATTERN NO. 49:03:17(date)
SUPERSEDES NO. 480527
REINSTATES NO. _____

GAUTNEY, RAY & PRICE
RADIO ENGINEERS WASHINGTON, D.C.

AMENDMENT TO ML-1269 RECD 4-8-49

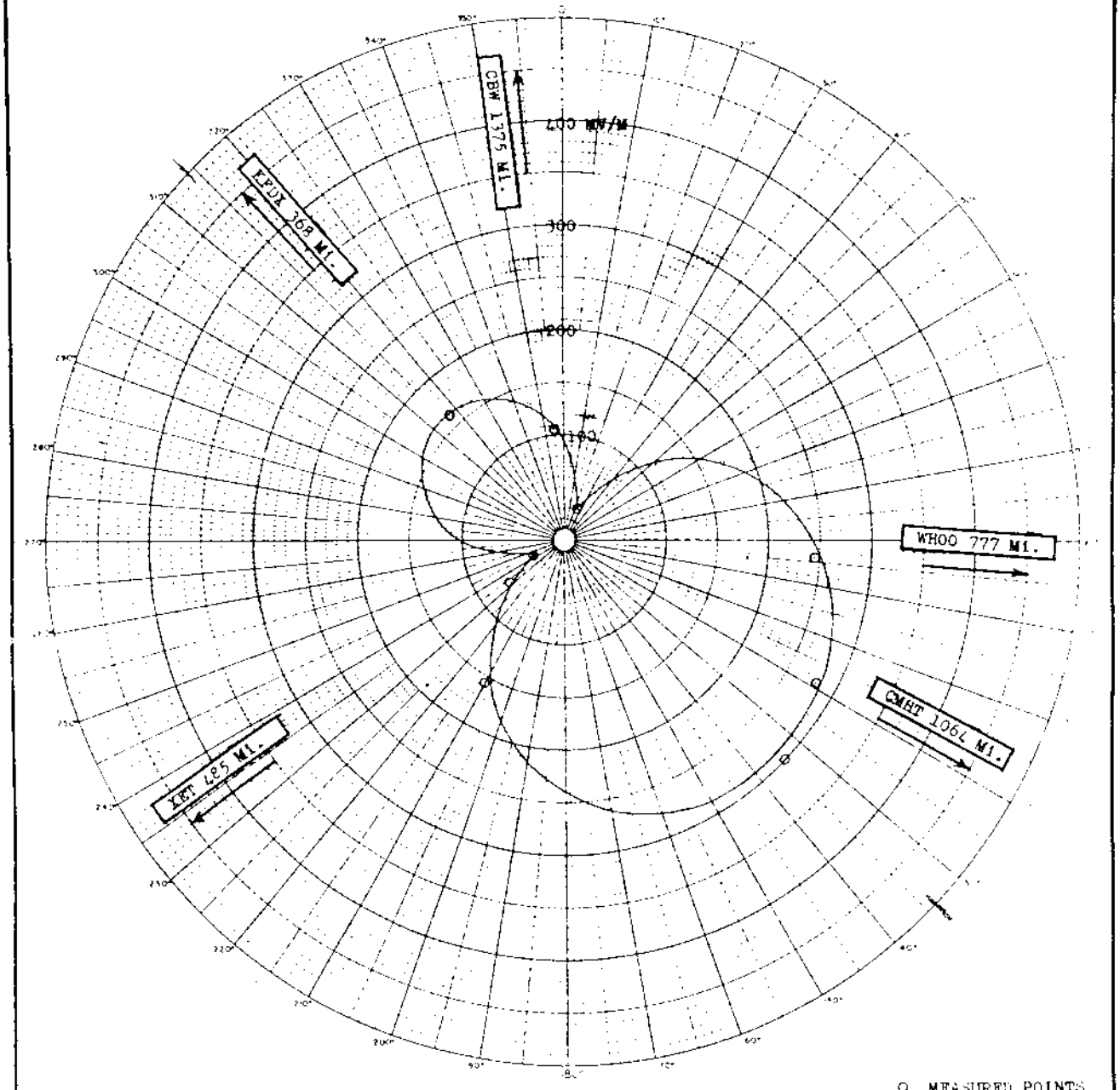
KTRM

MEASURED NIGHT&DAY — KTRM, BEAUMONT, TEX. — 1kw, DA-1 — 990 kc

12/2/490

N

BI-3686
11-21-49



O MEASURED POINTS

KTRM

HORIZONTAL RADIATION PATTERN

ANTENNA	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6
PHASE DEG.	0°	-152.6°				
HEIGHT DEG.	84.4°	84.4°				
F.I.D. RATIO	1.22	1.00				
	SPACING = 80°					

ORIENTATION = 134° TRUE

FREQUENCY	990 KC
ASSIGNMENT	1 KW-U(DA-1)
LONGITUDE	94 DEG 09 MIN 25 SEC
LATITUDE	30 DEG 07 MIN 25 SEC
WHEN USED	DAYTIME & NIGHTIME
RMS FIELD	180 MV/M
DATE	NOVEMBER 1949

ROBERT M. SILLIMAN
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

KTRM, Beaumont, Tex. 990 kc

KTYD ~~KGUD~~

Proposed Day
(7-27-62ct)

Station KGUD
Santa Barbara, California

1kw,DA-D,D
990 kc

-31-62
ental map for
ings in pattern

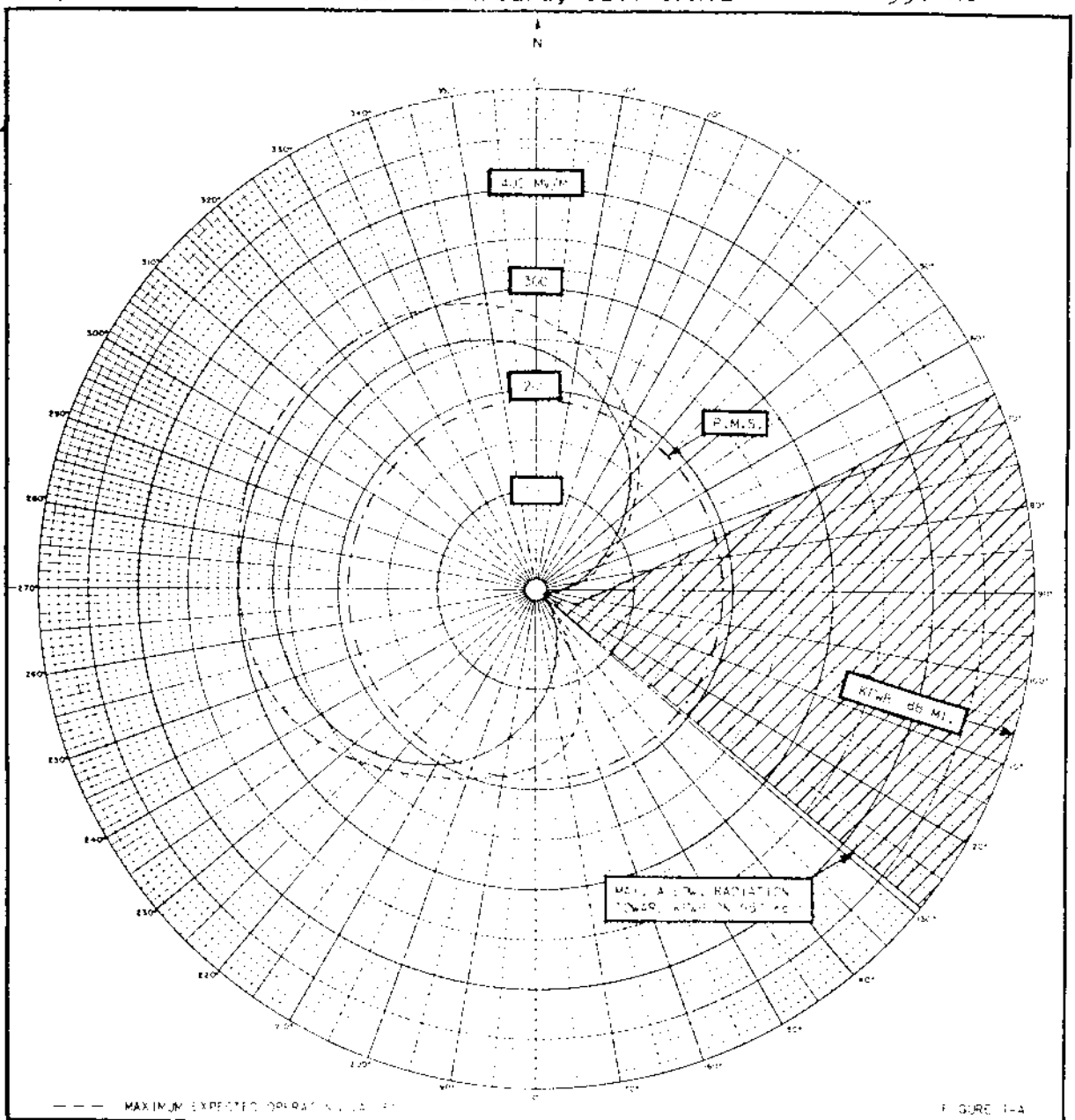
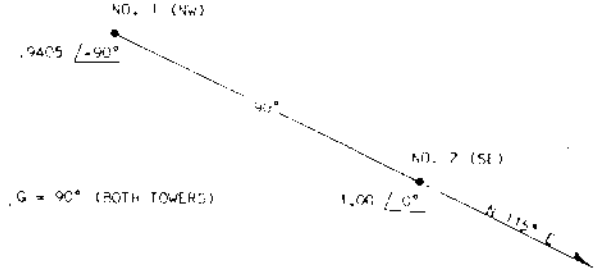


FIGURE 1-A

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION



APPLICANT	METROPOLITAN THEATRES CORP.
LOCATION	SANTA BARBARA, CALIFORNIA
FREQUENCY	990 KCS
POWER	1 KW-D (DA)
LATITUDE	34 DEG 29 MIN 15 SEC
LONGITUDE	119 DEG 42 MIN 33 SEC
WHEN USED	DAYTIME HOURS
RMS FIELD	[illegible] MV/M
DATE	JULY 1962

STILLMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BMP-10397
Accepted 7-23-62

Station KGUD
Santa Barbara, California

990 kc

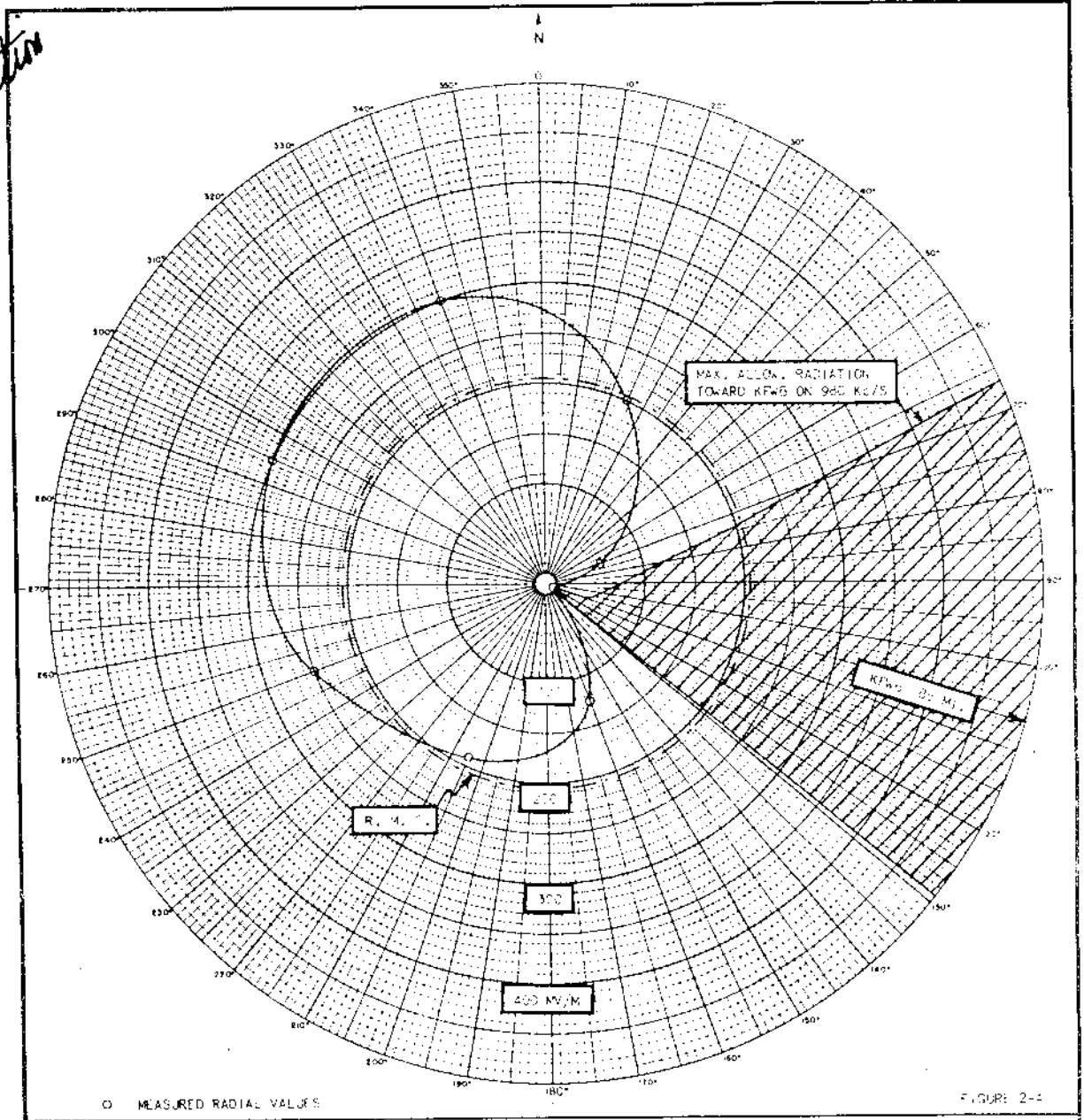
KT YD KGUD

Measured Day
(9-27-62ct)

Station KGUD
Santa Barbara, California

1kw,DA-D,D
990 kc

-11-63
Permitted L for station



O MEASURED RADIAL VALUES

FIGURE 2-4

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION

NO. 1 (NW)

.9405 ∠-90°

90°

NO. 2 (SE)

1.00 ∠0°

H 175' ±

G = 90° (BOTH TOWERS)

APPLICANT	METROPOLITAN THEATRES CORP.
LOCATION	SANTA BARBARA, CALIFORNIA
FREQUENCY	990 KC/S
POWER	1 KW-D-DA
LATITUDE	34 DEG 22 MIN 15 SEC
LONGITUDE	119 DEG 40 MIN 33 SEC
WHEN USED	DAYTIME HOURS
RMS FIELD	206 MV/M
DATE	JULY 1962

SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-9512
Accepted 8-22-62

Station KGUD
Santa Barbara, California

990 kc

KITO —KGUD

Proposed Day Nulls
(7-27-62ct)

Station KGUD
Santa Barbara, California

1kw,DA-D,D
990 kc

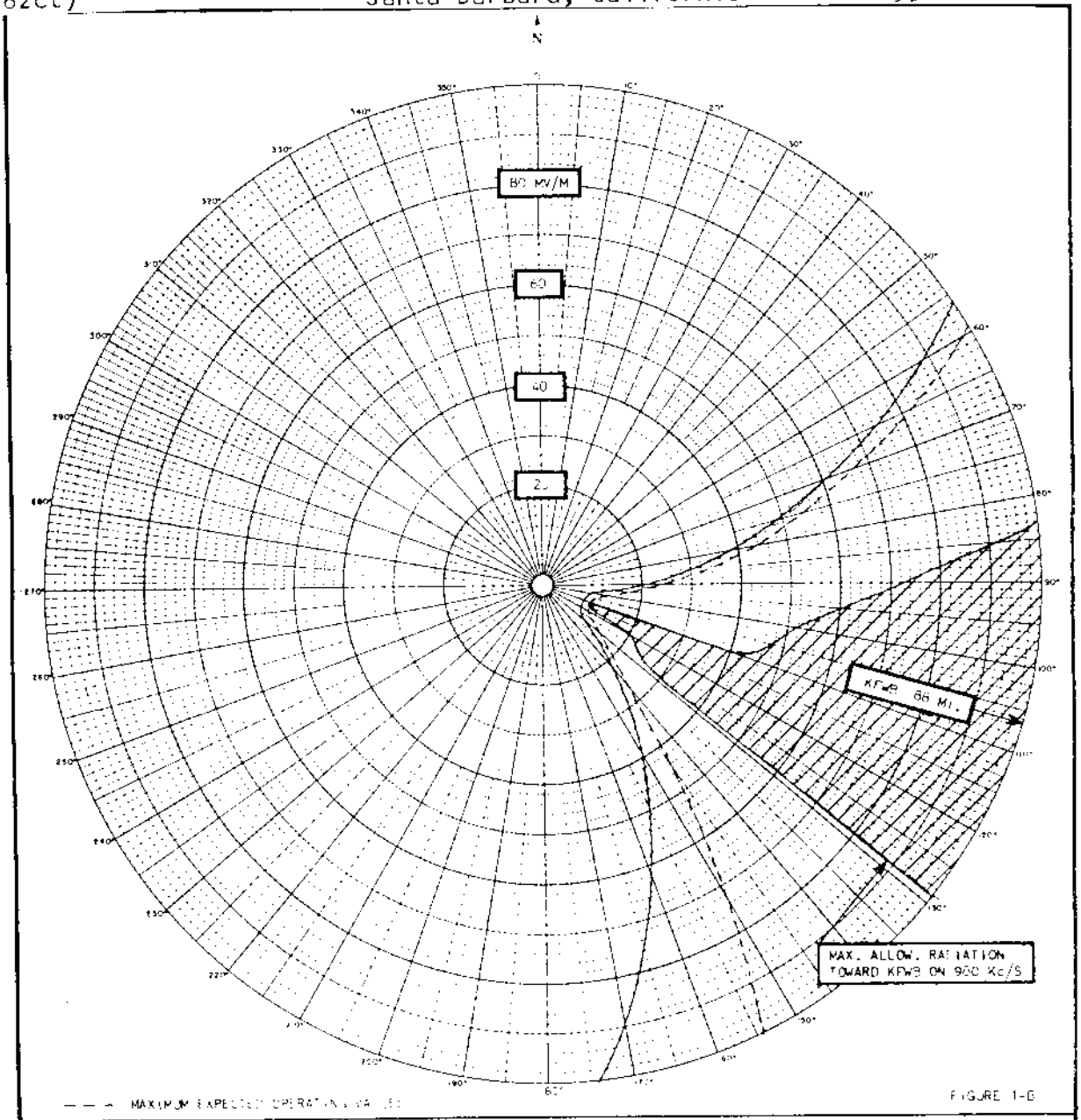


FIGURE 1-D

HORIZONTAL RADIATION PATTERN

EXPANDED VIEW

APPLICANT	METROPOLITAN THEATRES CORP.
LOCATION	SANTA BARBARA, CALIFORNIA
FREQUENCY	990 KC/S
POWER	1 KW-D (DA)
LATITUDE	34 DEG 24 MIN 29 SEC
LONGITUDE	119 DEG 40 MIN 39 SEC
WHEN USED	DAYTIME HOURS
RMS FIELD	289.5 MV/M
DATE	JULY 1962

SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BMP-10397
Accepted 7-23-62

Station KGUD
Santa Barbara, California

990 kc

KITV ~~KGUD~~

Measured Day Nulls
(9-27-62ct)

Station KGUD
Santa Barbara, California

1kw,DA-D,D
990 kc

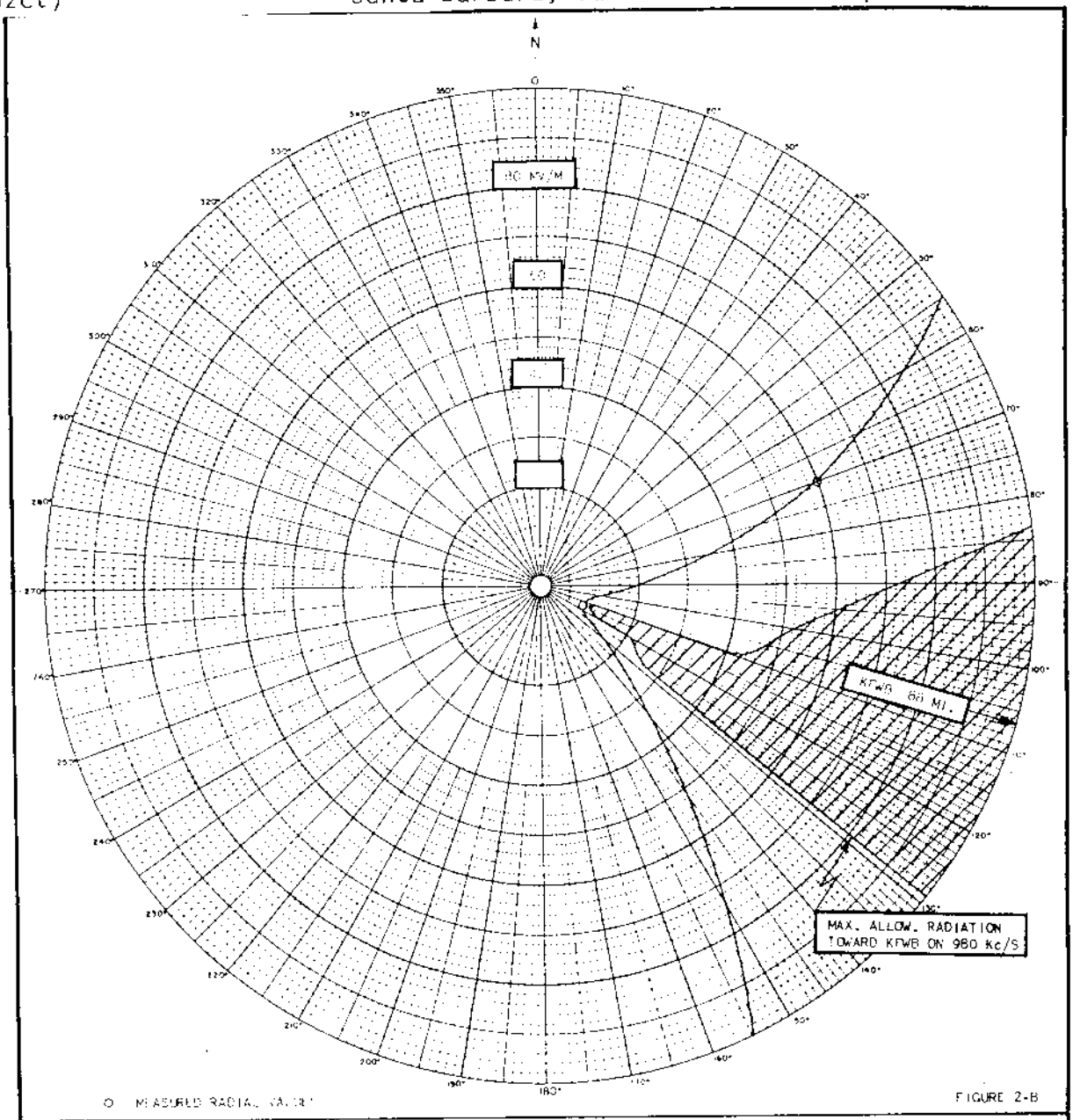


FIGURE 2-B

HORIZONTAL RADIATION PATTERN

EXPANDED VIEW

APPLICANT	METROPOLITAN THEATRES CORP.
LOCATION	SANTA BARBARA, CALIFORNIA
FREQUENCY	990 KC/S
POWER	1 KW-D-DA
LATITUDE	34 DEG ~~26~~ 28 MIN ~~45~~ 15 SEC
LONGITUDE	119 DEG 40 MIN ~~40~~ 33 SEC
WHEN USED	DAYTIME HOURS
RMS FIELD	206 MV/M
DATE	JULY 1962

SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-9512
Accepted 8-22-62

Station KGUD
Santa Barbara, California

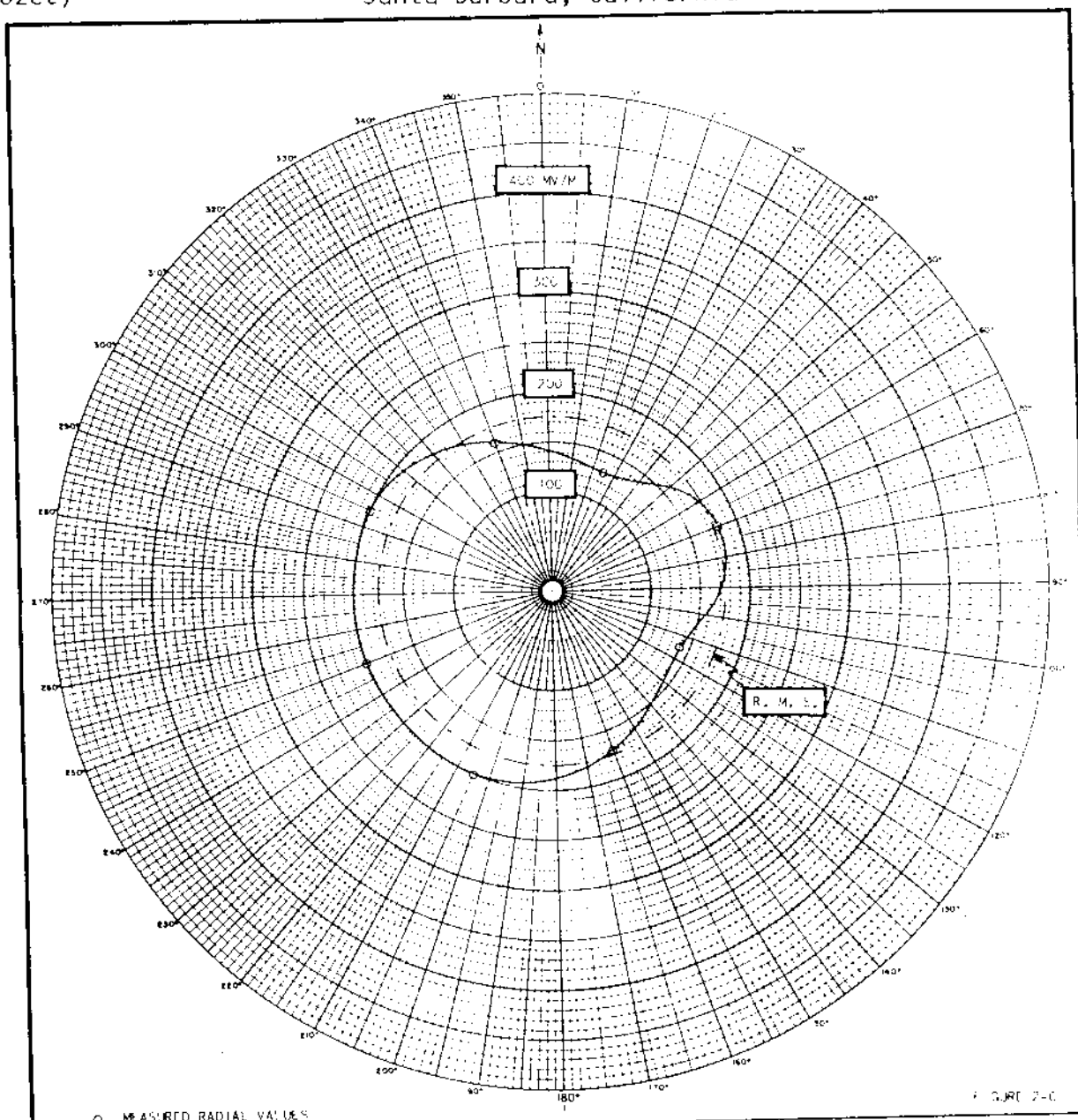
990 kc

KTYD KGUD

Measured Non-DA
(9-27-62ct)

Station KGUD
Santa Barbara, California

1kw,DA-D,D
990 kc



○ MEASURED RADIAL VALUES

FIGURE 2-C

HORIZONTAL RADIATION PATTERN

NON-DIRECTIONAL SURVEY

APPLICANT	METROPOLITAN THEATRES CORP.
LOCATION	SANTA BARBARA, CALIFORNIA
FREQUENCY	990 KC/S
POWER	1 KW
LATITUDE	34 DEG 26 MIN 45 SEC → 34 DEG 25 MIN 15 SEC
LONGITUDE	119 DEG 40 MIN 44 SEC → 119 DEG 39 MIN 39 SEC
WHEN USED	NON-DIRECTIONAL SURVEY ONLY
R.M.S. FIELD	175 MV/M
DATE	JULY 1962

SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-9512
Accepted 8-22-62

Station KGUD
Santa Barbara, California

990 kc

KWAM

PROPOSED DAY
(8-22-61ct)

Station KWAM
Memphis, Tennessee

10kw, DA-D, D
990 KC

6-12-63
granted CP to
increase power to
10 Kw

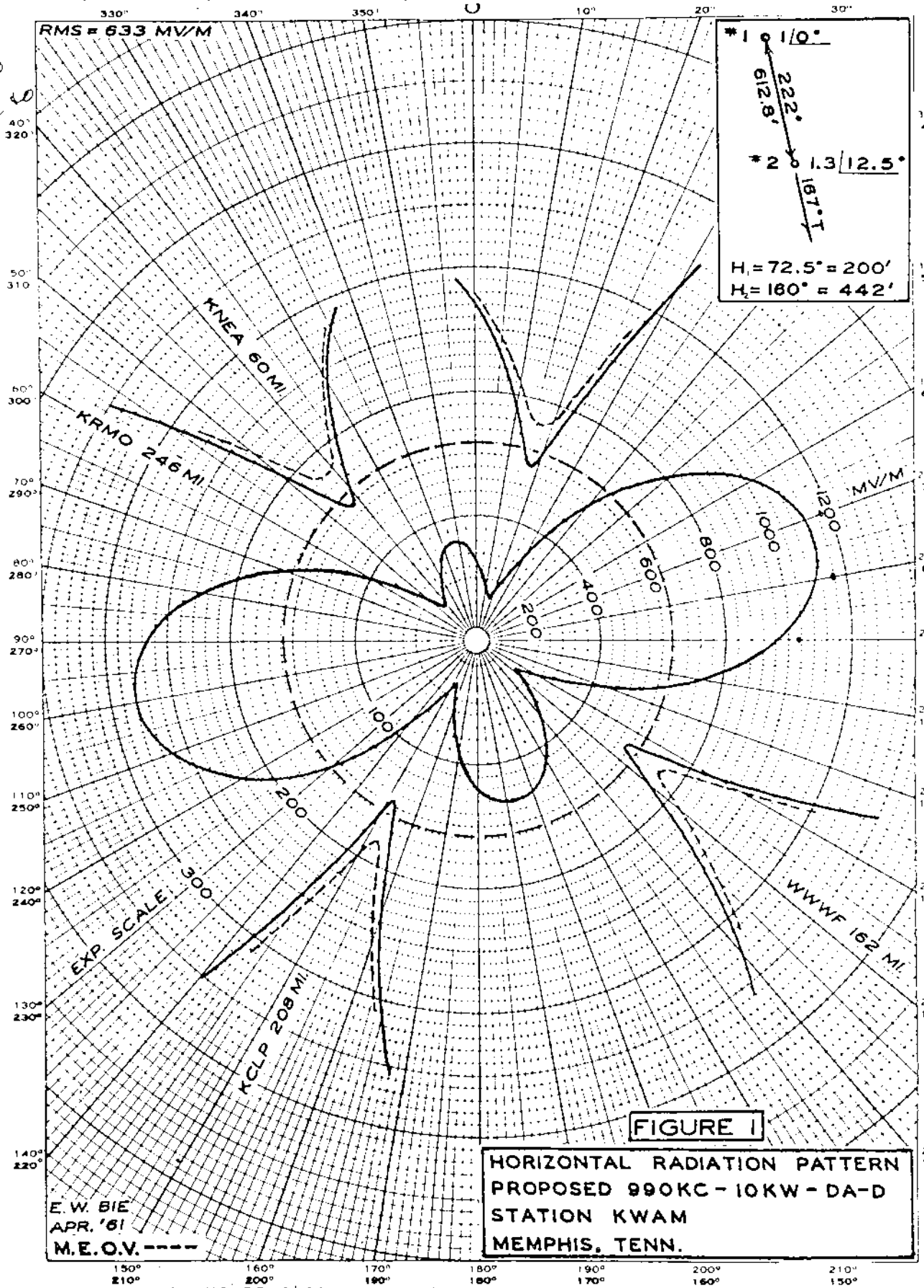


FIGURE 1

HORIZONTAL RADIATION PATTERN
PROPOSED 990KC - 10KW - DA-D
STATION KWAM
MEMPHIS, TENN.

FCC File NO. BP-14952
Accepted 8-9-61

Station KWAM
Memphis, Tennessee

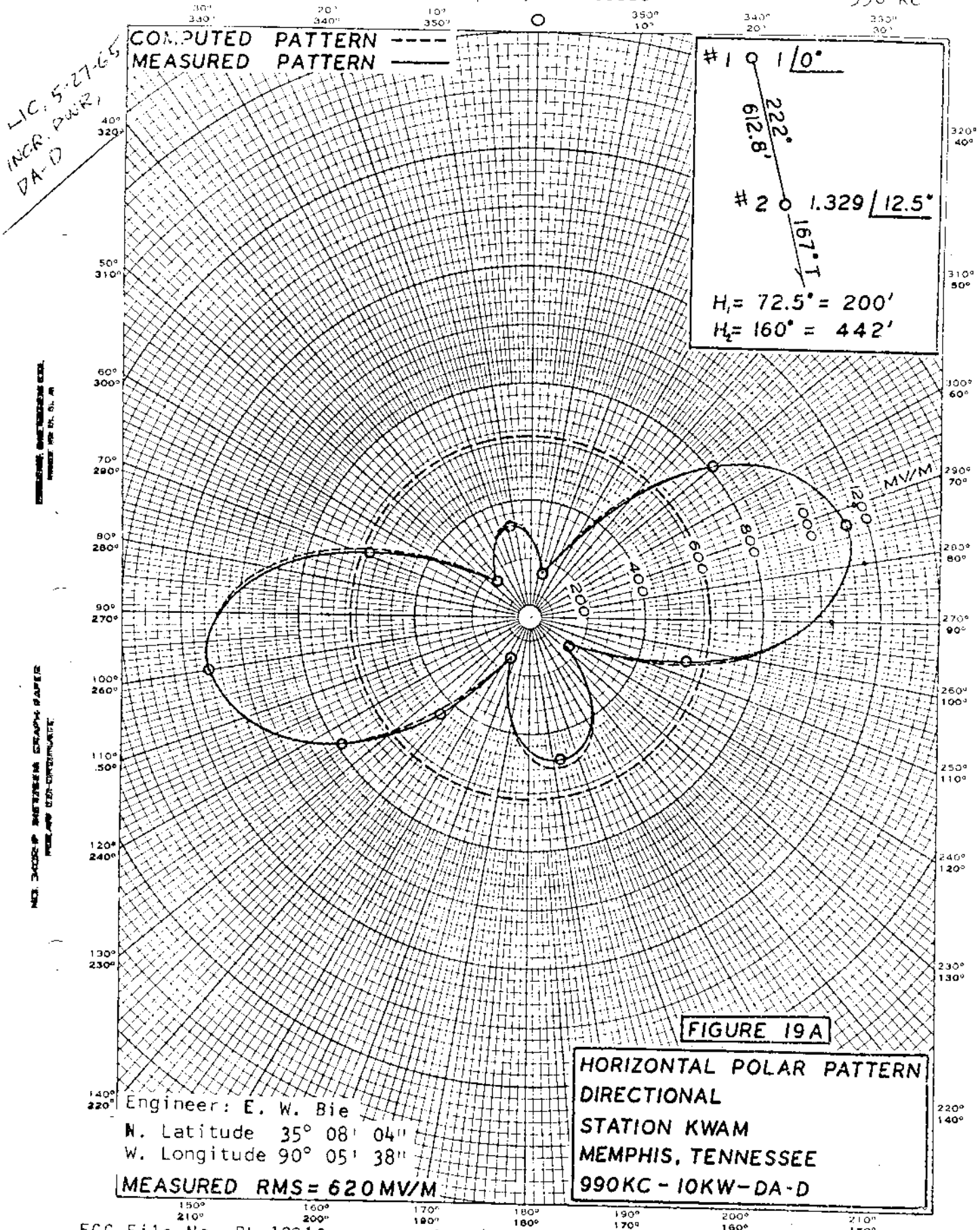
990 KC

KWAM

Measured Day
(5-27-65ct)

Station KWAM
Memphis, Tennessee

10kw, DA-D, D
990 kc



Engineer: E. W. Bie
N. Latitude 35° 08' 04"
W. Longitude 90° 05' 38"

MEASURED RMS = 620 MV/M

FIGURE 19A

HORIZONTAL POLAR PATTERN
DIRECTIONAL
STATION KWAM
MEMPHIS, TENNESSEE
990KC - 10KW - DA-D

FCC File No. BL-10913
Accepted 5-21-65

Station KWAM
Memphis, Tennessee

990 kc

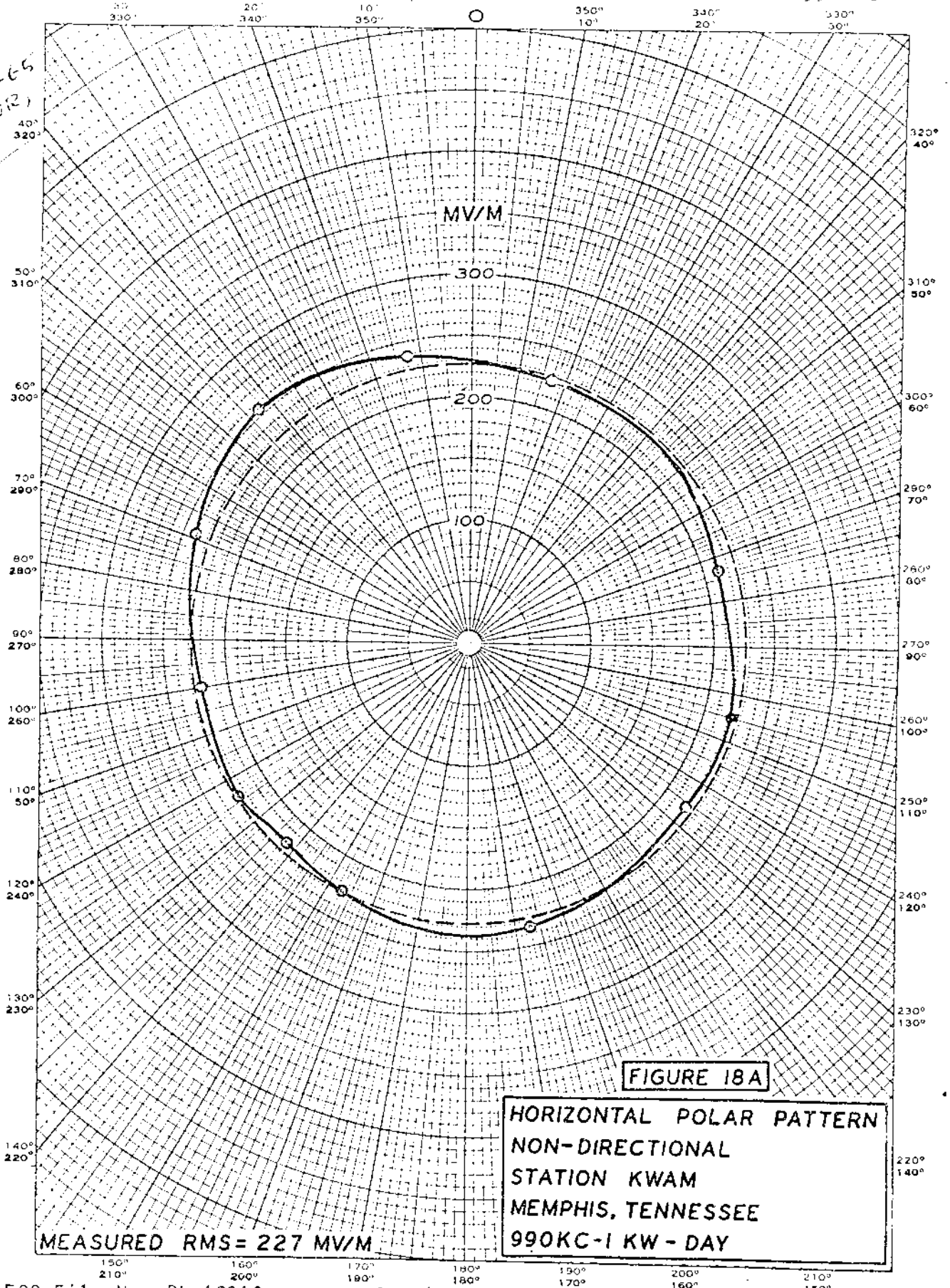
KWAM

Measured Non-DA
(5-27-65ct)

Station KWAM
Memphis, Tennessee

10kw, DA-D, D
990 kc

IC-5-27-65
INCR. PWR.
DA-D



EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340R-P DIETZGEN GRAPH PAPER
POLAR CO-ORDINATE

MEASURED RMS = 227 MV/M

FIGURE 18A

HORIZONTAL POLAR PATTERN
NON-DIRECTIONAL
STATION KWAM
MEMPHIS, TENNESSEE
990KC-1 KW-DAY

FCC File No. BL-10913
Accepted 5-21-65

Station KWAM
Memphis, Tennessee

990 kc

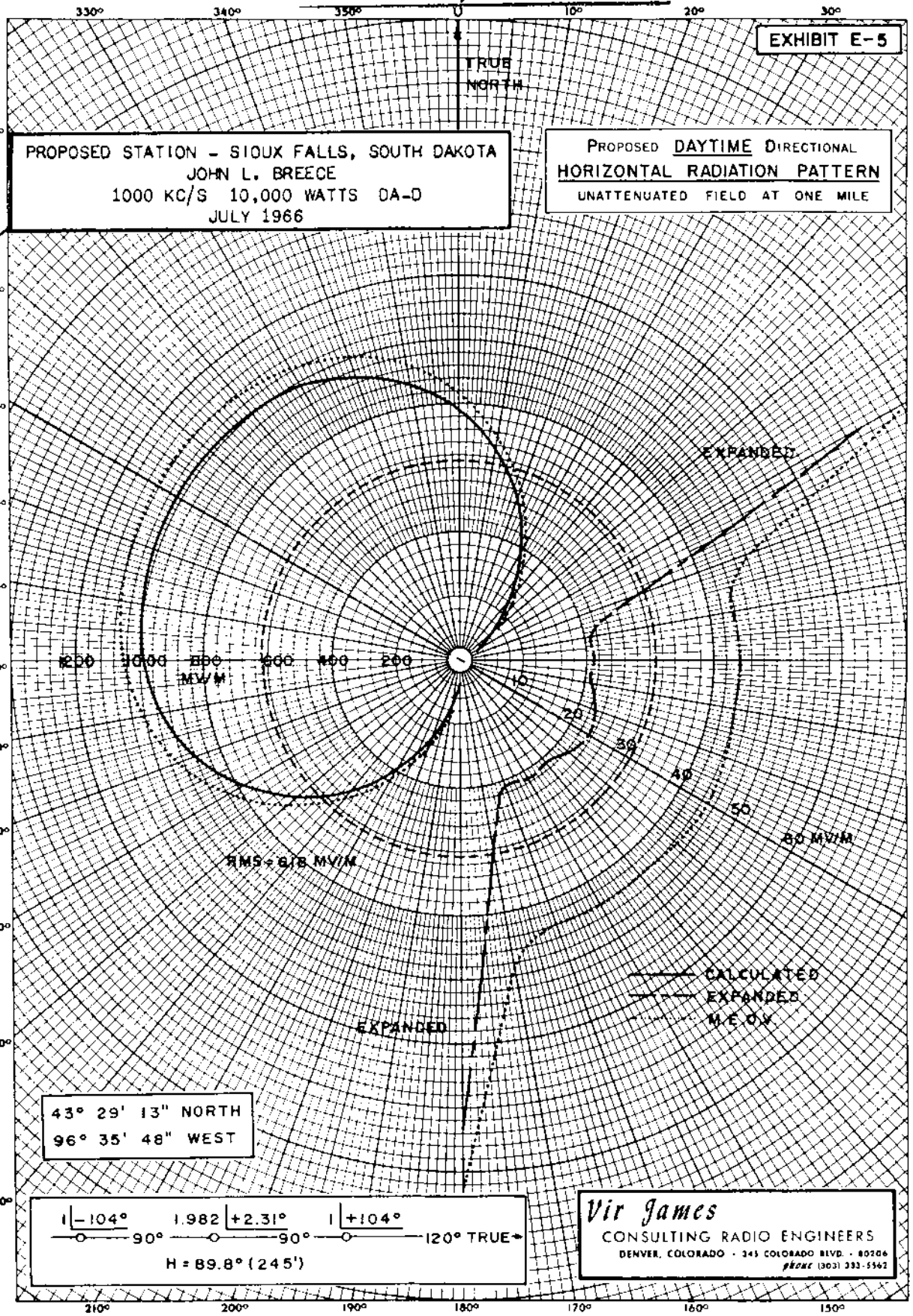
KXRB

Proposed Day
(1-30-67ct)

New; John L. Breece
Sioux Falls, South Dakota

10kw,DA-D,D
1000 kc

4-18-68
GRANTED
CP FOR
A NEW AM
B. STATION

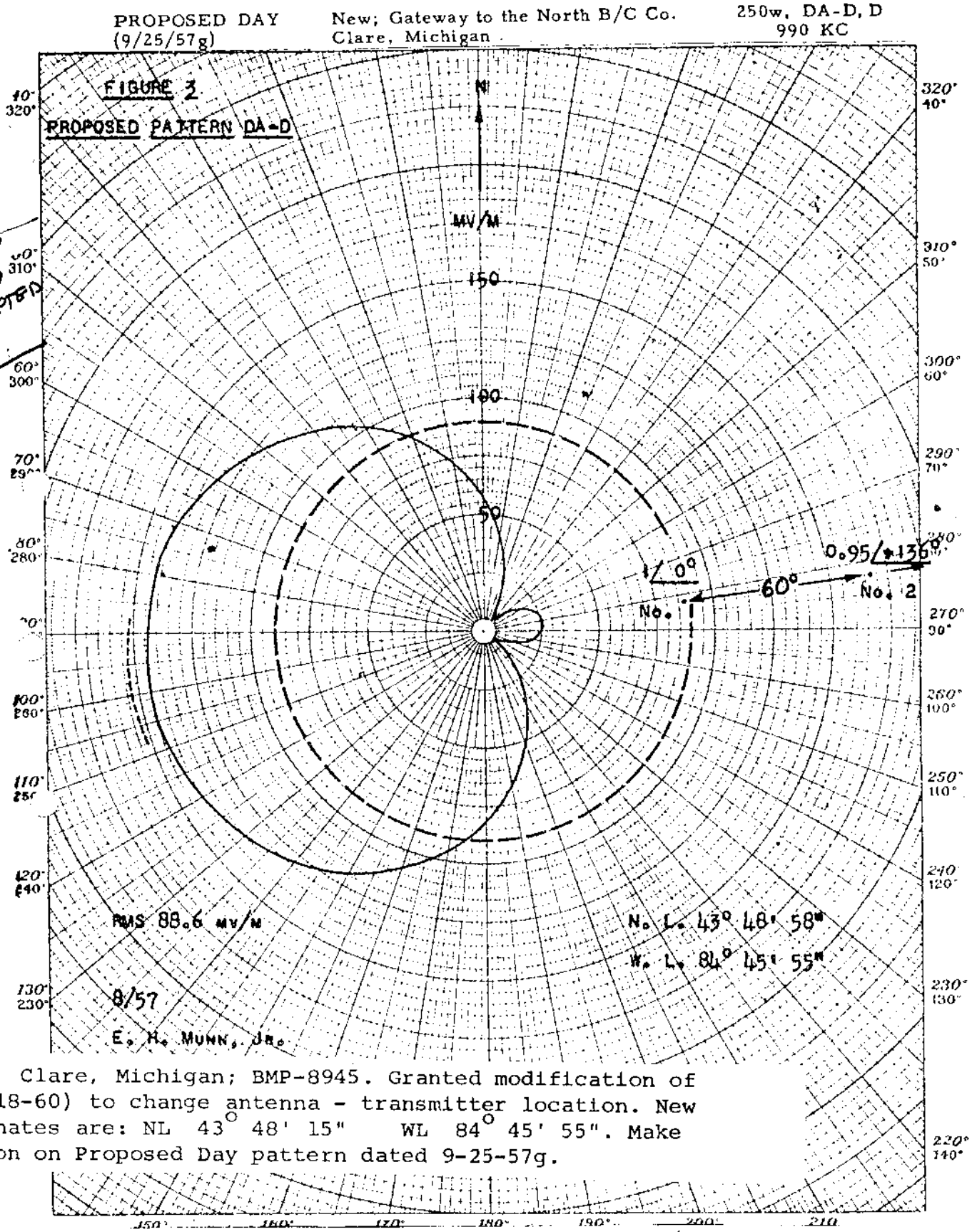


FCC File No.BP-17517
Accepted 1-20-67

New; John L. Breece
Sioux Falls, South Dakota

1000 kc

Clare, Mich. WCRM



Granted CP 5/17/58 for a new station

4-4-68 BP-17987 APPL. ACCEPTED FOR CP.

WCRM - Clare, Michigan; BMP-8945. Granted modification of CP (5-18-60) to change antenna - transmitter location. New coordinates are: NL 43° 48' 15" WL 84° 45' 55". Make notation on Proposed Day pattern dated 9-25-57g.

FCC File No. BP-11,058
Accepted 9/17/57

Gateway to the North B/C Co.
Clare, Michigan

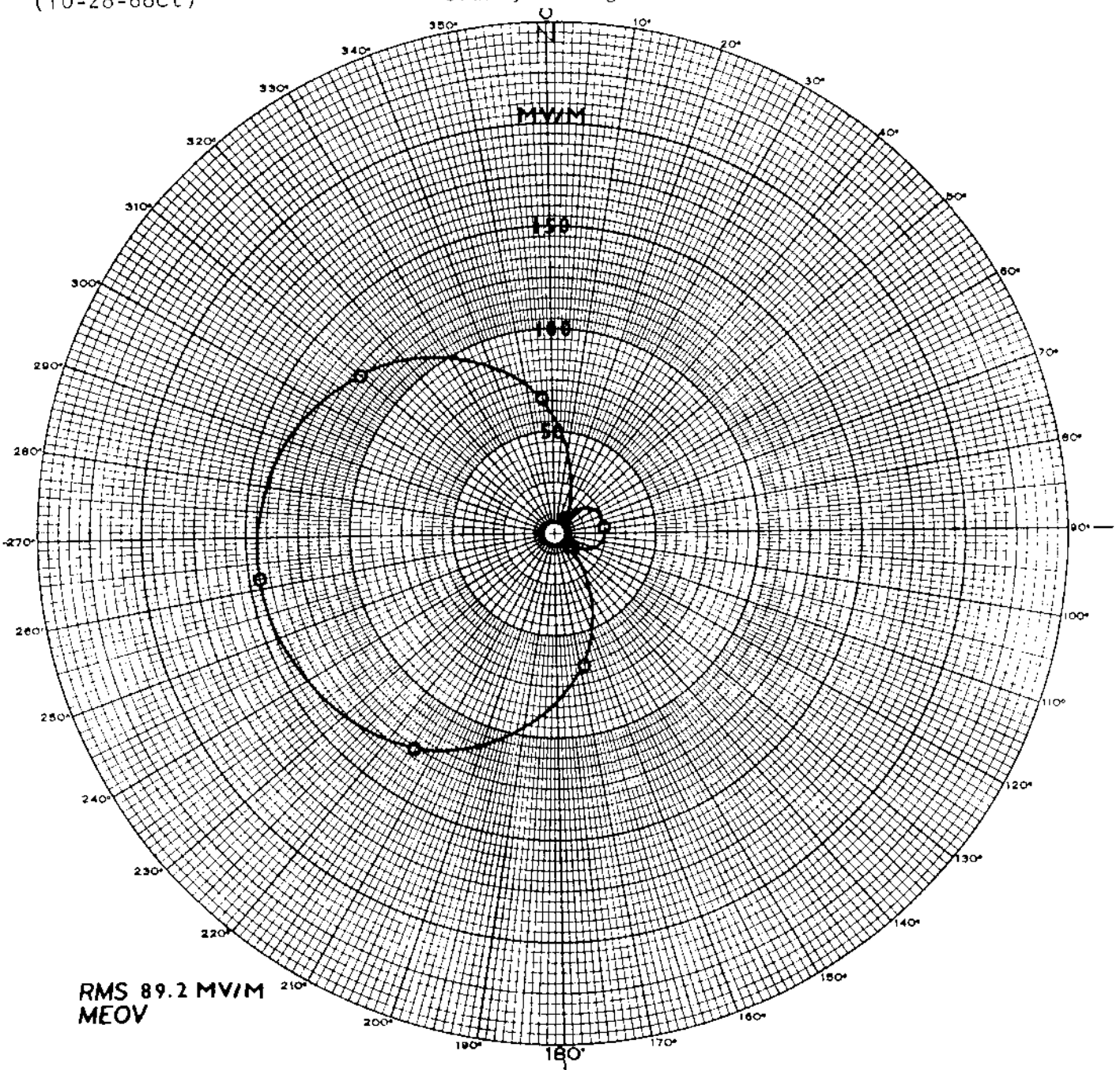
990 KC

WCRM

Measured Day
(10-28-68ct)

Station WCRM
Clare, Michigan

250w, DA-D, D
990 kc



RMS 89.2 MV/M
MEOV

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 2	STATION DATA
G's = 65° S = 60° No. 2 → 82° No. 1 ← S 0.946/131° 1/0°	TOWER No. / ELECTRICAL HEIGHT G° / SPACING S° / PHASING ψ° / FIELD RATIO F 1 2 3 4 5 6 7 8 9 10 DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐	MEASURED DAYTIME DIRECTIONAL - - - AUGUST 1967 PROOF θ° 0°	CALL WCRM FREQ 990 kHz POWER 0.25 Kw TYPE DA TIME DAY LAT. NL43°48'15" LONG. WL84°45'53" E.H.MUNN, JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No.BZ-6967
Accepted 10-9-68

Station WCRM
Clare, Michigan

990 kc

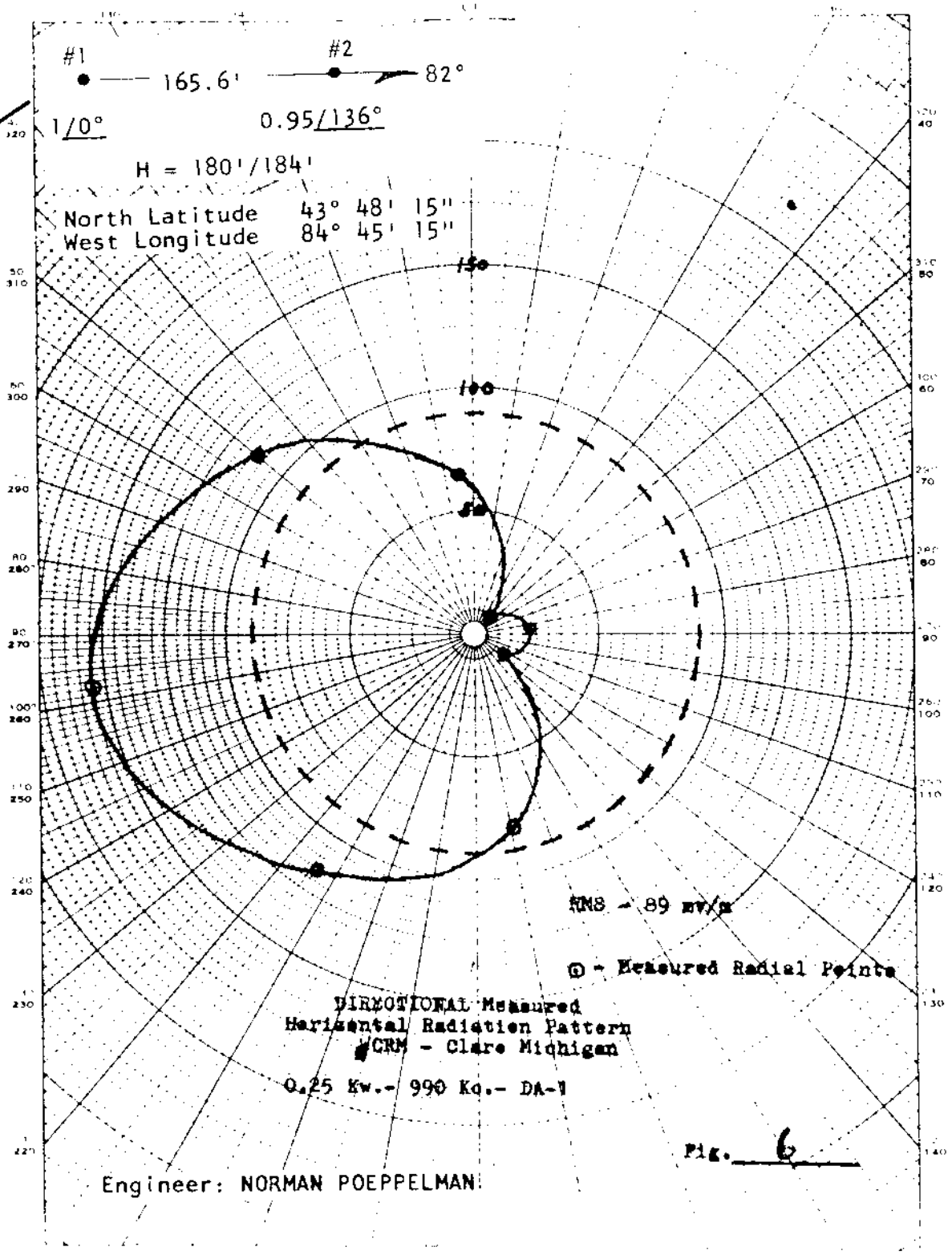
WCRM

MEASURED DAY
(1-17-61g)

Station WCRM
Clare, Michigan

250w, DA-1,U
990 KC

OVER



FCC File No. BL-8186
Accepted 12-28-60

WCRM
Clare, Michigan

990 KC

WCRM

MEASURED NON-DA
(1-17-61g)

Station WCRM
Clare, Michigan

250w, DA-1,U
990 KC

North Latitude 43° 48' 15"
West Longitude 84° 45' 15"

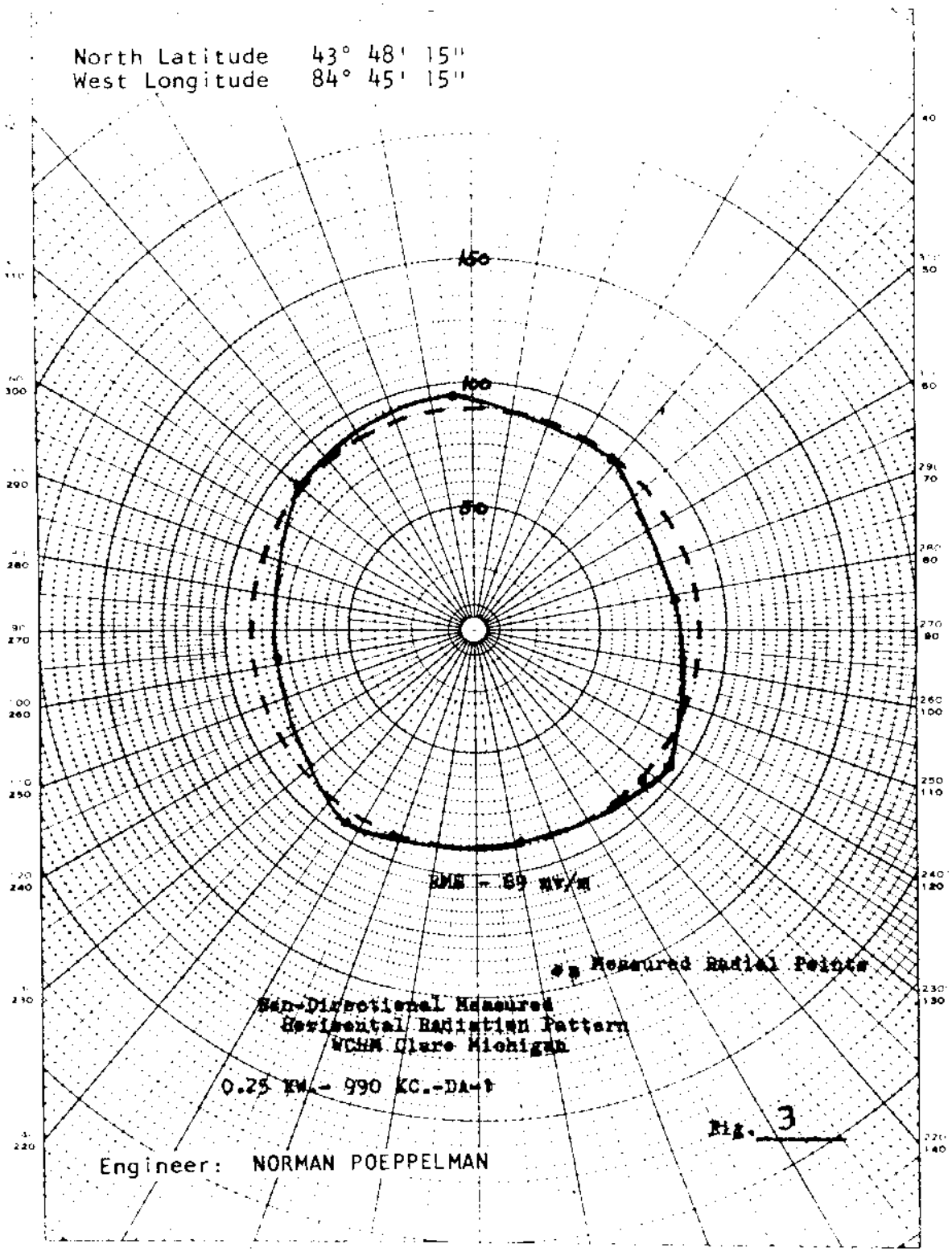


Fig. 3

Engineer: NORMAN POEPPELMAN

FCC File No. BL-8186
Accepted 12-28-60

WCRM
Clare, Michigan

990 KC

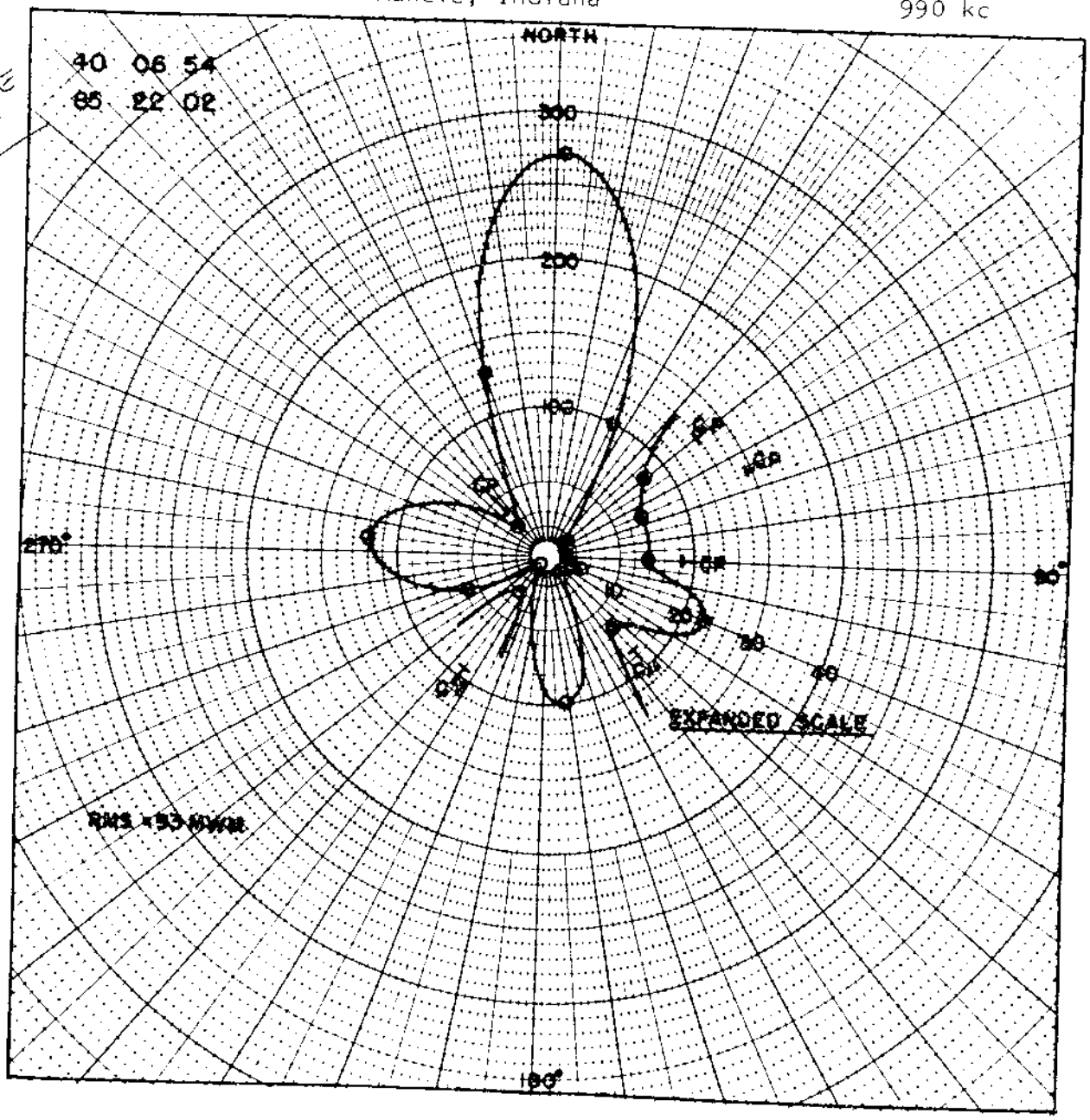
WERK

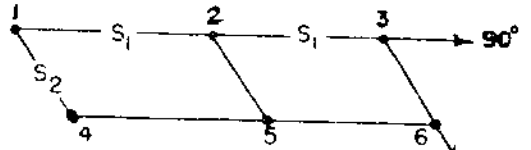
Measured Day
(5-27-65ct)

Station WERK
Muncie, Indiana

250w, DA-D, D
990 kc

LICENSE
5-19-65





	CALC	MEAS	
TOWER 1 =	1.00 /0	1.00 /0	
2 =	1.02 /-5	1.01 /-6	
3 =	0.30 /-14	0.29 /-16	S_1 = 253.8°
4 =	0.80 /105.4	0.78 /104	S_2 = 130°
5 =	0.82 /100.4	0.76 /95	H = 90.6°
6 =	0.24 /91.4	0.21 /78	

WERK
MEASURED RADIATION PATTERN
990 KC 0.25KW DA-D
MUNCIE, INDIANA
JAN. 1965

ROBERT A. JONES
CONSULTING ENGINEERS
LA GRANGE, ILLINOIS

FCC File No. BL-108/9
Accepted 4-29-65

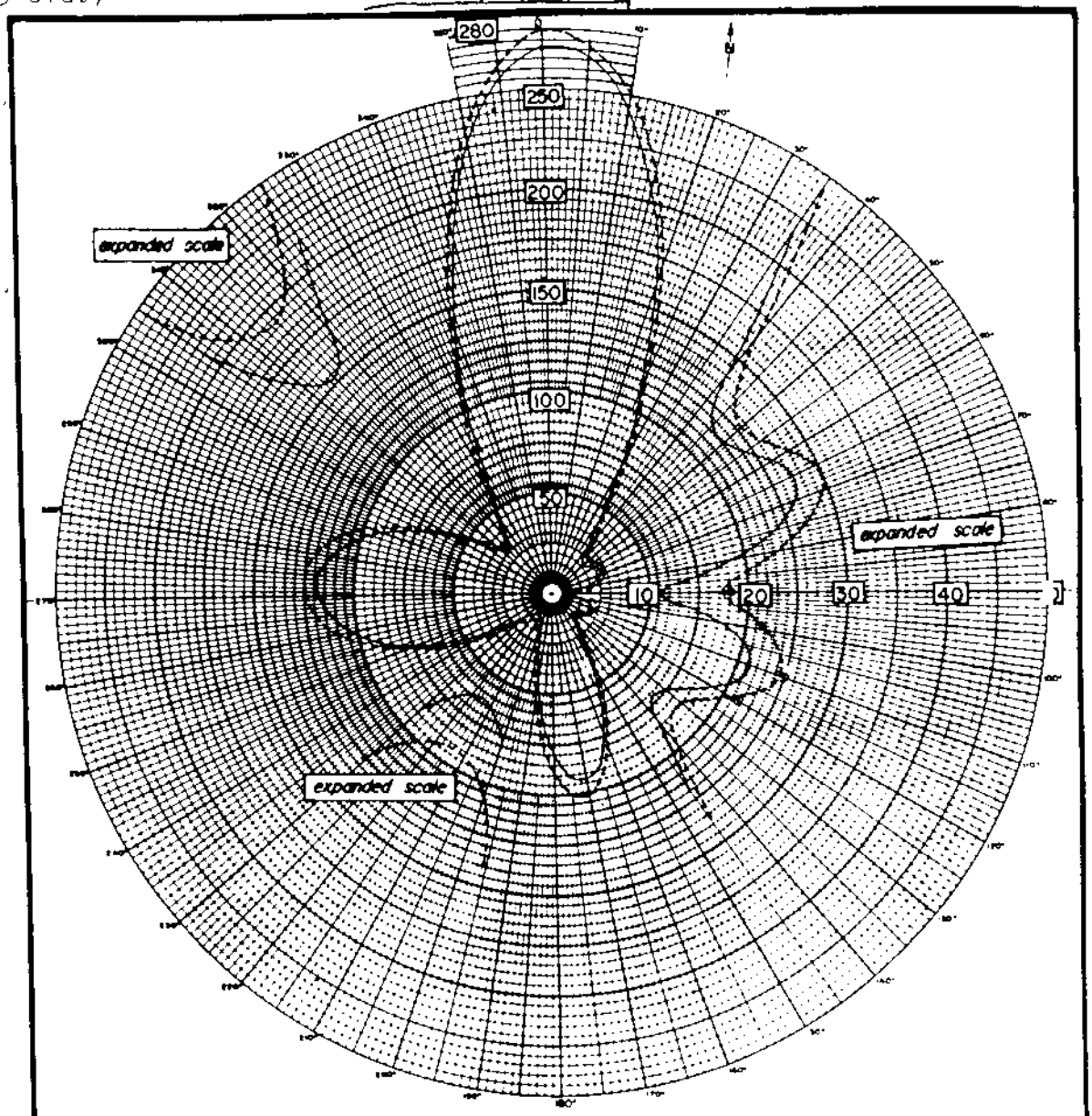
WERK

PROPOSED DAY
(10-25-61ct)

New; Muncie B/C Corp.
Muncie, Indiana

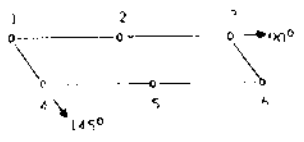
250w,DA-D,D
990 kc

11/21/61 Granted app. for new station. 6:00 A.M.



E_{RMS} 95 MV/M

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT (DEGREES)	TRUE TOWER ORIENTATION (DEGREES)	SPACING (FEET)	PHASING (DEGREES)	HORIZONTAL FIELD RATIO	FIELD RATIO	ELEV ANGLE (DEGREES)	ELEVATION RMS FIELD RATIO
1	90.6	0	0	0		1.0	0	
2	90.6	90	253.8	-5		1.0276	10	
3	90.6	90	507.6	-14		0.3	20	
4	90.6	145	130.0	+105.4		0.8	30	
5	90.6	108	345.2	+100.4		0.8221	40	
6	90.6	100.2	591.8	+91.4		0.24	50	
7							60	
8							70	
9							80	
10							E_0 =	RMS

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐

STATION DATA

CALL	WERK
FREQUENCY	990 kc
POWER	0.25 kw
TIME OF OPERATION	Daytime
TYPE OF OPERATION	Class II
DAYTIME TOWERS	5
NIGHTTIME TOWERS	---
No. RADIALS PER TOWER	120
LENGTH OF RADIALS	109° 200 ft
GROUND SCREEN DIMENSION	68'X48'
LAT.	40 ° 06 ' 54 "
LONG.	85 ° 22 ' 02 "
SUPERSEDES	
PATTERN No.	

JOHN R. McKENNA
CONSULTING RADIO ENGINEER
WASHINGTON, D. C.

FIGURE 4 - POLAR PLOT OF DAYTIME DIRECTIONAL PATTERN, HORIZONTAL PLANE.

MUNCIE BROADCASTING CORPORATION
MUNCIE INDIANA

990kc 0.25kW, DA-DAY

FCC File No. BP-15125
Accepted 10-19-61

New; Muncie B/C Corp.
Muncie, Indiana

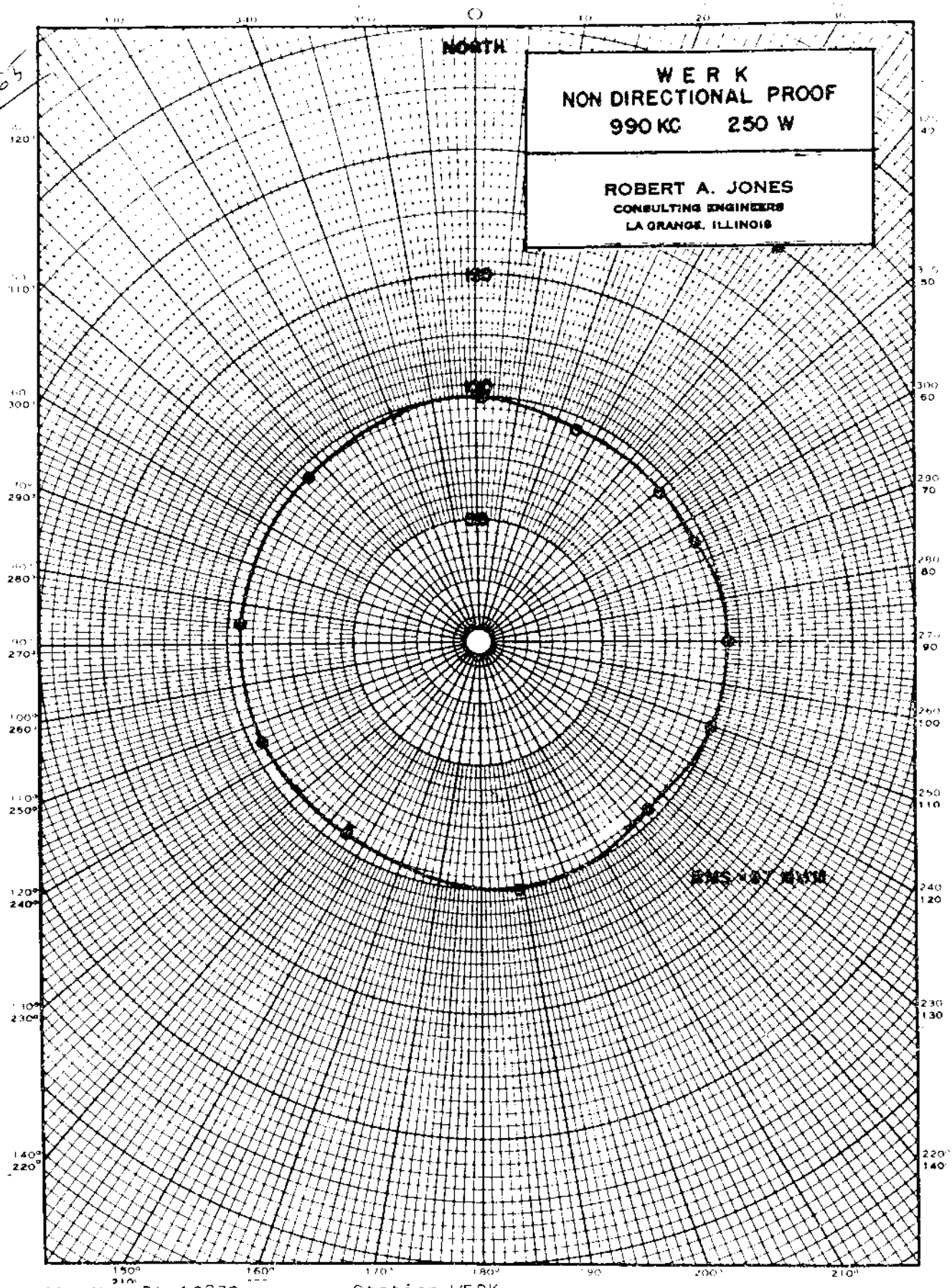
990 kc

WERK

Measured Non-DA
(5-27-65ct)

Station WERK
Muncie, Indiana

250w, DA-D, D
990 kc



FCC File No. BL-10879
Accepted 4-29-65

Station WERK
Muncie, Indiana

990 kc

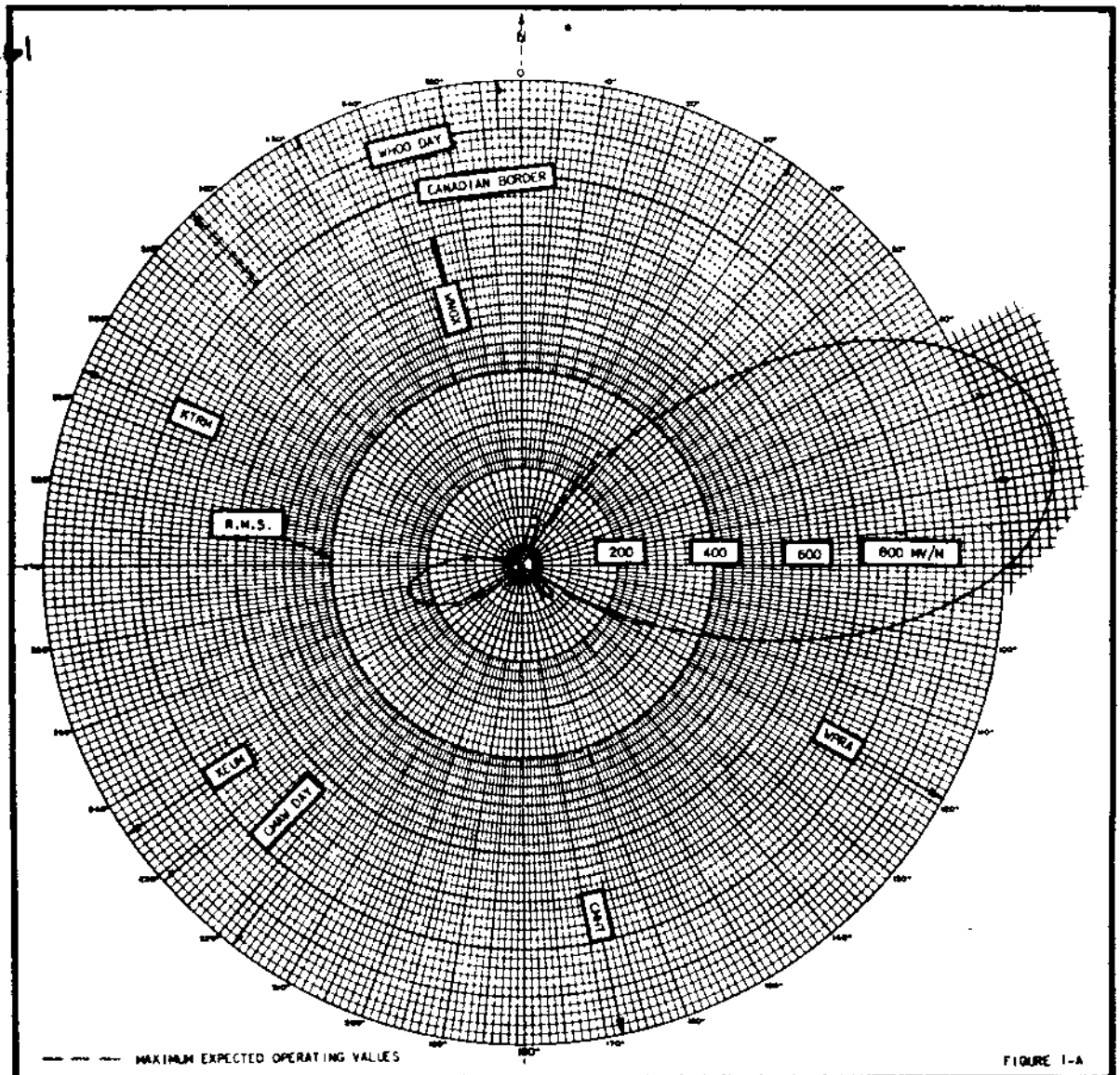
WFAB

10/15/57 granted CP for new station

Granted MCP to change T-site location 5-22-61

PROPOSED DAY & NIGHT
(3-8-61g)

Station WFAB 5kw, DA-1,U
Miami-South Miami, Florida 990 KC

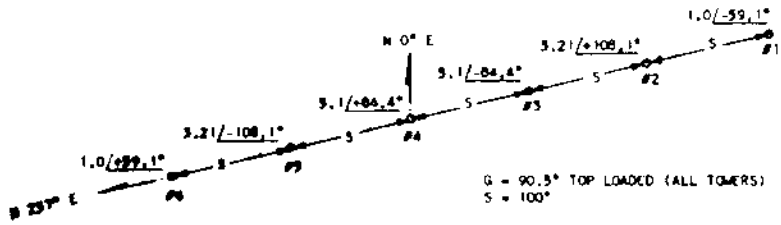


— — — MAXIMUM EXPECTED OPERATING VALUES

FIGURE 1-A

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION



APPLICANT	WFAB, INC.
LOCATION	MIAMI-SOUTH MIAMI, FLORIDA
FREQUENCY	990 KC/S
POWER	5 KW, DA-1, U
LATITUDE	25 DEG 41 MIN 55.2SEC.
LONGITUDE	80 DEG 22 MIN 09.6SEC.
TIMES USED	DAY AND NIGHT
R.M.S. FIELD	403 MV/M
DATE	JANUARY 1961

SILLIMAN, MOFFET & KOHRER
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

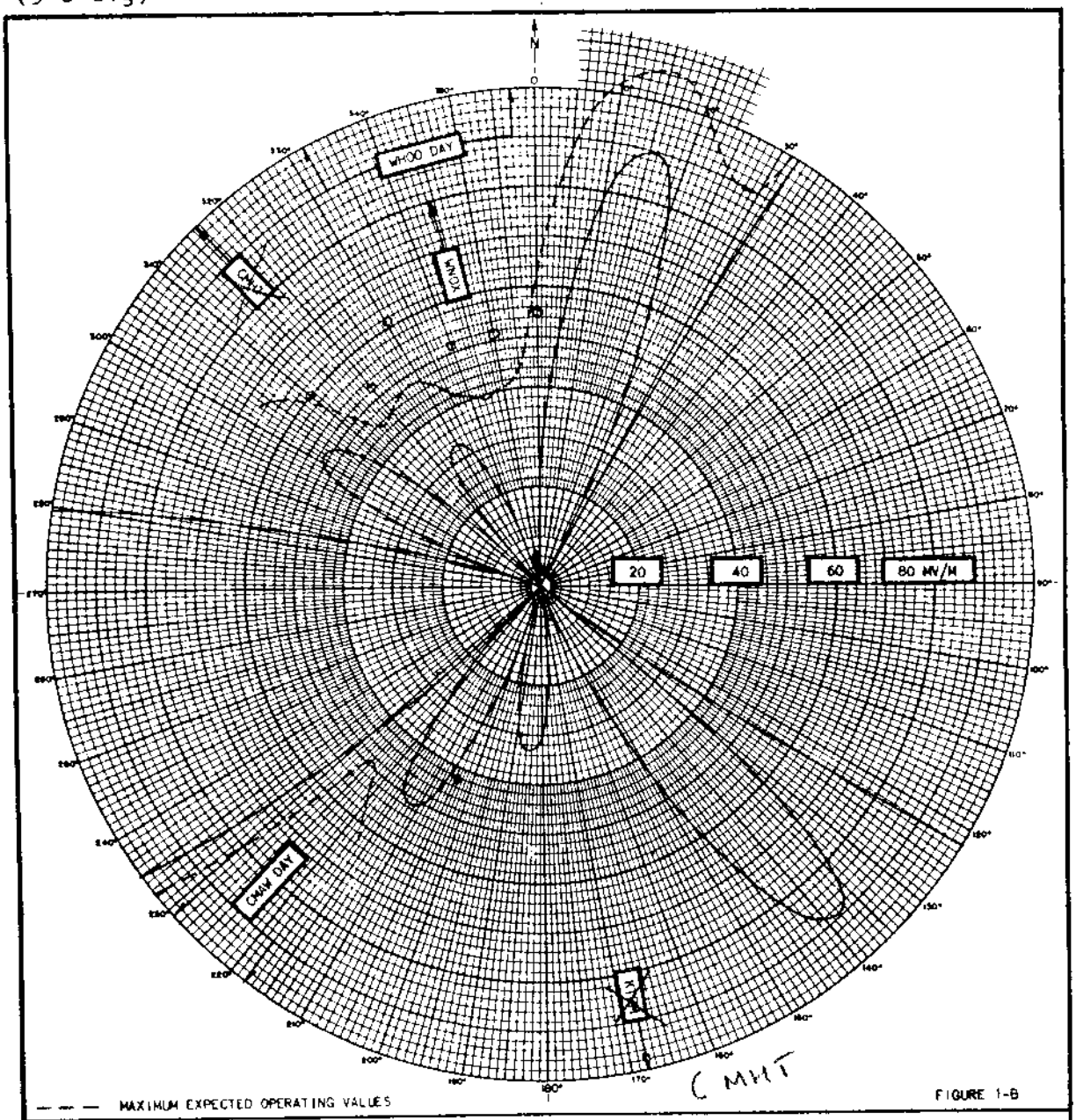
FCC File No. BMP-9324
Accepted 2-28-61

Station WFAB
Miami - South Miami, Florida 990 KC

WFAB

PROPOSED DAY & NIGHT NULLS
(3-8-61g)

Station WFAB 5kw, DA-1,U
Miami - South Miami, Florida 990 KC



— — — MAXIMUM EXPECTED OPERATING VALUES

FIGURE 1-B

HORIZONTAL RADIATION PATTERN

EXPANDED VIEW

APPLICANT	: WFAB, INC.
LOCATION	: MIAMI-SOUTH MIAMI, FLORIDA
FREQUENCY	: 990 KC/S
POWER	: 5 KW, DA-1, U
LATITUDE	: 25 DEG. 41 MIN. 53.2 SEC.
LONGITUDE	: 80 DEG. 22 MIN. 09.6 SEC.
WHEN USED	: DAY AND NIGHT
R.M.S. FIELD	: 403 MV/M
DATE	: JANUARY 1961

SILLIMAN, MOFFET & ROHRER
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No. BMP-9324
Accepted 2-28-61

Station WFAB
Miami - South Miami, Florida 990 KC

WFAB

Measured Day & Night
(1-24-62ct)

Station WFAB
Miami-South Miami, Florida

5kw,DA-1,U
990 kc

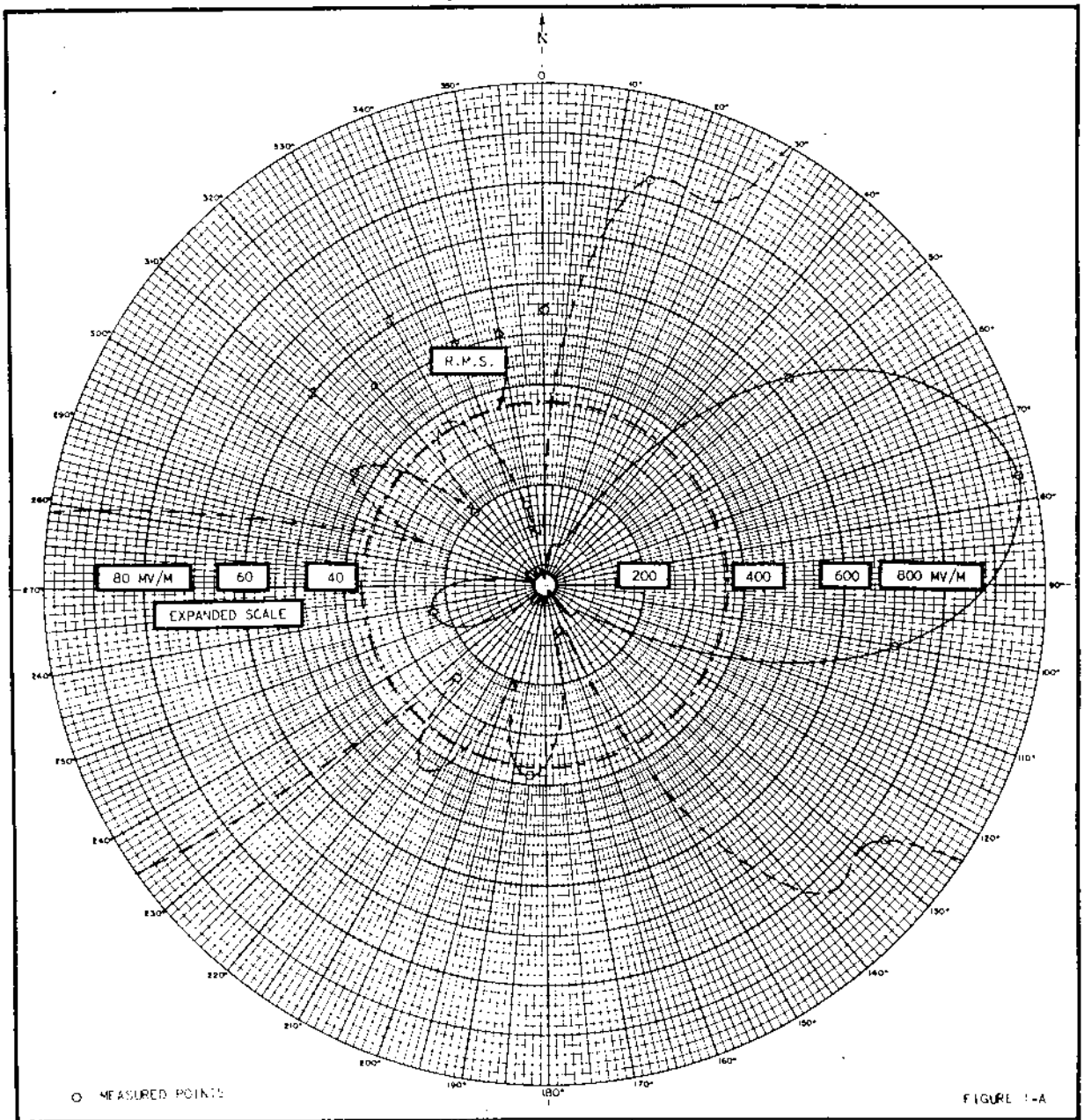
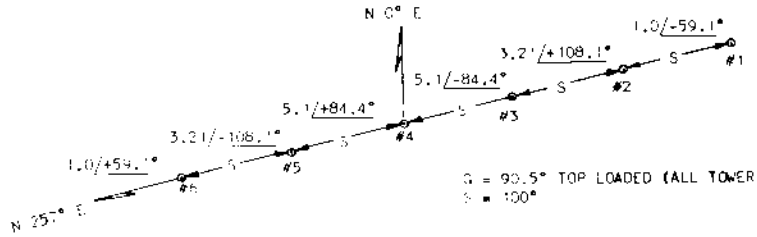


FIGURE 1-A

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION



APPLICANT	WFAB, INC.
LOCATION	MIAMI-SOUTH MIAMI, FLORIDA
FREQUENCY	990 KC/S
POWER	5 KW - U - DA-1
LATITUDE	25 DEG 41 MIN 53.2 SEC
LONGITUDE	80 DEG 22 MIN 09.6 SEC
WHEN USED	DAY AND NIGHT
RMS FIELD	365.6 MV/M
DATE	JANUARY 1962

ROBERT M. SILLIMAN & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-8858
Accepted 1-12-62

Station WFAB
Miami-South Miami, Florida

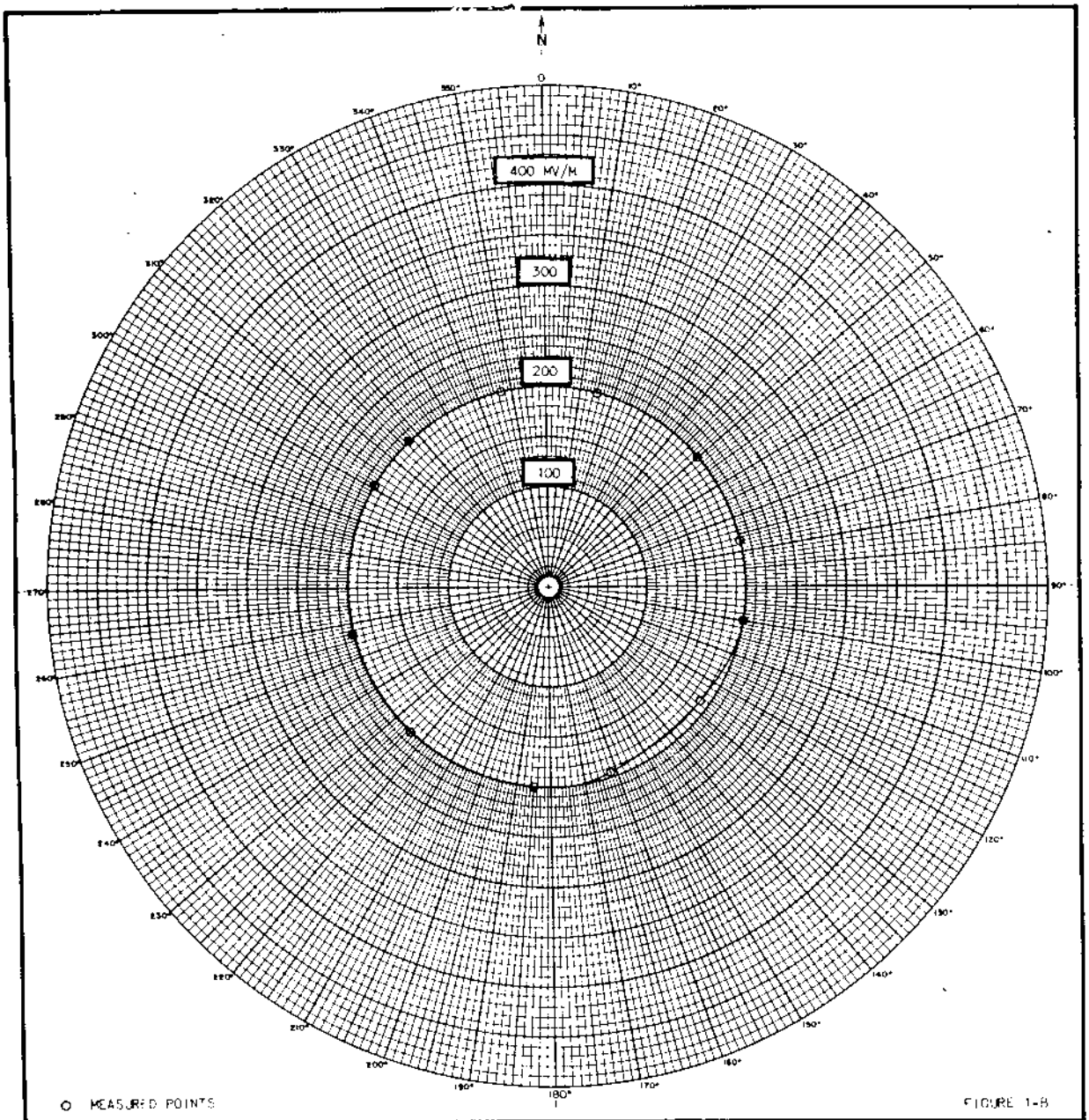
990 kc

WFAB

Measured Non-DA
(1-24-62ct)

Station WFAB
Miami-South Miami, Florida

5kw,DA-1,U
990 kc



O MEASURED POINTS

FIGURE 1-B

HORIZONTAL RADIATION PATTERN

NON-DIRECTIONAL SURVEY

APPLICANT	WFAB, INC.
LOCATION	MIAMI-SOUTH MIAMI, FLORIDA
FREQUENCY	990 KC/S
POWER	5 KW - U - DA-1
LATITUDE	25 DEG 41 MIN 53.2 SEC.
LONGITUDE	80 DEG 22 MIN 09.6 SEC.
WHEN USED	NON-DIRECTIONAL SURVEY
RMS FIELD	198.4 MV/M
DATE	JANUARY 1962

ROBERT M SILLIMAN & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-8858
Accepted 1-12-62

Station WFAB
Miami-South Miami, Florida

990 kc

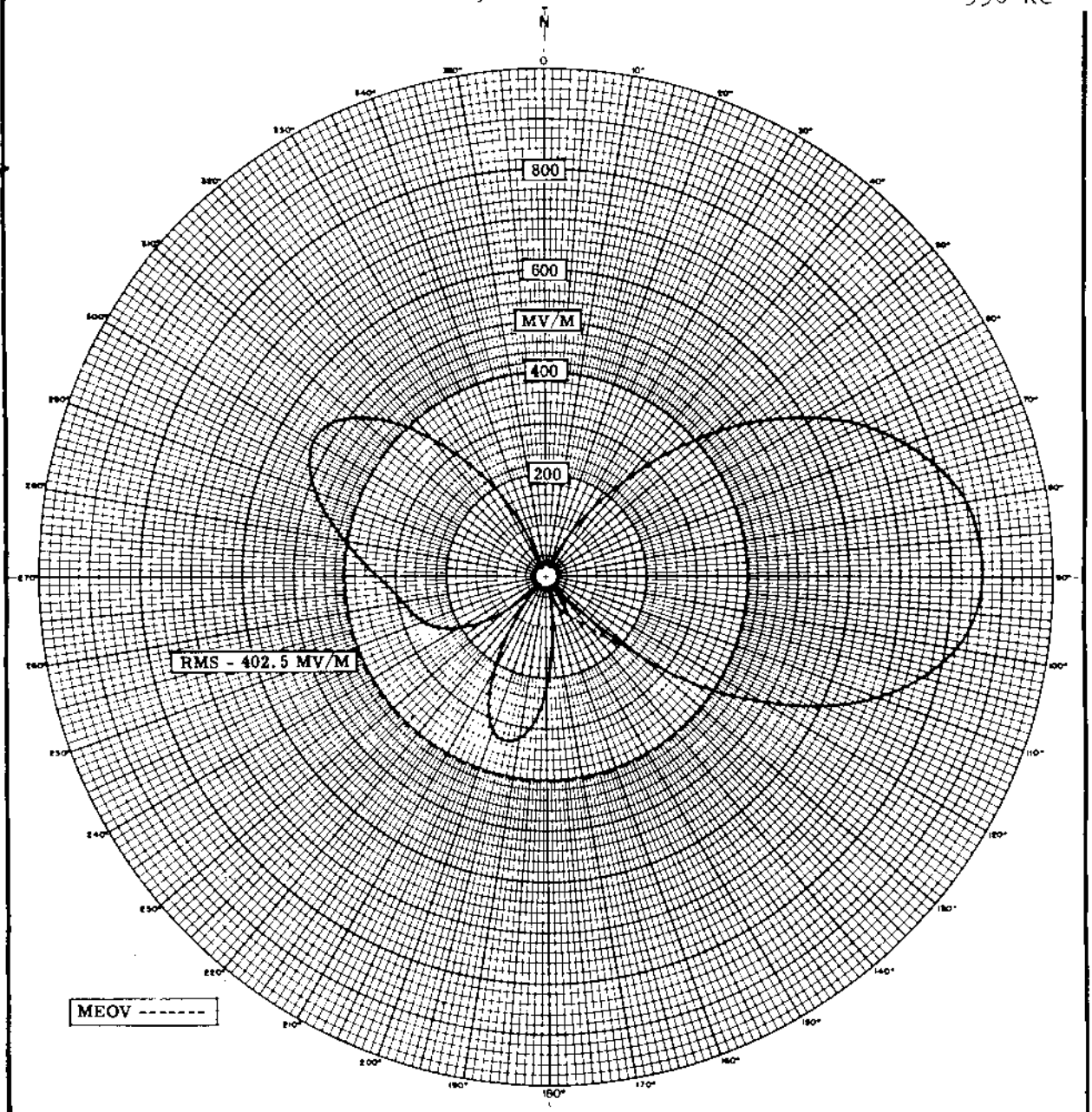
WHOO

Proposed Night
(5-28-68ct)

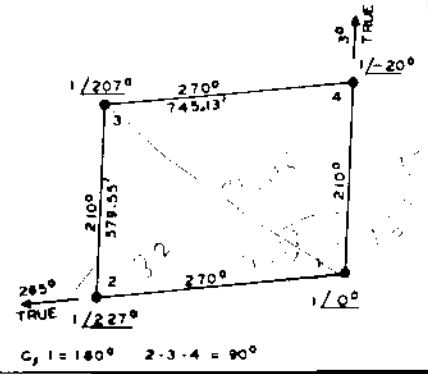
Station WHOO
Orlando, Florida

5kw, 50kw-LS(10kw-CH), DA-2, U
990 kc

OVER



CALCULATED HORIZONTAL PLANE PATTERN FOR NIGHTTIME OPERATION



WHOO

990 KHZ 5/50 KW, DA-2, U
(10 KW C.H.)

ORLANDO, FLORIDA

APRIL-1968

N. LAT 28-37-26
W. LONG 82-16-48

LOUIS A. KING
CONSULTING RADIO ENGINEERS
BRISTOL, TENN.

FCC File No. BP-18167
Accepted 5-21-68

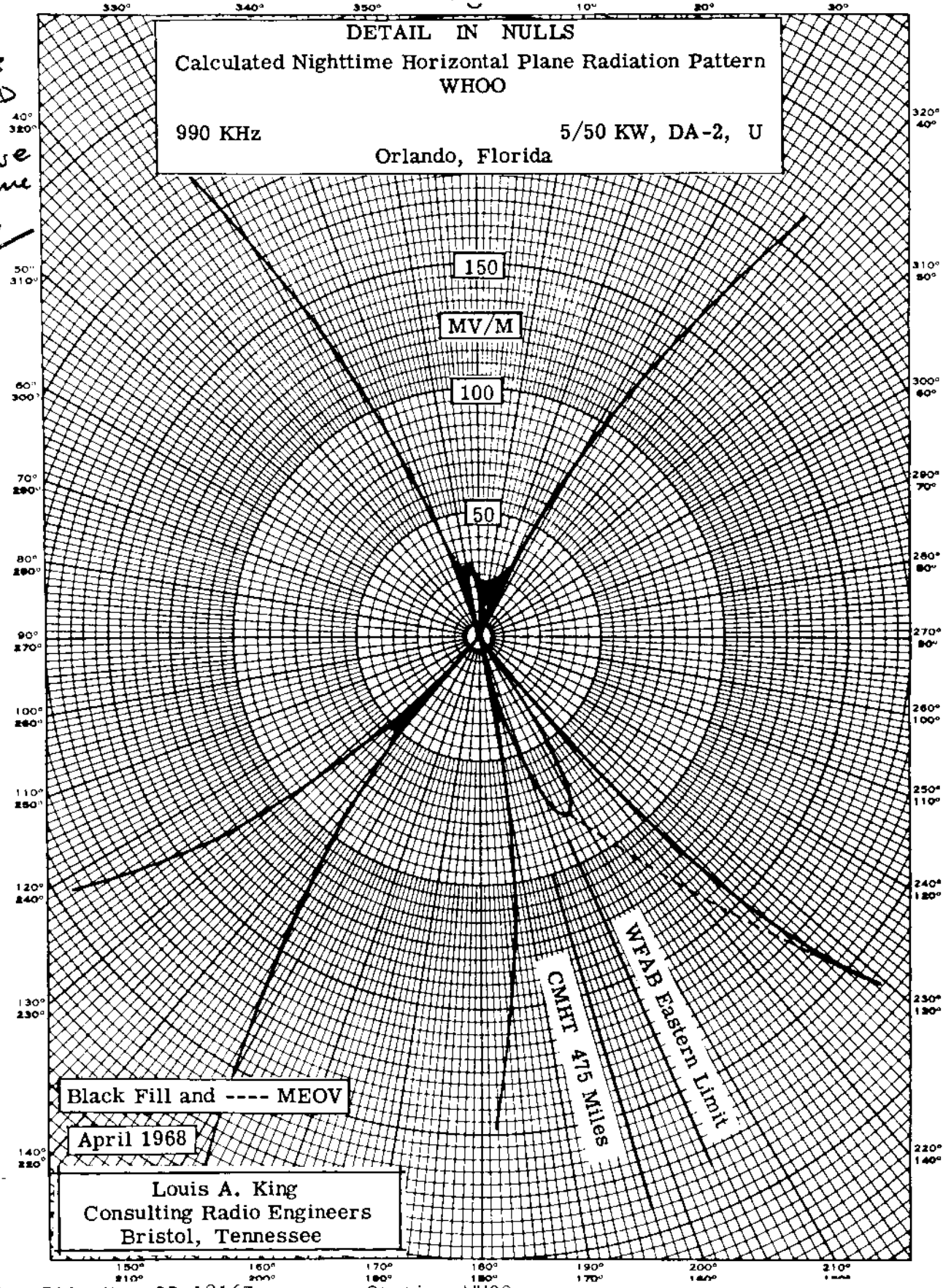
Station WHOO
Orlando, Florida

990 kc

WHOO

Proposed Night Nulls (5-28-68ct) | Station WHOO Orlando, Florida | 5kw, 50kw-LS(10kw-CH), DA-2, U 990 kc

5-27-68 GRANTED CP to increase nighttime MEOV.



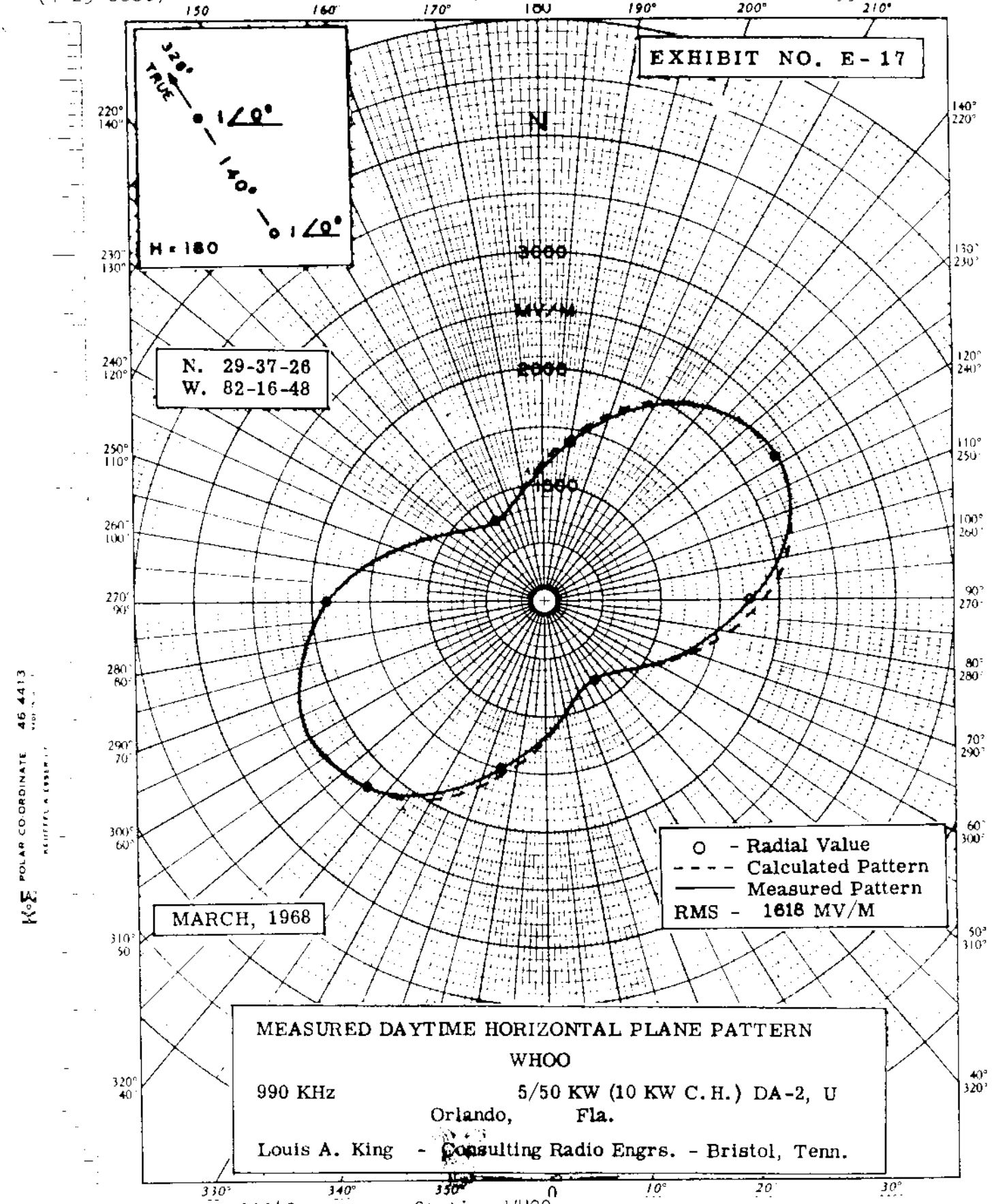
FCC File No. BP-18167 Accepted 5-21-68 | Station WHOO Orlando, Florida | 990 kc

WHOO

Measured Day
(4-29-68ct)

Station WHOO
Orlando, Florida

5kw, 50kw-LS(10kw-CH), DA-2, U
990 kc



FCC File No. BL-11942
Accepted 4-16-68

Station WHOO
Orlando, Florida

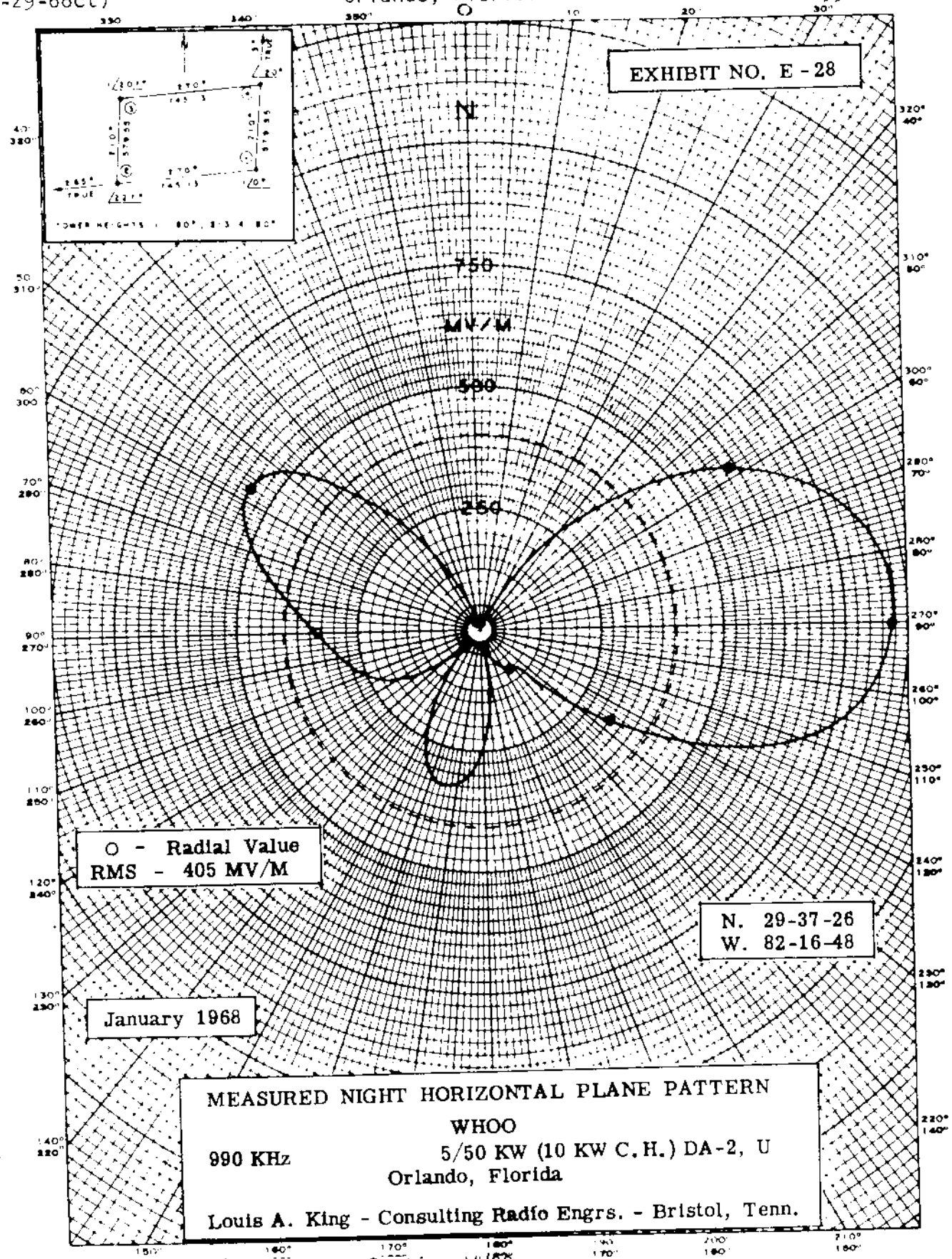
990 kc

WHOO

Measured Night
(4-29-68ct)

Station WHOO
Orlando, Florida

5kw, 50kw-LS(10kw-CH), DA-2, U
990 kc



FCC File No. BL-11942
Accepted 4-16-68

Station WHOO
Orlando, Florida

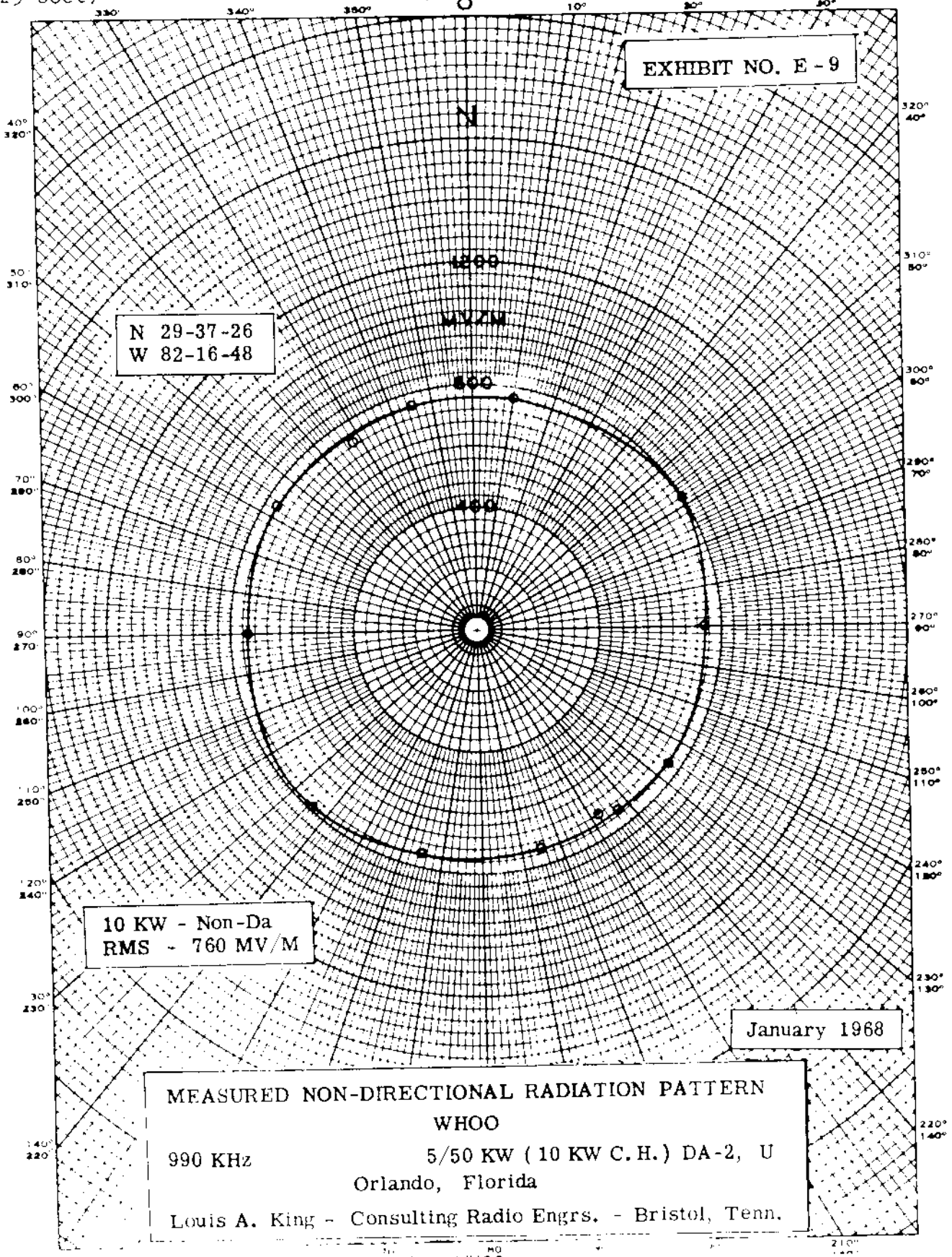
990 kc

WHOO

Measured Non-DA
(4-29-68ct)

Station WHOO
Orlando, Florida

5kw, 50kw-LS(10kw-CH), DA-2, U
990 KC



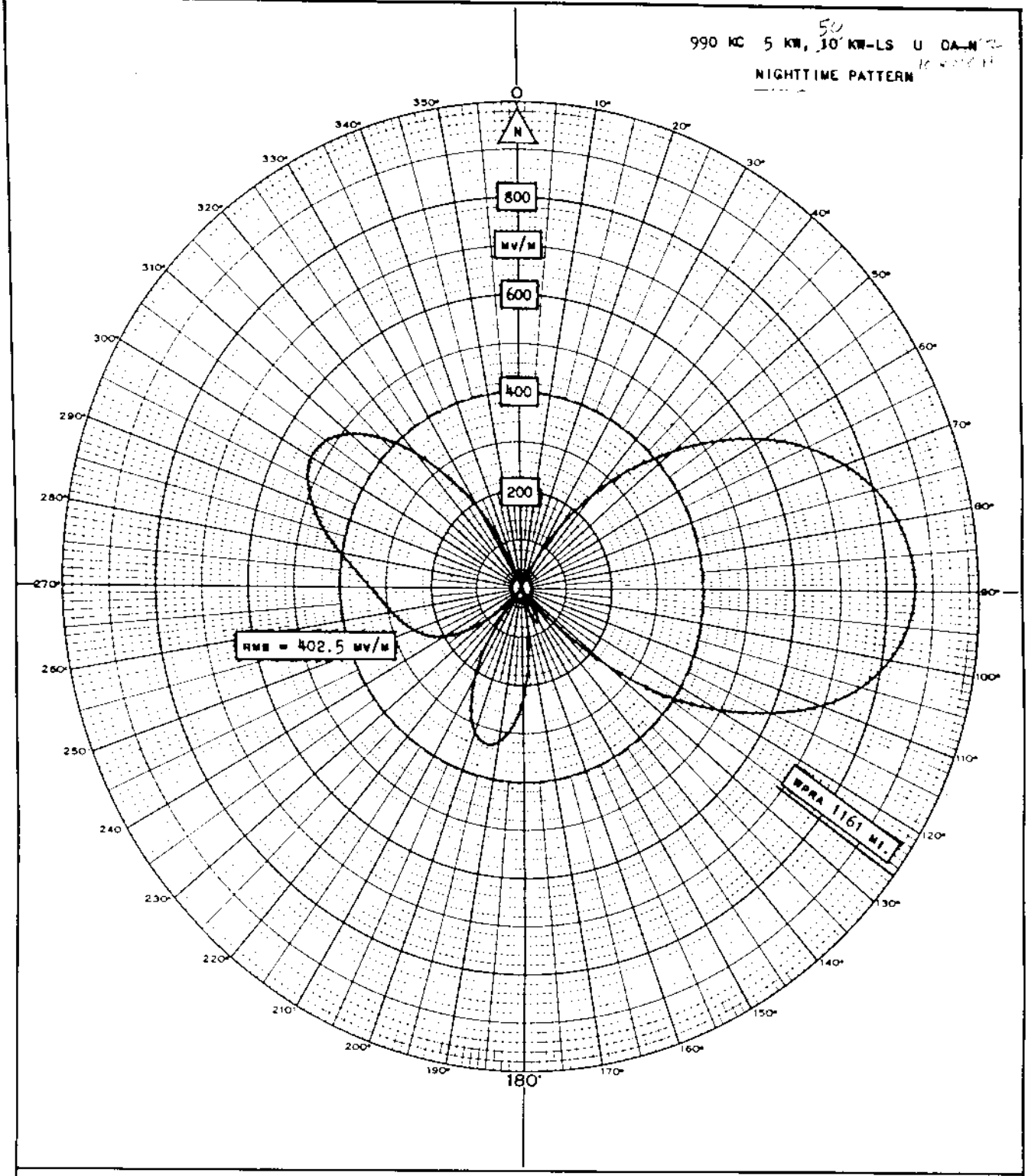
FCC File No.8L-11942
Accepted 4-16-68

Station WHOO
Orlando, Florida

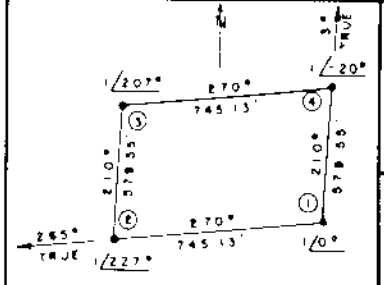
990 kc

WHOO

FIGURE 5



CALCULATED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION



TOWER HEIGHTS 1 -180°, 2-3-4 90°

ORLANDO DAILY NEWSPAPERS INC

ORLANDO FLORIDA

WELDON & CARR

CONSULTING RADIO ENGINEERS

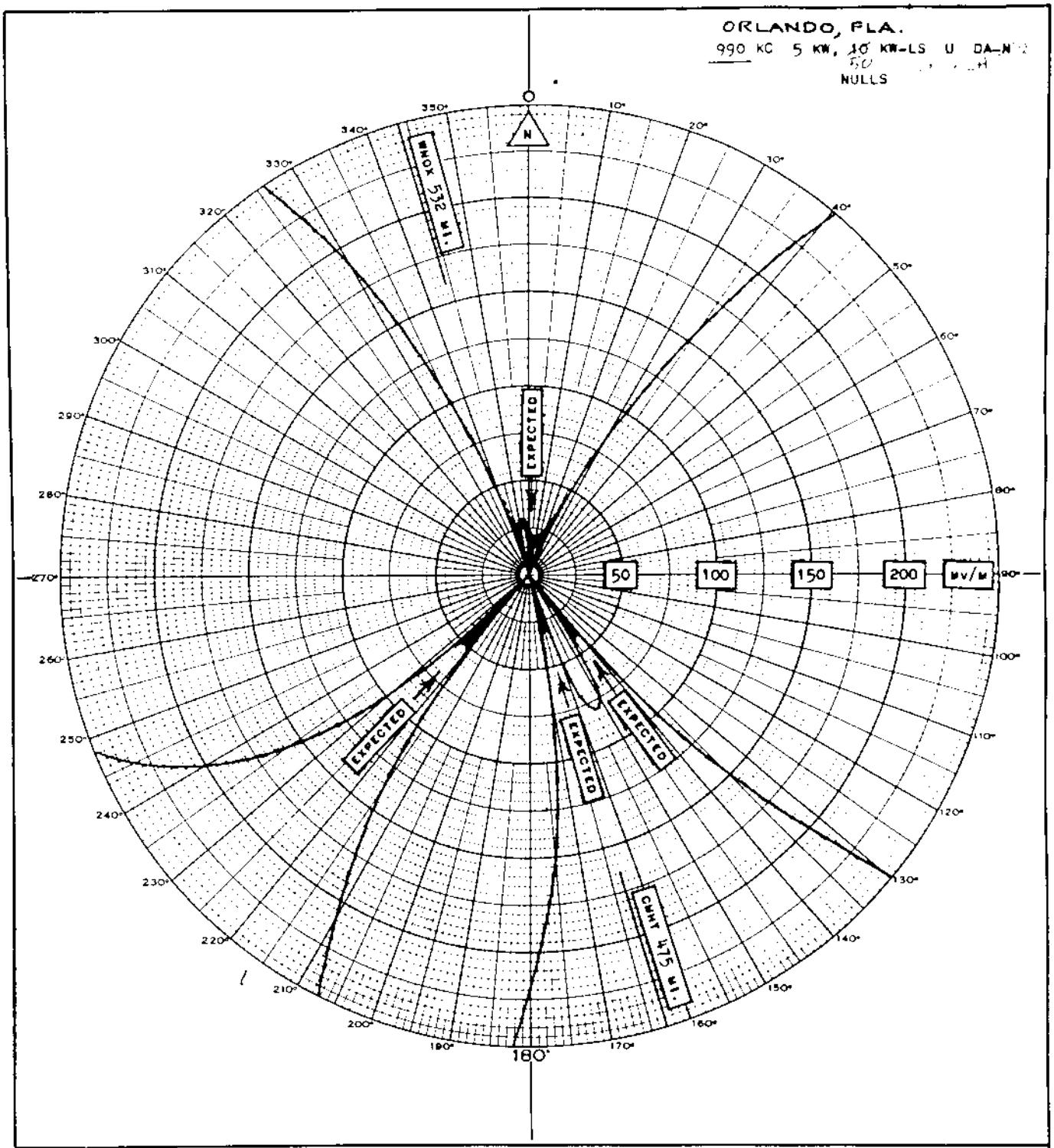
WASHINGTON DC

PROPOSED WHOO OPERATION

ORLANDO FLORIDA

990 KC 5KW, 10KW-LS U DA-N

470221A



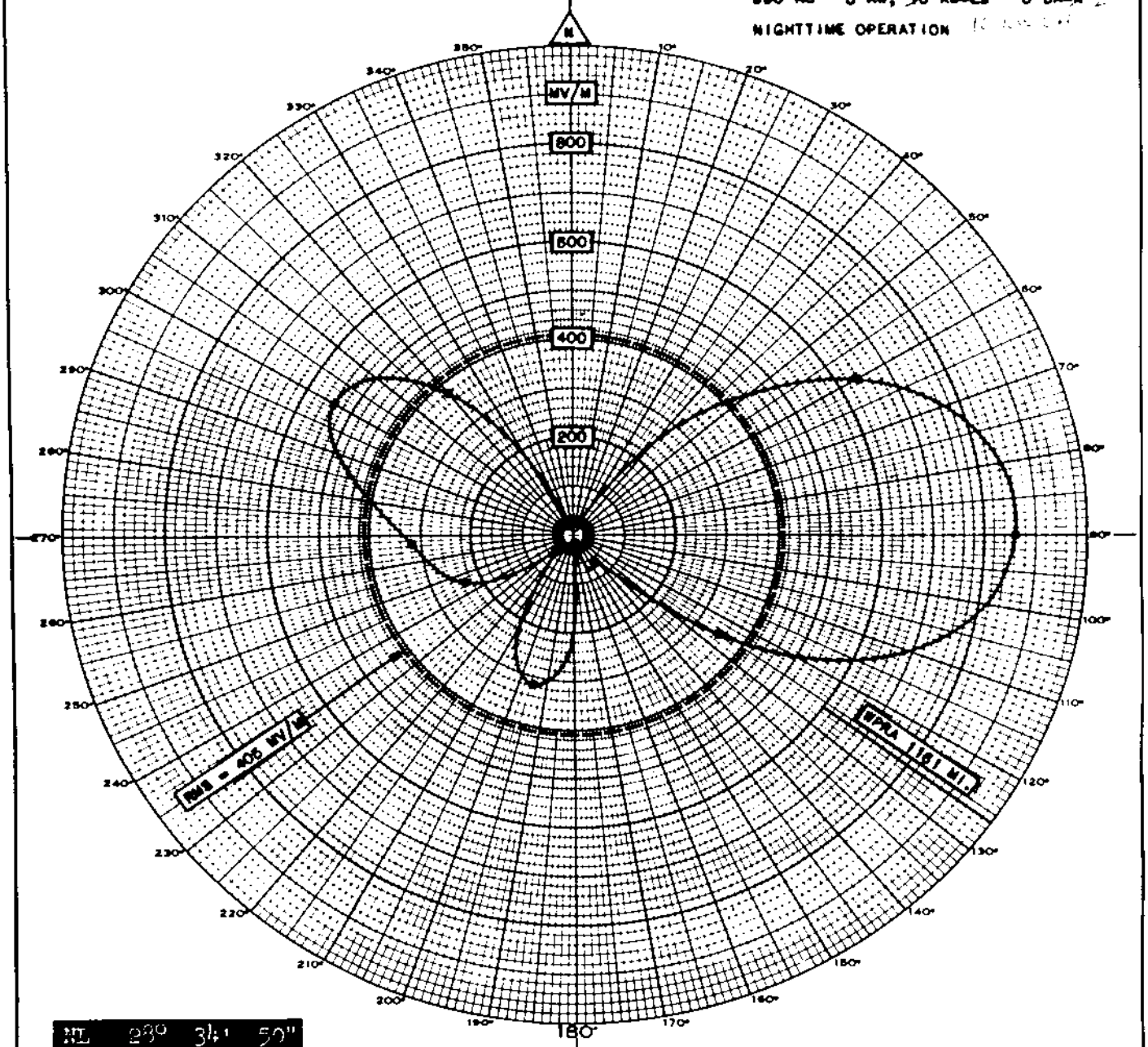
CALCULATED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION

DETAIL IN NULLS	ORLANDO DAILY NEWSPAPERS INC ORLANDO FLORIDA	PROPOSED WHOO OPERATION ORLANDO FLORIDA
	WELDON & CARR CONSULTING RADIO ENGINEERS WASHINGTON DC	990 KC 5KW, 10KW-LS U DA-N 4702218

WHOO

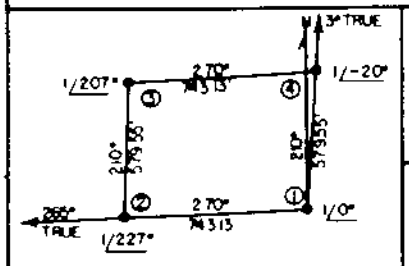
990 KC 5 KW, 10 KW-LS U DA-N

NIGHTTIME OPERATION



NL 28° 34' 50"
WL 81° 27' 00"

MEASURED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION



TOWER HEIGHT = 1 160°, 2-3-4 90°

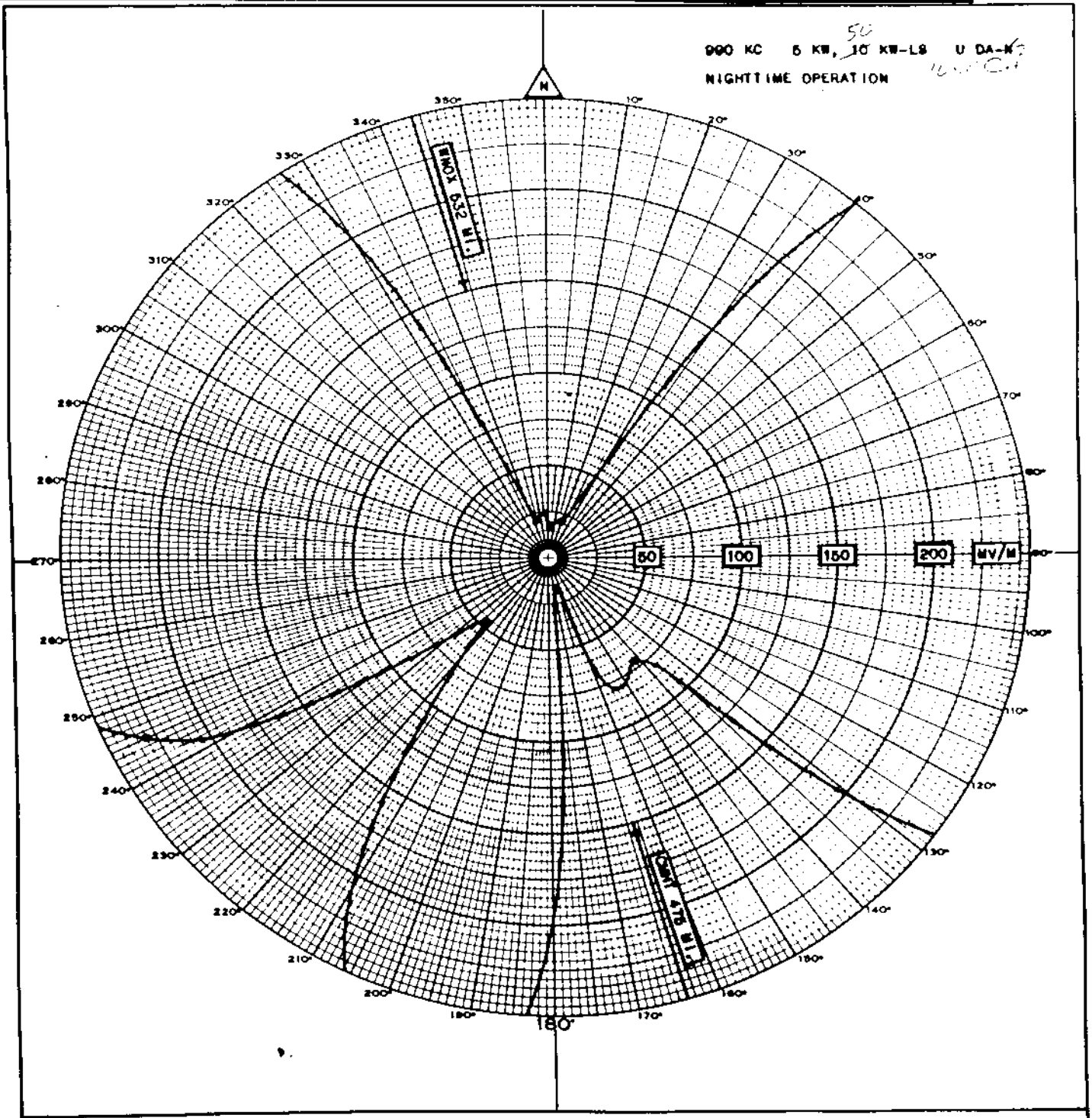
ORLANDO DAILY NEWSPAPERS INC
ORLANDO FLORIDA

WELDON & CARR
CONSULTING RADIO ENGINEERS
WASHINGTON DC

WHOO
ORLANDO FLORIDA
990 KC U DA-N
5 KW, 10 KW-LS
471126M

MEASURED NIGHT NULLS Station WHOO Orlando, Florida 5kw,10kw-LS, DA-N,U 990 KC

WHOO



MEASURED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION

DETAIL IN NULLS	ORLANDO DAILY NEWSPAPERS INC ORLANDO FLORIDA	WHOO ORLANDO FLORIDA 990 KC U DA-N 5 KW, 10 KW-LS 4711258
	WELDON & CARR CONSULTING RADIO ENGINEERS WASHINGTON DC	

WHOO

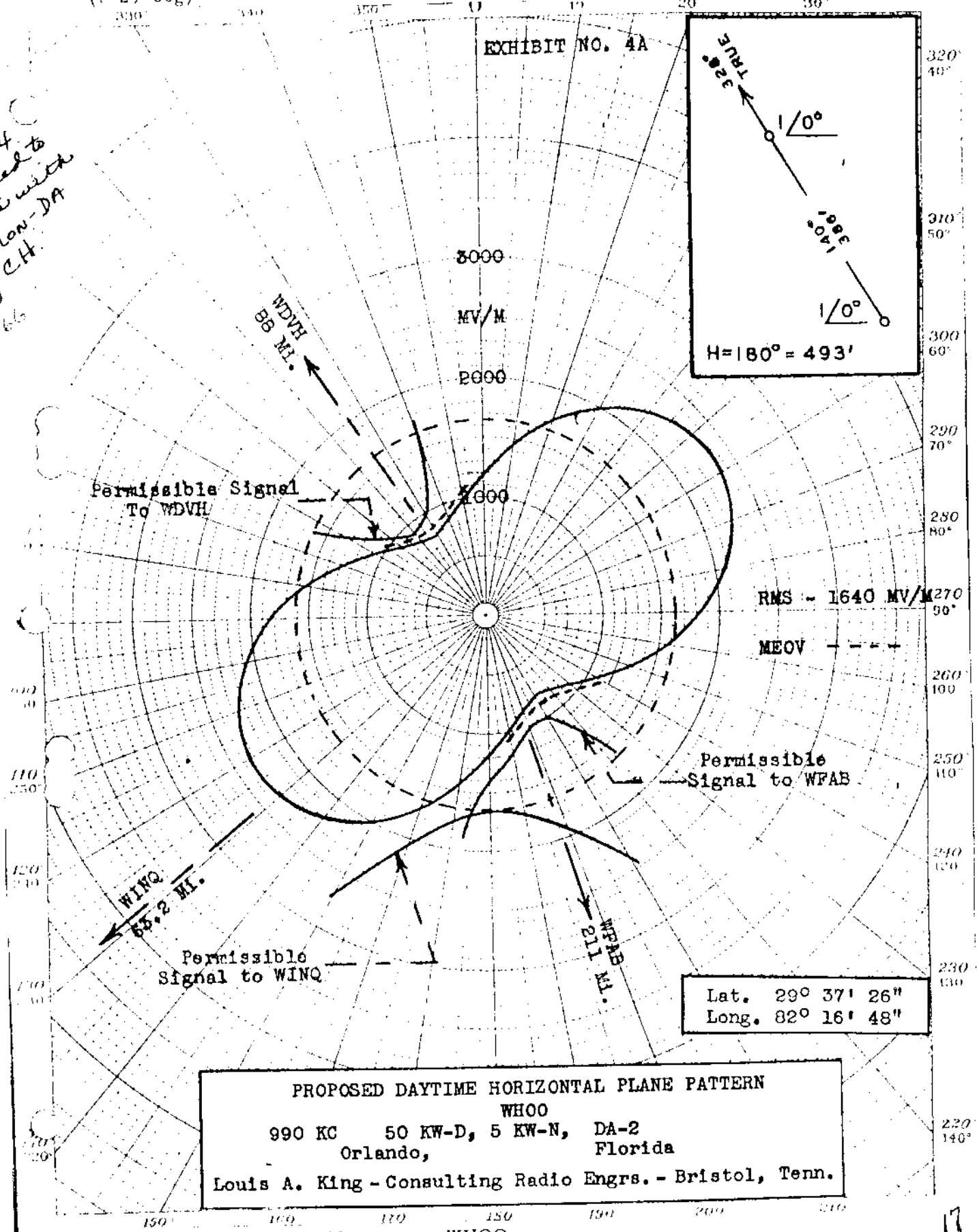
PROPOSED DAY
(1-29-60g)

Station WHOO
Orlando, Florida

5kw, 50kw-LS, DA-2, U 10 kw CH
990 KC

EXHIBIT NO. 4A

-7-64
marked to
operate with
5 kw Non-DA
using CH.
P 7-19-64



PROPOSED DAYTIME HORIZONTAL PLANE PATTERN
WHOO
990 KC 50 KW-D, 5 KW-N, DA-2
Orlando, Florida
Louis A. King - Consulting Radio Engrs. - Bristol, Tenn.

FCC File No. BP-13708
Accepted 12-30-60

WHOO
Orlando, Florida

990 KC

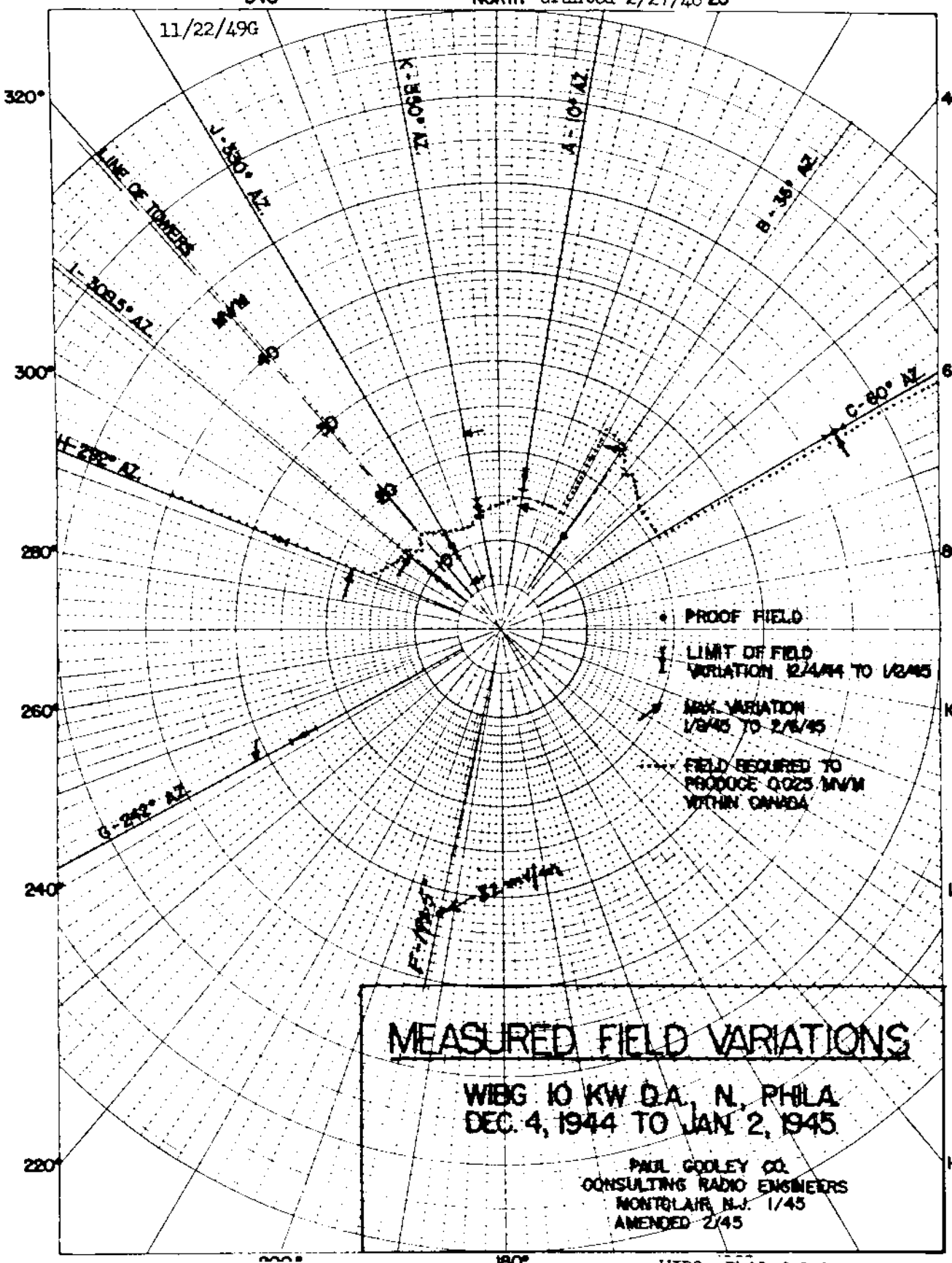
17

WIBG

MEASURED NIGHT VARIATIONS — WIBG, PHILADELPHIA, PA. — 10kw, DA-2 — 990 kc

Granted 2/27/46

11/22/49G



AMENDMENT RECD 4-17-45 BL-1766

WIBG, Philadelphia, Pa. 990 kc

POLAR COORDINATE

WIBG

Prop + MEASURED NIGHT

WIBG, PHILADELPHIA, PA.

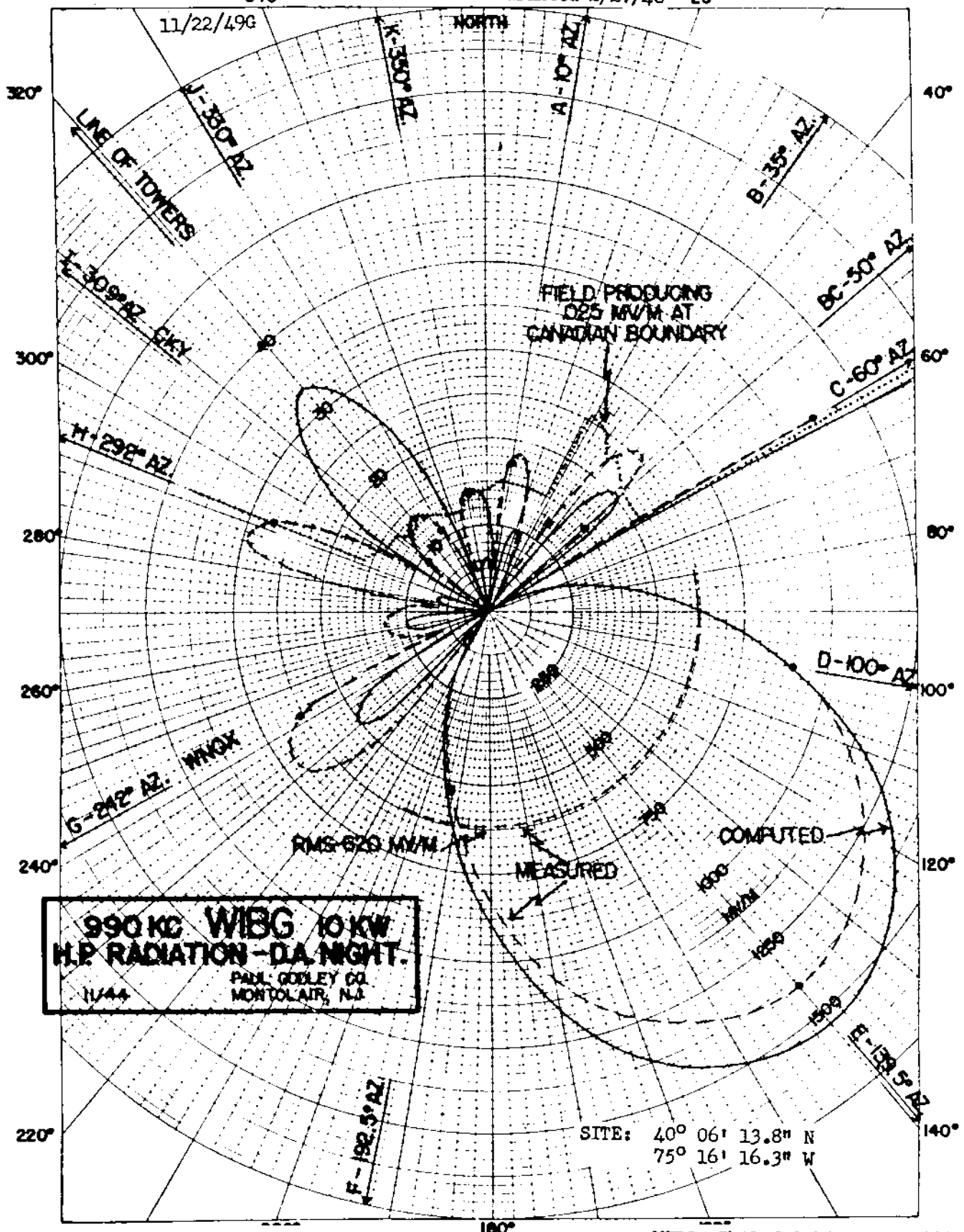
10kw, DA-2

990 kc

FIG. 1

Granted 2/27/46

11/22/49G



AMENDMENT RECD 11-11-44 BL-1766

WIBG, Philadelphia, Pa. 990 kc

POLAR CO-ORDINATE

WIBG

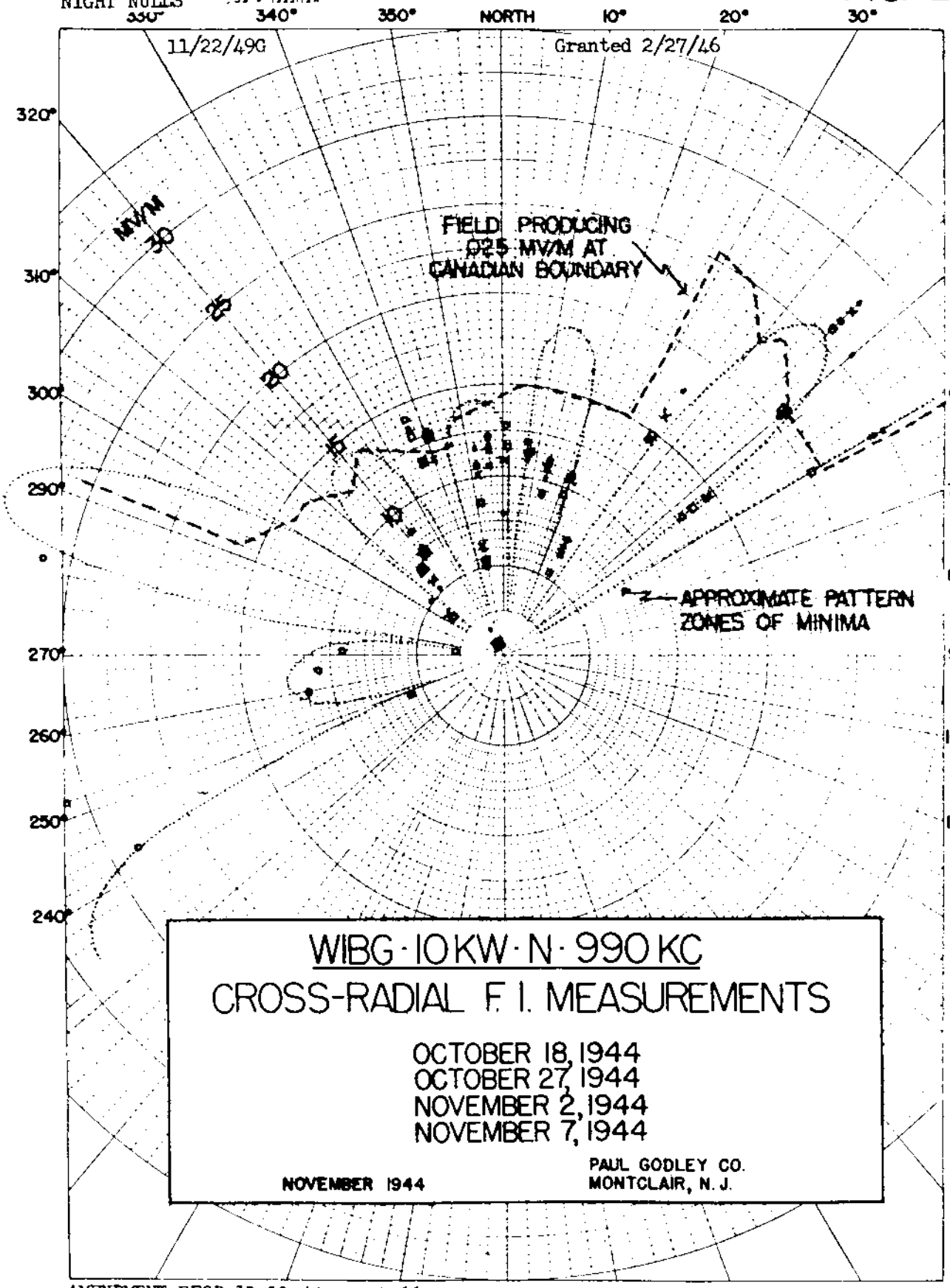
MEASURED NIGHT NULLS

WIBG, PHILADELPHIA, PA.

10kw, DA-2

990 kc

FIG. 2



WIBG · 10 KW · N · 990 KC

CROSS-RADIAL F. I. MEASUREMENTS

OCTOBER 18, 1944
OCTOBER 27, 1944
NOVEMBER 2, 1944
NOVEMBER 7, 1944

NOVEMBER 1944

PAUL GODLEY CO.
MONTCLAIR, N. J.

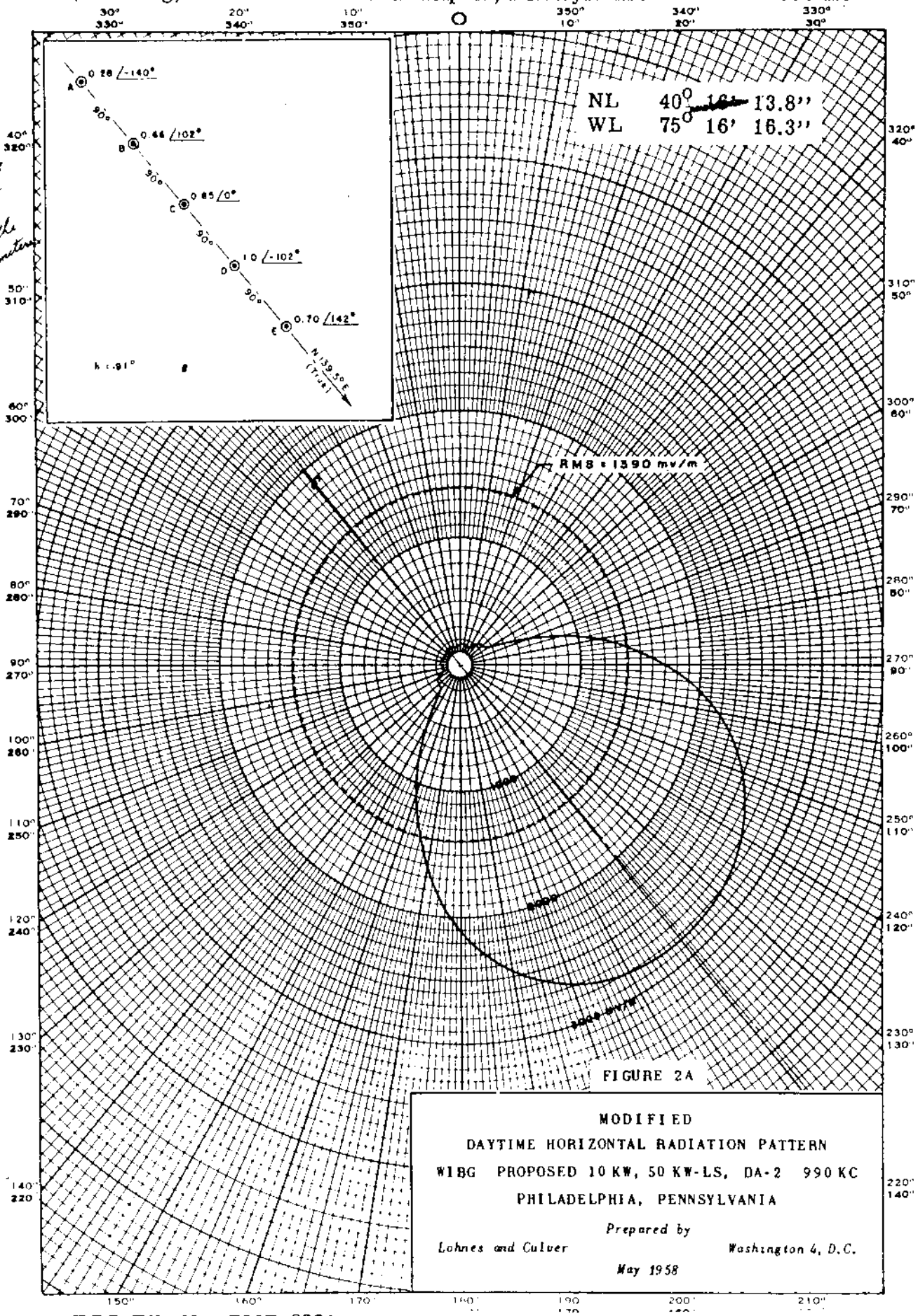
AMENDMENT RECD 11-11-44 BL-1766

WIBG

PROPOSED DAY (9-11-58g)

Station WIBG
Philadelphia, Pennsylvania

10kw,50kw-LS, DA-2,U
990 KC



revised 9/5/58 ed. of CP to take minor change in the existing parameters

FIGURE 2A

MODIFIED
DAYTIME HORIZONTAL RADIATION PATTERN
WIBG PROPOSED 10 KW, 50 KW-LS, DA-2 990 KC
PHILADELPHIA, PENNSYLVANIA

Prepared by
Lohnes and Culver *Washington 4, D.C.*
May 1958

FCC File No. BMP-8221
Accepted 8-15-58

WIBG
Philadelphia, Pennsylvania

990 KC

WIBG

PROPOSED DAY NULLS
(9-11-58g)

Station WIBG 10kw,50kw-LS, DA-2,U
Philadelphia, Pennsylvania 990 KC

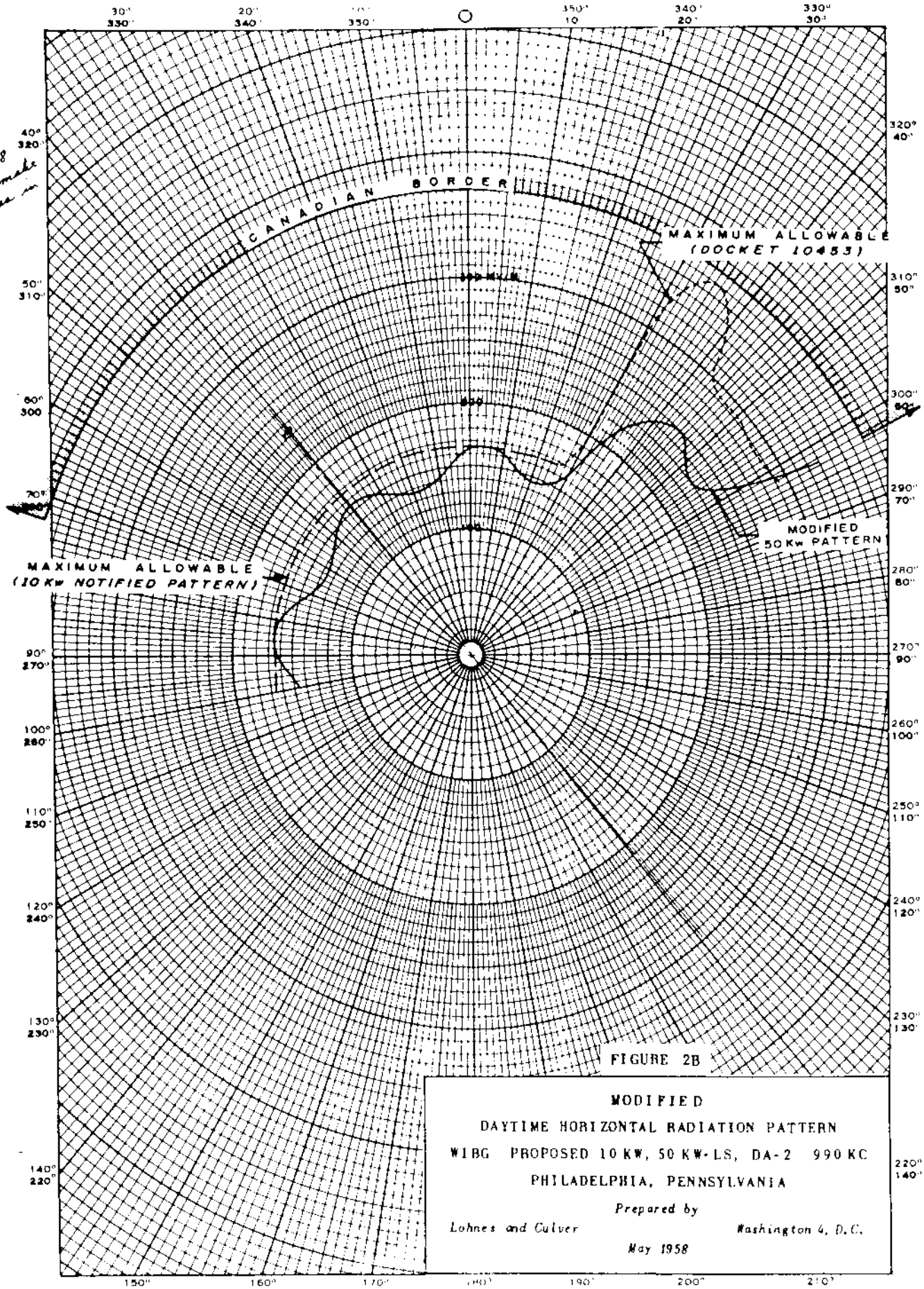


FIGURE 2B

MODIFIED
DAYTIME HORIZONTAL RADIATION PATTERN
WIBG PROPOSED 10 KW, 50 KW-LS, DA-2 990 KC
PHILADELPHIA, PENNSYLVANIA
Prepared by
Lohnes and Culver *Washington 4, D.C.*
May 1958

FCC File No. BMP-8221 WIBG
Accepted 8-15-58 Philadelphia, Pennsylvania 990 KC

WIBG

MEASURED DAY
(4-22-59g)

Station WIBG
Philadelphia, Pennsylvania

10kw, 50kw-LS, DA-2,U
990 KC

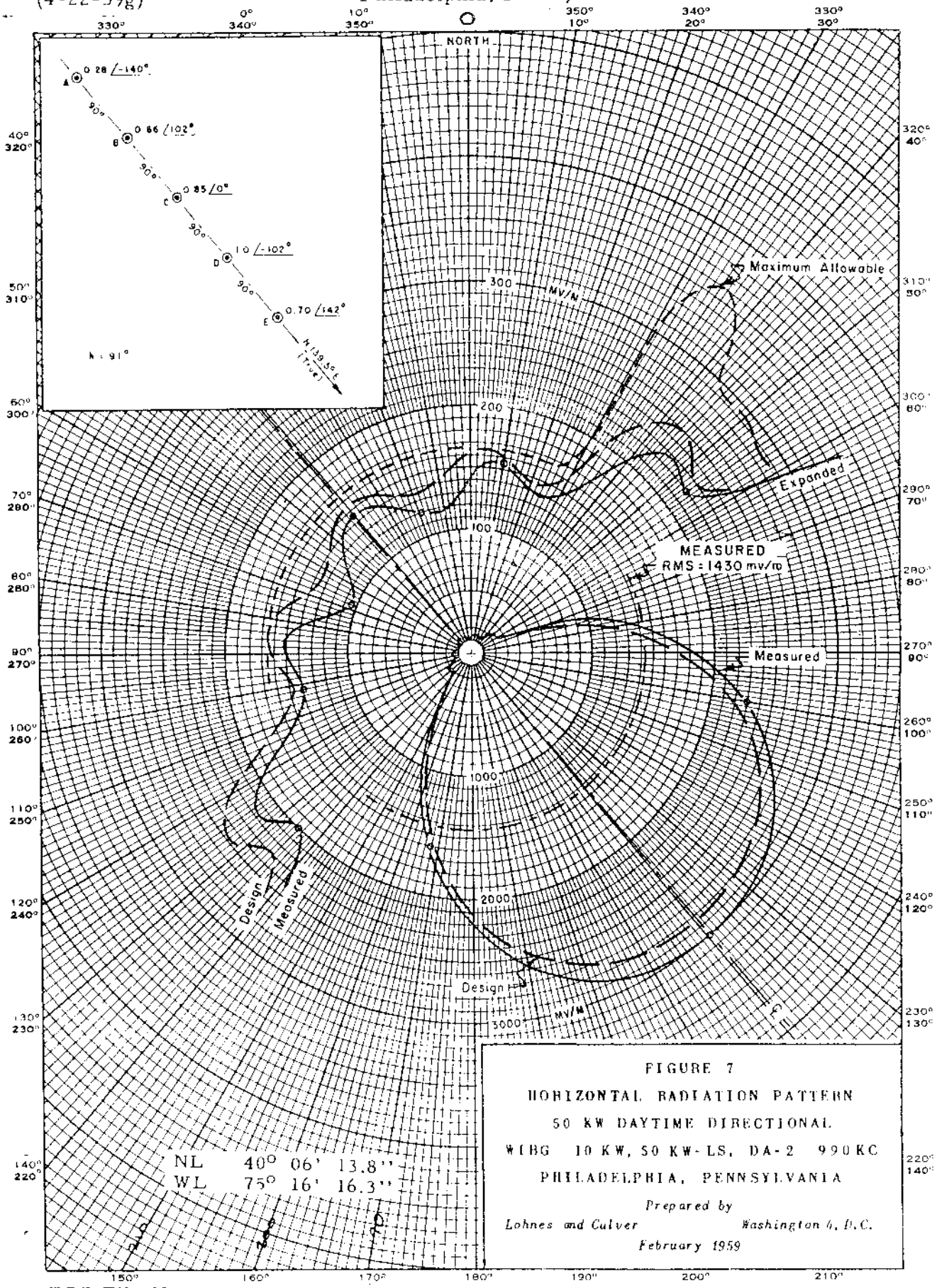


FIGURE 7

HORIZONTAL RADIATION PATTERN

50 KW DAYTIME DIRECTIONAL

WIBG 10 KW, 50 KW-LS, DA-2 990 KC

PHILADELPHIA, PENNSYLVANIA

Prepared by

Lohnes and Culver *Washington 4, D.C.*

February 1959

FCC File No. BL-7415
Accepted 4-13-59 (Amended)

WIBG
Philadelphia, Pennsylvania

990 KC

WIBG

MEASURED NON-DA
(4-22-59g)

Station WIBG
Philadelphia, Pennsylvania

10kw, 50kw-LS, DA-2,U
990 KC

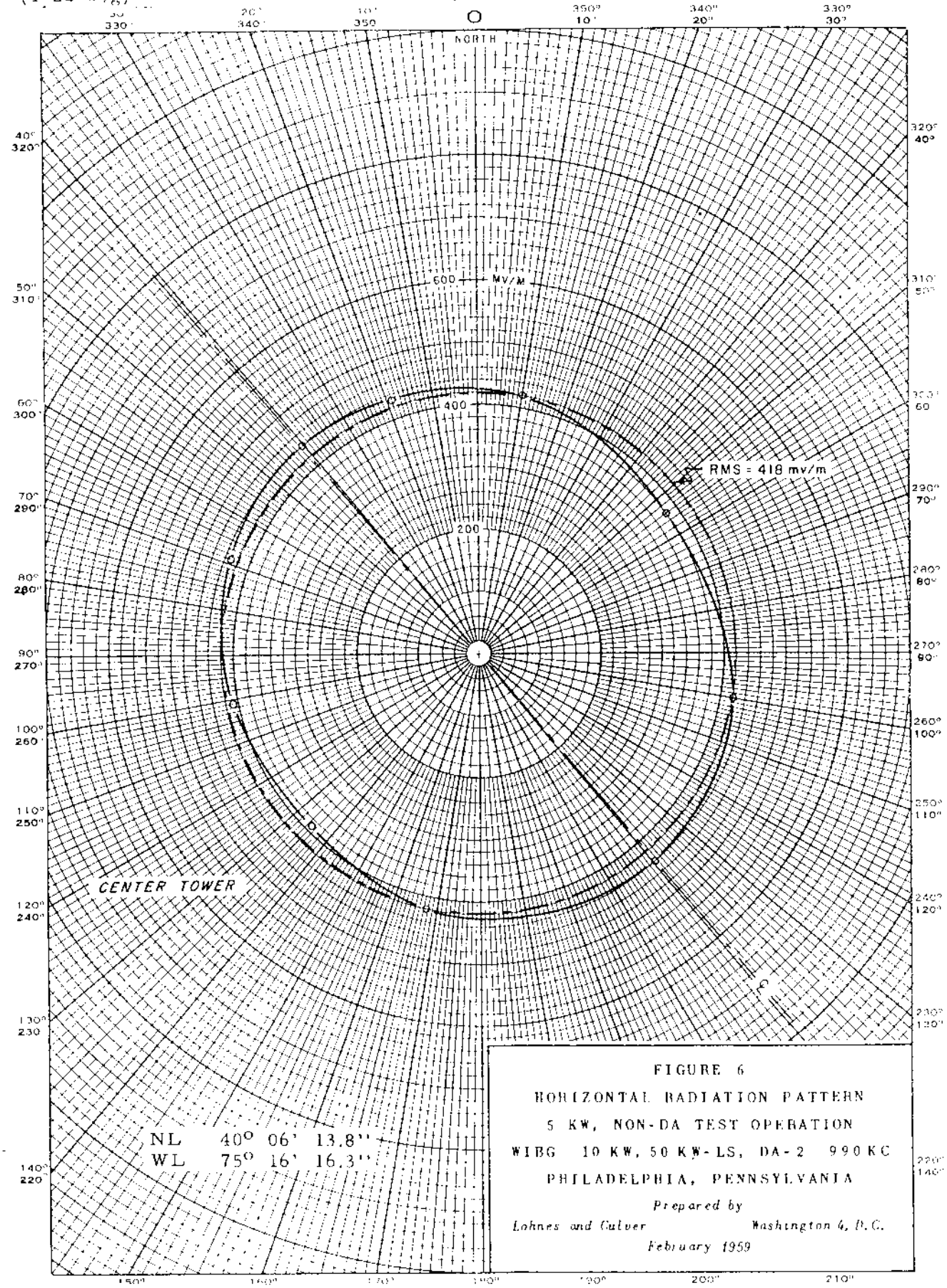


FIGURE 6
HORIZONTAL RADIATION PATTERN
5 KW, NON-DA TEST OPERATION
WIBG 10 KW, 50 KW-LS, DA-2 990 KC
PHILADELPHIA, PENNSYLVANIA
Prepared by
Lohnes and Culver *Washington 4, D.C.*
February 1959

FCC File No. BL-7415
Accepted 4-13-59 (Amended)

WIBG
Philadelphia, Pennsylvania

990 KC

Granted to increase power to 50 KW (NARBA) 10-27-59

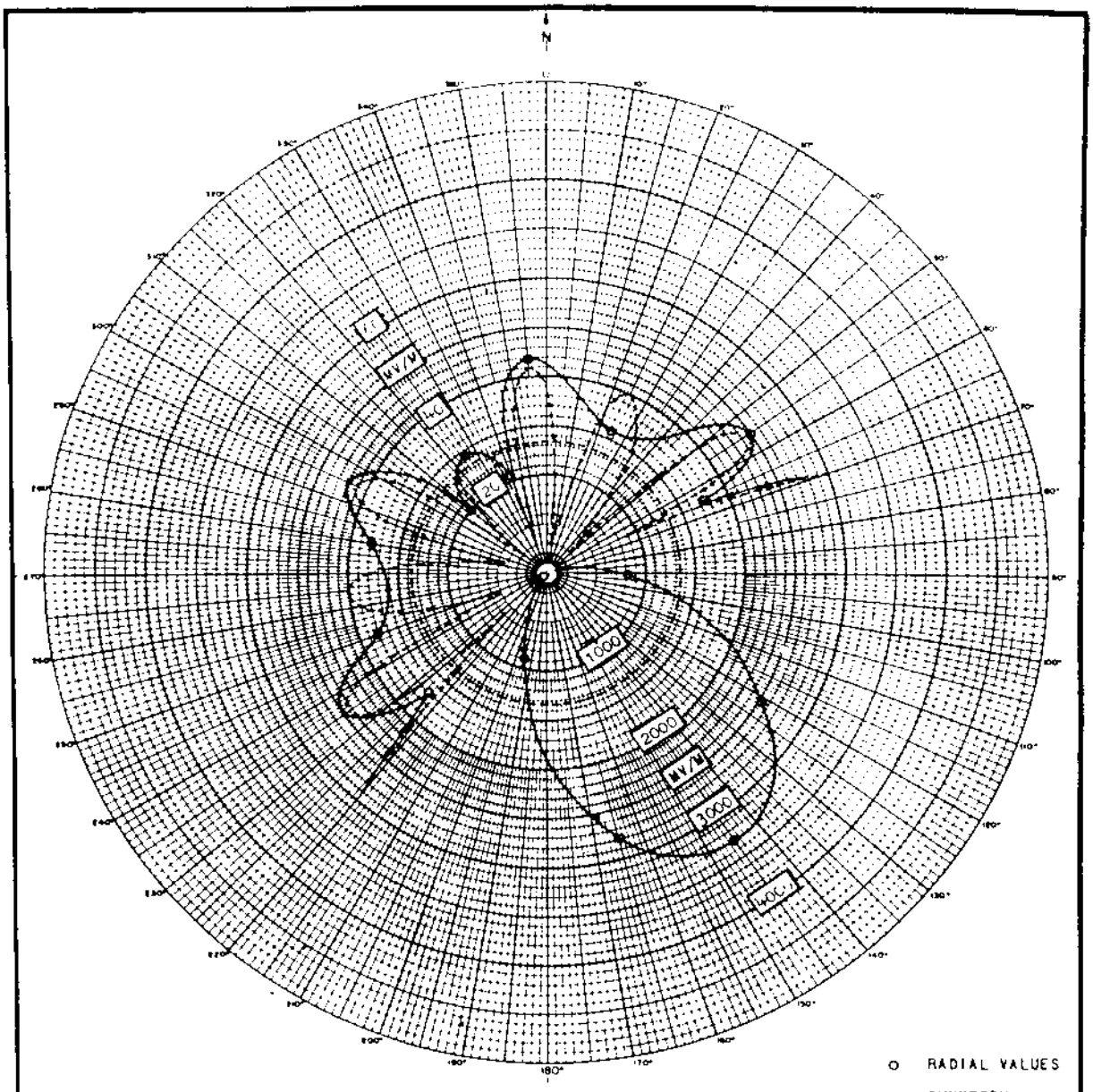
WLKW

MEASURED DAY
(5-8-61g)

Station WLKW
Providence, Rhode Island

50kw, DA-D,D
990 KC

5-7-61 granted as for new station



E_{RMS} = 1320 MV/M (MEASURED)

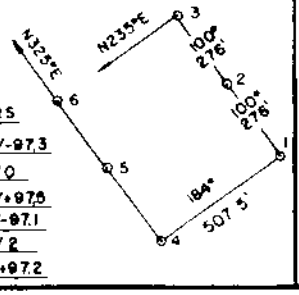
LATITUDE 41° 52' 18"

LONGITUDE 71° 35' 38.7"

G = 87°

JOHN H. MULLANEY
AND ASSOCIATES, INC.
WASHINGTON, D. C.

ANTENNA PARAMETERS



TOWERS

1. 1.086/-97.3
2. 1.938/0
3. 1.006/+97.5
4. 0.978/-97.1
5. 1.949/2
6. 1.031/+97.2

FIGURE 16
MEASURED HORIZONTAL
DIRECTIONAL PATTERN

RADIO STATION WLKW
PROVIDENCE, RHODE ISLAND

990 KC 50 KW, DA-D

FCC File No. BL-8292
Accepted 4-11-61

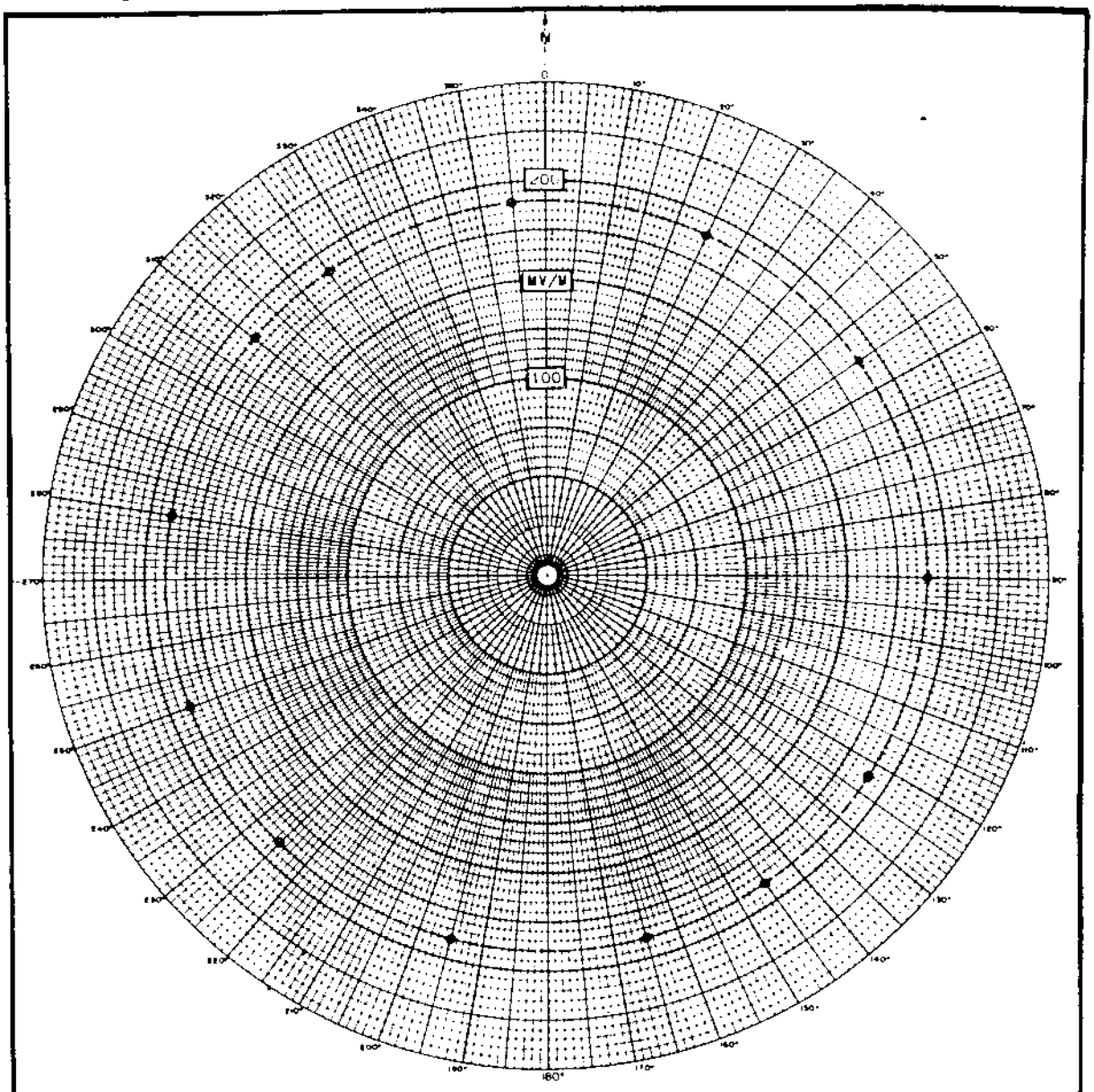
WLKW
Providence, Rhode Island 990 KC

WLKW

MEASURED NON-DA
(5-8-61g)

Station WLKW
Providence, Rhode Island

50kw, DA-D,D
990 KC



E_{RMS} = 190 MV/M (MEASURED)

O RADIAL VALUES

LATITUDE 41° 52' 18"
LONGITUDE 71° 25' 30.2"

JOHN H. MULLANEY
AND ASSOCIATES, INC.
WASHINGTON, D. C.

ANTENNA PARAMETERS

#5 TOWER

G = 87°

FIGURE 15
MEASURED HORIZONTAL
NON-DIRECTIONAL PATTERN
RADIO STATION WLKW
PROVIDENCE, RHODE ISLAND
990 KC 50 KW, DA-D

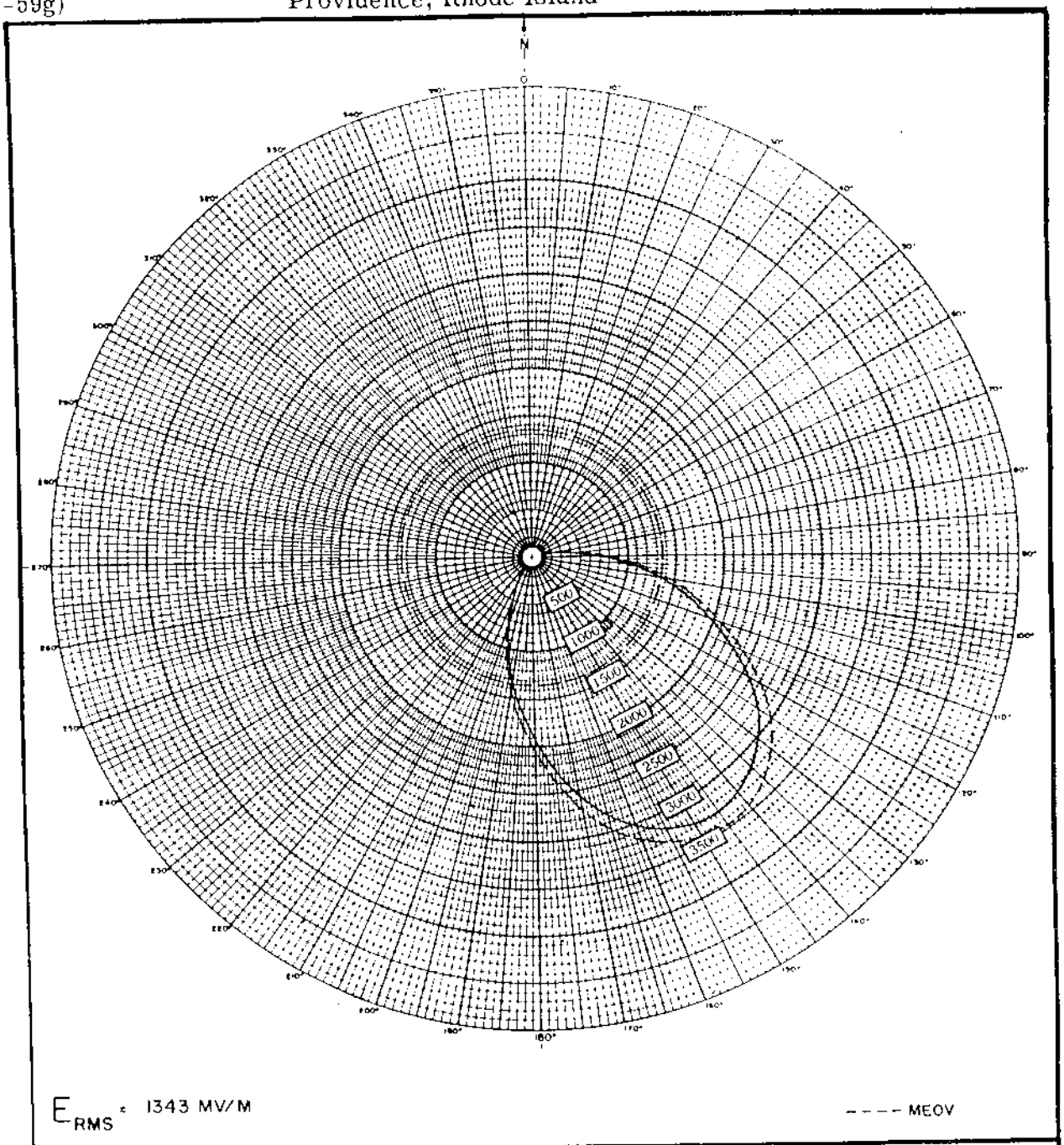
FCC File No. BL-8292
Accepted 4-11-61

WLKW
Providence, Rhode Island 990 KC

Providence, R.I. WLKW

PROPOSED DAY (2-2-59g) | New; Radio Rhode Island, Inc. Providence, Rhode Island | 50kw, DA-D,D 990 KC

granted CP for new station 3-25-60

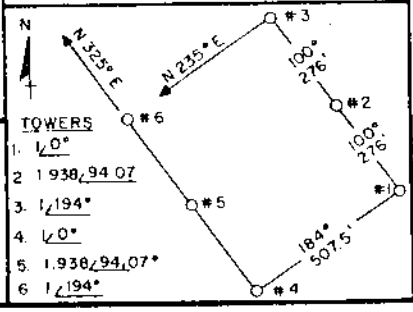


E_{RMS} = 1343 MV/M ---- MEOV

LATITUDE: 41° 57' 18"
LONGITUDE 71° 35' 38"
G = 87°

JOHN H. MULLANEY
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

ANTENNA PARAMETERS



TOWERS
1. 1∠0°
2. 1.938∠94.07°
3. 1∠194°
4. 1∠0°
5. 1.938∠94.07°
6. 1∠194°

FIGURE 4

DAYTIME HORIZONTAL POLAR PATTERN

RADIO RHODE ISLAND, INC.
PROVIDENCE, R.I.

990 KC 50 KW, DA-D

FCC File No. BP-12,383
Accepted 1-19-59 (Amended)

Radio Rhode Island, Incorporated
Providence, Rhode Island 990 KC

Providence, R.I.

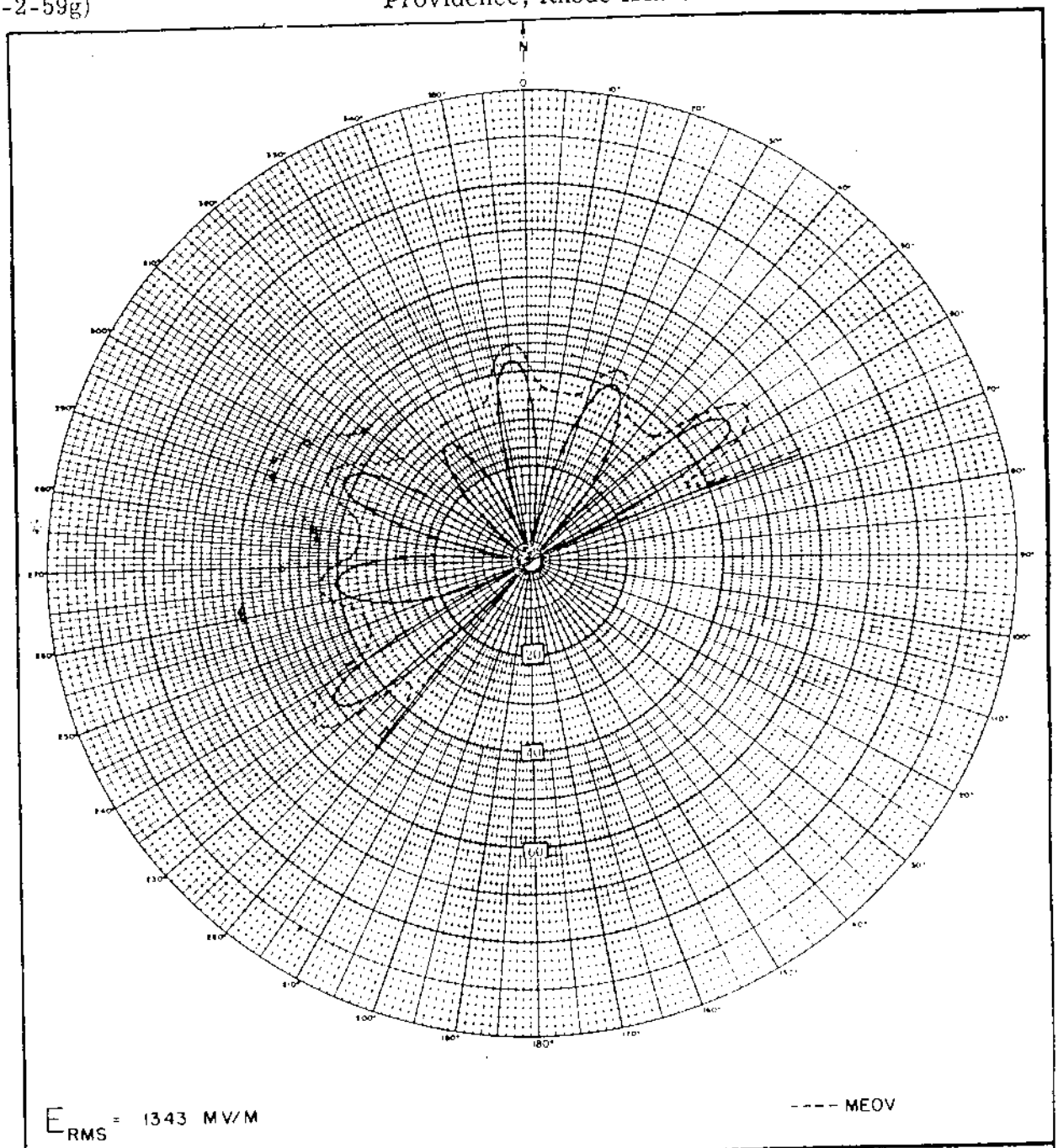
WLKW

PROPOSED DAY NULLS
(2-2-59g)

New; Radio Rhode Island, Inc.
Providence, Rhode Island

50kw, DA-D,D
990 KC

granted OP 3-25-60 for new stn.



LATITUDE 41° 57' 18"
LONGITUDE 71° 35' 38"
G= 87°

JOHN H. MULLANEY
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

ANTENNA PARAMETERS

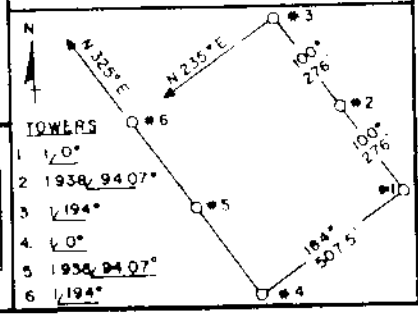


FIGURE 4A

DAYTIME HORIZONTAL POLAR PATTERN

RADIO RHODE ISLAND, INC.
PROVIDENCE, R.I.

990KC 50 KW, DA-D

FCC File No. BP-12383
Accepted 1-19-59 (Amended)

Radio Rhode Island, Incorporated
Providence, Rhode Island 990 KC

PATTERN NO. [illegible]
SUPERSEDES: 410715

WNOX – 990

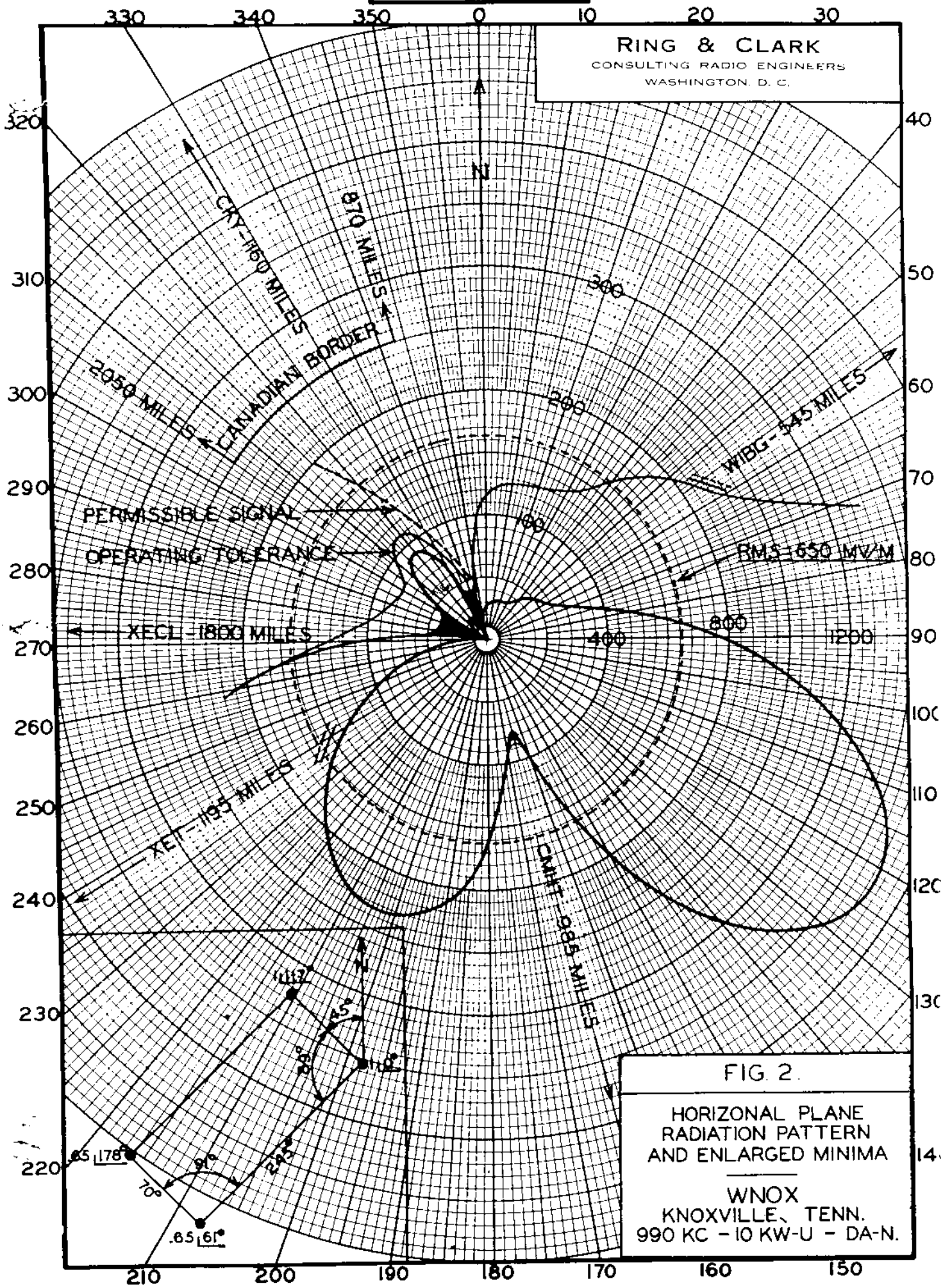


FIG. 2

HORIZONAL PLANE
RADIATION PATTERN
AND ENLARGED MINIMA

WNOX
KNOXVILLE, TENN.
990 KC – 10 KW-U – DA-N.

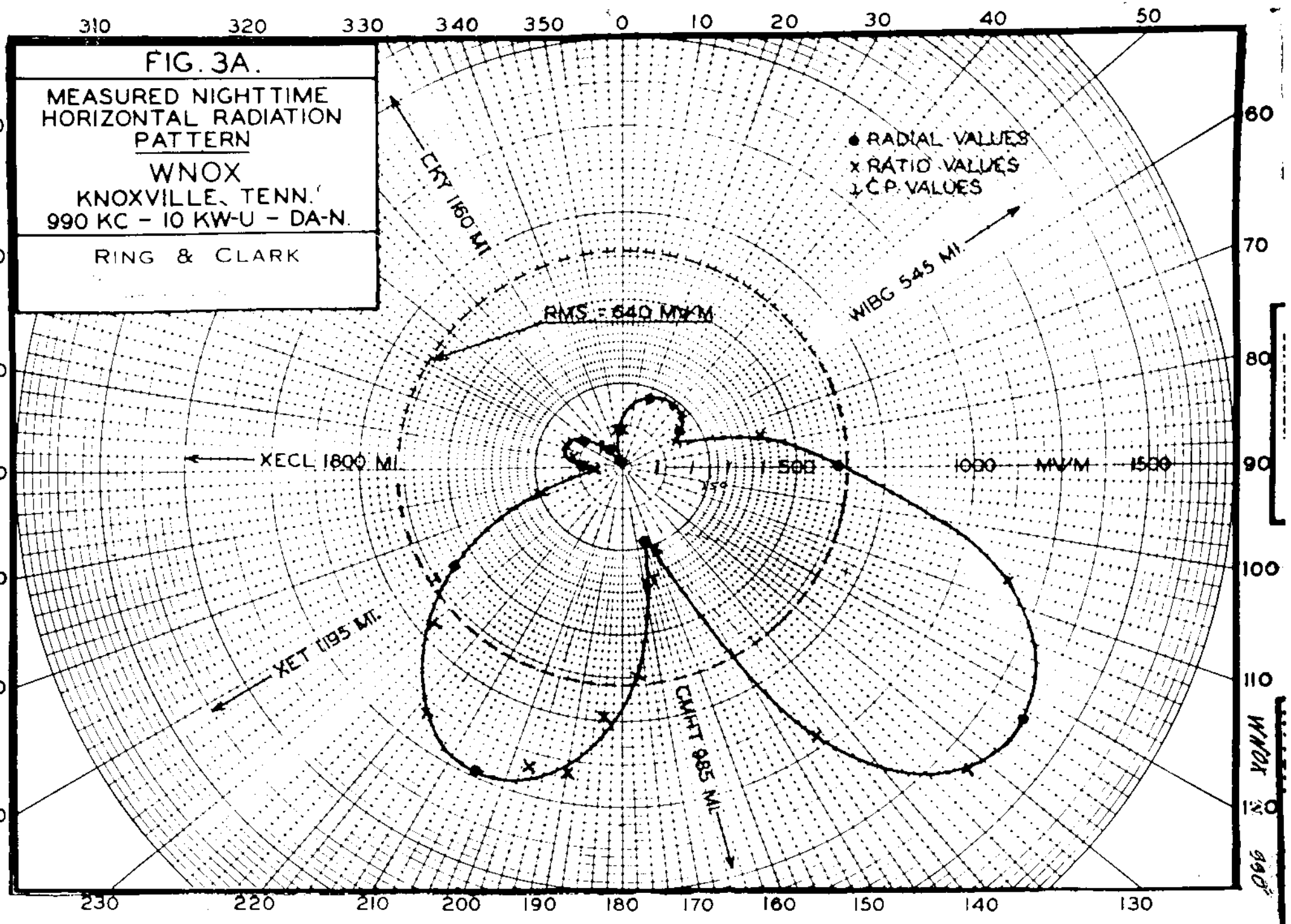


FIG. 3A.
MEASURED NIGHTTIME HORIZONTAL RADIATION PATTERN
WNOX
KNOXVILLE, TENN.
990 KC - 10 KW-U - DA-N.
RING & CLARK
RMS = 640 MV/M
CKY 160 MI
WIBG 545 MI
XECL 1800 MI.
XET 1195 MI.
CMHT 985 MI.
500
1000
1500
MV/M
RADIAL VALUES
RATIO VALUES
C.P. VALUES
WNOX
990

PATTERN No. 4208-U
SUPERSEDES:

WNOX – 990

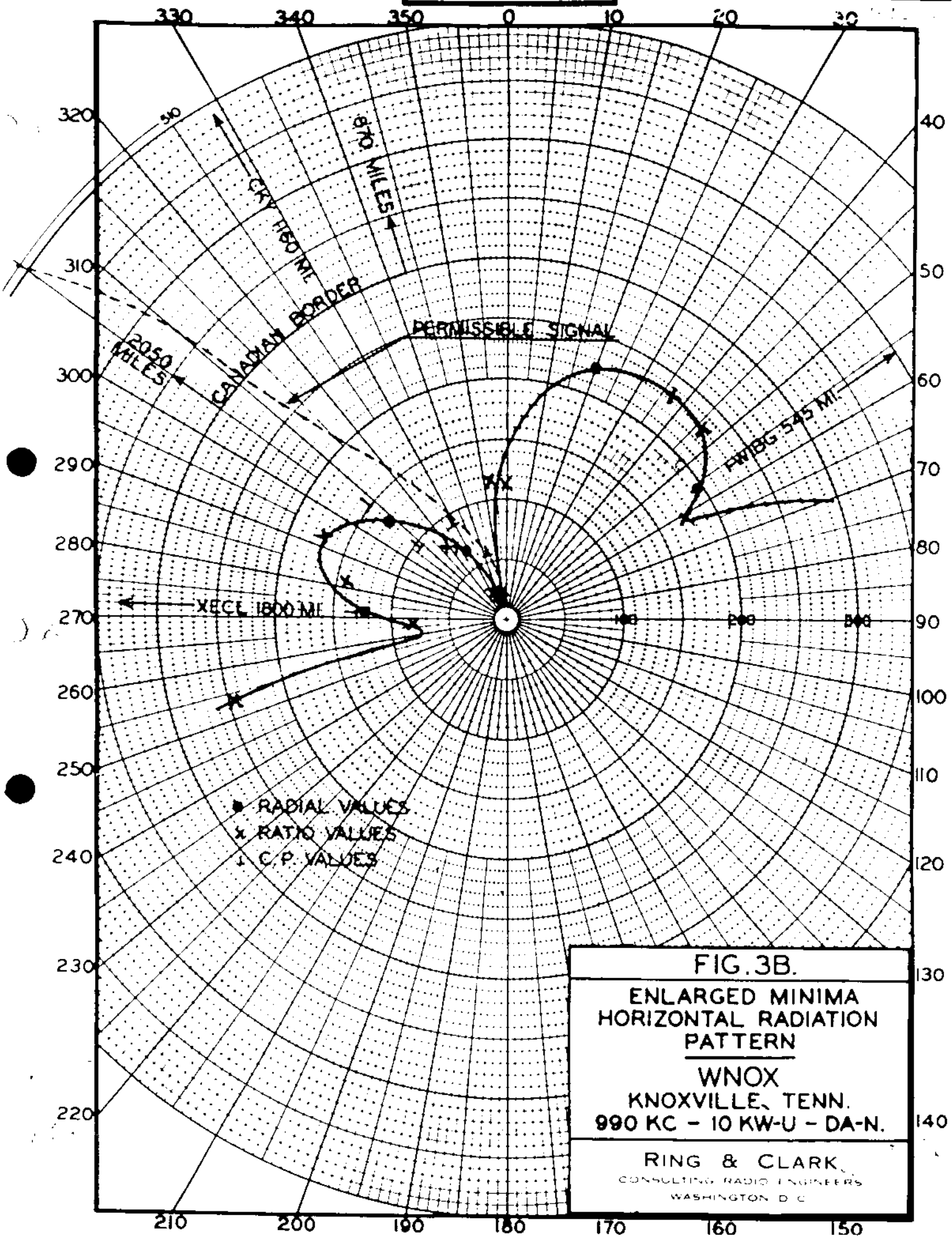


FIG. 3B.

ENLARGED MINIMA
HORIZONTAL RADIATION
PATTERN

WNOX
KNOXVILLE, TENN.
990 KC – 10 KW-U – DA-N.

RING & CLARK
CONSULTING RADIO ENGINEERS
WASHINGTON D. C.

WNOX

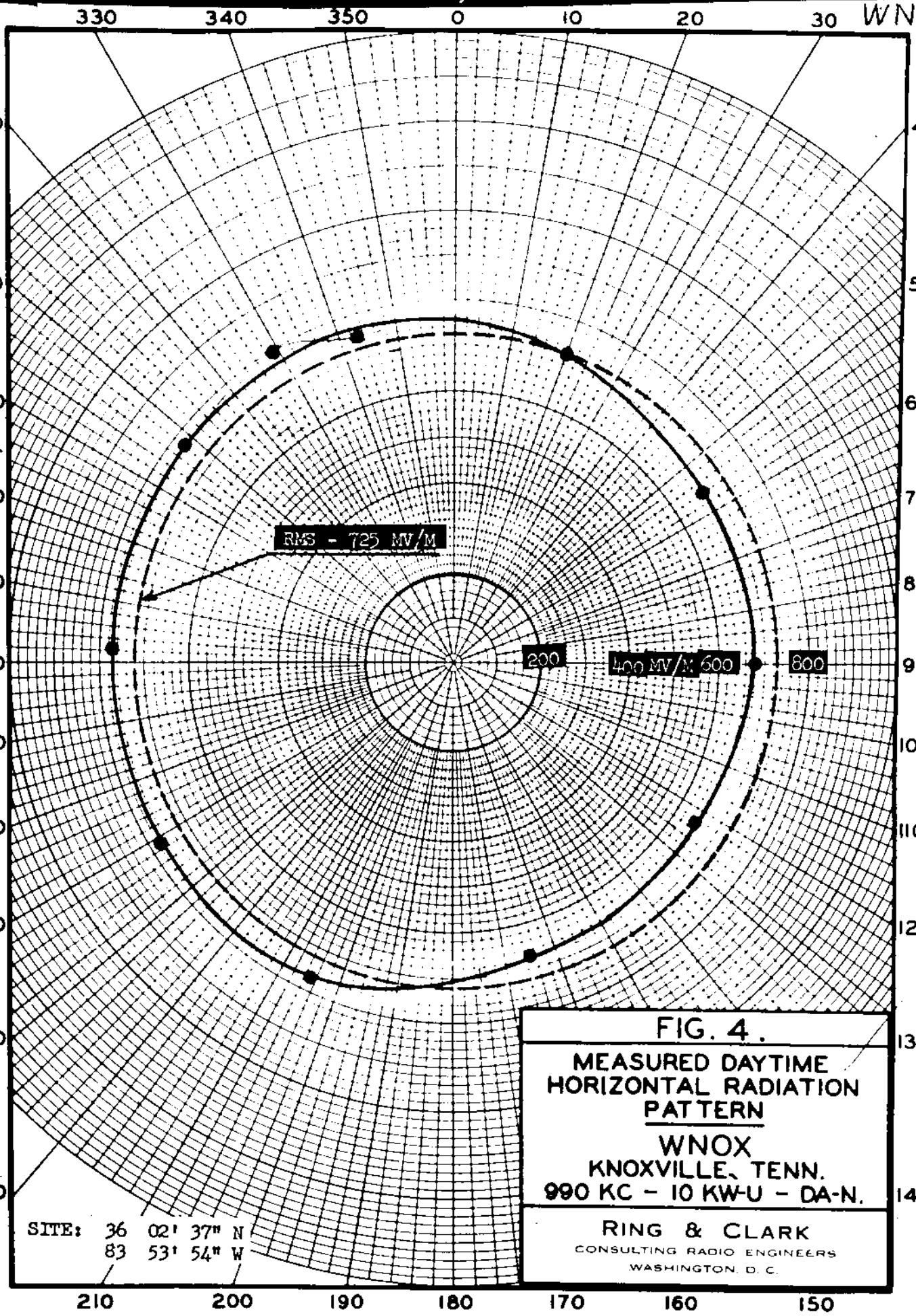


FIG. 4.

MEASURED DAYTIME HORIZONTAL RADIATION PATTERN

WNOX
KNOXVILLE, TENN.
990 KC - 10 KW-U - DA-N.

RING & CLARK
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

Description Sheet
(3-27-70ct)

Station WNTY
Southington, Connecticut

PROOF OF PERFORMANCE BL-12528

STATION WNTY GR(3-24-70) Lic. Granted CP For New Standard Broadcast Station

SOUTHINGTON, CONN.

DESCRIPTION OF THE ANTENNA SYSTEM

Number of Elements	Two	
Type of Elements	Uniform Cross Section, Guyed, Galvanized Steel radiators, Base Insulated	
Height of Elements	#1 Northwest	# Southeast
Elements themselves	250'	250'
Overall height above gnd	~~256'~~ 253	~~256'~~ 253
Height above AMSL	406'	406'
Orientation of Array		
Line of towers	124°T	
Spacing	248' (90°)	
Phasing	0°	+94°

Detail of Ground System: 120 equally spaced radials around each tower varying in length from 220' to 280' depending on property lines. Radials cut short where they intersect traverse strap. Ground radials bonded to steel roof of factory building which intersects ground system. The first 50' of each ground radial are not buried, the rest buried 3 to 6" in soil.

Field Parameters Elements	Computed		Measured Array as set up	
	Base Current ratio	Phase	Base Current ratio	Phase
#1 Northwest	.6	0°	.6	0°
#2 Southeast	1.0	+111°	1.0	+94°

Phase Monitor Pickup:

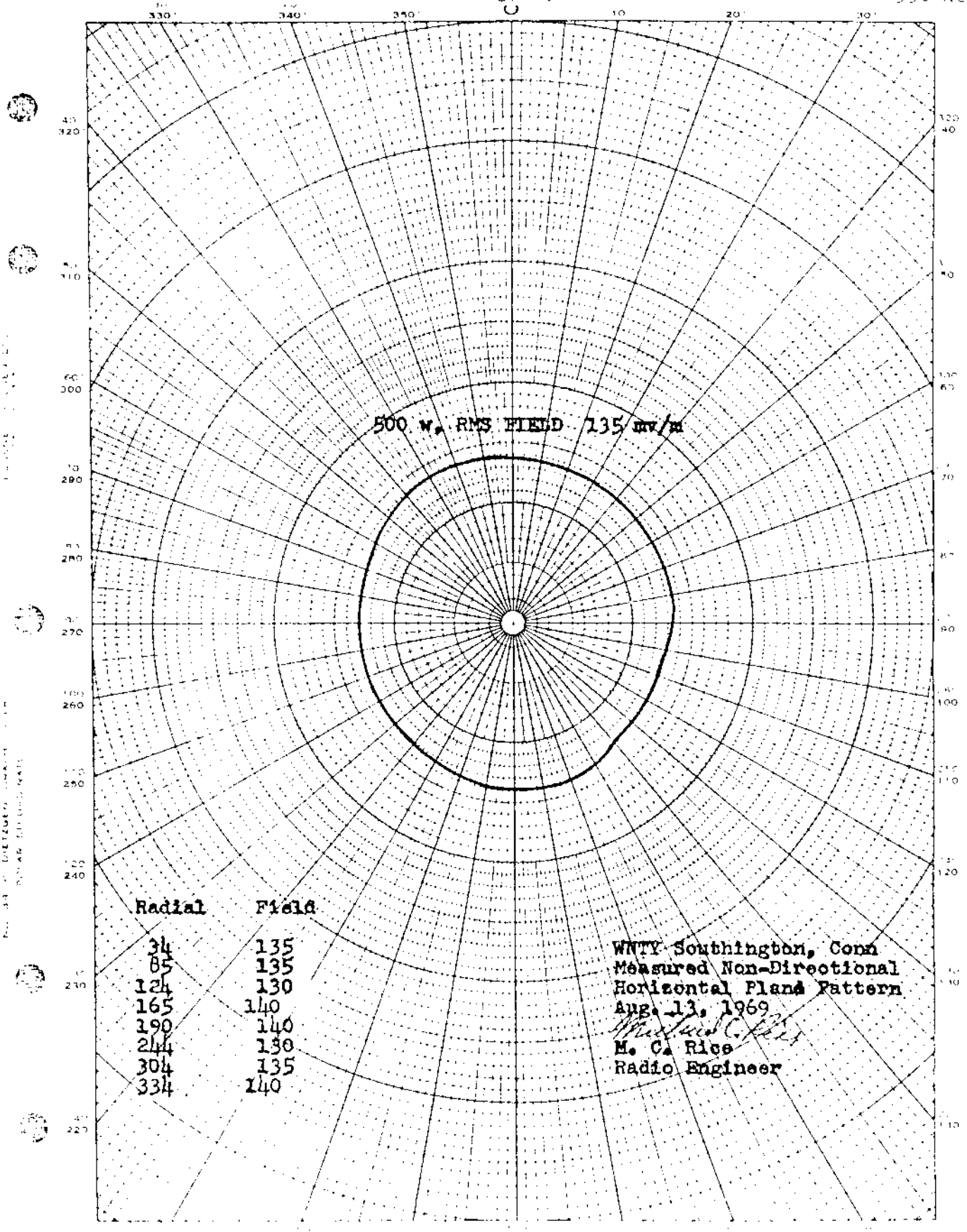
Loops are composed of one turn of RG 59U Transmission line enclosed in a mechanical loop broken by an insulator, clamped securely to the tower about 25 feet from the ground. The loop ratio is 28/53 which is equal to .53

BL-12528
Gill (3-24-70) Lic. Covering CP for New Station

WNTY
500w, DA-D, D
990 kc

Measured Non-DA
(3-27-70ct)

Station WNTY
Southington, Connecticut



Radial	Field
34	135
85	135
124	130
165	140
190	140
244	130
304	135
334	140

WNTY Southington, Conn
Measured Non-Directional
Horizontal Plane Pattern
Aug. 13, 1969
Michael C. Rice
M. C. Rice
Radio Engineer

FCC File No. BL-12528
Accepted 3-6-70

Station WNTY
Southington, Connecticut

990 kc

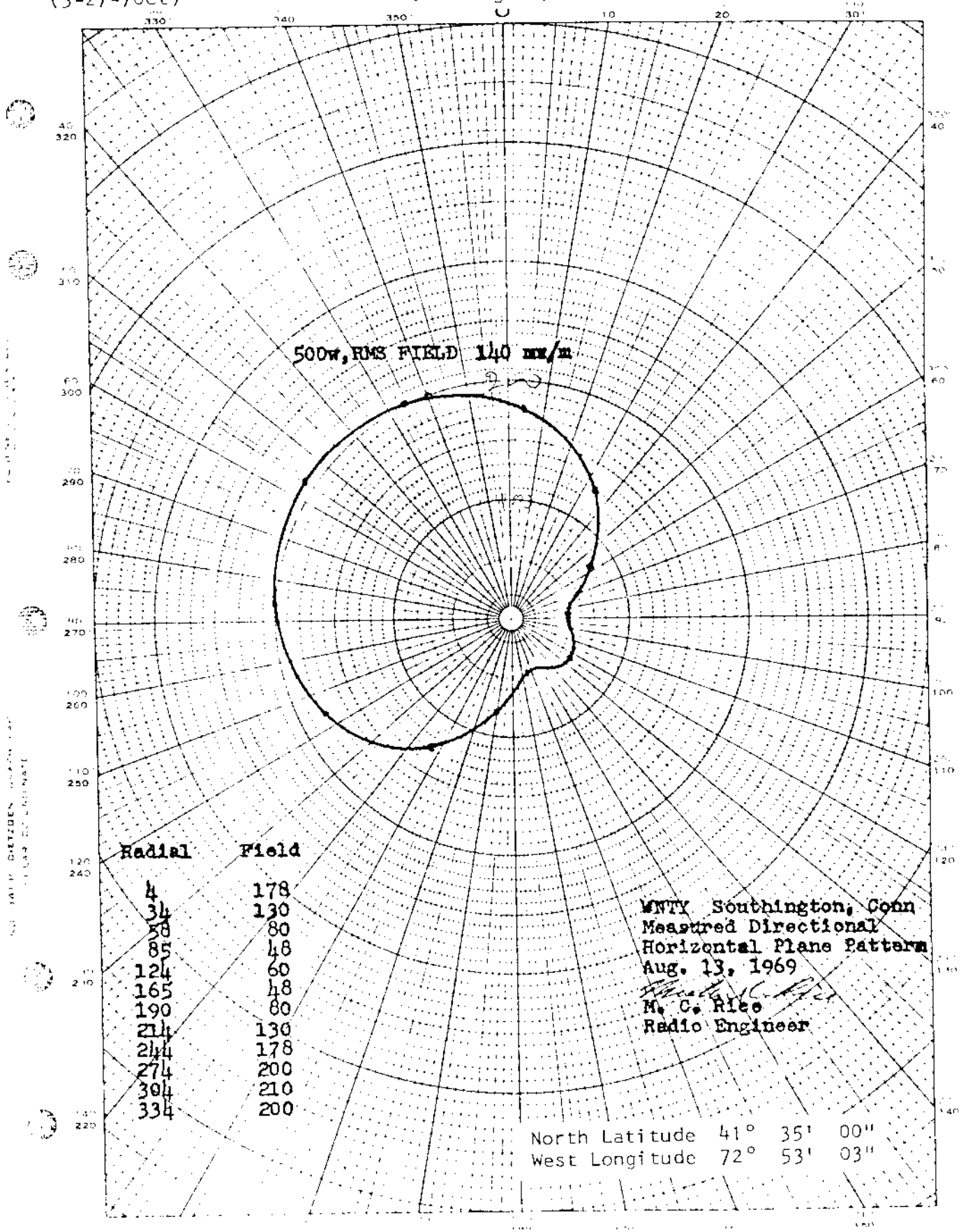
BL-12528
Gtd (3-24-70) Lic. Covering CP for New Station

WNTY

Measured Day
(3-27-70ct)

Station WNTY
Southington, Connecticut

500w, DA-D,
990 kc



Radial	Field
4	178
34	130
58	80
85	48
124	60
165	48
190	80
214	130
244	178
274	200
304	210
334	200

WNTY Southington, Conn
Measured Directional
Horizontal Plane Pattern
Aug. 13, 1969

M. C. Rice
Radio Engineer

North Latitude 41° 35' 00"
West Longitude 72° 53' 03"

FCC File No. BL-12528
Accepted 3-6-70

Station WNTY
Southington, Connecticut

990 kc

WNTY

Proposed Day
(1-28-65ct)

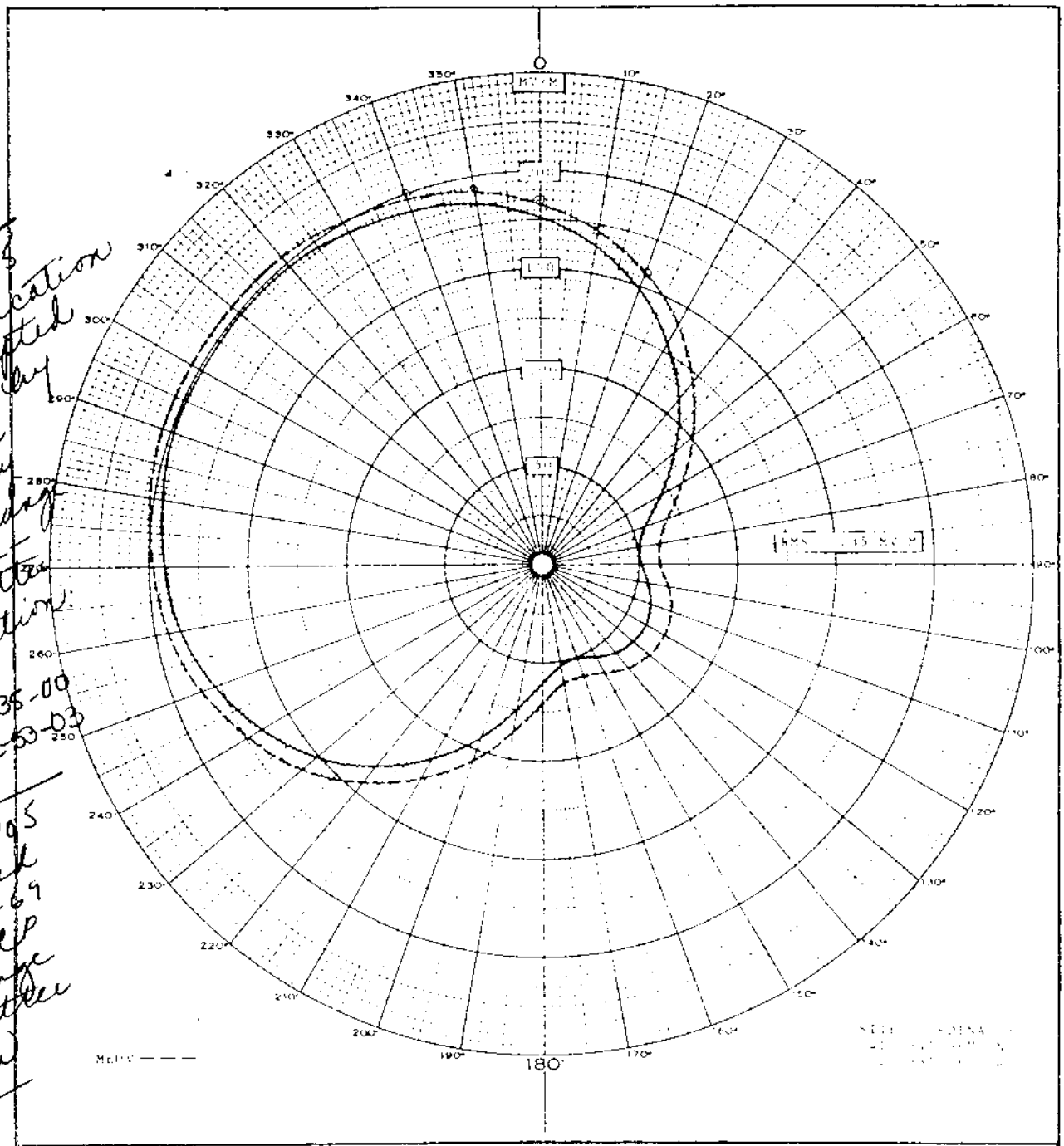
New; Southington Broadcasters 500w,DA-D,D
Southington, Connecticut 990 kc

4-15-68
GRANTED
CP FOR
+ NEW
STATION

BMP-12703
in application
was accepted
1-23-69 by
the FCC
to modify
CP to change
transmitter
location:

) Lat. 41-35-00
) Long. 72-50-03

BMP-12795
Granted
4-24-69
Mod. of CP
to change
transmitter
location



FCC File No. BP-16405
Accepted 1-11-65

New; Southington Broadcasters
Southington, Connecticut 990 kc

POLAR CO-ORDINATE NO. 10 LP CLEVELAND INSTITUTE OF RADIO ELECTRONICS CLEVELAND OHIO

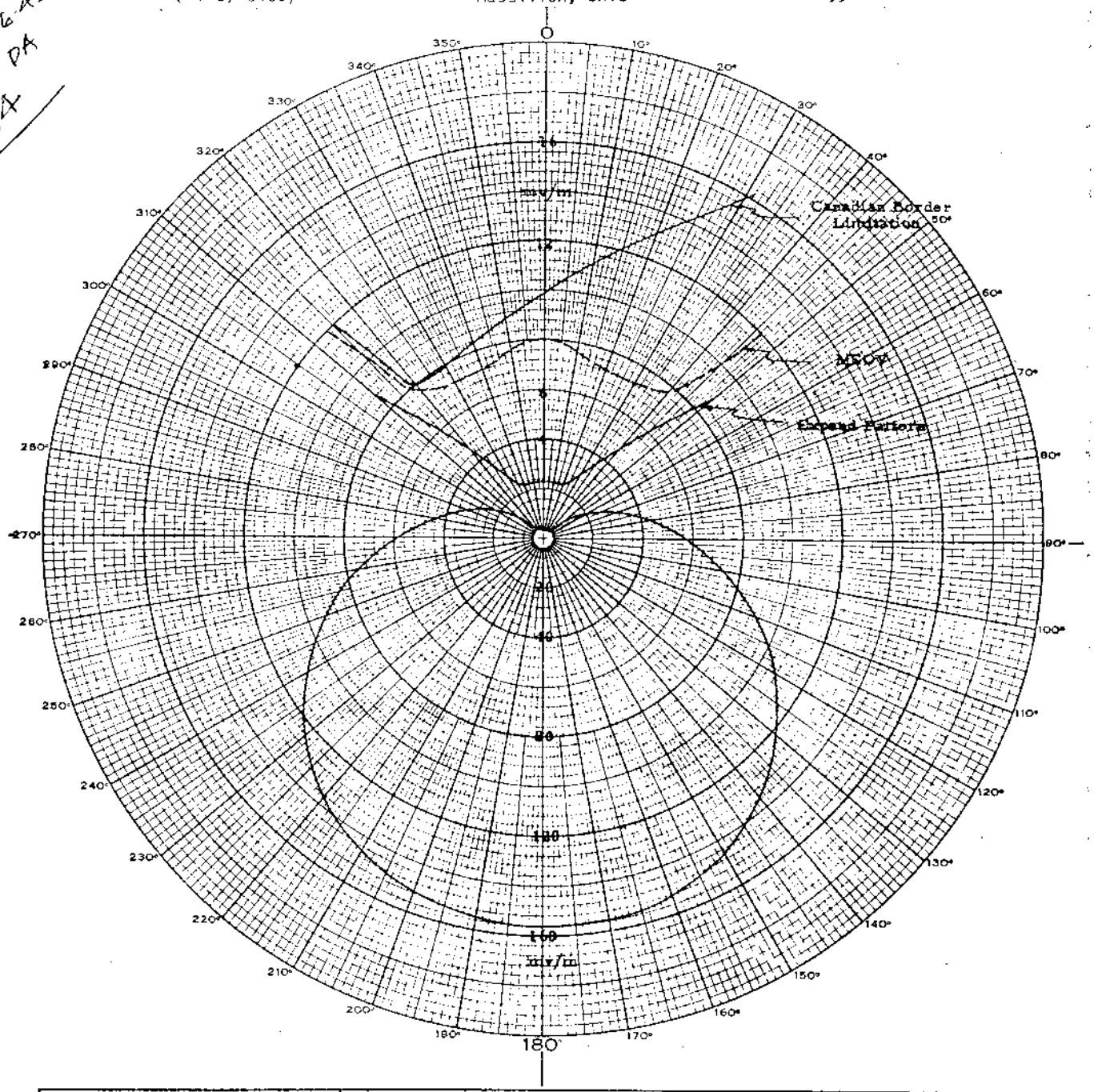
WTIG

BP 16432
CP CHG DA
12-13-64

Proposed Day
(11-27-64ct)

Station WTIG
Massillon, Ohio

250w, DA-D, D
990 kc



TOWER PLACEMENT SKETCH	PATTERN PARAMETERS									STATION DATA
0° 0.465/112.5° #2 70°=193' #1 1/0° 70° 193' #3 0.588/-112.5° G=72.5°	TOWER No	ELECTRICAL HEIGHT G°	TRUE TOWER ORIENTATION φ°	SPACING S°	PHASING ψ°	HORIZONTAL FIELD mv/m E	FIELD RATIO F	ELEV. ANGLE θ°	ELEVATION RMS FIELD mv/m E_θ	CALL WTIG
	1	72.5			0		1	0	92.5	FREQUENCY 990 kc
	2	72.5			112.5		0.465	10		POWER 0.25 kw
	3	72.5			-112.5		0.588	20		TIME OF OPERATION DA-D
	4							30		TYPE OF OPERATION Class II
	5							40		DAYTIME TOWERS 3
	6							50		NIGHTTIME TOWERS - - -
	7							60		No. RADIALS PER TOWER 120
	8							70		LENGTH OF RADIALS 200 ft
	9							80		GROUND SCREEN DIMENSION 24'x24'
	10							$E_{1.4}$ mv/m		LAT. 40° 49' 56.7"
	DAYTIME OPERATION ☑ NIGHTTIME OPERATION ☐							$P_{1.4}$ kw		LONG. 81° 33' 39.7"
										SUPERSEDES
										PATTERN No 640710

CARL E. SMITH

Consulting Radio Engineers

Cleveland, Ohio

Fig. 1

Horizontal Pattern Amended MEOV

Radio Station WTIG

Massillon, Ohio

FCC File No. BP-16432
Accepted 11-23-64

Station WTIG
Massillon, Ohio

990 kc

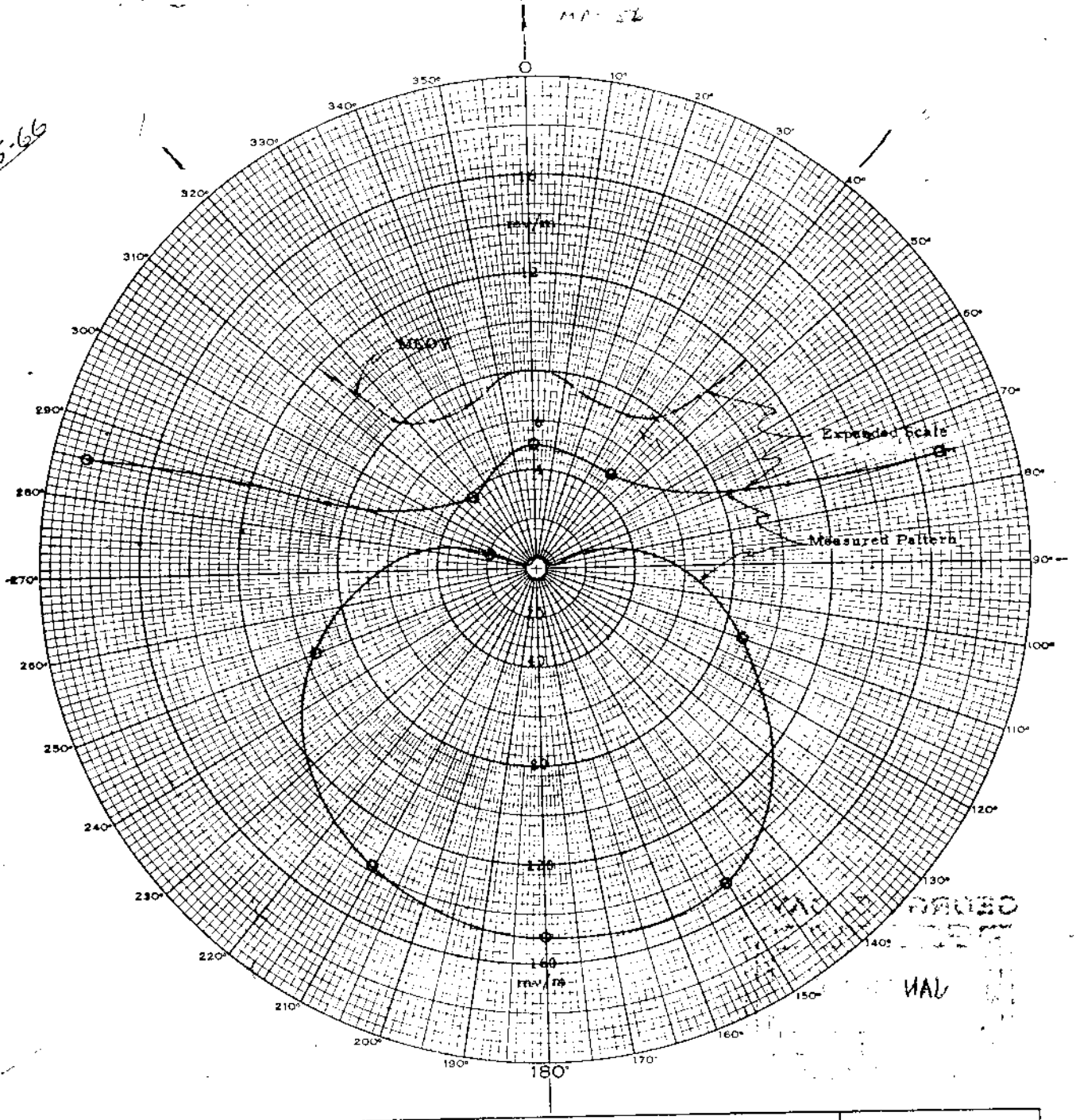
Measured Day
(1-28-66ct)

Station WTIG
Massillon, Ohio

250w,DA-D,D
990 kc

WTIG

LIC 3-25-66



TOWER PLACEMENT SKETCH	PATTERN PARAMETERS									STATION DATA
	TOWER No.	ELECTRICAL HEIGHT (degrees)	TRUE TOWER ORIENTATION	SPACING (degrees)	PHASING	HORIZONTAL FIELD	FIELD RATIO	ELEV. ANGLE	ELEVATION RMS FIELD	CALL WTIG
#2 0.465 /112.5°	1	72.5			0		1	0	88.5	FREQUENCY 990 kc
70° = 193'	2	72.5			112.5		0.465	10		POWER 0.25 kw
#1 1/0°	3	72.5			112.5		0.588	20		TIME OF OPERATION DA-D
70° = 193°	4							30		TYPE OF OPERATION Class II
#3 0.588 / -112.5°	5							40		DAYTIME TOWERS 3
G = 72.5°	6							50		NIGHTTIME TOWERS
	7							60		[illegible] POWER 120
	8							70		[illegible] 200 ft
	9							80		GROUND SYSTEM 24'x24'
	10							90		LAT. 40° 49' 56.1"
										LONG. 81° 33' 39.7"
										ANTENNA
										FCC File No. 650615

FIG. 7.11
Measured Horizontal Pattern

CARL E. SMITH Consulting Radio Engineers
Cleveland, Ohio

Radio Station WTIG
Massillon, Ohio
990 kc 250 w DA-D

FCC File No.BL-11098
Accepted 11-2-65

Station WTIG
Massillon, Ohio

990 kc

WTIG

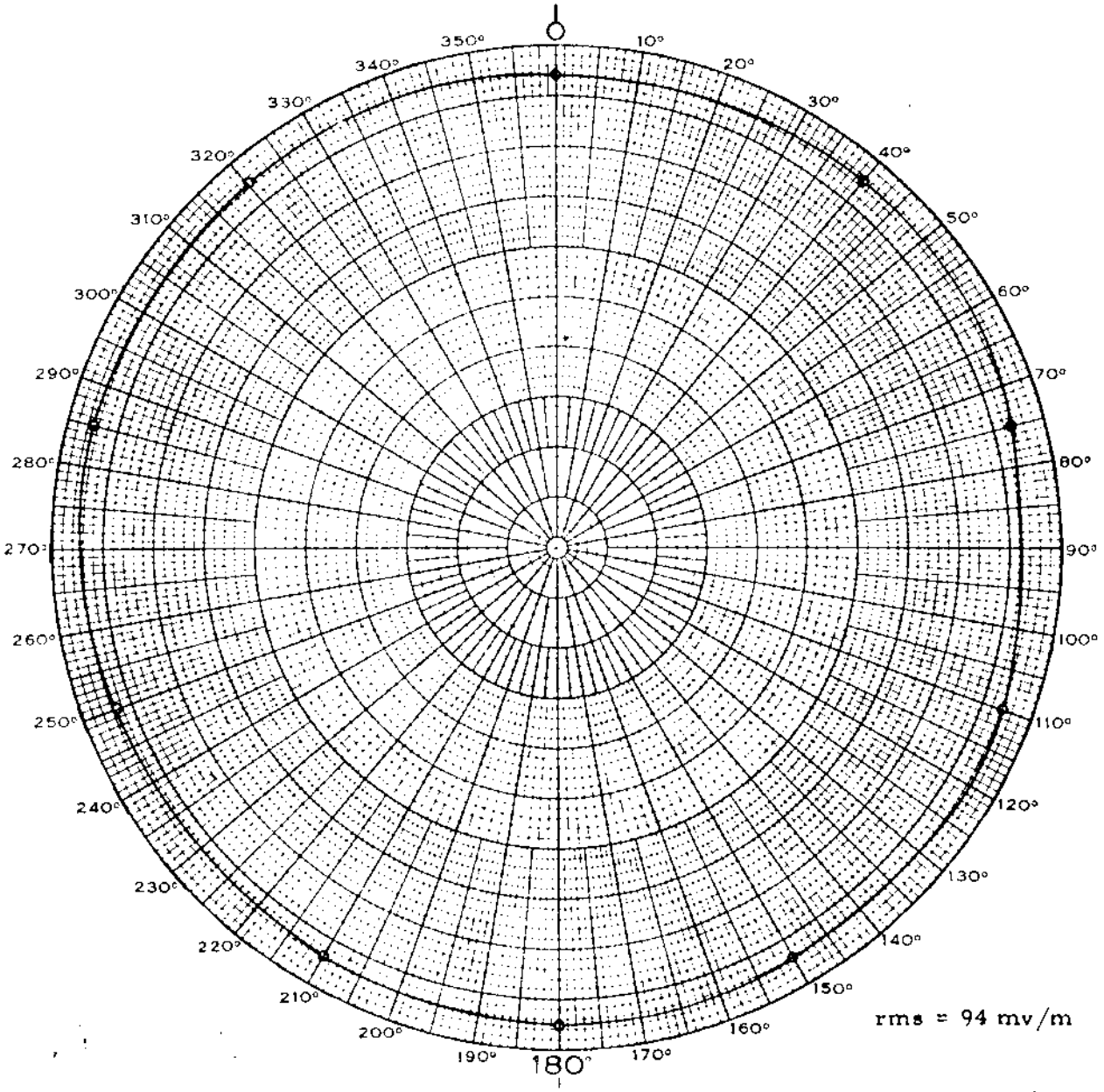
Measured Non-DA
(11-29-65ct)

Station WTIG
Massillon, Ohio

250w,DA-D,D
990 kc

LIC 3-25-66

SEI-32-10L



rms = 94 mv/m

CARL E. SMITH Consulting Radio Engineers 650628	FIG. 6.11 MEASURED NON-DIRECTIONAL PATTERN 250 w Tower No. 3 (S) RADIO STATION WTIG Massillon, Ohio 990 kc 250 w DA-D

FCC File No. BL-11098
Accepted 11-2-65

Station WTIG
Massillon, Ohio

990 kc

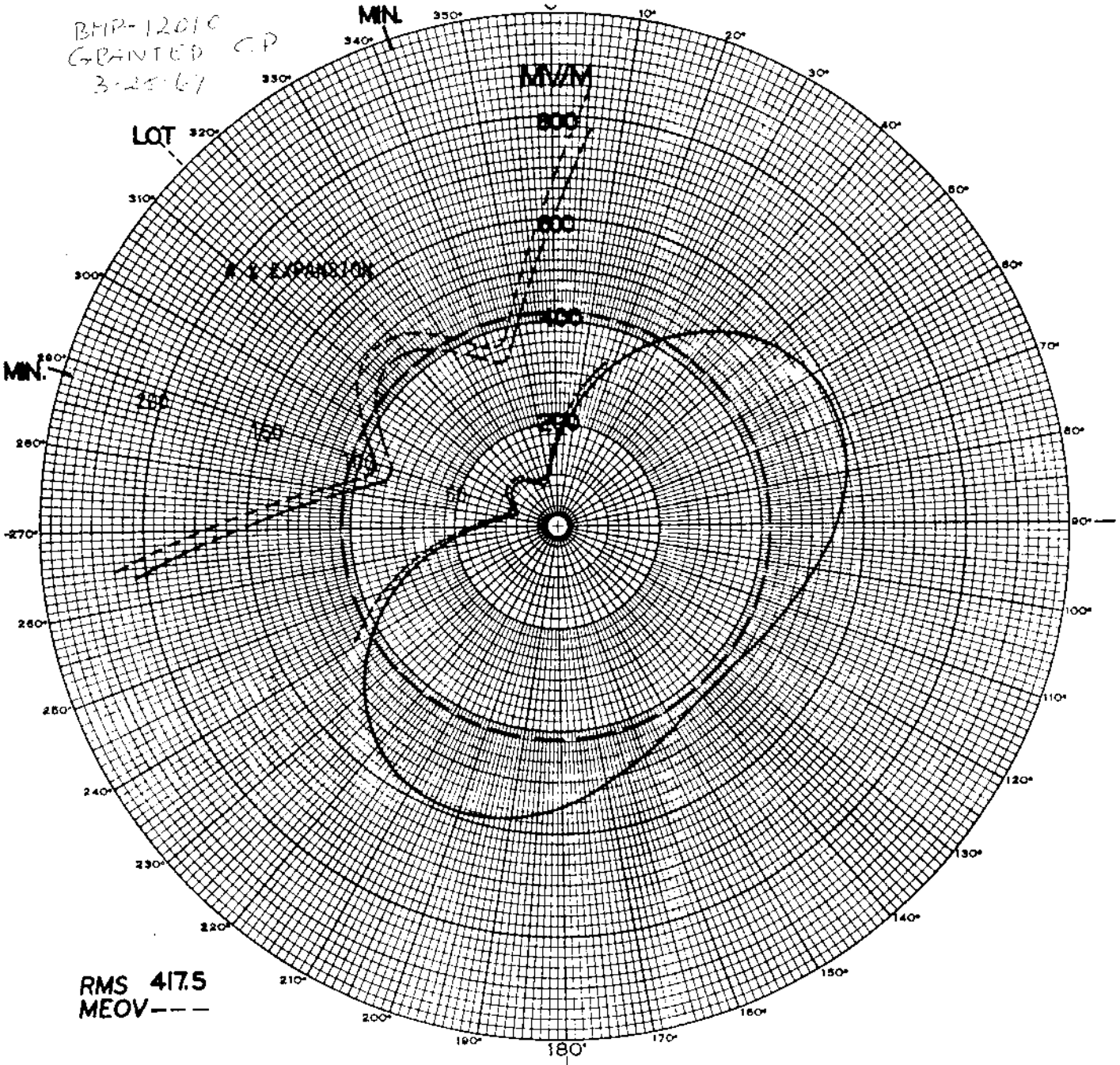
WVSC

Proposed Day
(3-29-67ct)

Station WVSC
Somerset, Pennsylvania

5kw, DA-D, D
990 kc

BMP-12010
GRANTED CP
3-20-67



TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 3	STATION DATA
315°T 2 o 0.75/55° N 140° 1 o 1/0° G's = 90°	TOWER No. / ELECTRICAL HEIGHT θ° / SPACING d° / PHASING ψ° / FIELD RATIO I 1 2 3 4 5 6 7 8 9 10 DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐	PROPOSED DAYTIME DIRECTIONAL PATTERN 12 - 1964 θ° 0	CALL WVSC FREQ 990 kc/s POWER 5 Kw TYPE DA TIME DAY LAT. 40° 01' 30.9" LONG. 79° 05' 42" E.H.MUNN, JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No. BMP-12010
Accepted 3-20-67

Station WVSC
Somerset, Pennsylvania

990 kc

WVSC

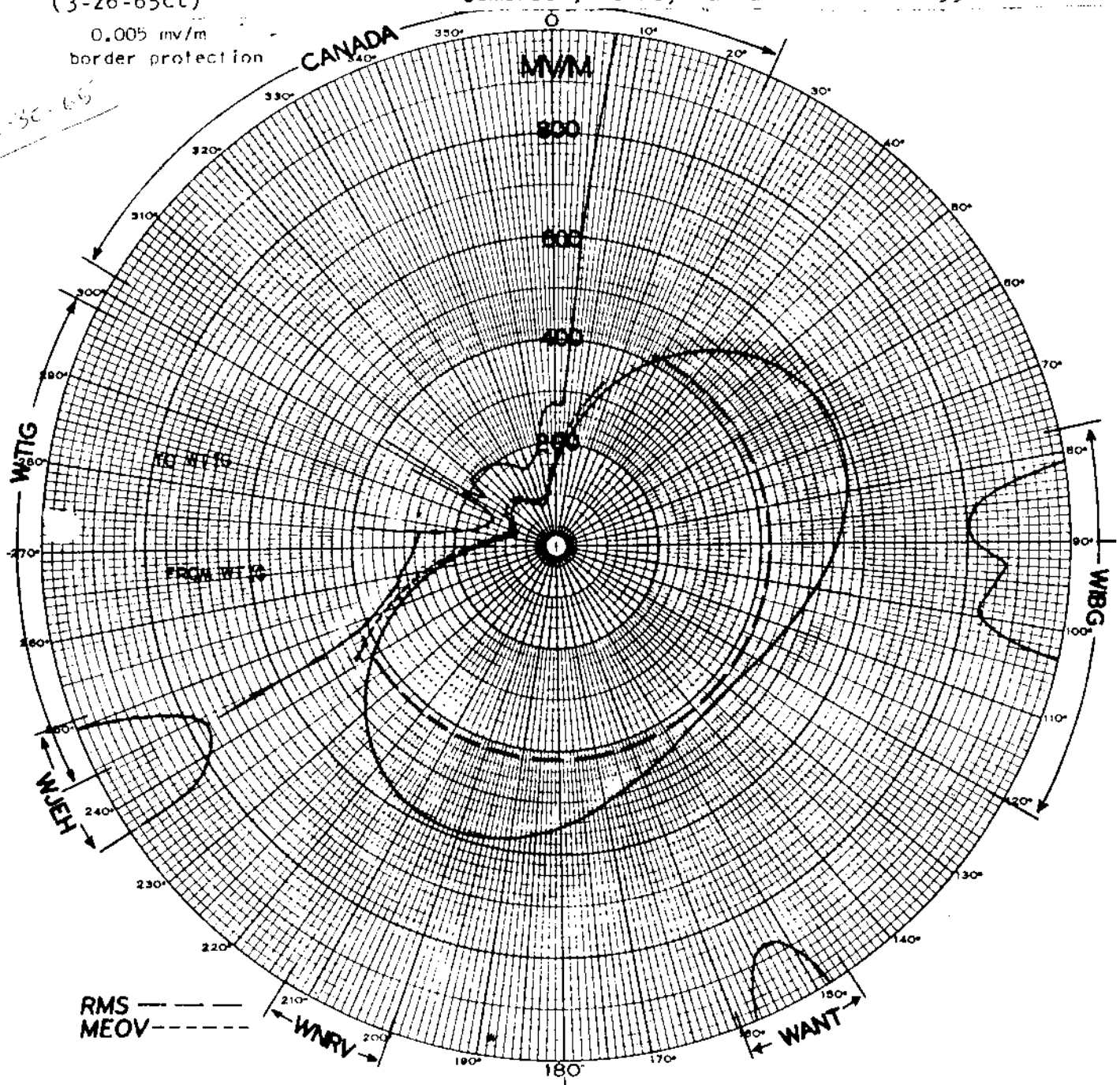
Proposed Day Null
(3-26-65ct)

0.005 mv/m
border protection

Station WVSC
Somerset, Pennsylvania

5kw, DA-D, D
990 kc

CP 11-SC-65



TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 3-A	STATION DATA
	TOWER No. / ELECTRICAL HEIGHT θ° / SPACING S° / PHASING ψ° / FIELD RATIO f 1 2 3 4 5 6 7 8 9 10 DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☐	PROPOSED PATTERN SHOWING PROTECTION REQUIREMENTS IN DETAIL VERSUS THE PROPOSED FIELDS θ°	CALL FREQ POWER TYPE TIME LAT. LONG. E.H.MUNN, JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No. BP-16510
Accepted 3-12-65

Station WVSC
Somerset, Pennsylvania

990 kc

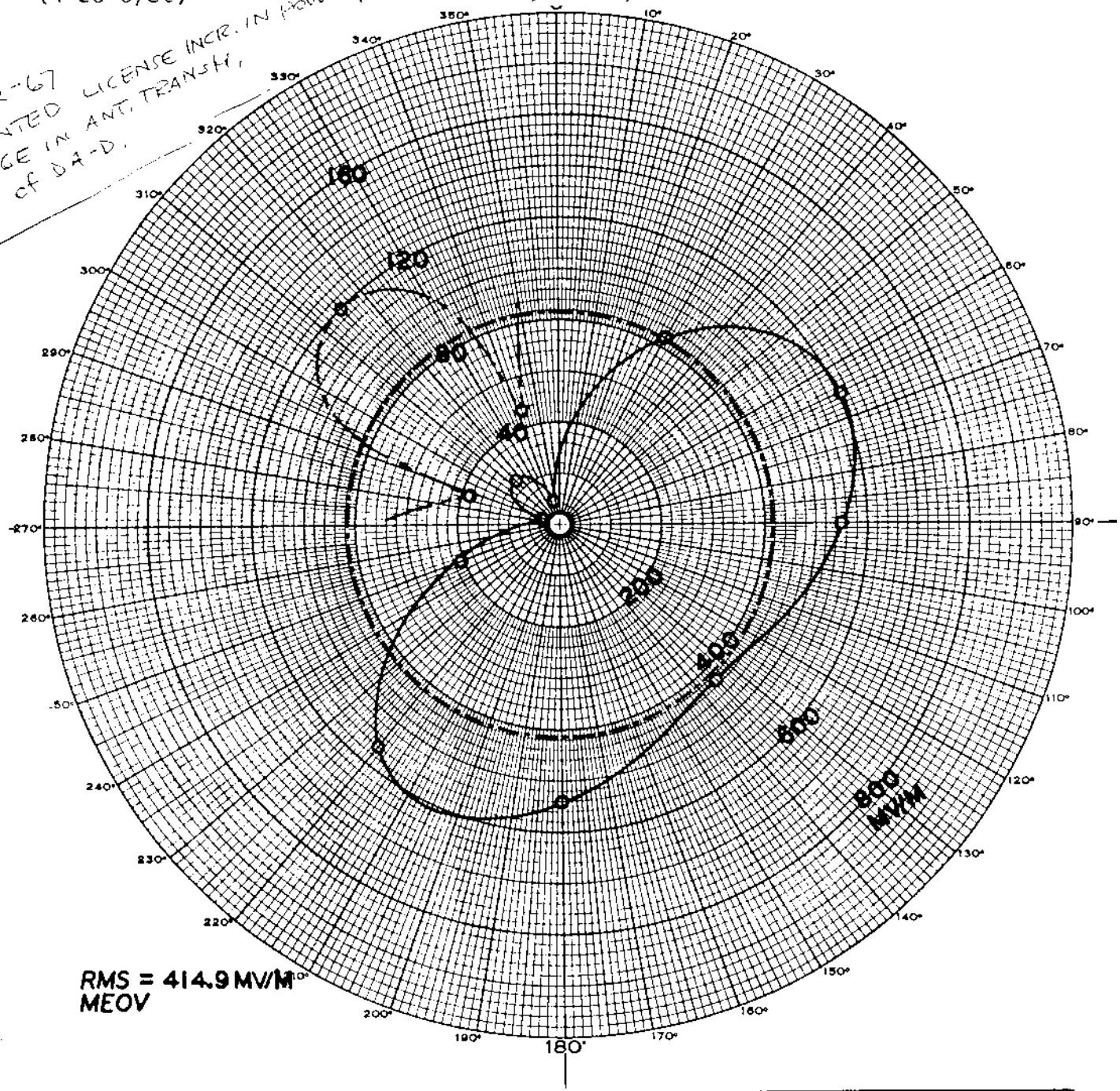
WVSC

Measured Day
(4-28-67ct)

Station WVSC
Somerset, Pennsylvania

5kw, DA-D, D
990 kc

2-12-67
-GRANTED LICENSE INCR. IN POWER,
-CHANGE IN ANT. TRANSM.
LOC. of DA-D.



RMS = 414.9 MV/M
MEOV

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 6	STATION DATA
315°T 2 ● 1 ∠55° 140° ● 0.761 ∠0° 1 G's = 90°	TOWER No. / ELECTRICAL HEIGHT G° / SPACING S° / PHASING ψ° / FIELD RATIO F 1 2 3 4 5 6 7 8 9 10 DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐	MEASURED DIRECTIONAL PATTERN JANUARY - 1967 θ° = 0°	CALL WVSC FREQ 990 KHz. POWER 5 Kw TYPE DA-D TIME Daytime LAT. 40-01-30.9 LONG. 79-05-42 E.H.MUNN, JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No.BL-11602
Accepted 4-19-67

Station WVSC
Somerset, Pennsylvania

990 kc

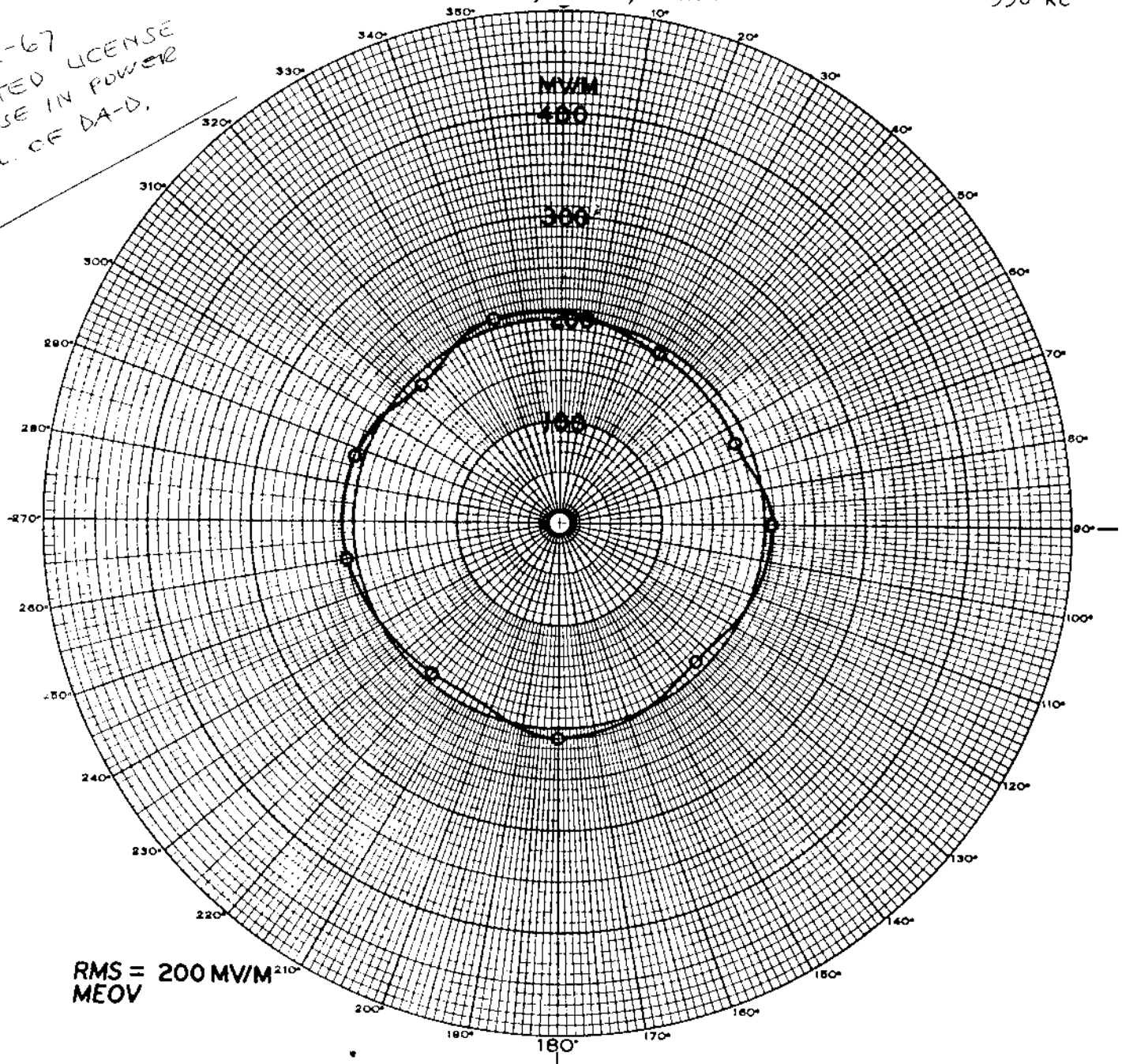
WVSC

Measured Non-DA
(4-28-67ct)

Station WVSC
Somerset, Pennsylvania

5kw, DA-D, D
990 kc

12-12-67
GRANTED LICENSE
INCREASE IN POWER
INSTALL. OF DA-D.



RMS = 200 MV/M
MEOV

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 5	STATION DATA
315°T 2 NU 140° NDA 1 G's = 90°	TOWER No. / ELECTRICAL HEIGHT / SPACING / PHASING / FIELD RATIO 1 2 3 4 5 6 7 8 9 10 DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☐	MEASURED NON-DIRECTIONAL PATTERN JANUARY - 1967 θ°	CALL WVSC FREQ 990 KHz. POWER 1 Kw TYPE DA-D TIME Daytime LAT. 40-01-30.9 LONG. 79-05-42 E.H.MUNN, JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No. BL-11602
Accepted 4-19-67

Station WVSC
Somerset, Pennsylvania

990 kc

XE1

DESCRIPTION SHEET (1-10-58g) — Station XET 50kw, DA-N, Class II — Monterrey, Nuevo Leon, Mexico 990 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XET — Main Studio: Monterrey, Nuevo Leon

Frequency: 990 Kc. — Power: 50 kw

Notification List No. 205 — Date: Dec. 14, 1957 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 25° 43' 57.8"

West Longitude: 100° 14' 44.5"

ANTENNA CHARACTERISTICS

Authorized for Nighttime operation (DA-N)
Number of elements: 3
Type of elements: Series-excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	South (#2)	Center(#1)	North (#3)
HEIGHT ABOVE INSULATORS:	111.96°	111.96°	111.96°
PHASING:	-115°	0°	-235°
FIELD RATIO:	0.52631	1.0	0.52631

SPACING AND ORIENTATION: Elements # 1 and #2 are spaced 75.66° on a line bearing 174°24' true. Elements # 1 and # 3 are spaced 75.66° on a line bearing 9°36" true.

Ground System: 180 equally spaced copper radials 90° to 111° in length about each tower. Radials are shortened and bonded along intersections between towers.

Predicted effective Field: 1237 mv/m at rated power.

- -

Note: In a letter dated Nov. 14, 1957 the Mexican Administration calls attention to the fact that the phasing of the South tower should be —115° rather than -135° as shown on the description sheet and diagrams.

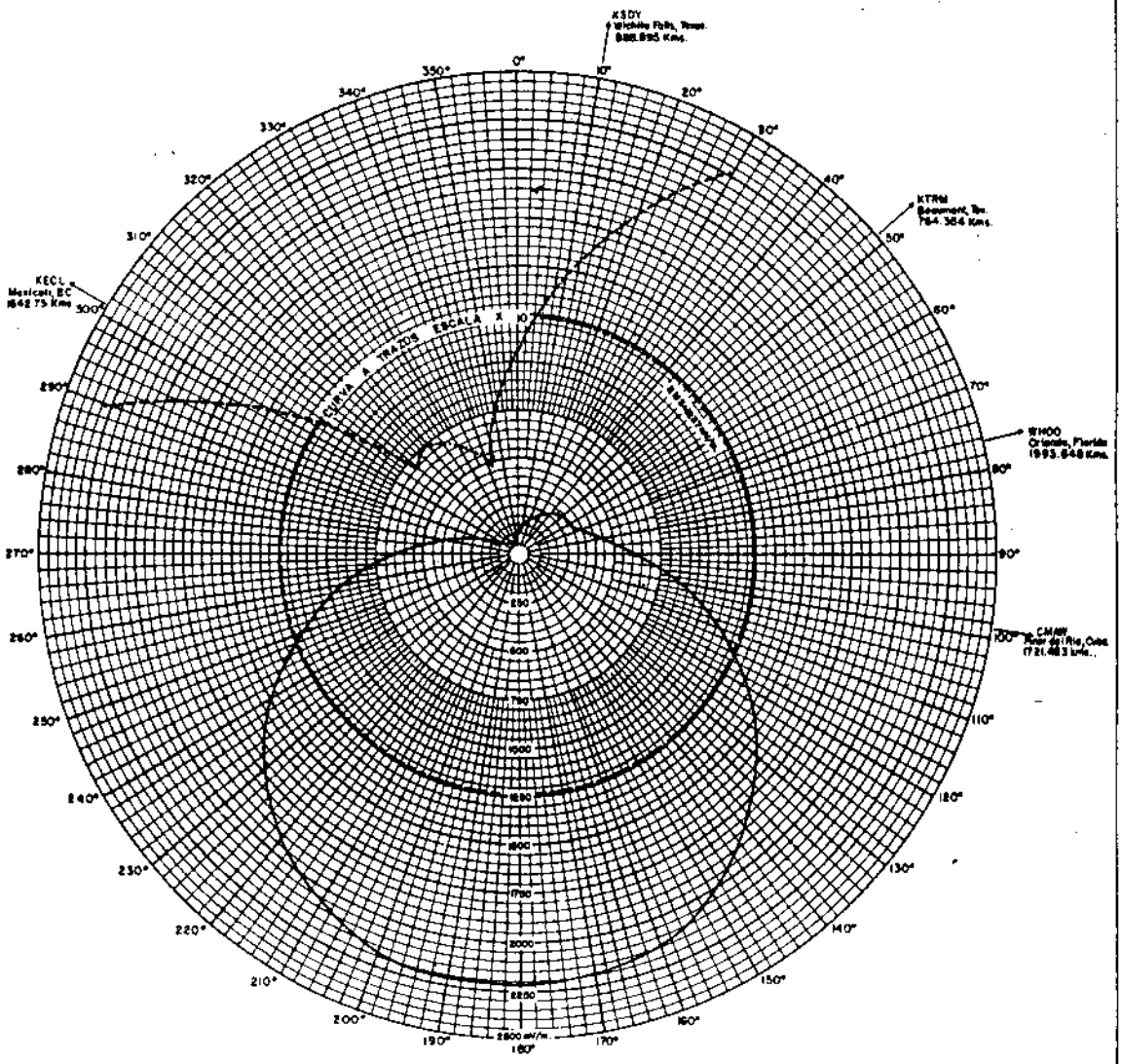
XET

PROPOSED NIGHT (1-10-58g)

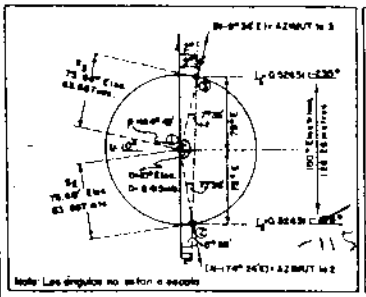
Station XET
Monterrey, Neuvo Leon, Mexico

50kw, DA-N, Class II
990 KC

XET Hoja 3



PATRON DE RADIACION HORIZONTAL CALCULADO EN mv/M A 1609 MTS.



EL PREGONERO DEL NORTE

X E T

Monterrey, N. L.

México

990 KHz.

50,000 Watts.

DISEÑO

TOMAS GUZMAN CANTU

ING EN COMUNICACIONES ELECTRICAS.
Ced. Prof. Nº 3542 —— S.E.P. Nº 797

México, D.F. 15-Oct.-1956.

Dib. J. De la Torre.

XETG

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XETG — Main Studio: Tuxtla Gutierrez, Chis.

Frequency: 990 kHz — Power: 10 kW Night

Notification List No. ---- — Date: ----- — Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 16° 45' 20"
West Longitude: 93° 06' 46"

ANTENNA CHARACTERISTICS

Authorized for Nighttime operation. (DA-N)
Number of elements: 2
Type of elements: Series-excited, uniform cross-section, guyed vertical steel towers.

TOWER:	S(#1)	N(#2)
HEIGHT ABOVE INSULATORS:	331'	331' (120°)
NIGHT PHASING:	0°	+120°
NIGHT FIELD RATIO:	1	1

SPACING AND ORIENTATION: Elements are spaced 207.3' (75°) on a line bearing 8° true.

GROUND SYSTEM: 120-249' equally spaced copper radials about each tower.

Predicted effective Night Field: 640.823 mv/m at rated power.

CTR NO 20424A3

DESCRIPCION DEL SISTEMA DIRECCIONAL DE XETG RADIACION

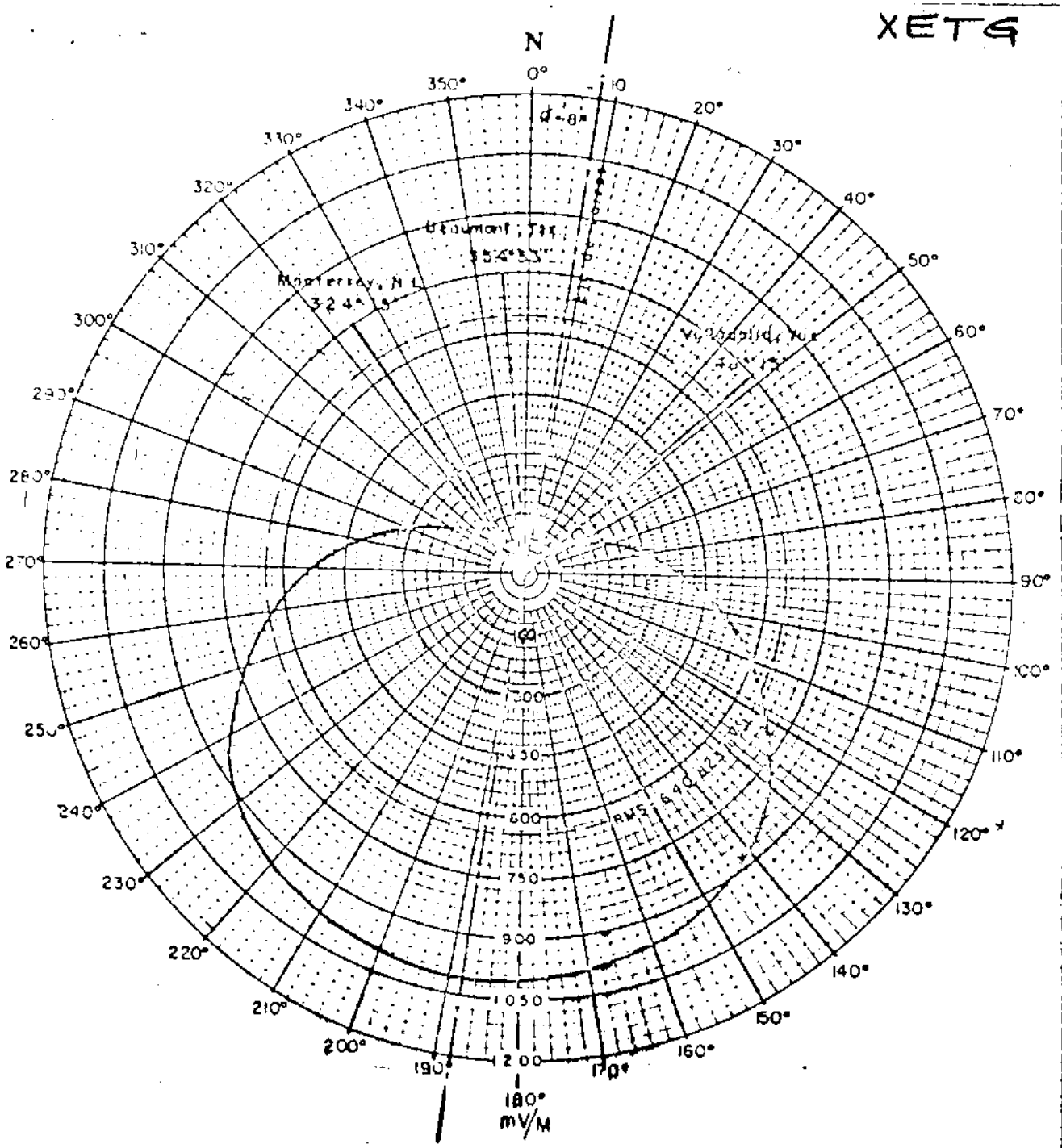
OPERACION NOCTURNA

ESTACION	X E T G
FRECUENCIA	990 KHz.
CLASE	II
LOCALIZACION GEOGRAFICA DEL SISTEMA RADIADOR	ESTUDIOS EN: Tuxtla Gutierrez, Chis POTENCIA: DE NOCHE 10 KW. LONGITUD W 93° 06' 46" LATITUD N. 16° 45' 20"
AUTORIZADO PARA OPERACION.	A D N
NUMERO DE ELEMENTOS RADIADORE	DOS.
TIPO DE ELEMENTOS RADIADORES	TORRES VERTICALES DE ACERO DE SECCION UNIFORME TRIANGULAR SOPORTADAS CON RETENIDAS ALIMENTACION TIPO SERIE

TORRES:	NORTE (2)	SUR (1)
ALTURA SOBRE LOS AISLADORES	101.00 M 120° E	101.00 M 120° E
SEPARACION ENTRE TORRES	63.18 M (75°)	
MAGNITUDES RELATIVAS DE CORRIENTES	I	I
DEFASAMIENTO.	|+120°	|0°

AZIMUT DEL EJE DE LAS TORRES.	MOSTRADO EN EL LOBULO HORIZONTAL 8° 00' 00"
RAIZ CUADRATICA MEDIA TEORICA.	640.823 m V/M
INTENSIDAD DE CAMPO R. C. M. NO ATENUADO A UNA MILLA (1609 M) POR KW DE POTENCIA RADIADA	202.664 m V/M

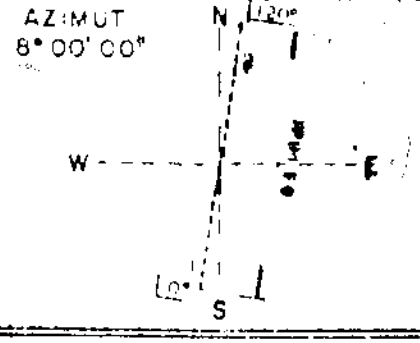
XETG



PATRON DE RADIACION HORIZONTAL CALCULADO EN mV/M A 1609 Mts.

ESQUEMA DE LAS TORRES Y SU ORIENTACION CON RESPECTO AL NORTE ASTRONOMICO

AZIMUT
8° 00' 00"



RADIODIFUSORA

X E T G

TUXTLA GUTIERREZ, CHIS.

990 KHz.

Nocturna 10 KW

DISEÑO
ING FILIBERTO SOLIS

DIBUJO
Tere Robles A

XETG

PATRON DE RADIACION HORIZONTAL TABULADO

OPERACION NOCTURNA

XETG

- 990 KHz.

Noche 10 KWatts.

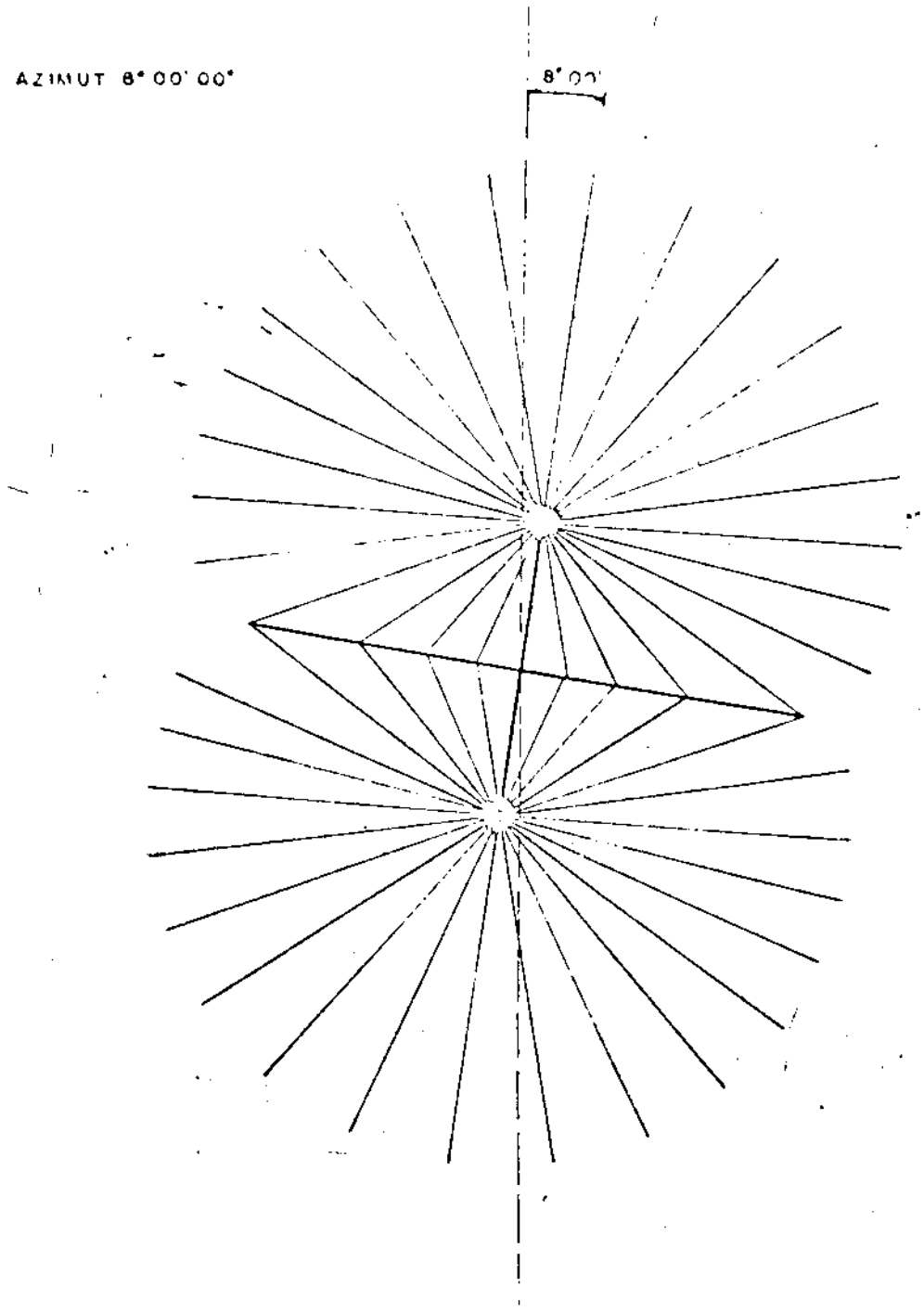
Tuxtla Gutierrez, Chis.

formula:

$$E_h = 767.682\sqrt{1+\cos(75^\circ \cos\phi + 120^\circ)}$$

AZIMUT		A	B	C	D	F	G	Eh
ø N	ø	cos ø	75 cos ø	B + 120	cos C	1 + D	√F	767.682 G
8°	0°	1.00000	75.0000	195.0000	-0.9659	.0341	.1847	141.7909
18°	10°	.98481	73.8607	193.8607	-0.9710	.0290	.1704	130.8130
28°	20°	.93969	70.4767	190.4767	-0.9833	.0167	.1293	99.2613
38°	30°	.86603	64.9522	184.9522	-0.9922	.0038	.0616	47.2892
48°	40°	.76604	57.4530	177.4530	-0.9990	.0010	.0316	24.2587
58°	50°	.64279	48.2092	168.2092	-0.9787	.0213	.1460	112.0816
68°	60°	.50000	37.5000	157.5000	-0.9239	.0761	.2759	211.8035
78°	70°	.34202	25.6515	145.6515	-0.8258	.1742	.4174	320.4305
88°	80°	.17365	13.0237	133.0237	-0.6820	.3180	.5640	432.9726
98°	90°	0	0	120.0000	-0.5000	.5000	.7071	542.8279
108°	100°	-.17365	-13.0237	106.9763	-0.2924	.7076	.8412	645.7741
118°	110°	-.34202	-25.6515	94.3485	-0.0756	.9244	.9615	738.1262
128°	120°	-.50000	-37.5000	82.5000	+0.1305	1.1305	1.0633	816.2763
138°	130°	-.64279	-48.2092	71.7908	+0.3118	1.3118	1.1453	879.2262
148°	140°	-.76604	-57.4530	62.5470	+0.4617	1.4617	1.2090	928.1275
158°	150°	-.86603	-64.9522	55.0478	+0.5736	1.5736	1.2545	963.0571
168°	160°	-.93969	-70.4767	49.5233	+0.6494	1.6494	1.2843	985.9339
178°	170°	-.98481	-73.8607	46.1393	+0.6926	1.6926	1.3010	998.7543
188°	180°	-1.00000	-75.0000	45.0000	+0.7071	1.7071	1.3066	1003.0533

XETG



SISTEMA DE TIERRA

LOS RADIALES SON DE ALAMBRE DE COBRE AWG N°10 120 EN CADA TORRE CON LONGITUD DE 76.00 METROS LOS MAYORES. EL RESTO DE LOS RADIALES DE ACUERDO AL PLANO

TODO EL SISTEMA ESTA ENTERRADO A 0.30 METROS SEPARACION ENTRE TORRES 63.18 METROS

RADIODIFUSORA

XETG

Tuxtla Gutierrez, Chis.

CONCESIONARIO

FECHA Mexico, D.F Mayo de 1974

POTENCIA

990 KHz.

Nocturna 10 Kw.

DISEÑO

ING. FILIBERTO SOLIS

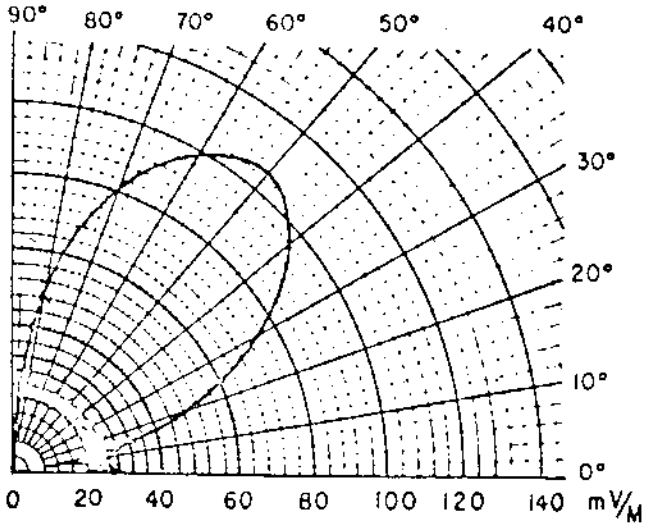
DIBUJO

Tere Robles A

XETG

INTENSIDAD DEL CAMPO EN EL PLANO VERTICAL

$$Ev = 767.682\ f(\theta)\ \sqrt{1+\cos(75\cos\theta \times 0.7632 + 120°)}$$



VALLADOLID, YUC.

040° 15' Azimut 48° 15' Angulo θ = 13° 30'

Distancia 650Km.

Valores Tabulados

θ	E mV/M
0°	25.4870
10°	10.5172
20°	52.0488
30°	75.9237
40°	96.1905
50°	105.7866
60°	98.8007
70°	82.3723
80°	49.2852
90°	0.0000

PATRON DE RADIACION EN EL PLANO VERTICAL

RADIODIFUSORA

X E T G

TUXTLA GUTIERREZ, CHIS.

990 KHz.
NOCTURNA 10 Kw.

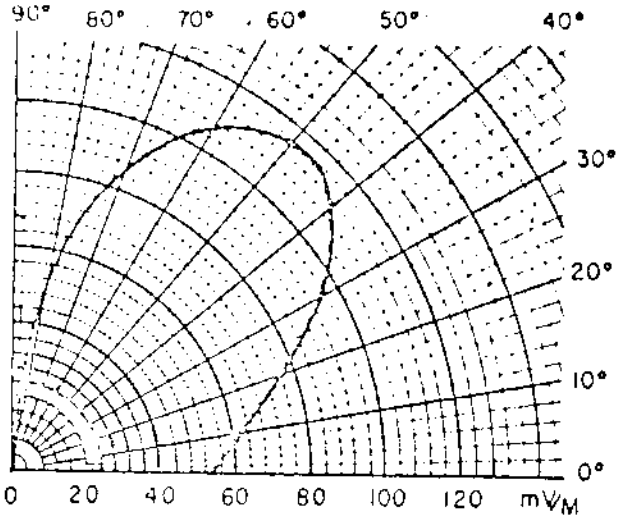
DISEÑO. ING FILIBRTO SOLIS

DIBUJO Tere Robles A

XETG

INTENSIDAD DEL CAMPO EN EL PLANO VERTICAL

$$E_v = 767.682\, f(\theta) \sqrt{1 + \cos(75 \cos\theta \times 0.7224 + 120^\circ)}$$



MONTERREY, N. L.

Ø = 43° 45' Azimut 324° 15' Angulo θ = 6° 15'

Distancia 1180 Km.

Valores Tabulados

θ	E mV/M
0°	55.3499
10°	61.4913
20°	76.6914
30°	95.3461
40°	110.0088
50°	114.7684
60°	106.7078
70°	84.8289
80°	49.8226
90°	0.0000

PATRON DE RADIACION EN EL PLANO VERTICAL

RADIODIFUSORA

X E T G

TUXTLA GUTIERREZ, CHIS.

990 K H z.

NOCTURNA 10 Kw

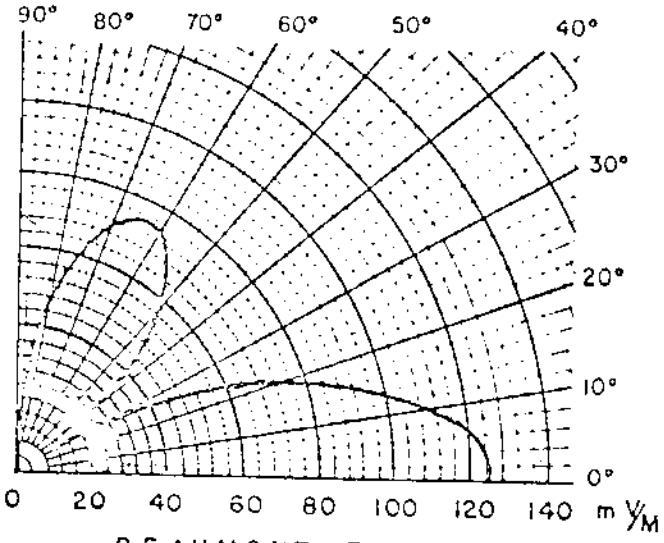
DISEÑO: ING. FILIBERTO SOLIS

DIBUJO: Tere Robles A.

XETG

INTENSIDAD DEL CAMPO EN EL PLANO VERTICAL

$$E_v = 767.682\, f(\theta) \sqrt{1+\cos(75 \cos\theta \times 0.9742 + 120°)}$$



BEAUMONT, TEX.

Ø = 13°07' Azimut 354°53' Angulo θ = 4° 15'

Distancia 1450 Km.

Valores Tabulados

θ	E mV/M
0°	123.6736
10°	108.8573
20°	73.0065
30°	23.6446
40°	23.6444
50°	59.6489
60°	76.9217
70°	71.9318
80°	46.8686
90°	0.0000

PATRON DE RADIACION EN EL PLANO VERTICAL

RADIODIFUSORA

X E T G

TUXTLA GUTIERREZ, CHIS.

990 KHz.
NOCTURNA 10 Kw.

DISEÑO: ING. FILIBERTO SOLIS

DIBUJO: Tere Robles A.

CHLP

IFRB Serial No. 1000 12185

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

CHARACTERISTICS OF A REGION 2 BROADCASTING STATION IN THE BAND 535 - 1605 kHz

PART I GENERAL INFORMATION

(01) Administration: CANADA | Sheet No.: 420 | Date: 830705

Assigned frequency (kHz)		(02)	1000
Transmitting station	Name of the station	(03)	RIMOUSKI QW
	Call sign	(04)	CFLP
	Additional identification	(05)	
	Station class	(06)	B
	Operational Status	(07)	O
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	68 W 41 12 48 N 23 07

(11) a) New assignment [ ] b) Modification of characteristic of an assignment recorded in the plan [X] c) Cancellation of an assignment [ ]

(12) Modification under Section 4.2.14 Yes [X] No [ ]

(13) Date of bringing into service or cessation of operation [ ] [ ] [ ] Year Month Day

STATION PARAMETERS		DAYTIME OPERATION		NIGHT-TIME OPERATION
Station power (kW)	(21)		(31)	10
r.m.s. value of radiation for station power (mV/m at 1km)	(25)		(35)	1037.8
Antenna type	(26)		(36)	B
Simple vertical antenna electrical height (degrees)	(27)		(37)	

(44) Remarks

COORDINATION UNDER ARTICLE 4:									
COUNTRY	USA								
IN PROGRESS									
ACCEPTANCE OBTAINED									

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT
CHARACTERISTICS OF A REGION 2 BROADCASTING STATION IN THE BAND 535 - 1605 kHz

IFRB Serial No. 2185

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No. 420

Date 830705

(01) Name of transmitting station: RIMOUSKI QU

(02) Country: CAN

(03) Hours of operation: N

(04) Total number of towers: 4

(05) Tower No.	(06) Tower field ratio	(07) Phase difference of the field (± degrees)	(08) Electrical tower spacing (degrees)	(09) Angular tower orientation (degrees)	(10) Reference tower indicator	(11) Electrical height of tower (degrees)	(12) Tower structure
1	1.	0.	0.	0.		90.	
2	2.853	250.2	90.	30.		90.	
3	2.853	139.8	180.	30.		90.	
4	1.	30.	270.	30.		90.	

(14) r.m.s value of radiation: 1037.8 mV/m at 1 km

(15) Type of pattern: M

(16) Special quadrature factor: 15. mV/m at 1 km

(17) SUPPLEMENTARY INFORMATION

CFLP 1000

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT
CHARACTERISTICS OF A REGION 2 BROADCASTING STATION IN THE BAND 535 -1605 kHz

I.F.R.B. Serial No. 12185

PART III

Description of the parameters of directional antenna systems with expanded and augmented (modified expanded) patterns, to be submitted whenever the symbol M is entered in Part II Section I Box 15

(01) RIMOUSKI QU — Name of transmitting station

(02) CAN — Country

420 — Sheet No.

(03) N — Hours of operation

(04) 1 — Total number of augmentations

(05) Augmentation number	(06) Radiation at central azimuth of augmentation (m V/m at 1 km)	(07) Central azimuth of augmentation (degrees)	(08) Total span of augmentation (degrees)
01	70.8	155	34
02			
03			
04			
05			
06			
07			
08			
09			
10			
11			
12			

(Use a supplementary sheet in cases where there are more than 12 augmentations)

(09) SUPPLEMENTARY INFORMATION

CHLP 1000

CFLP
1000KHz

SUPPLEMENTAL DIRECTIONAL

ANTENNA DESCRIPTION SHEET

Station:	CFLP	Location:	Rimouski, Quebec
Frequency:	1000 kHz	Power:	10 kW, Class II
Notification List No.:	405	Date:	June 12, 1981
		Mode of operation:	DA-2

Geographical Location of
the Centre of the Antenna System:

North Latitude: 48° 23' 07"

West Longitude: 68° 41' 12"

Night-time directional antenna pattern augmentation

Centre: 155°

Span: 34° (138° - 172°)

Value at centre: 44 mV/m

Note: Please retain the description sheet and day-time directional antenna radiation patterns notified for station CFLP in Canadian Change List Number 405 dated June 12, 1981 and attach this supplemental description sheet and night-time radiation pattern. This notification is for the purpose of indicating a pattern augmentation.

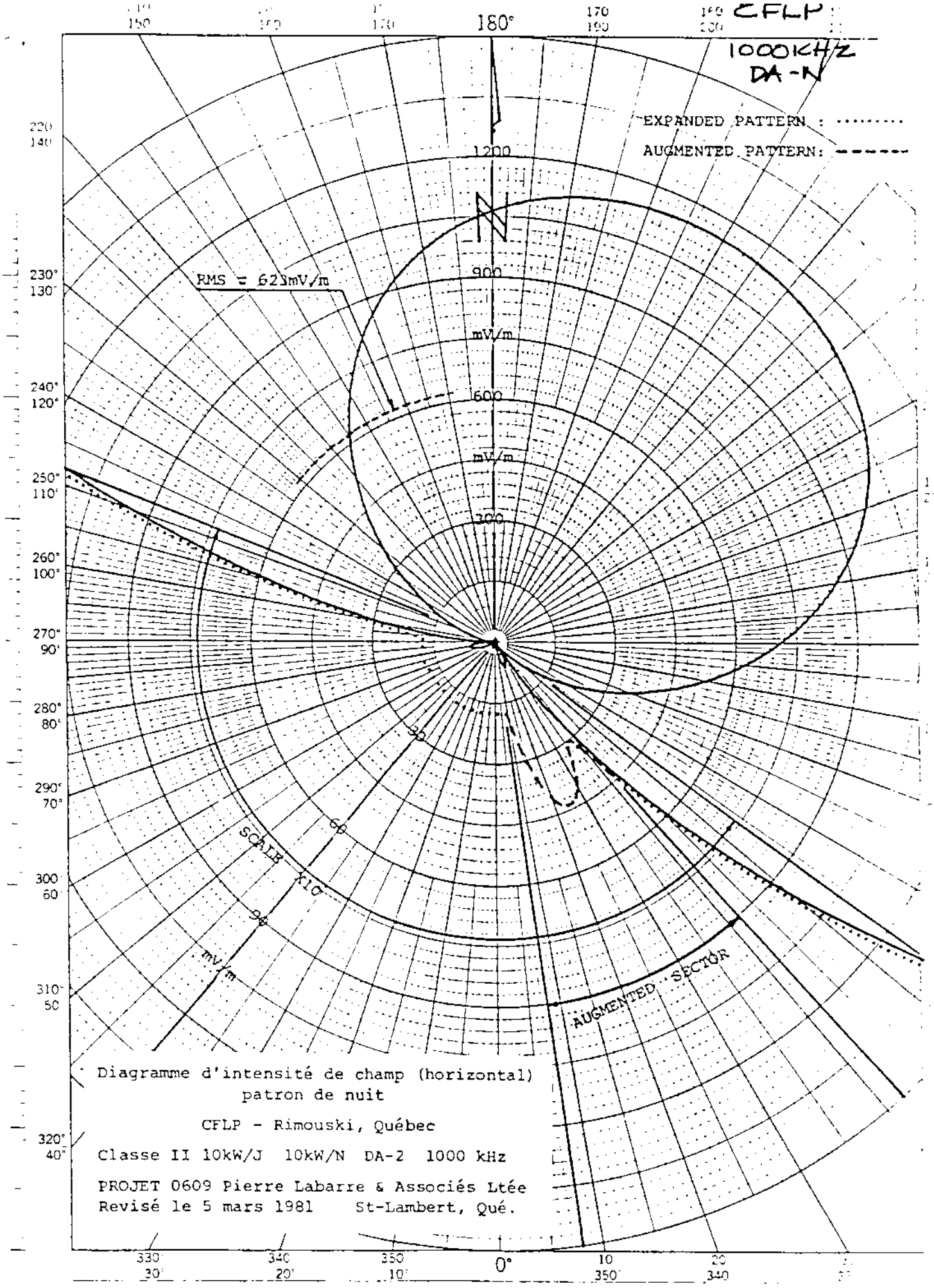


Diagramme d'intensité de champ (horizontal)
patron de nuit

CFLP - Rimouski, Québec

Classe II 10kW/J 10kW/N DA-2 1000 kHz

PROJET 0609 Pierre Labarre & Associés Ltée
Revisé le 5 mars 1981 St-Lambert, Qué.

46 4410

CFLP

DIRECTIONAL ANTENNA DESCRIPTION SHEET

STATION	: New	MAIN STUDIO:	Rimouski, Que.
POWER	: 10 kw	FREQUENCY	: 1000 KHz, Class II
NOTIFICATION LIST NO.:	372	DATE	: April 4, 1978
GEOGRAPHICAL LOCATION:	North Latitude: 48° 23' 07"		
	West Longitude: 68° 41' 12"		

ANTENNA CHARACTERISTICS

MODE OF OPERATION	:	DA-2
NUMBER OF ELEMENTS	:	4 nighttime, 2 daytime
TYPE OF ELEMENTS	:	Four elements, uniform cross-section guyed steel tower, base insulated for series feed, no top loading.

TOWERS		No. 1	No. 2	No. 3	No. 4
HEIGHT ABOVE INSULATORS:		246' (90°)	246'	246'	246'
OVERALL HEIGHT	:	252'	252'	252'	252'
FIELD RATIOS	Night:	1.0	2.853	2.853	1.0
	Day:	-	1.0	0.7	-
PHASING	Night:	0	250.2	139.8	30
	Day:	-	0	-135	-
SPACING	Night:	Ref.	246' (90°)	492' (180°)	738' (270°)
	Day:	-	Ref.	246' (90°)	-
ORIENTATION	Night:	Ref.	030	030	030
	Day:	-	Ref.	030	-

GROUND SYSTEM : 120 equiangularly spaced radials extend from the base of each tower to a maximum distance of 393 ft. (0.4 wavelength) and bonded along the common chord. Ground wires are No. 10 B & S soft drawn copper wire, buried 8" in the ground.

PREDICTED UNATTENUATED EFFECTIVE FIELD :
- Daytime 627 mV/m at 1 mile for 10 kw (198 mV/m @ 1 mile for 1 kw)
- Nighttime 645 mV/m at 1 mile for 10 kw (204 mV/m @ 1 mile for 1 kw)

PIERRE LABARRE & ASSOCIATES LTD.
St. Lambert, Que.
(Project 601)

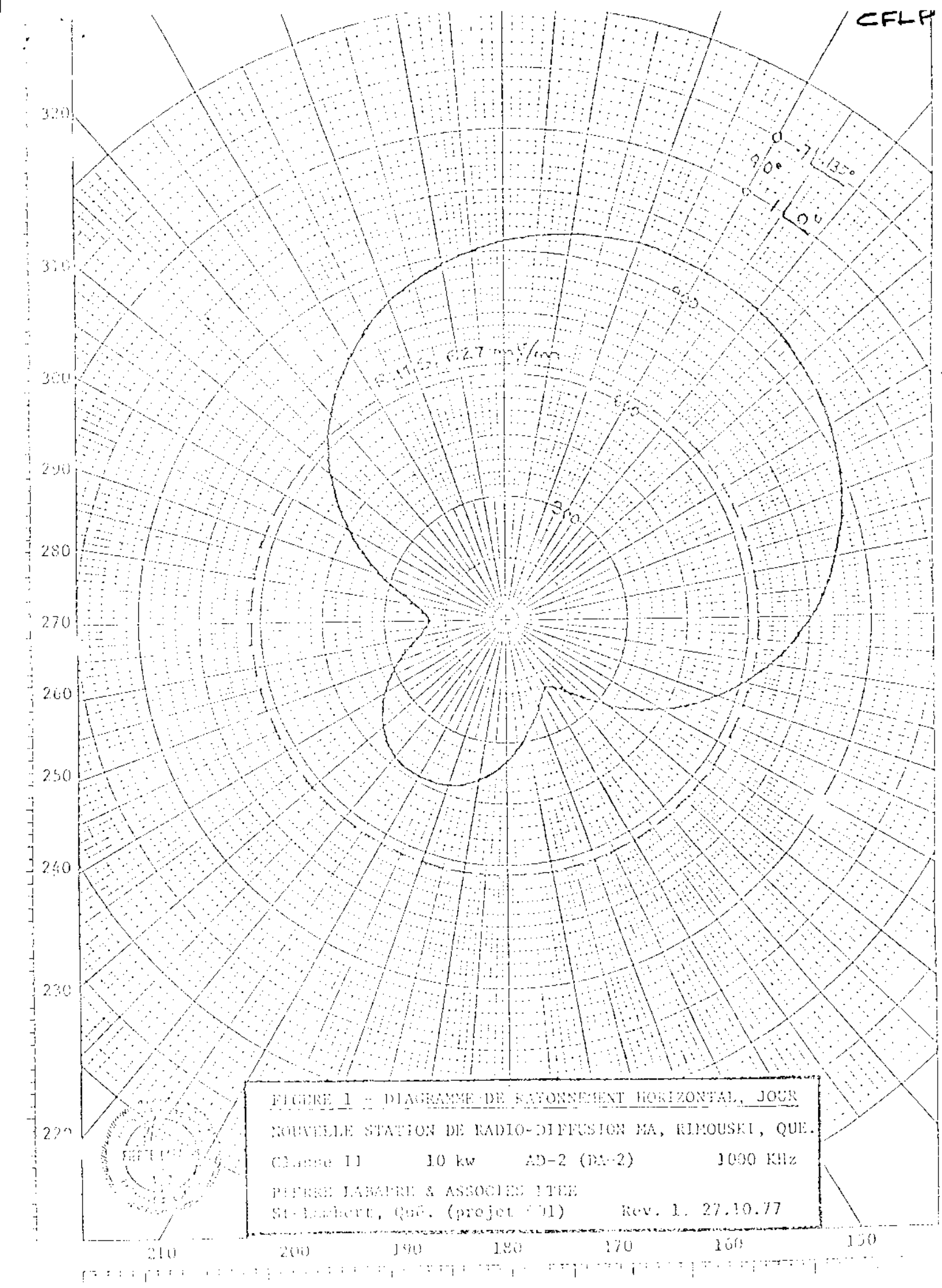


FIGURE 1 - DIAGRAMME DE RAYONNEMENT HORIZONTAL, JOUR

NOUVELLE STATION DE RADIO-DIFFUSION MA, RIMOUSKI, QUE.

Classe II 10 kw AD-2 (DA-2) 1000 KHz

PIERRE LABAPRE & ASSOCIES LTEE

St-Lambert, Qué. (projet 701) Rev. 1. 27.10.77

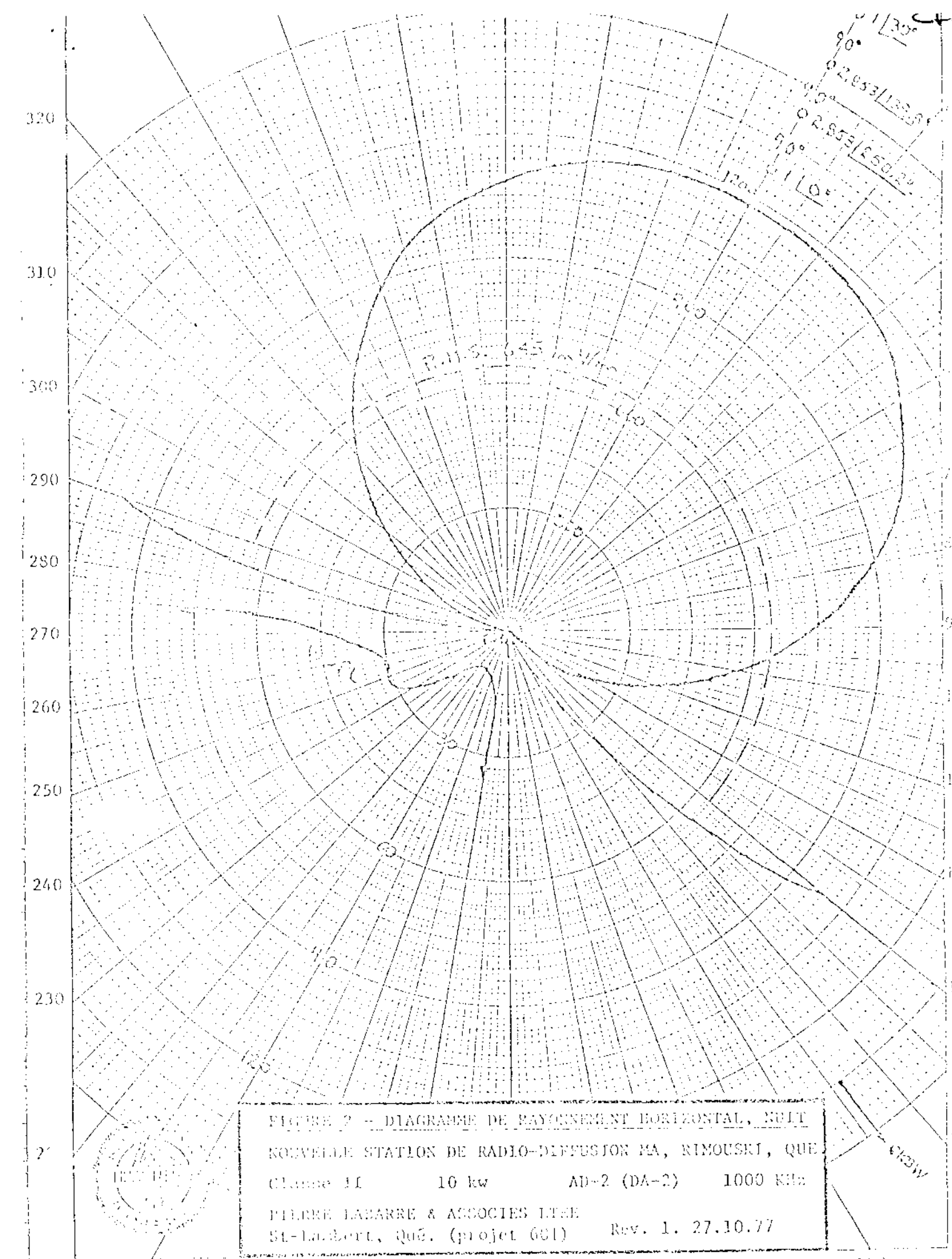


FIGURE 2 -- DIAGRAMME DE RAYONNEMENT HORIZONTAL, NUIT

NOUVELLE STATION DE RADIO-DIFFUSION MA, RIMOUSKI, QUE.

Classe II 10 kw AD-2 (DA-2) 1000 KHz

PIERRE LAZARRE & ASSOCIES LTEE
St-Lambert, Qué. (projet 681) Rev. 1. 27.10.77

CFLP

FIGURE 3 - DETAILS DE RAYONNEMENT SUR PLANS CONIQUES

NOUVELLE STATION DE RADIO-DIFFUSION MA, RIMOUSKI, QUE.

Classe II 10 kw AD-2 (DA-2) 1000 Khz

PITRE LABARRE & ASSOCIES LTEE R.M.S. 645 mV/m

St-Lambert, Que. (projet 601) Rev. 1. 27.10.77

CFLP

FIGURE 4 - DETAILS DE RAYONNEMENT SUR PLANS CONIQUES

NOUVELLE STATION DE RADIO-DIFFUSION MA, RIMOUSKI, QUE.

Classe II 10 kw AD-2 (DA-2) 1000 KHz

POURET LAFARGE & ASSOCIES LTEE R.M.S. 645 mV/m

St-Lambert, Qué. (projet 601) Rev.) 27.10.77

CFLP

SUPPLEMENTAL DIRECTIONAL

ANTENNA DESCRIPTION SHEET

Station: CFLP

Main Studio: Rimouski, Quebec

Frequency: 1000 kHz

Power: 10 kW, Class: II

Notification List No.: 371

Date: March 8, 1978

Geographical Location of the Center of the Antenna System:

North Latitude: 48° 23' 07"
West Longitude: 68° 41' 12"

Mode of Operation: DA-2 unlimited

Note: Please retain the description sheet and directional antenna radiation patterns notified for this station in Canadian Change List Number 314 dated August 31, 1973 and attach... to this supplemental description sheet. This notification is for the purpose of indicating only a correction in the geographical co-ordinates and assignment of call letters.

CFLP

SUPPLEMENTAL DIRECTIONAL

ANTENNA DESCRIPTION SHEET

Station: CFLP

Main Studio: Rimouski, Quebec

Frequency: 1000 kHz

Power: 10 kW, Class: II

Notification List No.: 371

Date: March 8, 1978

Geographical Location of the Centre of the Antenna System:

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Mode of Operation: DA-2 unlimited

Note: Please retain the description sheet and directional antenna radiation patterns notified for this station in Canadian Change List Number 314 dated August 31, 1973 and attach... to this supplemental description sheet. This notification is for the purpose of indicating only a correction in the geographical co-ordinates and assignment of call letters.

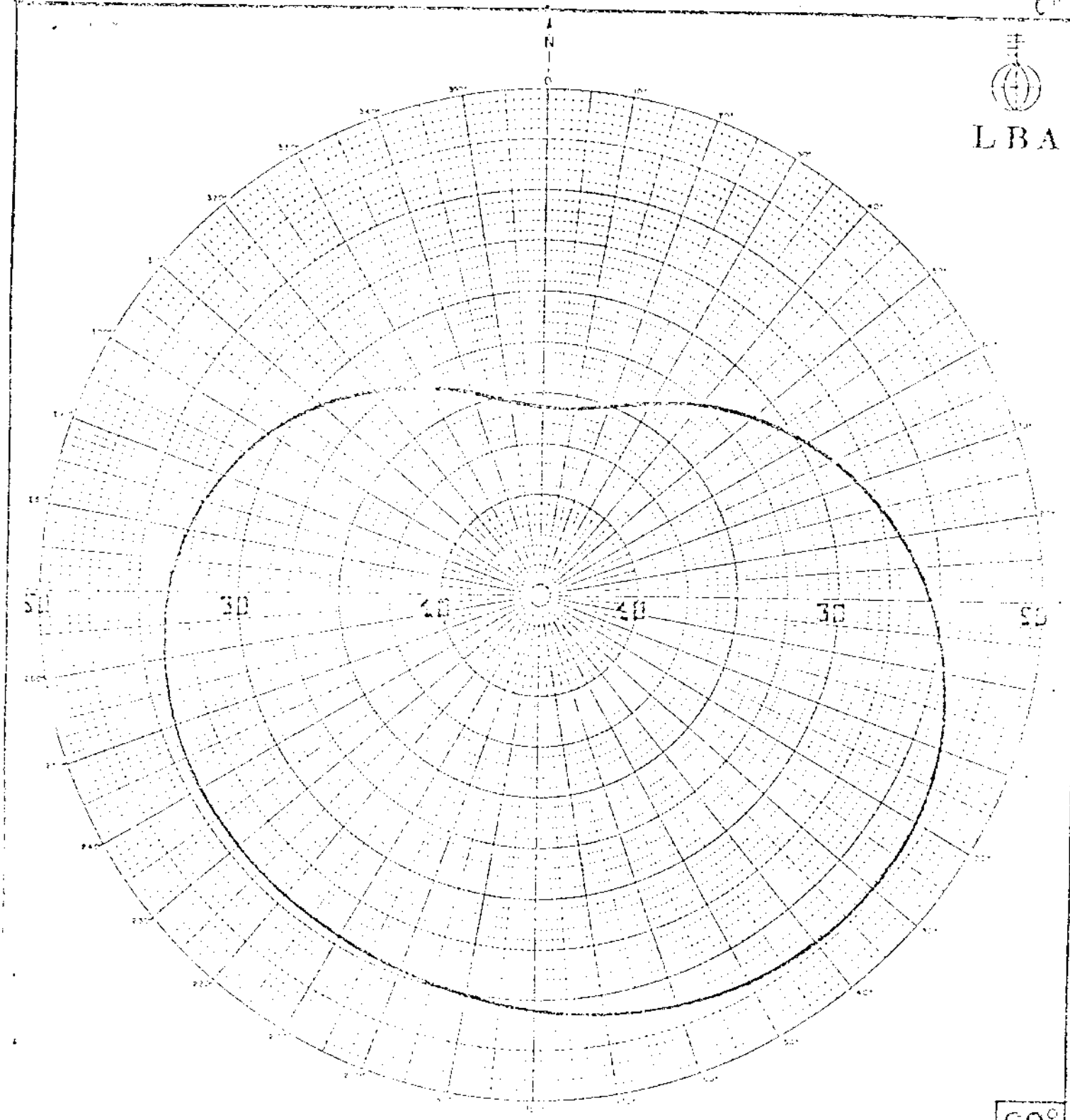


FIGURE 15M

PROPOSED VERTICAL NIGHT PATTERN

RADIO STATION WKYK
BURNSVILLE, NORTH CAROLINA

3-77

164

CKBW

Description Sheet
(11-30-61ct)

Station CKBW
Bridgewater, Nova Scotia

10kw,DA-N,U,Class II
1000 kc

DIRECTIONAL ANTENNA - DESCRIPTION SHEET

STATION: CKBW

MAIN STUDIO: BRIDGEWATER, NOVA SCOTIA

FREQUENCY: 1000 KC

POWER: 10 KW Day & Night CLASS: II

NOTIFICATION LIST NO. 164

DATE: October 30, 1961

GEOGRAPHICAL LOCATION OF ANTENNA SYSTEM:

North Latitude 44° 21' 41"

West Longitude 64° 32' 14"

ANTENNA CHARACTERISTICS

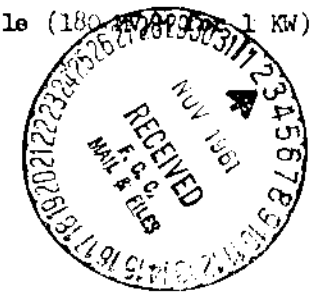
Mode of Operation: Non-directional day, directional nighttime (DA-N)
Number of element: Three (3)
Type of elements: Uniform cross section guyed steel towers, base insulated for series feed.

TOWER:	#1 (W)	#2 (C)	#3 (E)
HEIGHT ABOVE INSULATORS:	164' (60°)	164' (60°)	164' (60°)
OVERALL HEIGHT:	170'	170'	170'
SPACING:	246' (90°)	246' (90°)	
PHASING:	+100°	0°	-100
FIELD RATIO:	.51	1.0	.51

ORIENTATION: Towers in a line bearing 90° East of True North

GROUND SYSTEM: 120' equiangularly spaced radials extend from the base of each tower to a distance of 393' (.4 wavelength) with the exception of those joined along the common chord.

PREDICTED EFFECTIVE FIELD: 570 MV/M at 1 mile (180 MV/M at 1 KW)



164

CKBW

Proposed Night
(11-30-61ct)

Station CKBW
Bridgewater, Nova Scotia

10kw,DA-N,U,Class II
1000 kc

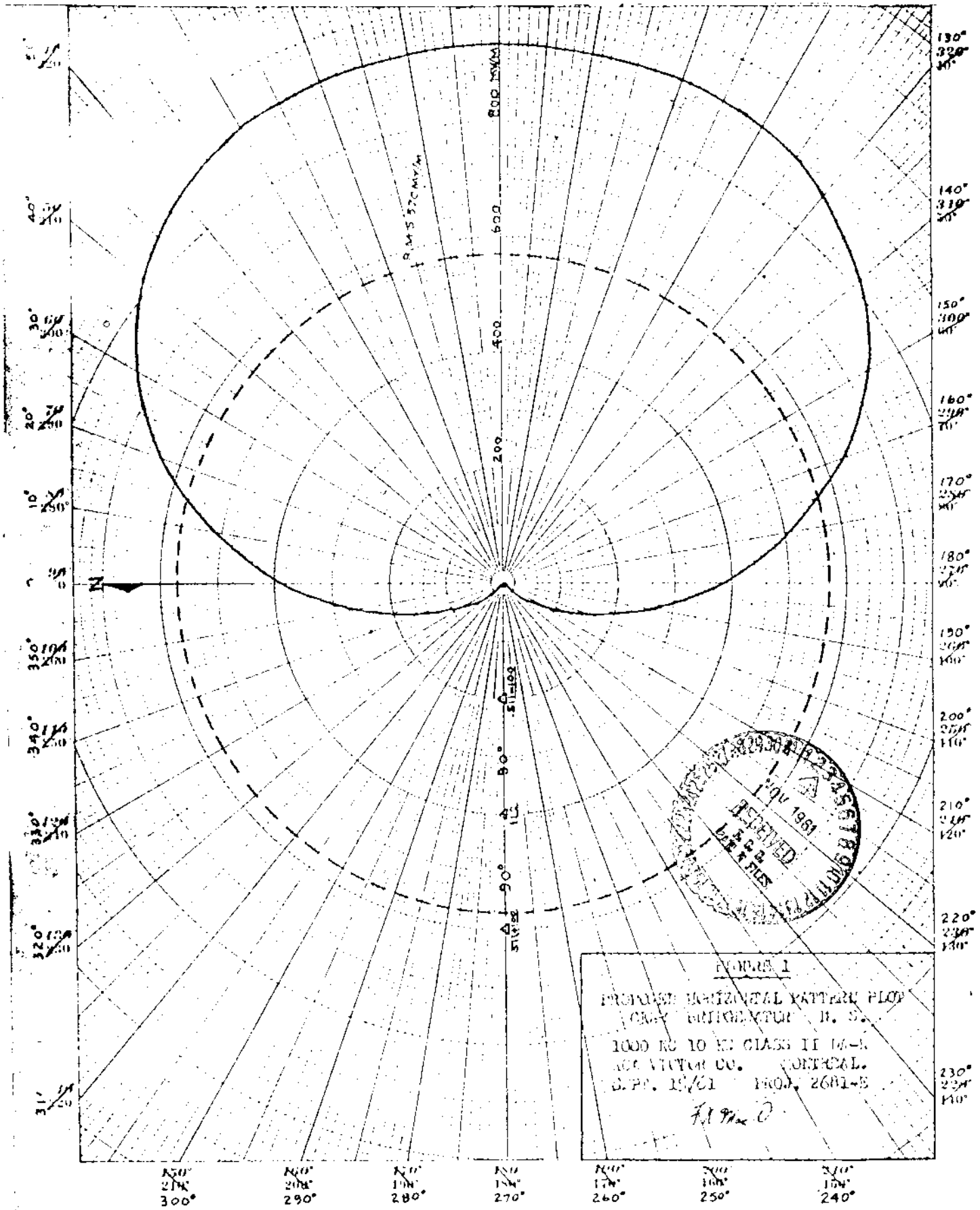


FIGURE 1

PROPOSED HORIZONTAL PATTERN PLOT
CKBW BRIDGEWATER, N. S.

1000 KC 10 KW CLASS II DA-N
ANDREW ANTENNA CO. LTD. MONTREAL.
DATE 13/61 DWG. 2681-S

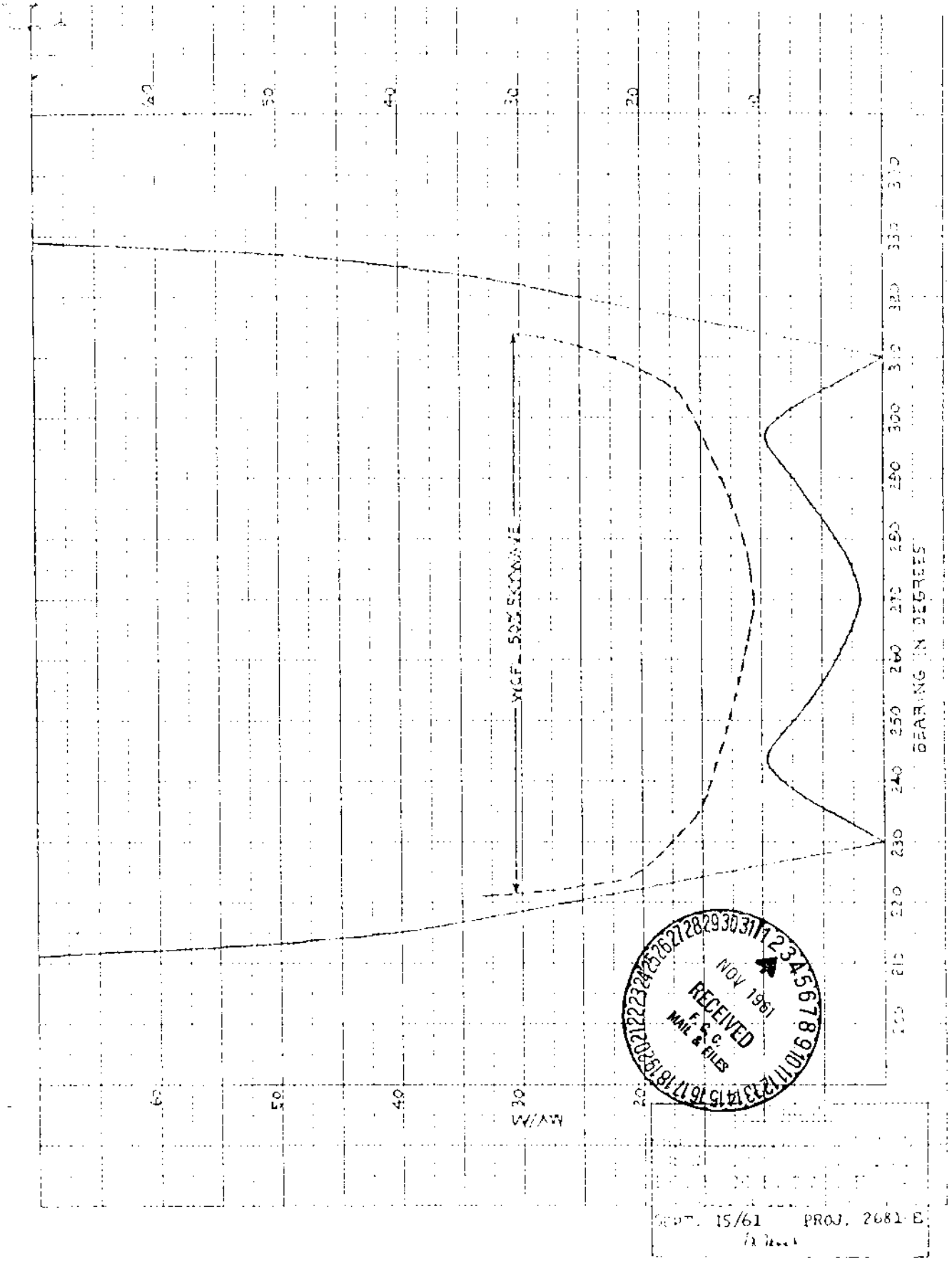
#16A

CKBW

Proposed Night Nulls
(11-30-61ct)

Station CKBW
Bridgewater, Nova Scotia

10kw,DA-N,U,Class II
1000 kc



SEPT. 15/61 PROJ. 2681 E.

KMLO
1000KHz

SUPPLEMENTAL AND CORRECTED
DIRECTIONAL ANTENNA DESCRIPTION SHEET
Issued: _____ 19 ____

Station: K M L O Main Studio: Vista, California

Frequency: 1000 kHz Power: 1 kW Night 5 kW Day

Notification List No.1784 Date: November 9, 1979 Class: II

GEORGRAPHICAL LOCATION OF THE
CENTER OF THE ANTENNA SYSTEM:

North Latitude: 33° 15' 25"
West Longitude: 117° 16' 17"

---

*Note: Please retain the description sheet and directional antenna radiation patterns notified for station KMLO in United States Change List Number 1781, dated October 19, 1979 and attached to this supplemental Description Sheet. This notification is for the purpose of indicating only a correction in the geographical coordinates of the center of the antenna system and a correction of the nighttime power.

KMLO

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : KMLO Main Studio: Vista, California

Frequency : 1000 KHz Power : 5 kW Night 5 kW Day

Notification : 1781 Date : Oct. 19, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 33 13 59
West Longitude: 107 16 09

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-2)
Number of elements: 6
Type of elements : Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER	NE(#1)	EC(#2)	SE(#3)	NW(#4)	WC(#5)	SW(#6)
HEIGHT ABOVE INSULATORS	246'	246'	246'	246'	246'	246' (90°)
NIGHT PHASING	0°	-110.14	139.73	-65.78°	-175.92	73.95
NIGHT FIELD RATIO:	1.0	1.998	1.0	0.700	1.398	0.700
DAY PHASING	0°	---	-57.72	-67.42	---	-125.14
DAY FIELD RATIO	1.0	---	.59	.44	---	.26

SPACING AND ORIENTATION : The towers are located in two parallel rows with 2 towers per row. Adjacent towers in a row are space 232 ' (85°) on a line bearing 160° true. End towers forming a side of the parallelogram are spaced 355 ' (130°) on a line bearing 286.4 ° true.

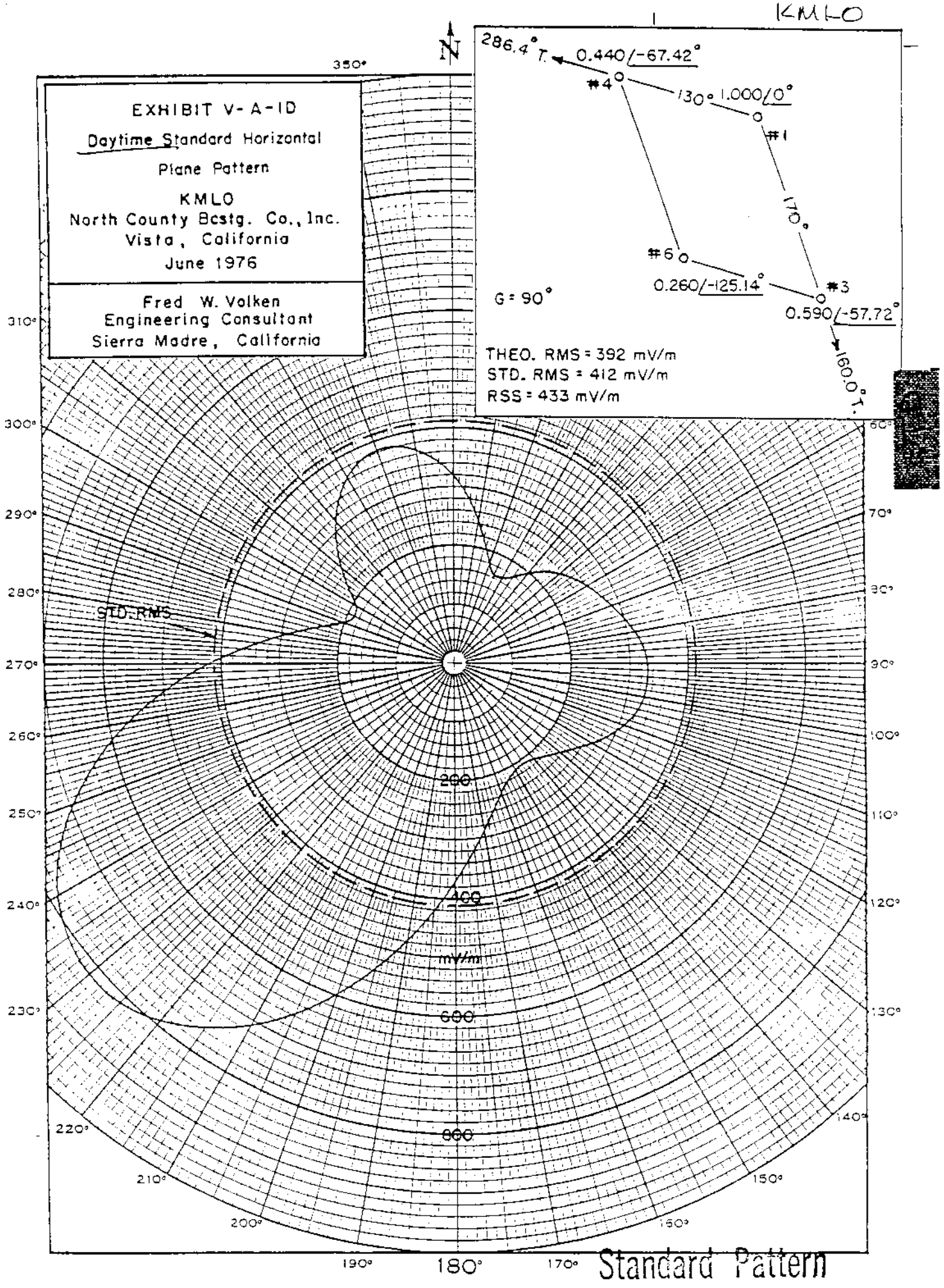
GROUND SYSTEM : 120 - 246 equally spaced copper radials plus a 120 - 50 ' interspaced radials about each tower. Radials are shortened and bonded to transverse strap along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	392 mv/m	433 mv/m	412 mv/m
Night	194 mv/m	267 mv/m	204 mv/m

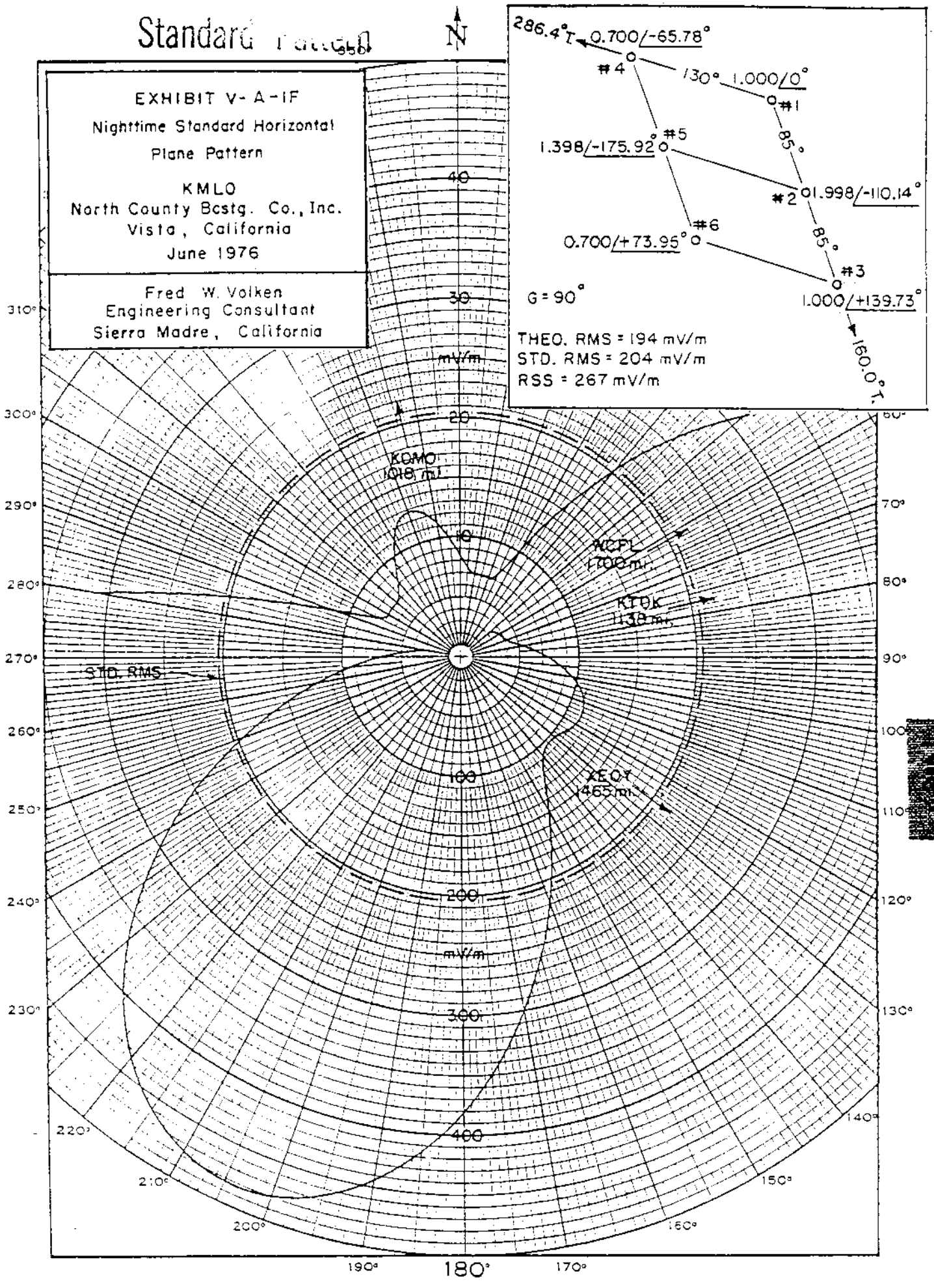
Note:

KMLO



Standard Pattern

KMLO


Standard Pattern
N
EXHIBIT V-A-IF
Nighttime Standard Horizontal Plane Pattern
KMLO
North County Bcstg. Co., Inc.
Vista, California
June 1976
Fred W. Volken
Engineering Consultant
Sierra Madre, California
286.4°T 0.700/-65.78°
#4
130° 1.000/0°
#1
85°
1.398/-175.92° #5
#2 01.998/-110.14°
85°
#6
0.700/+73.95°
#3
G = 90°
1.000/+139.73°
160.0°T.
THEO. RMS = 194 mV/m
STD. RMS = 204 mV/m
RSS = 267 mV/m
40
30
mV/m
20
10
100
200
mV/m
300
400
KOMO 1018 mi.
KCPL 1700 mi.
KTOK 1138 mi.
XEOY 1465 mi.
STD. RMS
310°
300°
290°
280°
270°
260°
250°
240°
230°
220°
210°
200°
190°
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°
60°

KMLO

Proposed Day
(11-29-66ct)

New; North County Broadcasting Co., Inc. 1kw,DA-D,D
Vista, California 1000 kc

5-10-67
GRANTED
CP
FOR A NEW
DAYTIME AM
STATION

North Latitude 33° 13' 59"
West Longitude 117° 16' 09"

Fred W. Volken
Engineering Consultant

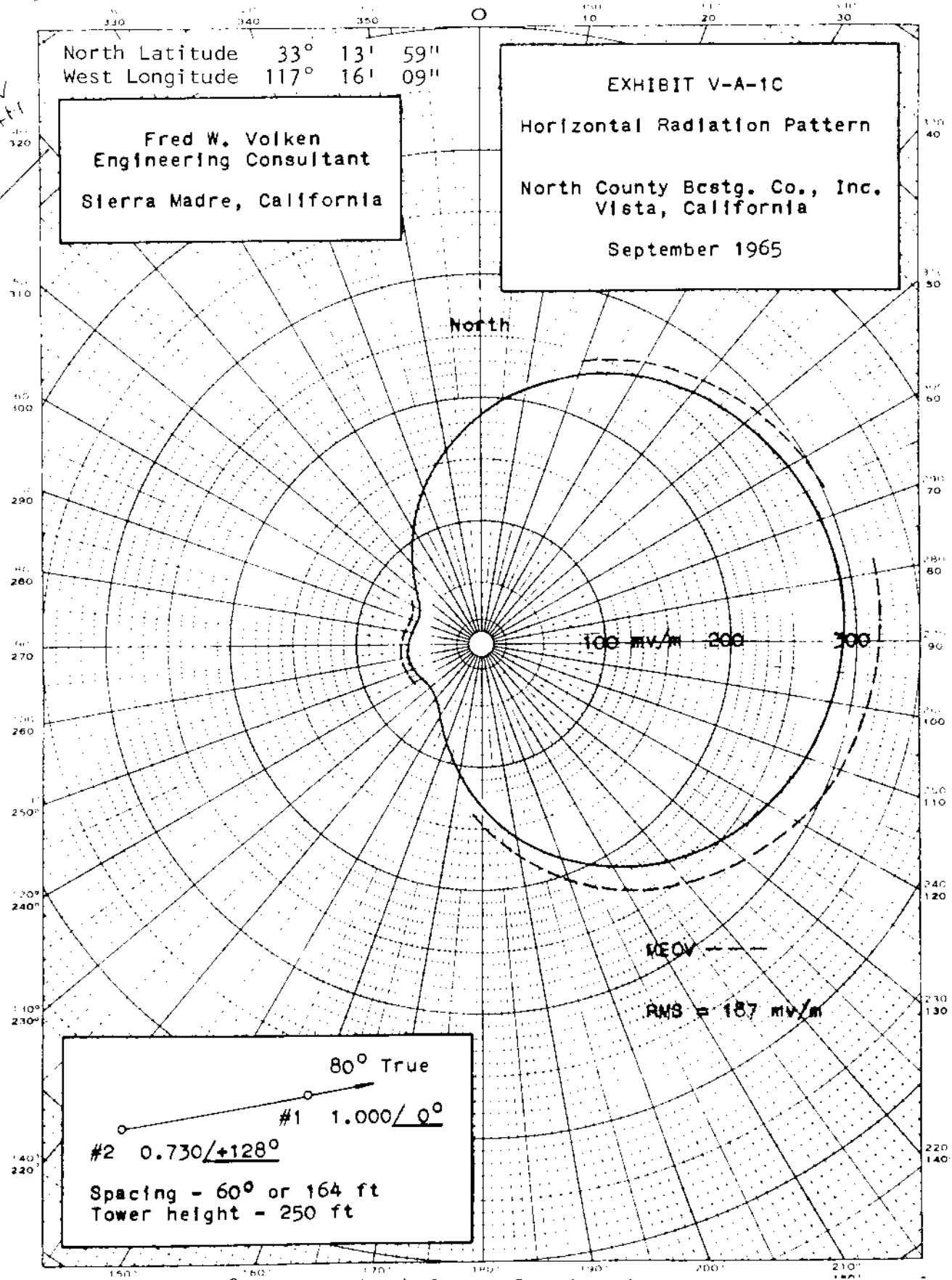
Sierra Madre, California

EXHIBIT V-A-1C

Horizontal Radiation Pattern

North County Bcstg. Co., Inc.
Vista, California

September 1965



FCC File No. BP-17328
Accepted 11-16-66

New; North County Broadcasting Co., Inc.
Vista, California

1000 kc

KMLO

Measured Day
(12-28-67ct)

Station KMLO
Vista, California

1kw, DA-D, D
1000 kc

3-13-68
GRANTED
LICENSE
FOR NEW
AM STATION.

Fred W. Volken
Engineering Consultant

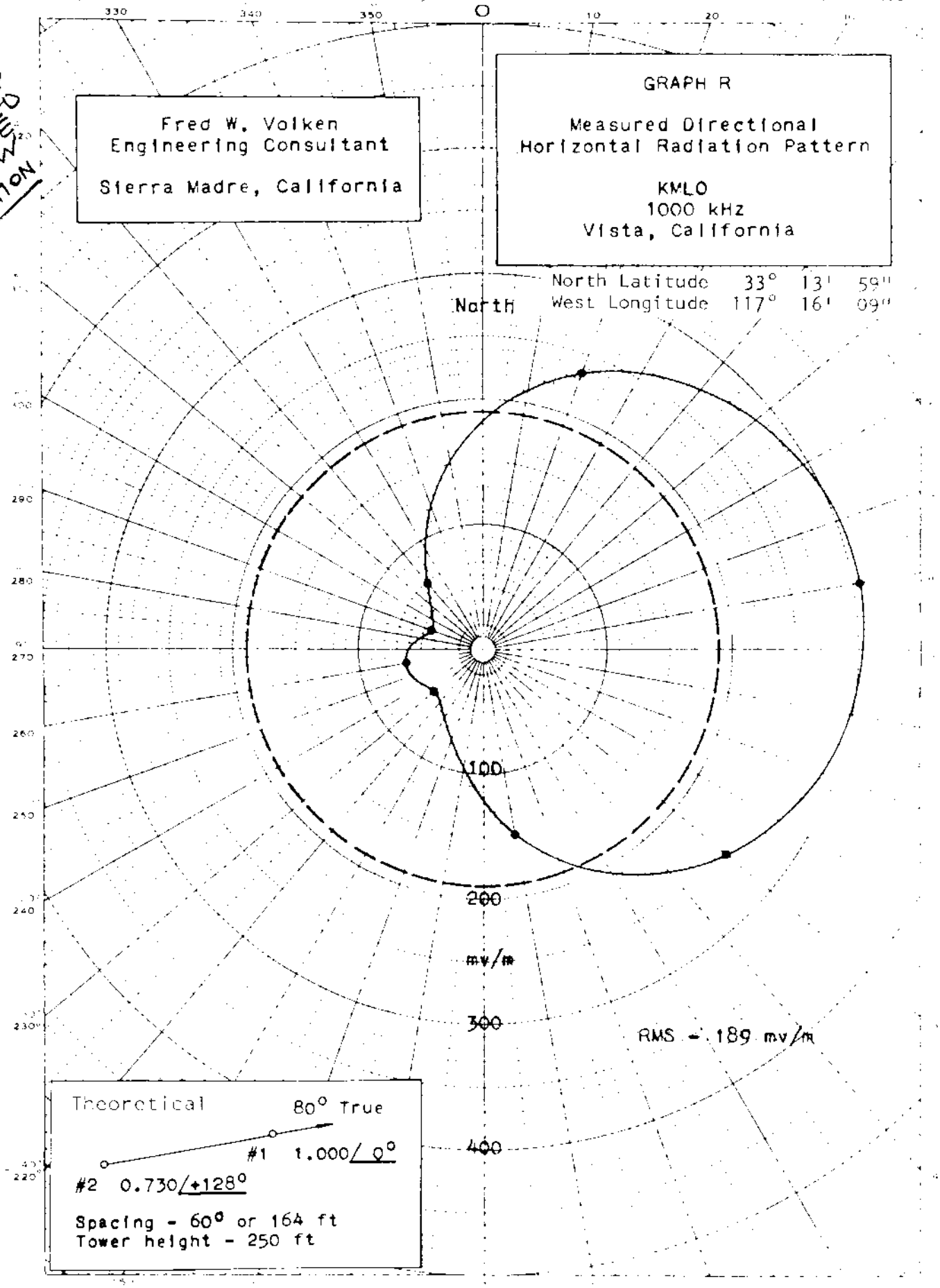
Sierra Madre, California

GRAPH R

Measured Directional
Horizontal Radiation Pattern

KMLO
1000 kHz
Vista, California

North Latitude 33° 13' 59"
West Longitude 117° 16' 09"



FCC File No. BL-11822
Accepted 12-11-67

Station KMLO
Vista, California

1000 kc

KMLO

Measured Non-DA
(12-28-67ct)

Station KMLO
Vista, California

1kw, DA-D, D
1000 kc

3-13-68
GRANTED
LICENSE
FOR NEW
AM STATION

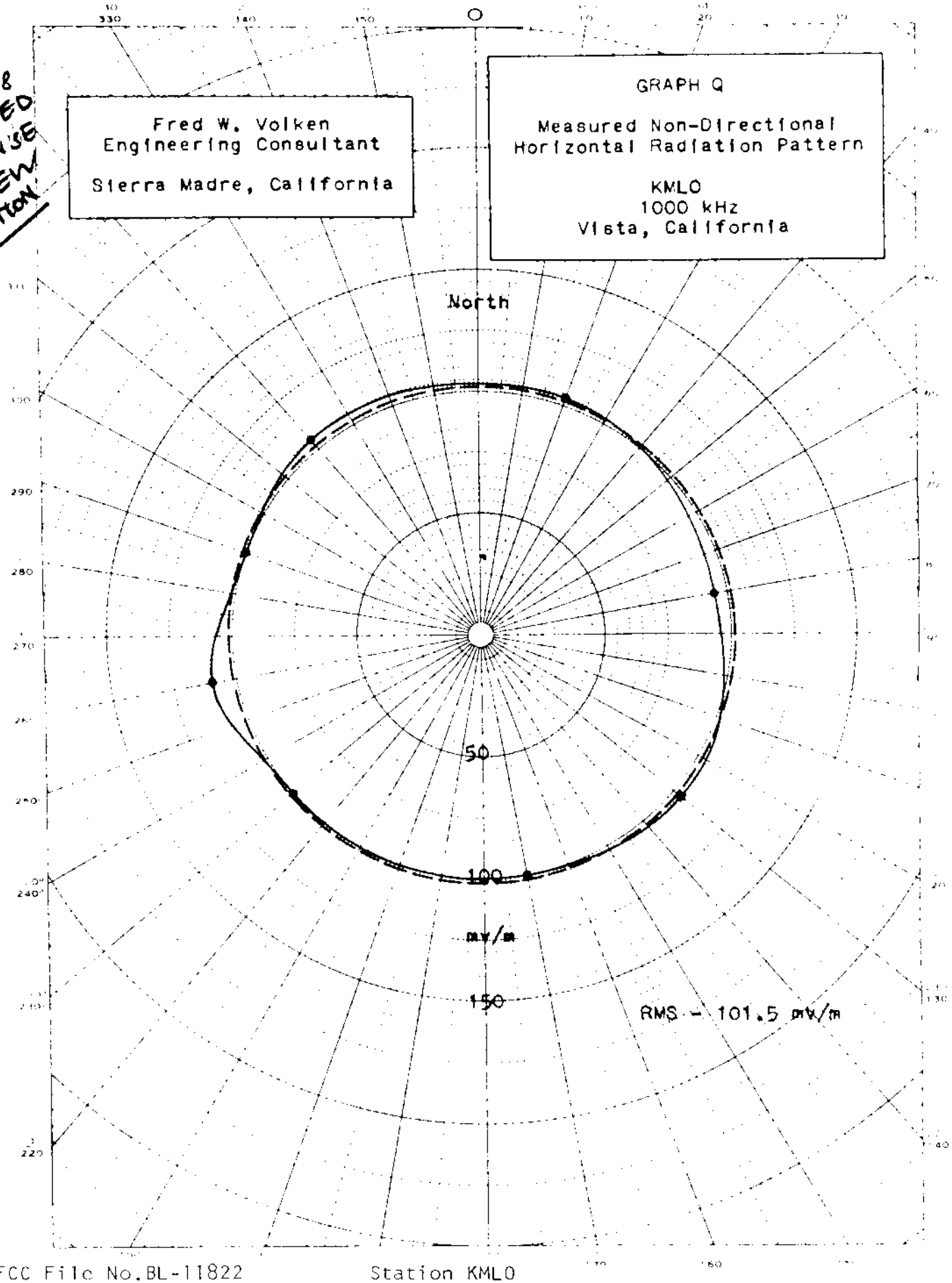
Fred W. Volken
Engineering Consultant

Sierra Madre, California

GRAPH Q

Measured Non-Directional
Horizontal Radiation Pattern

KMLO
1000 kHz
Vista, California



EUGENE DIETZGEN CO.

FCC File No. BL-11822
Accepted 12-11-67

Station KMLO
Vista, California

1000 kc

KOMO – 1000KC

KOMO

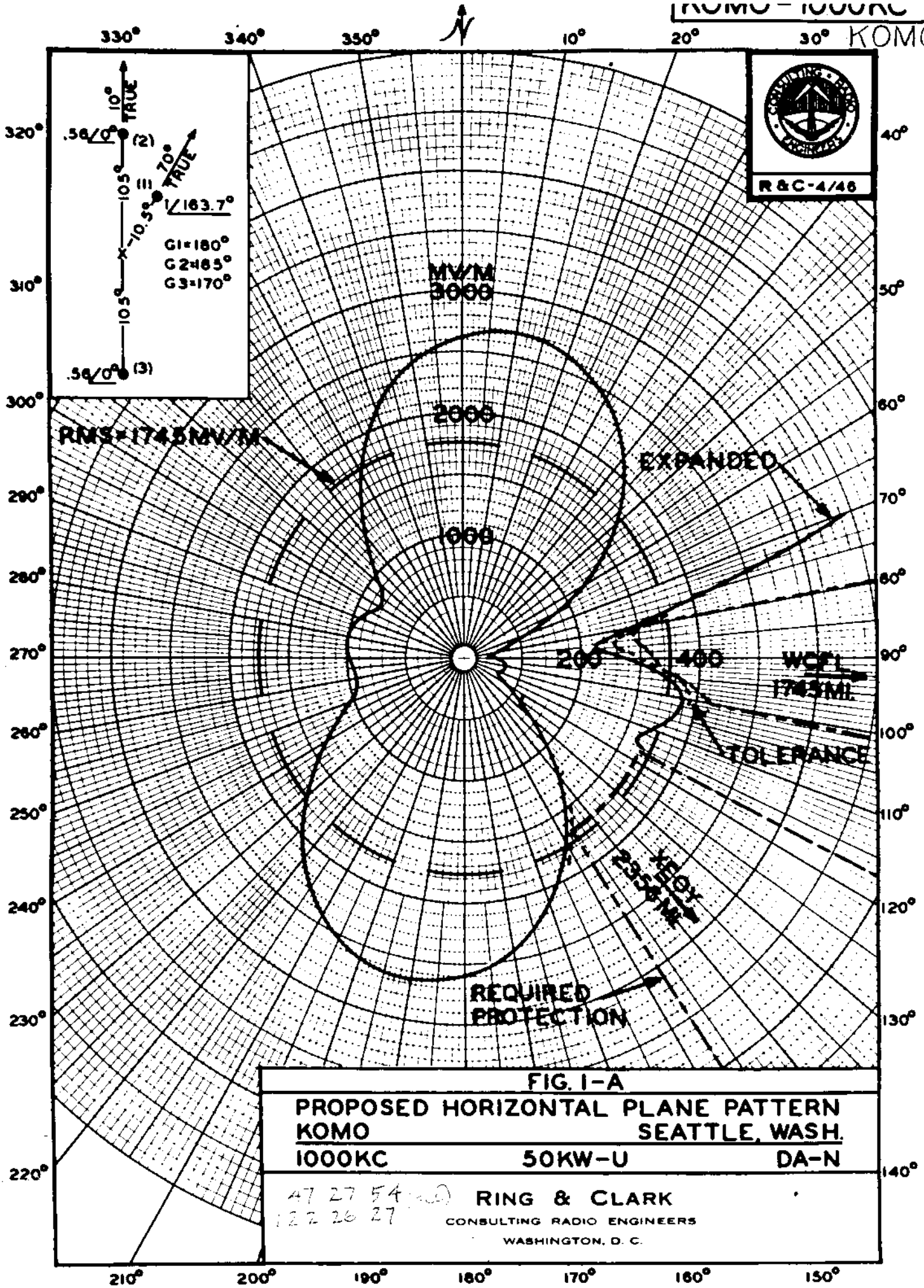


FIG. 1-A

PROPOSED HORIZONTAL PLANE PATTERN

KOMO SEATTLE, WASH.

1000KC 50KW-U DA-N

47 27 54 -0
122 26 27

RING & CLARK

CONSULTING RADIO ENGINEERS

WASHINGTON, D. C.

KOMO

9/8/48G

KOMO - 1000 kc

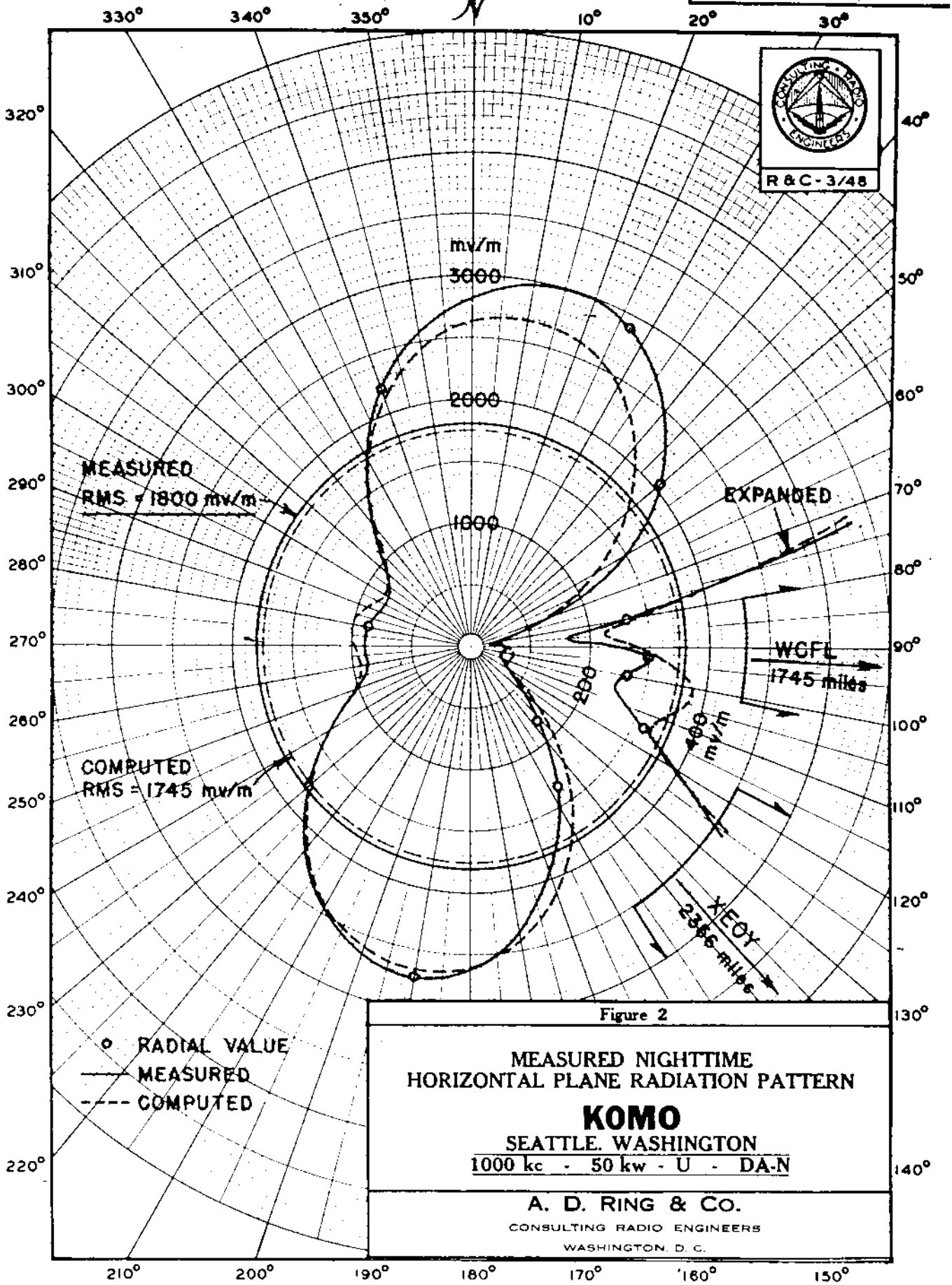


Figure 2

MEASURED NIGHTTIME
HORIZONTAL PLANE RADIATION PATTERN

KOMO

SEATTLE, WASHINGTON

1000 kc - 50 kw - U - DA-N

A. D. RING & CO.

CONSULTING RADIO ENGINEERS

WASHINGTON, D. C.

KOTD

Measured Day
(11-24-70ct)

Station KOTD
Plattsmouth, Nebraska

250w, DA-D, D
1000 kc

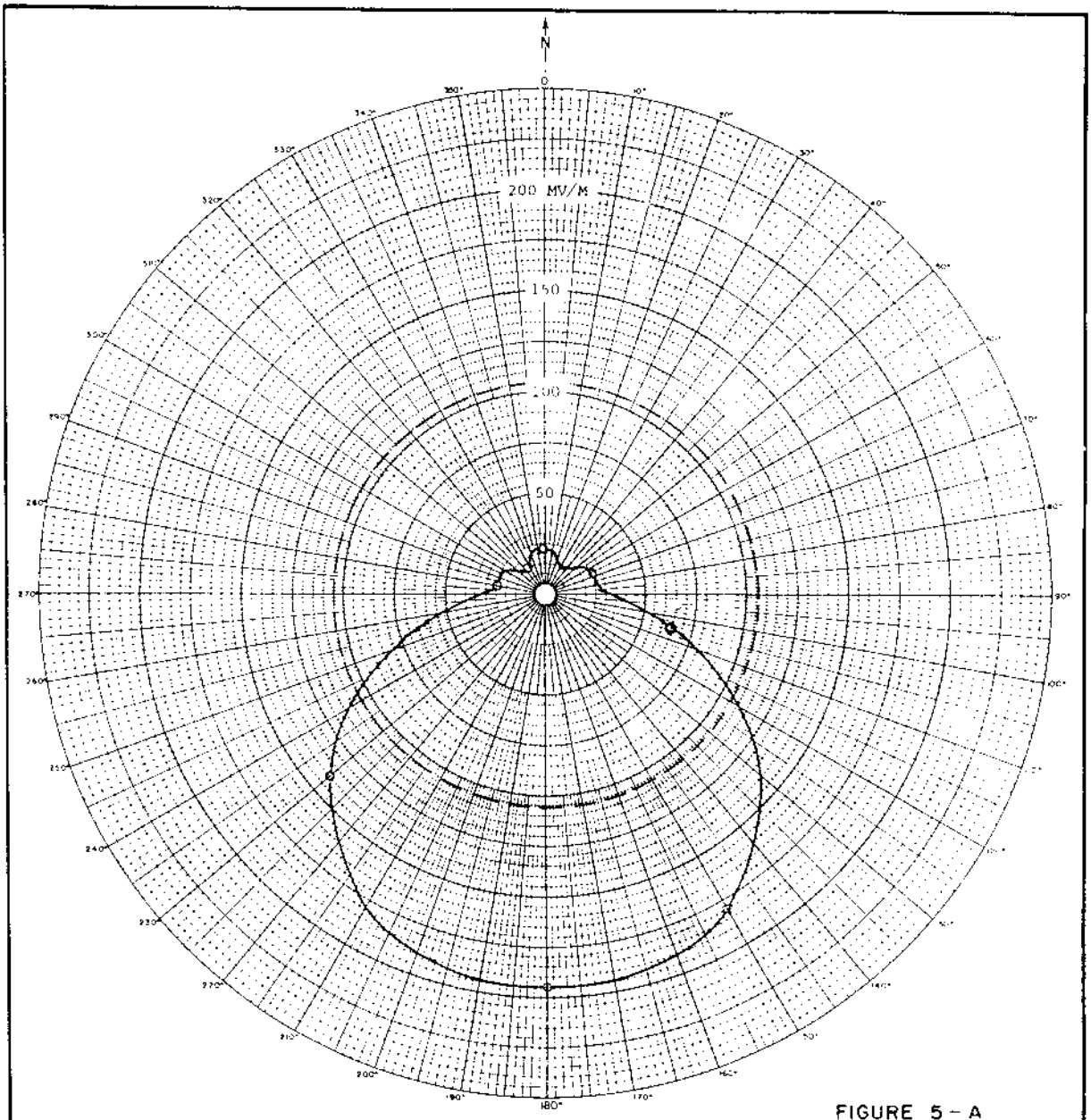


FIGURE 5 - A

HORIZONTAL RADIATION PATTERN — MEASURED

N 0° E

2 ○ .812/134.3

90°

1 ○ 1/0

90°

3 ○ .455/-139.7

ALL Gs = 90°

APPLICANT	KOTD
LOCATION	PLATTSMOUTH, NEB.
FREQUENCY	1000 KHZ
POWER	250 WATTS
LATITUDE	41 DEG 01 MIN 35 SEC
LONGITUDE	95 DEG 54 MIN 00 SEC
WHEN USED	DAYTIME
RMS FIELD	105 MV/M
DATE	OCTOBER 1970

Raymond E. Rohrer
CONSULTING ENGINEER
RADIO TV COMMUNICATIONS CATV

FCC File No. BL-12789
Accepted 11-16-70

Station KOTD
Plattsmouth, Nebraska

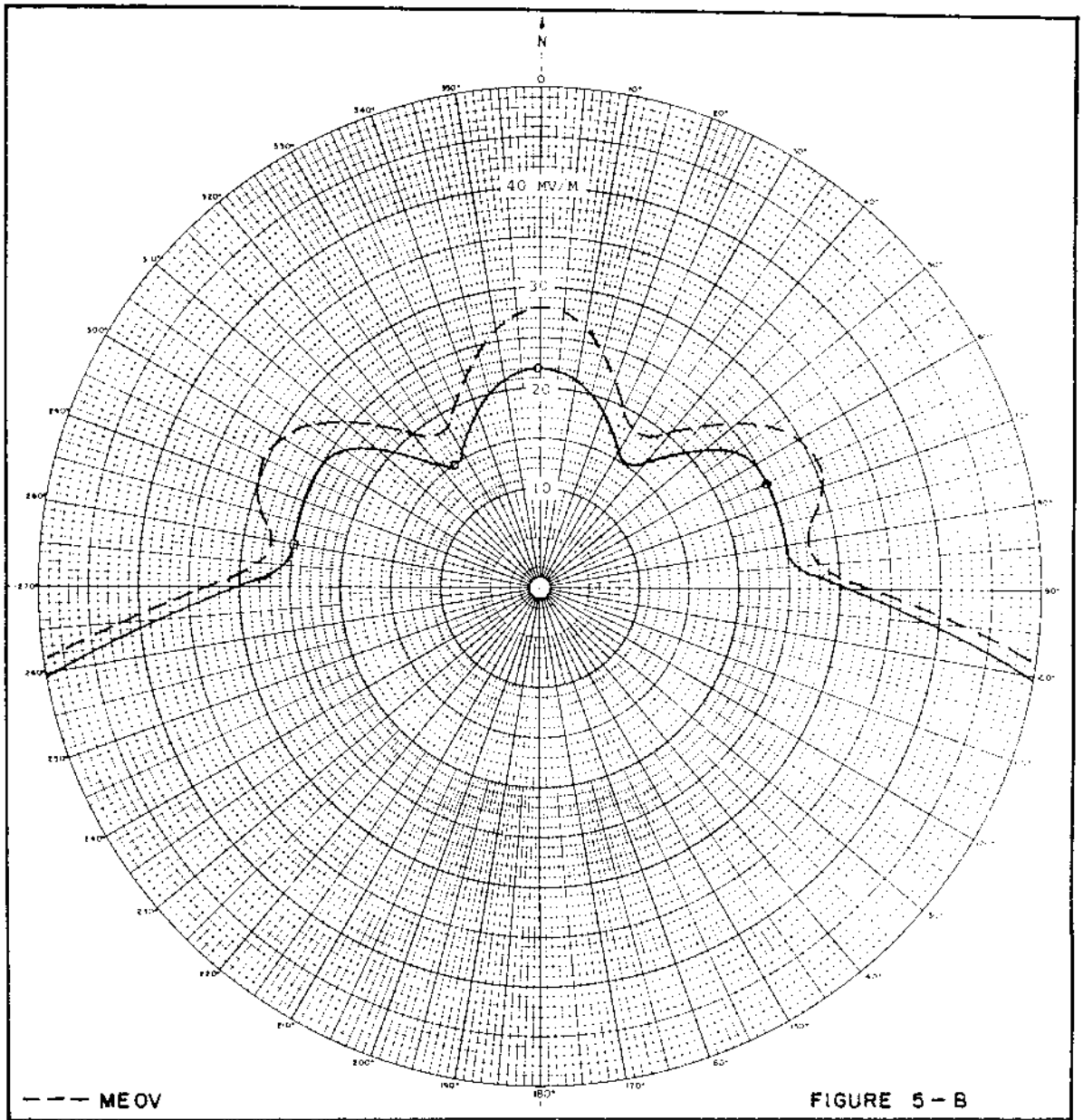
1000 kc

KOTD

Measured Day Nulls
(11-24-70ct)

Station KOTD
Plattsmouth, Nebraska

250w,DA-D,D
1000 kc



--- MEOV

FIGURE 5 - B

KOTD -- PLATTSMOUTH, NEBRASKA

EXPANDED VIEW

MEASURED

OCTOBER 1970

Raymond E. Rohrer
CONSULTING ENGINEER
RADIO TV COMM. STATIONS ETV

FCC File No.BL-12789
Accepted 11-16-70

Station KOTD
Plattsmouth, Nebraska

1000 kc

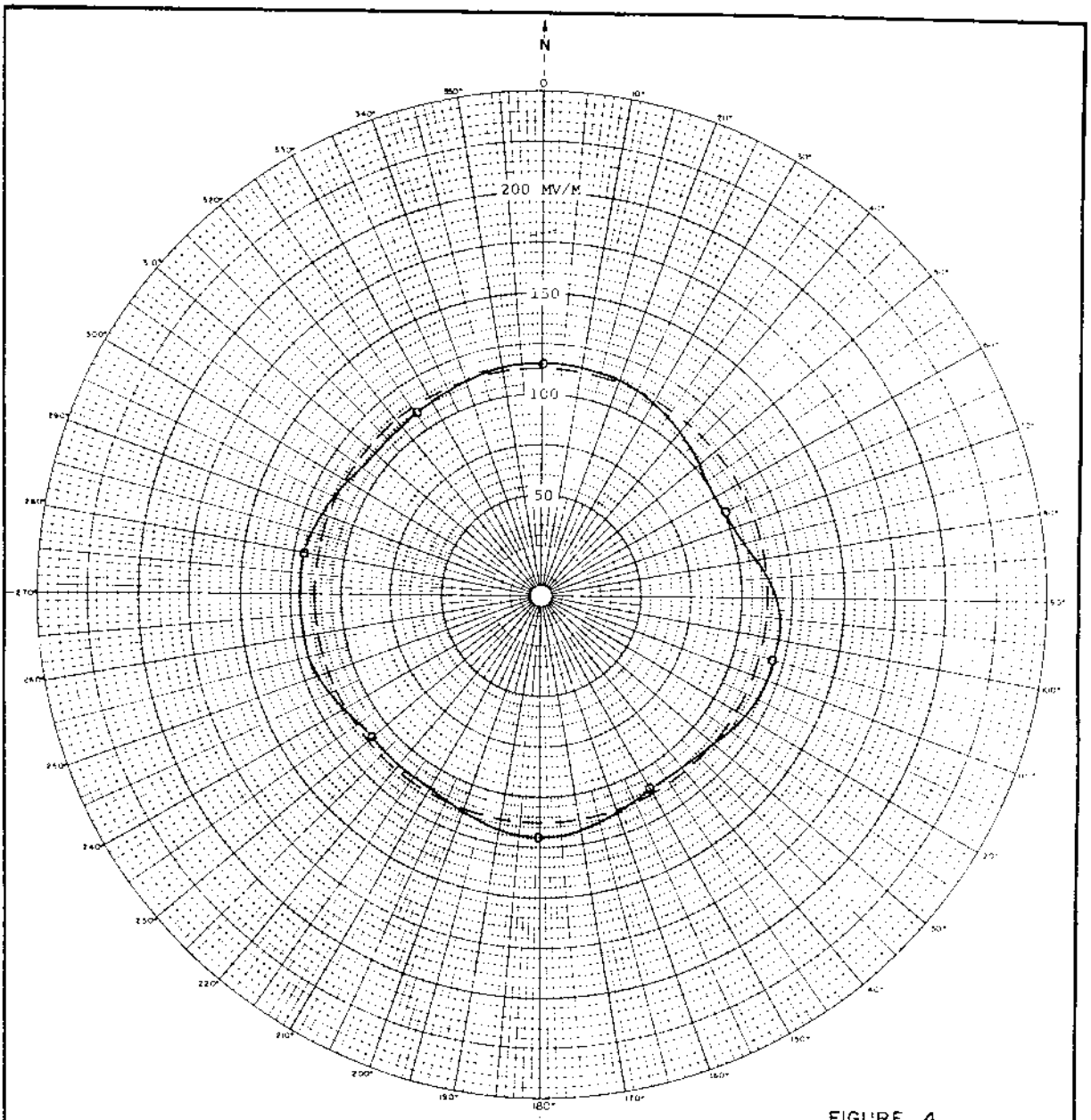


FIGURE 4

HORIZONTAL RADIATION PATTERN — MEASURED

NON-DIRECTIONAL SURVEY
NO. 1(C) TOWER FED
TOWERS NO. 2(N) & 3(S) DETUNED

APPLICANT	KOTD
LOCATION	PLATTSMOUTH, NEB.
FREQUENCY	1000 KHZ
POWER	250 WATTS
LATITUDE	41 DEG 01 MIN 35 SEC
LONGITUDE	95 DEG 54 MIN 00 SEC
WHEN USED	NDA SURVEY
RMS FIELD	113 MV/M
DATE	OCTOBER 1970

Raymond E. Rohrer
CONSULTING ENGINEER
RADIO TV COMMUNICATIONS CATV

Cm (1-7-70) CP for new Broad. STA. BP-18281 KCTD

Proposed Day
(12-27-68ct)

New; Platte Broadcasting Co., Inc.
Plattsmouth, Nebraska

1kw, DA-D, D
1000 kc

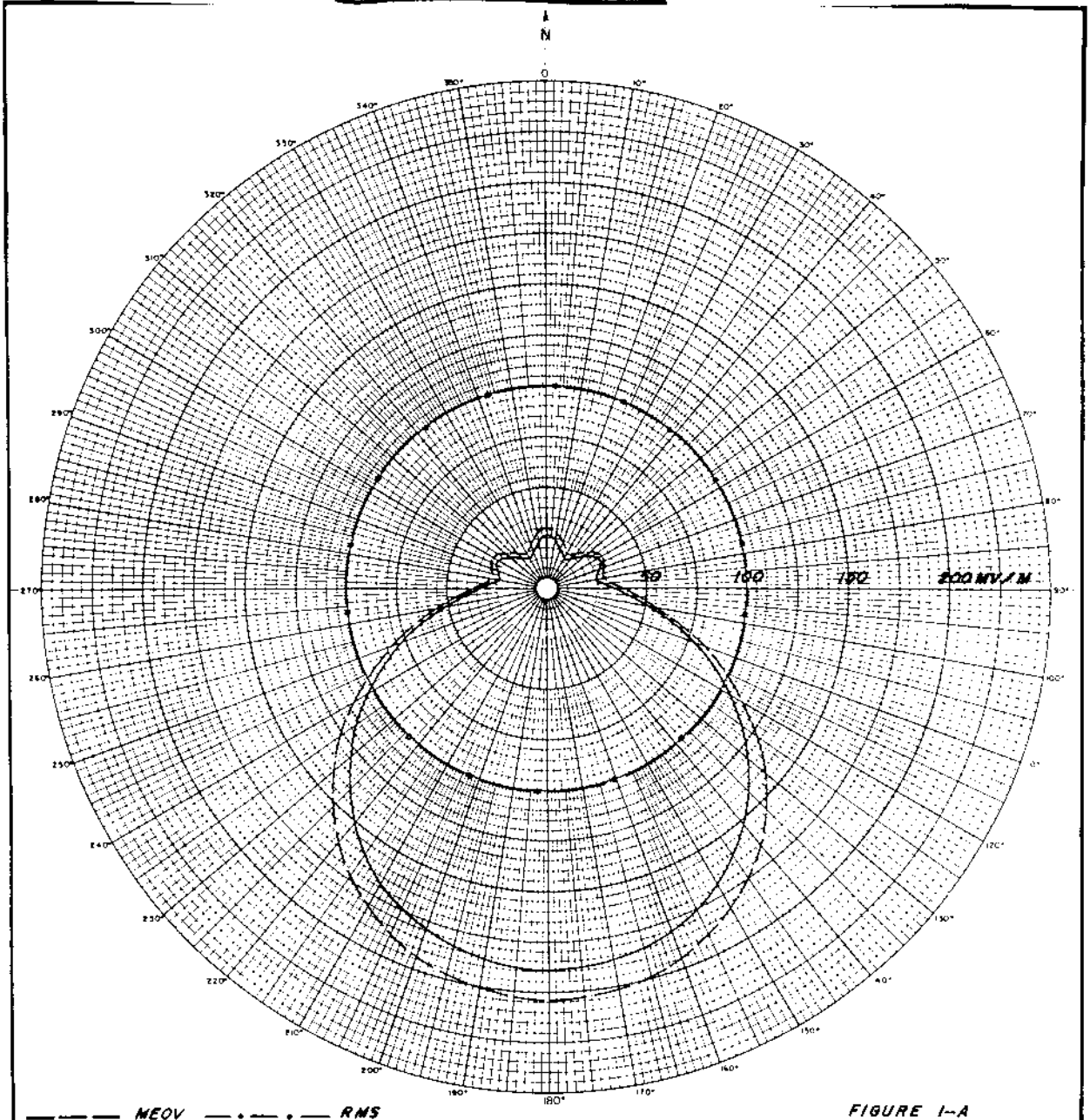


FIGURE 1-A

HORIZONTAL RADIATION PATTERN

N 0°E

2 .812 /134.3

90°

1 1/0

90°

3 .455 /-139.7

ALL Gs 90°

APPLICANT	Platte Broadcasting Co.
LOCATION	Plattsmouth, Nebraska
FREQUENCY	1000 KC/S
POWER	350 W
LATITUDE	41 DEG 01 MIN 35 SEC
LONGITUDE	95 DEG 54 MIN 0 SEC
WHEN USED	Daytime
RMS FIELD	99.95 MV/M
DATE	June 1968

RAYMOND E. ROHRER & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

FCC File No. BP-18281
Accepted 12-12-68

New; Platte Broadcasting Co., Inc.
Plattsmouth, Nebraska

1000 kc

Gr(1-7-70) CP for DAO STA. BP-18281 KC-TD

Proposed Day Nulls
(12-27-68ct)

New; Platte Broadcasting Co., Inc.
Plattsmouth, Nebraska

1kw,DA-D,D
1000 kc

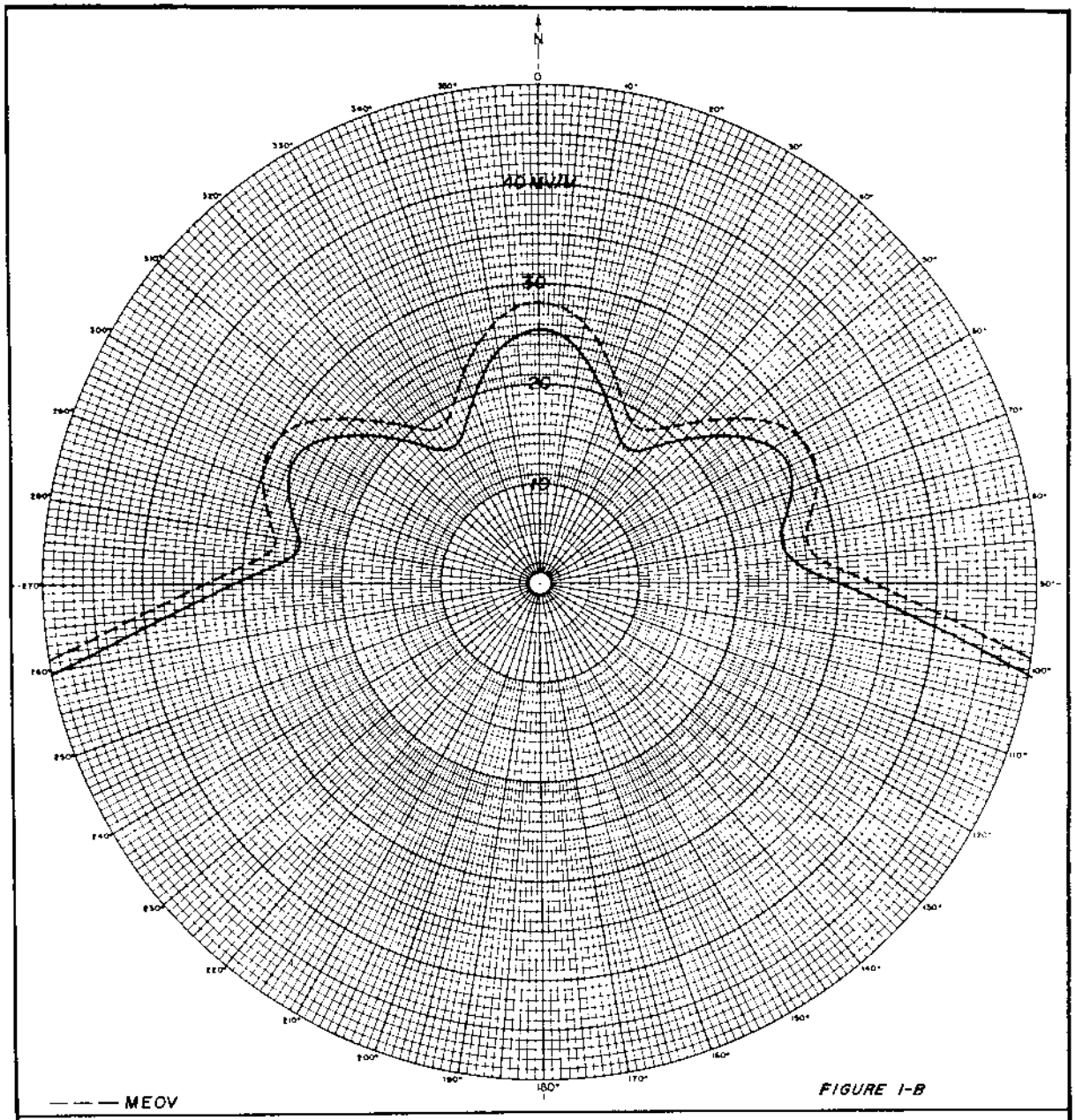


FIGURE 1-B

EXPANDED VIEW

RAYMOND E. ROHRER & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

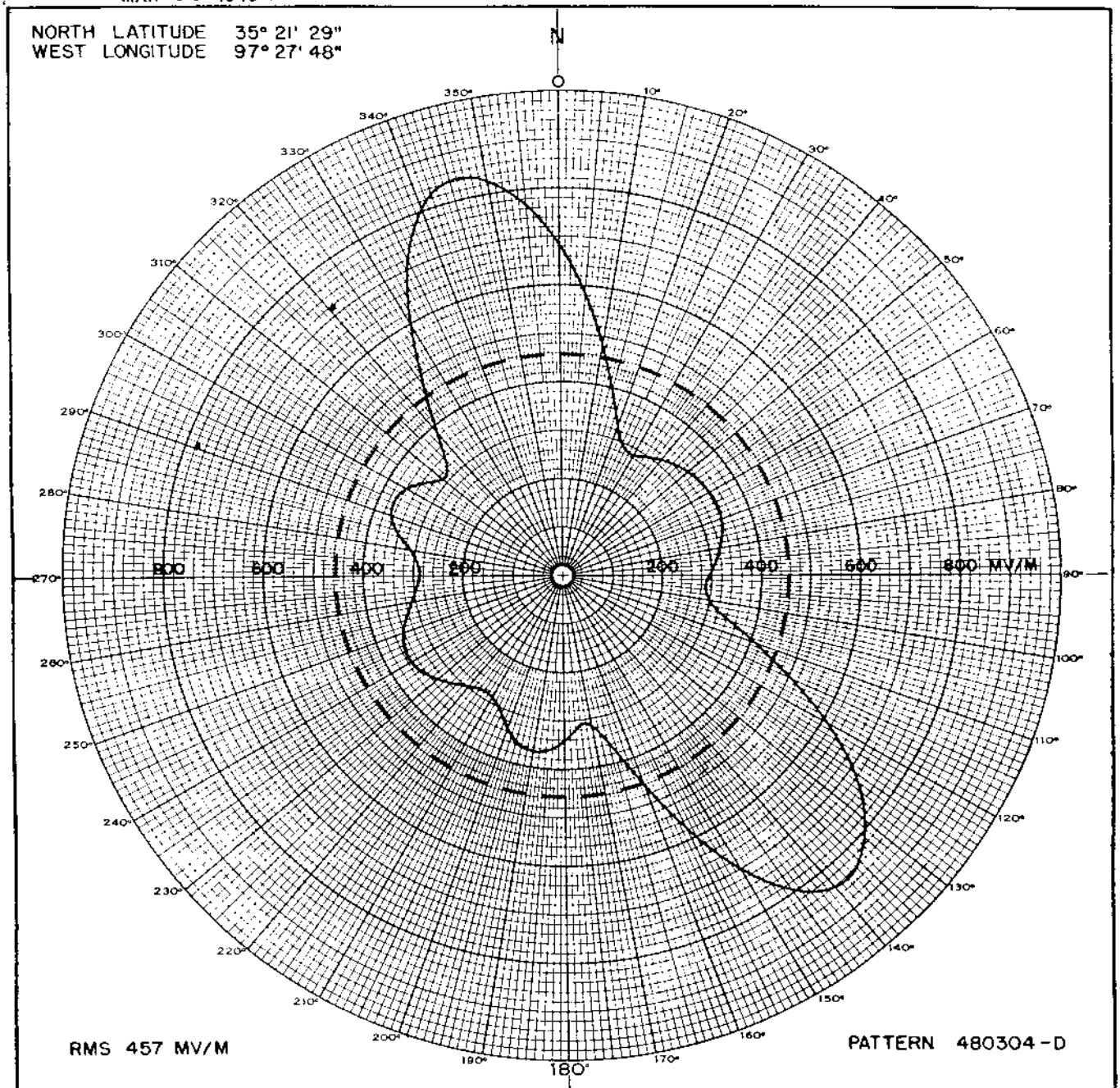
FCC File No.BP-18281
Accepted 12-12-68

New; Platte Broadcasting Co., Inc.
Plattsmouth, Nebraska

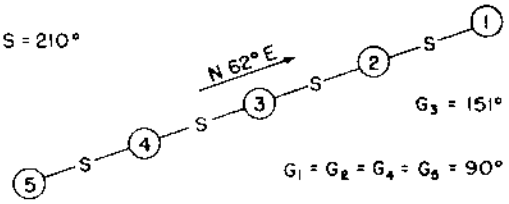
1000 kc

KTOK
1000

MAR 23 1948 G



S = 210°



$G_3 = 151° \pm 4/3°$

$G_1 = G_2 = G_4 = G_5 = 90° \pm 2½°$

TOWER	5	4	3	2	1
FIELD	0000	0.633	1.000	0.599	0000
PHASE	--	5.7°	0.0°	-99.3°	--

A. EARL CULLUM, JR.
CONSULTING RADIO ENGINEERS
DALLAS TEXAS

RADIO STATION KTOK
PROPOSED 1000 KC, 5 KW, DA-D
480304 FIGURE 6A

BMP-3125 Amendment Recd 3-11-48

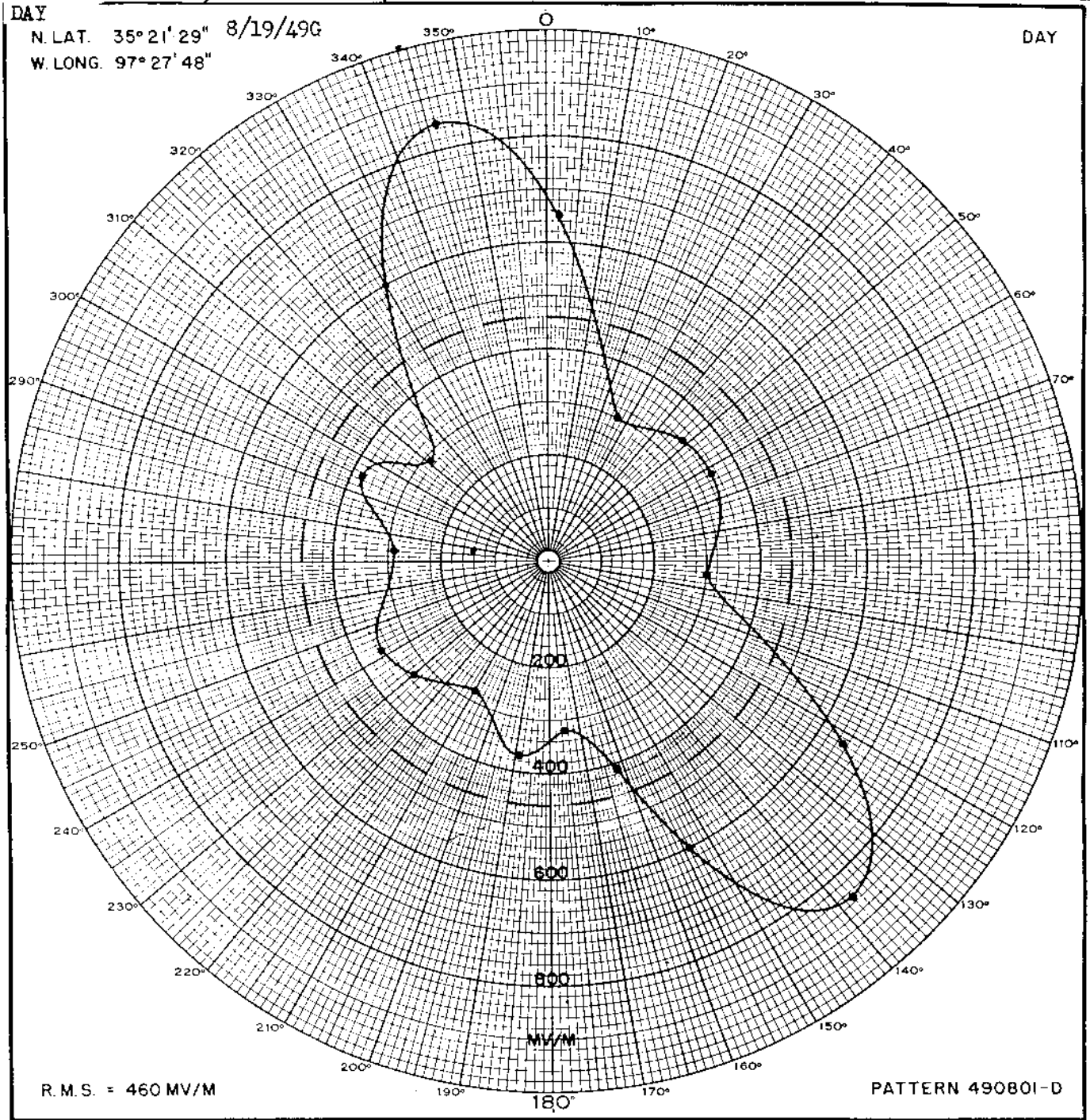
KTOK

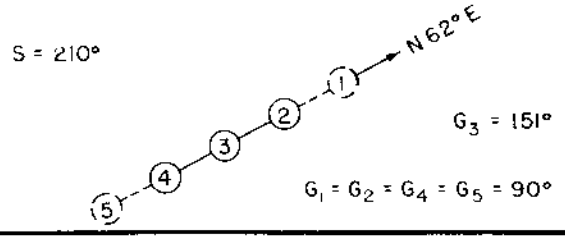
MEASURED KTOK, OKLAHOMA CITY, OKLA. 8-16-49 1kw, 5kw-LS, DA-2 1000 kc

DAY

N. LAT. 35° 21' 29" 8/19/49G

W. LONG. 97° 27' 48"





RADIO STATION KTOK

OKLAHOMA CITY, OKLAHOMA

1000 KC, 1 KW, 5 KW-LS, DA-2

PATTERN BASED ON

FIELD INTENSITY

MEASUREMENTS

A. EARL CULLUM, JR.

CONSULTING RADIO ENGINEERS

490801 FIGURE 2B

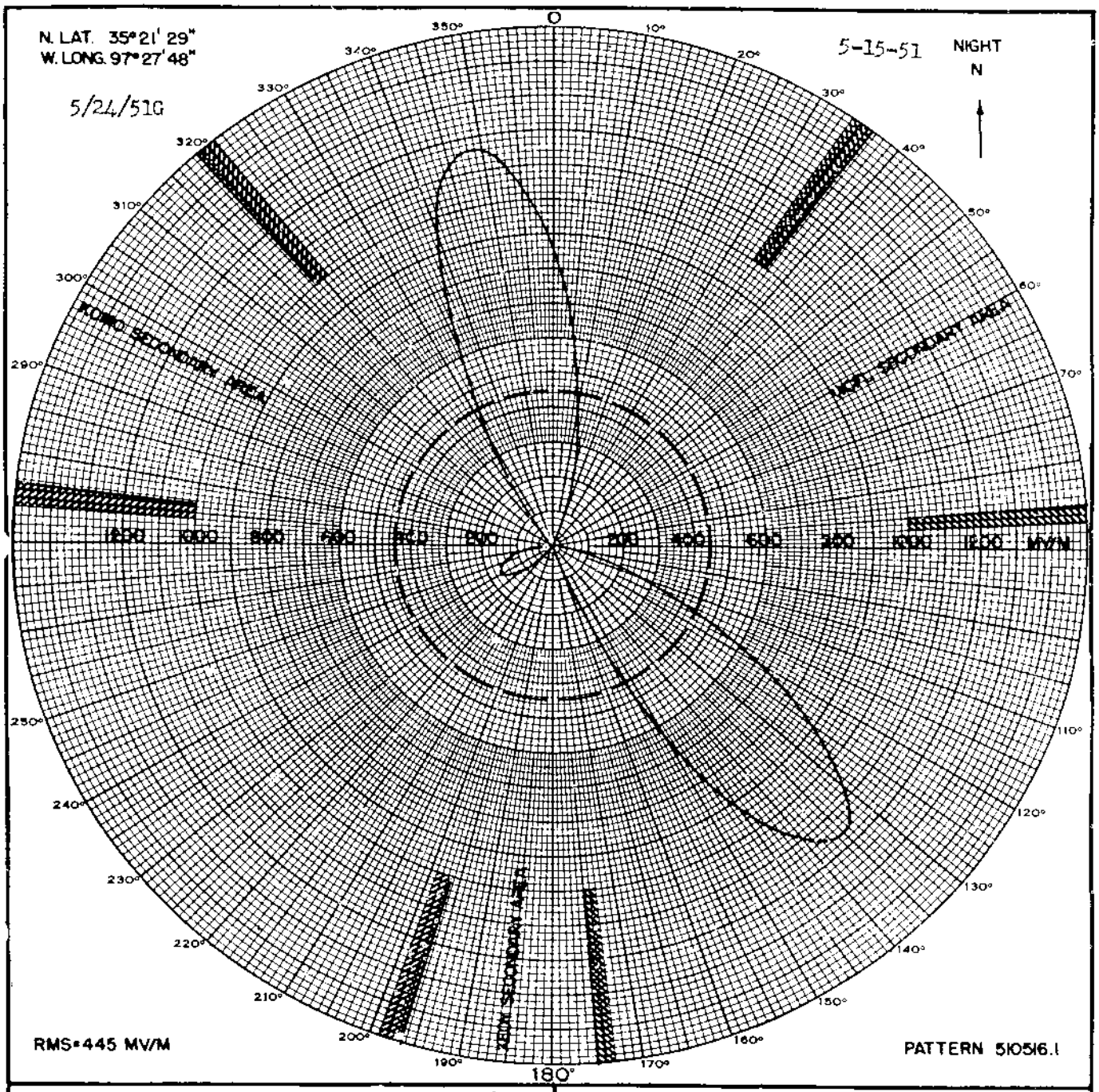
KTOK, Oklahoma City, Okla. 1000 kc

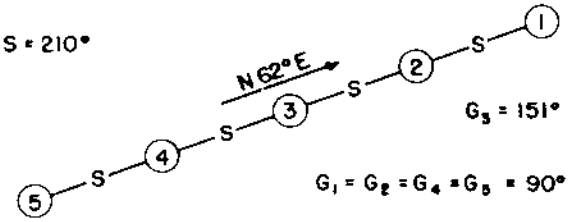
KTOK

PROPOSED NIGHT

KTOK, OKLAHOMA CITY, OKLA.

5kw, DA-2 1000 kc





RADIO STATION KTOK

OKLAHOMA CITY, OKLAHOMA

1000 KC 5 KW DA-2

TOWER	5	4	3	2	1
FIELD	0.298	0.760	1.000	0.760	0.298
PHASE	+117.5°	+61.14°	0.0°	-61.14	-117.5

A. EARL CULLUM, JR.

CONSULTING RADIO ENGINEERS

510516.1 FIGURE 3A

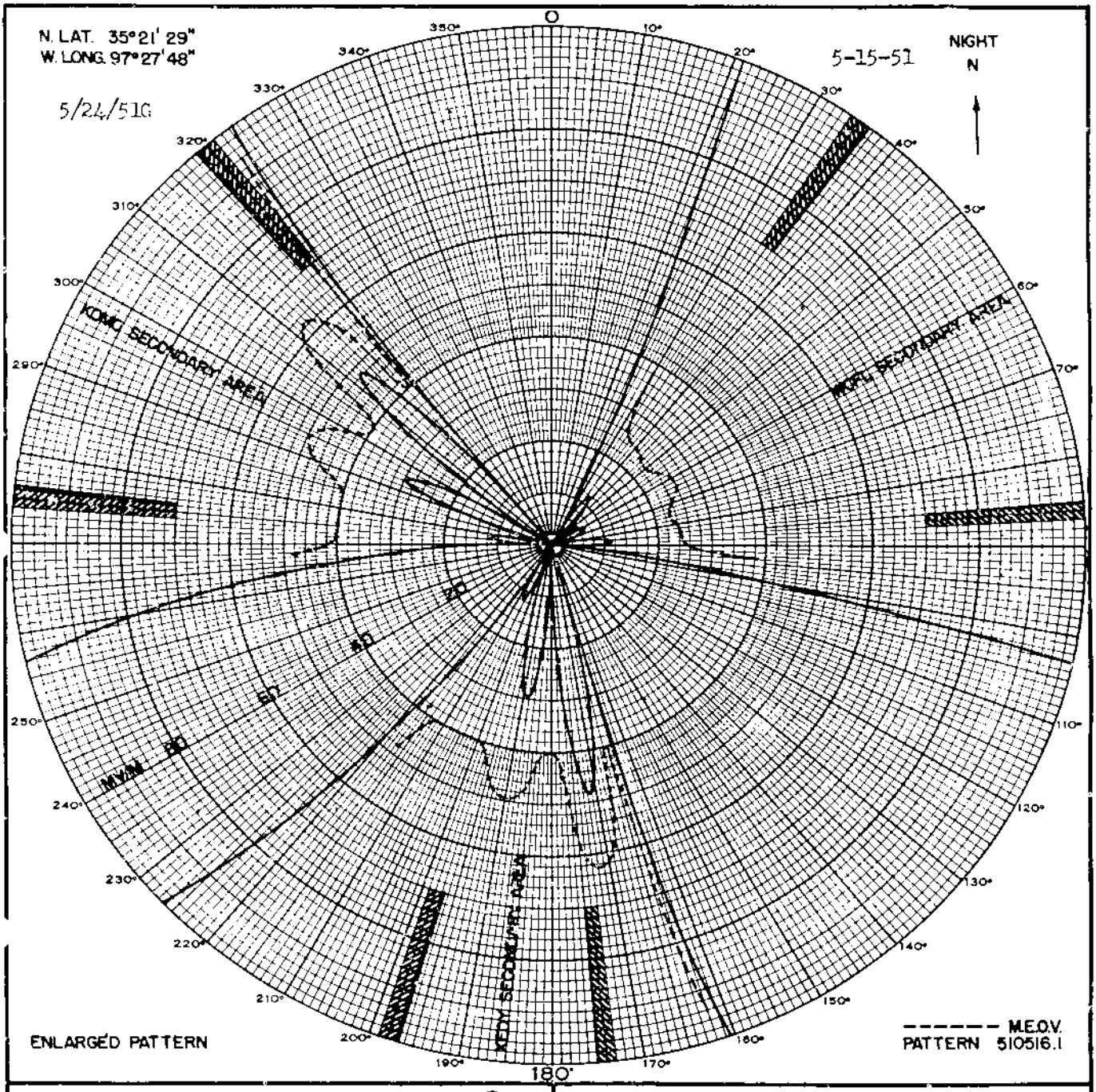
KTOK

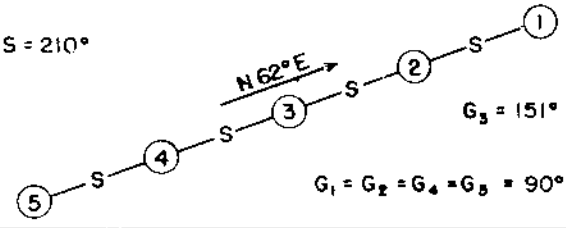
PROPOSED NIGHT NULLS

KTOK, OKLAHOMA CITY, OKLA.

5kw, DA-2

1000 kc





RADIO STATION KTOK

OKLAHOMA CITY, OKLAHOMA

1000 KC 5 KW DA-2

TOWER	5	4	3	2	1
FIELD	0.298	0.760	1.000	0.760	0.298
PHASE	+117.5°	+61.14°	0.0°	-61.14	-117.5

A. EARL CULLUM, JR.

CONSULTING RADIO ENGINEERS

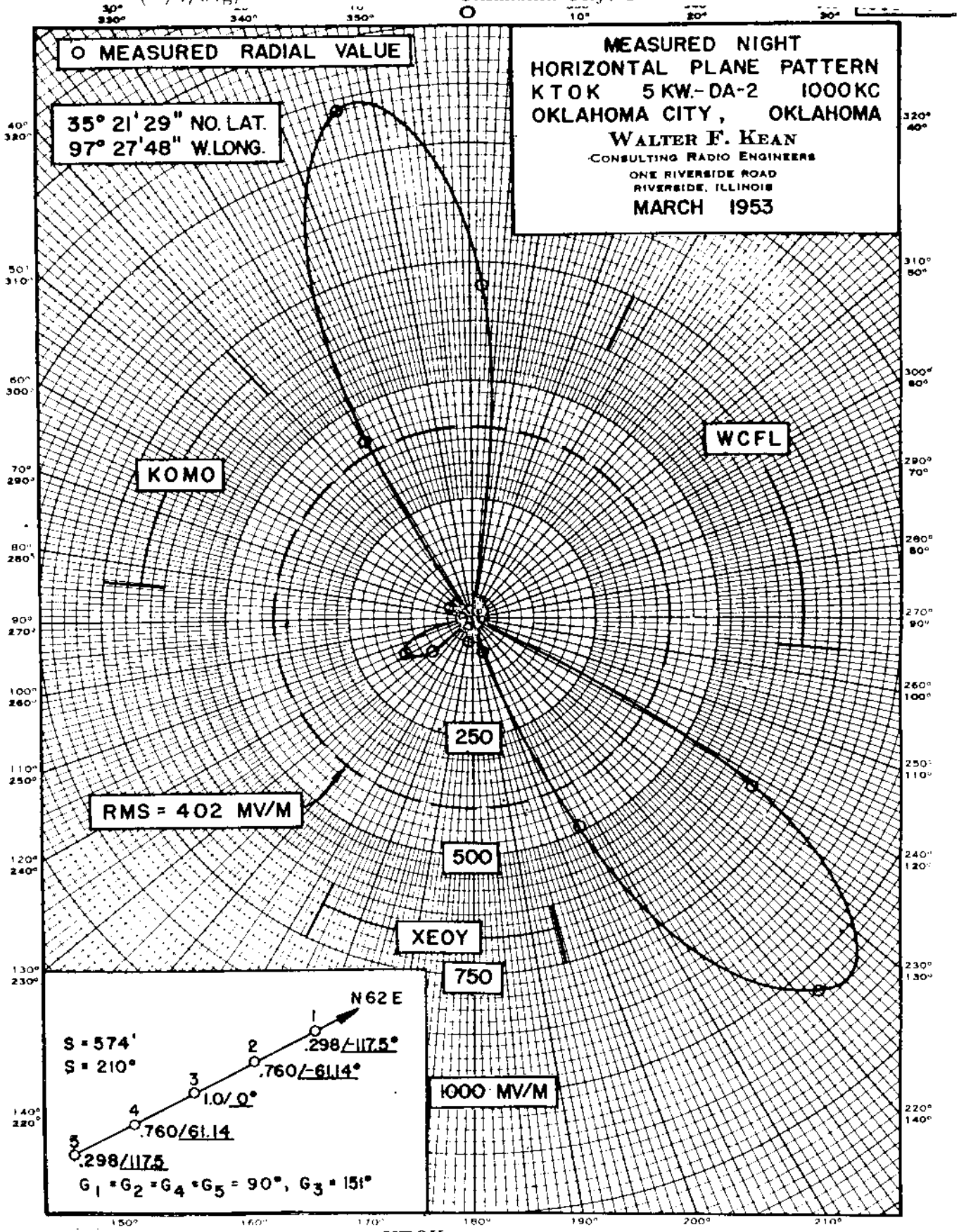
510516.1 FIGURE 3B

KTOK

MEASURED NIGHT
(?/7/57g)

Station KTOK
Oklahoma City, Oklahoma

5Kw, DA-2,U
1000 KC



FCC File No.
BL-5015

KTOK
Oklahoma City, Oklahoma

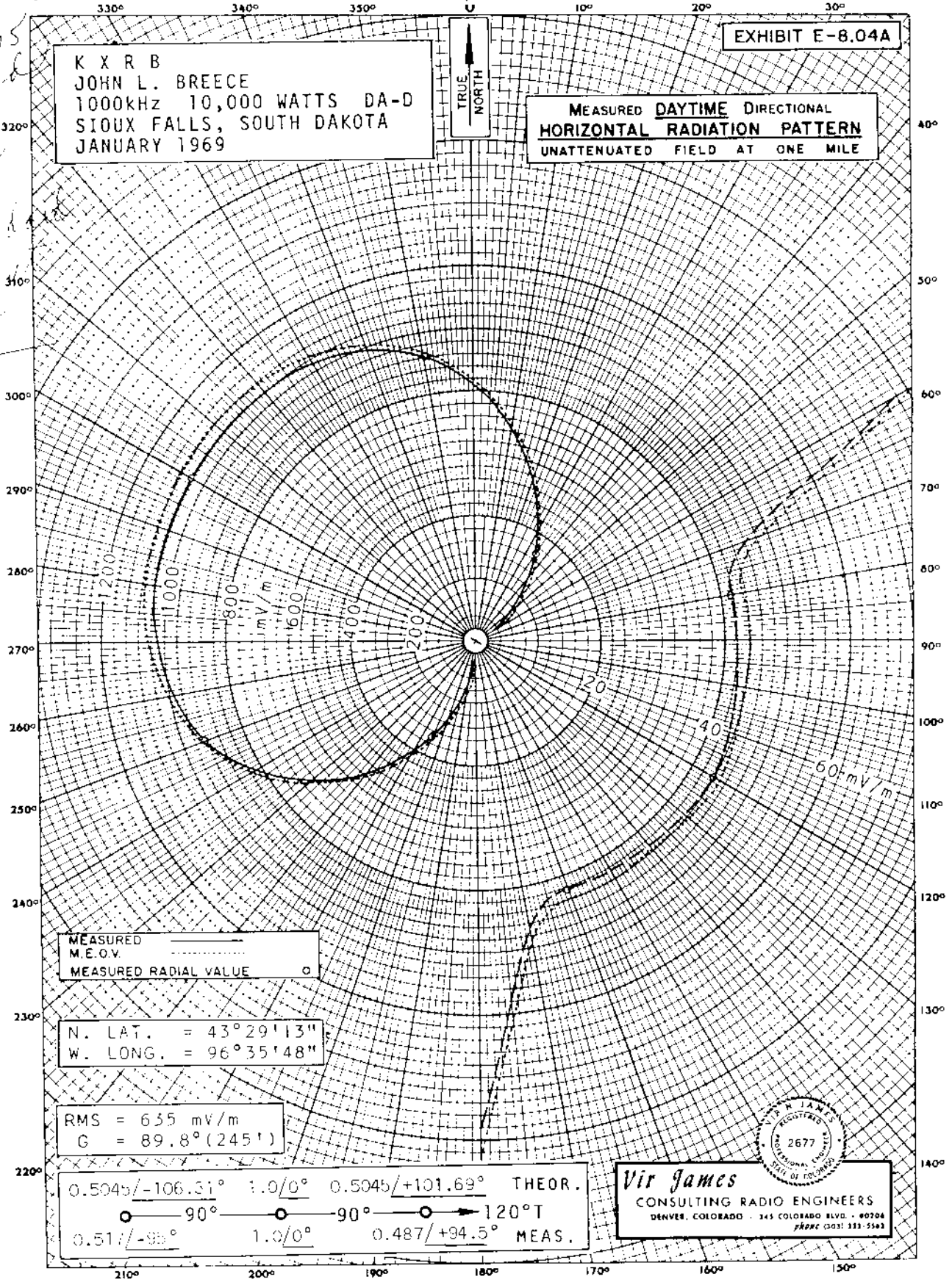
1000 KC

KXRB

Measured Day
(3-28-69ct)

Station KXRB
Sioux Falls, South Dakota

10kw,DA-D,D
1000 kc



FCC File No.BL-12295
Accepted 3-17-69

Station KXRB
Sioux Falls, South Dakota

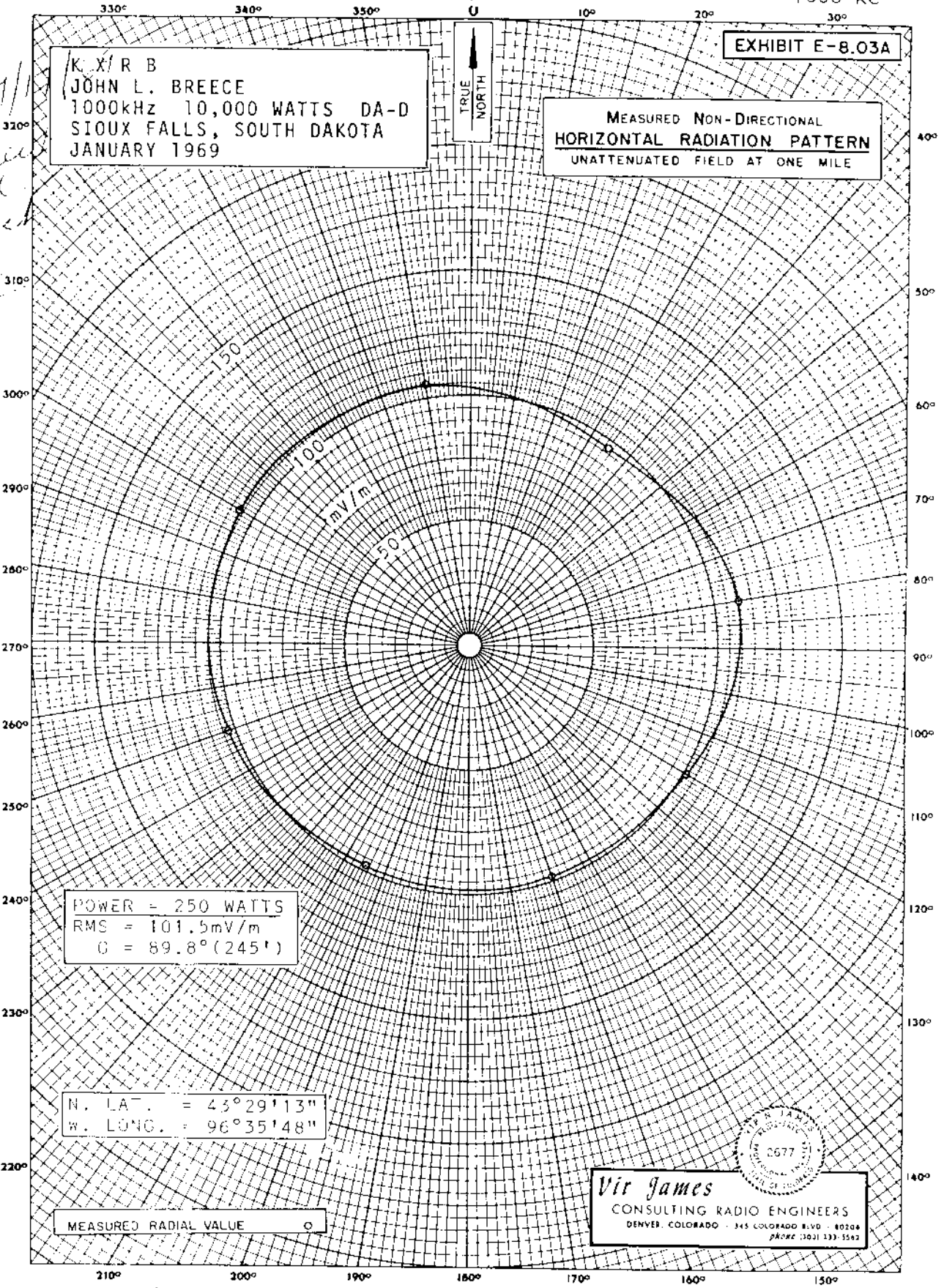
1000 kc

KXRB

Measured Non-DA
(3-28-69ct)

Station KXRB
Sioux Falls, South Dakota

10kw, DA-D, D
1000 kc

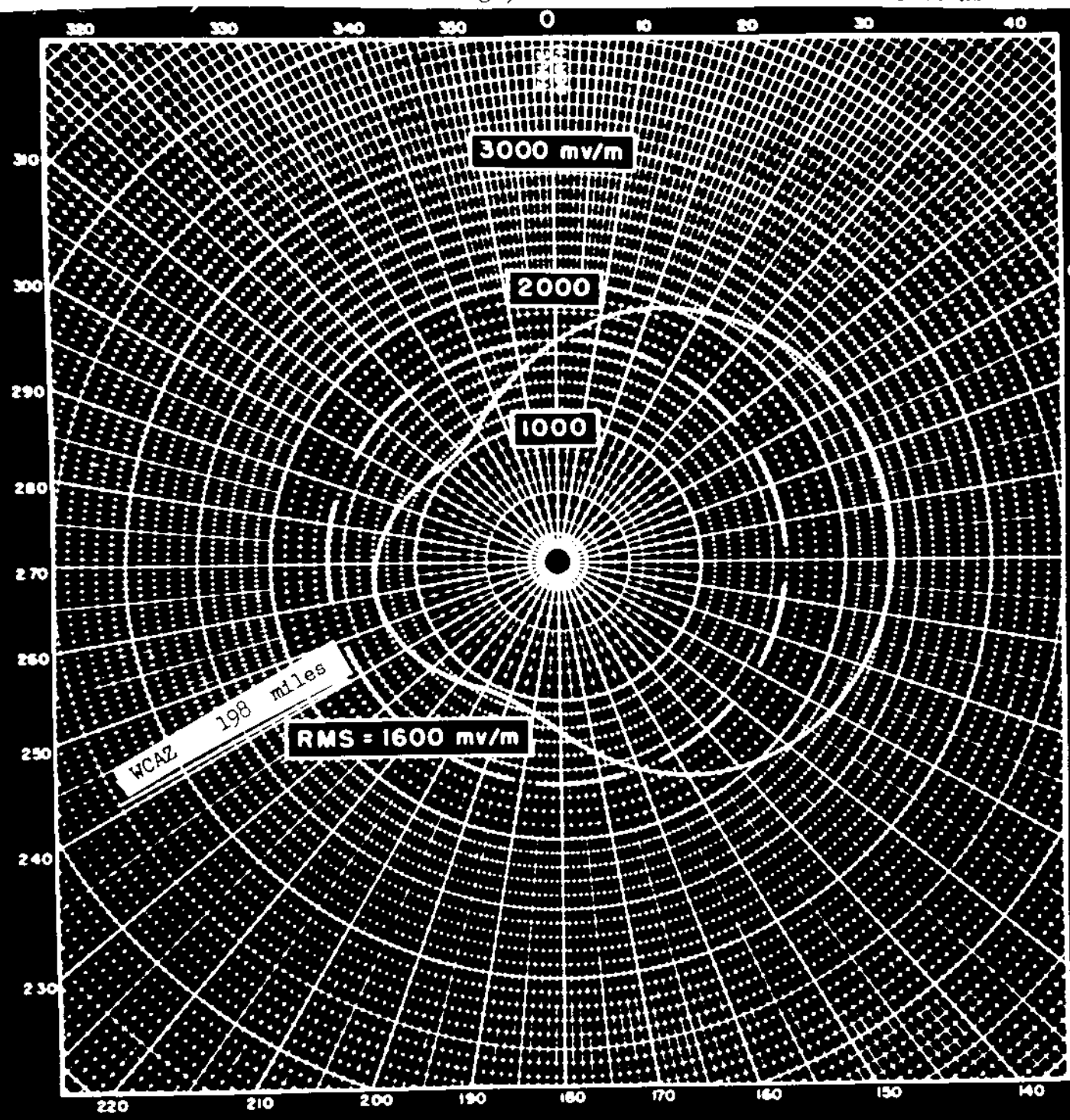


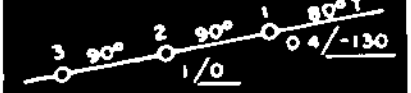
FCC File No. BL-12295
Accepted 3-17-69

Station KXRB
Sioux Falls, South Dakota

1000 kc

PROPOSED DAY | Station WCFL, Chicago, Illinois | 50kw, DA-2,U | 1000 KC | WCFL





G1 =181°, G2 =163°

HORIZONTAL RADIATION PATTERN
DAYTIME
WCFL CHICAGO, ILL.

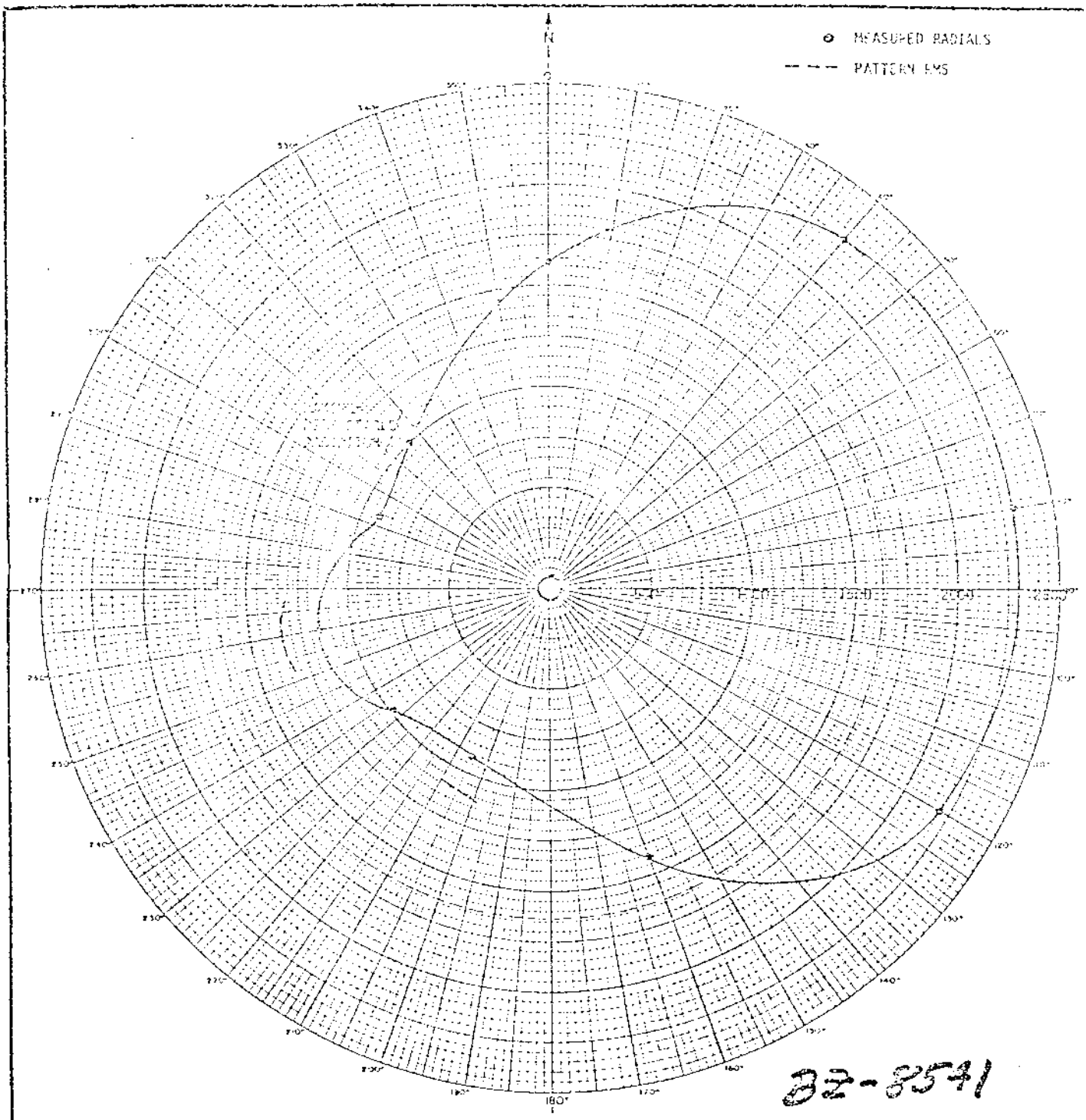
1000 KC
50 KW
DA-2

CONSULTING RADIO ENGINEERS

FIGURE 1
470117

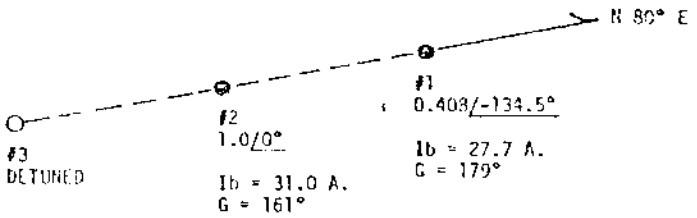
WCFL

FIGURE 11



82-3541

HORIZONTAL RADIATION PATTERN



APPLICANT	RADIO STATION WCFL
LOCATION	CHICAGO, ILLINOIS
FREQUENCY	1000 KC/S
POWER	50 KW DA-2 U
LATITUDE	41 DEG. 49 MIN. 09 SEC.
LONGITUDE	87 DEG. 59 MIN. 14 SEC.
WHEN USED	DAY DIRECTIONAL - NORMAL
RMS FIELD	1632 mV/m
DATE	July, 1973

RALPH E. EVANS ASSOCIATES
Consulting Radio Engineers
3500 North Sherman Boulevard
Milwaukee, Wisconsin 53216

WCFL

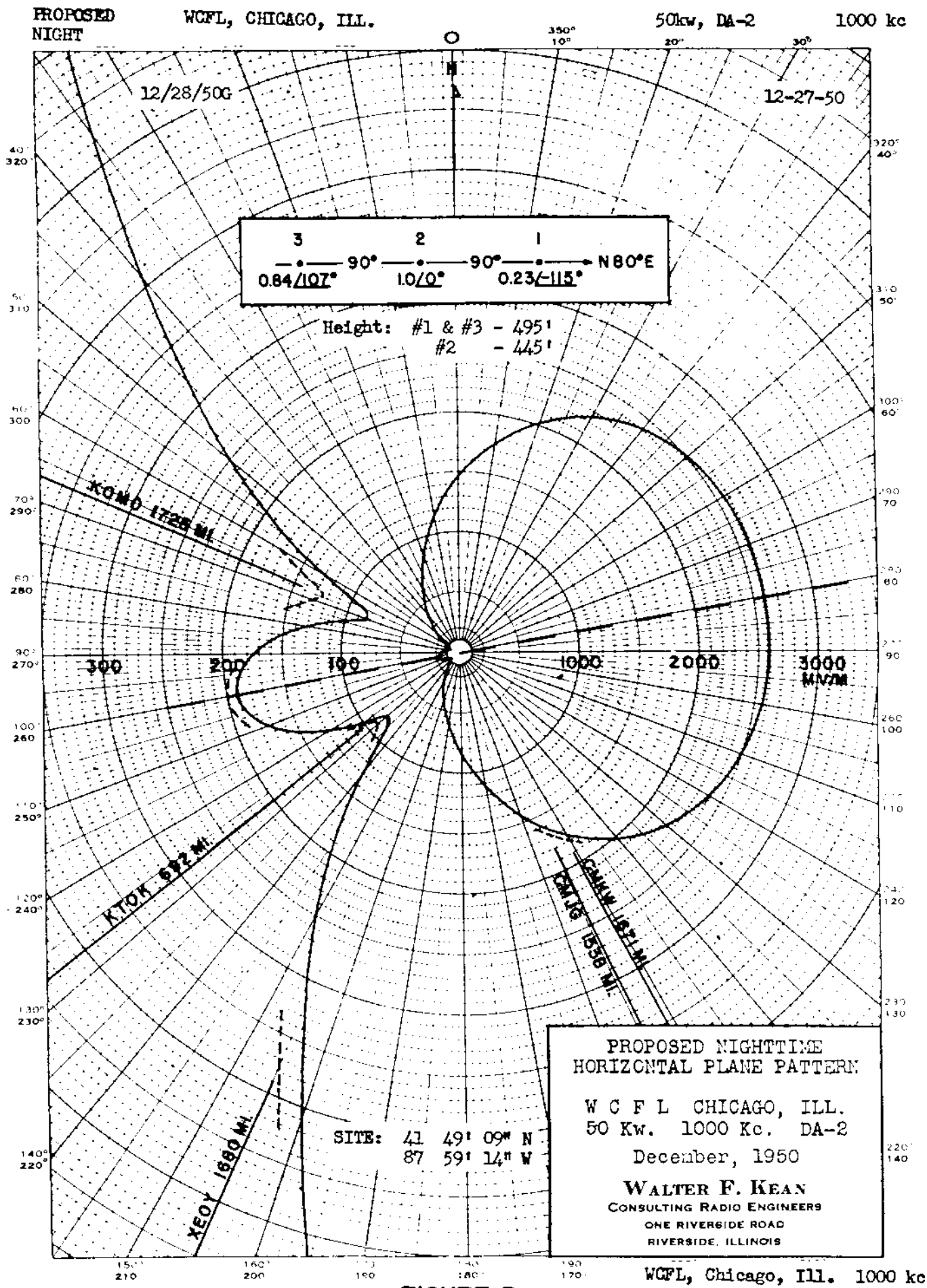
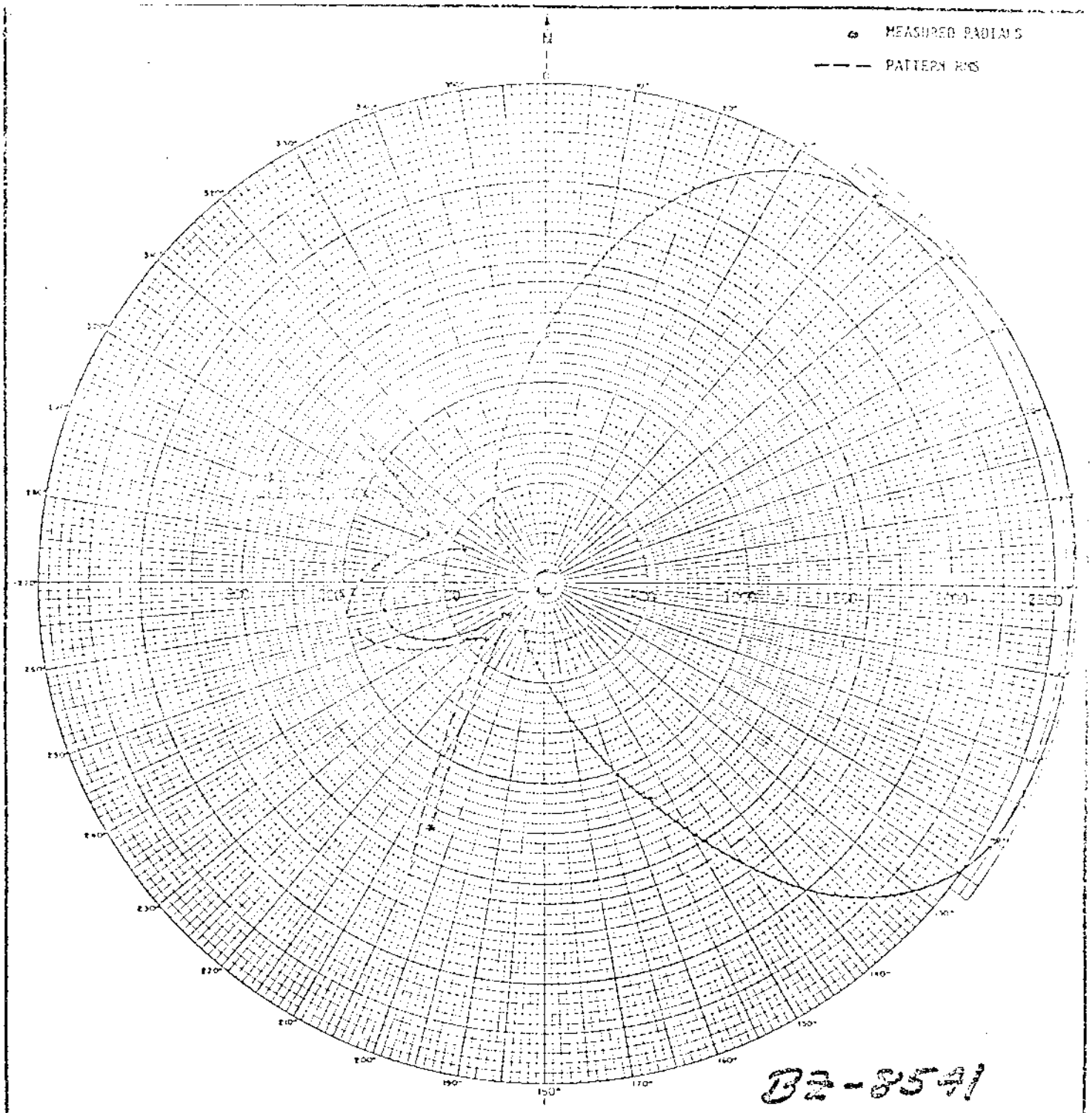


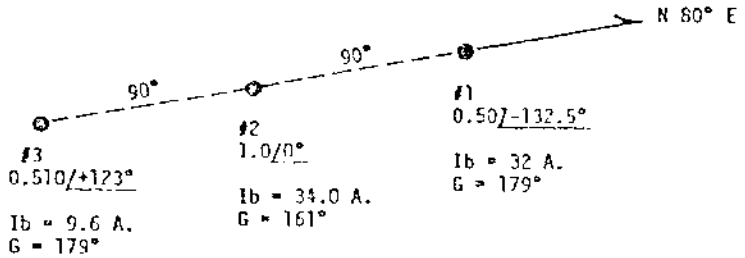
FIGURE 5

WCFL



B2-8541

HORIZONTAL RADIATION PATTERN



APPLICANT	RADIO STATION WCFL
LOCATION	CHICAGO, ILLINOIS
FREQUENCY	1000 KC/S
POWER	50 KW DA-2 U
LATITUDE	41 DEG 49 MIN. 09 SEC.
LONGITUDE	87 DEG 59 MIN. 14 SEC.
WHEN USED	NITE DIRECTIONAL - NORMAL
RMS FIELD	1580 mv/m
DATE	July, 1973

RALPH E. EVANS ASSOCIATES
Consulting Radio Engineers
3500 North Sherman Boulevard
Milwaukee, Wisconsin 53216

WCFL

MEASURED NON-DA

WCFL, CHICAGO, ILL. 9-17-52G 50 KW, U, DA-2 1000 KC

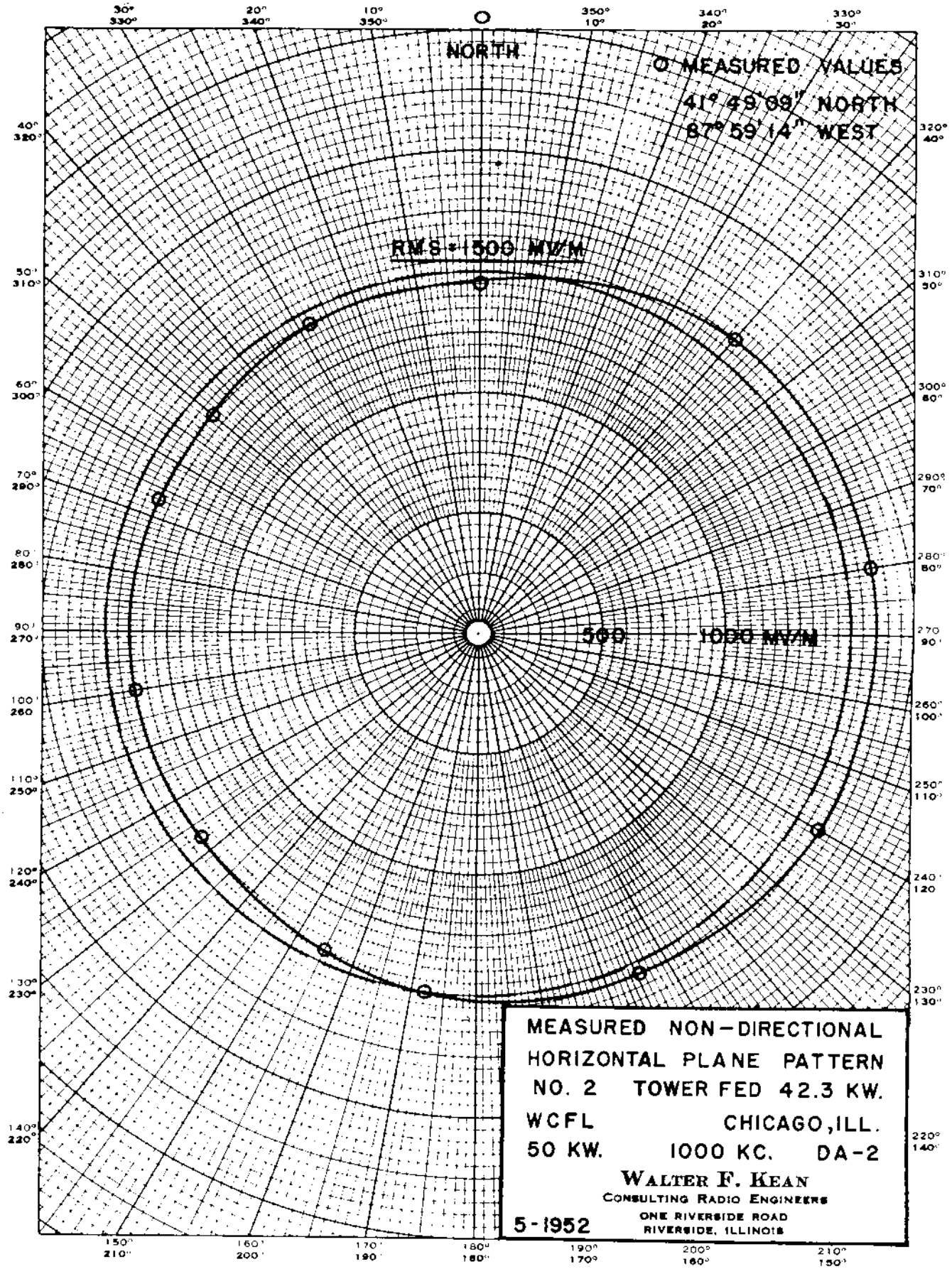


FIGURE 4

APPL RECC FCC 6/9/52 ACC 8/11/52 BL-4747 WCFL, CHIAGO, ILL. 1000 KC

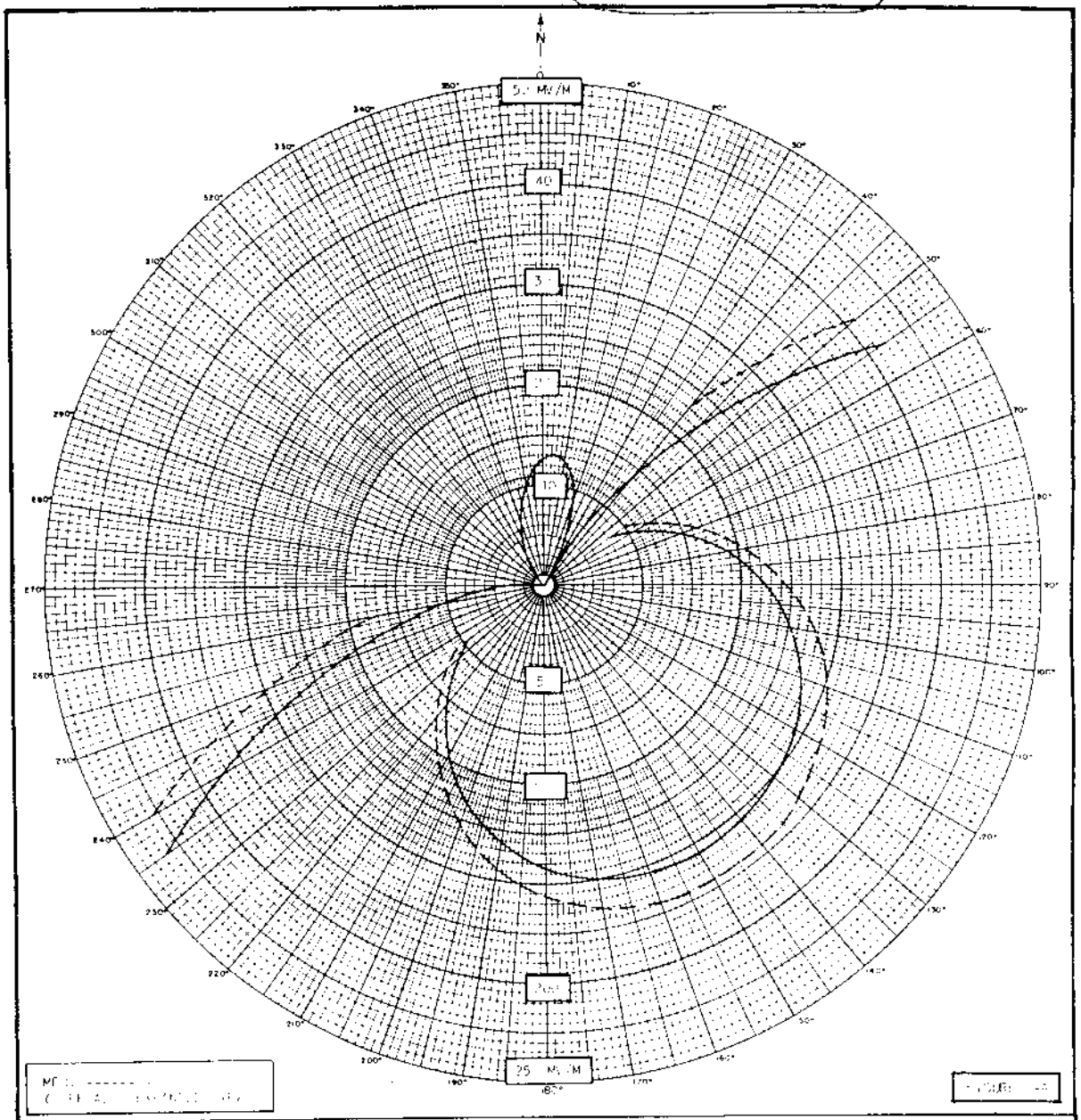
WHTH

Proposed Day
(3-27-70ct)

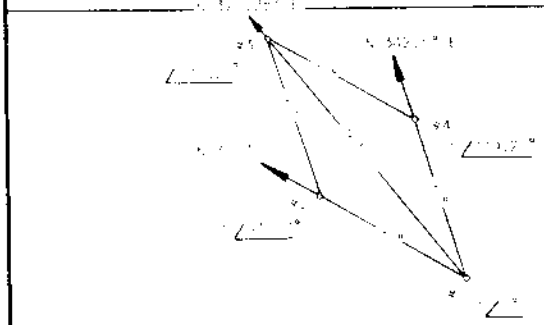
Station WHTH
Heath, Ohio

250w, DA-D, D
1000 kc

SEE Reverse Side



HORIZONTAL RADIATION PATTERN



SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No. BMP-12913
Accepted 2-25-70

Station WHTH
Heath, Ohio

1000 kc

WHTH

Measured Day
(11-24-70ct)

Station WHTH
Heath, Ohio

250w, DA-D, D
1000 kc

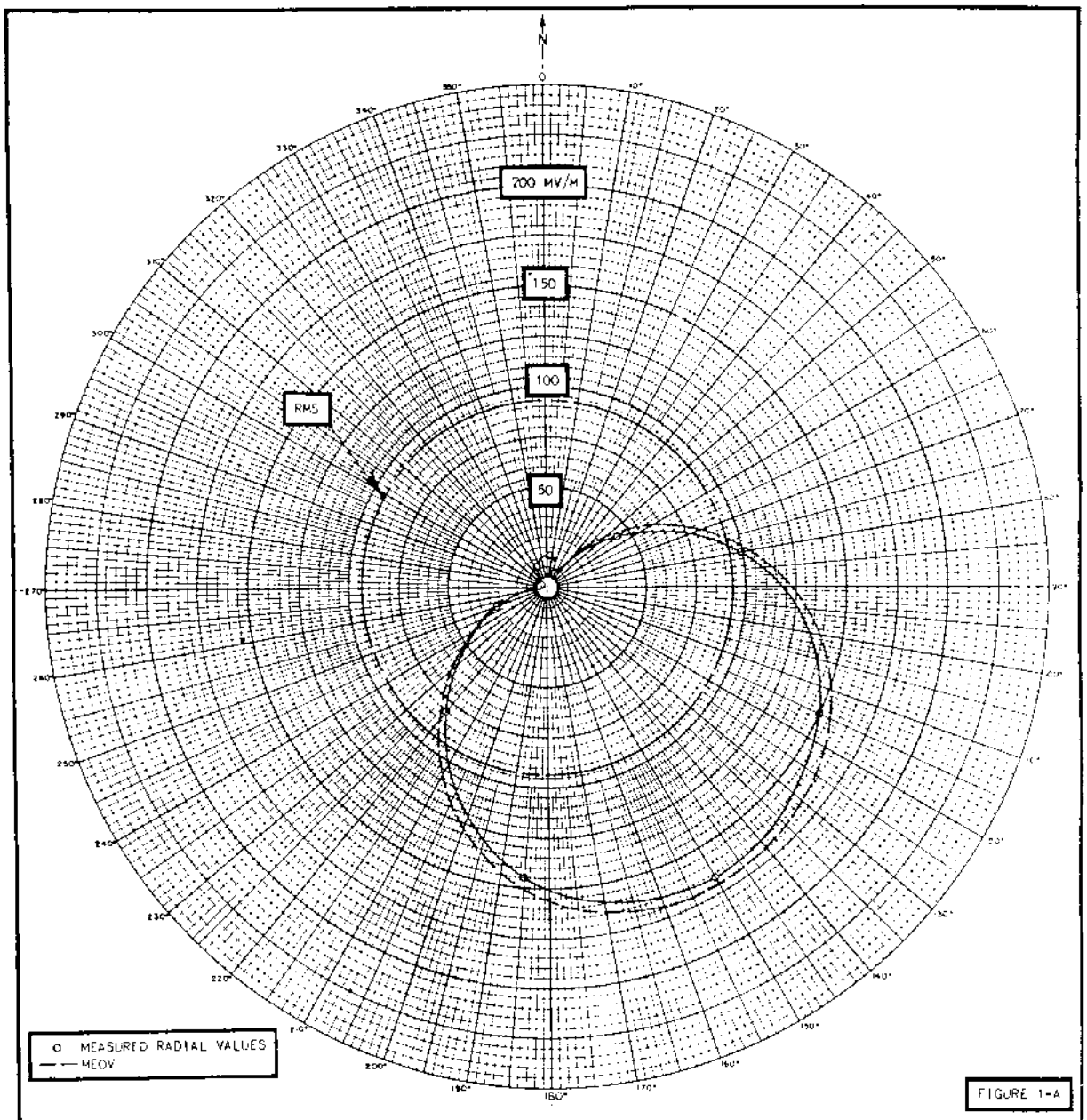
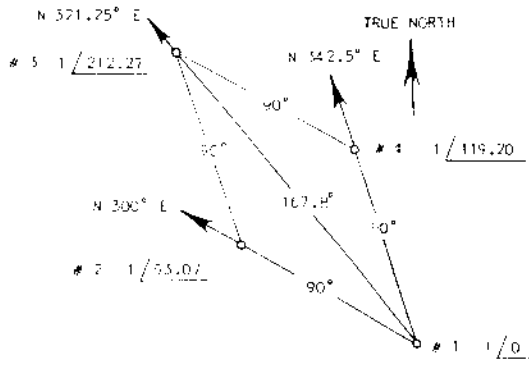


FIGURE 1-A

HORIZONTAL RADIATION PATTERN



APPLICANT	RUNNYMEDE, INC.
LOCATION	HEATH, OHIO
FREQUENCY	1000 KC/S
POWER	250 WATTS
LATITUDE	40 DEG 05 MIN 05 SEC
LONGITUDE	82 DEG 28 MIN 08 SEC
WHEN USED	DAYTIME
RMS FIELD	93 MV/M MEASURED
DATE	OCTOBER 1970

SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-12785
Accepted 11-16-70

Station WHTH
Heath, Ohio

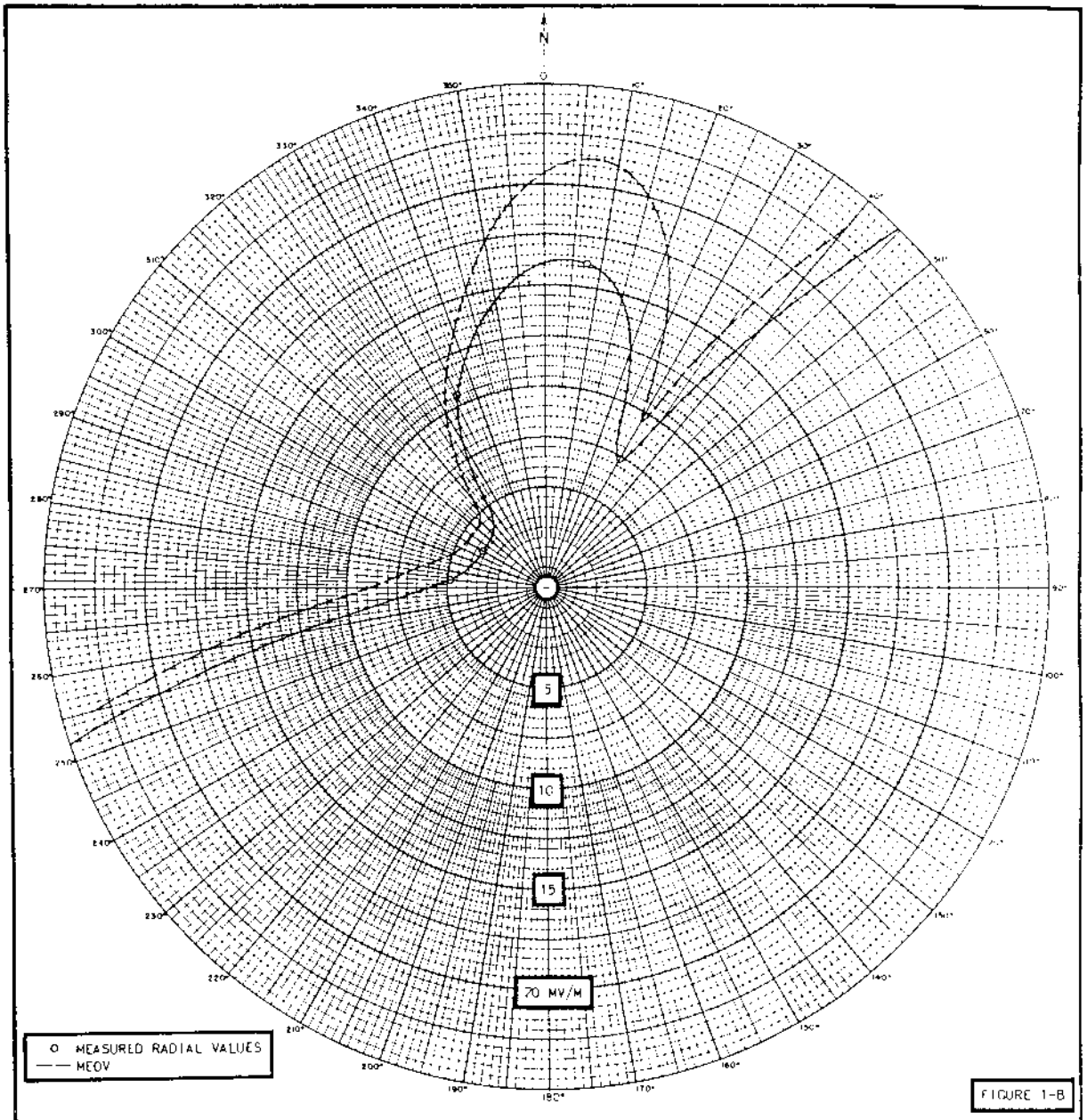
1000 kc

WHTH

Measured Day Nulls
(11-24-70ct)

Station WHTH
Heath, Ohio

250w,DA-D,D
1000 kc



HORIZONTAL RADIATION PATTERN

EXPANDED VIEW

APP. CANT.	RUNNYMEDE, INC.
LOCATION	HEATH, OHIO
FREQUENCY	1000 KCYS
POWER	250 WATTS
LATITUDE	40 DEG 03 MIN 05 SEC
LONGITUDE	82 DEG 28 MIN 05 SEC
HRS USED	DAYTIME
RMS FIELD	93 MV/M MEASURED
DATE	OCTOBER 1970

SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-12785
Accepted 11-16-70

Station WHTH
Heath, Ohio

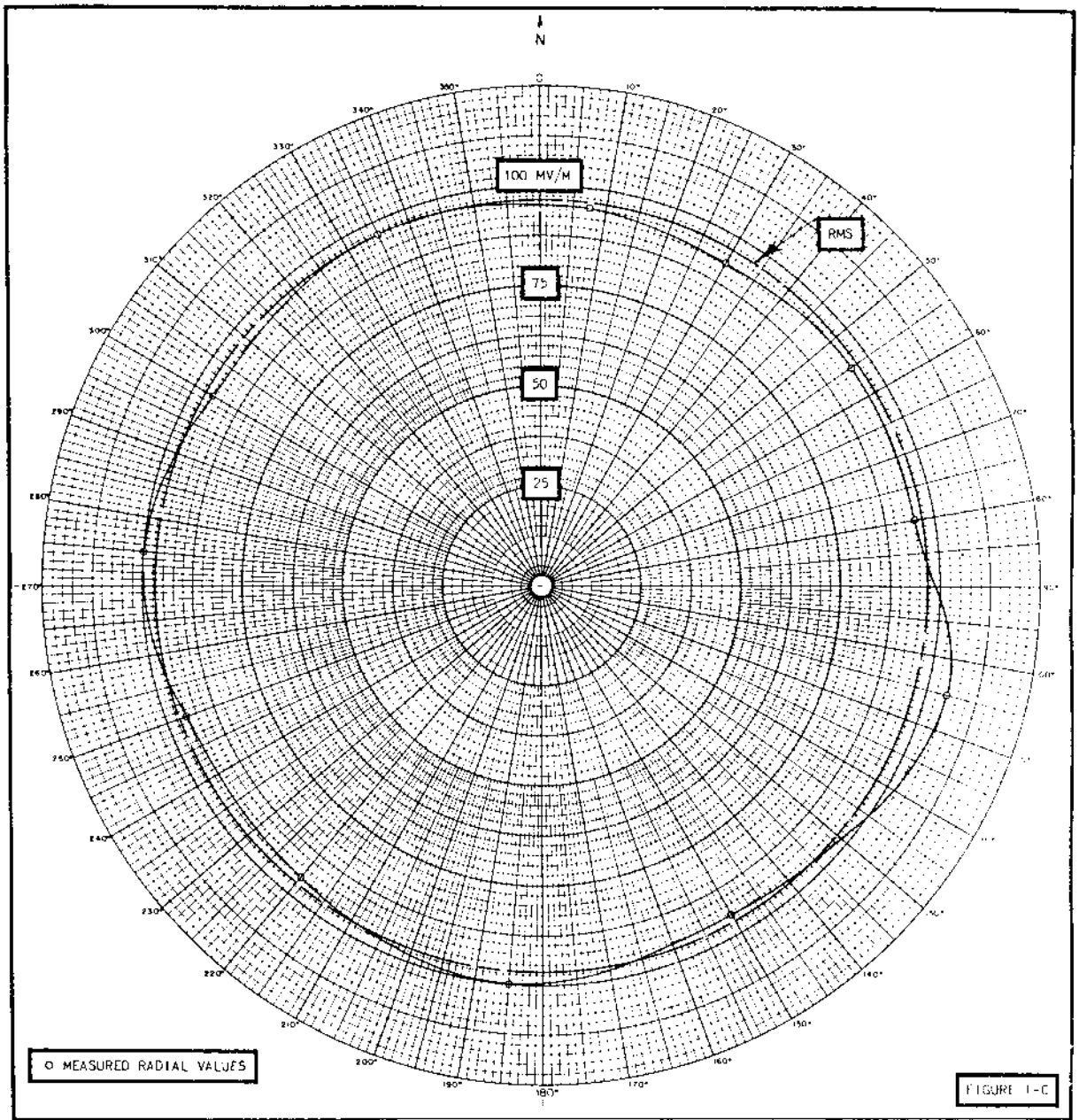
1000 kc

WHTH

Measured Non-DA
(11-24-70ct)

Station WHTH
Heath, Ohio

250w,DA-D,D
1000 kc



HORIZONTAL RADIATION PATTERN

NON-DIRECTIONAL SURVEY

APPLICANT	RUNNYMEDE, INC.
LOCATION	HEATH, OHIO
FREQUENCY	1000 KC/S
POWER	250 WATTS
LATITUDE	40 DEG 05 MIN 05 SEC
LONGITUDE	82 DEG 28 MIN 04 SEC
WHEN USED	DAYTIME
RMS FIELD	97 MV/M MEASURED
DATE	OCTOBER 1970

SILLIMAN, MOFFET & KOWALSKI
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

FCC File No.BL-12785
Accepted 11-16-70

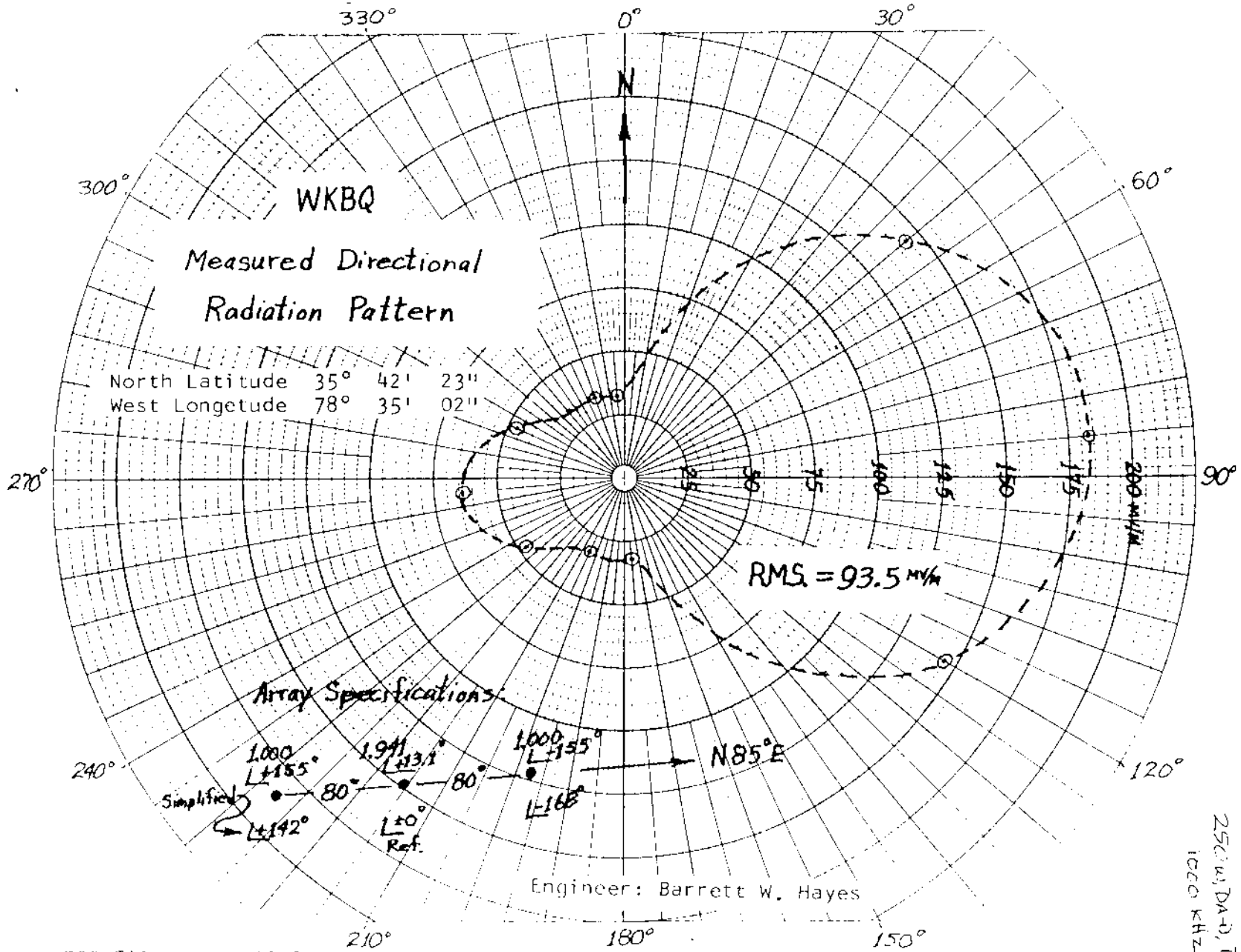
Station WHTH
Heath, Ohio

1000 kc

Measured Day
(10-26-70ct)

Station WKBQ
Garner, North Carolina

250w, DA-D, D
1000 kc



FCC File No. BL-12727
Accepted 9-28-70

Station WKBQ
Garner, North Carolina

1000 kc

WKBQ
250 (w), DA-D, D
1000 KHz

WKBQ

250w, DA-D, D

1000 KHz

WKBQ

Proposed Day
(5-27-70ct)

Station WKBQ
Garner, North Carolina

250w, DA-D, D
1000 kc

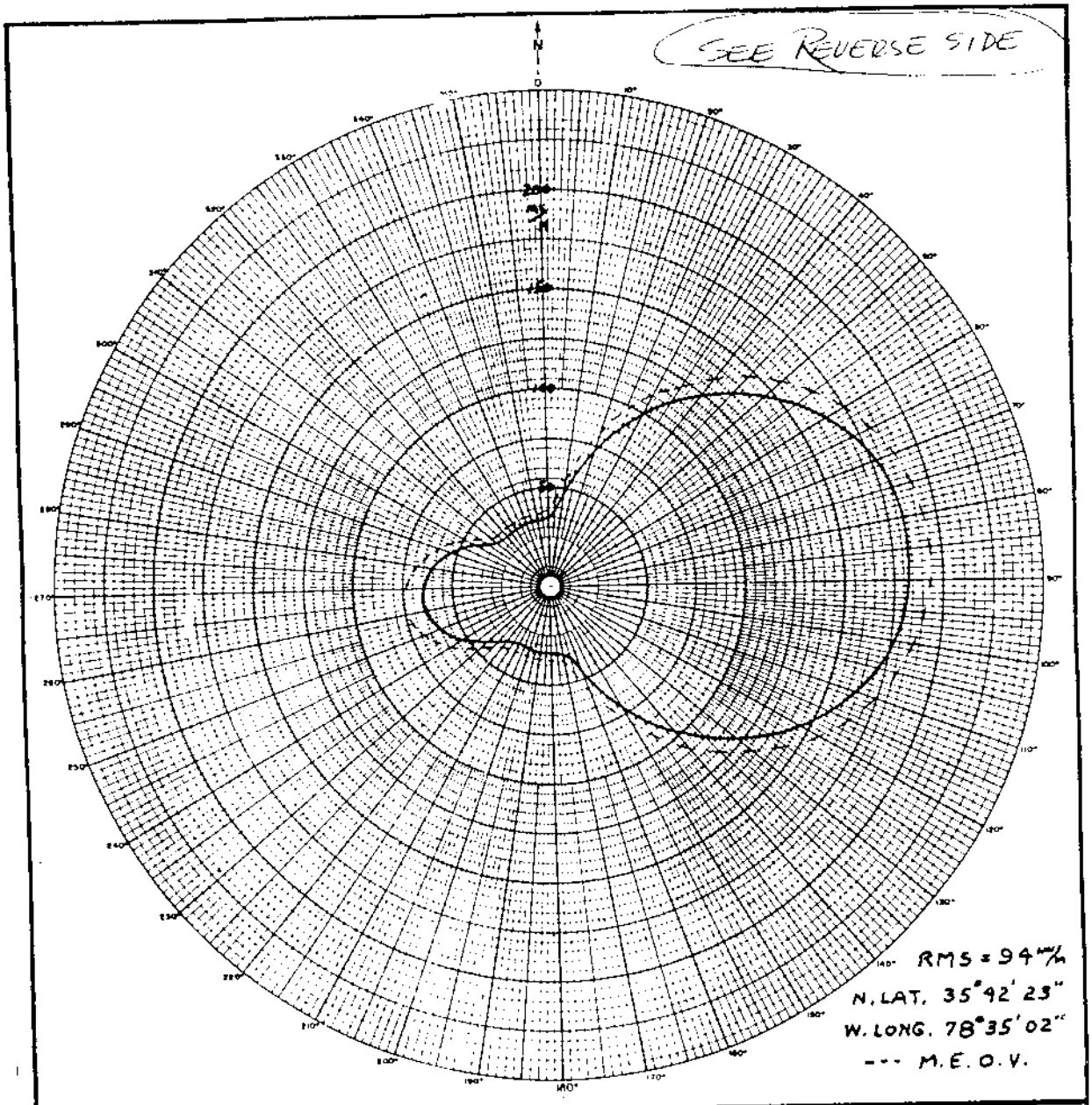


EXHIBIT IV

HORIZONTAL RADIATION PATTERN

WKBQ 1000KC 250W-DA-DAY

GARNER, NORTH CAROLINA

1 ∠-155°

1 ∠+155°

O

O

N85°E

1.94 ∠13.1°

h = 80°
s = 80°

WILLIAM L. FOSS, INC.
Electronic Consultants
WASHINGTON 8, D. C.

PATTERN NO
SUPERSEDES
APP

FCC File No. BP-18754
Accepted 4-28-70

Station WKBQ
Garner, North Carolina

1000 kc

WOOP

SUPPLEMENTAL AND CORRECTED DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WOOP

Main Studio: Danville, Kentucky

Frequency: 1000 kHz

Power: 1kw Day

Notification List No. 1781

Date: October 19, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 37° 39' 58"
West Longitude: 84° 42' 18"

Note: Please retain the description sheet and directional antenna radiation patterns notified for a new station in Danville, Kentucky in United States Change List Number 1733, dated May 12, 1977 and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only a change in the geographical coordinates of the center of the antenna system.

WRNJ

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WRNJ — Main Studio: Hackettstown, New Jersey

Frequency: 1000 kHz — Power: 1 kW

Notification List No. 1637 — Date: June 18, 1975 — Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 40° 50' 46"
West Longitude: 74° 48' 13"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation. (DA-D)
Number of elements: 2
Type of elements: Series-excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	NW(#2)	SE(#1)
HEIGHT ABOVE INSULATORS:	249'	249' (90°)
PHASING:	-134°	0°
FIELD RATIO:	0.8	1

SPACING AND ORIENTATION: Elements are spaced 218' (80°) on a line bearing 330° true.

GROUND SYSTEM: 120-229' equally spaced copper radials plus a 24' square ground screen about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers. Centers of systems are bonded together.

Predicted effective Field: 180 mv/m at rated power.

Note: This notification concerns only a change in transmitter location and orientation of the line of towers in the directional antenna system.

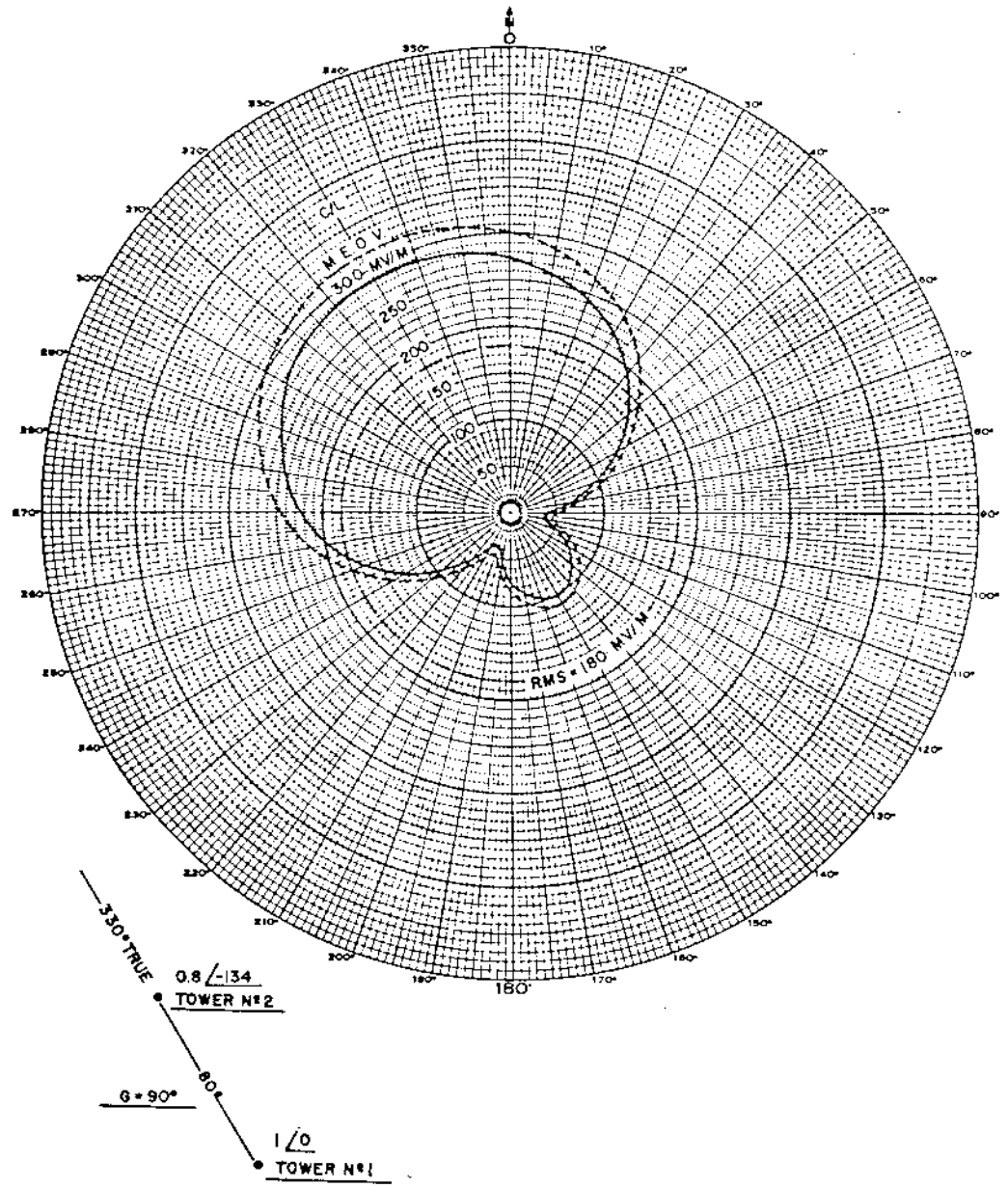


EXHIBIT E-3

CALCULATED HORIZONTAL RELATIVE FIELD PATTERN PROPOSED WRNJ HACKETTSTOWN, NEW JERSEY

WRYZ

FEB 9, 73

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WRYZ — Main Studio: Jupiter, Florida

Frequency: 1000 kHz — Power: 1kw

Notification List No. 1452 — Date: November 24, 1971 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 26° 56' 22"
West Longitude: 80° 07' 04"

ANTENNA CHARACTERISTICS - STANDARD AND MODIFIED PATTERNS

Authorized for Daytime operation. (DA-D)
Number of elements: 2
Type of elements: Series-excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	W(#1)	E(#2)
HEIGHT ABOVE INSULATORS:	317' (116°)	243' (89°)
PHASING:	0°	+158°
FIELD RATIO:	1	0.92

SPACING AND ORIENTATION: Elements are spaced 191' (70°) on a line bearing 90° true.

GROUND SYSTEM: 120 - 250' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

Predicted RMS Field (Theoretical): 207 mv/m at rated power.
Predicted RSS Field (Theoretical): 332 mv/m at rated power.
Predicted RMS Field (Standard): 217 mv/m at rated power.

MODIFIED PATTERN AUGMENTATION

Azimuth of Maximum Augmentation	Augumented Radiation E_2	Span of Augmentation From - To
20°	40 mv/m	355° - 45°
170°	56.3 mv/m	155° - 185°

WRYZ

FIGURE #I

SPECIFIVATIONS OF

DIRECTIVE ANTENNA ARRAY

PROPOSED JUPITER, FLA. STATION

1000KC. IKW,DA-D, D.

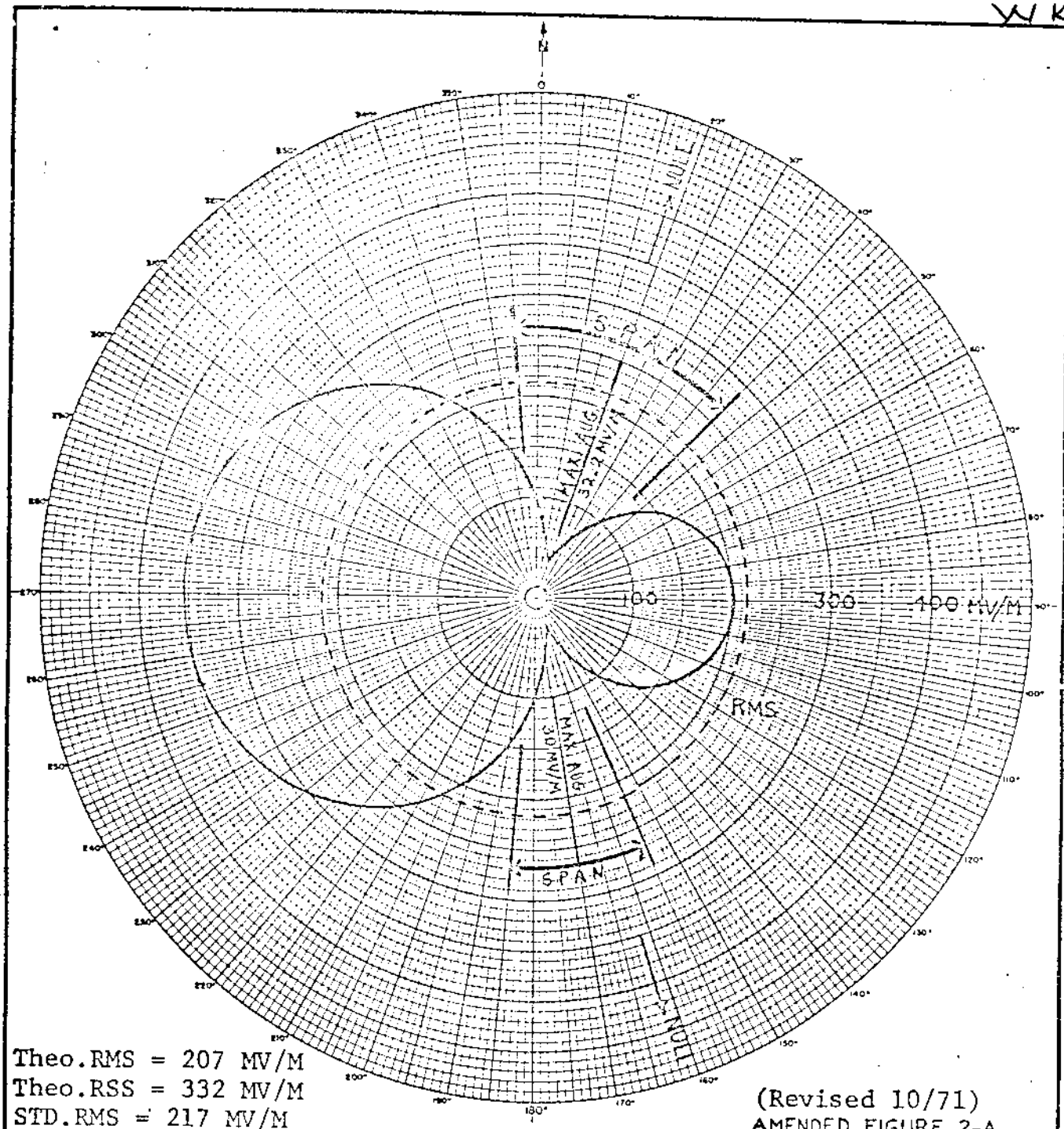
TYPE OF TOWER:		UNIFORM CROSS-SECTION GUYED, INSULATED
NUMBER OF TOWERS:		TWO
HEIGHT ABOVE INSULATORS:		246'
HEIGHT ABOVE GROUND:		249'
HEIGHT ABOVE SEA LEVEL:		254'
ORIENTATION:	On a line Bearing	N90°E
SPACING:		70° or 191'
	Tower #1, West	0°
	Tower #2, East	155°
FIELD RATIO:		
	Tower #1, West	1.0
	Tower #2, East	0.9

GROUND SYSTEM: 120 radials 150 to 300 feet in length evenly spaced around each tower and running to a common 4-inch copper strap at junction of radials between towers.

A 4' x 4' copper plate is provided at base of each tower with radials silversoldered to this plate.

Radials that extend to center of creek or canal will be weighted and imbeded in bottom of creek or canal. Water in Jupiter creek is tidal salt water.

WKYZ



Theo.RMS = 207 MV/M
Theo.RSS = 332 MV/M
STD.RMS = 217 MV/M

(Revised 10/71)
AMENDED FIGURE 2-A

STANDARD HORIZONTAL RADIATION PATTERN

SPACING & ORIENTATION

1 ⊙——— 70° ———⊙→ 2 N 90°E

1 ∠0°

.92 ∠158°

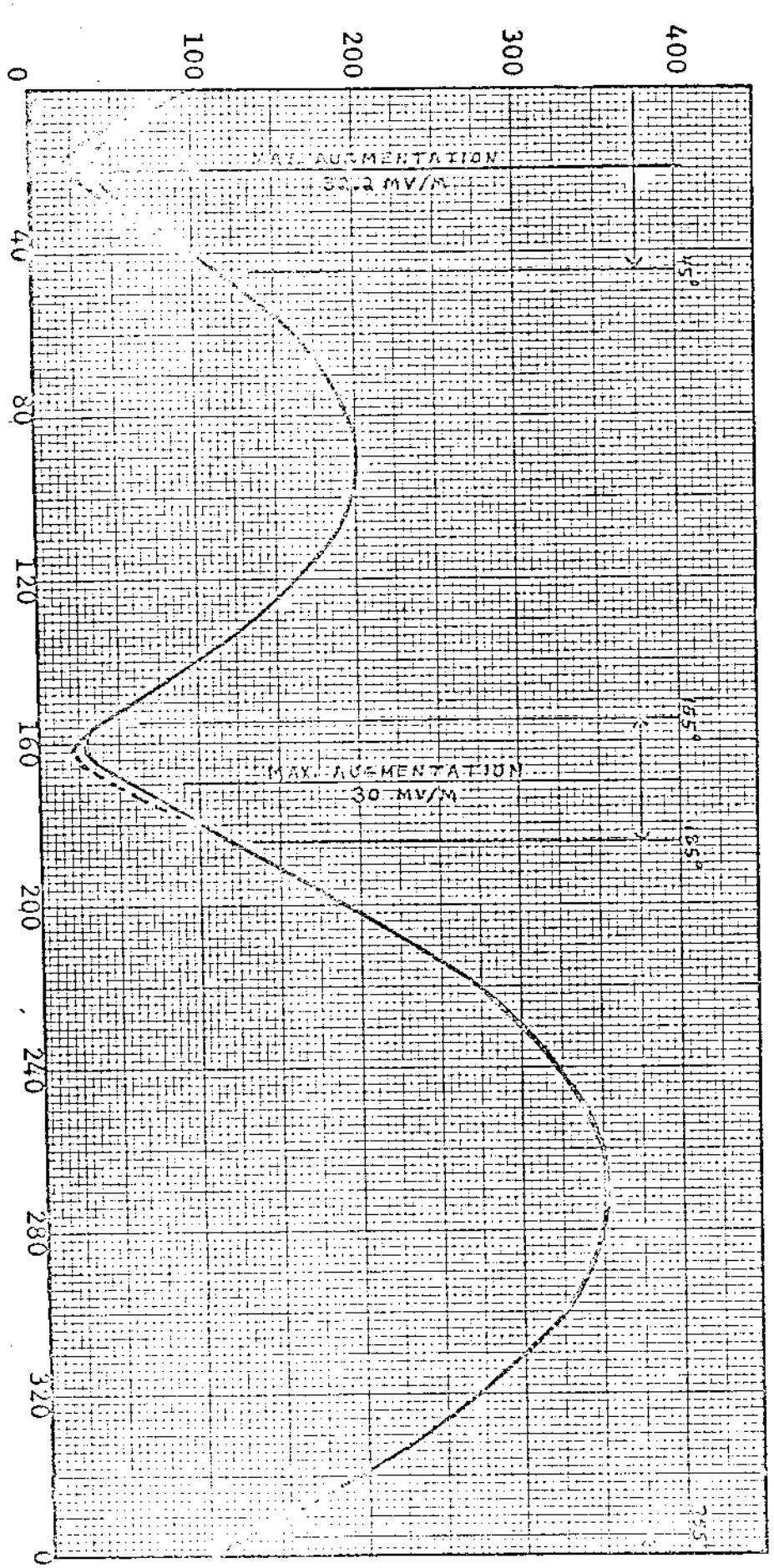
G(1) = 116° G(2) = 90°

APPLICANT	WRYZ (WJTS)
LOCATION	JUPITER, FLORIDA
FREQUENCY	1000 KHZ
POWER	1 KW
LATITUDE	26 DEG. 56 MIN. 22 SEC
LONGITUDE	80 DEG. 07 MIN. 04 SEC
WHEN USED	DAYTIME
R.M.S. FIELD	217 MV/M
DATE	SEPTEMBER 1971

BURLESON ASSOCIATES, INC.

WASHINGTON, D. C.

WKY2



MODIFIED STANDARD HORIZONTAL PATTERN AUGMENTED

(Revised 10/71)
AMENDED FIGURE 2-B

WRYZ

Proposed Day
(11-29-66ct)

New; Lighthouse Bcstg. Company, Inc.
Jupiter, Florida

1kw,DA-D,D
1000 kc

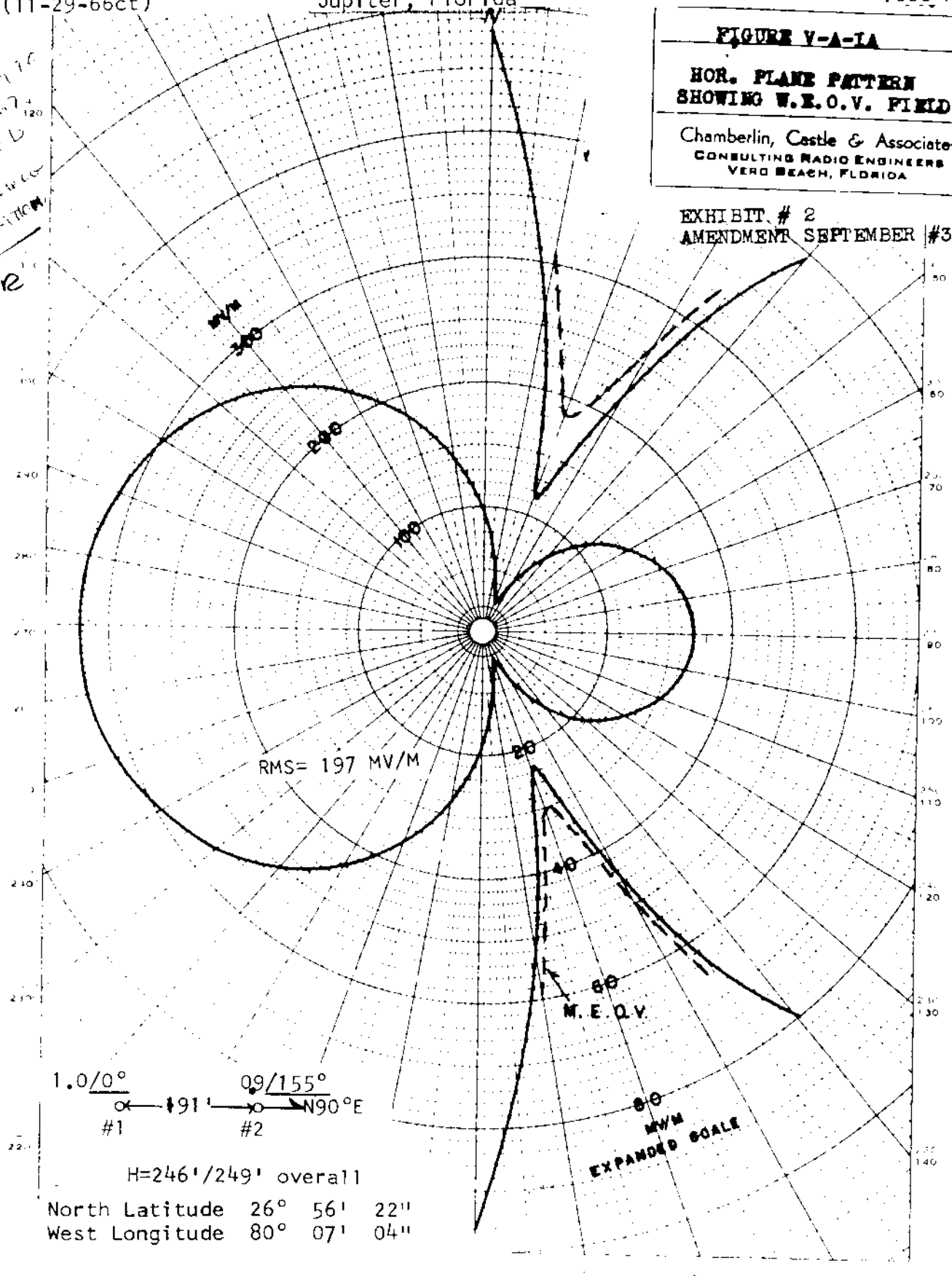
P-16970
2-1-67
GRANTED
CP
AM
STATION
OVER

FIGURE V-A-IA

HOR. PLANE PATTERN SHOWING M.E.O.V. FIELD

Chamberlin, Castle & Associates
CONSULTING RADIO ENGINEERS
VERO BEACH, FLORIDA

EXHIBIT # 2
AMENDMENT SEPTEMBER #3,196



H=246'/249' overall

North Latitude 26° 56' 22"
West Longitude 80° 07' 04"

FCC File No.BP-16970 New; Lighthouse Bcstg. Company, Inc.
Accepted 11-1-66 Amended Jupiter, Florida

1000 kc

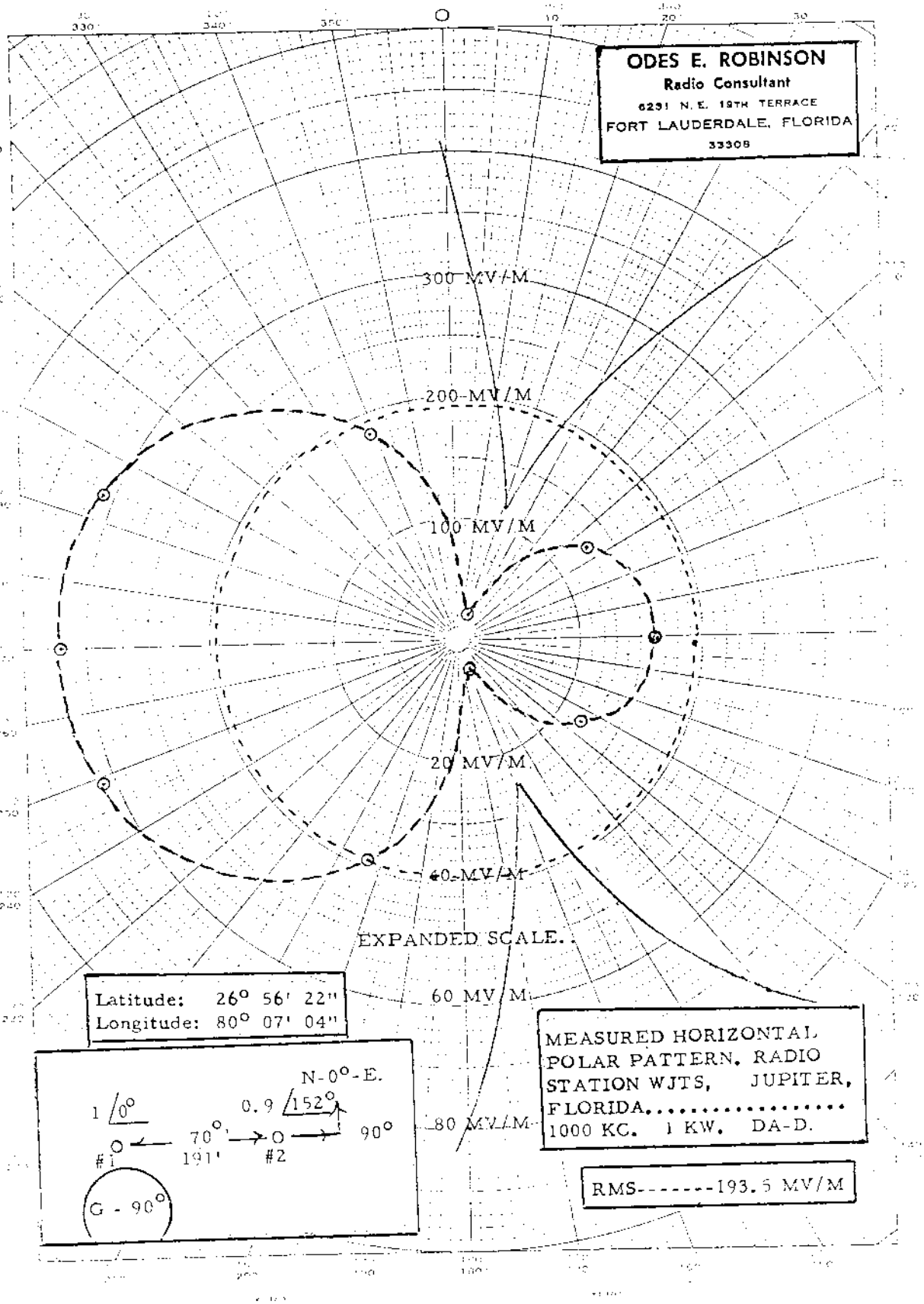
WRY2

Measured Day
(4-29-68ct)

Station WJTS
Jupiter, Florida

1kw, DA-D, D
1000 kc

5-15-68
GRANTED
LICENSE.



FCC File No. BL-11926
Accepted 4-10-68

Station WJTS
Jupiter, Florida

1000 kc

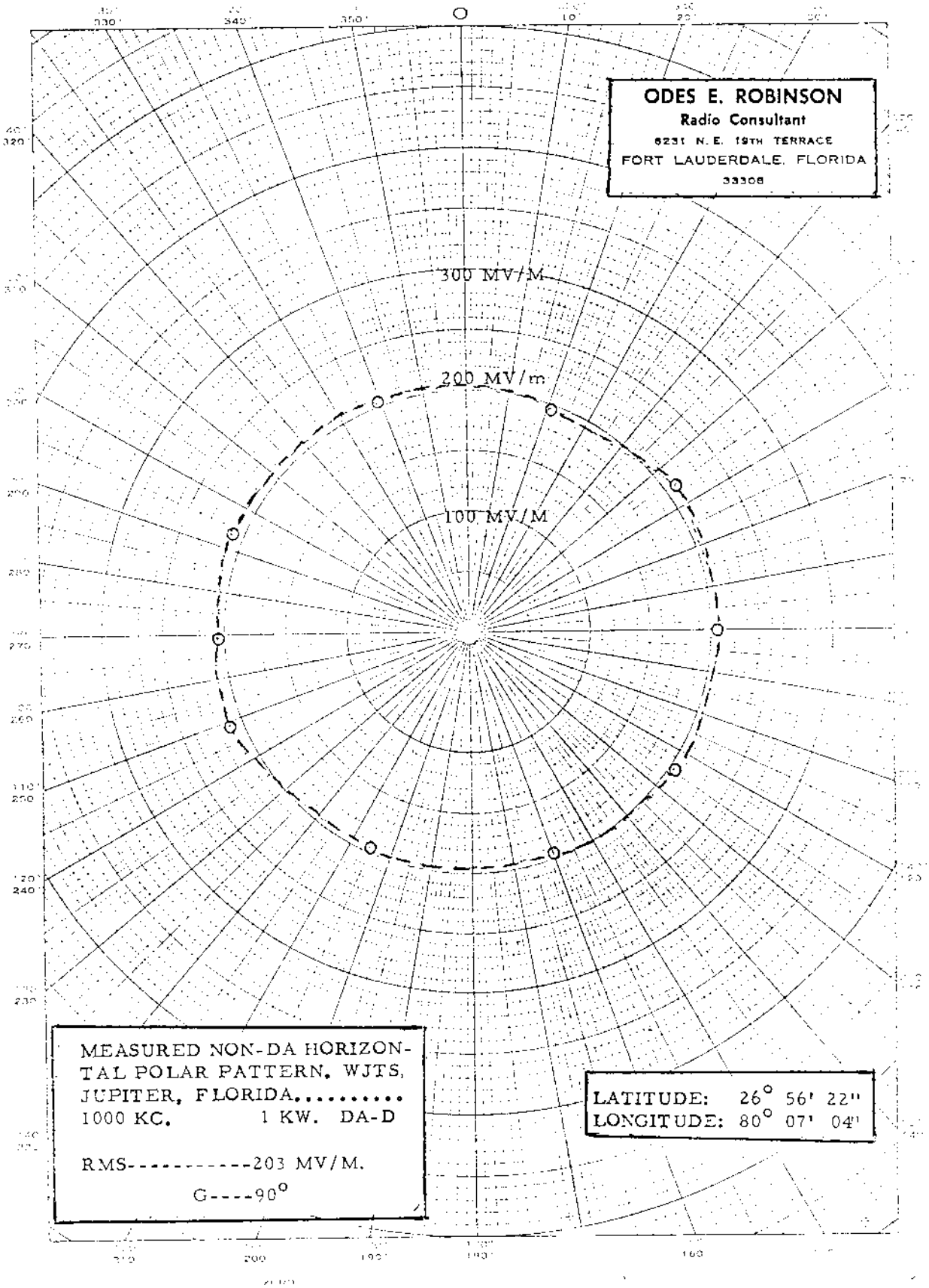
WRY 2

Measured Non-DA
(4-29-68ct)

Station WJTS
Jupiter, Florida

1kw, DA-D, D
1000 kc

5-15-68
GRANTED
LICENSE



FCC File No. BL-11926
Accepted 4-10-68

Station WJTS
Jupiter, Florida

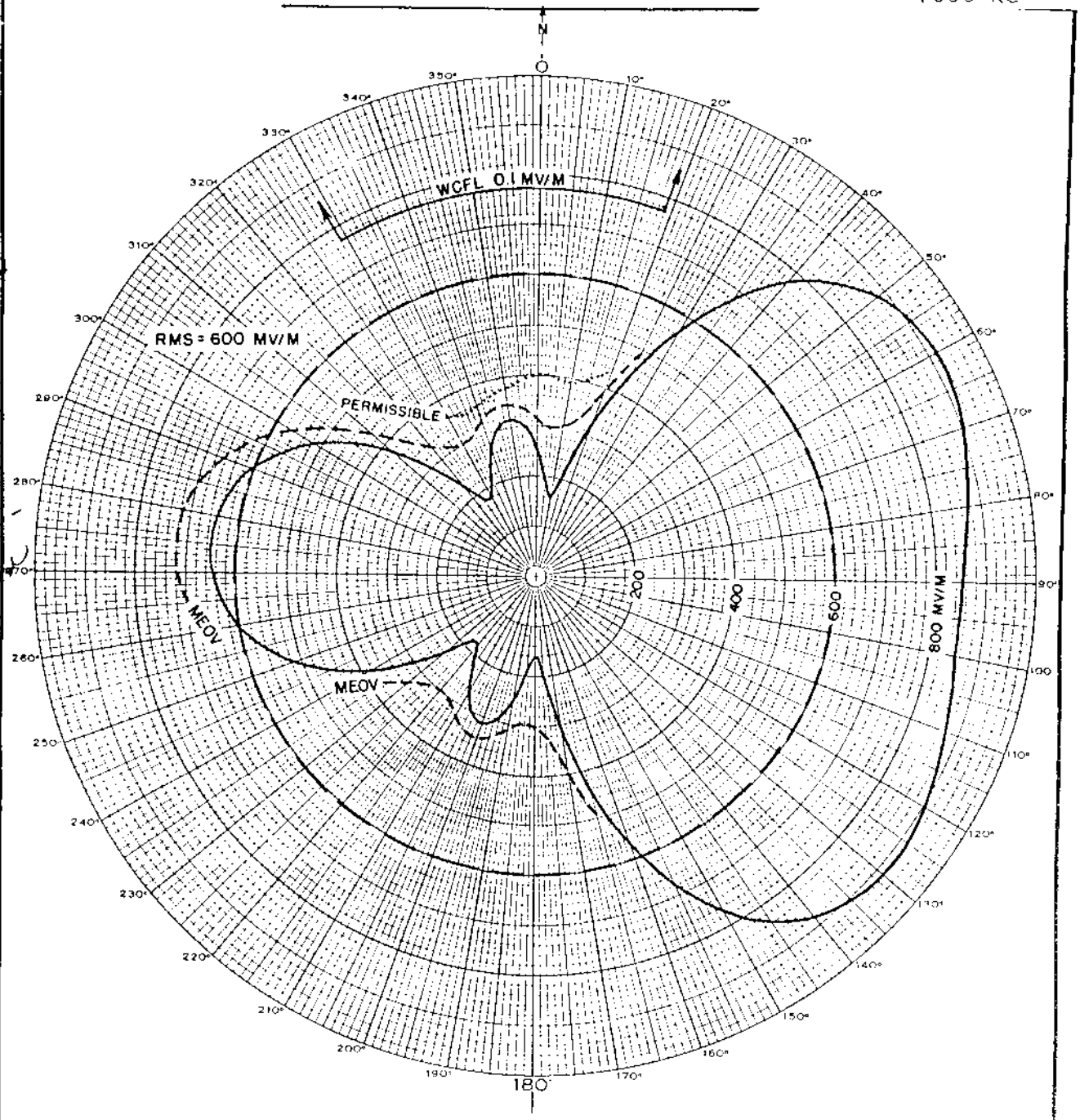
1000 kc

Proposed Day
(12-28-67ct)

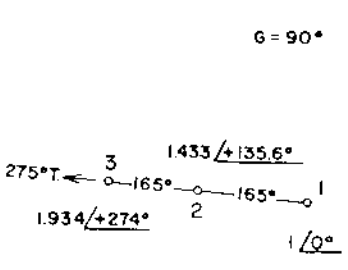
New; Tennessee Valley Bcstg Co., Inc. 10kw,DA-D,D
Huntsville, Alabama 1000 kc

12-21-67
GRANTED
CP FOR A
NEW AM
STATION

BL-12174
Granted
8-5-69
license
for new
AM Broad-
cast station



AMENDED
EXHIBIT C-1



SITE COORDINATES
LATITUDE 34° 46' 47" NORTH
LONGITUDE 86° 39' 16" WEST

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	–	–	0	1.0	190	90
2	–	165	+135.6	.433	190	90
3	275	165	+274	1.934	190	90

PROPOSED DAYTIME
HORIZONTAL PLANE PATTERN
FOR
HUNTSVILLE, ALABAMA
1000 KC 10 KW DA-D

670412

KEAR & KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D.C.

FCC File No. BP-16609 New; Tennessee Valley Bcstg Co., Inc.
Accepted 11-3-67Amended Huntsville, Alabama 1000 kc

WVOV

Measured Day
(11-29-68ct)

Station WVOV
Huntsville, Alabama

10kw, DA-D, D
1000 kc

BL-12174 Granted 2-5-69 license for a new AM broadcast station

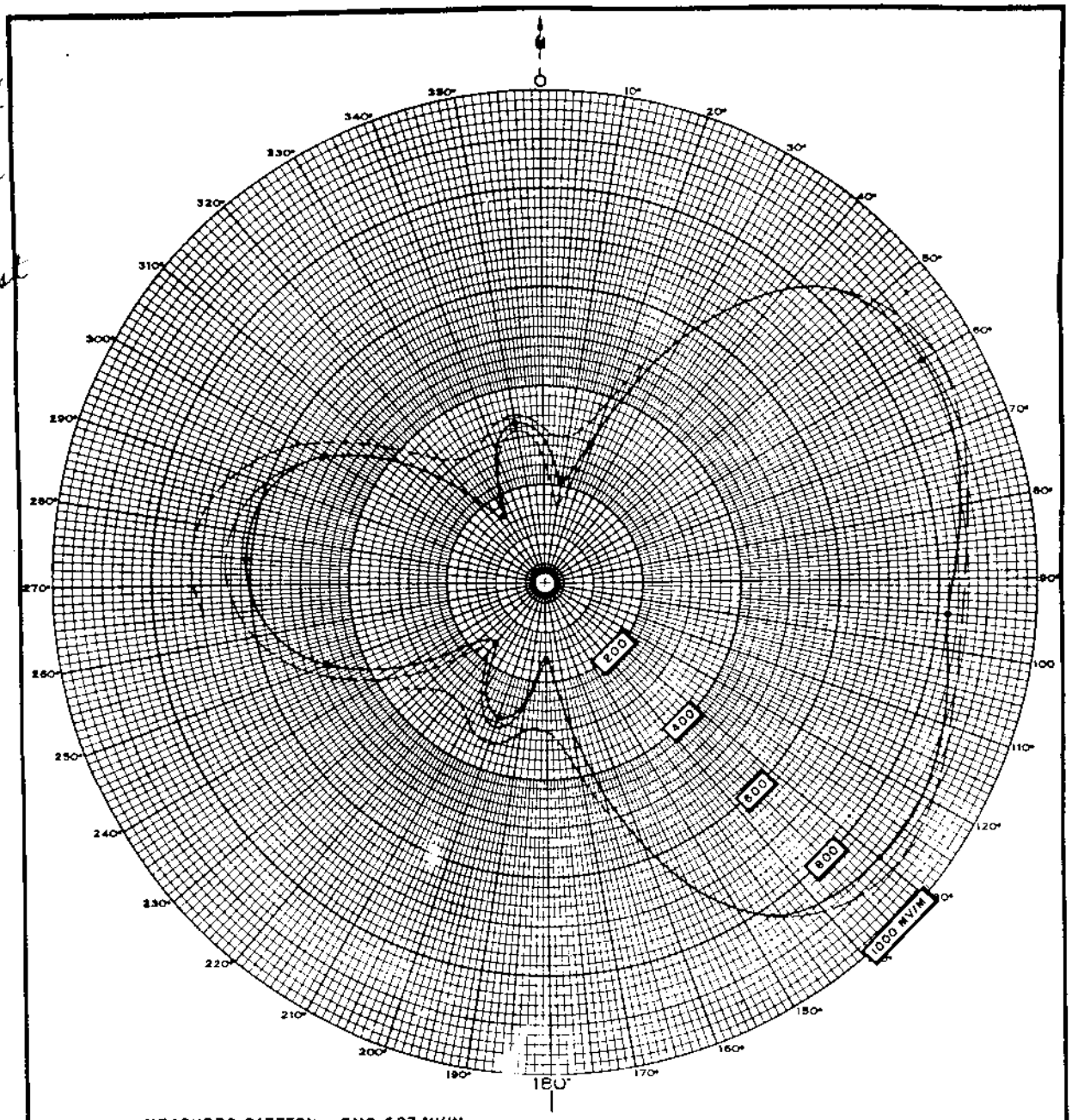
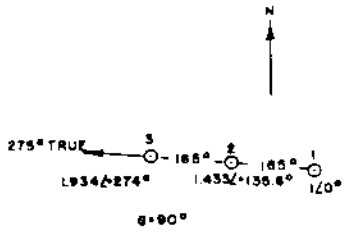


EXHIBIT J



LATITUDE 34° 46' 47" North
LONGITUDE 86° 39' 16" West

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	—	—	0	1.0	190	90
2	—	165	+135.6	1.433	190	90
3	275	165	+274	1.934	190	90

MEASURED & THEORETICAL
DAYTIME
HORIZONTAL PLANE PATTERN
FOR
WVOV
HUNTSVILLE, ALABAMA
1000 Khz 10 KW DA-D

680917

KEAR & KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.

FCC File No. BL-12174
Accepted 11-15-68

Station WVOV
Huntsville, Alabama

1000 kc

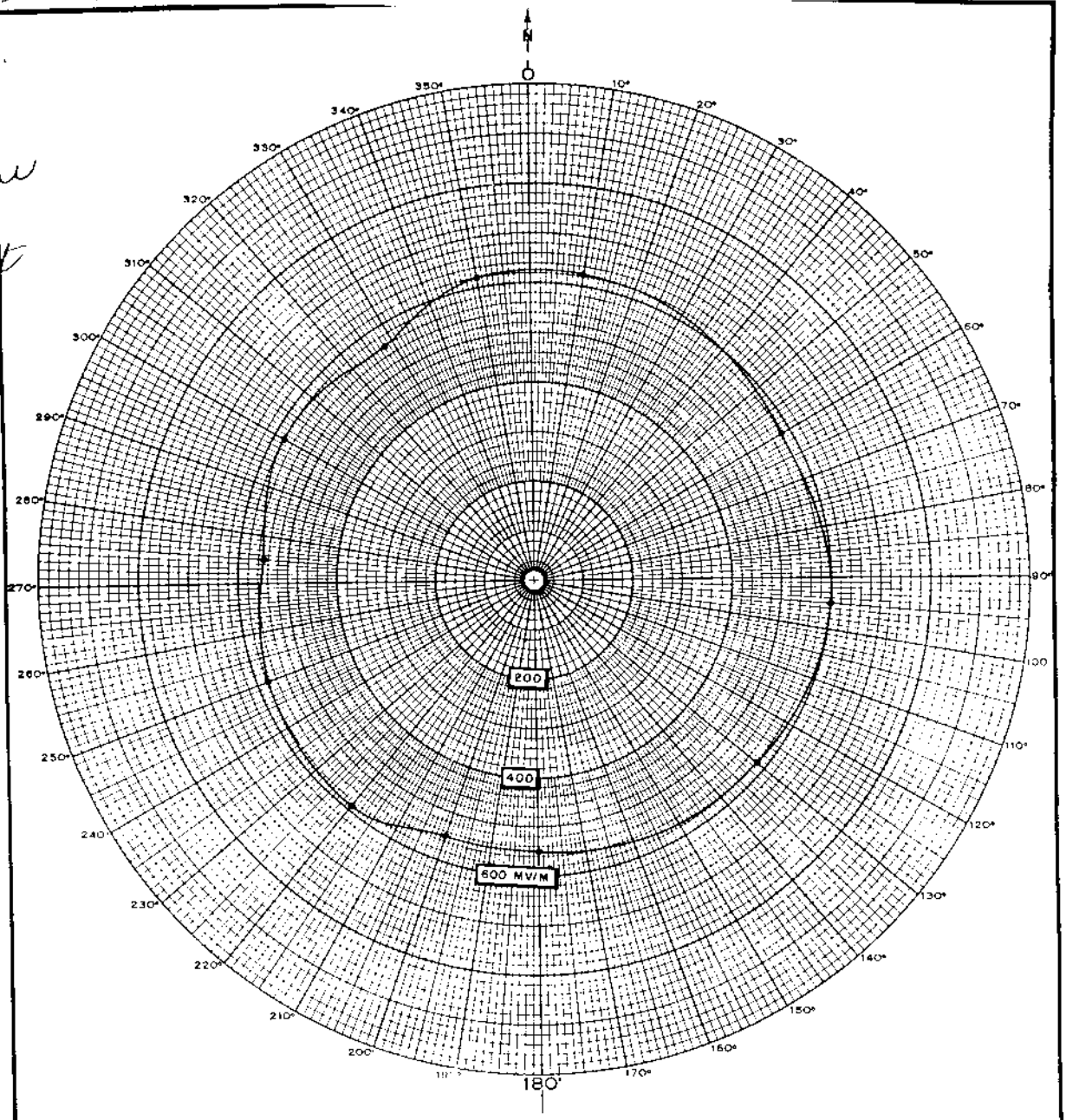
WVOV

Measured Non-DA
(11-29-68ct)

Station WVOV
Huntsville, Alabama

10kw, DA-D, D
1000 kc

BL 12174
Granted
2-5-69
licensed
new AM
broadcast
station



MEASURED PATTERN = RMS 587 MV/M

EXHIBIT H

LATITUDE 34° 46' 47" North
LONGITUDE 86° 39' 16" West

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG

MEASURED
NON-DIRECTIONAL PATTERN
FOR
WVOV
HUNTSVILLE, ALABAMA
1000 Khz 10 KW DA-D

680917

KEAR & KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.

FCC File No. BL-12174
Accepted 11-15-68

StationWVOV
Huntsville, Alabama

1000 kc

CENTREVILLE, VA.

DIRECTIONAL ANTENNA DESCRIPTION SHEET BP 17564

Station: (New) Main Studio: Centreville, Virginia

Frequency: 1000 kHz Power: 1 kW

Notification List No. 1566 Date: February 6, 1974 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 38° 51' 40"
West Longitude: 77° 24' 56"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation. (DA-D)
Number of elements: 2
Type of elements: Series-excited, uniform cross-section, guyed, vertical steel towers.

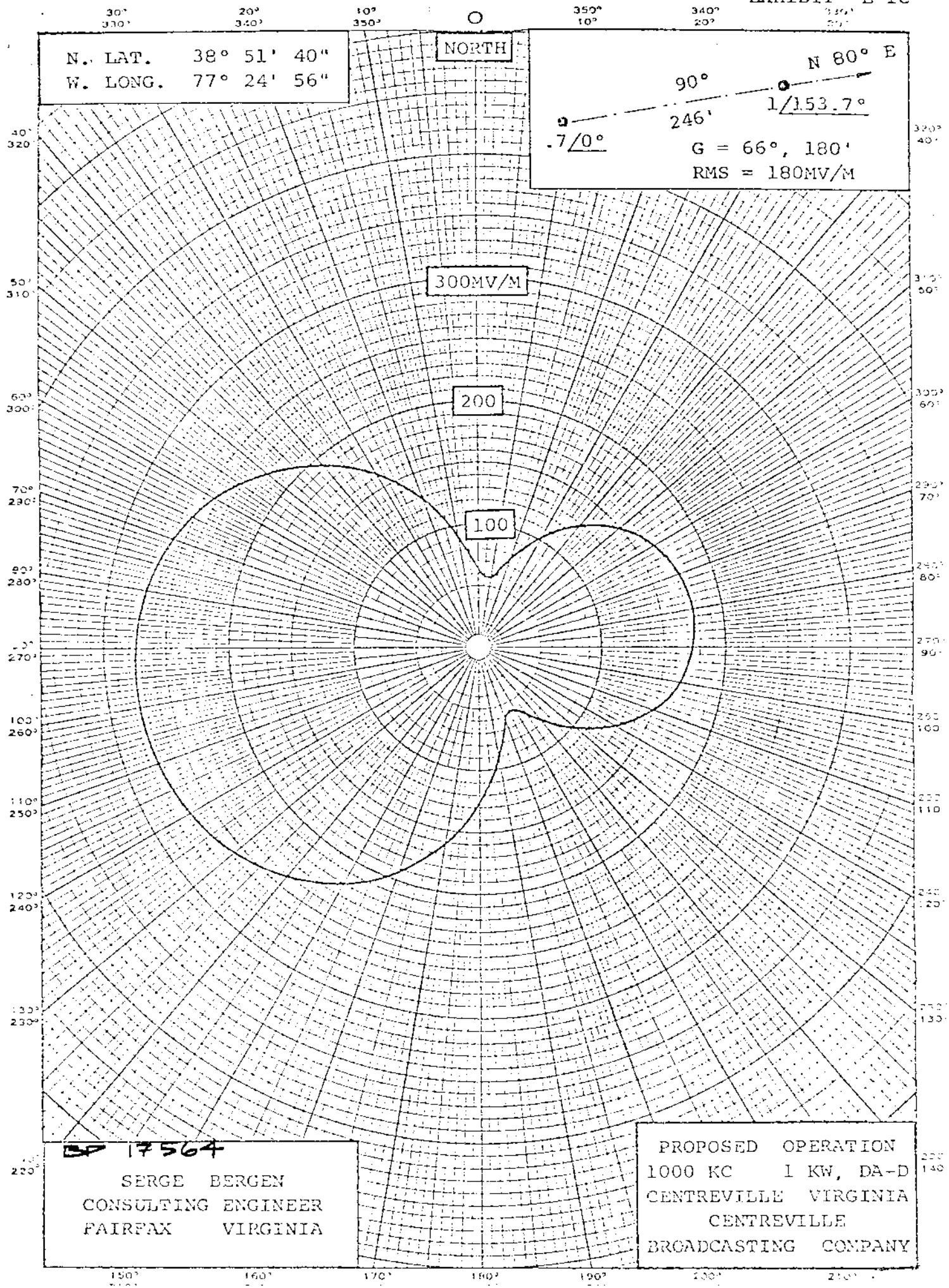
TOWER:	W(#1)	E(#2)	
HEIGHT ABOVE INSULATORS:	180'	180'	(66°)
PHASING:	0°	+153.7°	
FIELD RATIO:	0.7	1	

SPACING AND ORIENTATION: Elements are spaced 246' (90°) on a line bearing 80° true.

GROUND SYSTEM: 120-246' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

Predicted effective Field: 180 mv/m at rated power.

EXHIBIT E-1C



BP 17564

SERGE BERGEN
CONSULTING ENGINEER
FAIRFAX VIRGINIA

PROPOSED OPERATION
1000 KC 1 KW, DA-D
CENTREVILLE VIRGINIA
CENTREVILLE
BROADCASTING COMPANY

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: (New) Main Studio: Danville, Kentucky

Frequency: 1000 kHz Power: 1 kW

Notification List No. 1733 Date: May 12, 1977 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 37° 41' 54"
West Longitude: 84° 43' 51"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation. (DA-D)
Number of elements: 3
Type of elements: Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	SW(#1)	C(#2)	NE(#3)
HEIGHT ABOVE INSULATORS:	220'	220'	220'(80°)
PHASING:	-143°	0°	+143°
FIELD RATIO:	0.77	1.64	1

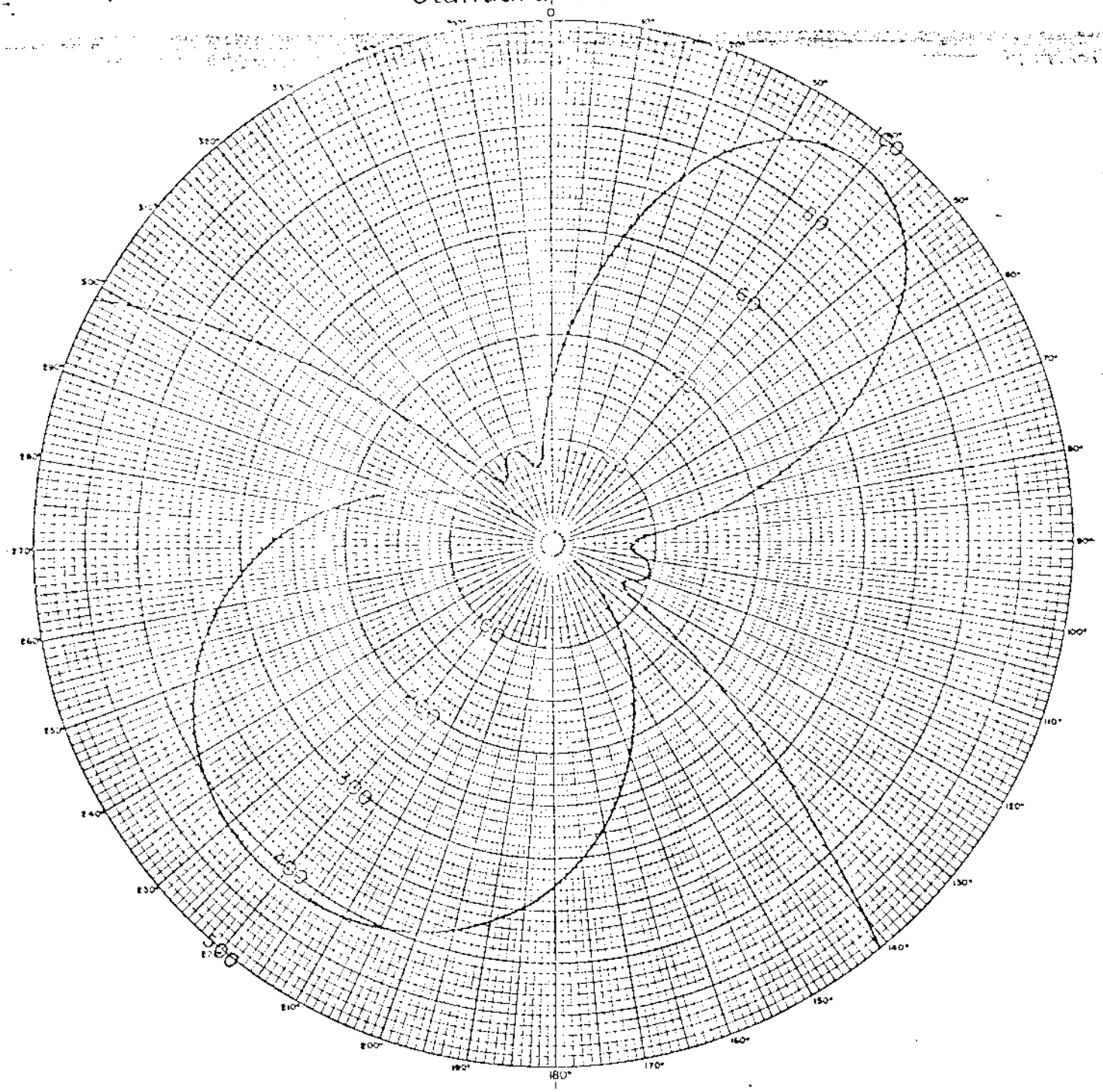
SPACING AND ORIENTATION: Adjacent towers are spaced 246.06' (90°) on a line bearing 40° true.

GROUND SYSTEM: 120-200 equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

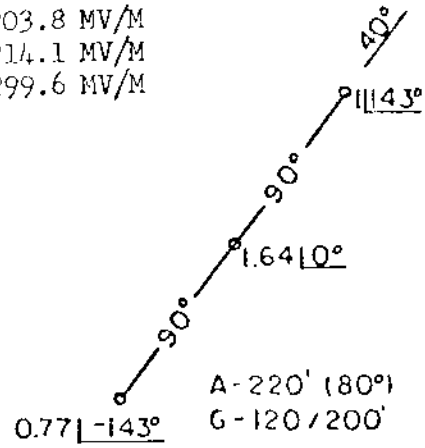
	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	203.8 mv/m	299.6 mv/m	214.1 mv/m

Standard Pattern



HORIZONTAL RADIATION PATTERN — Standard Pattern

Theoretical RMS (1 ohm loss) - 203.8 MV/M
Standard Pattern RMS - 214.1 MV/M
RSS - 299.6 MV/M



APPLICANT	Honus Shain
LOCATION	Danville, Kentucky
FREQUENCY	1000 KC/S
POWER	1000 Watts
LATITUDE	37 DEG. 41 MIN. 54 SEC.
LONGITUDE	84 DEG. 43 MIN. 51 SEC.
WHEN USED	Daytime
RMS FIELD	214.1 MV/M
DATE	June 3rd, 1976

RALPH J. BITZER
CONSULTING RADIO ENGINEERS
ST. LOUIS, MISSOURI