1110-1130

Station	Main Studio	Freq	Power	Date
NEW	Hawkesbury, ON	1110	1 kW/DA-D	7/8/75
CBD	Saint John, NB	1110	10 kW/DA-2	6/28/63
CFML	Cornwall, ON	1110	1 kW/DA-D	2/2/59
CFTJ	Galt, ON	1110	0.25 kW	7/14/54
CHQT	Edmonton, AB	1110	50 kW/DA-N	5/12/76
CHQT	Edmonton, AB	1110	10 kW/DA-N	1/28/65
CHUR	North Bay, ON	1110	10 kW	9/23/82
CKJD	Sarnia, ON	1110	10/1 kW/DA-2	5/12/76
NEW	Camaguey	1110	1/0.25 kW/DA-N	8/22/57
NEW	Alvin, TX	1110	0.5 kW/DA-D	7/10/80
KAKA	Dermott, AR	1110	10 kW	10/19/79
KBND	Bend, OR	1110	1/10 kW/DA-N	1/22/71
KBND	Bend, OR	1110	1/5 kW/DA-2	1/29/57
KEOR	Atoka, OK	1110	5 kW/DA-D	1/29/68
KFAB	Omaha, NE	1110	50 kW/DA-N	4/22/60
KIGI	Pasadena, CA	1110	10/50 kW/DA-2	1/28/65
KPOP	Roseville, CA	1110	0.5 kW/DA-N	12/12/58
KRLA	Pasadena, CA	1110	10 kW/DA-2	7/19/57
KRLA	Pasadena, CA	1110	10/50 kW/DA-2	12/21/59
NEW	Salem, NH	1110	5 kW/DA-D	5/27/75
WALT	Tampa, FL	1110	10 kW/DA-D	10/21/56
WBCA	Bay Minette, AL	1110	10 kW/DA-D	6/28/65
WBT	Charlotte, NC	1110	50 kW/DA-N	8/22/80
WBT	Charlotte, NC	1110	1 kW/DA-N	2/46
WELX	Xenia, OH	1110	0.25 kW/DA-D	11/24/70
WFBM	Noblesville, IN	1110	1 kW/DA-D	9/12/80
WHYT	Noblesville, IN	1110	0.5 kW/DA-D	4/7/76

1110-1130

Station	Main Studio	Freq	Power	Date
WHYT	Noblesville, IN	1110	0.25 kW/DA-D	6/3/75
WHYT	Noblesville, IN	1110	1 kW/DA-D	11/29/66
WHYT	Noblesville, IN	1110	0.5 kW/DA-D	9/28/77
WJML	Petoskey, MI	1110	10 kW/DA-D	4/28/66
WKEG	Washington, PA	1110	1 kW/DA-D	10/26/70
WNAR	Norristown, PA	1110	5/1 kW/DA-2	11/29/66
WNAR	Norristown, PA	1110	50 kW/DA-D	12/28/62
WNAR	Norristown, PA	1110	2.5 kW/DA-D	4/26/78
WUNN	Mason, MI	1110	1 kW/DA-D	9/8/76
WVNH	Salem, NH	1110	5 kW/DA-D	5/25/77
WZAM	Norfolk, VA	1110	50 kW/DA-D	7/28/69
XELEO	Leon, Guanajuato	1110	1/5 kW/DA-N	2/28/69
XERCN	Mexico, DF	1110	20 kW	5/12/50
NEW	Dermott, AR	1110	10 kW/DA-D	5/27/69
NEW	Fullerton, CA	1110	10/50 kW/DA-2	9/29/64
NEW	Pasadena, CA	1110	10/50 kW/DA-2	5/28/64
NEW	Topanga, CA	1110	0.5 kW/DA-2	9/29/64
NEW	Whittier, CA	1110	10/50 kW/DA-2	3/26/65
NEW	Pittsfield, MA	1110	5 kW/DA-D	12/29/66
NEW	Hatillo, PR	1120	1/0.25 kW/DA-2	11/16/79
KPNW	Eugene, OR	1120	50 kW/DA-1	10/19/79
CKWX	Vancouver, BC	1130	50 kW/DA-1	12/5/77
CKWX	Vancouver, BC	1130	50 kW/DA-N	3/28/60
CKXL	Calgary, AB	1130	50 kW/DA-2	5/10/77
NEW	Batesville, AR	1130	0.25 kW/DA-D	11/16/79
KBGH	Lufkin, TX	1130	1 kW/DA-D	6/28/66
KLEY	Wellington, KS	1130	0.25 kW/DA-D	10/26/65

1110-1130

Station	Main Studio	Freq	Power	Date
KQTI	Edna, TX	1130	2.5 kW/DA-D	8/22/80
KRDU	Dinuba, CA	1130	1 kW/DA-1	2/11/57
KSDO	San Diego, CA	1130	10 kW/DA-2	8/78
KSDO	San Diego, CA	1130	1/50 kW/DA-2	2/28/68
KSDO	San Diego, CA	1130	10 kW/DA-2	8/24/76
KWBY	Edna, TX	1130	10 kW/DA-D	11/27/64
KWKH	Shreveport, LA	1130	50 kW/DA-N	12/15/48
WASP	Brownsville, PA	1130	5 kW/DA-D	11/24/70
WCAR	Detroit, MI	1130	10/50 kW/DA-2	3/48
WCAR	Detroit, MI	1130	10 kW/DA-2	6/56
WCTM	Easton, OH	1130	0.25 kW/DA-D	6/28/66
WDGV	Minneapolis, MN	1130	25/50 kW/DA-2	8/28/67
WEEO	Waynesboro, PA	1130	1 kW/DA-D	2/22/71
WISN	Milwaukee, WI	1130	10/50 kW/DA-2	10/19/79
WISN	Milwaukee, WI	1130	25/50 kW/DA-2	8/28/67
WMGA	Moultrie, GA	1130	0.25/10 kW/DA-N	12/30/69
WNEW	New York, NY	1130	50 kW/DA-N	9/73
NEW	Chariton, IA	1130	0.5 kW/DA-D	2/28/67
NEW	Frankfort, KY	1130	0.5 kW/DA-D	4/13/77
NEW	Greencastle, PA	1130	1 kW/DA-D	3/28/68
XEJW	Jalapa, Veracruz	1130	10 kW/DA-N	7/13/53

Section (5) **DIRECTIONAL ANTENNA DESCRIPTION SHEET**

STATION: NEW	MAIN STUDIO: Hawkesbury, Ontario
FREQUENCY: 1110KHZ	POWER: 1000 WATTS
CLASS: II	MODE: DA/D
NOTIFICATION LIST: 342	DATE: July 8, 1975
GEOGRAPHICAL LOCATION OF ANTENNA SYSTEM	North Latitude 45-34-39
	West Longitude 74-38-09

ANTENNA CHARACTERISTICS

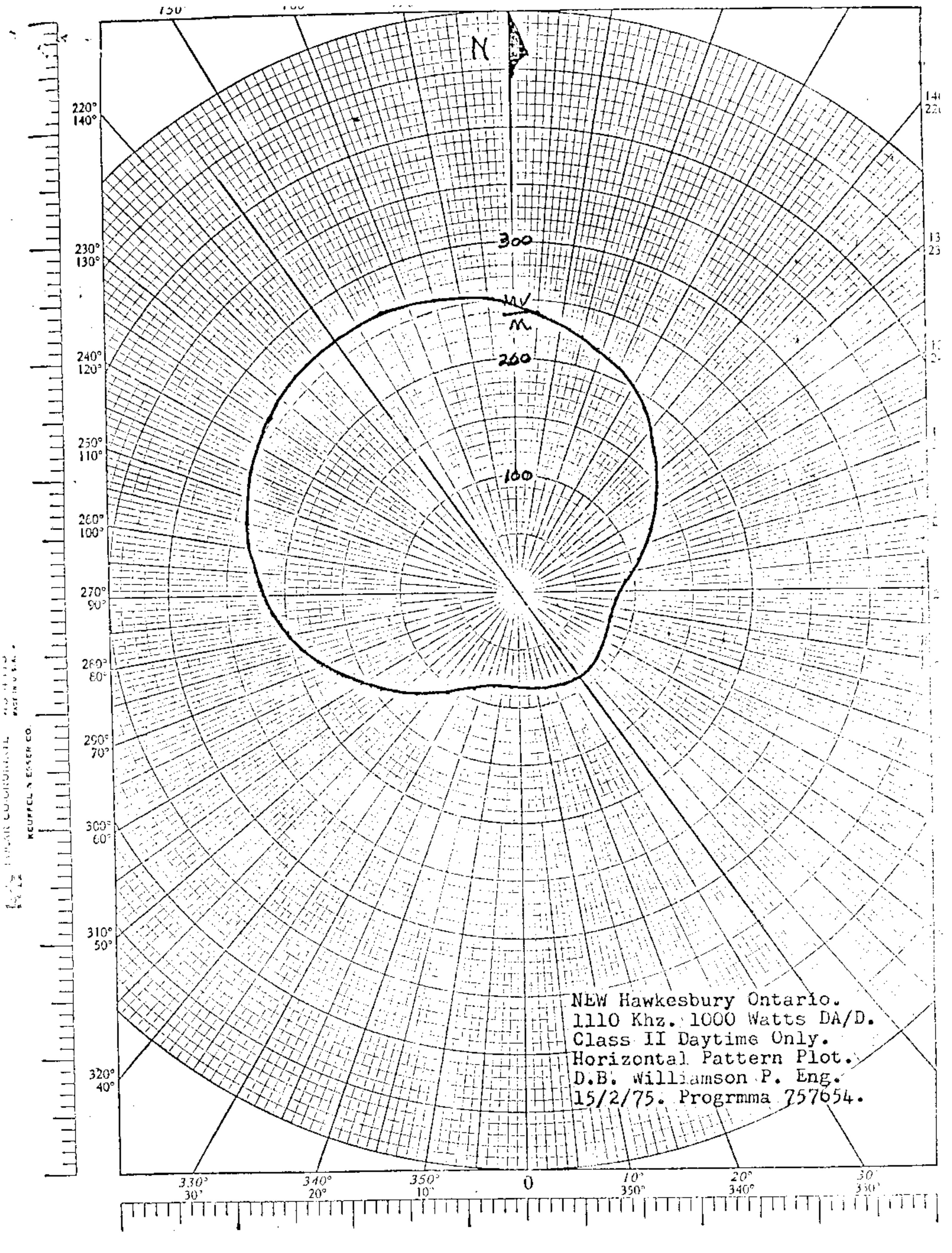
TOWER	#1 (SE)	#2 (NW)
HEIGHT ABOVE INSULAORS	150' (61°)	150' (61°)
OVERALL HEIGHT	155'	155'
SPACING	148' (60°)	
PHASING	0°	-135.000°
FIELD RATIO	1.000	0.600

ORIENTATION On a line bearing 035° West of North

GROUND SYSTEM 120 equiangular spaced radials extend from the base of each tower to a distance of 356' (0.4 wavelengths) with the exception of those joined along the common chord. All radials consist of soft drawn solid copper wire #10 B&S gauge and are buried approximately 8".

PREDICTED EFFECTIVE FIELD 175 mv/m @ 1 mi. for 1 KW

CONSULTANT D. B. Williamson P. Eng.,
Consulting Engineer,
Radio CHUC Building,
Cobourg, Ontario.


N
300
MV/M
260
100
220° 140°
230° 130°
240° 120°
250° 110°
260° 100°
270° 90°
280° 80°
290° 70°
300° 60°
310° 50°
320° 40°
330° 30°
340° 20°
350° 10°
0
10° 350°
20° 340°
30° 330°
KEUFFEL & ESSER CO.
NEW Hawkesbury Ontario.
1110 Khz. 1000 Watts DA/D.
Class II Daytime Only.
Horizontal Pattern Plot.
D.B. Williamson P. Eng.
15/2/75. Progrmma 757654.

F 177

CBT

Description Sheet (6-28-63ct)

New Station Saint John, N.B.

10kw,DA-2,U,Class II 1110 kc

CANADIAN BROADCASTING CORPORATION

ENGINEERING DIVISION MONTREAL

TITLE ENGINEERING BRIEF FOR SAINT JOHN, N.B.

DWG. NO.
DATE APRIL 3/63 ISS. 2
ENG. J.H.S. APP. R.E.S.

DESCRIPTION OF ANTENNA SYSTEM:

Station: NEW Main Studio: Saint John, N.B.

Frequency: 1110 kc/s Power: 10 kw Class II

Geographical Coordinates of Centre of Antenna System: Lat.: 45° 15' 55" N.

Notification List No. 177 Date: May 7, 1963. Long.: 66° 08' 47" W.

Antenna Characteristics:

Day and Night Operation: (DA-2)

Number of Elements: 3

Type of Elements: Series fed, uniform cross-section guyed, vertical steel towers.

Towers:	1 (S.W.)	2 (Centre)	3 (N.E.)
Height above Insulators:	210 ft. (85.5°)	210 ft. (85.5°)	210 ft. (85.5°)
Phasing: Day -		/0°	/-100°
Night -	/105°	/0°	/-105°
Field Ratio: Day -		1.0	0.5
Night -	1.01	2.0	1.01

Spacing and Orientation: Elements are spaced 221 ft. (90°) apart, and lie on a line bearing 241° True North.

Ground System: 120 radials per tower spaced at 3° and averaging 354 ft. long, except in the area between the towers, where the radials are bonded to a common transverse copper strap midway between the towers.

Antenna Efficiency: Day - 597 mv/m - 10 kw

Night - 610 mv/m - 10 kw

C.B.C.-252A

Transmission & Development Department

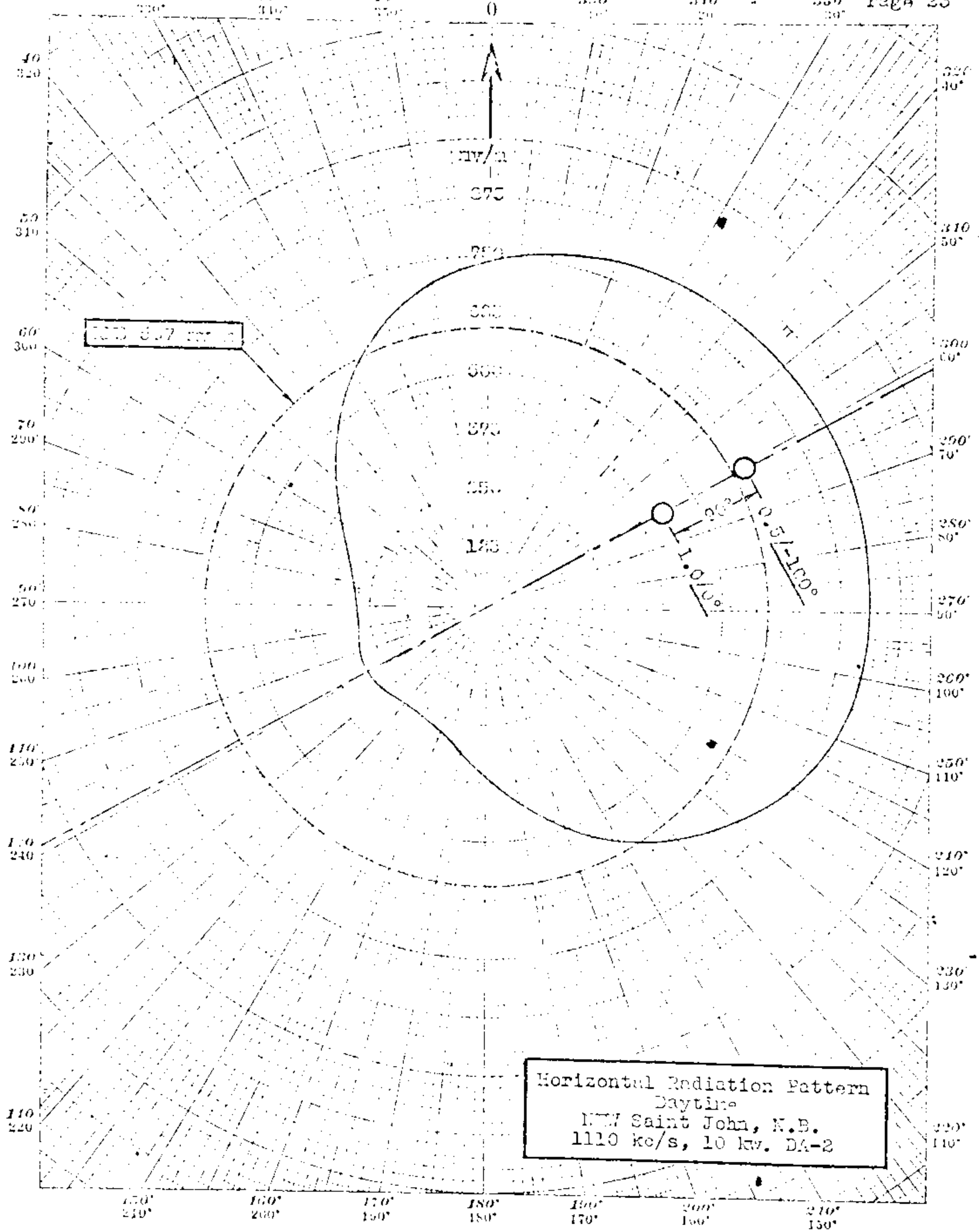
#177

CBD

Proposed Day
(6-28-63ct)

New Station
Saint John, N.B.

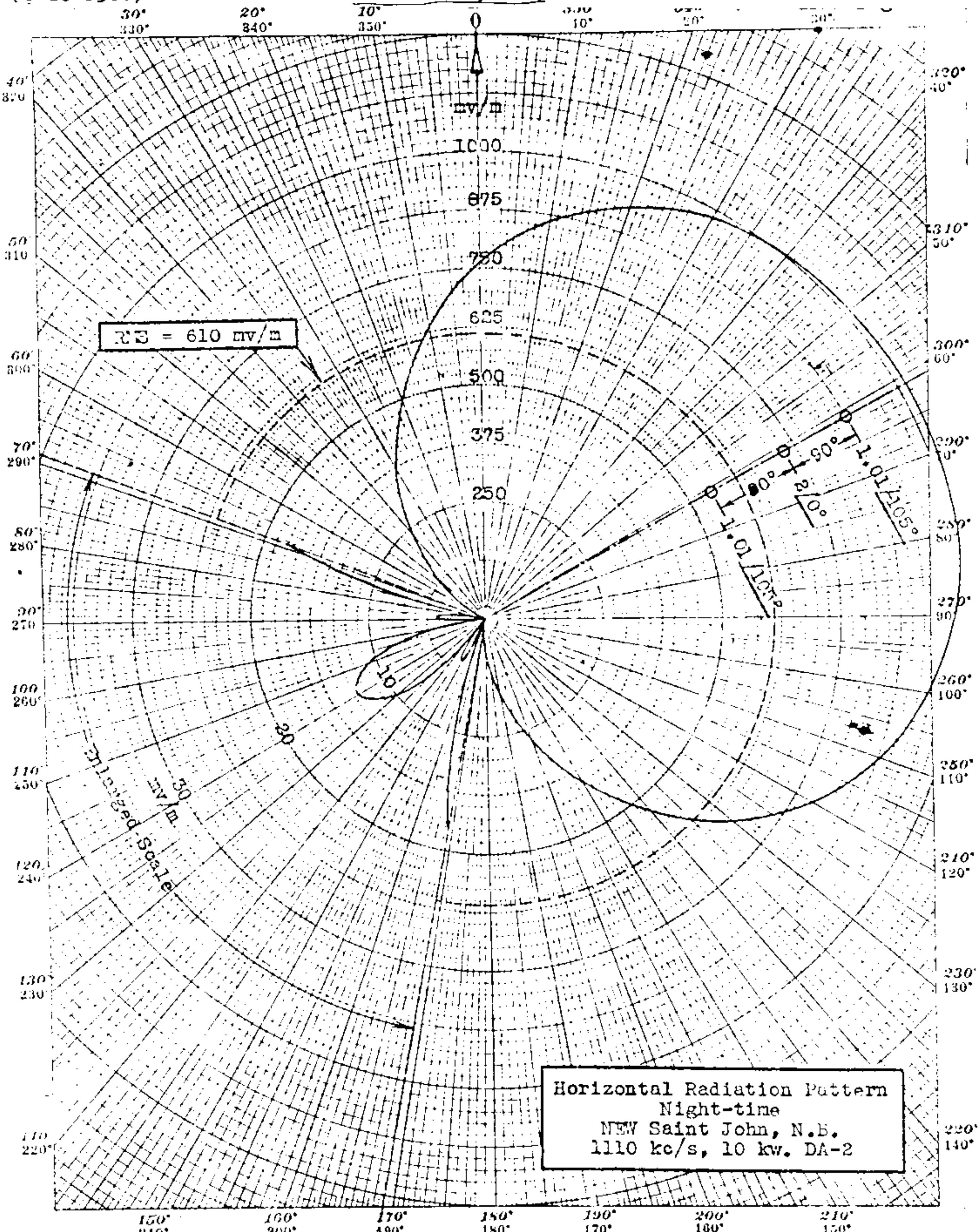
10kw,DA-2,U,Class II
1110 kc
Page 23



Proposed Night
(6-28-63ct)

New Station
Saint John, N.B.

10kw.DA-2,U,Class II
1110 kc



#128 Cornwall, Ontario, Can. CFML

DESCRIPTION SHEET
(2-2-59g)

New Station 1kw, DA-D, D, Class II
Cornwall, Ontario, Canada 1110 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: NEW Main Studio: CORNWALL, ONTARIO

Frequency: 1110 KC/S Power: 1000 Watts Class: II

Notification List No. 128 Date: December 23, 1958

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM: North Latitude: 45° 00' 27"

West Longitude: 74° 37' 06"

ANTENNA CHARACTERISTICS

Mode of Operation: Directional, daytime only (DA-D)

Number of elements: Two (2)

Type of elements: Uniform Cross section, guyed steel towers,
Base insulated for series feed

TOWER:	#1 (South-East)	#2 (North-West)
HEIGHT ABOVE INSULATORS:	200' (81.1°)	200' (81.1°)
OVERALL HEIGHT:	205'	205'
SPACING:	147.8' (60°) between Towers	
PHASING:	0	-150°
FIELD RATIO:	1	.75
ORIENTATION:	On line bearing 120° East of True North	
GROUND SYSTEM:	120 equiangular spaced radials extend from the base of each Tower to a distance of 356 feet (.4 wavelengths) with the exception of those joined along the common chord. Radials consist of solid copper wire # 10 B&S gauge and are burried approx. 8 inches.	
Predicted effective field:	196.5 mv/m at Station power of 1KW	

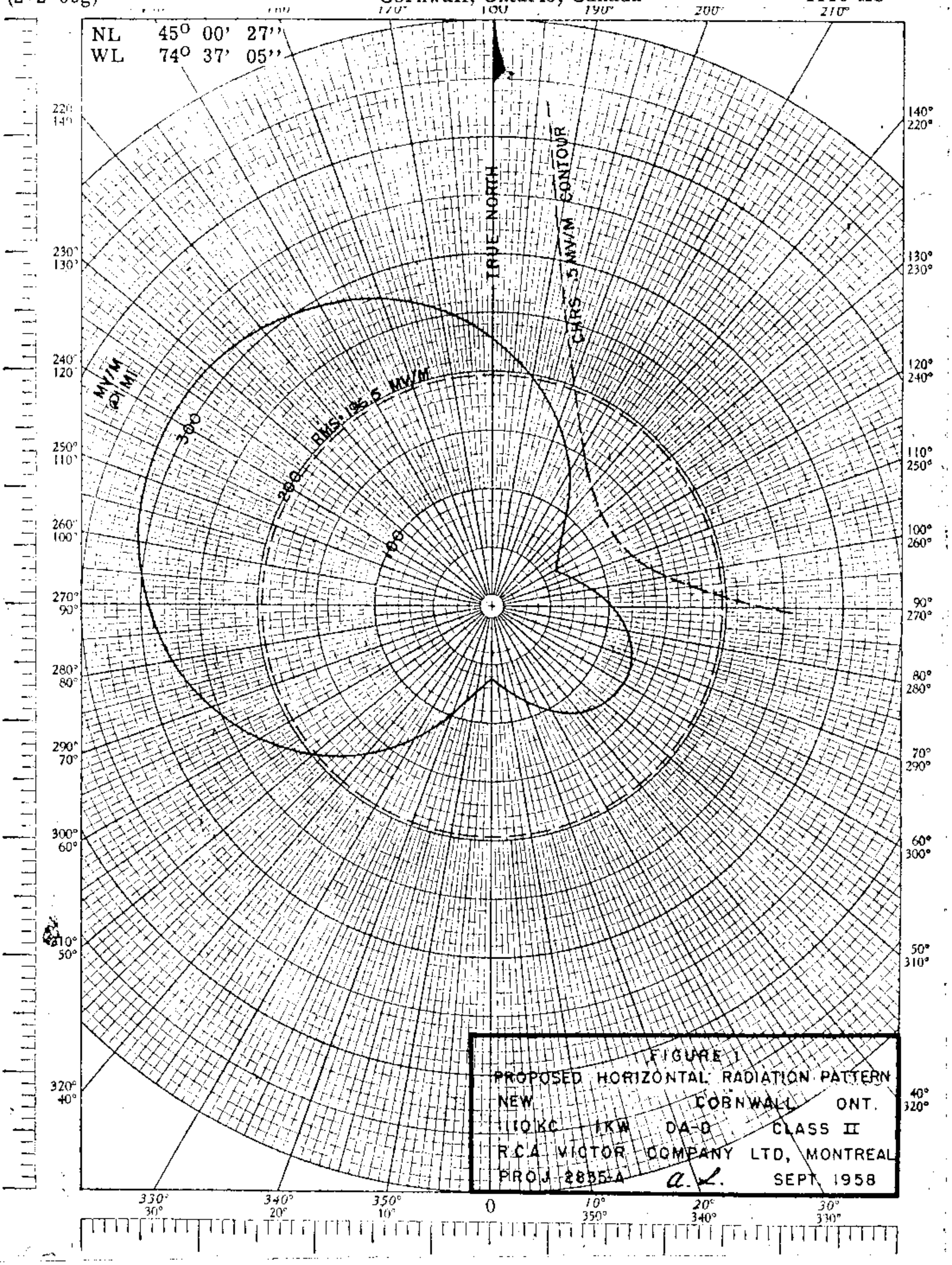
Cornwall, Ontario, Can. CHML

F128

PROPOSED DAY
(2-2-59g)

New Station
Cornwall, Ontario, Canada

1kw, DA-D,D, Class II
1110 KC



#85

CFTJ
1110

Oficina Interamericana de Radio (OIR)
OIR/NARBA /547 Canada C. 16.32.
La Habana,

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: ~~NEW~~ CFTJ

Main Studio: Galt, Ontario

Frequency: 1110 Kc.

Power: 250 w.

Class: II

Time: Day only

Notification Reference: 85 DATE: July 14, 1954

Geographical Location:

North Latitude: 43° 20' 15"

West Longitude: 80° 17' 40"

Antenna Characteristics:

Height: 146 ft. 60 degrees

Expected Efficiency: 90 mv/m at 1 mi. for .25 KW

or: 180 mv/m at 1 mi. for 1 KW

Ground System: 120 radials 356 feet long of #10 AWG Soft Copper wire uniformly spaced, buried to a depth of 8" approx. and bonded to the tower base.

Type of Element: One element, base insulated, guyed, series fed and with no top loading.

CHQT

PROJECT #6304

DESCRIPTION SHEET - DIRECTIONAL ANTENNA

STATION: CHQT

LOCATION: Edmonton, Alberta

FREQUENCY: 1110 kHz

POWER: 50 kW CLASS II

NOTIFICATION LIST NO. 354

DATE: May 12, 1976

GEOGRAPHICAL LOCATION: Latitude 53° 27' 55" North
Longitude 113° 19' 50" West

ANTENNA CHARACTERISTICS:

Mode of Operation: DA-N
Number of Elements: 3 (Three)
Type of Elements: Guyed steel towers, uniform cross-section, base insulated for series feed

Tower	#1 (S)	#2 (C)	#3 (N)
Height above base insulator:	222'(90°)	222'	222'
Overall Height:	227'	227'	227'
Field Ratio Nighttime	.51	1.0	0.5
Phasing Nighttime	110°	0.0°	-110°
Spacing	80°	0.0°	80°
Orientation	150°	Ref.	330°

GROUND SYSTEM: 120 equally spaced radials of No. 10 bare copper wire extend from each tower base. Radial Length: 355'(144°), with the exception of those joined along the common chords.

PREDICTED EFFECTIVE FIELDS:

Nighttime: 1407 mV/m at 1 mile for 50 kW
199 mV/m at 1 mile for 1 kW

Daytime: 1343 mV/m at 1 mile for 50 kW
190 mV/m at 1 mile for 1 kW

June 13, 1975
Revised March 17, 1976

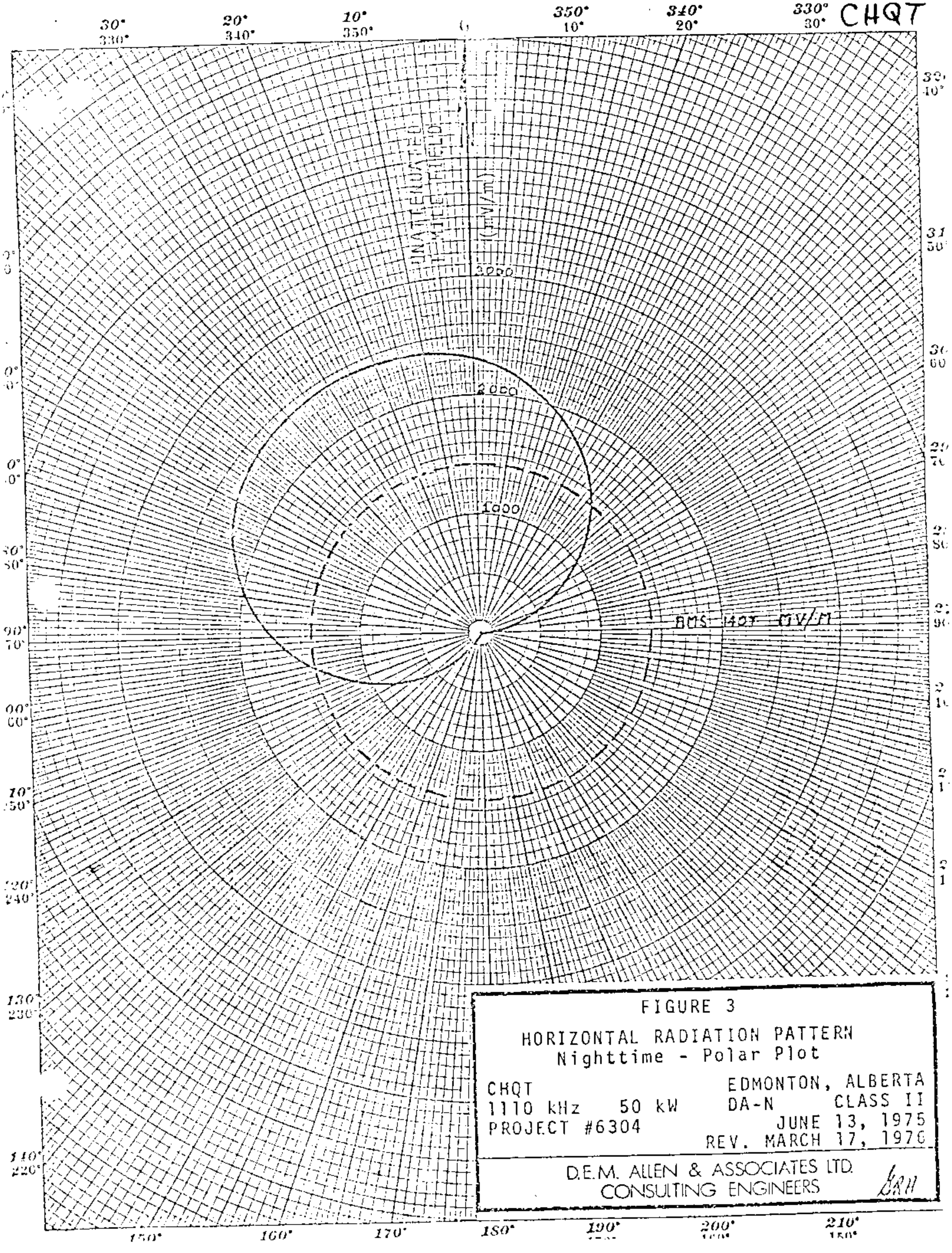


FIGURE 3

HORIZONTAL RADIATION PATTERN
Nighttime - Polar Plot

CHQT
1110 kHz 50 kW
PROJECT #6304

EDMONTON, ALBERTA
DA-N CLASS II
JUNE 13, 1975
REV. MARCH 17, 1976

D.E.M. ALLEN & ASSOCIATES LTD.
CONSULTING ENGINEERS

K+E 10 X 10 TO ½ INCH 7 X 10 INCHES KEUFFEL & ESSER CO. MADE IN U.S.A.

46 1323

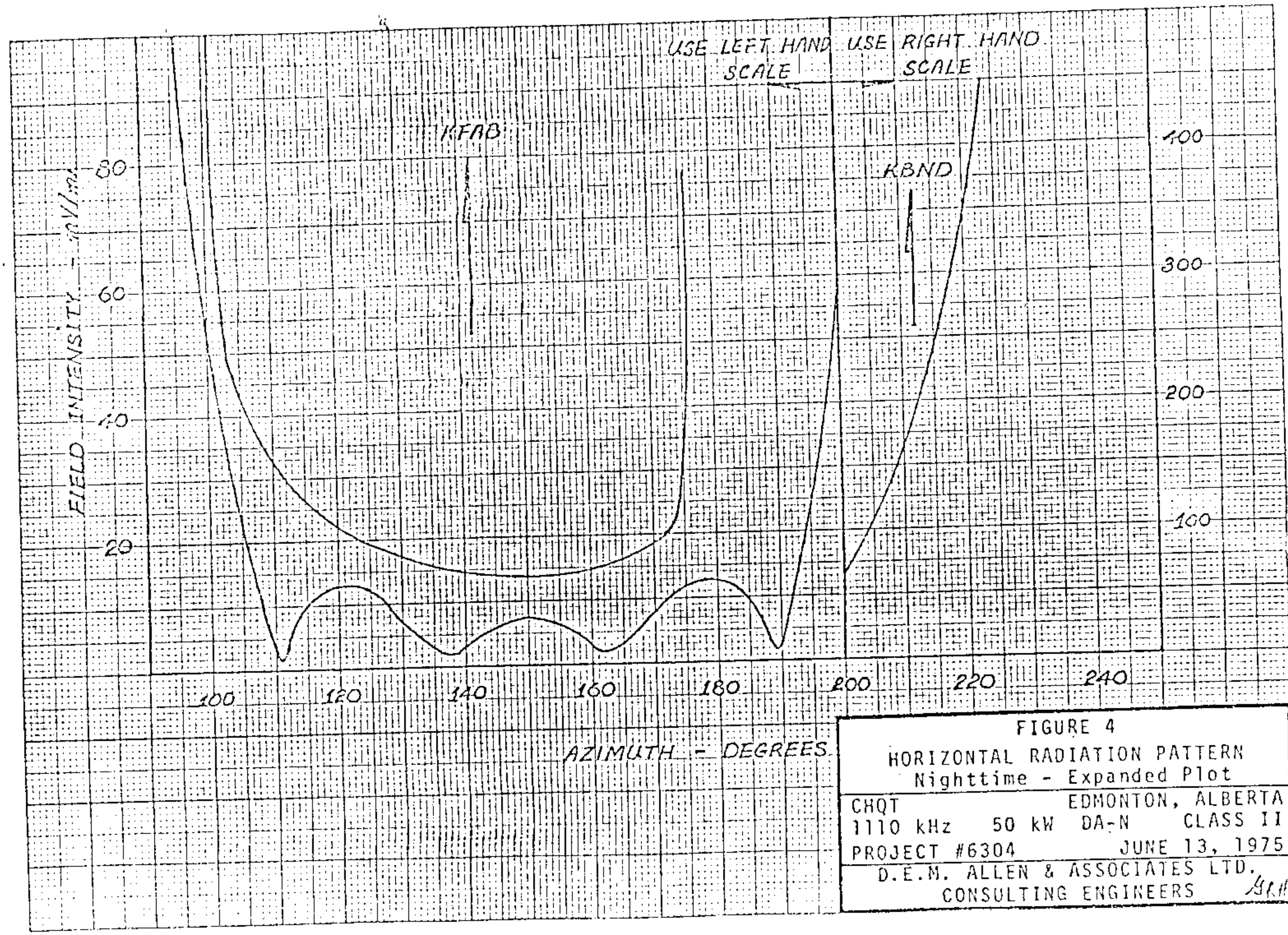


FIGURE 4

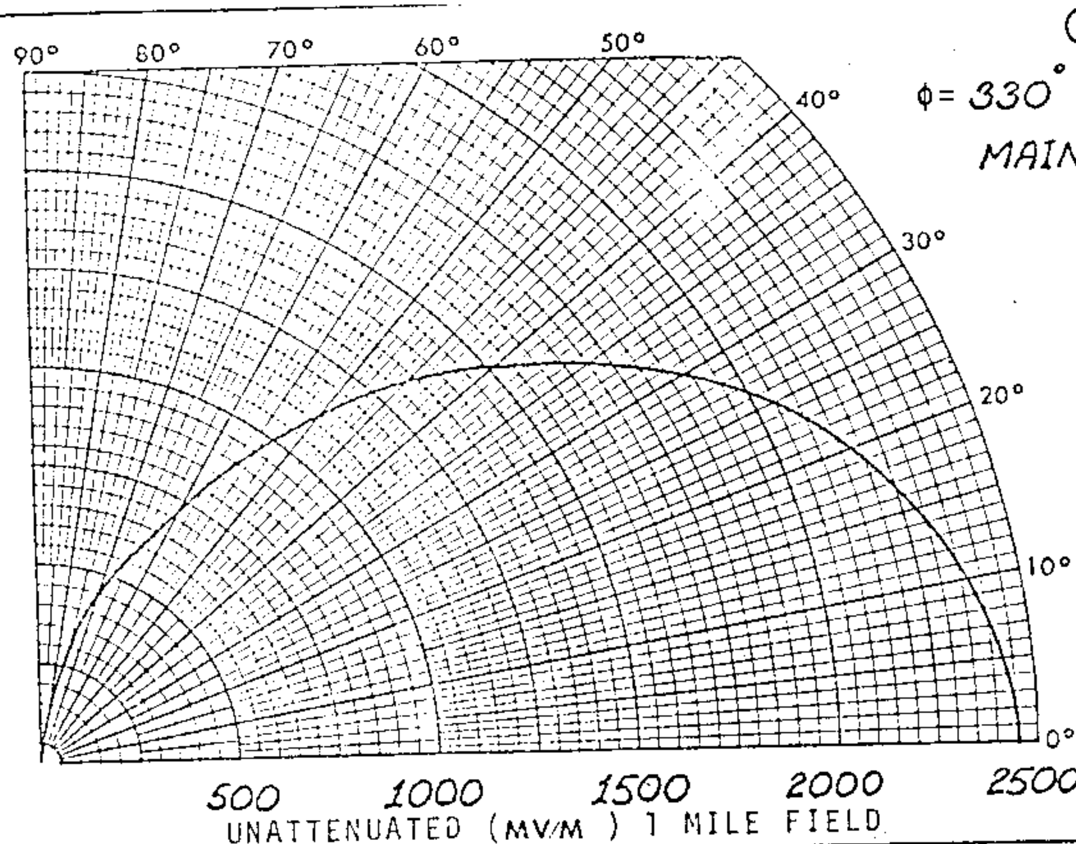
HORIZONTAL RADIATION PATTERN
Nighttime - Expanded Plot

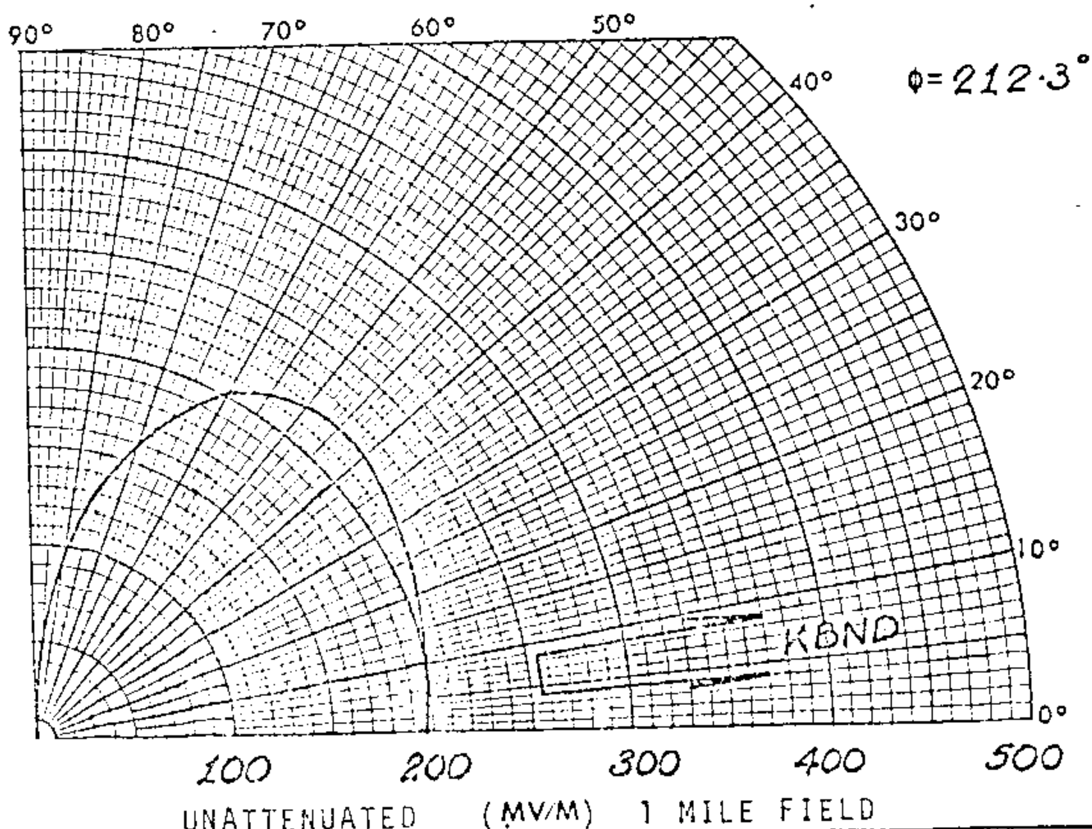
CHQT EDMONTON, ALBERTA
1110 kHz 50 kW DA-N CLASS II
PROJECT #6304 JUNE 13, 1975

D.E.M. ALLEN & ASSOCIATES LTD.
CONSULTING ENGINEERS

CHQT

CHQT





VERTICAL RADIATION PATTERNS

FIGURE 5

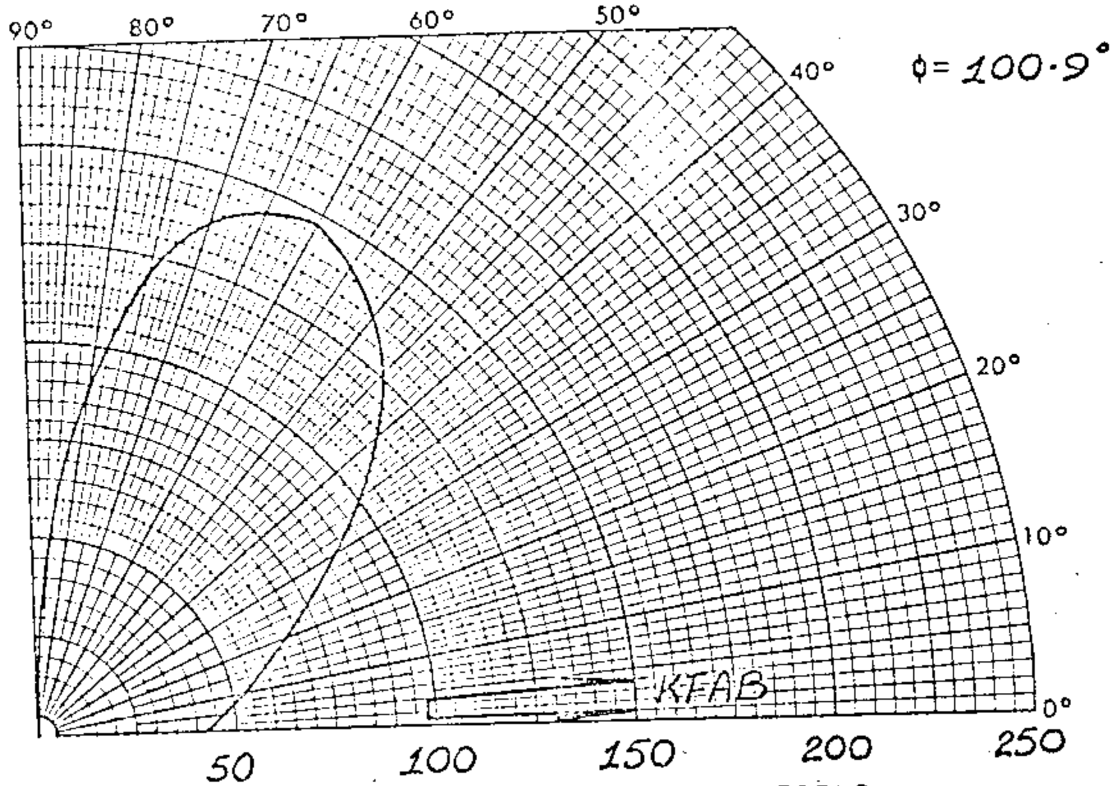
CHQT
1110 kHz 50 kW DA-N
PROJECT #6304

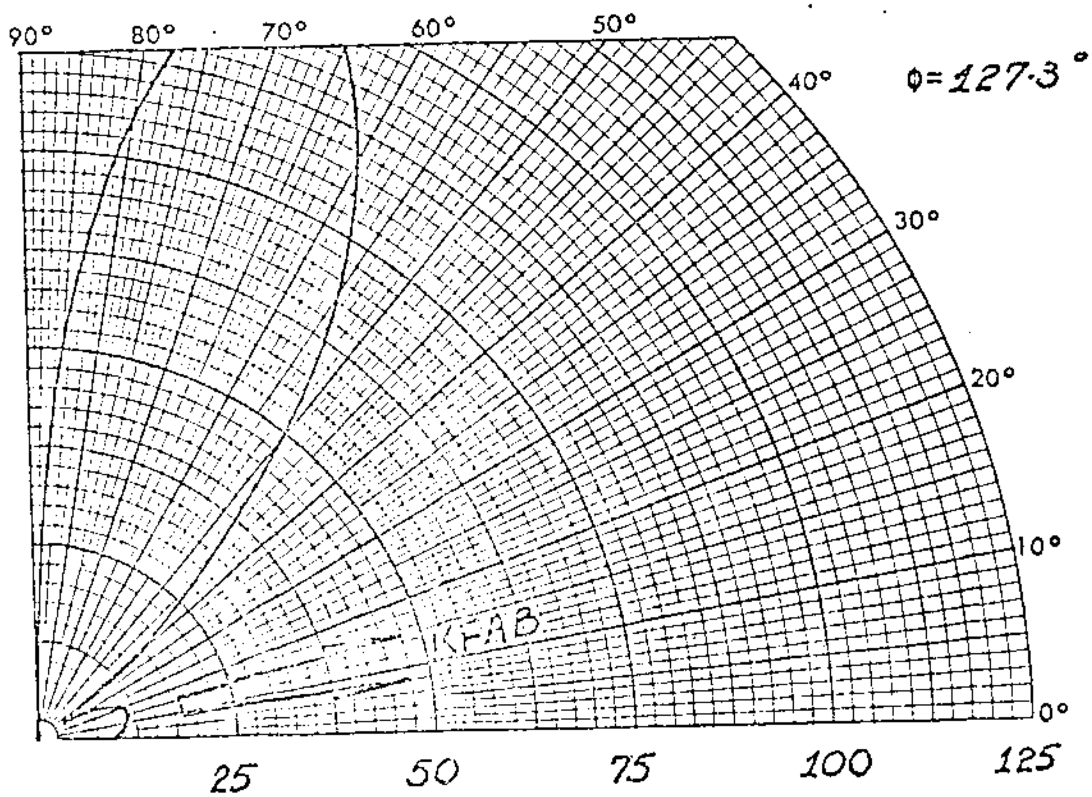
EDMONTON, ALBERTA
CLASS II
JUNE 13, 1975

D.E.M. ALLEN & ASSOCIATES LTD., CONSULTING ENGINEERS

G9-10159 (NO.101V)
CLEAR CO-ORDINATE MADE IN CANADA

CHQT





VERTICAL RADIATION PATTERNS

FIGURE 6

CHQT
1110 kHz 50 kW DA-N
PROJECT #6304

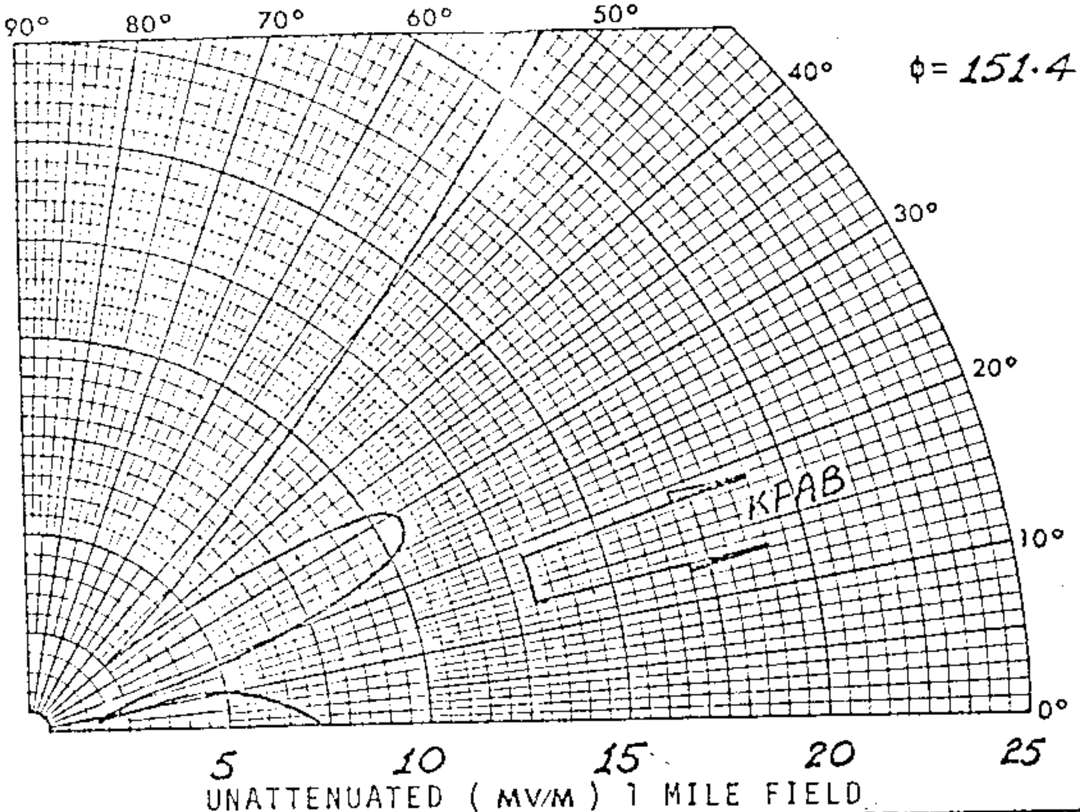
EDMONTON, ALBERTA
CLASS II
JUNE 13, 1975

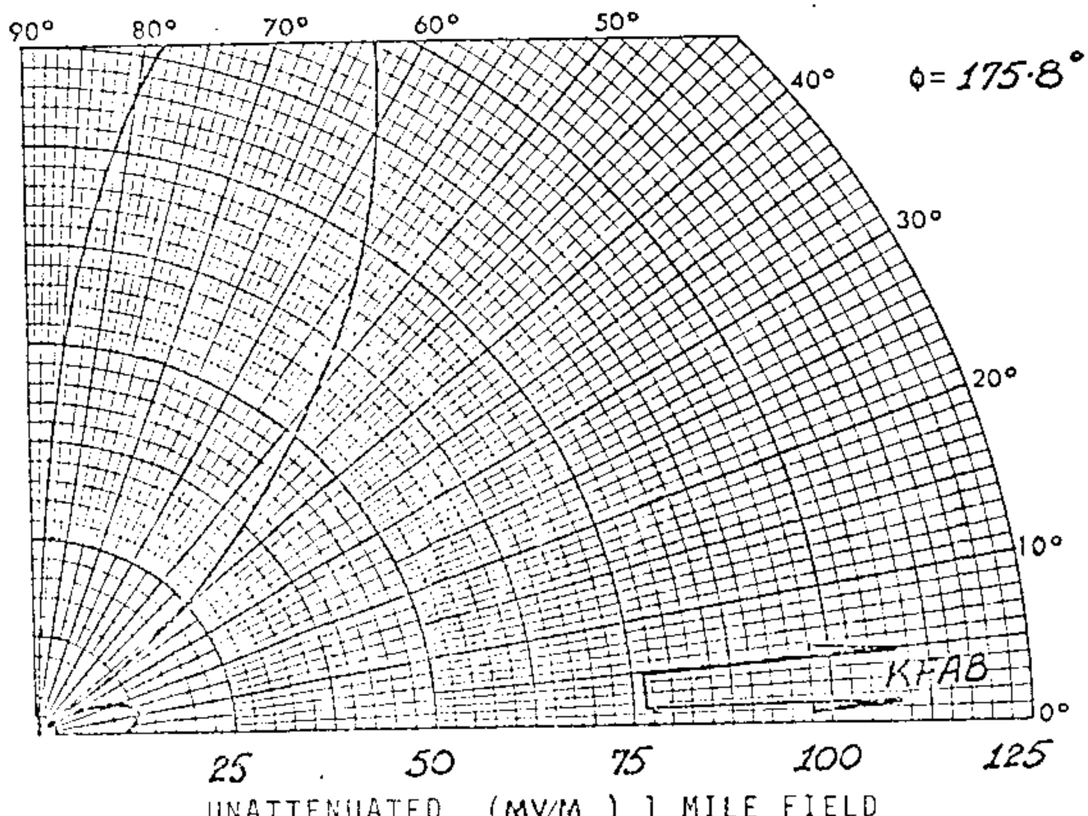
D.E.M. ALLEN & ASSOCIATES LTD., CONSULTING ENGINEERS

GRH

GO-10159 (NO. 10LY)
POLAR CO-ORDINATE

CHQT





VERTICAL RADIATION PATTERNS

FIGURE 7

CHQT 1110 kHz PROJECT #6304	50 kW	DA-N	EDMONTON, ALBERTA CLASS II JUNE 13, 1975

D.E.M. ALLEN & ASSOCIATES LTD., CONSULTING ENGINEERS

HAH

G9-10159 (NO.10(V)
POLAR CO-ORDINATE
CCES MICRO

#192

CHQT

DESCRIPTION SHEET
(1-28-65ct)

New Station
Edmonton, Alberta

10kw,DA-N,U,Class II
1110 kc

DESCRIPTION SHEET
DIRECTIONAL ANTENNA

Station: New AM

Main Studio: Edmonton, Alberta.

Power: 10 kw

Frequency: 1110 kc/s

Class: II

Time: Unlimited

Notification List No. **192**

Date: **December 14, 1964**

GEOGRAPHICAL LOCATION
OF ANTENNA SYSTEM:

North Latitude: 53° 27' 55"
West Longitude: 113 ° 19' 50"

ANTENNA CHARACTERISTICS

Mode of Operation: DA-N
Number of Elements: Three (3)
Type of Elements: Uniform Cross Section Guyed Steel Towers, Bases Insulated For Series Feed.

TOWER:	No. 1 South	No. 2 Center	No. 3 North
HEIGHT ABOVE INSULATORS:	222' (90°)	222'	222'
OVERALL HEIGHT:	227'	227'	227'
SPACING:	172' (70°) Between Adjacent Towers		
PHASING:	+124.2°	0°	-124.2°
FIELD RATIO:	0.507	1.0	0.507
ORIENTATION:	Towers on a line bearing 343° true		
GROUND SYSTEM:	120 equally spaced copper wire radials extending from the base of each tower to a distance of 354 feet (0.4 wavelength) except where joined along the common chord.		

Predicted Effective Field

Day Operation: 590 Mv/m at 1 mile for 10 kw.
Night Operation: 574 Mv/m at 1 mile for 10 kw.

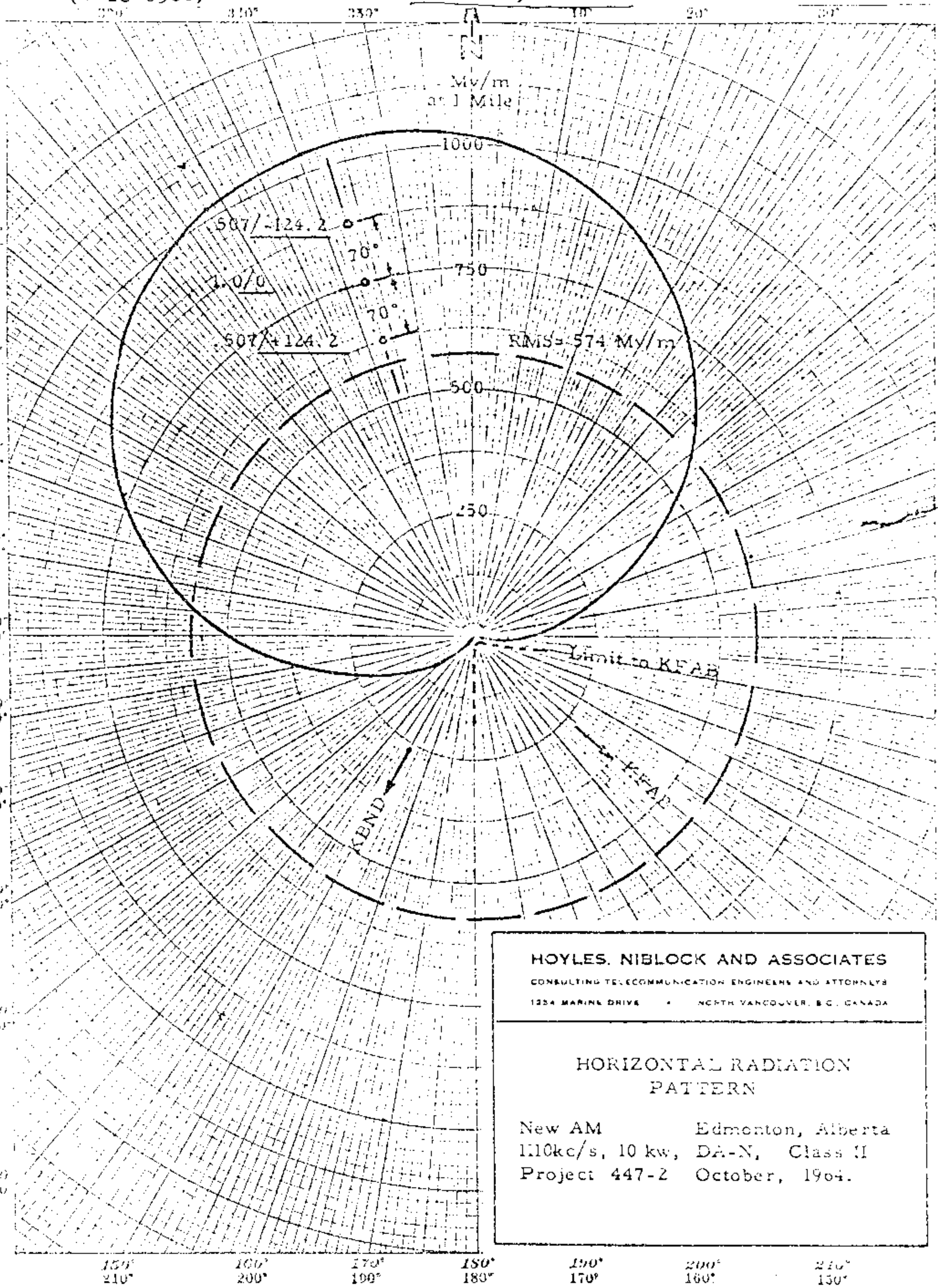
#192

CHQT

Proposed Night
(1-28-65ct)

New Station
Edmonton, Alberta

10kw,DA-N,U,Class II
1110 kc



HOYLES, NIBLOCK AND ASSOCIATES
CONSULTING TELECOMMUNICATION ENGINEERS AND ATTORNEYS
1234 MARINE DRIVE • NORTH VANCOUVER, B.C., CANADA

HORIZONTAL RADIATION
PATTERN

New AM	Edmonton, Alberta
1110kc/s, 10 kw,	DA-N, Class II
Project 447-2	October, 1964.

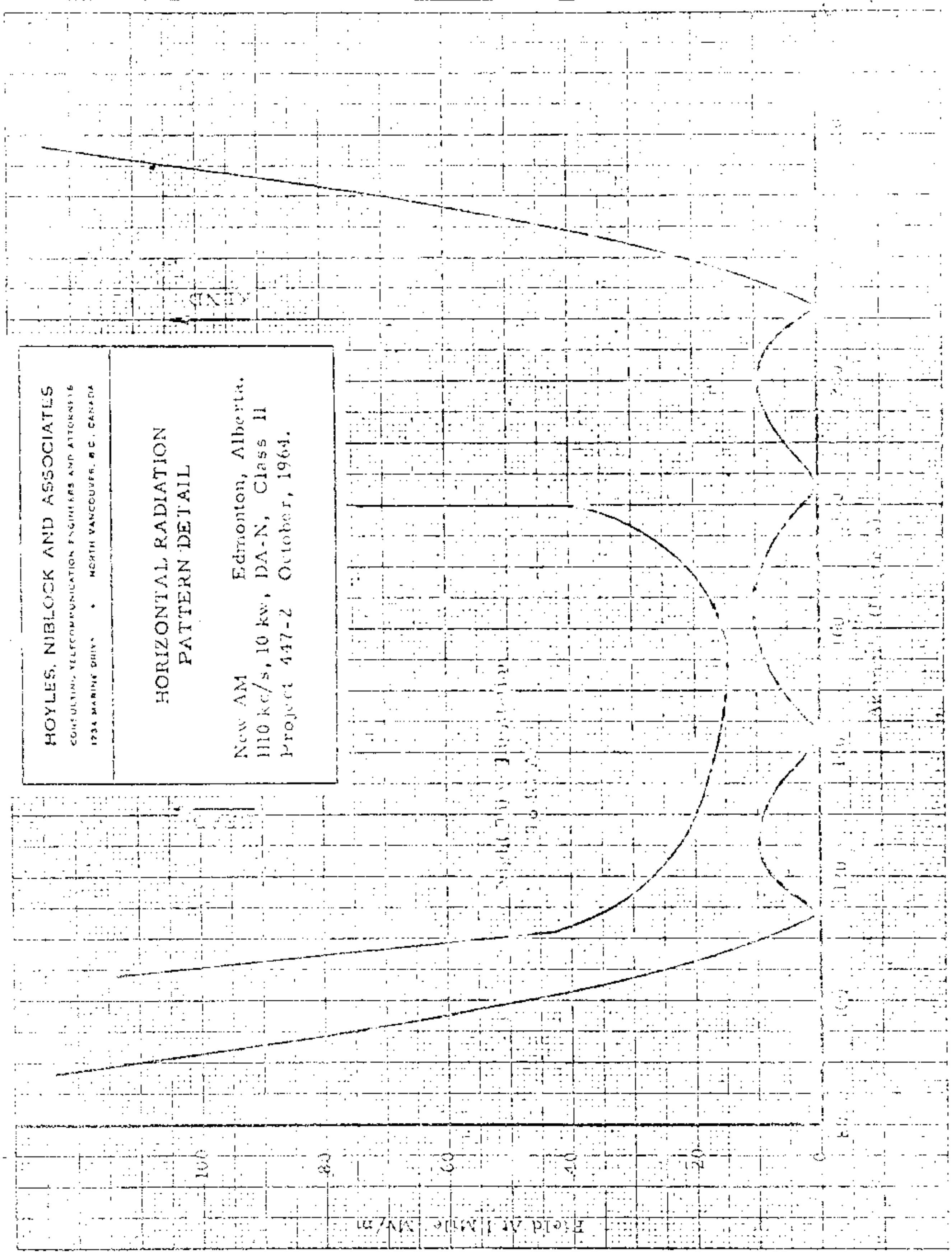
#192

CHQT

Proposed Night Nulls
(1-28-65ct)

New Station
Edmonton, Alberta

10kw,DA-N,U,Class II
1110 kc



CHUR
1110 kHz

IFRB Serial No. 1 2 50 5

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. 413 | Date 82-09-23

Assigned frequency (kHz)		(02)	1 1 1 0
Transmitting station	Name of the station	(03)	N O R T H B A Y O N
	Call sign	(04)	
	Additional Identification	(05)	
	Station class	(06)	
	Operational Status	(07)	
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	7 9 W 3 0 1 2 4 6 N 1 1 2 1

(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: Year Month Day

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

(44) **Remarks**

Co-ordinates and phase of day-time tower # 2 corrected from List 411.

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. 12505

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No. 413

Date

(01) NORTH BAY ON
Name of transmitting station

(02) CAN
Country

(03) HJ
Hours of operation

(04)
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 structure
1	1.	0.	0.	0.	–	90.	
2	.9578	152.91	100.	192.5		90.	
3	.6835	-57.7	200.	192.5		90.	
4	.2047	90.6	300.	192.5		90.	
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(14) r.m.s value of radiation . mV/m at 1 km

(15) Type of pattern E

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

(17) SUPPLEMENTARY INFORMATION
Correction to phase of tower #2

CHOR
1110kHz

IFRB Serial No. 12505

1110 kHz

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. 411✓ — Date: 82.4.5

Assigned frequency (kHz)		(02)	1110
Transmitting station	Name of the station	(03)	NORTH BAY ON
	Call sign	(04)	CHUR
	Additional identification	(05)	
	Station class	(06)	B
	Operational Status	(07)	P
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	82W2330 42N4949

(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 [ ] No [X]

(13) Date of bringing into service or cessation of operation: 82 06 01 (Year Month Day)

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

(44) Remarks

Change from theoretical to modified expanded directional pattern

COORDINATION UNDER ARTICLE 4:							
COUNTRY	USA						
IN PROGRESS	X						
ACCEPTANCE OBTAINED							

CHUR
1110 kHz

IFRB S No. 12509

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

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No. 411

Date

(01) NORTH BAY ON — Name of transmitting station

(02) CAN — Country

(03) NJ — Hours of operation

(04) 4 — 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 structure
1	1.	0.	0.	0.	—	90.	—
2	.9578	-152.91	100.	192.5		90.	
3	.6835	-57.7	200.	192.5		90.	
4	.2047	90.6	300.	192.5		90.	
	.	.	.	.		.	
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	.	.	.	.		.	

(14) r.m.s value of radiation: 1086.2 mV/m at 1 km

(15) Type of pattern: E

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

(17) SUPPLEMENTARY INFORMATION

CHOR
1110 kHz

IFRB Serial No. 1250

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

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No.: 411

Date:

(01) Name of transmitting station: NORTH BAY ON

(02) Country: CAN

(03) Hours of operation: HN

(04) Total number of towers: 6

(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	4.0821	-134.15	100.	12.5		90.	
3	7.3908	90.93	200.	12.5		90.	
4	7.3908	-44.17	300.	12.5		90.	
5	4.0821	-179.09	400.	12.5		90.	
6	1.	46.76	500.	12.5			

(14) r.m.s value of radiation: 1141.6 mV/m at 1 km

(15) Type of pattern: M

(16) Special quadrature factor: 12.55 mV/m at 1 km

(17) SUPPLEMENTARY INFORMATION

CHUR
1110 kHz

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. 12505

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) NORTH BAY ON — Name of transmitting station

(02) CAN — Country

411 — Sheet No.

(03) HN — Hours of operation

(04) 4 — Total number of augmentations

(05) Augmentation number	(06) Radiation at central azimuth of augmentation (mV/m at 1 km)	(07) Central azimuth of augmentation (degrees)	(08) Total span of augmentation (degrees)
01	16.77	105.0	40.0
02	13.91	145.0	40.0
03	20.54	185.0	40.0
04	30.84	250.0	90.0
05			
06			
07			
08			
09			
10			
11			
12			

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

(09) SUPPLEMENTARY INFORMATION

CKJD

DIRECTIONAL ANTENNA DESCRIPTION SHEET

STATION: CKJD

POWER: 10 KW D/1 KW N

MODIFICATION LIST NO. 354

MAIN STUDIO: Sarnia, Ontario.

FREQUENCY: 1110 KHz, Class II

DATE: May 12, 1976

GEOGRAPHICAL LOCATION: North Latitude 42° 49' 49" West Longitude 82° 23' 30"

COHEN AND DIPPEL
JUN 9 1976
WASHINGTON, D.C.

ANTENNA CHARACTERISTICS

MODE OF OPERATION: DA-2, Unlimited.

ANTENNA CHARACTERISTICS: Uniform cross-section, guyed steel towers, base insulated for series feed, no top-loading.

HEIGHT ABOVE INSULATORS:	Towers 1-4, 6-9	270.9 ft. 110.06
	Tower 5	283.3 ft. 115.10
	Towers 10, 11, 12	160.1 ft. 65.05
OVERALL HEIGHT	Towers 1-4, 6-9	275.9 ft. 112.09
	Tower 5	288.3 ft. 117.13
	Towers 10, 11, 12	165.1 ft. 67.08

FIELD RATIO, PHASING, SPACING AND ORIENTATION:

			NIGHT		DAY	
TOWER	SPACING	ORIENTATION	FIELD	PHASE	FIELD	PHASE
1	REF. NIGHT	REF. NIGHT	1.0000	0.00°		
2	85.00°	160.50°	1.9769	116.64°		
3	170.00°	160.50°	1.0000	-126.72°		
4	207.50°	101.50°	1.9253	4.64°		
	REF. DAY	REF. DAY			1.0000	0.00
5	261.63°	117.67°	3.8060	121.28°		
6	329.08°	127.78°	1.9253	-122.08°		
7	415.00°	101.50°	1.0000	9.28°		
8	464.53°	110.50°	1.9767	125.92°		
9	523.26°	117.67°	1.0000	-117.44°		
10	70.00°	70.50°)			2.9732	-119.03°
11	140.00°	70.50°)	wrt Tower 4		2.9732	121.93°
12	216.75°	69.34°)			1.0000	10.79°

GROUND SYSTEM 120 equiangularly spaced radials extend from the base of each tower to a distance of 0.4 wavelengths (355 ft.) with the exception of those joined along common chords. Ground wires are No. 10, B&S, soft drawn copper wire buried in the ground.

PREDICTED EFFECTIVE FIELD 555 MV/M for 10 KW Day
195 MV/M for 1 KW Night.

90° 221.52

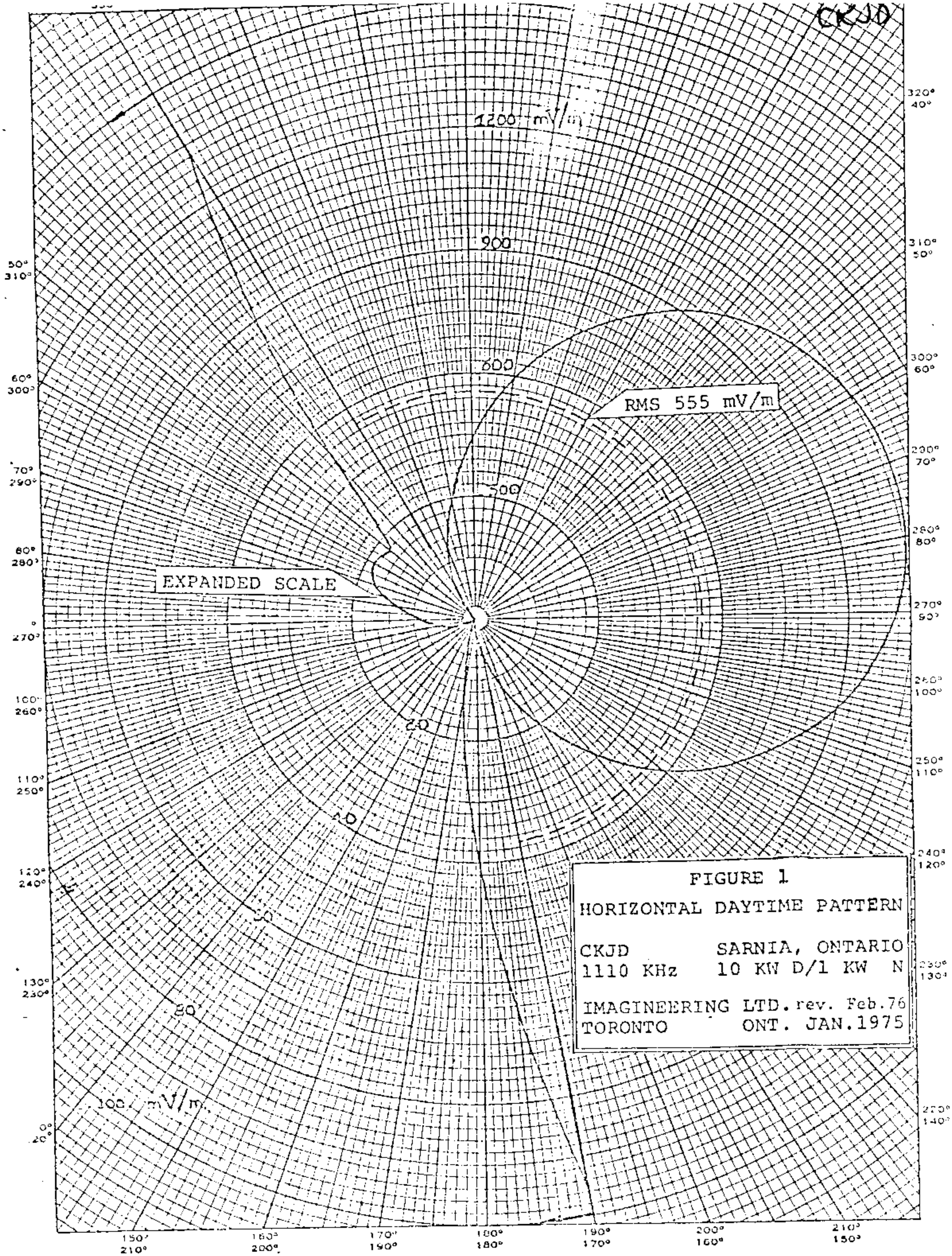


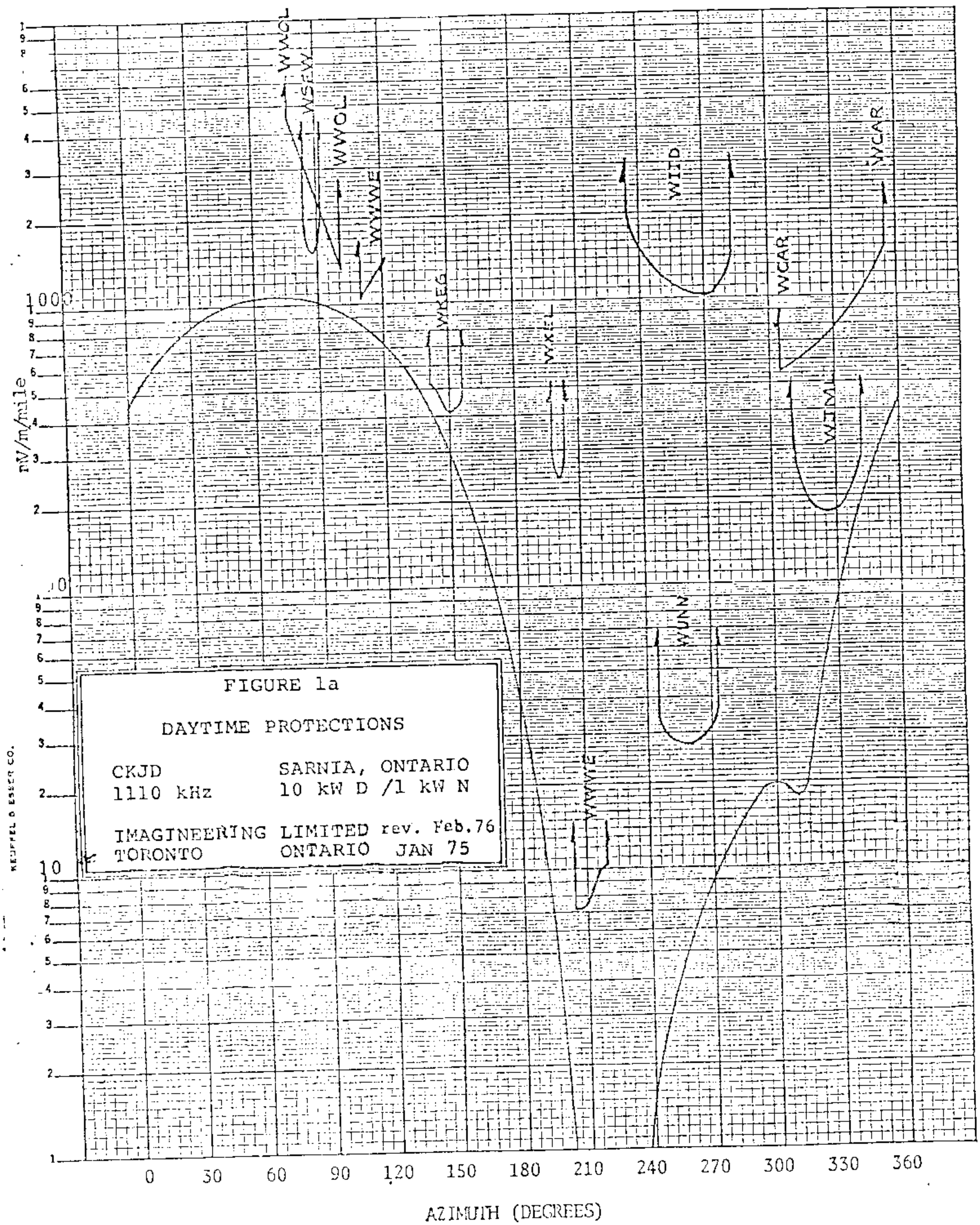
FIGURE 1
HORIZONTAL DAYTIME PATTERN

CKJD SARNIA, ONTARIO
1110 KHz 10 KW D/1 KW N

IMAGINEERING LTD. rev. Feb.76
TORONTO ONT. JAN.1975

REV 0212

CKJD



WWOL
WSEW
WWOL
WYWE
WYWE
WKEG
WXEL
WIID
WCAR
WCAR
WJML
WUNN
WYWE
1000
100
10
1
mV/m/mile
0
30
60
90
120
150
180
210
240
270
300
330
360
AZIMUTH (DEGREES)
KEUFFEL & ESSER CO.
FIGURE 1a
DAYTIME PROTECTIONS
CKJD
1110 kHz
SARNIA, ONTARIO
10 kW D /1 kW N
IMAGINEERING LIMITED rev. Feb.76
TORONTO
ONTARIO JAN 75

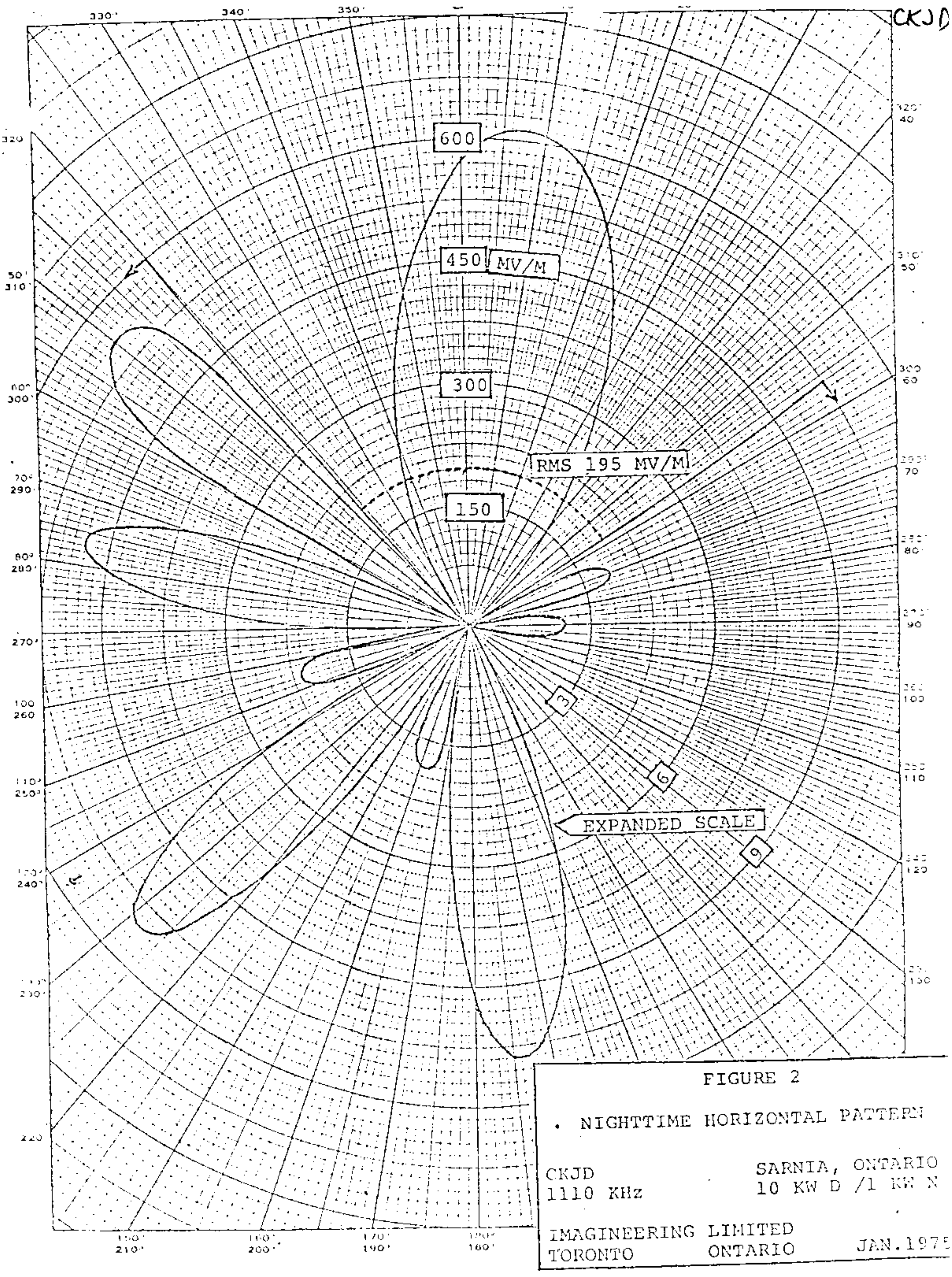


FIGURE 2

. NIGHTTIME HORIZONTAL PATTERN

CKJD
1110 KHz

SARNIA, ONTARIO
10 KW D /1 KW N

IMAGINEERING LIMITED
TORONTO ONTARIO

JAN.1975

Camaguey, Cuba
1110 KC

new

51631

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: New

Main Studio: Camaguey, Camaguey

Frequency: 1110 kc.

Power: 1 kw ~~Night~~ Day 250 watts ~~Day~~ Night

Notification List No. 4/57

Date: August 22, 1957 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 21° 23'

West Longitude: 77° 56'

ANTENNA CHARACTERISTICS

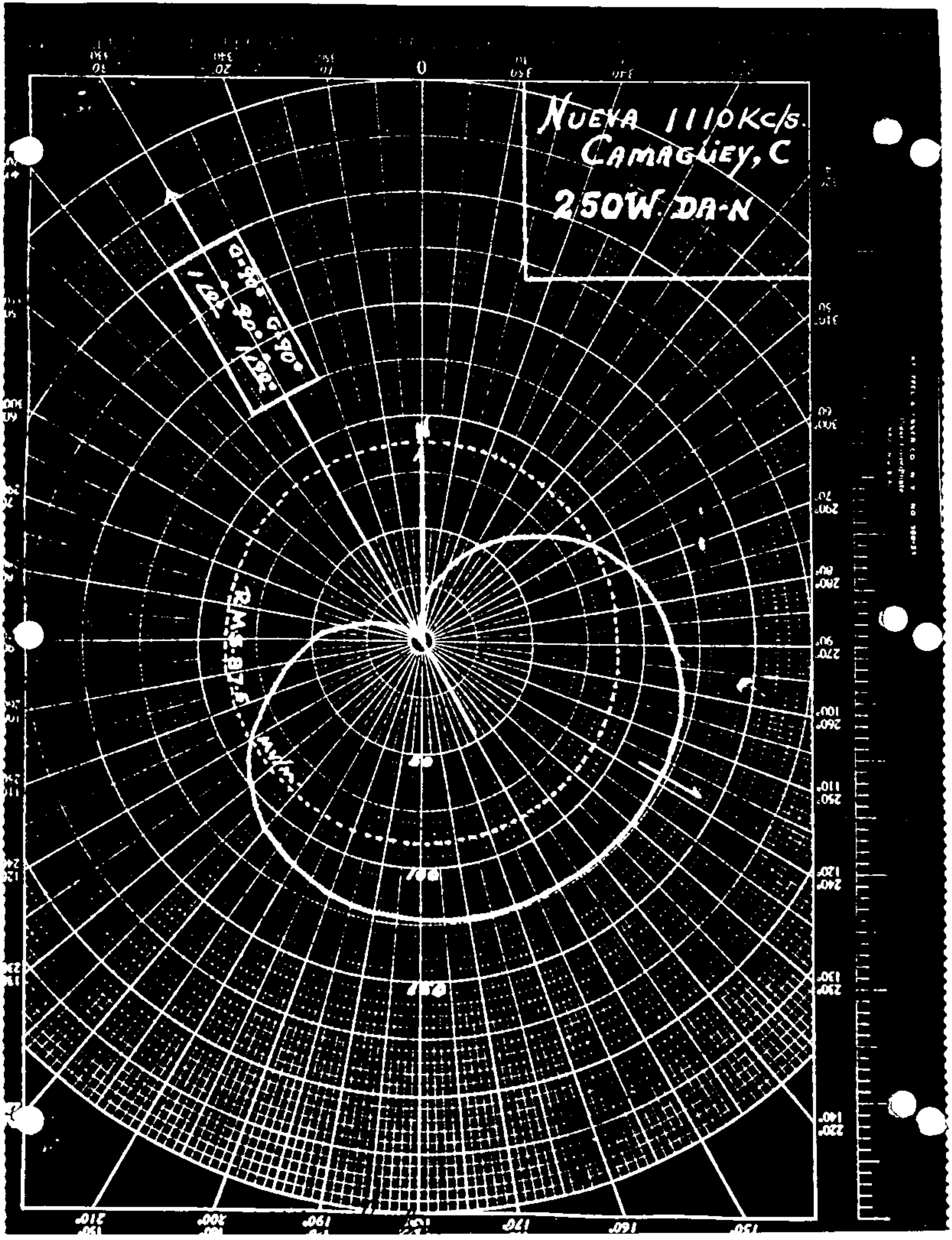
Authorized for Day and Night operation. (DA-N)
Number of elements: 2
Type of elements: Tubular

TOWER:	#1	#2
HEIGHT ABOVE INSULATORS:	90°	90° (221')
PHASING:	0	-90
FIELD RATIO:	1.0	1.0

SPACING AND ORIENTATION: Adjacent elements are spaced 221' (90°) on a line bearing 330° true.

GROUND SYSTEM: 120 buried radials around each tower.

Predicted effective Field: 87.5 mv/m at rated power.



NUEVA 1110 Kc/s.
CAMAGÜEY, C
250W DA-N
R.M.S. 87.5 mv/m

NEW
1110 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: (NEW)

Frequency: 1110 kHz

Notification List No. 1787

Main Studio: Alvin, Texas

Power: 0.5kw Day

Date: July 10, 1980 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 29° 23' 48"
West Longitude: 95° 15' 17"

ANTENNA CHARACTERISTICS

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

TOWER:	#1 (SE)	#2 (NE)	#3 (SW)	#4 (NW)
HEIGHT ABOVE INSULATORS:	221.6'	221.6'	221.6'	221.6' (90°)
DAY PHASING:	0°	-134.1°	+59.9°	-74.6°
DAY FIELD RATIO:	1.0	1.0	1.0	1.0

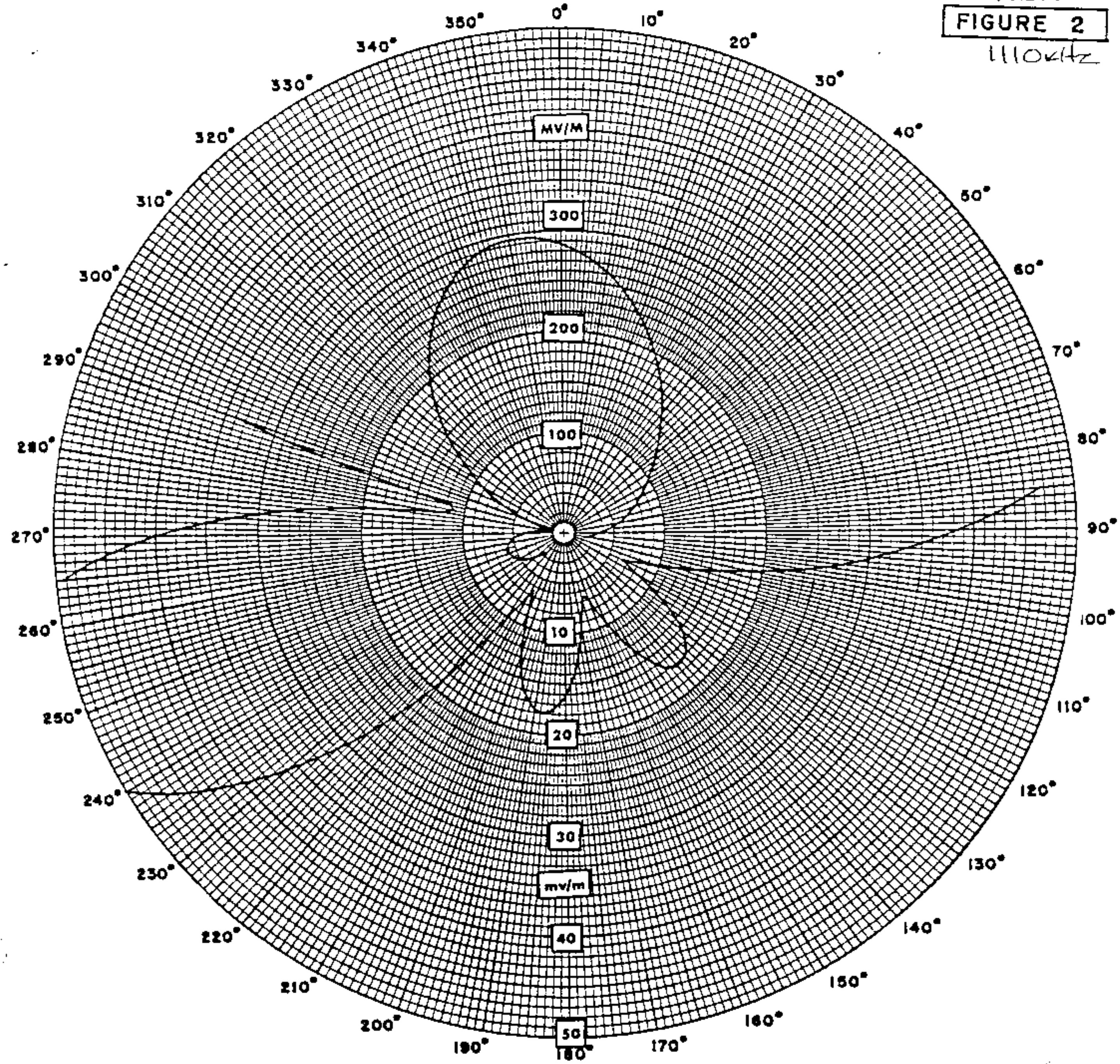
SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 369.2' (150°) in length on a line bearing 246° true. The short sides are 124.2' (50°) in length on a line bearing 319° true.

GROUND SYSTEM: 120 - 226' equally spaced copper radials. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	124.0 mv/m	204.95 mv/m	130.35 mv/m

NEW
FIGURE 2
1110kHz



ANTENNA NO.	1	2	3	4
FIELD	1.0	1.0	1.0	1.0
PHASE	REF	-134.1°	59.9°	-74.6°
SPACING	REF	50°	150°	171.4°
ORIENTATION	REF	319°	246°	262.2°
HEIGHT	90°	90°	90°	90°

N. LAT.	29 ° 23 ' 48 "	
W. LONG.	95 ° 15 ' 16.5"	
RMS STD.	130.35	mv/m
RMS Th.	124.0	mv/m
RSS Th.	204.95	

HORIZONTAL STANDARD PATTERN
NEW AM - ALVIN, TEXAS
1110 kHz - 0.5 kW - DA-D

DECEMBER, 1978

CARL T. JONES ASSOCIATES—CONSULTING ENGINEERS

KAKA

DIRECTIONAL ANTENNA DESCRIPTION SHEET

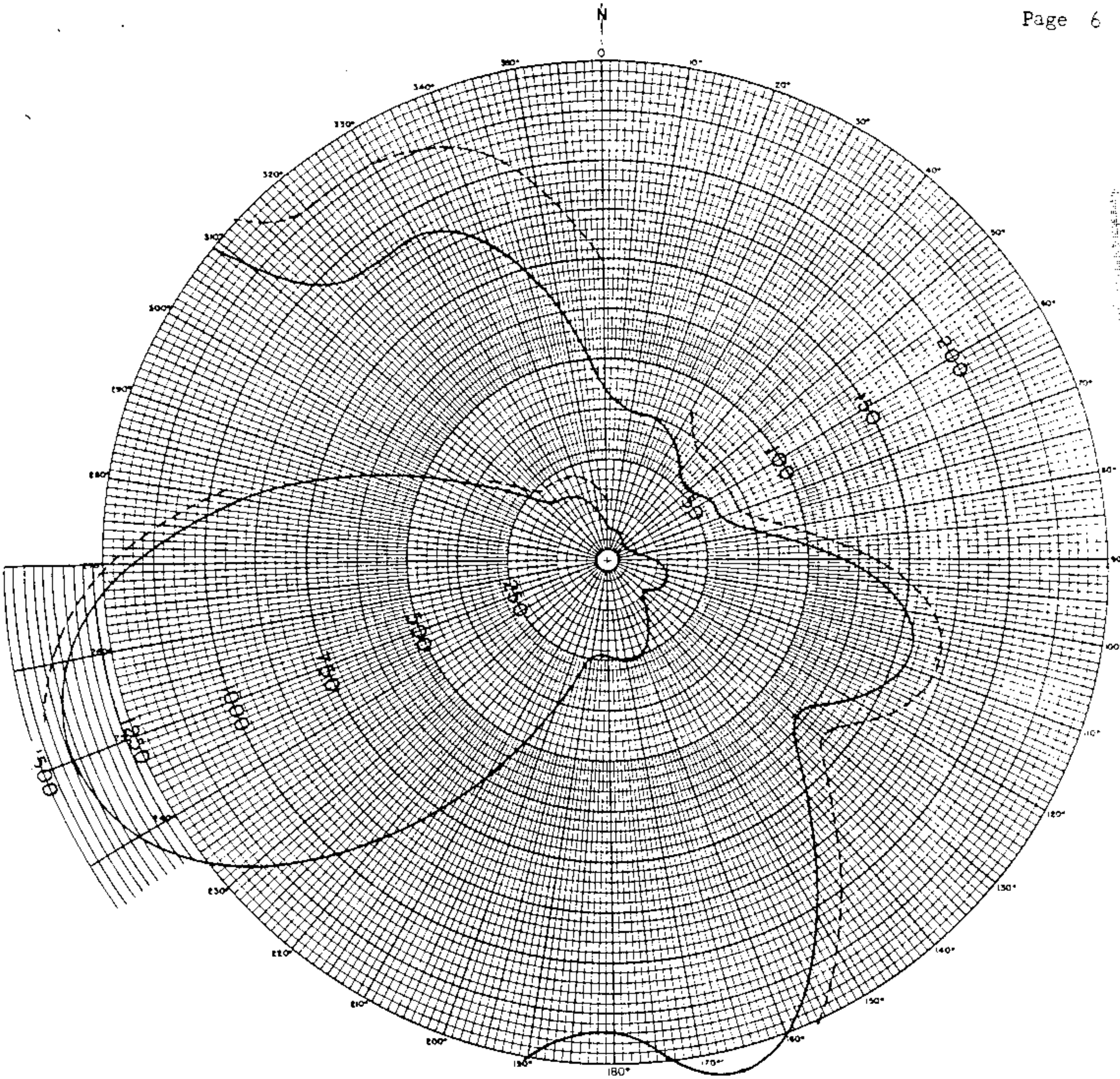
Station	: KAKA	Main Studio:	Dermott, Arkansas	
Frequency	: 1110 KHz	Power :	____ Night 10 kW Day	
Notification	: 1781	Date :	Oct. 19, 1979	Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude:	33	31	32
West Longitude:	91	27	20

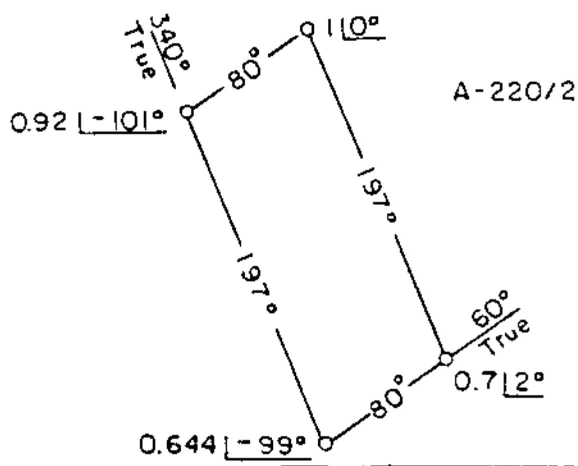
Note: Please retain the description sheet and directionl antenna radiation patterns notified for a new station in Dermott, Arkansas in United States Change List Number 1535, dated June 27, 1973 and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only a change in the geographical coordinates of the center of the antenna system.

Thea



HORIZONTAL RADIATION PATTERN

KAKA BMP-14,336
BP-18,476



A-220/225' (90°)

APPLICANT	Southeast Arkansas Radio, Inc.
LOCATION	Dermott, Arkansas
FREQUENCY	1110 KC/S
POWER	10,000 Watts
LATITUDE	33 DEG 31 MIN. 32 SEC
LONGITUDE	91 DEG 27 MIN. 20 SEC.
WHEN USED	Daytime
R.M.S. FIELD	575 MV/M
DATE	June 1st, 1972

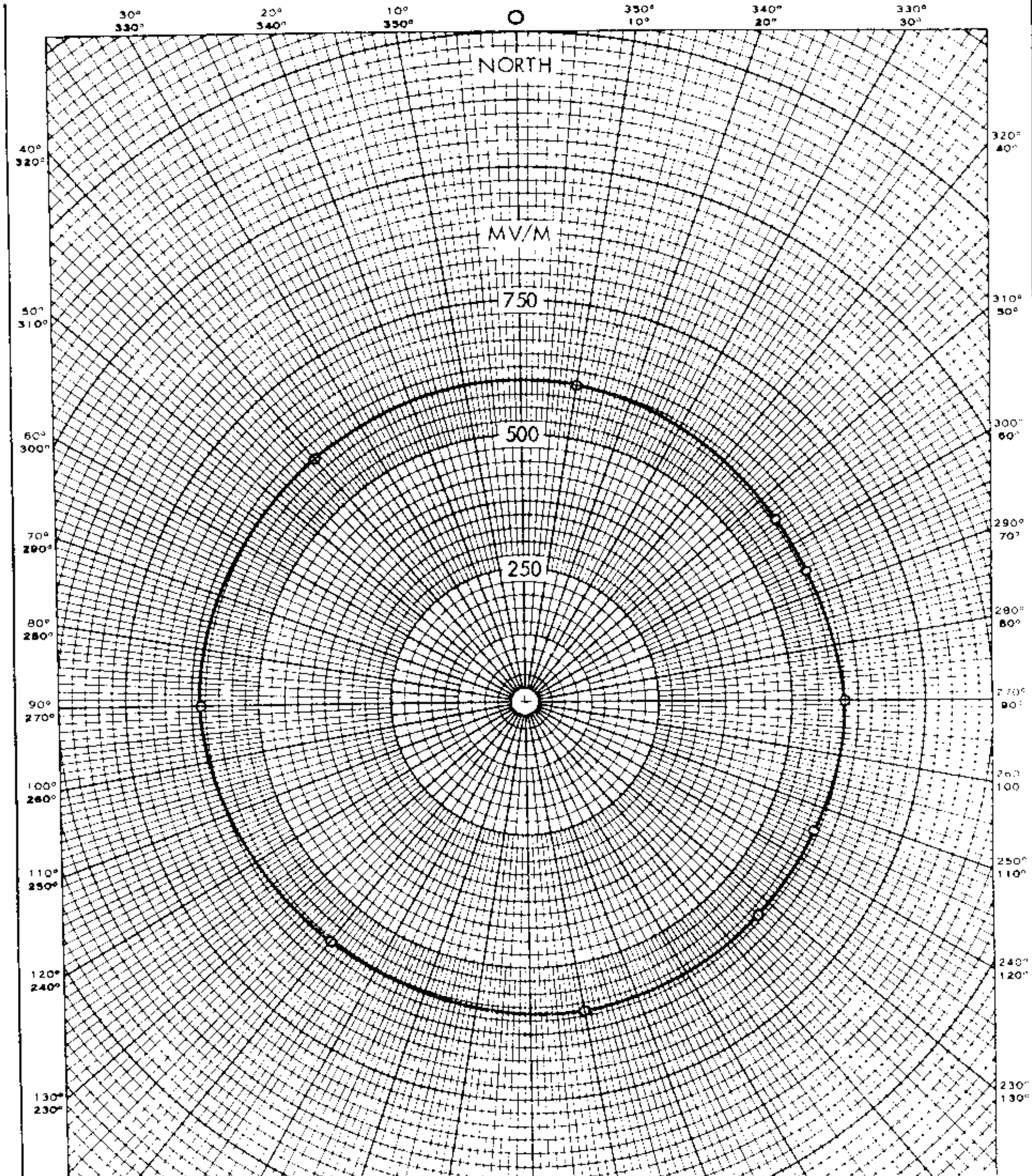
RALPH J. BITZER
CONSULTING RADIO ENGINEERS
ST. LOUIS, MISSOURI

KBND

Measured Non-DA
(1-22-71ct)

Station KBND
Bend, Oregon

1kw,10kw-LS,DA-N,U
1110 kc



N. LAT 44° 04' 30"
W. LONG 121° 17' 39"

G: 79.2°=195 FT
RMS: 592 MV/M

TOWER 1 (E) EXCITED
TOWER 2 (W) FLOATING

MEASURED HORIZONTAL RADIATION
NON-DIRECTIONAL

UNATTENUATED FIELD INTENSITY
AT ONE MILE

HAMMETT & EDISON CONSULTING ENGINEERS SAN FRANCISCO	RADIO STATION KBND 1110 KHZ. 1 KW, 10 KW-LS, DA-N BEND OREGON	700914	FIGURE 10A

FCC File No.BL-12830
Accepted 1-6-71

Station KBND
Bend, Oregon

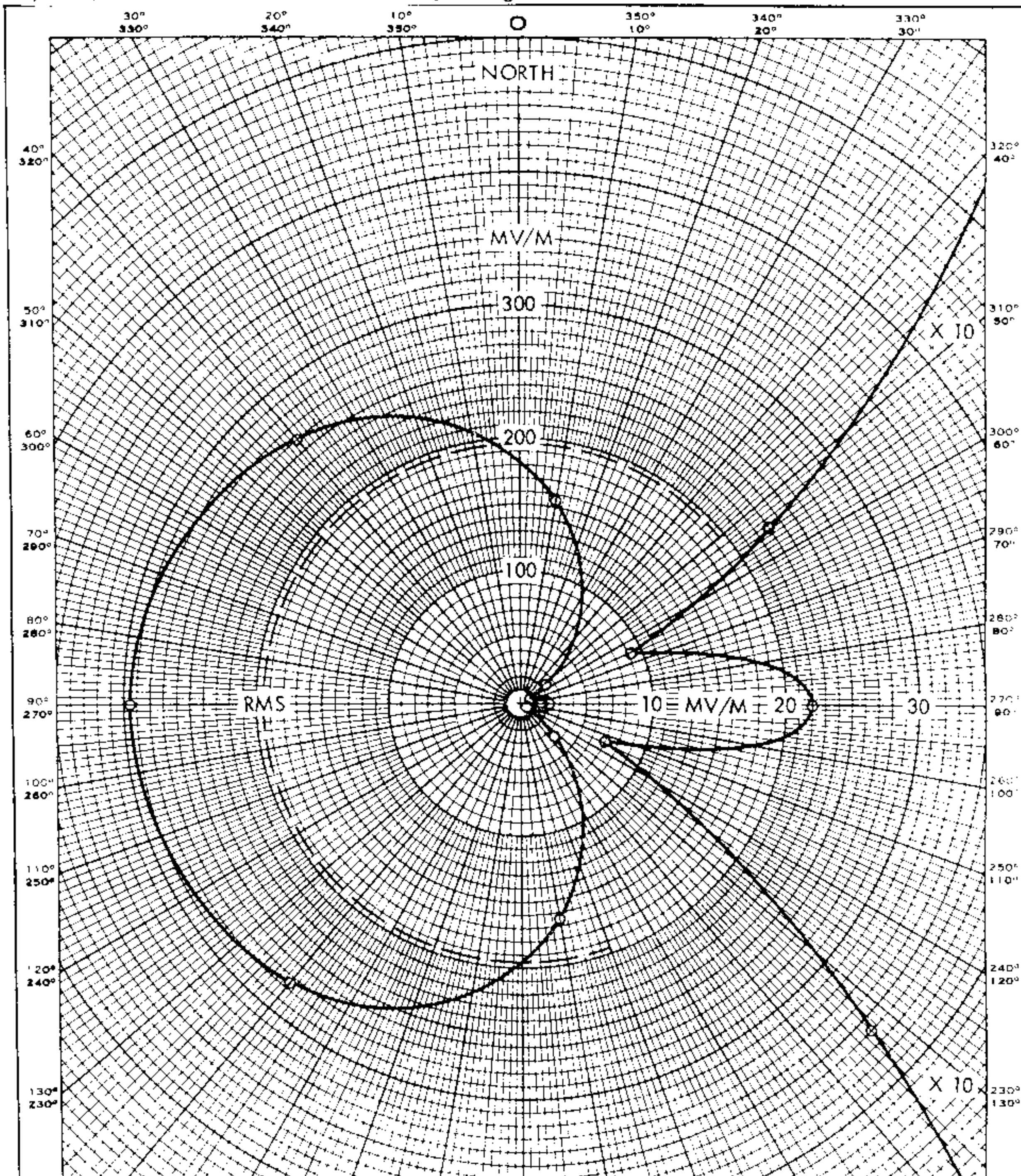
1110 kc

KBND

Measured Night
(1-22-71ct)

Station KBND
Bend, Oregon

1kw,10kw-LS,DA-N,U
1110 kc



N LAT 44° 04' 30" S = 90°=2215 FT RMS = 196 MV/M
W LONG 121° 17' 39" G = 79.2°=195 FT

THEORETICAL	OPERATING
N 90° E	N 90° E
2 — S — 1	2 — S — 1
1.0 ∠-98° 1.0 ∠0°	0.92 ∠-94° 1.00 ∠0°

MEASURED HORIZONTAL RADIATION NIGHTTIME DIRECTIONAL

UNATTENUATED FIELD INTENSITY
AT ONE MILE

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KBND
1110 KHZ. 1 KW. 10 KW-LS. DA-N
BEND, OREGON

700914

FIGURE 10B

FCC File No.BL-12830
Accepted 1-6-71

Station KBND
Bend, Oregon

1110 kc

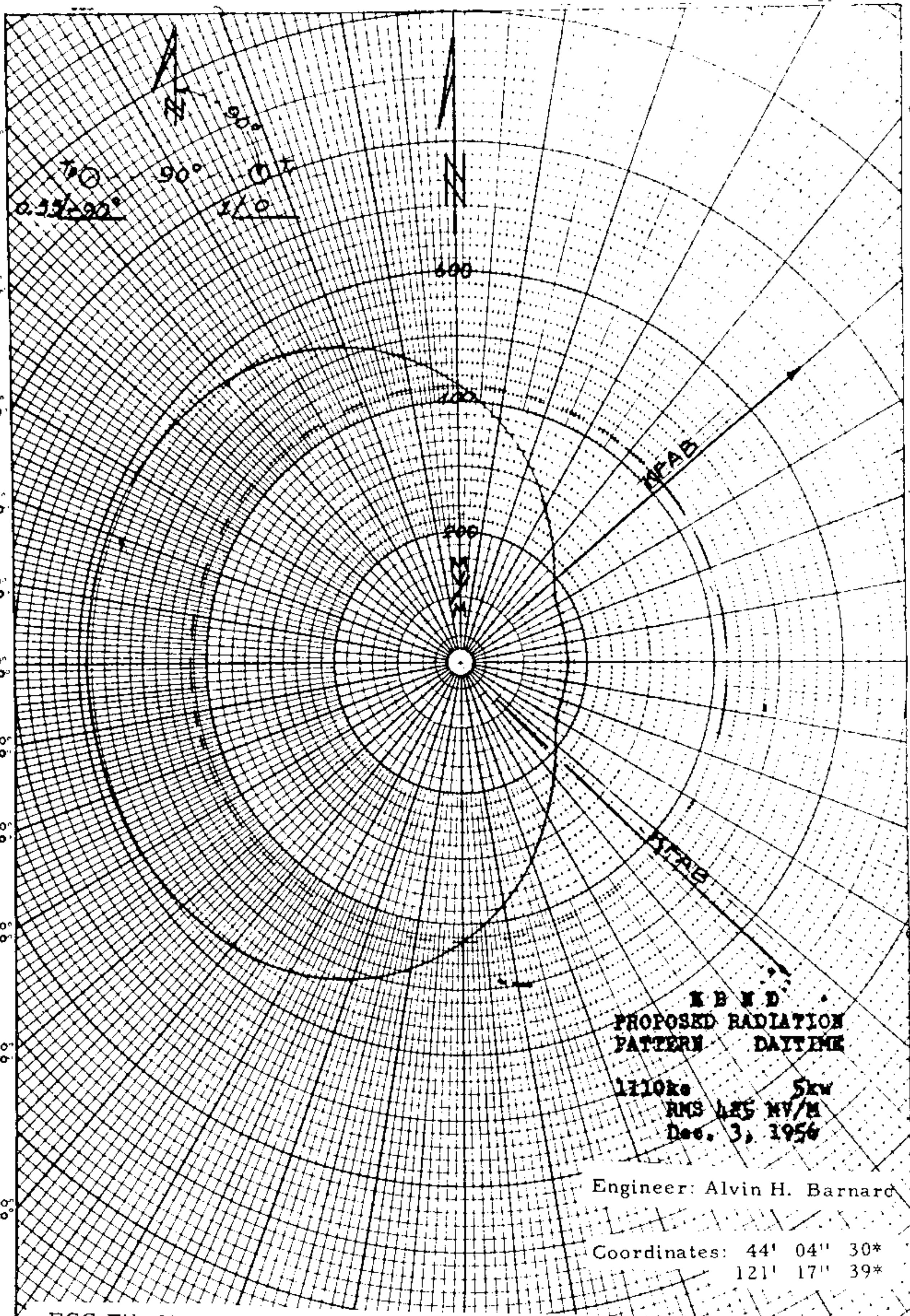
KBND

PROPOSED DAY (1-29-57g)

Station K B N D
Bend, Oregon

1KW-N, 5KW-D, U

1110 K C



[illegible] changed from DA-N to DA-2 directional antenna operation + to increase daytime pattern to 5 KW

OVER

FCC File No.
BP-10,670

Accepted 1-23-57

KBND
Bend, Oregon, 1110 K C

KBND

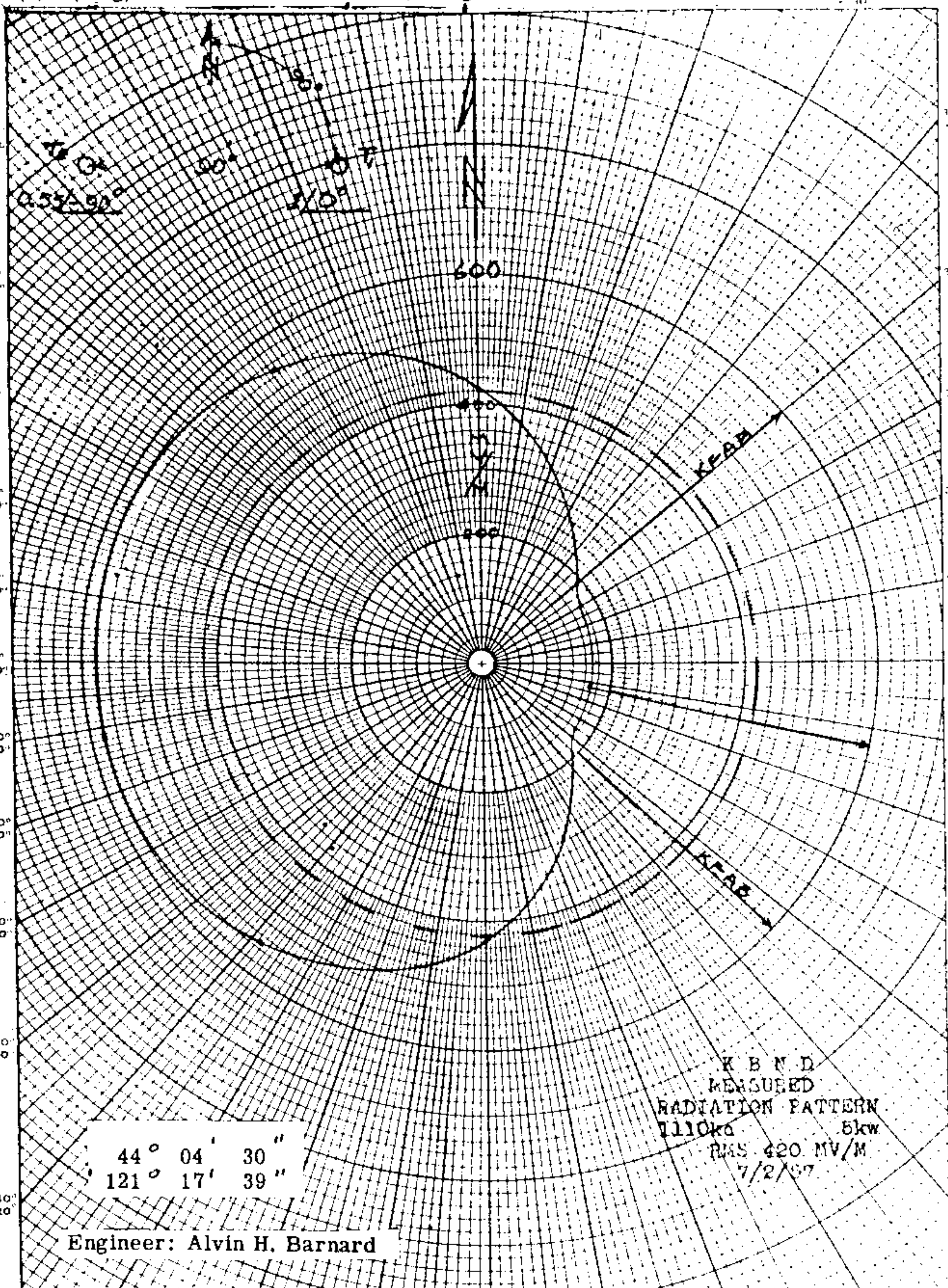
MEASURED DAY (8/29/57g)

Station KBND
Bend, Oregon

1kw,5kw-LS, DA-2,U
1110 KC

Granted license 3/30/57 for increase in power & to DA-2

OVER



FCC File No. BL-6716
Accepted 8/19/57

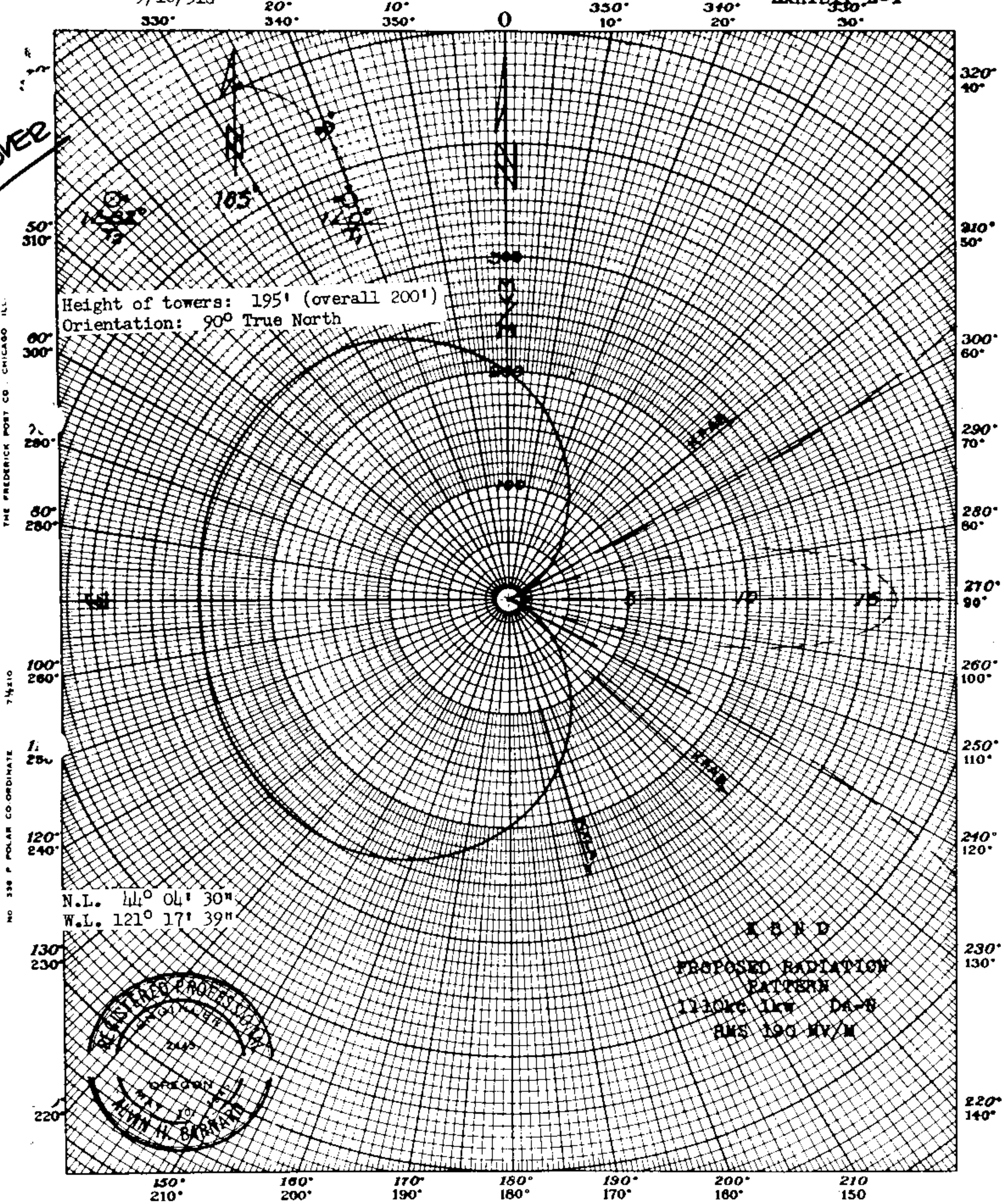
KBND
Bend, Oregon

1110 KC

KBND

PROPOSED NIGHT 9/18/51G KBND, BEND, OREGON 1 kw, U, DA-N 1110 KC

EXHIBIT E-1



PRINTED IN U. S. A.

APPL RECD 8/9/51 BP-8216 KBND, BEND, OREGON 1110 KC

KBND

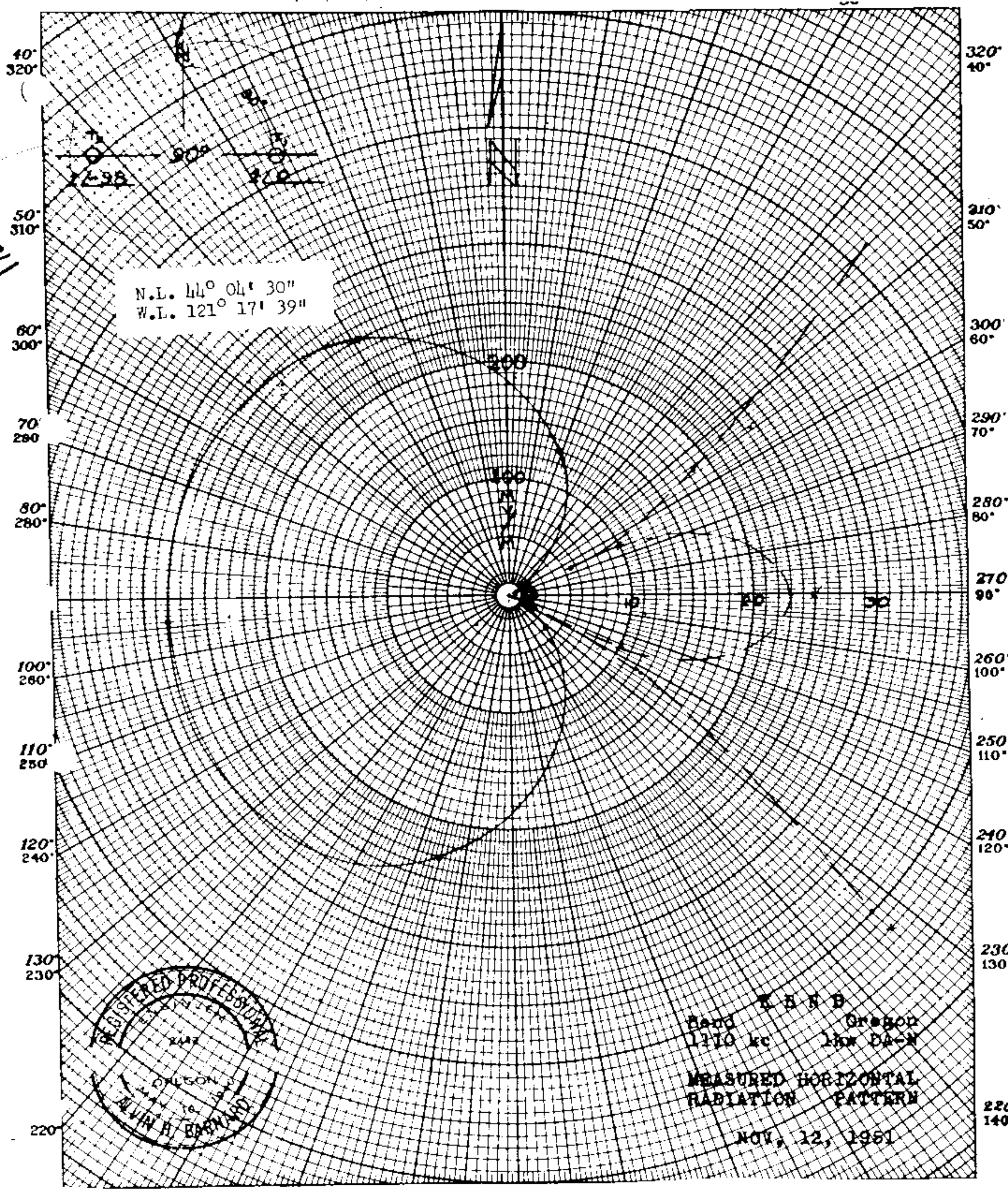
MEASURED NIGHT

KBND, BEND, OREGON 12/20/51G

1 KW, U, DA-N

1110 KC

OVER



APPL RECD 11/19/51 ACC 12/3/51 BL-4595

KBND, BEND, OREGON

1110 KC

H = 195'

KEOR

Proposed Day
(1-29-68ct)

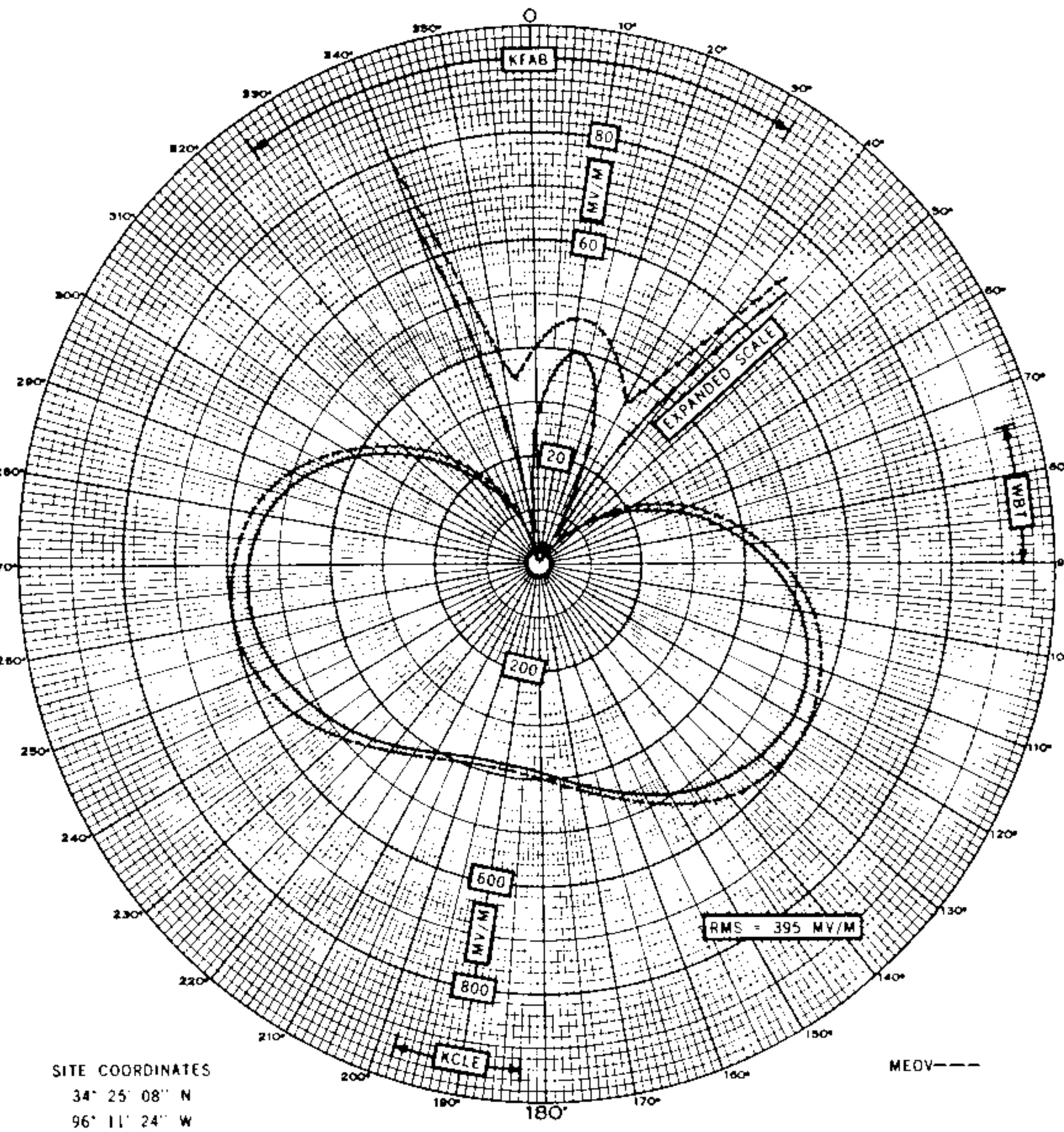
Station KEOR
Atoka, Oklahoma

5kw,DA-D,D
1110 kc

Figure 1
Sheet 1 of 9

GRANTED CP
1-19-68
CHANGES IN
DA SYSTEM

APRIL 1966



SITE COORDINATES
34° 25' 08" N
96° 11' 24" W

PROPOSED HORIZONTAL PLANE RADIATION PATTERN

H_1 = 450' (183°) H_2 = 220' (90°) 12° True #2 0.98 /46° 142° 350' #1 1 /0°	RADIO STATION KEOR ATOKA, OKLAHOMA Jules Cohen & Associates Consulting Electronics Engineers	PROPOSED OPERATION 1110 KC/S 5 KW D DA Pattern 651011

FCC File No.BMP-12262
Accepted 1-23-68

KEOR

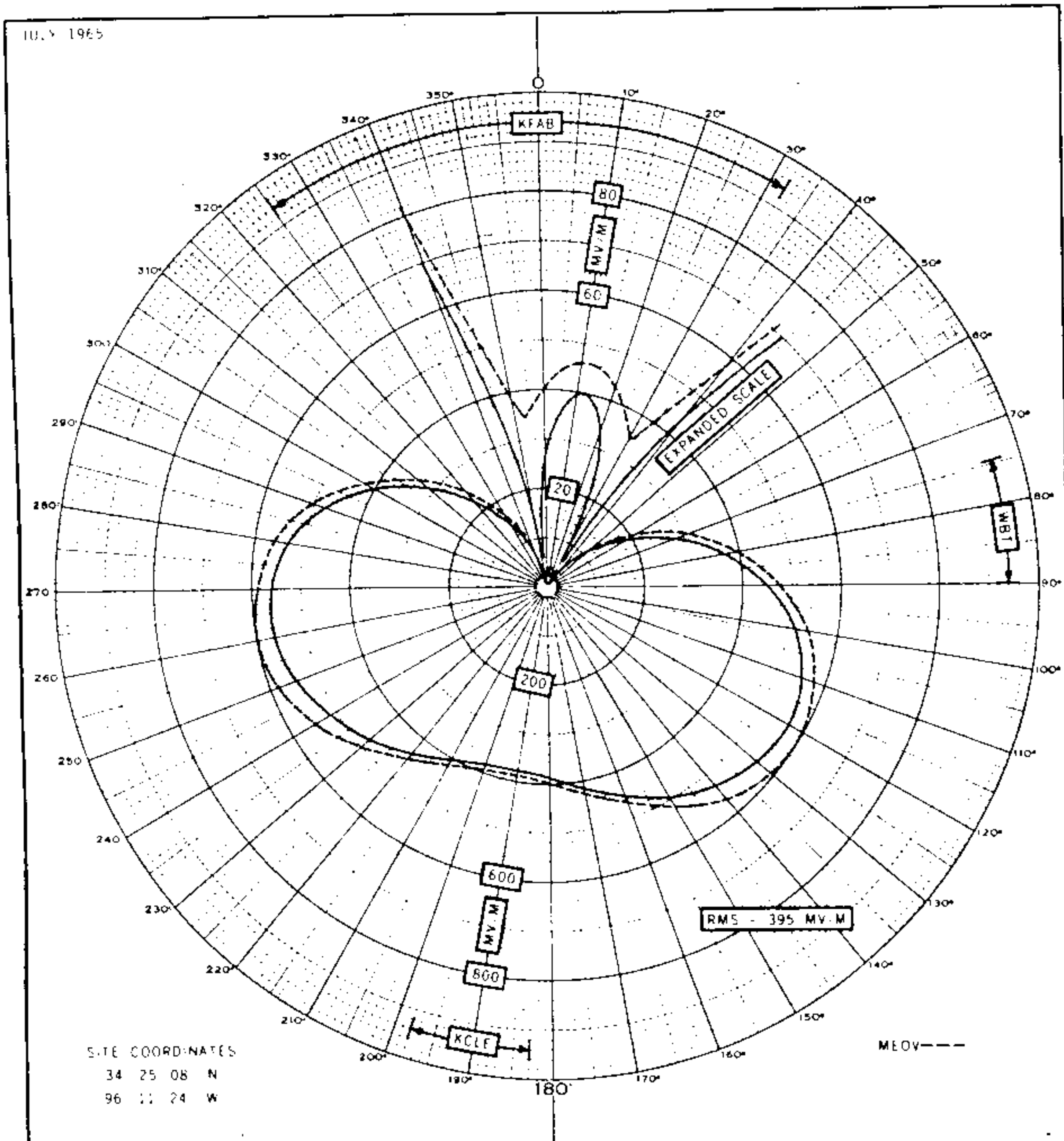
Proposed Day
(10-26-65ct)

New; Bill Hoover
Atoka, Oklahoma

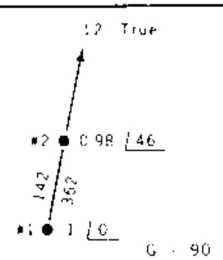
5kw,DA-D,D
1110 kc

Sheet 1 of 9
(Amended)

CP
12-22-65



PROPOSED HORIZONTAL PLANE RADIATION PATTERN



BILL HOOVER
ATOKA OKLAHOMA

Jules Cohen & Associates
Consulting Electronics Engineers

PROPOSED OPERATION
1110 KC 5 KW D DA
Pattern 650730

FCC File No. BP-16470
Accepted 10-13-65 Amended

New; Bill Hoover
Atoka, Oklahoma

1110 kc

KEOR

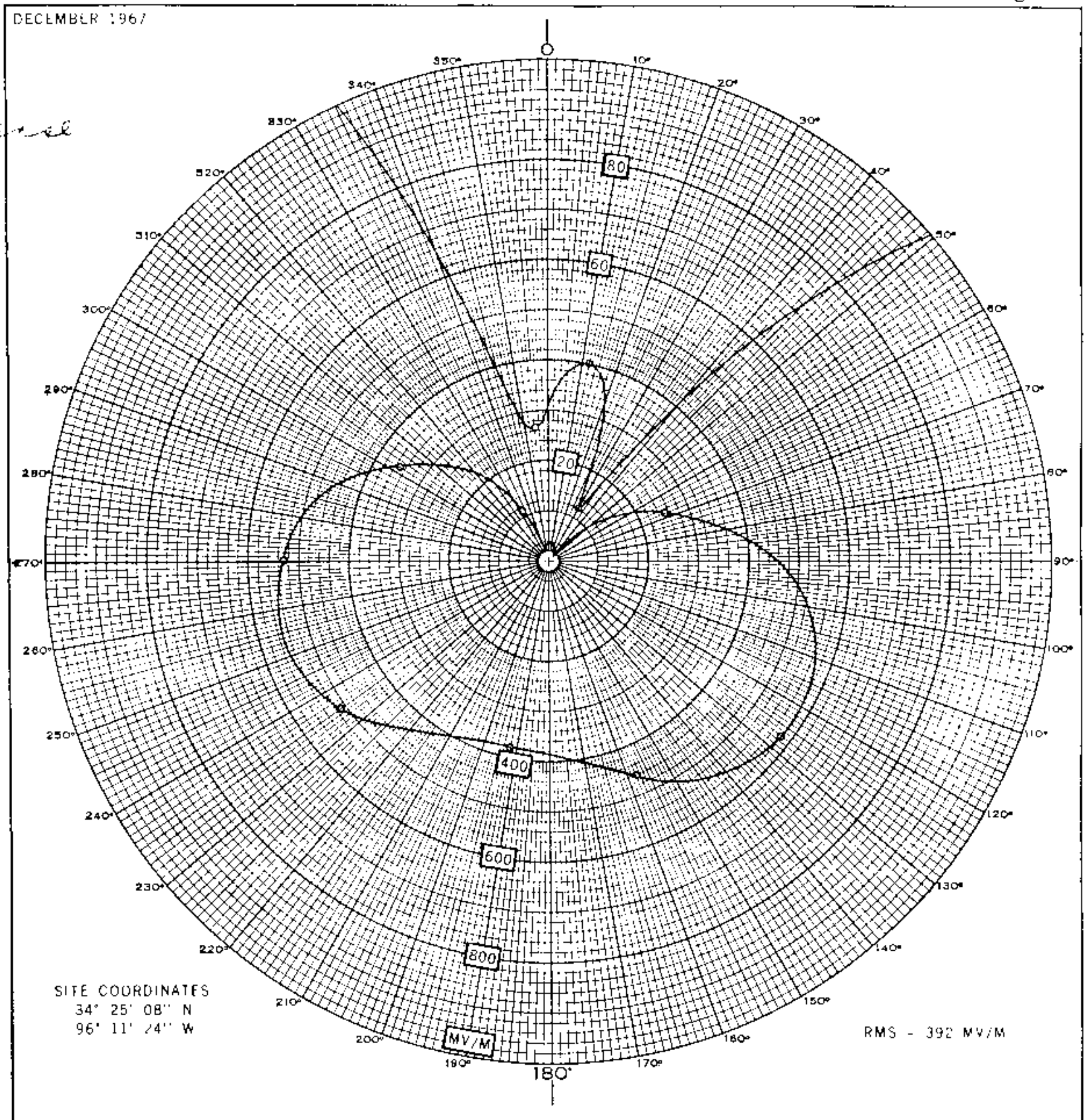
Measured Day
(3-28-68-ct)

Station KEOR
Atoka, Oklahoma

5kw,DA-D,D
1110 kc

Figure 9

BL-11896
Granted
1/21/68 license
for new AM
station



MEASURED DIRECTIONAL HORIZONTAL PLANE, RADIATION PATTERN

H_1 = 450' (183°) H_2 = 220' (90°) 12° TRUE #2 0.98/46° 142° 350' #1 1/0	EASTERN OKLAHOMA TELEVISION CO., INC. ATOKA, OKLAHOMA Jules Cohen & Associates Consulting Electronics Engineers	RADIO STATION KEOR 1110 KHZ 5 KW D PATTERN 671215

FCC File No.BL-11896
Accepted 3-12-68

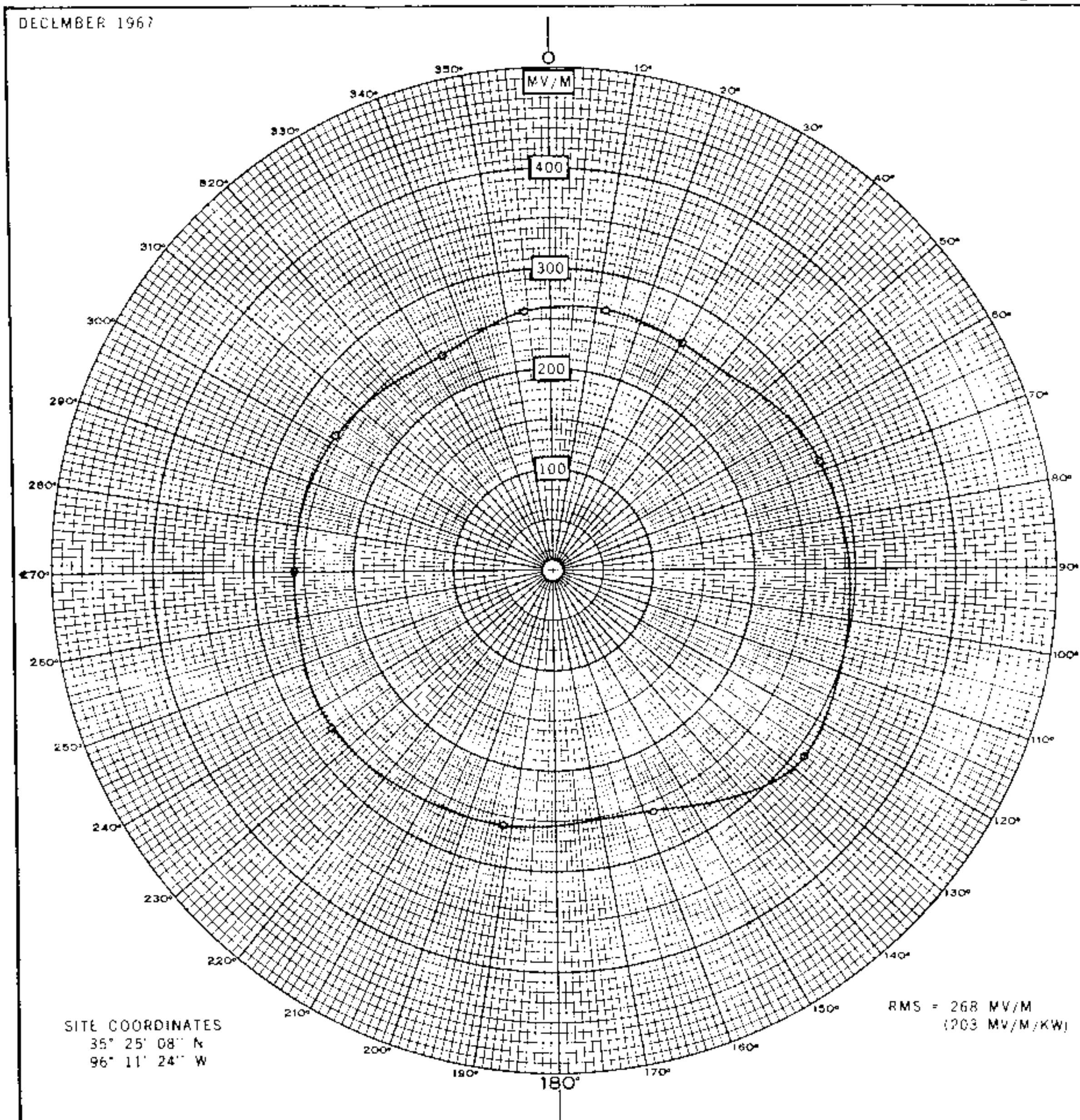
Station KEOR
Atoka, Oklahoma

1110 kc

Measured Non-DA
(3-28-68ct)

Station KEOR
Atoka, Oklahoma

5kw,DA-D,D
1110 kc
Figure 7



MEASURED NONDIRECTIONAL HORIZONTAL PLANE RADIATION PATTERN
1.74 KW

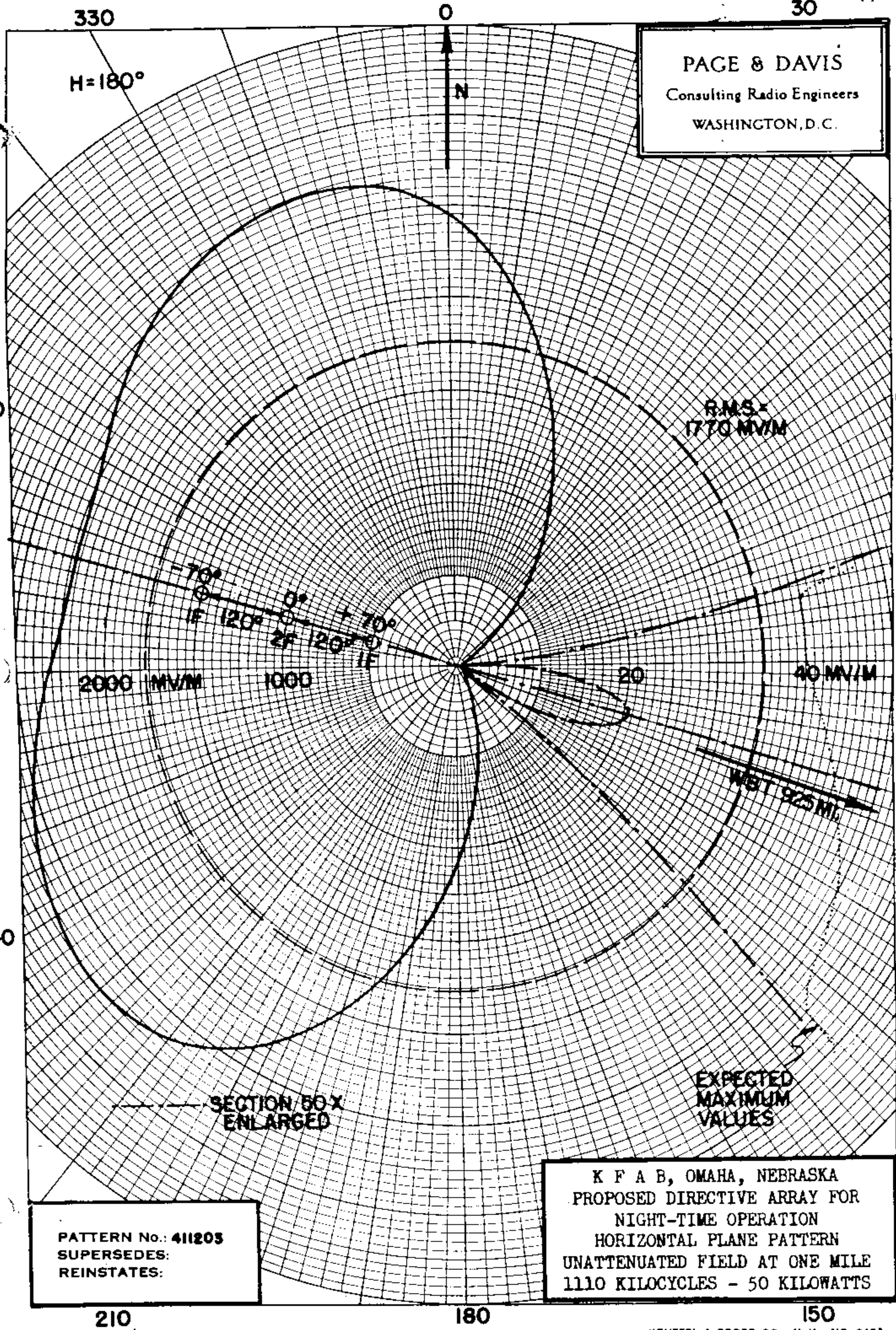
NORTH TOWER USED FOR NONDIRECTIONAL OPERATION	EASTERN OKLAHOMA TELEVISION CO., INC. ATOKA, OKLAHOMA Jules Cohen & Associates Consulting Electronics Engineers	RADIO STATION KEOR 1110 KHZ

FCC File No.BL-11896
Accepted 3-12-68

Station KEOR
Atoka, Oklahoma

1110 kc

KFAB 1110



K F A B, OMAHA, NEBRASKA
PROPOSED DIRECTIVE ARRAY FOR
NIGHT-TIME OPERATION
HORIZONTAL PLANE PATTERN
UNATTENUATED FIELD AT ONE MILE
1110 KILOCYCLES - 50 KILOWATTS

PATTERN No.: 411203
SUPERSEDES:
REINSTATES:

KEUFFEL & ESSER CO., N.Y. NO. 347A

KFAB

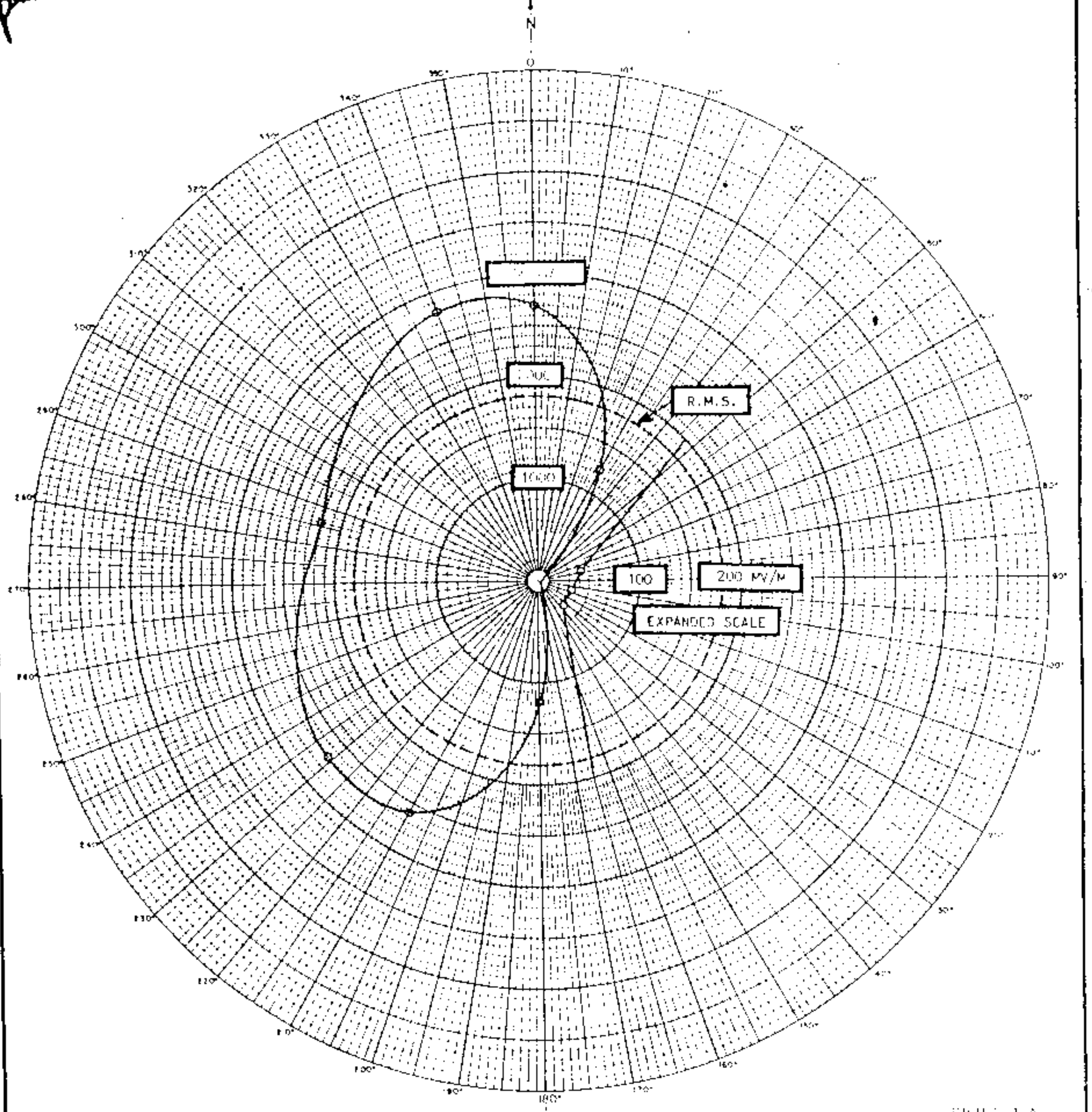
MEASURED NIGHT
(4-22-60g)

Station KFAB
Omaha, Nebraska

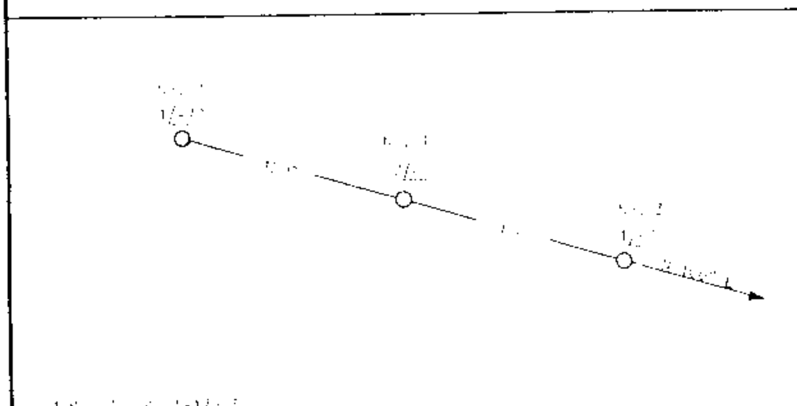
50kw, DA-N,U
1110 KC

5-19-60
... N-DA pat.

MEOV-N100°E = 30 mv/m



HORIZONTAL RADIATION PATTERN



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

FCC File No. BL-7884
Accepted 4-13-60

KFAB
Omaha, Nebraska

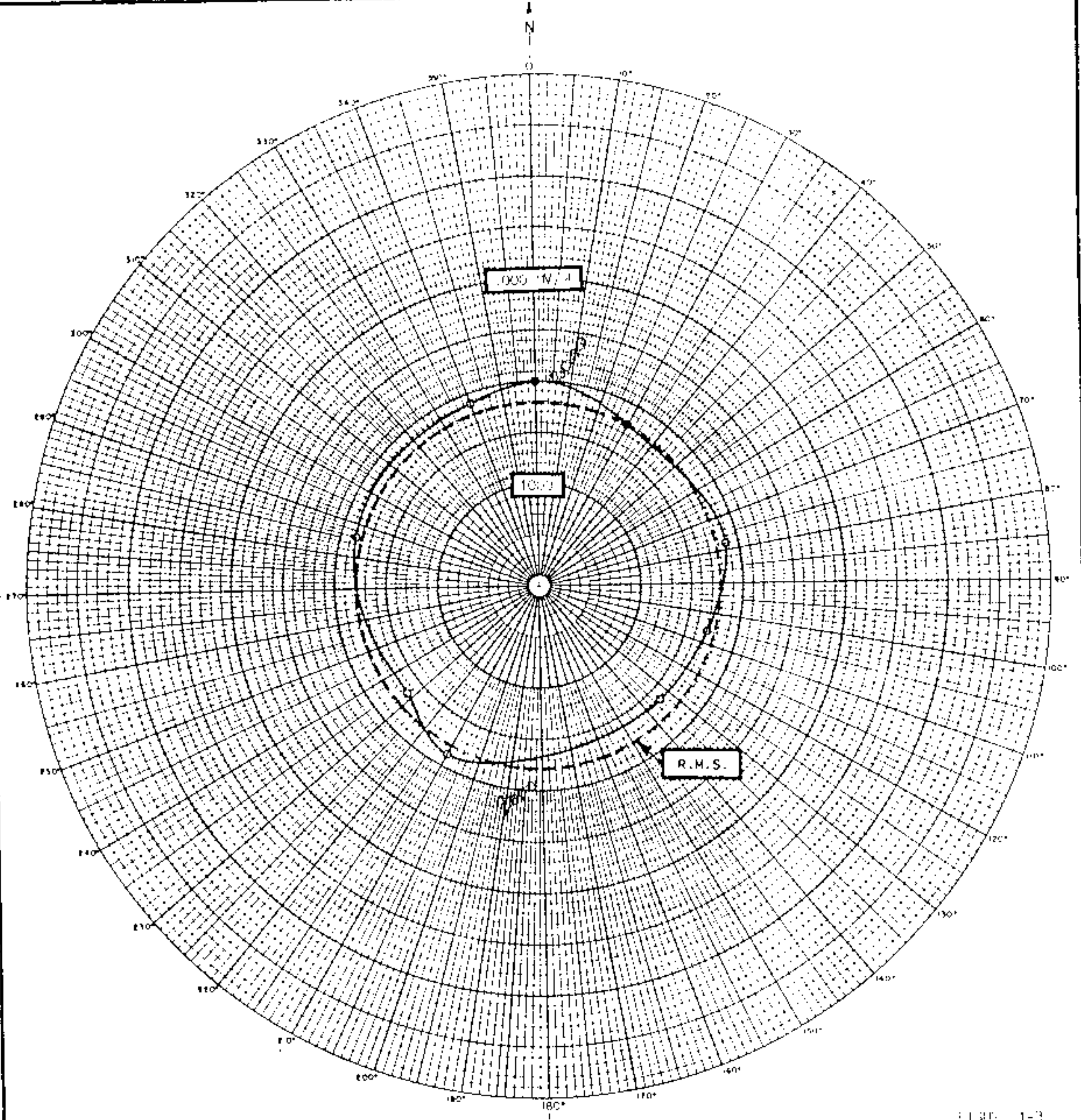
1110 KC

KFAB

MEASURED NON-DA
(4-22-60g)

Station KFAB
Omaha, Nebraska

50kw, DA-N,U
1110 KC



HORIZONTAL RADIATION PATTERN

NON-DIRECTIONAL SURVEY

APPLICANT [illegible]
LOCATION OMAHA, NEBRASKA
FREQUENCY 1110 KC/S
POWER [illegible]
LATITUDE 41 DEG [illegible] MIN [illegible] SEC
LONGITUDE [illegible] DEG [illegible] MIN [illegible] SEC
WHEN USED DAYTIME OPERATION
R.M.S. FIELD [illegible]
DATE [illegible]

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

FCC File No. BL-7884
Accepted 4-13-60

KFAB
Omaha, Nebraska

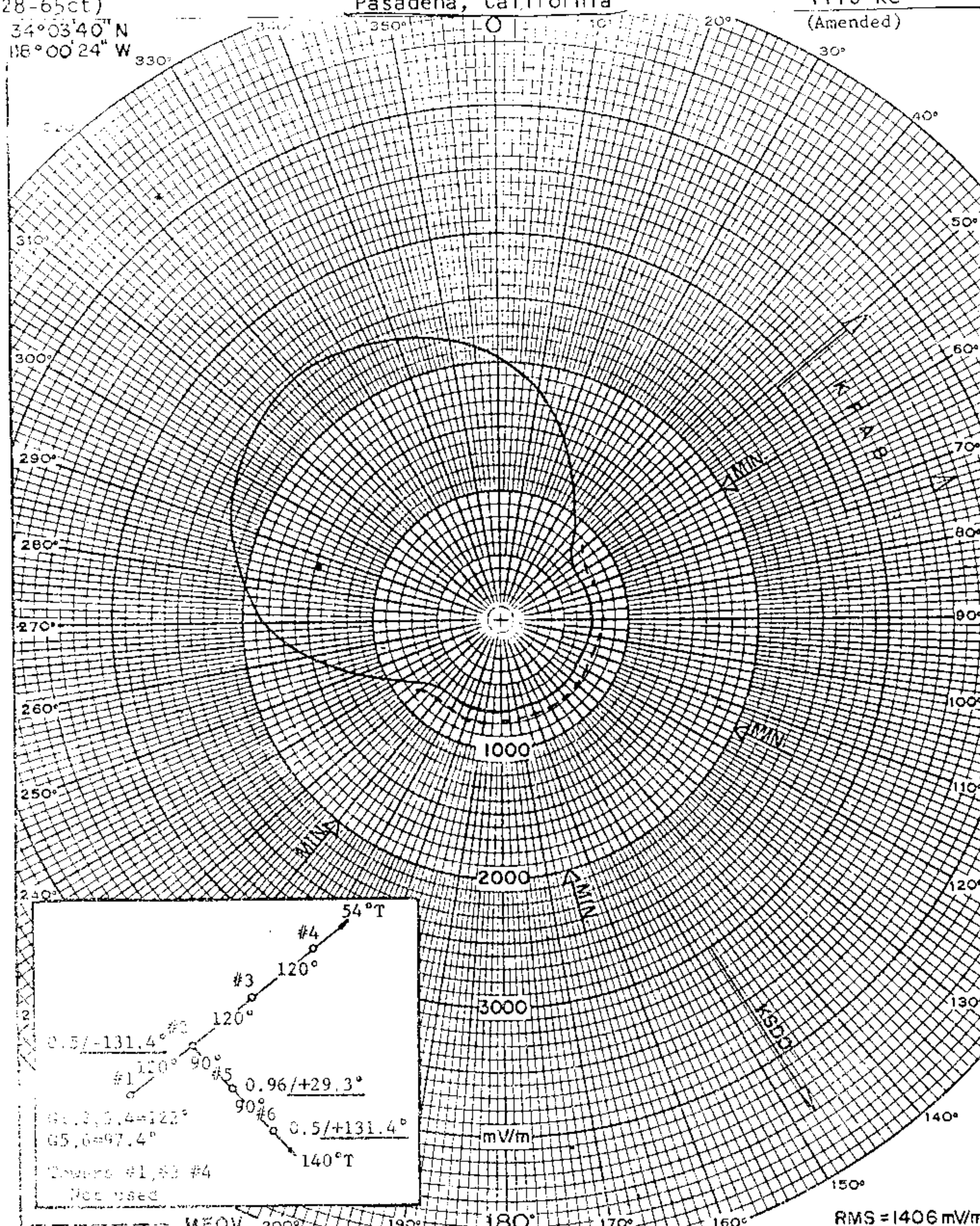
1110 KC

KIGI

Proposed Day
(1-28-65ct)
34°03'40" N
118°00'24" W

New; Western B/cg Corp.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc
(Amended)



COMMERCIAL RADIO EQUIPMENT CO.
Radio Engineering Consultants
WASHINGTON, D. C.
12/64

PROPOSED DAYTIME HORIZONTAL PATTERN
PASADENA, CALIFORNIA
1110 KC, 50 KW-D, 10 KW-N, DA-2
Western Broadcasting Corporation

FCC File No. BP-16173
Accepted 12-28-64 Amended

New; Western B/cg Corp.
Pasadena, California

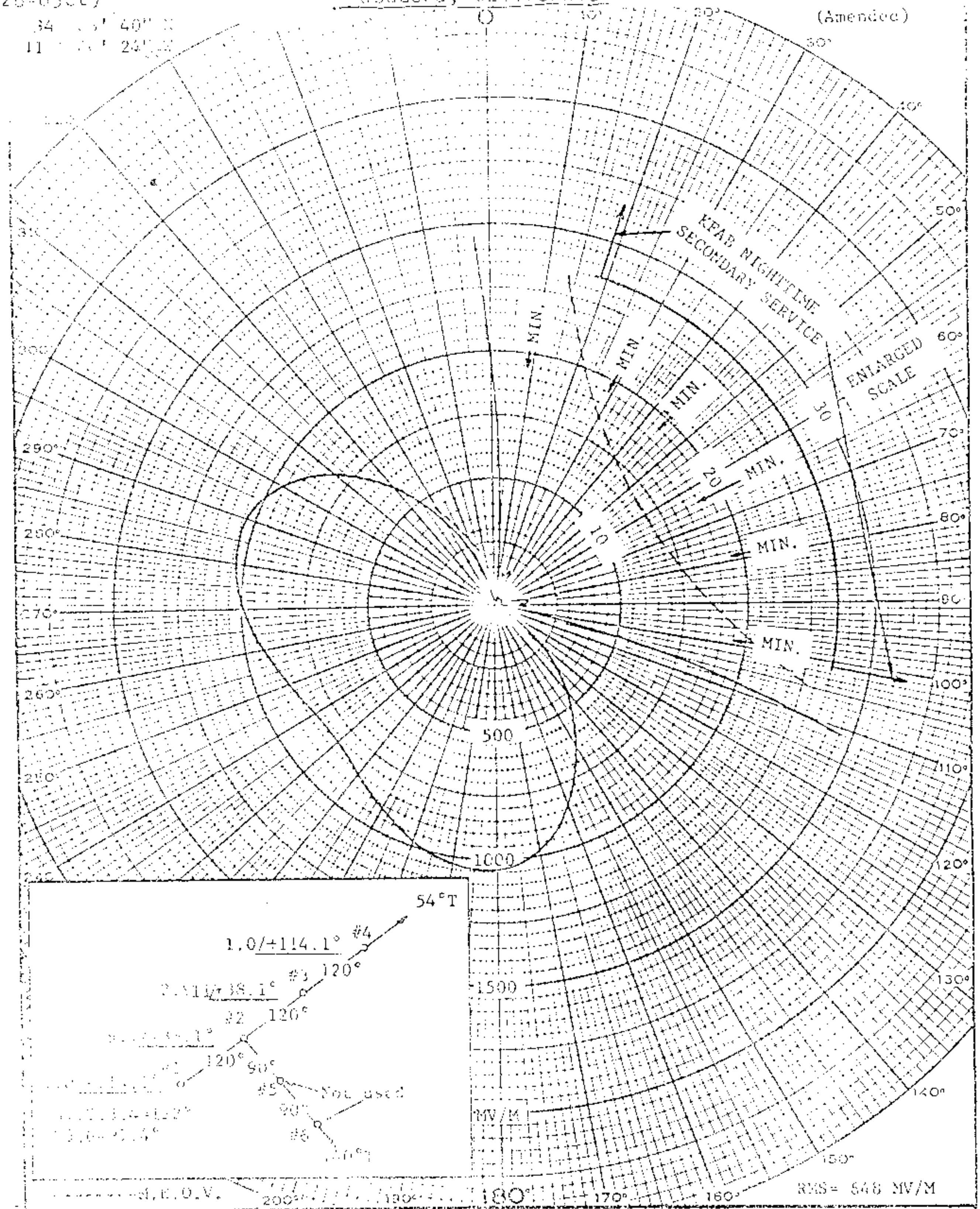
1110 kc

K/G1

Proposed Night (1-28-65ct)

New: Western B/cg Corp.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc
(Amended)



COMMERCIAL RADIO EQUIPMENT CO.
Radio Engineering Consultants

PROPOSED NIGHTTIME HORIZONTAL PATTERN
PASADENA, CALIFORNIA
1110 KC, 50 KW-D, 10 KW-N, DA-2
Western Broadcasting Corporation

FCC File No. BP-16173
Accepted 12-28-64 Amended

New; Western B/cg Corp.
Pasadena, California

1110 kc

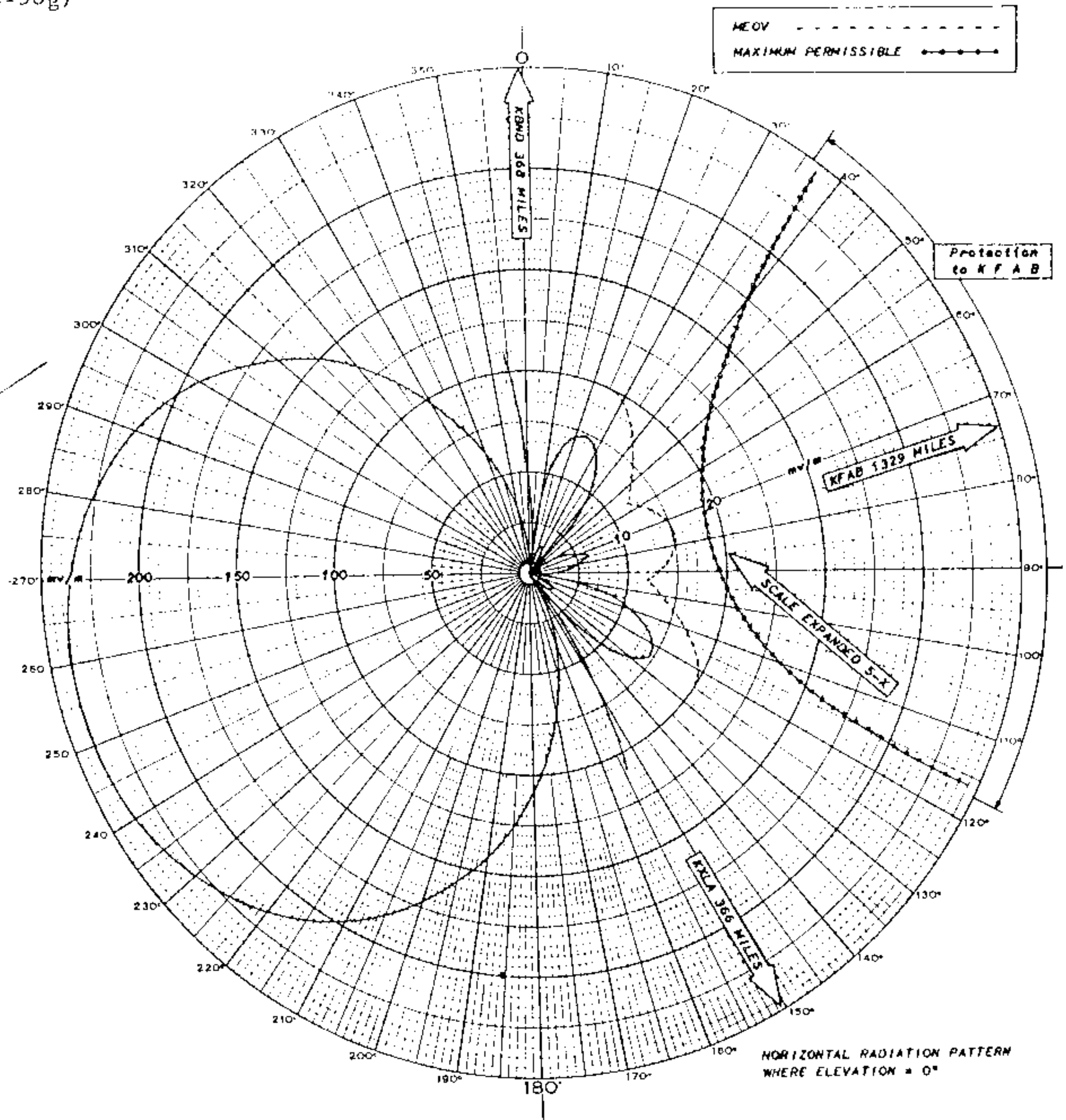
Roseville, Calif.

KPOP

PROPOSED DAY & NIGHT
(12-12-58g)

New; Service Bcstng. Co.
Roseville, California

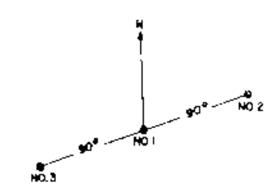
500w, DA-N, U
1110 KC



Radio Hr. Channeled 7-25-66

1-25-67
GRANTED CP
BP-12555

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No	ELECTRICAL HEIGHT $G°$	TRUE TOWER ORIENTATION $\theta°$	SPACING $S°$	PHASING $\psi°$	HORIZONTAL FIELD mv/m E	FIELD RATIO F
1	90	0	0	0		1.0
2	90	74	90	122		0.56
3	90	254	90	-122		0.56
4						
5						
6						
7						
8						
9						
10						

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☒

ELEV ANGLE $\theta°$	ELEVATION RMS FIELD mv/m E_θ
0	132
10	
20	
30	
40	
50	
60	
70	
80	

STATION DATA

CALL	NEW APPLICATION
FREQUENCY	1110 kc
POWER	0.5 kw
TIME OF OPERATION	UNLIMITED
TYPE OF OPERATION	DA-1
DAYTIME TOWERS	3
NIGHTTIME TOWERS	3
No RADIALS PER TOWER	120
LENGTH OF RADIALS	
GROUND SCREEN DIMENSION	
LAT	38° 44' 22"
LONG	121° 12' 48"
SUPERSEDES	
PATTERN No	

CECIL LYNCH, CONSULTING ENGINEER
MODESTO, CALIFORNIA

PROPOSED NEW STANDARD BROADCAST STATION
1110 kc - 0.5 kw - U - DA-1
SERVICE BROADCASTING COMPANY
ROSEVILLE, CALIFORNIA
October 1958

EXHIBIT NO 1-B

FCC File No. BP-12555
Accepted 11-25-58

Service Broadcasting Company
Roseville, California

1110 KC

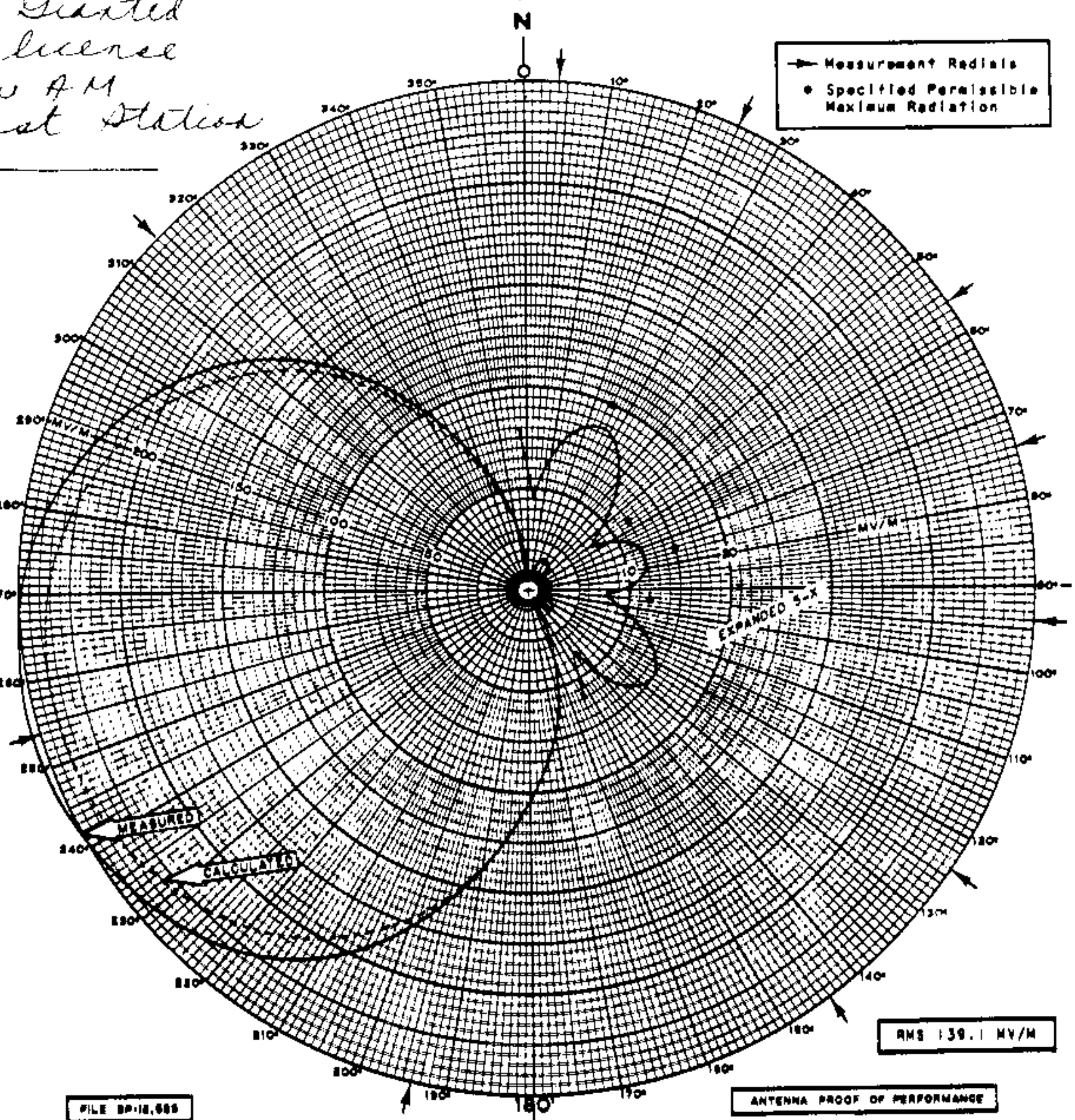
KPOP

Measured Night
(4-29-68ct)

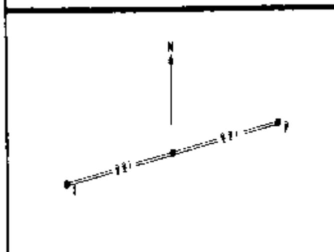
Station KPOP
Roseville, California

500w, DA-N, U
1110 kc

BL-11921 Granted
12-9-68 license
for new AM
Broadcast Station



TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

Tower No.	Electrical Height	True Tower Orientation	Spacing	Phasing	Horizontal Field	Field Ratio	Elev Angle	Elevation RMS Field
THEORETICAL								
1	90	0	0	0		1.0		
2	90	74	90	122		.56		
3	90	254	90	-122		.56		
ADJUSTED								
1	90	0	0	0		1.0		
2	90	74	90	122		.583		
3	90	254	90	-122		.496		

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ■

STATION DATA

CALL	KPOP
FREQUENCY	1110 KC
POWER	0.5 KW
TIME OF OPERATION	Unlimited
TYPE OF OPERATION	DA-N
DAYTIME TOWERS	
NIGHTTIME TOWERS	3
NO. RADIALS PER TOWER	
LENGTH OF RADIALS	
GROUND SCREEN DIMENSION	
LAT	38° 44' 22"
LONG	121° 12' 46"
SUPERSEDES	
PATTERN No.	

GEO. LYNCH, CONSULTING ENGINEER
MODESTO, CALIFORNIA

RADIO STATION KPOP
ROSEVILLE, CALIFORNIA

FIGURE 9

FCC File No. BL-11921
Accepted 4-10-68

Station KPOP
Roseville, California

1110 kc

KPOP

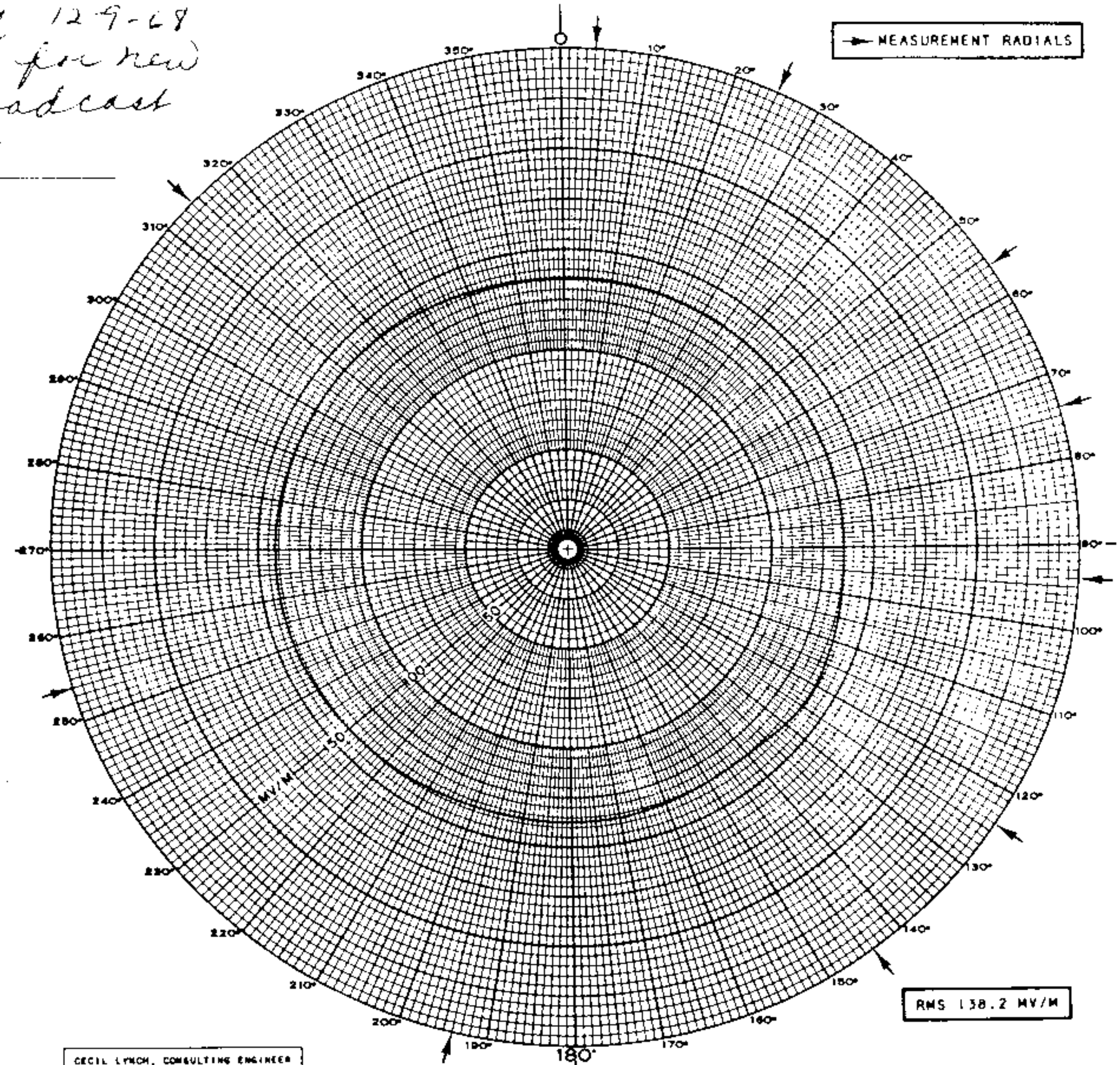
Measured Non-DA
(4-29-68ct)

Station KPOP
Roseville, California

500w,DA-N,U
1110 kc

BL-11921
Granted 12-9-68
license for new
AM broadcast
station

NON-DIRECTIONAL RADIATION PATTERN



CECIL LYNCH, CONSULTING ENGINEER
MODESTO - CALIFORNIA

PATTERN BASED ON MEASUREMENTS OF INDICATED RADIALS

ANTENNA: *Center Tower of Three-Tower Directional Array*

POWER: *500 Watts*

RADIO STATION KPOP **ROSEVILLE, CALIFORNIA**	**FIGURE 8**
ANTENNA PROOF OF PERFORMANCE	FILE BP-12,555

680715

FCC File No.BL-11921
Accepted 4-10-68

Station KPOP
Roseville, California

1110 kc

1110 kc New; Pasadena Civic Broadcasting Company; BP-16167. An application for the existing facilities of Station KRLA, 10 kw, 50 kw-LS, DA-2,U, was accepted (7-29-64) by the FCC. Applicant did not include engineering with his application, but made reference to KRLA's records on file with the FCC.

201|924

KRLA

PROPOSED NIGHT
(7/19/57g)

Station KXLA
Pasadena, California

10 kw, DA-2,U
1110 KC

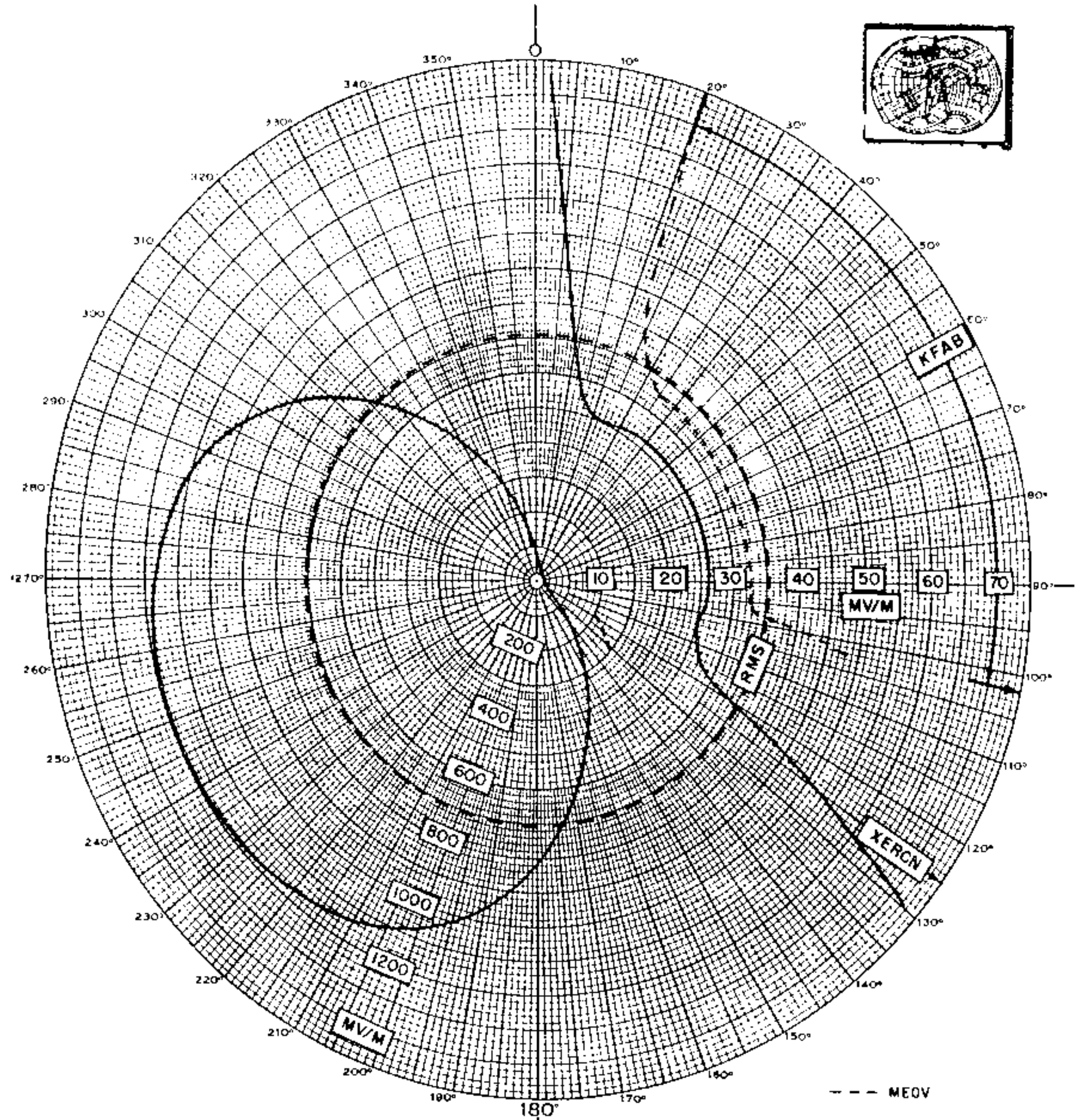
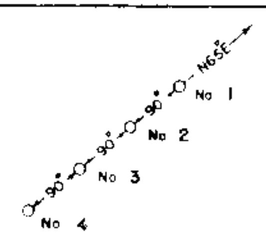


FIGURE 1C

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT $G°$	TRUE TOWER ORIENTATION $\phi°$	SPACING $S°$	PHASING $\psi°$	HORIZONTAL FIELD mv/m E	FIELD RATIO F	ELEV. ANGLE $\theta°$	ELEVATION RMS FIELD mv/m E_θ
1	180	N65E	270	263.58		1.090	0	707.6
2	146	N65E	180	189.06		3.074	10	
3	146	N65E	90	94.53		3.167	20	
4	90	—	—	0	143.52	1.000	30	
5							40	
6							50	
7							60	
8							70	
9							80	
10							E_r = mv/m	
							P_r = kw	

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☐

STATION DATA

CALL	KXLA
FREQUENCY	1110 kc
POWER	10 kw
TIME OF OPERATION	U
TYPE OF OPERATION	DA - 2
DAYTIME TOWERS	2
NIGHTTIME TOWERS	4
No RADIALS PER TOWER	120
LENGTH OF RADIALS	SEE SKETCH
GROUND SCREEN DIMENSION	SEE SKETCH
LAT.	34° 02' 13"
LONG.	118° 03' 10"
SUPERSEDES	510227
PATTERN No	550307

PACIFIC COAST BROADCASTING COMPANY
Pasadena, California

GEORGE P. ADAIR
Radio Engineering Consultants
WASHINGTON, D. C.

FCC File No. BMP-6898

KXLA
Pasadena, California

1110 KC

KRLA

MEASURED NIGHT

Station KXLA
Pasadena, California

10kw, DA-2,U
1110 KC

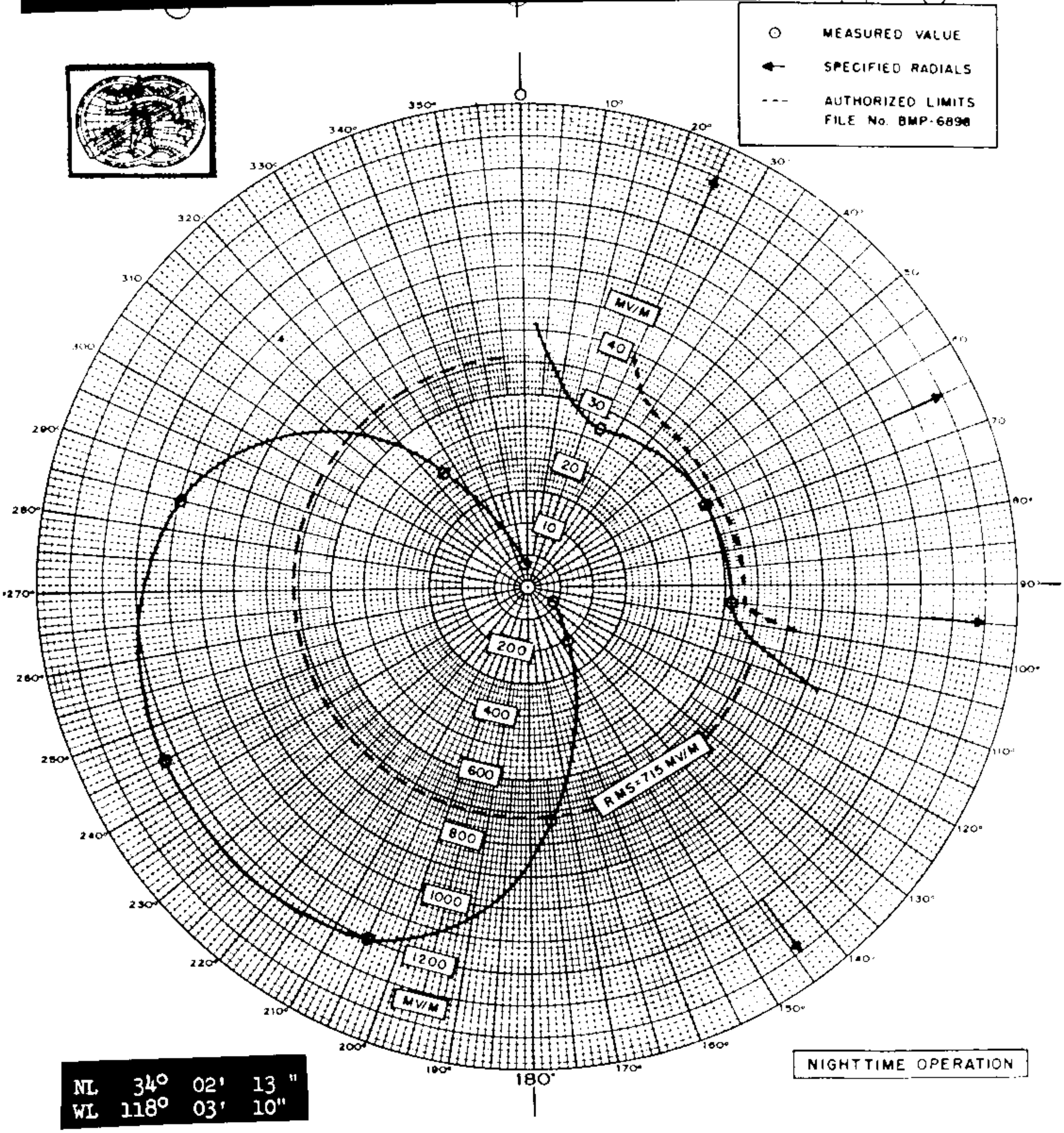


FIGURE IB

PATTERN BASED ON MEASUREMENTS

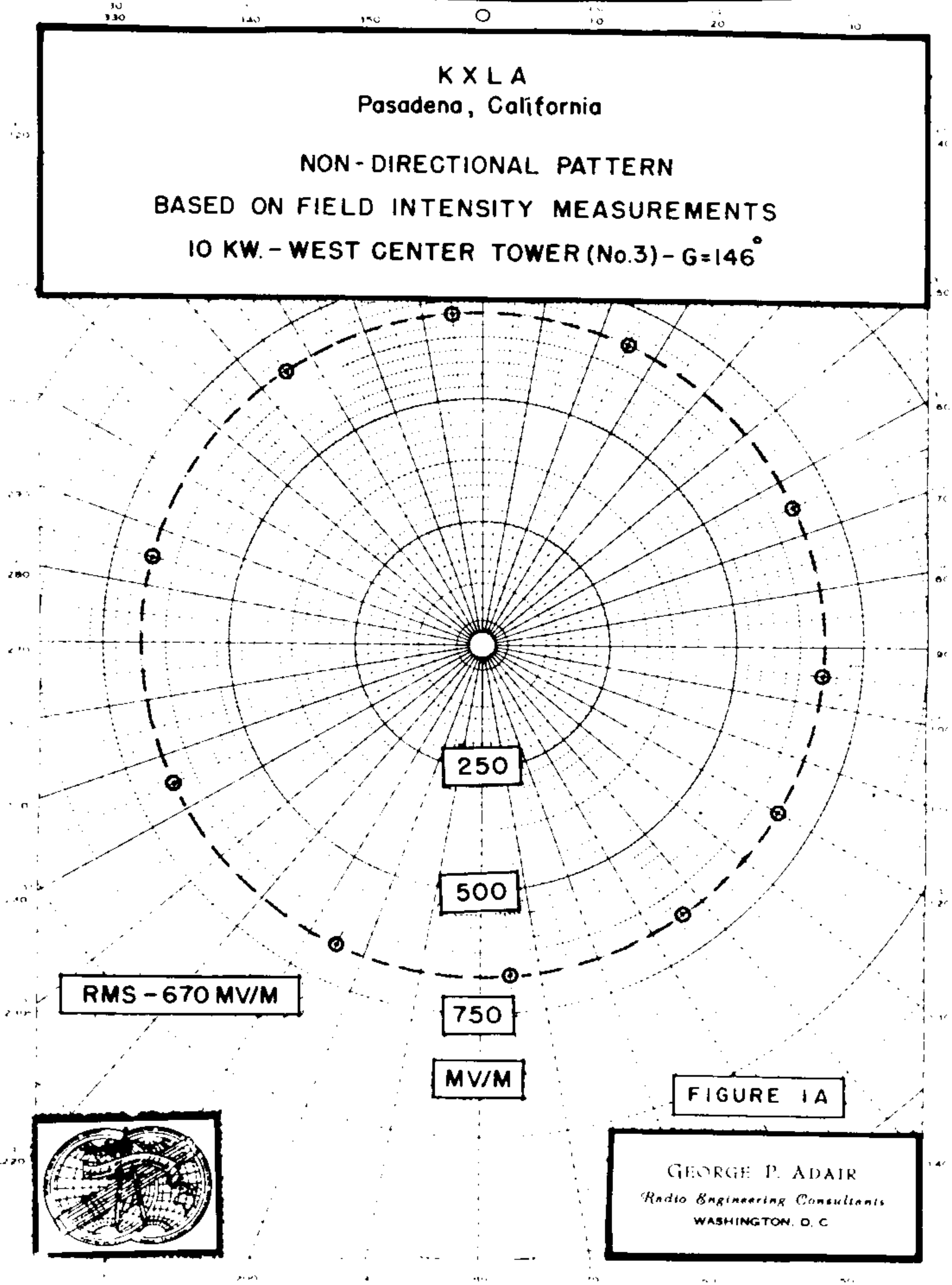
No. 561203

RADIO STATION KXLA
Pasadena, California

GEORGE P. ADAIR
Radio Engineering Consultants
WASHINGTON, D. C.

Pasadena, California 1110 KC

KRLA

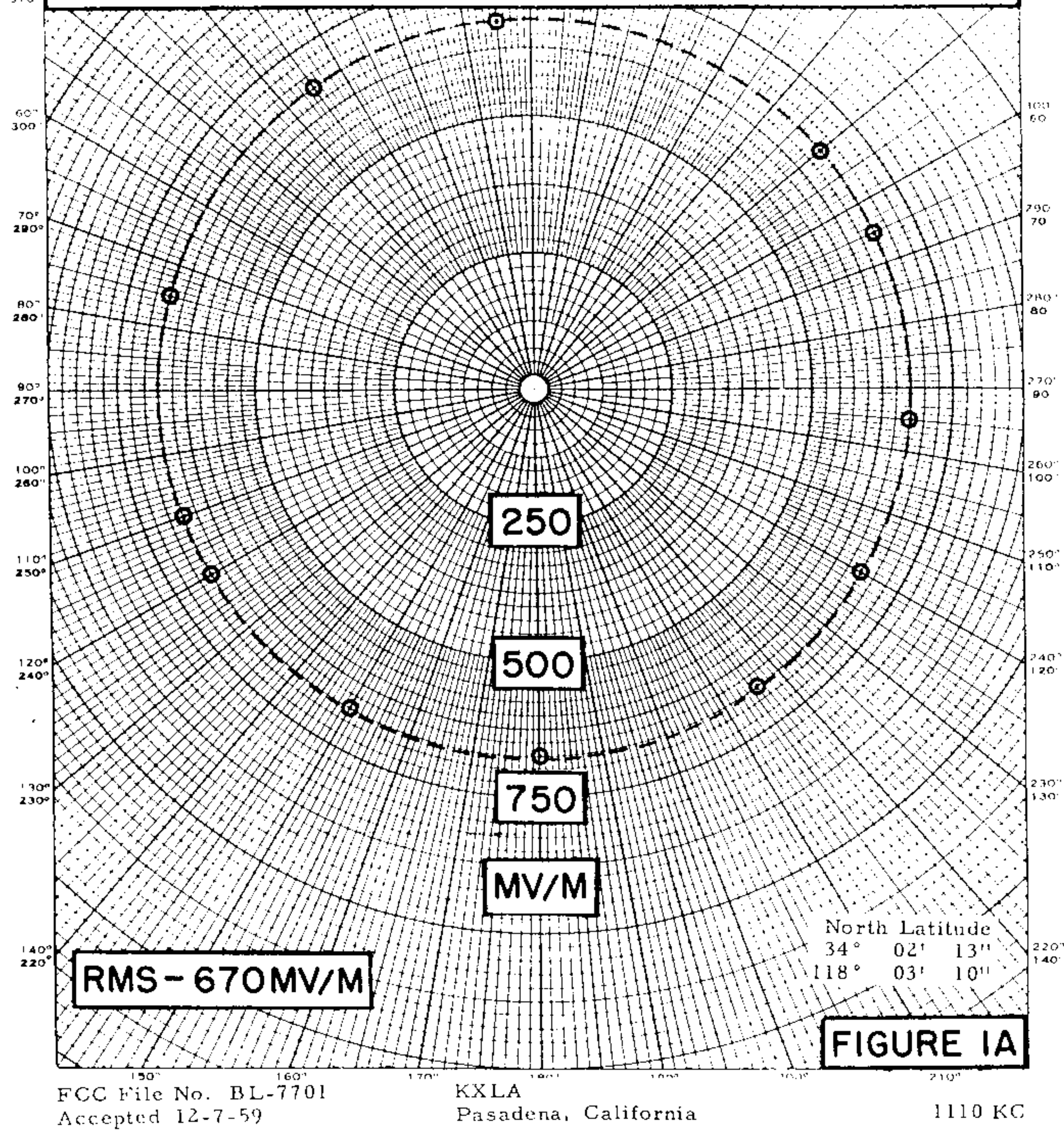


KXLA

MEASURED NON-DA (12-21-59g) | Station KXLA, Pasadena, California | 10kw, 50kw-LS, DA-2, U, 1110 KC

KXLA
PASADENA, CALIFORNIA

NON-DIRECTIONAL PATTERN
BASED ON FIELD INTENSITY MEASUREMENTS
10KW-WEST CENTER TOWER (NO.3)-G=146°



FCC File No. BL-7701
Accepted 12-7-59

KXLA
Pasadena, California

1110 KC

KXLA

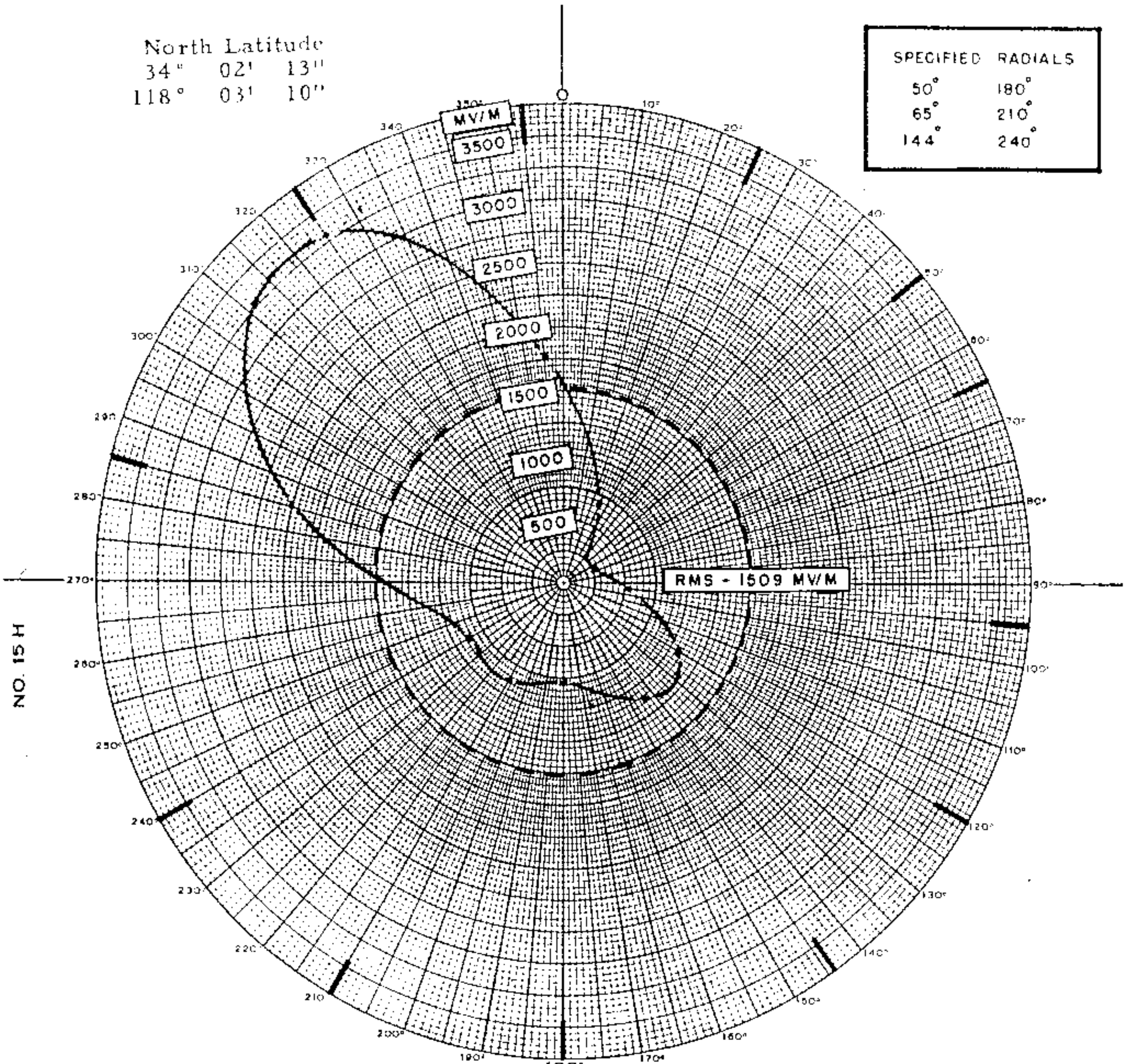
MEASURED DAY
(12-21-59g)

Station KXLA
Pasadena, California

10kw, 50kw-LS, DA-2, U
1110 KC

North Latitude
34° 02' 13"
118° 03' 10"

SPECIFIED	RADIALS
50°	180°
65°	210°
144°	240°



DAYTIME OPERATION

FIGURE 1B

PATTERN BASED ON MEASUREMENTS

590817

RADIO STATION KXLA
Pasadena, California

CONSULTING ENGINEERS — GEORGE P. ADAIR ENGINEERING COMPANY — WASHINGTON D. C.

FCC File No. BL-7701
Accepted 12-7-59

KXLA
Pasadena, California

1110 KC

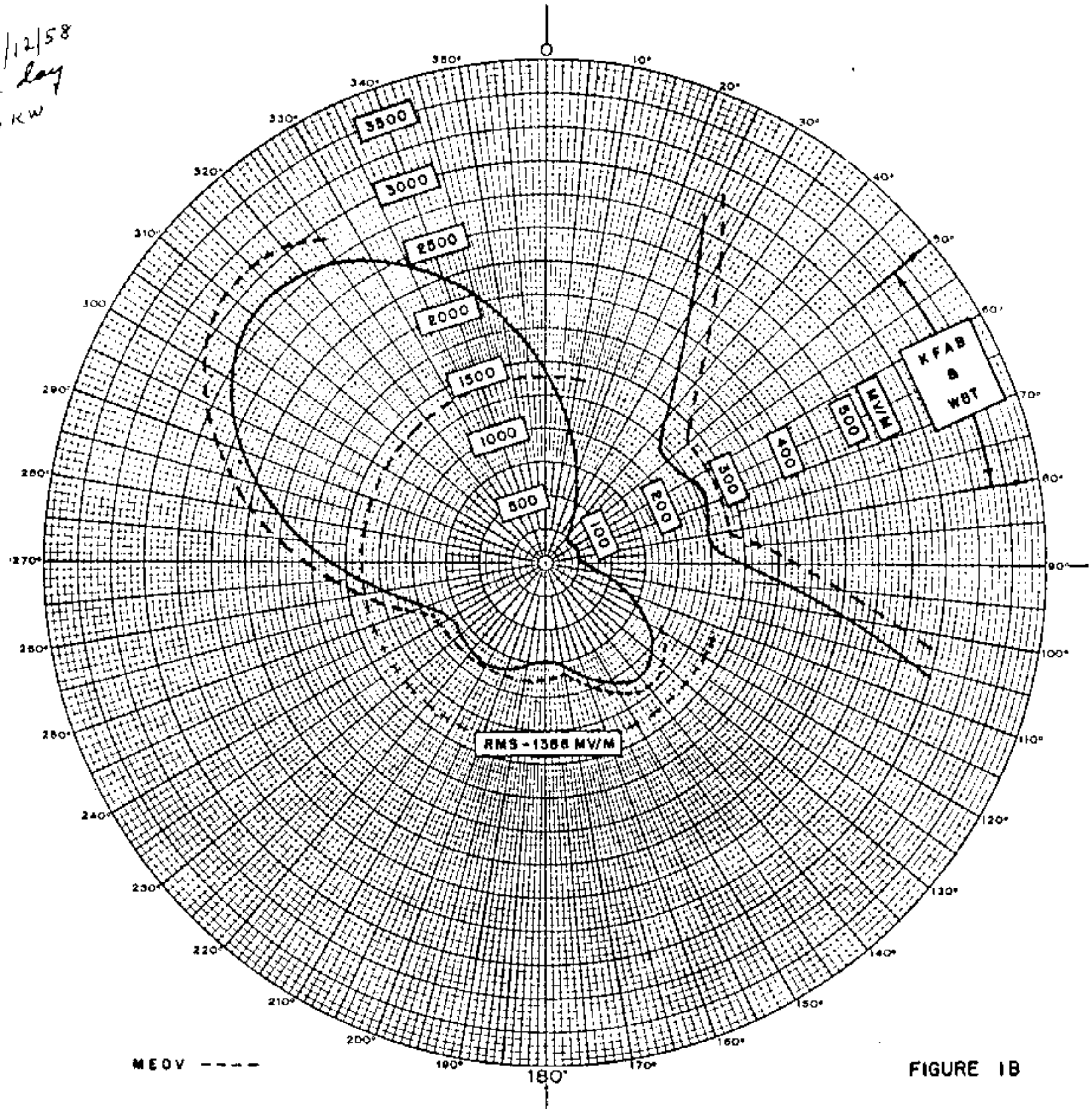
KRLA

PROPOSED DAY
(12-20-57g)

Station KXLA
Pasadena, California

10kw,50kw-LS, DA-2,U
1110 KC

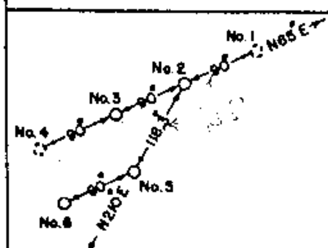
Granted CP 11/12/58 for increase in day power to 50KW



MEOV ----

FIGURE 1B

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT G°	TRUE TOWER ORIENTATION θ°	SPACING S°	PHASING ψ°	HORIZONTAL FIELD mv/m E	FIELD RATIO F	ELEV. ANGLE φ°	ELEVATION RMS FIELD mv/m Eφ
1	180°	N65°E	180°	——	——	——	0	1366
2	146°	N65°E	90°	+93.07°	1169.9	1.150	10	
3	146°	0	0	0°	1017.3	1.000	20	
4	90°	N245°E	90°	——	——	——	30	
5	90°	N160.75°E	68.2°	+165.85°	731.4	0.719	40	
6	90°	N210°E	118.3	+72.78	635.8	0.625	50	
7							60	
8							70	
9							80	
10							E_s =	mv/m
DAYTIME OPERATION ☒			NIGHTTIME OPERATION ☐				P_s =	kw

STATION DATA

CALL	KXLA
FREQUENCY	1110 kc
POWER	50-D / 10-N kw
TIME OF OPERATION	U
TYPE OF OPERATION	DA-2
DAYTIME TOWERS	4
NIGHTTIME TOWERS	4
No. RADIALS PER TOWER	120
LENGTH OF RADIALS	SEE SKETCH
GROUND SCREEN DIMENSION	——
LAT.	34° 02' 13"
LONG.	118° 03' 10"
SUPERSEDES	561204
PATTERN No.	570628

PACIFIC COAST BROADCASTING COMPANY
Pasadena, California

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

FCC File No. BP-11,700
Accepted 12-6-57

KXLA
Pasadena, California

1110 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: (New) — Main Studio: Salem, New Hampshire

Frequency: 1110 kHz — Power: 5 kW

Notification List No. 1634 — Date: May 27, 1975 — Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 42° 45' 59"
West Longitude: 71° 16' 03"

ANTENNA CHARACTERISTICS

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

TOWER:	N(#1)	W(#2)	S(#3)	E(#4)	
HEIGHT ABOVE INSULATORS:	130'	130'	130'	130'	(52.82°)
PHASING:	0°	+88.6°	-156.1°	+115.3°	
FIELD RATIO:	1.0	1.33	1.83	1.37	

SPACING AND ORIENTATION: From reference tower #1: tower #2 is spaced 246.1' (100.0°) on a line bearing 206.5° true, tower #3 is spaced 331.1' (134.536°) on a line bearing 164.5° true and tower #4 is spaced 221.5' (90°) on a line bearing 116.5° true.

GROUND SYSTEM: 120-221' equally spaced copper radials plus 120-50' inter-spaced radials about each tower. Radials are shortened and bonded to transverse straps along intersections between tower

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL		STANDARD
RMS	RSS	RMS
406.1 mv/m	449.4 mv/m	426.4 mv/m

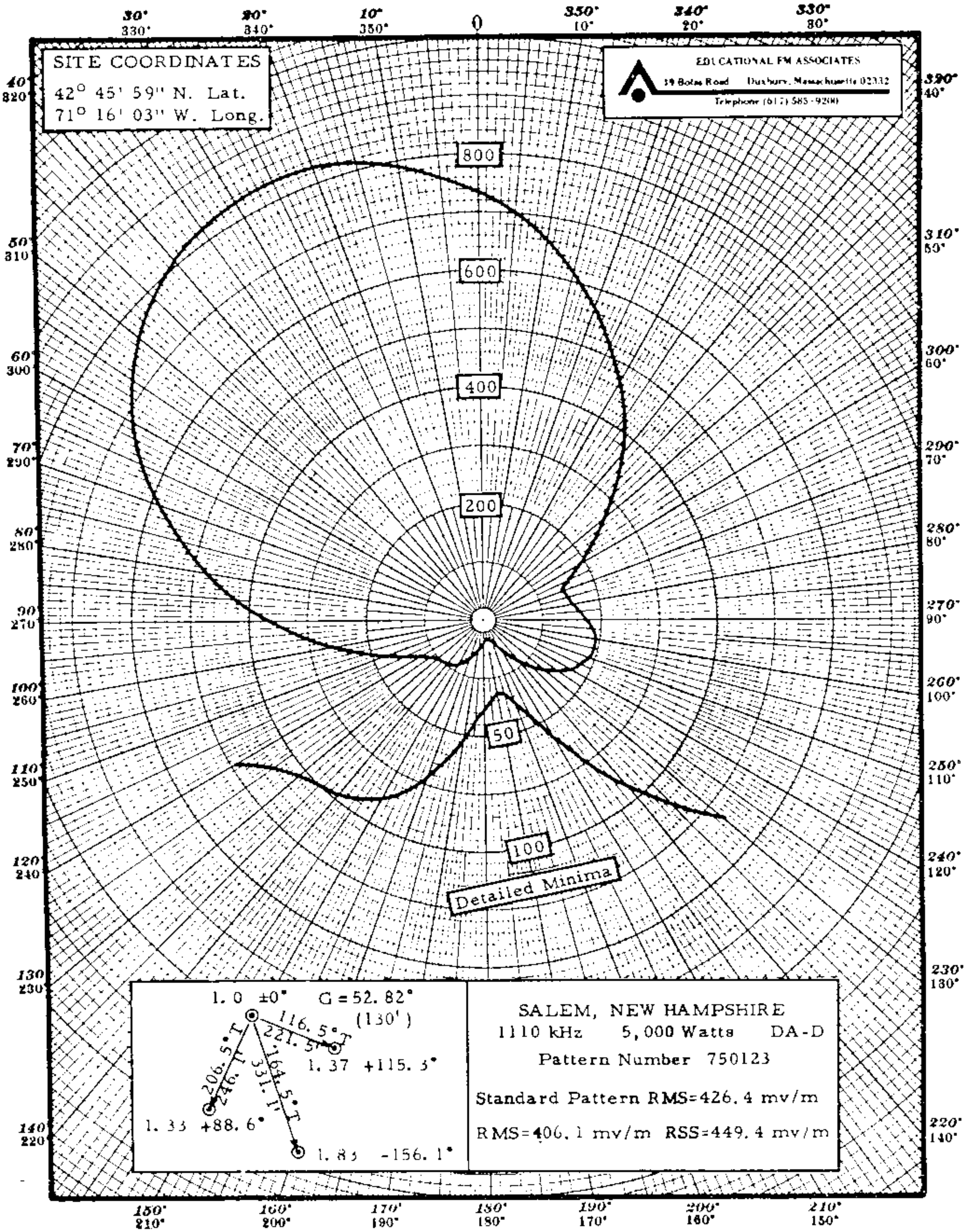
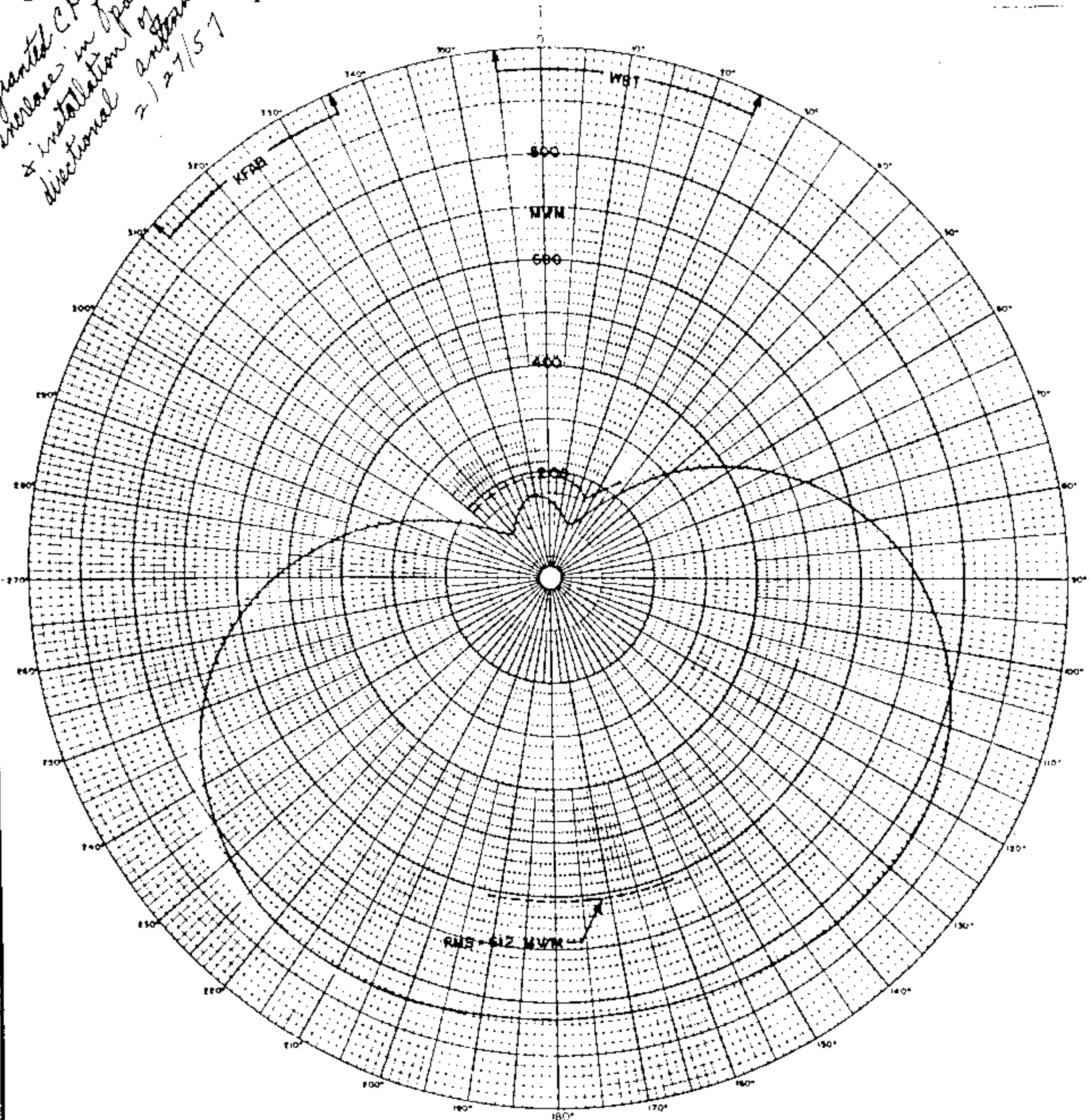


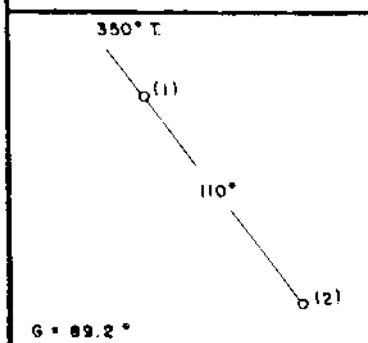
Figure 2-1. Proposed Horizontal Radiation Pattern

WALT

PROPOSED DAY (10-21-56g) Radio Station W A L T Tampa, Florida — 10 KW, DA-D, D — 1110 K C

Granted CP for increase in power & installation of directional antenna 2/27/57





LATITUDE 28° 01' 28"
LONGITUDE 82° 22' 27"

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	SEE DIAGRAM	0	85	1.3	194	89.2
2		110	0	1.0	194	89.2

HORIZONTAL PLANE PATTERN FOR PROPOSED WALT

TAMPA, FLORIDA

1110 KC. 10KW. DA-D

560929

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D.C.

FCC File No. BP-10,829

Accepted 10-9-56

Station W A L T Tampa, Florida — 1110 K C

WALT

MEASURED DAY
(3-3-58g)

Station WALT
Tampa, Florida

10kw, DA-D,D
1110 KC

Granted license 4/2/58 for increase in power, for DA-D and for daytime change in antenna - trans. location

granted cp for increase in power

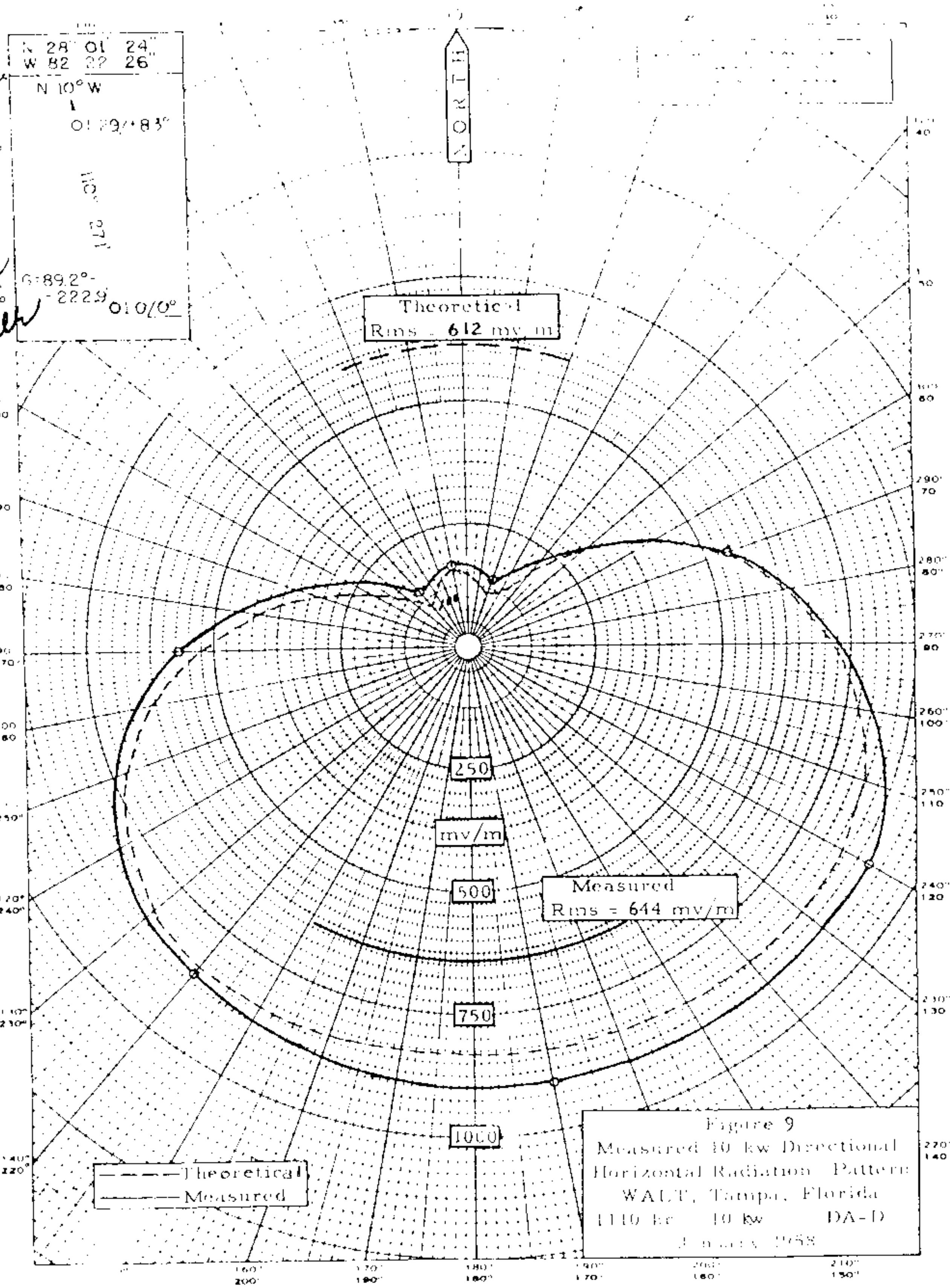


Figure 9
Measured 10 kw Directional Horizontal Radiation Pattern
WALT, Tampa, Florida
1110 kc 10 kw DA-D
January 1958

FCC File No. BL-7020
Accepted 2-25-58

WALT
Tampa, Florida

1110 KC

WALT

MEASURED NON-DA
(3-3-58g)

Station WALT
Tampa, Florida

10kw, DA-D,D
1110 KC

Granted license 4/2/58 for increase in power, for DA-D and for daytime change in antenna trans. location

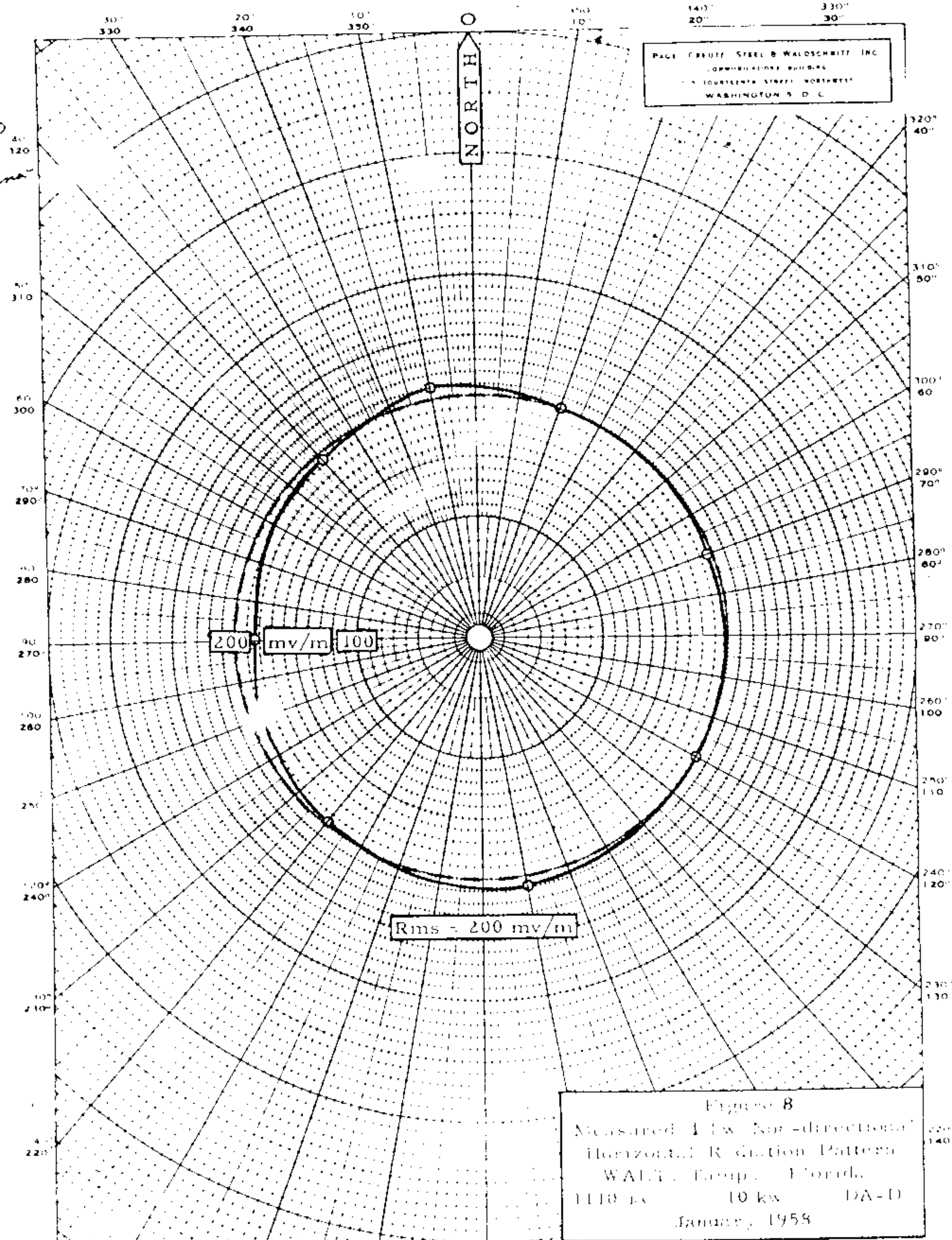


Figure 8
Measured 1 kw Non-directional Horizontal Radiation Pattern
WALT, Tampa, Florida
1110 kc 10 kw DA-D
January, 1958

FCC File No. BL-7020
Accepted 2-25-58

WALT
Tampa, Florida

1110 KC

Proposed Day (CH)
(6-28-65ct)

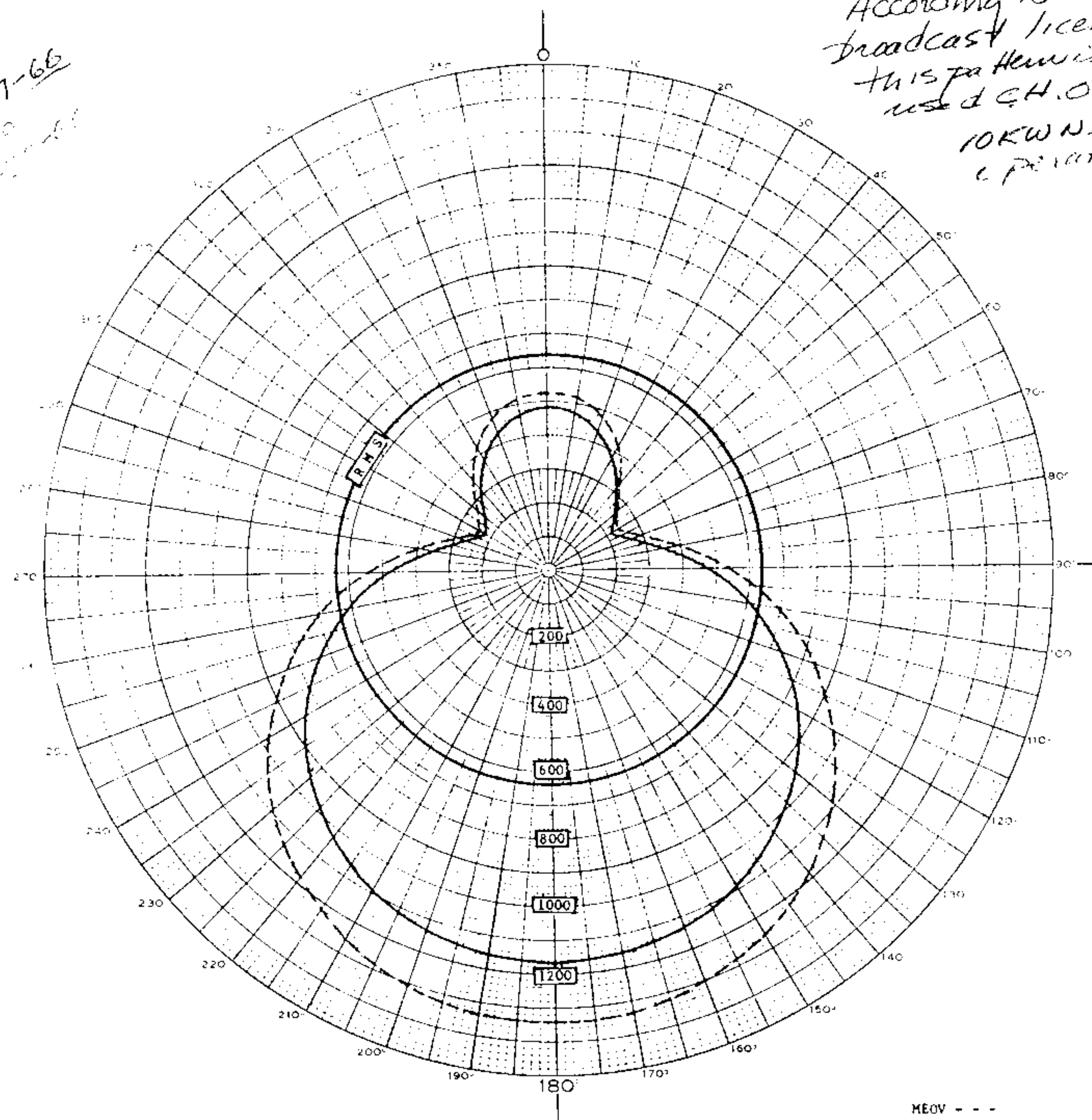
Station WBCA
Bay Minette, Alabama

10kw,DA-D,CH,D
1110 kc

WBCA

According to broadcast license this pattern is used CH.ONLY 10KW ND-DAY operation

CP 2-7-66



MEOV - - -

TOWER PLACEMENT SKETCH

N000°E

#2 .75/147.5

65°

#1 1.00/000°

PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT G°	TRUE TOWER ORIENTATION φ°	SPACING S°	PHASING ψ°	HORIZONTAL R.M.S. mv/m E	FIELD RATIO
1	101.5	000	000	000		1.000
2	101.5	000	65	142.5		.750
3						
4						
5						
6						
7						
8						
9						

ELEV. ANGLE θ°	ELEVATION RMS FIELD mv/m $E_θ$
0	
5	
20	
30	
40	
50	
60	
70	
80	
E_r	634.5 mv/m
P_r	10 kw

STATION DATA

CALL	WBCA
FREQUENCY	1110 kc
POWER	10 kw
TIME OF OPERATION	Critical Hours
TYPE OF OPERATION	DA
DAYTIME TOWERS	1-2
NIGHTTIME TOWERS	--
NO. RADIALS PER TOWER	120
LENGTH RADIALS	80 to 250 ft
GROUND SCREEN	24'x24'
LAT.	30 52 10
LONG.	87 46 09
THEORETICAL No.	650122A
PATTERN No.	650503A

CLAUDE M. GRAY
CONSULTING RADIO ENGINEER
BIRMINGHAM, ALA.

EXHIBIT
B-5

PROPOSED HORIZONTAL RADIATION PATTERN

RADIO STATION W B C A

BAY MINETTE, ALABAMA

FCC File No. BP 16605

Station WBCA
Bay Minette, Alabama

1110 kc

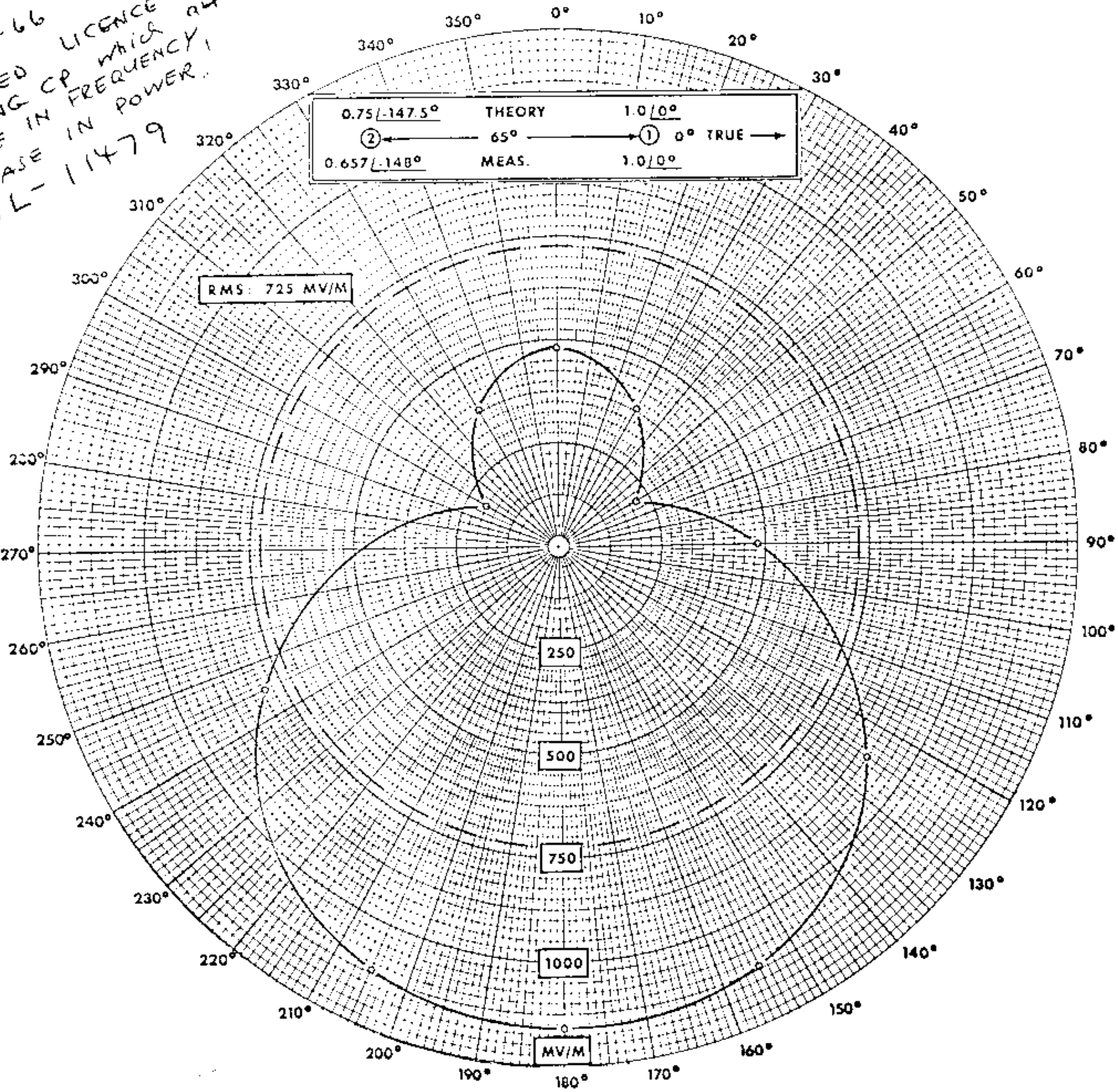
WBCA

Measured Day (CH)
(12-29-66ct)

Station WBCA
Bay Minette, Alabama

10kw,DA-CH,D
1110 kc

12-30-66 GRANTED LICENCE COVERING CP which auth. CHANGE IN FREQUENCY, INCREASE IN POWER.
BL-11479



MEASURED 10 KW DA-CH PATTERN
WBCA - BAY MINETTE, ALABAMA
1110 KC - 10 KW - DAY (DA-CH)

SEPTEMBER, 1966

H = 250'/253' overall

Gautney & Jones
Consulting Radio Engineers

FCC File No.BL-11479
Accepted 12-15-66

Station WBCA
Bay Minette, Alabama

1110 kc

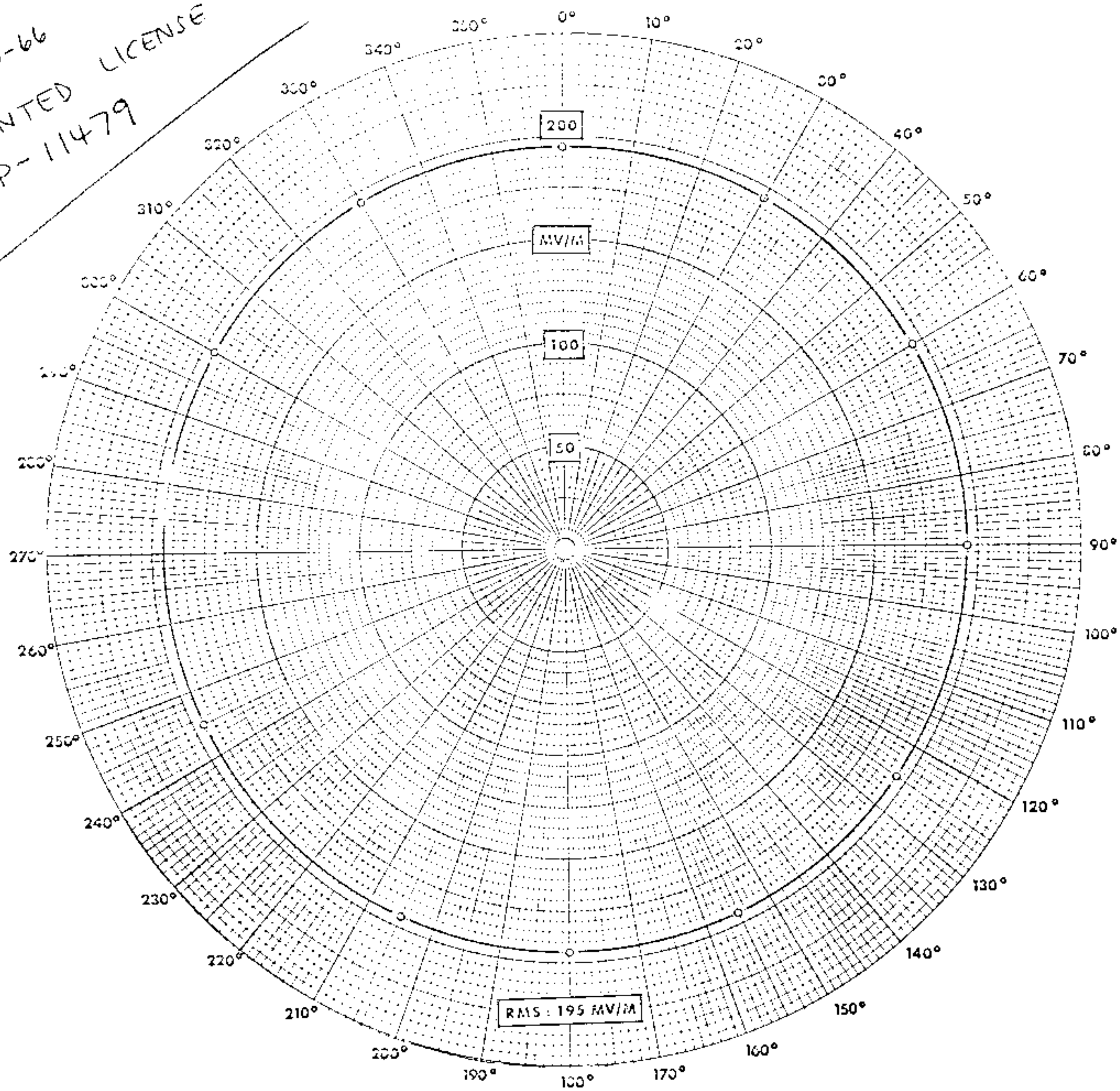
WBCA

Measured Non-DA
(12-29-66ct)

Station WBCA
Bay Minette, Alabama

10kw,DA-CH,D
1110 kc

12-30-66
GRANTED LICENSE
BP-11479



MEASURED 1 KW NON-DIRECTIONAL PATTERN
WBCA - BAY MINETTE, ALABAMA
1110 KC - 10 KW - DAY (DA-CH)

SEPTEMBER, 1966

Gautney & Jones
Consulting Radio Engineers

FCC File No.BL-11479
Accepted 12-15-66

Station WBCA
Bay Minette, Alabama

1110 kc

WBT
1110kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Main Studio: Charlotte, North Carolina

Station: WBT

Power: 50kw Night 50kw Day

Frequency: 1110 kHz

Date: August 22, 1980 Class: I-B

Notification List No. 1788

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 35° 07' 56"
West Longitude: 80° 53' 23"

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:	W(A)	C(B)	E(C)
HEIGHT ABOVE INSULATORS:	429'	429'	429' (174°)
NIGHT PHASING:	+49°	0.0°	-47.5°
NIGHT FIELD RATIO:	0.507	1.0	0.507

SPACING AND ORIENTATION: Adjacent towers in a row are spaced 354' (144°) on a line bearing 115° true.

GROUND SYSTEM: 120 - 220' equally spaced copper radials about each tower.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	1647.6 mv/m		
Night	1590 mv/m		

Note: This notification concerns only a change in the cirectional radiation pattern MEOV's.

1110 kHz

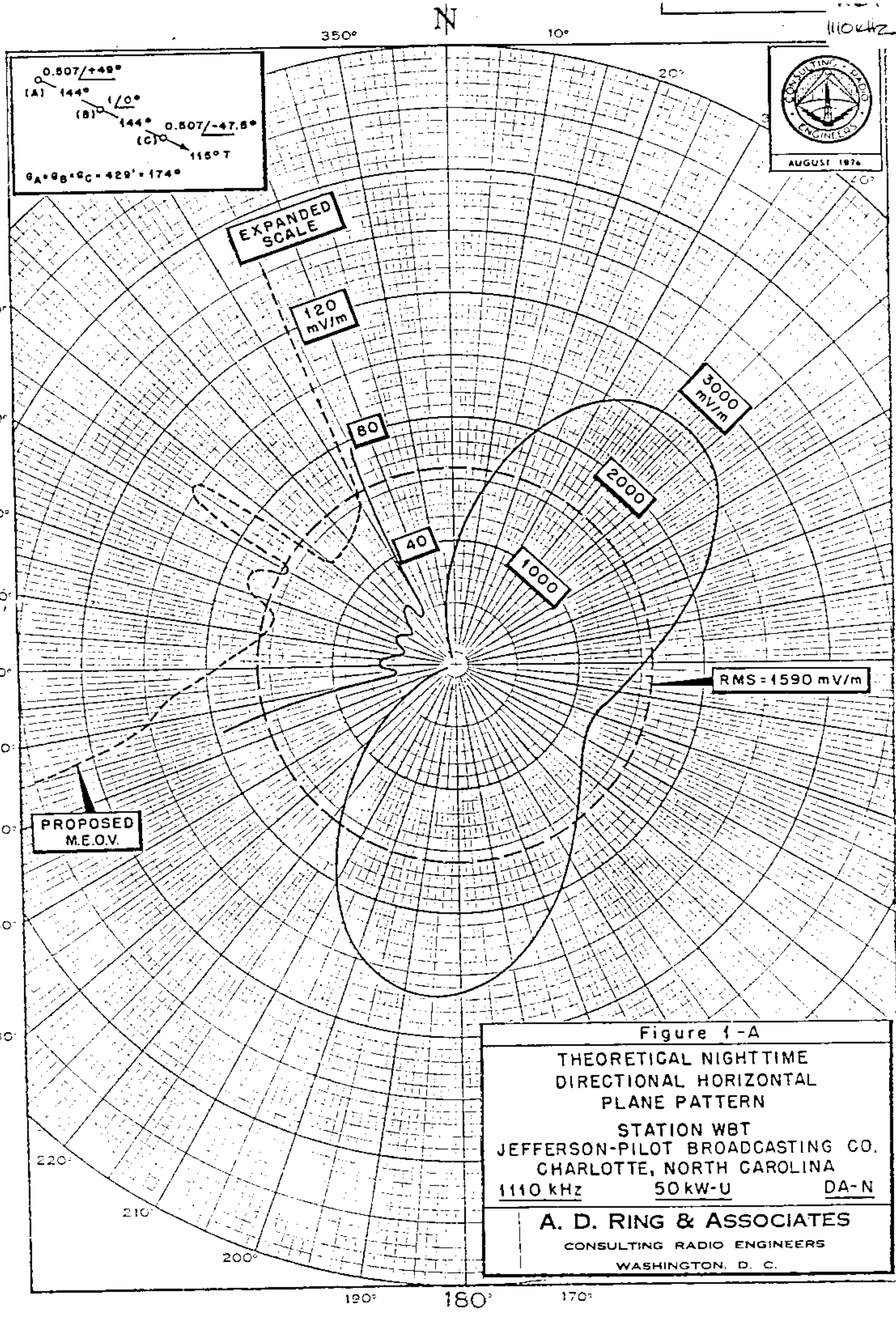


Figure 1-A

THEORETICAL NIGHTTIME
DIRECTIONAL HORIZONTAL
PLANE PATTERN

STATION WBT
JEFFERSON-PILOT BROADCASTING CO.
CHARLOTTE, NORTH CAROLINA

1110 kHz 50 kW-U DA-N

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

A. D. RING & ASSOCIATES - 4/64 - M

/ WBT

Proposed Night
(10-26-62ct)

Station WBT
Charlotte, North Carolina

50kw,DA-N,U
1110 kc

3-27-63
Granted CP to
make changes in
night DA pattern

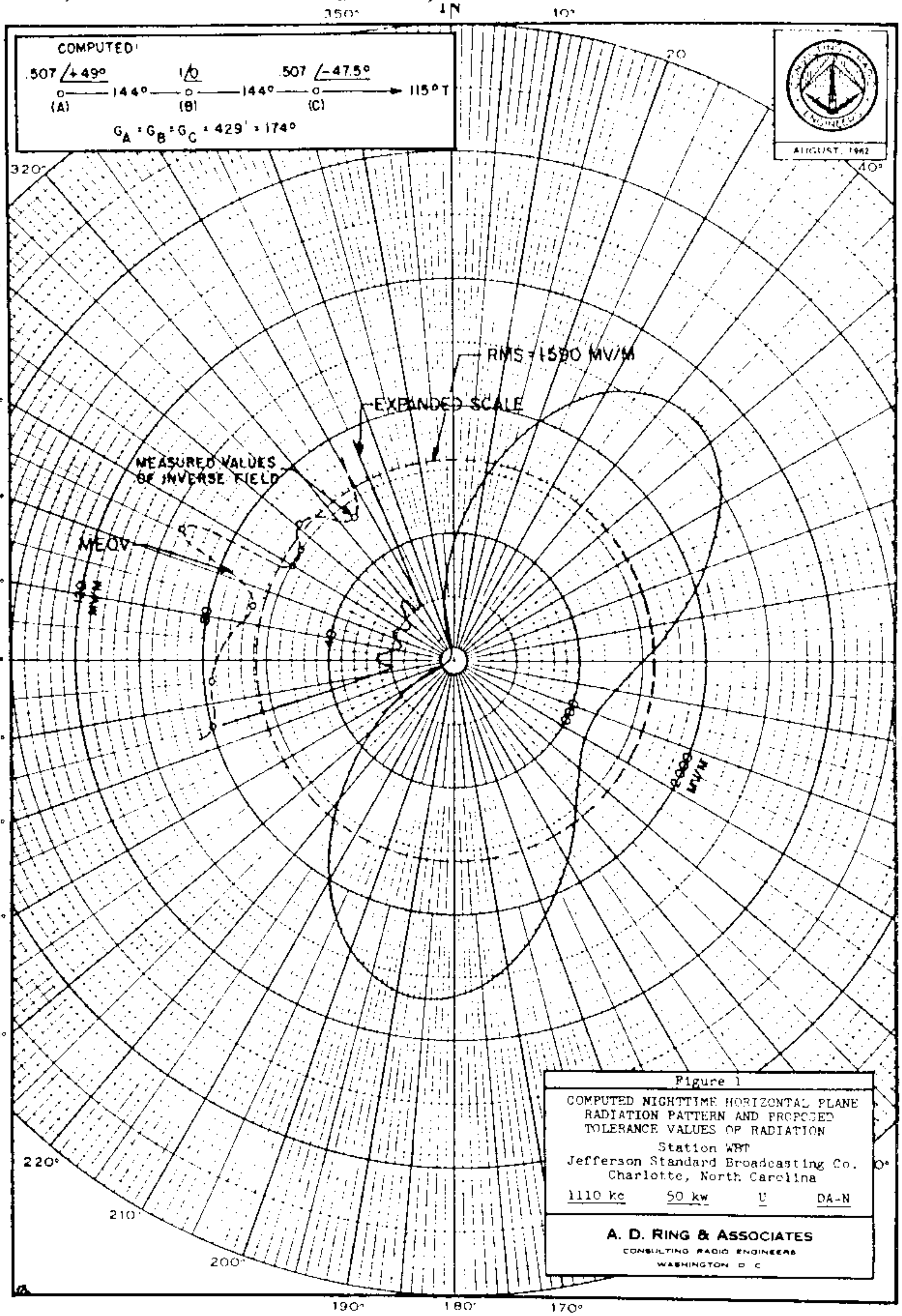


Figure 1
COMPUTED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN AND PROPOSED TOLERANCE VALUES OF RADIATION
Station WBT
Jefferson Standard Broadcasting Co.
Charlotte, North Carolina
1110 kc 50 kw U DA-N

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

A. D. RING & ASSOCIATES - 10/60 - H

FCC File No. BP-15701
Accepted 9-25-62

Station WBT
Charlotte, North Carolina

1110 kc

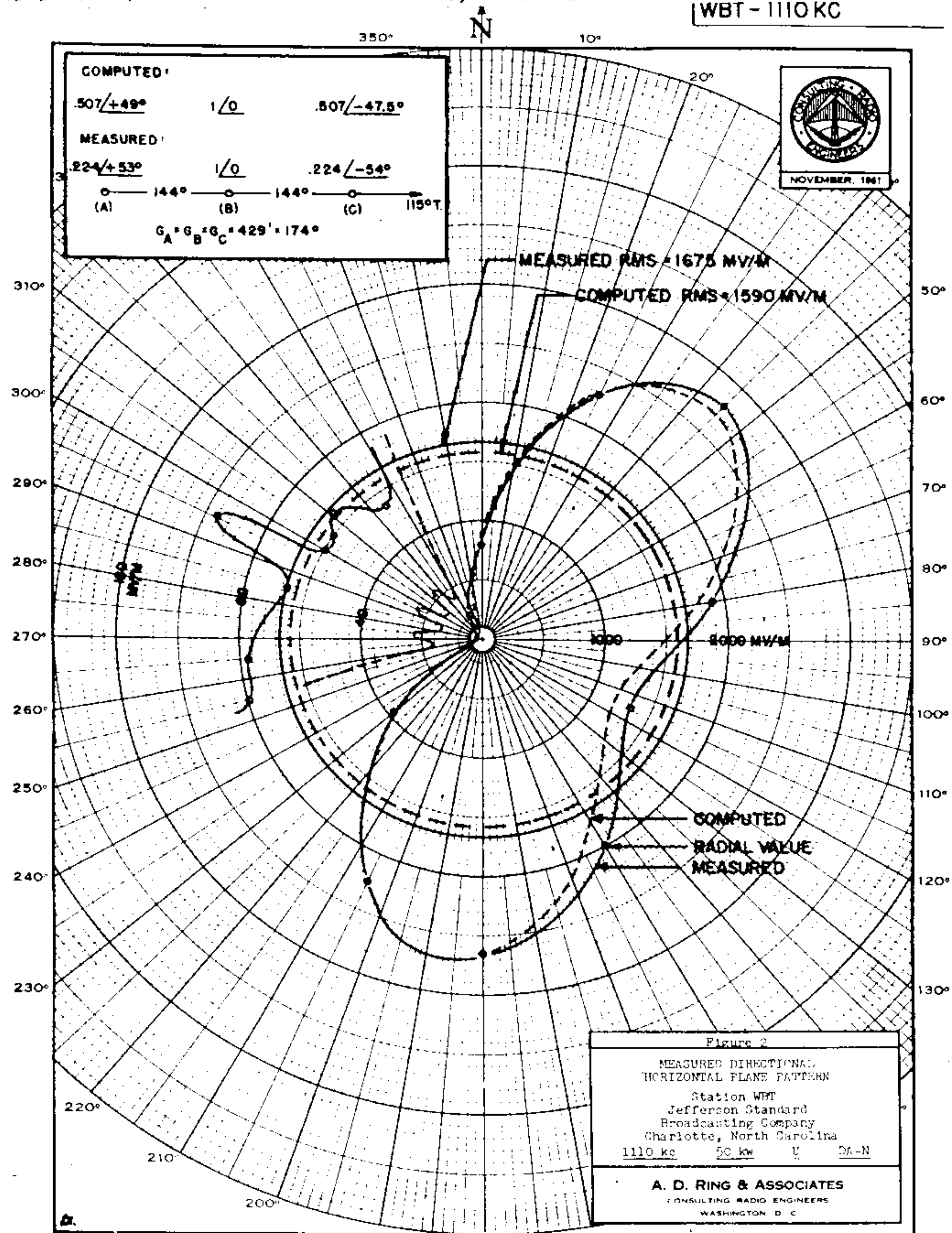
WBT

Measured Night
(3-30-62ct)

Station WBT
Charlotte, North Carolina

50kw,DA-N,U
1110 kc

WBT - 1110 KC



FCC File No.BZ-4608
Accepted 3-1-62

Station WBT
Charlotte, North Carolina

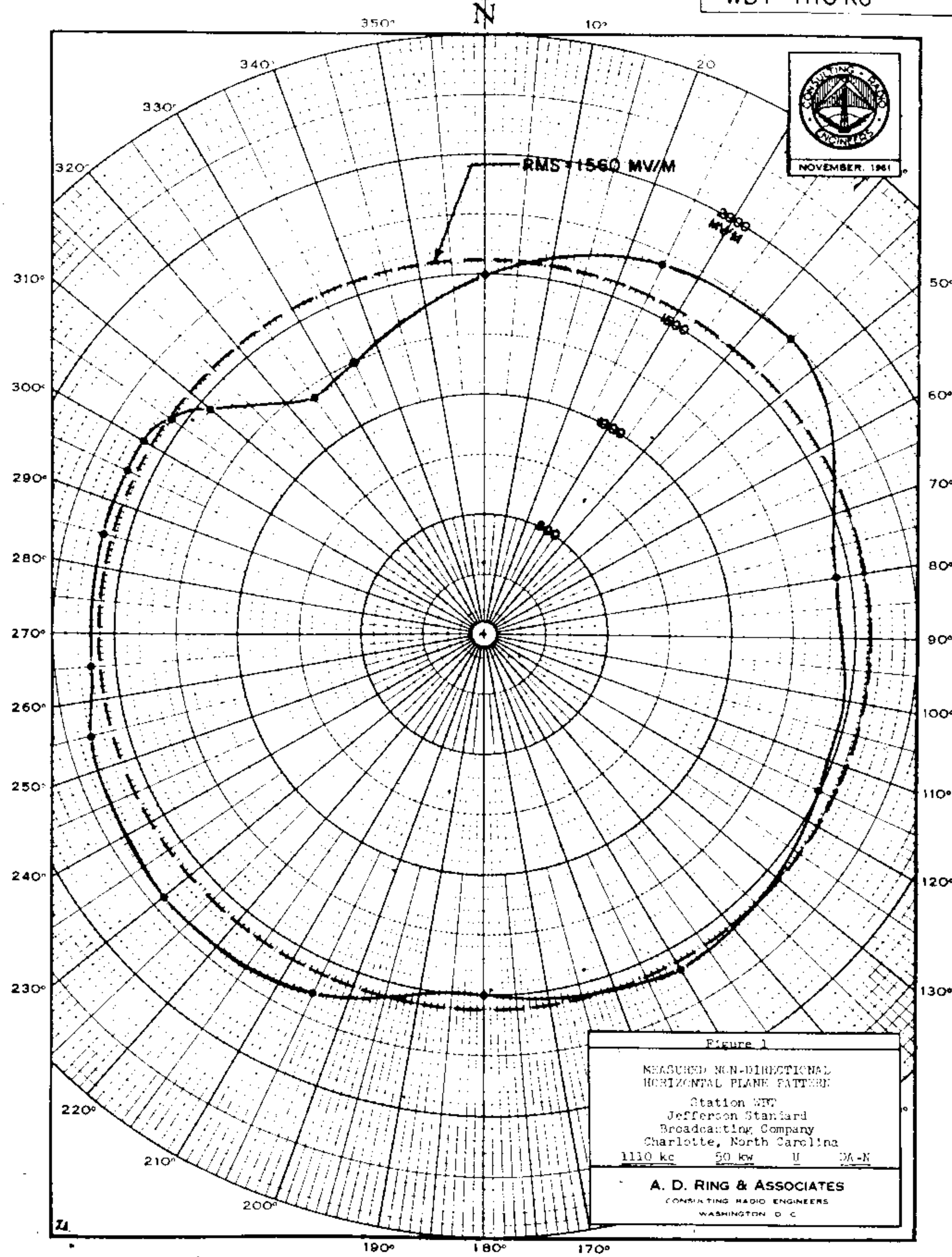
1110 kc

WBT

Measured Non-DA
(3-30-62ct)

Station WBT
Charlotte, North Carolina

50kw,DA-N,U
1110 kc
WBT-1110 KC



A. D. RING & ASSOCIATES - 10/60 - 2

FCC File No.BZ-4608
Accepted 3-1-62

Station WBT
Charlotte, North Carolina

1110 kc

PROPOSED NIGHT Station WBT-BOOSTER 1kw, DA-Night
Shelby, North Carolina 1110 KC

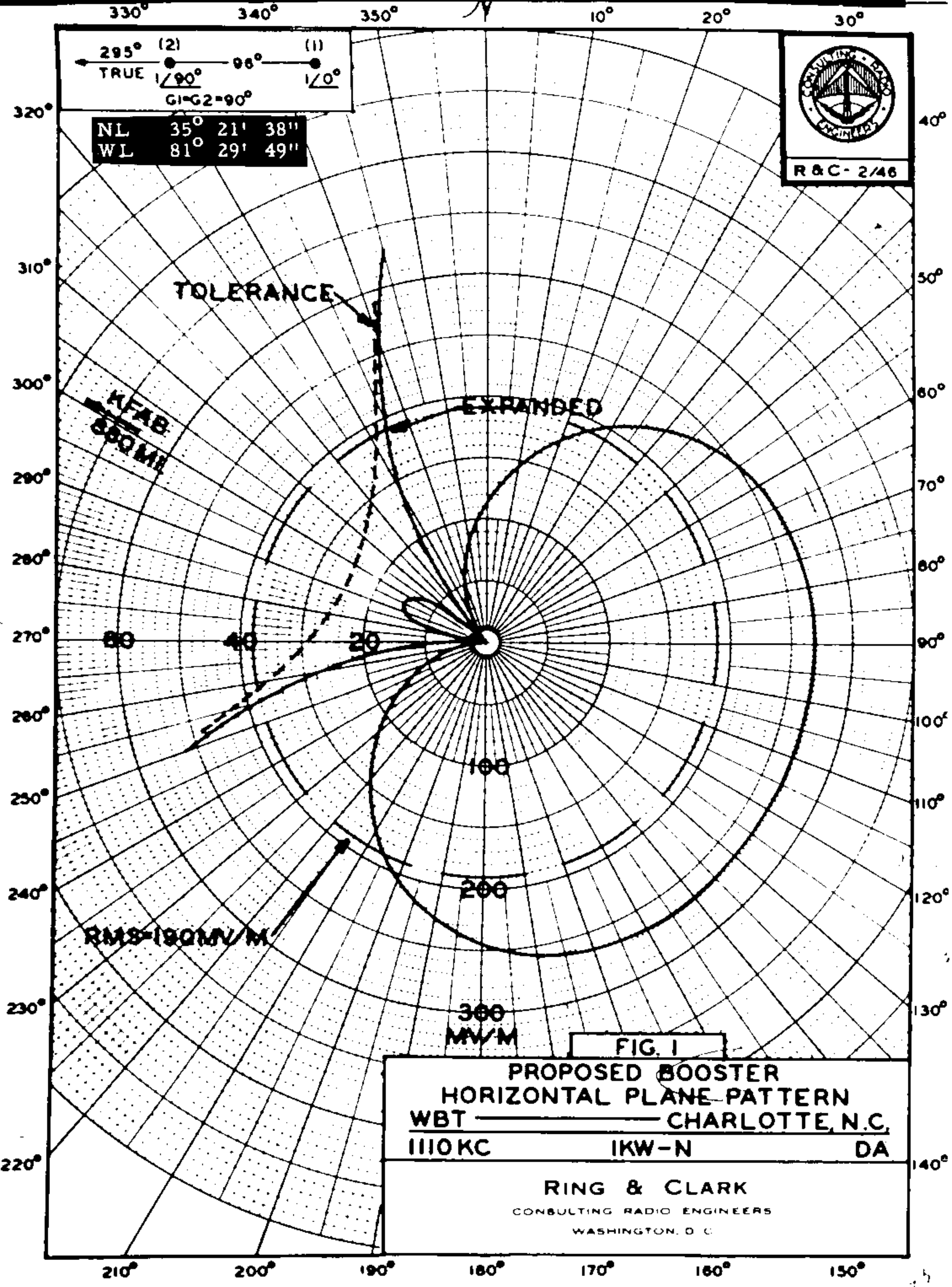


FIG. 1

PROPOSED BOOSTER
HORIZONTAL PLANE PATTERN
WBT — CHARLOTTE, N.C.
1110 KC IKW-N DA

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

MEASURED NIGHT Station WBT-BOOSTER 1kw, DA-Night
Shelby, North Carolina 1110 KC

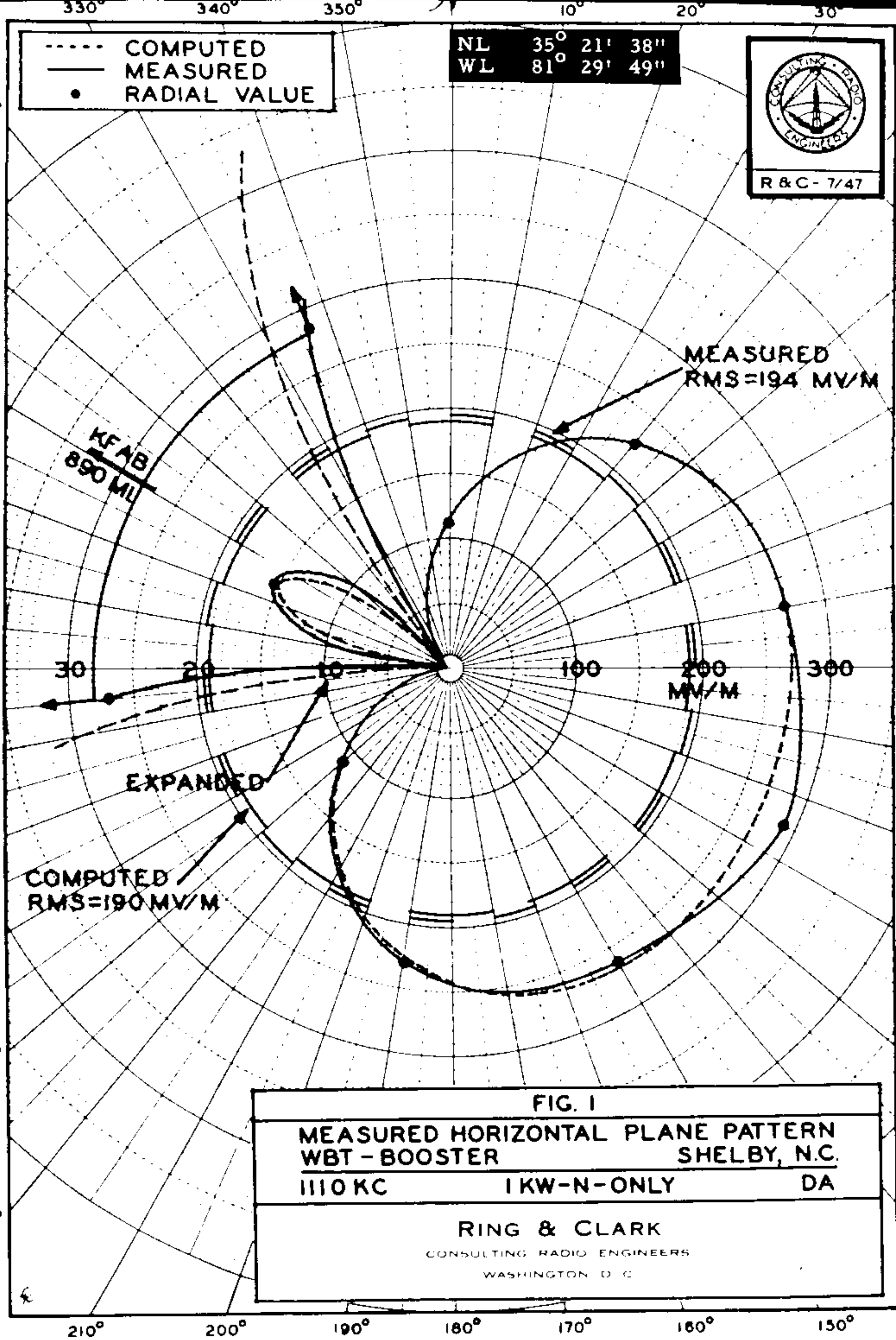


FIG. 1

MEASURED HORIZONTAL PLANE PATTERN
WBT - BOOSTER SHELBY, N.C.
1110 KC 1 KW-N-ONLY DA

RING & CLARK
CONSULTING RADIO ENGINEERS
WASHINGTON D. C.

WELX

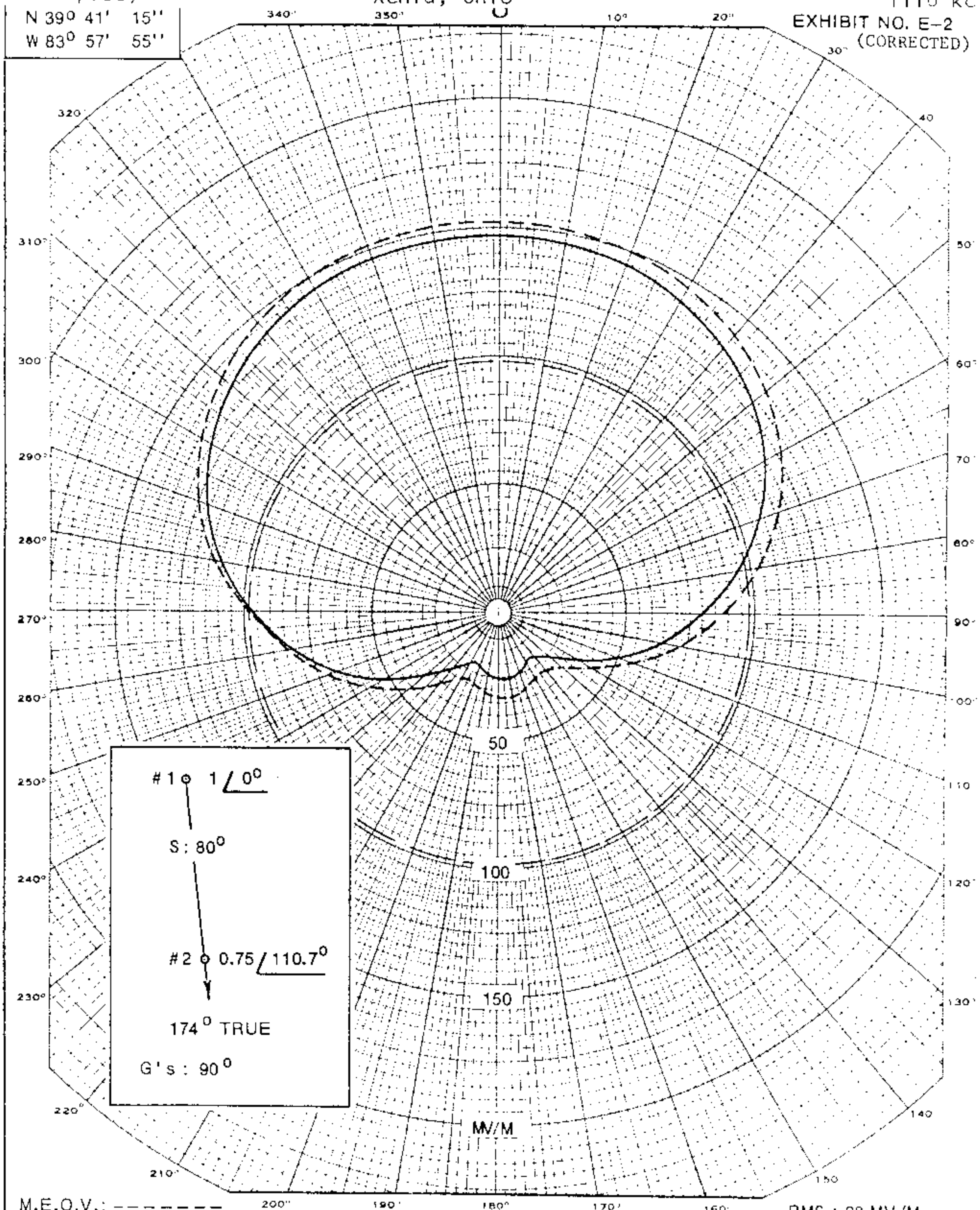
Proposed Day
(11-24-70ct)

Station WELX
Xenia, Ohio

250w,DA-D,D
1110 kc

N 39° 41' 15''
W 83° 57' 55''

EXHIBIT NO. E-2
(CORRECTED)



M.E.O.V.: -------

RMS : 98 MV/M

COMMERCIAL RADIO EQUIPMENT CO. Consulting Radio Engineers 2/70 *Washington, D.C.*	DIRECTIONAL ANTENNA HORIZONTAL RADIATION PATTERN RADIO STATION WELX XENIA, OHIO 1110 kHz, 250 W–D, DA–D

FCC File No.BP-18923
Accepted 11-10-70

Station WELX
Xenia, Ohio

1110 kc

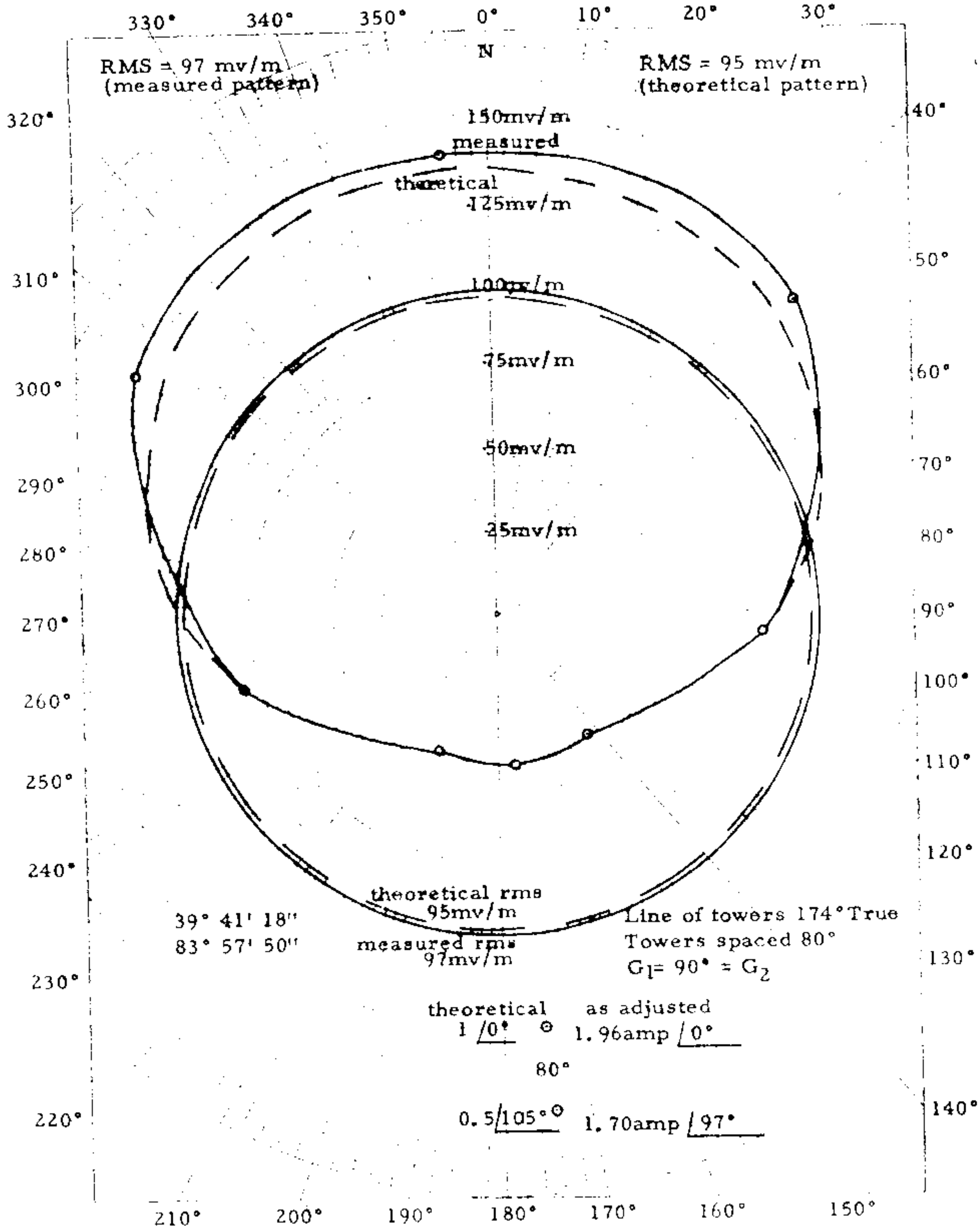
WELX

Measured Day
(11-29-68ct)

Station WELX
Xenia, Ohio

250w, DA-D, D
1110 kc

Measured Horizontal Radiation Pattern for Radio Station WELX, Xenia, Ohio. 1110 khz. 250 W-D, DA-D. West Central Ohio Broadcasters, Inc. This Exhibit Prepared by Paul Dean Ford, Engineer, on October 15, 1968.



FCC File No.BL-12151
Accepted 11-8-68

Station WELX
Xenia, Ohio

1110 kc

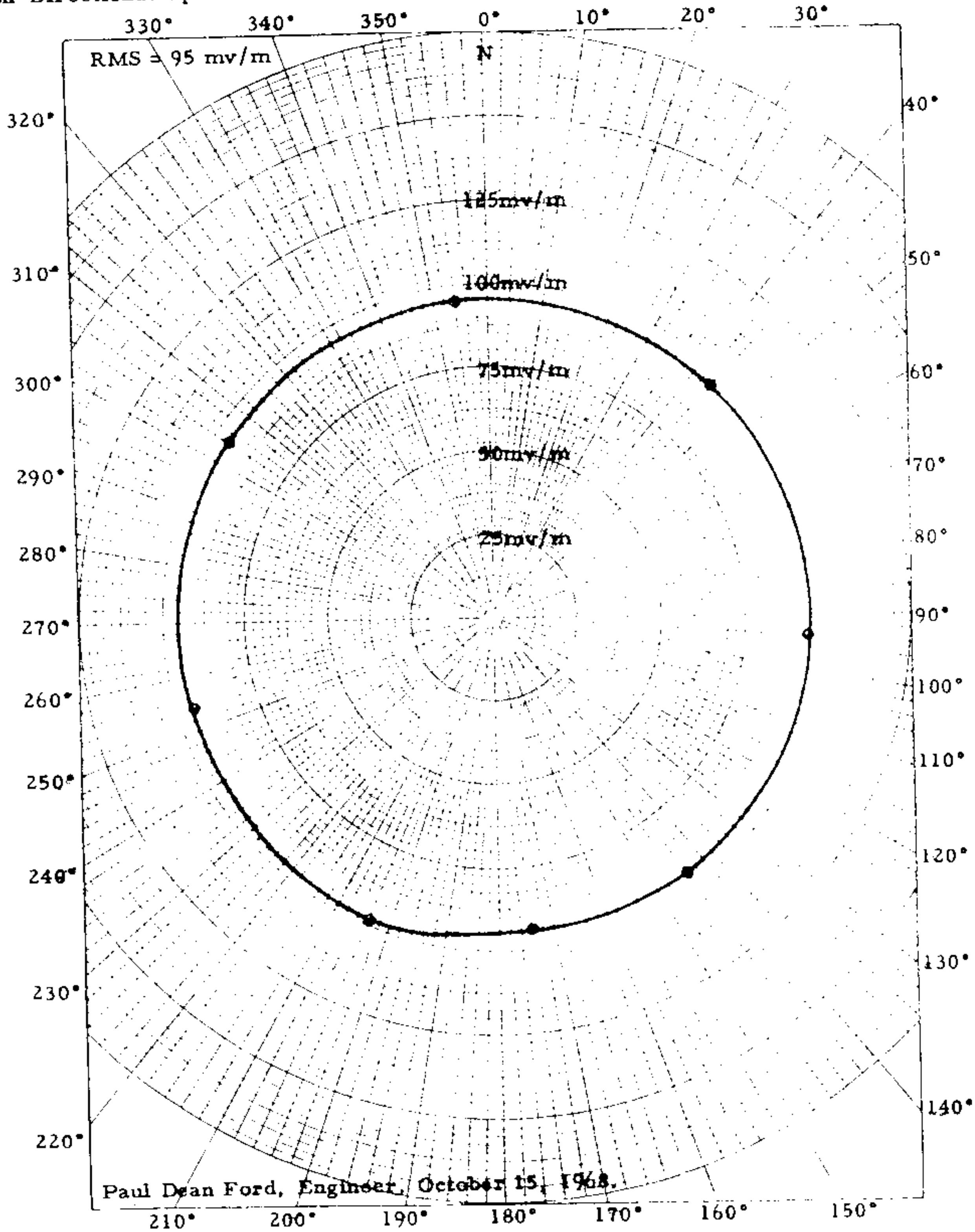
WELX

250w,DA-D,D
1110 kc

Measured Non-DA
(11-29-68ct)

Station WELX
Xenia, Ohio

West Central Ohio Broadcasters, Inc.
Measured Non-Directional Pattern for WELX, Xenia, Ohio, operation from Number One(1) North Tower. Number Two(2) South Tower Open Circuited for Non-Directional Operation. WELX, 1110khz. 250W-D, DA-D.



FCC File No.BL-12151
Accepted 11-8-68

Station WELX
Xenia, Ohio

1110 kc

1110 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WFBM

Main Studio: Noblesville, Indiana

Frequency: 1110 kHz

Power 1kw Day

Notification List No. 1789

Date: September 12, 1980 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 40° 04' 41"
West Longitude: 86° 01' 04"

ANTENNA CHARACTERISTICS

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

TOWERS:	S(#1)	C(#2)	N(#3)
HEIGHT ABOVE INSULATORS:	260'	260'	260' (105.6°)
DAY PHASING:	-149°	0°	+149°
DAY FIELD RATIO:	0.8	1.0	0.312

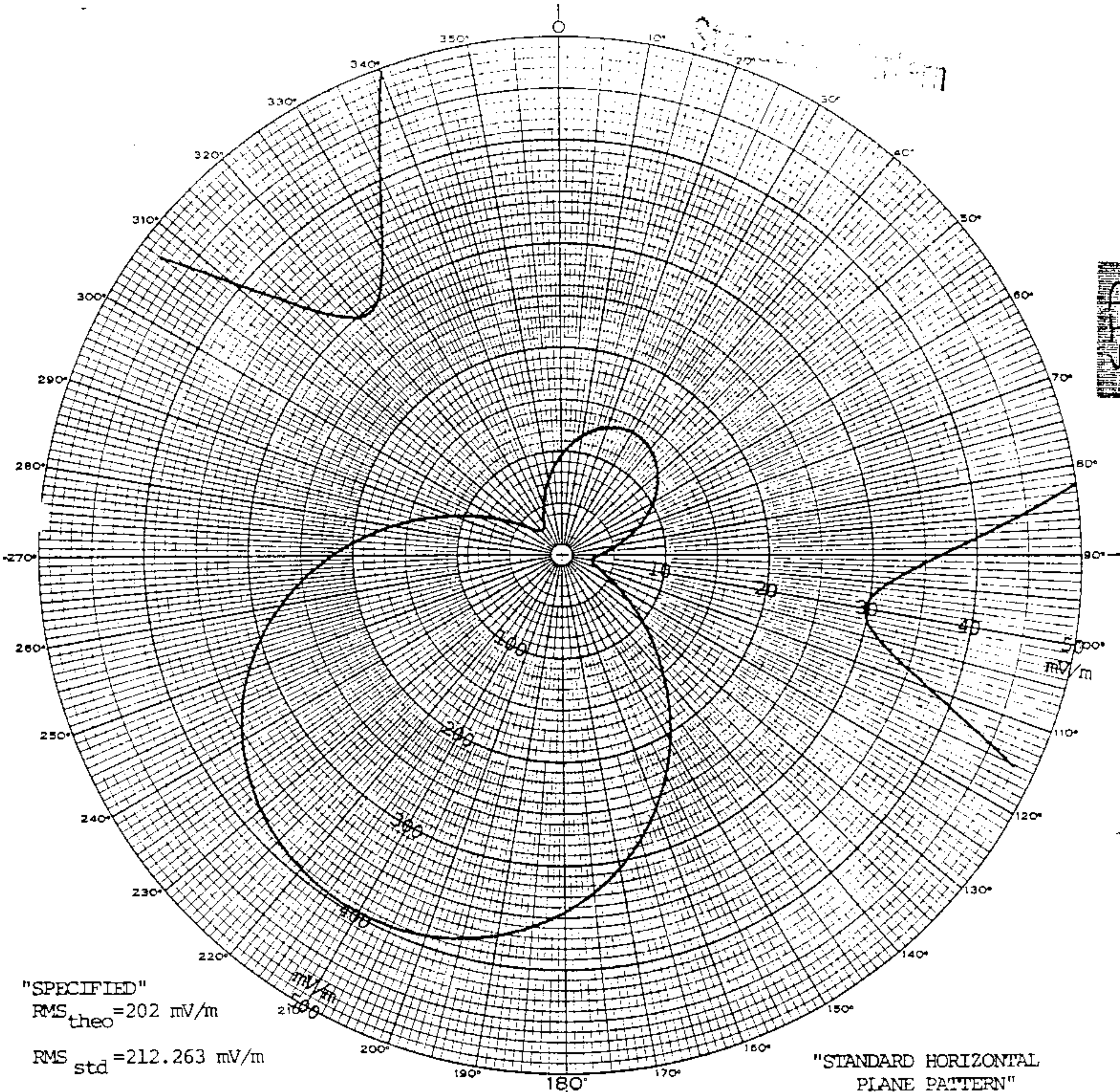
SPACING AND ORIENTATION: Towers in a row are spaced 86.15° on a line bearing 30.96° true.

GROUND SYSTEM: 120 - 260' equally spaced copper radials plus a 40' square ground screen 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	202 mv/m	317.331 mv/m	212.263 mv/m

WFBM
1110KHz



"SPECIFIED"
RMS_{theo}=202 mV/m

RMS_{std}=212.263 mV/m

RSS_{theo}=317.331 mV/m

"STANDARD HORIZONTAL PLANE PATTERN"

10X EXPANSION

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS					FIGURE 4	STATION DATA
G's = 105.6° 30.96° T. s = 86.15° #3 s #2 s #1	TOWER No.	ELECTRICAL HEIGHT G°	SPACING S°	PHASING ψ°	FIELD RATIO F	PROPOSED DAYTIME STANDARD PATTERN NOBLESVILLE, IND.	CALL WHYT FREQ 1110 kHz POWER 1 kW TYPE DA-D TIME DAYTIME LAT. N 40°04'41" LONG. W 86°01'04"
	1			-149°	0.8		
	2			0°	1.0		
	3			149°	0.312		
	4						
	5						
	6					θ° = 0	E. HAROLD MUNN, JR. & ASSOCIATES, INC. COLDWATER, MICH.

DAYTIME OPERATION X NIGHTTIME OPERATION ☐

WHYT

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WHYT

Main Studio: Noblesville, Indiana

Frequency: 1110 kHz

Power: 0.5 kW

Notification List No. 1679

Date: April 7, 1976

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 40° 04' 41"
West Longitude: 86° 01' 04"

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:	NW(#3)	S(#2)	E(#1)
HEIGHT ABOVE INSULATORS:	197'(80°)	260'	260' (105.6°)
PHASING:	+82°	+44°	0°
FIELD RATIO:	0.64	1.14	1

SPACING AND ORIENTATION: From reference tower #1, tower #2 is located 450.6' (183°) on a line bearing 271° true and tower #3 is located 837.2' (340°) on a line bearing 285° true.

GROUND SYSTEM: About tower #1 and #2, 120-260' equally spaced copper radials plus a 40' square ground screen. About tower #3, 120-221' equally spaced copper radials plus 120-50' interspaced radials. Radials are shortened and bonded to transverse straps along intersections between towers.

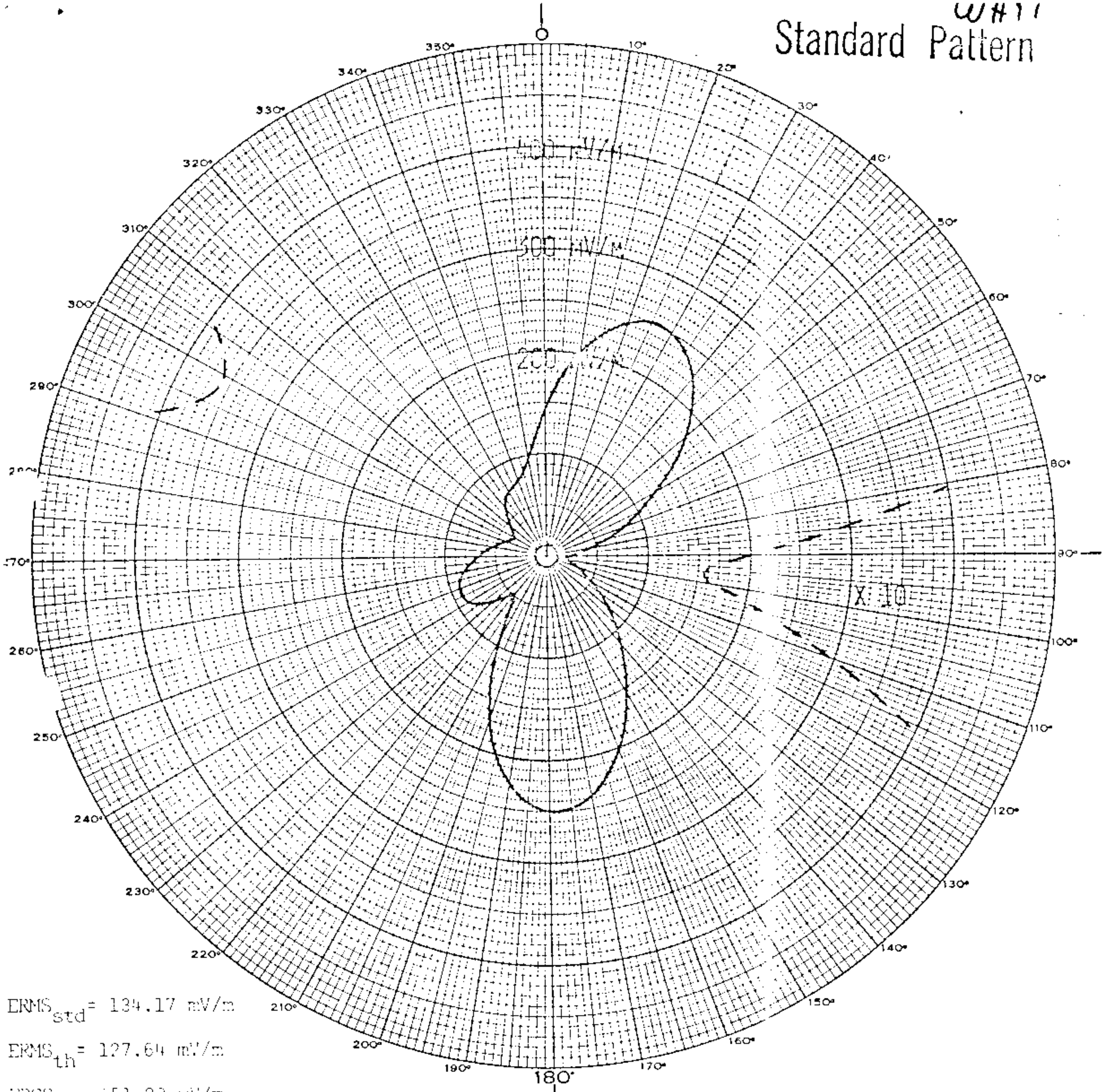
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
127.64 mv/m	151.00 mv/m	134.17 mv/m

WASHINGTON, D.C.

Standard Pattern

W#11

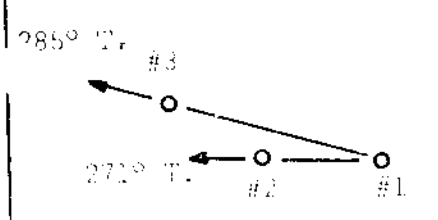


ERMS$_{std}$ = 134.17 mV/m

ERMS$_{th}$ = 127.64 mV/m

ERSS$_{th}$ = 151.80 mV/m

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT $G°$	SPACING $S°$	PHASING $\psi°$	FIELD RATIO F
1	105.6	0	0	1.00
2	105.6	[illegible]	44	[illegible]
3	80	[illegible]	[illegible]	[illegible]
4				
5				
6				

DAYTIME OPERATION [X] NIGHTTIME OPERATION [ ]

FIGURE 4

PROPOSED
STANDARD
RADIATION
PATTERN

JUNE, 1975

$\theta° = 0$

STATION DATA

CALL WHYT
FREQ 1110 kHz
POWER 500 W
TYPE DA-D
TIME DAY
LAT. N 40°04'41"
LONG. [illegible]

E. HAROLD MUNN, JR. & ASSOCIATES, INC.
COLDWATER, MICH.

WHYT

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WHYT	Main Studio: Noblesville, Indiana
Frequency: 1110 kHz	Power: 0.25 kW
Notification List No. 1635	Date: June 3, 1975 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 40° 04' 41" West Longitude: 86° 01' 04"

ANTENNA CHARACTERISTICS STANDARD AND MODIFIED PATTERNS

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

TOWER:	SW(#1)	W(#2)	NW(#3)	SE(#4)	E(#5)	NE(#6)
HEIGHT ABOVE INSULATORS:	All towers 260' (105.6°)					
PHASING:	0°	+112°	-136°	0°	+112°	-136°
FIELD RATIO:	1.000	1.956	1.000	1.000	1.956	1.000

SPACING AND ORIENTATION: Towers are located in two rows with three towers per row. Adjacent elements in a row are spaced 219.2' (89°) on a line bearing 328° true. End towers in each row forming a side of the parallelogram are spaced 450.6' (183°) on a line bearing 271° true.

GROUND SYSTEM: 120-260' equally spaced copper radials plus a 40' square ground screen 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
97.15 mv/m	118.62 mv/m	102.20 mv/m

MODIFIED PATTERN AUGMENTATION:

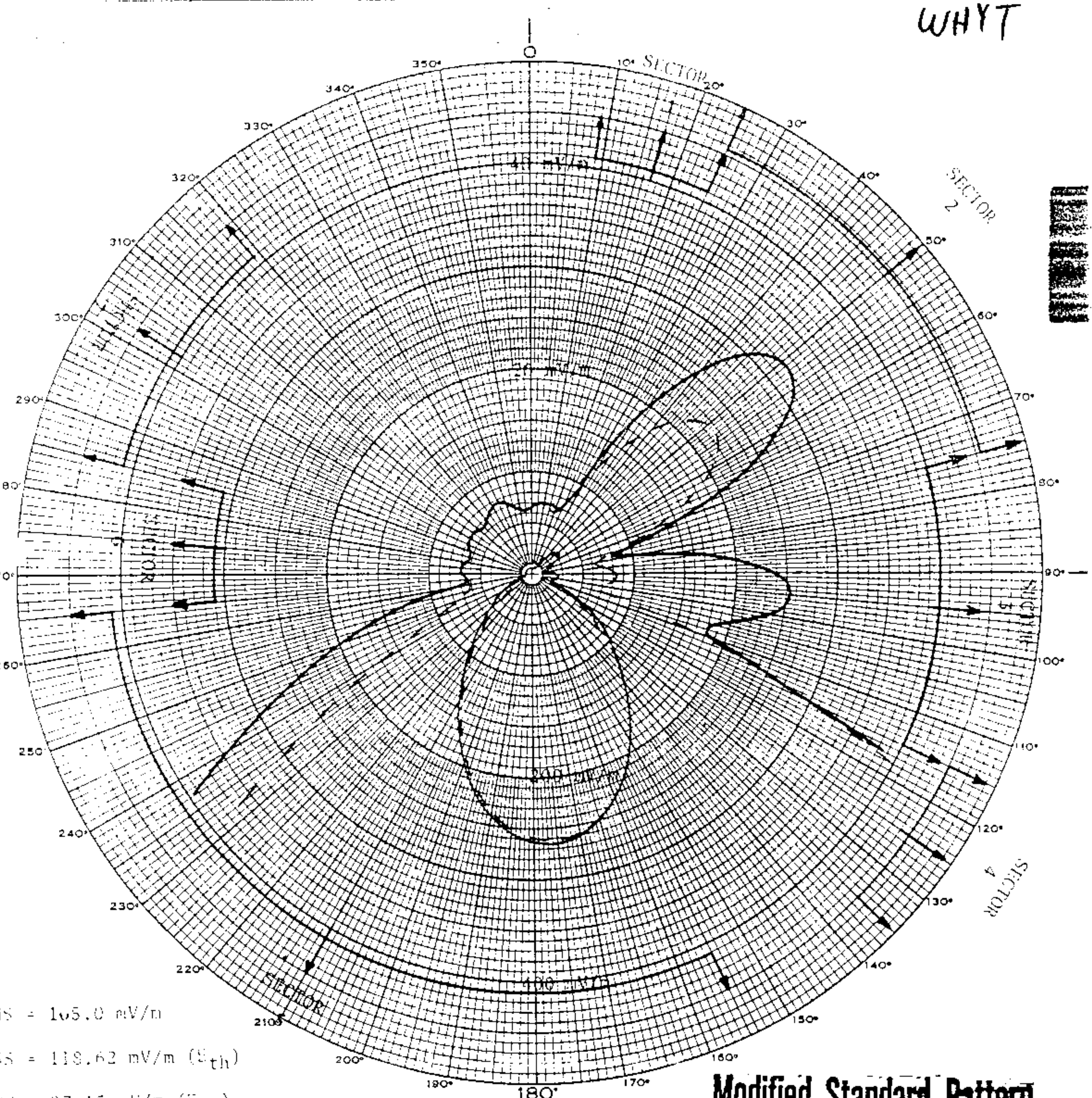
Sector Number	Azimuth of Maximum Augmentation	Augmented Radiation E_2	Span of Augmentation From - To
1	17°	7.057 mv/m	9° - 25°
2	50°	32.149 mv/m	25° - 75°

(Cont'd.)

3	95°	25.288 mv/m	75° - 115°
4	125°	80.039 mv/m	115° - 135°
5	210°	145.027 mv/m	155° - 265°
6	275°	6.999 mv/m	265° - 285°
7	302°	7.000 mv/m	285° - 319°

Note: This notification concerns only a change to augment the standard pattern.

WHYT



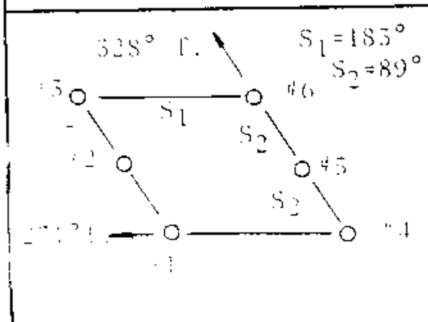
RMS = 105.0 mV/m

SS = 118.62 mV/m (E_{th})

RMS = 97.15 mV/m (E_{th})

Modified Standard Pattern

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT G°	SPACING S°	PHASING ψ°	FIELD RATIO F
1	105.6		0.	1.000
2	105.6		112.	1.956
3	105.6		136.	1.000
4	105.6		0.	1.000
5	105.6		112.	1.956
6	105.6		136.	1.000

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐

FIGURE 2

MODIFIED
STANDARD
RADIATION
PATTERN

FEBRUARY 1975

θ^{o} 0.

STATION DATA

CALL WHYT
FREQ 1110 kHz
POWER 0.25 kW
TYPE DA-D
TIME DAYTIME
LAT. N40°04'41"
LONG. W86°01'04"

E.H.MUNN, JR.
RADIO ENGINEER
COLDWATER, MICH.

WHT I

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WHYT | Main Studio: Noblesville, Indiana

Frequency: 1110 kHz | Power: 0.25 kW

Notification List No. 1599 | Date: September 25, 1974 | Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 40° 04' 41"
West Longitude: 86° 01' 04"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation (DA-D). STANDARD PATTERN
Number of elements: 6
Type of elements: Series-excited, uniform cross-section, guye[illegible] vertical steel towers.

TOWER:	SW(#1)	CW(#2)	NW(#3)	SE(#4)	CE(#5)	NE(
HEIGHT ABOVE INSULATORS:	All towers 260'(105.6°)					
PHASING:	0°	+112°	-136°	0°	+112°	-
FIELD RATIO:	1.000	1.956	1.000	1.000	1.956	1.

SPACING AND ORIENTATION: Towers are located in two rows with three towers per row. Adjacent elements in a row are spaced 219.2'(89°) on a line bearing 328° true. End towers in each row forming a side of the parallelogram are spaced 450.6'(183°) on a line bearing 91° true.

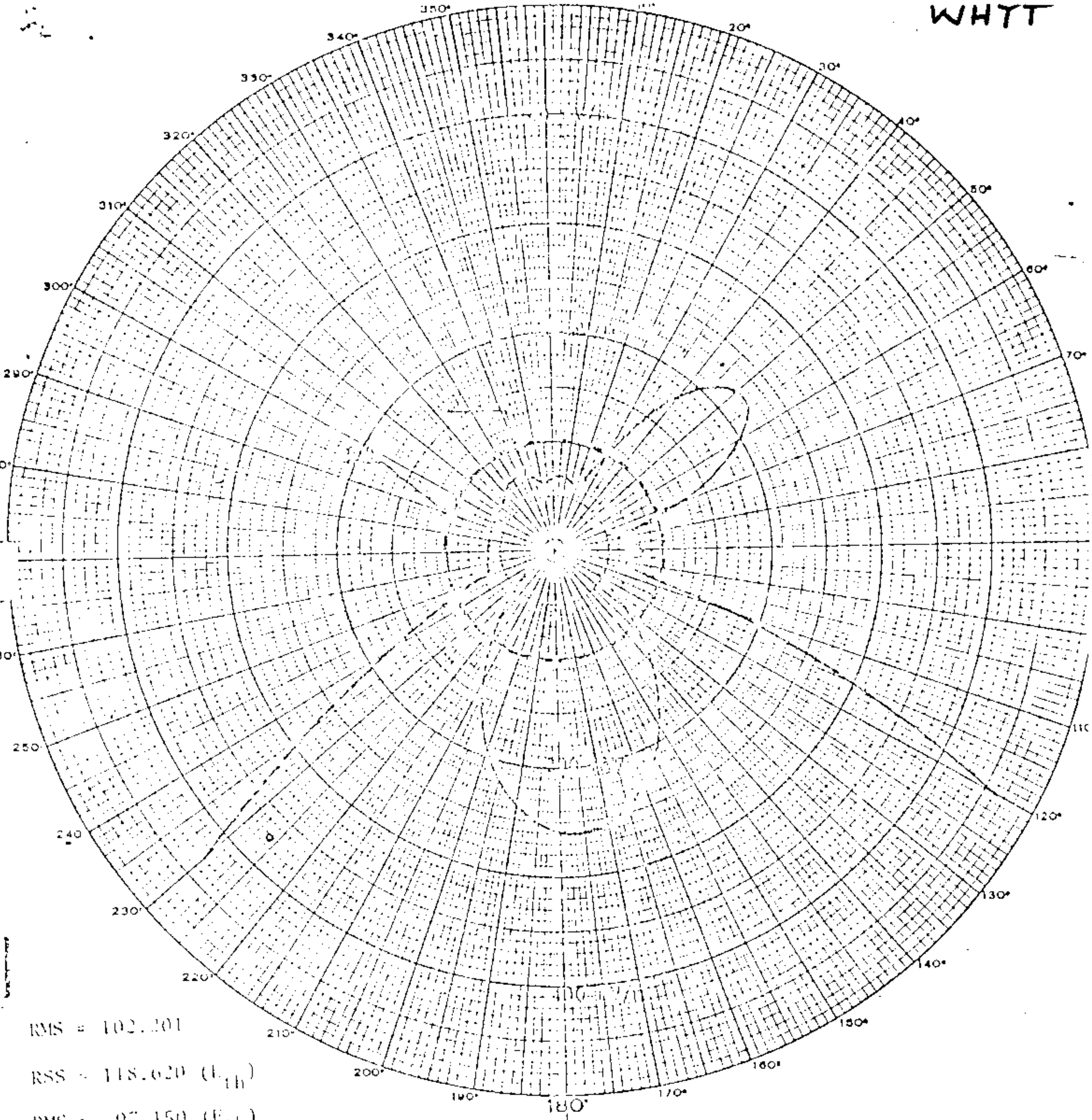
GROUND SYSTEM: 120-260' equally spaced copper radials plus a 40' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towe[illegible]

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
97.150 mv/m	118.620 mv/m	102.201 mv/m

Note: This notification concerns only a change in directional antenna radiation pattern from theoretical-meov to standard.

WHYT

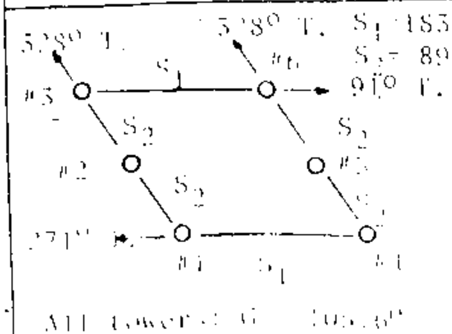


RMS = 102.201

RSS = 118.620 (E_{th})

RMS = 97.150 (E_{th})

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 3	STATION DATA



TOWER NO	ELECTRICAL HEIGHT G°	SPACING S°	PHASING ψ°	FIELD RATIO F
1			0	1.000
2			112	1.956
3			-156	1.000
4			0	1.000
5			112	1.956
6			156	1.000

θ° 0

STANDARD
HORIZONTAL
RADIATION
PATTERN

WHYT

CALL WHYT
FREQ 1110 KHz
POWER 0.25 KW
TYPE DA-D
TIME DAYTIME
LAT. N40°04'31"
LONG.

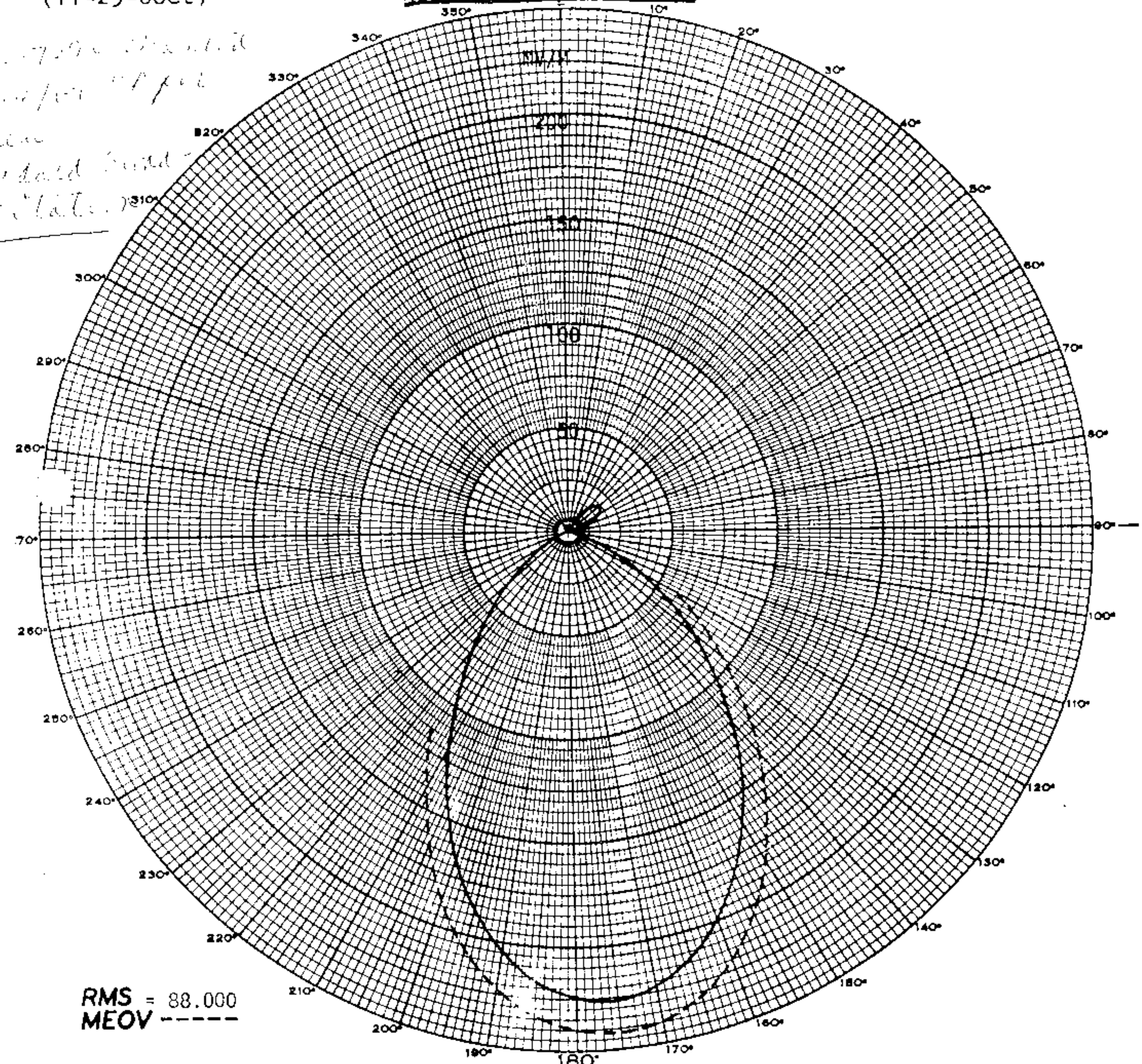
E.H.MUNN, JR.
RADIO ENGINEER
COLDWATER, MICH.

WHYT

Proposed Day
(11-29-68ct)

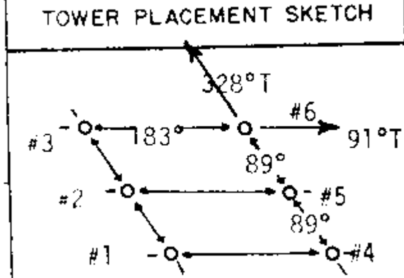
New; White River Radio Corporation
Noblesville, Indiana

250w, DA-D, D
1110 kc



RMS = 88.000
MEOV -----

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT G°	SPACING S°	PHASING ψ°	FIELD RATIO F
1	105.6		0	1.00
2	105.6		112	1.956
3	105.6		-136	1.00
4	105.6		0	1.00
5	105.6		112	1.956
6	105.6		-136	1.00
7				
8				
9				
10				

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐

FIGURE 3

PROPOSED DIRECTIONAL ANTENNA PATTERN
*****
NOBLESVILLE, IND.
*****
AUGUST, 1968

θ°

STATION DATA

CALL NEW
FREQ 1110 KHz
POWER 0.25 KW
TYPE DA-D
TIME DAY
LAT N-40-04-41
LONG W-86-01-04

E.H.MUNN, JR.
RADIO ENGINEER
COLDWATER, MICH.

FCC File No. BP-17290
Accepted 11-4-68 Amended

New; White River Radio Corporation
Noblesville, Indiana

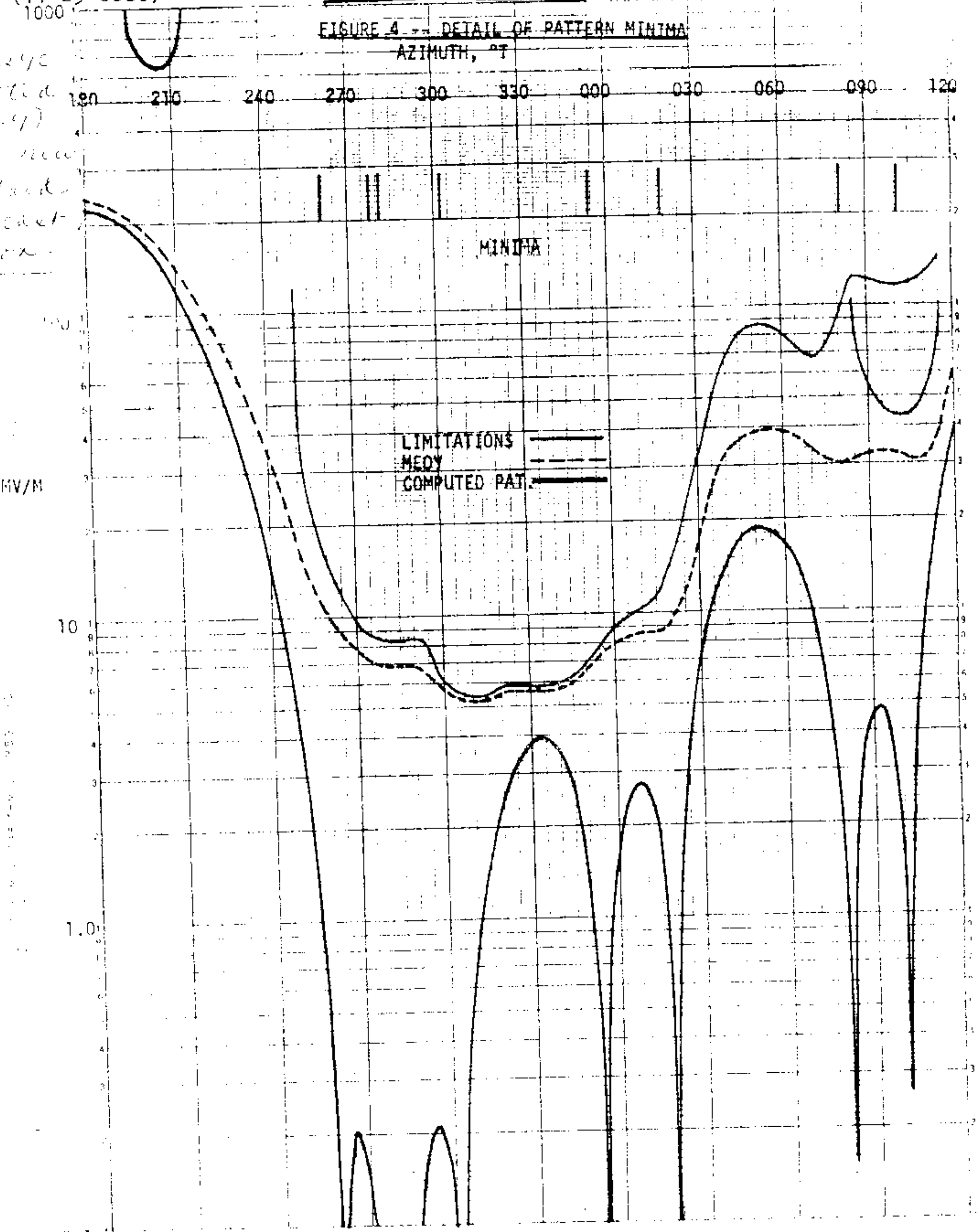
1110 kc

WHYT

Proposed Day Nulls
(11-29-66ct)

New; White River Radio Corporation
Noblesville, Indiana

250w, DA-D, D
1110 kc



FCC File No.BP-17290
Accepted 11-4-68 Amended

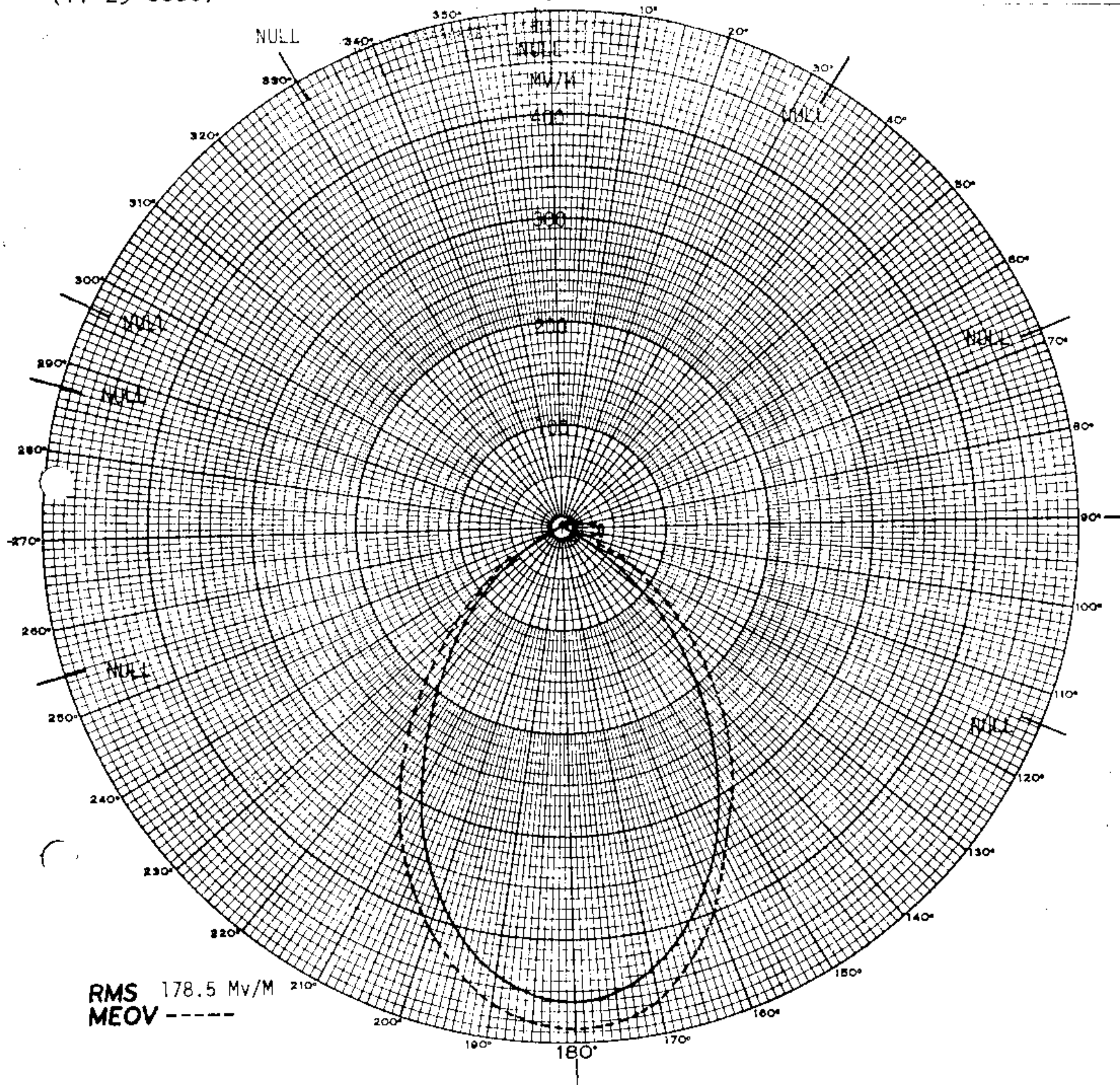
New White River Radio Corporation
Noblesville, Indiana

1110kc

Proposed Day
(11-29-66ct)

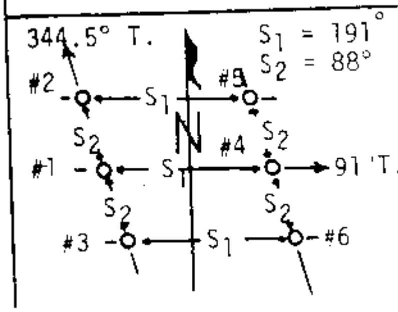
New; White River Radio Corp.
Noblesville, Indiana

1kw, DA-D, D
1110 kc



RMS 178.5 Mv/M
MEOV -----

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 3	STATION DATA



PATTERN PARAMETERS

TOWER No	ELECTRICAL HEIGHT G°	SPACING S°	PHASING ψ°	FIELD RATIO F
1	105.6		+13.25	.947
2	105.6		94.5	1.000
3	105.6		+121.0	1.000
4	105.6		+9.75	.947
5	105.6		98.5	1.000
6	105.6		+117.5	1.000
7				
8				
9				
10				

FIGURE 3

PROPOSED PATTERN

NOBLESVILLE, IND.

MAY - 1966

$\theta^\circ = 0$

STATION DATA

CALL NEW
FREQ 1110 Kc/S
POWER 1 Kw
TYPE DA-D
TIME DAYTIME
LAT. NL 40°04'41"
LONG WL 86°01'04"

E.H.MUNN, JR.
RADIO ENGINEER
COLDWATER, MICH.

FCC File No. BP-17290
Accepted 11-3-66

New; White River Radio Corp.
Noblesville, Indiana

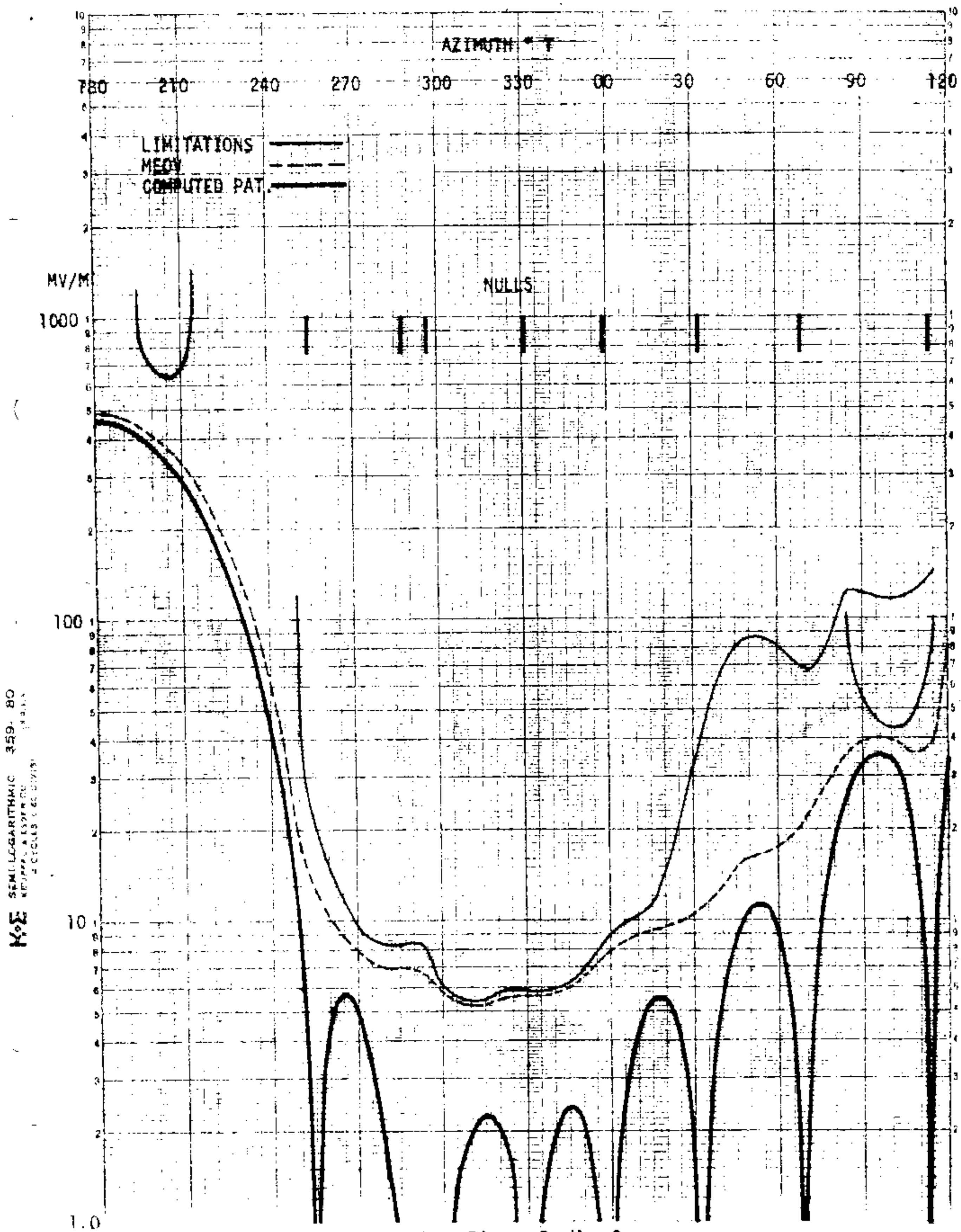
1110 kc

WHYT

Proposed Day Nulls
(11-29-66ct)

New; White River Radio Corp.
Noblesville, Indiana

1kw,DA-D,D
1110 kc



FCC File No.BP-17290
Accepted 11-3-66

New; White River Radio Corp.
Noblesville, Indiana

1110 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WHYT | Main Studio: Noblesville, Indiana

Frequency: 1110 kHz | Power: 0.5 kW

Notification List No. 1751 | Date: September 28, 1977 | Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 40° 04' 41"
West Longitude: 86° 01' 04"

ANTENNA CHARACTERISTICS

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

TOWER:	NW(#4)	SW(#3)	NE(#2)	SE(#1)	
HEIGHT ABOVE INSULATORS:	260'	260'	260'	260'	(105.6°)
PHASING:	+100°	-5°	+105°	0°	
FIELD RATIO:	0.48	0.80	0.60	1.00	

SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 450.6' (183°) in length on a line bearing 271° true. The short sides are 219.2' (89°) in length on a line bearing 328° true.

GROUND SYSTEM: 120-260' equally spaced copper radials plus a 40' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
130.74 mv/m	164.98 mv/m	138.00 mv/m

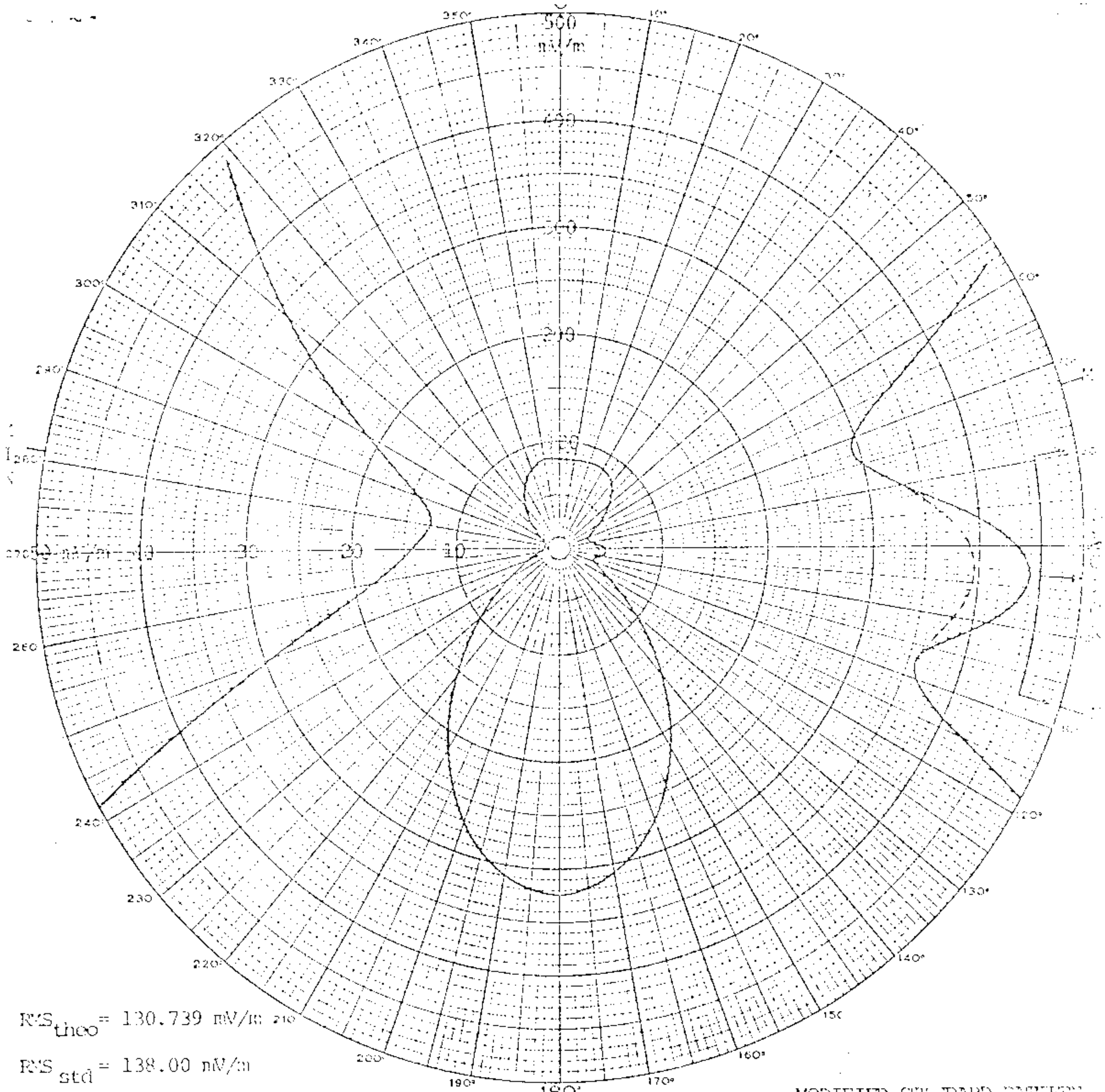
MODIFIED PATTERN AUGMENTATION

Azimuth of Maximum Augmentation	Augmented Radiation E_2	Span of Augmentation From - To
93.5°	45 mv/m	79.5° - 107.5°

(over)

H.T

This notification concerns a change to add augmentation to the proposed standard pattern.



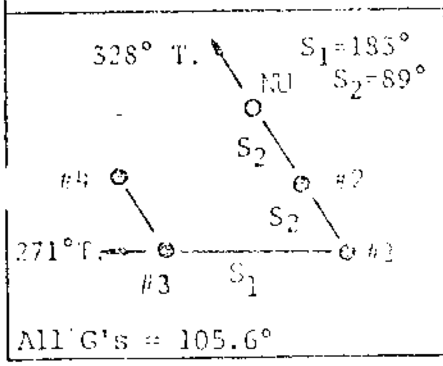
RMS_{theo} = 130.739 mV/m

RMS_{std} = 138.00 mV/m

RSS_{theo} = 164.984 mV/m

—— MODIFIED STANDARD PATTERN
---- ORIGINAL STANDARD PATTERN

TOWER PLACEMENT SKETCH



All G's = 105.6°

PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT G°	SPACING S°	PHASING φ°	FIELD RATIO F
1		REF	0°	1.00
2		89°	105°	0.6
3		183°	-5°	0.8
4		243.2°	100°	0.48
5				
6				

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐

FIGURE 4

"MODIFIED"
STANDARD
PATTERN

JUNE - 1977

NOBLESVILLE, INDIANA

θ^{o} = 0

STATION DATA

CALL	WHYT
FREQ	1110 kHz
POWER	0.5 kW
TYPE	DA-D
TIME	DAYTIME
LAT.	N 40°04'42"
LONG.	W 86°01'04"

E. HAROLD MUNN, JR. & ASSOCIATES, INC.
COLDWATER, MICH.

WHYT

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WHYT

Main Studio: Noblesville, Indiana

Frequency: 1110 kHz

Power: 0.5 kW

Notification List No. 1702

Date: September 15, 1976

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 40 ° 04 ' 41 "
West Longitude: 86 ° 01 ' 04 "

ANTENNA CHARACTERISTICS

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

TOWER:	NW(#4)	SW(#3)	NE(#2)	SE(#1)
HEIGHT ABOVE INSULATORS:	260'	260'	260'	260'
PHASING:	$+100^{\circ}$	-5°	$+105^{\circ}$	0°
FIELD RATIO:	0.48	0.80	0.60	1.00

SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 450.6' (183°) in length on a line bearing 271° true. The short sides are 219.2' (89°) in length on a line bearing 328° true.

GROUND SYSTEM: 120-260' equally spaced copper radials plus a 40' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

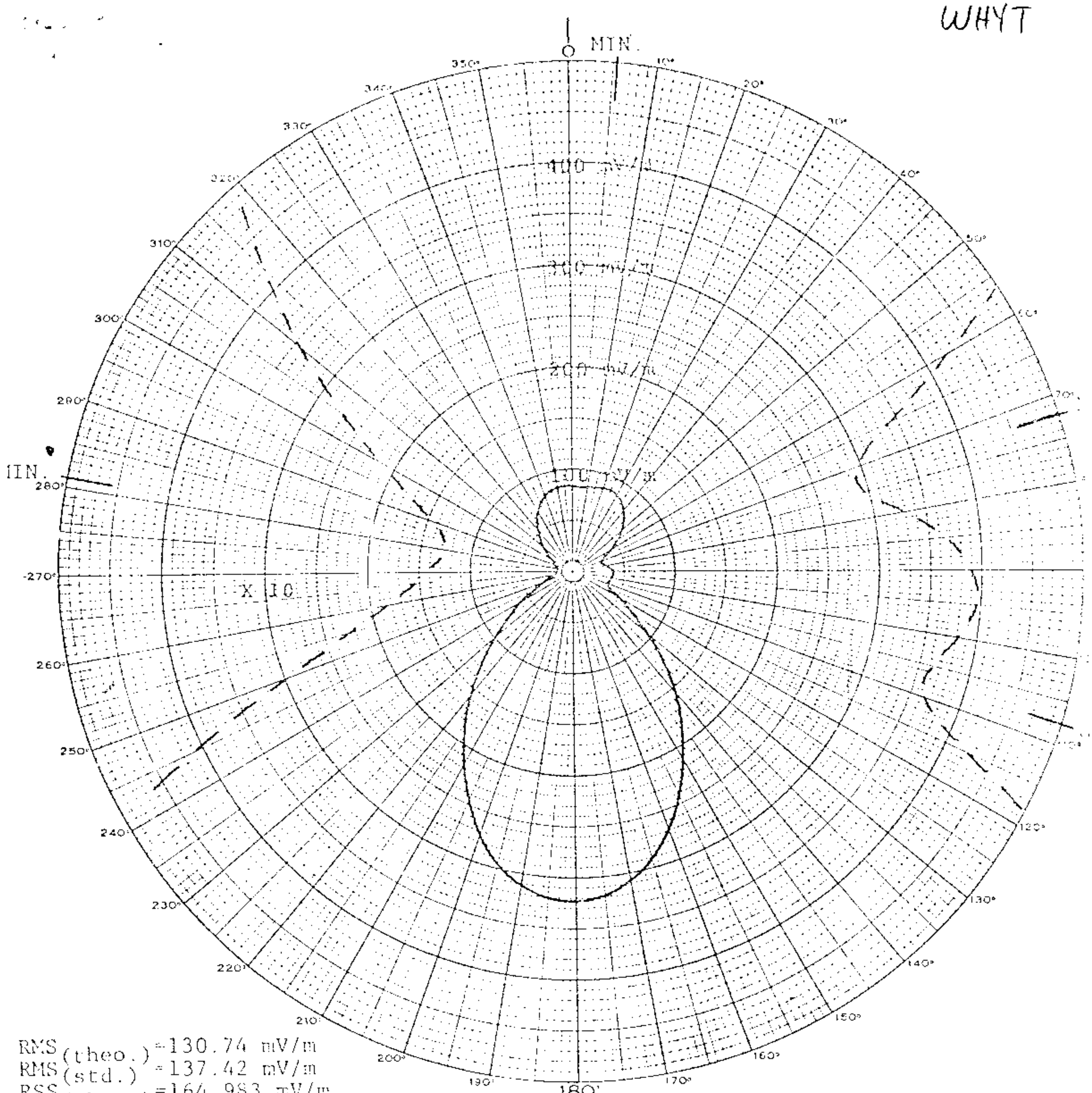
THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
130.74 mv/m	164.98 mv/m	137.42 mv/m

(Over)

WHYT

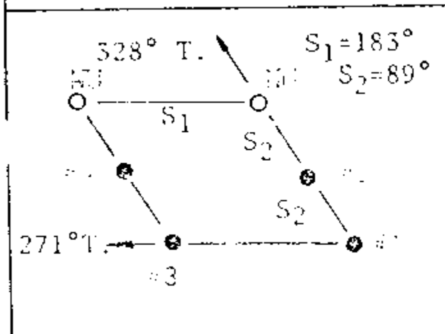
This notification concerns a change in the proposed directional antenna system and radiation pattern.

WHYT



RMS (theo.) = 130.74 mV/m
RMS (std.) = 137.42 mV/m
RSS (theo.) = 164.983 mV/m

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT $G°$	SPACING $S°$	PHASING $\psi°$	FIELD RATIO F
1	[illegible]	–	–	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]			[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]
5				
6				

FIGURE 4

PROPOSED
STANDARD
RADIATION
PATTERN

NOBLESVILLE, IND.
APSII – [illegible]

$\theta° = 0$

STATION DATA

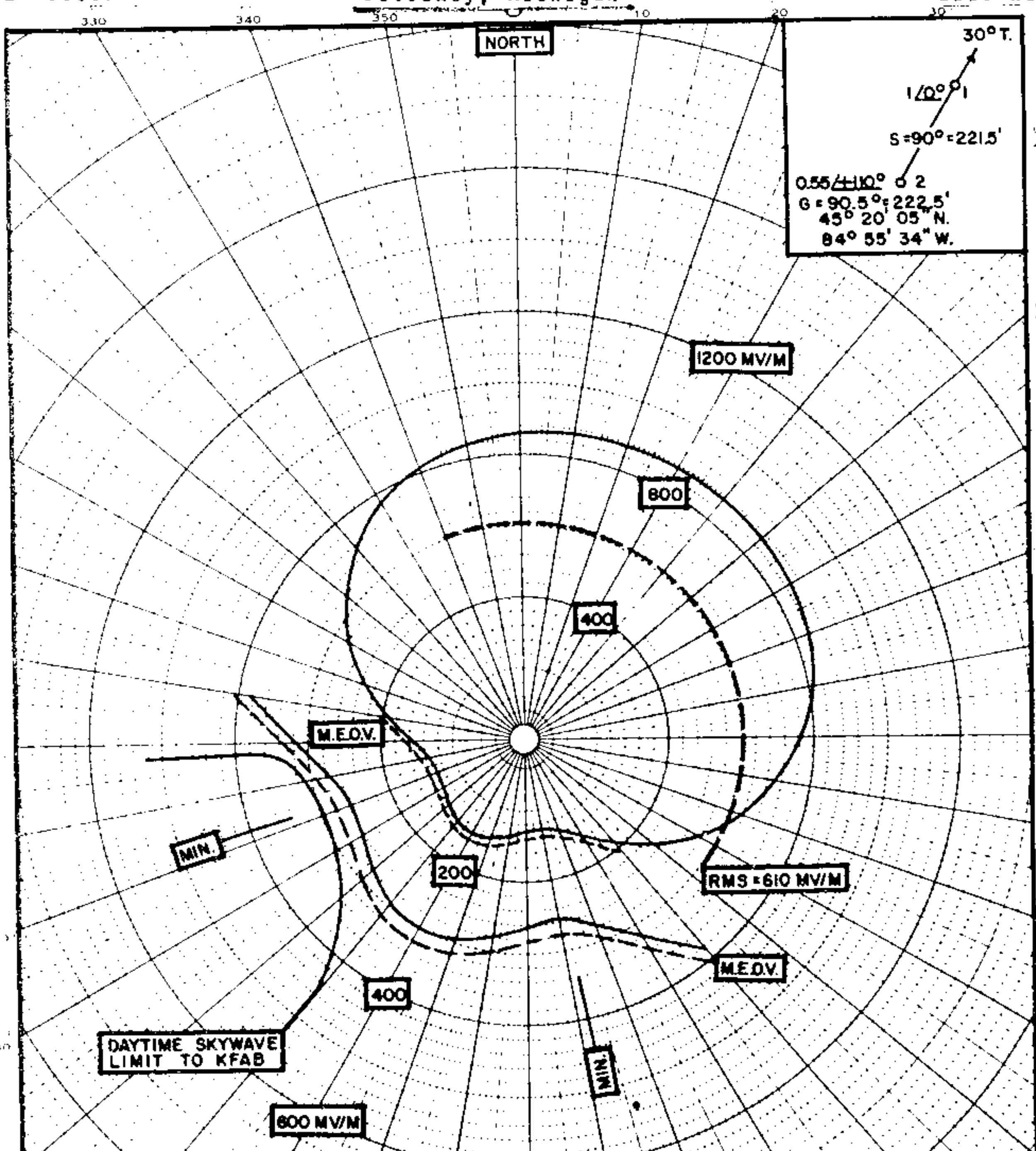
CALL WHYT
FREQ [illegible] KHz
POWER 0.5 KW
TYPE DA-D
TIME DAY
LAT. 40°03'41"
LONG. 86°01'34"

E. HAROLD MUNN, JR.
& ASSOCIATES, INC.
COLDWATER, MICH.

WJML

Proposed Day (4-28-66ct) | New; Harrington Bcstg. Co. Petoskey, Michigan | 10kw,DA-D,D 1110 kc

.P 16830
.P 8-17-66



PROPOSED HORIZONTAL PLANE
RADIATION PATTERN
HARRINGTON B/CING CO.
1110 KC. 10 KW. DA-D
PETOSKEY, MICHIGAN
MAY, 1965 FIGURE 1

WALTER F. KEAN
CONSULTING RADIO ENGINEERS
NINETEEN EAST QUINCY STREET
RIVERSIDE, ILLINOIS

FCC File No. BP-16830
Accepted 4-22-66

New; Harrington Bcstg. Co.
Petoskey, Michigan

1110 kc

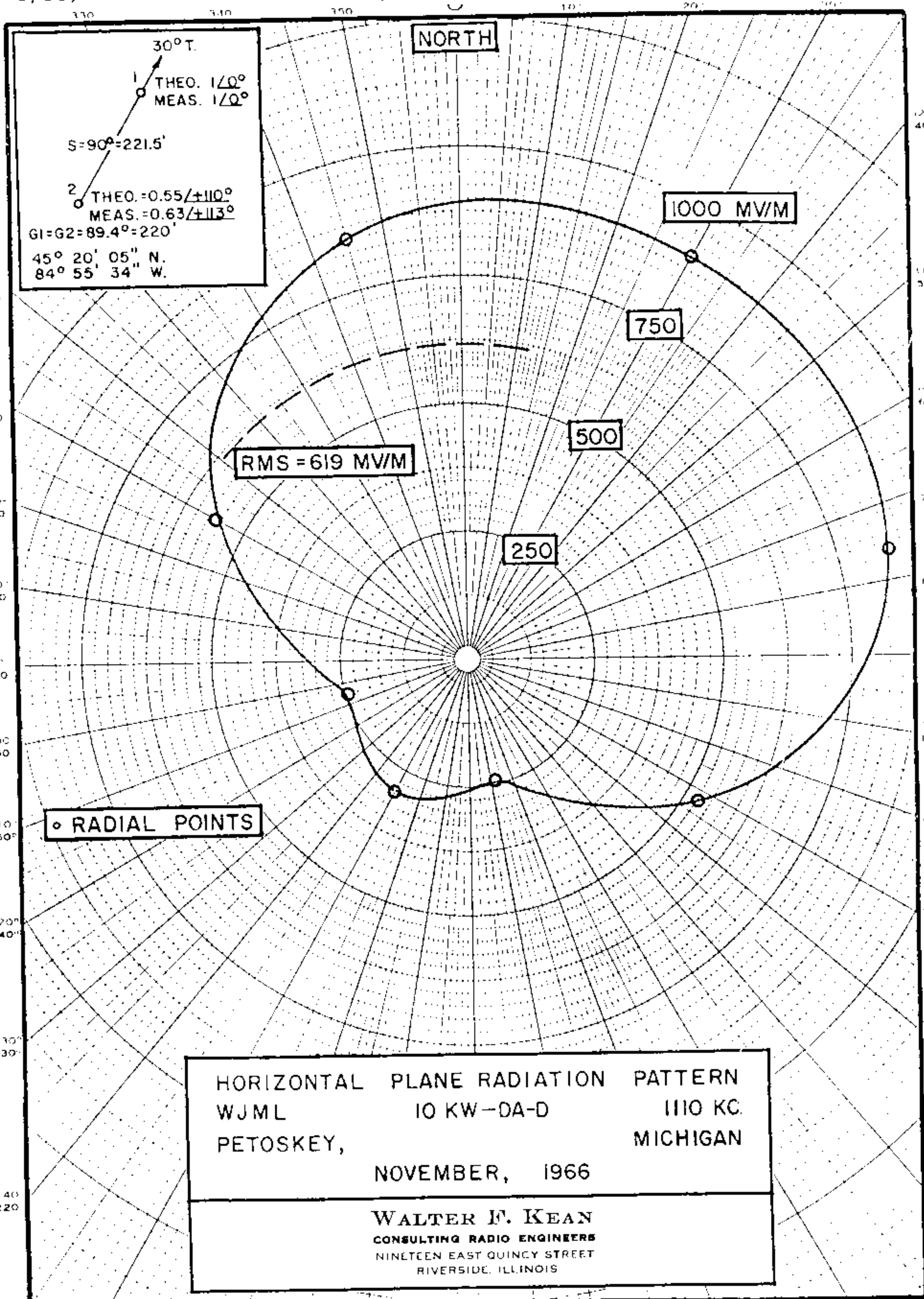
WJML

Measured Day
(2-28-67ct)

Station WJML
Petoskey, Michigan

10kw,DA-D,D
1110 kc

BL-11540
1-14-69
new station



FCC File No.BL-11540
Accepted 2-7-67

Station WJML
Petoskey, Michigan

1110 kc

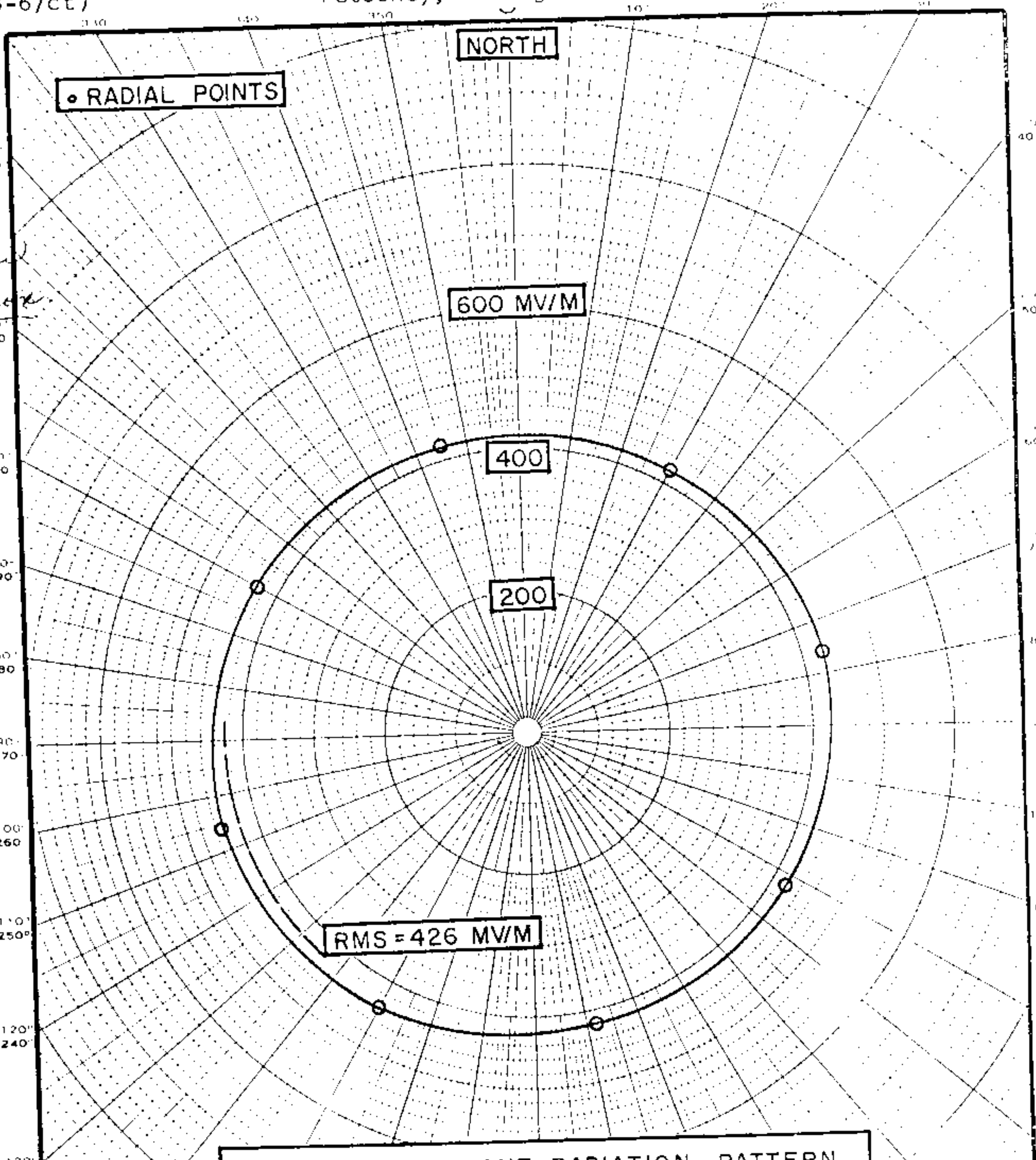
WJML

Measured Non-DA
(2-28-67ct)

Station WJML
Petoskey, Michigan

10kw, DA-D, D
1110 kc

BL-11540
Granted
2-14-69
license
covering
permit for
a new station.



HORIZONTAL PLANE RADIATION PATTERN
NORTH TOWER FED 5 KW.

WJML 10 KW-DA-D 1110 KC
PETOSKEY, MICHIGAN
NOVEMBER, 1966

WALTER F. KEAN
CONSULTING RADIO ENGINEERS
NINETEEN EAST QUINCY STREET
RIVERSIDE, ILLINOIS

FCC File No. BL-11540
Accepted 2-7-67

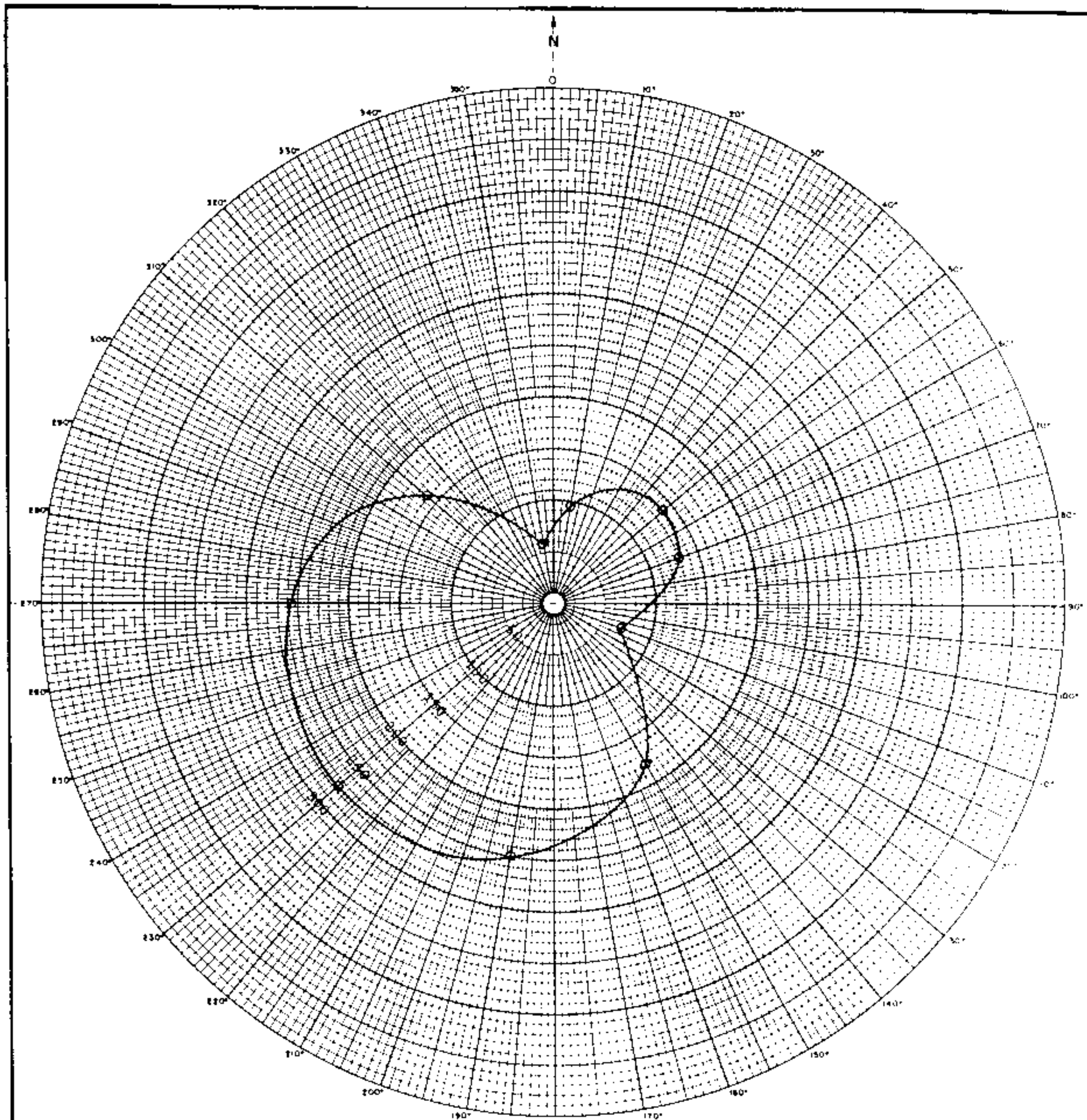
Station WJML
Petoskey, Michigan

1110 kc

Measured Day
(10-26-70ct)

Station WKEG
Washington, Pennsylvania

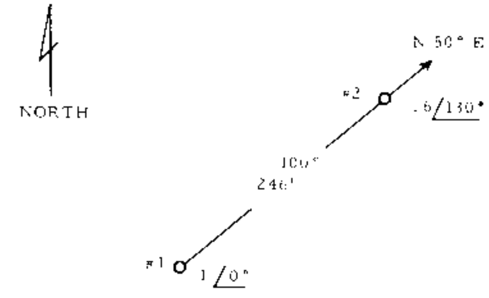
1kw,DA-D,D
1110 kc



o MEASURED RADIALS

FIGURE 13

HORIZONTAL RADIATION PATTERN



G = 90°

APPLICANT:	Radio Station WKEG
LOCATION:	Washington, Pennsylvania
FREQUENCY:	1110 KC/S
POWER	1.0
LATITUDE:	40 DEG 13 MIN 16 SEC
LONGITUDE:	80 DEG 14 MIN 54 SEC
WHEN USED:	Daytime
R.M.S. FIELD:	182 mv/m
DATE	September 1970

ROBERT L. PURCELL

WASHINGTON, D. C.

FCC File No.BL-12755
Accepted 10-19-70

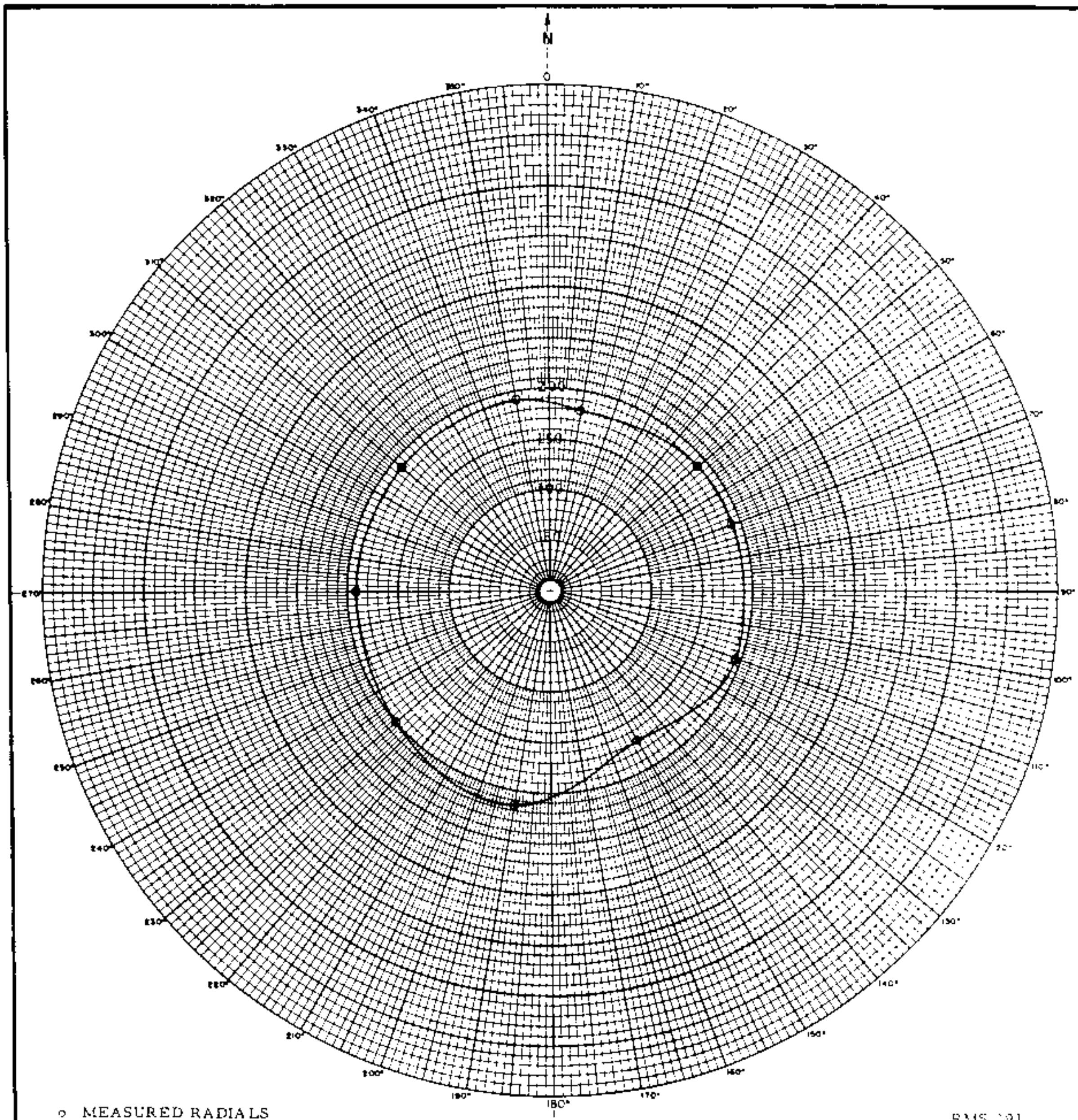
Station WKEG
Washington, Pennsylvania

1110 kc

Measured Non-DA
(10-26-70ct)

Station WKEG
Washington, Pennsylvania

1kw,DA-D,D
1110 kc



NON-DIRECTIONAL SURVEY

#1 SOUTH TOWER

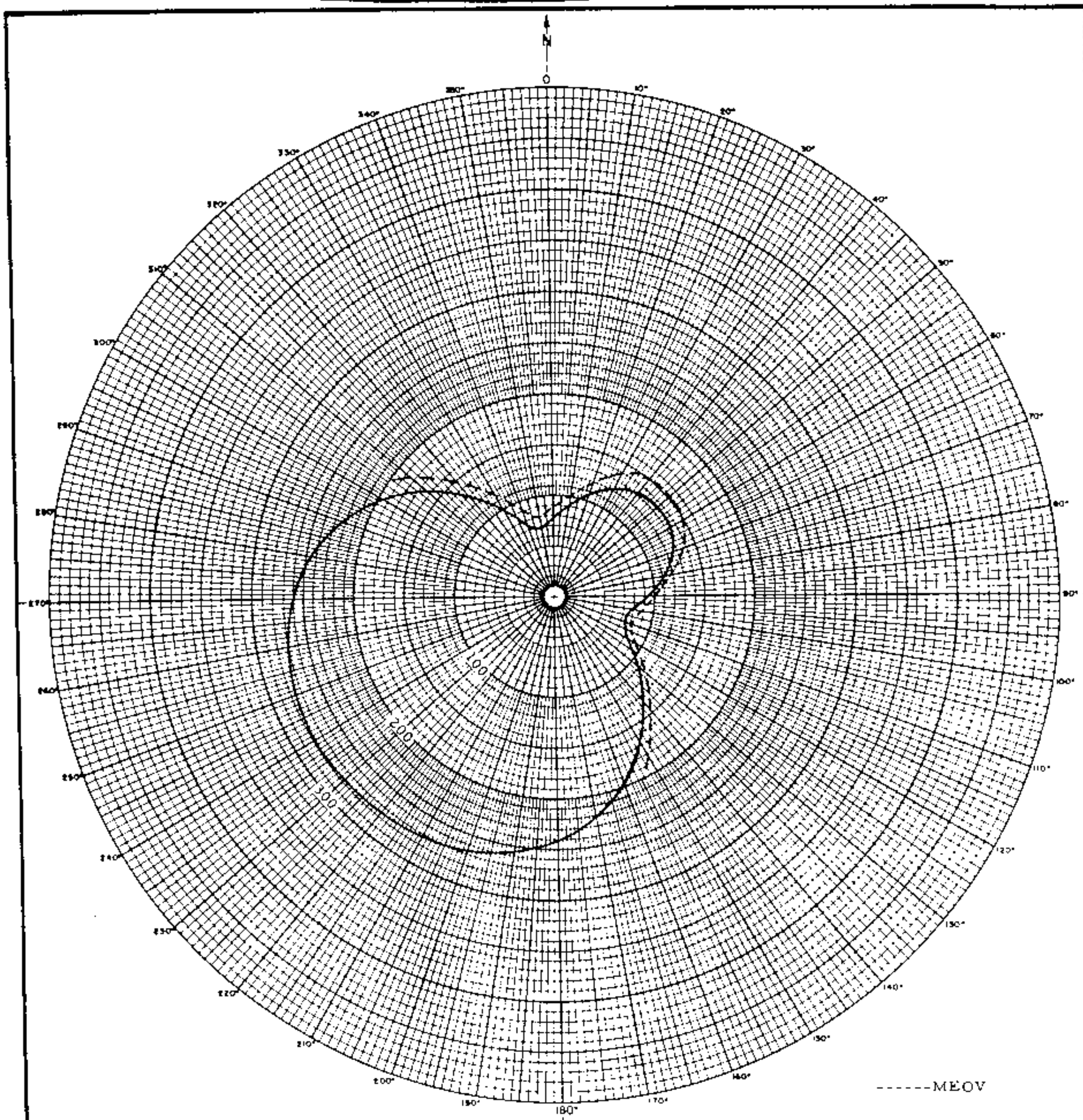
FIGURE 14

ROBERT L. PURCELL
WASHINGTON D.C.

Proposed Day
(10-28-69ct)

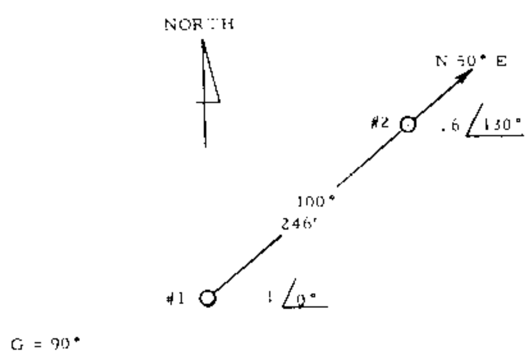
New; DiLeLo Broadcasting Co.
Washington, Pennsylvania

WKEG
1kw,DA-D,D
1110 kc



HORIZONTAL RADIATION PATTERN

FIGURE 1-A



APPLICANT	Dilelo Broadcasting Co.
LOCATION	Washington, Pennsylvania
FREQUENCY	1110 KC/S
POWER	1 KW
LATITUDE	40 DEG 13 MIN 16 SEC.
LONGITUDE	80 DEG 14 MIN 34 SEC
WHEN USED	Daytime
R M S FIELD	185.5 Mv/m
DATE	July 1969

ROBERT L. PURCELL

WASHINGTON, D. C.

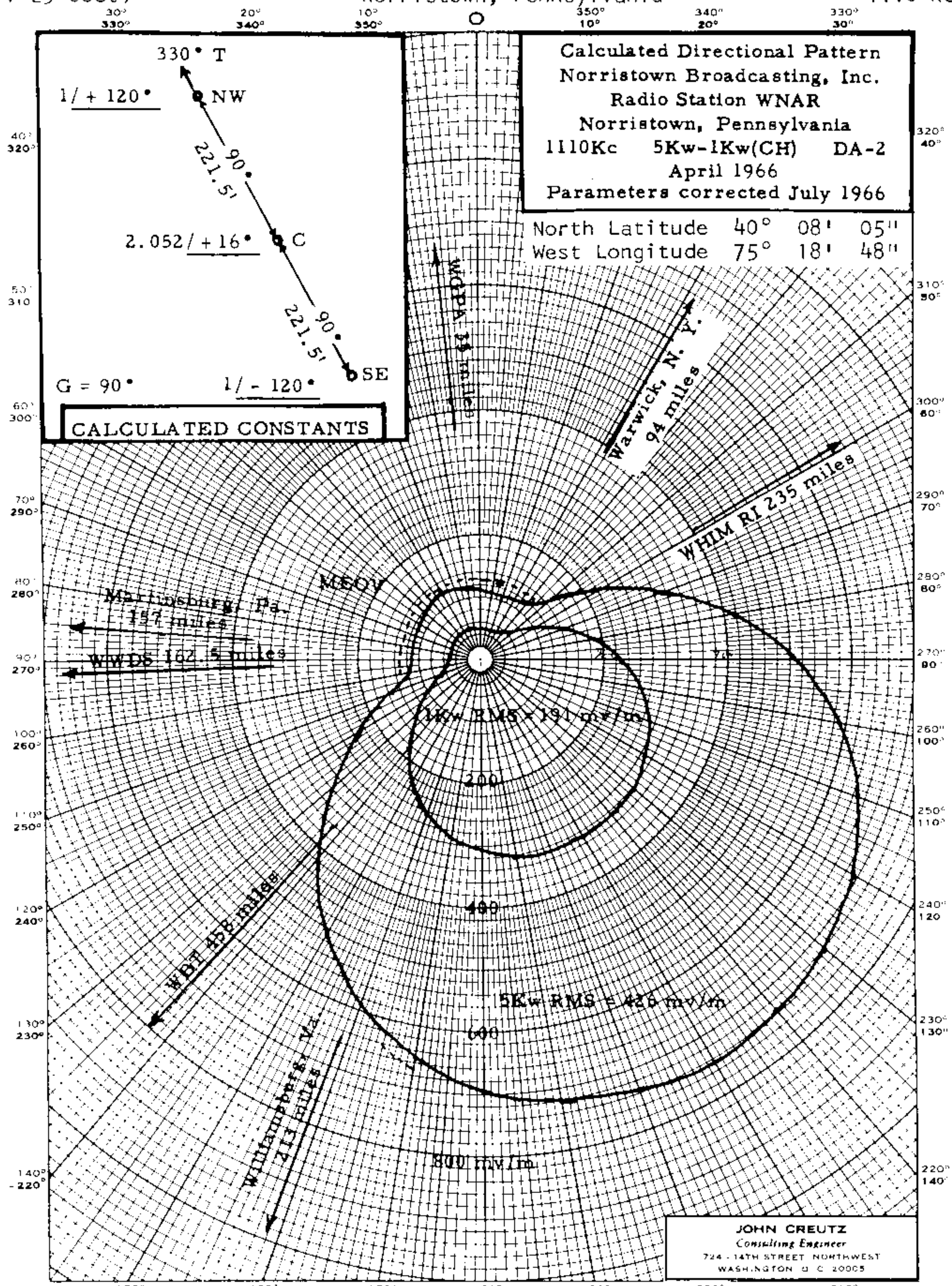
FCC File No. BMP-12797
Accepted 9-29-69

New: DiLeLo Broadcasting Co.
Washington, Pennsylvania

1110 kc

WNAR

Proposed Day (11-29-66ct) | Station WNAR Norristown, Pennsylvania | 5kw, 1kw-CH, DA-2, D 1110 kc



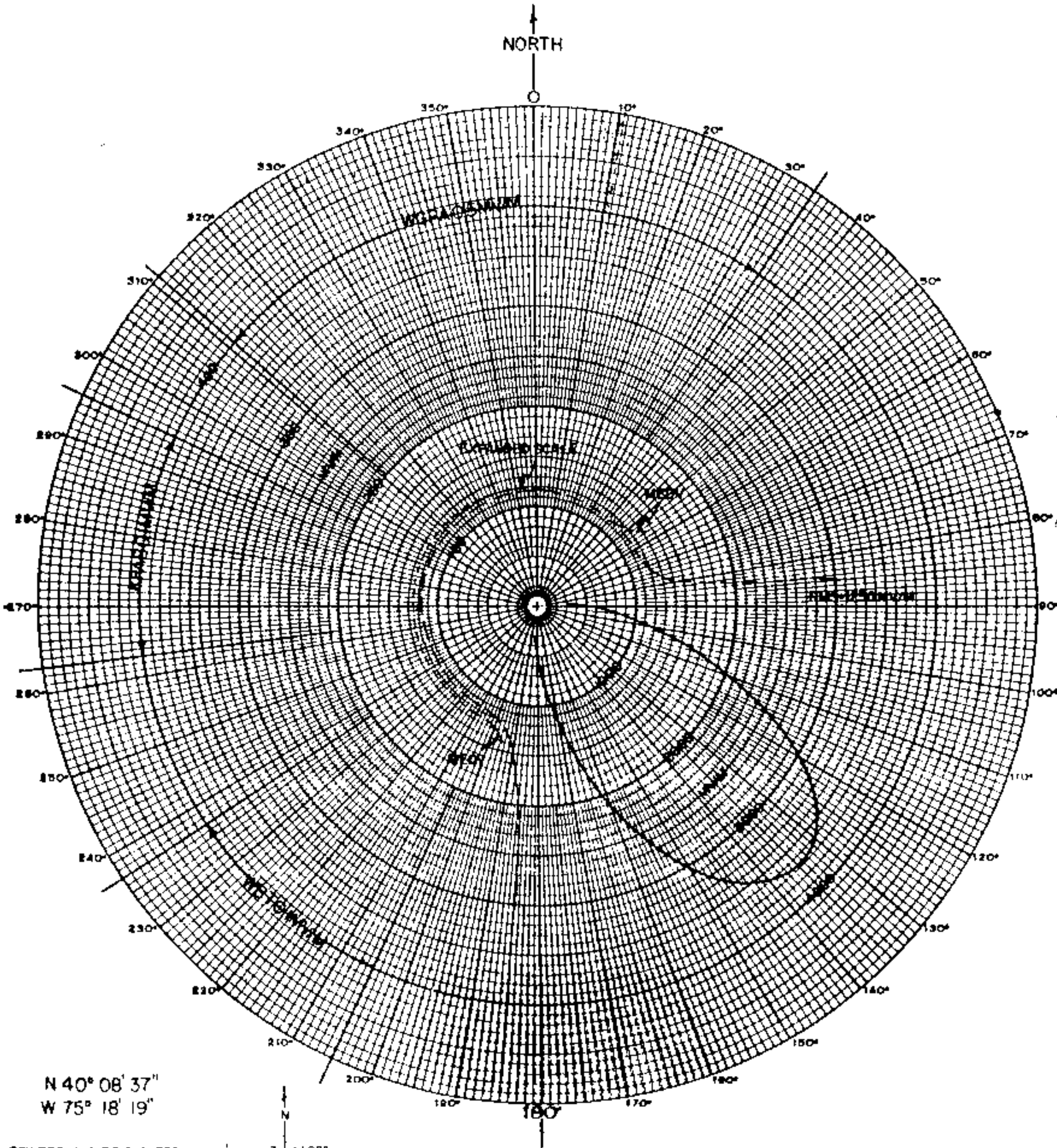
FCC File No. BP-12902 Accepted 10-26-66 Amended | Station WNAR Norristown, Pennsylvania | 1110 kc

WNAR

Proposed Day
(12-28-62ct)

Station WNAR
Norristown, Pennsylvania

50kw,DA-D,D
1110 kc



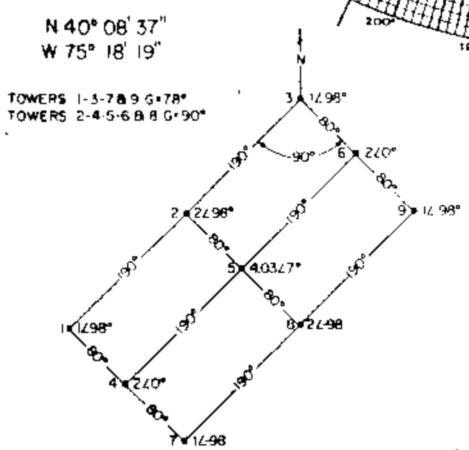


FIGURE 7 RB

PROPOSED HORIZONTAL RADIATION PATTERN

WNAR NORRISTOWN, PENNSYLVANIA

1110 KC 50KW DA-D

OCTOBER 1962

CREUTZ & SNOWBERGER
Consulting Engineers
724-14TH STREET, NORTHWEST
WASHINGTON 5, D. C.

FCC File No. BP-12902
Accepted 11-30-62 Amended

Station WNAR
Norristown, Pennsylvania

1110 kc

WNAK

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WNAR

Frequency: 1110 kHz

Notification List No. 1774

Main Studio: Norristown, Pennsylvania

Power 2.5kw Day

Date: April 26, 1978 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 40° 08' 05"
West Longitude: 75° 18' 48"

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:	W (#1)	C (#2)	E (#3)
HEIGHT ABOVE INSULATORS:	221.5	221.5	221.5 (90°)
PHASING:	+83.22°	0°	-131.36°
FIELD RATIO:	0.403	1.000	0.379

SPACING AND ORIENTATION: With the C(#2) tower as reference, the W(#1) tower is spaced 215.67' (87.62°) in length on a line bearing 344.79° true, and the E #3) tower is spaced 226.55' (92.04°) on a line bearing 164.34° true.

GROUND SYSTEM: 120 - 150' equally spaced copper radials plus 120 - 50' interspaced radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers. Centers of system are bonded together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

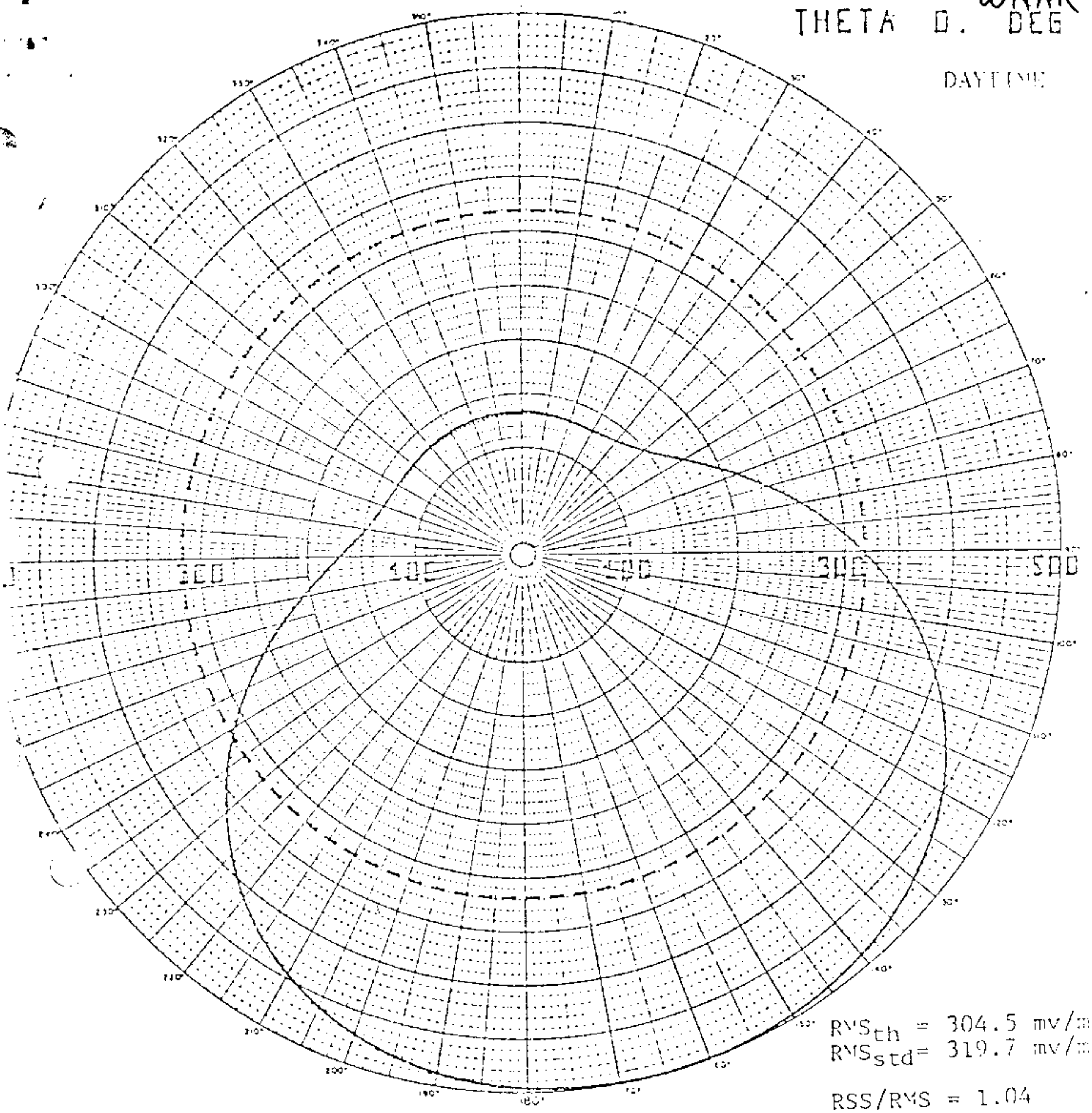
	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	304.5 mv/m	1.04 mv/m	319.7 mv/m

Note: This notification concerns a change in the proposed Daytime operation of the station to reduce power and change antenna system.

WNAK

THETA D. DEG

DAYTIME



RMS_{th} = 304.5 mv/m
RMS_{std} = 319.7 mv/m

RSS/RMS = 1.04

TOWER NUMBER	HEIGHT DEGREES	FIELD RATIO	SPACING DEGREES	ORIENTATION DEGREES	PHASING DEGREES
1	90.00	1.000	0.000	0.000	0.000
2	90.00	0.403	87.620	344.790	83.220
3	90.00	0.379	92.040	164.340	-131.360

JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND.

RADIO STATION WNAR
NORRISTOWN, PA.
1110 KHz
2.5 KW DA

FIGURE 2

WUNN

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WUNN

Main Studio: Mason, Michigan

Frequency: 1110 kHz

Power: 1 kW

Notification List No. 1701

Date: September 8, 1976

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42° 33' 04"
West Longitude: 84° 24' 15"

ANTENNA CHARACTERISTICS

Aut[illegible]zed for Daytime operation. (DAD)
Number of elements: 2
Type of elements: Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	W(#2)	E(#1)	
HEIGHT ABOVE INSULATORS:	221'	221'	(89.8°)
PHASING:	-75°	0°	
FIELD RATIO:	0.495	1.000	

SPACING AND ORIENTATION: Towers are spaced 258.8' (105°) on a line bearing 270° true.

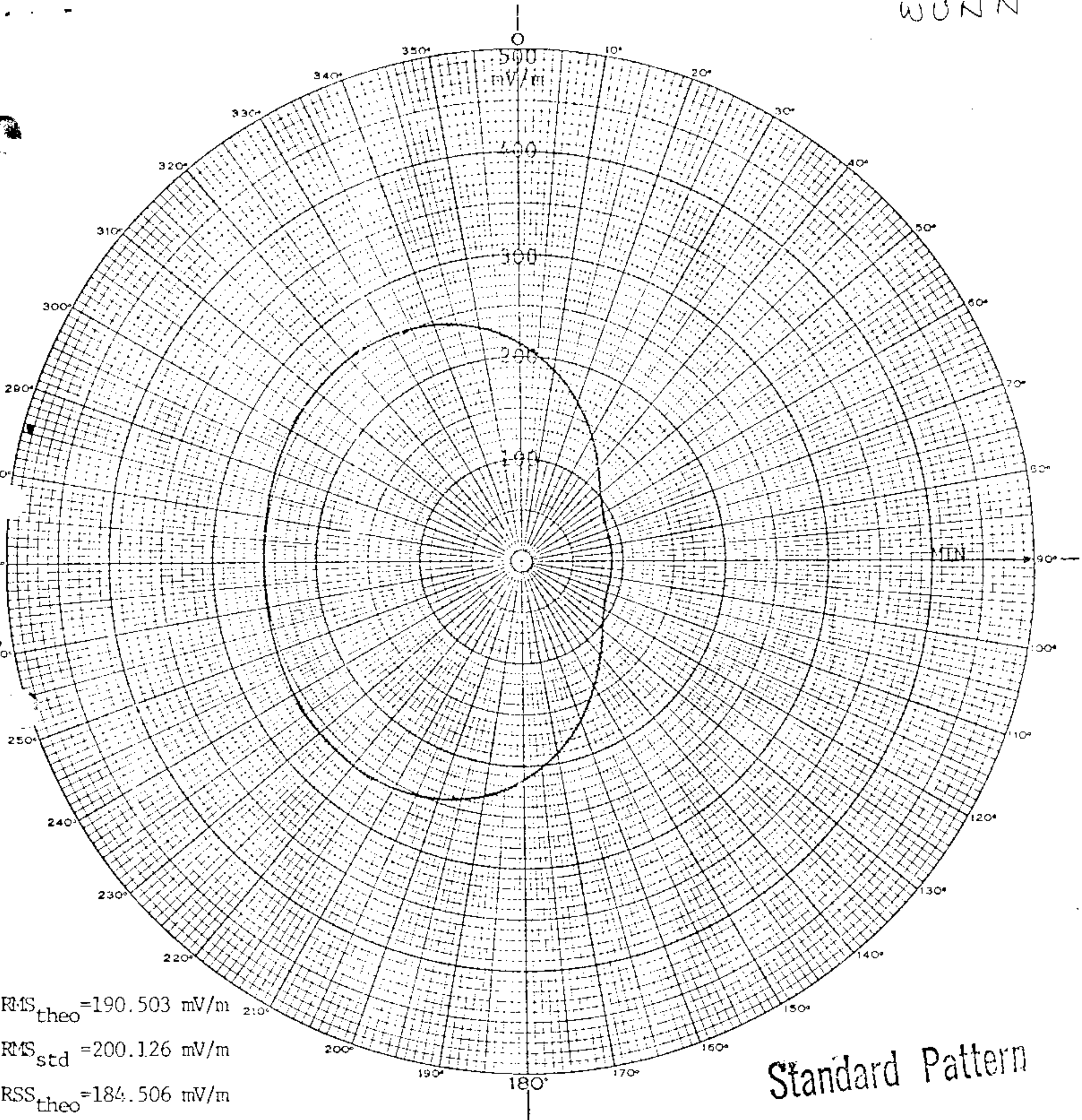
GROUND SYSTEM: 120-221' equally spaced copper radials about each tower. Radials are shortended and bonded to a transverse strap along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL RMS	RSS	STANDARD RMS
190.5 mv/m	184.5 mv/m	200.1 mv/m

This notification concerns an increase in power from 0.25 kW and installation of a directional antenna system.

WUNN



RMS_{theo}=190.503 mV/m

RMS_{std} =200.126 mV/m

RSS_{theo}=184.506 mV/m

Standard Pattern

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 8	STATION DATA
270° T. ← #2 — 105° — #1	(see table below)	PROPOSED STANDARD RADIATION PATTERN θ^{o} = 0	CALL WUNN FREQ 1110 kHz POWER 1.0 kW TYPE DA-D TIME DAYTIME LAT. 42-33-04 LONG. 84-24-15 E. HAROLD MUNN, JR. & ASSOCIATES, INC. COLDWATER, MICH.

TOWER No.	ELECTRICAL HEIGHT $G°$	SPACING $S°$	PHASING $\psi°$	FIELD RATIO F
1	89.8	0	0	1.000
2	89.8	105	-75	0.495
3				
4				
5				
6				

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐

WVNH

CORRECTED DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WVNH

Main Studio: Salem, New Hampshire

Frequency: 1110 kHz

Power: 5 kW

Notification List No. 1735

Date; May 25, 1977

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42° 45' 42"
West Longitude: 71° 16' 13"

Authorized for Daytime operation (DA-D).

Note: Please retain the description sheet and directional antenna radiation patterns notified for a new station at Salem, New Hampshire in United States Change List Number 1634, dated May 27, 1975 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.

WVNH

SUPPLEMENTAL DIRECTIONAL ANTENNA
DESCRIPTION SHEET

Station: WVNH

Main Studio: Salem, New Hampshire

Frequency: 1110 kHz

Power: 5 kW

Notification List No. 1682

Date: April 27, 1976

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude 42° 45' 43"
West Longitude 71° 16' 13"

Authorized for Daytime operation (DA-D).

Predicted effective Day Field: 426.4 mv/m (Standard) at rated power.

Note: Please retain the description sheet and directional antenna radiation pattern notified for a new station at Salem, New Hampshire in United States Change List Number 1634, dated May 27, 1975, 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.

WVNH

Proposed Day
(11-29-68ct)
SALEM, N. H.
1110 kHz

New; Salem Broadcasting Co., Inc.
Salem, New Hampshire
BP-

5kw,DA-D,D
1110 kc
Figure
2-2

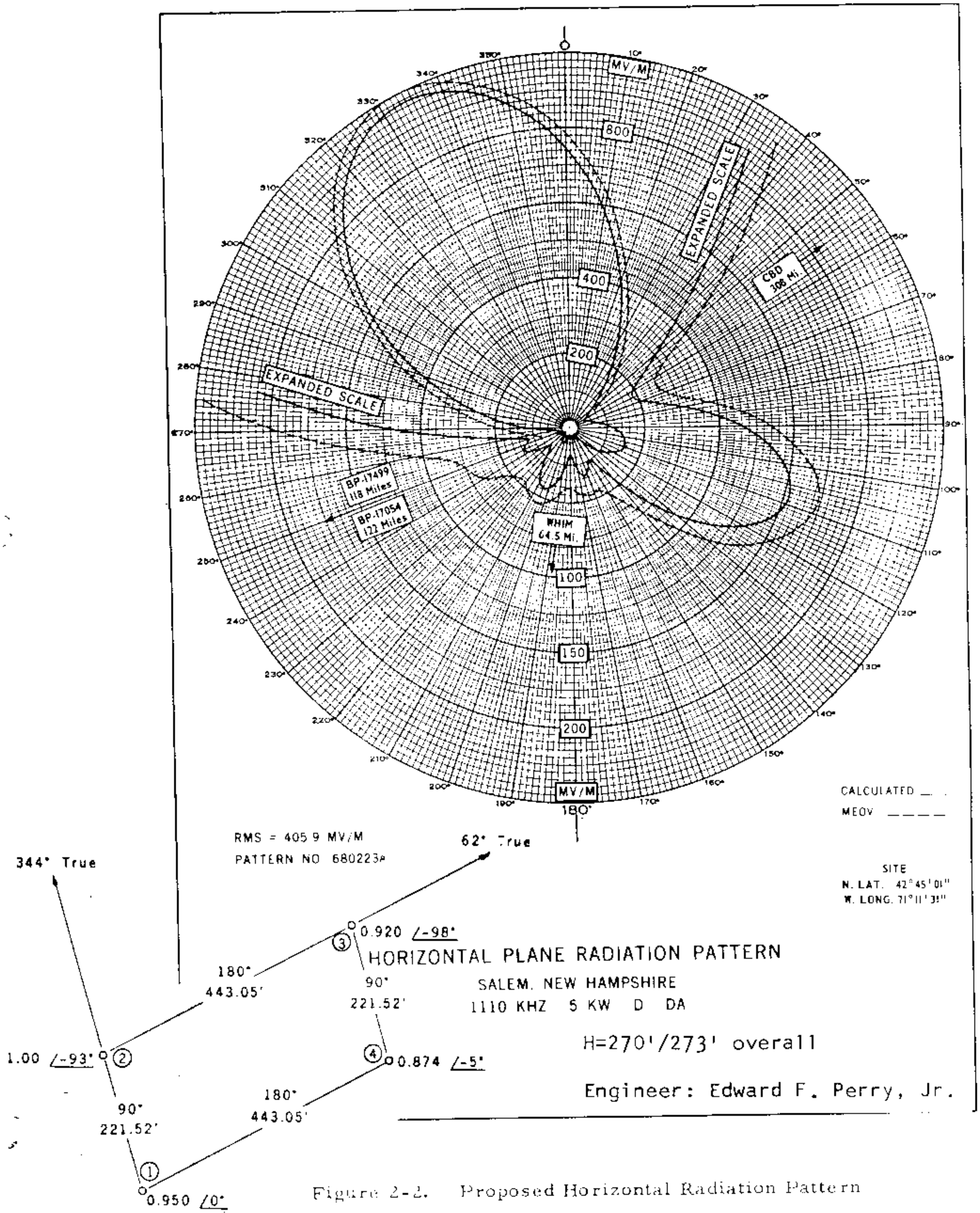


Figure 2-2. Proposed Horizontal Radiation Pattern

FCC File No.BP-18325
Accepted 11-12-68

New; Salem Broadcasting Co., Inc.
Salem, New Hampshire

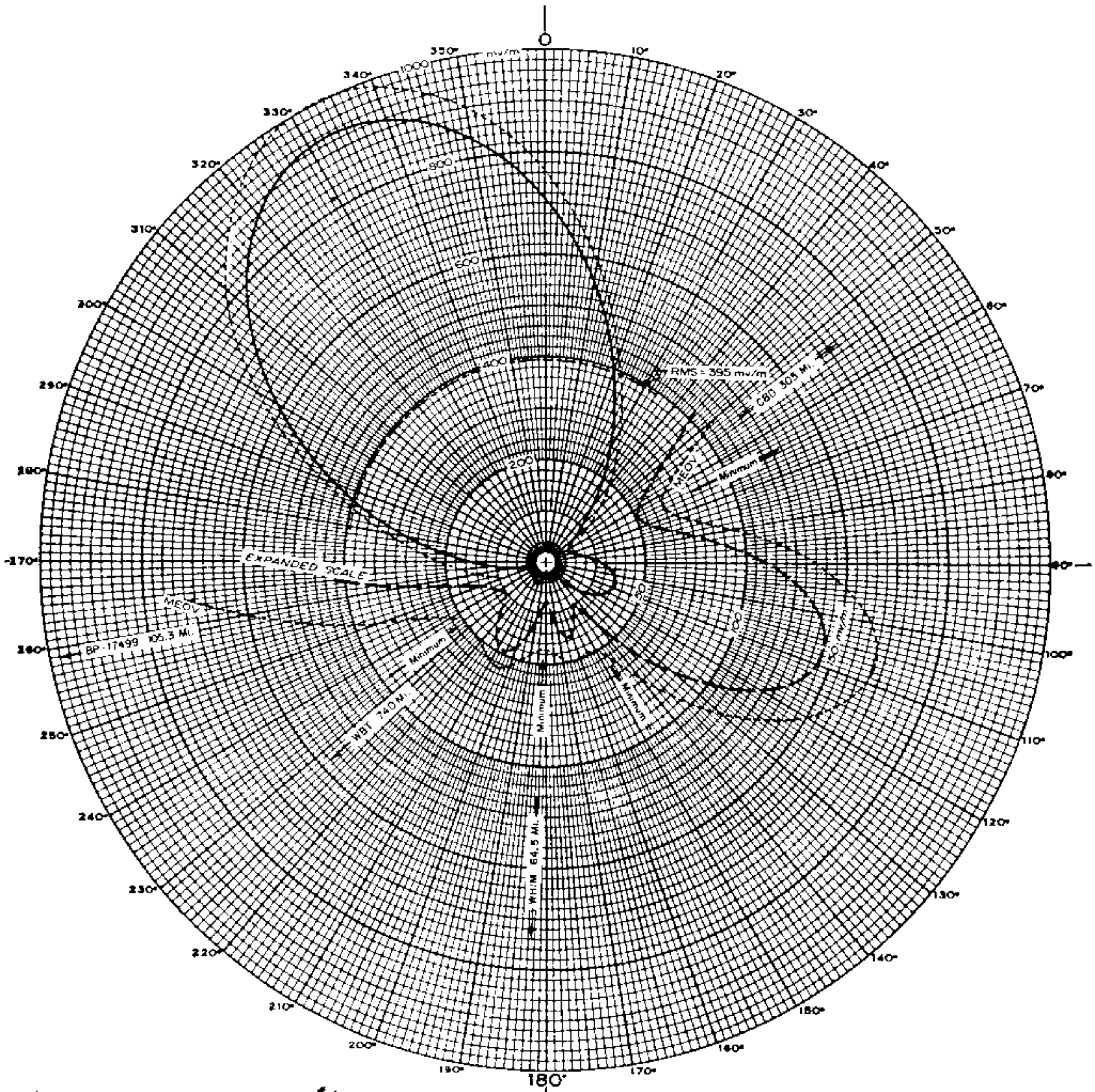
1110 kc

WVNH

Proposed Day
(9-26-69ct)

~~New: New Hampshire Broadcasting Corp.~~
Salem, New Hampshire

5kw,DA-D,D
1110 kc



NORTH LATITUDE 42° 45' 06"
WEST LONGITUDE 71° 11' 16"

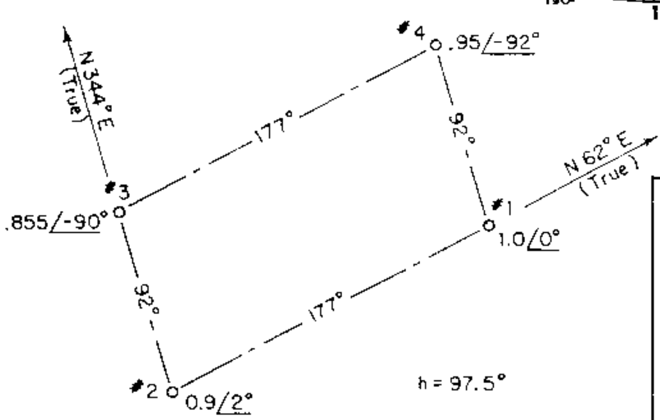


FIGURE 4
DAYTIME HORIZONTAL RADIATION PATTERN
NEW HAMPSHIRE BROADCASTING CORPORATION
1110 KC 5 KW DA-DAY
SALEM, NEW HAMPSHIRE

Prepared by
Lohnes and Culver Washington, D. C.
February, 1969

FCC File No.BP-18479
Accepted 9-24-69

New; New Hampshire Broadcasting Corp.
Salem, New Hampshire

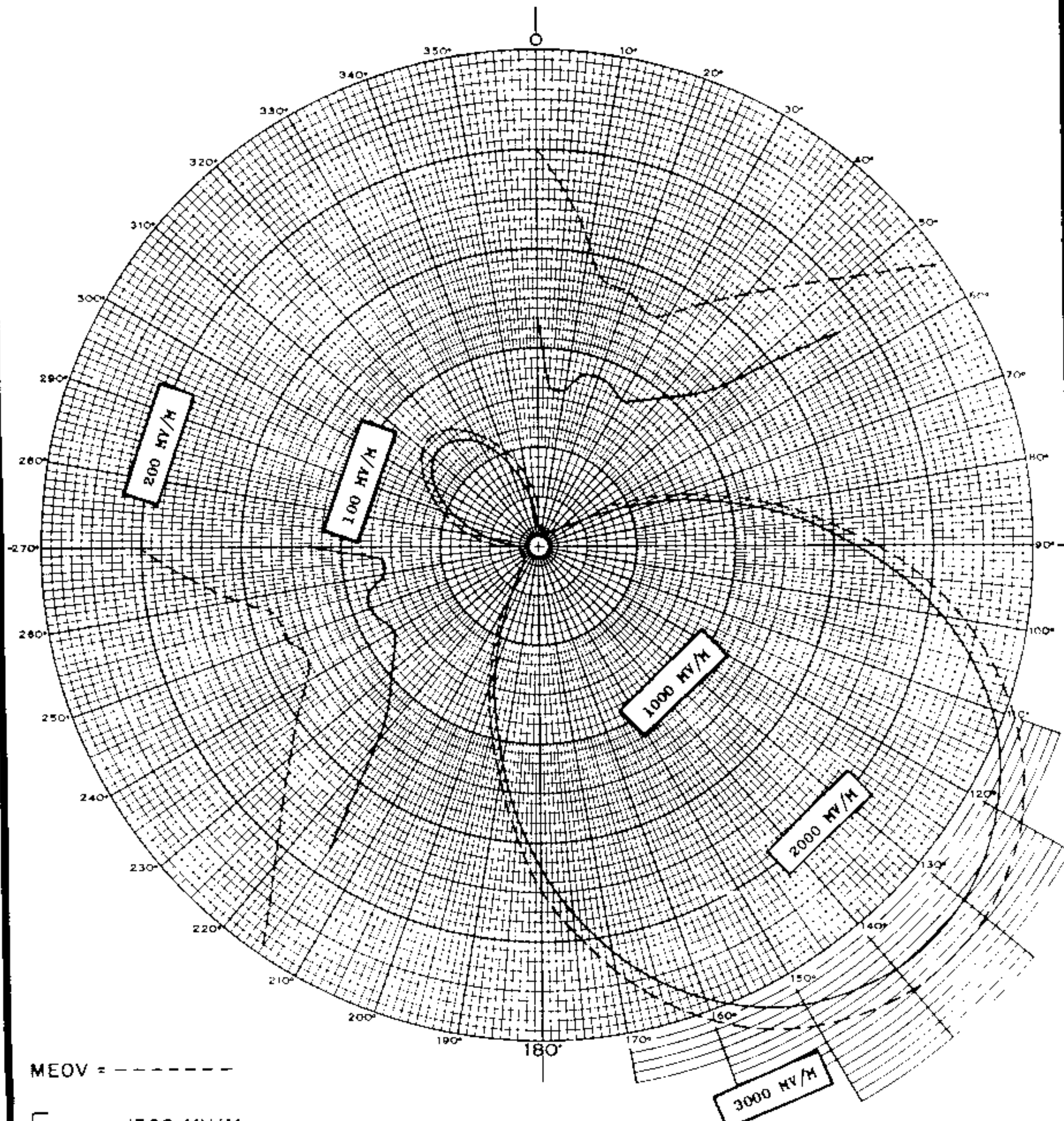
1110 kc

WZAM

Proposed Day
(7-28-69ct)

New; James River Broadcasting Corp.
Norfolk, Virginia

50kw, DA-D, D
1110 kc

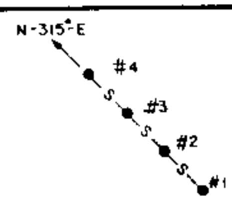


E_{RMS} = 1308 MV/M

LATITUDE 36°-57'-15"
LONGITUDE 76°-31'-06"

#1	1.000	0°
#2	1.987	151.18°
#3	1.539	304.01°
#4	0.4462	98.56°

ANTENNA PARAMETERS



S = 100° = 246.3 FEET
G = 89.3° = 220 FEET

FIGURE 2

PROPOSED HORIZONTAL PATTERN

JAMES RIVER BROADCASTING CORPORATION

NORFOLK, VIRGINIA

1110 KC 50 KW, DA-D

FCC File No. BP-17268
Accepted 6-27-69 Amended

New; James River Broadcasting Corp.
Norfolk, Virginia

1110 kc

XELEO

Description Sheet (2-28-69ct) | Station XELEO Leon, Guanajuato | 1kw,5kw-LS,DA-N,U,Class III 1110 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XELEO — Main Studio: Leon, Guanajuato

Frequency: 1110 kc/s — Power: 1kwN/5kwD

Notification List No. 250 — Date: October 16, 1968 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 21° 08' 00" West Longitude: 101° 40' 00"

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:	North	South
HEIGHT ABOVE INSULATORS:	221.47'	221.47' (90°)
PHASING:	+152°	0°
FIELD RATIO:	1	1

SPACING AND ORIENTATION: Adjacent elements are spaced 159.46' (65°) on a line bearing 61.2662° true.

GROUND SYSTEM: 90-221.47' equally spaced copper radials about each tower.

Predicted effective Night Field: 194 mv/m at rated power.

FCC Note: This supplementary data was transmitted by letter from Mexico dated February 12, 1969.

XELEO

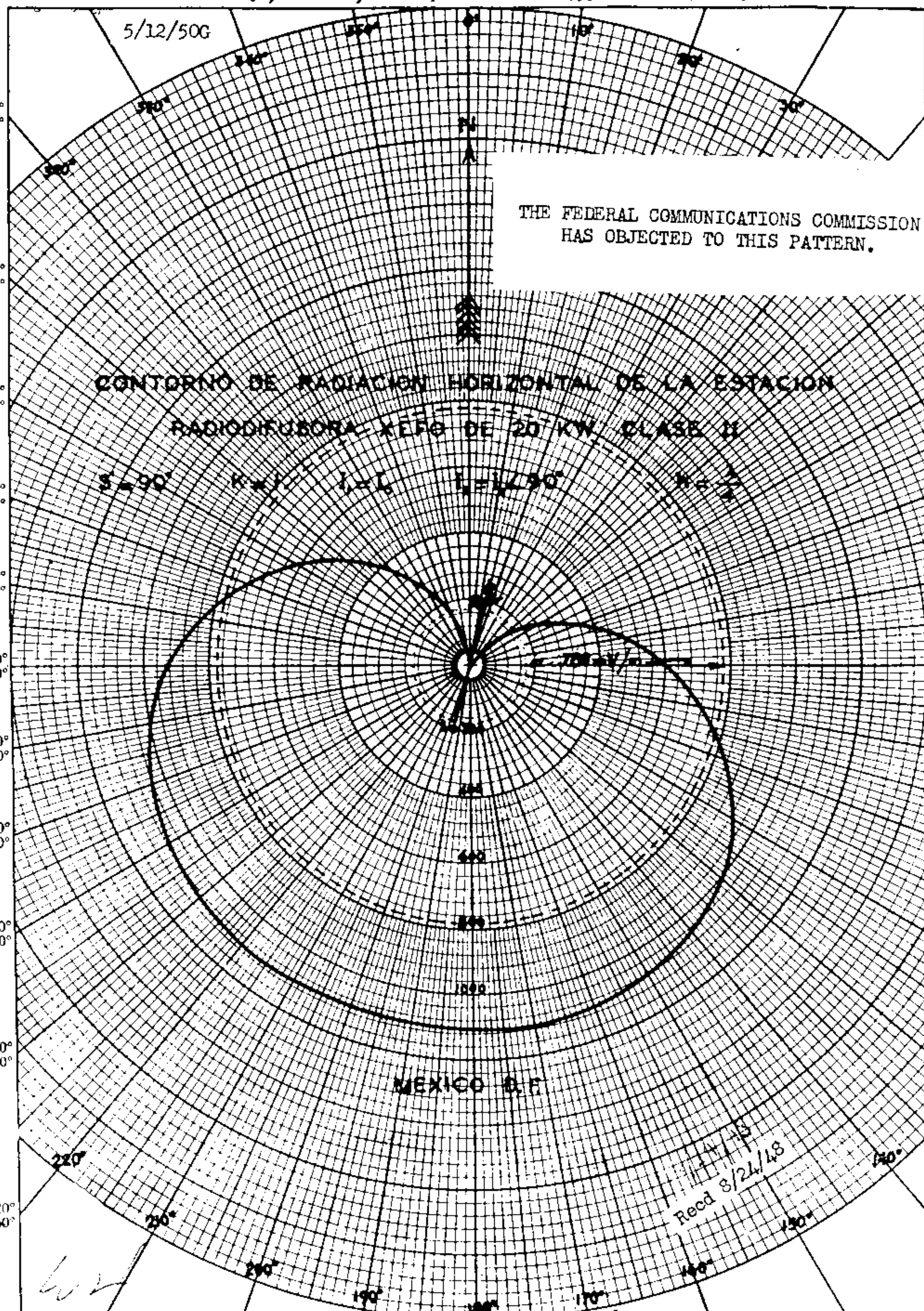
Horizontal Radiation Pattern for

XELEO Leon, Guanajuato 1110 kc/s
(Notification List No. 250, dated October 16, 1968)

FCC Note: The horizontal radiation pattern received for XELEO contained discrepancies which have precluded its distribution for public use. The Mexican Government is being advised of these discrepancies with a request for a corrected radiation pattern.

XERCN ~~XEQB~~

PROPOSED XEQB, MEXICO, D. F., MEXICO 20kw, DA 1110 kc



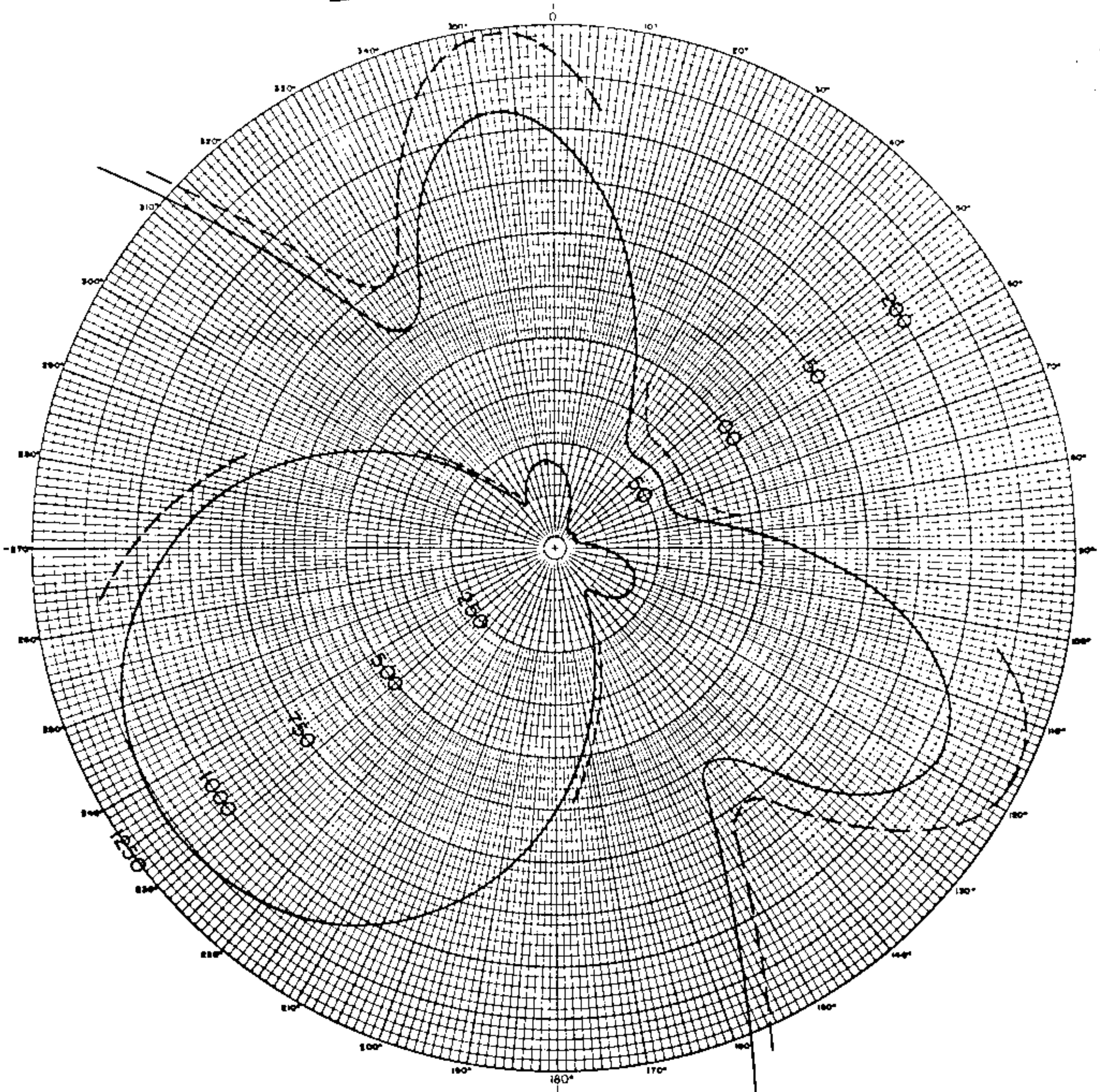
THE FEDERAL COMMUNICATIONS COMMISSION HAS OBJECTED TO THIS PATTERN.

XEQB, Mexico, D. F., Mexico 1110 kc

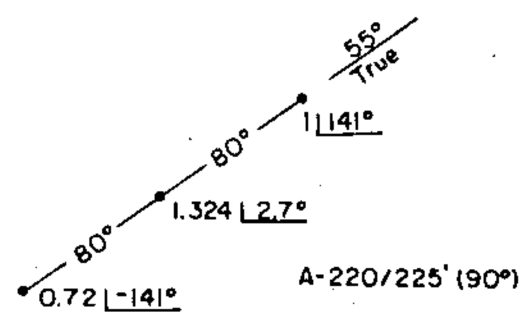
Proposed Day
(5-27-69ct)

New; Southeast Arkansas Radio, Inc.
Dermott, Arkansas

10kw,DA-D,D
1110 kc



HORIZONTAL RADIATION PATTERN



APPLICANT	Southeast Arkansas Radio, Inc.
LOCATION	Dermott, Arkansas
FREQUENCY	1110 KC/S
POWER	10,000 Watts
LATITUDE	33 DEG. 31 MIN. 42 SEC.
LONGITUDE	91 DEG. 28 MIN. 27 SEC.
WHEN USED	Daytime
R.M.S. FIELD	575 MV/M
DATE	1/20/69

RALPH J. BITZER

FCC File No.BP-18476
Accepted 5-9-69

New; Southeast Arkansas Radio, Inc.
Dermott, Arkansas

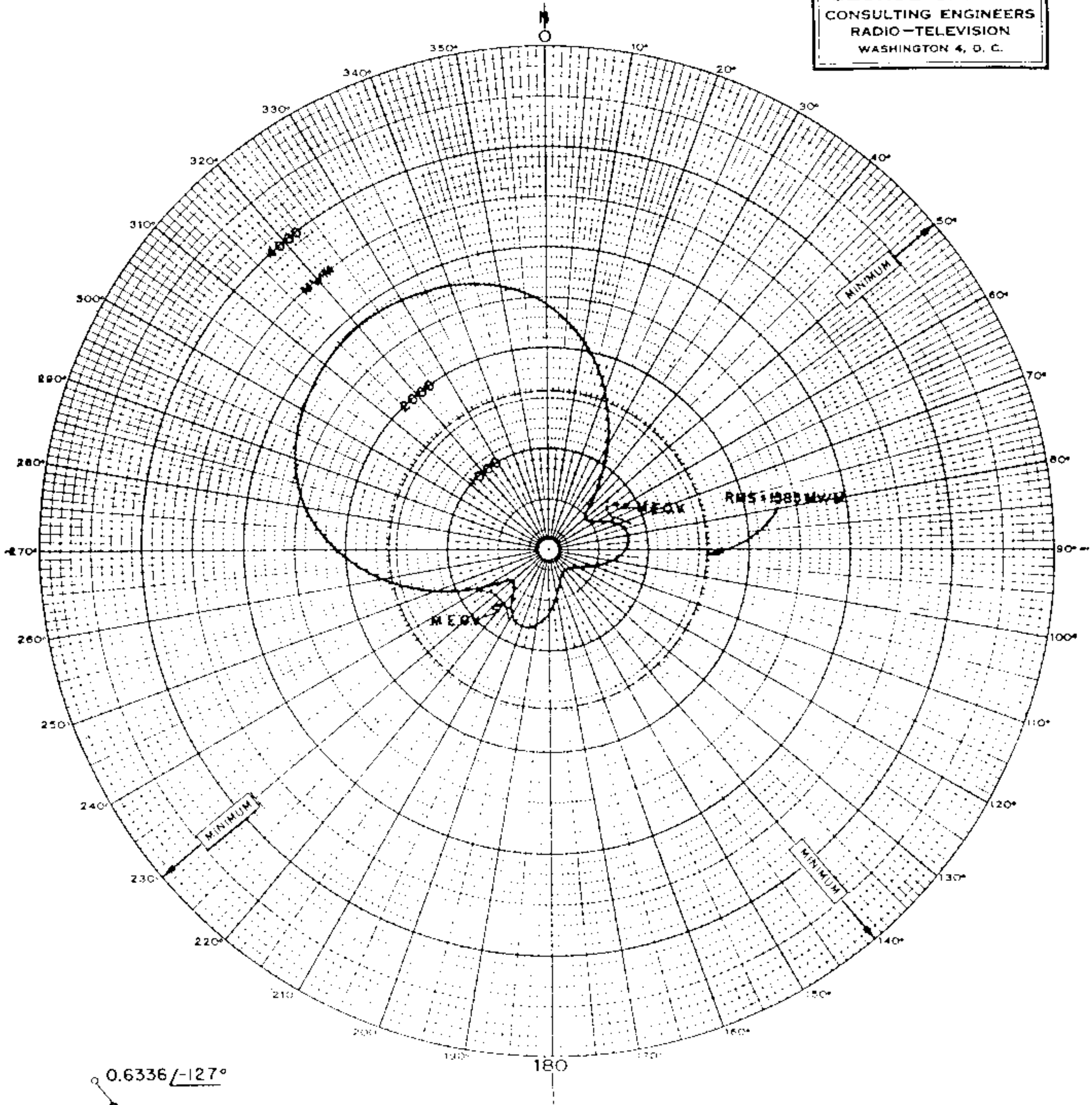
1110 kc

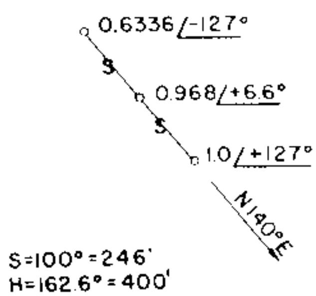
Proposed Day
(9-29-64ct)

New; Orange Radio, Inc.
Fullerton, California

10kw,50kw-LS,DA-2,U
1110 kc

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO—TELEVISION
WASHINGTON 4, D. C.





COMPUTED DAYTIME HORIZONTAL
PLANE RADIATION PATTERN
ORANGE RADIO, INC.
FULLERTON, CALIFORNIA
1110 KC - 10/50 KW - DA-2
MARCH 1964

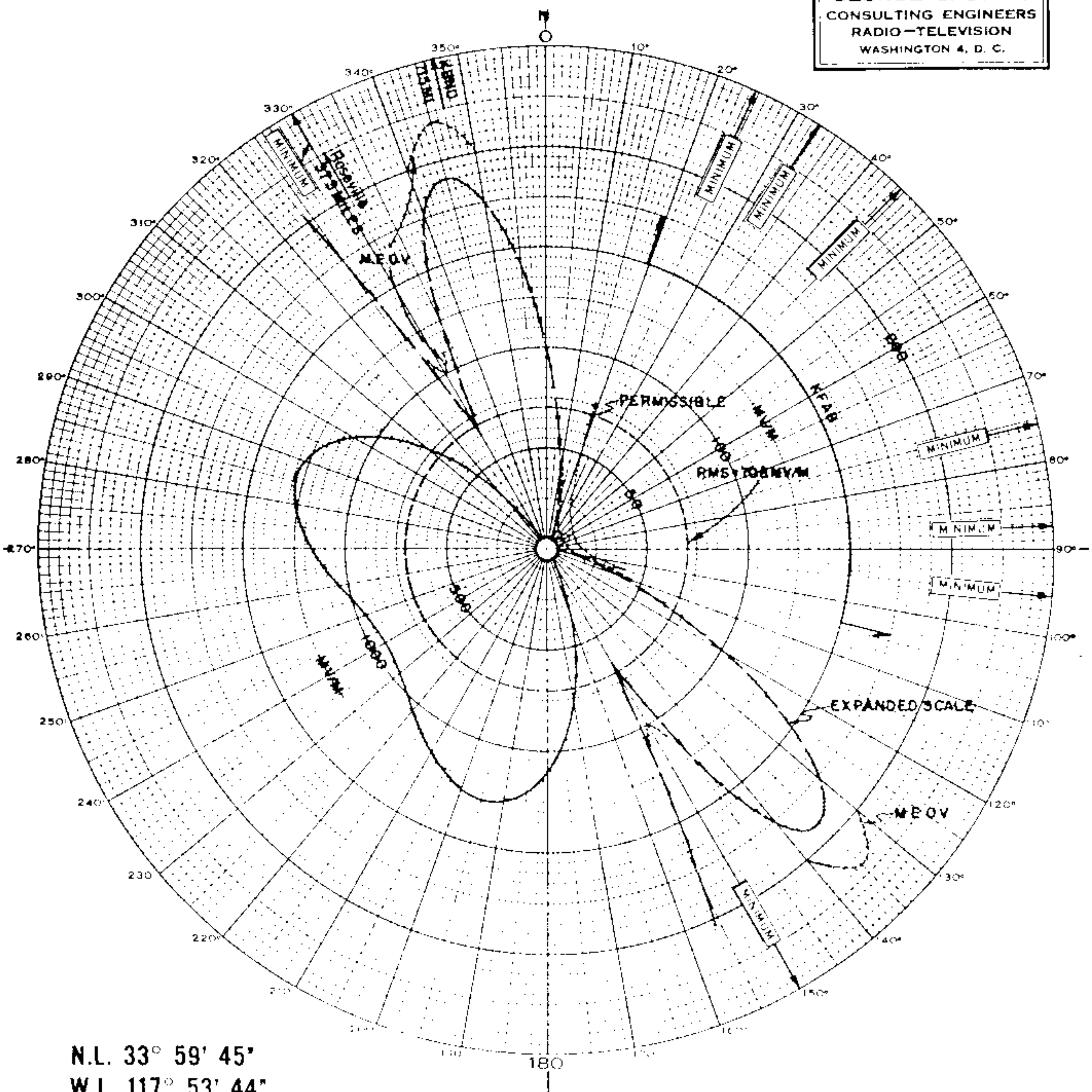
N.L. 33° 59' 45"
W.L. 117° 53' 44"

FCC File No.BP-16160
Accepted 7-29-64

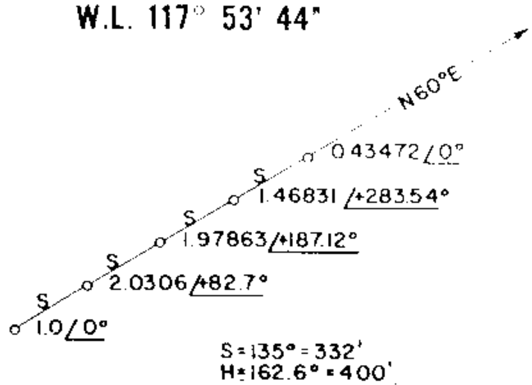
New; Orange Radio, Inc.
Fullerton, California

1110 kc

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO—TELEVISION
WASHINGTON 4, D. C.



N.L. 33° 59' 45"
W.L. 117° 53' 44"

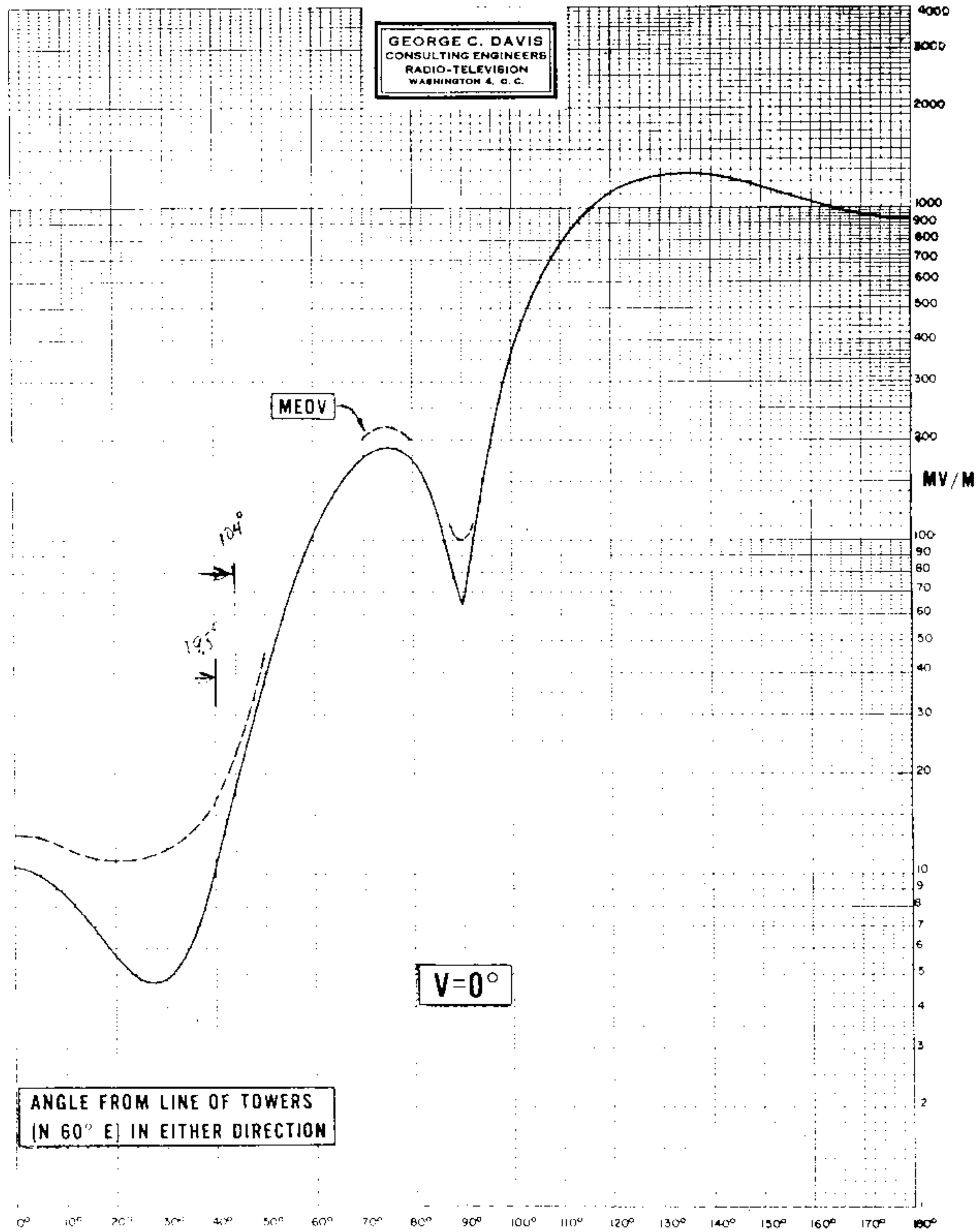


COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR NIGHTTIME OPERATION OF
ORANGE RADIO, INC.
FULLERTON, CALIFORNIA
1110 KC - 10 KW/50 KW - DA-2
MARCH 1964

10kw,50kw-LS,DA-2,U
1110 kc

New; Orange Radio, Inc.
Fullerton, California

Proposed Night Nulls
(9-29-64ct)



1110 kc

New; Orange Radio, Inc.
Fullerton, California

FCC File No.BP-16160
Accepted 7-29-64

COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR NIGHTTIME OPERATION OF
ORANGE RADIO, INC.
FULLERTON, CALIFORNIA
1110 KC - 10 KW/50 KW - DA-2
MARCH 1964

169

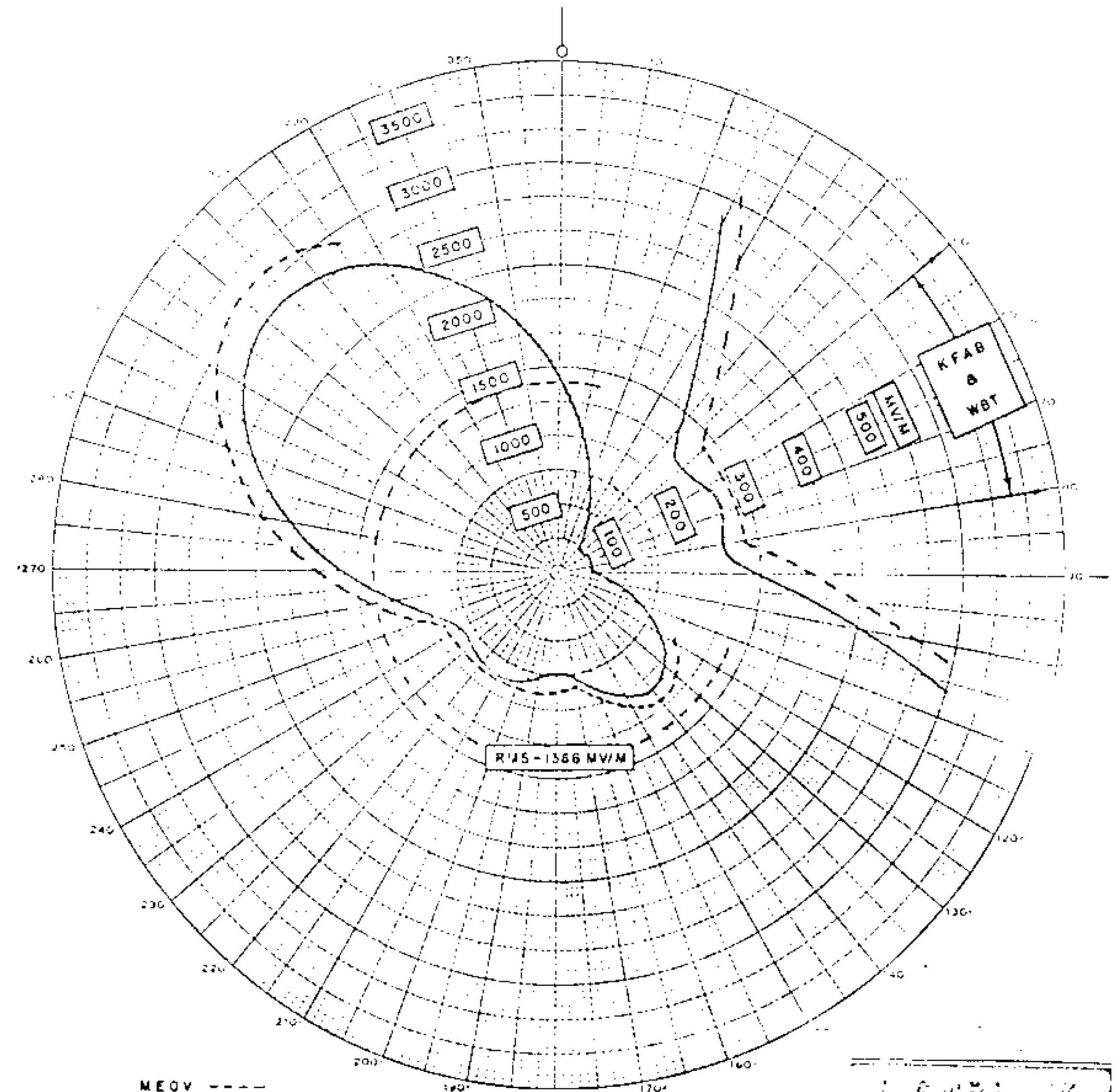
Proposed Day
(5-28-64ct)

New; Oak Knoll Bcstng. Corp.
Pasadena, California

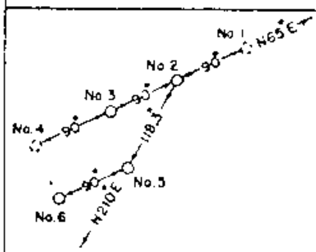
10kw,50kw-LS,DA-2,U
1110 kc

POLAR COORDINATE NO. 15 HP

INTERIM



TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	STATION DATA



Tower	Electrical Height		Spacing	Phasing		
1	180°	N65°E	180°	—	—	—
2	146°	N65°E	90°	+93.07°	1169.9	1.150
3	146°	0	0	0	1017.3	1.000
4	90°	N245°E	90°	—	—	—
5	90°	N160.75°E	68.2°	+165.85°	731.4	0.719
6	90	N210°E	118.3	+72.78	635.8	0.625

Elev. Angle	Elevation RMS Field
0	1386

CALL	KXLA
FREQUENCY	1110
POWER	50-D/10-N
TIME OF OPERATION	U
TYPE OF OPERATION	DA-2
DAYTIME TOWERS	4
NIGHTTIME TOWERS	4
NO. RADIALS PER TOWER	120
LENGTH OF RADIALS	SEE SKETCH
GROUND SCREEN DIMENSION	
LAT	34° 02 13
LONG	118° 03 19
SUPERSEDES	561204
PREPARED	570628

P. ADAIR ENGINEERING

FCC File No.BPI-1
Accepted 4-22-64

New; Oak Knoll Bcstng. Corp.
Pasadena, California

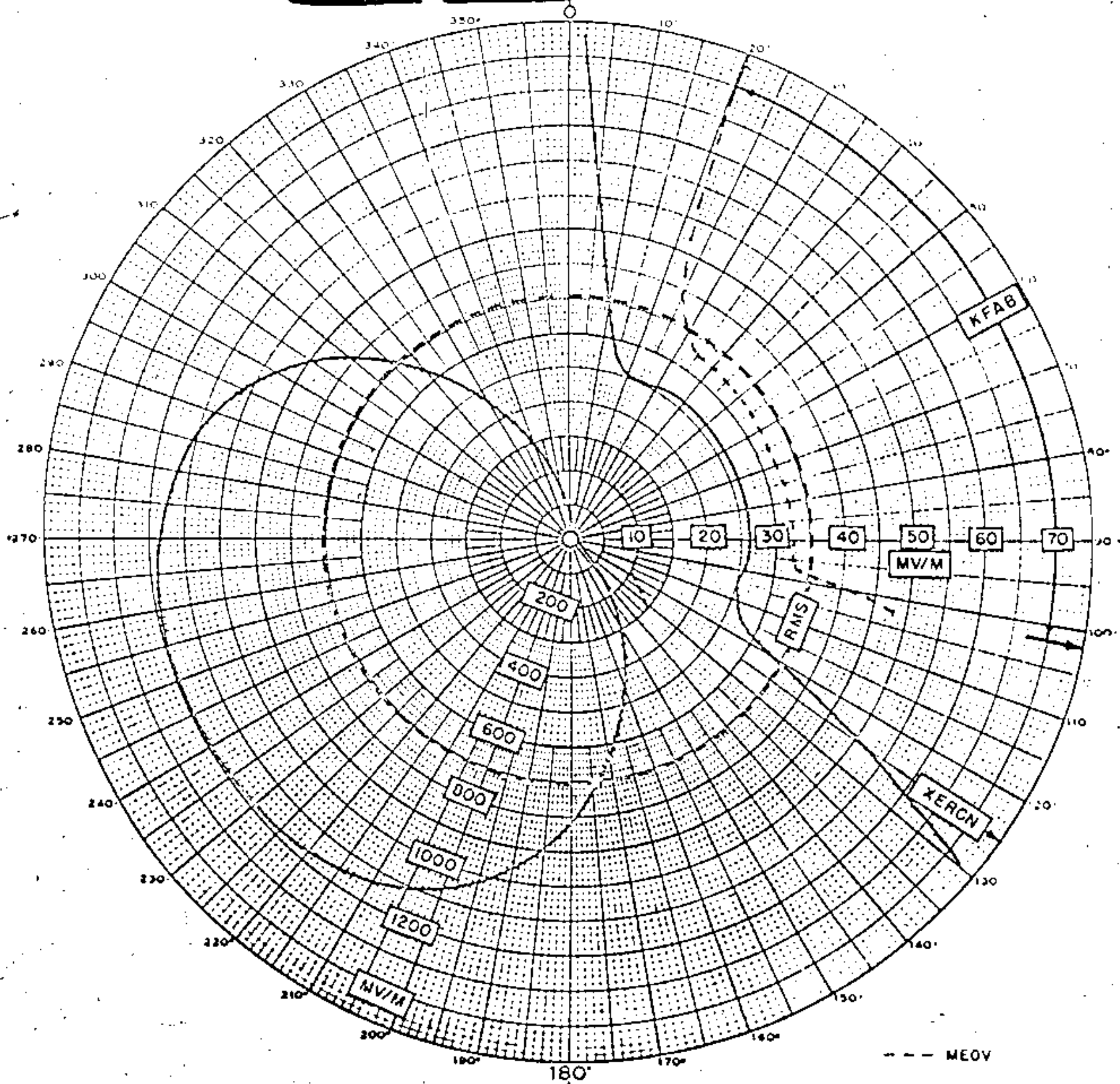
1110 kc

Proposed Night
(5-28-64ct)

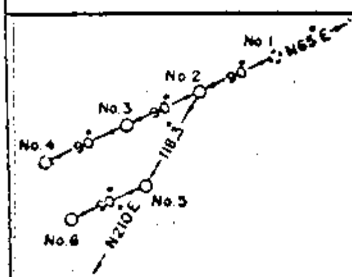
New; Oak Knoll Bcstng. Corp.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc

INTERIM



TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

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 Eθ
1	180°	N65°E	180°	283.59		1.090	0	707.6
2	146°	N65 E	90	189.03		3.074	10	
3	146°	0	0	94.55		3.167	20	
4	90°	N245E	90°	0	143.52	1.000	30	
5	90°	N160.75E	68.2°				40	
6	90°	N210E	118.3				50	
7							60	
8							70	
9							80	
10								

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☒

STATION DATA

CALL	KALA
FREQUENCY	1110 kc
POWER	50-D/10-N kw
TIME OF OPERATION	U
TYPE OF OPERATION	DA-2
DAYTIME NO. TOWERS	4
NIGHTTIME NO. TOWERS	4
NO. RADIALS PER TOWER	120
LENGTH OF RADIALS	SEE SKETCH
GROUND SCREEN DIMENSION	
LAT	34° 02 13
LONG	118° 03 10
SUPERSEDES	
PATTERN NO.	

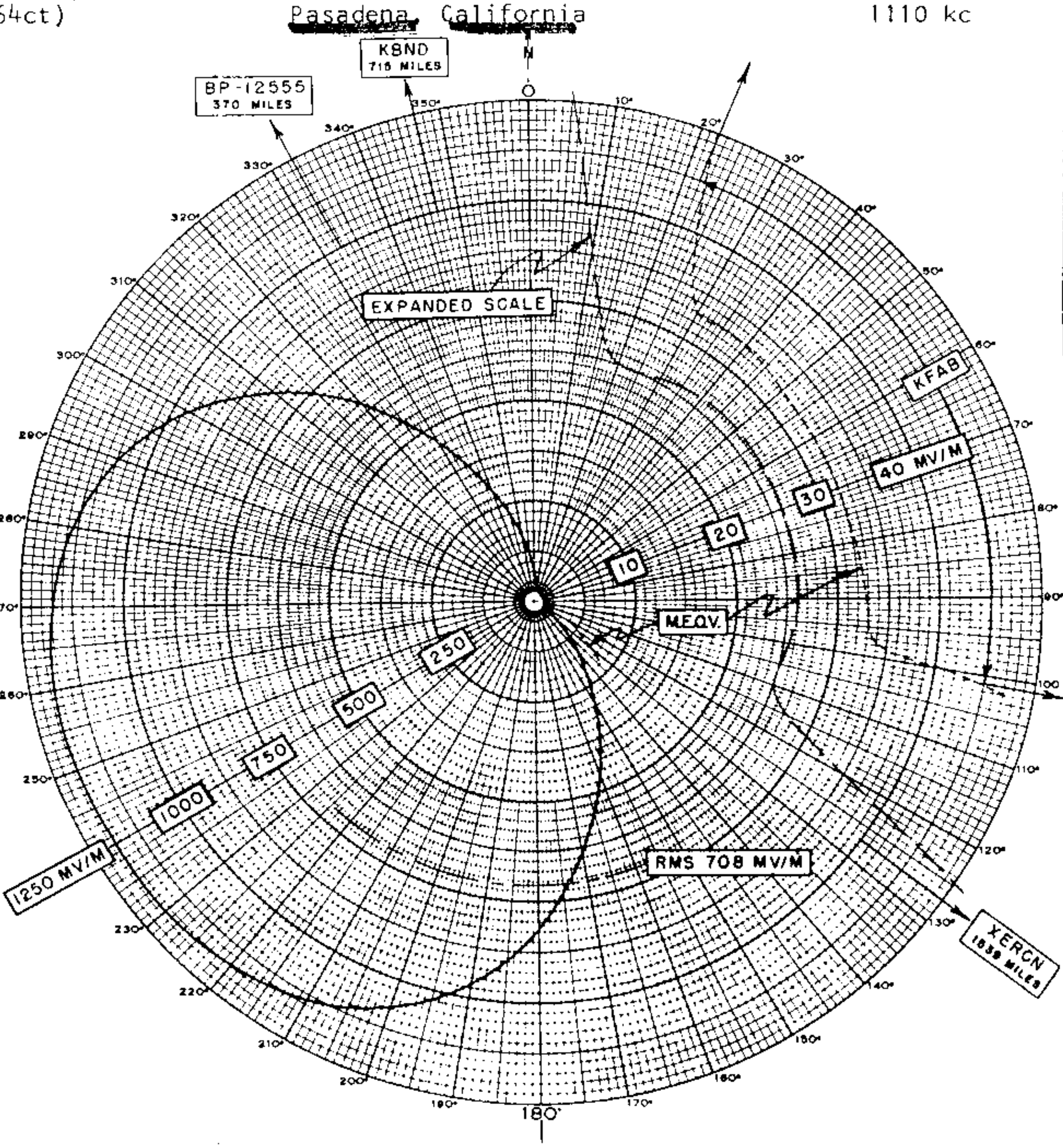
ELEVEN - TEN BROADCASTING CORPORATION
Pasadena, California

FIGURE 4

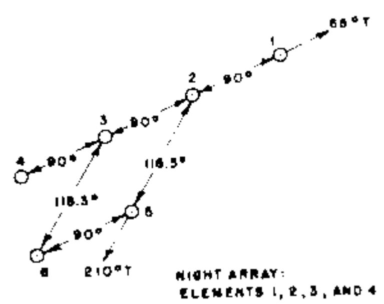
FCC File No.BPI-1
Accepted 4-22-64

New; Oak Knoll Bcstng. Corp.
Pasadena, California

1110 kc



NIGHTTIME PATTERN



NIGHT ARRAY:
ELEMENTS 1, 2, 3, AND 4

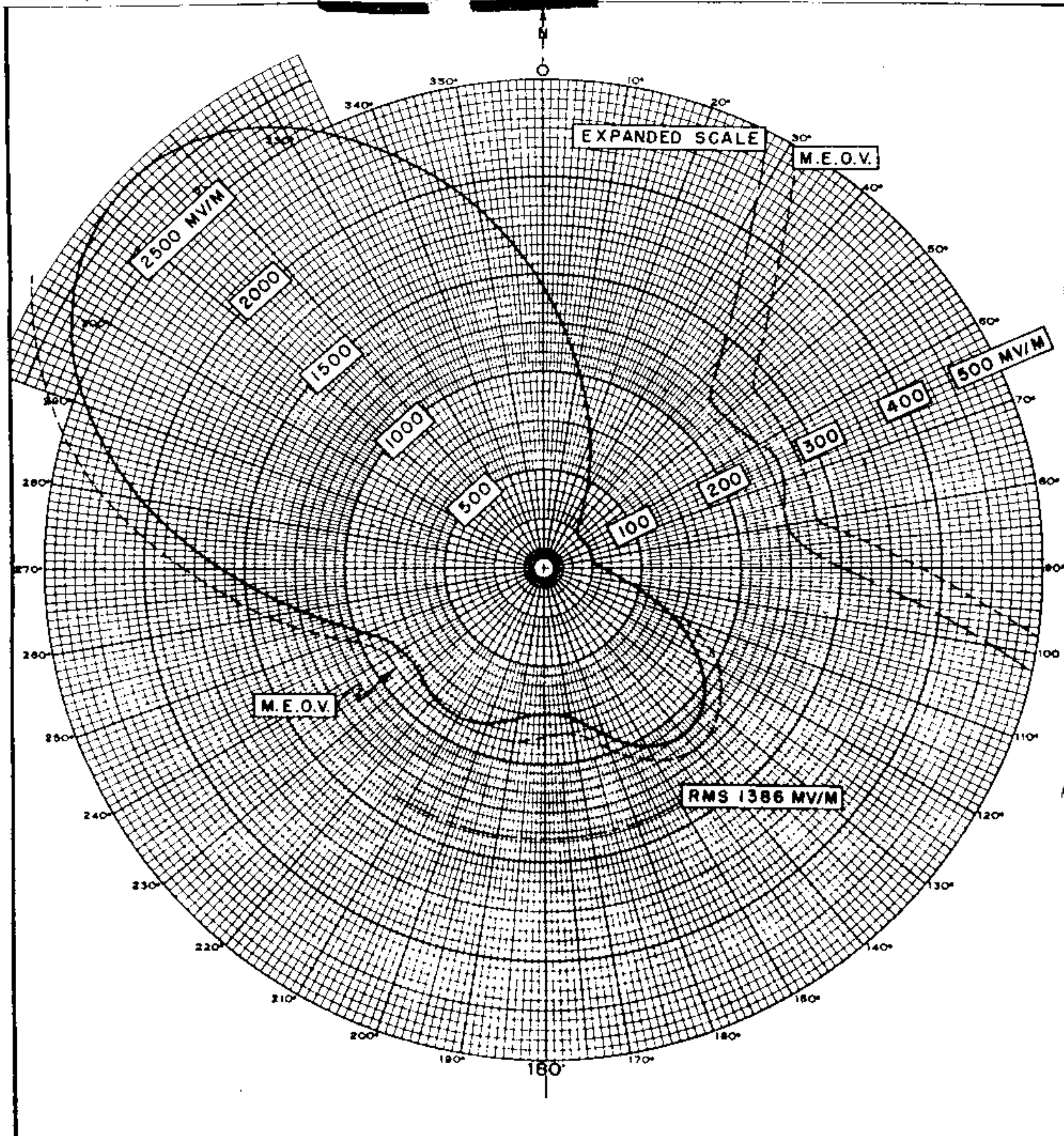
DAY ARRAY:
ELEMENTS 2, 3, 5, AND 6

LATITUDE 34° 02' 13" North
LONGITUDE 118° 03' 10" West

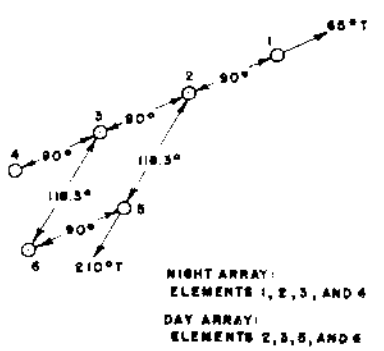
ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	–	–	283.58	1.090		180
2	245	90	189.06	3.074		146
3	245	90	94.53	3.167		146
4	245	90	0	1.000		90

PREPARED BY
THE FIRM OF
A. EARL CULLUM, JR.
CONSULTING ENGINEERS

GOODSON – TODMAN
BROADCASTING, INC.
1110 KC 10 KW 50 KW-LS DA-2
640325.2 FIGURE 4A



DAYTIME PATTERN



LATITUDE 34° 02' 13" North
LONGITUDE 118° 03' 10" West

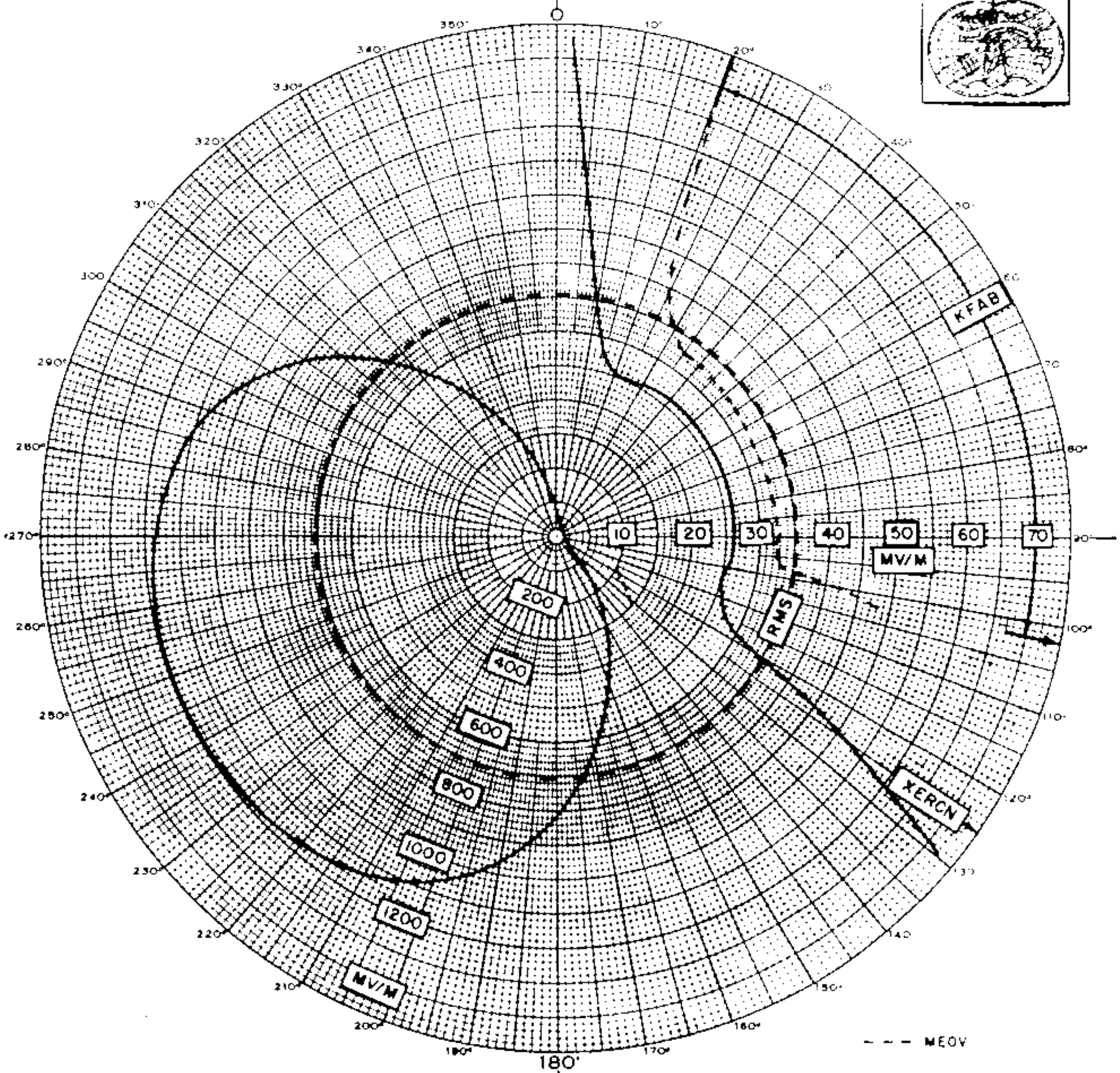
ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
2	65.0	90	93.07	1.15		146
3	0	0	0	1.00		146
5	160.6	68.2	165.85	0.72		90
6	210.0	118.3	72.78	0.63		90

PREPARED BY
THE FIRM OF
A. EARL CULLUM, JR.
CONSULTING ENGINEERS

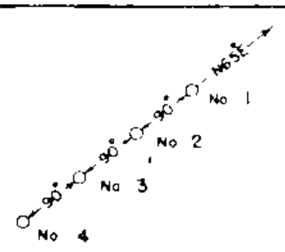
GOODSON – TODMAN
BROADCASTING, INC.
1110 KC 10 KW 50 KW-LS DA-2
640325.1 FIGURE 4

Proposed Night
(5-28-64ct)

New; California Regional Bcstng. Corp.10kw,50kw-LS,DA-2,U
Pasadena, California 1110 kc



TOWER PLACEMENT SKETCH



PATTERN PARAMETERS							
TOWER No	ELECTRICAL HEIGHT	TRUE TOWER ORIENTATION	SPACING	PHASING	HORIZONTAL FIELD	FIELD RATIO
1	180	N65E	270	283.58		1.090
2	146	N65E	180	189.06		3.074
3	146	N65E	90	94.53		3.167
4	90	—	—	0	143.52	1.000
5						
6						
7						
8						
9						
10						

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☒

ELEV. ANGLE	ELEVATION RMS FIELD
0	707.6
10	
20	
30	
40	
50	
60	
70	
80	

STATION DATA	
CALL	KXLA
FREQUENCY	1110 kc
POWER	50-D 10-N kw
TIME OF OPERATION	U
TYPE OF OPERATION	DA 2
DAYTIME TOWERS	4
NIGHTTIME TOWERS	4
NO RADIALS PER TOWER	120
LENGTH OF RADIALS	SEE SKETCH
GROUND SCREEN DIMENSION	SEE SKETCH
LAT	34° 02' 13"
LONG	118° 03' 10"
SUPERSEDES	5.0227
PATTERN No	550207

CALIFORNIA REGIONAL BROADCASTING CORPORATION
PASADENA, CALIFORNIA

FIGURE 1
DATE MARCH 23, 64

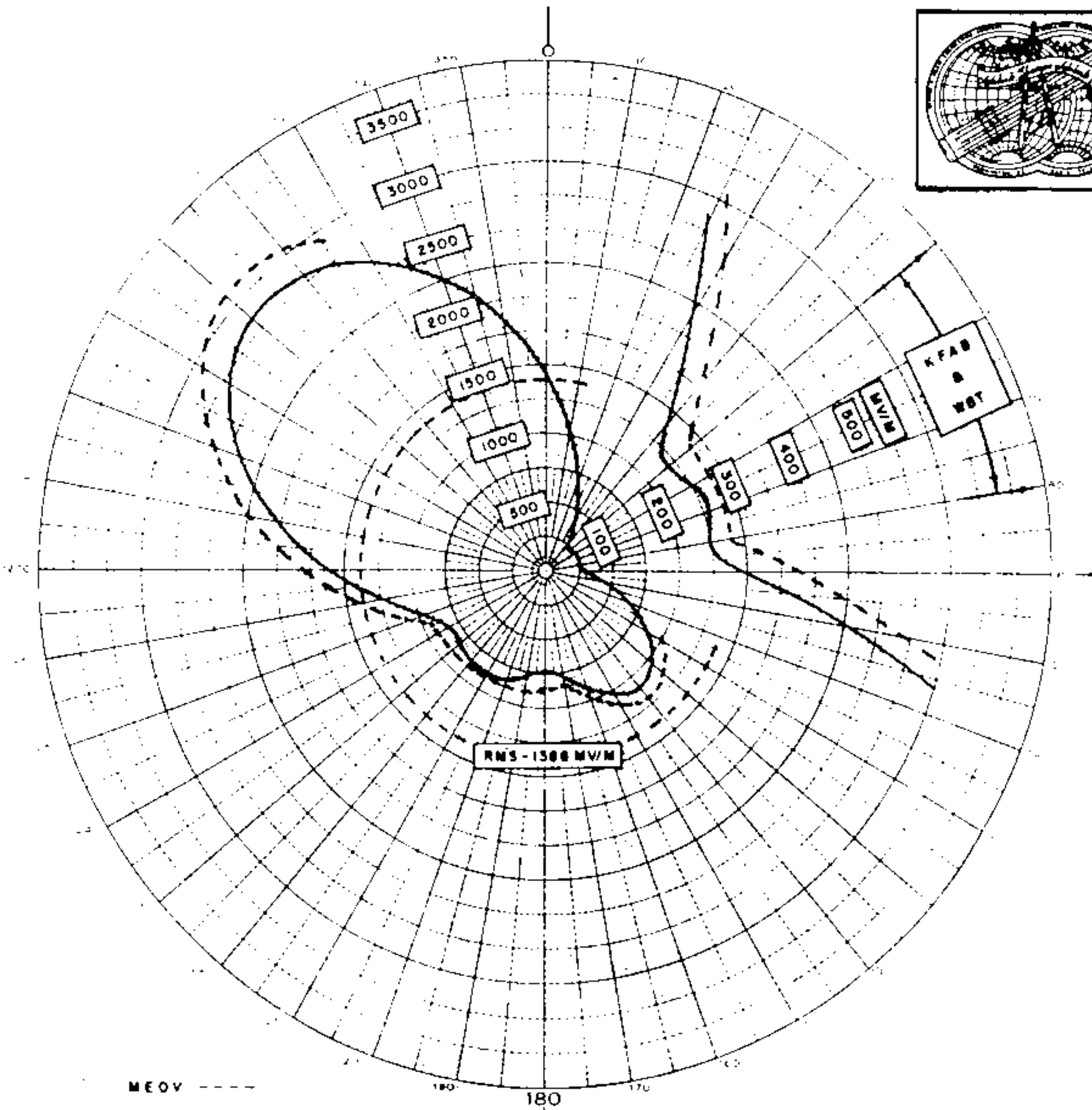
CONSULTING ENGINEERS GEORGE C. DAVIS ENGINEERING COMPANY WASHINGTON, D.C.

FCC File No.BPI-3
Accepted 4-22-64

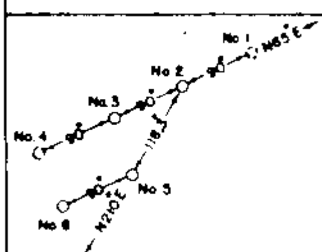
New; California Regional Bcstng. Corp.
Pasadena, California 1110 kc

Proposed Day
(5-28-64ct)

New; California Regional Bcstng. Corp.10kw,50kw-LS,DA-2,U
Pasadena, California 1110 kc



TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

1	180°	N65°E	180°	—	—	—
2	146°	N65°E	90°	+93.07°	1169.9	1.150
3	146°	0	0	0°	1017.3	1.000
4	90°	N245°E	90°	—	—	—
5	90°	N160.75°E	68.2°	+163.85°	731.4	0.719
6	90°	N210°E	116.3	+72.70°	635.8	0.625

1386

STATION DATA

KRLA
1110
50-0/10-N
U
DA-2
4
4
120
SEE SKETCH
34 02 13
118 05 10
561204
570628

CALIFORNIA REGIONAL BROADCASTING CORPORATION
PASADENA, CALIFORNIA

FIGURE 4

DATE MARCH 23,64

CONSULTING ENGINEERS GEORGE P. ADAIR ENGINEERING COMPANY WASHINGTON, D. C.

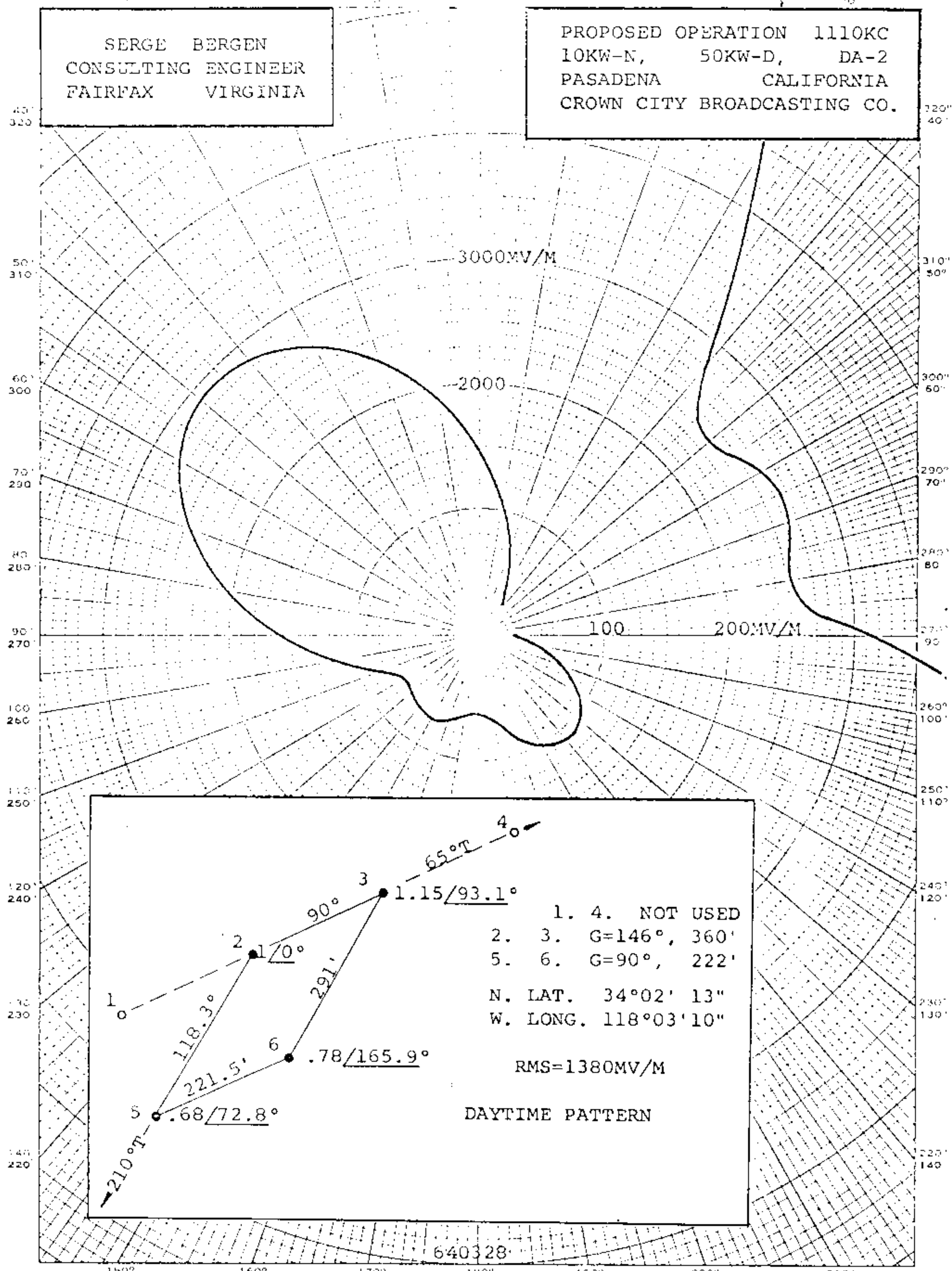
FCC File No.BPI-3
Accepted 4-22-64

New; California Regional Bcstng. Corp.
Pasadena, California 1110 kc

Proposed Day
(5-28-64ct)

New; Crown City Bcstng. Co.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc



FCC File No.BPI-4
Accepted 4-22-64

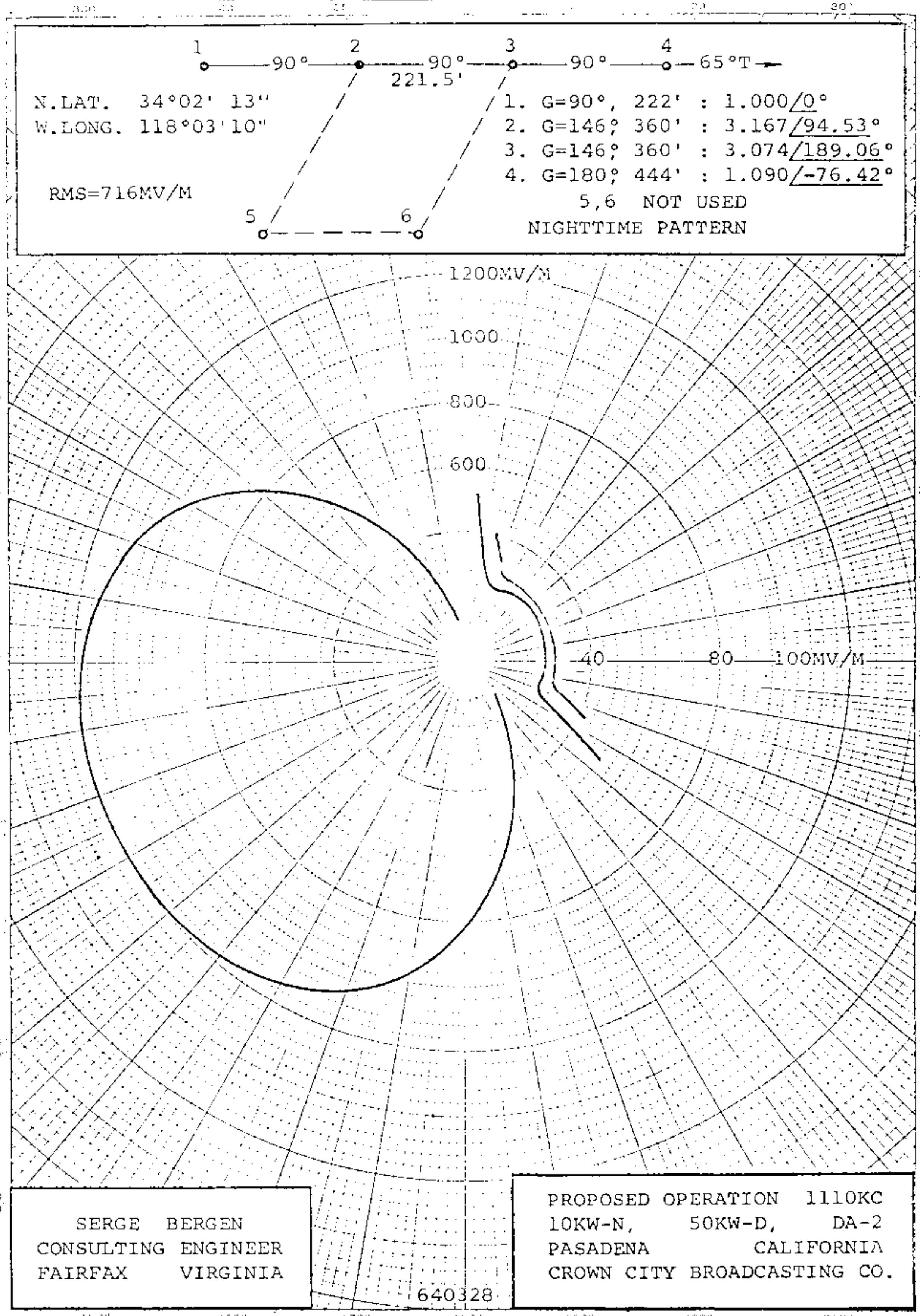
New; Crown City Bcstng. Co.
Pasadena, California

1110 kc

Proposed Night
(5-28-64ct)

New; Crown City Bcstng. Co.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc



FCC File No.BPI-4
Accepted 4-22-64

New; Crown City Bcstng. Co.
Pasadena, California

1110 kc

Proposed Day
(4-28-65ct)

New; KFOX, Inc.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc

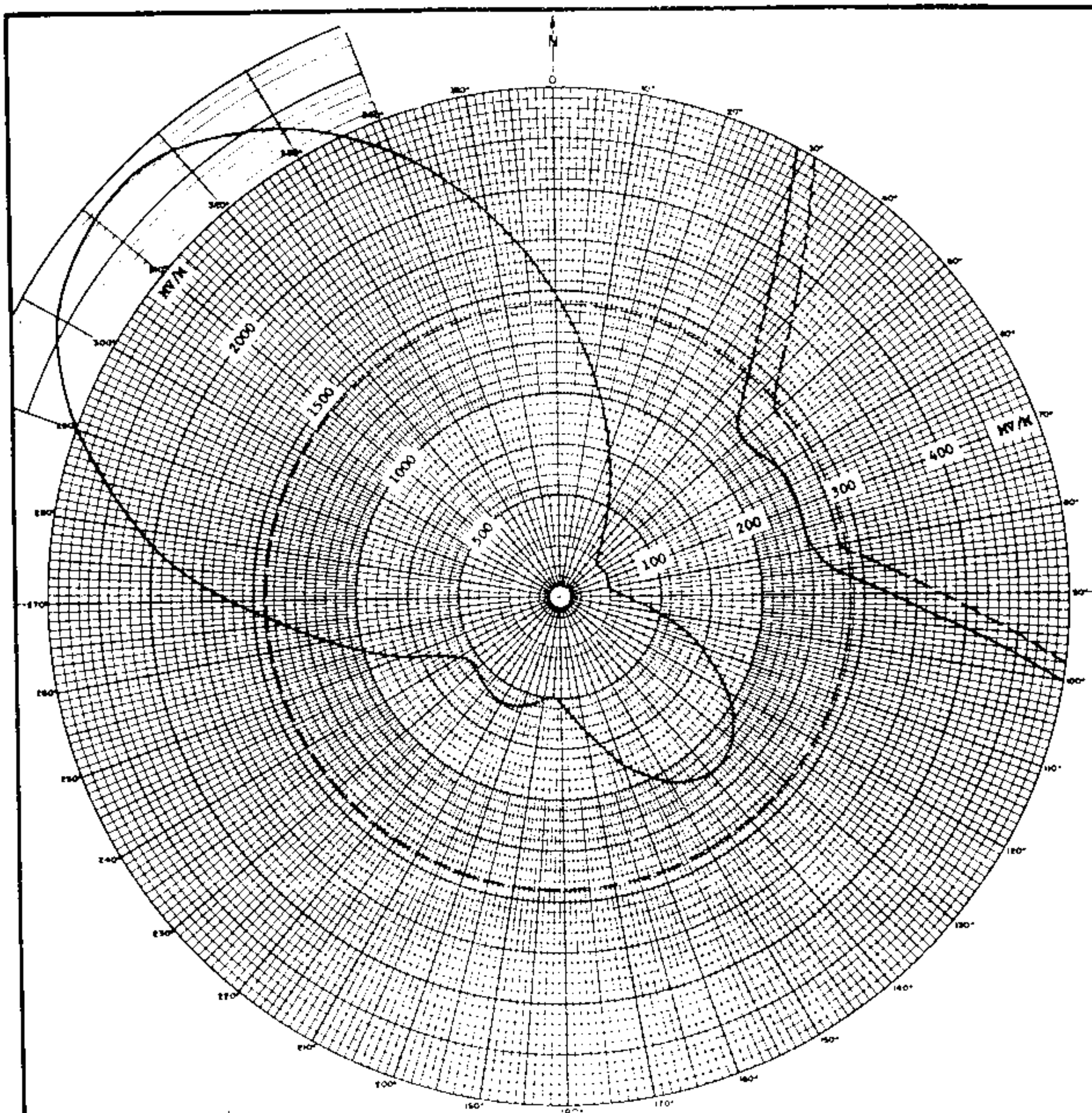
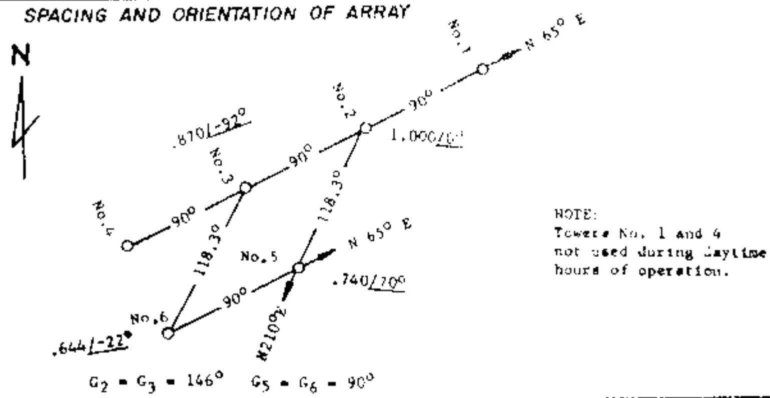


FIGURE 1

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION OF ARRAY



NOTE:
Towers No. 1 and 4 not used during daytime hours of operation.

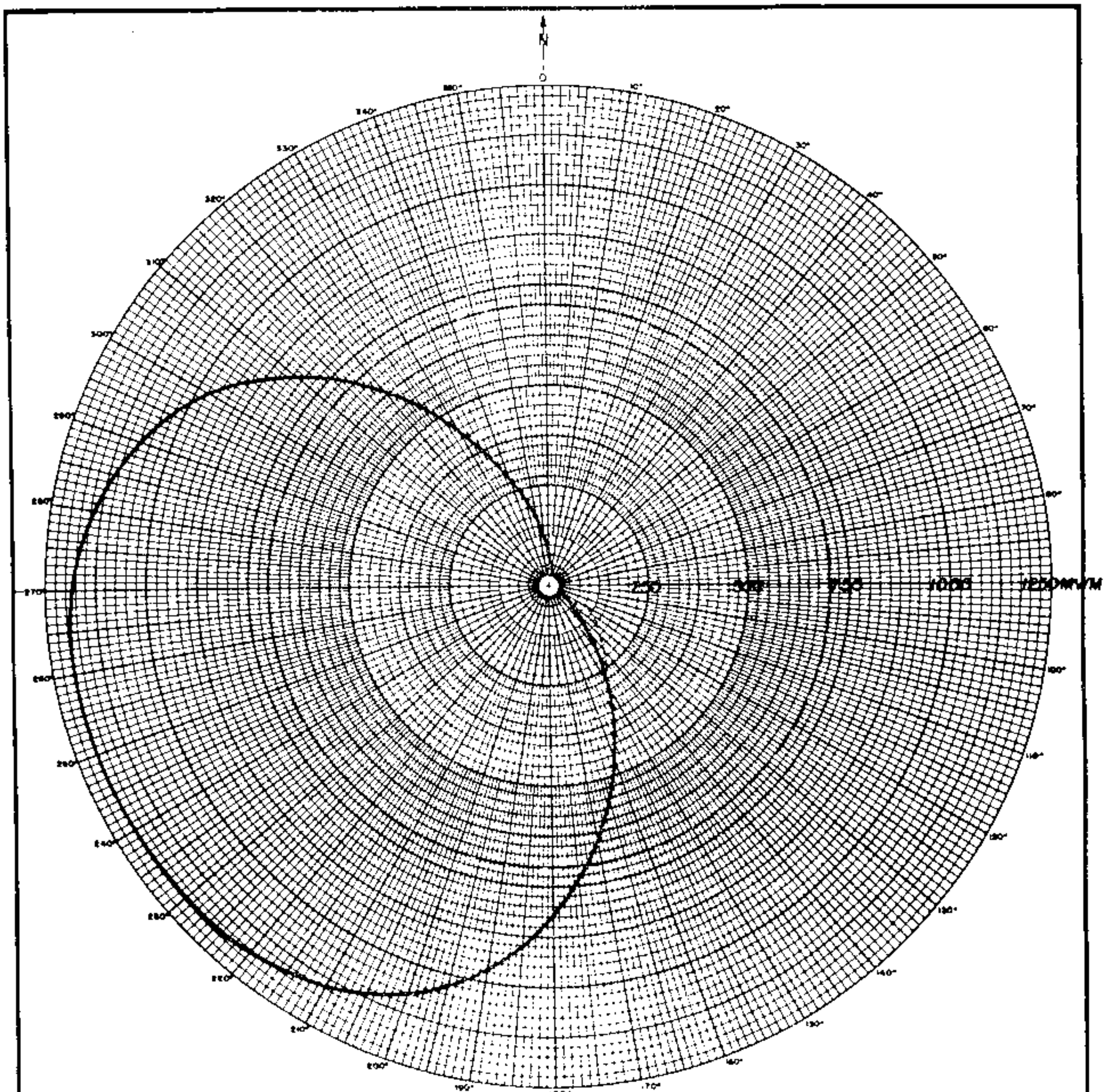
APPLICANT	KFOX, INC.
LOCATION	PASADENA, CALIFORNIA
FREQUENCY	1110 KC/S
POWER	50 KW
LATITUDE	34 DEG 02 MIN 13 SEC
LONGITUDE	118 DEG 03 MIN 10 SEC
WHEN USED	DAYTIME
RMS FIELD	1386 MV/M
DATE	MARCH 1965

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

FCC File No. BP-16149
Accepted 4-12-65 Amended

New; KFOX, Inc.
Pasadena, California

1110 kc

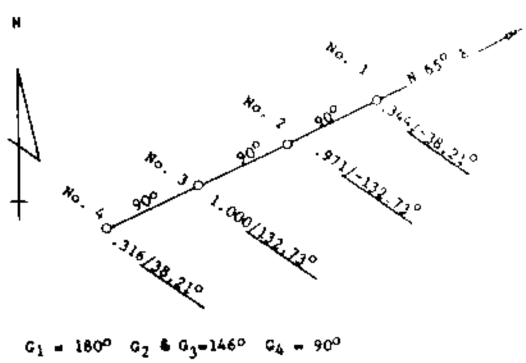


--- RMS FIELD

FIGURE 3-A

HORIZONTAL RADIATION PATTERN

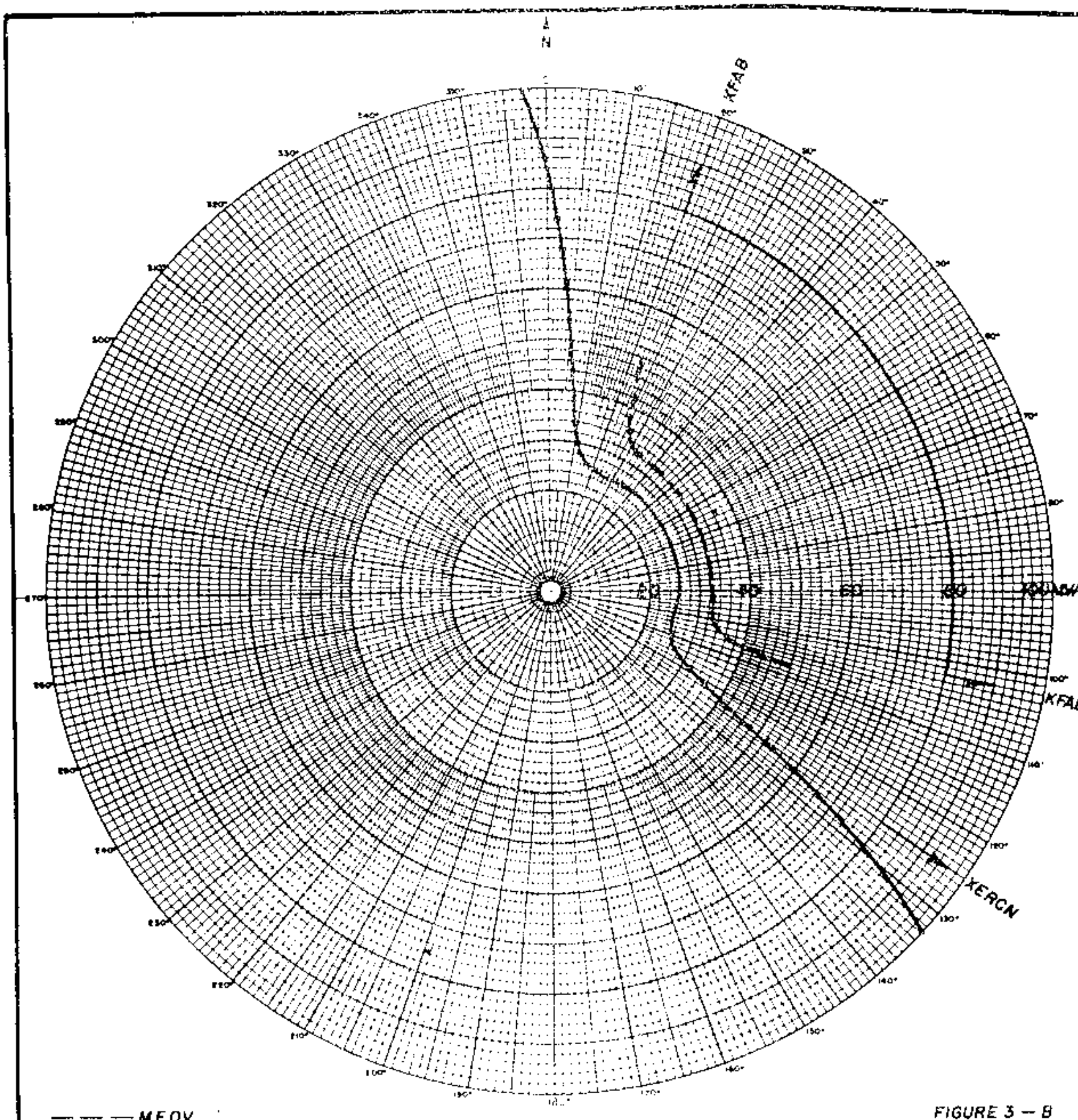
SPACING AND ORIENTATION OF ARRAY



$G_1 = 180°$ G_2 & $G_3 = 146°$ $G_4 = 90°$

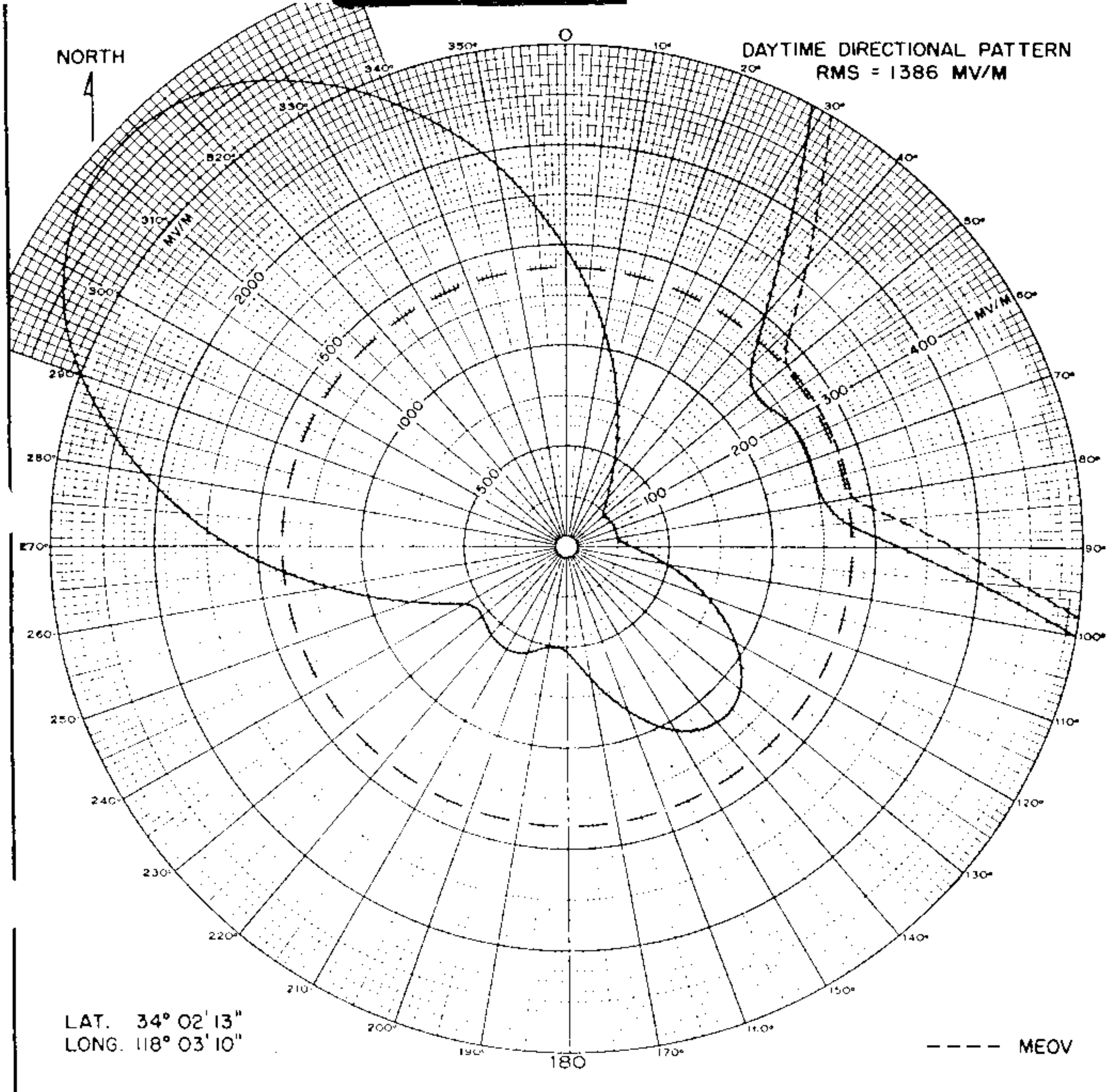
APPLICANT :	KFOX, Inc.
LOCATION :	Pasadena, California
FREQUENCY :	1110 KC/S
POWER :	10 KW
LATITUDE :	34 DEG 02 MIN 13 SEC.
LONGITUDE :	118 DEG. 03 MIN 10 SEC.
WHEN USED :	Nighttime
R M S FIELD	708 MV/M
DATE	MARCH 1965

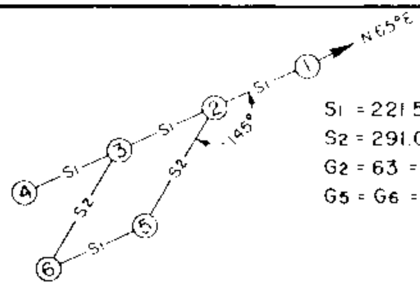
RAYMOND E. ROHRER & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.



EXPANDED VIEW

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





S1 = 221.5' = 96°
S2 = 291.0' = 118.3°
G2 = 63 = 360' = 146°
G5 = G6 = 222' = 90°

DAYTIME THEORETICAL ANTENNA PARAMETERS

TOWER	FIELD	PHASE
2	1.000	0°
3	0.870	− 92°
5	0.740	+ 70°
6	0.644	− 22°

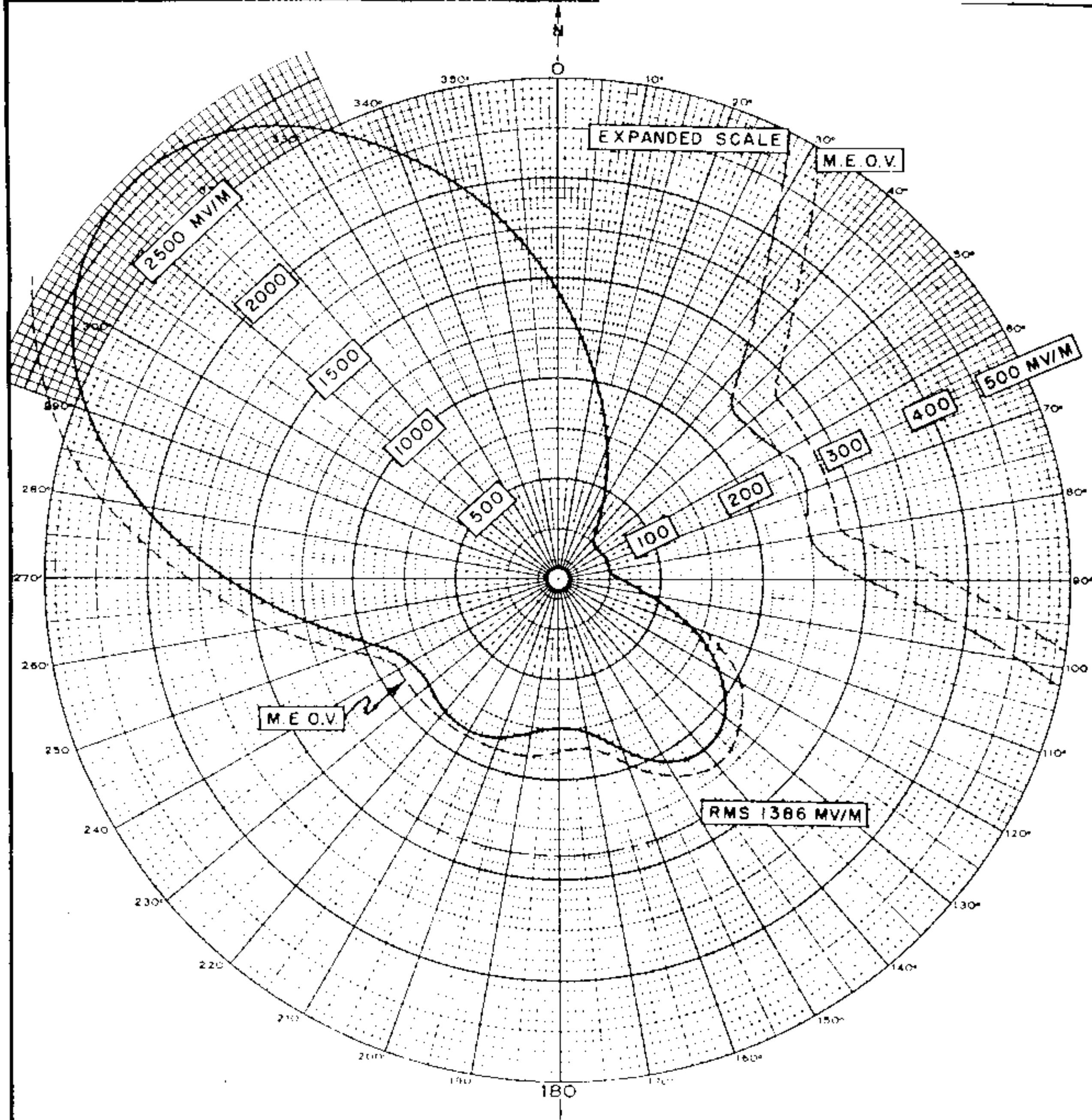
PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

GOODSON-TODMAN BROADCASTING, INC.
1110 KC 10 KW 50 KW-LS DA-2
640527 FIGURE 1

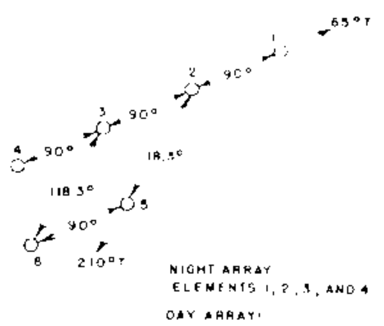
Proposed Day
(9-29-64ct)

New; Goodson-Todman B/cg, Inc.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc



DAYTIME PATTERN



34° 02' 13" North
118° 03' 10" West

[illegible] NUMBER	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	65 0	90	93 07	1 15	221.5	146
3	0	0	0	1 00		146
5	160 8	68 2	165 85	0 72	167 8	90
6	210 0	118 3	72.78	0 63	291 0	90

PREPARED BY
THE FIRM OF
A. EARL CULLUM, JR.
CONSULTING ENGINEERS

GOODSON - TODMAN
BROADCASTING, INC.
1110 KC 10 KW 50 KW-LS DA-2
640325.1 (REVISED) FIGURE 4

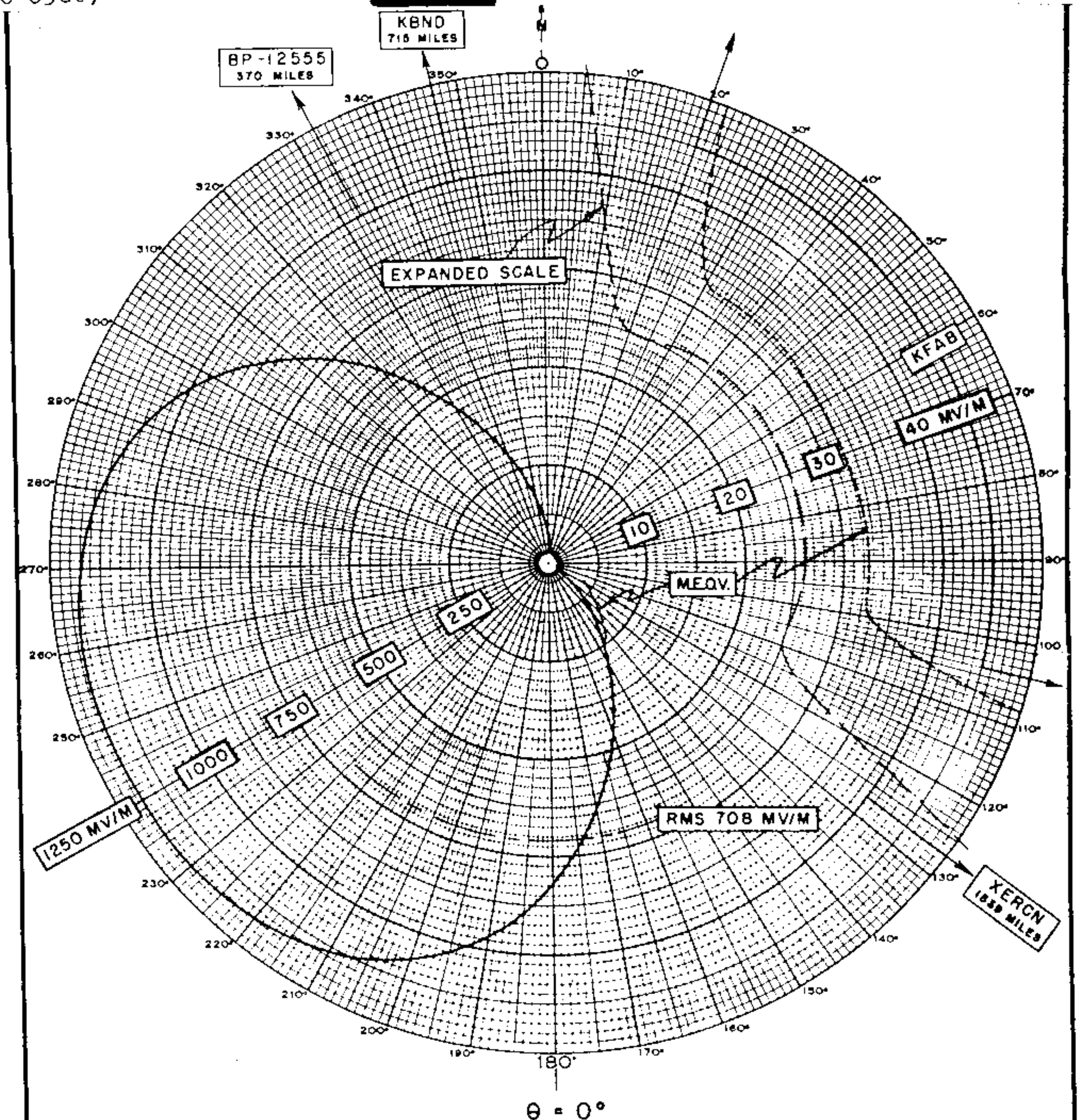
FCC File No. BP-16159
Accepted 7-29-64

New; Goodson-Todman B/cg, Inc.
Pasadena, California

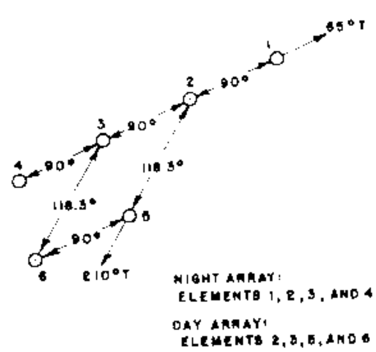
1110 kc

Proposed Night
(4-28-65ct)

New; Goodson-Todman B/cg, Inc. 10kw,50kw-LS,DA-2,U
Pasadena, California 1110 kc



NIGHTTIME PATTERN



LATITUDE 34° 02' 13" North
LONGITUDE 118° 03' 10" West

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	SPACING FEET	HEIGHT DEG
1	–	–	283.58	1.090		180
2	245	90	189.06	3.074	221.5	146
3	245	90	94.53	3.167	221.5	146
4	245	90	0	1.000	221.5	90

PREPARED BY THE FIRM OF
A. EARL CULLUM, JR.
CONSULTING ENGINEERS

GOODSON-TODMAN
BROADCASTING, INC.
1110 KC 10 KW 50 KW DA-2
650310 2 FIGURE 4A

FCC File No. BP-16159
Accepted 4-12-65 Amended

New; Goodson-Todman B/cg, Inc.
Pasadena, California 1110 kc

Proposed Day New; Bible Inst. of Los Angeles, Inc. 10kw,50kw-LS,DA-2,U
(4-28-65ct) Pasadena, California 1110 kc

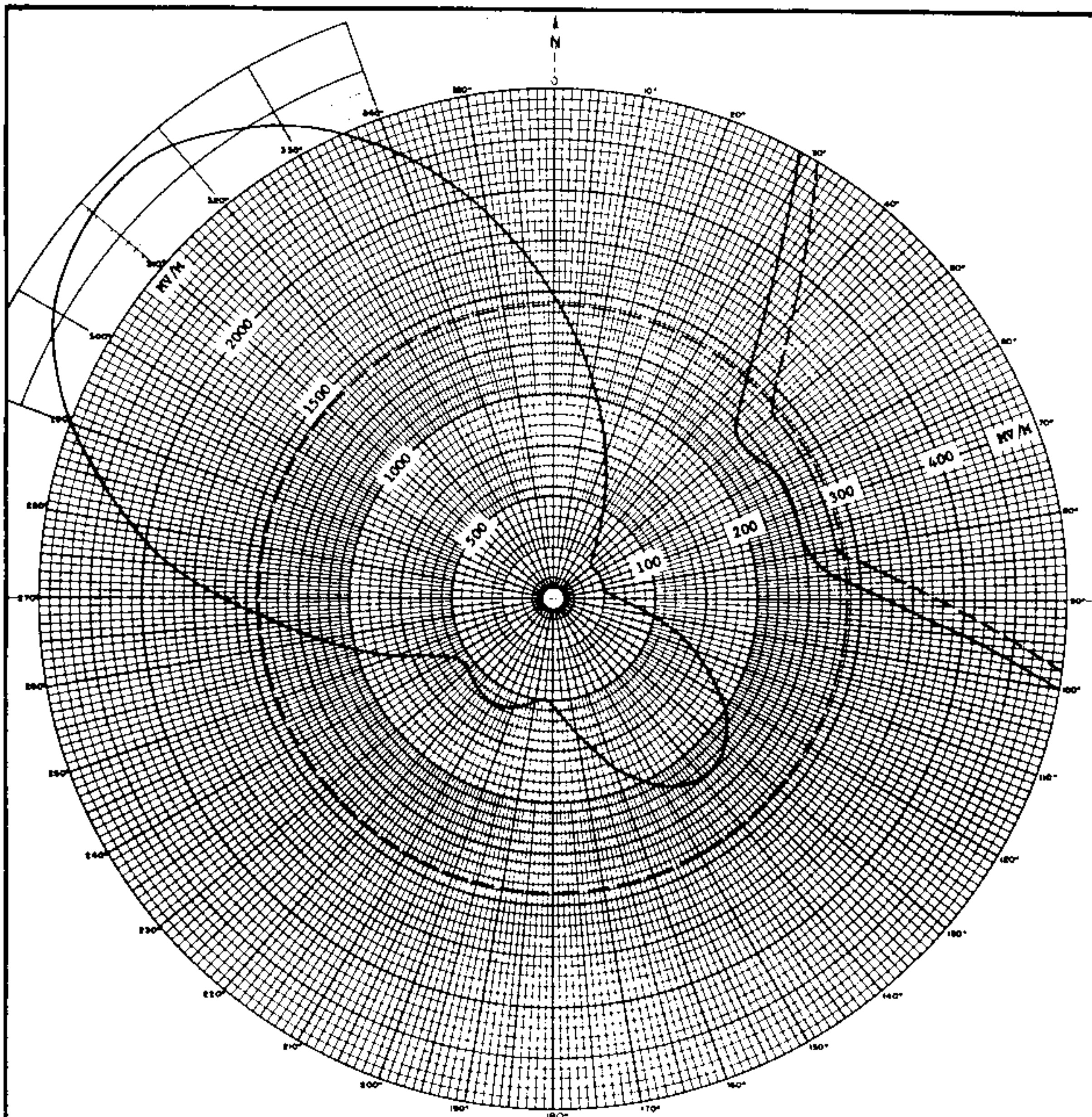
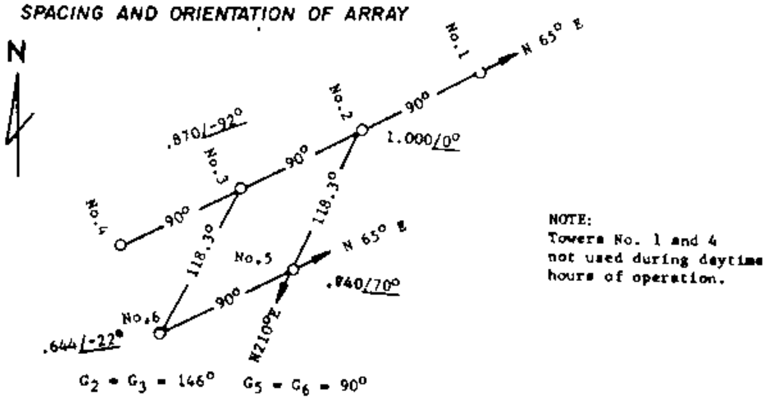


FIGURE 1

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION OF ARRAY



NOTE:
Towers No. 1 and 4 not used during daytime hours of operation.

APPLICANT	THE BIBLE INSTITUTE OF LOS ANGELES, INC.
LOCATION	PASADENA, CALIFORNIA
FREQUENCY	1110 KC/S
POWER	50 KW
LATITUDE	34 DEG 02 MIN. 13 SEC.
LONGITUDE	118 DEG 03 MIN 10 SEC.
WHEN USED	DAYTIME
R.M.S. FIELD	1386 MV/M
DATE	MARCH 1965

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

FCC File No. BP-16162 New; Bible Inst. of Los Angeles, Inc.
Accepted 4-12-65 Amed. Pasadena, California 1110 kc

Proposed Night
(4-28-65ct)

New; Bible Inst. of Los Angeles, Inc. 10kw,50kw-LS,DA-2,U
Pasadena, California 1110 kc

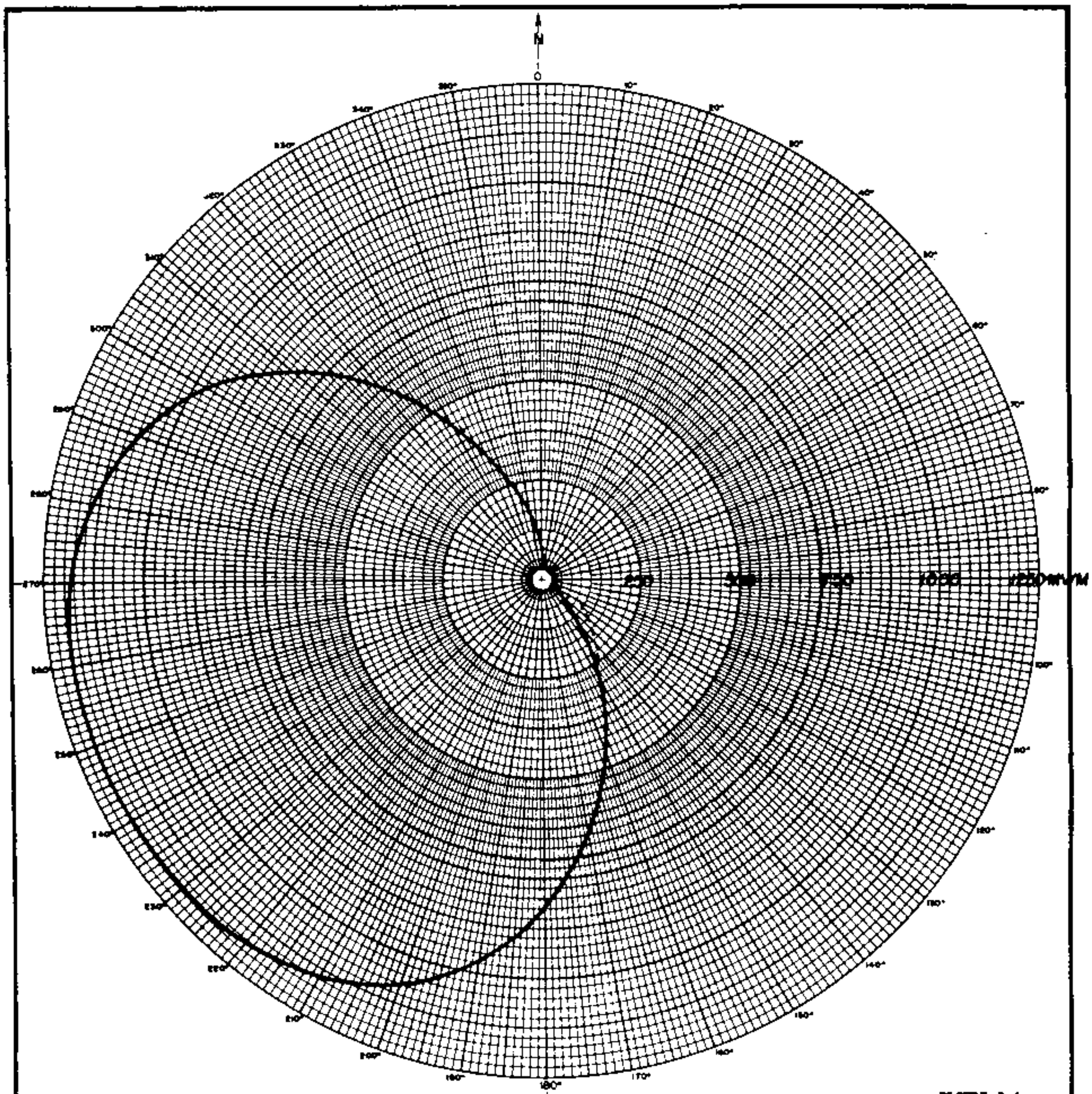
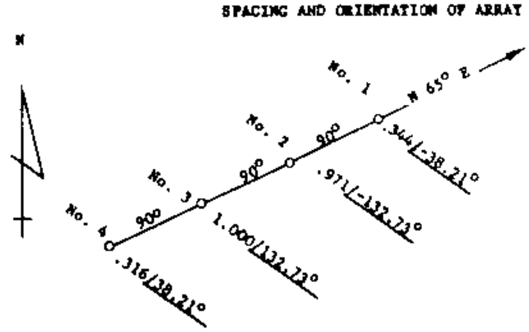


FIGURE 3-A

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION OF ARRAY



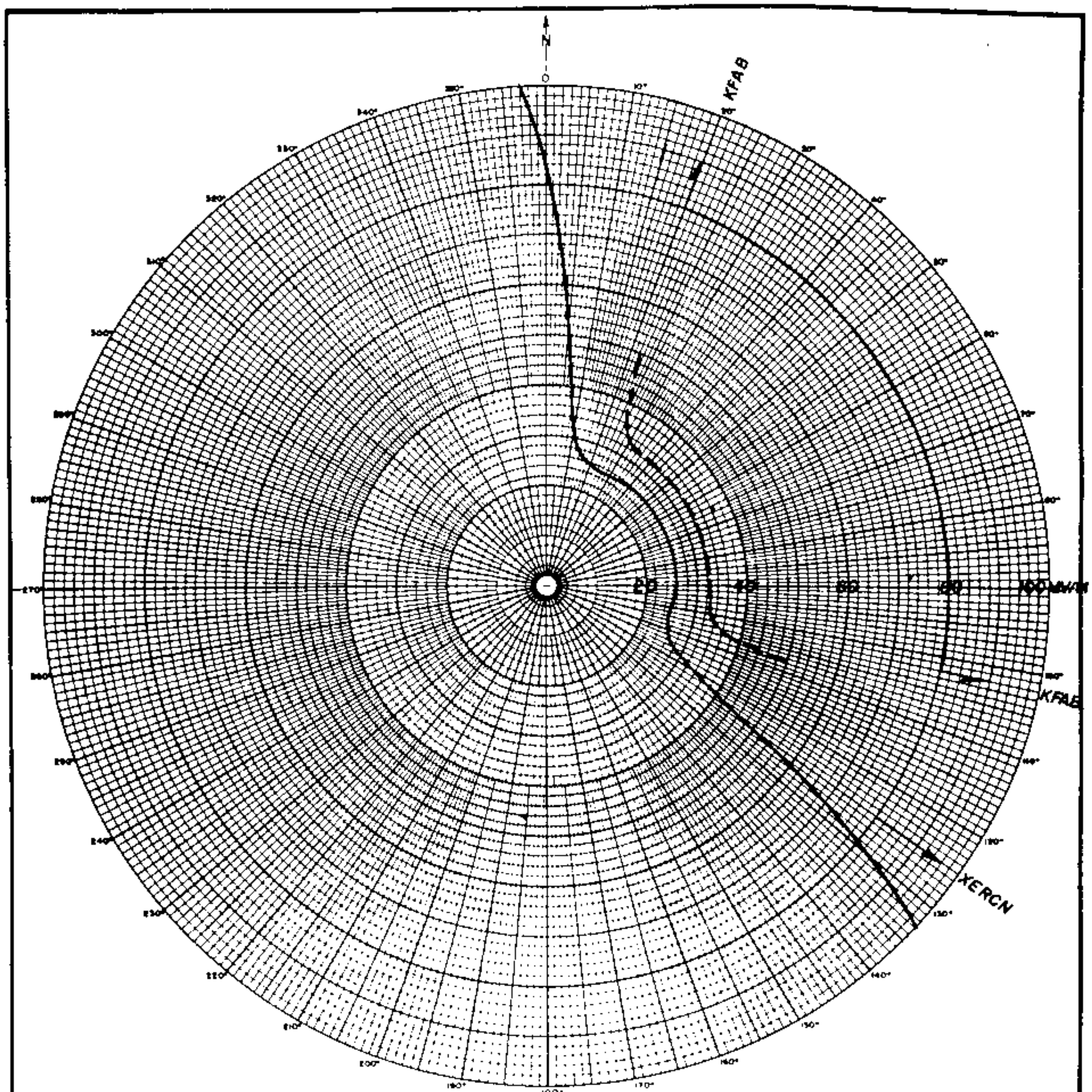
$G_1 = 180°$ G_2 & $G_3 = 146°$ $G_4 = 90°$

APPLICANT :	The Bible Institute of Los Angeles, Inc.
LOCATION :	Pasadena, California
FREQUENCY :	1110 KC/S
POWER :	10 KW
LATITUDE :	34 DEG 02 MIN. 13 SEC.
LONGITUDE :	118 DEG. 03 MIN. 10 SEC.
WHEN USED :	Nighttime
R.M.S FIELD :	708 MV/M
DATE :	MARCH 1965

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

FCC File No. BP-16162 New; Bible Inst. of Los Angeles, Inc.
Accepted 4-12-65 Amed. Pasadena, California 1110 kc

Proposed Night Nulls (4-28-65ct) New; Bible Inst. of Los Angeles, Inc. Pasadena, California 10kw,50kw-LS,DA-2,U 1110 kc



— — — MEOV

FIGURE 3 – B

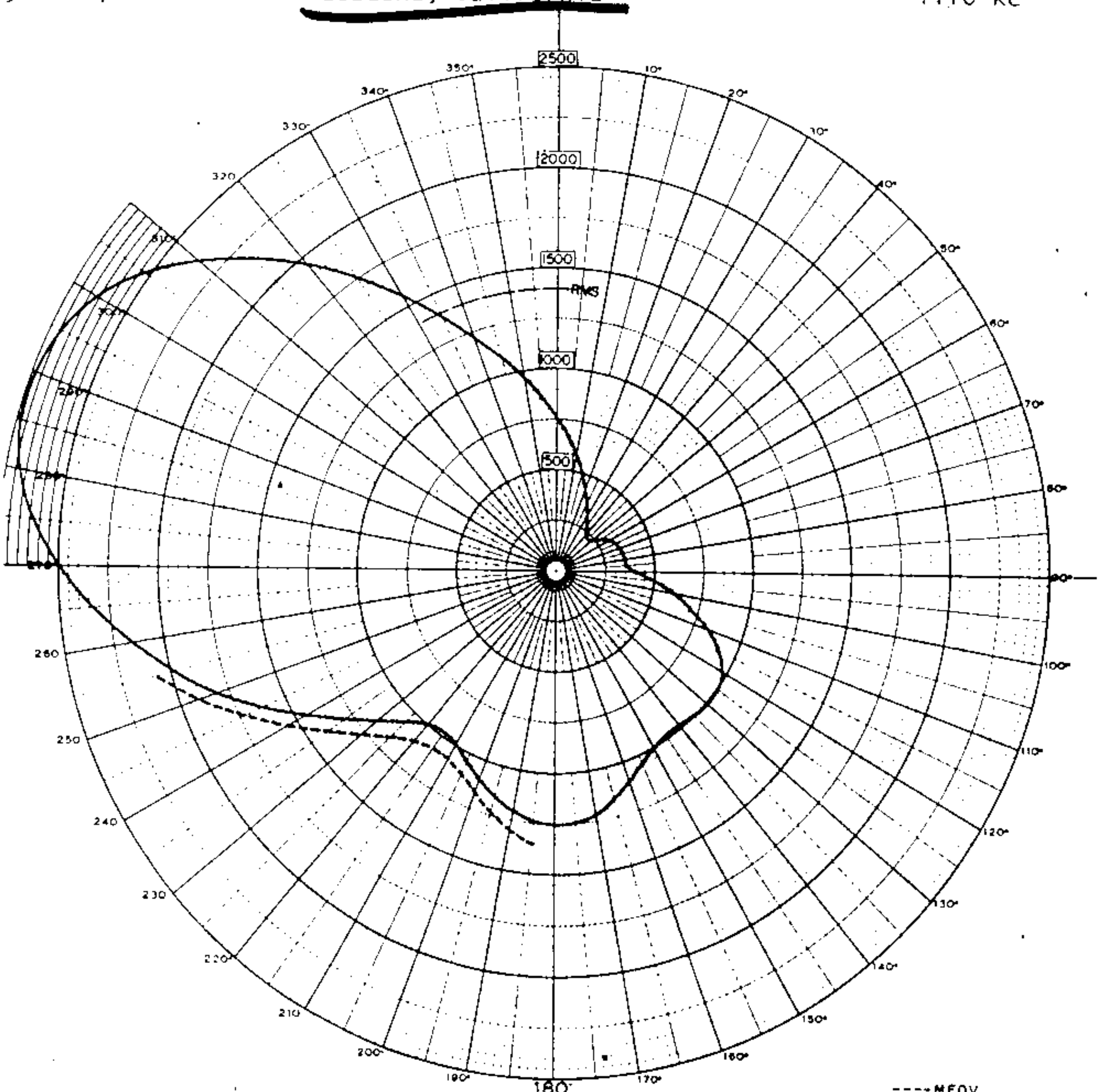
EXPANDED VIEW

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

FCC File No. BP-16162 Accepted 4-12-65 Amed. New; Bible Inst. of Los Angeles, Inc. Pasadena, California 1110 kc

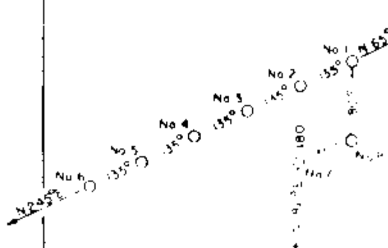
Proposed Day
(9-29-64ct)

New; California Regional B/cg Corp. 50kw,DA-2,U
Pasadena, California 1110 kc



----MEOV

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

Tower	Electrical Height $G°$	True Tower Orientation $\phi°$	Spacing $S°$	Phasing $\psi°$	Horizontal Field mv/m E	Field Ratio F
1	180	0	0	+50	1195.5	1.25
2	135	N 245 E	135	0	956.4	1.0
3	90	—	—	—	—	—
4	90	—	—	—	—	—
5	135		—	—	—	—
6	180			—	—	
7	90	208.3	270	-2[illegible]	444.7	0.465
8	90	N 182 E	180	-70.00	555.7	0.581
9						
10						

Elev. Angle $\theta°$	Elevation RMS Field mv/m E_θ
0	1392
10	
20	
30	
40	
50	
60	
70	
80	

STATION DATA

Call	NEW
Frequency	1110 kc
Power	50 kw
Time of Operation	Unlimited
Type of Operation	DA-2
Daytime Towers	4
Nighttime Towers	6
No. Radials per Tower	120
Length of Radials	90° 222 ft
Ground Screen Dimension	48' x 48'
Lat.	34° 01' 32"
Long.	117° 53' 32"
Supersedes	
Pattern No.	630301

CALIFORNIA REGIONAL BROADCASTING CORPORATION
PASADENA, CALIFORNIA

FIGURE 3

DATE MARCH 23, 64

FCC File No.BP-16165
Accepted 7-29-64

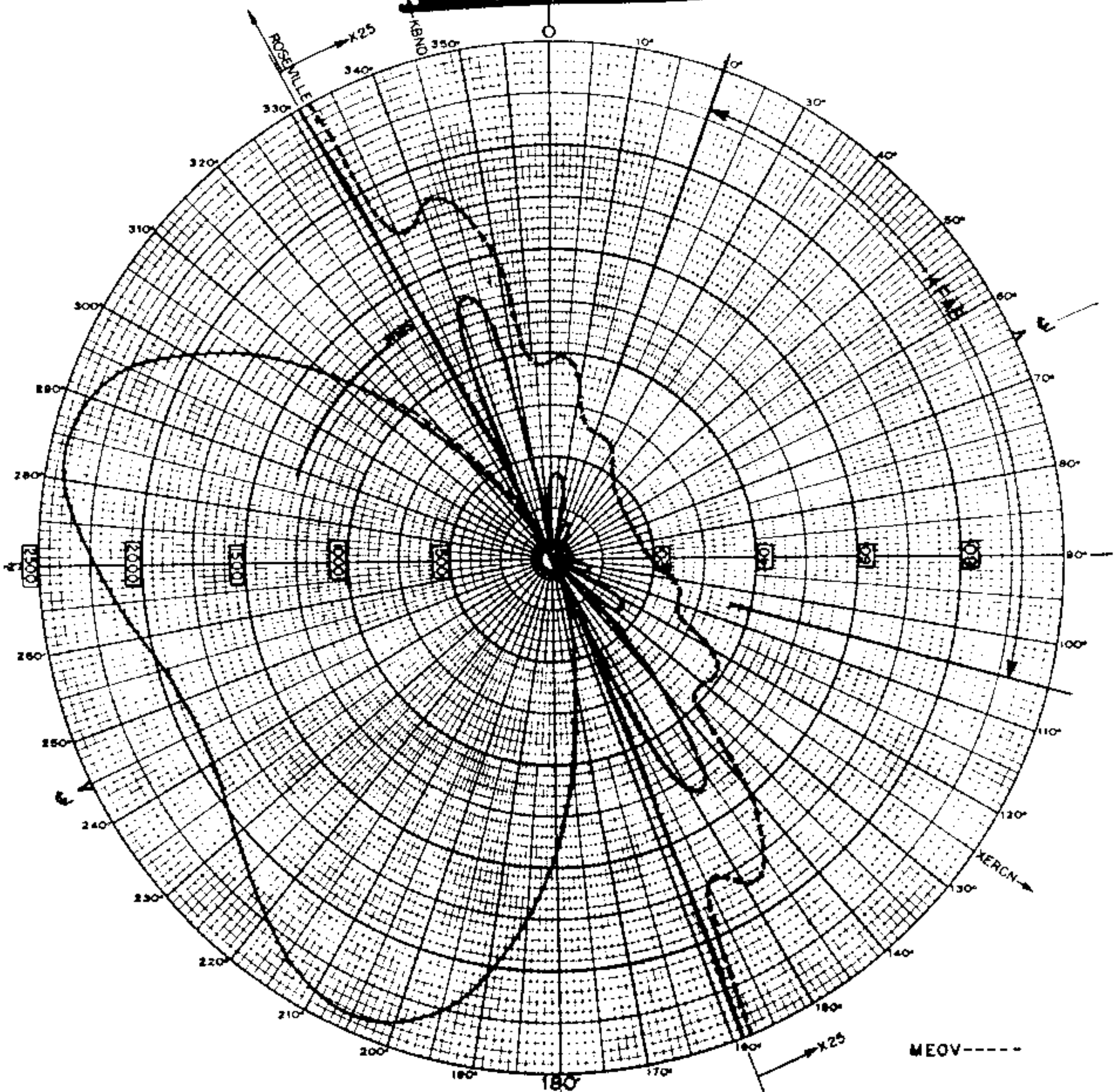
New; California Regional B/cg Corp.
Pasadena, California 1110 kc

Proposed Night
(3-26-65ct)

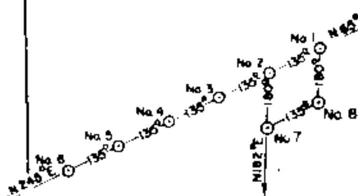
New; California Regional B/cg Corp.
Pasadena, California

[redacted]

50kw,DA-2,U
1110 kc



TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT	TRUE TOWER ORIENTATION	SPACING	PHASING	HORIZONTAL FIELD	FIELD RATIO
1	180	0	0	0	1234	0.183
2	135	N 245° E	135	-9930	4128	0.612
3	90	N 245 E	270	-20338	6748	1.0
4	90	N 245° E	405	+91.28	6748	1.0
5	135	N 245° E	540	-6278	4128	0.612
6	180	N 245° E	675	-1621	1234	0.183
7	90	N 208.5E	270	—	—	—
8	90	N 182° E	180	—	—	—
9						
10						

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☒

ELEV. ANGLE	ELEVATION RMS FIELD
0	1311
10	
20	
30	
40	
50	
60	
70	
80	

STATION DATA

CALL	NEW
FREQUENCY	1110 kc
POWER	50 kw
TIME OF OPERATION	Unlimited
TYPE OF OPERATION	DA-2
DAYTIME TOWERS	4
NIGHTTIME TOWERS	8
No. RADIALS PER TOWER	120
LENGTH OF RADIALS	90° 222 ft
GROUND SCREEN DIMENSION	48 X 48
LAT	34° 01' 32"
LONG	117° 55' 32"
SUPERSEDES	
PATTERN No.	630212

CALIFORNIA REGIONAL BROADCASTING CORPORATION
PASADENA, CALIFORNIA

FIGURE 1(A)
DATE FEB 12, 1965

FCC File No. BP-16165
Accepted 3-15-65 Amended

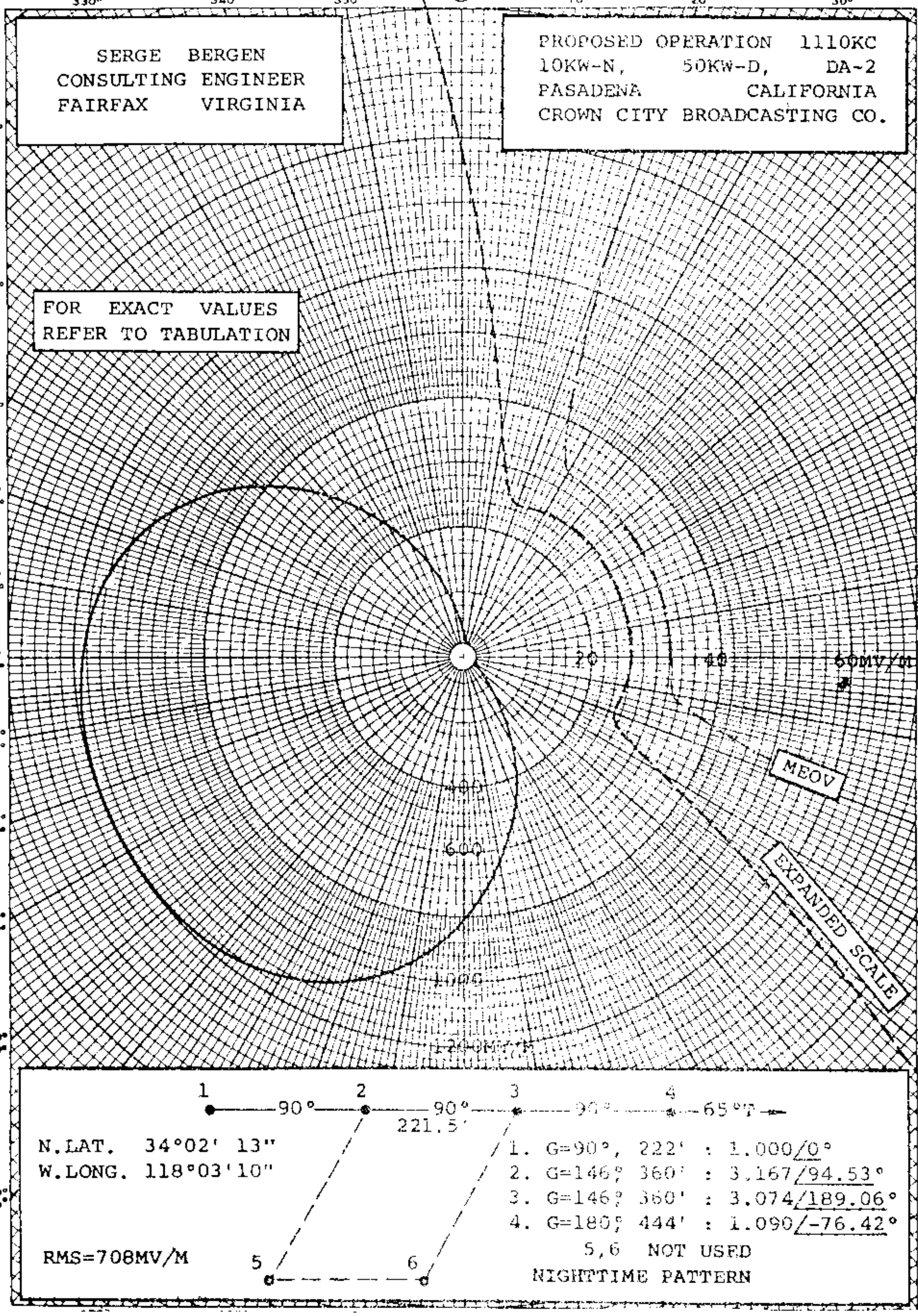
New; California Regional B/cg Corp.
Pasadena, California

1110 kc

Proposed Night
(4-28-65ct)

New; Crown City B/cng, Co.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc



EUGENE DIETZGEN CO. MADE IN U.S.A.
NO. 340R-P DIETZGEN GRAPH PAPER POLAR CO-ORDINATE

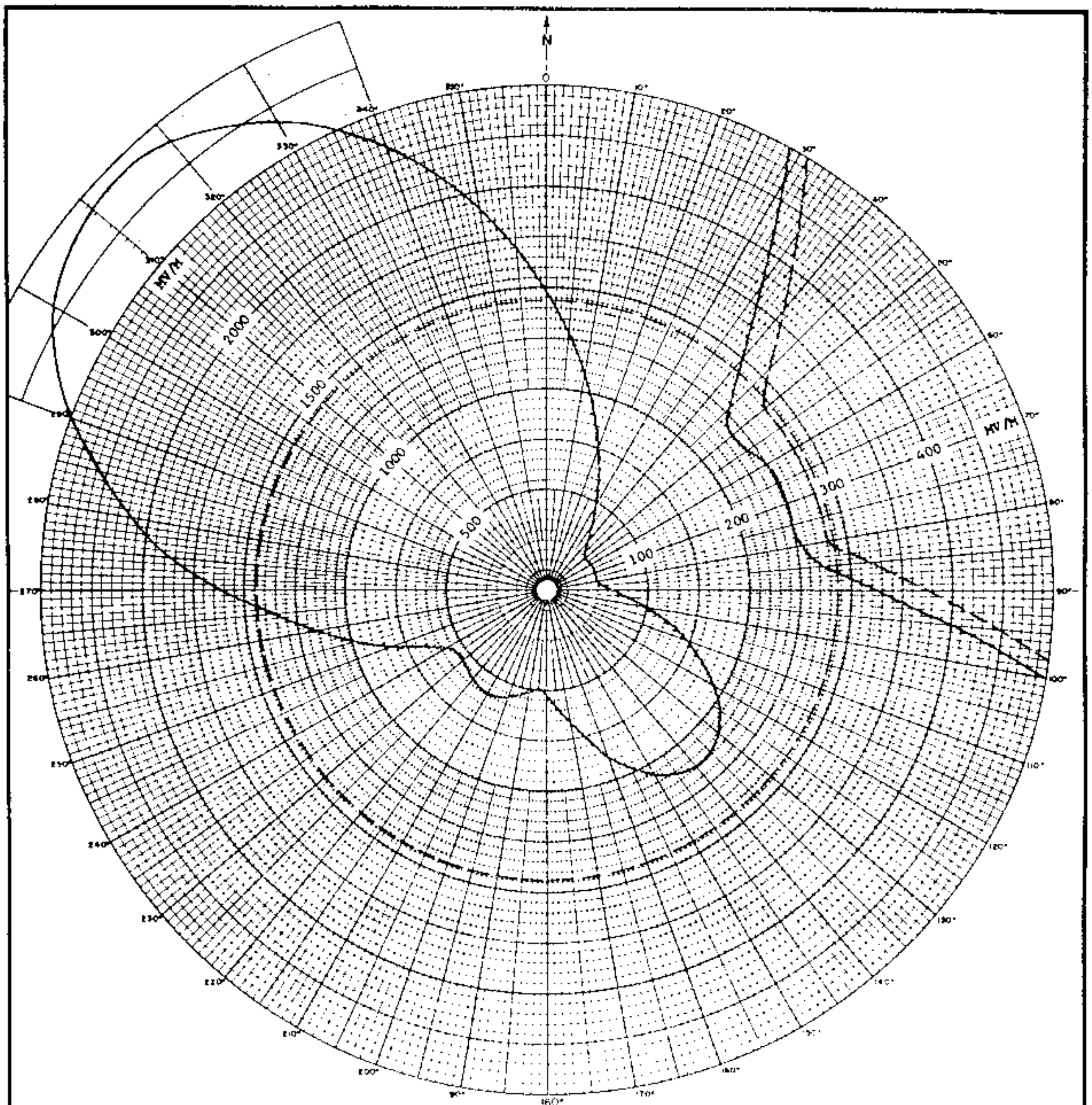
FCC File No. BP-16168
Accepted 4-12-65 Amended

New; Crown City B/cng, Co.
Pasadena, California

1110 kc.

Proposed Day (4-28-65ct)

New; Pasadena Community Station, Inc. 10kw,50kw-LS,DA-2,U
Pasadena, California 1110 kc

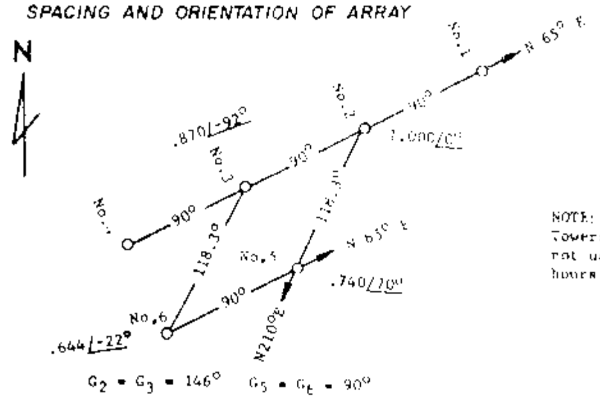


RMS FIELD — MEOV

FIGURE 1

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION OF ARRAY



NOTE:
Towers No. 1 and 4 not used during daytime hours of operation.

APPLICANT	PASADENA COMMUNITY STATION, INC.
LOCATION	PASADENA, CALIFORNIA
FREQUENCY	1110 KC/S
POWER	50 KW
LATITUDE	34 DEG 02 MIN 13 SEC
LONGITUDE	118 DEG 03 MIN 10 SEC
WHEN USED	DAYTIME
RMS FIELD	1386 MV/M
DATE	MARCH 1965

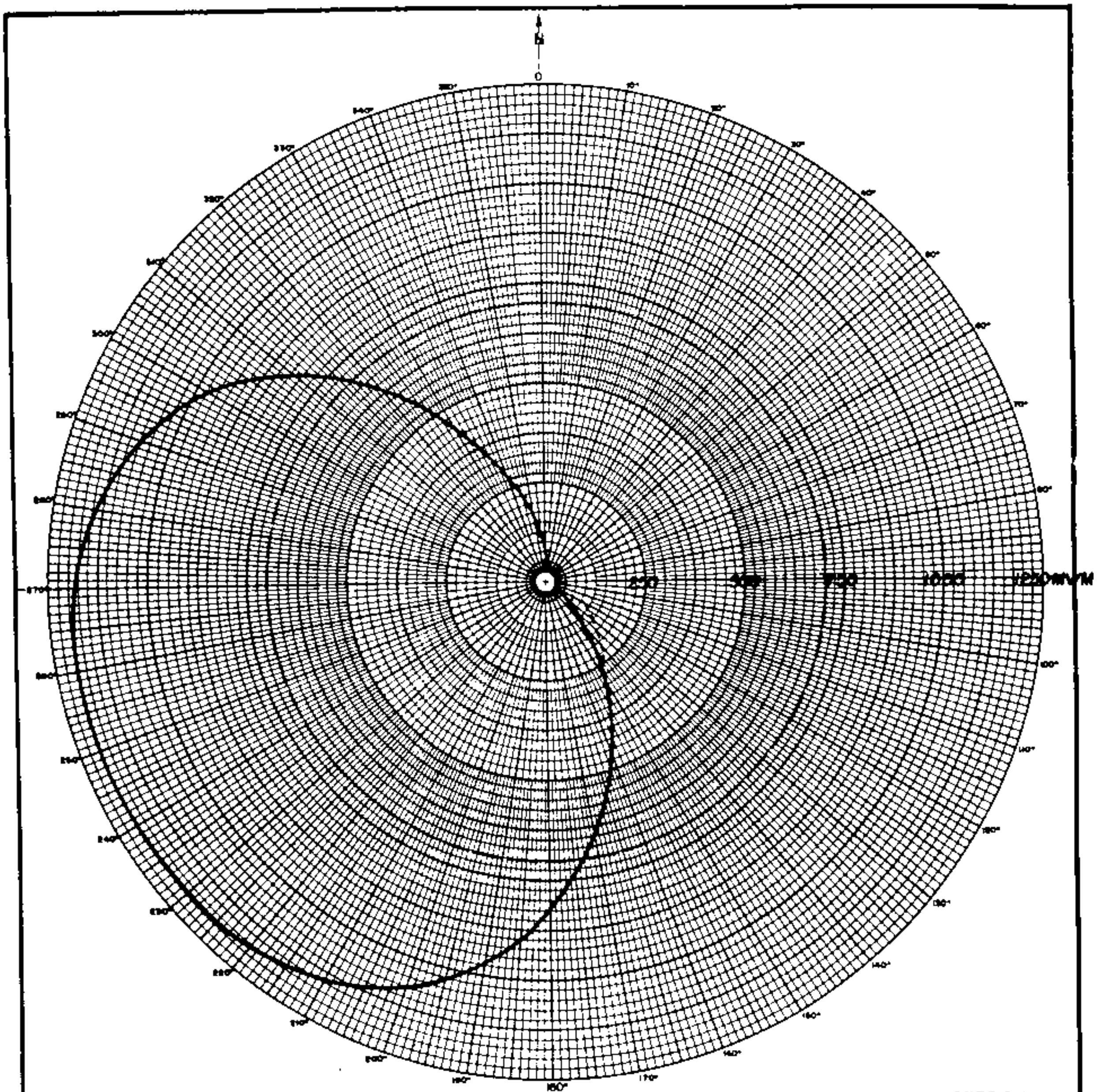
RAYMOND E. ROHRER & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON D C

FCC File No. BP-16170 New; Pasadena Community Station, Inc.
Accepted 4-12-65 Amed.Pasadena, California 1110 kc

Proposed Night
(4-28-65ct)

New; Pasadena Community Station, Inc.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc

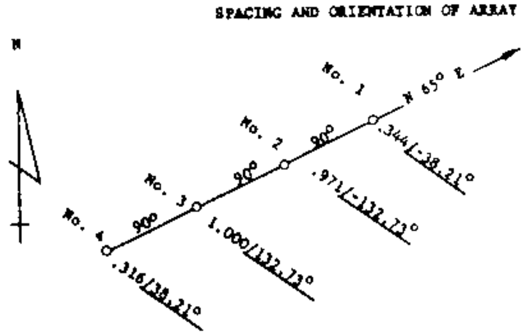


--- RMS FIELD

FIGURE 3-A

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION OF ARRAY



$G_1 = 180°$ G_2 & $G_3 = 146°$ $G_4 = 90°$

APPLICANT	Pasadena Community Station, Inc.
LOCATION :	Pasadena, California
FREQUENCY	1110 KC/S
POWER	10 KW
LATITUDE :	34 DEG 02 MIN. 13 SEC.
LONGITUDE :	118 DEG 03 MIN 10 SEC.
WHEN USED:	Nighttime
R.M.S FIELD:	708 MV/M
DATE	MARCH 1965

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

FCC File No. BP-16170 New; Pasadena Community Station, Inc.
Accepted 4-12-65 Amed.Pasadena, California

1110 kc

Proposed Night Nulls New; Pasadena Community Station, Inc. 10kw,50kw-LS,DA-2,U
(4-28-65ct) Pasadena, California 1110 kc

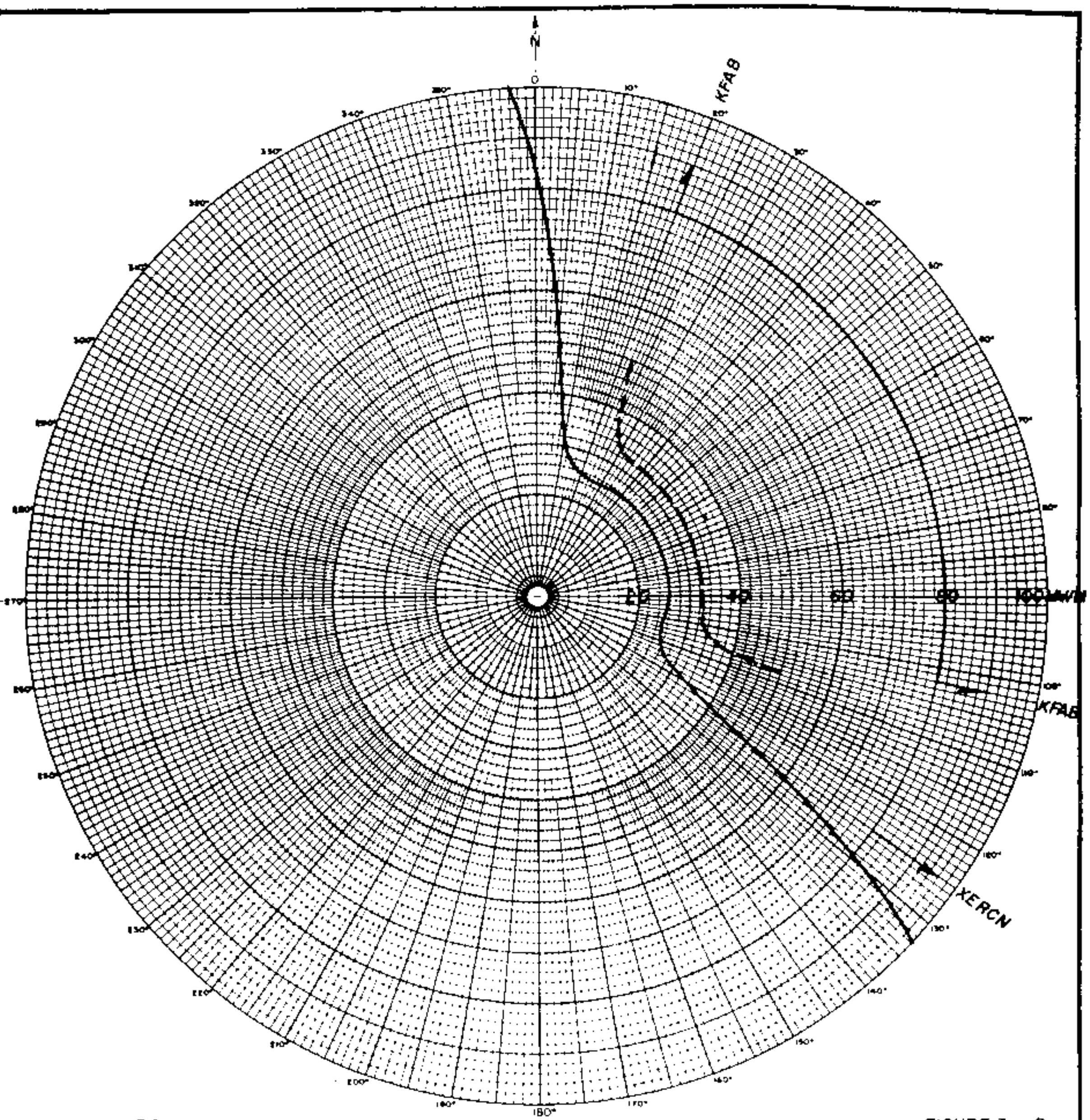


FIGURE 3 — 8

EXPANDED VIEW

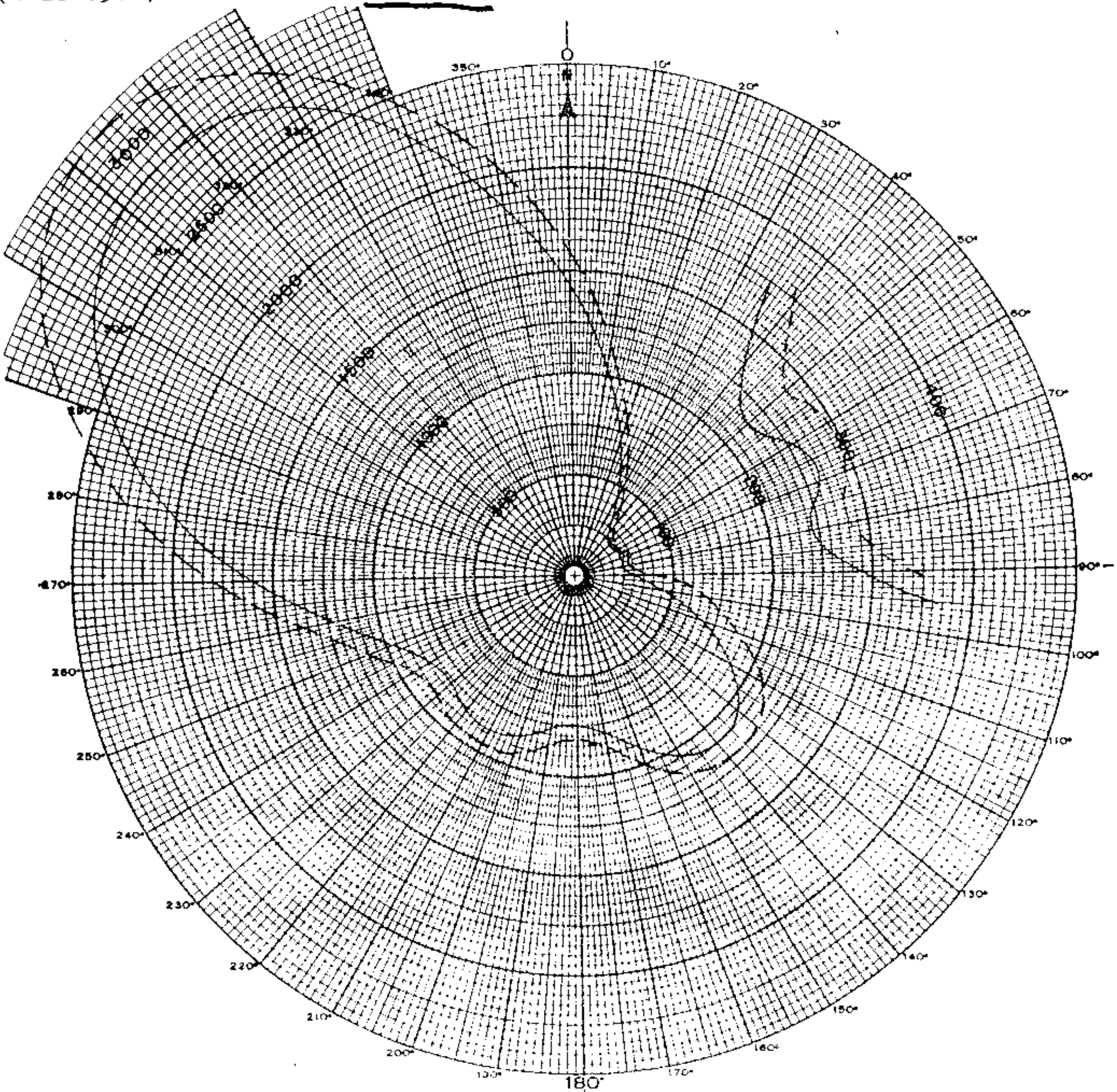
RAYMOND E. ROHRER & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

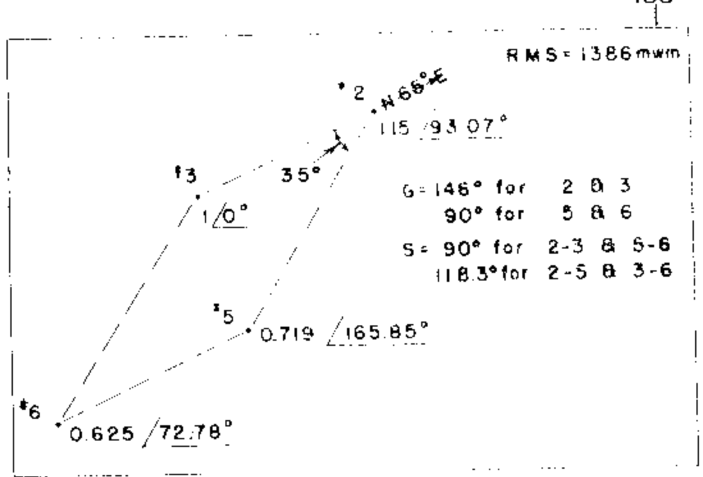
FCC File No. BP-16170 New; Pasadena Community Station, Inc.
Accepted 4-12-65 Amed.Pasadena, California 1110 kc

Proposed Day
(4-28-65ct)

New; Voice of Pasadena, Inc.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc





34° 02' 13"
118° 03' 10"

Figure 2
Horizontal Daytime Radiation Pattern
Voice of Pasadena, Inc.
Pasadena, California
1110Kc 50-10Kw DA-2
Docket No. 15764 File No. BP-16172
March 1965

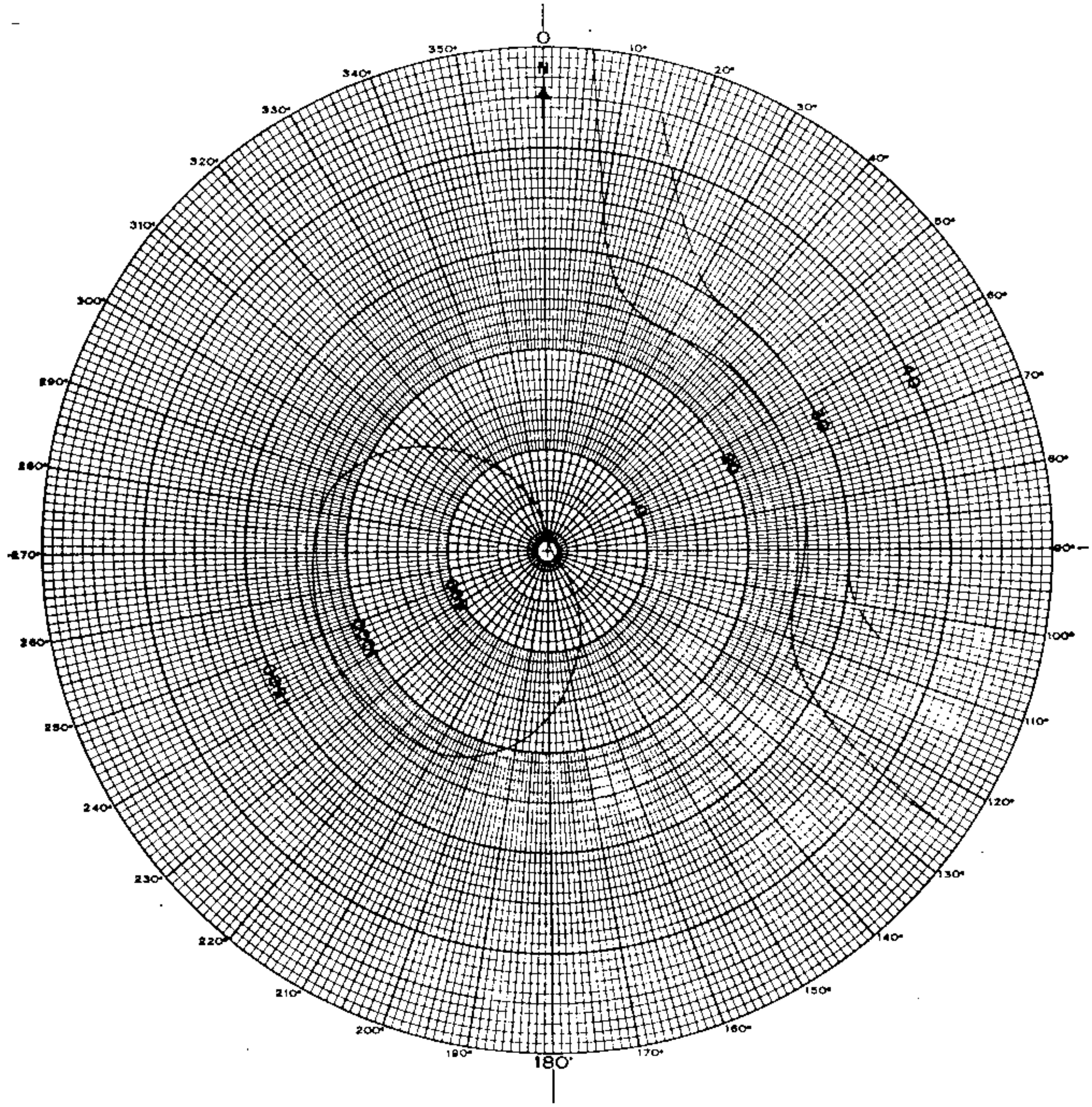
FCC File No. BP-16172 New; Voice of Pasadena, Inc.
Accepted 4-14-65 Amended Pasadena, California

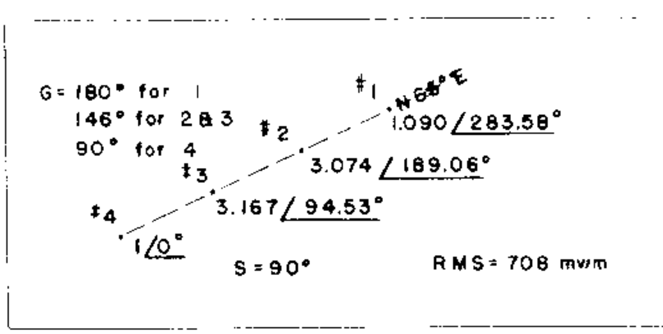
1110 kc

Proposed Night
(4-28-65ct)

New; Voice of Pasadena, Inc.
Pasadena, California

10kw,50kw-LS,DA-2,U
1110 kc





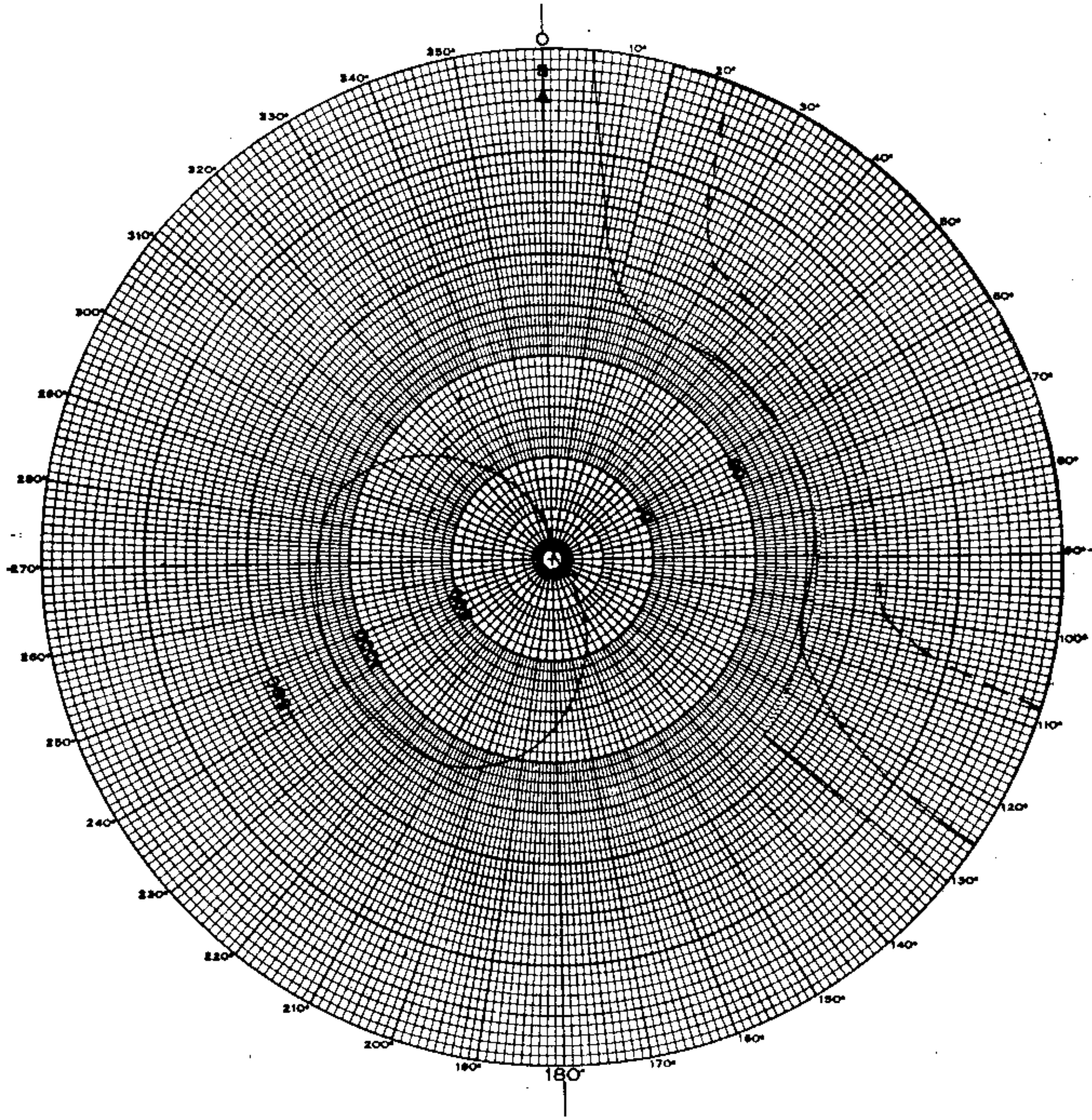
34° 02' 13"
118° 03' 10"

Figure 3
Horizontal Night-time Radiation Pattern
Voice of Pasadena, Inc.
Pasadena, California
1110Kc 50-10Kw DA-2
Docket No. 15764 File No. BP-16172
March 1965

FCC File No. BP-16172 New; Voice of Pasadena, Inc.
Accepted 4-14-65 Amended Pasadena, California 1110 kc

Proposed Night
(7-27-65ct)

New; Voice of Pasadena, Inc. 10kw,50kw-LS,DA-2,U
Pasadena, California 1110 kc



G = 180° for 1
146° for 2 & 3
90° for 4

#1 N68°E 1.090 /283.58°
#2 3.074 /189.06°
#3 3.167 /94.63°
#4 1 /0°

S = 90° RMS = 708 mv/m

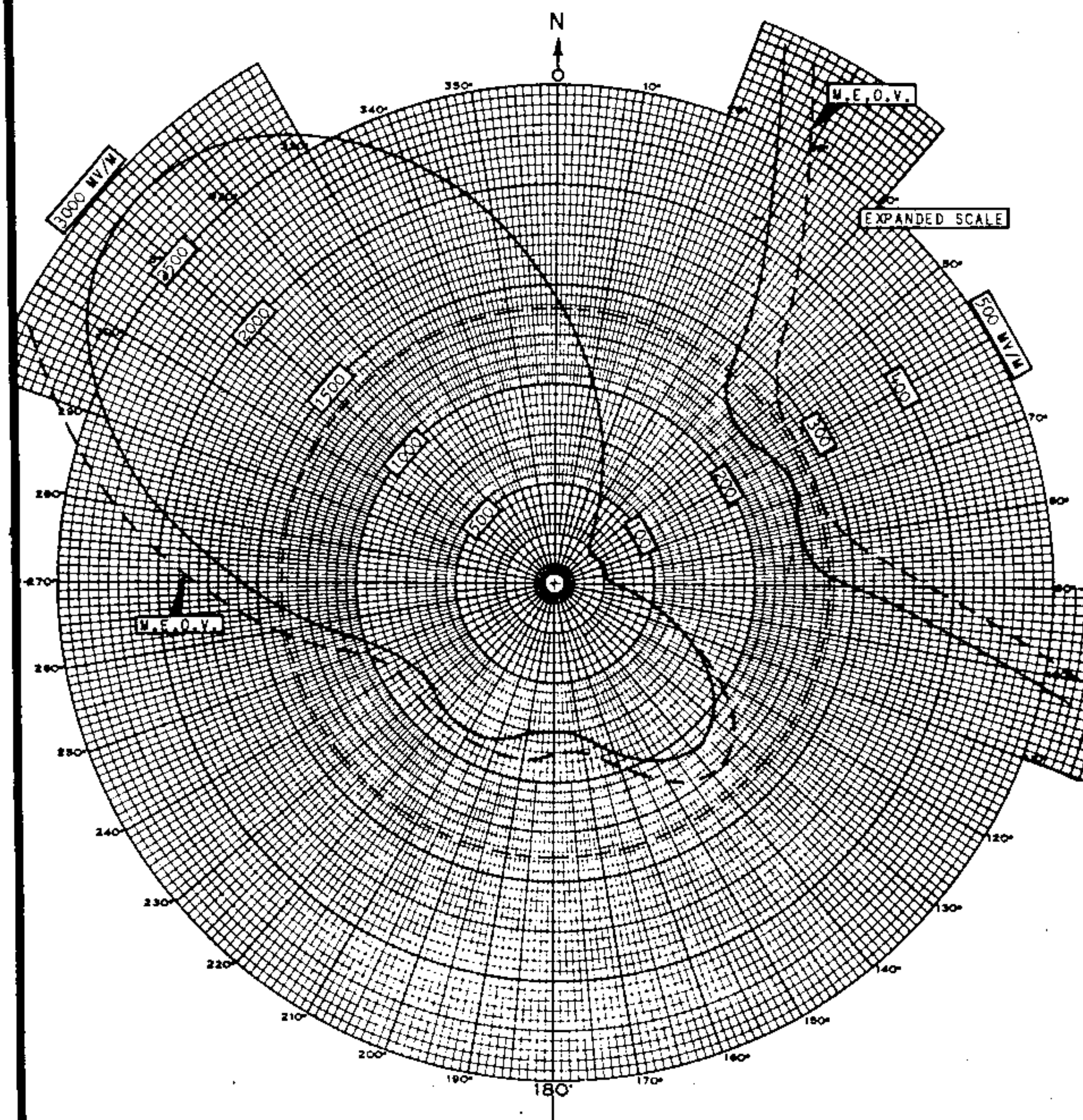
34° 02' 13"
118° 03' 10"

Figure 3 (Amended)
Horizontal Night-time Radiation Pattern
Voice of Pasadena, Inc.
Pasadena, California
1110Kc 50-10 Kw DA-2
Docket No. 15764 File No. BP-16172
May 1965

FCC File No. BP-16172
Accepted 6-1-65 Amended

New; Voice of Pasadena, Inc.
Pasadena, California

1110 kc

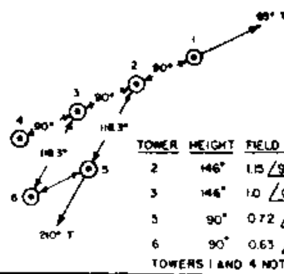


E_{RMS} = 1386 MV/M

LATITUDE: N-34° 02' 13"
LONGITUDE: W-118° 03' 10"

JOHN H. MULLANEY AND ASSOCIATES
A DIVISION OF MULTRONICS, INC.

ANTENNA PARAMETERS



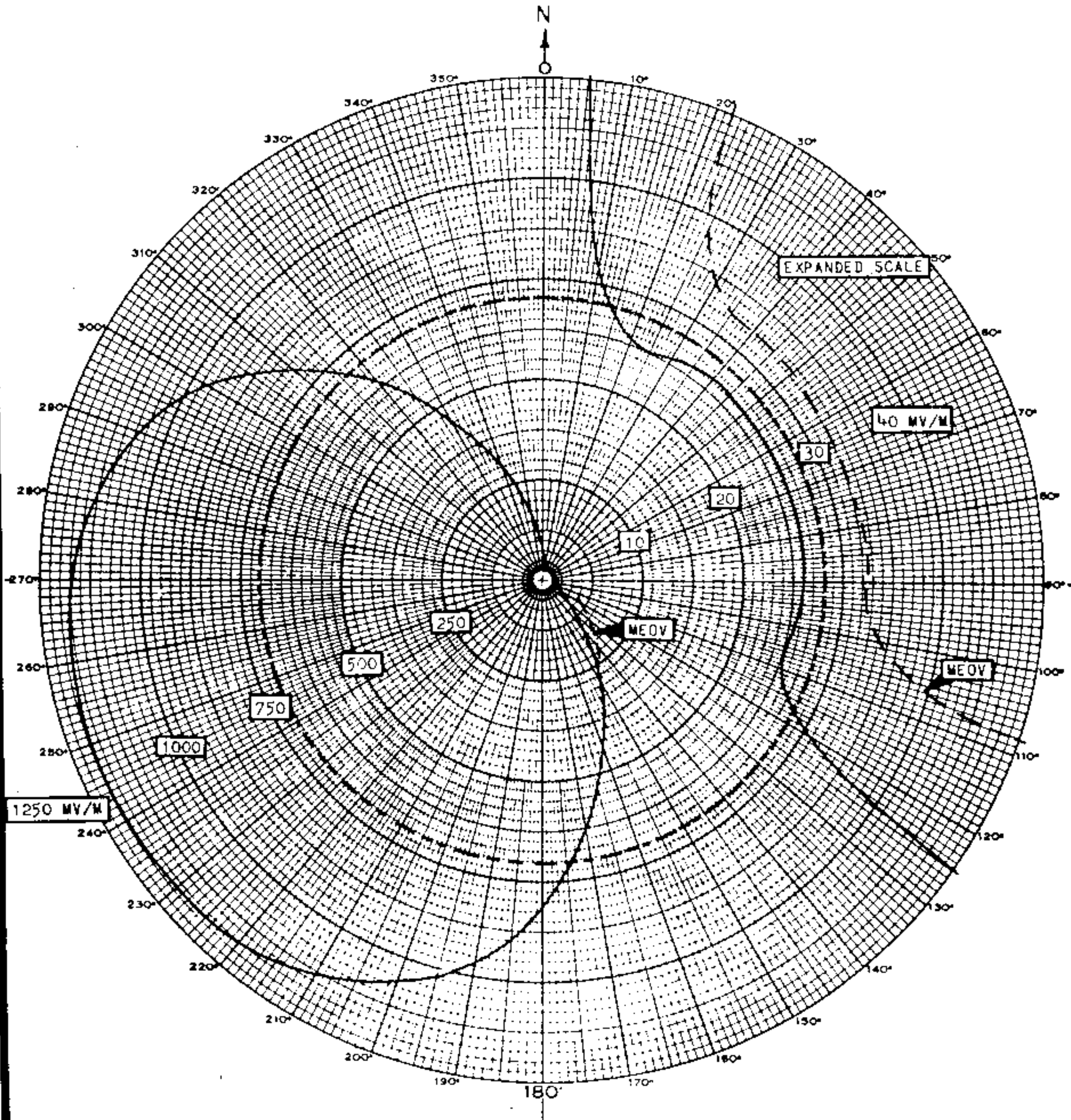
TOWER	HEIGHT	FIELD RATIO/PHASE
2	146°	1.15 /93.07°
3	146°	1.0 /0°
5	90°	0.72 /165.85°
6	90°	0.63 /72.78°

TOWERS 1 AND 4 NOT USED

FIGURE 3-A

DAYTIME DIRECTIONAL HORIZONTAL PATTERN
PASADENA BROADCASTING COMPANY
PASADENA, CALIFORNIA

1110KC 10/50KW-LS, DA-2, U



E_{RMS} = 708 MV/M ——·——

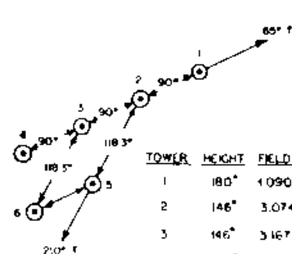
LATITUDE: N 34° 02' 13"

LONGITUDE: W 118° 03' 10"

JOHN H. MULLANEY AND ASSOCIATES

A DIVISION OF MULTRONICS, INC.

ANTENNA PARAMETERS



TOWER	HEIGHT	FIELD RATIO/PHASE
1	180°	1.090 /283.58°
2	146°	3.074 /189.06°
3	146°	3.167 /94.53°
4	90°	1.0 /0°

TOWERS 5 AND 6 NOT USED

FIGURE 4-A

NIGHTTIME DIRECTIONAL HORIZONTAL PATTERN

PASADENA BROADCASTING COMPANY

PASADENA, CALIFORNIA

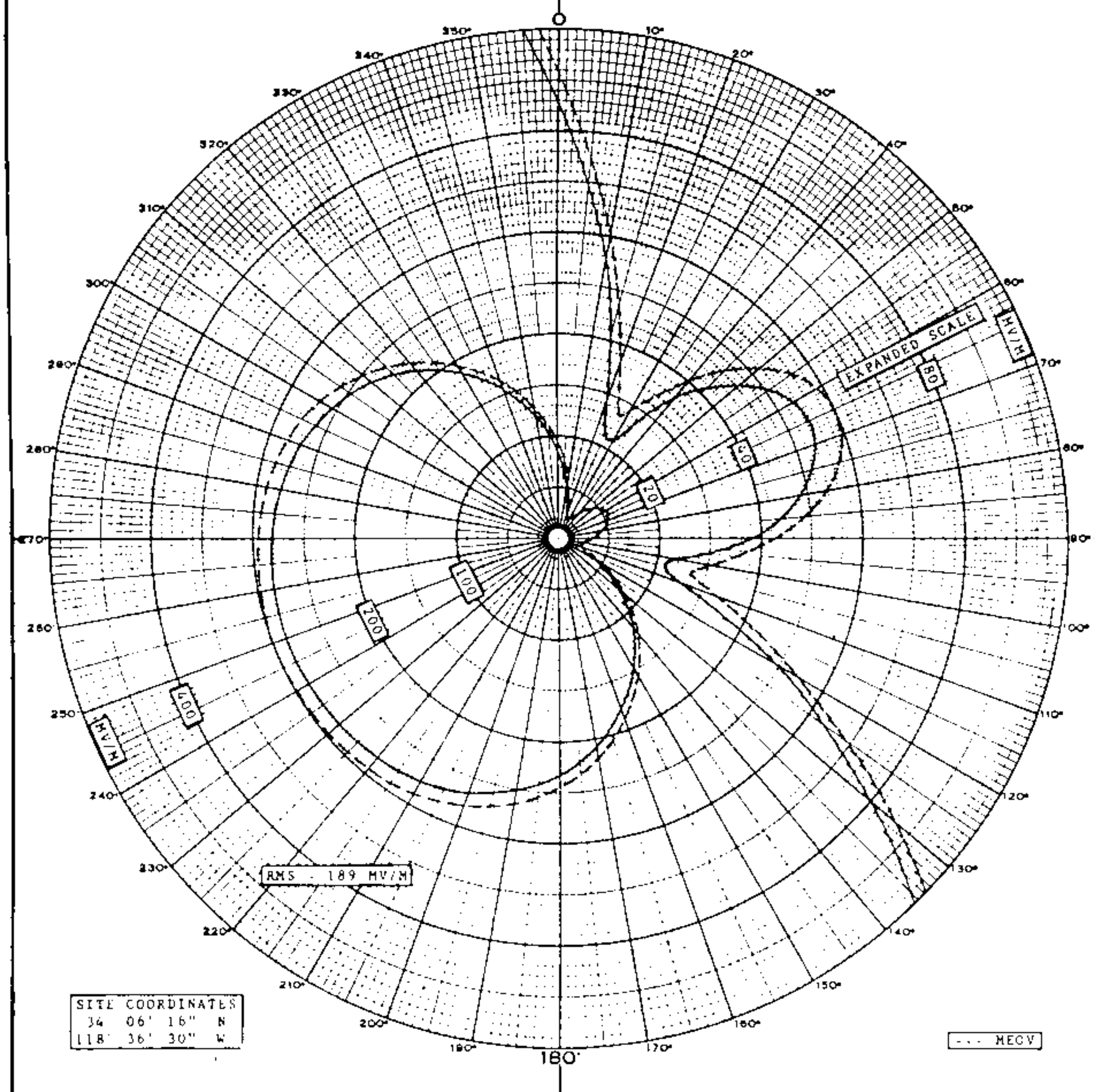
1110 KW 10/50KW-LS, DA-2, U

Proposed Day
(9-29-64ct)

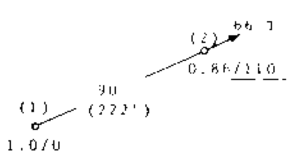
New; Topanga Malibu B/cg Co.
Topanga, California

500w,DA-2,U
1110 kc

Figure 7



CALCULATED DAYTIME HORIZONTAL PLANE RADIATION PATTERN



TOPANGA MALIBU BROADCASTING COMPANY
TOPANGA, CALIFORNIA

Jules Cohen & Associates
Consulting Electronics Engineers

PROPOSED OPERATION
1110 KC
0.5 KW D DA-2
Pattern 640324

FCC File No.BP-16164
Accepted 7-29-64

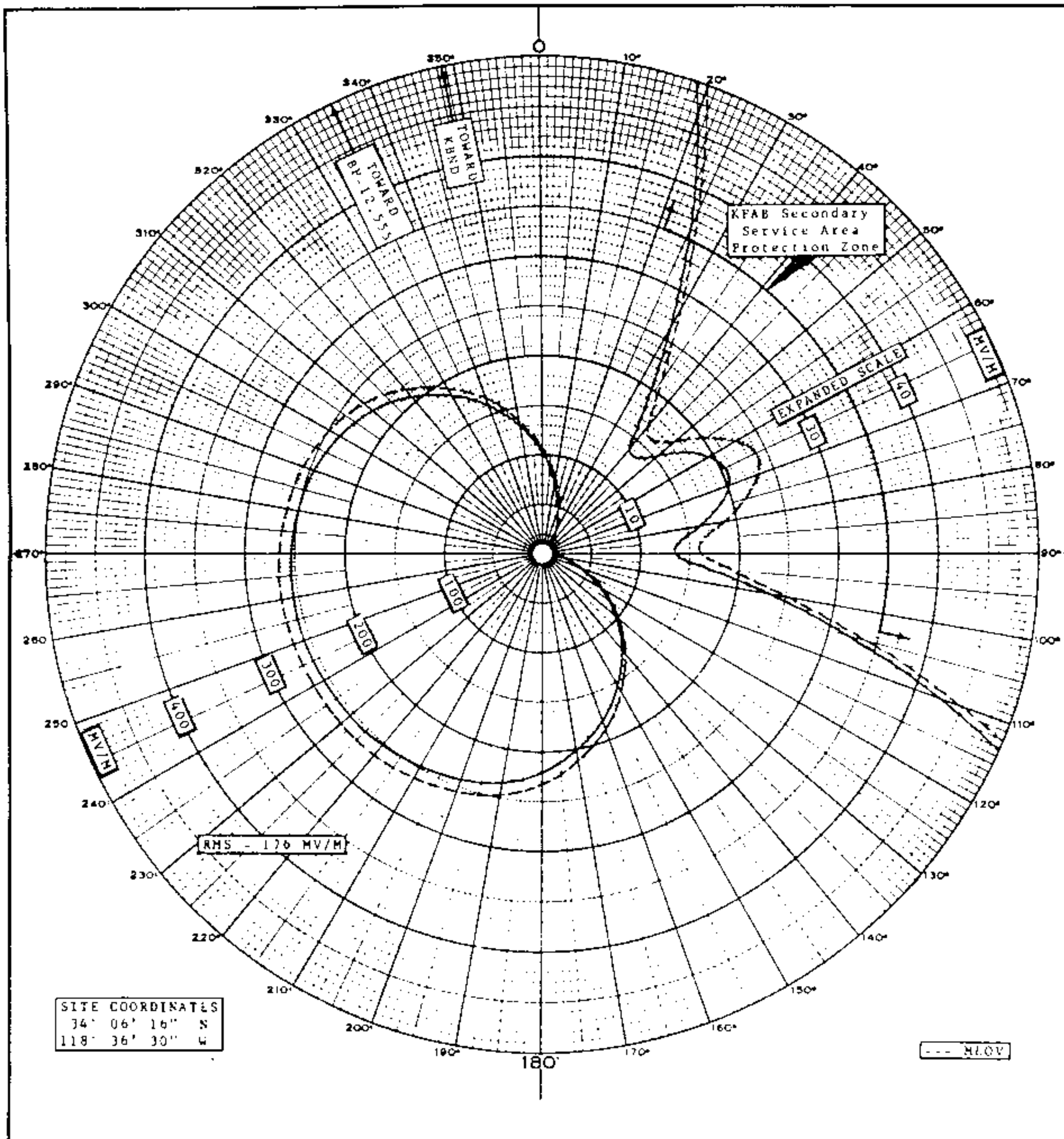
New; Topanga Malibu B/cg Co.
Topanga, California

1110 kc

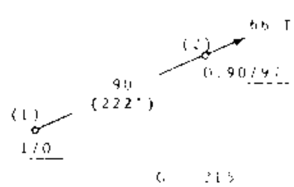
Proposed Night
(9-29-64ct)

New; Topanga Malibu B/cg Co.
Topanga, California
[redacted]

500w,DA-2,U
1110 kc
Figure 10
Sheet 1 of 14



CALCULATED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN



TOPANGA MALIBU BROADCASTING COMPANY
TOPANGA, CALIFORNIA

Jules Cohen & Associates
Consulting Electronics Engineers

PROPOSED OPERATION

DA-2

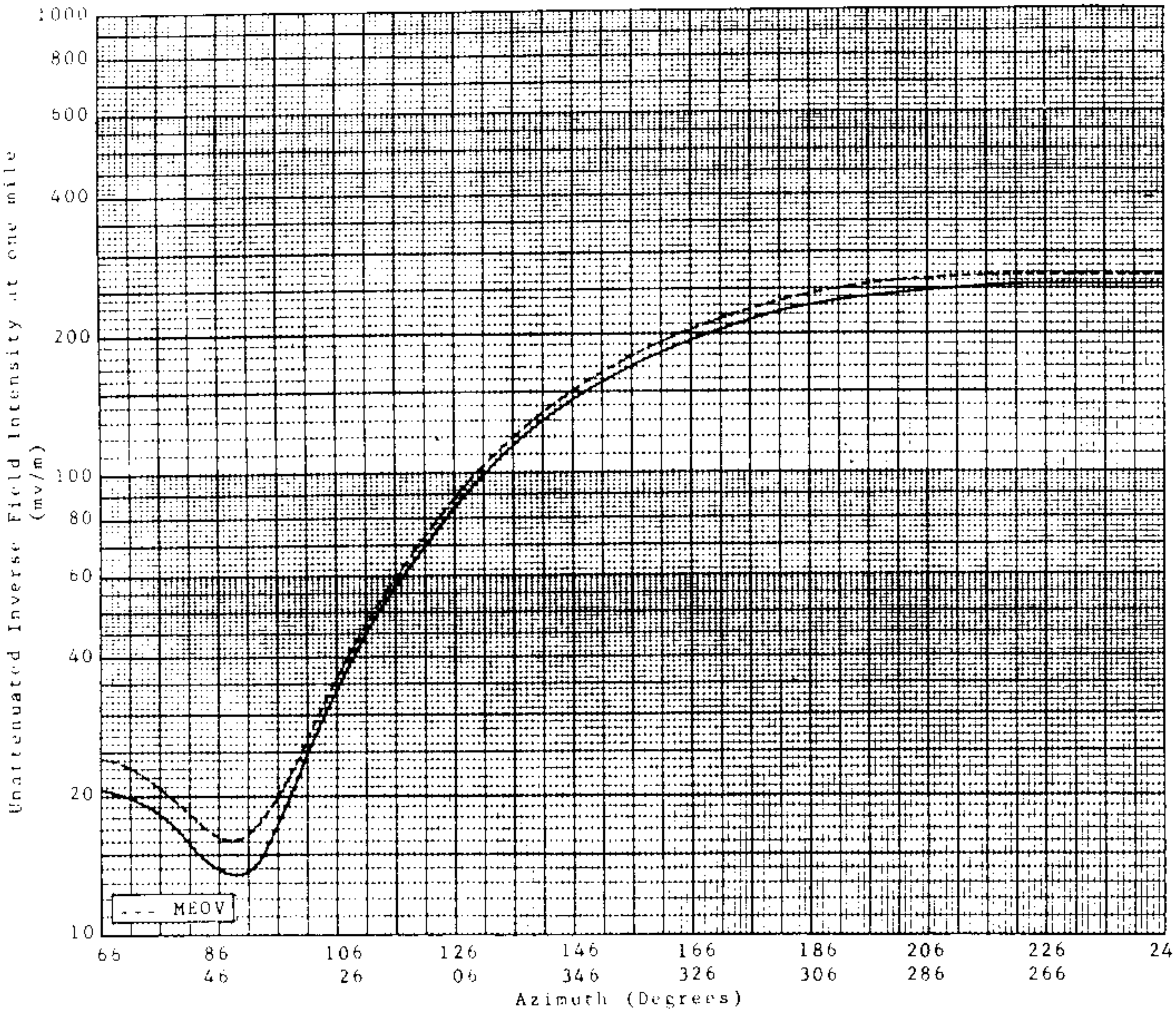
FCC File No.BP-16164
Accepted 7-29-64

New; Topanga Malibu B/cg Co.
Topanga, California

1110 kc

Figure 10
Sheet 2 of 14

Proposed Night Nulls (9-29-64ct) | New; Topanga Malibu B/cg Co. Topanga, California | 500w,DA-2,U 1110 kc



PROPOSED NIGHTTIME RADIATION PATTERN AT VERTICAL ANGLE OF ZERO DEGREES

1110 KC 0.5 KW U DA-2

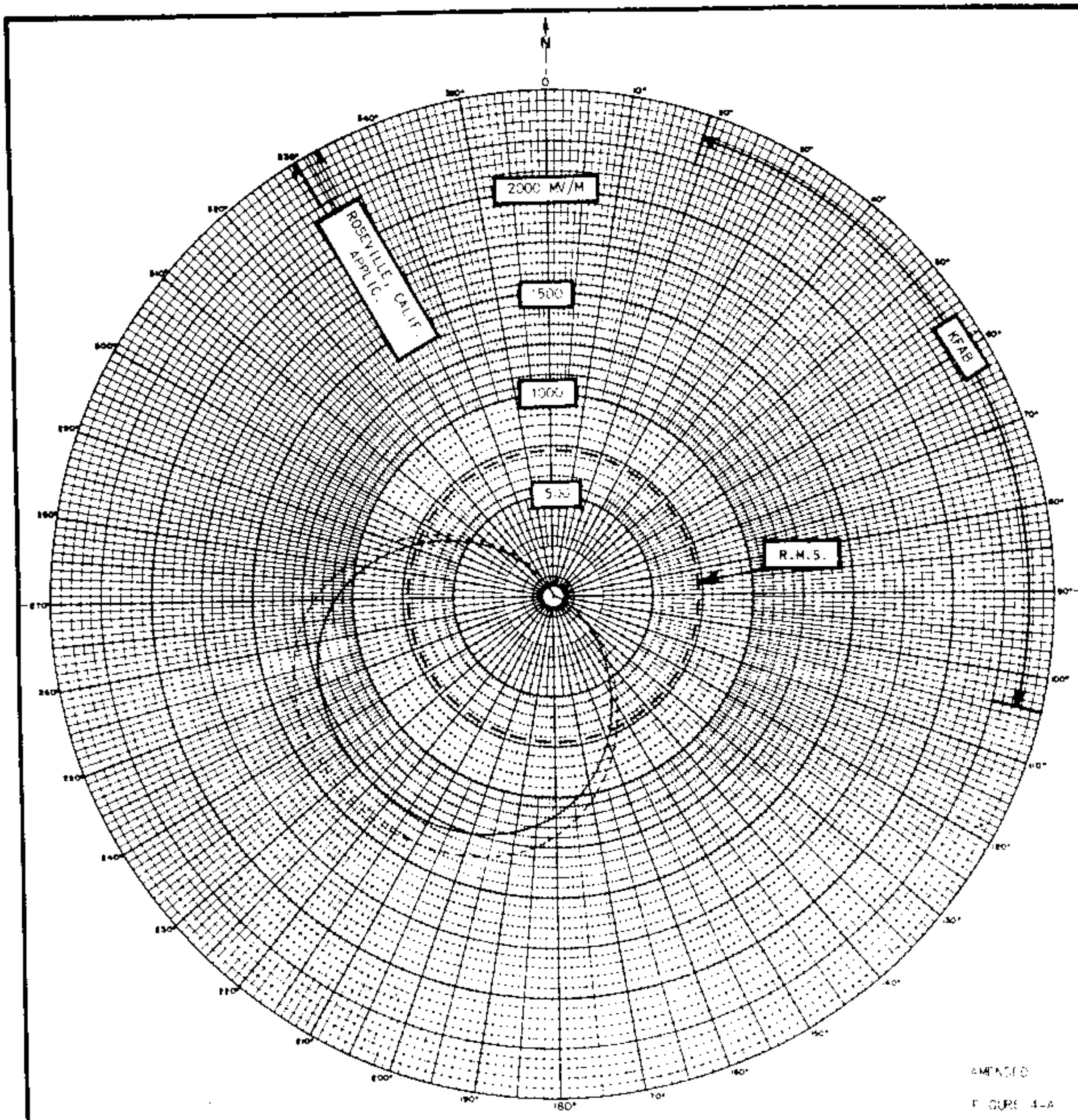
FCC File No.BP-16164
TOPANGA Accepted 7-29-64

New; Topanga Malibu B/cg Co.
Topanga, California

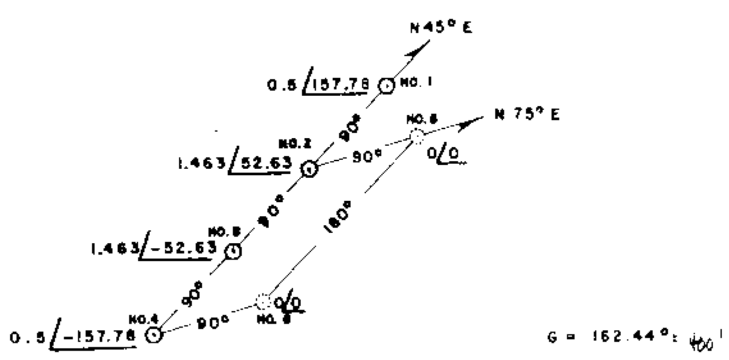
1110 kc

Proposed Night
(3-26-65ct)

New; Pacific Fine Music Inc. 10kw,50kw-LS,DA-2,U
Whittier, California 1110 kc



HORIZONTAL RADIATION PATTERN



APPLICANT	PACIFIC FINE MUSIC, INC.
LOCATION	WHITTIER, CALIFORNIA
FREQUENCY	1110 KC/S
POWER	10,000 WATTS
LATITUDE	34 DEG 00 MIN 37 SEC
LONGITUDE	117 DEG 55 MIN 07 SEC
WHEN USED	NIGHTTIME
RMS FIELD	725.04
DATE	FEBRUARY 1965

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

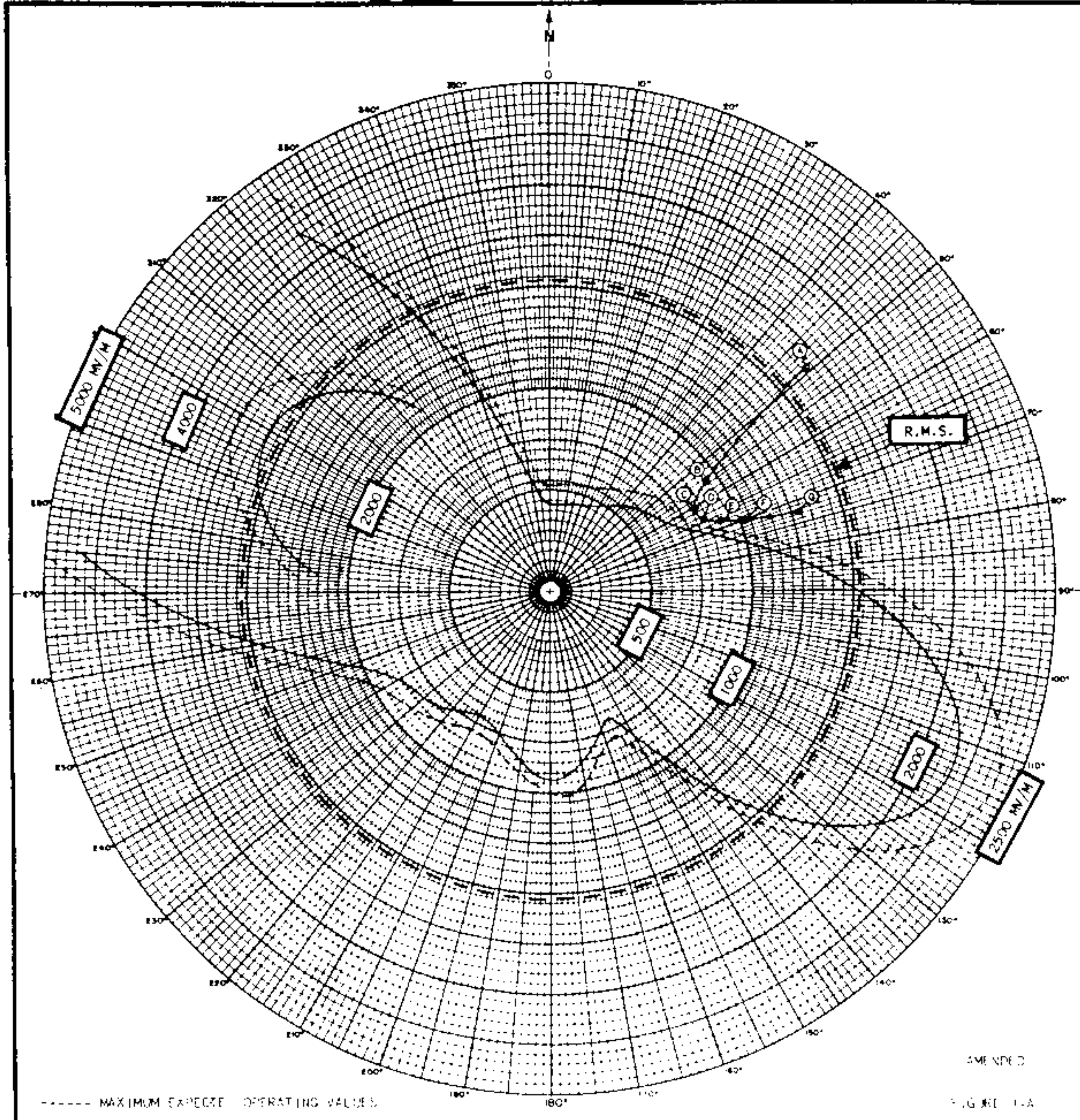
FCC File No. BP-16161
Accepted 3-15-65 Amended

New; Pacific Fine Music Inc.
Whittier, California 1110 kc

Proposed Day
(3-26-65ct)

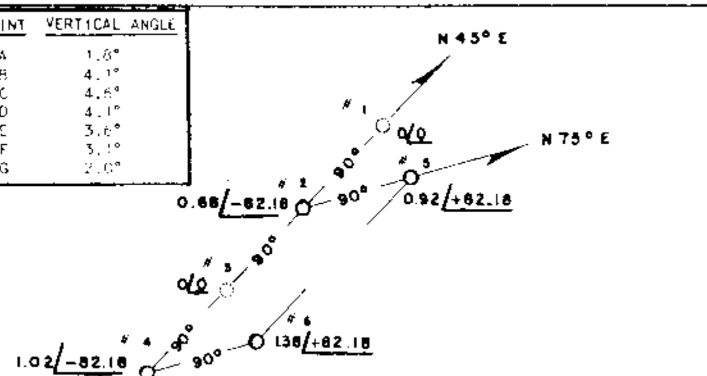
New; Pacific Fine Music Inc.
Whittier, California

10kw,50kw-LS,DA-2,U
1110 kc



HORIZONTAL RADIATION PATTERN

POINT	VERTICAL ANGLE
A	1.8°
B	4.1°
C	4.6°
D	4.1°
E	3.6°
F	3.1°
G	2.0°



G = 162.44°

APPLICANT	PACIFIC FINE MUSIC, INC.
LOCATION	WHITTIER, CALIFORNIA
FREQUENCY	1110 KC/S
POWER	50,000 WATTS
LATITUDE	34 DEG 00 MIN 37 SEC
LONGITUDE	117 DEG 53 MIN 07 SEC
WHEN USED	DAYTIME
RMS FIELD	1532.1 MV/M
DATE	FEBRUARY 1965

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

FCC File No. BP-16161
Accepted 3-15-65 Amended

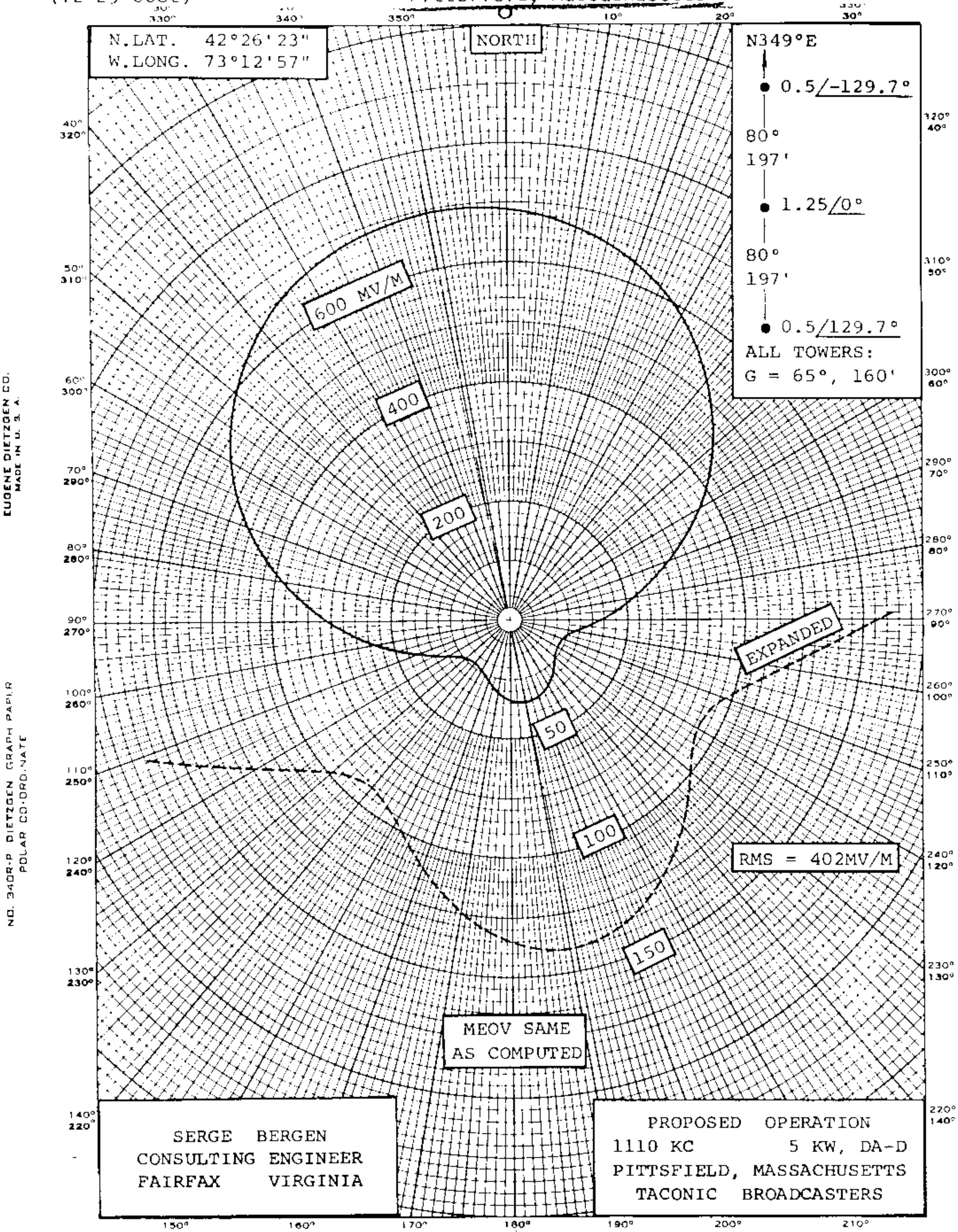
New; Pacific Fine Music Inc.
Whittier, California

1110 kc

Proposed Day (12-29-66ct)

New; Taconic Broadcasters
Pittsfield, Massachusetts

5kw, DA-D, D
1110 kc



FCC File No. BP-17499
Accepted 12-8-66

New: Taconic Broadcasters
Pittsfield, Massachusetts

1110 kc

1120kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: NEW

Main Studio: Hatillo, Puerto Rico

Frequency: 1120 kHz

Power: 1kw Night .25kw Day

Notification List No. 1785

Date: November 16, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 18° 28' 15"
West Longitude: 66° 50' 24"

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.

TOWERS:	C(#1)	E(#2)	S(#3)
HEIGHT ABOVE INSULATORS:	220'	220'	220' (90°)
NIGHT PHASING:	0°	-128.7°	---
NIGHT FIELD RATIO:	1.0	1.05	---
DAY PHASING:	0°	---	-174.2°
DAY FIELD RATIO:	1.0	---	1.05

SPACING AND ORIENTATION: With tower #1 as reference, tower #2 is spaced 60° on a line bearing 90° true, tower #3 spaced 80° on a line bearing 170.6 true.

GROUND SYSTEM: 120 - 220' 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 system are bonded together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	90.0 mv/m	137 mv/m	94.7 mv/m
Night	195.0 mv/m	266 mv/m	205 mv/m

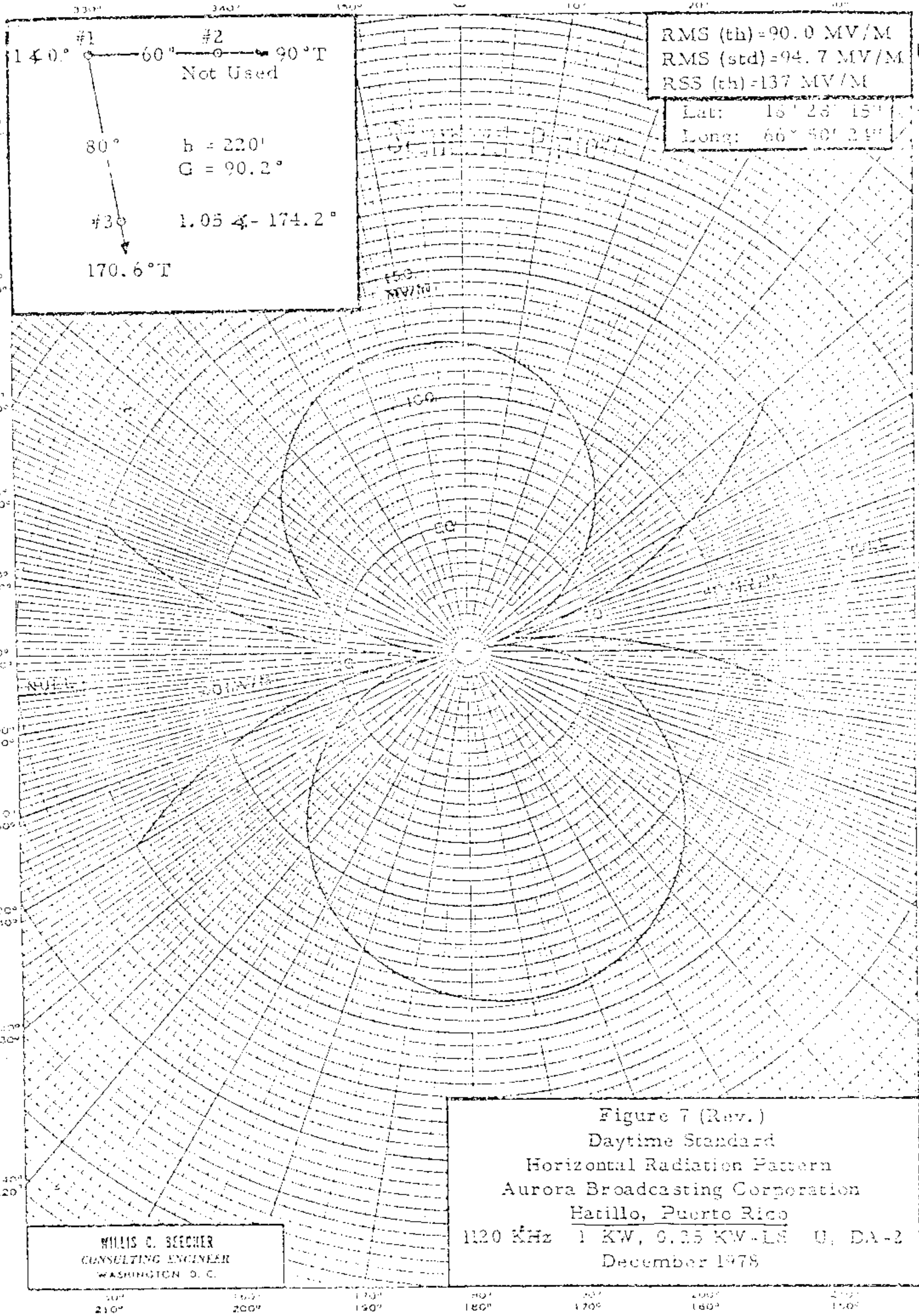


Figure 7 (Rev.)
Daytime Standard
Horizontal Radiation Pattern
Aurora Broadcasting Corporation
Hatillo, Puerto Rico
1120 KHz 1 KW, 0.25 KW-LS U, DA-2
December 1978

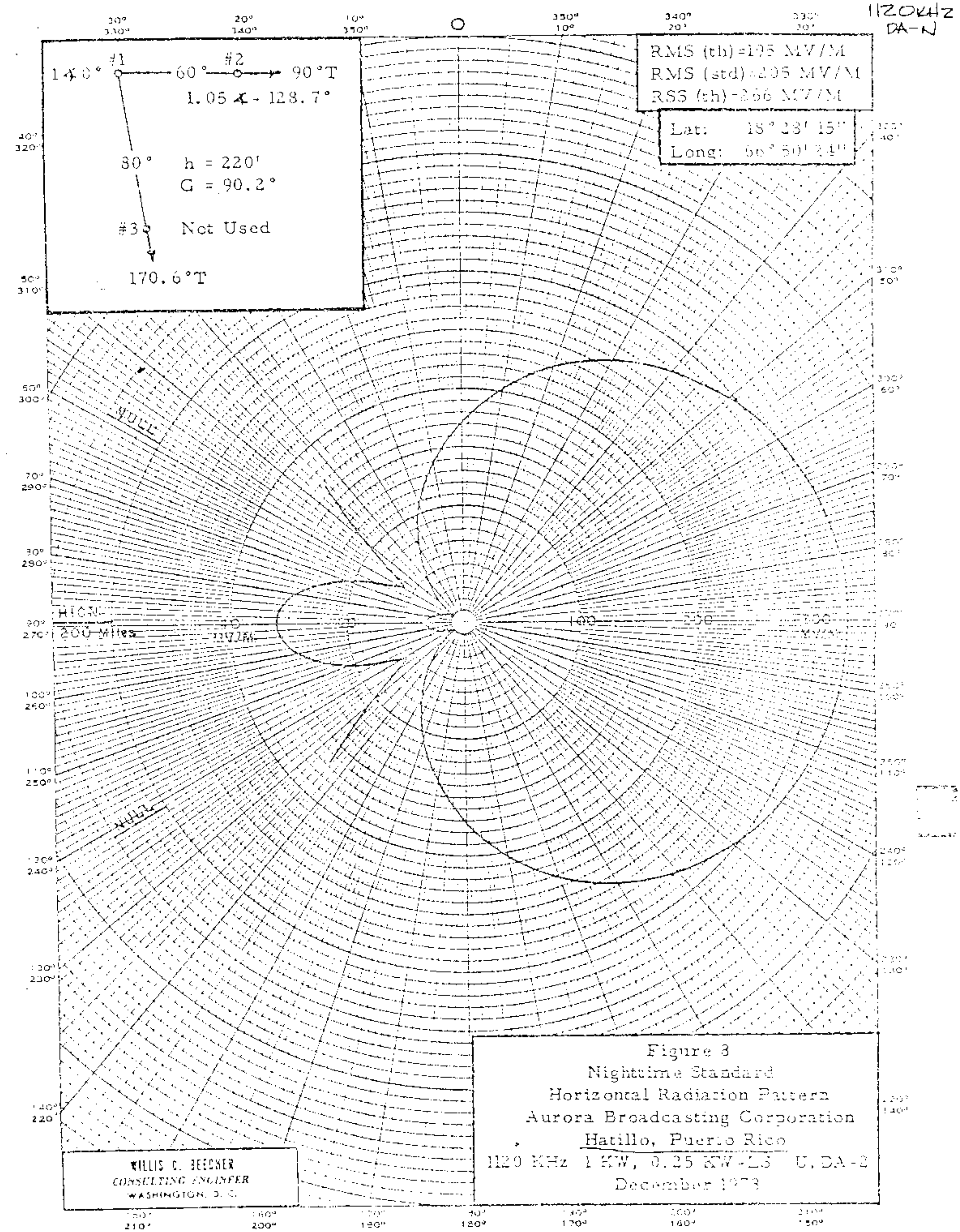


Figure 3
Nighttime Standard
Horizontal Radiation Pattern
Aurora Broadcasting Corporation
Hatillo, Puerto Rico
1120 KHz 1 KW, 0.25 KW-LS U, DA-2
December 1978

KPNW

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : KPNW   Main Studio: Eugene, Oregon

Frequency : 1120 KHz   Power : 50 kW Night 50 kW Day

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

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 43 57 24
West Longitude: 123 02 10

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nightime operation.(DA-1)
Number of elements: 4
Type of elements : Series excited,uniform cross-section, guyed vertical steel towers.

TOWER :	#1	#2	#3	#4		
HEIGHT ABOVE INSULATORS :	440'	440'	440'	440' (180°)		
PHASING :	0°	73.56°	172.67°	99.11°		
FIELD RATIO:	1.0	0.90	0.81	0.90		

SPACING AND ORIENTATION : The towers are located at the vertices of a parallelogram the long sides of which are 293' (120°) in length on a line bearing 90° true. The short sides are 220° (90°) in length on a line bearing 67° true.

GROUND SYSTEM : 120 - 352 equally spaced copper radials plus 120 - 75' interspaced radials about each tower. Radials are shortened and bonded to copper straps at points of overlap midway between adjacent towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	1688 mv/m	mv/m	1772.40 mv/m
Night	1688 mv/m	mv/m	1772.40 mv/m

Note: Please retain the directional antenna radiation pattern notitied for Station KPIR (WOW KPNW) in United States Change List Number 1191 dated November 23, 1966 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 noted.

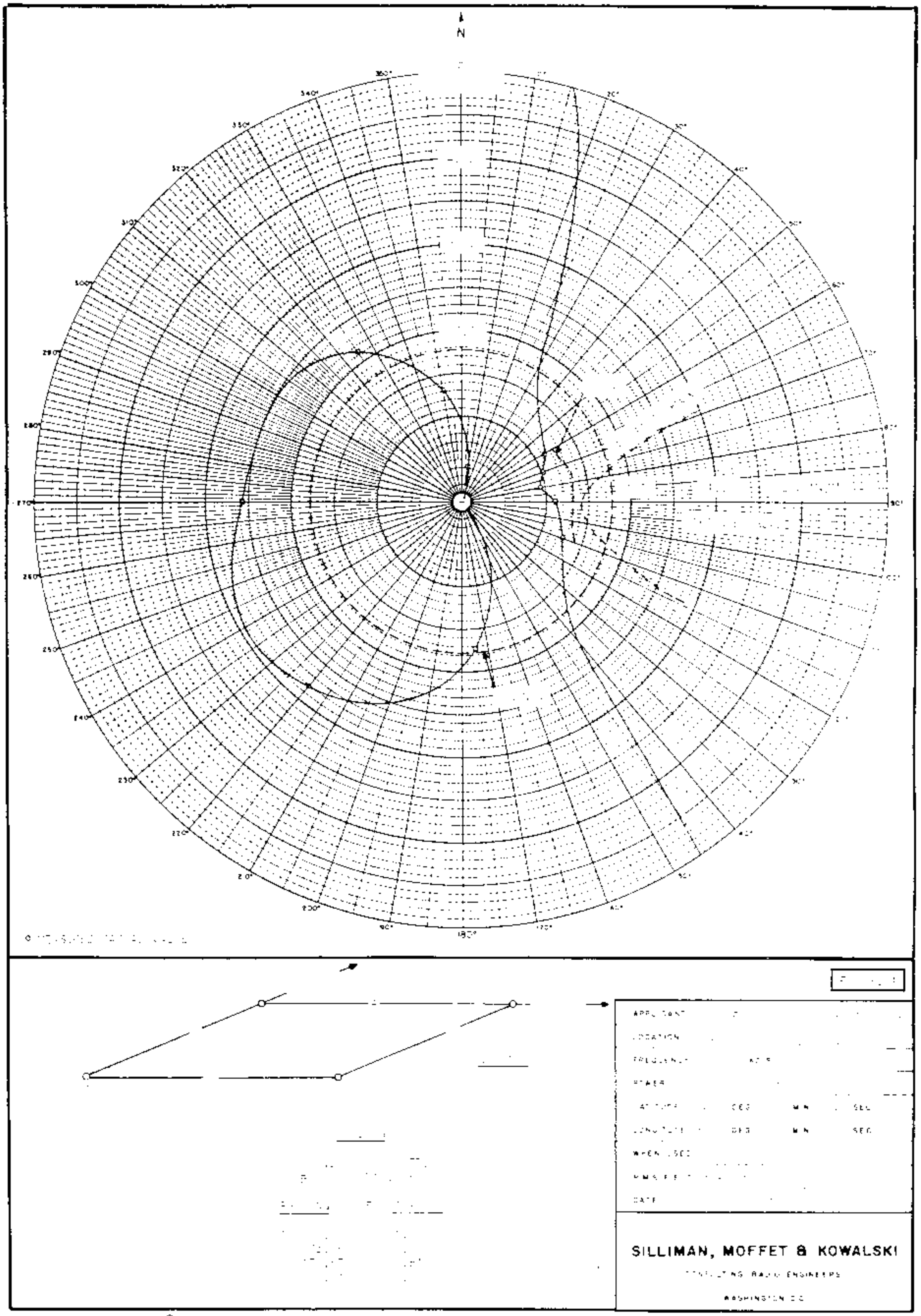
CTR NO

KPNW

Measured Day & Night
(2-22-71ct)

Station KPNW
Eugene, Oregon

50kw,DA-1,U
1120 kc



FCC File No.BL-12852
Accepted 1-28-71

Station KPNW
Eugene, Oregon

1120 kc

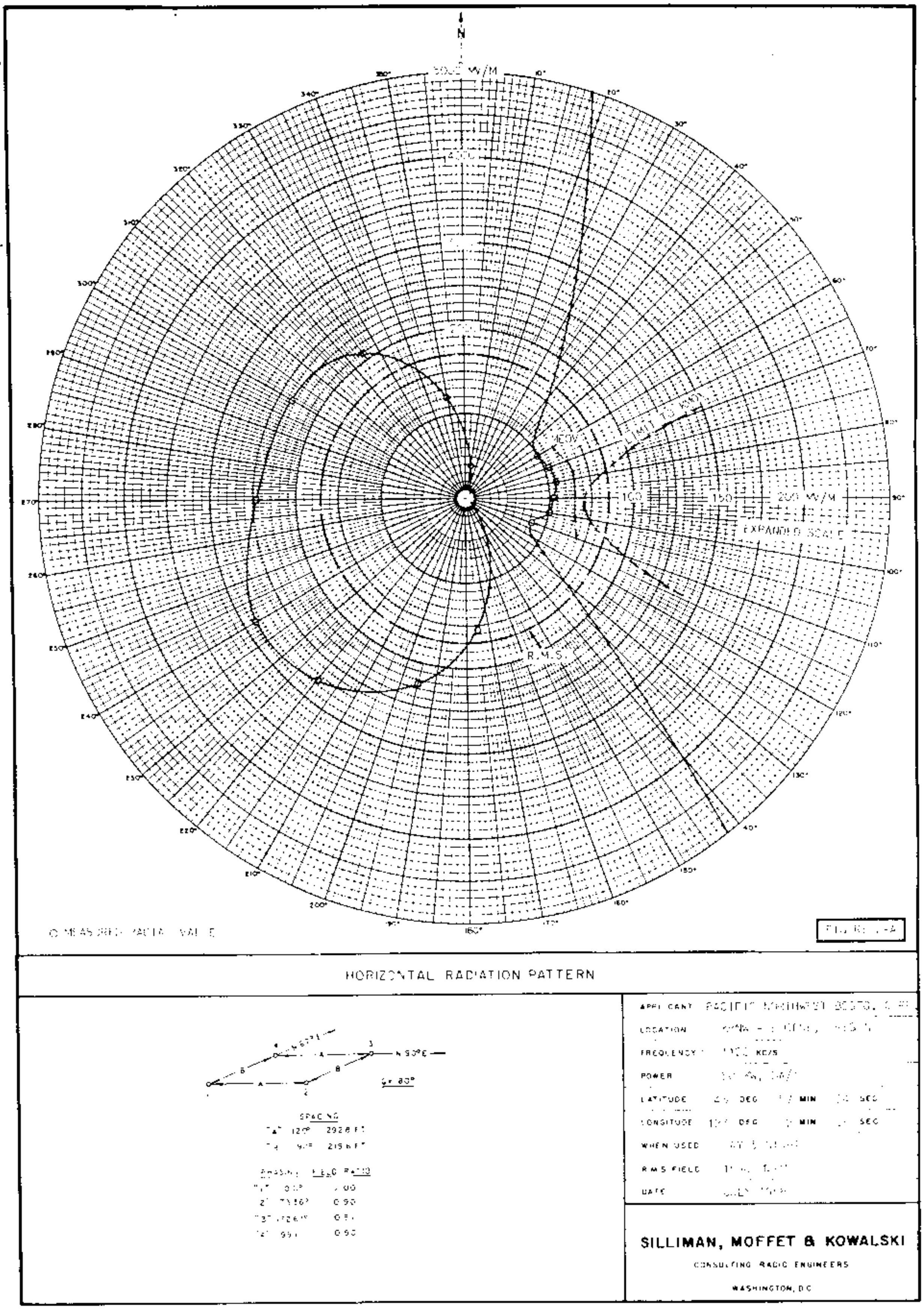
KPNW

Measured Day & Night
(8-28-68ct)

Station KPNW
Eugene, Oregon

50kw, DA-1, U
1120 kc

BL 12048
Granted
5-9-69
license
covering
change



FCC File No. BL-12048
Accepted 8-14-68

Station KPNW
Eugene, Oregon

1120 kc

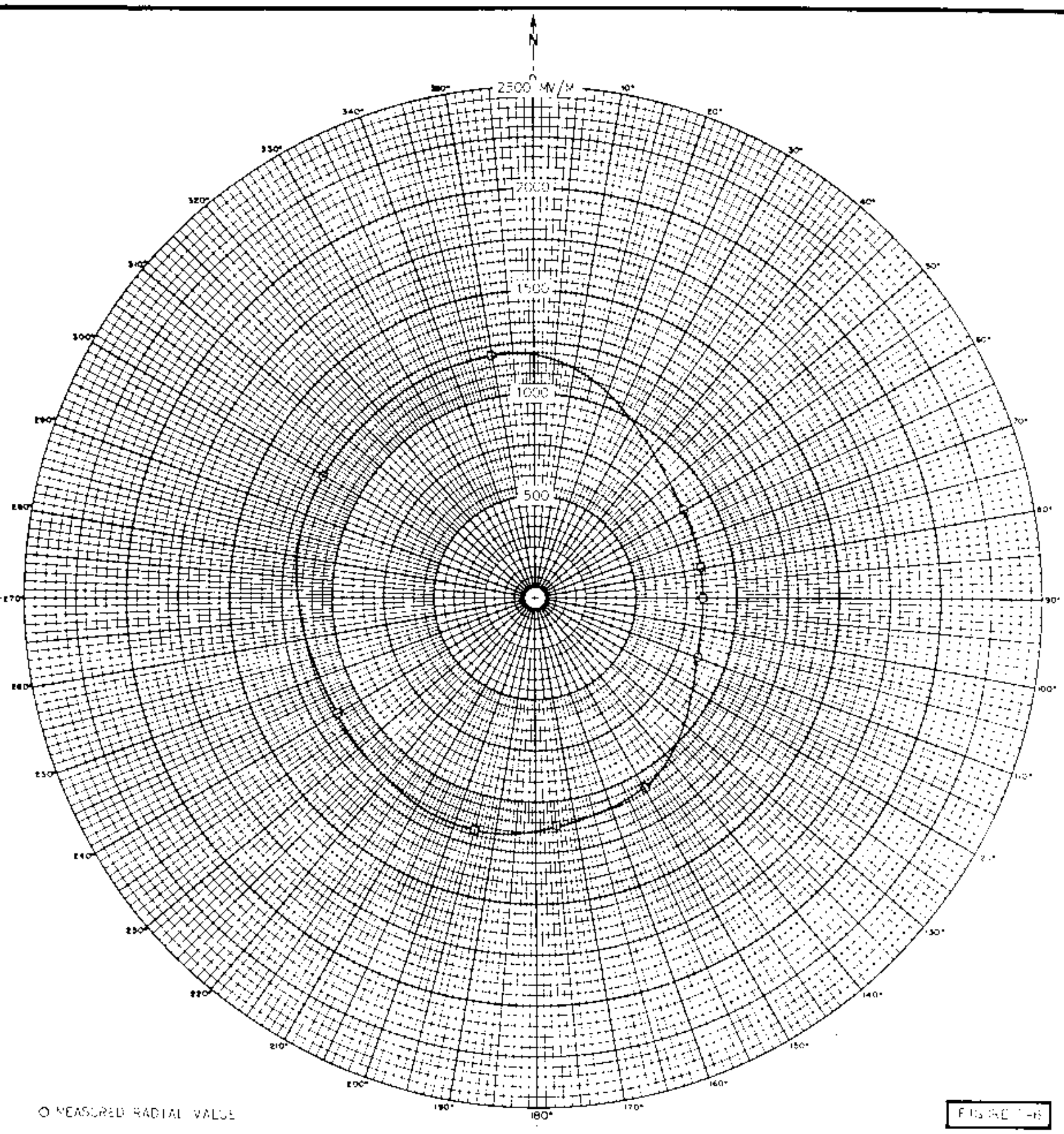
KPNW

Measured Non-DA
(8-28-68ct)

Station KPNW
Eugene, Oregon

50kw,DA-1,U
1120 kc

BL 12048
Granted
5-9-69
License
covering
changes



HORIZONTAL RADIATION PATTERN

NON-DIRECTIONAL SURVEY

APPLICANT	[illegible]
LOCATION	KPNW - EUGENE, OREGON
FREQUENCY	1120 KC/S
POWER	[illegible]
LATITUDE	45 DEG [illegible] MIN [illegible] SEC
LONGITUDE	[illegible] DEG [illegible] MIN [illegible] SEC
WHEN USED	NON-DIRECTIONAL
R M S FIELD	[illegible] MV/M
DATE	[illegible] JULY [illegible]

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

FCC File No.BL-12048
Accepted 8-14-68

Station KPNW
Eugene, Oregon

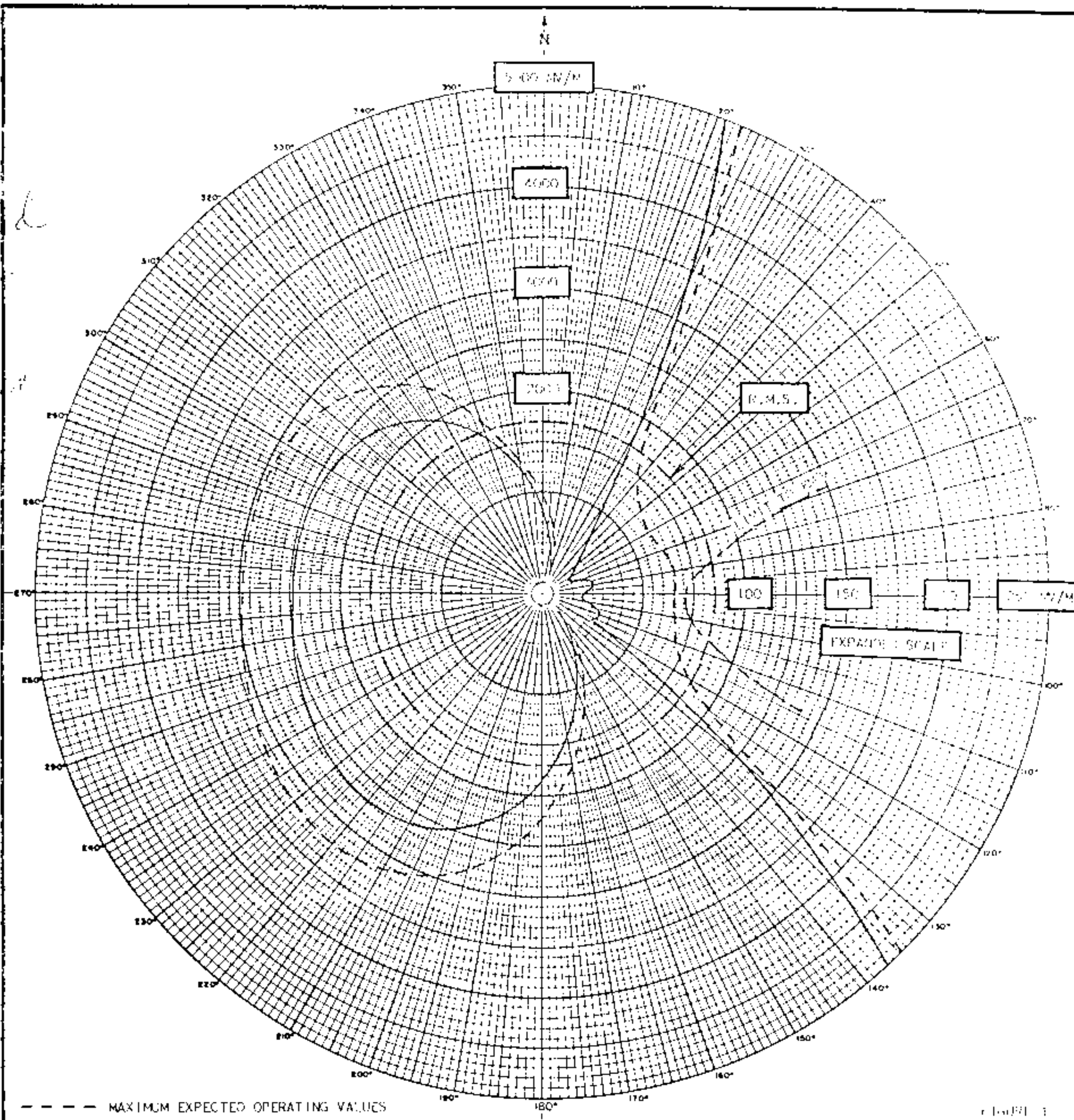
1120 kc

KPNW

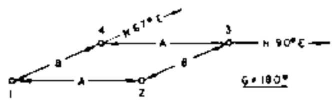
Proposed Day & Night
(7-28-69ct)

Station KPNW
Eugene, Oregon

50kw,DA-1,U
1120 kc



HORIZONTAL RADIATION PATTERN



SPACING

"A"	120°	292.6 FT.
"B"	90°	219.6 FT

	PHASING	FIELD RATIO
"1"	0.0°	1.00
"2"	73.56°	0.90
"3"	172.67°	0.81
"4"	99.11	0.90

APPLICANT: [illegible]
LOCATION: KPNW - EUGENE, OREGON
FREQUENCY: 1120 KC/S
POWER: [illegible]
LATITUDE 43 DEG 57 MIN 24 SEC
LONGITUDE 123 DEG [illegible] MIN [illegible] SEC
WHEN USED: DAY & NIGHT
RMS FIELD: 1686 MV/M
DATE [illegible]

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

FCC File No.BP-18594
Accepted 7-9-69

Station KPNW
Eugene, Oregon

1120 kc

DESCRIPTION SHEET - DIRECTIONAL ANTENNA

STATION: CKWX

MAIN STUDIO: Vancouver, B.C.

FREQUENCY: 1130 kHz

POWER: 50 kW CLASS 1-B

NOTIFICATION LIST NO. 369

DATE: December 5, 1977

GEOGRAPHICAL LOCATION: Latitude 49° 09' 22" North
Longitude 123° 04' 00" West

ANTENNA CHARACTERISTICS:

Mode of Operation: DA-1
Number of Elements: 2 (Two)
Type of Elements: Guyed steel towers, uniform cross-section, base insulated for series feed

TOWER	#1 (E)	#2 (W)
Height above base insulator:	218' (90°)	218' (90°)
Overall height:	218'	218'
Field Ratio:	1.0	.48
Phasing:	Ref.	-100°
Spacing:	Ref.	218' (90°)
Orientation:	Ref.	298°T

GROUND SYSTEM: 120 equally spaced radials of No.10 B & S gauge bare copper wire extend from the base of each tower. The maximum length of any radial is 348 feet (0.4 wavelength), with the exception of those joined along the common chords.

PREDICTED EFFECTIVE FIELD: 1345 mV/m at 1 mile for 50 kW
190 mV/m at 1 mile for 1 kW

Please retain the directional antenna radiation patterns notified for CKWX in Canadian Change List No. 364 dated June 27, 1977. This notification is for the purpose of indicating only a change in the overall height of the antenna towers.

February 8, 1977 Revised October 28, 1977

CKWX

PROJECT #17505

DESCRIPTION SHEET - DIRECTIONAL ANTENNA

STATION: CKWX — MAIN STUDIO: Vancouver, B.C.

FREQUENCY: 1130 kHz — POWER: 50 kW — CLASS 1-B

NOTIFICATION LIST NO. 364 — DATE: June 27, 1977

GEOGRAPHICAL LOCATION: Latitude 49° 09' 22" North
Longitude 123° 04' 00" West

ANTENNA CHARACTERISTICS:

Mode of Operation:	DA-1
Number of Elements:	2 (Two)
Type of Elements:	Guyed steel towers, uniform cross-section, base insulated for series feed

TOWER	#1 (E)	#2 (W)
Height above base insulator:	218' (90°)	218' (90°)
Overall height:	223'	223'
Field Ratio:	1.0	.48
Phasing:	Ref.	-100°
Spacing:	Ref.	218' (90°)
Orientation:	Ref.	298°T

GROUND SYSTEM: 120 equally spaced radials of No.10 B & S gauge bare copper wire extend from the base of each tower. The maximum length of any radial is 348 feet (0.4 wavelength), with the exception of those joined along the common chords.

PREDICTED EFFECTIVE FIELD: 1345 mV/m at 1 mile for 50 kW
190 mV/m at 1 mile for 1 kW

February 8, 1977

CKWX

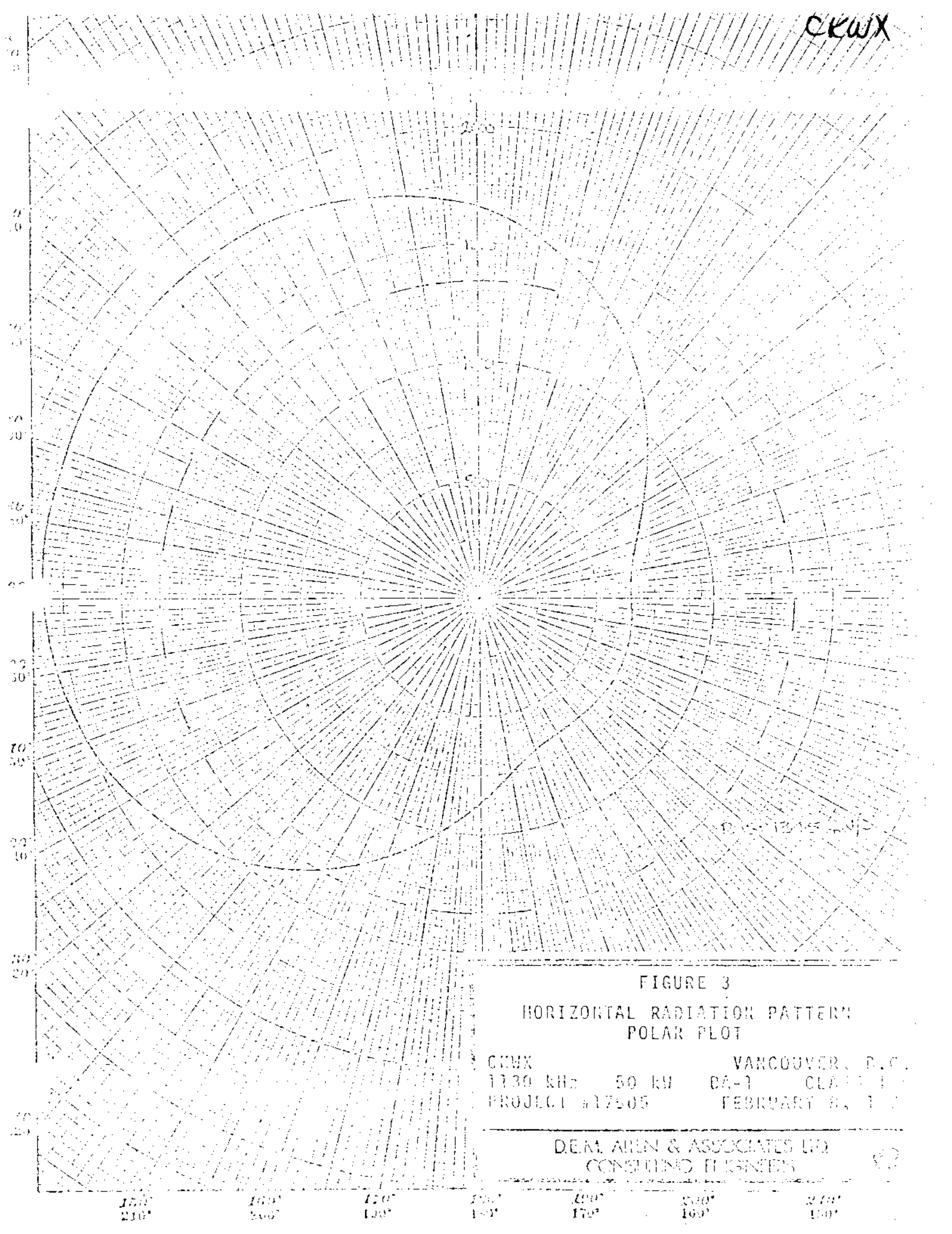


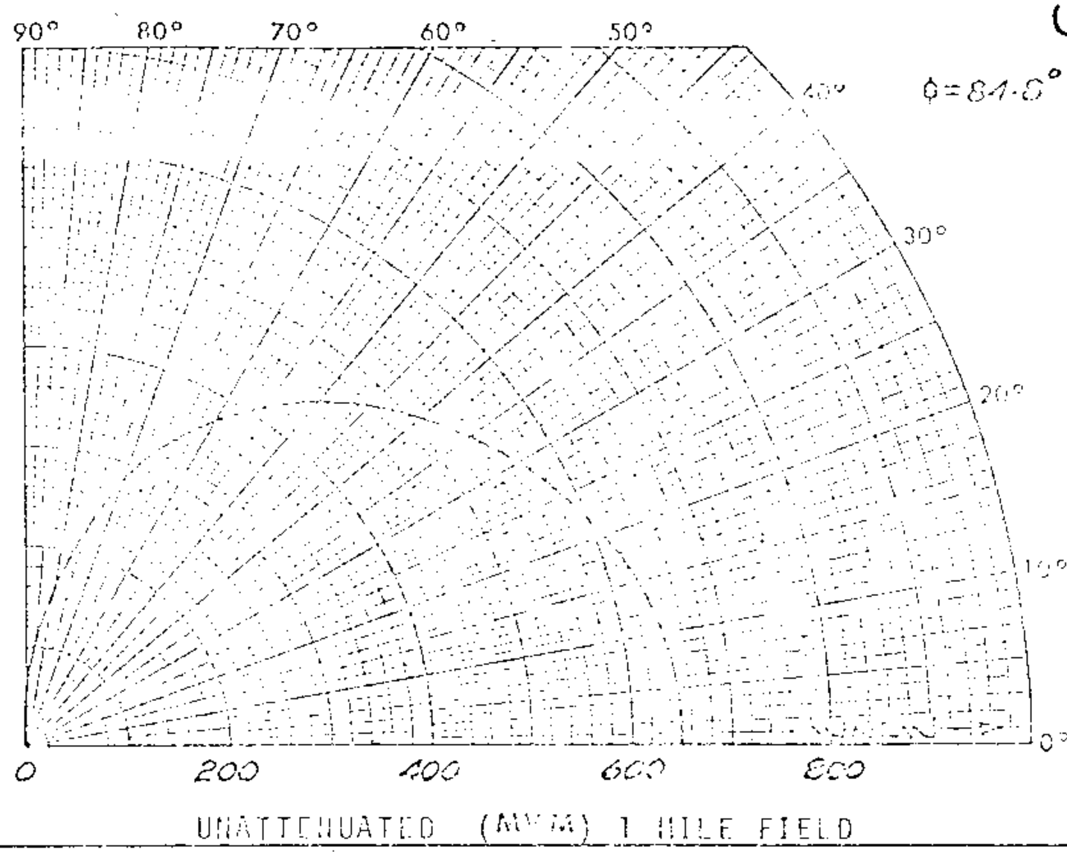
FIGURE 3

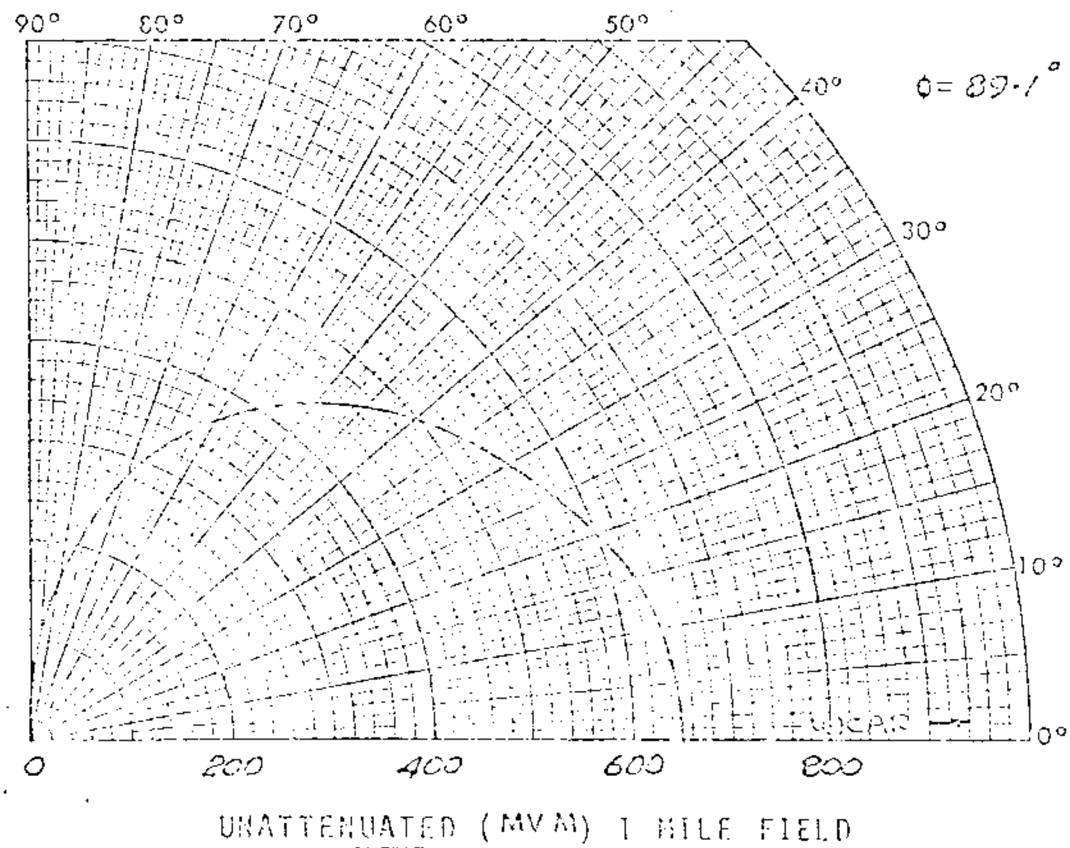
HORIZONTAL RADIATION PATTERN
POLAR PLOT

CKWX VANCOUVER, B.C.
1130 kHz 50 kW DA-1 CLA[illegible]
PROJECT #17505 FEBRUARY [illegible]

D.E.M. ALLEN & ASSOCIATES LTD.
CONSULTING ENGINEERS

CKWX





VERTICAL RADIATION PATTERNS

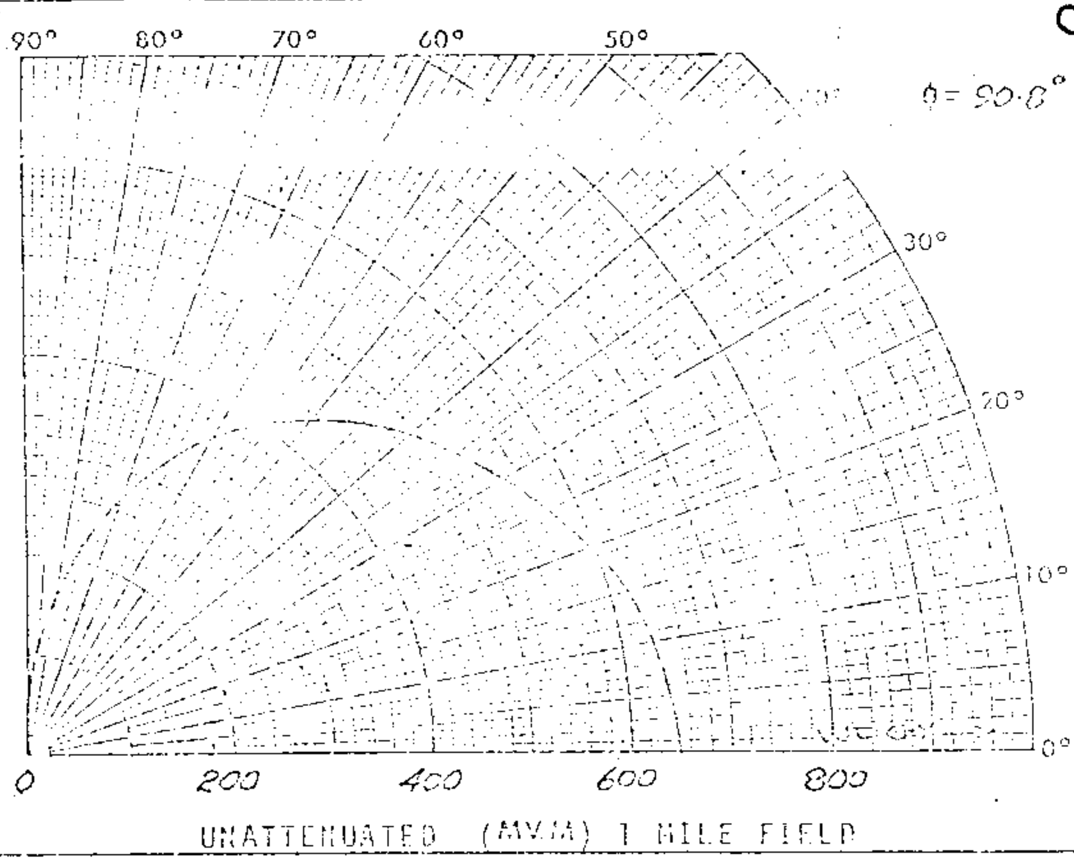
FIGURE 4

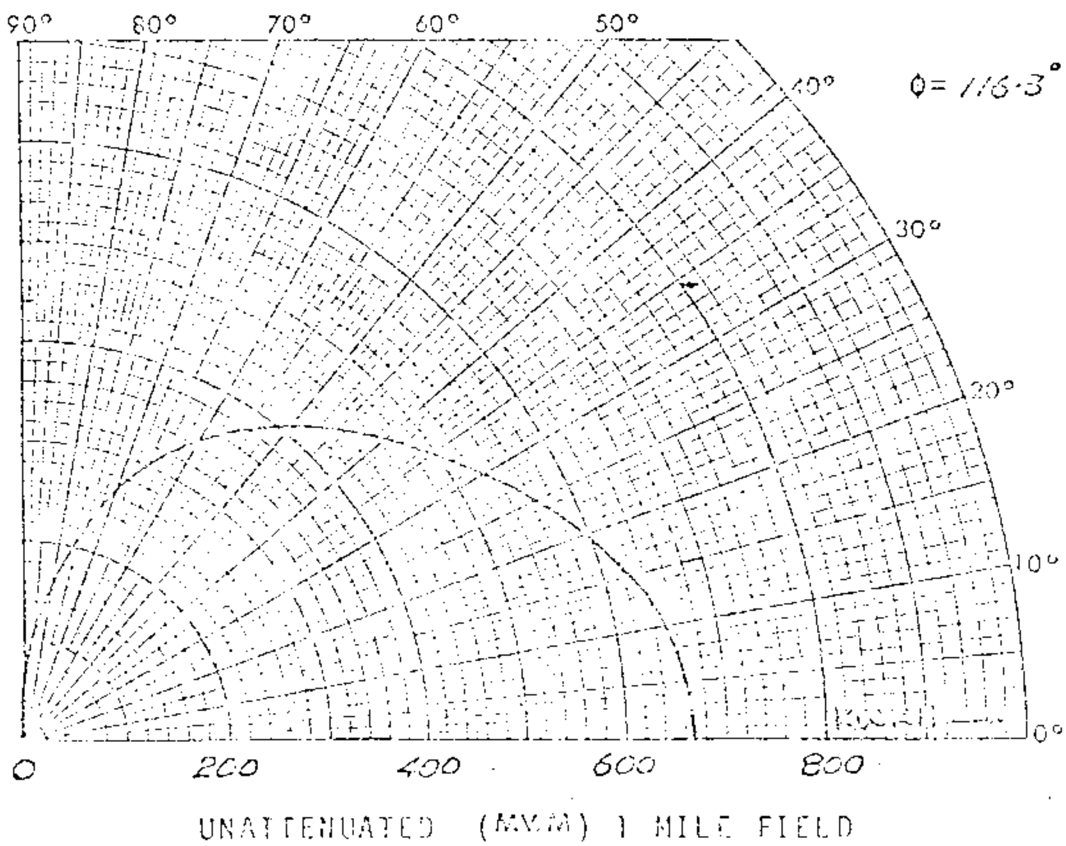
CKWX			VANCOUVER, B.C.
1130 kHz	50 kW	DA-1	CLASS I-B
PROJECT #17505			FEBRUARY 8, 1977

D. E. M. ALLEN & ASSOCIATES LTD.

CO-1015D (NO.10LV)
CLAR CO-ORDINATE MADE IN CANADA

CKWX





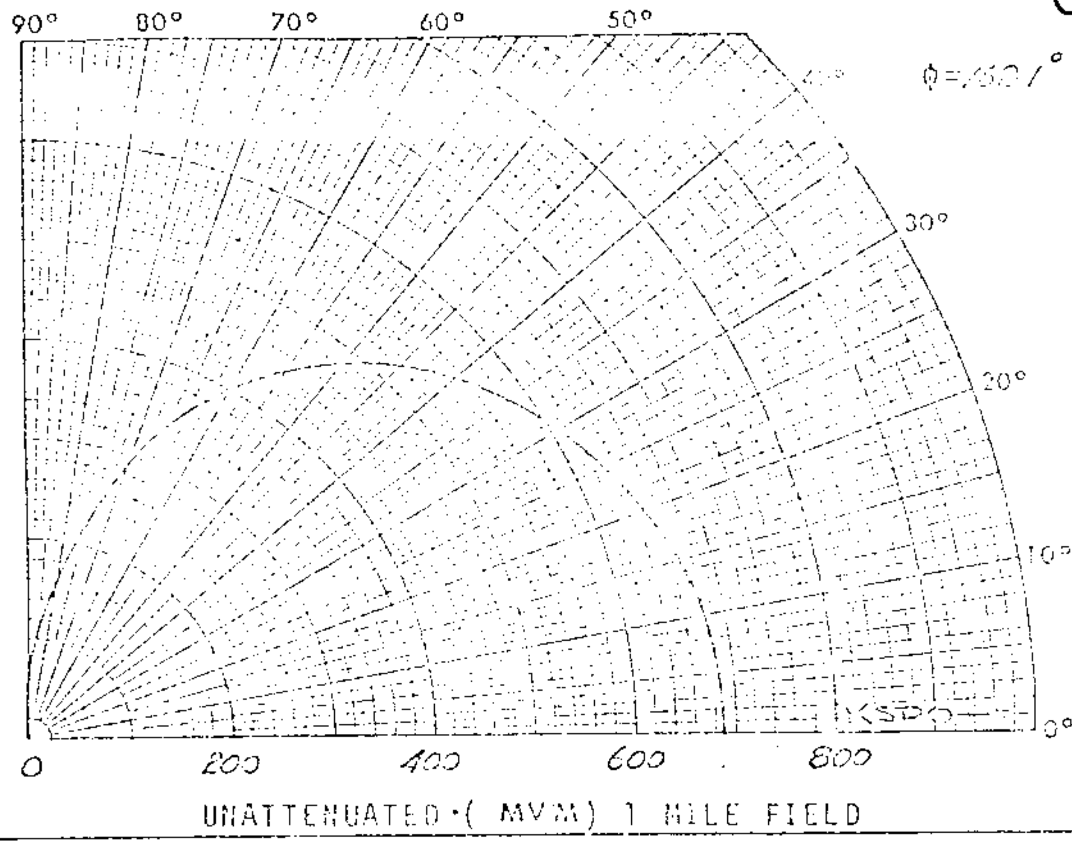
VERTICAL RADIATION PATTERNS

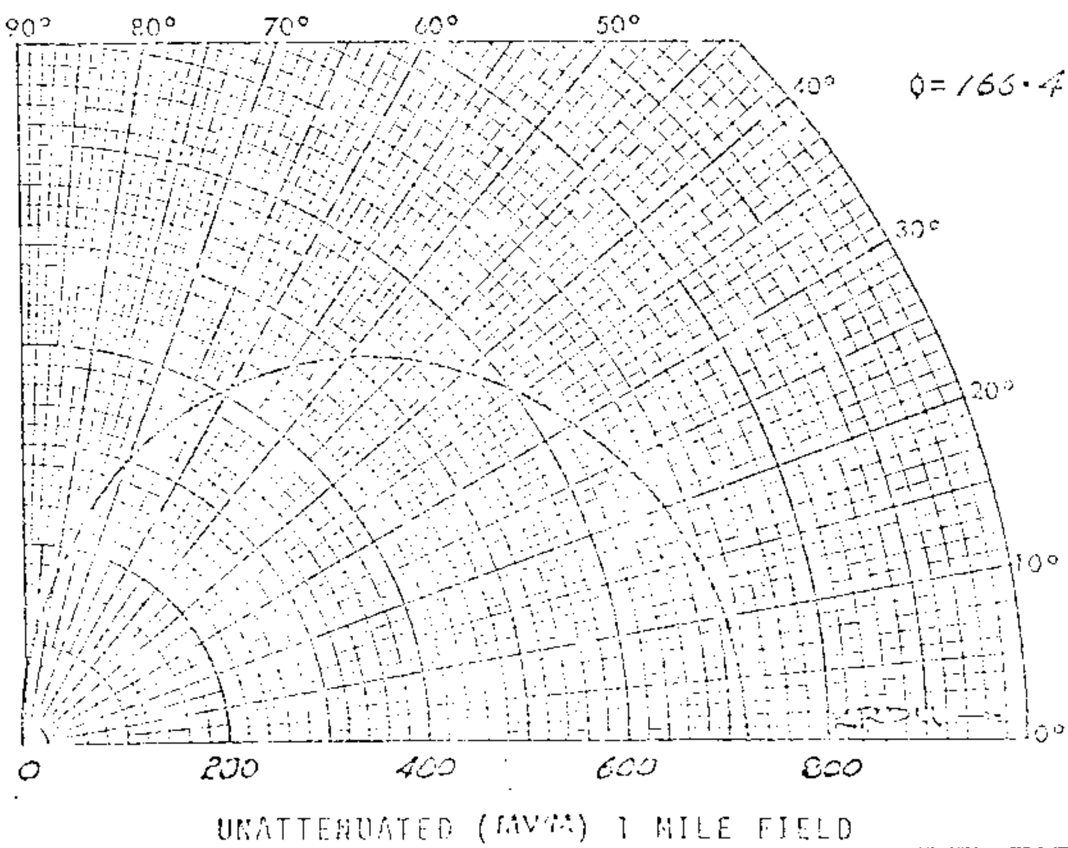
FIGURE 5

CKWX VANCOUVER, B.C.
1130 kHz 50 kW DA-1 CLASS I-B
PROJECT #17805 FEBRUARY 8, 1977
D. E. M. ALLEN & ASSOCIATES LTD.

CO-10150 (NO.10LV)
OUR CO-ORDINATE MADE IN CANADA

CKWX





VERTICAL RADIATION PATTERNS

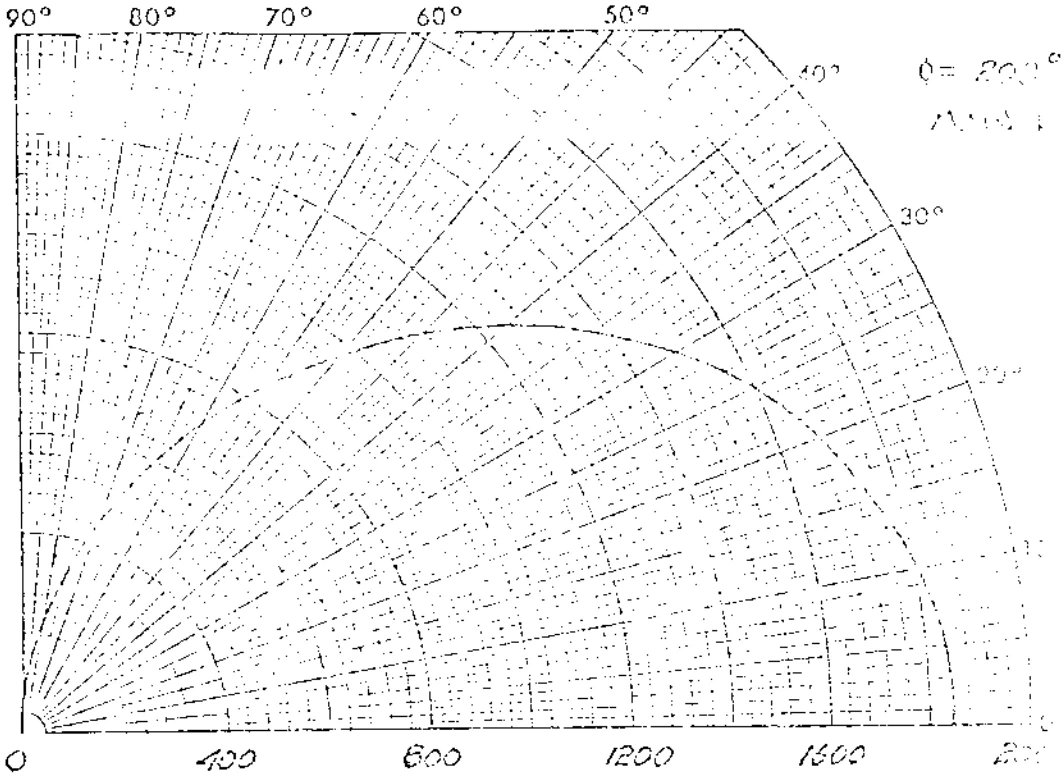
FIGURE 6

CKWX 1130 KHz PROJECT #17505	50 KW	DA-1	VANCOUVER, B.C. CLASS 1-B FEBRUARY 8, 1977

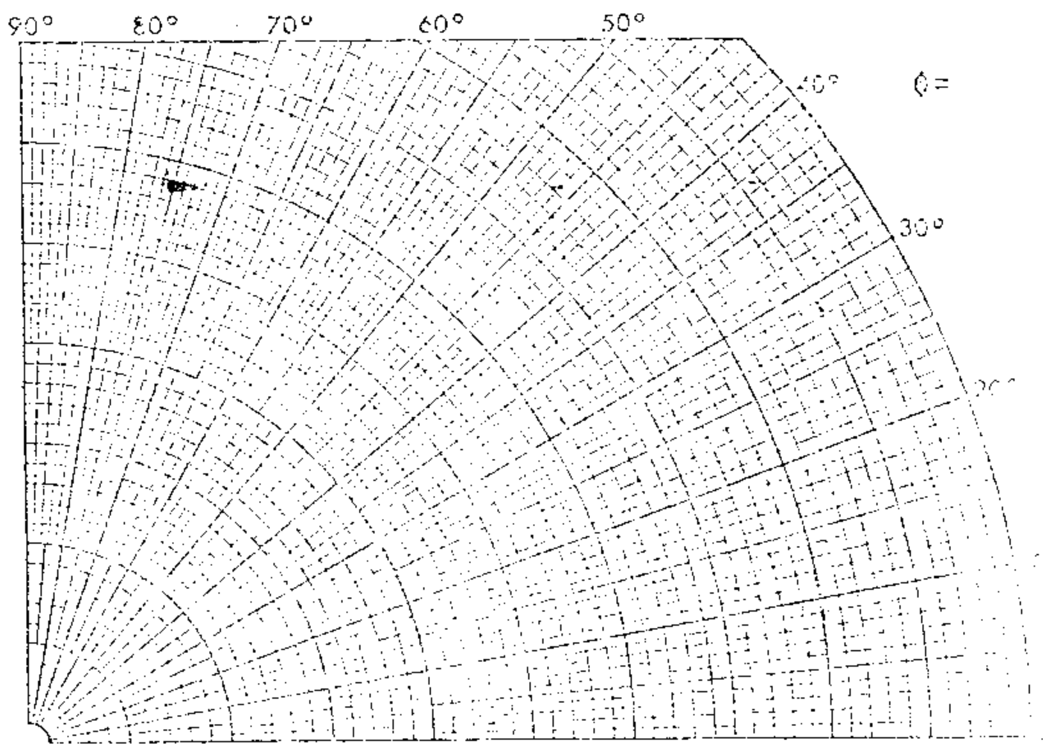
D. E. M. ALLEN & ASSOCIATES LTD.

POLAR CO-ORDINATE

CKWX



UNATTENUATED (MV/M) 1 MILE FIELD



MV/M

VERTICAL RADIATION PATTERNS

FIGURE 7

CKWX
1130 KHz 50 KW DA-1
PROJECT #17505

D. E. M. ALLEN & ASSOCIATES LTD.

GD-1015D (NO.101V)
POLAR CO-ORDINATE
MADE IN CANADA

#127

CKWX

DESCRIPTION SHEET
(3-28-60g)

Station CKWX
Vancouver, British Columbia

50kw, DA-N,U, Class I-B
1130 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CKWX

Main Studio: Vancouver, B.C.

Power: 50 kw

Frequency: 1130 kcs. Class: I-B

Notification Reference No. 127

Date: November 28, 1958

Location:

North Latitude: 49° 10' 48"

West Longitude: 123° 04' 38"

RECEIVED
MAR 1960
F.C.C.
MAIL & FILES

ANTENNA CHARACTERISTICS

Authorized for Night operation (DA-N)
Two elements, guyed uniform cross-section, series fed, no top loading.

TOWER:	Northwest	Southeast
Height above Insulators:	218' (90°)	218' (90°)
Spacing:	218' (90°)	
Phasing:	120° lag	0°
Field Ratio:	0.47	1.0

Ground System: 120 radials, each 300' long, spaced 3° around each tower.

Predicted Effective Field: 1348 mv/m at 1 mile. (190 mv/m per kw)

Orientation of Towers: Centre line through towers lies in azimuth 298°.

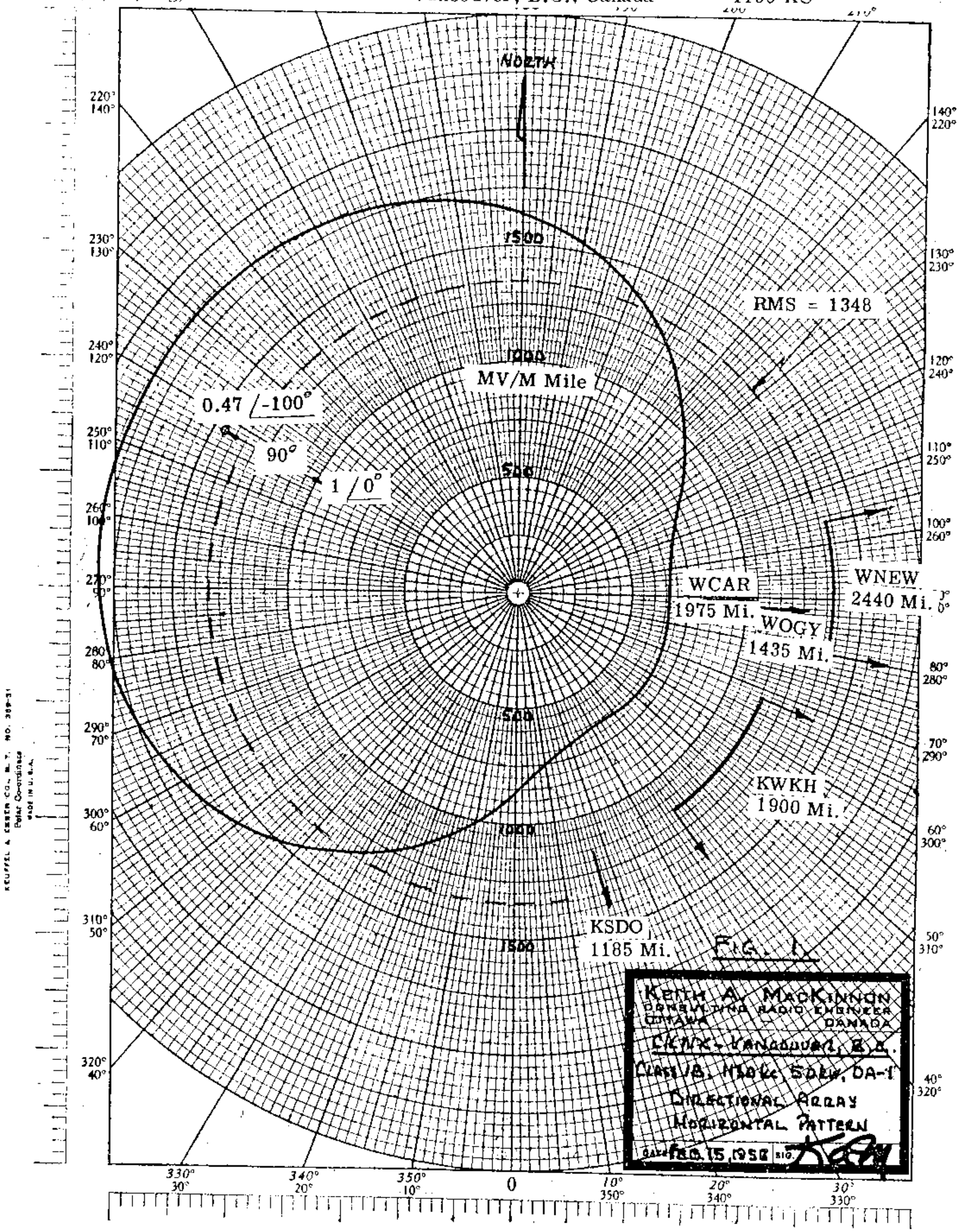
NOTE: Please retain the antenna radiation pattern notified for station CKWX in Canadian Change List No. 109 dated November 28, 1958 and attach to this revised description sheet. This notification only concerns a change in the day-time operation with the night-time operation continued as previously notified.

2

CKWX

PROPOSED ~~DAY &~~ NIGHT
(4/16/57g)

Station CKWX 50kw, DA-1,U
Vancouver, B.C., Canada 1130 KC



DESCRIPTION SHEET - DIRECTIONAL ANTENNA

STATION: CKWX

MAIN STUDIO: Vancouver, B.C.

FREQUENCY: 1130 kHz

POWER: 50 kW CLASS 1-B

NOTIFICATION LIST NO. 369

DATE: December 5, 1977

GEOGRAPHICAL LOCATION: Latitude 49° 09' 22" North
Longitude 123° 04' 00" West

ANTENNA CHARACTERISTICS:

Mode of Operation: DA-1
Number of Elements: 2 (Two)
Type of Elements: Guyed steel towers, uniform cross-section, base insulated for series feed

TOWER	#1 (E)	#2 (W)
Height above base insulator:	218' (90°)	218' (90°)
Overall height:	218'	218'
Field Ratio:	1.0	.48
Phasing:	Ref.	-100°
Spacing:	Ref.	218' (90°)
Orientation:	Ref.	298°T

GROUND SYSTEM: 120 equally spaced radials of No.10 B & S gauge bare copper wire extend from the base of each tower. The maximum length of any radial is 348 feet (0.4 wavelength), with the exception of those joined along the common chords.

PREDICTED EFFECTIVE FIELD: 1345 mV/m at 1 mile for 50 kW
190 mV/m at 1 mile for 1 kW

Please retain the directional antenna radiation patterns notified for CKWX in Canadian Change List No. 364 dated June 27, 1977. This notification is for the purpose of indicating only a change in the overall height of the antenna towers.

February 8, 1977 Revised October 28, 1977

CKXL

DESCRIPTION SHEET

Station:	CKXL	Main Studio:	Calgary, Alberta
Frequency:	1140 kHz	Power:	50 kW
Time:	Unlimited	Class:	II
Notification List No.:	363	Date:	May 10, 1977

Geographical Location: North Lat. 50° 55' 25"
West Long. 113° 49' 58"

Antenna System:

Mode of Operation: DA-2

Elements: Four uniform cross-section, guyed steel towers, base insulated and series fed.

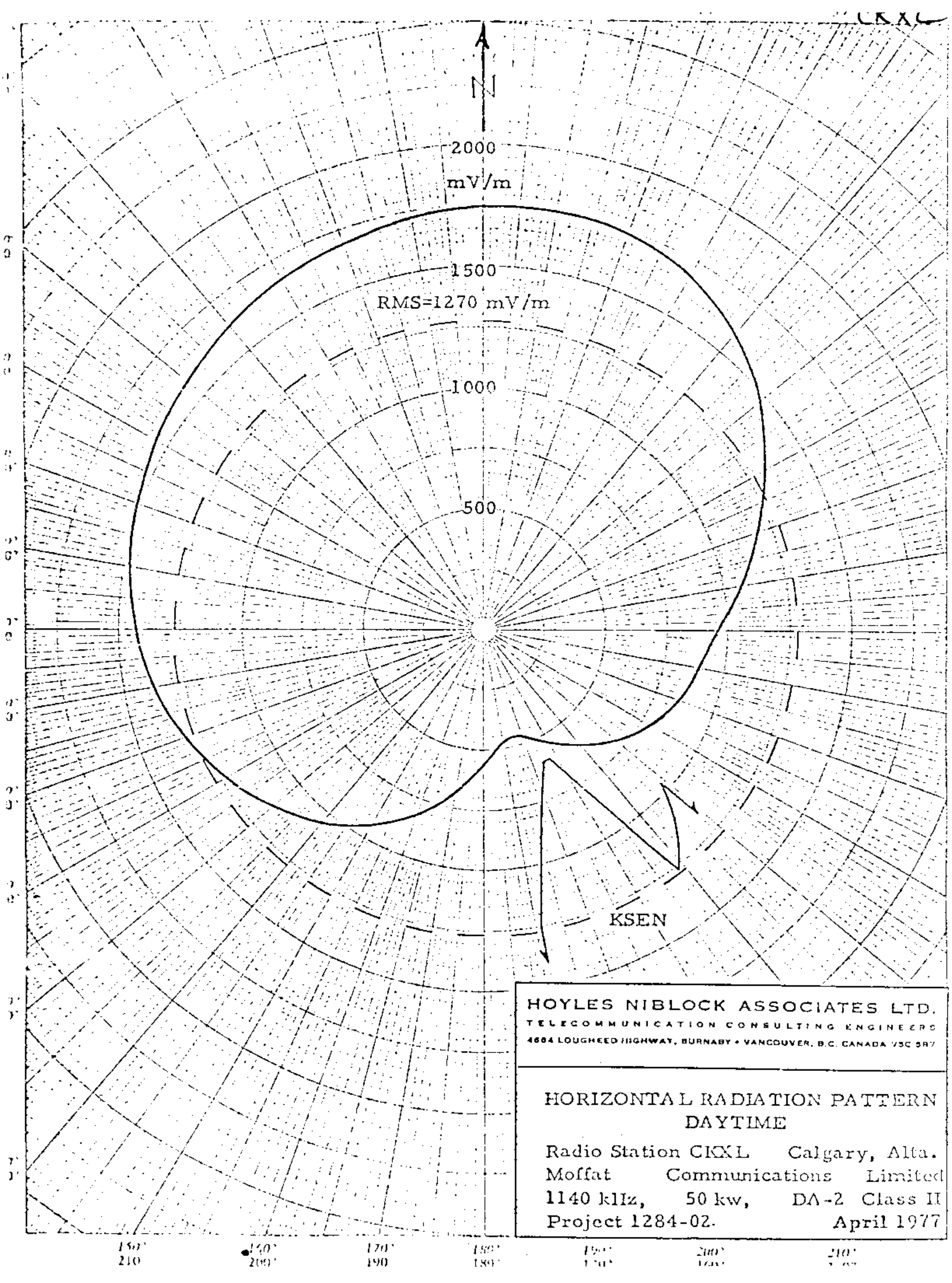
Towers	1	2	3	4
Height Above Insulators	216' (90°)	216' (90°)	216' (90°)	216' (90°)
Overall Height	220'	220'	220'	220'
Spacing	Ref	90°	151.87°	120°
Orientation	Ref	30°	82.2°	118.5°
Field Ratio - Day	1	0.5	---	0.53
- Night	1	0.87	0.896	1.030
Phase - Day	0	315°	---	45°
- Night	0	-91.4	-24.1	67.3°

Ground System: The ground system shall consist of 120, 0.4λ No. 10 copper wire radials buried approximately 8" to 14" below grade. The radials will be shortened between towers and bonded to transverse straps along the common chord between the towers.

Predicted Effective Field, Day: 1270 mV/m for 50 kW
179 mV/m for 1 kW

Predicted Effective Field, Night: 1250 mV/m for 50 kW
177 mV/m for 1 kW

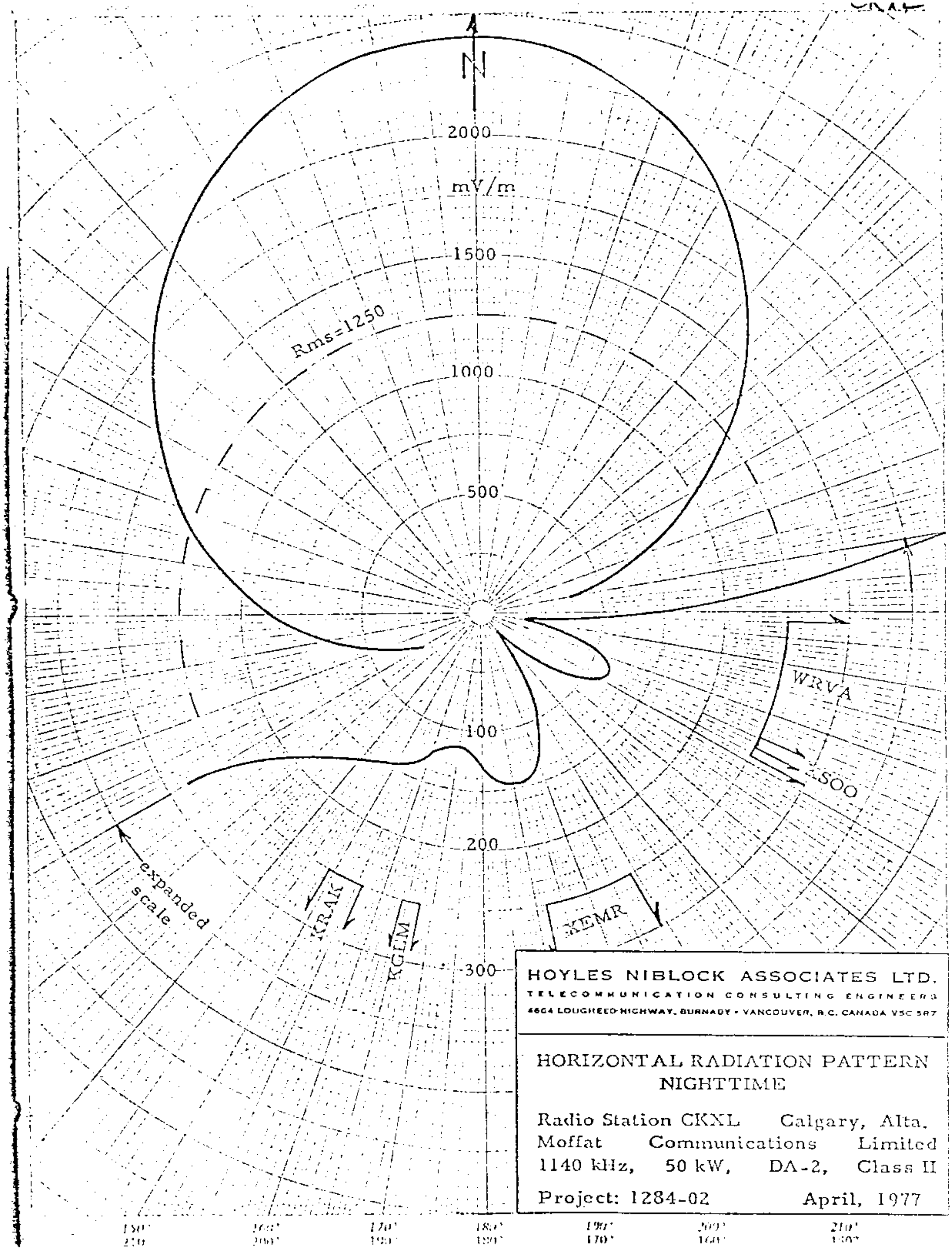
18-4-77



HOYLES NIBLOCK ASSOCIATES LTD.
TELECOMMUNICATION CONSULTING ENGINEERS
4684 LOUGHEED HIGHWAY, BURNABY • VANCOUVER, B.C. CANADA V5C 5R7

HORIZONTAL RADIATION PATTERN
DAYTIME

Radio Station CKXL Calgary, Alta.
Moffat Communications Limited
1140 kHz, 50 kw, DA-2 Class II
Project 1284-02. April 1977



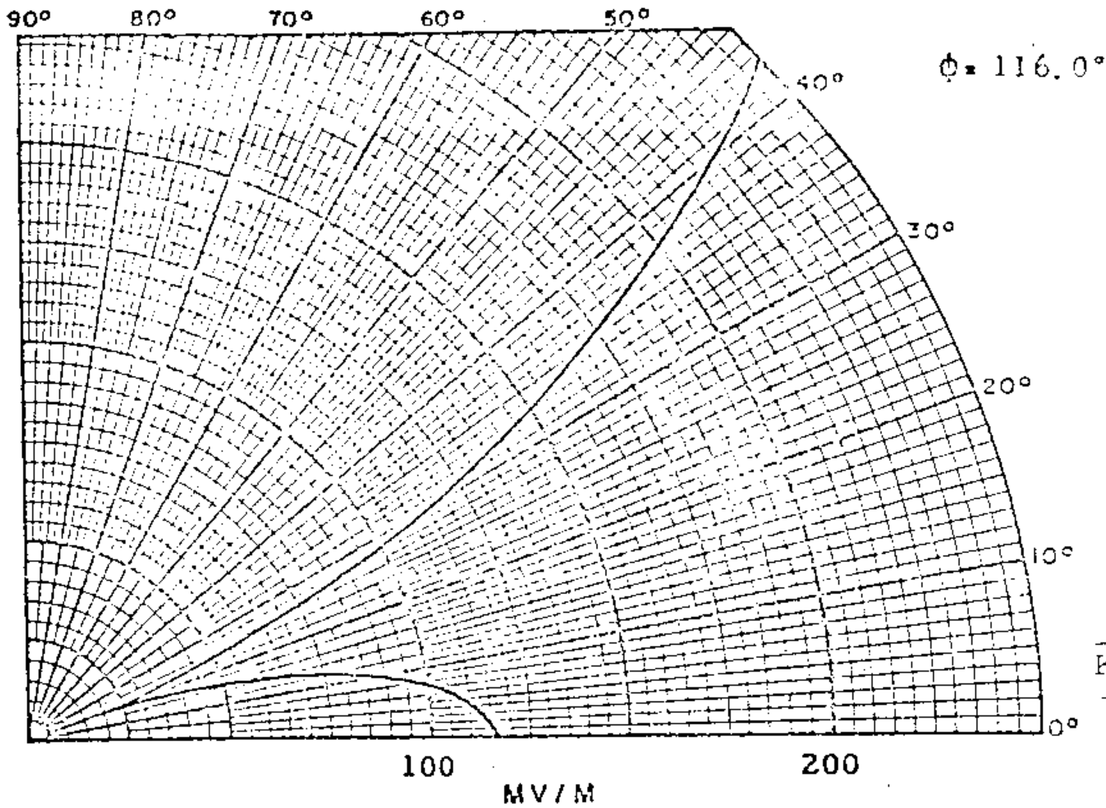
HOYLES NIBLOCK ASSOCIATES LTD.
TELECOMMUNICATION CONSULTING ENGINEERS
4664 LOUGHEED HIGHWAY, BURNABY • VANCOUVER, B.C. CANADA V5C 5R7

HORIZONTAL RADIATION PATTERN
NIGHTTIME

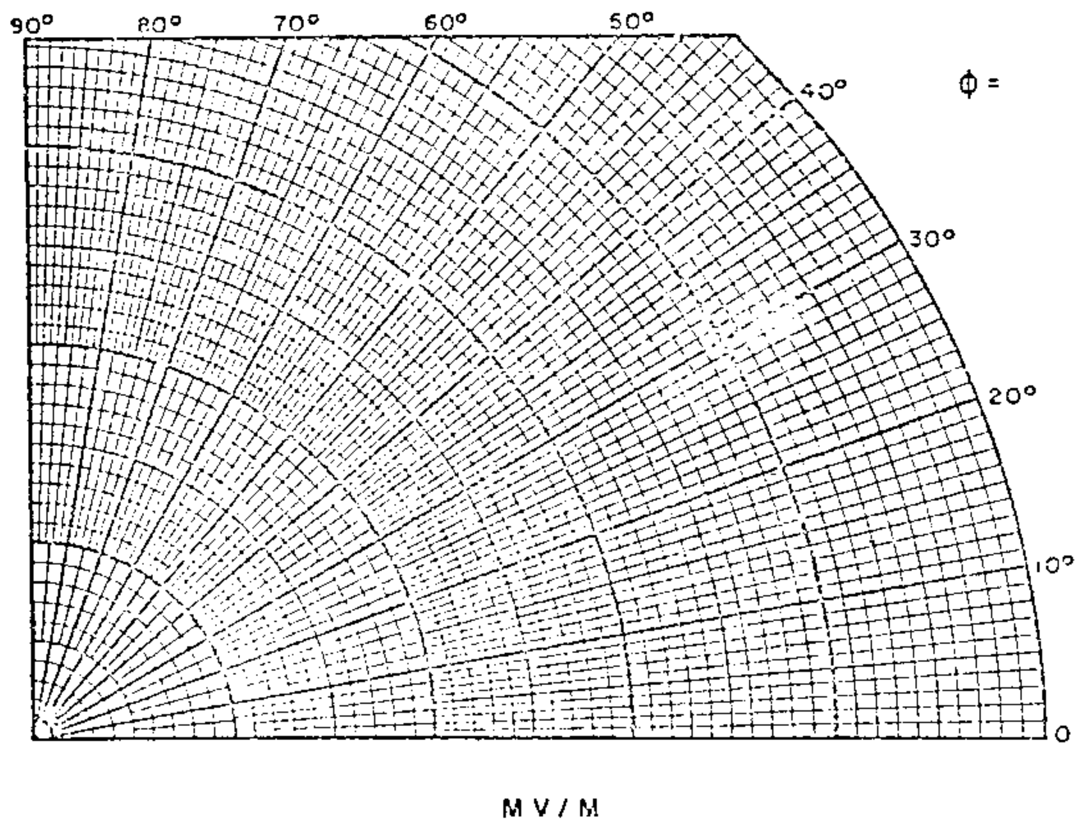
Radio Station CKXL Calgary, Alta.
Moffat Communications Limited
1140 kHz, 50 kW, DA-2, Class II

Project: 1284-02 April, 1977

CKXL



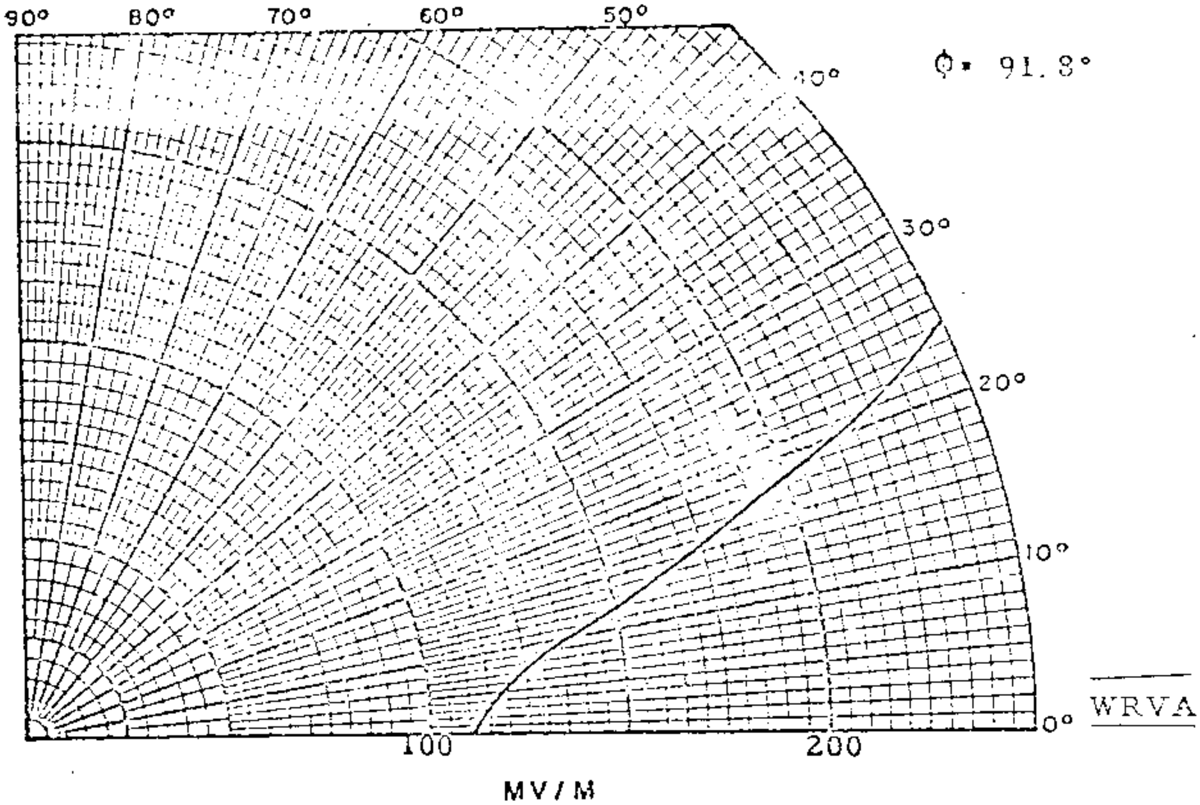
KSOO

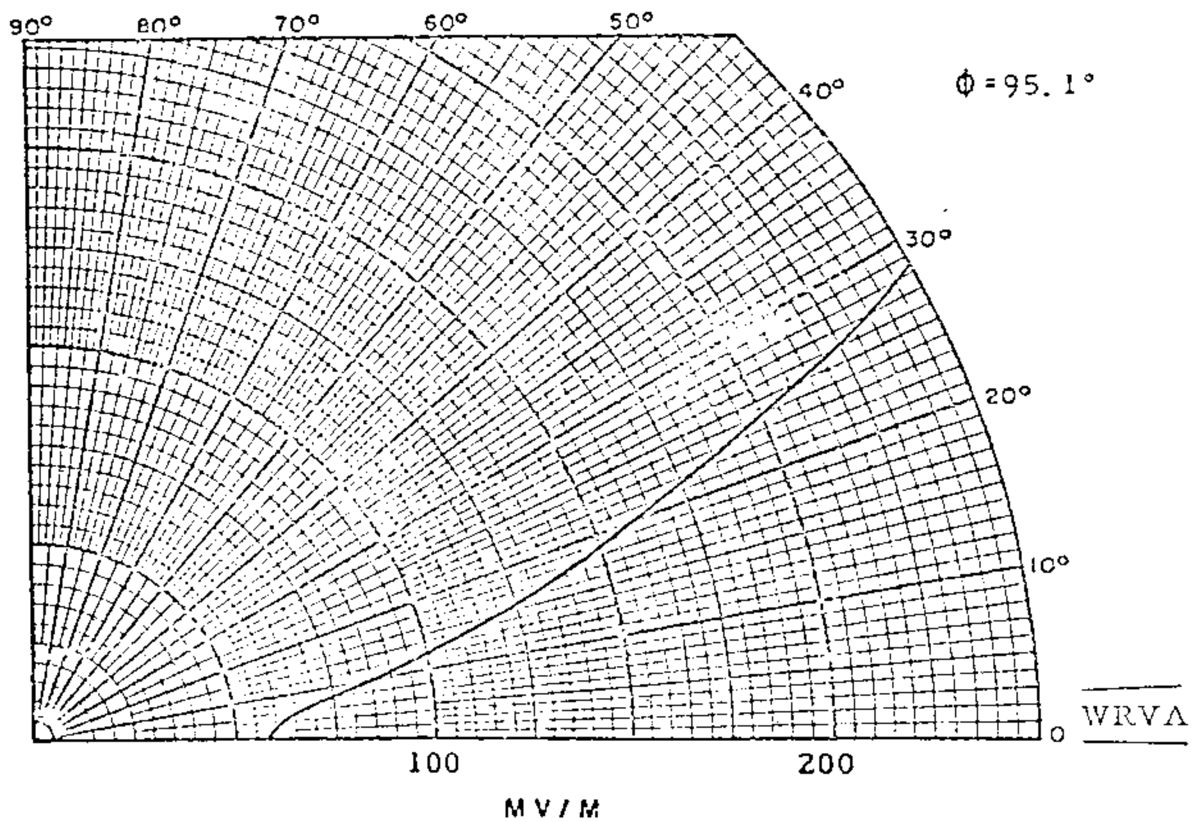


VERTICAL RADIATION PATTERNS

Radio Station CKXL, Moffat Communications Ltd.,			Calgary, Alta.
1140 kHz,	50 kW,	DA-2	Class II
Project: 1284-02			April, 1977

CKXL





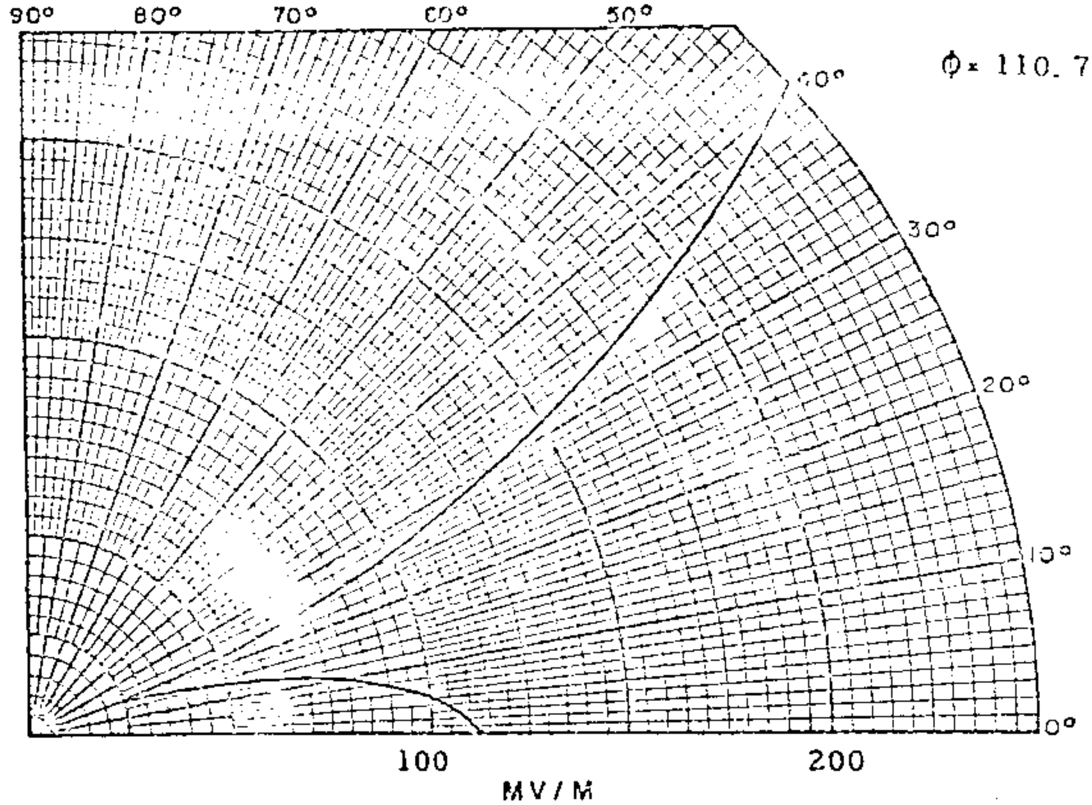
VERTICAL RADIATION PATTERNS

Radio Station CKXL, Moffat Communications Ltd., Calgary, Alta.

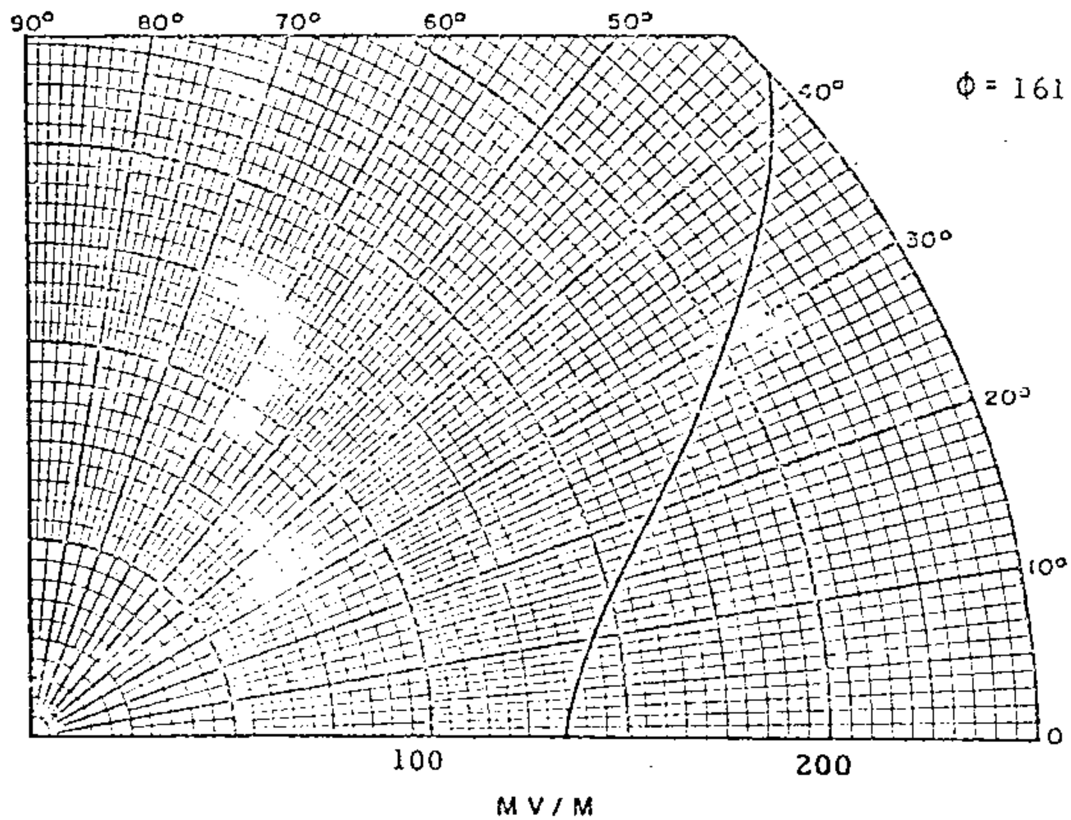
1140 kHz, 50 kW DA-2 Class II

Project: 1284-02 April, 1977

CKXL



WRVA



XEMR

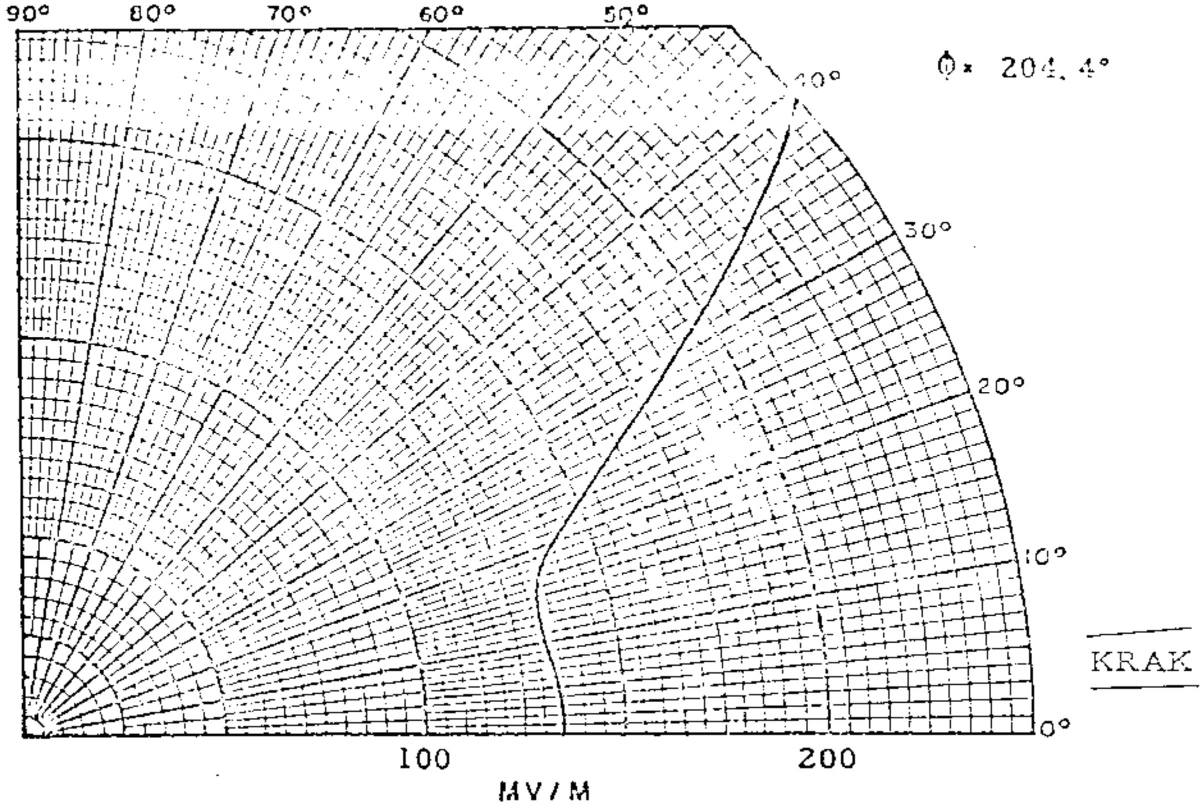
VERTICAL RADIATION PATTERNS

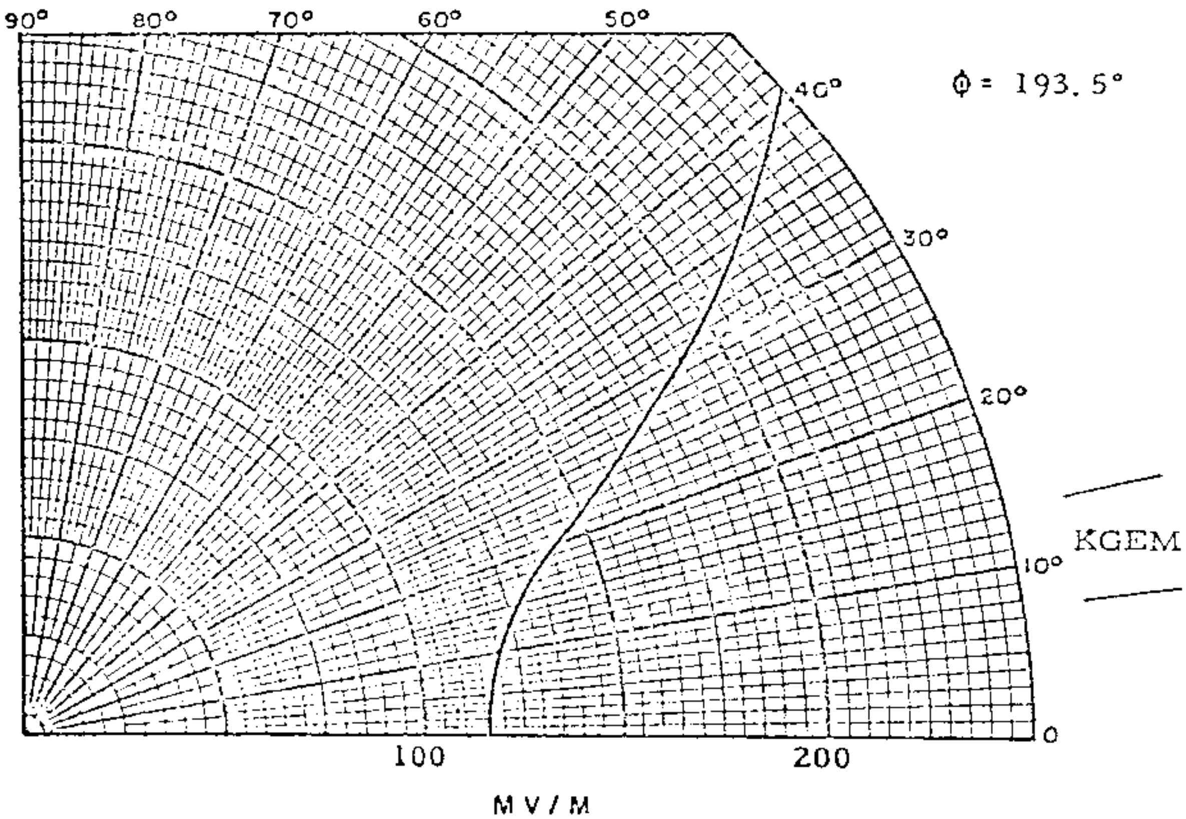
Radio Station CKXL, Moffat Communications Ltd., Calgary, Alta.

1140 kHz, 50 kW, DA-2 Class II

Project: 1284-02 April, 1977

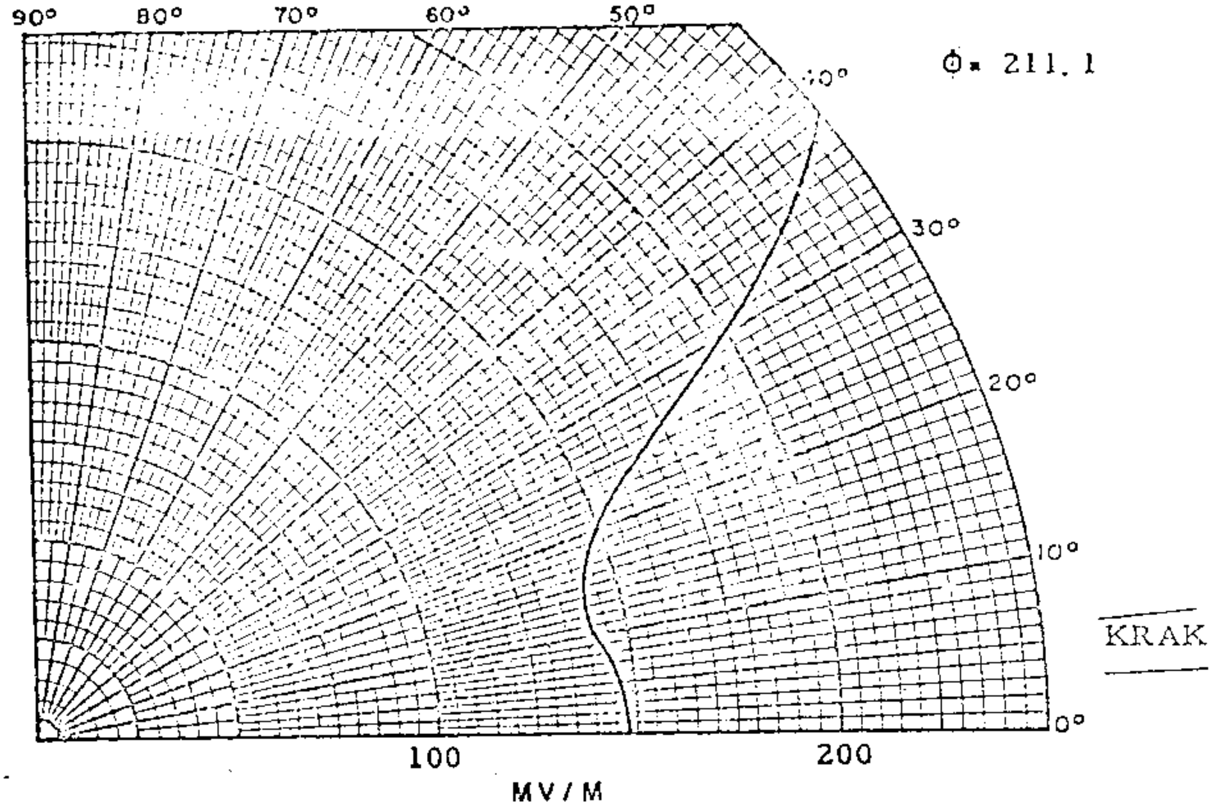
CKXL

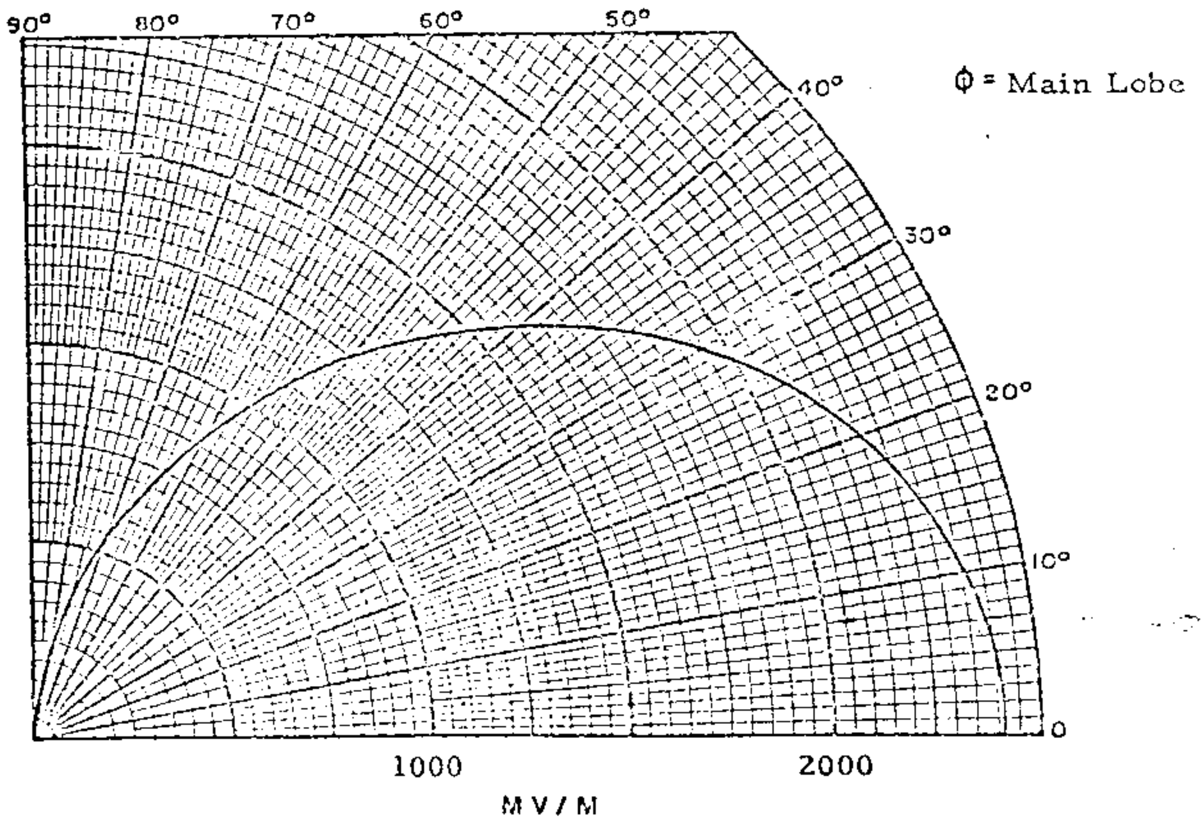




VERTICAL RADIATION PATTERNS

Radio Station CKXL,	Moffat Communications Ltd.,		Calgary, Alta.
1140 kHz,	50 kW,	DA-2,	Class II
Project: 1284-02			April, 1977





VERTICAL RADIATION PATTERNS

Radio Station CKXL, Moffat Communications Ltd., Calgary, Alta.

1140 kHz, 50 kW DA-2, Class II

Project: 1284-02 April, 1977

DIRECTIONAL ANTENNA DESCRIPTION SHEET 1130KHz

Station: (New)

Main Studio: Batesville, Arkansas

Frequency: 1130 kHz

Power: 0.25kw Day

NOTIFICATION LIST NO. 1785

Date: November 16, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 35° 44' 40"
West Longitude: 91° 38' 21"

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:	#1 (SW)	#2 (NE)
HEIGHT ABOVE INSULATORS:	180' (74°)	180'
DAY PHASING:	104°	0°
DAY FIELD RATIO:	1.0	1.0

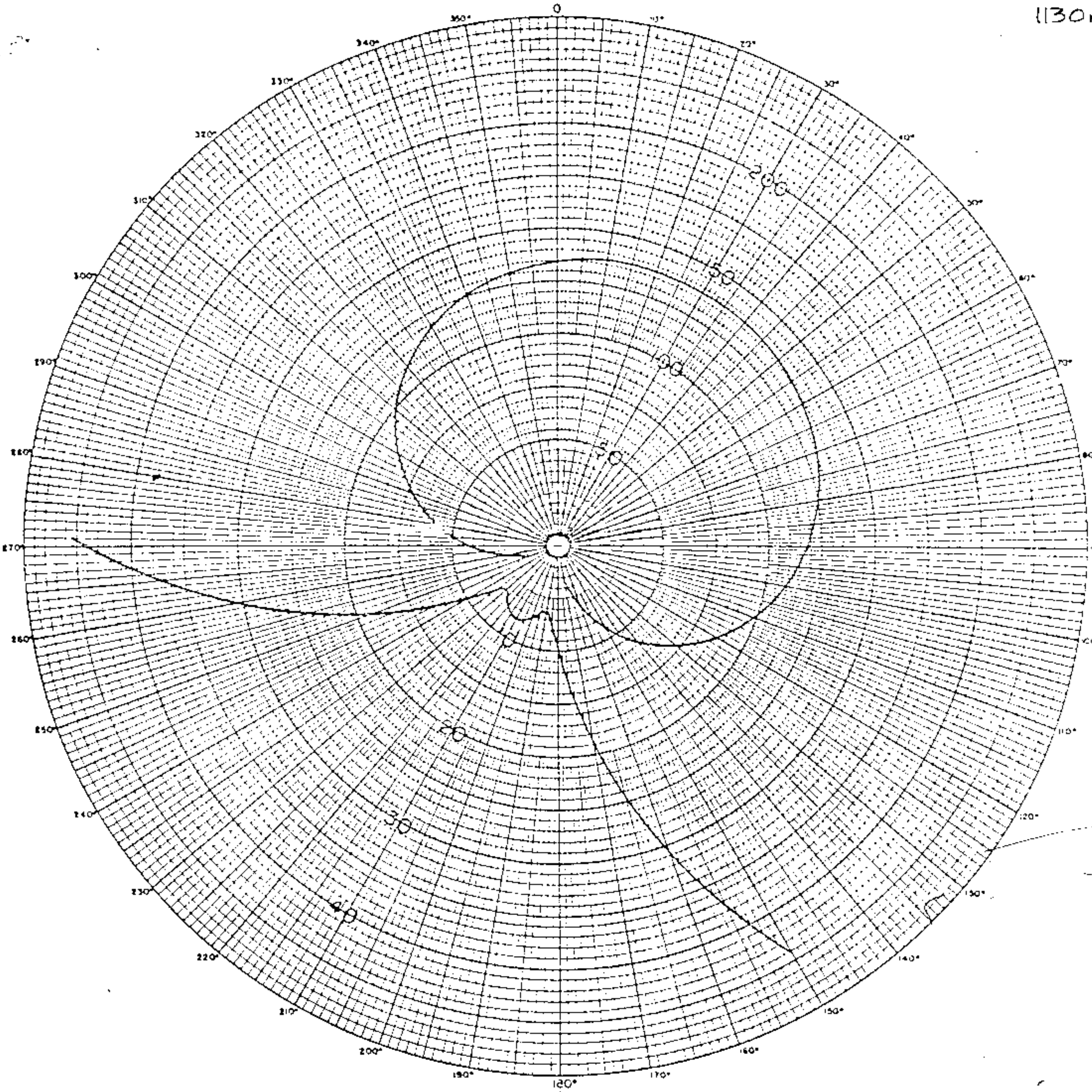
SPACING AND ORIENTATION: The towers are spaced 193.6' (80.1°) on a line bearing 30° true.

GROUND SYSTEM: 120 - 180' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	88.0 mv/m	94.8 mv/m	92.6 mv/m

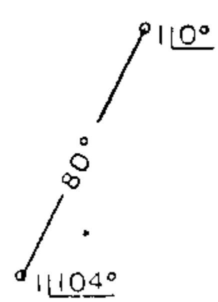
1130KHz



HORIZONTAL RADIATION PATTERN	Standard Pattern

Theoretical Pattern RMS - 88.0 MV/M
Standard Pattern RMS - 92.5 MV/M
RSS - 94.8 MV/M

30° S



A-180' (74°)

APPLICANT	Maggie, Inc.
LOCATION	Batesville, Arkansas
FREQUENCY	1130 KC/S
POWER	250 Watts
LATITUDE	35 DEG 44 MIN 40 SEC.
LONGITUDE	91 DEG 38 MIN 21 SEC.
WHEN USED	Daytime
R.M.S. FIELD:	92.5 MV/M
DATE	June 11th, 1976

RALPH J. BITZER
CONSULTING RADIO ENGINEERS
ST. LOUIS, MISSOURI

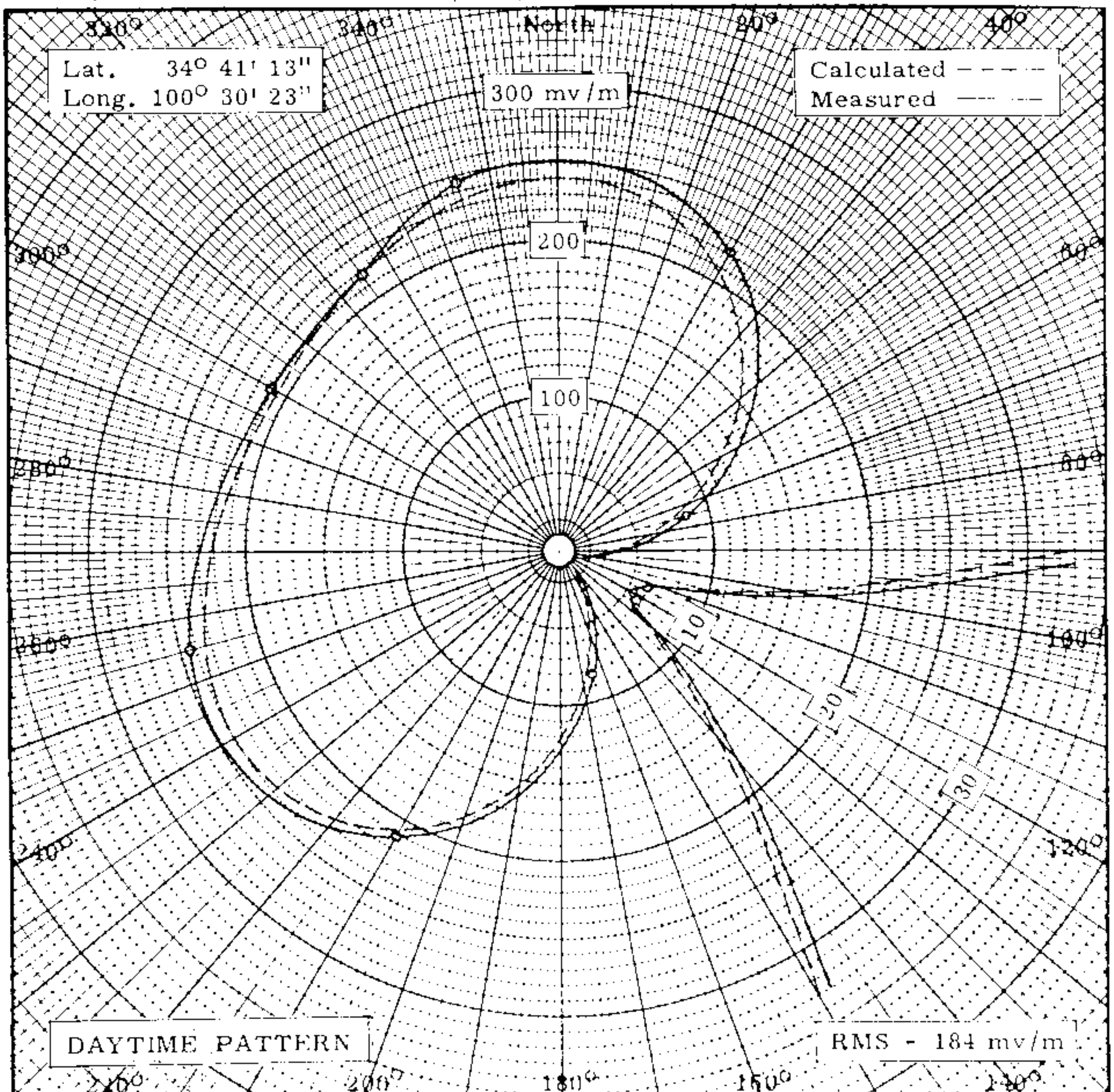
KBGH

Measured ~~Non-DA~~ DAY
(6-28-66ct)

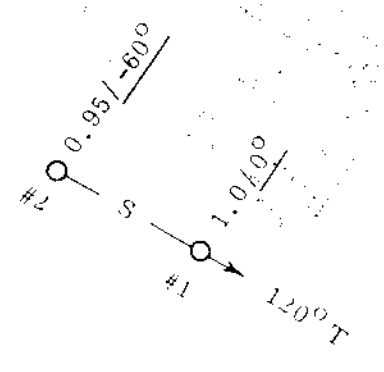
Station KBGH
Memphis, Texas

1 ~~5~~ kw, DA-D, D
1130 kc

BL-11325
-1C 11-16-66



Theoretical



G - 74.5° - 180'
S - 120° - 290'

RADIO STATION KBGH
MEMPHIS, TEXAS

MEASURED DIRECTIONAL
HORIZONTAL PLANE RADIATION PATTERN
1130 KC 1000 WATTS

040366

FIGURE 3

MERL SAXON
CONSULTING RADIO ENGINEER
LUFKIN, TEXAS

FCC File No. BL-11325
Accepted 6-24-66

Station KBGH
Memphis, Texas

1130 kc

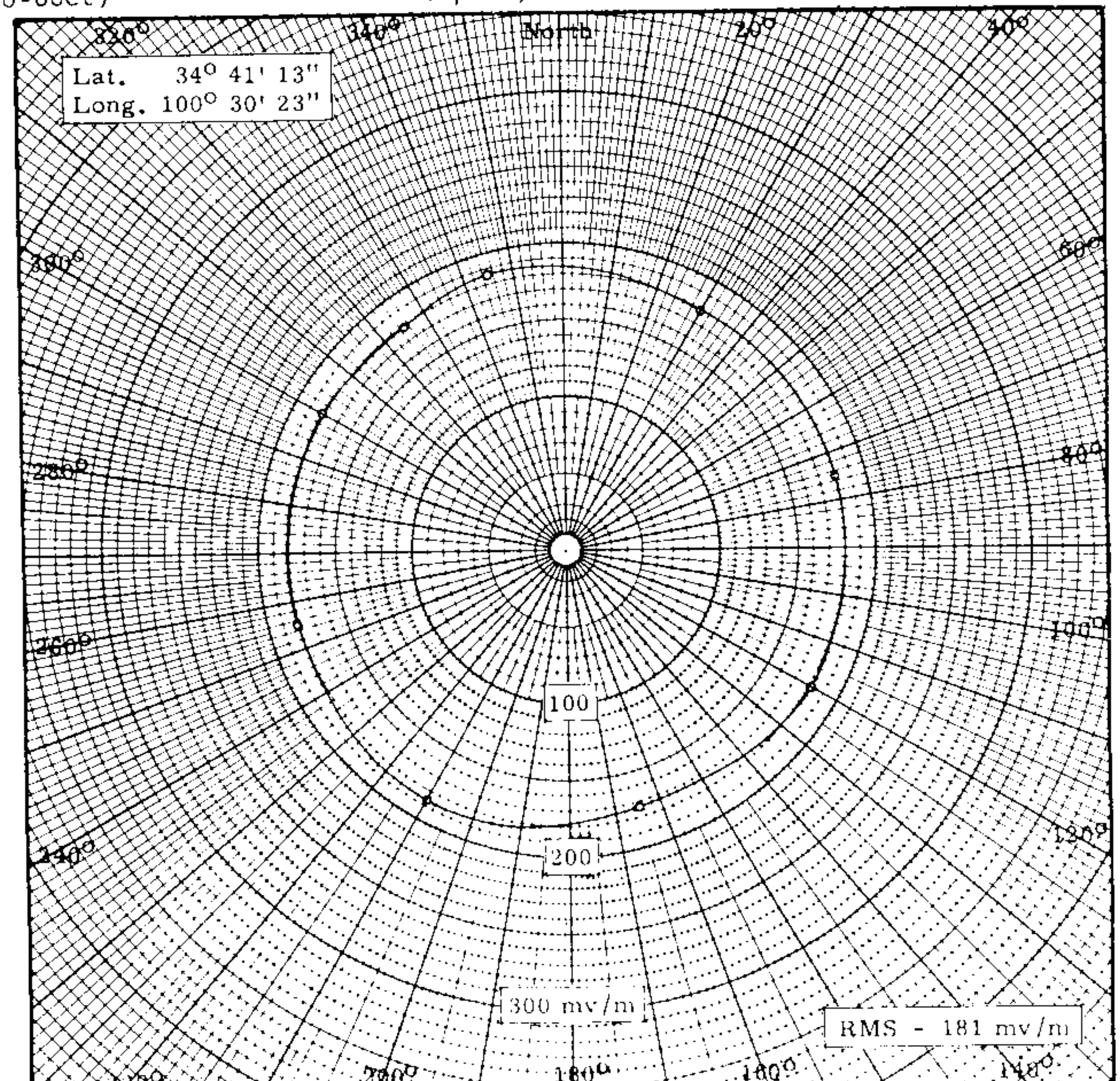
KBGH

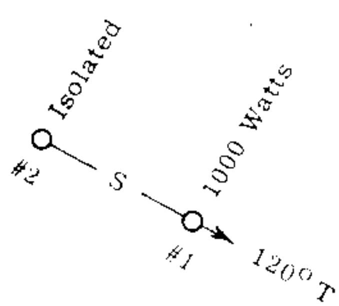
Measured ~~Day~~ ND
(6-28-66ct)

Station KBGH
Memphis, Texas

1 $\cancel{5}$kw, DA-D, D
1130 kc

BL11325
-IC 11-16-66





G - 74.5° - 180'
S - 120° - 290'

RADIO STATION KBGH
MEMPHIS, TEXAS

MEASURED NON-DIRECTIONAL
HORIZONTAL PLANE RADIATION PATTERN
1130 KC 1000 WATTS

040366

FIGURE 2

MERL SAXON
CONSULTING RADIO ENGINEER
LUFKIN, TEXAS

FCC File No. BL-11325
Accepted 6-24-66ct)

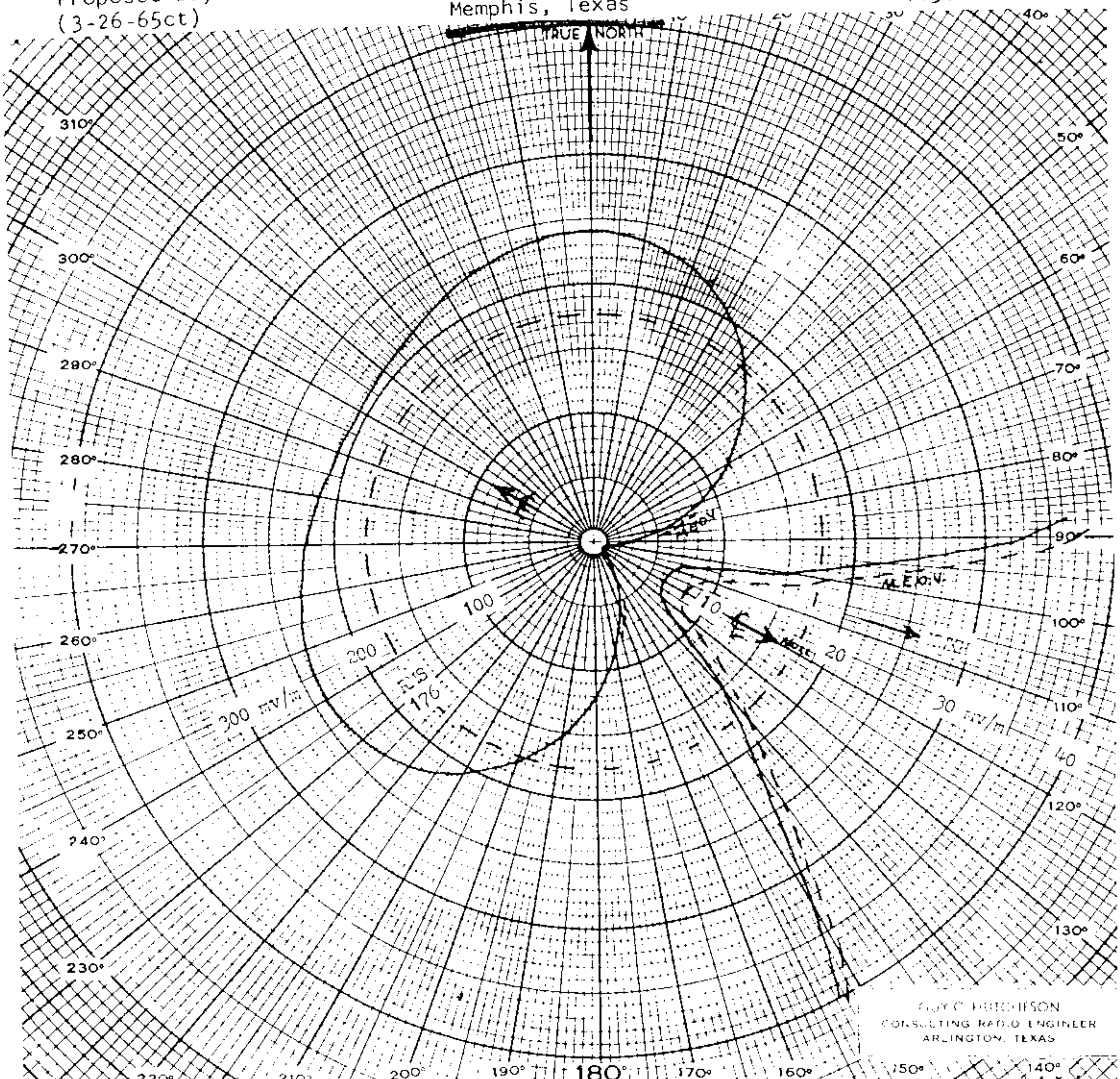
Station KBGH
Memphis, Texas

1130 kc

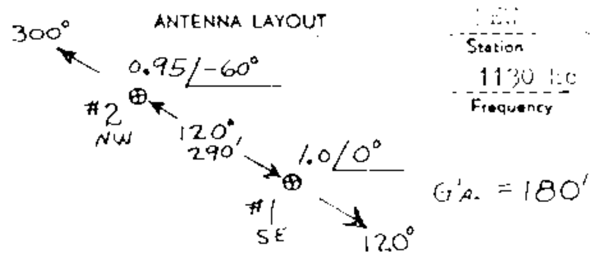
KBGH

Proposed Day
(3-26-65ct)

New; M.W.C. Broadcasting Co. 1kw,DA-D,D
Memphis, Texas 1130 kc



HORIZONTAL RADIATION PATTERN



NEW | MEMPHIS, TEXAS
Station | Location
1130 kc | 1 kw | 34° 41' 13" N 100° 30' 23"
Frequency | Power

CALCULATED DAYTIME

Fig. 1

FCC File No. BP-16493
Accepted 3-5-65

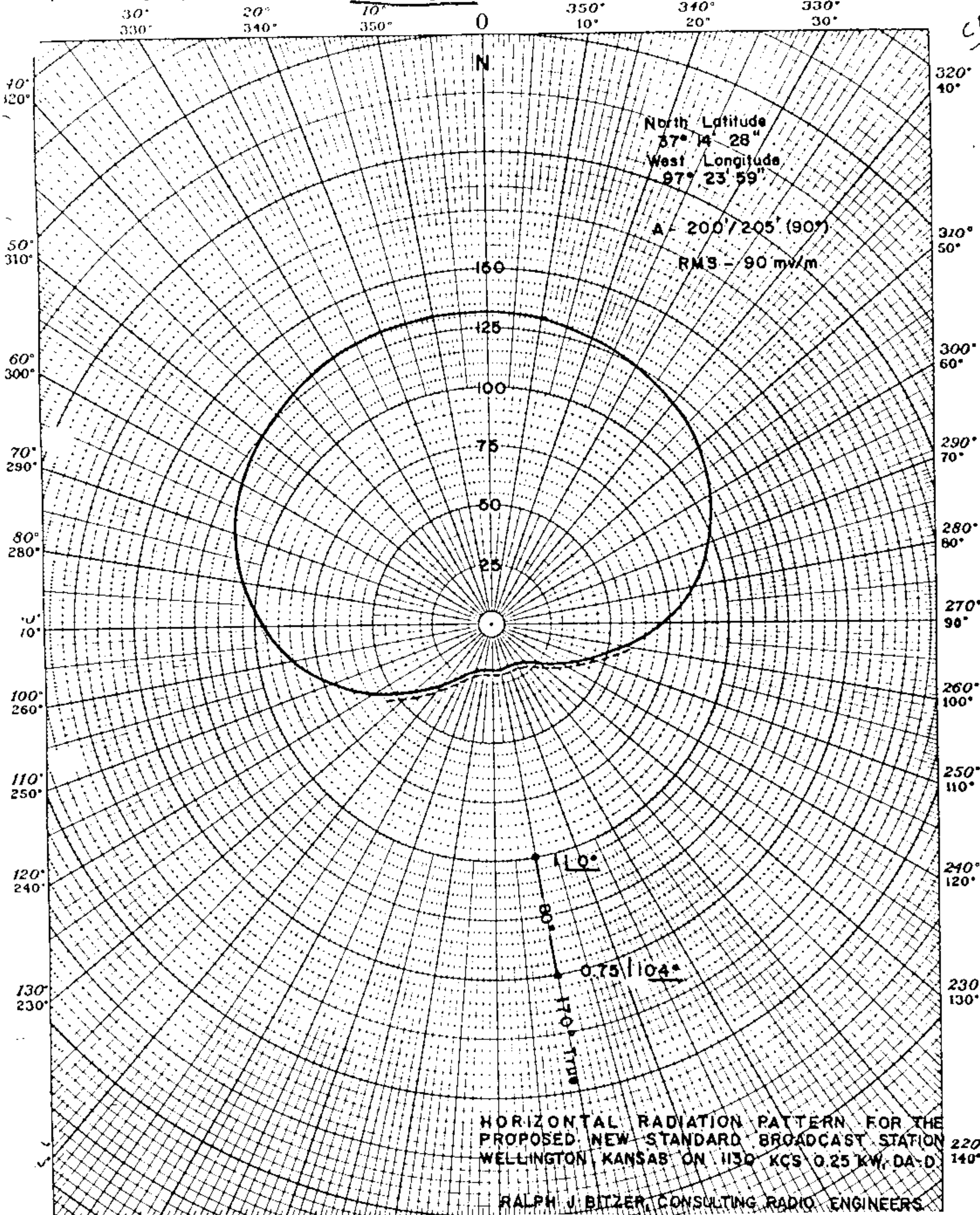
New; M.W.C. Broadcasting Co.
Memphis, Texas 1130 kc

KLEY
8-18-66

CP 6-8-66

Proposed Day
(10-26-65ct)

New; Sumner Broadcasting Company 250w,DA-D,D
Wellington, Kansas 1130 kc



FCC File No. BP-16812
Accepted 10-21-65

New; Sumner Broadcasting Company
Wellington, Kansas 1130 kc

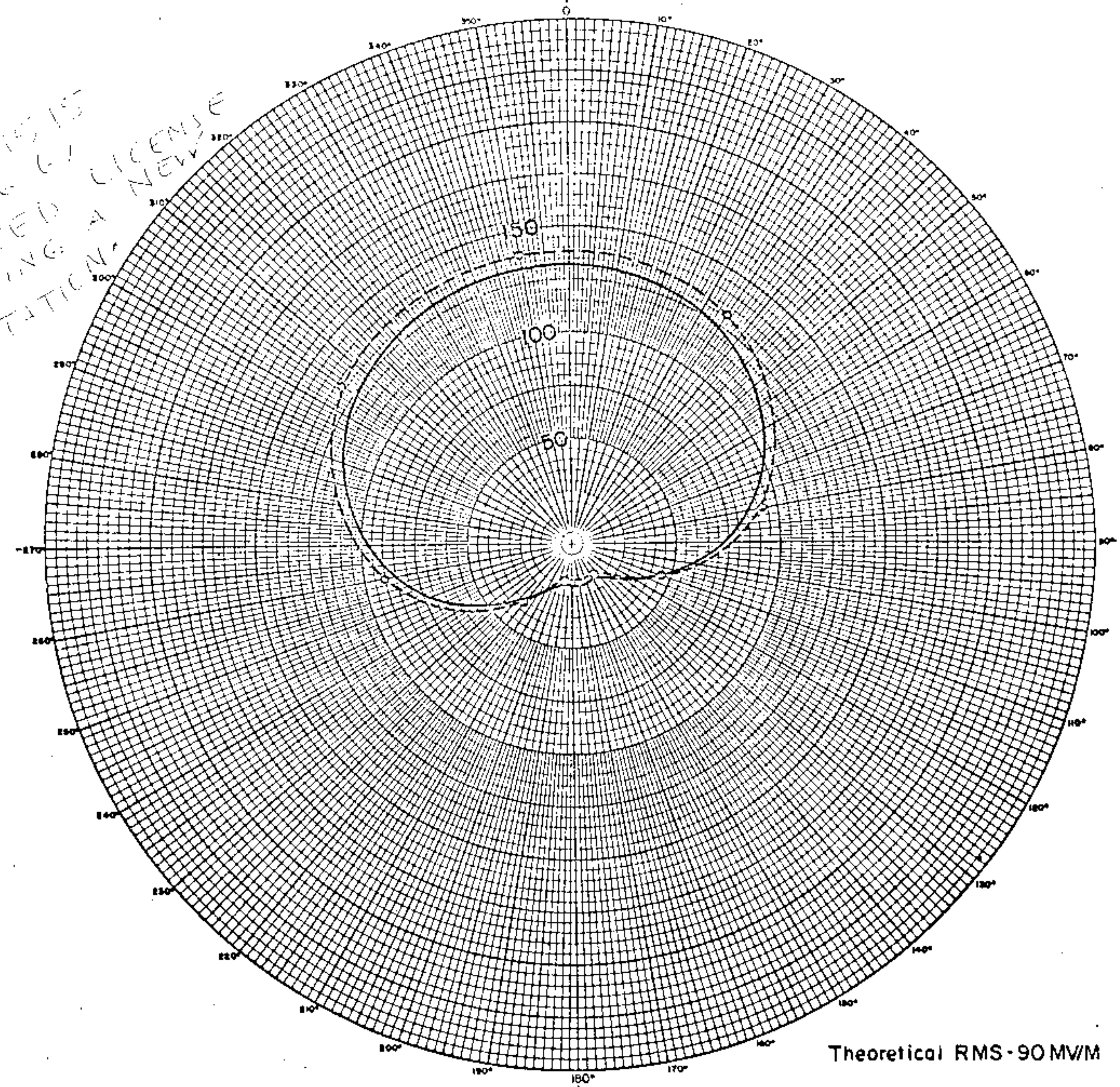
KLEY

Measured Day
(1-30-67ct)

Station KLEY
Wellington, Kansas

250w,DA-D,D
1130 kc

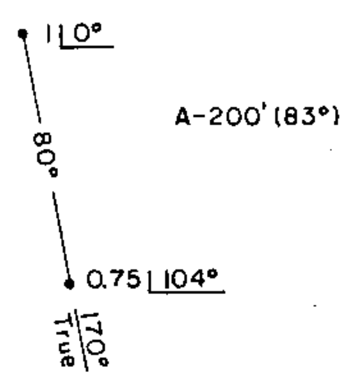
BL-11515
2-6-67
GRANTED LICENSE
COVERING A NEW
AM STATION



Theoretical RMS - 90 MV/M

HORIZONTAL RADIATION PATTERN

Radio Station KLEY (BP-16,812)



APPLICANT	Sumner Broadcasting Co
LOCATION	Wellington, Kansas
FREQUENCY	1130 KC/S
POWER	250 Watts
LATITUDE	37 DEG. 14 MIN. 28 SEC.
LONGITUDE	97 DEG. 23 MIN. 59 SEC.
WHEN USED	Daytime
R.M.S. FIELD	Measured 94 MV/M
DATE	November 2nd, 1966

RALPH J. BITZER
CONSULTING RADIO ENGINEERS
ST. LOUIS, MISSOURI

FCC File No. BL-11515
Accepted 1-5-67

Station KLEY
Wellington, Kansas

1130 kc

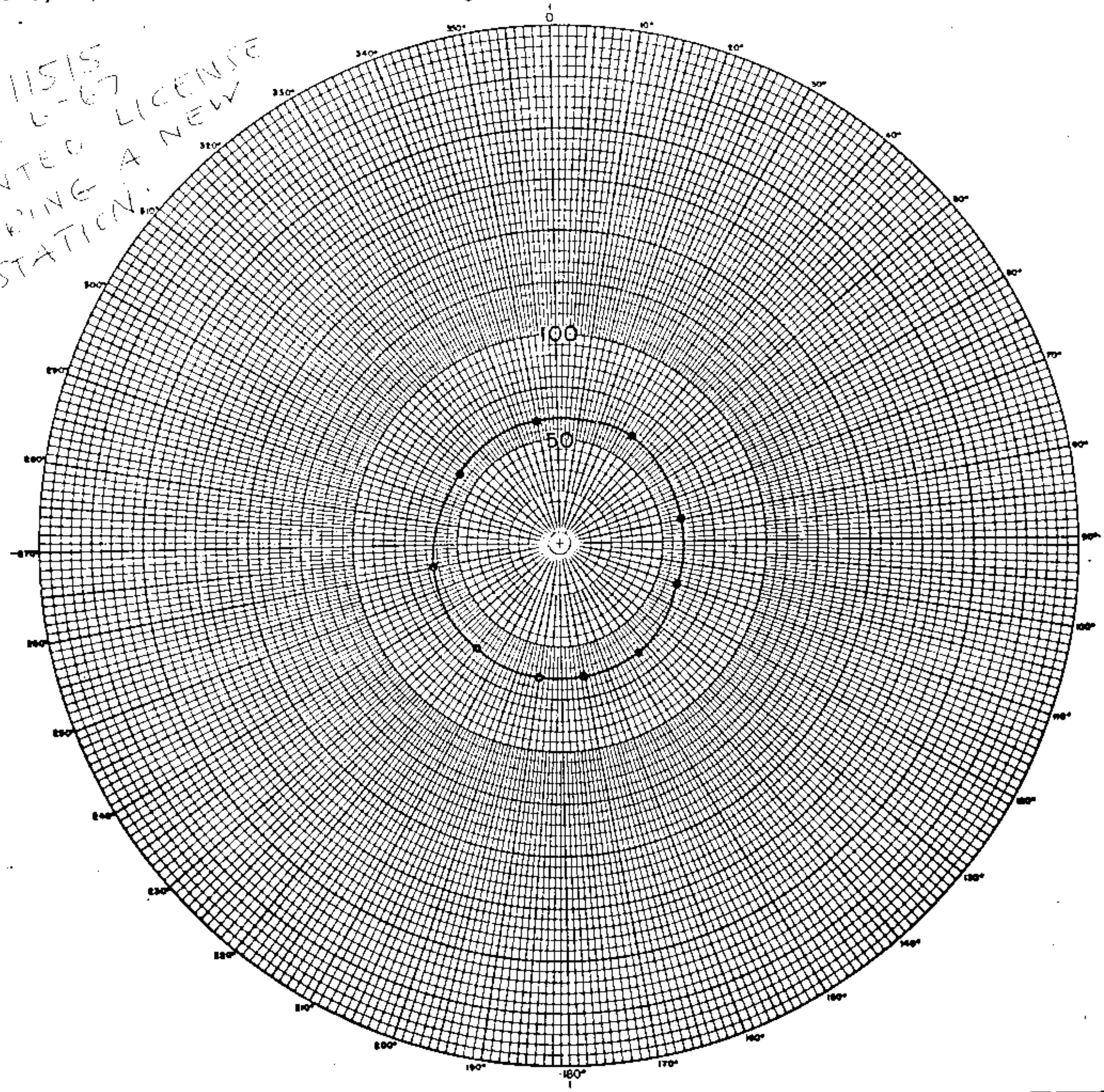
KLEY

Measured Non-DA
(1-30-67ct)

Station KLEY
Wellington, Kansas

250w, DA-D, D
1130 kc

BL-11515
2-6-67
GRANTED LICENSE
COVERING A NEW
AM STATION.



HORIZONTAL RADIATION PATTERN Radio Station KLEY (BP-16,812)

APPLICANT	Sumner Broadcasting Co.
LOCATION	Wellington, Kansas
FREQUENCY	1130 KC/S
POWER	100 Watts
LATITUDE	37 DEG. 14 MIN. 28 SEC.
LONGITUDE	97 DEG. 23 MIN. 59 SEC.
WHEN USED	Non-Directional Proof
R.M.S. FIELD	62 MV/M
DATE	November 2nd, 1966

RALPH J. BITZER
CONSULTING RADIO ENGINEERS

FCC File No. BL-11515
Accepted 1-5-67

Station KLEY
Wellington, Kansas

1130 kc

K411
1130 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KQTI

Main Studio: Edna, Texas

Frequency: 1130 kHz

Power: 2.5kw Day

Notification List No. 1788

Date: August 22, 1980 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 29° 01' 40"
West Longitude: 96° 40' 05"

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:	NE(#1)	C(#2)	SW(#3)
HEIGHT ABOVE INSULATORS:	220'	220'	220' (91°)
DAY PHASING:	+41.1°	0°	-49.1°
DAY FIELD RATIO:	0.5335	1.0	0.4916

SPACING AND ORIENTATION: Towers in a row are spaced 363'(150°) on a line bearing 26° true

GROUND SYSTEM: 120 - 218' equally spaced copper radials plus a 48' square ground screen 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	277.5 mv/m		

KQTI
1130 kHz

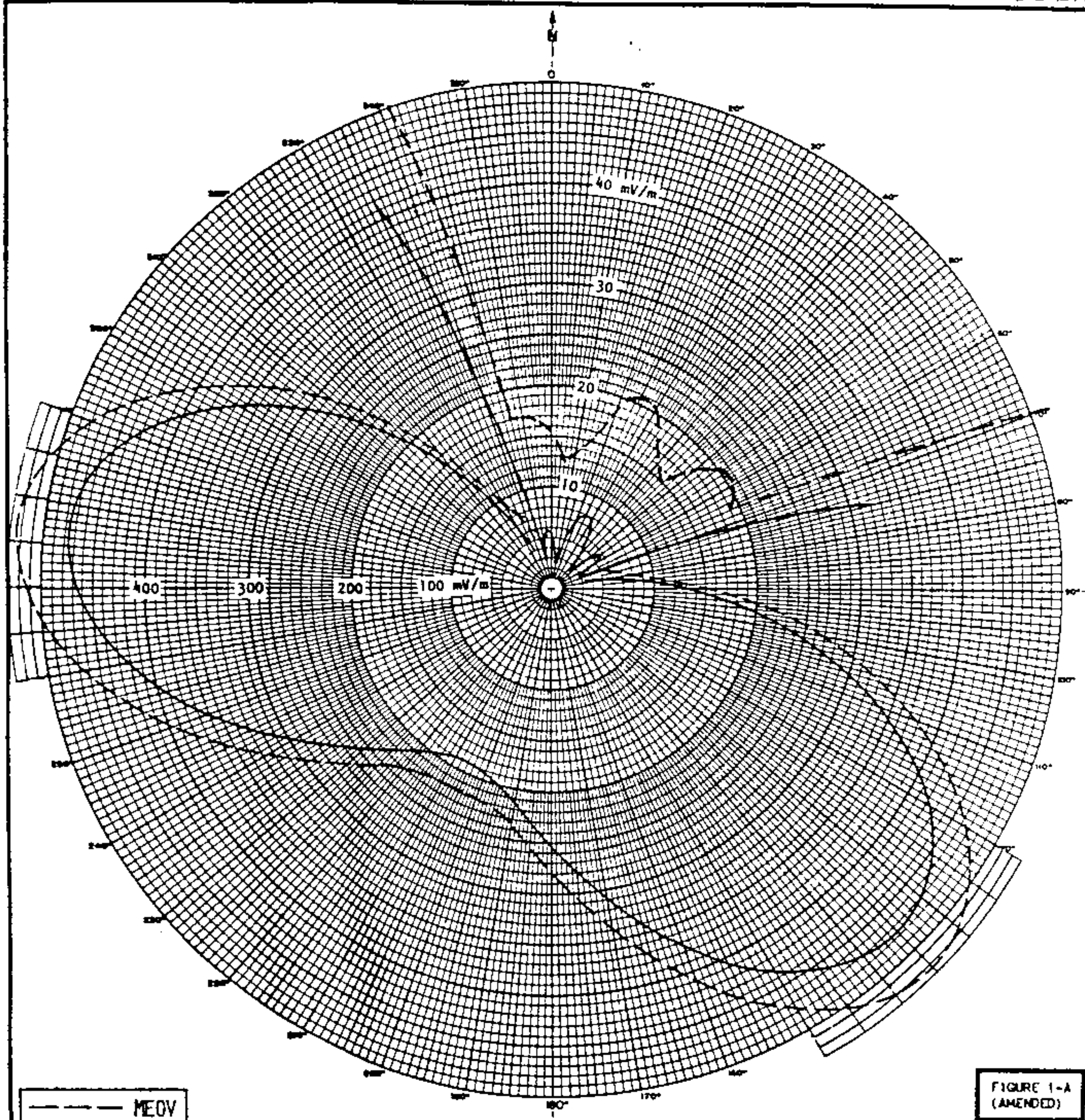
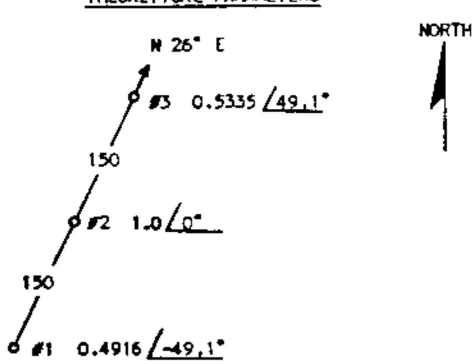


FIGURE 1-A (AMENDED)

HORIZONTAL PLANE PATTERN

THEORETICAL PARAMETERS



G = 91° (ALL TOWERS)

CALL	: KQTI
LOCATION	: EDNA, TX
FREQUENCY	: 1130 kHz
POWER	: 2.5 kW
LATITUDE	: 29 DEG. 01 MIN. 40 SEC.
LONGITUDE	: 96 DEG. 40 MIN. 05 SEC.
WHEN USED	: DAYTIME
R.M.S. FIELD	: 277.5 mV/m
DATE	: APRIL 1980

Moffet, Ritch & Larson, P.C.
Consulting Radio Engineers

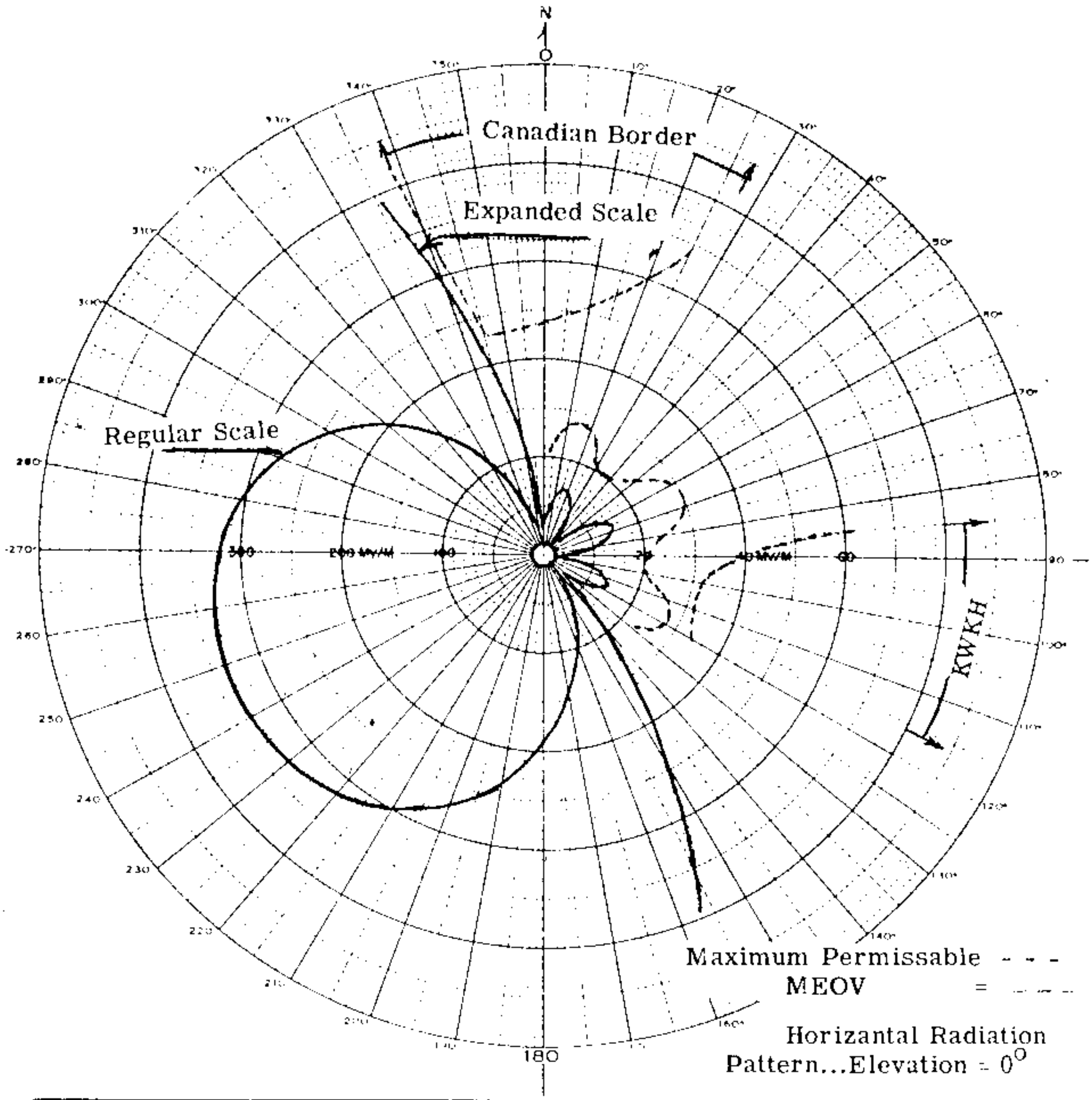
KRDU

PROPOSED NIGHT & DAY
(2/11/57g)

Station KRDU
Dinuba, California

1KW,DA-1,U
1130 KC

granted cp for increase in power and install DA 4-13-60



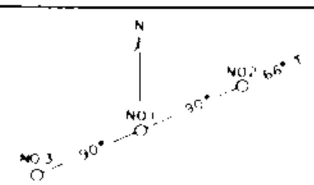
TOWER PLACEMENT SKETCH	PATTERN PARAMETERS									STATION DATA
	Tower No.	Electrical Height G°	True Tower Orientation φ°	Spacing S°	Phasing ψ°	Horizontal Field mV/m f	Field Ratio r	Elev. Angle θ°	Elevation RMS Field f_θ	CALL KRDU
	1	86.5	0	0	0	187	1.0		187	FREQUENCY 1130 KC
	2	86.5	66	90	122		0.54			POWER 1.0 KW
	3	86.5	246	90	122		0.54			TIME OF OPERATION FULLTIME
										TYPE OF OPERATION DA-1
										DAYTIME TOWERS 3
										NIGHTTIME TOWERS 3
										NO. RADIALS PER TOWER 120
										LENGTH OF RADIALS 95'–230'
										LAT 36° 37' 19"
										LONG 119° 20' 34"

EXHIBIT NO. 1-A (AMENDED)

PROPOSED 1.0 KW DA-1 FULLTIME 1130 KC
DINUBA, CALIFORNIA

JANUARY — 1957

FCC File No. BP-10,735 Ammended
Accepted 1/28/57

KRDU
Dinuba, California

1130 KC

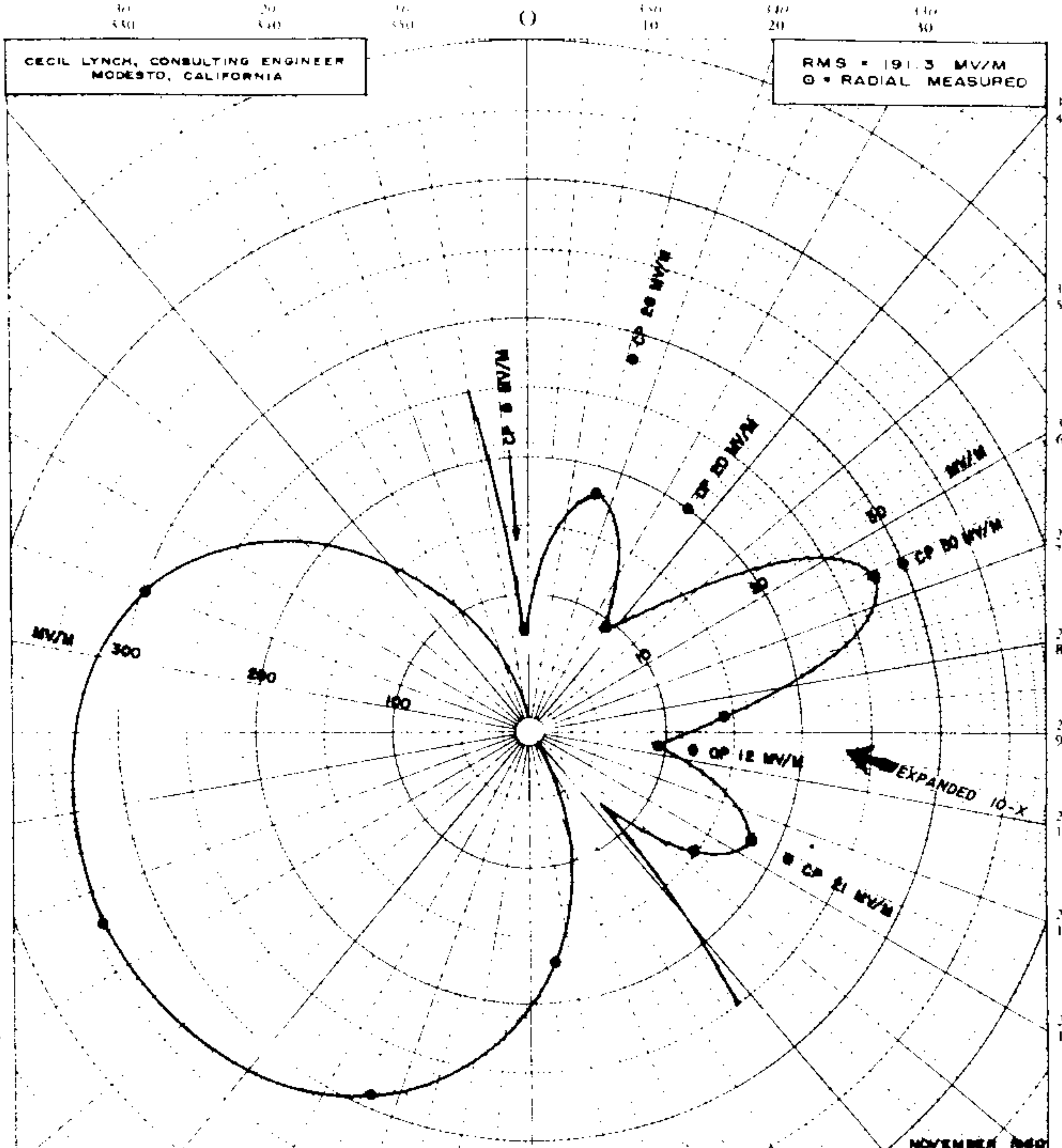
KRDU

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

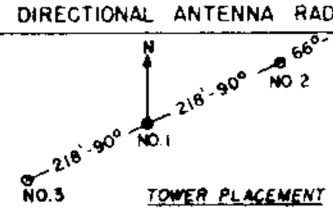
Station KRDU 1kw, DA-1,U

Dinuba, California 1130 KC

previous for DA-1, 6.12.61



DIRECTIONAL ANTENNA RADIATION PATTERN, BASED ON FIELD INTENSITY MEASUREMENTS



TOWER PLACEMENT

36° 37'19" N LAT. 119° 20'34" W LONG.

OPERATING PARAMETERS

ANTENNA		CURRENT RATIO	PHASING
NO 1	CALCULATED	1.0	0°
	MEASURED	1.0	0°
NO 2	CALCULATED	0.54	+122°
	MEASURED	0.531	+124°
NO 3	CALCULATED	0.54	-122°
	MEASURED	0.438	-124°

KRDU • DINUBA, CALIFORNIA | 1130 KC 1.0 KW DA-1 | FIGURE NO. 6

FCC File No. BL-8237
Accepted 2-23-61

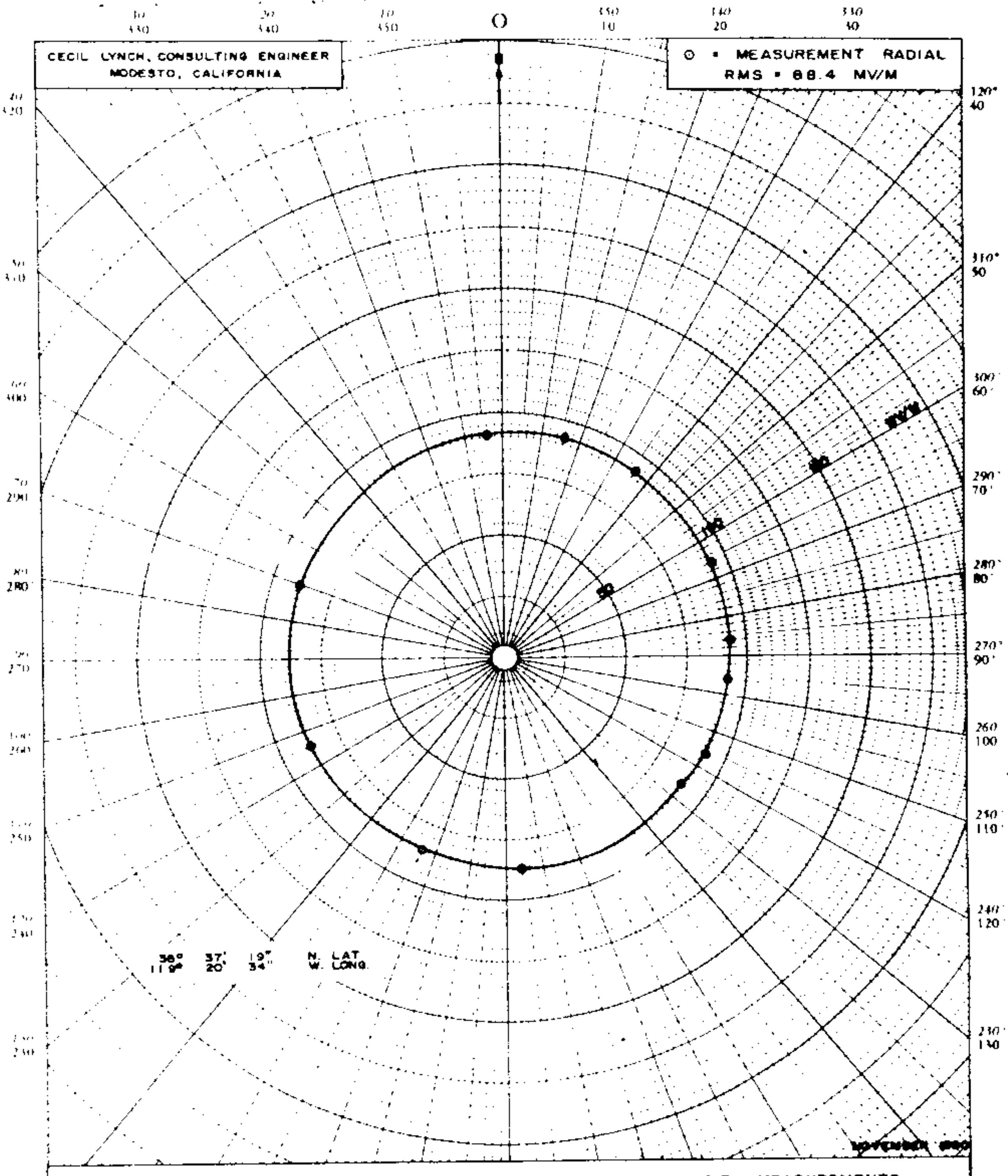
KRDU
Dinuba, California 1130 KC

KRDU

MEASURED NON-DA
(3-8-61g)

Station KRDU
Dinuba, California

1kw, DA-1,U
1130 KC



NON-DIRECTIONAL RADIATION PATTERN, BASED ON FIELD INTENSITY MEASUREMENTS
(RADIATED POWER, 250 WATTS)

KRDU • DINUBA, CALIFORNIA	1130 KC 1.0 KW DA-1	FIGURE NO. 5

FCC File No. BL-8237
Accepted 2-23-61

KRDU
Dinuba, California

1130 KC

KSDO

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : KSDO   Main Studio: San Diego, California

Frequency : 1130 KHz   Power : 10 kW Night 10 kW Day

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

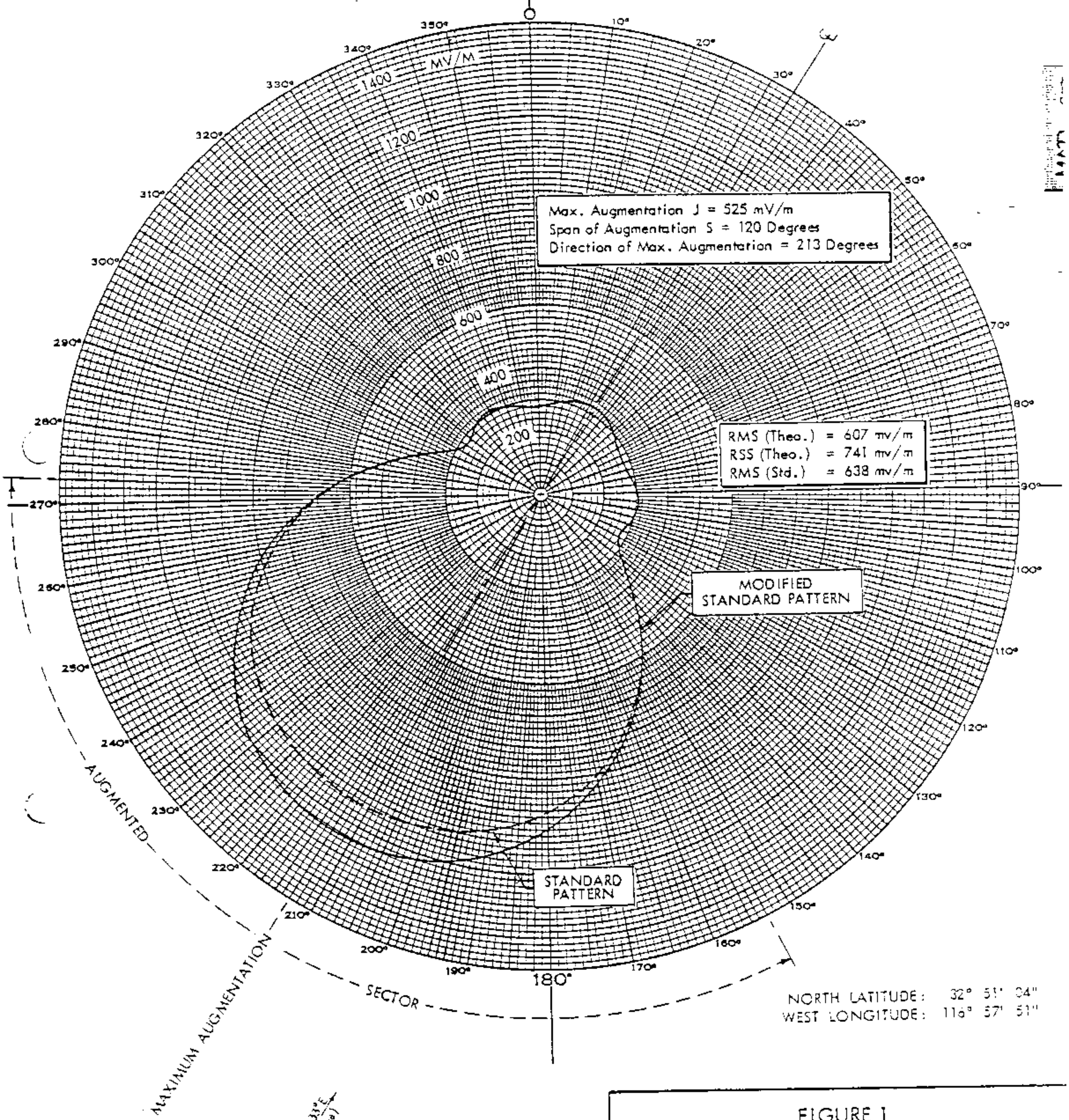
GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude:	32	51	04
West Longitude:	116	57	51

Note: This notification concerns only an augmentation of the Daytime directional antenna pattern. All other particulars as notified for Station KSOO in United States Change List Number 1699, dated August 24, 1976 and attached to this supplemental Description Sheet remains unchanged.

Modified Standard Pattern

KSDO



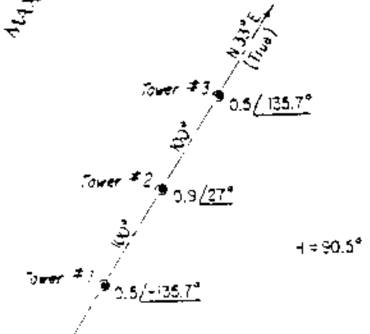
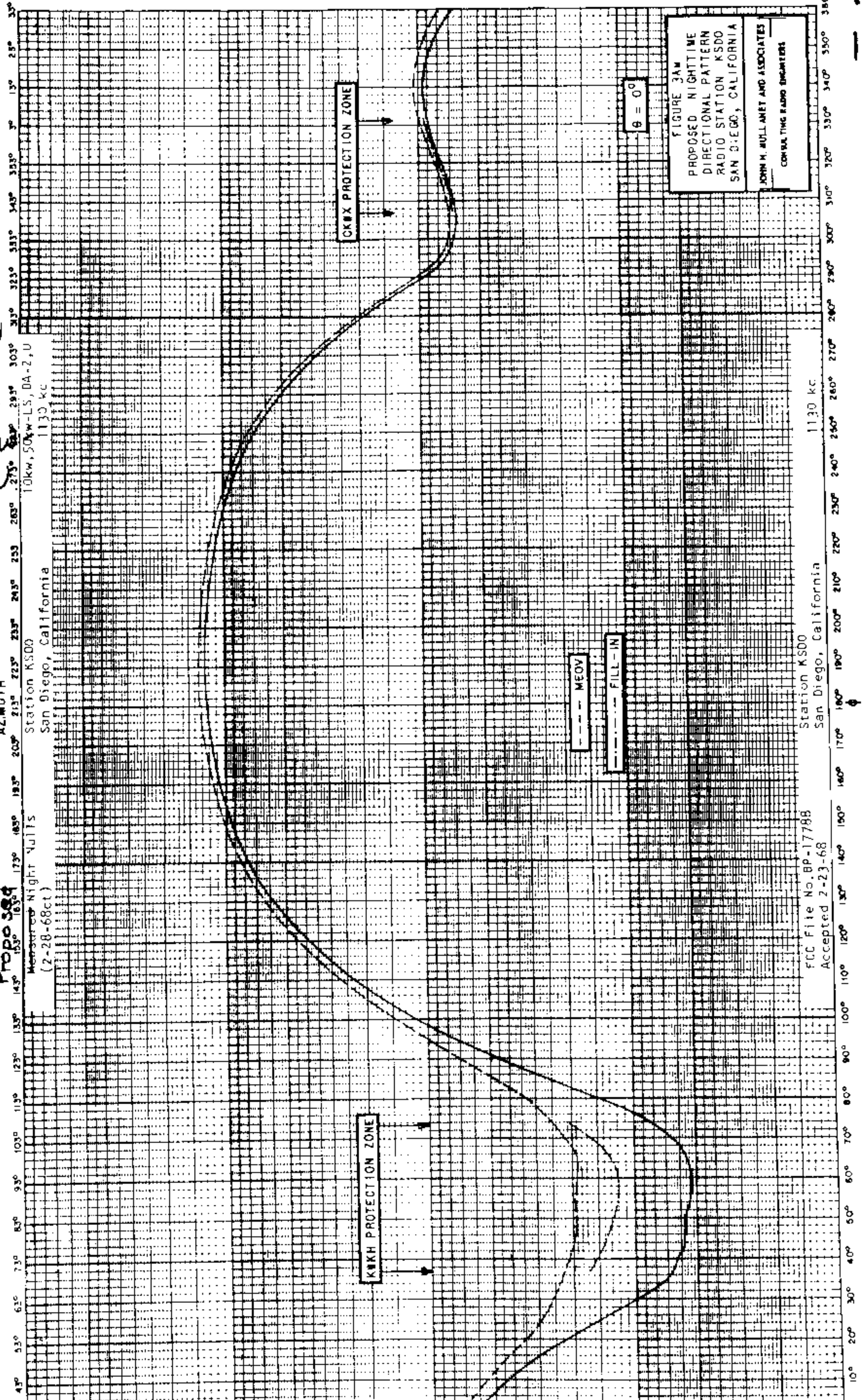


FIGURE 1
DAYTIME MODIFIED
STANDARD RADIATION PATTERN
KSDO 10 kW-U, DA-2 1130 kHz
SAN DIEGO, CALIFORNIA

Prepared by
Lohnes and Culver Washington, D. C.
August, 1978

KSDU
1130 KC

BP-17788
SRANTED
(8-15-68)
CP TO IN-
REASE
OWER,
ROM 1KW,
KW-LS,
A-2, U, TO
0KW, 50KW
LS, DA-2, U



KSDO

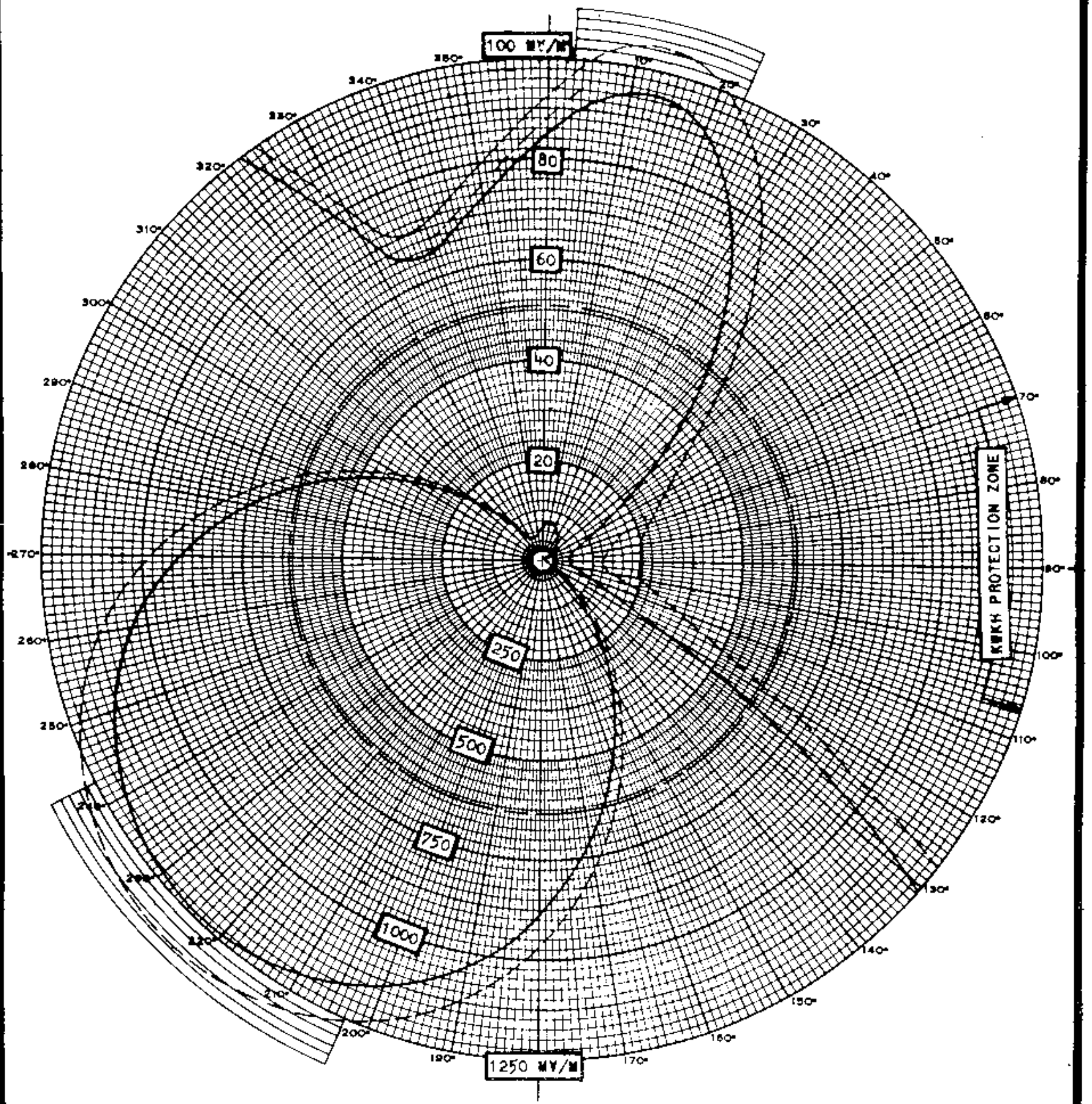
KSDO

Proposed Night
(2-28-68ct)

Station KSDO
San Diego, California

10kw,50kw-LS,DA-2,U
1130 kc

3P-17788
;RANTED
(8-15-68)
:P TO IN-
REASE
OWER
ROM 1 KW,
5KW-LS,
DA-2, U
TO 10 KW,
50KW-LS



E_{RMS} = 632.5 MV/M

---- MEOV
-·- - FILL-IN

LATITUDE: 32° 51' 04"
LONGITUDE: 116° 57' 51"

JOHN H. MULLANEY
AND
ASSOCIATES

ANTENNA PARAMETERS

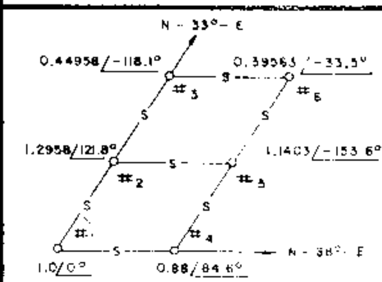


FIGURE 3AM-P

PROPOSED NIGHTTIME
DIRECTIONAL POLAR PATTERN

$\theta = 0°$

RADIO STATION KSDO
SAN DIEGO, CALIFORNIA

1130 KHz   10KW/50KW-LS, DA-2, U

FCC File No.BP-17788
Accepted 2-23-68 Amended

Station KSDO
San Diego, California

1130 kc

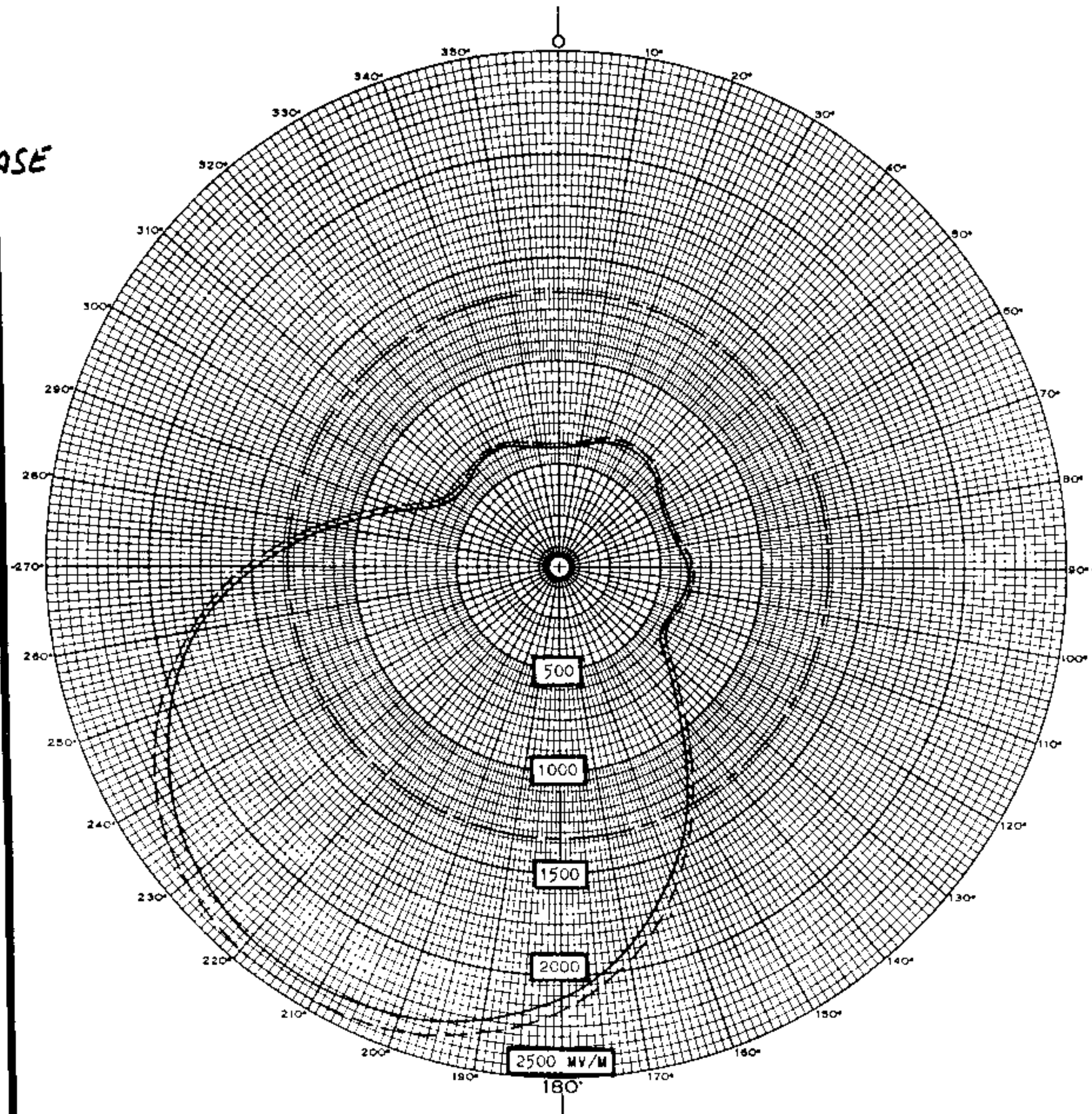
KSDO

Proposed Day
(11-28-67ct)

Station KSDO
San Diego, California

10kw,50kw-LS,DA-2,U
1130 kc

BP-17788
GRANTED
(8-15-68)
P TO INCREASE
OWER
ROM 1KW,
KW-LS,
A-2, U, TO
10 KW, 50KW
LS, DA-2, U.



E_{RMS} = 1340 MV/M ————————

- - - - - - MEOV

LATITUDE 32° 51' 04"

LONGITUDE 116° 57' 51"

JOHN H. MULLANEY
AND
ASSOCIATES

ANTENNA PARAMETERS

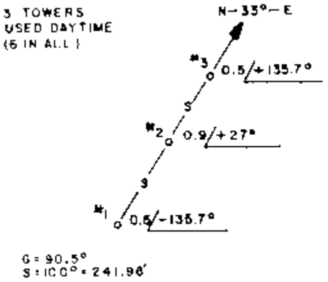


FIGURE 2A

PROPOSED DAYTIME
DIRECTIONAL PATTERN

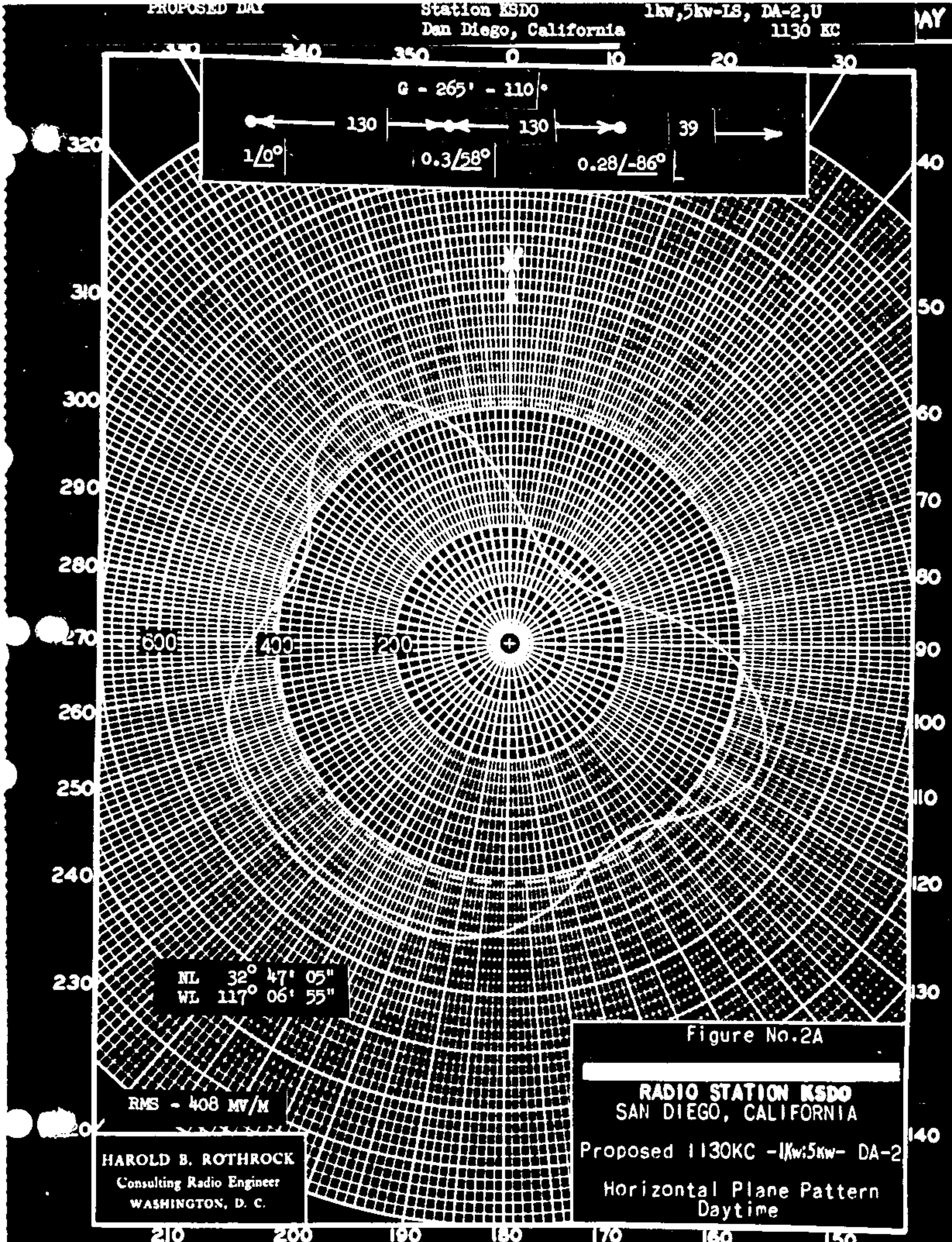
RADIO STATION KSDO
SAN DIEGO, CALIFORNIA

1130 KHz 10/50 KW-LS, DA-2, U

FCC File No. BP-17788
Accepted 11-2-67

Station KSDO
San Diego, California

1130 kc


PROPOSED DAY
Station KSDO
Dan Diego, California
1kw,5kw-LS, DA-2,U
1130 KC
DAY
G - 265' - 110°
130
130
39
1/0°
0.3/58°
0.28/-86°
600
400
200
NL 32° 47' 05"
WL 117° 06' 55"
RMS - 408 MV/M
HAROLD B. ROTHROCK
Consulting Radio Engineer
WASHINGTON, D. C.
Figure No.2A
RADIO STATION KSDO
SAN DIEGO, CALIFORNIA
Proposed 1130KC -1Kw:5Kw- DA-2
Horizontal Plane Pattern
Daytime

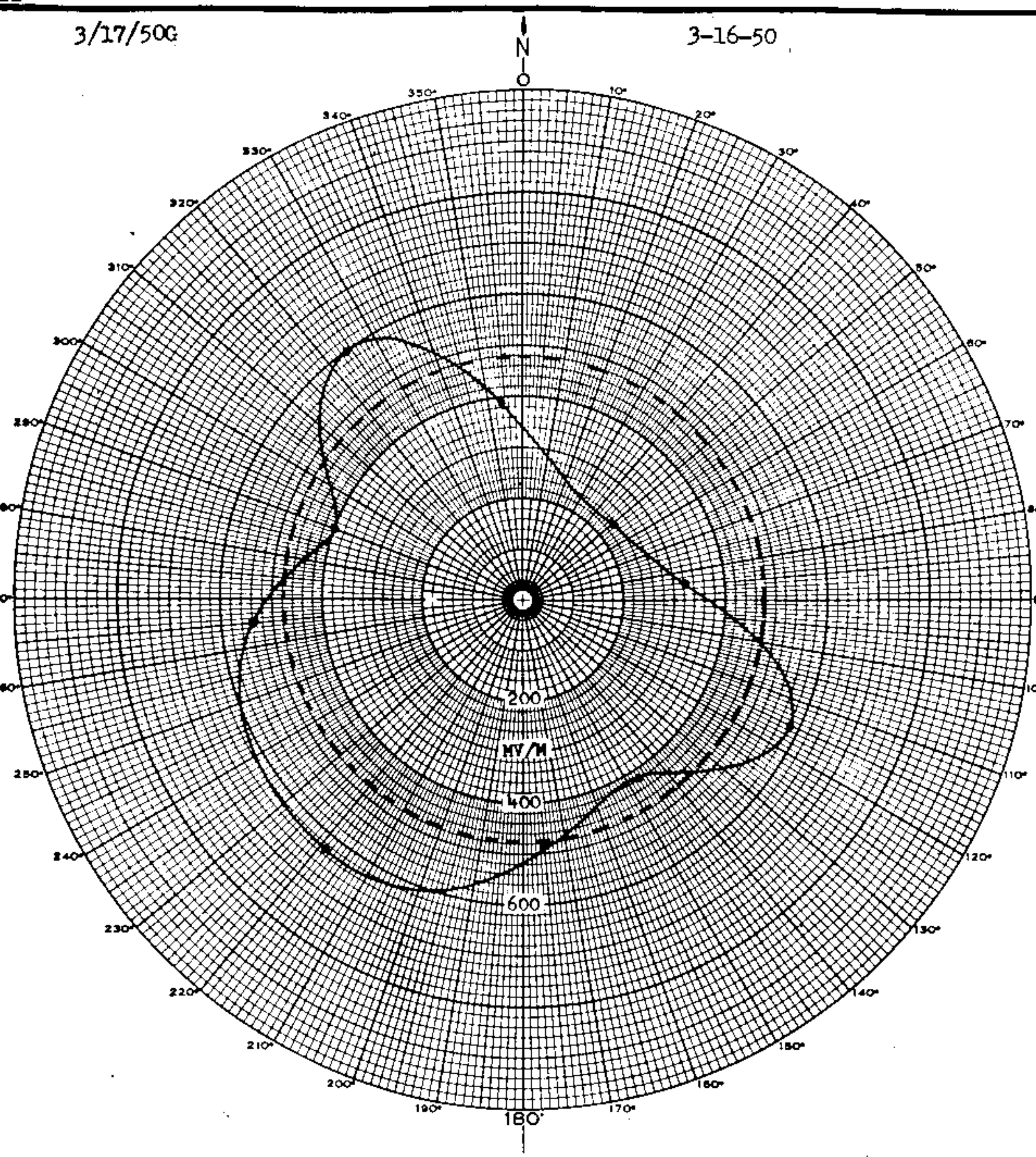
MEASURED
DAY

KSDO, SAN DIEGO, CAL.

1kw,5kw-LS,DA-2 1130 kc

3/17/50G

3-16-50



RMS = 475 MV/M

PATTERN NO. 500215DP

LATITUDE: 32° 45' 57"

LONGITUDE: 117° 06' 41"

MEASURED DIRECTIONAL PATTERN
DAYTIME

Exhibit No. 10

RADIO STATION KSDO
SAN DIEGO BROADCASTING COMPANY
SAN DIEGO, CALIFORNIA

1130KC - 1KW, 5KW-LS - DA-2

HAROLD B. ROTHROCK

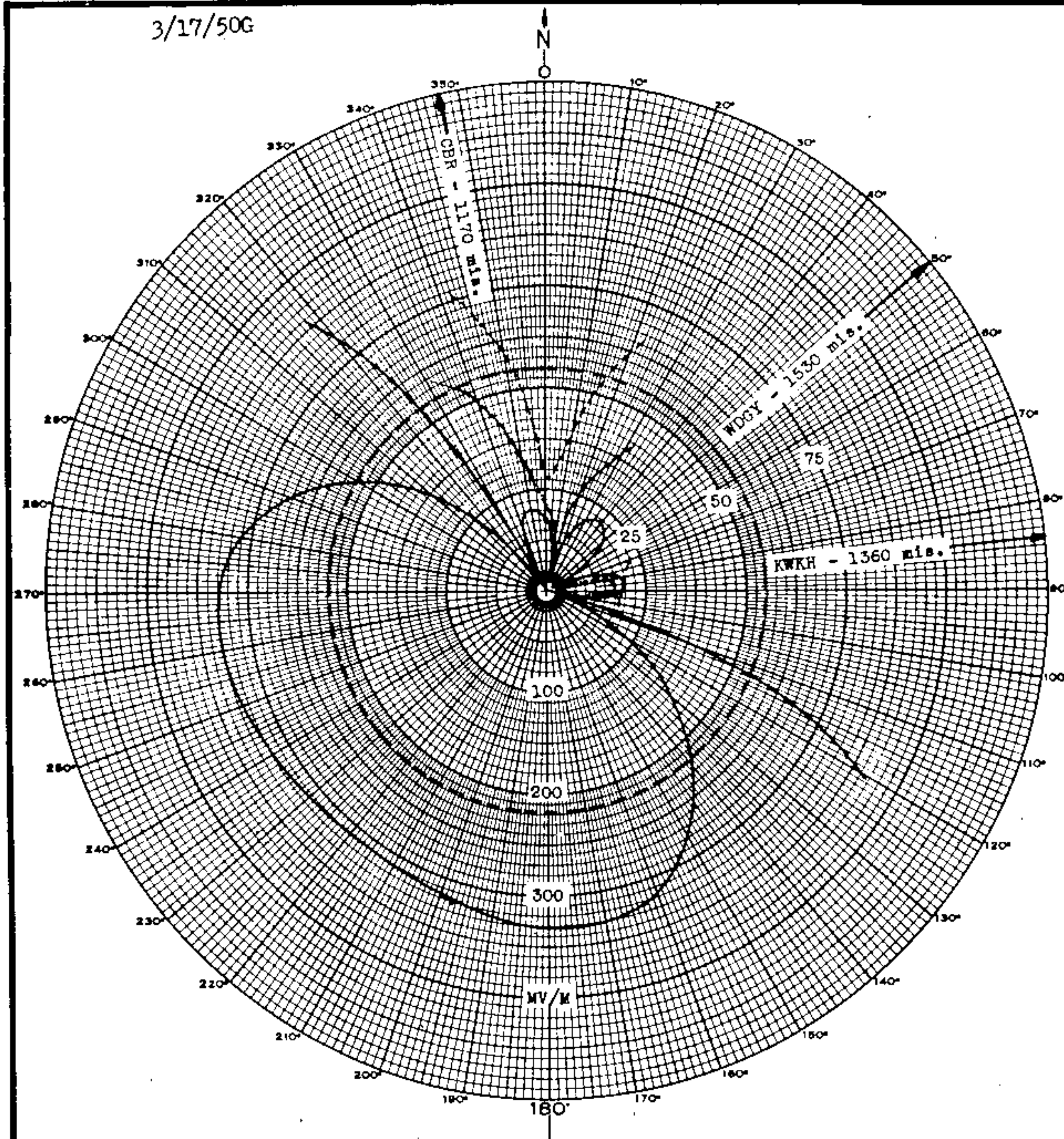
KSDO

PROPOSED
NIGHT

KSDO, SAN DIEGO, CAL.

1kw, 5kw-LS, DA-2 1130 kc

3/17/50G



CALCULATED VALUES
REQUESTED TOLERANCE VALUES
VALUES ESTABLISHED BY PROOF

RMS = 218 MV/M

PATTERN NO. 500227
LATITUDE: 32° 46' 57"
LONGITUDE: 117° 06' 41"

TOWER	G	FIELD	PHASE
NE	110°	1.068	91.5°
CENTER	110°	1.825	0°
SW	110°	1.000	-89.5°

S = 130°

Center Line at 39°

Based on measured values of current, phase and RMS.

Exhibit No. 4

RADIO STATION KSDO
SAN DIEGO BROADCASTING COMPANY
SAN DIEGO, CALIFORNIA

1130kc - 1kw, 5kw-LS - DA-2

THEORETICAL NIGHTTIME
HORIZONTAL PLANE PATTERN

HAROLD B. ROTHROCK
CONSULTING RADIO ENGINEER
CITIZENS NATIONAL BANK BUILDING
BEDFORD, INDIANA

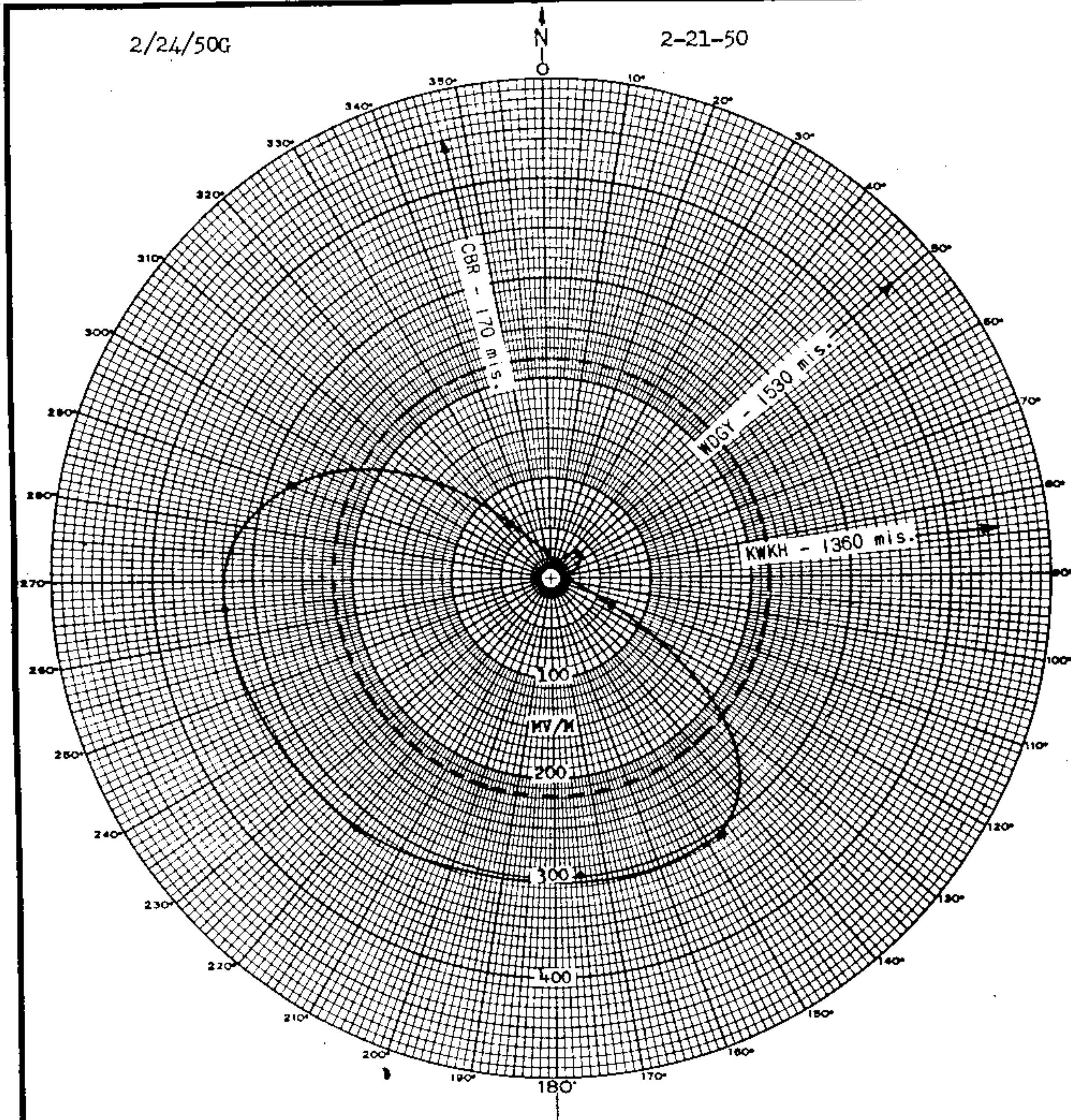
AMENDMENT RECD 3-10-50 BMP-5022

KSDO

MEASURED NIGHT

KSDO, SAN DIEGO, CAL.

1kw,5kw-LS,DA-2 1130 kc



RMS = 218 MV/M

PATTERN NO. 500215NP

LATITUDE: 32° 46' 57"

LONGITUDE: 117° 06' 41"

HAROLD B. ROTHROCK
CONSULTING RADIO ENGINEER
BLOOMINGTON, INDIANA

MEASURED DIRECTIONAL PATTERN
NIGHTTIME

Exhibit No. 11
RADIO STATION KSDO
SAN DIEGO BROADCASTING COMPANY
SAN DIEGO, CALIFORNIA
1130KC - 1KW, 5KW-LS - DA-2

KSDO 1

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KSDO | Main Studio: San Diego, California

Frequency: 1130 kHz | Power: 10 kW

Notification List No. 1699 | Date: August 24, 1976 | Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 32° 51' 04"
West Longitude: 116° 57' 51"

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:	SW(#1)	WC(#2)	NW(#3)	SE(#4)	EC(#5)	NE(#6)
HEIGHT ABOVE INSULATORS:	All towers 219' (90.5°)					
NIGHT PHASING:	-121.8°	0°	+120.1°	-37.2°	+84.6°	-155.3°
NIGHT FIELD RATIO:	1.00	1.93	1.00	1.00	1.93	1.00
DAY PHASING:	-135.7°	+27°	+135.7°	-	-	-
DAY FIELD RATIO:	0.5	0.9	0.5	-	-	-

SPACING AND ORIENTATION: The towers are located in two parallel rows with three towers per row. Adjacent towers in a row are spaced 241.96' (100°) on a line bearing 33° true. End towers forming a side of the parallelogram are spaced 241.96' (100°) on a line bearing 88° true.

GROUND SYSTEM: 120-219' equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers. Centers of system are bonded together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	607 mv/m	741 mv/m	638 mv/m
Night	648 mv/m	- mv/m	- mv/m

(Cont'd)

KSDO

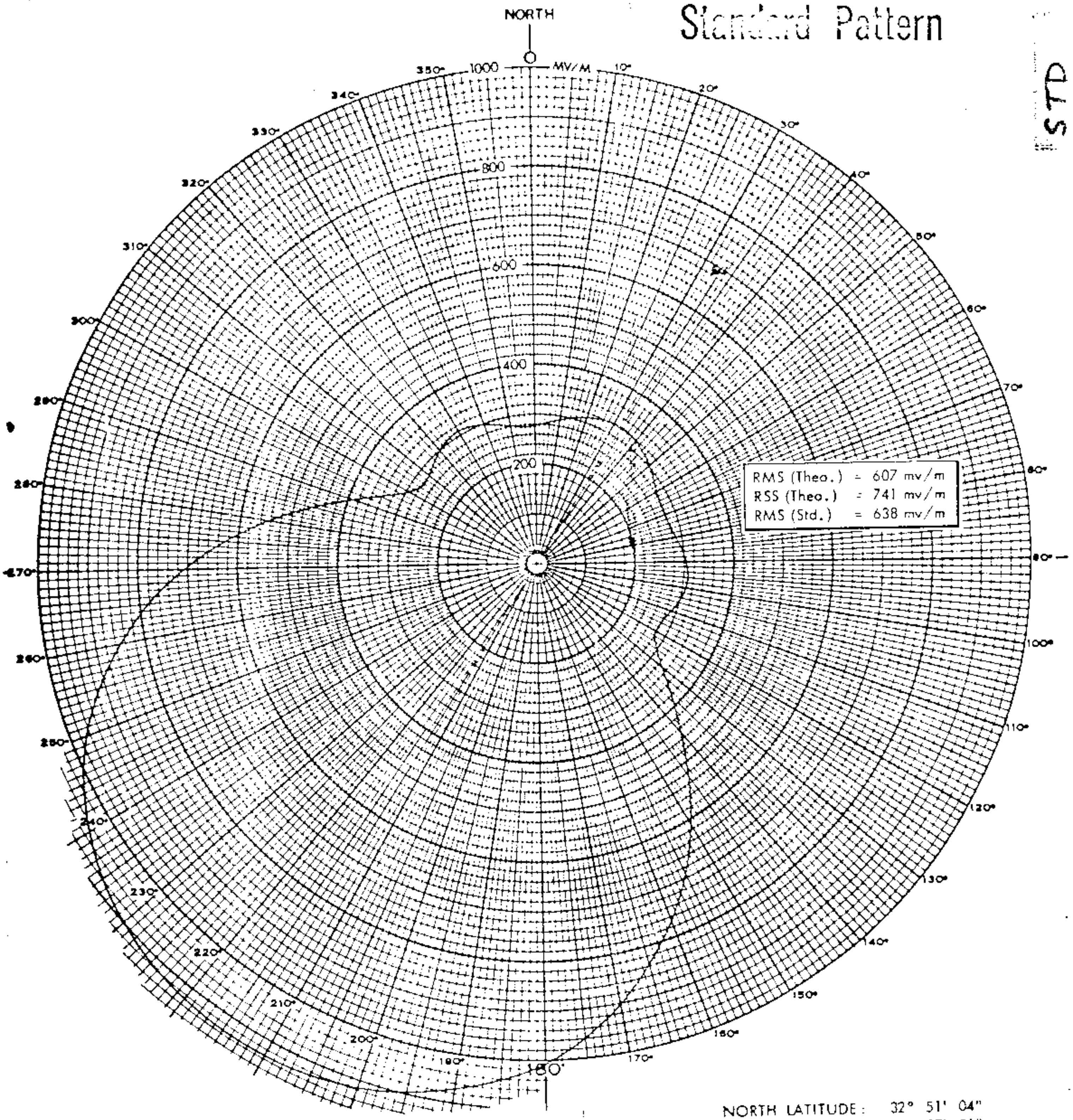
Note: Please retain the Nighttime directional antenna radiation pattern notified for station KSDO in United States Change List Number 1556 dated November 28, 1973, and attach to this Revised Description Sheet and Daytime pattern. This notification concerns only a change in the Daytime operation of the station Nighttime operation continued as previously notified.

CTR NO 30556A4

KSDO

Standard Pattern

STD



NORTH LATITUDE: 32° 51' 04"
WEST LONGITUDE: 116° 57' 51"

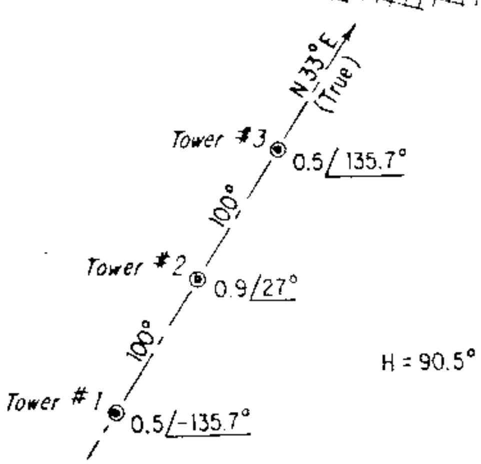


FIGURE 1
PROPOSED DAYTIME
STANDARD RADIATION PATTERN
KSDO 10KW-U, DA-2 1130 KHz
SAN DIEGO, CALIFORNIA

Prepared by
Lohnes and Culver Washington, D. C.
July, 1976

KWBY

Proposed Day
(11-27-64ct)

New; Cosmopolitan Enterprises, Inc.
Edna, Texas

10kw,DA-D,D
1130 kc

BP-16347
Granted
2-17-68 CP
for new AM
Broadcast
Station

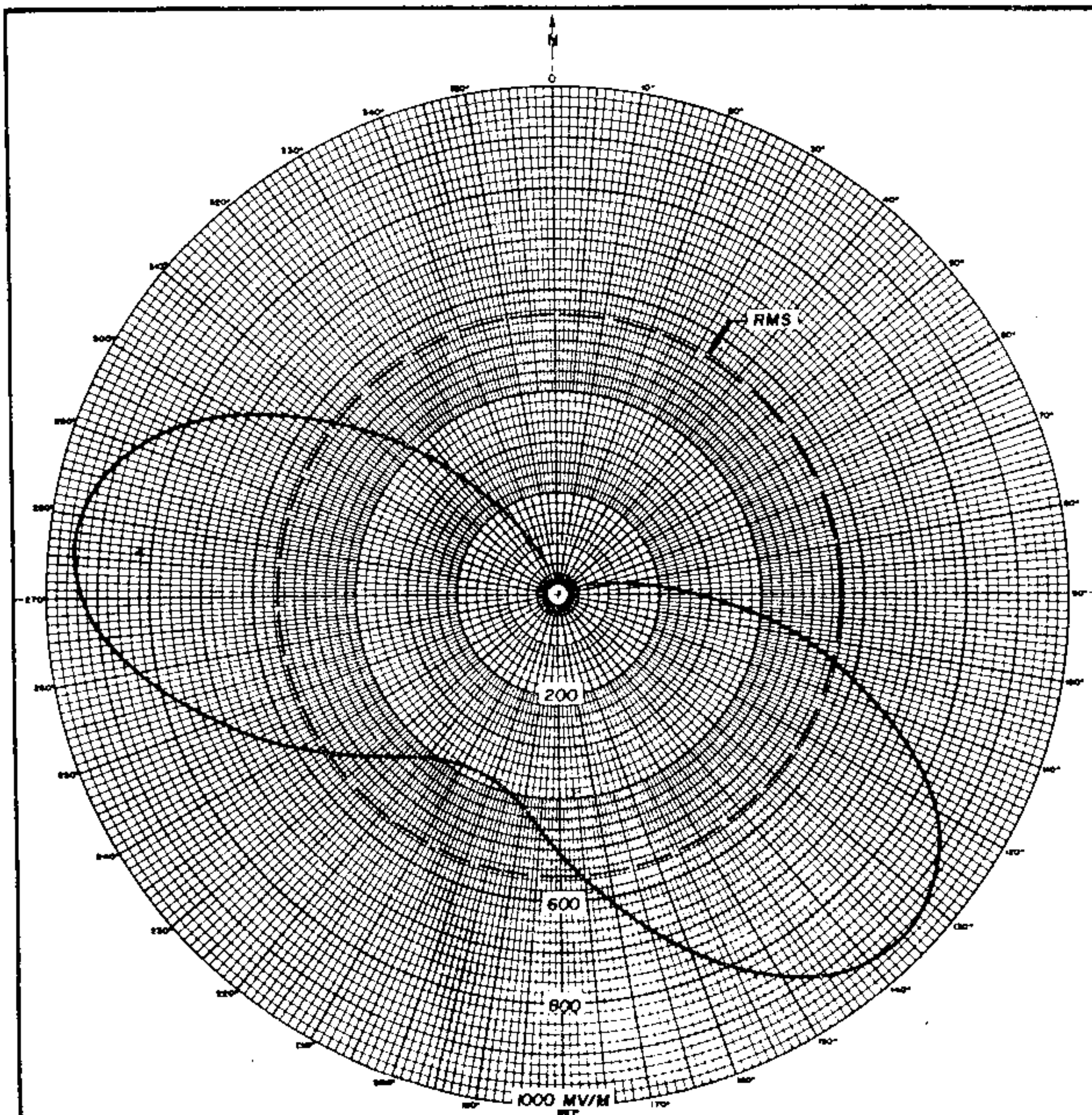
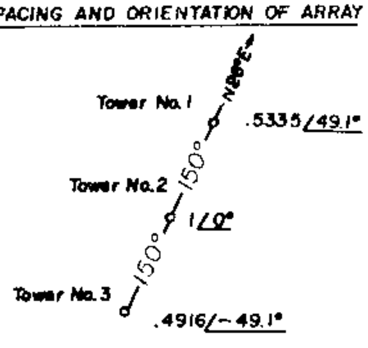


FIGURE 1 — A

HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION OF ARRAY



θ: 90°

APPLICANT	COSMOPOLITAN ENT., INC.
LOCATION	EDNA, TEXAS
FREQUENCY	1130 KC/S
POWER	10 KW
LATITUDE	29 DEG 01 MIN 40 SEC
LONGITUDE	96 DEG 40 MIN 05 SEC
WHEN USED	DAYTIME
R.M.S. FIELD	555 MV/M
DATE	AUGUST 1964

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

FCC File No. BP-16347
Accepted 10-26-64

New; Cosmopolitan Enterprises, Inc.
Edna, Texas

1130 kc

KWBY

Proposed Day Nulls
(11-27-64ct)

New; Cosmopolitan Enterprises, Inc
Edna, Texas

10kw,DA-D,D
1130 kc

BP-16347
Granted
2-17-68 CP
for new AM
broadcast
station

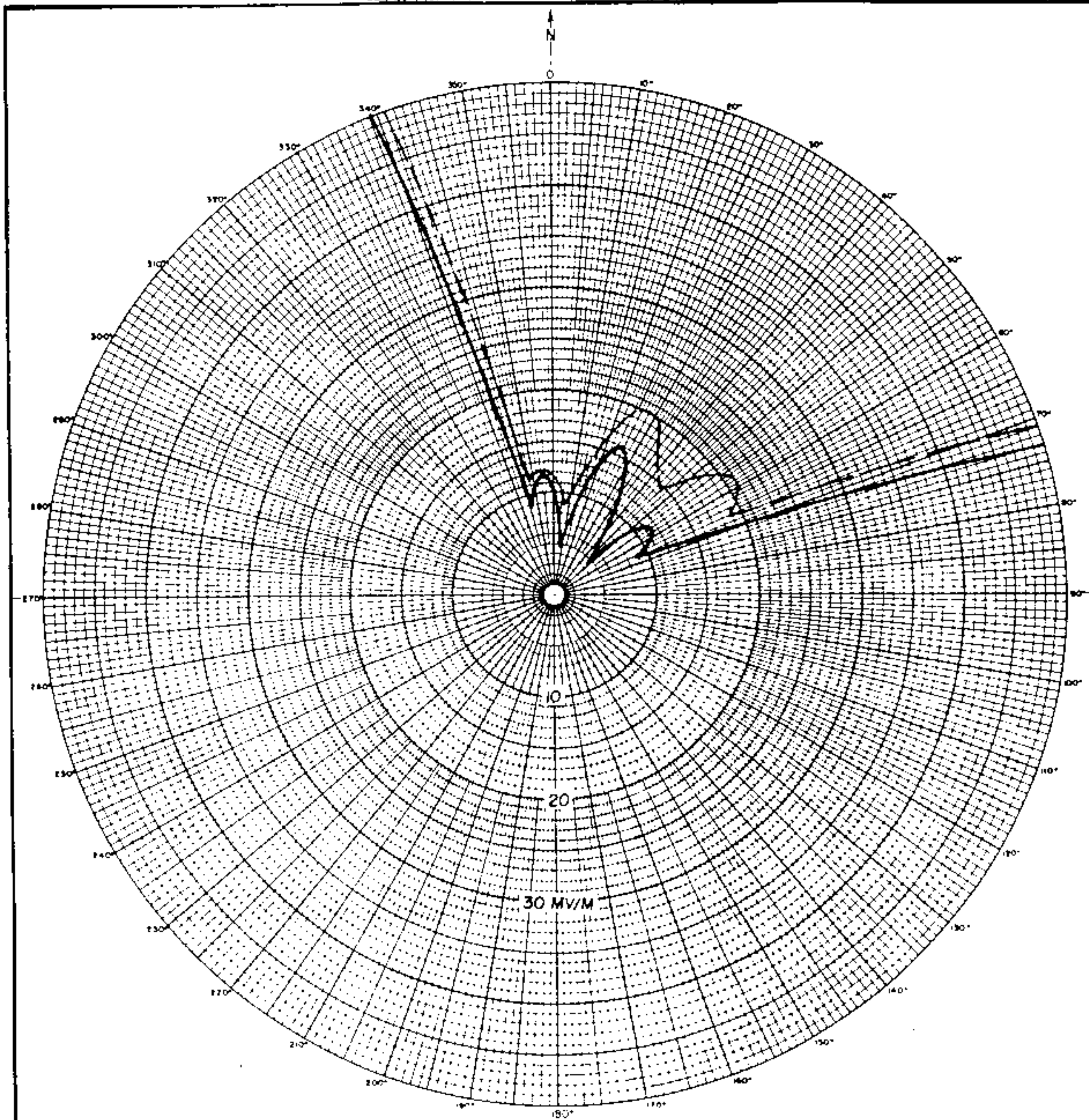


FIGURE 1 — B

EXPANDED VIEW

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

FCC File No. BP-16347
Accepted 10-26-64

New; Cosmopolitan Enterprises, Inc
Edna, Texas

1130 kc

PROPOSED NIGHT

Station KWKH 50kw, DA-N,U
Shreveport, Louisiana 1130 KC

KWK

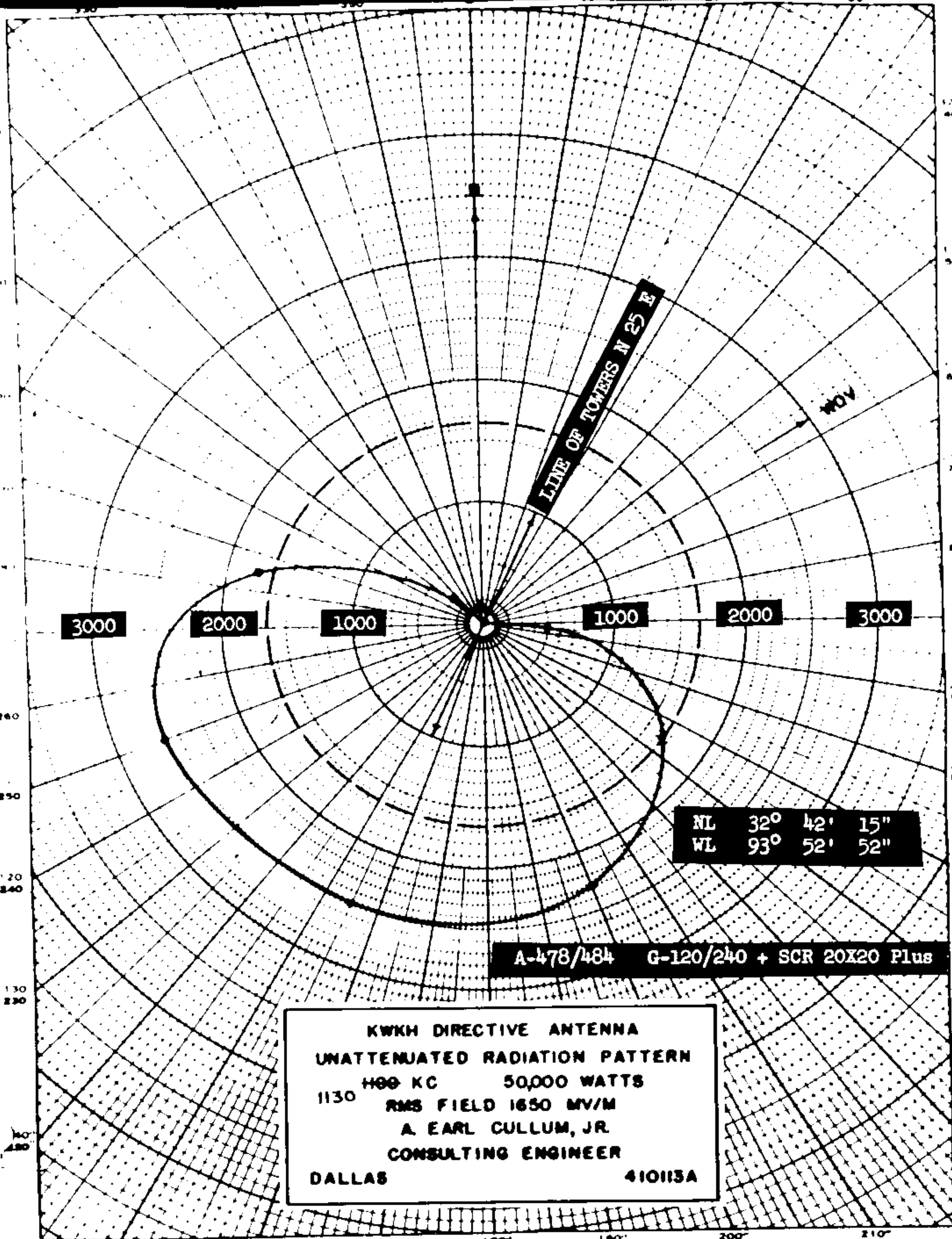


EXHIBIT 8A

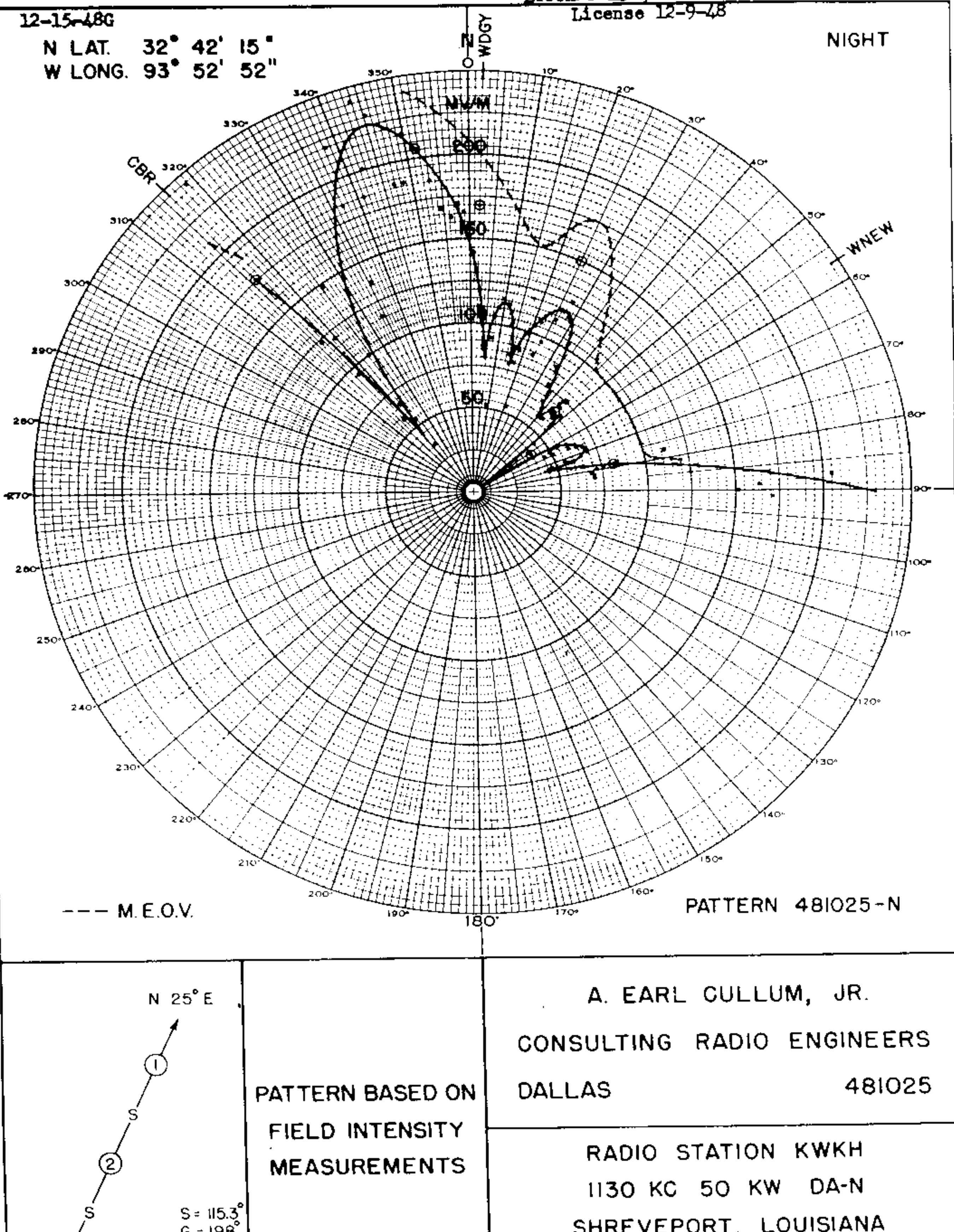
KWKH

MEASURED NIGHT NULLS　　KWKH, SHREVEPORT, LA.　　50kw, DAN　　1130kc

12-15-48G

License 12-9-48

License 12-9-48



PATTERN BASED ON FIELD INTENSITY MEASUREMENTS

A. EARL CULLUM, JR.
CONSULTING RADIO ENGINEERS
DALLAS　　481025

RADIO STATION KWKH
1130 KC 50 KW DA-N
SHREVEPORT, LOUISIANA
FIGURE 1C

KWKH

MEASURED NIGHT

KWKH, SHREVEPORT, LA.

50kw.DAN

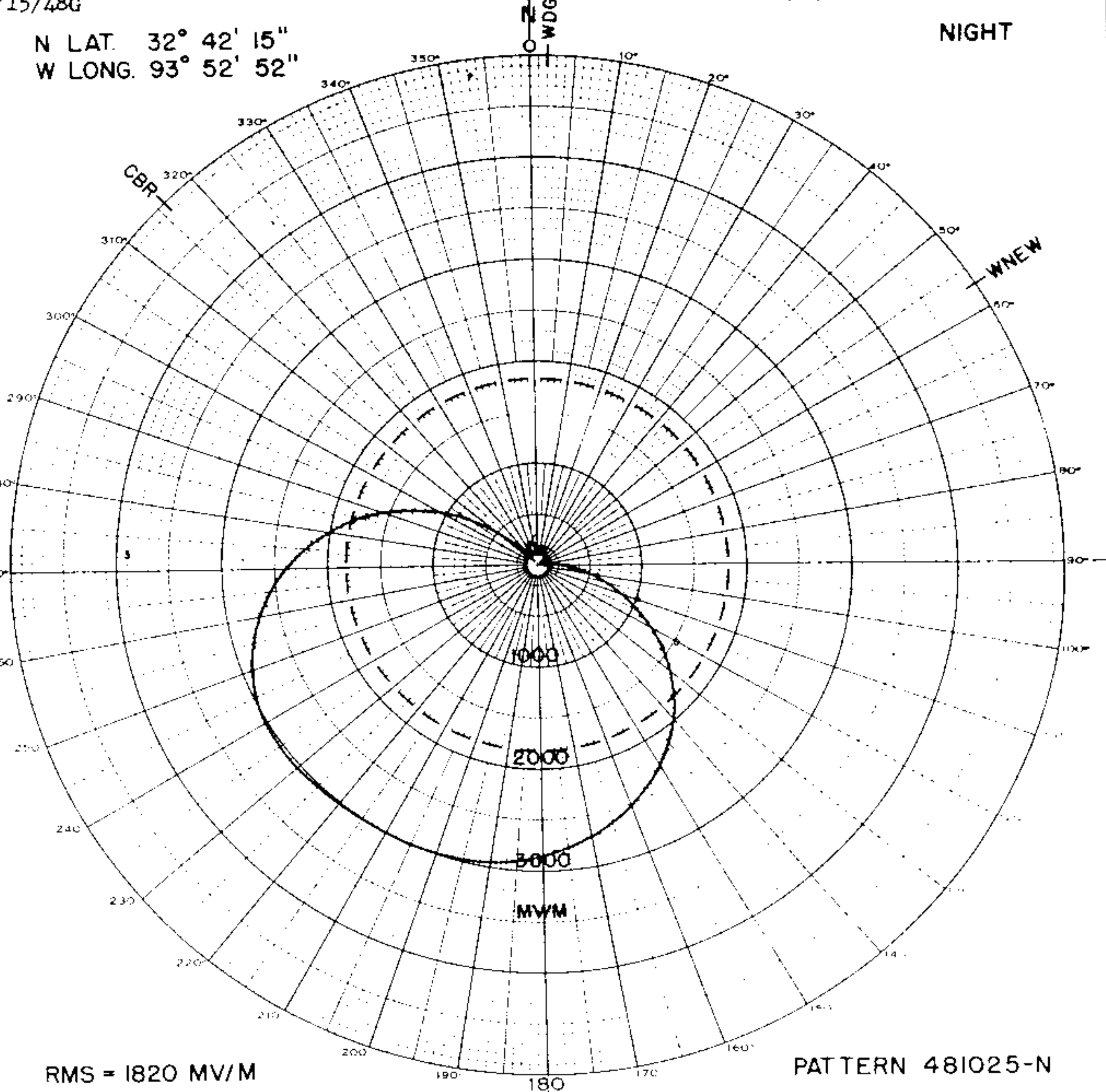
1130 k

License 12-9-48

12/15/48G

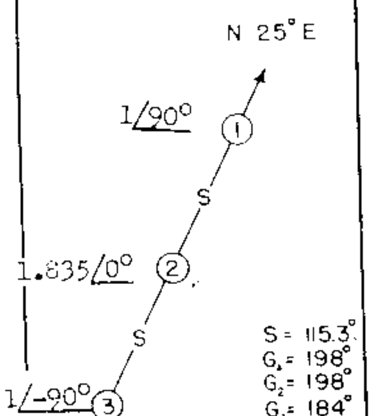
N LAT. 32° 42' 15"
W LONG. 93° 52' 52"

NIGHT



RMS = 1820 MV/M

PATTERN 481025-N



PATTERN BASED ON FIELD INTENSITY MEASUREMENTS

A. EARL CULLUM, JR.
CONSULTING RADIO ENGINEERS
DALLAS 481025

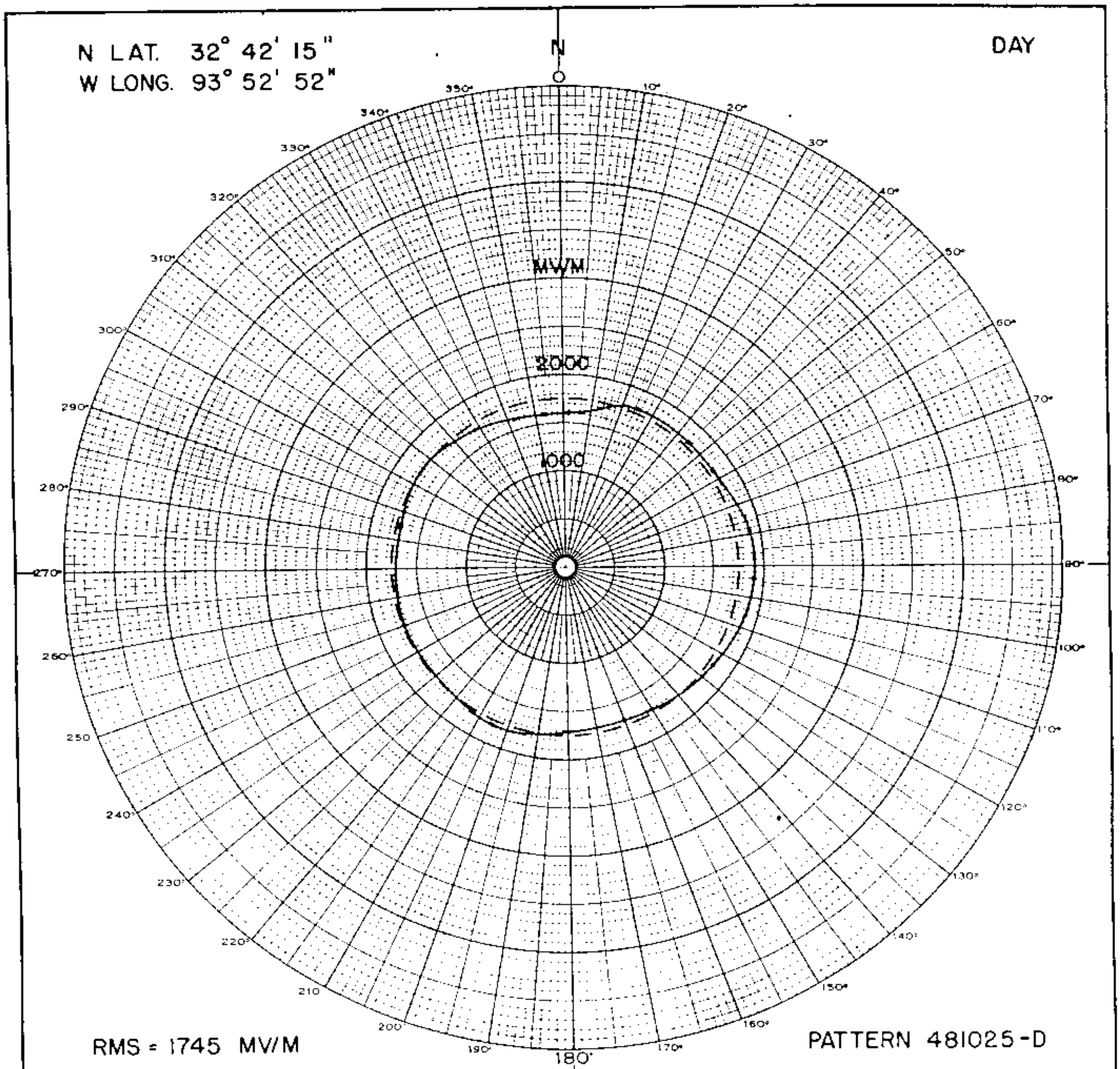
RADIO STATION KWKH
1130 KC 50 KW DA-N
SHREVEPORT, LOUISIANA
FIGURE 1B

KWKH

MEASURED KWKH, SHREVEPORT, LA. 12/31/48 G 50kw,DAN 1130 kc
DAY

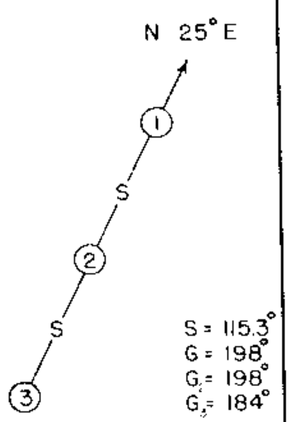
N LAT. 32° 42' 15"
W LONG. 93° 52' 52"

DAY



RMS = 1745 MV/M

PATTERN 481025-D



PATTERN BASED ON FIELD INTENSITY MEASUREMENTS

A. EARL CULLUM, JR.
CONSULTING RADIO ENGINEERS
DALLAS 481025

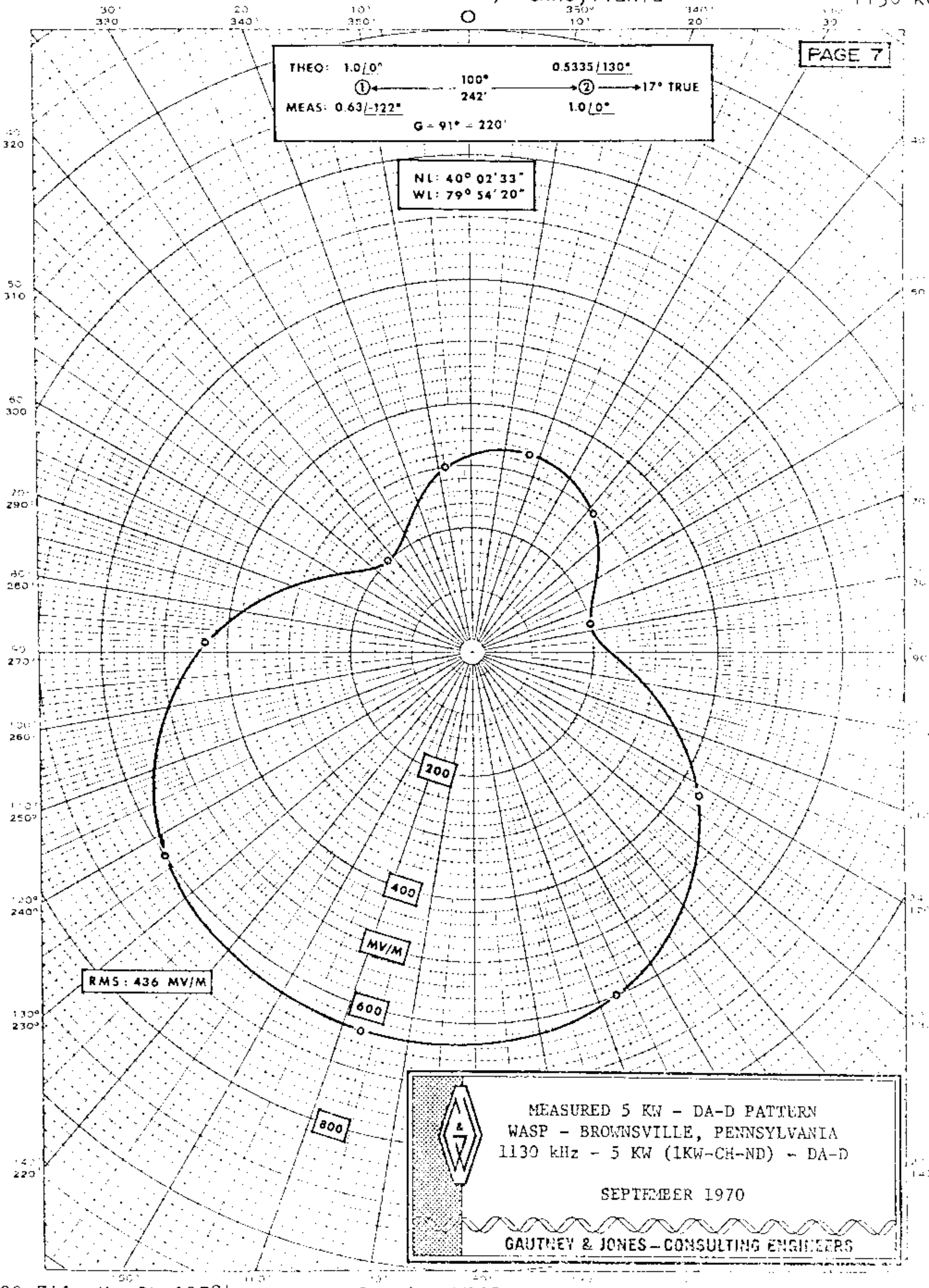
RADIO STATION KWKH
1130 KC 50 KW ND-D
SHREVEPORT, LOUISIANA
FIGURE 1A

WASP

Measured Day
(11-24-70ct)

Station WASP
Brownsville, Pennsylvania

5kw(1kw-CH,Non-DA)DA-D,D
1130 kc



FCC File No. BL-12784
Accepted 11-12-70

Station WASP
Brownsville, Pennsylvania

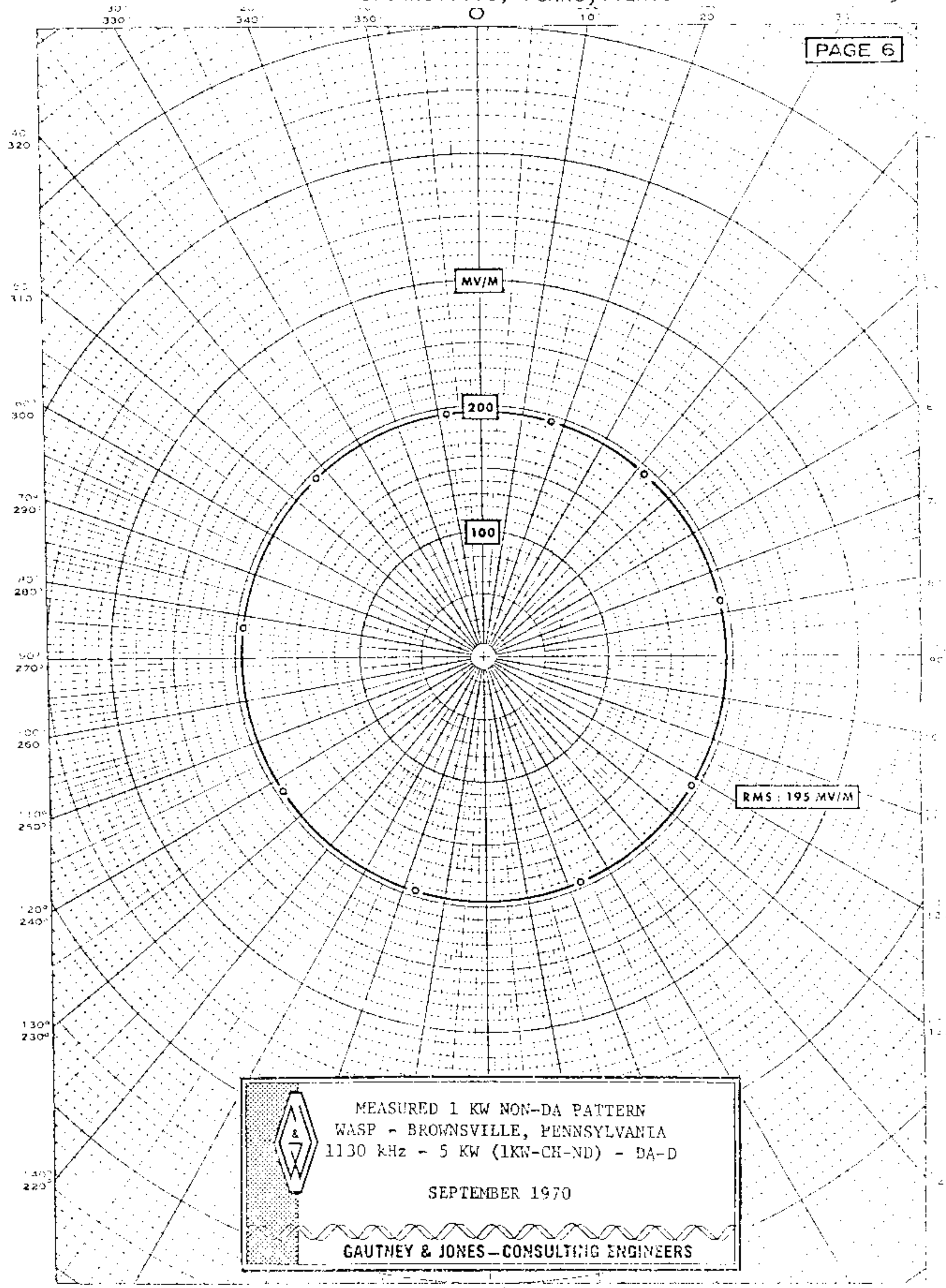
1130 kc

WASP

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

Station WASP
Brownsville, Pennsylvania

5kw(1kw-CH,Non-DA)DA-D,D
1130 kc



FCC File No.BL-12784
Accepted 11-12-70

Station WASP
Brownsville, Pennsylvania

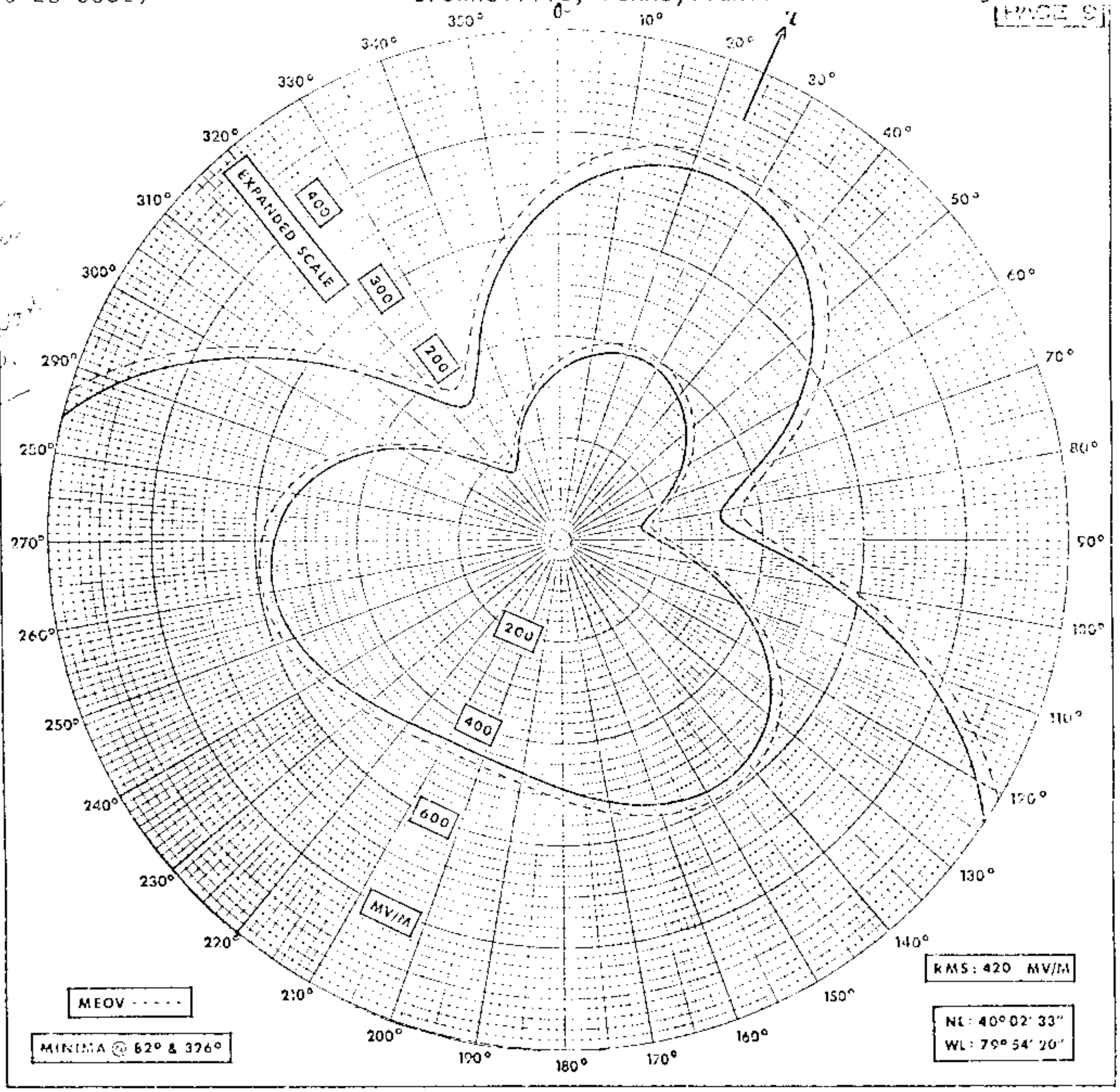
1130 kc

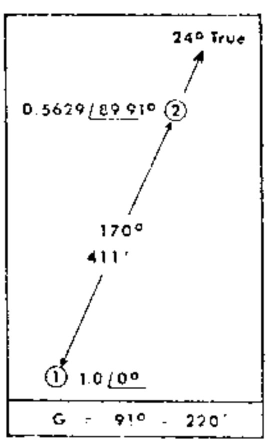
WASP

Proposed Day (10-28-68ct)

Station WASP
Brownsville, Pennsylvania

5kw(1kw-CH,Non-DA)DA-D,D
1130 kc





DIRECTIONAL ANTENNA PATTERN
WASP - BROWNSVILLE, PENNSYLVANIA
1130 kHz - 5 KW (1 KW-ND-CH) - DA-D

JUNE, 1968

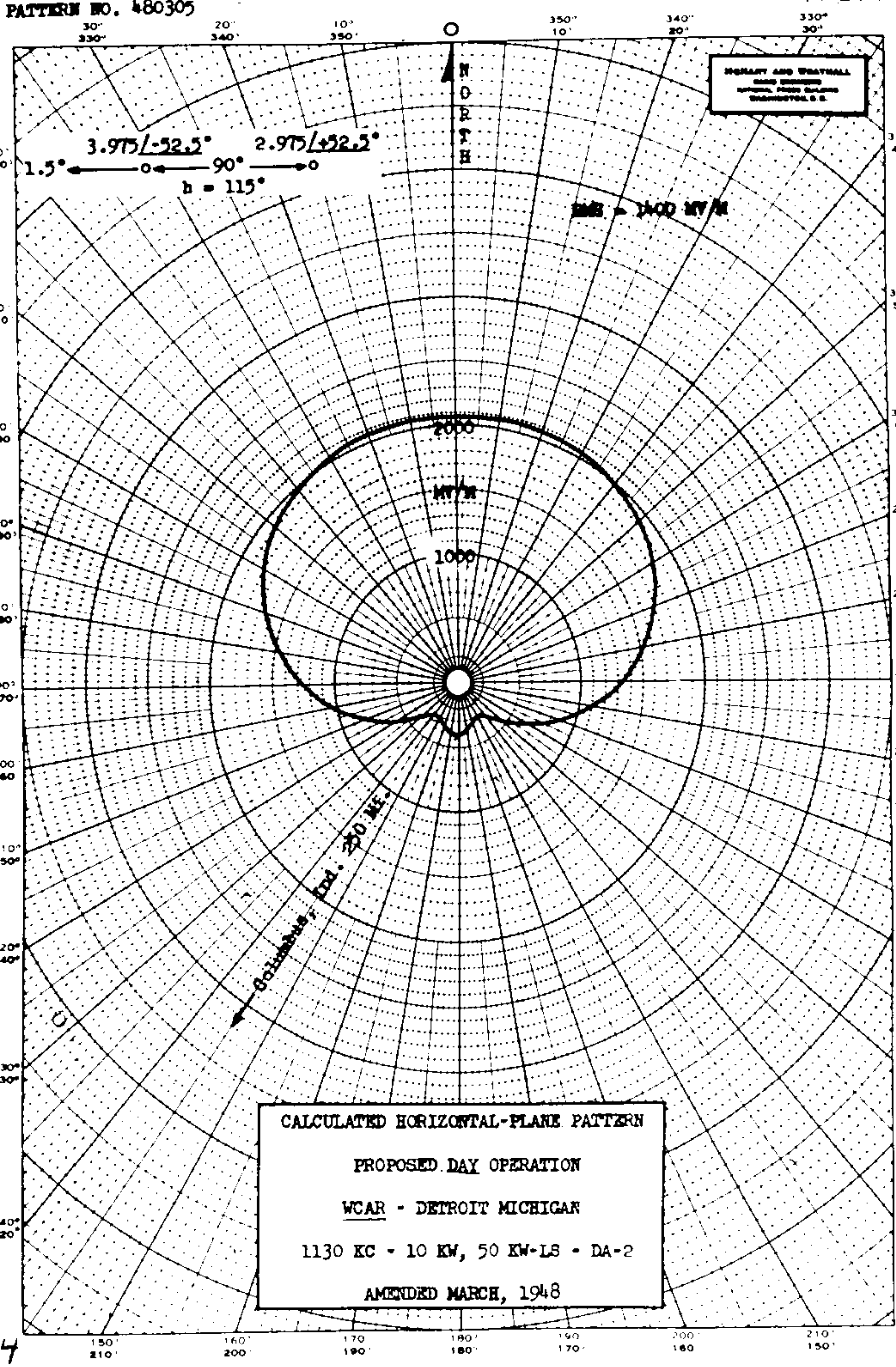
CAUTNEY & JONES—CONSULTING ENGINEERS

FCC File No.BP-18232
Accepted 10-16-68

Station WASP
Brownsville, Pennsylvania

1130 kc

WCAR



EUGENE DIETZGEN CO. PRINTED IN U.S.A.
NO. 340-P DIETZGEN GRAPH PAPER POLAR CO-ORDINATE

WCAR 4

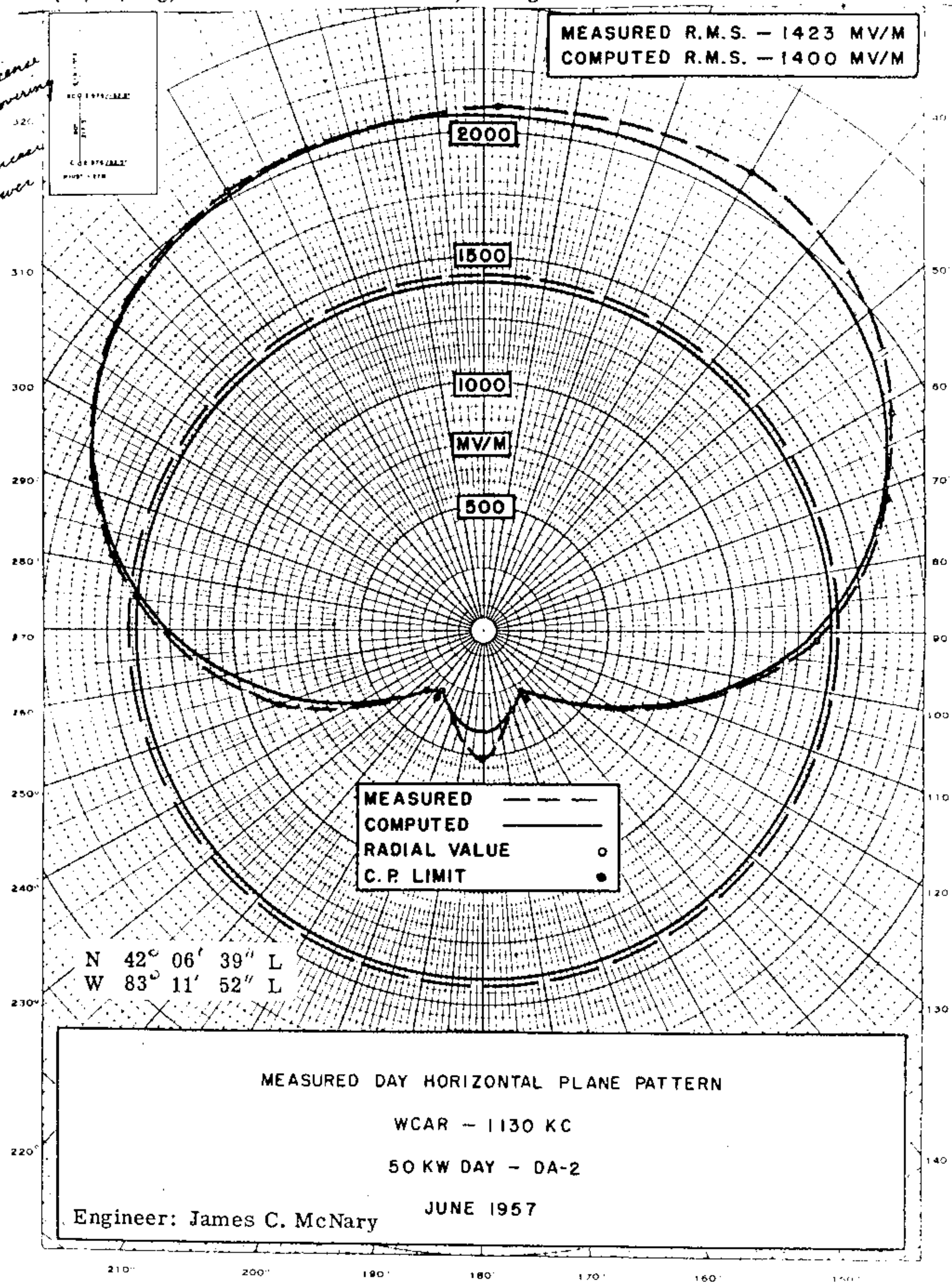
WCAR

MEASURED DAY
(11/22/57g)

Station WCAR
Detroit, Michigan

10kw,50kw-LS, DA-2,U
1130 KC

Granted license 11/25/57 covering change in facil & increase in day power



FCC File No. BL-6814
Accepted 11-19-57

WCAR
Detroit, Michigan

1130 KC

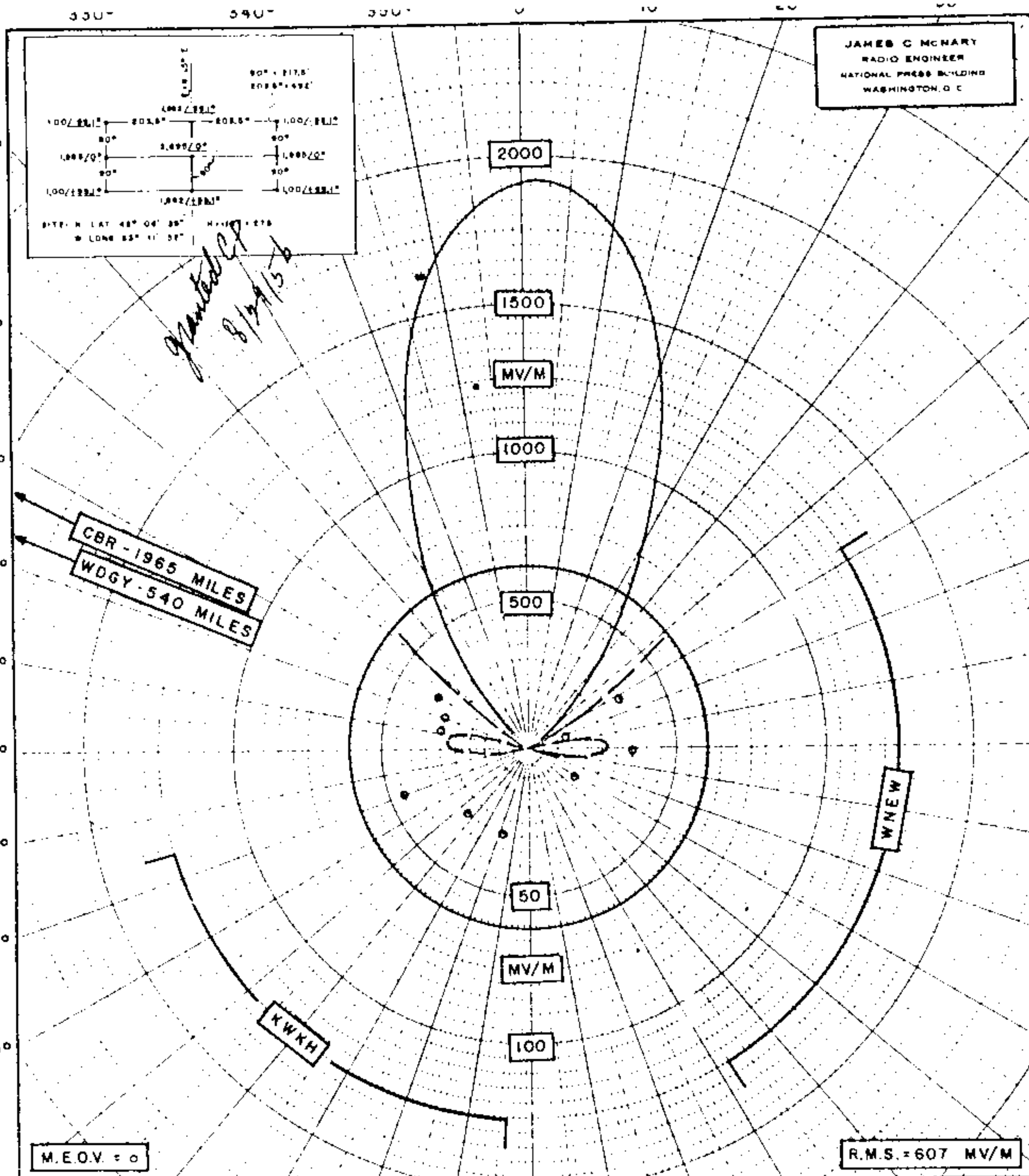
WCAR

PROPOSED
NIGHT (8-17-56g)

STATION WCAR
DETROIT, MICH.

10 KW
DA-2, U

1130 KC



NIGHT HORIZONTAL PLANE PATTERN

WCAR - 1130 KC - 10 KW - DA-2

JUNE, 1956

FCC File No. BP-10,715 Accepted 8-13-56 WCAR, Detroit, Michigan 1130 KC

Granted license 4/2/57
for DA-2 operation

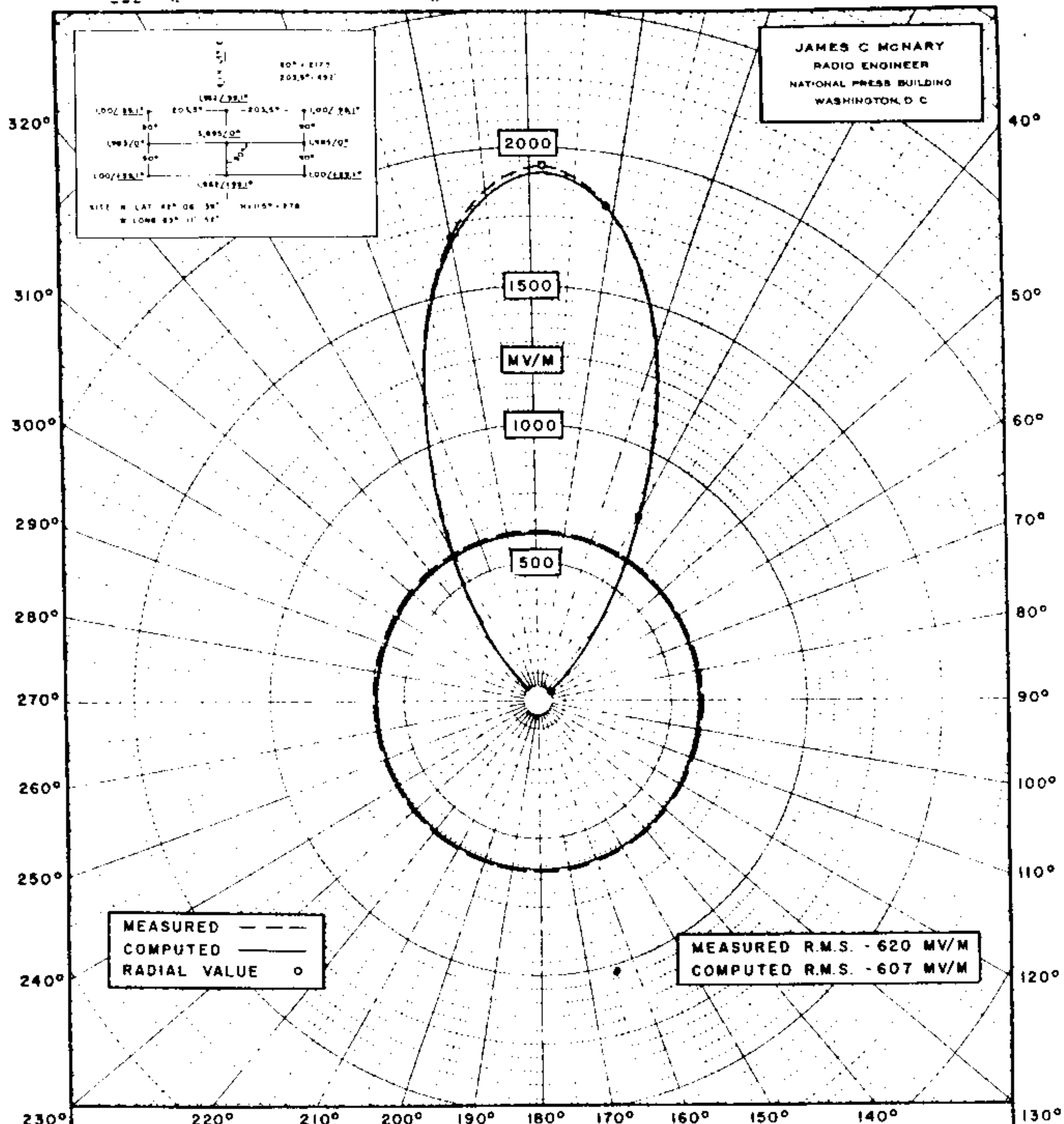
WCAR

MEASURED
NIGHT (10-5-56g)

Station W C A R
Detroit, Michigan

10 KW, DA-2, U

1130 KC



WCAR - DETROIT, MICHIGAN

1130 KC - 10 KW - DA-2

MEASURED NIGHT HORIZONTAL PLANE PATTERN

JUNE, 1956

FCC File No.
BL-6299

Accepted 9-21-56

Station W C A R
Detroit, Michigan

1130 KC

granted license 3/5/57 for DA-2 operation

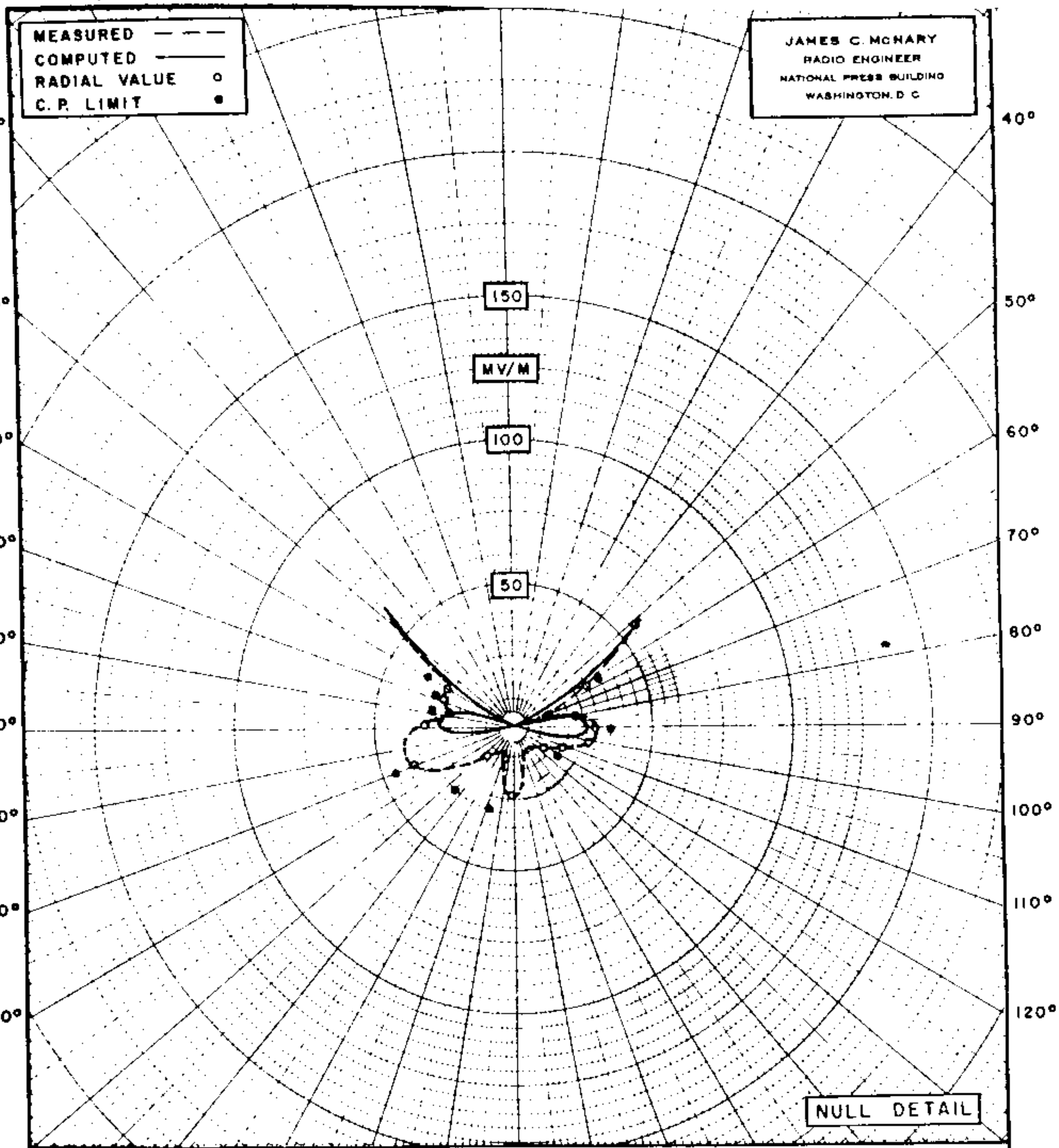
WCAR

MEASURED NIGHT NULL (10-5-56g)

Station W C A R
Detroit, Michigan

10 KW, DA-2, U

1130 K C



WCAR - DETROIT, MICHIGAN

1130 KC - 10 KW - DA-2

MEASURED NIGHT HORIZONTAL PLANE PATTERN

JUNE, 1956

FCC File No.
BL-6299

Accepted 9-21-56

Station W C A R
Detroit, Michigan

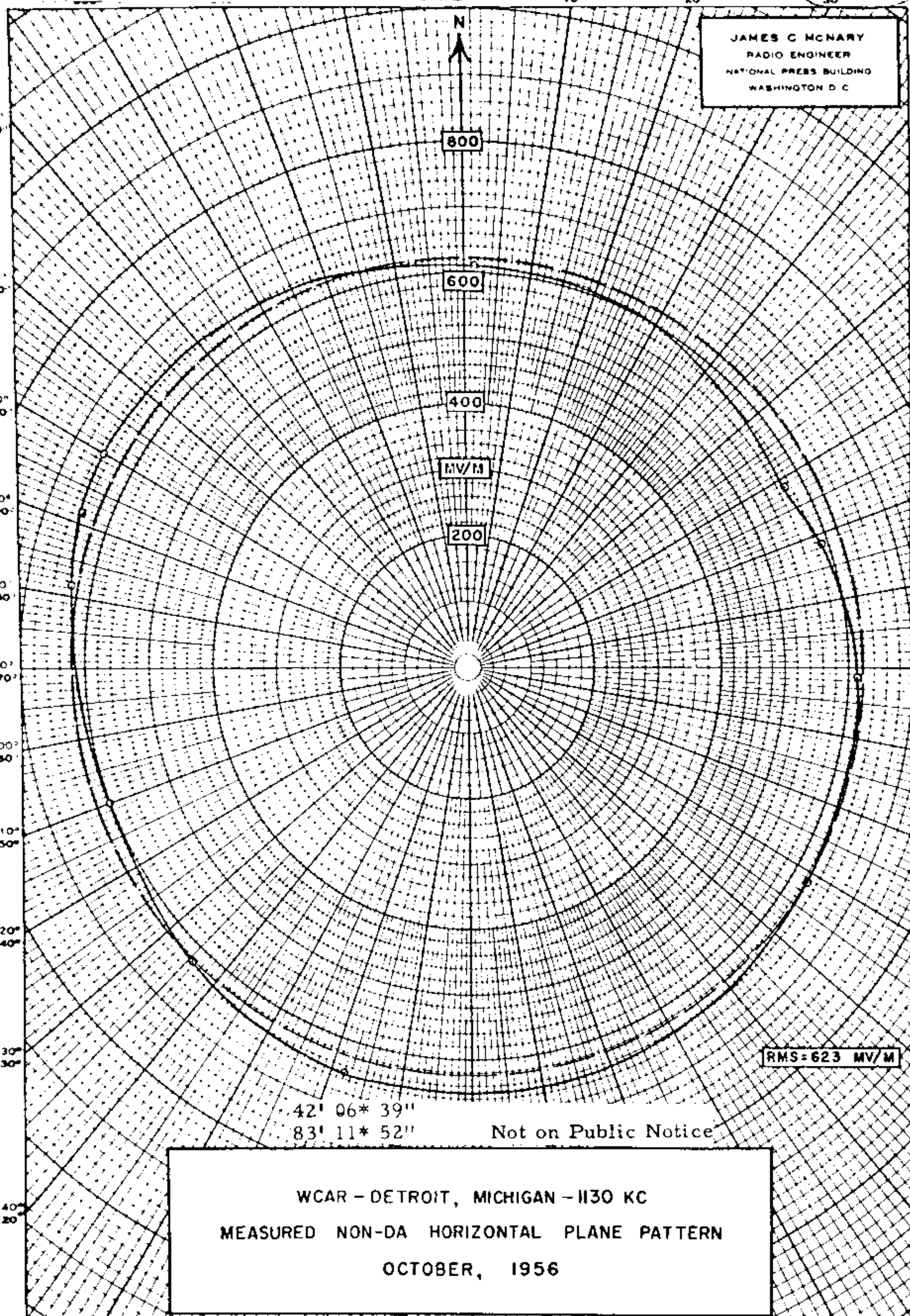
1130 KC

Granted license 4/23/57
for DA-2 operation

WCAR

MEASURED NON-DA (12-3-56g)

Station W C A R
Detroit, Michigan 10 KW DA-2, U 1130 KC



FCC File No.
BL-6299 (Amended)

Accepted 10-31-56

Station WCAR
Detroit, Michigan

1130 KC

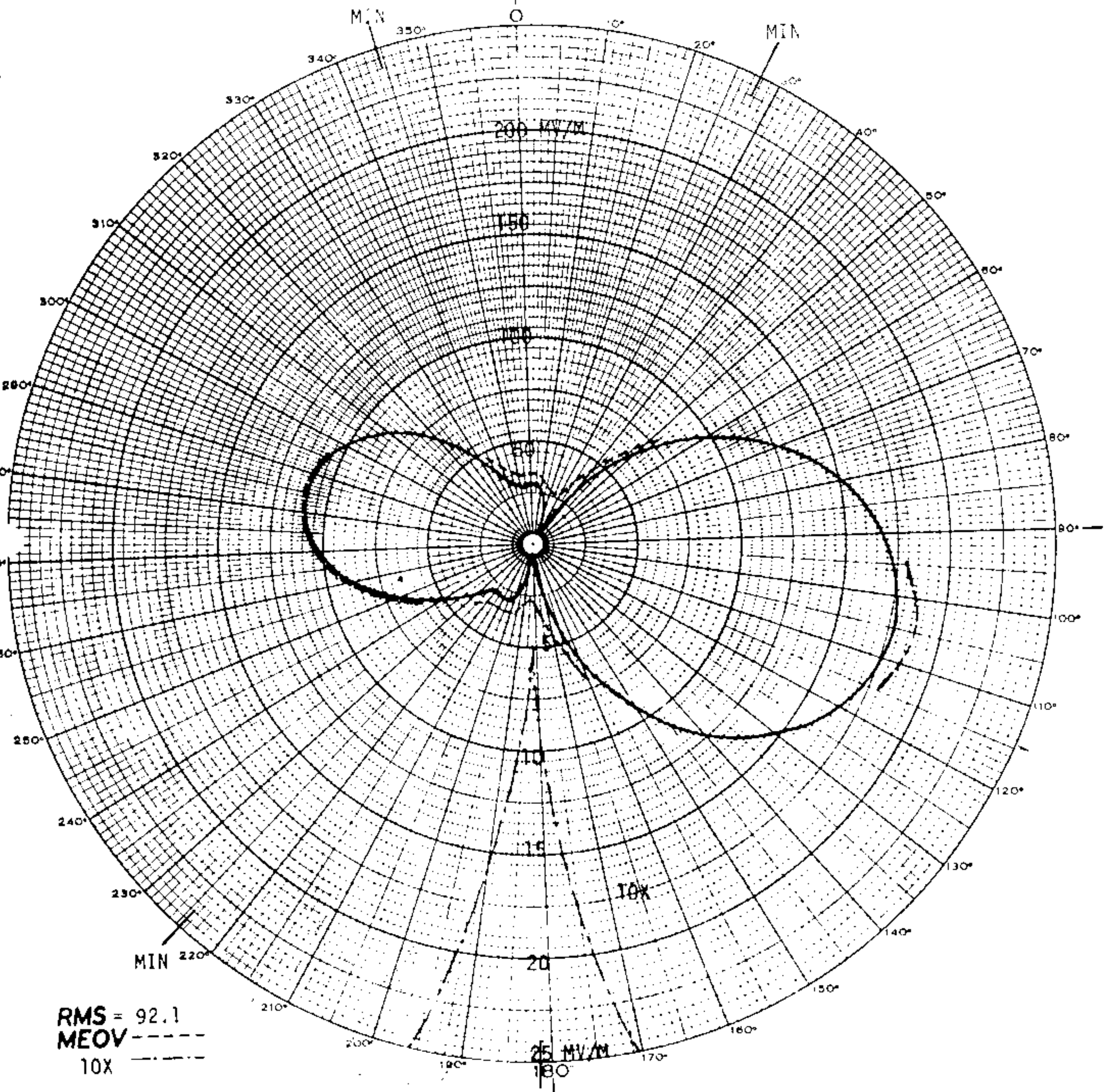
Gr. (1-9-70) Appl. for CP for New Sta. BP-16816

WCTM

Proposed Day
(6-28-66ct)

New; Western Ohio Bcstg. Service, Inc.
Eaton, Ohio

250w, DA-D, D
1130 kc



RMS = 92.1
MEOV -----
10X —·—·—

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 2	STATION DATA
LOT: 104.5° No. 1 1.0/θ° S No. 2 1.5323/-186.4° S No. 3 0.7088/-19.01° G's=90° S 70°		PROPOSED DAYTIME DIRECTIONAL FOR EATON, OHIO ********* APRIL - 1966 θ° 0°	CALL NEW FREQ 1130 Kc/S POWER 0.25 Kw TYPE DA-D TIME DAYTIME LAT. 39°44'~~48.3~~"53" LONG. 84°~~34~~'~~52.5~~" 35' 03" E.H.MUNN, JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No. BP-16816
Accepted 5-26-66 Amended

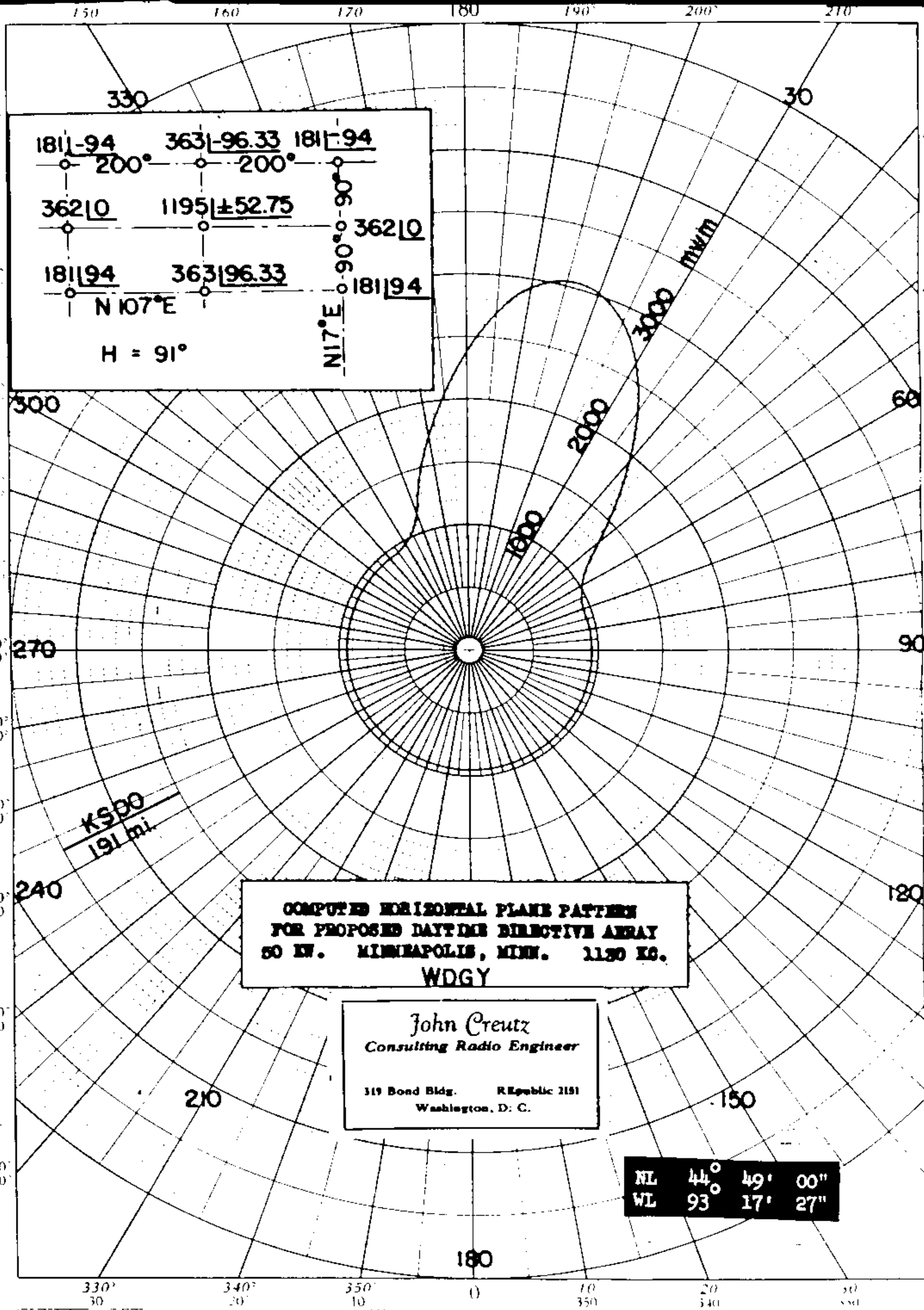
New; Western Ohio Bcstg. Service, Inc.
Eaton, Ohio

1130 kc

WDGY

PROPOSED DAY

Station WDGY 25kw,50kw-LS, DA-2,U
Minneapolis, Minnesota 1130 KC



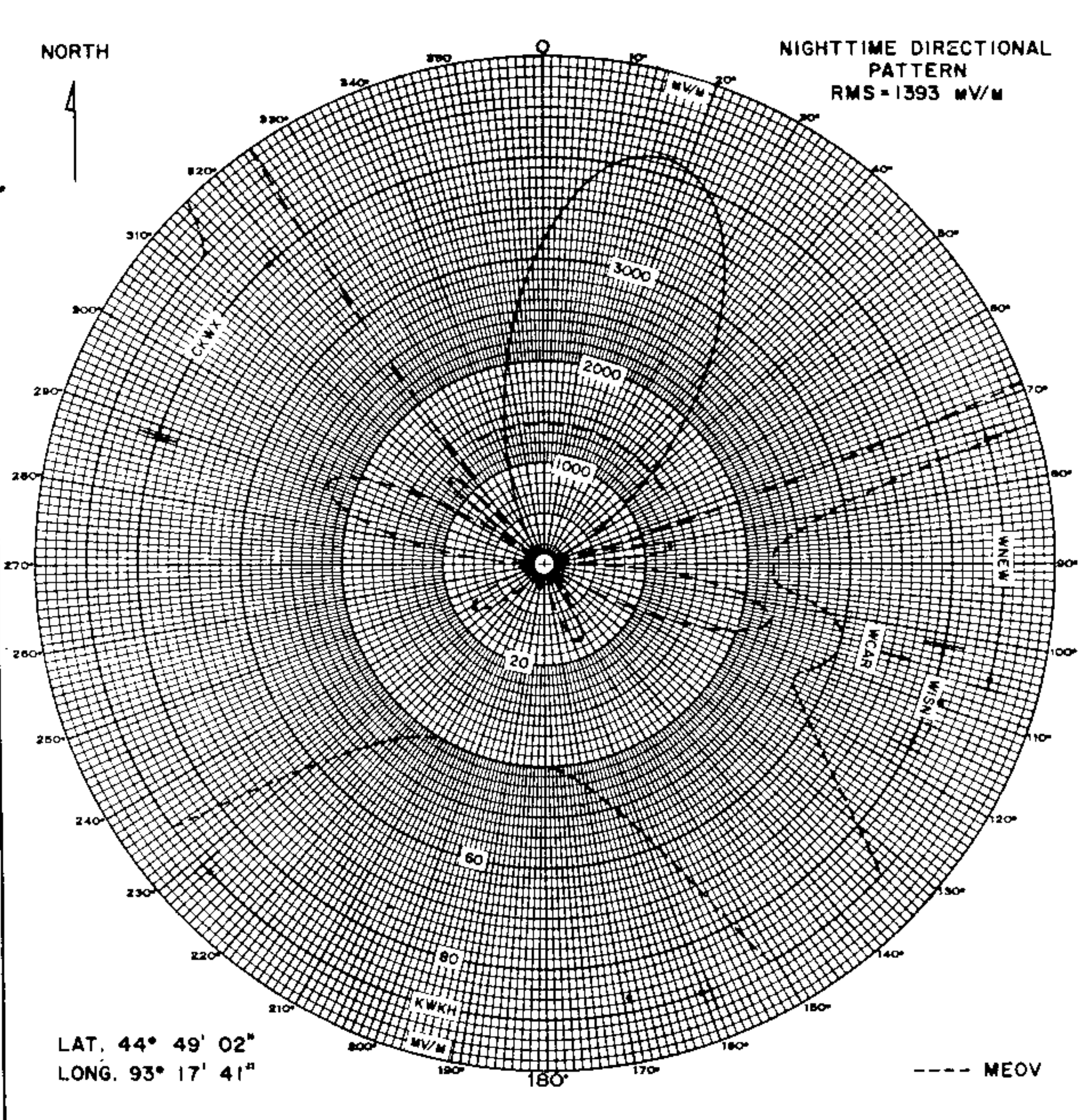
WDGY

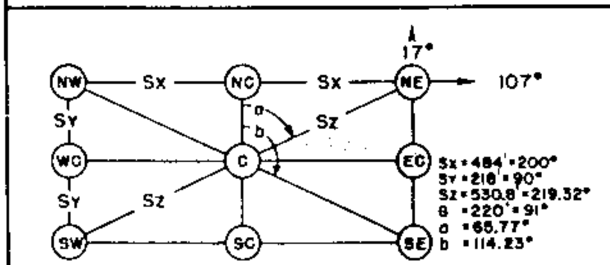
Proposed Night
(8-28-67ct)

Station WDGY
Minneapolis, Minnesota

50kw,DA-2,U
1130 kc

5-27-68
GRANTED
CP
FROM 25 KW
TO 50 KW





NW	NC	NE
.254/-94	.500/-94	.254/-94
WC	**CC**	**EC**
.508/0	1.000/0	.508/0
SW	**SC**	**SE**
.254/94	.500/94	.254/94

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WDGY
MINNEAPOLIS, MINNESOTA
661201.2A FIGURE 2B

FCC File No.BP-17783
Accepted 8-15-67

Station WDGY
Minneapolis, Minnesota

1130 kc

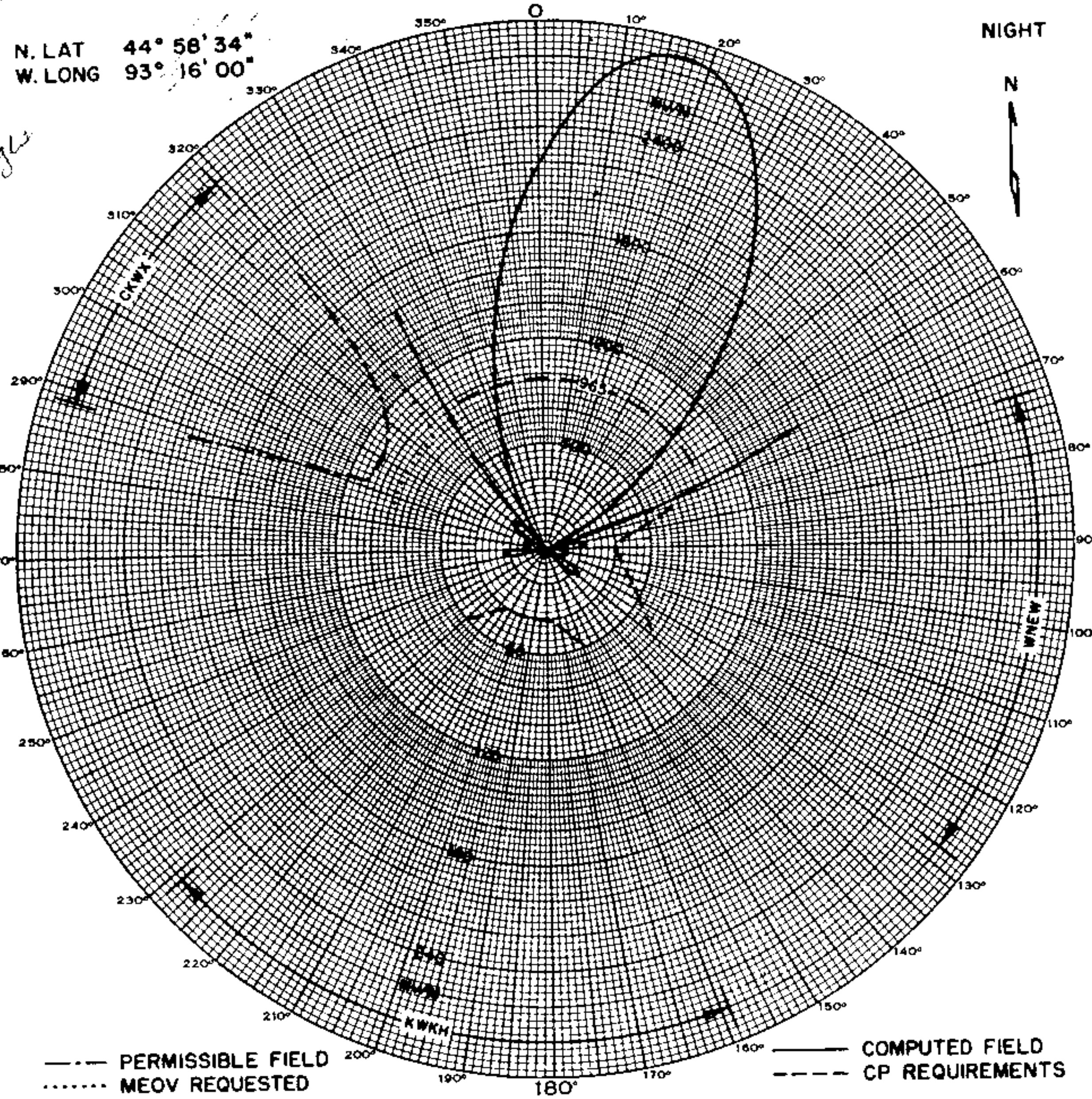
WDGY

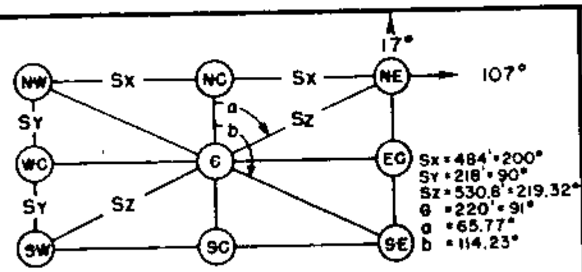
Proposed Night
(5-25-62ct)

Station WDGY
Minneapolis, Minnesota

25N/50kw,DA-2,U
1130 kc

4-1-63
granted CP
to make changes
in night
DA pattern





NW	NC	NE
.250/-94	.502/-96.33	.250/-94
WC	**CC**	**EC**
.500/0	1.000/0	.500/0
SW	**SC**	**SE**
.250/94	.502/96.33	.205/94

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WDGY
MINNEAPOLIS, MINNESOTA
620309 FIGURE 2A

FCC File No.BP-15490
Accepted 5-2-62

Station WDGY
Minneapolis, Minnesota

1130 kc

WDGY

Measured Day
(8-26-66ct)

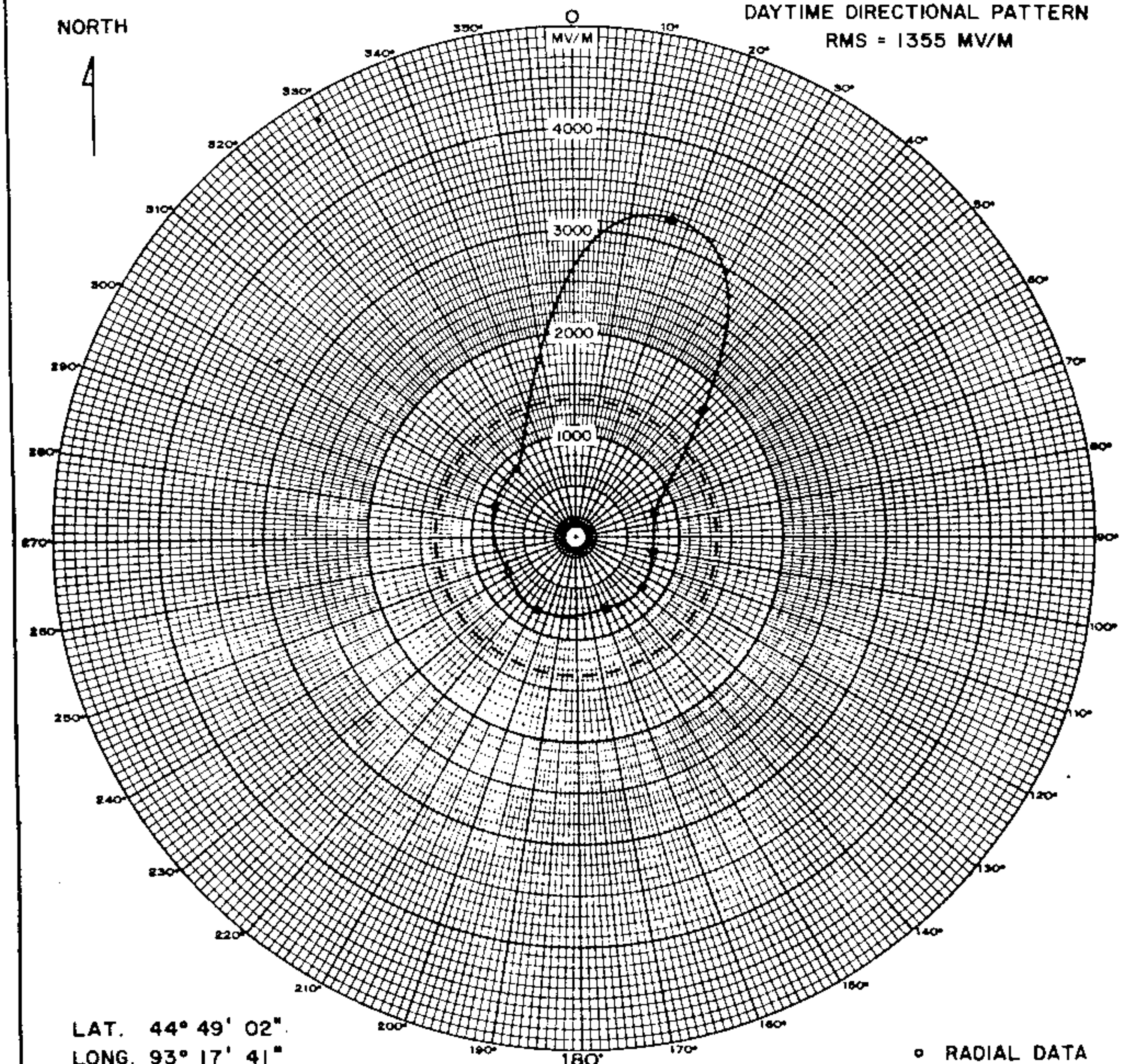
Station WDGY
Minneapolis, Minnesota

25kw,50kw-LS,DA-2,U
1130 kc

L 11350
C 8-15-66

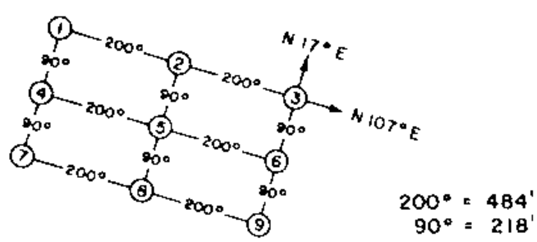
NORTH

DAYTIME DIRECTIONAL PATTERN
RMS = 1355 MV/M



LAT. 44° 49' 02"
LONG. 93° 17' 41"

o RADIAL DATA



200° = 484'
90° = 218'

DAYTIME OPERATING PARAMETERS

TOWER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	.151	-94.00°	.187	232.0°
2	.304	-96.33°	.335	223.5°
3	.151	-94.00°	.193	233.5°
4	.303	0.00°	.335	323.5°
5	1.000	+52.75°	1.000	5.0°
6	.303	0.00°	.329	322.5°
7	.151	94.00°	.174	57.5°
8	.304	96.33°	.302	61.0°
9	.151	94.00°	.168	57.5°

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WDGY
1130 KC 25 KW 50 KW-LS DA-2
660330 FIGURE 2B

FCC File No.BL-11350
Accepted 8-9-66

Station WDGY
Minneapolis, Minnesota

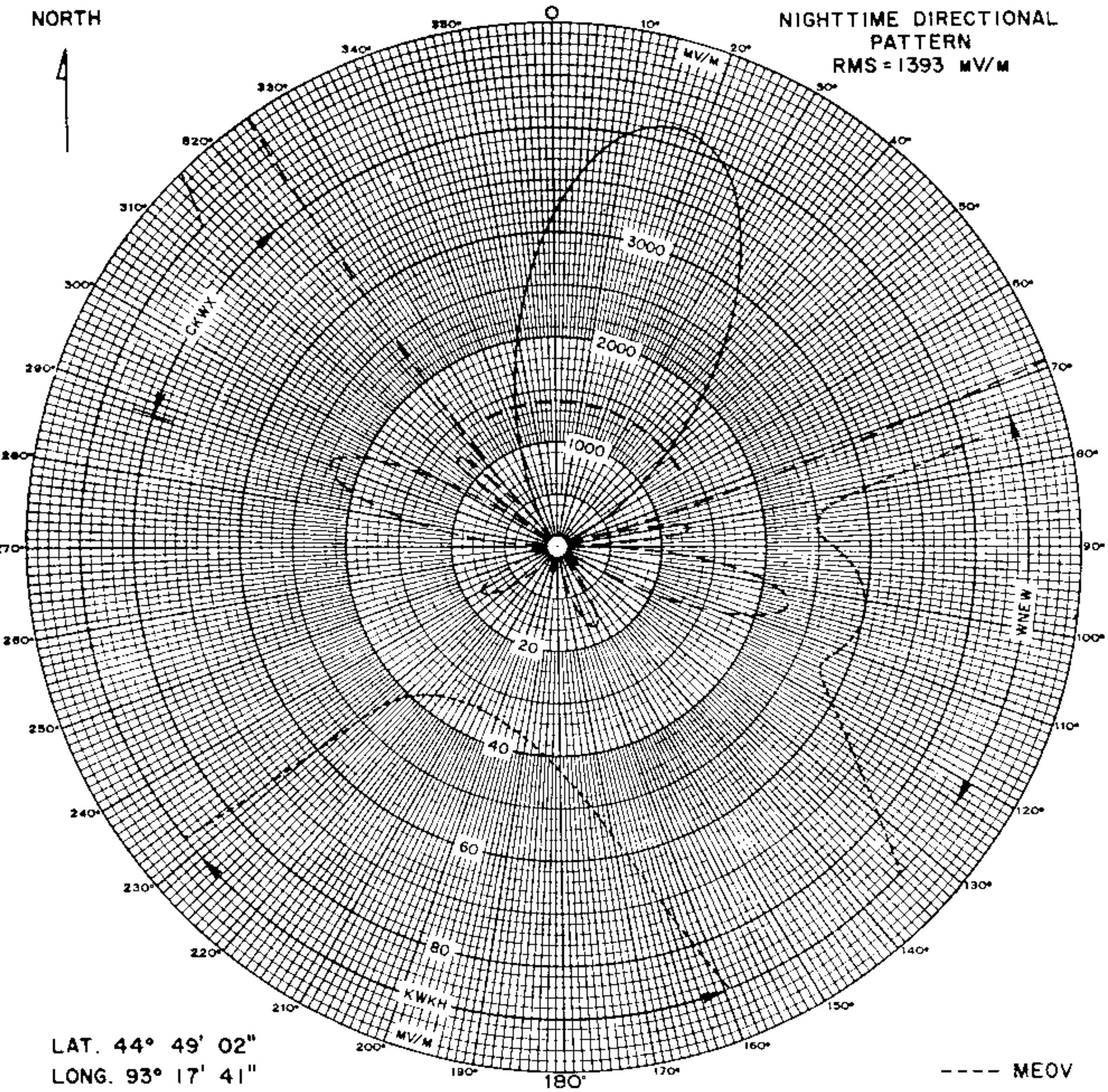
1130 kc

WDG

Proposed Night (4-28-67ct)	Station WDGY Minneapolis, Minnesota	50kw,DA-2,U 1130 kc

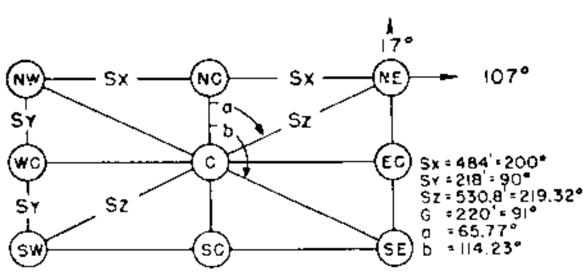
NORTH

NIGHTTIME DIRECTIONAL PATTERN
RMS = 1393 MV/M



LAT. 44° 49' 02"
LONG. 93° 17' 41"

---- MEOV



NW	NC	NE
254/-94	500/-94	254/-94
WC	CC	EC
508/0	1.000/0	508/0
SW	SC	SE
254/94	500/94	254/94

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CONSULTING ENGINEERS

RADIO STATION WDGY
MINNEAPOLIS, MINNESOTA
661201.2 FIGURE 2B

FCC File No.BP-17640
Accepted 4-19-67

Station WDGY
Minneapolis, Minnesota

1130 kc

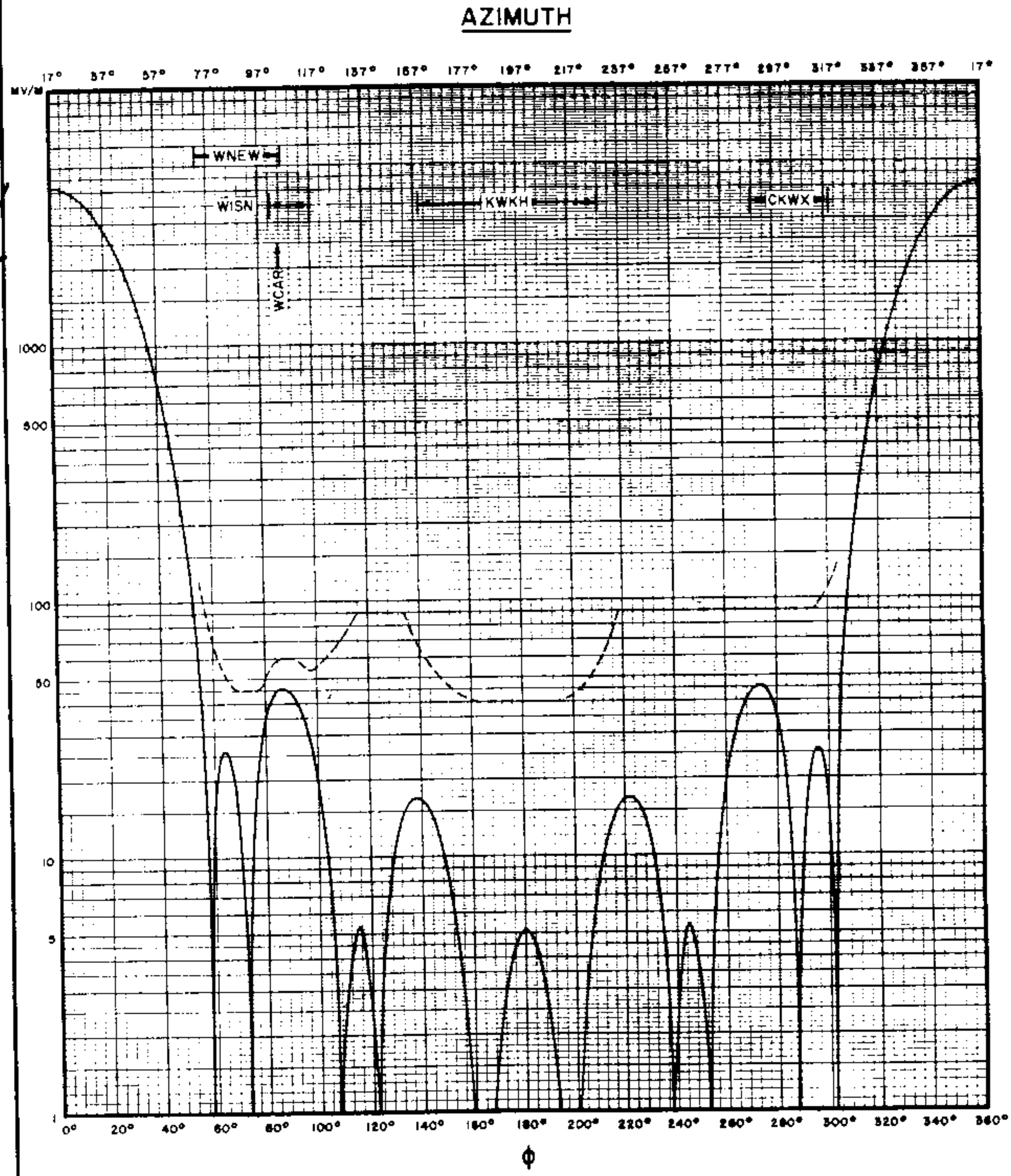
WDGY

Proposed Night Nulls
(8-28-67ct)

Station WDGY
Minneapolis, Minnesota

50kw, DA-2, U
1130 kc

5-29-68
GRANTED
CP
FOR 25 KW
TO 50 KW



1130 kHz 50 kW DA NIGHTTIME
0° ELEVATION ---- MEOV

PREPARED BY THE FIRM OF A. EARL CULLUM, JR. CONSULTING ENGINEERS	RADIO STATION WDGY MINNEAPOLIS, MINNESOTA 661201.2A FIGURE 2C-1

FCC File No. BP-17783
Accepted 8-15-67

Station WDGY
Minneapolis, Minnesota

1130 kc

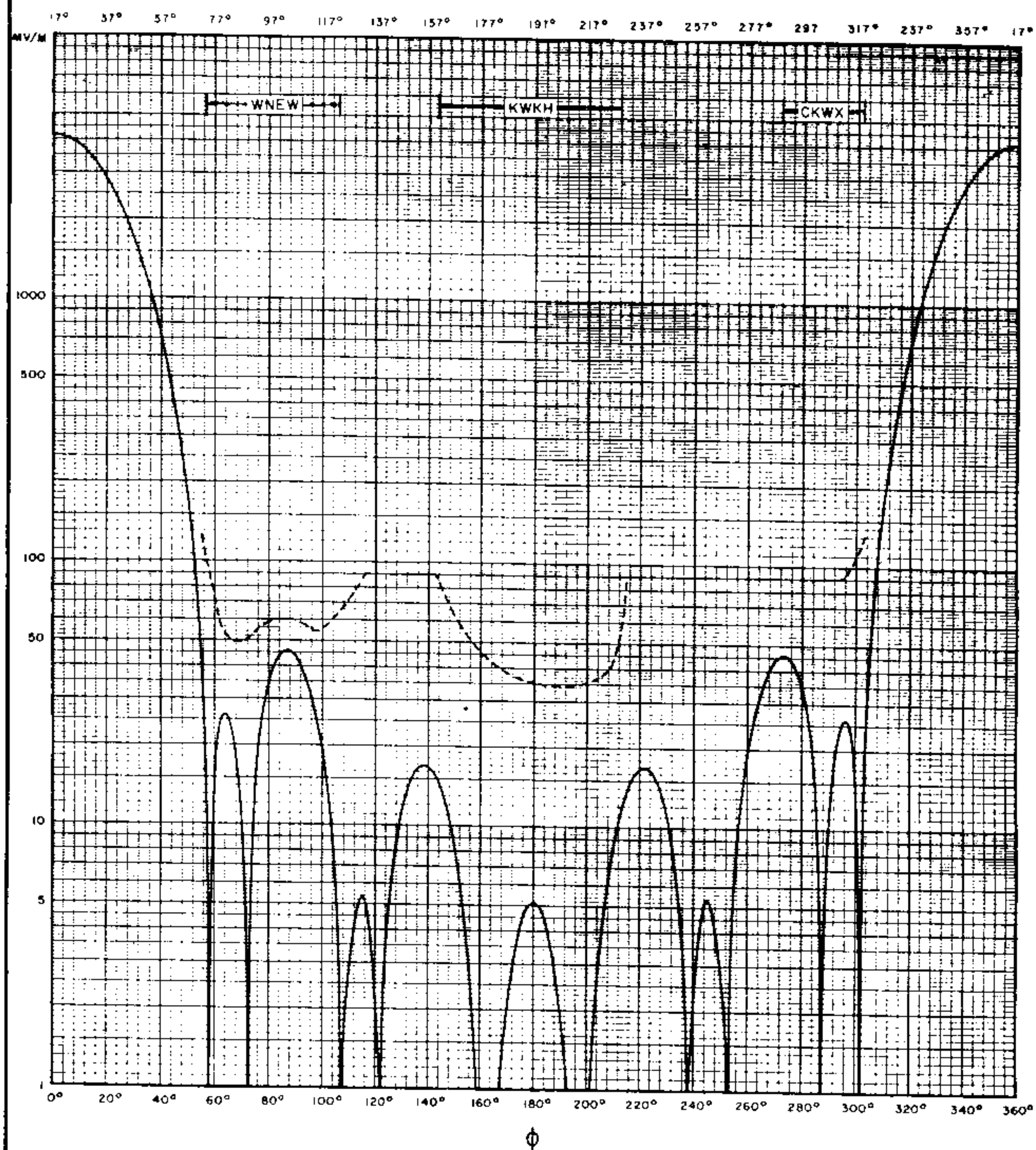
WDGY

Proposed Night Nulls
(4-28-67ct)

Station WDGY
Minneapolis, Minnesota

50kw,DA-2,U
1130 kc

AZIMUTH



1130 kHz 50 kW DA NIGHTTIME

0° ELEVATION

---- MEOV

PREPARED BY THE FIRM OF A. EARL CULLUM, JR. CONSULTING ENGINEERS	RADIO STATION WDGY MINNEAPOLIS, MINNESOTA 661201.2 FIGURE 2C-1

FCC File No.BP-17640
Accepted 4-19-67

Station WDGY
Minneapolis, Minnesota

1130 kc

Measured Non-DA
(8-26-66ct)

Station WDGY
Minneapolis, Minnesota

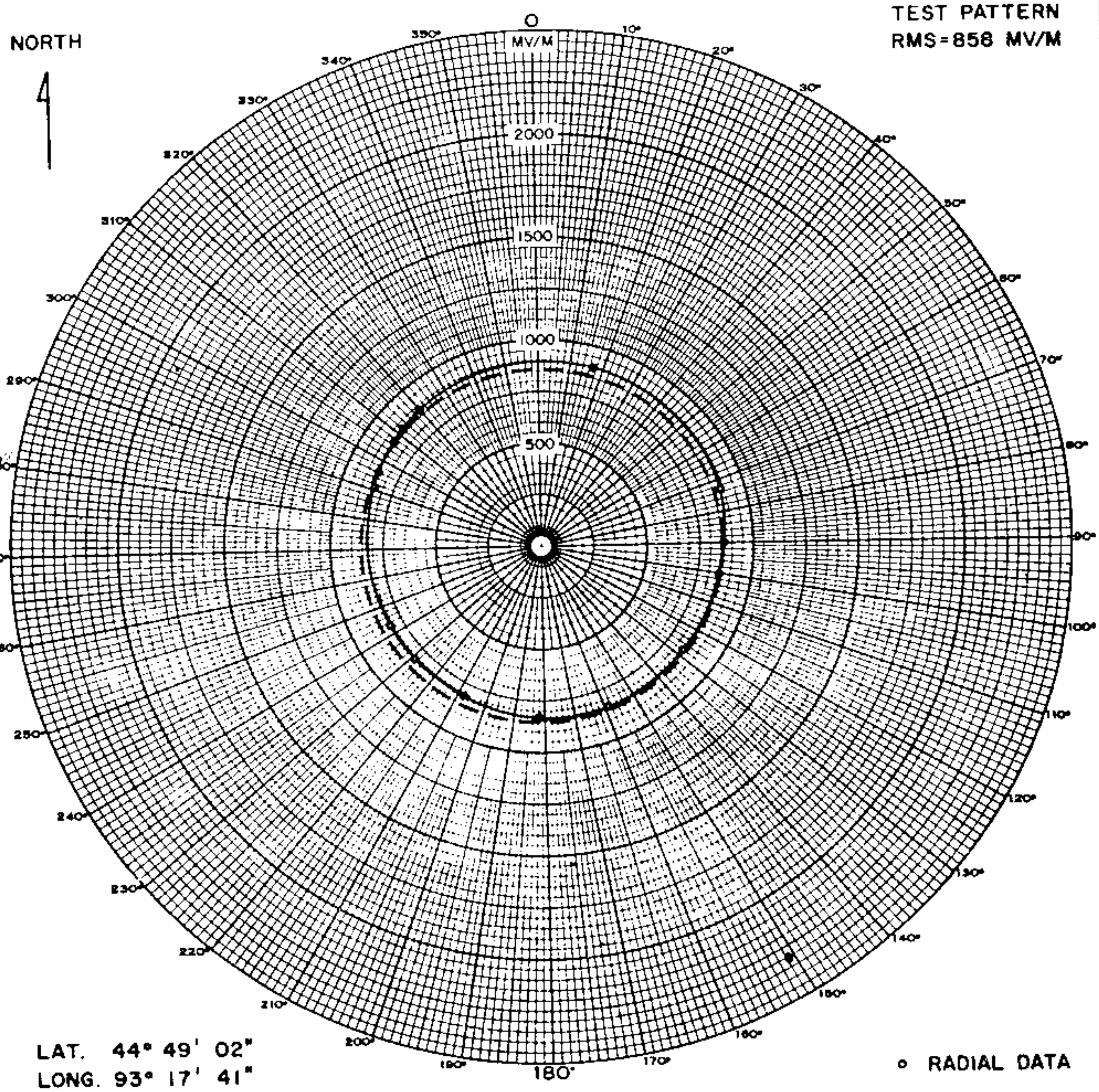
WDGY

25kw,50kw-LS,DA-2,U
1130 kc.

L 11350
ic 8-15-66

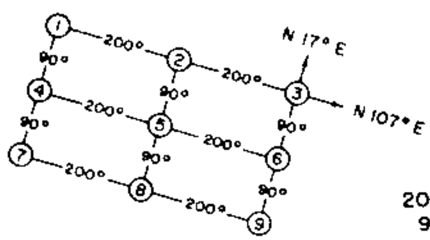
NORTH

TEST PATTERN
RMS=858 MV/M



LAT. 44° 49' 02"
LONG. 93° 17' 41"

∘ RADIAL DATA



200° = 484'
90° = 218'

RADIATING ELEMENTS

TOWER	OPERATION
1	DETUNED
2	DETUNED
3	DETUNED
4	DETUNED
5	SERIES FED
6	DETUNED
7	DETUNED
8	DETUNED
9	DETUNED

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WDGY
1130 KC 25 KW 50 KW-LS DA-2
660330
FIGURE 2A

FCC File No.BL-11350
Accepted 8-9-66

Station WDGY
Minneapolis, Minnesota

1130 kc

Measured Night
(8-26-66ct)

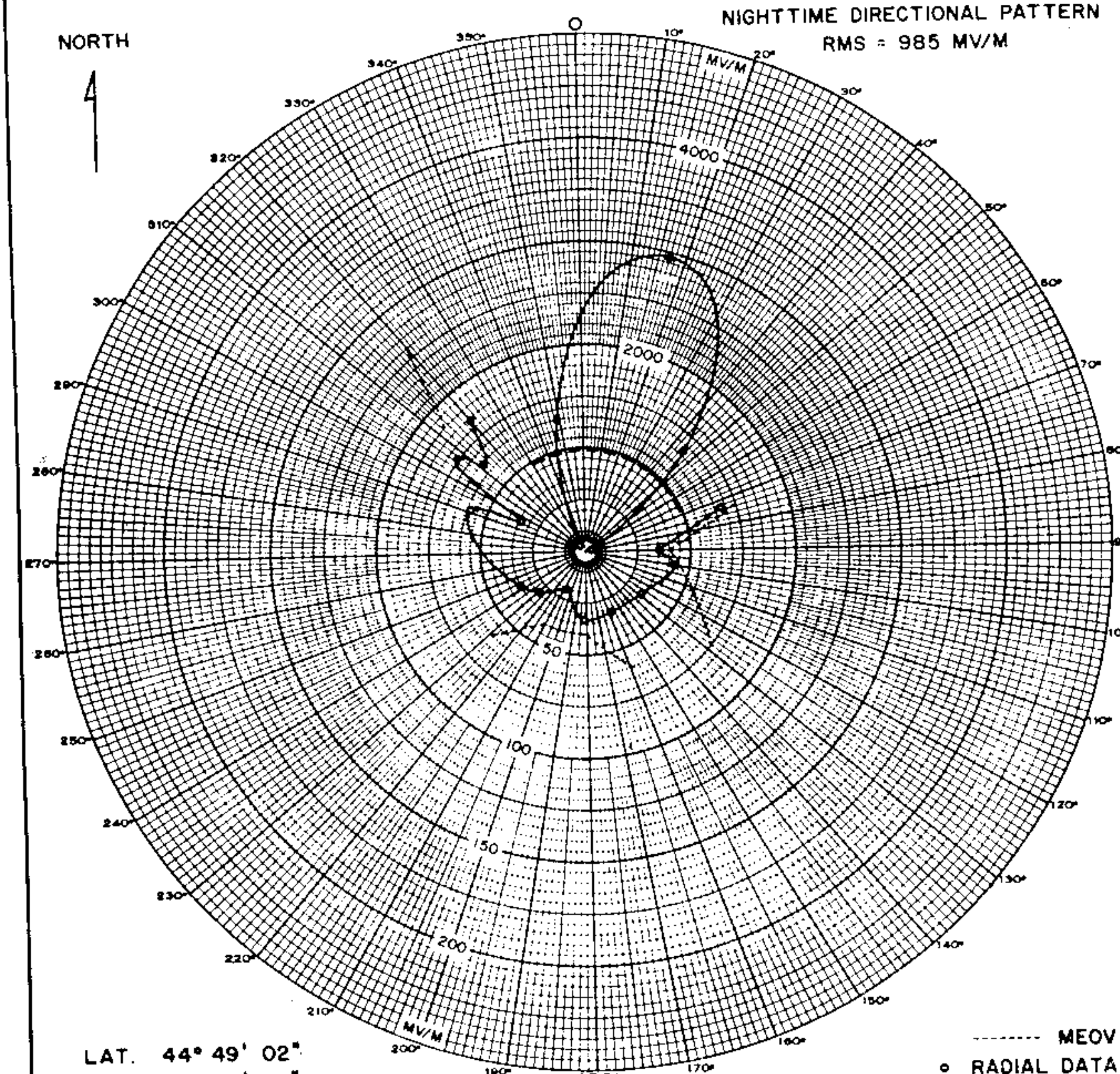
Station WDGY
Minneapolis, Minnesota

25kw,50kw-LS,DA-2,U
1130 kc

BL 11350
LIC 8-15-66

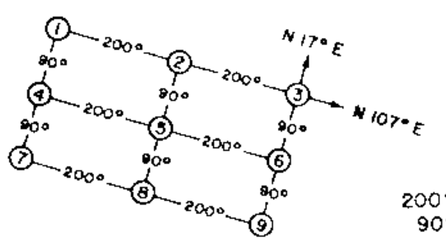
NORTH

NIGHTTIME DIRECTIONAL PATTERN
RMS = 985 MV/M



LAT. 44° 49' 02"
LONG. 93° 17' 41"

-------- MEOV
∘ RADIAL DATA



200° = 484'
90° = 214'

NIGHTTIME OPERATING PARAMETERS

TOWER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	.250	-94.00°	.248	269.0°
2	.502	-96.33°	.452	263.5°
3	.250	-94.00°	.262	268.0°
4	.500	0.00°	.452	13.0°
5	1.000	0.00°	1.000	5.0°
6	.500	0.00°	.467	10.3°
7	.250	94.00°	.219	119.0°
8	.502	96.33°	.452	117.0°
9	.250	94.00°	.219	115.0°

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CONSULTING ENGINEERS

RADIO STATION WDGY
1130 KC 25 KW 50 KW-LS DA-2
660330
FIGURE 2C

FCC File No. BL-11350
Accepted 8-9-66

Station WDGY
Minneapolis, Minnesota

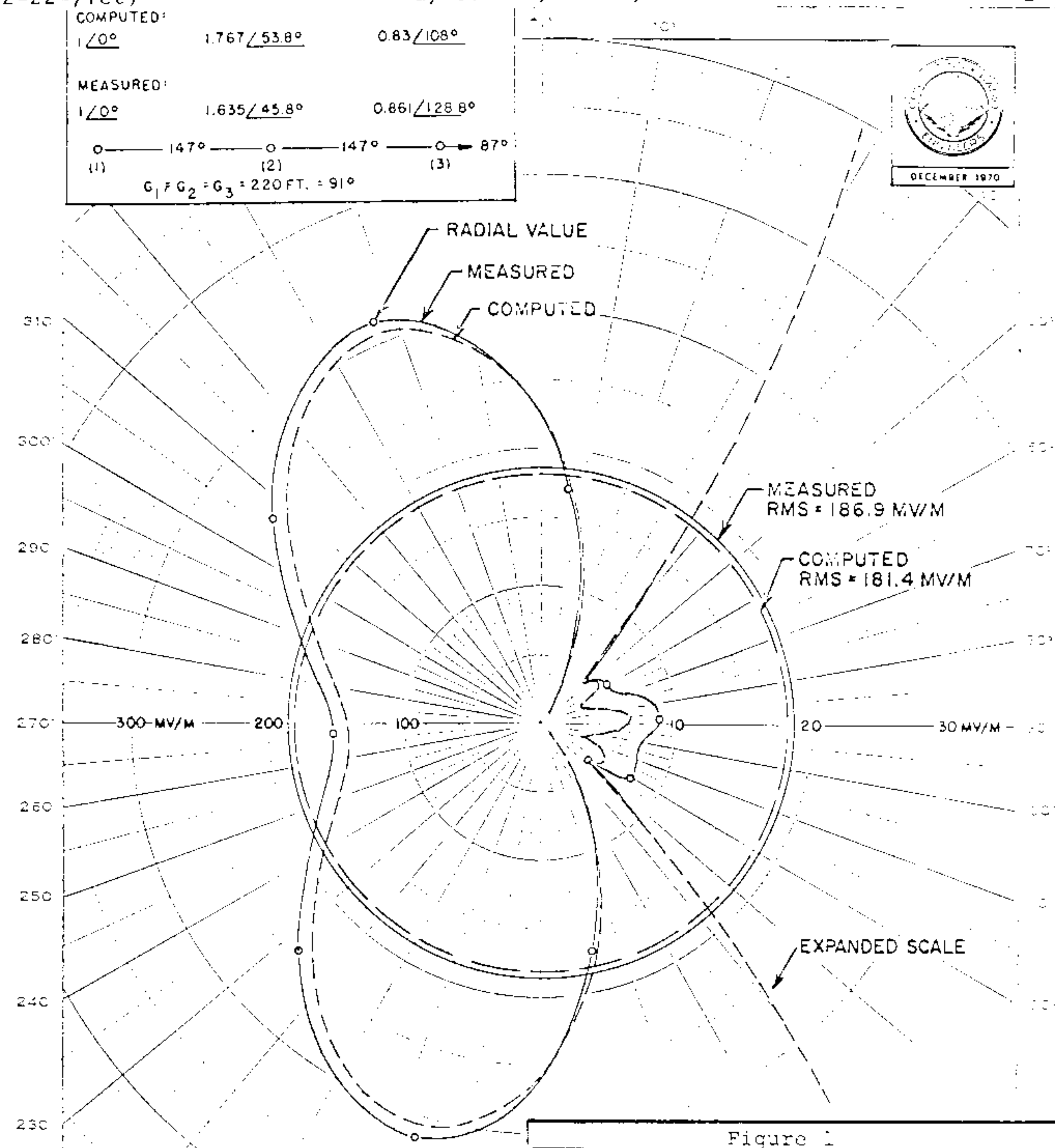
1130 kc

WEEO

Measured Day
(2-22-71ct)

Station WEEO
Waynesboro, Pennsylvania

1kw,DA-D,D
1130 kc



North Latitude 39° 44' 04"
West Longitude 77° 32' 06"

Figure 1

MEASURED DAYTIME DIRECTIONAL
HORIZONTAL PLANE RADIATION PATTERN

Station WEEO
Raystay Co.
Waynesboro, Pennsylvania

1130 kHz 1 kw DA-D

A. D. RING & ASSOCIATES
CONSULTING RADIO ENGINEERS

A. D. RING & ASSOCIATES - 4/61 - M

FCC File No. BL-12843
Accepted 1-25-71

Station WEEO
Waynesboro, Pennsylvania

1130 kc

Measured Non-DA
(2-22-71ct)

Station WEEO
Waynesboro, Pennsylvania

WEEO
1kw,DA-D,D
1130 kc

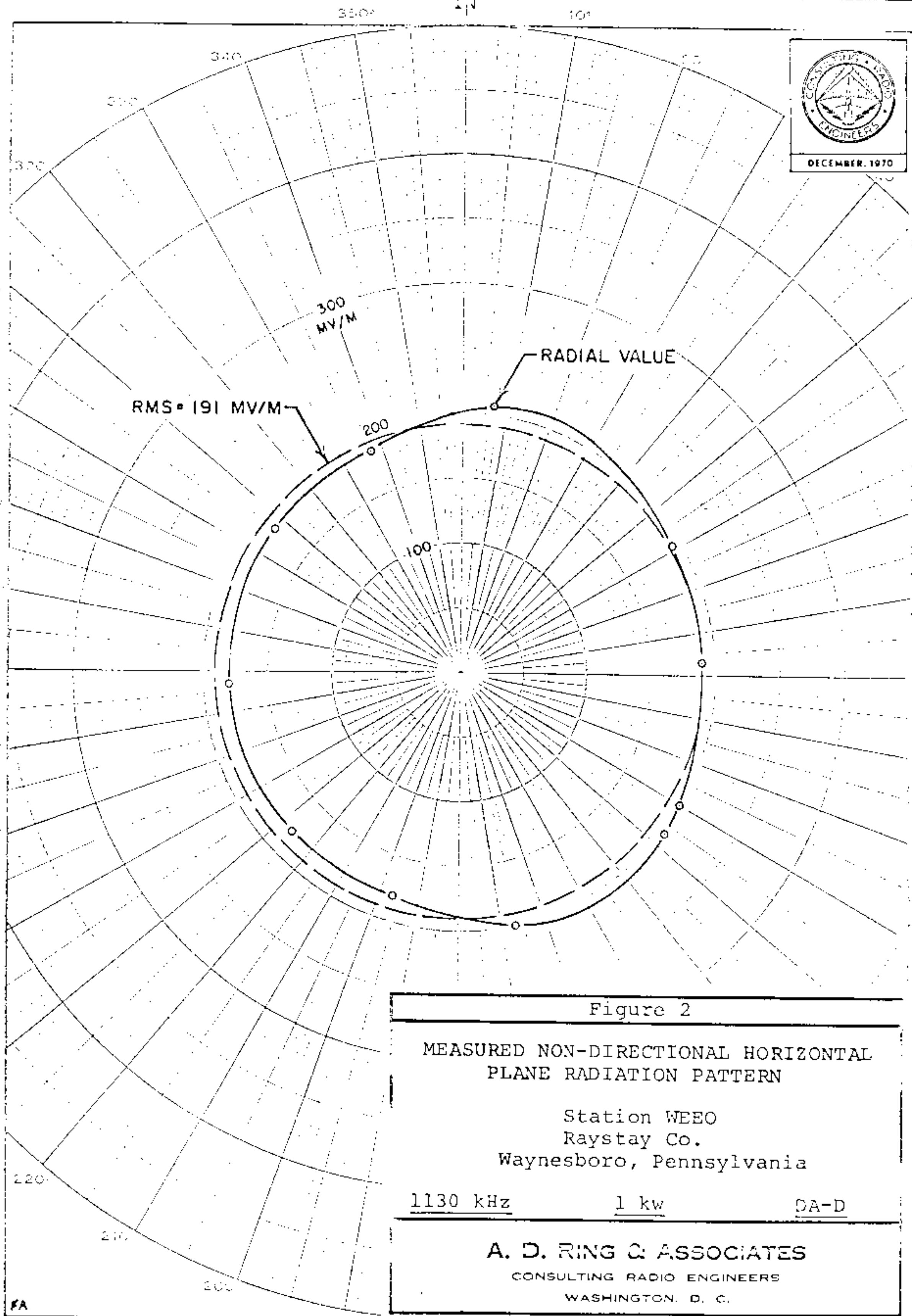


Figure 2

MEASURED NON-DIRECTIONAL HORIZONTAL PLANE RADIATION PATTERN

Station WEEO
Raystay Co.
Waynesboro, Pennsylvania

1130 kHz | 1 kw | DA-D

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

A. D. RING & ASSOCIATES - 4/64 - M

FCC File No.BL-12843
Accepted 1-25-71

Station WEEO
Waynesboro, Pennsylvania

1130 kc

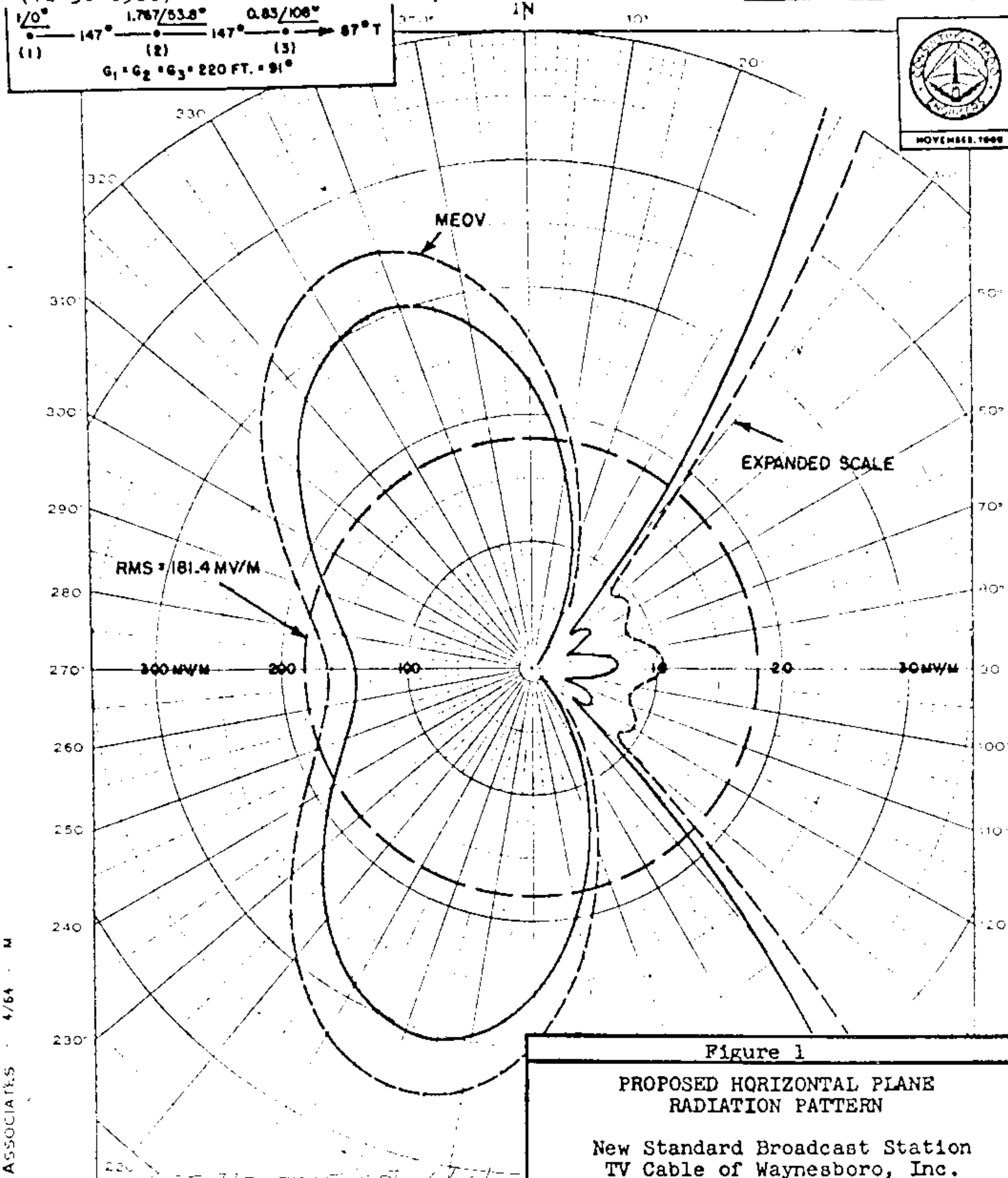
BP 18234
GR(3-11-70) Appl. for CP for New Station

WEEO

Proposed Day
(12-30-69ct)

New; TV Cable of Waynesboro, Inc.
Waynesboro, Pennsylvania

1kw, DA-D, D
1130 kc



SEE REVERSE SIDE 6/30/70

Figure 1
PROPOSED HORIZONTAL PLANE RADIATION PATTERN
New Standard Broadcast Station TV Cable of Waynesboro, Inc. Waynesboro, Pennsylvania
1130 kHz 1 kw Day-DA
A. D. RING & ASSOCIATES CONSULTING RADIO ENGINEERS WASHINGTON, D. C.

North Latitude 39° 44' 01"
West Longitude 77° 32' 16"

A. D. RING & ASSOCIATES 4/64

FCC File No. BP-18234
Accepted 12-3-69

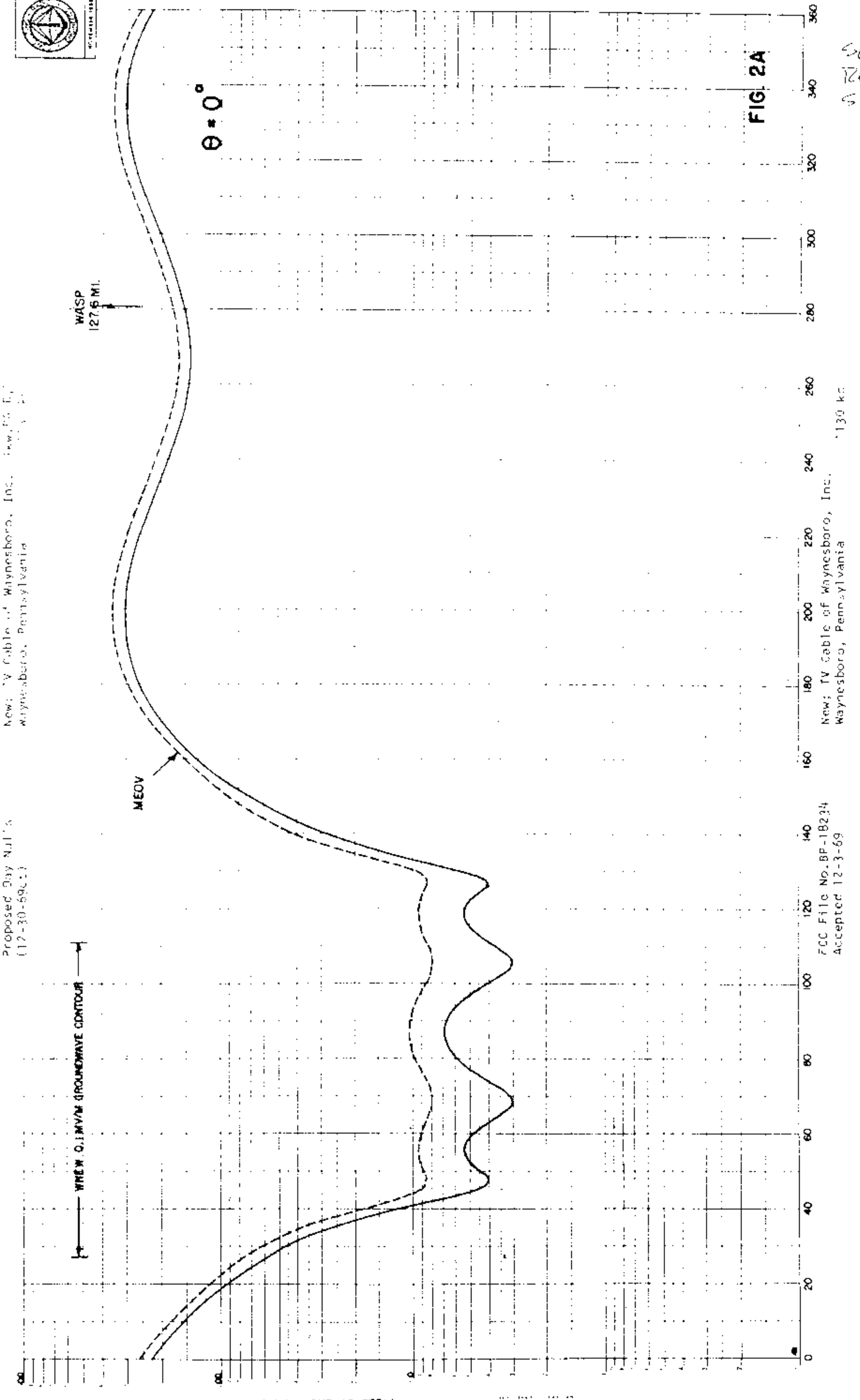
New; TV Cable of Waynesboro, Inc.
Waynesboro, Pennsylvania 1130 kc

NEW; TV CABLE OF WAYNESBORO, INC.

BP 18234
GR (3-11-70) Appl. for CP for New Station

WEEO

SEE
REVERSE
SIDE 6/29/70



WISN

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WISN

Main Studio: Milwaukee, Wisconsin

Frequency: 1130 kHz

Power: 10kw Night 50kw Day

Notification List No. 1781

Date: October 19, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42° 45' 18"
West Longitude: 88° 04' 53"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation (DA-2)
Number of elements: 9
Type of elements: Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	NW(#1)	NC(#2)	NE(#3)	CW(#4)	C(#5)	CE(#6)	SW(#7)	SC(#8)	SE(#9)
HEIGHT ABOVE INSULATORS:	218'	218'	218'	218'	218'	218'	218'	218'	218'(90°)
NIGHT PHASING:	-87°	-106°	-125°	19°	0°	-19°	129°	110°	91°
NIGHT FIELD RATIO:	0.278	0.550	0.278	0.506	1.000	0.506	0.278	0.550	0.278
DAY PHASING:	---	0°	-30°	---	104°	74°	---	-103°	-133°
DAY FIELD RATIO:	---	1.000	0.600	---	0.840	0.504	---	0.600	0.360

SPACING AND ORIENTATION: Towers are located in three parallel rows. Adjacent elements in a row are spaced 317.6'(214°) on a line bearing 90° true. Three adjacent towers each at the end of a row are spaced 237.0'(96°) on a line bearing 0° true.

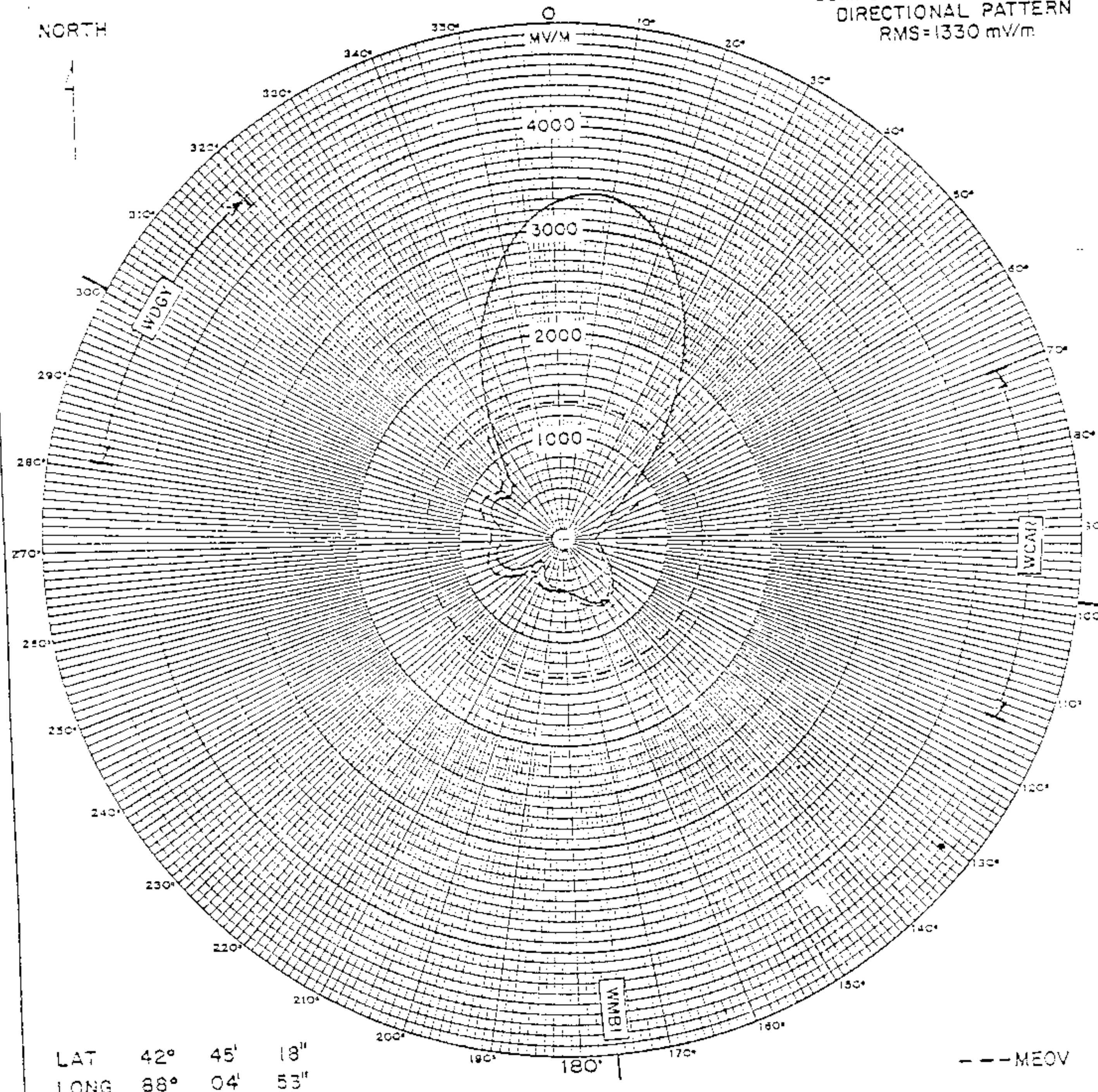
GROUND SYSTEM: 120-220' equally spaced copper radials plus 120-30' interspaced radials about each tower. Radials are extended and bonded to transverse straps along intersections between towers. Centers of systems are bonded together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day 1330 mv/m		1396.05 mv/m
Night 581 mv/m		610.05 mv/m

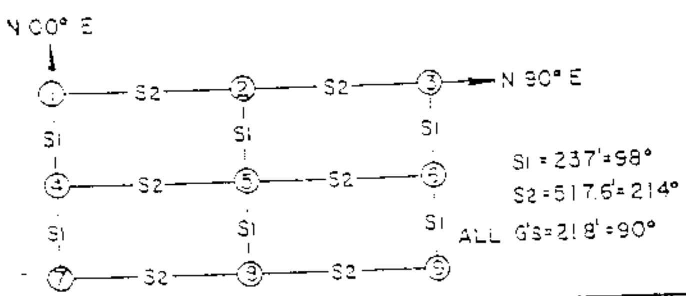
NOTE: This notification concerns only a change in MEOV's

WISN
COMPUTED DAYTIME 50 kW
DIRECTIONAL PATTERN
RMS=1330 mV/m



LAT 42° 45' 18"
LONG 88° 04' 53"

– – – MEOV



DAYTIME THEORETICAL PARAMETERS

TOWER	FIELD	PHASE
1	—	—
2	1.000	0°
3	0.600	-30°
4	—	—
5	0.840	104°
6	0.504	74°
7	—	—
8	0.600	-103°
9	0.360	-133°

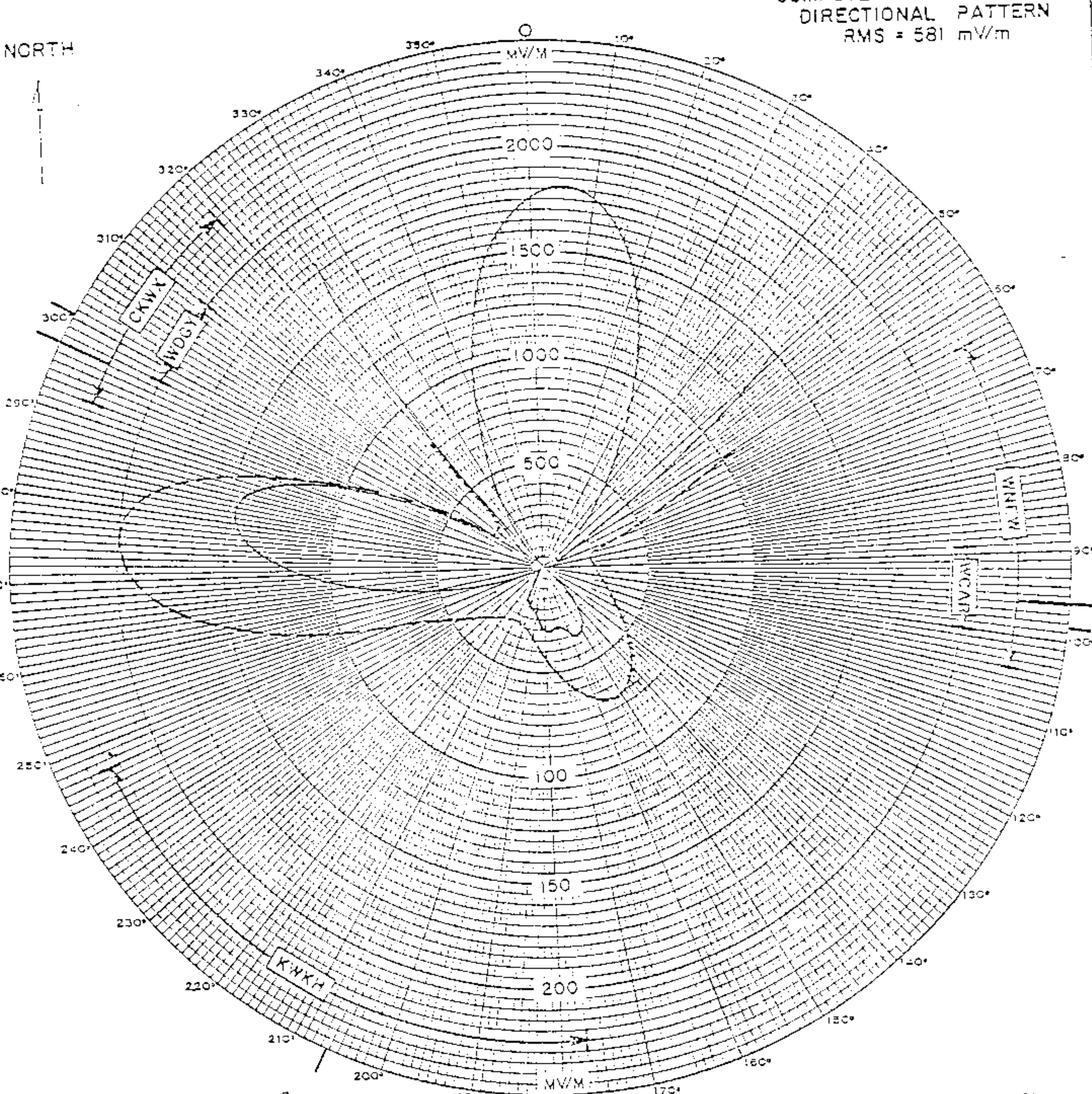
PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WISN
1130 KHZ 10 KW 50 KW-LS DA-2
760810.1 FIGURE 20

WIS

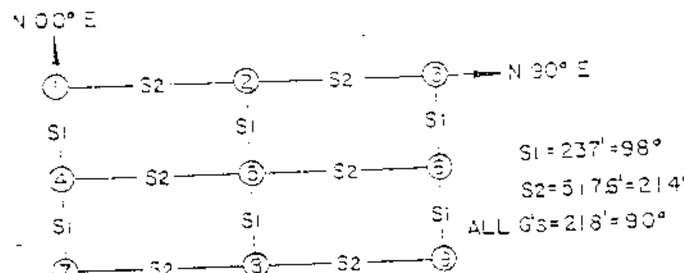
COMPUTED NIGHTTIME 10 KW
DIRECTIONAL PATTERN
RMS = 581 mV/m

NORTH



LAT 42° 45' 18"
LONG 88° 04' 53"

--- MEOV



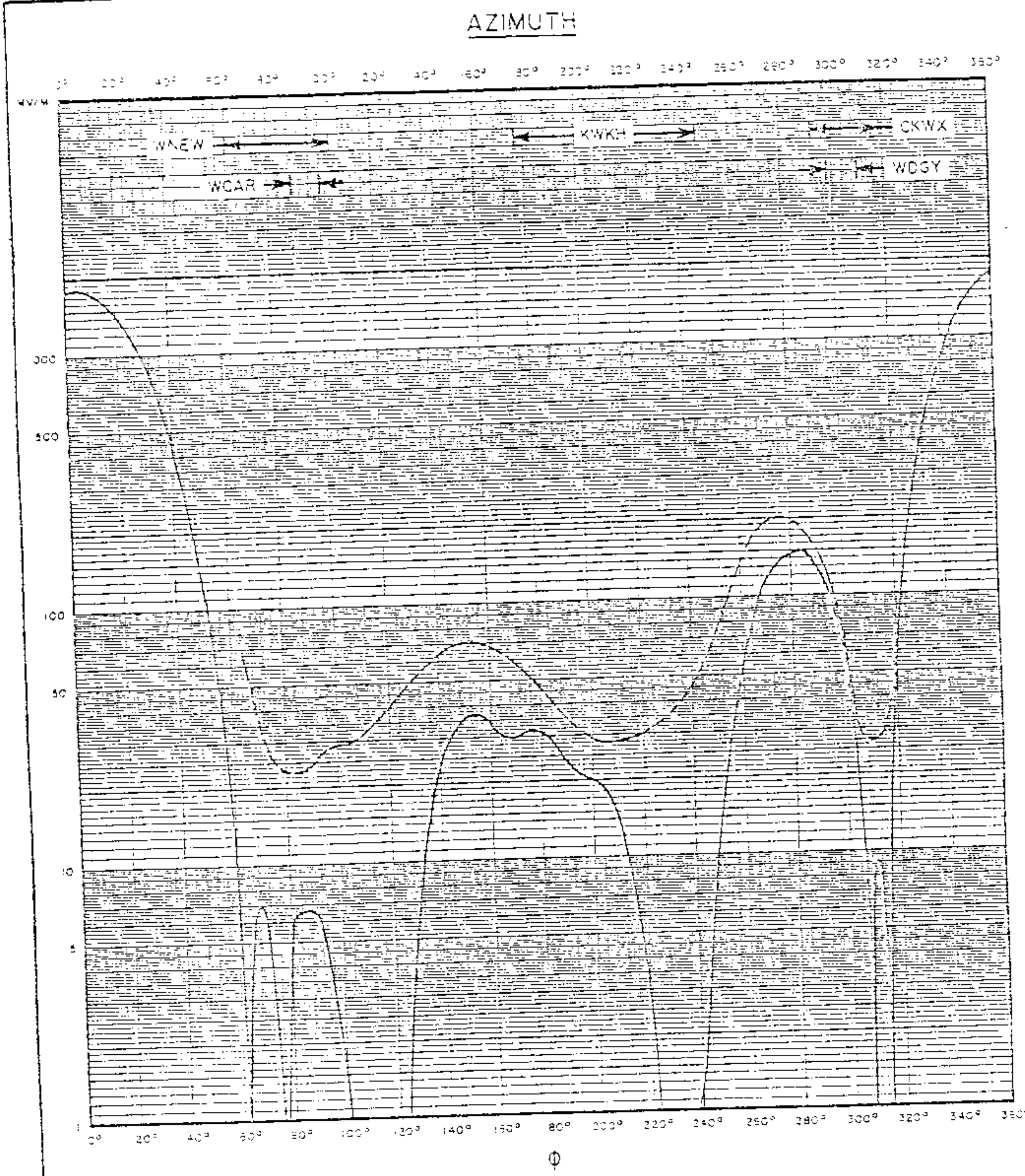
NIGHTTIME THEORETICAL PARAMETERS

TOWER	FIELD	PHASE
1	0.278	-87°
2	0.550	-106°
3	0.279	-125°
4	0.506	19°
5	1.000	0°
6	0.506	-19°
7	0.278	129°
8	0.550	110°
9	0.278	91°

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WISN
1130 KHZ 10 KW 50 KW-LS DA-2
76C810.2 FIGURE 2C

WISN



1130 kHz 10 kW DA-2 NIGHTTIME

0° ELEVATION

----MEOV

PREPARED BY THE FIRM OF A. EARL CULLUM, JR. CONSULTING ENGINEERS	RADIO STATION WISN MILWAUKEE, WISCONSIN
	760810.2 FIGURE 2D-1

NO MEOV SHOWN ABOVE 0° STACKED SECTION

WISN

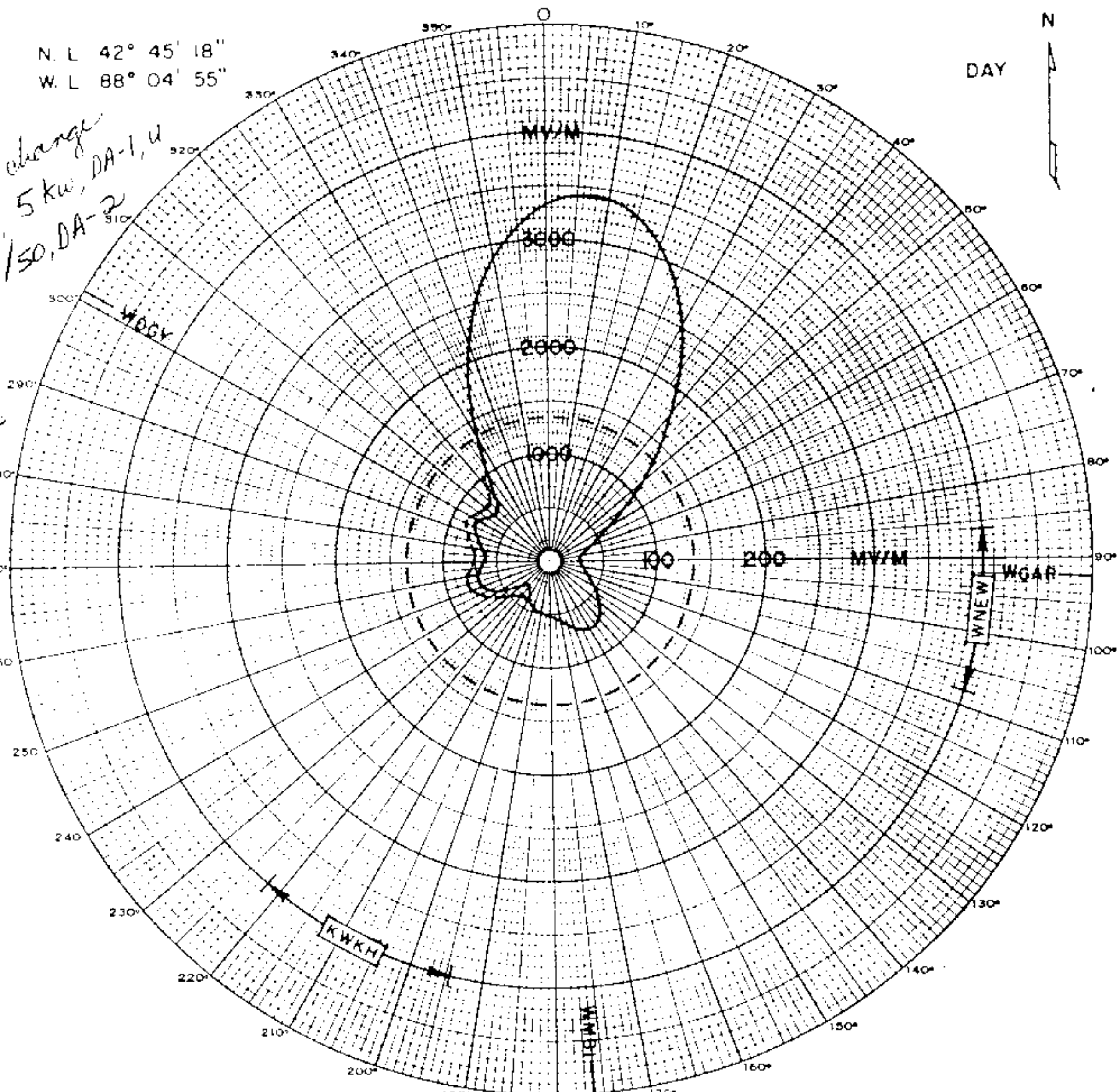
PROPOSED DAY
(1-17-61g)

Station WISN
Milwaukee, Wisconsin

10kw, 50kw-LS, DA-2, U
1130 KC

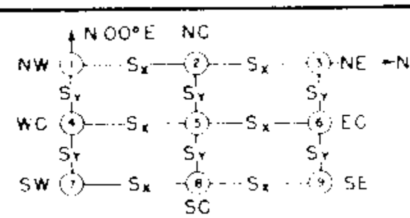
4-23-63
granted CP to change
from 1150 kc, 5 kw, DA-1, U
to 1130 kc 10/50, DA-2

10-7-63
P accepted
for new coordinates
42 45 18
88 04 53



RMS = 1350 MV/M
-------- MEOV

PATTERN NO. 601020.2



S_x = 214° = 517.6'
S_y = 98° = 237'
ALL G'S = 90° = 218'

NW NOT USED	NC 1000 ∠ 0	NE 600 ∠ -30
WC NOT USED	CC 840 ∠ 104	EC 504 ∠ 74
SW NOT USED	SC 600 ∠ -103	SE 360 ∠ -133

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WISN
1130 KC 10 KW 50 KW-LS DA-2
601020.2 FIGURE 6A

FCC File No. BP-14515
Accepted 1-9-61 (was BP-13894)

WISN
Milwaukee, Wisconsin 1130 KC

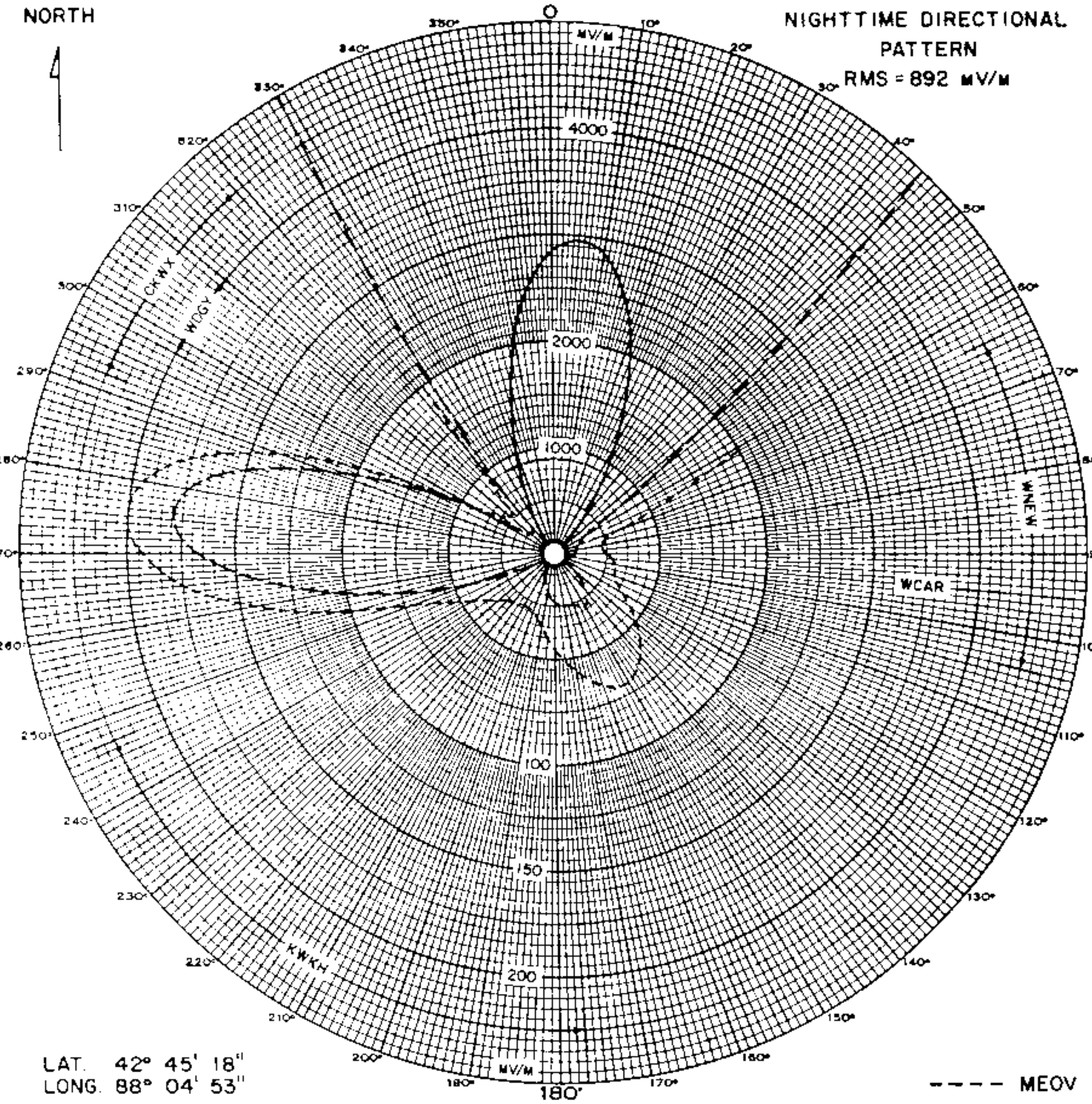
WISN

Proposed Night (8-28-67ct)	Station WISN Milwaukee, Wisconsin	25kw,50kw-LS,DA-2,U 1130 kc

6-18-68
GRANTED
CP
FROM 10KW
TO 25KW

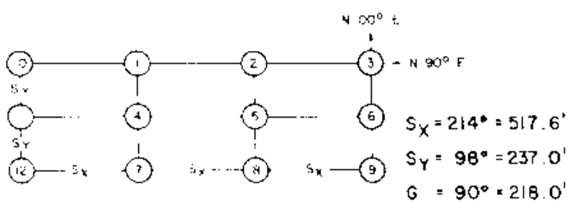
NORTH

NIGHTTIME DIRECTIONAL PATTERN
RMS = 892 MV/M



LAT. 42° 45' 18"
LONG. 88° 04' 53"

---- MEOV



10	1	2	3
0.336/257	1.268/238.3	1.620/219.3	0.706/200
11	4	5	6
0.800/337	3.017/318.3	3.854/299.3	1.680/280
12	7	8	9
0.476/57	1.796/38.3	2.294/19.3	1.000/0

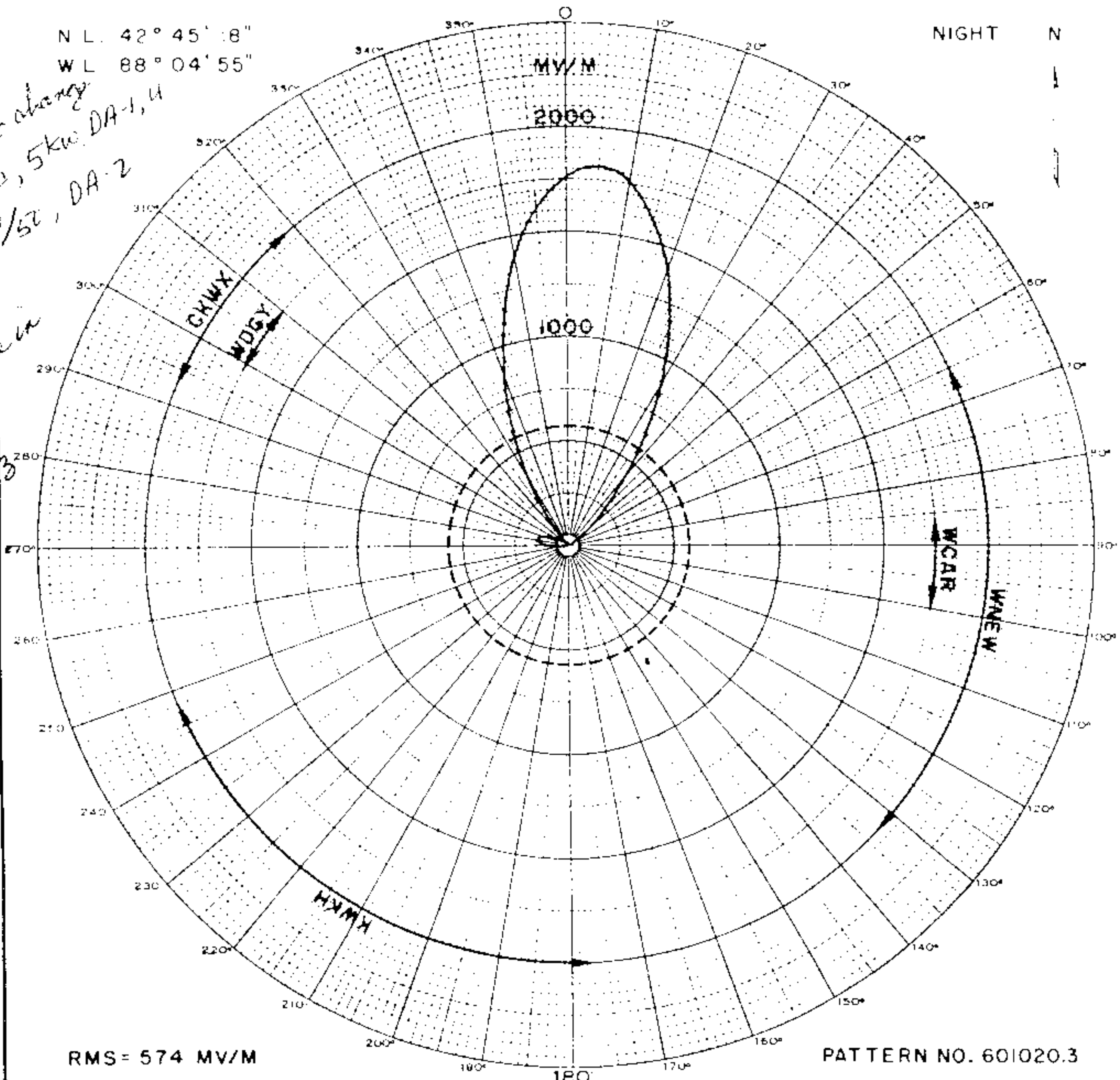
PREPARED BY THE FIRM OF A. EARL CULLUM, JR. CONSULTING ENGINEERS	RADIO STATION WISN MILWAUKEE, WISCONSIN 661202.2A FIGURE 4B

FCC File No. BP-17781
Accepted 8-15-67
Station WISN
Milwaukee, Wisconsin
1130 kc

PROPOSED NIGHT
(1-17-61g)

Station WISN
Milwaukee, Wisconsin

10kw,50kw-LS, DA-2,U
1130 KC



4-23-63 granted CP for change from 1150 kc, 5kw DA-1, U to 1130 kc, 10/50, DA-2

10-7-63 P for change in coordinates N 42 45 18 W 88 04 53

N 00° E

NW	(1)	Sx	(2) NC	Sx	(3) NE	← N 90° E
	Sy		Sy		Sy	
WC	(4)	Sx	(5)	Sx	(6) EC	
	Sy		Sy		Sy	
SW	(7)	Sx	(8) SC	Sx	(9) SE	

Sx = 214° = 517.6'
Sy = 98° = 237'
ALL G's = 90° = 218'

NW	NC	NE
1000/ 87	975/ 106	1000/ 125
WC	**CC**	**EC**
818/ 19	3952/ 0	818/ -9
SW	**SC**	**SE**
1000/ 129	975/ 110	1000/ 91

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WISN
1130 KC 10 KW 50 KW-LS DA-2
601020.3 FIGURE 6A

FCC File No. BP-14515
Accepted 1-9-61 (was BP-13894)

WISN
Milwaukee, Wisconsin
1130 KC

WISN

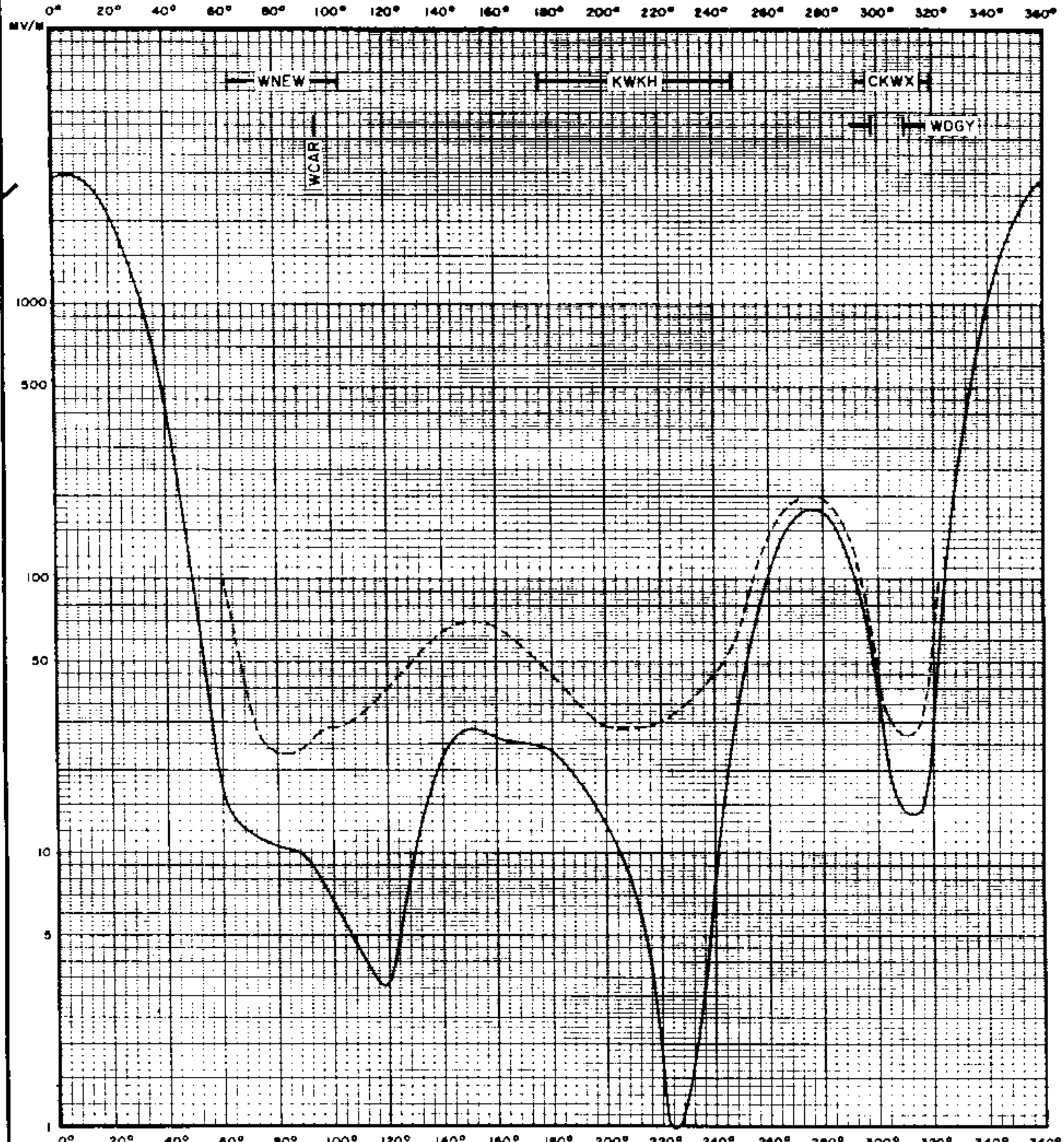
Proposed Night Nulls
(8-28-67ct)

Station WISN
Milwaukee, Wisconsin

25kw,50kw-LS,DA-2,U
1130 kc

6-18-68
GRANTED
CP
FROM 10 KW
TO 25 KW

AZIMUTH



1130 KHZ 25 KW DA-2 NIGHTTIME
0° ELEVATION

---- MEOV

PREPARED BY THE FIRM OF A. EARL CULLUM, JR. CONSULTING ENGINEERS	RADIO STATION WISN MILWAUKEE, WISCONSIN 661202.2A FIGURE 4C-1

FCC File No. BP-17781
Accepted 8-15-67

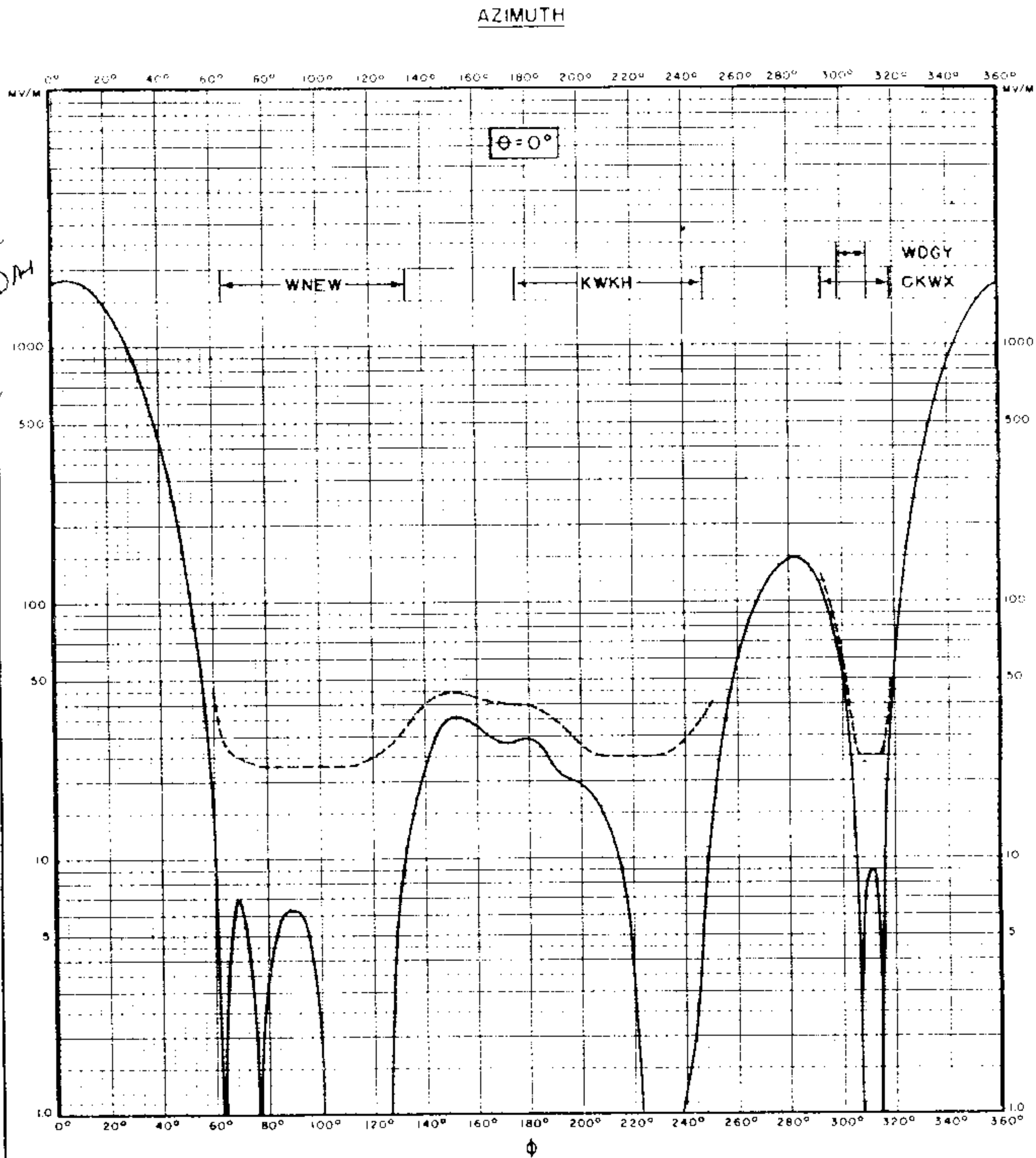
Station WISN
Milwaukee, Wisconsin

1130 kc

WISN

PROPOSED NIGHT NULLS (1-17-61g) Station WISN Milwaukee, Wisconsin 10kw, 50kw-LS, DA-2, U 1130 KC

1-23-63 Granted CP to change from 50 kc, 5 kw, DA to 1130 kc, 10/50, DA-2



PROPOSED 1130 KC 10 KW NIGHTTIME

MEOV ------

PREPARED BY THE FIRM OF A. EARL CULLUM, JR. CONSULTING ENGINEERS	RADIO STATION WISN 1130 KC 10 KW 50 KW-LS DA-2 601020.3 FIGURE 6B-1

FCC File No. BP-14515
Accepted 1-9-61 (was BP-13894)

WISN
Milwaukee, Wisconsin 1130 KC

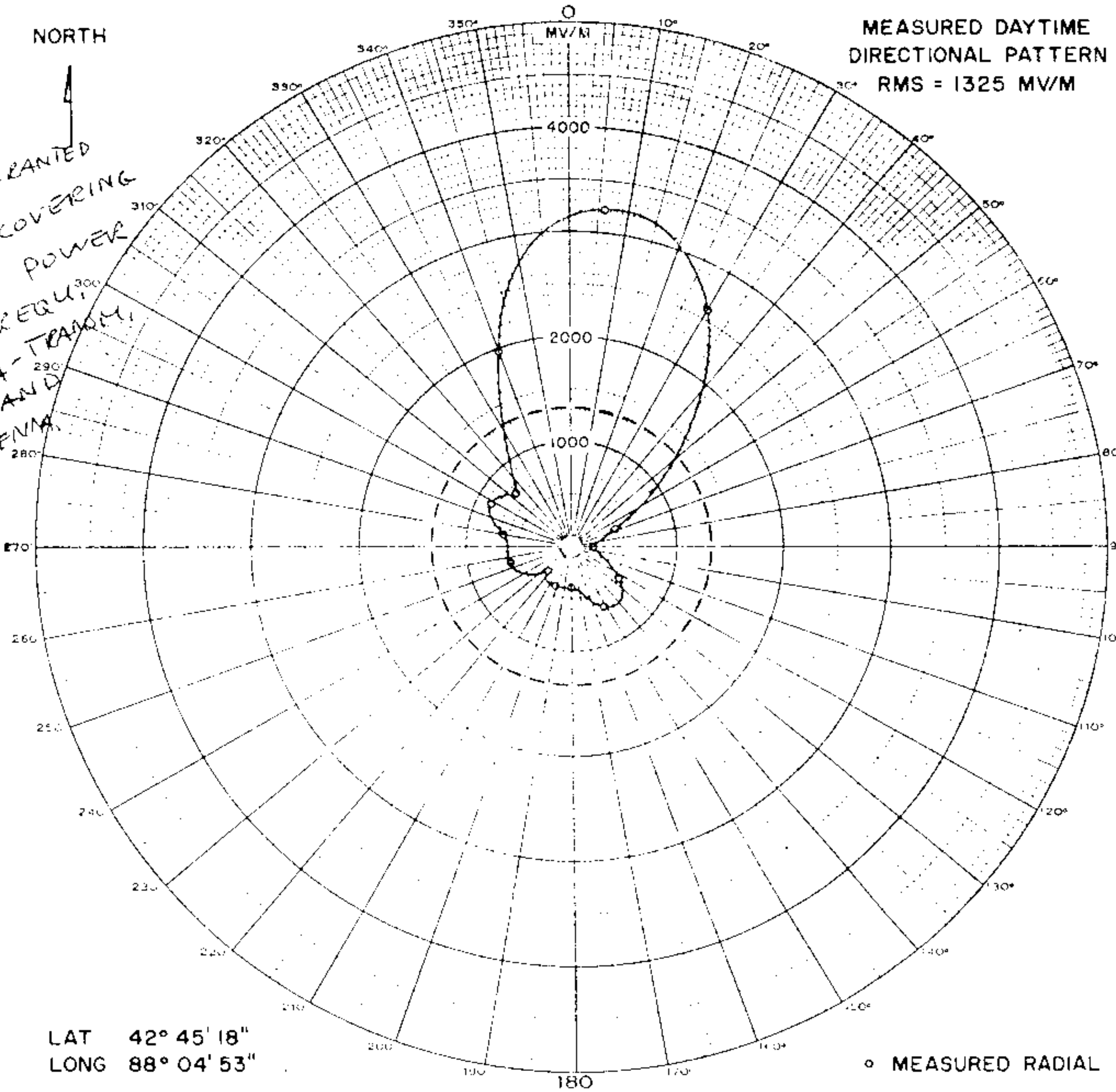
WISN

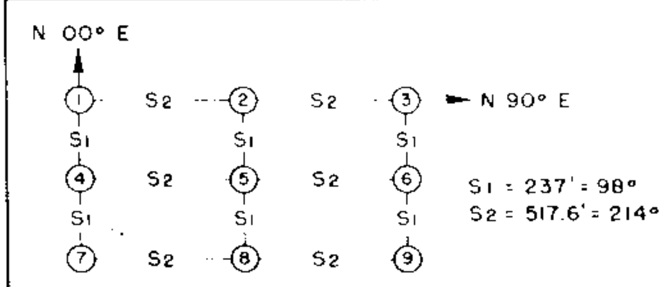
Measured Day
(6-28-65ct)

Station WISN
Milwaukee, Wisconsin

10kw,50kw-LS,DA-2,U
1130 kc

L-10937
-19-67 GRANTED
LICENSE COVERING
NCE. IN POWER
CH. IN FREQU;
ANTENNA-TRANM.
LOCATION AND
DIR. ANTENNA.





DAYTIME OPERATING PARAMETERS

TOWER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	—	—	—	—
2	1.000	0°	1.000	1°
3	0.600	- 30°	.630	330°
4	—	—	—	—
5	0.840	104°	.947	110°
6	0.504	74°	.581	80°
7	—	—	—	—
8	0.600	-103°	.652	256°
9	0.360	-133°	.379	226°

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WISN
1130 KC 10 KW 50 KW-LS DA-2
650130
FIGURE 2B

FCC File No. BL-10937
Accepted 6-22-65

Station WISN
Milwaukee, Wisconsin

1130 kc

WISN

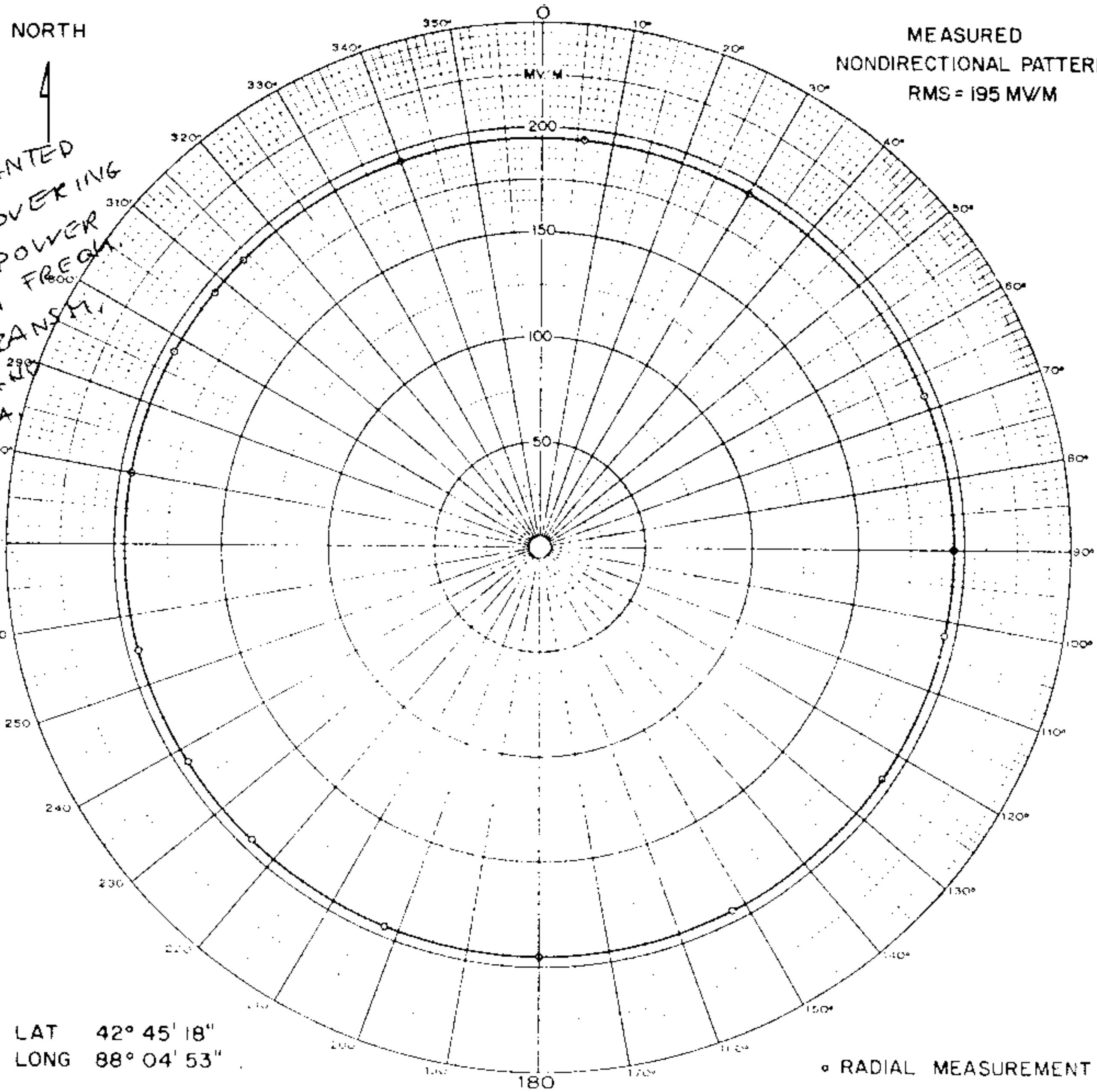
Measured Non-DA
(6-28-65ct)

Station WISN
Milwaukee, Wisconsin

10kw,50kw-LS,DA-2,U
1130 kc

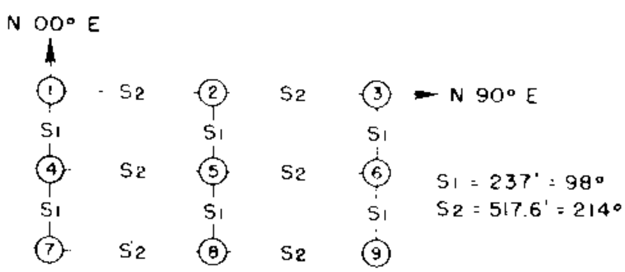
MEASURED
NONDIRECTIONAL PATTERN
RMS = 195 MV/M

BL-10937
1-19-67 GRANTED
LICENSE COVERING
INCR. IN POWER
CHANGE IN FREQ.
ANTENNA TRANSM.
LOCATION AND
DIR. ANTENNA.



LAT 42° 45' 18"
LONG 88° 04' 53"

∘ RADIAL MEASUREMENT



TOWER	OPERATION
1	DETUNED
2	DETUNED
3	DETUNED
4	DETUNED
5	SERIES FED
6	DETUNED
7	DETUNED
8	DETUNED
9	DETUNED

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WISN
1130 KC 10 KW 50 KW-LS DA-2
650130 FIGURE 2A

FCC File No. BL-10937
Accepted 6-22-65

WISN

Measured Night
(6-28-65ct)

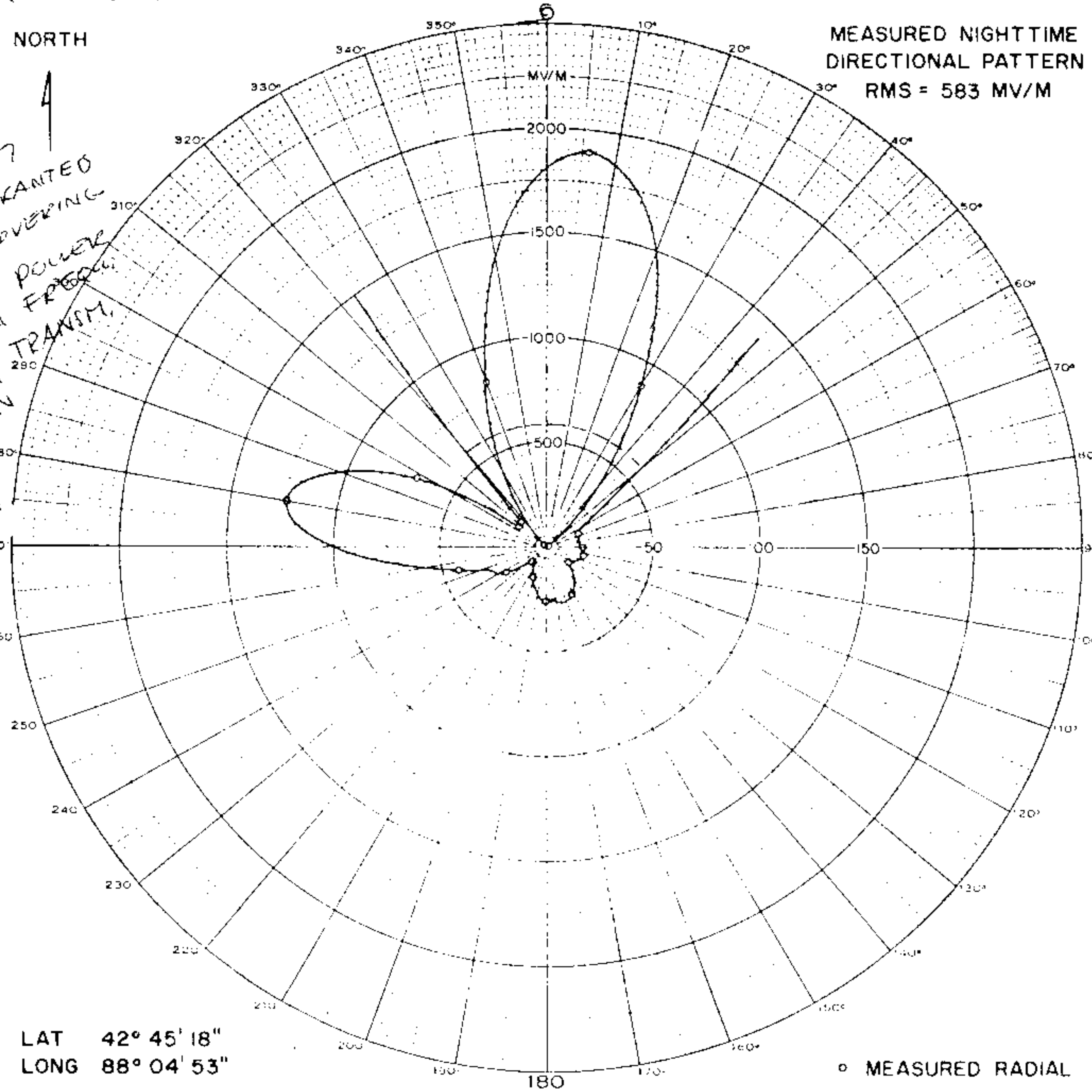
Station WISN
Milwaukee, Wisconsin

10kw,50kw-LS,DA-2,U
1130 kc

NORTH

MEASURED NIGHTTIME
DIRECTIONAL PATTERN
RMS = 583 MV/M

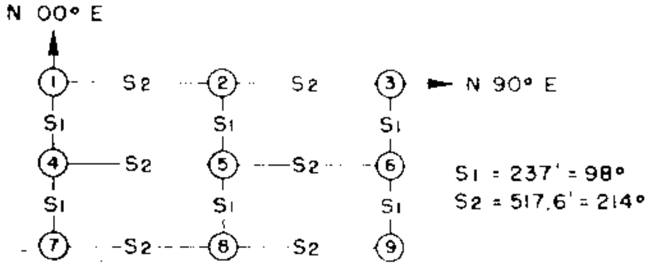
3L-10937
-19-67 GRANTED
ICENSE COVERING
INCR. IN POWER
HANGE IN FREQ.
ANTENNA TRANSM.
LOCATION
AND DIR.
ANTENNA



LAT 42° 45' 18"
LONG 88° 04' 53"

∘ MEASURED RADIAL

N 00° E



S1 = 237' = 98°
S2 = 517.6' = 214°

NIGHTTIME OPERATING PARAMETERS

TOWER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	1.000	- 87°	.277	271.0°
2	1.975	-106°	.550	247.0°
3	1.000	-125°	.280	235.5°
4	1.818	19°	.478	23.5°
5	3.592	0°	1.000	1.0°
6	1.818	-19°	.497	345.0°
7	1.000	129°	.283	137.0°
8	1.975	110°	.549	119.5°
9	1.000	91°	.275	105.5°

PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION WISN
1130 KC 10 KW 50 KW-LS DA-2
650130.1
FIGURE 2C

FCC File No. BL-10937
Accepted 6-22-65

Station WISN
Milwaukee, Wisconsin
1130 kc

WMGA

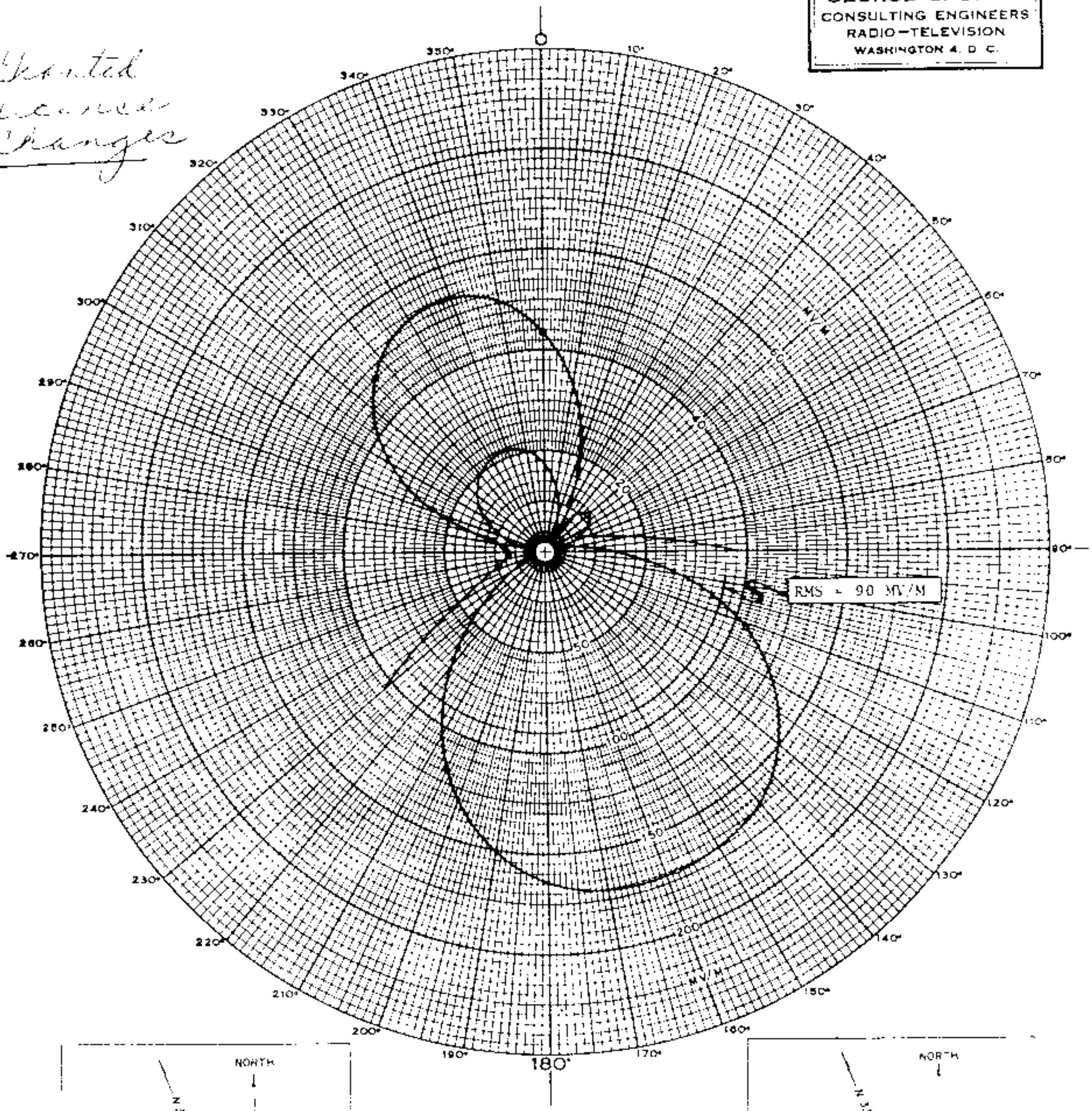
Measured Night
(12-30-69ct)

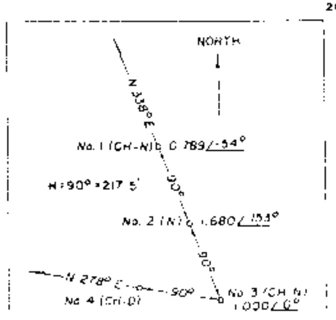
Station WMGA
Moultrie, Georgia

250w,10kw-LS,DA-N,DA-D(CH),U
1130 kc

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO—TELEVISION
WASHINGTON 4, D. C.

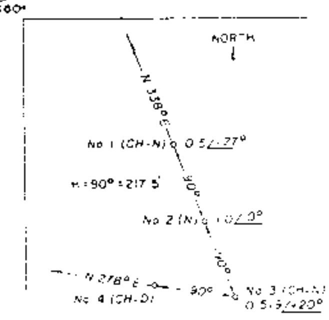
BL-12343 Granted
(12-5-69) License
Covering Changes





THEORETICAL

NORTH LATITUDE 31° 12' 26"
WEST LONGITUDE 83° 46' 45"



MEASURED

MEASURED HORIZONTAL PLANE RADIATION PATTERN
FOR NIGHTTIME OPERATION OF
WMGA, MOULTRIE, GEORGIA
1130 KHZ 0.25/10 KW DA-N-[illegible] 10 KW DA-CH
MARCH 1969

FCC File No.BL-12343
Accepted

Station WMGA
Moultrie, Georgia

1130 kc

WMGA

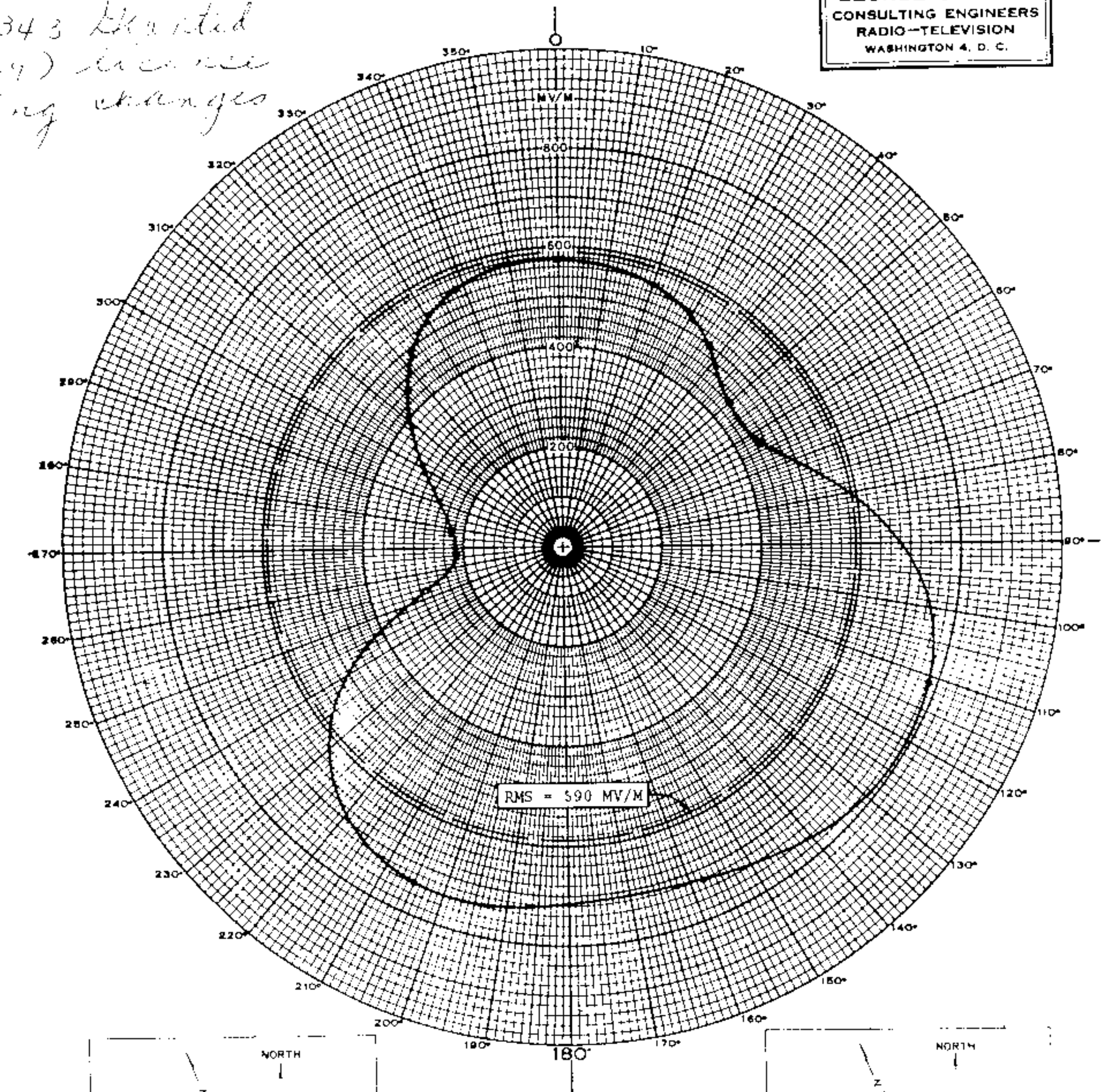
Measured Day (CH)
(12-30-69ct)

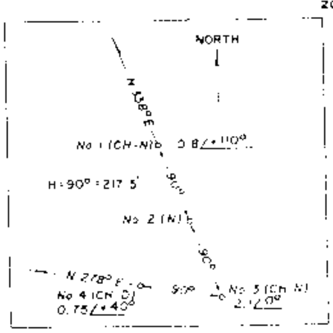
Station WMGA
Moultrie, Georgia

250w,10kw-LS,DA-N,DA-D (CH),U
1130 kc

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO—TELEVISION
WASHINGTON 4, D. C.

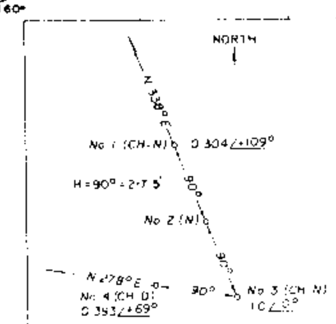
BL-12343 Granted (12-5-69) license covering changes





THEORETICAL

NORTH LATITUDE 31° 12' 20"
WEST LONGITUDE 83° 46' 45"



MEASURED

MEASURED HORIZONTAL PLANE RADIATION PATTERN
FOR CRITICAL HOURS OPERATION OF
WMGA, MOULTRIE, GEORGIA
1130 KHz - 0.25/10 KW - DA N E 10 KW DA (CH)
MARCH 1969

FCC File No.BL-12343
Accepted

Station WMGA
Moultric, Georgia

1130 kc

WMGA

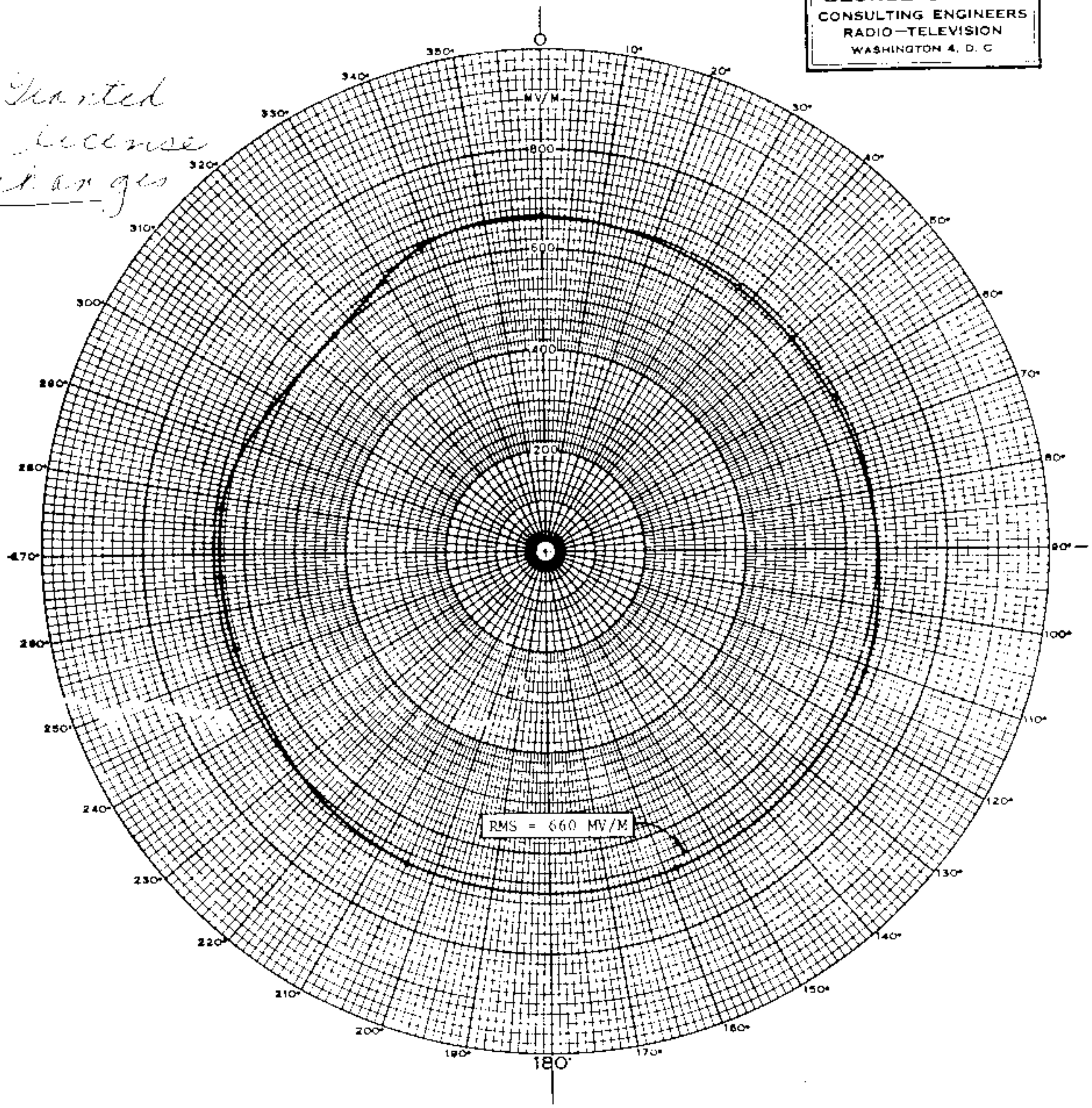
Measured Non-DA
(12-30-69)

Station WMGA
Moultrie, Georgia

250w,10kw-LS,DA-N,DA-D(CH),U
1130 kc

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO—TELEVISION
WASHINGTON 4, D. C

BL-12343 Granted
(12-5-69) License
Covering changes



NORTH LATITUDE 31° 12' 20"
WEST LONGITUDE 83° 46' 45"

MEASURED NON DIRECTIONAL UNATTENUATED
FIELD INTENSITY AT ONE MILE FOR
WMGA, MOULTRIE, GEORGIA
[illegible] 10 KW - DA-N [illegible] DA [illegible]
MARCH 1969

FCC File No.BL-12343
Accepted

Station WMGA
Moultrie, Georgia

1130 kc

WMGA

Proposed Night
(7-26-67ct)

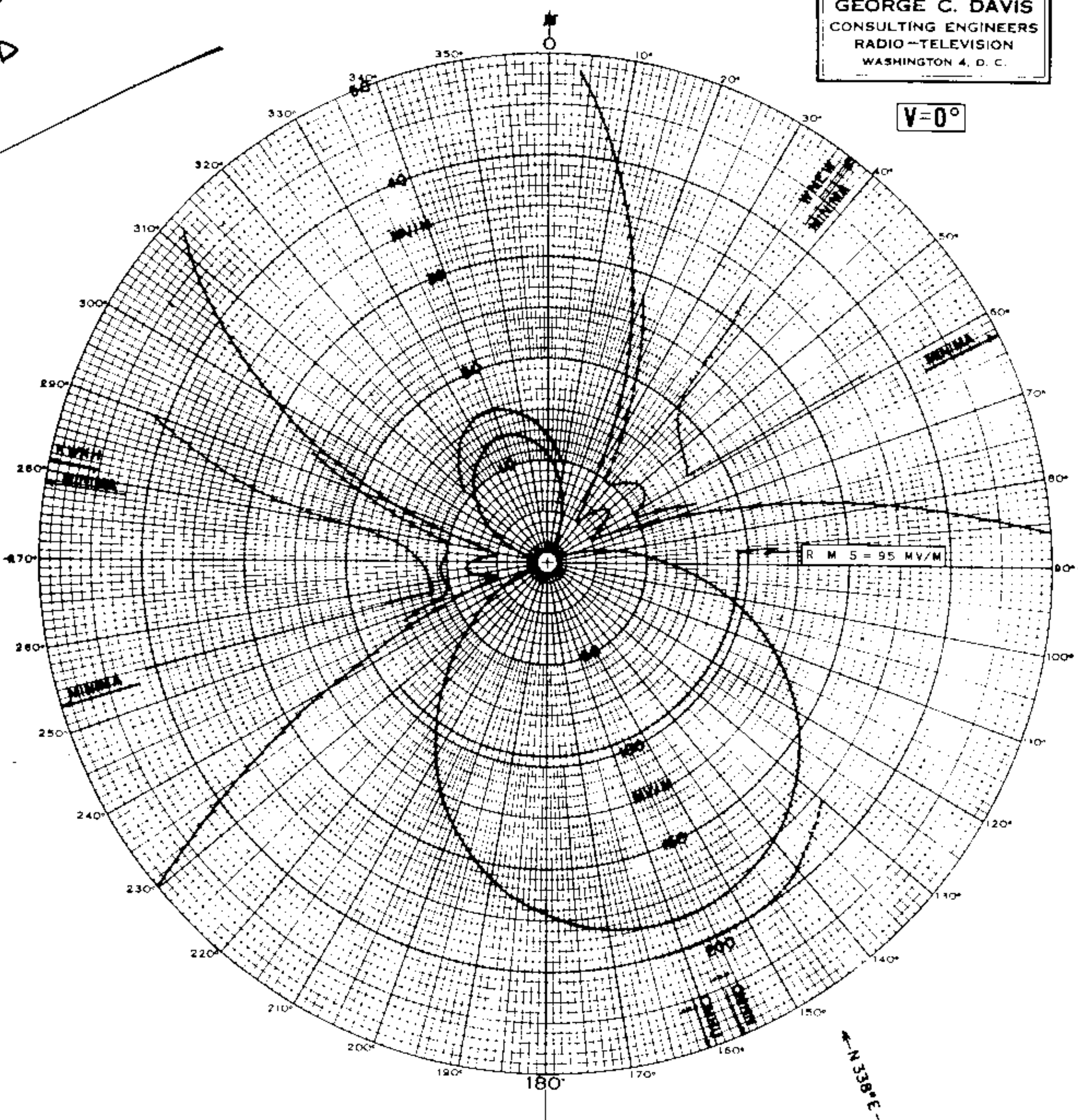
Station WMGA
Moultrie, Georgia

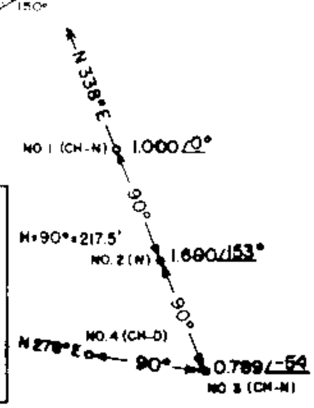
250w,10kw-LS,DA-N,DA-D(CH),U
1130 kc

6-6-68
GRANTED
CP

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO—TELEVISION
WASHINGTON 4, D. C.

V=0°





COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR PROPOSED OPERATION OF
WMGA, MOULTRIE, GEORGIA
1130 KC - 0.25/10 KW - DA-N U 10 KW DA-(CH)
JUNE 1964

PERMISSIBLE ————
M. E. O. V. - - - - -

NORTH LATITUDE 31° 12' 20"
WEST LONGITUDE 83° 46' 45"

FCC File No.BP-17607
Accepted 6-21-67

Station WMGA
Moultrie, Georgia

1130 kc

Proposed Day (CH)
(7-26-67ct)

Station WMGA
Moultrie, Georgia

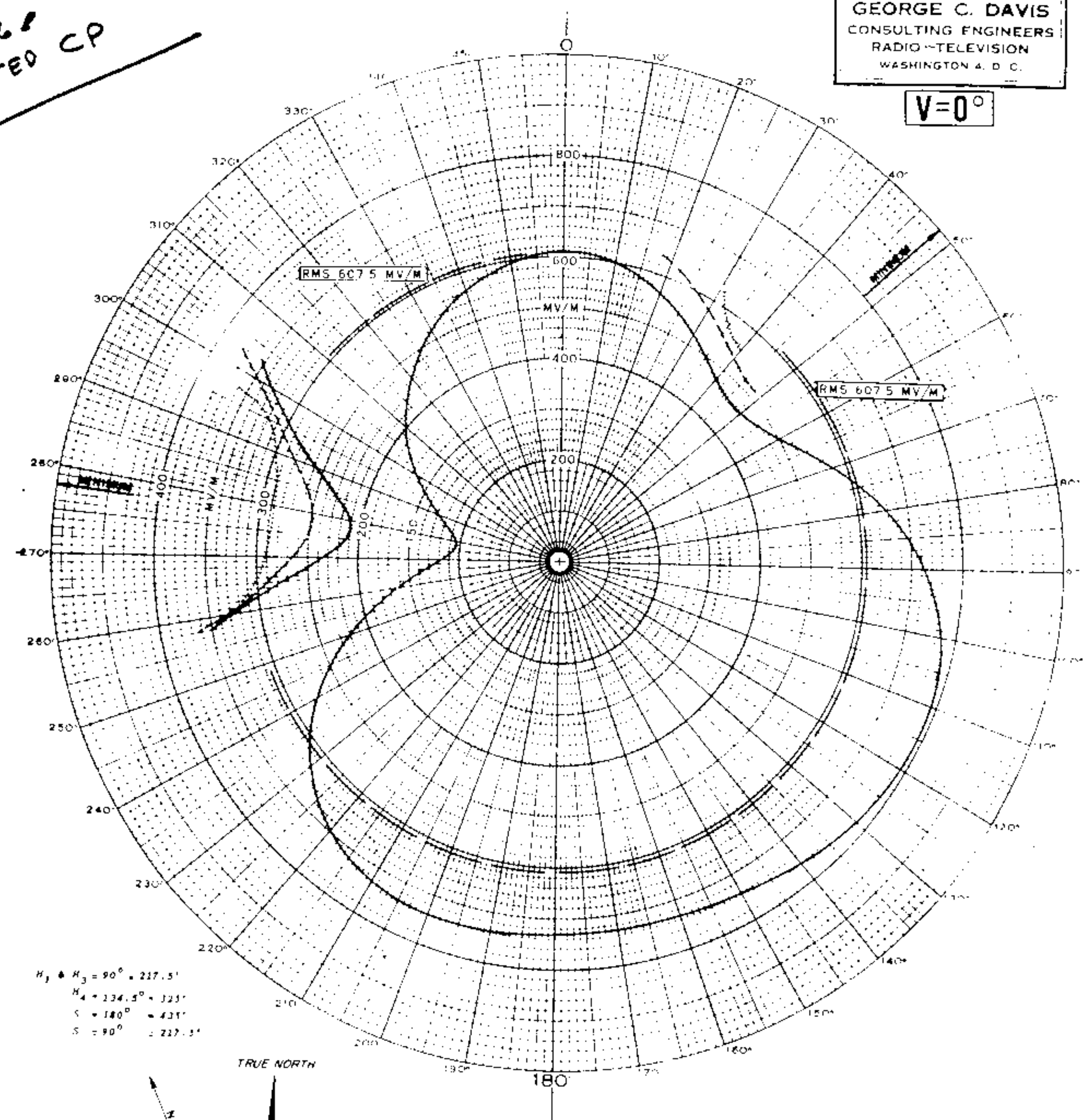
250w,10kw-LS,DA-N,DA-D(CH),U
1130 kc

\ MGA

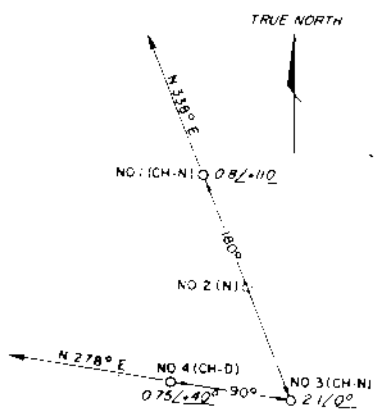
6-6-68
GRANTED CP

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO-TELEVISION
WASHINGTON 4, D. C.

V=0°



H_1 & H_3 = 90° = 217.5'
H_4 = 134.5° = 323'
S = 180° = 435'
S = 90° = 217.5'



COMPUTED HORIZONTAL PLANE RADIATION PATTERN
FOR PROPOSED CRITICAL HOURS OPERATION OF
WMGA, MOULTRIE, GEORGIA
1130 KC - 0.25/10 KW - DA-N - U
10 KW - DA-(CH)
JULY 1964

PERMISSIBLE ....
M.E.O.V. — — — — —

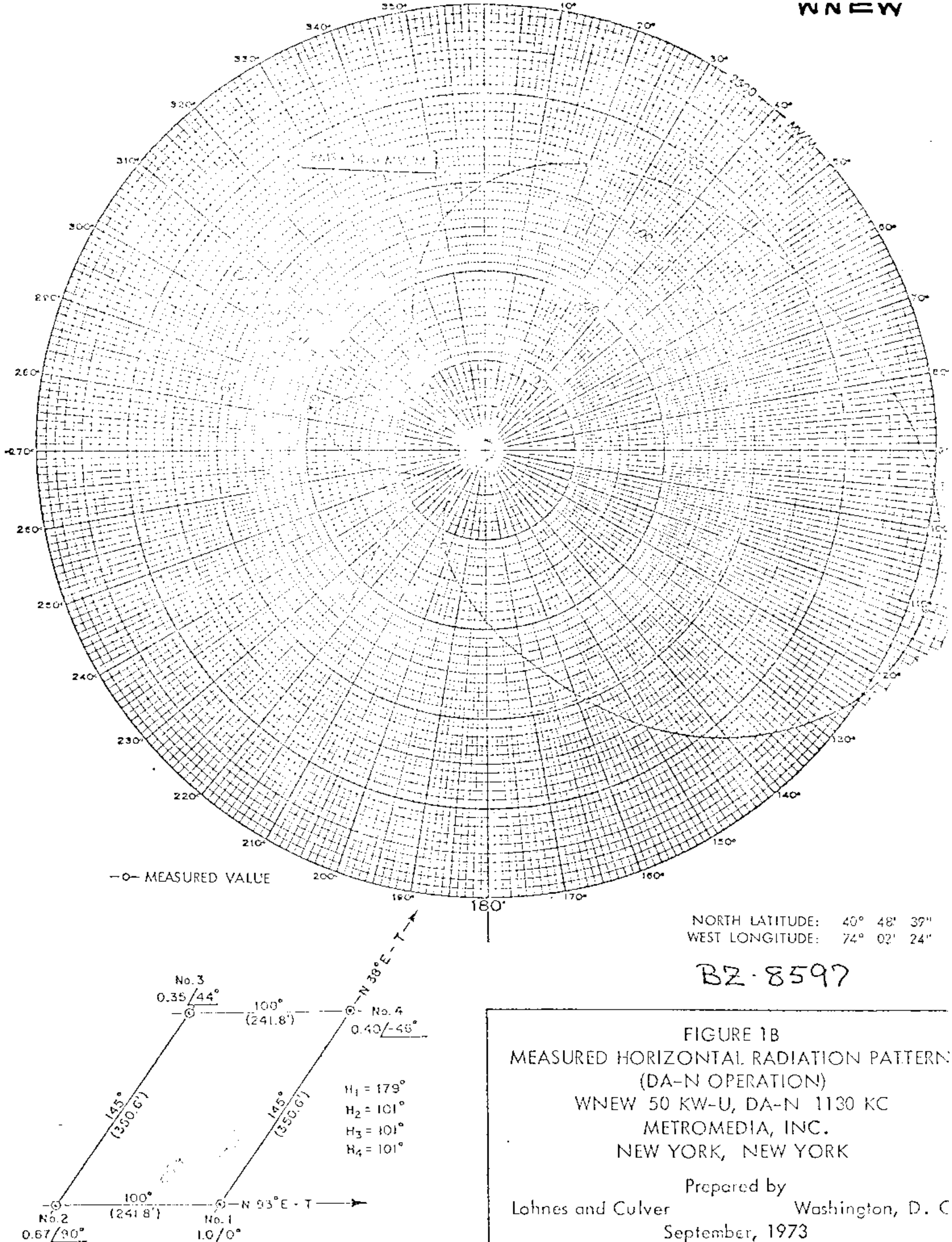
NORTH LATITUDE 31° 12' 20"
WEST LONGITUDE 83° 46' 45"

FCC File No.BP-17607
Accepted 6-21-67

Station WMGA
Moultrie, Georgia

1130 kc

WNEW



NORTH LATITUDE: 40° 48' 39"
WEST LONGITUDE: 74° 02' 24"

BZ-8597

FIGURE 1B
MEASURED HORIZONTAL RADIATION PATTERN
(DA-N OPERATION)
WNEW 50 KW-U, DA-N 1130 KC
METROMEDIA, INC.
NEW YORK, NEW YORK

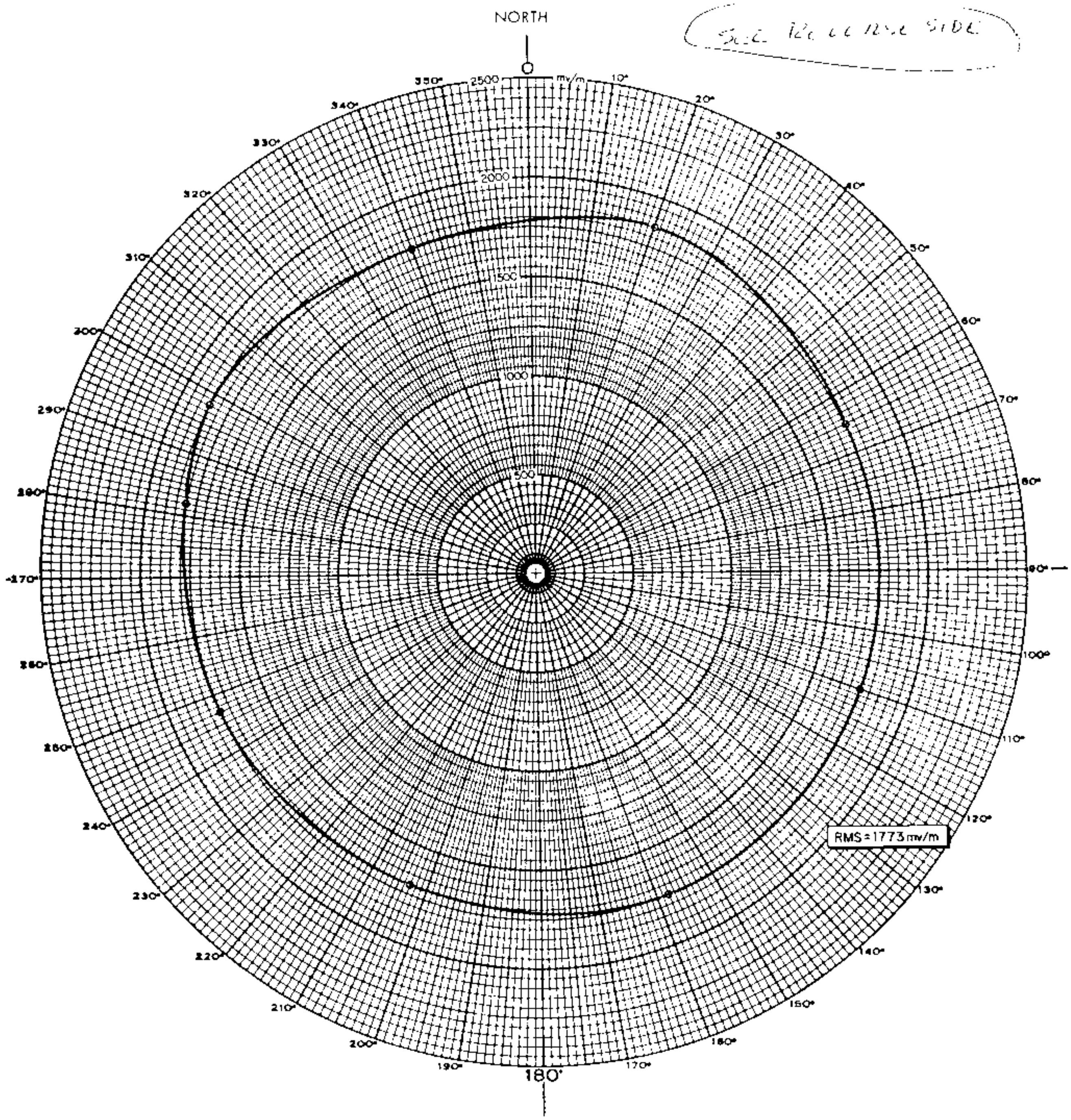
Prepared by
Lohnes and Culver Washington, D. C
September, 1973

Measured Non-DA
(4-29-70ct)

Station WNEW
New York, New York

WNEW
50kw,DA-N,U
1130 kc

(See Reverse Side)



North Latitude 40° 48' 39"
West Longitude 74° 02' 24"

FIGURE 9
HORIZONTAL RADIATION PATTERN
NON-DA TOWER NO. 1
WNEW 50 KW-U, DA-N 1130 KC
METROMEDIA, INC.
NEW YORK, NEW YORK

Prepared by
Lohnes and Culver Washington, D. C.
July, 1969

FCC File No.BL-12598
Accepted 4-27-70

Station WNEW
New York, New York

1130 kc

WNEW

Proposed Night
(5-27-66ct)

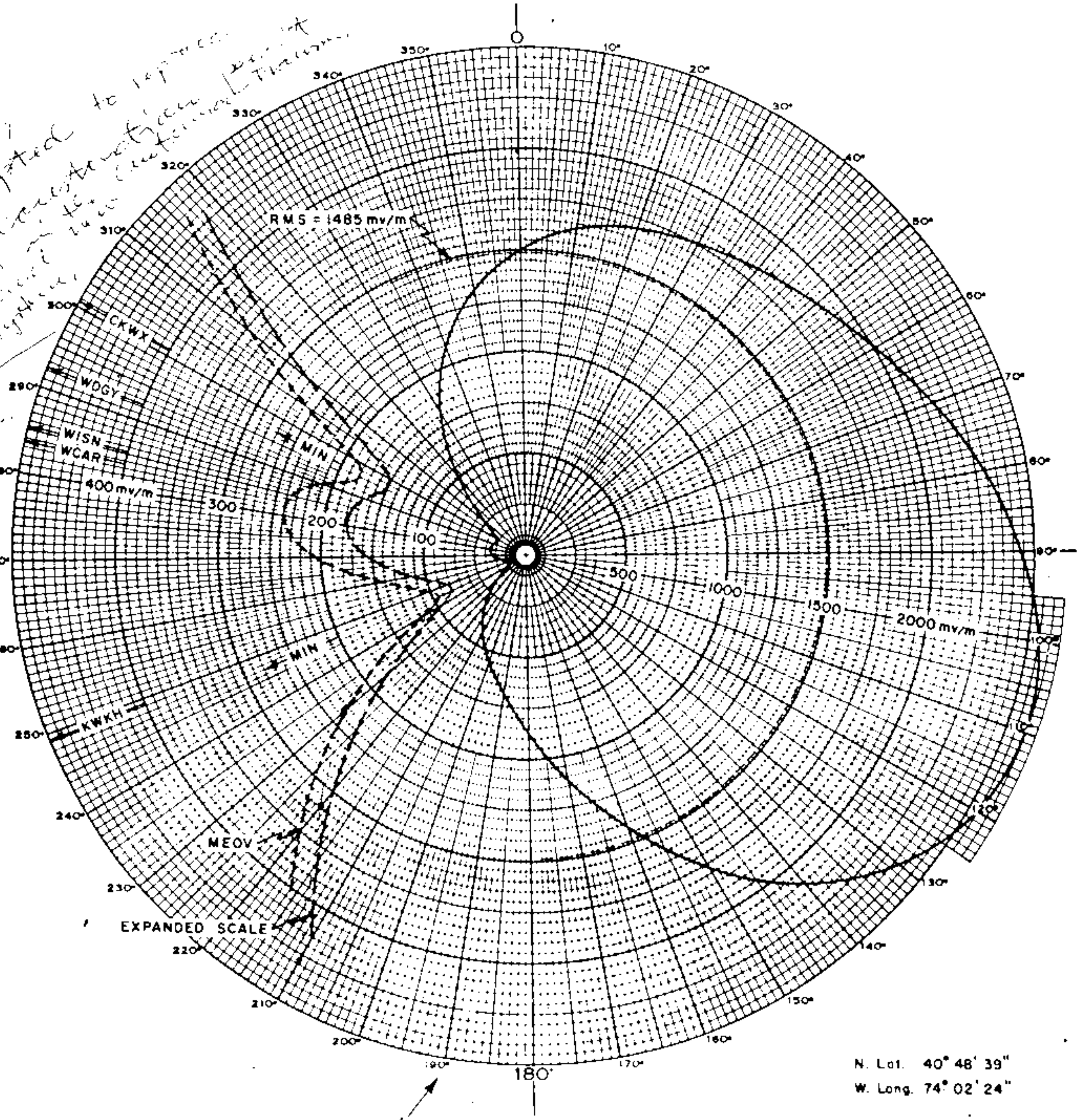
Station WNEW
New York, New York

50kw,DA-N,U
1130 kc

CP 5-11-66
CHG. LOC.

BP-17624
2-23-67
Appl. accepted to replace [illegible] expired [illegible]

Granted Appl.
3-15-67
to replace exp
permit.



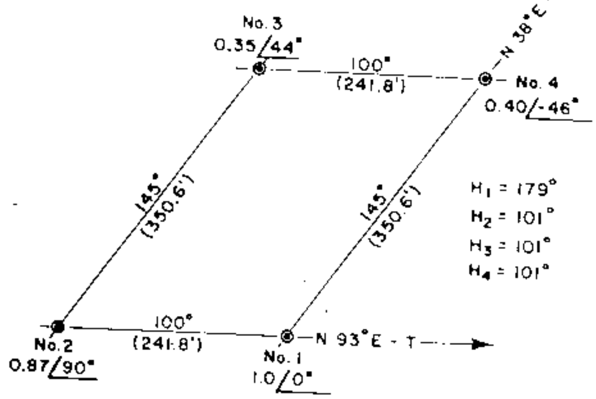


FIGURE 5
NIGHTTIME RADIATION PATTERN
PROPOSED WNEW 50 KW-U, DA-N 1130 KC
NEW YORK, NEW YORK

Prepared by
Lohnes and Culver Washington, D. C.
February, 1966

FCC File No. BP-17200
Accepted 4-29-66

Station WNEW
New York, New York

1130 kc

WNEW

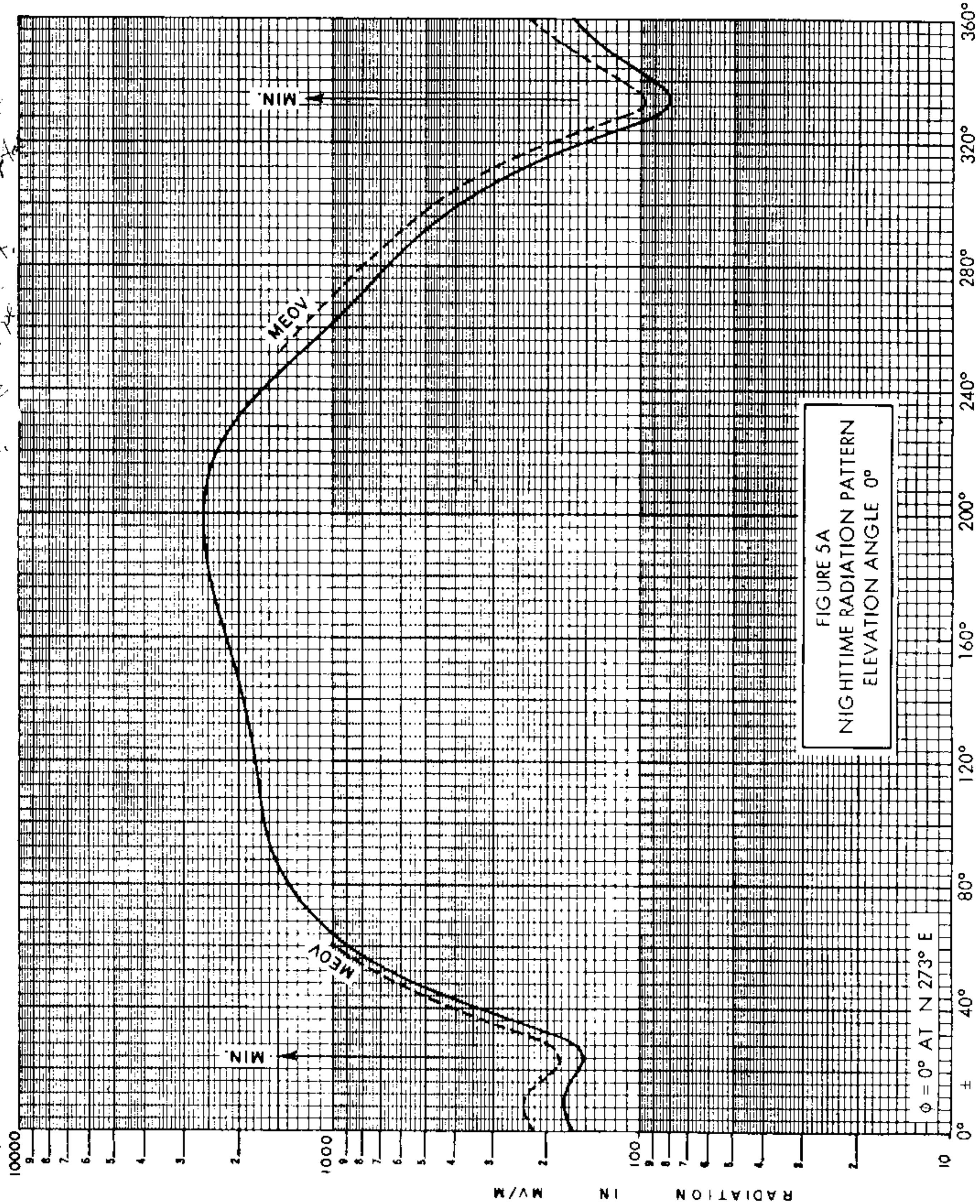
Proposed Night Nulls (5-27-66ct)

Station WNEW
New York, New York

50kw, DA-N, U
1130 kc

CP 5-11-66
CHG. LOC.
BP-17624
2-23-67
Appl. accepted
to replace
expired
const. permit.

granted appl.
3-22-67
to replace
expired
permit.



FCC File No.BP-17200
Accepted 4-29-66

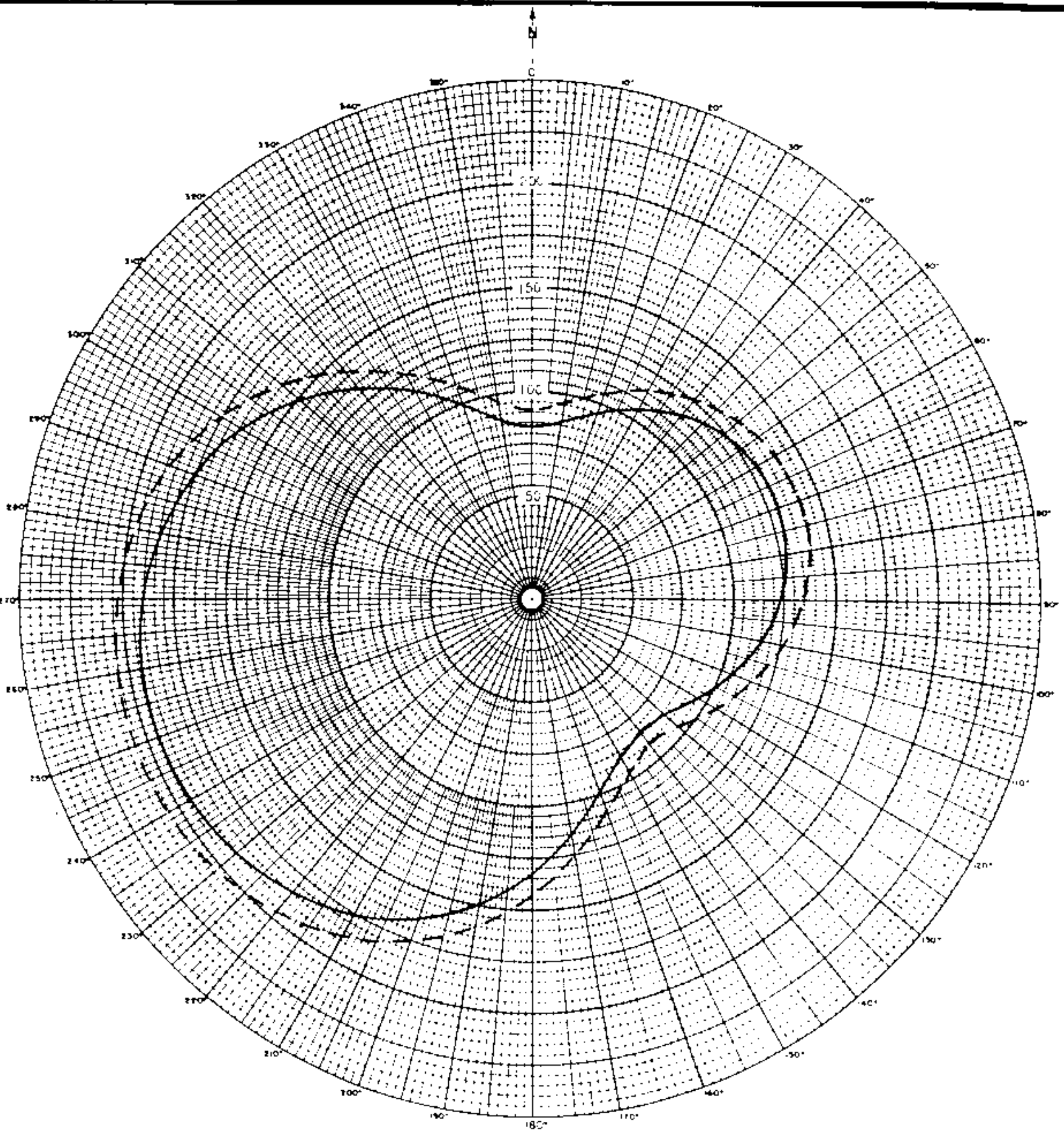
Station WNEW
New York, New York

1130 kc

Proposed Day
(2-28-67ct)

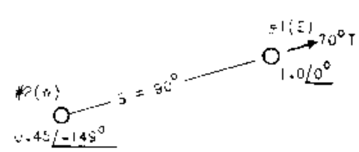
New; Chariton Radio Company
Chariton, Iowa

500w,DA-D,D
1130 kc



E_{RMS} = 138.5 MV/M

LOCATION OF MINIMA: 0° AND 70°

LATITUDE: 41° 00' 40" LONGITUDE: 93° 15' 51"	**ANTENNA PARAMETERS**	661201 PROPOSED PATTERN FIGURE 5 CHARITON RADIO COMPANY CHARITON, IOWA 1130 KC 500 DA-D
CHARLES E. BRENNAN CONSULTING RADIO ENGINEERS MILWAUKEE, WISCONSIN	G'S = 90.9° 	

FCC File No.BP-17559
Accepted 1-31-67

New; Chariton Radio Company
Chariton, Iowa

1130 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: (New) Main Studio: Frankfort, Kentucky

Frequency: 1130 kHz Power: 0.5 kW

Notification List No. 1729 Date: April 13, 1977 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 38° 12' 13"
West Longitude: 84° 54' 51"

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:	193'	193' (79.8°)
PHASING:	+115°	0°
FIELD RATIO:	1.431	1

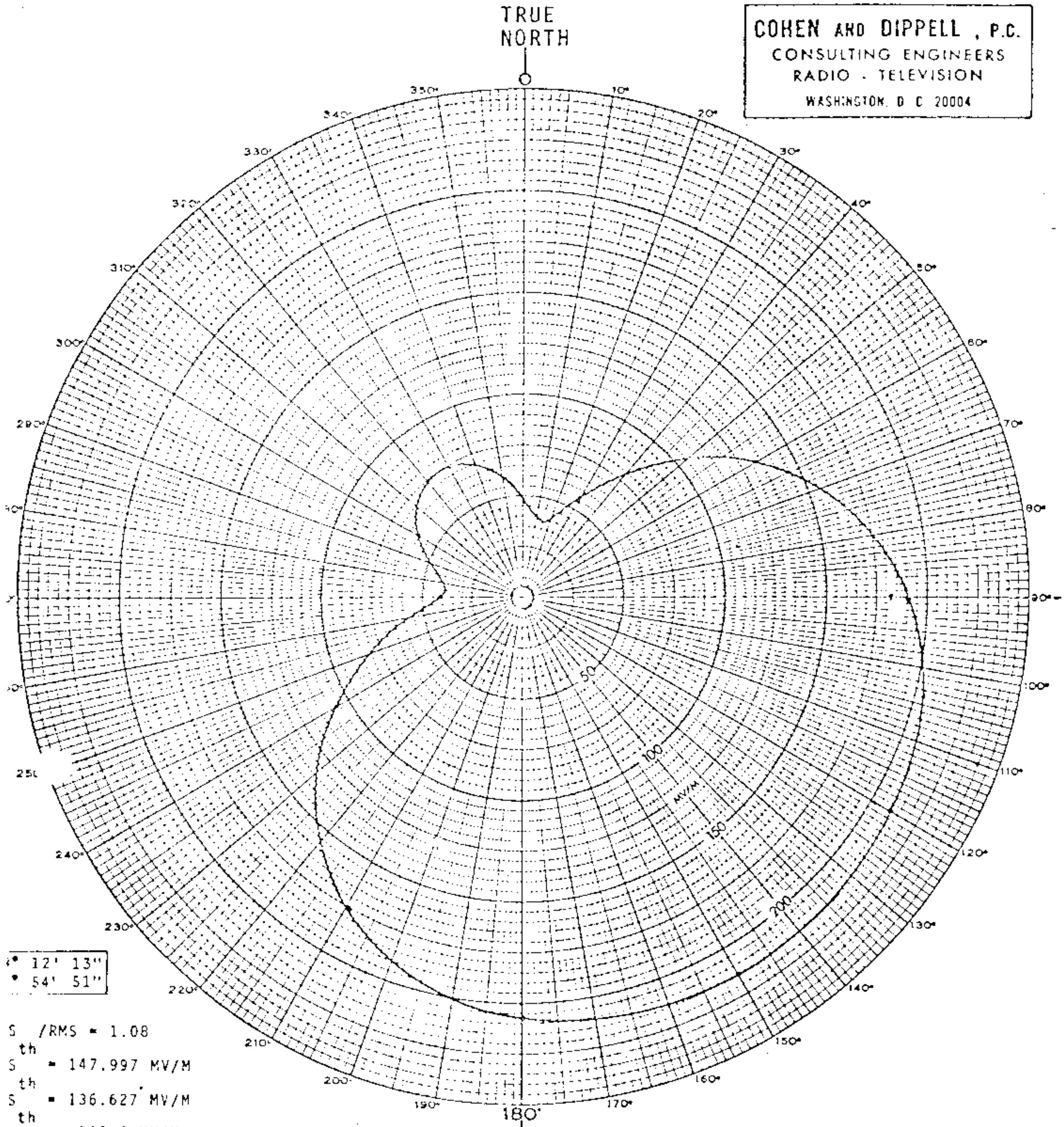
SPACING AND ORIENTATION: Towers are spaced 241.7' (100°) on a line bearing 325° true.

GROUND SYSTEM: 120-217.5' 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.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	136.627 mv/m	147.997 mv/m	143.6 mv/m

COHEN AND DIPPELL, P.C.
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D. C. 20004



STD

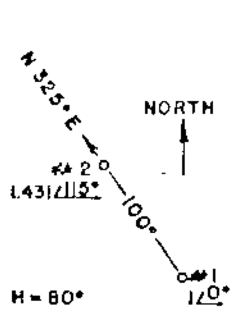
° 12' 13"
° 54' 51"

S$_{th}$/RMS = 1.08

S$_{th}$ = 147.997 MV/M

S$_{th}$ = 136.627 MV/M

S$_{std}$ = 143.6 MV/M



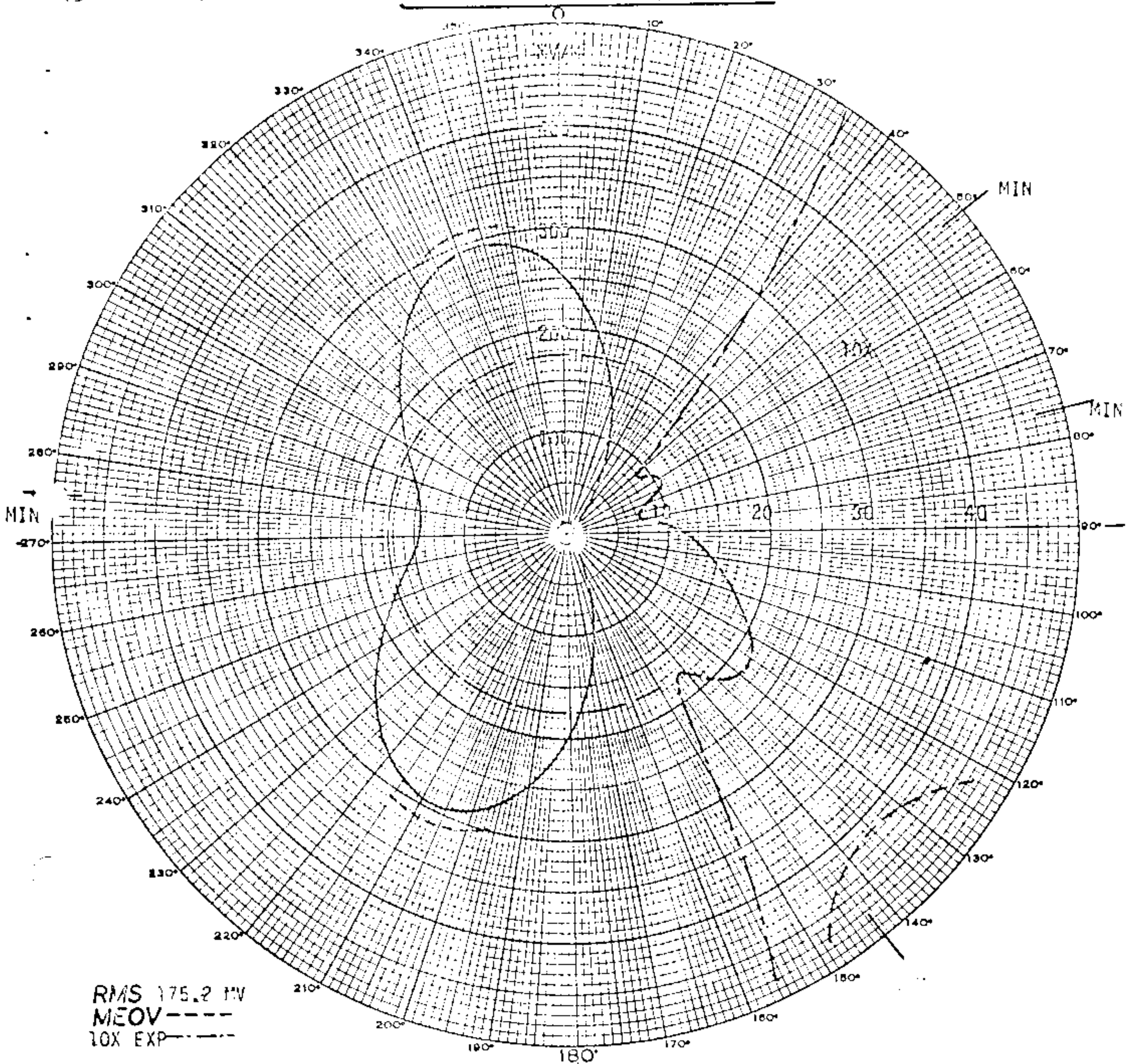
STANDARD RADIATION PATTERN
HORIZONTAL PLANE
FOR THE PROPOSED DAYTIME OPERATION
D & R BROADCASTING, INC.
FRANKFORT, KENTUCKY
1130 KHz - 0.5 KW - DA-D
DECEMBER 1975

Standard Pattern

Proposed Day
(3-28-68ct)

New; Greencastle Broadcasting Co.
Greencastle, Pennsylvania

1kw,DA-D,D
1130 kc



TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 3	STATION DATA
G's = 110° S_1 = 144.5° S_2 = 148° .5012/-55.09° 1.0/0° .5714 272° ← O ← S_1 → O ← S_2 → O → 98°T 1 2 3 /58.910°	TOWER No. / ELECTRICAL HEIGHT $G°$ / SPACING $S°$ / PHASING $\psi°$ / FIELD RATIO f 1–10 DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐	PROPOSED DAYTIME DIRECTIONAL ANTENNA PATTERN ************* GREENCASTLE, PA. ************* SEPT. 1967 $\theta° = 0$	CALL NEW FREQ 1130 KHZ POWER 1.0KW TYPE DA-D TIME DAY LAT. N39-47-23.7 LONG. W77-41-40.7 E.H.MUNN,JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No.BP-17125
Accepted 3-15-68

New; Greencastle Broadcasting Co.
Greencastle, Pennsylvania

1130 kc

XEJW
1130

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station:	XEJW	Main Studio:	Jalapa, Veracruz
Frequency:	1130kc	Power:	10Kw
Notification List No.	161	Date: July 13, 1953	Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 19° 31' 33"

West Longitude: 96° 59' 50"

ANTENNA CHARACTERISTICS

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

TOWER:	South	North
HEIGHT ABOVE INSULATORS:	218' (90°)	218' (90°)
PHASING:	0°	160°
FIELD RATIO:	1.0	1.0

SPACING AND ORIENTATION: Elements are spaced 48.2' (20°) on a line bearing 8° true.

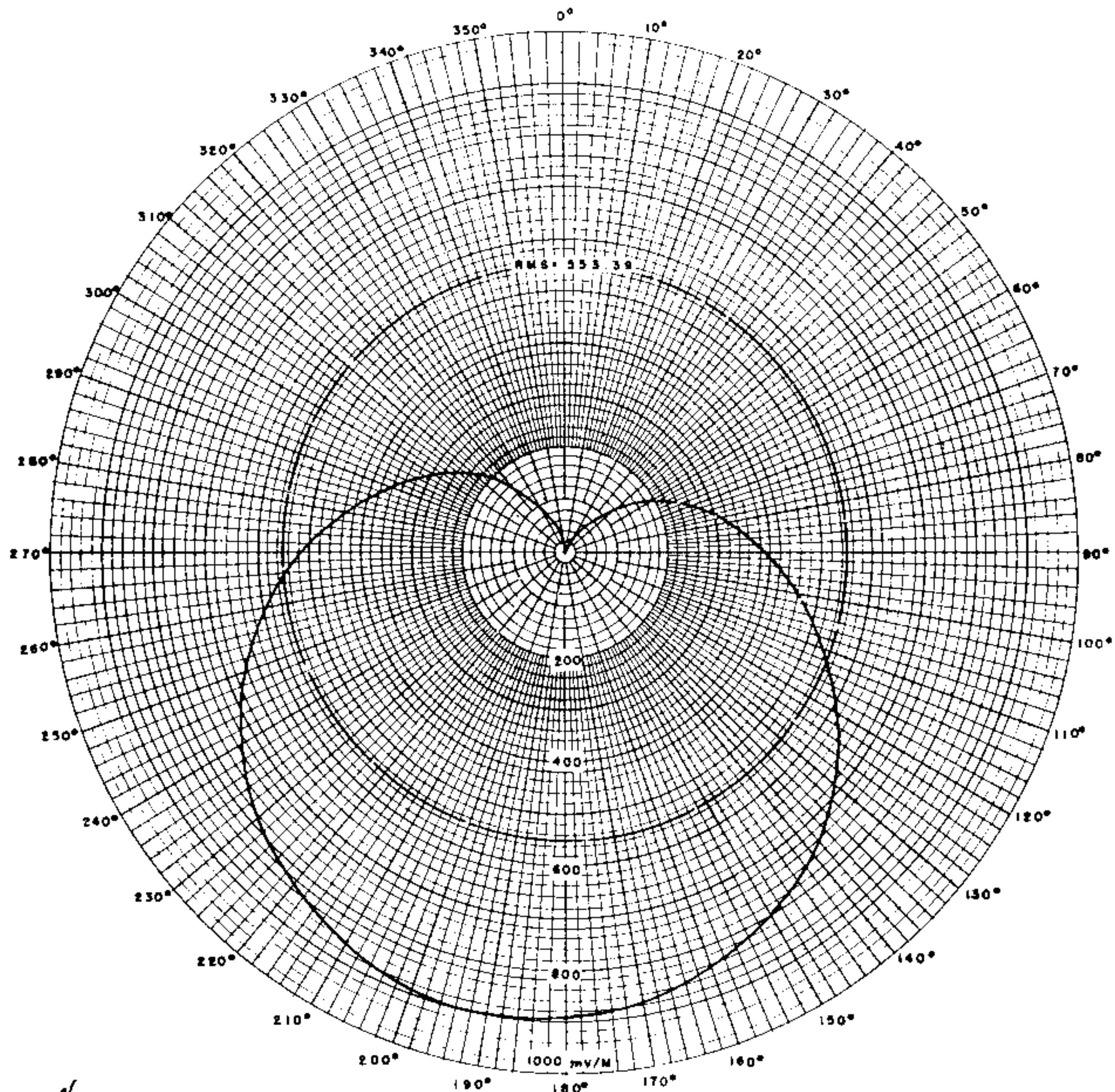
GROUND SYSTEM: Equivalent to 120 - 218' equally spaced radials about each tower base with radials shortened and bonded by a transverse strap along intersections between towers.

Predicted effective Field: 553.39 mv/m (at rated power)

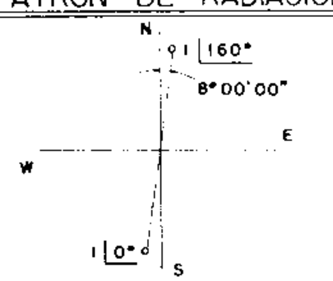
Note: The Federal Communications Commission has objected to this pattern.

XEJW

NIGHTTIME XEJW, JALAPA, VERACRUZ 10kw DA-N 1130 kc
9/22/53G



PATRON DE RADIACION HORIZONTAL CALCULADO EN mV/M A UNA MILLA.



RADIODIFUSORA

XEJW

Jalapa Ver.

1130 Kc.

10 000 Watts.

ARTURO AMADOR
MANUEL CASTELLANOS
Pasantes Ing. COMUNICACIONES