810-850

Station	Main Studio	Freq	Power	Date
CHQR	Calgary, AB	810	50 kW/DA-2	5/6/75
CHQR	Calgary, AB	810	10 kW/DA-2	9/29/64
KCMO	Kansas City, MO	810	5/50 kW/DA-N	11/9/79
KCMO	Kansas City, MO	810	10/50 kW/DA-N	7/47
KGO	San Francisco, CA	810	50 kW	7/18/46
WJJQ	Tomahawk, WI	810	10 kW/DA-D	9/28/79
WJXL	Jacksonville, AL	810	0.5/50 kW/DA-2	11/10/77
WKVM	San Juan, PR	810	50 kW/DA-1	4/28/67
WKVM	San Juan, PR	810	25 kW/DA-1	10/20/52
WSJC	Magee, MS	810	5/50 kW/DA-N	9/25/70
WSJC	Magee, MS	810	0.5/50 kW/DA-N	10/28/68
XEFW	Tampico, MX	810	50 kW/DA-N	5/12/50
NEW	Winnipeg, MB	810	10 kW/DA-1	8/28/67
NEW	Caraquet, NB	810	5/10 kW/DA-N	11/29/69
XEBA	Guadalajara, Jal.	820	10 kW/DA-D	4/1/76
CMBZ	Havana, CU	830	5 kW/DA-1	4/28/53
WNYC	New York, NY	830	50 kW/DA-2	2/64
WNYC	New York, NY	830	1 kW/DA-2	6/25/57
XELA	Mexico, DF	830	5/10 kW/DA-N	3/19/52
WXEW	Yabucca, PR	840	1/5 kW/DA-N	9/12/80
NEW	Spaniards' Bay/ Harbour Grace, NF	850	10 kW/DA-N	4/21/78
NEW	St. John's, NF	850	25 kW/DA-2	3/15/77
NEW	Spaniard's Bay/ Harbour Grace, NF	850	5 kW/DA-1	3/8/79
CFCL	Timmins, ON	850	10 kW/DA-1	9/23/77
CFVR	Abbotsford, BC	850	10 kW/DA-2	11/26/75

810-850

Station	Main Studio	Freq	Power	Date
CHCM	Marystown, NF	850	10 kW	11/30/82
CHVO	Spaniard’s Bay/ Harbour Grace, NF	850	5 kW/DA-1	4/11/80
CJJC	Langley Prairie, BC	850	1 kW/DA-2	12/4/59
CKRD	Red Deer, AB	850	10/5 kW/DA-N	6/6/83
CKRD	Red Deer, AB	850	10/1 kW/DA-N	9/30/71
CKVL	Verdun, QU	850	10/50 kW/DA-2	12/29/66
KEYH	Houston, TX	850	10 kW/DA-D	11/5/74
KGOE	Thousand Oaks, CA	850	0.5 kW/DA-2	9/28/79
KLEU	Waterloo, IA	850	0.5 kW/DA-D	10/73
KRPT	Anadarko, OK	850	0.5 kW/DA-D	1/22/71
KTAC	Tacoma, WA	850	1/10 kW/DA-2	12/29/66
WABA	Aguadilla, PR	850	5 kW/DA-1	11/9/79
WEAT	W. Palm Beach, FL	850	1 kW/DA-1	8/14/53
WEEU	Reading, PA	850	1 kW/DA-N	9/27/78
WHDH	Boston, MA	850	50 kW/DA-2	10/73
WIVK	Knoxville, TN	850	50 kW/DA-D	2/28/67
WIVS	Crystal Lake, IL	850	0.5 kW/DA-D	12/30/63
WJAC	Johnstown, PA	850	10 kW/DA-1	5/27/60
WJW	Cleveland, OH	850	5/10 kW/DA-2	3/27/70
WKBZ	Muskegon, MI	850	1 kW/DA-1	4/48
WKIX	Raleigh, NC	850	5/10 kW/DA-N	8/28/67
WMAG	Forest, MS	850	10 kW/DA-D	4/29/69
WPTB	Statesboro, GA	850	1 kW/DA-N	6/3/75
WRAP	Norfolk, VA	850	1/5 kW/DA-2	1/4/57
WRUF	Gainesville, FL	850	5 kW/DA-N	6/49
WYDE	Birmingham, L	850	1/50 kW/DA-2	11/70

810-850

Station	Main Studio	Freq	Power	Date
NEW	Conejo Valley, CA	850	0.5 kW/DA-1	6/14/61
NEW	Honesdale, PA	850	0.25 kW/DA-D	4/29/69
NEW	Houston, TX	850	10 kW/DA-D	8/22/69
NEW	Houston, TX	850	5 kW/DA-D	11/28/67
NEW	Humble, TX	850	0.5 kW/DA-D	3/29/67
NEW	Nassau Bay, TX	850	1 kW/DA-D	3/29/67
XETQ	Orizaba, Veracruz	850	10 kW/DA-2	5/8/55
XEZR	Zaragoza, Coahuila	850	1 kW/DA-N	8/27/65
NEW	Corner Brook, NF	850	10 kW/DA-1	2/11/76

STATION: CHQR

MAIN STUDIO: Calgary, Alberta

FREQUENCY: 810 Khz

POWER: 50 Kw

NOTIFICATION LIST: 340

DATE: May 6, 1975

CLASS: 11 Unlimited

GEOGRAPHICAL LOCATION: 50 - 53 - 50 North
114 - 05 - 38 West

ANTENNA CHARACTERISTICS

Mode of Operation - DA/2

Number of Elements - 5

Type of Elements - Guyed, uniform cross section, base insulated, no top loading

TOWER	#1 (S)	#2 (SC)	#3 (C)	#4 (NC)	#5 (N)
HEIGHT OVER INSULATORS	300'(90°)	300'(90°)	300'(90°)	300'(90°)	300'(90°)
OVERALL HEIGHT	305'	305'	305'	305'	305'
SPACING	0	303.5'	607.0'	910.5'	1214.0'
	0	(90°)	(180°)	(270°)	(360°)
ORIENTATION	Ref.	004°	004°	004°	004°
DAY PHASING	-	+166.844	0	-166.844	-
DAY RATIO	-	1.00000	1.01270	0.27040	-
NIGHT PHASING	-107.072	+126.758	0	-126.758	+107.072
NIGHT RATIO	1.00000	3.59887	5.21152	3.59887	1.00000

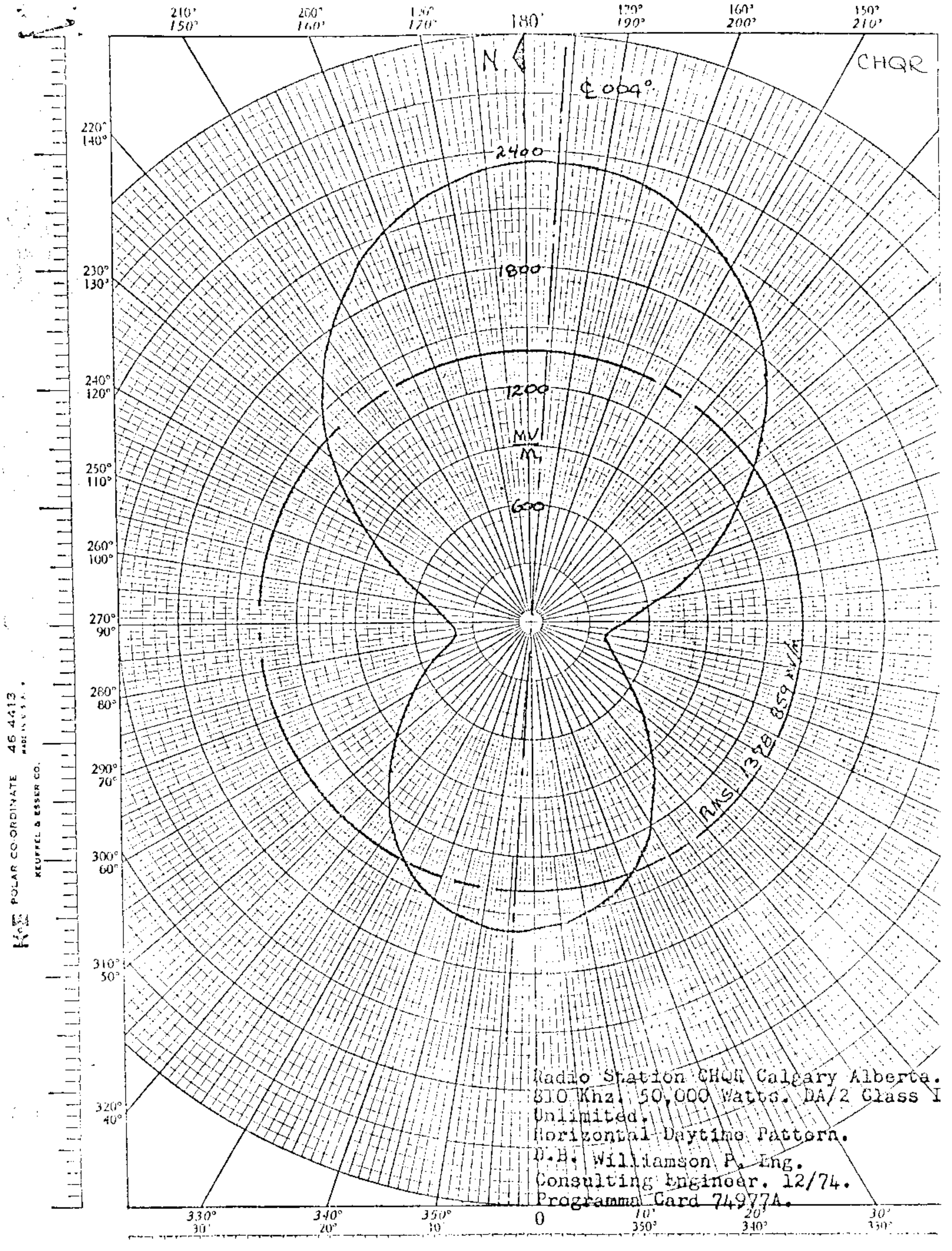
GROUND SYSTEM: 120 Radials per tower 0.4 wavelength or to common chords, bonded buried 8" #10AWG. 50 sq. ft. expanded copper mesh at base of each tower.

PREDICTED EFFECTIVE FIELD: 1341.640 mv/m @ 1 mile for 50 Kw night
189.783 mv/m @ 1 mile for 1 Kw night
1378.859 mv/m @ 1 mile for 50 Kw day
195.001 mv/m @ 1 mile for 1 Kw day

CONSULTANT: D. B. Williamson P. Eng.
Radio CHUC Bldg.
Cobourg, Ontario

NOTE: Patterns calculated from multiplication form. Decimal Readout from conversion to addition form.

Programma Card 74977A



Radio Station CHQR Calgary Alberta.
810 Khz. 50,000 Watts. DA/2 Class I
Unlimited.
Horizontal Daytime Pattern.
D.H. Williamson P. Eng.
Consulting Engineer. 12/74.
Programma Card 74977A.

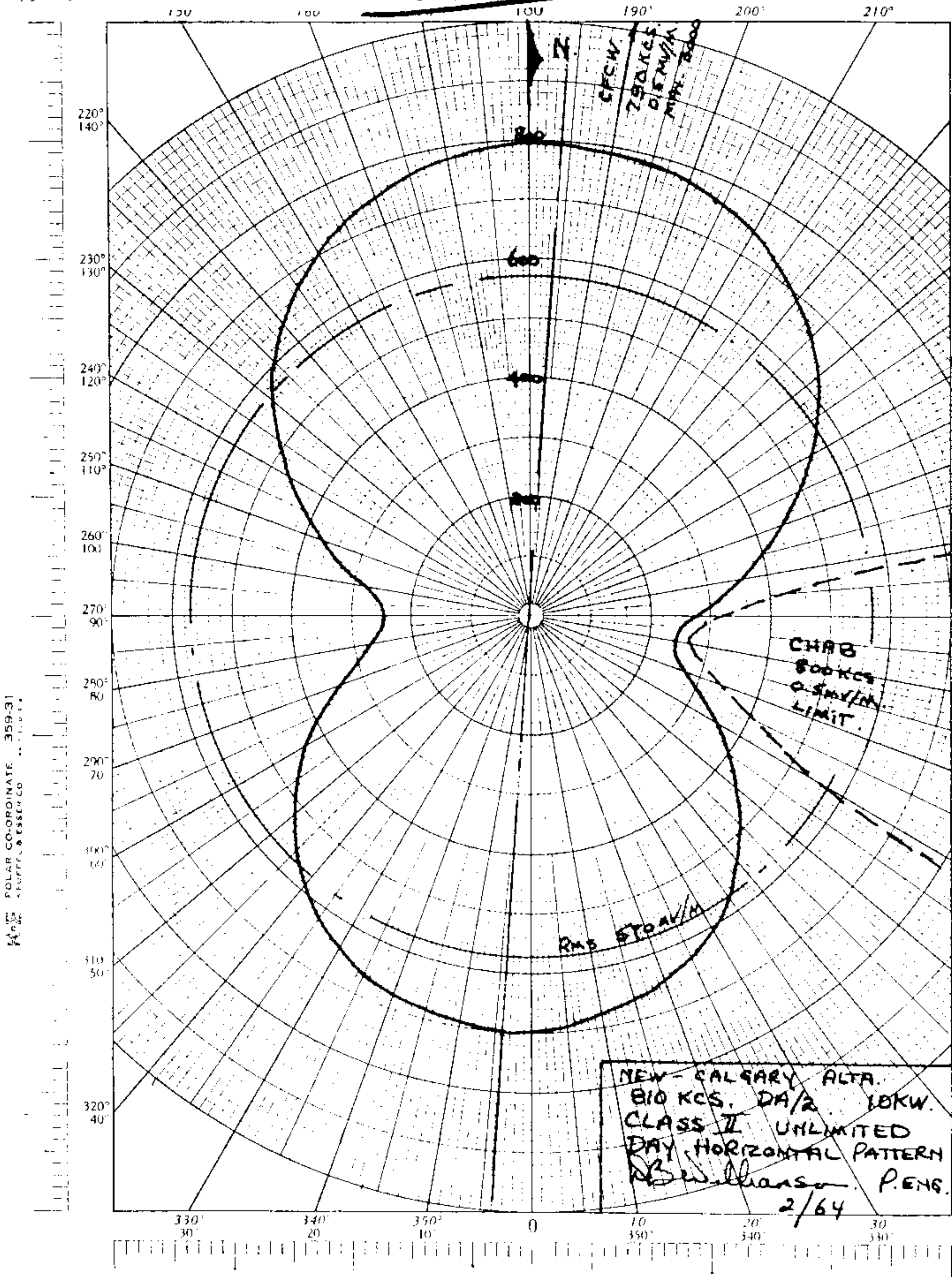
#185

CH[illegible]

Proposed Day
(9-29-64ct)

New Station
Calgary, Alberta

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



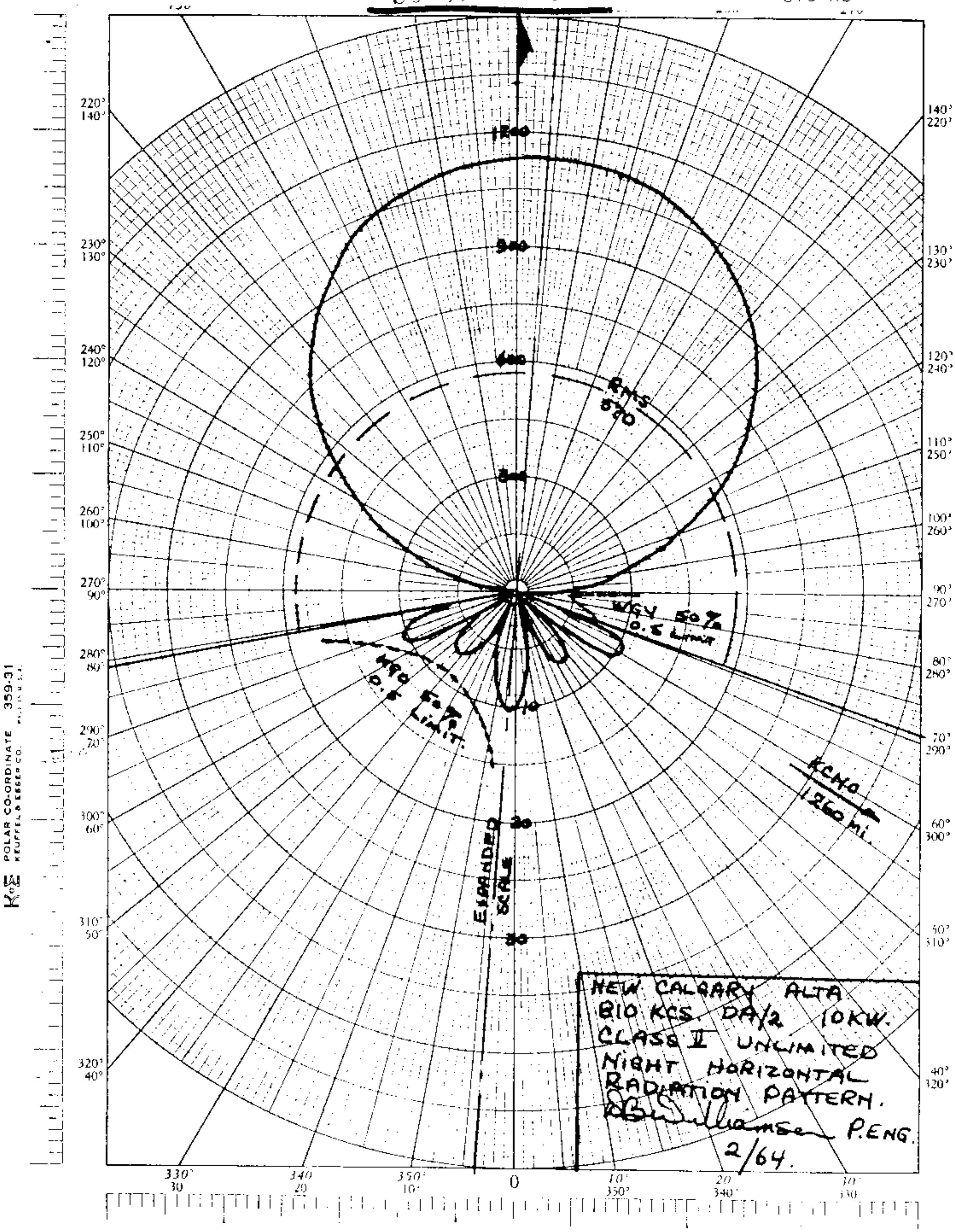
185

CHQR

Proposed Night
(9-29-64ct)

New Station
Clagary, Alberta

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



CHQR

DESCRIPTION OF ARRAY

STATION: CHQR MAIN STUDIO: Calgary, Alberta

FREQUENCY: 810 KHz POWER: 50 Kw

NOTIFICATION LIST: 360 DATE: November 23, 1976

CLASS: II Unlimited

GEOGRAPHICAL LOCATION: 50 - 53 - 50 North
114 - 05 - 38 West

ANTENNA CHARACTERISTICS

Mode of Operation - DA/2
Number of Elements - 5
Type of Elements - Guyed, uniform cross section, base insulated, no top loading

TOWER	#1(S)	#2(SC)	#3(C)	#4(NC)	#5(N)
HEIGHT OVER INSULATORS	300'(90°)	300'(90°)	300'(90°)	300'(90°)	300'(90°)
OVERALL HEIGHT	305'	305'	305'	305'	305'
SPACING	0	303.5'	607.0'	910.5'	1214.0'
	0	(90°)	(180°)	(270°)	(360°)
ORIENTATION	Ref.	004°	004°	004°	004°
DAY PHASING	-	+172.200	0	-	-
DAY RATIO	-	0.62300	1.0000	-	-
NIGHT PHASING	-107.072	+126.758	0	-126.758	+107.072
NIGHT RATIO	1.00000	3.59887	5.21152	3.59887	1.00000

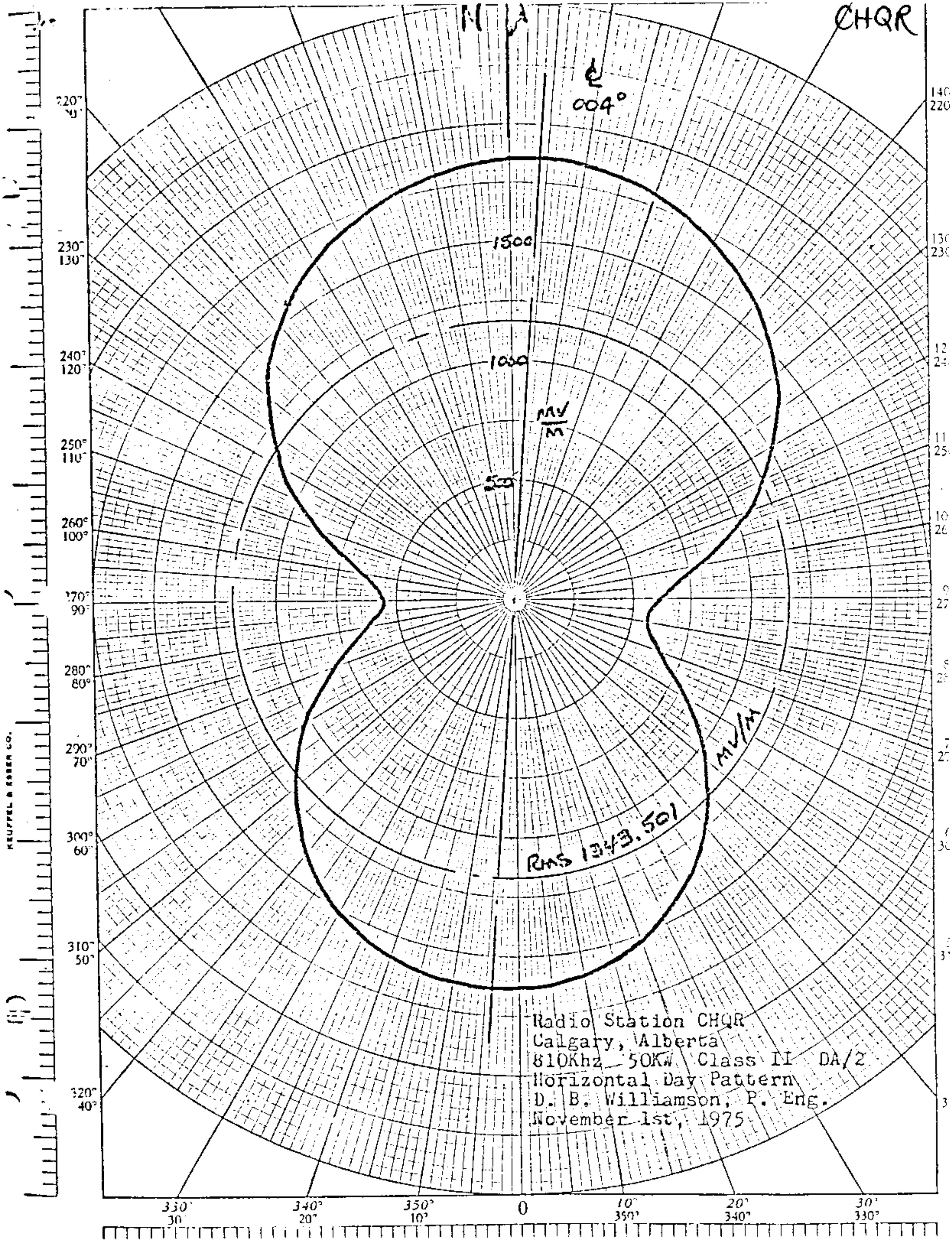
GROUND SYSTEM 120 Radials per tower 0.4 wavelength or to common chords, bonded buried 8" #10AWG. 50 sq.ft. expanded copper mesh at base of each tower.

PREDICTED EFFECTIVE FIELD 1341.64 mv/m @ 1 mi. for 50 Kw night
189.74 mv/m @ 1 mi. for 1 Kw night
1343.501 mv/m@ 1 mi. for 50 Kw day
190.00 mv/m @ 1 mi. for 1 Kw day

CONSULTANT D. B. Williamson, P. Eng.
Radio CHUC Ltd.
Cobourg, Ontario

NOTE Patterns calculated from multiplication form.
Decimal Readout from conversion to addition form.

COMPUTER REFERENCES Programma Cards 74977A
75331A



N
CHQR
℄ 004°
1500
1000
MV/M
500
MV/M
RMS 1343.501
Radio Station CHQR
Calgary, Alberta
810Khz 50KW Class II DA/2
Horizontal Day Pattern
D. B. Williamson, P. Eng.
November 1st, 1975
KEUFFEL & ESSER CO.

KCMO
810KHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: K C M O   Main Studio: Kansas City, Missouri

Frequency: 810 kHz   Power: 5 kW Night 50 kW Day

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

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 39° 18' 21"
West Longitude: 94° 34' 30"

ANTENNA CHARACTERISTICS

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

TOWER:	#1 (SW)	#2 (SC)	#3 (C) *	#4 (NC)	#5 (NE)
HEIGHT ABOVE INSULATORS:	300'	300'	300'	300'	300' (88.9°)
NIGHT PHASING:	-84.7°	-25.3°	-1.9°	-4.3°	0.0°
NIGHT FIELD RATIO:	1.31	3.50	3.72	2.36	1.00
NIGHT SPACING:	600.2°	458.8°	300°	150°	REF
NIGHT ORIENTATION:	258.6°	254°	250°	250°	REF

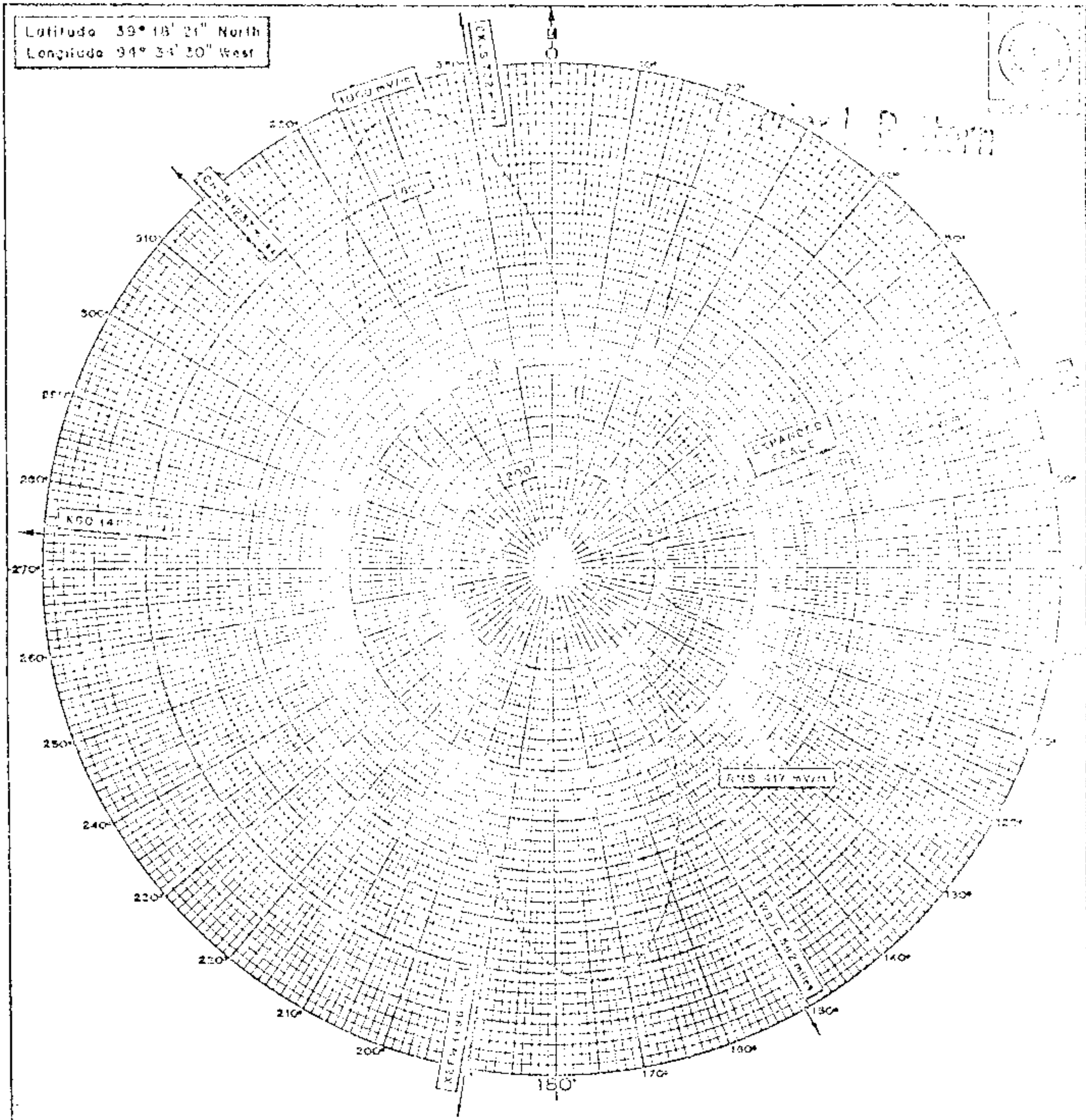
* Tower #3 (C) used for omnidirectional daytime operation.

GROUND SYSTEM: 120 equally spaced copper radials plus a 40' square ground screen about each tower. Radials are 300' (except about tower #5 where they are 500') except where bonded to a copper bus.

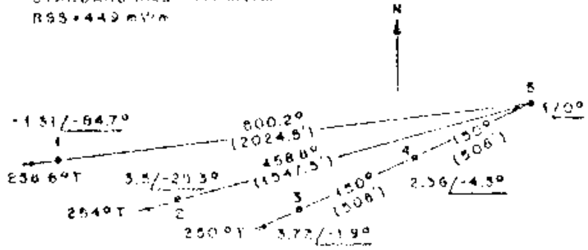
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	1342.5 mV/m		
Night	397 mV/m	449 mV/m	417 mV/m

KCMO
810KHz



THEORETICAL RMS = 397 mV/m
STANDARD RMS = 417 mV/m
RSS = 449 mV/m



B = 500' = 86.9°

FIGURE 1

PROPOSED NIGHTTIME HORIZONTAL
PLANE STANDARD RADIATION PATTERN
STATION KCMO
MEREDITH CORPORATION
KANSAS CITY, MISSOURI

Present:	810 kHz	50 kW-D; 10 kW-N	DA-N
Proposed:	810 kHz	50 kW-D; 5 kW-N	DA-N

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

KCMO
810KHz

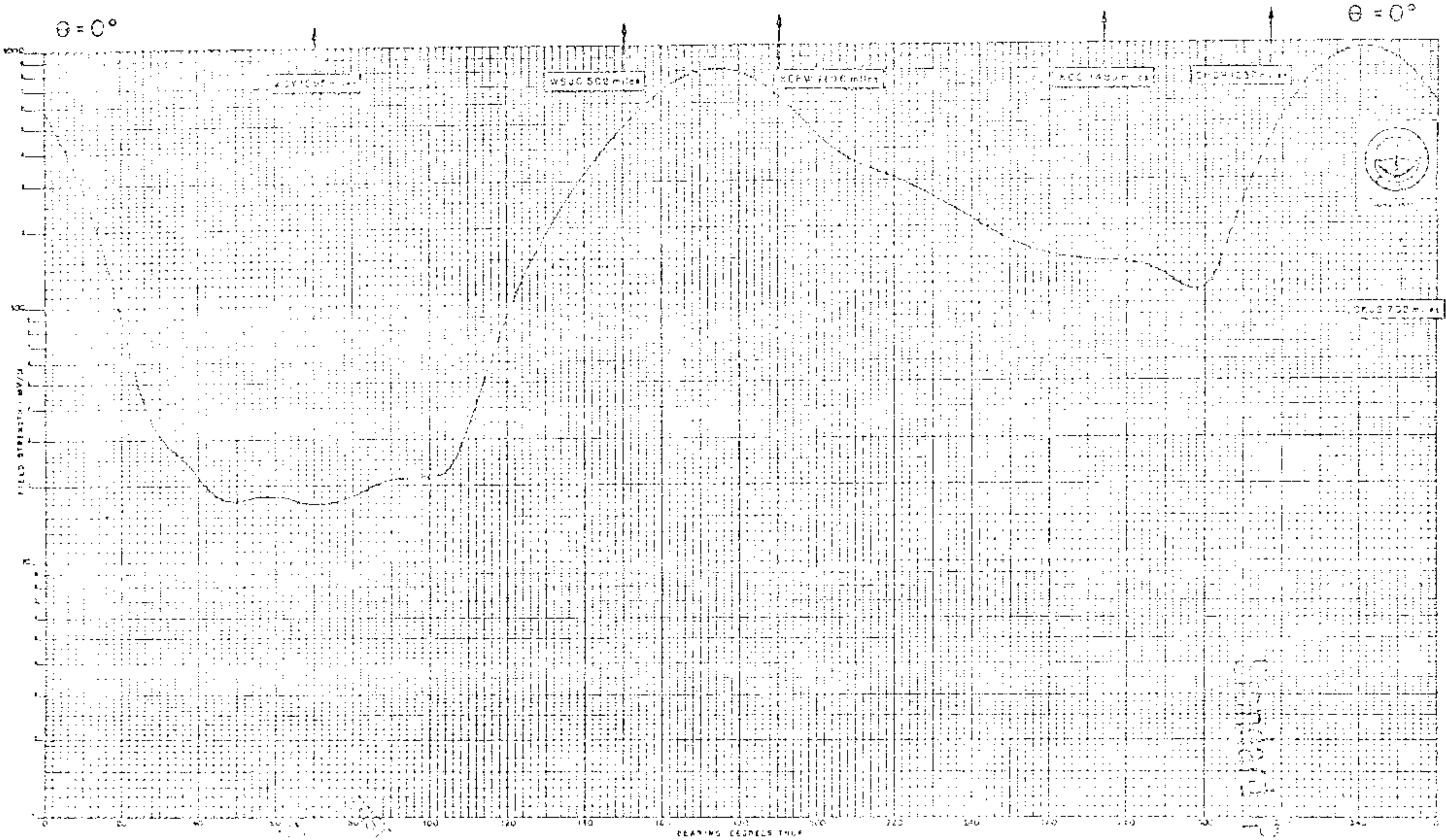


FIGURE 2-A

Standard Pattern

KCMO-810KC

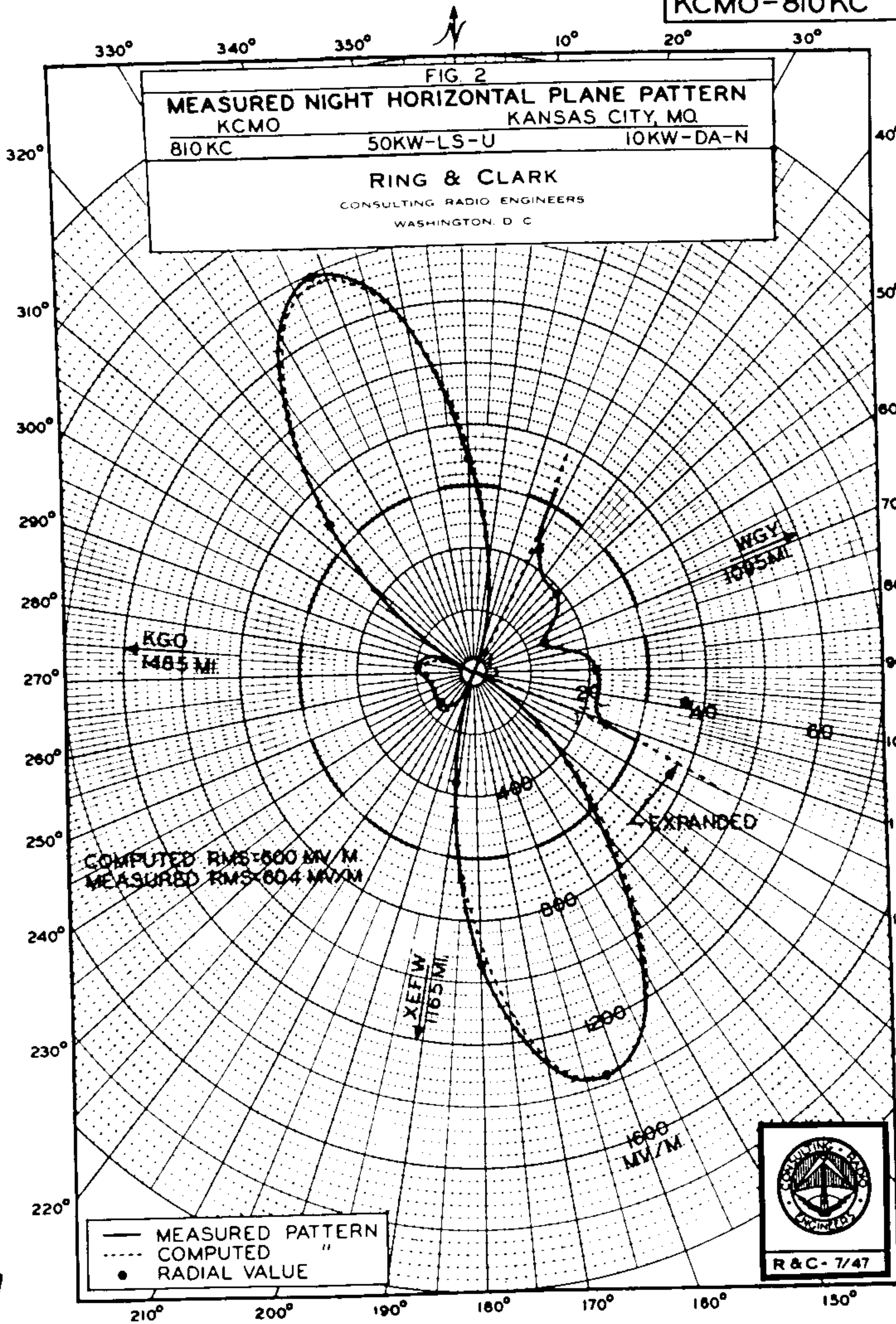
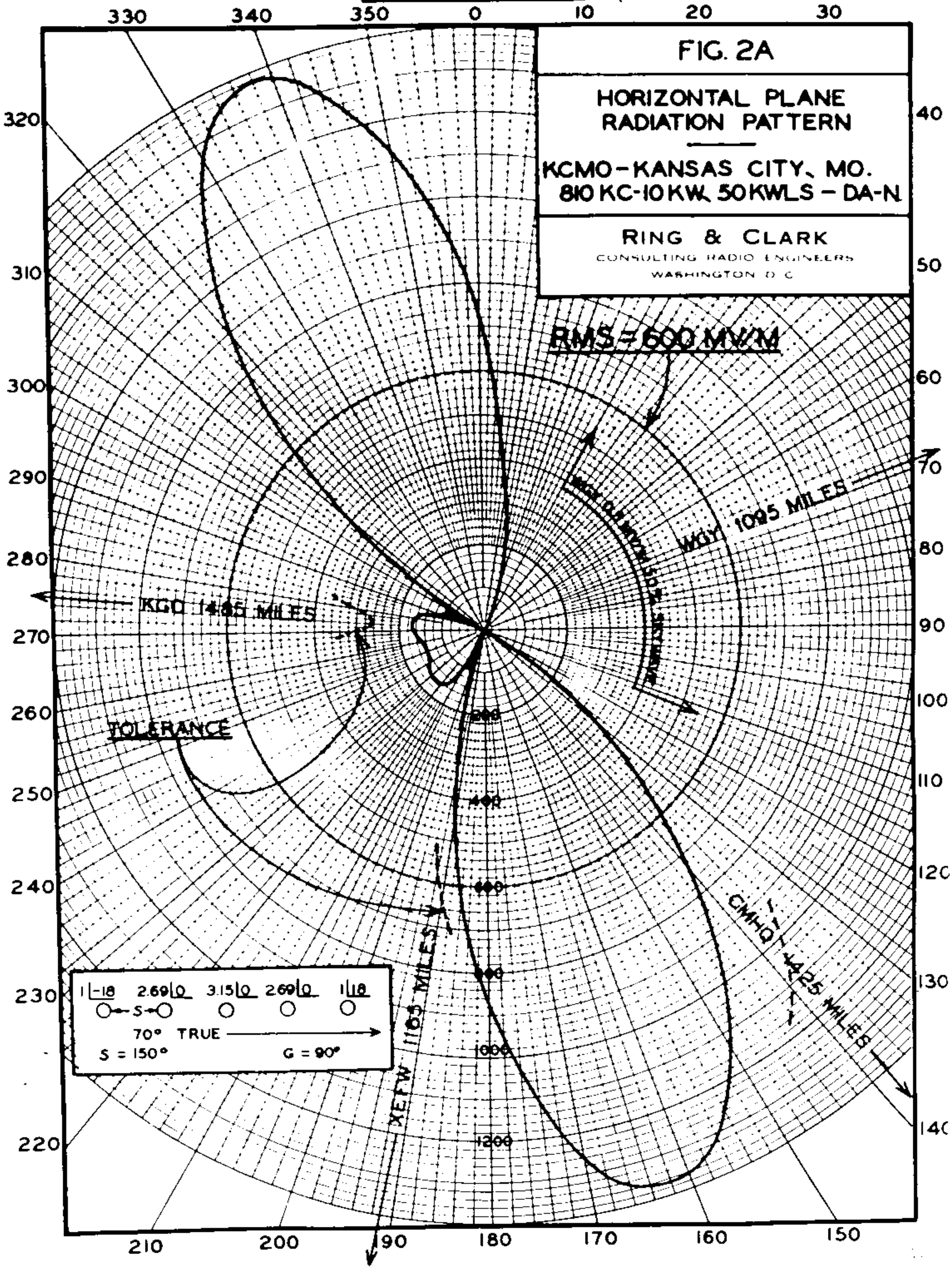


FIG. 2
MEASURED NIGHT HORIZONTAL PLANE PATTERN
KCMO
KANSAS CITY, MO.
810 KC
50KW-LS-U
10KW-DA-N
RING & CLARK
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.
330°
340°
350°
10°
20°
30°
40°
50°
60°
70°
80°
90°
320°
310°
300°
290°
280°
270°
260°
250°
240°
230°
220°
210°
200°
190°
180°
170°
160°
150°
KGO
1485 MI.
WGY
1095 MI.
XEFW
1165 MI.
20
40
60
400
800
1200
1600 MV/M
EXPANDED
COMPUTED RMS-600 MV/M
MEASURED RMS-604 MV/M
MEASURED PATTERN
COMPUTED "
RADIAL VALUE
R & C- 7/47

PATTERN No 410922
SUPERSEDES

KCMO 810 KC



PATTERN No: 410922
SUPERSEDES

KCMO 810 KC

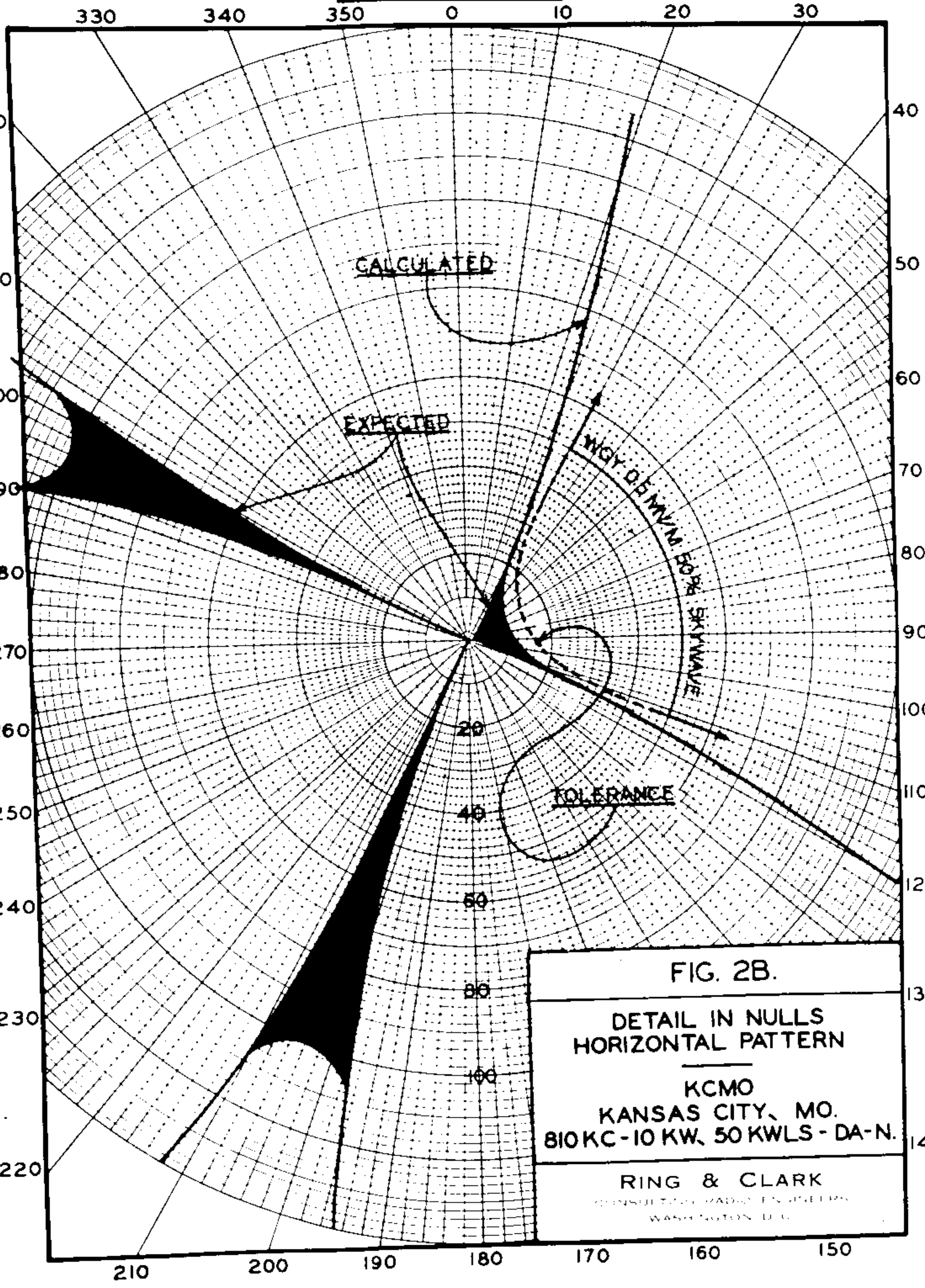


FIG. 2B.

DETAIL IN NULLS
HORIZONTAL PATTERN

KCMO
KANSAS CITY, MO.
810 KC - 10 KW, 50 KWLS - DA-N.

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

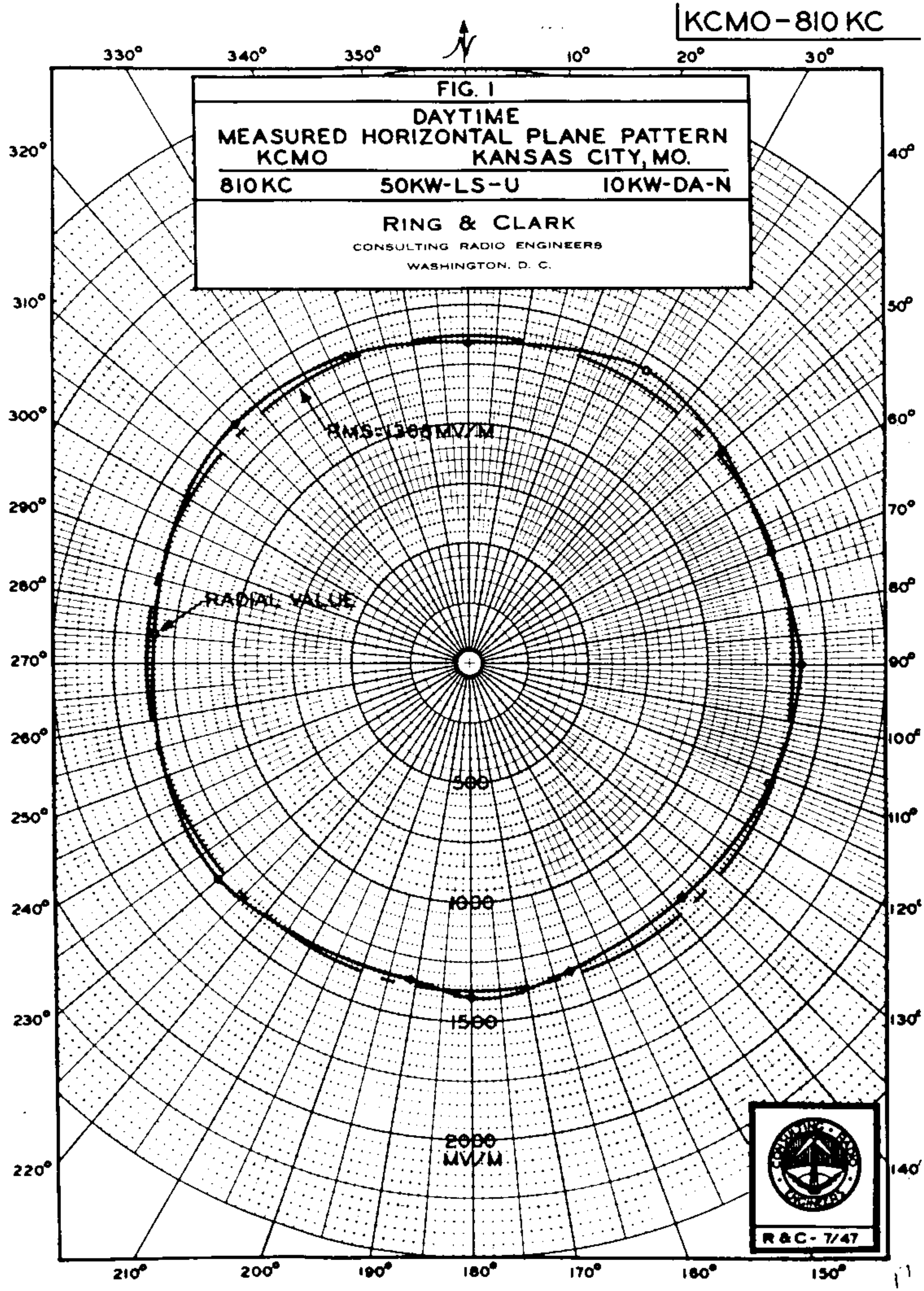


FIG. 1
DAYTIME
MEASURED HORIZONTAL PLANE PATTERN
KCMO KANSAS CITY, MO.
810 KC 50KW-LS-U 10KW-DA-N
RING & CLARK
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.
RMS=1366 MV/M
RADIAL VALUE
500
1000
1500
2000 MV/M
330° 340° 350° 10° 20° 30°
320° 310° 300° 290° 280° 270° 260° 250° 240° 230° 220°
40° 50° 60° 70° 80° 90° 100° 110° 120° 130° 140°
210° 200° 190° 180° 170° 160° 150°
R & C - 7/47

KG

Station	KGO	Main Studio	San Francisco, California
Power	50 kw	Frequency	810 kc
Authorized	July 18, 1946		Notification No. 180

Location:	North Latitude	37°	31'	28"
	West Longitude	122°	05'	54"

Antenna:

Authorized for Day and Night operation

Three elements, series-fed, uniform cross-section, guyed, vertical towers.

Tower:	South	Center	North
Height above insulators:	304'	304'	304'
Spacing:	125°	422'	125°
Phasing:	171.6°	10.1°	-171.6°
Field Ratio:	1.0	1.672	1.0

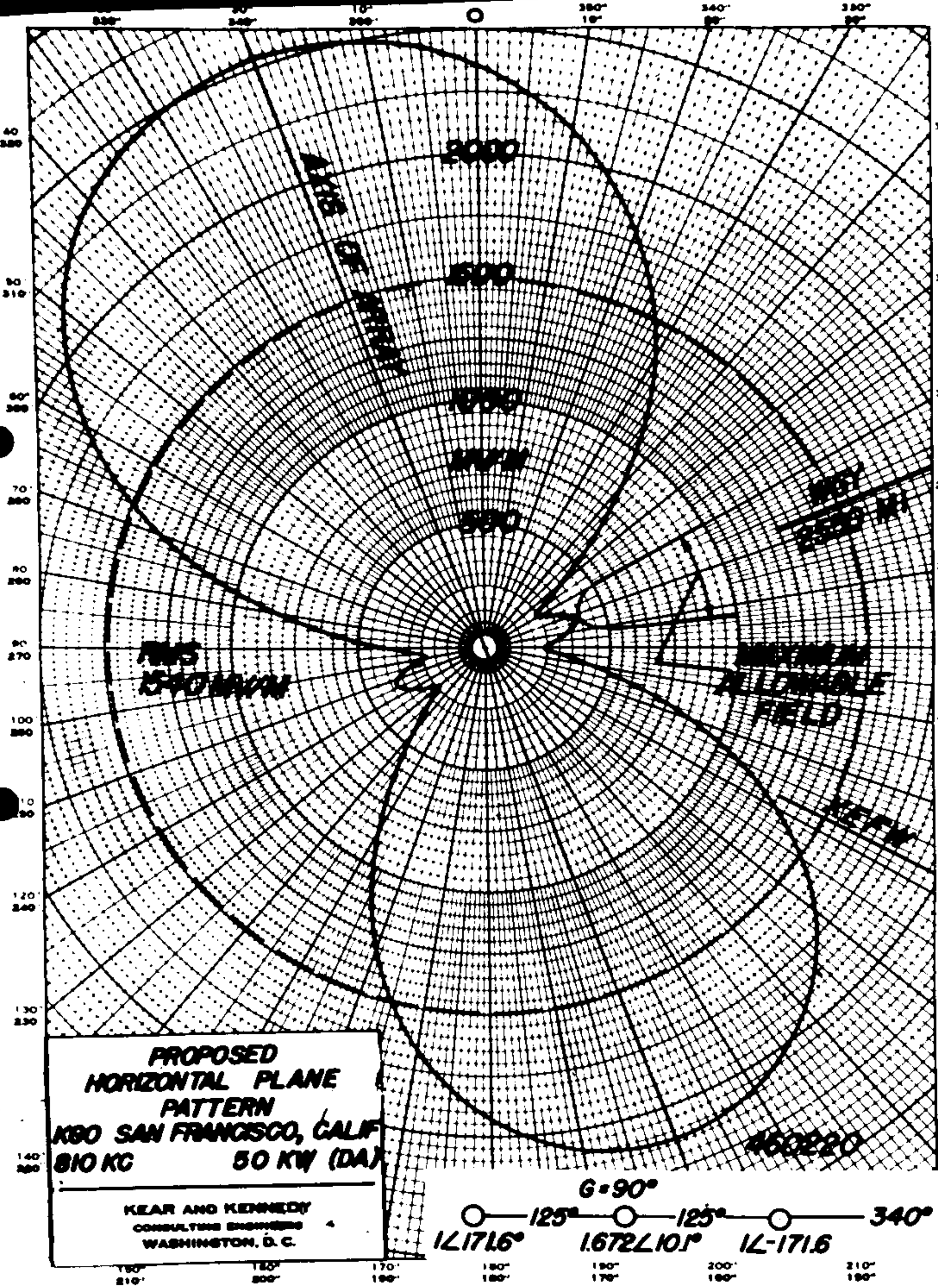
Ground System: 120 - 486' equally spaced radials, except at bonding strips on the perpendicular bisectors of the line between the towers for a distance of 438' on each side. 30' mesh screen under the base of each tower, bonded to the center of each radial system.

Orientation: Elements on a line bearing 160° true.

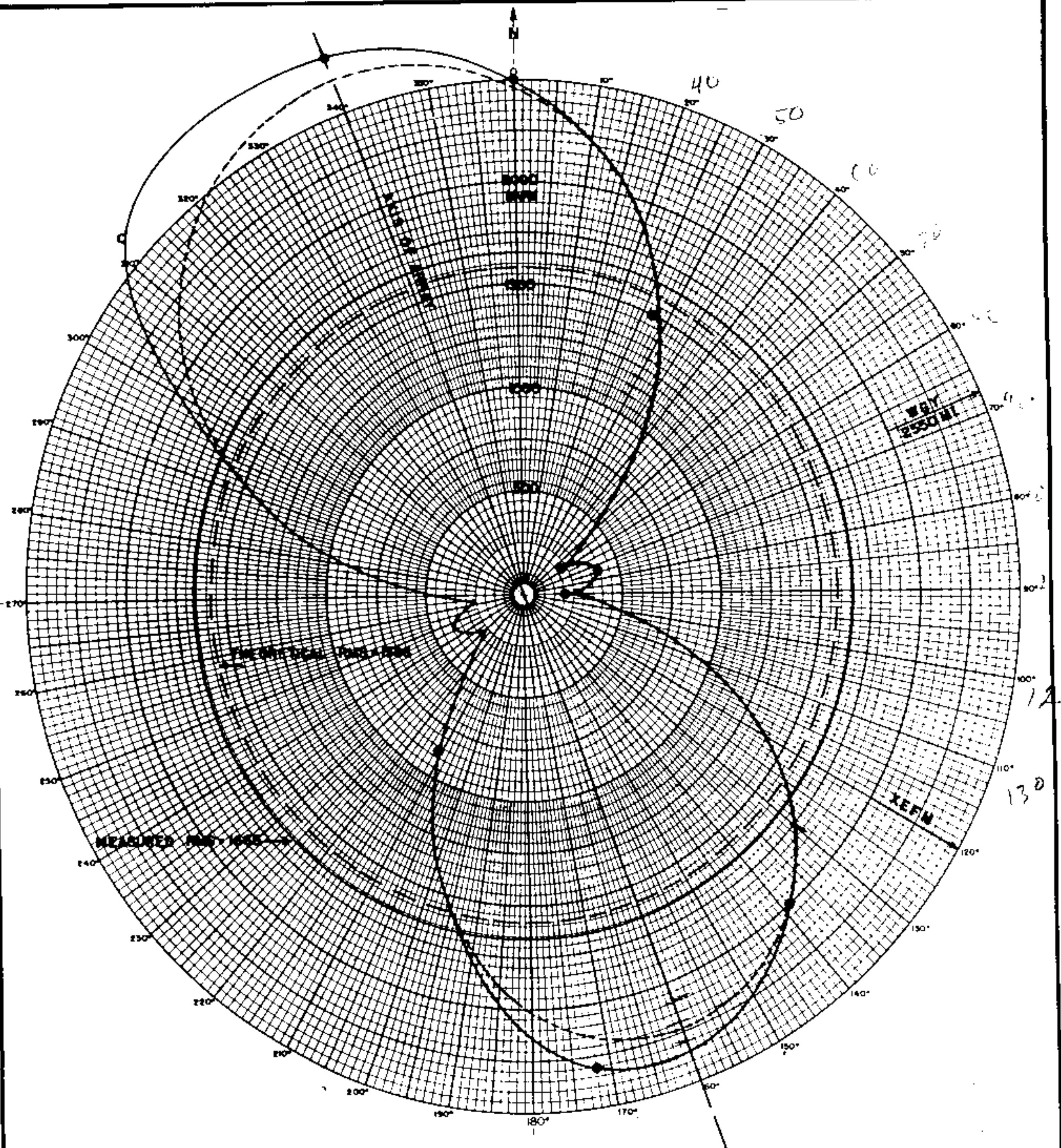
Predicted effective field 1540 mv/m (218 for 1 kw)

KGO

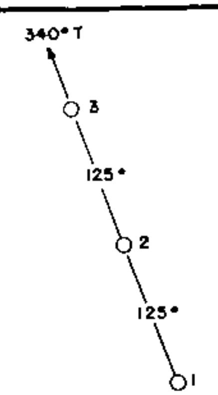
PROPOSED DAY & NIGHT — Station KGO, San Francisco, California — 50kw, DA-1,U — 810 KC



KGO
810



o MEASURED VALUES



LATITUDE 37° 31' 39"
LONGITUDE 122° 06' 05"

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	—	—	0	1	194	90
2	340	125	−181.6	1.67	194	90
3	340	250	+16.8	1	194	90

AMERICAN BROADCASTING CO. INC.
GENERAL ENGINEERING DEPARTMENT

MEASURED HORIZONTAL
PLANE PATTERN
RADIO STATION KGO
SAN FRANCISCO, CALIFORNIA
810 KC 50KW U, DA-1

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D.C.

1471120

WJJQ

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : WJJQ Main Studio: Tomahawk, Wisconsin

Frequency : 810 KHz Power : --- Night 10 kW Day. -

Notification : 1781 Date : Sept. 28, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 45 29 29
West Longitude: 89 43 34

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	:	SE(#1)	NW(#2)					
HEIGHT ABOVE INSULATORS	:	300' (88.94°)	220'(59.20°)					
PHASING	:	0°	-123.62°					
FIELD RATIO	:	1.0	0.70					

SPACING AND ORIENTATION : Towers in a row are spaced 202.4' (60°) on a line bearing 335° true.

GROUND SYSTEM : 120 - 303' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersection between towers.

WWQ

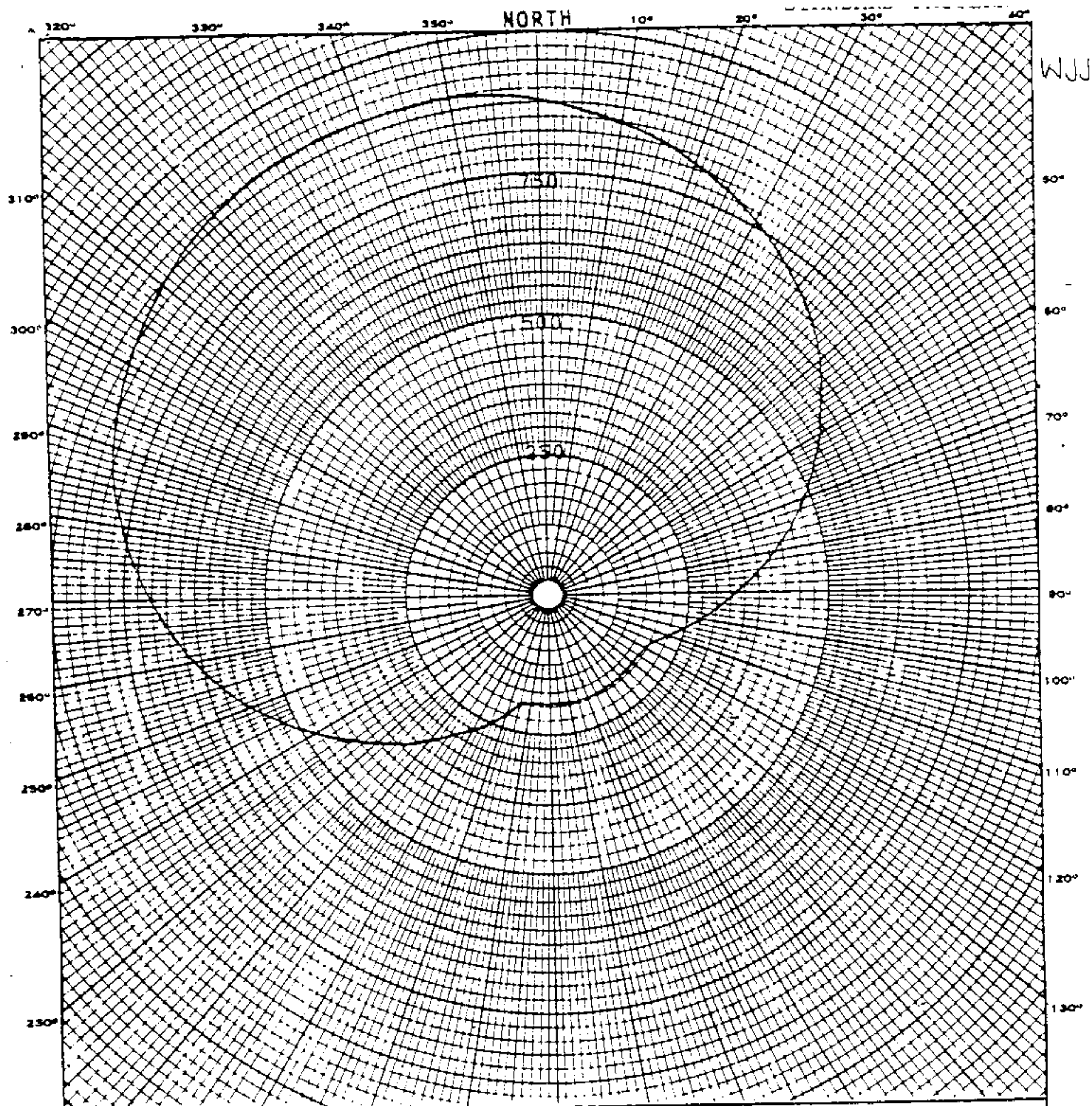
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	565 mv/m	712 mv/m	593 mv/m

Note:

CTR NO

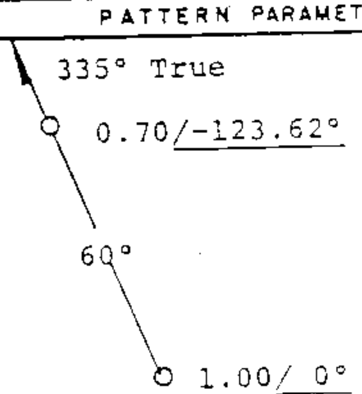
WJJQ



R.M.S. (THEO) 565 MV/M R.M.S. (STND) 593 MV/M R.S.S. 712. MV/M

220° 210° 200° 190° 180° 170° 160° 150° 140°

PATTERN PARAMETERS



WYYS, Inc.

☐ MEASURED ☒ PROPOSED

FREQ: 810 (KHZ) POWER 10 (KW) ☒ DA-D

N. LAT. 45 ° 29 ' 29 " ☐ DA-N

W. LONG. 89 ° 43 ' 34 " ☐ N-D

LOCATION: Tomahawk, Wisconsin

DATE: April 1979

ROBERT A. JONES
CONSULTING ENGINEERS
LA GRANGE, ILLINOIS

N#4?

DIRECTIONAL ANTENNA DESCRIPTION SHEET

WJXL

Station: (NEW)

Main Studio: Jacksonville, Alabama

Frequency: 810 kHz

Power: 0.5 kw Night 50 kw Day

Notification List No. 1756

Date: November 10, 1977 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 33° 50' 59''
West Longitude: 85° 46' 00'

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-2)
Number of elements: 8
Type of elements: Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	S(#1)	(#2)	W(#3)	(#7)	(#4)	(#5)	N(#6)	E(#8)	
HEIGHT ABOVE INSULATORS:	300'	300'	300'	300'	300'	300'	300'	300'	(88.9°)
NIGHT PHASING:	---	---	---	0°	+100.5°	---	---	+201°	
NIGHT FIELD RATIO:	---	---	---	1.0	1.743	---	---	0.81	
DAY PHASING:	0°	+134.9°	+284°	---	-3°	+131.9°	+281°	---	
DAY FIELD RATIO:	1.0	1.129	0.784	---	0.770	0.869	0.604	---	

SPACING AND ORIENTATION: From tower #1:
tower #2 spaced 303.8' (90°) on a line bearing 337° true;
tower #3 spaced 607.6' (180°) on a line bearing 337° true;
tower #4 spaced 749.3' (222°) on a line bearing 45° true;
tower #5 spaced 908' (269°) on a line bearing 24.9° true;
tower #6 spaced 1127.7' (334.1°) on a line bearing 15° true.

From tower #4:
tower #7 spaced 337.5' (100°) on a line bearing 222.5° true;
tower #8 spaced 337.5' (100°) on a line bearing 42.5 ° true.

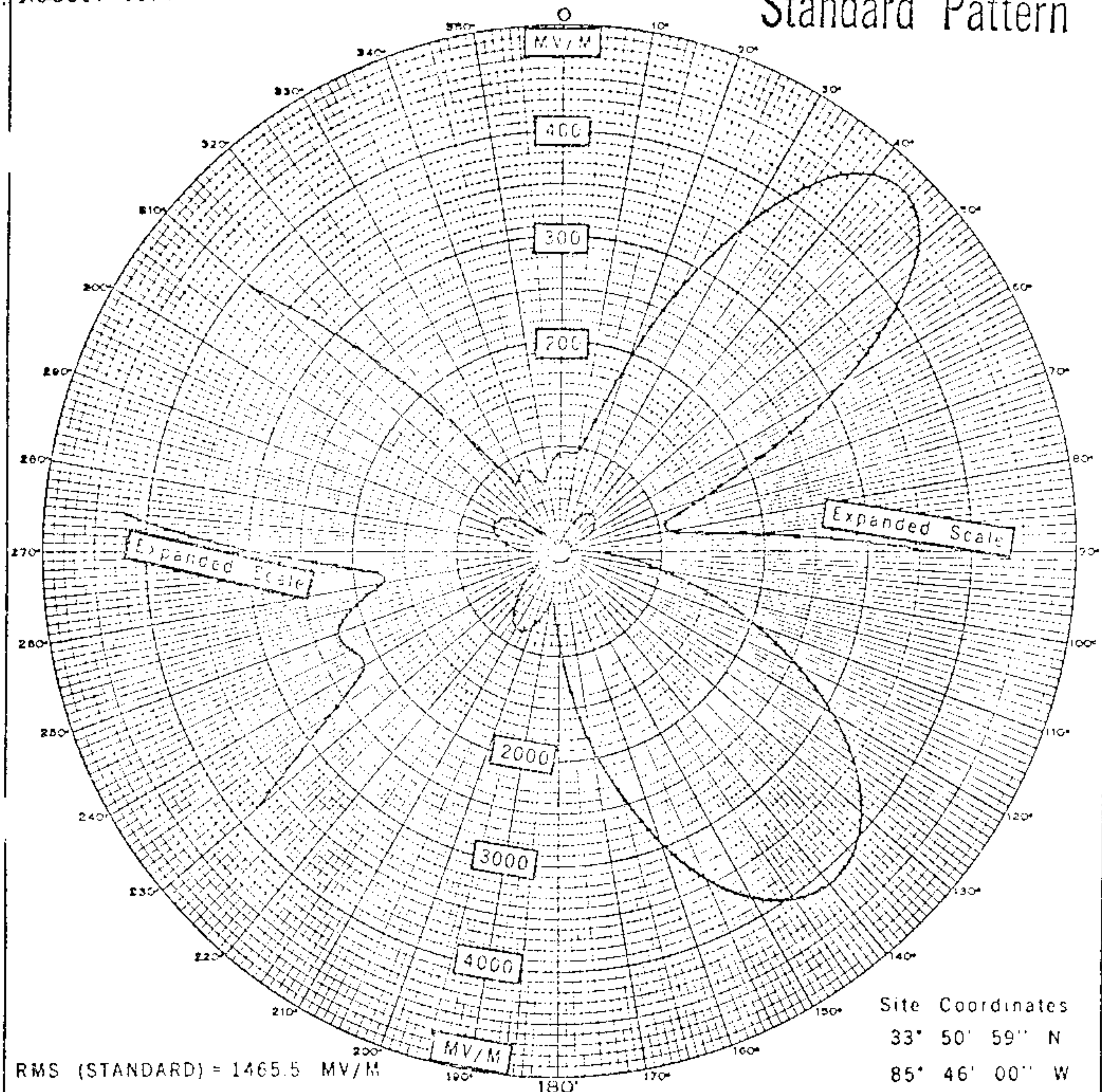
GROUND SYSTEM: 120-305' equally spaced copper radials plus 120-50' interspaced radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers. Centers of system are bonded together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	2406.6 mv/m	2268.7 mv/m	1465.5 mv/m
Night	139.8 mv/m	137.7 mv/m	146.3 mv/m

AUGUST 1974

Standard Pattern

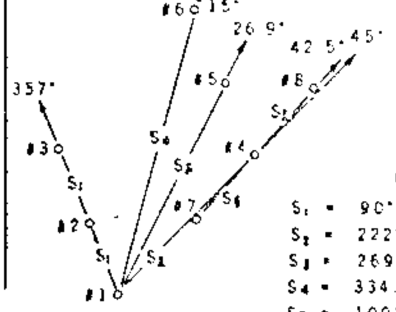


Site Coordinates
33° 50' 59" N
85° 46' 00" W

RMS (STANDARD) = 1465.5 MV/M
RMS (THEORETICAL) = 1406.6 MV/M
RSS (THEORETICAL) = 2268.7 MV/M

Pattern No. 740801

PROPOSED DAYTIME HORIZONTAL PLANE STANDARD RADIATION PATTERN



- #1 1.0/0°
- #2 1.129/134.9°
- #3 0.784/284°
- #4 0.770/-3°
- #5 0.869/131.9°
- #6 0.604/281°
- #7 Isolated
- #8 Isolated

S1 = 90° (303.8')
S2 = 222° (749.3')
S3 = 269° (908')
S4 = 334.1° (1127.7')
S5 = 100° (337.5')

(All) = 88.9° (300')

H-M-S BROADCASTING COMPANY

JACKSONVILLE, ALABAMA

810 KHZ 0.5 KW, 50 KW-LS U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

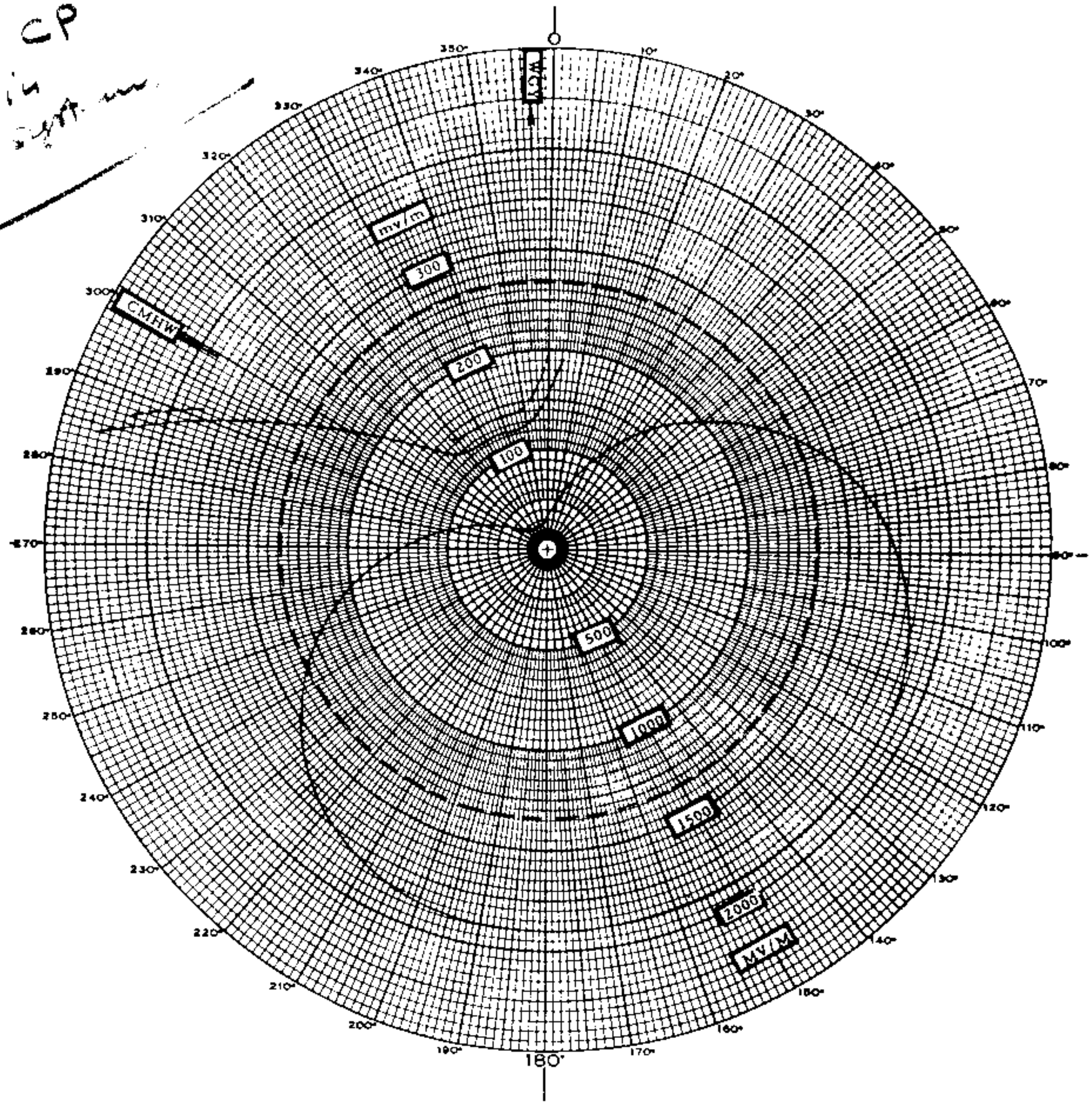
WKVM

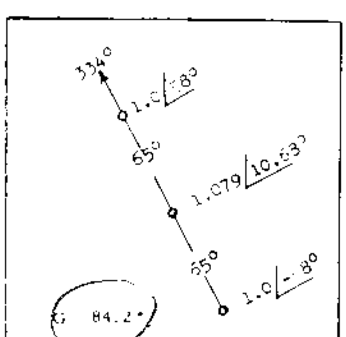
Proposed Day & Night
(4-28-67ct)

Station WKVM
San Juan, Puerto Rico

50kw,DA-1,U
810 kc

5-24-67
GRANTED CP
changes in
antenna system





MEOV --------

RMS 1341 MV/M

N. LAT. 18° 21' 47"
W. LONG. 66° 08' 13"

WILLIS C. BEECHER
CONSULTING ENGINEER
WASHINGTON D.C.

Figure 6 (Revised)
Calculated Horizontal Plane
Radiation Pattern
American Colonial Broadcasting Corporation
WKVM, San Juan, Puerto Rico
810Kc 50Kw U, DA-1
March 1967

FCC File No.BMP-12021
Accepted 4-5-67

Station WKVM
San Juan, Puerto Rico

810 kc

Proposed Day & Night
(9-28-66ct)

Station WKVM
San Juan, Puerto Rico

50kw,DA-1,U
810 kc

2-6-67
BMP-11884
GRANTED CP
INCR. IN POWER
, CHANGE IN
ANTENNA SYST

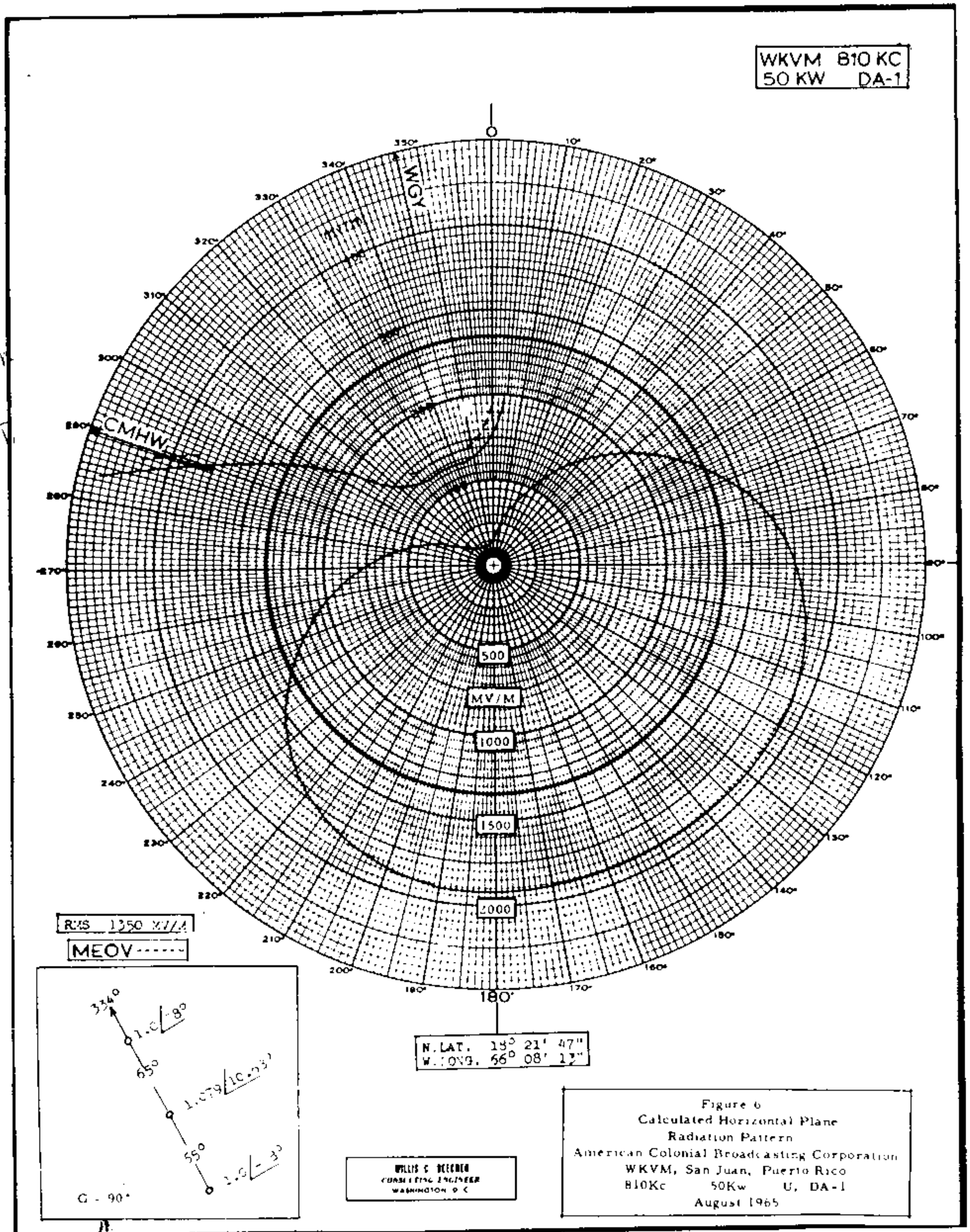


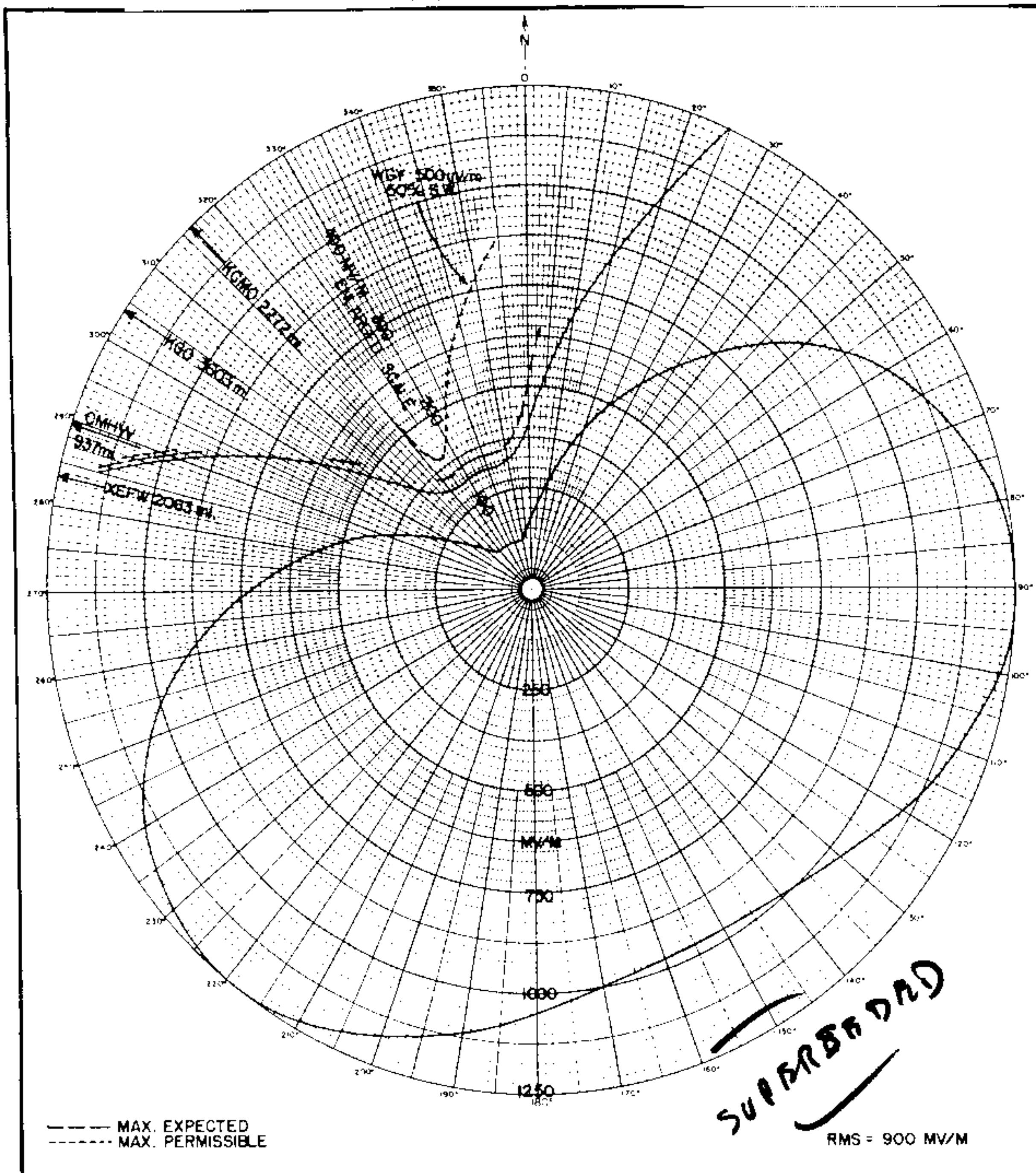
Figure 6
Calculated Horizontal Plane
Radiation Pattern
American Colonial Broadcasting Corporation
WKVM, San Juan, Puerto Rico
810Kc 50Kw U, DA-1
August 1965

CHANGE

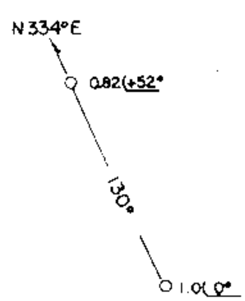
WKVM

PROPOSED NIGHT & DAY WKVM, SAN JUAN, PUERTO RICO 25 KW, U, DA-1 10/20/52G 810 KC

C P granted 11/25/53



SUPERSEDED



Height of towers: [illegible] ([illegible] overall)

WKVM
SAN JUAN, PUERTO RICO
25 KW 810 KC DA-1

LATITUDE 18° 23' 06" N. 18 21 47
LONGITUDE 66° 06' 52" W. 66 08 13
CP

GILLETT & BERGQUIST
CONSULTING RADIO ENGINEERS
NATIONAL PRESS BUILDING
WASHINGTON 4, D. C.

PATTERN NO 520803
SUPERSEDES 520318
APP

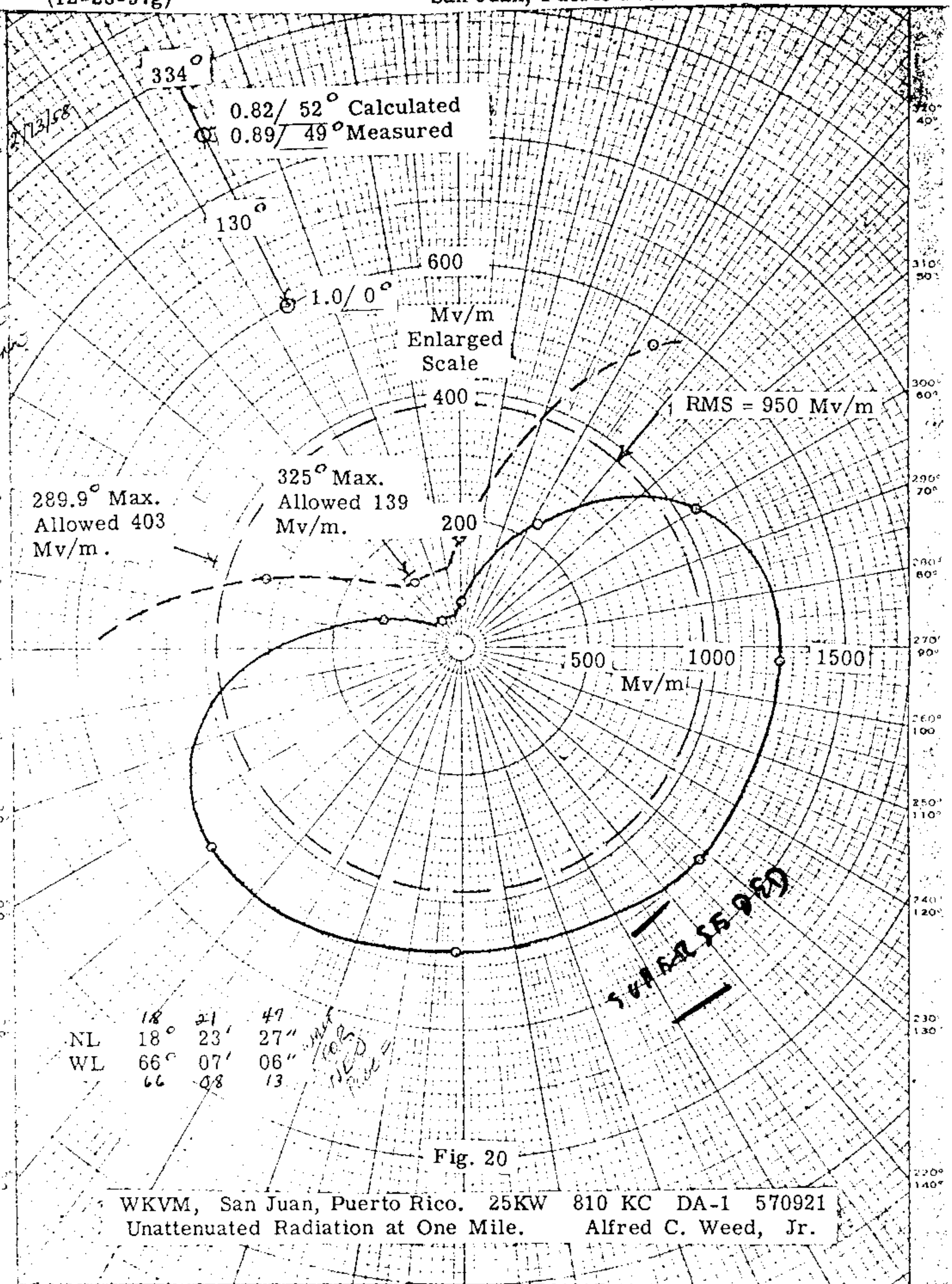
APP. 2

APPL RECD FCC 9/12/52 ACC 10/8/52 BMP-6000 WKVM, SAN JUAN, PUERTO RICO 810 KC

MEASURED DAY & NIGHT
(12-20-57g)

Station WKVM
San Juan, Puerto Rico

25kw, DA-1,U WKVM
810 KC



2/13/58
canceled license for change in freq + for DA-1 system
3-17-64
issued CPto change location transmitter location + antenna system

FCC File No. BL-6865
Accepted 11-29-57

WKVM
San Juan, Puerto Rico (over)

810 KC

MEASURED NON-DA (12-20-57g) | Station WKVM San Juan, Puerto Rico | 25kw, DA-1,U 810 KC | WKVM

granted license for change in freq. & for DA-1 system

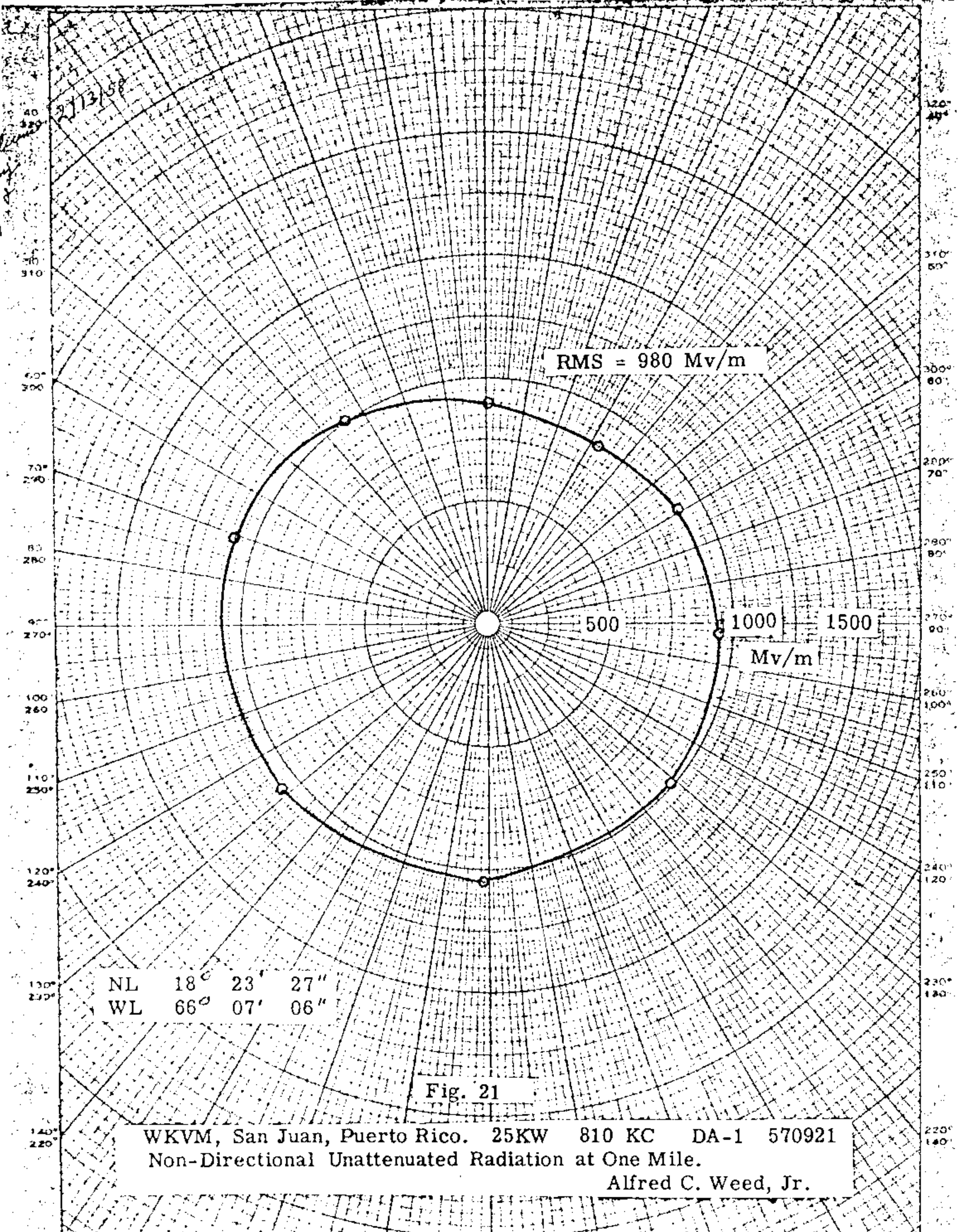


Fig. 21

WKVM, San Juan, Puerto Rico. 25KW 810 KC DA-1 570921
Non-Directional Unattenuated Radiation at One Mile.
Alfred C. Weed, Jr.

FCC File No. BL-6865 WKVM

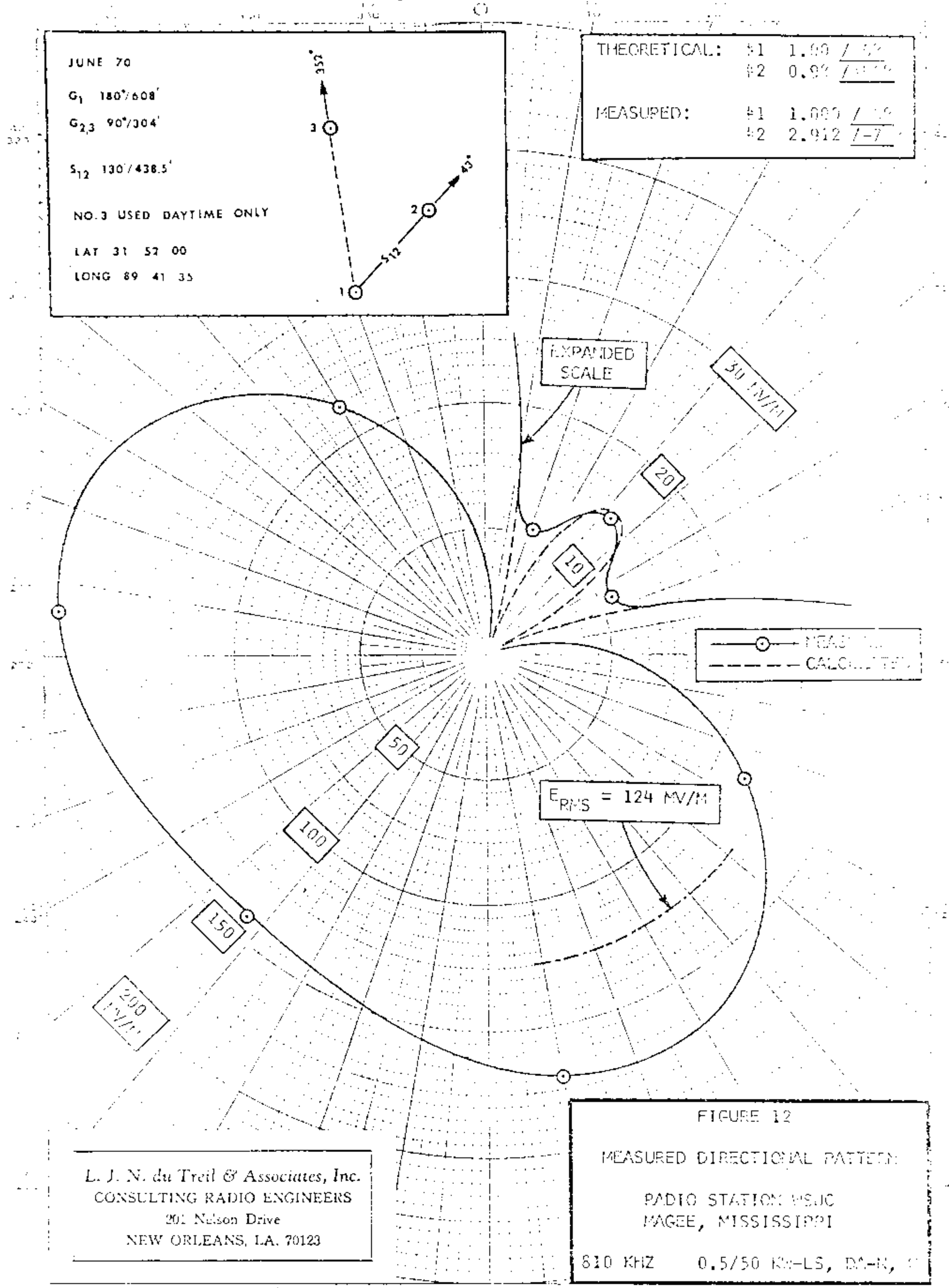
WSJC

Measured Night
(9-25-70ct)

Station WSJC
Magee, Mississippi

5kw,50kw-LS,DA-N,

810 kc



FCC File No.BL-12721
Accepted 8-28-70

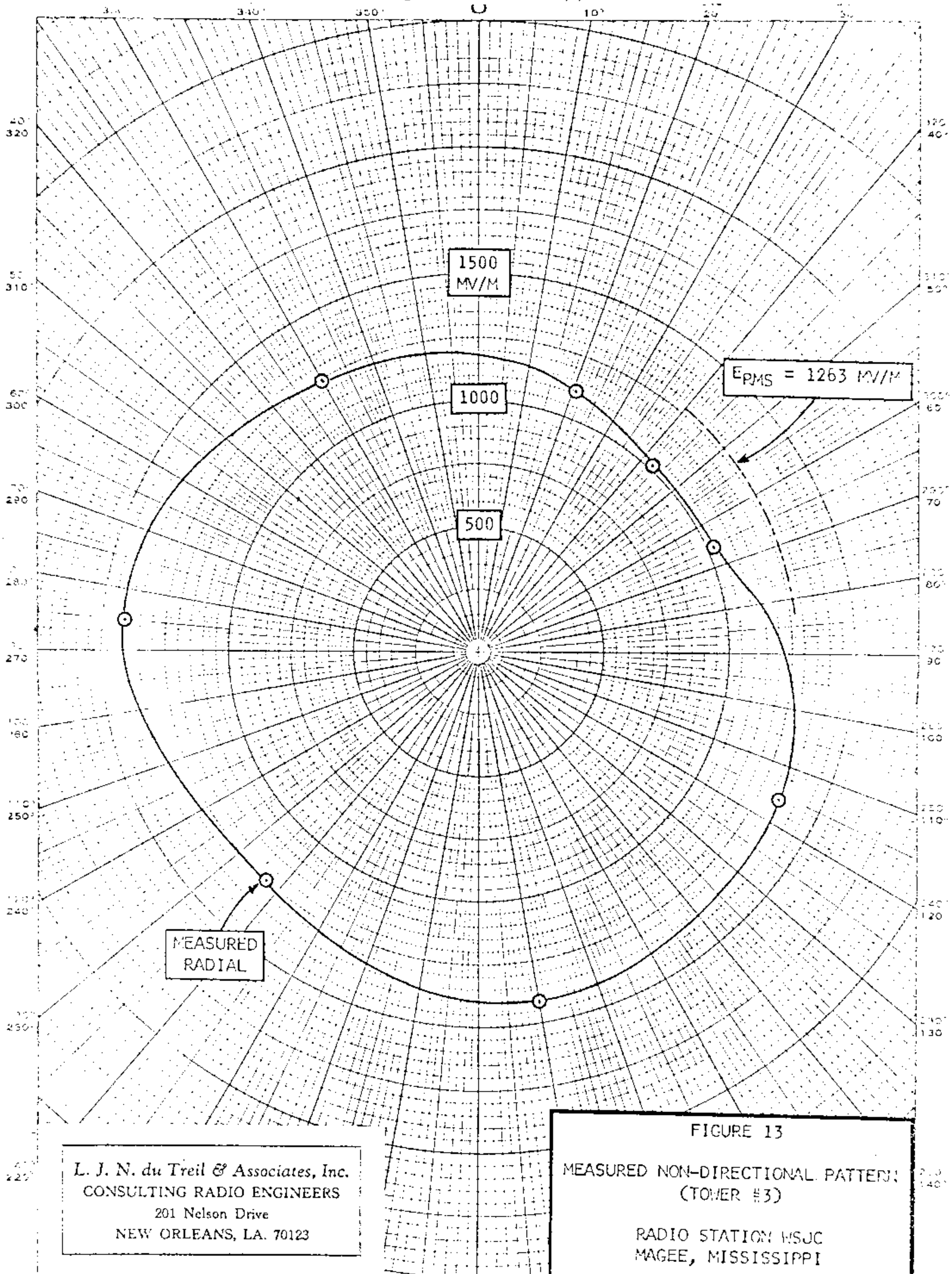
Station WSJC
Magee, Mississippi

810 kc

Measured Non-DA
(9-25-70ct)

Station WSJC
Magee, Mississippi

WSJC
5kw,50kw-LS,DA-N,U
810 kc



L. J. N. du Treil & Associates, Inc.
CONSULTING RADIO ENGINEERS
201 Nelson Drive
NEW ORLEANS, LA. 70123

FIGURE 13

MEASURED NON-DIRECTIONAL PATTERN
(TOWER #3)

RADIO STATION WSJC
MAGEE, MISSISSIPPI

FCC File No.BL-12721
Accepted 8-28-70

Station WSJC

WSJC

Proposed Night
(10-28-68ct)

Station WSJC
Magee, Mississippi

500w,50kw-LS,DA-N,U
810 kc

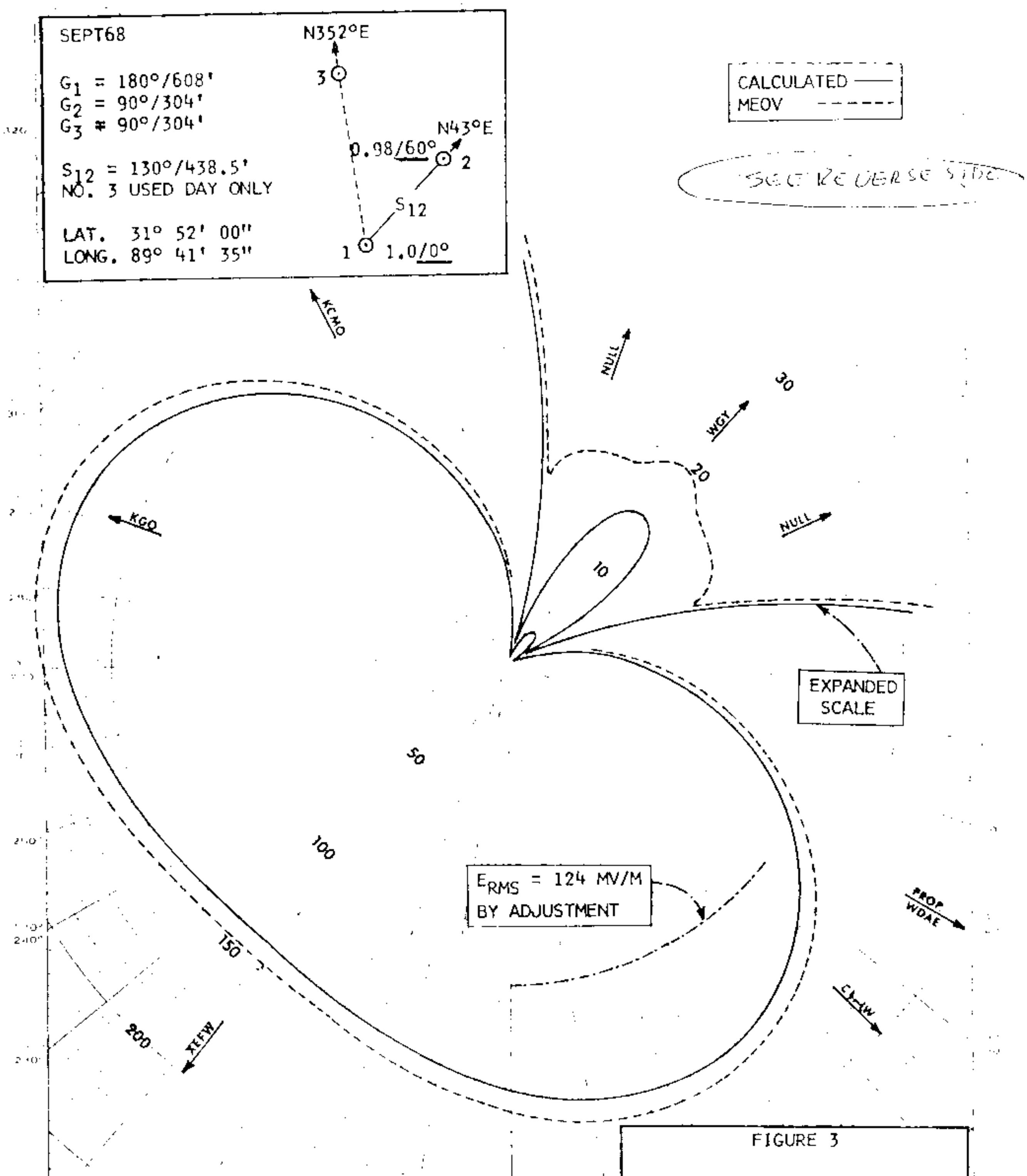


FIGURE 3

PROPOSED NIGHTTIME DIRECTIONAL PATTERN

RADIO STATION WSJC
MAGEE, MISSISSIPPI
810 KHZ 0.5/50 KW-LS, DA-N, U

L. J. N. du Treil & Associates, Inc.
CONSULTING RADIO ENGINEERS
201 Nelson Drive
NEW ORLEANS, LA. 70123

FCC File No.BP-18270
Accepted 10-18-68

Station WSJC
Magee, Mississippi

810 kc

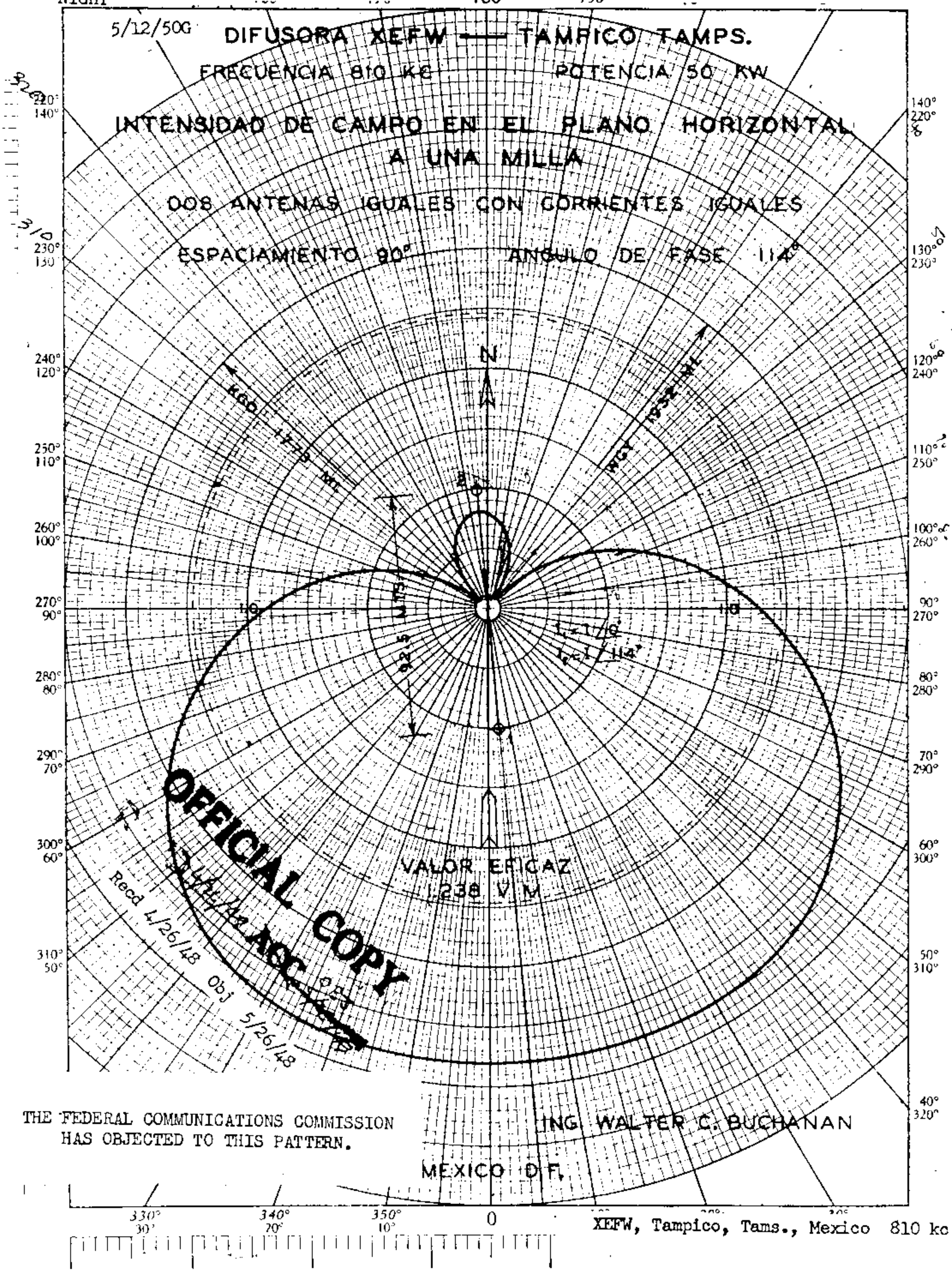
XEFW

PROPOSED
NIGHT

XEFW, TAMPICO, TAMS., MEXICO

50kw, DAN

810 kc



THE FEDERAL COMMUNICATIONS COMMISSION
HAS OBJECTED TO THIS PATTERN.

XEFW, Tampico, Tams., Mexico 810 kc

Description Sheet
(8-28-67ct)

New Station
Winnipeg, Manitoba

10kw,DA-1,U,Class II
810 kc

SUMMARY SHEET

STATION:	NEW	MAIN STUDIO:	Winnipeg, Manitoba
POWER:	10 KW	FREQUENCY:	810 kHz CLASS: II
NOTIFICATION LIST NO.	229	DATE:	July 31, 1967.
GEOGRAPHICAL LOCATION:		North Latitude West Longitude	49° 44' 07" 97° 11' 36"

Antenna Characteristics

MODE OF OPERATION:	DA-1			
NUMBER OF ELEMENTS:	4			
TYPE OF ELEMENTS:	Uniform Cross-section, guyed steel towers, base insulated, for series feed.			
TOWER:	#1 (S)	#2 (SC)	#3 (NC)	#4 (N)
HEIGHT ABOVE INSULATORS:	202'(60°)	202'	202'	202'
OVERALL HEIGHT ABOVE GROUND:	207'	207'	207'	207'
FIELD RATIO	1	2.907	2.907	1
PHASING:	0(ref.)	-151.3°	57.3°	-94°
SPACING:	Ref.	303'(90°)	606'(180°)	909' (270°
ORIENTATION:	Ref.	010°	010°	010°
GROUND SYSTEM:	120 equally spaced radials of #10 B and S bare copper wires per tower, buried approximately 8" length 485' (.4 wavelength).			
PREDICTED EFFECTIVE FIELD:	DAY: 585 mv/m (10 Kw) or 185 mv/m/Kw			

RCA VICTOR COMPANY, LTD.
MONTREAL, QUEBEC.

PROJECT 5068-A

Proposed Day & Night
(8-28-67ct)

New Station
Winnipeg, Manitoba

10kw,DA-1,U,Class II
810 kc

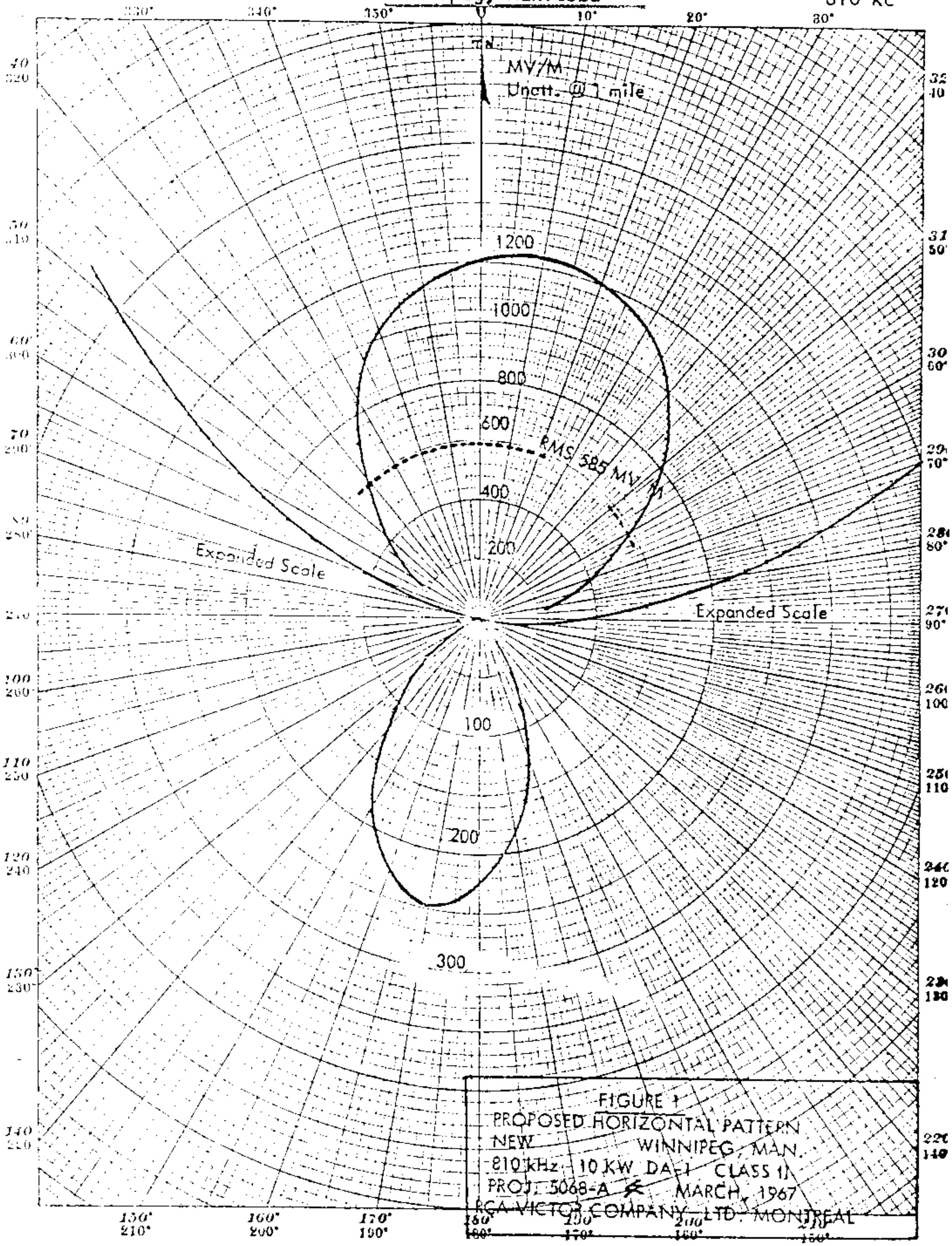


FIGURE 1
PROPOSED HORIZONTAL PATTERN
NEW WINNIPEG, MAN.
810 kHz 10 KW DA-1 CLASS II
PROJ. 5068-A MARCH, 1967
RCA VICTOR COMPANY, LTD. MONTREAL

Proposed Day & Night Nulls
(8-28-67ct)

New Station
Winnipeg, Manitoba

10kw,DA-1,U,Class II
810 kc

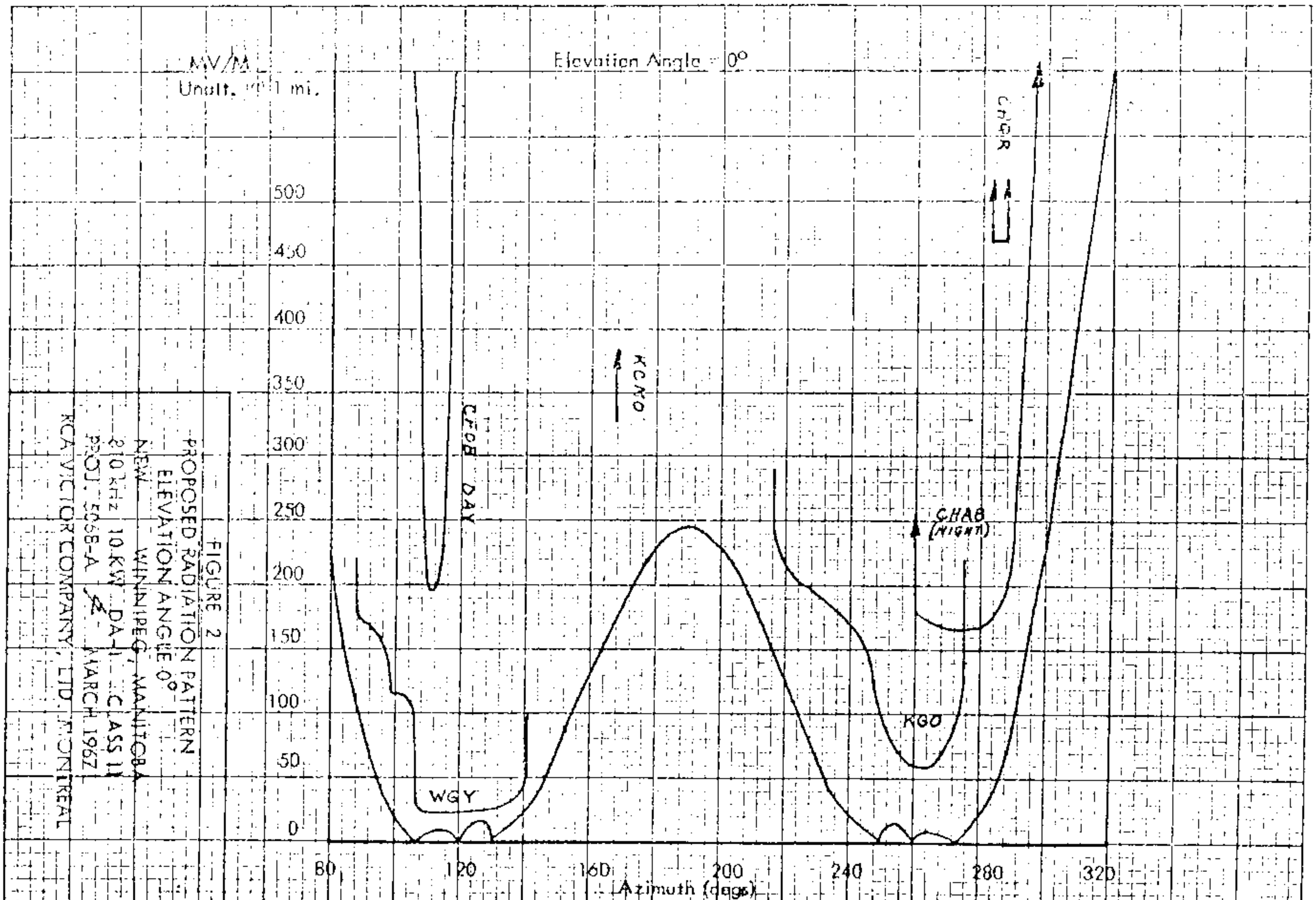


TABLE 1

ANTENNA DESCRIPTION SHEET

STATION CALL: NEW

MAIN STUDIO: CARAQUET, N. B.

FREQUENCY: 810 kHz

POWER: 5N/10D kW

CLASS: II

MODE: DA-N

TIME: UNLIMITED

NOTIFICATION LIST NO.: 261...... DATE: November 5, 1969

GEOGRAPHICAL LOCATION: Latitude 47° 45' 40" North
Longitude 65° 03' 45" West

ARRAY CHARACTERISTICS: Three guyed steel towers of uniform cross section; base insulated, series fed, no top loading.

TOWER #:	1 EAST	2 CENTRE	3 WEST
HEIGHT:	270'	270'	270'(80°)
NIGHT CURRENT:	1.00	1.975	1.00
NIGHT PHASE:	-108°	0°	108°
SPACING:	ref.	90° 303'	180° 606'
ORIENTATION:	ref.	235°	235°

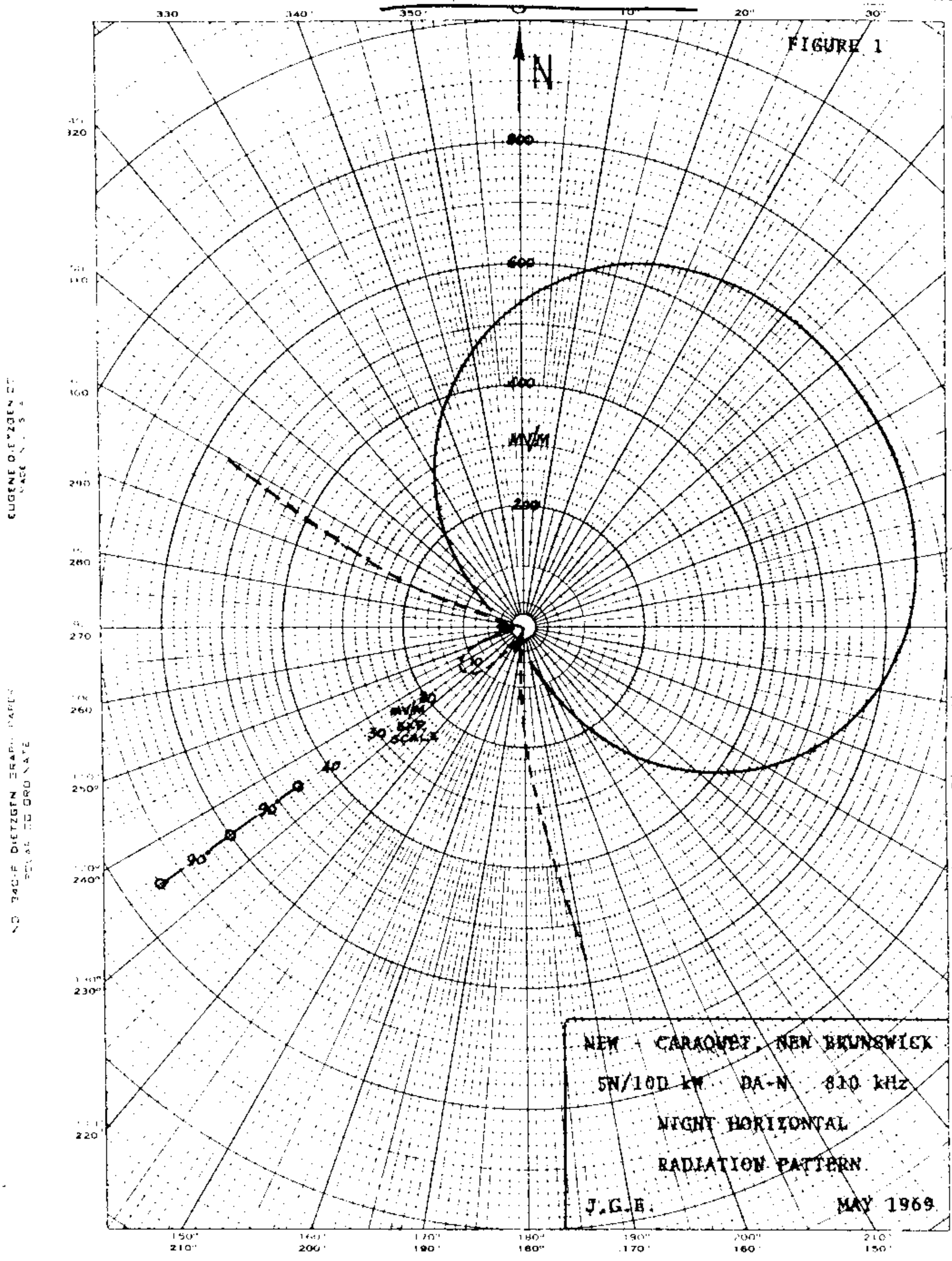
GROUND SYSTEM: 120 equally spaced copper radial wires per tower, buried 8"-12" deep, of average length 485'(0.4λ), excluding those along the common chord.

PREDICTED EFFICIENCY: 180 mV/m for 1 kW (at one mile) or 402 mV/m for 5 kW night and 569 mV/m for 10 kW day.

Proposed Night (11-29-69ct)

New Station
Caraquet, New Brunswick

5kw,10kw-LS,DA-N,U,ClassI
810 kc



XEBA

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XEBA

Main Studio: Guadalajara, Jal.

Frequency: 820 kHz

Power: 10 kW

Notification List No. 276

Date: April 1, 1976

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 20° 43' 34"
West Longitude: 103° 20' 05"

ANTENNA CHARACTERISTICS

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

TOWER:	#1(NE)	#2(SW)
HEIGHT ABOVE INSULATORS:	296.8'	296.8' (89.0°)
PHASING:	0°	-178°
FIELD RATIO:	1	0.815

SPACING AND ORIENTATION: The towers are located in a row spaced 266.7'(80.0°) on a line bearing 210° true.

GROUND SYSTEM: 120-300' equally spaced copper radials about each tower.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL

RMS

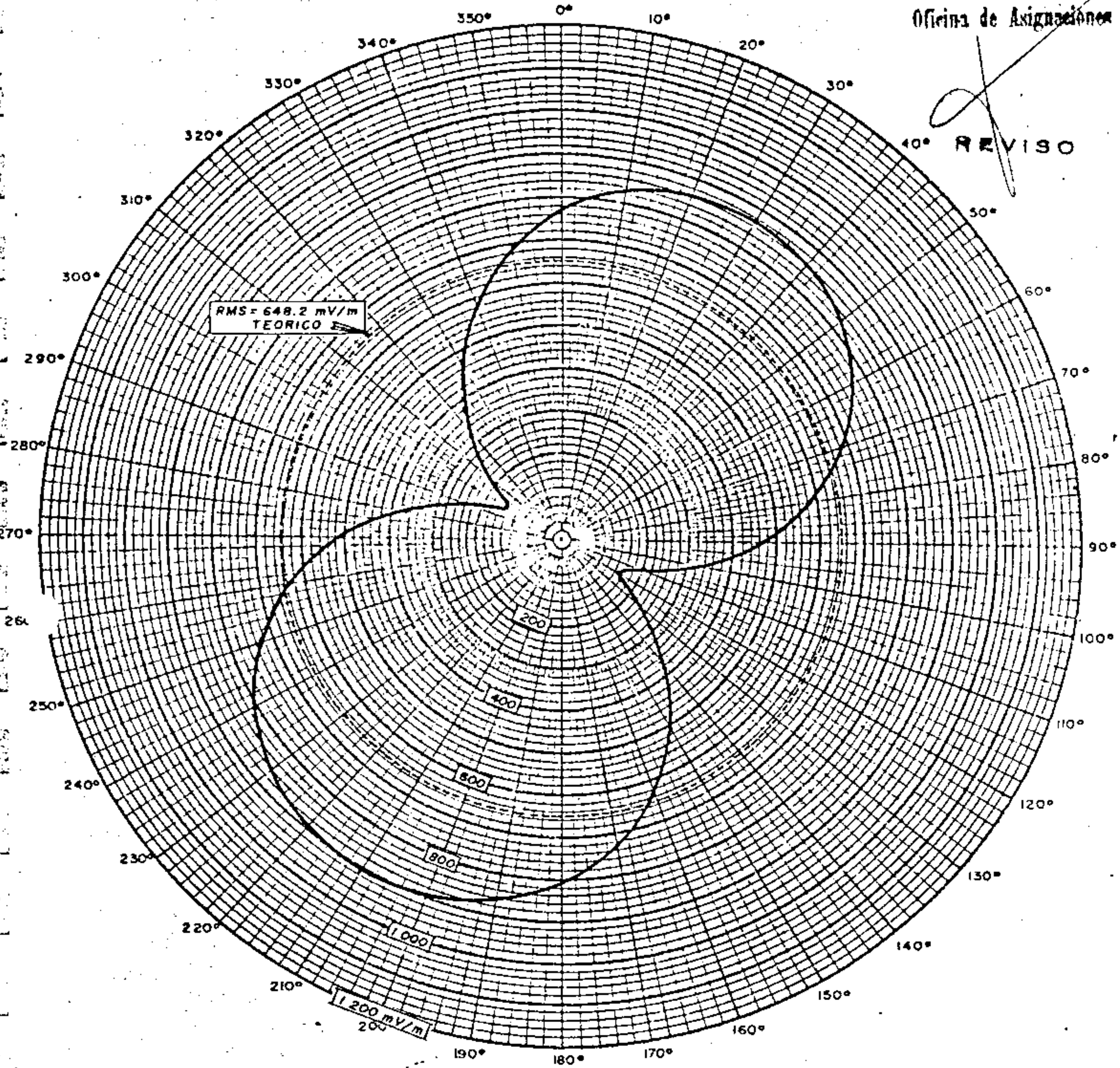
648.2 mv/m

CTR NO 20481A3

XEBA

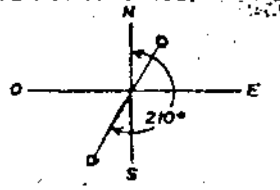
Departamento de F.ecuencias
Oficina de Asignaciones

REVISO



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

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



RADIO TAPATIA S.A.

XEBA

820 KHz.
10,000 WATTS

DISEÑO:
ING. ANTONIO DE AVILA S.

XEBA

DIRECC. GRAL. DE [illegible]CACIONES
Departamento de F[illegible]encias
Oficina de Asignaciones

PATRON DE RADIACION HORIZONTAL TABULADO

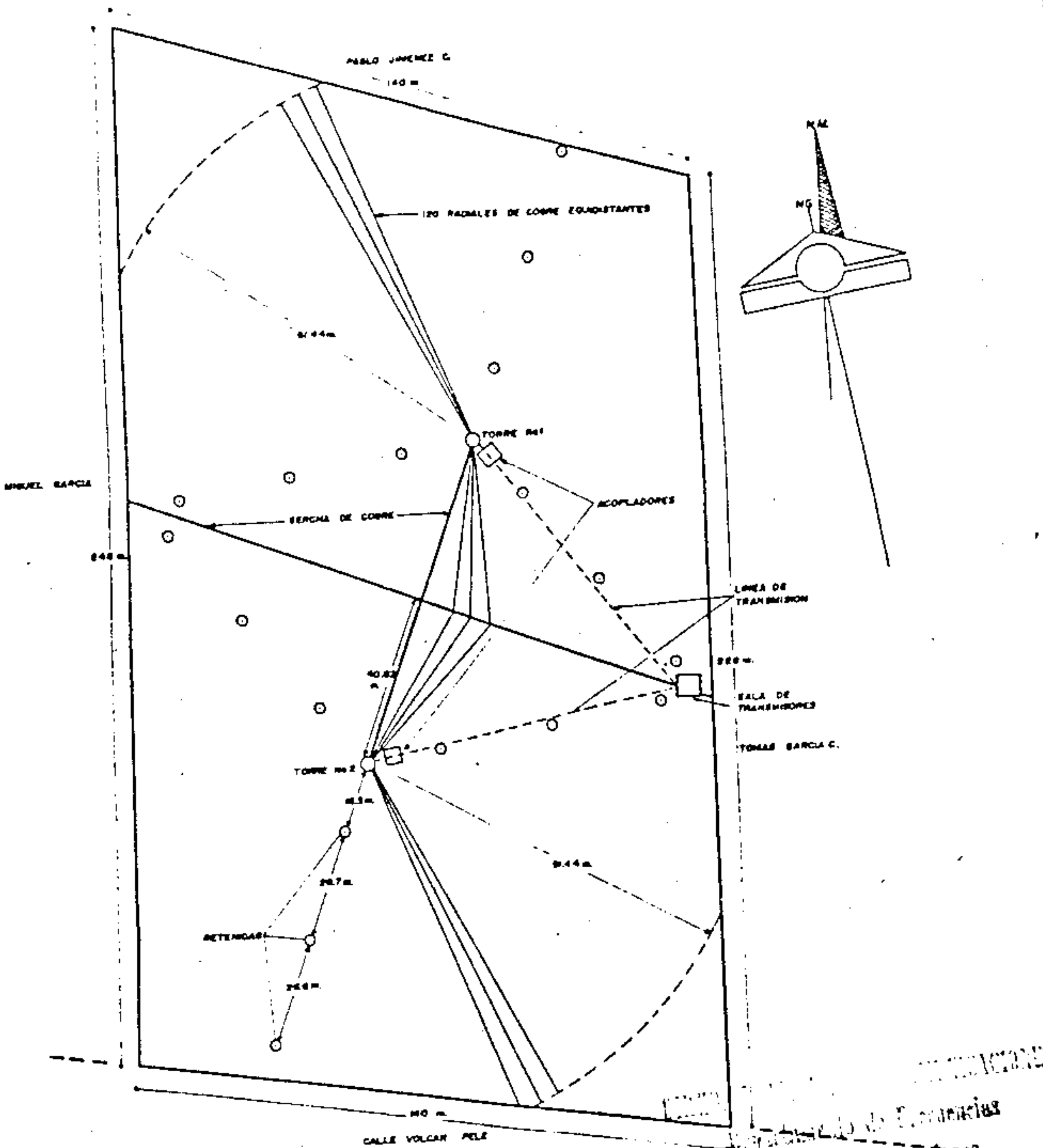
XEBA
820 KHz.

10,000 WATTS
GUADALAJARA, JAL.

$$E = E_1\sqrt{2f_2}\sqrt{\frac{1+(f_2)^2}{2f_2} + \cos\left[S\cos(210-\theta) + \alpha\right]}$$

AZIMUT	A	B	C	D	E	E (mV/m.)
θ	$S\cos(210-\theta)$	$A+\alpha$	$\cos B$	$C + \frac{1+(f_2)^2}{2f_2}$	$\sqrt{D}$	$\sqrt{2f_2}\,F\cdot E_1$
0	-69.2820	-247.2820	-0.3862	0.6348	0.7967	767.7940
10	-75.1754	-253.1754	-0.2894	0.7316	0.8553	824.2311
20	-78.7846	-256.7846	-0.2286	0.7924	0.8902	857.8152
30	-80.0000	-258.0000	-0.2079	0.8131	0.9017	868.9479
40	-78.7846	-256.7846	-0.2286	0.7924	0.8092	857.8152
50	-75.1754	-253.1754	-0.2894	0.7316	0.8553	824.2311
60	-69.2820	-247.2820	-0.3862	0.6348	0.7967	767.7940
70	-61.2836	-239.2836	-0.5108	0.5102	0.7143	688.3337
80	-51.4230	-229.4230	-0.6505	0.3705	0.6087	586.5918
90	-40.0000	-218.0000	-0.7880	0.2330	0.4827	465.1476
100	-27.3616	-205.3616	-0.9036	0.1174	0.3426	330.1509
110	-13.8919	-191.8919	-0.9785	0.0425	0.2061	198.5678
120	0.0000	-178.0000	-0.9994	0.0216	0.1470	141.6491
130	13.8919	-164.1081	-0.9618	0.0592	0.2433	234.5026
140	27.3616	-150.6384	-0.8715	0.1495	0.3866	372.5461
150	40.0000	-138.0000	-0.7431	0.2779	0.5271	507.9635
160	51.4230	-126.5770	-0.5959	0.4251	0.6520	628.3020
170	61.2836	-116.7164	-0.4496	0.5714	0.7559	728.4571
180	69.2820	-108.7180	-0.3209	0.7001	0.8367	806.3093
190	75.1754	-102.8246	-0.2220	0.7990	0.8939	861.4047
200	78.7846	- 99.2154	-0.1601	0.8609	0.9278	894.1073
210	80.0000	-98.0000	-0.1392	0.8818	0.9391	904.9334
220	78.7846	-99.2154	-0.1601	0.8609	0.9278	894.1013
230	75.1754	-102.8246	-0.2220	0.7990	0.8939	861.4047
240	69.2820	-108.7180	-0.3209	0.7001	0.8367	806.3093
250	61.2836	-116.7164	-0.4496	0.5714	0.7559	728.4571
260	51.4230	-126.5770	-0.5959	0.4251	0.6520	628.3020
270	40.0000	-138.0000	-0.7431	0.2779	0.5271	507.9635
280	27.3616	-150.6384	-0.8715	0.1495	0.3866	372.5461
290	13.8919	-164.1081	-0.9618	0.0592	0.2433	234.5026
300	0.0000	-178.0000	-0.9994	0.0216	0.1470	141.6491
310	-13.8919	-191.8919	-0.9785	0.0425	0.2061	198.5678
320	-27.3616	-205.3616	-0.9036	0.1174	0.3426	330.1509
330	-40.0000	-218.0000	-0.7880	0.2330	0.4827	465.1476
340	-51.4230	-229.4230	-0.6505	0.3705	0.6087	586.5918
350	-61.2836	-239.2836	-0.5108	0.5102	0.7143	688.3337

XEBA



Departamento de Frecuencias
Oficina de Asignaciones

REVISO

DISTANCIA AL CONTORNO DE 5V/m
DEL CENTRO DEL EJE DE LAS TORRES

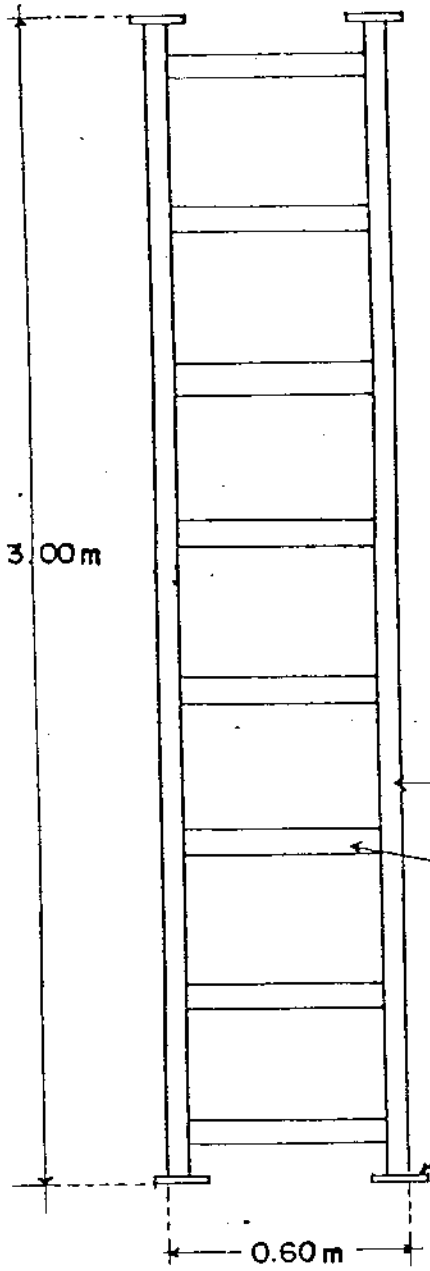
DIRECC.	DIST. en mts.
0°	247.25
45	271.72
90	149.78
135	97.39
180	66 43
225	283 53
270	163.57
315	84 31

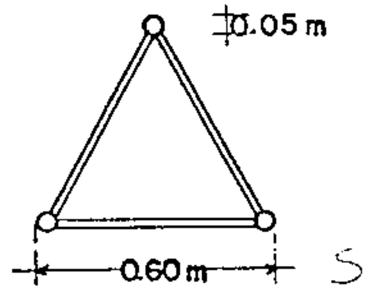
DIR... GRAL. DE TELECOMUNICACIONES
Departamento de Frecuencias
Oficina de Asignaciones

1.1.— NOMBRE DE LA POBLACION: GUADALAJARA
1.2.— ESTADO A QUE PERTENECE: JALISCO
1.3.— NOMBRE DEL CONCESIONARIO O PERMISIONARIO: RADIO TAPATIA S. A.
1.4.— DISTINTIVO DE LLAMADA: XEBA
1.5.— FRECUENCIA ASIGNADA EN KHz. 820
1.6.— POTENCIA ASIGNADA EN KW 10
1.7.— DOMICILIO PREDIO RUSTICO CALLE VOLCAN PELE SIN No. HUENTITAN EL BAJO MPIO. DE GADALAJARA.
1.8.— ALTURA DEL ELEMENTO RADIADOR 90 Mts.
1.9.— NUMERO DE RADIALES 120 C/ RADIADOR
1.10.— LONGITUD DE LOS RADIALES 91.44 Mts. C/U
1.11.— CALIBRE DE LOS RADIALES ALAMBRE No 6

XEBA

DETALLE SECCION DE TORRE ANTENA





SECCION TRANSVERZAL
E S C A L A 1:20

T-60

SECCION TRIANGULAR
GALVANIZADO EN CALIENTE
ESCALA 1:20
GUADALAJARA, JAL.

DIREC. GRAL. DE TELECOMUNICACIONES
Departamento de Frecuencias
Oficina de Asignaciones

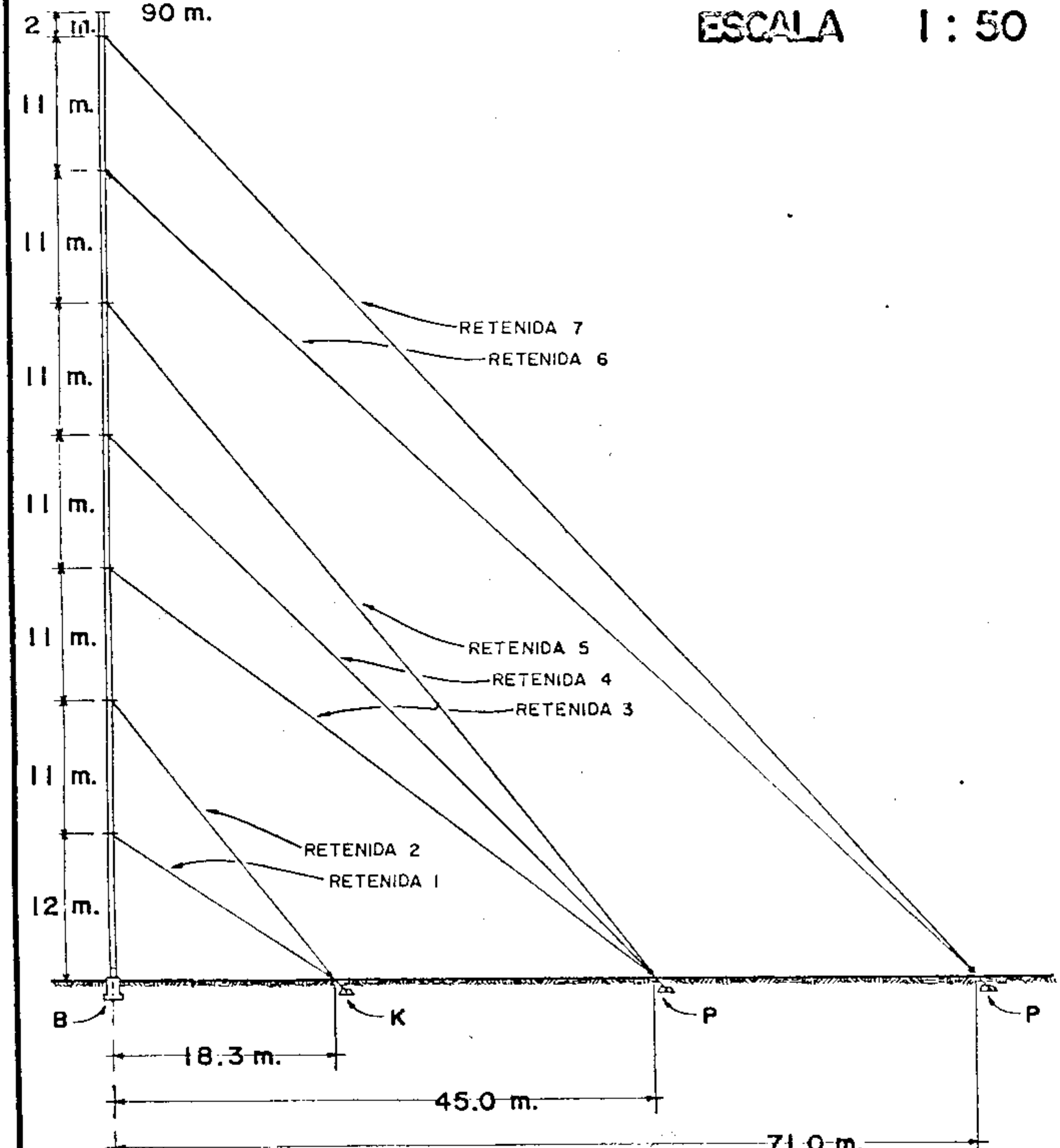
DIREC. GRAL. DE TELECOMUNICACIONES
Departamento de Frecuencias
Oficina de Asignaciones

ESTACION XEBA

XEBA

DETALLE DE LA TORRE Y RETENIDAS

ESCALA 1 : 50



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Departamento de Frecuencias
Oficina de Asignaciones
GUADALAJARA, JAL.

[illegible]
Departamento de Frecuencias
Oficina de Asignaciones
ESTACION XEBA

APROBO

REVISO

Cuba

CMBZ
830 kc

91524

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CMBZ

Main Studio: Havana, Cuba

Frequency: 830kc/s

Power 5 kw

Date Received April 28, 1953

Class: II-E

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:

North Latitude: 23° ~~21'~~ 08' 30"
West Longitude: 82° 23' 00"

ANTENNA CHARACTERISTICS

Authorized for Day and Night operation. (DA-1)
Number of elements: Two (2)
Type of elements: Series-fed, self-supporting, vertical steel towers.

Tower:	North	South
Height Above Insulators:	90°	90°
Spacing:	230' or 70° between adjacent towers.	
Phasing:	55°	-55°
Field Ratio:	1	1

Orientation: Elements on a line bearing 170° true.

Ground System: 120 equally spaced radials.

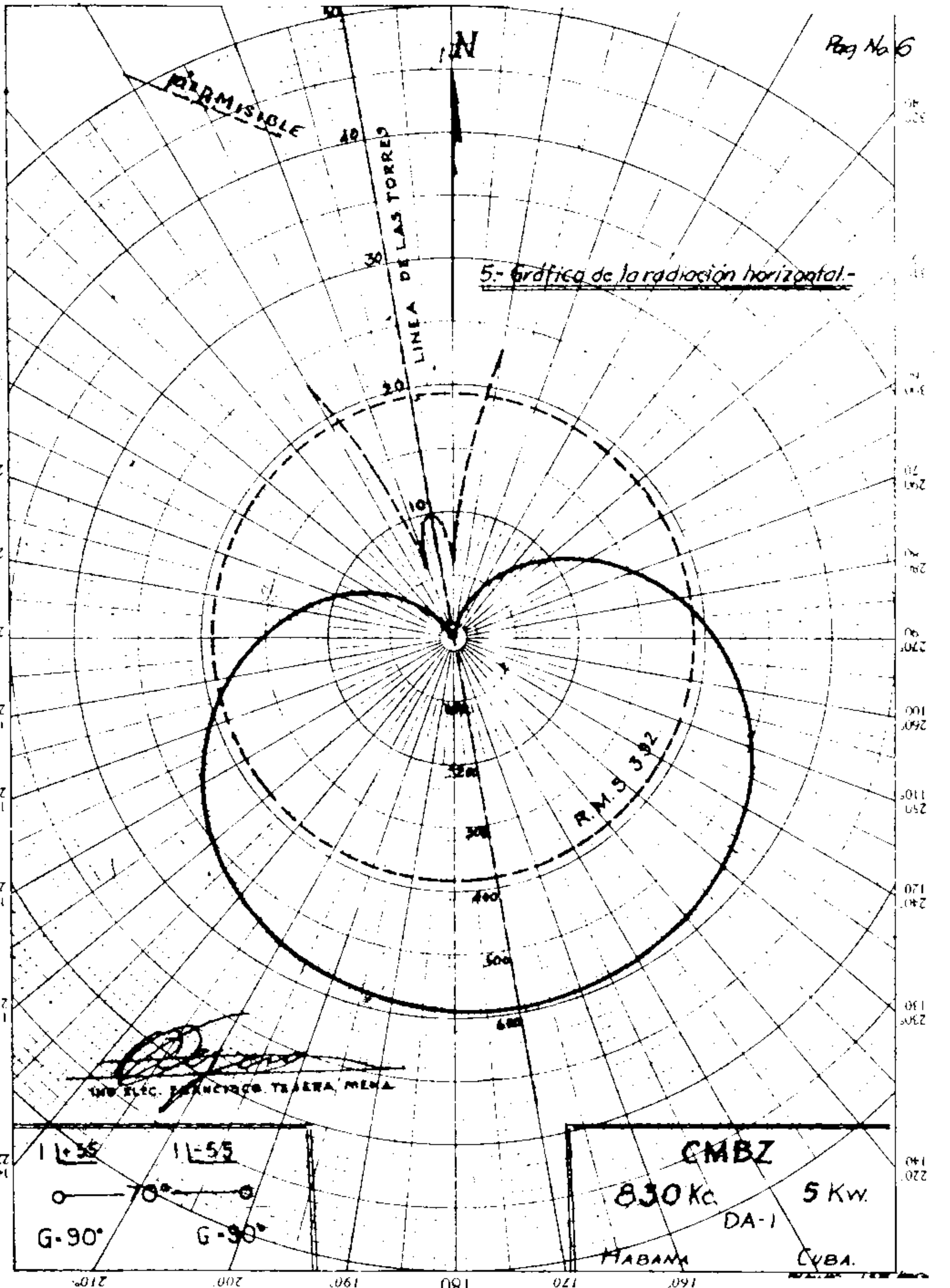
Predicted effective Field 392 mv/m at rated power.

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

CMBZ

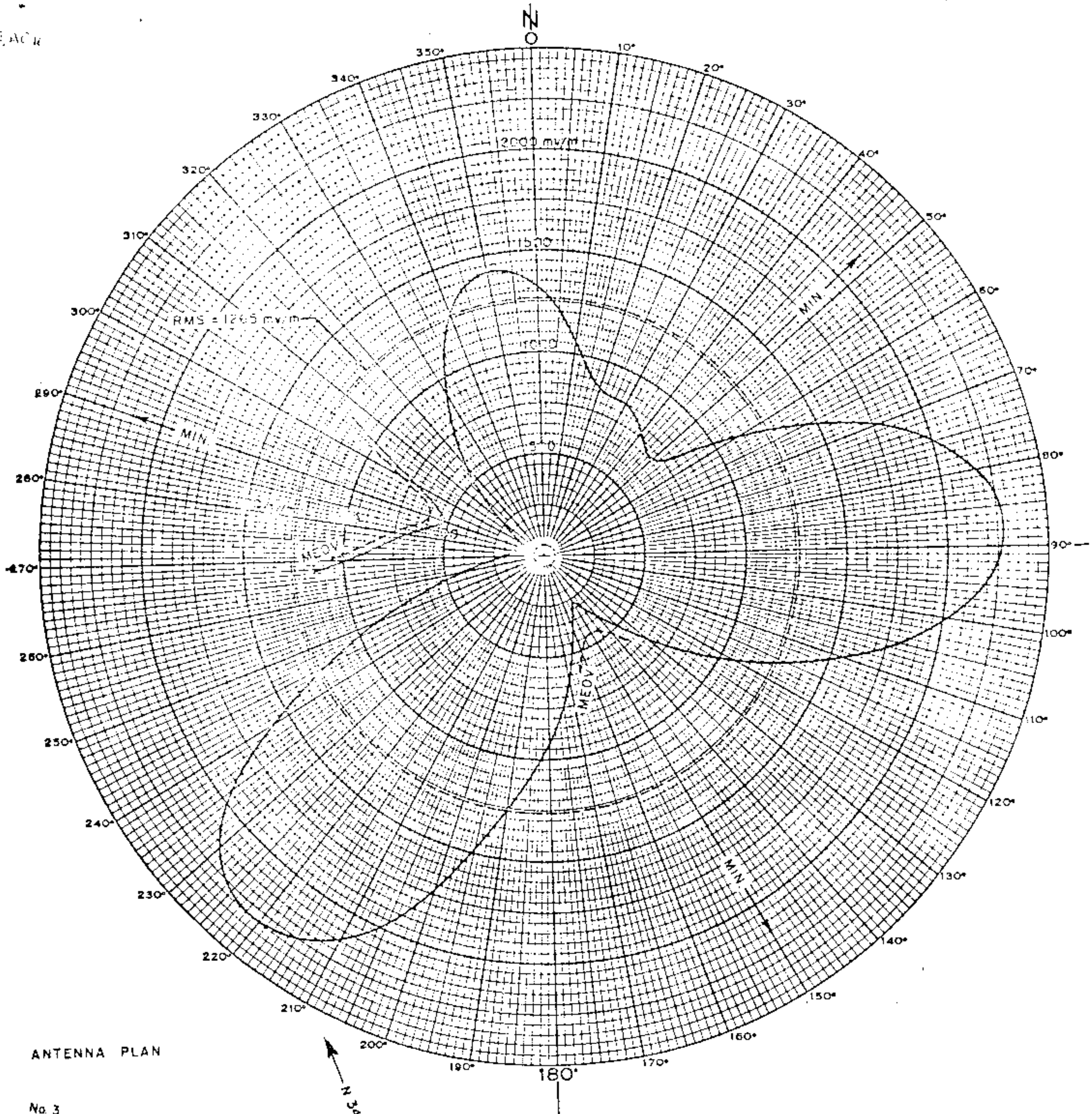
PROPOSED CMBZ, HAVANA, CUBA 5 kw, DA-1 830 kc
DAY & NIGHT (7/9/53G)



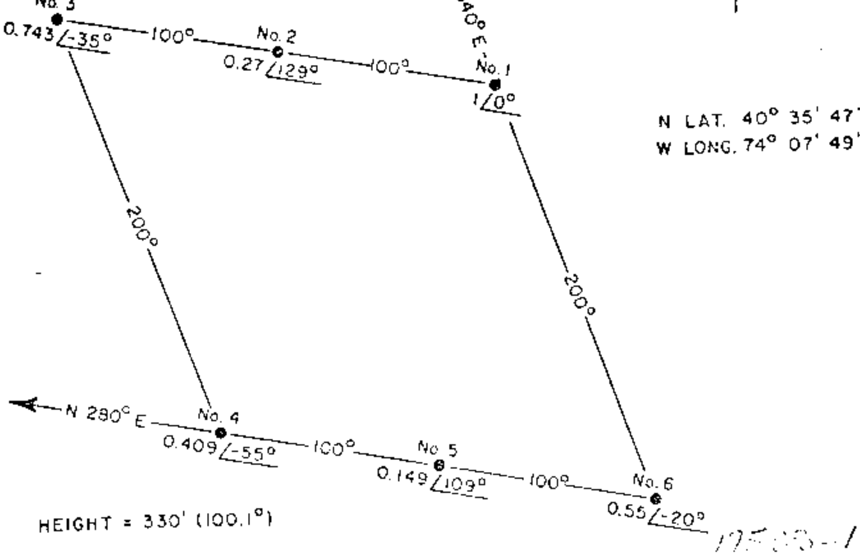
CMBZ, HAVANA, CUBA

WNYC

SEE BACK



ANTENNA PLAN



HEIGHT = 330' (100.1°)

N LAT. 40° 35' 47"
W LONG. 74° 07' 49"

FIGURE 4

HORIZONTAL RADIATION PATTERN

PROPOSED DAYTIME OPERATION

CITY OF NEW YORK

MUNICIPAL BROADCASTING SYSTEM

WNYC 50 KW DA-2 830 KC

NEW YORK, NEW YORK

Prepared by

Lohnes and Culver Washington, D. C.

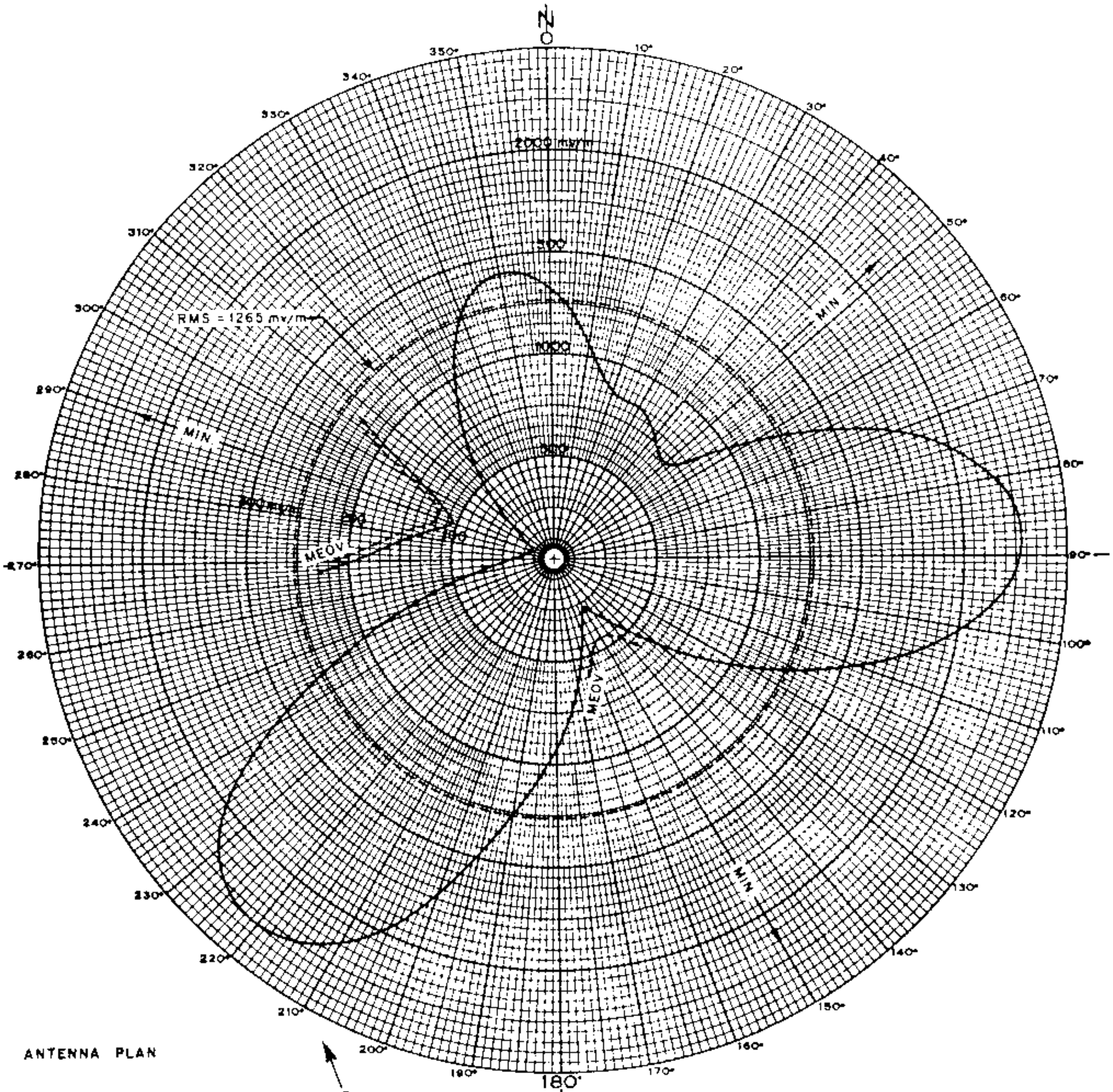
February 1964

WNYC

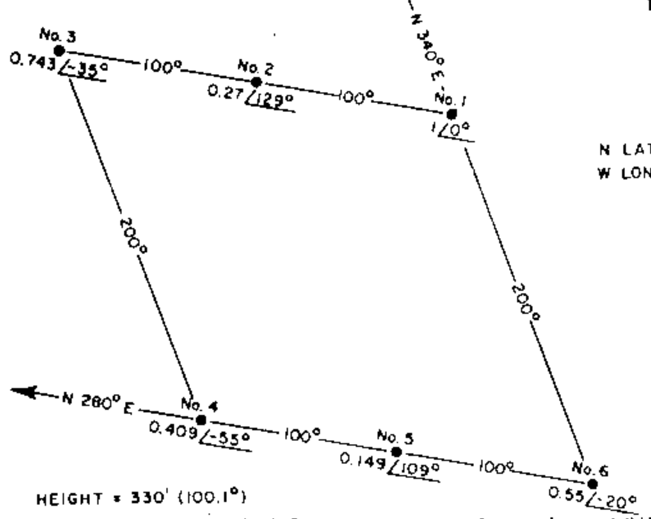
Proposed Day
(12-29-65ct)

Station WNYC
New York, New York

50kw, DA-2, U
830 kc



ANTENNA PLAN



N LAT. 40° 35' 47"
W LONG. 74° 07' 49"

HEIGHT = 330' (100.1°)

FIGURE 4
HORIZONTAL RADIATION PATTERN
PROPOSED DAYTIME OPERATION
CITY OF NEW YORK
MUNICIPAL BROADCASTING SYSTEM
WNYC 50 KW DA-2 830 KC
NEW YORK, NEW YORK

Prepared by
Lohnes and Culver Washington, D. C.
February 1964

FCC File No. BP-16148
Accepted 11-17-65

Station WNYC
New York, New York

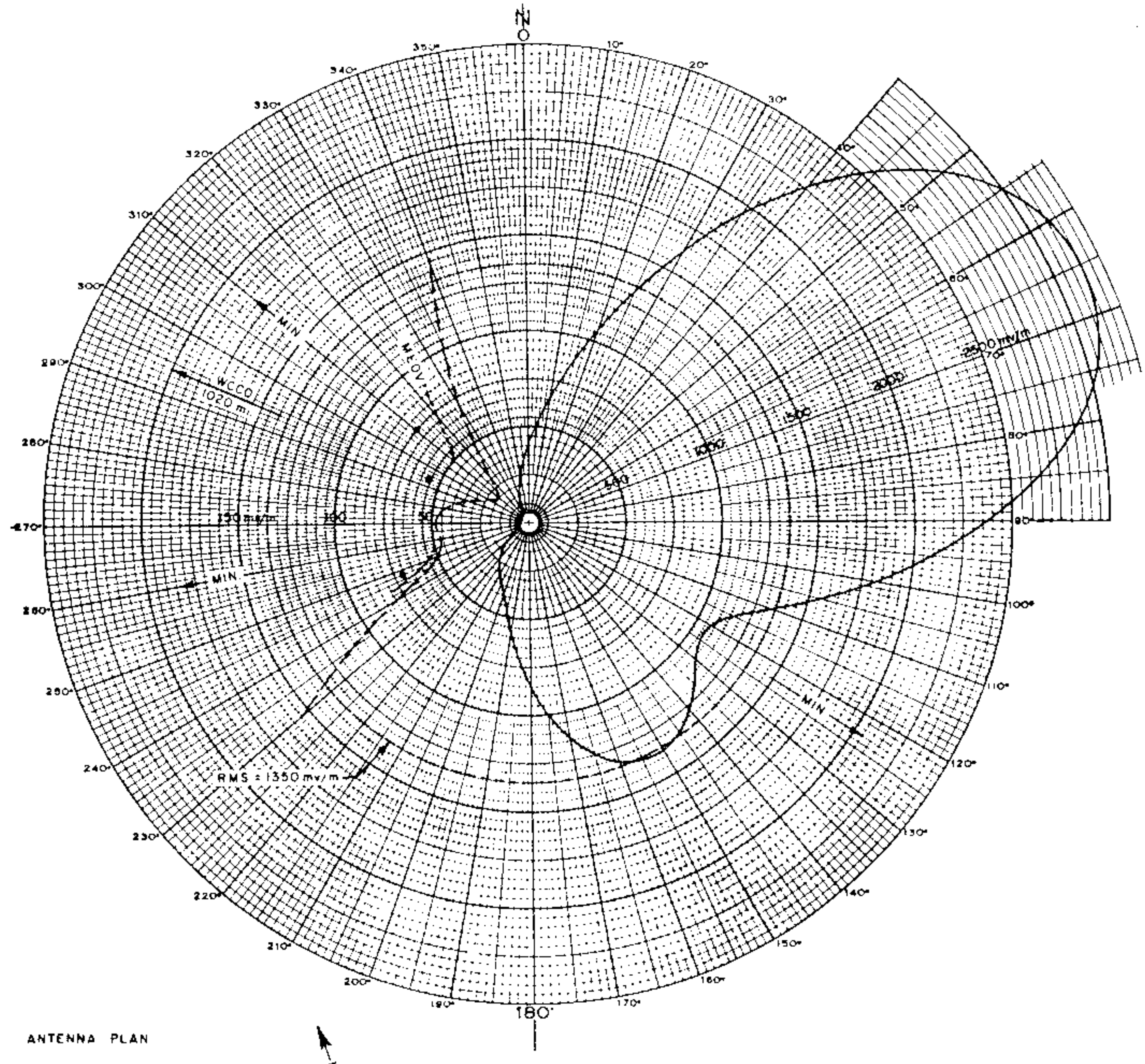
830 kc

WNYC

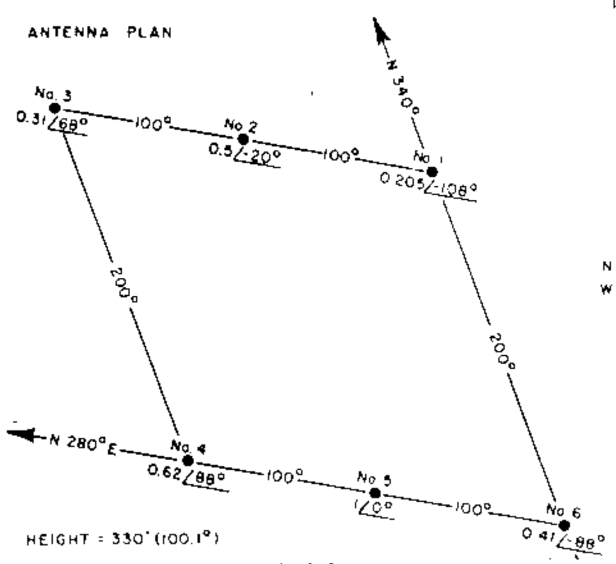
Proposed Night
(12-29-65ct)

Station WNYC
New York, New York

50kw,DA-2,U
830 kc



ANTENNA PLAN



● MAXIMUM ALLOWABLE RADIATION FOR WNYC
SSA AUTHORIZATION FROM B1-SSA-52

N LAT 40° 35' 47"
W LONG 74° 07' 49"

FIGURE 5
HORIZONTAL RADIATION PATTERN
PROPOSED NIGHTTIME OPERATION
CITY OF NEW YORK
MUNICIPAL BROADCASTING SYSTEM
WNYC 50 KW DA-2 830 KC
NEW YORK, NEW YORK

Prepared by
Lohnes and Culver Washington, D. C.
February 1964

FCC File No.BP-16148
Accepted 11-17-65

Station WNYC
New York, New York

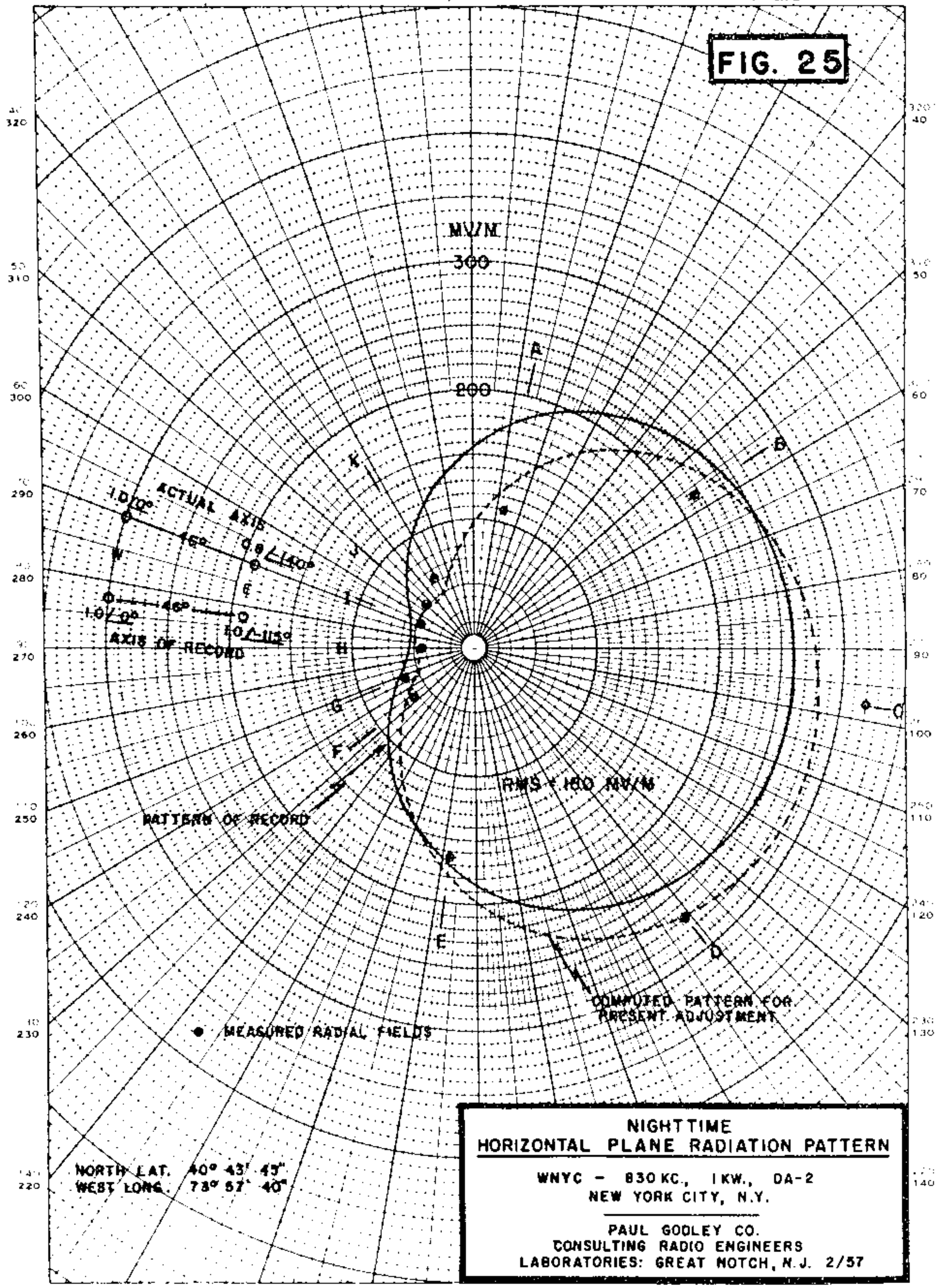
830 kc

Used from 6:00 a.m. until sunrise, and from time of sunset in Minneapolis to 10:00 p.m. See note on day pattern.

WNYC

MEASURED NIGHT
(7/3/57g)

Station WNYC 1kw, DA-2,U
New York, New York 830 KC



FCC File No. BL-6659 WNYC
Accepted 6/25/57 New York, New York 830 KC

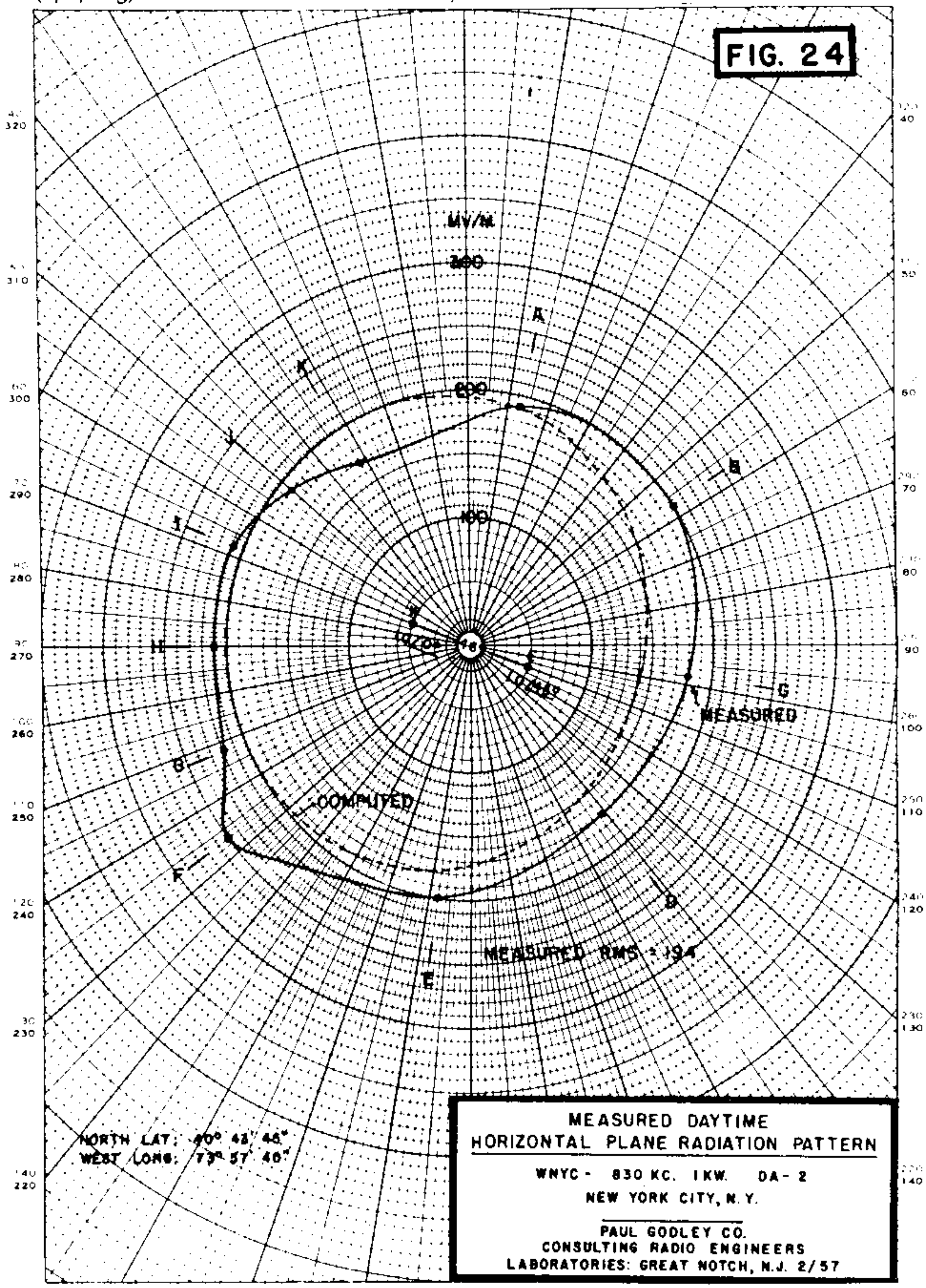
WNYC licensed for daytime operation only
Special permission to operate from 6:00 a.m. (or before sunrise) to 10:00 p.m. EST (from hr of sunset in Minneapolis - WCCO) - night pattern used at times of special operation to protect WCCO

WNYC

MEASURED DAY
(7/3/57g)

Station WNYC
New York, New York

1kw, DA-2,U
830 KC

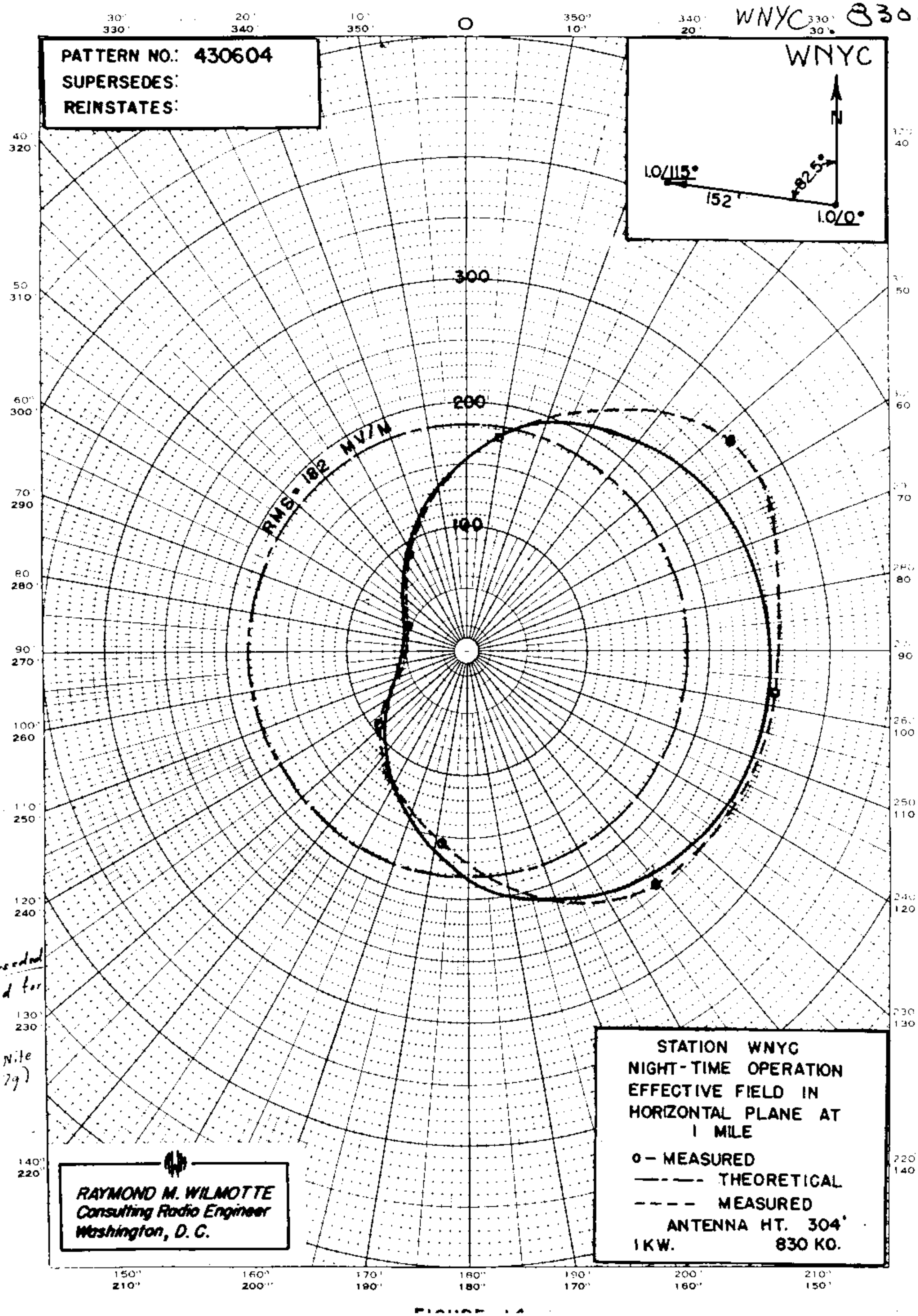


FCC File No. BL-6659
Accepted 6/25/57

WNYC
New York, New York

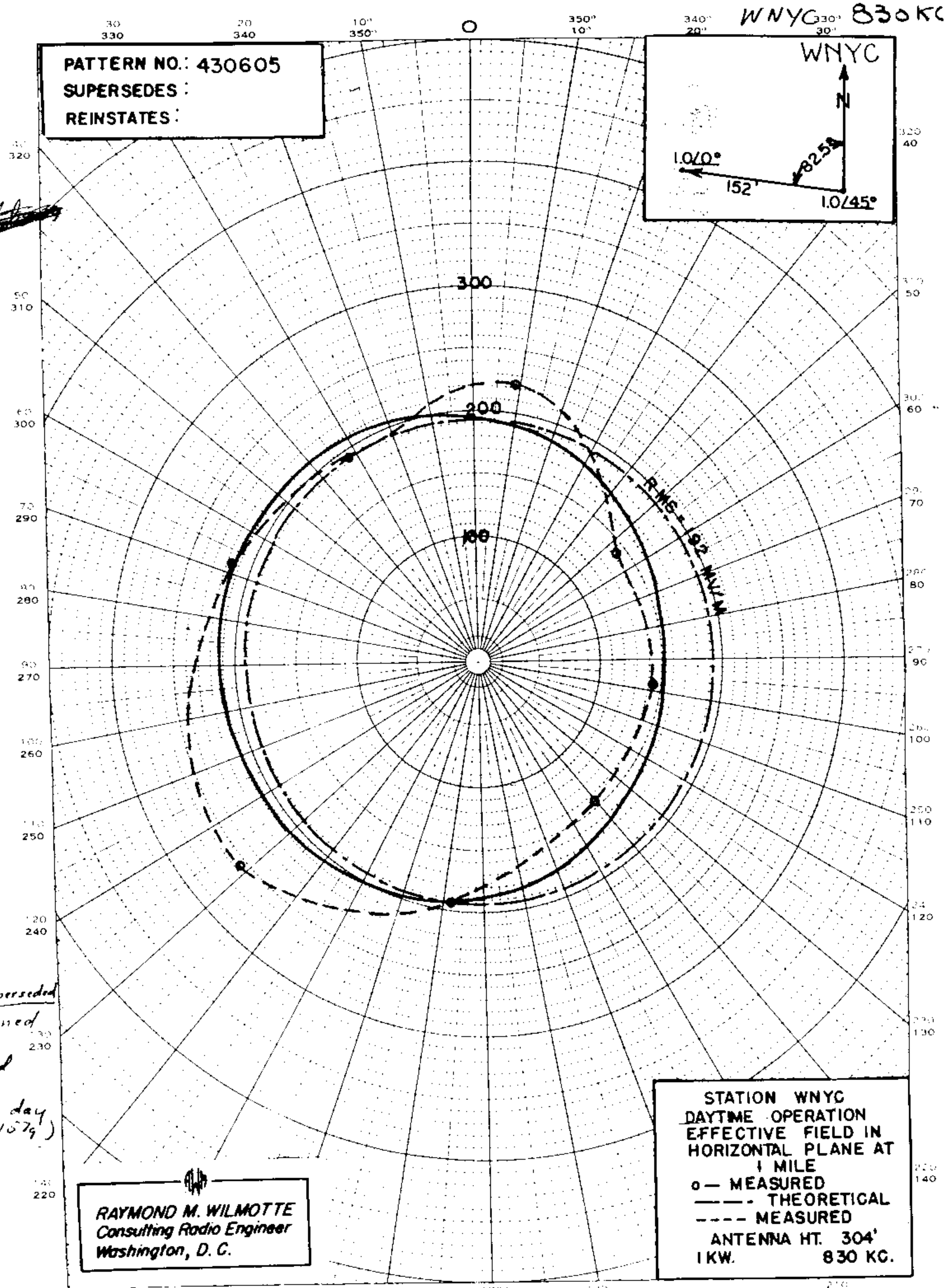
830 KC

WNYC 830K



superseded
retained for added info. see (Memo Nite 7/31/79)

WNYC 830 KC



superseded
retained for added info see (meas day 7/31/79)

FIGURE 13

XELA

FOREIGN NIGHT	XELA, MEXICO, D. F. 3/19/52O	5 KW, 10KW-LS, U, DA-N	830 KC

73891

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XELA

Main Studio: Mexico, D. F.

Frequency: 830 kc/s

Power 5 kw-Night; 10 kw-Day

Class II

Date of Pattern: 9/25/51

Antenna Characteristics

Authorized for nighttime operation (DA-N) - 2 elements

Spacing: 209.5' or 60° between adjacent towers

Tower:	#1 (North)	#2 (South)
Height above insulators:	314'	314' (90°)
Phasing:	125°	0°
Field Ratio:	1.0	1.0

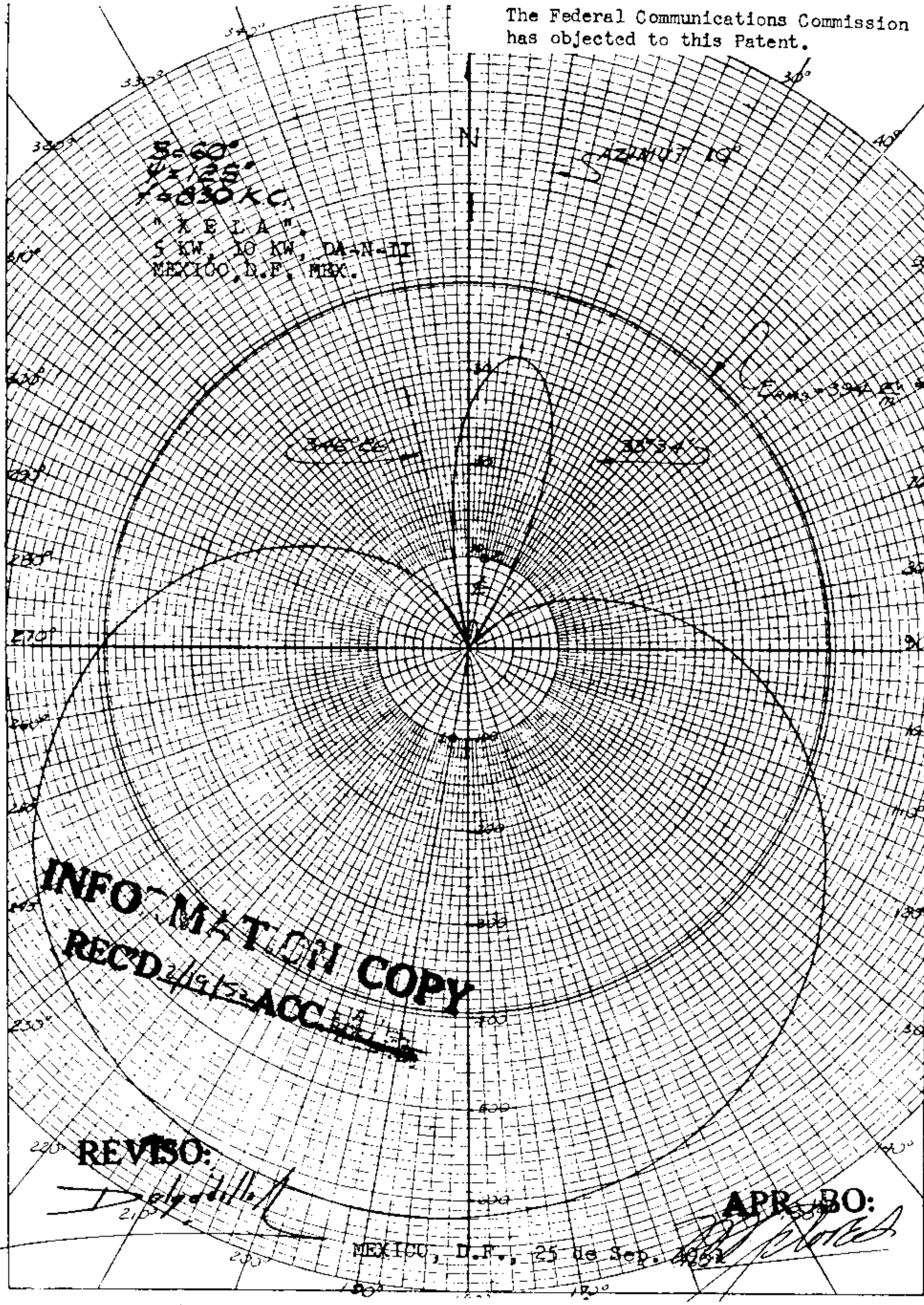
Orientation: Elements on a line bearing 10° true.

Predicted effective night field 392 mv/m at rated power.

XELA

FOREIGN NIGHT | XELA, MEXICO, D. F. 3/19/52G | 5 KW, 10KW DAY, U, DA-N | 830 KC

The Federal Communications Commission has objected to this Patent.



RECD FCC 2/19/52

XELA, MEXICO, D. F. 830 KC

WXEW
840 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WXEW

Main Studio: Yabucoa, Puerto Rico

Frequency: 840 KHz

Power: 1kw Night 5kw Day

Notification List No. 1789

Dated: September 12, 1980 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 18° 02' 58"
West Longitude: 65° 52' 07"

ANTENNA CHARACTERISTICS

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

TOWER:	NW(2)	SE(#1)
HEIGHT ABOVE INSULATORS:	180'	180' (55.34°)
NIGHT PHASING:	+107.37°	0°
NIGHT FIELD RATIO:	1.123	1.0
DAY PHASING:	—	—
DAY FIELD RATIO:	—	—

SPACING AND ORIENTATION: Towers in a row are spaced 227.7' (70°) on a line bearing 285° true.

GROUND SYSTEM: 120-293' 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:

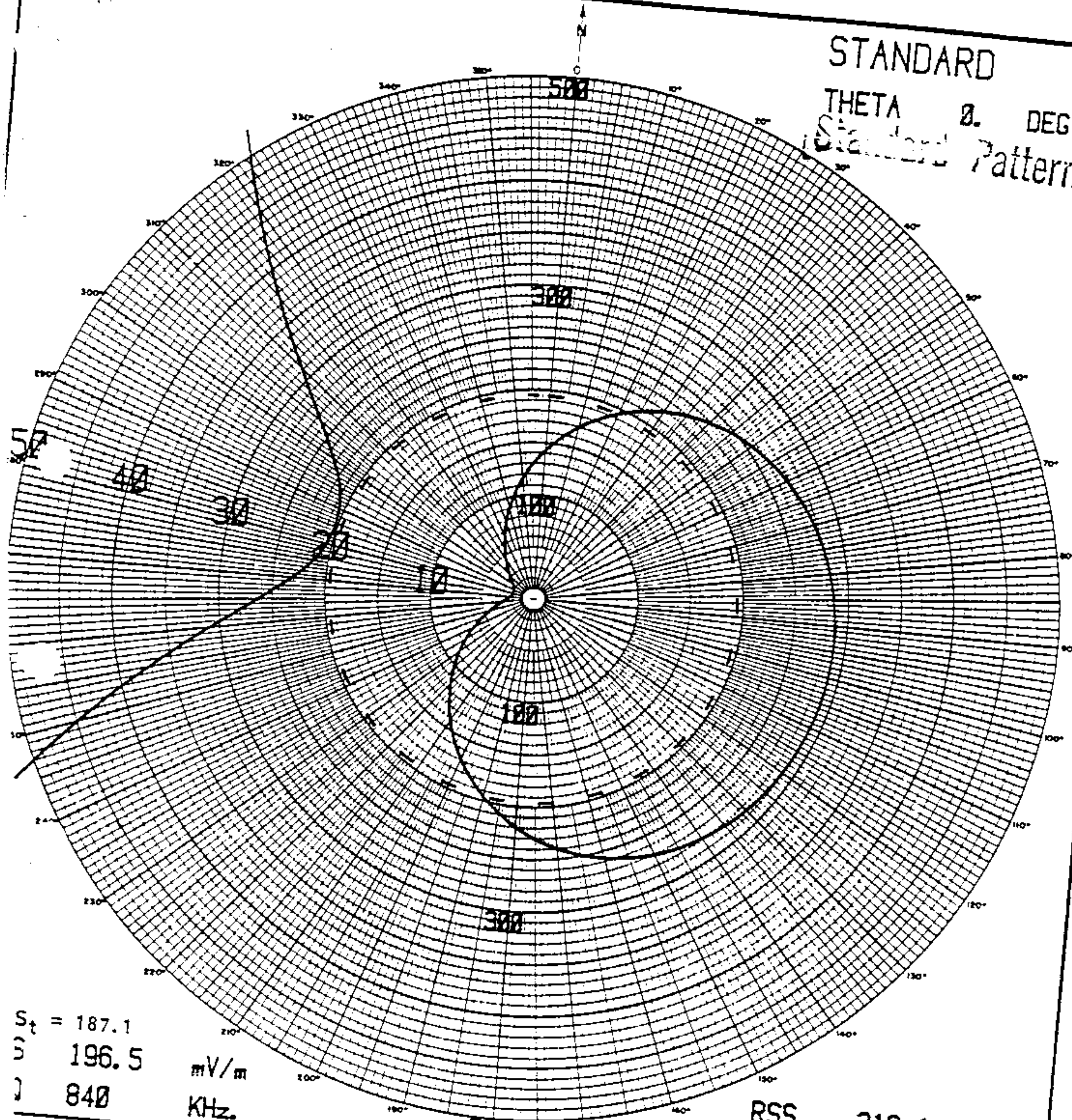
	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	406.96 mv/m		
Night	187.1 mv/m	219.1 mv/m	196.5 mv/m

WXEW
840kHz

STANDARD

THETA 0. DEG

Standard Pattern



S_t = 187.1

S 196.5 mV/m

0 840 KHz.

RSS 219.1 mV/m

POWER 1.0 KW.

18° 02' 58"

65° 52' 07"

MARCH, 1980

N-285°-E

1.123/107.37° #2

70°

1/0° #1

G = 70°

r V.Gureckis & Assoc.
ılting Radio Engineers
Potomac, MD

FIGURE 3

PLOT OF NIGHTTIME
DIRECTIONAL PATTERN

RADIO STATION WXEW
YABUCOA, PUERTO RICO

840 KHz 1/5 kw-LS-DA

DIRECTIONAL ANTENNA - DESCRIPTION SHEET

Station : New AM

Main Studio : ~~Conception Bay, Nfld.~~ Spaniard's Bay/Harbour Grace, Newfoundland

Frequency : 850 kHz

Power : 10 KW Class : II

Notification List No. : 373

Date : April 21, 1978

GEOGRAPHICAL LOCATION OF THE CENTRE OF THE ANTENNA SYSTEM : 47° 39' 21" N. 53° 15' 30" W.

ANTENNA ARRAY CHARACTERISTICS :

Mode of Operation : DA-N, Unlimited Time
Number of Elements : Two (2)
Type of Elements : Guyed steel towers, uniform cross-section, base insulated, series fed, no top loading.

Tower No. :	No. 1 (S.W.)	No. 2 (N.E.)
Height above Insulator :	225 ft. (70°)	225 ft.
Overall Height :	230 ft.	230 ft.
Field Ratio :	1	1
Phasing :	0°	-30°

Spacing & Orientation : Elements are spaced 385.9 ft. (120°) on a line bearing 77°E of true north

Ground System : 120 equiangularly spaced radials per tower, No. 10 AWG bare, soft-drawn copper wire, buried 8-10" in ground, each radial is 463 ft. long (≈ 0.4 λ), except where radials are shortened and bonded to transverse strap along intersection between towers.

Predicted Effective Fields at Rated Power :

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	576 mV/m	-	-
Night	570 mV/m	532.2 mV/m	598.8 mV/m

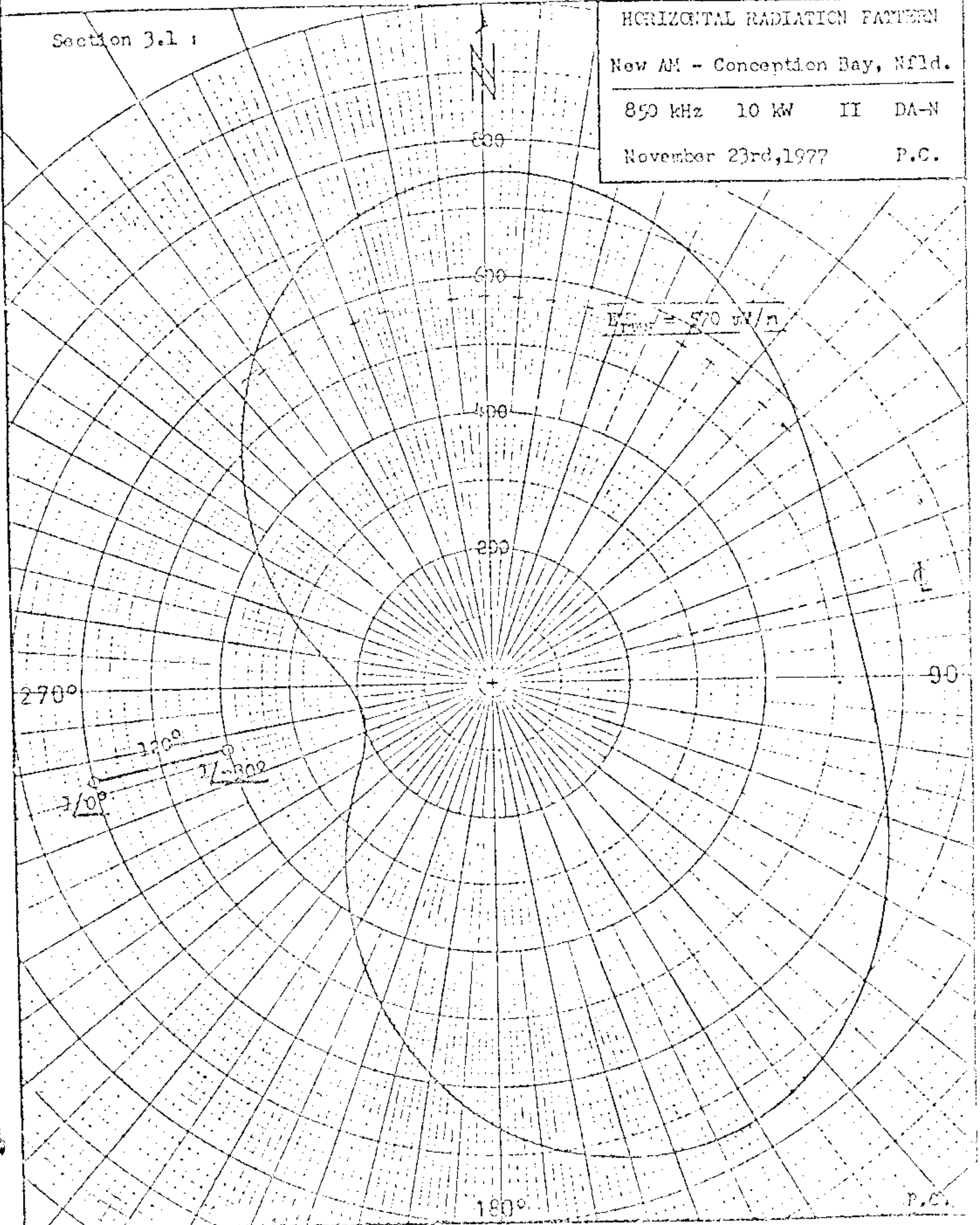
Section 3.1 :

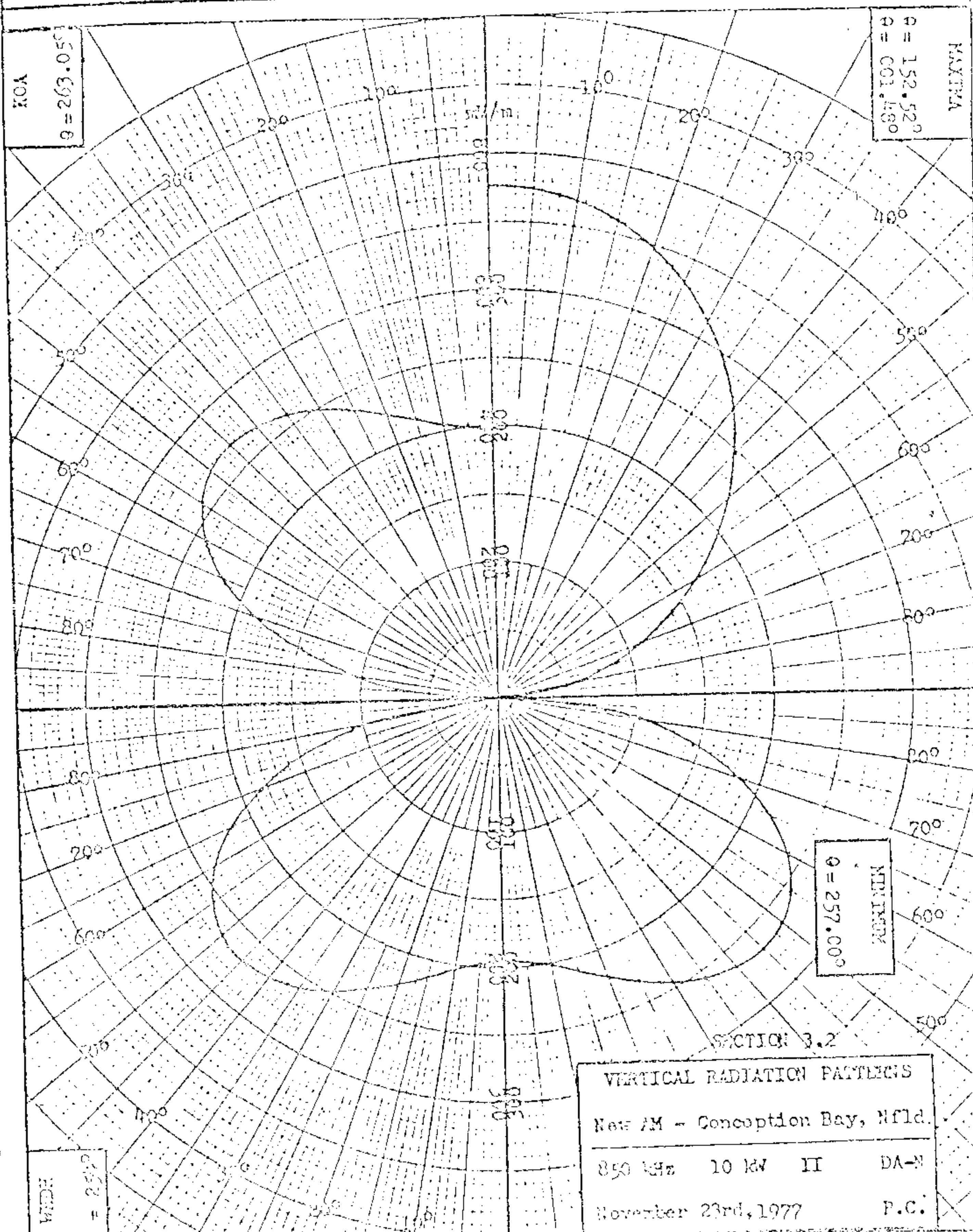
HORIZONTAL RADIATION PATTERN

New AM - Conception Bay, Nfld.

850 kHz 10 kW II DA-N

November 23rd,1977 P.C.





VERTICAL RADIATION PATTERNS

New AM - Conception Bay, Nfld.

850 kHz 10 kW II DA-N

November 23rd, 1977 P.C.

Directional Antenna Description Sheet

Station: New	Main Studio: St. John's, Newfoundland
Frequency: 850 kHz	Power: 25 kW day & night
Time: Unlimited	Class: II
Notification List No: 362	Date: March 15, 1977

Geographical Location: North Lat. 47° 36' 00"
West Long. 52° 49' 55"

Antenna System: Mode of Operation = DA-2
Two elements, guyed, uniform cross section, base insulated, series feed. Height above insulator 193 feet or 60 degrees.

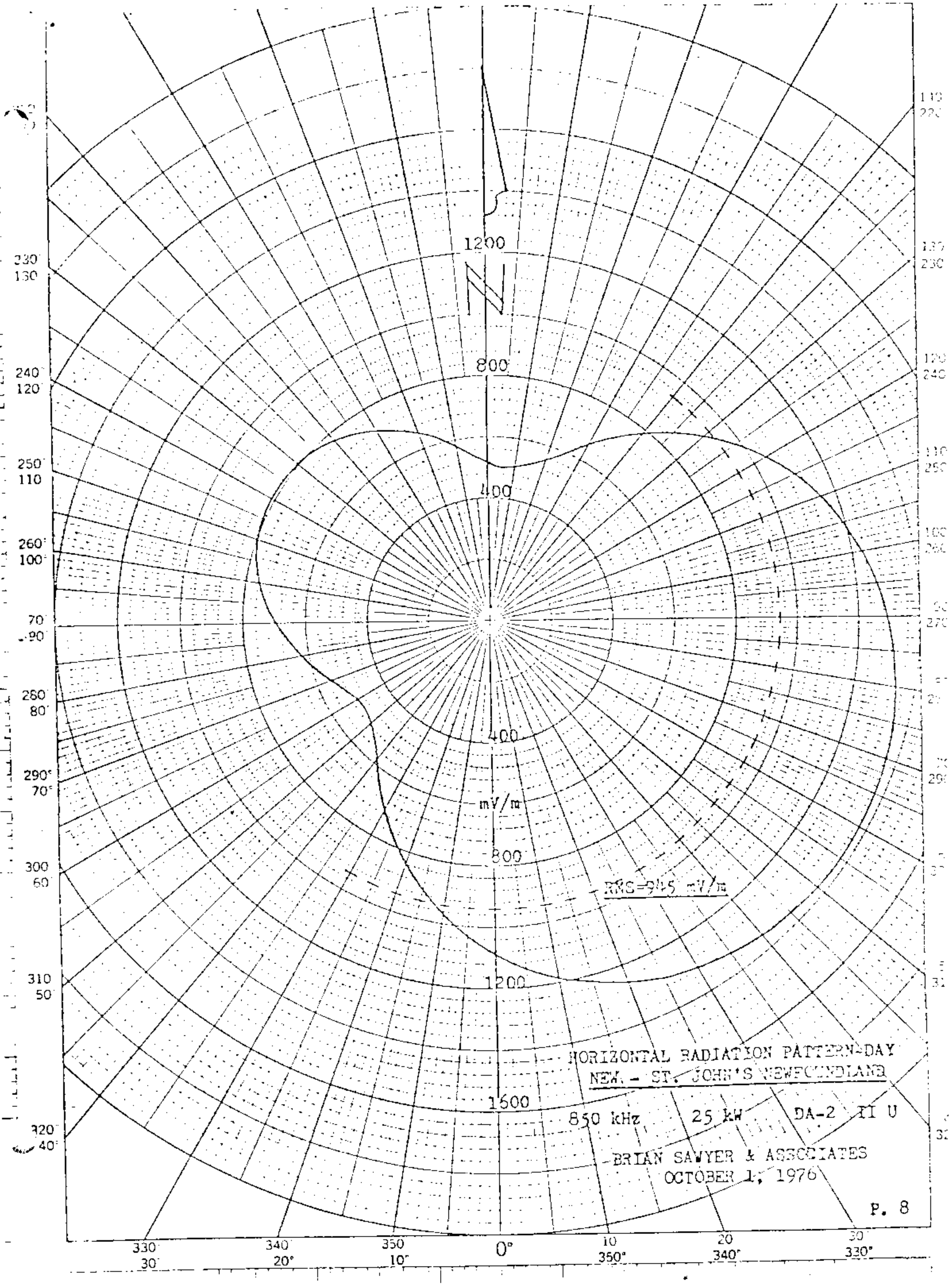
Element:	One (SE)	Two (NW)
Bearing:	Ref.	302°
Spacing:	Ref.	90°
Day Field Ratio:	1.0	0.5
Day Phase:	Ref.	+143°
Night Field Ratio:	1.0	0.8
Night Phase:	Ref.	+120°

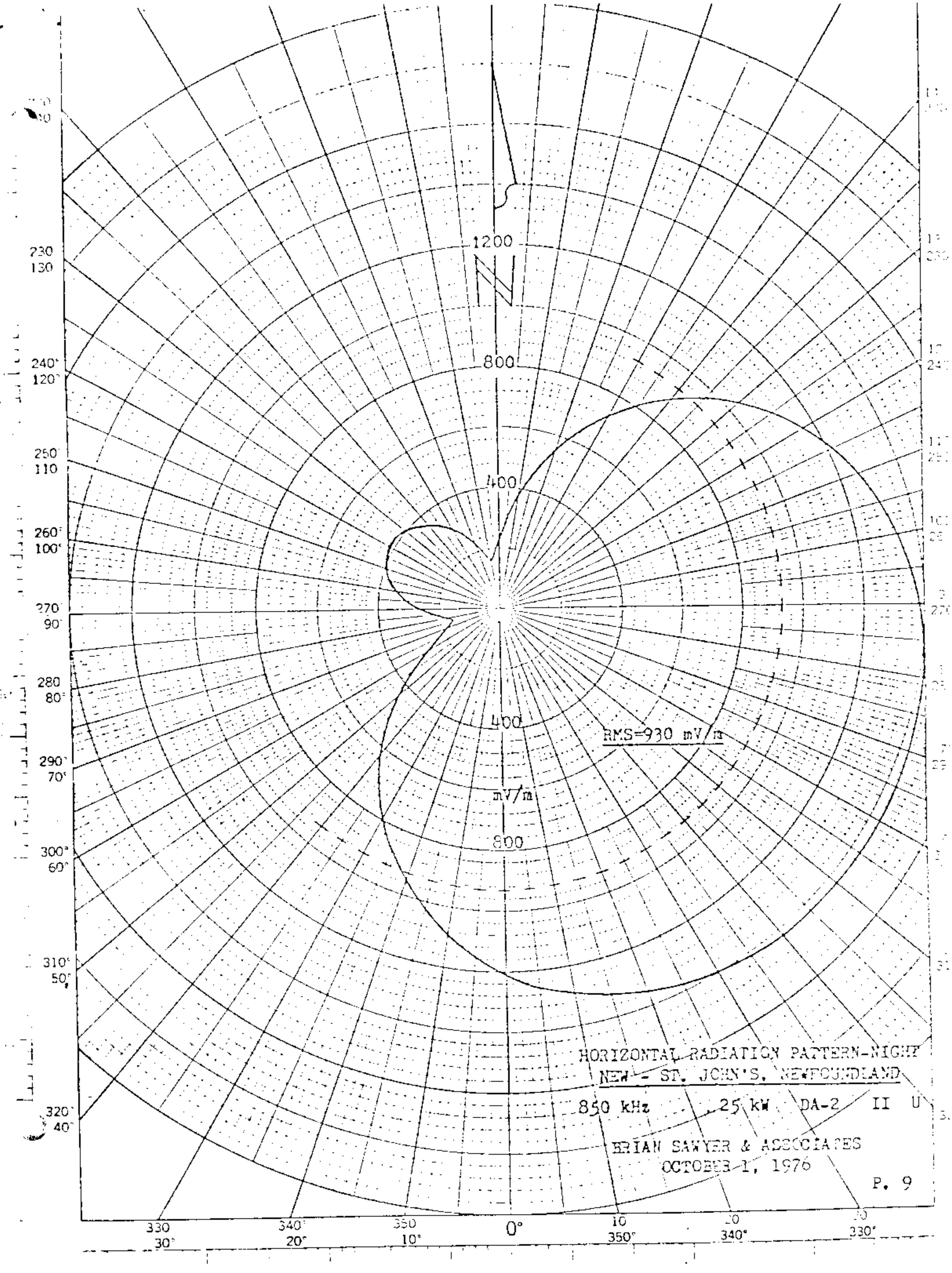
Ground System: 240 radials spaced every 1.5° extending a minimum 0.25 wavelengths long, #10 AWG soft drawn bare copper wire, buried 8" below ground level.

Predicted RMS: Day 945 mV/m at 1 mile for 25 kW
189 mV/m at 1 mile for 1 kW

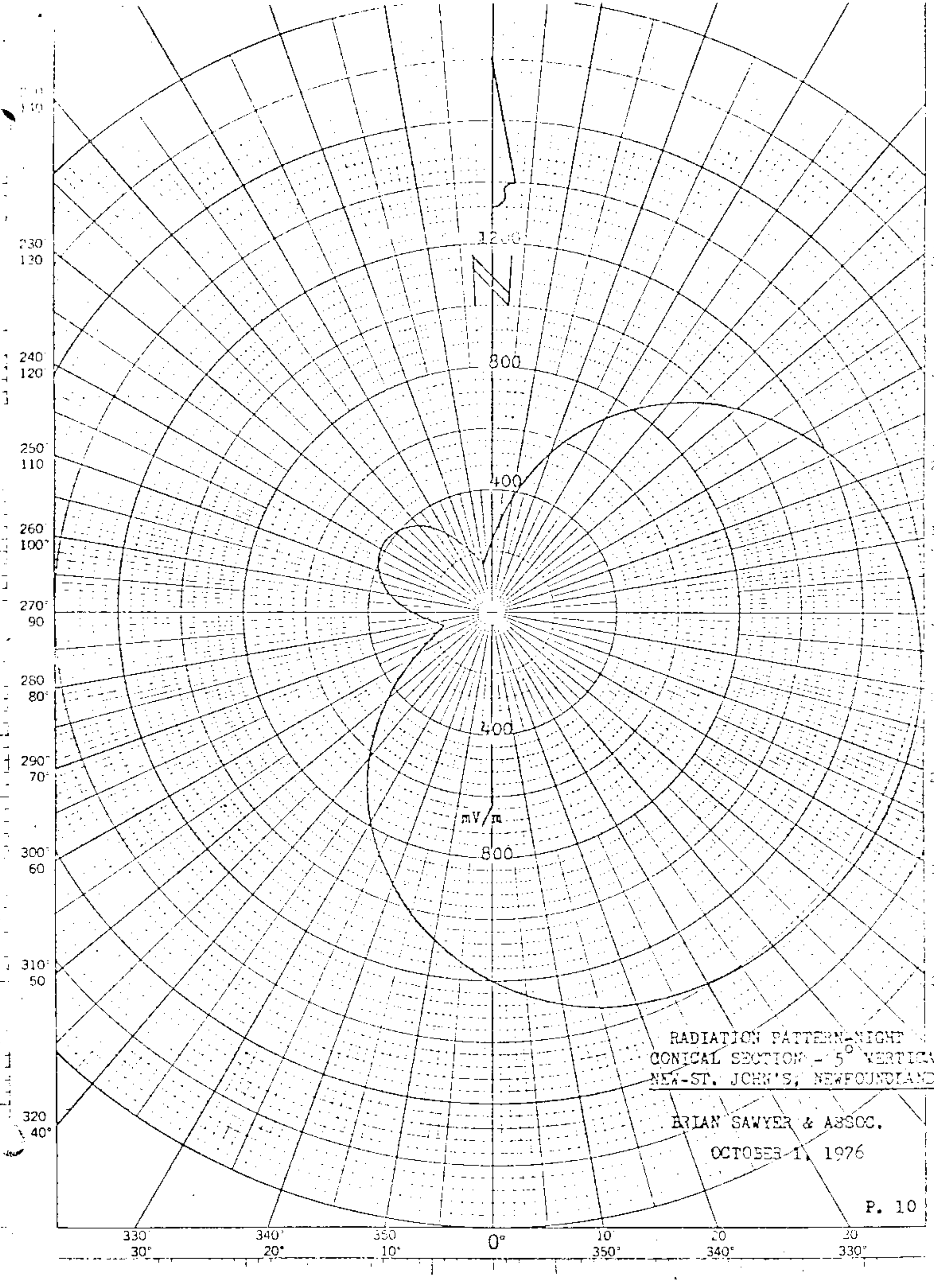
Night 930 mV/m at 1 mile for 25 kW
186 mV/m at 1 mile for 1 kW

(Revised Jan. 24, 1977)


HORIZONTAL RADIATION PATTERN-DAY
NEW. - ST. JOHN'S NEWFOUNDLAND
850 kHz
25 kW
DA-2
II U
BRIAN SAWYER & ASSOCIATES
OCTOBER 1, 1976
RMS=945 mV/m
mV/m
1200
800
400
400
800
1200
1600
N
0°
10
350°
20
340°
30
330°
330
30
340
20°
350
10°
230
130
240
120
250
110
260
100
70
90
260
80
290°
70°
300
60
310
50
320
40

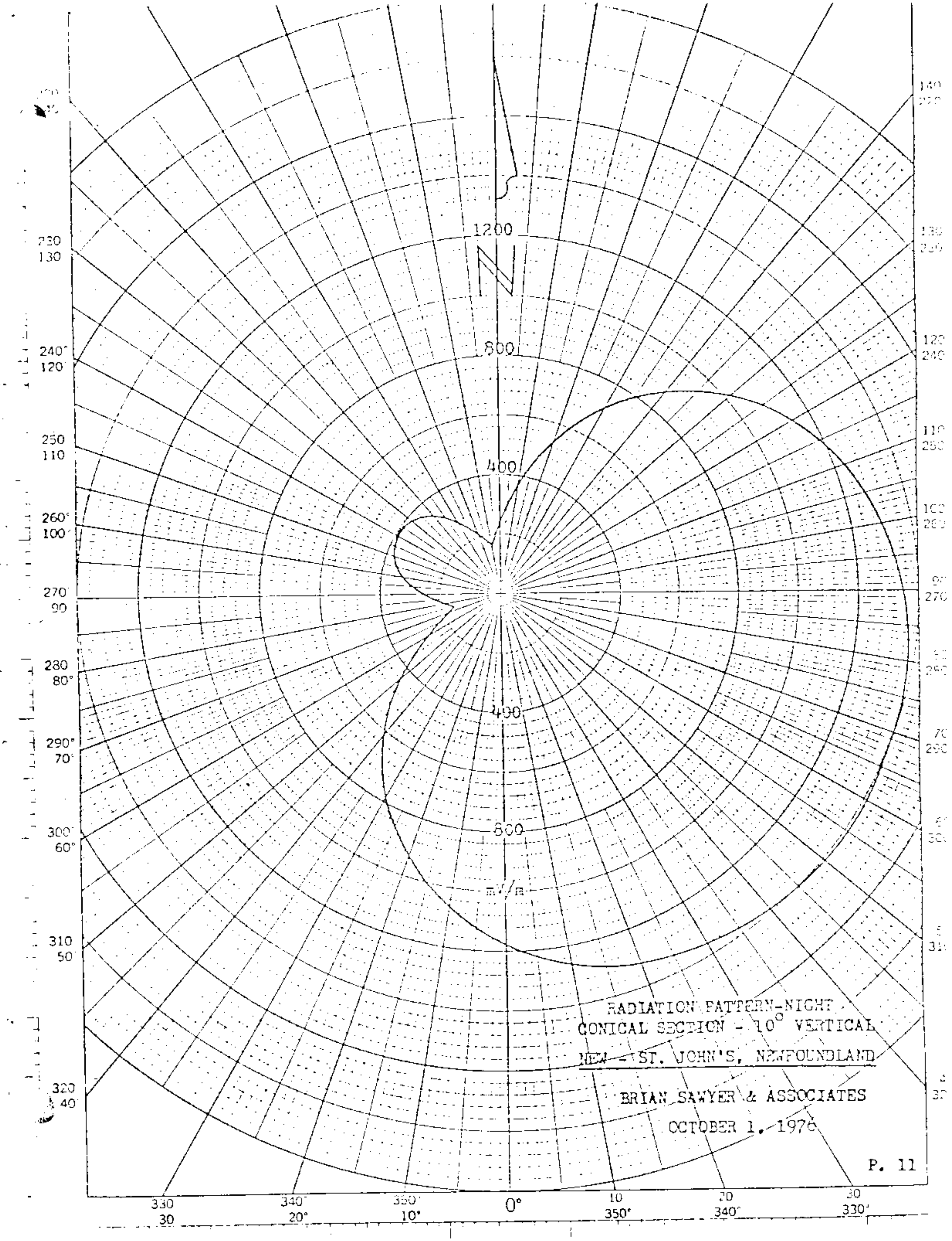

1200
800
400
400
RMS=930 mV/m
mV/m
800
0°
HORIZONTAL RADIATION PATTERN-NIGHT
NEW - ST. JOHN'S, NEWFOUNDLAND
850 kHz 25 kW DA-2 II U
BRIAN SAWYER & ASSOCIATES
OCTOBER 1, 1976

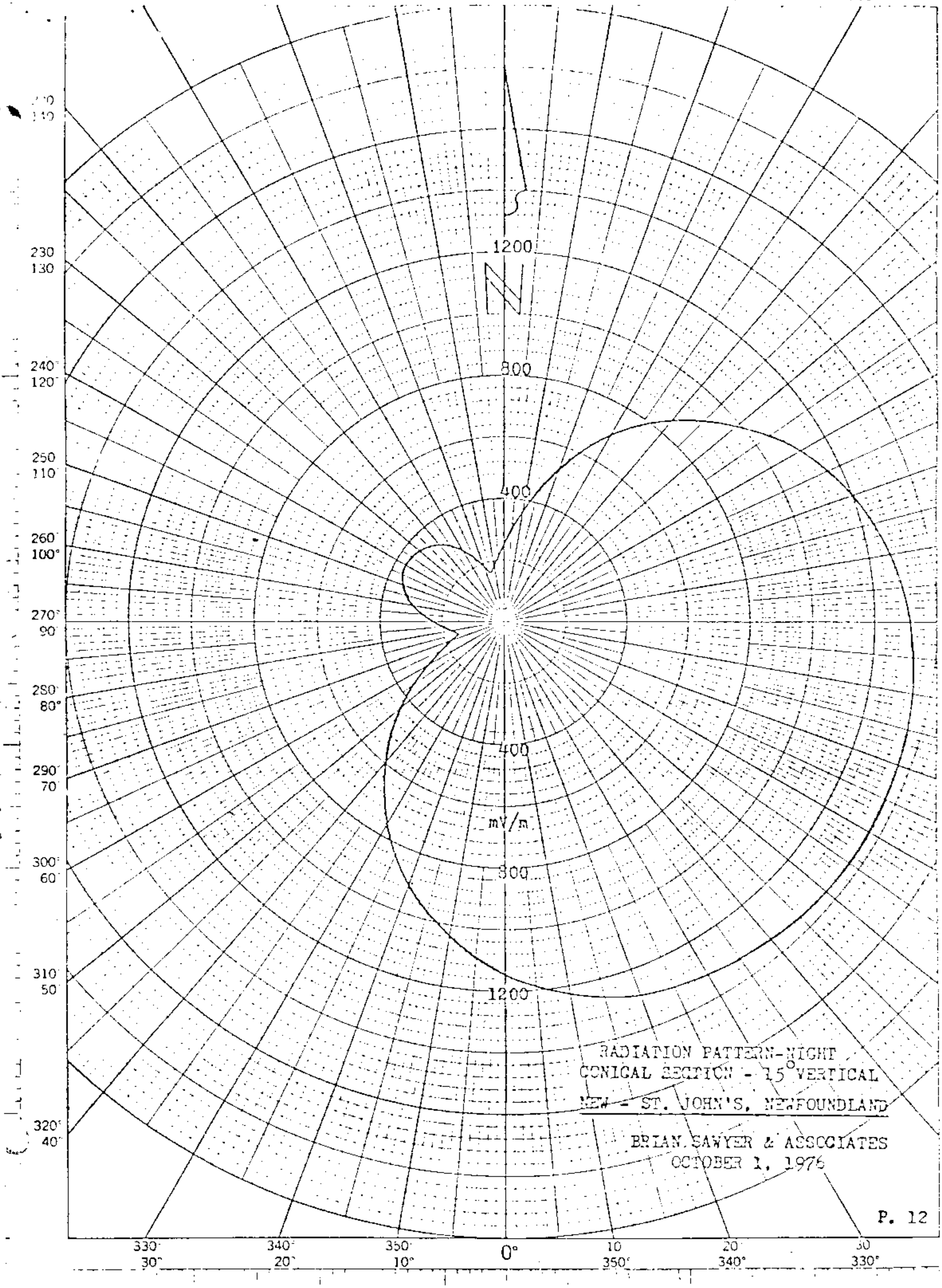
P. 9



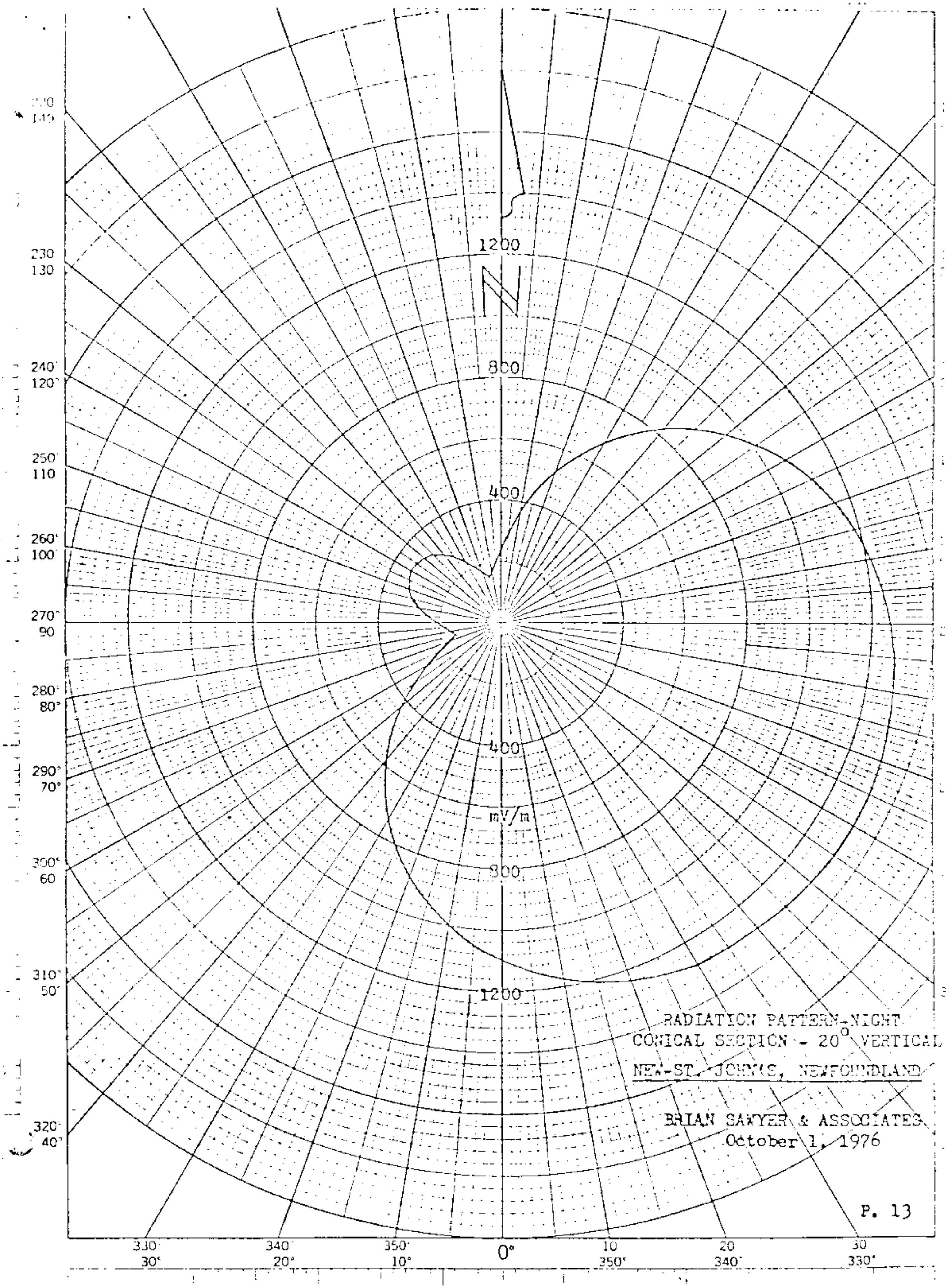
RADIATION PATTERN-NIGHT
CONICAL SECTION - 5° VERTICAL
NEW-ST. JOHN'S, NEWFOUNDLAND

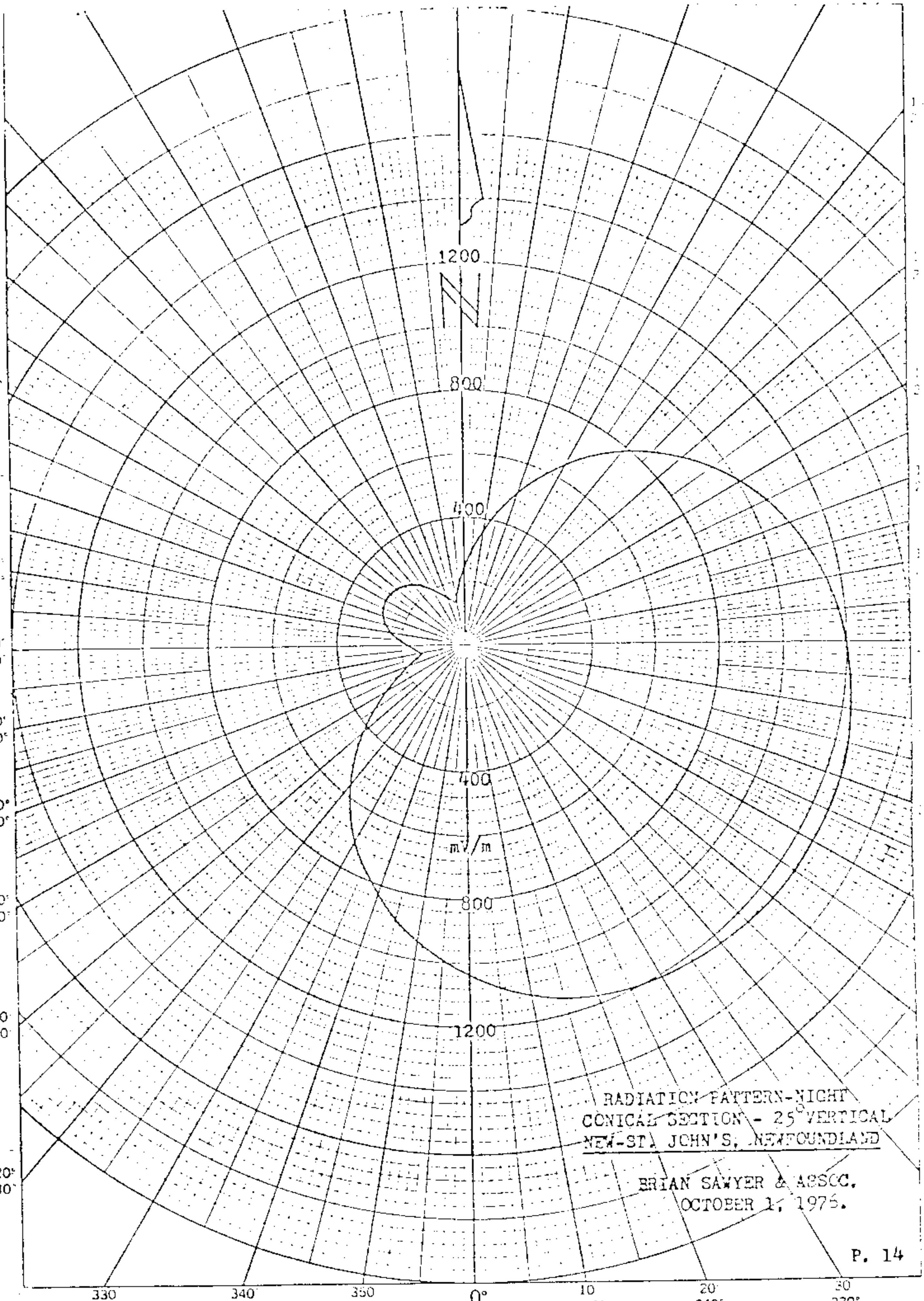
BRIAN SAWYER & ASSOC.
OCTOBER 1, 1976

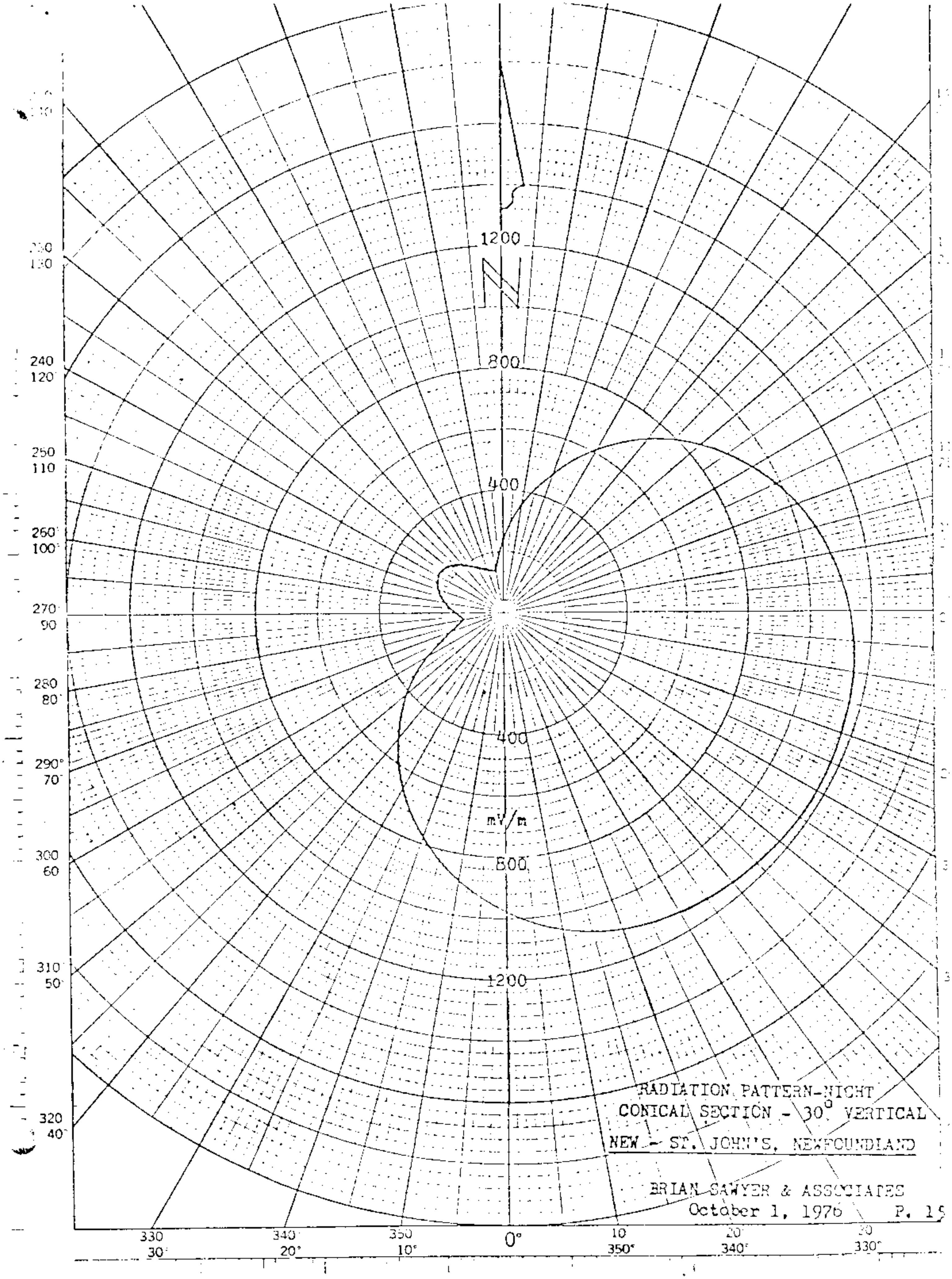

1200
N
800
400
400
800
mV/m
230
130
240°
120°
250
110
260°
100°
270°
90
280
80°
290°
70°
300°
60°
310
50°
320
40°
330
30
340°
20°
350°
10°
0°
10
350°
20
340°
30
330°
RADIATION PATTERN-NIGHT
CONICAL SECTION - 10° VERTICAL
NEW - ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOCIATES
OCTOBER 1, 1976

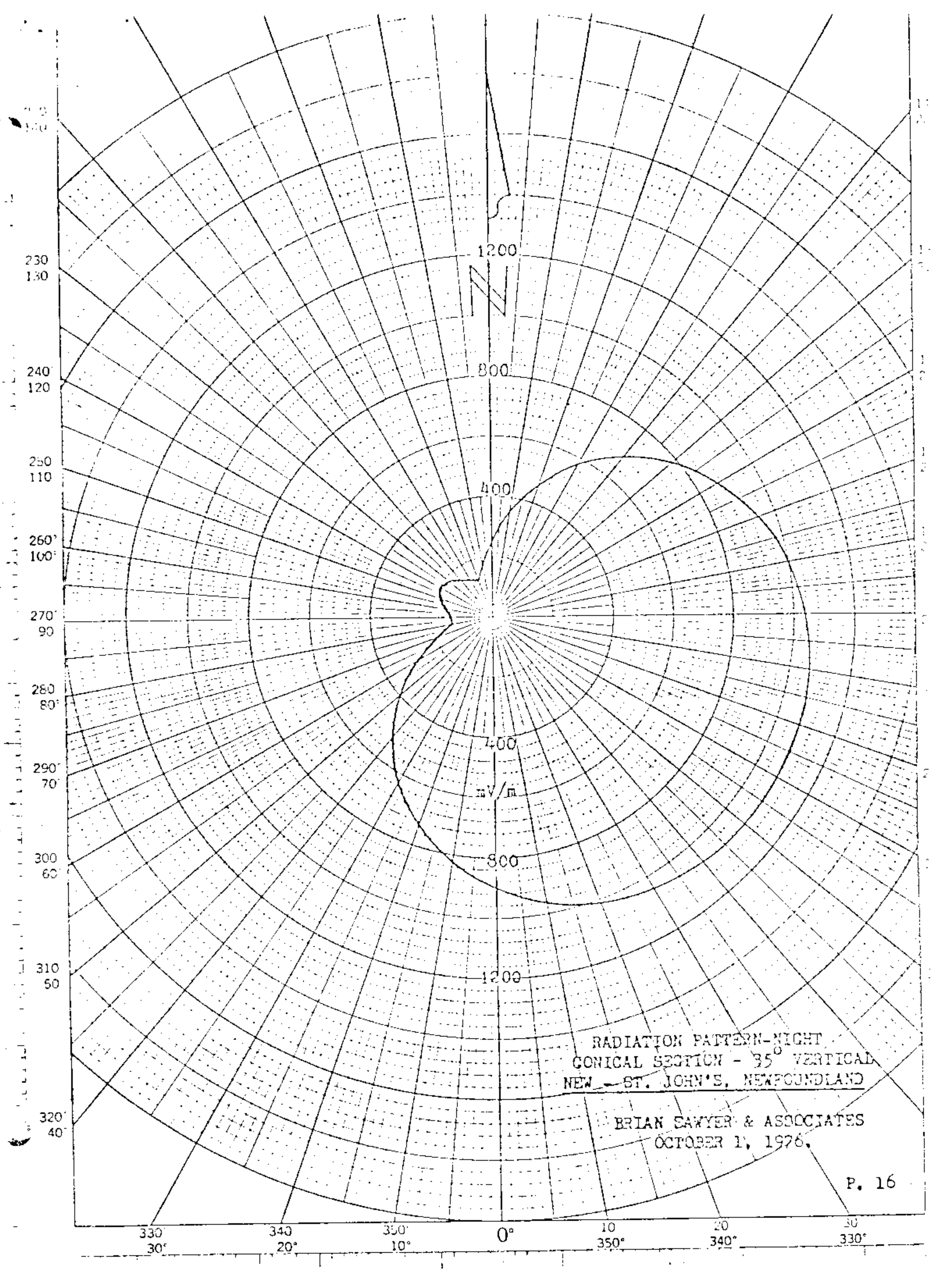

1200
800
400
400
mV/m
800
1200
RADIATION PATTERN-NIGHT
CONICAL SECTION - 15° VERTICAL
NEW - ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOCIATES
OCTOBER 1, 1976
230
130
240°
120°
250
110°
260°
100°
270°
90°
280°
80°
290°
70°
300°
60°
310°
50°
320°
40°
330°
30°
340°
20°
350°
10°
0°
10
350°
20°
340°
30
330°
P. 12

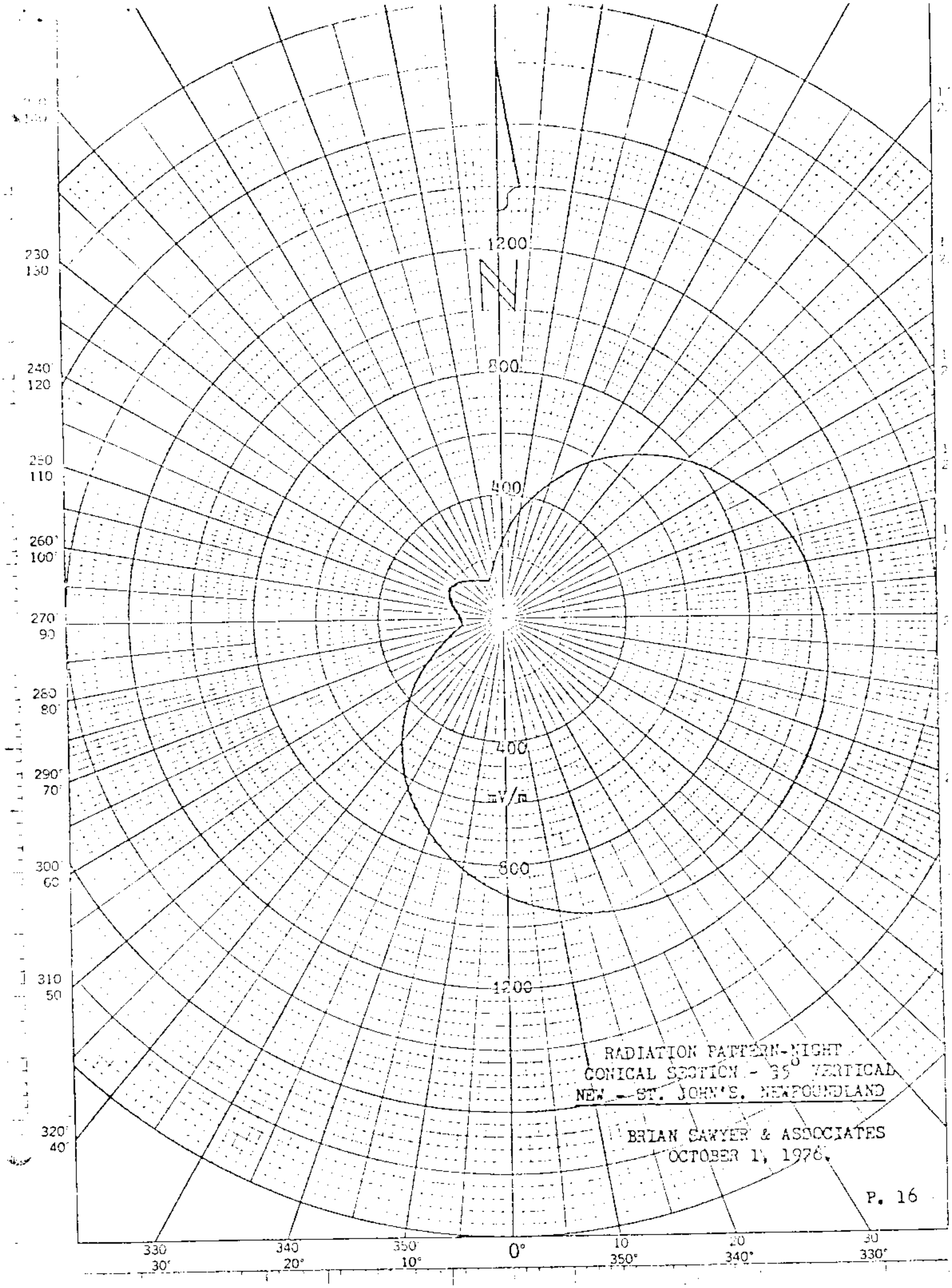
46 4410

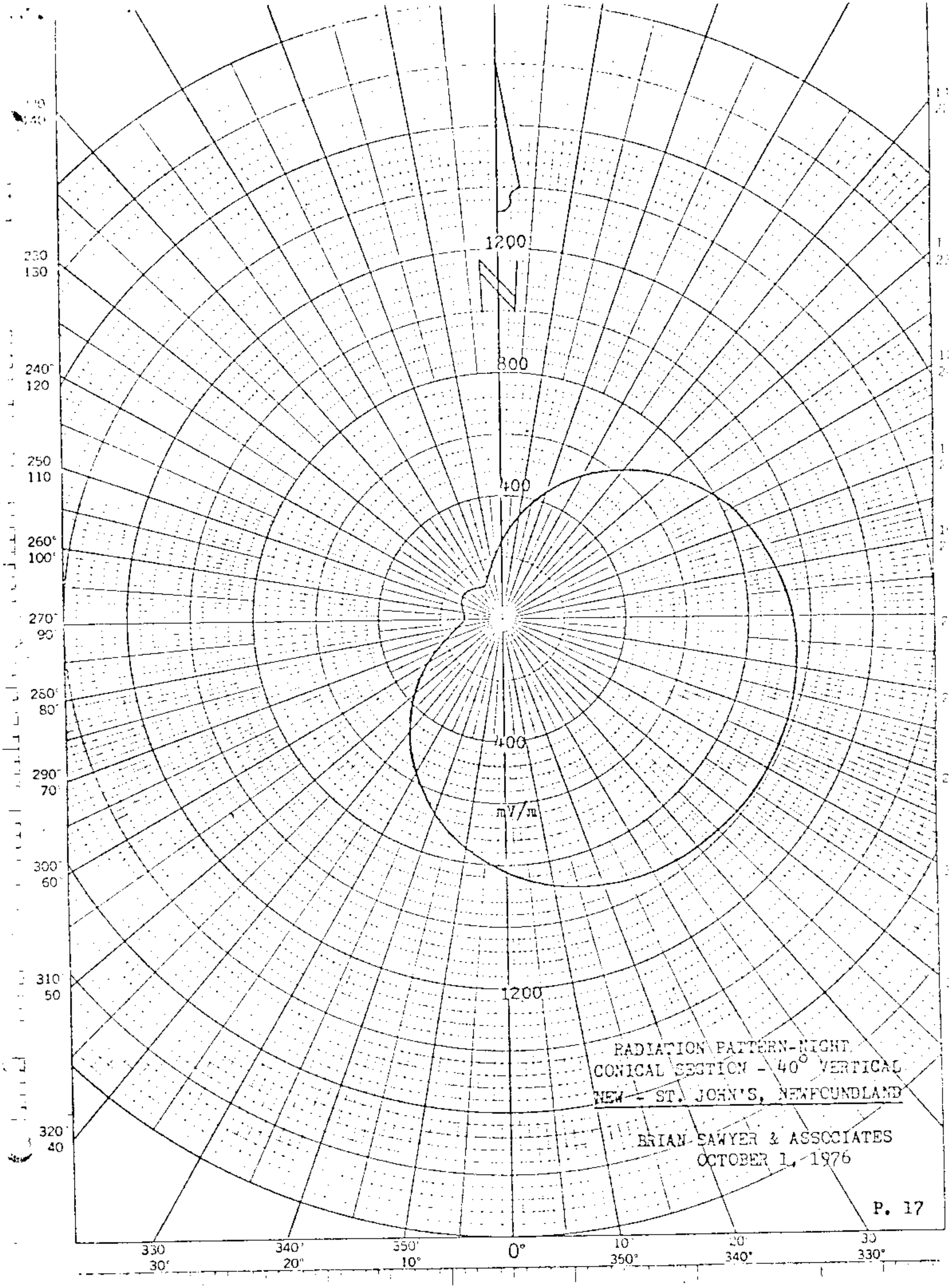

1200
N
800
400
400
mV/m
800
1200
230
130
240°
120°
250°
110
260°
100°
270°
90
280°
80°
290°
70°
300°
60
310°
50°
320°
40°
330°
30°
340°
20°
350°
10°
0°
10
350°
20
340°
30
330°
RADIATION PATTERN-NIGHT
CONICAL SECTION - 20° VERTICAL
NEW-ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOCIATES
October 1, 1976


RADIATION PATTERN-NIGHT
CONICAL SECTION - 25° VERTICAL
NEW-ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOC.
OCTOBER 1, 1976.
1200
800
400
400
mV/m
800
1200
230 130°
240° 120°
250° 110
260° 100°
270° 90°
280° 80°
290° 70°
300° 60°
310° 50°
320° 40°
330 30°
340° 20°
350 10°
0°
10 350°
20° 340°
30 330°


1200
800
400
400
mV/m
800
1200
240
120°
250
110
260°
100°
270°
90
280
80°
290°
70°
300
60
310°
50°
320
40°
330
30°
340°
20°
350
10°
0°
10
350°
20°
340°
30
330°
RADIATION PATTERN-NIGHT
CONICAL SECTION - 30° VERTICAL
NEW - ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOCIATES
October 1, 1976
P. 15


1200
800
400
400
mV/m
800
1200
230
130
240
120
250
110
260
100
270
90
280
80
290
70
300
60
310
50
320
40
330
30
340
20
350
10
0°
10
350
20
340
30
330
RADIATION PATTERN-NIGHT
CONICAL SECTION - 35° VERTICAL
NEW - ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOCIATES
OCTOBER 1, 1976.


1200
N
800
400
400
mV/m
800
1200
230
130
240
120
250
110
260
100
270
90
280
80
290
70
300
60
310
50
320
40
330
30
340
20
350
10
0°
10
350°
20
340°
30
330°
RADIATION PATTERN-NIGHT
CONICAL SECTION - 35° VERTICAL
NEW - ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOCIATES
OCTOBER 1, 1976.
K+E KEUFFEL & ESSER CO. MADE IN USA


1200
800
400
400
mV/m
1200
0°
330 30
340 20
350 10
10 350
20 340
30 330
230 130
240 120
250 110
260 100
270 90
280 80
290 70
300 60
310 50
320 40
RADIATION PATTERN-NIGHT
CONICAL SECTION - 40° VERTICAL
NEW - ST. JOHN'S, NEWFOUNDLAND
BRIAN SAWYER & ASSOCIATES
OCTOBER 1, 1976

NEW

DIRECTIONAL ANTENNA - DESCRIPTION SHEET

Station : New AM

Main Studio : Spaniard's Bay/Harbour Grace, Newfoundland.

Frequency : 850 kHz   Power : 5 kW   Class : II

Notification List No. : 382   Date : March 8, 1979

Geographical Location of the Centre of the Antenna System : 47° 39' 21" North Latitude; 53° 15' 30" West Longitude

Antenna Array Characteristics : Mode of Operation - DA-1 (U)
Number of Elements - Two (2)
Type of Elements - Guyed, uniform cross-sectional steel towers base insulated, series fed; no top loading.

Tower No.	:	1 (West)	2 (East)
Height above Insulator	:	68.61 m. (70°)	68.61 m.
Overall Height	:	70.10 m.	70.10 m.
Field Ratio	:	1.0	0.85
Phasing	:	0°	0°

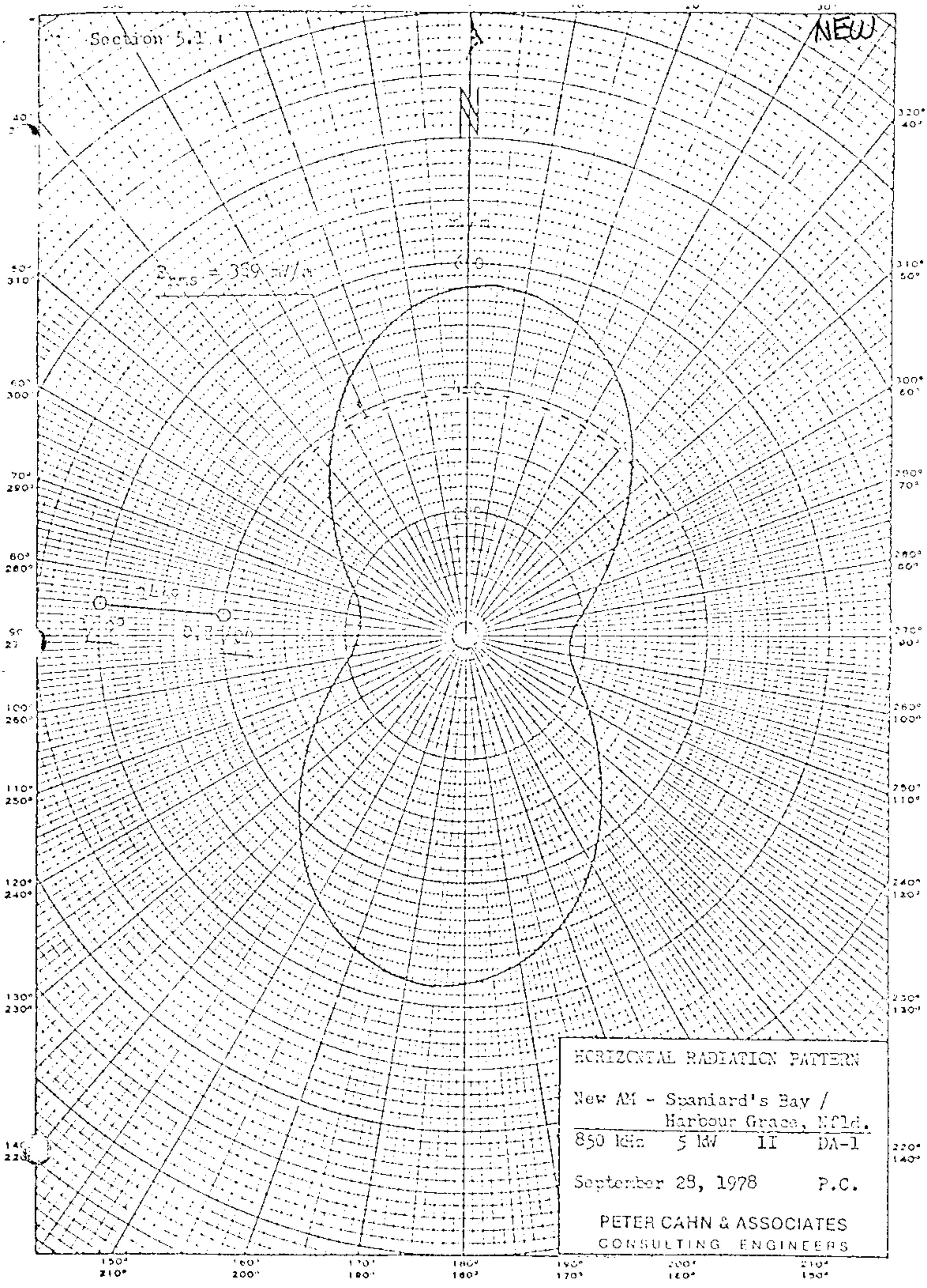
Spacing & Orientation : Elements are spaced 142.12 metres (145°) on a line bearing 95° East of True North

Ground System : 120 equiangularly spaced radials per tower, No. 10 AWG, bare soft-drawn copper wire, buried 8" in ground. Each radial is 141.14 metres long (=0.4λ), except where radials are shortened and bonded to transverse copper strap along intersection between towers.

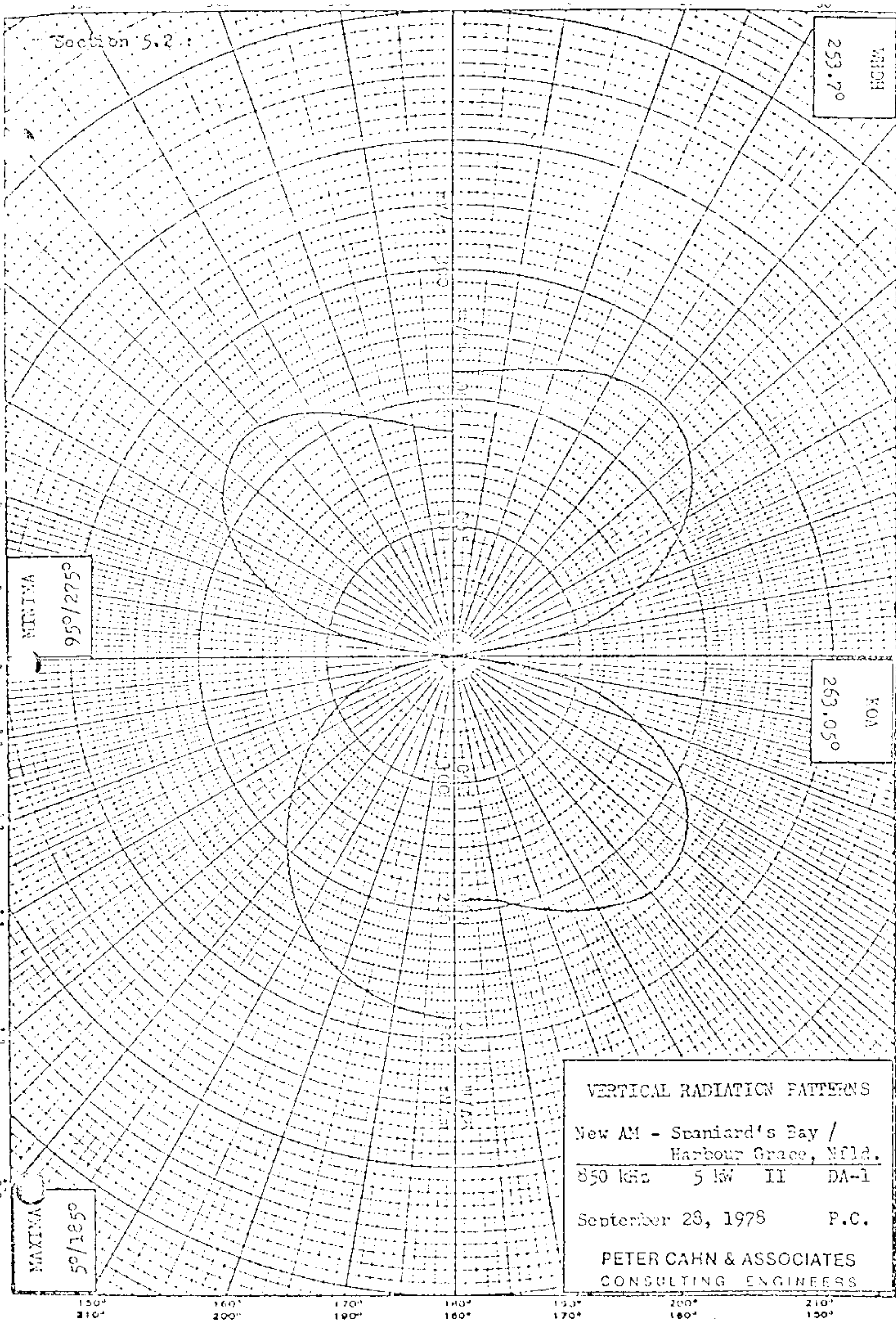
Predicted Effective Fields : Theoretical E_{rms} = 389 mV/m at 1 mile (5kW)
174 mV/m at 1 mile (1kW)

Theoretical E_{rss} = 402 mV/m

Standard E_{std} = 408 mV/m


Section 5.1
NEW
N
E_{rms} = 339 mV/m
HORIZONTAL RADIATION PATTERN
New AM - Spaniard's Bay /
Harbour Grace, Nfld.
850 kHz
5 kW
II
DA-1
September 28, 1978
P.C.
PETER CAHN & ASSOCIATES
CONSULTING ENGINEERS

NEW



Section 5.2
WRDH 253.7°
MINIMA 95°/275°
MAXIMA 5°/185°
RMA 263.05°
VERTICAL RADIATION PATTERNS
New AM - Spaniard's Bay / Harbour Grace, Nfld.
850 kHz 5 kW II DA-1
September 28, 1978 P.C.
PETER CAHN & ASSOCIATES
CONSULTING ENGINEERS

CFCL

DESCRIPTION SHEET

Station: CFCL

Main Studio: Timmins, Ontario

Frequency: 850 kHz

Power: 10kW

Time: Unlimited

Class: II

Notification List No. 367

Date: September 23, 1977

Geographic Location: North Lat. 48° 26' 50" N. Lat.

West Long. 81° 23' 08" W. Long.

Antenna System:

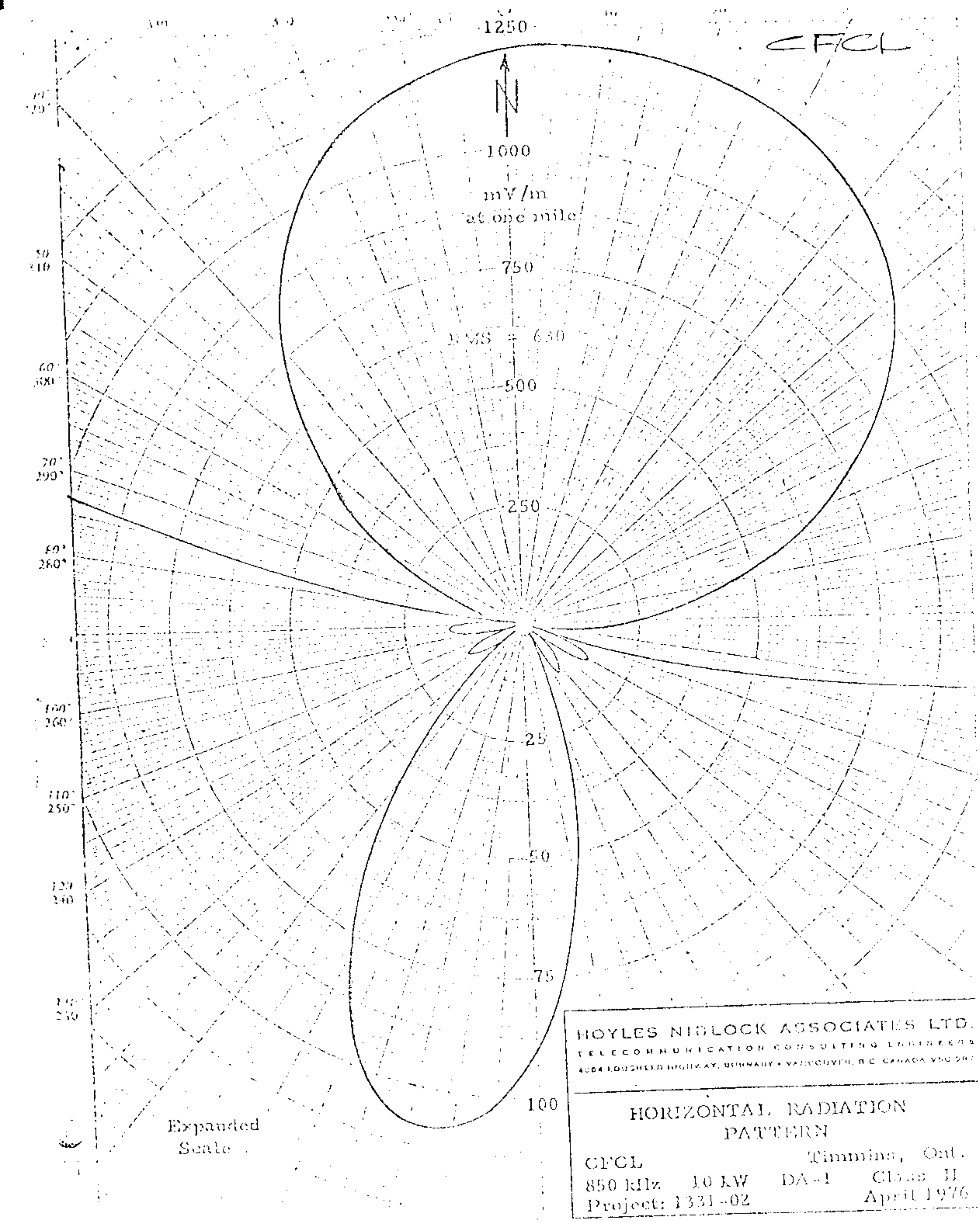
Mode of Operation: DA-1

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

Towers:	1	2	3	4
Height above insulators:	300'	300'	300'	300'
Overall Height :	303'	303'	303'	303'
Spacing:	0°	109.9°	219.9°	329.8°
Phasing:	0°	-129°	101.6°	-27.5°
Current Radio:	1.00	2.64	2.64	1.0
Orientation:	0°	13°	13°	13°

Ground System: The ground system shall consist of 120, No. 10 copper wire radials buried approximately 8 inches below grade. The system is equivalent to 0.4 λ

Predicted Effective Field: 630 mV/m for 10 kW

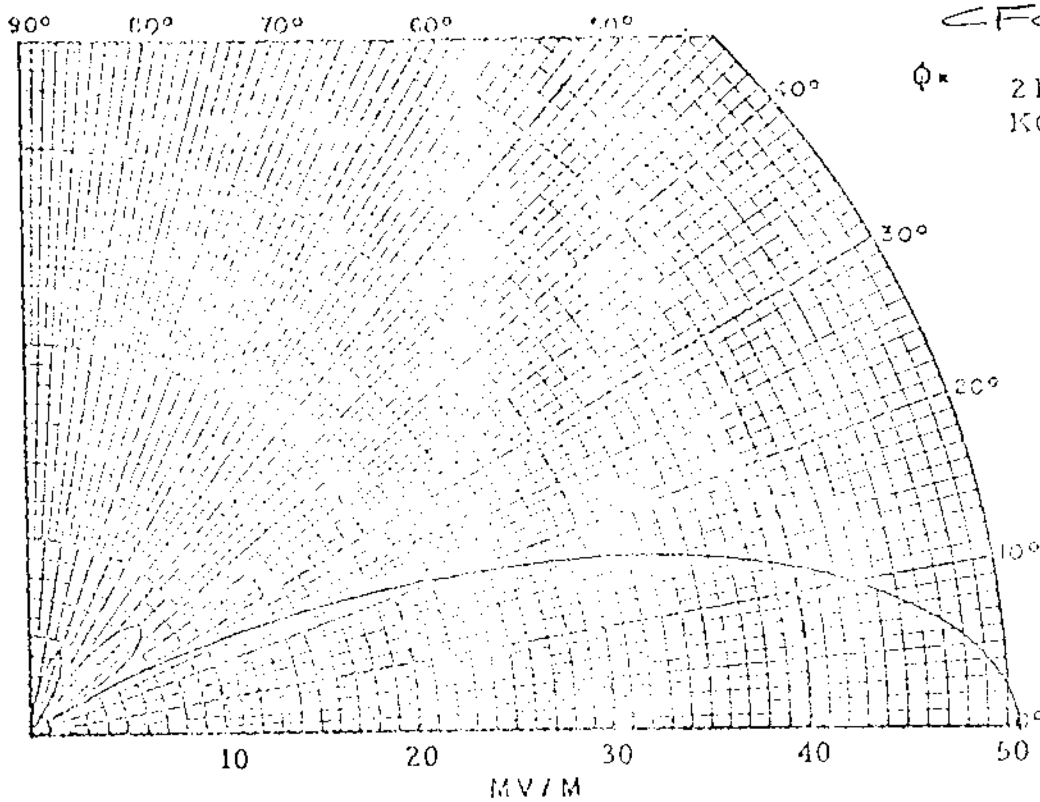


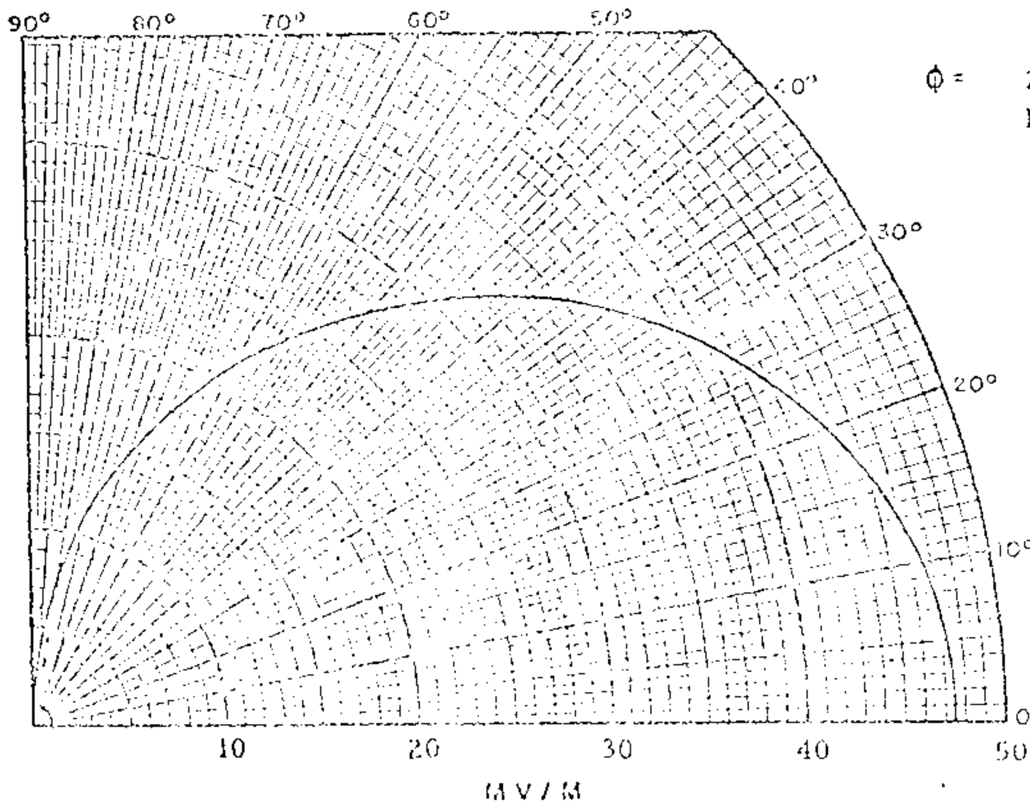
HOYLES NIBLOCK ASSOCIATES LTD.
TELECOMMUNICATION CONSULTING ENGINEERS
4004 LOUGHEED HIGHWAY, BURNABY • VANCOUVER, B.C. CANADA V5C 3Y7

HORIZONTAL RADIATION
PATTERN

CFCL Timmins, Ont.
850 kHz 10 kW DA-1 Class II
Project: 1331-02 April 1976

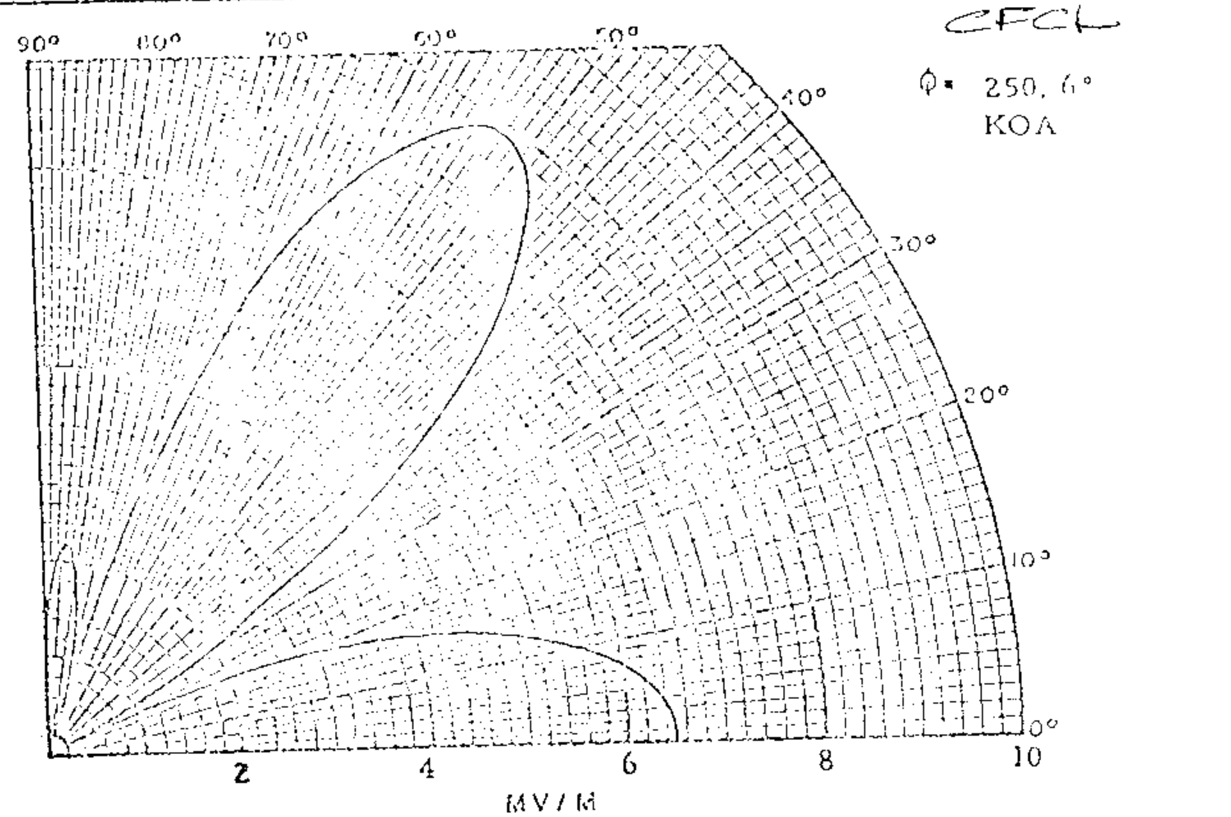
CFCL

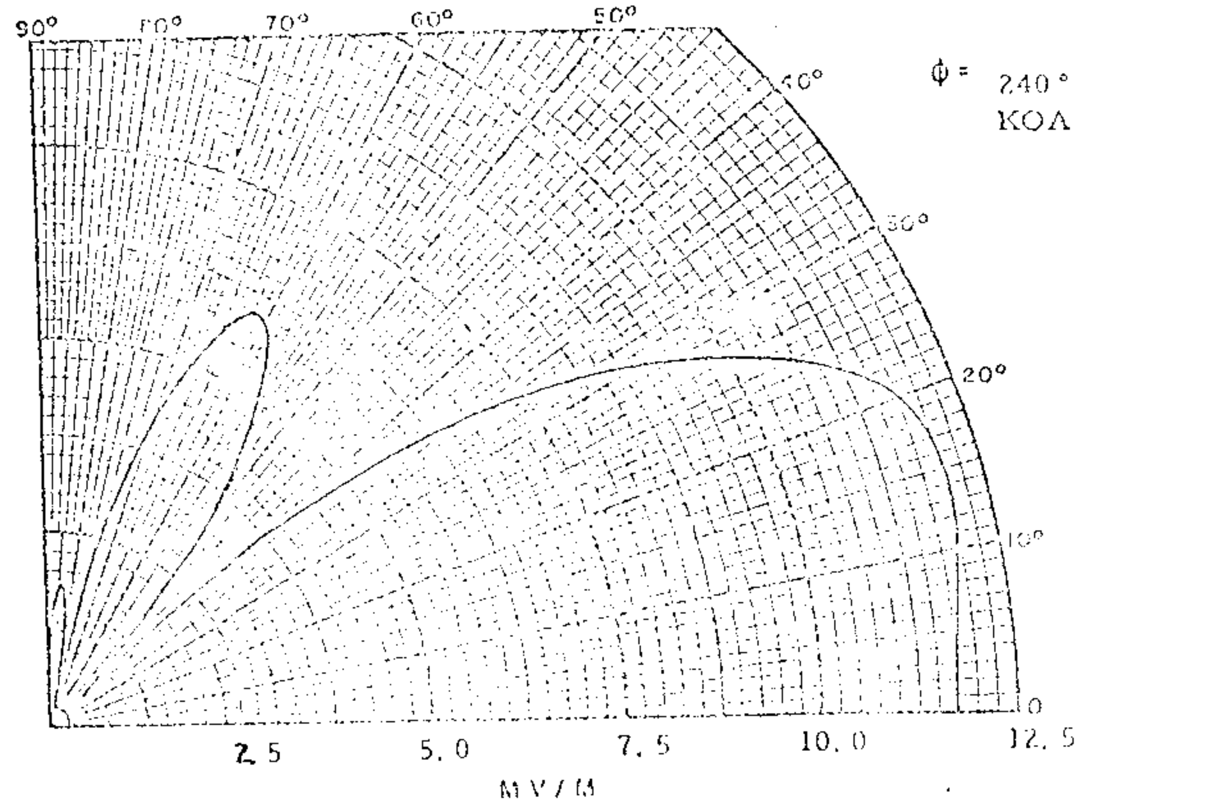




VERTICAL RADIATION PATTERNS

CFCL Timmins, Ontario
850 kHz 10 kW DA - 1 Class II
Project: 1321-02 April 1976





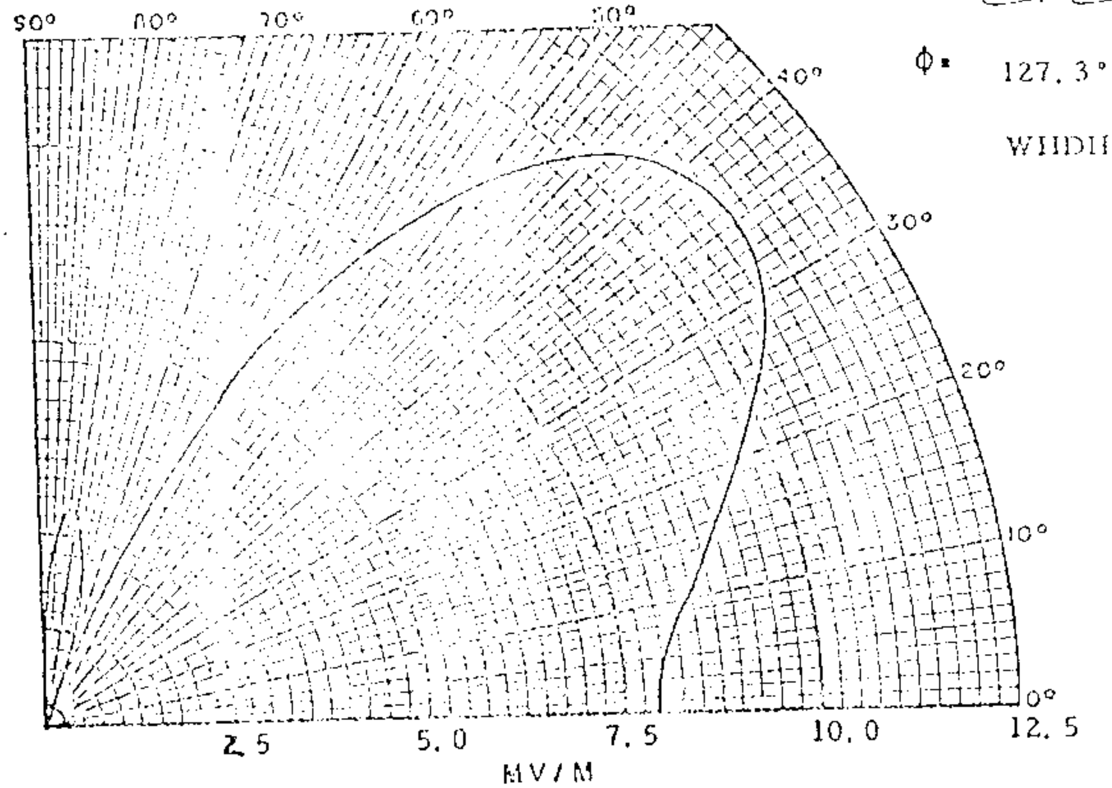
VERTICAL RADIATION PATTERNS

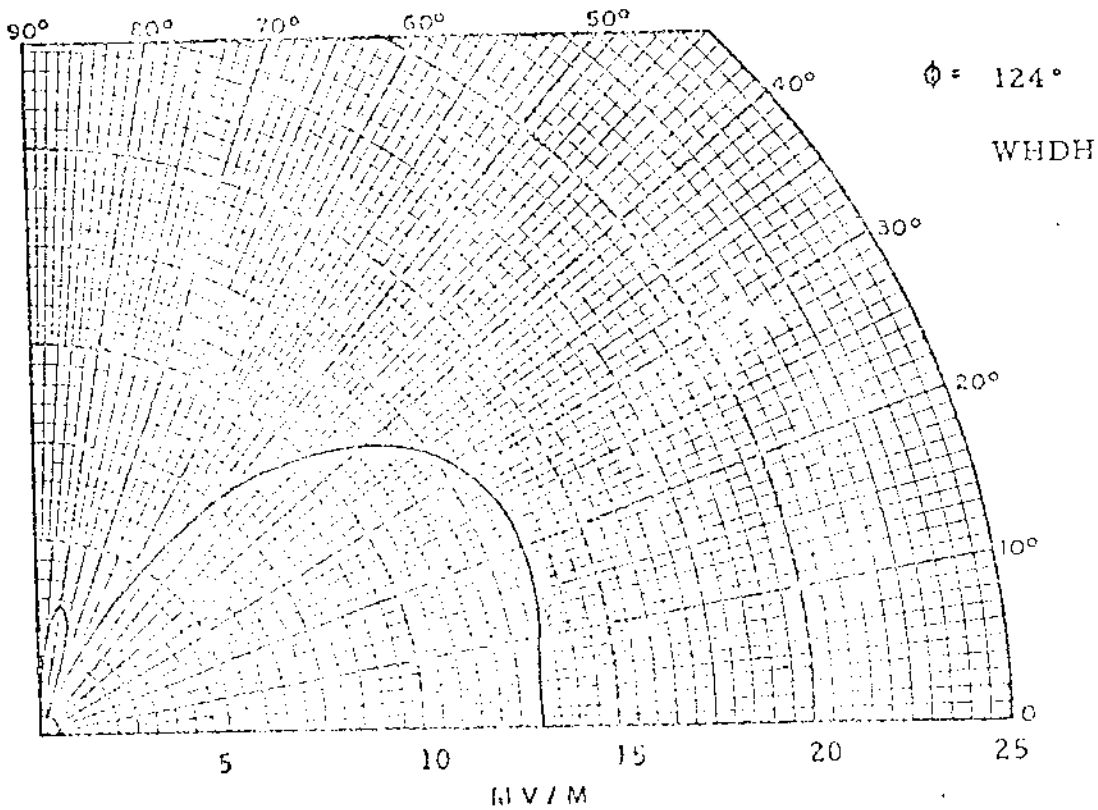
CFCL — Timmins, Ontario

850 kHz 10 kW DA-1 Class II

Project: 1331-02 — April 1976

CFCL



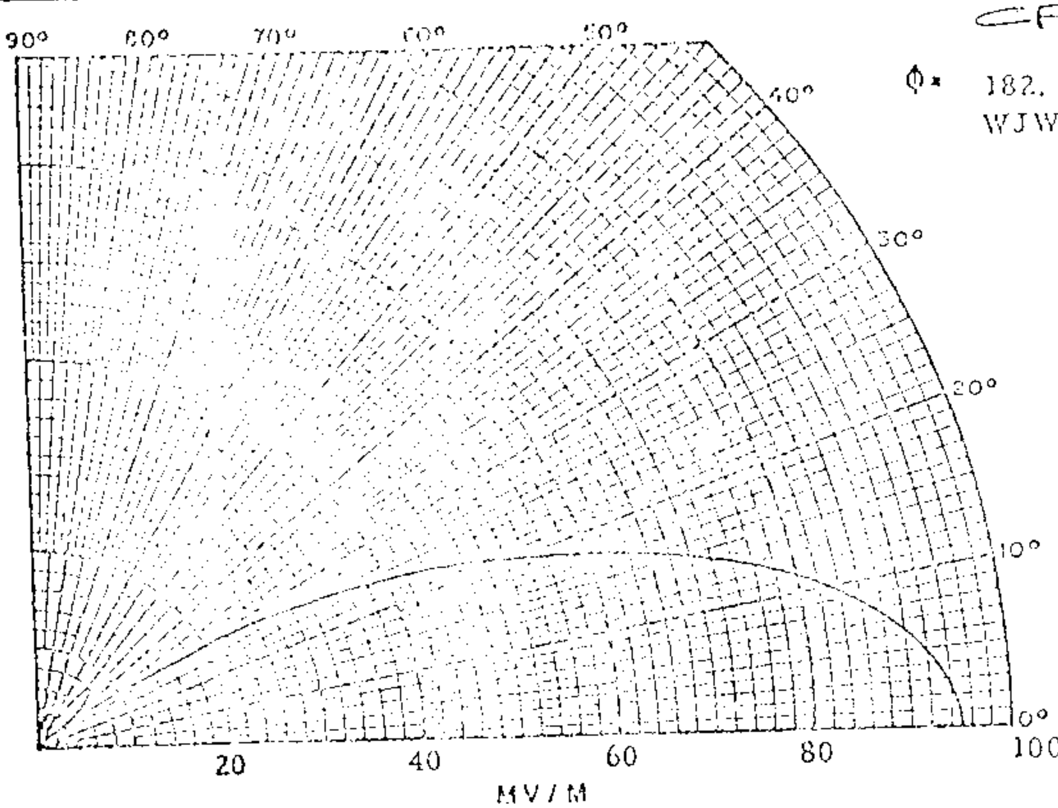


VERTICAL RADIATION PATTERNS

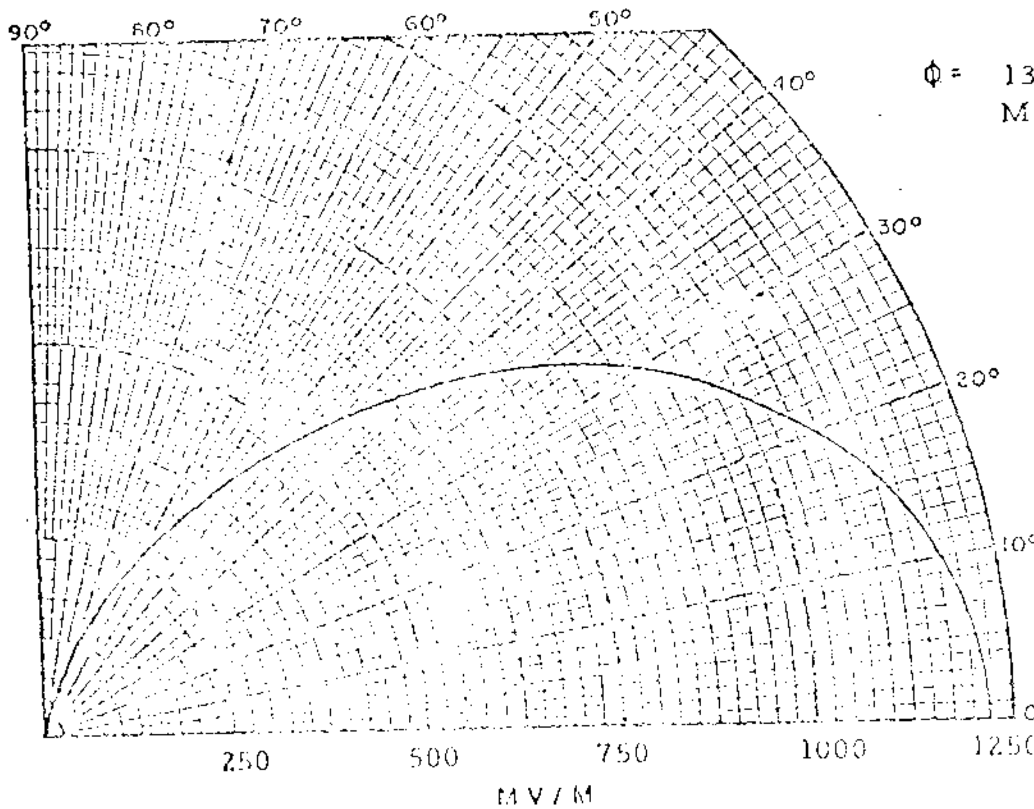
CFCL	Timmins, Ontario
850 kHz 10 kW	DA - 1 Class II
Project: 1331-02	April 1976

HOYLES NIBLOCK ASSOCIATES LTD.   CONSULTING ENGINEERS

CFCL



φ = 182.1°
WJW



φ = 13°
Maximum

VERTICAL RADIATION PATTERNS

CFCL
850 kHz   10 kW   DA - 1
Project: 1331-02

Timmins, Ontario
Class II
April 1976

ROYLES NIBLOCK ASSOCIATES LTD.   CONSULTING ENGINEERS

CFVR

PROJECT #6114

DESCRIPTION SHEET - DIRECTIONAL ANTENNA

STATION: CFVR

STATION LOCATION: Abbotsford, B.C.

FREQUENCY: 850 kHz

POWER: 10 kW

NOTIFICATION LIST: No. 348

DATE: November 26, 1975

GEOGRAPHICAL LOCATION: Latitude 49° 01' 08" North
Longitude 122° 13' 46" West

ANTENNA CHARACTERISTICS:

Mode of Operation: DA-2
Number of Elements: 4 (Four)
Type of Elements: Guyed steel towers, uniform cross-section, base insulated for series feed

Tower:	#1(S)	#2(S.C.)	#3(N.C.)	#4(N)
Height above base insulator:	230'(71.5°)	230'(71.5°)	230'(71.5°)	230'(71.5°)
Overall Height:	235'	235'	235'	235
Night Field Ratio:	.37	1.0	1.0	.37
Night Phasing:	0°	-105°	+149.5°	+43.2°
Day Field Ratio:	.364	1.0	1.0	.36
Day Phasing:	0°	-129°	+102.8°	-26.5°
Orientation:	Ref.	320°T	320°T	320°T
Spacing:	Ref.	354'(110°)	708'(220°)	1062'(330°)

GROUND SYSTEM:

120 equally spaced radials per tower of #10 bare soft copper wire, buried approximately 8". Ground system length equivalent to 0.4 wavelength (463').

PREDICTED EFFECTIVE FIELDS:

Day

629 mV/m at 1 mile for 10 kW
199 mV/m at 1 mile for 1 kW

Night

605 mV/m at 1 mile for 10 kW
191 mV/m at 1 mile for 1 kW

April 4, 1975

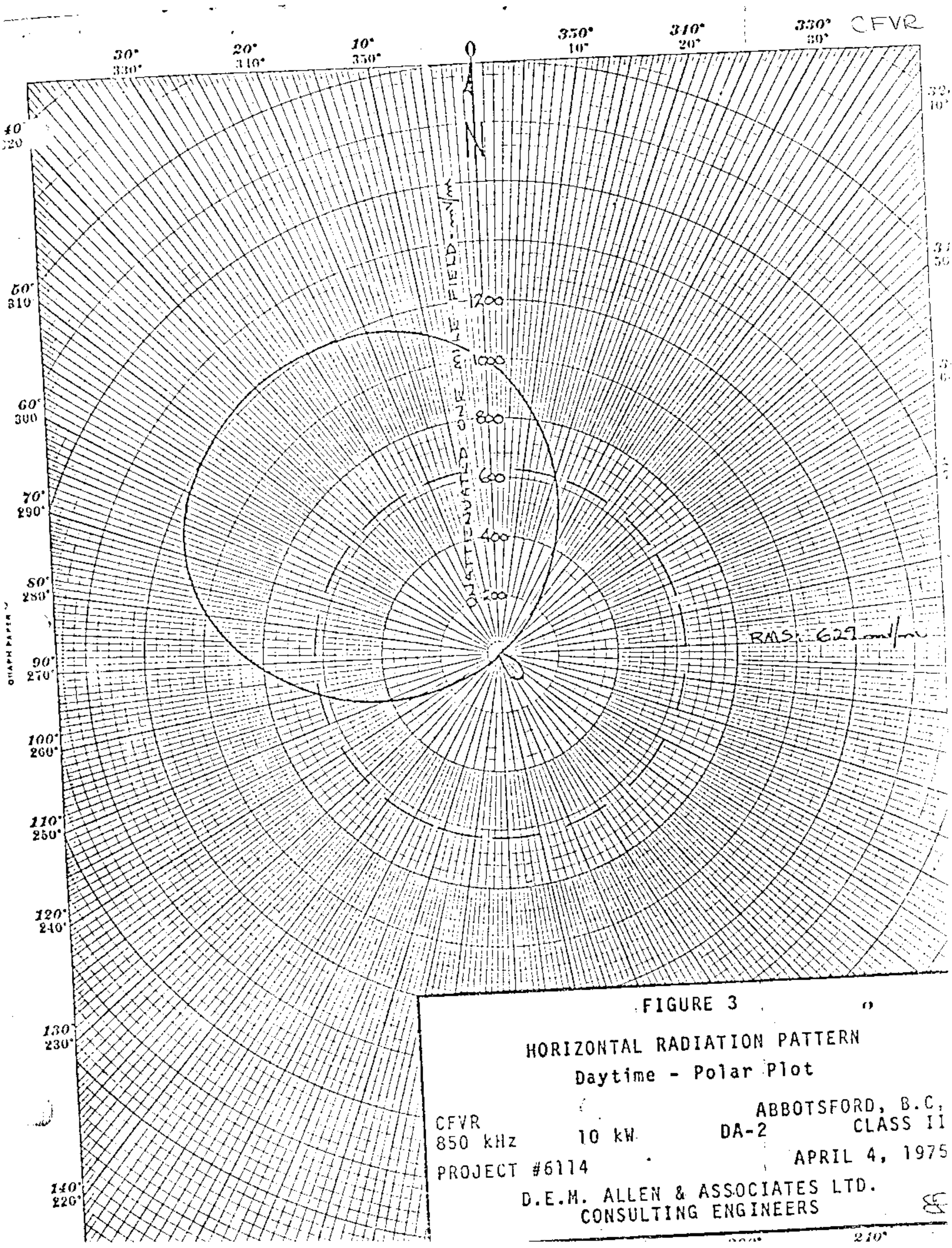


FIGURE 3

HORIZONTAL RADIATION PATTERN
Daytime - Polar Plot

CFVR
850 kHz
10 kW
DA-2
ABBOTSFORD, B.C.
CLASS II
APRIL 4, 1975
PROJECT #6114

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

CFVR

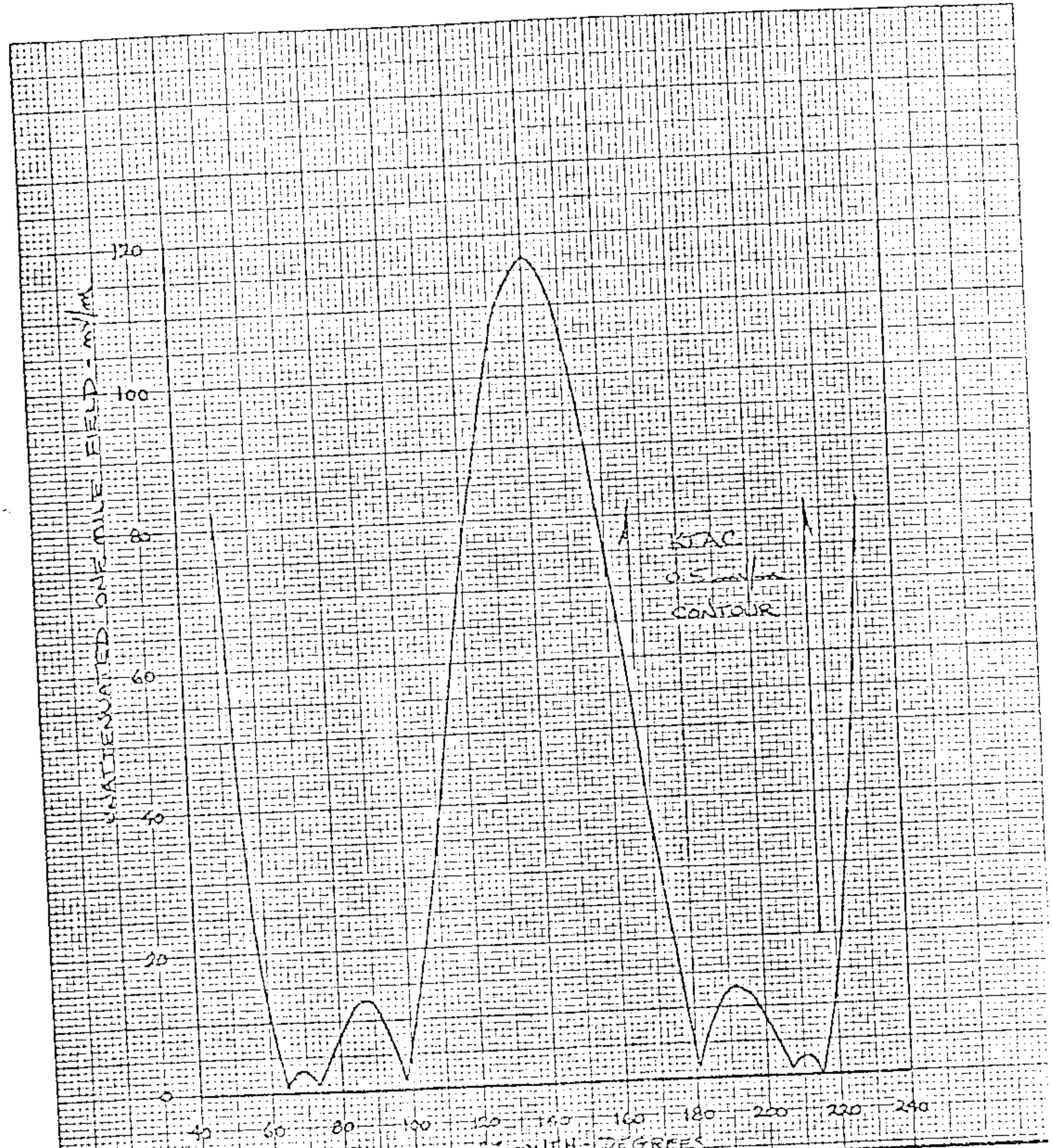


FIGURE 4

HORIZONTAL RADIATION PATTERN

Daytime - Expanded Plot

CFVR ABBOTSFORD, B.C.
850 kHz 10 kW DA-2 CLASS II

PROJECT #6114 APRIL 4, 1975

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

CFVR

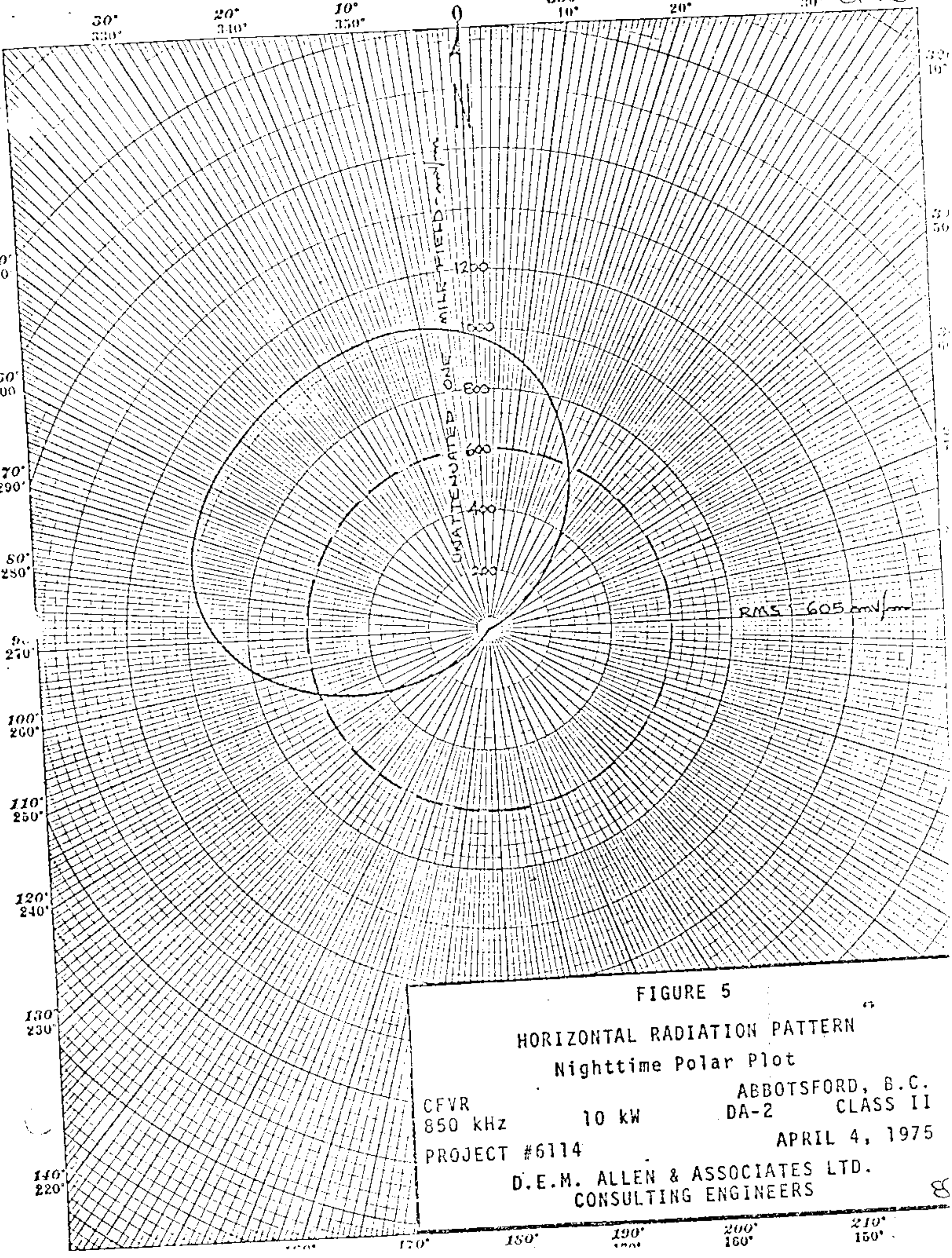


FIGURE 5

HORIZONTAL RADIATION PATTERN

Nighttime Polar Plot

CFVR
850 kHz
10 kW

ABBOTSFORD, B.C.
DA-2
CLASS II

APRIL 4, 1975

PROJECT #6114

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

8

CFVR

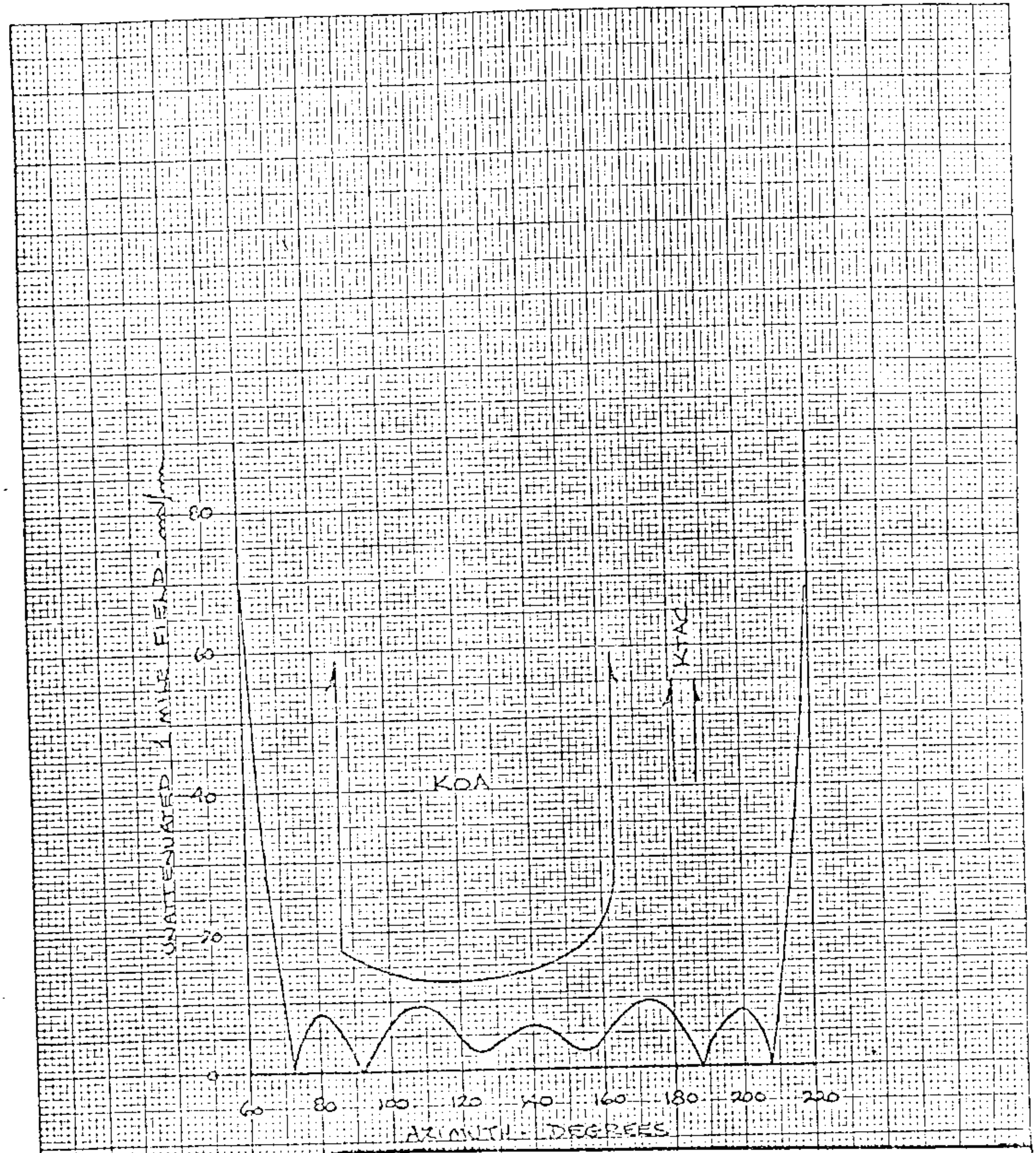


FIGURE 6

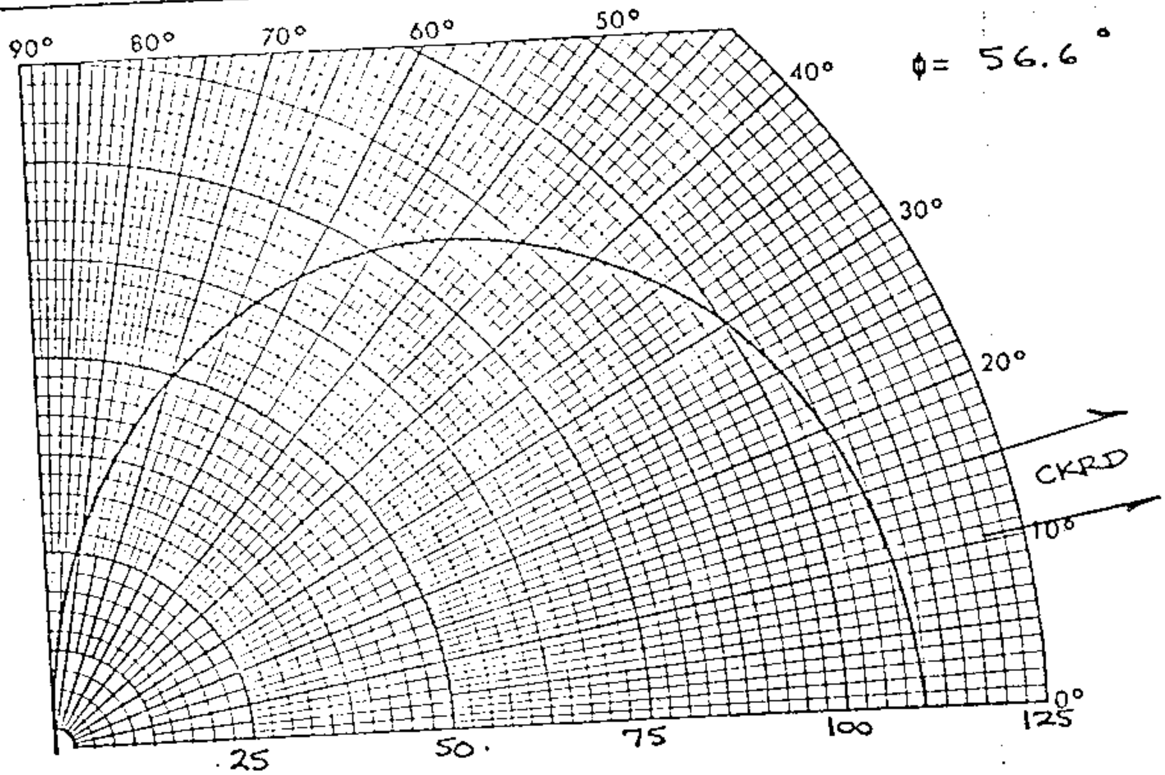
HORIZONTAL RADIATION PATTERN

Nighttime - Expanded Plot

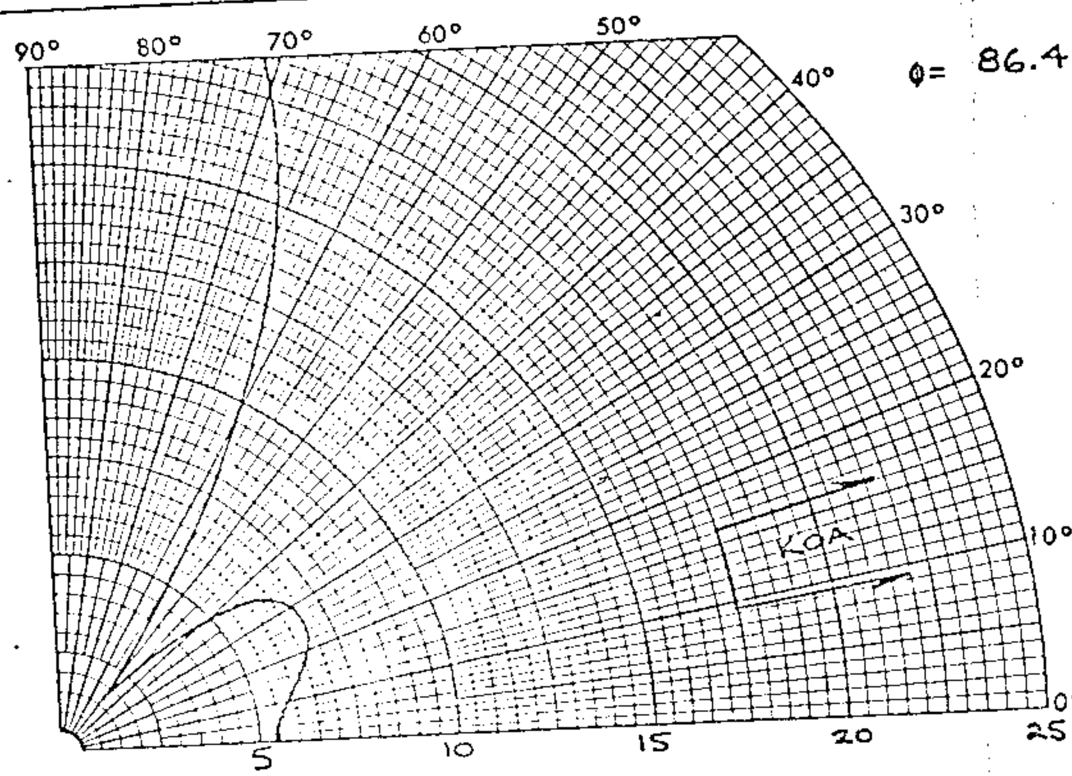
CFVR			ABBOTSFORD, B.C.
850 kHz	10 kW	DA-2	CLASS II
PROJECT #6114			APRIL 4, 1975

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

CFVR



UNATTENUATED (MV/M) 1 MILE FIELD



UNATTENUATED (MV/M) 1 MILE FIELD

VERTICAL RADIATION PATTERNS

FIGURE 7

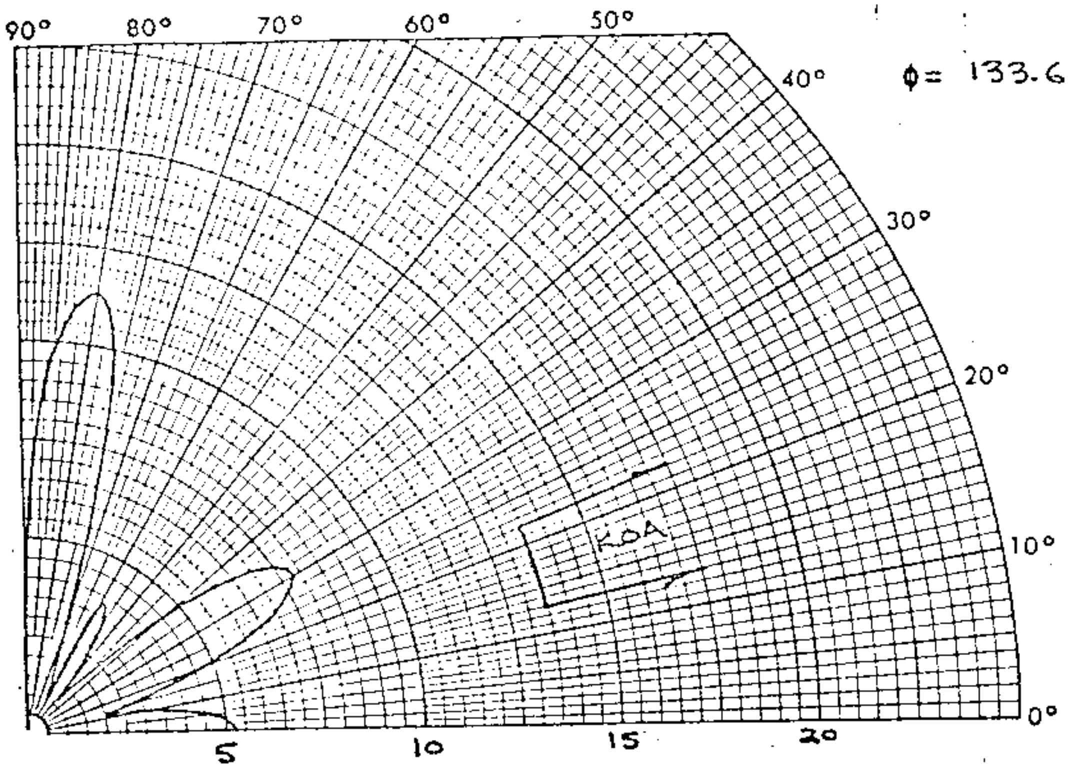
CFVR 850 kHz PROJECT #6114	10 kW	DA-2	ABBOTSFORD, B.C. CLASS II APRIL 4, 1975

...SSOCIATES LTD. CONSULTING ENGINEERS

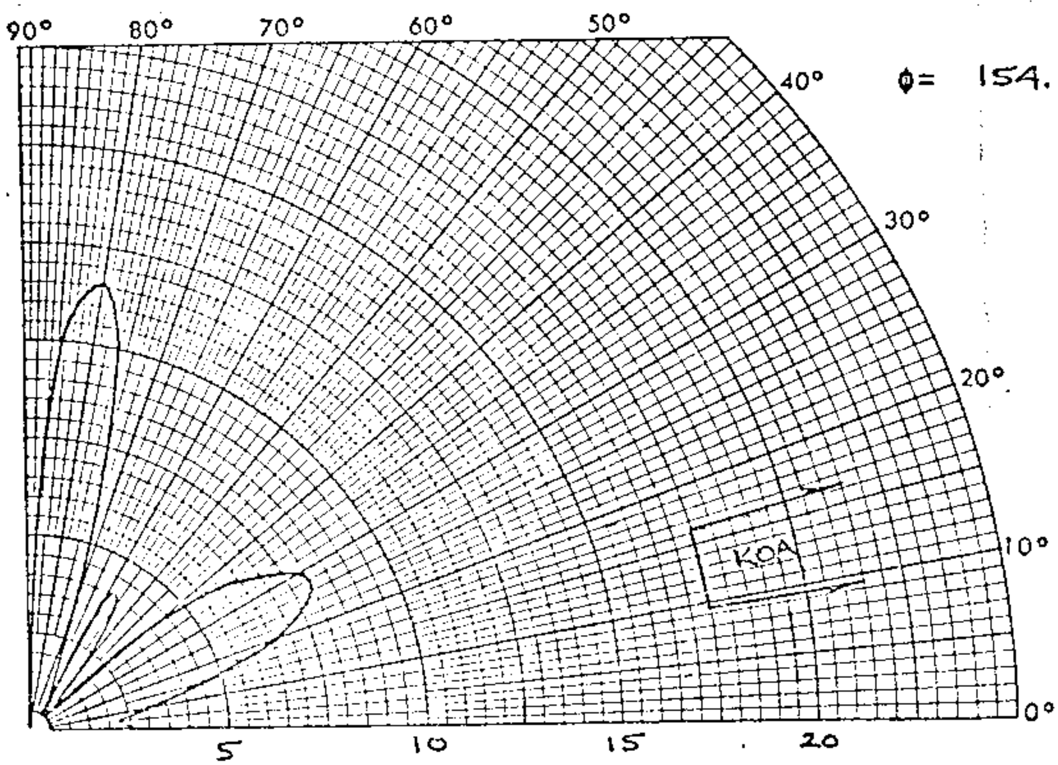
CFVR

G9-10159 (NO.10LV)

POLAR CO-ORDINATE



UNATTENUATED (MV/M) 1 MILE FIELD



UNATTENUATED (MV/M) 1 MILE FIELD

VERTICAL RADIATION PATTERNS

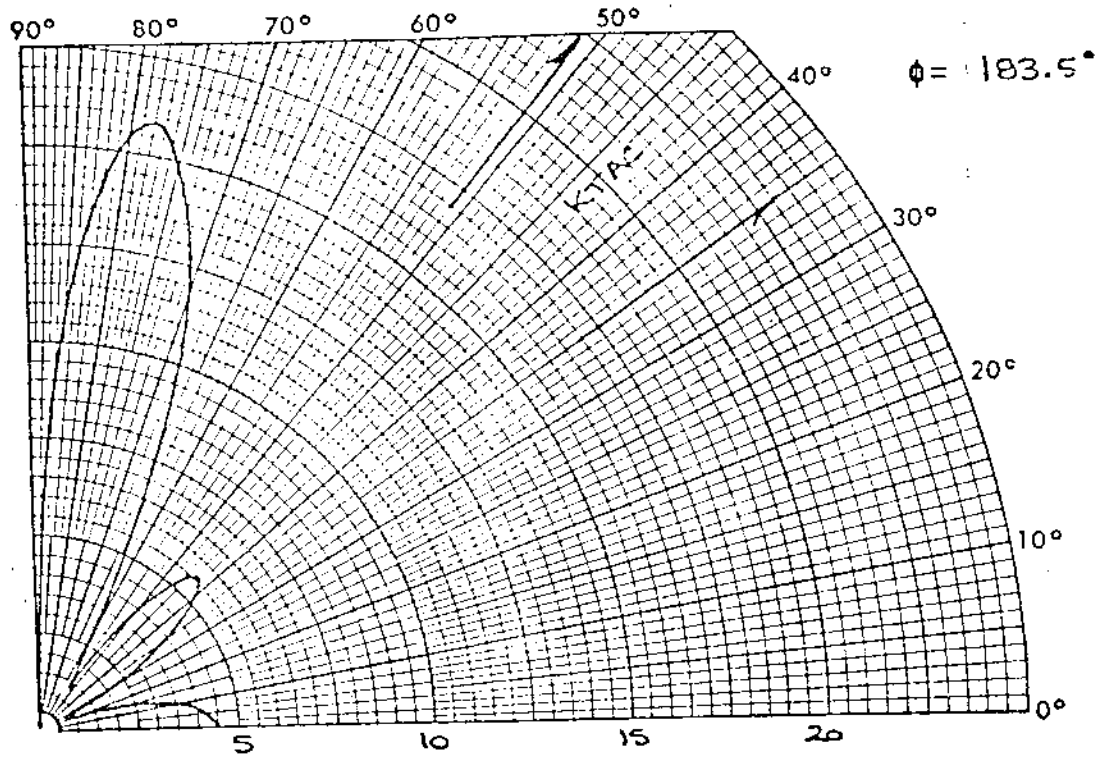
FIGURE 8

CFVR
850 kHz 10 kW DA-2
PROJECT #6114

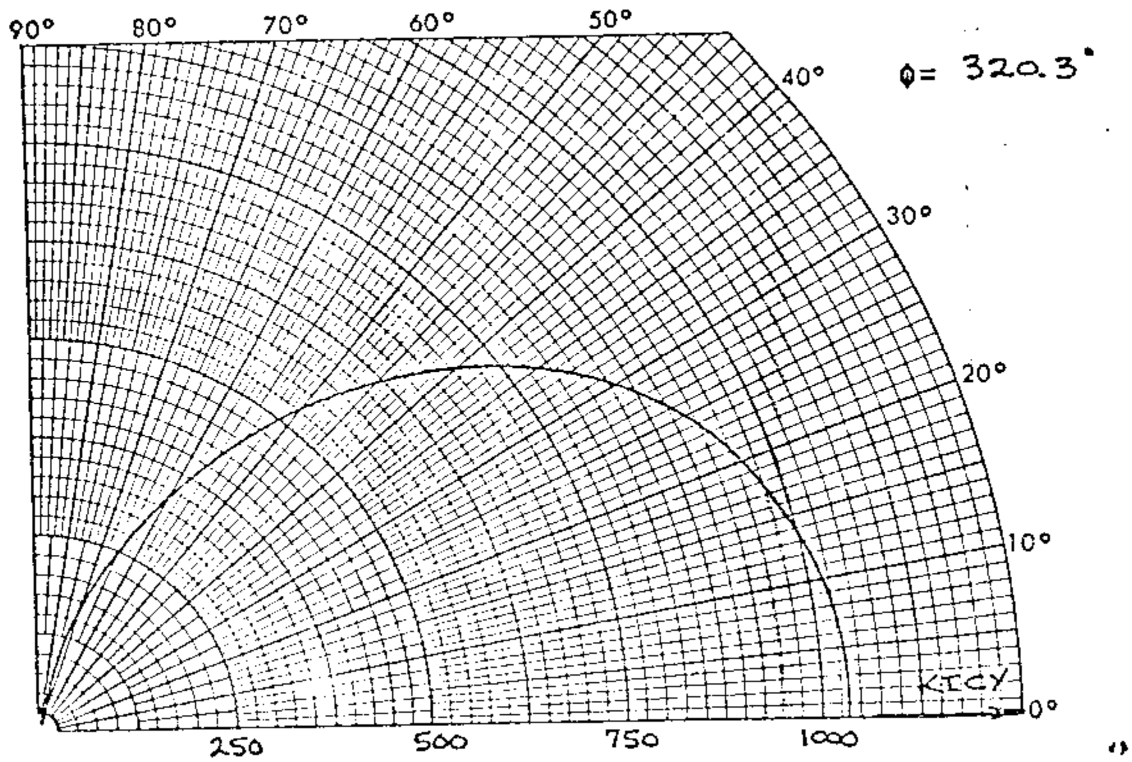
ABBOTSFORD, B.C.
CLASS II
APRIL 4, 1975

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

CFVR



UNATTENUATED(MV/M)1 MILE FIELD



UNATTENUATED (MV/M) 1 MILE FIELD

VERTICAL RADIATION PATTERNS

FIGURE 9

CFVR
850 kHz
PROJECT #6114

10 kW

DA-2

ABBOTSFORD, B.C.
CLASS II
APRIL 4, 1975

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

CHCM
DELETE

IFRB Serial No. 850

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

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

PART I GENERAL INFORMATION

(01) Administration: CANADA | Sheet No.: 415 | Date: 821130

Assigned frequency (kHz)		(02)	850
Transmitting station	Name of the station	(03)	MARYSTOWN NF
	Call sign	(04)	CHCM
	Additional identification	(05)	
	Station class	(06)	
	Operational Status	(07)	
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	W N

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

Station remains on 560 kHz

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

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

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

(44) Remarks

COORDINATION UNDER ARTICLE 4:

COUNTRY	USA							
IN PROGRESS								
ACCEPTANCE OBTAINED								

CHCM

IFRB Serial No. 850

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

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

PART I GENERAL INFORMATION

(01) Administration: CANADA | Sheet No.: 413 | Date: 82-09-23

		No.	
Assigned frequency (kHz)		02	850
Transmitting station	Name of the station	03	MARYSTOWN NF
	Call sign	04	
	Additional Identification	05	
	Station class	06	
	Operational Status	07	
Country		08	CAN
Geographical coordinates of the transmitting station		09	W N

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

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

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

STATION PARAMETERS	DAYTIME OPERATION		NIGHT-TIME OPERATION	
Station power (kW)	21		31	5.
r.m.s. value of radiation for station power (mV/m at 1 km)	25		35	681.73
Antenna type	26		36	
Simple vertical antenna electrical height (degrees)	27		37	

(44) Remarks

Reduction in night power from 10 kW (List 411)

COORDINATION UNDER ARTICLE 4:

COUNTRY	USA	DNK						
IN PROGRESS	X							
ACCEPTANCE OBTAINED		X						

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

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

CHCM
850 kHz

PART I GENERAL INFORMATION

(01) Administration CANADA Sheet No. 411 Date 82.4.5

Assigned frequency (kHz)		(02)	850
Transmitting station	Name of the station	(03)	MARYSTOWN NF
	Call sign	(04)	CHCM
	Additional Identification	(05)	
	Station class	(06)	B
	Operational Status	(07)	P
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	55W 14 37 47N 09 33

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

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

(13) Date of bringing into service or cessation of operation 82 09 01 (Year Month Day)

STATION PARAMETERS	DAYTIME OPERATION		NIGHT-TIME OPERATION	
Station power (kW)	(21)	10.	(31)	10.
r.m.s. value of radiation for station power (mV/m at 1 km)	(25)	968.	(35)	.
Antenna type	(26)	A	(36)	B
Simple vertical antenna electrical height (degrees)	(27)	91.1	(37)	.

(44) Remarks

Night power restricted to 5.0 kW until GRL 00813 Upernavik makes planned change to 810 kHz.

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

IFR | Serial No.

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

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No.: 411

Date:

(01) Name of transmitting station: MARYSTOWN NF

(02) Country: CAN

(03) Hours of operation: HN

(04) Total number of towers: 2

(05) Tower No.	(06) Tower field ratio	(07) Phase difference of the field (± degrees)	(08) Electrical tower spacing (degrees)	(09) Angular tower orientation (degrees)	(10) Reference tower indicator	(11) Electrical height of tower (degrees)	(12) Tower structure
1	1.	0.	0.	0.		91.1	
2	.7	-97.	121.43	25.57		91.1	

(14) r.m.s value of radiation: 964.11 mV/m at 1 km

(15) Type of pattern: E

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

(17) SUPPLEMENTARY INFORMATION

CHCM
850 kHz

DIRECTIONAL ANTENNA - DESCRIPTION SHEET

Station : CHVO

Main Studio : Spaniard's Bay, Newfoundland.

Frequency : 850kHz   Power : 5kW   Class : II

Notification List No. : 395   Date : April 11, 1980

Geographical Location of the Centre of the Antenna System : 47° 39' 21" N. 53° 15' 30" W.

Antenna Array Characteristics : Mode of Operation - DA-1
Number of Elements - Two (2)
Type of Elements - Uniform cross-section steel towers, guyed, base insulated, series fed; no top loading.

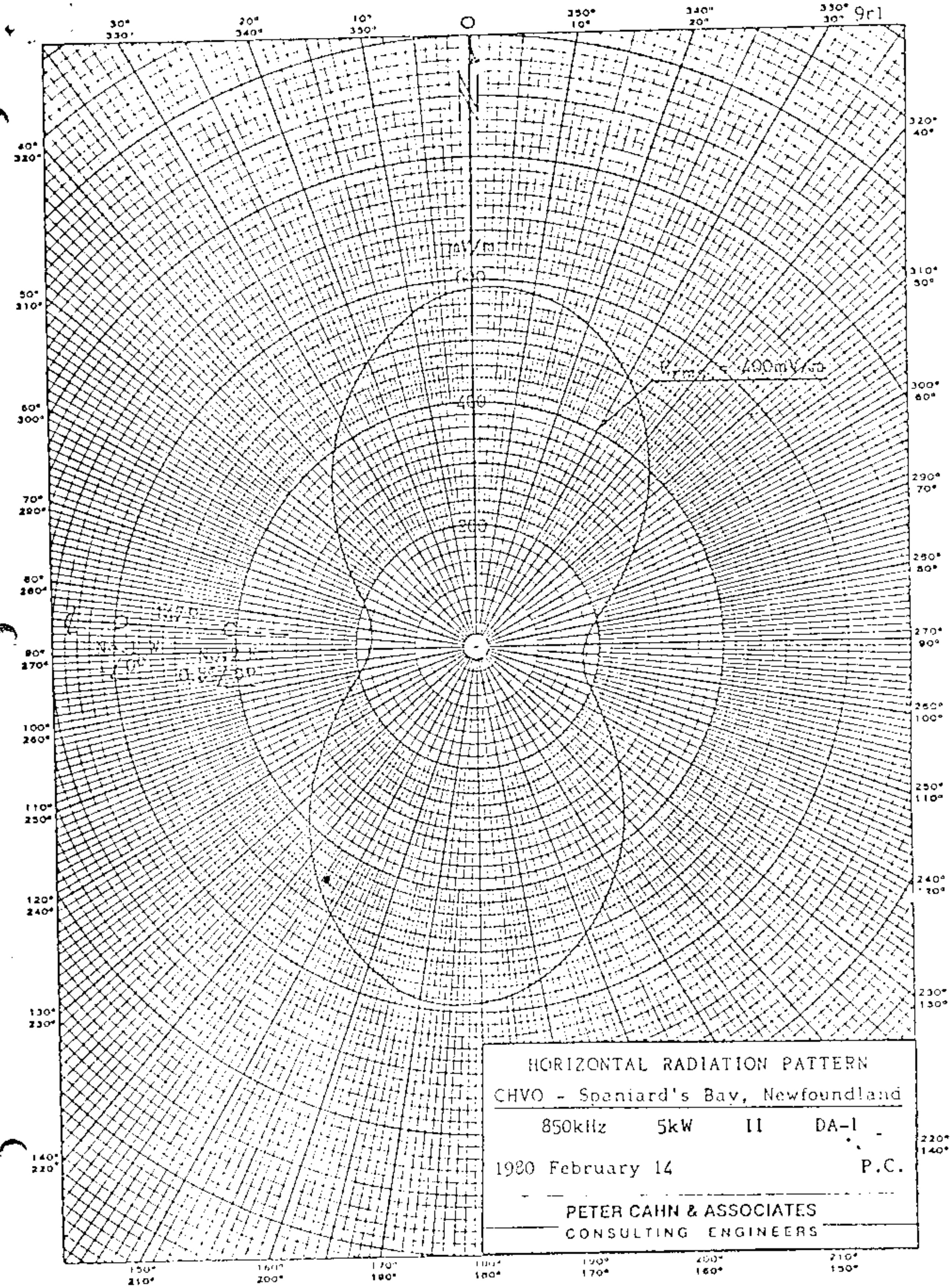
Tower No.	:	1 (West)	2 (East)	
Height above Insulator	:	89.31m	89.31m	(91.12°)
Overall Height	:	90.53m	90.53m	(297ft)
Field Ratio	:	1.0	0.85	
Phasing	:	0°	0°	

Spacing & Orientation : Elements are spaced 144.08m (147°) on a line bearing 95° East of T.N.

Ground System : No. 10 AWG, 120 equiangularly spaced radials per tower, bare, soft-drawn copper wire, buried approx. 8" in ground. Each radial is 141.14m long (=0.4λ), except where radials are shortened and bonded to transverse copper strap buried along the intersection between towers.

Predicted Effective Fields : E_{rms} = 400mV/m at 1 mile for 5 kW or = 179mV/m at 1 mile for 1 kW.

CHVO



HORIZONTAL RADIATION PATTERN

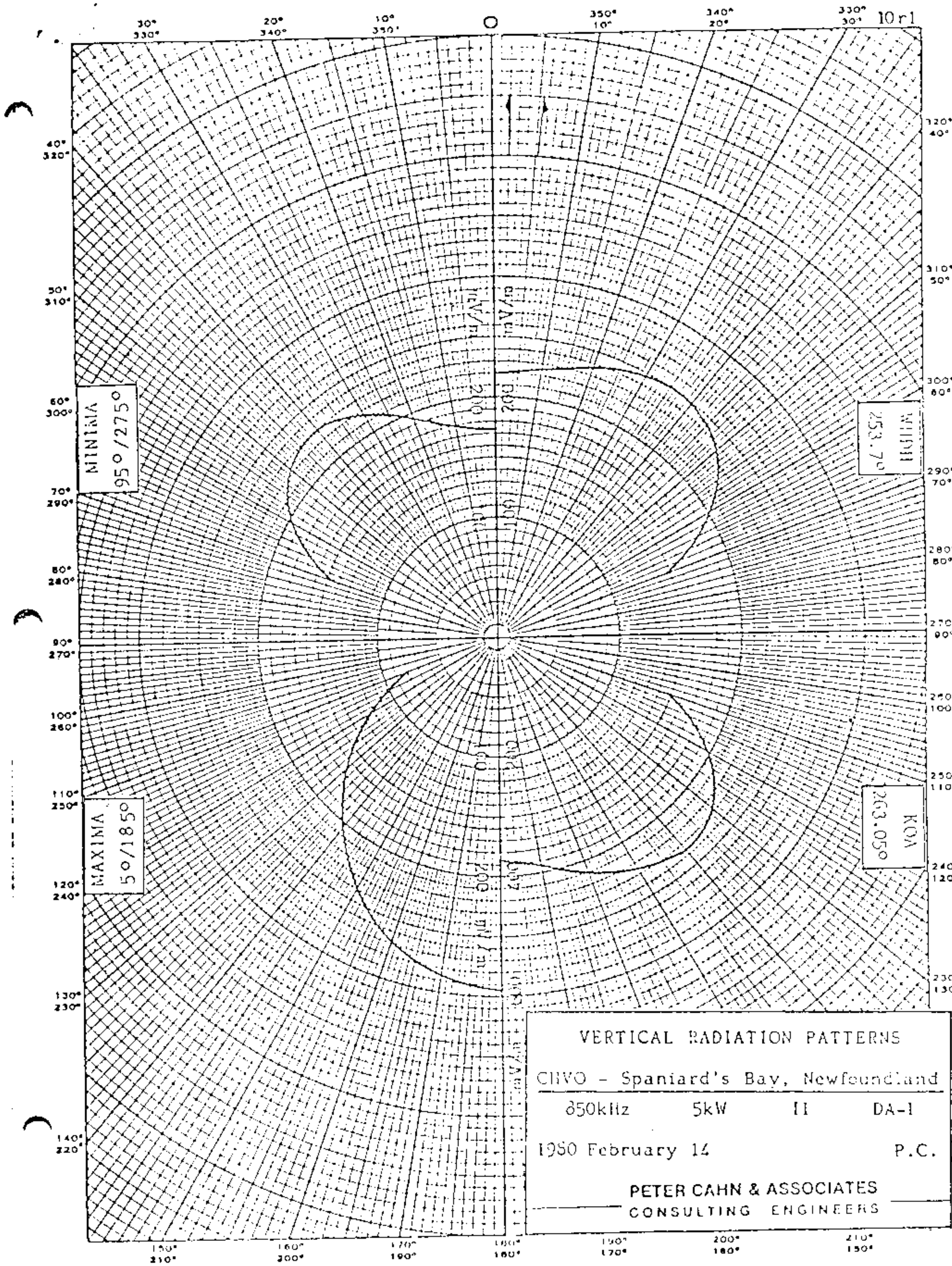
CHVO - Spaniard's Bay, Newfoundland

850kHz 5kW II DA-1

1980 February 14 P.C.

PETER CAHN & ASSOCIATES
CONSULTING ENGINEERS

CHVO



VERTICAL RADIATION PATTERNS

CHVO - Spaniard's Bay, Newfoundland

850kHz	5kW	II	DA-1

1980 February 14 P.C.

PETER CAHN & ASSOCIATES
CONSULTING ENGINEERS

LANGLEY PRAIRIE, B.C.   CJJC

DESCRIPTION SHEET
(1-29-60g)

New Station
Langley Prairie, B.C., Canada

1kw,DA-2,U,Class II
850 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

STATION: New

MAIN STUDIO: Langley Prairie, B.C.

FREQUENCY: 850 Kcs.

POWER: 1,000 Watts CLASS: II

NOTIFICATION LIST NO. 141

DATE: December 4, 1959

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:
North Latitude: 49° 03' 54"
West Longitude: 122° 34' 18"

ANTENNA CHARACTERISTICS

Mode of Operation: DA-2
Number of elements: 4
Type of elements: Guyed, uniform cross-section, series fed, no top loading.

TOWER:	#1 (S)	#2	#3	#4
HEIGHT OVER INSULATORS:	250' (78°)	250' (78°)	250' (78°)	250' (78°)
OVERALL HEIGHT	255'	255'	255'	255'

SPACING: 265' (82.5°) on both pairs of parallelogram

PHASING: (Day)	0 (Ref)	-99°(lag)	+180 (lead)	+81 (lead)
FIELD RATIO: (Day)	1.0	1.0	.715	.715
PHASING: (Night)	0	-139 (lag)	-1[illegible].5(lag)	-247.5 (lag)
FIELD RATIO: (Night)	1.0	1.0	1.0	1.0

GROUND SYSTEM: 120 radials per tower 0.4 wavelengths long, buried 8" below grade.

THEORETICAL EFFECTIVE FIELD: Day - 1[illegible] mv/m at 1 mile for 1 KW
Night - 1[illegible] mv/m at 1 mile for 1 KW

ORIENTATION: Towers form the corners of a parallelogram.
North - South pairs are on a line bearing true north.
East - West pairs are on a line bearing 200° true.

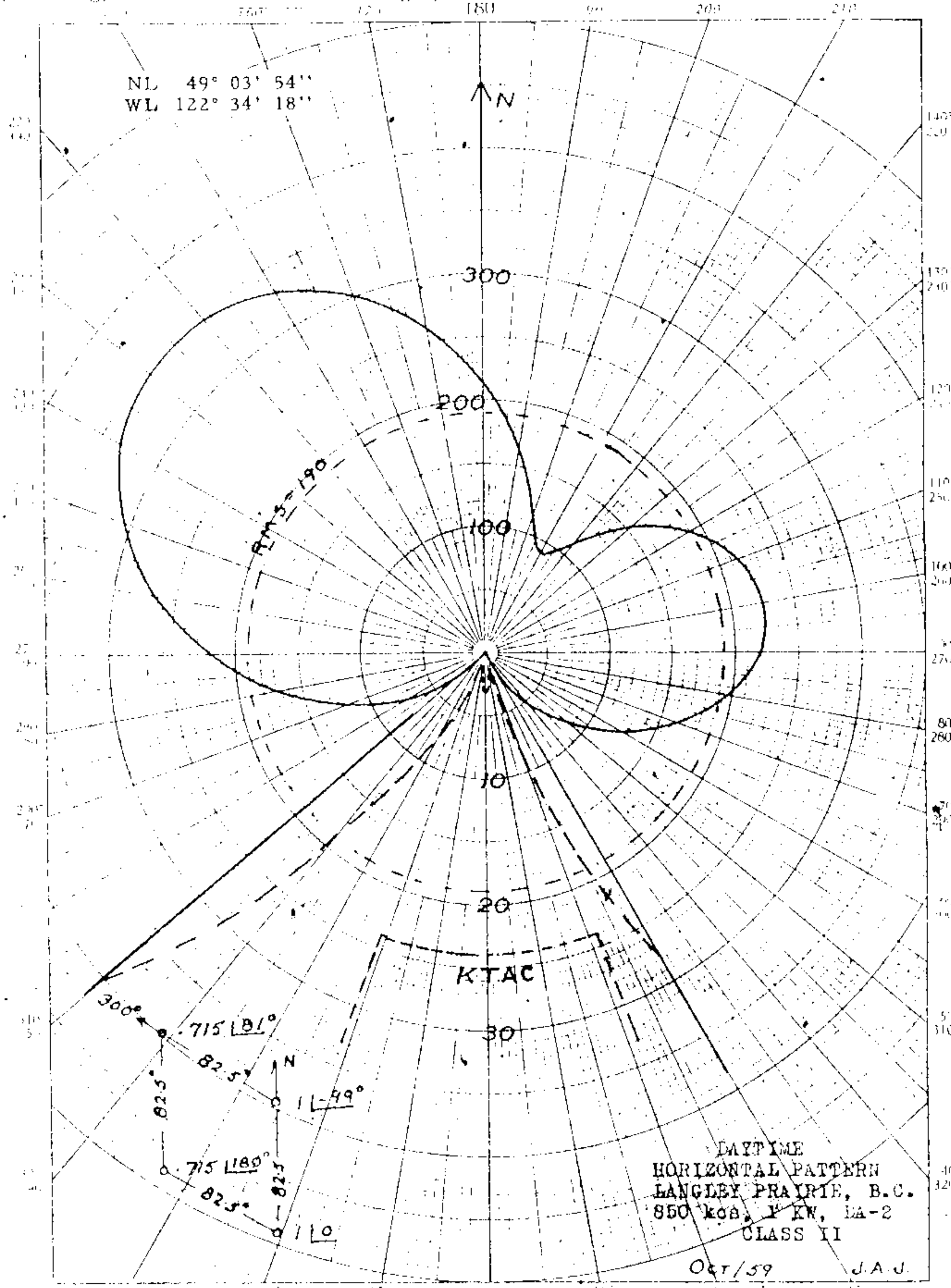
8

LANGLEY PRAIRIE, B.C.

PROPOSED DAY
(1-29-60g)

New Station
Langley Prairie, B.C., Canada

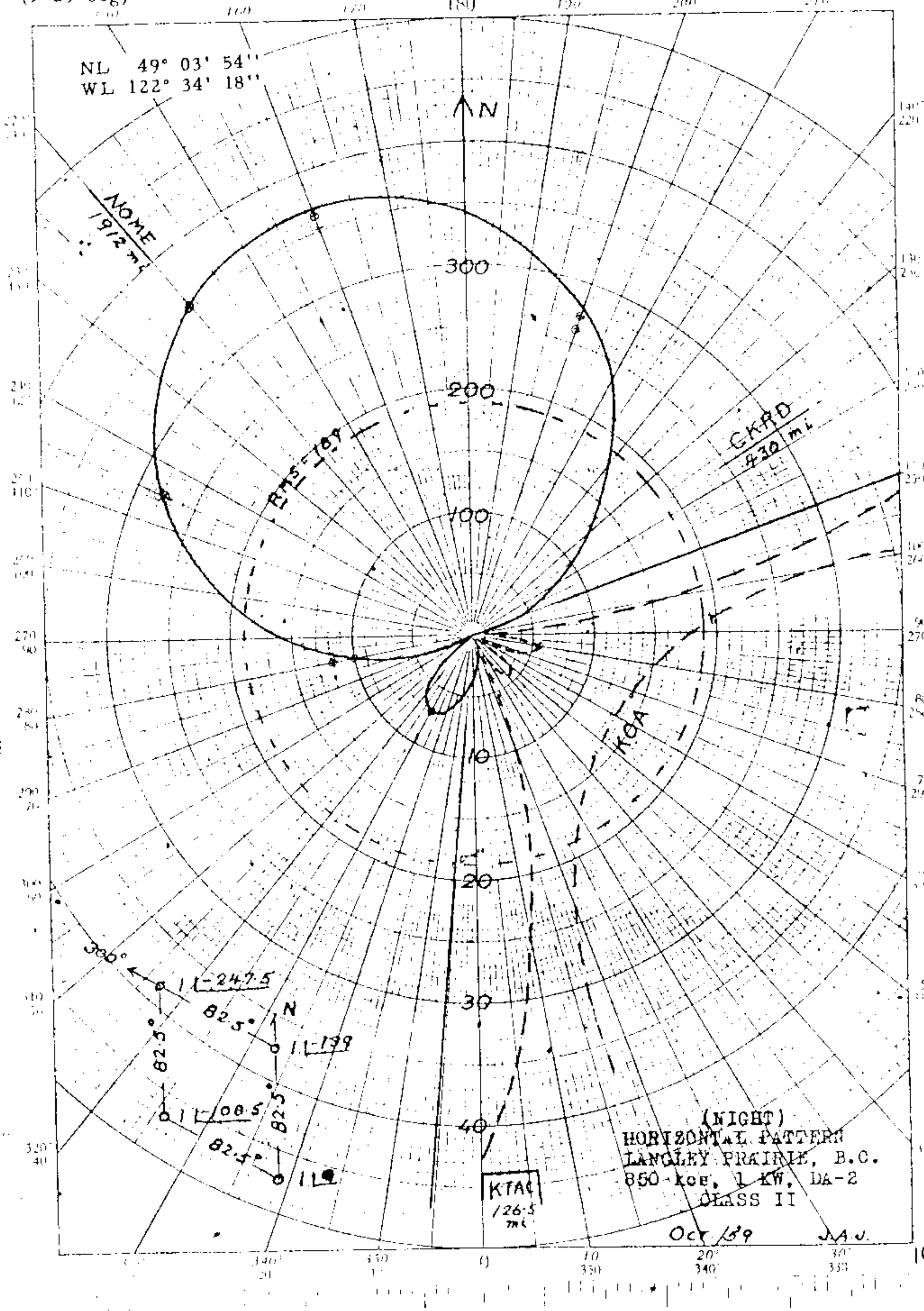
1kw, DA-2,U, Class II
850 KC



LANGLEY PRAIRIE, B.C. CJJC

PROPOSED NIGHT
(1-29-60g)

New Station 1kw, DA-2,U, Class II
Langley Prairie, B.C., Canada 850 KC



IFRB Serial No. 12122

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

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

CKRD 850

PART I GENERAL INFORMATION

(01) Administration: CANADA | Sheet No.: 419 | Date: 830606

Assigned frequency (kHz)	02	850
Transmitting station – Name of the station	03	RED DEER AB
Transmitting station – Call sign	04	CKRD
Transmitting station – Additional identification	05	
Transmitting station – Station class	06	B
Transmitting station – Operational Status	07	P
Country	08	CAN
Geographical coordinates of the transmitting station	09	113W4323 52N0149

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

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

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

STATION PARAMETERS	DAYTIME OPERATION		NIGHT-TIME OPERATION	
Station power (kW)	21	10.	31	5.
r.m.s. value of radiation for station power (mV/m at 1 km)	25	965.4	35	.
Antenna type	26	A	36	B
Simple vertical antenna electrical height (degrees)	27	90.2	37	.

(44) Remarks

COORDINATION UNDER ARTICLE 4:

COUNTRY	USA						
IN PROGRESS							
ACCEPTANCE OBTAINED	X						

CKRD
850

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

IFRB S No. 12122

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No. 419

Date 830606

(01) Name of transmitting station: RED DEER AB

(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.	0.	0.	0.	0	90.2	0
2	3.	-102.3	90.	340.	0	90.2	0
3	3.	155.3	180.	340.	0	90.2	0
4	1.	53.	270.	340.	0	90.2	0

(14) r.m.s value of radiation: 703. mV/m at 1 km

(15) Type of pattern: E

(16) Special quadrature factor: 16.4 mV/m at 1 km

(17) SUPPLEMENTARY INFORMATION
The phase and current monitoring system will have a precision of 0.5 degrees and 0.5 per cent or less.

CKRD

850

IFRB Serial No. 1 2 1 2 2

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

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

PART I GENERAL INFORMATION

(01) Administration: CANADA   Sheet No. 415   Date 821130

Assigned frequency (kHz)		02	850
Transmitting station	Name of the station	03	RED DEER AB
	Call sign	04	CKRD
	Additional identification	05	
	Station class	06	B
	Operational Status	07	P
Country		08	CAN
Geographical coordinates of the transmitting station		09	113W4323 52N0149

(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	10.	31	5.
r.m.s. value of radiation for station power (mV/m at 1 km)	25	965.4	35	.
Antenna type	26	A	36	B
Simple vertical antenna electrical height (degrees)	27	90.2	37	.

(44) Remarks

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

CKRD
850

IFRB Serial No.

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

PART II Section I

Description of a directional antenna consisting of vertical conductors

Sheet No. 415

Date 821130

(01) Name of transmitting station: RED DEER AB

(02) Country: CAN

(03) Hours of operation: 1 N

(04) Total number of towers: 4

(05) Tower No.	(06) Tower field ratio	(07) Phase difference of the field (± degrees)	(08) Electrical tower spacing (degrees)	(09) Angular tower orientation (degrees)	(10) Reference tower indicator	(11) Electrical height of tower (degrees)	(12) Tower structure
1	1.	0.	0.	0.	0	90.2	0
2	3.	-102.3	90.	340.	0	90.2	0
3	3.	155.3	180.	340.	0	90.2	0
4	1.	53.	270.	340.	0	90.2	0

(14) r.m.s value of radiation: 703. mV/m at 1 km

(15) Type of pattern: E

(16) Special quadrature factor: 17.54 mV/m at 1 km

(17) SUPPLEMENTARY INFORMATION

CKRD
850

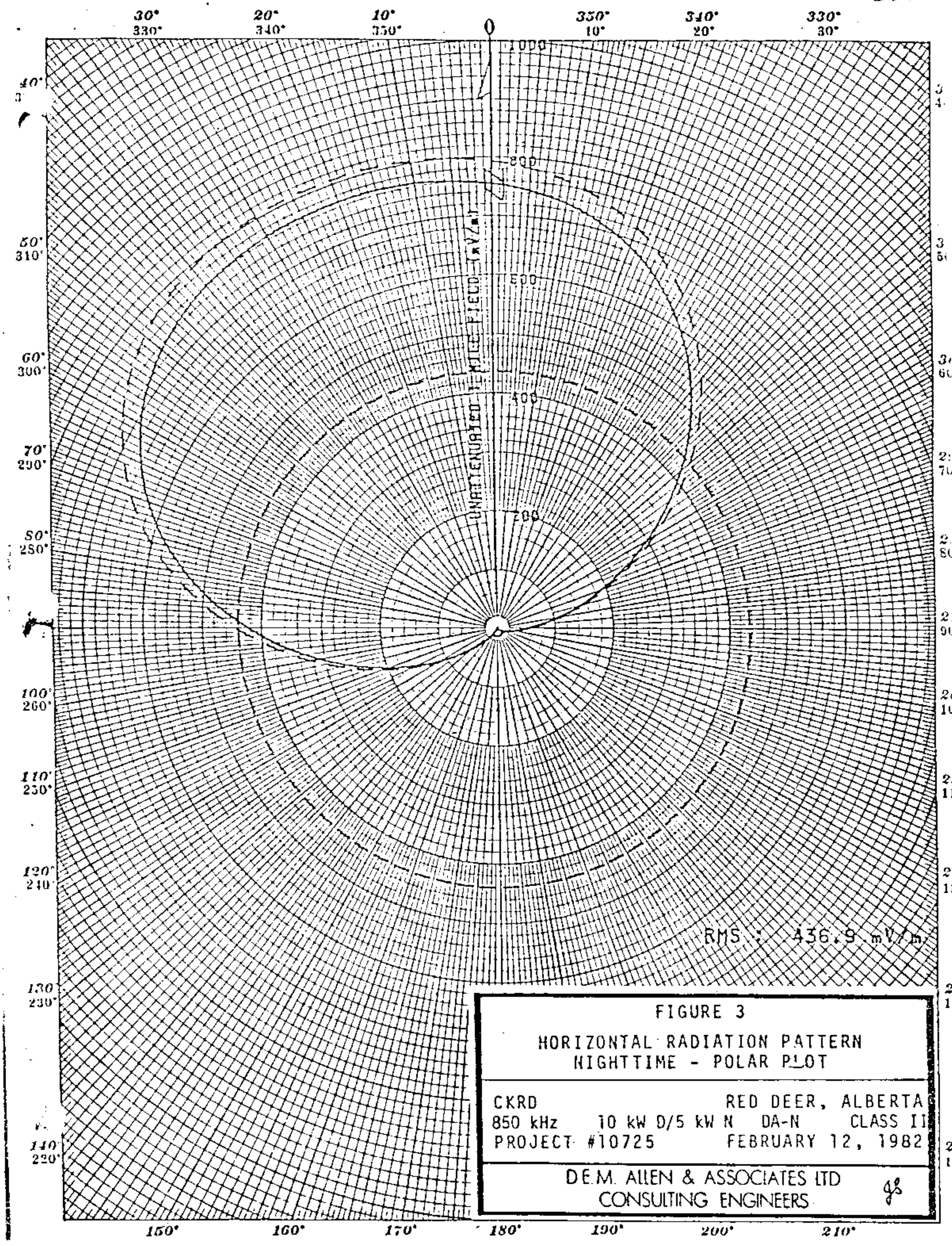


FIGURE 3

HORIZONTAL RADIATION PATTERN
NIGHTTIME - POLAR PLOT

CKRD RED DEER, ALBERTA
850 kHz 10 kW D/5 kW N DA-N CLASS II
PROJECT #10725 FEBRUARY 12, 1982

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

CKRD
850 KHz

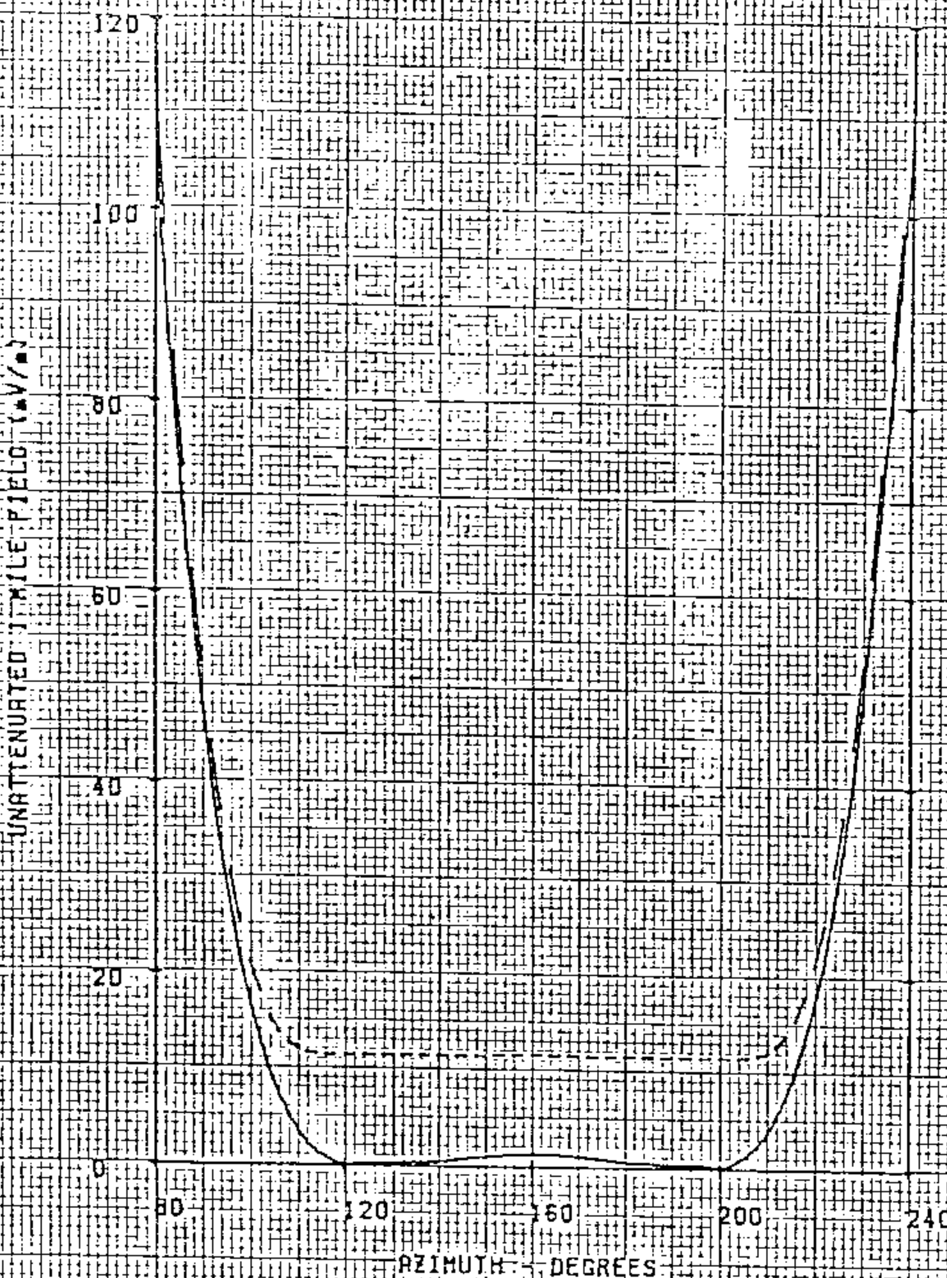


FIGURE 4

HORIZONTAL RADIATION PATTERN
NIGHTTIME - RECTANGULAR PLOT

CKRD RED DEER, ALBERTA
850 kHz 10 kW D/5 kW N DA-N CLASS II
PROJECT #10725 FEBRUARY 12, 1982

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

RED DEER, ALBERTA CKRD

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CKRD

Main Studio: Red Deer, Alberta

Frequency: 850 kcs.

Power: 10 kw Day/ 1 kw Night Class: II

Notification List: No. 283

Date: September 30, 1971.

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM: North Latitude: 52° 08' 34"

West Longitude: 113° 47' 40"

ANTENNA CHARACTERISTICS

Mode of operation: DA-N
Number of elements: Three
Type of elements: guyed, uniform cross- section, base insulated, series fed, no top loading.

TOWER:	#1 South	#2 Centre	#3 North
HEIGHT ABOVE INSULATORS:	200'	200'	200' (62°)
OVERALL HEIGHT:	204'	204'.	204'
SPACING:	370'(115°)	370' (115°)	
PHASING:	+82.4°	0	-88.4°
FIELD RATIO:	0.514	1.0	-.514

ORIENTATION: Towers on a line bearing 30° west of north.

GROUND SYSTEM: 120 radials per tower of #10 AWG soft copper wire uniformly spaced and bonded at intersections. Depth approximately 8".

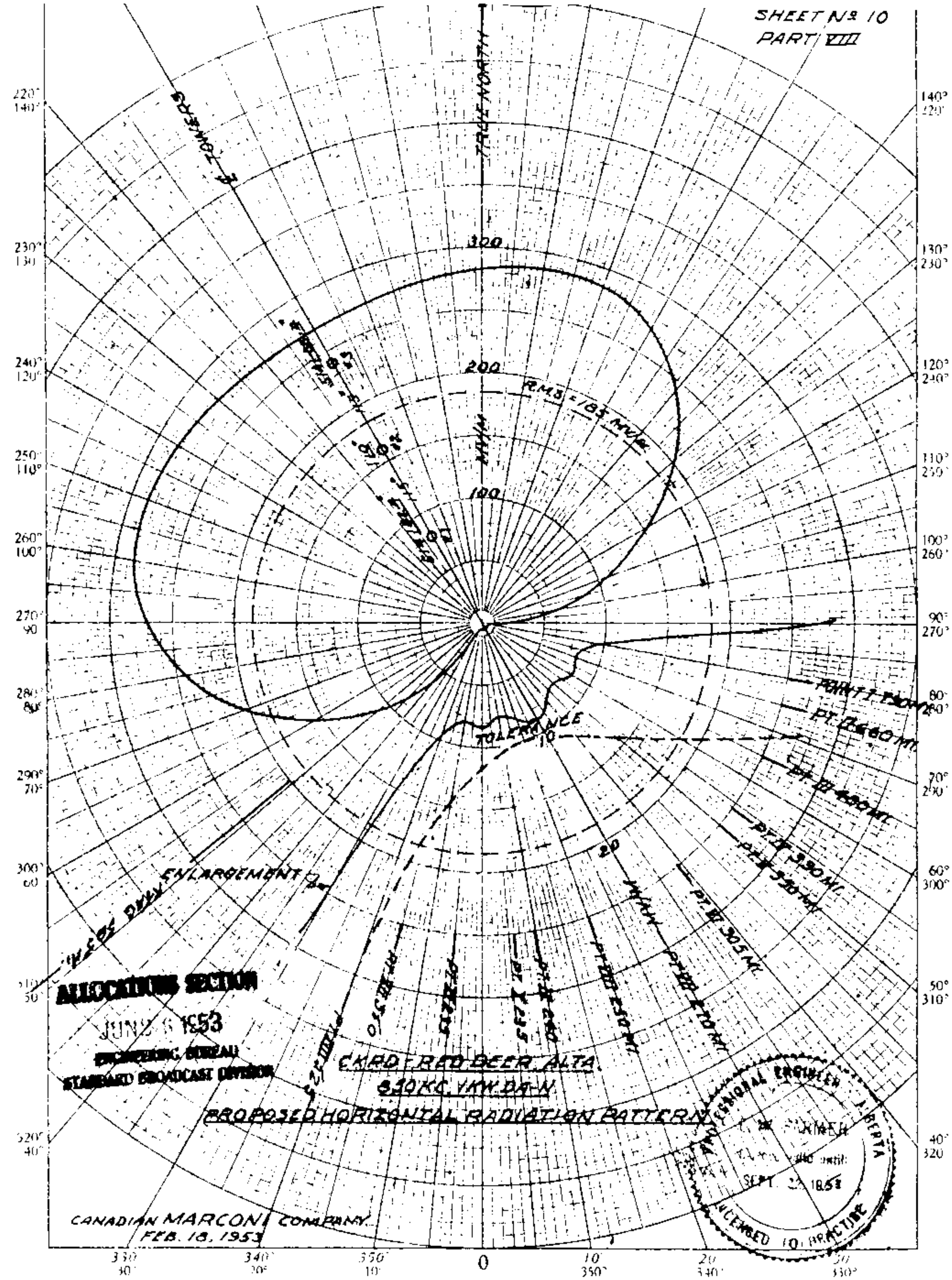
Predicted Effective Field: Night 185 mv/m
Day 592 mv/m (187 for 1 kw)

NOTE: This notification concerns a correction to the phasing and field ratio of towers 1 and 3.

#76

CKRD

PROPOSED NIGHT (8/3/53G) CKRD, RED DEER, ALBERTA 1 KW, DA-N 850 kc



CKRD, RED DEER, ALBERTA

PETER CAHN, ENG | BROADCAST CONSULTANT

CLIENT: CKVL - Verdun, Que.

TITLE: Technical Brief

SECTION III : DESCRIPTION SHEET - DIRECTIONAL ARRAY

STATION : CKVL   MAIN STUDIO : Verdun, Que.

POWER : 50Kw-D/10Kw-N   FREQUENCY : 850KHz CLASS : II

Notification List No. : 219   Date : December 12, 1966

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM : 45° 23' 32" N. Lat.
73° 35' 16" W. Long.

MODE OF OPERATION : DA-2, U

ANTENNA CHARACTERISTICS : Four (4) elements, guyed, uniform cross-section, series fed, no top loading.

Tower No.:	1 (SW)	2 (C)	3 (NE)	4 (NW)
Height above Insulators:	193' (60°)	193' (60°)	193' (60°)	193' (60°)

Spacing: 231.5' (72°) between adjacent towers #1, 2 and 3; 450' (140°) betw. towers #3 and 4

		1 (SW)	2 (C)	3 (NE)	4 (NW)
Phasing:	Night	+131°	0°	-131°	unused
	Day	unused		0°	-36°
Field Ratio:	N	.525	1	.525	unused
	D	unused		1	1

GROUND SYSTEM : 120 equally spaced radials of #10 AWG bare copper wire extending to 463',connected at lines equidistant from adjacent towers and buried approximately 8 inches in ground.

ORIENTATION : Towers #1,2 & 3 on line 30° East of True N.
Towers #3 & 4 on line 25° West of True N.

PREDICTED EFFECTIVE FIELD : N - 575 mV/m @ 1 m. for 10 Kw
182 mV/m @ 1 m. for 1 Kw

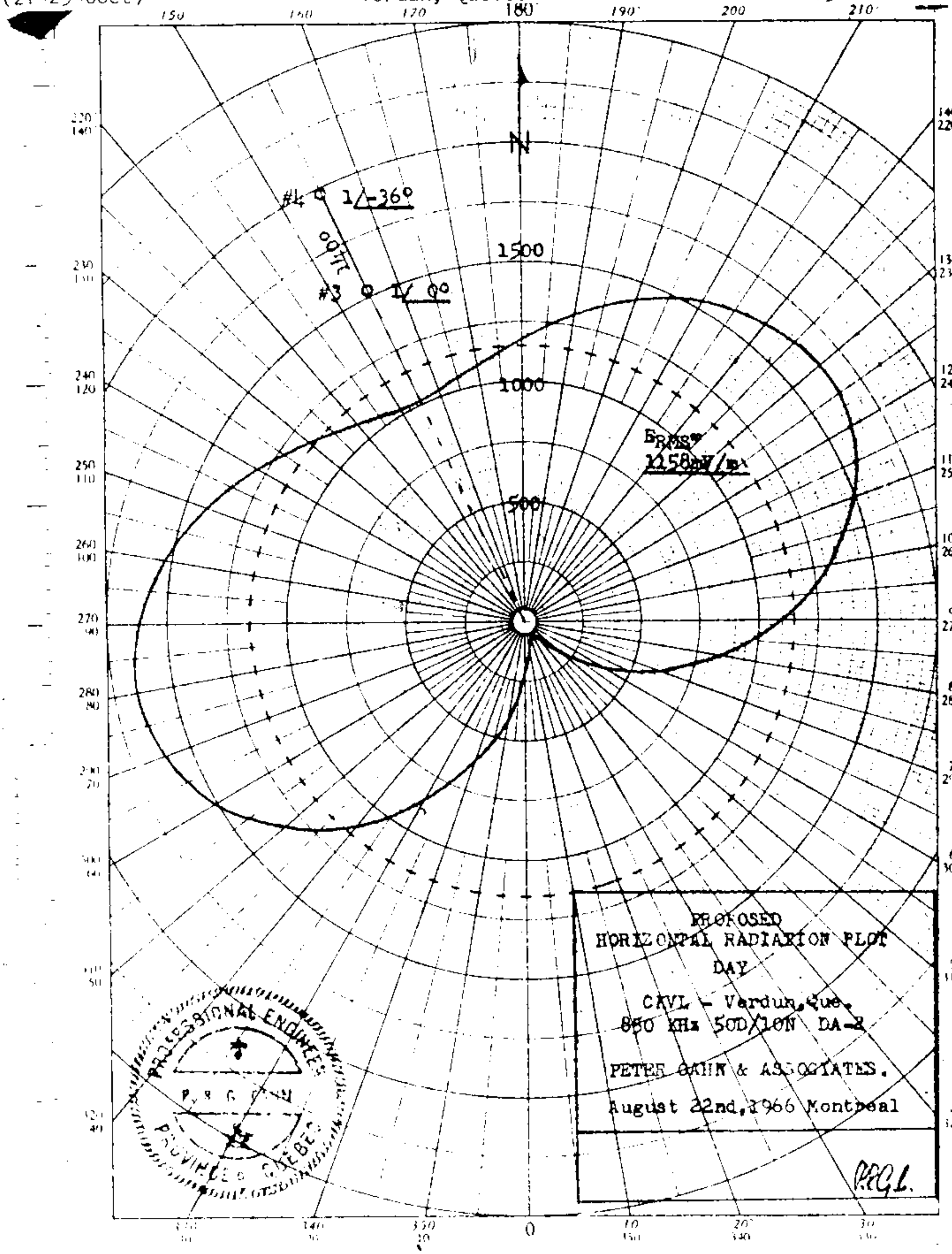
D - 1158 mV/m @ 1 m. for 50 Kw
165 mV/m @ 1 m. for 1 Kw.

CKVL

Proposed Day
(21-29-66ct)

Station CKVL
Verdun, Quebec

10kw,50kw-LS,DA-2,U,Class II
850 kc



F11A

CKVL

DESCRIPTION SHEET (10/11/57g)

Station CKVL 10kw,50kw-LS, DA-2,U
Verdun, Quebec, Canada 850 KC

DESCRIPTION OF ARRAY

STATION: C K V L **MAIN STUDIO:** Verdun, Que.

POWER: 10 KW-N/50 KW-D **FREQUENCY:** 850 KC **CLASS:** II

NOTIFICATION LIST NO. 114 DATE: August 28, 1957

LOCATION:

NORTH LATITUDE: 45° 23' 32"

WEST LONGITUDE: 73° 35' 16"

ANTENNA:

MODE OF OPERATION: DA-2(10KW-N/50KW-D)

ELEMENTS: Four, guyed, square, uniform cross section series fed, base insulated, no top loading

		#1(SW)	#2(C)	#3(NE)	#4(NW)
TOWER:		#1(SW)	#2(C)	#3(NE)	#4(NW)
HEIGHT ABOVE INSULATORS:		193'(60°)	193'(60°)	193'(60°)	193'(60°)
SPACING:			231.5'(72°)	231.5'(72°)	450'(140°)
PHASING:	Night	131°	0	-131°	Unused
	Day	Unused	Unused	0	0
FIELD RATIO:	Night	.525	1	.525	Unused
	Day	Unused	Unused	1	1

GROUND SYSTEM: 120 equally spaced radials of #10 B & S bare copper wire, extending to 463', connected at lines equidistant from adjacent tower, buried approximately 8 inches.

PREDICTED EFFECTIVE FIELD: (Night 575 MV/M (182 MV/M for 1 KW)

(Day 1215 MV/M (172 MV/M for 1 KW)

ORIENTATION: Tower #1, 2 and 3 on line bearing 30° East of True North

Tower #3 and 4 on line bearing 25° West of True North.

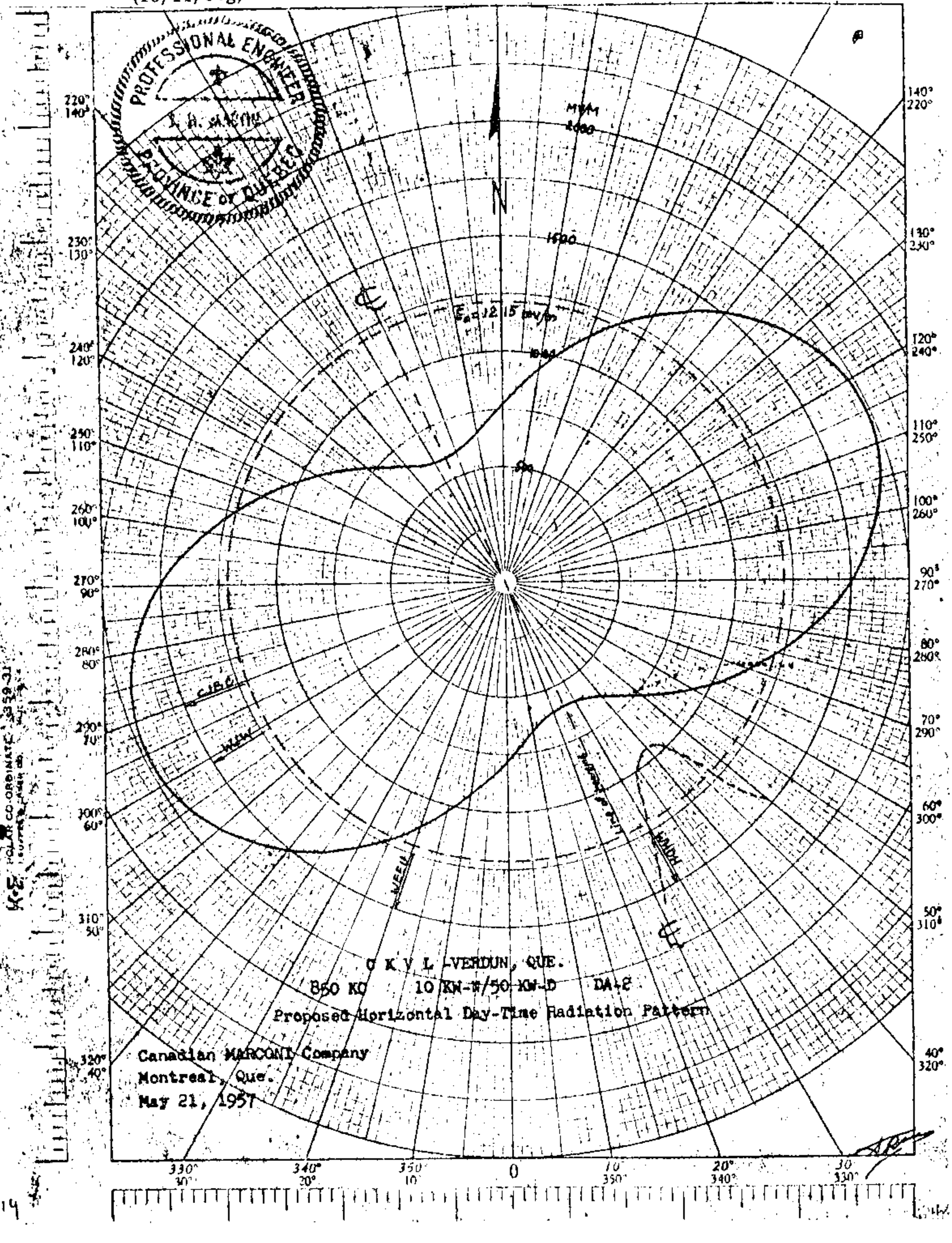
15

CKVL

114

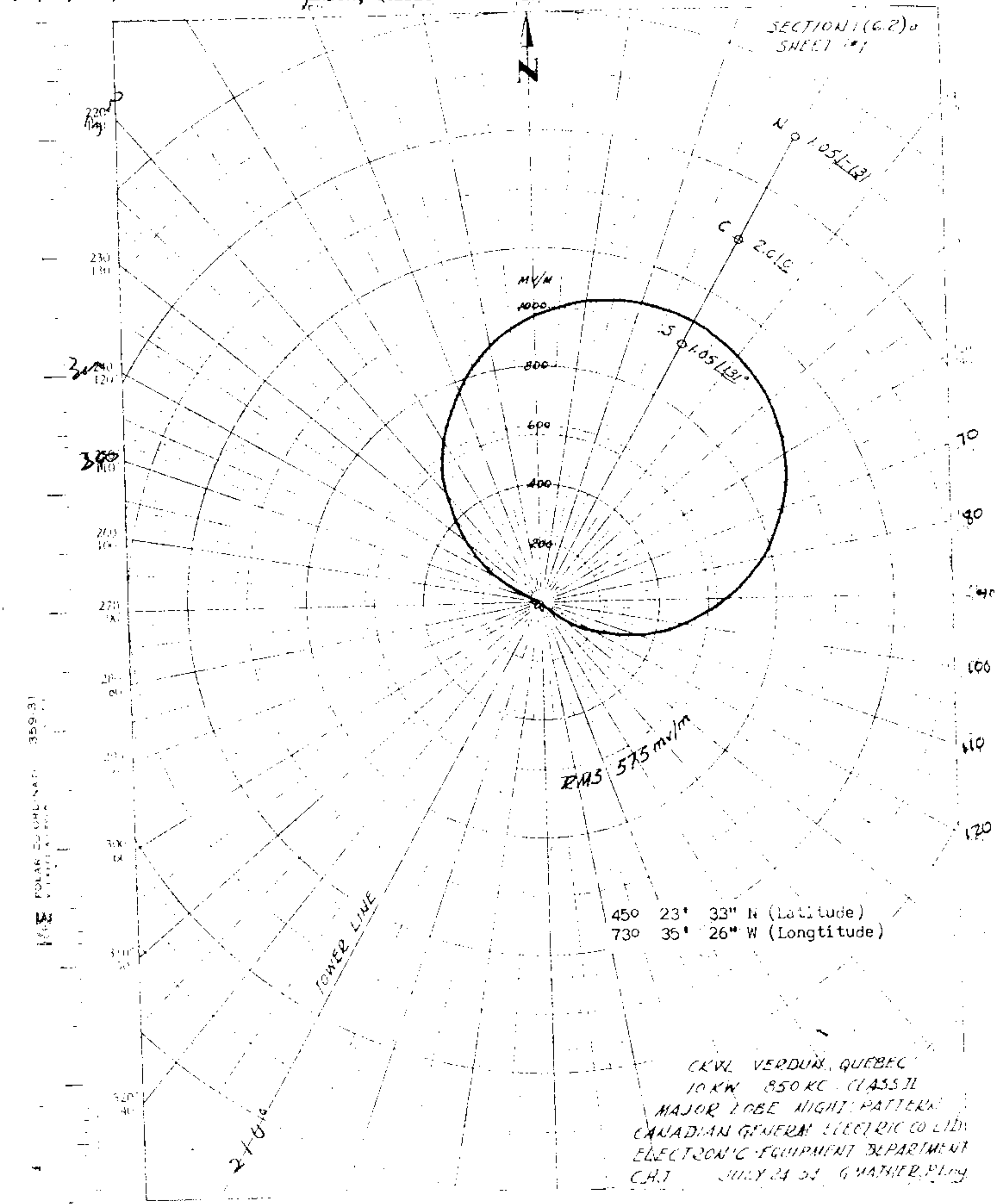
PROPOSED DAY
(10/11/57g)

Station CKVL 10kw,50kw-LS, DA-2,U
Verdun, Quebec, Canada 850 KC



CKVL

REVISED NIGHT (Major lobe) (10/19/54G) STATION CKVL VERDUN, QUEBEC 10 KW, CLASS II DA-2 850 KC



Notification List No. 78 August, 9, 1954 CKVL, Verdun Quebec 850 KC

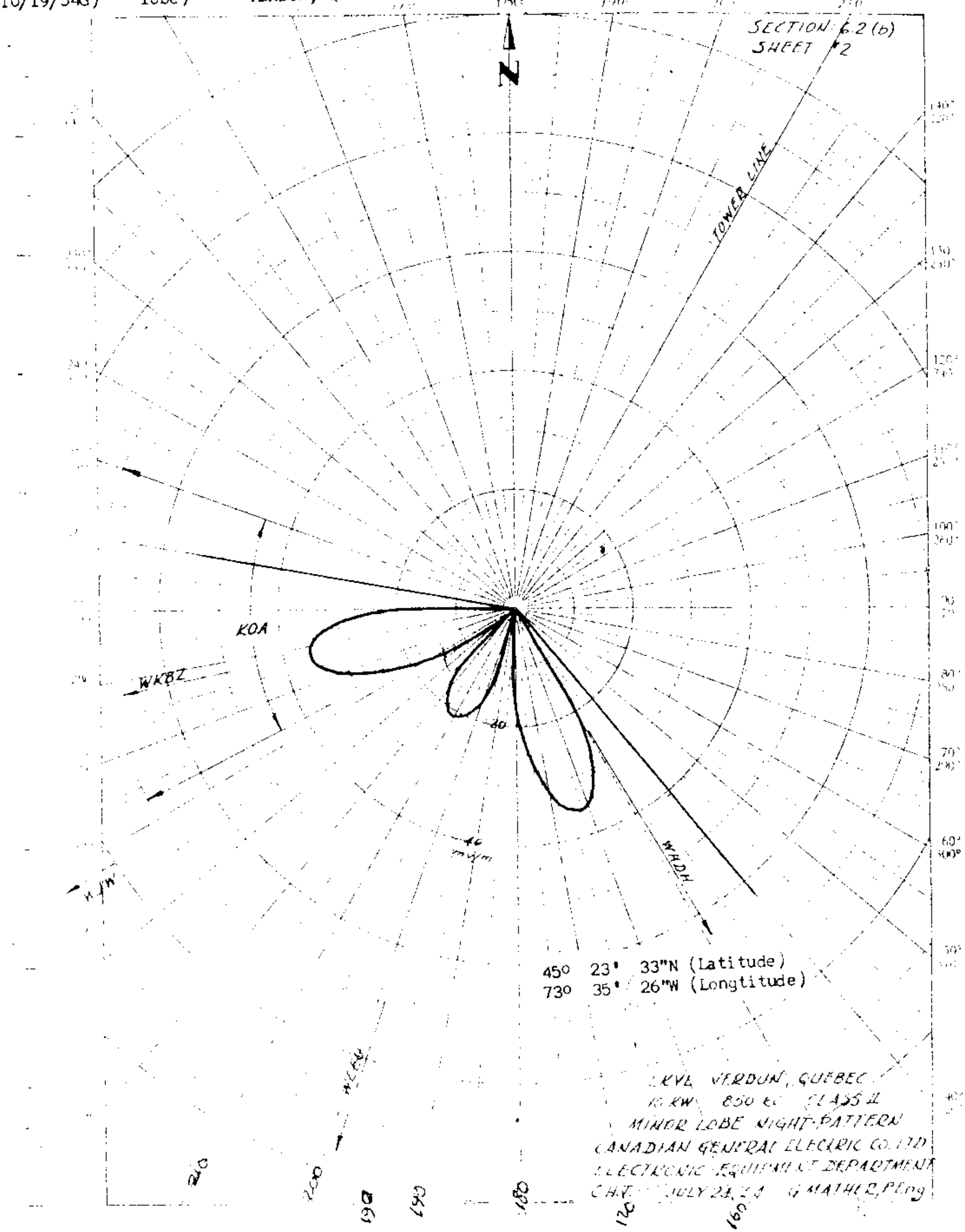
F78

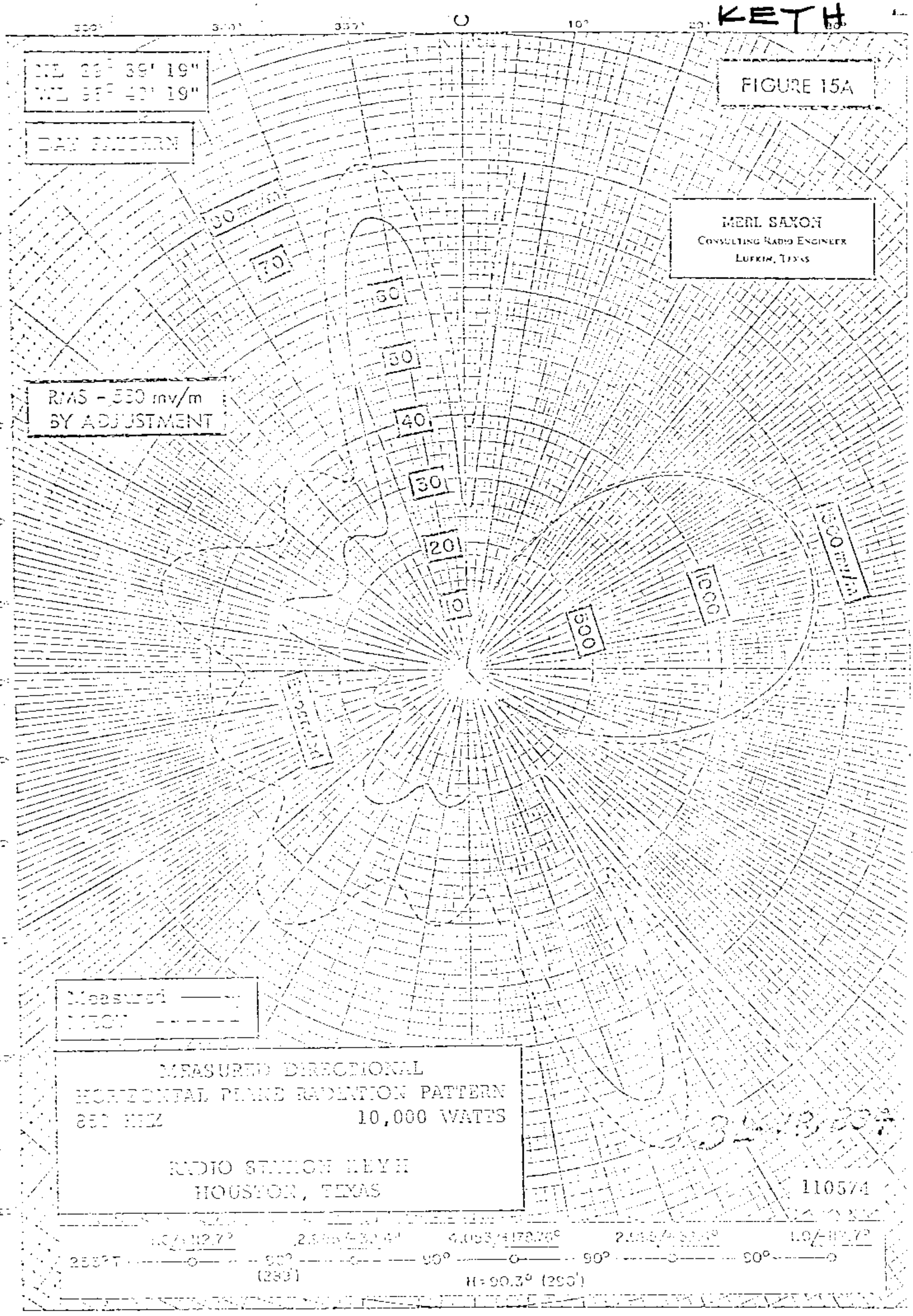
CKVL
850 KC

REVISED NIGHT (Minor lobe)
(10/19/54G)

STATION CKVL
VERDUN, QUEBEC

10 KW, CLASS II
DA-2



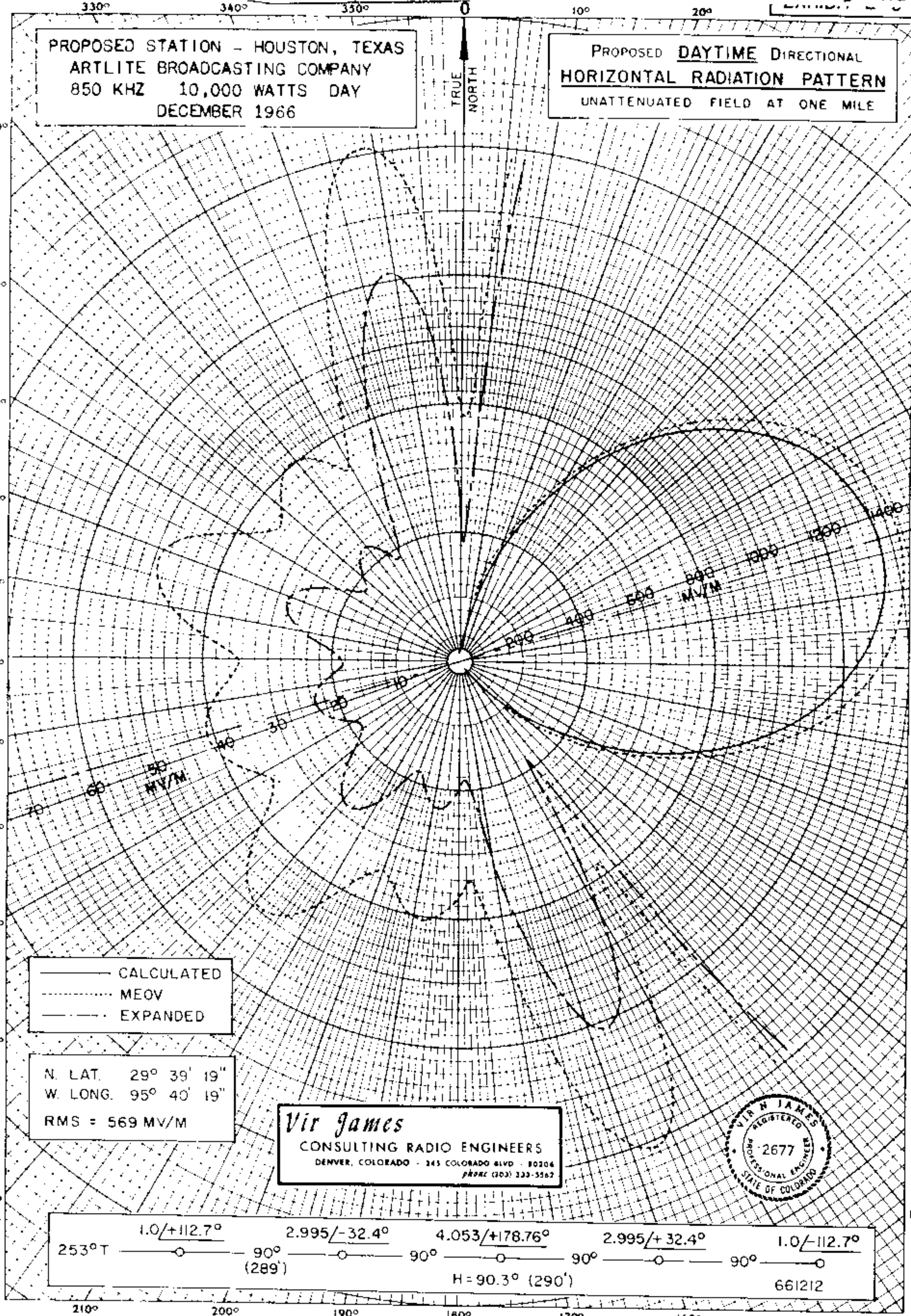

KETH
FIGURE 15A
MERL SAXON
CONSULTING RADIO ENGINEER
LUFKIN, TEXAS
19"
19"
RMS
BY ADJUSTMENT
70
60
50
40
30
20
10
500
1000
Measured
MEASURED DIRECTIONAL
HORIZONTAL PLANE RADIATION PATTERN
10,000 WATTS
HOUSTON, TEXAS
110574
H=90.3° (290')

KEYH

Proposed Day (3-29-67ct)

New; Artlite Broadcasting Co.
Houston, Texas

10kw,DA-D,D
850 kc



FCC File No.BP-17577
Accepted 3-8-67

New; Artlite Broadcasting Co.
Houston, Texas

850 kc

KGOE

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : KGOE　　Main Studio: Thousand Oaks, California

Frequency : 850 KHz　　Power : 0.5 kW Night 0.5 Day

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

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 34 12 07
West Longitude: 118 49 47

ANTENNA CHARACTERISTICS

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

TOWER :	SW(#1)	SC(#2)	NC(#3)	NE(#4)		
HEIGHT ABOVE INSULATORS :	250	250	250	250	(77.8°)	
NIGHT PHASING :	-105°	0°	+102.1°	-156.5°		
NIGHT FIELD RATIO:	0.323	1.0	0.861	0.226		
DAY PHASING :		0°	+127.39°	-110.0°		
DAY FIELD RATIO :		1.0	0.84	0.234		

SPACING AND ORIENTATION : Towers in a row are spaced 290' (90°) on a line bearing 61° true.

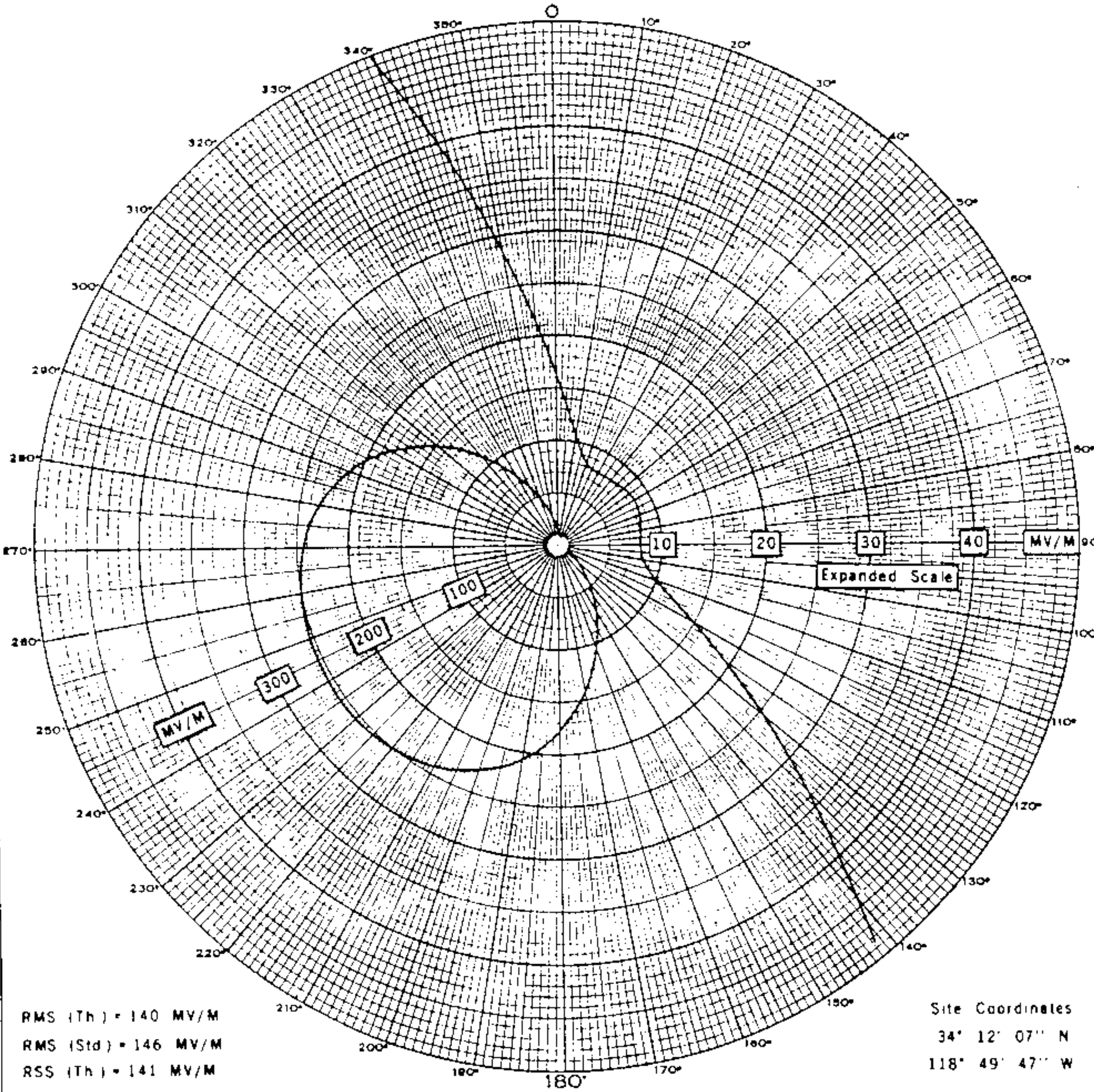
GROUND SYSTEM : 120 - 290 equally spaced copper radials plus _______ - _____ a 24' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

KGOE

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	134 mV/m		
Night	140 mV/m	141 mV/m	146 mV/m

Note: Please retain the Daytime directional antenna radiation pattern notified for a new station at thousand Oaks, California in United States Change List Number 1316 dated April 16, 1969 and Attach to this Revised Description Sheet and Nighttime patterns. This notification concerns only a change in the Nighttime operation of the station with Daytime operation continued as previously notified.

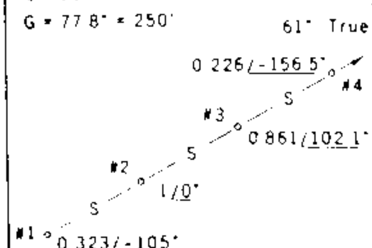


RMS (Th) = 140 MV/M
RMS (Std) = 146 MV/M
RSS (Th) = 141 MV/M

Site Coordinates
34° 12' 07" N
118° 49' 47" W

PROPOSED NIGHTTIME HORIZONTAL STANDARD RADIATION PATTERN

S = 90° = 290'
G = 77.8° = 250'



CONEJO BROADCASTERS, INC.

THOUSAND OAKS, CALIFORNIA

850 KHZ

0.5 KW U DA-2

Jules Cohen & Associates
Consulting Electronics Engineers

MAY 1979

KGOE

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KGOE | Main Studio: Thousand Oaks, California

Frequency: 850 kHz | Power: 0.5 kW

Notification List No. 1580 | Date: May 15, 1974 | Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:
North Latitude: 34° 12' 07"
West Longitude: 118° 49' 47"

ANTENNA CHARACTERISTICS

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

TOWER:	SW(#4)	SC(#1)	NE(#2)	NE(#3)	
HEIGHT ABOVE INSULATORS:	250'	250'	250'	250'	(77.8°)
NIGHT PHASING:	0°	+106°	-148°	-42°	
NIGHT FIELD RATIO:	1.00	2.93	2.93	1.00	
DAY PHASING:	-	0°	+127.39°	-110°	
DAY FIELD RATIO:	-	1.00	0.84	0.234	

SPACING AND ORIENTATION: Adjacent elements are spaced 290' (90°) on a line bearing 61° true.

GROUND SYSTEM: 120-290' 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: 145.6 mv/m at rated power.

Predicted effective Day Field: 134 mv/m at rated power.

Note: Please retain the Daytime directional antenna radiation pattern notified for a new station at Thousand Oaks, California in United States Change List Number 1316 dated April 16, 1969 and attach to this Revised Description Sheet and Nighttime patterns. This notification concerns only a change to add new nighttime operation with Daytime operation continued as previously notified.

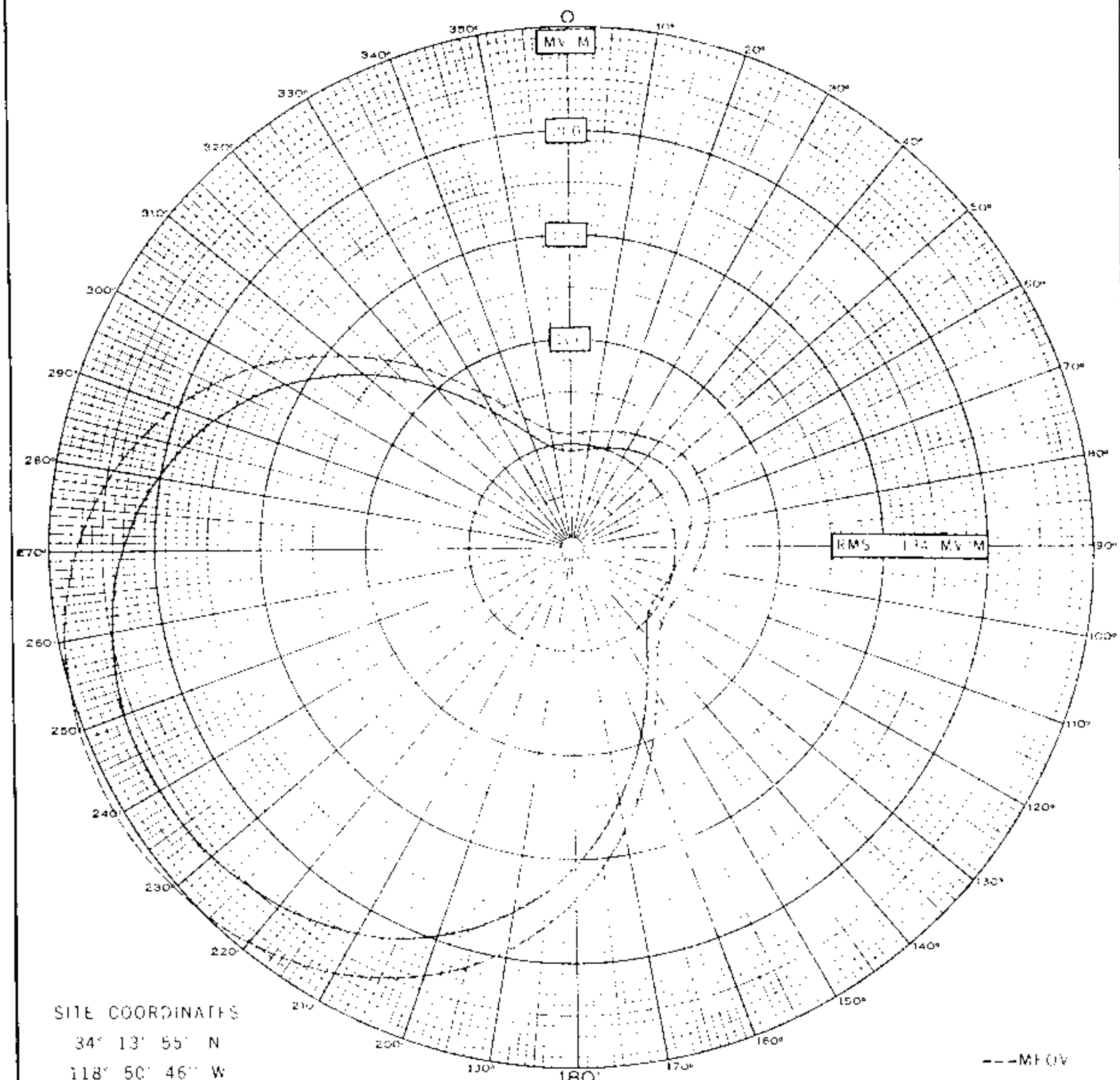
CTR NO 30101A3

KGOE

Proposed Day (9-26-68ct)	New; Conejo Broadcasters Thousand Oaks, California	500w,DA-2,U 850 kc

Figure 7B
Sheet 1 of 4

JUNE 1968



SITE COORDINATES
34° 13' 55" N
118° 50' 46" W

---MEOV

PROPOSED DAYTIME HORIZONTAL PLANE RADIATION PATTERN

S 90 ...	CONEJO BROADCASTERS THOUSAND OAKS CALIFORNIA	PROPOSED OPERATION 850 KHZ. 0.5 KW U DA-2 PATTERN NO. 6806030

FCC File No.BP-14769
Accepted 8-28-68 Amended

New; Conejo Broadcasters
Thousand Oaks, California

850 kc

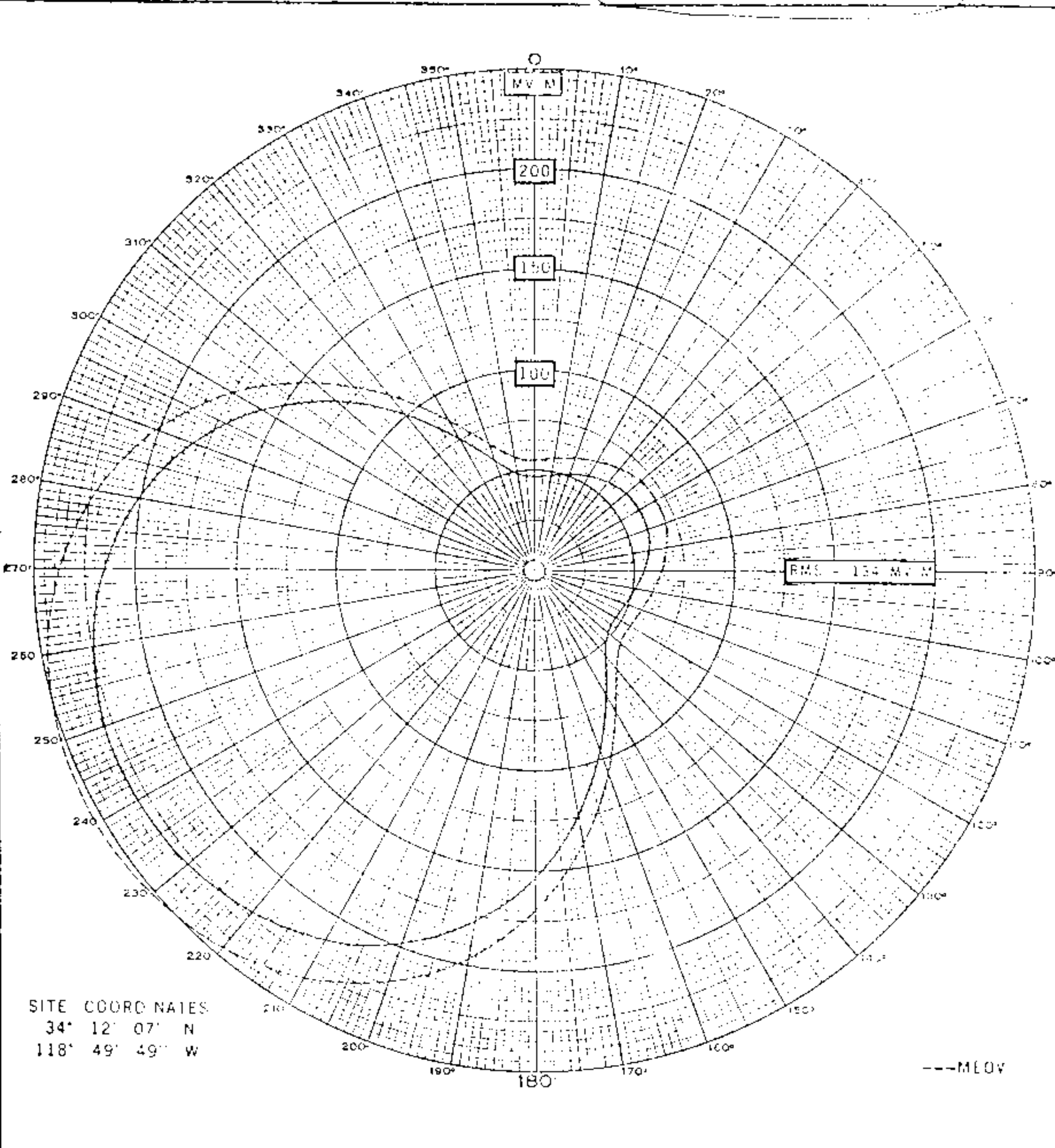
KGOE ~~KKID~~

Proposed Day
(8-26-70ct)

Station KKID
Thousand Oaks, California

500w,DA-2,U
850 kc

SEE REVERSE SIDE



PROPOSED DAYTIME HORIZONTAL PLANE RADIATION PATTERN

CONEJO BROADCASTERS
THOUSAND OAKS, CALIFORNIA

Jules Cohen & Associates
Consulting Electronics Engineers

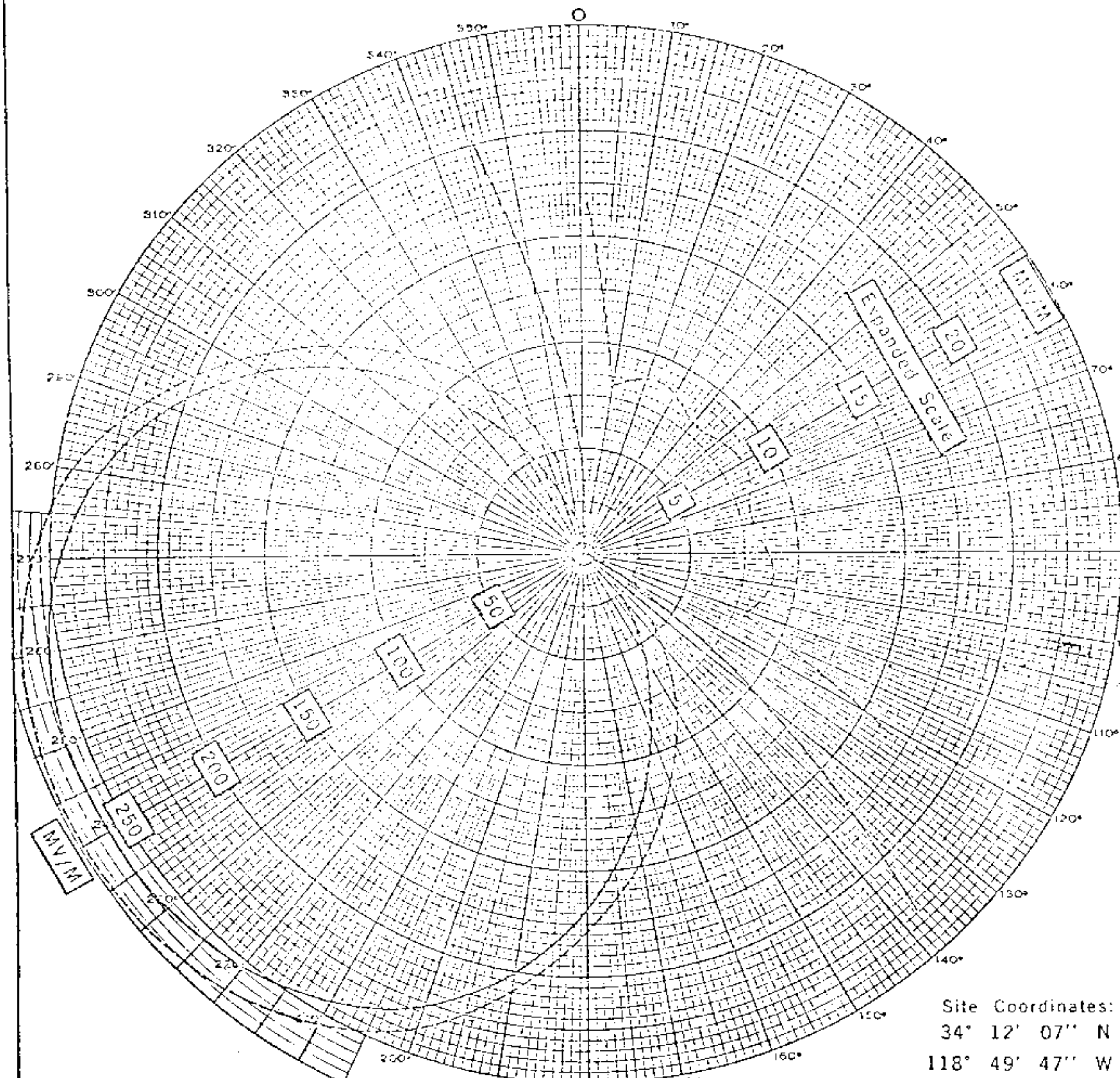
PROPOSED OPERATION
850 KHZ
0.5 KW U DA-2
Pattern No 7002065

FCC File No.BMP-13063
Accepted 8-20-70

Station KKID
Thousand Oaks, California

850 kc

KGOE

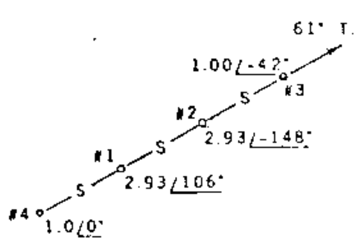


Site Coordinates:
34° 12' 07'' N
118° 49' 47'' W

MEOV ----
RMS = 145.6 MV/M

PROPOSED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN

S = 90° = 290'
G = 77.8° = 250'



CONEJO BROADCASTERS, INC.
THOUSAND OAKS, CALIFORNIA

Jules Cohen & Associates
Consulting Electronics Engineers

STATION KGOE
850 KHZ
0.5 KW U DA-2
NOVEMBER 1973

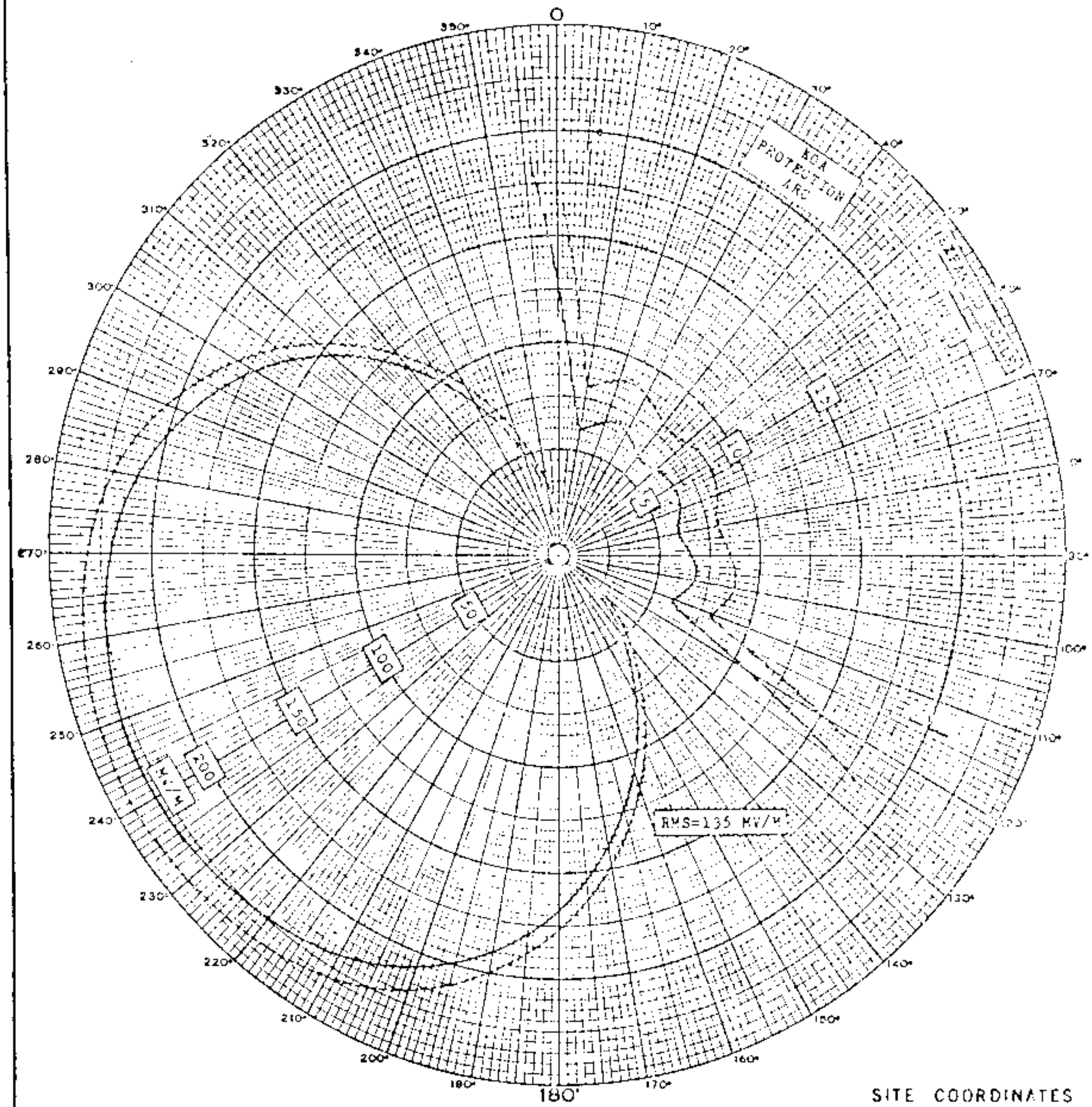
K-GOE ~~KKID~~

Proposed Night
(8-26-70ct)

Station KKID
Thousand Oaks, California

500w,DA-2,U
850 kc

(SEE REVERSE SIDE) Figure 7

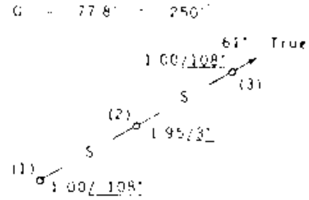


---MEOV

SITE COORDINATES
34° 12' 07" N
118° 49' 47" W

PROPOSED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN

S - 90° - 290
G - 77.8° - 250'



CONEJO BROADCASTERS
THOUSAND OAKS, CALIFORNIA

Jules Cohen & Associates
Consulting Electronics Engineers

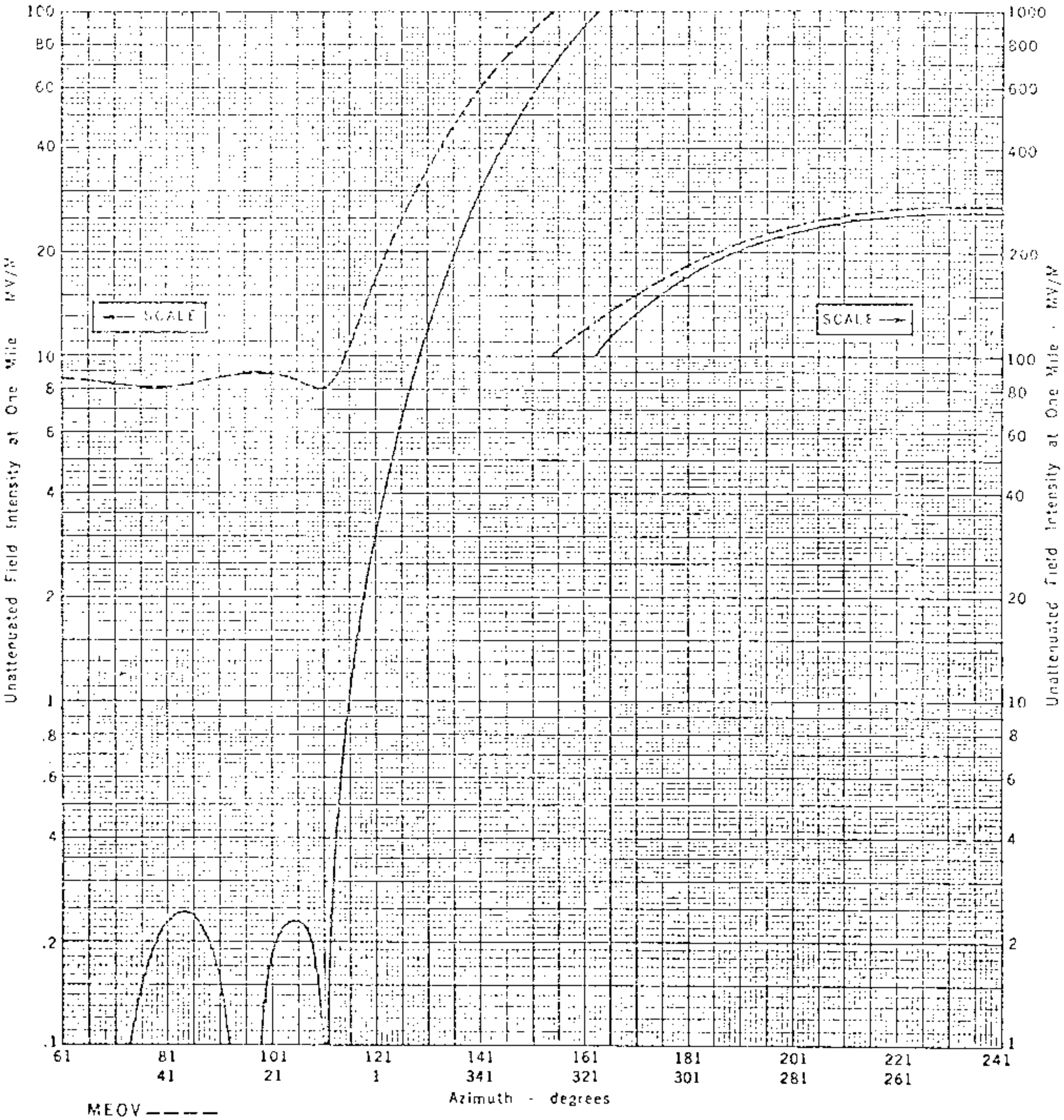
PROPOSED OPERATION
850 KHZ
0.5 KW U DA 2
Pattern No 700206%

FCC File No.BP-14769
Accepted 8-20-70 Amended

Station KKID
Thousand Oaks, California

850 kc

NOVEMBER 1973

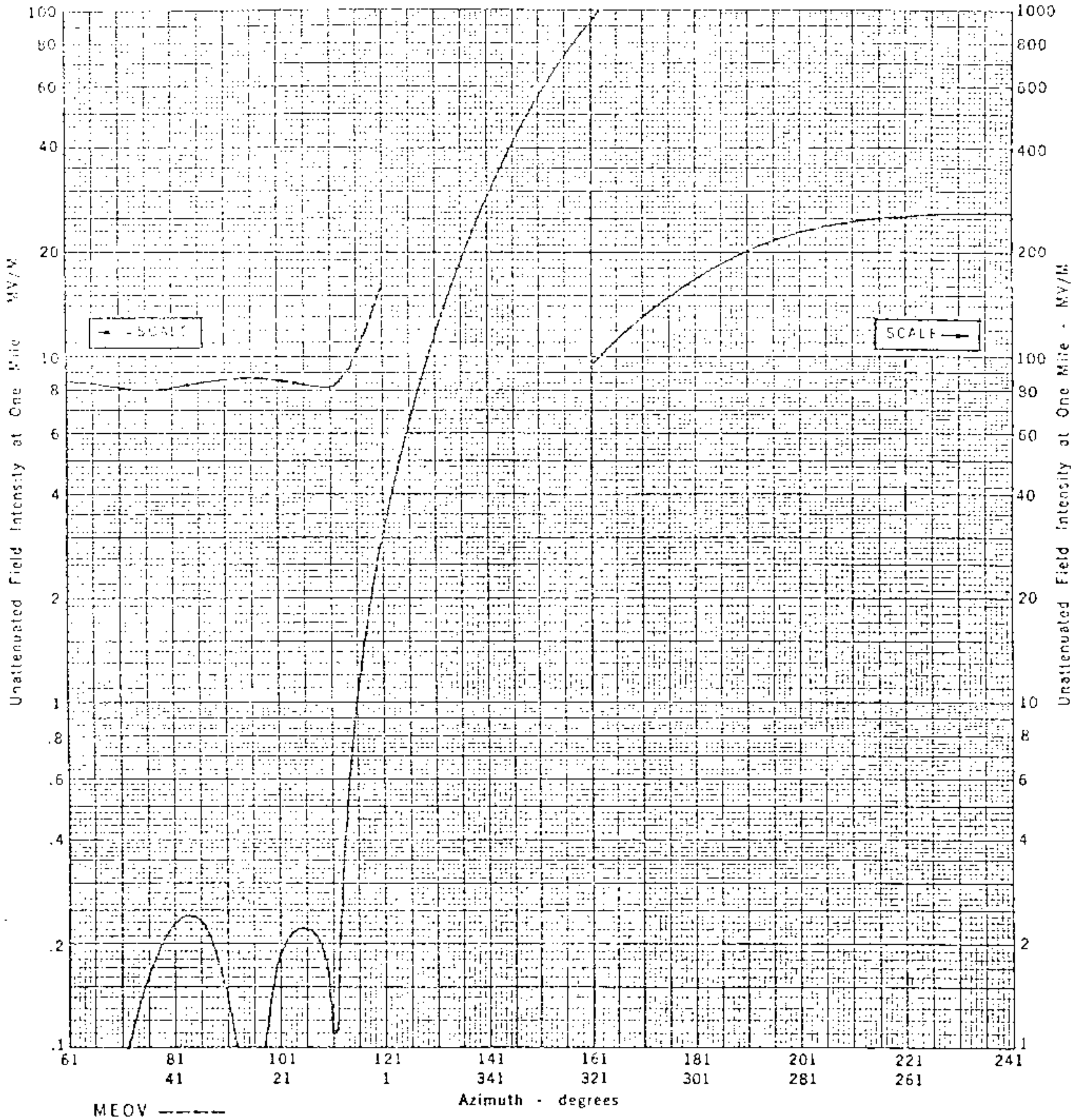


PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 0 DEGREES

CONEJO BROADCASTERS, INC.
STATION KGOE THOUSAND OAKS, CALIFORNIA
850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973



PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 5 DEGREES

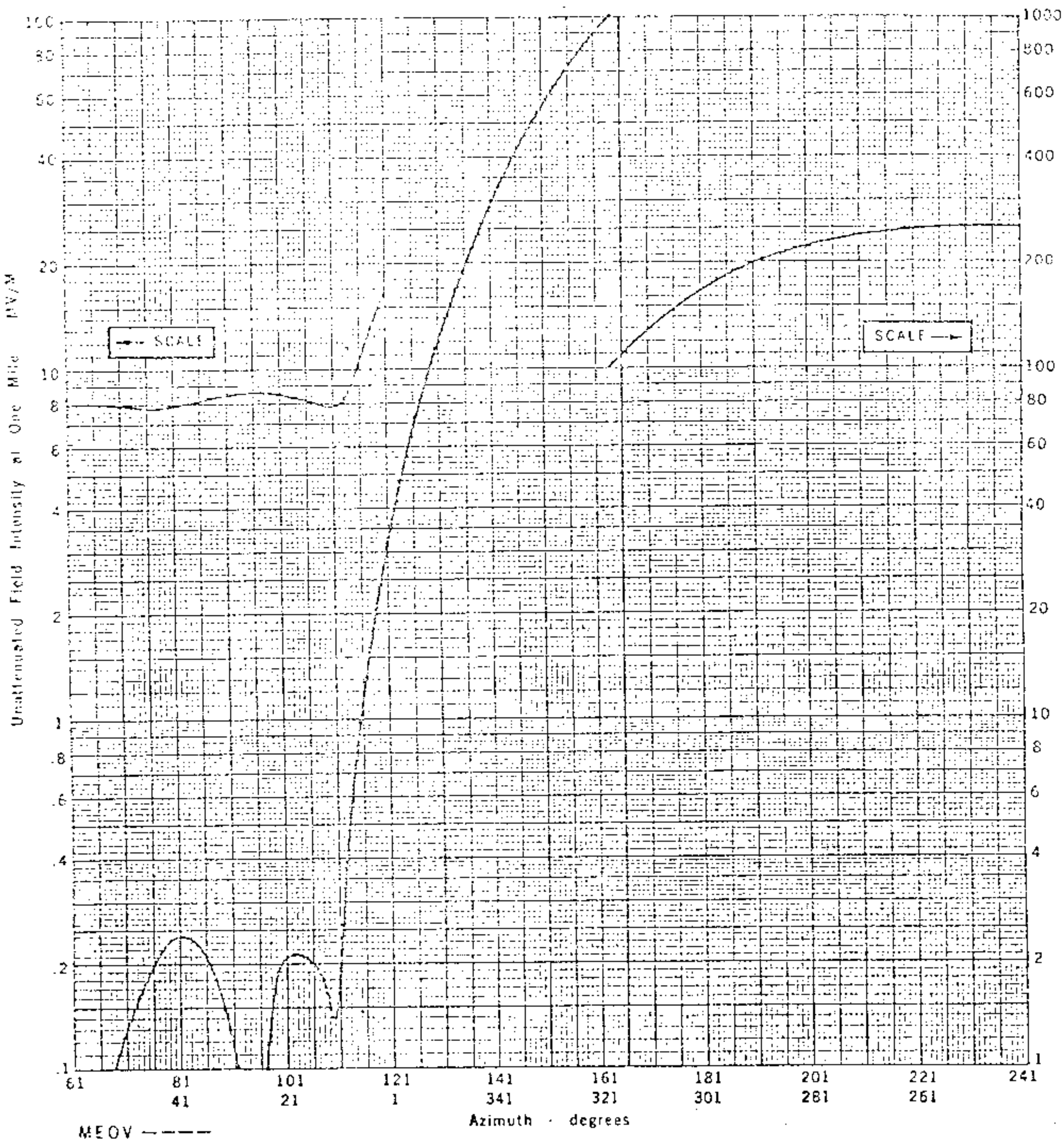
CONEJO BROADCASTERS, INC.

STATION KGOE THOUSAND OAKS, CALIFORNIA

850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973

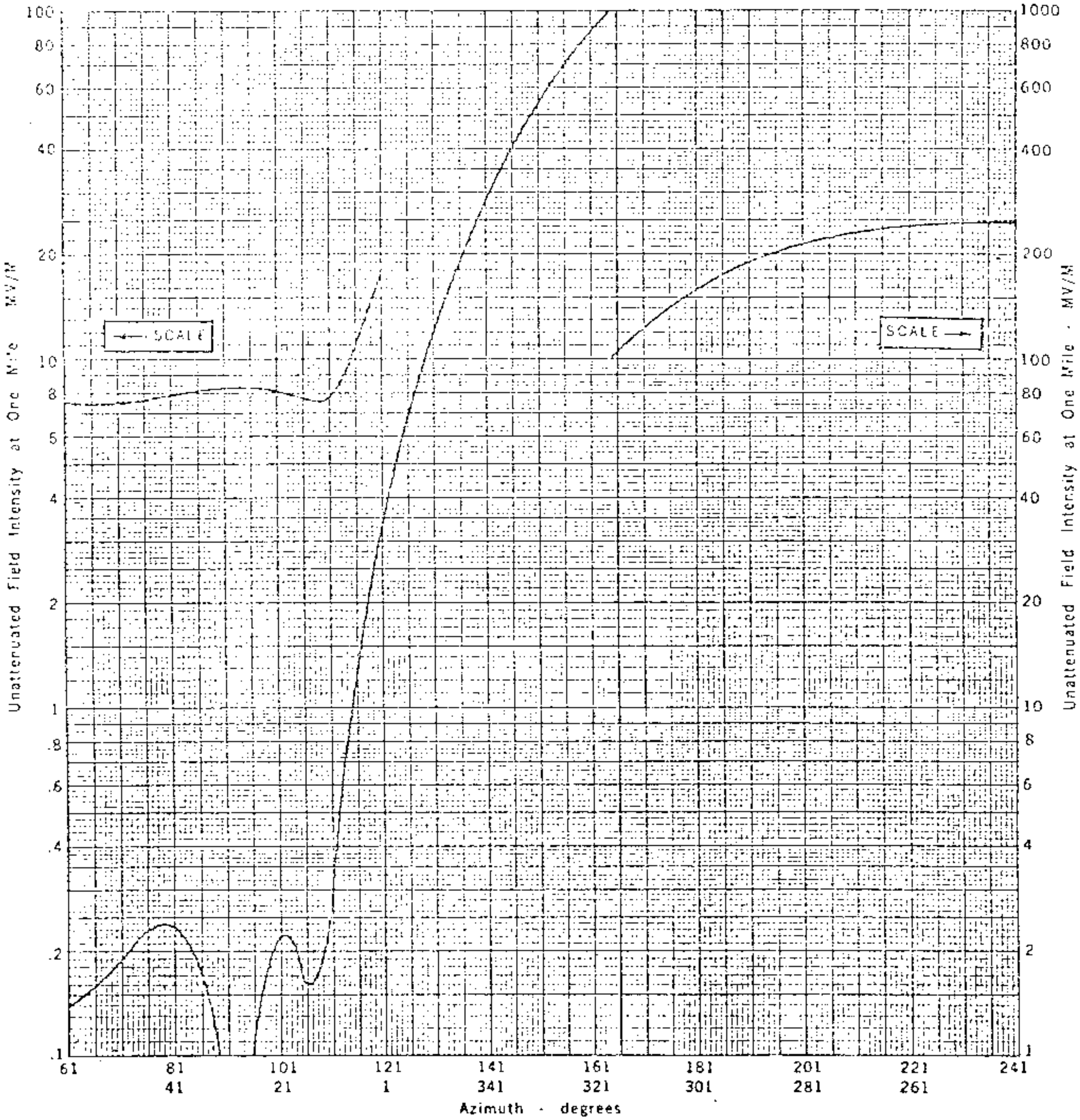


PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 10 DEGREES

CONEJO BROADCASTERS, INC.
STATION KGOE THOUSAND OAKS, CALIFORNIA
850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973



MEOV ----

PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 15 DEGREES

CONEJO BROADCASTERS, INC.

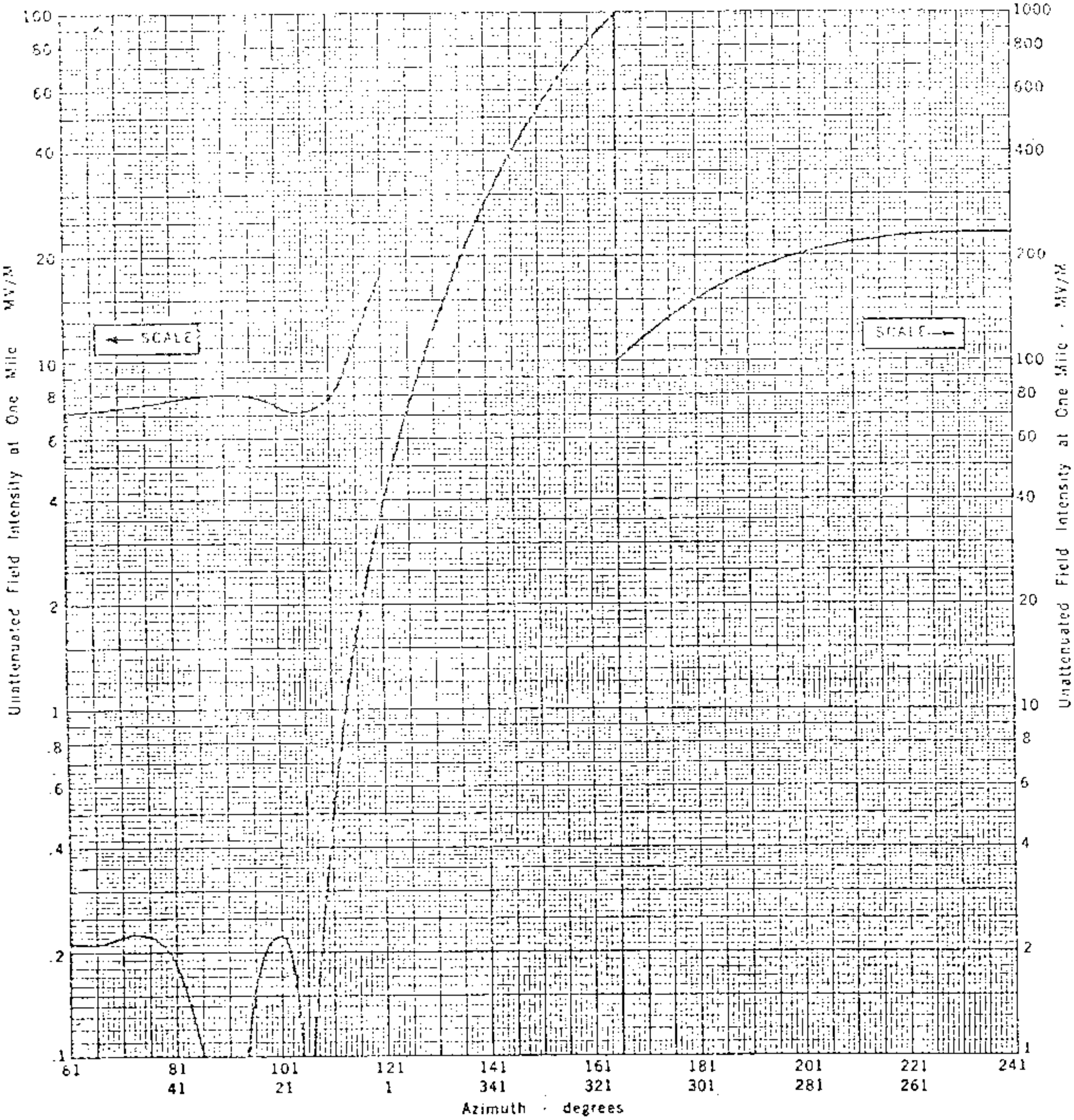
STATION KGOE THOUSAND OAKS, CALIFORNIA

850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

KGOE

NOVEMBER 1973



MEOV ----

PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 20 DEGREES

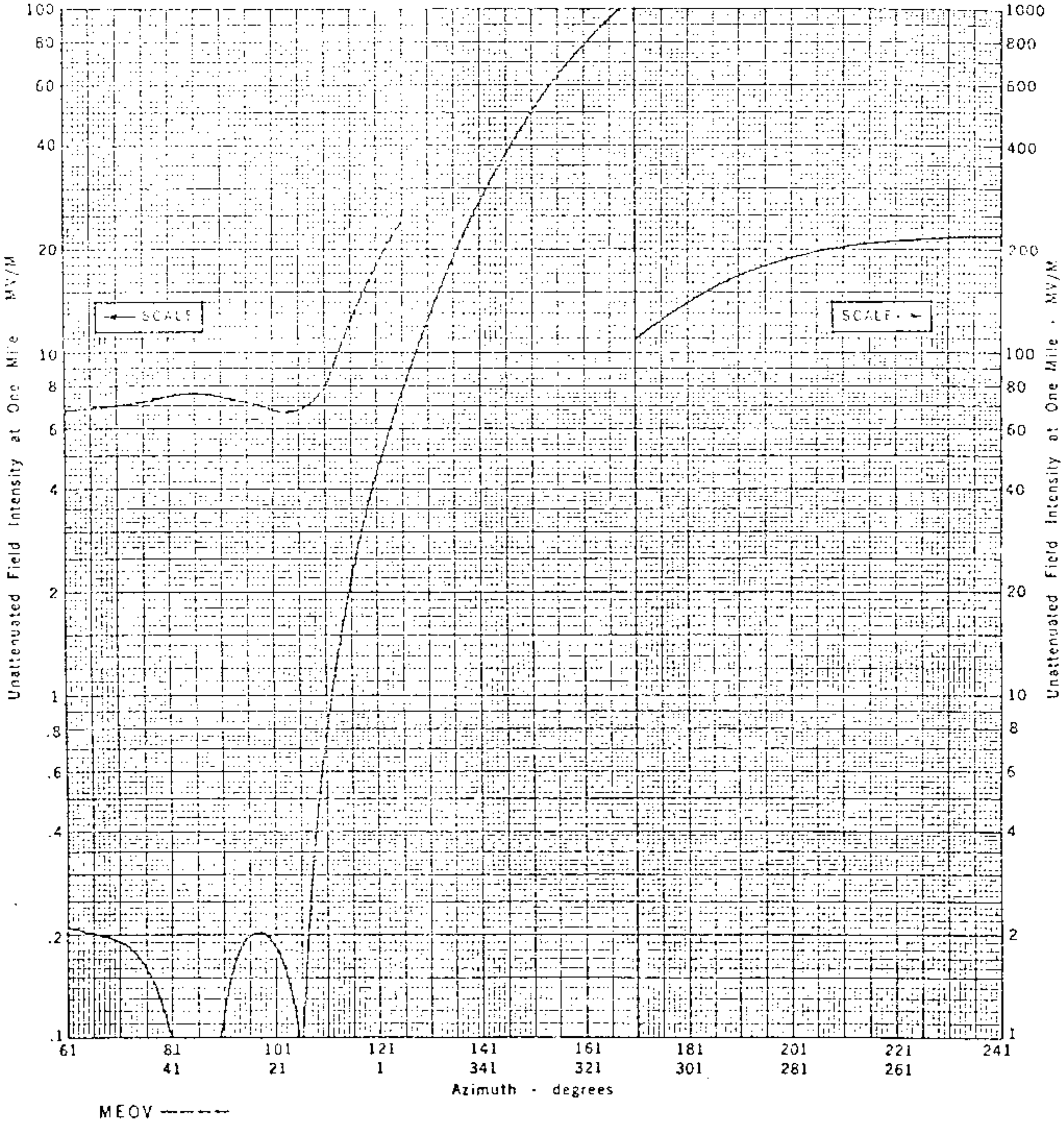
CONEJO BROADCASTERS, INC.

STATION KGOE THOUSAND OAKS, CALIFORNIA

850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973



PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 25 DEGREES

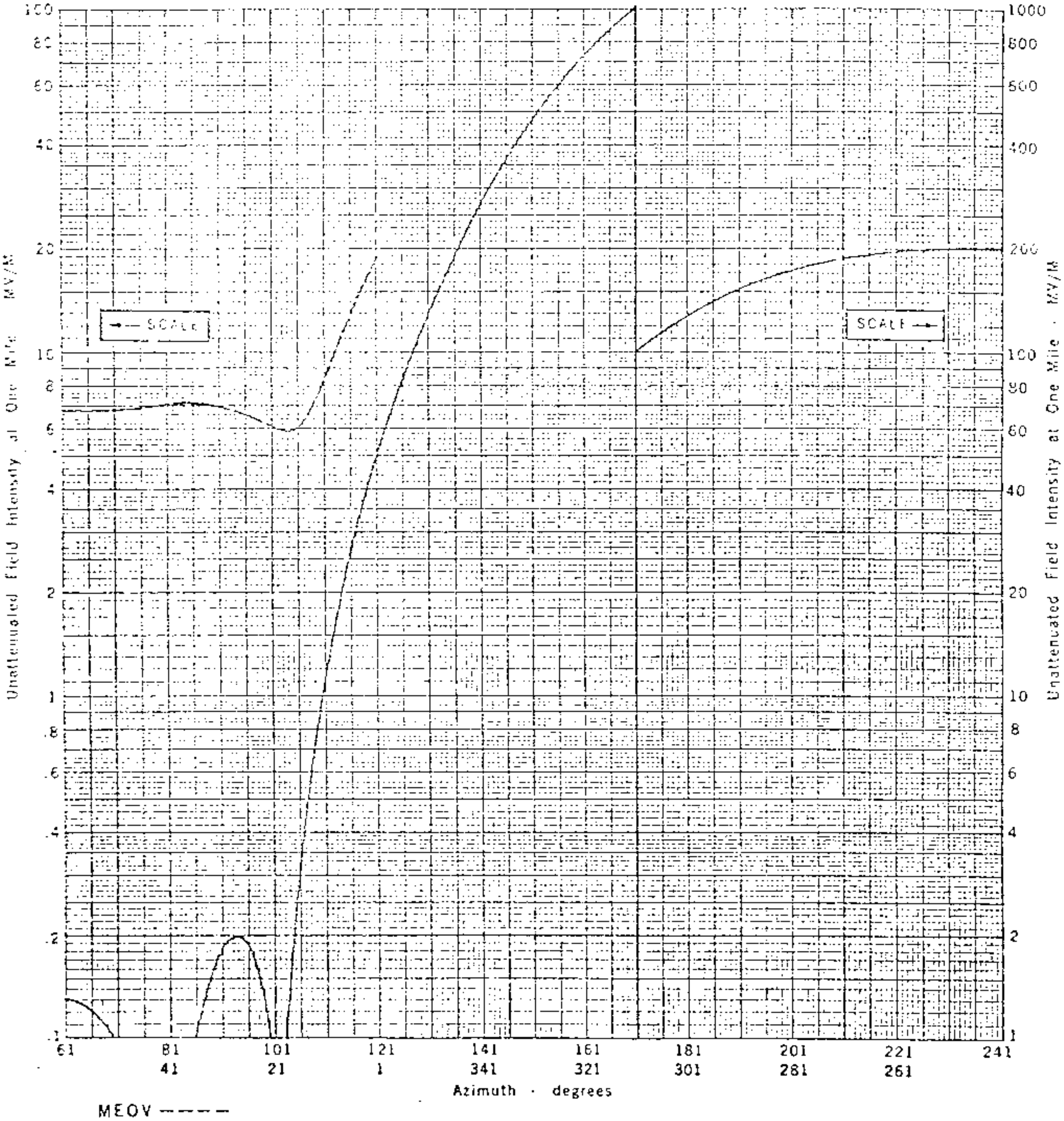
CONEJO BROADCASTERS, INC.

STATION KGOE THOUSAND OAKS, CALIFORNIA

850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973

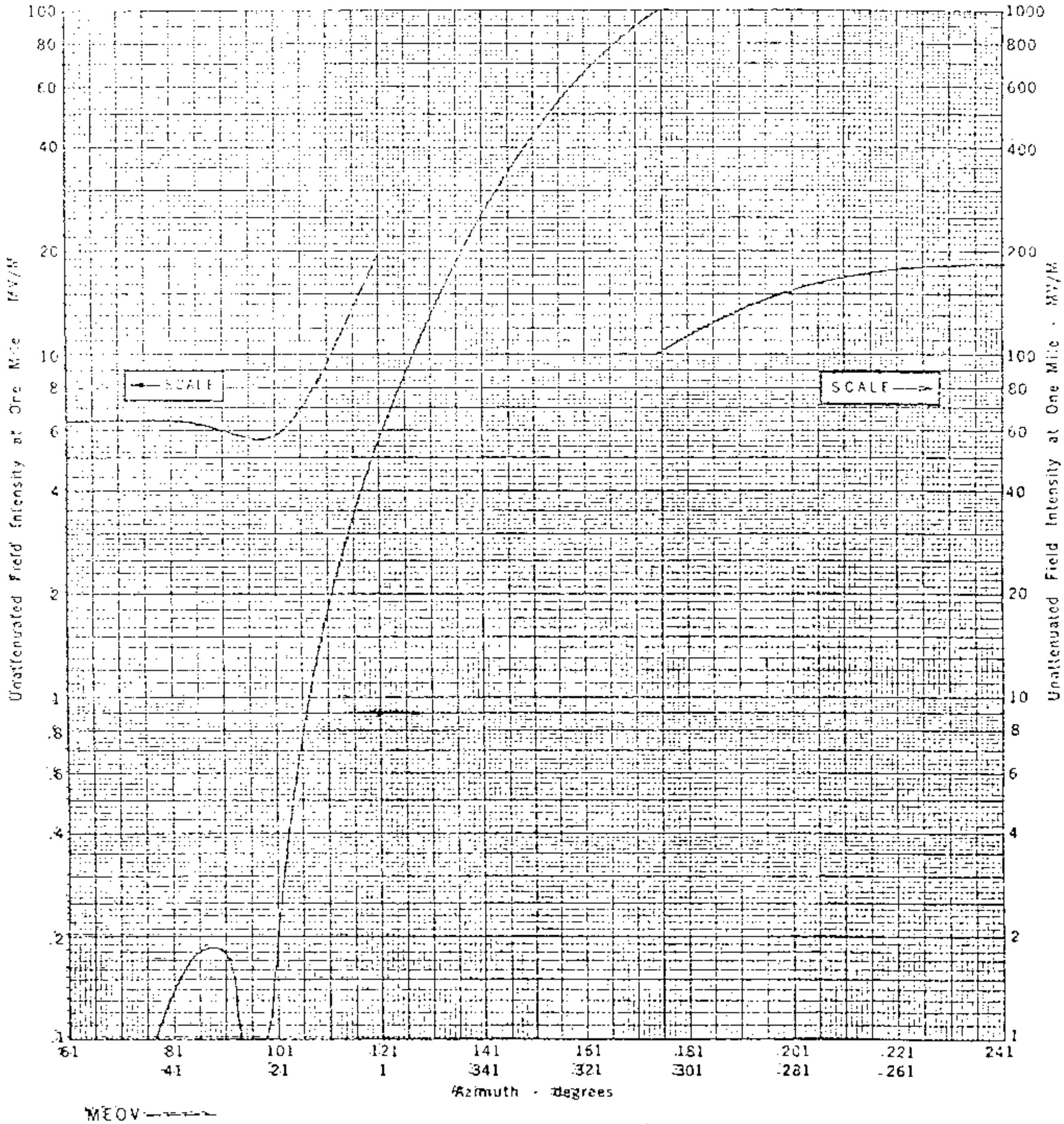


PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 30 DEGREES

CONEJO BROADCASTERS, INC.
STATION KGOE THOUSAND OAKS, CALIFORNIA
850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973

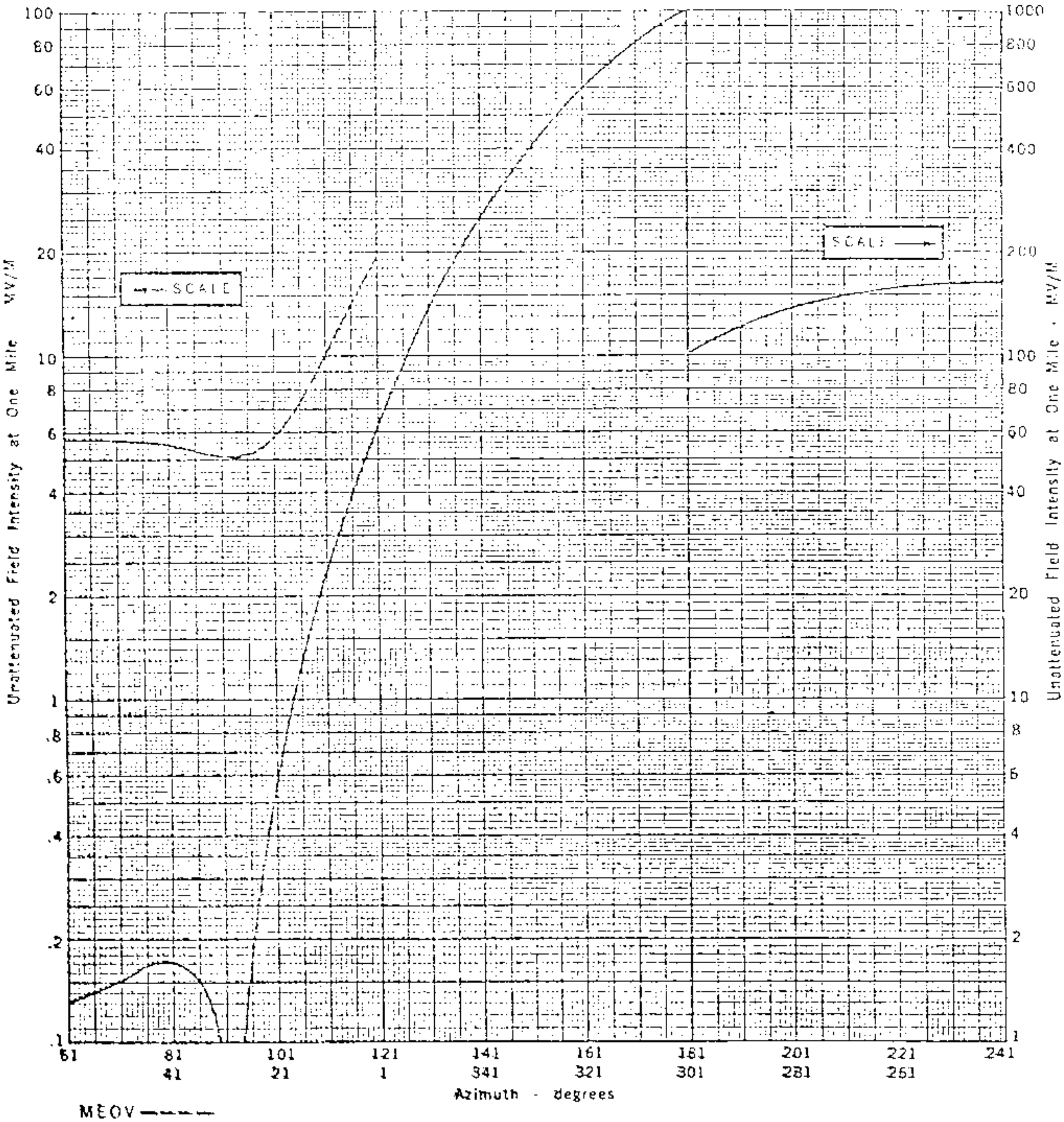


PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 35 DEGREES

CONEJO BROADCASTERS, INC.
STATION KGOE THOUSAND OAKS, CALIFORNIA
850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973

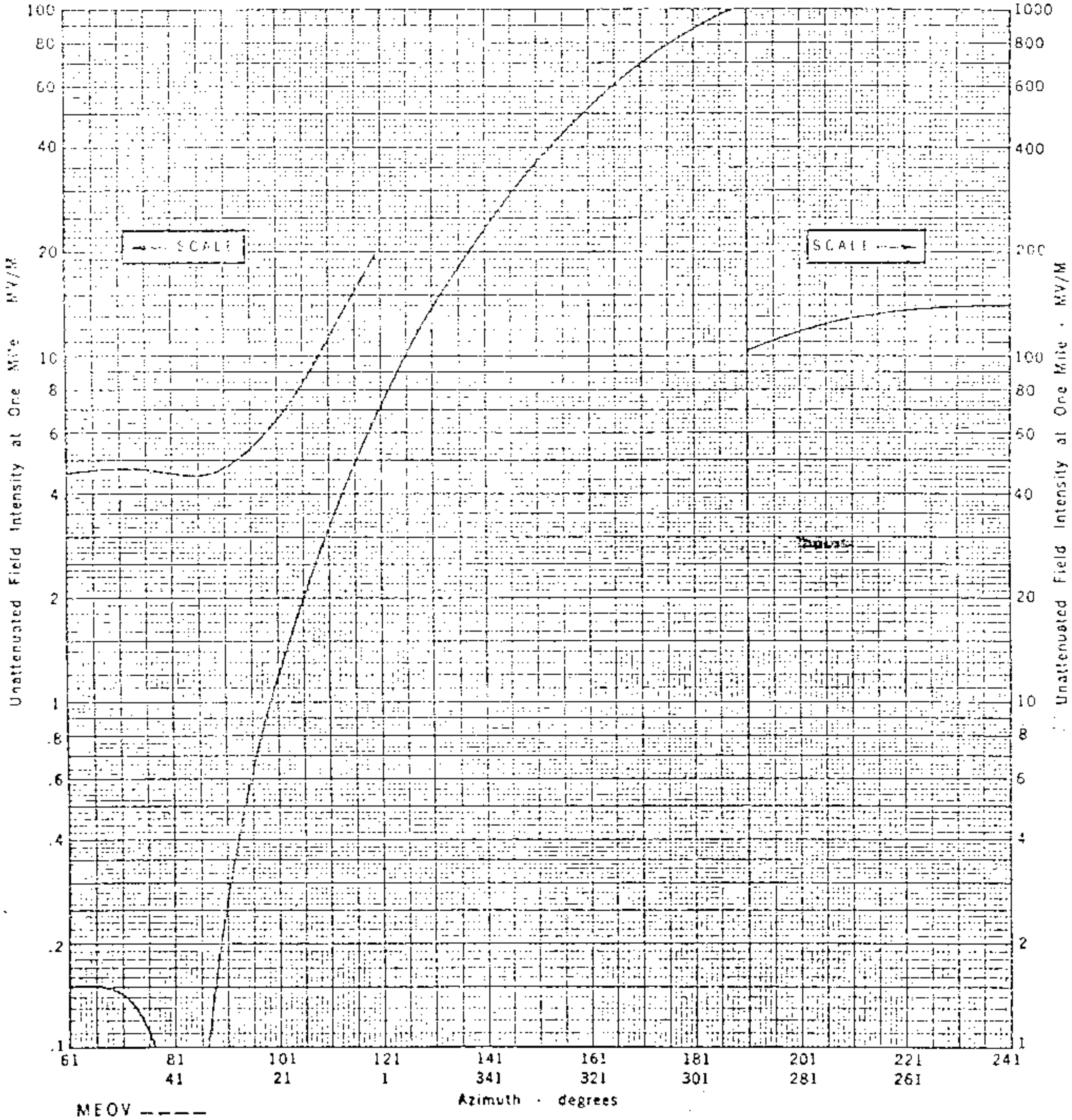


PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 40 DEGREES

CONEJO BROADCASTERS, INC.
STATION KGOE THOUSAND OAKS, CALIFORNIA
850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973



PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 45 DEGREES

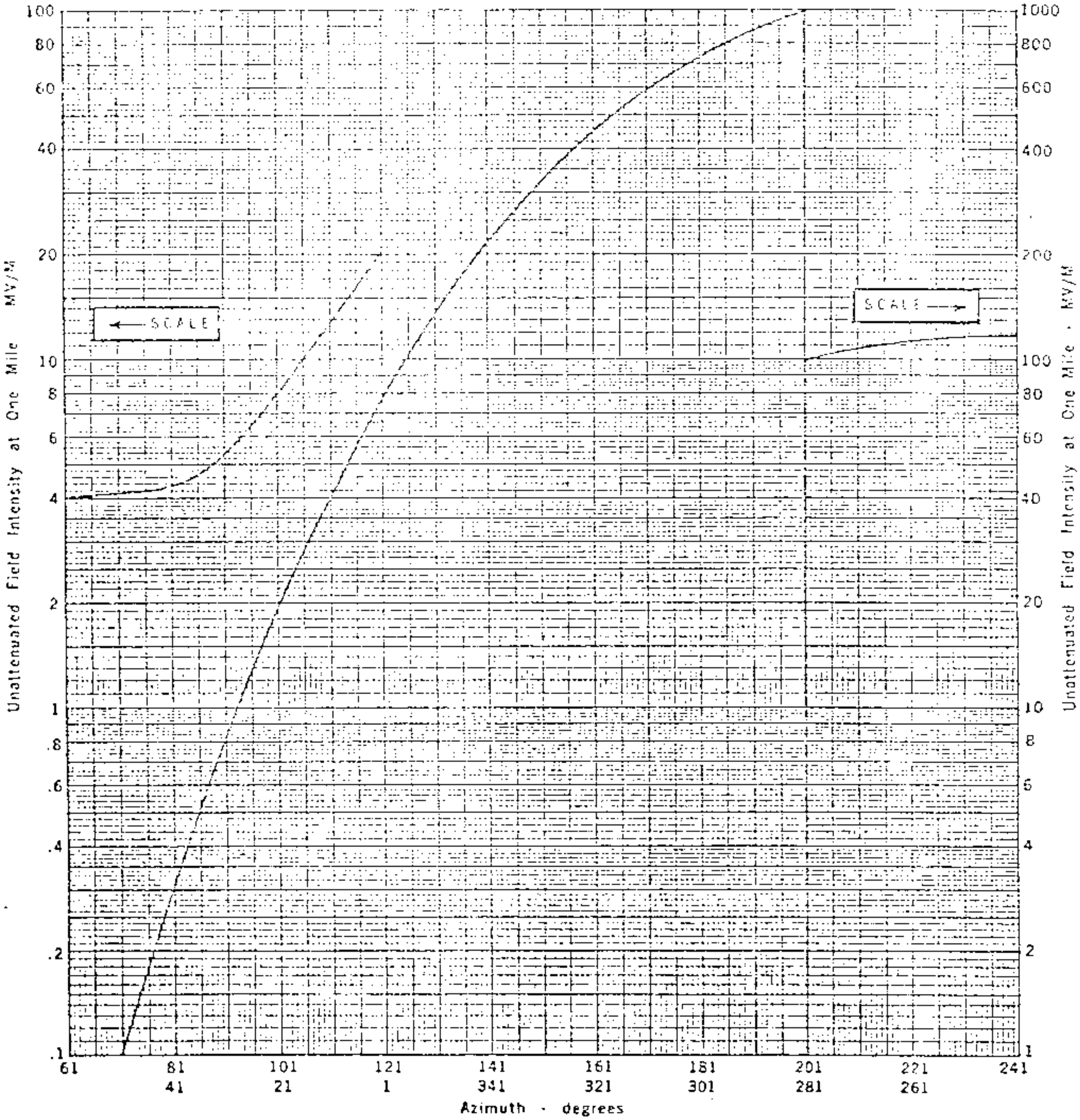
CONEJO BROADCASTERS, INC.

STATION KGOE THOUSAND OAKS, CALIFORNIA

850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973



MEOV ----

PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 50 DEGREES

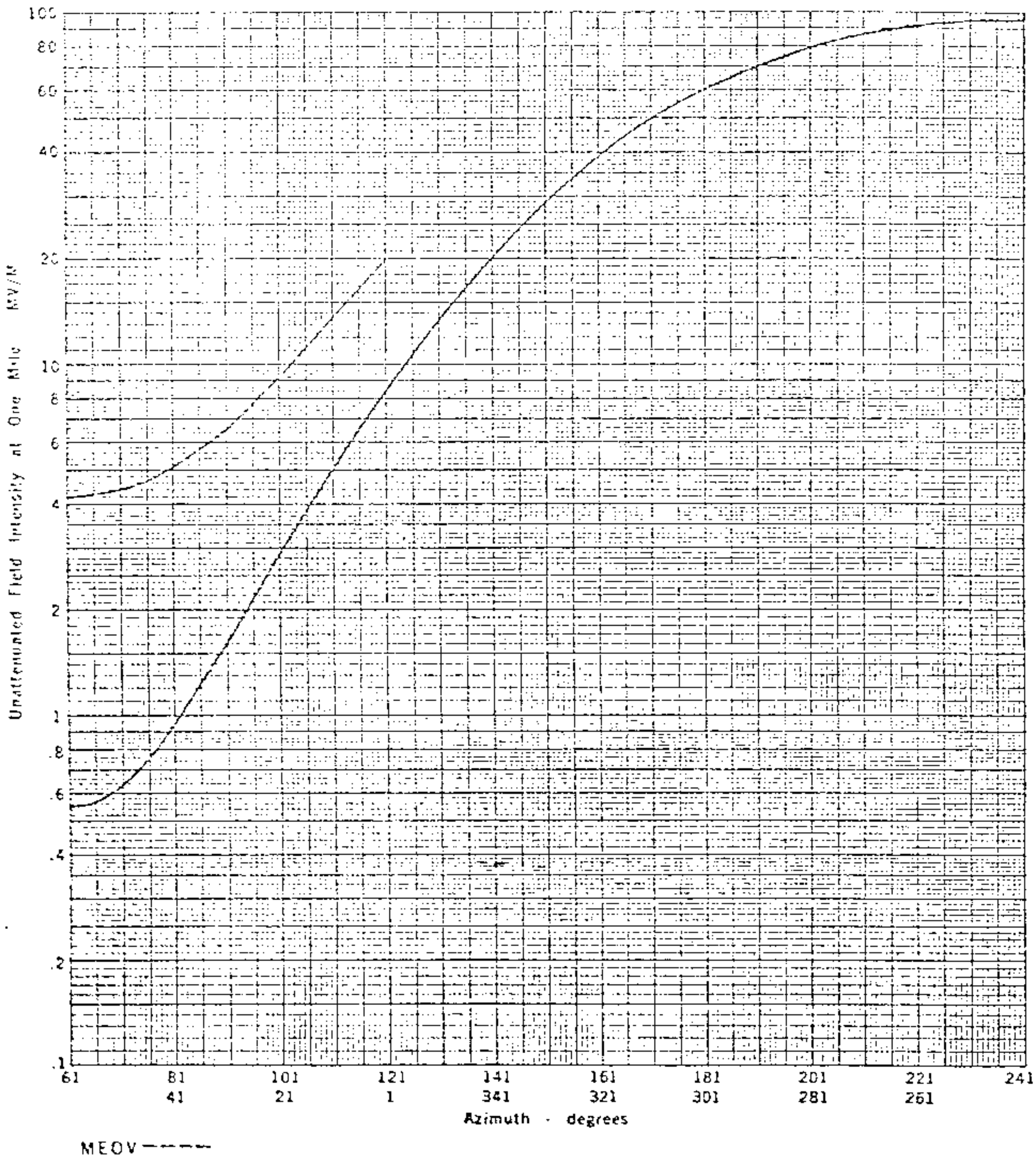
CONEJO BROADCASTERS, INC.

STATION KGOE THOUSAND OAKS, CALIFORNIA

850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973

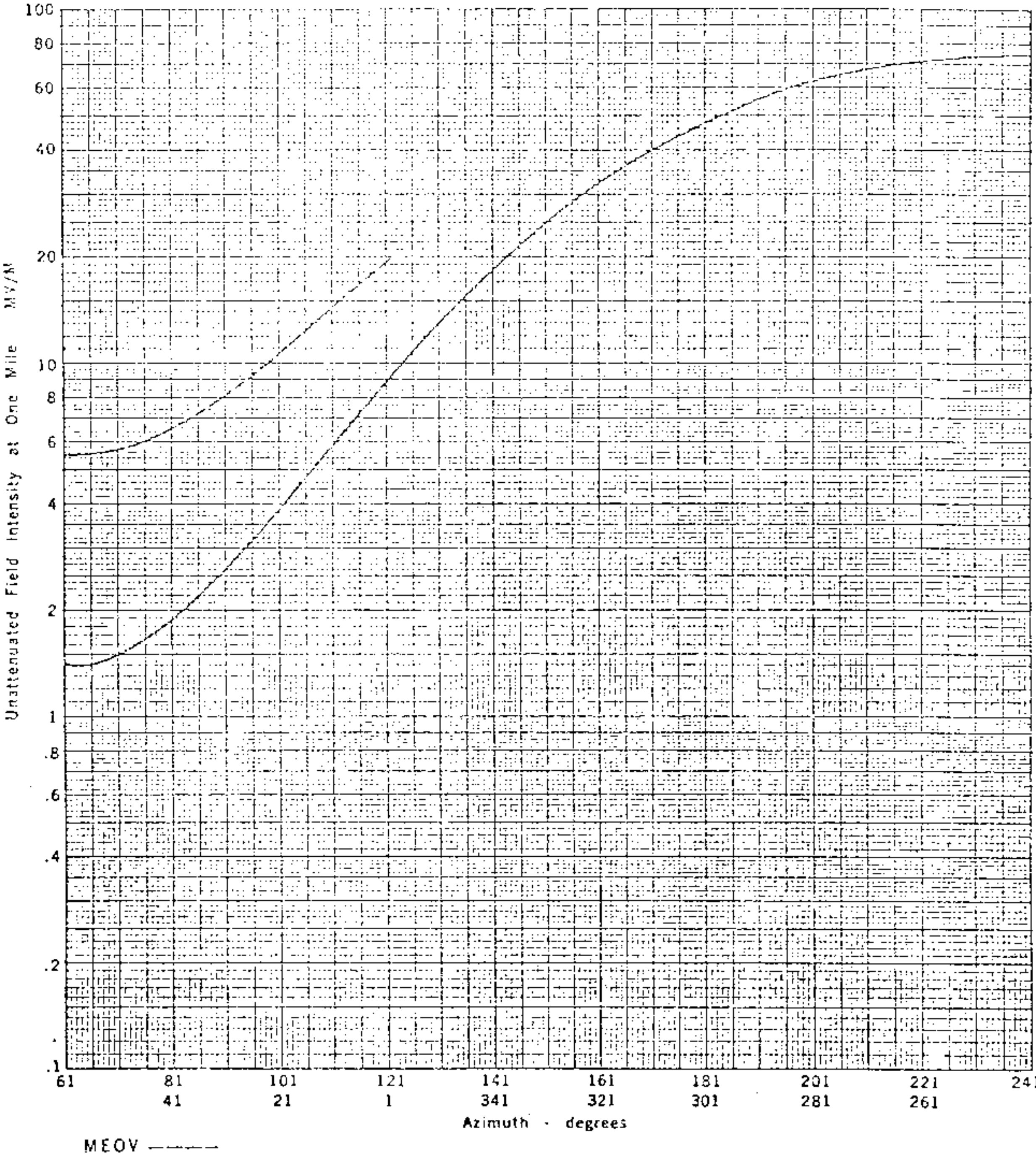


PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 55 DEGREES

CONEJO BROADCASTERS, INC.
STATION KGOE THOUSAND OAKS, CALIFORNIA
850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

NOVEMBER 1973

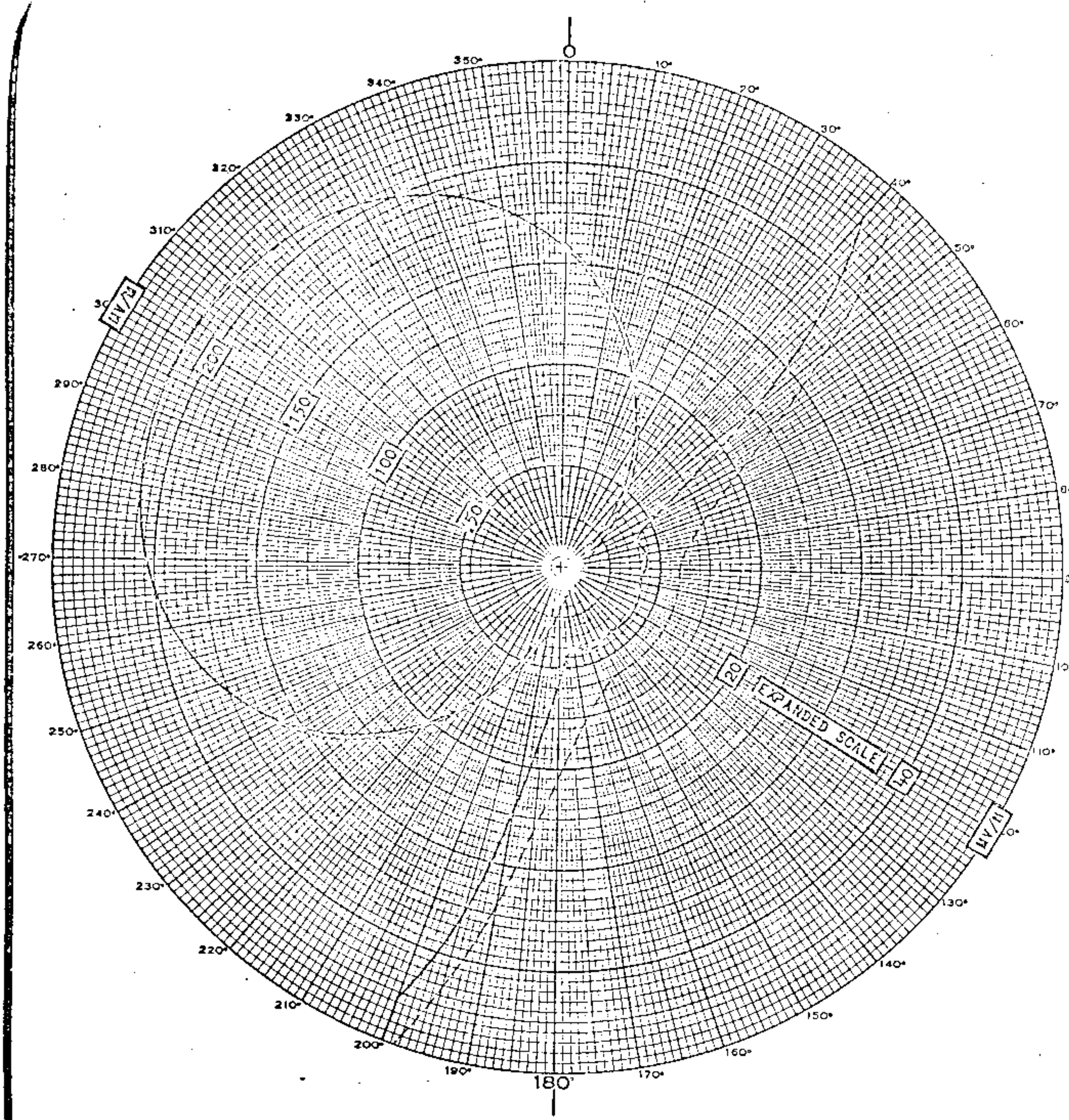


PROPOSED NIGHTTIME RADIATION PATTERN
AT VERTICAL ANGLE OF 60 DEGREES

CONEJO BROADCASTERS, INC.
STATION KGOE THOUSAND OAKS, CALIFORNIA
850 KHZ 0.5 KW U DA-2

Jules Cohen & Associates Consulting Electronics Engineers

KLEU
OCT '73



E_{RMS} = 126 MV/M (BY ADJUSTMENT)

——— CALCULATED
- - - - - MEOV

LATITUDE: 42° 28' 56"
LONGITUDE: 92° 16' 16"

PETER V. GURECKIS & ASSOC.
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

ANTENNA PARAMETERS

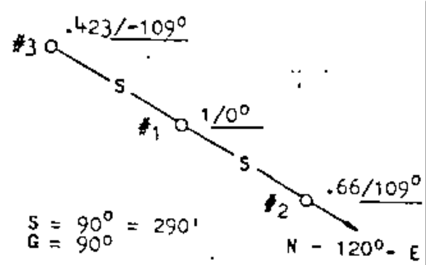


FIGURE 8

PROPOSED WATERLOO, IOWA
HORIZONTAL POLAR PATTERN

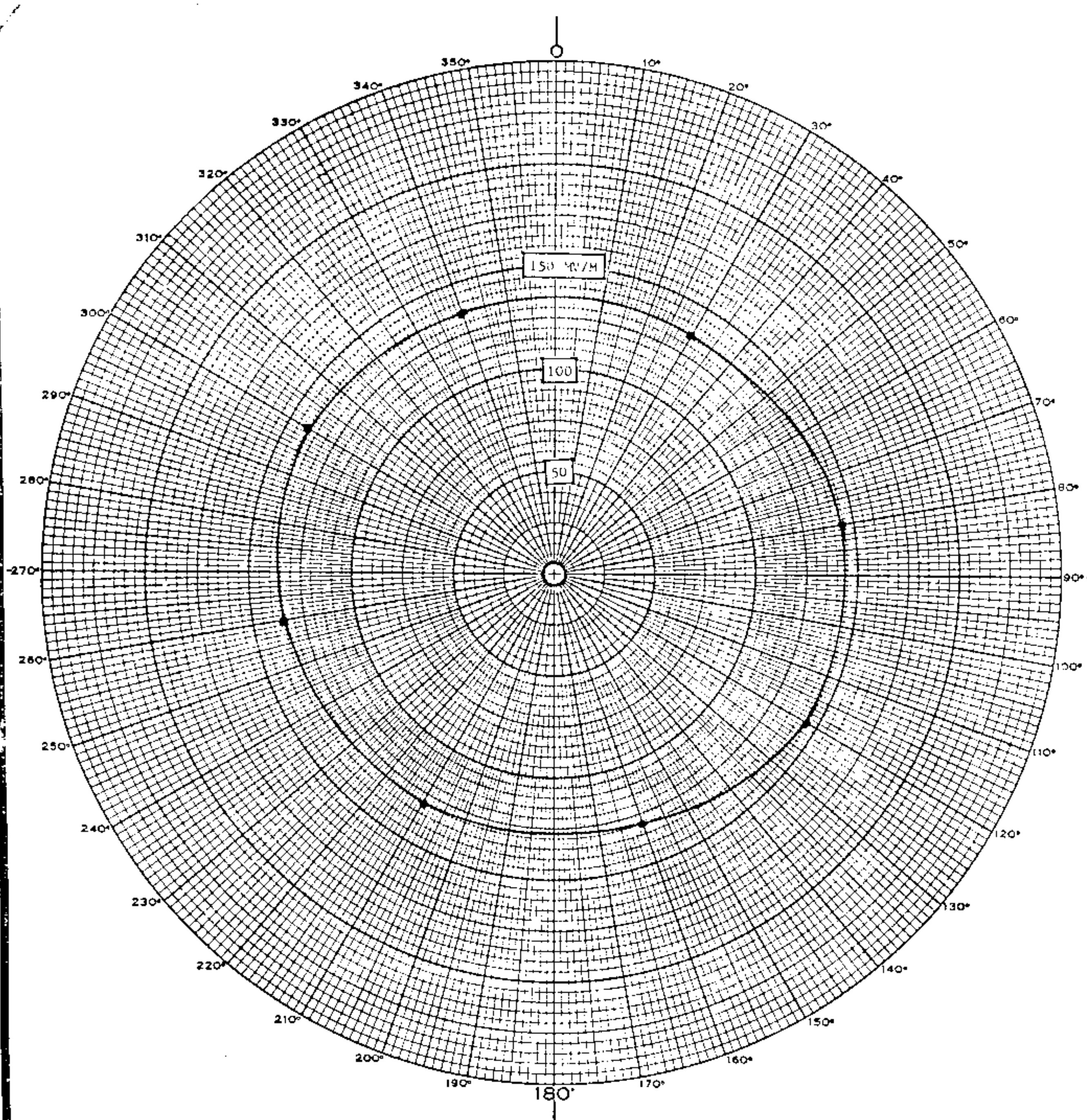
CLARK BROADCASTING COMPANY
WATERLOO, IOWA

850 KHz

0.5 KW, DA-D, D

KLEU

Oct '73



E_{RMS} = 137.5 MV/M

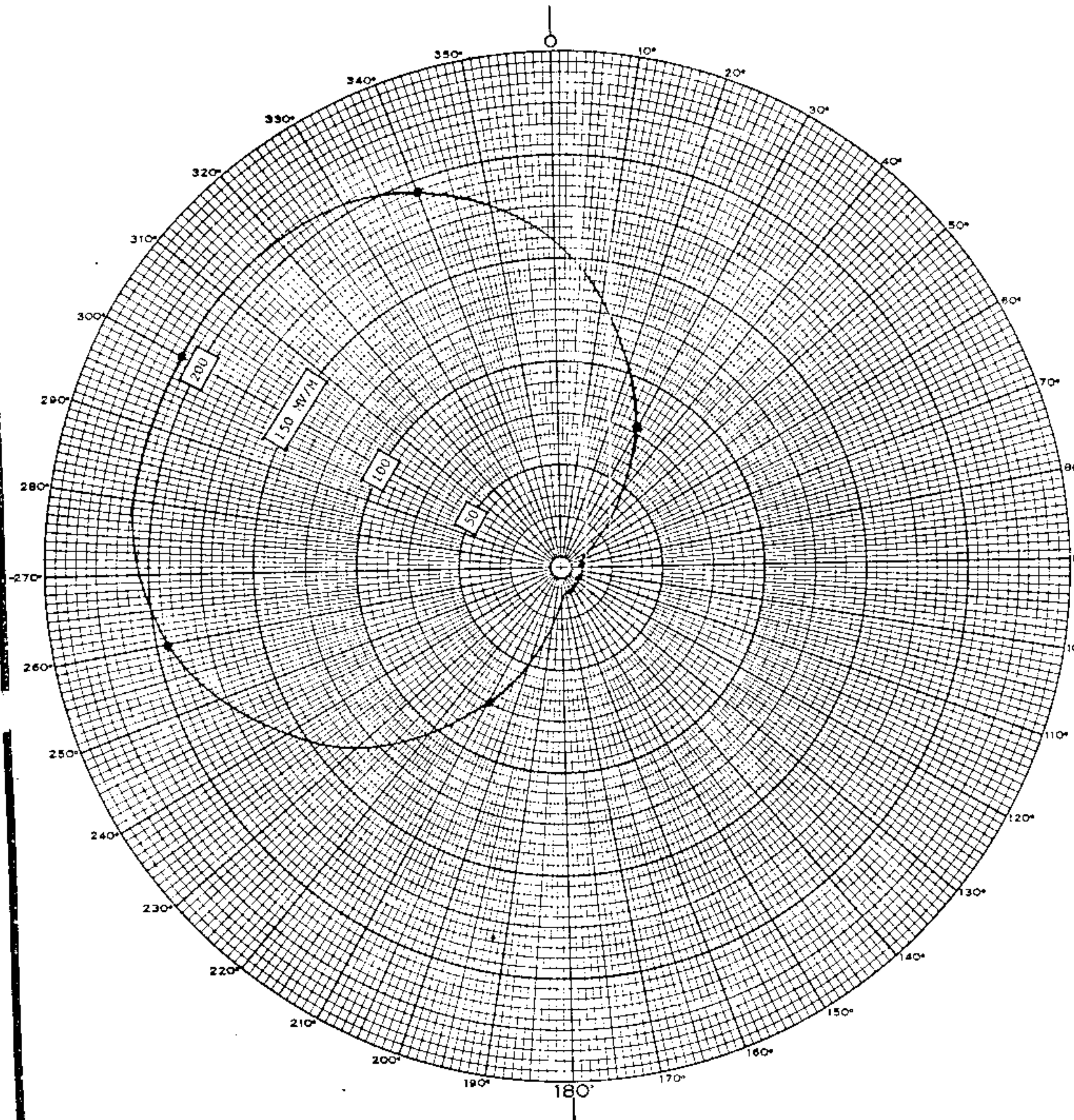
● MEASURED RADIALS

OCTOBER 1972

LATITUDE: 42° 28' 56" LONGITUDE: 92° 16' 16"	ANTENNA PARAMETERS NON-DA - TOWER # 1	FIGURE 7 MEASURED NON-DA PATTERN
PETER V. GURECKIS & ASSOC. CONSULTING RADIO ENGINEERS WASHINGTON, D.C.	G= 90°	RADIO STATION KLEU WATERLOO, IOWA 850KHz 0.5 KW, DA-D

BL-13330 KLEU

OCT '73



● MEASURED RADIALS

E_{RMS} = 125 MV/M

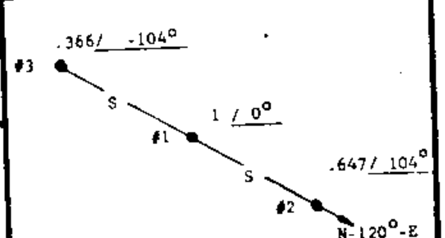
OCTOBER 1972

LATITUDE: 42° 28' 56"

LONGITUDE: 92° 16' 16"

PETER V. GURECKIS & ASSOC.
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

ANTENNA PARAMETERS
(MEASURED)



S= 90°=290'
G= 90°

FIGURE 9

MEASURED
DAYTIME DIRECTIONAL
PATTERN

RADIO STATION KLEU
WATERLOO, IOWA

850 KHz

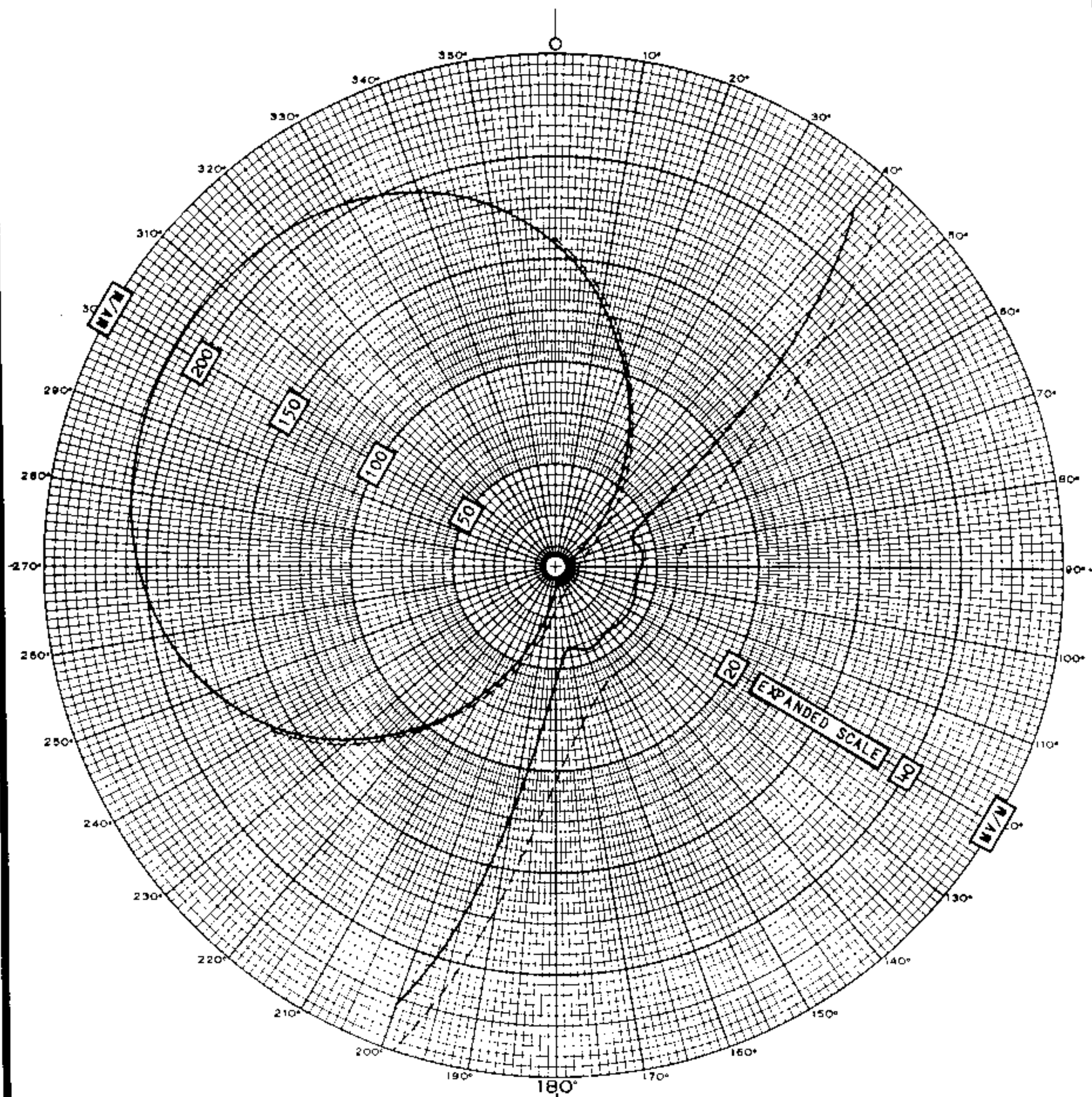
0.5 KW, DA-D

KLEU

Proposed Day
(9-26-69ct)

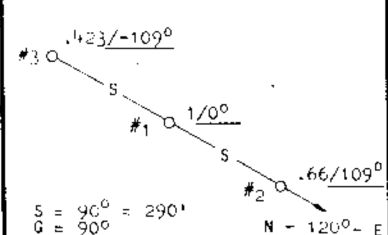
~~New; Clark Broadcasting Co.~~
Waterloo, Iowa

500w, DA-D, D
850 kc



E_{RMS} = 126 MV/M (BY ADJUSTMENT)

——— CALCULATED
- - - - - MEOV

LATITUDE 42° 28' 54" LONGITUDE 92° 16' 18"	ANTENNA PARAMETERS	FIGURE 16 PROPOSED WATERLOO, IOWA HORIZONTAL POLAR PATTERN CLARK BROADCASTING COMPANY WATERLOO, IOWA
JOHN H. MULLANEY AND ASSOCIATES		850 KHz 0.5 KW, DA-D, D

FCC File No. BP-18332
Accepted 9-2-69

New; Clark Broadcasting Co.
Waterloo, Iowa

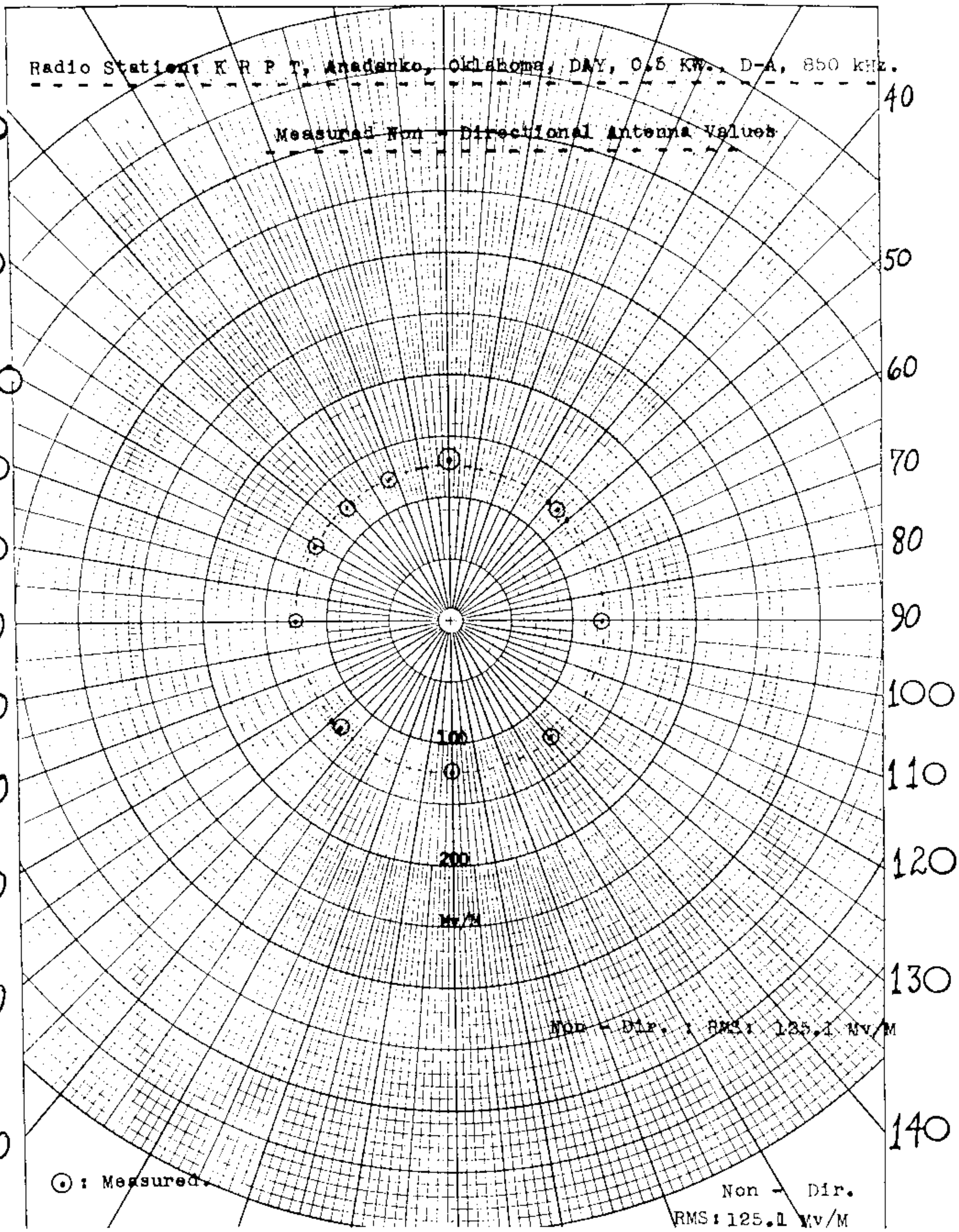
850 kc

KRPT

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

Station KRPT
Anadarko, Oklahoma

500w,DA-D,D
850 kc



FCC File No.BL-12834
Accepted 1-6-71

Station KRPT
Anadarko, Oklahoma

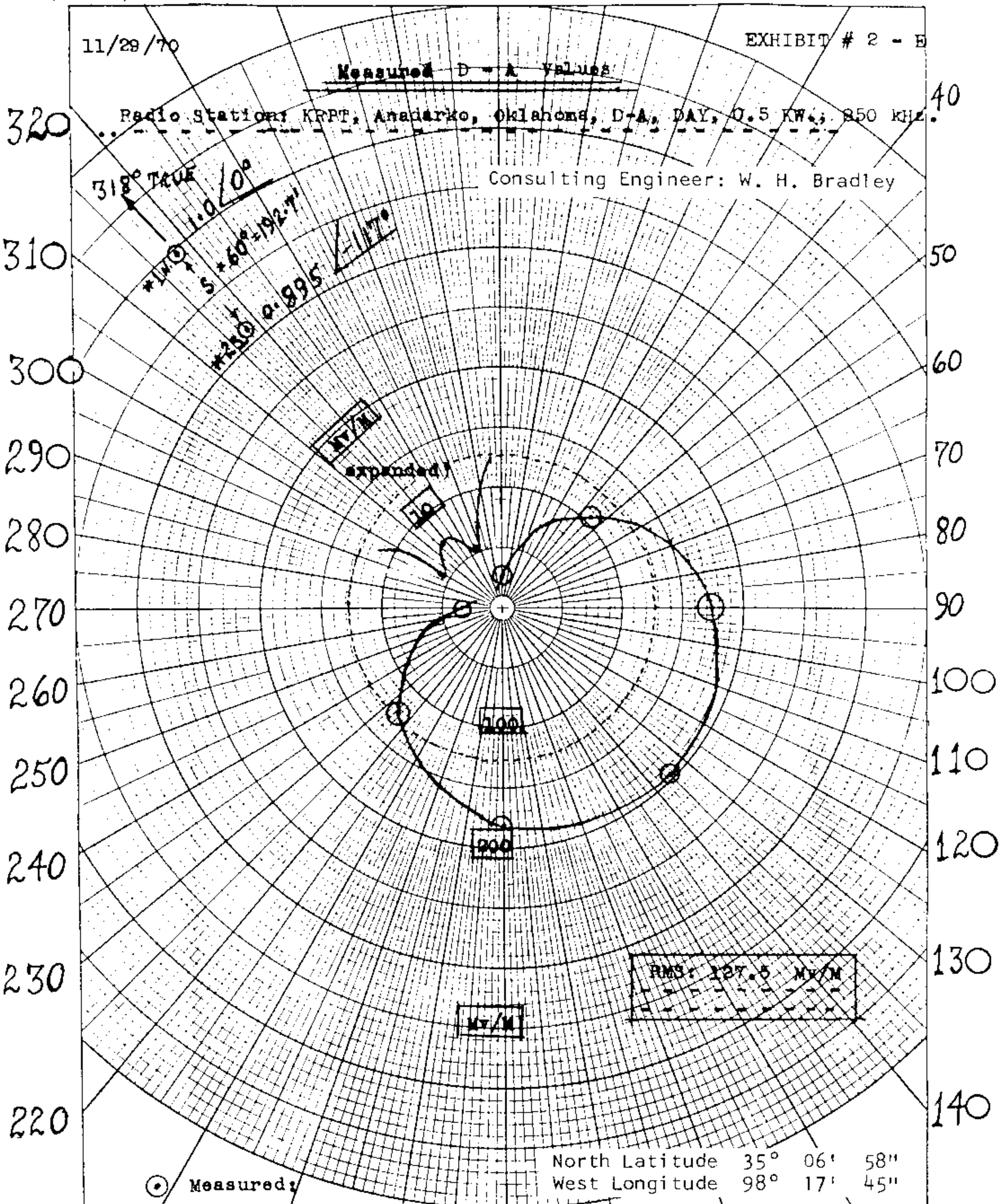
850 kc

KRPT

Measured Day
(1-22-71ct)

Station KRPT
Anadarko, Oklahoma

500w,DA-D,D
850 kc



FCC File No.BL-12834
Accepted 1-6-71

Station KRPT
Anadarko, Oklahoma

850 kc

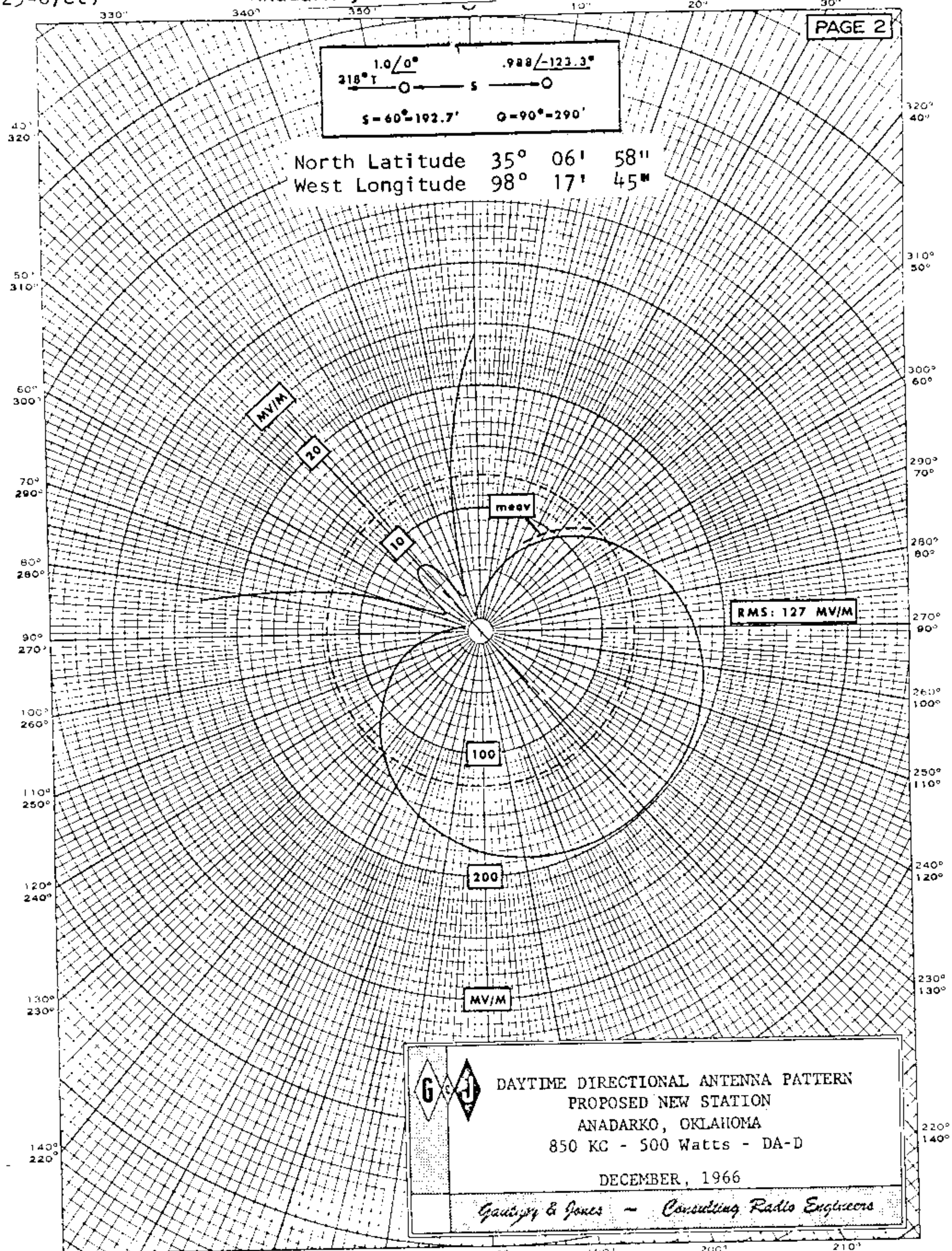
Gr. (10-7-69) appl. for CP for new Standard Broad. STATION

KRPT

Proposed Day
(3-29-67ct)

New; Allan Pratt Page
Anadarko, Oklahoma

500w, DA-D, D
850 kc



FCC File No. BP-17575
Accepted 2-24-67

New; Allan Pratt Page
Anadarko, Oklahoma

850 kc

Gr. (10-7-69) Appl. for C.P. for new ST. Broad. STA.

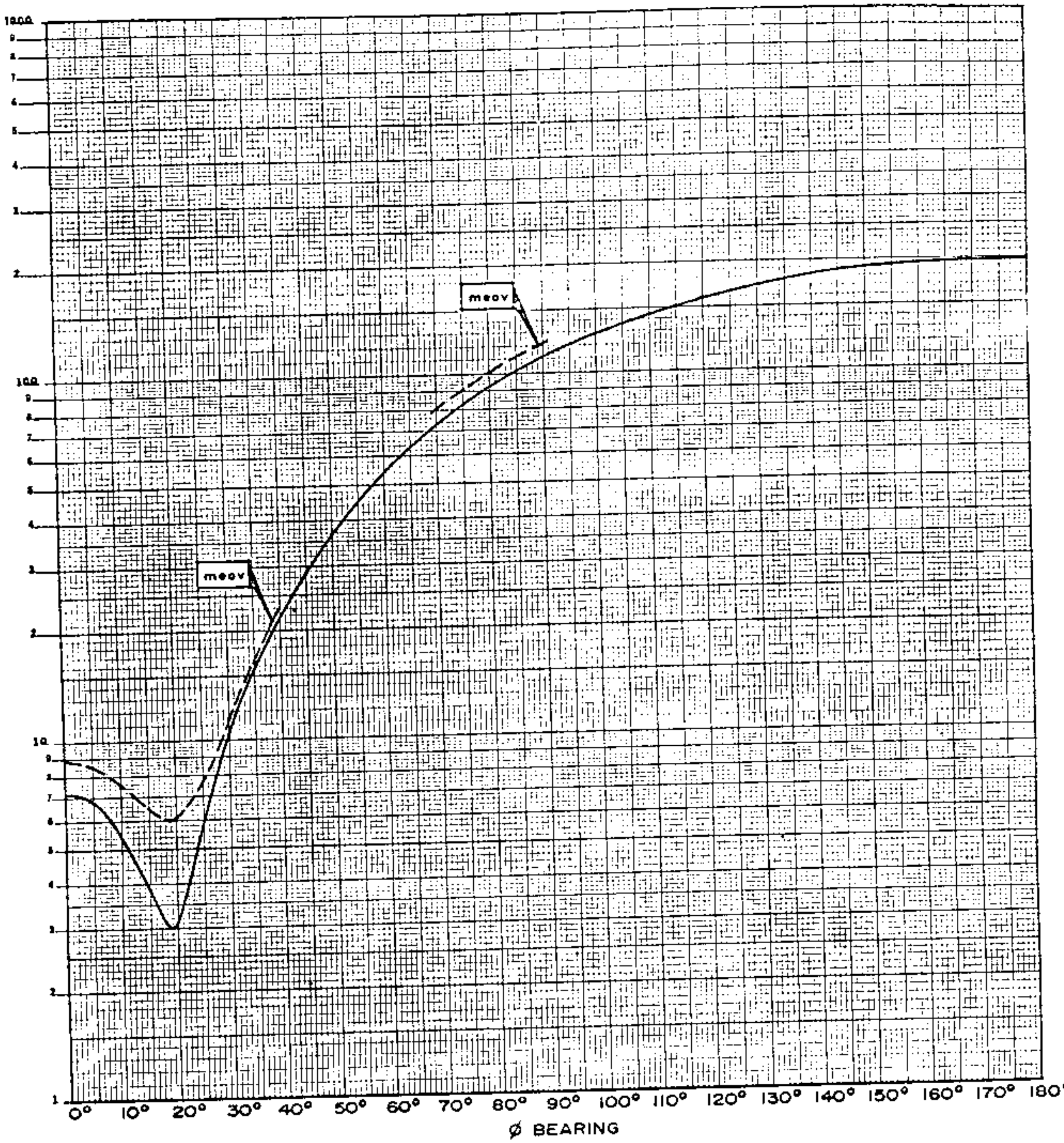
KRPT

Proposed Day Nulls
(3-29-67ct)

New; Allan Pratt Page
Anadarko, Oklahoma

HORIZONTAL RADIATION PATTERN

500w,DA-D,D
850 kc
PAGE 3



DETAILS IN MINIMA
DAYTIME DIRECTIONAL PATTERN
PROPOSED NEW STATION
ANADARKO, OKLAHOMA
850 KC - 500 Watts - DA-D

DECEMBER, 1966

Gautney & Jones — Consulting Radio Engineers

FCC File No.BP-17575
Accepted 2-24-67

New; Allan Pratt Page
Anadarko, Oklahoma

850 kc

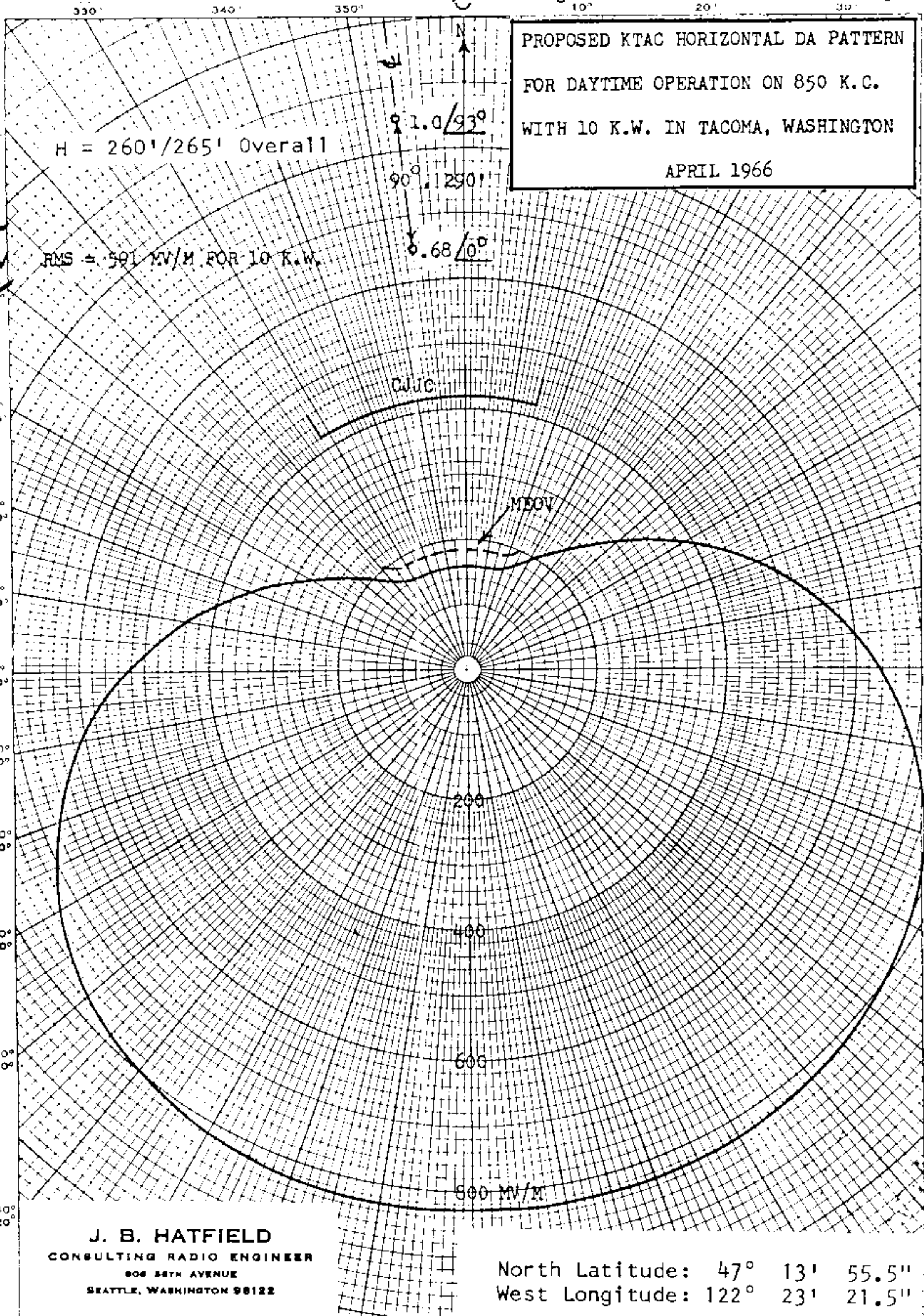
KTAC

Proposed Day
(12-29-66ct)

Station KTAC
Tacoma, Washington

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

6-23-67
GRANTED
CP
to increase
power from
1 kw to 10 kw



FCC File No.BP-11373
Accepted 12-19-66 Amended

Station KTAC
Tacoma, Washington

850 kc

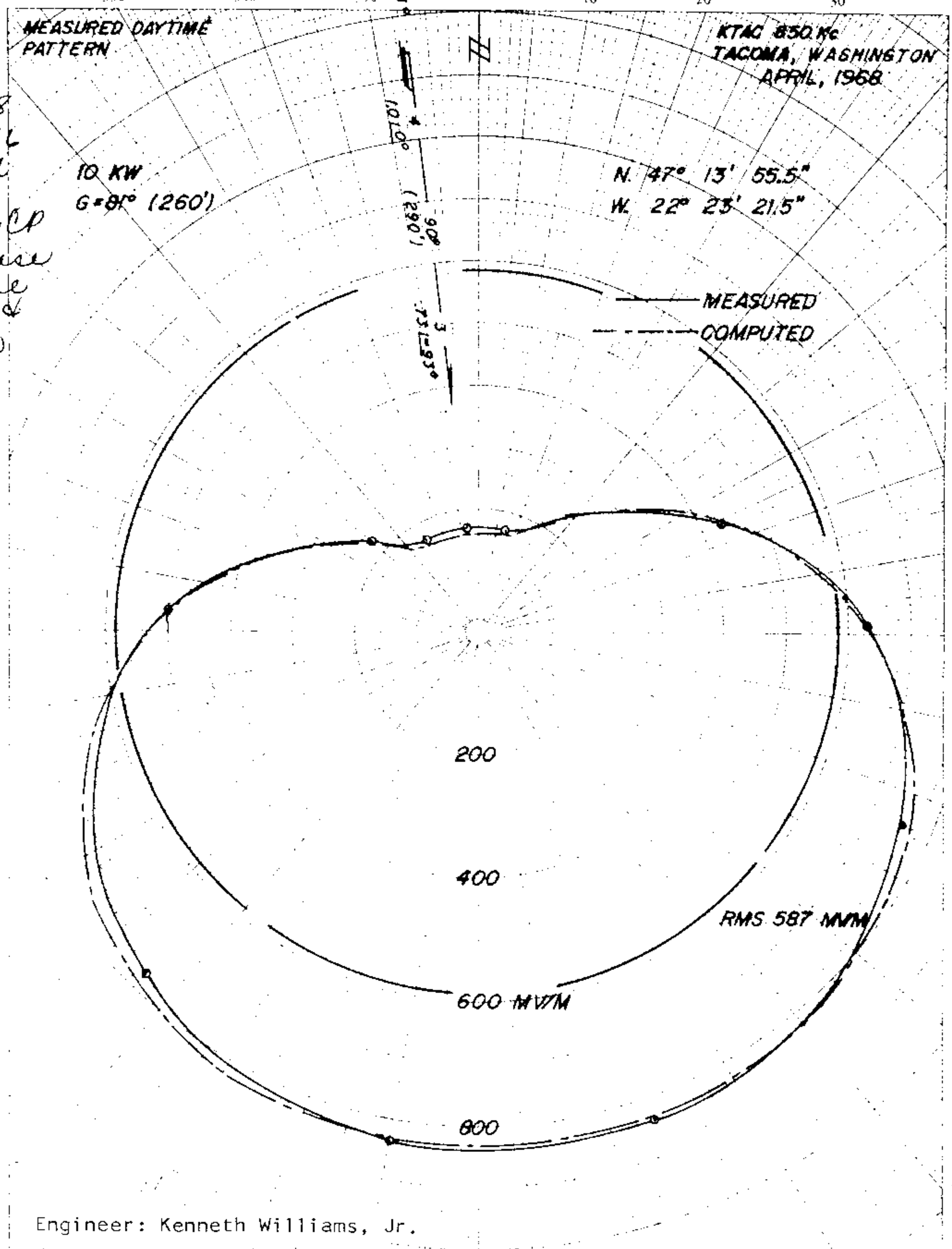
KTAC

Measured Day
(8-28-68ct)

Station KTAC
Tacoma, Washington

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

11-26-68
BL-12076
Granted
license
covering CP
to increase
daytime
power &
change to
DA-2



Engineer: Kenneth Williams, Jr.

FCC File No.BL-12076
Accepted 8-23-68

Station KTAC
Tacoma, Washington

850 kc

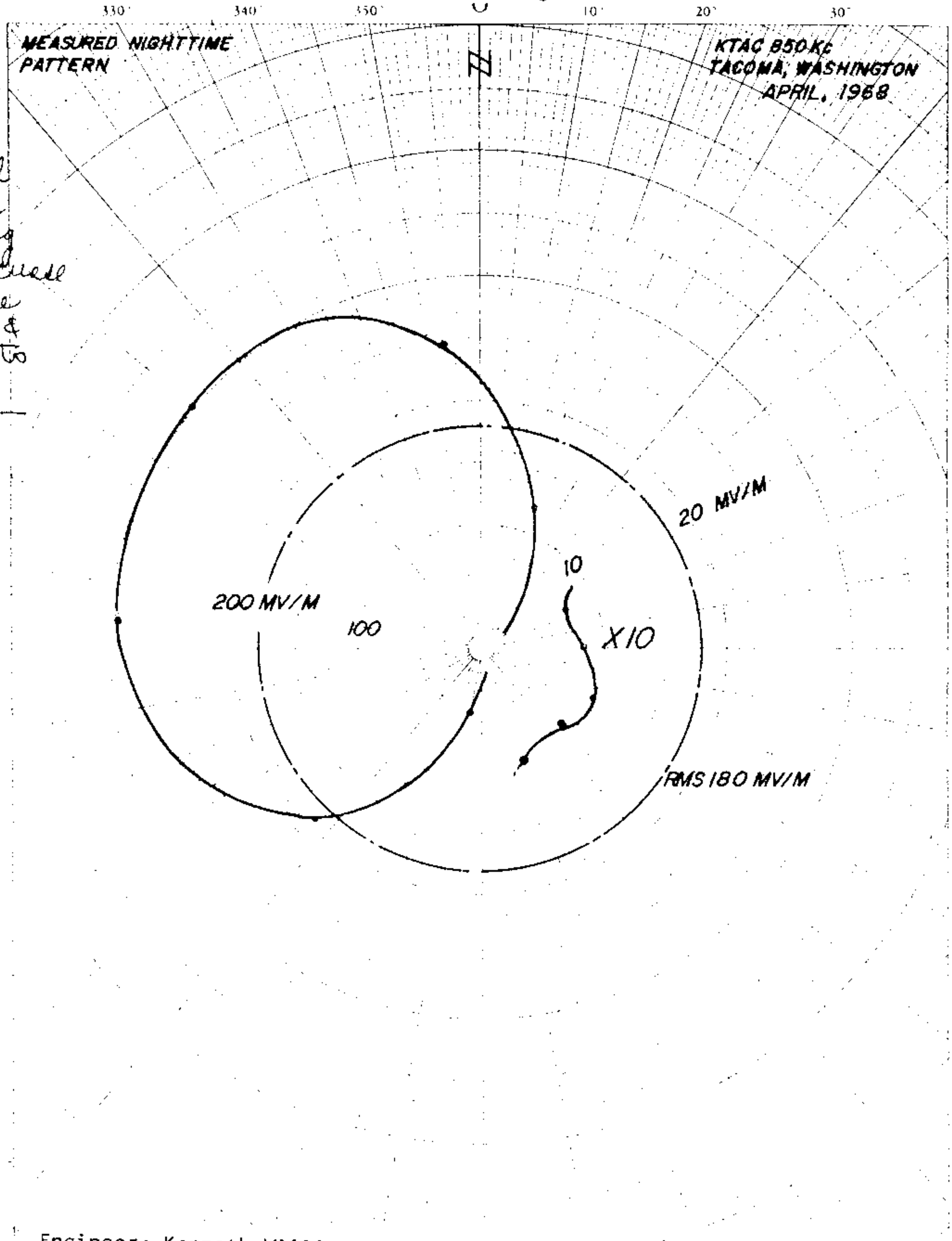
KTAC

Measured Night
(8-28-68ct)

Station KTAC
Tacoma, Washington

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

1-26-68
BL-12076
Granted
license
covering
CP to increase
daytime
power &
change to
DA-2



Engineer: Kenneth Williams, Jr.

FCC File No.BL-12076
Accepted 8-23-68

Station KTAC
Tacoma, Washington

850 kc

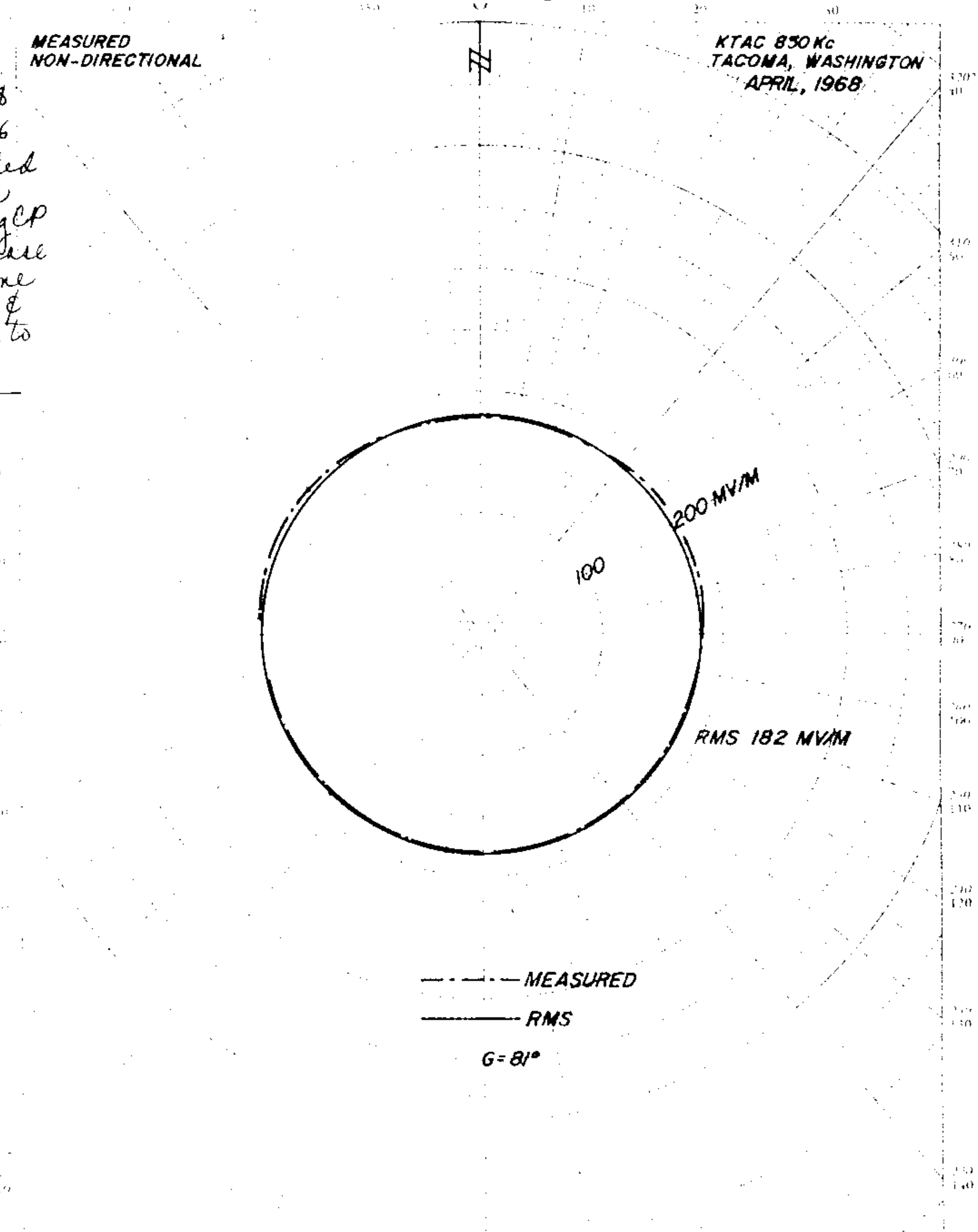
KTAC

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

Station KTAC
Tacoma, Washington

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

11-26-68
BL-12076
Granted
license
covering CP
to increase
daytime
power &
change to
DA-2.



FCC File No.BL-12076
Accepted 8-23-68

Station KTAC
Tacoma, Washington

850 kc

WABA
850KHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: W A B A	Main Studio: Aguadilla, Puerto Rico
Frequency: 850 kHz	Power: 5 kW
Notification List No. 1784	Date: November 9, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 18° 24' 18"
West Longitude: 67° 09' 44"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-1)
Number of elements: 2
Type of elements: Series excited, uniform cross-section guyed, vertical steel towers.

TOWER:	#1 (E)	#2 (W)
HEIGHT ABOVE INSULATORS:	260'	260' (80.9°)
PHASING:	0°	-17.8°
FIELD RATIO:	1.00	1.30

SPACING AND ORIENTATION: The towers are spaced 666.3'(207.3°) on a line bearing 113.5° true.

GROUND SYSTEM: 120-290' equally spaced copper radials plus a 24' square ground screen about each tower. Radials are extended and bonded to a copper strap between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL		STANDARD
RMS	RSS	RMS
393 mV/m	492 mV/m	413 mV/m

WABA
850 KHZ

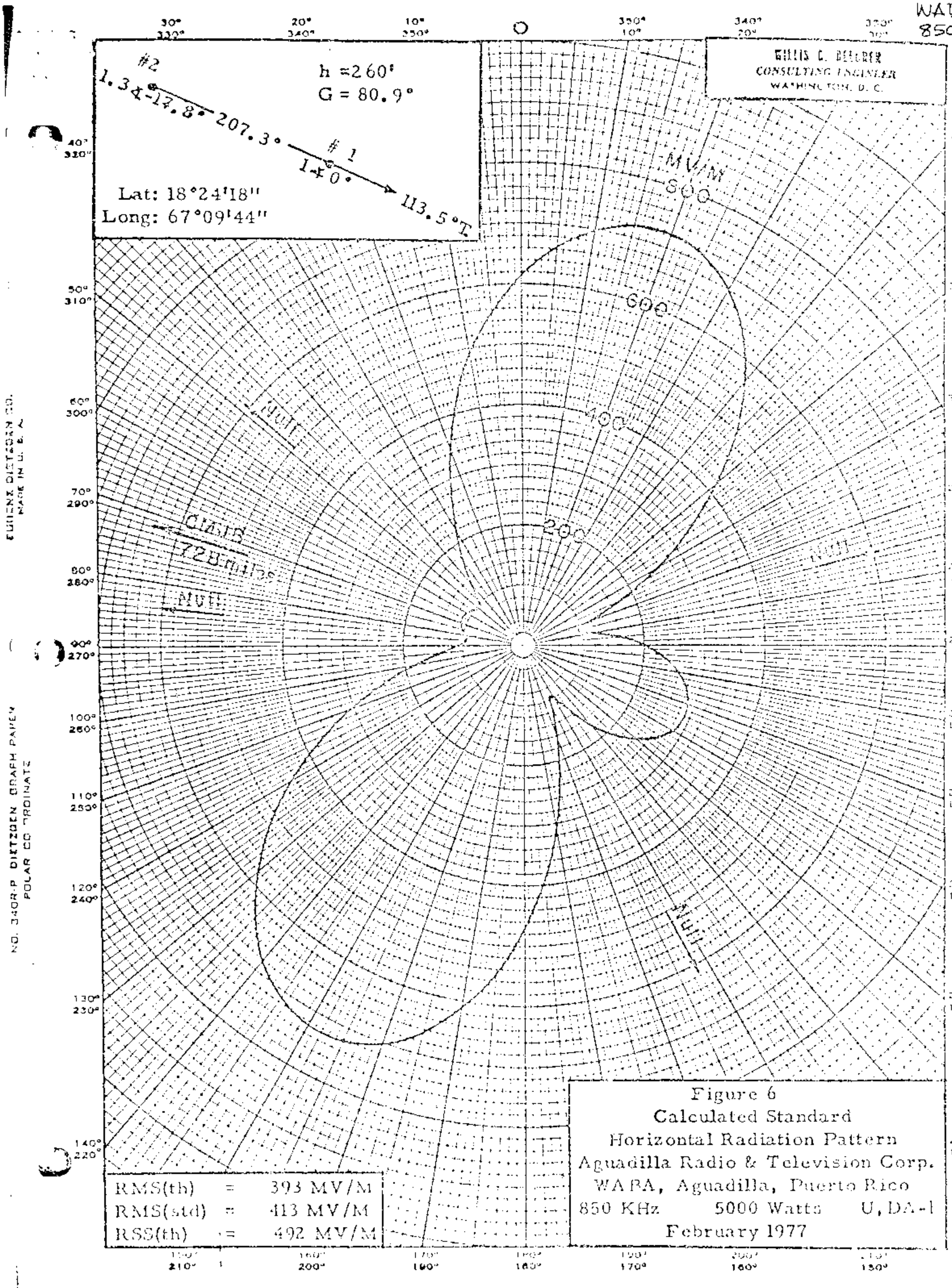
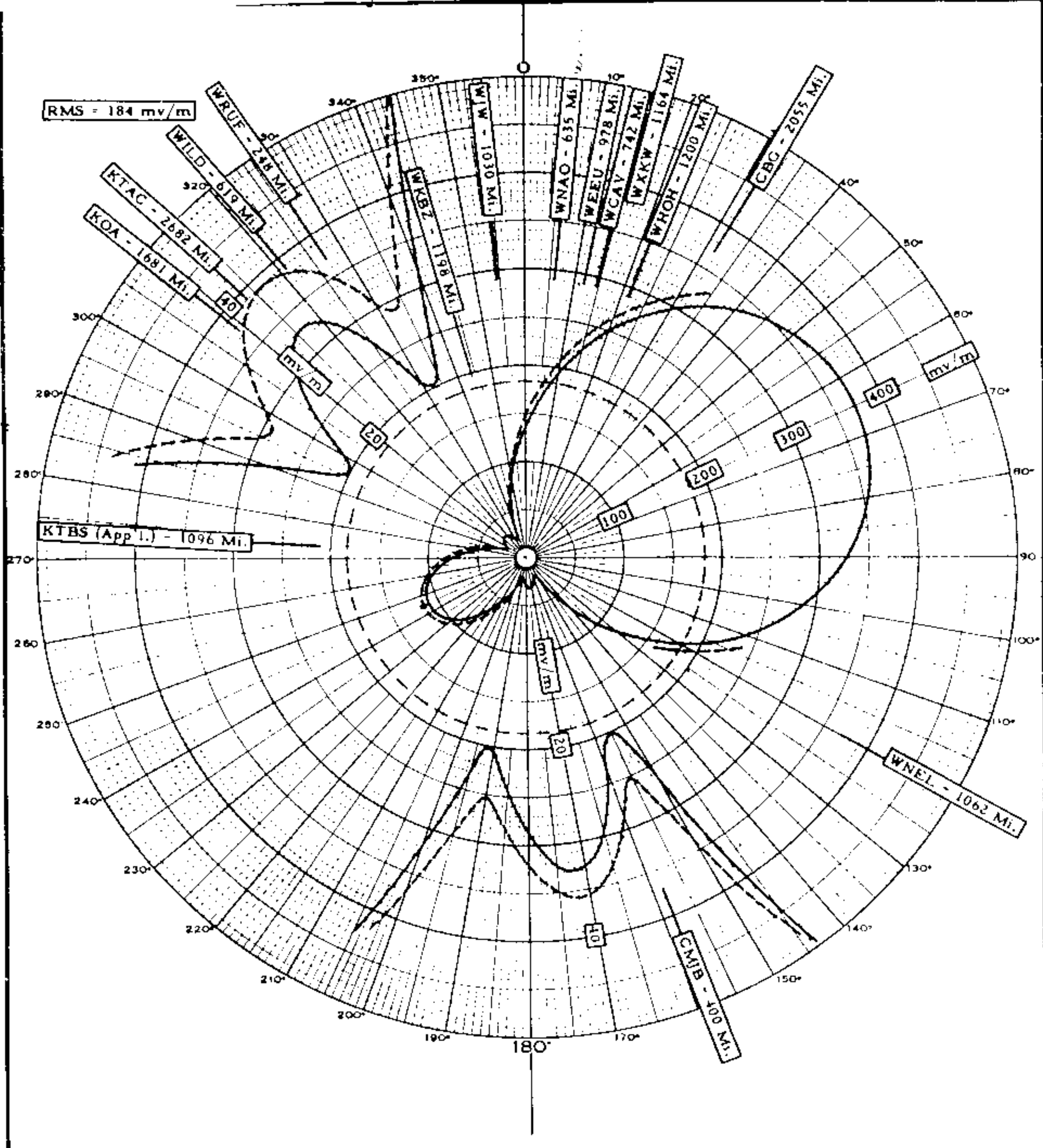


Figure 6
Calculated Standard
Horizontal Radiation Pattern
Aguadilla Radio & Television Corp.
WABA, Aguadilla, Puerto Rico
850 KHz 5000 Watts U, DA-1
February 1977

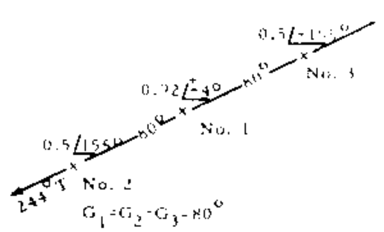
WEAT
850 kc

PROPOSED WEAT, W.PALM BEACH, FLORIDA 1KW, U, DA-1
DAY & NIGHT (8/14/53G)

7-17-62 granted CP to change 4 system
8-15-63 granted CP to change antenna system



CALCULATED HORIZONTAL RADIATION PATTERN



N. Lat: 26° 38' 28"
W. Long: 80° 04' 08.5"

Proposed Directional Antenna
JAMES ROBERT MEACHEM
West Palm Beach, Florida
850 kc, 1 kw, U, DA-1
June 1953

APPENDIX IV

C File No. BP-8179 Amended Accepted 7/27/53 WEAT, W.PALM BEACH, FLA. 850 kc

WEAT

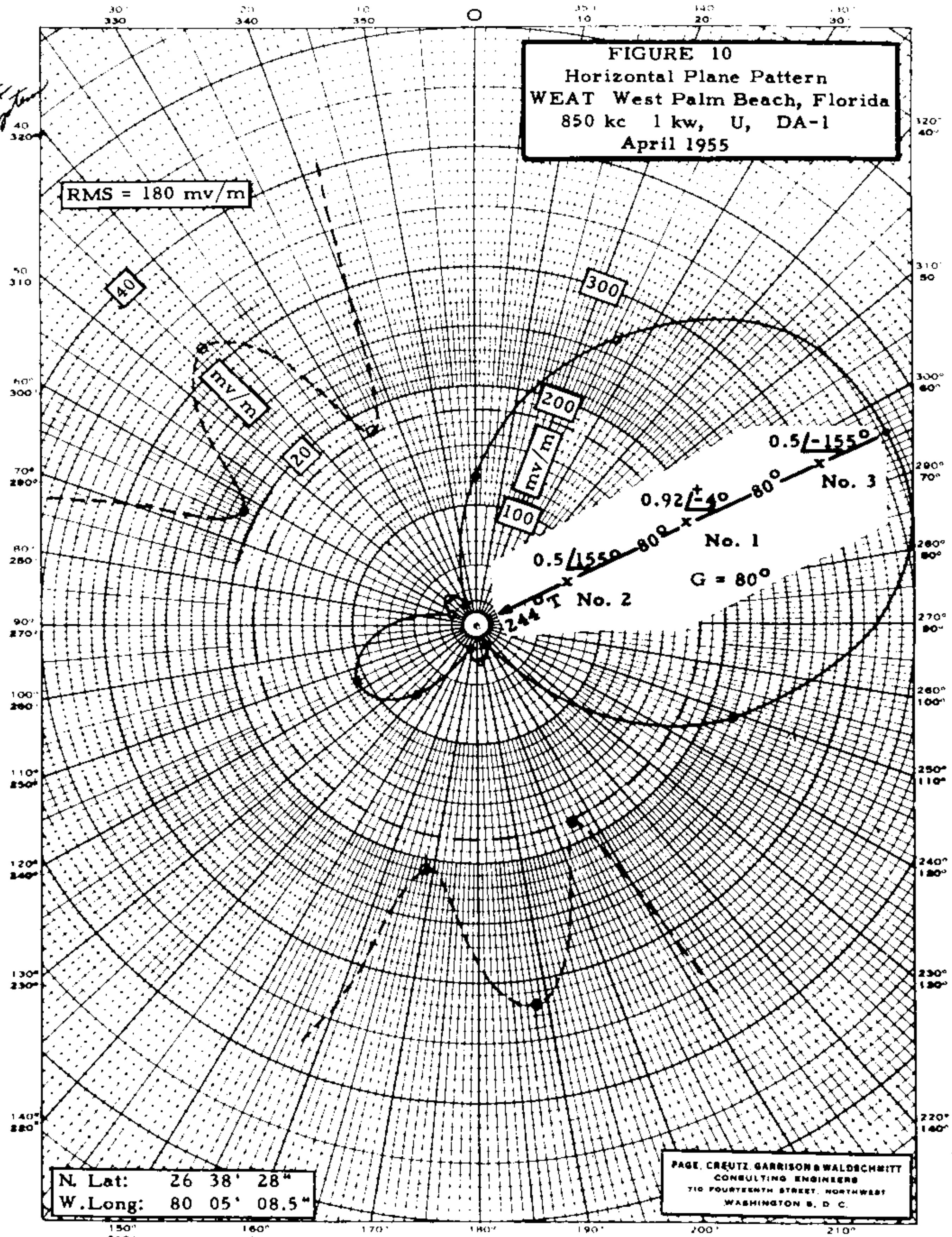
MEASURED NIGHT & DAY

WEAT, West Palm Beach, Florida
5/11/55G

U, DA-1
1 KW

850 KC

1-17-62 granted cp to change 4 system



FCC File No. BL-5699   Accepted 5-6-55   WEAT, West Palm Beach, Fla.   850 KC

WEAT

ND

MEASURED ~~DAY & NIGHT~~ (11/1/54G)   STATION WEAT WEST PALM BEACH, FLORIDA   1 KW DA-1, U   850 KC

8-15-63 Granted license to change antenna system

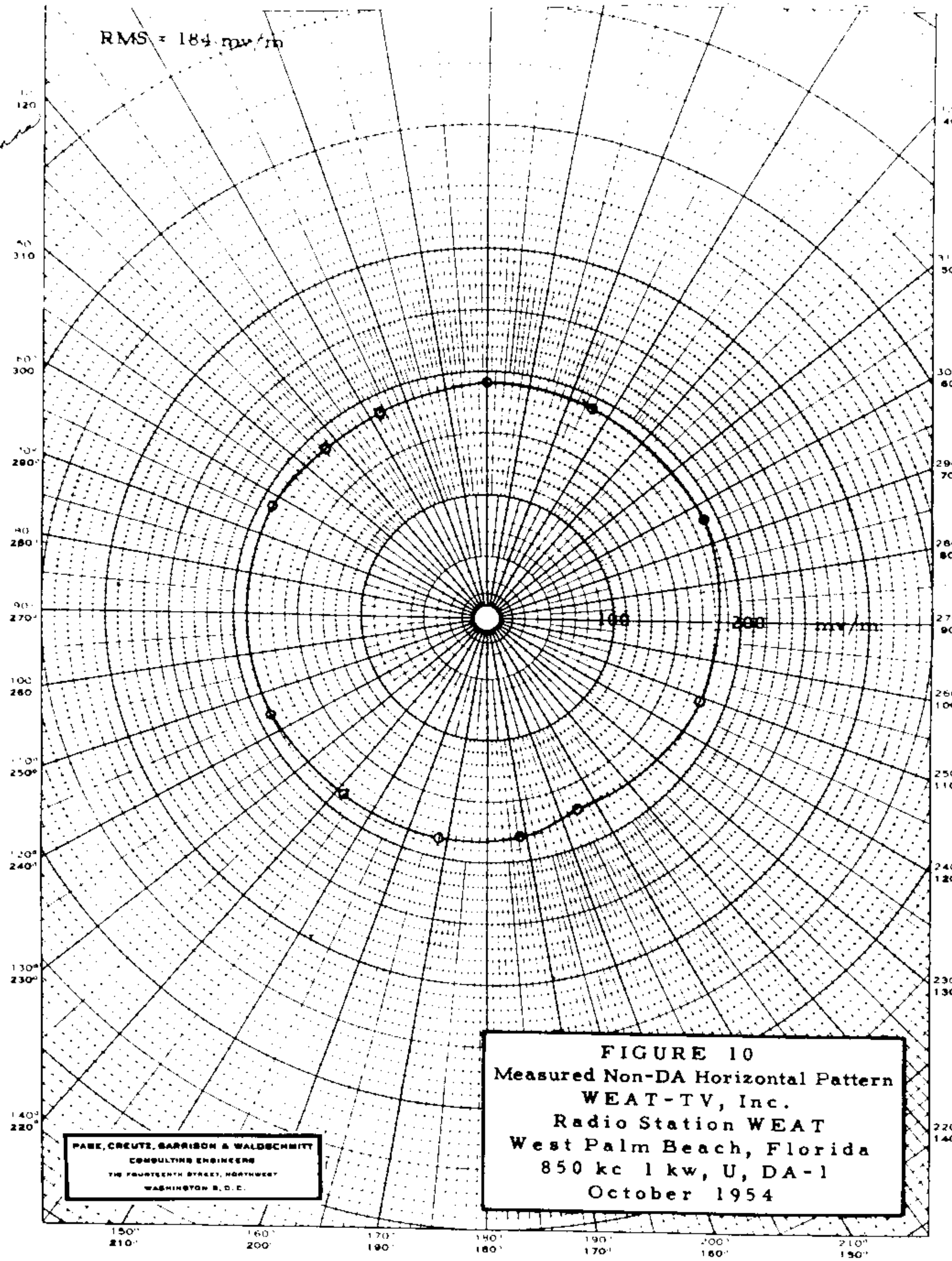


FIGURE 10
Measured Non-DA Horizontal Pattern
WEAT-TV, Inc.
Radio Station WEAT
West Palm Beach, Florida
850 kc 1 kw, U, DA-1
October 1954

File No. BL-5496   Accepted 10/19/54   WEAT, West Palm Beach, Florida   850 KC

WEEU

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : WEEU

Frequency : 850 kHz

Notification List No. 1779

Main Studio: Reading, Pennsylvania

Power: 1 kW Night - 1 kW Day

Date: September 27, 1978 Class: II

GEORGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 40° 21' 28"
West Longitude: 75° 59' 03"

PREDICTED EFFICTIVE DAYTIME FIELD (OMNIDIRECTIONAL): 179 mV/m

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 :	S(#1)	NC(#2)	N(#3)	SC(#4)
HEIGHT ABOVE INSULATORS :	195'	195'	195'	195' (60.7°)
PHASING:	0°	-97.3°	+48.1°	+145.4°
FIELD RATIO:	0.533	0.860	1.0	0.620

SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 965' (300°) in length on a line bearing 312.5° true. The short sides are 290' (90°) in length on a line bearing 330° true.

GROUND SYSTEM: 120-420' to 475' equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

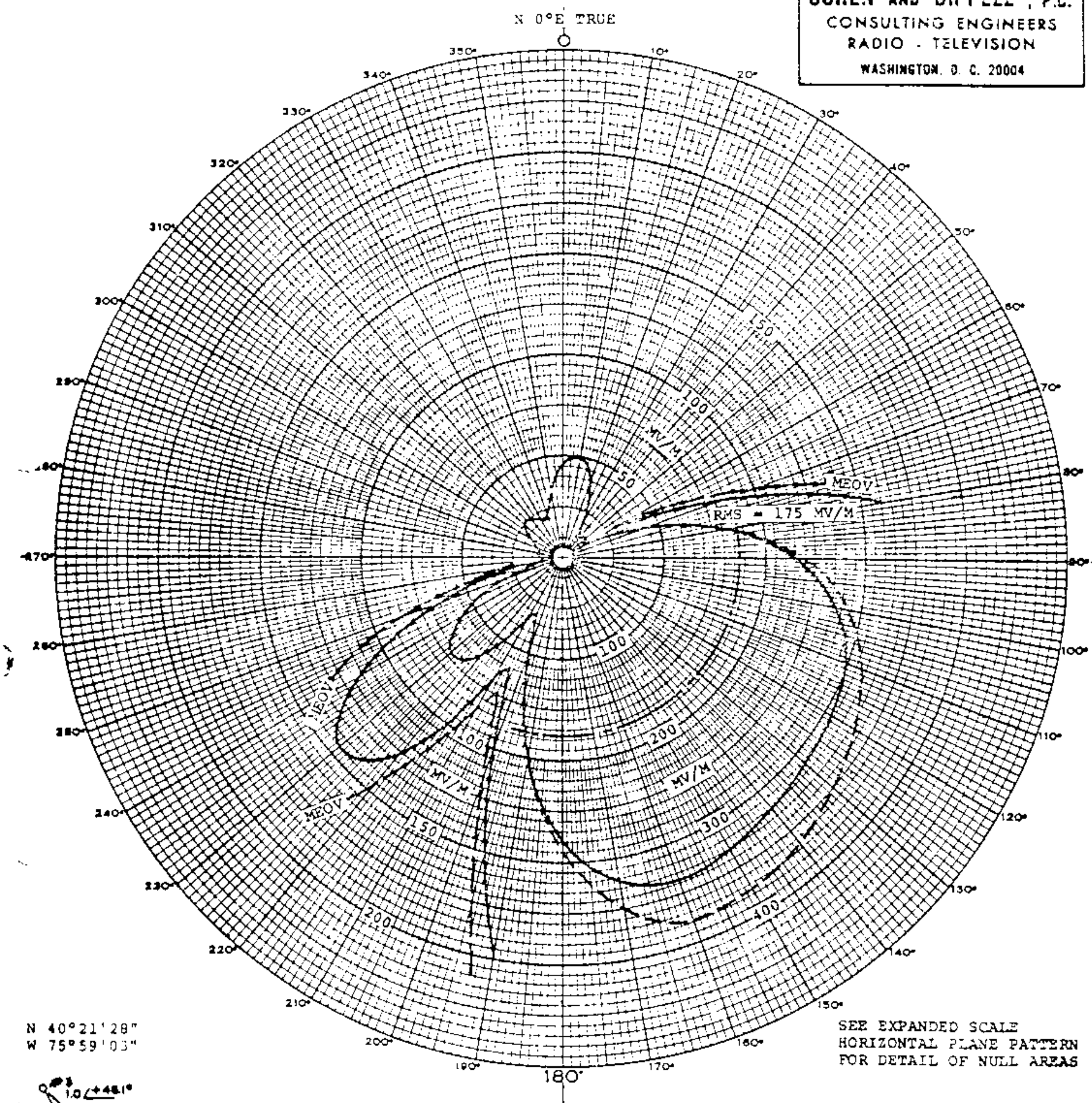
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL	
	RMS	RSS
NIGHT	175 mV/m	

NOTE: This notification concerns only the addition of MEOVS to the Nighttime directional radiation patterns with Daytime operation continued as Nighttime previously notified.

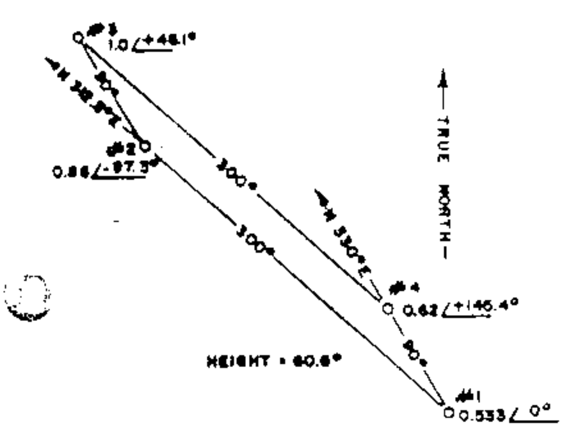
WEEU

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



SEE EXPANDED SCALE
HORIZONTAL PLANE PATTERN
FOR DETAIL OF NULL AREAS

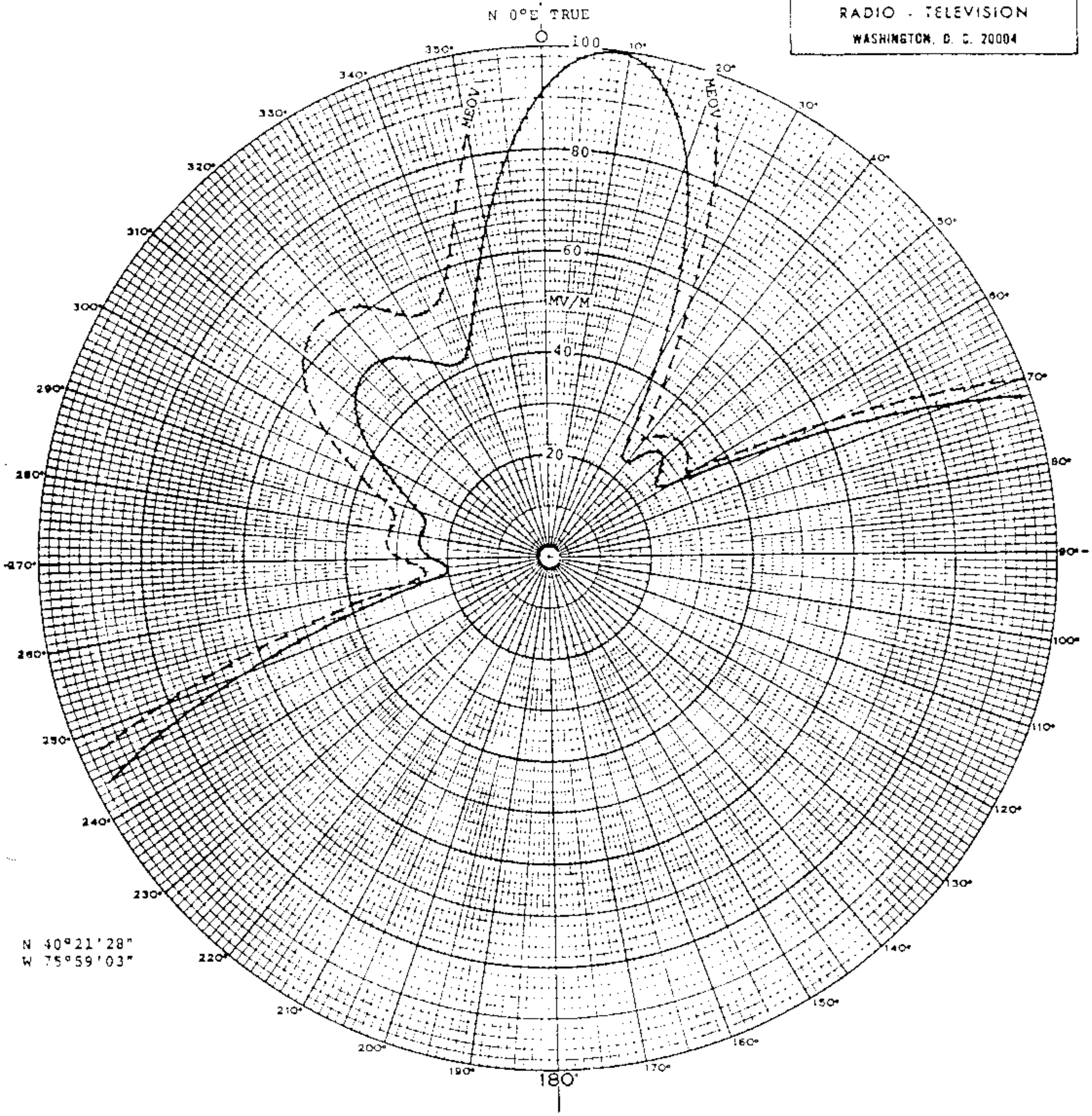
N 40°21'28"
W 75°59'03"



HORIZONTAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

WEEU

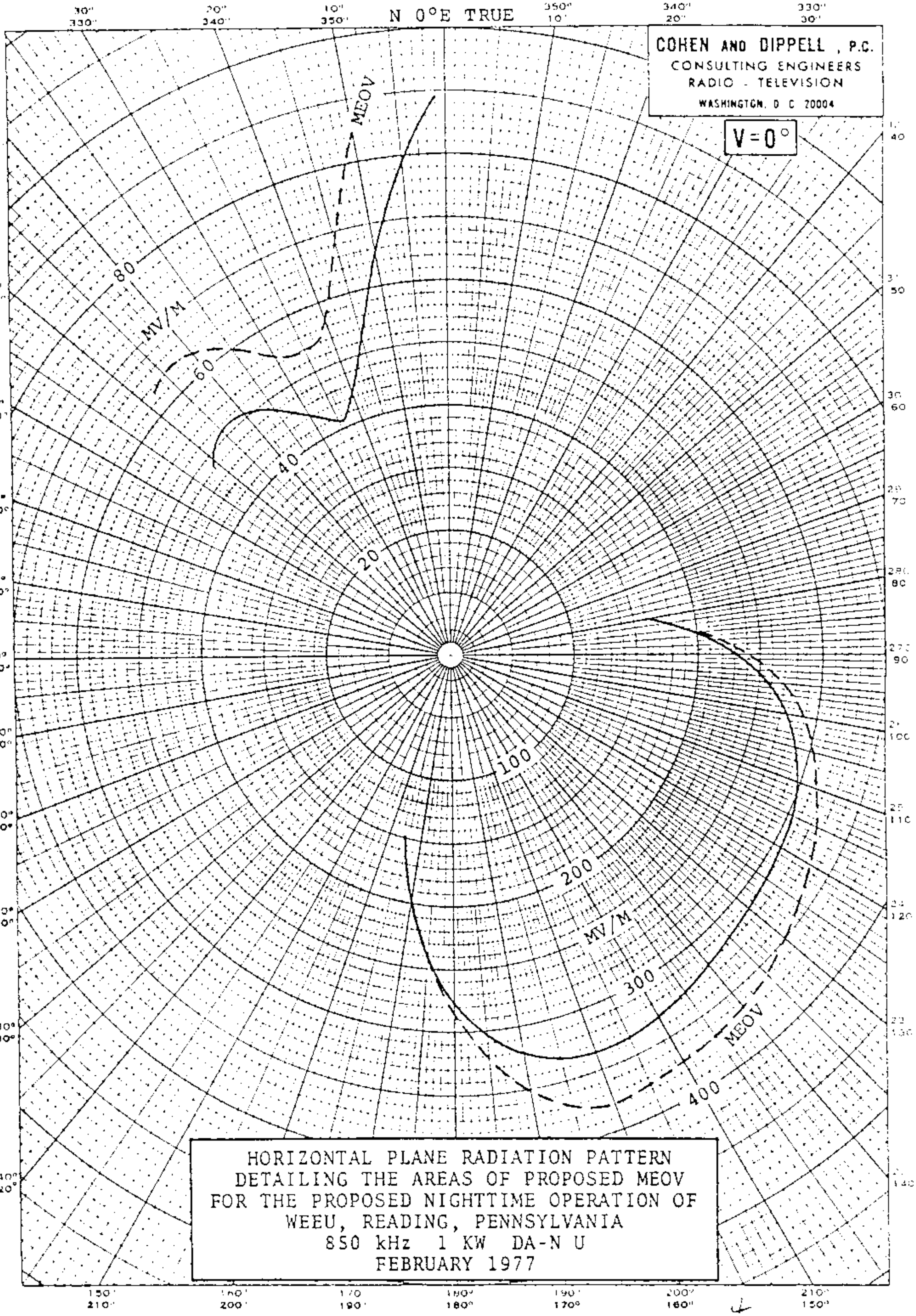
COHEN AND DIPPELL, P.C.
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D. C. 20004



N 40°21'28"
W 75°59'03"

HORIZONTAL PLANE
RADIATION PATTERN
EXPANDED SCALE
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

WEEU

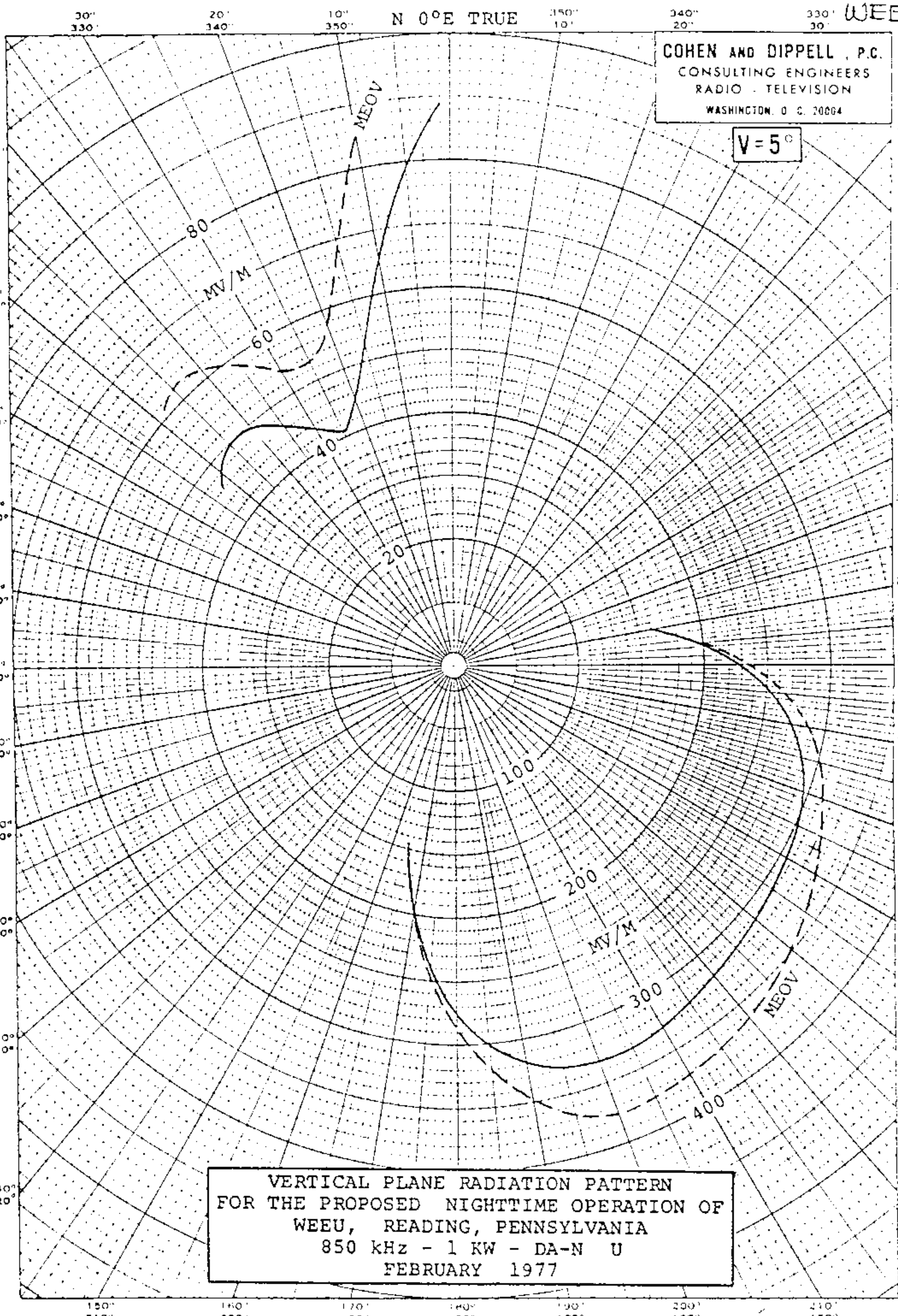


HORIZONTAL PLANE RADIATION PATTERN
DETAILING THE AREAS OF PROPOSED MEOV
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz 1 KW DA-N U
FEBRUARY 1977

NO. 341-P DIETZGEN GRAPH PAPER POLAR CO-ORDINATE

DIETZGEN CORPORATION MADE IN U.S.A.

WEEU

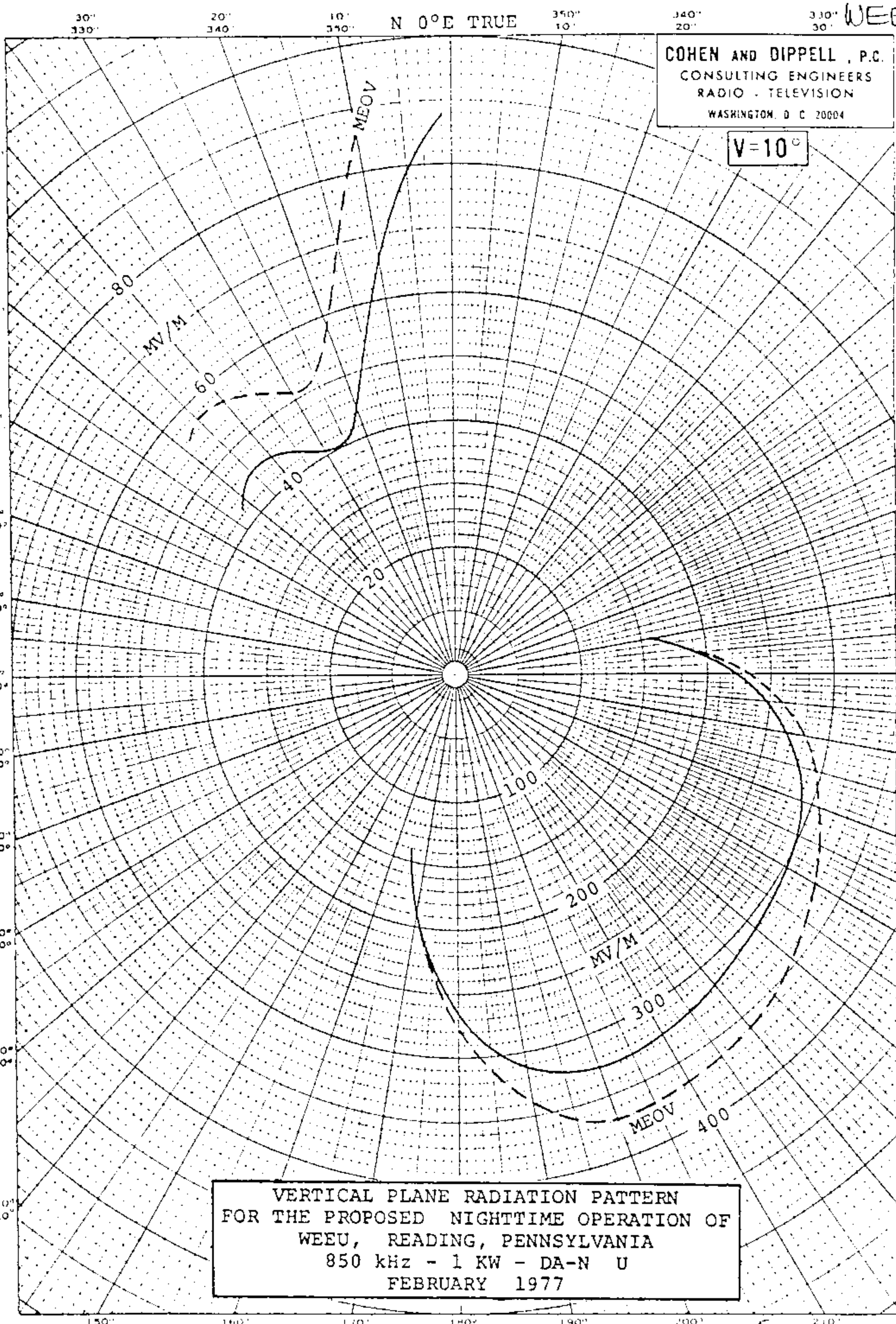


VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

NO. 341-P DIETZGEN GRAPH PAPER POLAR CO-ORDINATE

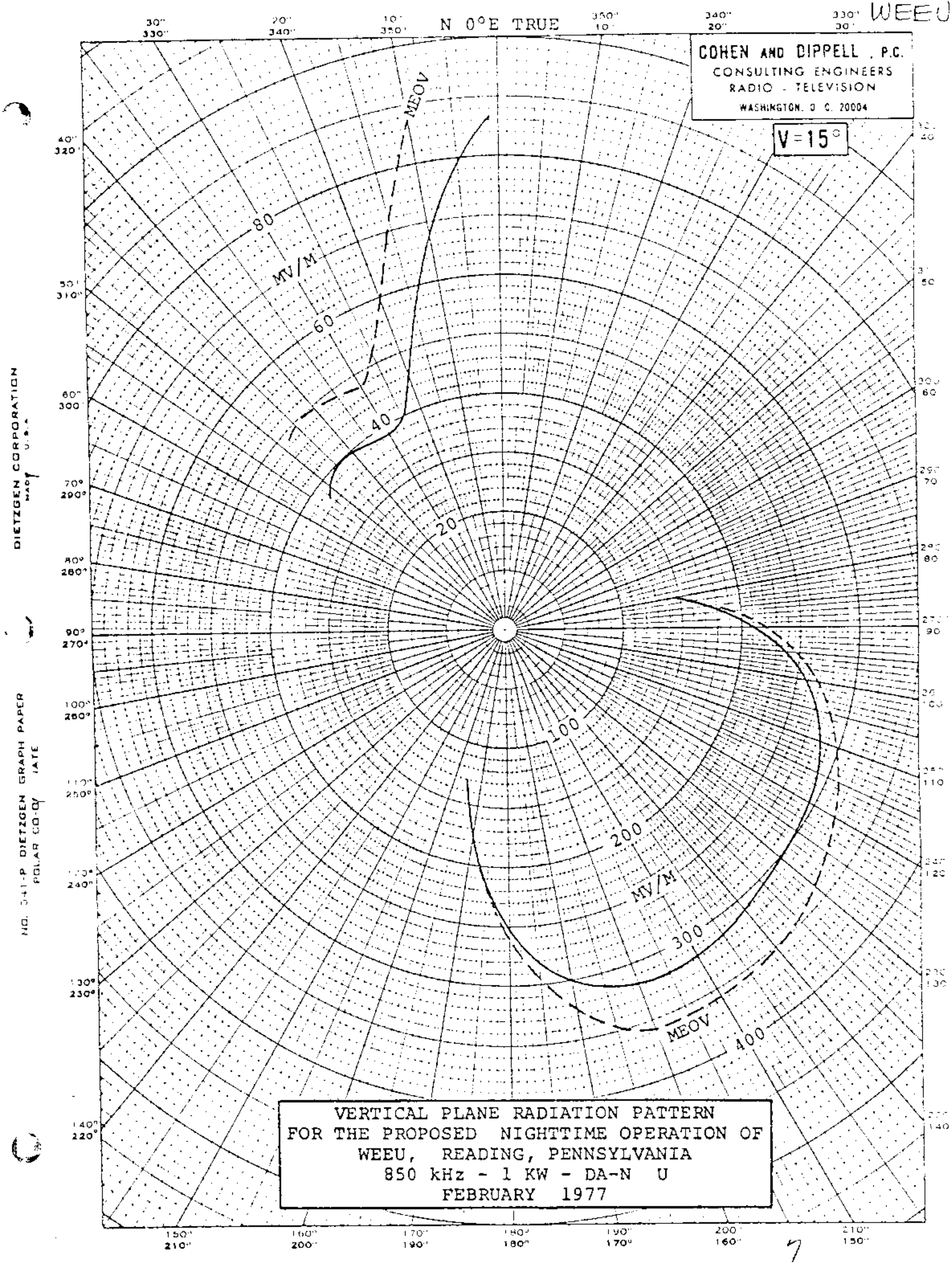
DIETZGEN CORPORATION MADE IN U.S.A.

WEEU



VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

WEEU

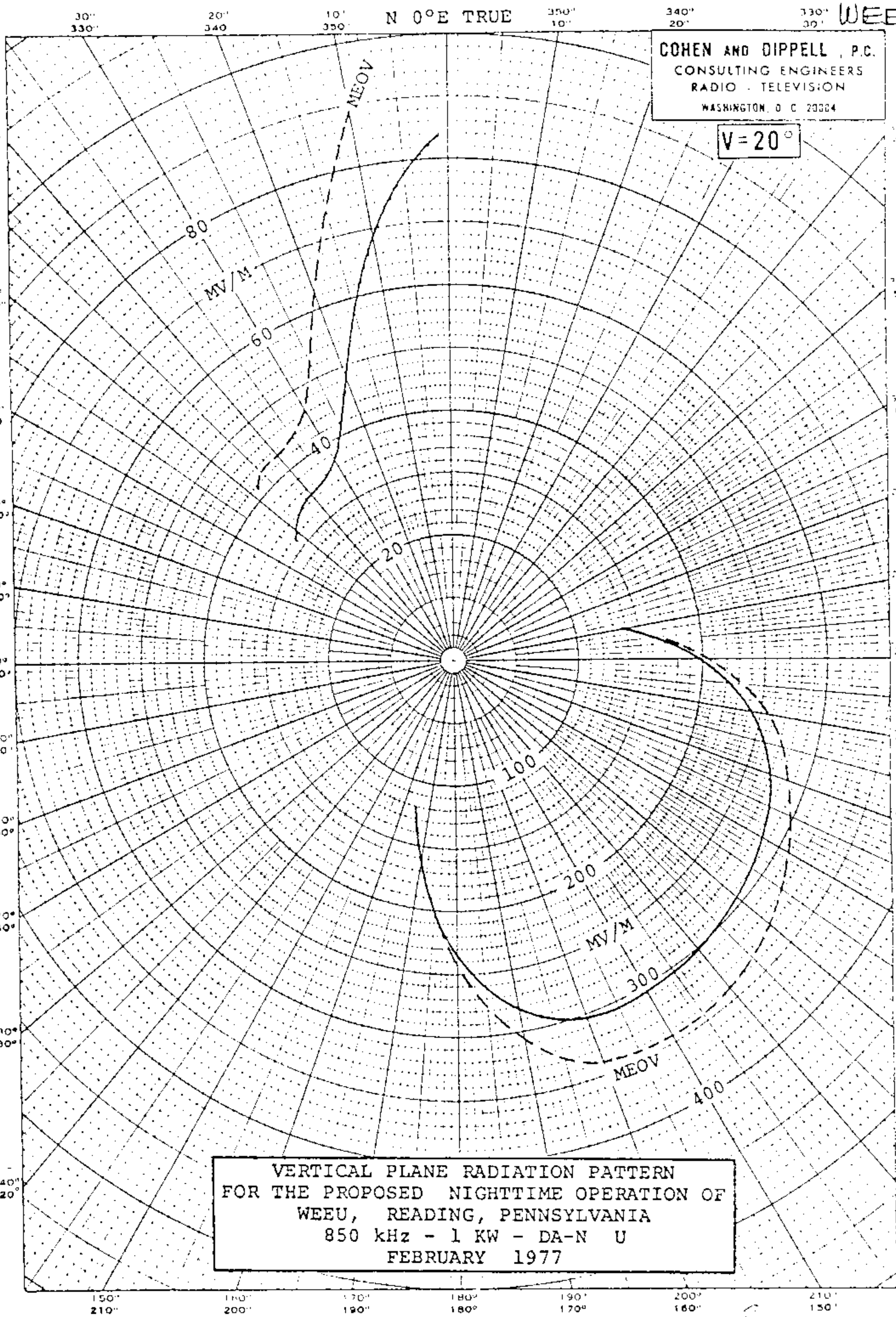


VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

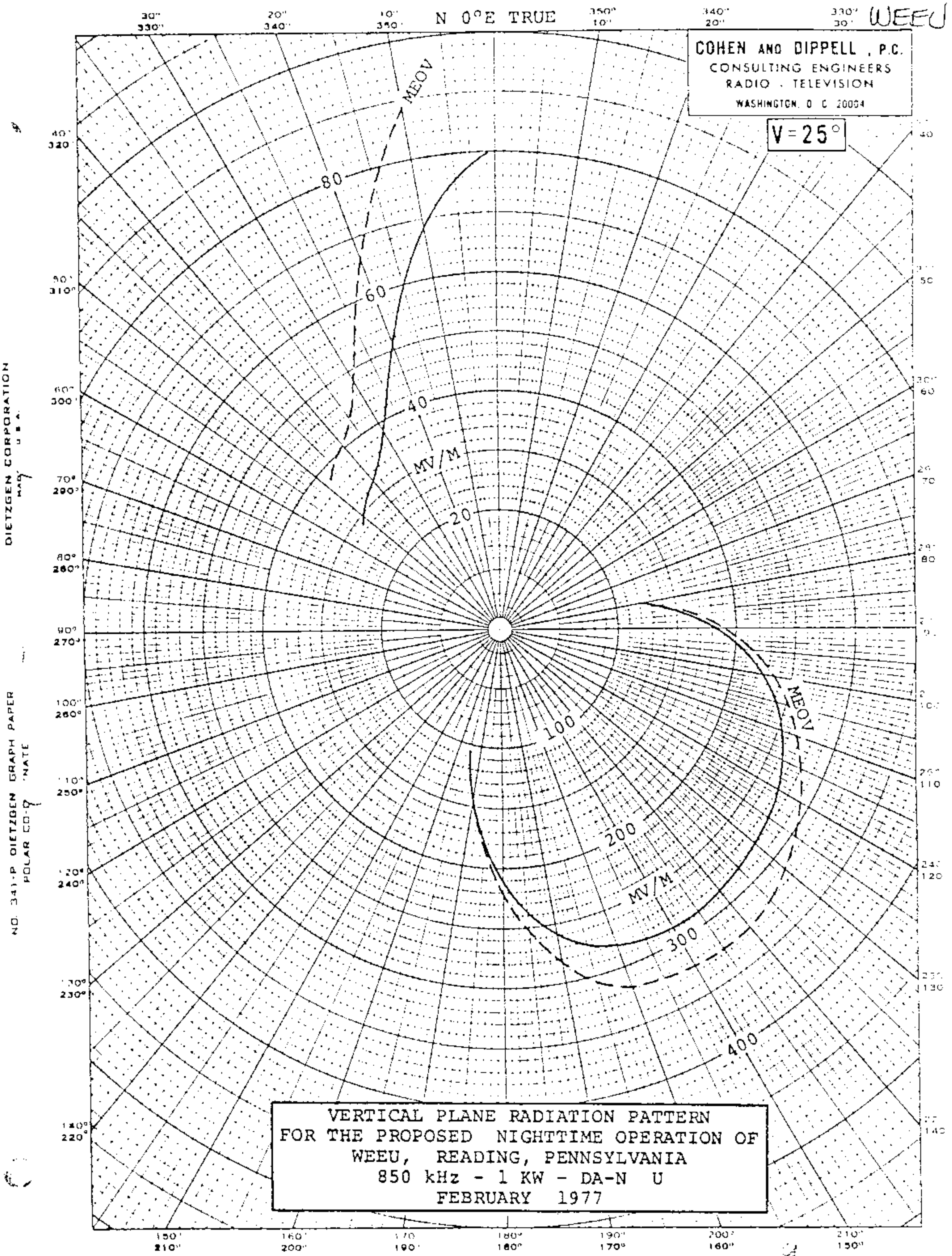
7

WEEU

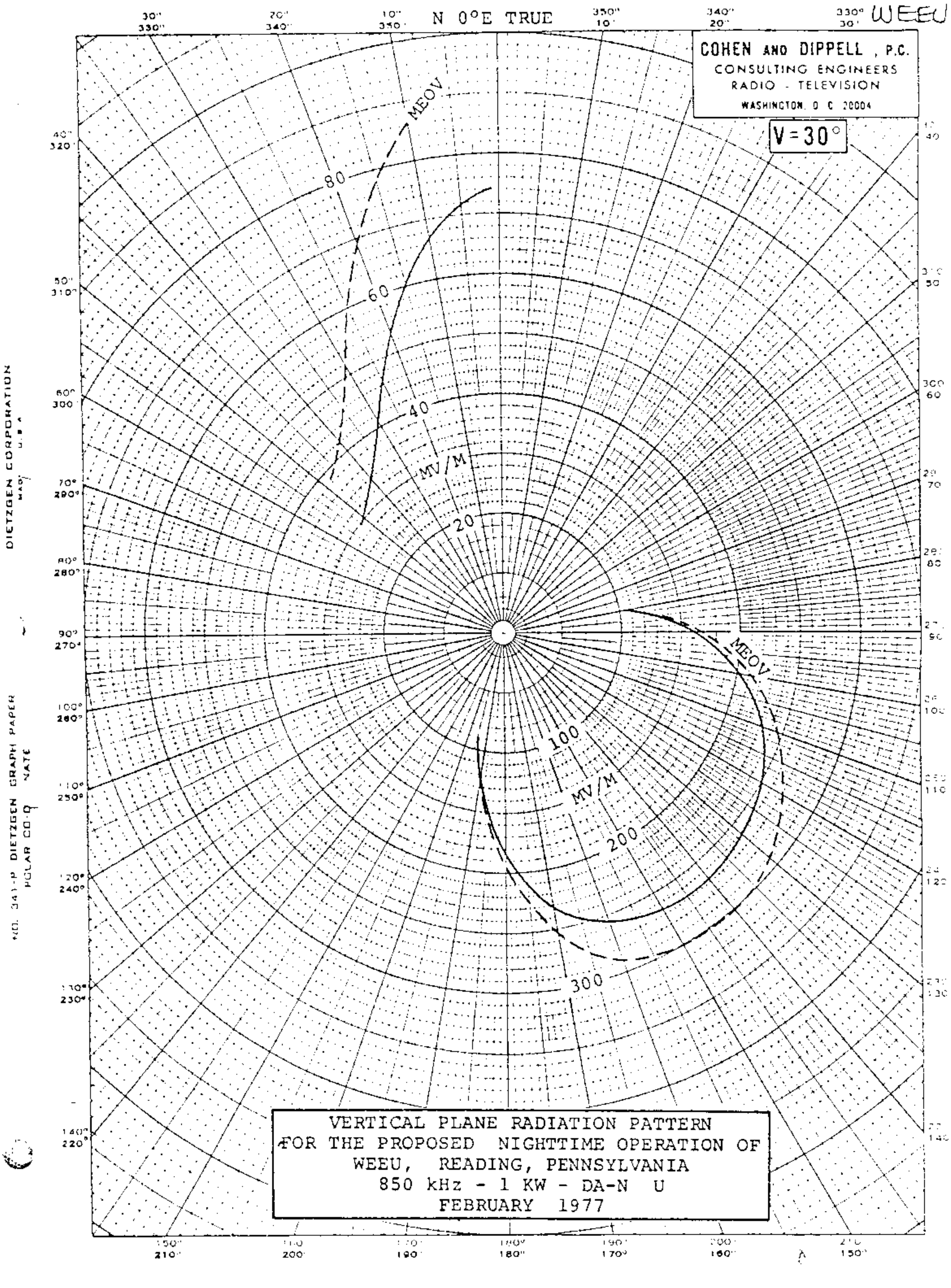
COHEN AND DIPPELL, P.C.
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D. C. 20004



VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

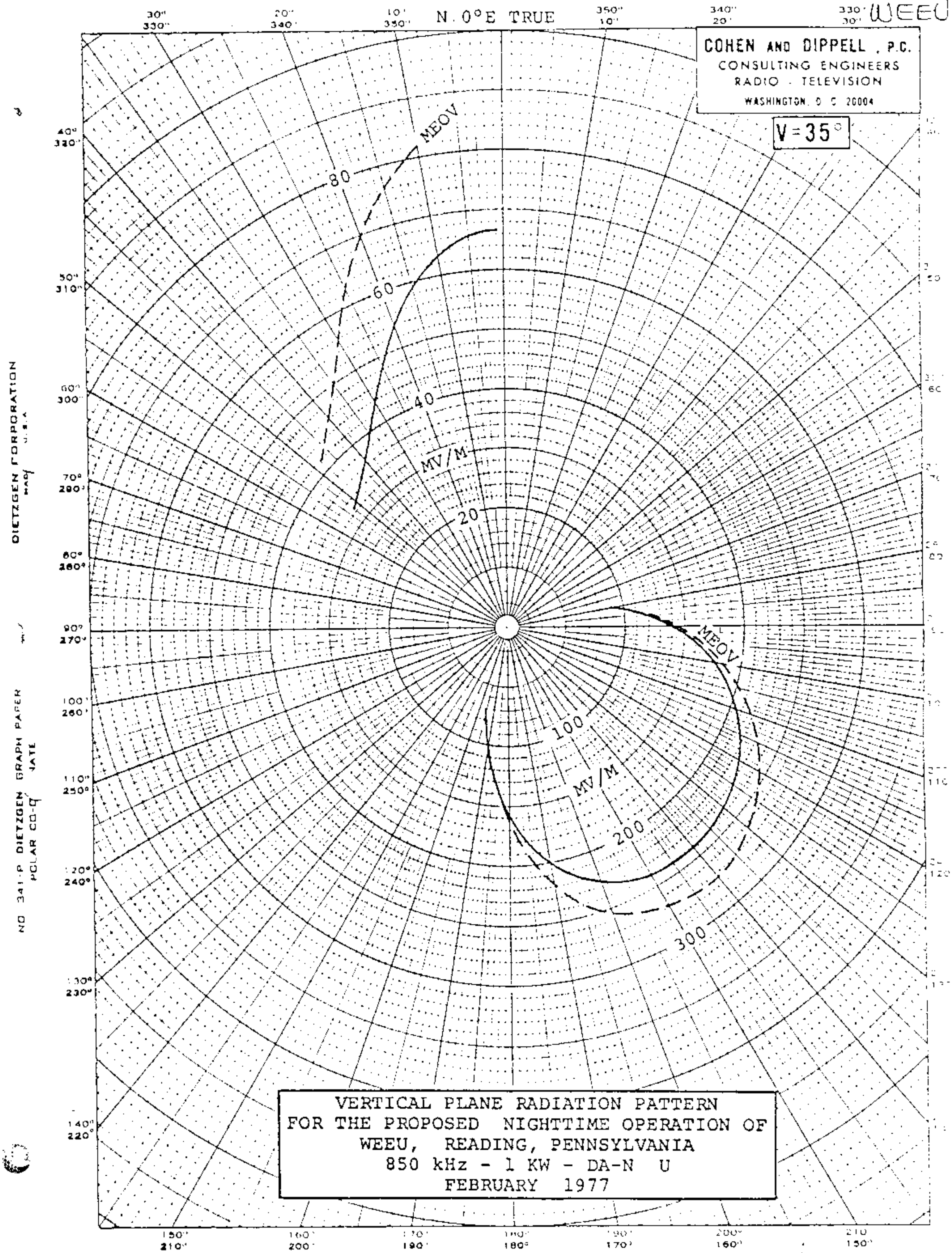


VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

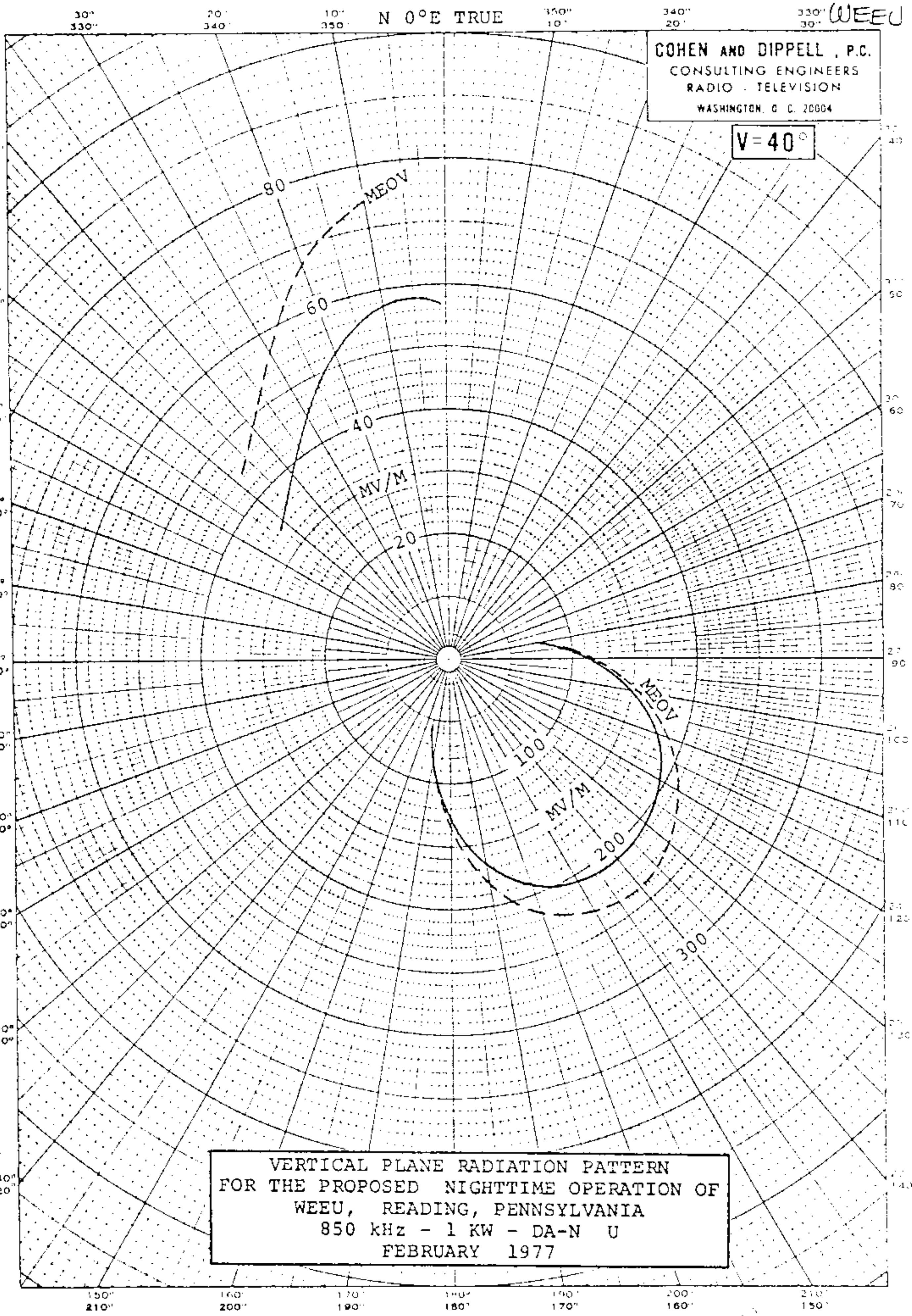


COHEN AND DIPPELL, P.C.
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D.C. 20004

VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977


WEEU
N. 0°E TRUE
COHEN AND DIPPELL, P.C.
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D.C. 20004
V = 35°
MEOV
80
60
40
MV/M
20
100
MV/M
200
300
MEOV
NO 341-P DIETZGEN GRAPH PAPER
POLAR CO-ORDINATE
DIETZGEN CORPORATION
MADE IN U.S.A.
VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

WEEU

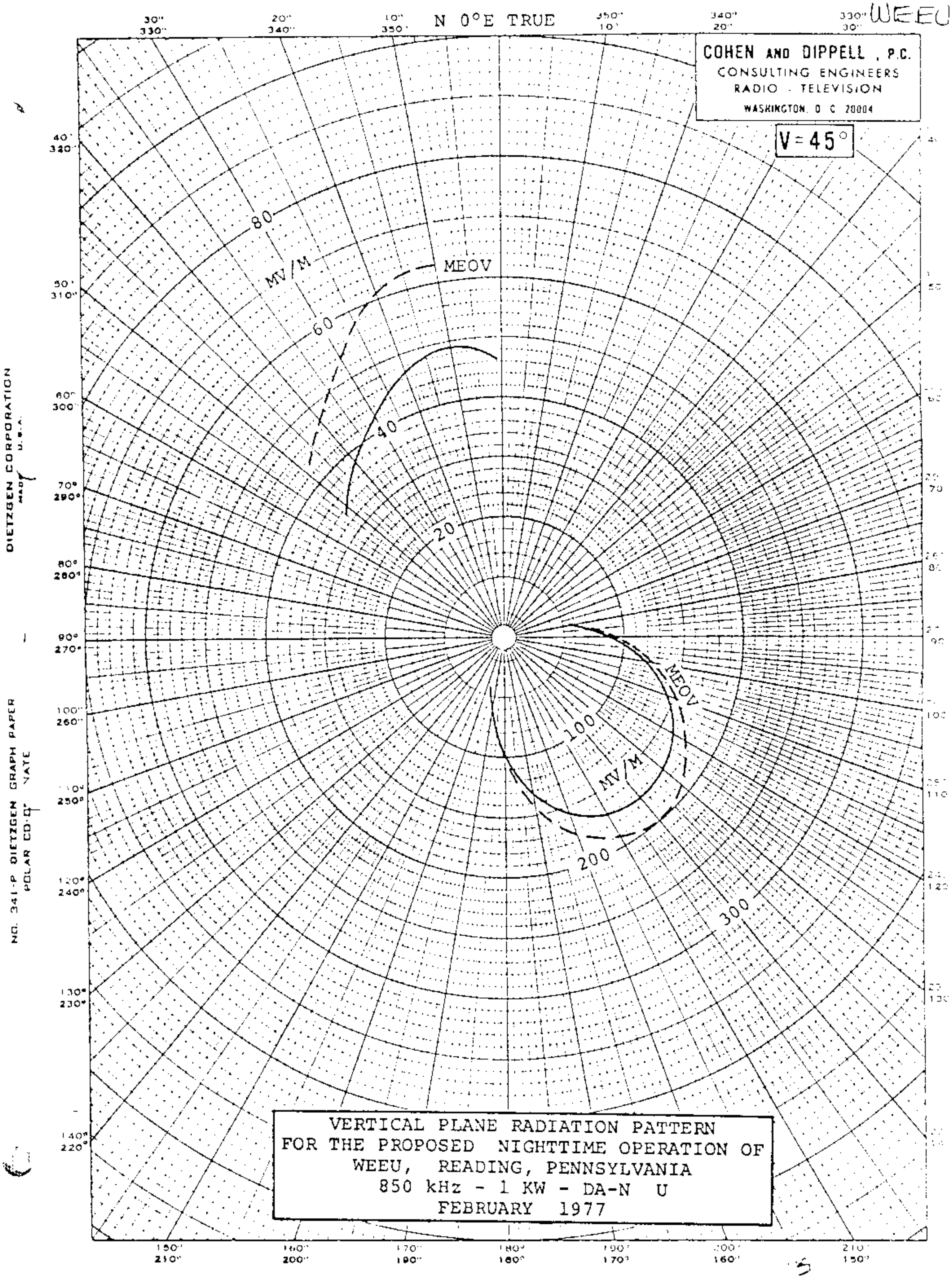


COHEN AND DIPPELL, P.C.
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D. C. 20004

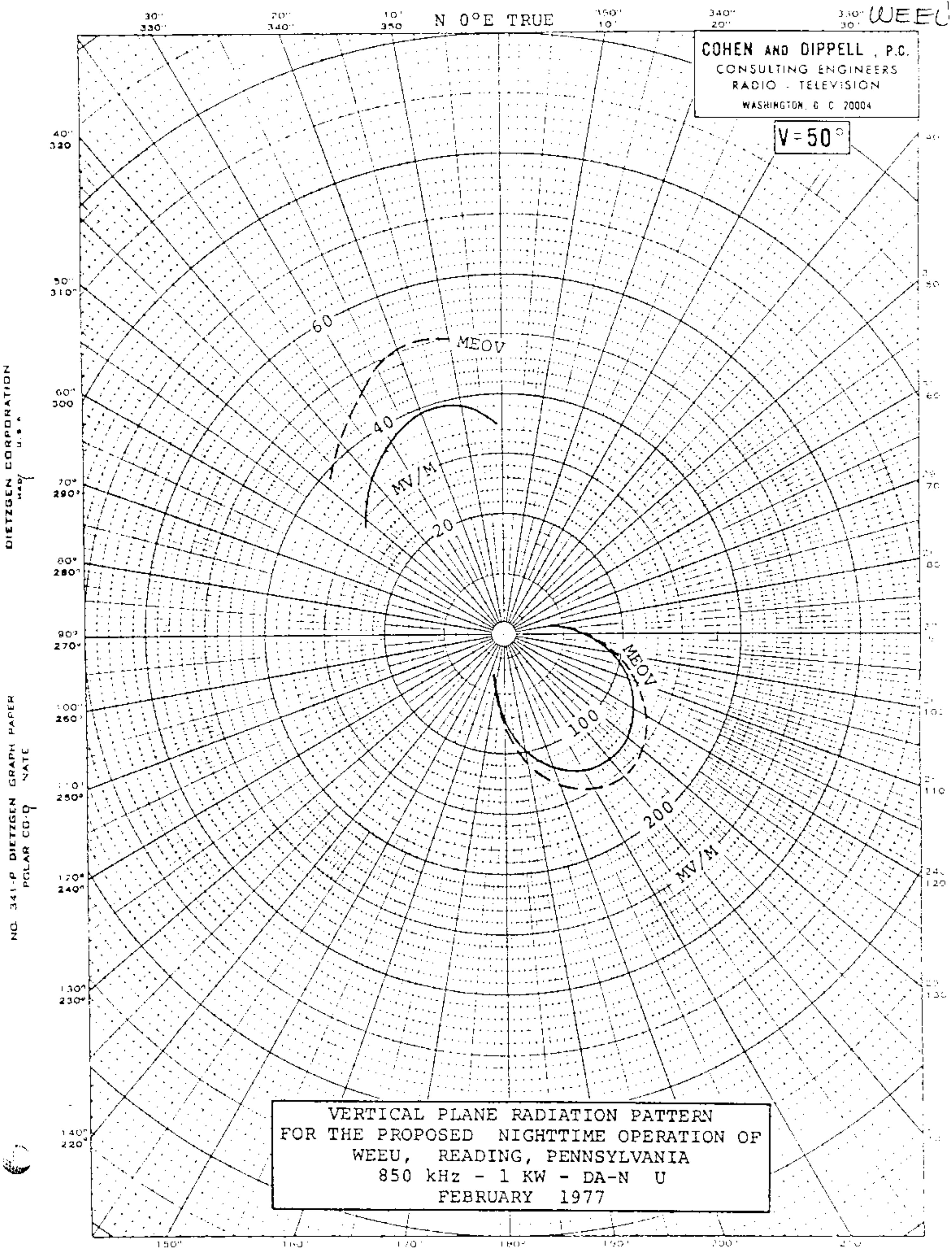
VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

NO. 341-P DIETZGEN GRAPH PAPER POLAR COORDINATE
DIETZGEN CORPORATION MADE IN U.S.A.

WEEU

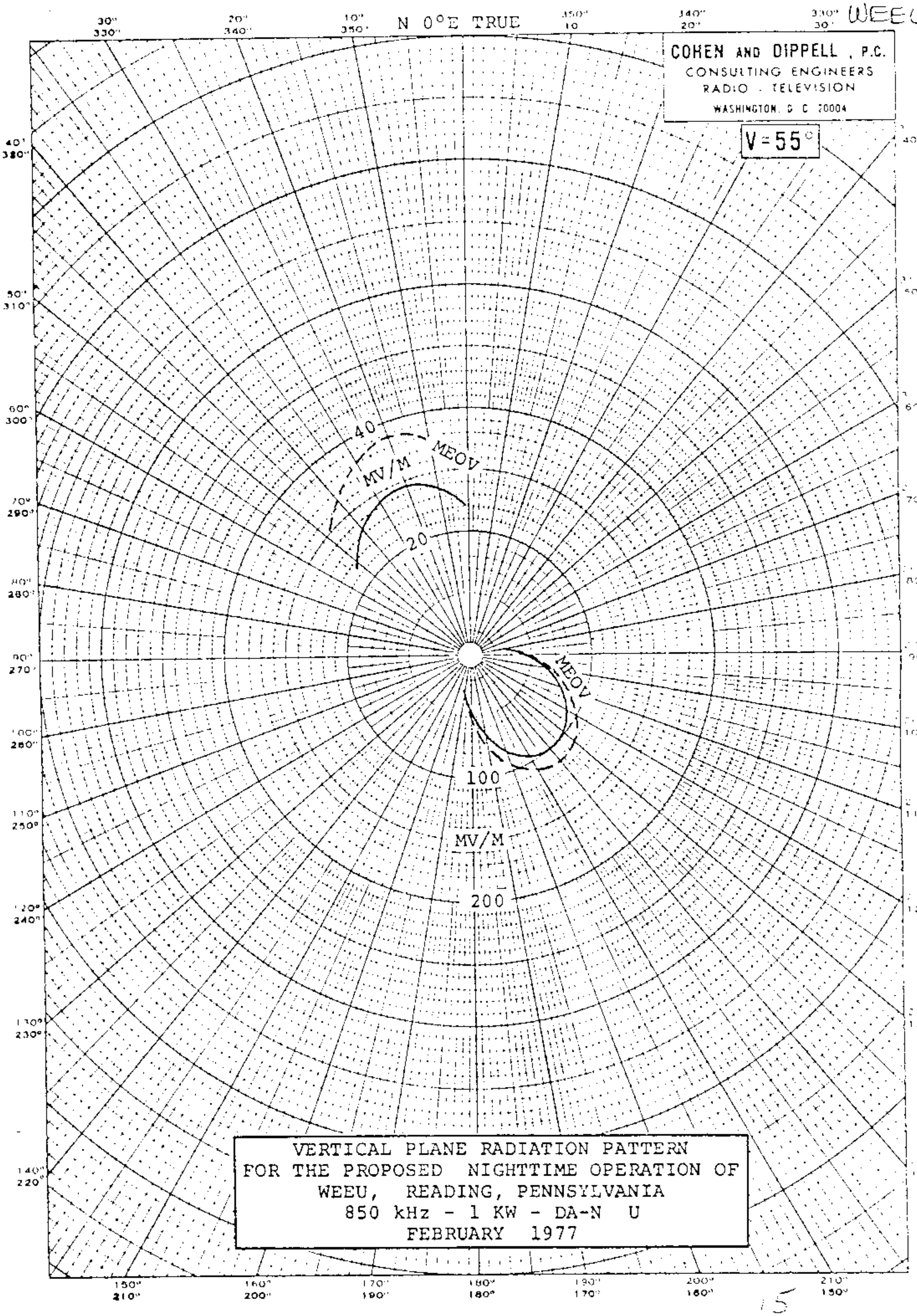


VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977



VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

WEEU

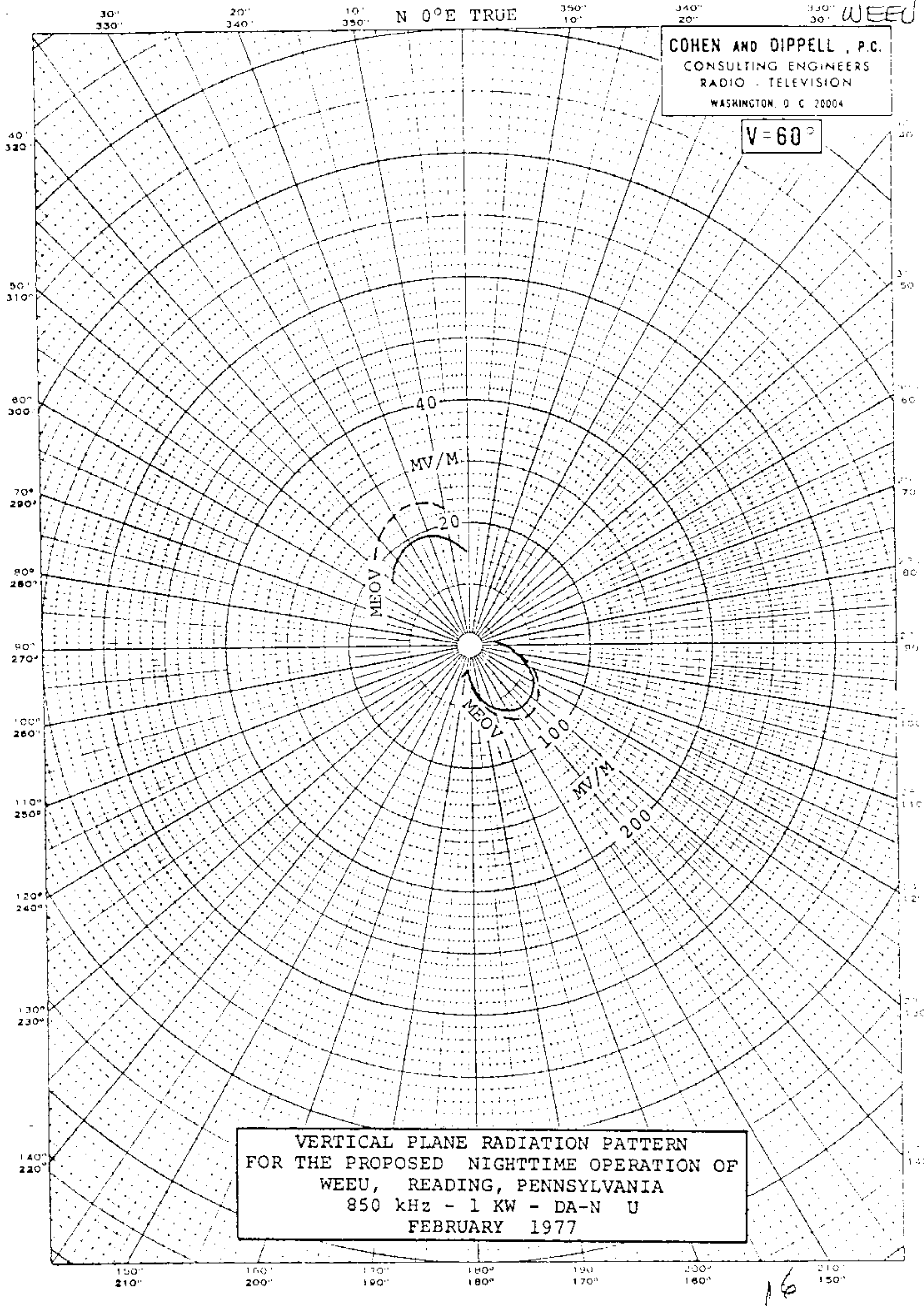


VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

WEEU

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

V = 60°



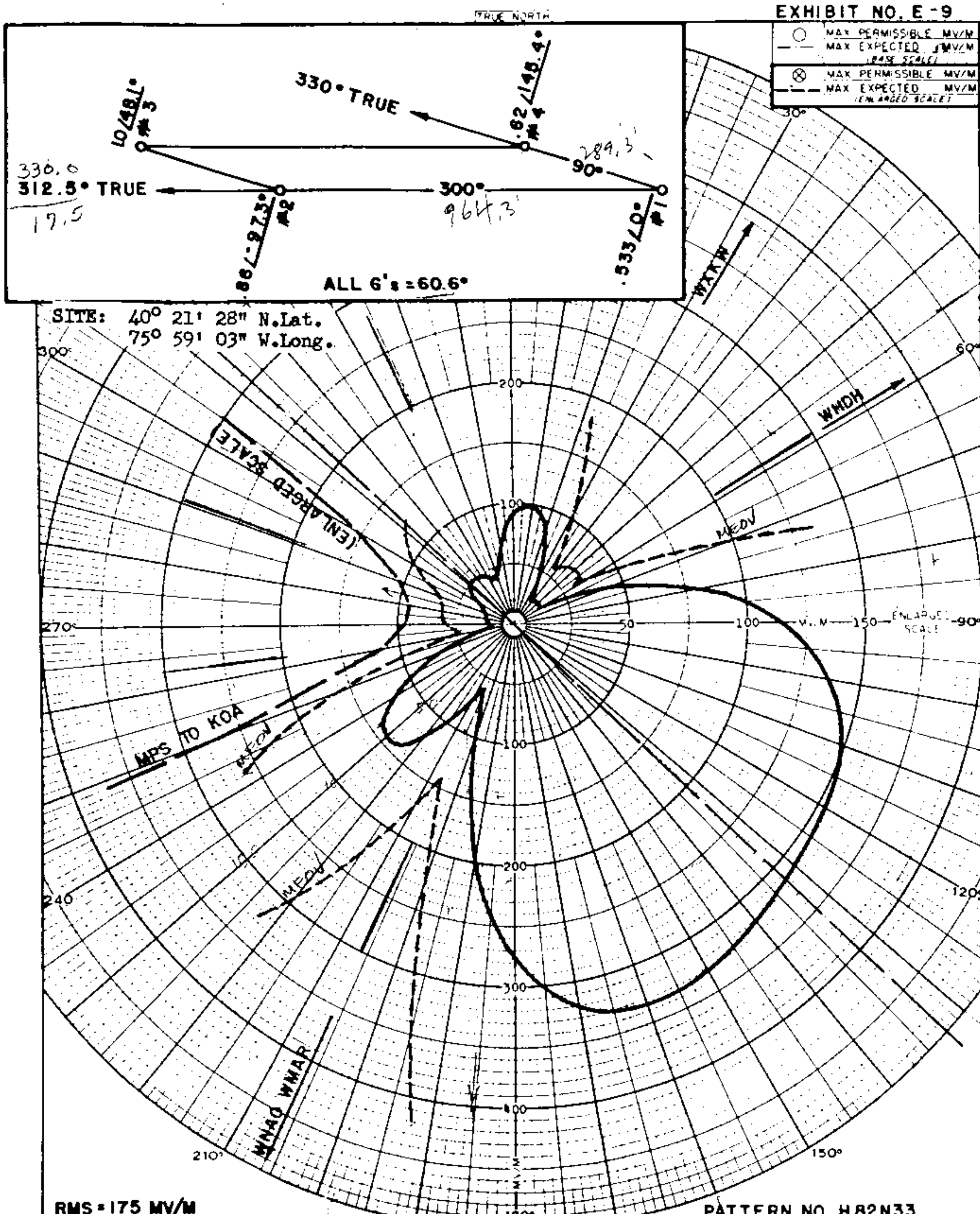
VERTICAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
WEEU, READING, PENNSYLVANIA
850 kHz - 1 KW - DA-N U
FEBRUARY 1977

16

WEEU

PROPOSED NIGHT   WEEU, READING, PA.   11/22/48G   1kw, DAN   850 kc

EXHIBIT NO. E-9



PATTERN NO. H82N33

COMMERCIAL RADIO EQUIPMENT CO.

RADIO ENGINEERING CONSULTANTS

KANSAS CITY   WASHINGTON, D.C.   HOLLYWOOD

PATTERN PROPOSED NIGHTTIME
FOR WEEU, READING, PA.
POWER 1 KW   FREQ 850 KC
DATE 10-20-48

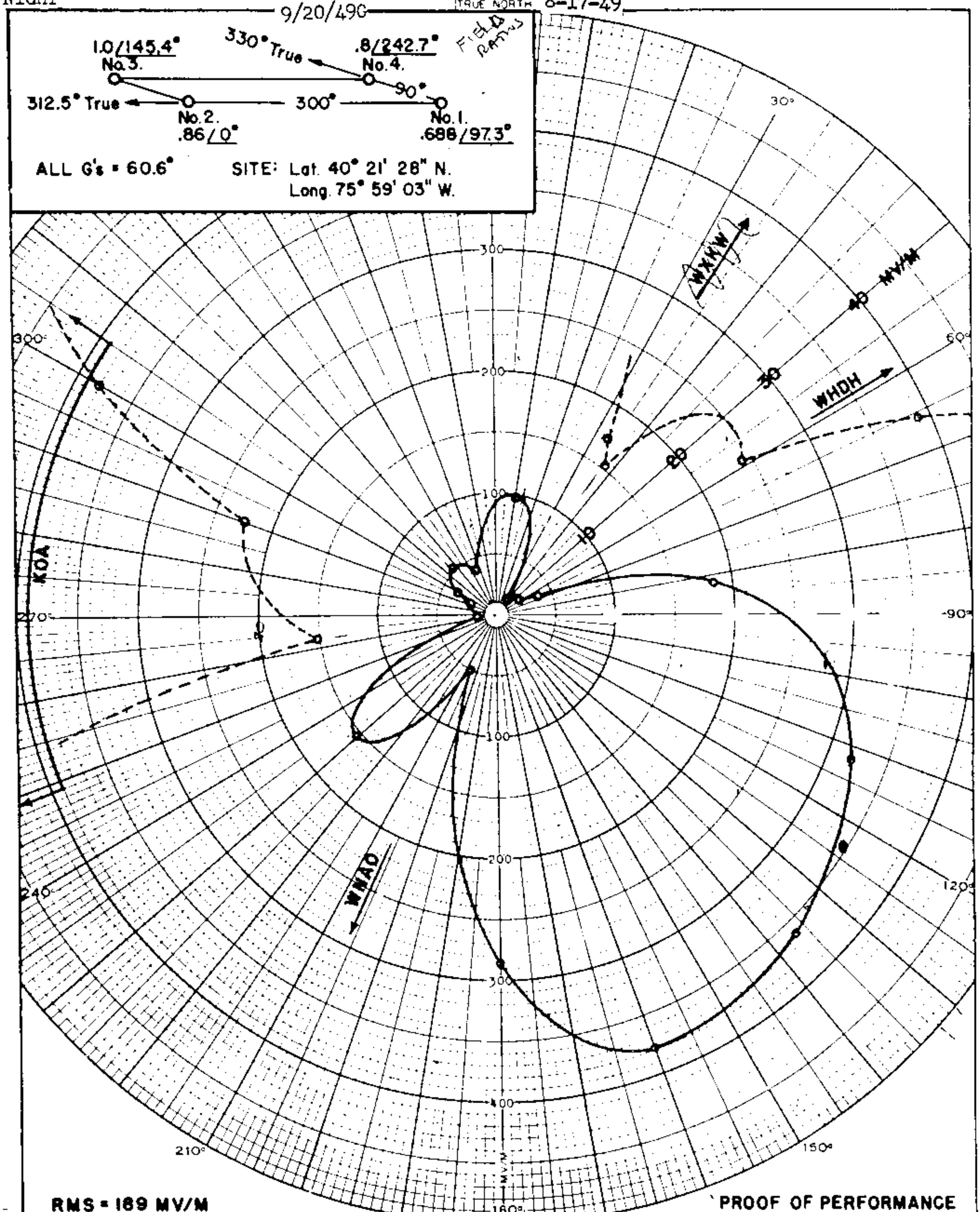
Amendment Rec'd 10-26-48   BMP 4169

$E = 185 \left(\sqrt{1.011 + \cos(146.4 + 90 \cos A \cos 0} \sqrt{1.118 + \cos(97.3 + 300 \cos(A - 162.5\right.$

WEEU

MEASURED NIGHT WEEU, READING, PA. BL-3787 1kw, DAN 850 kc

EXHIBIT VI



COMMERCIAL RADIO EQUIPMENT CO. RADIO ENGINEERING CONSULTANTS KANSAS CITY WASHINGTON, D. C.	PATTERN H82N43P DA-N
	FOR WEEU, READING, PA.
	POWER 1 KW FREQ 850 KC
	DATE 8/11/49 BY EFL

WEEU, Reading, Pa. 850 kc

WHDH
Oct 73

RADIO STATION WHDH

BOSTON, MASSACHUSETTS

TABULATION OF INVERSE-DISTANCE FIELDS

Azimuth	50-kW Daytime Pattern		50-kW Nighttime Pattern	
	Measured	MEOV	Measured	MEOV
20.0°	2450 mV/m	-	2470 mV/m	-
50.0°	2200 mV/m	-	2400 mV/m	-
80.0°	1980 mV/m	-	2120 mV/m	-
110.0°	2200 mV/m	-	2400 mV/m	-
140.0°	2450 mV/m	-	2470 mV/m	-
170.0°	1550 mV/m	-	1500 mV/m	-
191.7°	600 mV/m	-	558 mV/m	670 mV/m
208.0°	280 mV/m	400 mV/m	-	-
219.2°	350 mV/m	480 mV/m	55.6 mV/m	180 mV/m
240.0°	435 mV/m	580 mV/m	45.7 mV/m	64 mV/m
260.0°	495 mV/m	600 mV/m	47.0 mV/m	80 mV/m
280.0°	435 mV/m	580 mV/m	39.2 mV/m	65 mV/m
299.0°	350 mV/m	470 mV/m	41.3 mV/m	150 mV/m
320.0°	355 mV/m	-	355 mV/m	-
350.0°	1550 mV/m	-	1460 mV/m	-

WHDH
Oct '73

RADIO STATION WHDH
BOSTON, MASSACHUSETTS

DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM

Number and Type of Elements:	Three triangular, guyed, series excited, vertical steel radiators. East and center towers are uniform cross-section. West tower is uniform cross-section for the first 580 feet, tapered for the next 20 feet, and uniform cross-section for the next 40 feet.		
	West Tower	Center Tower	East Tower
Height above Insulators:	640 feet	600 feet	560 feet
Overall Height:	648 feet	608 feet	568 feet
Spacing and Orientation:	Spaced 386 feet (120°) between adjacent towers on a line bearing N 80° E.		
Ground System:	180 Copper wire radials equally spaced about the base of each tower and extending to 600 feet or to point of overlap. These radials are elevated 7.5 feet above the ground for the first 32 feet and extend along the surface of the ground beyond 32 feet.		

THEORETICAL SPECIFICATIONS

		West (1)	Center (2)	East (3)
Phasing:	Night:	75°	0°	-75°
	Day:	88.9°	0°	-41.1°
Field Ratio:	Night:	1.0	1.97	1.0
	Day:	1.27	1.95	1.0

OPERATING SPECIFICATIONS

		West (1)	Center (2)	East (3)
*Phase Indication:	Night:	73.2°	0°	-85.5°
	Day:	88.0°	0°	-53.2°
Antenna Base Current Ratio:	Night:	.347	1.00	.817
	Day:	.550	1.00	.704
*Loop Current Ratio:	Night:	.504	1.00	.482
	Day:	.70	1.00	.47

*As indicated by Nems-Clarke 112 Phase Monitor with DANA Digital Voltmeter

701231

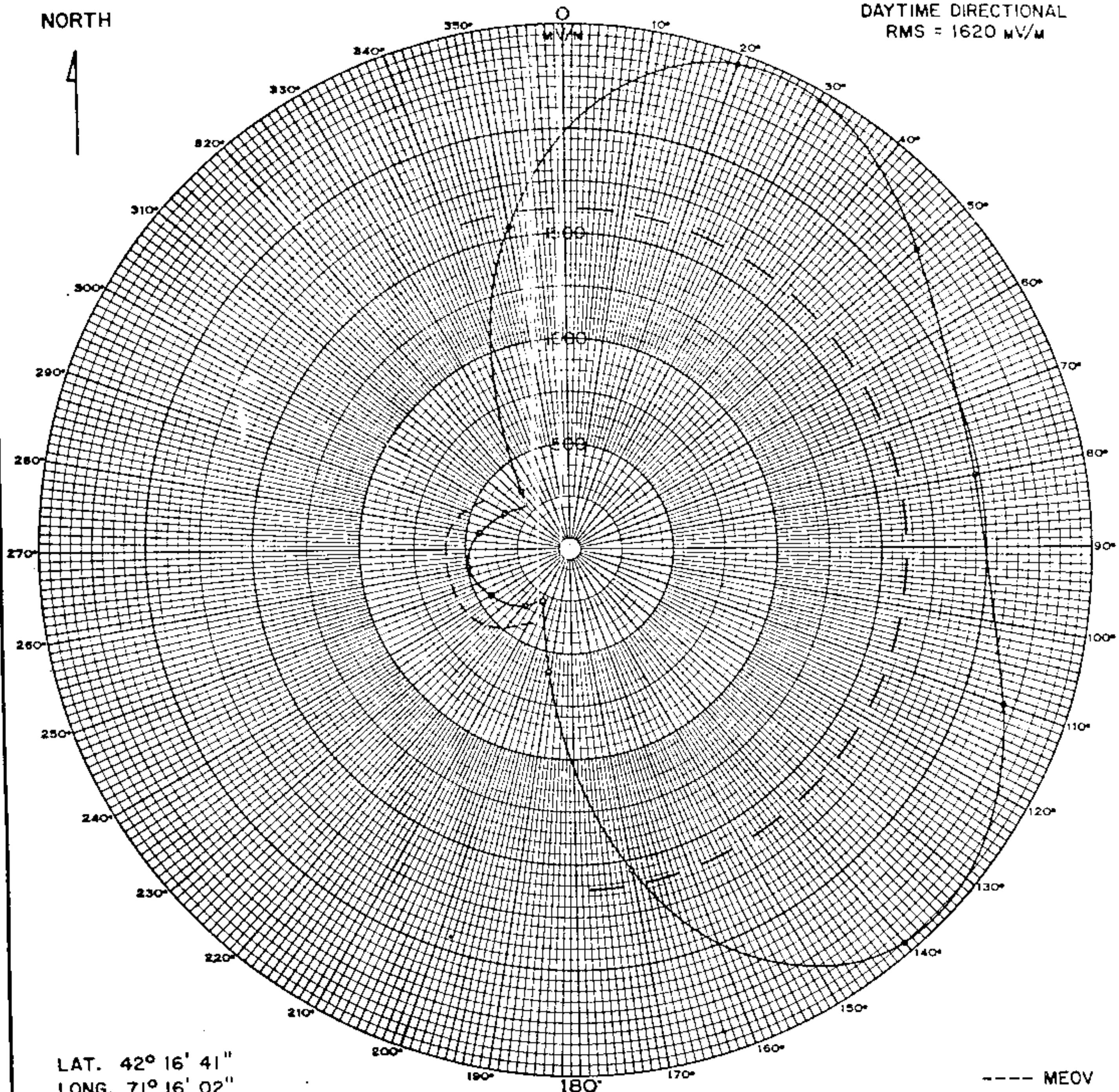
Figure 1

BS-760(1) WHDH

OCT '73

NORTH

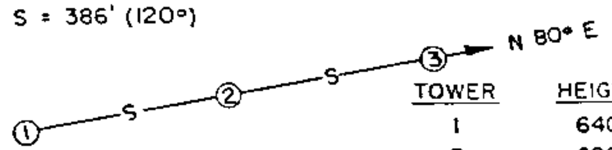
DAYTIME DIRECTIONAL
RMS = 1620 MV/M



LAT. 42° 16' 41"
LONG. 71° 16' 02"

---- MEOV

S = 386' (120°)



TOWER	HEIGHT
1	640'
2	600'
3	560'

ANTENNA PARAMETERS

TOWER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	1.270	88.9°	0.700	88.0°
2	1.950	0.0°	1.000	0.0°
3	1.000	-41.1°	0.470	-53.2°

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

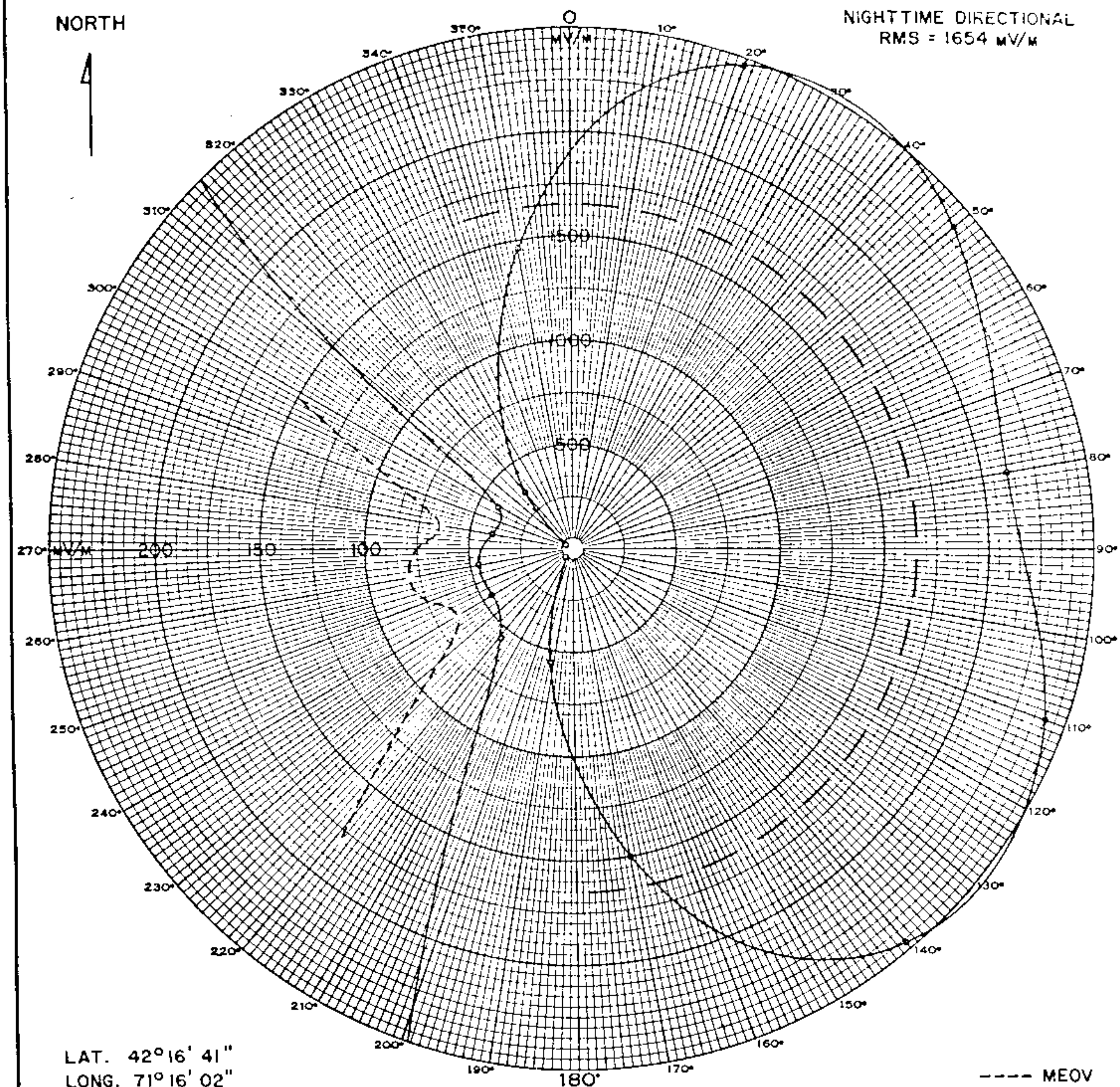
RADIO STATION WHDH
850 kHz 50 kW DA-2
701231 FIGURE 2A

BS-760 WHDH

Oct '73

NORTH

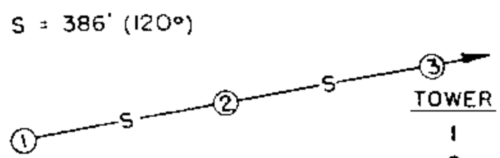
NIGHTTIME DIRECTIONAL
RMS = 1654 MV/M



LAT. 42° 16' 41"
LONG. 71° 16' 02"

---- MEOV

S = 386' (120°)



TOWER	HEIGHT
1	640'
2	600'
3	560'

ANTENNA PARAMETERS

TOWER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	1.000	75.0°	0.504	73.2°
2	1.970	0.0°	1.000	0.0°
3	1.000	-75.0°	0.482	-85.5°

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

RADIO STATION WHDH
850 kHz 50 kW DA-2
701231 FIGURE 2B

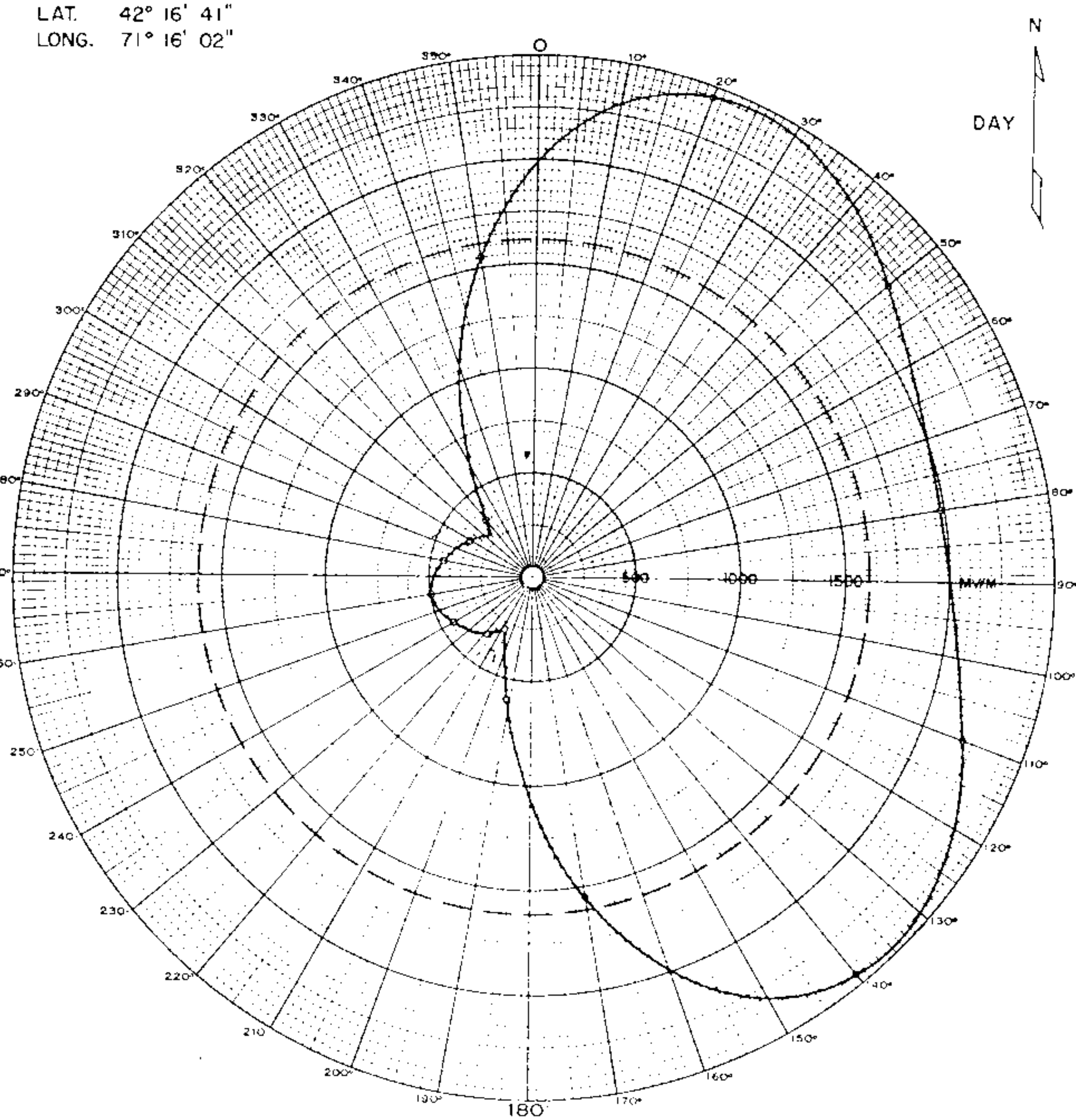
WHDH

Measured Day (6-28-66ct)

Station WHDH
Boston, Massachusetts

50kw, DA-2, U
850 kc

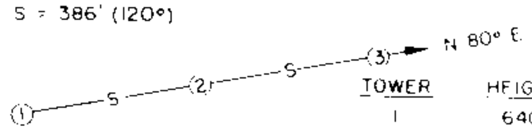
LAT. 42° 16' 41"
LONG. 71° 16' 02"



RMS = 1620 MV/M

MEOV

S = 386' (120°)



TOWER	HEIGHT
1	640'
2	600'
3	560'

DAYTIME ANTENNA PARAMETERS

	THEORETICAL			MEASURED		
TOWER	1	2	3	1	2	3
BASE RATIO	-	-	-	546	100	721
LOOP RATIO	127	195	100	689	100	491
LOOP PHASE	88.9°	0.0°	-41.1°	90.0°	0.0°	-52.0°

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

RADIO STATION WHDH
850 KC 50 KW DA-2
610320 FIGURE 3A

FCC File No. BR-760
Accepted Granted 5-11-61

Station WHDH
Boston, Massachusetts

850 kc

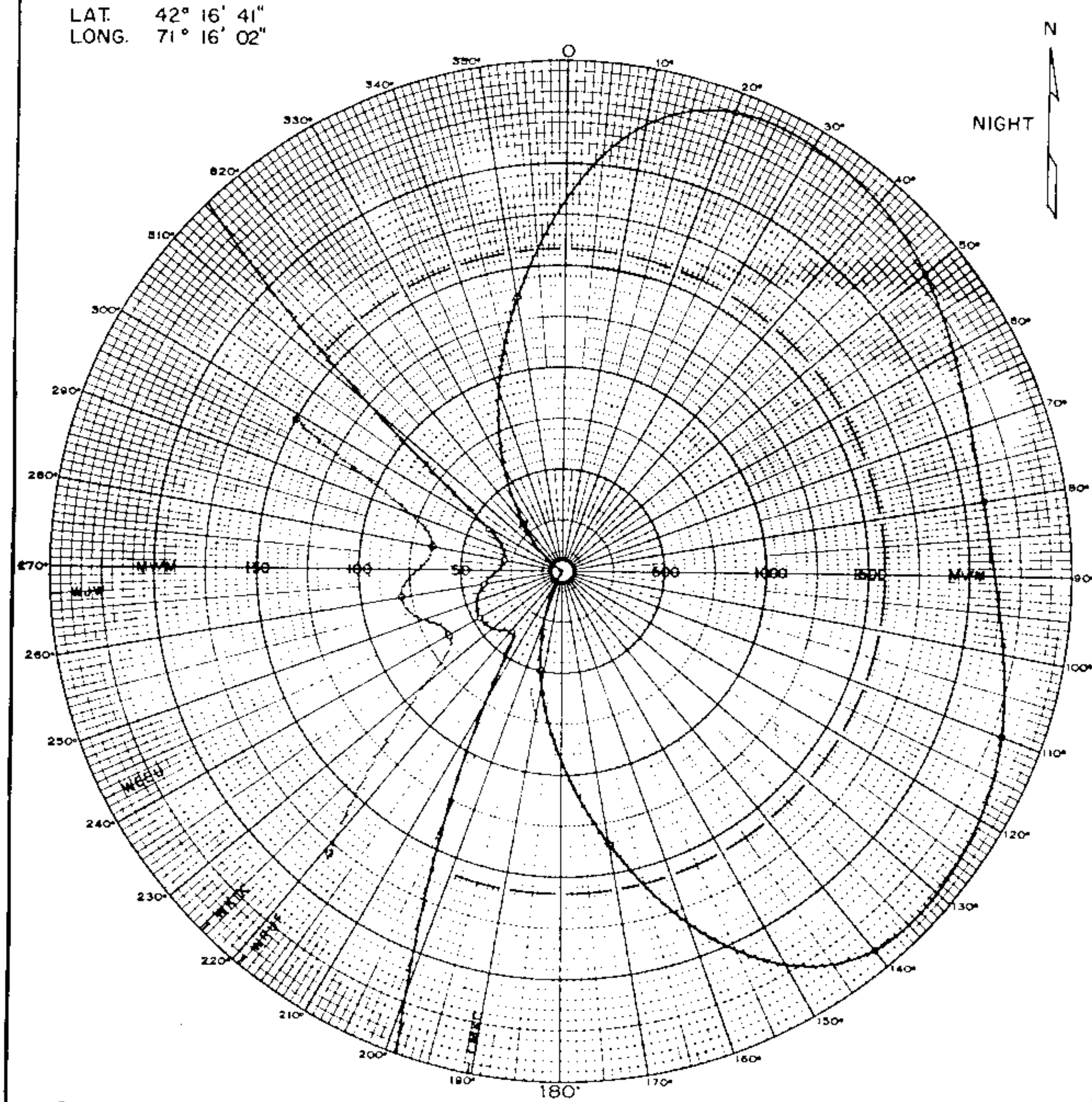
WHDH

Measured Night
(6-28-66ct)

Station WHDH
Boston, Massachusetts

50kw,DA-2,U
850 kc

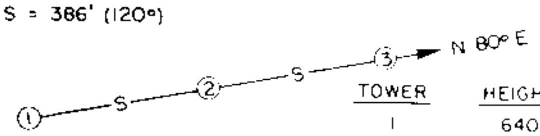
LAT. 42° 16' 41"
LONG. 71° 16' 02"



RMS = 1580 MV/M

······ MEOV

S = 386' (120°)



TOWER	HEIGHT
1	640'
2	600'
3	560'

NIGHTTIME ANTENNA PARAMETERS

	THEORETICAL			MEASURED		
TOWER	1	2	3	1	2	3
BASE RATIO	-	-	-	.363	1.00	.828
LOOP RATIO	1.00	1.97	1.00	.509	1.00	.513
LOOP PHASE	75°	0.0°	-75°	77.5°	0.0°	-85.5°

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

RADIO STATION WHDH
850 KC 50 KW DA-2
610320 FIGURE 3B

FCC File No.BR-760
Accepted Granted 5-11-61

Station WHDH
Boston, Massachusetts

850 kc

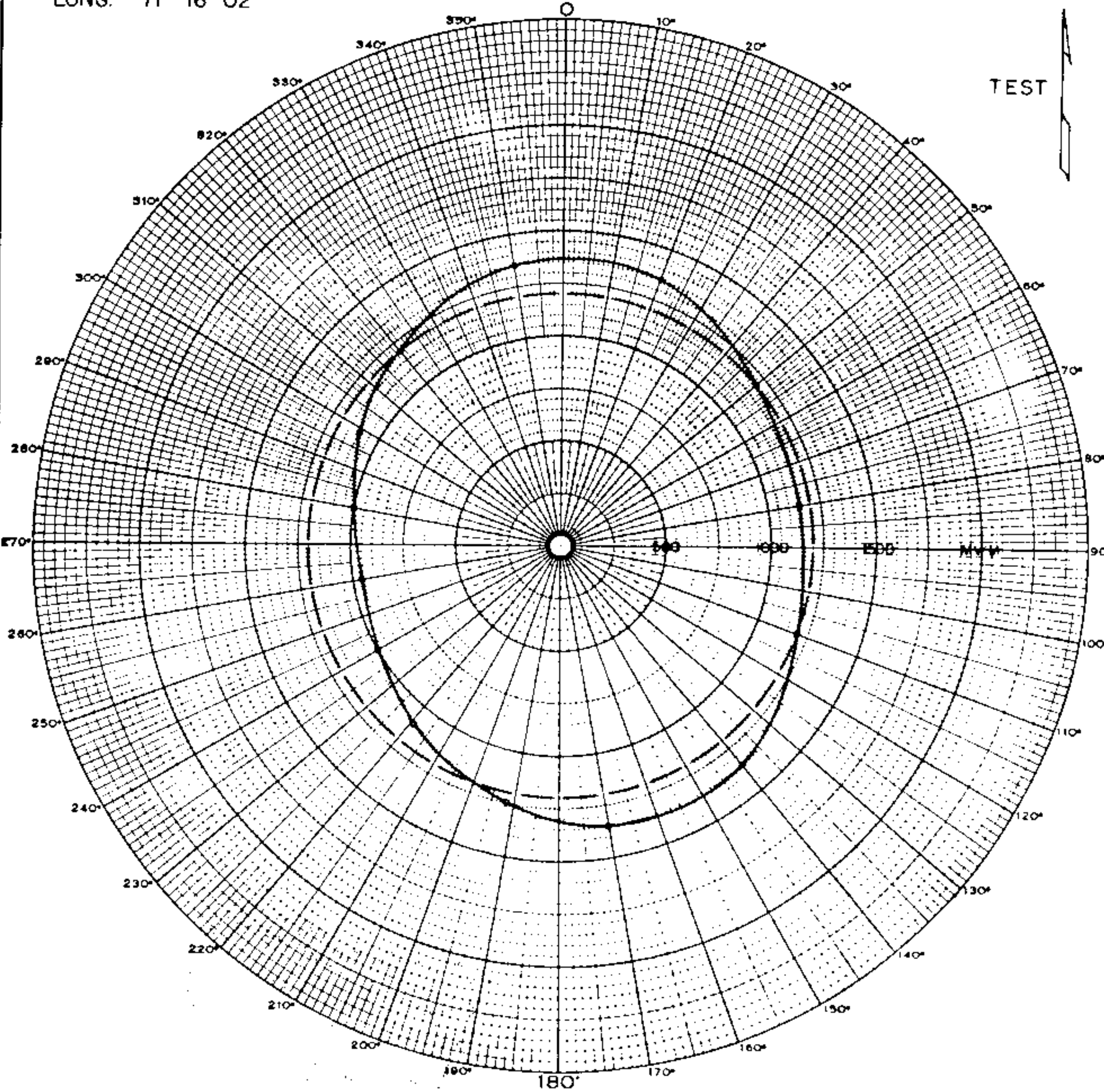
WHDH

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

Station WHDH
Boston, Massachusetts

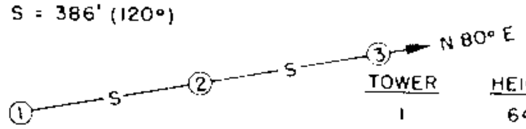
50kw,DA-2,U
850 kc

LAT. 42° 16' 41"
LONG. 71° 16' 02"



RMS = 1200 MV/M

S = 386' (120°)



TOWER	HEIGHT
1	640'
2	600'
3	560'

MEASURED 25 KW TEST PATTERN

TOWER	OPERATION
1	GROUNDED
2	SERIES FED
3	GROUNDED

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

RADIO STATION WHDH
850 KC 50 KW DA-2
610320 FIGURE 3C

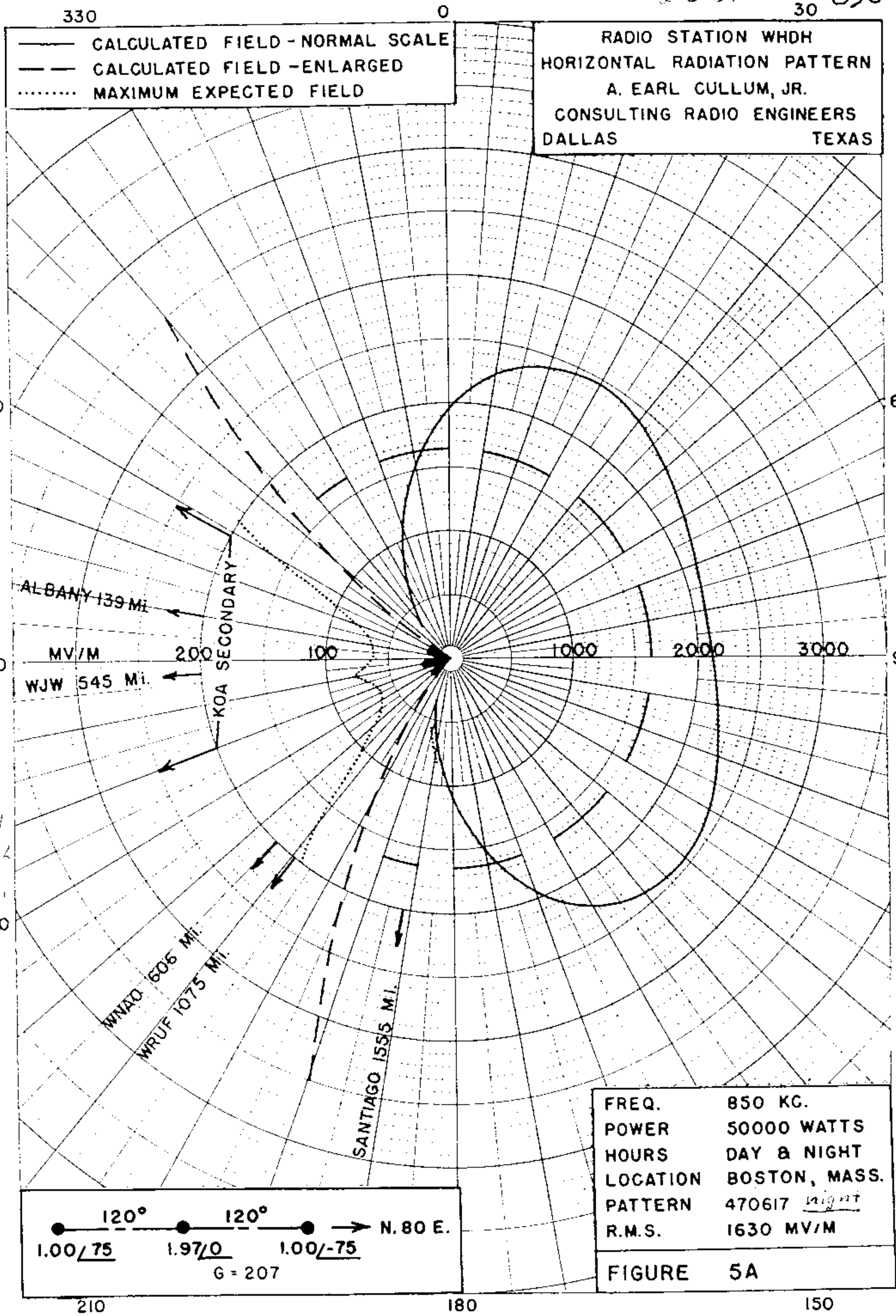
FCC File No.BR-760
Accepted Granted 5-11-61

Station WHDH
Boston, Massachusetts

850 kc

KANODE ADVISES THIS IS THE OFFICIAL NOTIFIED PATTERN.
W.L.D.

WHDH
850

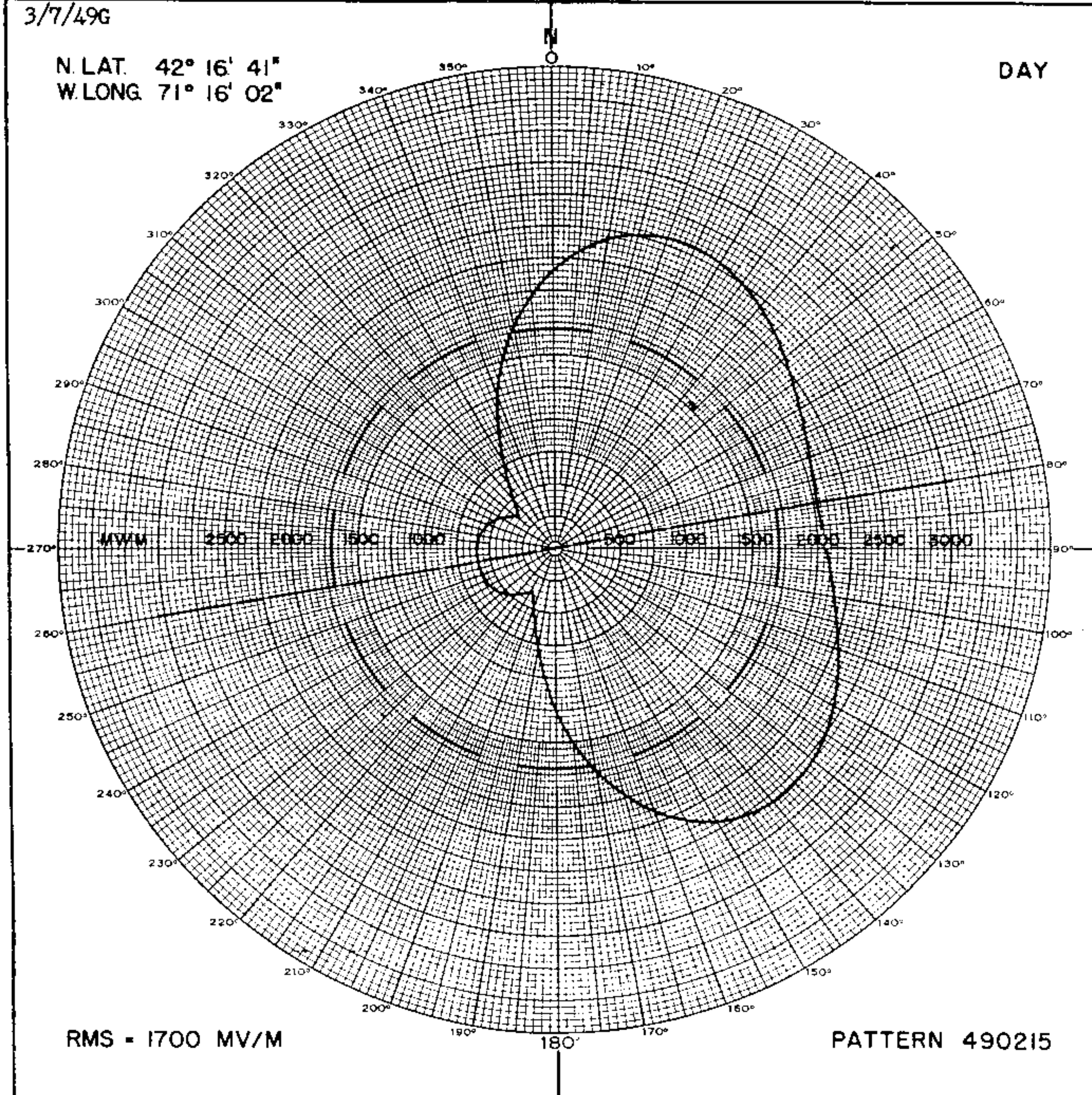


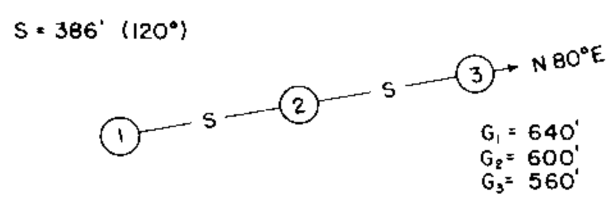
42-16-41
71-16-02

WHDH

PROPOSED DAY WHDH, BOSTON, MASS. 3-3-49 50kw,DA2 850 kc

3/7/49G





RADIO STATION WHDH

BOSTON, MASSACHUSETTS

850 KC 50,000 WATTS DA-D

TOWER	1	2	3
FIELD	1.27	1.95	1.00
PHASE	88.9°	0°	-41.1°

A. EARL CULLUM, JR.

CONSULTING RADIO ENGINEERS

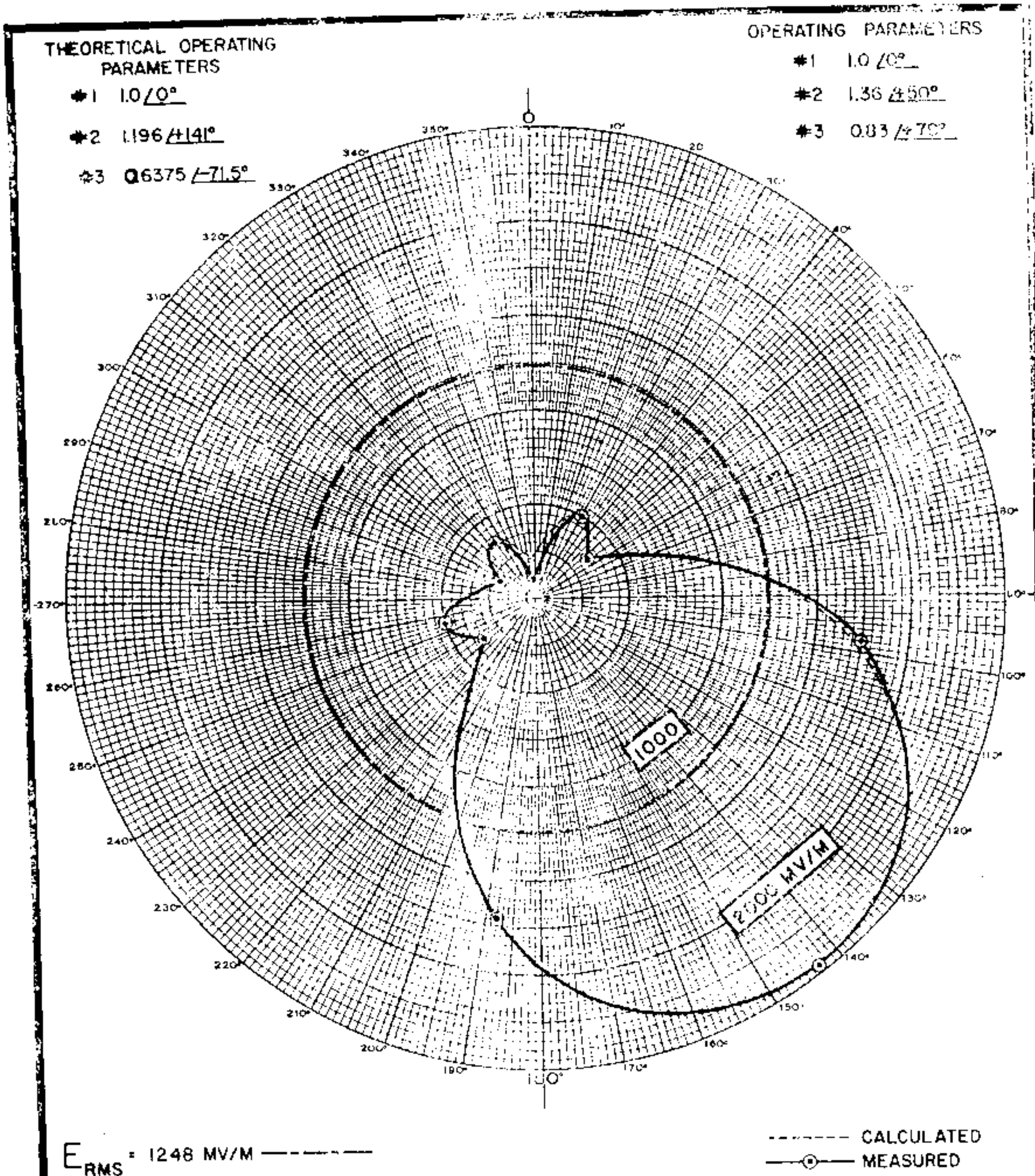
490215 FIGURE 5A

WIVK

Measured Day
(2-28-67ct)

Station WIVK
Knoxville, Tennessee

50kw, DA-D, D
850 kc



Submitted
Three Line
2-23-67

LATITUDE: 36° 04' 12" LONGITUDE: 83° 58' 19"	ANTENNA PARAMETERS	FIGURE 23 MEASURED DIRECTIONAL PATTERN RADIO STATION WIVK KNOXVILLE, TENNESSEE
JOHN H. MULLANEY AND ASSOCIATES A DIVISION OF MULTRONICS INC	N-323°-E #3 S #2 S #1 S= 90°= 289.5' G= 80° = 260'	850 KHZ 50 KW, DA-D

FCC File No. BL-11545
Accepted 2-10-67

Station WIVK
Knoxville, Tennessee

850 kc

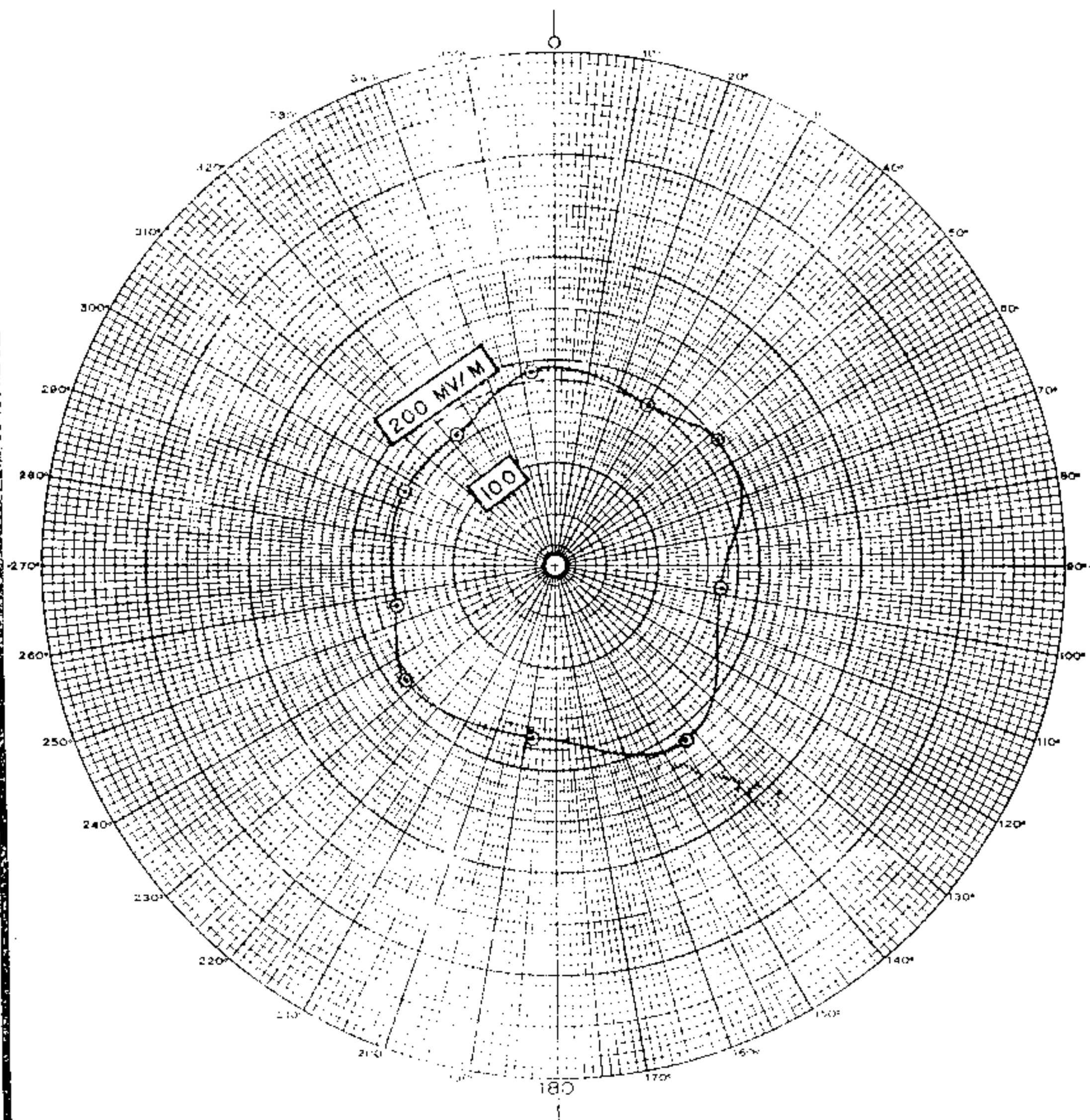
WIVK

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

Station WIVK
Knoxville, Tennessee

50kw,DA-D,D
850 kc

Granted License
-23-67



E_{RMS} = 180 MV/M

LATITUDE 36° 04' 12" LONGITUDE 83° 58' 19"	ANTENNA PARAMETERS	FIGURE 22 MEASURED NONDIRECTIONAL PATTERN RADIO STATION WIVK KNOXVILLE, TENNESSEE
JOHN H. MULLANEY AND ASSOCIATES A DIVISION OF MULTRONICS INC	TOWER #1	850 KHZ 50 KW, DA-D,D

FCC File No.BL-11545
Accepted 2-10-67

Station WIVK
Knoxville, Tennessee

850 kc

WIVK

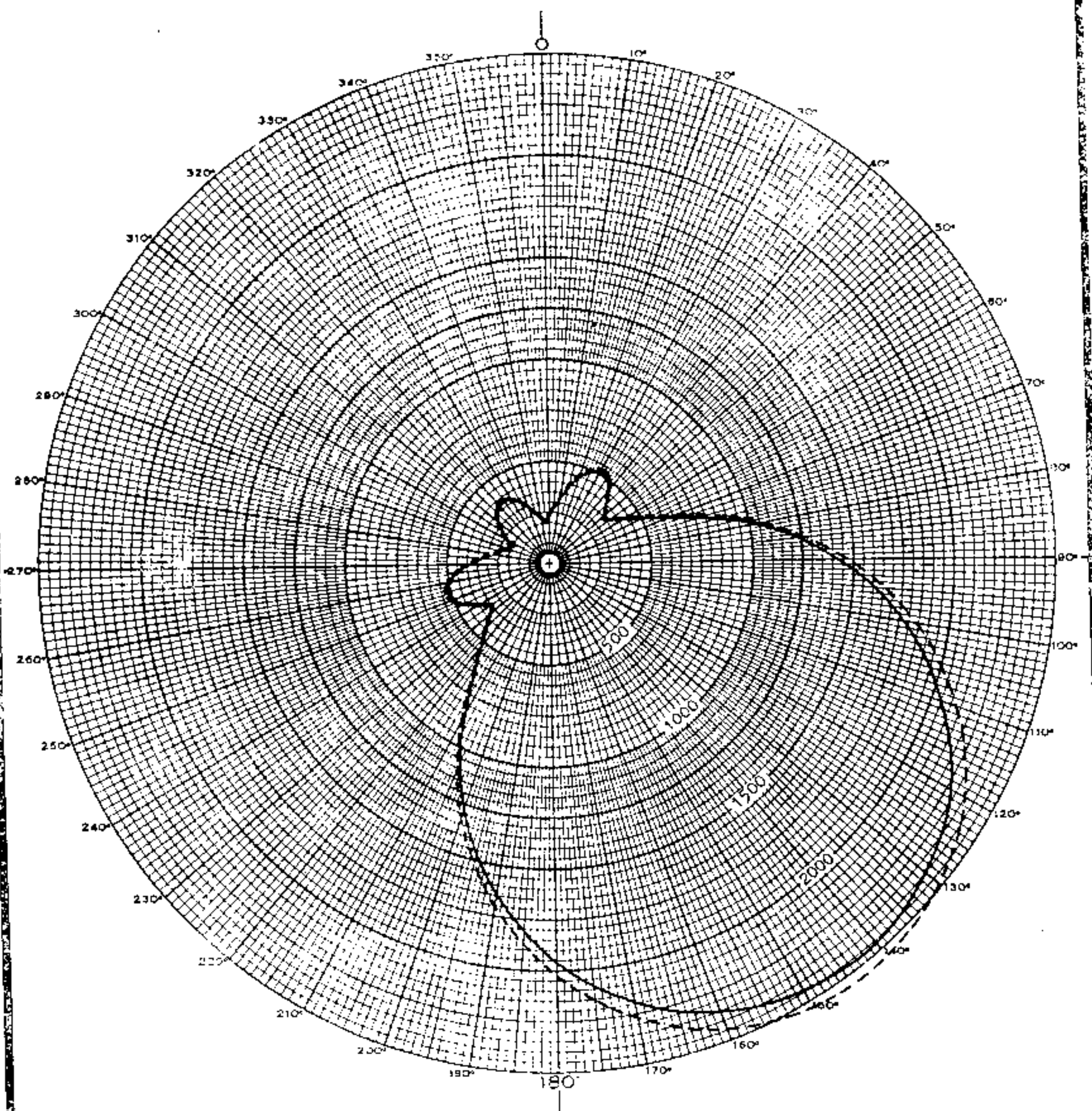
Proposed Day
(2-28-67ct)

Station WIVK
Knoxville, Tennessee

50kw,DA-D,D
850 kc

Amendment, R17 12-16-66
BL-11,545

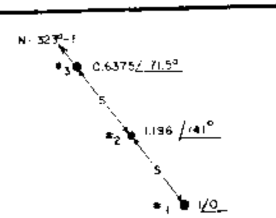
Corrected License 2-23-67



E_{RMS} = 1251 MV/M (BY ADJUSTMENT)

CALCULATED PATTERN

MEOV

LATITUDE: 36° 04' 12" LONGITUDE: 83° 58' 19"	ANTENNA PARAMETERS	FIGURE 5 PROPOSED PATTERN RADIO STATION WIVK KNOXVILLE, TENNESSEE
JOHN H. MULLANEY AND ASSOCIATES A DIVISION OF MULTRONICS, INC	 S: 90°/289.5' G= 80°/260'	850 KC 50 KW, DA-D

FCC File No. BL-11545
Filed 12-16-66 Corrected

Station WIVK
Knoxville, Tennessee

850 kc

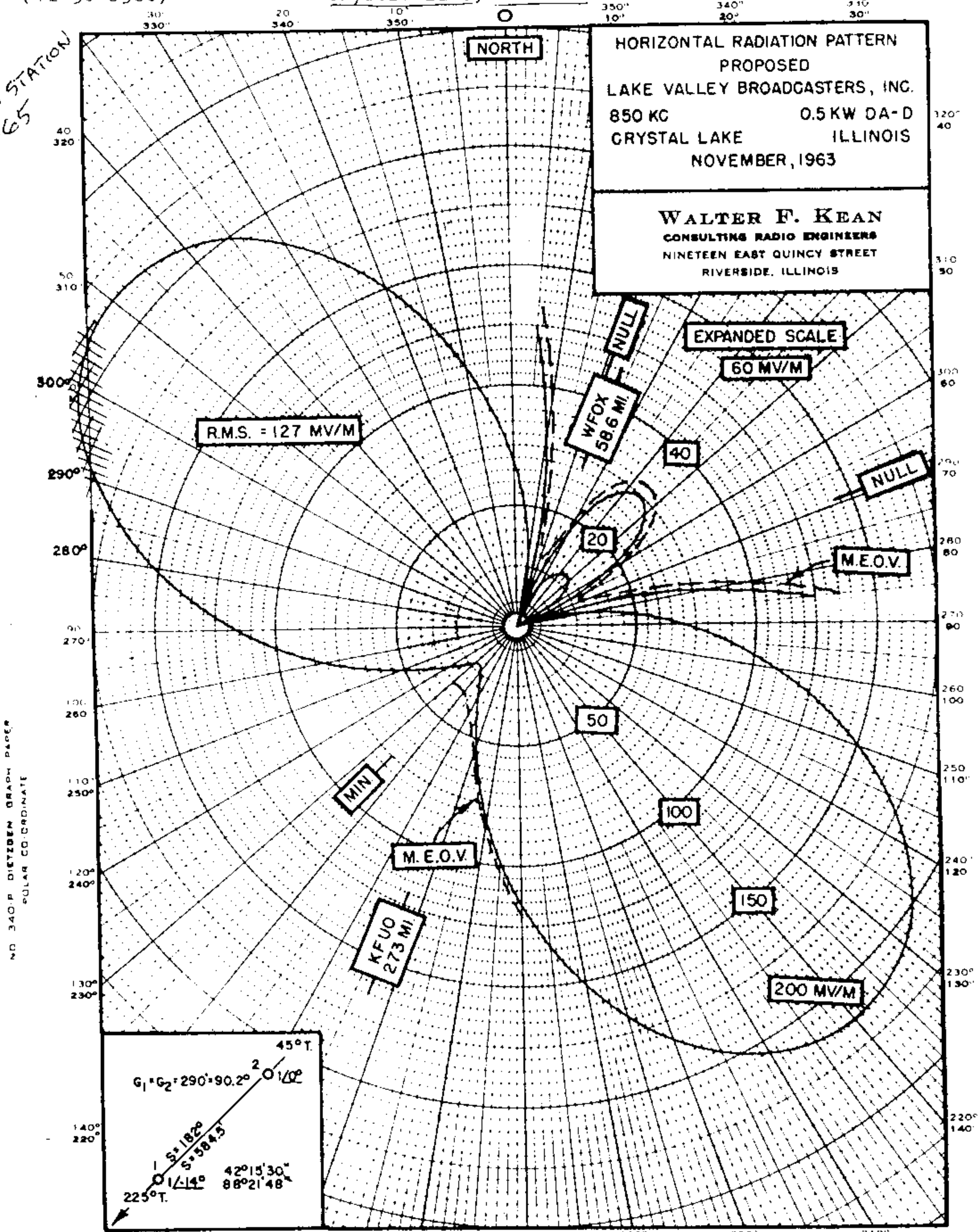
WCLR
WIVS

Proposed Day
(12-30-63ct)

New; Lake-Valley Broadcasters, Inc.
Crystal Lake, Illinois

500w,DA-D,D
850 kc

PA NEW STATION
3-31-65



FCC File No.BP-15509 New; Lake-Valley Broadcasters, Inc.
Accepted 12-2-63 Amended Crystal Lake, Illinois 850 kc

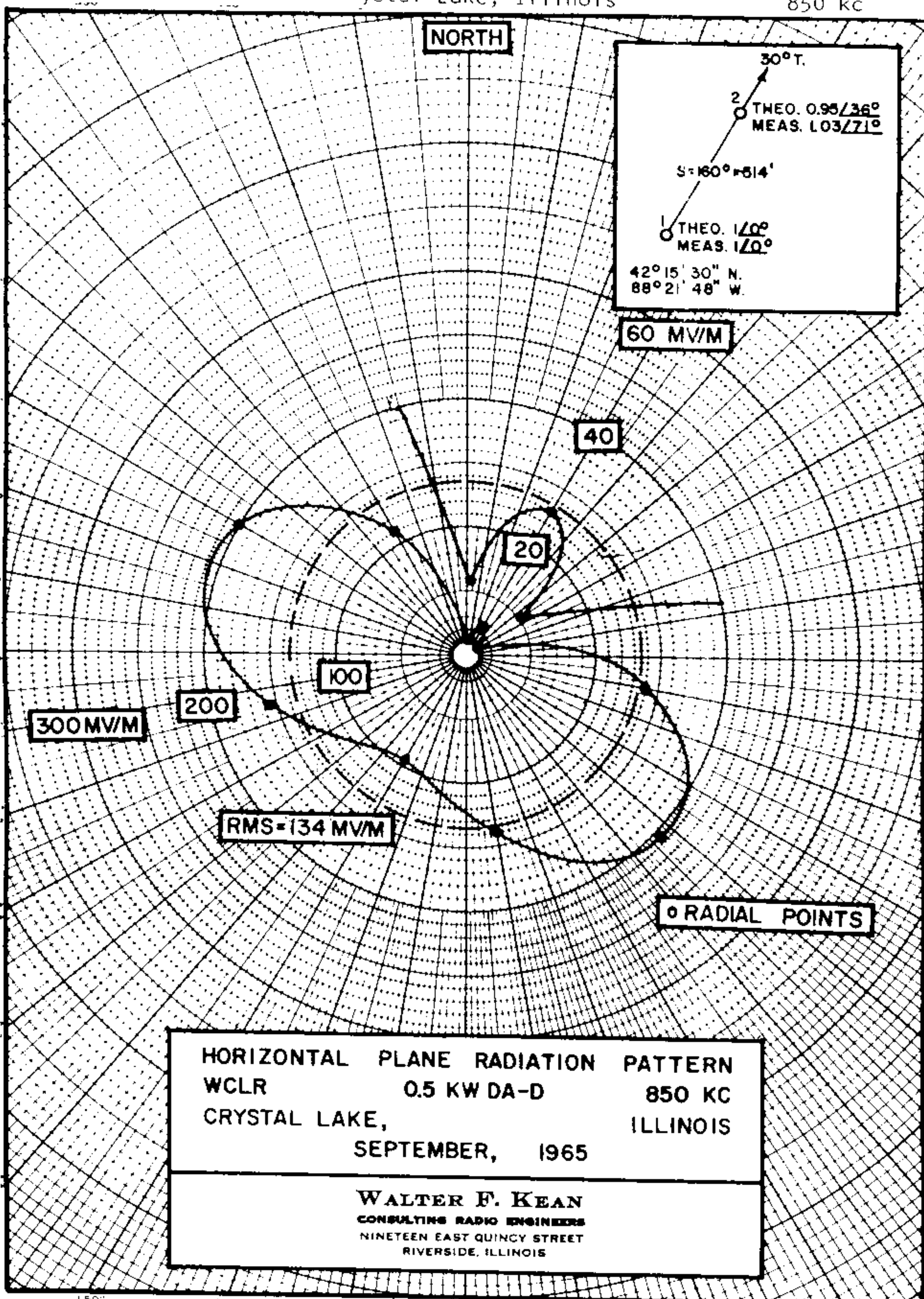
INFORMATION ONLY

WCLR WIVS

Measured Day
(10-26-65ct)

Station WCLR
Crystal Lake, Illinois

500w, DA-D, D
850 kc



FCC File No. BL-11082
Accepted 10-12-65

Station WCLR
Crystal Lake, Illinois

850 kc

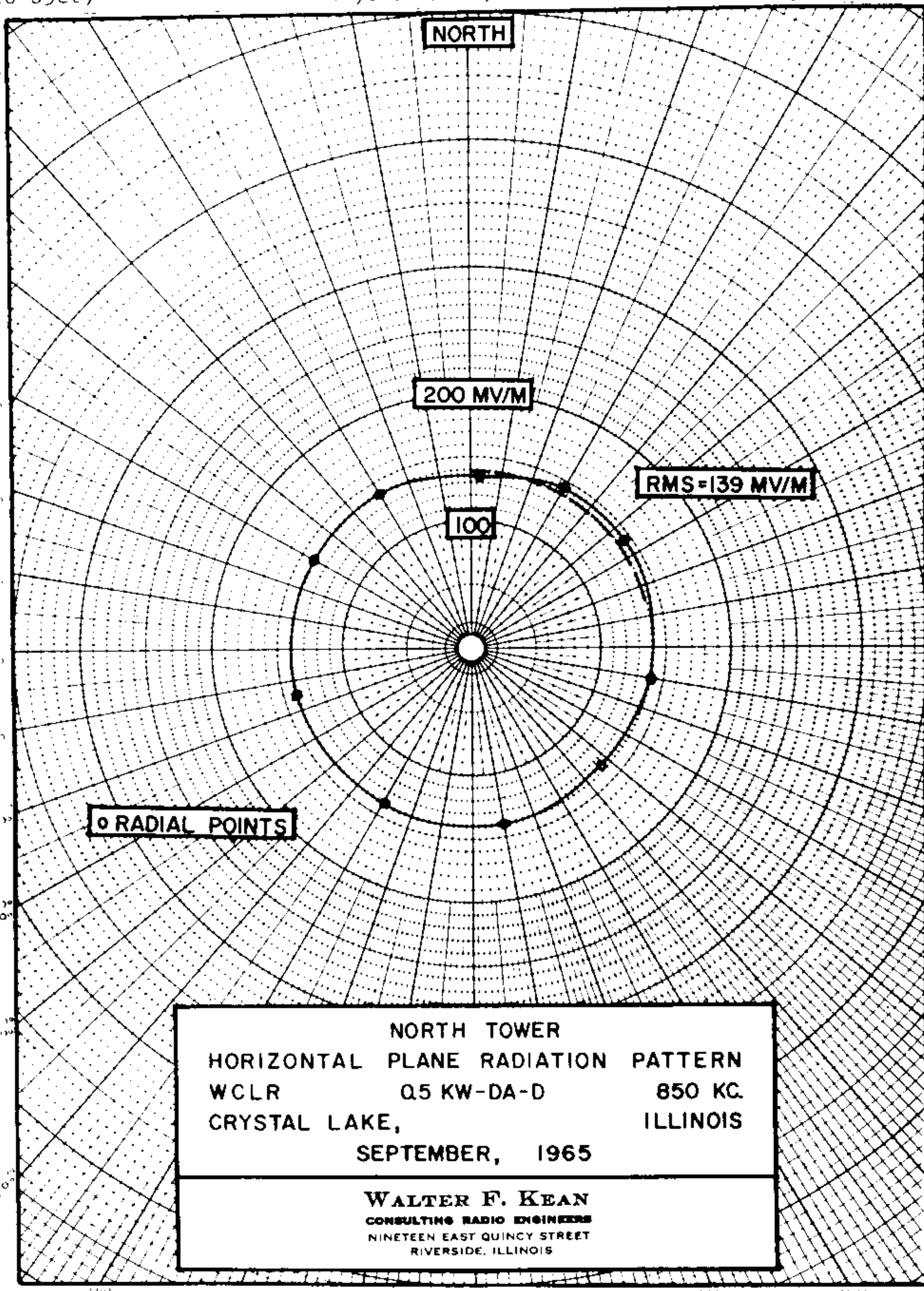
WIVS

Measured Non-DA
(10-26-65ct)

Station WCLR
Crystal Lake, Illinois

500w,DA-D,D
850 kc

Lic.
12-20-65



FCC File No. BL-11082
Accepted 10-12-65

Station WCLR
Crystal Lake, Illinois

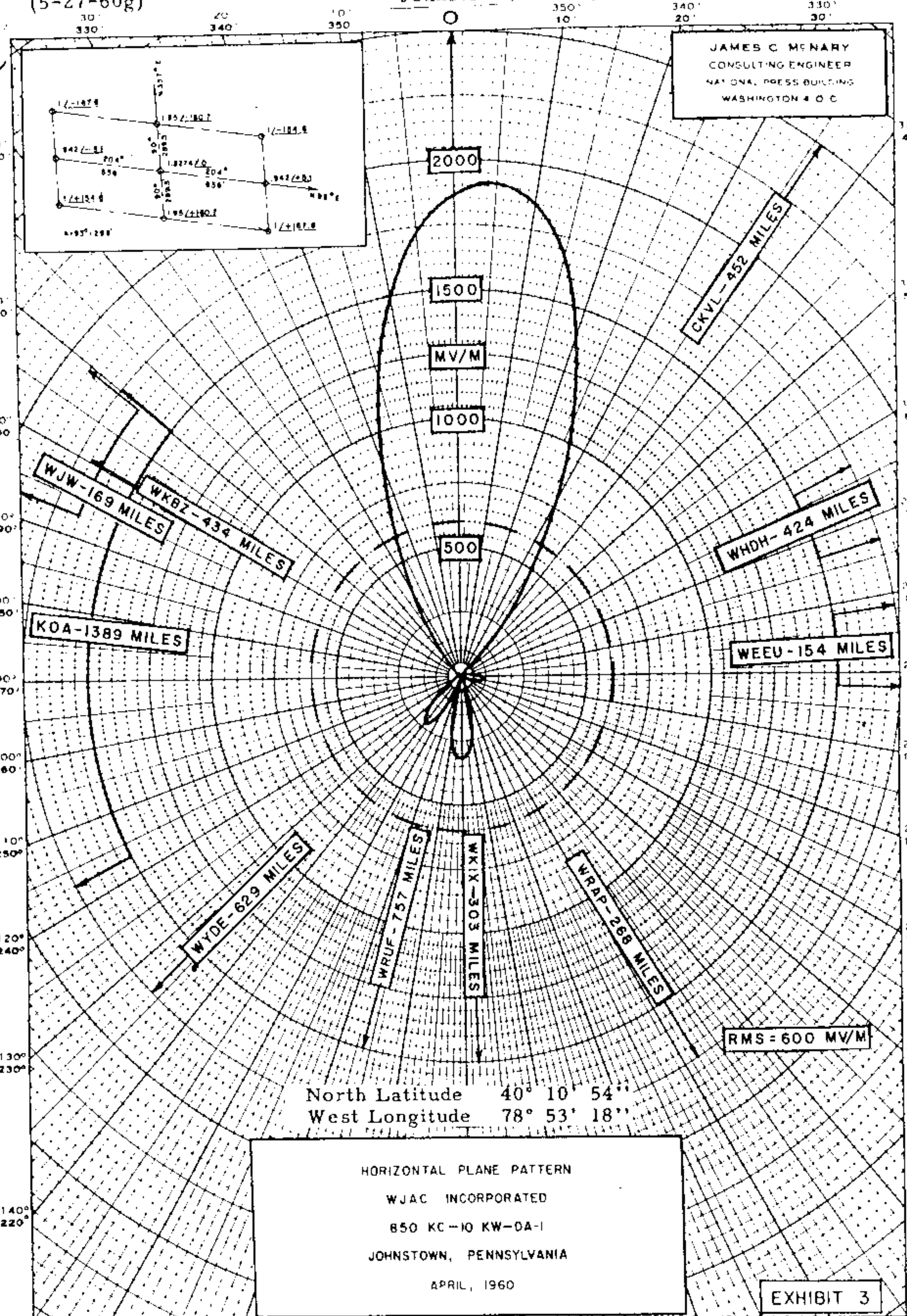
850 kc

WJAC

7-62- granted CP w/ chg in freq. incr. in power, and DA-1.

PROPOSED DAY & NIGHT
(5-27-60g)

Station WJAC — 10kw, DA-1,U
Johnstown, Pennsylvania — 850 KC



FCC File No. BP-11510
Accepted 5-20-60 (Amended)

WJAC
Johnstown, Pennsylvania — 850 KC

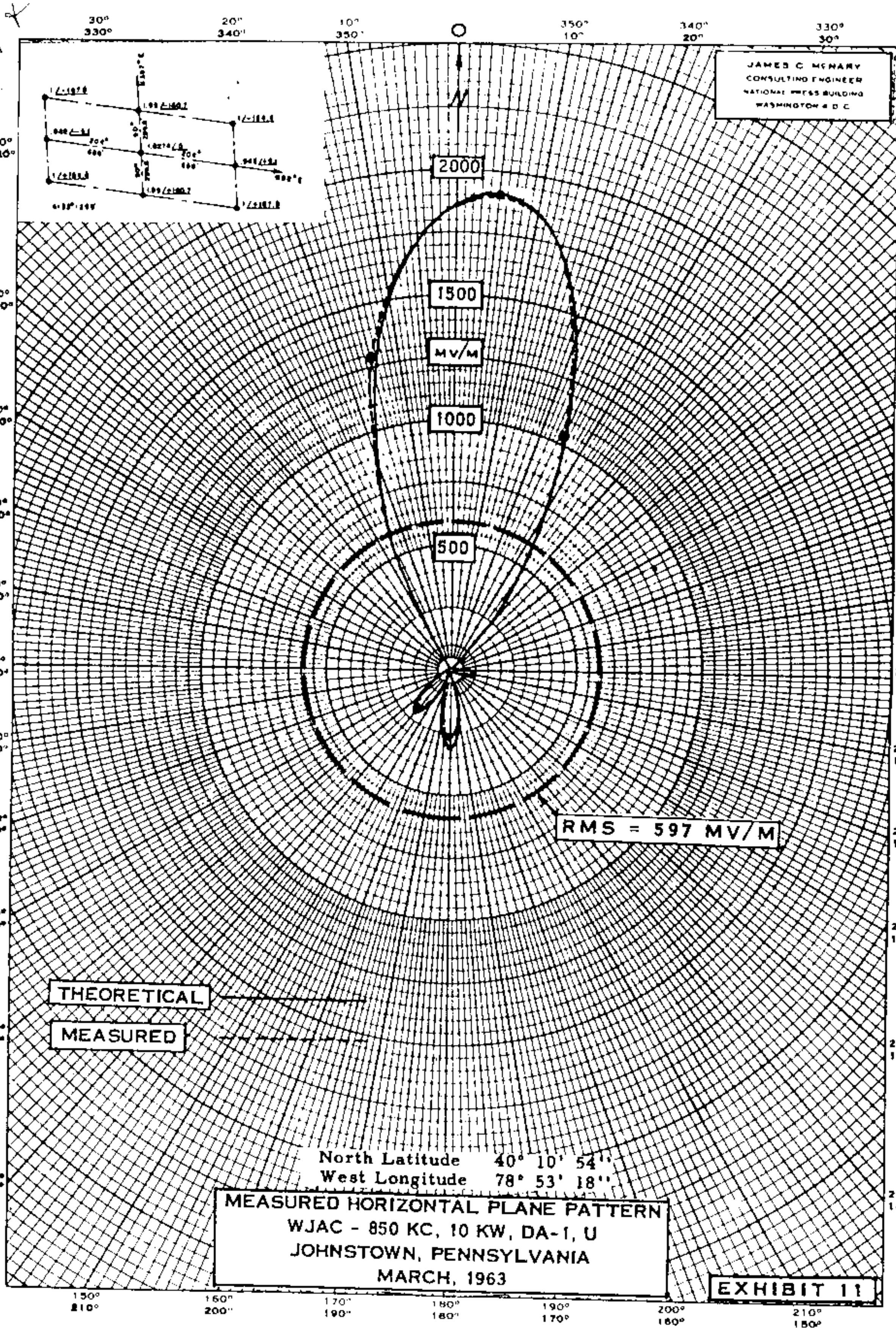
WJAC

Measured Day & Night
(6-28-63ct)

Station WJAC
Johnstown, Pennsylvania

10kw,DA-1,U
850 kc

#201
5-28-64 granted
- for 10KW DA-1 &
change in freq



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

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

FCC File No.BL-10050
Accepted 6-12-63

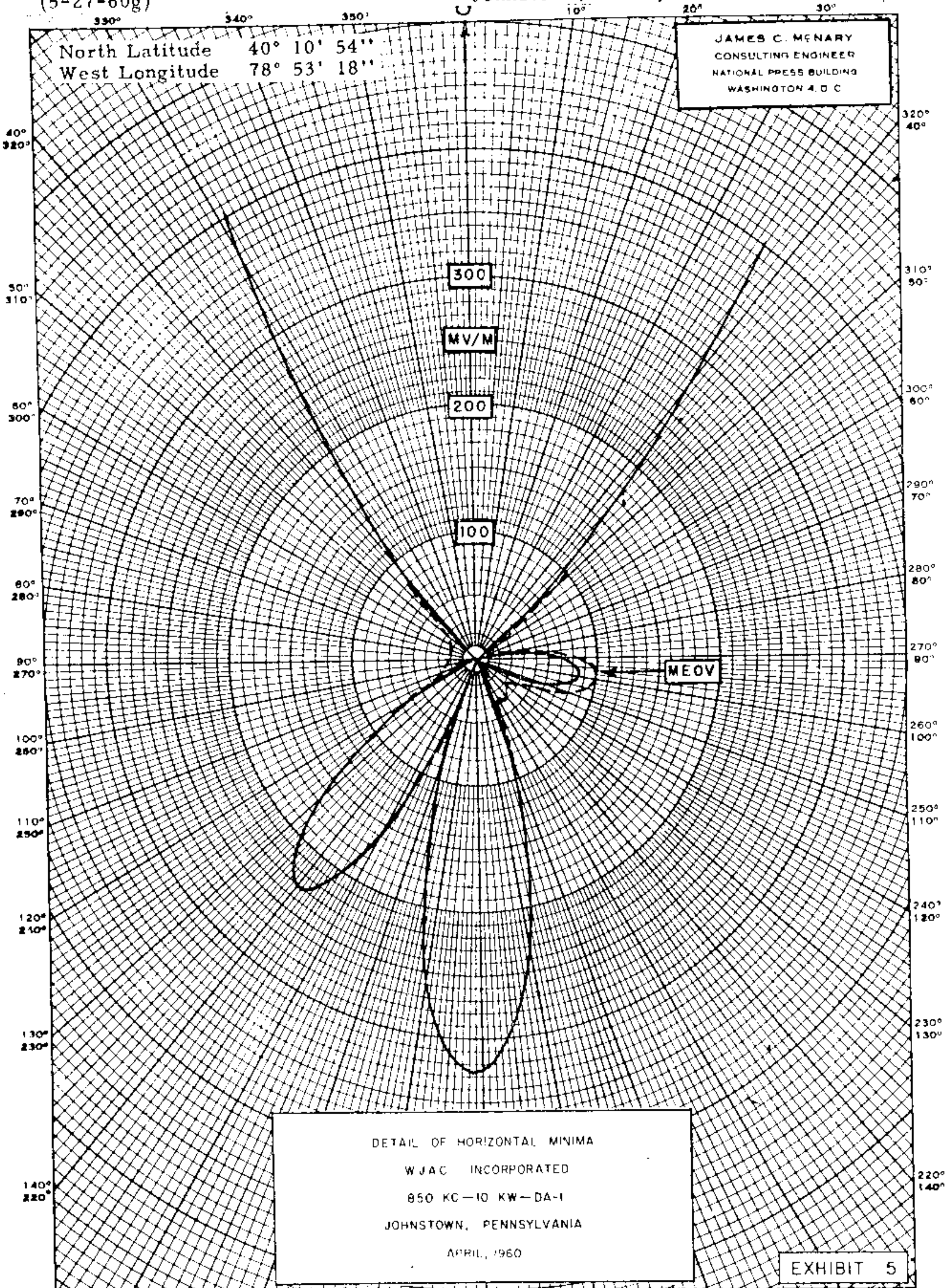
Station WJAC
Johnstown, Pennsylvania

850 kc

WJAC

PROPOSED DAY & NIGHT NULLS (5-27-60g)

Station WJAC 10kw, DA-1,U
Johnstown, Pennsylvania 850 KC



FCC File No. BP-11510
Accepted 5-20-60 (Amended)

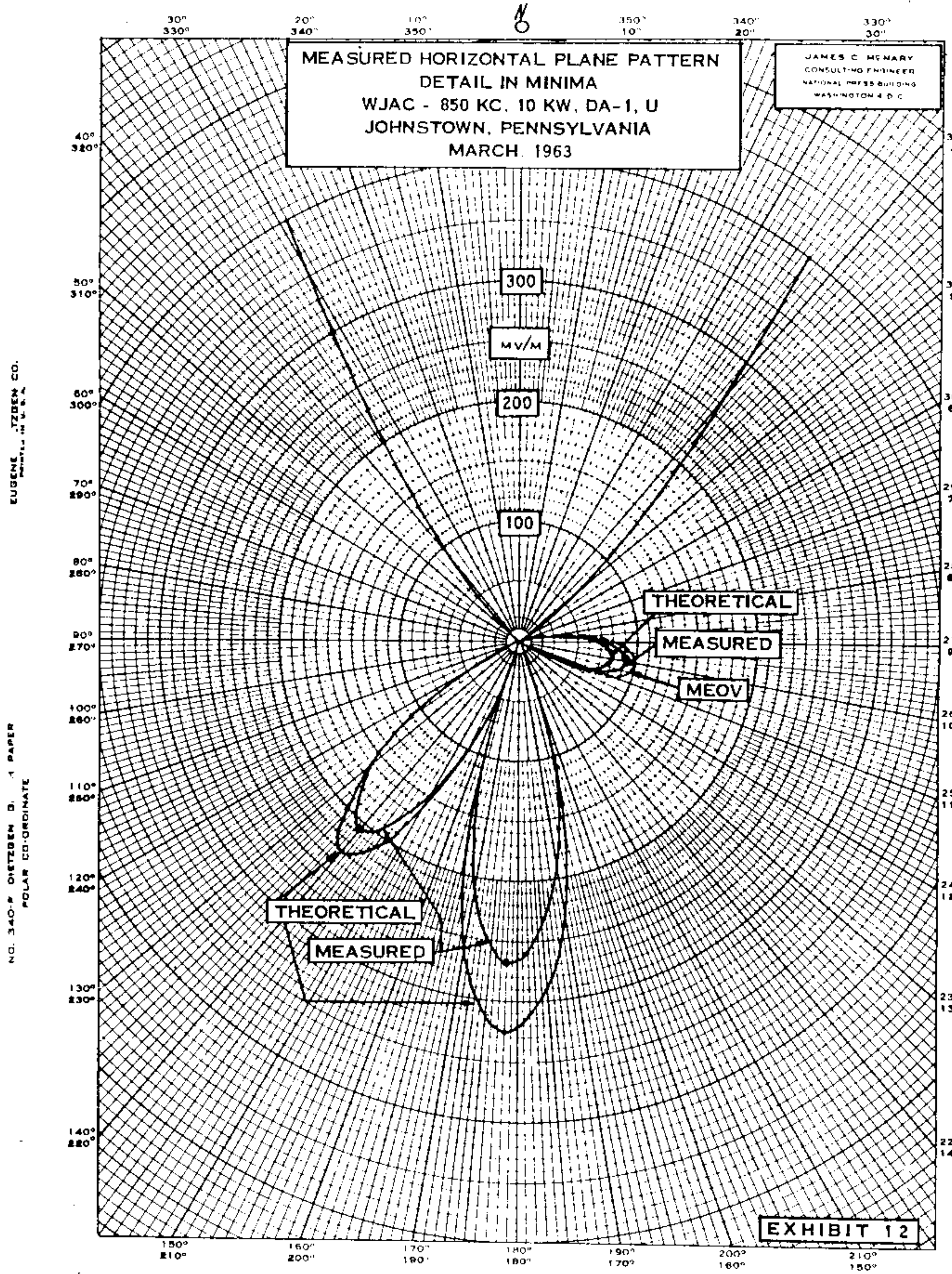
WJAC
Johnstown, Pennsylvania 850 KC

WJAC

Measured Day & Night Nulls (6-28-63ct)

Station WJAC
Johnstown, Pennsylvania

10kw,DA-1,U
850 kc



FCC File No.BL-10050
Accepted 6-12-63

Station WJAC
Johnstown, Pennsylvania

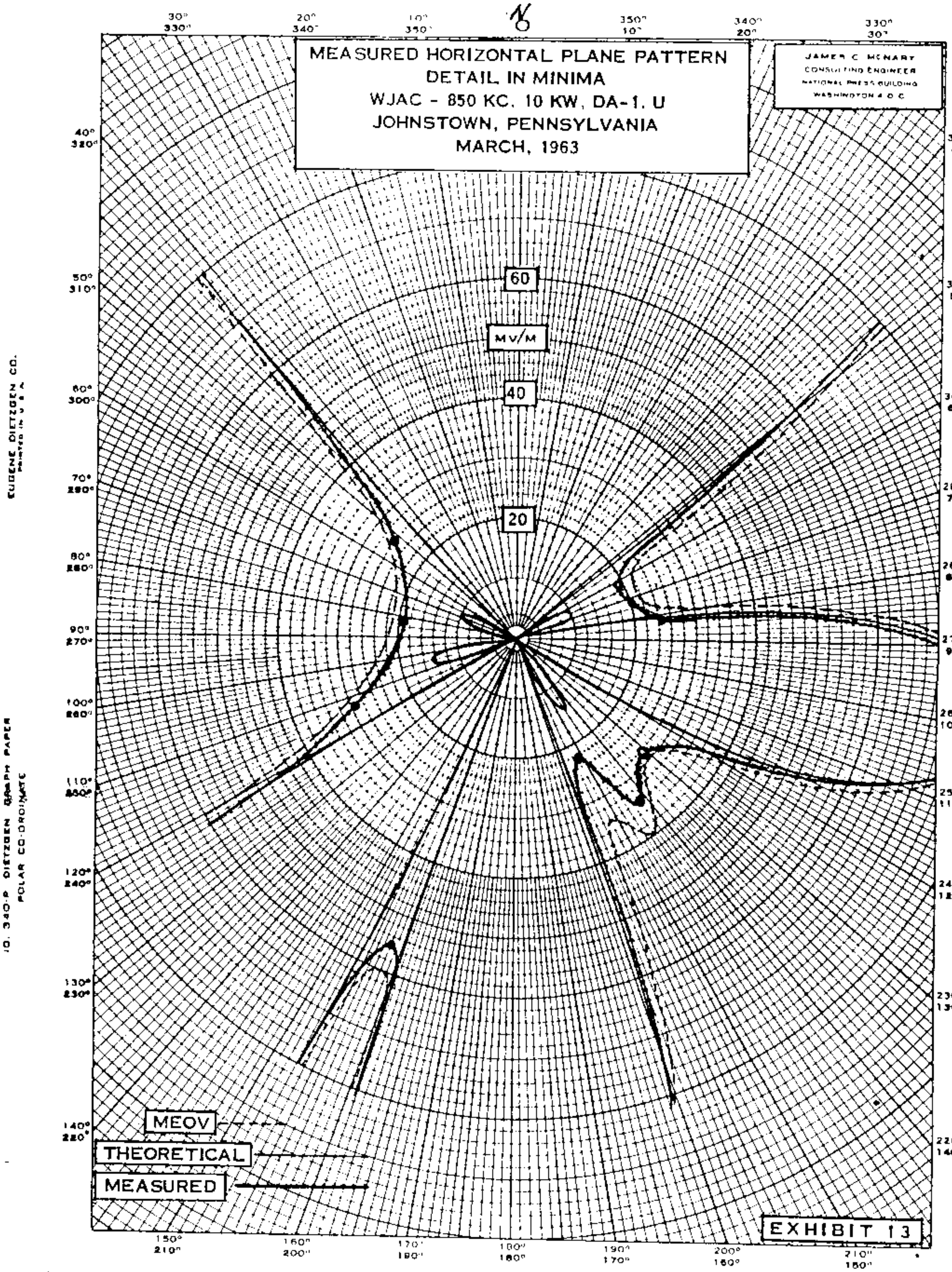
850 kc

WJAC

Measured Day & Night Nulls (6-28-63ct)

Station WJAC
Johnstown, Pennsylvania

10kw,DA-1,U
850 kc



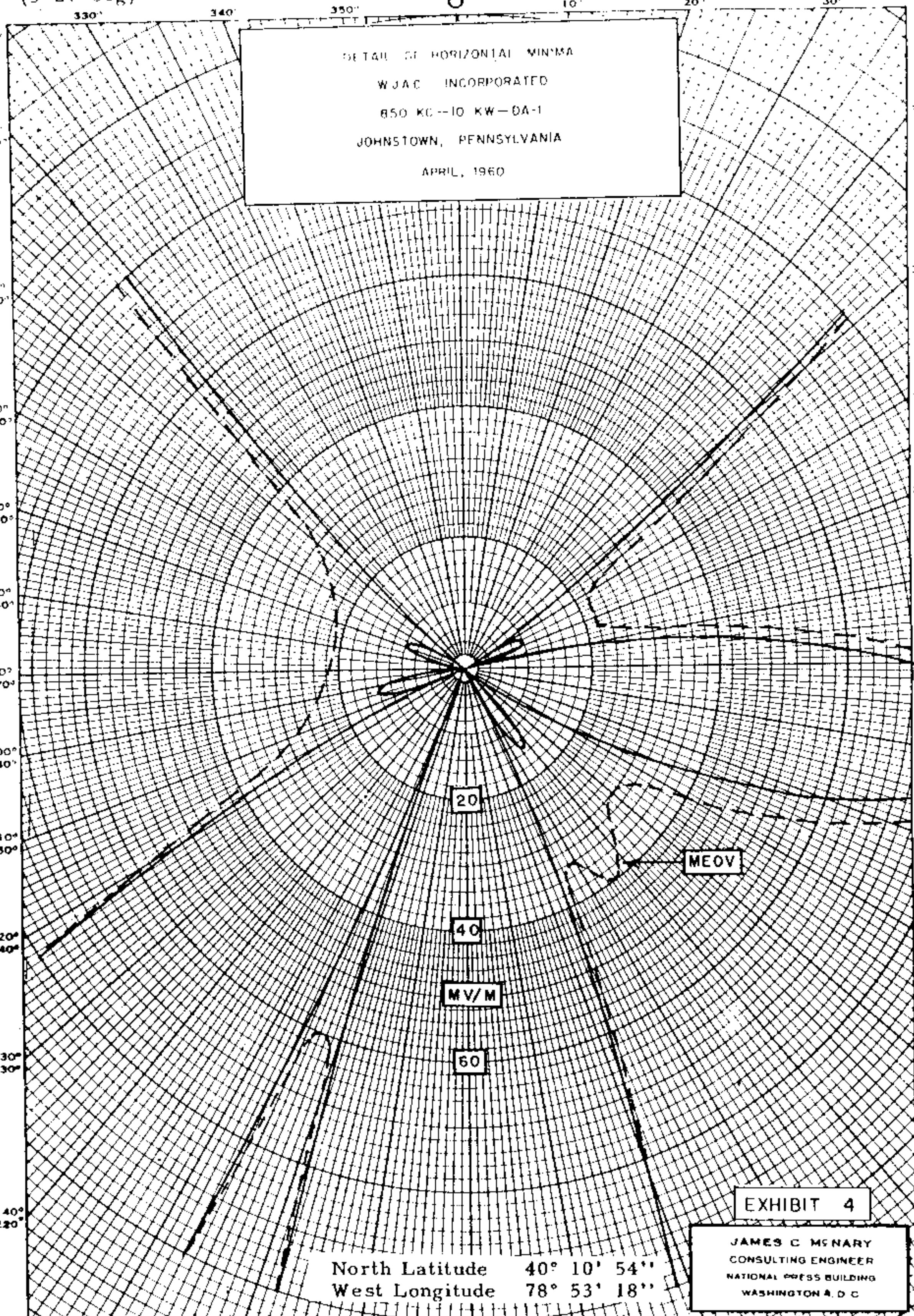
FCC File No.BL-10050
Accepted 6-12-63

Station WJAC
Johnstown, Pennsylvania

850 kc

PROPOSED DAY & NIGHT NULLS
(5-27-60g)

Station WJAC 10kw, DA-1,U
Johnstown, Pennsylvania 850 KC



FCC File No. BP-11510
Accepted 5-20-60 (Amended)

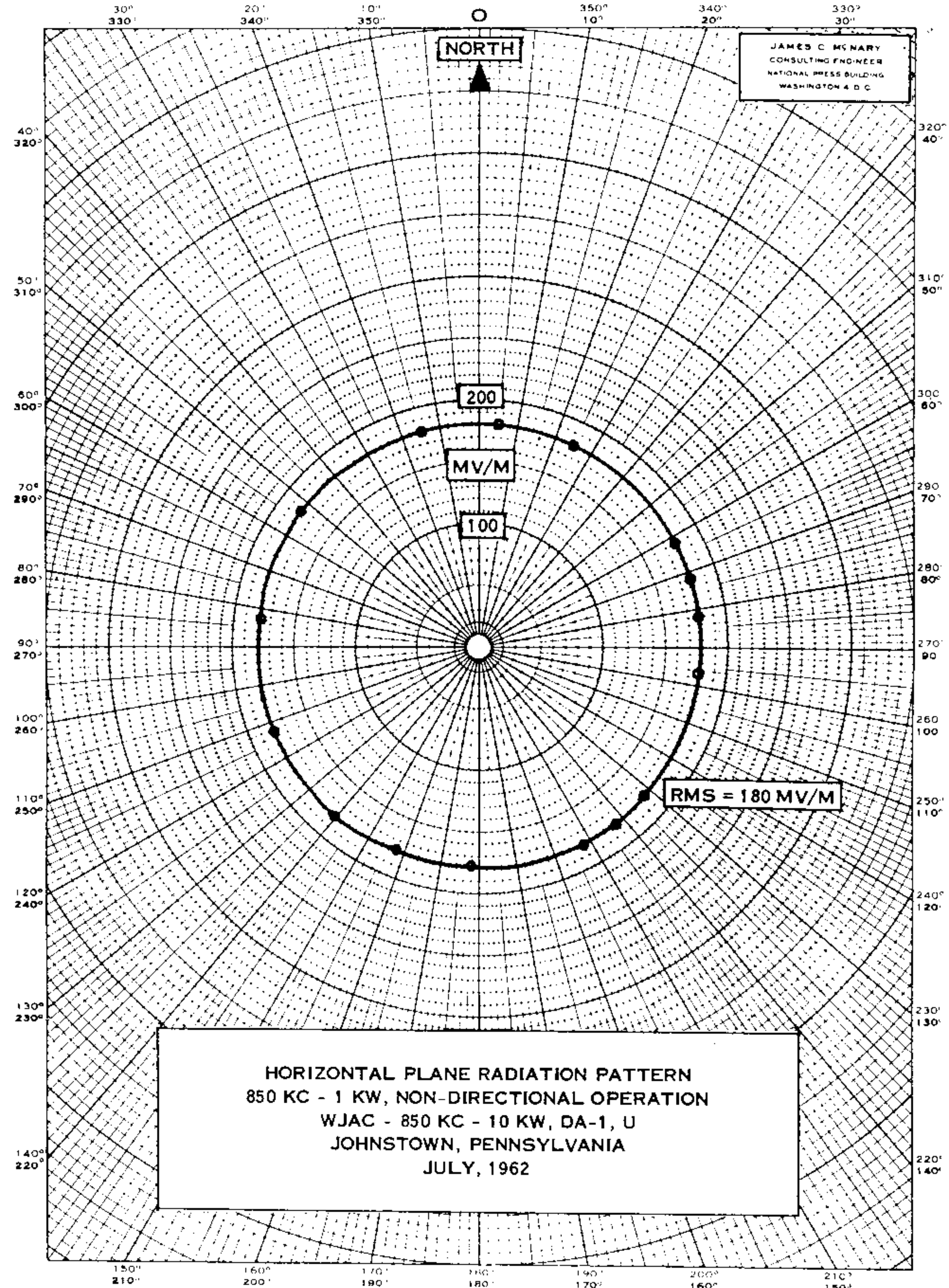
WJAC
Johnstown, Pennsylvania 850 KC

WJAC

Measured Non-DA
(6-28-63ct)

Station WJAC
Johnstown, Pennsylvania

10kw,DA-1,U
850 kc



HORIZONTAL PLANE RADIATION PATTERN
850 KC - 1 KW, NON-DIRECTIONAL OPERATION
WJAC - 850 KC - 10 KW, DA-1, U
JOHNSTOWN, PENNSYLVANIA
JULY, 1962

FCC File No.BL-10050
Accepted 6-12-63

Station WJAC
Johnstown, Pennsylvania

850 kc

BL-12521
GR (3-24-70) Lic. covering changes

WJW

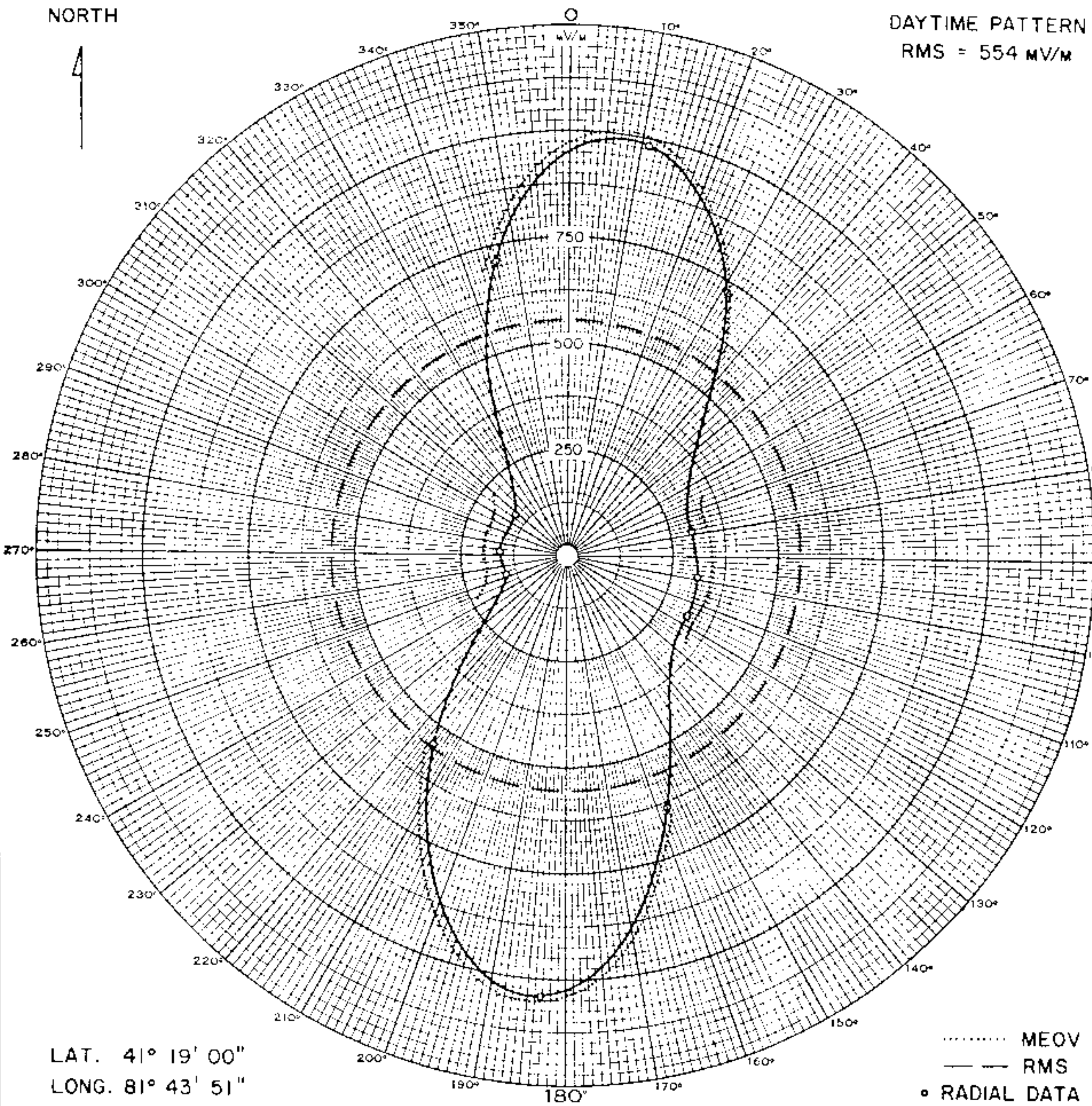
Measured Day
(3-27-70ct)

Station WJW
Cleveland, Ohio

5kw, 10kw-LS, DA-2, U
850 kc

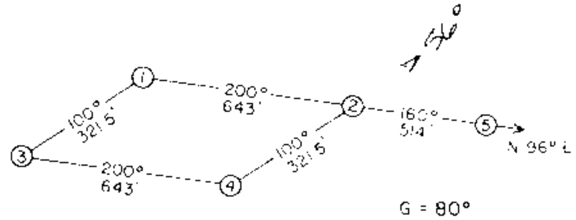
NORTH

DAYTIME PATTERN
RMS = 554 MV/M



LAT. 41° 19' 00"
LONG. 81° 43' 51"

······ MEOV
— — RMS
• RADIAL DATA



PARAMETERS

TOWER NUMBER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	0.350	5°	0.389	-5.0°
2	1.000	12°	1.000	0.0°
3	–	–	–	–
4	–	–	–	–
5	0.350	-5°	0.394	-11.4°

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

RADIO STATION WJW
850 kHz 5 kW 10 kW-LS DA-2
690130 FIGURE 2B

FCC File No. BL-12521
Accepted 3-3-70

Station WJW
Cleveland, Ohio

850 kc

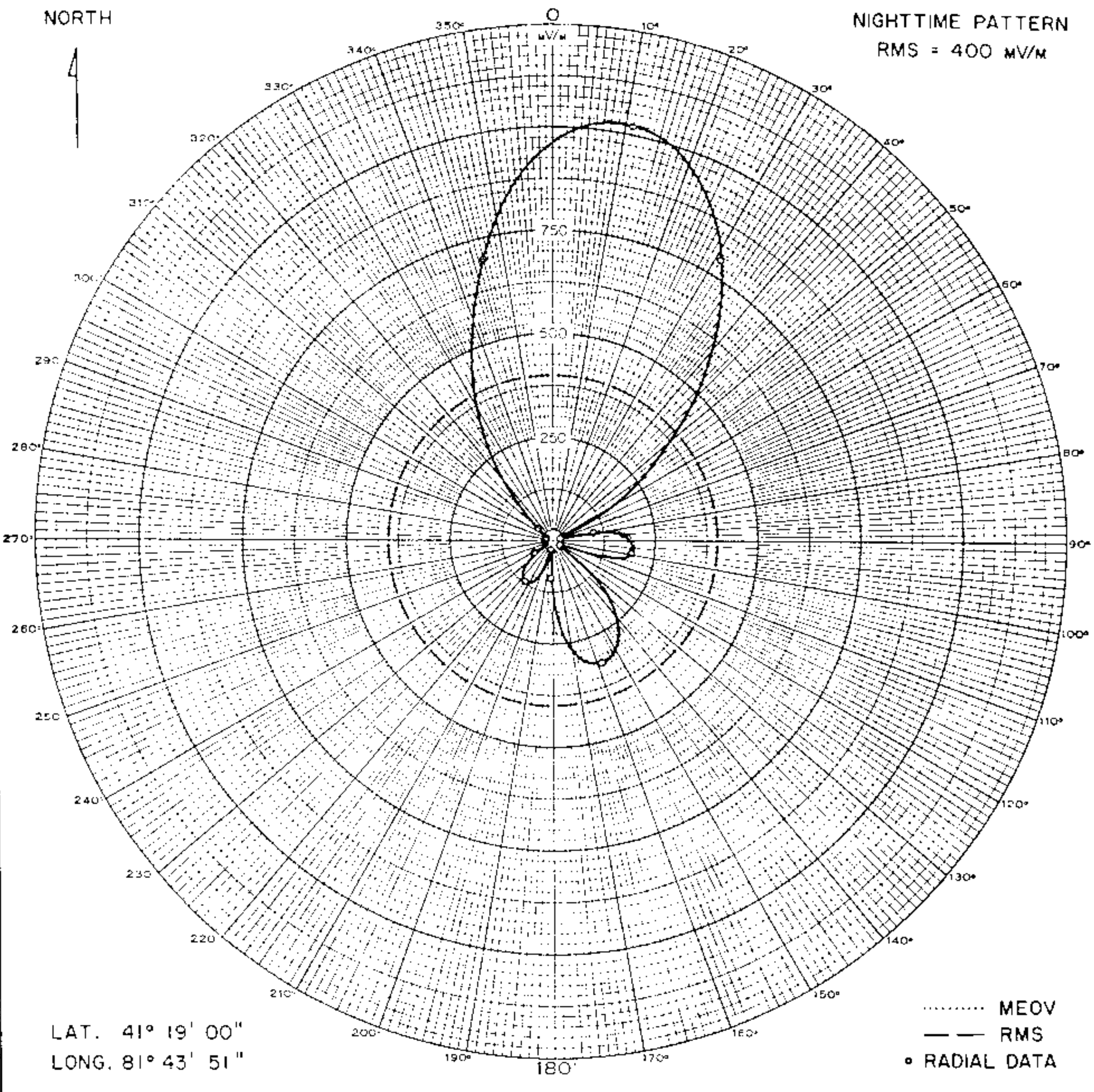
BL-12521
GR (3-24-70) Lic. covering changes

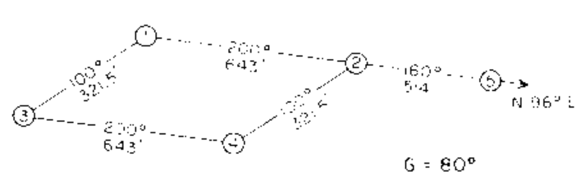
WJW

Measured Night
(3-27-70ct)

Station WJW
Cleveland, Ohio

5kw,10kw-LS,DA-2,U
850 kc





PARAMETERS

TOWER NUMBER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	1.000	0°	1.000	0.0°
2	1.000	0°	0.982	-3.2°
3	1.000	106°	1.076	102.2°
4	1.000	106°	1.007	101.5°
5	-	-	-	-

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

RADIO STATION WJW
850 kHz 5 kW 10 kW-LS DA-2
690130 FIGURE 2C-1

FCC File No.BL-12521
Accepted 3-3-70

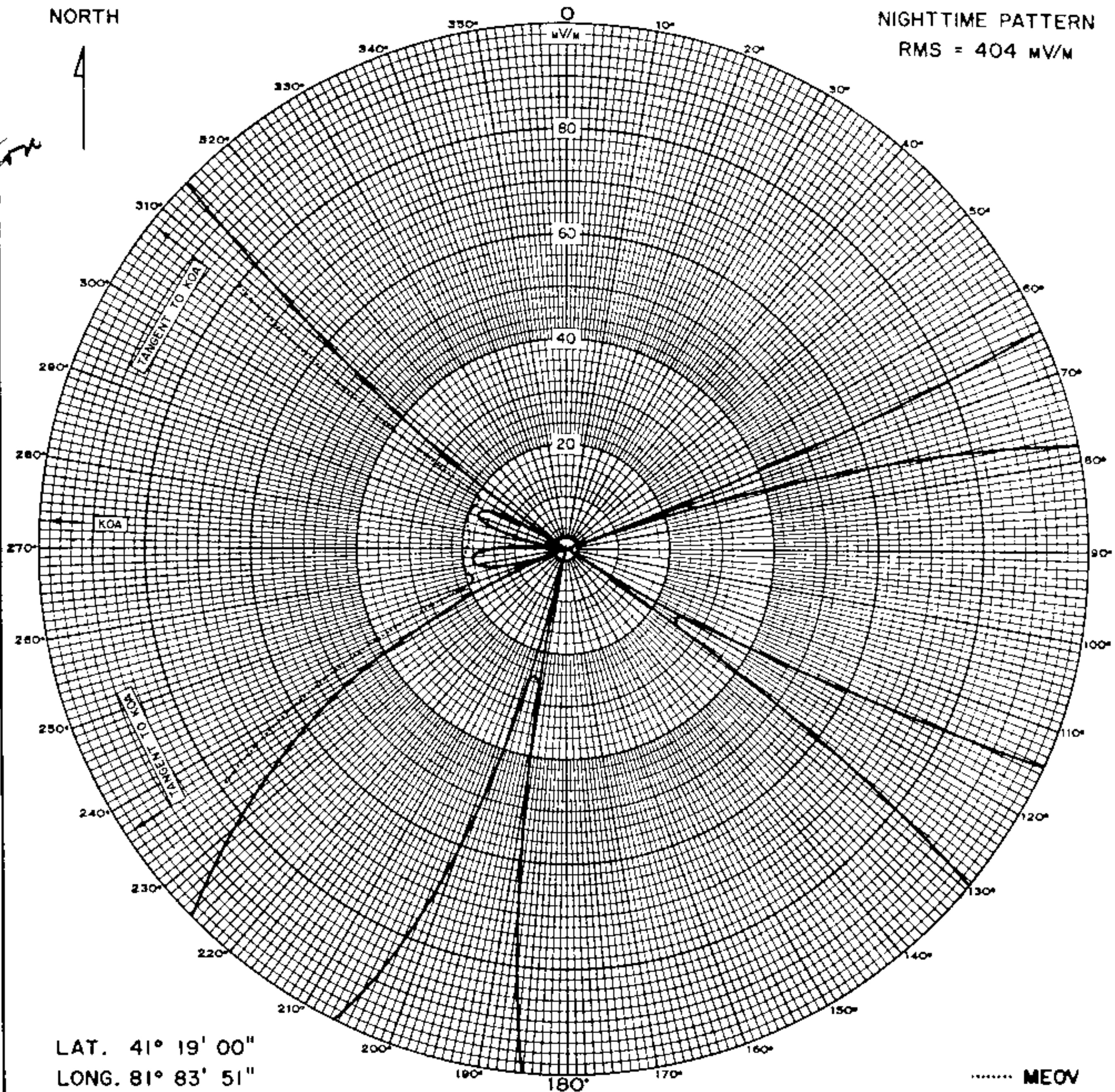
Station WJW
Cleveland, Ohio

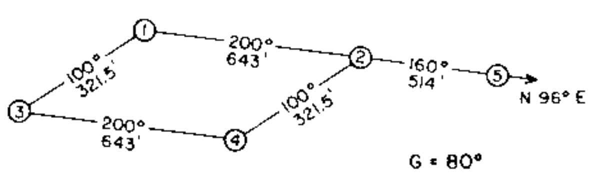
850 kc

WJW

Proposed Night Nulls (9-26-69ct) | Station WJW Cleveland, Ohio | 5kw,10kw-LS,DA-2,U 850 kc

BMP-12793 Granted 9-23-69 Modification of CP for changes





ANTENNA PARAMETERS

TOWER	FIELD	PHASE
1	1.00	0°
2	1.00	0°
3	1.00	106°
4	1.00	106°
5	—	—

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

RADIO STATION WJW
850 kHz 5 kW 10 kW-LS DA-2
690128 FIGURE 2B

FCC File No.BMP-12793 Accepted 9-24-69 | Station WJW Cleveland, Ohio | 850 kc

WJW

Proposed Night
(9-26-69ct)

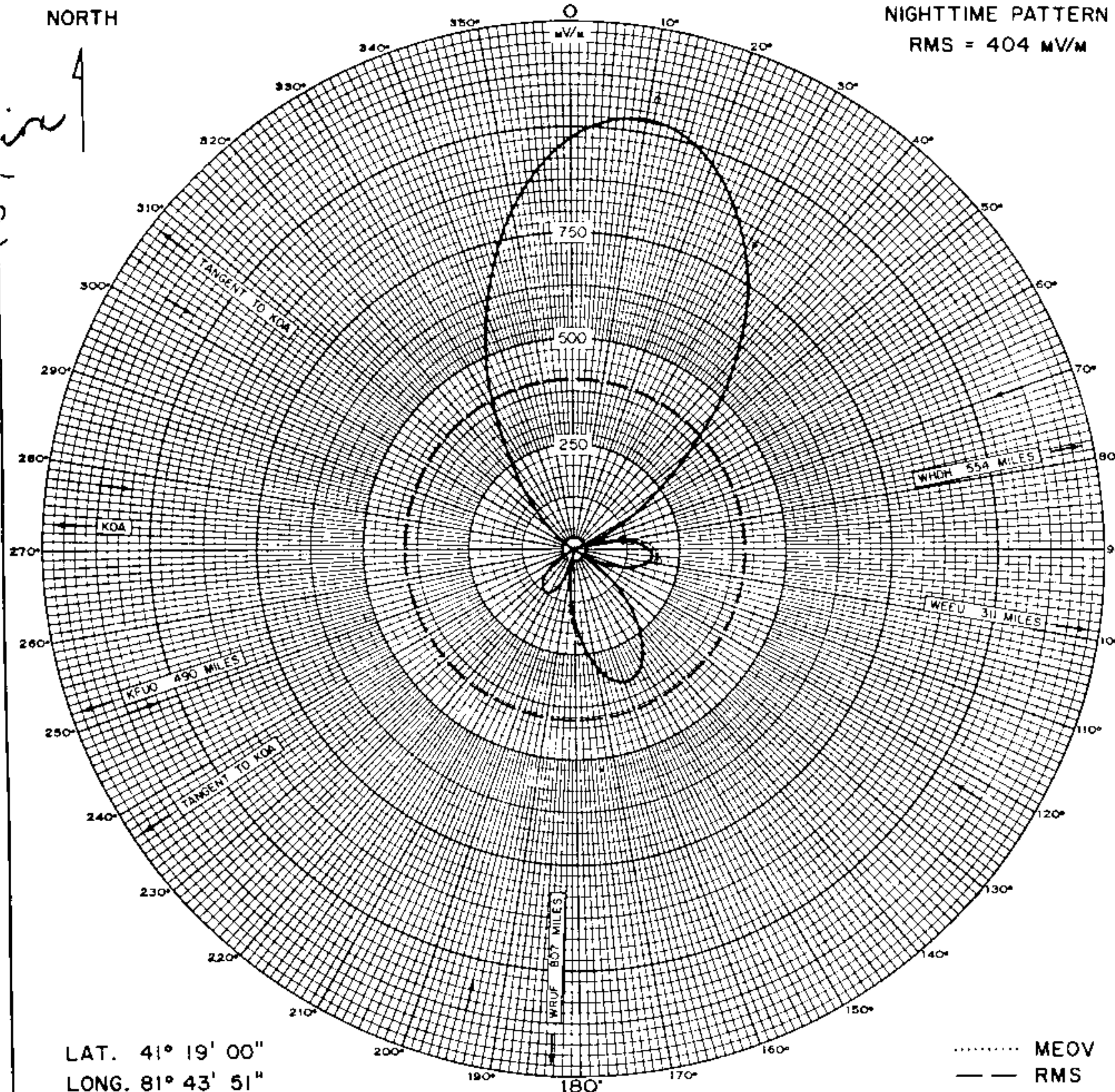
Station WJW
Cleveland, Ohio

5kw,10kw-LS,DA-2,U
850 kc

BMP 12793
Granted 9-23-69
modification of CP for changes

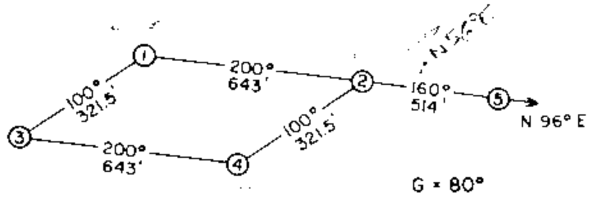
NORTH

NIGHTTIME PATTERN
RMS = 404 MV/M



LAT. 41° 19' 00"
LONG. 81° 43' 51"

.... MEOV
— — RMS



ANTENNA PARAMETERS

TOWER	FIELD	PHASE
1	1.00	0°
2	1.00	0°
3	1.00	106°
4	1.00	106°
5	—	—

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

RADIO STATION WJW
850 kHz 5 kW 10 kW-LS DA-2
690128 FIGURE 2A

FCC File No.BMP-12793
Accepted 9-24-69

Station WJW
Cleveland, Ohio

850 kc

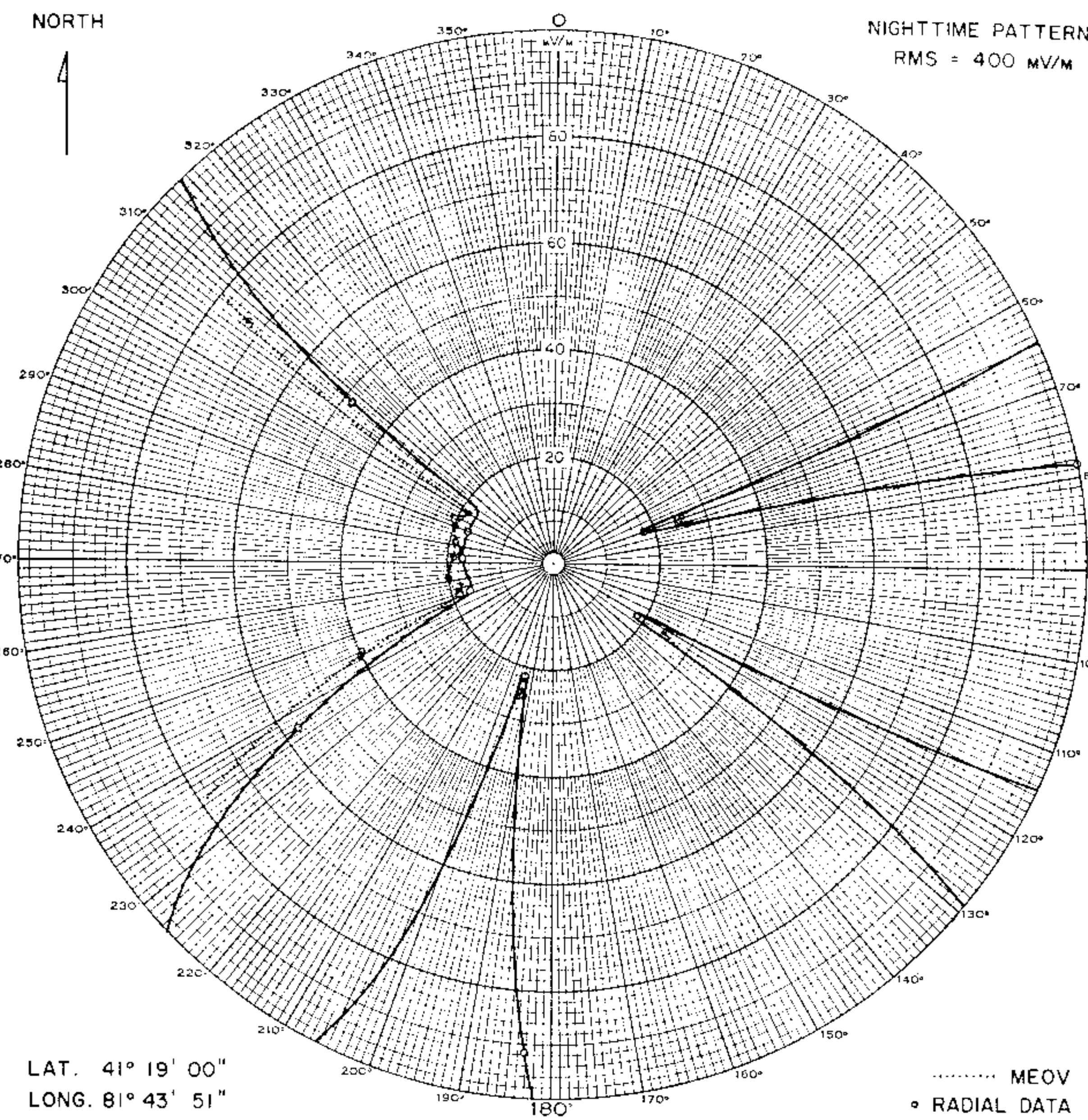
BL - 12521
GR.(3-24-70) Lic Covering Changes

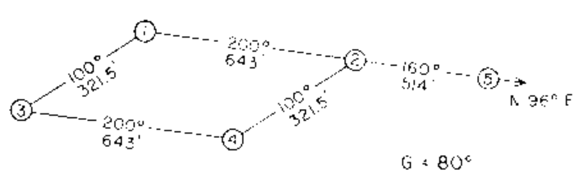
WJW

Measured Night Nulls
(3-27-70ct)

Station WJW
Cleveland, Ohio

5kw, 10kw-LS, DA-2, U
850 kc





TOWER NUMBER	THEORETICAL FIELD	THEORETICAL PHASE	OBSERVED FIELD	OBSERVED PHASE
1	1.000	0°	1.000	0.0°
2	1.000	0°	0.982	- 3.2°
3	1.000	106°	1.076	102.2°
4	1.000	106°	1.007	101.5°
5	-	-	-	-

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

RADIO STATION WJW
850 kHz 5 kW 10 kW-LS DA-2
690130 FIGURE 2C-2

FCC File No. BL-12521
Accepted 3-3-70

Station WJW
Cleveland, Ohio

850 kc

BL-12521
GIL (3-24-70) Lic. Covering Changes

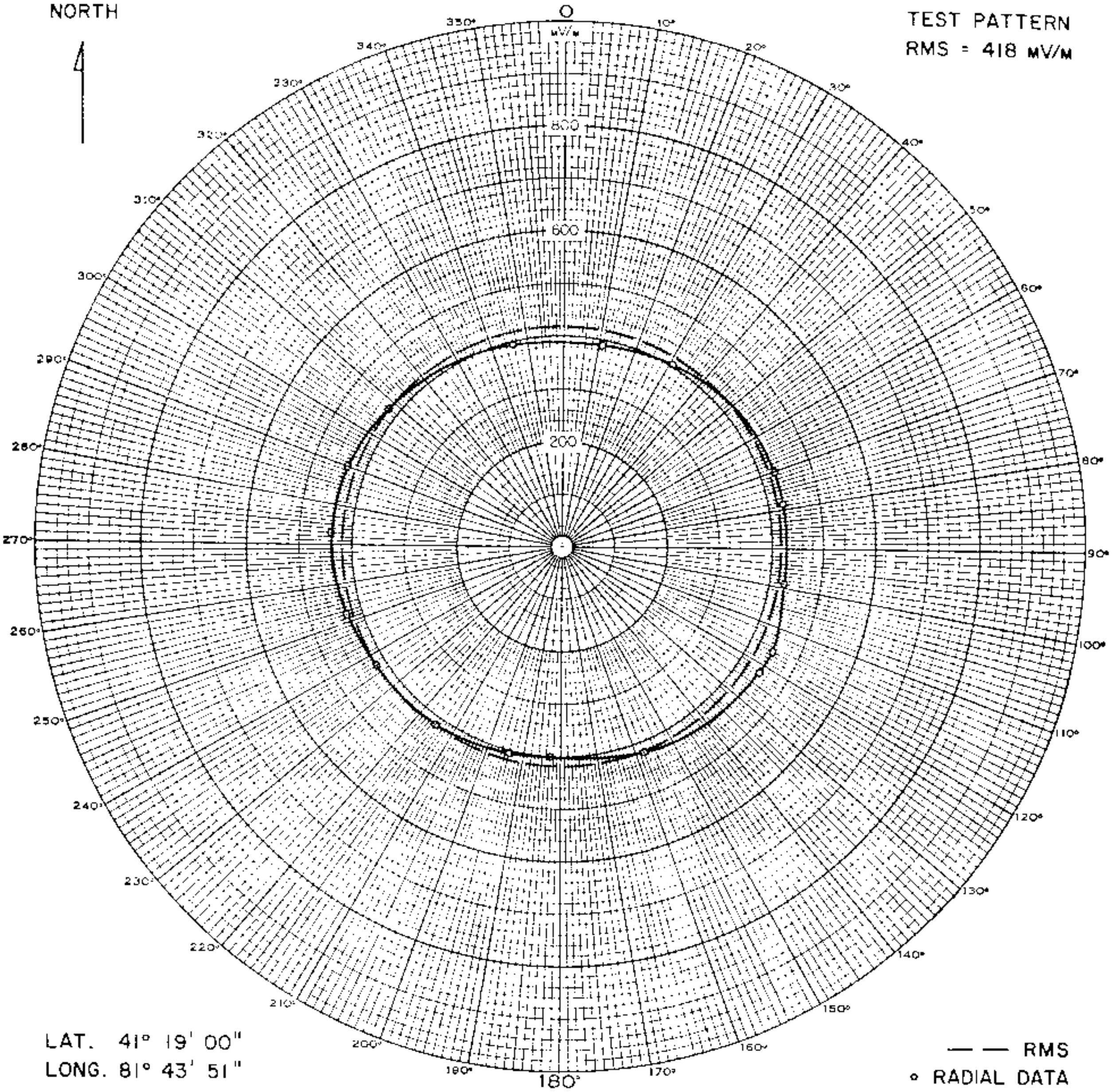
Measured Non-DA
(3-27-70ct)

Station WJW
Cleveland, Ohio

WJW
5kw,10kw-LS,DA-2,U
850 kc

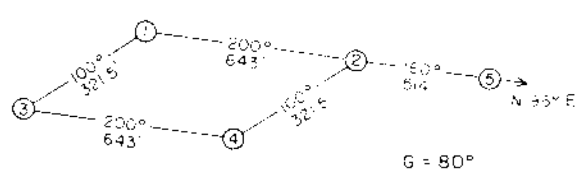
NORTH

TEST PATTERN
RMS = 418 MV/M



LAT. 41° 19' 00"
LONG. 81° 43' 51"

— — RMS
∘ RADIAL DATA



TOWER	OPERATION
1	DETUNED
2	SERIES FED
3	DETUNED
4	DETUNED
5	DETUNED

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

RADIO STATION WJW
850 kHz 5 kW 10 kW-LS DA-2
690130 FIGURE 2A

FCC File No. BL-12521
Accepted 3-3-70

Station WJW
Cleveland, Ohio

850 kc

WKBZ 850

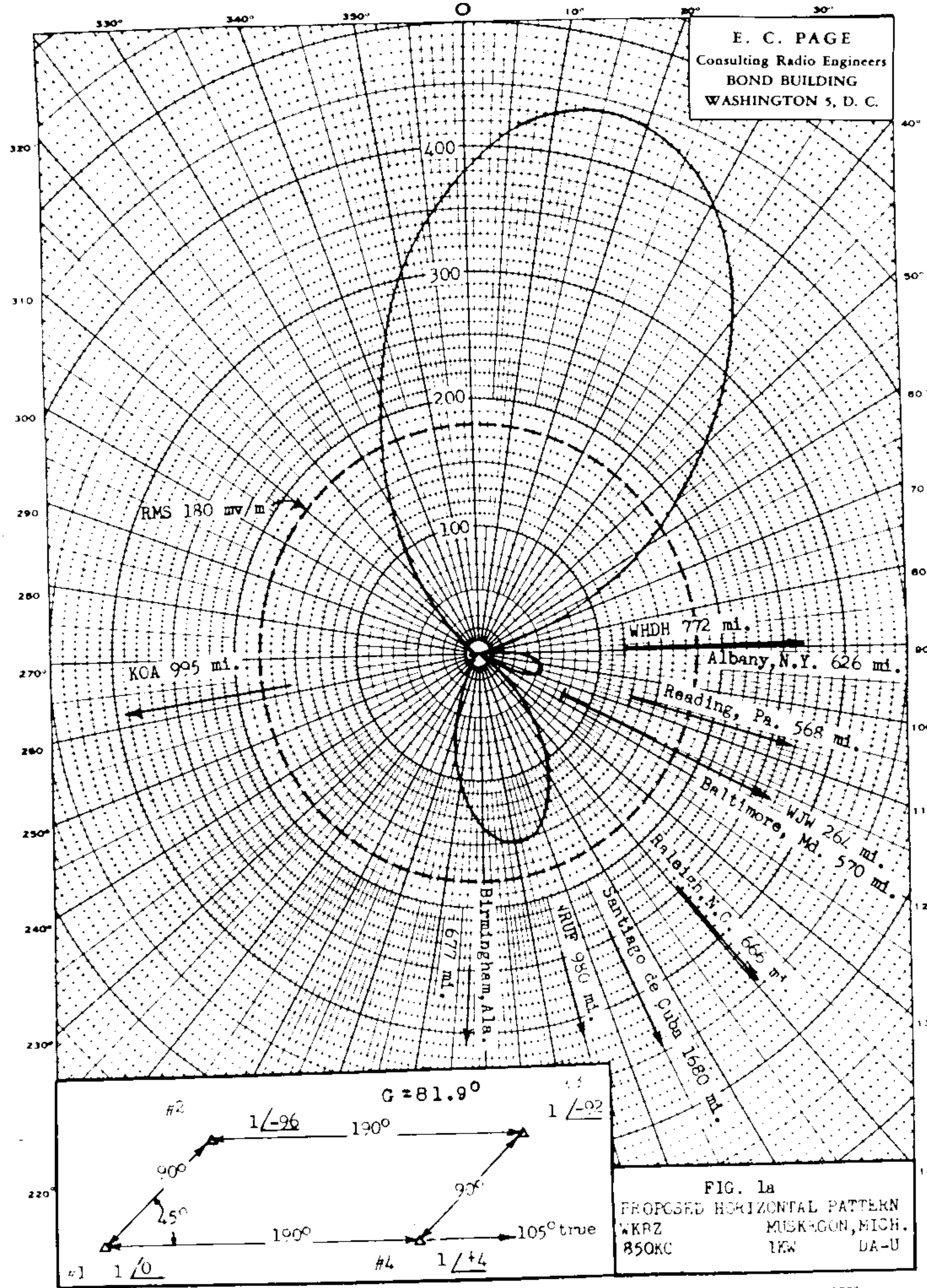
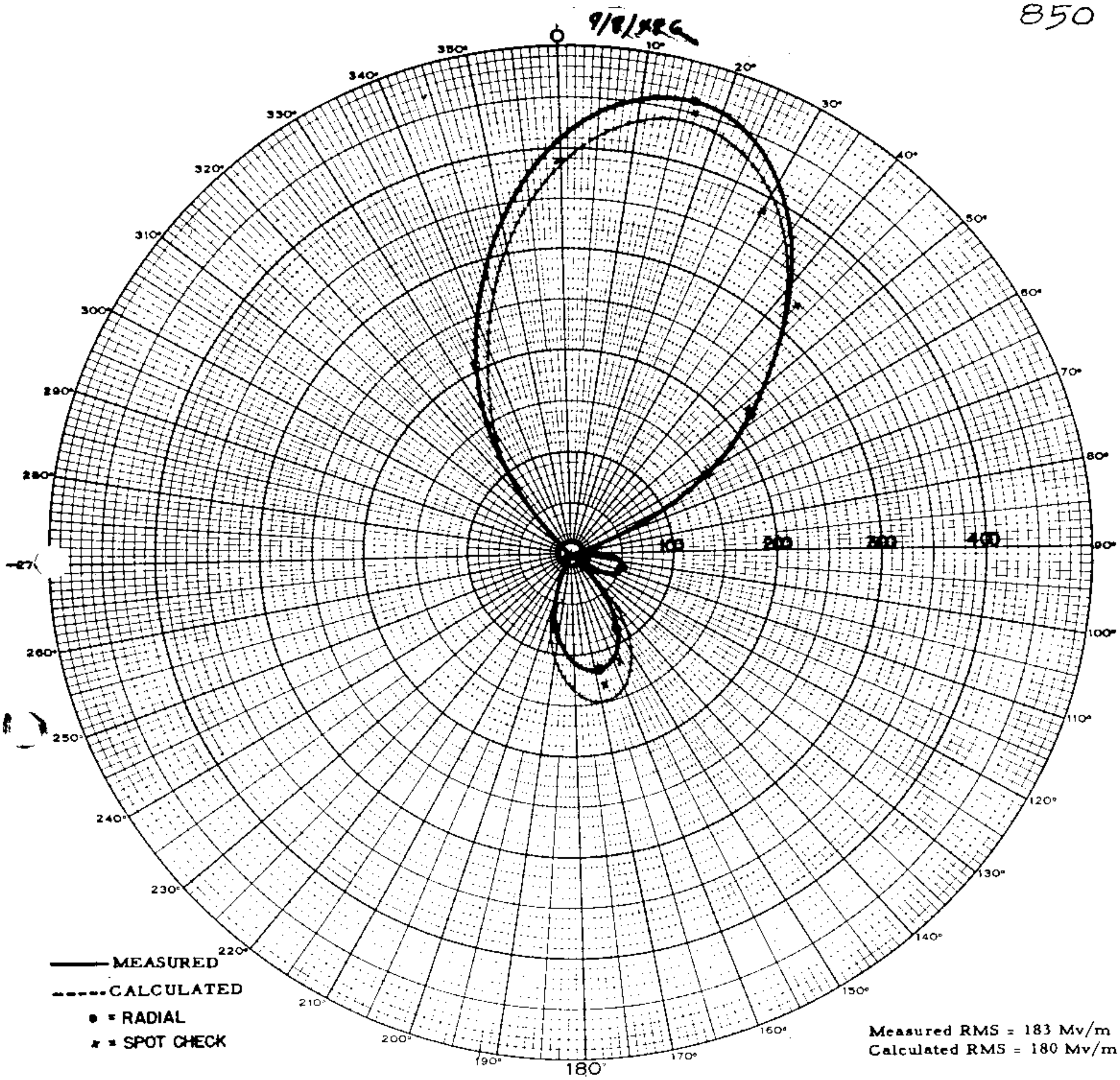


FIG. 1a
PROPOSED HORIZONTAL PATTERN
WKBZ MUSKEGON, MICH.
850KC 1KW DA-U

PATTERN # 470128

WKBZ
850



Measured RMS = 183 Mv/m
Calculated RMS = 180 Mv/m

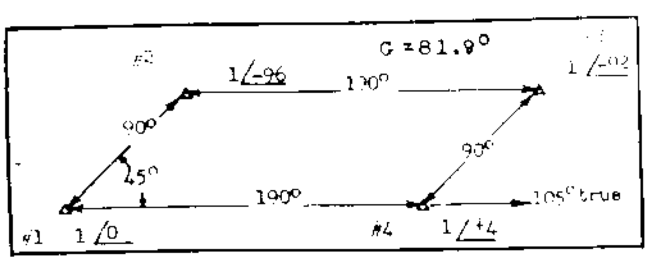
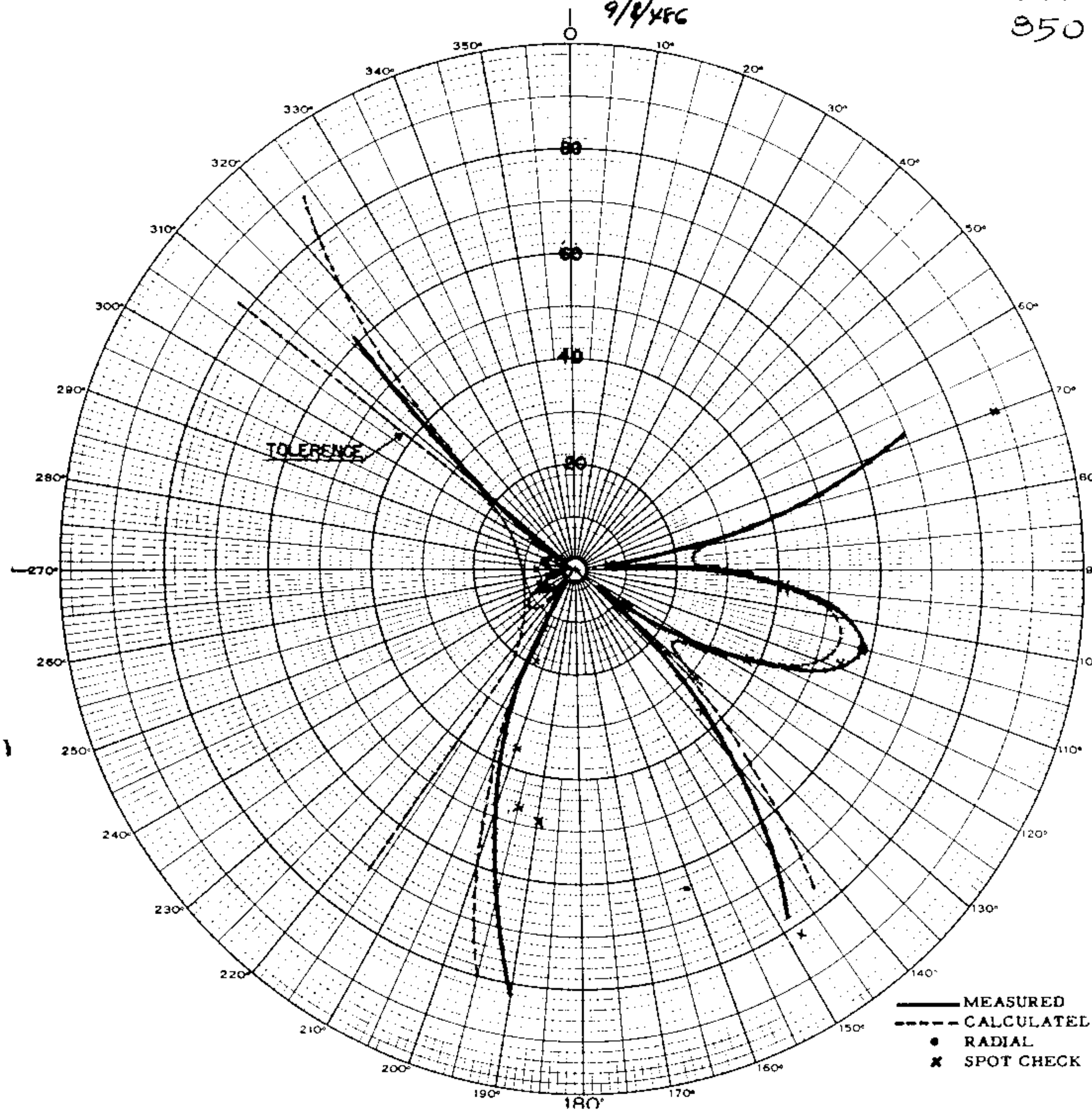


FIGURE 1a
MEASURED HORIZONTAL PATTERN

WKBZ	MUSKEGON,		MICH.
850 Kc	1 Kw	U	DA-1
WFD:FL		April 1948	

E. C. PAGE
CONSULTING RADIO ENGINEERS
BOND BUILDING
WASHINGTON 5, D. C.

WKBZ
850



E. C. PAGE CONSULTING RADIO ENGINEERS BOND BUILDING WASHINGTON 5, D. C.	FIGURE 1b DETAILS IN NULLS WKBZ MUSKEGON, MICH. 850 Kc 1 Kw U DA-1 WFD:FL April 1948

WKBZ 850

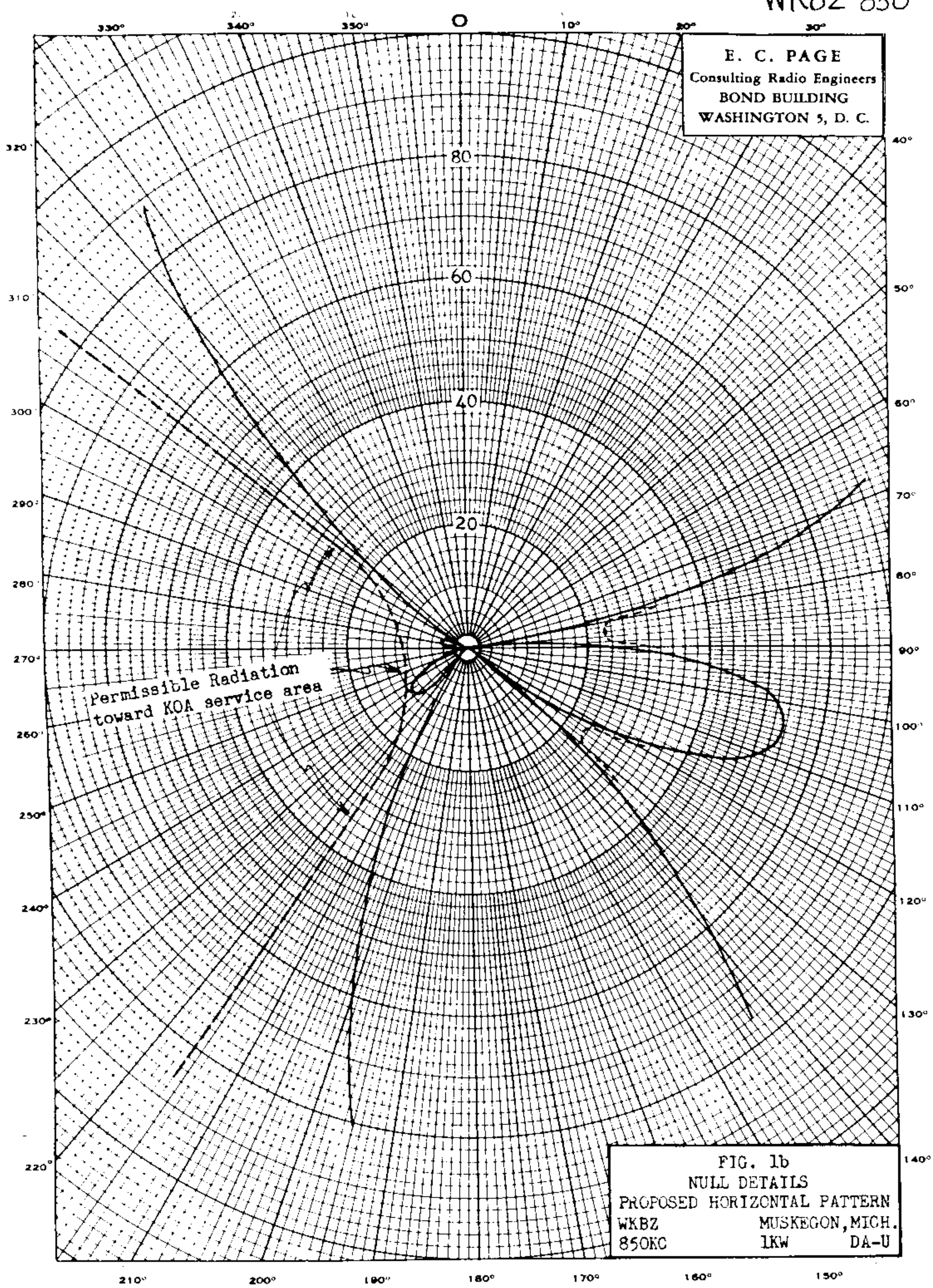


FIG. 1b
NULL DETAILS
PROPOSED HORIZONTAL PATTERN
WKBZ MUSKEGON, MICH.
850KC 1KW DA-U

Measured Night
(8-28-67ct)

Station WKIX
Raleigh, North Carolina

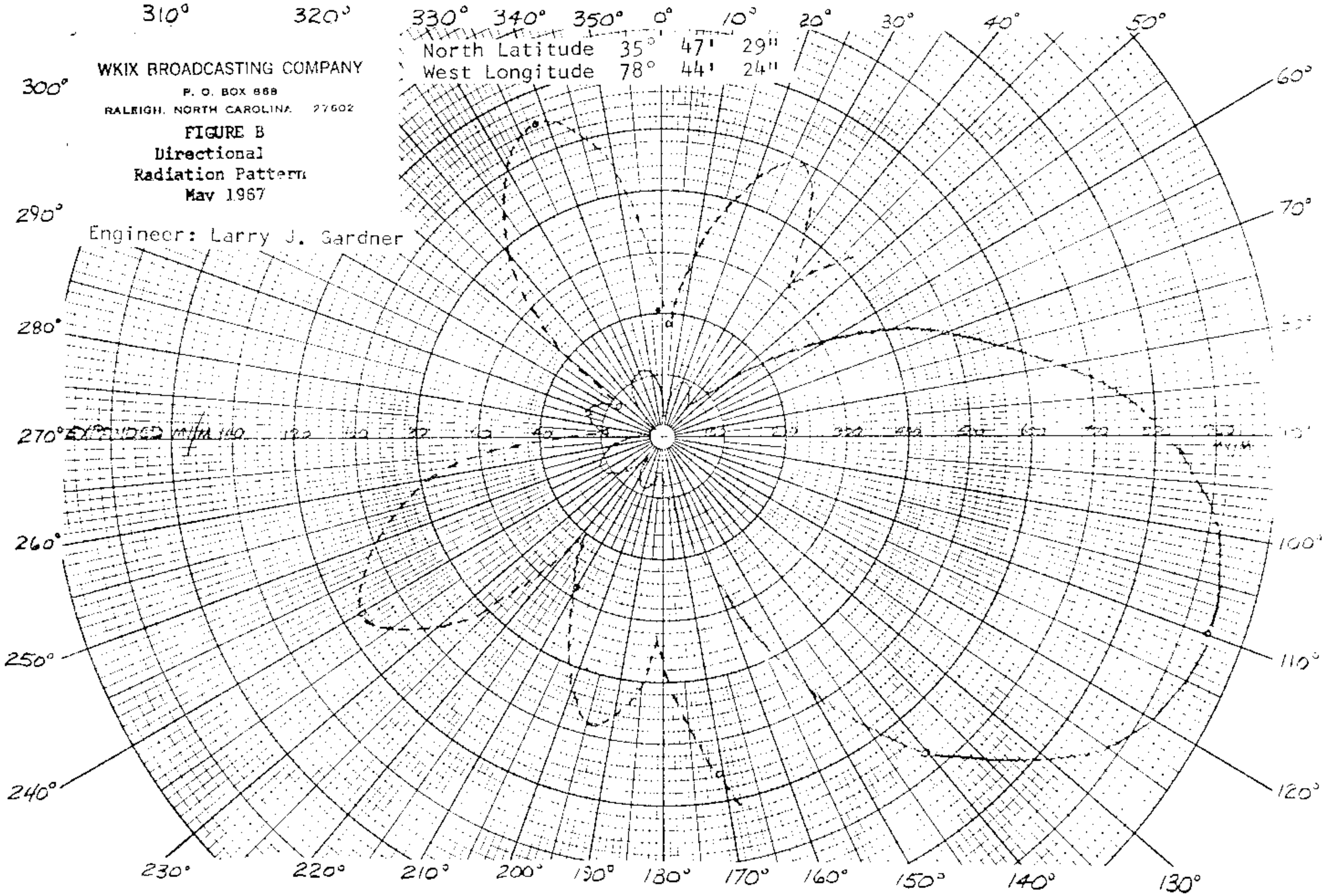
5kw,10kw-LS,DA-N,U
850 kc

WKIX BROADCASTING COMPANY
P. O. BOX 888
RALEIGH, NORTH CAROLINA 27602

FIGURE B
Directional
Radiation Pattern
May 1967

Engineer: Larry J. Gardner

North Latitude 35° 47' 29"
West Longitude 78° 44' 24"



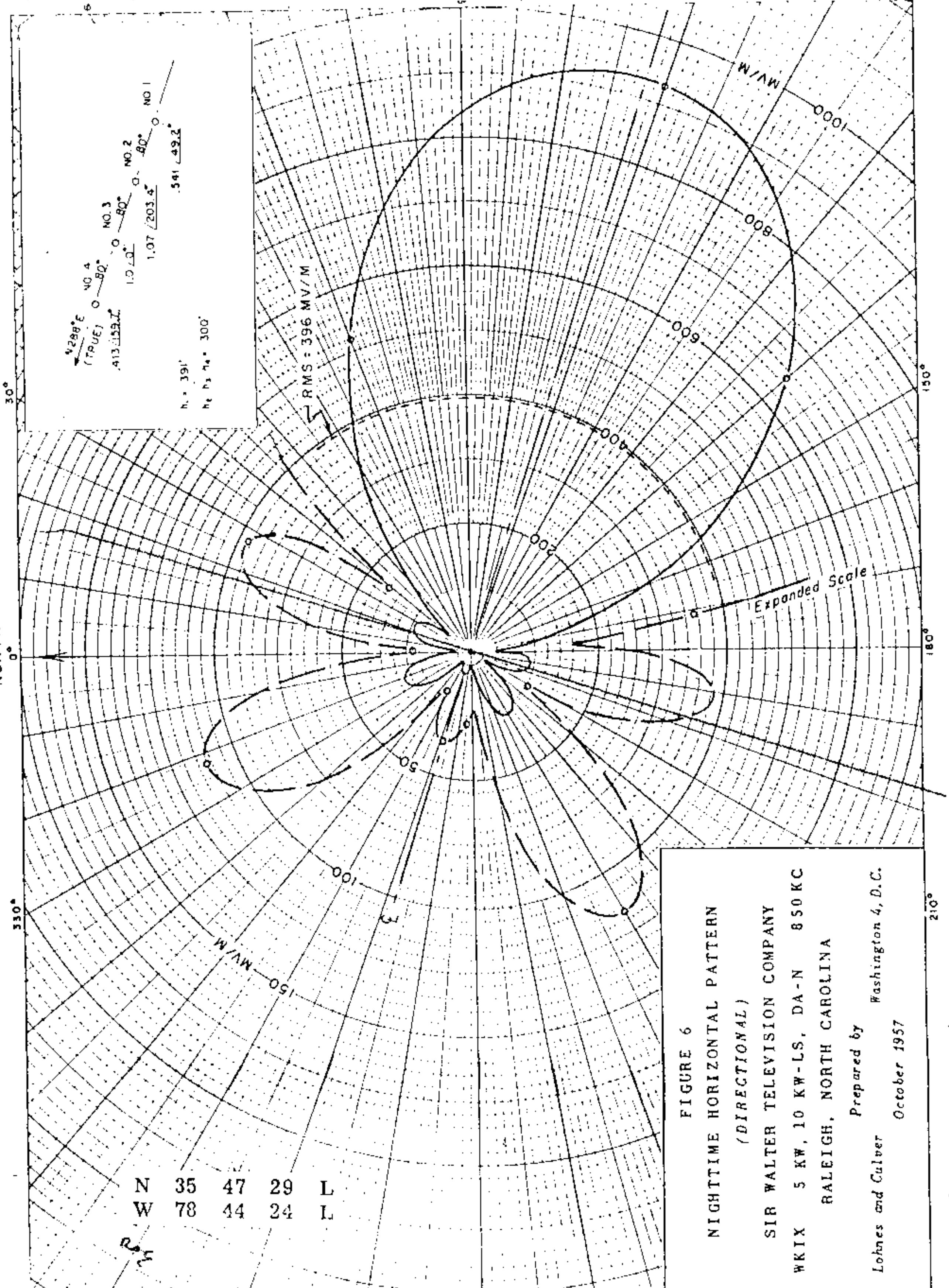
FCC File No.BZ-6502

Station WKIX

WKIX

MEASURED NIGHT
(11/22/57g)

Station WKIX 5kw,10kw-LS,DA-N,U
Raleigh, North Carolina 850 KC



BZ 3930 WKIX

FCC File No. BZ-3930
Accepted 11-14-57

WKIX
Raleigh, North Carolina 850 KC

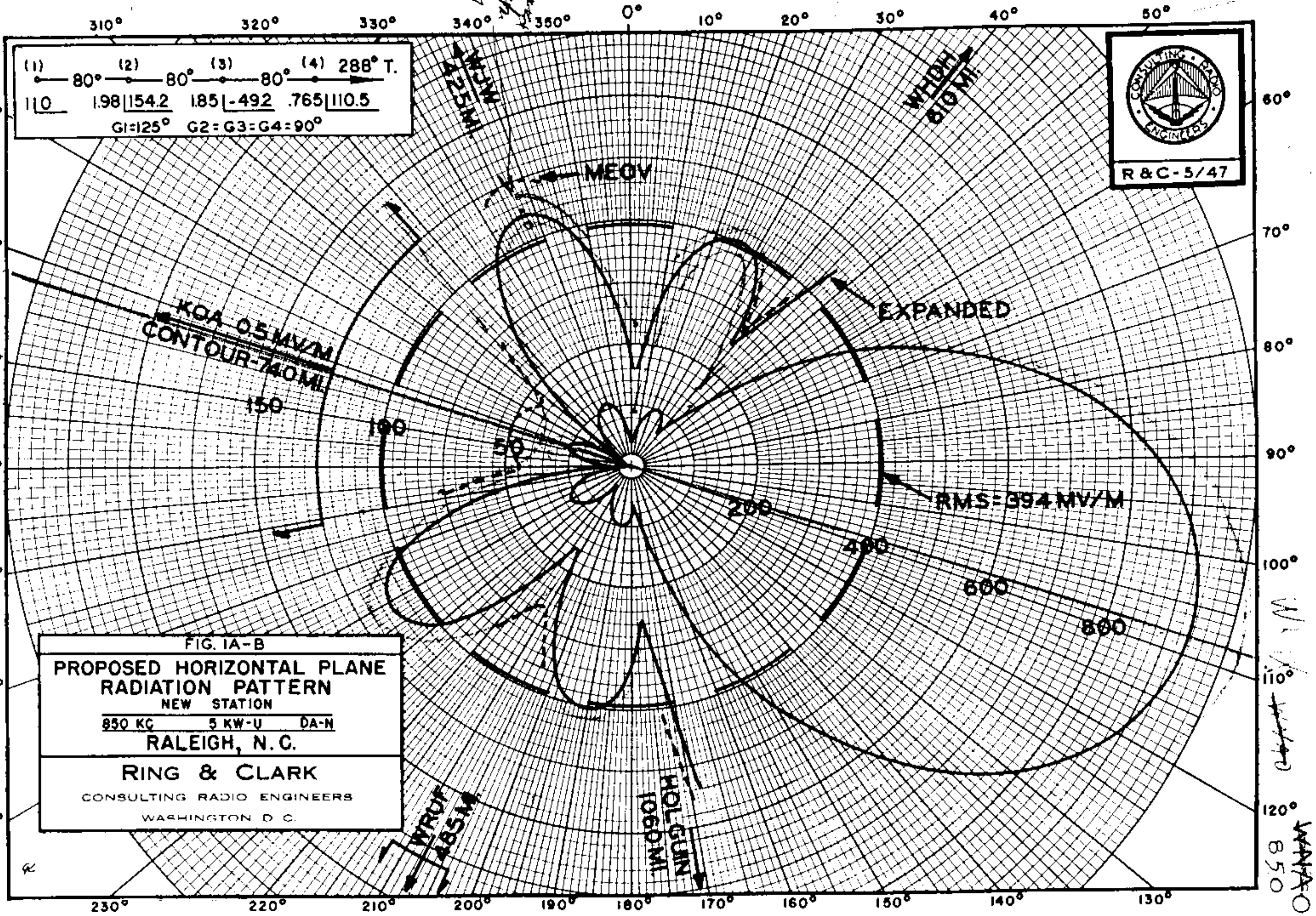


FIG. IA-B

PROPOSED HORIZONTAL PLANE RADIATION PATTERN

NEW STATION

850 KC 5 KW-U DA-N

RALEIGH, N. C.

RING & CLARK

CONSULTING RADIO ENGINEERS

WASHINGTON D. C.

PROPOSED NIGHT NULLS — Station WKIX, Raleigh, North Carolina — 5kw,10kw-LS, DA-N,U — 850 KC

WKIX

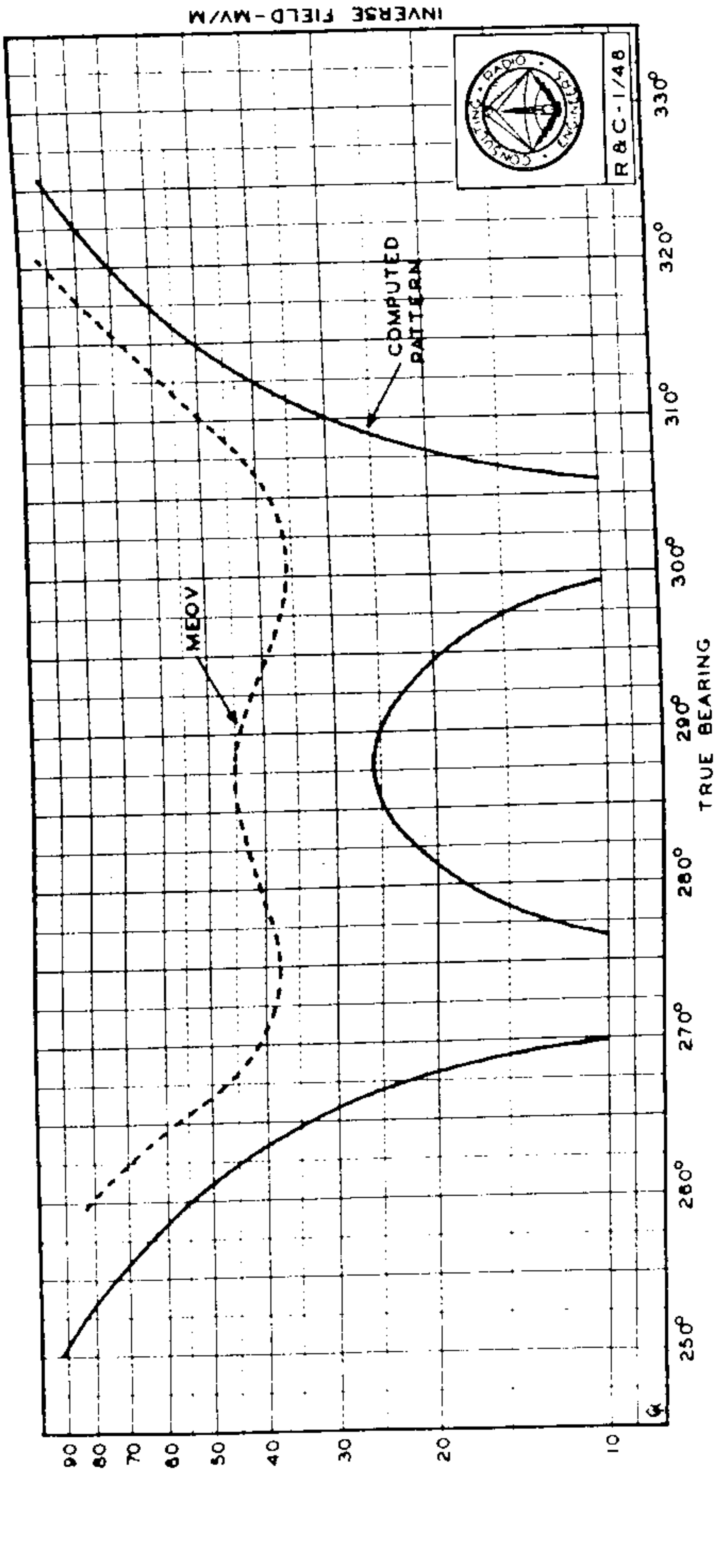


FIG. 51

DETAIL IN NULLS

HORIZONTAL PLANE PATTERN

WNAO RALEIGH, N.C.

850KC 5KW-U DA-N

A. D. RING & CO.

CONSULTING RADIO ENGINEERS

WASHINGTON D.C.

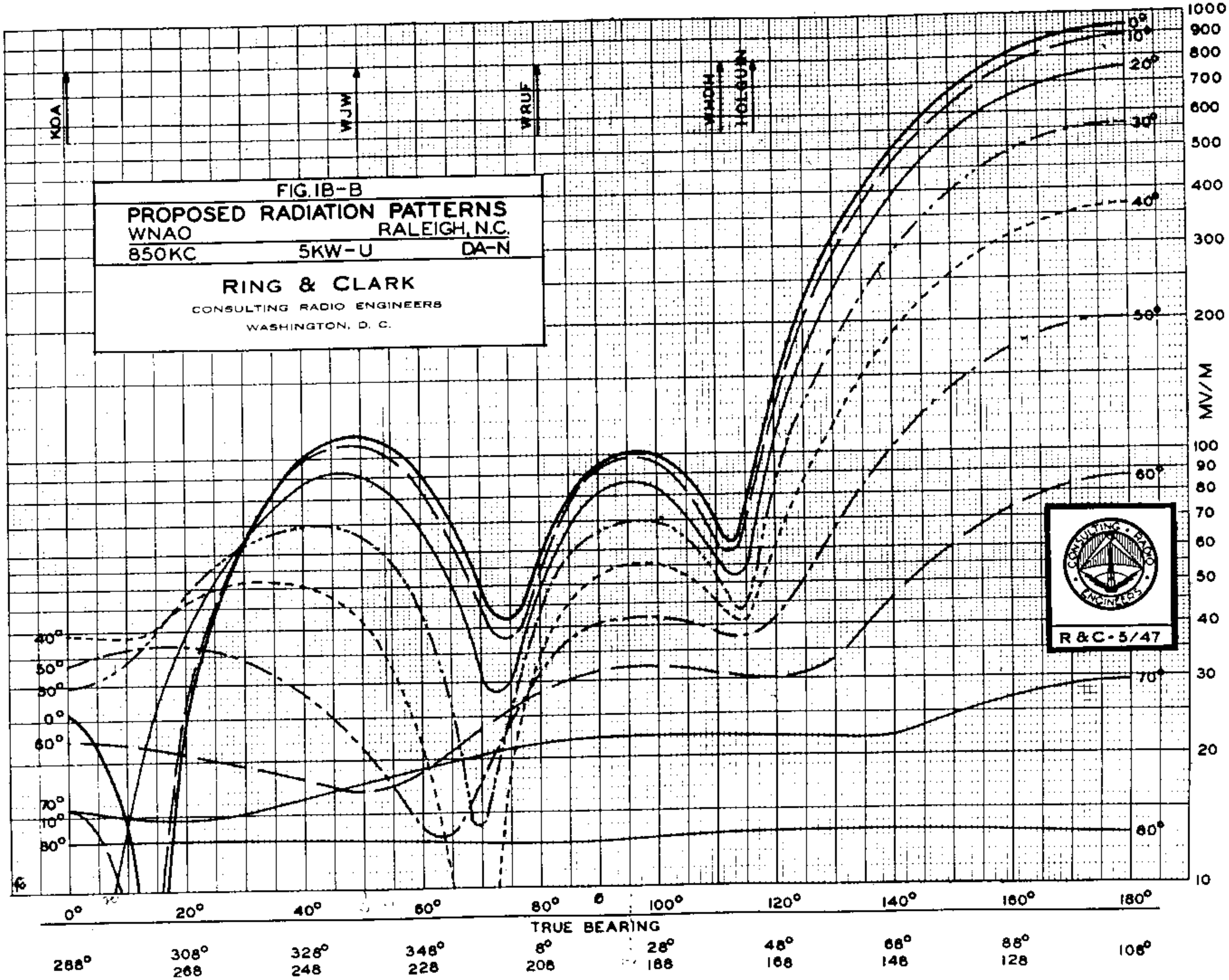


FIG.1B-B
PROPOSED RADIATION PATTERNS
WNAO
RALEIGH, N.C.
850KC
5KW-U
DA-N
RING & CLARK
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.
KOA
WJW
WRUF
WMDH
HOLGUIN
MV/M
TRUE BEARING
R & C - 5/47
CONSULTING RADIO ENGINEERS

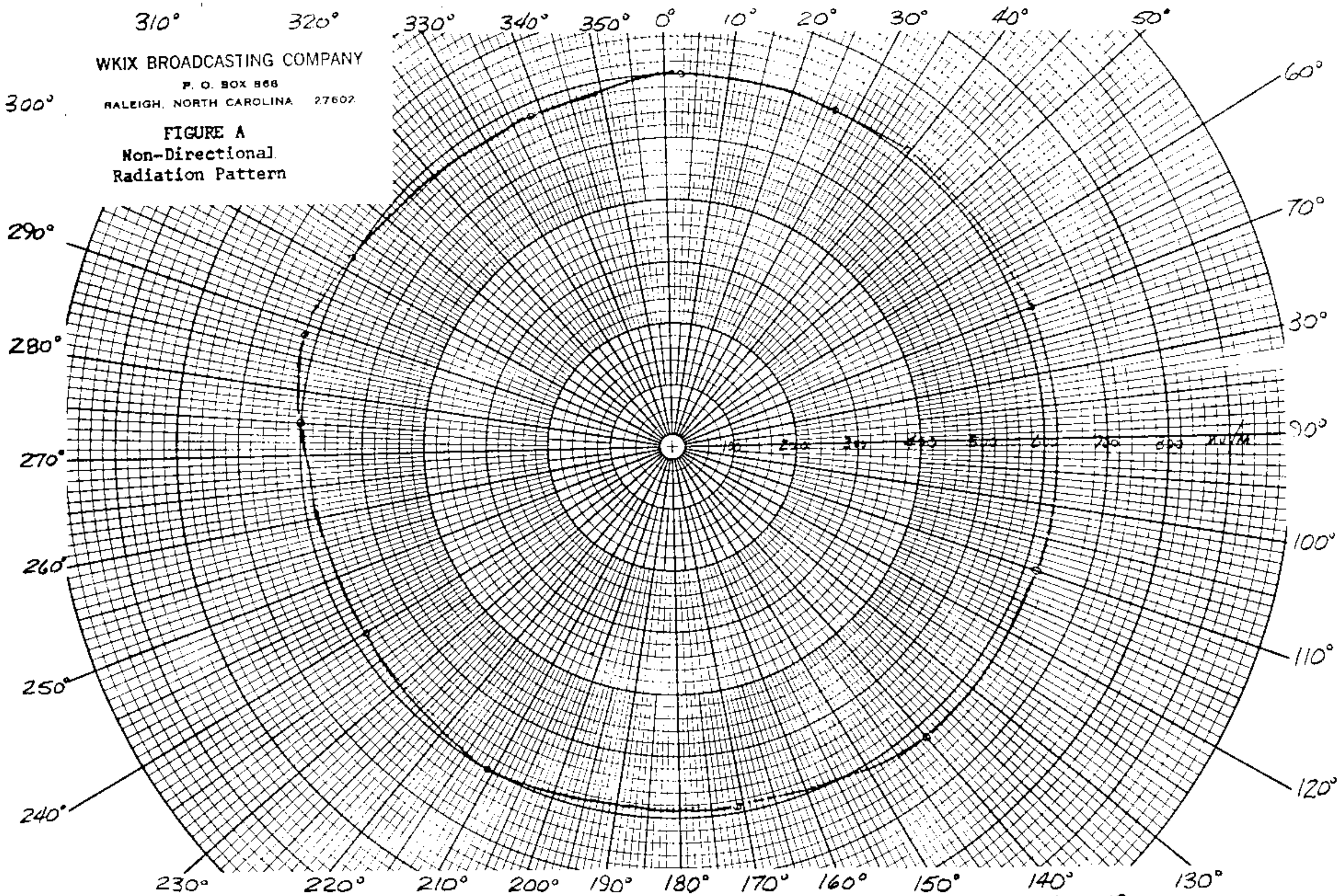
Measured Non-DA
(8-28-67ct)

Station WKIX
Raleigh, Nort Carolina

5kw,10kw-LS,DA-N,U
850 kc

WKIX BROADCASTING COMPANY
P. O. BOX 866
RALEIGH, NORTH CAROLINA 27602

FIGURE A
Non-Directional
Radiation Pattern



FCC File No.BZ-6502
Accepted 8-21-67

Station WKIX
Raleigh, North Carolina

MAY 1967
850 kc

WKIX

WKIX

MEASURED NON-DA
(11/22/57g)

Station WKIX
Raleigh, North Carolina

5kw,10kw-LS, DA-N,U
850 KC

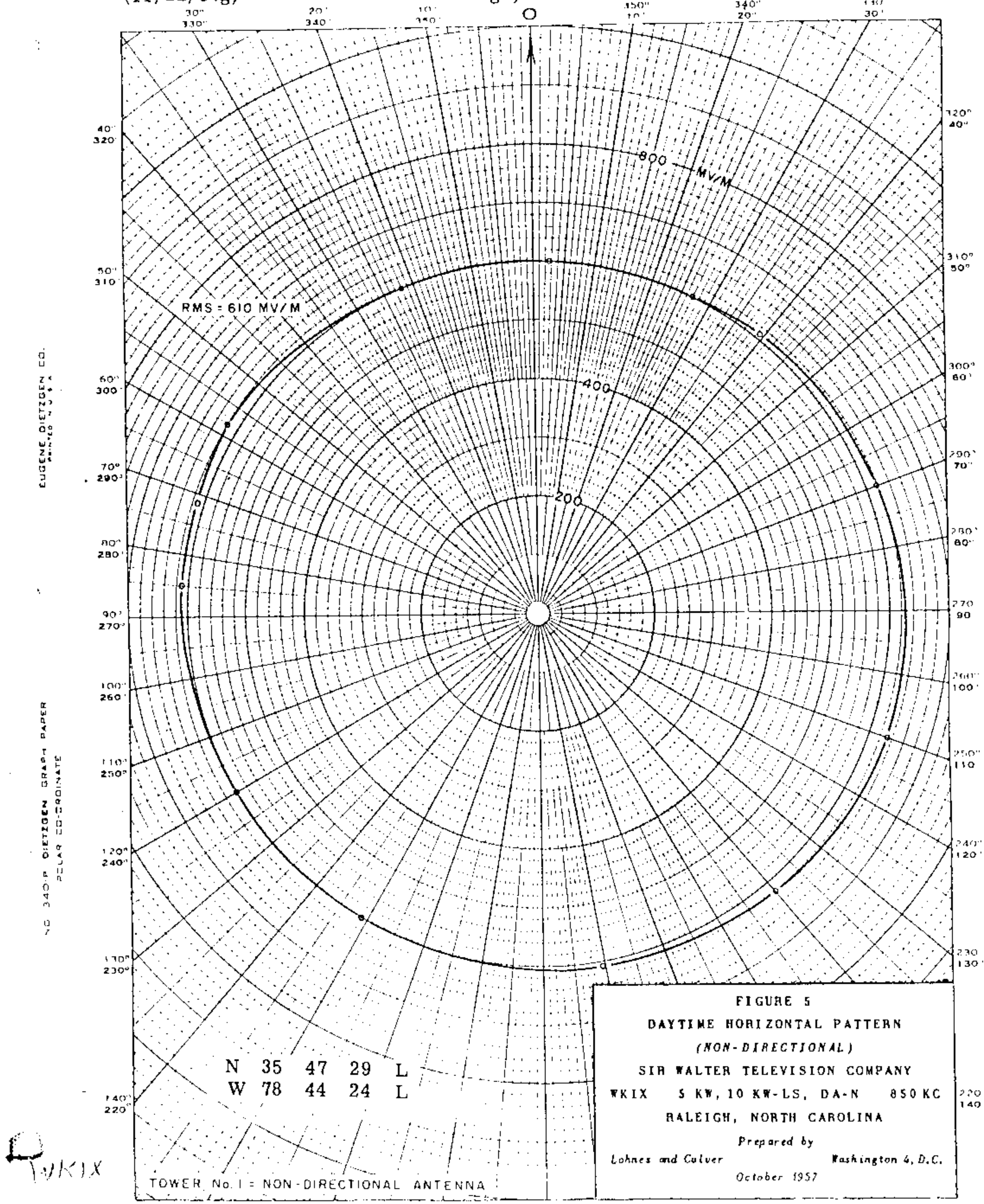


FIGURE 5
DAYTIME HORIZONTAL PATTERN
(NON-DIRECTIONAL)
SIR WALTER TELEVISION COMPANY
WKIX 5 KW, 10 KW-LS, DA-N 850 KC
RALEIGH, NORTH CAROLINA
Prepared by
Lohnes and Culver *Washington 4, D.C.*
October 1957

FCC File No. BZ-3930
Accepted 11-14-57

WKIX
Raleigh, North Carolina

850 KC

WMAG

Proposed Day
(4-29-69ct)

Station WMAG
Forest, Mississippi

10kw,DA-D,D
850 kc

SEE REVERSE SIDE

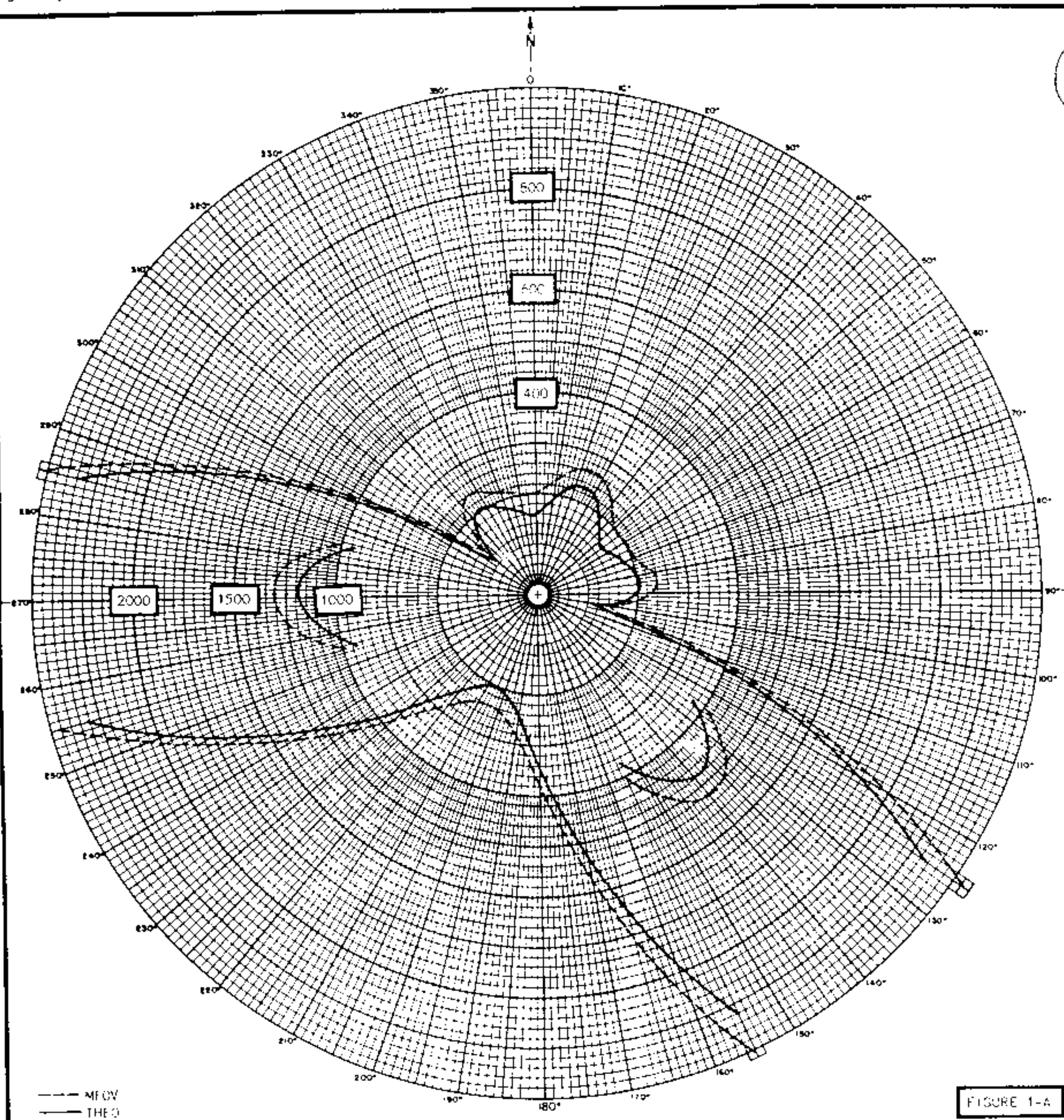
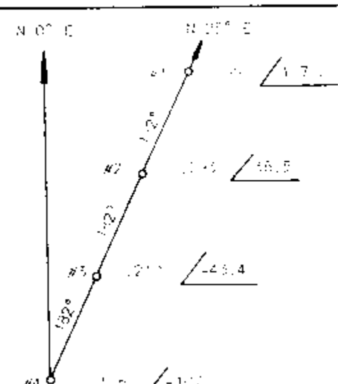


FIGURE 1-A

HORIZONTAL RADIATION PATTERN



APPLICANT	WMAG
LOCATION	FOREST, MISSISSIPPI
FREQUENCY	850 KC/S
POWER	10 KW
LATITUDE	32 DEG 21 MIN 40 SEC
LONGITUDE	89 DEG 25 MIN 09 SEC
WHEN USED	DAYTIME
R.M.S. FIELD	563.1 MV/M
DATE	FEBRUARY 1969

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

FCC File No.BP-18504
Accepted 4-23-69

Station WMAG
Forest, Mississippi

850 kc

WPTB

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: (New) | Main Studio: Statesboro, Georgia

Frequency: 850 kHz | Power: 1 kW

Notification List No. 1635 | Date: June 3, 1975 | Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 32° 27' 56"; West Longitude: 81° 50' 04"

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:	W(#1)	WC(#2)	EC(#3)	E(#4)
HEIGHT ABOVE INSULATORS:	290'	290'	290'	290' (90°)
PHASING:	0°	-148.7°	+62.9°	-86.8°
FIELD RATIO:	1	2.18	2.12	0.917

SPACING AND ORIENTATION: Adjacent elements are spaced 289' (90°) on a line bearing 102° true.

GROUND SYSTEM: 120-290' 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 FIELDS AT RATED POWER:

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	190 mv/m	---	---
Night	215 mv/m	422 mv/m	226 mv/m

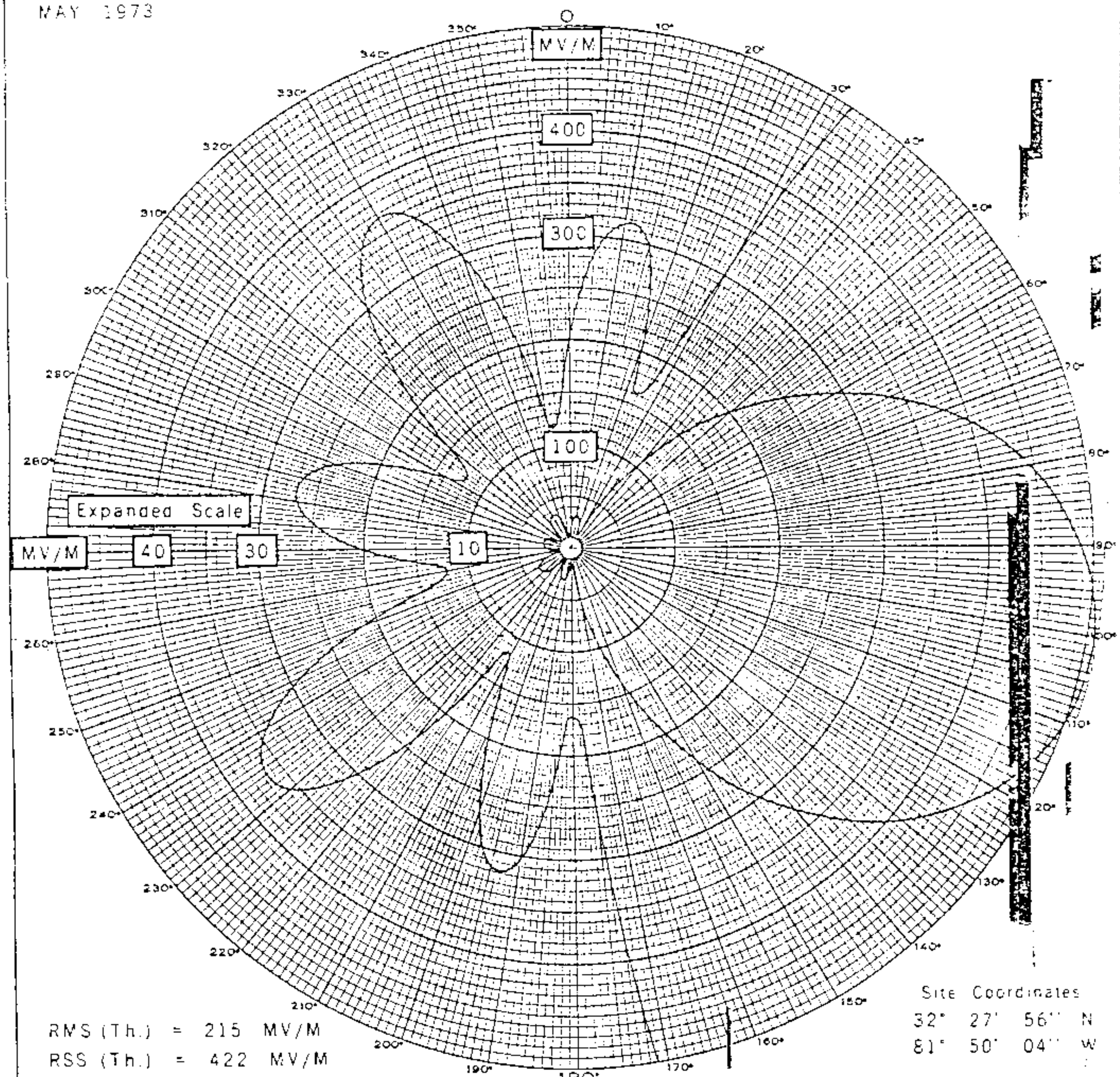
CTR NO 30351A3

WPTB

Standard Pattern

Figure 7
Sheet 1 of 14

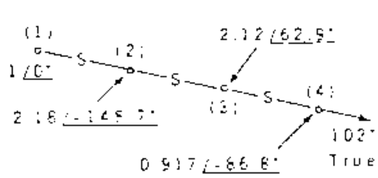
MAY 1973



RMS (Th.) = 215 MV/M
RSS (Th.) = 422 MV/M
RMS (Std.) = 226 MV/M

Site Coordinates
32° 27' 56" N
81° 50' 04" W

STANDARD HORIZONTAL PLANE PATTERN



S = 90° (289°)
G = 90°

ROSEMOR
BROADCASTING COMPANY, INC.
STATESBORO, GEORGIA

Jules Cohen & Associates
Consulting Electronics Engineers

WPTB

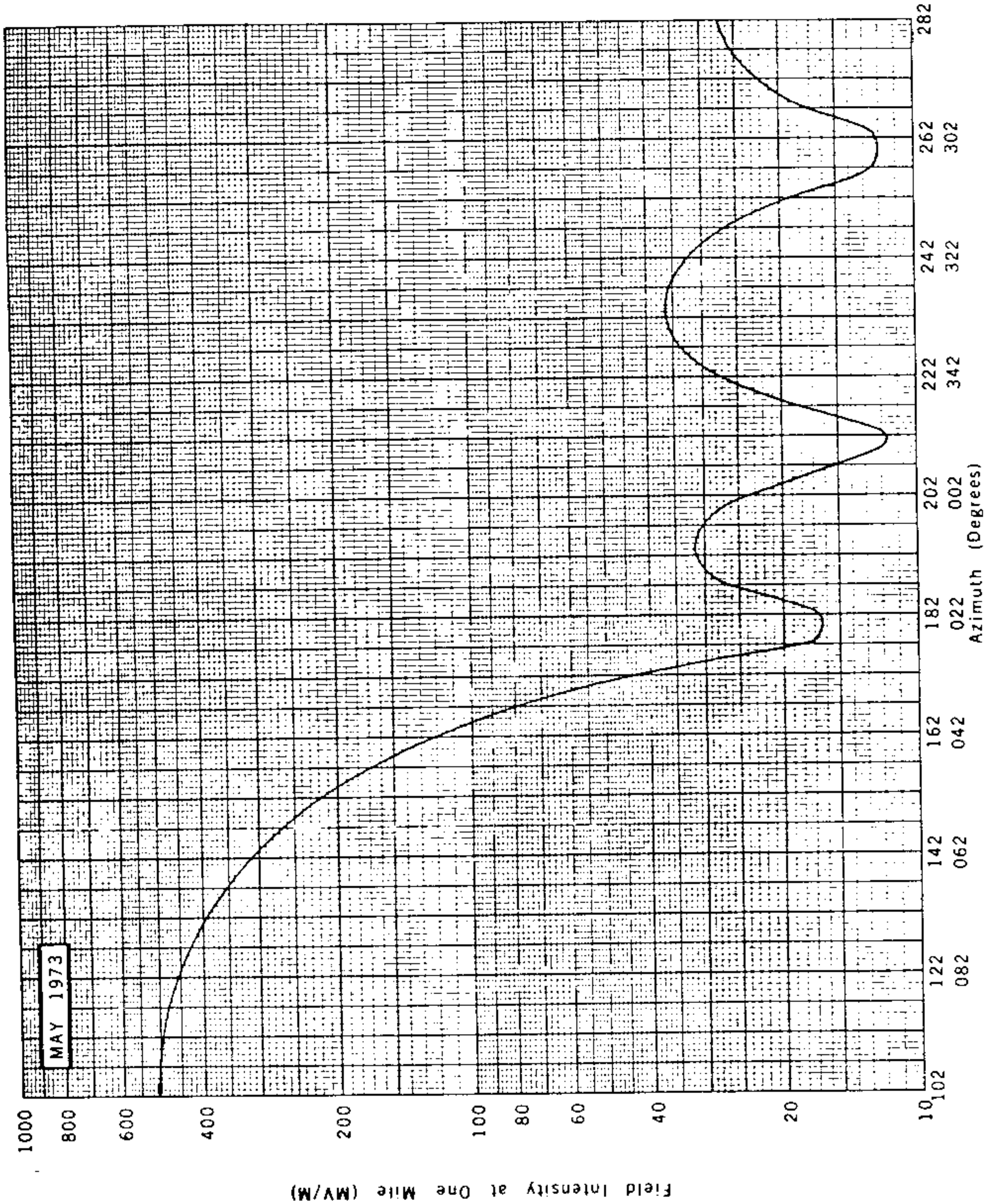
850 KHZ

1 KW U DA-N

Pattern No. 7305033

WPTB

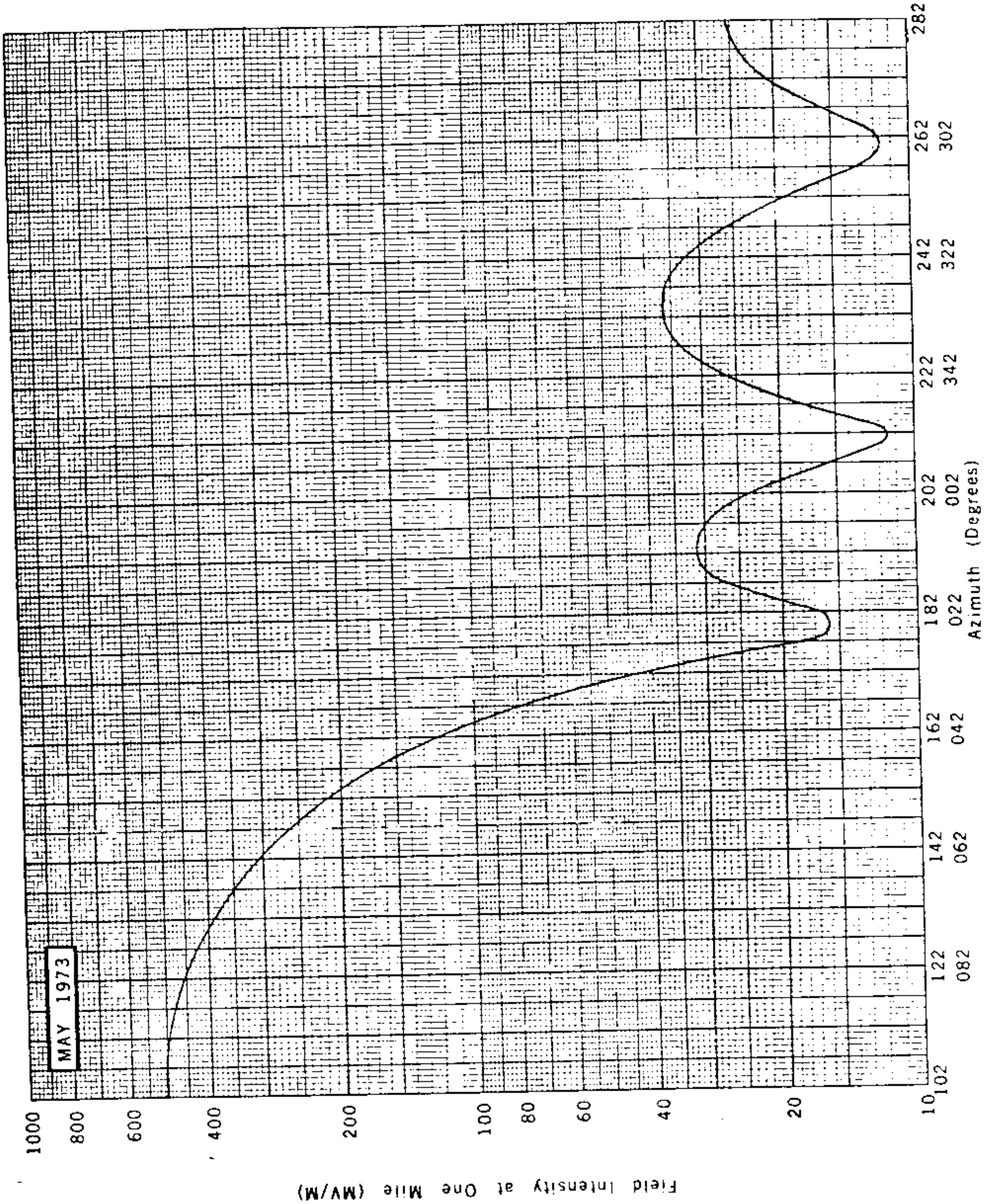
Standard Pattern



STANDARD PATTERN AT VERTICAL ANGLE OF 0 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

Standard Pattern

Figure 7
Sh [illegible] of 14
WPTB

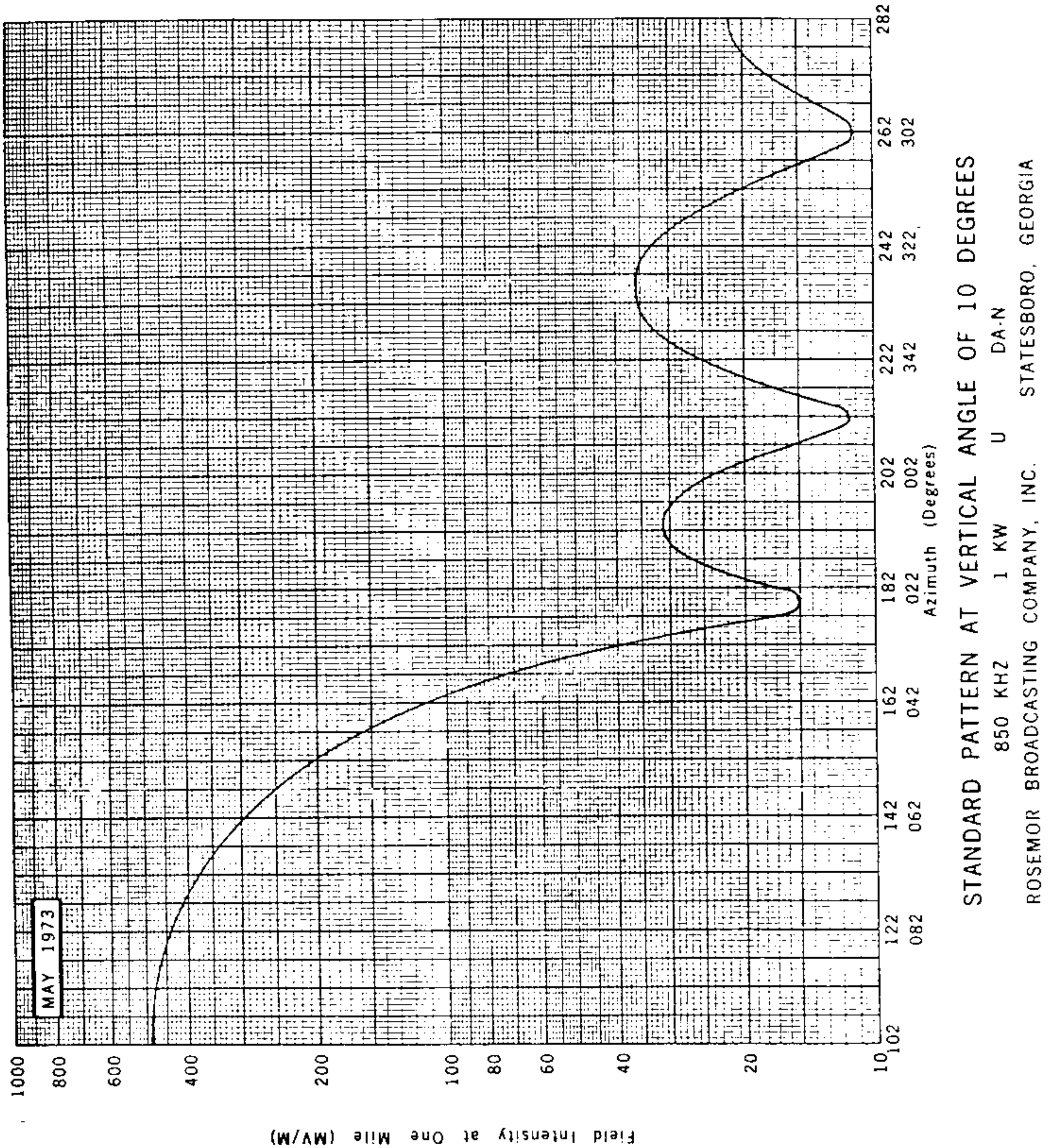


STANDARD PATTERN AT VERTICAL ANGLE OF 5 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

Figure 7 WPTB
Sheet 4 of 14

Standard Pattern

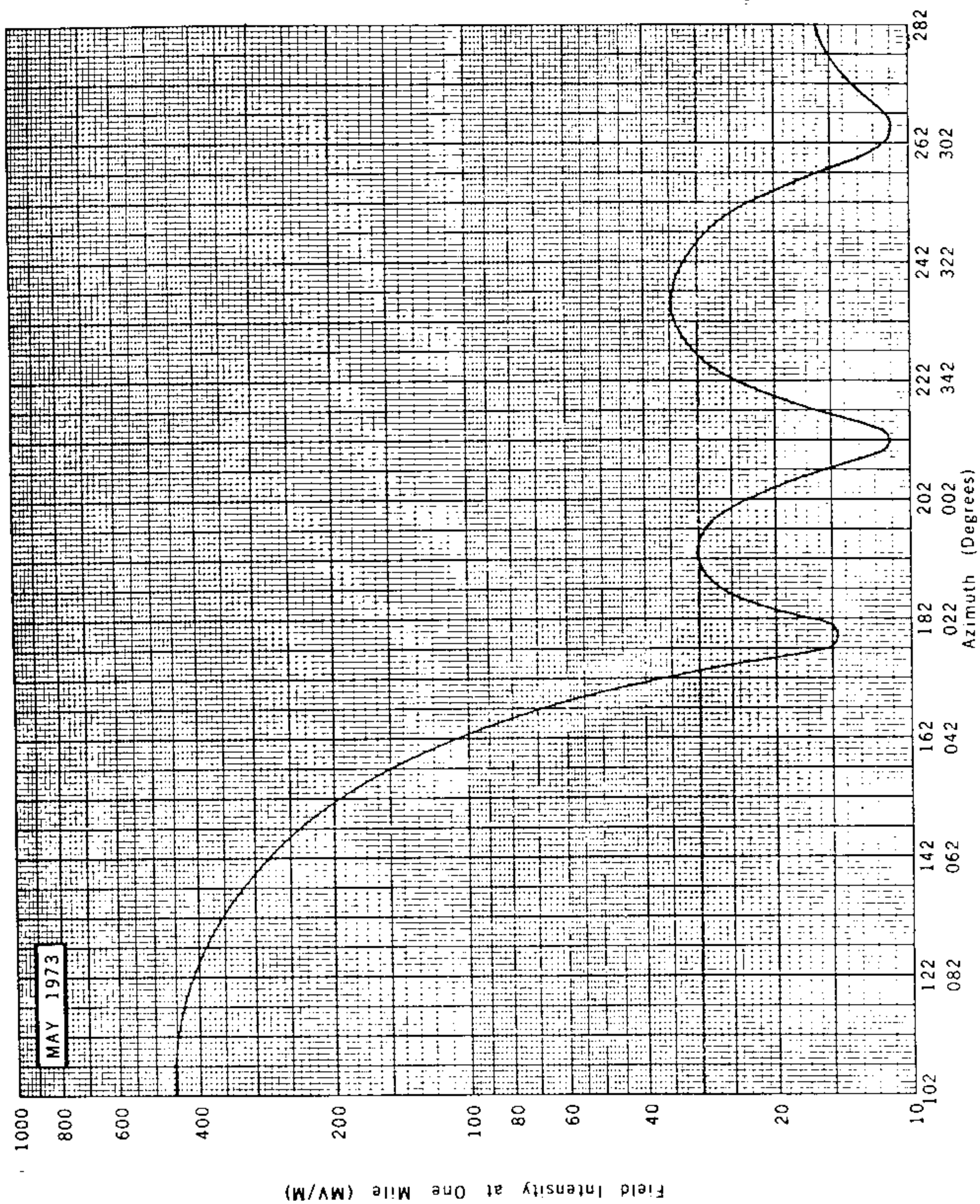
1



WPTB

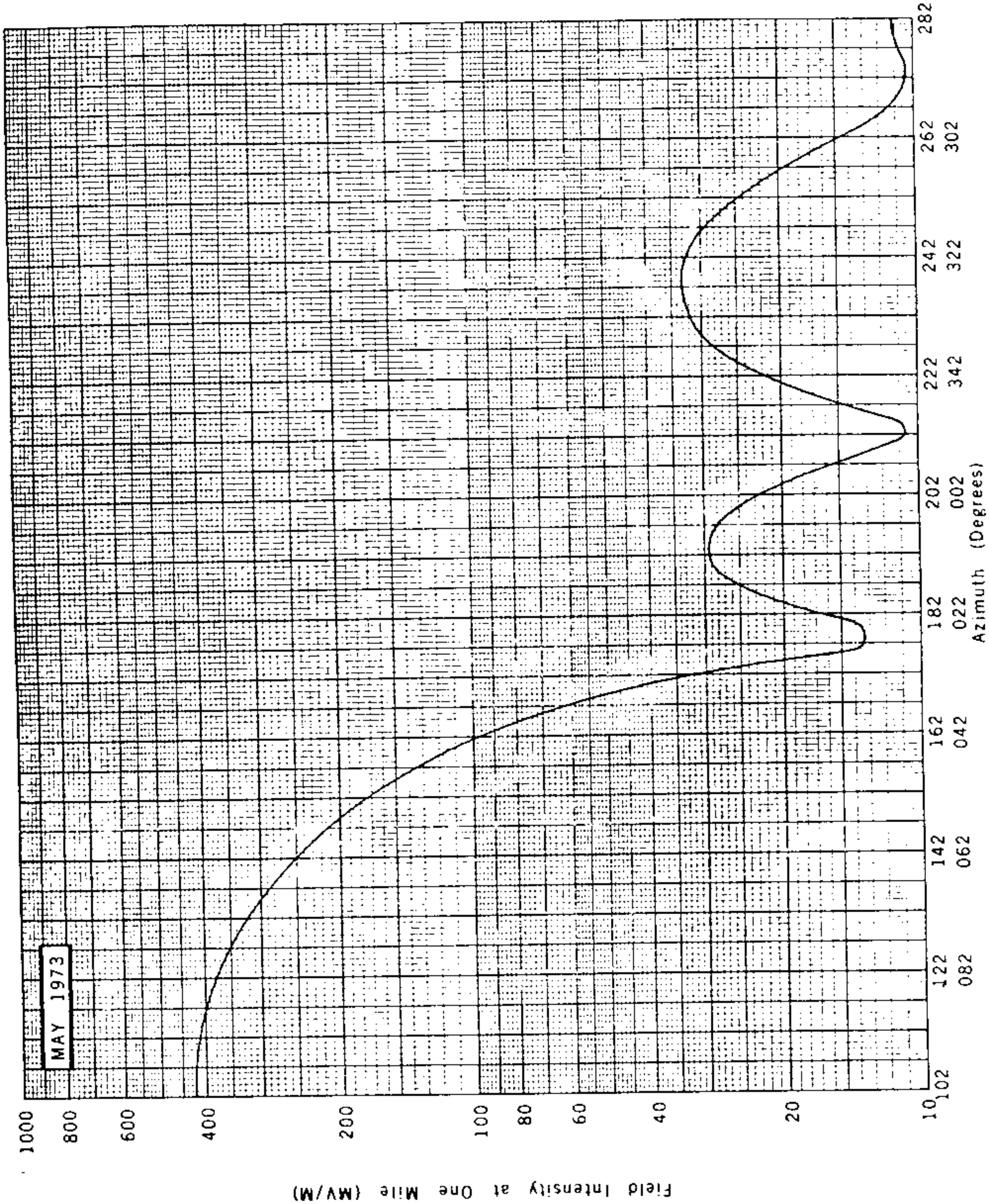
Figure 7
Sheet 5 of 14

Standard Pattern



STANDARD PATTERN AT VERTICAL ANGLE OF 15 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

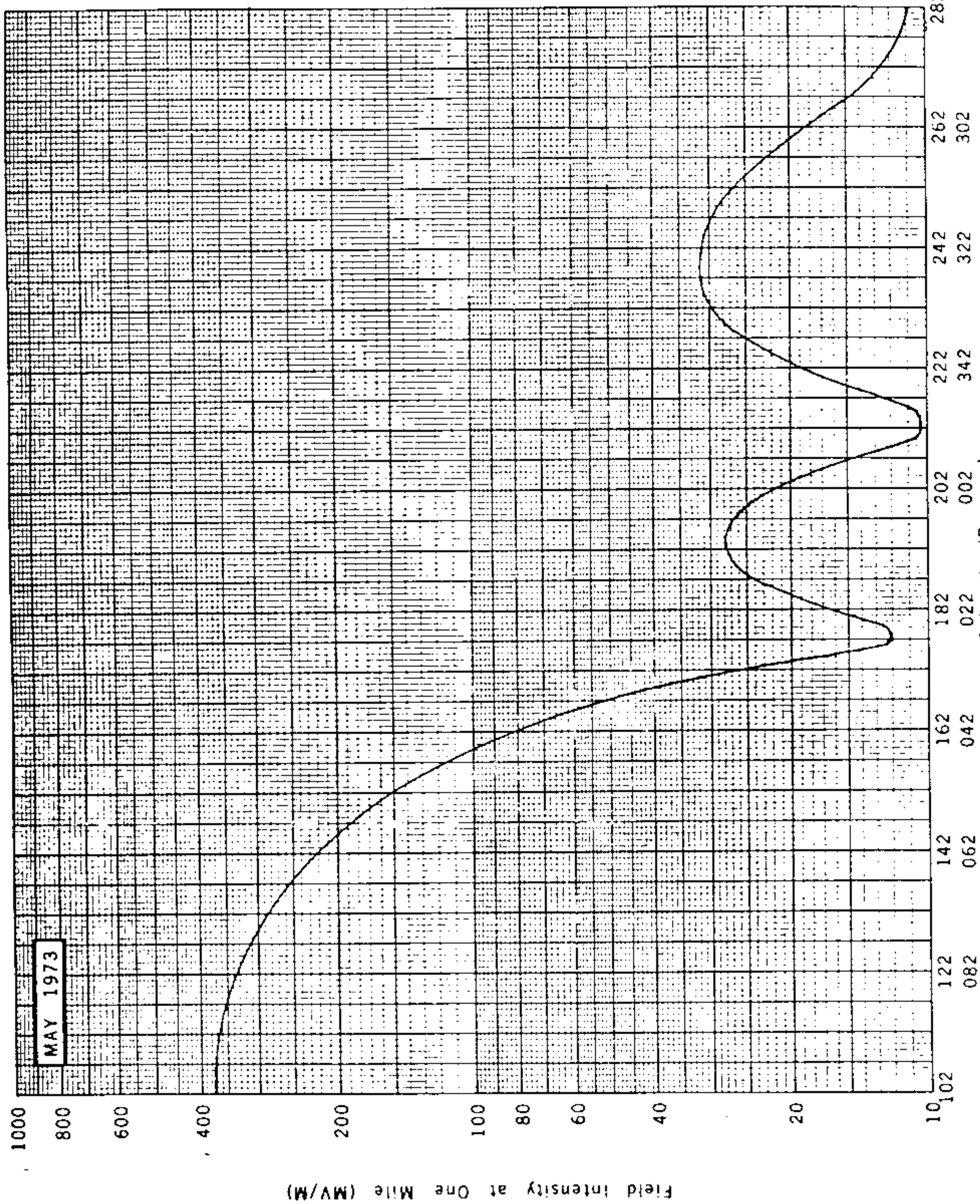
Standard Pattern



STANDARD PATTERN AT VERTICAL ANGLE OF 20 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

Figure 7 WPTB
Sheet 7 of 14

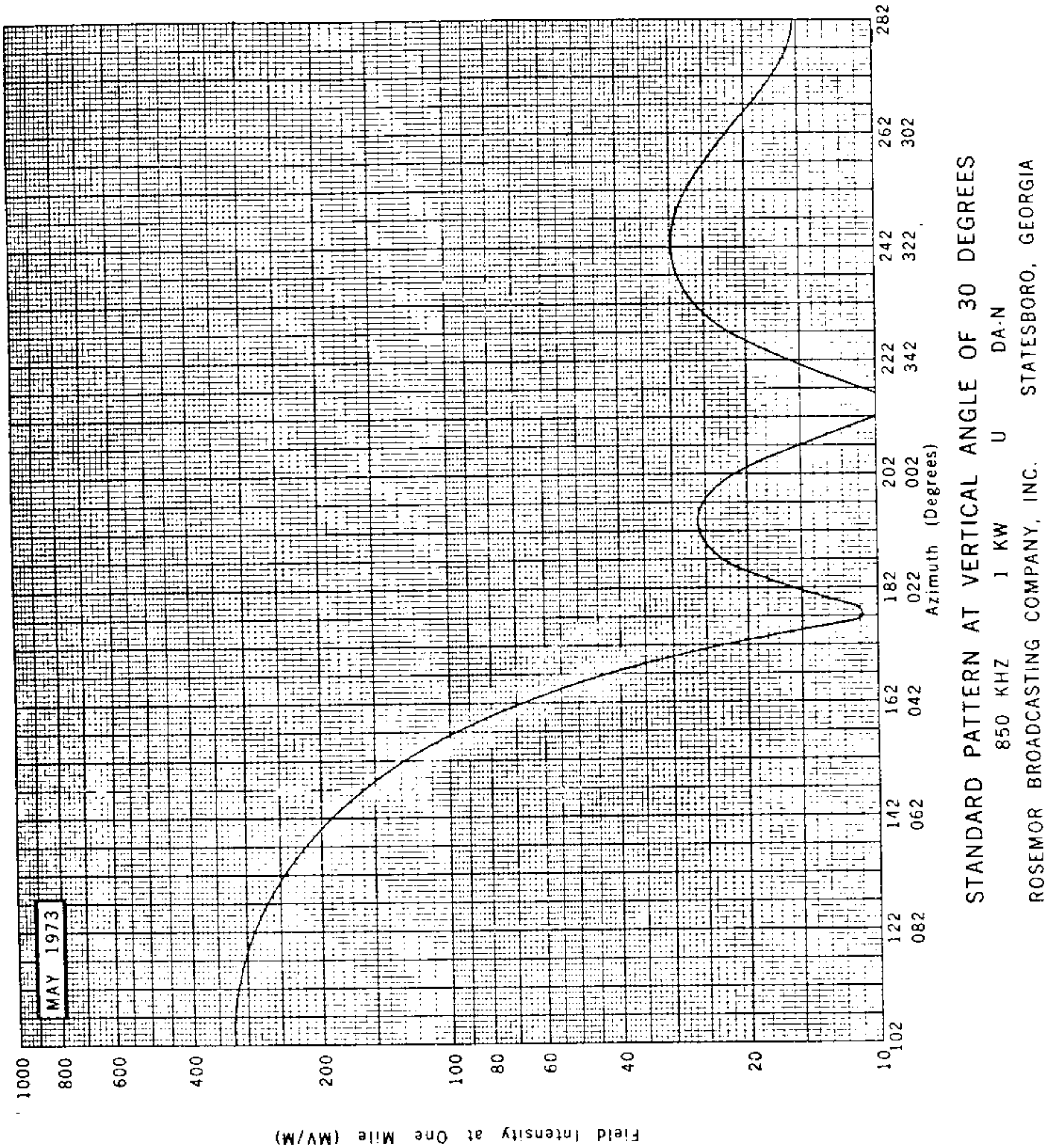
Standard Pattern



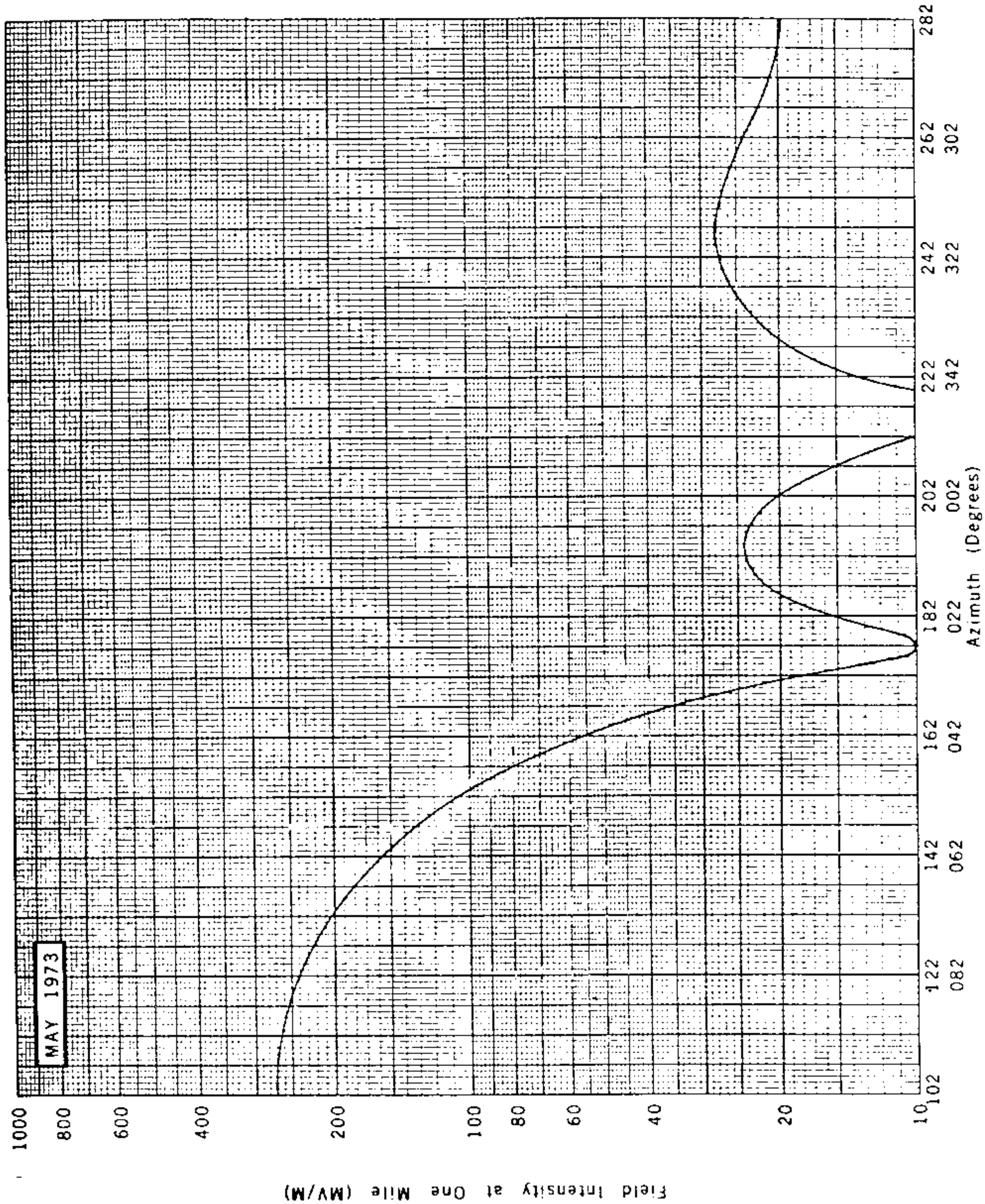
STANDARD PATTERN AT VERTICAL ANGLE OF 25 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

Figure 7 WPTB
Sheet 8 of 14

Standard Pattern



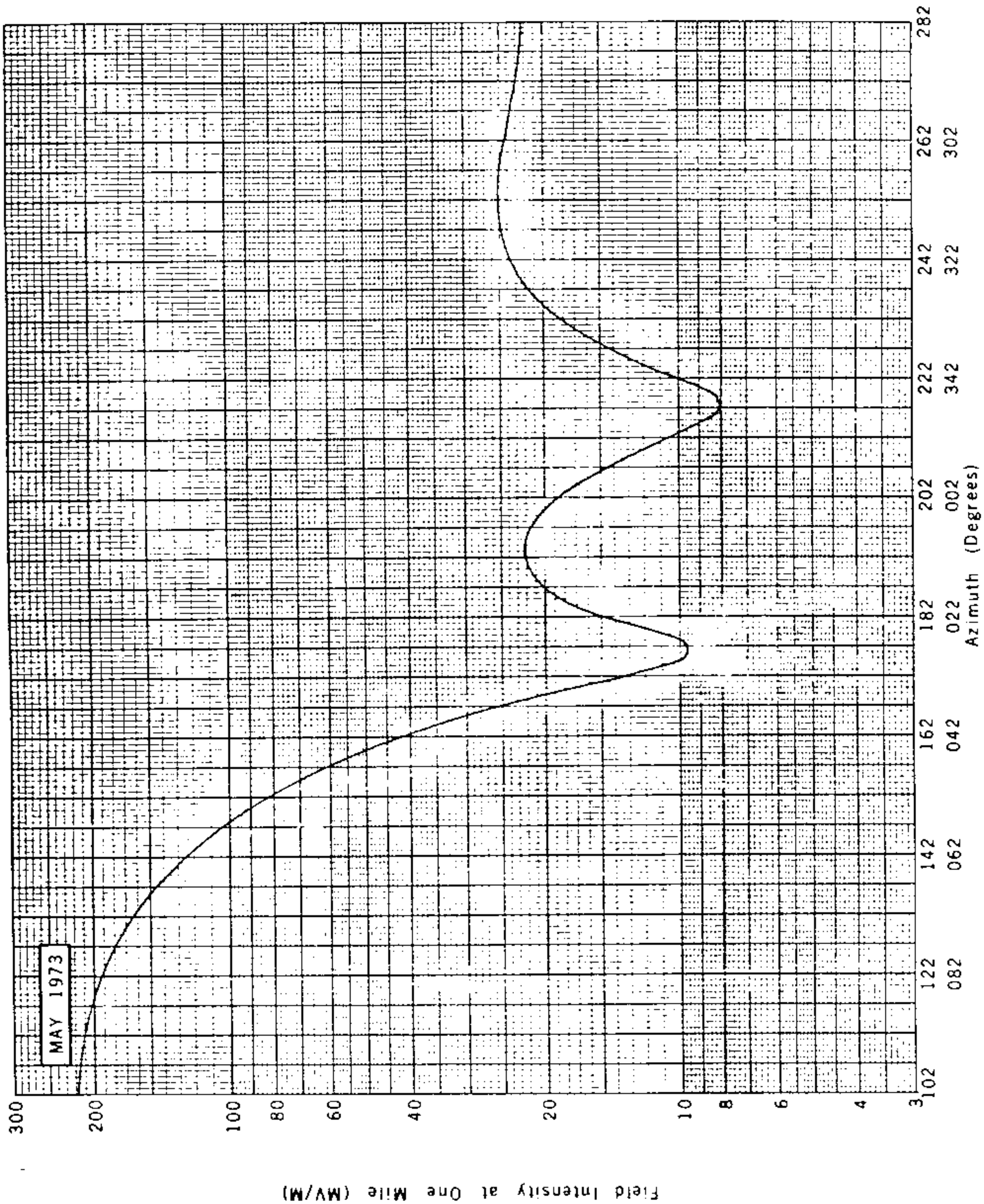
Standard Pattern



STANDARD PATTERN AT VERTICAL ANGLE OF 35 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

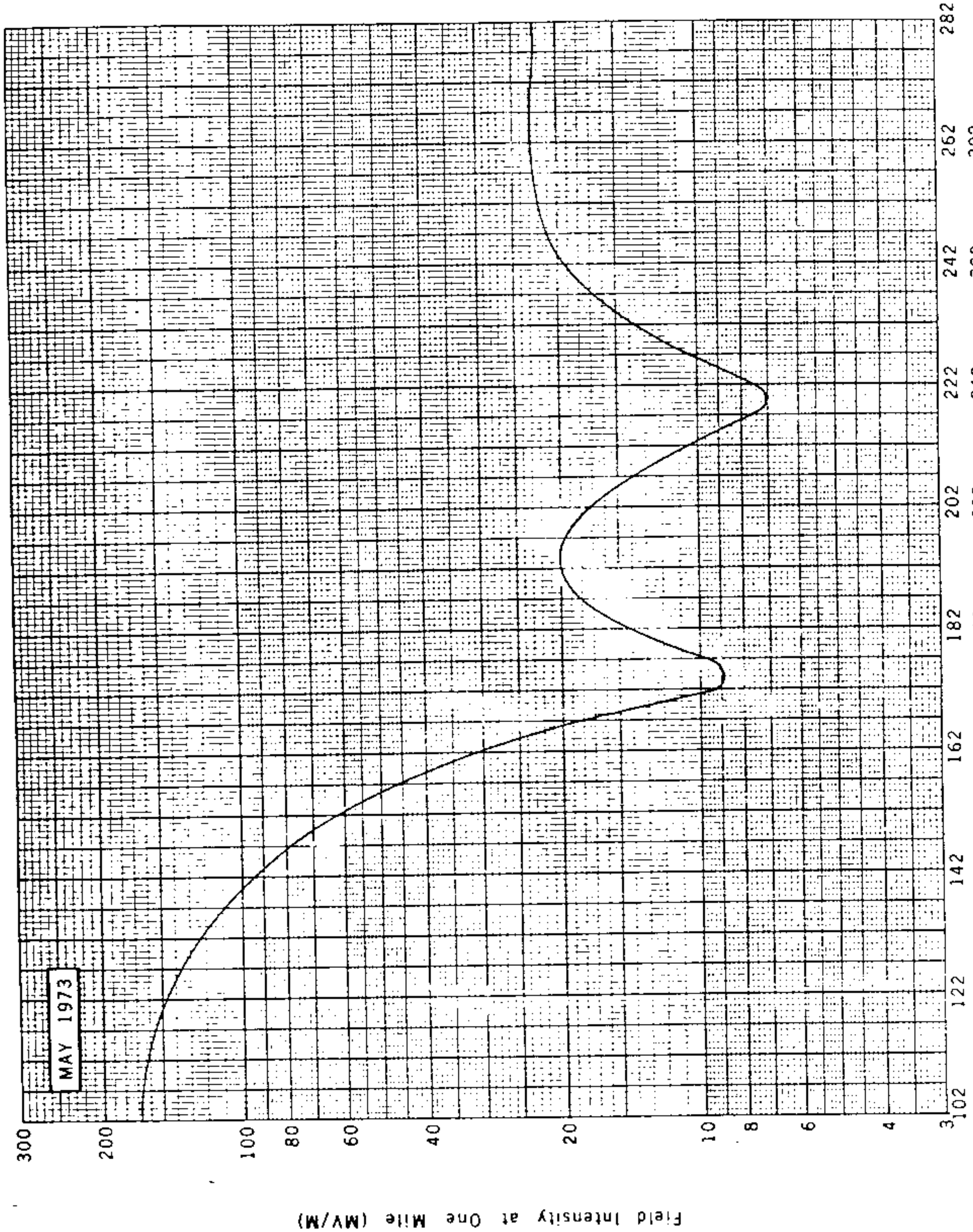
Figure 7 WPTB
Sheet 10 of 14

Standard Pattern



STANDARD PATTERN AT VERTICAL ANGLE OF 40 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

Standard Pattern

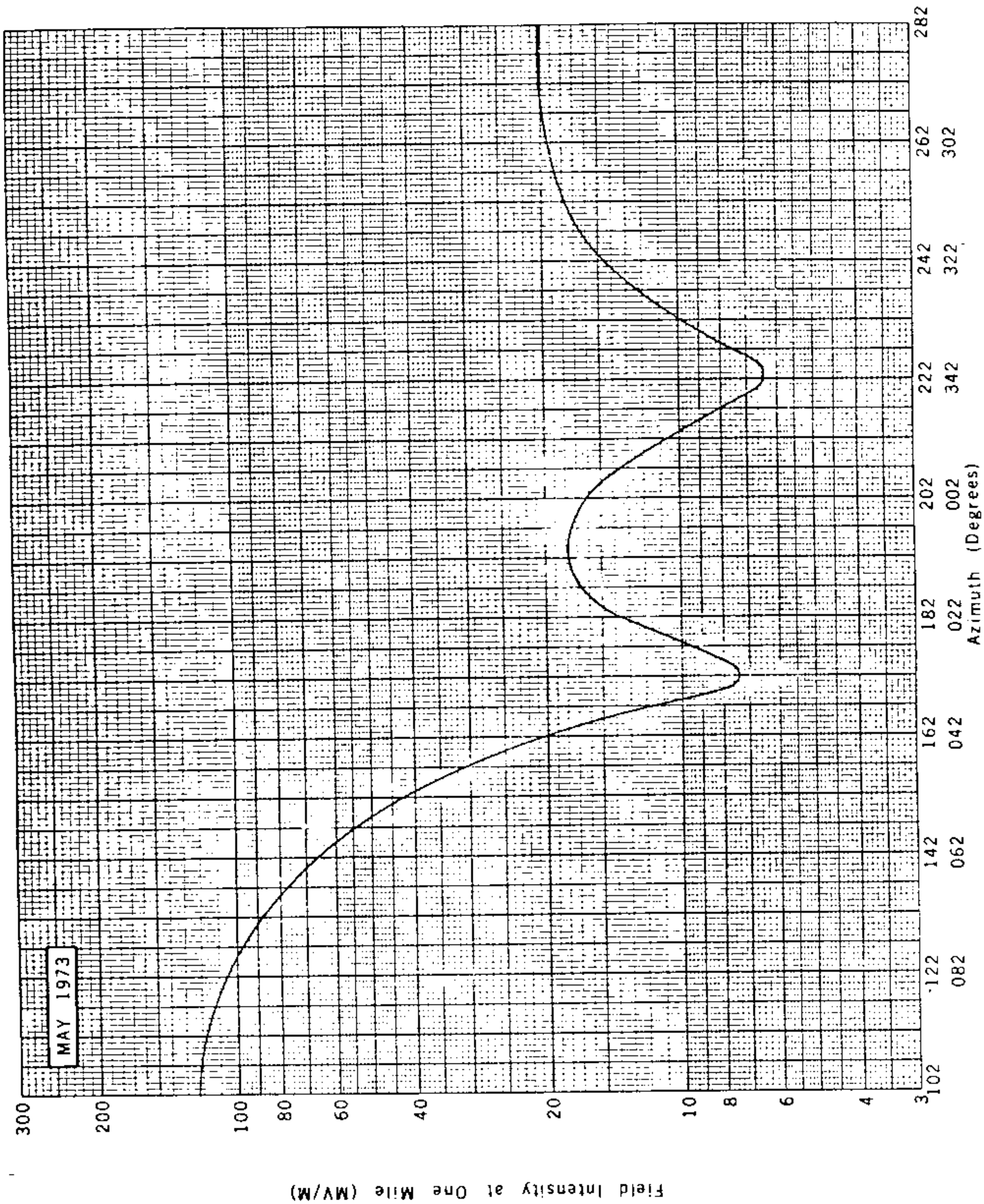


STANDARD PATTERN AT VERTICAL ANGLE OF 45 DEGREES

850 KHZ 1 KW U DA-N

ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

Standard Pattern

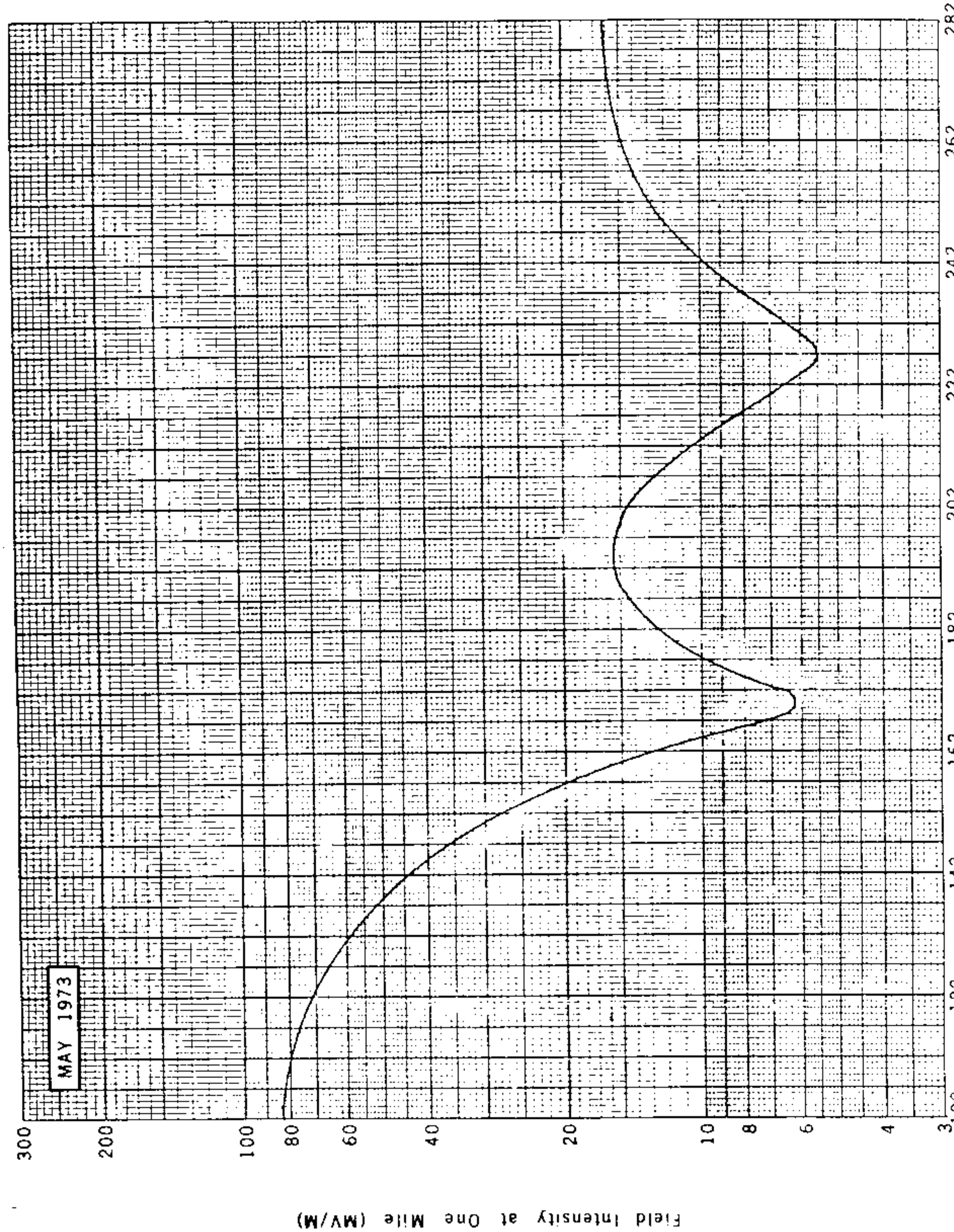


STANDARD PATTERN AT VERTICAL ANGLE OF 50 DEGREES

850 KHZ 1 KW U DA-N

ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

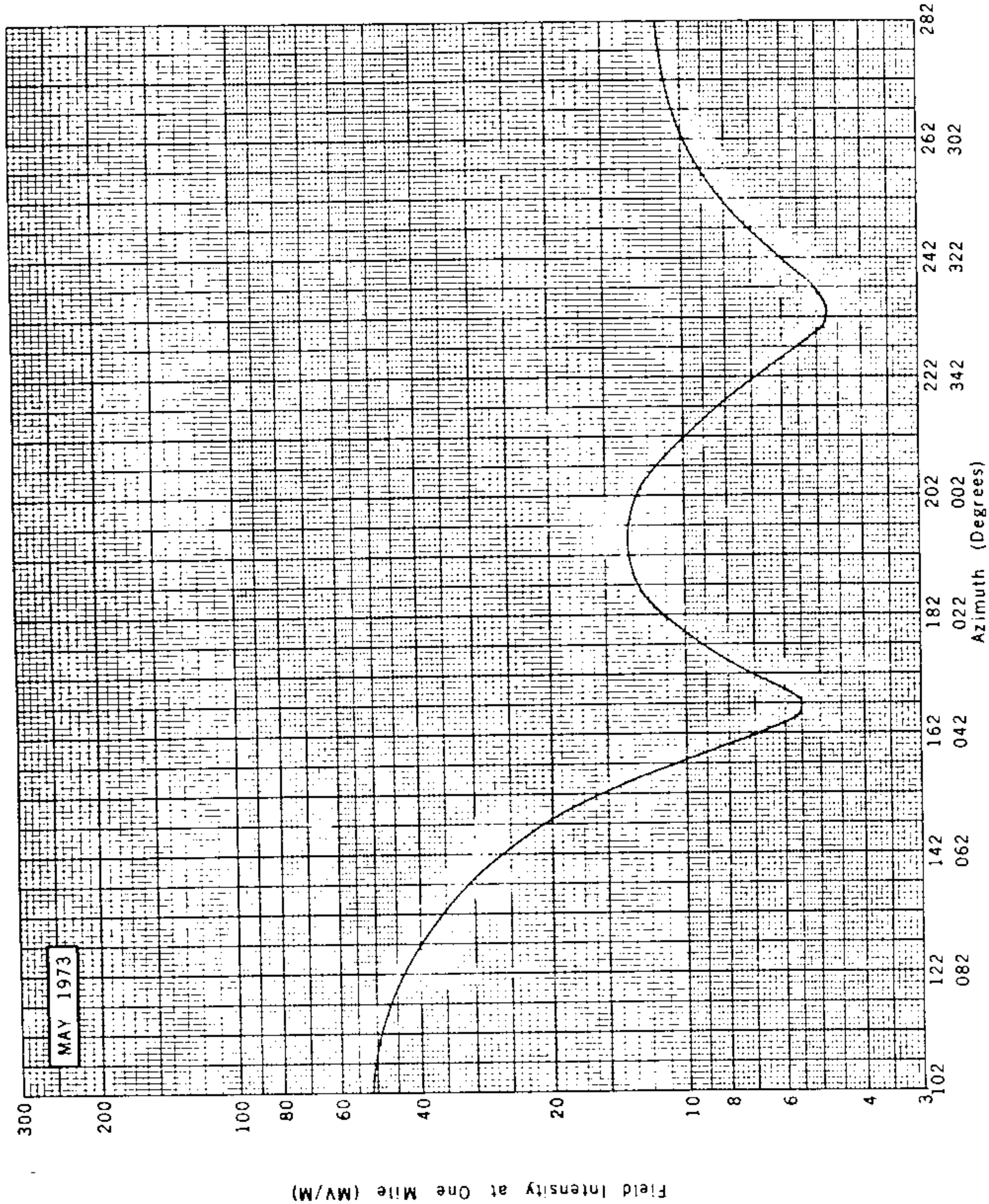
Standard Pattern



STANDARD PATTERN AT VERTICAL ANGLE OF 55 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

Figure 7 WPTB
Sheet 14 of 14

Standard Pattern



STANDARD PATTERN AT VERTICAL ANGLE OF 60 DEGREES
850 KHZ 1 KW U DA-N
ROSEMOR BROADCASTING COMPANY, INC. STATESBORO, GEORGIA

WPTB

SUPPLEMENTAL DIRECTIONAL ANTENNA
DESCRIPTION SHEET

Station: WPTB

Main Studio: Statesboro, Georgia

Frequency: 850 kHz

Power: 1 kW

Notification List No. 1699

Date: August 24, 1976 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 32° 28' 02"
West Longitude: 81° 50' 07"

Authorized for Night operation (DA-N).

Note: Please retain the description sheet and directional antenna radiation patterns notified for a new station at Statesboro, Georgia, in United States Change List Number 1635, dated June 3, 1975, and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only a correction in the geographical coordinates of the center of the antenna system.

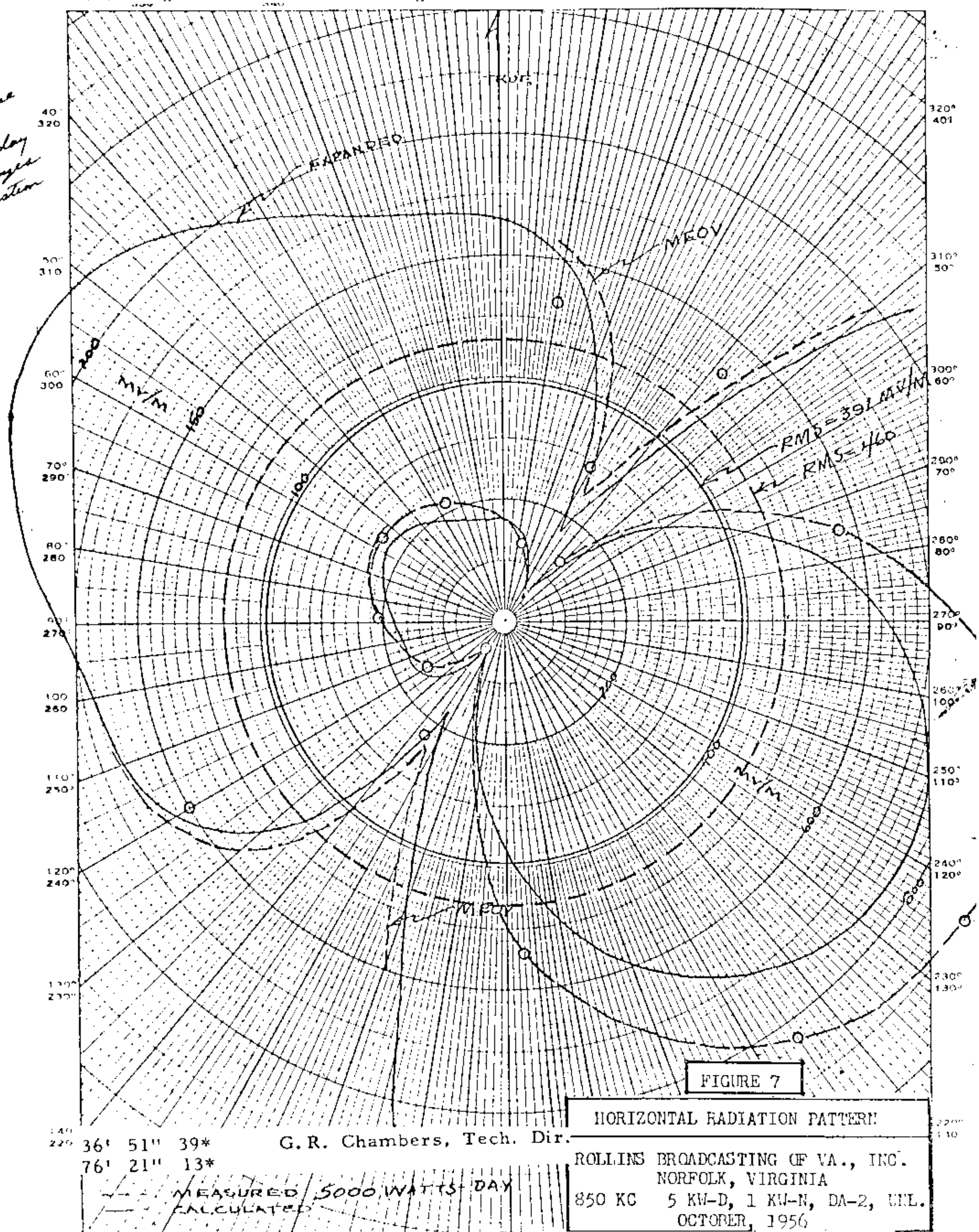
CTR NO 30351A4

COHEN AND DIPPELL
RECEIVED
OCT 22 1977
WASHINGTON, D.C.

WRAP

MEASURED DAY (1-4-57g) Station W R A P Norfolk, Virginia 1KW-N, 5KW-D, DA-2, U 850 KC

anted license
3/30/57 for
ncrease in day
ower + changes
in DA-D system

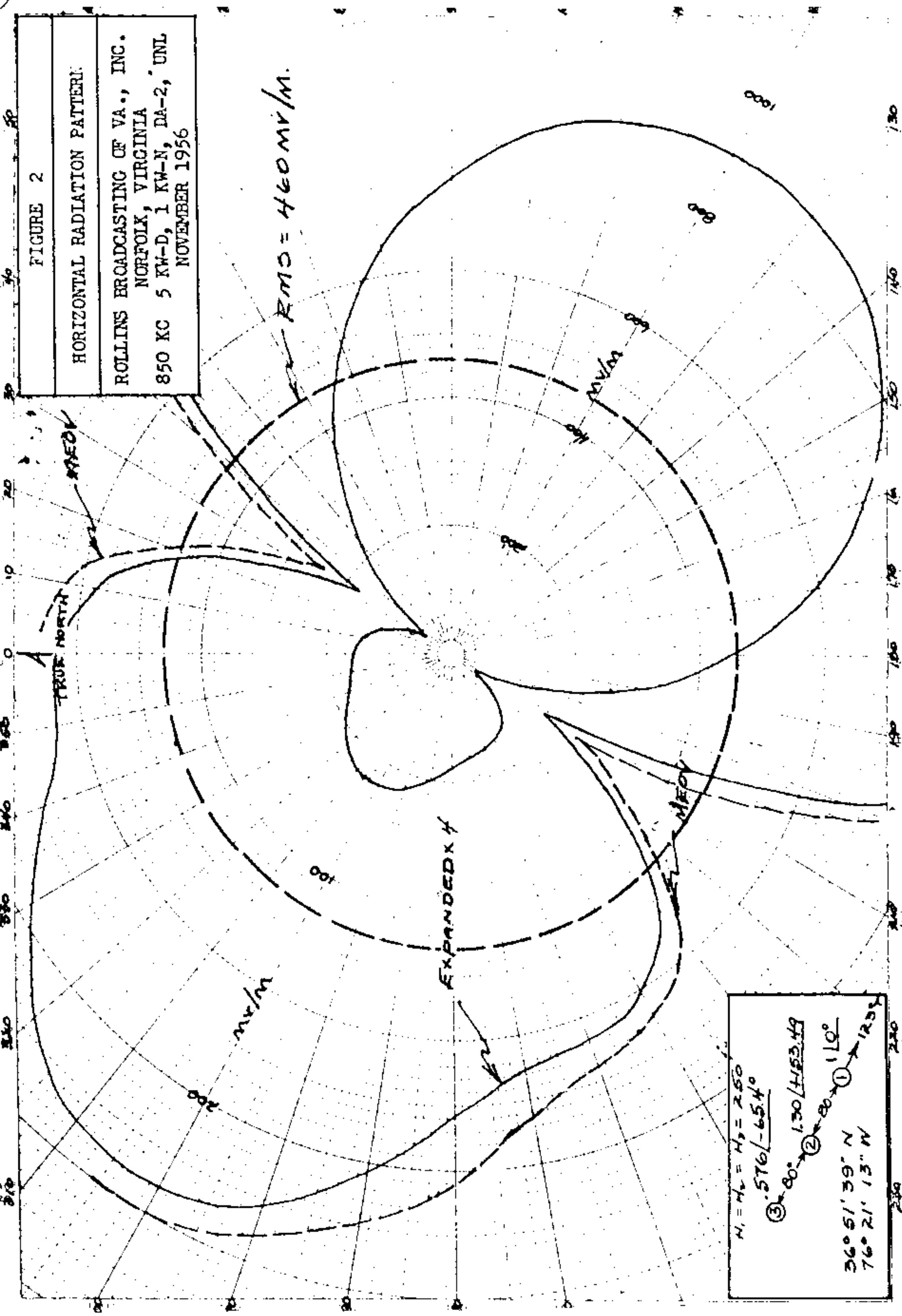


FCC File No. BL6448 Accepted 12-20-56 WRAP Norfolk, Va. 850 K C

granted CP 12/7/56
to make changes in
daytime directional pattern

WRAP

PROPOSED DAY Station W R A P (12-18-56g) Norfolk, Virginia 1KW-N, 5KW-D, DA-2, U 850 KC



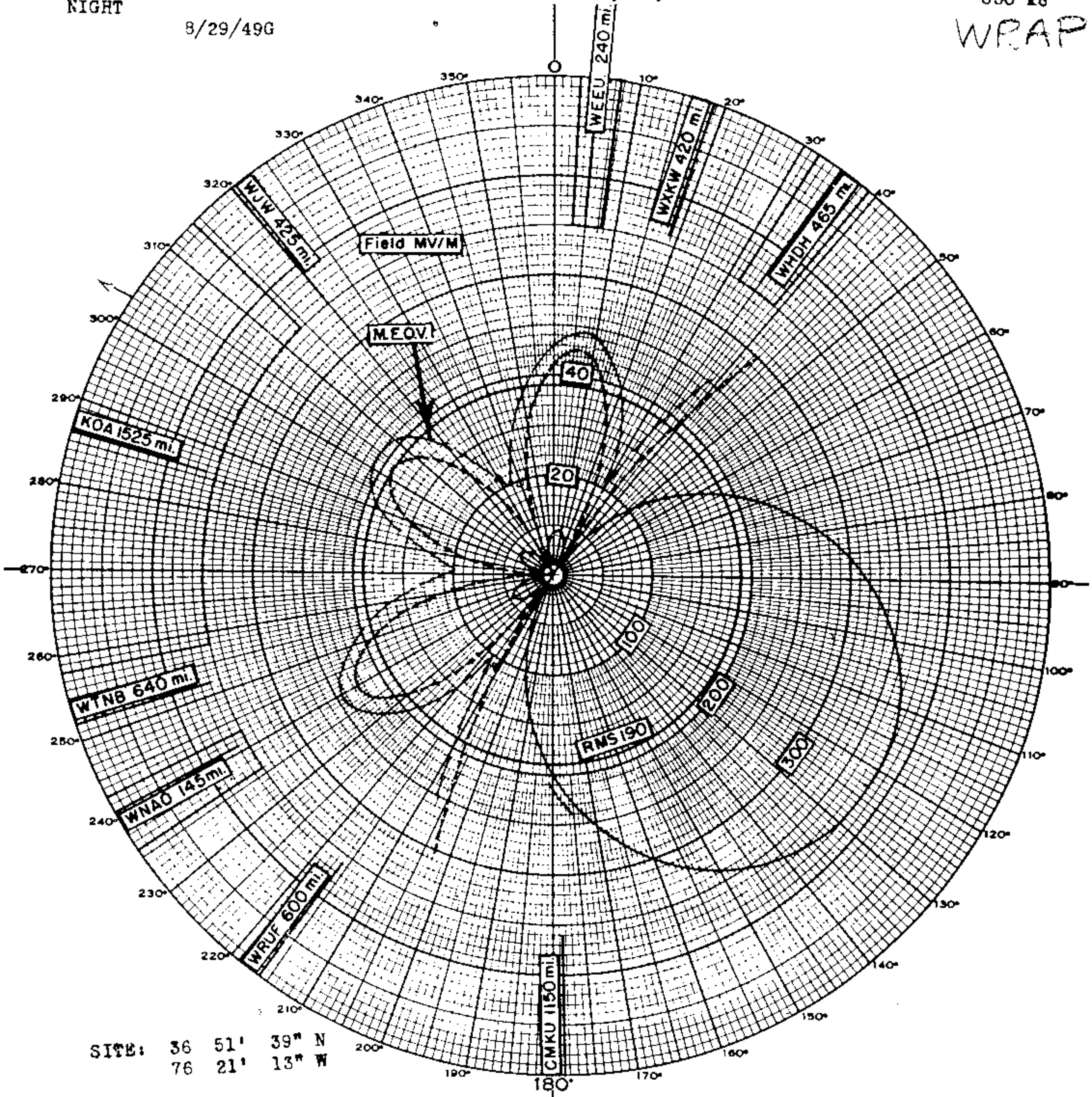
FCC File No. BMP-7458
Accepted 12-5-56
WRAP
Engineer: G. R. Chambers, Tech. Norfolk, Va.
850 KC

PROPOSED
NIGHT

WCAV, NORFOLK, VA. 1kw, DAN, U

8/29/49G

WCAV
850 kc
WRAP



SITE: 36 51' 39" N
76 21' 13" W

CAVALIER BROADCASTING CORP.
NORFOLK, VIRGINIA

Figure 1A
Series C490808

850 KC
1 KW DA-N 2

N
SPACING 80°
H = 77.5°
3 1.0∠0°
2 1.7∠216°
1 1.0∠72°
123°

PROPOSED

DIRECTIONAL ANTENNA PATTERN

FRANK H. McINTOSH
Consulting Radio Engineer
Washington, D.C.

Amendment Rec'd 8-24-49 BP-6540

WCAV, NORFOLK, VA. 850 kc

~~WCAV~~

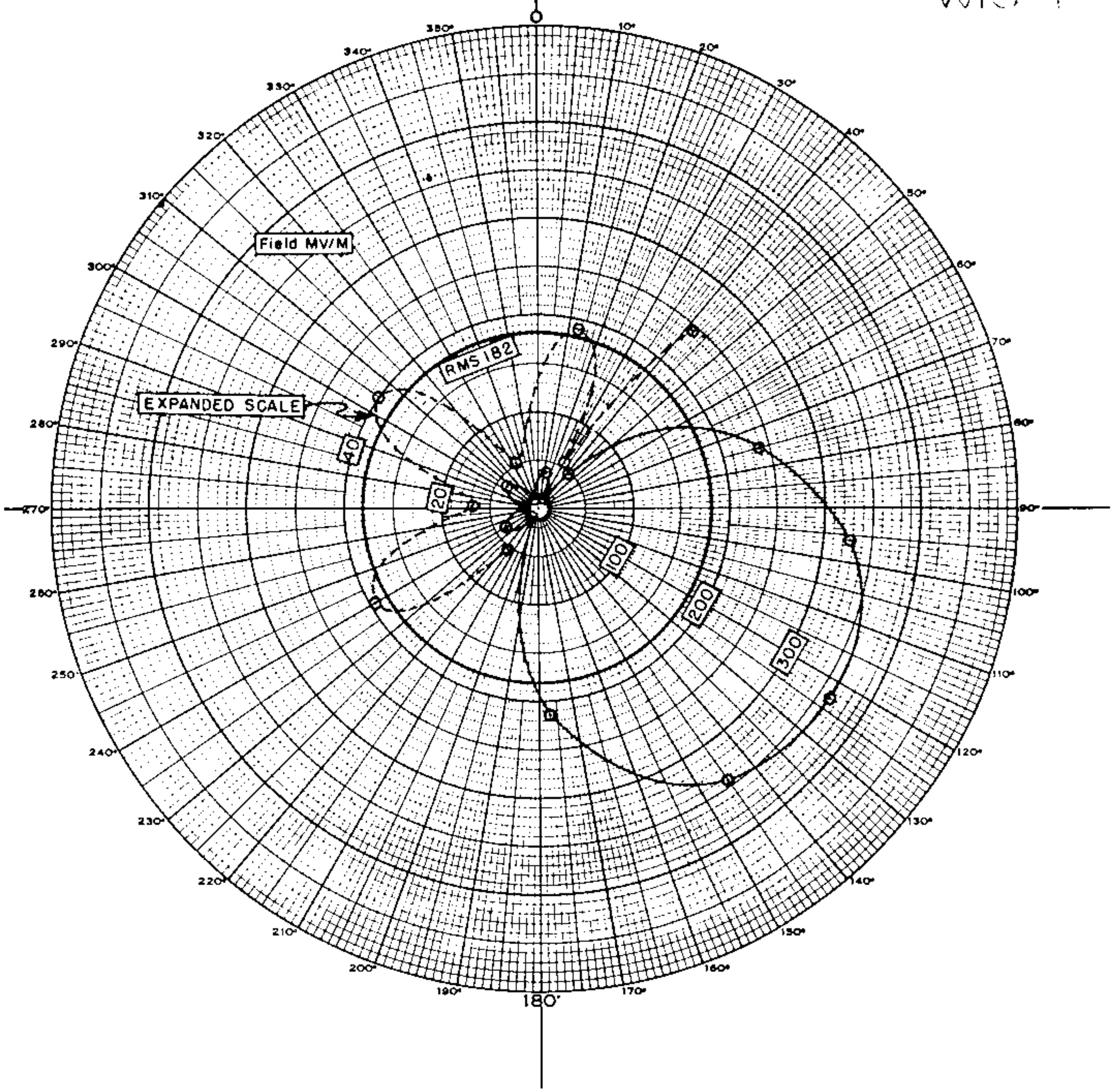
MEASURED
NIGHT

WCAV, NORFOLK, VA.

1kw. DA-2-U

850 kc

WRAP

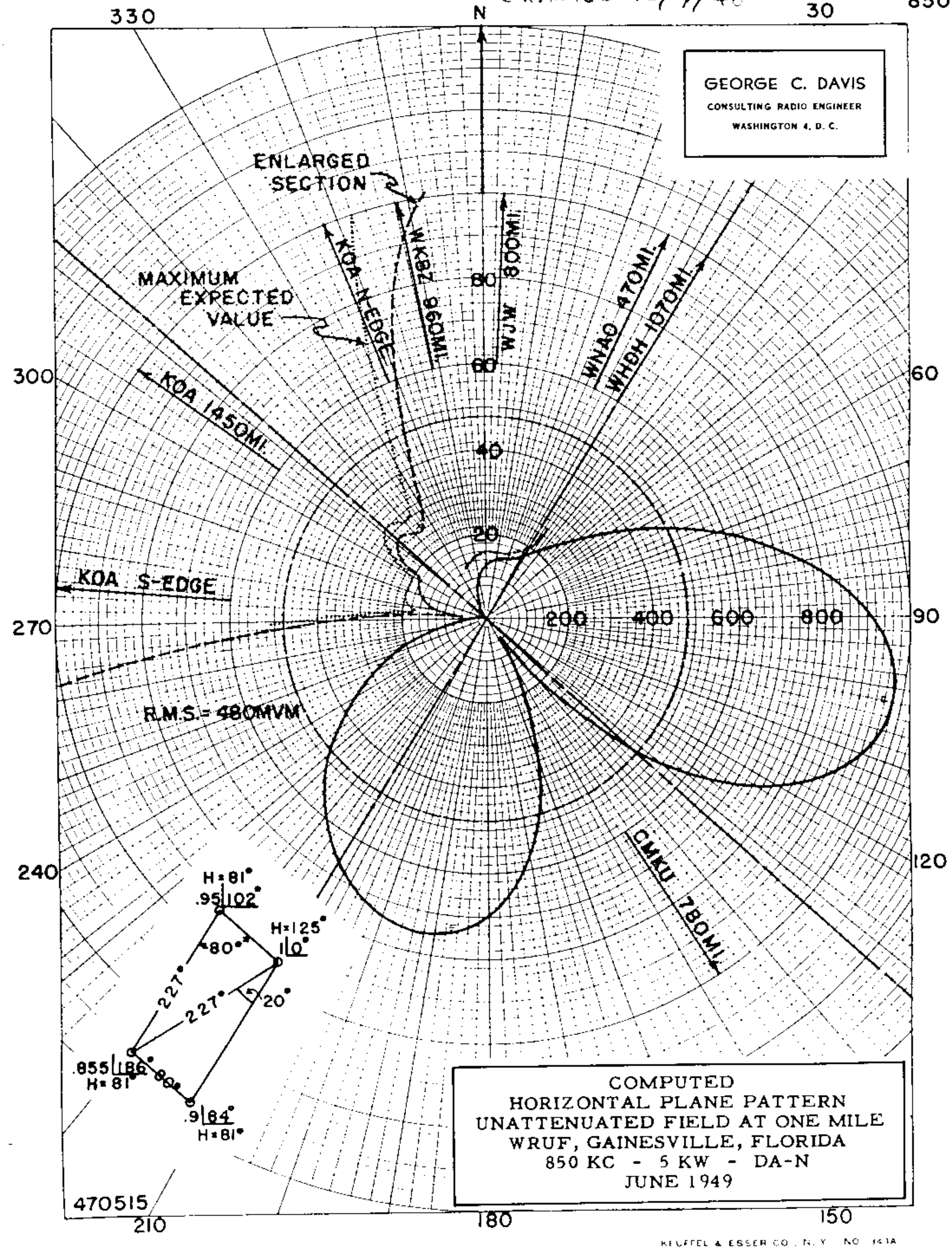


STATION WCAV NORFOLK, VIRGINIA	FIGURE 68 SERIES C500606
	850 KC 1 KW, DA-2
MEASURED NIGHTTIME DIRECTIONAL PATTERN	McINTOSH & INGLIS *Consulting Radio Engineers* Washington, D.C.

PROP. NIGHT

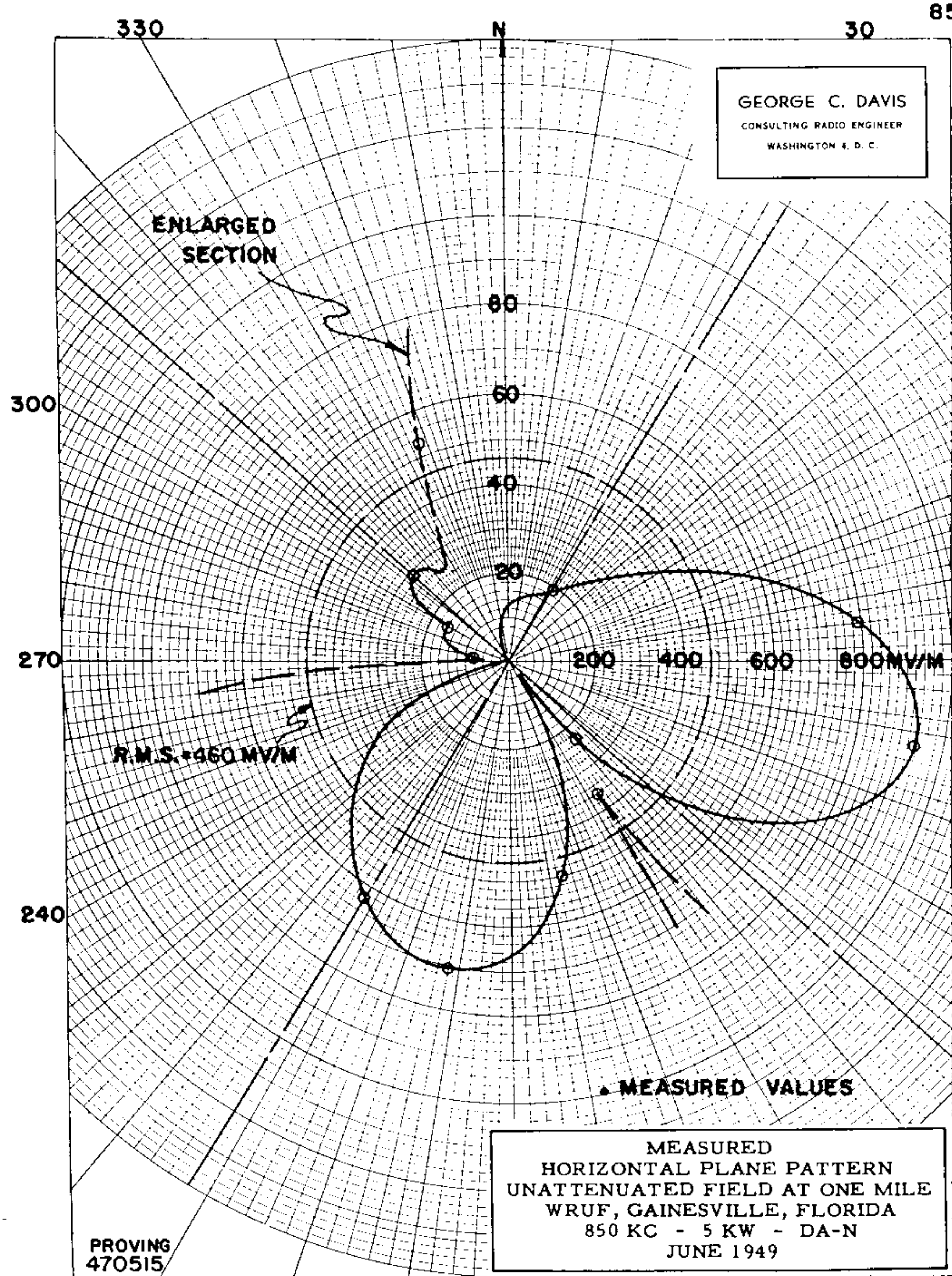
BMP-3733
GRANTED 10/7/48

WRUF
850KC



COMPUTED
HORIZONTAL PLANE PATTERN
UNATTENUATED FIELD AT ONE MILE
WRUF, GAINESVILLE, FLORIDA
850 KC - 5 KW - DA-N
JUNE 1949

WRUF
850KC



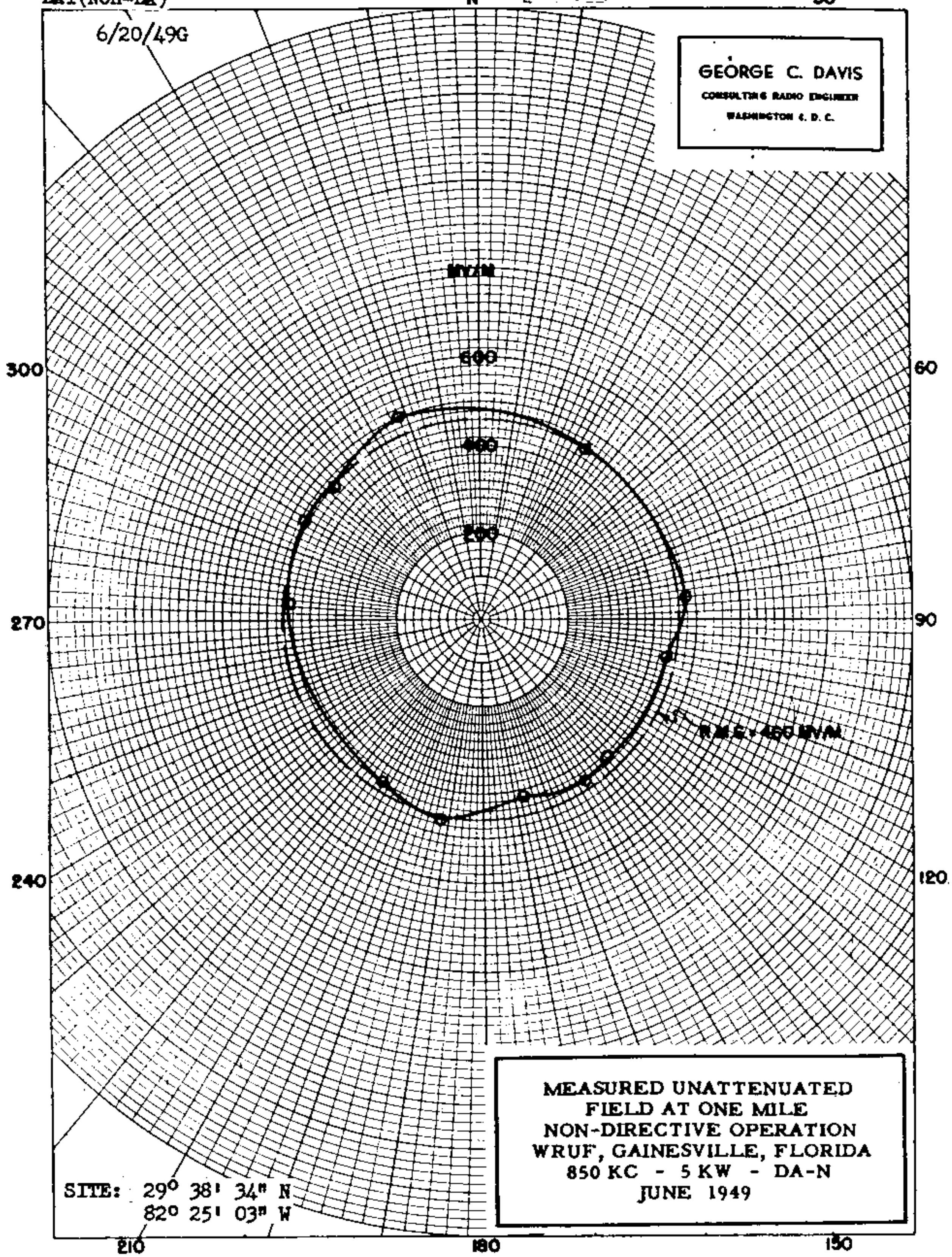
MEASURED
HORIZONTAL PLANE PATTERN
UNATTENUATED FIELD AT ONE MILE
WRUF, GAINESVILLE, FLORIDA
850 KC - 5 KW - DA-N
JUNE 1949

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

WRUF

MEASURED DAY(Non-DA) WRUF, GAINESVILLE, FLA. 6-13-49 5kw, DAN 850 kc

6/20/49G



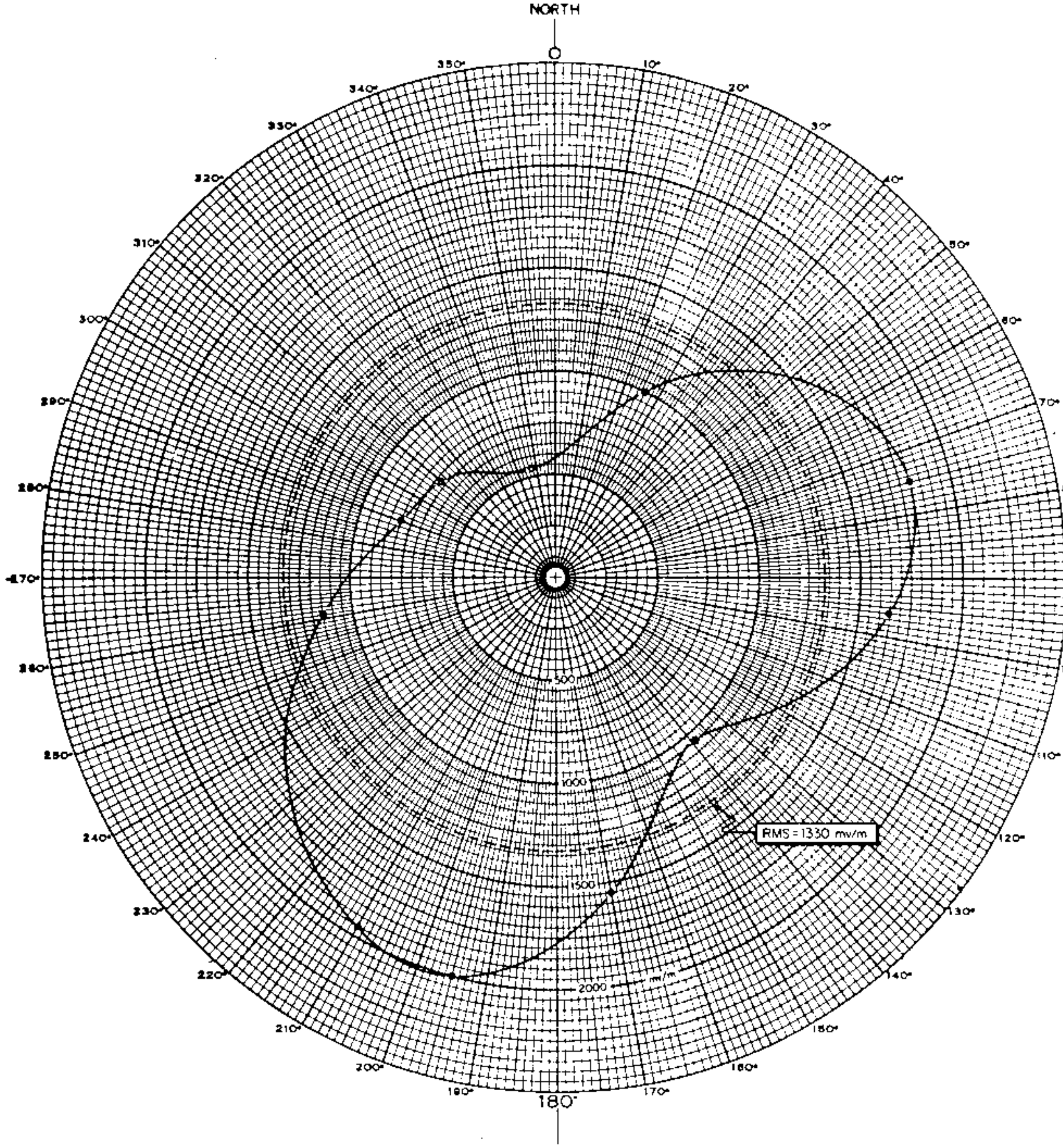
MEASURED UNATTENUATED
FIELD AT ONE MILE
NON-DIRECTIVE OPERATION
WRUF, GAINESVILLE, FLORIDA
850 KC - 5 KW - DA-N
JUNE 1949

WYDE

Measured Day
(12-23-70ct)

Station WYDE
Birmingham, Alabama

1kw,50kw-LS,DA-2,U
850 kc



NORTH LATITUDE 33° 37' 25"
WEST LONGITUDE 86° 44' 45"

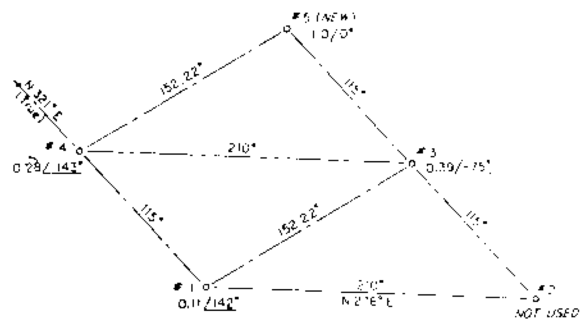


FIGURE 9
HORIZONTAL RADIATION PATTERN
(Daytime Directional)
WYDE 1KW, 50KW-LS, U DA-2 850 KC
BASIC COMMUNICATIONS, INC.
BIRMINGHAM, ALABAMA

Prepared by
Lohnes and Culver Washington, D. C.
November, 1970

FCC File No.BL-12820
Accepted 12-18-70

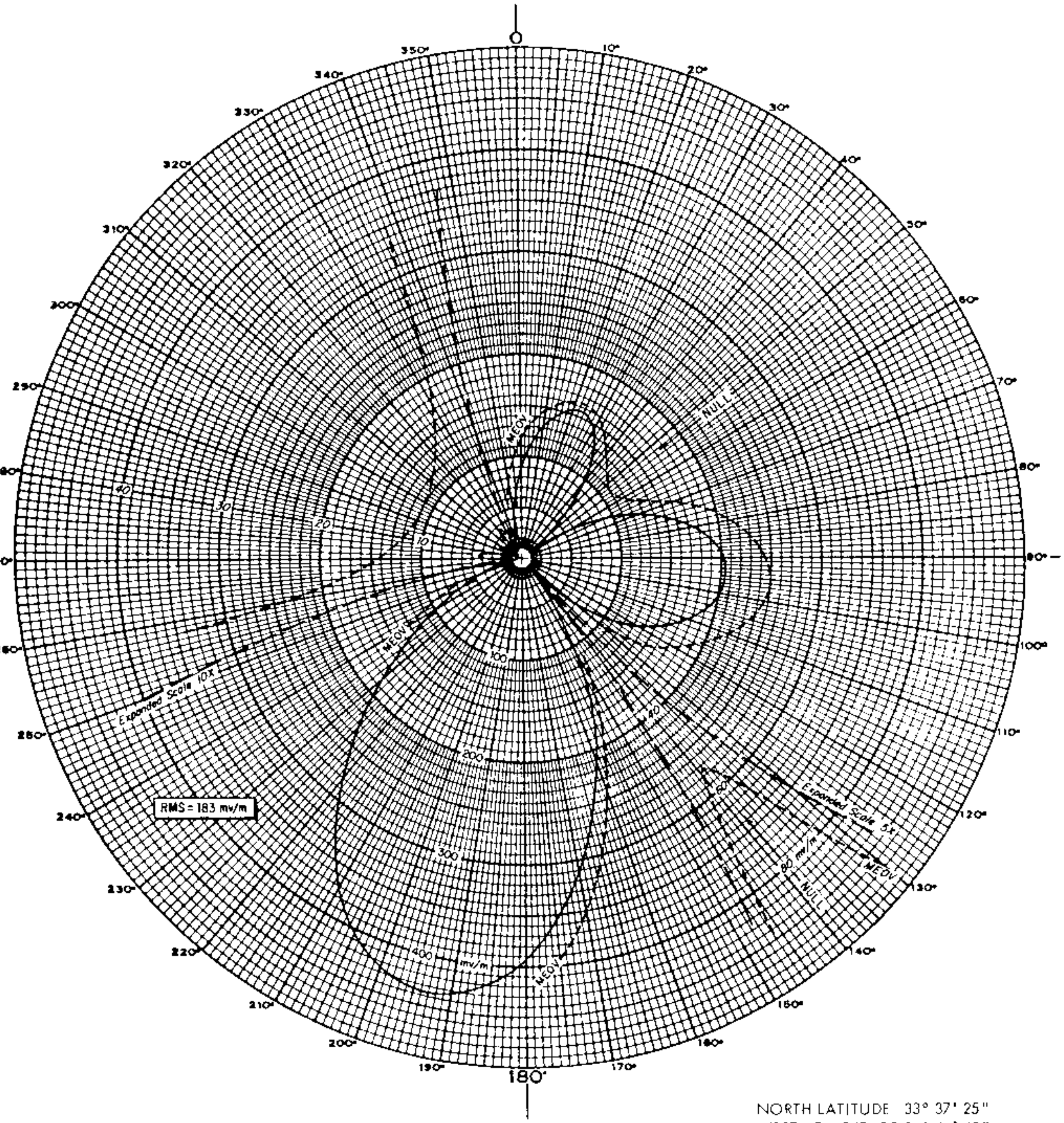
Station WYDE
Birmingham, Alabama
850 kc

WYDE

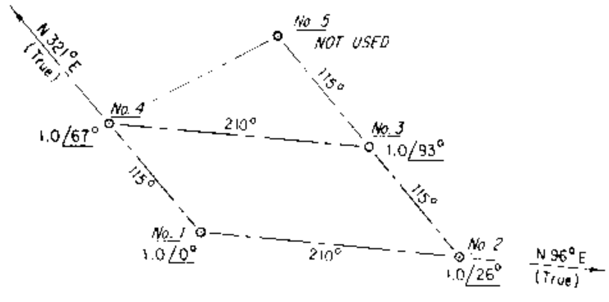
Proposed Night
(12-23-70ct)

Station WYDE
Birmingham, Alabama

1kw,50kw-LS,DA-2,U
850 kc



NORTH LATITUDE 33° 37' 25"
WEST LONGITUDE 86° 44' 45"



h = 109°

FIGURE 1
NIGHTTIME HORIZONTAL PLANE
RADIATION PATTERN
WYDE 1 KW, 50 KW-LS, DA-2 850 KC
BIRMINGHAM, ALABAMA

Prepared by
Lohnes and Culver Washington, D. C.
April, 1970

FCC File No.BMP-13069
Accepted 8-28-70

Station WYDE
Birmingham, Alabama

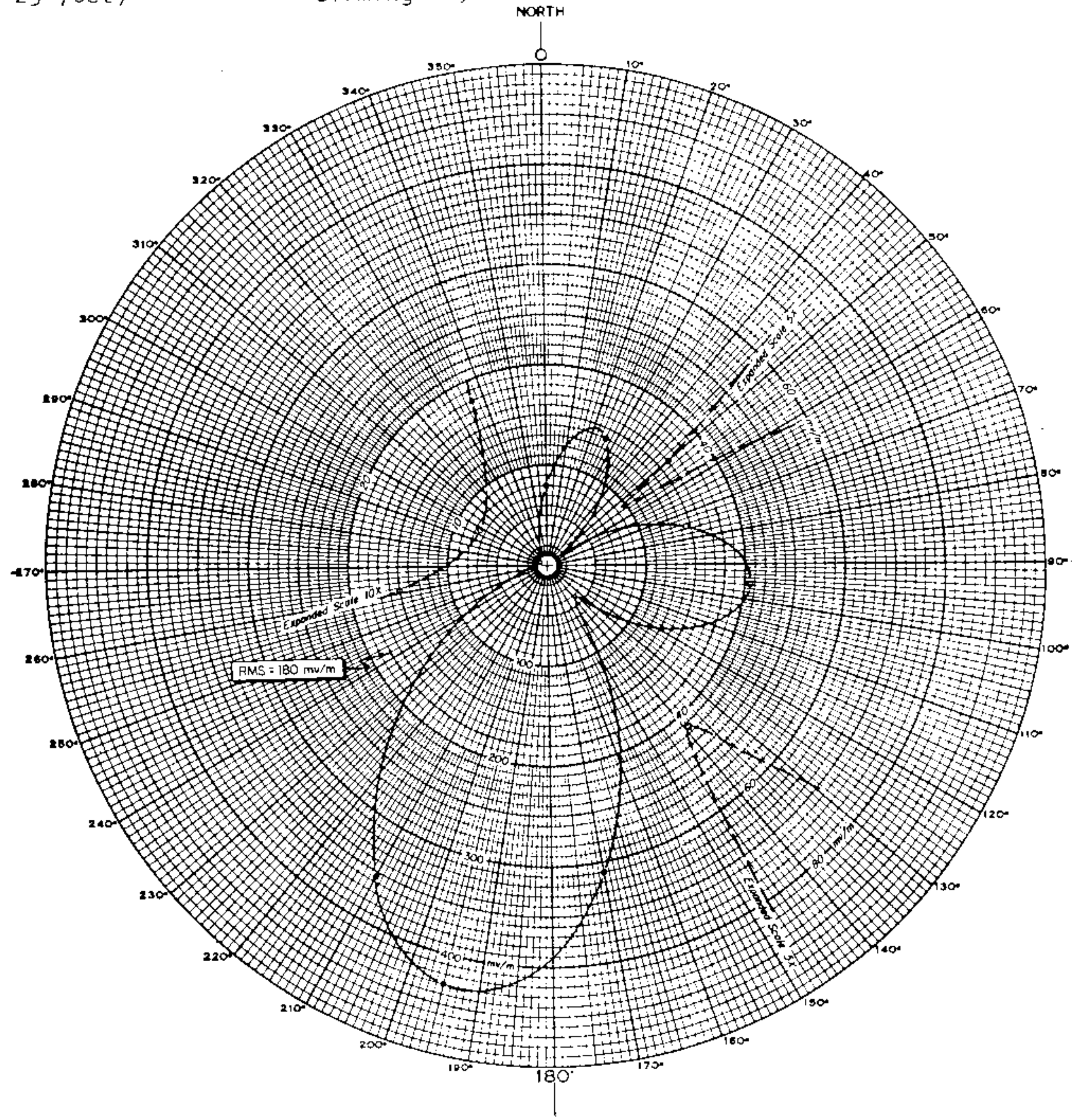
850 kc

WYDE

Measured Night
(12-23-70ct)

Station WYDE
Birmingham, Alabama

1kw,50kw-LS,DA-2,U
850 kc



NORTH LATITUDE 33° 37' 25"
WEST LONGITUDE 86° 44' 45"

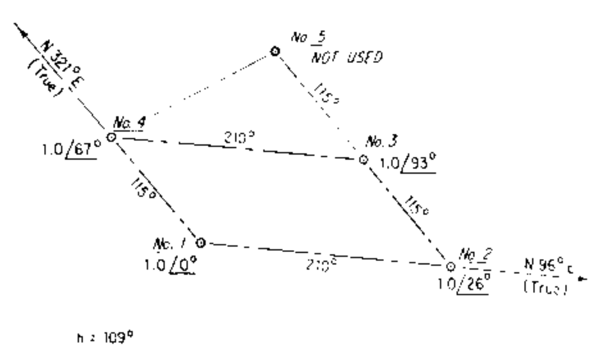


FIGURE 10
HORIZONTAL RADIATION PATTERN
(Nighttime Directional)
WYDE 1KW, 50KW-LS, U DA-2 850 KC
BASIC COMMUNICATIONS, INC.
BIRMINGHAM, ALABAMA

Prepared by
Lohnes and Culver Washington, D. C.
November, 1970

FCC File No.BL-12820
Accepted 12-18-70

Station WYDE
Birmingham, Alabama

850 kc

WYDE

Measured Non-DA
(12-23-70ct)

Station WYDE
Birmingham, Alabama

1kw,50kw-LS,DA-2,U
850 kc

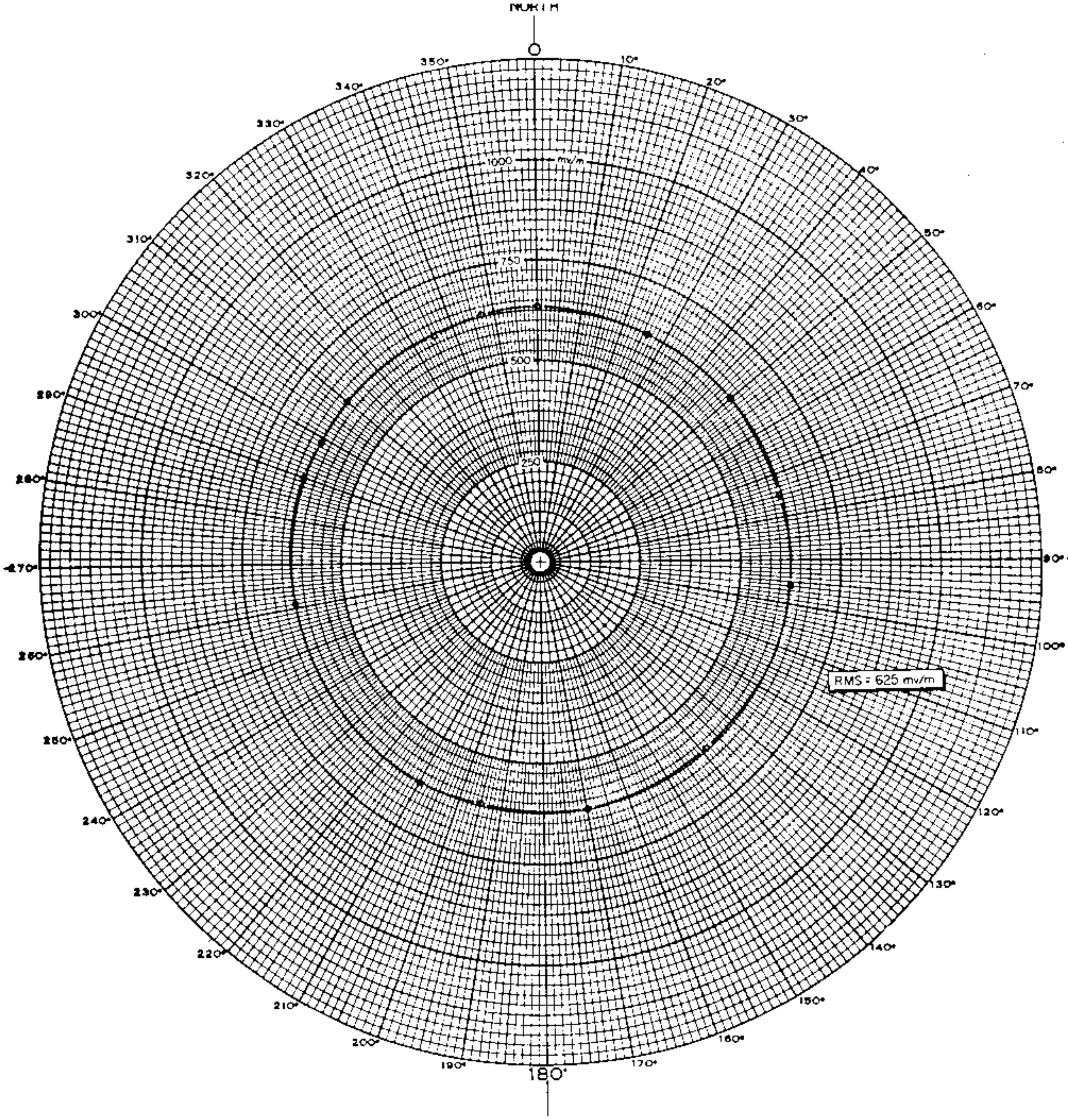


FIGURE 8
HORIZONTAL RADIATION PATTERN
(Non-Directional)
WYDE 1KW, 50KW-LS, U DA-2 850 KC
BASIC COMMUNICATIONS, INC.
BIRMINGHAM, ALABAMA

Prepared by
Lohnes and Culver Washington, D. C.
November, 1970

FCC File No. BL-12820
Accepted 12-18-70

Station WYDE
Birmingham, Alabama

850 kc

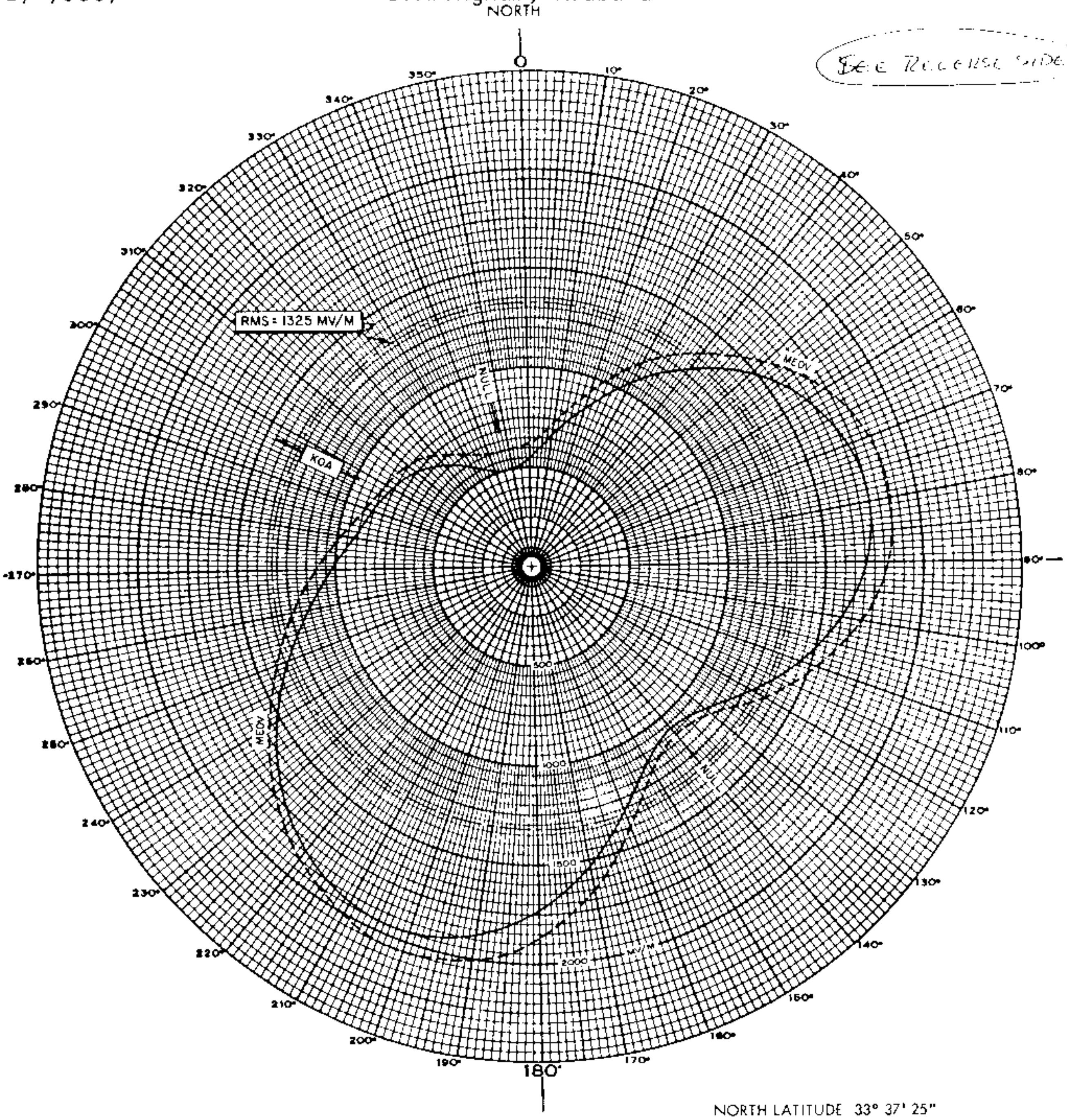
WYDE

Proposed Day
(5-27-70ct)

Station WYDE
Birmingham, Alabama

1kw,50kw-LS,DA-2,U
850 kc

See Reverse Side



NORTH LATITUDE 33° 37' 25"
WEST LONGITUDE 86° 44' 45"

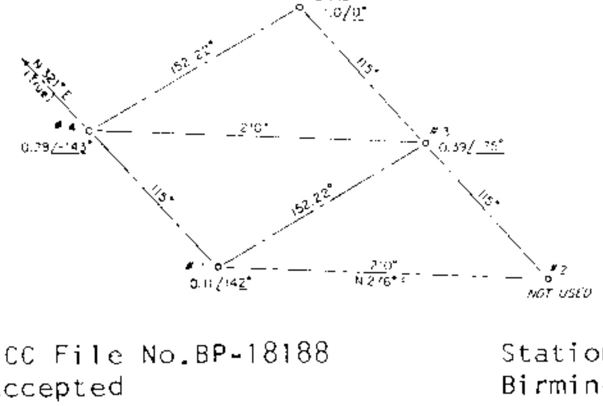


FIGURE 2
PROPOSED DAYTIME HORIZONTAL PLANE
RADIATION PATTERN
PROPOSED WYDE 1 KW, 50 KW-LS, U DA-2 850 KC
BIRMINGHAM, ALABAMA

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

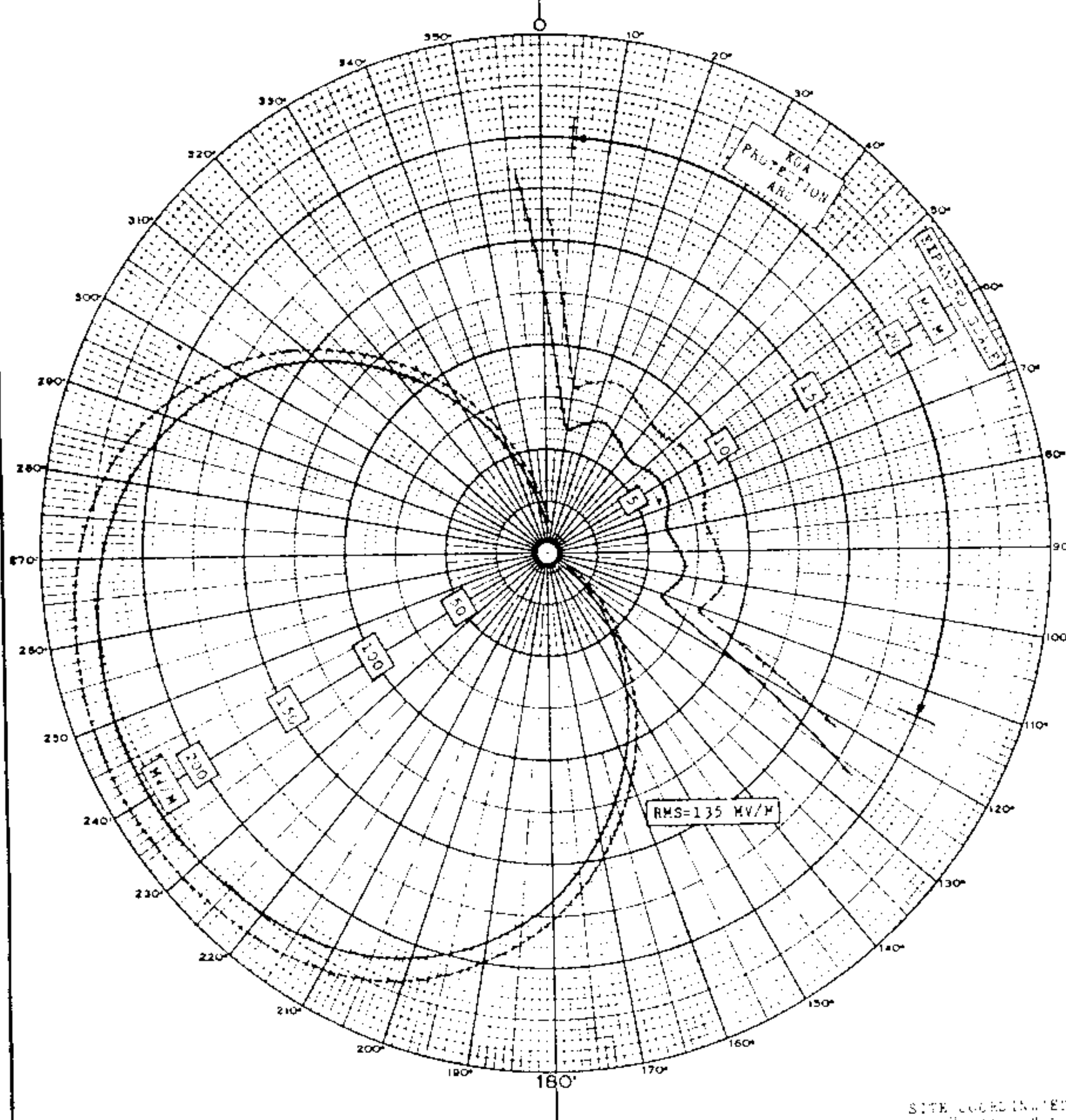
FCC File No.BP-18188
Accepted

Station WYDE
Birmingham, Alabama

850 kc

PROPOSED DAY & NIGHT
(6-14-61g)

New; Conejo Valley Bcstrs. 500w, DA-1,U
Conejo Valley, California 850 KC



PROPOSED HORIZONTAL PLANE RADIATION PATTERN

S = 90° - 290°

(1) 1.00 /-10°

CONEJO BROADCASTERS
CONEJO VALLEY, CALIFORNIA

Jules Cohen
Consulting Electronic Engineer

PROPOSED OPERATION
850 KC
0.5 KW U DA-1
January, 1961

FCC File No. BP-14769
Accepted 5-8-61

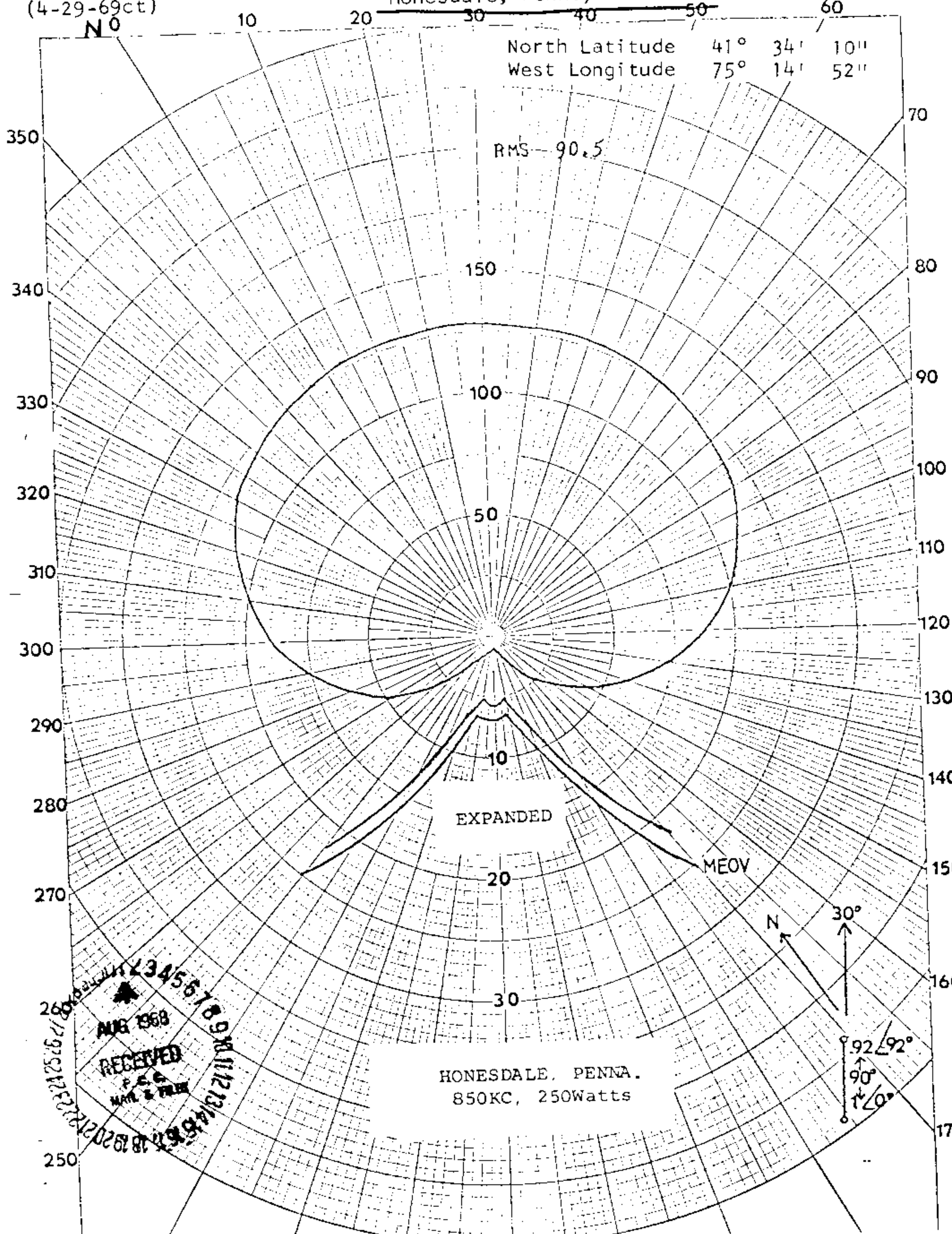
Conejo Valley Broadcasters
Conejo Valley, California

850 KC

Proposed Day
(4-29-69ct)

New; Peter L. Pratt
Honesdale, Pennsylvania

250w,DA-D,D
850 kc



FCC File No.BP-18233
Accepted 3-13-69

New; Peter L. Pratt
Honesdale, Pennsylvania

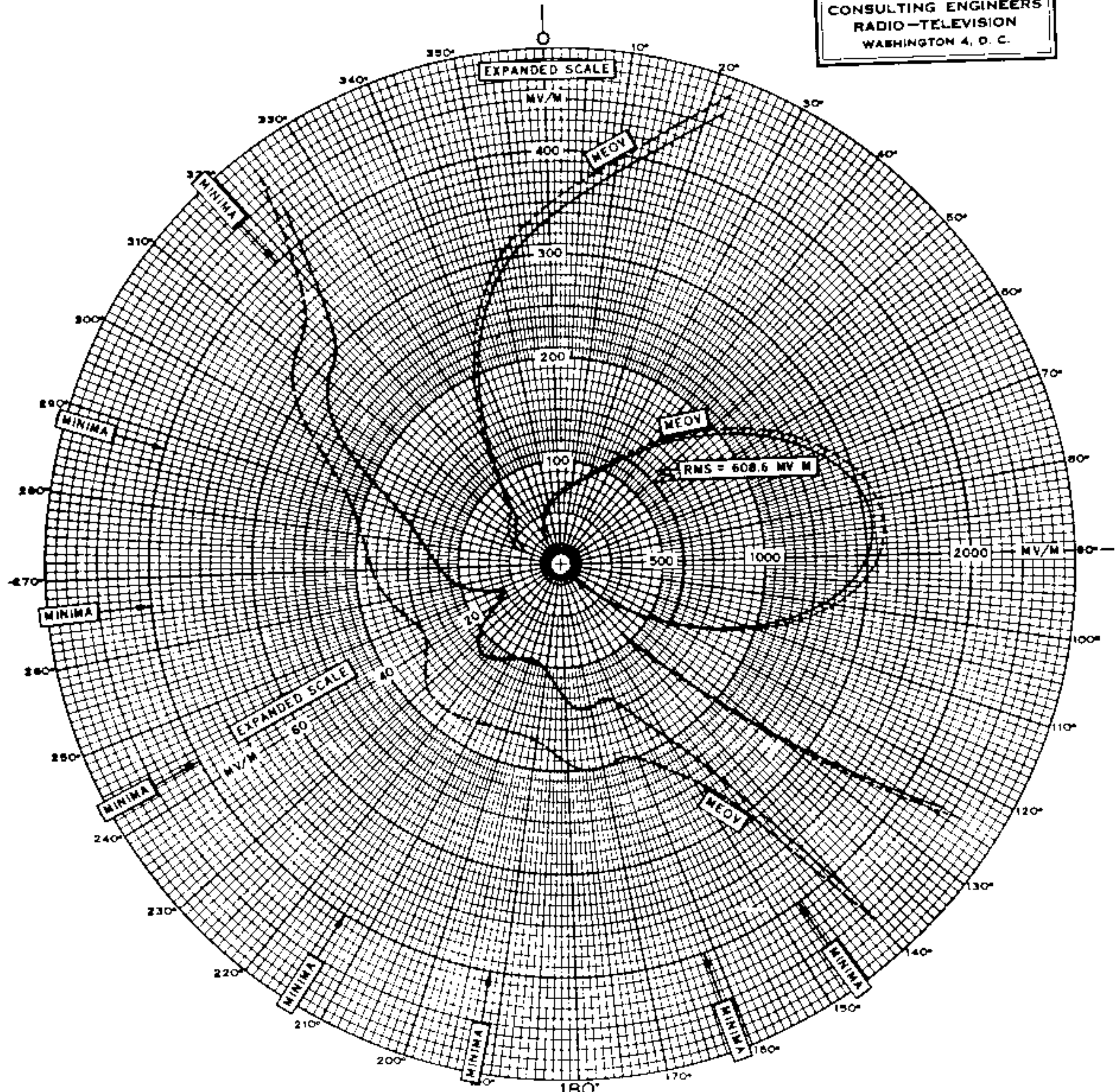
850 kc

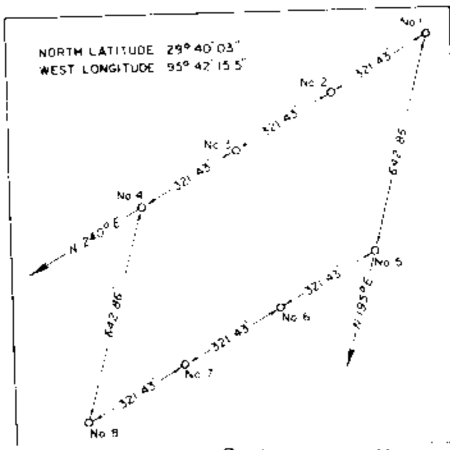
Proposed Day
(8-22-69ct)

New; Space City Broadcasting Co.
Houston, Texas

10kw,DA-D,D
850 kc

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





TOWER	FIELD RATIO	SPACING (DEGREES)	SPACING (FEET)	ORIENTATION FROM TOWER NO. 1	PHASE
No. 1	1.5	REFERENCE TOWER			0°
No. 2	3.122	100	321.43	N 240° E	126.1°
No. 3	3.34	200	642.86	N 240° E	249.4[illegible]°
No. 4	1.459	300	964.28	N 240° E	1.9°
No. 5	1.465	200	642.86	N 195° E	57.[illegible]°
No. 6	4.187	279.79	899.33	N 209.64° E	177.1°
No. 7	3.202	369.55	1187.84	N 217.5° E	300.6[illegible]°
No. 8	2.144	463.52	1489.89	N 222.24° E	54.0°

COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR THE PROPOSED DAYTIME OPERATION OF
SPACE CITY BROADCASTING CO.
HOUSTON, TEXAS
850 KHz - 10 KW DA-D
JUNE 1969

FCC File No.BP-17871
Accepted 8-1-69 Amended

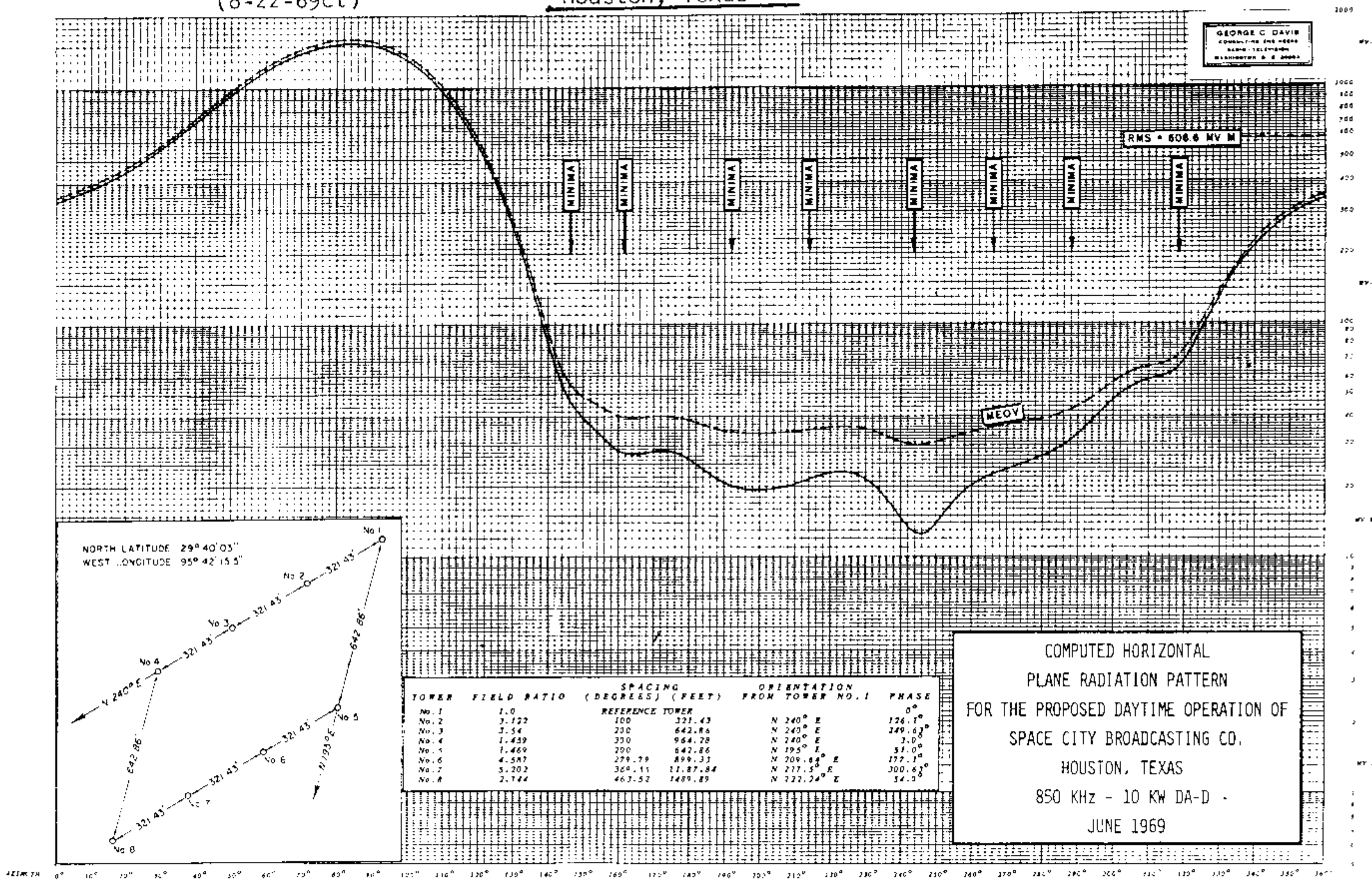
New; Space City Broadcasting Co.
Houston, Texas

850 kc

Proposed Day Nulls
(8-22-69ct)

New; Space City Broadcasting Co.
Houston, Texas

10kw,DA-D,D
850 kc

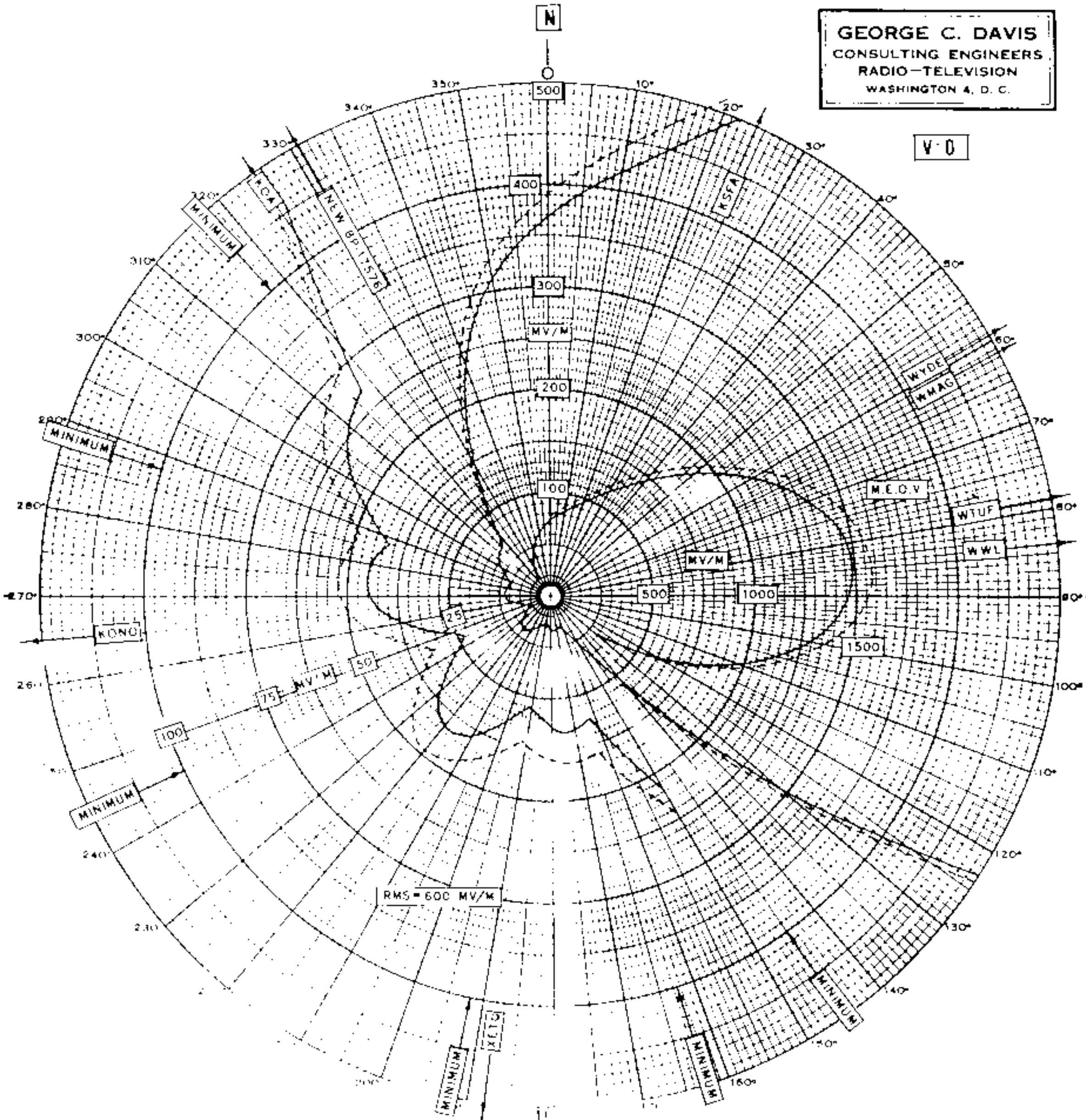


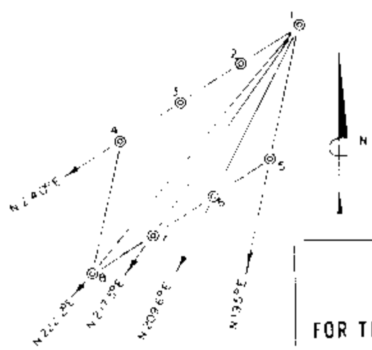
TOWER	FIELD RATIO	SPACING (DEGREES)	SPACING (FEET)	ORIENTATION FROM TOWER NO. 1	PHASE
No. 1	1.0	REFERENCE TOWER			0°
No. 2	3.172	100	321.43	N 240° E	126.1°
No. 3	3.54	200	642.86	N 240° E	249.63°
No. 4	1.459	300	964.28	N 240° E	3.0°
No. 5	1.469	200	642.86	N 195° E	51.0°
No. 6	4.587	279.79	899.33	N 209.64° E	177.1°
No. 7	5.202	369.15	1187.84	N 217.5° E	300.63°
No. 8	2.744	463.52	1489.89	N 222.24° E	54.5°

FCC File No.BP-17871
Accepted 8-1-69 Amended

New; Space City Broadcasting Co.
Houston, Texas

850 kc





TOWER NUMBER	RELATIVE FIELD	DISTANCE FEET	(DEGREES)	PHASING
1	1	[illegible]	0	[illegible]
2.	[illegible]	[illegible]	[illegible]	[illegible]
3	2.647	[illegible]	[illegible]	[illegible]
4.	[illegible]	[illegible]	[illegible]	[illegible]
5.	[illegible]	[illegible]	[illegible]	[illegible]
6.	[illegible]	[illegible]	279.8	[illegible]
7.	[illegible]	[illegible]	[illegible]	[illegible]
8.	[illegible]	[illegible]	463.5	[illegible]

H = 269 FEET [illegible]

COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR THE PROPOSED DAYTIME OPERATION OF
SPACE CITY BROADCASTING CO.
HOUSTON, TEXAS
850 KC - 10 KW DA-D
AUGUST 1967

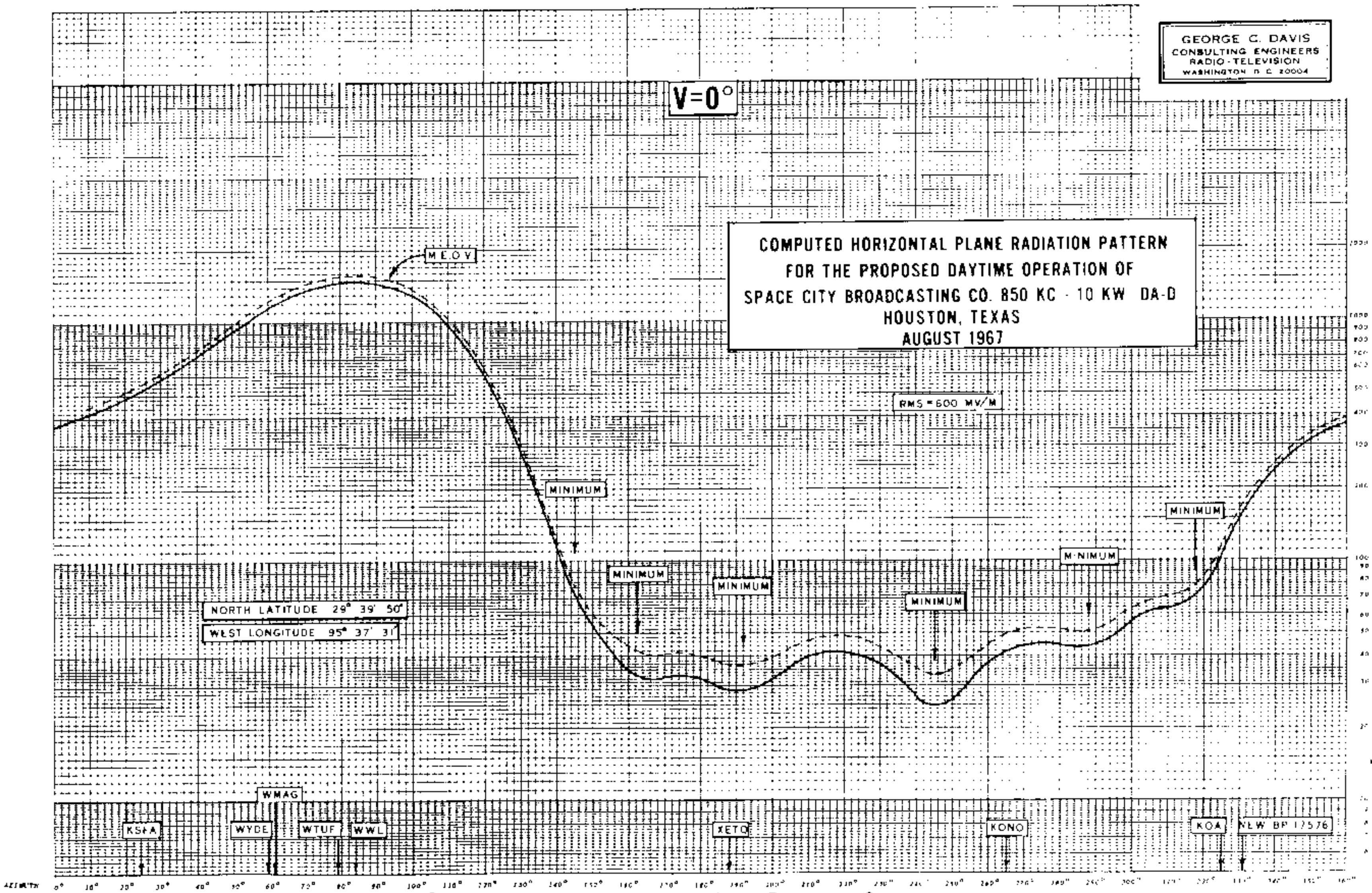
NORTH LATITUDE 29° 39' 50"

WEST LONGITUDE 95° 37' 31"

Proposed Day Nulls
(11-28-67ct)

New; Space City Bcstg. Co.
Houston, Texas

10kw,DA-D,D
850 kc



FCC File No.BP-17871
Accepted 11-2-67

New; Space City Bcstg. Co.
Houston, Texas

850 kc

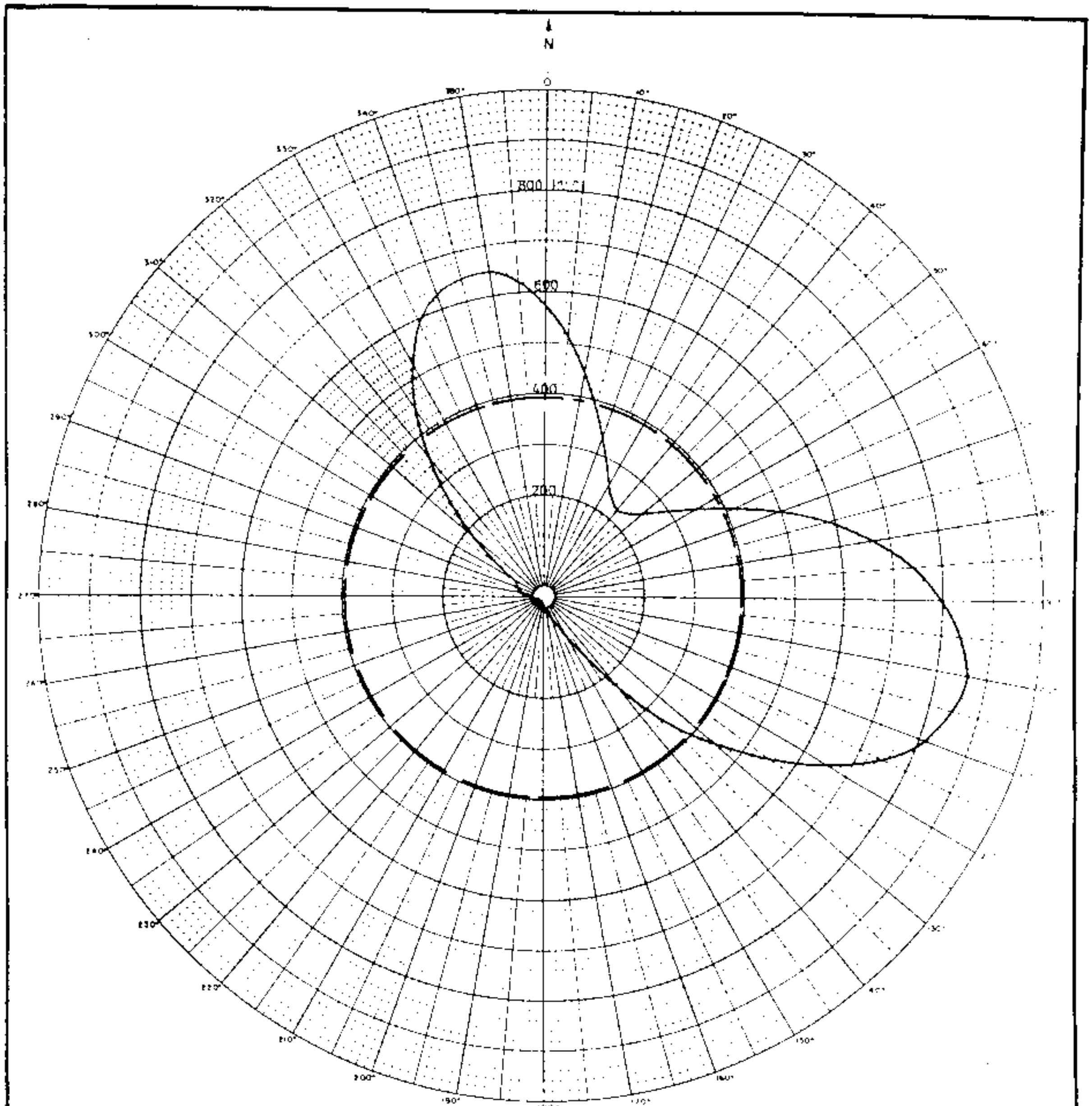
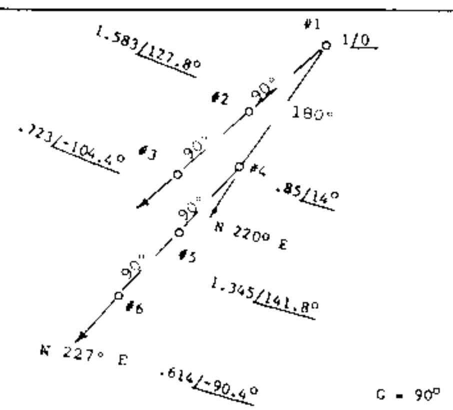


FIGURE 1-A (AMENDED)

HORIZONTAL RADIATION PATTERN



APPLICANT	Strauss Broadcasting Company of Houston
LOCATION	Houston, Texas
FREQUENCY	850 KC/S
POWER	5 KW
LATITUDE	29 DEG 30 MIN 51 SEC
LONGITUDE	95 DEG 17 MIN 58 SEC
WHEN USED	Daytime
R.M.S. FIELD	395 MV/M
DATE	May 1967

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

Proposed Day Nulls
(11-28-67ct)

New; Strauss Bcstg. Co. of Houston
Houston, Texas

5kw,DA-D,D
850 kc

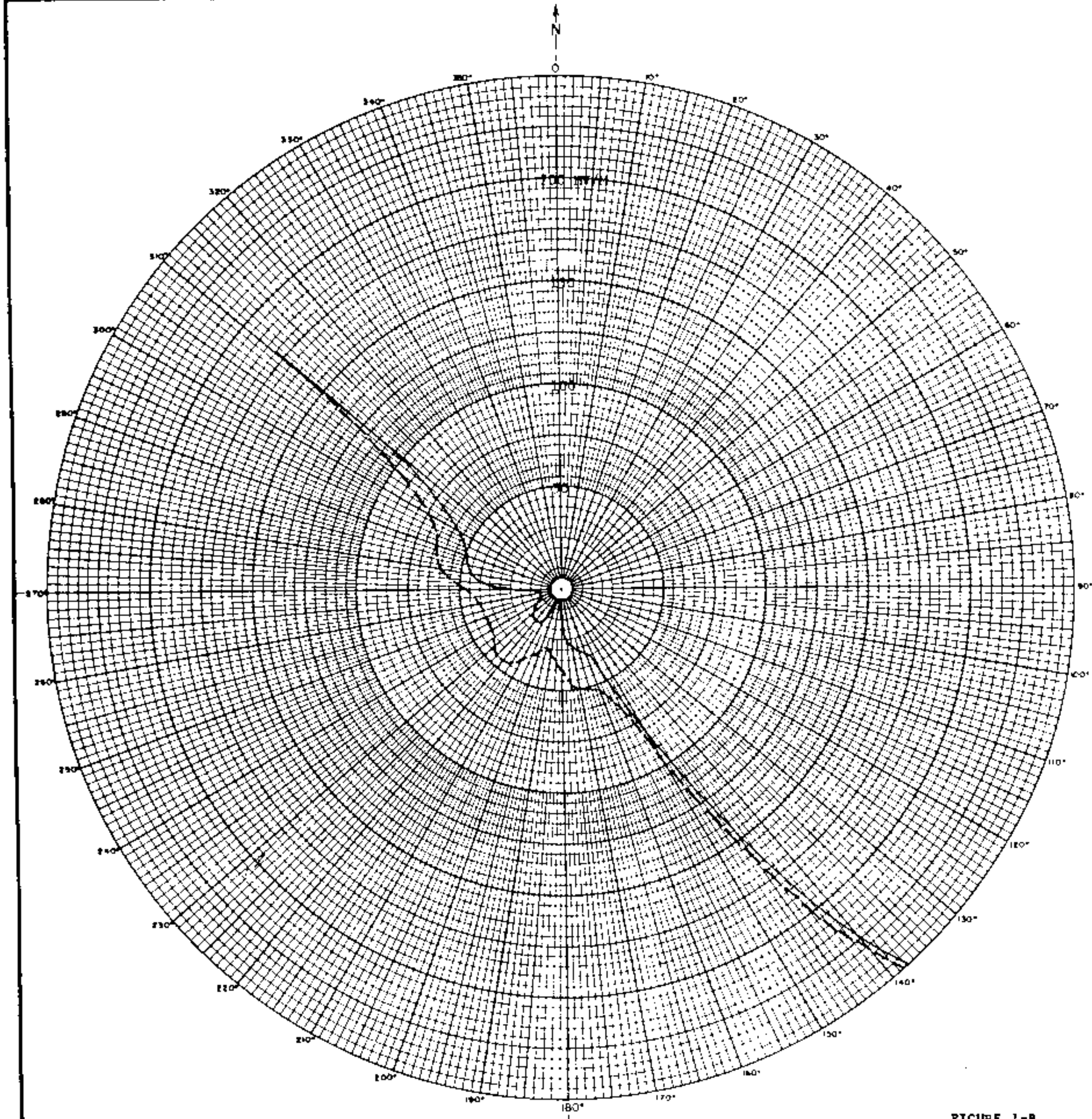


FIGURE 1-B

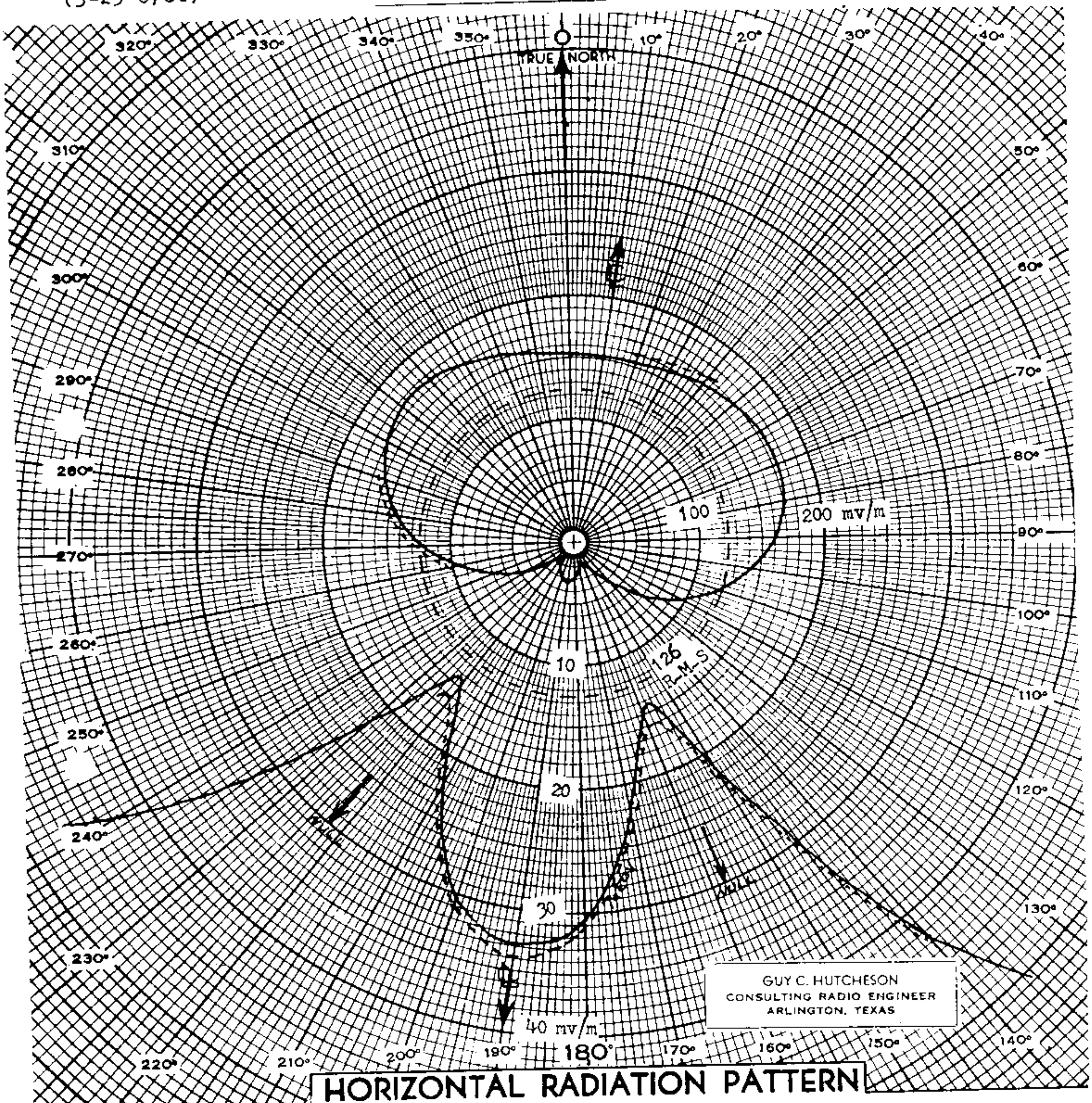
EXPANDED VIEW

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

Proposed Day
(3-29-67ct)

New; Albert L. Crain
Humble, Texas

500w,DA-D,D
850 kc



ANTENNA LAYOUT

10° #2 NORTH

0.85 /-70°

130°
417'

#1 SOUTH
1 /0°

190°

PROPOSED	HUMBLE, TEXAS	
Station	Location	
850 kc	0.5 kw DA-D	30° 00' 19", 95° 13' 07"
Frequency	Power	

G's = 194'

CALCULATED DAYTIME PATTERN

Fig. 1

FCC File No.BP-17550
Accepted 3-8-67

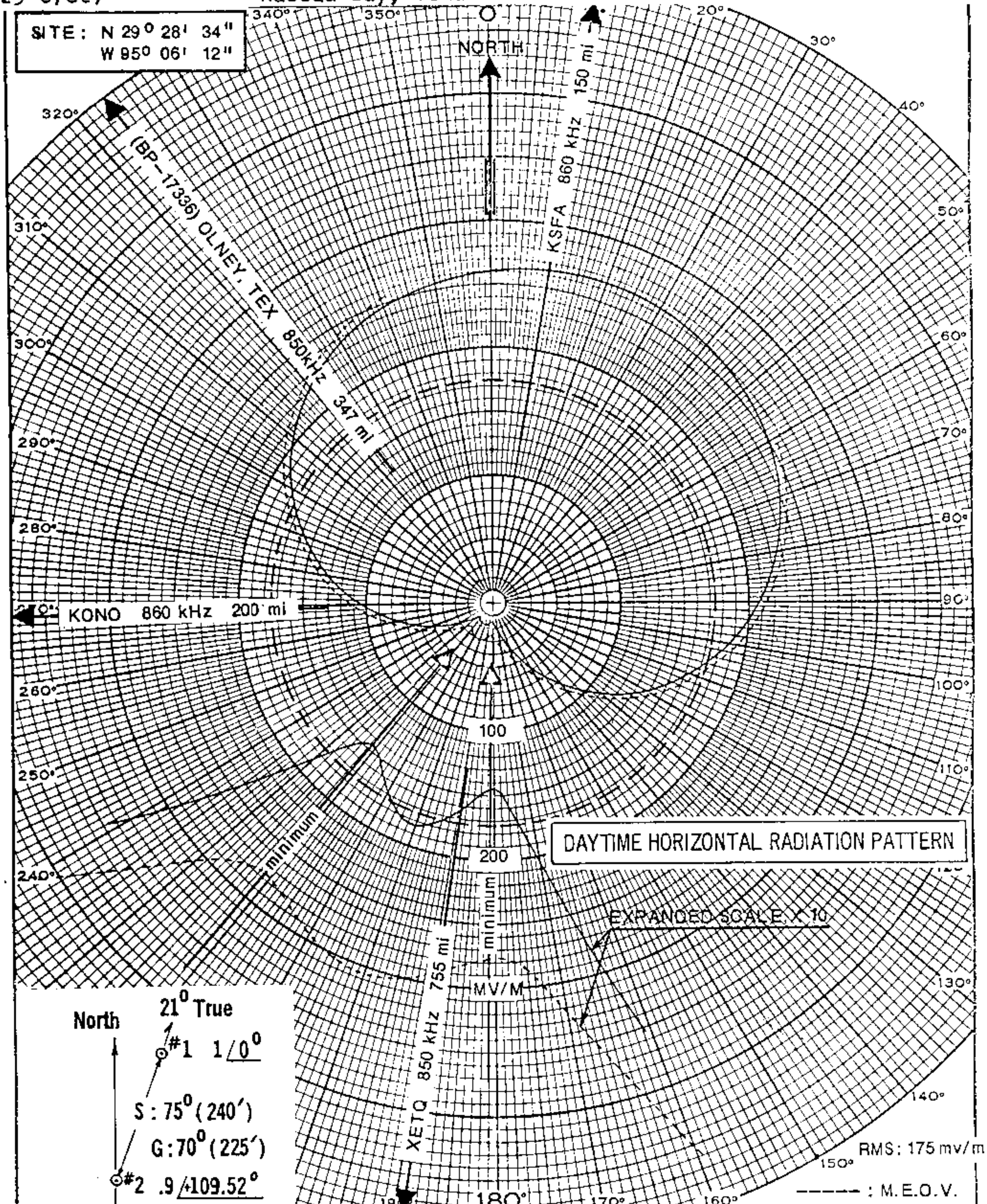
New; Albert L. Crain
Humble, Texas

850 kc

Proposed Day
(3-29-67ct)

New; Jester Broadcasting Co.
Nassau Bay, Texas

1kw,DA-D,D
850 kc



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

12 66

PROPOSED NEW STATION
NASSAU BAY, TEXAS
850 kHz, 1 KW, DA-D
Jester Broadcasting Company

FCC File No.BP-17579
Accepted 3-8-67

New; Jester Broadcasting Co.
Nassau Bay, Texas

850 kc

XETQ

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XETQ — Main Studio: Orizaba, Veracruz

Frequency: 850 kc/s — Power: 10 KW

Notification List No.: 179 — Date: 5/8/55 — Class: II

Geographical Location of the Center of the antenna system: North Latitude: 18° 50' 57"

West Longitude: 97° 05' 40"

ANTENNA CHARACTERISTICS

Authorized for Day and Night (DA-2) operation.

Number of elements: 2

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

Tower	North	South
Height above insulators:	148°	148°
Night Phasing:	104°	0°
Night Field Ratio:	1.0	1.0
Day Phasing:	170°	0°
Day Field Ratio:	0.4	1.0

Spacing and Orientation: Adjacent elements are spaced 80° on a line bearing 356° true.

Ground System: 120 - 145.o8 meters equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections intersections between towers. Centers of the systems are bonded together.

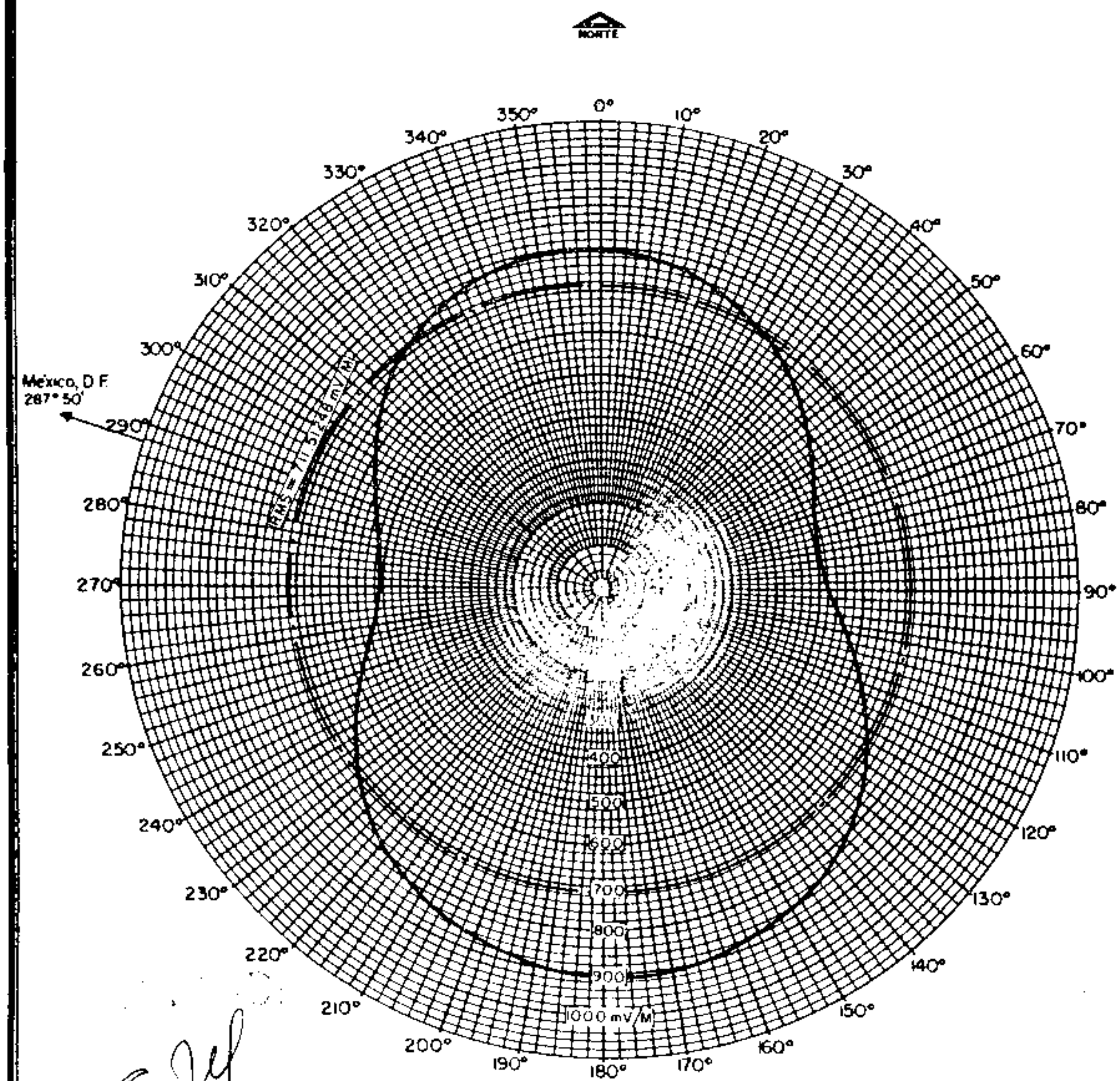
Predicted effective Day & Night field: 711.51 mv/m at rated power.

XETQ

PROPOSED DAY (8/29/57g)

Station XETQ 10kw, DA-2,U

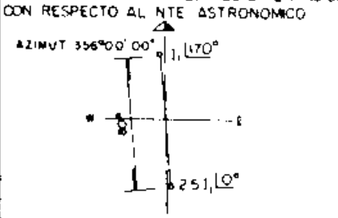
Orizaba, Veracruz, Mexico 850 KC



OPERACION DIURNA.

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

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



RADIODIFUSORA

XETQ

Orizaba, Ver.

850 KHz.
10,000 Watts.

DISEÑO:

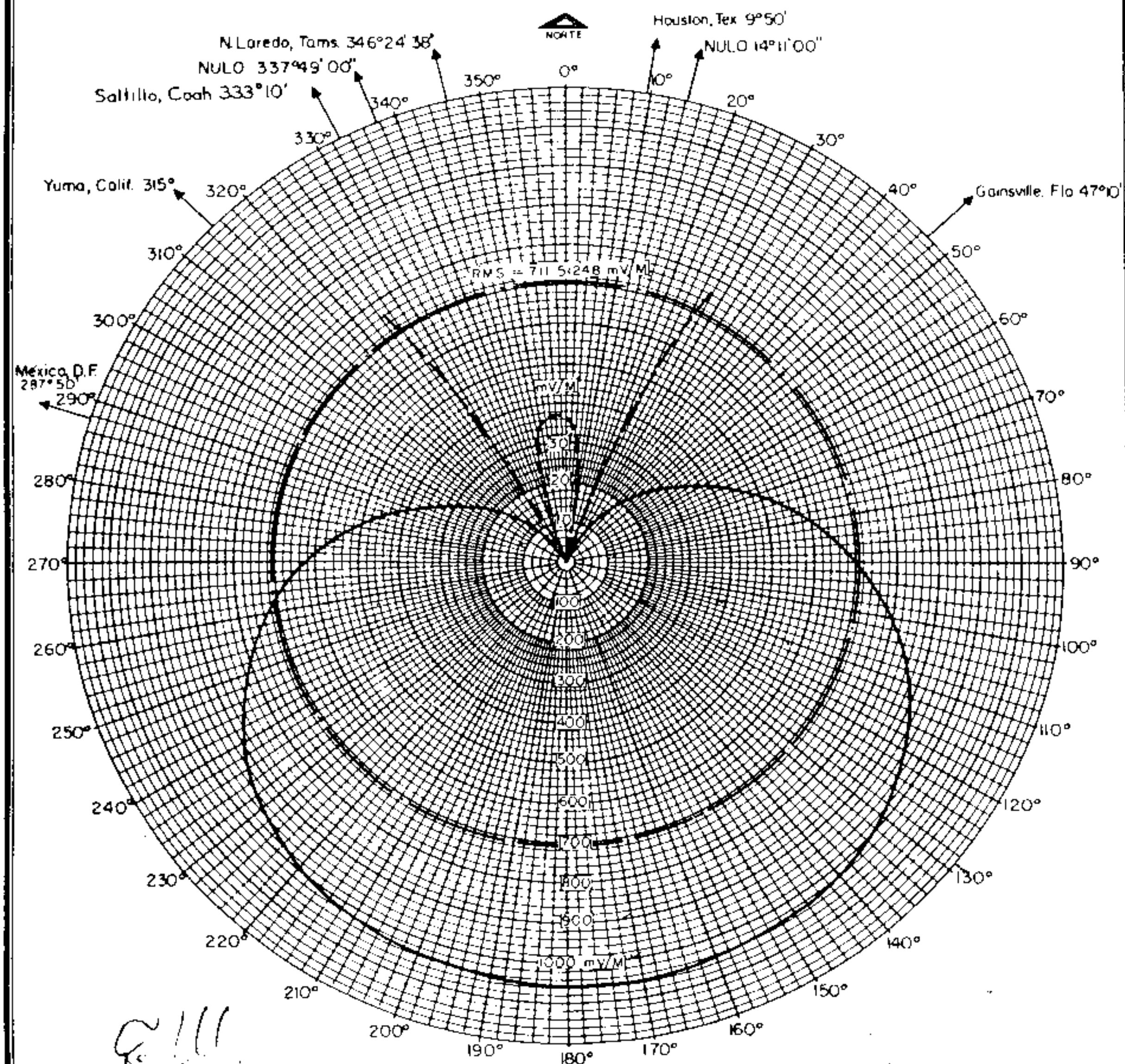
LUIS VASQUEZ ORTIZ

PASANTE ING. COMUNICACIONES.

Dib. E. Sesma

XETQ

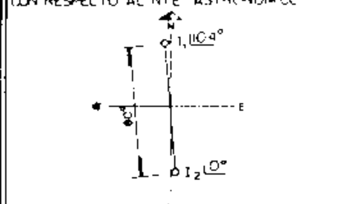
PROPOSED NIGHT (8/29/57g) Station XETQ 10kw, DA-2,U
Orizaba, Veracruz, Mexico 850 KC



OPERACION NOCTURNA

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

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



RADIODIFUSORA

XETQ

Orizaba, Ver.

850 KHz.
10,000 Watts.

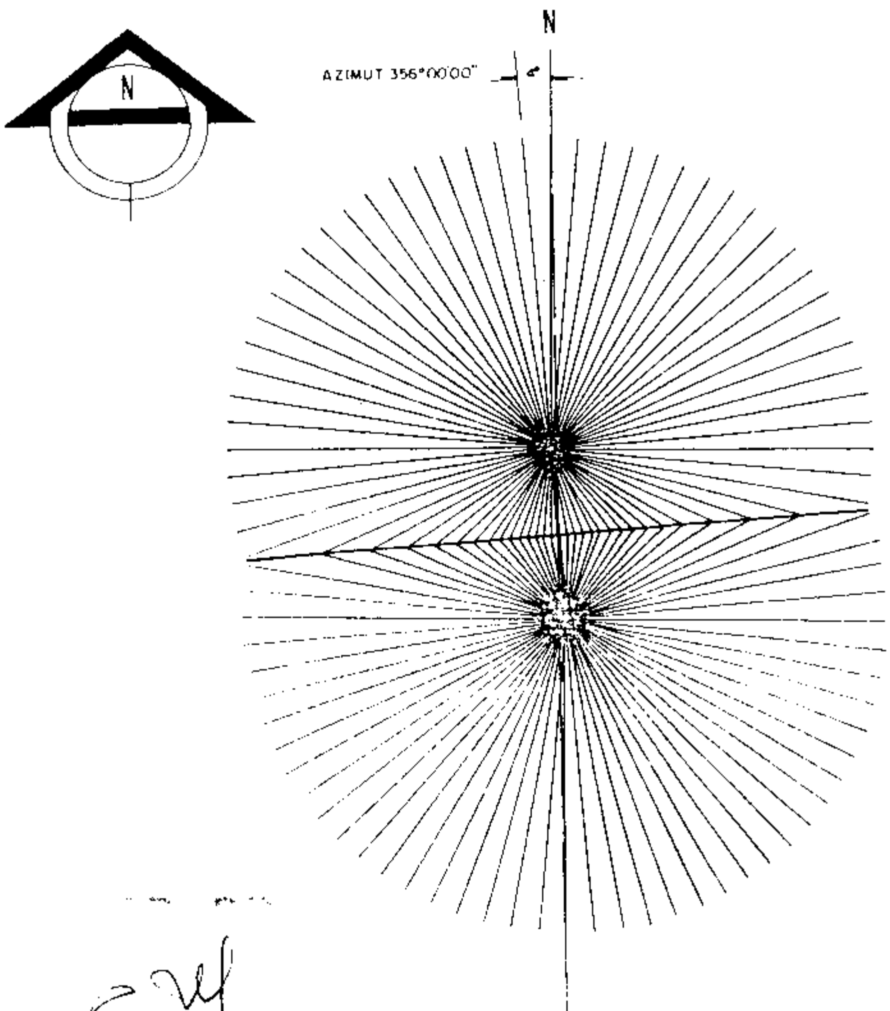
DISEÑO
LUIS VASQUEZ ORTIZ.
PASANTE ING COMUNICACIONES.

Dib. E. Sesma

XETQ

PROPOSED GROUND SYSTEM (8/29/57g)

Station XETQ 10kw, DA-2,U
Orizaba, Veracruz, Mexico 850 KC



G. M

LOS RADIALES SON DE ALAMBRE AWG No. 8, 120 EN CADA TORRE, 145.08 METROS DE LONGITUD Y UNIDOS AL CENTRO COMO LO INDICA LA FIGURA POR ALAMBRE DEL MISMO TIPO No. 00

TODO EL SISTEMA ESTA ENTERRADO 0.15 METROS. LA SEPARACION ENTRE LOS EJES DE LAS TORRES ES DE 78.43 METROS

SISTEMA DE TIERRA

RADIODIFUSORA

XETQ

Orizaba, Ver.

850 KHz.
10,000 Watts.

DISEÑO:
LUIS VASQUEZ ORTIZ.
PASANTE ING. COMUNICACIONES.

Dib. E. Sesma

XEZR

Description Sheet (8-27-65ct) | Station XEZR Zaragoza, Coahuila | 1kw, DA-N, U, Class II 850 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET
(Issued July 21, 1965)

Station: XEZR | Main Studio: Zaragoza, Coahuila

Frequency: 850 kc/s | Power: 1kw

Notification List No. (*) | Class II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 28° 29' West Longitude: 100° 54'

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:	North	Center	South	
HEIGHT ABOVE INSULATORS:	286.1'	286.1'	286.1'	(90°)
PHASING:	+29°	0°	-29°	
FIELD RATIO:	0.511	1.000	0.511	

SPACING AND ORIENTATION: Adjacent elements are spaced 553.8' (172°) on a line bearing 350° true.

GROUND SYSTEM: 120 - 285' equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

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

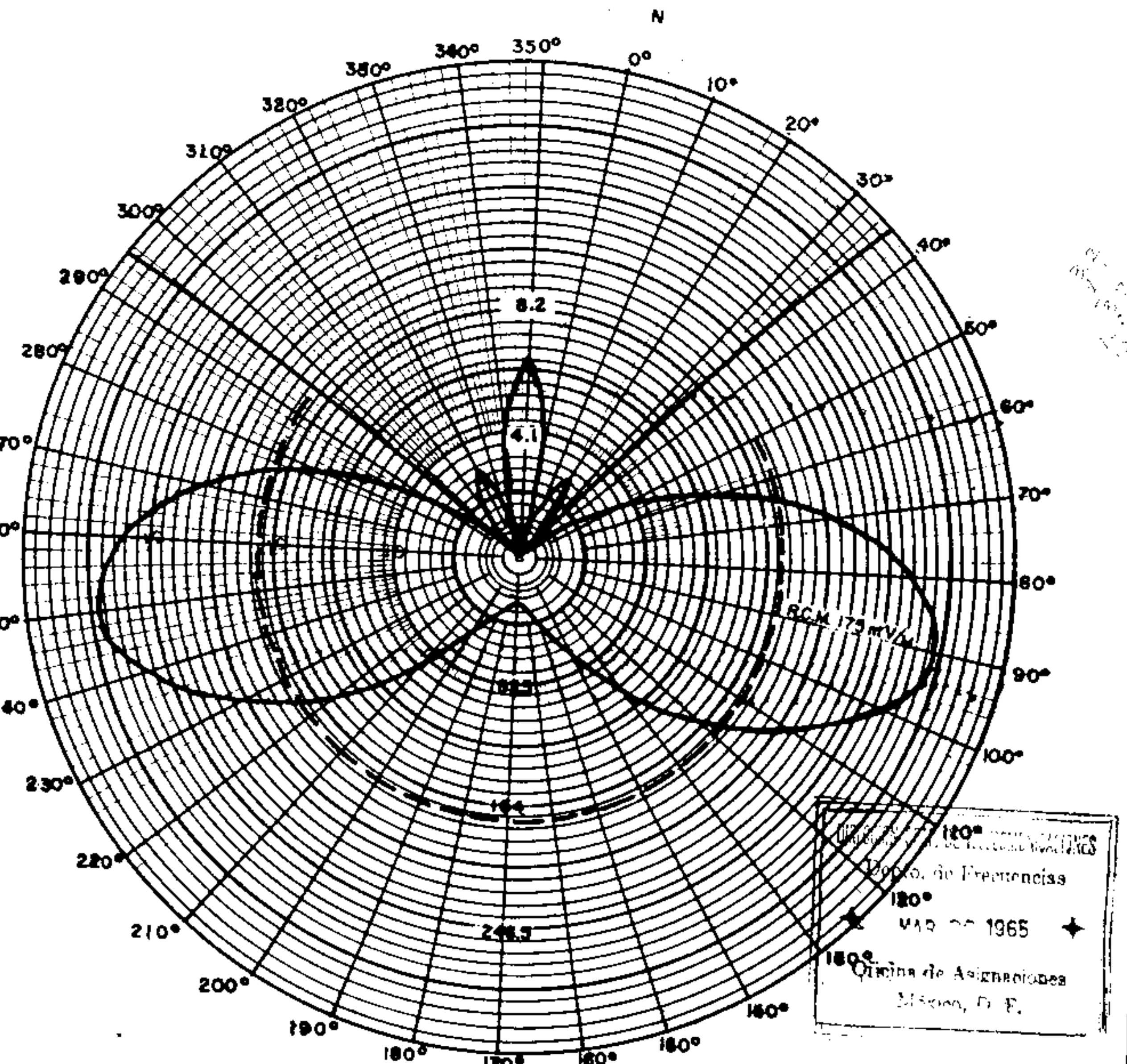
(*) FCC Note: This "supplementary" information corresponds to a change in an existing station assignment concerning which official notification has not been received in the Commission as of July 21, 1965.

XEZR

Proposed Night
(8-27-65ct)

Station XEZR
Zaragoza, Coahuila

1kw,DA-N,U,Class II
850 kc



OPERACION NOCTURNA

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

Esquema de las torres y su orientación con respecto al norte astronómico

RADIODIFUSORA

XEZR

Zaragoza, Coah.

850 KHz.
1,000 Watts
AD-N

DISEÑO

Ing. Carlos Topete
Ced. Prof. 2107

DE(·)

DESCRIPTION SHEET

Station:	New	Main Studio:	Corner Brook, Nfld.
Frequency:	850 kHz	Power:	10 kW
Time:	Unlimited	Class:	II
Notification List No.	351	Date:	February 11, 1976

Geographic Location: North Lat. 48° 55' 40"

West Long. 57° 53' 50"

Antenna System:

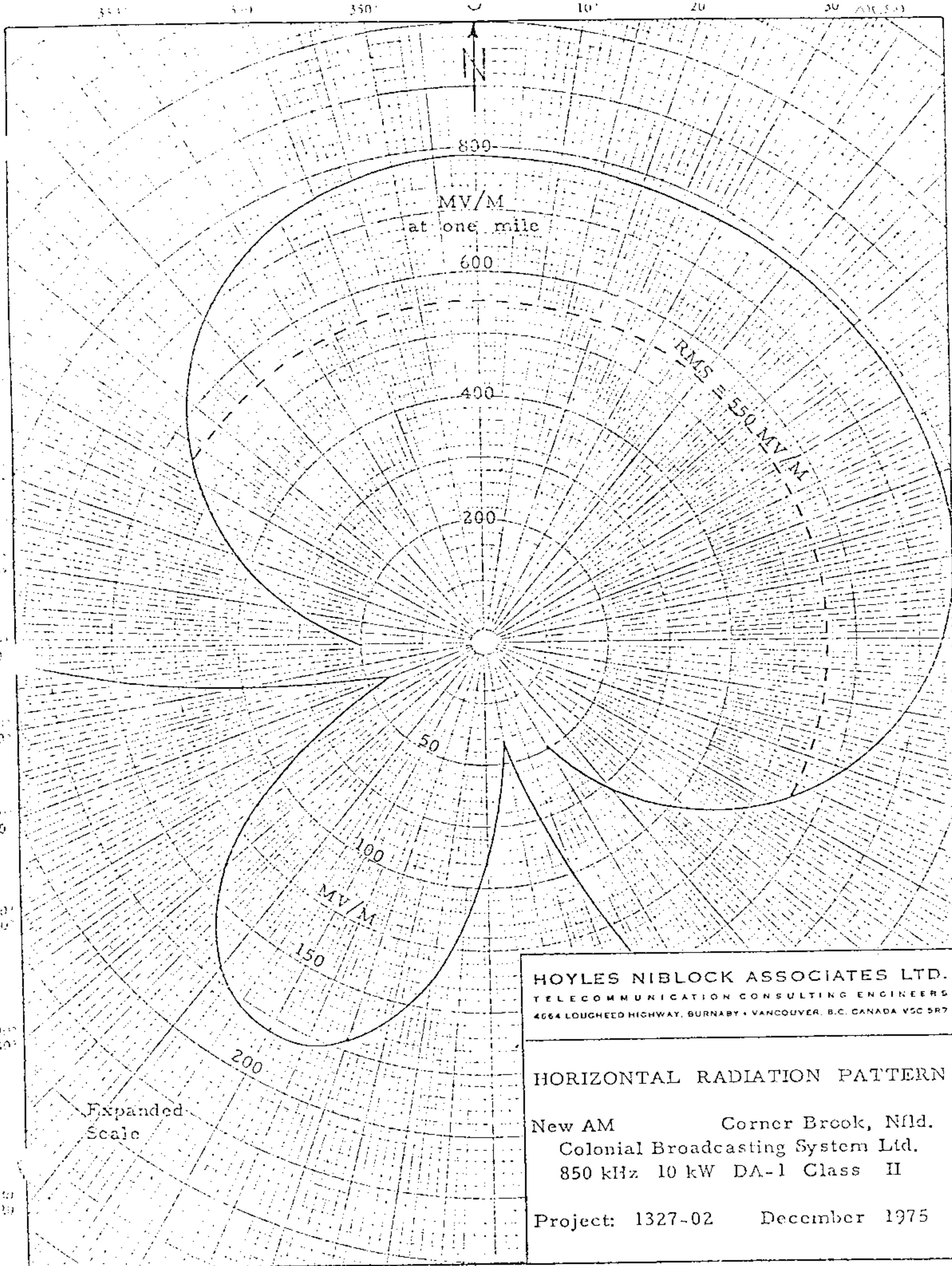
Mode of Operation: DA-1

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

Towers:	1	2
Height above insulators:	70° (225')	70° (225')
Overall Height:	230'	230'
Spacing:	0°	110°
Phasing:	0°	-96°
Current:	1.00	0.9
Orientation:	0°	30°

Ground System: The ground system shall consist of 120, No. 10 copper wire radials buried approximately 8 inches below grade. The system is equivalent to 0.4λ

Predicted Effective Field: 550 mV/m for 10 kW

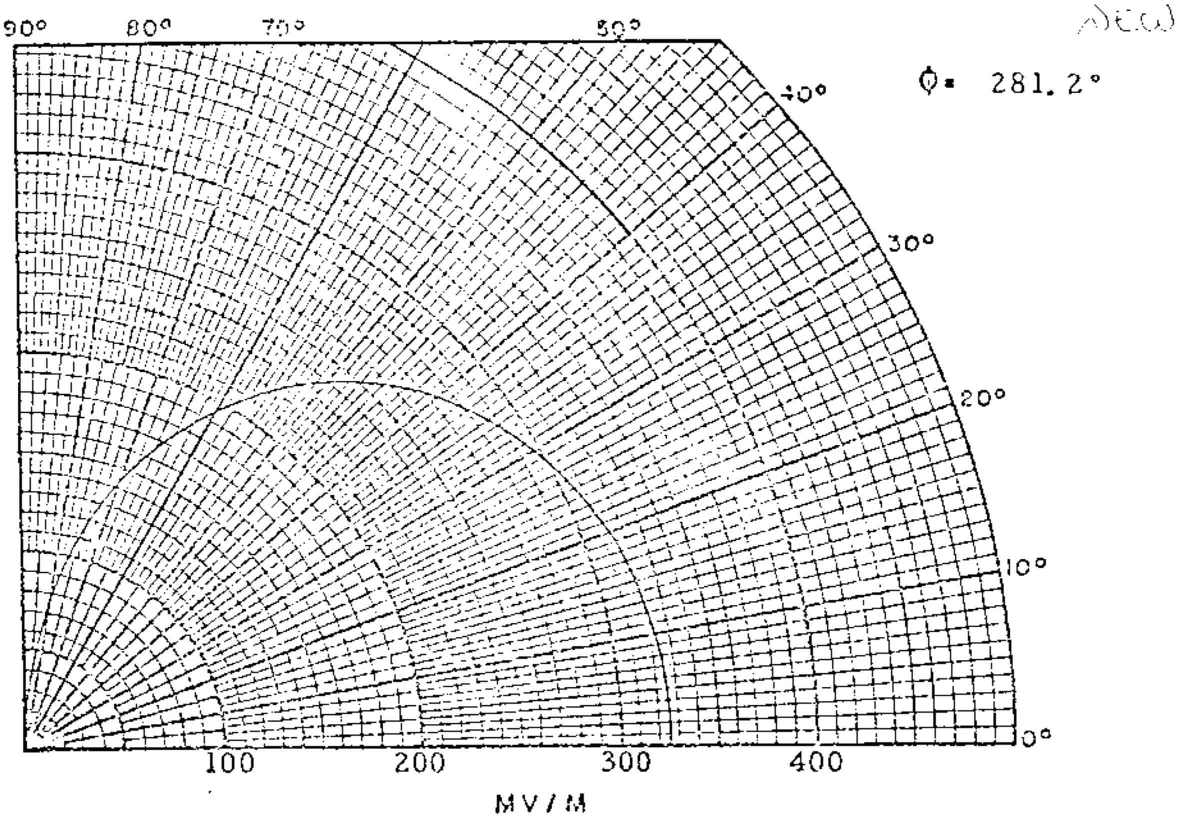


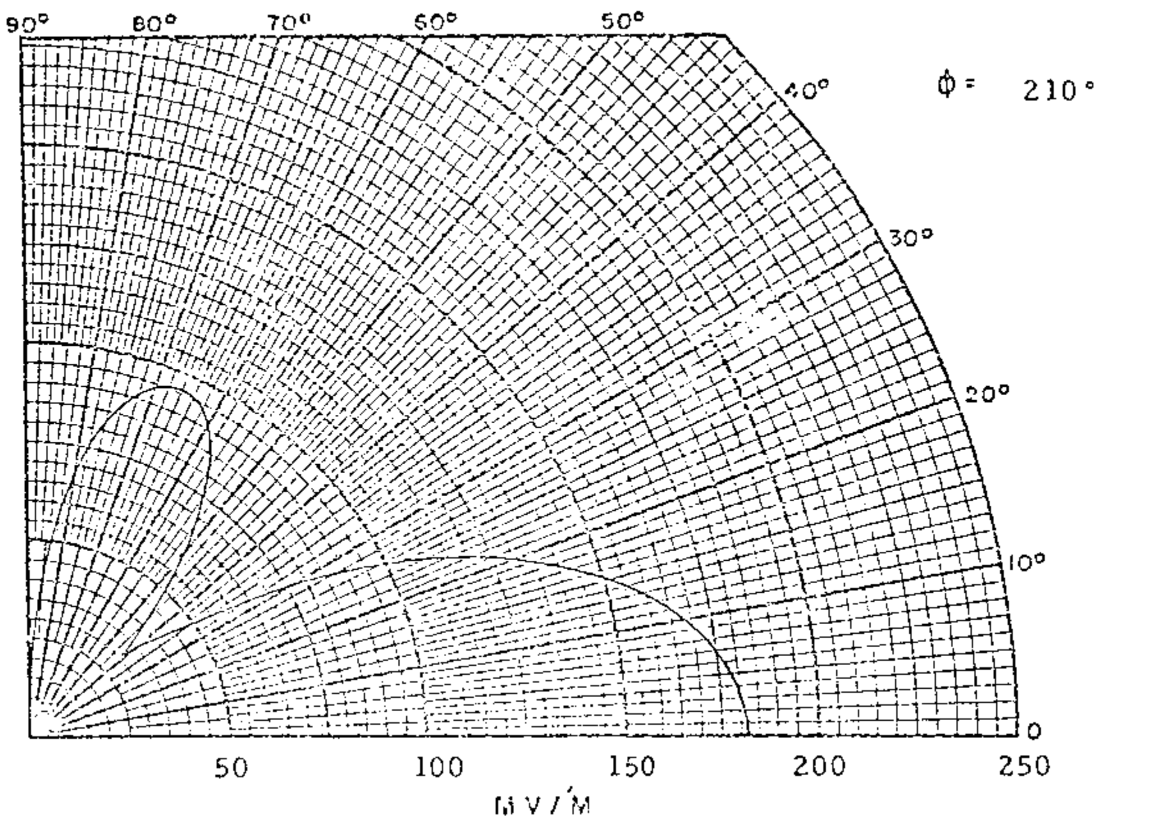
HOYLES NIBLOCK ASSOCIATES LTD.
TELECOMMUNICATION CONSULTING ENGINEERS
4664 LOUGHEED HIGHWAY, BURNABY • VANCOUVER, B.C. CANADA V5C 5R7

HORIZONTAL RADIATION PATTERN

New AM Corner Brook, Nfld.
Colonial Broadcasting System Ltd.
850 kHz 10 kW DA-1 Class II

Project: 1327-02 December 1975



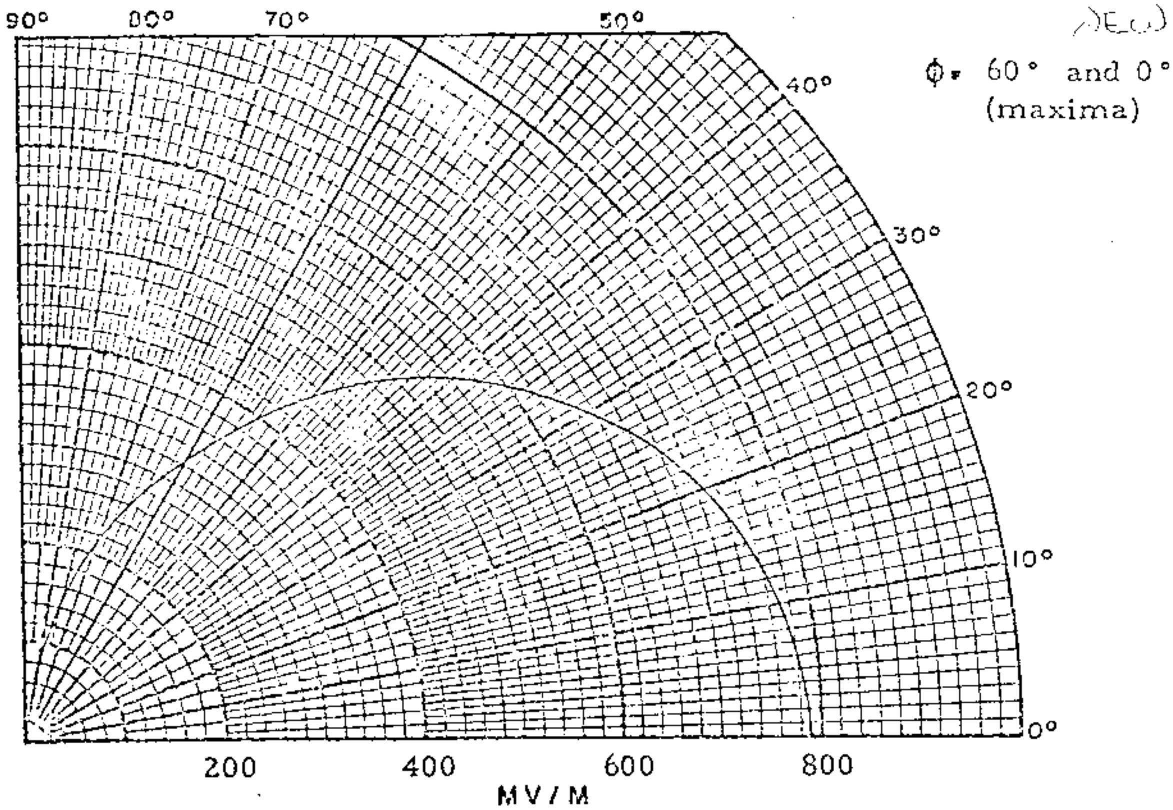


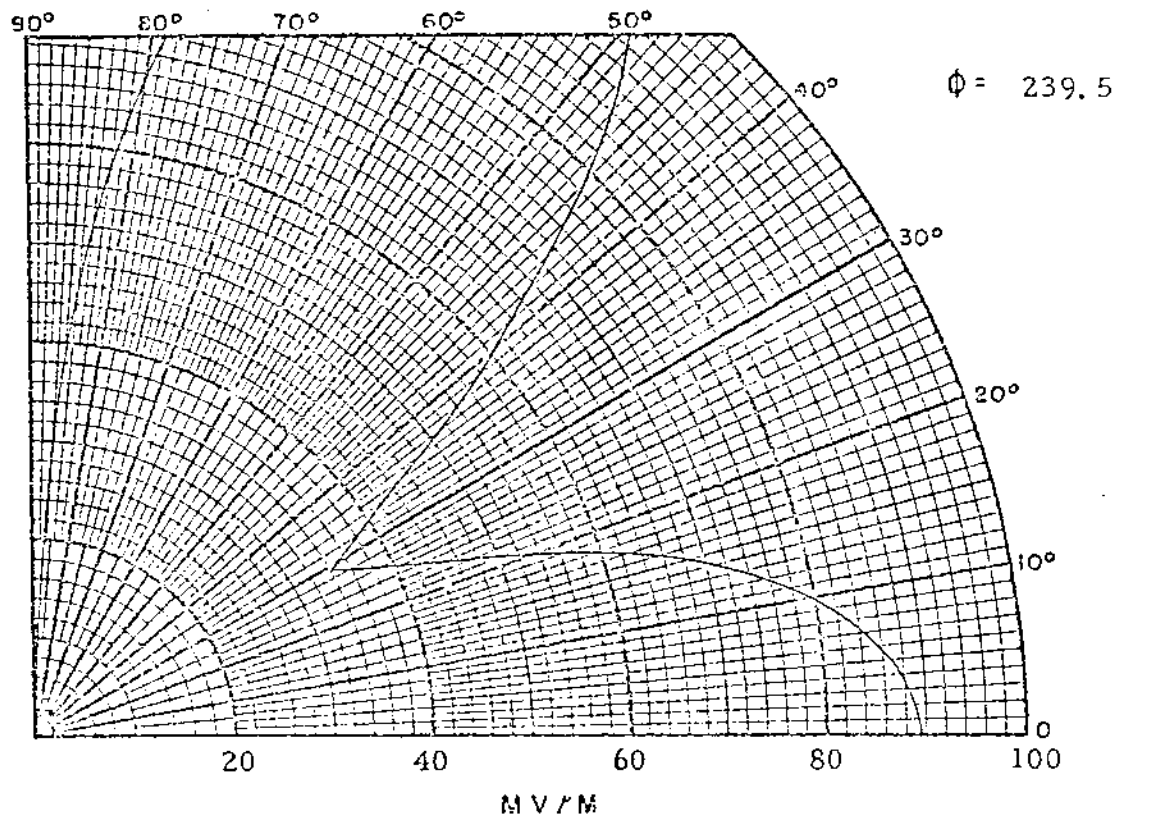
VERTICAL RADIATION PATTERNS

New AM
850 kHz 10 kW
Project: 1327-02

Corner Brook, Newfoundland
DA - 1 Class II
December 1975

HOYLES NIBLOCK ASSOCIATES LTD.





VERTICAL RADIATION PATTERNS

New AM — Corner Brook, Newfoundland
850 kHz — 10 kW — DA-1 — Class II
Project: 1327-02 — December 1975