920

Station	Main Studio	Freq	Power	Date
CBO	Ottawa, ON	920	50 kW/DA-2	11/5/74
CFLS	Lévis, QU	920	10 kW/DA-2	11/30/81
CFLS	Lévis, QU	920	10 kW/DA-N	8/20/76
CFLS	Lévis, QU	920	1 kW/DA-N	6/27/77
CFRY	Portage La Prairie, MB	920	10 kW/DA-2	2/5/73
CJCH	Halifax, NS	920	25 kW	4/1/76
CJCH	Halifax, NS	920	5 kW/DA-N	1/10/58
CJCJ	Woodstock, NB	920	1 kW/DA-1	11/30/61
CKCQ	Quesnel, BC	920	10/1 kW/DA-N	3/19/75
CKCY	Sault Ste. Marie, ON	920	5/10 kW/DA-2	1/5/62
CKNX	Wingham, ON	920	20/10 kW/DA-2	1/10/83
CKNX	Wingham, ON	920	1/2.5 kW/DA-2	6/14/61
CKWL	Williams Lake, BC	920	1 kW/DA-N	6/27/69
CMJL	Camaguey, Camaguey	920	10 kW	7/52
KARN	Little Rock, AR	920	5 kW/DA-N	11/29/68
KBZB	Odessa, TX	920	0.5/1 kW/DA-N	5/9/49
KDES	Palm Springs, CA	920	1/5 kW/DA-2	9/29/79
KDES	Palm Springs, CA	920	0.5/5 kW/DA-2	10/28/66
KDHL	Faribault, MN	920	5 kW/DA-2	8/24/62
KELP	El Paso, TX	920	0.5/1 kW/DA-N	8/3/53
KGAL	Lebanon, OR	920	1 kW/DA-1	9/18/51
KITN	Olympia, WA	920	0.5/1 kW/DA-N	6/16/76
KKLS	Rapid City, SD	920	5 kW/DA-D	7/1/77
KLMR	Lamar, CO	920	0.5/1 kW/DA-N	7/31/51
KLOC	Ceres, CA	920	0.5 kW/DA-D	1/29/64
KOLO	Reno, NV	920	1/5 kW/DA-N	9/12/80
KORK	Las Vegas, NV	920	0.5/5 kW/DA-2	11/24/70

920

Station	Main Studio	Freq	Power	Date
KQEO	Albuquerque, NM	920	0.5/1 kW/DA-N	9/8/55
KRAM	Las Vegas, NV	920	0.5/1 kW/DA-N	5/9/49
KWAD	Wadena, MN	920	1 kW/DA-N	1/3/49
WBAA	Lafayette, IN	920	1/5 kW/DA-N	9/20/61
WBOX	Bogalusa, LA	920	1 kW/DA-N	9/28/79
WCTA	Andalusia, AL	920	0.5/1 kW/DA-N	7/13/54
WGHQ	Kingston, NY	920	5 kW/DA-D	2/28/62
WGNU	Granite City, IL	920	0.5 kW/DA-N	9/28/79
WJAR		920	5 kW	8/40
WKRT	Cortland, NY	920	1/0.5 kW/DA-N	12/47
WKVA	Lewiston, PA	920	0.5/1 kW/DA-N	4/22/59
WMEL	Melbourne, FL	920	1 kW/DA-N	4/10/74
WMMN	Fairmont, WV	920		4/43
WMNI	Columbus, OH	920	0.5/1 kW/DA-2	11/59
WOKY	Milwaukee, WI	920	1/5 kW/DA-2	11/6/74
WPTX	Lexington Park, MD	920	1/5 kW/DA-2	8/26/70
WTTM	Trenton, NJ	920	1 kW/DA-1	9/25/63
NEW	Lake Etchemin, QU	920	1 kW/DA-N	5/6/75
XELT	Guadalajara, Jalisco	920	0.25/20 kW/DA-D	11/30/76

CBO

DESCRIPTION SHEET

Station: CBO

Main Studio: Ottawa, Ontario

Frequency: 920 kHz

Power: 50 kW

Time: Unlimited

Class: III

Notification List No.: 332

Date: November 5, 1974.

Geographic Location: 45° 11'09" N. Lat.
75°44'53" W. Long

Antenna System: Mode of Operation: DA-2

Elements - seven guyed elements, 238' (80° electrical) high with overall height of 243', uniform cross-section, base insulated and series fed.

Tower Parameters:

	Spacing		Orientation	Night	
Tower	Degrees	Feet	Degrees True	Ratio	Phase
1	REF	REF	REF	1.0	0°
3	110	326.811	150	1.797	100.51°
4	220	653.623	150	0.94	-157.53°
6	227.408	675.632	187.573	0.846	-111.53°
7	155.442	461.82	213.137	1.617	146.51°
9	144.256	428.586	256	0.9	46°
				Day	
1	REF	REF	REF	1.0	0°
3	110	326.811	150	3.0	85.6°
4	220	653.623	150	3.0	169.4°
5	330	980.435	153	0.94	- 99°

Ground System: The ground system shall consist of 120 radial per tower No. 10 AWG, bare soft-drawn copper wire, uniformly spaced, depth 8 inches approximately. The ground system is equivalent to a 0.4 wave-length system.

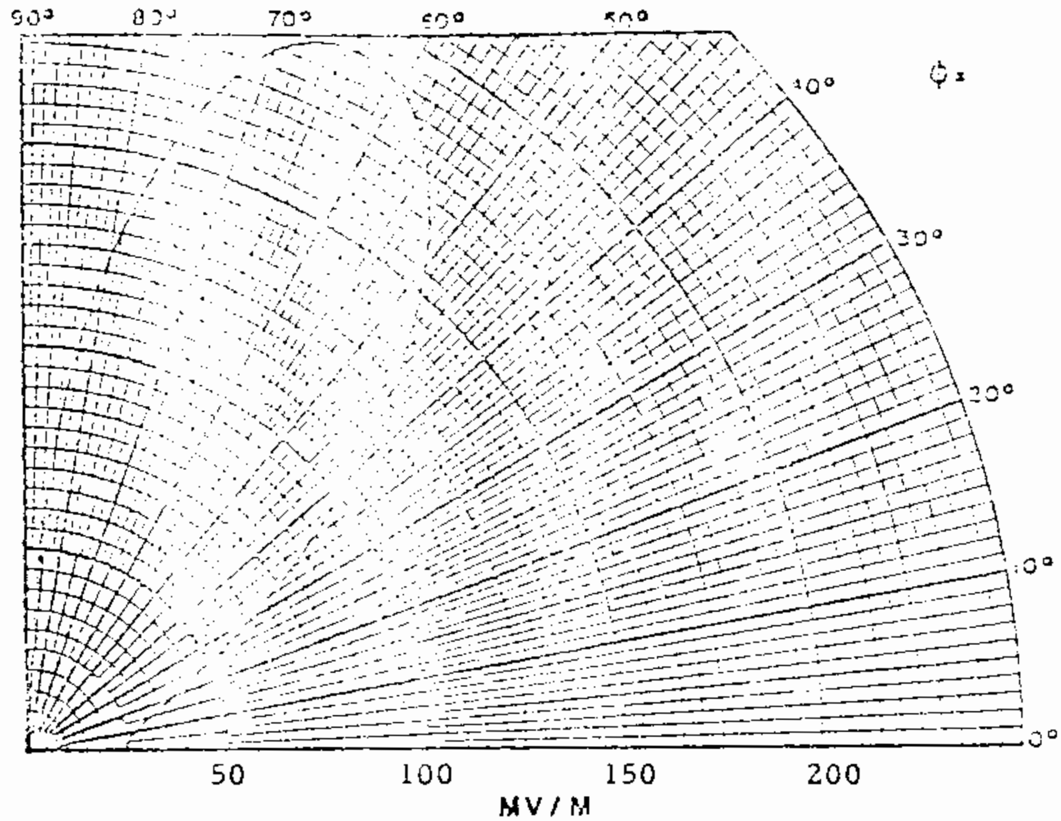
Predicted Effective Field:

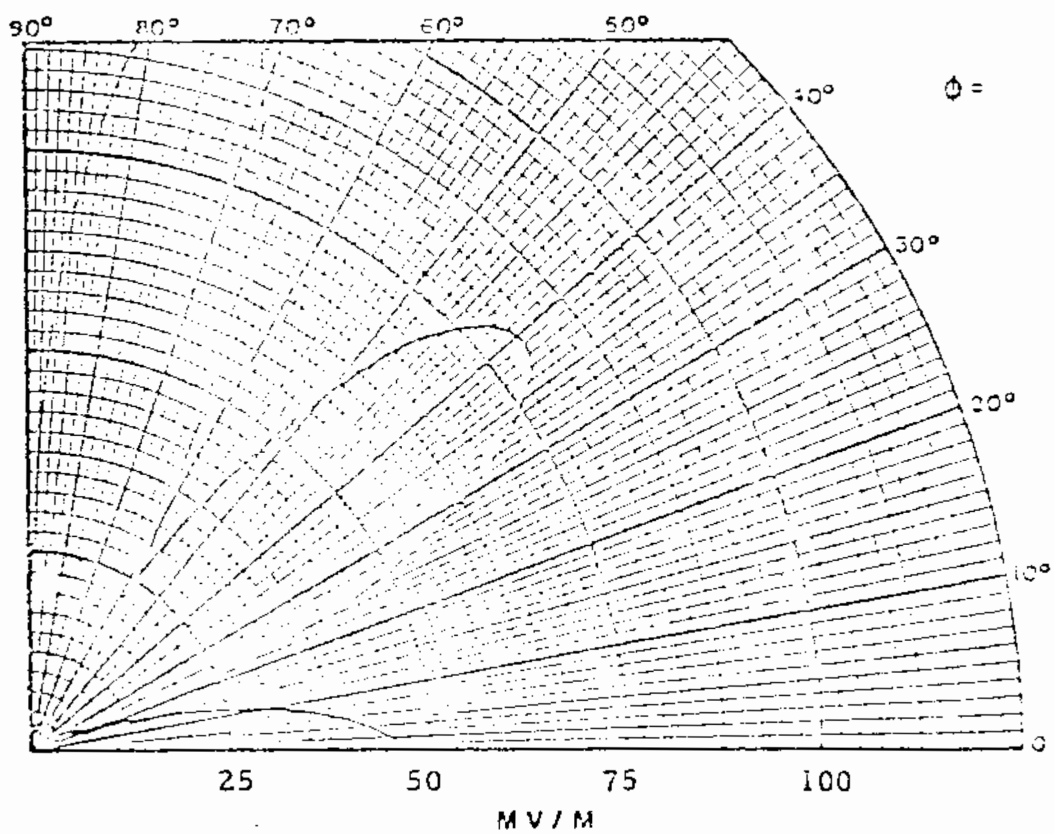
Day 1290 mV/m at one mile for 50 kW
(182 mV/m at one mile for 1 kW)

Night 1250 mV/m at one mile for 50 kW
(178 mV/m at one mile for 1 kW)

Revised June 1974
Revised September 1974

CBO

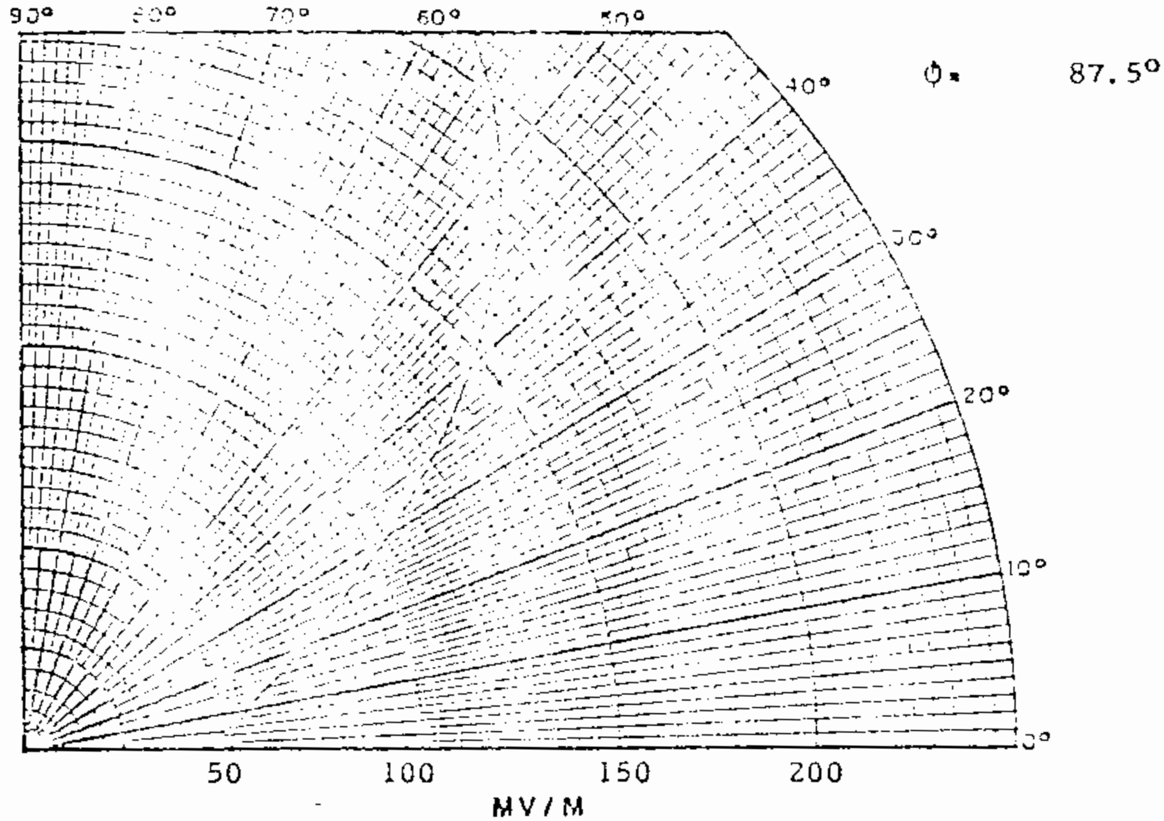


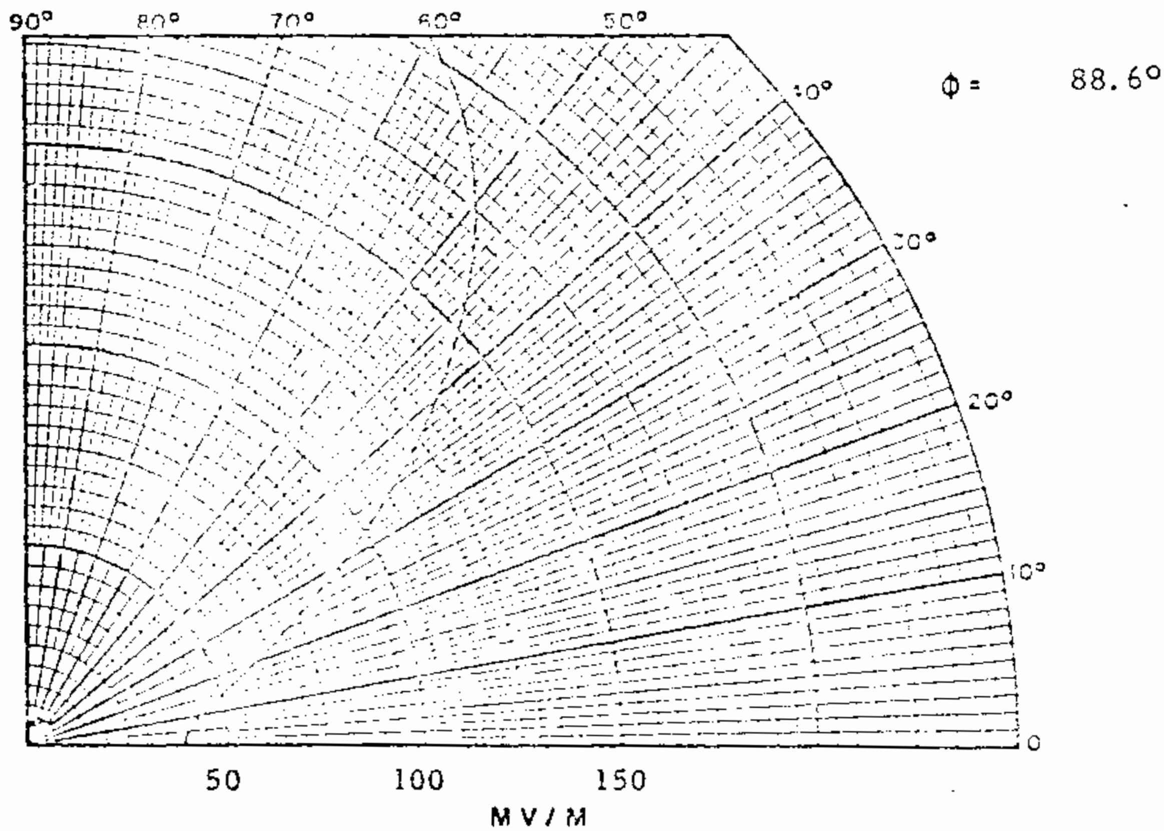


VERTICAL RADIATION PATTERNS

CBO 920 kHz, 50 kW, DA-2, Class III

Project: 1071-14 May 1974





VERTICAL RADIATION PATTERNS

CBO 920 kHz, 50 kW, DA-2, Class III

Project: 1071-14 May 1974

CFLS
920 kHz

DESCRIPTION DU SYSTEME A ANTENNE DIRECTIONNELLE

1. INDICATIF D'APPEL: CFLS
2. EMPLACEMENT: Lévis, Qué.
3. FREQUENCE: 920 kHz
4. PUISSANCE: 10 kW jour et nuit
5. CLASSE: III (illimité)
6. NOTIFICATION NO: 409 DATE: 30 novembre 1981
7. COORDONNEES: Latitude nord: 46° 48' 26"
   Longitude ouest: 71° 08' 37"
8. SYSTEME D'ANTENNE:
   a) Fonctionnement: directionnel AD-2
   b) Type: trois (3) éléments à section uniforme, haubanés et alimentés en série
   c) Mise à la terre: 120 fils No. 10 par élément, d'une longueur max. de 428 pi., espacés également, avec courroies d'interconnexion, le tout enfoui à environ 8" sous la surface.
9. MATS D'ANTENNE:

		No. 1 (SE)	No. 2 (C)	No. 3 (NO)
Orientation (Az):		147°	0°	325°
Hauteur au-dessus de l'isolateur:		60.8°	80.8°	60.8°
Espacement:		68°	0°	65°
Phasage:	Jour:	0°	+203.0°	+21.0°
	Nuit:	0°	-146.5°	-290.0°
Rapport d'intensité de champ:	Jour:	0.510	1.000	0.510
	Nuit:	0.490	1.000	0.545

10. EFFICACITE PREVUE:
    a) Jour: 594.9 mV/m à 1 mille pour 10 kW
    188.1 mV/m à 1 mille pour 1 kW
    b) Nuit: 545.0 mV/m à 1 mille pour 10 kW
    172.3 mV/m à 1 mille pour 1 kW

CFLS
920 kHz

I - DESCRIPTION DU SYSTEME A ANTENNE DIRECTIONNELLE

1. INDICATIF D'APPEL: CFLS

2. EMPLACEMENT: Lévis, Qué.

3. FREQUENCE: 920 KHz

4. PUISSANCE: 10 KW jour et nuit

5. CLASSE: III (illimité)

6. NOTIFICATION NO: 407 DATE: 25 août 1981

7. COORDONNEES: Latitude nord: 46° 48' 26"
   Longitude ouest: 71° 08' 37"

8. SYSTEME D'ANTENNE:
   a) Fonctionnement: directionnel AD-2

   b) Type: trois (3) éléments à section uniforme, haubanés et alimentés en série.

   c) Mise à la terre: 120 fils No.10 par élément, d'une longueur max. de 428 pi., espacés également, avec courroies d'interconnexion, le tout enfoui à environ 8" sous la surface.

9. MATS D'ANTENNE:

		No.1 (SE)	No.2 (C)	No.3 (NO)
Orientation (Az):		147°	0°	325°
Hauteur au-dessus de l'isolateur:		60.8°	80.8°	60.8°
Espacement:		68°	0°	65°
Phasage:	Jour:	0°	+203.0°	+21.0°
	Nuit:	0°	-146.5°	-290.0°
Rapport d'intensité de champ:	Jour:	0.510	1.000	0.510
	Nuit:	0.490	1.000	0.545

10. EFFICACITE PREVUE:
   a) Jour: 594.9 mV/m à 1 mille pour 10 KW
   188.1 mV/m à 1 mille pour 1 KW

   b) Nuit:*567.2 mV/m à 1 mille pour 10 KW
   179.4 mV/m à 1 mille pour 1 KW

CFLS
920 kHz

* L'efficacité du diagramme de rayonnement de nuit sera réduit à 545 mV/m jusqu'à ce que CKCY Sault Ste Marie change de 920 à 540 kHz.

CFLS
920 kHz

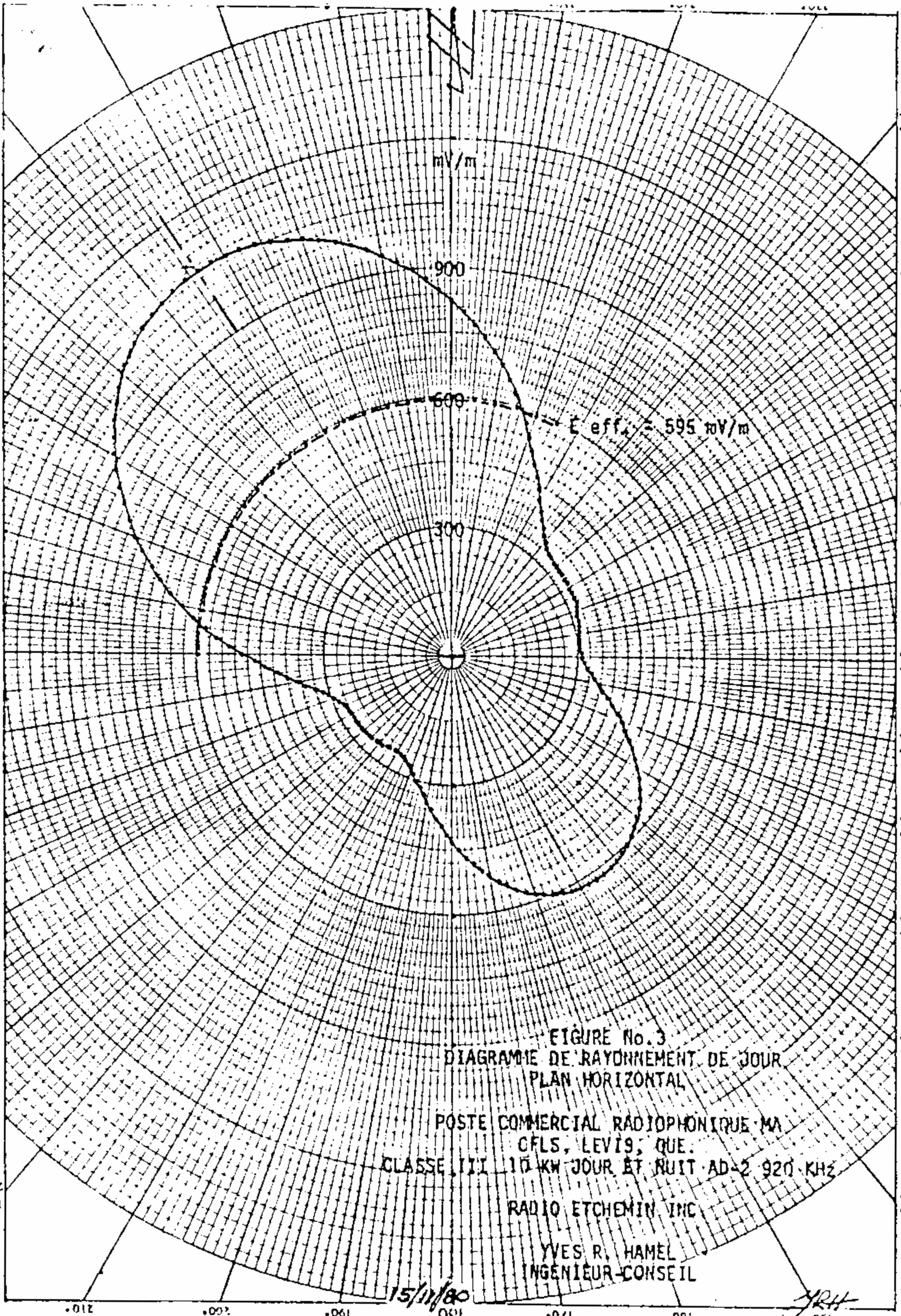


FIGURE No. 3
DIAGRAMME DE RAYONNEMENT DE JOUR
PLAN HORIZONTAL

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 10 KW JOUR ET NUIT AD-2 920 KHz

RADIO ETCHEMIN INC

YVES R. HAMEL
INGENIEUR-CONSEIL

CFLS
920
kHz

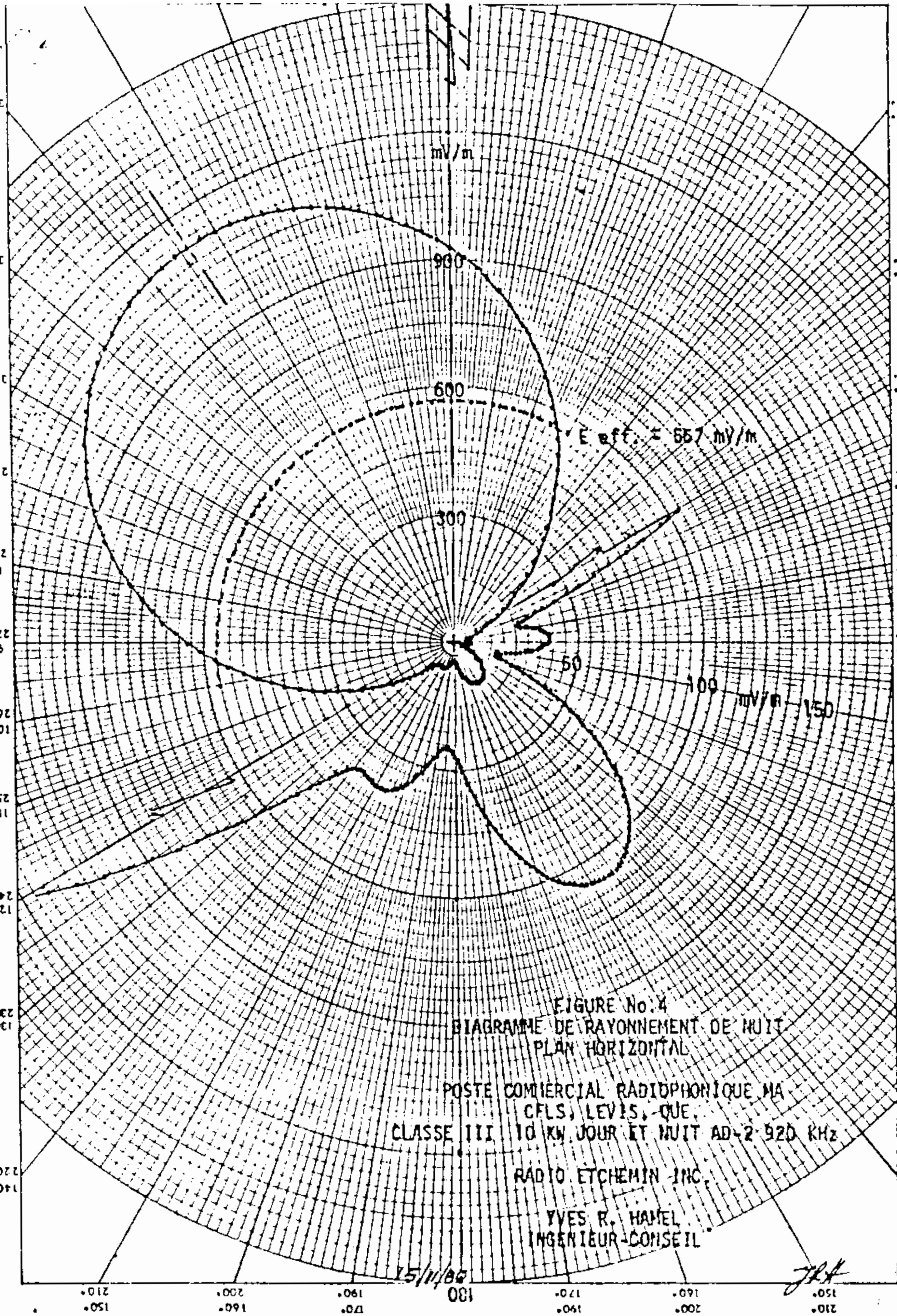


FIGURE No. 4
DIAGRAMME DE RAYONNEMENT DE NUIT
PLAN HORIZONTAL

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 10 KW JOUR ET NUIT AD-2 920 KHz

RADIO ETCHEMIN INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

CFLS
920 KHz

I - DESCRIPTION DU SYSTEME A ANTENNE DIRECTIONNELLE

1. INDICATIF D'APPEL: CFLS
2. EMPLACEMENT: Lévis, Qué.
3. FREQUENCE: 920 KHz
4. PUISSANCE: 10 KW jour et nuit
5. CLASSE: III (illimité)
6. NOTIFICATION NO: 407 DATE: 25 août 1981
7. COORDONNEES: Latitude nord: 46° 48' 26"
   Longitude ouest: 71° 08' 37"
8. SYSTEME D'ANTENNE:
   a) Fonctionnement: directionnel AD-2
   b) Type: trois (3) éléments à section uniforme, haubanés et alimentés en série.
   c) Mise à la terre: 120 fils No.10 par élément, d'une longueur max. de 428 pi., espacés également, avec courroies d'interconnexion, le tout enfoui à environ 8" sous la surface.
9. MATS D'ANTENNE:

		No.1 (SE)	No.2 (C)	No.3 (NO)
Orientation (Az):		147°	0°	325°
Hauteur au-dessus de l'isolateur:		60.8°	80.8°	60.8°
Espacement:		68°	0°	65°
Phasage:	Jour:	0°	+203.0°	+21.0°
	Nuit:	0°	-146.5°	-290.0°
Rapport d'intensité de champ:	Jour:	0.510	1.000	0.510
	Nuit:	0.490	1.000	0.545

10. EFFICACITE PREVUE:
    a) Jour: 594.9 mV/m à 1 mille pour 10 KW
       188.1 mV/m à 1 mille pour 1 KW
    b) Nuit:*567.2 mV/m à 1 mille pour 10 KW
       179.4 mV/m à 1 mille pour 1 KW

YVES R. HAMEL
INGENIEUR-CONSEIL

.../2

CHLS
920kHz

* L'efficacité du diagramme de rayonnement de nuit sera réduit à 545 mV/m jusqu'à ce que CKCY Sault Ste Marie change de 920 à 540 kHz.

920KHz
DA-N

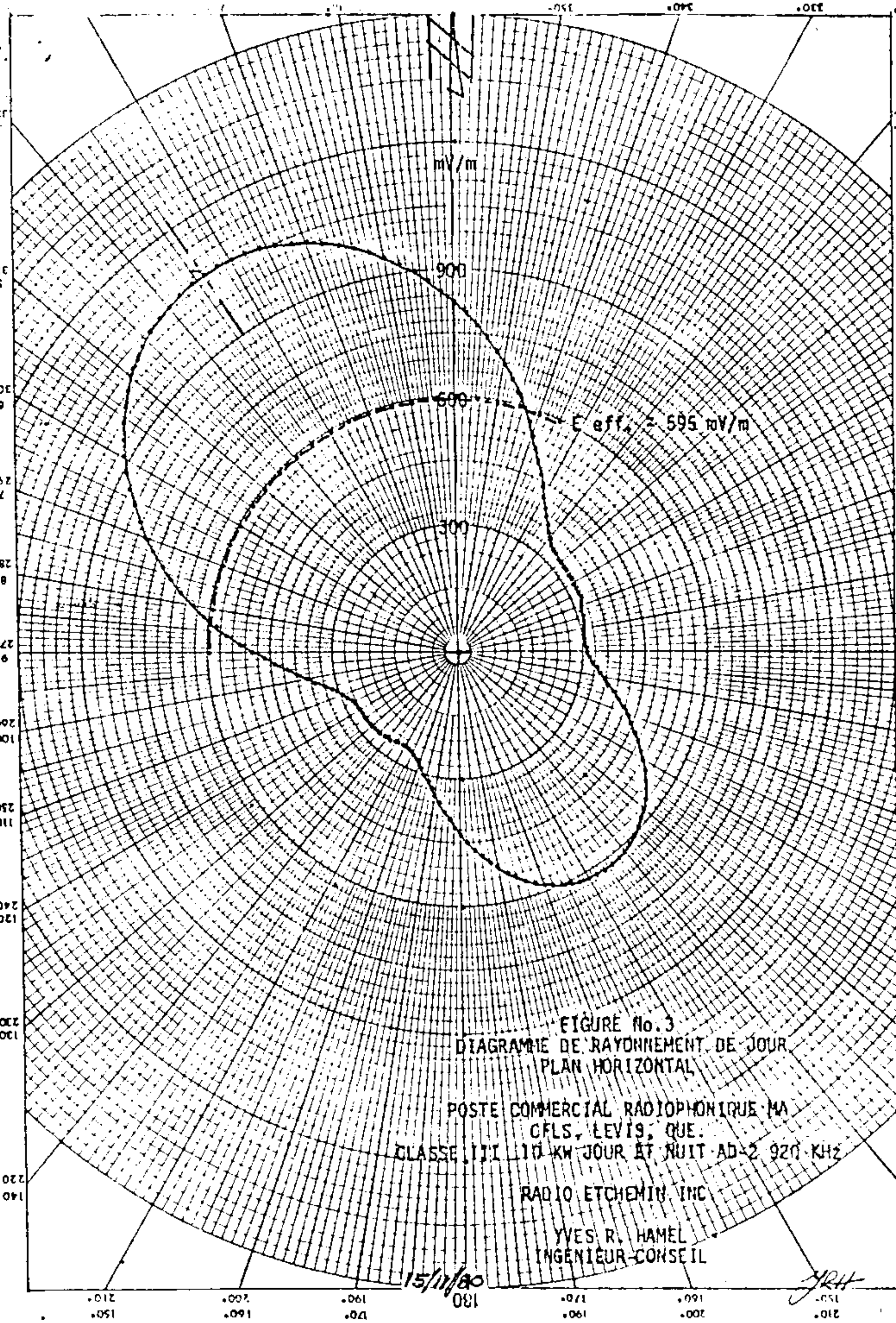


FIGURE No.3
DIAGRAMME DE RAYONNEMENT DE JOUR
PLAN HORIZONTAL

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 10 KW JOUR ET NUIT AD-2 920 KHz

RADIO ETCHEMIN INC

YVES R. HAMEL
INGENIEUR-CONSEIL

CFLS
920 KHz
DA-N

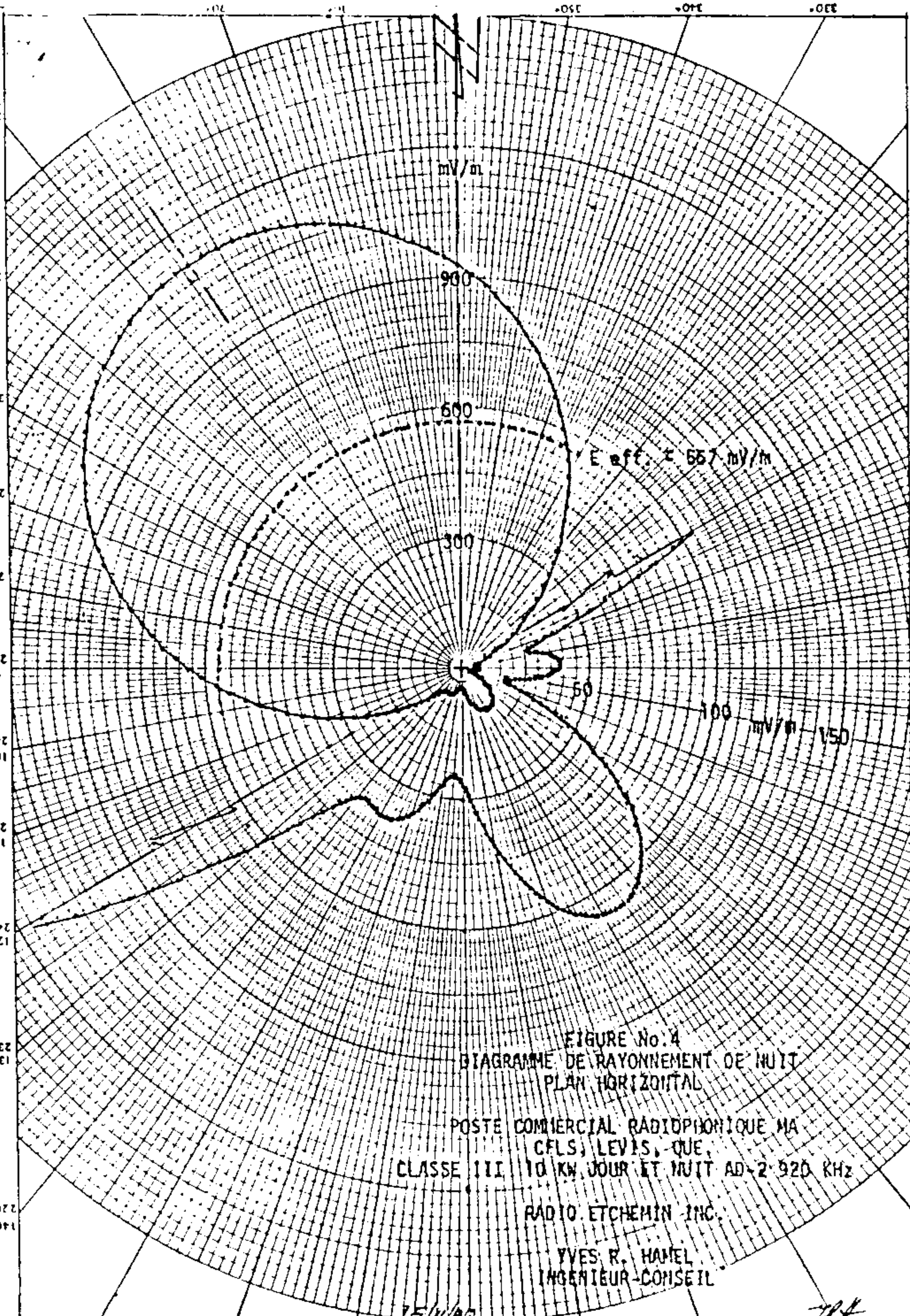


FIGURE No. 4
DIAGRAMME DE RAYONNEMENT DE NUIT
PLAN HORIZONTAL

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 10 KW JOUR ET NUIT AD-2 920 KHz

RADIO ETCHEMIN INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

15/11/80

SPECIFY TRACING OR DRAWING PAPER

MADE IN CANADA

CFLS

I - DESCRIPTION DU SYSTEME A ANTENNE DIRECTIONNELLE

1. LETTRES D'APPEL: CFLS.

2. EMPLACEMENT: Lévis, Qué.

3. FREQUENCE: 920 KHz.

4. PUISSANCE: 1 KW jour et nuit.

5. CLASSE: III (U).

6. NOTIFICATION NO: 358 DATE: August 20, 1976

7. COORDONNEES: Latitude nord: 46° 47' 44"
   Longitude ouest: 71° 08' 39"

8. SYSTEME D'ANTENNE: a) Fonctionnement: directionnel AD-N.

   b) Type: deux (2) éléments à section triangulaire, haubanés et alimentés en série.

   c) Mise à la terre: 120 fils #10 par élément, espacés également, d'une longueur max. de 428' (0.4λ) avec courroies d'interconnexion, le tout enfoui à environ 3 pouces sous la surface.

9. MATS D'ANTENNE:

		#1 (SE)	#2 (NO)
Orientation (Az):		Réf.	325°
Hauteur au-dessus de l'isolateur:		80.8° (240')	60.6° (180')
Espacement:		Réf.	65° (193.1')
Phasage:	Jour:	0°	-
	Nuit:	0°	-130°
Rapport d'intensité de champ:	Jour:	1.000	-
	Nuit:	1.000	0.850

10. EFFICACITE PREVUE: a) Jour: 188.0 mV/m à 1 mille pour 1 KW.

    b) Nuit: 187.0 mV/m à 1 mille pour 1 KW.

YVES R. HAMEL
INGENIEUR-CONSEIL

CFLS

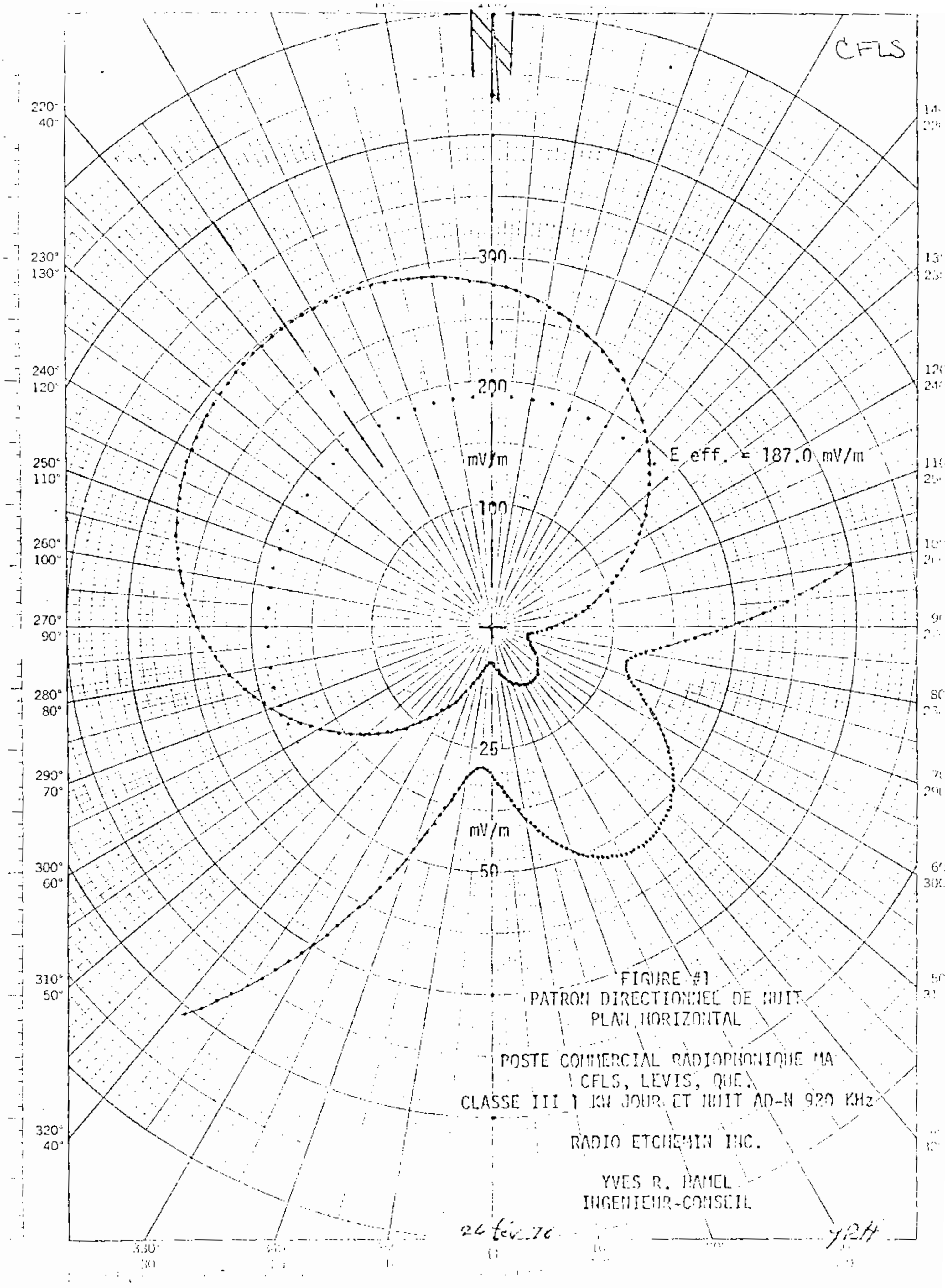


FIGURE #1
PATRON DIRECTIONNEL DE NUIT
PLAN HORIZONTAL

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO ETCHEMIN INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

24 fév. 76

CFLS

46 4412

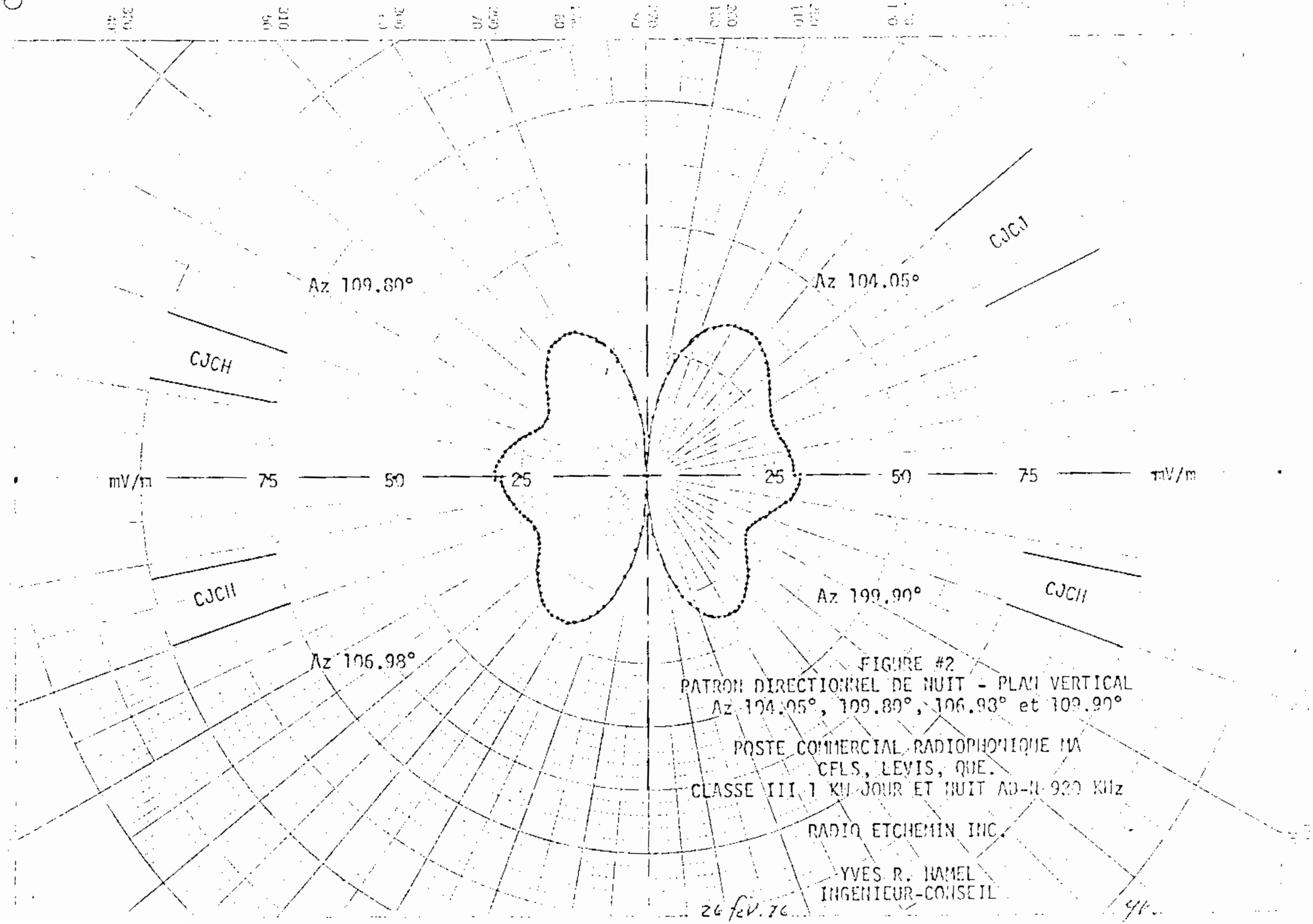


FIGURE #2
PATRON DIRECTIONNEL DE NUIT - PLAN VERTICAL
Az 104.05°, 109.80°, 106.93° et 109.90°

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO ETCHEMIN INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

26 fév. 76

CFLS

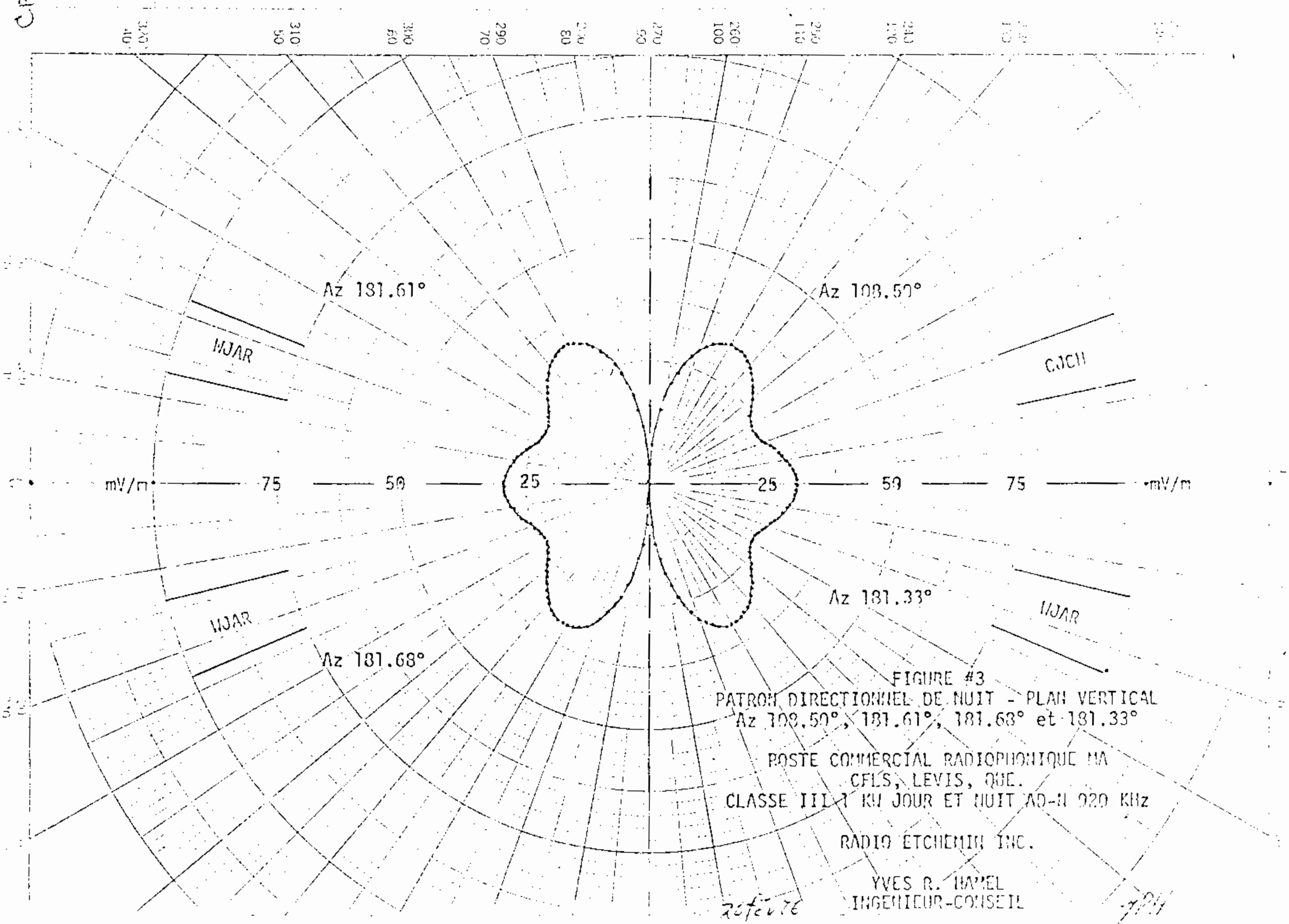


FIGURE #3
PATRON DIRECTIONNEL DE NUIT - PLAN VERTICAL
Az 108.50°, 181.61°, 181.68° et 181.33°

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO ETCHEMIN INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

CFLS

46 4412

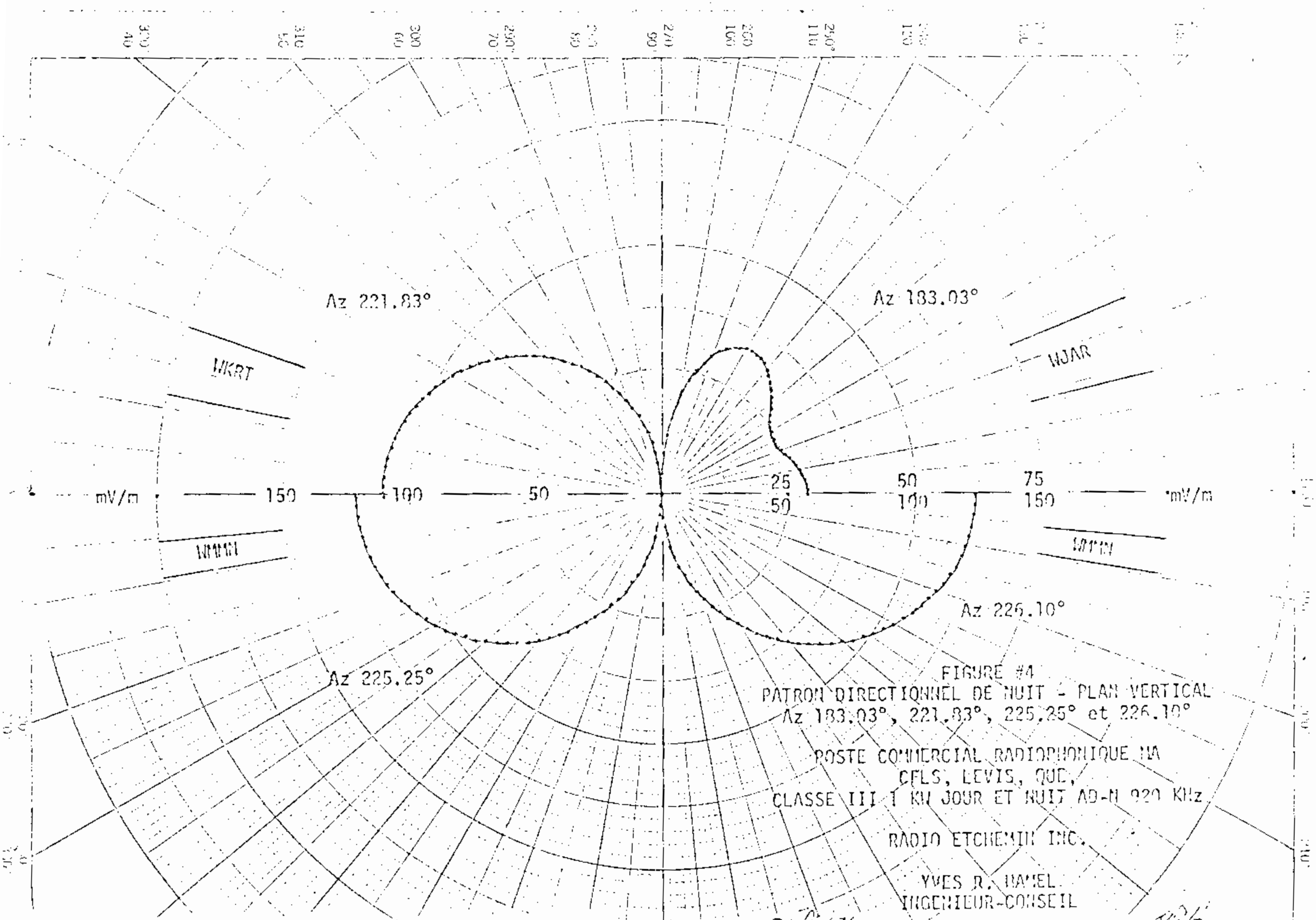


FIGURE #4
PATRON DIRECTIONNEL DE NUIT - PLAN VERTICAL
Az 183.03°, 221.83°, 225.25° et 226.10°

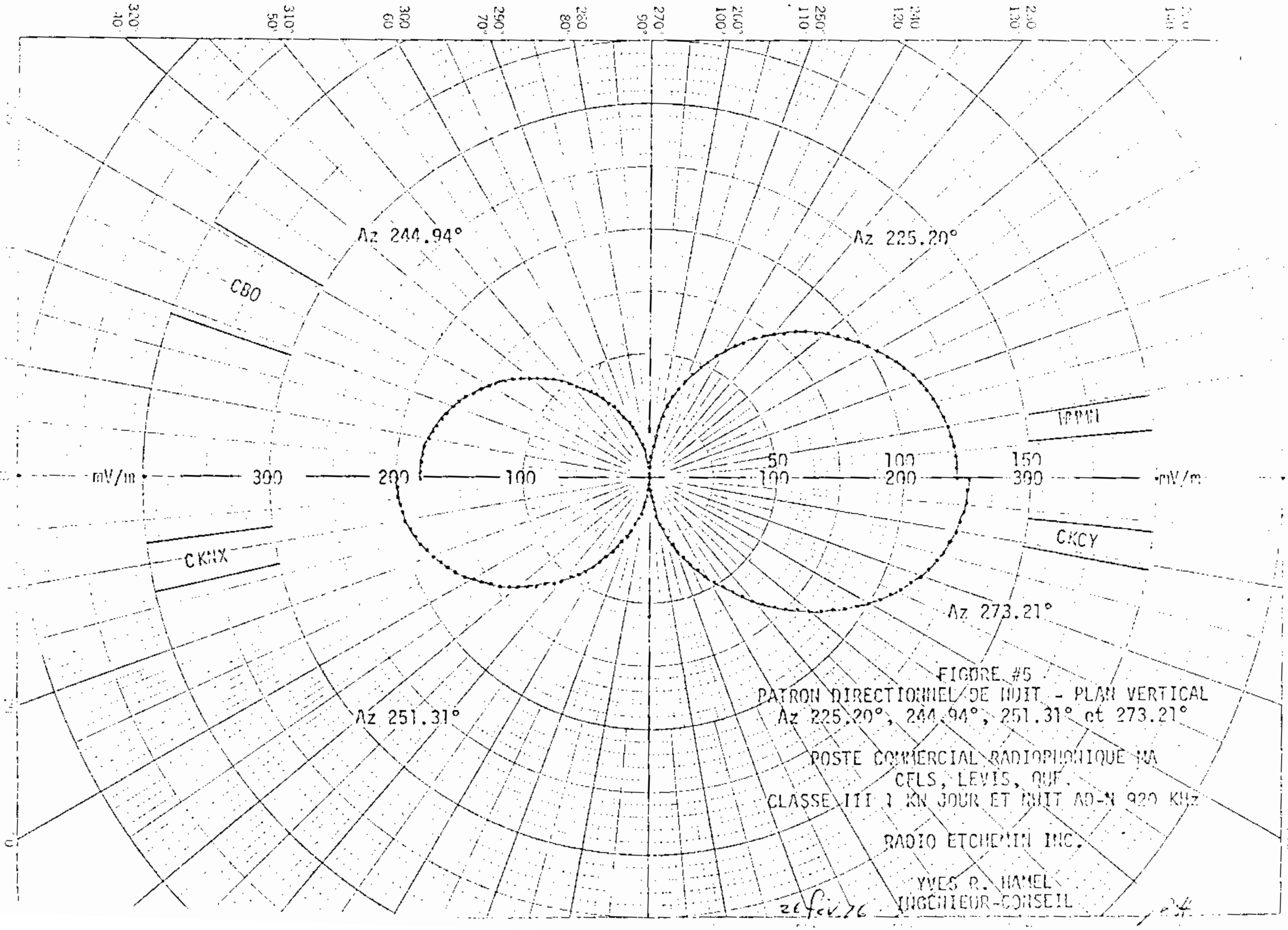
POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE,
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO ETCHEMIN INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

CFLS

K&E POLAR CO-ORDINATE KEUFFEL & ESSER CO. MADE IN U.S.A. 46 4412



CFLS

POLAR CO-ORDINATE

46 4412

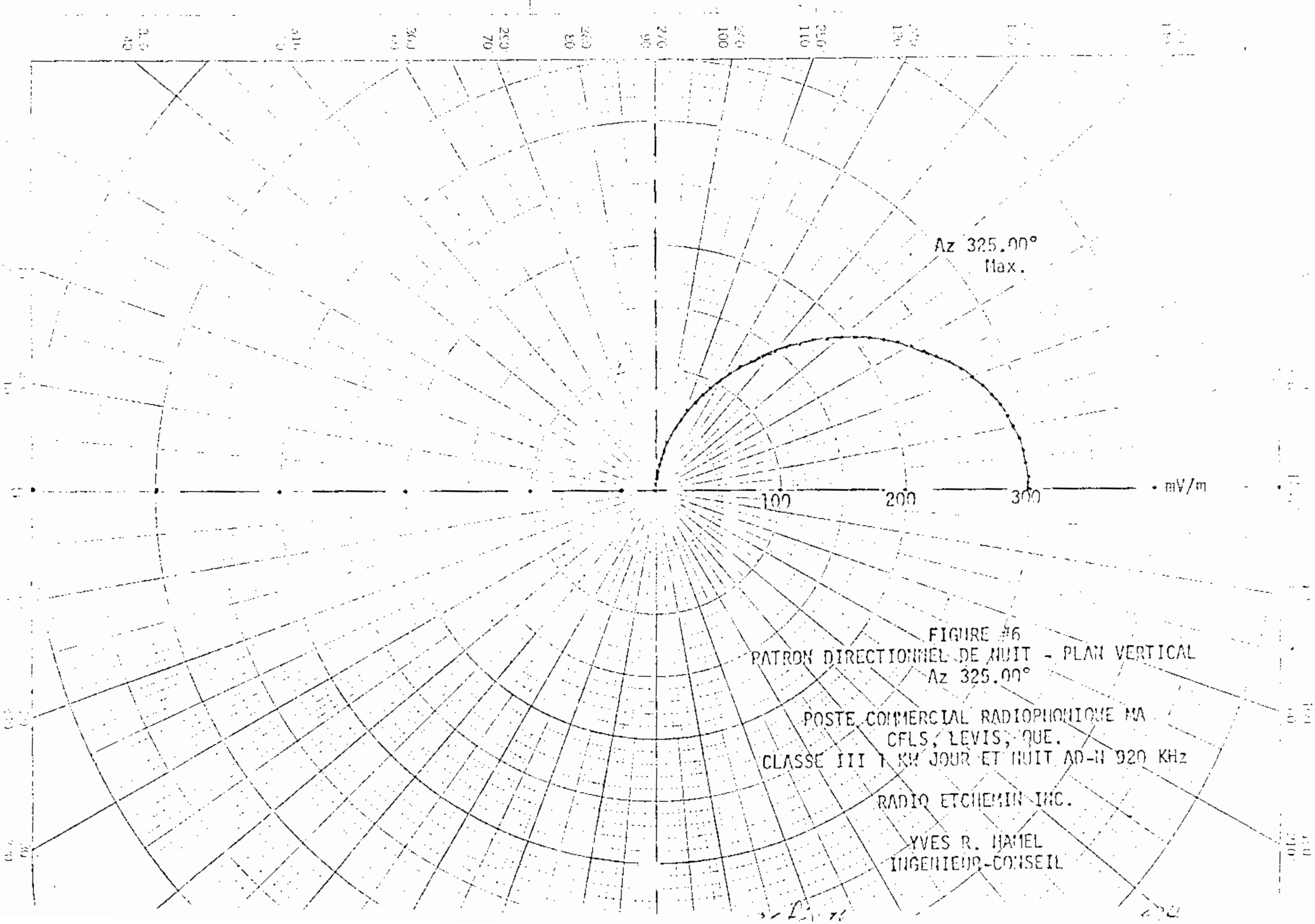


FIGURE #6
PATRON DIRECTIONNEL DE NUIT - PLAN VERTICAL
Az 325.00°

POSTE COMMERCIAL RADIOPHONIQUE MA
CFLS, LEVIS, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO ETCHEMIN INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

CFLS

SUPPLEMENTAL INFORMATION

ANTENNA DESCRIPTION SHEET

Station: CFLS Main Studio: Lévis, Québec

Frequency: 920KHz Power: 1 kw, Class III

Notification List No.: 364 Date: June 27, 1977

Geographical Location of the Center of the Antenna System:

North Latitude: 46° 48' 26"
West Longitude: 71° 03' 37"

Mode of Operation - DA-N

Note: Please retain the description sheet and directional antenna radiation patterns notified for station CFLS in Canadian Change List Number 358 dated August 20, 1976 and attach to this supplemental description sheet. This notification is for the purpose of indicating only a minor change in the location and geographical coordinates.

CFRY

TABLE 1

ANTENNA DESCRIPTION SHEET

STATION CALL:	CFRY
MAIN STUDIO:	PORTAGE LA PRAIRIE, MANITOBA
FREQUENCY:	920 kHz
POWER:	10 kW
CLASS:	III
MODE:	DA-2
TIME:	UNLIMITED
NOTIFICATION LIST NO.:	304 — DATE: [illegible]
GEOGRAPHICAL LOCATION:	Latitude: 49° 58' 10" North Longitude: 98° 22' 30" West
ARRAY CHARACTERISTICS:	Three guyed steel towers of uniform cross section; base insulated, series fed; no top loading.

TOWER NUMBER:	1 (South)	2 (Centre)	3 (North)
HEIGHT:	180'	180'	180' (60.7°)
NIGHT CURRENT RATIO:	1.00	1.62	1.00
NIGHT PHASE:	0°	270°	187°
DAY CURRENT RATIO:	1.00	1.07	0.25
DAY PHASE:	0°	279°	179°
SPACING:	ref.	120° 357'	240° 714'
ORIENTATION:	ref.	030°	026°

GROUND SYSTEM:	120 equally spaced copper radial wires per tower, buried 8" - 12" deep, of average length 430' (0.40λ)
PREDICTED EFFICIENCY:	570 mV/m day and night or 180 mV/m per 1 kW

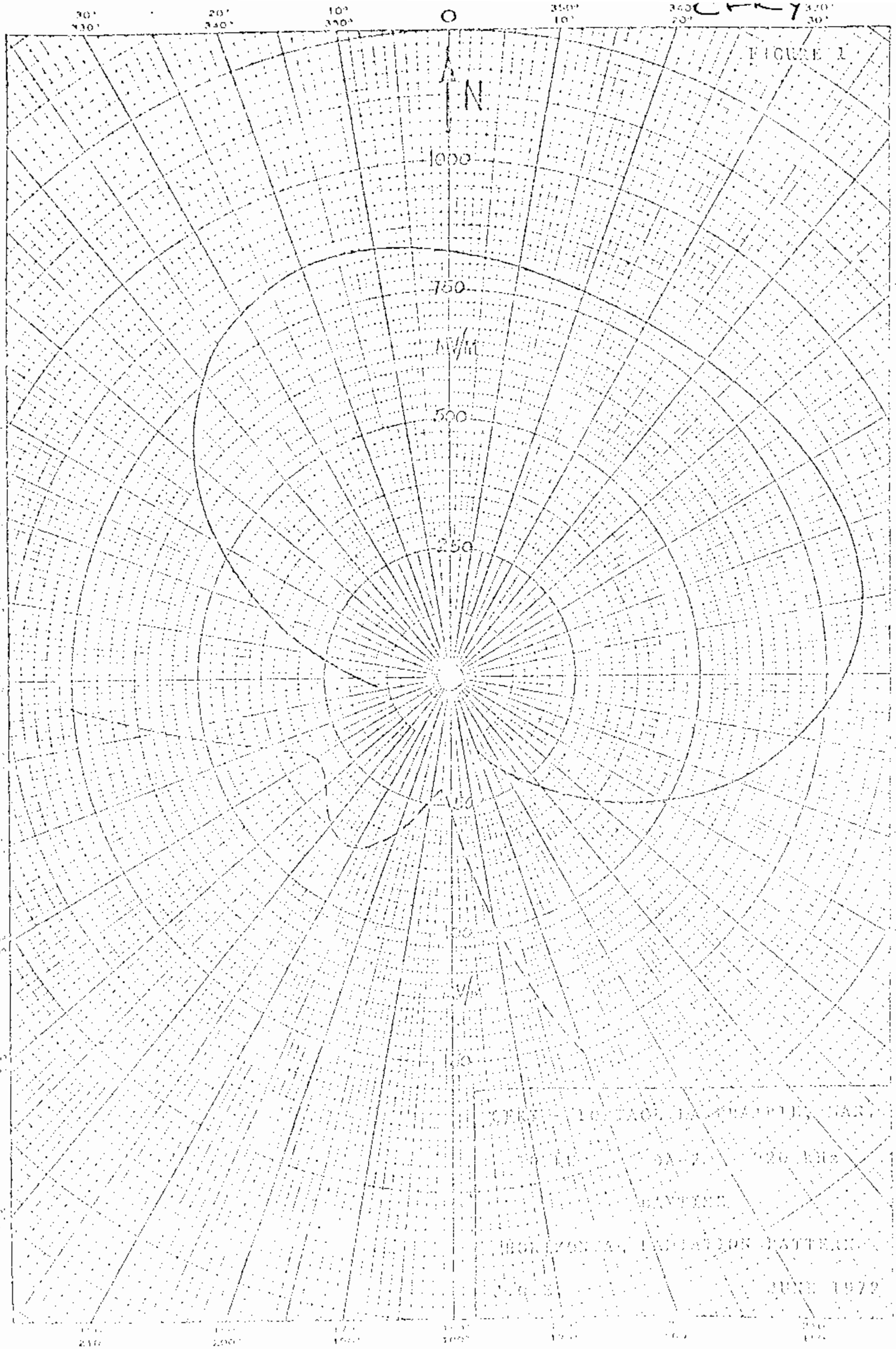


FIGURE 1
N
1000
750
mV/m
500
250
mV/m

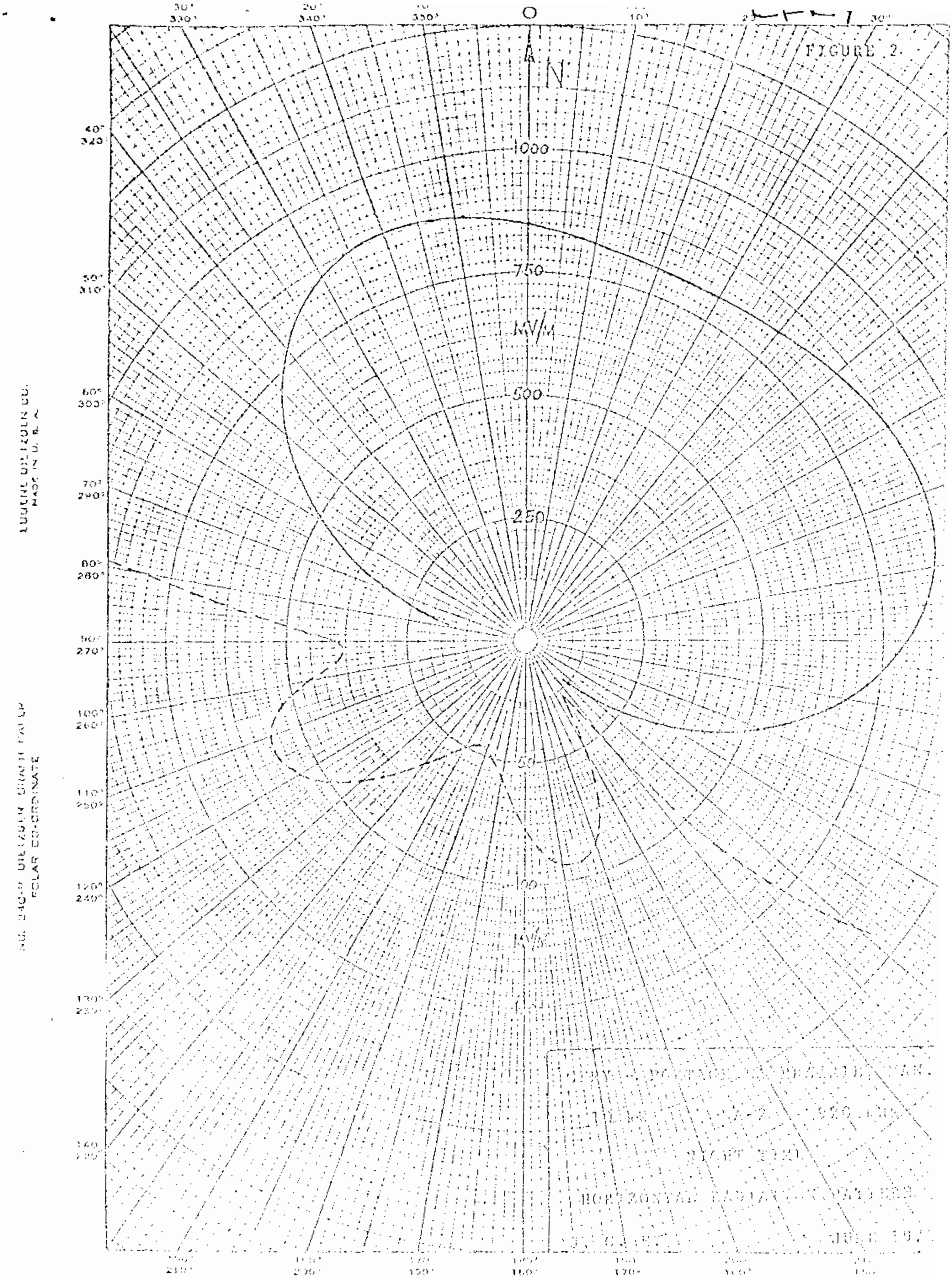


FIGURE 2.
O
N
1000
750
MV/M
500
250
HORIZONTAL

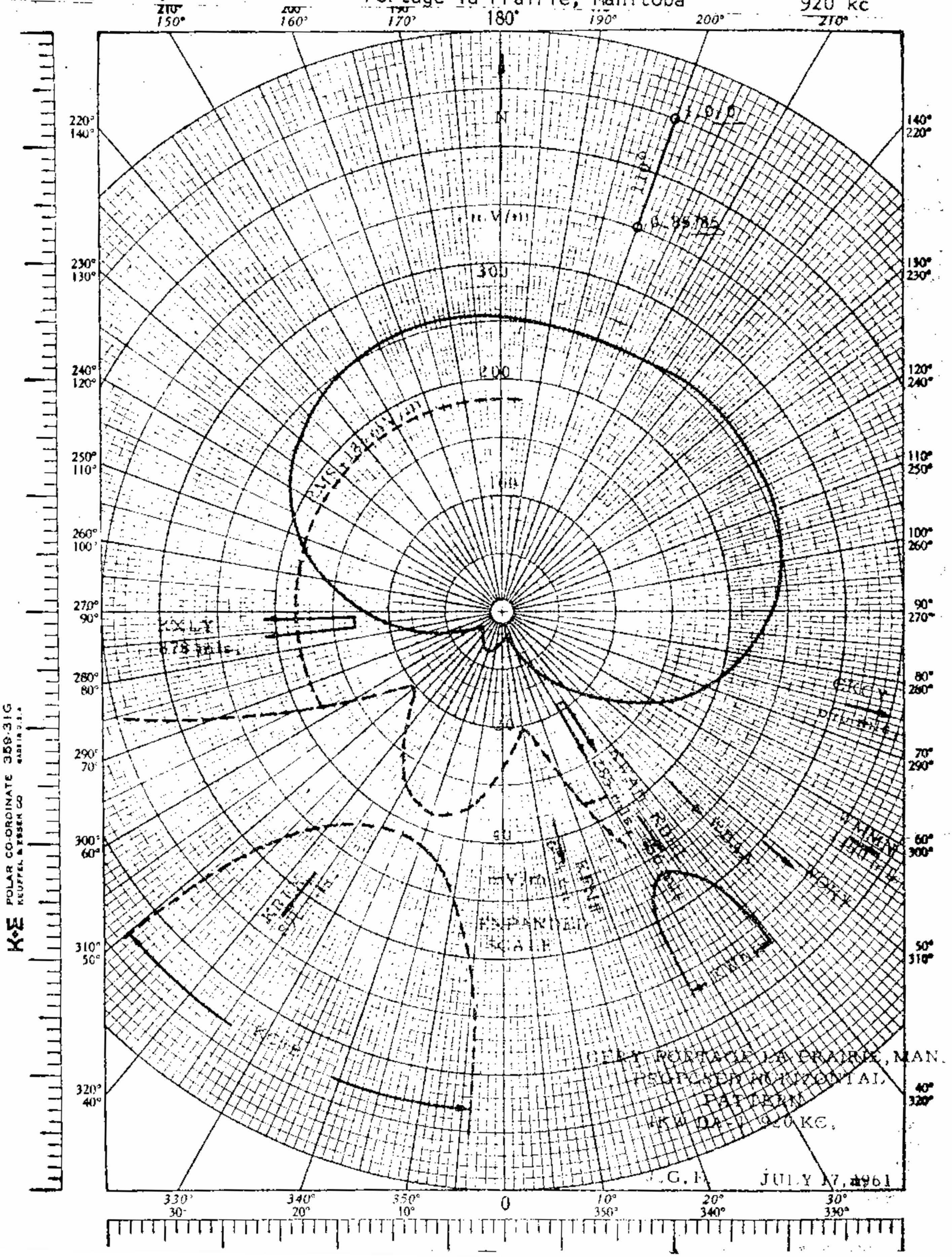
163

CFRY

PROPOSED DAY
(10-25-61ct)

Station CFRY
Portage la Prairie, Manitoba

1kw,DA-1,U,Class III
920 kc



CJCH

ANTENNA DESCRIPTION SHEET

DIRECTIONAL DA-N

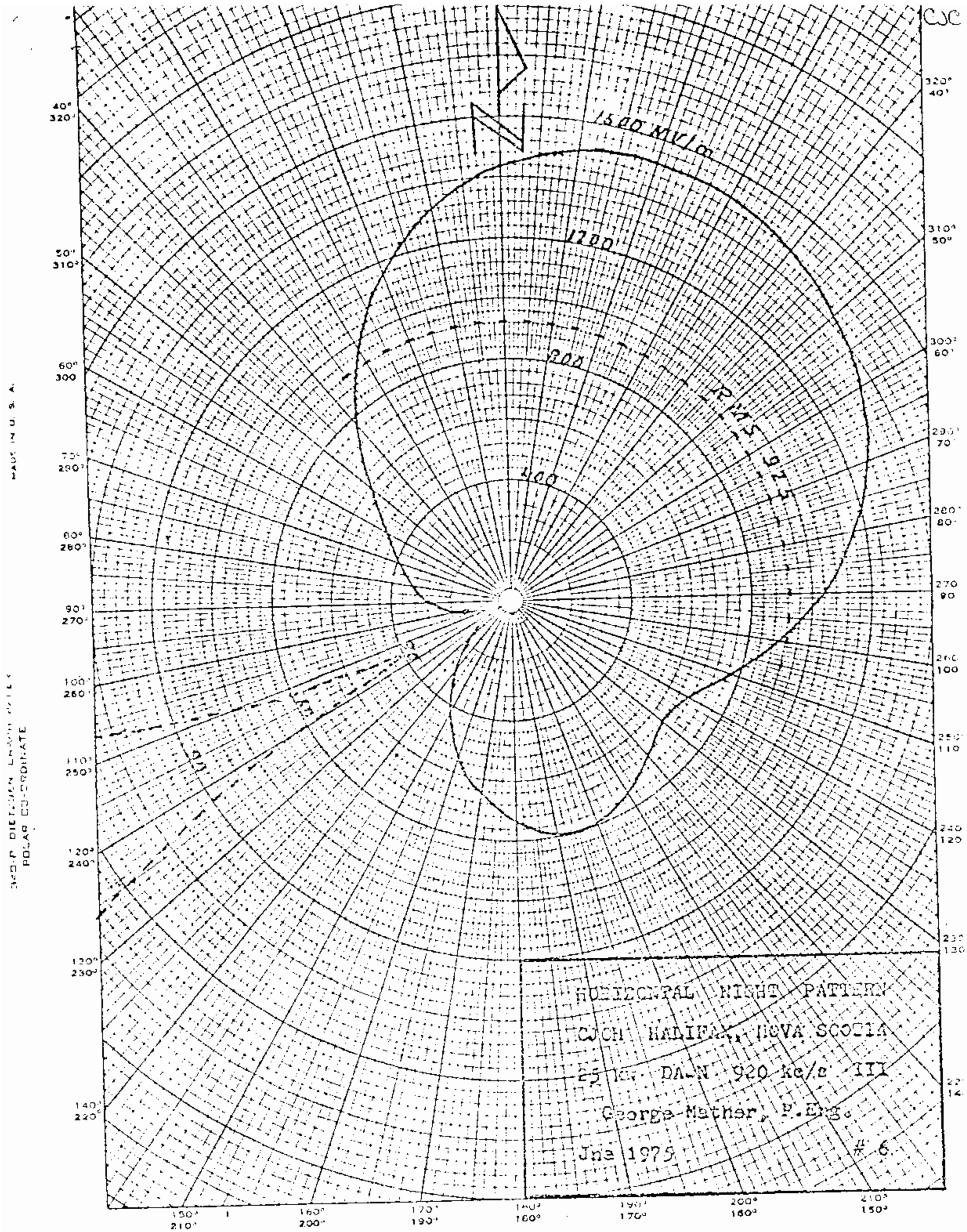
STATION CALL:	C J C H
LOCATION:	Halifax, Nova Scotia.
FREQUENCY:	920 kc/s
POWER:	25,000 watts
CLASS:	III
TIME:	Unlimited
NOTIFICATION REFERENCE:	List No. 353, April 1, 1976
GEOGRAPHICAL COORDINATES:	Lat 44°38'10", Lon 63°40'22"
ARRAY CHARACTERISTICS	Three elements, guyed, uniform cross section, base insulated, series feed, no top loading, height 250 feet or 84 degrees

ELEMENT	ONE	TWO	THREE
Spacing	ref	273.4' 92°	546.8' 184°
Bearing	ref	010°	044°
Night R	1.225	1.980	0.875
Night Ø	000°	-136°	+150°

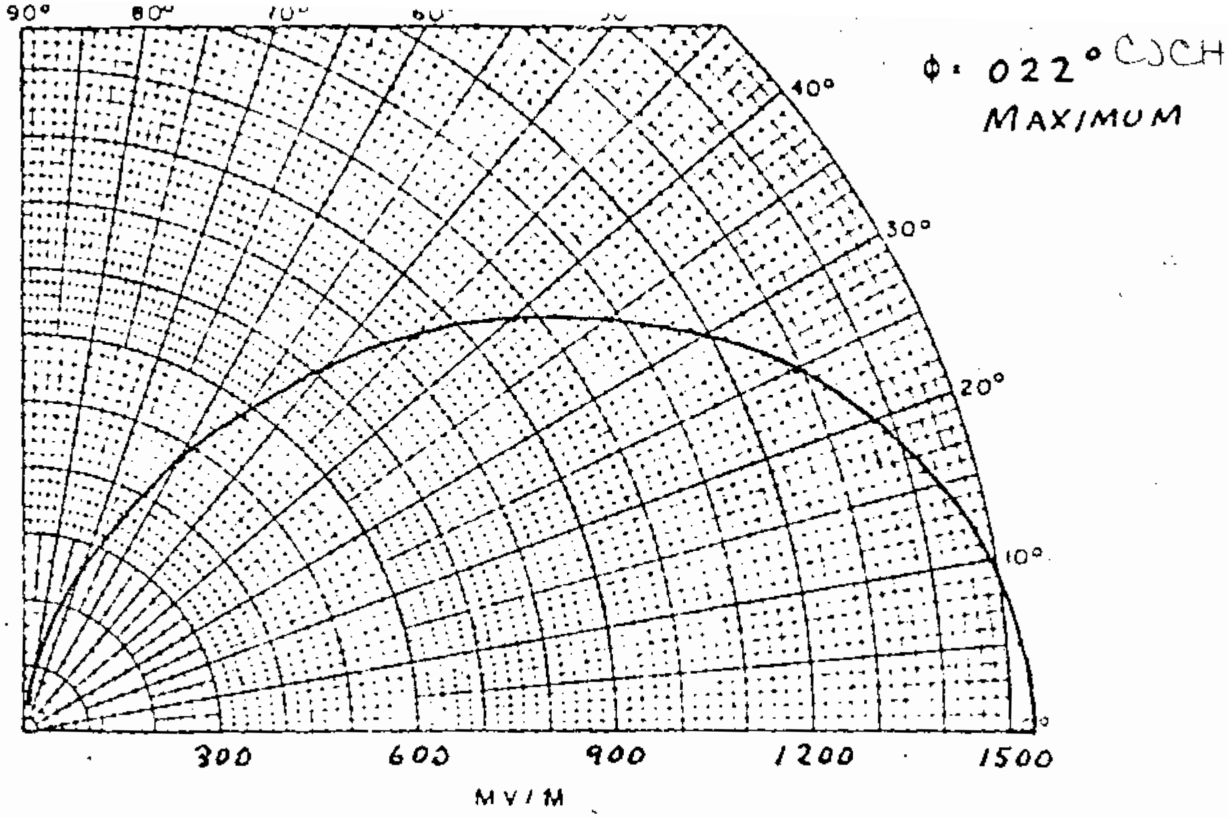
Ground System: 120 radials per tower, #10 AWG bare, soft copper wire, spaced uniformly, depth approximately 8 inches. Radials bonded along line between towers and bonded to soft copper strap at tower base. Maximum length 428 feet.

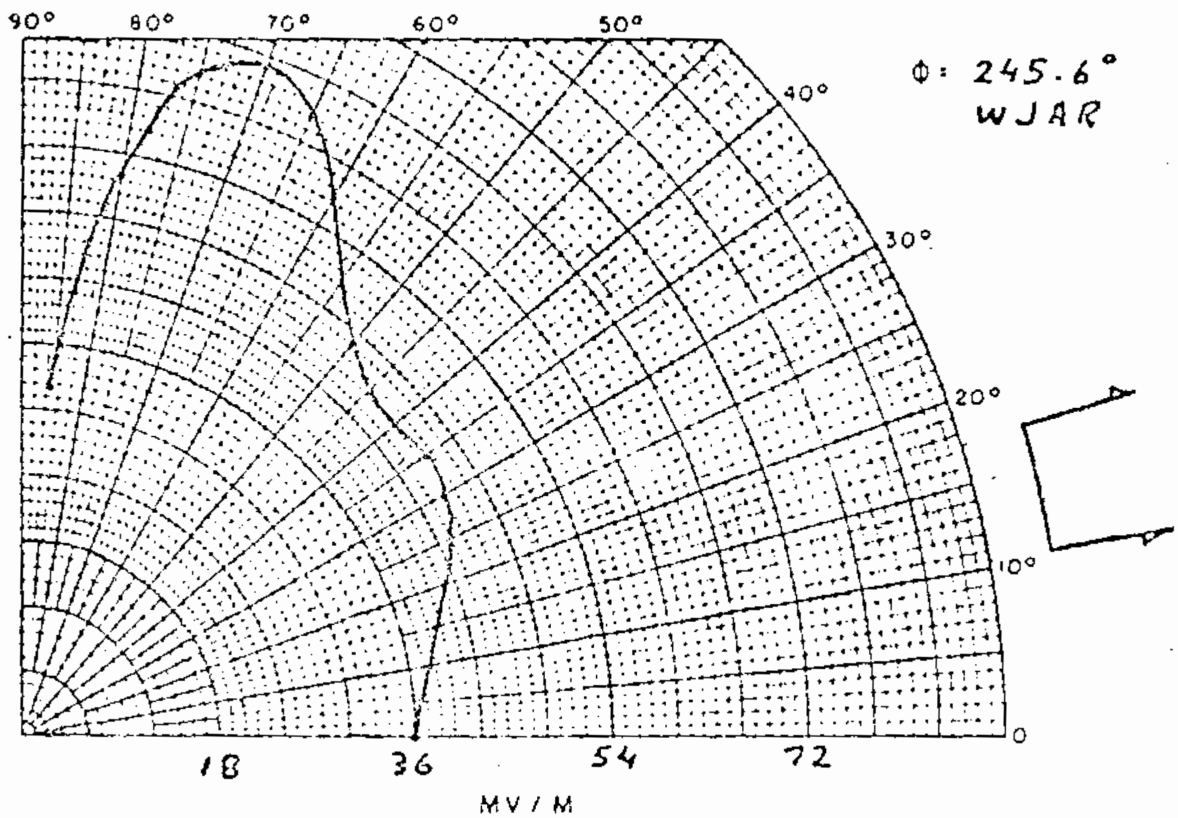
Predicted RMS: 925 mv/m at 1 mile for 25 kw
185 mv/m at 1 mile for 1 kw

Jne 1975



CJC
1700
300
100
RMS 925
HORIZONTAL NIGHT PATTERN
CJCH HALIFAX, NOVA SCOTIA
DA-N 920 kc/s III
George Mather, P.Eng.
1975
6
POLAR CO-ORDINATE
MADE IN U.S.A.





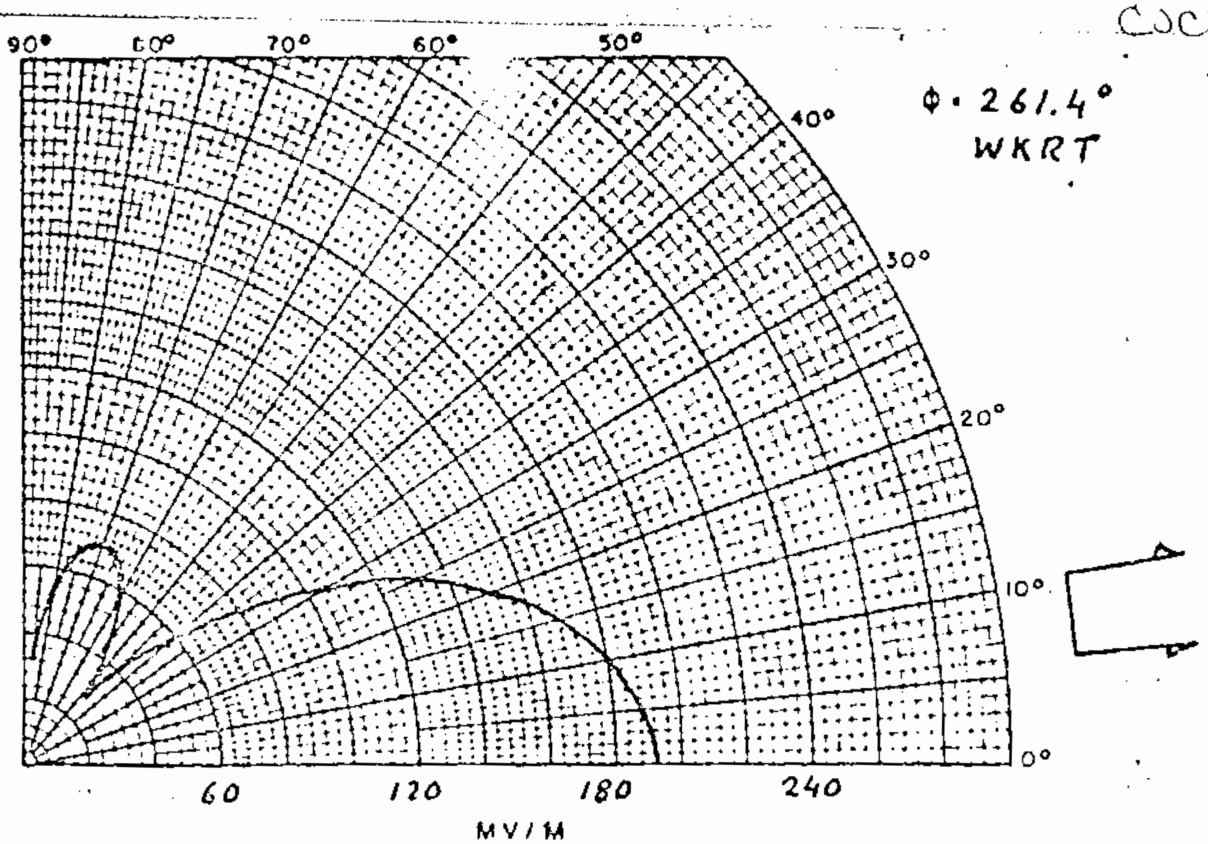
VERTICAL RADIATION PATTERNS

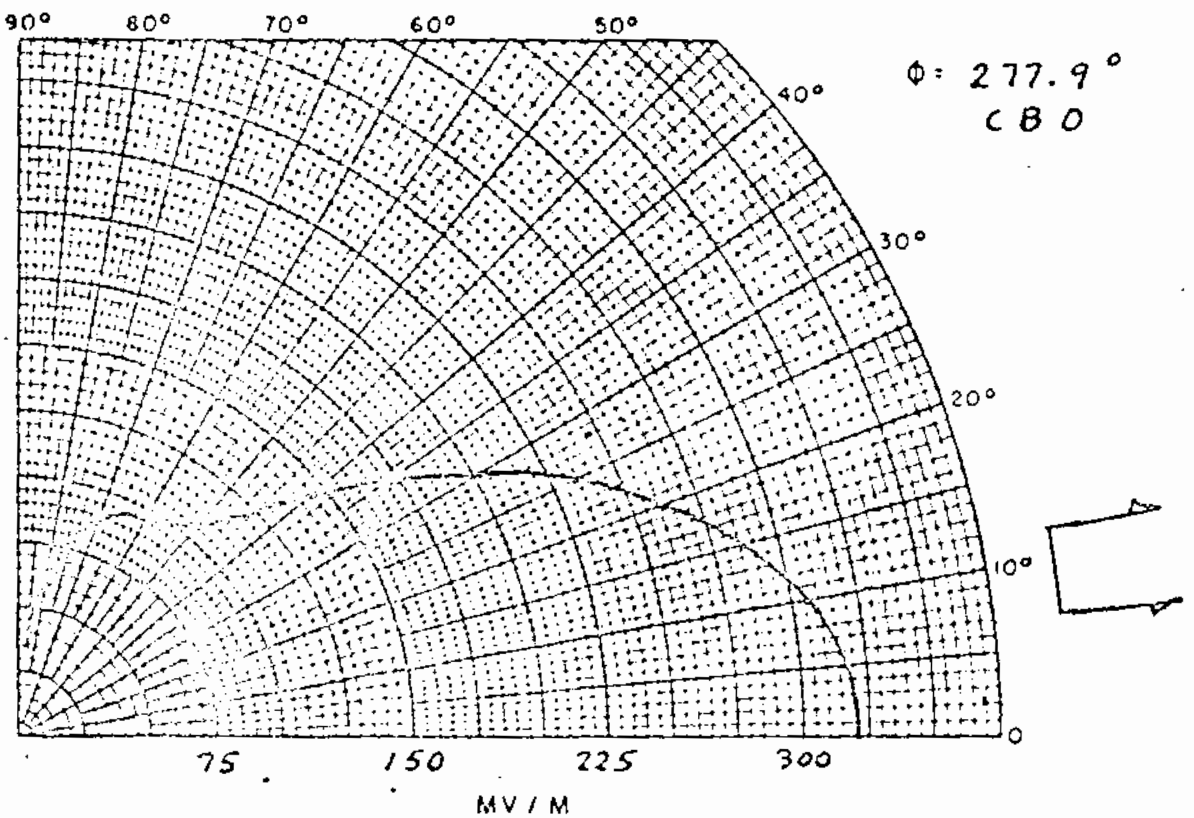
CJCH HALIFAX, NOVA SCOTIA
25 kw DA-N 920 kc/s III
George Mather, P.Eng.

Jne 1975

7-1

CJCH





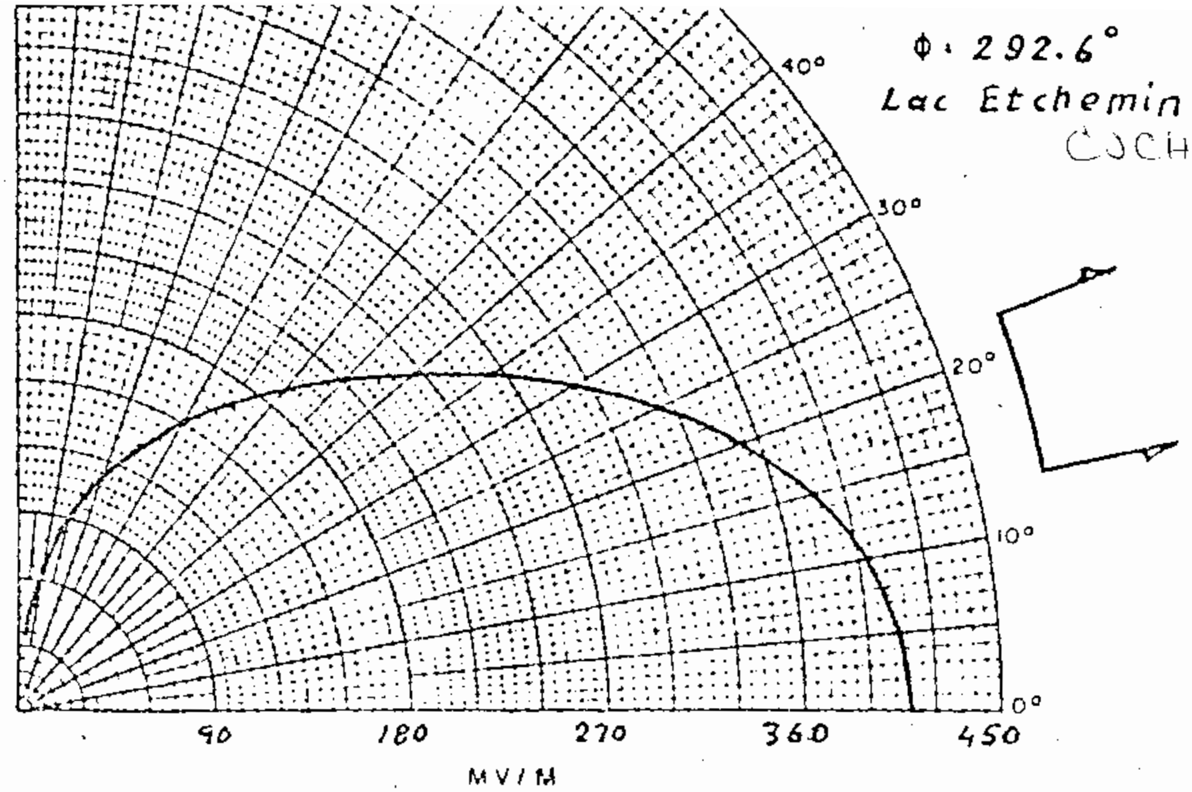
VERTICAL RADIATION PATTERNS

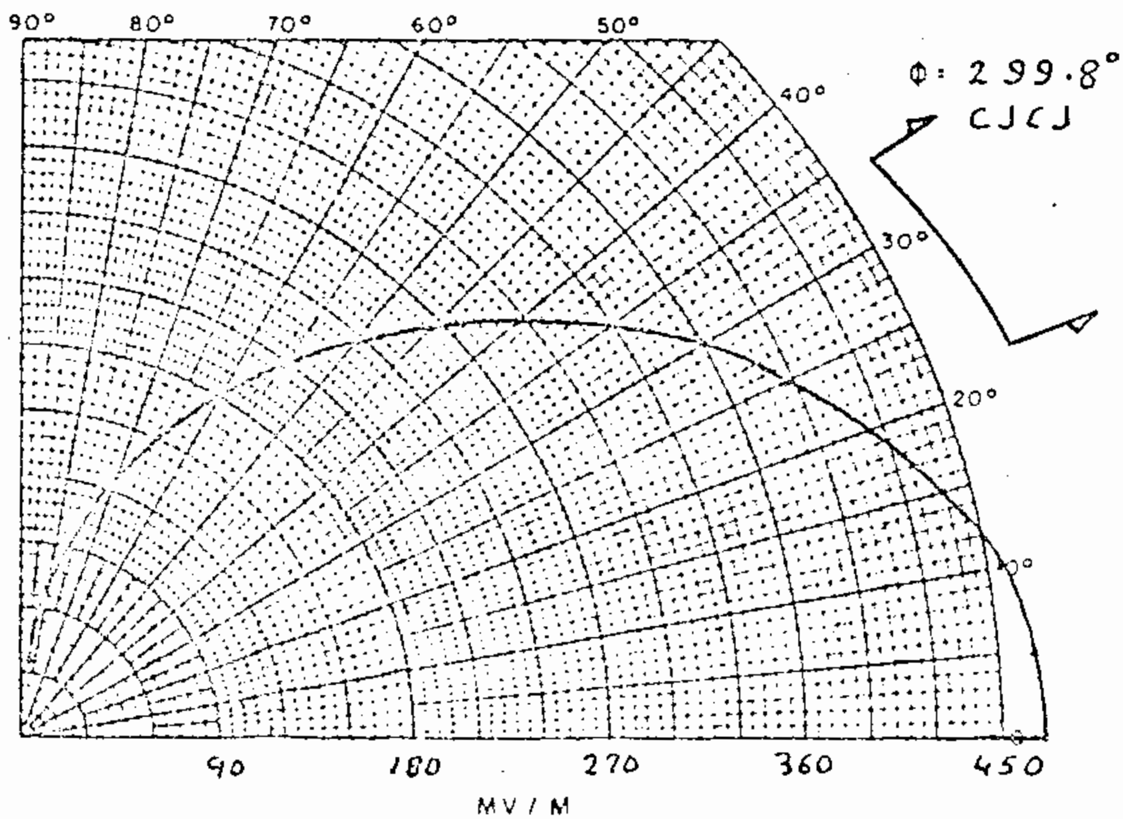
CJCH HALIFAX, NOVA SCOTIA
25 kw DA-N 920 kc/s III
George Mather, P.Eng.

Jne 1975

7-2

POLAR CO-ORDINATE





VERTICAL RADIATION PATTERNS

CJCH HALIFAX, NOVA SCOTIA
25 kw DA-N 920 kc/s III
George Mather, P.Eng.

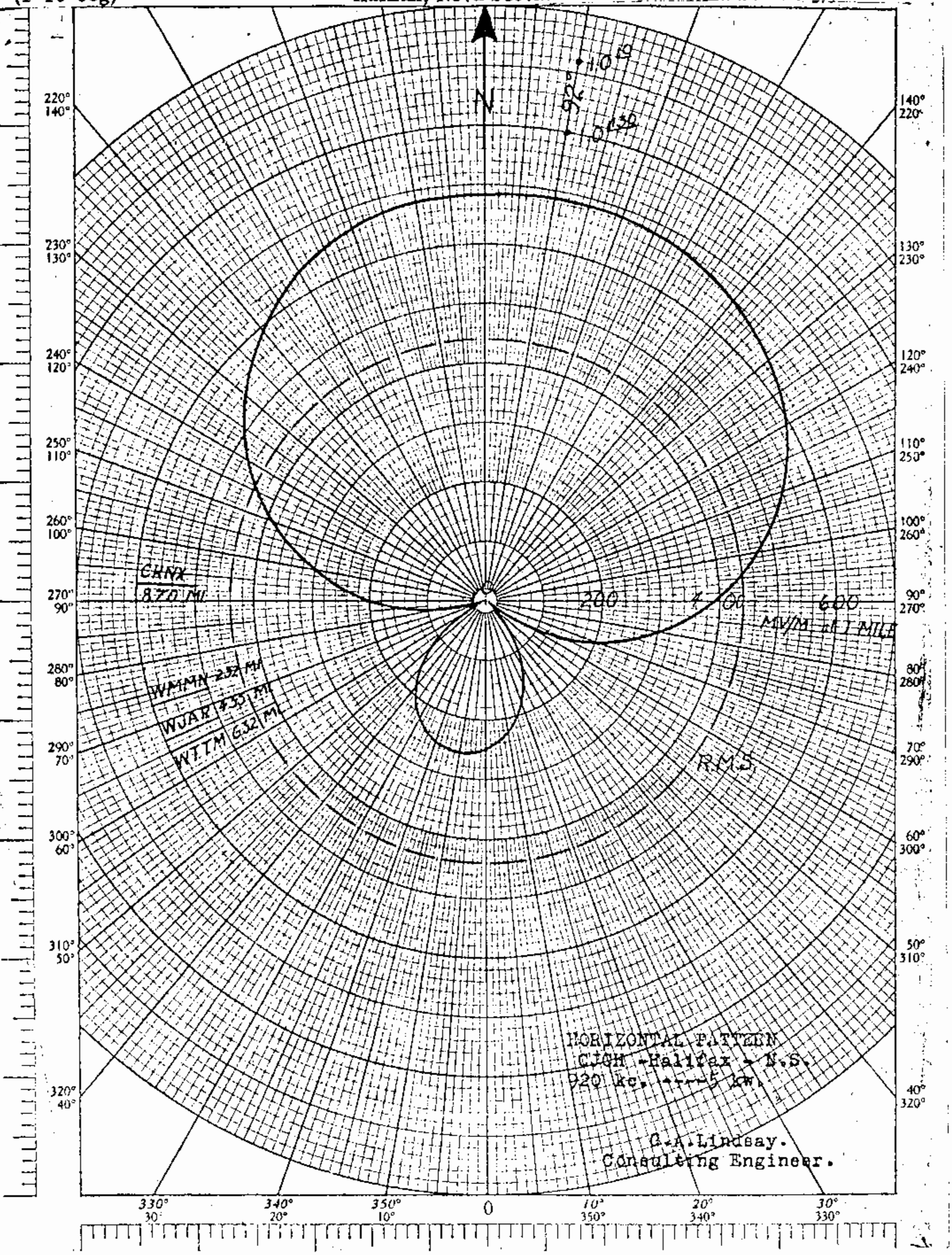
June 1975

7-3

WITH #122

CJCH

PROPOSED NIGHT | **Station CJCH** | **5 kw, DA-N, Class II**
(1-10-58g) | Halifax, Nova Scotia | 920 KC



\#130

CJCJ

Description Sheet
(11-30-61ct)

Station CJCJ
Woodstock, N.B.

1kw,DA-1,U,Class III
920 kc

AMENDED

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CJCJ

Main Studio: Woodstock, N.B.

Frequency: 920 kcs.

Power: 1 kw   Class: III

Notification List No. 130

Date: February 12, 1959

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM:

North Latitude: 46° 07' 30"

West Longitude: 67° 35' 10"

ANTENNA CHARACTERISTICS

Mode of operation: Directional day and night (DA-1)
Number of elements: Two
Type of elements: Guyed, base insulated, series fed.

TOWER:	#1 Northwest		#2 Southeast
HEIGHT ABOVE INSULATORS:	178' (60°)		178' (60°)
OVERALL HEIGHT:	182'		182'
SPACING:		268' (90°)	
FIELD RATIO:	1.0		1.0
PHASING:	0		131°

ORIENTATION OF TOWERS: On Line bearing 350° true.

GROUND SYSTEM: 120 radials spaced 3° about each tower. Length of radials 428' except where they are joined by common chord.

Predicted Effective Field: 186 mv/m

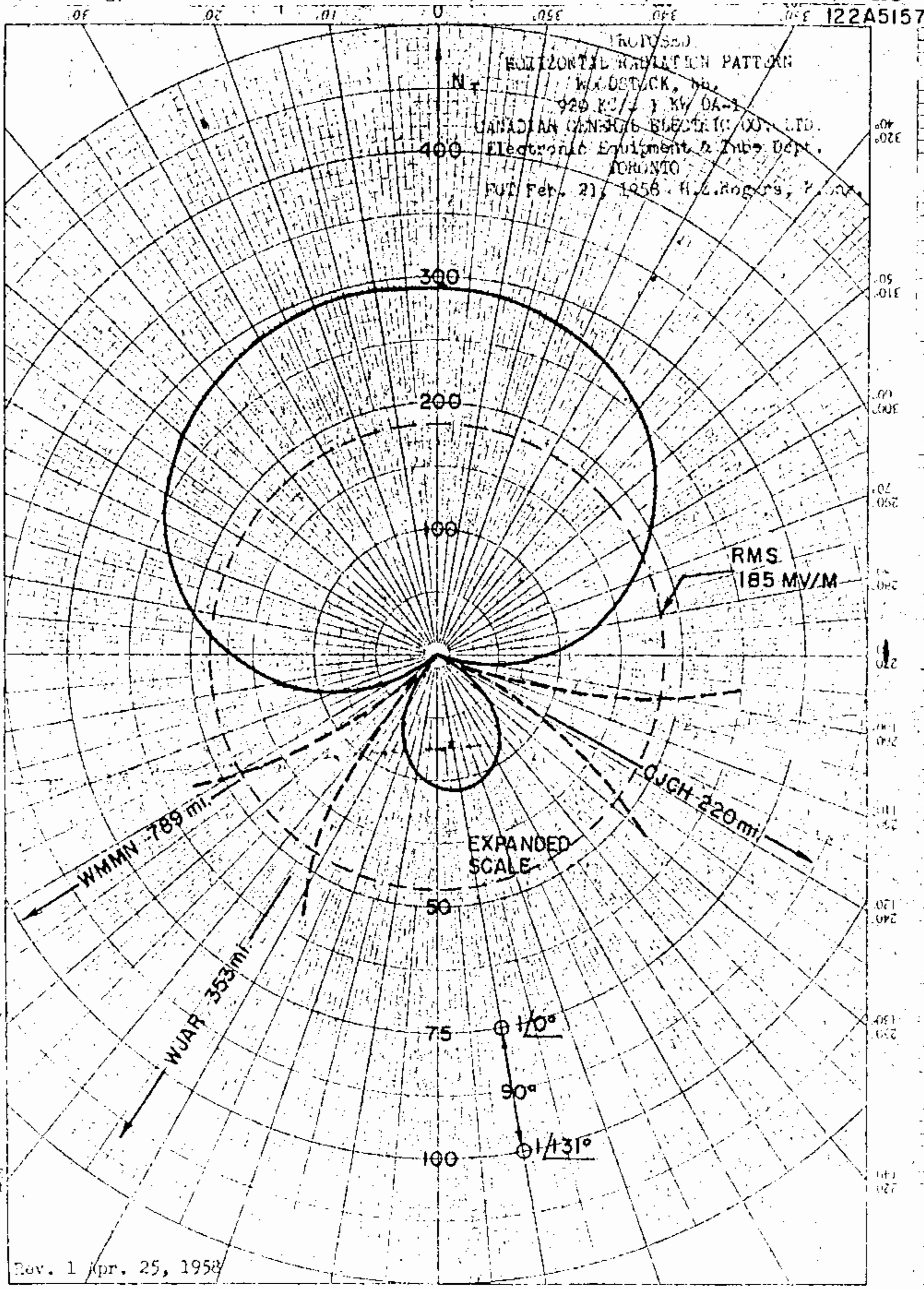
NOTE: Please retain antenna radiation patterns notified for station CJCJ in Canadian Change List No. 130 and attach to this amended description sheet. This only concerns an amended description of the ground system.

October 25, 1961

Woodstock, New Brun., Can.   CJCJ

PROPOSED DAY & NIGHT   New Station   1kw, DA-1,U, Class III
(3-23-59g)   Woodstock, New Brunswick, Canada   920 KC

122A5157



CKCQ

DESCRIPTION SHEET - DIRECTIONAL ANTENNA

Station: CKCQ   Main Studio: Quesnel, B.C.

Power: 10 kW Day, 1 kW Night   Frequency: 920 kHz

Class: III   Notification List No.: 339

Date: March 19, 1975

Location: 52° 56' 40" N. Latitude, 122° 30' 00" W. Longitude

Antenna:

Mode of Operation: DA-N

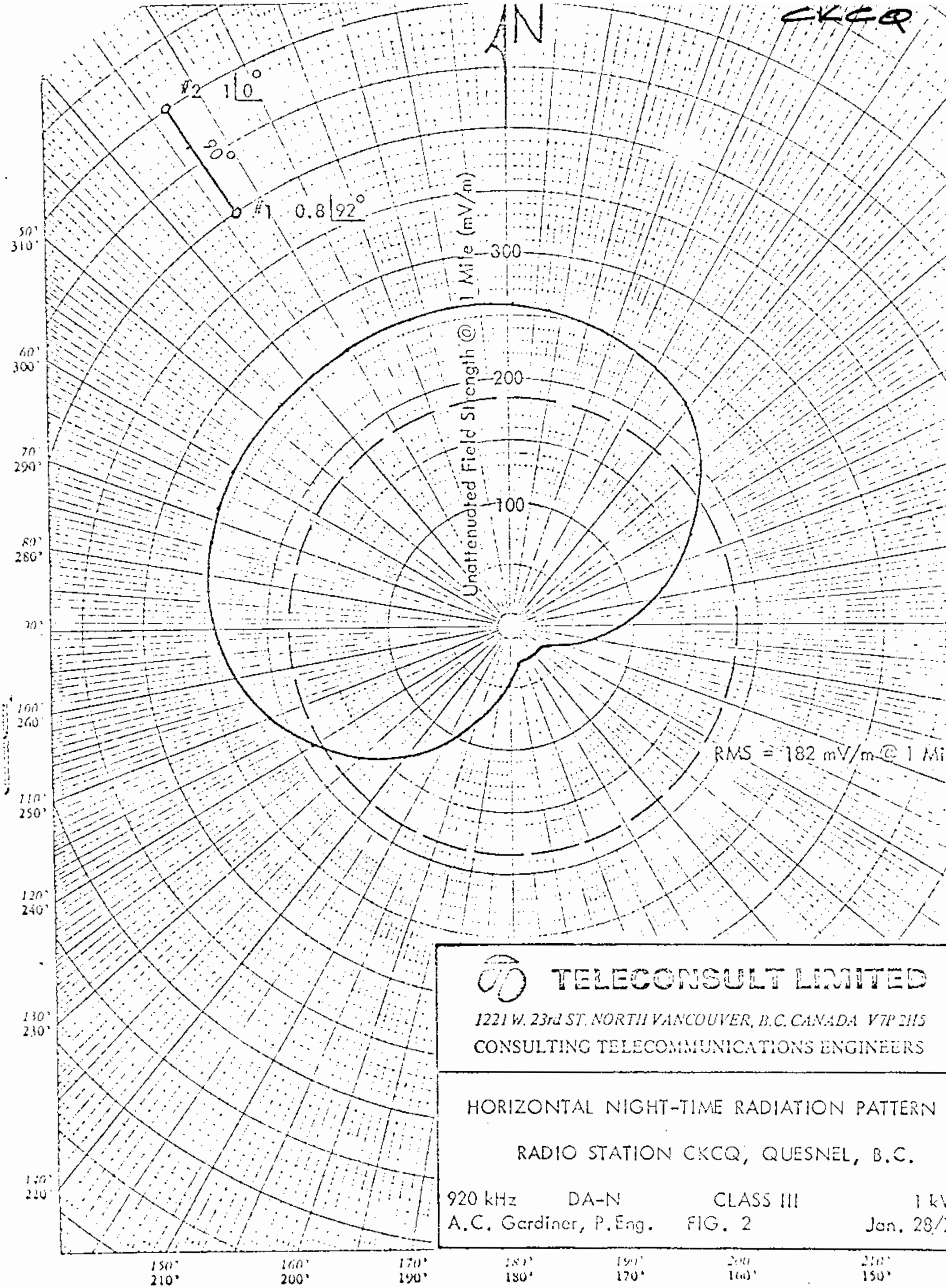
Elements: Two, guyed steel towers, uniform cross section, base insulated for series feed.

Tower:	#1	#2
Height above insulators:	200' (67.3°)	200' (67.3°)
Spacing:	267' (90°)	
Phasing: Night-	+92°	0°
Field Ratio: Night-	0.8	1.0

Ground System: 120 equally spaced radials of No. 10 B & S gauge bare copper wire extended from the base of each tower for a maximum distance of 460' (0.43 wavelength) and a minimum distance of 340' (0.32 wavelength). Area covered by ground system approximately 2.5% greater than that of a standard 0.4 wavelength system. Radials buried approximately 8".

Predicted Effective Field: 182 mV/m @ 1 Mile for 1 kW;
576 mV/m @ 1 Mile for 10 kW

Orientation: Line of towers bearing 326.5° True North.



TELECONSULT LIMITED

1221 W. 23rd ST. NORTH VANCOUVER, B.C. CANADA V7P 2H5

CONSULTING TELECOMMUNICATIONS ENGINEERS

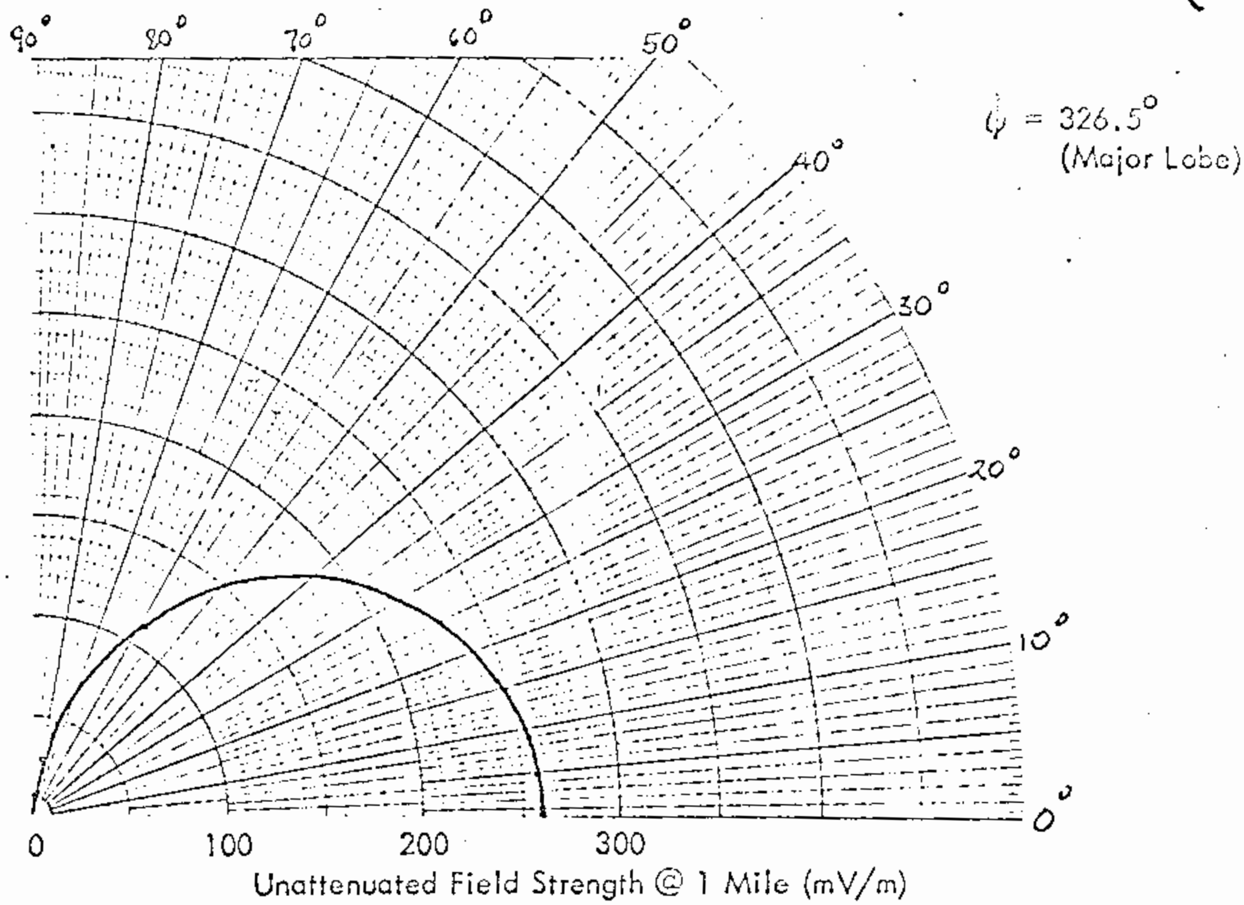
HORIZONTAL NIGHT-TIME RADIATION PATTERN

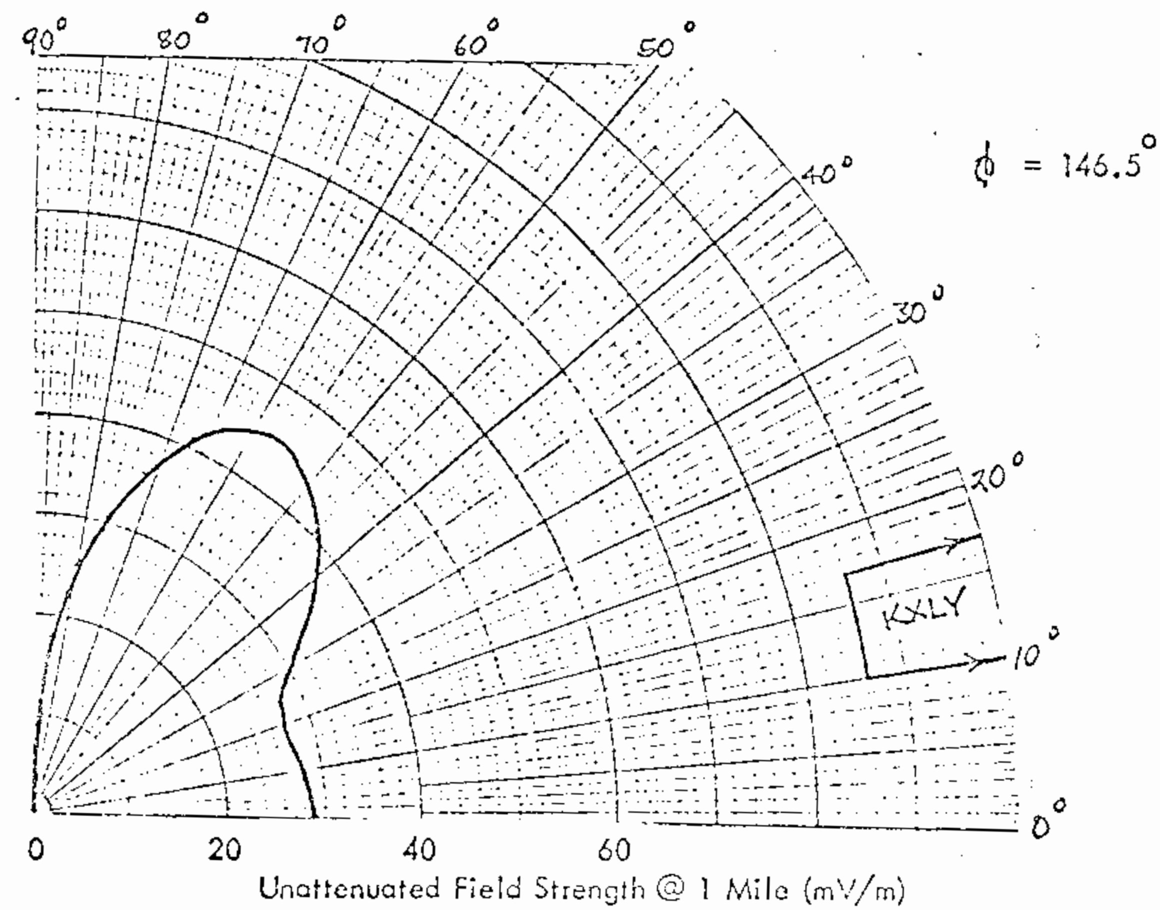
RADIO STATION CKCQ, QUESNEL, B.C.

920 kHz DA-N CLASS III 1 kV

A.C. Gardiner, P.Eng. FIG. 2 Jan. 28/

CKCQ





VERTICAL RADIATION CHARACTERISTICS
NIGHT PATTERN

FIG. 3

A.C. GARDINER CONSULTING TELECOMMUNICATION ENGINEERS

#166

CKCY

Description Sheet
(2-28-62ct)

Station CKCY
Sault Ste. Marie, Ontario

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

2.4 DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CKCY

Main Studio: Sault Ste. Marie, Ontario.

Frequency: 920 kc/s

Power: 10/5 Kw Class: III

Notification List No: 166

Date: January 5, 1962.

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM:

North Latitude: 46° 32' 41"
West Longitude: 84° 19' 34"

ANTENNA CHARACTERISTICS

Mode of Operation: DA-2
Number of Elements: Five
Type of Elements: Guyed uniform cross section base insulated series fed.

TOWER:		1 South	2 East	3 West	4 North	5 N.West
HEIGHT ABOVE INSULATORS:		220'	220'	220'	220'	220' (74°)
OVERALL HEIGHT:		224'	224'	224'	224'	224'
SPACING:		Reference	178' (60°)	490' (165°)	476'(160°)	669' (225°)
PHASING:	Day:	0°	-100°	--	--	-80°
	Night:	0°	-122°	-25°	-147°	--
FIELD RATIO:	Day:	1.0	0.70	--	--	0.50
	Night:	1.0	0.87	0.763	0.663	--
ORIENTATION:		Reference	43°	298°	320°	266°

GROUND SYSTEM: 120 radials of No. 10 AWG soft drawn copper wire spaced evenly around the base of each tower and buried to a depth of 8". Radials bonded to two No. 4 AWG copper buses positioned at right angles to towers. Average length of ground system (0.4λ)

Predicted effective field: Day: RMS 570 mv/m (180 mv/m for 1 Kw)
Night: RMS 403 mv/m (180 mv/m for 1 Kw)

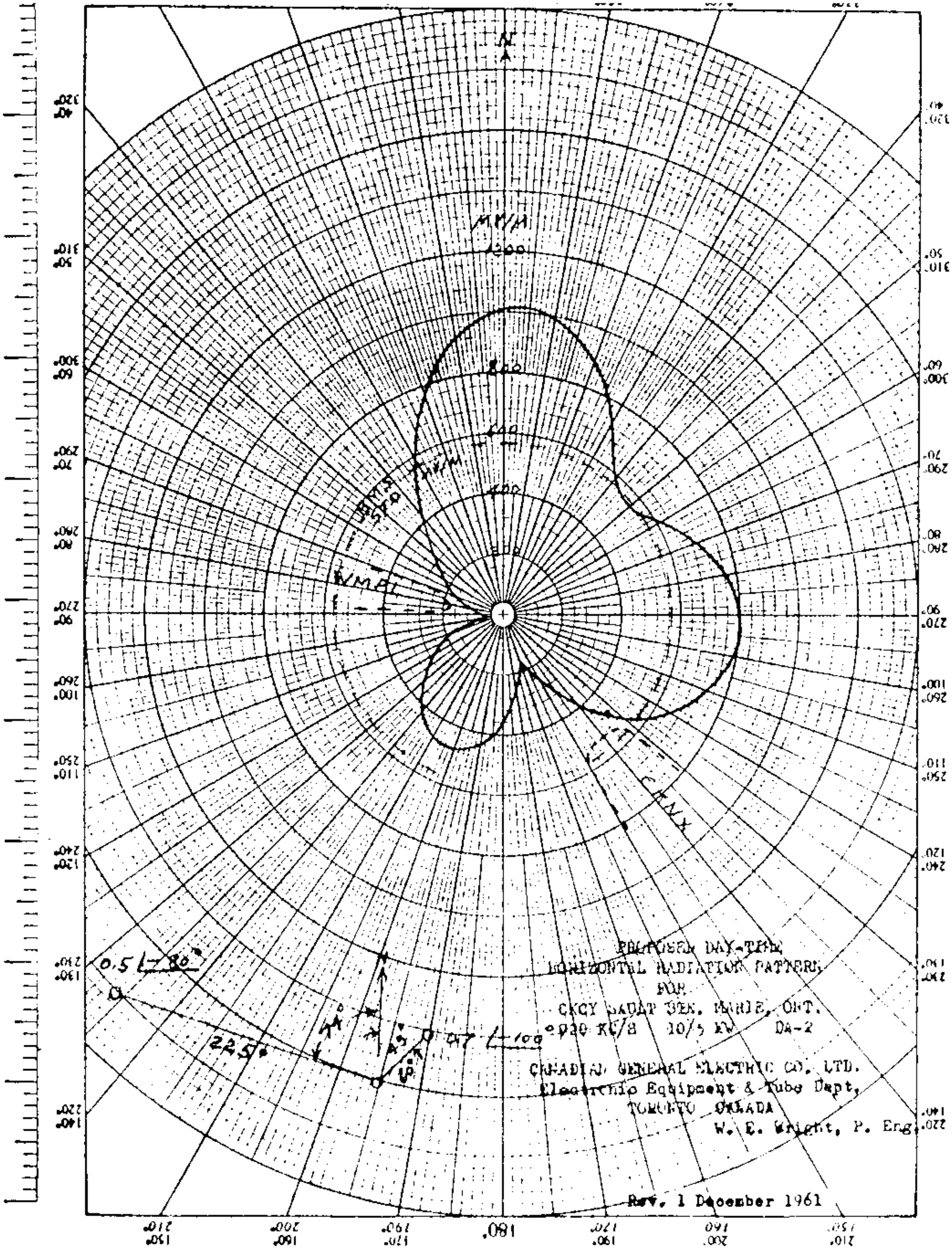
#166

CKCY

Proposed Day
(2-28-62ct)

Station CKCY
Sault Ste. Marie, Ontario

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



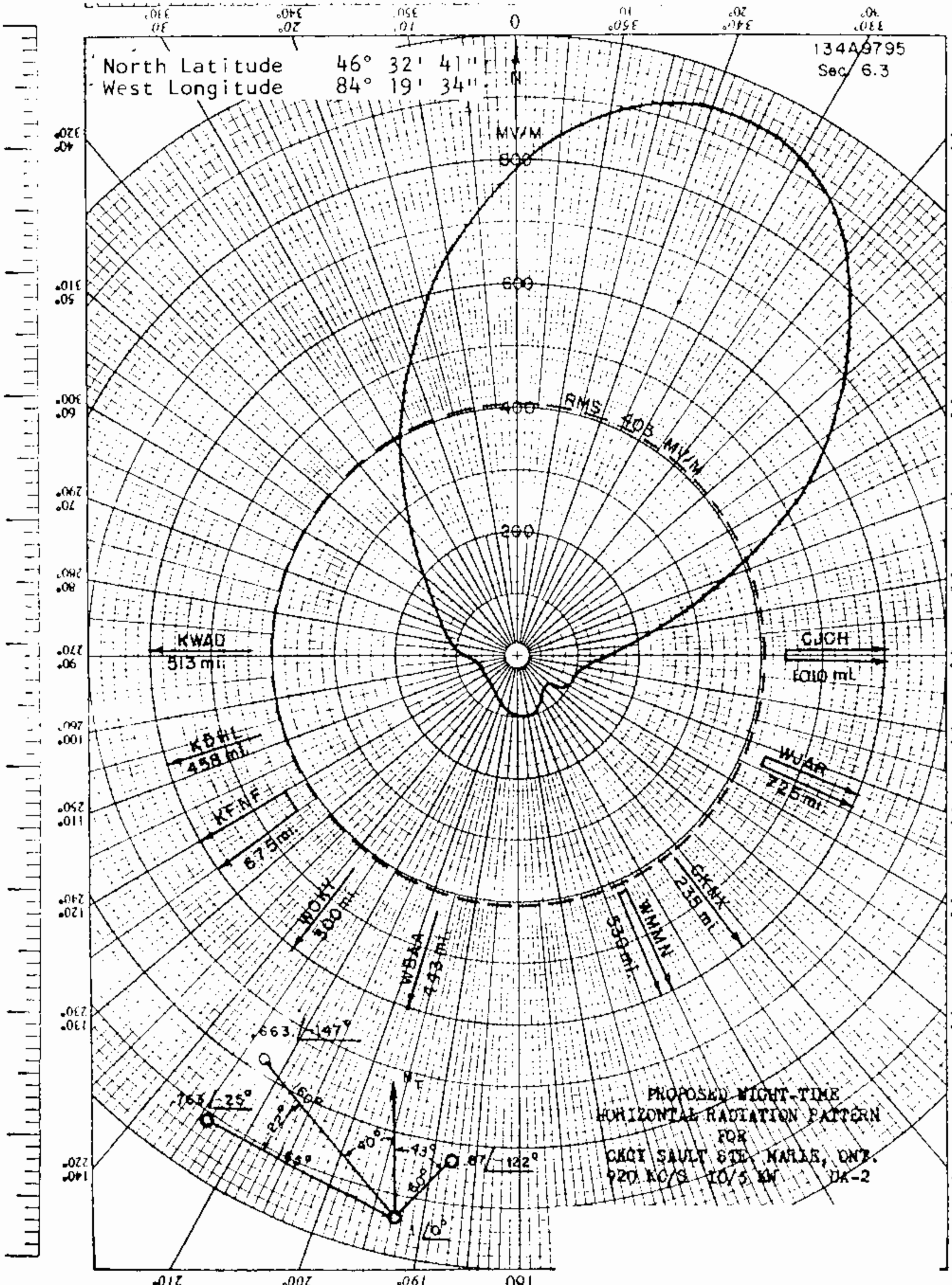
#149

CKCY

PROPOSED NIGHT
(2-17-61g)

Station CKCY
Sault Ste. Marie, Ontario, Canada

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



Rev. 1

CKNX
920

IFRB Serial No. 1 2 1 5 3

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

(a) Administration: CANADA | Sheet No. 416 | Date 830110

Assigned frequency (kHz)		(02)	9 2 0
Transmitting station	Name of the station	(03)	W I N G H A M O N
	Call sign	(04)	C K N X
	Additional identification	(05)	
	Station class	(06)	B
	Operational Status	(07)	O
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	8 1 W2 0 5 3 4 3 N5 0 3 5

(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: Year Month Day

STATION PARAMETERS	DAYTIME OPERATION		NIGHT-TIME OPERATION	
Station power (kW)	(21)	2 0 .	(31)	1 0 .
r.m.s. value of radiation for station power (mV/m at 1 km)	(25)	.	(35)	.
Antenna type	(26)	B	(36)	B
Simple vertical antenna electrical height (degrees)	(27)	.	(37)	.

(44) Remarks

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

CKNX
920

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. 12153

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No. 416

Date 830110

(01) Name of transmitting station: WINGHAM ON

(02) Country: CAN

(03) Hours of operation: HN

(04) Total number of towers: 4

(05) Tower No.	(06) Tower field ratio	(07) Phase difference of the field (± degrees)	(08) Electrical tower spacing (degrees)	(09) Angular tower orientation (degrees)	(10) Reference tower indicator	(11) Electrical height of tower (degrees)	(12) Tower structure
1	1.	19.	65.	12.	—	75.7	
2	1.	141.	0.	0.		75.7	
3	1.	122.	175.	279.		75.7	
4	1.	0.	183.46	299.72		75.7	
	.	.	.	.		.	
	.	.	.	.		.	
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	.	.	.	.		.	
	.	.	.	.		.	
	.	.	.	.		.	
	.	.	.	.		.	
	.	.	.	.		.	

(14) r.m.s value of radiation: 909.7 mV/m at 1 km

(15) Type of pattern: E

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

(17) SUPPLEMENTARY INFORMATION

CKNX
920

CKNK
920

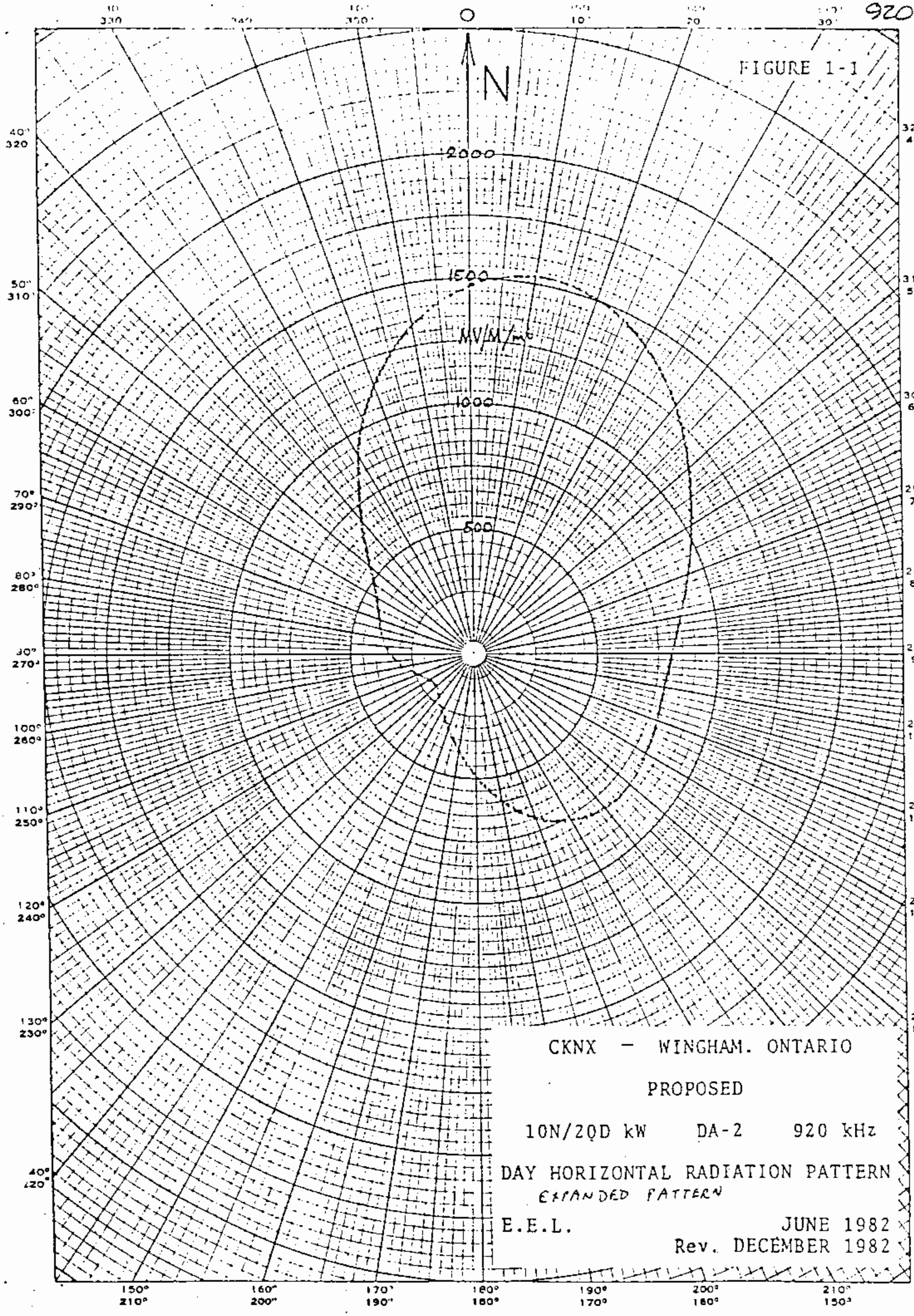
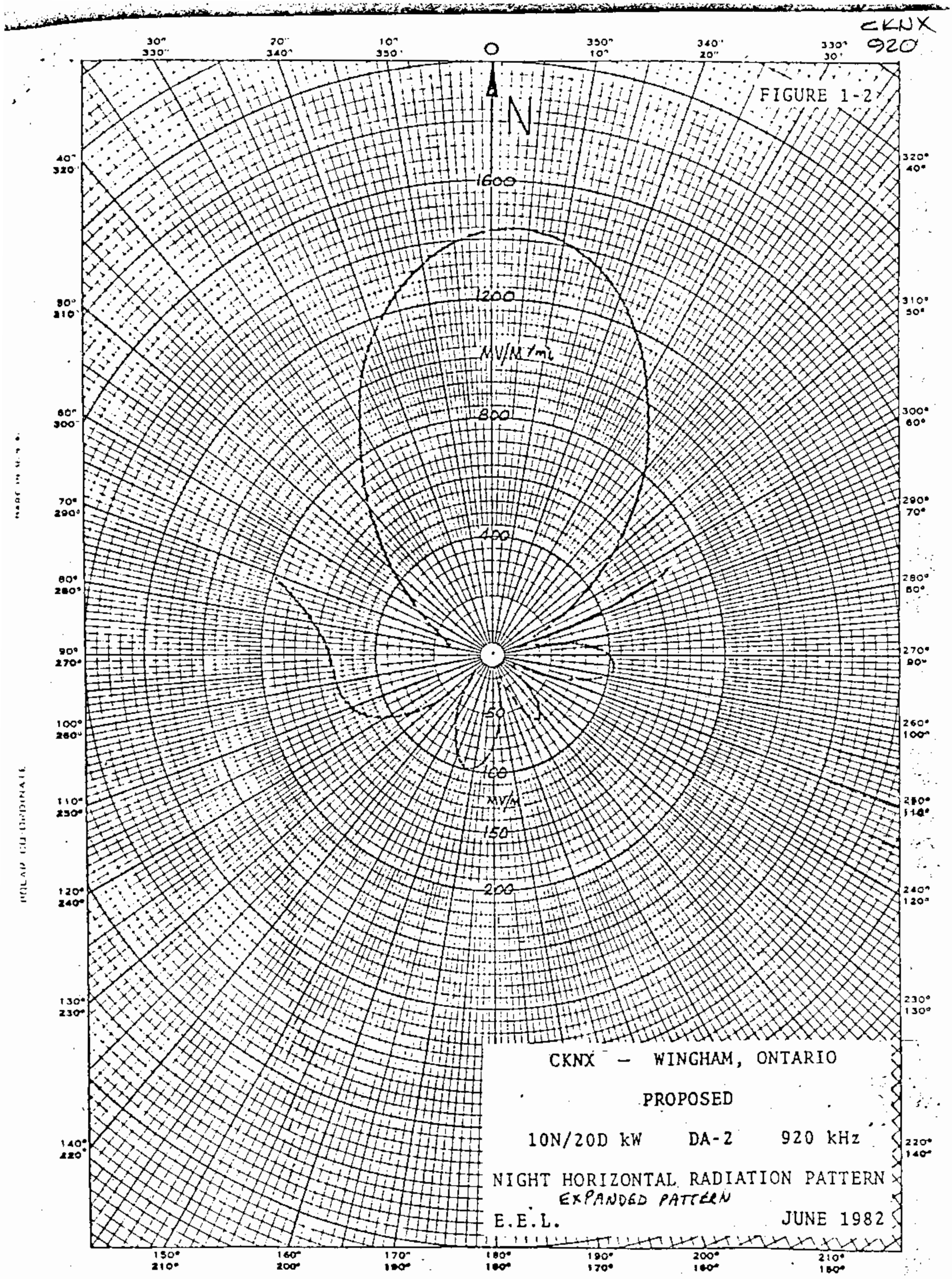


FIGURE 1-1
N
2000
1500
MV/M/m
1000
500
CKNX - WINGHAM. ONTARIO
PROPOSED
10N/20D kW DA-2 920 kHz
DAY HORIZONTAL RADIATION PATTERN
EXPANDED PATTERN
E.E.L.
JUNE 1982
Rev. DECEMBER 1982


CKNX
920
FIGURE 1-2
N
0
1600
1200
MV/M/mi
800
400
50
100
MV/M
150
200
CKNX - WINGHAM, ONTARIO
PROPOSED
10N/20D kW DA-2 920 kHz
NIGHT HORIZONTAL RADIATION PATTERN
EXPANDED PATTERN
E.E.L. JUNE 1982

CKNX
920

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. 1 2 15 3

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No. 416

Date 830110

(01) Name of transmitting station: W I N G H A M O N

(02) Country: C A N

(03) Hours of operation: H J

(04) Total number of towers: 4

(05) Tower No.	(06) Tower field ratio	(07) Phase difference of the field (± degrees)	(08) Electrical tower spacing (degrees)	(09) Angular tower orientation (degrees)	(10) Reference tower indicator	(11) Electrical height of tower (degrees)	(12) Tower structure
1	1.	0.	65.	12.		75.7	
2	.79	98.	0.	0.		75.7	
3	.3	90.	108.	266.		75.7	
4	.52	96.5	175.	279.		75.7	

(14) r.m.s value of radiation: 1303.6 mV/m at 1 km

(15) Type of pattern: E

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

(17) SUPPLEMENTARY INFORMATION

TABLE 1

ANTENNA DESCRIPTION SHEET

STATION CALL:	CKNX			
MAIN STUDIO:	WINGHAM, ONTARIO			
FREQUENCY:	920 kc/s			
POWER:	1N/10D kW			
CLASS:	III			
MODE:	DA-2			
TIME:	UNLIMITED			
NOTIFICATION LIST NO.:	....		DATE:	....
GEOGRAPHICAL LOCATION:	Latitude: 43° 50' 35" North Longitude: 81° 20' 53" West			
ARRAY CHARACTERISTICS:	Four guyed steel towers of uniform cross section; base insulated, series fed; no top loading.			
TOWER #:	1 NE	2 NC	3 NW	4 S
HEIGHT:	227'	227'	227'	227'(76.4°)
DAY CURRENT:	1.00	0.77	0.15	-
DAY PHASE:	-70°	0°	+70°	-
NIGHT CURRENT:	0.80	-	-	1.00
NIGHT PHASE:	-130°	-	-	0°
SPACING:	ref.	108° 319'	216° 638'	50° 148'
ORIENTATION:	ref.	266°	266°	165°
GROUND SYSTEM:	120 equally spaced copper radial wires per tower, buried 8-12" deep, of average length 430'(0.4λ).			
PREDICTED EFFICIENCY:	172 mV/m for 1 kW night. 175 mV/m for 1 kW day or 553 mV/m for 10 kW.			

159

CKNX

DESCRIPTION SHEET
(6-14-61g)

Station CKNX 1kw,2.5kw-LS,DA-2,U
Wingham, Ontario 920 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CKNX

Main Studio: Wingham, Ontario

Frequency: 920 kcs

Power: 2.5 kw Day, 1 kw Night

Notification List No. 159

Date: April 21, 1961

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 43° 50' 35"

West Longitude: 81° 20' 53"

ANTENNA CHARACTERISTICS

Mode of operation: DA-2
Number of elements: Two
Type of elements: Series-fed, no top loading.

Tower:	South	North
Height above insulators:	180' (60°)	180' (60°)
Overall height:	187'	187'
Spacing:	148' (50°) between towers.	
Night field ratio:	1	0.80
Night phasing:	0	-130
Day field ratio:	1	0.75
Day phasing:	0	-190

Ground system: 120 radials per tower, 250' long, spaced 3° buried 8" approximately.

Orientation of towers: On line bearing 165° true.

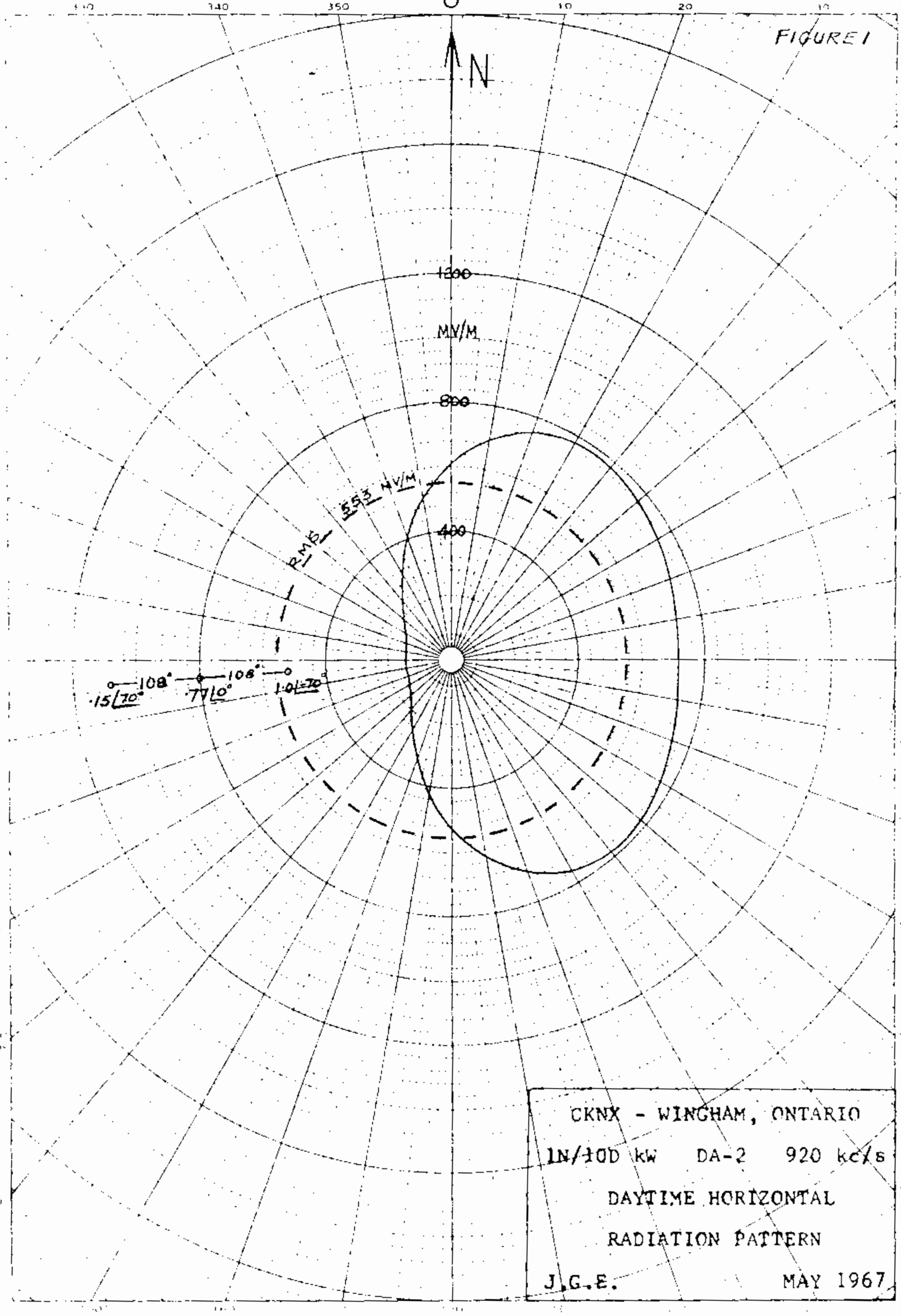
Predicted effective field: Night: 172 mv/m for 1 kw
Day: 175 mv/m for 1 kw
(276.5 mv/m for 2.5 kw)

NOTE: Please retain daytime pattern previously supplied for this station. This notification is for the purpose of indicating a correction in the nighttime pattern.

Proposed Day
(9-28-67ct)

Station CKNX
Wingham, Ontario

1kw,10kw-LS,DA-2,U,Class III
920 kc

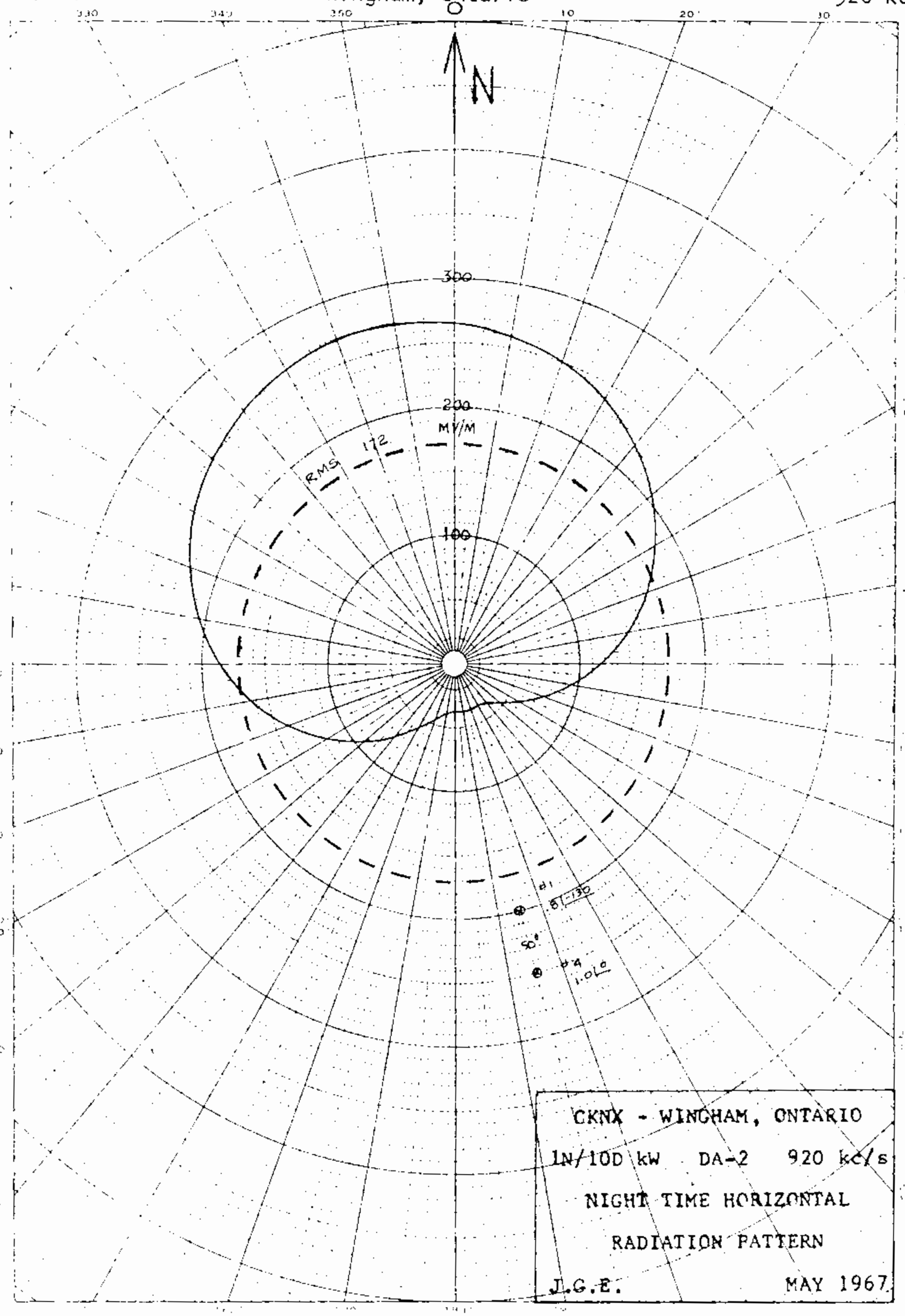


CKNX

Proposed Night
(9-28-67ct)

Station CKNX
Wingham, Ontario

1kw,10kw-LS,DA-2,U,Class III
920 kc



CKNX - WINGHAM, ONTARIO

1N/10D kW DA-2 920 kc/s

NIGHT TIME HORIZONTAL

RADIATION PATTERN

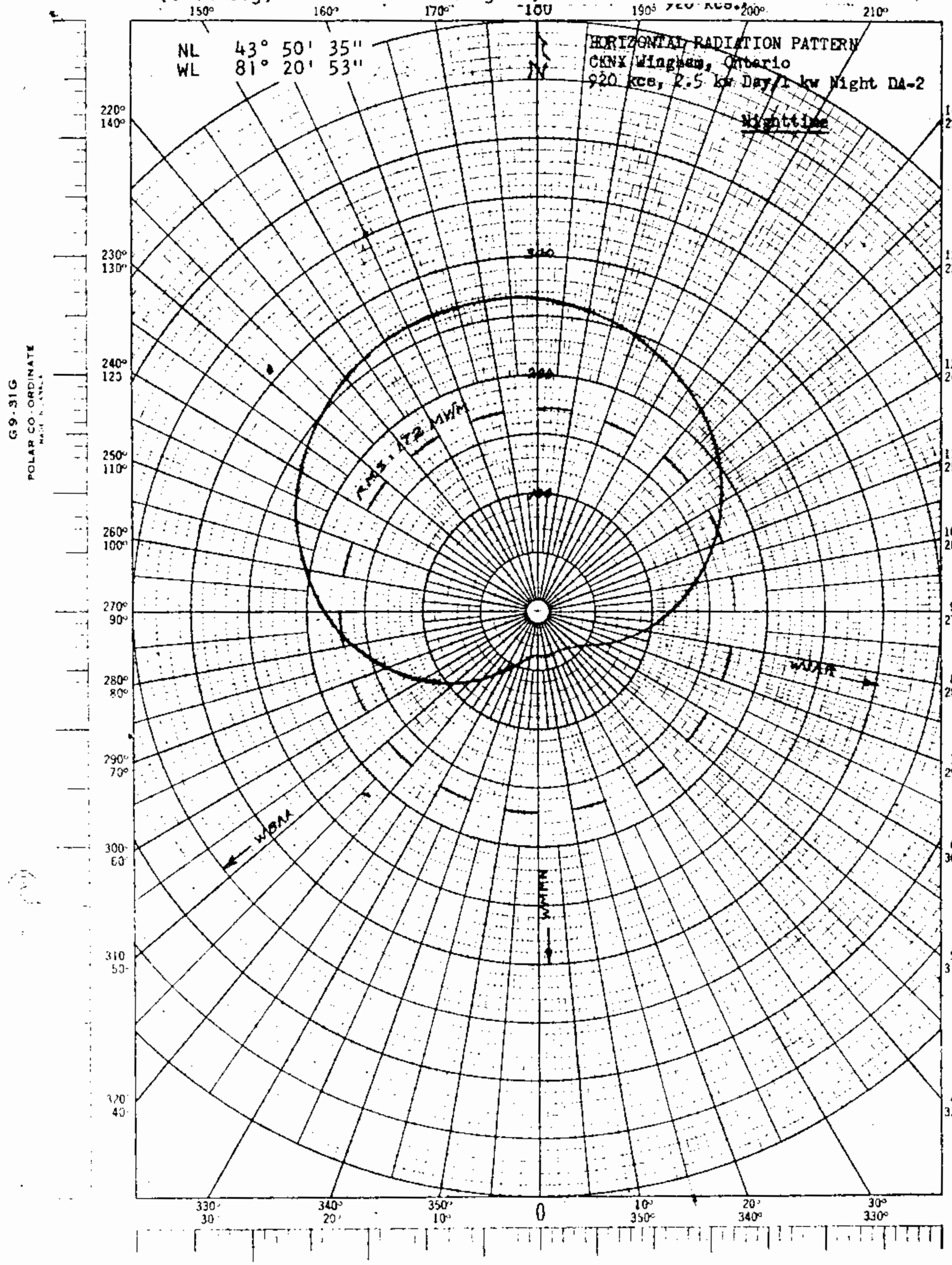
J.G.E. MAY 1967

#159

CKNX

PROPOSED NIGHT
(6-14-61g)

Station CKNX 1kw,2.5kw-LS,DA-2,U
Wingham, Ontario 920 KC



CKWL

Description Sheet
(6-27-69ct)

Station CKWL
Williams Lake, B. C.

1kw,DA-N,U,Class III
920 kc

PROJECT #7701

DESCRIPTION SHEET - DIRECTIONAL ANTENNA

STATION: CKWL MAIN STUDIO: WILLIAMS LAKE, B.C.

FREQUENCY: 920 kHz POWER: 1 kW CLASS III

NOTIFICATION LIST NO: #256 DATE: May 16, 1969.
GEOGRAPHICAL LOCATION: Lat. 52° 05' 29" N Long. 122° 10' 27" W

ANTENNA CHARACTERISTICS:

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

TOWER:	#1 (SE)	#2 (NW)
HEIGHT ABOVE BASE INSULATOR	200' (67.3°)	200' (67.3°)
OVERALL HEIGHT:	205'	205'
FIELD RATIO:	0.8	1.0
PHASING:	+92°	0°

ORIENTATION AND SPACING: The towers are on a line bearing 143.5° East of True North and are spaced 267' (90°)apart.

GROUND SYSTEM: 120 equally spaced radials of No. 10 B & S gauge bare copper wire extend from the base of each tower for a distance of 428' (0.4 wavelength) with the exception of those joined along the common chord. Radials are buried approximately eight inches.

PREDICTED EFFECTIVE FIELD:

Daytime 182 mV/m at 1 mile for 1 kW

Nighttime 182 mV/m at 1 mile for 1 kW

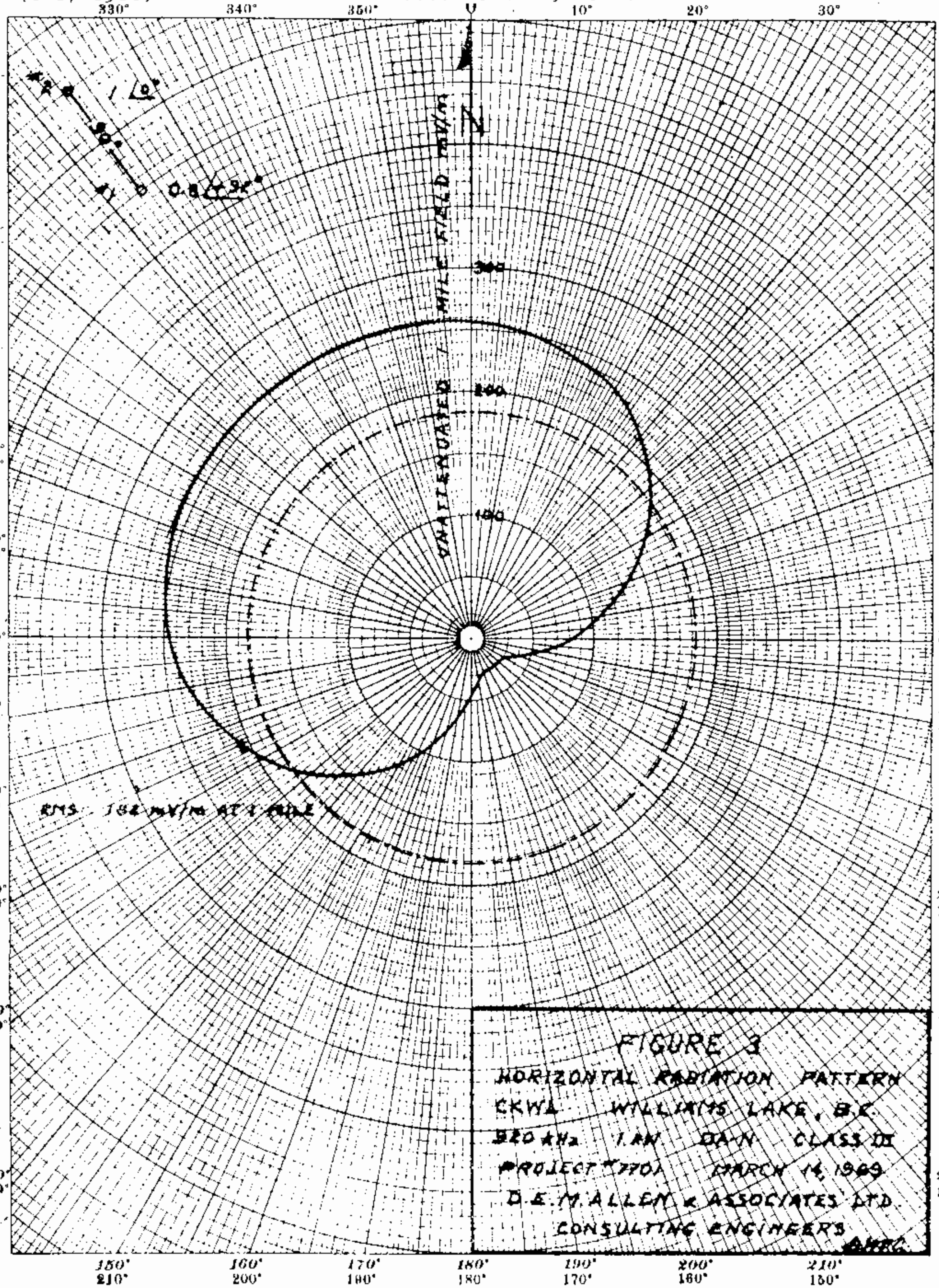
D. E. M. ALLEN, P. ENG.
BROADCAST CONSULTING ENGINEER

CKWL

Proposed Night
(6-27-69ct)

Station CKWL
Williams Lake, B. C.

1kw, DA-N, U, Class III
920 kc



Cuba

CMJL

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CMJL

Main Studio: Camaguey, Camaguey

Frequency: 920 Kcs.

Power: 10 kw

Date: July 1952 Class: I-D

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 21° 22' 10"

West Longitude: 77° 52' 46"

ANTENNA CHARACTERISTICS

Number of elements: two (2)
Type of elements: Shunt-fed, self-supporting, vertical steel towers.

TOWER:	Northeast	Southwest
HEIGHT ABOVE GROUND	300'	300' (101°)
SPACING:	(338.68' or 135° between adjacent towers)	
PHASING:	0°	-100°
FIELD RATIO:	1	0.6

ORIENTATION: (Elements on a line bearing 31.5° true.)

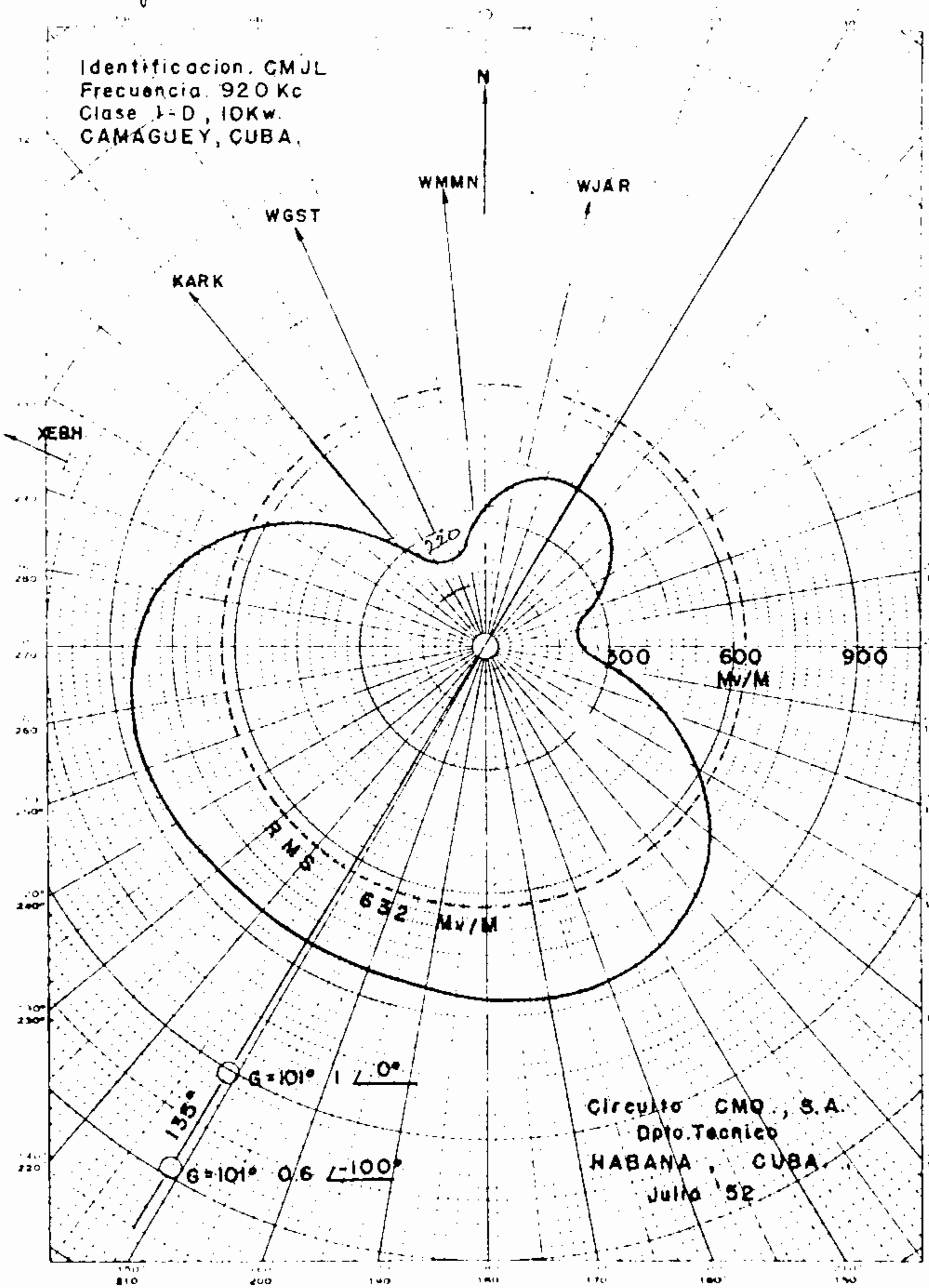
Predicted effective Field: 632 mv/m (at rated power)

F.C.C. Note:
This pattern supplements the particulars for this station set forth in Annex 3 to the North American Regional Broadcasting Agreement, Washington, D. C., 1950.

Cuba

CMJL

PROPOSED NIGHT & Day (3/18/53G) CMJL, CAMAGUEY, CUBA 10 kw, 920 kc



CMJL, Camaguey, Cuba 920 kc

KARN

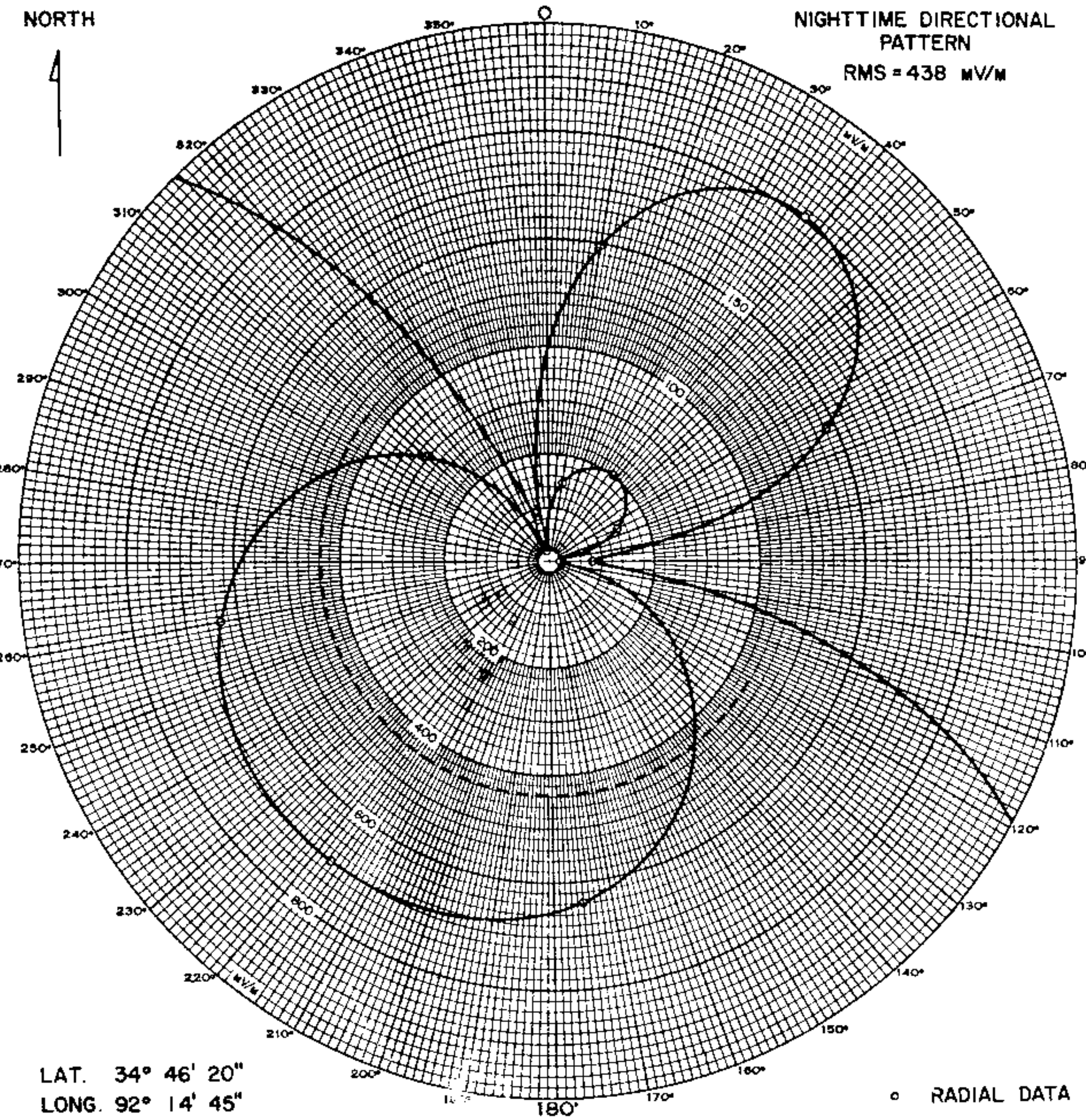
Measured Night (11-29-68ct) | Station KARK Little Rock, Arkansas | 5kw,DA-N,U 920 kc

Granted license ... Kangas 4/25/69

NORTH

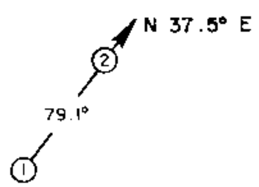
NIGHTTIME DIRECTIONAL PATTERN

RMS = 438 MV/M



LAT. 34° 46' 20"
LONG. 92° 14' 45"

○ RADIAL DATA



ANTENNA HEIGHT

1 (SW) = 249' = 84°
2 (NE) = 304' = 102°

ANTENNA SYSTEM PARAMETERS

TOWER	THEORETICAL FIELD	THEORETICAL PHASE	INDICATED FIELD	INDICATED PHASE
1 (SW)	1.000	0°	1.000	-132°
2 (NE)	1.063	131.5°	.743	0°

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

RADIO STATION KARK
920 kHz 5.0 kW DA - N
680930 FIGURE 2B

FCC File No.BL-12178
Accepted 11-18-68

Station KARK
Little Rock, Arkansas

920 kc

KARN

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

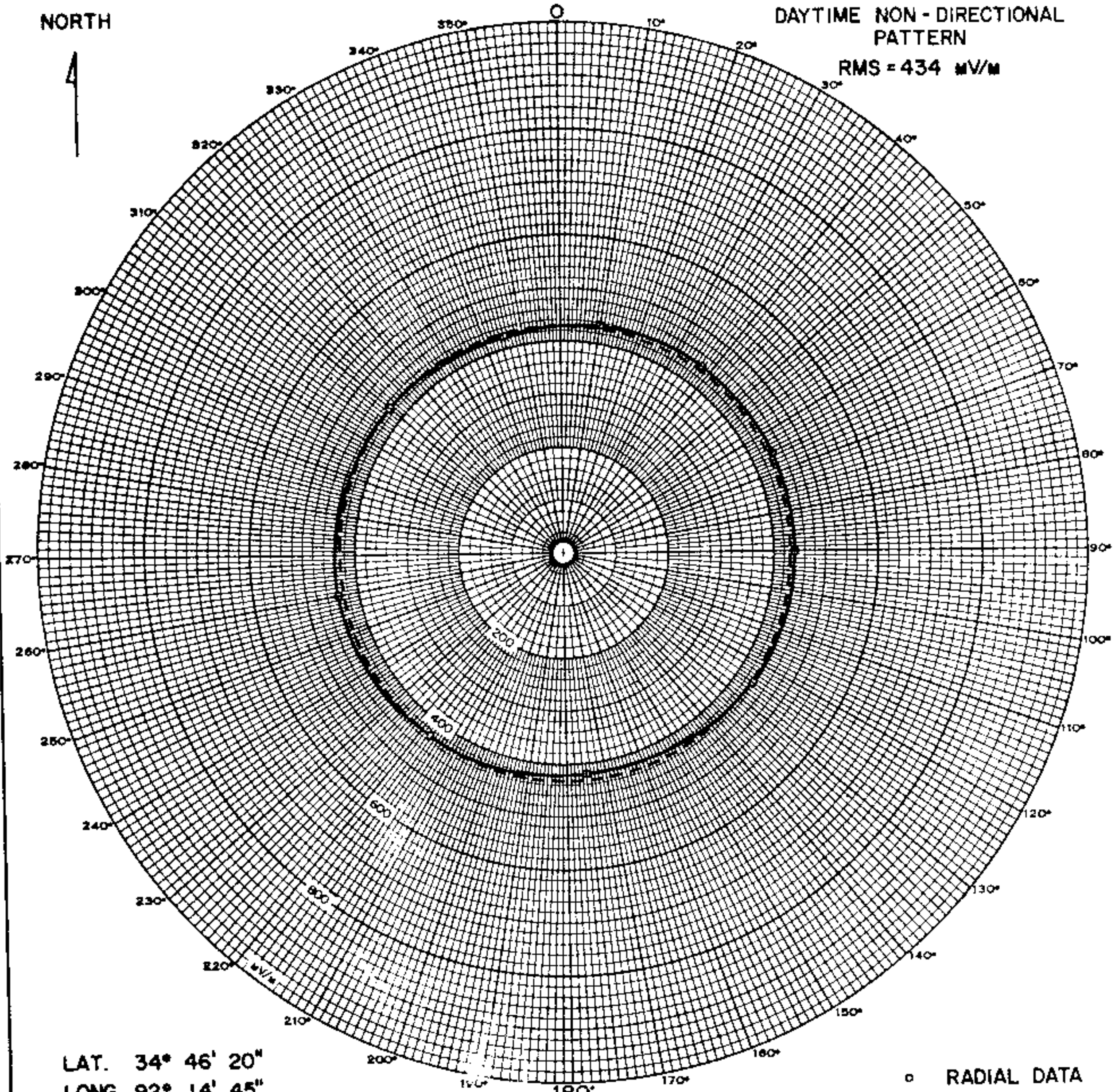
Station KARK
Little Rock, Arkansas

5kw,DA-N,U
920 kc

Granted license covering changes 4/25/69

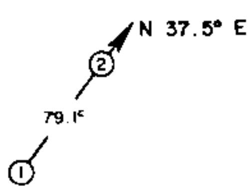
NORTH

DAYTIME NON-DIRECTIONAL PATTERN
RMS = 434 mV/m



LAT. 34° 46' 20"
LONG. 92° 14' 45"

o RADIAL DATA



ANTENNA HEIGHT
1 (SW) = 249' = 84°
2 (NE) = 304' = 102°

ANTENNA SYSTEM

TOWER	OPERATION
1 (SW)	DETUNED
2 (NE)	SERIES - FED

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

RADIO STATION KARK
920 kHz 5.0 kW DA - N
680930 FIGURE 2A

FCC File No.BL-12178
Accepted 11-18-68

Station KARK
Little Rock, Arkansas

920 kc

KARN

Proposed Night
(11-28-67ct)

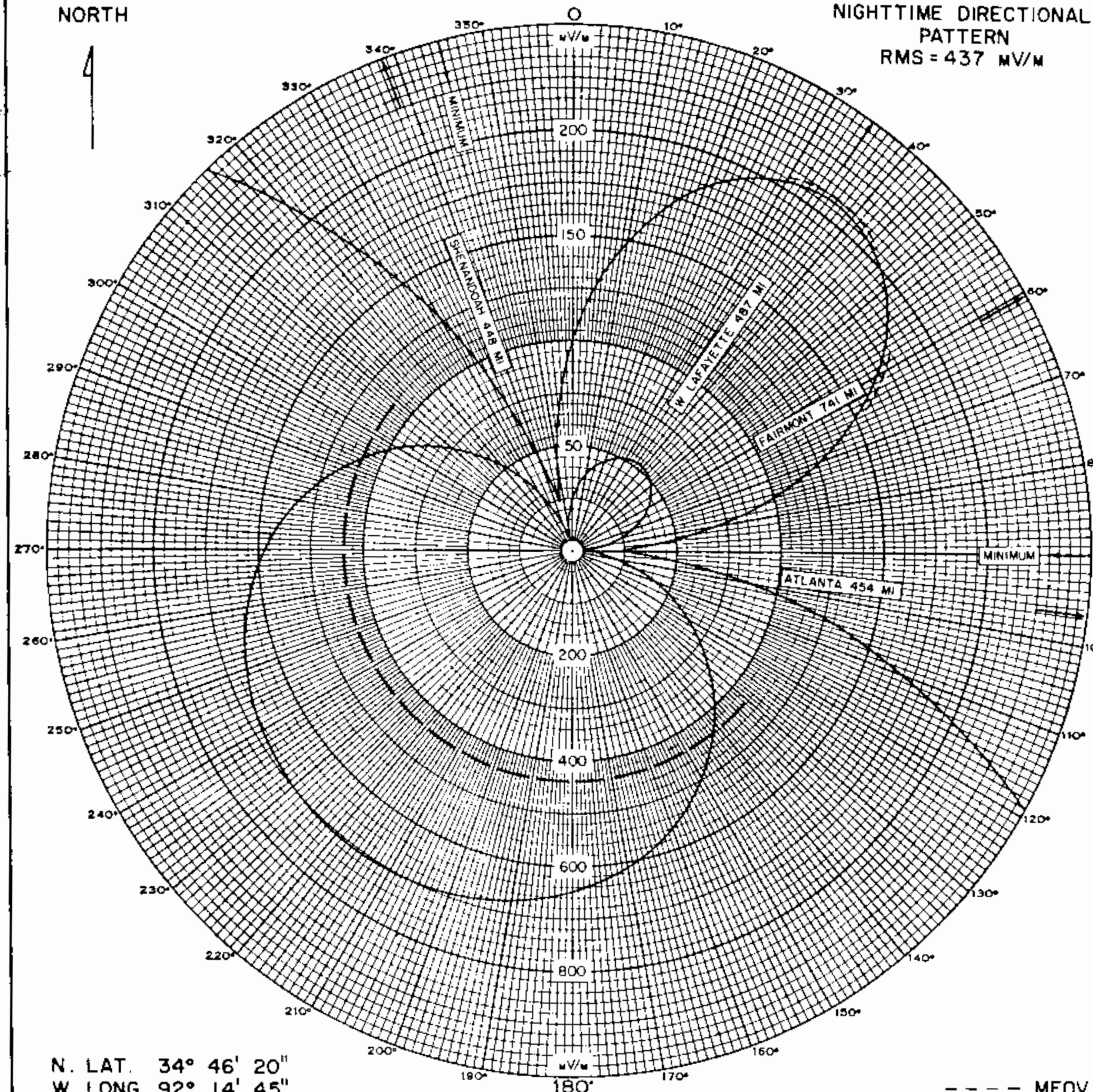
Station KARK
Little Rock, Arkansas

5kw,DA-N,U
920 kc

11-29-67
GRANTED
CD change
in DA PATT.

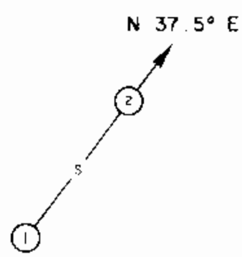
NORTH

NIGHTTIME DIRECTIONAL PATTERN
RMS = 437 MV/M



N. LAT. 34° 46' 20"
W. LONG. 92° 14' 45"

- - - - MEOV



S = 235' = 79.1°
G1 = 249' = 84.0°
G2 = 304' = 102.0°

PROPOSED THEORETICAL PARAMETERS

TOWER	FIELD	PHASE
1 (SW)	1.000	0.0°
2 (NE)	1.063	131.5°

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

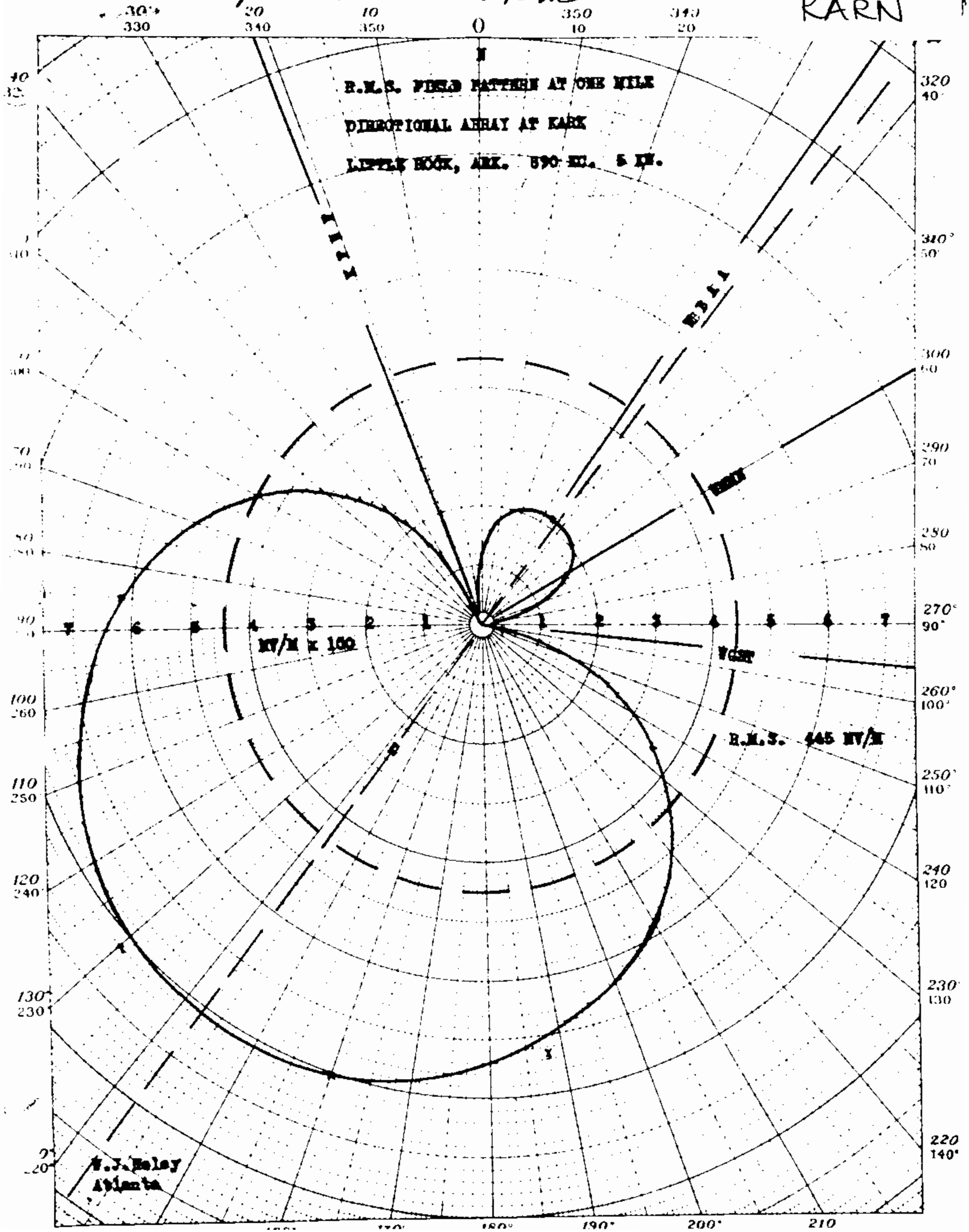
RADIO STATION KARK
920 kHz 5.0 kW DA-N
670901 FIGURE 2B

FCC File No.BP-17901
Accepted 11-8-67

Station KARK
Little Rock, Arkansas
920 kc

L-1312 granted 1-23-41 890 Kc

KARN



KBZB ~~KECK~~

PROPOSED NIGHT 5/9/49G KECK, ODESSA, TEX. 500w,1kw-LS,DAN 920 kc

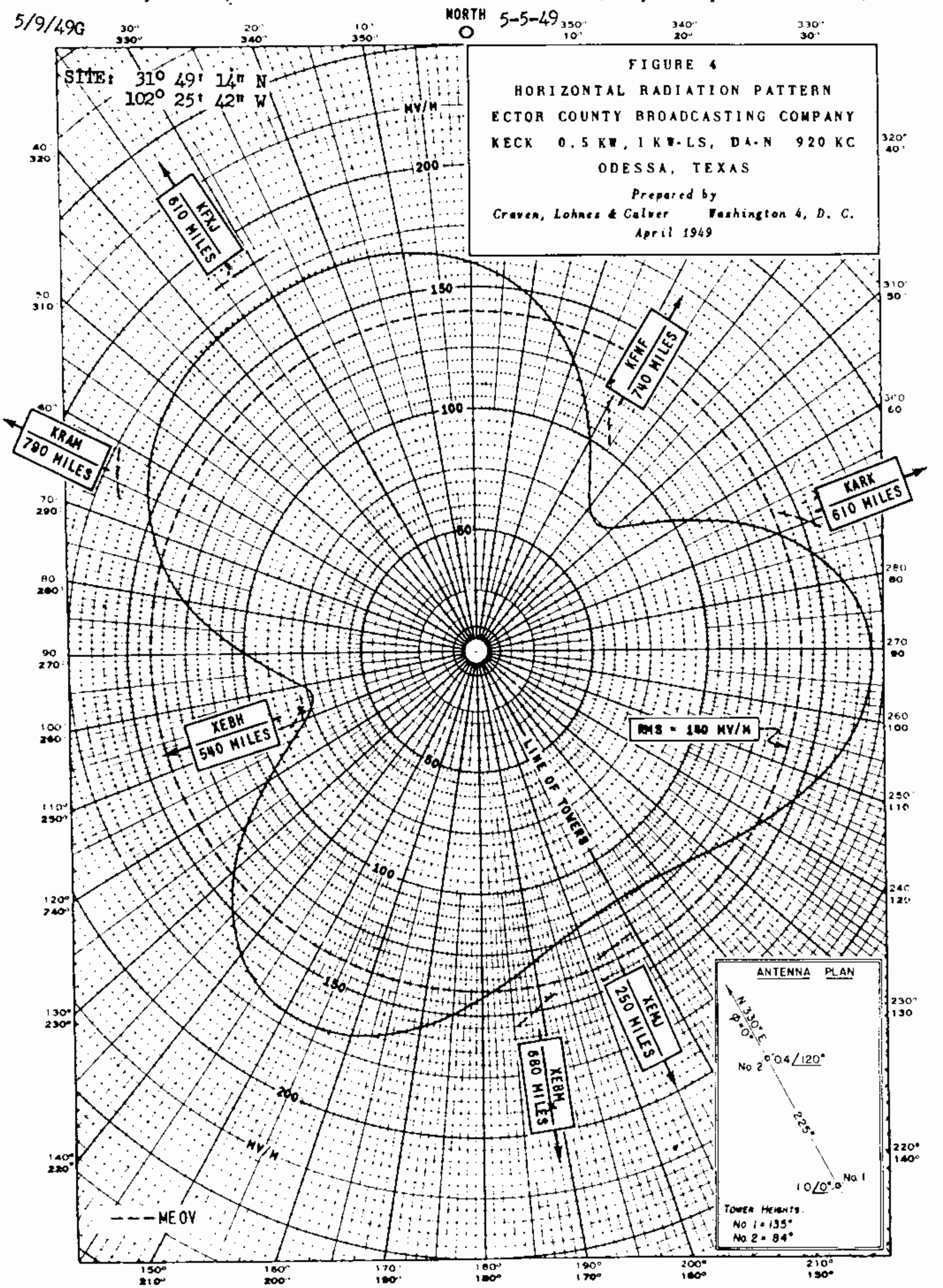


FIGURE 4

HORIZONTAL RADIATION PATTERN

ECTOR COUNTY BROADCASTING COMPANY

KECK 0.5 KW, 1 KW-LS, DA-N 920 KC

ODESSA, TEXAS

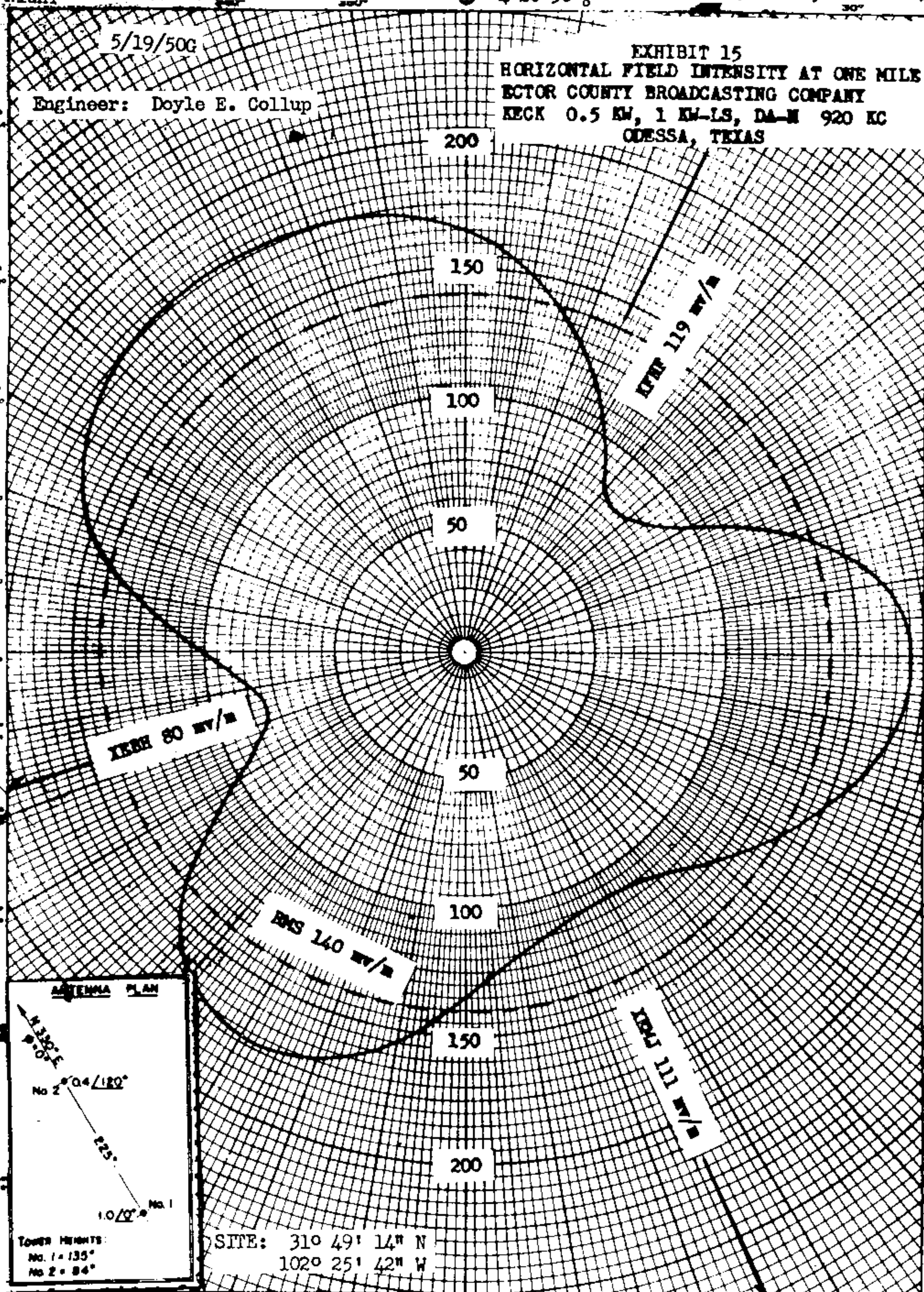
Prepared by

Craven, Lohnes & Culver Washington 4, D. C.

April 1949

KBZB ~~KECK~~

MEASURED NIGHT KECK, ODESSA, TEXAS 4-26-50 500w,1kw-LS,DAN 920 kc

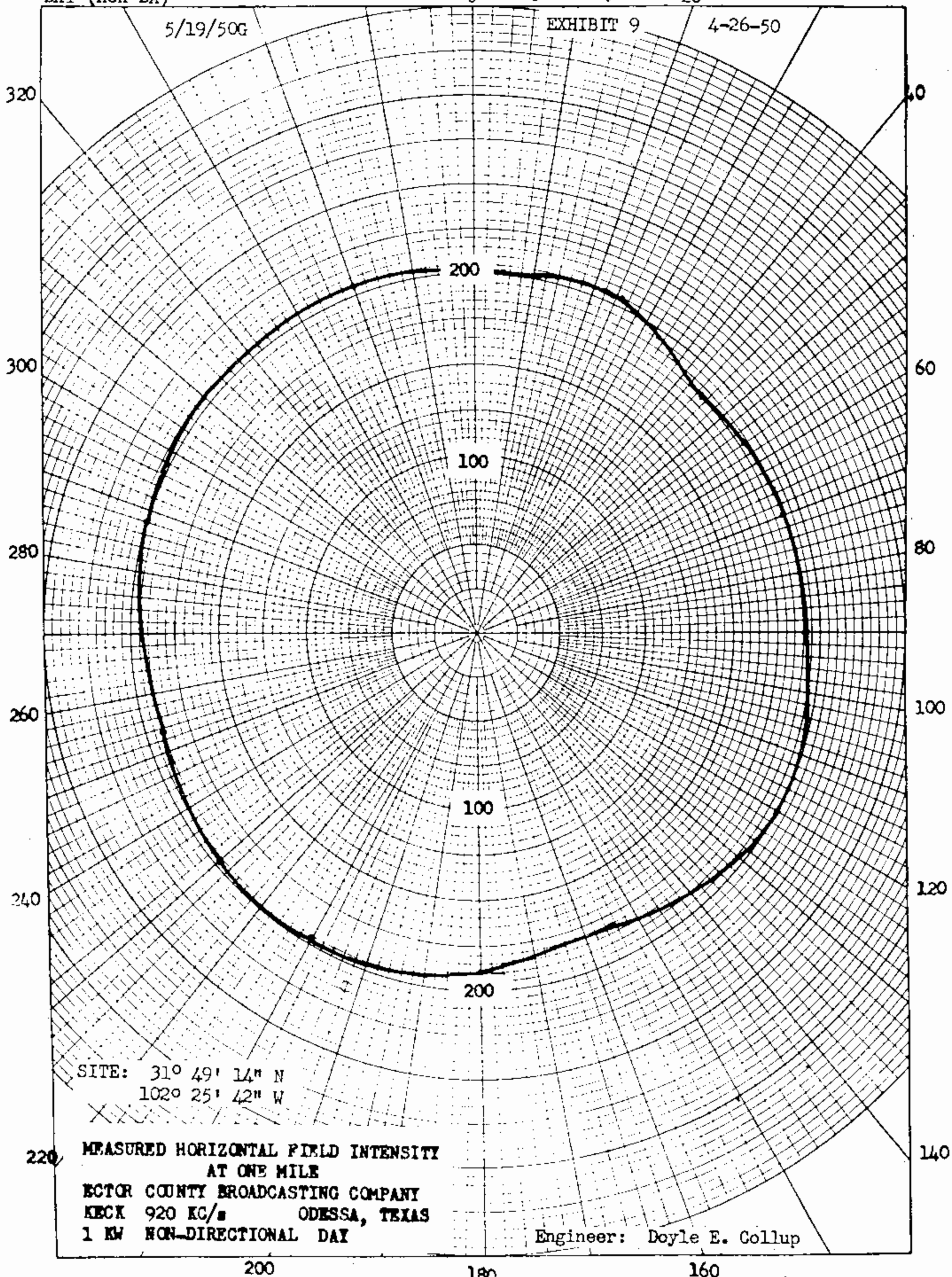


KECK, Odessa, Texas 920 kc

KBZB ~~KECK~~

MEASURED KECK, ODESSA, TEXAS
DAY (non-DA)

April 19, 1950 500w,1kw-LS,DAN 920 kc



KEUF KECK, Odessa, Texas 920 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : KDES — Main Studio: Palm Springs, California

Frequency : 920 KHz — Power : 1 kW Night 5 kW Day

Notification : 1780 — Date : Sept. 29, 1979 — Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 35 51 29
West Longitude: 116 29 39

ANTENNA CHARACTERISTICS

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

TOWER	N(#1)	NE(#2)	C(#3)	SW(#4)		
HEIGHT ABOVE INSULATORS	267'	267'	267'	267'	267'(90°)	
NIGHT PHASING	-31.8°	+164.5°	0°	+178.9°		
NIGHT FIELD RATIO	0.308	0.848	1.0	0.575		
DAY PHASING		-45°	0°			
DAY FIELD RATIO		0.750	1.000			

SPACING AND ORIENTATION : With the center (#3) tower a reference; the towers are located at the vertices of a square, parallelogram, rectangle the northeast (#2) tower is spaced 267' (90°) in length on 534' (180°) on a line bearing 55° true, the north (#1) is spaced a line bearing, 40° true, and the southwest (#4) tower is spaced 267' (90°) on a line bearing 235° true.

GROUND SYSTEM : 120 - 267' equally spaced copper radials plus 120 - 50' interspaced radials about each tower. Radials are shortened and bonded to a transverse straps along intersections between towers. Centers of system are bonded together.

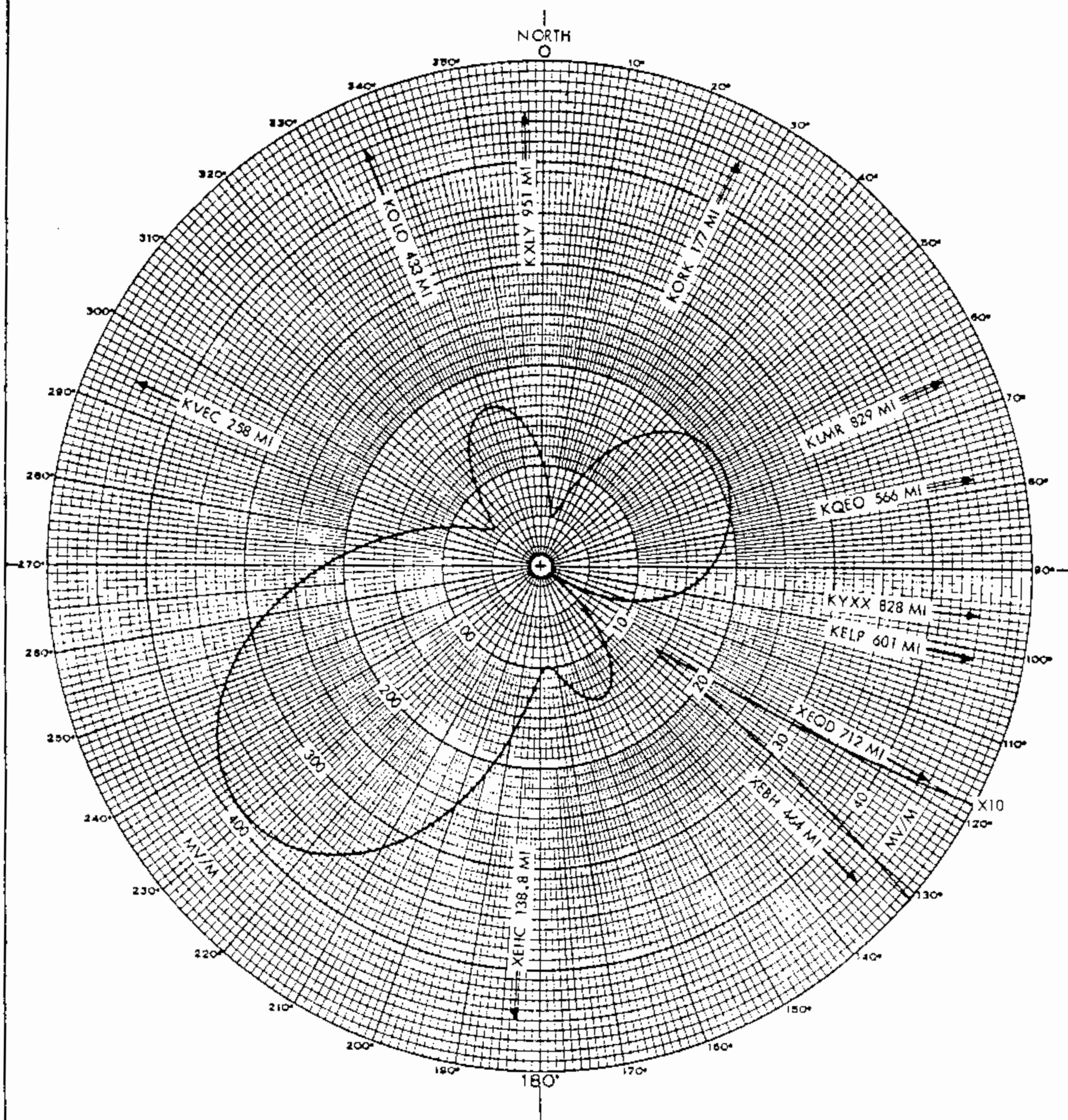
KDES

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	400 mV/m		
Night	185.0 mV/m	185.0 mV/m	194.8 mV/m

Note: Please retain the Daytime directional antenna radiation pattern notified for Station KDES in United States Change List Number 1110 dated May 5, 1965 and attach to this Revised Description Sheet and Nighttime patterns. This nofification concerns only a change in the Nighttime operation of the station with Daytime operation continued as previously nofified.

KDES



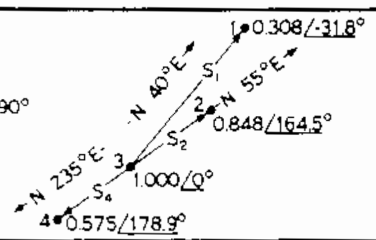
RMS$_{STD}$ = 194.8 MV/M* RMS$_{THEO}$ = 185.0 MV/M* E$_{RSS}$ = 530.4 MV/M

*RMS ADJUSTED TO VALUES SHOWN BY REDUCTION OF COMMON POINT INPUT POWER TO 895 WATTS

N. LAT. 33° 51' 29"
W. LONG. 116° 29' 39"

$G_1 = G_2 = G_3 = G_4 = 267$ FT = 90°

$S_1 = 534$ FT = 180°
$S_2 = 267$ FT = 90°
$S_4 = 267$ FT = 90°



PROPOSED STANDARD HORIZONTAL RADIATION NIGHTTIME

UNATTENUATED FIELD STRENGTH AT ONE MILE

HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KDES
920 KHZ. 1 KW. 5 KW-LS. DA-2
PALM SPRINGS, CALIFORNIA

780516

FIGURE 2B

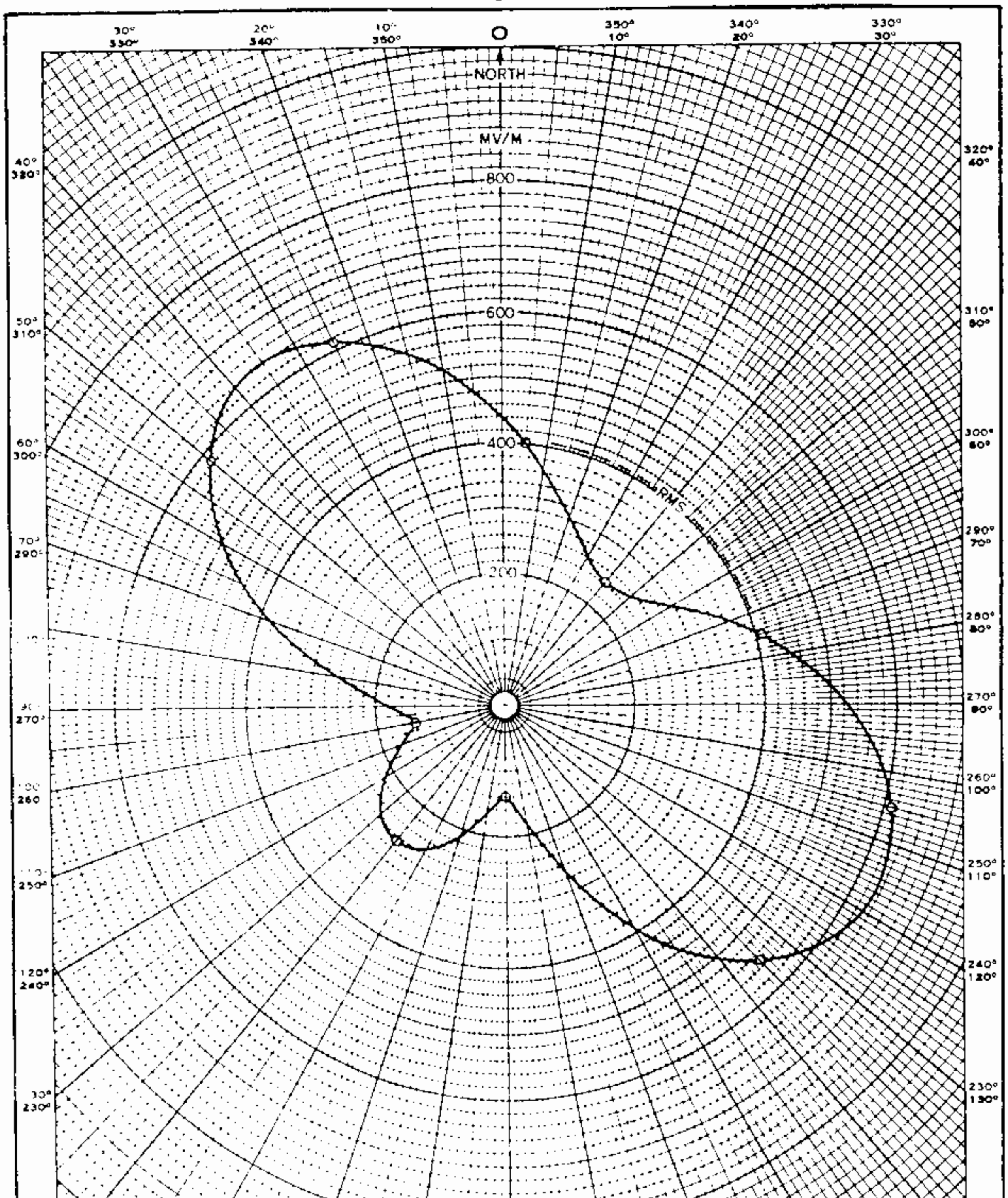
KDES

Measured Day
(10-28-66ct)

Station KDES
Palm Springs, California

500w,5kw-LS,DA-2,U
920 kc

LIC 10-21-66



THEORETICAL

1 0.750/45°

N40°E

S

3 1.000/0°

OPERATING

1 0.648/44.5°

N40°E

S

3 1.000/0°

N LAT 33° 51' 29"
W LONG 116° 29' 39"

S : 180° : 534'
G : 90° : 267'
RMS 405 MV/M

MEASURED HORIZONTAL RADIATION DAYTIME

UNATTENUATED FIELD INTENSITY AT ONE MILE

HAMMETT & EDISON
CONSULTING RADIO ENGINEERS
SAN FRANCISCO

RADIO STATION KDES
920 KC 0.5 KW-5 KW-LS DA-2
PALM SPRINGS CALIFORNIA

6605271

FIGURE 11B

FCC File No.BL-11414
Accepted 10-18-66

Station KDES
Palm Springs, California

920 kc

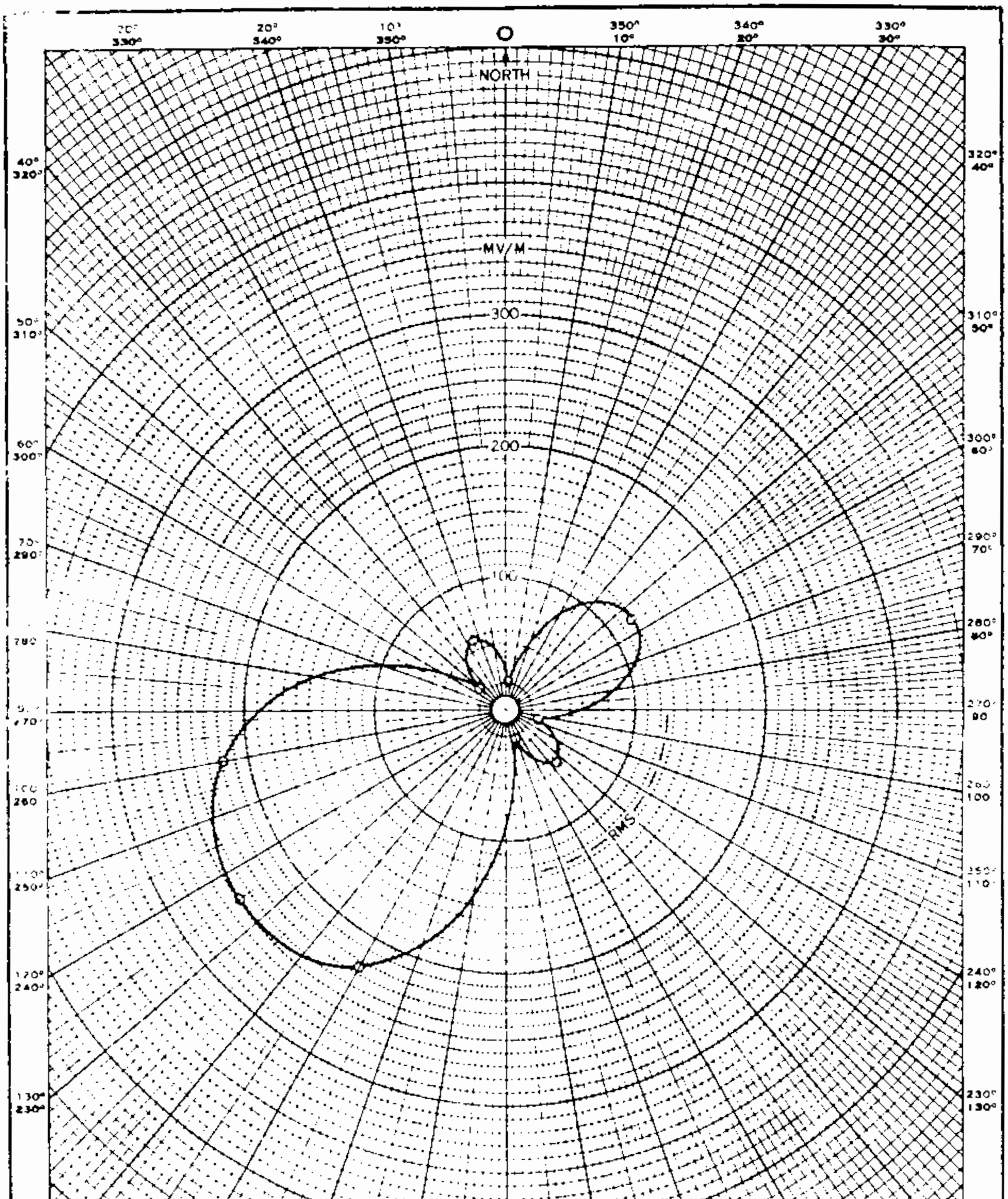
KDES

Measured Night
(10-28- 66ct)

Station KDES
Palm Springs, California

500w,5kw-LS,DA-2,U
920 kc

LIC 10-21-66



THEORETICAL	OPERATING
N55°E; 2 0.653/+165°; 3 1.000/0°; 4 0.653/-165°; S	N55°E; 2 0.558/+164.5°; 3 1.000/0°; 4 0.535/-164.0°; S
N. LAT. 33° 51' 29" W. LONG. 116° 29' 39"	S: 90° : 267' G: 90° : 267' RMS: 126 MV/M

MEASURED HORIZONTAL RADIATION NIGHTTIME

UNATTENUATED FIELD INTENSITY AT ONE MILE

HAMMETT & EDISON
CONSULTING RADIO ENGINEERS
SAN FRANCISCO

RADIO STATION KDES
920 KC 0.5 KW 5 KW-LS DA-2
PALM SPRINGS CALIFORNIA

6605271

FIGURE 11C

FCC File No.BL-11414
Accepted 10-18-66

Station KDES
Palm Springs, California

920 kc

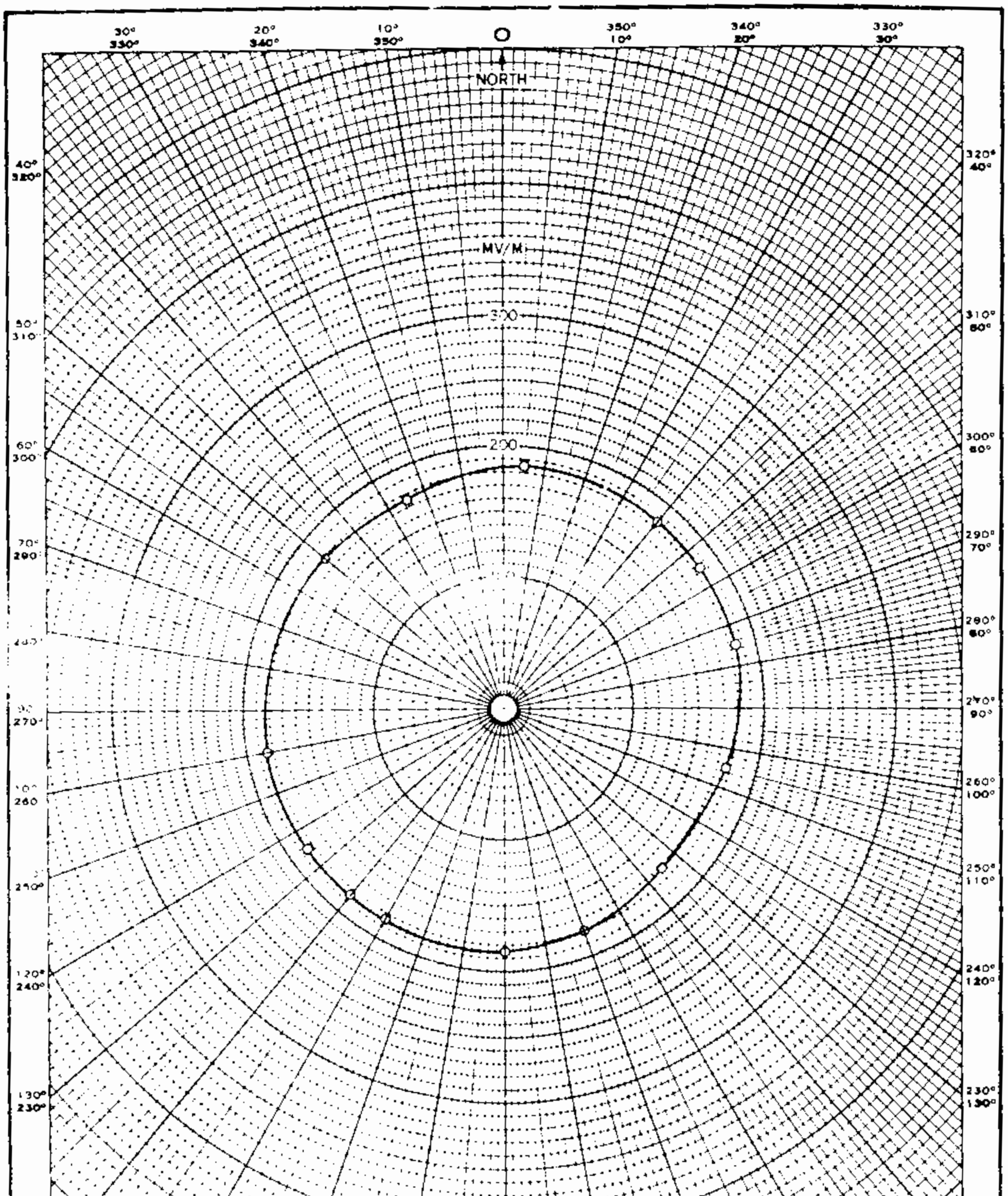
KDES

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

Station KDES
Palm Springs, California

500w,5kw-LS,DA-2,U
920 kc

-1C 10-21-66



N LAT 33° 51' 29"
W LONG 116° 29' 39"
G-90° = 267
RMS: 181 MV/M
TOWER 3 EXCITED, REMAINING TOWERS FLOATING

MEASURED NON-DIRECTIONAL HORIZONTAL RADIATION

UNATTENUATED FIELD INTENSITY AT ONE MILE

HAMMETT & EDISON
CONSULTING RADIO ENGINEERS
SAN FRANCISCO

RADIO STATION KDES
920 KC. 0.5 KW. 5 KW-LS. DA-2
PALM SPRINGS, CALIFORNIA

6605271

FIGURE 11A

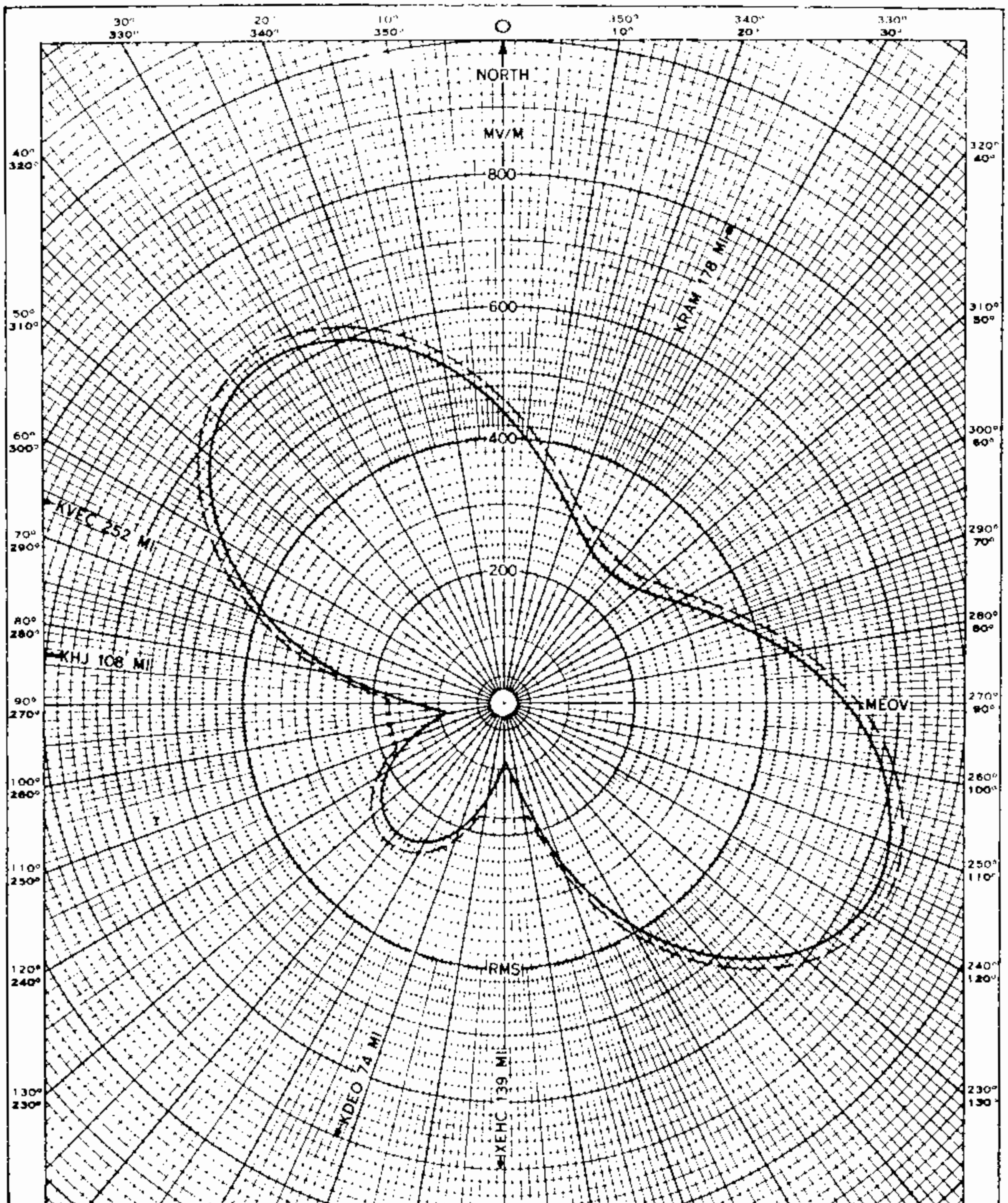
FCC File No.BL-11414
Accepted 10-18-66

Station KDES
Palm Springs, California

920 kc

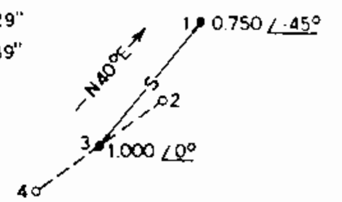
KDES

5-5-65 APPL.
500w,5kw-LS,DA-2,U



N. LAT. 33° 51' 29"
W. LONG. 116° 29' 39"

S = 180° = 534'
G = 90° = 267'
RMS = 400 MV/M



HORIZONTAL RADIATION PATTERN
DAYTIME

UNATTENUATED FIELD INTENSITY
AT ONE MILE

HAMMETT & EDISON
CONSULTING RADIO ENGINEERS
SAN FRANCISCO

RADIO STATION KDES
920 KC. 0.5 KW. 5KW-LS. DA-2
PALM SPRINGS, CALIFORNIA

640323

FIGURE 5B

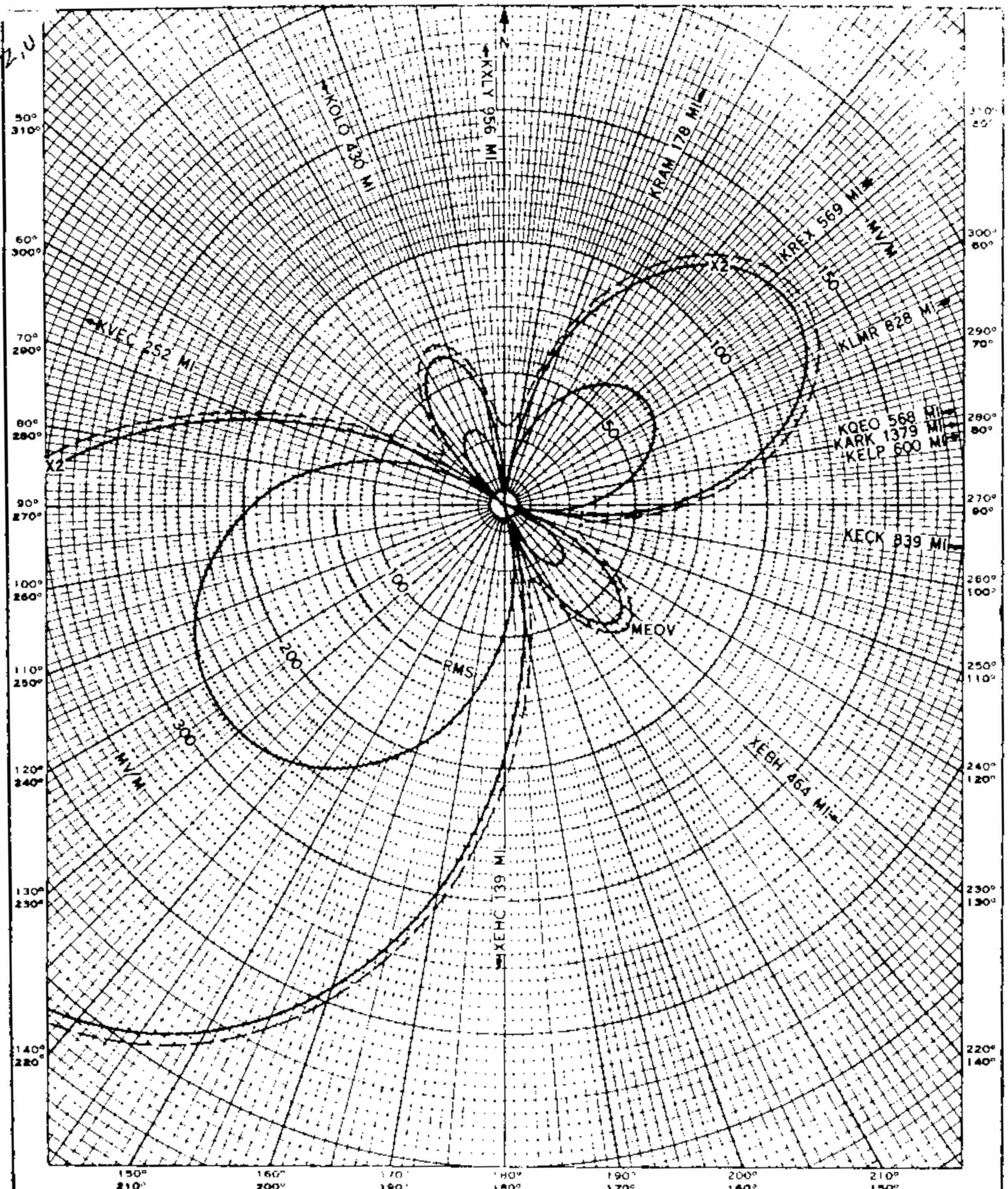
KDES

Proposed Night (11-27-64ct)

Station KDES
Palm Springs, California

500w,5kw-LS,DA-2,U
920 kc

5-5-65 APPL. 500w,5kw-LS,DA-2,U

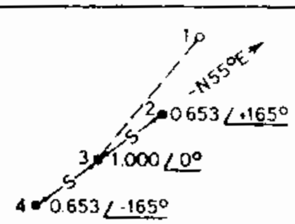


N. LAT.	33° 51' 29"
W. LONG.	116° 29' 39"

S = 90° = 267'

G = 90° = 267'

RMS = 130 MV/M



HAMMETT & EDISON
CONSULTING RADIO ENGINEERS
SAN FRANCISCO

RADIO STATION KDES
920 KC. 0.5 KW. 5 KW-LS. DA-2
PALM SPRINGS, CALIFORNIA

HORIZONTAL RADIATION PATTERN NIGHTTIME

UNATTENUATED FIELD INTENSITY AT ONE MILE

640323

FIGURE 6B

FCC File No. BP-12558
Accepted 11-19-64 Amended

Station KDES
Palm Springs, California

920 kc

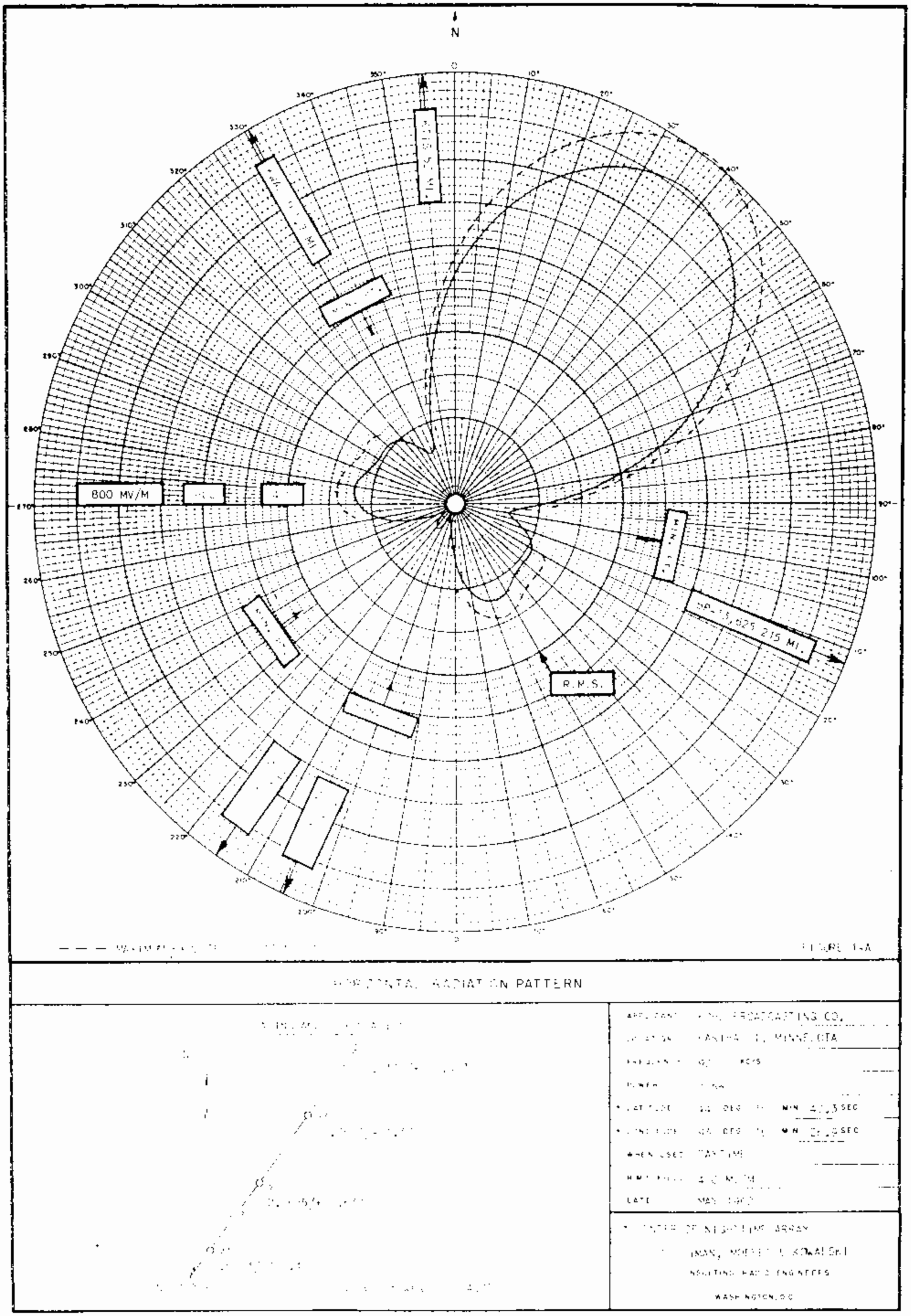
KDHL

Proposed Day
(8-24-62ct)

Station KDHL
Faribault, Minnesota

5kw,DA-2,U
920 kc

9-24-63
Granted increased power to 5kw.



FCC File No.BP-14365
Accepted 8-3-62 Amended

Station KDHL
Faribault, Minnesota

920 kc

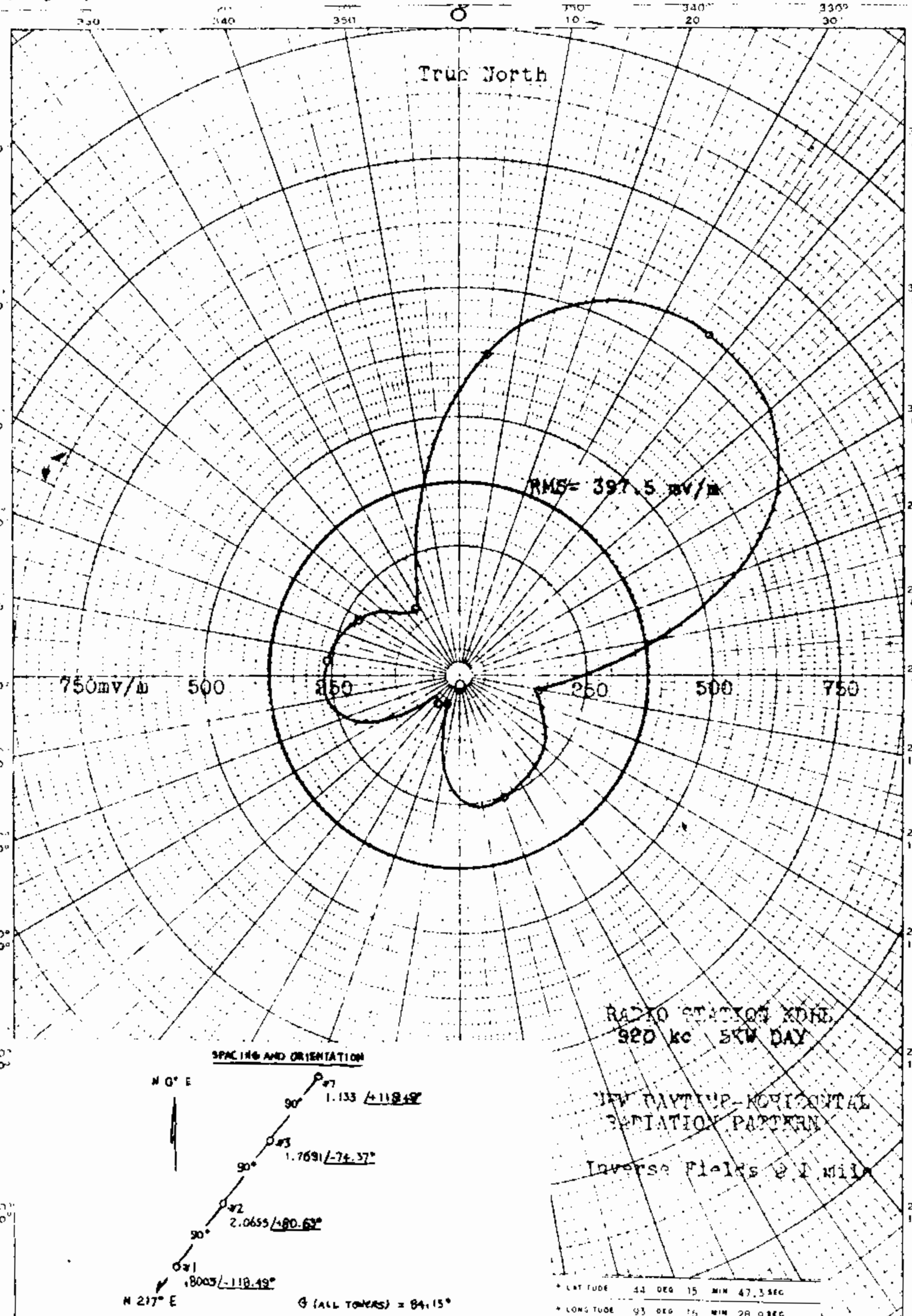
KDHL

Measured Day
(4-28-65ct)

Station KDHL
Faribault, Minnesota

5kw,DA-2,U
920 kc

LIC 3-24-66



FCC File No. BL-10857
Accepted 4-8-65

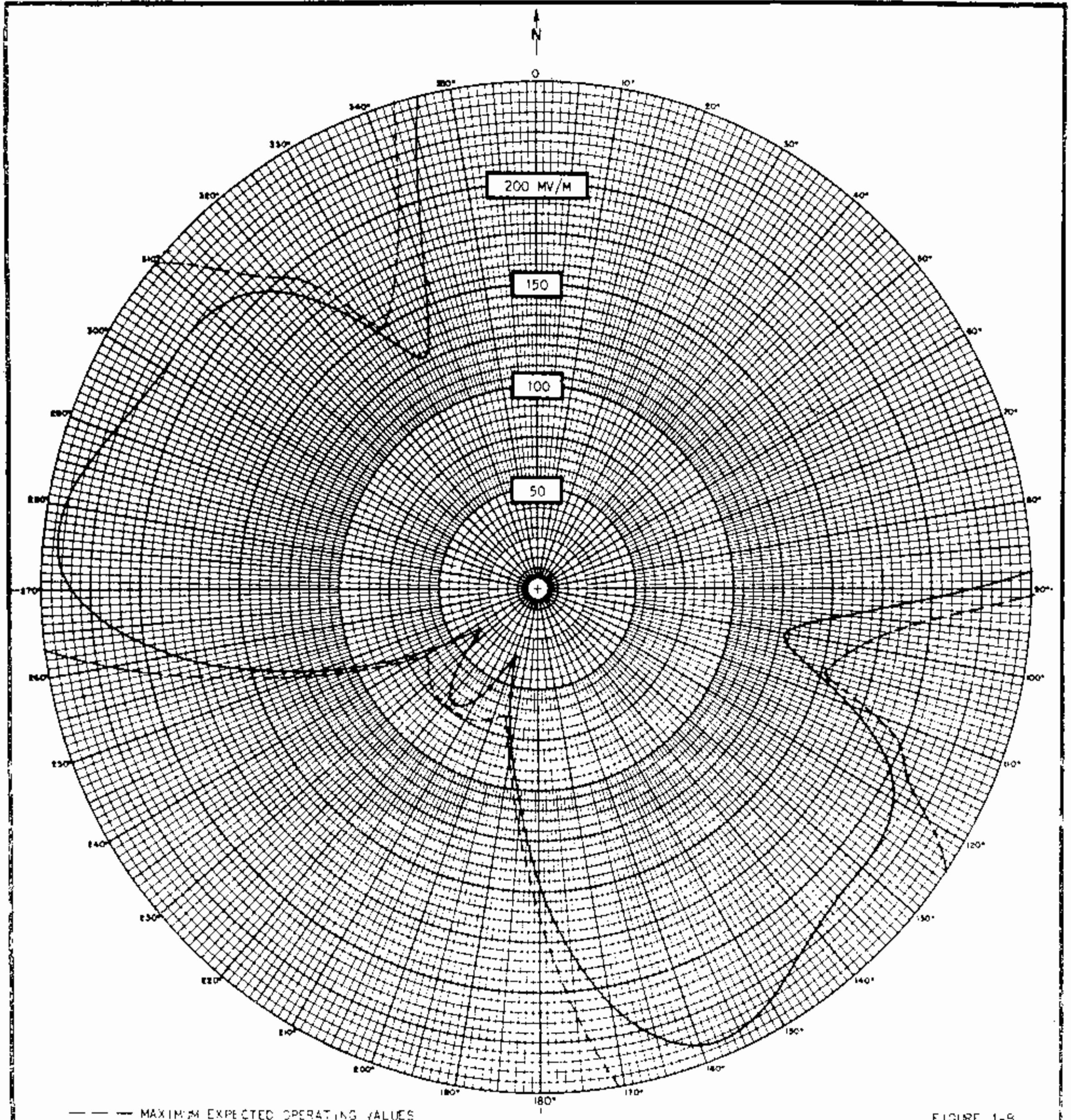
Station KDHL
Faribault, Minnesota

920 kc

KDHL

Proposed Day Nulls (8-24-62ct) | Station KDHL Faribault, Minnesota | 5kw,DA-2,U 920 kc

7-24-63 Granted increased power to 5kw



HORIZONTAL RADIATION PATTERN

EXPANDED VIEW

APPLICANT	KDHL BROADCASTING CO.
LOCATION	FARIBAULT, MINNESOTA
FREQUENCY	920 KC/S
POWER	5 KW
* LATITUDE :	44 DEG. 15 MIN. 47.3 SEC
* LONGITUDE :	93 DEG. 16 MIN. 25.9 SEC
WHEN USED:	DAYTIME
R.M.S. FIELD:	400 MV/M
DATE	MAY 1962

* CENTER OF NIGHTTIME ARRAY

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

FCC File No.BP-14365
Accepted 8-3-62 Amended

Station KDHL
Faribault, Minnesota

920 kc

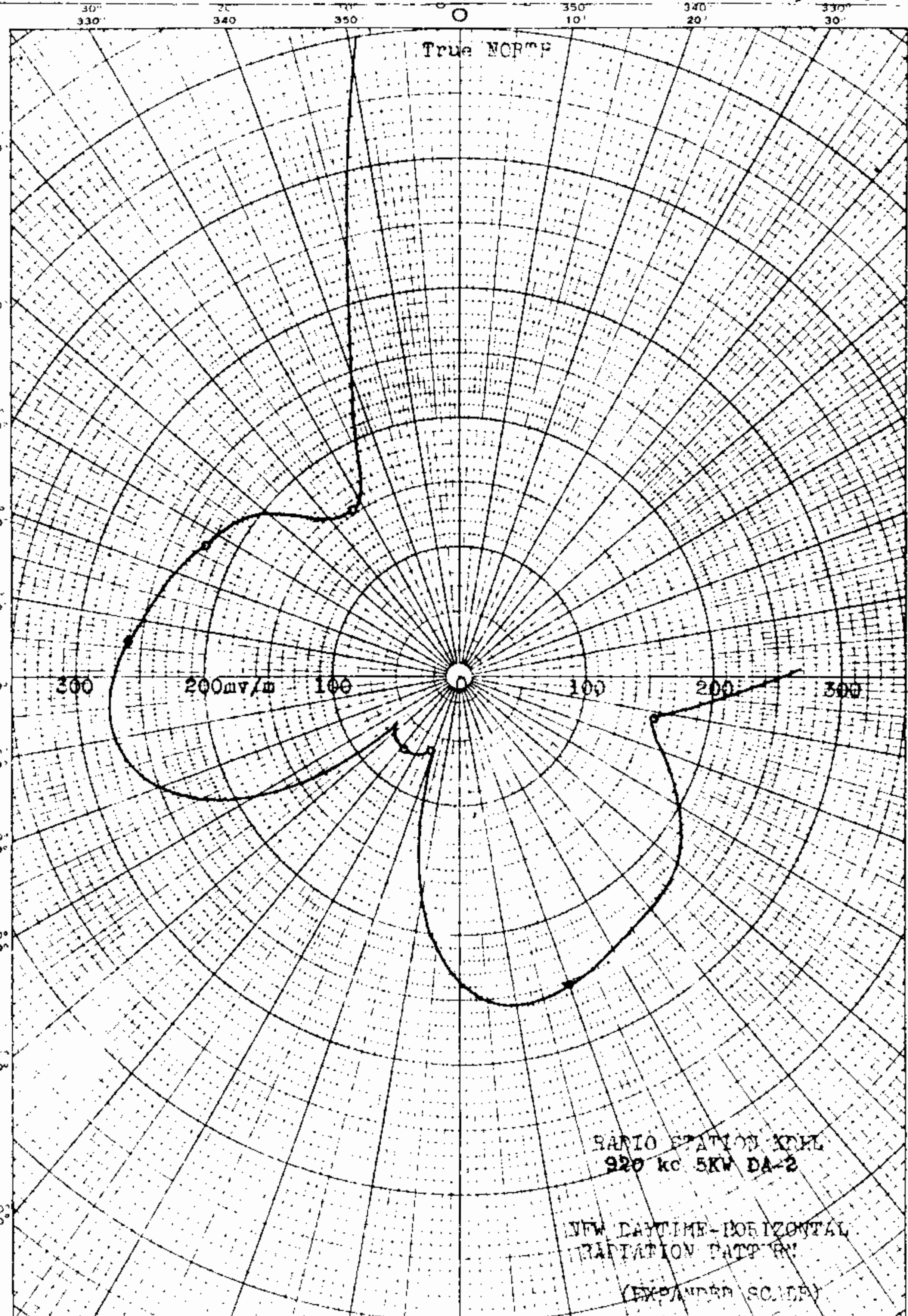
KDHL

Measured Day Nulls
(4-28-65ct)

Station KDHL
Faribault, Minnesota

5kw,DA-2,U
920 kc

LIC 3-24-66



FCC File No. BL-10857
Accepted 4-8-65

Station KDHL
Faribault, Minnesota

920 kc

KDHL

Proposed Night
(8-24-62ct)

Station KDHL
Faribault, Minnesota

5kw,DA-2,U
920 kc

7-24-63
Granted
increased power
to 5kw.

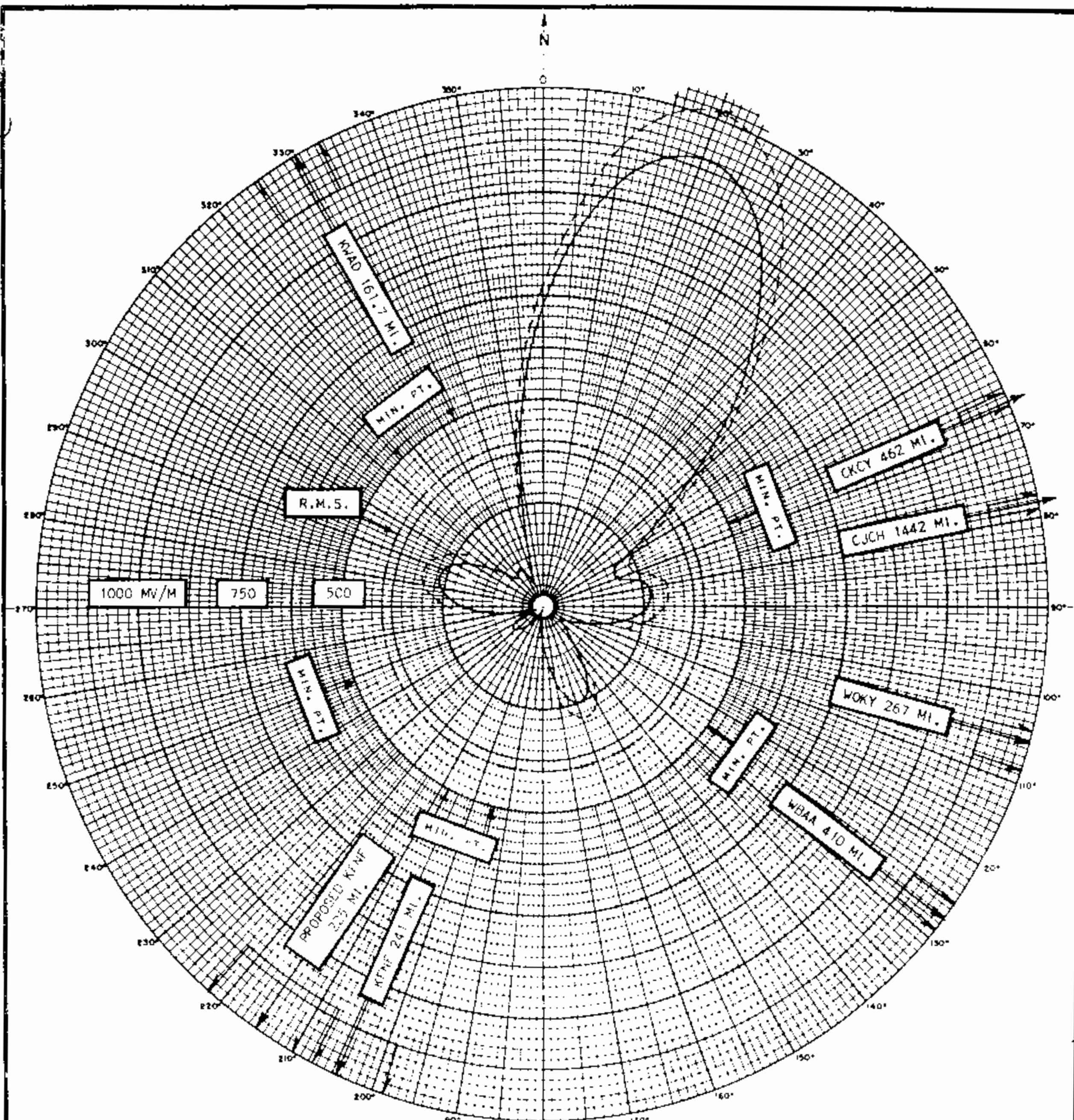
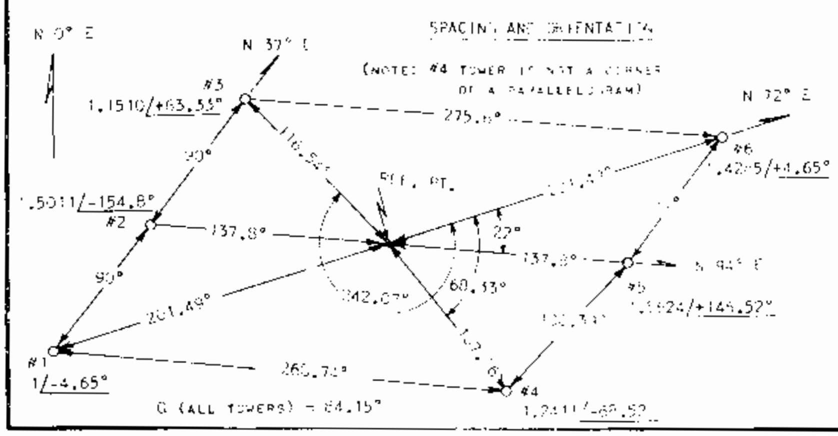


FIGURE 4-A

HORIZONTAL RADIATION PATTERN



APPLICANT	KDHL BROADCASTING CO.
LOCATION	FARIBAULT, MINNESOTA
FREQUENCY	920 KC/S
POWER	5 KW
LATITUDE	44 DEG 15 MIN 47.3 SEC.
LONGITUDE	93 DEG 16 MIN 28.9 SEC
WHEN USED.	NIGHTTIME
R.M.S. FIELD.	401 MV/M
DATE	MAY 1962

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

FCC File No. BP-14365
Accepted 8-3-62 Amended

Station KDHL
Faribault, Minnesota

920 kc

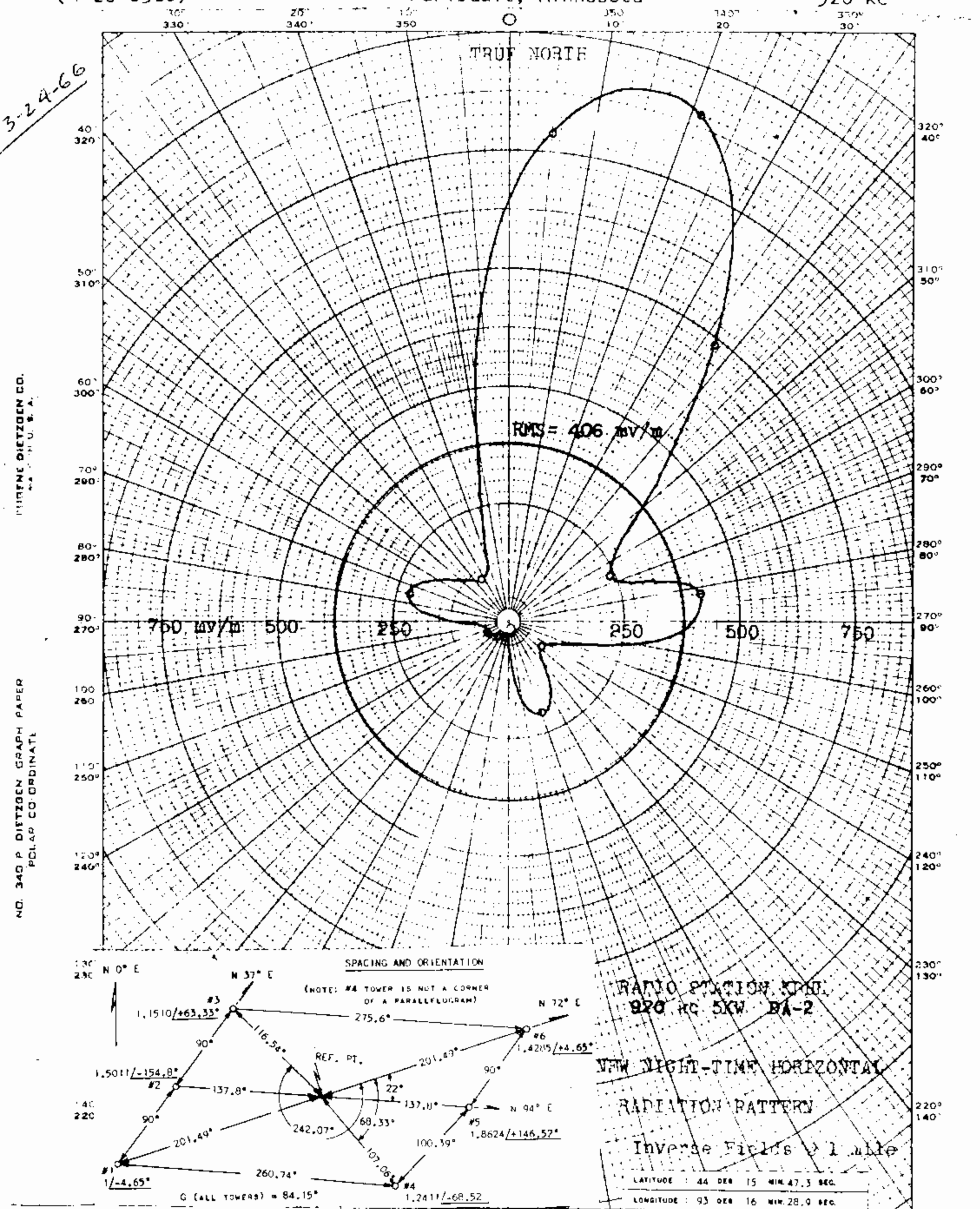
KDHL

Measured Night
(4-28-65ct)

Station KDHL
Faribault, Minnesota

5kw,DA-2,U
920 kc

LIC 3-24-66



FCC File No. BL-10857
Accepted 4-8-65

Station KDHL
Faribault, Minnesota

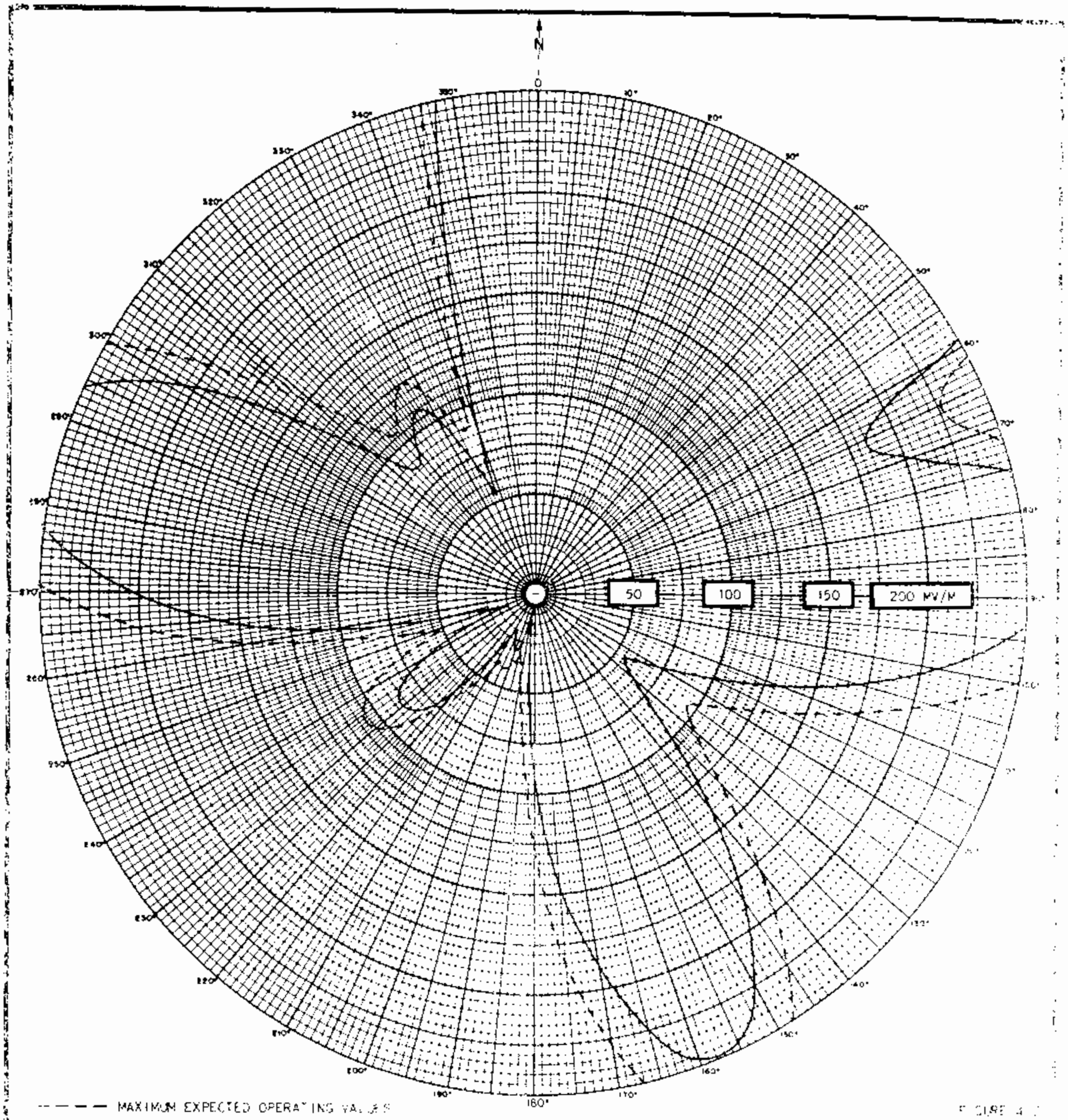
920 kc

KDHL

Proposed Night Nulls (6-24-62ct)

Station KDHL
Faribault, Minnesota

5kw,DA-2,U
920 kc



HORIZONTAL RADIATION PATTERN

EXPANDED VIEW

APPLICANT	KDHL BROADCASTING CO.
LOCATION	FARIBAULT, MINNESOTA
FREQUENCY	920 KC/S
POWER	5 Kw
LATITUDE	44 DEG 1? MIN ?? SEC
LONGITUDE	93 DEG ?? MIN 2? SEC
WHEN USED	NIGHTTIME
R.M.S. FIELD	401 MV/M
DATE	MAY 1962

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

File No. BP-14365
Dated 8-3-62 Amended

Station KDHL
Faribault, Minnesota

920 kc

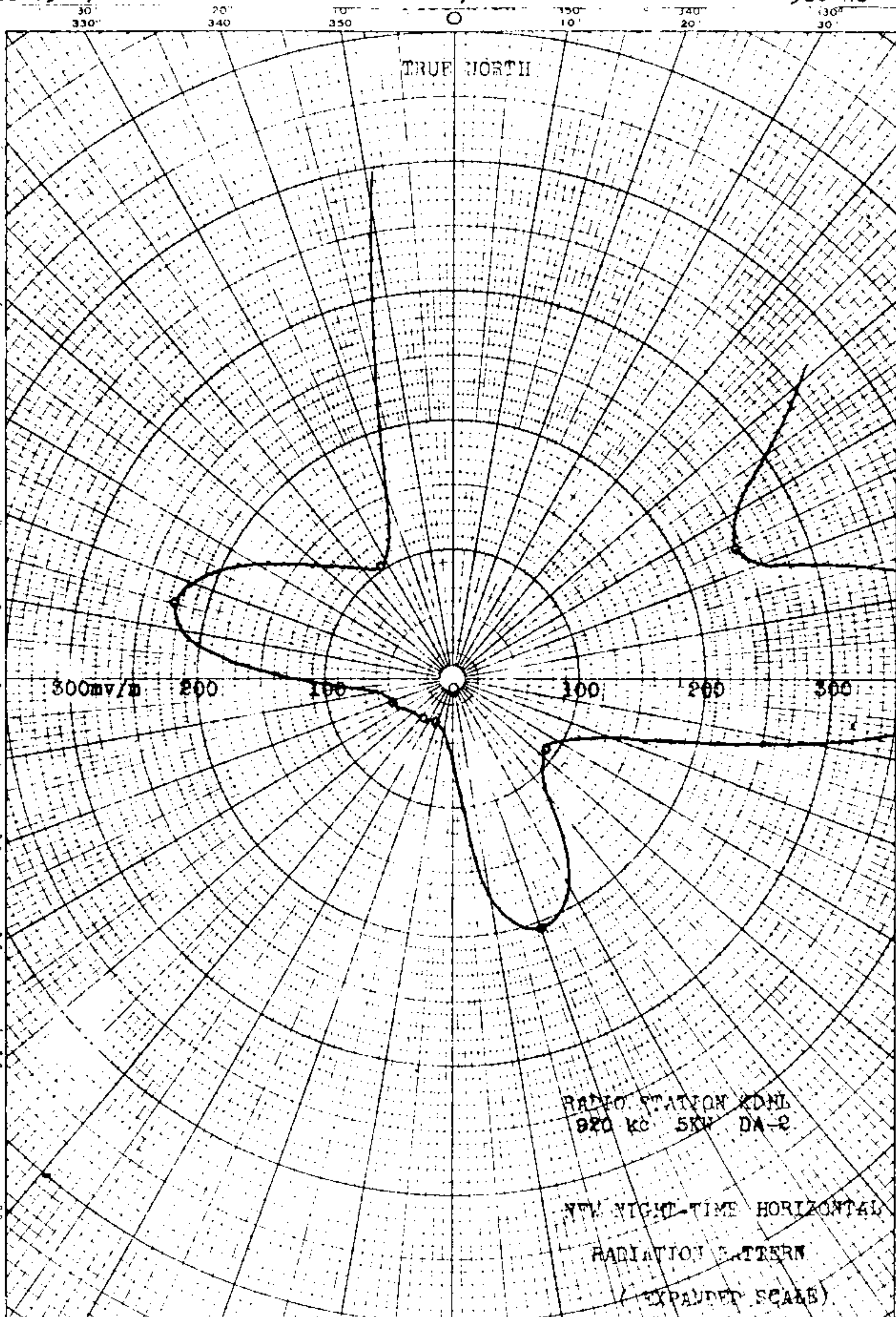
KDHL

Measured Night Nulls (4-28-65ct)

Station KDHL
Faribault, Minnesota

5kw,DA-2,U
920 kc

Lic 3-24-66



FCC File No. BL-10857
Accepted 4-8-65

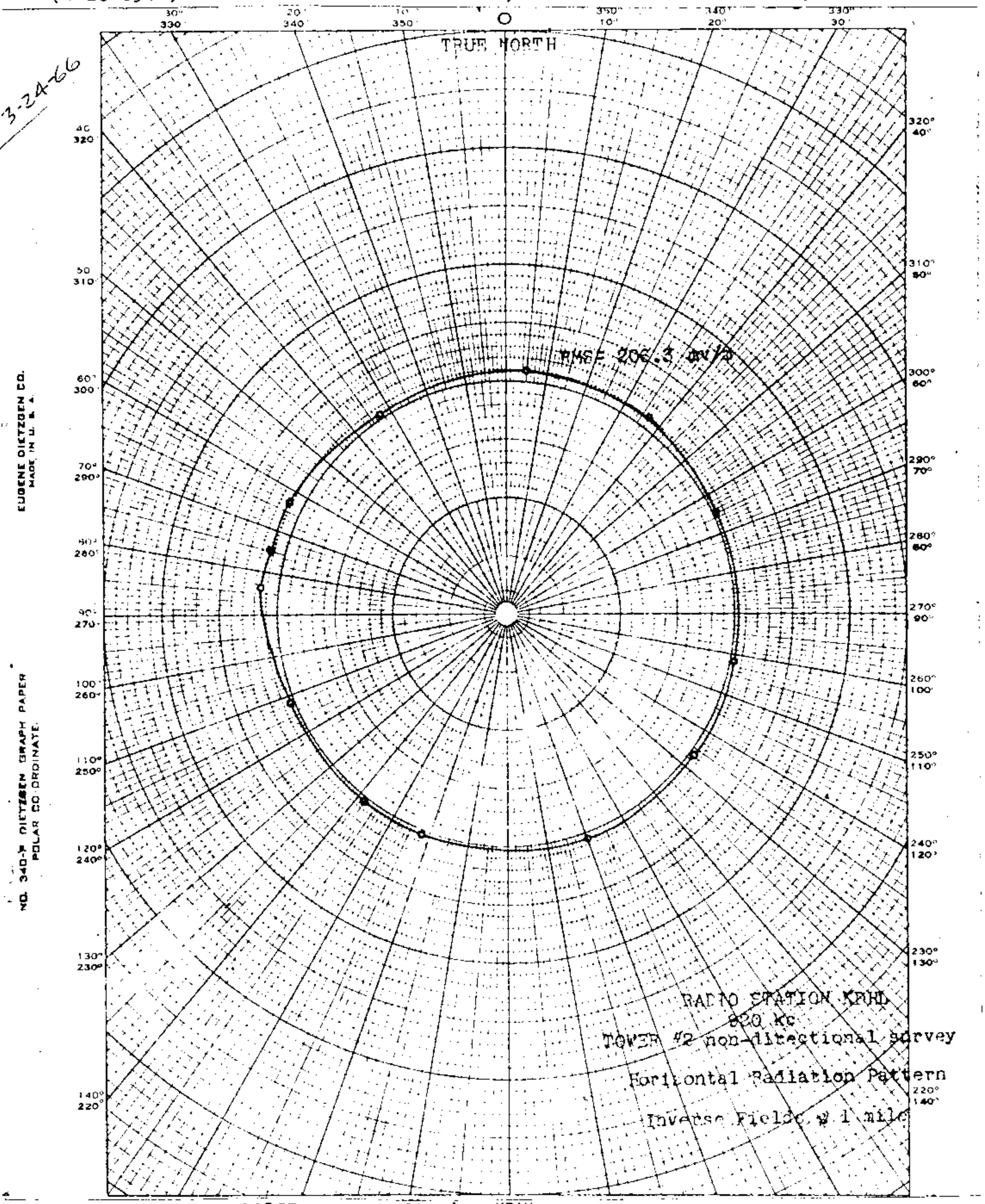
Station KDHL
Faribault, Minnesota

920 kc

KDHL

Measured Non-DA (4-28-65ct) | Station KDHL, Faribault, Minnesota | 5kw,DA-2,U 920 kc

LIC 3-24-66



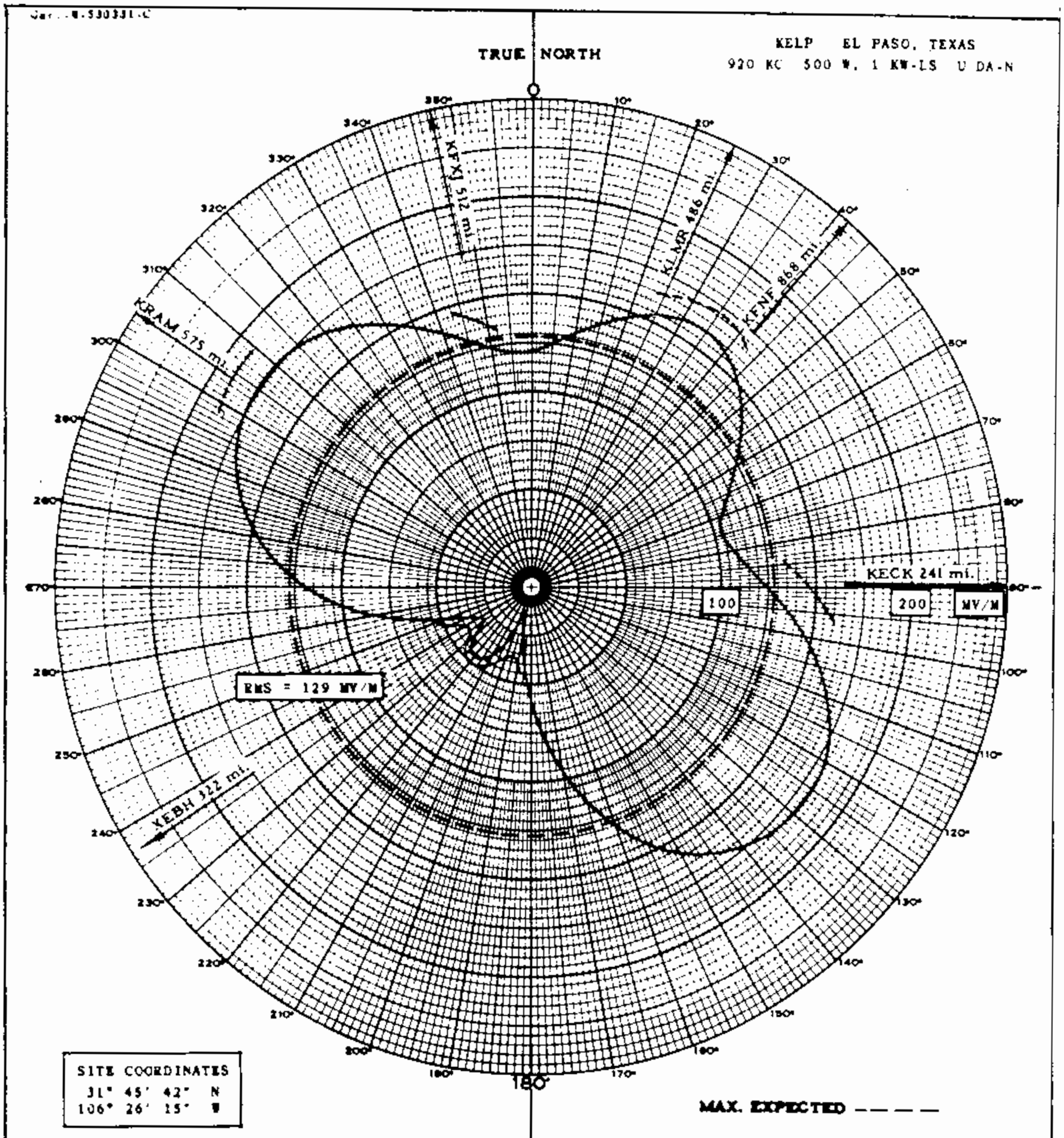
FCC File No. BL-10857
Accepted 4-8-65

Station KDHL
Faribault, Minnesota

920 kc

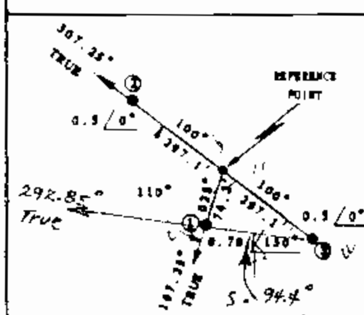
KELP

PROPOSED KELP EL PASO, TEXAS 500W 1KW-LS,U,DA-N 920 kc
NIGHT (8/3/53G)



Heights of towers: 250' (255'overall)

CALCULATED HORIZONTAL PLANE RADIATION PATTERN FOR NIGHTTIME OPERATION



TRINITY BROADCASTING CORPORATION
EL PASO TEXAS

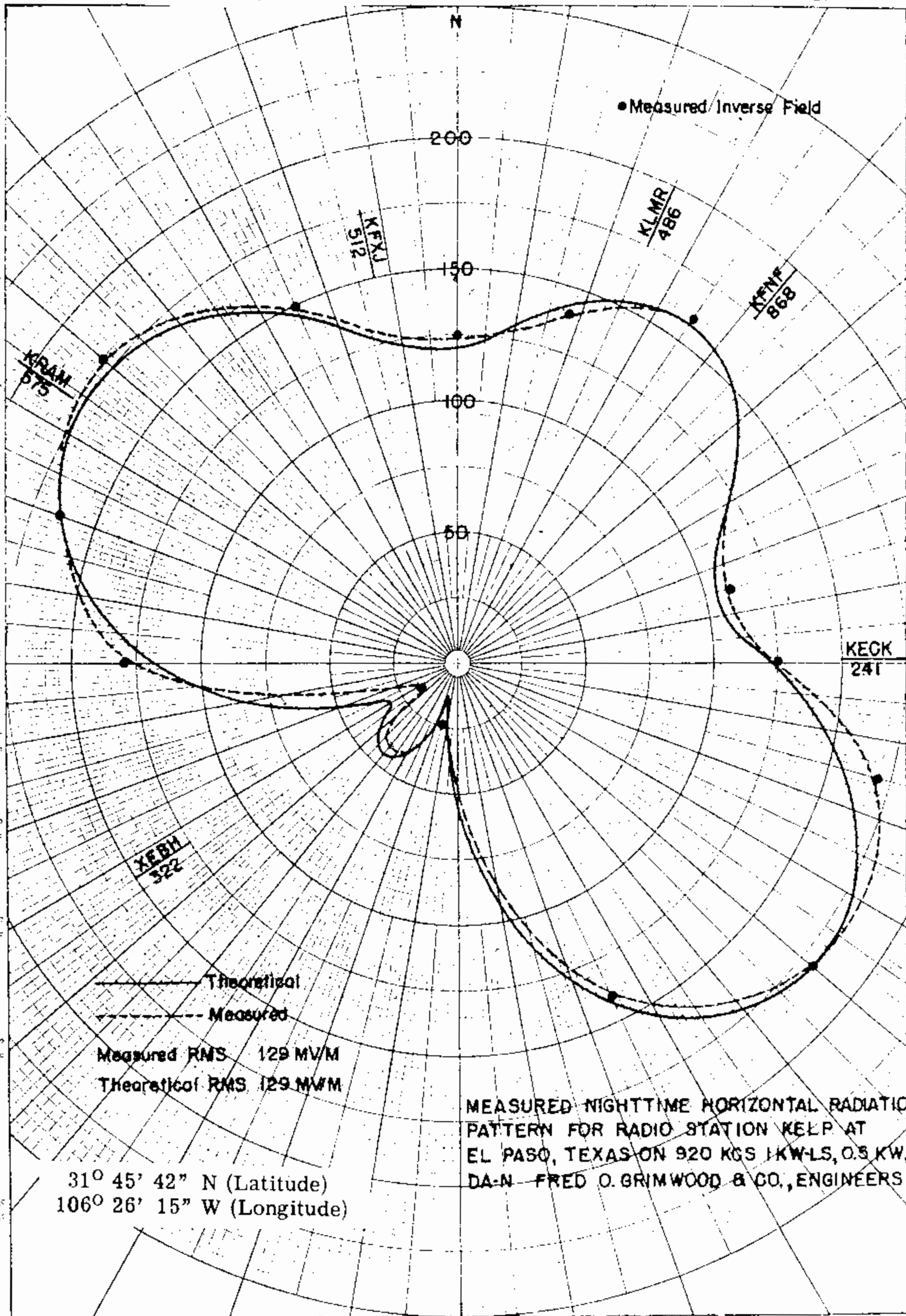
WELDON and CARR
Consulting Radio and Television Engineers
Washington, D. C. Dallas, Texas

KELP El Paso, Texas
920 KC 500 W, 1 KW-LS
U DA-N

FCC FILE NO. BP-8938 Accepted 7/20/53 KELP EL PASO, TEXAS 920 kc

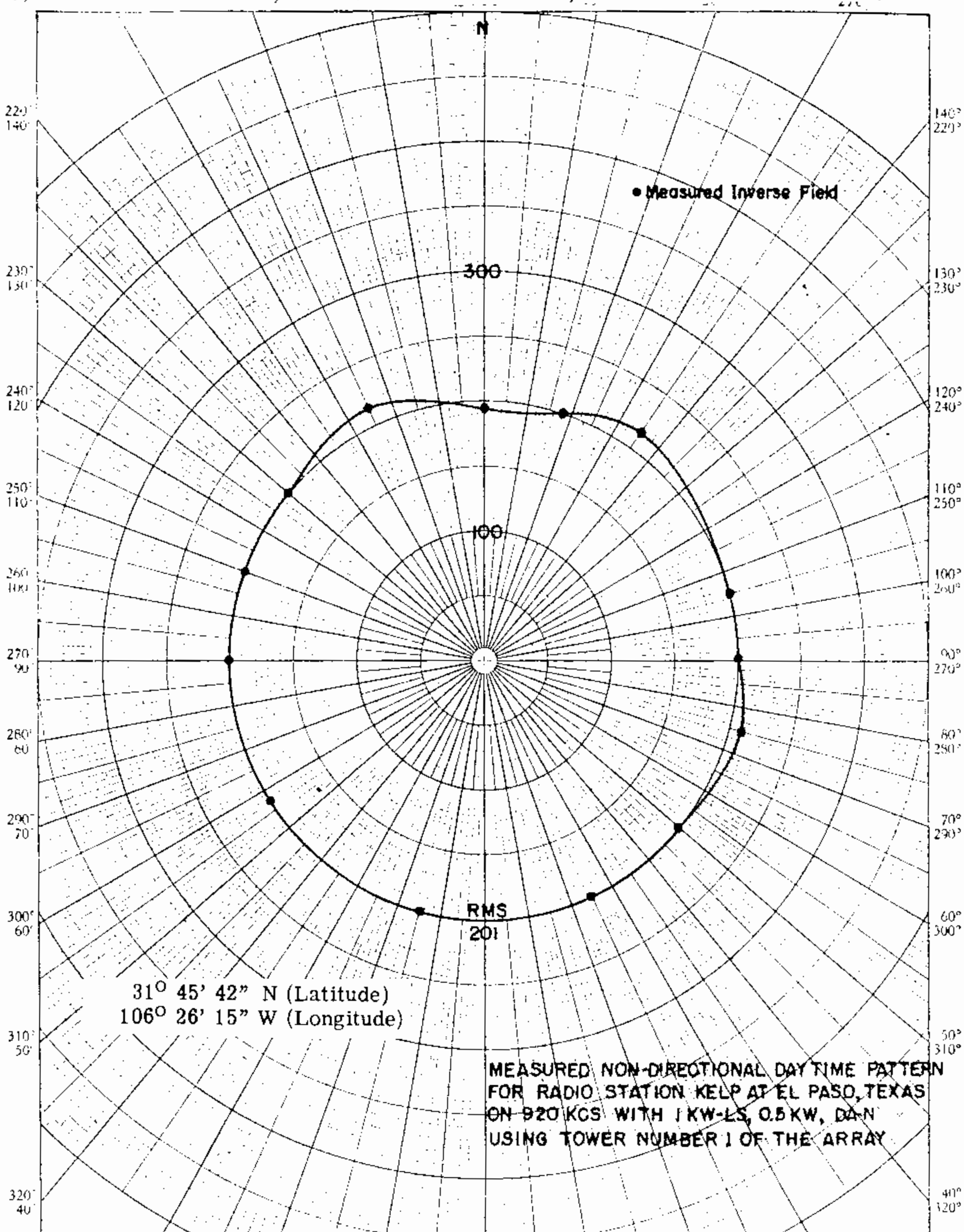
KELP

MEASURED NIGHT (1-21-55G) | KELP EL PASO, TEXAS | 500 W, 1 KW-LS DA-N, U | 920 KC



KELP

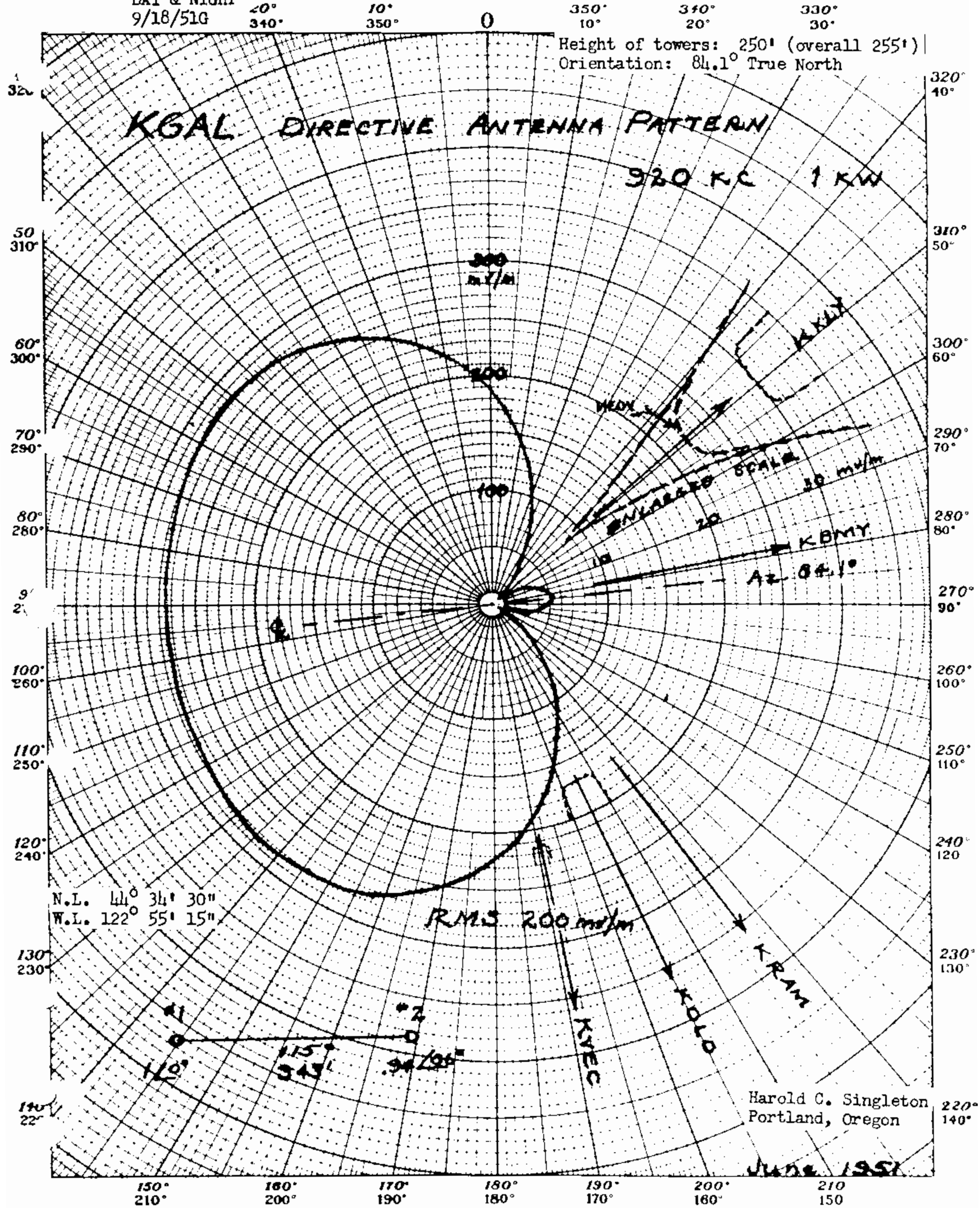
MEASURED NON-DA (1-21-55G) | KELP EL PASO, TEXAS | 500 W, 1 KW-LS DA-N, U | 920 KC



File No. BL-5574 | Accepted 1-11-55 | KELP, EL PASO, TEXAS | 920 KC

KGAL

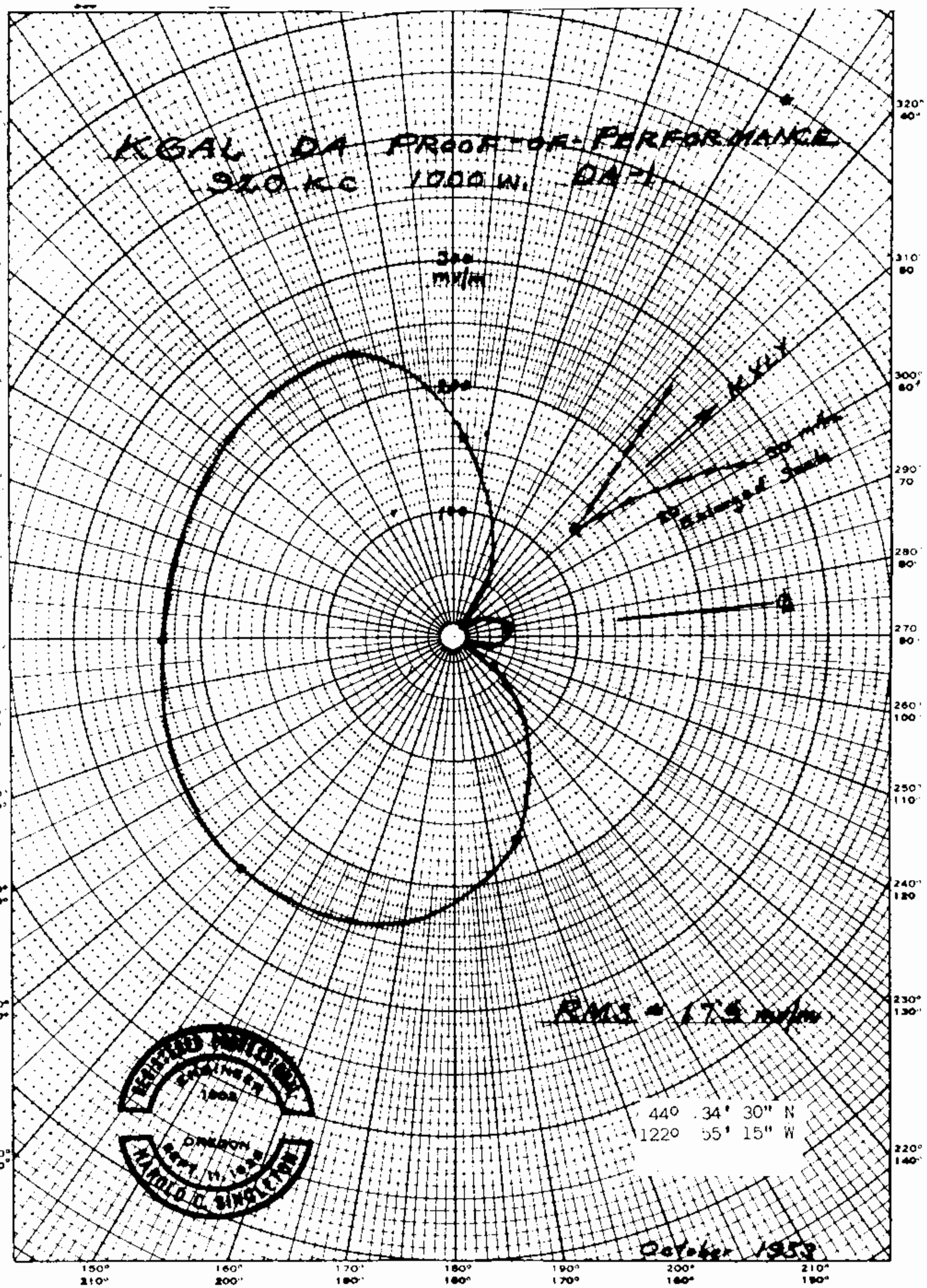
PROPOSED KGAL, LEBANON, OREGON 1 KW, U, DA-1 920 KC
DAY & NIGHT
9/18/51G



APPL RESUBMITTED 8/13/51 BP-8223 KGAL, LEBANON, OREGON 920 KC

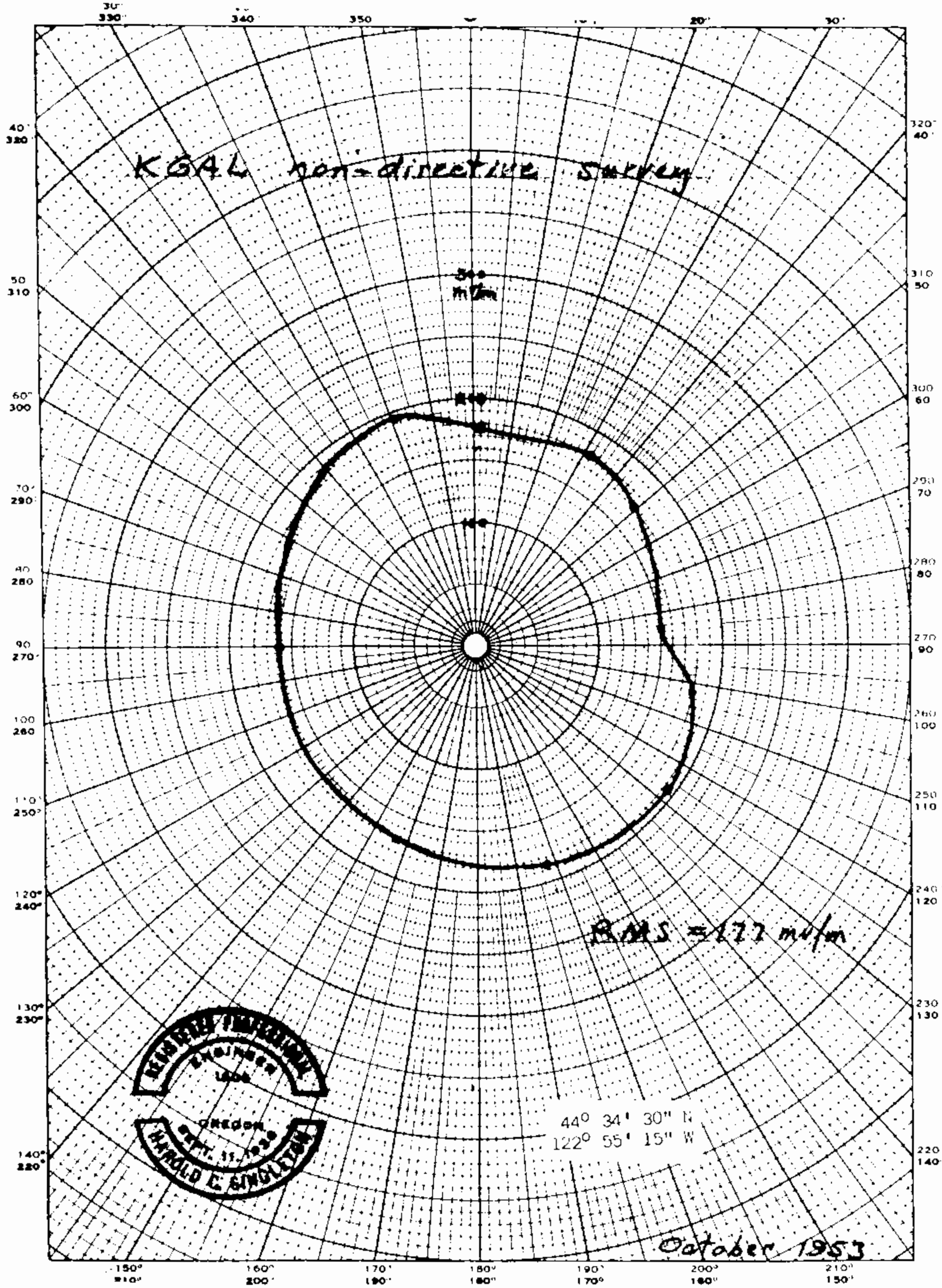
KGAL

MEASURED ~~DAY+N~~ Day + Night (1/19/54G) KGAL, LEBANON, OREGON 1KW, U, DA-N 920 kc



KGAL

MEASURED N-DA KGAL, LEBANON, OREGON 1KW, U, DA-N 920 kc
[redacted] (1/19/54G)



File No. BL-5180 Accepted 12/18/53 KGAL, LEBANON, OREGON 920 kc

KITN

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KITN

Main Studio: Olympia, Washington

Frequency: 920 kHz

Power: 0.5 kW Night 1 kW Day

Notification List No. 1689

Date: June 16, 1976

Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 47° 01' 52"
West Longitude: 122° 51' 10"

ANTENNA CHARACTERISTICS

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

0°

TOWER:	NW(#1)	SE(#2)
HEIGHT ABOVE INSULATORS:	210' (70.66°)	300' (100.95°)
PHASING:	0°	+84.0°
FIELD RATIO:	1.0	1.0

80°

90

100

SPACING AND ORIENTATION: Towers are spaced 332.83' (112°) on a line bearing 279.2° true.

10°

GROUND SYSTEM: 120-280' to 345' equally spaced copper radials about tower #2 plus 120-200' equally spaced radials about tower #1. 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	195 mv/m 1/	----	----
Night	133 mv/m	131.34 mv/m	141 mv/m

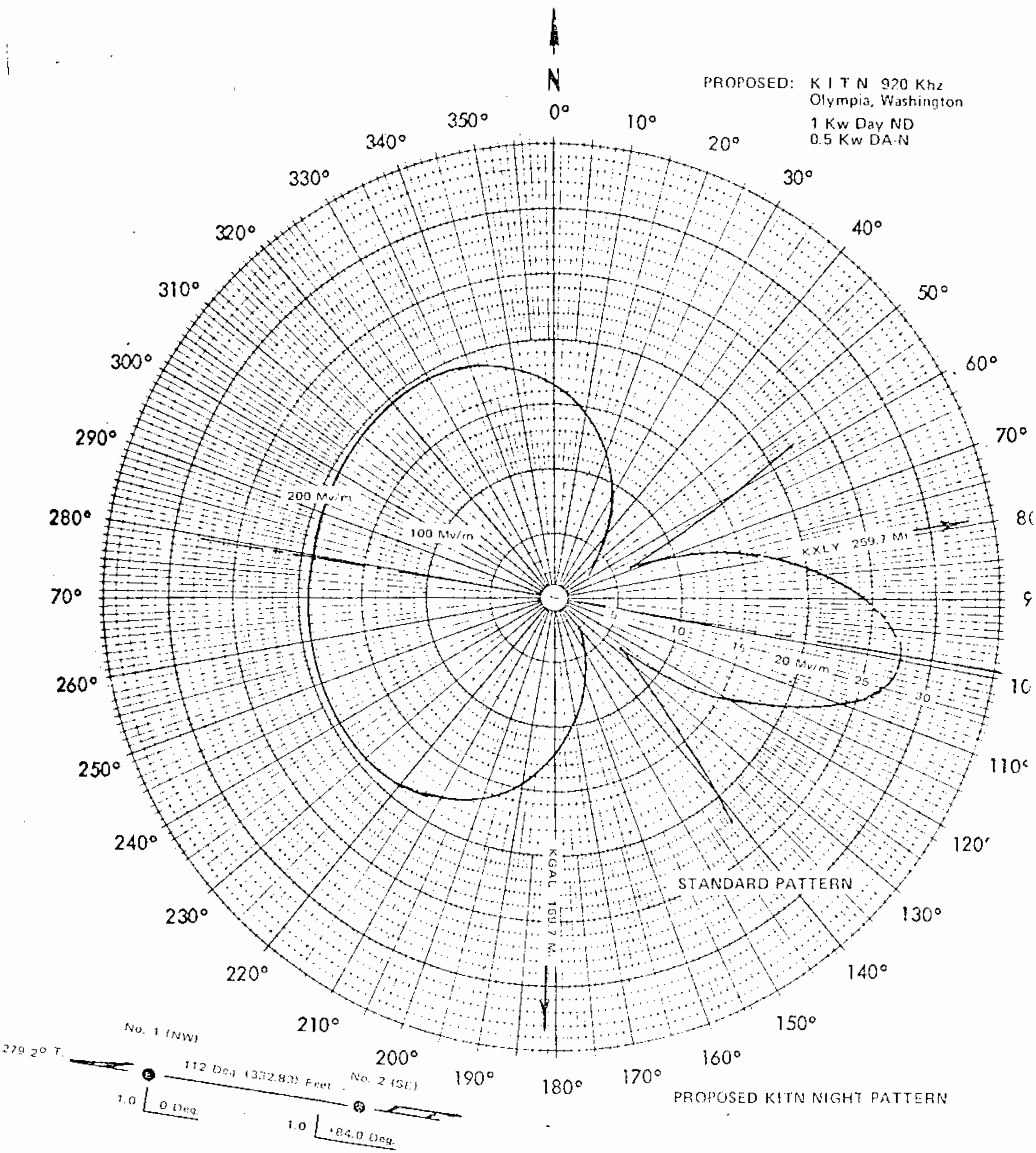
1/ Tower #2

Note: This notification concerns only a change to add new nighttime operation with Daytime operation continued as previously notified.

CTR NO 30479A3

KITN

PROPOSED: K I T N 920 Khz
Olympia, Washington
1 Kw Day ND
0.5 Kw DA-N



PROPOSED KITN NIGHT PATTERN

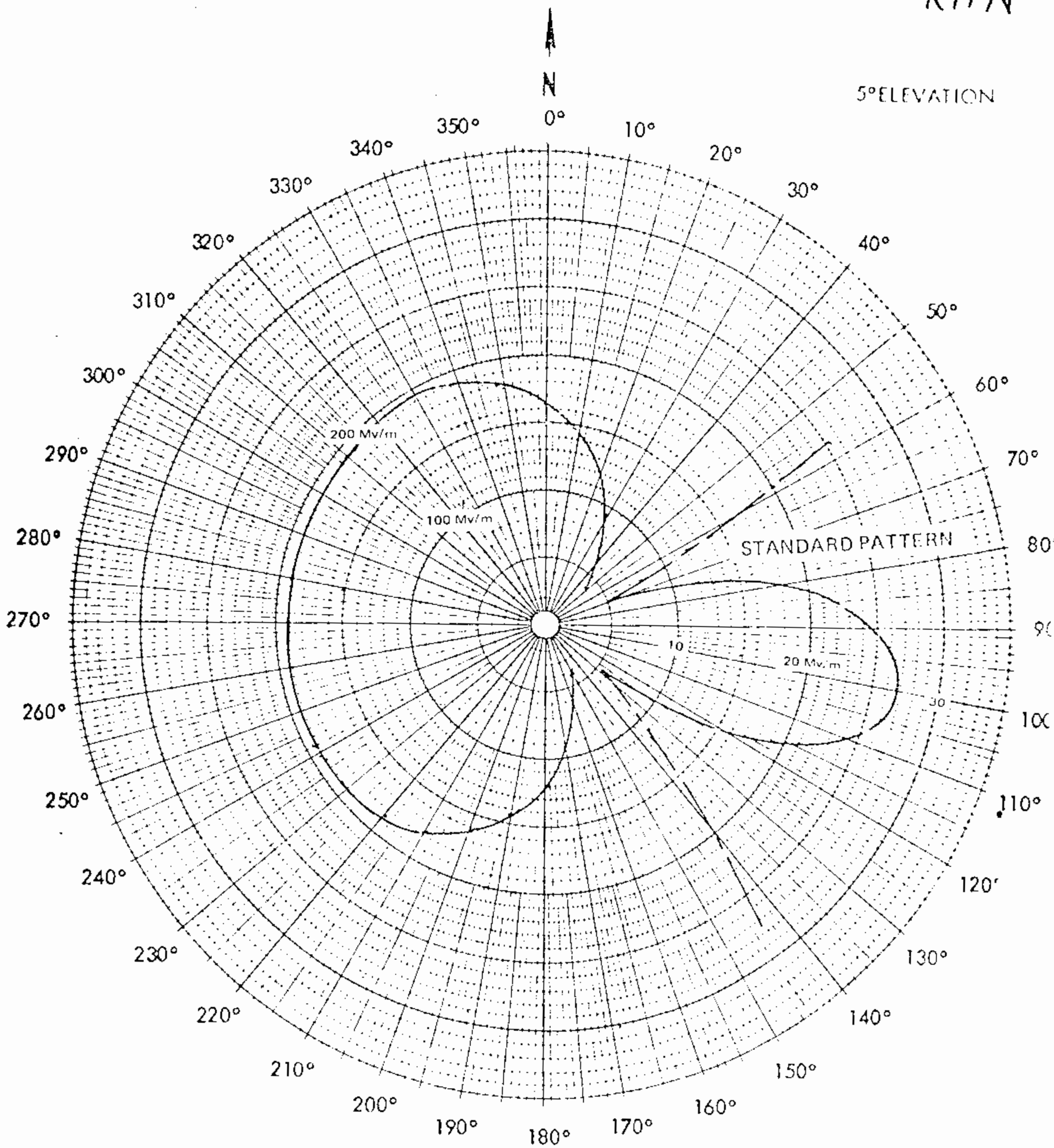
No. 1 Tower G-210' (70.66 Deg.)
No. 2 Tower G- 300' (100.95 Deg.)

No. 1 Tower operating Inverse field 92.87 Mv/m
RSS value of inverse fields 131.34 Mv/m
RMS of Theoretical pattern 133 Mv/m
RMS of standard pattern 141 Mv/m

CONSULTING ENGINEER KENNETH WILLIAMS, Jr. PE
ELECTRICAL • AM/FM BROADCAST • TELEVISION
321 SOUTH 11Th. St. • TACOMA, WASHINGTON 98402

EXHIBIT No. 6

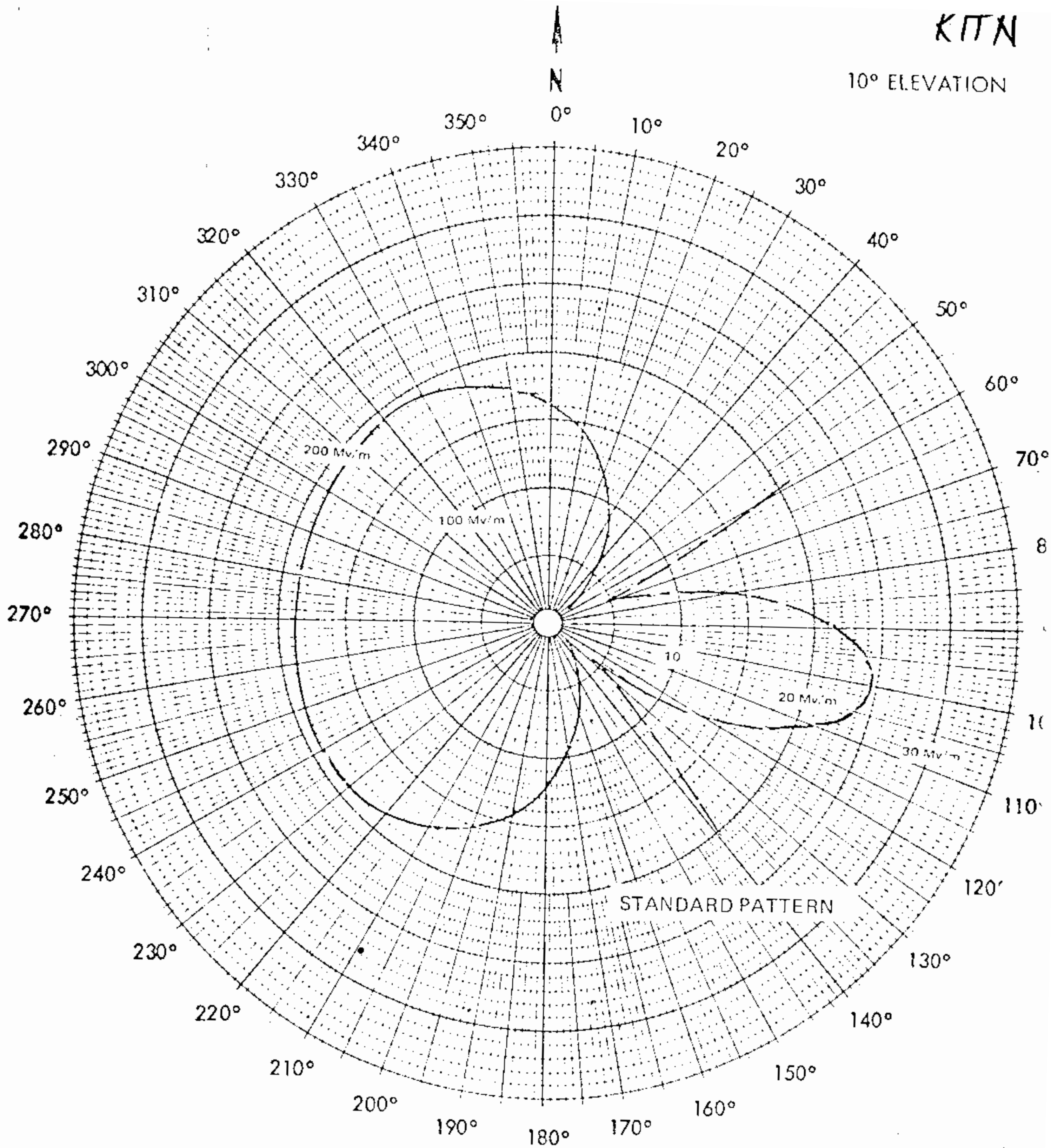
KITN



K I T N 920 Khz. Olympia, Washington

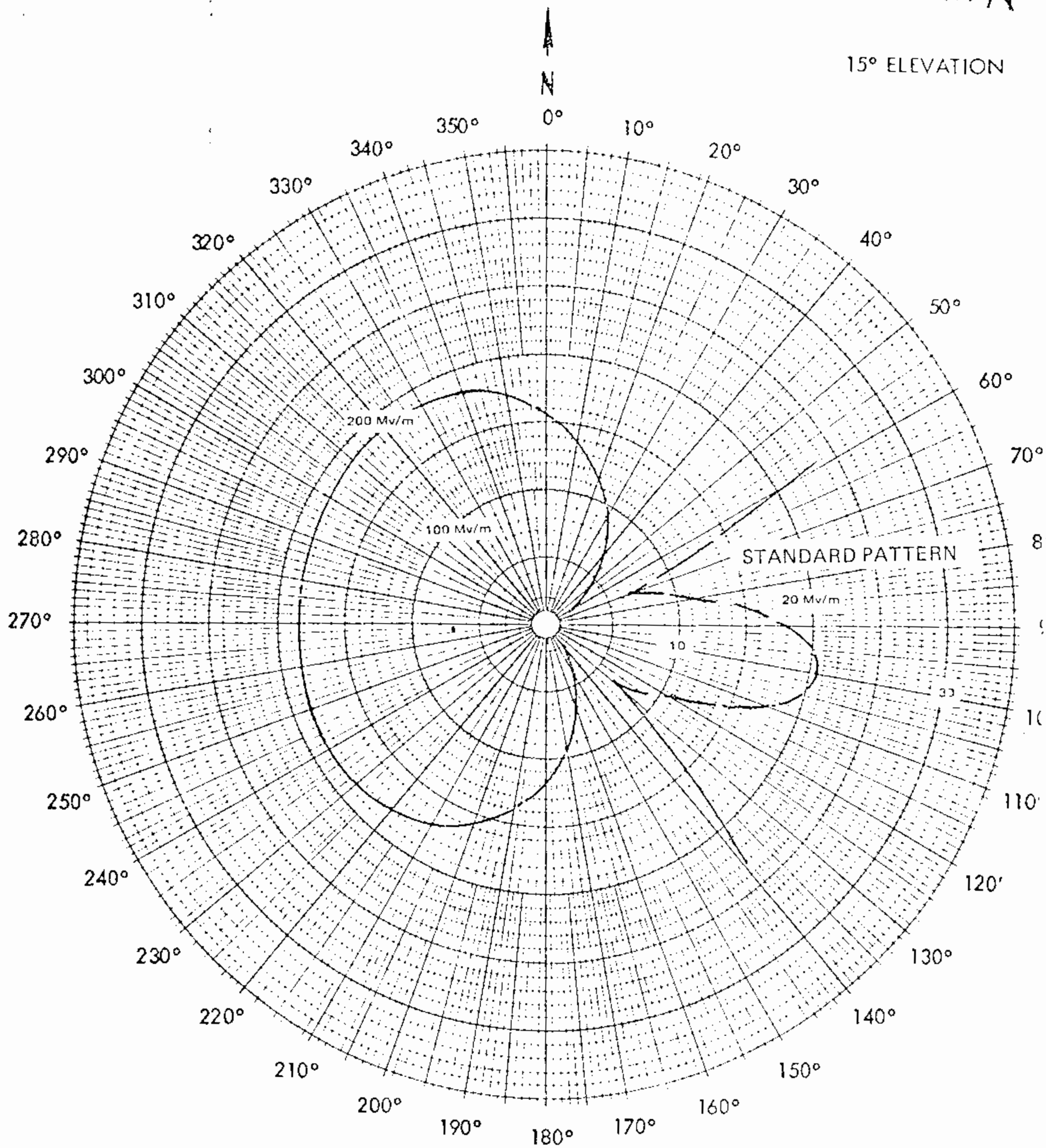
KITN

10° ELEVATION



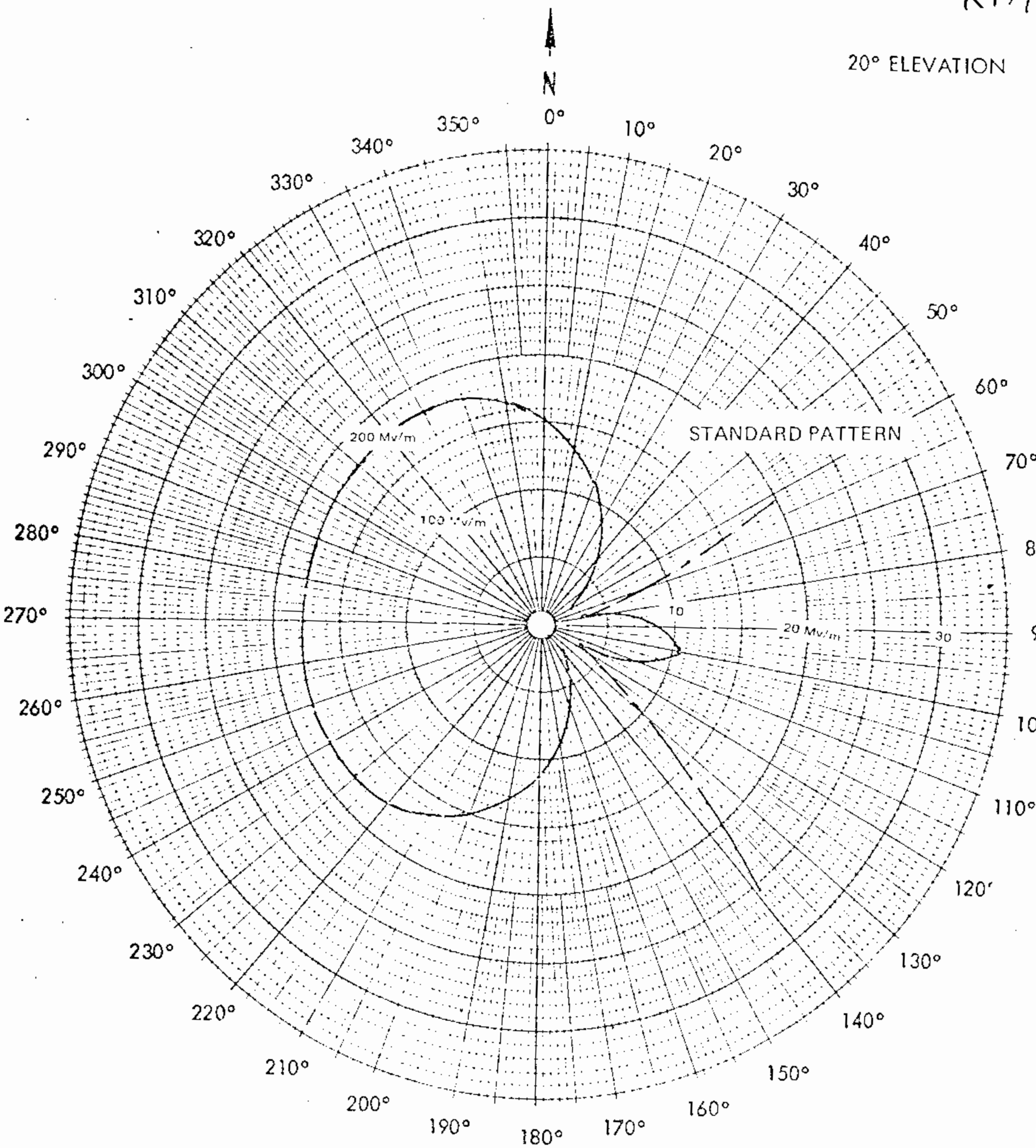
K I T N 920 Khz. Olympia, Washington

KITN



K I T N 920 Khz. Olympia, Washingtor

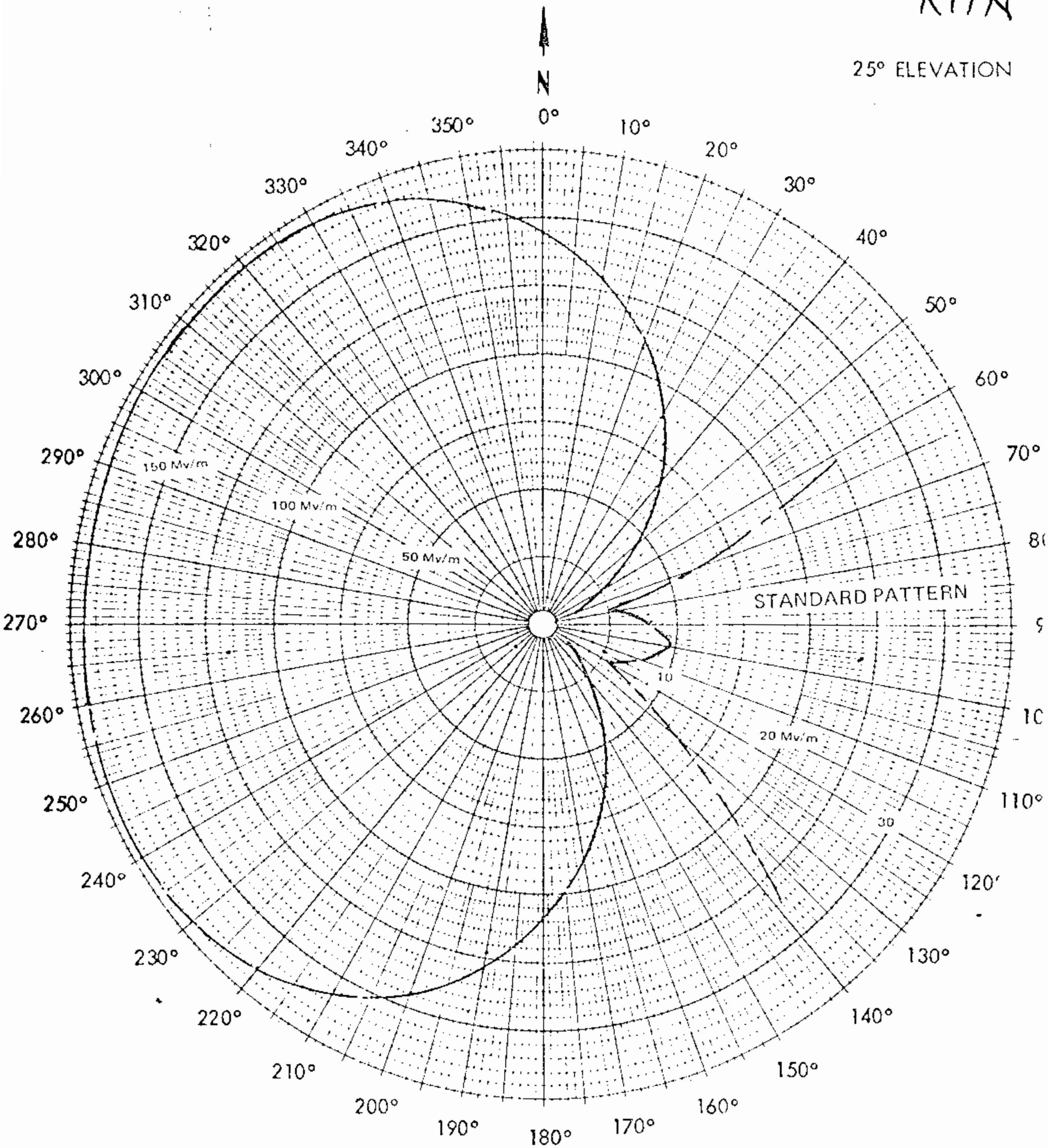
KITN



K I T N 920 Khz. Olympia, Washington

KITN

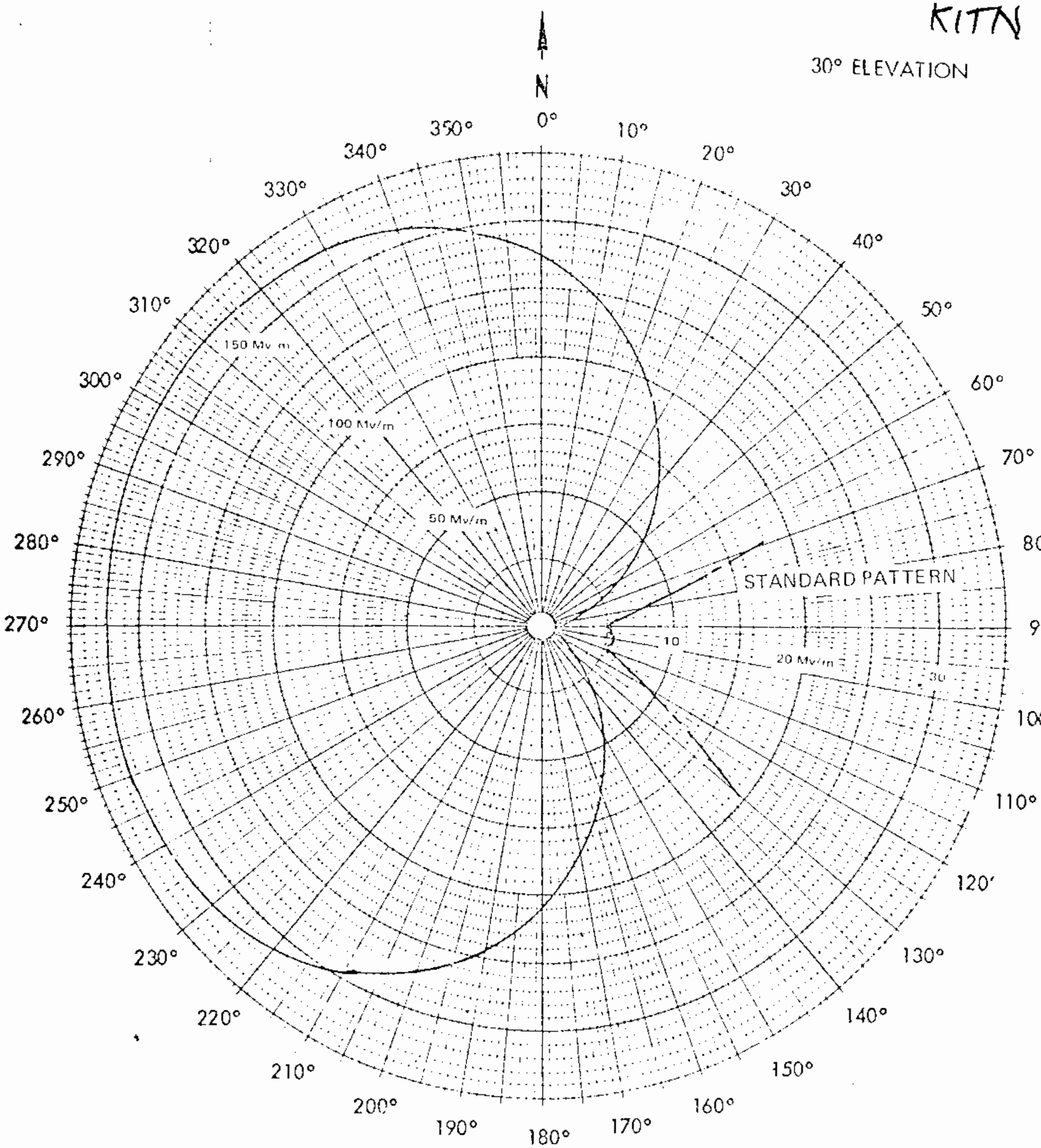
25° ELEVATION



K I T N 920 Khz. Olympia, Washington

KITN

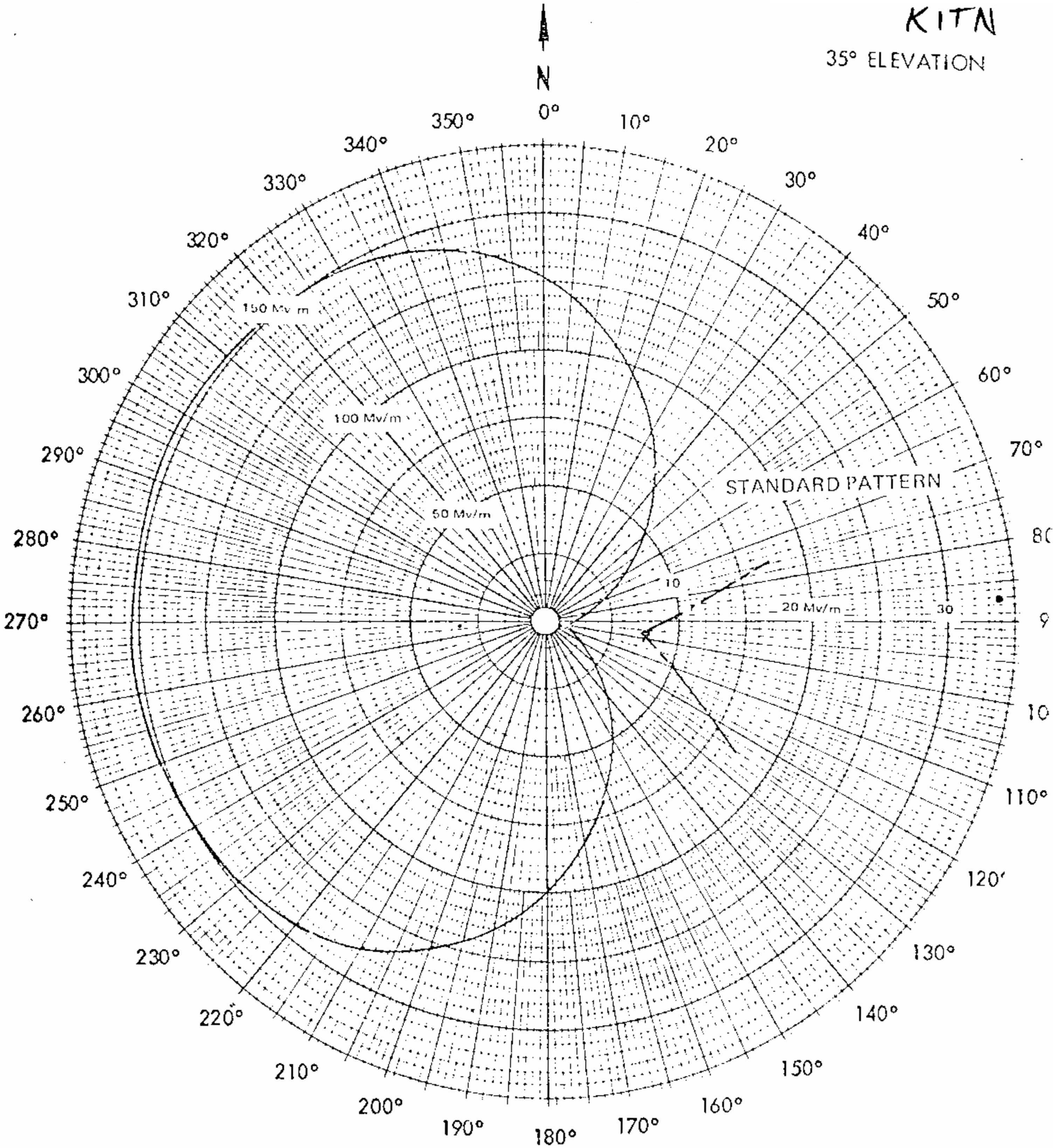
30° ELEVATION



K I T N 920 Khz. Olympia, Washington

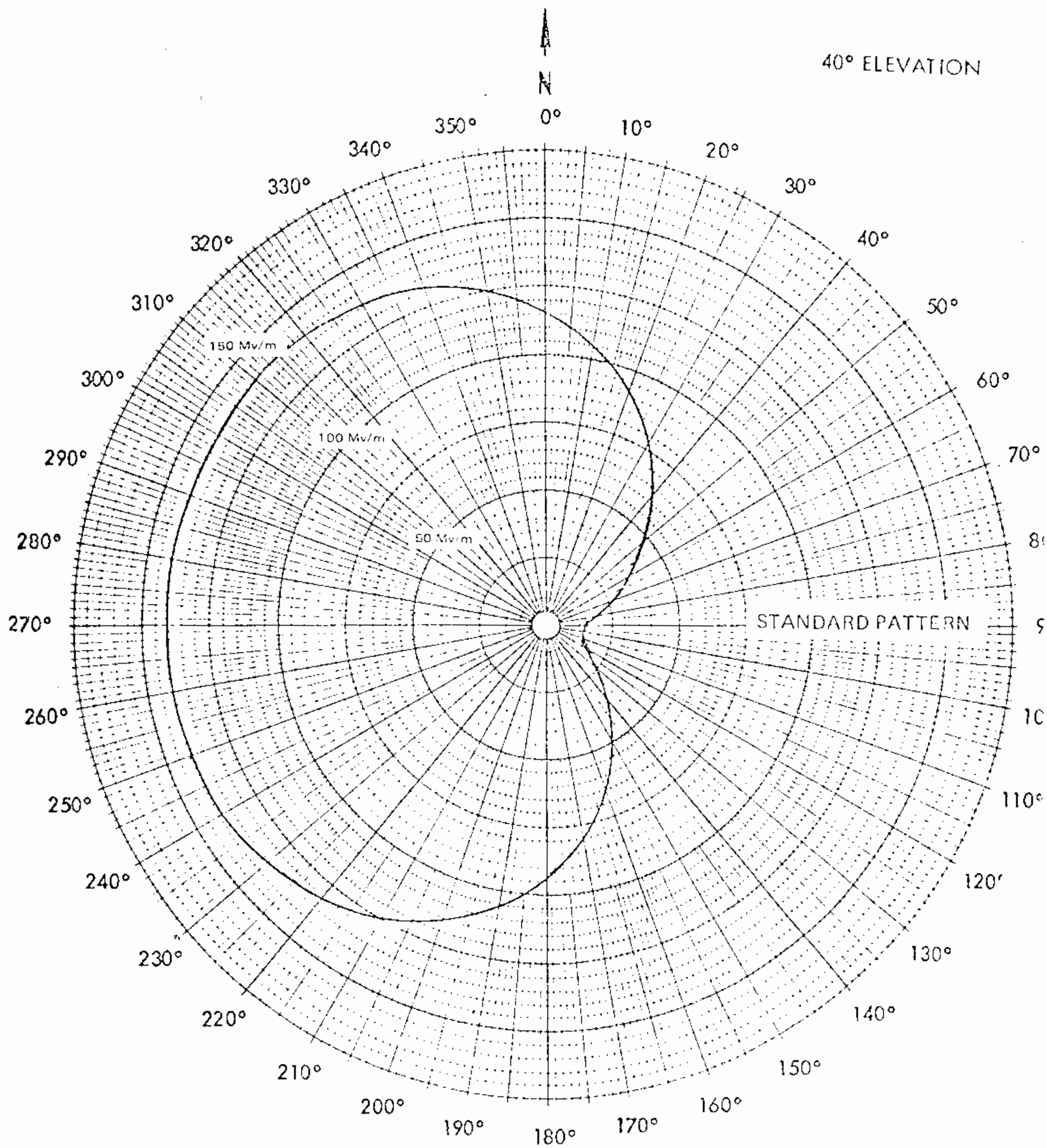
KITN

35° ELEVATION



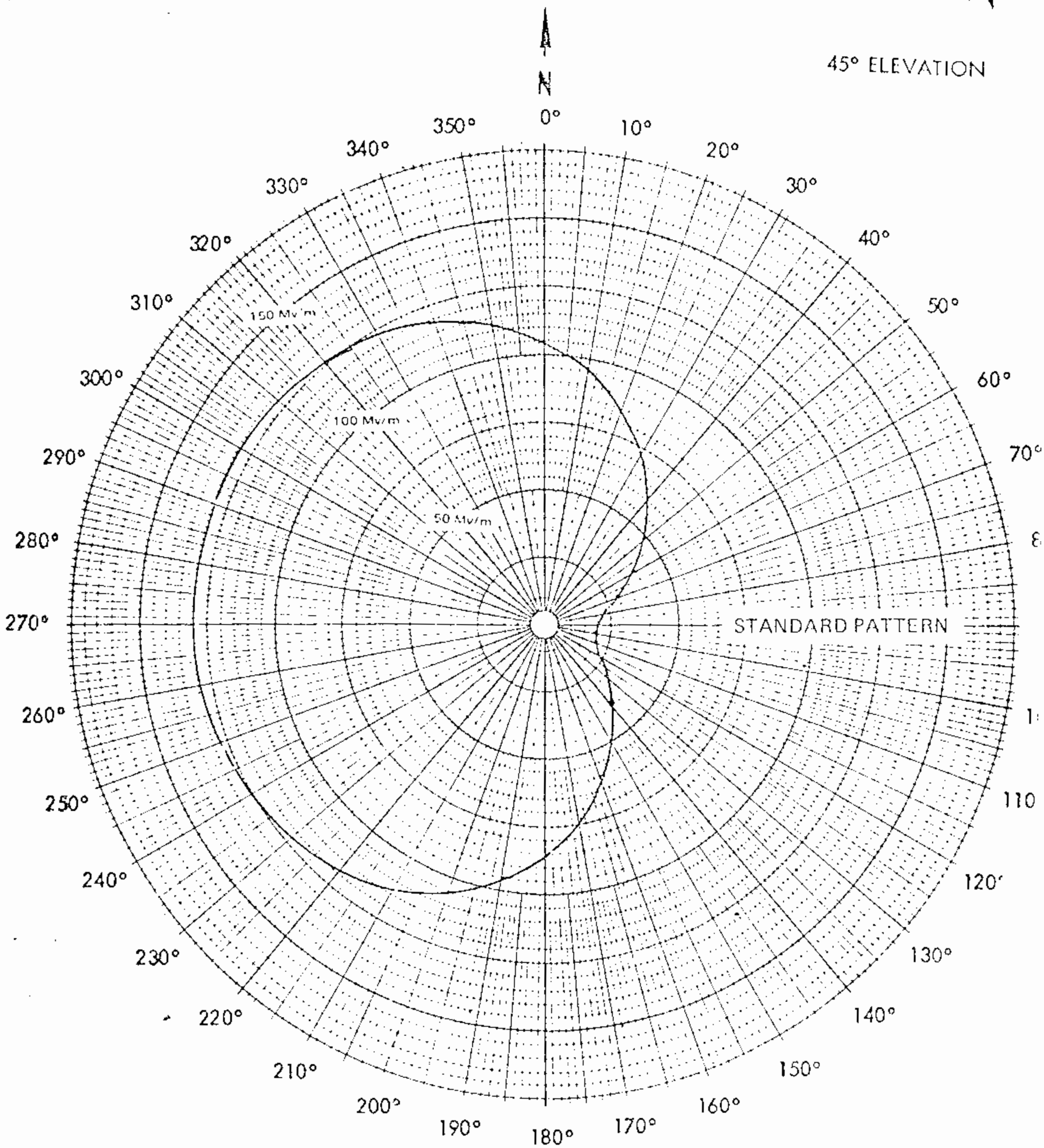
K I T N 920 Khz. Olympia, Washington

KITN



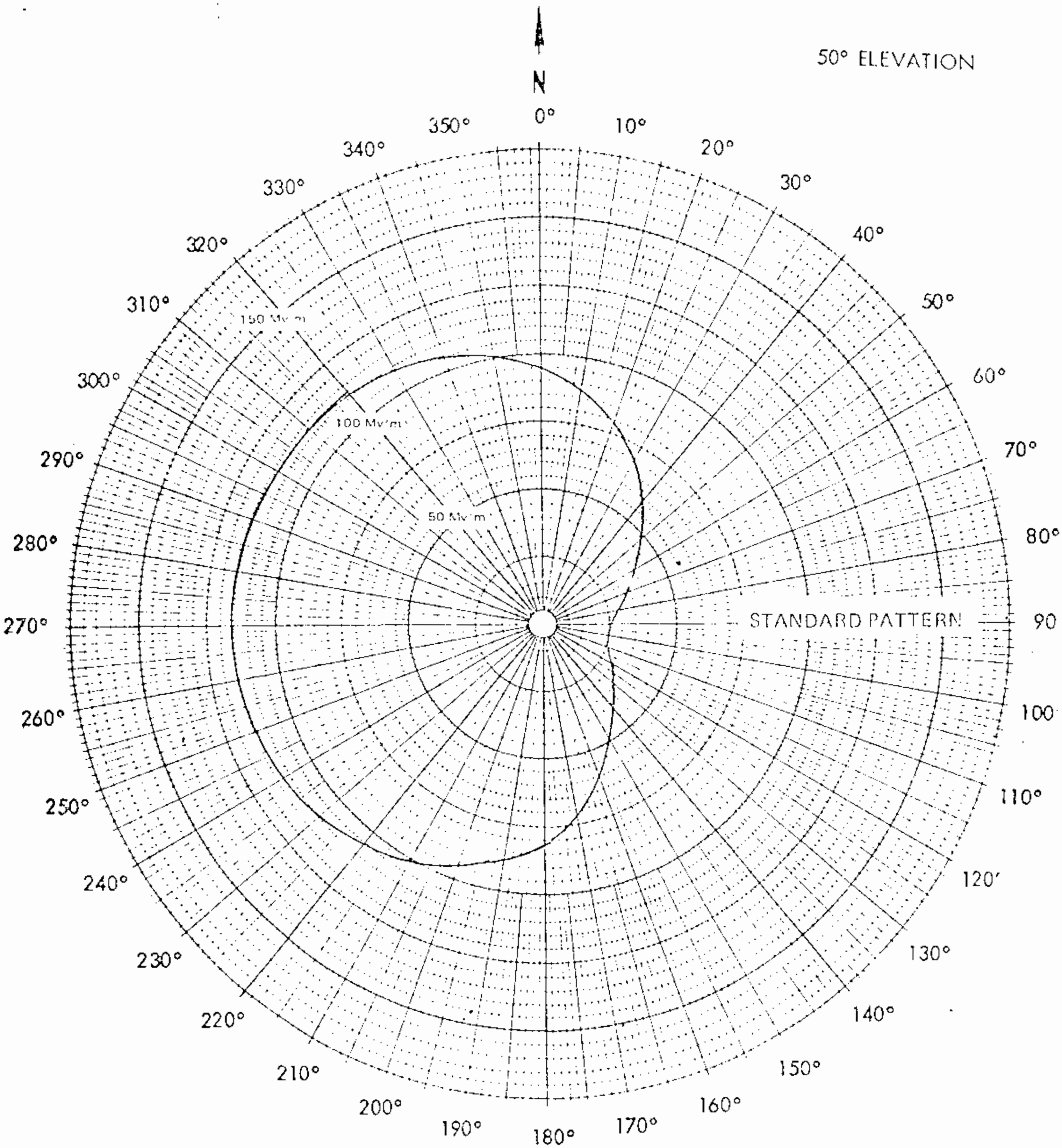
K I T N 920 Khz. Olympia, Washington

KITN

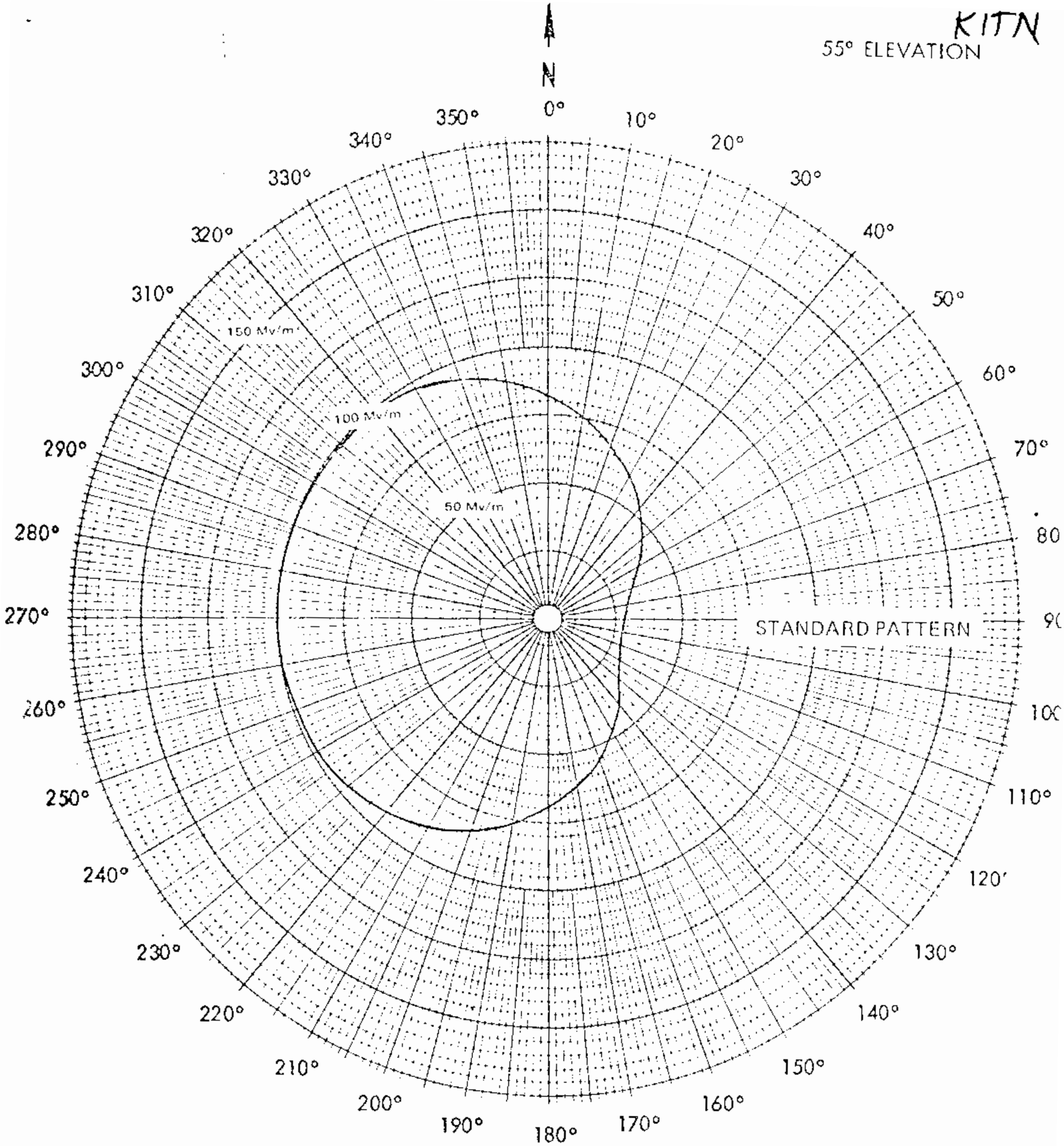


K I T N 920 Khz. Olympia, Washington

KITN



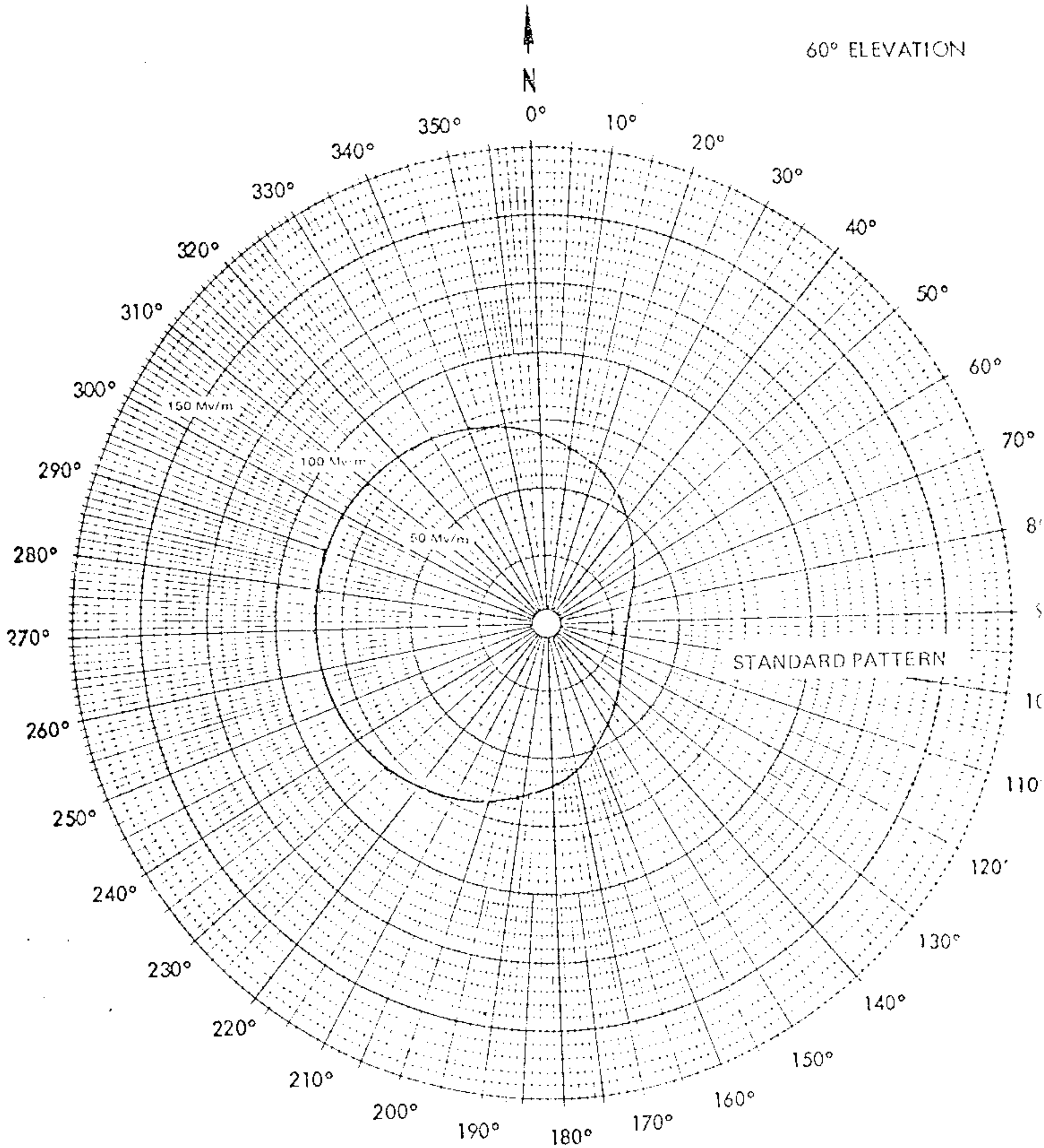
K I T N 920 Khz. Olympia, Washington



K I T N 920 Khz. Olympia, Washington

KITN

60° ELEVATION



KITN 920 Khz. Olympia, Washington

KKLS

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KKLS | Main Studio: Rapid City, South Dakota

Frequency: 920 kHz | Power: 5 kW

Notification List No. 1739 | Date: July 1, 1977 | Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 44° 03' 43"
West Longitude: 103° 10' 29"

ANTENNA CHARACTERISTICS

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

TOWER:	W(#2)	E(#1)	
HEIGHT ABOVE INSULATORS:	265'	265'	(89.2°)
PHASING:	-76°	0°	
FIELD RATIO:	0.54	1.00	

SPACING AND ORIENTATION: Towers are spaced 309.1' (104°) on a line bearing 252.5° true.

GROUND SYSTEM: 120-269' equally spaced copper radials plus 120-50' inter-spaced radials 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	426.11 mv/m	412.51 mv/m	447.63 mv/m

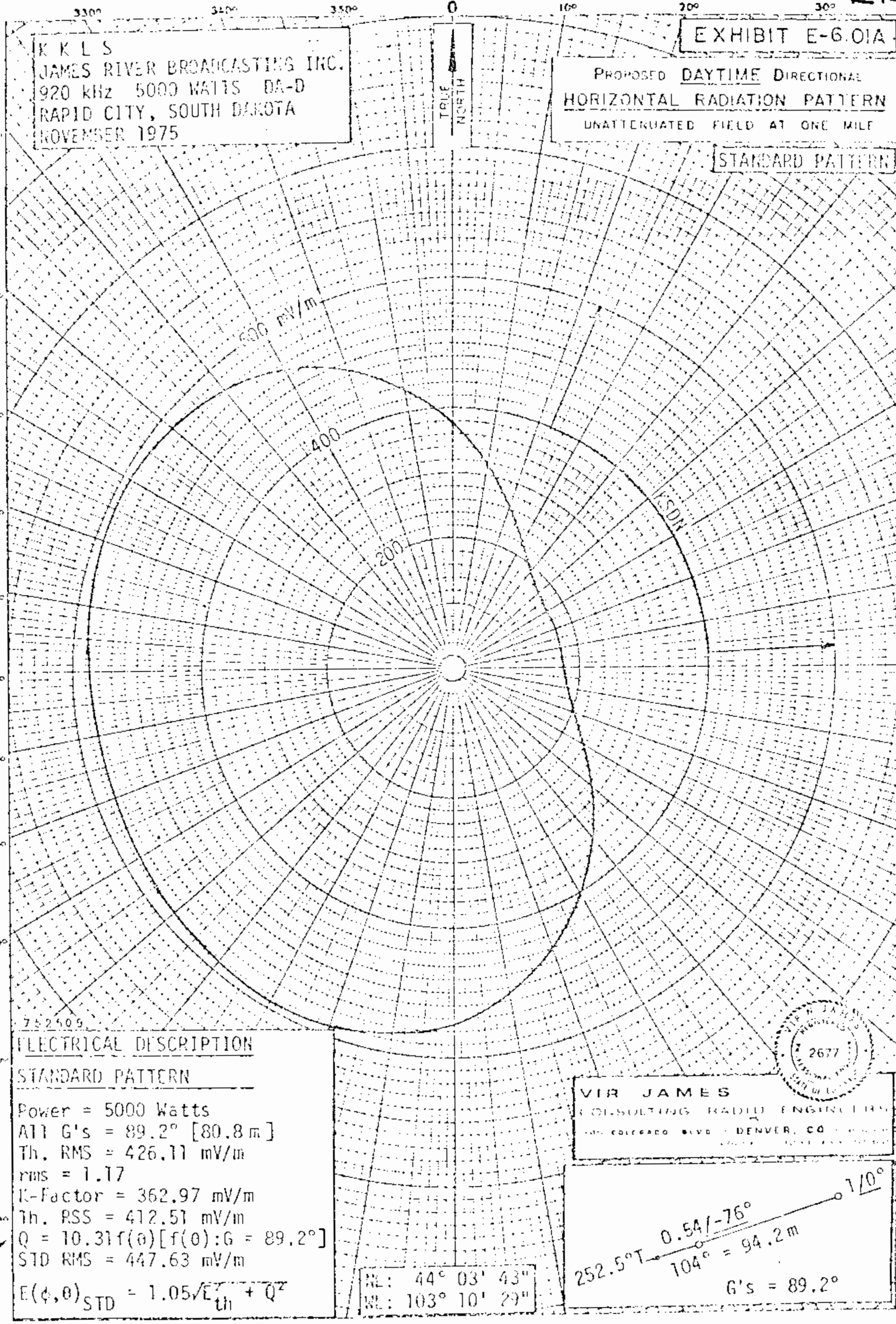
KKLS

EXHIBIT E-6.01A

K K L S
JAMES RIVER BROADCASTING INC.
920 kHz 5000 WATTS DA-D
RAPID CITY, SOUTH DAKOTA
NOVEMBER 1975

PROPOSED DAYTIME DIRECTIONAL
HORIZONTAL RADIATION PATTERN
UNATTENUATED FIELD AT ONE MILE

STANDARD PATTERN



ELECTRICAL DESCRIPTION
STANDARD PATTERN

Power = 5000 Watts
All G's = 89.2° [80.8 m]
Th. RMS = 426.11 mV/m
rms = 1.17
K-Factor = 362.97 mV/m
Th. RSS = 412.51 mV/m
Q = 10.31f(θ)[f(θ):G = 89.2°]
STD RMS = 447.63 mV/m
$E(\phi,\theta)_{STD} = 1.05\sqrt{E_{th}^2 + Q^2}$

NL: 44° 03' 43"
WL: 103° 10' 29"

VIR JAMES
CONSULTING RADIO ENGINEERS
COLORADO BLVD · DENVER, CO

2677

252.5°T — 0.54/-76° — 1/0°
104° = 94.2 m
G's = 89.2°

KLMR

PROPOSED NIGHT 7/31/51G KLMR, LAMAR, COLORADO 500W, 1KW-LS, U, DA-N 920 KC

7-16-62
an app. for
increase ND-D
to 5 KW night

BL-10558
2-4-65
LIC. INCR. DAY
PWR 1KW to 5KW

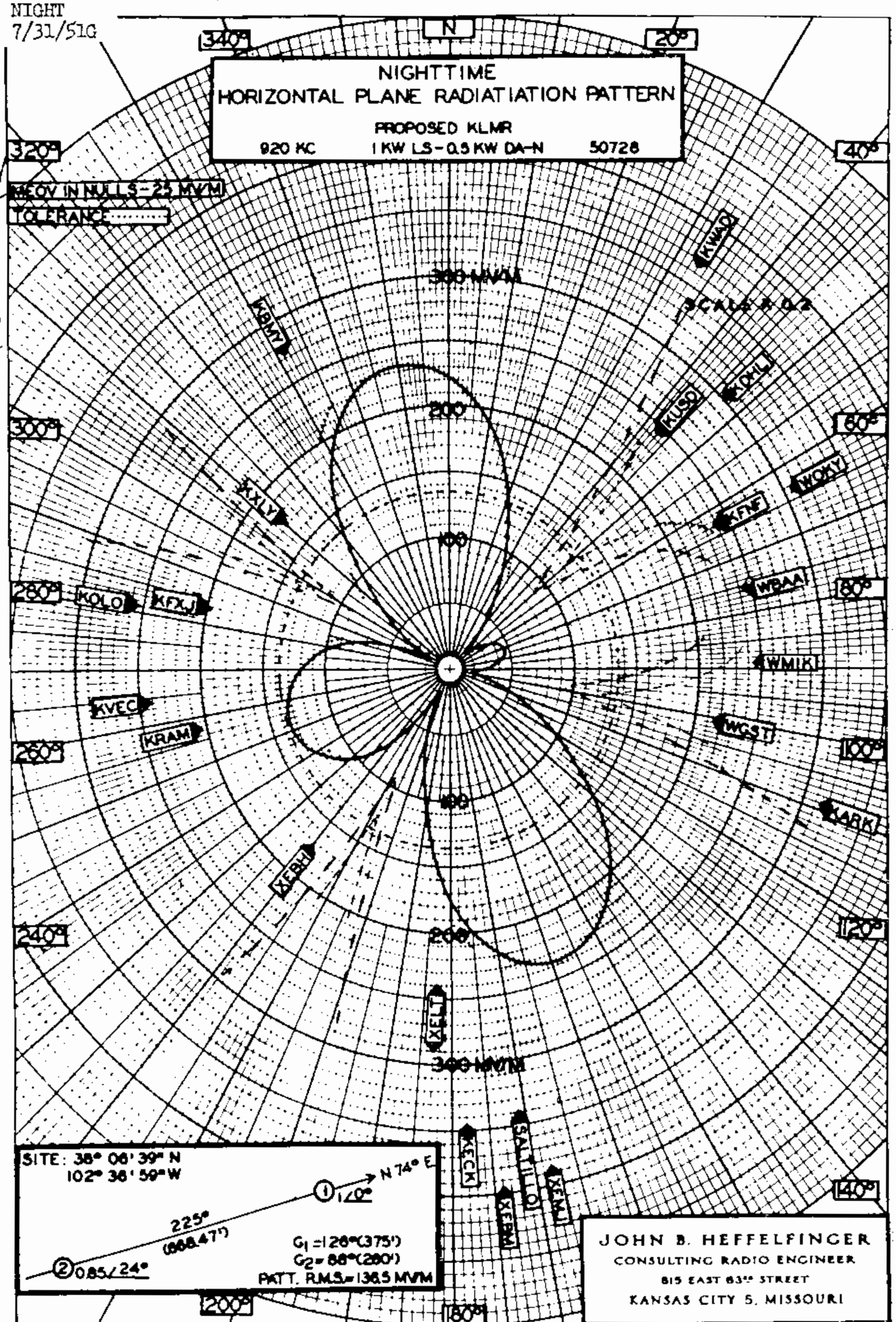


FIGURE 6

AMENDMENT RECD 5/28/51 BP-7783 KLMR, LAMAR, COLORADO 920 KC

KLMR

MEASURED NIGHT
(3/22/55G)

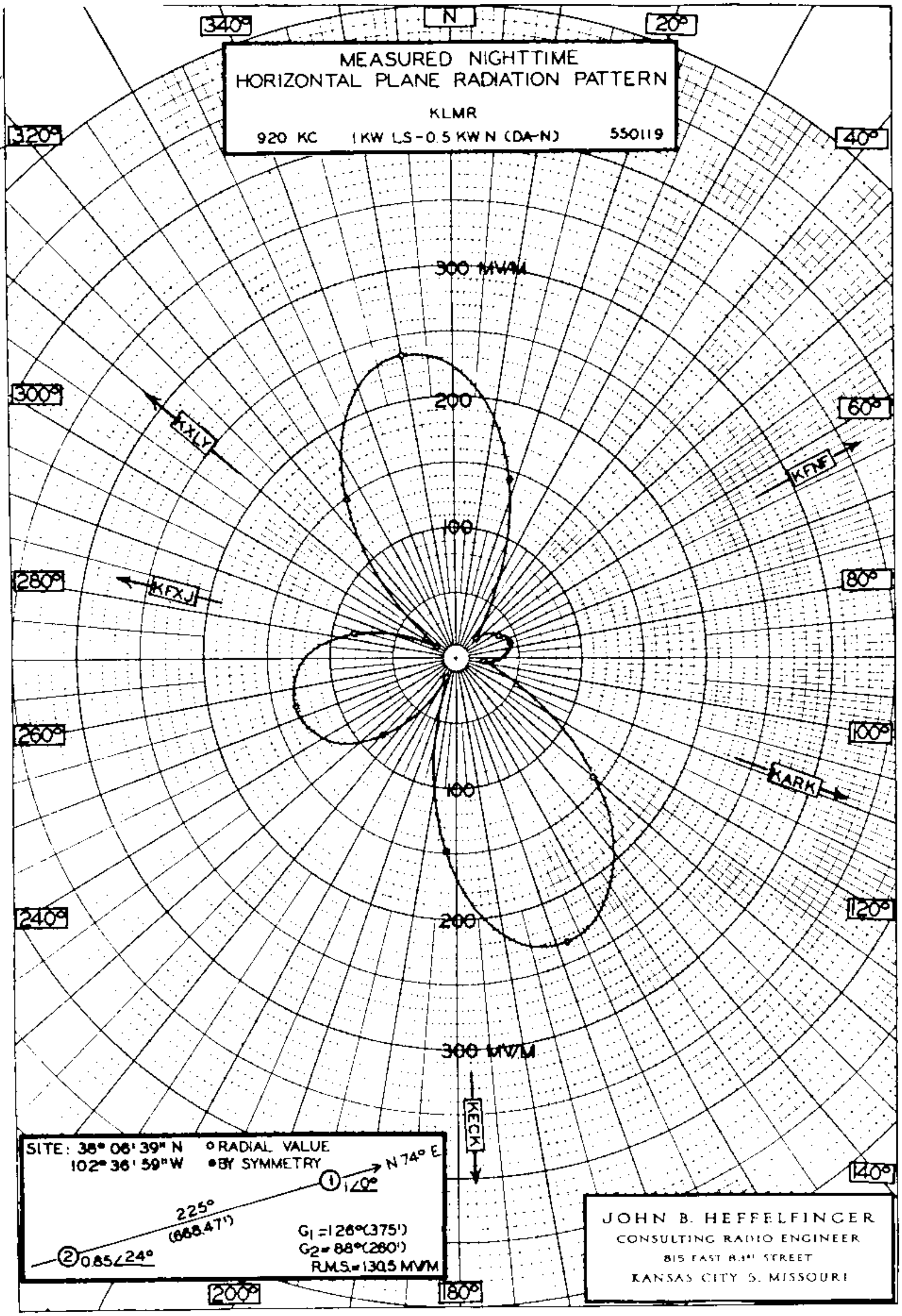
STATION KLMR
LAMAR, COLORADO

DA-N

920 KC

7-16-62
app. to increase
ND-D to 5KW
accepted

BL-10558
2-4-65
-ic. INCR.
ND-D TO 5KW



FILE BL-5635

Accepted 3/17/55 FCC

KLMR, Lamar, Colorado

920 KC

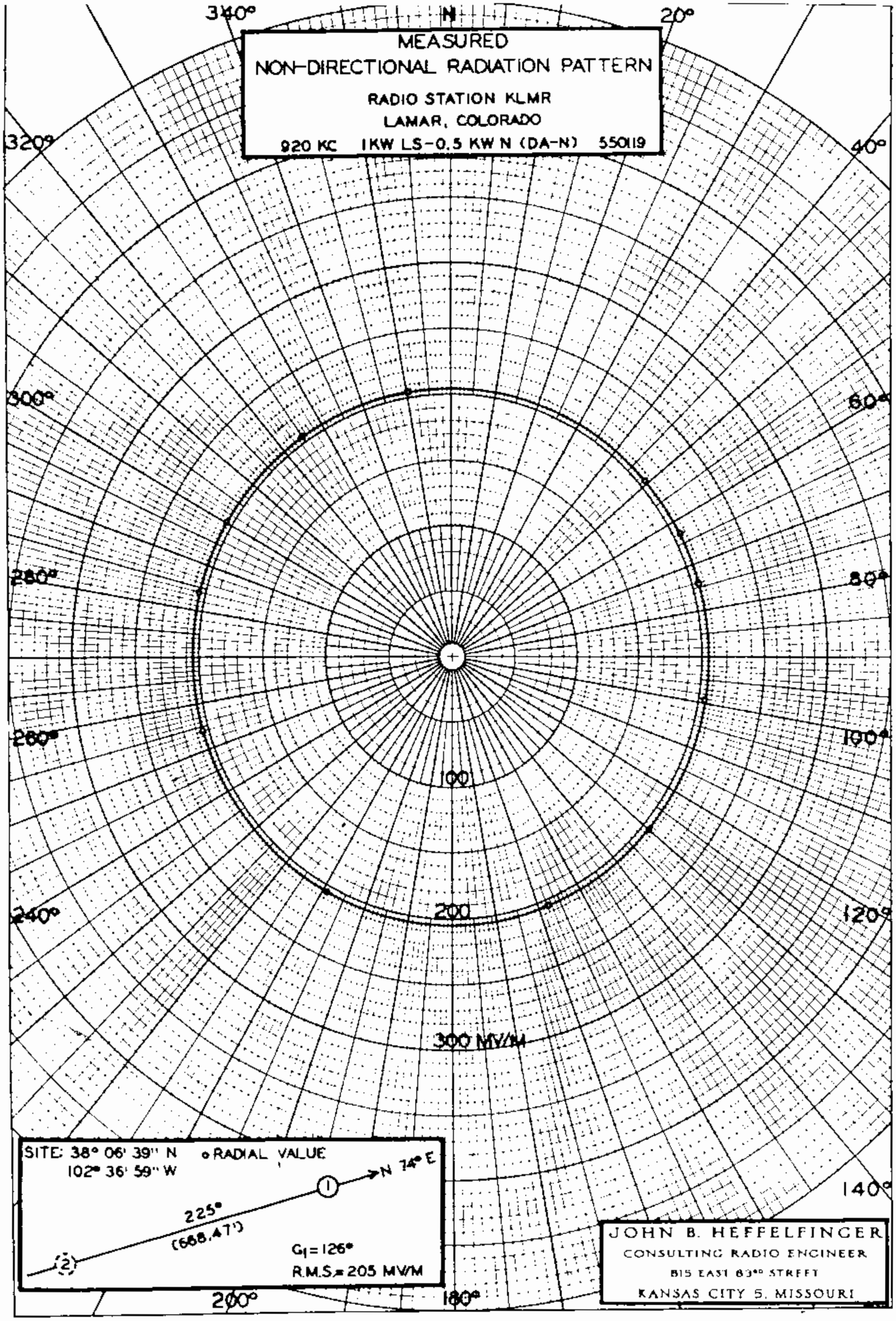
KLMR

MEASURED NON-DIRECTIONAL (3/22/55G) STATION KLMR LAMAR, COLORADO DA-N 920 KC

7-16-62
app. to increase ND-D to 5 KW accepted

8-1-63
increase daytime power to 5 KW

BL-10 558
2-4-65
LIC INCR
ND-D TO 5 KW



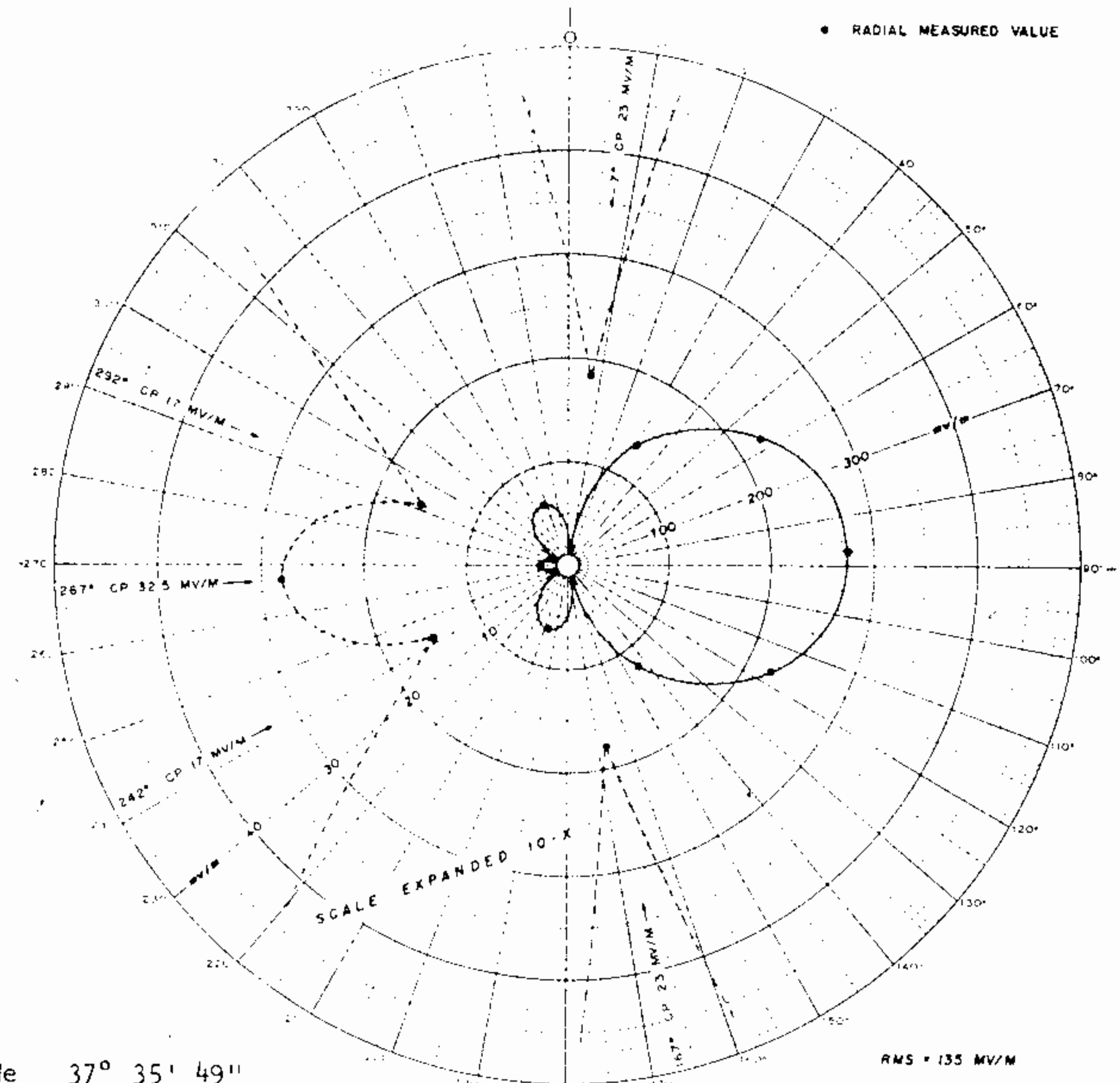
FILE BL-5635 Accepted 3/17/55 FCC DA-N 920 KC

KLOC

Measured Day
(1-29-64ct)

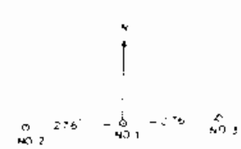
Station KLOC
Ceres, California

500w,DA-D,D
920 kc



North Latitude 37° 35' 49"
West Longitude 121° 04' 15"

TOWER PLACEMENT SKETCH



DIRECTIONAL RADIATION PATTERN

THEORETICAL

Tower No.	Electrical Height G°	True Tower Orientation φ°	Spacing S°	Phasing ψ°	Horizontal Field mv/m E	Field Ratio F	Elev. Angle θ°	Elevation RMS Field mv/m E_θ
1	90	0	0	0		1.0	0	
2	90	267	85	+145		0.7		
3	90	87	85	-152		0.7		

OPERATING

Tower No.	Electrical Height G°	True Tower Orientation φ°	Spacing S°	Phasing ψ°	Horizontal Field mv/m E	Field Ratio F	Elev. Angle θ°	Elevation RMS Field mv/m E_θ
1	90	0	0	0		1.0		
2	90	267	85	+145		0.81		
3	90	87	85	-152		0.74		

STATION DATA

CALL	KLOC
FREQUENCY	920 kc
POWER	0.5 kw
TIME OF OPERATION	DAYTIME
TYPE OF OPERATION	DA-D
DAYTIME TOWERS	3
NIGHTTIME TOWERS	-
NO. RADIALS PER TOWER	
LENGTH OF RADIALS	
GROUND SCREEN DIMENSION	
LAT	
LONG	
SUPERSEDES	
PATTERN NO.	

CECIL LYNCH CONSULTING ENGINEER
MODESTO, CALIFORNIA

STATION KLOC • ANTENNA PROOF OF PERFORMANCE
920 kc 0.5 kw DA-D
CERES, CALIFORNIA

File BP-15263 September 1963

FIGURE NO. 6

FCC File No.BL-10349
Accepted 1-14-64

Station KLOC
Ceres, California

920 kc

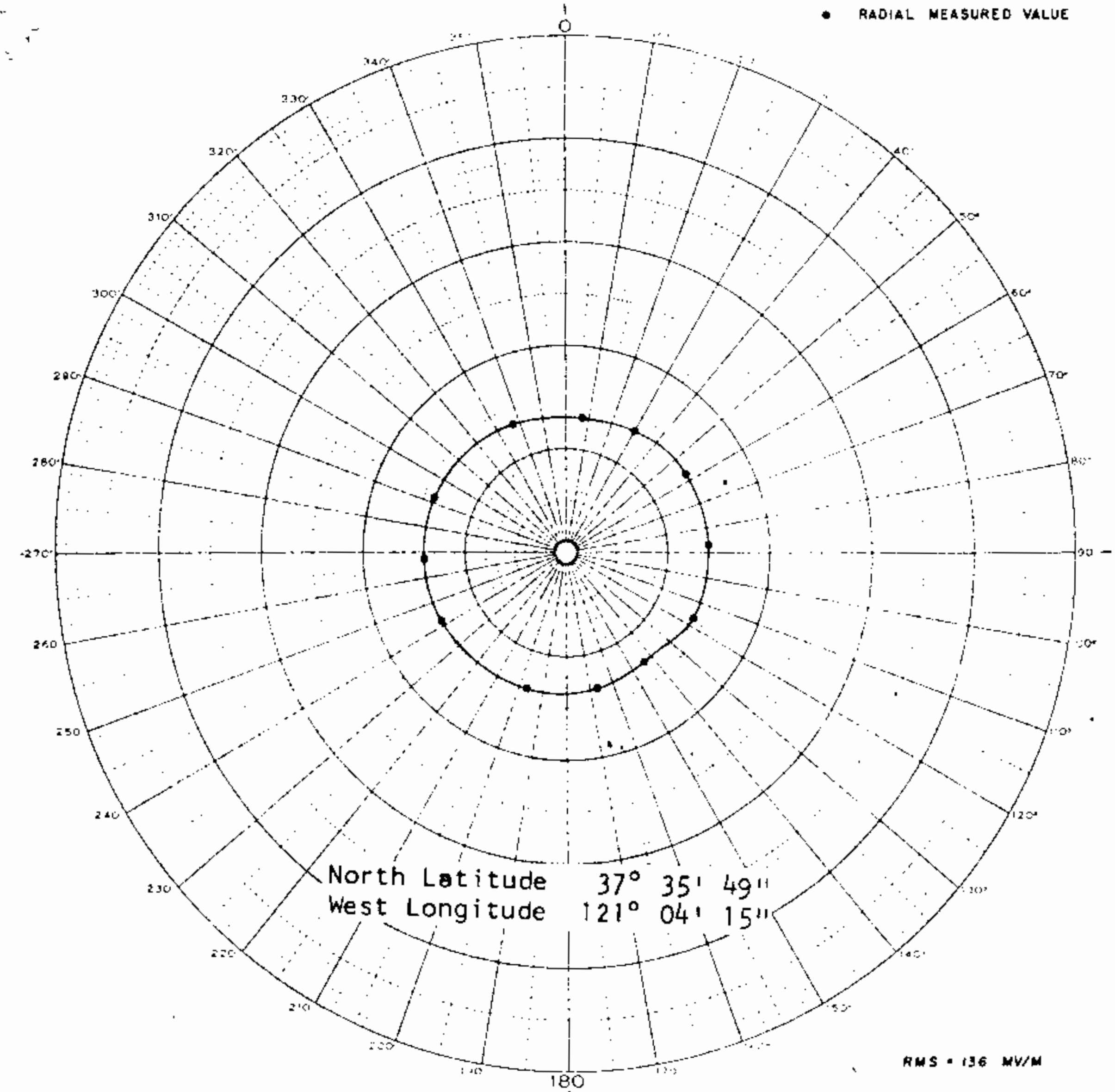
K L O C

Measured Non-DA
(1-29-64ct)

Station KLOC
Ceres, California

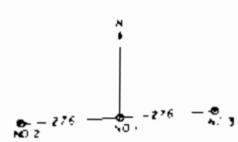
500w,DA-D,D
920 kc

● RADIAL MEASURED VALUE



RMS = 136 MV/M

TOWER PLACEMENT SKETCH



NON-DIRECTIONAL PATTERN

Tower No.	Electrical Height	True Tower Orientation	Spacing	Phasing	Horizontal Field	Field Ratio
1	90	0	0	0		1.0
2	90	267	85	+145		0.7
3	90	87	85	-152		0.7
4						
5						
6						
7						
8						
9						
10						

Radiating Element, No. 1.
Power, 0.5 kw

Elev. Angle	Elevation RMS Field
0	
10	
20	
30	
40	
50	
60	
70	
80	

STATION DATA

Call	KLOC
Frequency	920 kc
Power	0.5 kw
Time of Operation	DAYTIME
Type of Operation	DA-D
Daytime Towers	3
Nighttime Towers	-
No. Radials per Tower	
Length of Radials	
Ground Screen Dimension	
Lat.	
Long.	
Supersedes	
Pattern No.	

CECIL LYNCH, CONSULTING ENGINEER
MODESTO, CALIFORNIA

STATION KLOC ● ANTENNA PROOF OF PERFORMANCE
920 kc 0.5 kw DA-D
CERES, CALIFORNIA

File BP-15261 September 1963

FIGURE NO. 5

FCC File No.BL-10349
Accepted 1-14-64

Station KLOC
Ceres, California

920 kc

KLOC

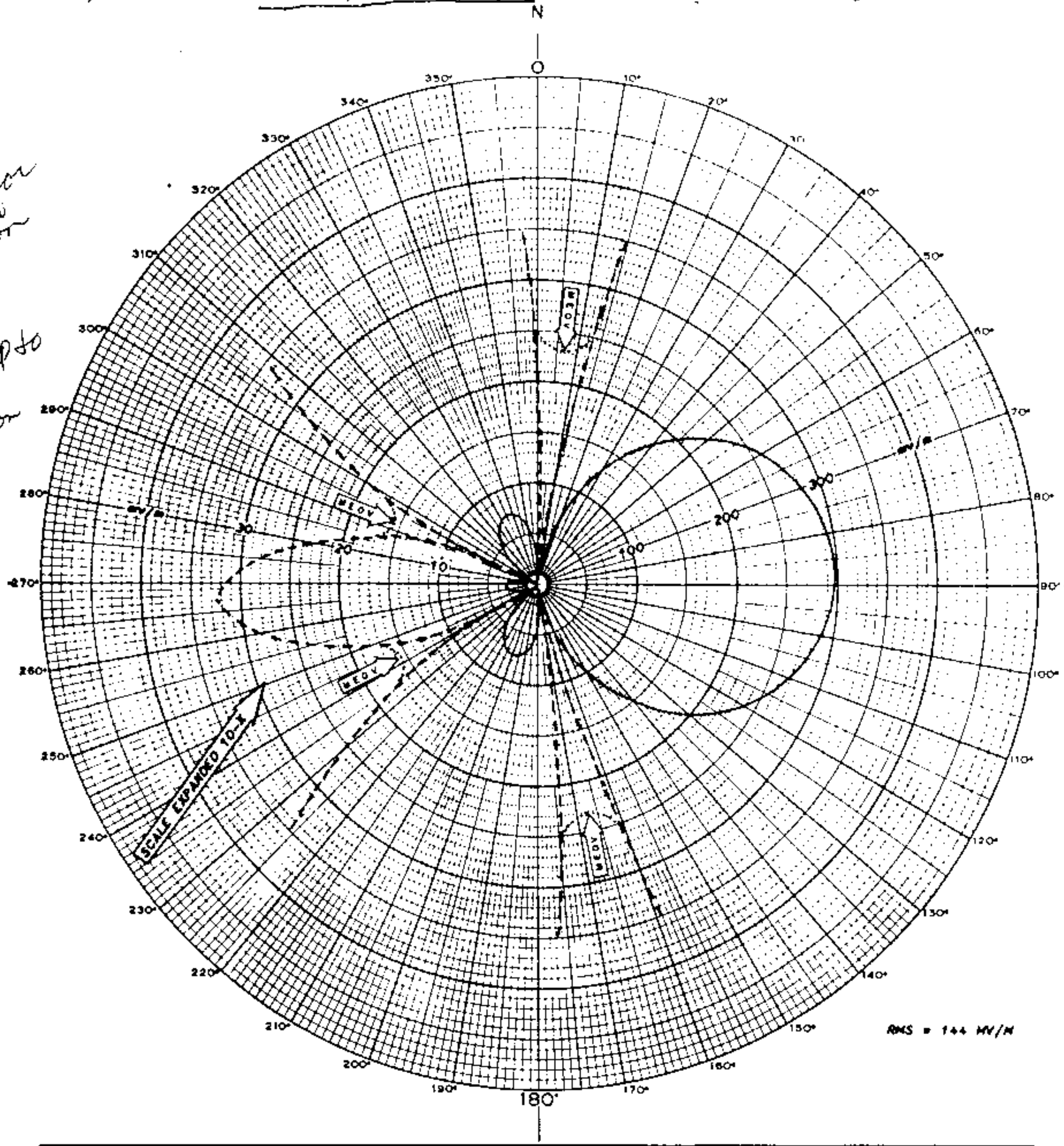
Proposed Day
~~(1~~-24-62ct)

New; KWES Broadcasting Co.
Ceres, California

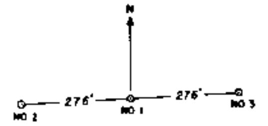
500w,DA-D,D
920 kc

4-22-63
granted CP for
new station

6-21-63
grand Mod. of CP to
change A-T location
to 37-35-49
121-04-15
8-1-63
A



TOWER PLACEMENT SKETCH	PATTERN, PARAMETERS	STATION DATA



TOWER No.	ELECTRICAL HEIGHT G°	TRUE TOWER ORIENTATION φ°	SPACING S°	PHASING ψ°	HORIZONTAL FIELD mv/m E	FIELD RATIO r	ELEV ANGLE θ°	ELEVATION RMS FIELD mv/m Eθ
1	90	0	0	0		1.0	0	
2	90	267	85	145		0.7	10	
3	90	87	85	-152		0.7	20	
4							30	
5							40	
6							50	
7							60	
8							70	
9							80	
10							E_1 =	mvm
DAYTIME OPERATION ☒				NIGHTTIME OPERATION ☐			P_1 =	kw

STATION DATA	
CALL	NEW APPLICATION
FREQUENCY	920 kc
POWER	0.5 kw
TIME OF OPERATION	DAYTIME
TYPE OF OPERATION	DA
DAYTIME TOWERS	3
NIGHTTIME TOWERS	—
No RADIALS PER TOWER	120
LENGTH OF RADIALS	ft
GROUND SCREEN DIMENSION	
LAT	37° 36' 08"
LONG	121° 03' 51"
SUPERSEDES	
PATTERN No	

CECIL LYNCH, CONSULTING ENGINEER
MODESTO, CALIFORNIA

KWES BROADCASTING COMPANY
CERES, CALIFORNIA
November 1961

FIGURE NO. 2

FCC File No.BP-15261 New; KWES Broadcasting Co.
Accepted 1-15-62 Ceres, California

920 kc

KOLO
920 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KOLO

Main Studio: Reno, Nevada

Frequency: 920 kHz

Power: 1kw Night 5kw Day

Notification List No. 1789

Date: September 12, 1980 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 39° 33' 18"
West Longitude: 119° 45' 17"

ANTENNA CHARACTERISTICS

Authorized for Nighttime operation. (DA-N)
Number of elements: 2
Type of elements: Series excited, Self supporting, tapered, vertical steel towers.

TOWER:	E(#1)	W(#2)
HEIGHT ABOVE INSULATORS:	282'	282' (94.97°)
NIGHT PHASING:	+155°	0°
NIGHT FIELD RATIO:	0.74	1.0
DAY PHASING:	—	—
DAY FIELD RATIO:	—	—

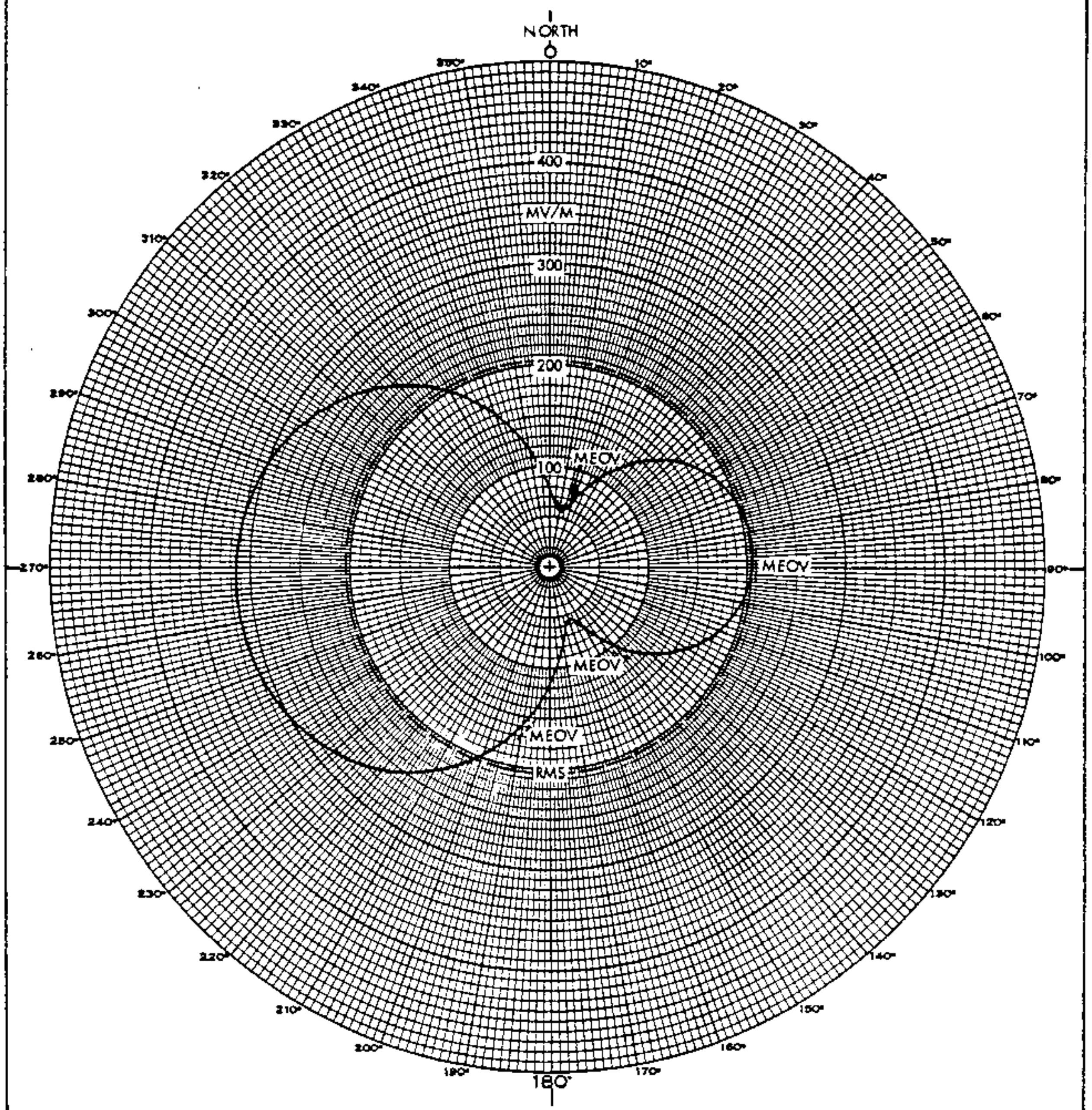
SPACING AND ORIENTATION: Towers in a row are spaced 270' (90.9°) on a line bearing 85° true.

GROUND SYSTEM: 120 - 270' equally spaced copper radials plus 120 - 50' interspaced 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	RSS
Night	204 mv/m	263.19 mv/m

KOLO
920kHz

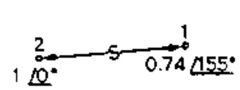


N. LAT. 39° 33' 18"
W. LONG. 119° 45' 17"

RMS_{THEO} = 204 MV/M

$G_1 = G_2$ = 282 FT = 94.9°

S = 270 FT = 90.9°



THEORETICAL HORIZONTAL RADIATION NIGHTTIME

UNATTENUATED FIELD STRENGTH AT ONE MILE

HAMMETT & EDISON, INC.
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KOLO
920 KHZ. 1 KW. 5 KW-LS. DA-N
RENO, NEVADA

791011

FIGURE 3B

Granted CP 1/21/59 to change from DA-1 to DA-N

1-12-60 entered DA-N operation

1-22-63 granted increase in day power to 5 Kw

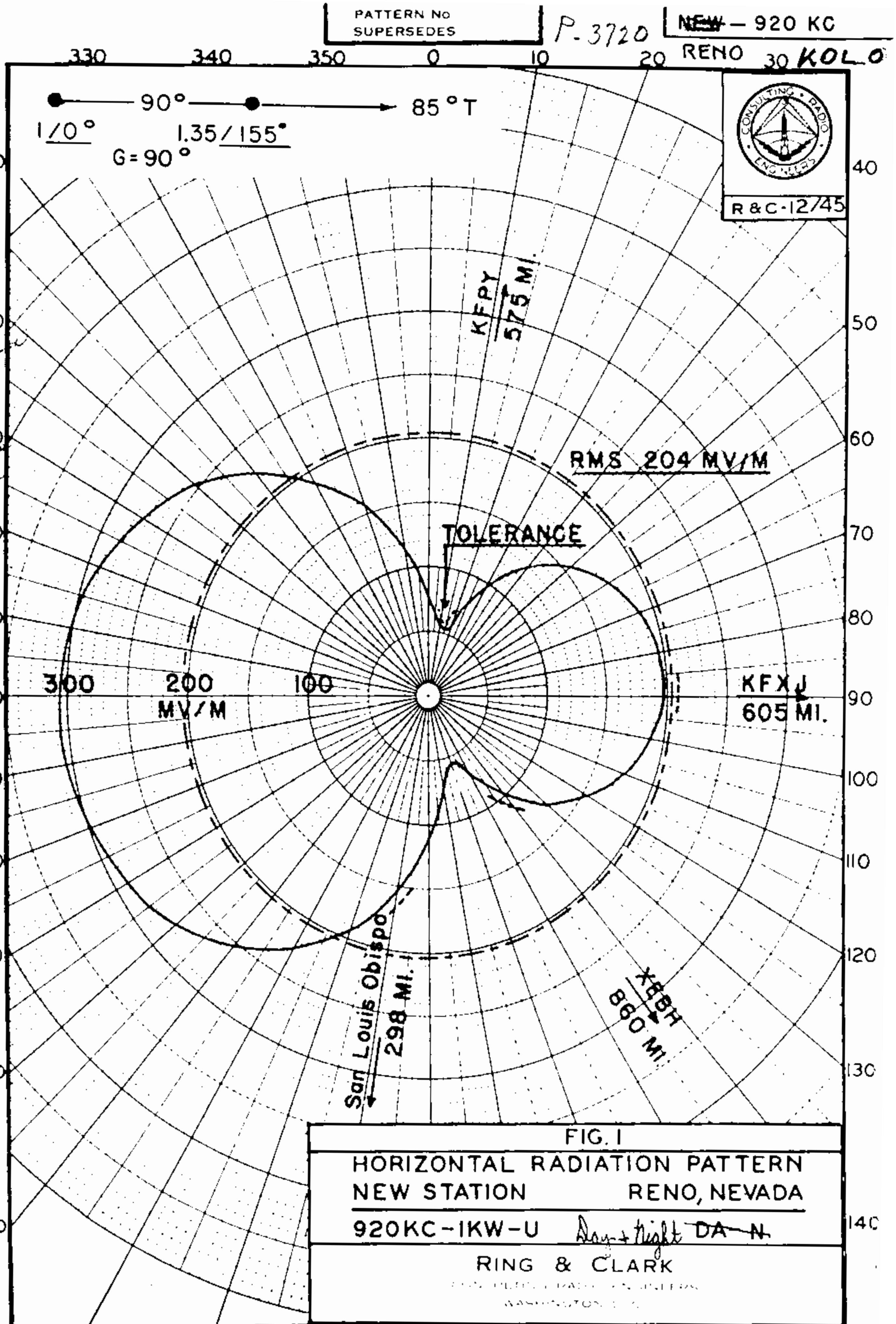


FIG. I
HORIZONTAL RADIATION PATTERN
NEW STATION RENO, NEVADA
920KC-1KW-U Day + Night ~~DA-N~~
RING & CLARK

19

KOLO-920KC 8

N-2047

Granted CP 1/21/59 to change from DA-1 to DA-N

4-22-63 granted increase in day power to 5 kw

9-30-63 Granted an increase in ND daytime power

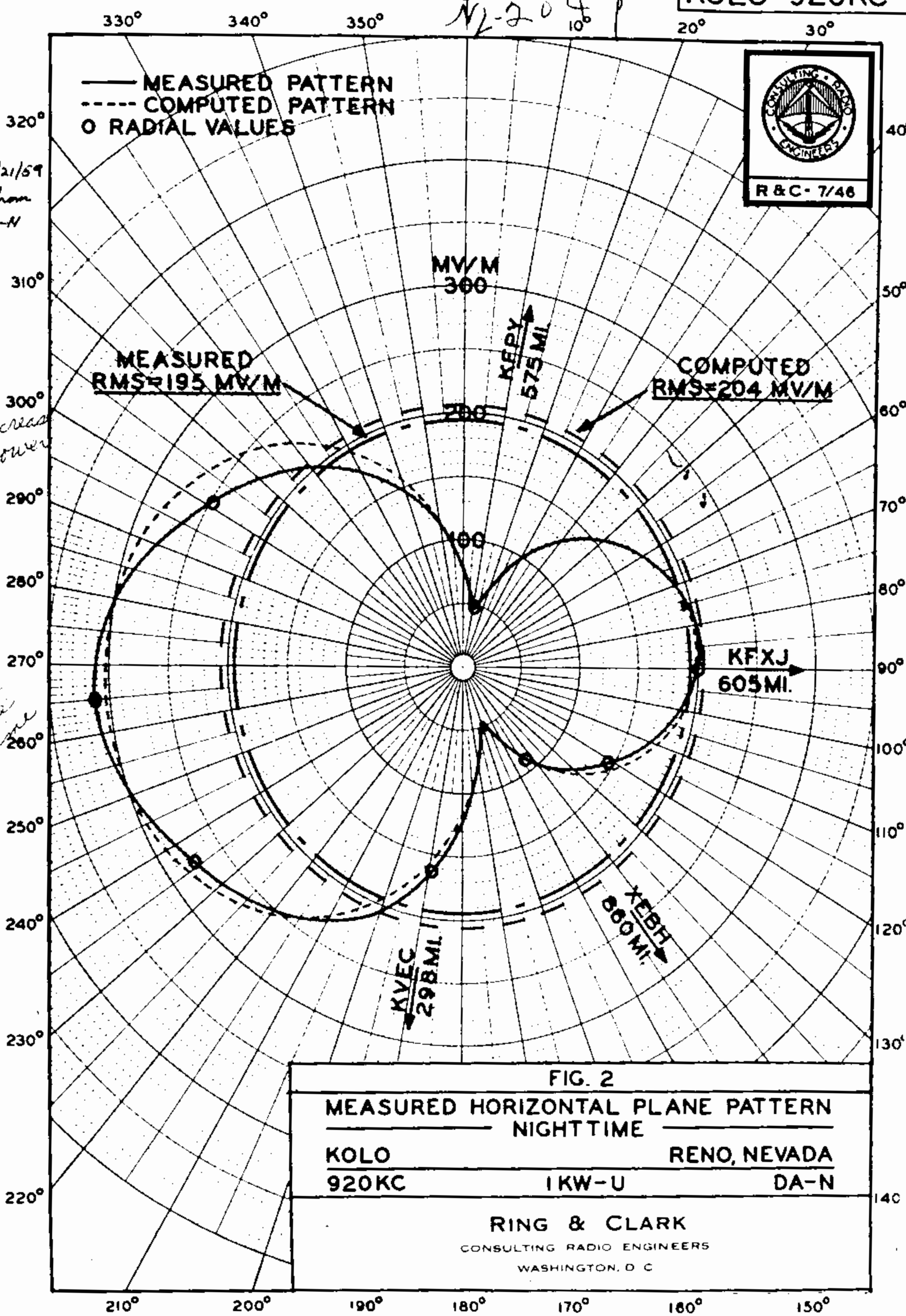


FIG. 2

MEASURED HORIZONTAL PLANE PATTERN

NIGHTTIME

KOLO RENO, NEVADA

920KC 1KW-U DA-N

RING & CLARK

CONSULTING RADIO ENGINEERS

WASHINGTON, D. C.

NL-2047 KOLO-920KC

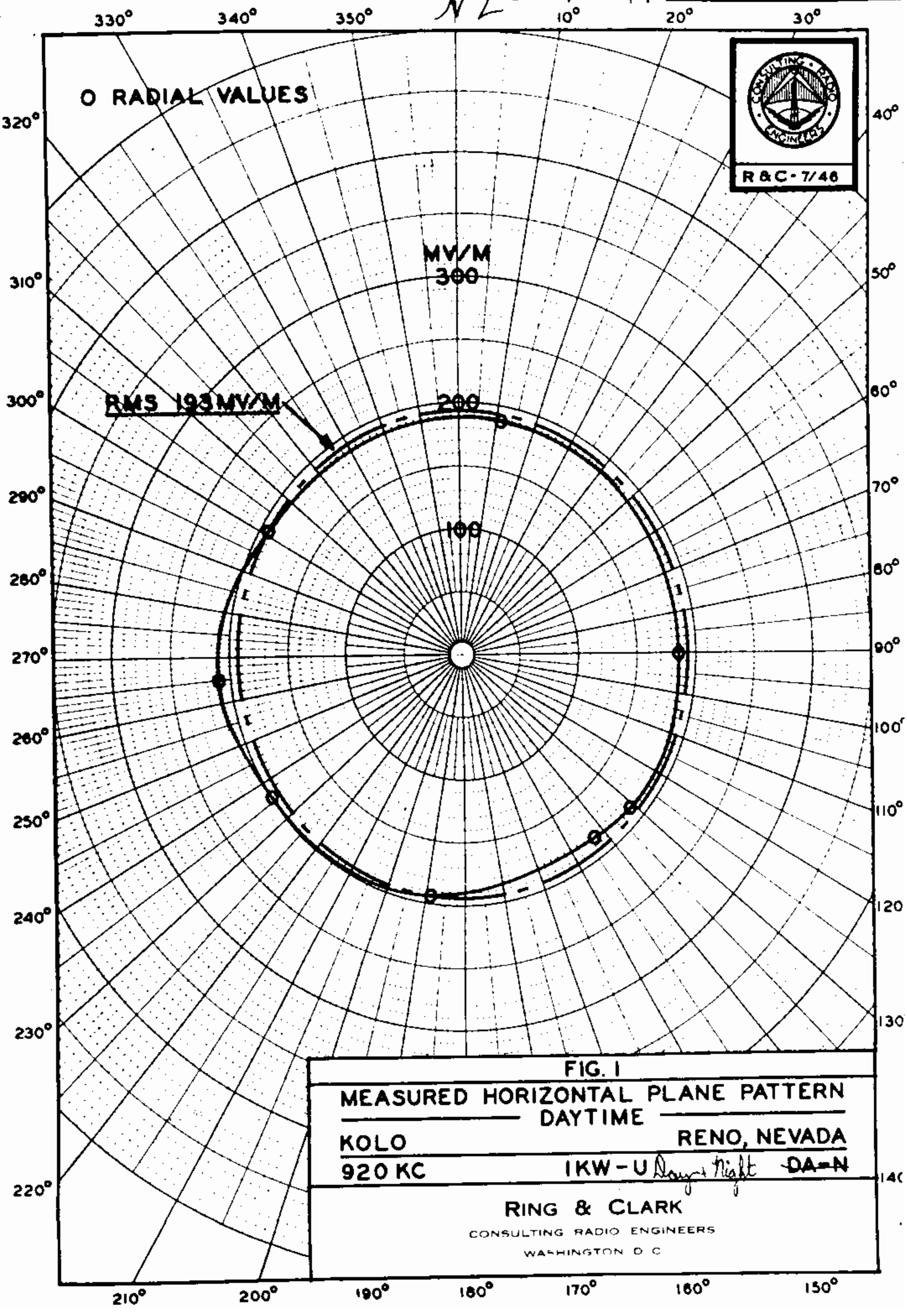


FIG. 1

MEASURED HORIZONTAL PLANE PATTERN

DAYTIME

KOLO — RENO, NEVADA

920 KC — 1KW-U Day + Night ~~DA-N~~

RING & CLARK

CONSULTING RADIO ENGINEERS

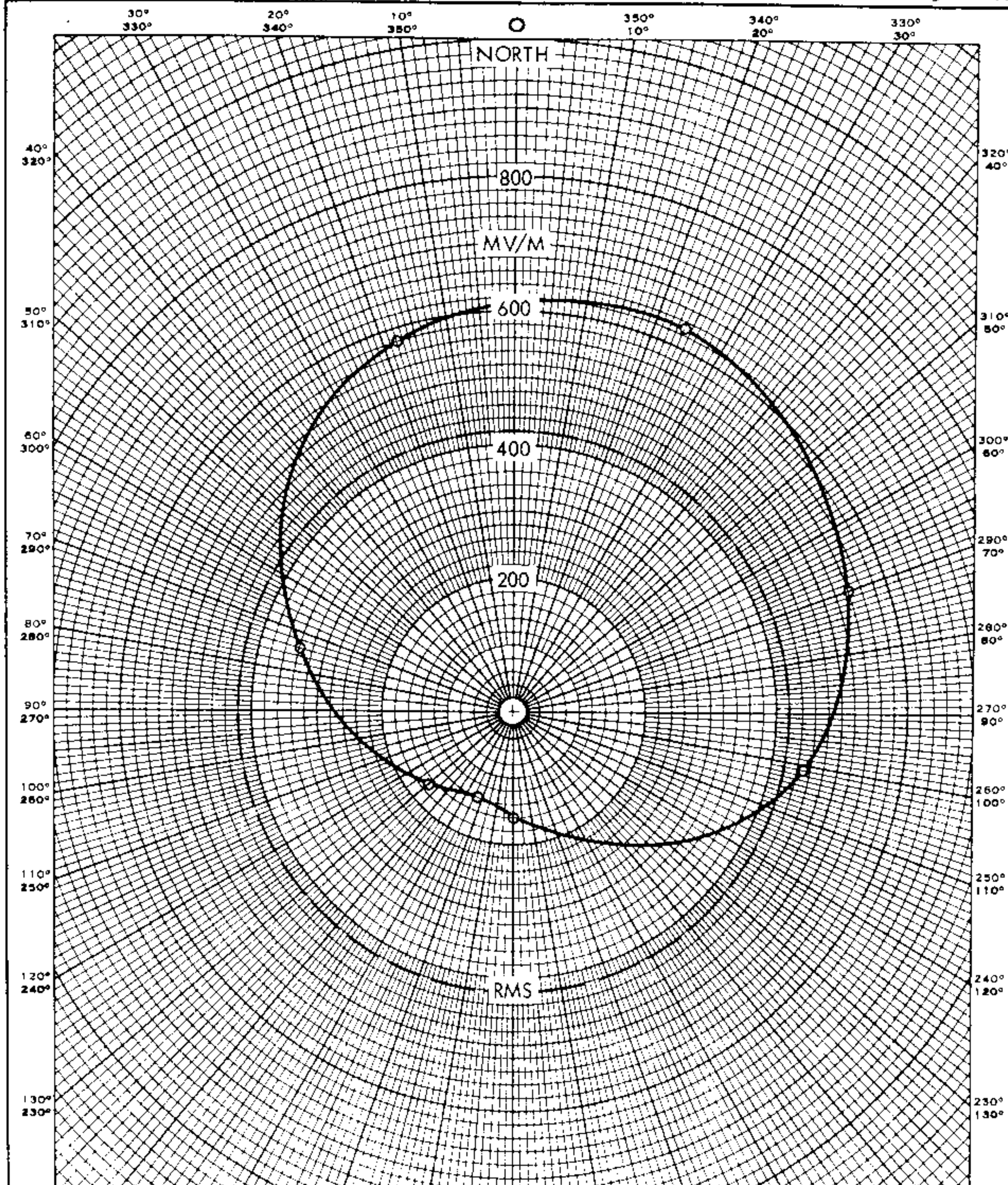
WASHINGTON D.C.

KORK

Measured Day
(11-24-70ct)

Station KORK
Las Vegas, Nevada

500w,5kw-LS,DA-2,U
920 kc



N. LAT. 36° 08′ 57″ G=90°=267′ RMS=420 MV/M
W. LONG 115° 05′ 22″ S_1=75°=223′ S_2=337°=1001′

THEORETICAL 1 0.600 ∠-110° S_1 1.000 ∠0° 2 S_2 N 162° E N 204° E 3 NOT USED

OPERATING 1 0.593 ∠-110° S_1 1.000 ∠0° 2 S_2 N 162° E N 204° E 3 NOT USED

MEASURED
HORIZONTAL RADIATION PATTERN
DAYTIME DIRECTIONAL

UNATTENUATED FIELD INTENSITY
AT ONE MILE

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KORK
920 KHZ. 0.5 KW. 5 KW-LS. DA-2
LAS VEGAS, NEVADA

700707

FIGURE 11B

FCC File No.BL-12768
Accepted 10-27-70

Station KORK
Las Vegas, Nevada

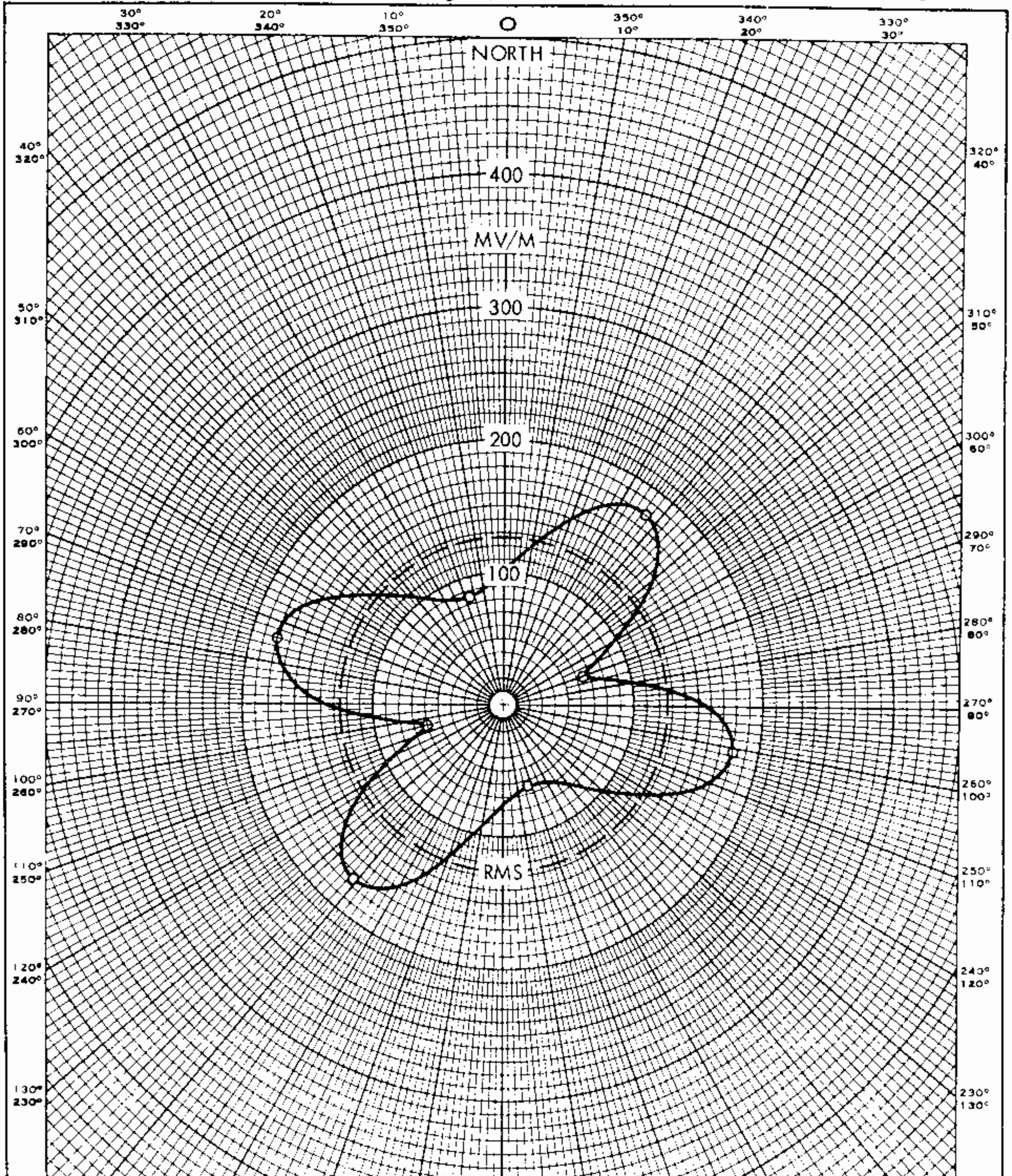
920 kc

KORK

Measured Night
(11-24-70ct)

Station KORK
Las Vegas, Nevada

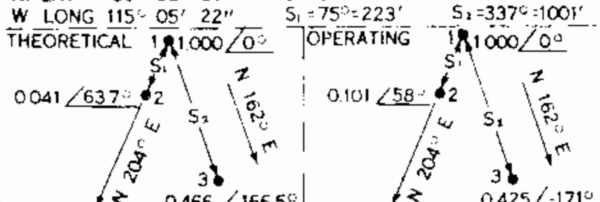
500w,5kw-LS,DA-2,U
920 kc



N. LAT 36° 08′ 57″
W LONG 115° 05′ 22″

G=90°=267′
S_1=75°=223′

RMS=127 MV/M
S_2=337°=1001′



HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KORK
920 KHZ. 0.5 KW. 5 KW-LS. DA-2
LAS VEGAS. NEVADA

MEASURED
HORIZONTAL RADIATION PATTERN
NIGHTTIME DIRECTIONAL

UNATTENUATED FIELD INTENSITY
AT ONE MILE

700707

FIGURE 11C

FCC File No.BL-12768
Accepted 10-27-70

Station KORK
Las Vegas, Nevada

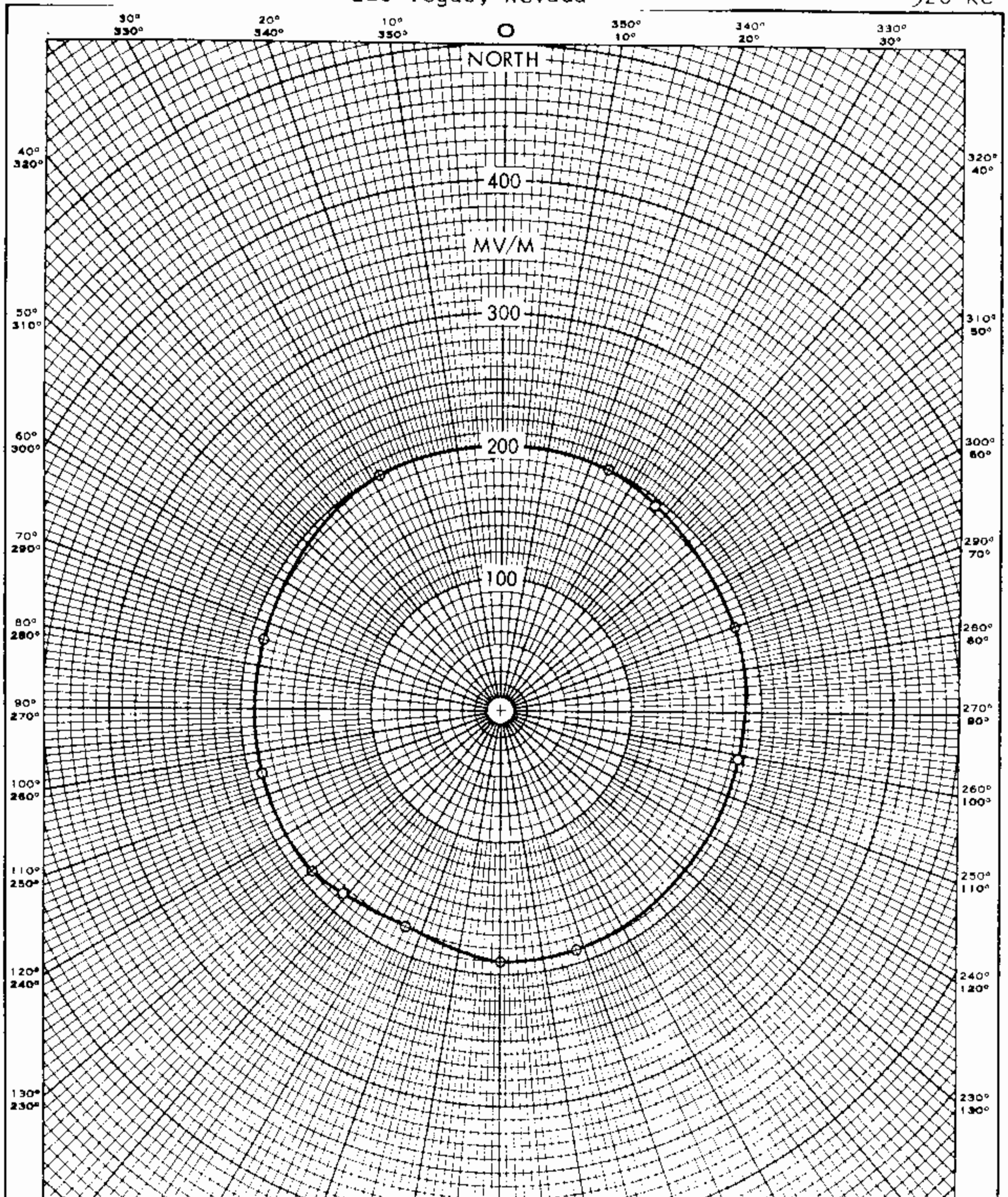
920 kc

KORK

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

Station KORK
Las Vegas, Nevada

500w,5kw-LS,DA-2,U
920 kc



N. LAT 36° 08′ 57″
W. LONG 115° 05′ 22″
G=90°=267′
RMS=190 MV/M
TOWER 2 EXCITED
TOWERS 1 & 3 FLOATING

MEASURED
HORIZONTAL RADIATION PATTERN
NON - DIRECTIONAL

UNATTENUATED FIELD INTENSITY
AT ONE MILE

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KORK
920 KHZ. 0.5 KW. 5 KW-LS. DA-2
LAS VEGAS NEVADA

700707

FIGURE 11A

FCC File No.BL-12768
Accepted 10-27-70

Station KORK
Las Vegas, Nevada

920 kc

~~[illegible]~~ BP

~~GR. ([illegible]) [illegible] CP for New Station~~

BP 18701

GR. (2-13-70) CP to replace expired Permit (BP-18079)

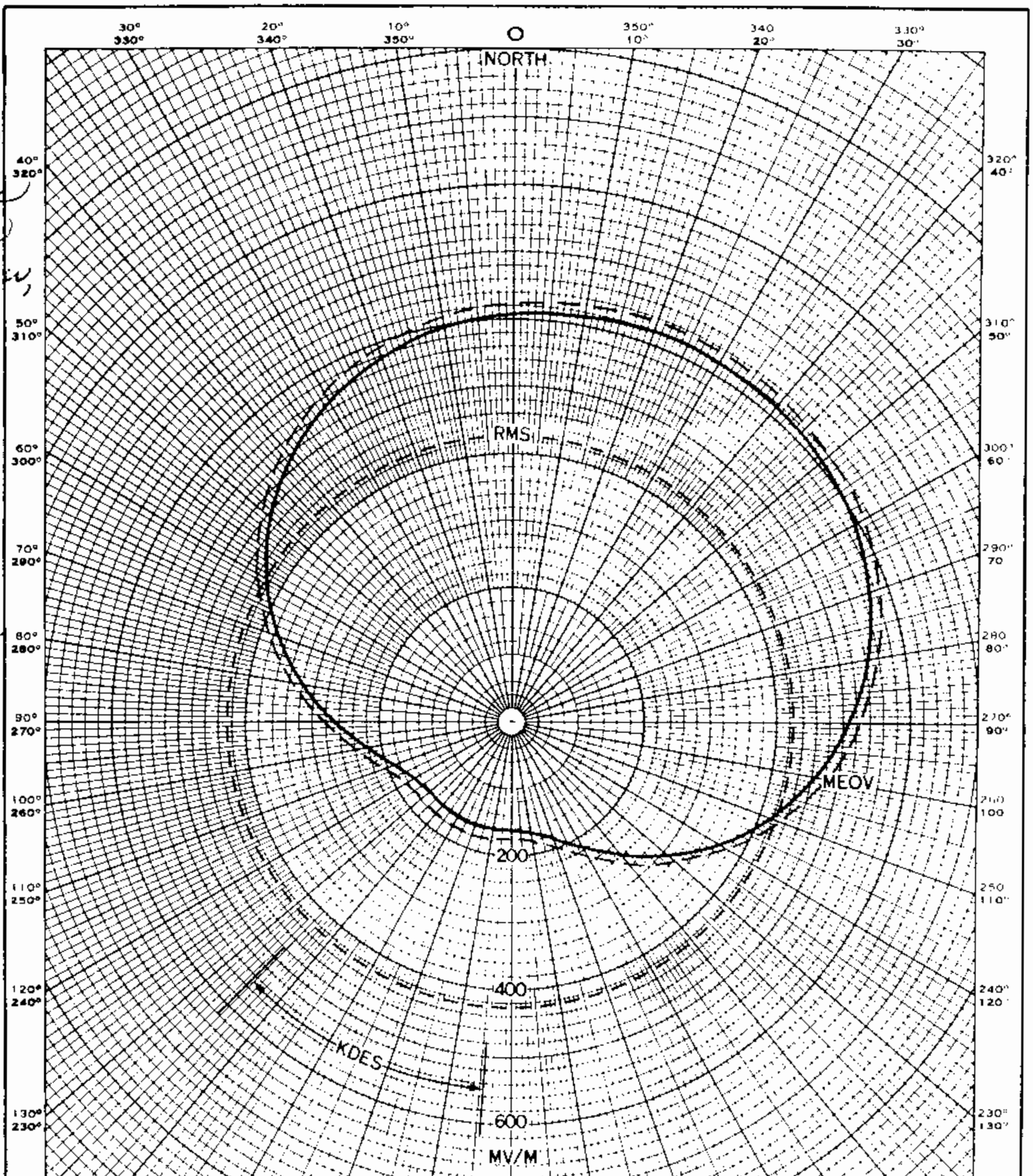
KORK

Proposed Day
(6-27-69ct)

Station KORK
Las Vegas, Nevada

500w, 5kw-LS, DA-2, U
920 kc

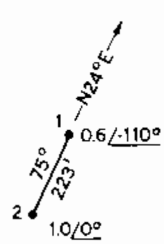
BP-18079 Granted 3/26/69 CP to change operation from 500w, 1kw-LS, DA-N, U to 500w, 5kw-LS, DA-2, U; change trans. location



N. LAT. 36° 08' 54"
W. LONG. 115° 05' 22"

$G_1 = G_2 = 90° = 267'$

RMS=425 MV/M



PROPOSED DAYTIME HORIZONTAL RADIATION

UNATTENUATED FIELD INTENSITY AT ONE MILE

HAMMETT & EDISON CONSULTING ENGINEERS SAN FRANCISCO	RADIO STATION KORK 920 KHZ. 0.5 KW. 5 KW-LS. DA-2 LAS VEGAS, NEVADA	680110	FIGURE 5B

FCC File No. BP-18079
Accepted Amended

Station KORK
Las Vegas, Nevada

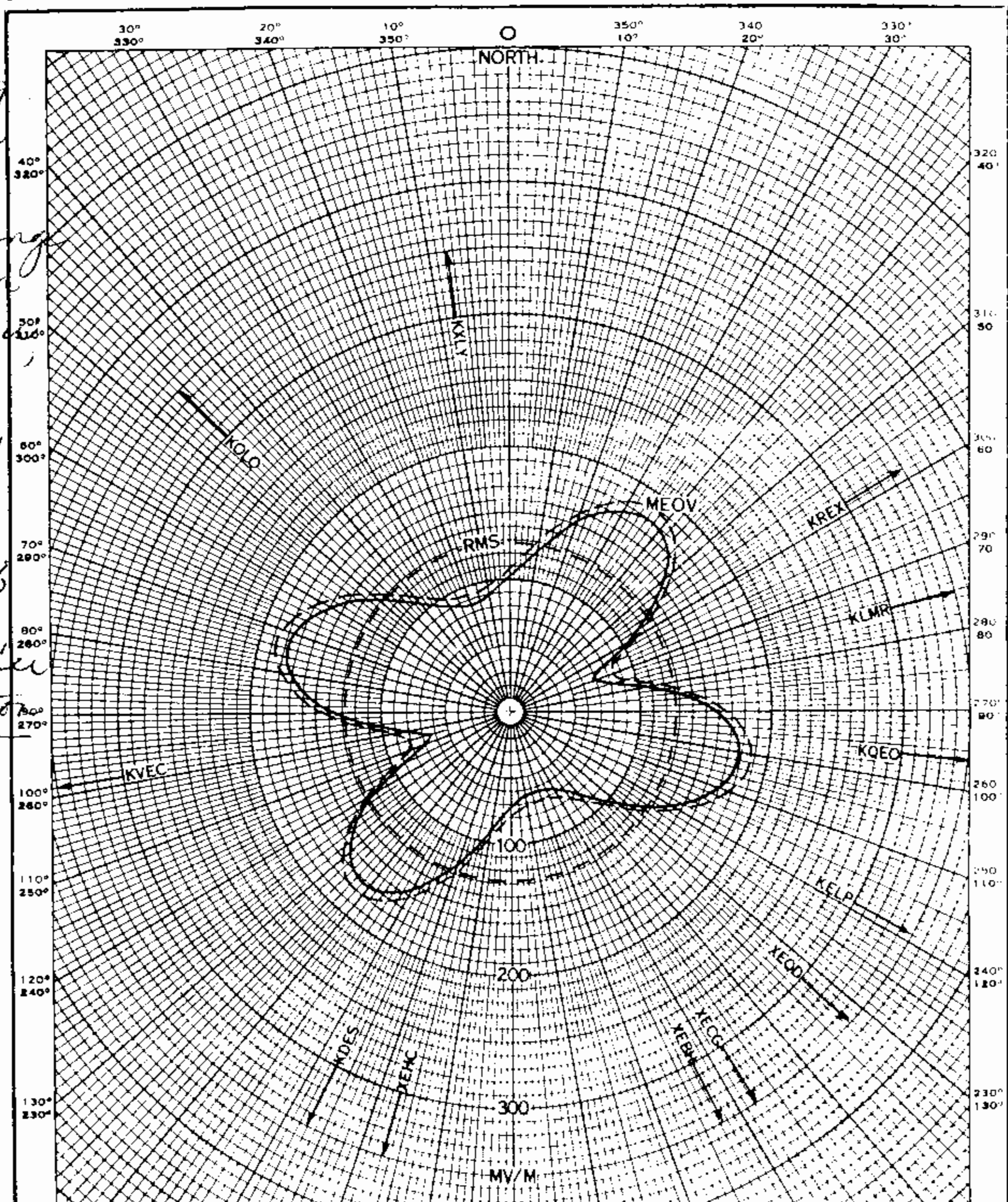
920 kc

BP 18701
GR. (2-13-70) CP To replace expired PERMIT (BP 18079)

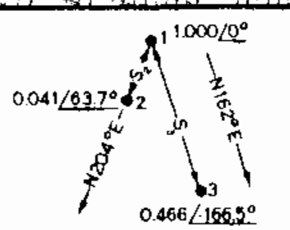
KORK

Proposed Night (6-27-69ct)	Station KORK Las Vegas, Nevada	500w, 5kw-LS, DA-2, U 920 kc

BP-18079
Granted
3/26/69
'f to change
operation
from 500w,
kw-LS,
DA-N, U,
o 500w,
kw-LS,
DA-2 U;
hange
ransmitter
location



N. LAT. 36° 08' 54"
W. LONG. 115° 05' 22"
$G_1 = G_2 = G_3 = 90° = 267'$
RMS = 128 MV/M
$S_2 = 75° = 223'$
$S_1 = 337° = 1001'$



PROPOSED NIGHTTIME HORIZONTAL RADIATION

UNATTENUATED FIELD INTENSITY
AT ONE MILE

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KORK
920 KHZ. 0.5 KW. 5 KW-LS. DA-2
LAS VEGAS, NEVADA

680110.1

FIGURE 6B

FCC File No. BP-18079 Accepted Amended	Station KORK Las Vegas, Nevada	920 kc

BP-18079 Granted 3/26/69)
CP to change operation from
500 w, 1kw-LS, DA-N, U to
500 w 5kw-LS, DA-2, U; change transmitter location

KORK

BP-18701
Gr. (2-13-70) CP to replace expired permit (BP 18079)

RADIO STATION KORK

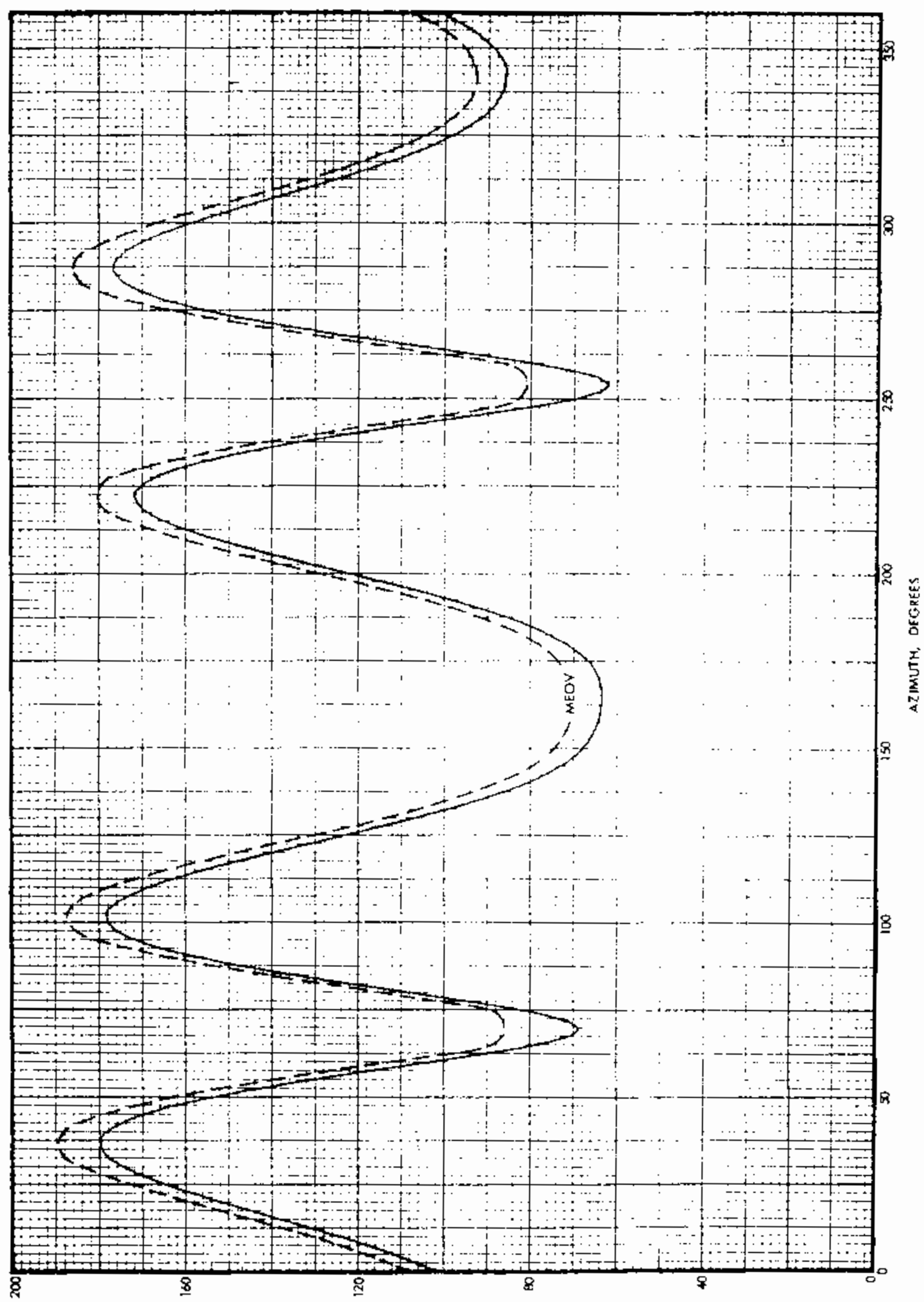
CALCULATED RADIATION

ELEVATION ANGLE 0°

500w,5kw-LS,DA-2,U
920 kc

Station KORK
Las Vegas, Nevada

Proposed Night Nulls
(6-27-69ct)



UNATTENUATED RADIATION, MV/M

920 kc

Station KORK
Las Vegas, Nevada

FCC File No.BP-18079
Accepted Amended

680110.1

HAMMETT & EDISON
CONSULTING ENGINEERS

FIGURE 6C

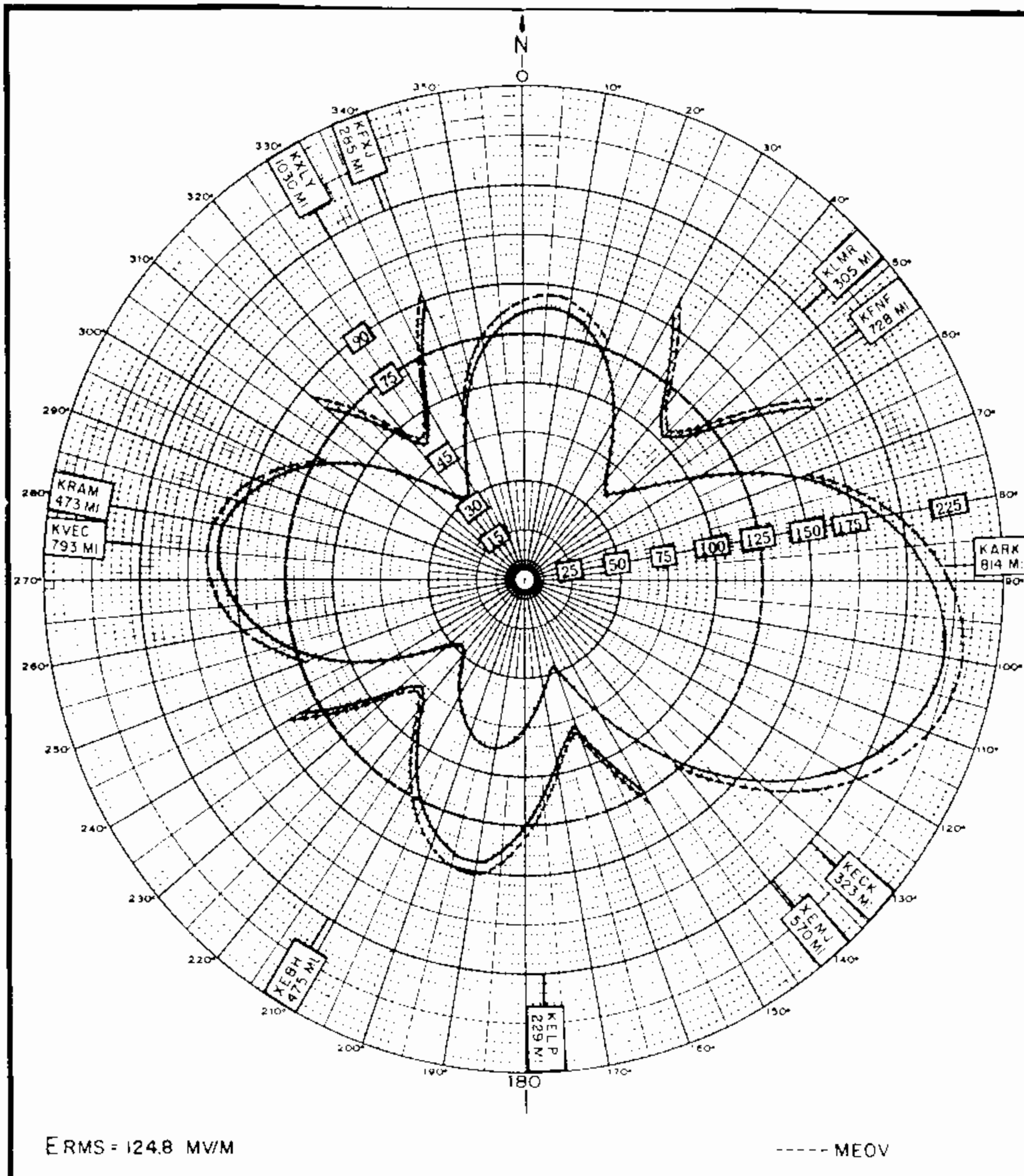
KQEO

PROPOSED NIGHT
(9/8/55G)

STATION [redacted]
ALBURQUERQUE, NEW MEXICO

500W, 1KW,-LS
DA-N, U

920 KC



LATITUDE: 35° 06' 36.23"
LONGITUDE: 106° 41' 03.85"

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

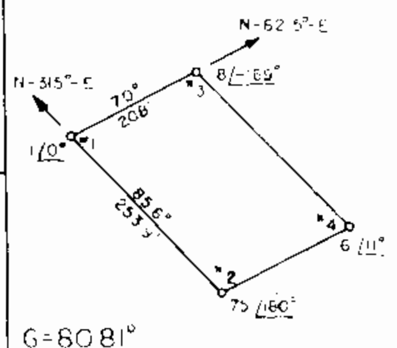


FIGURE 3

NIGHT TIME HORIZONTAL PLANE PATTERN (0° ELEVATION)

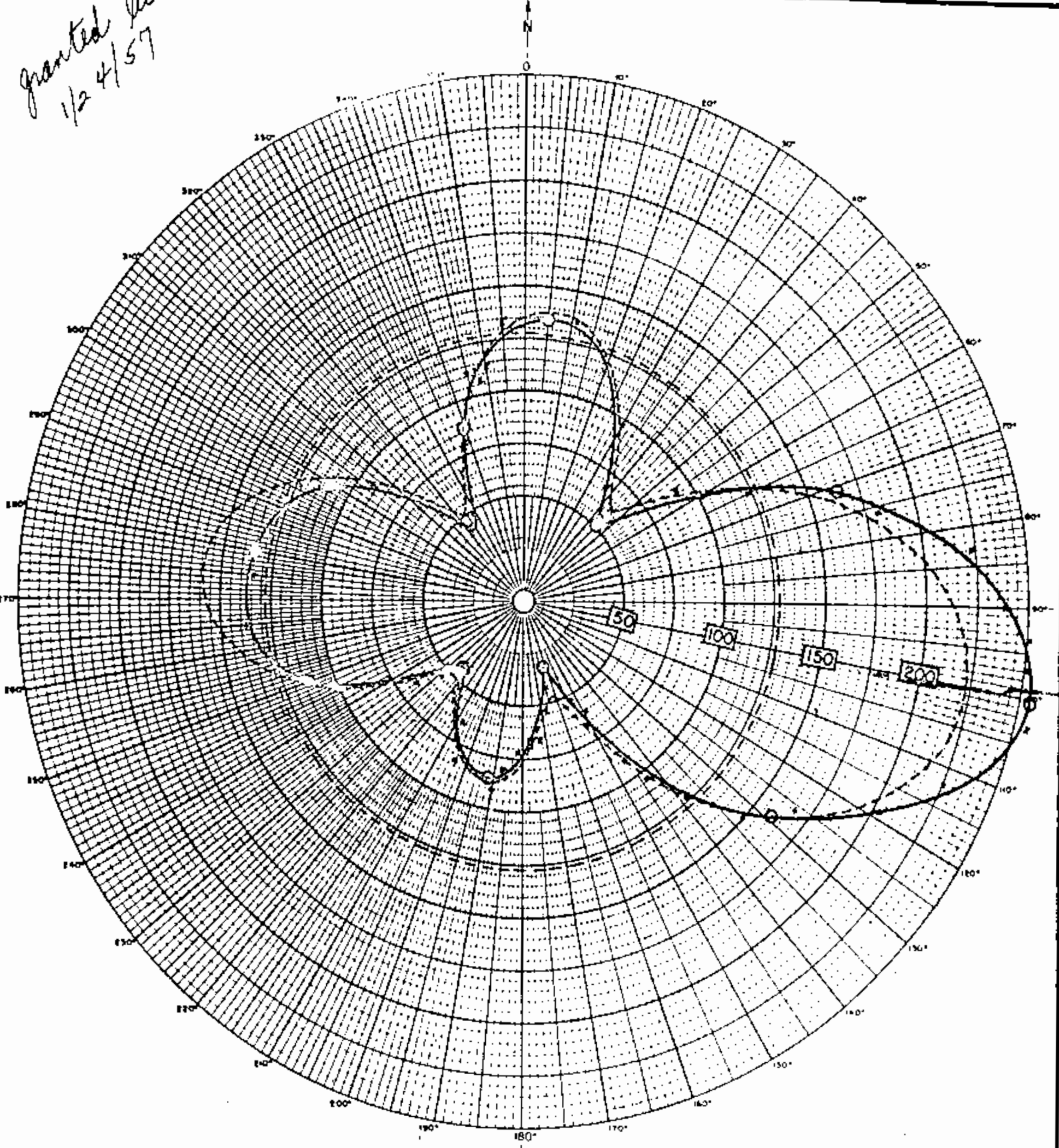
RADIO STATION KOAT
ALBUQUERQUE, N.M.

920KC 0.5-1KW-LS,DA-N,U

KQEO

MEASURED NIGHT (1-4-57g) Station ~~K[illegible]E~~ 500W, N 1 KW, D 920 K C
Albuquerque, New Mexico

granted license 1/24/57



— MEASURED PATTERN
---- CALCULATED PATTERN
OOOO MEASURED RADIALS
XXXX CROSS RADIALS

ERMS = 127.4 MV/M

The coordinates on the pattern are wrong.
They were corrected 12-5-56.

LATITUDE: 35° 06' 36.23"
LONGITUDE: 106° 41' 03.85"
35' 06" 36.23*
106' 40" 03.85*

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

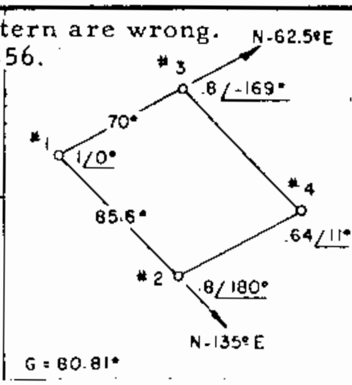


FIGURE 19

MEASURED
NIGHT HORIZONTAL PATTERN

RADIO STATION KQUE
ALBUQUERQUE, N. M.

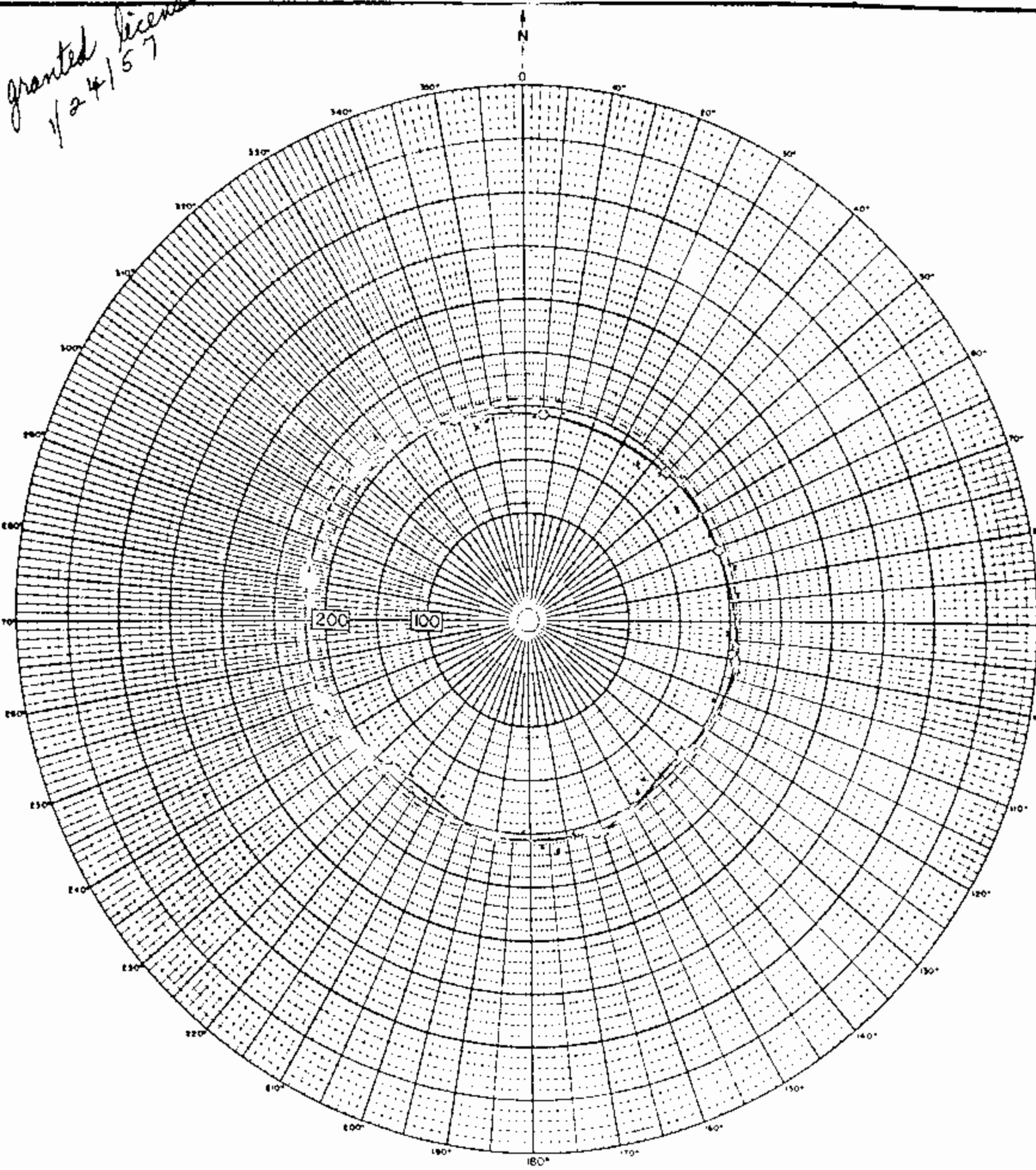
920KC 0.5KW, 1KW-LS, DA-N, U

FCC File No. BL-6417 Accepted 12/14/56 KQUE 920 KC
Albuquerque, New Mexico

KQEO

MEASURED NON-DA Station KQUE 500W, N 1 KW, D 920 KC
(1-4-57g) Albuquerque, New Mexico

granted license 1/24/57



ERMS = 207 MV/M

000 MEASURED RADIALS
XXX CROSS RADIALS

The coordinates on the pattern are wrong.
They were corrected 12-5-56

LATITUDE: 35° 06' 36.23" 35' 06" 36.23*
LONGITUDE: 106° 41' 03.85" 106' 40" 03.85*

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

G = 80.81°

FIGURE 17

MEASURED
NON-DA HORIZONTAL PATTERN

RADIO STATION KQUE
ALBUQUERQUE, N.M.

920 KC 0.5 KW, I KW-LS, DA-N, U

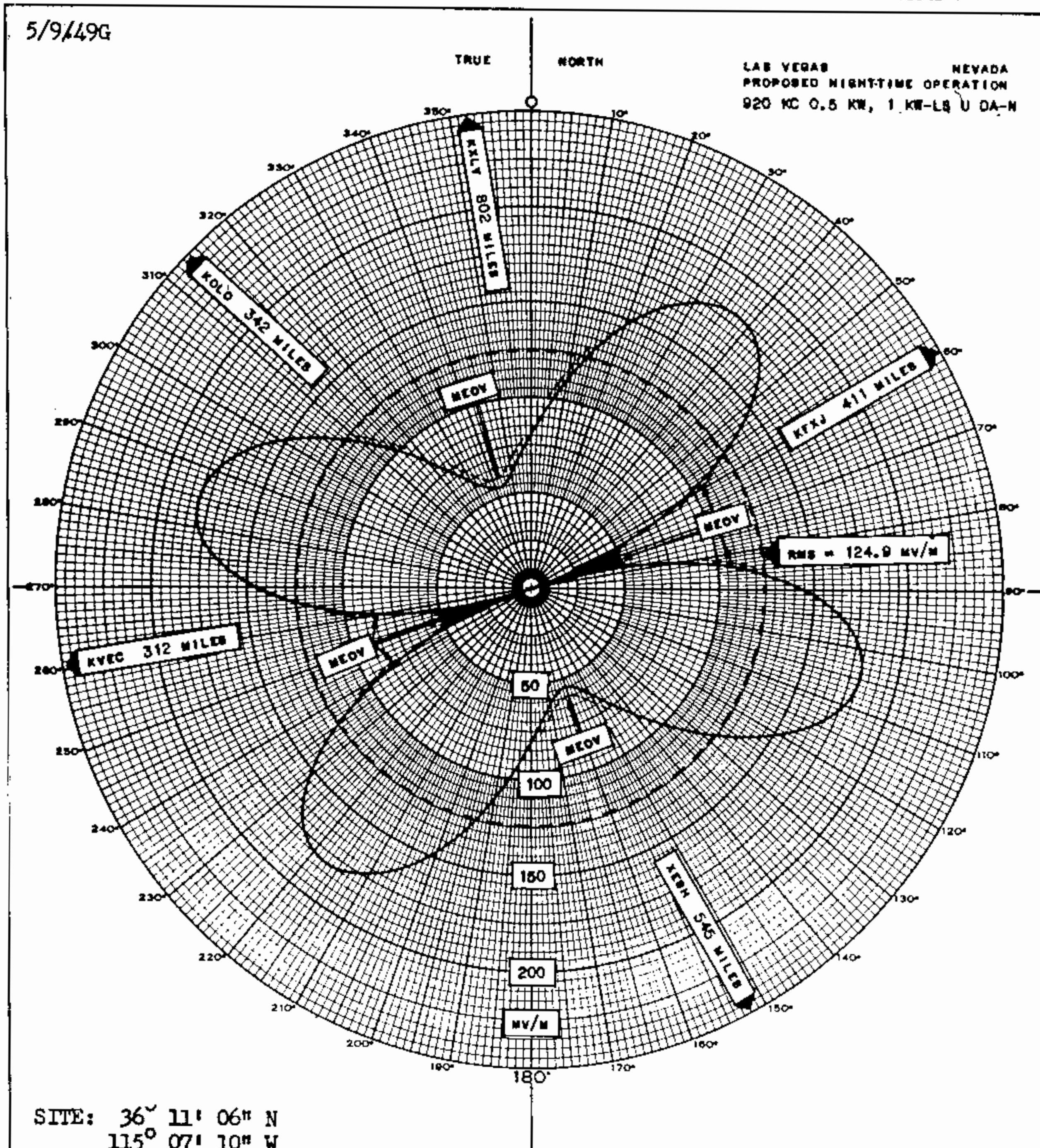
FCC File No. Accepted 12/14/56 KQUE 920 KC
BL-6417 Albuquerque, New Mexico

KRAM

PROPOSED NIGHT

KRAM, LAS VEGAS, NEVADA

500w,1kw-LS,DAN FIGURE 1 920 kc



PROPOSED NIGHT HORIZONTAL PLANE RADIATION PATTERN

341° TRUE N

② 0.9/180°

325°

① 1/0°

G = 81°

RADIO STATION KRAM
LAS VEGAS NEVADA

WELDON & CARR
CONSULTING RADIO ENGINEERS
WASHINGTON DC DALLAS TEXAS

PROPOSED NIGHTTIME OPERATION
LAS VEGAS NEVADA
920 KC 0.5 KW, 1 KW-LS U DA-N

W 490414 C

SUPERSEDES D 480211 B

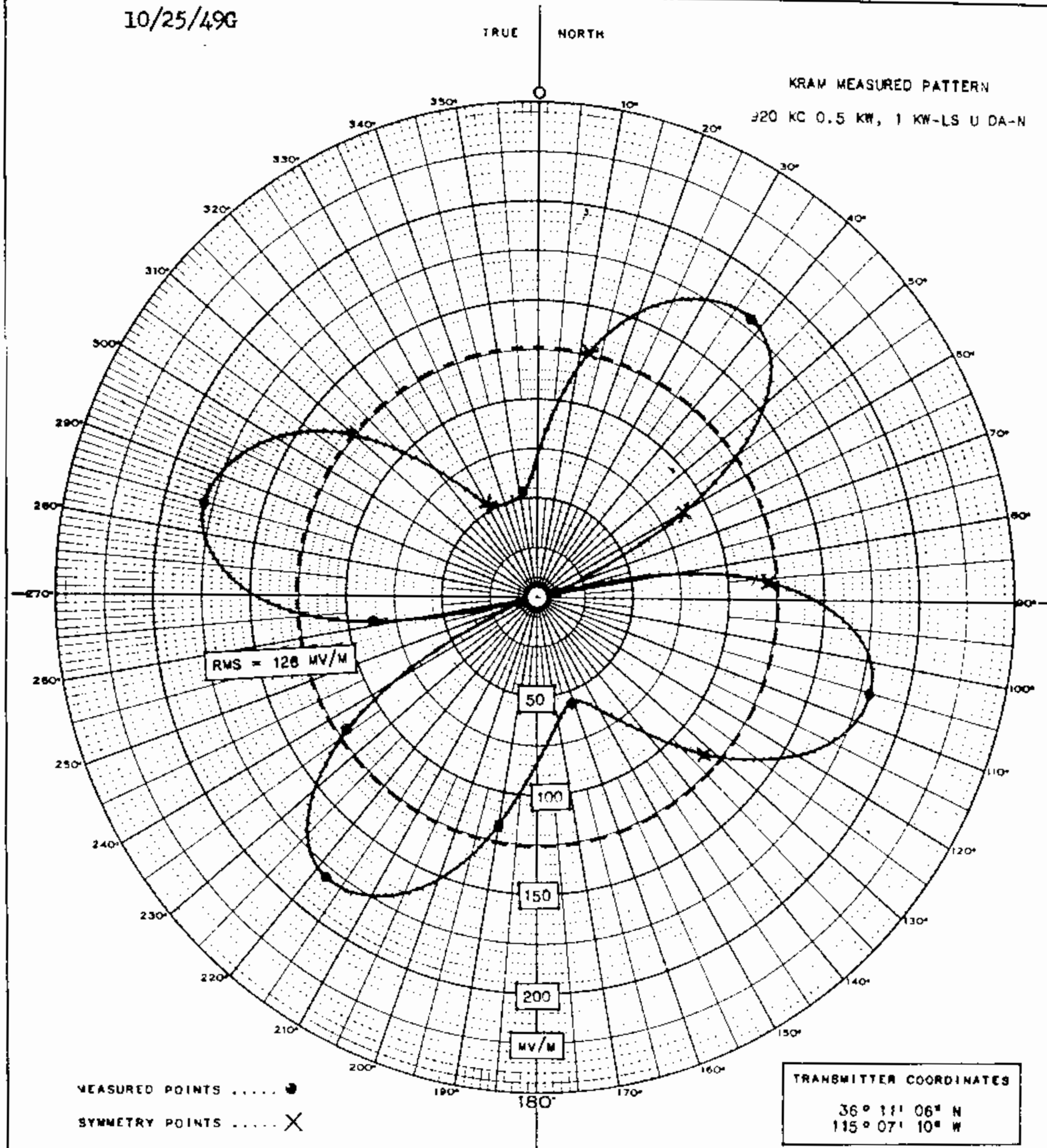
AMENDMENT RECD 4-19-49 BP-6605

KRAM, Las Vegas, Nev. 920 kc

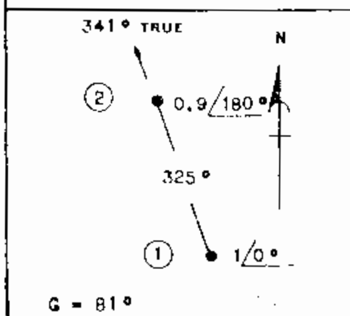
KRAM

MEASURED NIGHT — KRAM, LAS VEGAS, NEVADA — 500w, 1kw-LS, DAN — 920 kc

10/25/49G



MEASURED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN



RADIO STATION KRAM
BOULDER CITY BROADCASTING COMPANY
LAS VEGAS NEVADA

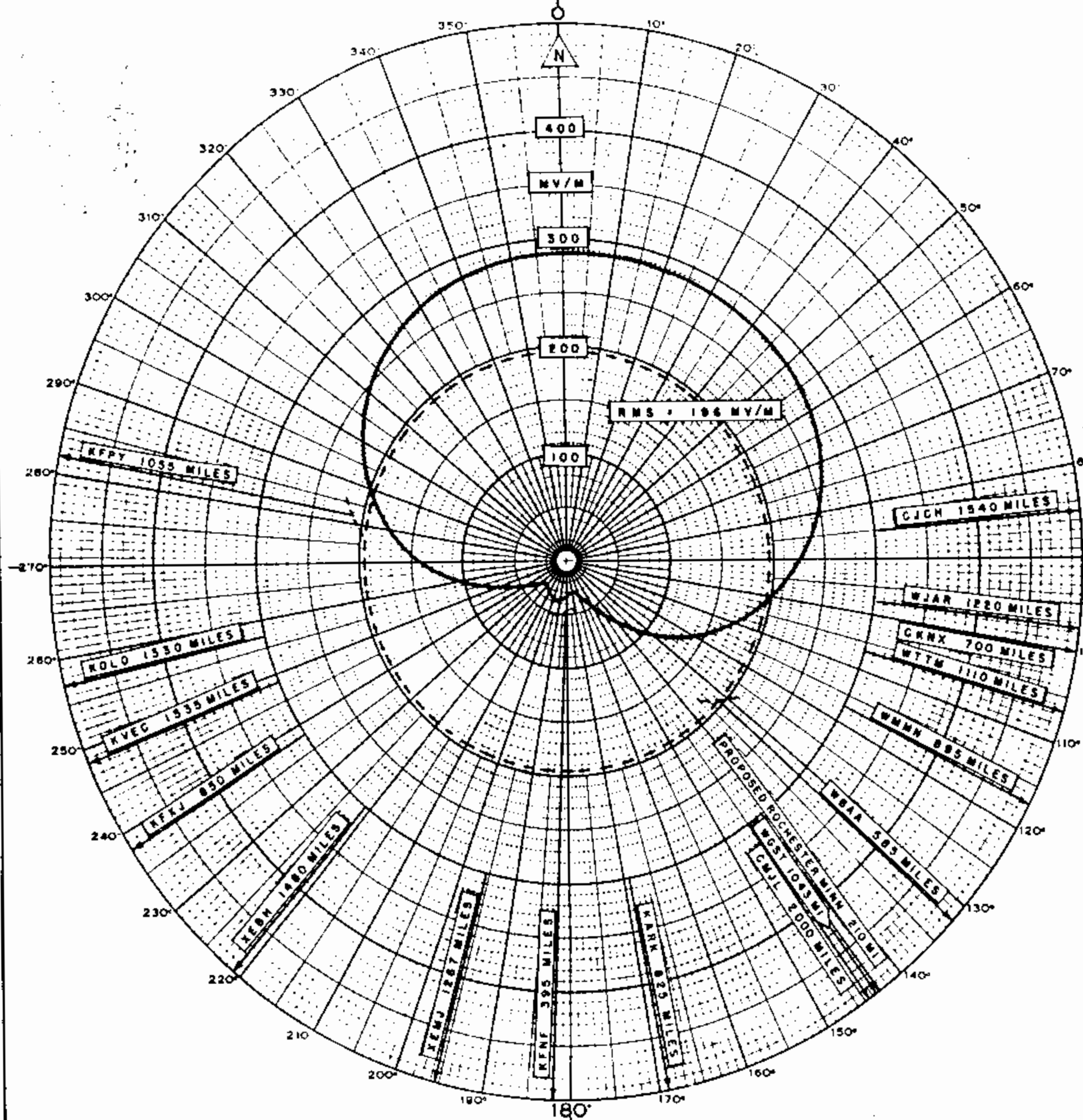
WELDON & CARR
CONSULTING RADIO ENGINEERS
WASHINGTON D C DALLAS TEXAS

KRAM
LAS VEGAS NEVADA
920 KC 0.5 KW, 1 KW-LS U DA-N
W 491005 A

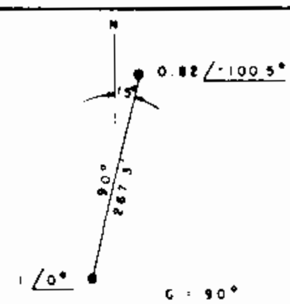
AMENDMENT RECD 10-10-49 BL-3840 — KRAM, Las Vegas, Nev. 920 kc

KWAD FIGURE 9

920 KC 1 KW DA-N
WADENA, MINN.



PROPOSED NIGHT HORIZONTAL PLANE RADIATION PATTERN



ASSOCIATED BROADCASTERS INC.

WADENA MINNESOTA

WELDON & CARR
CONSULTING RADIO ENGINEERS
WASHINGTON DC

PROPOSED NEW STATION

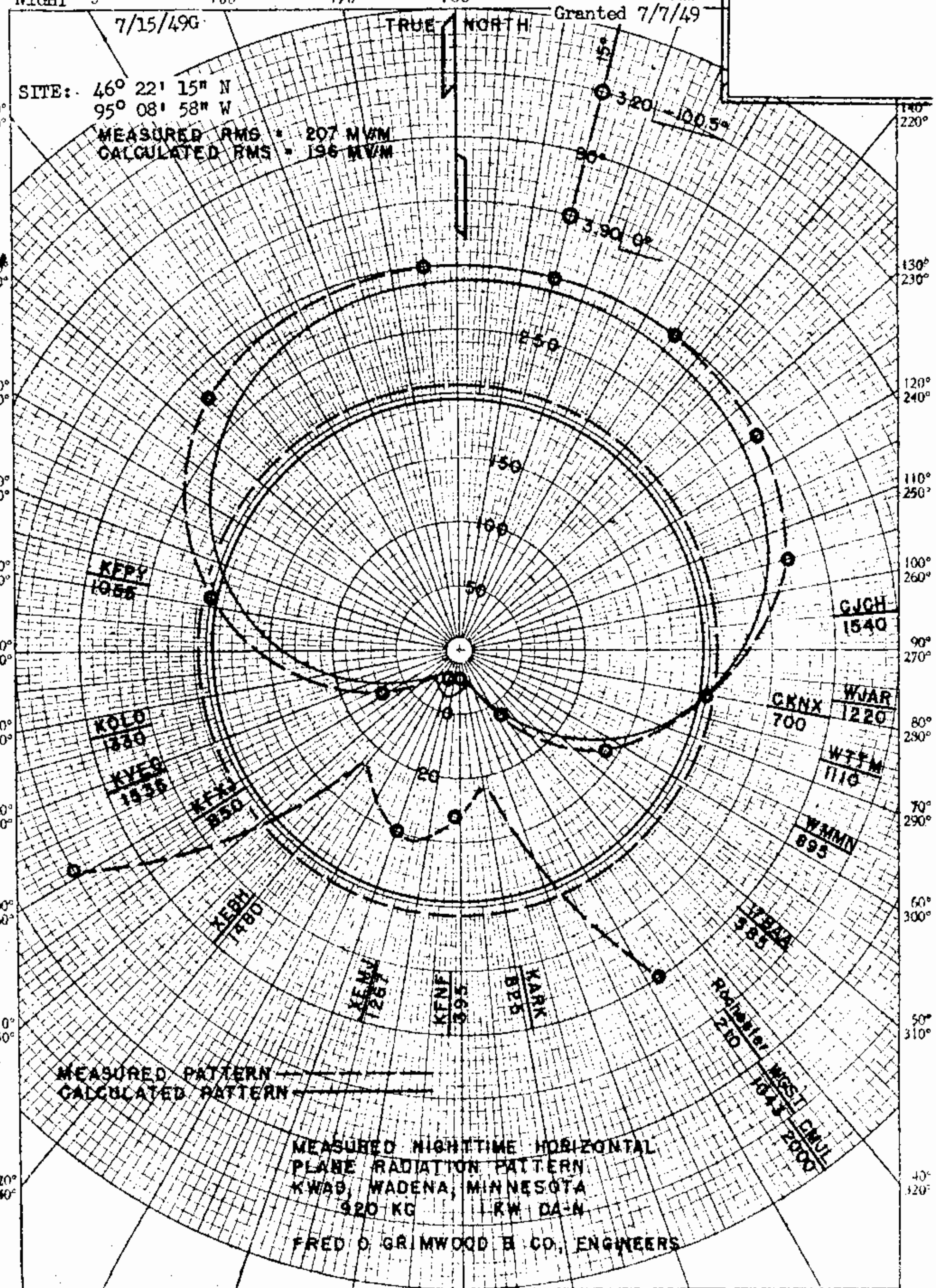
WADENA MINNESOTA

920 KC 1 KW DA-N

460805A

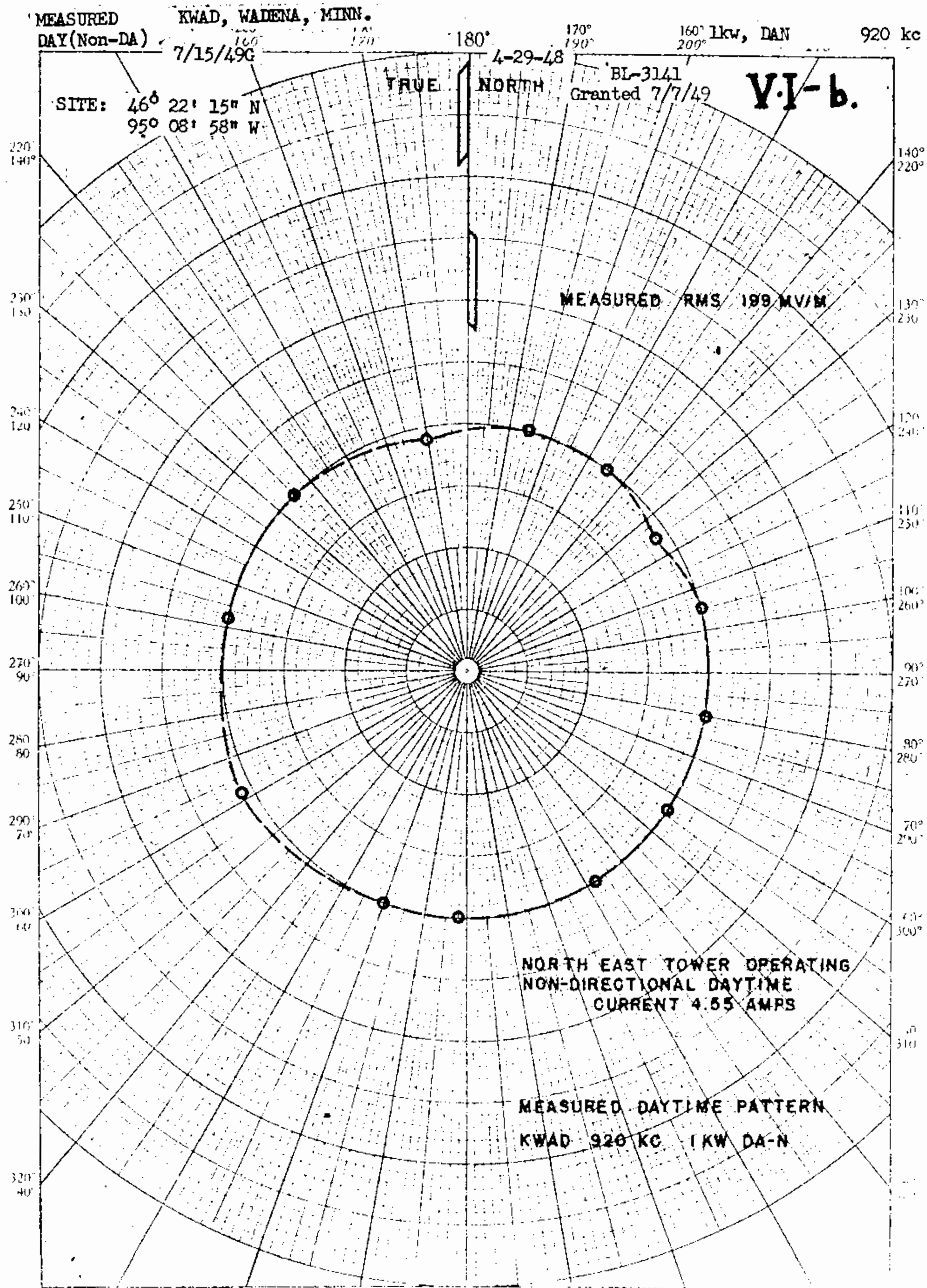
KWAD

MEASURED NIGHT KWAD, WADENA, MINN. 1kw, DAN 920 kc



AMENDMENT RECD 1-3-49 BL-3141 KWAD, Wadena, Minn. 920 kc

KWAD

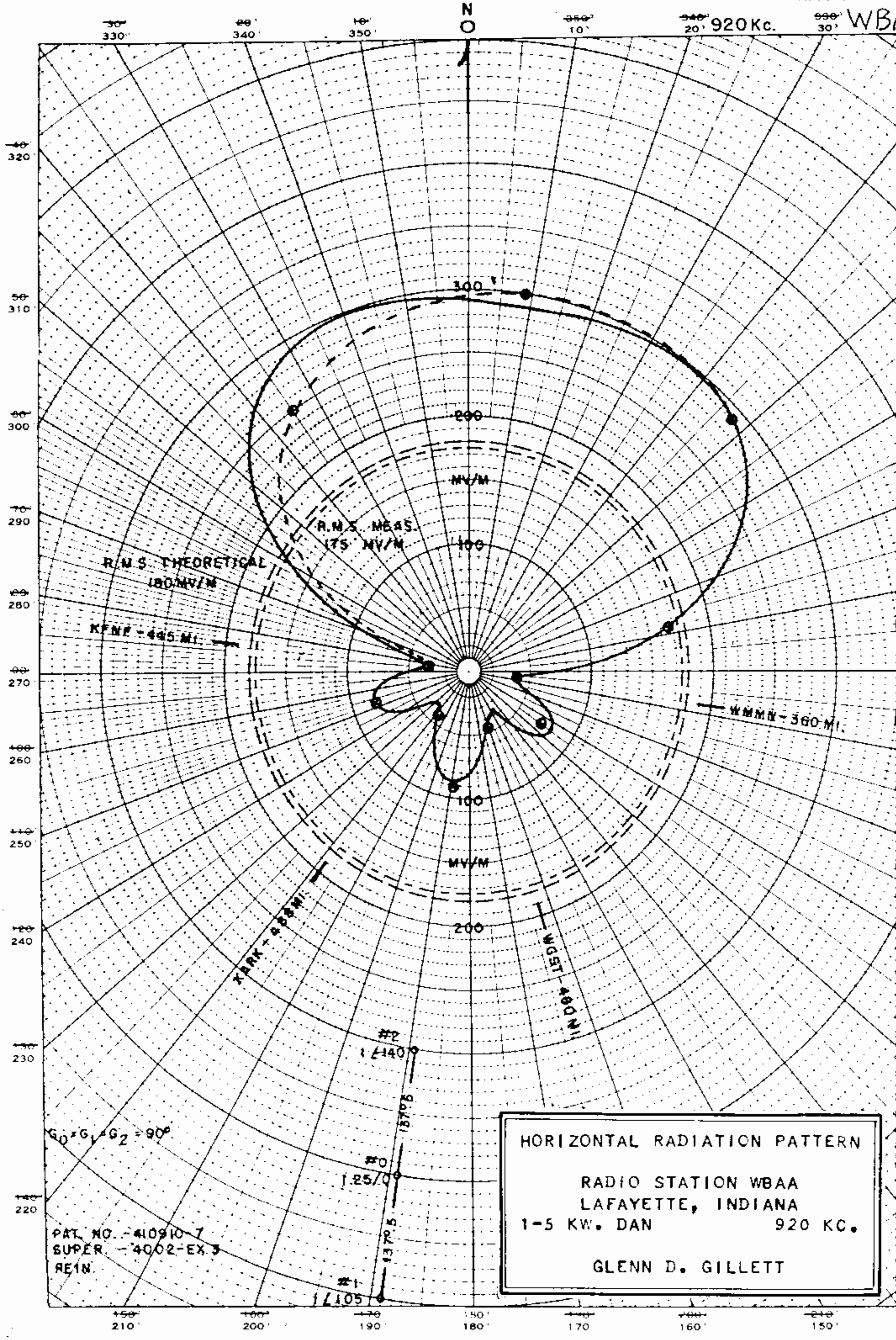


KWAD, Wadena, Minn. 920 kc

APP. 7

WBAA

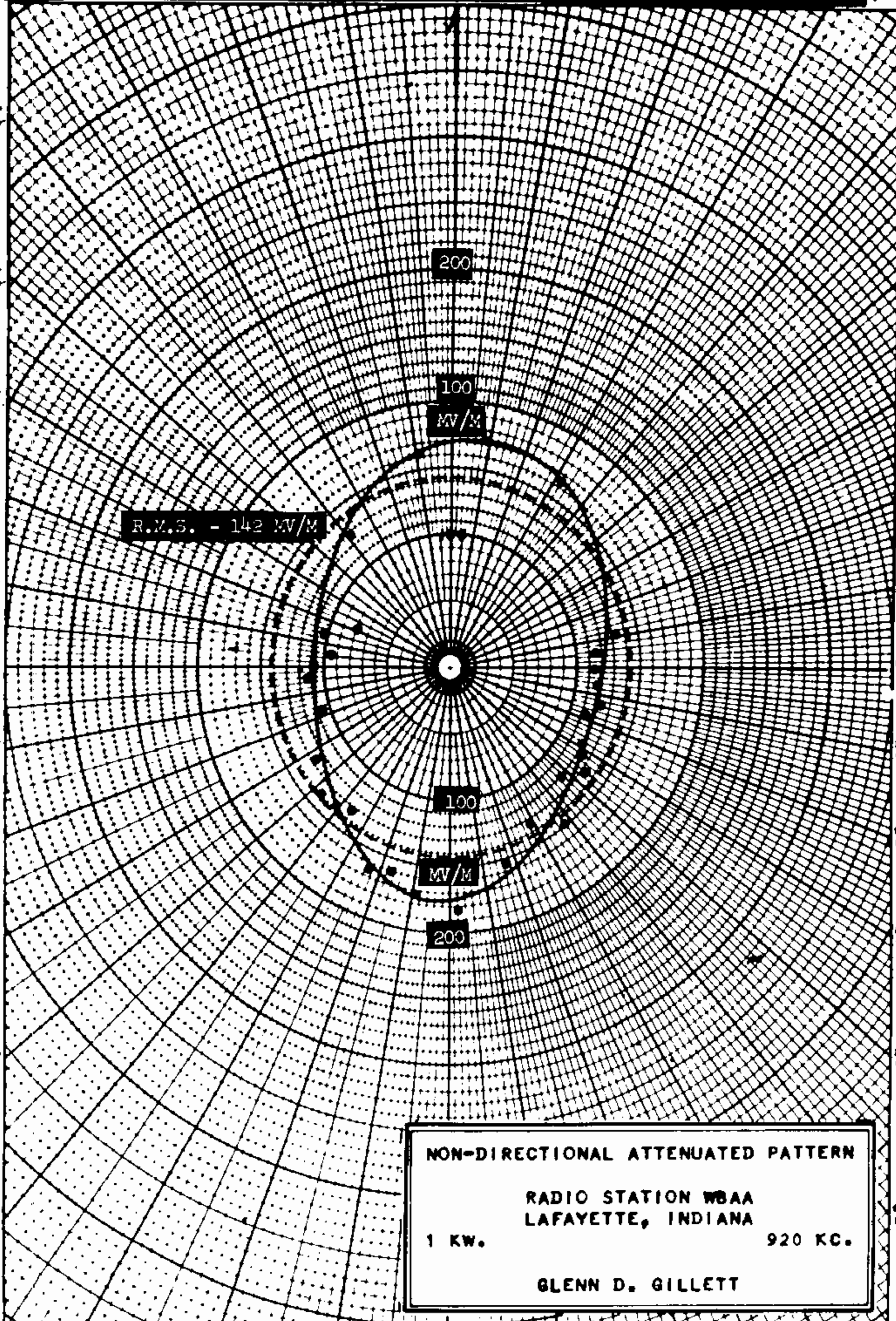
920



410910-7

PROPOSED & MEASURED NON-DA Station WBAA 1KW,5KW-LS, DA-N,U
West Kafayette, Indiana 920 KC

920
WBA



41

1

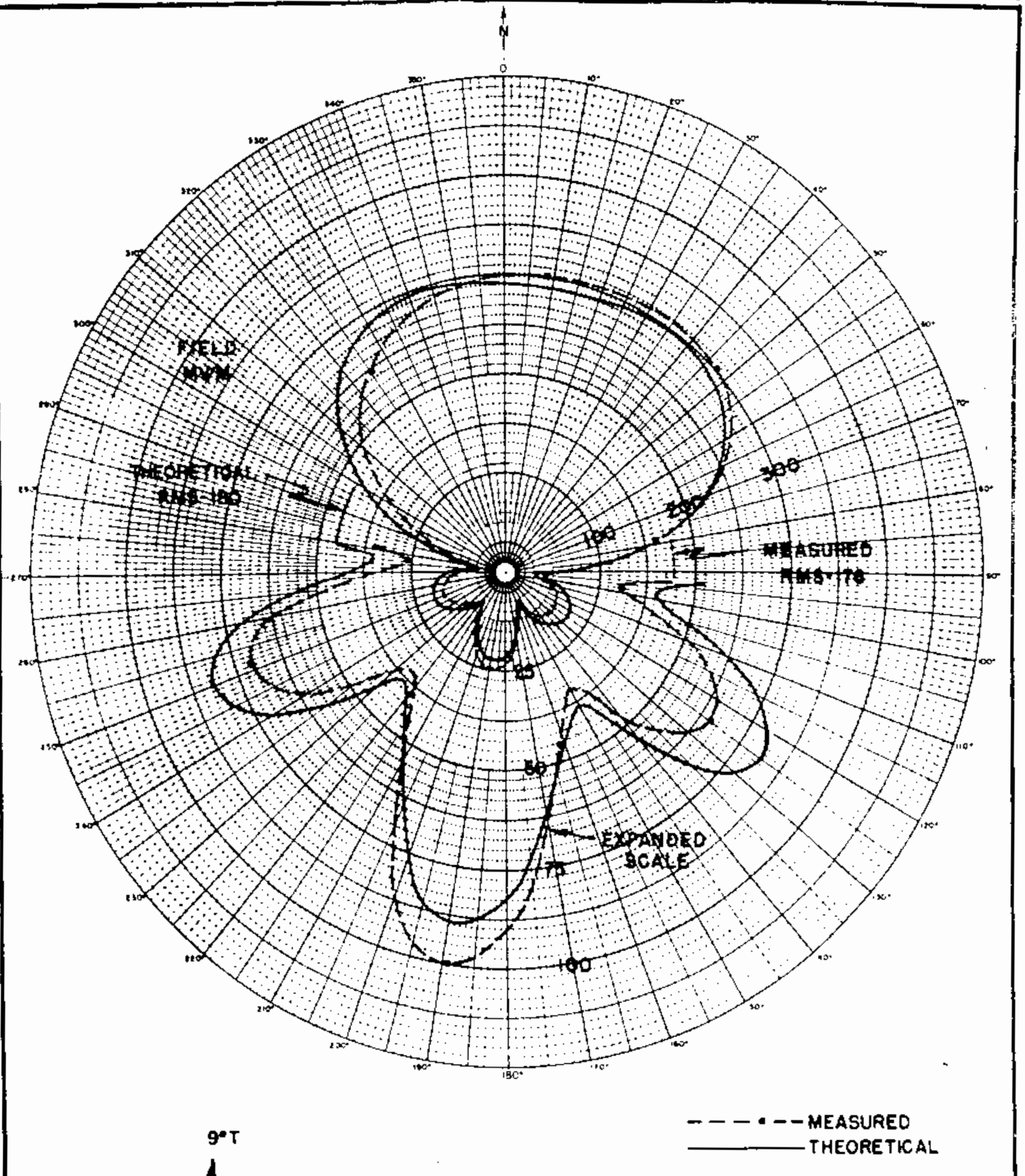
(45)

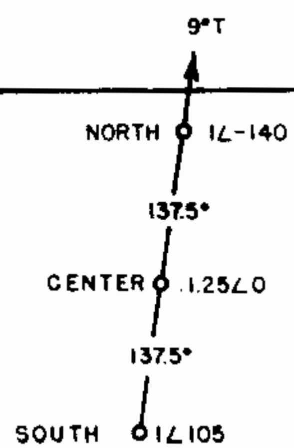
410910-16

PROPOSED & MEASURED NIGHT (9-20-61ct)

Station WBAA
West Lafayette, Indiana

1kw,5kw-LS,DA-N,U
920 kc





LATITUDE 40° 20' 08.8"
LONGITUDE 86° 53' 33.1"

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
	SEE	DIAGRAM			180	90°

DIRECTIONAL
HORIZONTAL PLANE PATTERN
WBAA
WEST LAFAYETTE, INDIANA
920 KC IKW,5KW LS-DAN

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D.C.

FCC File No.BZ-4494
Accepted 8-25-61

Station WBAA
West Lafayette, Indiana

920 kc

WBOX

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : WBOX Main Studio: Boga lusa, Louisiana

Frequency : 920 KHz Power : 1 kW Night 1 kW Day

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

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude:	30	50	29
West Longitude:	89	50	06

Predicted Daytime Effective Field (omnidirectional): 187 mV/m at rated power.

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	C(#1)	SW(#2)	NE(#3)			
HEIGHT ABOVE INSULATORS	240'	240'(80.8°)	243'(81.8°)			
PHASING	0°	-131.3°	+131.6°			
FIELD RATIO	1.0	0.89	0.5			

SPACING AND ORIENTATION : Towers in a row are spaced 267.3' (90°) on a line bearing 64° true.

GROUND SYSTEM : (NE (#3) Tower) 120 - 330 equally spaced copper radials plus a 38' square gound screen about the tower (C(#1) and SW (#2) towers) 120 - 267' equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

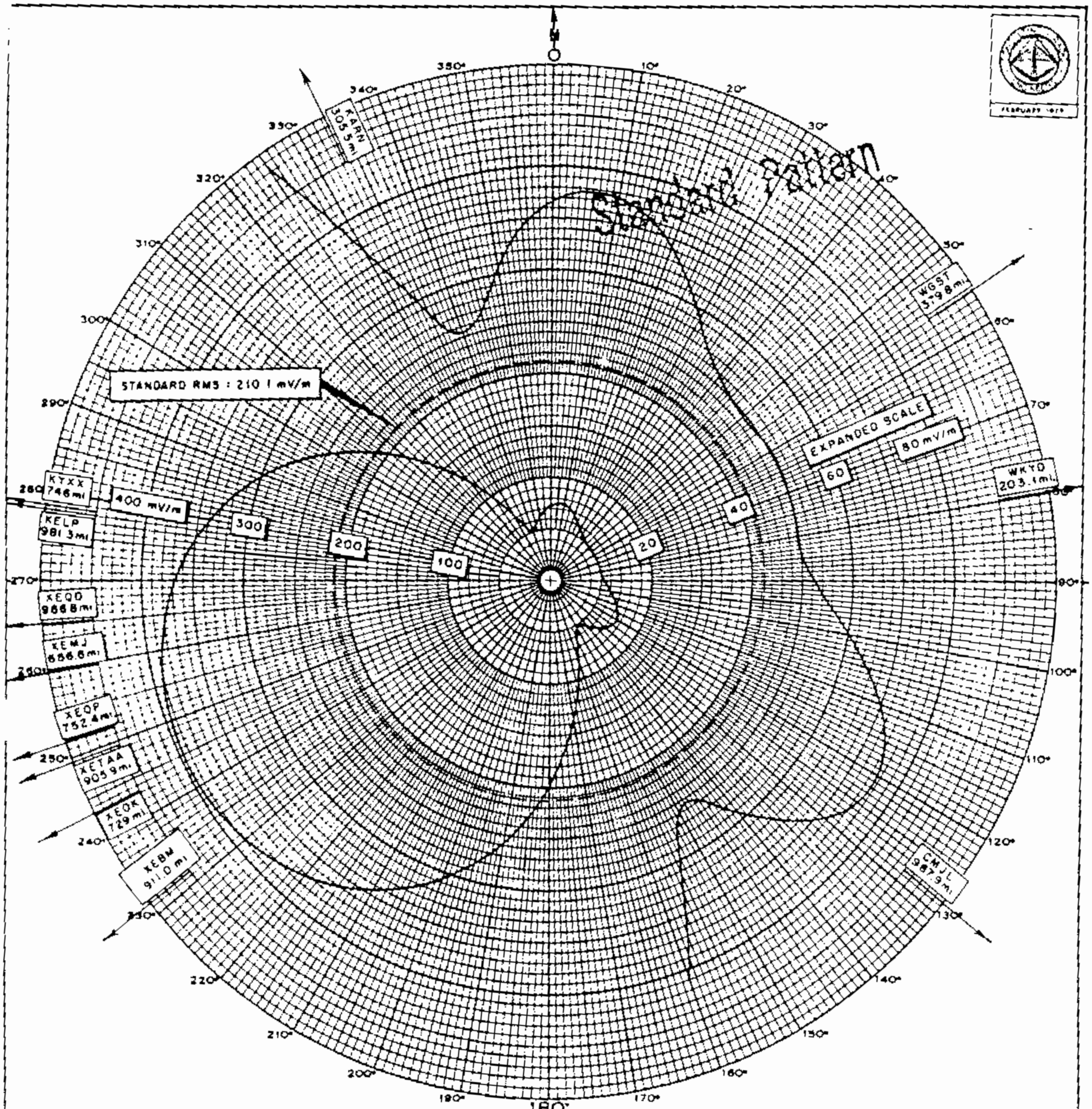
WBOX

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

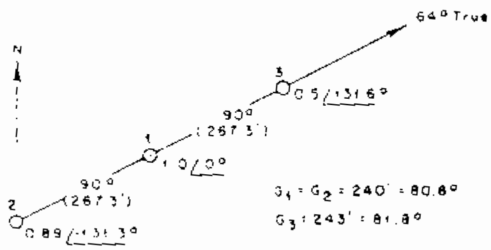
	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Night	200.0 mV/m	260.1 mV/m	210.1 mV/m

Note: The notification concerns only a change in the addition of Nighttime operation to the staito with Daytime operation continued as previousiy notified. Except the daytime antenna height is corected to 243' (81.8°).

WBO



LATITUDE	30°	50'	29"	NORTH
LONGITUDE	89°	50'	06"	WEST



$G_1 = G_2 = 240' = 80.8°$

$G_3 = 243' = 81.8°$

THEORETICAL RMS : 200.0 mV/m
STANDARD RMS : 210.1 mV/m
RSS : 250.1 mV/m

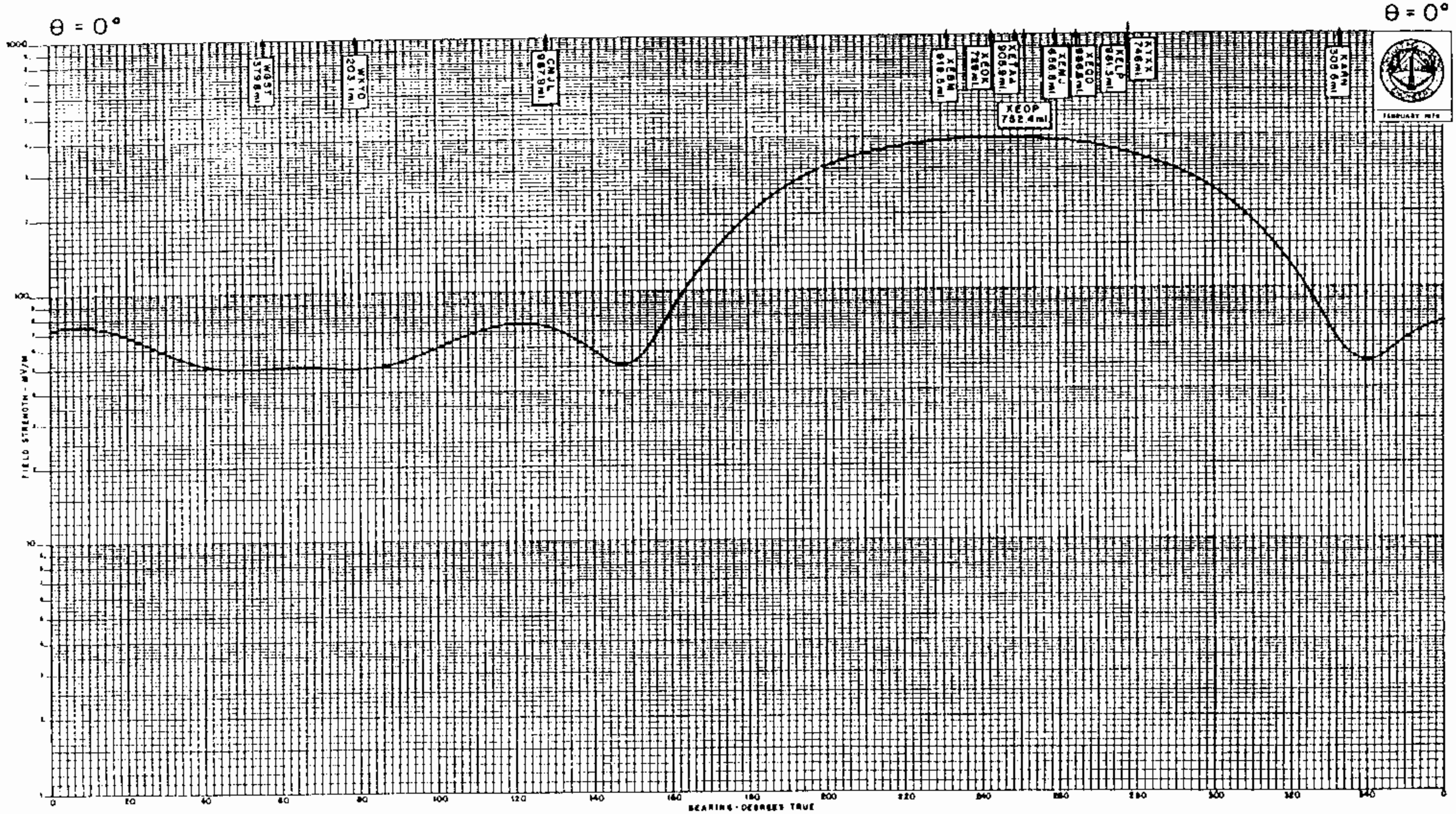
FIGURE 1-A

PROPOSED NIGHTTIME
HORIZONTAL PLANE
STANDARD RADIATION PATTERN

STATION WBOX
MOSELEY-SMITH BROADCASTING, INC.
BOGALUSA, LOUISIANA

PRESENT	920 kHz	1 kW	DAY
PROPOSED	920 kHz	1 kW-U	DA-N

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

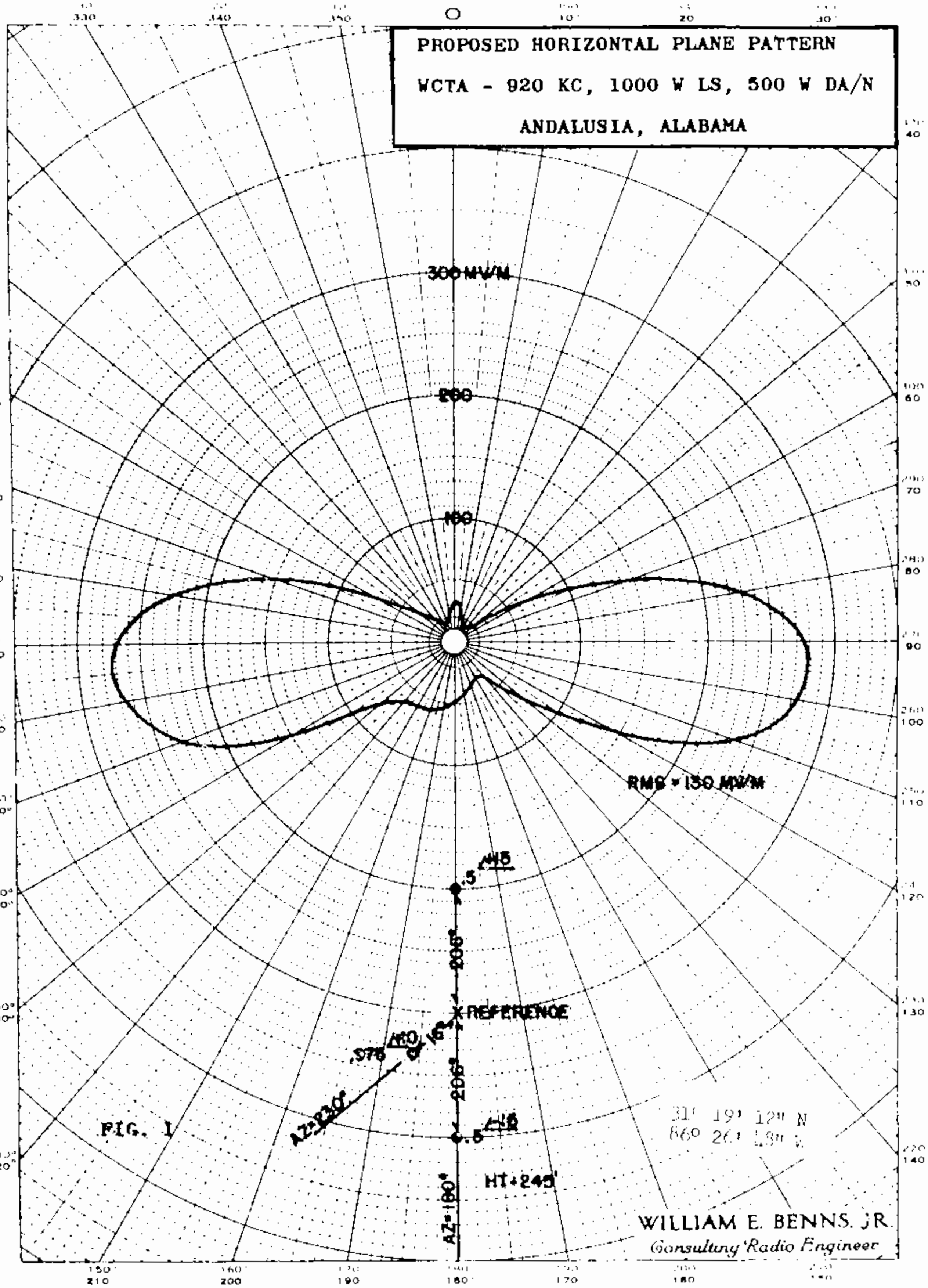


Standard Pattern

FIGURE 2-A

WBOX

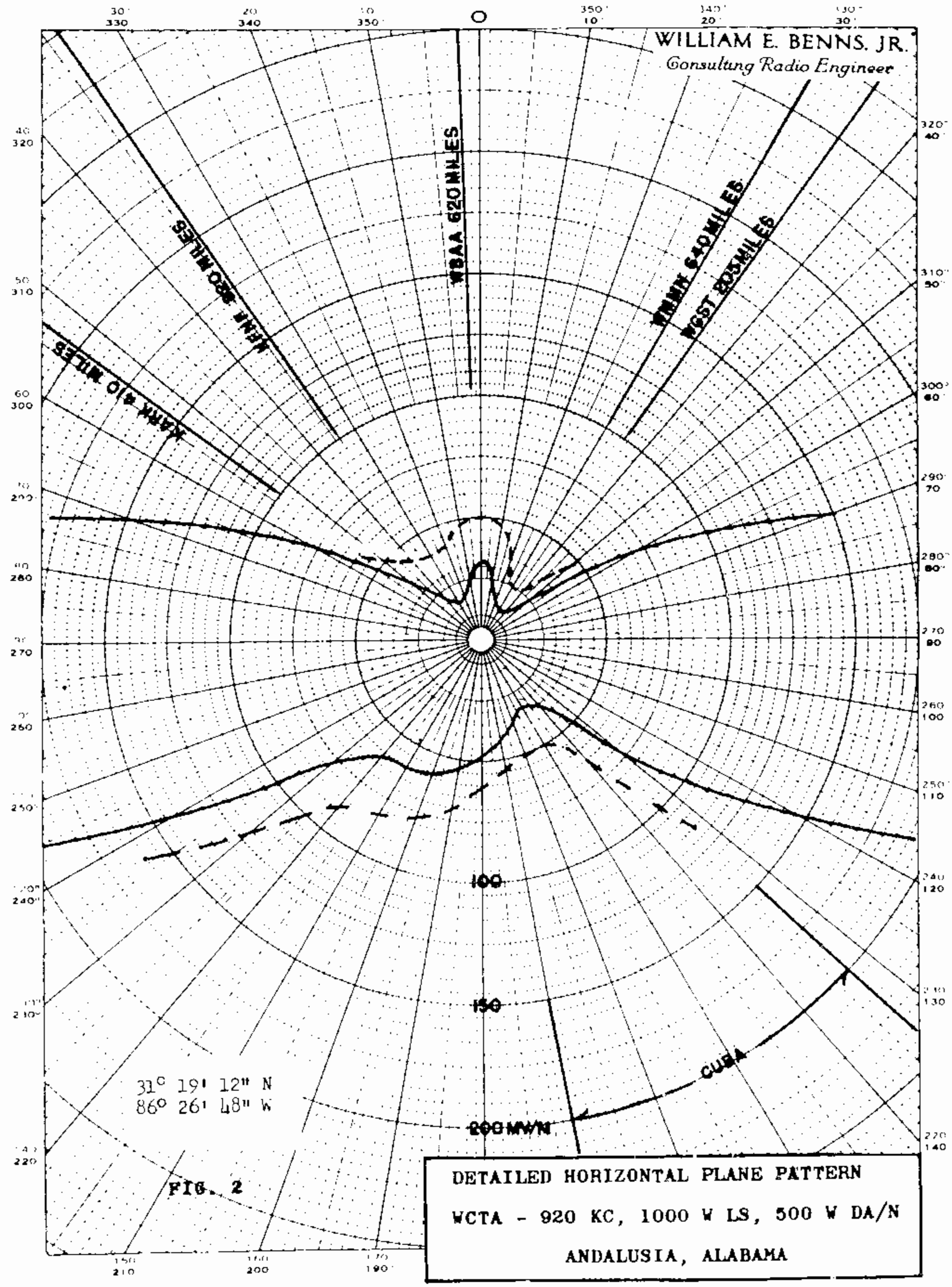
PROPOSED WCTA, Andalusia, Ala. 500W, 1KW,LS, U, DA-N 920 kc
NIGHT (7/13/54G)



FCC File No. BP-9113 Amended Accepted 6/24/54 WCTA, Andalusia, Ala. 920 kc

WCTA

PROPOSED NIGHT NULLS   WCTA, Andalusia, Ala.   500W, 1KW-LS, U, DA-N   920 kc
(7/13/54G)



DETAILED HORIZONTAL PLANE PATTERN

WCTA - 920 KC, 1000 W LS, 500 W DA/N

ANDALUSIA, ALABAMA

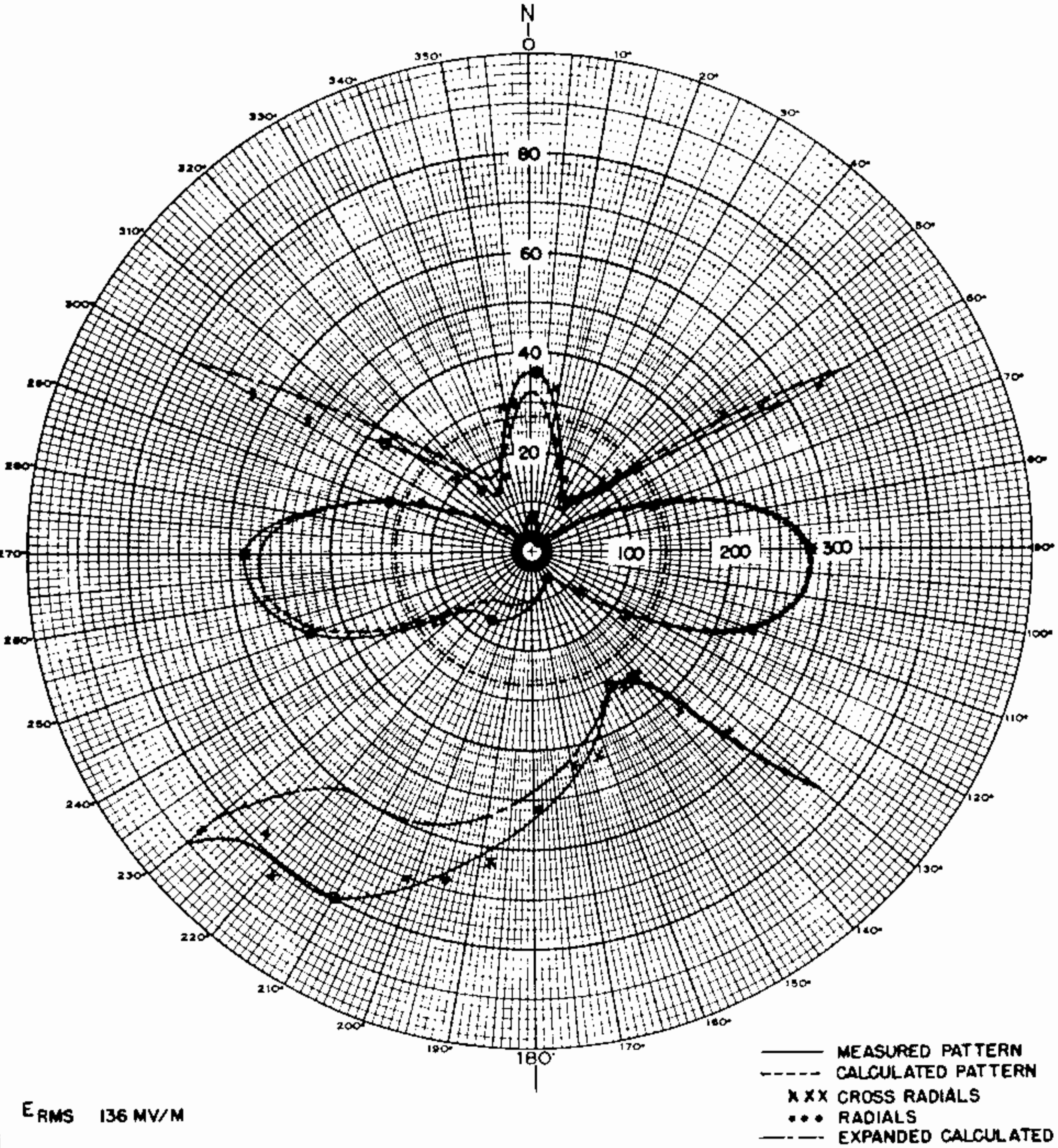
WCTA

MEASURED NIGHT
(4/11/55G)

STATION WCTA
ANDALUSIA, ALABAMA

500W, 1KW-LS
DA-N, U

920 KC



LATITUDE: 31° 19' 05"
LONGITUDE: 86° 26' 47"

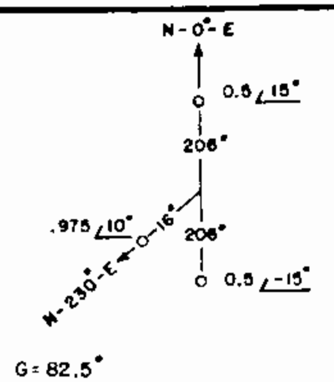


FIGURE 30

MEASURED NIGHTTIME DIRECTIONAL HORIZONTAL PATTERN

RADIO STATION WCTA

ANDALUSIA, ALA.

920 KC 0.5, 1.0 KW-LS, DA-N,U

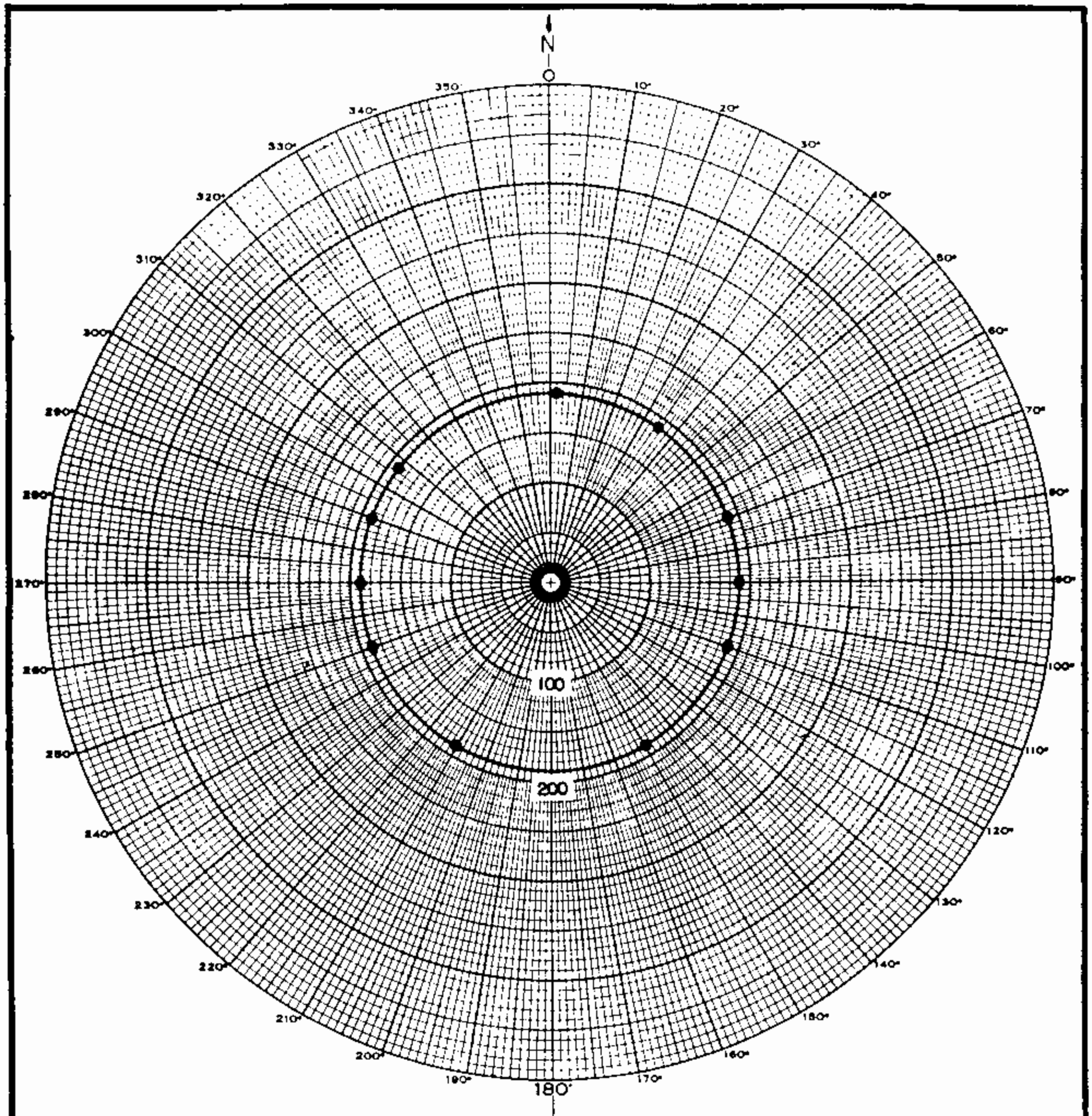
JOHN H. MULLANEY
CONSULTING RADIO ENGINEER
WASHINGTON, D. C.

WCTA

MEASURED NON-DIRECTIONAL STATION WCTA (4/11/55G) ANDALUSIA, ALABAMA

500W, 1KW-LS DA-N, U

920 KC



E RMS 189.5 MV/M

LATITUDE: 31° 19' 05"
LONGITUDE: 86° 26' 47"

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

G = 82.5°

FIGURE 28

MEASURED NON-DA DAYTIME HORIZONTAL PATTERN

RADIO STATION WCTA

ANDALUSIA, ALA.

920 KC 0.5, 1.0 KW-LS, DA-N, U

FILE NO. BL-5661 Accepted 3/21/55 FCC WCTA, Andalusia, Alabama 920 KC

WGHQ

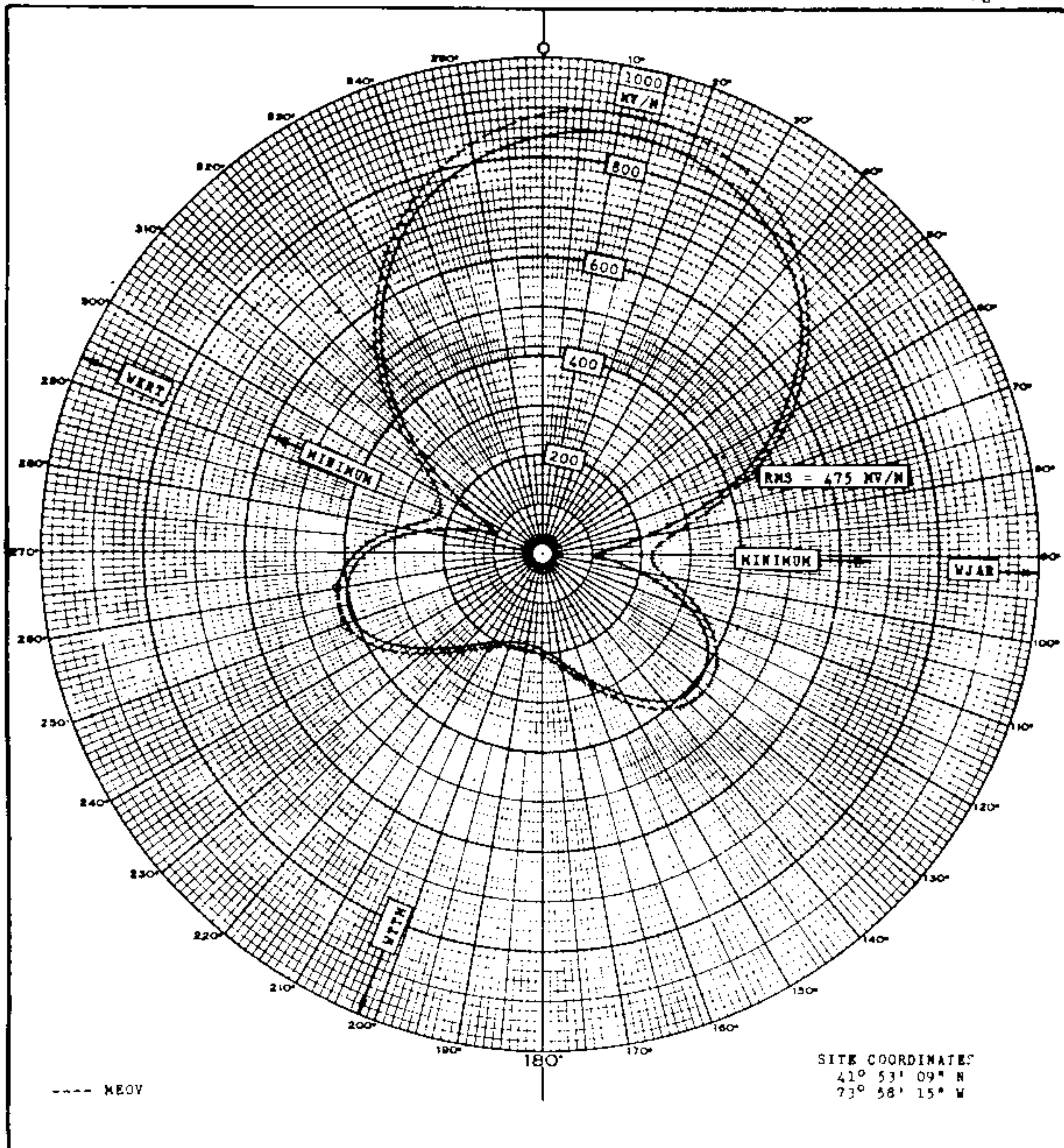
Proposed Day
(2-28-62ct)

Station WGHQ
Kingston, New York

5kw,DA-D,U
920 kc

Figure 2a

CP Granted
To Chg DA-Pat.
4/19/62



PROPOSED HORIZONTAL PLANE RADIATION PATTERN

S 94.4°
12° T
(3) 0.64/88.0°
100°
(2) 0.69/-141.5°
100°
(1) 1/0°

SKYLARK CORPORATION
KINGSTON, NEW YORK

Jules Cohen
Consulting Electronic Engineer

PROPOSED OPERATION
RADIO STATION WGHQ
920 KC 5.0 KW D DA
Pattern 620102

FCC File No.BP-15315
Accepted 1-30-62

Station WGHQ
Kingston, New York

920 kc

WGHQ

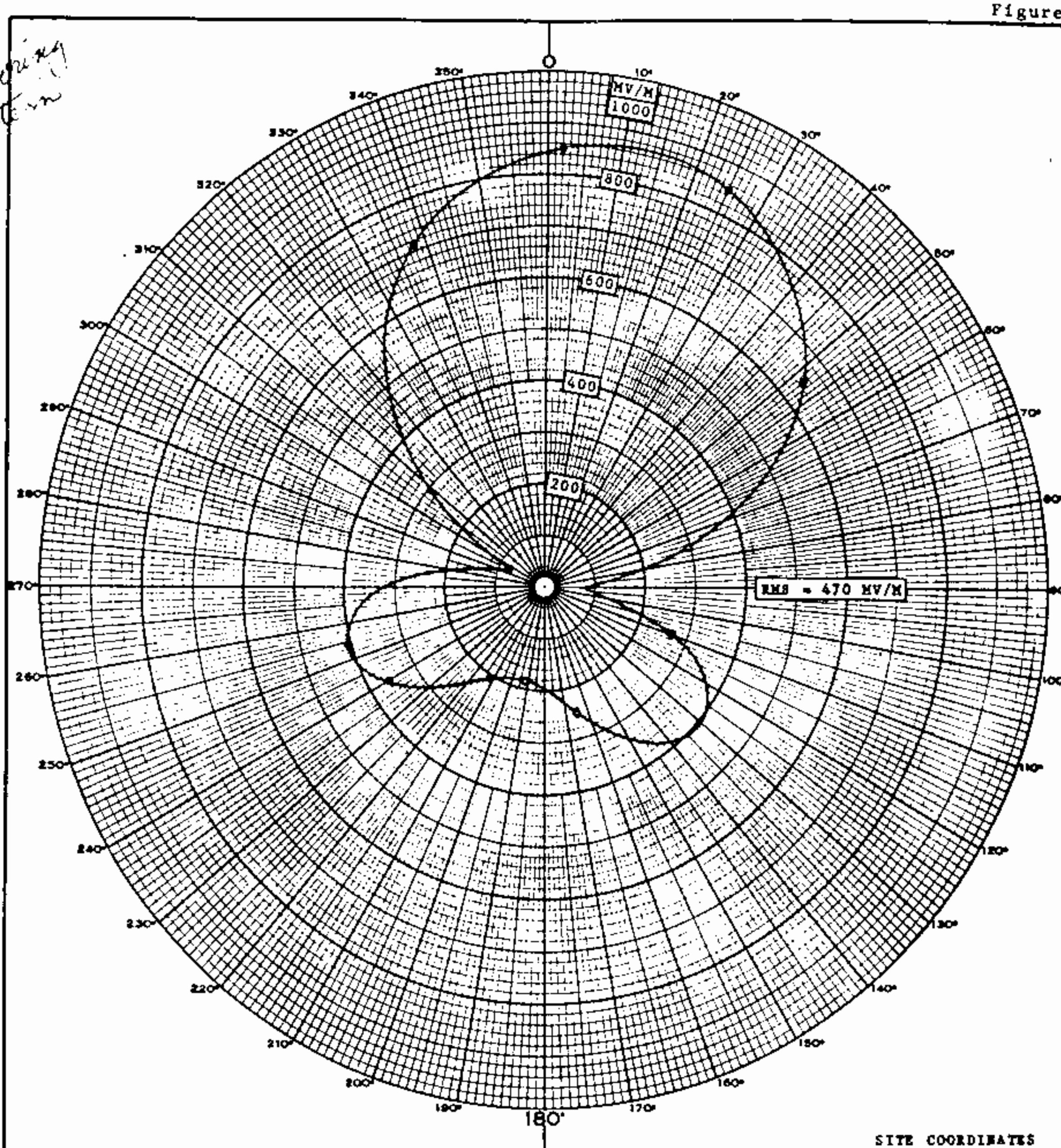
Measured Day
3-30-63ct)

Station WGHQ
Kingston, New York

5kw,DA-D,D
920 kc

5-6-63
partes lic. covering
changes in DA pattern

Figure 8



SITE COORDINATES
41° 53' 09" N
73° 58' 15" W

MEASURED HORIZONTAL PLANE RADIATION PATTERN

12° True
(3) ◊ 0.64/88°
100°
(2) ◊ 0.69/-141.5°
100°
(1) ◊ 1.00/0°
G = 94.4°

SKYLARK CORPORATION
KINGSTON, NEW YORK

Jules Cohen
Consulting Electronic Engineer

RADIO STATION WGHQ
920 KC
5.0 KW D DA
Pattern 621220

FCC File No. BL-9844
Accepted 3-22-63

Station WGHQ
Kingston, New York

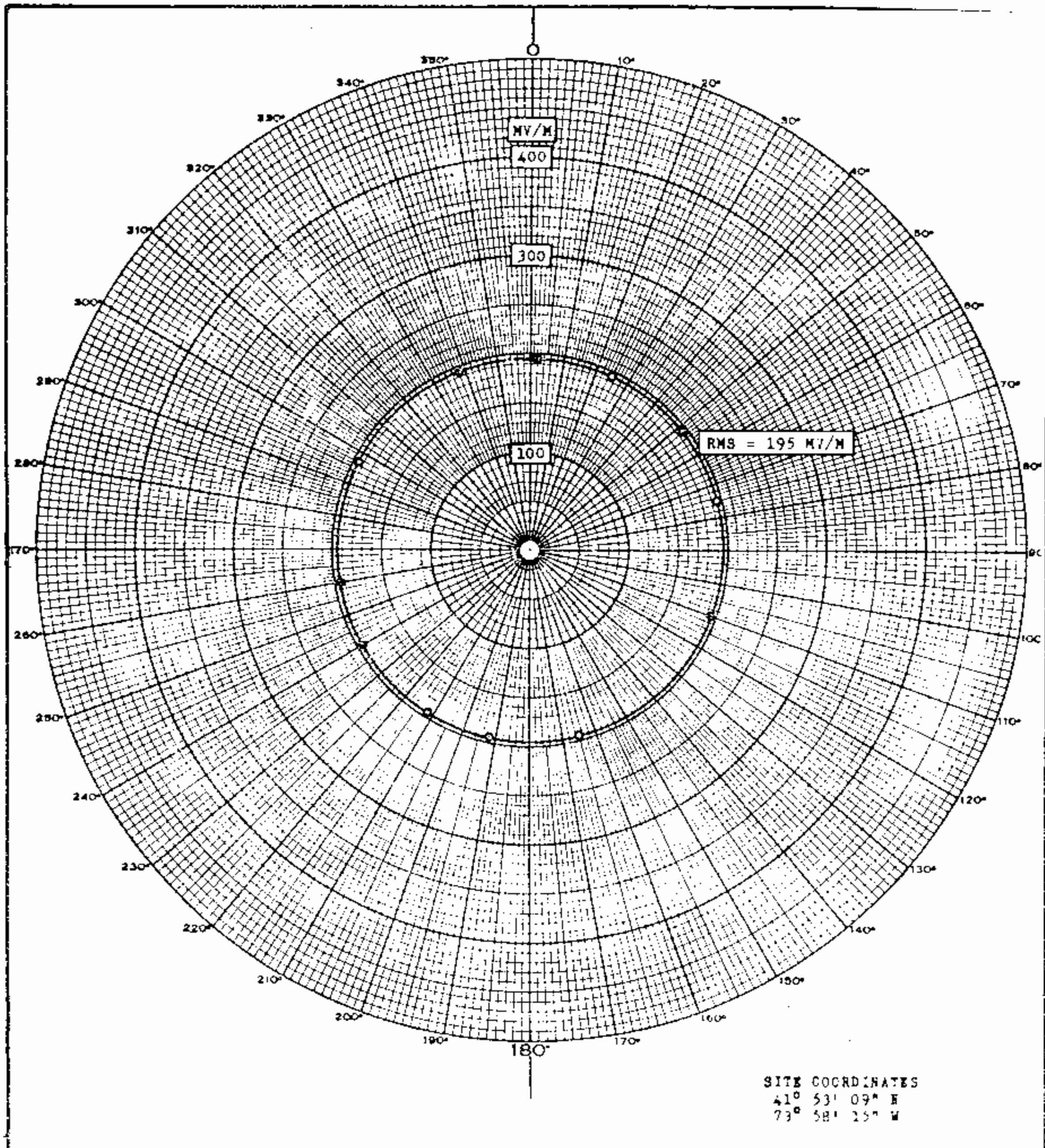
920 kc

WGHQ

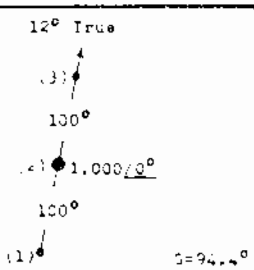
Measured Non-DA
(11-30-61ct)

Station WGHQ
Kingston, New York

5kw,DA-D,D
920 kc



MEASURED NONDIRECTIONAL HORIZONTAL PLANE RADIATION PATTERN



SKYLARK CORPORATION
KINGSTON, NEW YORK

Jules Cohen
Consulting Electronic Engineer

RADIO STATION WGHQ
920 KC
5.0 KW D DA
September 1?, 1961

FCC File No.BL-8802
Accepted 11-15-61

Station WGHQ
Kingston, New York
920 kc

WGNU

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : WGNU	Main Studio: Granite City, Illinois		
Frequency : 920 KHz	Power : 0.5 kW Night 0.5 kW Day		
Notification : 1780	Date : Sept. 28, 1979	Class: III	

GEOGRAPHICAL LOCATION OF THE CENTER OF THE DAYTIME AND NIGHTTIME ANTENNA SYSTEMS:

DAYTIME				NIGHTTIME			
North Latitude:	38	45	11	North Latitude:	38	45	33
West Longitude:	90	07	09	West Longitude:	90	03	00

DAYTIME ANTENNA CHARACTERISTICS

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

TOWER :	SW(#1)	SC(#2)	NC(#3)	NE(#4)		
HEIGHT ABOVE INSULATORS :	270'	270'	270'	270'	(90.9°)	
NIGHT PHASING :	0°	+160°	2.05	103		
NIGHT FIELD RATIO:	1	1.19	2.05	1.03		

SPACING AND ORIENTATION : Towers in a row are spaced 243.5' (82°) on a line bearing 68° true.

GROUND SYSTEM : 120 - 270 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.

WGNU

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day 1/	124.6 mV/m	____ mV/m	____ mV/m
Night 1/	129.67 mV/m	____ mV/m	136.86 mV/m

1/ By adjustment of input power.

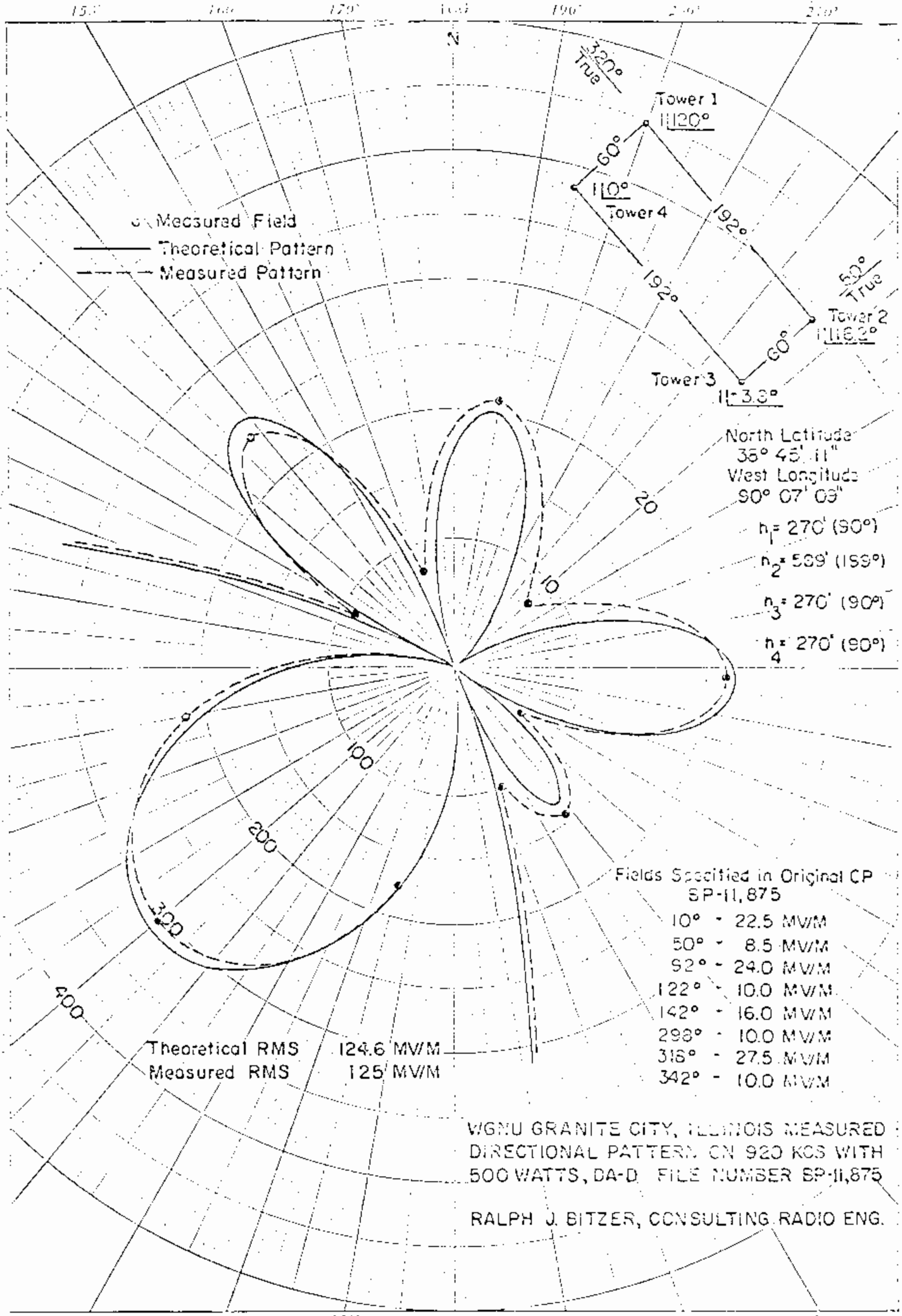
Note: Please retain the Daytime directional antenna radiation pattern notified for Station WGNU in United States Change List Number 1479 dated June 1, 1972 and attach to this Revised Description Sheet Nighttime pattern. This notification concerns only a change in the Nighttime operation of the station Daytime operation continued as previously notified.

WGNU

Proposed Day
(2-22-71ct)

Station WGNU
Granite City, Illinois

500w,DA-D,D
920 kc



FCC File No.BP-18952
Accepted 1-21-71

Station WGNU
Granite City, Illinois

920 kc

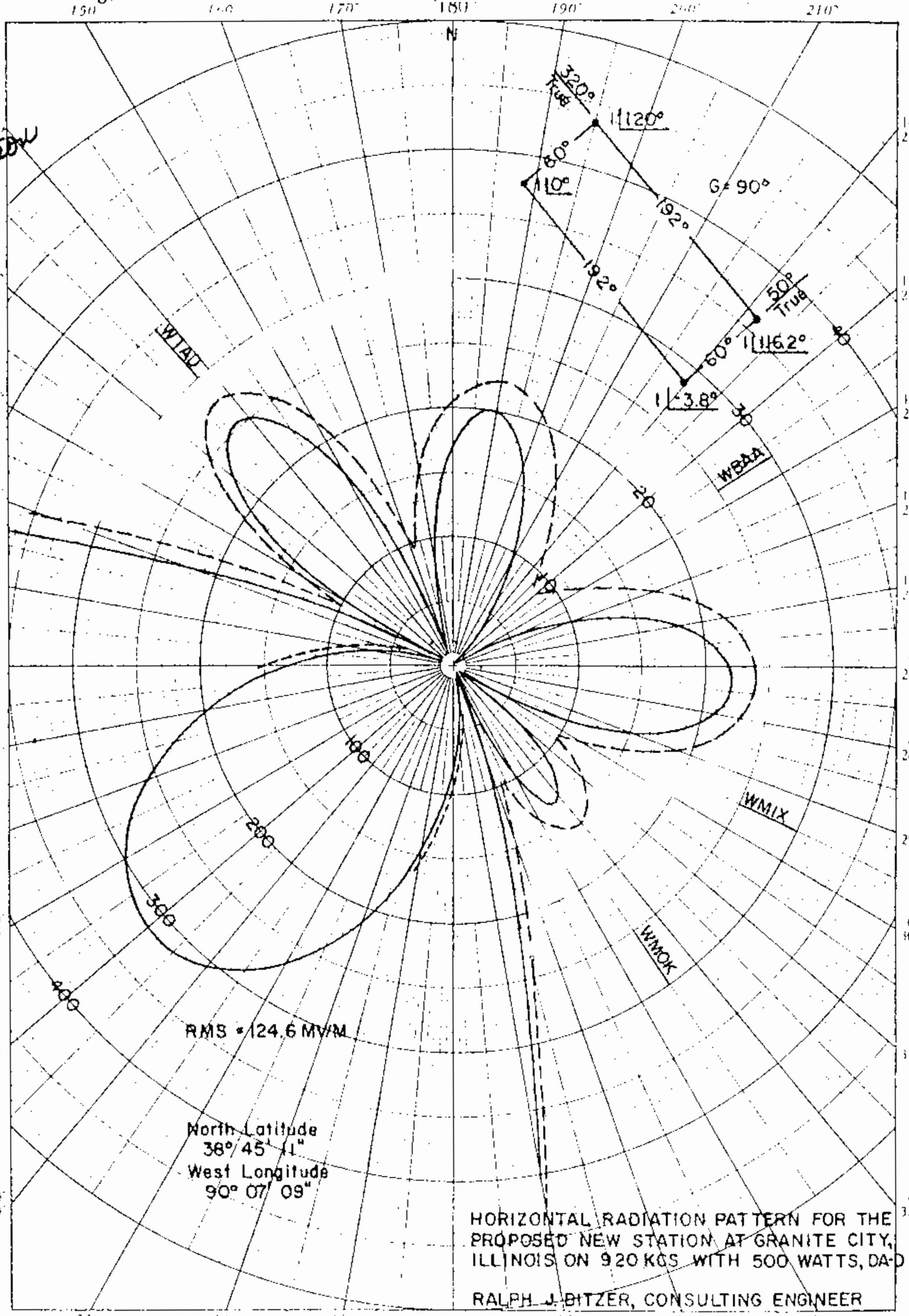
Granite City, Ill.

WGNU

PROPOSED DAY
(12-12-58g)

New; Tri-Cities Bcstng. Co. 500w, DA-D, D
Granite City, Illinois 920 KC

5-3-61 granted CP for new station
BL-8960 - Granted L 4-5-62 for new station



FCC File No. BP-11875 Tri-Cities Broadcasting Company
Accepted 11-24-58 Amended Granite City, Illinois 920 KC

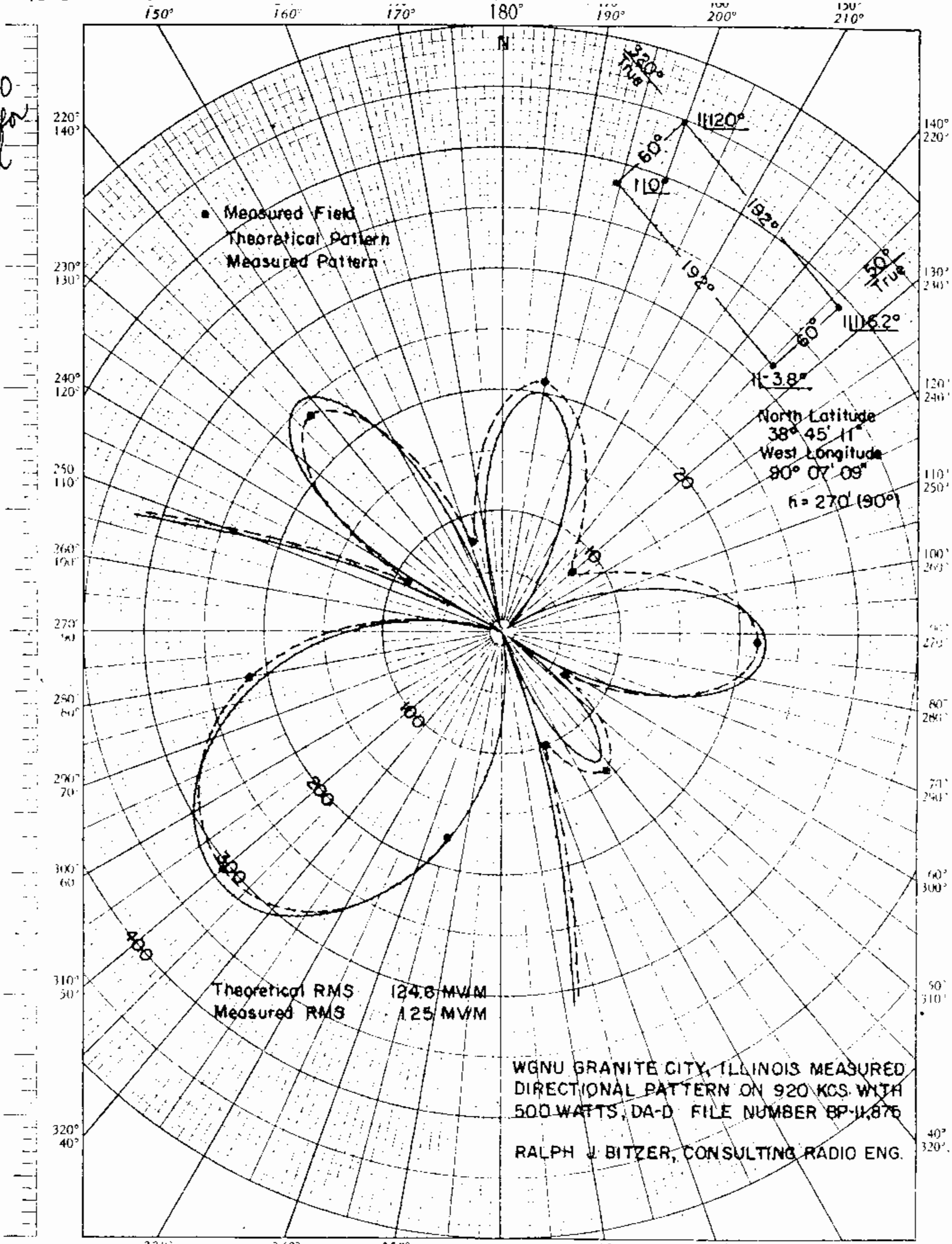
WGNU

Measured Day
(3-30-62ct)

Station WGNU
Granite City, Illinois

500w,DA-D,D
920 kc

BL-8960
granted L for
New station
4-5-62



FCC File No.BL-8960
Accepted 3-13-62

Station WGNU
Granite City, Illinois

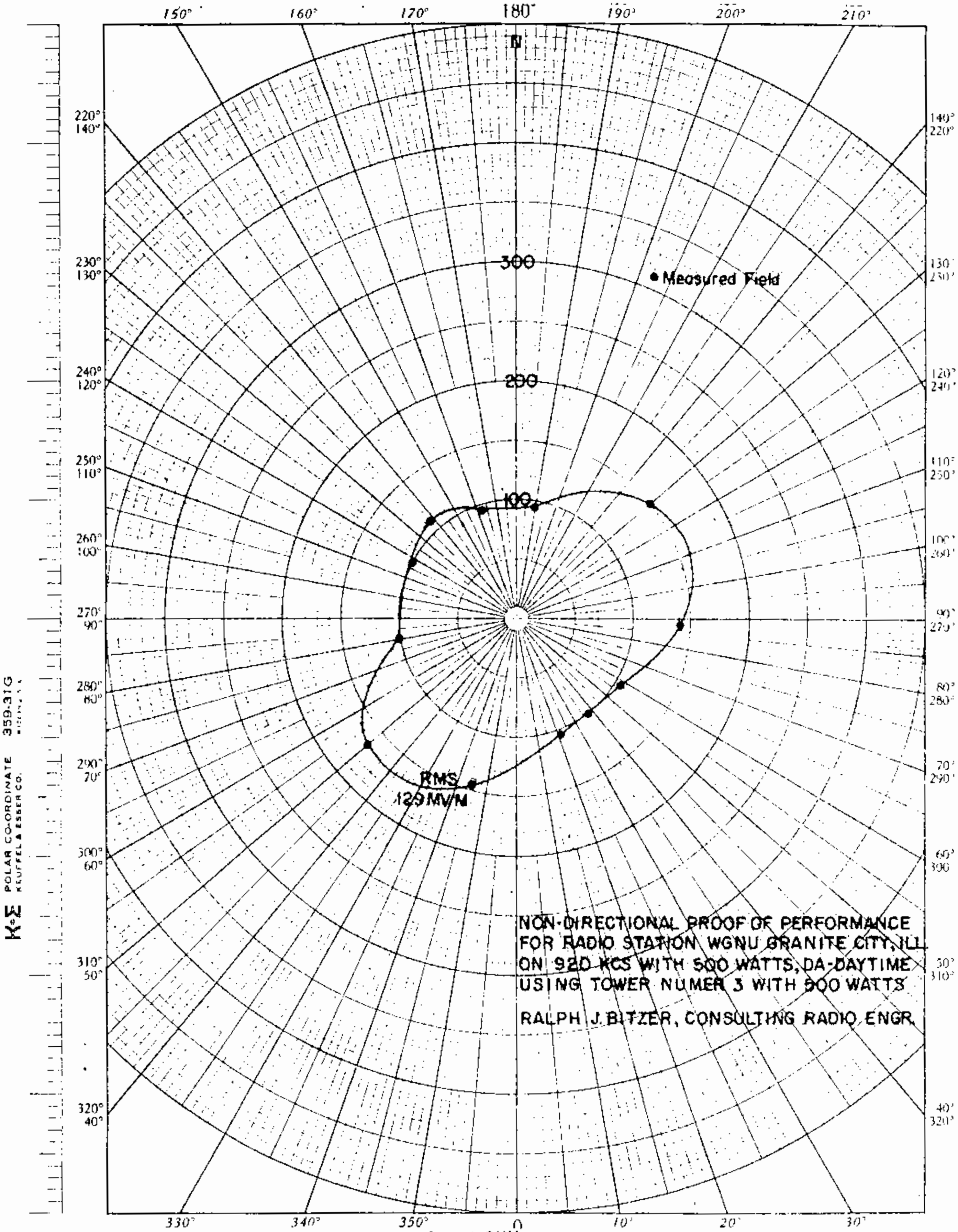
920 kc

WGNU

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

Station WGNU
Granite City, Illinois

500w,DA-D,D
920 kc



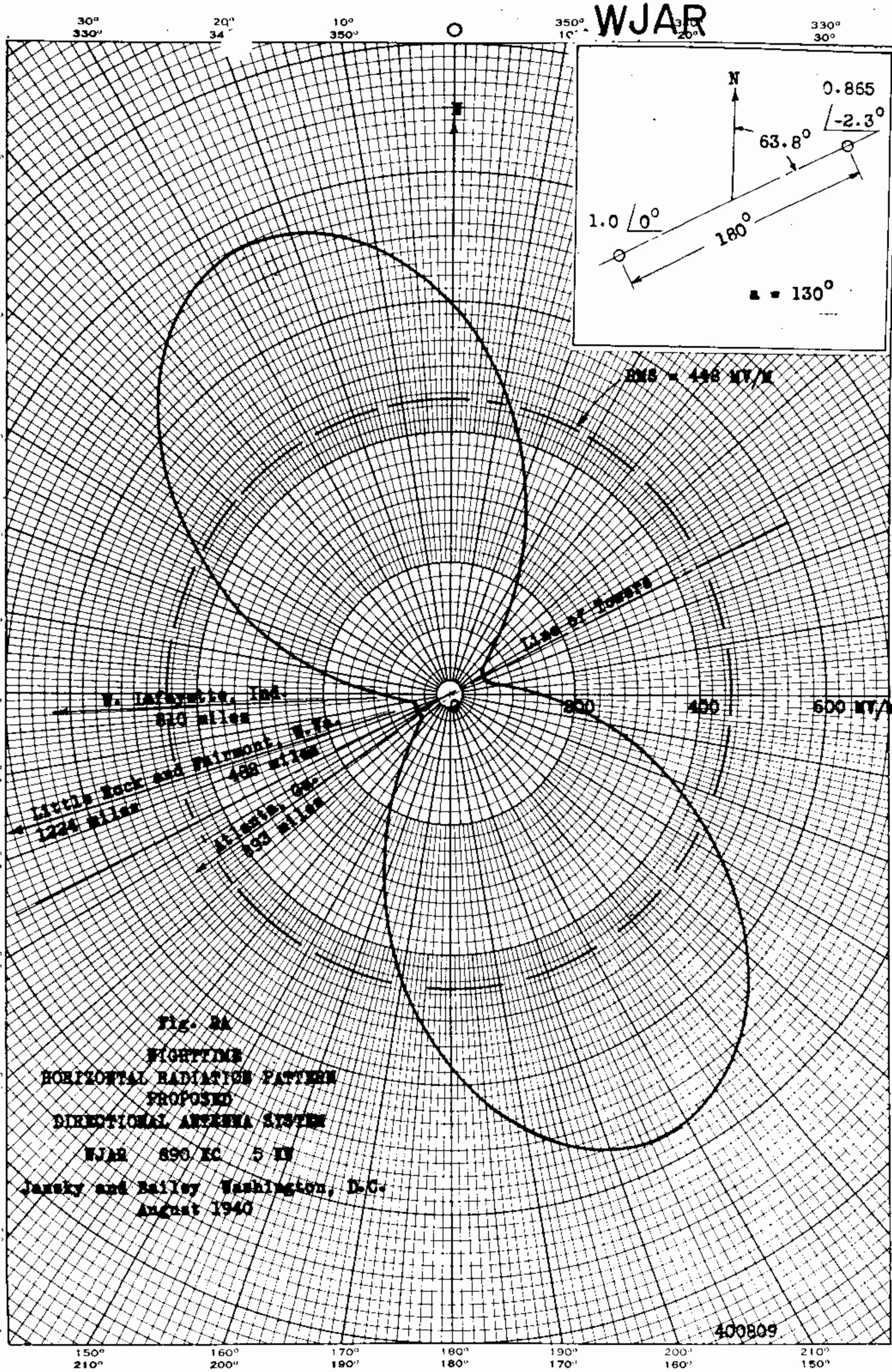
FCC File No.BL-8960
Accepted 3-13-62

Station WGNU
Granite City, Illinois

920 kc

WJAR

920



N
0.865
-2.3°
63.8°
1.0 0°
180°
a = 130°
Line of Towers
W. Lafayette, Ind.
Little Rock and Fairmont, W. Va.
1224 miles
Atlanta, Ga.
893 miles
200
400
600 MV/M
Fig. 2A
NIGHTTIME
HORIZONTAL RADIATION PATTERN
PROPOSED
DIRECTIONAL ANTENNA SYSTEM
WJAR 890 KC 5 KW
Jansky and Bailey Washington, D.C.
August 1940
400809

WJAR
920

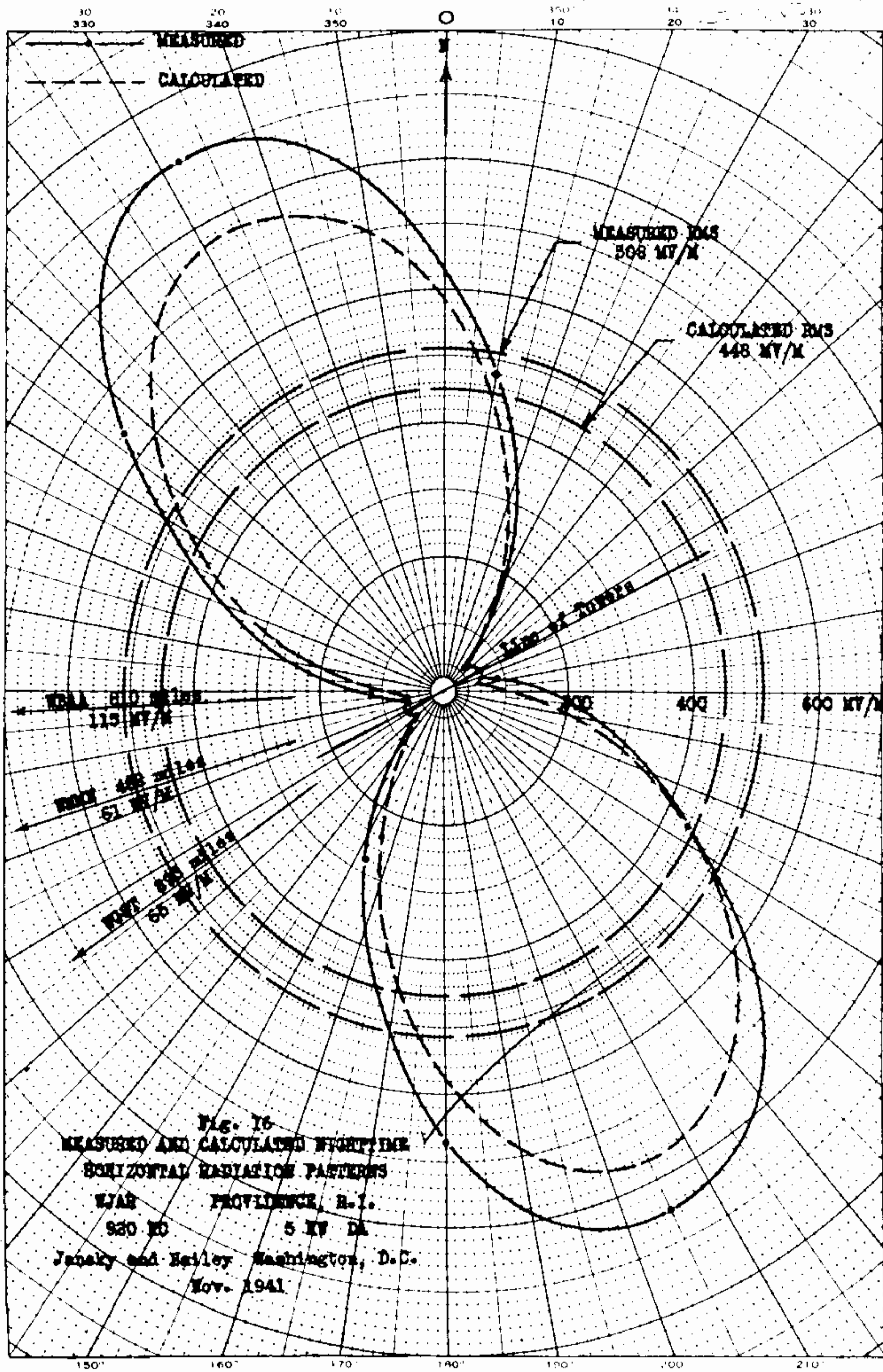
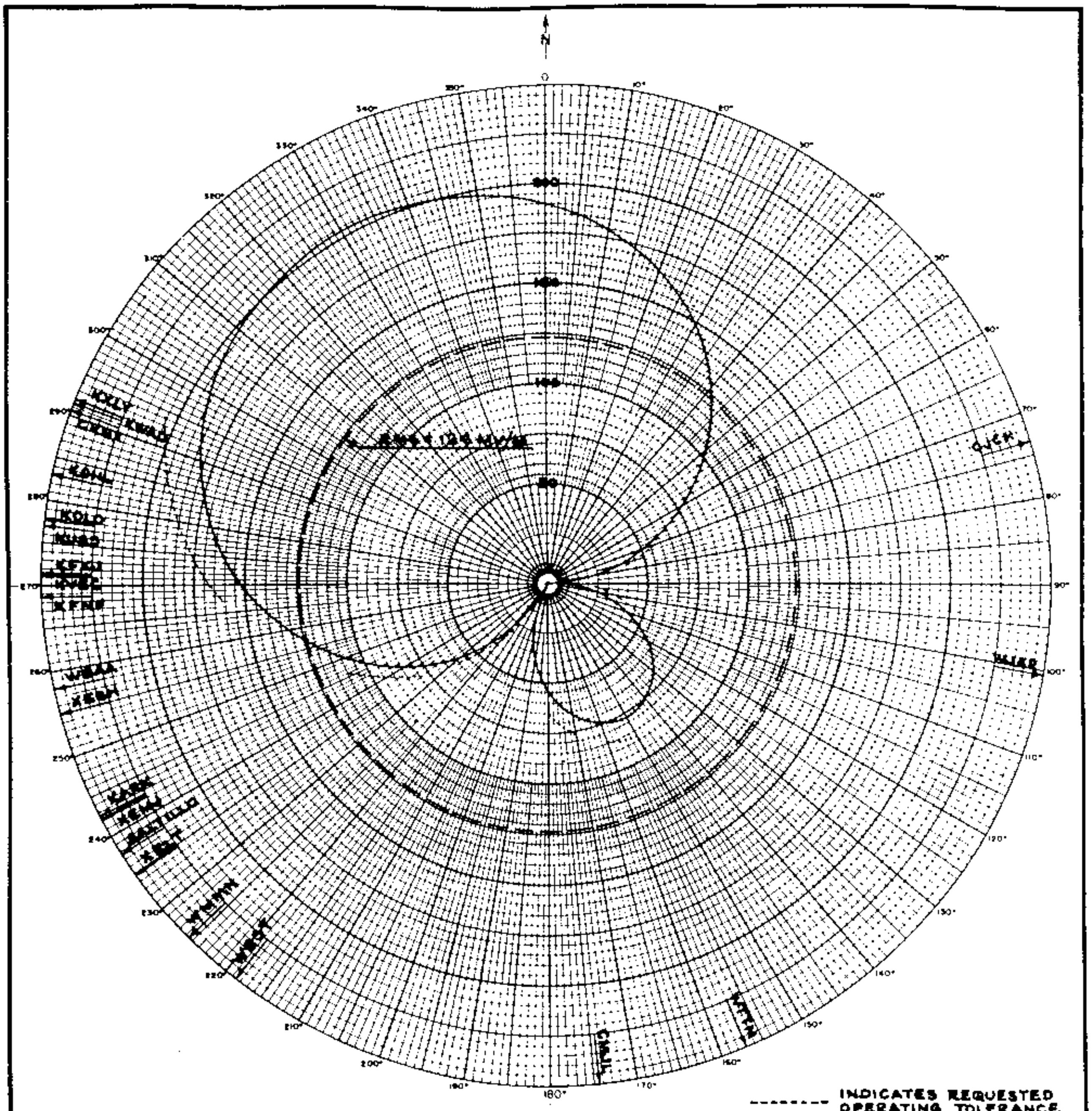


Fig. 16
MEASURED AND CALCULATED NIGHTTIME
HORIZONTAL RADIATION PATTERNS
WJAR PROVIDENCE, R.I.
920 KC 5 KW DA
Jansky and Bailey Washington, D.C.
Nov. 1941

WKRT
920



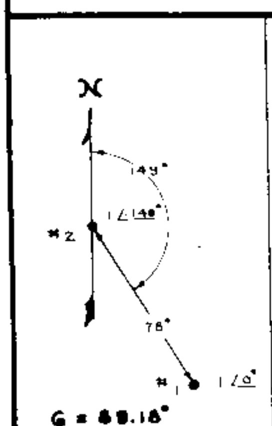


EXHIBIT VI-A
HORIZONTAL PATTERN
PROPOSED NIGHT OPERATION WKRT CORTLAND, N. Y. 920 KC/S DEC. 1947 1 KW - D, 500 W - N, DA-N

Note: Operating tolerance of 10 mv/m or 10% of pertinent radiation at pertinent vertical angles requested toward all full time co-channel stations except toward service areas of stations WMMN, WJAR, and CJCH. See Exhibits VIII-A,B,C and D, for requested operating tolerances toward these stations.

WILLIAM L. FOSS, INC.
Electronic Consultants
WASHINGTON, D. C.
927 15th Street, N.W. RE 3883

PATTERN NO	471215
SUPERSEDES	470919
APP	John Wofford

WKRT

PROPOSED
NIGHT
NULLS

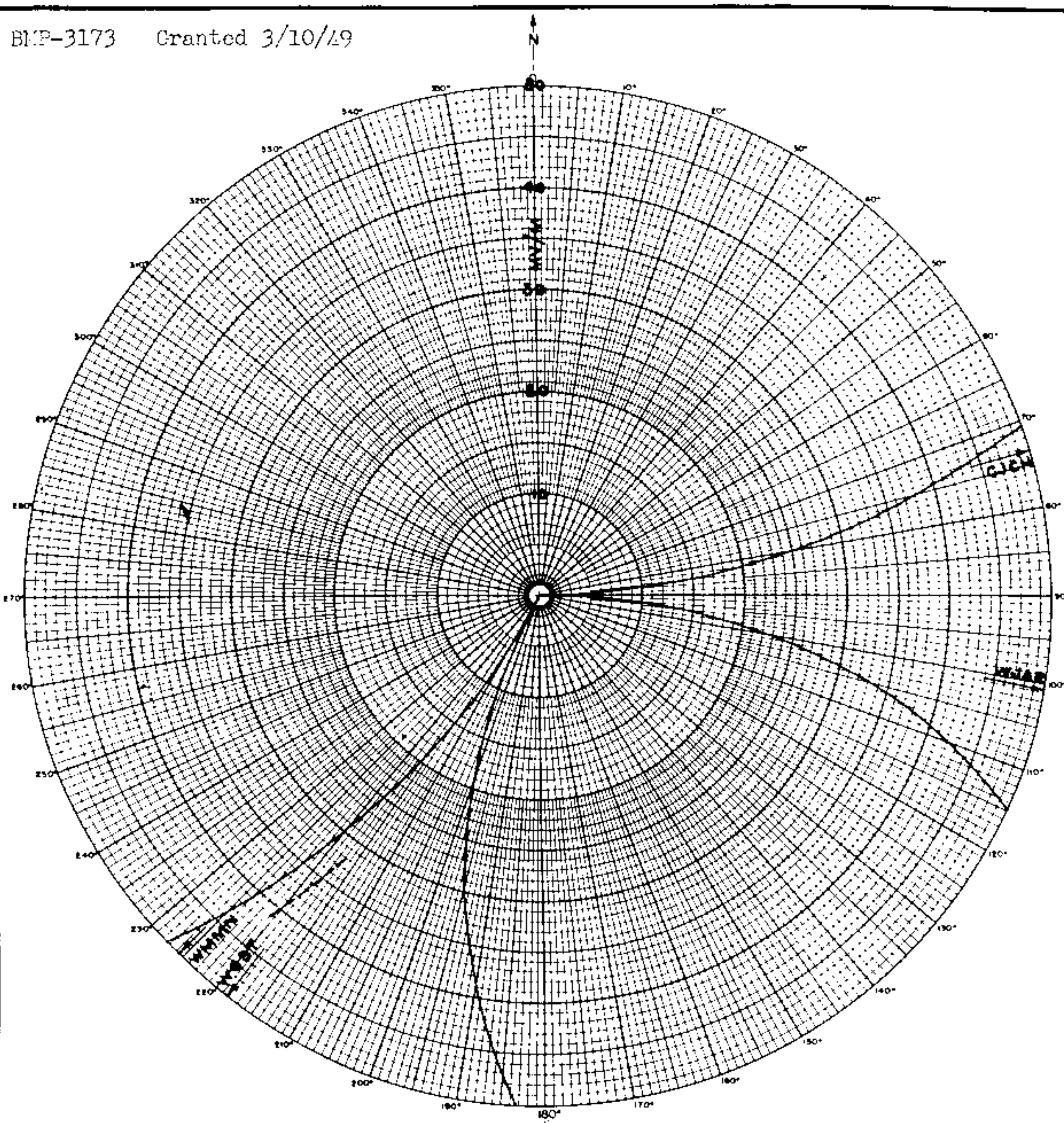
WKRT, CORTLAND, N. Y.

500w, 1kw-LS, DAN 920 kc

3/22/49C

12-17-47

BMP-3173 Granted 3/10/49



SITE: 42° 33' 22" N
76° 09' 17" W

EXHIBIT VI-B
EXPANDED HORIZONTAL PATTERN
PROPOSED NIGHT OPERATION WKRT CORTLAND, N. Y. 920 KC/S DEC. 1947 1 KW - D, 500 W - N, DA-N

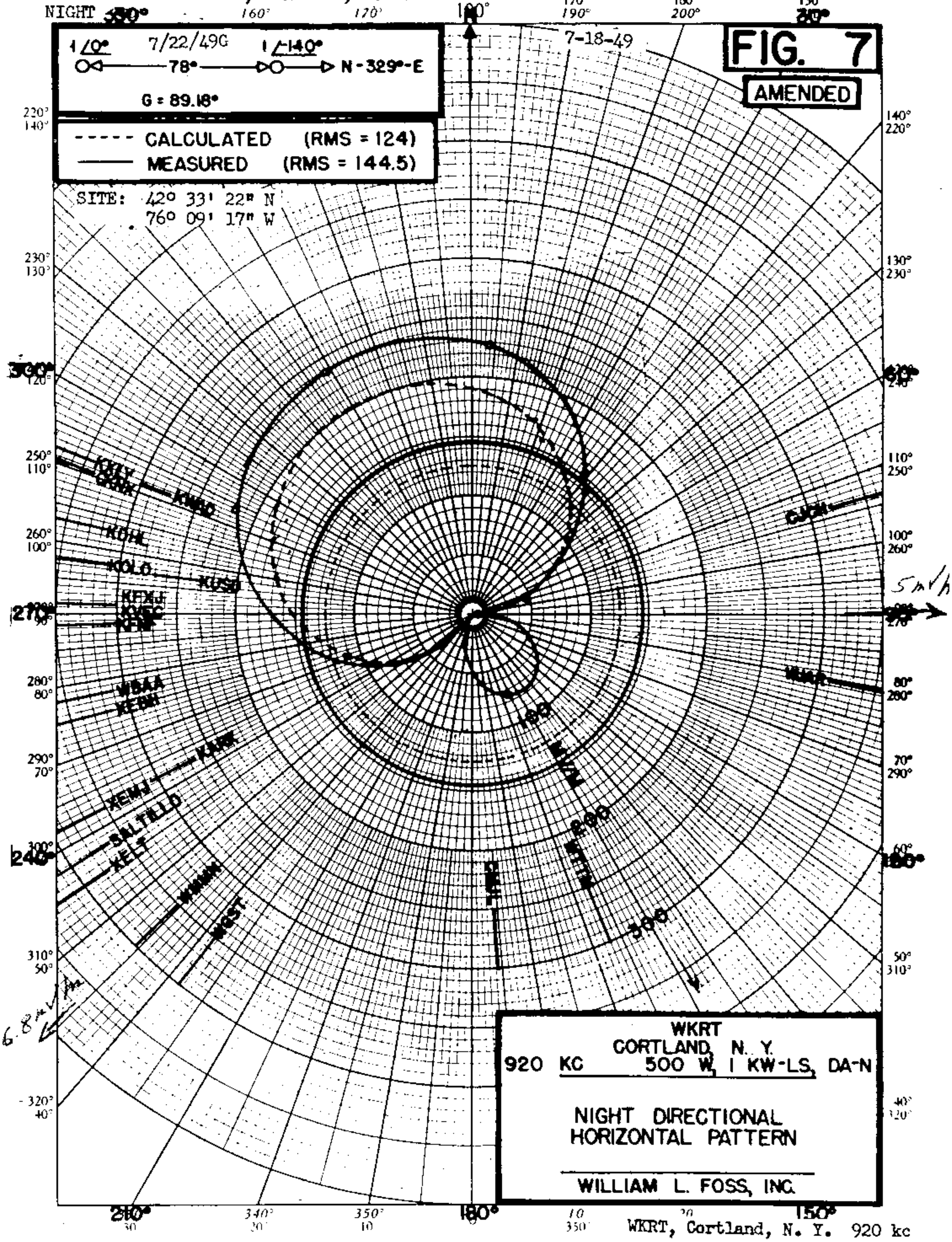
WILLIAM L. FOSS, INC.
Electronic Consultants
WASHINGTON, D. C.
927 15th Street, N.W. RE 3063

PATTERN NO 471215
SUPERSEDES 470919
APP John Auffli

WKRT, Cortland, N. Y. 920 kc

WKRT

MEASURED NIGHT — WKRT, CORTLAND, N. Y. — 500w, 1kw-LS, DAN PATTERN NO. 490701 920 kc



WKRT, Cortland, N. Y. 920 kc

WKRT

MEASURED
DAY (Non-DA)

WKRT, CORTLAND, N. Y.

7-18-49

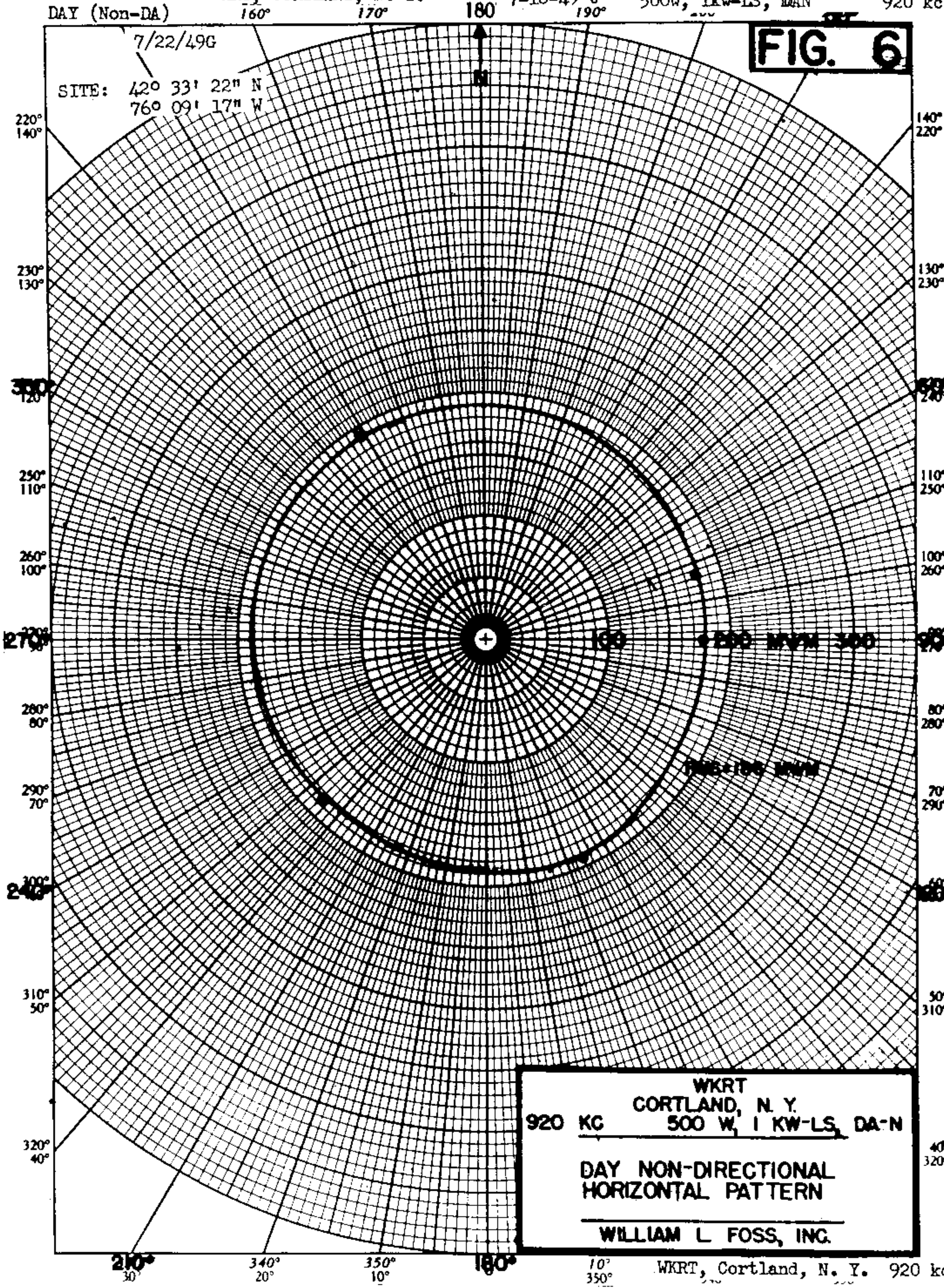
500w, 1kw-LS, DAN

920 kc

7/22/49G

SITE: 42° 33' 22" N
76° 09' 17" W

FIG. 6



WKRT
CORTLAND, N. Y.
920 KC 500 W, 1 KW-LS, DA-N

DAY NON-DIRECTIONAL
HORIZONTAL PATTERN

WILLIAM L. FOSS, INC.

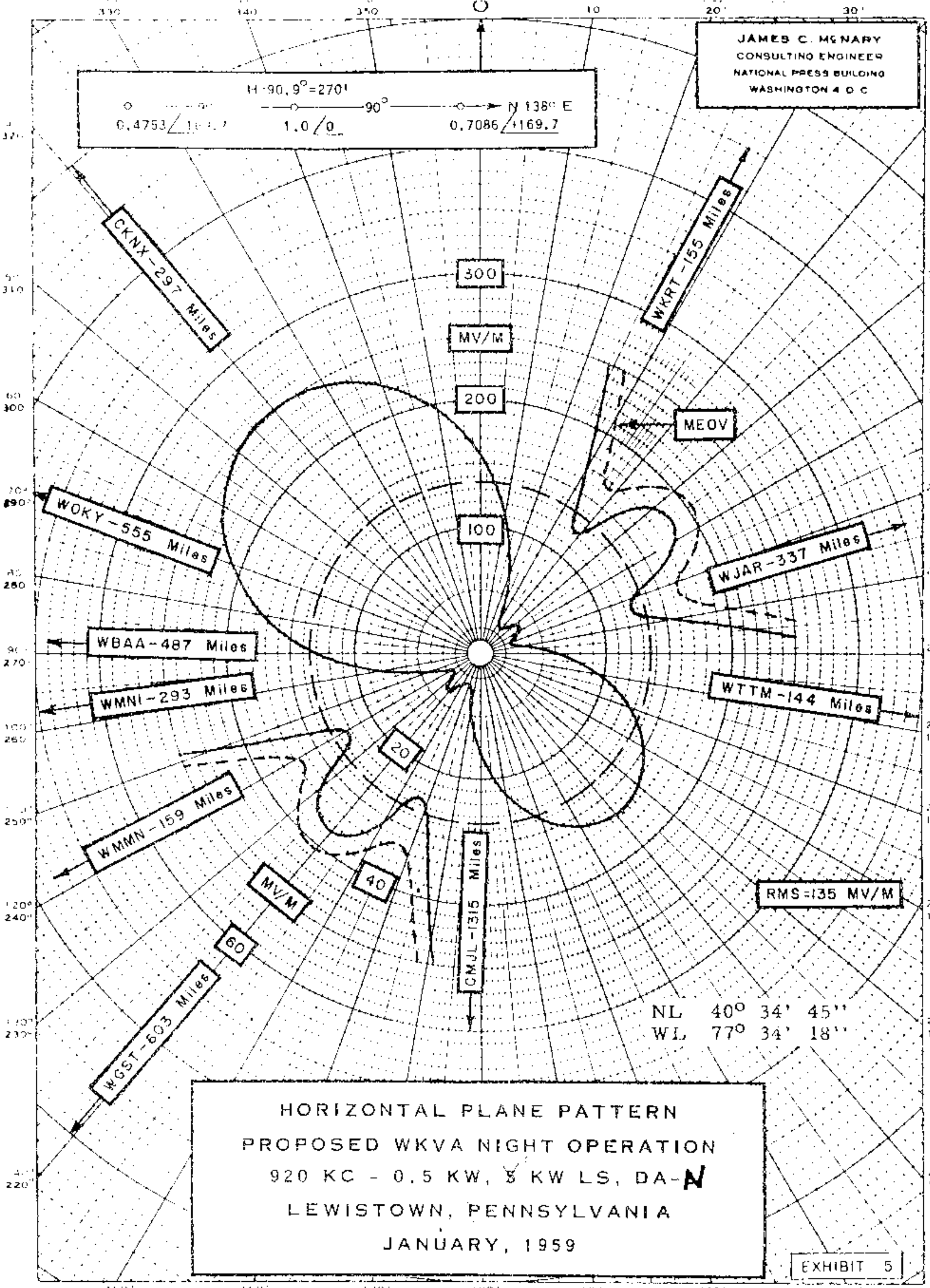
WKRT, Cortland, N. Y. 920 kc

WKVA

PROPOSED NIGHT
(4-22-59g)

Station WKVA
Lewiston, Pennsylvania

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



granted CP to [illegible] DA-N
2-28-61

FCC File No. BP-12888
Accepted 4-2-59

WKVA
Lewiston, Pennsylvania

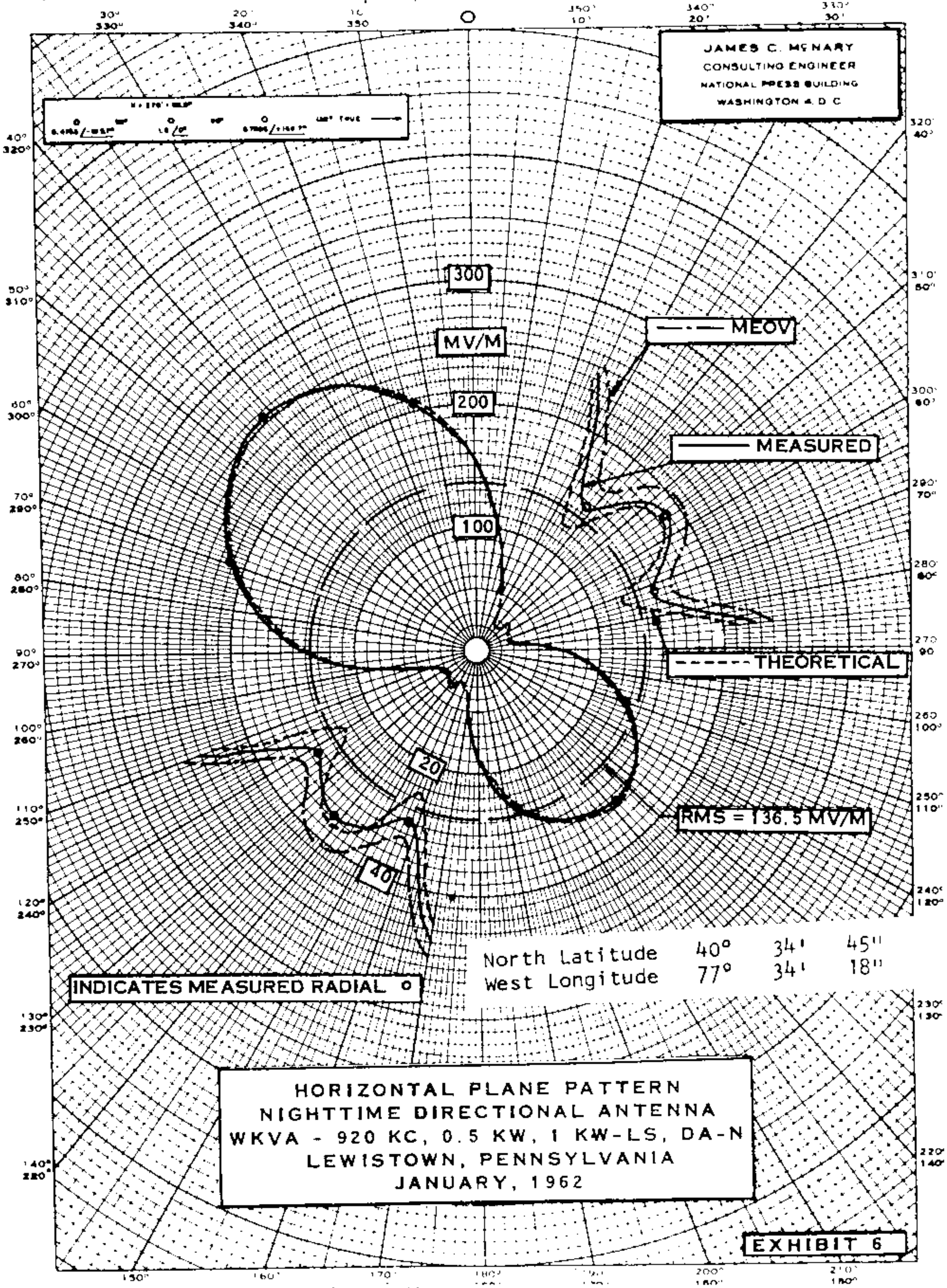
920 KC

WKVA

Measured Night
(2-28-62ct)

Station WKVA
Lewistown, Pennsylvania

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



FCC File No.BL-8913
Accepted 2-7-62

Station WKVA
Lewistown, Pennsylvania

920 kc

Measured Non-DA
(2-28-62ct)

Station WKVA
Lewistown, Pennsylvania

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

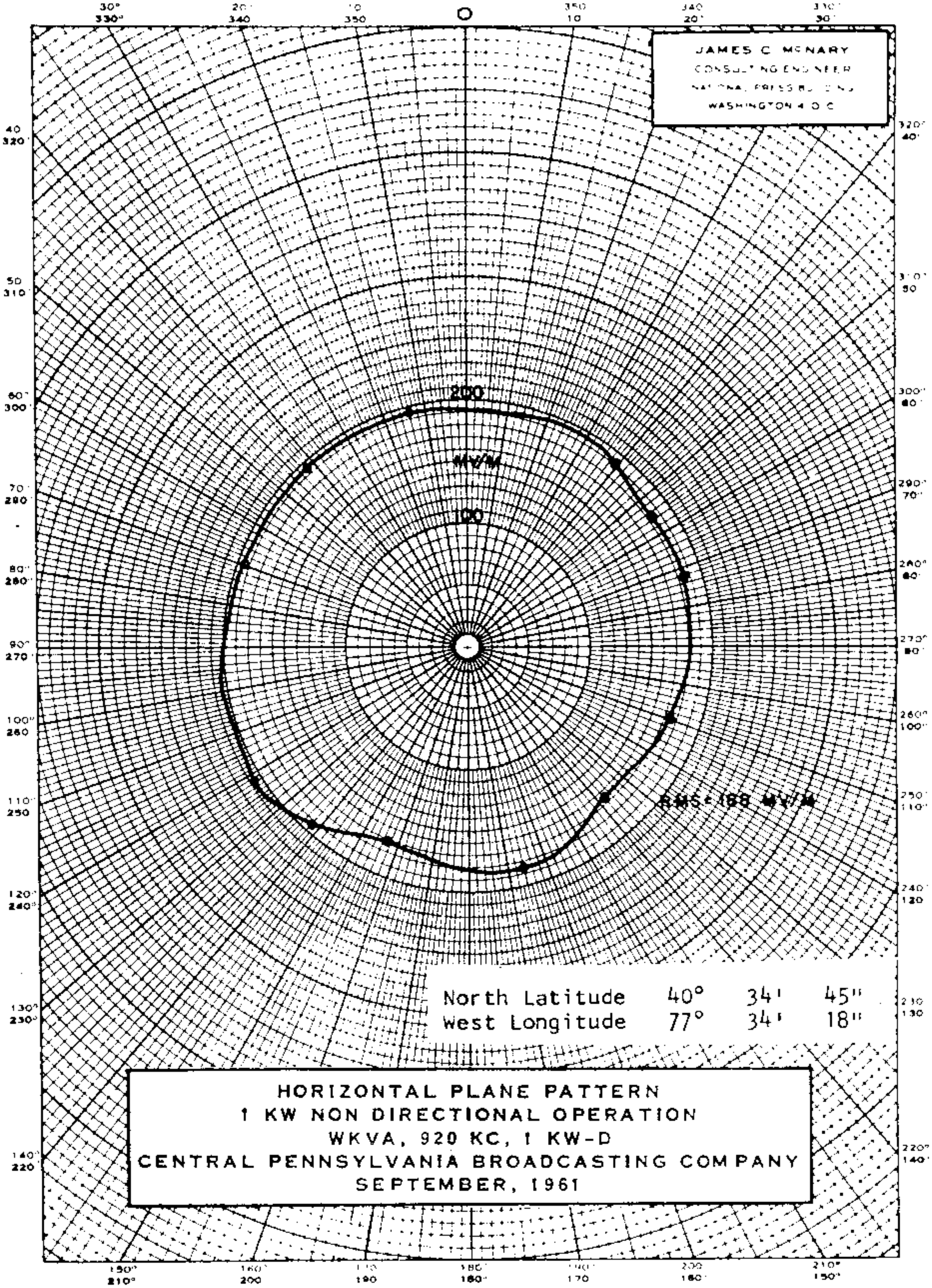


EXHIBIT I

FCC File NO.BL-8913
Accepted 2-7-62

Station WKVA
Lewistown, Pennsylvania

920 kc

WMEL

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WMEL | Main Studio: Melbourne, Florida

Frequency: 920 kHz | Power: 1 kW

Notification List No. 1575 | Date: April 10, 1974 | Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 28° 08' 11" West Longitude: 80° 41' 20"

ANTENNA CHARACTERISTICS

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

TOWER:	NW(#4)	SW(#1)	SE(#2)	NE(#3)	
HEIGHT ABOVE INSULATORS:	226'	226'	226'	226'	(76.07°)
PHASING:	-66°	0°	-155°	-221°	
FIELD RATIO:	1.111	1.0	1.25	1.389	

SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 357' (120°) in length on a line bearing 358° true. The short sides are 267' (90°) in length on a line bearing 77.5° true.

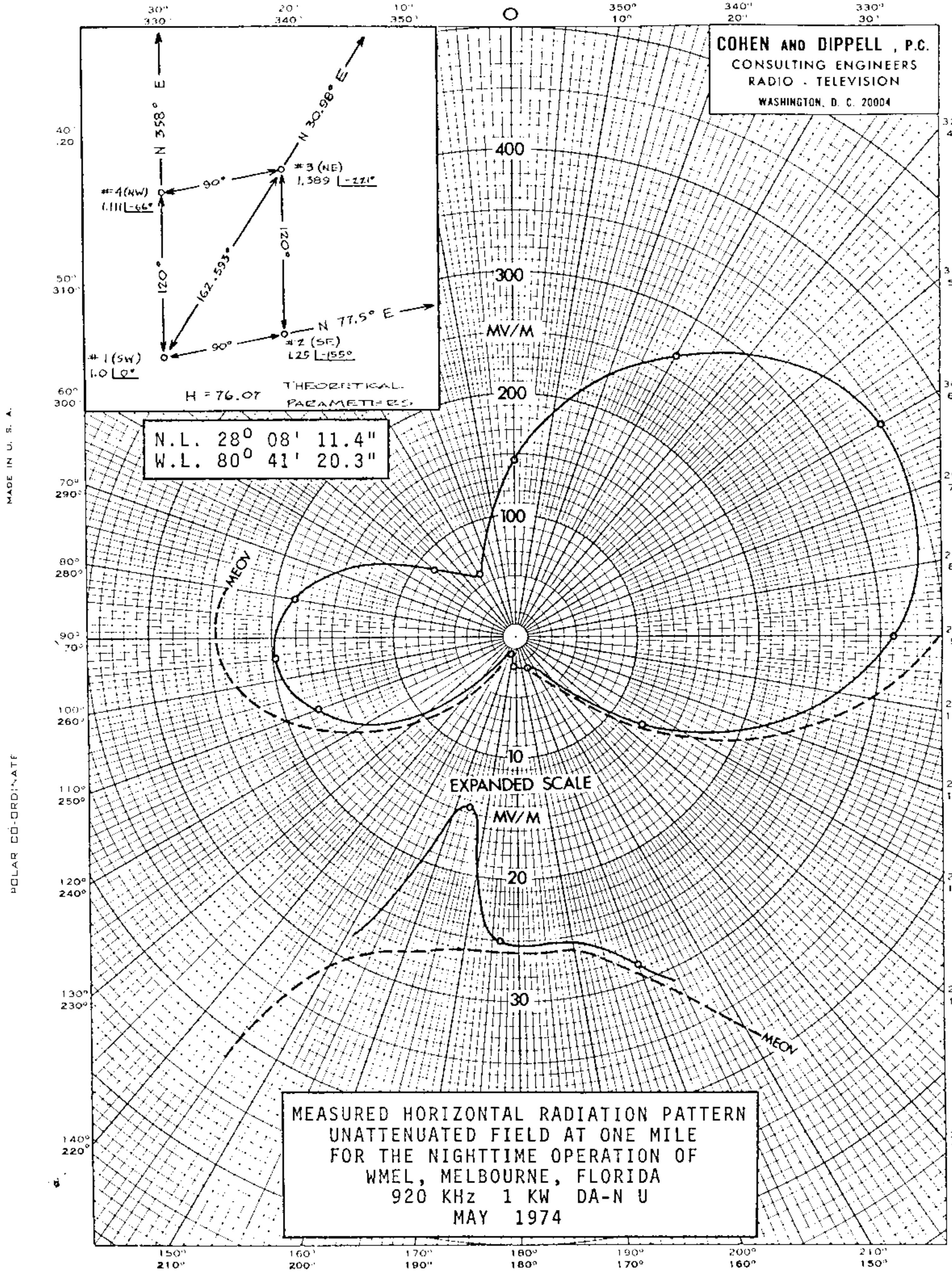
GROUND SYSTEM: 120-267' equally spaced copper radials plus a 24' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

Predicted effective Night Field: 187.45 mv/m at rated power.

Predicted effective Day Field: (omnidirectional) 179 mv/m at rated power.

Note: Please retain the Nighttime vertical angle radiation pattern Figure 2N notified for station WMEG (now WMEL) in U.S. Change List No. 1095 dated January 19, 1965 and attach to this Revised Description Sheet and Nighttime patterns. This notification concerns only minor changes to add M.E.O.V.s of radiation to the nighttime directional antenna pattern with daytime operation continued as previously notified.

CTR NO 30753A5

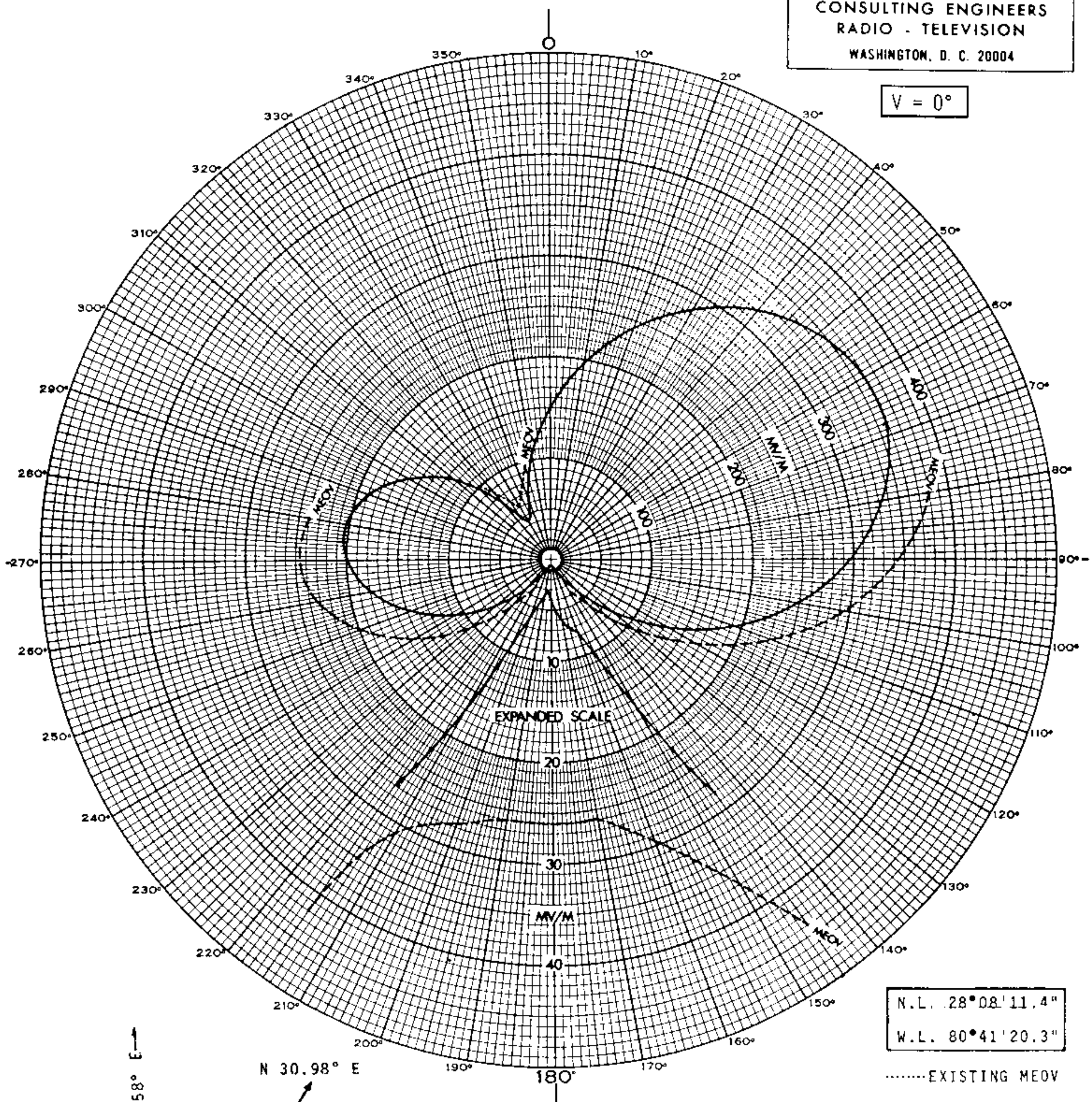


MEASURED HORIZONTAL RADIATION PATTERN
UNATTENUATED FIELD AT ONE MILE
FOR THE NIGHTTIME OPERATION OF
WMEL, MELBOURNE, FLORIDA
920 KHz 1 KW DA-N U
MAY 1974

WMEL

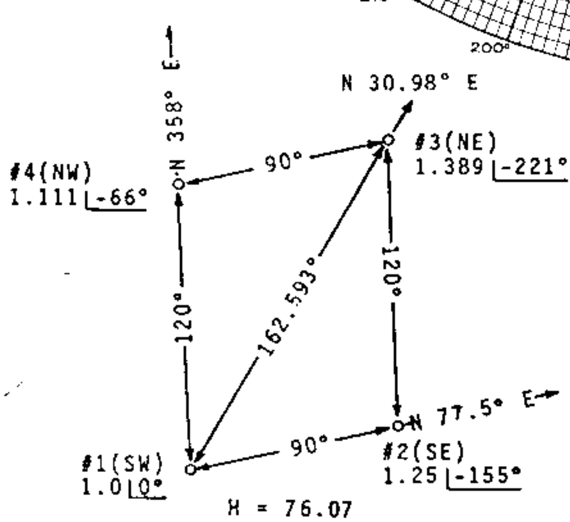
COHEN AND DIPPELL, P.C.
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D. C. 20004

V = 0°



N.L. 28°08'11.4"
W.L. 80°41'20.3"

........EXISTING MEOV



COMPUTED HORIZONTAL RADIATION PATTERN
UNATTENUATED FIELD AT ONE MILE
FOR THE NIGHTTIME OPERATION OF
WMEL, MELBOURNE, FLORIDA
920 KHz 1 KW DA-N U
SEPTEMBER 1973

MELBOURNE (SEE REVERSE SIDE) WMEG

Measured Non-DA
(4-28-66ct)

Station WMEG
~~Eau Gallie~~, Florida

WMEL 1kw, DA-N, U
920 kc

-IC
7-6-66

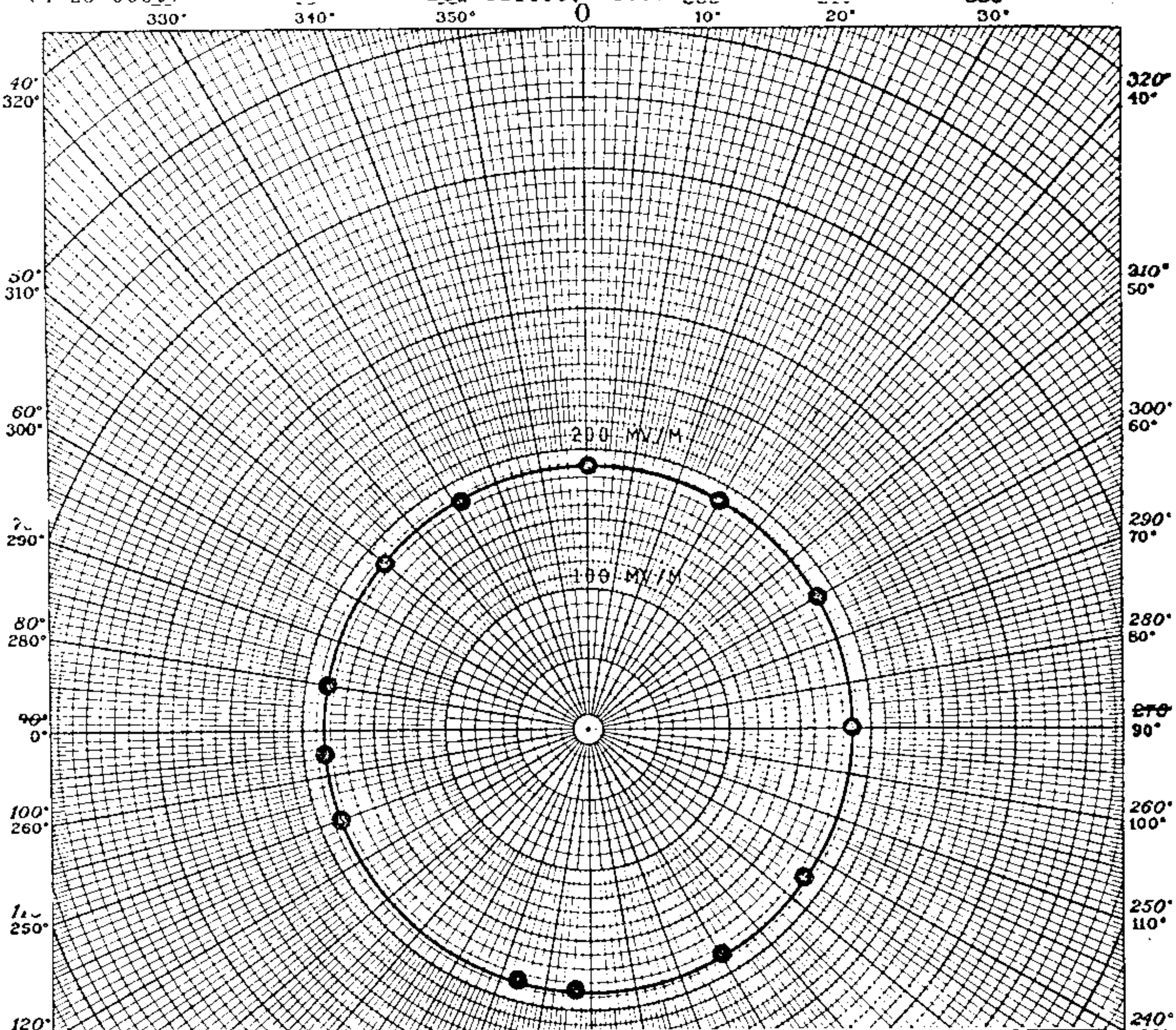


FIGURE 39

Graph of N.D.A. Horizontal
Polar Pattern
Radio Station WMEG, BP-16,210
920 kc/s, 1 kw U, D.A.N.
Eau Gallie, Florida

E_{rms} = 186 mv/m

0 = Measured Radials

AMBROSE W. KRAMER
CONSULTING RADIO ENGINEER

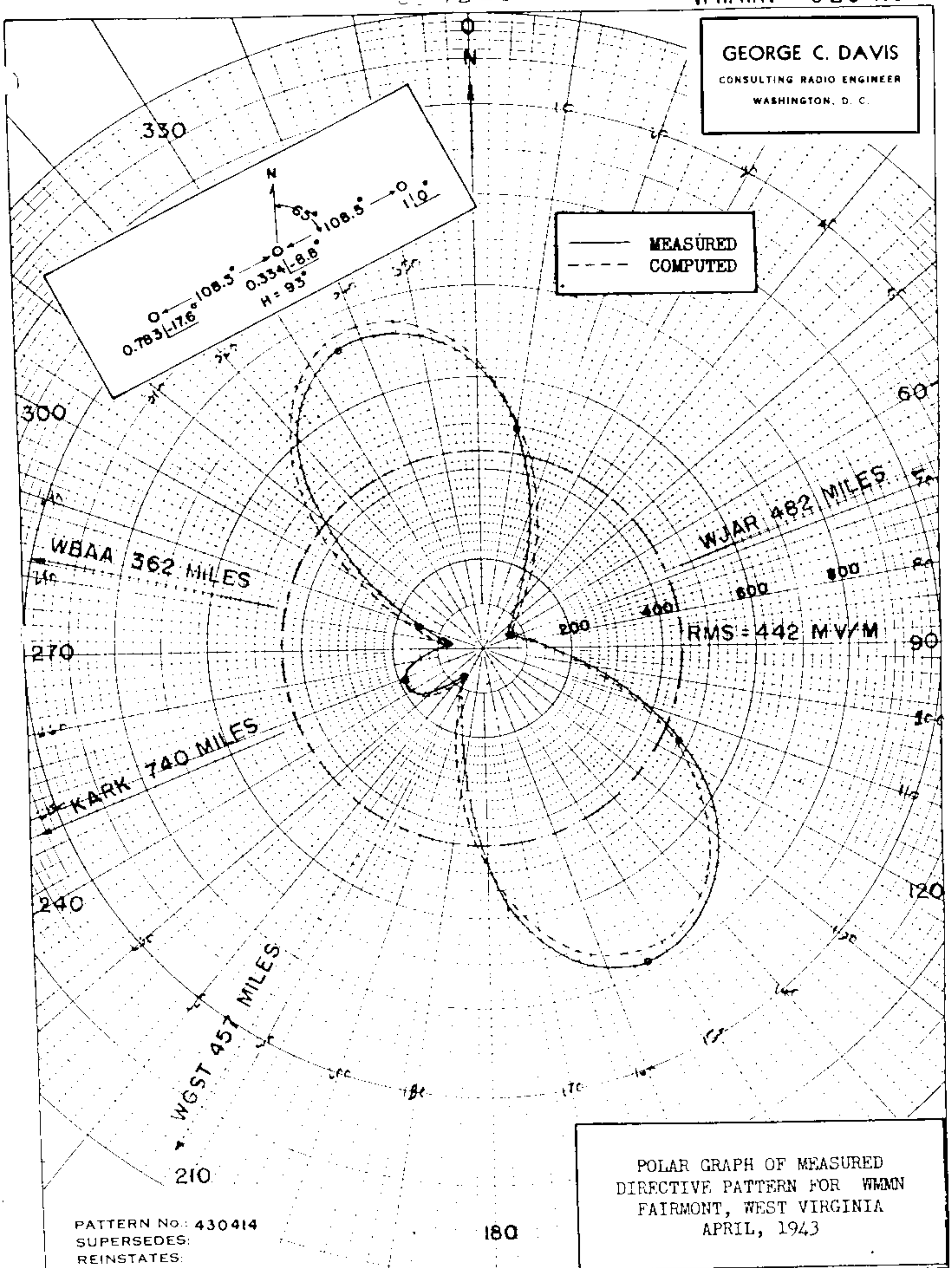
FCC File No. BL-11256
Accepted 4-21-66

Station WMEG
Eau Gallie, Florida

920 kc

39-23-03
8-12-30

WMMN 920 KC



POLAR GRAPH OF MEASURED
DIRECTIVE PATTERN FOR WMMN
FAIRMONT, WEST VIRGINIA
APRIL, 1943

PATTERN No.: 430414
SUPERSEDES:
REINSTATES:

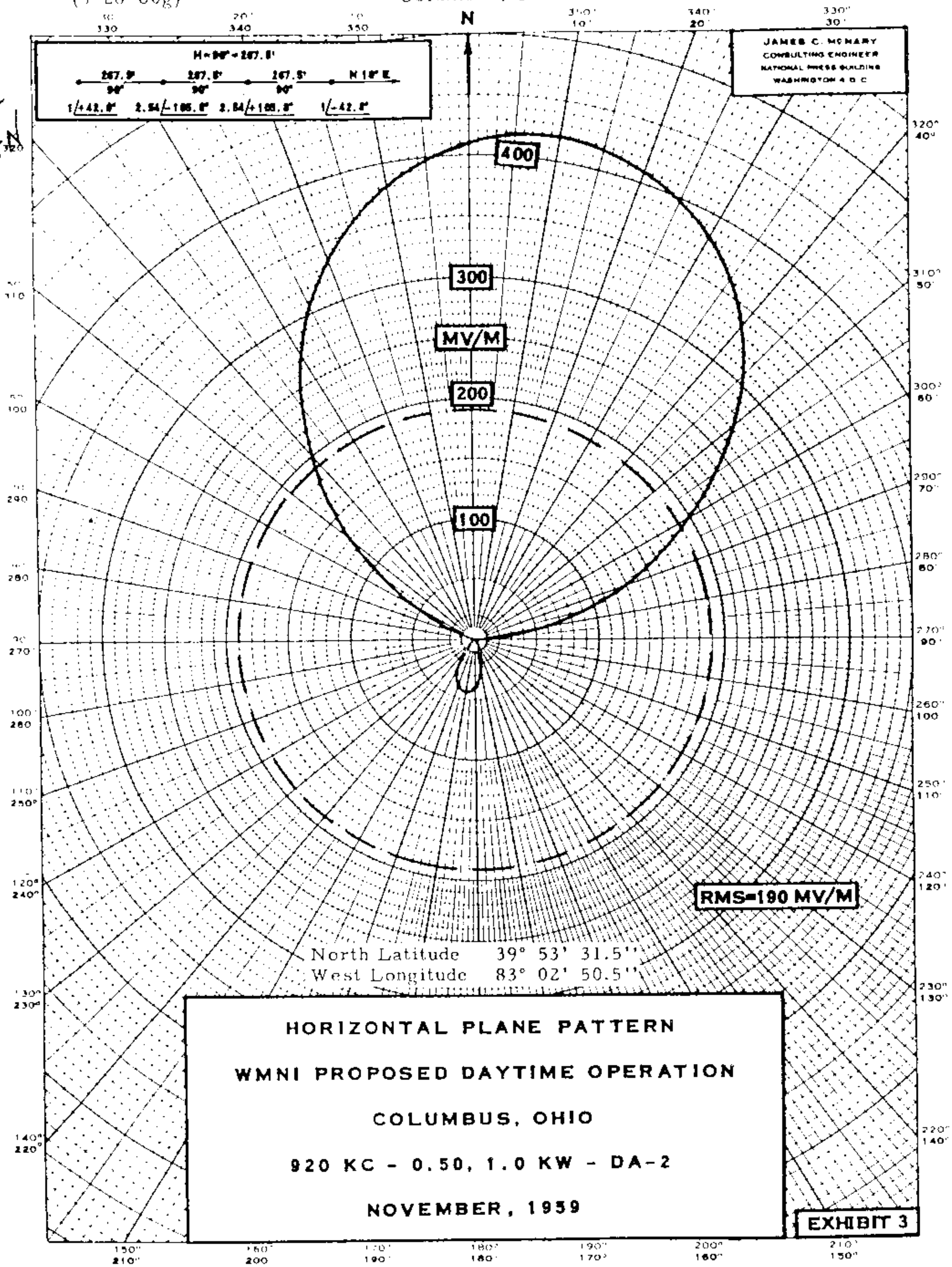
WMNI

PROPOSED DAY
(3-28-60g)

Station WMNI
Columbus, Ohio

500w, 1kw-LS, DA-2, U
920 KC

9-20-62
granted cp for
1 kw day 0.5 N
DA-2



FCC File No. BP-13916
Accepted 3-4-60

WMNI
Columbus, Ohio

920 KC

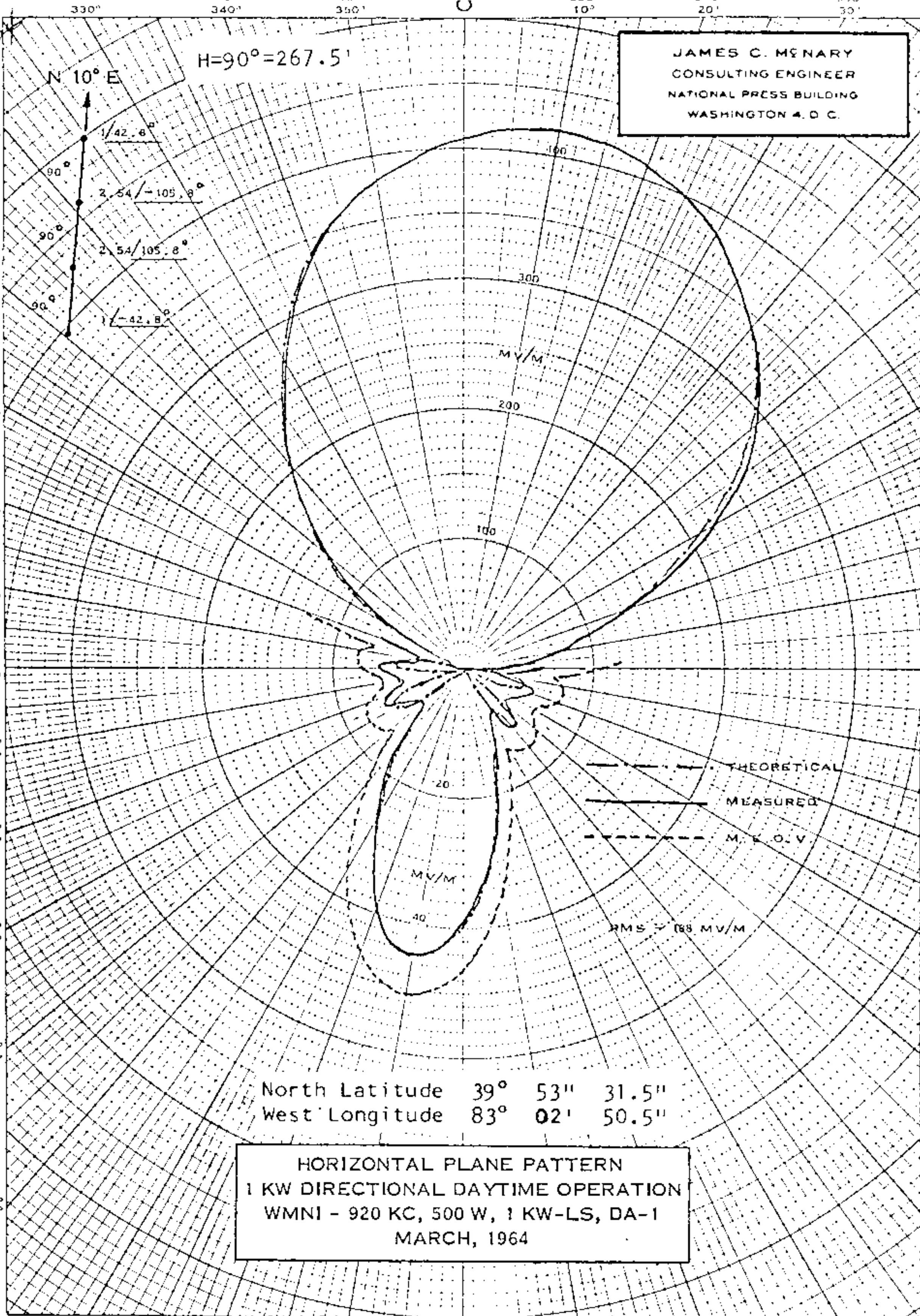
WMNI

Measured Day
(5-28-64ct)

Station WMNI
Columbus, Ohio

500w, 1kw-LS, DA-1, U
920 kc

#300-8-6-64
rented for
Kw, DA-1



HORIZONTAL PLANE PATTERN
1 KW DIRECTIONAL DAYTIME OPERATION
WMNI - 920 KC, 500 W, 1 KW-LS, DA-1
MARCH, 1964

FCC File No.BL-10575
Accepted 5-13-64

Station WMNI
Columbus, Ohio

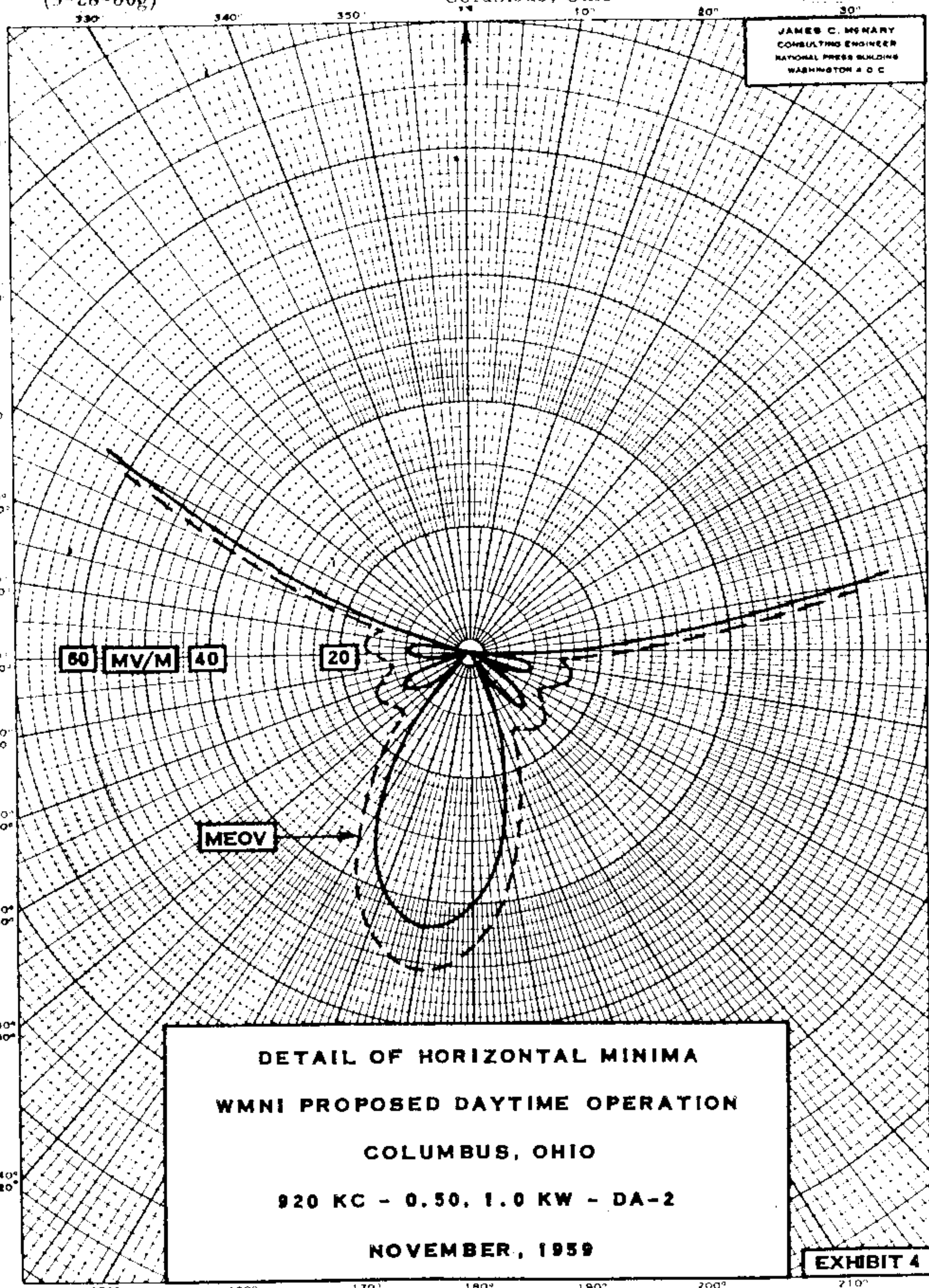
920 kc

WMNI

PROPOSED DAY NULLS
(3-28-60g)

Station WMNI
Columbus, Ohio

500w,1kw-LS,DA-2,U
920 KC



DETAIL OF HORIZONTAL MINIMA

WMNI PROPOSED DAYTIME OPERATION

COLUMBUS, OHIO

920 KC - 0.50, 1.0 KW - DA-2

NOVEMBER, 1959

FCC File No. BP-13916
Accepted 3-4-60

WMNI
Columbus, Ohio

920 KC

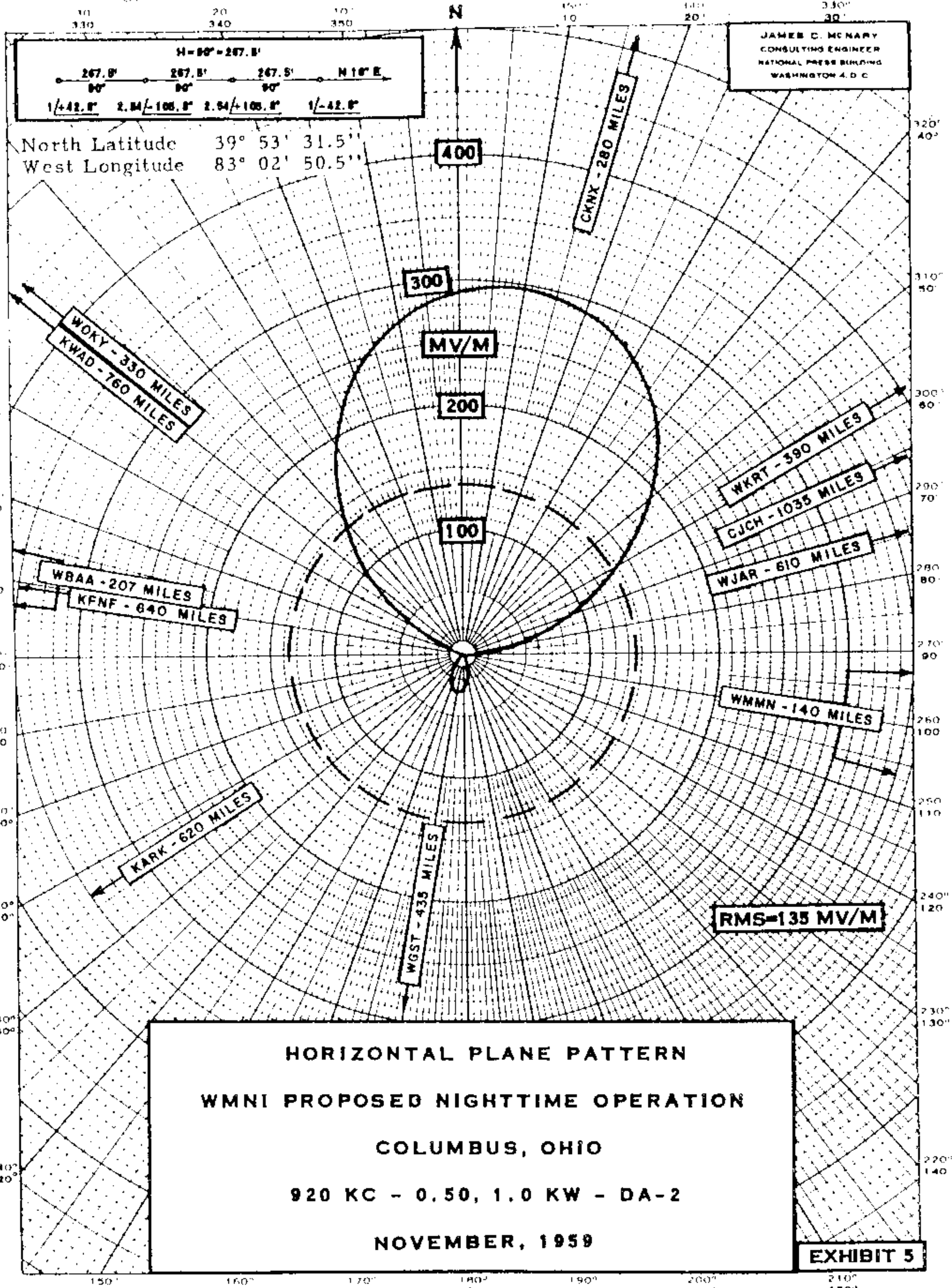
WMNI

PROPOSED NIGHT
(3-28-60g)

Station WMNI
Columbus, Ohio

500w, 1kw-LS, DA-2, U
920 KC

-20-62
granted CP for
kw day - 0.5 N
DA-2



HORIZONTAL PLANE PATTERN

WMNI PROPOSED NIGHTTIME OPERATION

COLUMBUS, OHIO

920 KC - 0.50, 1.0 KW - DA-2

NOVEMBER, 1959

FCC File No. BP-13916
Accepted 3-4-60

WMNI
Columbus, Ohio

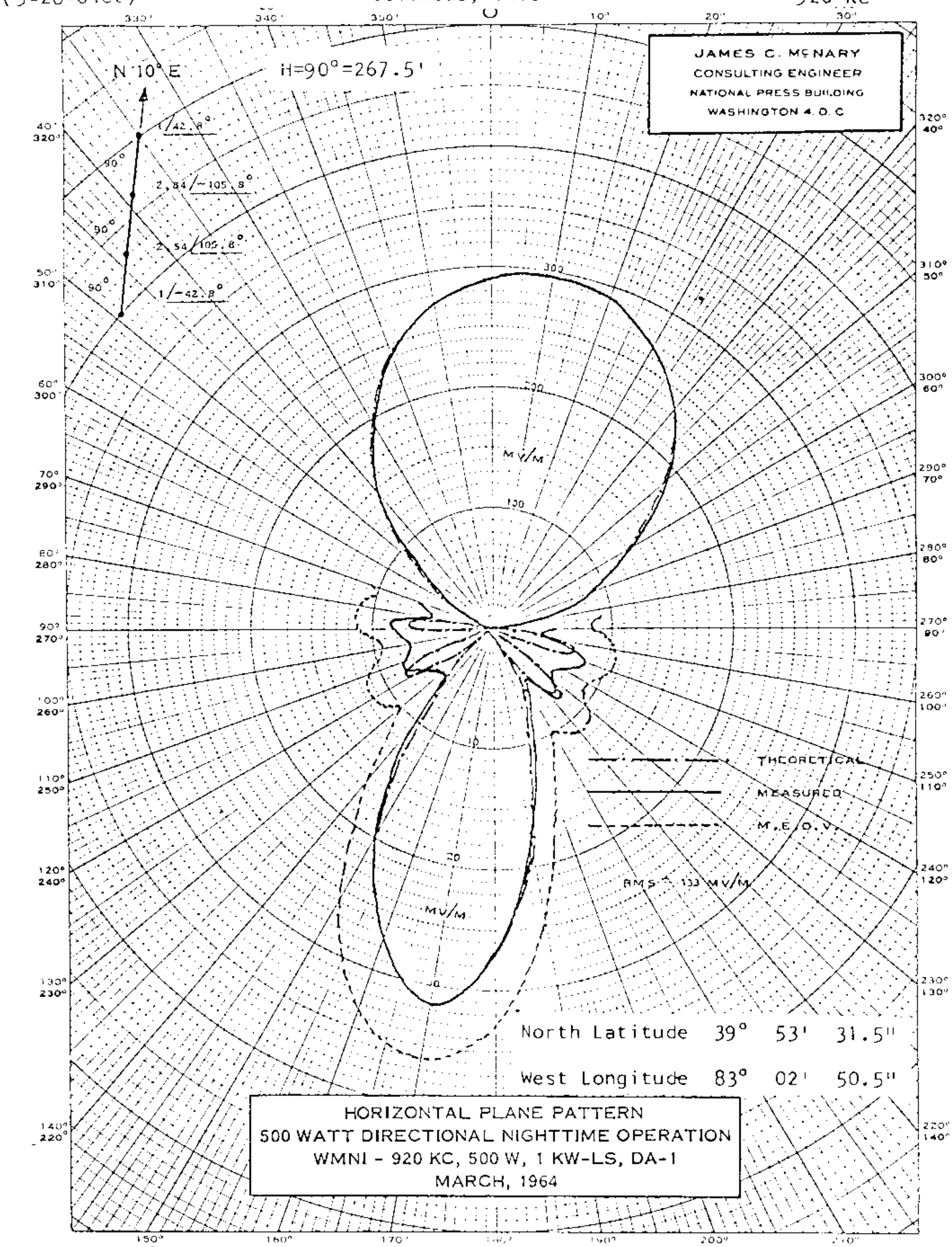
920 KC

WMNI

Measured Night
(5-28-64ct)

Station WMNI
Columbus, Ohio

500w,1kw-LS,DA-1,U
920 kc



North Latitude 39° 53' 31.5"

West Longitude 83° 02' 50.5"

HORIZONTAL PLANE PATTERN
500 WATT DIRECTIONAL NIGHTTIME OPERATION
WMNI - 920 KC, 500 W, 1 KW-LS, DA-1
MARCH, 1964

FCC File No.BL-10575
Accepted 5-13-64

Station WMNI
Columbus, Ohio

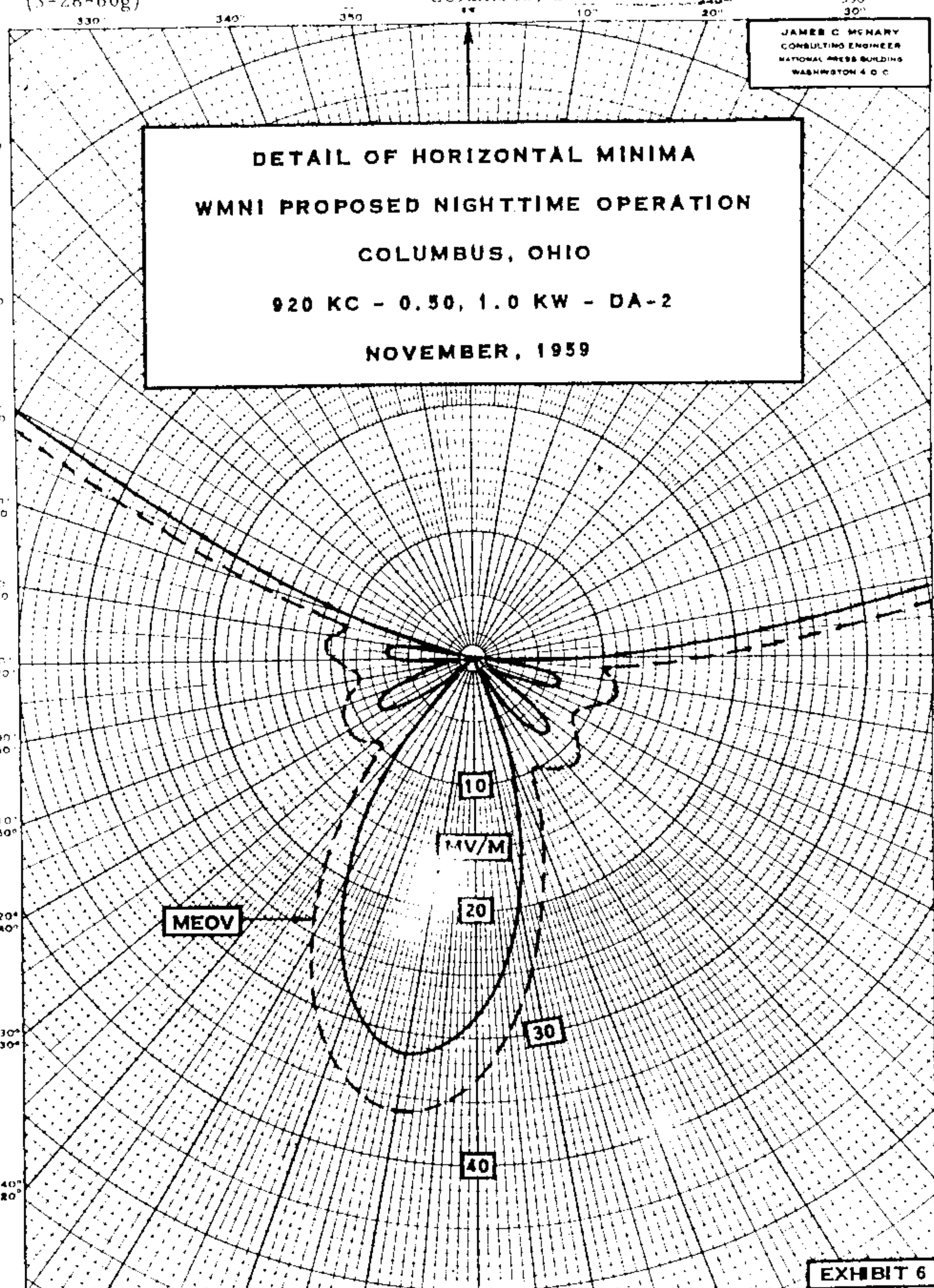
920 kc

W/M i I I

PROPOSED NIGHT NULLS
(3-28-60g)

Station WMNI
Columbus, Ohio

500w, 1kw-LS, DA-2, U
920 KC



FCC File No. BP-13916
Accepted 3-4-60

WMNI
Columbus, Ohio

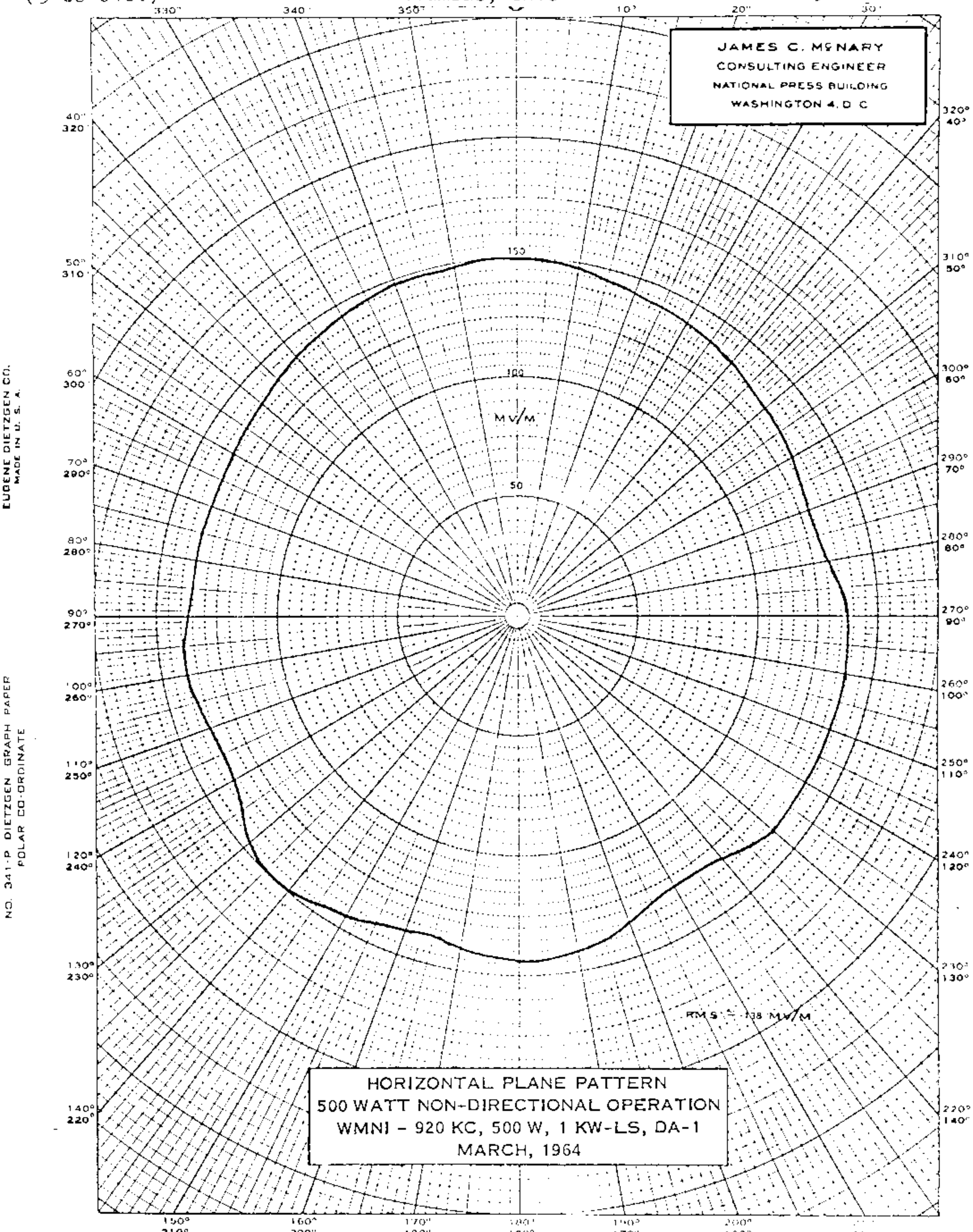
920 KC

WMNI

Measured Non-DA
(5-28-64ct)

Station WMNI
Columbus, Ohio

500w,1kw-LS,DA-1,U
920 kc



FCC File No.BL-10575
Accepted 5-13-64

Station WMNI
Columbus, Ohio

920 kc

WOKY

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WOKY

Main Studio: Milwaukee, Wisconsin

Frequency: 920 kHz

Power: 1 kW Night 5 kW Day

Notification List No. 1605

Date: November 6, 1974

Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42° 58' 32"
West Longitude: 88° 03' 56"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-2)
Number of elements: 5
Type of elements: Series-excited, uniform cross section, guyed, vertical steel towers.

TOWER:	SW(#3)	C(#2)	NE(#1	NW(#4)	SE(#5)
HEIGHT ABOVE INSULATORS:	All towers 240' (80.8°)				
NIGHT PHASING:	0°	-143.92°	+63.5°	---	---
NIGHT FIELD RATIO:	1.0	1.109	0.471	---	---
DAY PHASING:	-91.84°	---	+91.84°	-130.20°	+130.20
DAY FIELD RATIO:	0.169	---	0.320	0.151	0.360

SPACING AND ORIENTATION: Daytime, the towers are located at the vertices of a parallelogram the long sides of which are 470.0' (158.3°) in length on a line bearing 8.5° true. The short sides are 182.1' (61.3°) in length on a line bearing 63.3° true.

Nighttime, the towers are spaced 297' (100°) on a line bearing 203° true.

GROUND SYSTEM: 120-275' 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 systems are bonded together.

Predicted effective Night Field: 196.6 mv/m at rated power.

Predicted effective Day Field: 392 mv/m at rated power.

COHEN AND DIPPELL
RECEIVED
MAY 15 1975
D.C.

(Cont'd.)

WOKY

Note: Please retain the Nighttime directional radiation pattern notified for Station WOKY in United States Change List Number 1167, dated June 8, 1966, and attach to this Revised Description Sheet and Daytime pattern. This notification concerns only a change in the Daytime operation of the station with Nighttime operation continued as previously notified.

CTR NO 30004A3

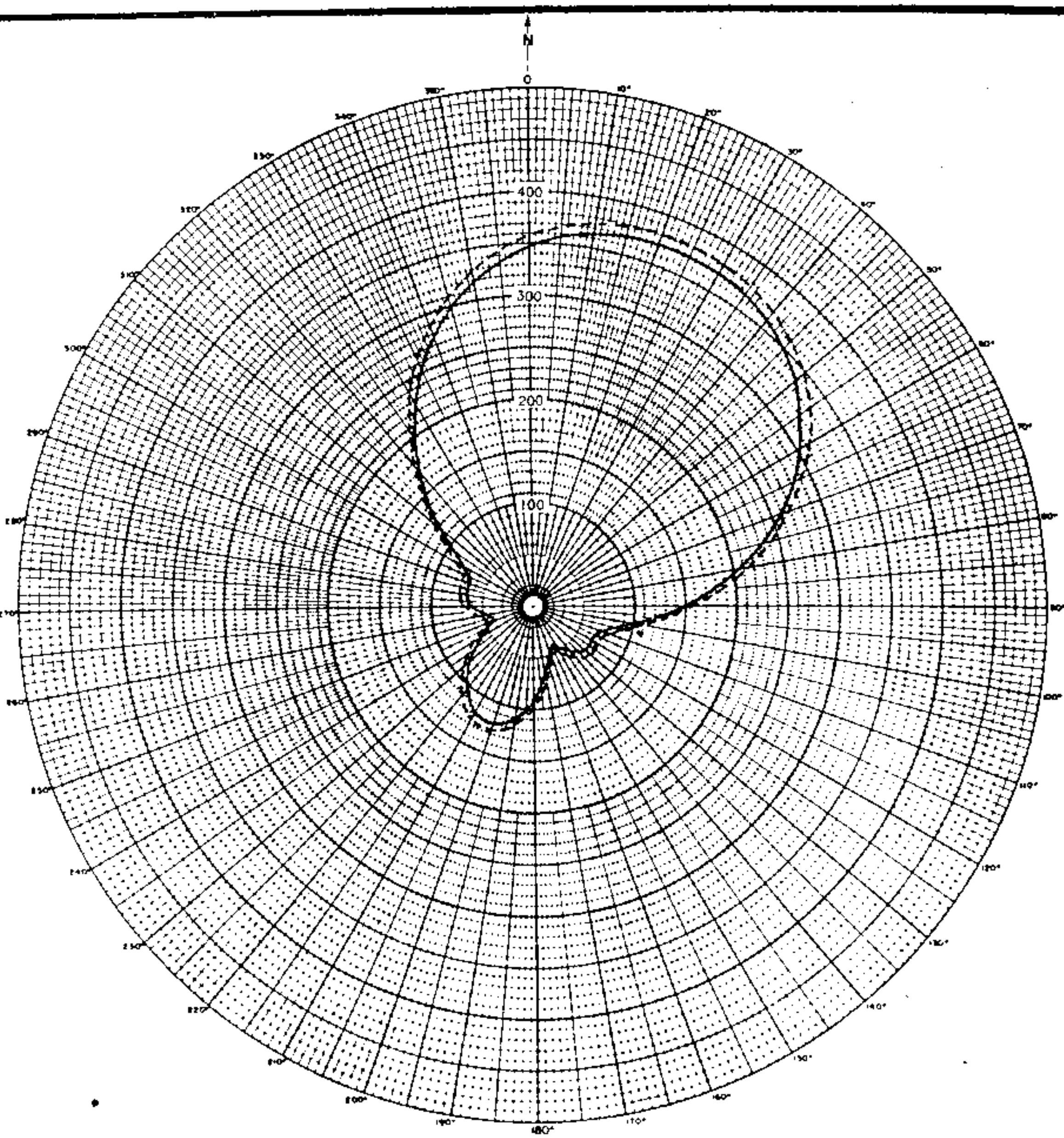
WOKY

Proposed Night
(4-28-66ct)

Station WOKY
Milwaukee, Wisconsin

1kw,5kw-LS,DA-2,U
920 kc

5-31-66



E_{RMS} = 196.6 MV/M

PATTERN MINIMA ARE AT 154° AND 252°

LATITUDE: 42° 57' 13"
LONGITUDE: 88° 00' 18"

CHARLES E. BRENNAN
CONSULTING RADIO ENGINEERS
MILWAUKEE, WISCONSIN

ANTENNA PARAMETERS

ALL G's = 80.8°

N23°E

3 O 0.471/+63.5°

2 O 1.109/-143.92°

1 O 1.0/0°

651210 FIGURE 4

PROPOSED NIGHTTIME RADIATION PATTERN

RADIO STATION WOKY
MILWAUKEE, WISCONSIN

920 KC 5000 LS, 1000 N DA-2 U

FCC File No.BP-17164
Accepted 4-11-66

Station WOKY
Milwaukee, Wisconsin

920 kc

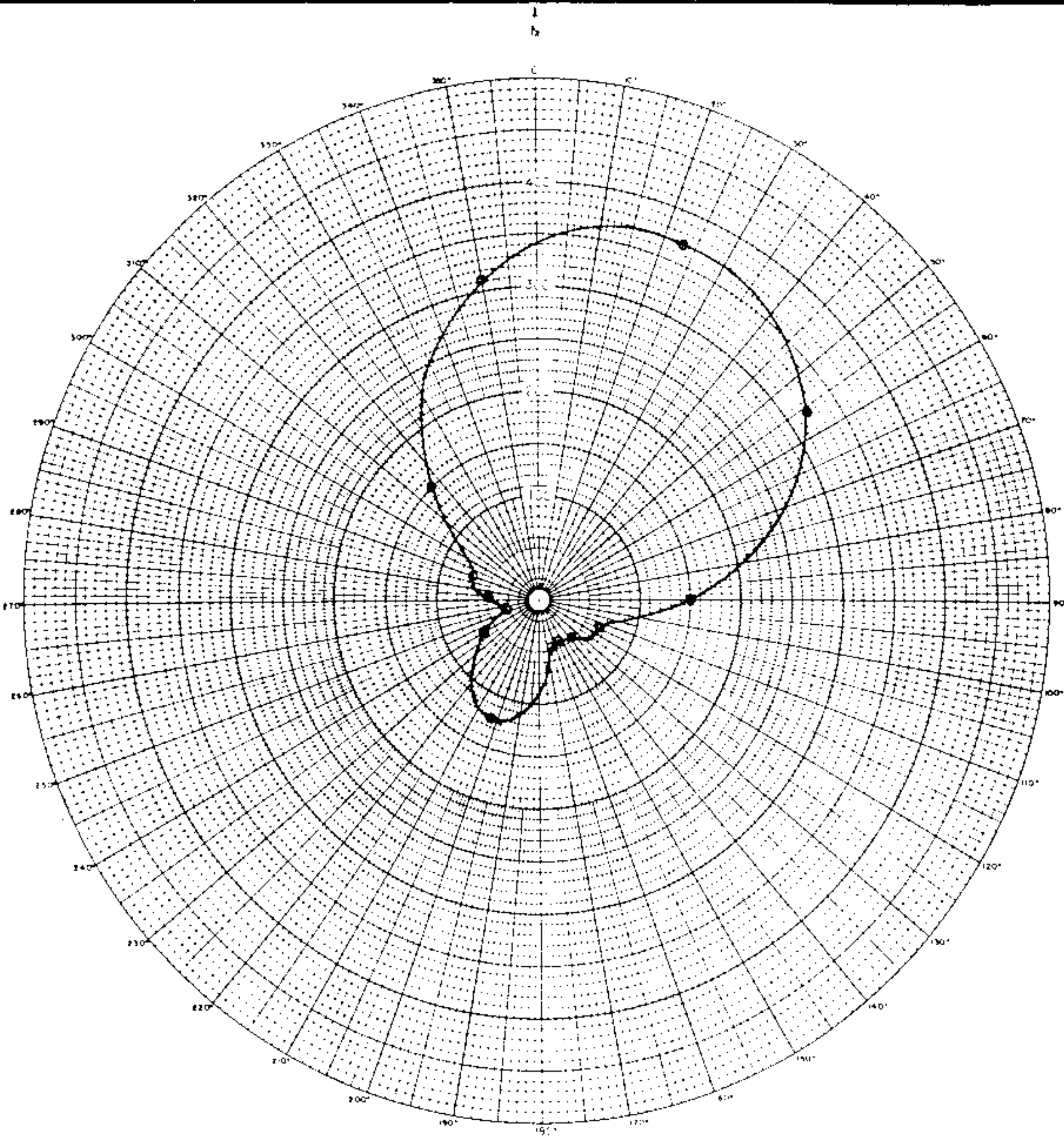
WOKY

Measured Night
(12-29-66ct)

Station WOKY
Milwaukee, Wisconsin

1kw,5kw-LS,DA-2,U
920 kc

GRANTED 12-15-66
LICENSE.
COV. CHANGE IN NIGHTTIME DA PATTERN



E_{RMS} = 195 mV/m

LATITUDE [illegible]

LONGITUDE [illegible]

CHARLES E. BRENNAN
CONSULTING RADIO ENGINEERS
MILWAUKEE, WISCONSIN

ANTENNA PARAMETERS

[illegible]°T

O 0.471/[illegible]

O [illegible]/-143.[illegible]°

S = 100°

O 1.0[illegible]

[illegible] FIGURE 2

MEASURED NIGHTTIME ANTENNA PATTERN

RADIO STATION WOKY
MILWAUKEE, WISCONSIN

920 KC 5000 LS, 1000 N, DA-2 [illegible]

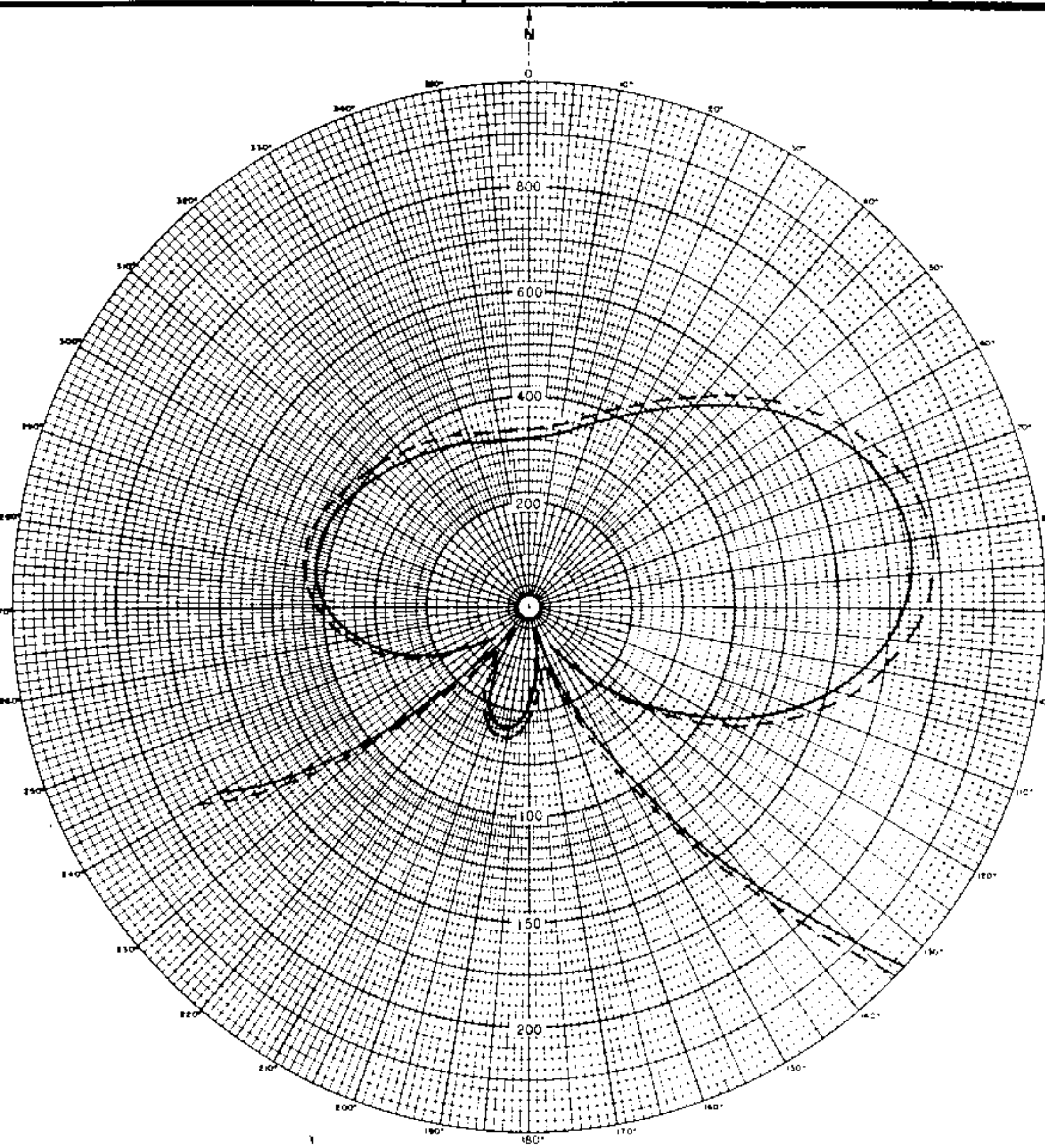
FCC File No.BL-11475
Accepted 12-12-66

Proposed Day
(12-29-66ct)

Station WOKY
Milwaukee, Wisconsin

1kw,5kw-LS,DA-2,U
920 kc

GRANTED CP TO MAKE CHANGES IN DAYTIME DIR. ANTENNA PATTERN.
BP-17501



E_{RMS} = 400 MV/M (BY ADJUSTMENT)

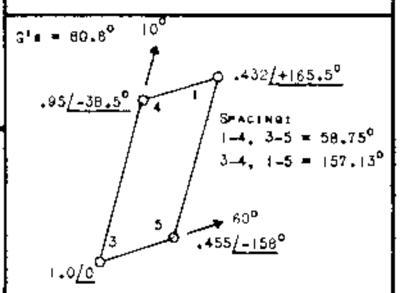
PATTERN MINIMA : 164.2°, 215.6°

LATITUDE: 42° 57' 13"

LONGITUDE: 88° 00' 19"

CHARLES E. BRENNAN
CONSULTING RADIO ENGINEERS
MILWAUKEE, WISCONSIN

ANTENNA PARAMETERS



661015

FIGURE 4

PROPOSED DAYTIME ANTENNA PATTERN
RADIO STATION WOKY
MILWAUKEE, WISCONSIN

920 KC

5000 LS, 1000 N DA-2 U

FCC File No.BP-17501
Accepted 12-8-66

Station WOKY
Milwaukee, Wisconsin

920 kc

WOKY

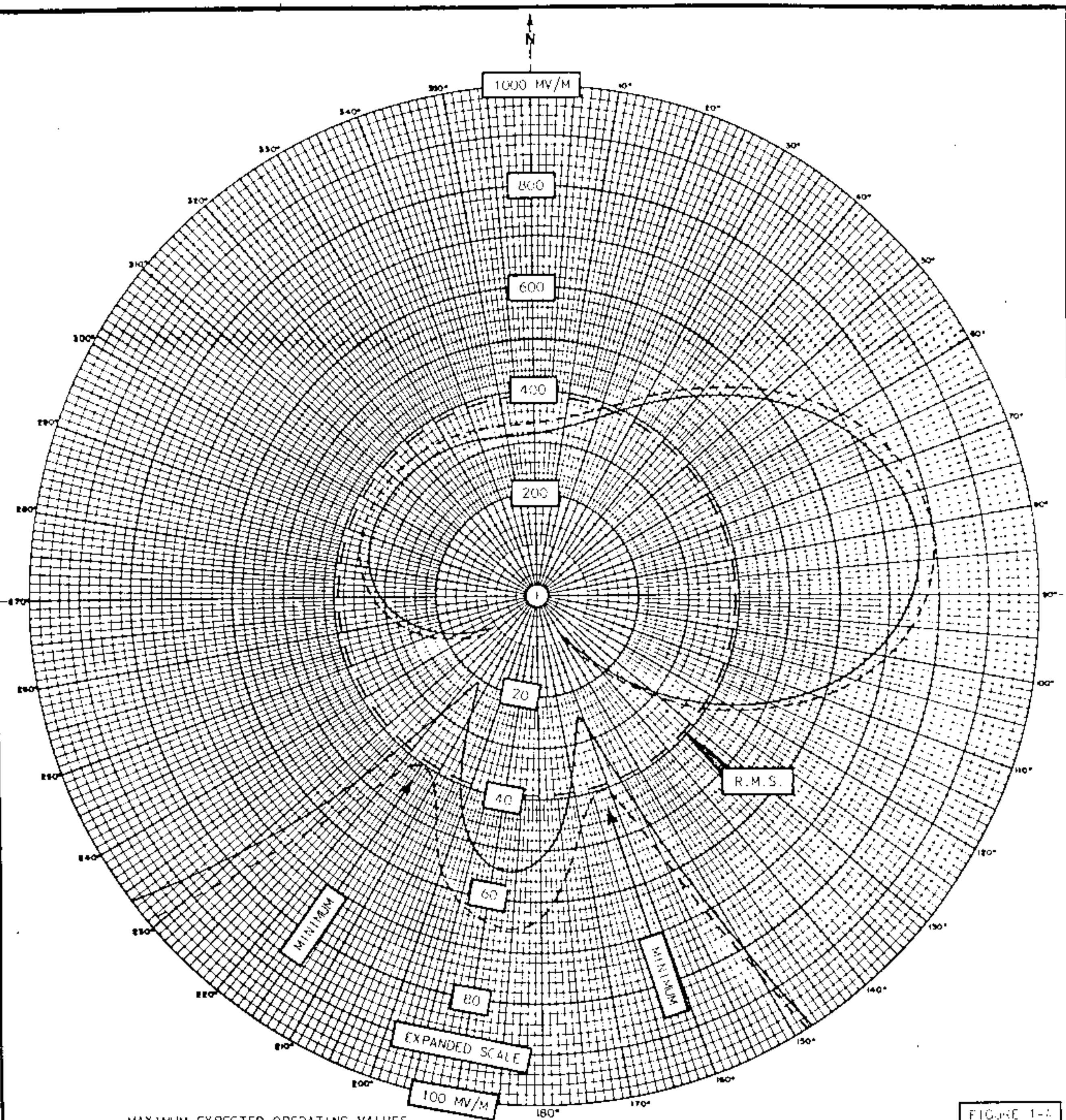
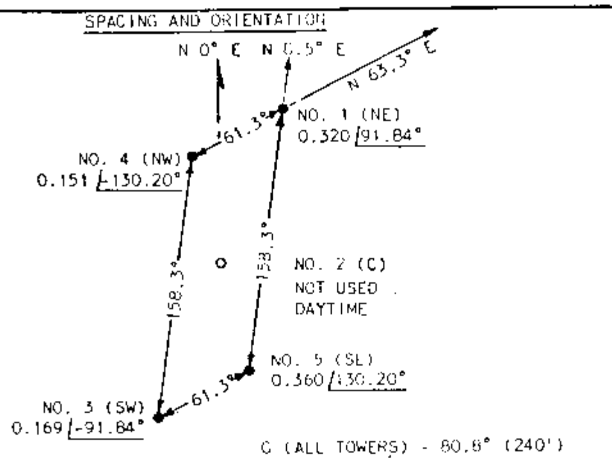


FIGURE 1-4

HORIZONTAL RADIATION PATTERN



APPLICANT: BARTELL BROADCASTERS, INC.

LOCATION: MILWAUKEE, WISCONSIN (WOKY)

FREQUENCY: 920 KC/S

POWER: 5 KW-LS, 1 KW-N, DA-2

LATITUDE: 42 DEG 56 MIN 31.5 SEC

LONGITUDE: 88 DEG. 03 MIN 56.7 SEC

WHEN USED: DAYTIME

R.M.S. FIELD: 397 MV/M (CALCULATED)

DATE: APRIL 1974

SILLIMAN, MOFFET & KOWALSKI

CONSULTING RADIO ENGINEERS

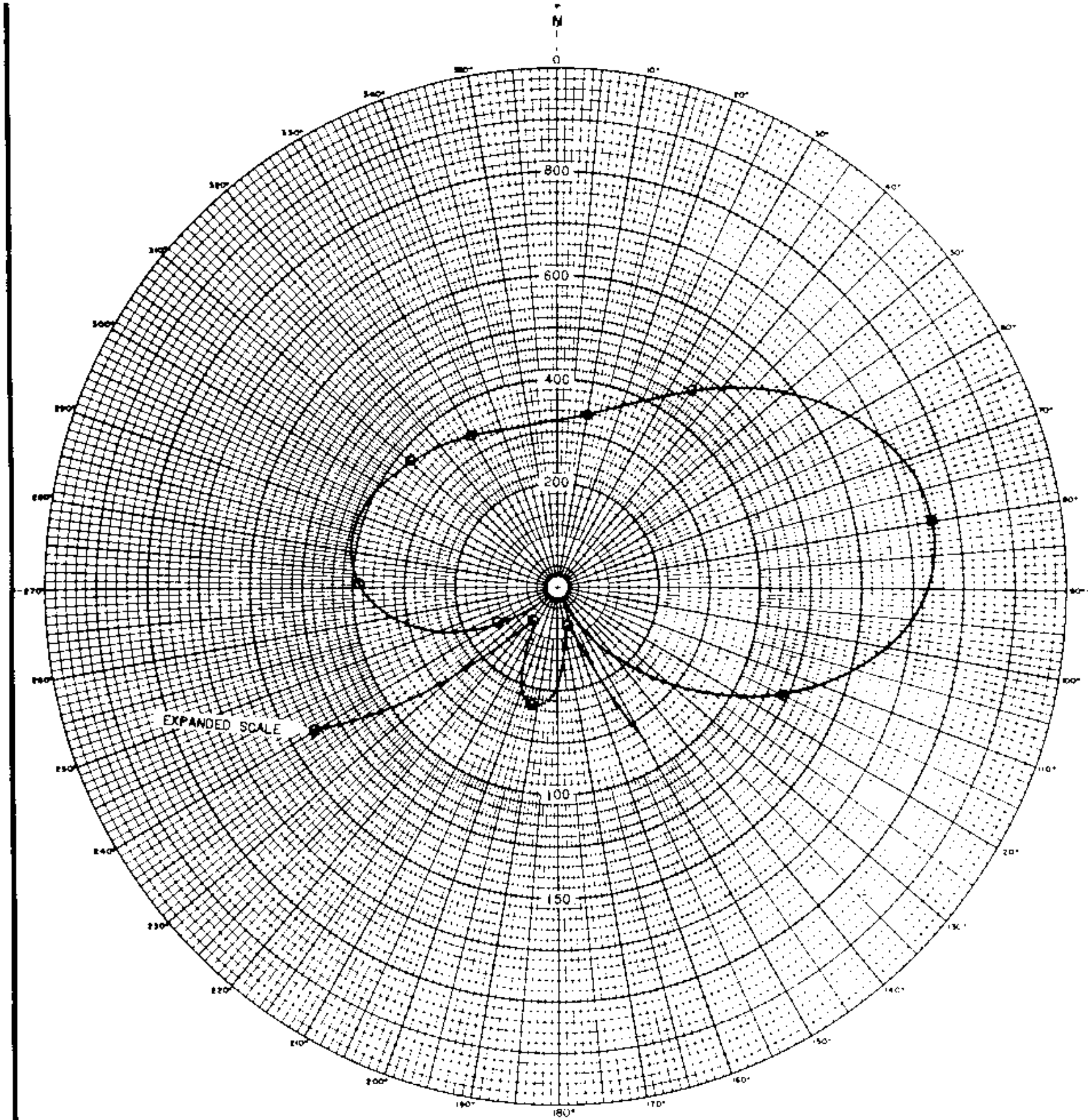
WASHINGTON, D.C.

WOKY

Measured Day
(11-28-67ct)

Station WOKY
Milwaukee, Wisconsin

1kw,5kw-LS,DA-2,U
920 kc



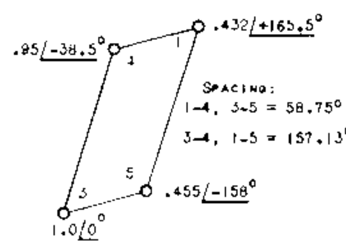
E_{RMS} = 396 MV/M (BY ADJUSTMENT)

LATITUDE: 42° 57' 13"
LONGITUDE: 88° 00' 19"

CHARLES E. BRENNAN
CONSULTING RADIO ENGINEERS
MILWAUKEE, WISCONSIN

ANTENNA PARAMETERS

G's = 80.8°



670908 FIGURE 2

MEASURED DAYTIME ANTENNA PATTERN

RADIO STATION WOKY
MILWAUKEE, WISCONSIN

920 KC 5000 LS, 1000 N DA-2 U

FCC File No.BL-11805
Accepted 11-6-67

Station WOKY
Milwaukee, Wisconsin

920 kc

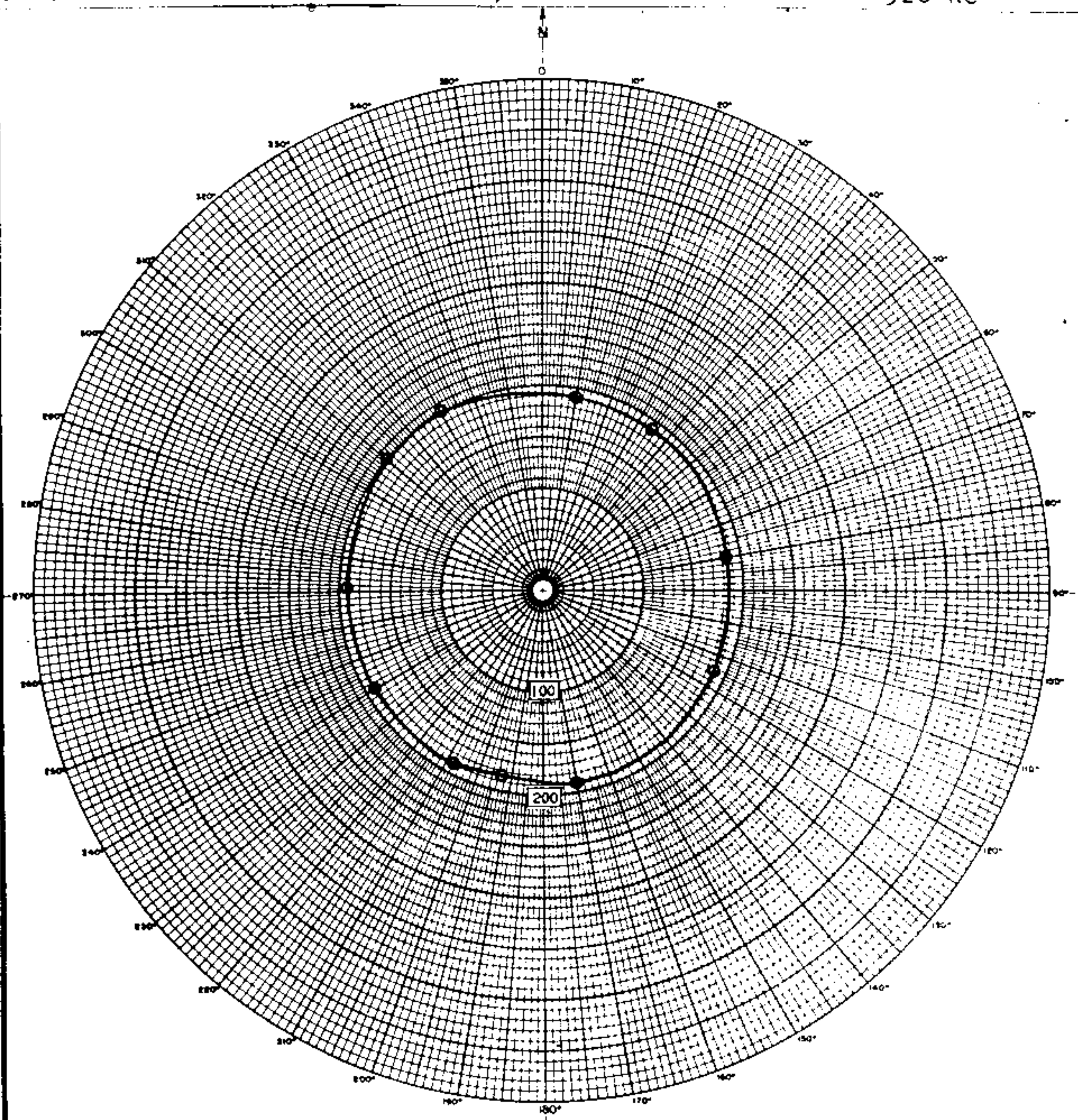
WOKY

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

Station WOKY
Milwaukee, Wisconsin

1kw,5kw-LS,DA-2,U
920 kc

-18-65 LIC
NCR. PWR D
HG DA-1 to DA-2



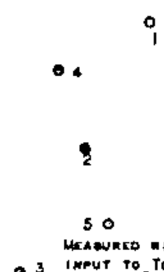
E_{RMS} = 190 mV/m

LATITUDE: 42°57' 13"

LONGITUDE: 88° 00' 19"

CHARLES E. BRENNAN
CONSULTING RADIO ENGINEERS
MILWAUKEE, WISCONSIN

ANTENNA PARAMETERS



MEASURED WITH 1000 WATTS INPUT TO TOWER 2
G = 80.8°

650219

FIGURE 3

MEASURED NON-DIRECTIONAL ANTENNA PATTERN

RADIO STATION WOKY
MILWAUKEE, WISCONSIN

920 KC

5000 LS, 1000 N DA-2 U

FCC File No. BL-10893
Accepted 4-29-65

Station WOKY
Milwaukee, Wisconsin

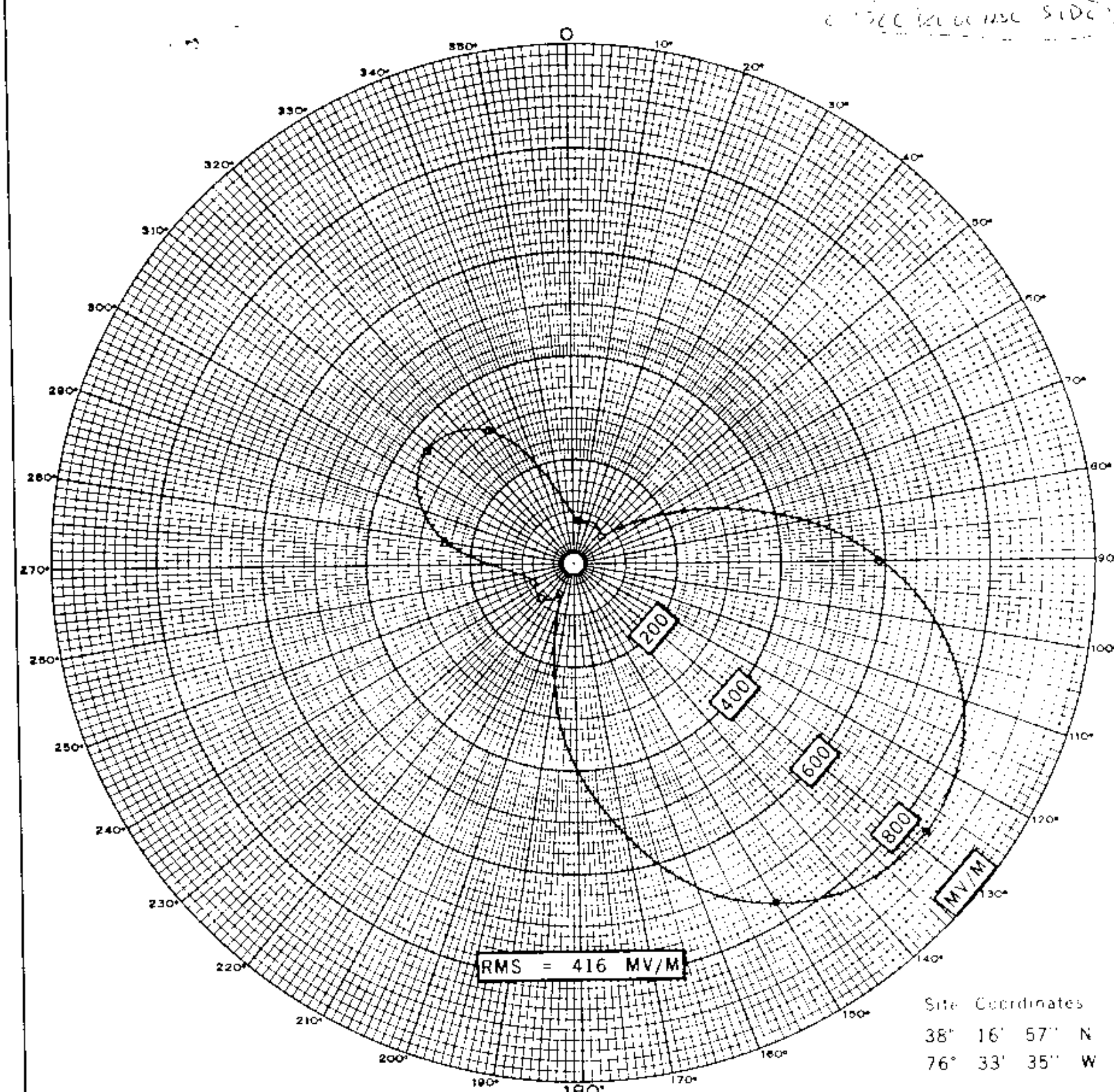
920 kc

WPTX

Measured Day
(8-26-70ct)

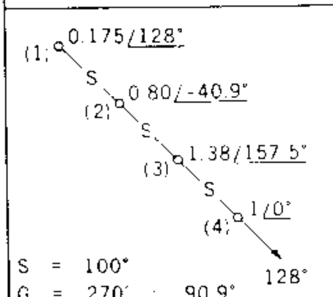
Station WPTX
Lexington Park, Maryland

1kw,5kw-LS,DA-2,U
920 kc
Figure 11



Site Coordinates
38° 16' 57" N
76° 33' 35" W

MEASURED DAYTIME HORIZONTAL PLANE RADIATION PATTERN



KEY BROADCASTING CORPORATION

LEXINGTON PARK, MARYLAND

Jules Cohen & Associates
Consulting Electronics Engineers

WPTX

920 KHZ

1 KW 5 KW LS U DA-2

PATTERN No 691105

FCC File No.BL-12637
Accepted 8-4-70

Station WPTX
Lexington Park, Maryland

920 kc

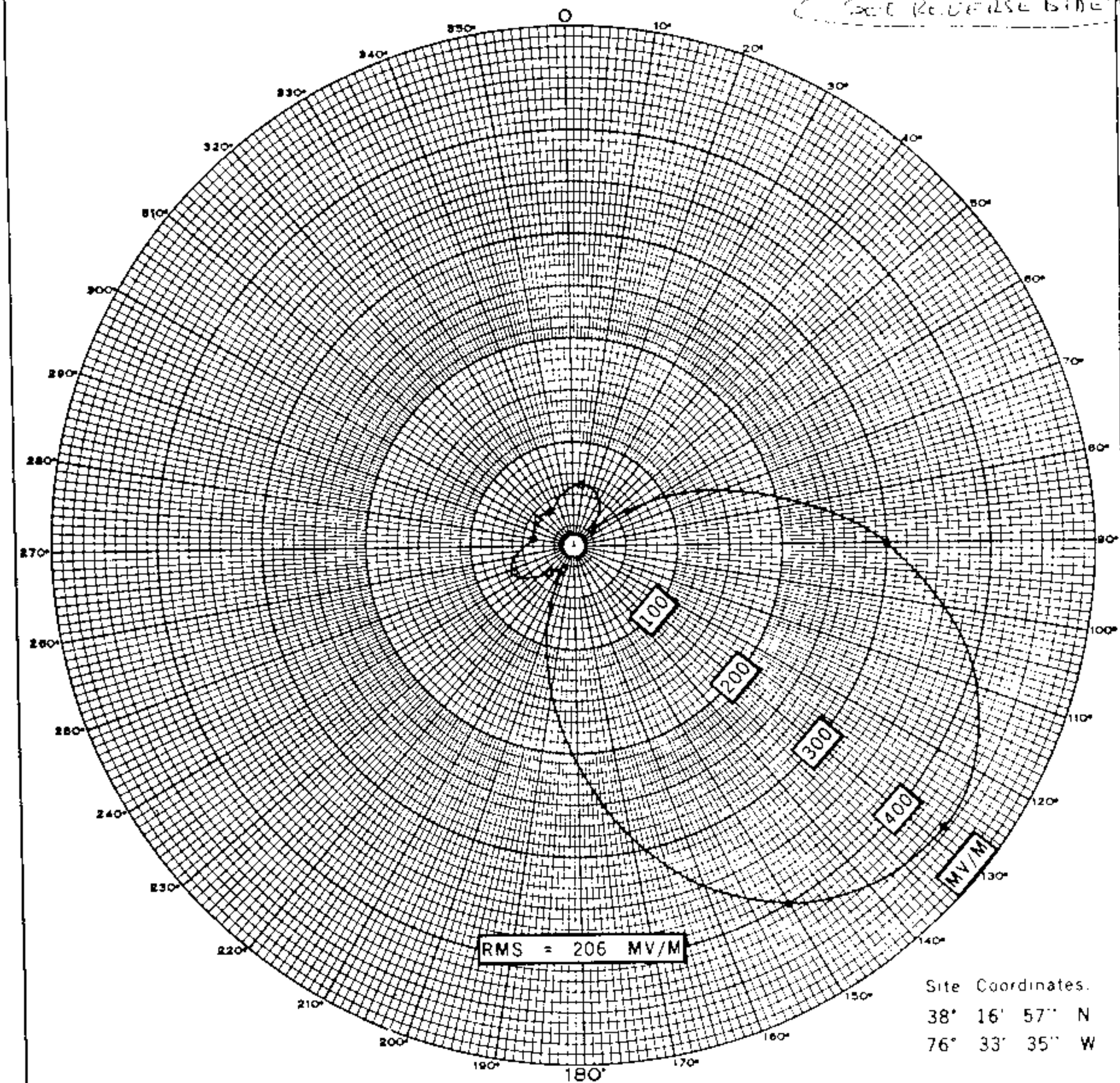
WPTX

Measured Night
(8-26-70ct)

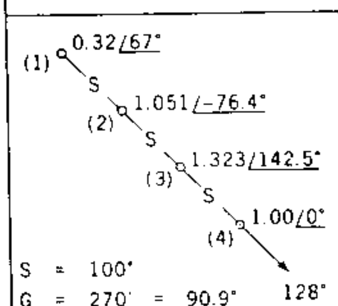
Station WPTX
Lexington Park, Maryland

1kw,5kw-LS,DA-2,U
920 kc

See Reverse Side



MEASURED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN



KEY BROADCASTING CORPORATION

LEXINGTON PARK, MARYLAND

Jules Cohen & Associates
Consulting Electronics Engineers

WPTX

920 KHZ

1 KW. 5 KW-LS U DA-2

PATTERN No. 691105

FCC File No.BL-12637
Accepted 8-4-70

Station WPTX
Lexington Park, Maryland

920 kc

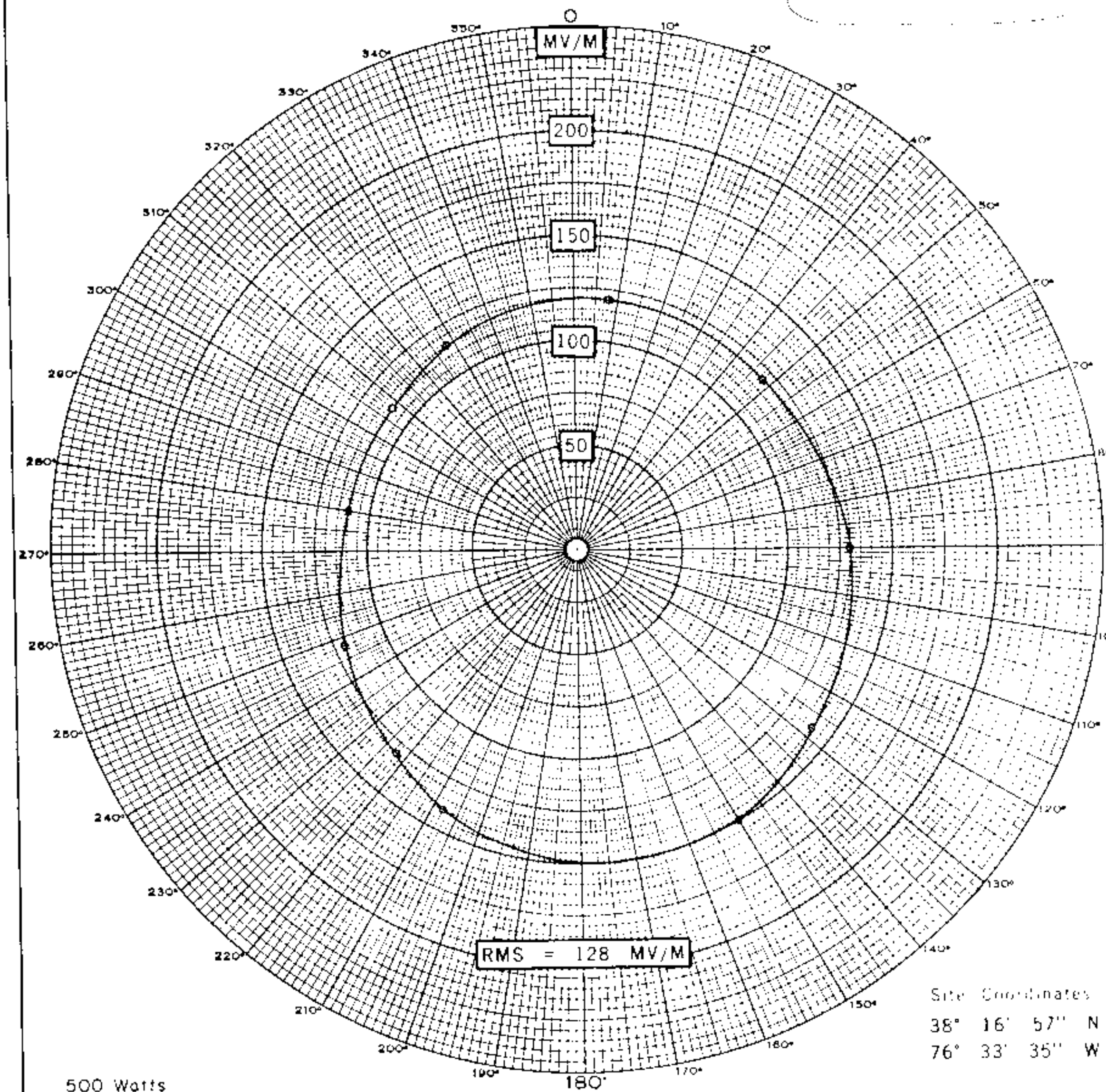
WPTX

Measured Non-DA
(8-26-70ct)

Station WPTX
Lexington Park, Maryland

1kw,5kw-LS,DA-2,U
920 kc

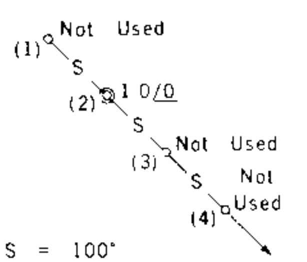
Figure 9



Site Coordinates
38° 16' 57" N
76° 33' 35" W

500 Watts

MEASURED NONDIRECTIONAL HORIZONTAL PLANE RADIATION PATTERN



S = 100°
G = 270° = 90.9° 128°

KEY BROADCASTING CORPORATION

LEXINGTON PARK, MARYLAND

Jules Cohen & Associates
Consulting Electronics Engineers

WPTX

920 KHZ

1 KW, 5 KW-LS U DA 2

PATTERN No 691105

FCC File No.BL-12637
Accepted 8-4-70

Station WPTX
Lexington Park, Maryland

920 kc

WPTX

Proposed Day
(7-26-67ct)

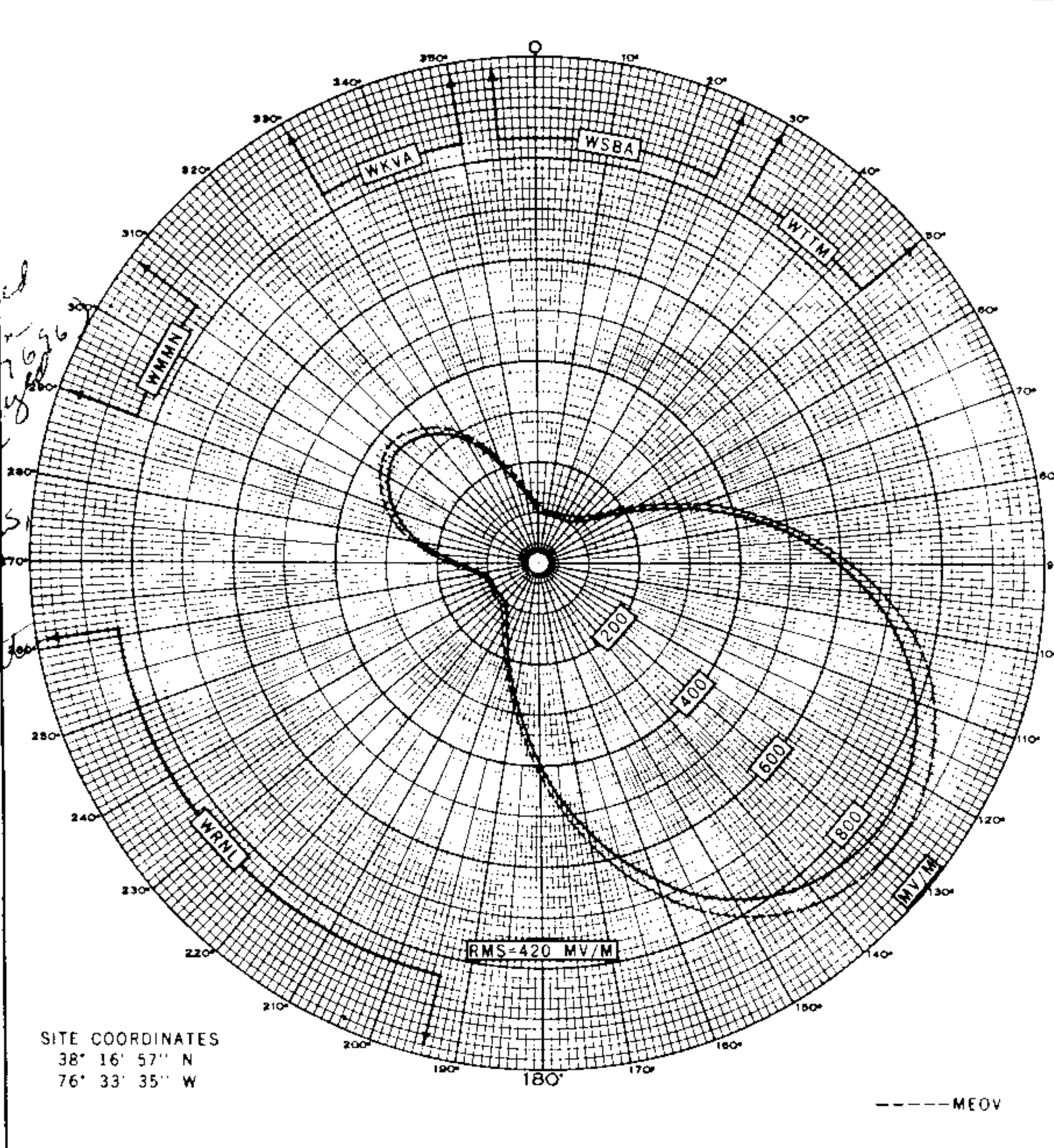
Station WPTX
Lexington Park, Maryland

1kw,5kw-LS,DA-2,U
920 kc

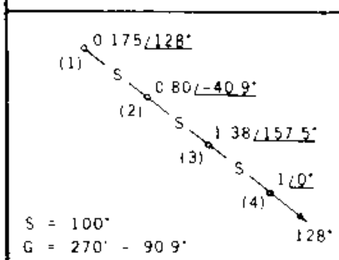
Figure 7

2-7-68 GRANTED CP to change hours.

10-24-68 application accepted to replace expired construction permit (BP-17696) which authorized change from 500 w, D to 1 kw, 5 kw-LS, DA-2, U; change transmitter location.



PROPOSED DAYTIME HORIZONTAL PLANE RADIATION PATTERN



KEY BROADCASTING CORPORATION

LEXINGTON PARK, MARYLAND

Jules Cohen & Associates

Consulting Electronics Engineers

WPTX

920 KC/S

1 KW, 5 KW LS U DA-2

PATTERN No 6611080

FCC File No.BP-17696
Accepted 6-30-67

Station WPTX
Lexington Park, Maryland

920 kc

WPTX

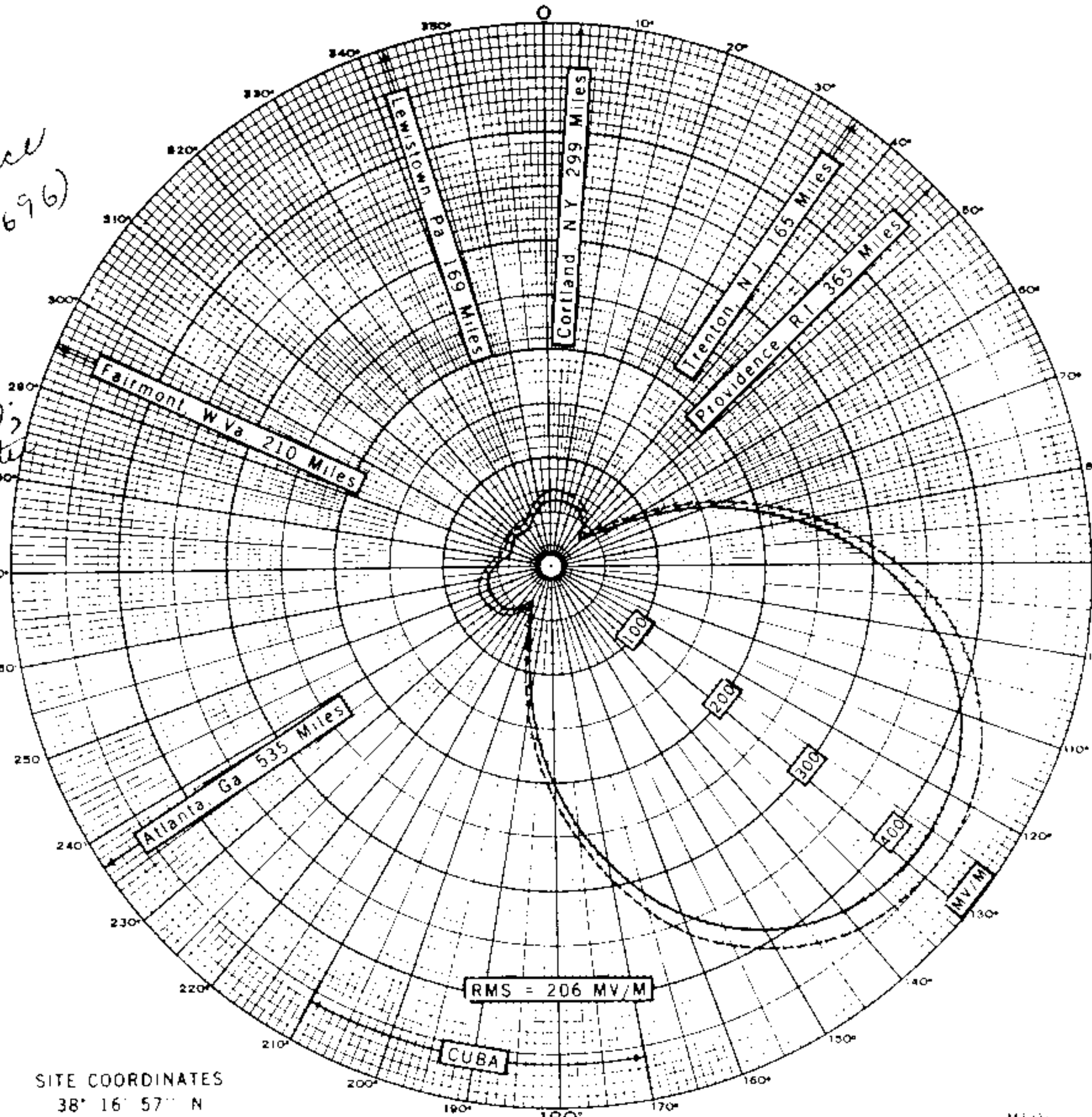
Proposed Night
(7-26-67ct)

Station WPTX
Lexington Park, Maryland

1kw,5kw-LS,DA-2,U
920 kc
Figure 10
Sheet 1 of 14

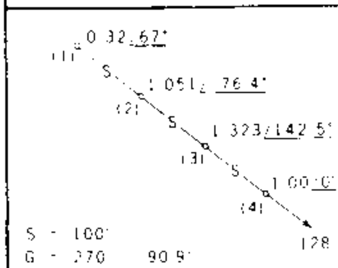
2-7-68
GRANTED CP
to change trans.

0-24-68
application accepted to replace expired CP (BP-17696) which authorized change from 500 w, D to 1 kw, 5 kw-LS, DA-2, U; change transmitter location



SITE COORDINATES
38° 16' 57" N
76° 33' 35" W

PROPOSED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN



KEY BROADCASTING CORPORATION
LEXINGTON PARK, MARYLAND

Jules Cohen & Associates
Consulting Electronics Engineers

WPTX
920 KC S
1 KW 5 KW LS U DA 2
PATTERN No. 670313N

FCC File No.BP-17696
Accepted 6-30-67

Station WPTX
Lexington Park, Maryland

920 kc

WTTM

Measured Day & Night
(9-25-63ct)

Station WTTM
Trenton, New Jersey

1kw,DA-1,U
920 kc

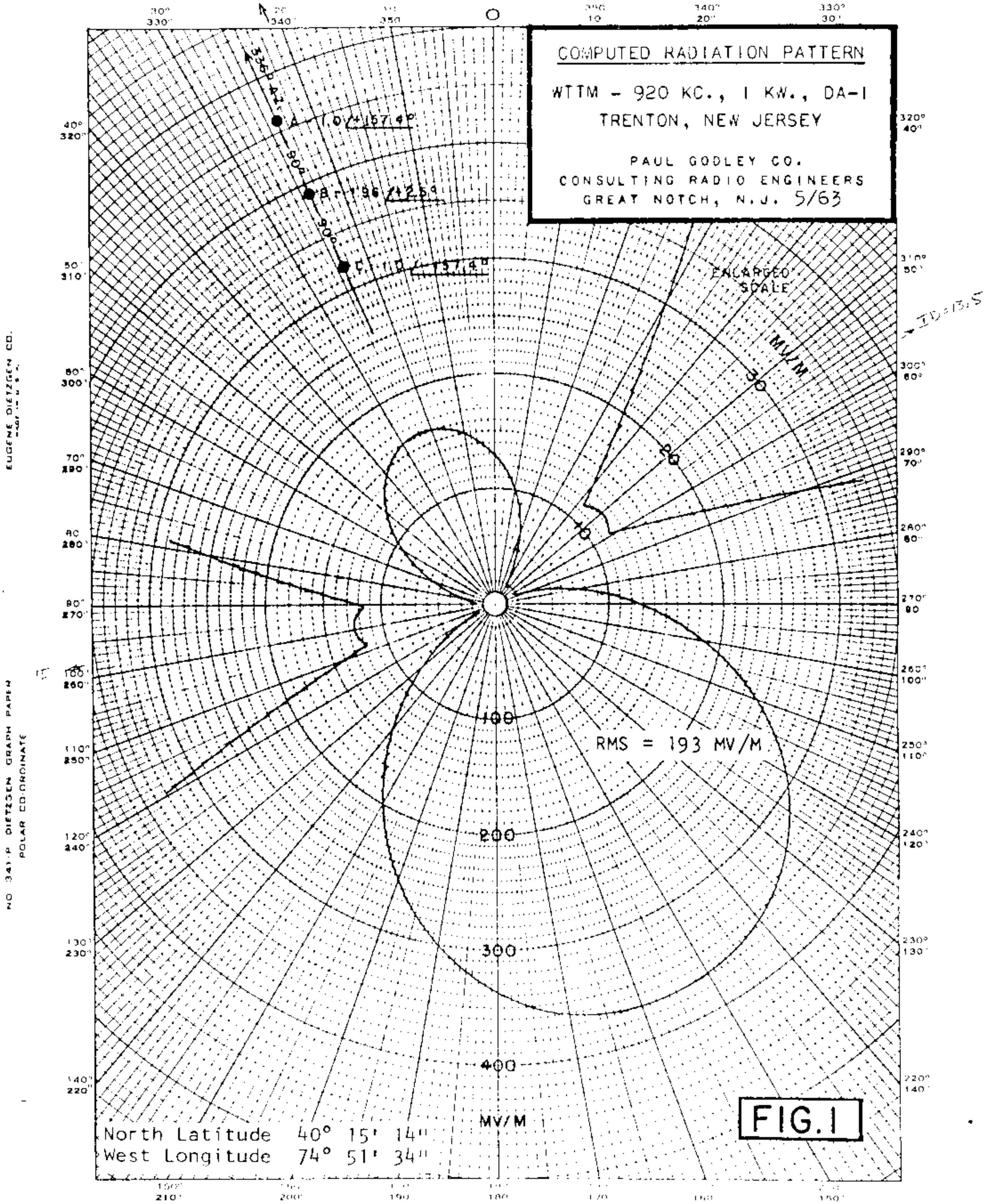


FIG.1

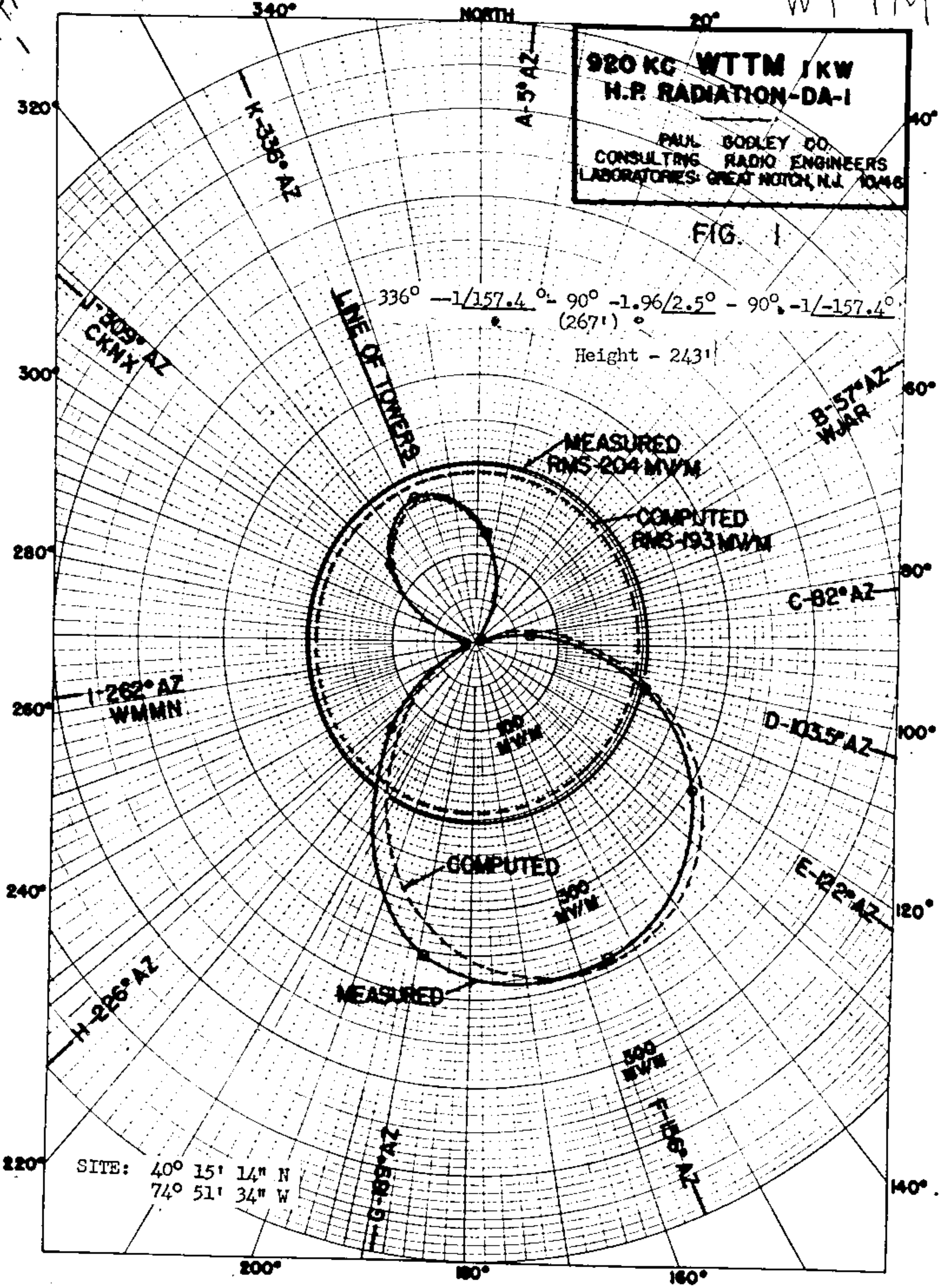
FCC File No.BZ-5024
Accepted 8-20-63

Station WTTM
Trenton, New Jersey

920 kc

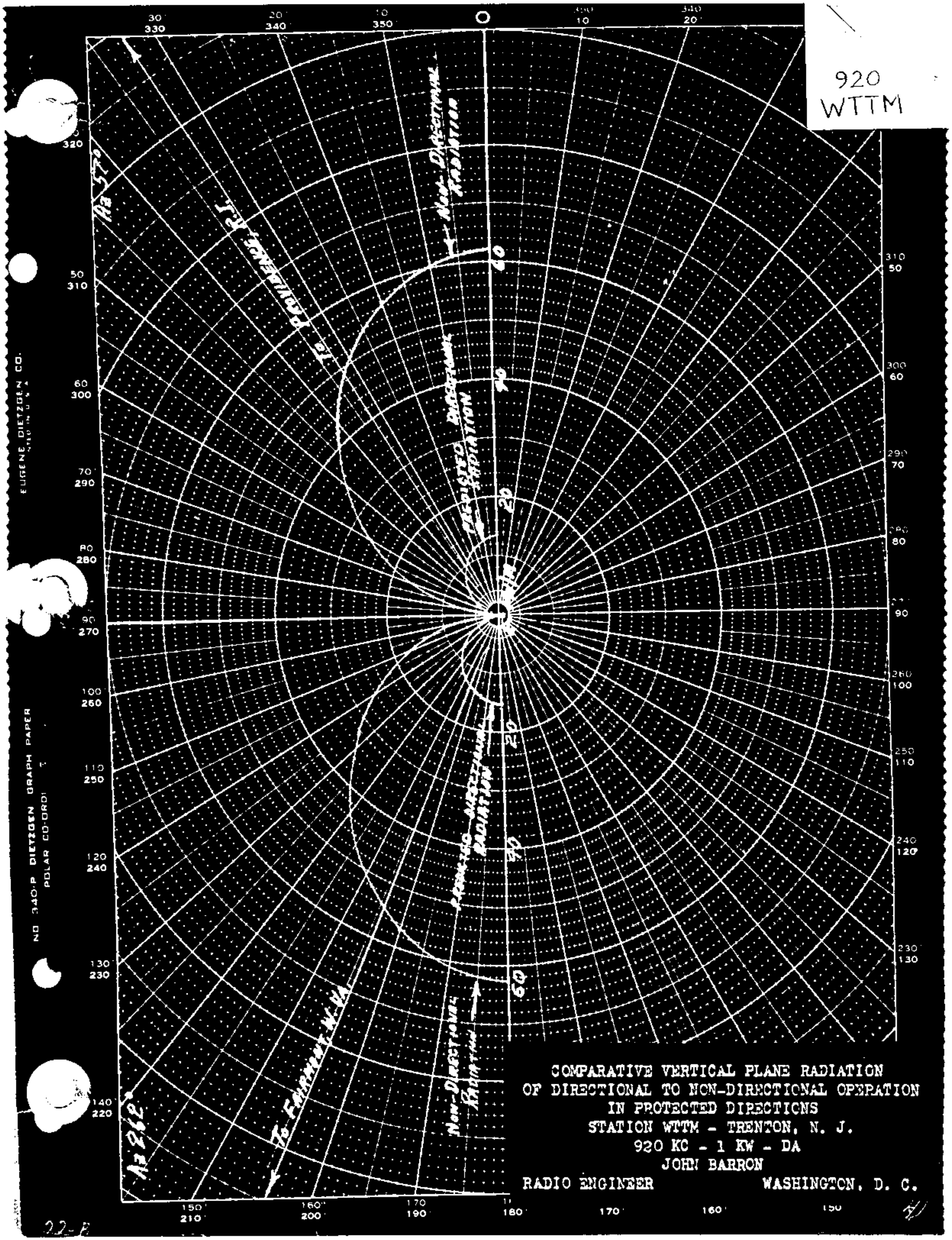
WTTM
1

WTTM



WTTM, Trenton, N. J. 920 kc

920
WTTM



COMPARATIVE VERTICAL PLANE RADIATION
OF DIRECTIONAL TO NON-DIRECTIONAL OPERATION
IN PROTECTED DIRECTIONS
STATION WTTM - TRENTON, N. J.
920 KC - 1 KW - DA
JOHN BARRON
RADIO ENGINEER WASHINGTON, D. C.

22-B

DEW

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: (New)

Main Studio: Lake Etchemin, Que.

Frequency: 920 kHz

Power: 1 kW

Notification List No. 340

Date: May 6, 1975

Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 46° 22' 48"
West Longitude: 70° 26' 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:	NW(#2)	SE(#1)
HEIGHT ABOVE INSULATORS:	250'	250' (84°)
PHASING:	-137.0°	0°
FIELD RATIO:	0.90	1.0

SPACING AND ORIENTATION: Elements are spaced 60° on a line bearing 330° true.

GROUND SYSTEM: 120-428' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

Predicted effective Night Field: 182.3 mv/m at rated power.

Predicted effective Day Field: (omnidirectional) 188.0 mv/m at rated power.

CTR NO 10101A3

NEW

I - DESCRIPTION DU SYSTEME A ANTENNE DIRECTIONNELLE

1. LETTRES D'APPEL: (nouveau poste)
2. EMPLACEMENT: Lac Etchemin, Qué.
3. FREQUENCE: 920 KHz.
4. PUISSANCE: 1 KW jour et nuit.
5. CLASSE: III (U).
6. NOTIFICATION NO: 340 DATE: May 6, 1975
7. COORDONNEES: Latitude nord: 46° 22' 48"
   Longitude ouest: 70° 26' 00"
8. SYSTEME D'ANTENNE:
   a) Fonctionnement: directionnel AD-N.
   b) Type: deux (2) éléments à section triangulaire, haubanés et alimentés en série.
   c) Mise à la terre: 120 fils Ø10 espacés également, d'une longueur de 428' max. (0.4λ) avec courroies d'interconnexion, le tout enfoui à environ 8" sous la surface.
9. MATS D'ANTENNE:

	#1 Sud-est	#2 Nord-ouest
Orientation (Az):	Réf.	330.0°
Hauteur au-dessus de l'isolateur:	84° (250')	84°
Espacement:	Réf.	60°
Phasage:	0.0°	-137.0°
Rapport d'intensité de champ:	1.0	0.90

10. EFFICACITE PREVUE:
    a) Jour: 188.0 mV/m à 1 mille pour 1 KW.
    b) Nuit: 182.3 mV/m à 1 mille pour 1 KW.

YVES R. HAMEL
INGENIEUR-CONSEIL
3772 AVENUE KENT,
MONTREAL, QUE. H3S 1N3

NEW

Station: New

Location: Lac Etchemin, Quebec

Frequency: 920 kHz

Power: 1 kw Class III

Notification List No.: 345

Date: September 11, 1975

Geographical Location of the Center of the Antenna System:

North Latitude: 46° 22' 48"
West Longitude: 70° 26' 00"

Mode of Operation - DA-N
ND-D-188

Note: Please replace Figure #2 containing directional antenna radiation patterns notified for this station in Canadian Change List Number 341 dated May 20, 1975 with the attached Figures 8 to 19 inclusive. This notification is for the purpose of clarifying the vertical radiation patterns.

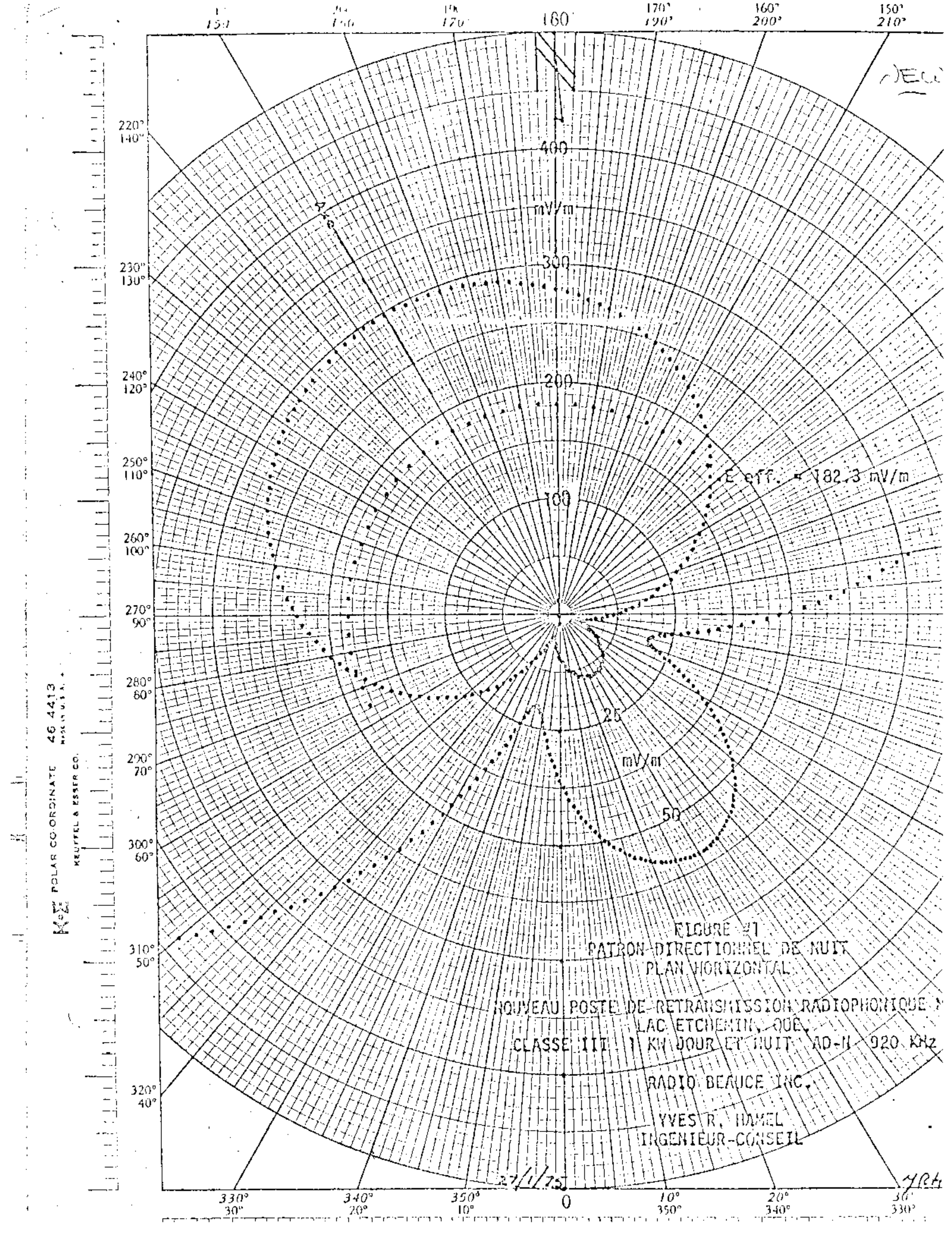
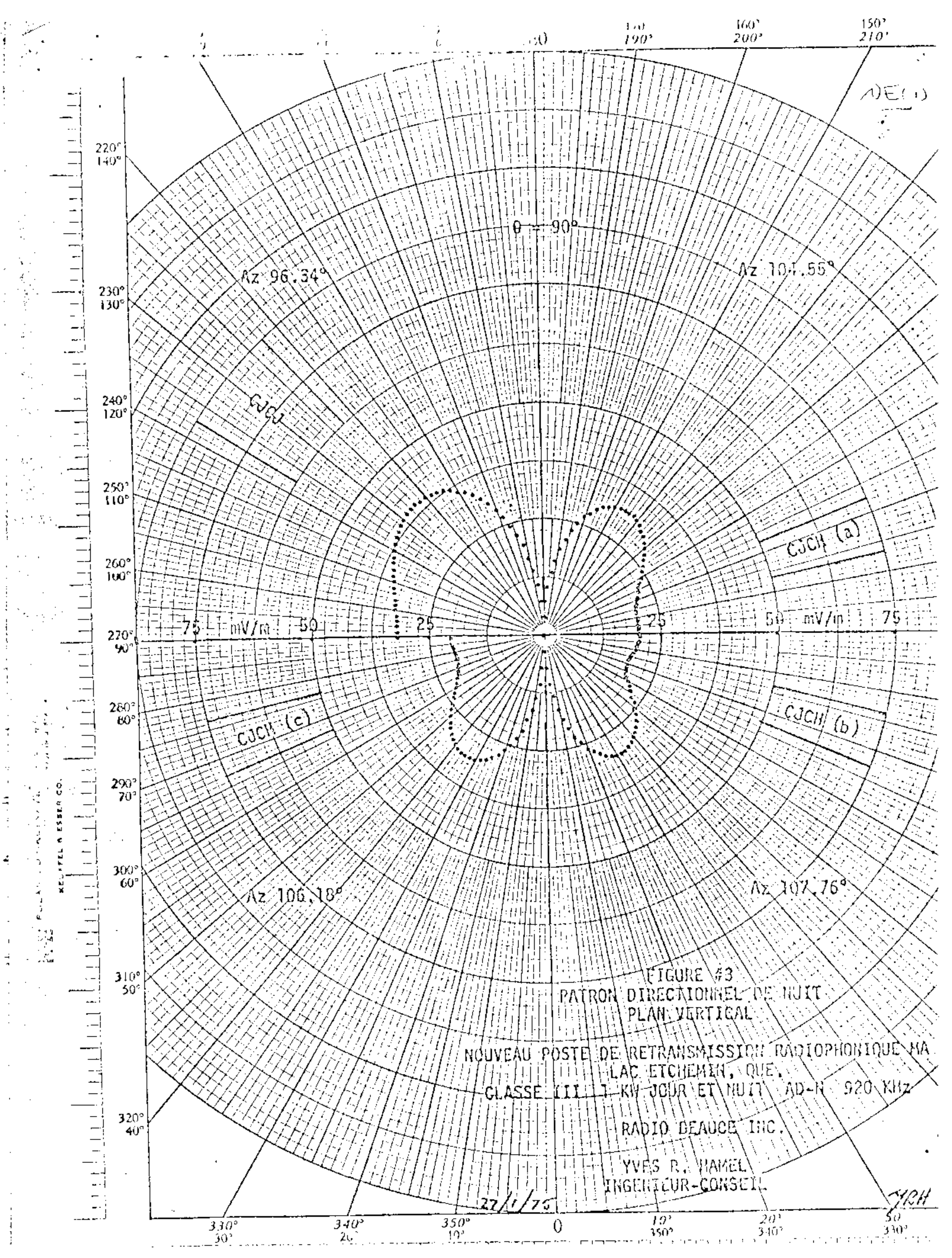


FIGURE #1
PATRON DIRECTIONNEL DE NUIT
PLAN HORIZONTAL

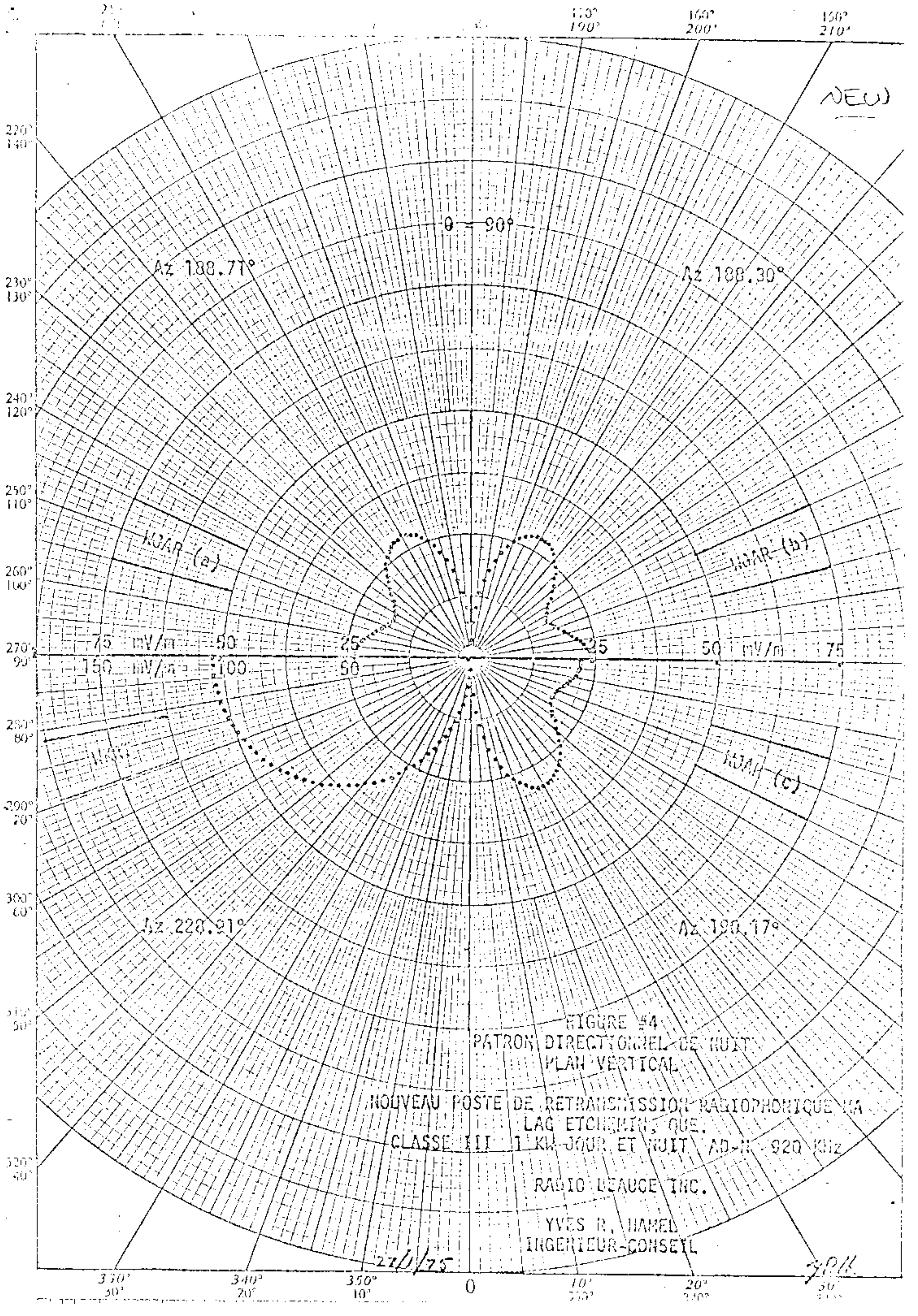
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL



θ = 90°
Az 96.34°
Az 104.55°
Az 106.18°
Az 107.76°
CJCJ
CJCH (a)
CJCH (b)
CJCH (c)
75 mV/m 50 25
25 50 mV/m 75
FIGURE #3
PATRON DIRECTIONNEL DE NUIT
PLAN VERTICAL
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
27/1/75
KEUFFEL & ESSER CO.


NEW
θ = 90°
Az 188.71°
Az 188.30°
NOAR (a)
NOAR (b)
75 mV/m 50 25
25 50 mV/m 75
150 mV/m 100 50
NOAR (c)
Az 228.91°
Az 190.17°
FIGURE #4
PATRON DIRECTIONNEL DE NUIT
PLAN VERTICAL
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE A
LAC ETCHEMIN, QUE.
CLASSE III 1 KW-JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
27/1/75

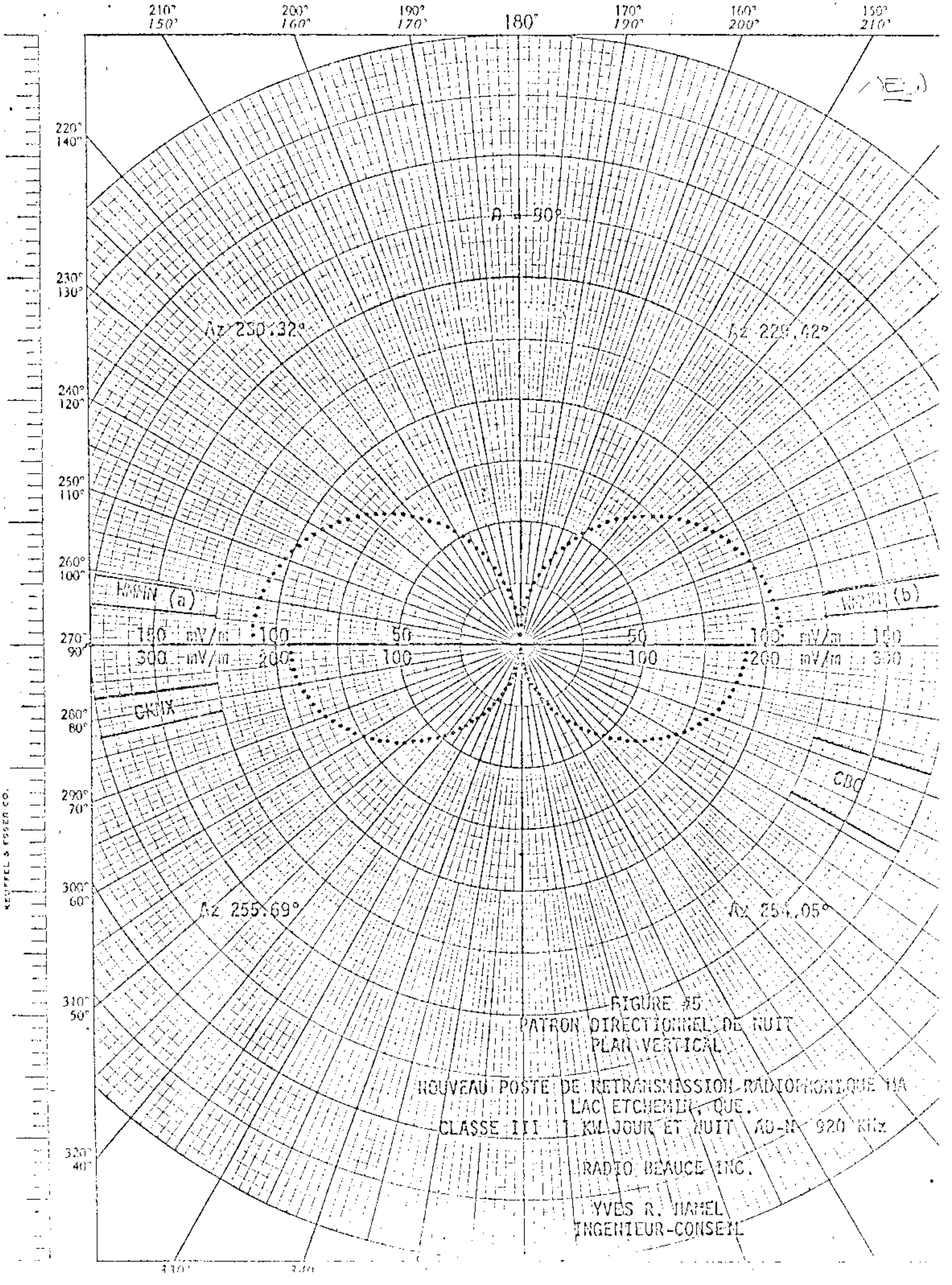


FIGURE #5
PATRON DIRECTIONNEL DE NUIT
PLAN VERTICAL

NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-M 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

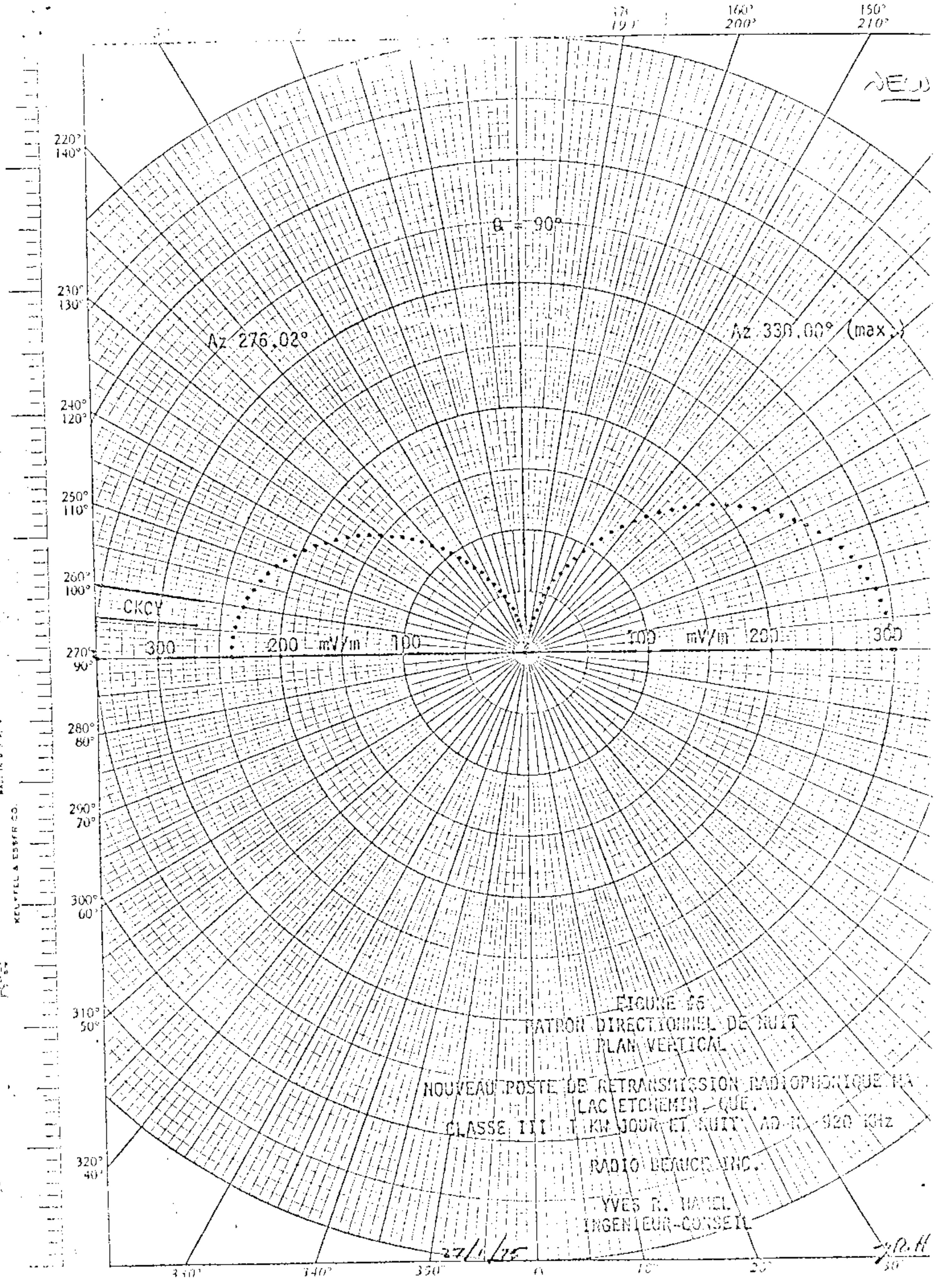


FIGURE #6
PATRON DIRECTIONNEL DE NUIT
PLAN VERTICAL

NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

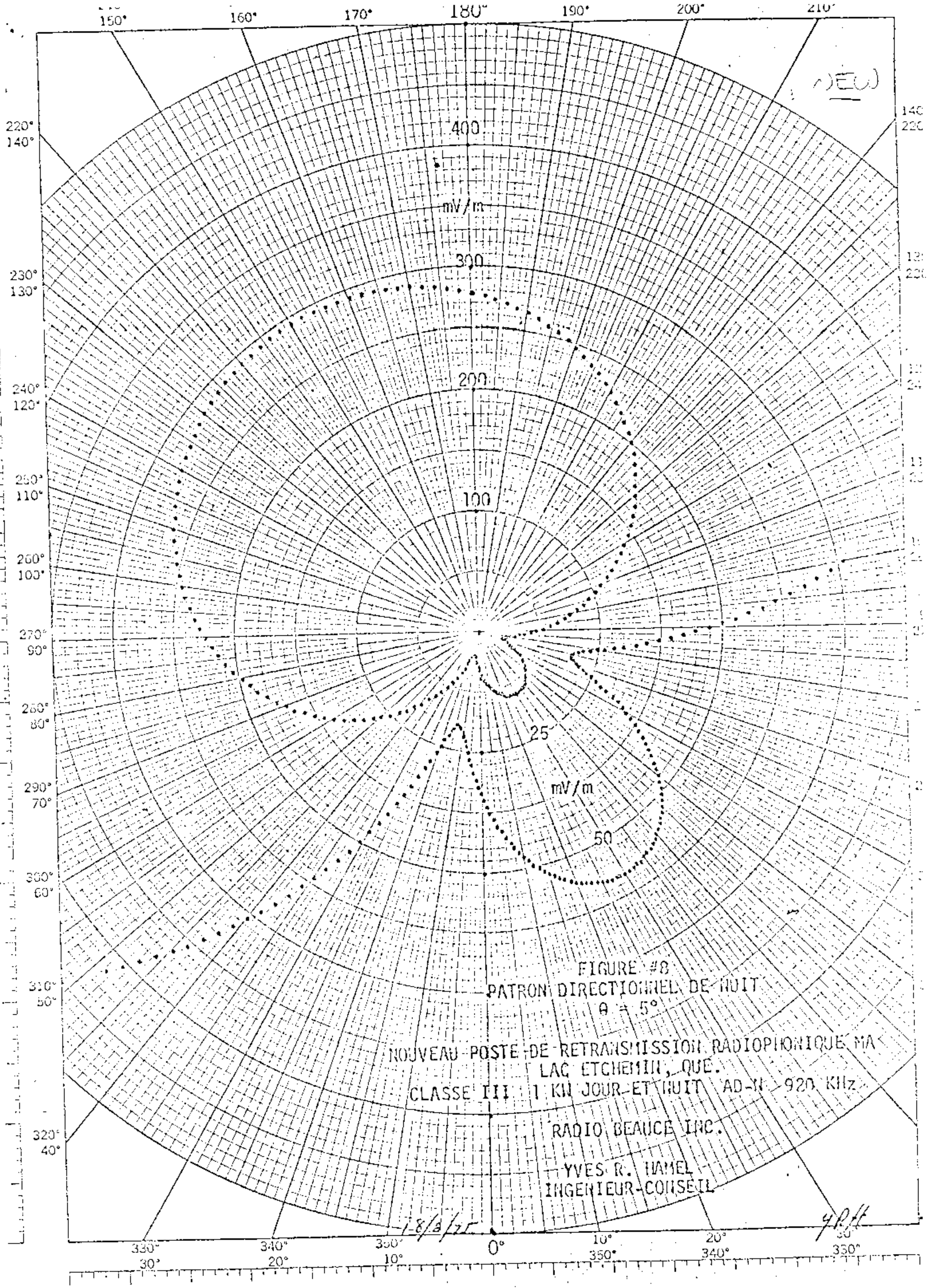
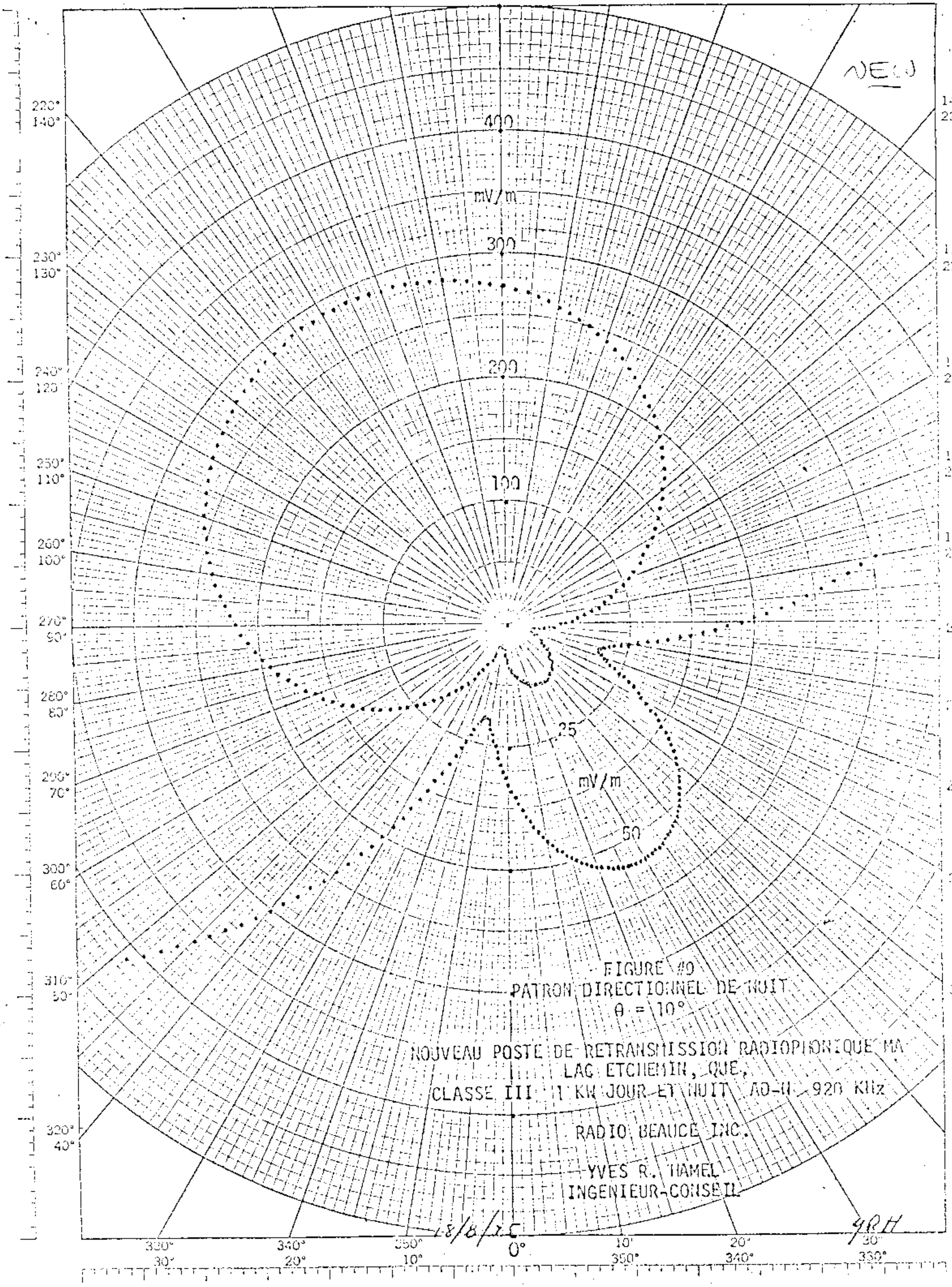


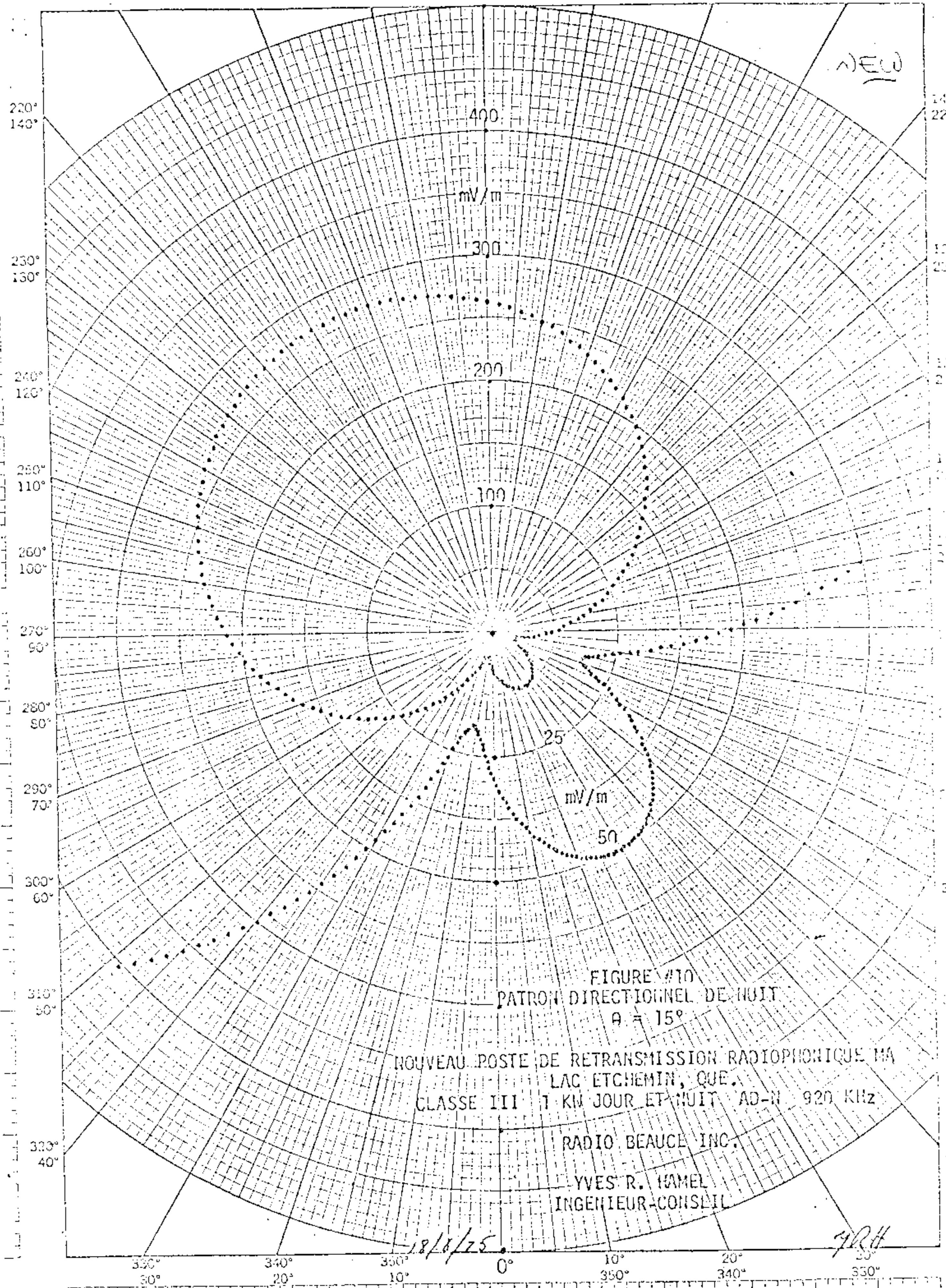
FIGURE #8
PATRON DIRECTIONNEL DE NUIT
θ = 5°

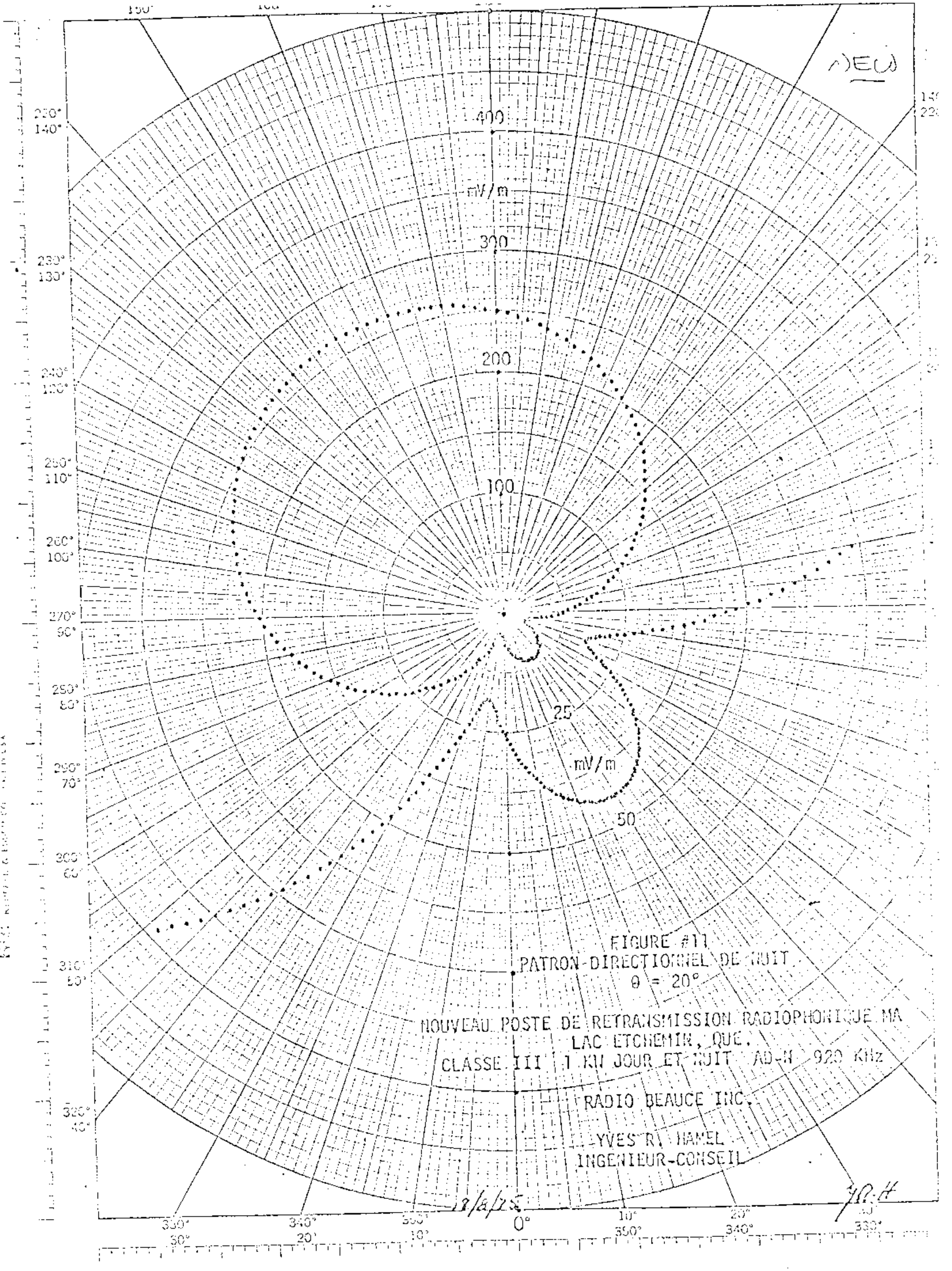
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUÉ.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL


NEW
400
mV/m
300
200
100
25
mV/m
50
0°
FIGURE #9
PATRON DIRECTIONNEL DE NUIT
θ = 10°
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
18/8/75
YRH
46 4412
POLAR CO-ORDINATE
KEUFFEL & ESSER CO.


400
mV/m
300
200
100
25
mV/m
50
FIGURE #10
PATRON DIRECTIONNEL DE NUIT
θ = 15°
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
18/8/75
46 4412



NEW
400
mV/m
300
200
100
25
mV/m
50
FIGURE #11
PATRON-DIRECTIONNEL DE NUIT
θ = 20°
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
9/8/75
Y.R.H.
46 4412

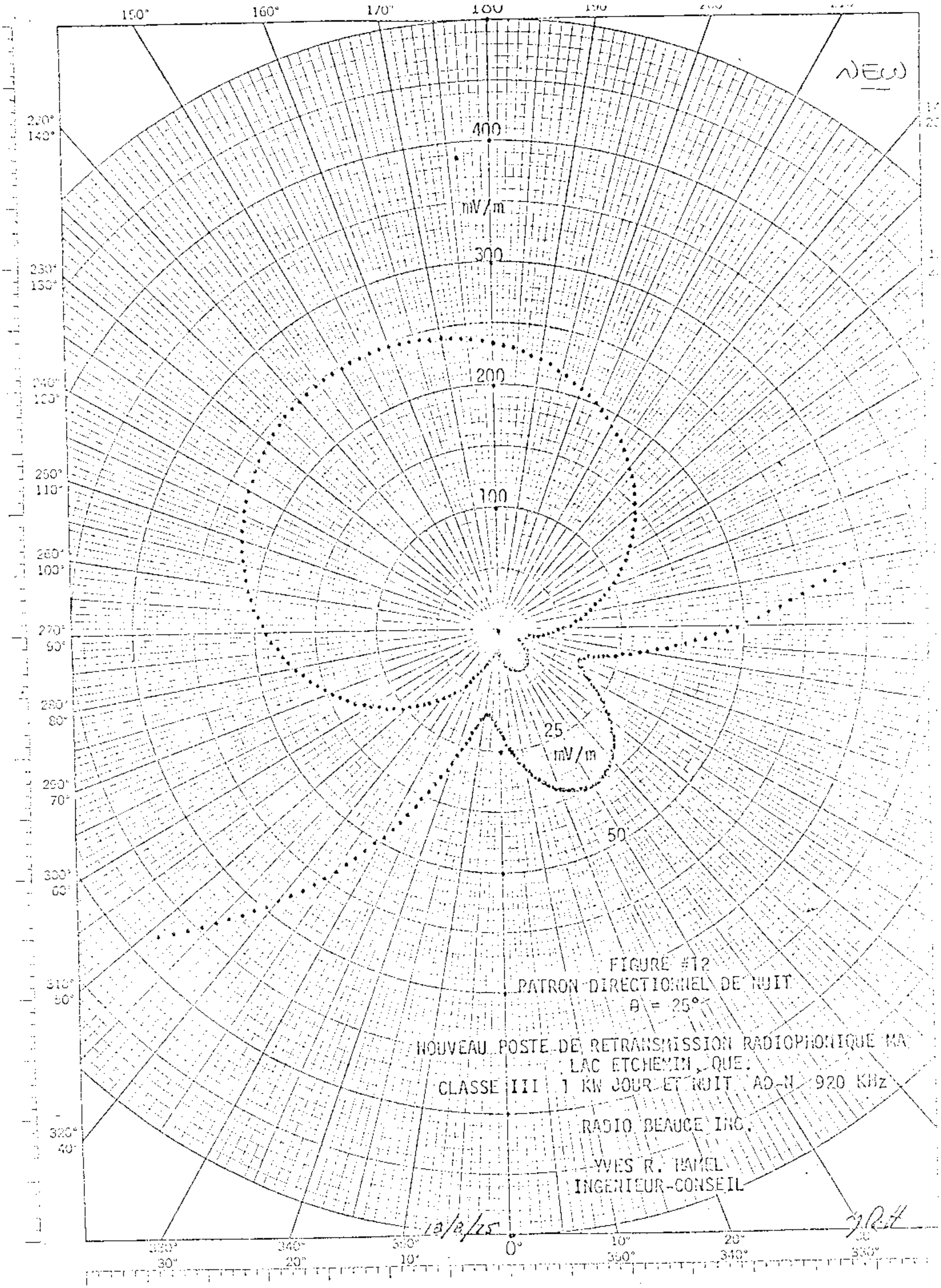


FIGURE #12
PATRON DIRECTIONNEL DE NUIT
θ = 25°

NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL

18/8/75

46 4412

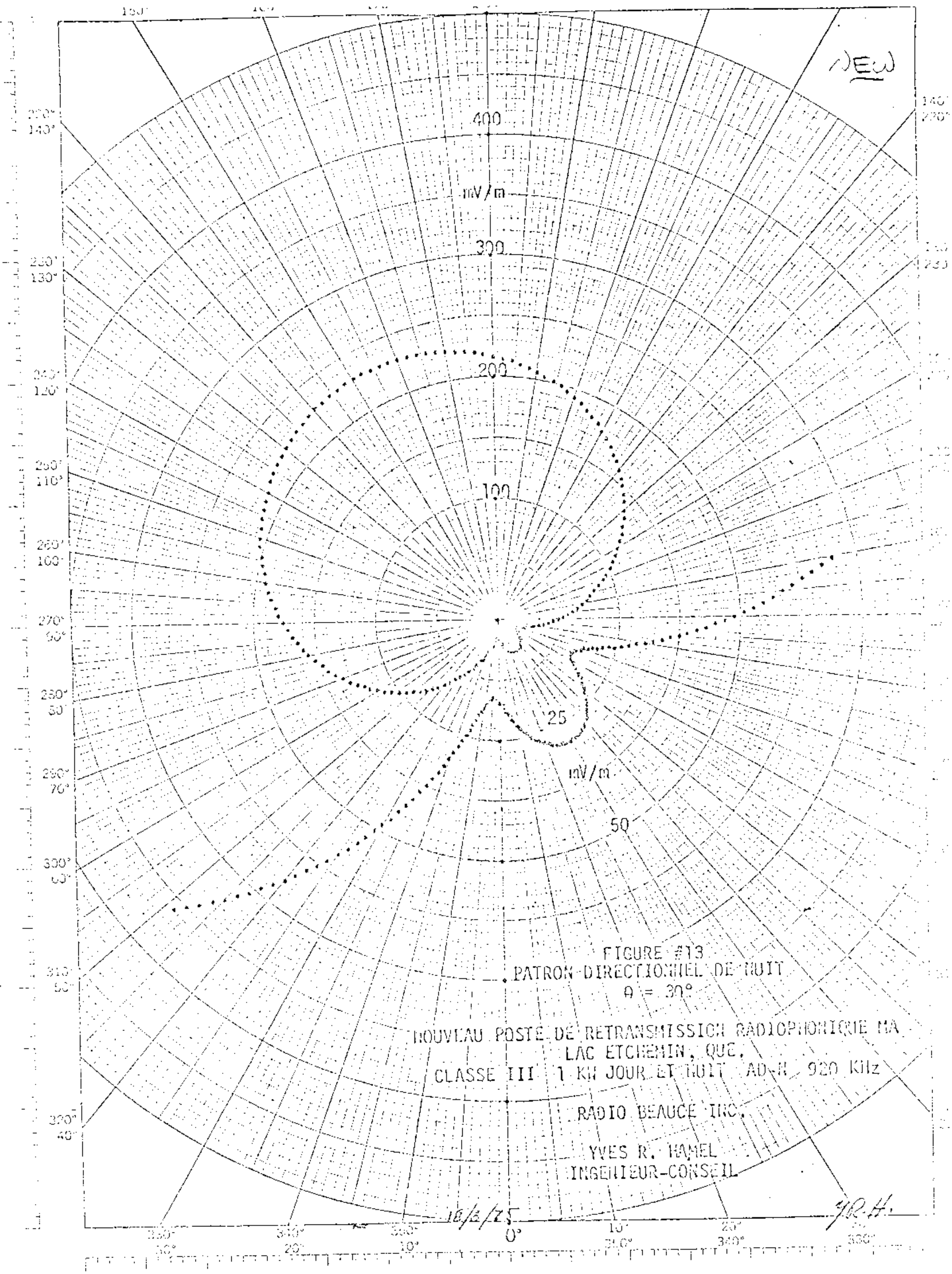
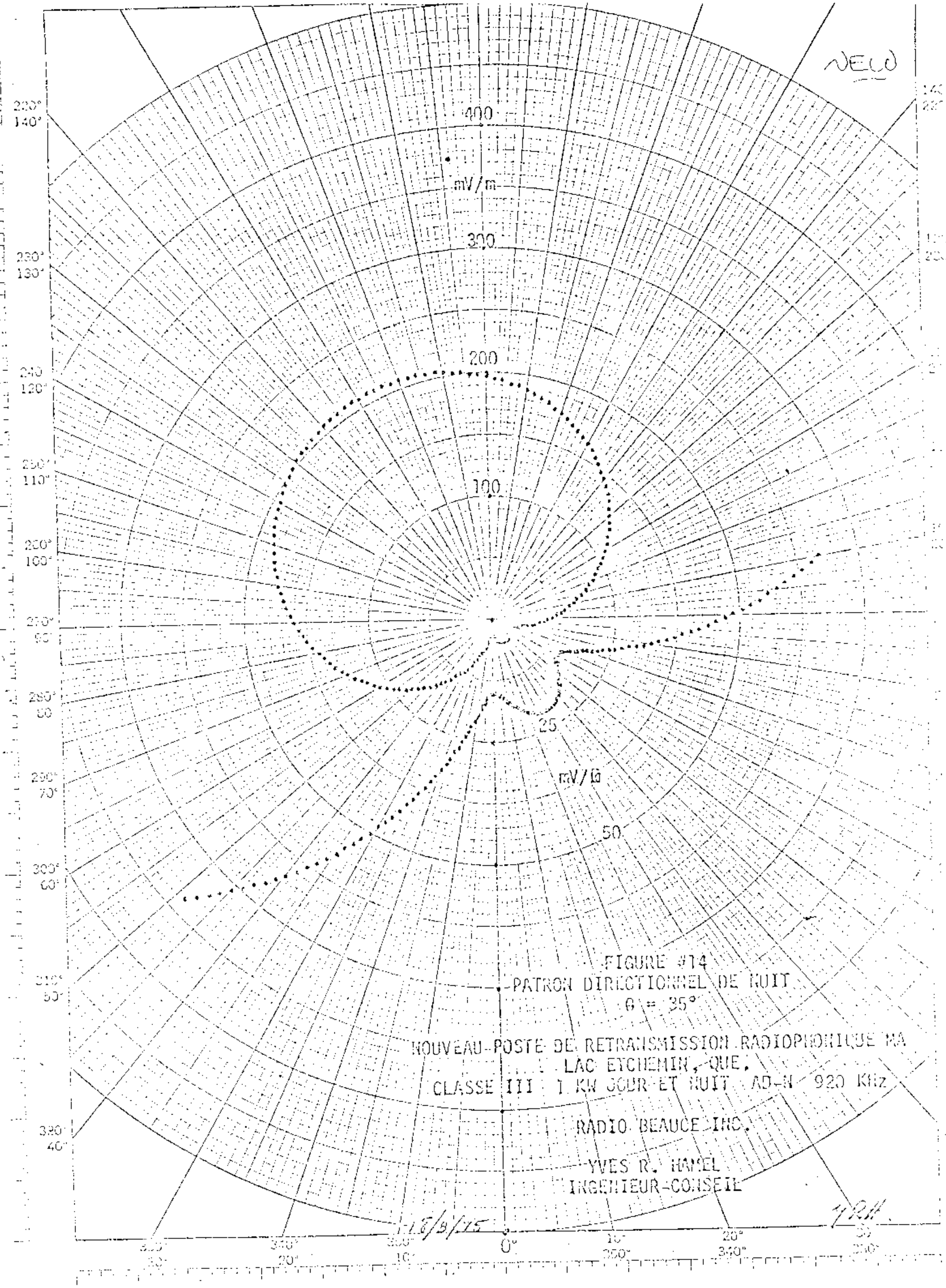


FIGURE #13
PATRON DIRECTIONNEL DE NUIT
θ = 30°

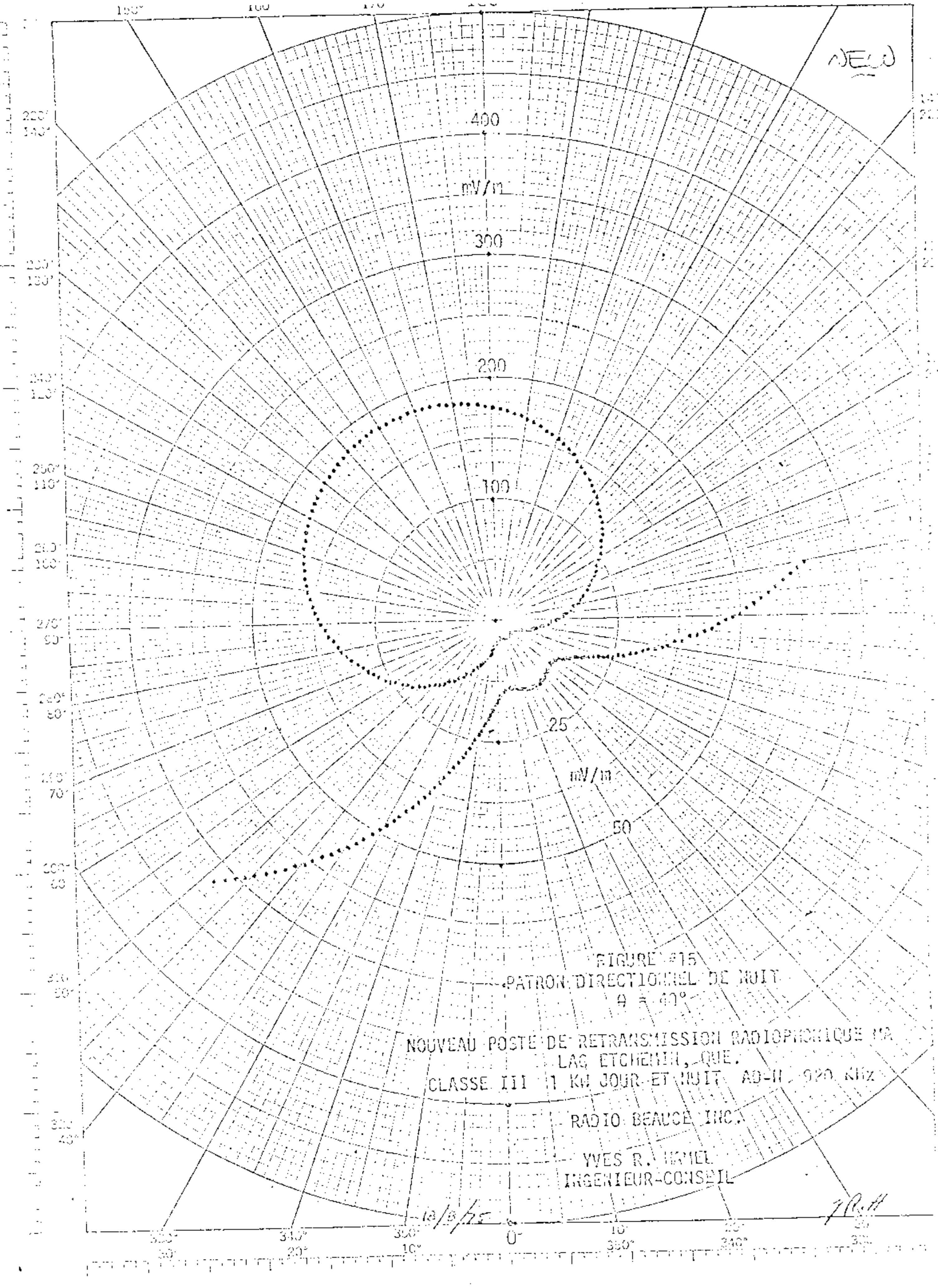
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL


NEW
400
mV/m
300
200
100
25
mV/m
50
FIGURE #14
PATRON DIRECTIONNEL DE NUIT
θ = 35°
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
18/3/75
0°
10°
20°
30°
340°
350°
270°
90°

46 4432



NEW
400
mV/m
300
200
100
25
mV/m
50
FIGURE #15
PATRON DIRECTIONNEL DE NUIT
θ = 40°
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
0°
10°
350°

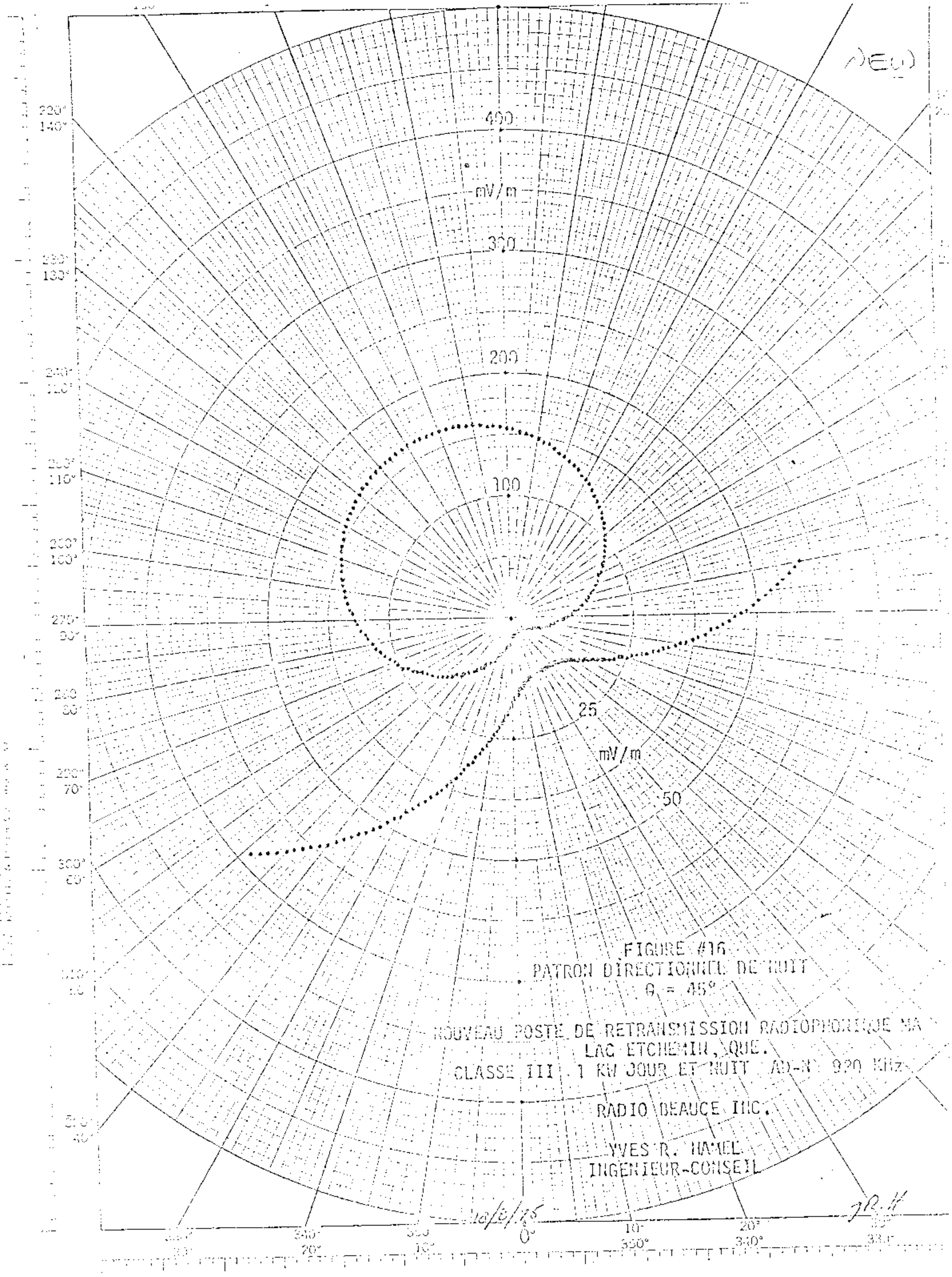
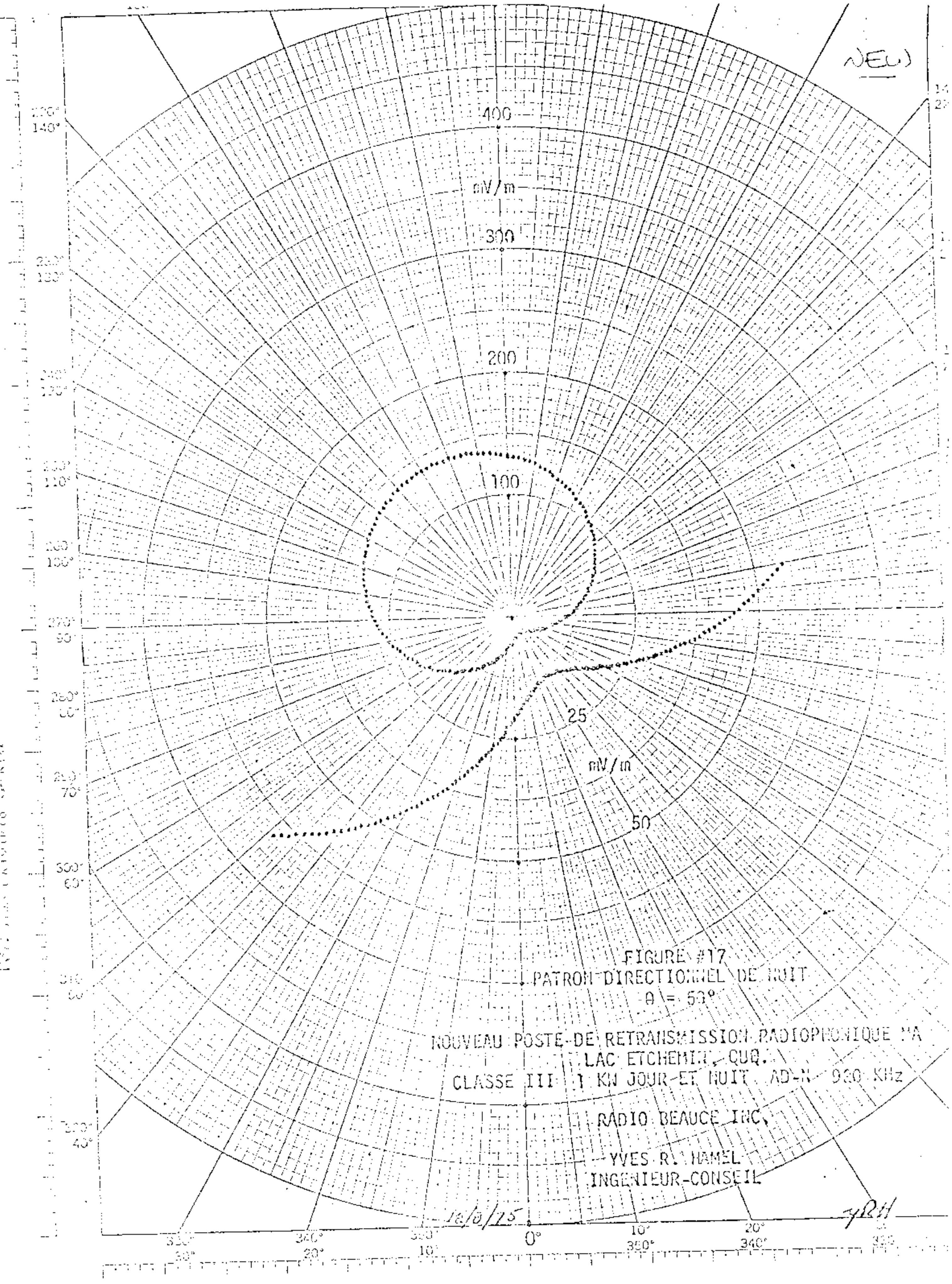


FIGURE #16
PATRON DIRECTIONNEL DE NUIT
θ = 45°

NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL


NEW
400
mV/m
300
200
100
25
mV/m
50
FIGURE #17
PATRON DIRECTIONNEL DE NUIT
θ = 53°
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 930 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
18/8/75
YRH
0°
10°
350°
20°
340°
46 4412

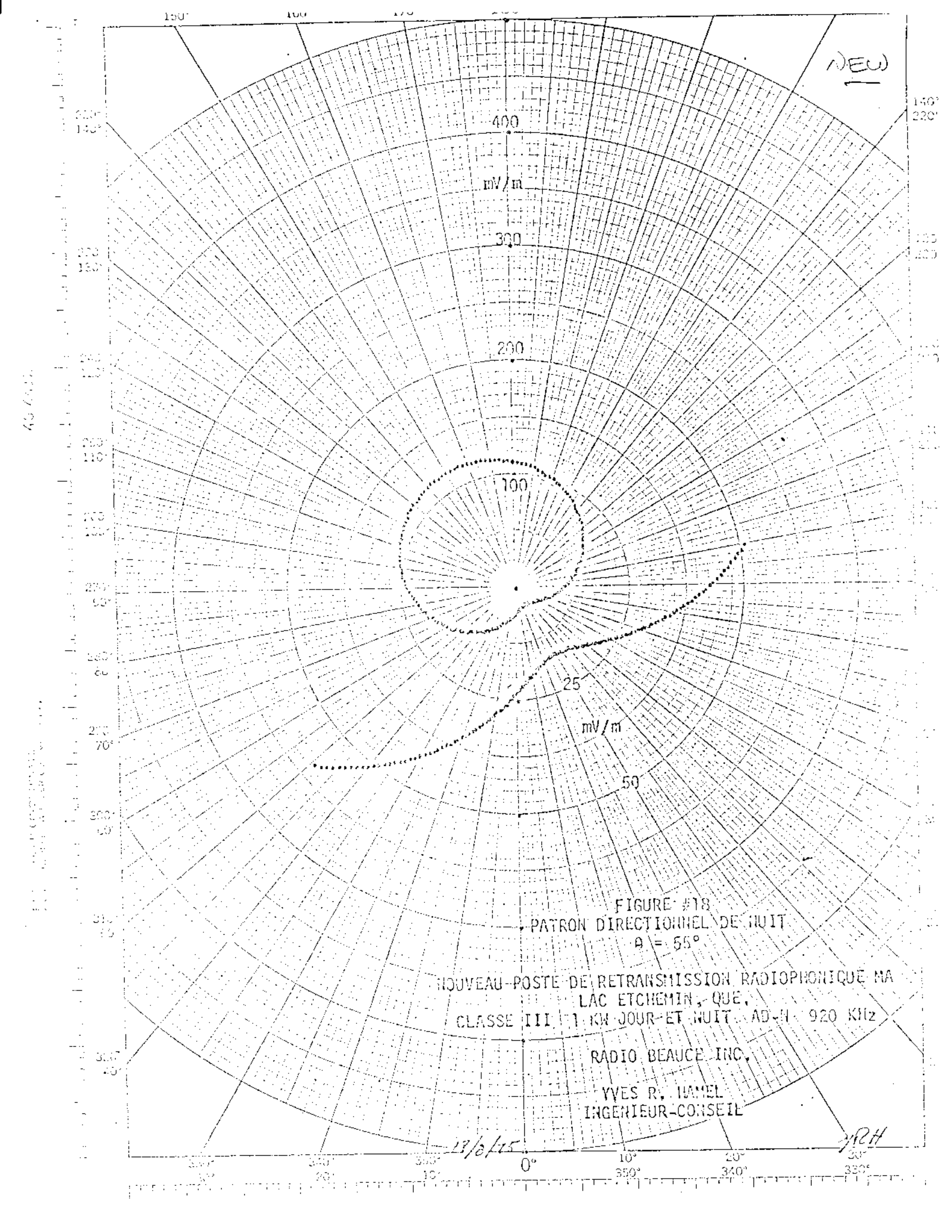
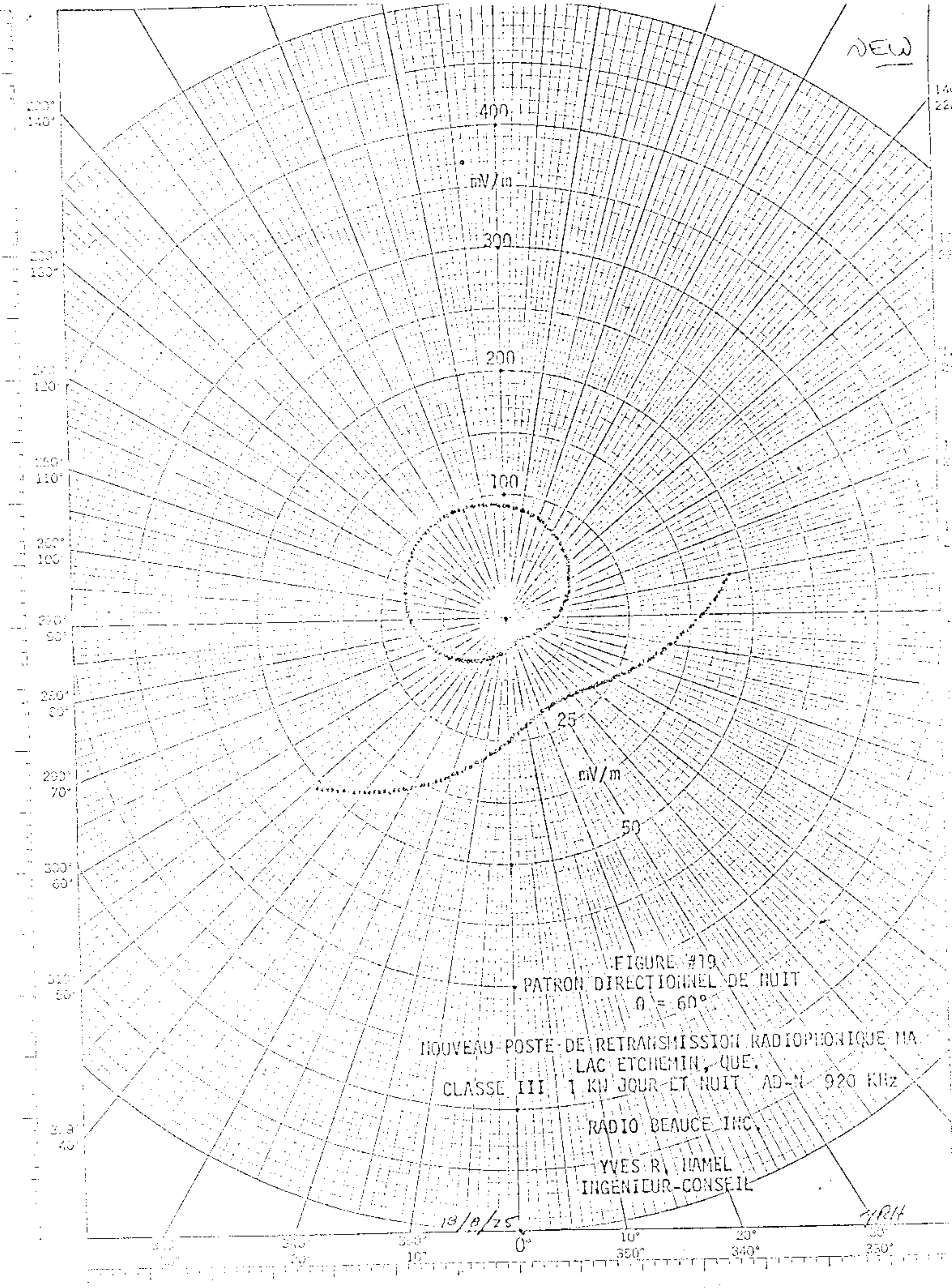


FIGURE #18
PATRON DIRECTIONNEL DE NUIT
θ = 55°

NOUVEAU-POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz

RADIO BEAUCE INC.

YVES R. HAMEL
INGENIEUR-CONSEIL


NEW
400
mV/m
300
200
100
25
mV/m
50
FIGURE #19
PATRON DIRECTIONNEL DE NUIT
θ = 60°
NOUVEAU POSTE DE RETRANSMISSION RADIOPHONIQUE MA
LAC ETCHEMIN, QUE.
CLASSE III 1 KW JOUR ET NUIT AD-N 920 KHz
RADIO BEAUCE INC.
YVES R. HAMEL
INGENIEUR-CONSEIL
18/8/75
YRH
0°
10°
20°
30°
350°
340°
330°

XELT

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XELT

Main Studio: Guadalajara, Jalisco

Frequency: 920 kHz

Power: 0.25kw Night 20 kw Day

Notification List No. 277

Date: November 30, 1976 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 20° 42' 21"
West Longitude: 103° 26' 49"

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(#1)	SE(#2)	
HEIGHT ABOVE INSULATORS:	267.4'	267.4'	(90°)
PHASING:	0°	-178°	
FIELD RATIO:	1	0.9	

SPACING AND ORIENTATION: Towers are spaced 80° on a line bearing 145° true.

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

PREDICTED EFFECTIVE FIELD AT RATED POWER:

	THEORETICAL RMS
Day	773.51 mv/m

DESCRIPCION DEL SISTEMA RADIADOR DIRECCIONAL

GENERALIDADES

BROADCAST BUREAU

1. LISTA DE CAMBIOS 277
2. FECHA
3. FRECUENCIA 920 KHz.
4. DISTINTIVO XELT
5. POBLACION GUADALAJARA, JALISCO.
6. UBICACION PREDIO RUSTICO "EL HUIZACHE" UBICADO EN LAS INMEDIACIONES DE SAN JUAN DE OCOTAN.
7. POTENCIA 20 KW-AD, 250 W-N
8. CLASE III

LATITUD NORTE 20° 42' 21"
LONGITUD OESTE 103° 26' 49"

CARACTERISTICAS TECNICAS DEL RADIADOR

9. TIEMPO DE OPERACION AD-D
10. SISTEMA DEL RADIADOR DIRECCIONAL DIURNO.
11. NUMERO DE ELEMENTOS DOS

TIPO DE ELEMENTOS RADIADORES

12. TIPO DE ALIMENTACION SERIE.
13. SECCION TRANSVERSAL: FORMA TRIANGULAR., DIMENSIONES 60 cm.
14. TIPO DE ELEMENTO RADIADOR VERTICAL
15. TIPO DE SOPORTE RETENIDAS, TIPO DE RETENES CABLE DE ACERO Ø=6.35mm.
16. LONGITUD DE TOPETE CAPACITIVO NO HAY
17. PERDIDAS DE IMPEDANCIA DE LA BASE, EN SERIE $Rb_1 = Rb_2 = 45 + j30$ $Z_{01} = 22.69 + j37.79\ \Omega$ $Z_{02} = 18.2 + j41.55\ \Omega$
18. NUMERO DE ELEMENTOS 1 2
19. ALTURA SOBRE EL AISLADOR 81.5 m. 81.5 m.
20. DEFASAMIENTO 0° -178°
21. RELACION DE CORRIENTE 1 0.9
22. DESCRIPCION DE LA ORIENTACION DEL SISTEMA RADIADOR EL EJE DE LAS TORRES ESTA A 145° DEL NORTE GEOGRAFICO, LA SEPARACION DE LAS TORRES ES DE 80°

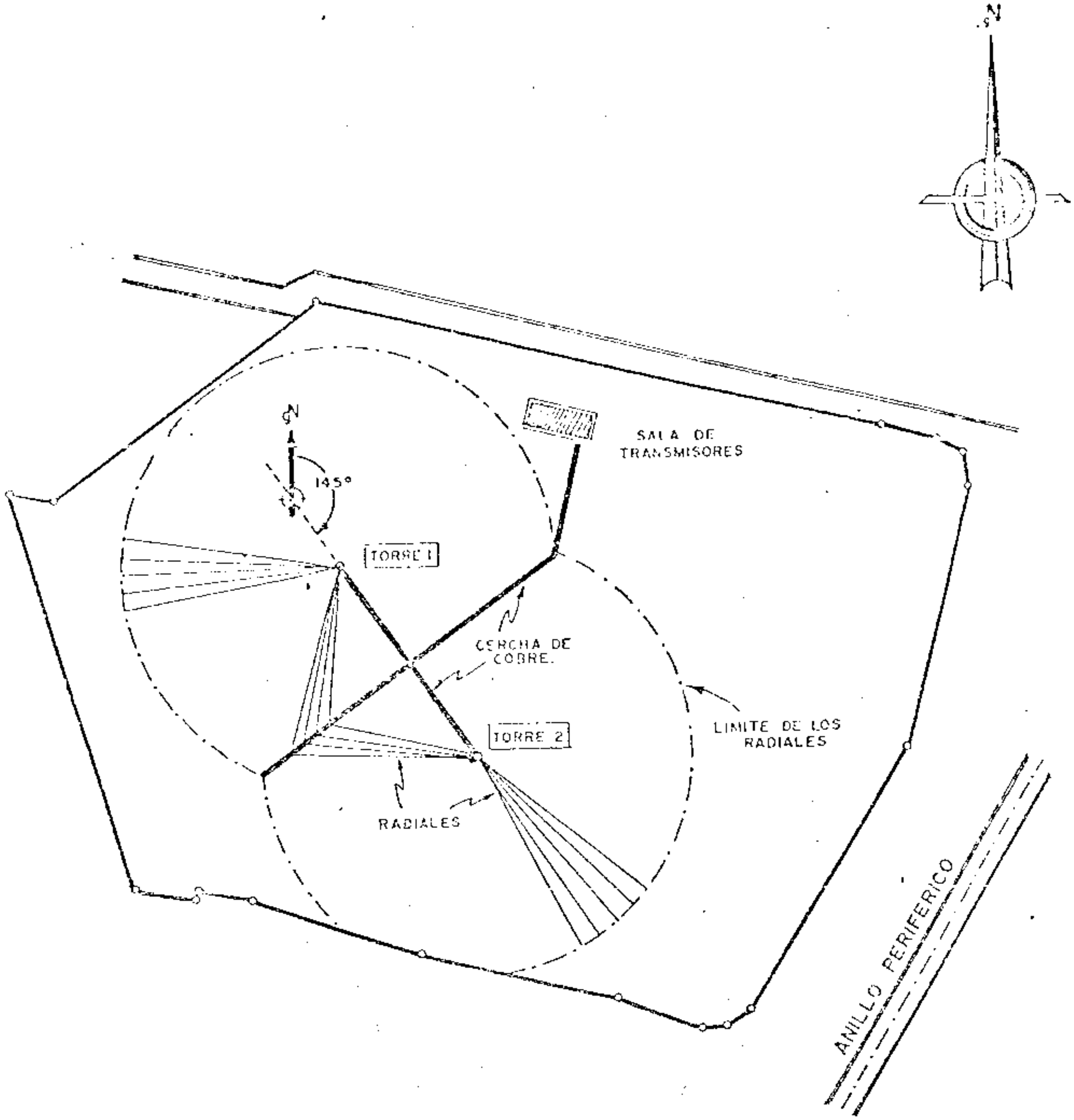
SISTEMA DE TIERRA

23. NUMERO DE RADIALES POR ELEMENTO 120
24. LONGITUD DE LOS RADIALES 75 m.
25. TIPO DEL RADIAL ALAMBRE DE COBRE No. 10 AWG

RADIACION DEL SISTEMA

26. INTENSIDAD DE CAMPO EFECTIVO TEORICO (OMNIDIRECCIONAL) DE LA POTENCIA RADIADA (RCM) 773.51 mV./mt.
27. INTENSIDAD DE CAMPO EFECTIVO TEORICO A 1609 m POR KW. DE POTENCIA RADIADA 184.8 mV/mt.
28. NOTA PATRON NUEVO

ING. ANTONIO DE AVILA SERAFIN
Perito en Telecomunicaciones No. 7



ESCALA 1:2000

SISTEMA DE TIERRA

Descripción del material

120 RADIALES POR TORRE, EQUIDISTANTES, DE 75 m COMO MAXIMA LONGITUD, DE ALAMBRE DE COBRE No. 10 AWG, UNIDOS CON SOLDADURA DE PLATA A UNA CERCHA DE COBRE (4 DE 6mm X ENTERRADOS A 10 cm DEL NIVEL DEL TERRENO

Distintivo de llamada

XELT

Coordenadas Geográficas

LN. 20° 42' 21", LW: 103° 26' 49"

Frecuencia

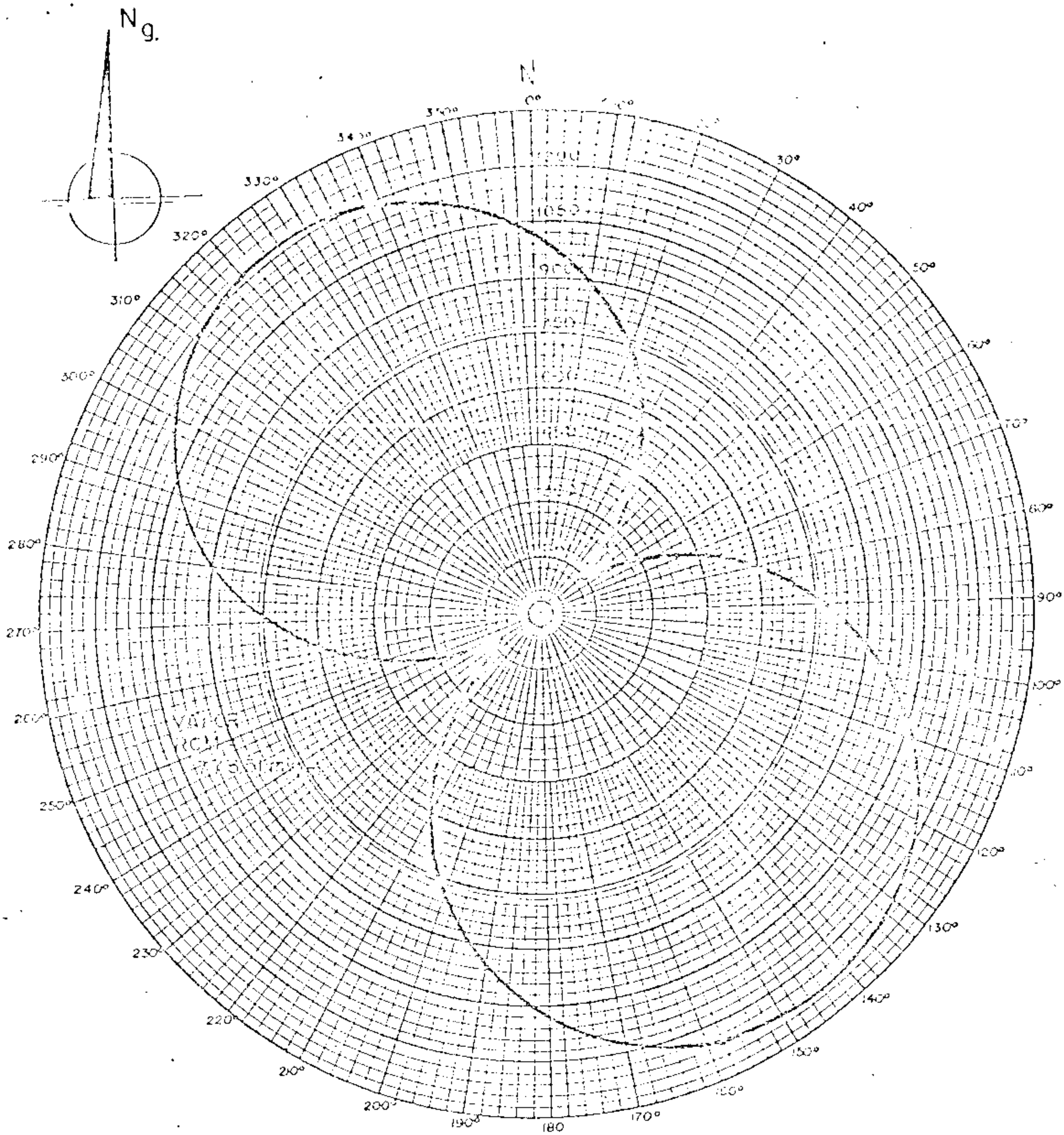
920 KHz

Perito en telecomunicaciones

ING. ANTONIO [illegible] AVILA [illegible] REG. No. 7

Fecha

MARZO de 19[illegible]



PATRON DE RADIACION HORIZONTAL CALCULADO EN mv/mts A 1609 mts

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

N

115°

S 80°

ψ_2 = 0.9 | 178

XELT

920 KHZ.

COORDENADAS GEOGRAFICAS:

LN 20° 42' 21"

LW 103° 20' 49"

DISEÑO:

Ing Antonio de Avila S.

N° 7

PATRON DE RADIACION HORIZONTAL TABULADO

XELT

GUADALAJARA, JAL.

920 KHz.
20 KW-AD, 250 W-N.

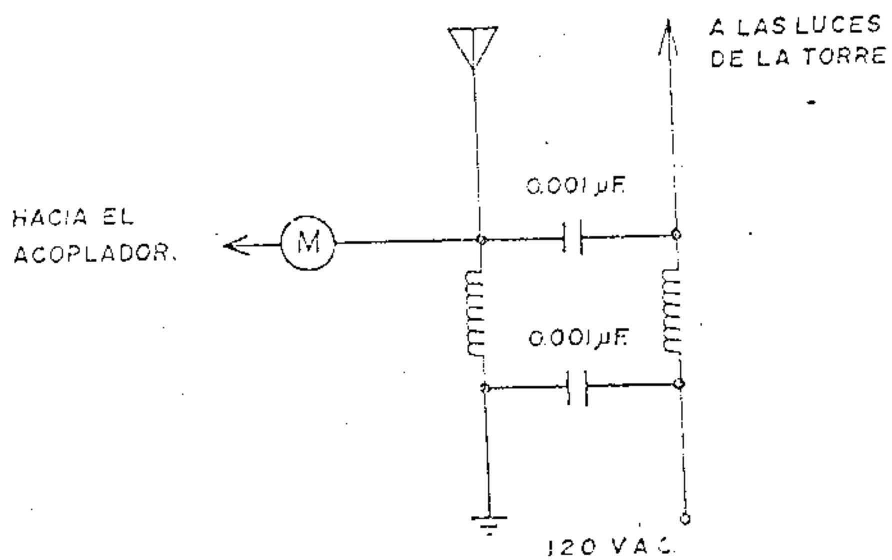
$x = 145°$ $\quad S = 80°$
$\psi = 178°$ $\quad E_i = 1021.3$ mV/mt.
$F = 0.9$

$$E_\theta = E_i\sqrt{2F}\ \sqrt{\frac{1+F^2}{2F} + \cos\left[S\cos(x-\theta)+\psi\right]}$$

AZIMUT	A	B	C	D	H	F	E (mV/mt)
θ°	x − θ	cos A	S·B	C + ψ	cos D	$\sqrt{H+1.00556}$	1370.22·F
0	145	-0.8191	-65.5321	-243.5322	-0.4457	0.7482	1025.1970
10	135	-0.7071	-56.5685	-234.5685	-0.5797	0.6525	894.0671
20	125	-0.5735	-45.8861	-223.8861	-0.7207	0.5337	731.2652
30	115	-0.4226	-33.8094	-211.8095	-0.8498	0.3946	540.6879
40	105	-0.2588	-20.7055	-198.7055	-0.9472	0.2415	330.9076
50	95	-0.0871	- 6.9724	-184.9725	-0.9962	0.0967	132.5001
60	85	0.0871	6.9724	-171.0275	-0.9877	0.1336	183.0611
70	75	0.2588	20.7055	-157.2945	-0.9225	0.2882	394.8968
80	65	0.4226	33.8094	-144.1905	-0.8109	0.4412	604.5401
90	55	0.5735	45.8861	-132.1139	-0.6706	0.5787	792.9450
100	45	0.7071	56.5685	-121.4315	-0.5214	0.6958	953.3975
110	35	0.8191	65.5321	-112.4678	-0.3821	0.7895	1081.7869
120	25	0.9063	72.5046	-105.4954	-0.2671	0.8593	1177.4281
130	15	0.9659	77.2740	-100.7259	-0.1861	0.9052	1240.3211
140	5	0.9961	79.6955	- 98.3044	-0.1444	0.9279	1271.4250
150	- 5	0.9961	79.6955	- 98.3044	-0.1444	0.9279	1271.4250
160	- 15	0.9659	77.2740	-100.7259	-0.1861	0.9052	1240.3211
170	- 25	0.9063	72.5046	-105.4954	-0.2671	0.8593	1177.4281
180	- 35	0.8191	65.5321	-112.4678	-0.3821	0.7895	1081.7869
190	- 45	-0.7071	56.5685	-121.4315	-0.5214	0.6958	953.3975
200	- 55	0.5735	45.8861	132.1139	-0.6706	0.5787	792.9450
210	- 65	0.4226	33.8094	-144.1905	-0.8109	0.4412	604.5401
220	- 75	0.2588	20.7055	-157.2945	-0.9225	0.2882	394.8968
230	- 85	0.0871	6.9724	-171.0275	-0.9877	0.1336	183.0611
240	- 95	0.0871	- 6.9724	-184.9725	-0.9962	0.0967	132.5001
250	-105	-0.2588	-20.7055	198.7055	-0.9472	0.2415	330.9076
260	-115	-0.4226	-33.8094	-211.8094	-0.8498	0.3946	540.6879
270	-125	-0.5735	-45.8861	-223.8861	-0.7207	0.5337	731.2652
280	-135	-0.7071	-56.5685	-234.5685	-0.5797	0.6525	894.0671
290	-145	-0.8191	-65.5321	-243.5322	-0.4457	0.7482	1025.1970
300	-155	-0.9063	-72.5046	-250.5046	-0.3337	0.8196	1123.0305
310	-165	-0.9659	-77.2740	-255.2740	-0.2541	0.8668	1187.7047
320	-175	-0.9961	-79.6955	-257.6955	-0.2131	0.8901	1219.6308
330	-185	-0.9961	-79.6955	-257.6955	-0.2131	0.8901	1219.6308
340	-195	-0.9659	-77.2740	-255.2740	-0.2541	0.8668	1187.7047
350	-205	-0.9063	-72.5046	-250.5046	-0.3337	0.8196	1123.0305

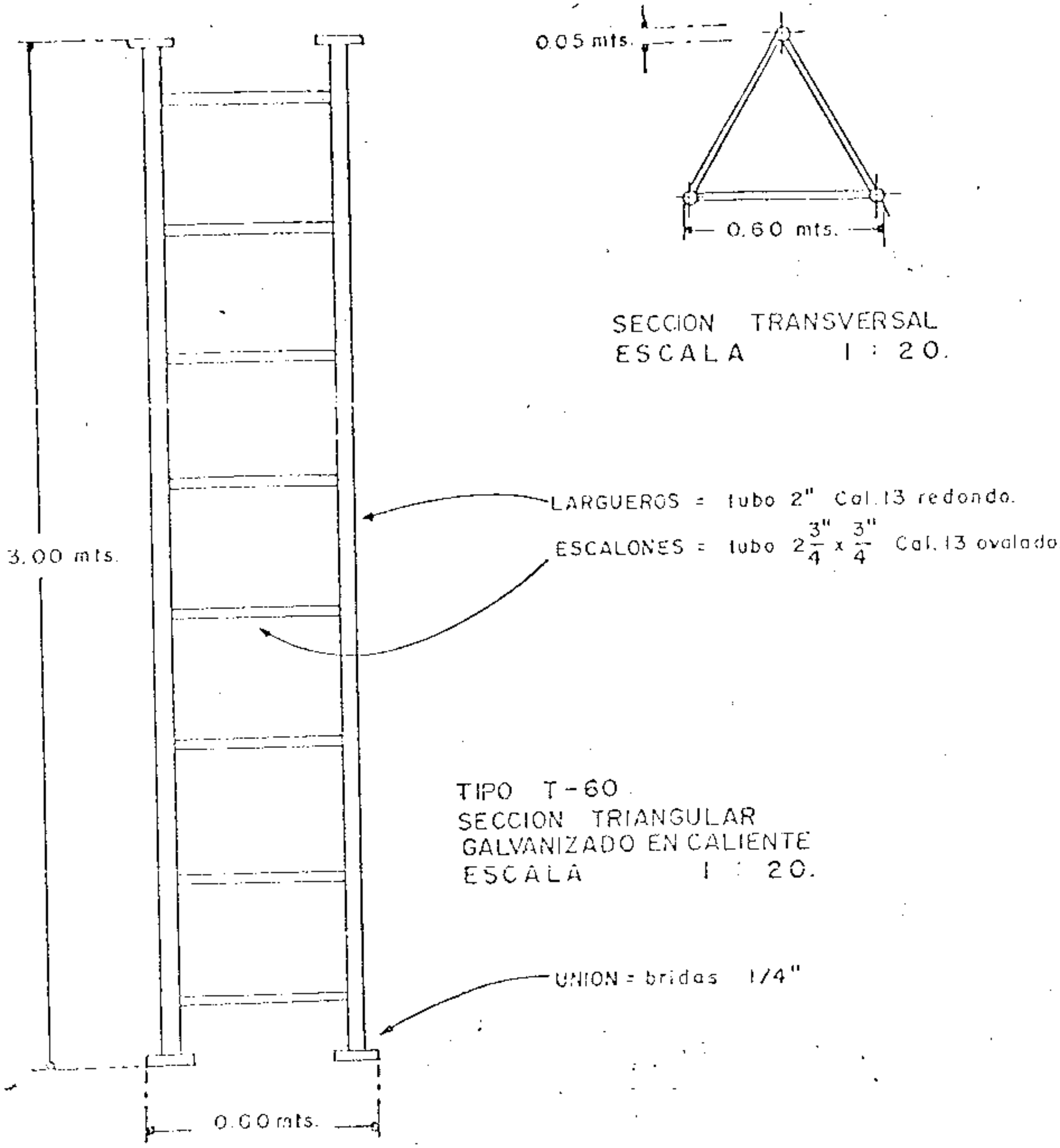
MARZO/78

ING. ANTONIO DE AVILA SERRANO
Perito en Telecomunicaciones No. 7



SISTEMA DE ALIMENTACION DE 120 V.A.C.
PARA EL ALUMBRADO DE LA TORRE.

XELT 920 KHz. 20 KW - AD, 250 W-N GUADALAJARA, JAL.



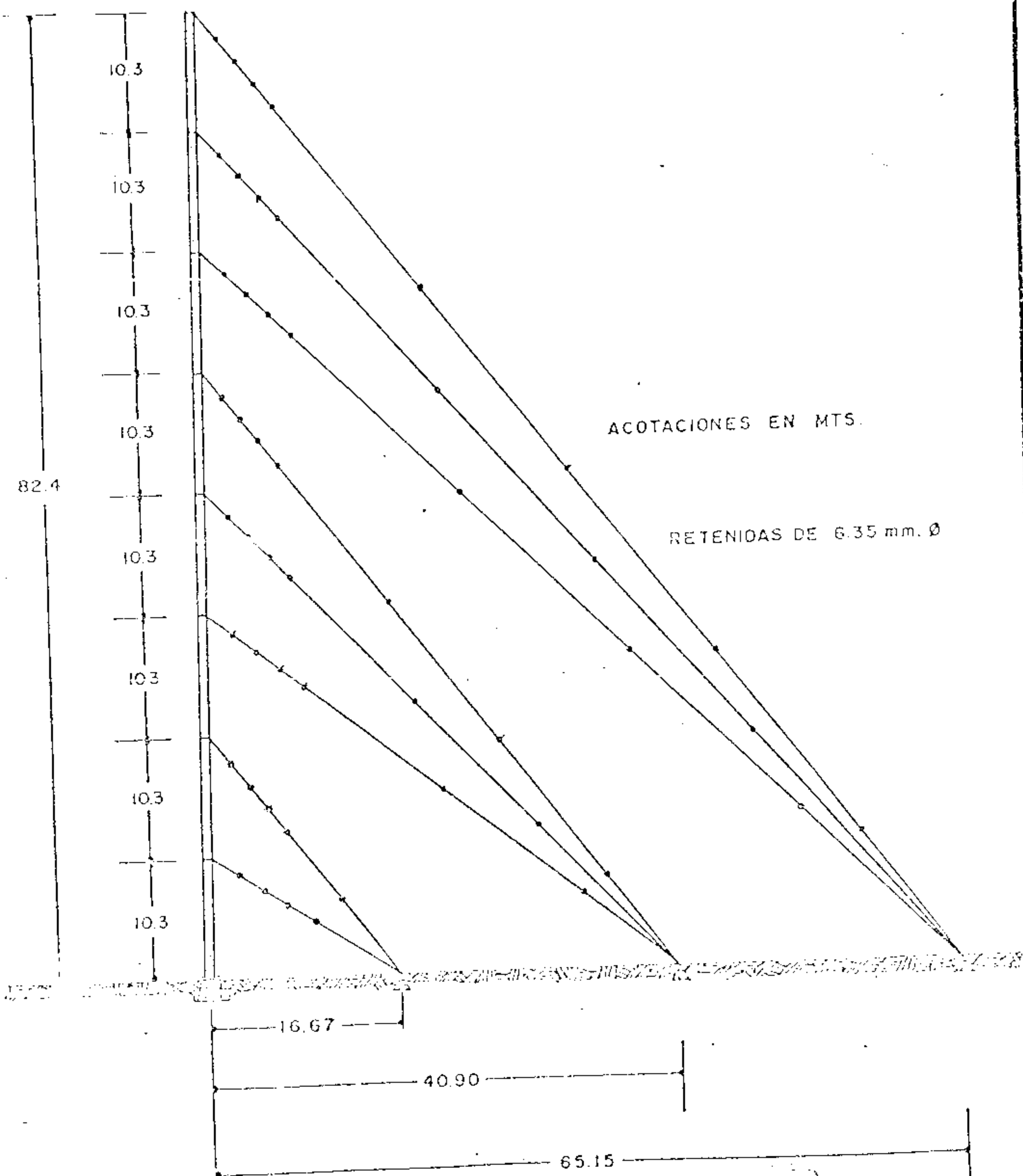
DETALLE SECCION DE TORRE — ANTENA

XELT

920 KHZ. GUADALAJARA, JAL.

marzo/1978.

DETALLE DE LA TORRE Y RETENIDAS.



XELT 920 KHZ.

marzo / 1978.