1580-1590

Station	Main Studio	Freq	Power	Date
NEW	Edmonton, AB	1580	50 kW/DA-N	6/12/81
CBJ	Chicoutimi, QU	1580	50 kW/DA-1	11/30/82
CBJ	Chicoutimi, QU	1580	10 kW/DA-1	10/30/47
NEW	Icard Township, NC	1580	5 kW/DA-D	11/9/79
KDAY	Santa Monica, CA	1580	50 kW/DA-2	11/24/70
KDAY	Santa Monica, CA	1580	50 kW/DA-D	6/20/58
KDOM	Windom, MN	1580	0.25 kW/DA-D	1/10/58
KDSN	Denison, IA	1580	0.5 kW/DA-D	1/18/57
KLOU	Lake Charles, LA	1580	1 kW/DA-1	11/13/45
KNIX	Tempe, AZ	1580	50/10 kW/DA-N	5/76
KRZI	Waco, TX	1580	0.5/1 kW/DA-2	1/30/67
KWIP	Merced, CA	1580	0.5 kW/ND	3/12/56
WAXU	Georgetown, KY	1580	10 kW/DA-D	9/4/59
WCCF	Punta Gorda, FL	1580	1 kW/DA-D	10/26/70
WCLS	Columbus, GA	1580	1 kW/DA-N	5/8/61
WFVR	Aurora, IL	1580	0.25 kW/DA-D	5/25/67
WPGC	Morningside, MD	1580	50 kW/DA-D	11/9/79
WPGC	Morningside, MD	1580	10 kW/DA-D	2/21/74
WPMP	Pascagoula-Moss Point, MS	1580	5 kW/DA-D	4/26/78
WRBJ	St. Johns, MI	1580	1 kW/DA-D	12/21/59
WSRF	Fort Lauderdale, FL	1580	5/10 kW/DA-2	3/18/75
WSUF	Patchogue, NY	1580	5 kW/DA-D	5/17/57
WVKO	Columbus, OH	1580	1 kW/DA-D	1/5/50
WWIL	Fort Lauderdale, FL	1580	1 kW/DA-2	10/1/52
WWIL	Fort Lauderdale, FL	1580	1/10 kW/DA-2	9/11/58
WWIL	Fort Lauderdale, FL	1580	5/10 kW/DA-2	5/25/62

1580-1590

Station	Main Studio	Freq	Power	Date
NEW	Cornwall, ON	1590	10/2.5 kW/DA-1	2/20/80
NEW	Guelph, ON	1590	10 kW/DA-1	7/29/70
NEW	Kitchener, ON	1590	10 kW/DA-2	8/28/67
NEW	St. Basile-de-Portneuf, QU	1590	0.25 kW	7/26/66
KBBQ	Ventura, CA	1590	5 kW/DA-2	12/23/70
KBBQ	Ventura, CA	1590	1 kW/DA-1	12/27/68
KEND	Lubbock, TX	1590	1 kW/DA-2	5/27/69
KIKN	Sinton, TX	1590	0.5/1 kW/DA-2	3/12/75
KIKN	Sinton, TX	1590	1 kW/DA-D	4/1/53
KLIV	San Jose, CA	1590	5 kW/DA-N	7/28/69
KRAD	East Grand Forks, MN	1590	1 kW/DA-N	6/28/63
KTIL	Tillamook, OR	1590	1 kW/DA-N	2/28/62
KLIV	San Jose, CA	1590	5 kW/DA-N	5/27/66
KMTI	Manti, UT	1590	1/5 kW/DA-N	11/2/79
KRAD	East Grand Forks, MN	1590	1/5 kW/DA-2	11/9/79
KTCH	Wayne, NE	1590	2.5 kW/DA-D	11/9/79
KUUU	Seattle, WA	1590	5 kW/DA-N	10/2/59
KVGB	Great Bend, KS	1590	5 kW/DA-N	2/28/64
KWBG	Boone, IA	1590	0.5/1 kW/DA-N	5/1/50
KWEY	Weatherford, OK	1590	1 kW/DA-D	7/29/70
KXEM	McFarland, CA	1590	0.5 kW/DA-D	7/29/70
KYOK	Houston, TX	1590	5 kW/DA-N	9/30/48
NEW	Gorham, ME	1590	2.5/5 kW/DA-2	9/27/78
WAIK	Galesburg, IL	1590	5 kW/DA-D	11/2/79
WAIK	Galesburg, IL	1590	0.5/5 kW/DA-2	3/29/67
WAKR	Akron, OH	1590	5 kW/DA-N	3/9/51

1580-1590

Station	Main Studio	Freq	Power	Date
WALG	Albany, GA	1590	1/5 kW/DA-2	5/25/67
WALG	Albany, GA	1590	1 kW/DA-N	2/20/45
WAUB	Auburn, NY	1590	0.5 kW/DA-D	5/29/58
WAWA	West Allis, WI	1590	1 kW/DA-D	10/25/61
WCBG	Chambersburg, PA	1590	1/5 kW/DA-N	6/14/61
WEEW	Washington, NC	1590	1/5 kW/DA-N	6/27/69
WEEZ	Chester, PA	1590	1 kW/DA-N	12/27/68
WERA	Plainfield, NJ	1590	0.5 kW/DA-D	11/16/56
WETT	Ocean City, MD	1590	5/1 kW/DA-2	11/16/79
WETT	Ocean City, MD	1590	0.5/1 kW/DA-2	5/28/59
WHPY	Clayton, NC	1590	5 kW/DA-D	6/19/74
WILZ	St. Petersburg Beach, FL	1590	1 kW/DA-D	2/11/58
WJRO	Glen Burnie, MD	1590	1 kW/DA-2	9/12/80
WJRO	Glen Burnie, MD	1590	0.5 kW/DA-2	6/5/74
WJSO	Jonesboro, TN	1590	5 kW/DA-N	9/27/78
WISZ	Glen Burnie, MD	1590	0.5 kW/DA-2	6/28/63
WNCT	Greenville, NC	1590	1/5 kW/DA-N	3/28/60
WNTS	Beech Grove, IN	1590	0.5/5 kW/DA-2	11/2/79
WONX	Evanston, IL	1590	2.5/1 kW/DA-N	11/2/79
WPLW	Carnegie, PA	1590	1 kW/DA-D	9/25/58
WQQW	Waterbury, CT	1590	5 kW/DA-1	7/13/54
WSMA	Marine City, MI	1590	1 kW/DA-D	12/21/50
WSMN	Nashua, NH	1590	5 kW/DA-1	7/26/61
WSWW	Platteville, WI	1590	0.5/1 kW/DA-N	8/29/60
WTVB	Coldwater, MI	1590	1/5 kW/DA-N	9/13/60
WVNA	Tuscumbia, AL	1590	1/5 kW/DA-N	11/30/61

1580-1590

Station	Main Studio	Freq	Power	Date
WWBK	Brockport, NY	1590	1 kW/DA-2	9/27/78
WVNA	Tuscumbia, AL	1590	1/5 kW/DA-N	4/24/64
WWUN	Jackson, MS	1590	1/5 kW/DA-N	10/25/61
XEACH	Monterrey, Nuevo Leon	1590	1 kW/DA-N	3/14/73
XEART	Zacatepec, Mor.	1590	1 kW/DA-1	7/31/75
XETE	Madero, Tamalipus, MX	1590	1 kW/DA-D	9/4/59

NEW EDMONTON
1580KHZ

DESCRIPTION SHEET

Station: New

Main Studio: Edmonton Alberta

Frequency: 1580 kHz

Power: 50 kW

Time: Unlimited

Class: II

Notification List No. 405

Date: June 12, 1981

Geographical Location:

North Lat. 53° 26' 50"
West Long. 113° 16' 30"

Antenna System

Mode of Operation: DA-N

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

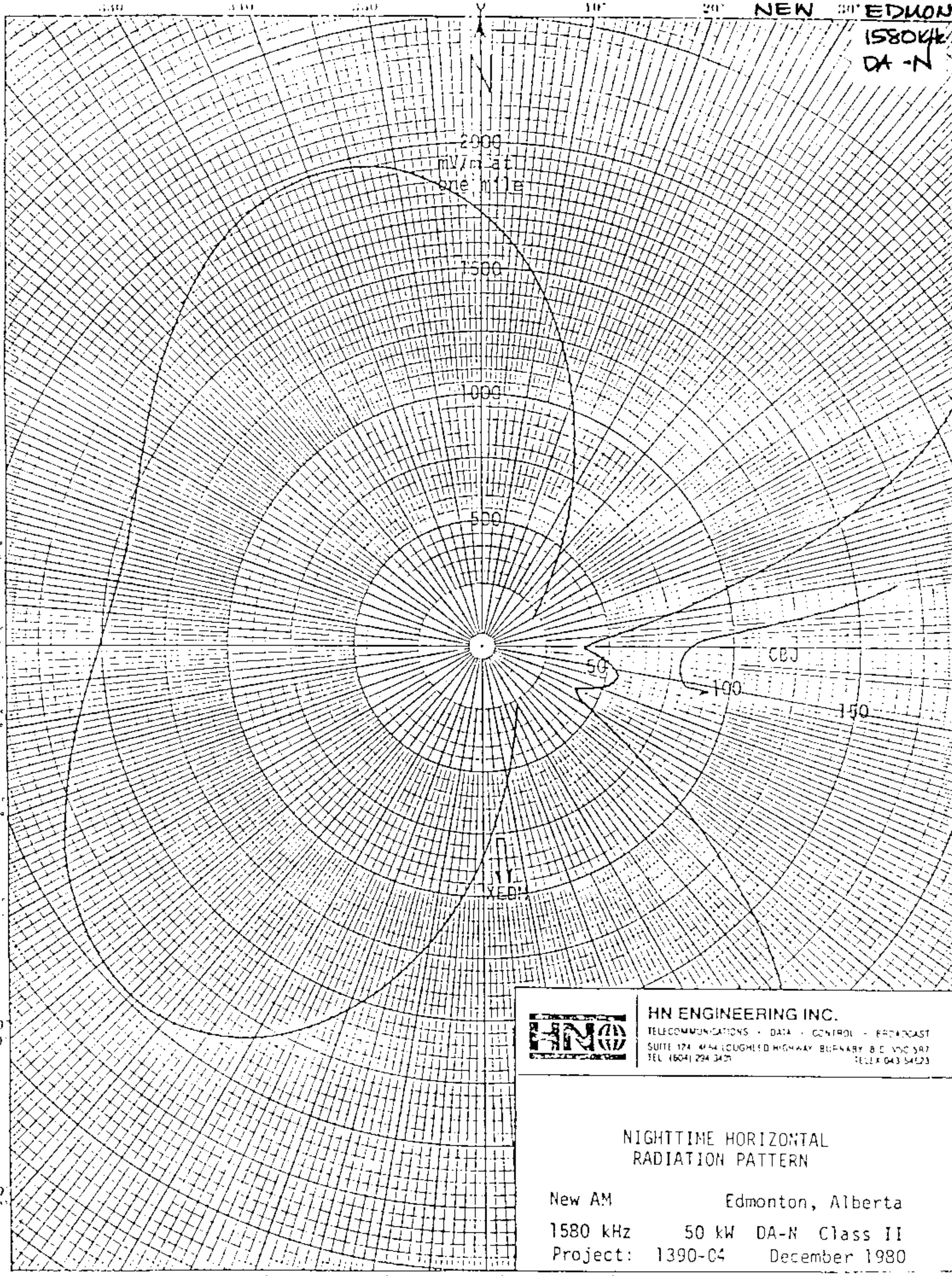
Towers:	1(E)	2(C)	3(W)
Height above insulators:	156' (90°)	156' (90°)	156' (90°)
Overall Height:	160'	160'	160'
Spacing:	ref	135°	270°
Phasing:	0	-64	-150
Current Ratio:	1.0	1.41	0.51
Orientation:	ref	283°	283°

Ground Systems: The ground system shall consist of 120, No. 10 copper wire radials about each tower buried approximately 8 inches below grade. The arrangement is equivalent to a 0.4 ground system.

Predicted Effective Field: 1275 mV/m for 50 kW nighttime
1300 mV/m for 50 kW daytime omni directional using center tower.

HN ENGINEERING INC.

NEW EDMONTON
1580KHz
DA -N



HN ENGINEERING INC.

TELECOMMUNICATIONS · DATA · CONTROL · BROADCAST

NIGHTTIME HORIZONTAL
RADIATION PATTERN

New AM Edmonton, Alberta

1580 kHz 50 kW DA-N Class II

Project: 1390-04 December 1980

CBJ
1580

IFRB Serial No. 1 2 4 3

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

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

PART I GENERAL INFORMATION

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

Assigned frequency (kHz)	02	1580
Transmitting station: Name of the station	03	CHICOUTIMI QU
Transmitting station: Call sign	04	CBJ
Transmitting station: Additional Identification	05	
Transmitting station: Station class	06	A
Transmitting station: Operational Status	07	O
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 [ ]

Power increase implemented

(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	50.	31	50.
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								

ENGINEERING HEADQUARTERS
SIÈGE DE L'INGÉNIERIE

TITLE / TITRE: Power increase & Relocation Station CBJ Chicoutimi, P.Q.

DWG. NO. / DESSIN NO.: CBJ
DATE / DATE: Sept.8/76 ISSUE NO. / REVISION NO.: 2
PREP. BY / PREP. PAR: W.G.R. APP. / APP.:

ANTENNA DESCRIPTION

Station: CBJ
Frequency: 1580 kHz

Location: Chicoutimi, P.Q.
Power: 50 kW

Notification List: 360

Date: November 23, 1976

Geographical Location:

Latitude: 48° 28' 56" N
Longitude: 71° 09' 33" W

ANTENNA CHARACTERISTICS:

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

TOWER ELEMENT:

	No. 1 (N)	No. 2 (C)	No. 3 (S)
Height above base:	188° (325')	98° (170')	98° (170'
Overall height:	333'	178'	178'
Field Ratio:	1.000	0.795	0.562
Phasing:	0.0°	- 66.0°	- 132.0°

Ground System:

120 copper wire (No. 10AWG) radials equispaced about each tower and buried 8 to 12 inches deep. Radial length 0.4 (250') exceptin those bonded to the common chord.

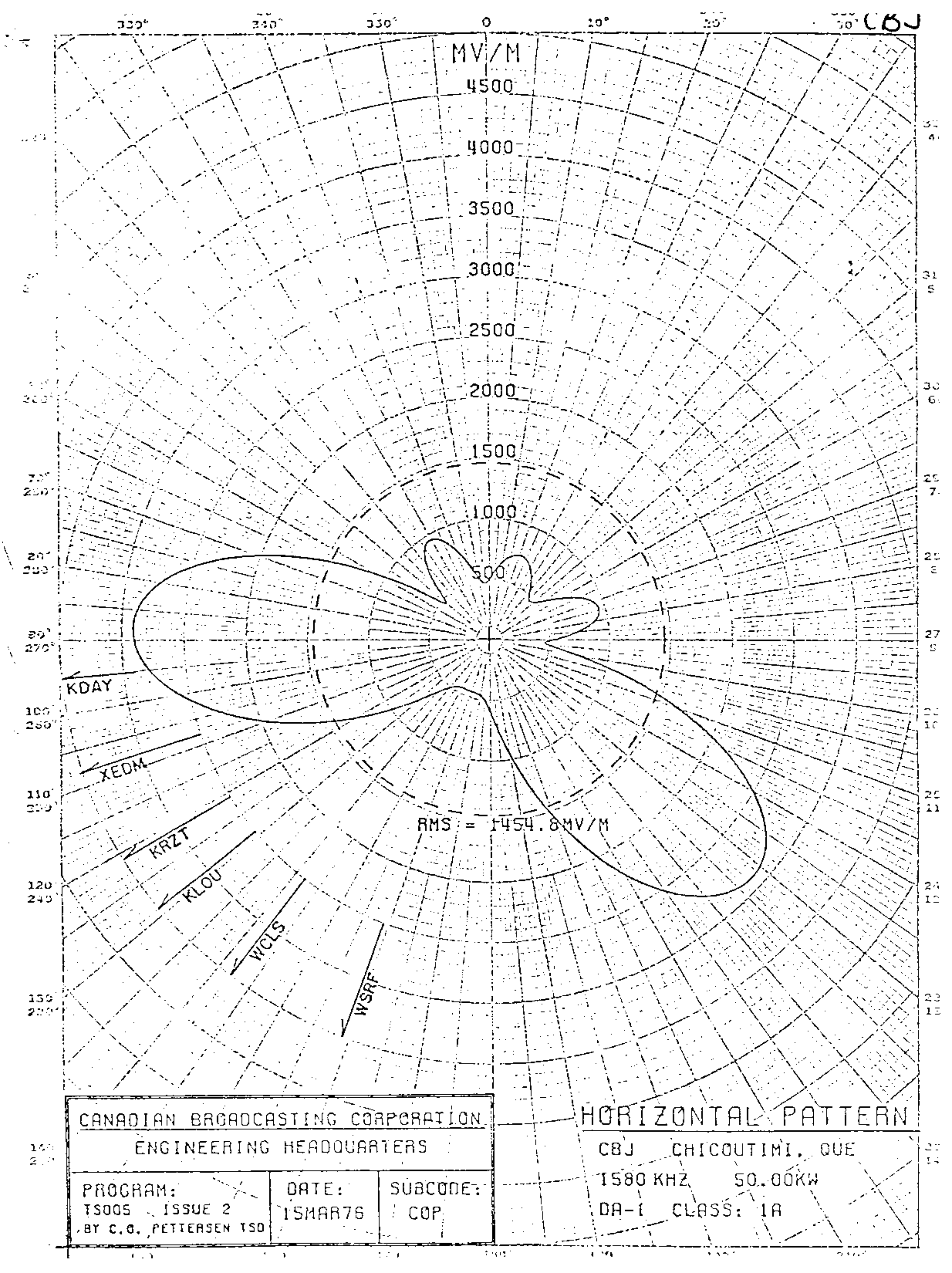
SPACING & ORIENTATION:

Element spacing is 190° (328.77') along a line bearing 202° true.

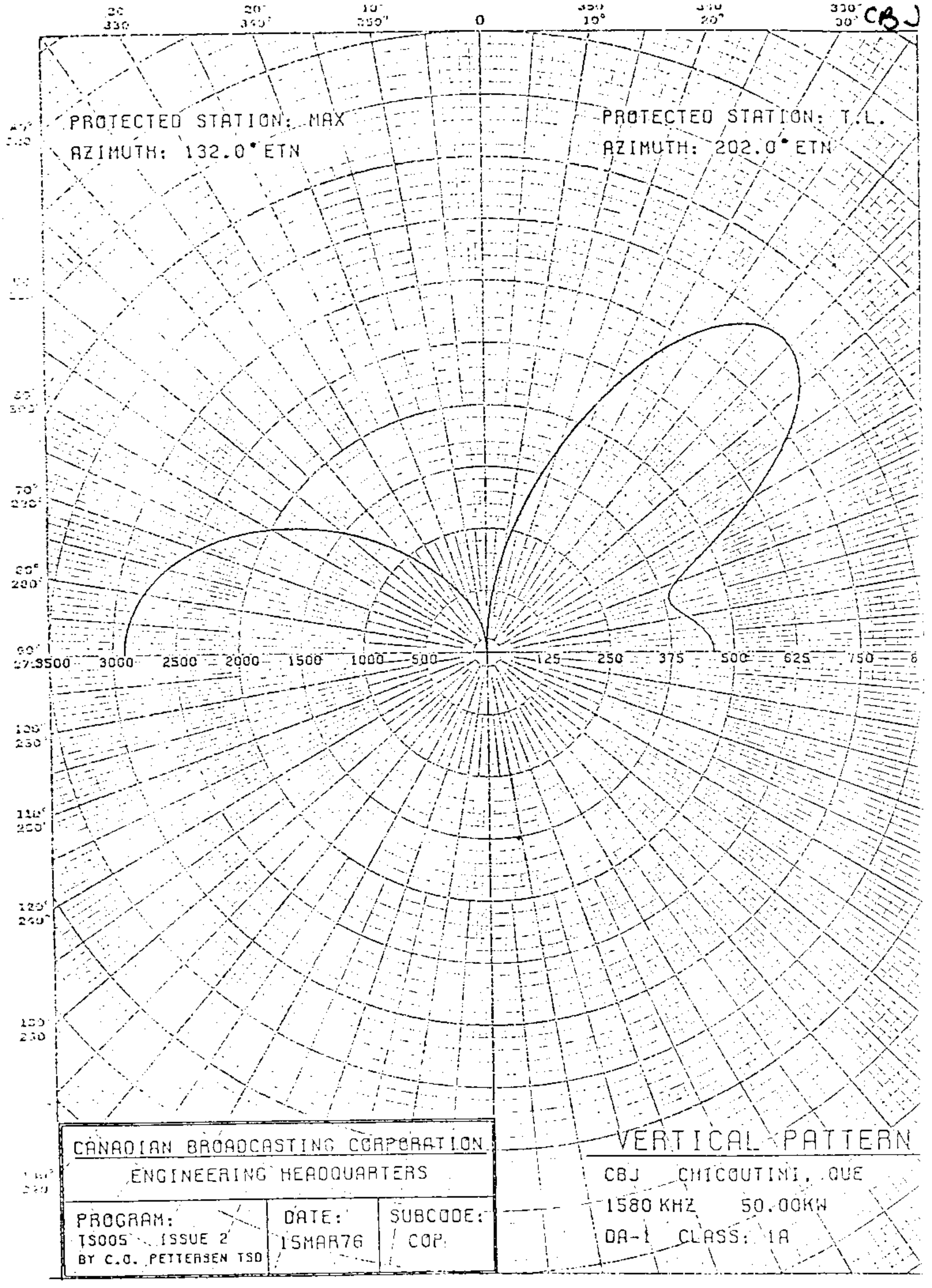
PREDICTED EFFECTIVE FIELD:

1454.8 mV/m for 50 kW (205.7 mV/m for 1 kW).

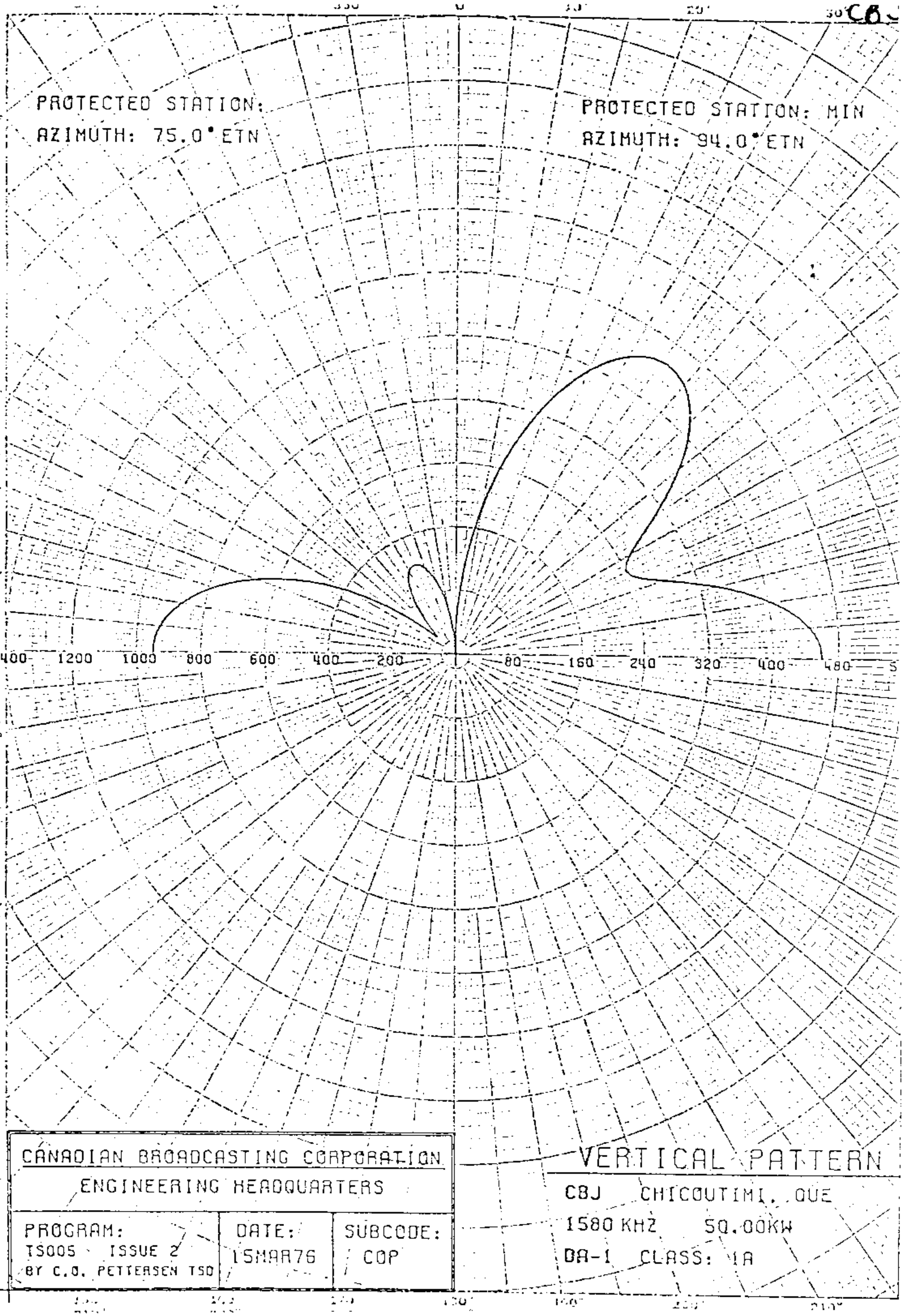
CTR NO 10140A3

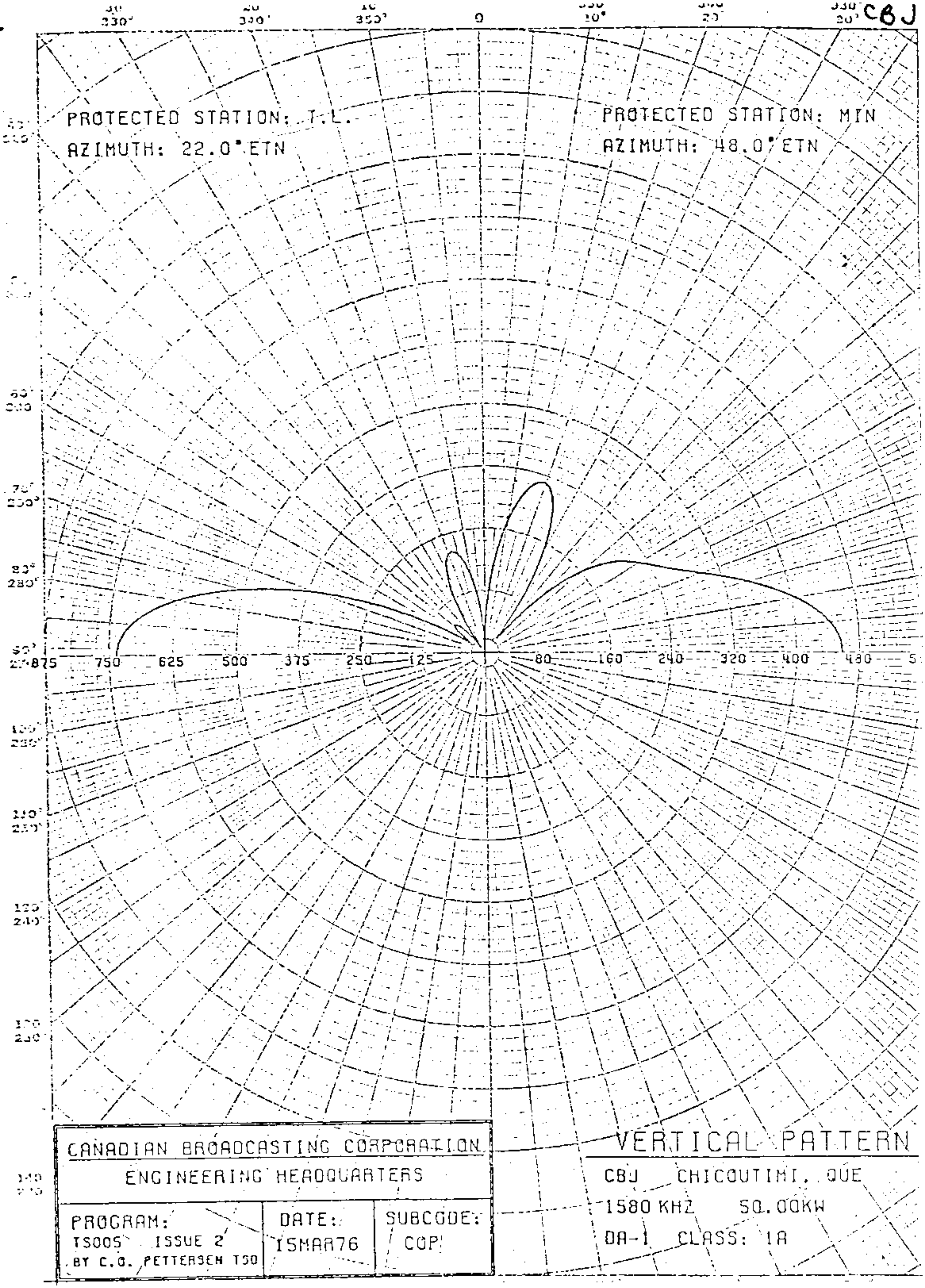


CBJ
MV/M
4500
4000
3500
3000
2500
2000
1500
1000
500
RMS = 1454.8MV/M
KDAY
XEDM
KRZT
KLOU
WCLS
WSRF
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM:
TS005 ISSUE 2
BY C.G. PETTERSEN TSO
DATE:
15MAR76
SUBCODE:
COP
HORIZONTAL PATTERN
CBJ CHICOUTIMI, QUE
1580 KHZ 50.00KW
DA-1 CLASS: 1A



CBJ
PROTECTED STATION: MAX
AZIMUTH: 132.0° ETN
PROTECTED STATION: T.L.
AZIMUTH: 202.0° ETN
3500 3000 2500 2000 1500 1000 500
125 250 375 500 625 750
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM:
TS005 ISSUE 2
BY C.O. PETTERSEN TSD
DATE:
15MAR76
SUBCODE:
COP
VERTICAL PATTERN
CBJ CHICOUTIMI, QUE
1580 KHZ 50.00KW
DA-1 CLASS: 1A


CBJ
PROTECTED STATION:
AZIMUTH: 75.0° ETN
PROTECTED STATION: MIN
AZIMUTH: 94.0° ETN
1400
1200
1000
800
600
400
200
80
160
240
320
400
480
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM:
TS005 ISSUE 2
BY C.O. PETTERSEN TSD
DATE:
15MAR76
SUBCODE:
COP
VERTICAL PATTERN
CBJ CHICOUTIMI, QUE
1580 KHZ 50.00KW
DA-1 CLASS: 1A


CBJ
PROTECTED STATION: T.L.
AZIMUTH: 22.0° ETN
PROTECTED STATION: MIN
AZIMUTH: 48.0° ETN
0
10°
20°
350°
340°
875
750
625
500
375
250
125
80
160
240
320
400
480
CANADIAN BROADCASTING CORPORATION
ENGINEERING HEADQUARTERS
PROGRAM:
TS005 ISSUE 2
BY C.G. PETTERSEN TSO
DATE:
15MAR76
SUBCODE:
COP
VERTICAL PATTERN
CBJ CHICOUTIMI, QUE
1580 KHZ 50.00KW
DA-1 CLASS: 1A

Information Copy
Rec'd 9/16/47

CBJ
1580

STATION: C B J MAIN STUDIO: CHICOUTIMI, QUEBEC.

POWER: 10 KW. FREQUENCY: 1580KC. CLASS: I-B

LOCATION: APPROXIMATELY 3 MILES SOUTH-EAST OF ARVIDA.

NORTH LATITUDE: 48° 23' 53.34"

WEST LONGITUDE: 71° 08' 30.06"

ANTENNA: MODE OF OPERATION: SERIES-FEED.

TWO ELEMENTS, GUYED, CONSTANT CROSS-SECTION, INSULATED BASE.

TOWER:	#1	#2
HEIGHT ABOVE INSULATORS:	~~190°~~ (310')	190° (310')
PHASING:	0°	0°
FIELD RATIO:	1.0	1.0

SPACING: 165° (286') BETWEEN TOWERS.

GROUND SYSTEM: 120 RADIALS, SPACED 3°, RUNNING OUT TO A MAXIMUM LENGTH OF [illegible]75 FT. FROM EACH TOWER. RADIALS JOINED ON A LINE EQUIDISTANT FROM EACH TOWER.

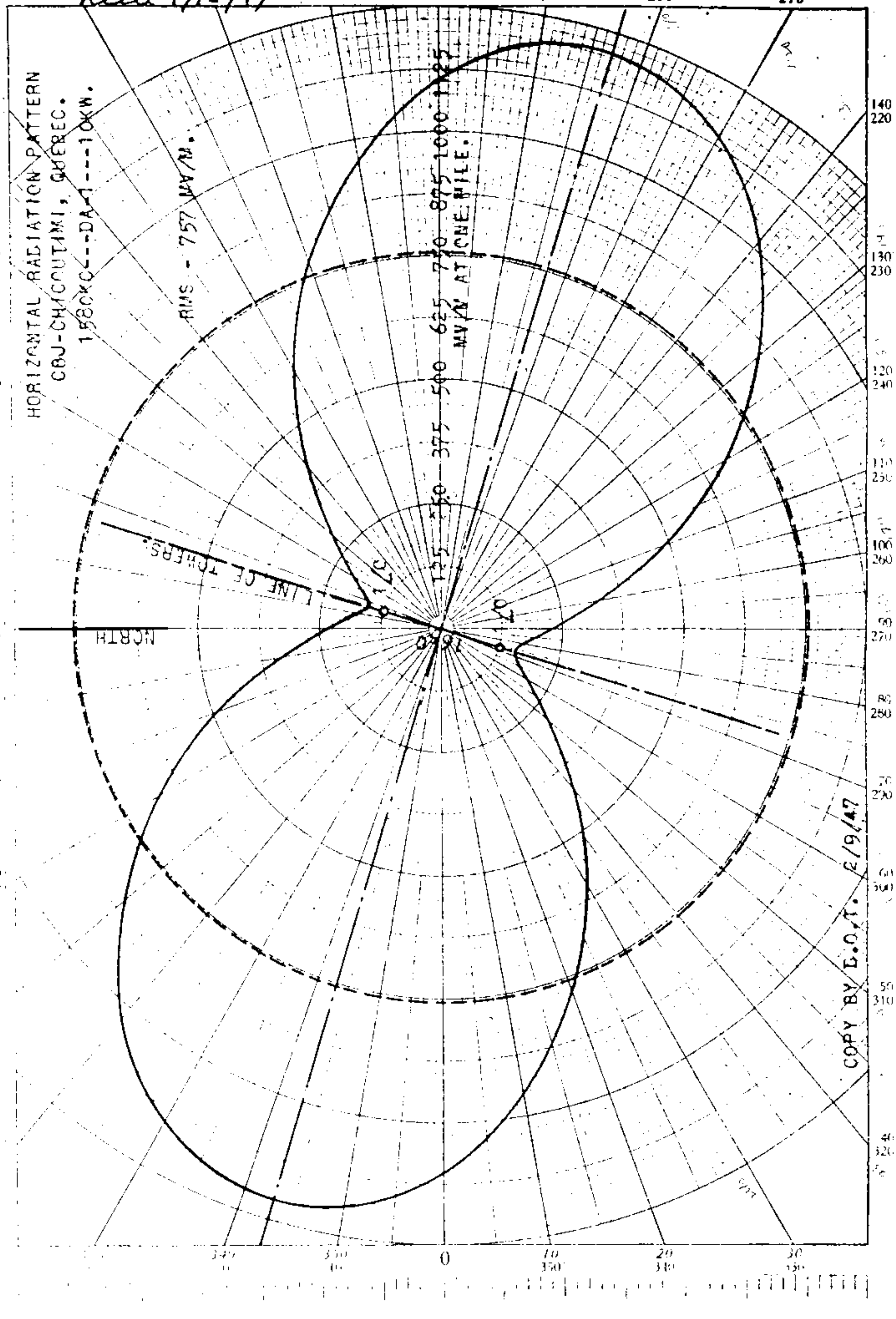
PREDICTED EFFECTIVE FIELD: [illegible] MV/M AT 1 MILE ([illegible] FOR 1 KW)

ORIENTATION: ELEMENTS ON A LINE BEARING 1[illegible]° EAST OF NORTH.

CBJ

C B J 1580KC

Information copy
Rec'd 9/10/47



NEW
1580KHZ

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: New | Main Studio: Icard Township, N.C.

Frequency: 1580 kHz | Power: 5 kW Day

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

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 35° 43' 06"

West Longitude: 81° 28' 06"

ANTENNA CHARACTERISTICS

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

TOWER:	NW (#1)	C (#2)	SE (#3)
HEIGHT ABOVE INSULATORS	120'	120'	120' (69.4°)
DAY PHASING:	0.0°	148.7°	-62.7°
DAY FIELD RATIO:	1.00	1.60	0.81

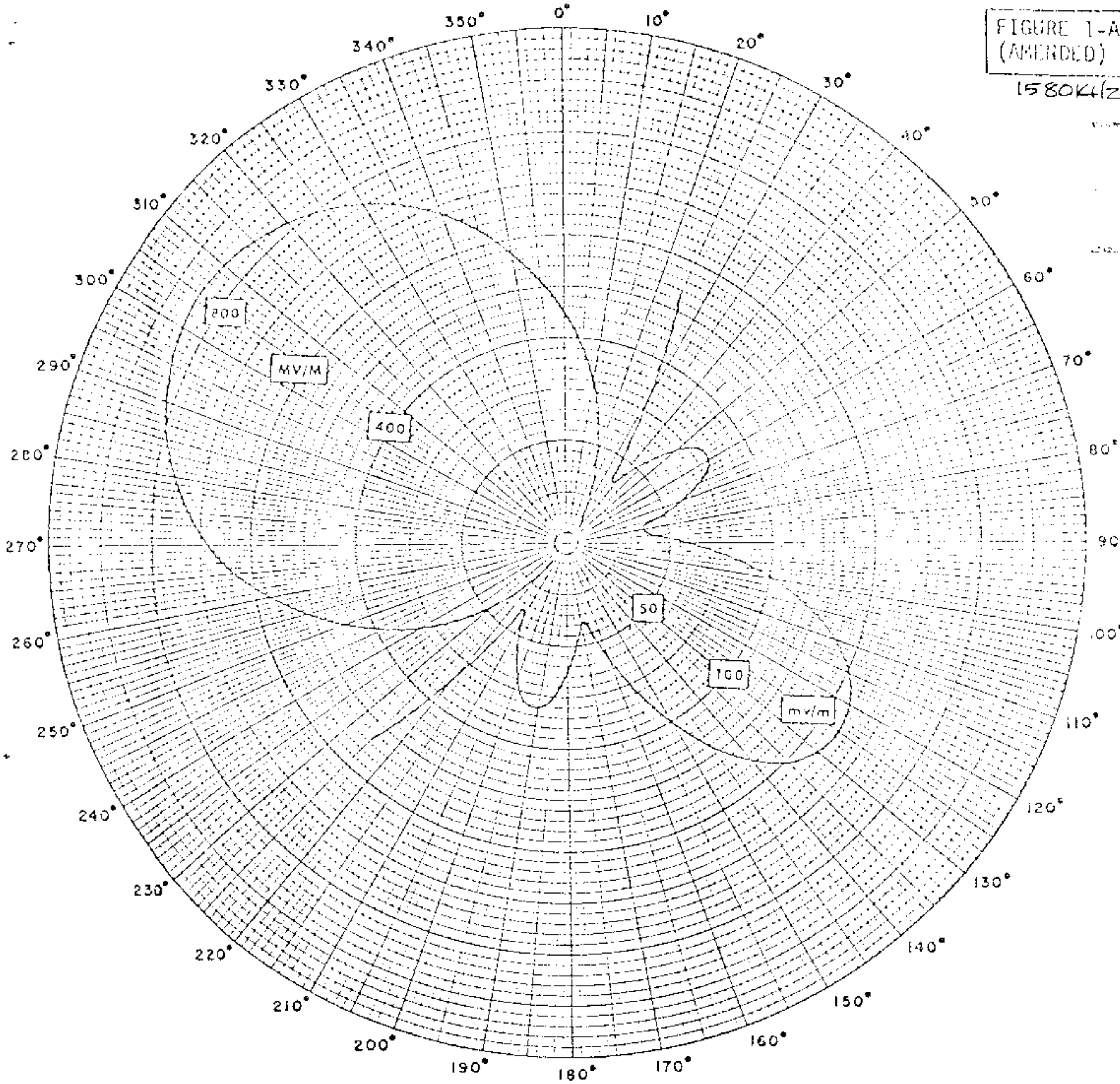
SPACING AND ORIENTATION: The adjacent towers are spaced 138.3' (80.0°) on a line bearing 125.0° true.

GROUND SYSTEM: 120-155' 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.

PREDICITED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	400 mV/m	729.718 mV/m	420.437 mV/m

FIGURE 1-A
(AMENDED)
1580KHz



ANTENNA NO	1	2	3
FIELD	1	1.6	.81
PHASE	0	+148.7°	-62.7°
SPACING	0	80°	160°
ORIENTATION	0	125°	125°
HEIGHT	69.4°	69.4°	69.4°

N. LAT.	35° 43' 6.5"	
W. LONG.	81° 28' 06"	
RMS STD	420.437	mv/m
RMS Th.	400	mv/m
RSS Th	729.718	

PROPOSED DAYTIME
HORIZONTAL STANDARD PATTERN
NEW AM - ICARD, NORTH CAROLINA
1580 kHz - 5 kW - DA-D
NOVEMBER, 1977

CARL T. JONES ASSOCIATES — CONSULTING ENGINEERS

Measured Day
(11-24-70ct)

Station KDAY
Santa Monica, California

KDAY
50kw,DA-2,U
1580 kc

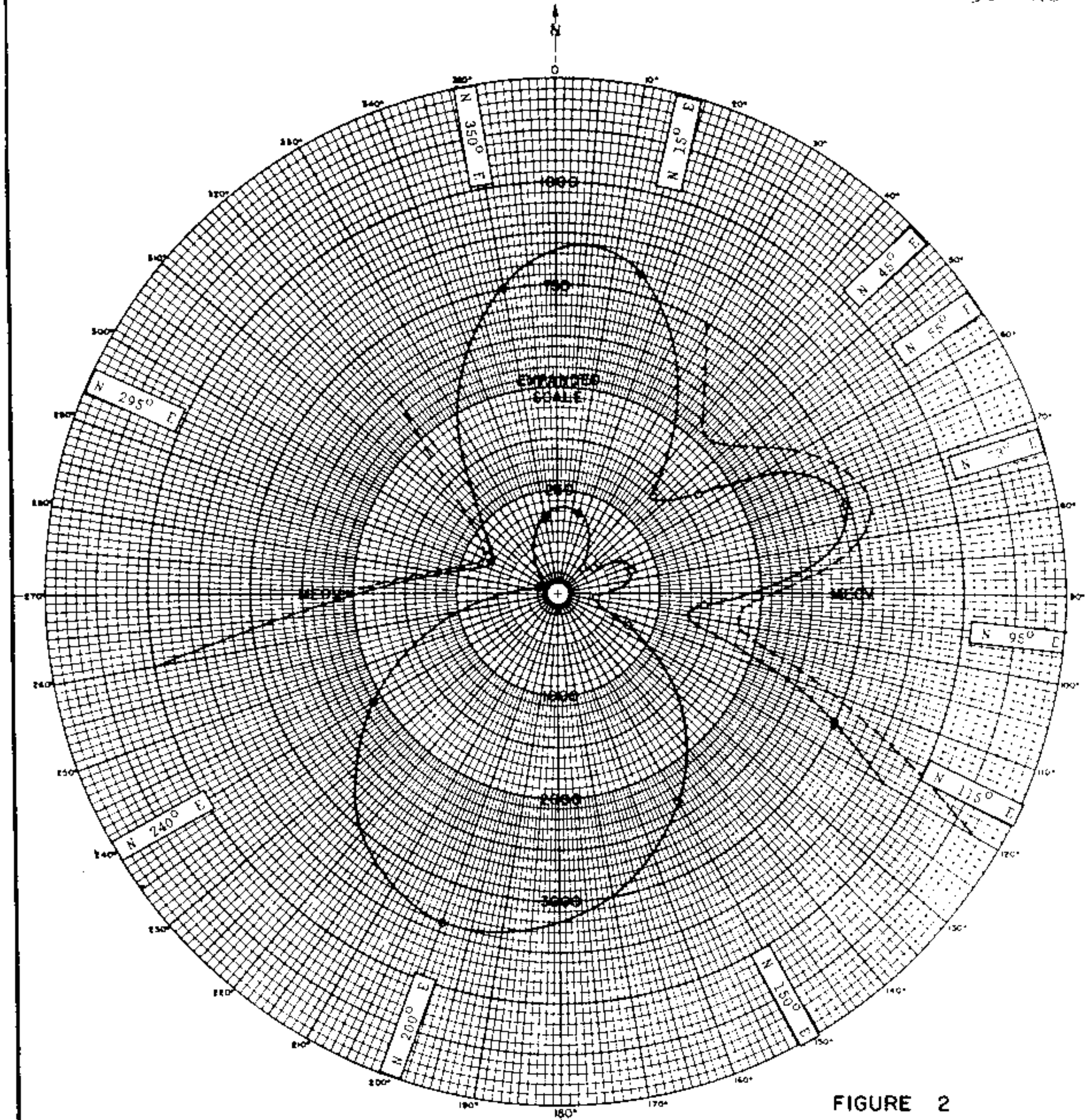
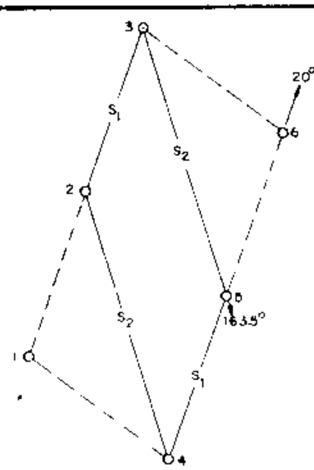


FIGURE 2



1 NOT USED
2 1.0 / 0°
3 1.026 / + 156°
4 .402 / − 118°
5 .795 / + 40°
6 NOT USED
S_1 = 80° (138.4)
S_2 = 128.624° (222.6')
θ = 115.57° (200')

APPLICANT : Continental Broadcasting of California, Inc.
LOCATION : Santa Monica, California
FREQUENCY 1580 KC
POWER : 50,000 Watts
LATITUDE 34° 03' 8.4"
LONGITUDE 118° 15' 24.5"
WHEN USED Daytime
RMS FIELD 1700 MV/M
DATE April 1968
Measured Horizontal Radiation Pattern.

G. RUSSELL CHAMBERS
CONSULTING RADIO ENGINEERS
WILMINGTON, DELAWARE

FCC File No.BL-12763
Accepted 10-26-70

Station KDAY
Santa Monica, California

1580 kc

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

Station KDAY
Santa Monica, California

KDAY
50kw, DA-2, U
1580 kc

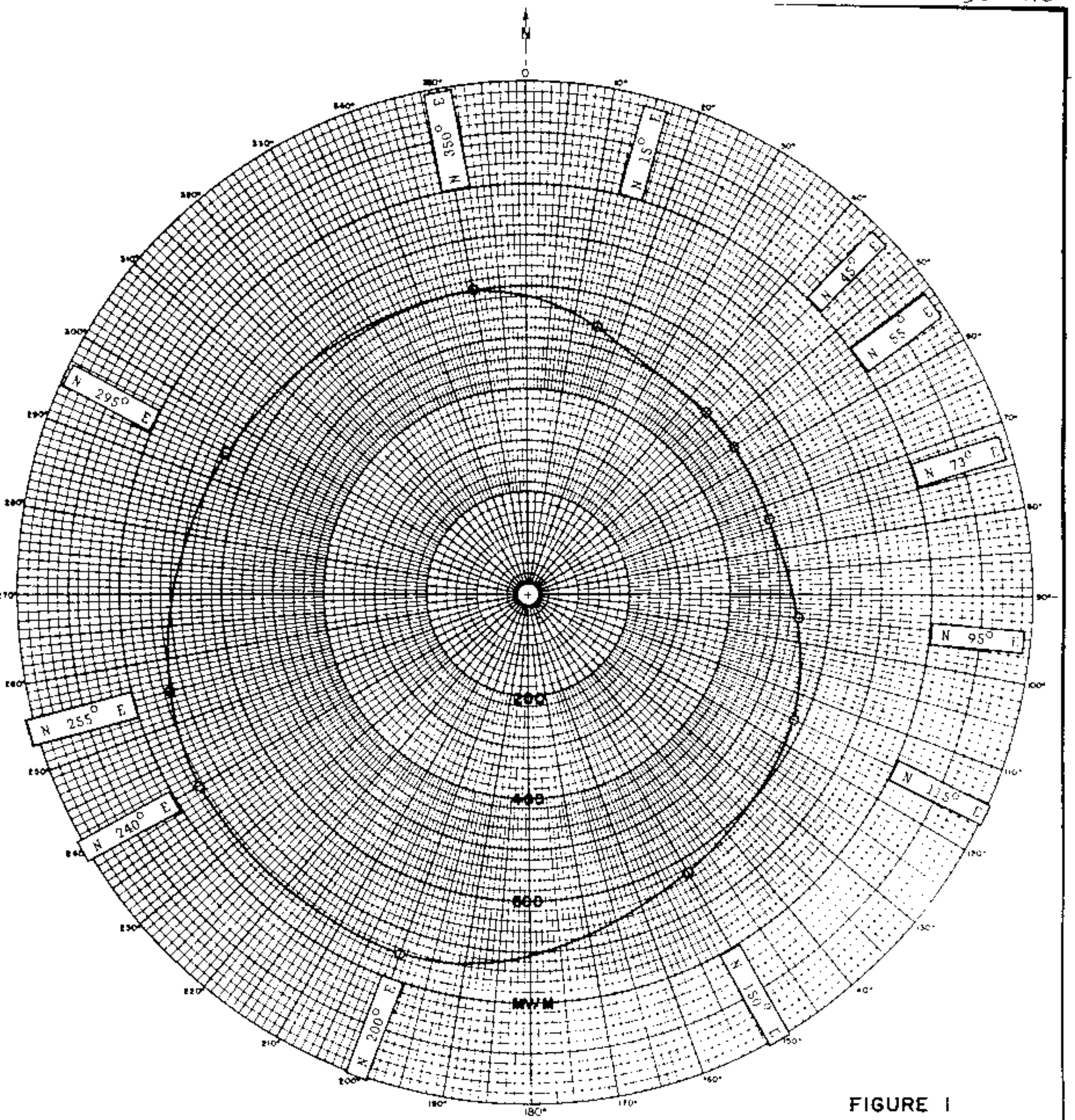


FIGURE I

NON-DIRECTIONAL SURVEY

APPLICANT	Continental Broadcasting of California, Inc.
LOCATION	Santa Monica, California
FREQUENCY	1580 KC
POWER	10,000 Watts
LATITUDE	34° 05' 8.4"
LONGITUDE	118° 15' 24.5"
WHEN USED	Non-Directional Survey
R M S FIELD	640 MV/M
DATE	April 1968

G. RUSSELL CHAMBERS
CONSULTING RADIO ENGINEERS
WILMINGTON, DELAWARE

FCC File No. BL-12763
Accepted 10-26-70

Station KDAY
Santa Monica, California

1580 kc

KDAY

Proposed Night
(9-26-68ct)

Station KDAY
Santa Monica, California

50kw, DA-2, U
1580 kc

8/28/68
GRANTED Mod of C.P.

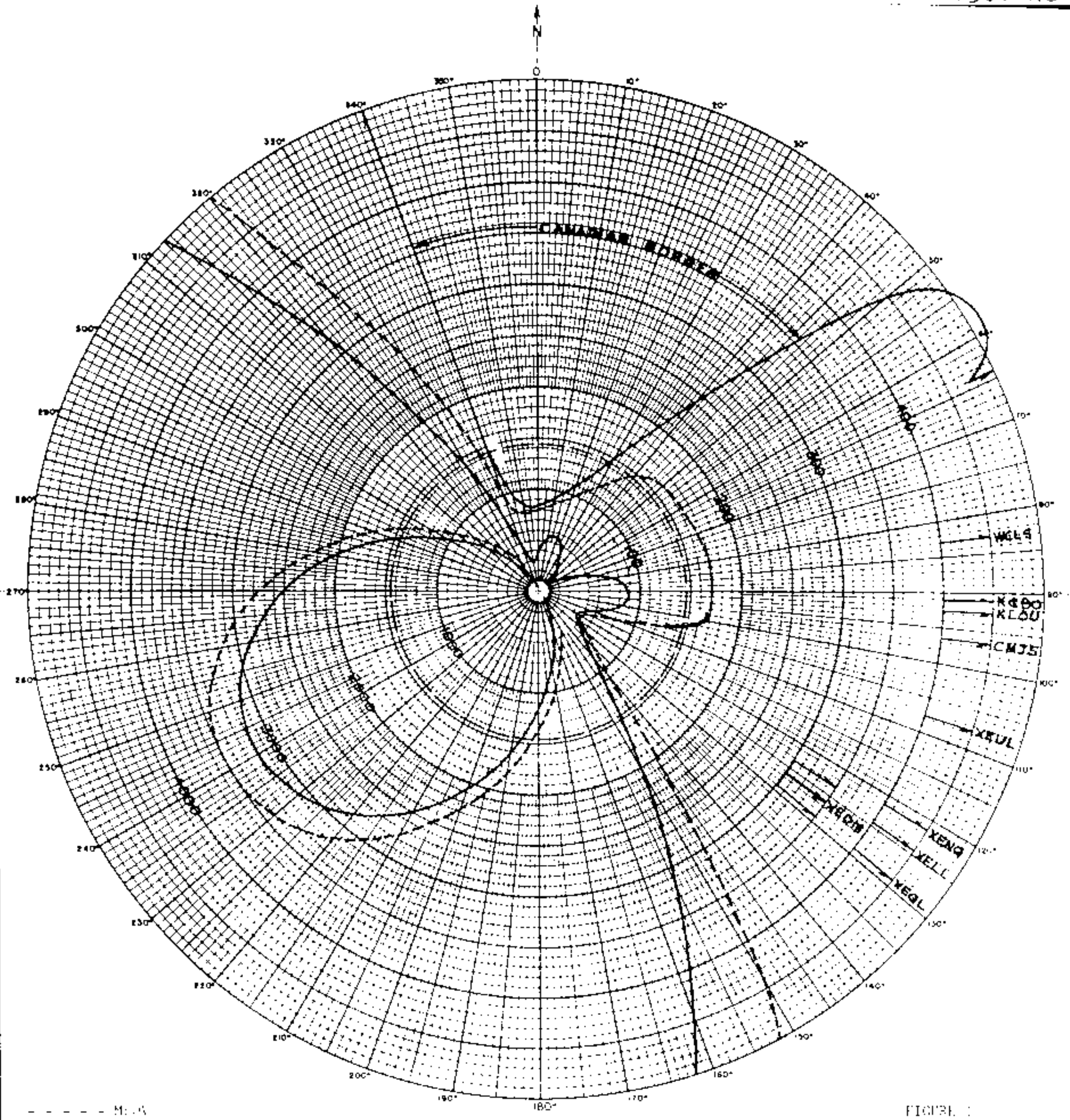
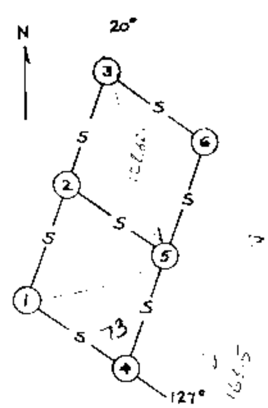


FIGURE 1



1	[illegible]	∠0°
2	[illegible]098	∠115.750°
3	.7095	∠27.440°
4	.5661	∠186.200°
5	.1132	∠219.720°
6	.0036	∠321.440°

[illegible] Towers [illegible]
[illegible] 198.1°

APPLICANT	Continental Broadcasting of California, Inc.
LOCATION	Santa Monica, California
FREQUENCY	1580 KC
POWER	50 KW DA-2 UNL
LATITUDE	34° 05' 8.4"
LONGITUDE	118° 15' 24.1"
WHEN USED	Nighttime
RMS FIELD	1450 MV/M
DATE	July 1968

Horizontal Radiation Pattern

G. RUSSELL CHAMBERS
CONSULTING RADIO ENGINEERS
WILMINGTON, DELAWARE

FCC File No. BMP-12477
Accepted 8-23-68

Station KDAY
Santa Monica, California

1580 kc

KDAY

3/28/68
ADTED Hoo of C.P.

Proposed Night Nulls
(9-26-68ct)

Station KDAY
Santa Monica, California

50kw,DA-2,U
1580 kc

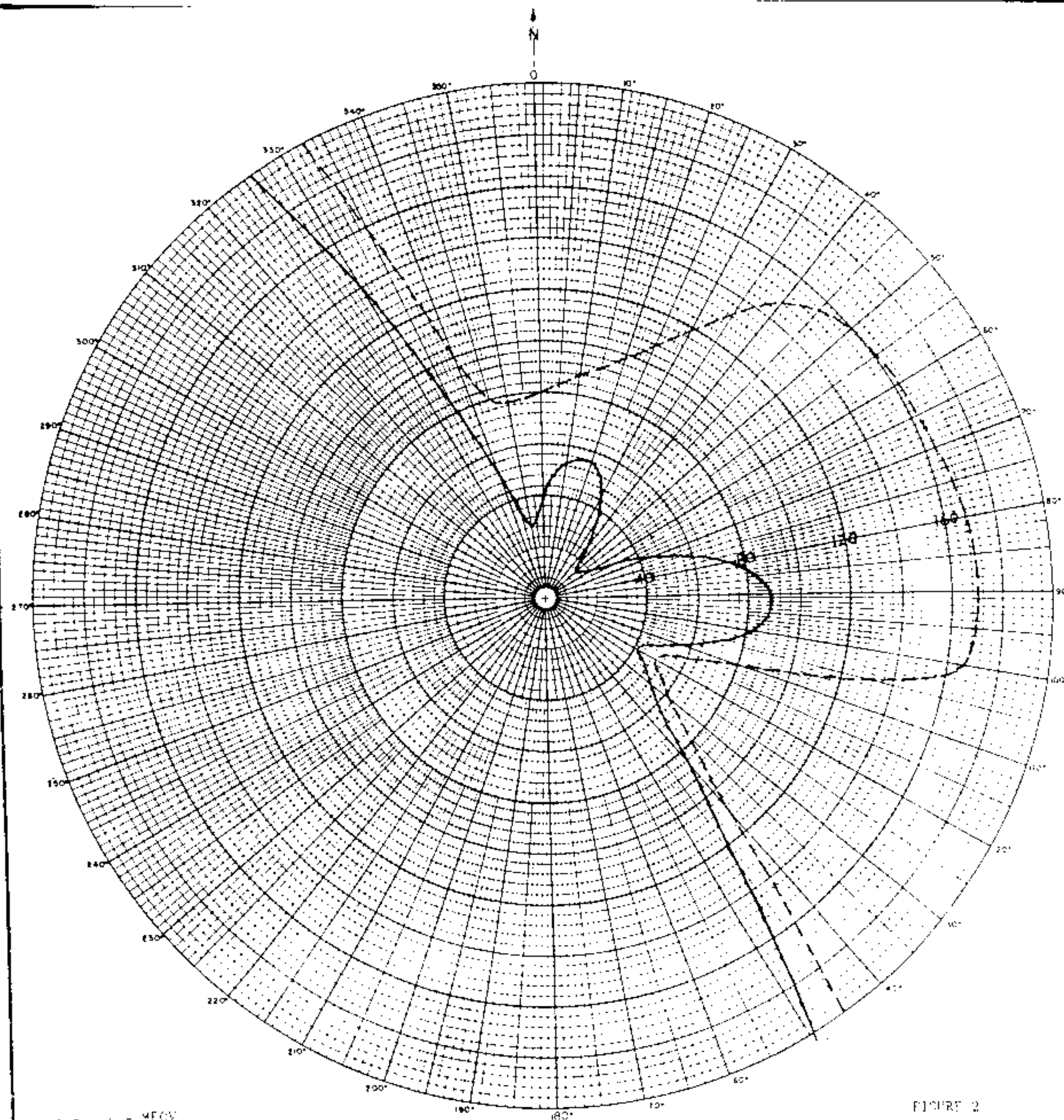


FIGURE 2

HORIZONTAL RADIATION PATTERN

EXPANDED SCALE

[illegible]	Continental Broadcasting of California, Inc.
[illegible]	Santa Monica, California
[illegible]	1580 KC
[illegible]	50 KW DA-2 ND
[illegible]	34° 05' 6.4"
[illegible]	118° 15' 14.5"
[illegible]	Nighttime
[illegible]	1450 MV/M
[illegible]	July 1968

Horizontal Radiation Pattern

G. RUSSELL CHAMBERS
CONSULTING RADIO ENGINEERS
WILMINGTON, DELAWARE

FCC File No.BMP-12477
Accepted 8-23-68

Station KDAY
Santa Monica, California

1580 kc

KDAY

Proposed Night
(3-30-66CT)

Station KDAY
Santa Monica, California

50kw, DA-2, U
1580 kc

MCP 4-19-66 50N

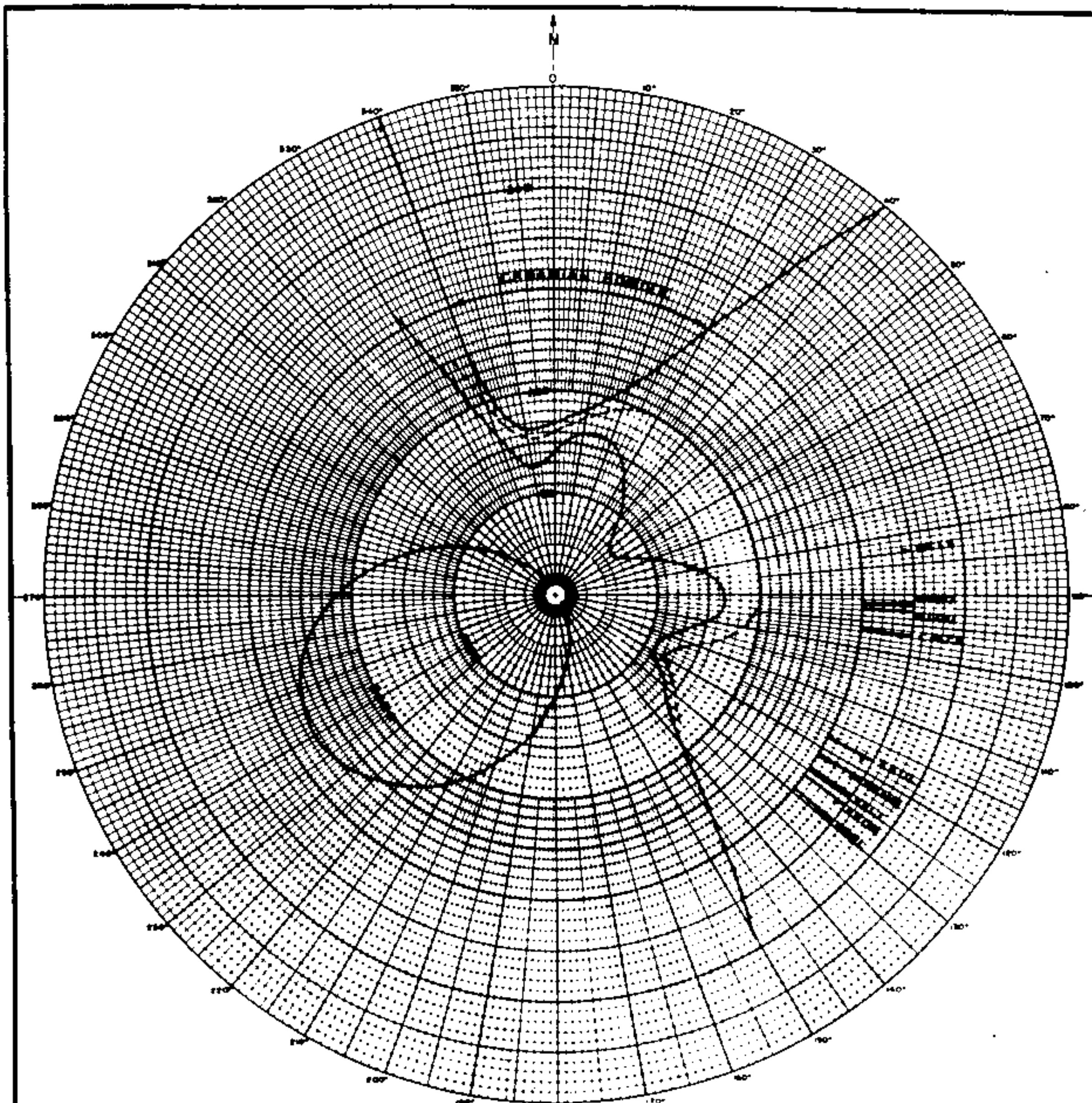
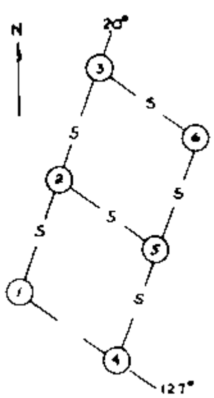


FIGURE 2-A



Tower	1	1	/ 0
	2	1.54	/ 110.720
	3	.593	/ 221.440
	4	.94	/ 100.000
	5	1.4476	/ 210.720
	6	.5573	/ 321.440

G 115.57° = 200' (All Towers)
S 80° = 138.4'

APPLICANT	Continental Broadcasting of California, Inc.
LOCATION	Santa Monica, California
FREQUENCY	1580 KC
POWER	50 KW DA-2 U
LATITUDE	34° 05' 8.4"
LONGITUDE	118° 15' 24.5"
WHEN USED	Nighttime
RMS FIELD	1245 MV/M
DATE	August 1965

Horizontal Radiation Pattern

G RUSSELL CHAMBERS
CONSULTING RADIO ENGINEERS
WILMINGTON, DELAWARE

FCC File No. BMP-11408
Accepted 3-25-66 Amended

Station KDAY
Santa Monica, California

1580 kc

KDAY

Proposed Day
(3-30-66ct)

Station KDAY
Santa Monica, California

50kw,DA-2,U
1580 kc

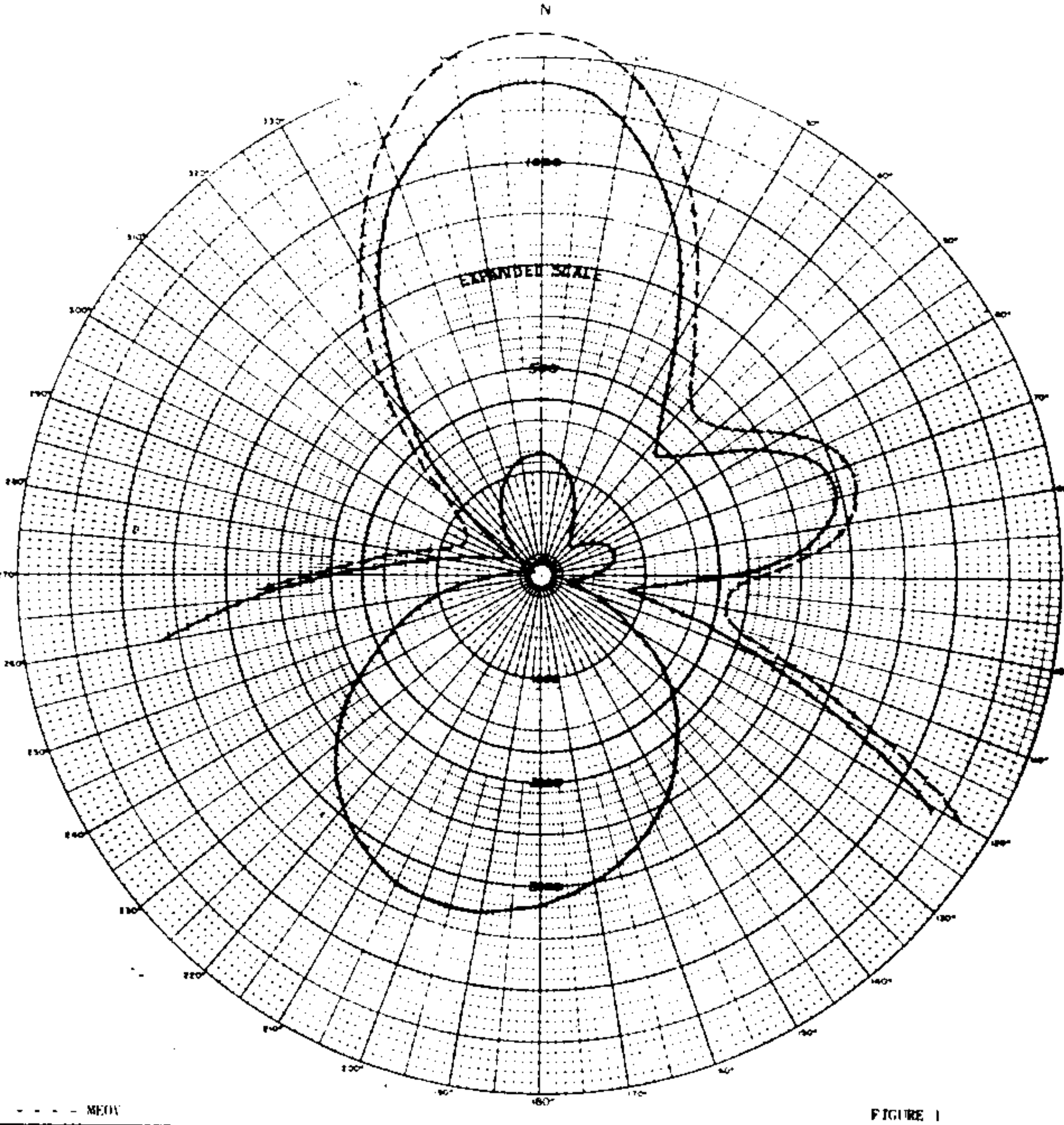
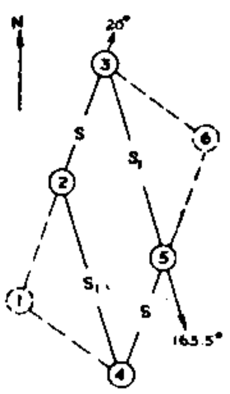


FIGURE 1



TOWER 1 Not Used
2 1.0 0°
3 .90 166.104°
4 .70 244.312°
5 .63 50.416°
6 Not Used

G = 115.57° = 200' (all towers)
S = 80° = 138.4'
S = 128.624° = 222.6'

APPLICANT	Continental Broadcasting of California, Inc.
LOCATION	Santa Monica, California
FREQUENCY	1580 KC
POWER	50 KW DA-2 U
LATITUDE	34° 05' 8.4"
LONGITUDE	118° 15' 24.5"
WHEN USED	Daytime
RMS FIELD	1700 MV/M
DATE	August 1965

Horizontal Radiation Pattern

G. RUSSELL CHAMBERS
CONSULTING RADIO ENGINEERS
WILMINGTON DELAWARE

FCC File No.BMP-11408
Accepted 3-25-66 Amended

Station KDAY
Santa Monica, California

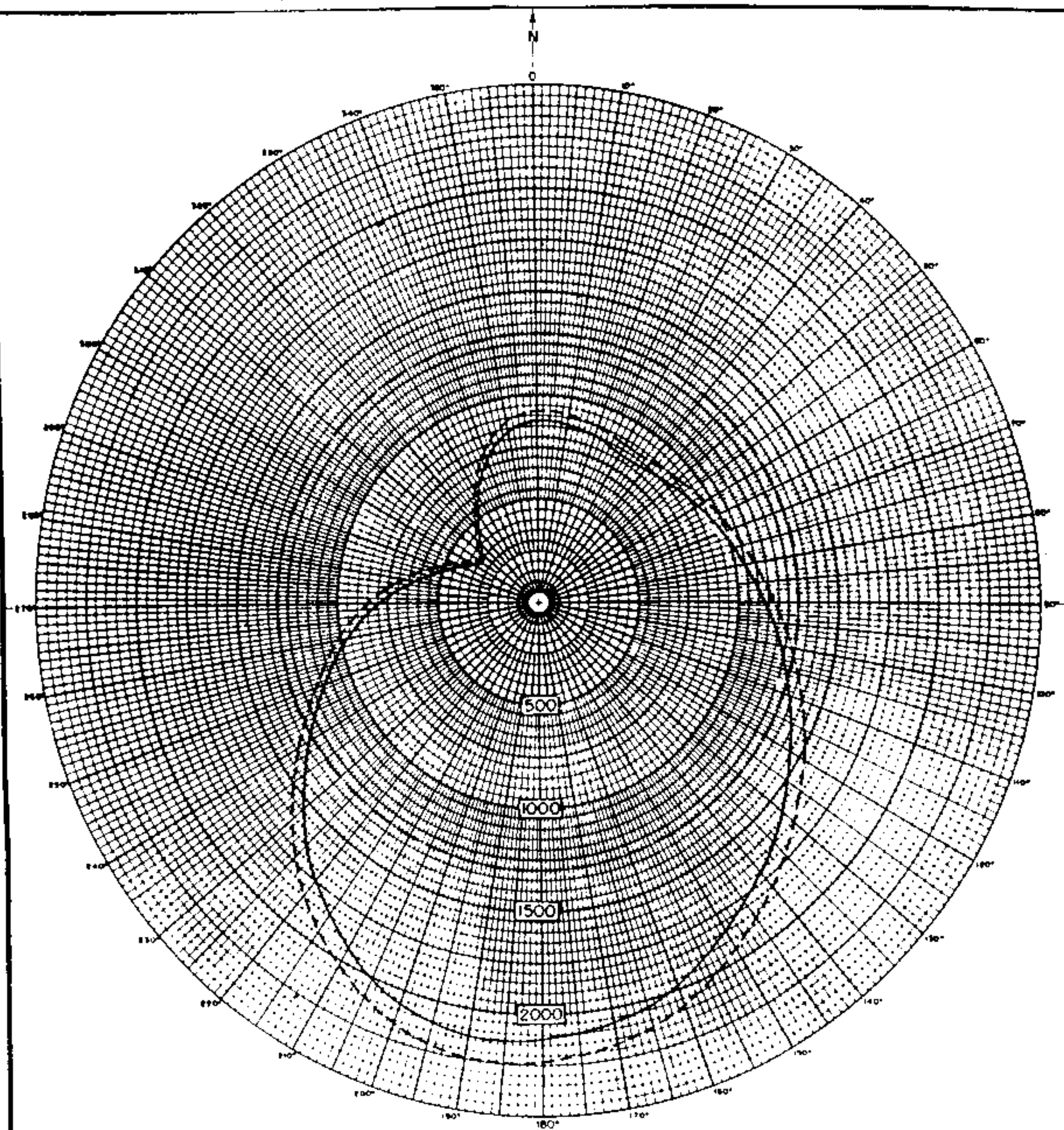
1580 kc

KDAY

Granted 9/3/58 mod. of CP to make changes in DA pattern

PROPOSED DAY (6-20-58g)

Station KDAY — 50kw, DA-D,D
Santa Monica, California — 1580 KC



E_{RMS} = 1300 MV/M

--------- MEOV

LATITUDE: 34° 00' 56.3"
LONGITUDE: 118° 25' 41.2"

JOHN H. MULLANEY
Consulting Radio Engineers
Washington, D. C.

ANTENNA PARAMETERS

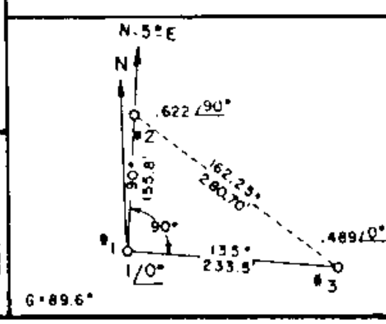


FIGURE 4

DAYTIME HORIZONTAL POLAR PATTERN

RADIO STATION KDAY
SANTA MONICA, CAL.

1580 KC — 50KW, DA-D

FCC File No. BMP-8144
Accepted 5-27-58

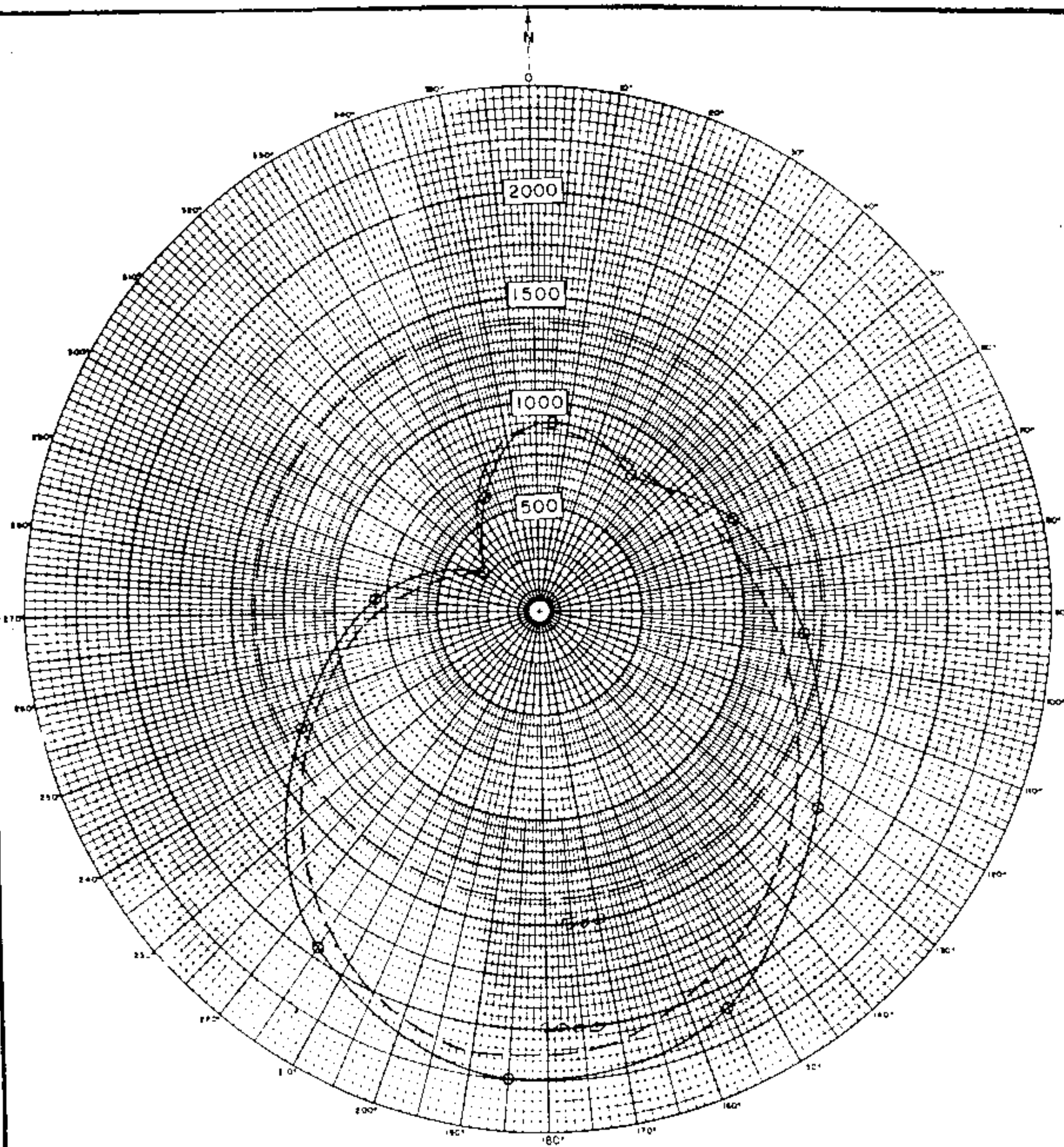
KDAY
Santa Monica, California — 1580 KC

KDAY

granted for measure in power and install DAD 11-19-59

MEASURED DAY
(7-8-59g)

Station KDAY — 50kw, DA-D, D
Santa Monica, California — 1580 KC



○ = MEASURED RADIALS
– – – – – COMPUTED PATTERN
———— MEASURED PATTERN

E_{RMS} = 1371 MV/M (MEASURED)

LATITUDE: 34° 00' 56.3"
LONGITUDE: 118° 25' 41.2"

JOHN H. MULLANEY
Consulting Radio Engineers
Washington, D. C.

ANTENNA PARAMETERS

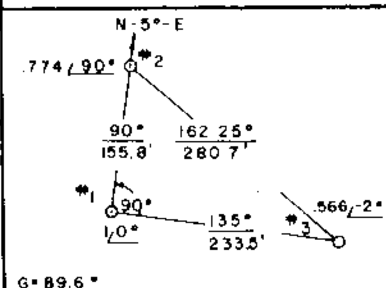


FIGURE 20

MEASURED DAYTIME
HORIZONTAL POLAR PATTERN
RADIO STATION KDAY
SANTA MONICA, CALIF.

1580 KC — 50 KW, DA-D

FCC File No. BL-7510
Accepted 6-30-59

KDAY
Santa Monica, California

1580 KC

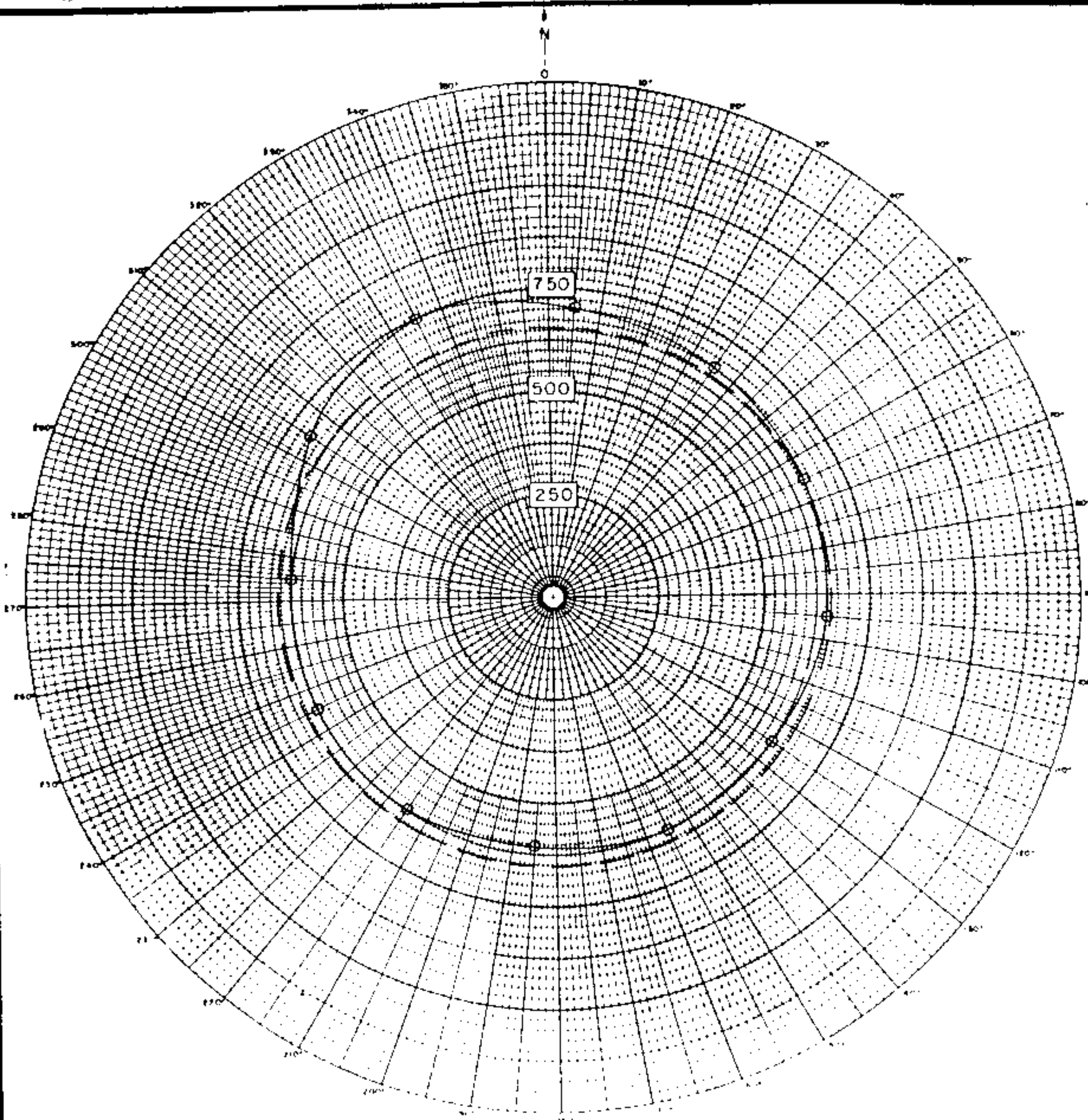
KDAY

MEASURED NON-DA
(7-8-59g)

Station KDAY
Santa Monica, California

1580 KC

granted c for increase in power and install DA-D 11-19-59



E_{RMS} = 655 MV/M (MEASURED)

O = MEASURED RADIALS

LATITUDE 34° 00' 56.3"
LONGITUDE 118° 25' 41.2"

ANTENNA PARAMETERS

G = 89.6°

FIGURE 18

MEASURED NON-DA
HORIZONTAL POLAR PATTERN
RADIO STATION KDAY
SANTA MONICA, CALIF.

1580 KC 50 KW, DA - D

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

FCC File No. BL-7510
Accepted 6-30-59

KDAY
Santa Monica, California

1580 KC

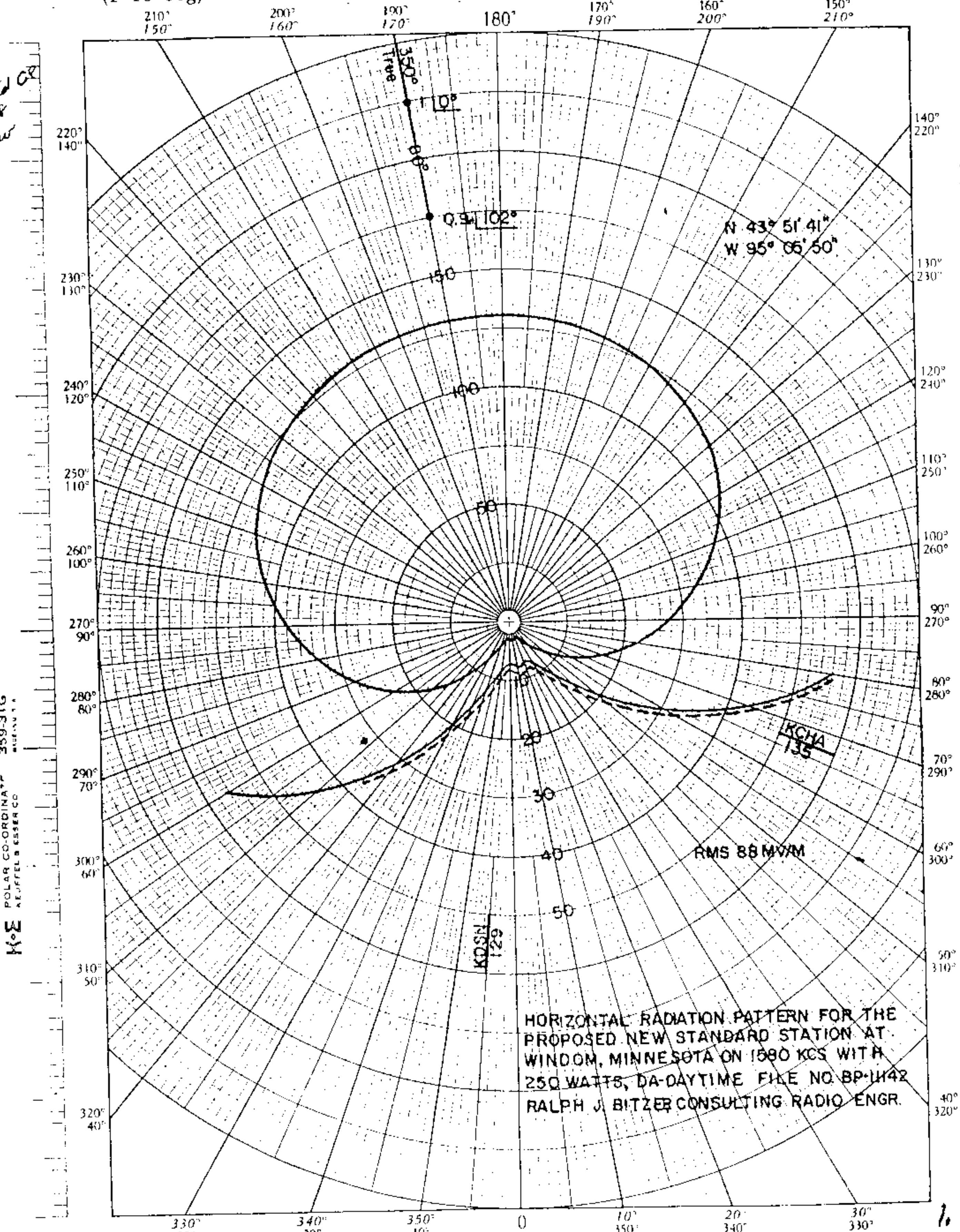
Windom, Minn. KDOM

Granted CP 1/23/58 on a new station

PROPOSED DAY (1-10-58g)

New; North Star B/Cstng. Co.
Windom, Minnesota

250w, DA-D,D
1580 KC



FCC File No. BP-11,142
Accepted 12-20-57 (Amended)

North Star Broadcasting Co.
Windom, Minnesota

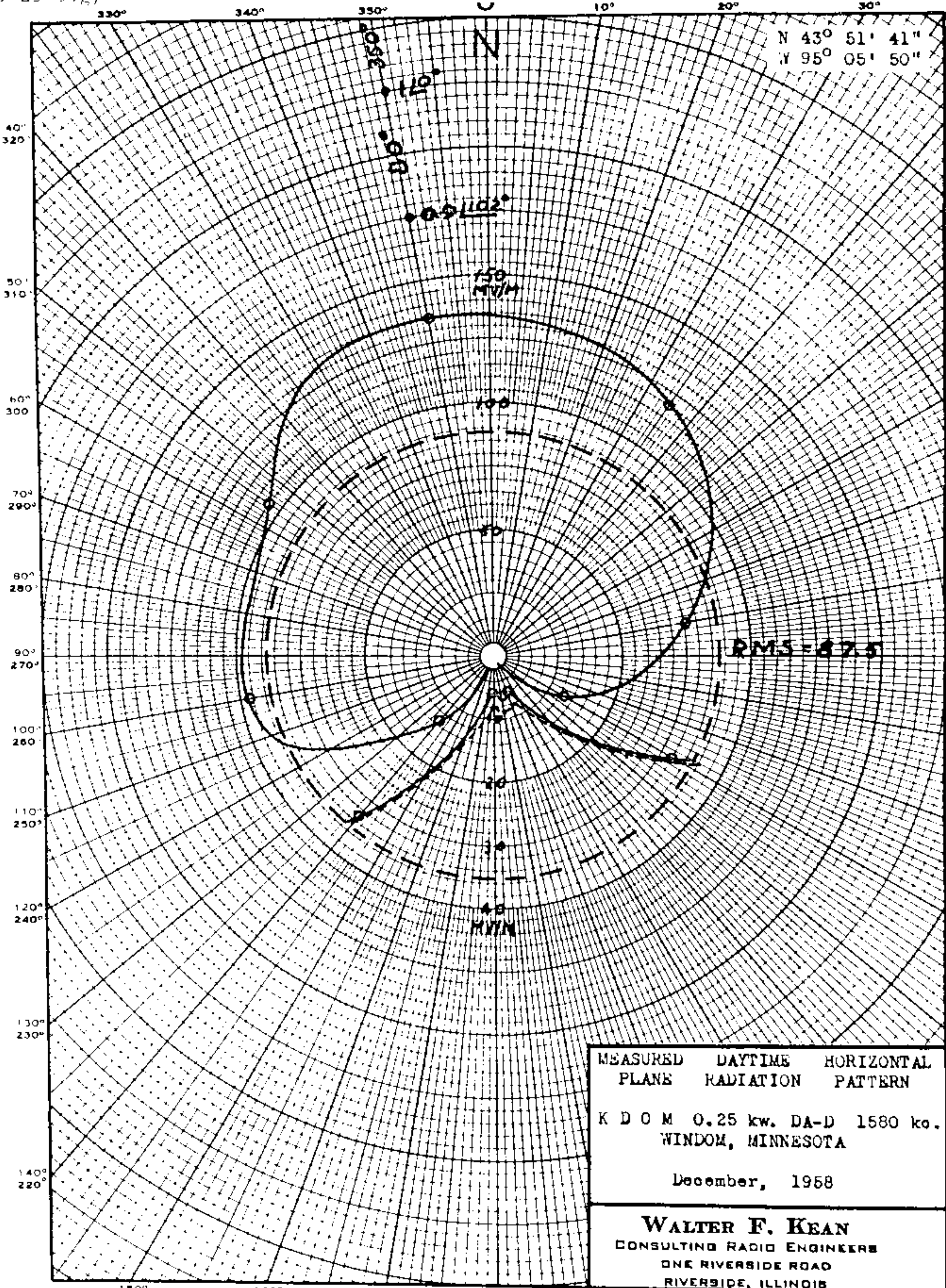
1580 KC

KDOM

MEASURED DAY
(3-23-59g)

Station KDOM
Windom, Minnesota

250w, DA-D,D
1580 KC



FCC File No. BL-7369
Accepted 2-19-59

Station KDOM
Windom, Minnesota

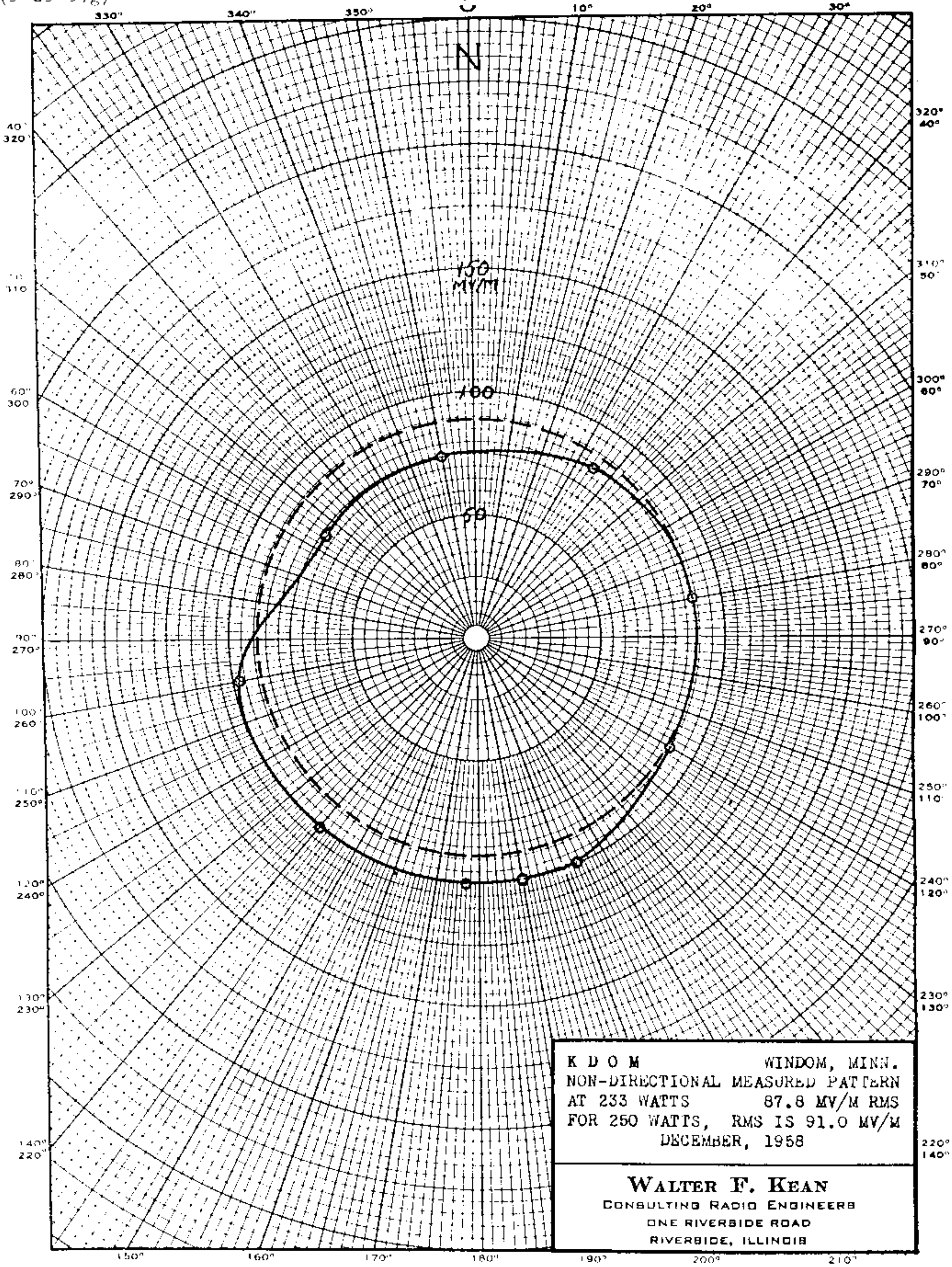
1580 KC

KDOM

MEASURED NON-DA
(3-23-59g)

Station KDOM
Windom, Minnesota

250w, DA-D,D
1580 KC



FCC File No. BL-7369
Accepted 2-19-59

Station KDOM
Windom, Minnesota

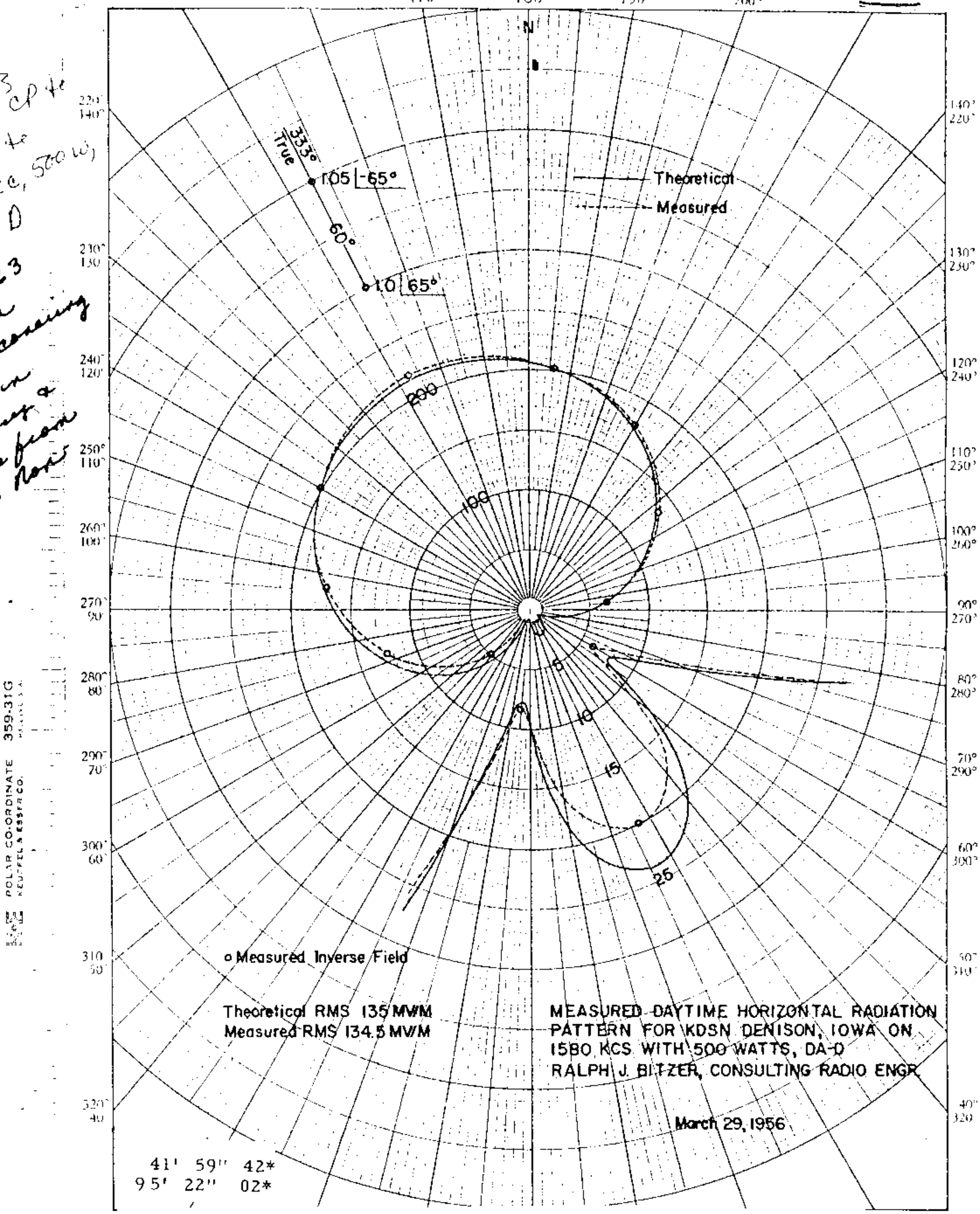
1580 KC

KDSN

MEASURED DAY Radio Station K D S N 500 W, DA-D, D
(1-18-57g) Denison, Iowa 1580 KC

5-1-63
granted CP to
change to
1530 kc, 500 w,
D

8-5-63
Granted
license covering
change in
frequency &
change from
DA to Non
DA



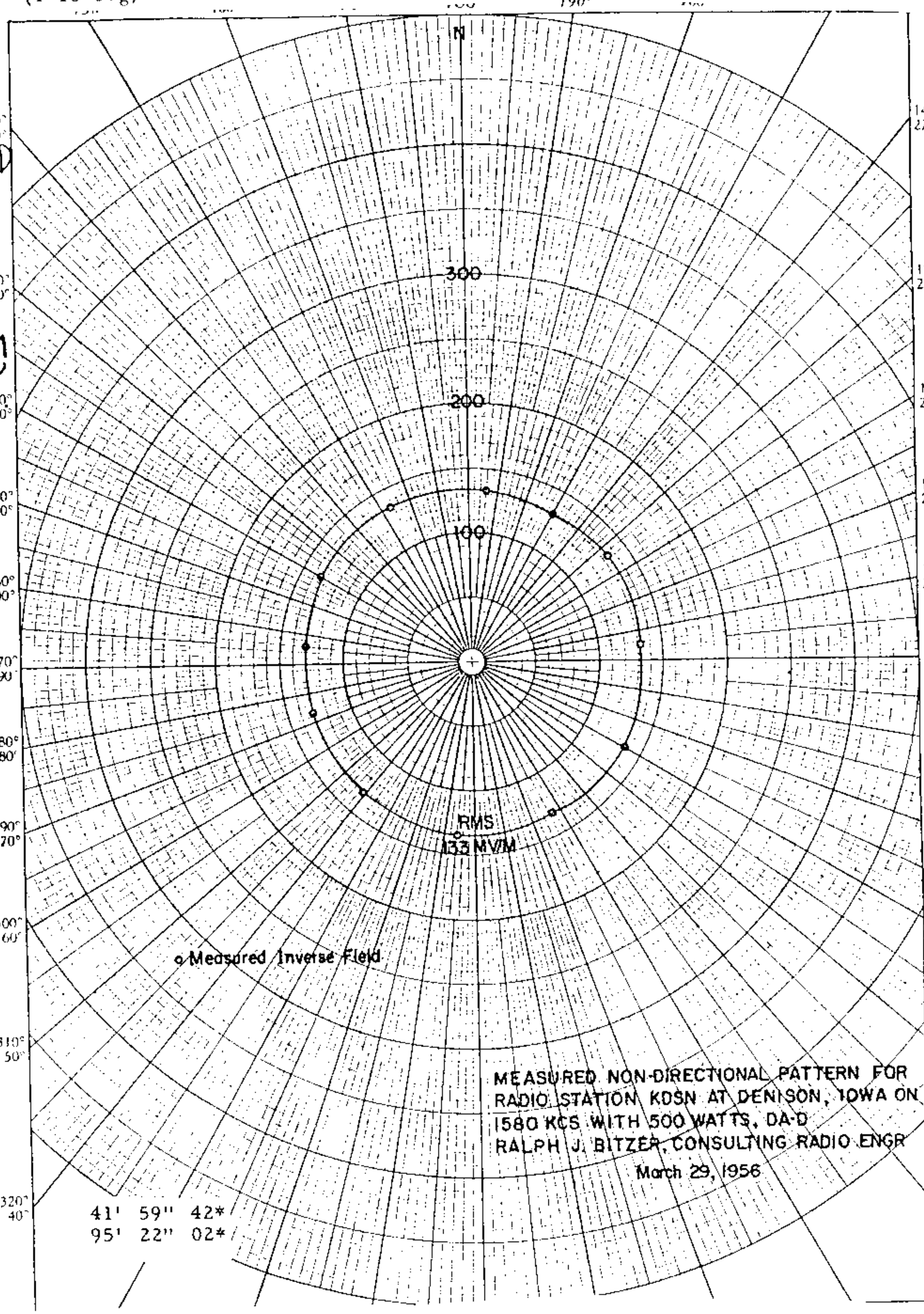
FCC File No. Accepted 4-3-56 KDSN
BL-6116 Denison, Iowa 1580 KC

KDSN

MEASURED Non-DA Radio Station K D S N (1-18-57g) Denison, Iowa 500 W, DA-D, D 1580 KC

5-1-63 granted cp to change to 1530 kc, 500w, D

8-5-63 Granted license covering change in frequency and change from DA to Non DA



POLAR CO-ORDINATE 359-31G KEUFFEL & ESSER CO.

FCC File No. BL-6116

Accepted 4-3-56

KDSN Denison Iowa 1580 KC

KLOU LAKE CHARLES, LA. KLUV

BL-10694
GRANTED
12-31-64
1KW, DA-N, U

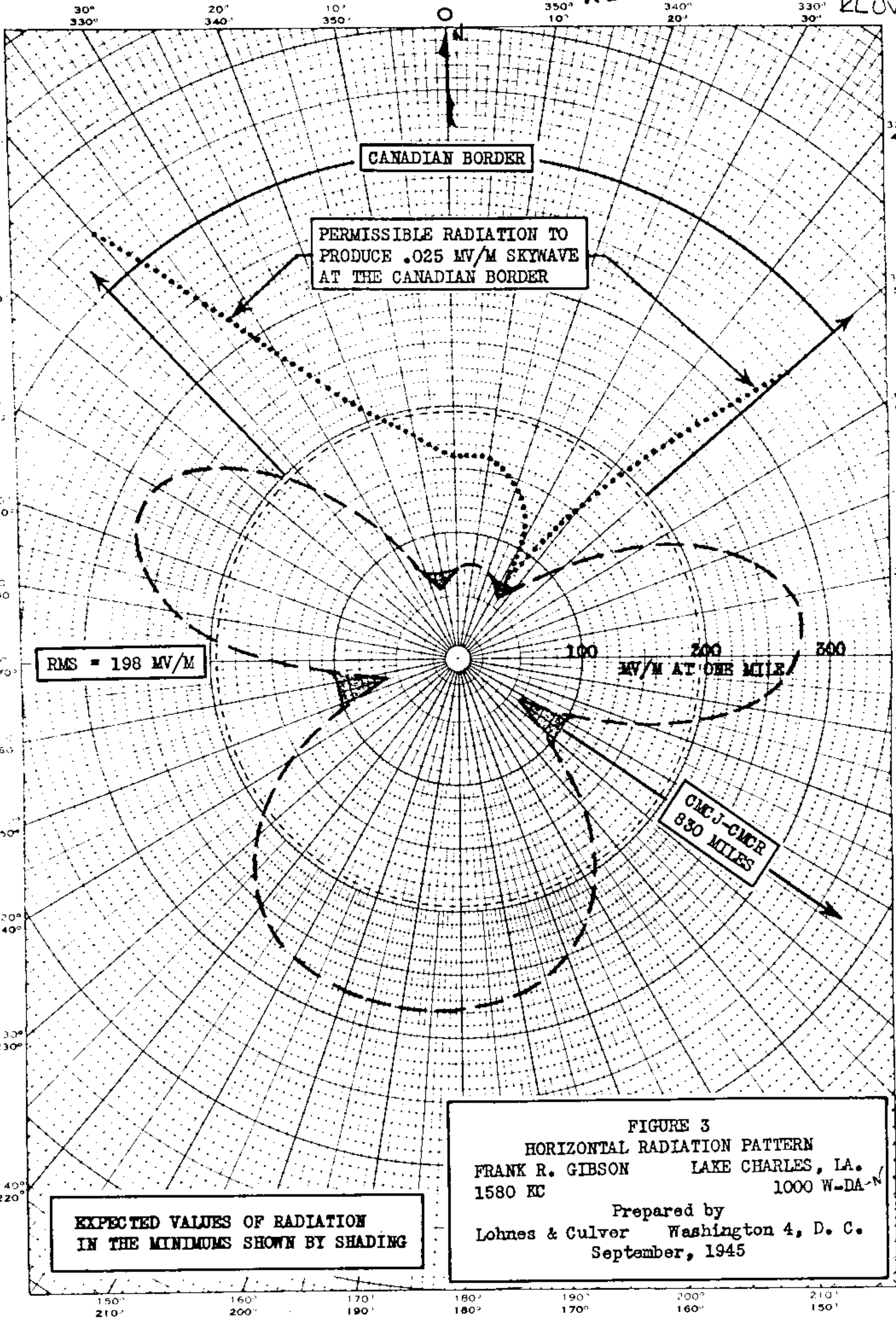


FIGURE 3
HORIZONTAL RADIATION PATTERN
FRANK R. GIBSON LAKE CHARLES, LA.
1580 KC 1000 W-DA-N
Prepared by
Lohnes & Culver Washington 4, D. C.
September, 1945

82-

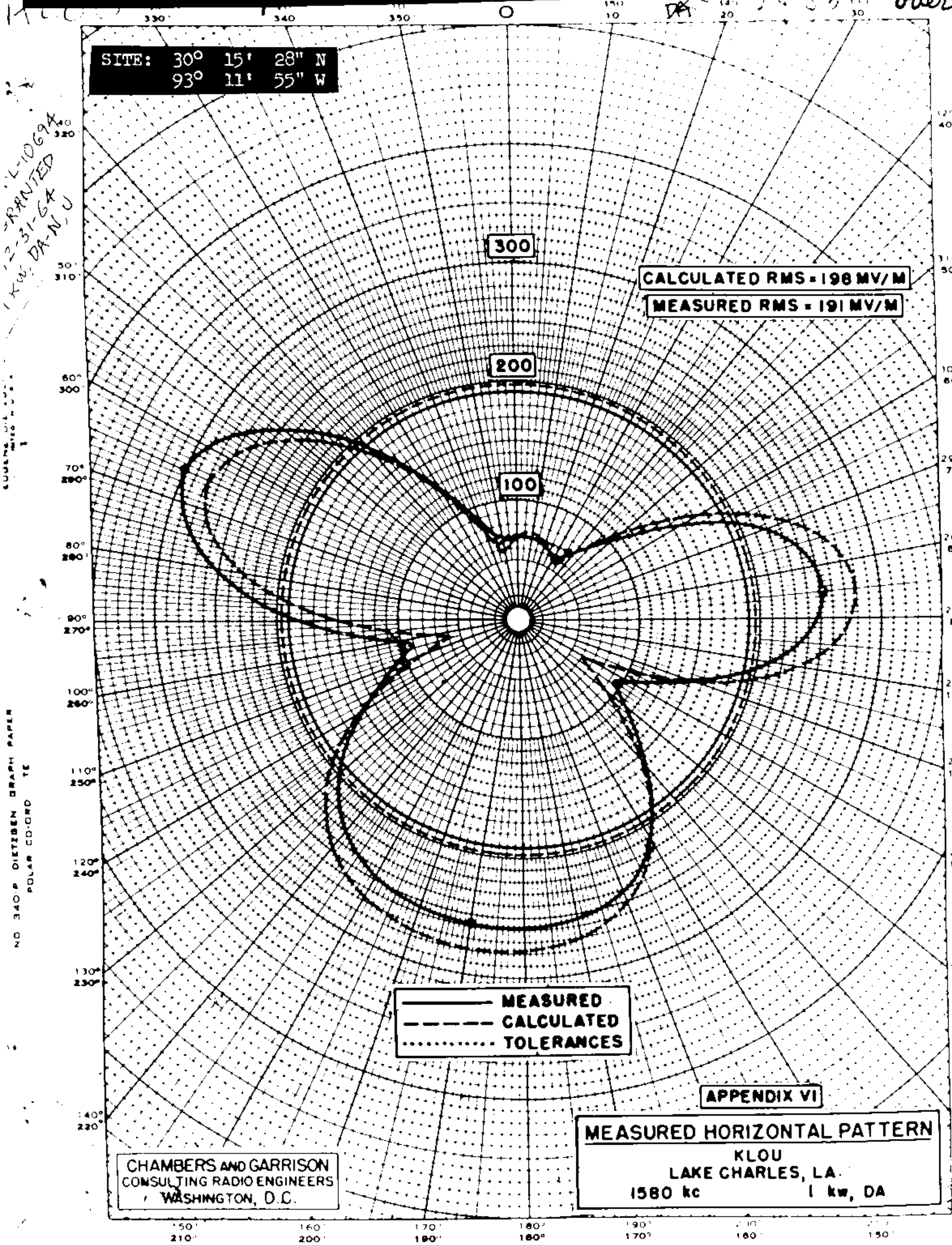
MEASURED DAY & NIGHT

Station KLOU
Lake Charles, Louisiana

1kw, DA-1,U
1580 KC

KLOU
over

BL-10694
GRANTED
12-31-64
1KW, DA-N, U



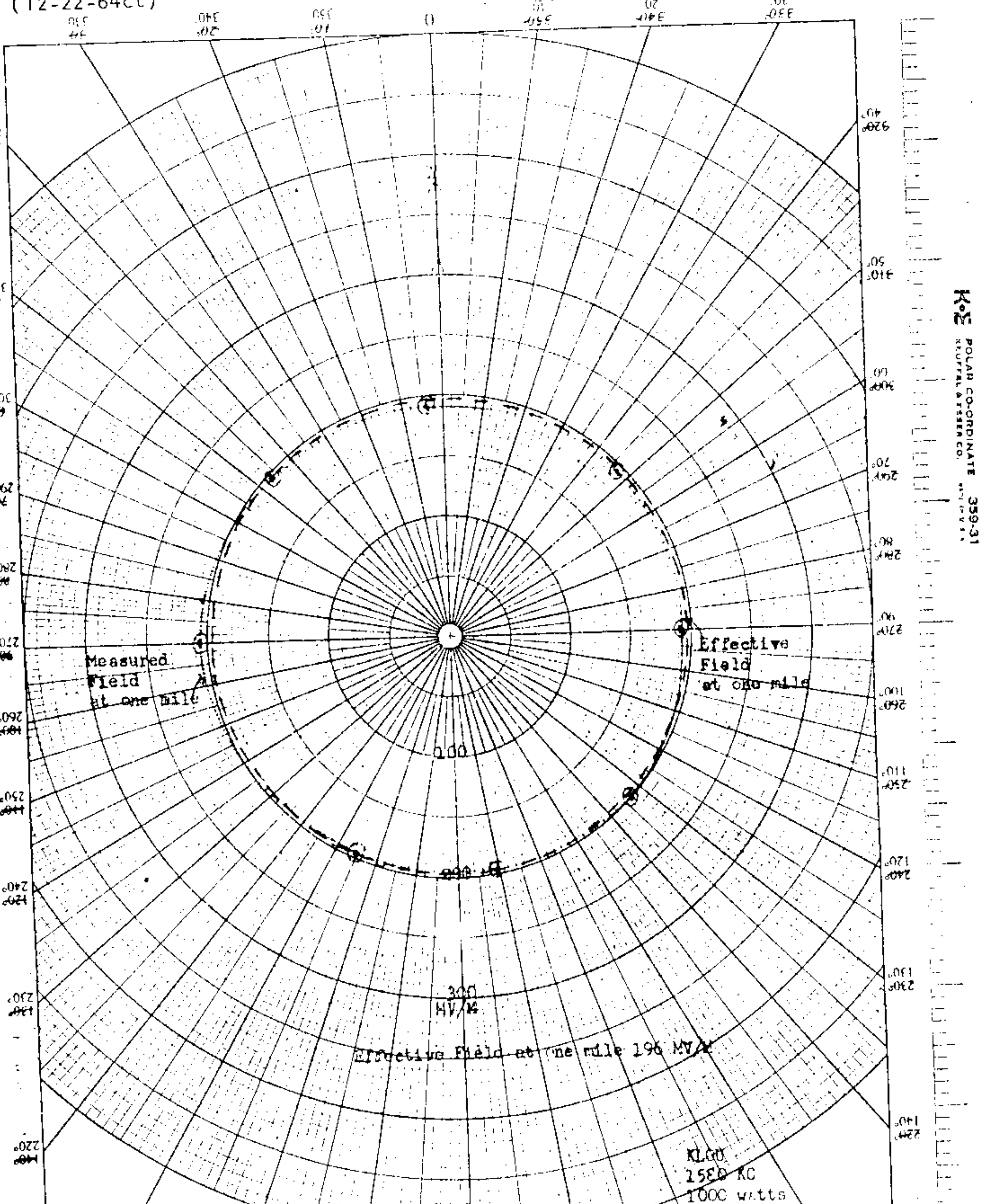
KLOU

Measured Non-DA
(12-22-64ct)

Station KLOU
Lake Charles, Louisiana

1kw,DA-N,U
1580 kc

L-10694
RANTED
2-31-64
kw,DA-N,U

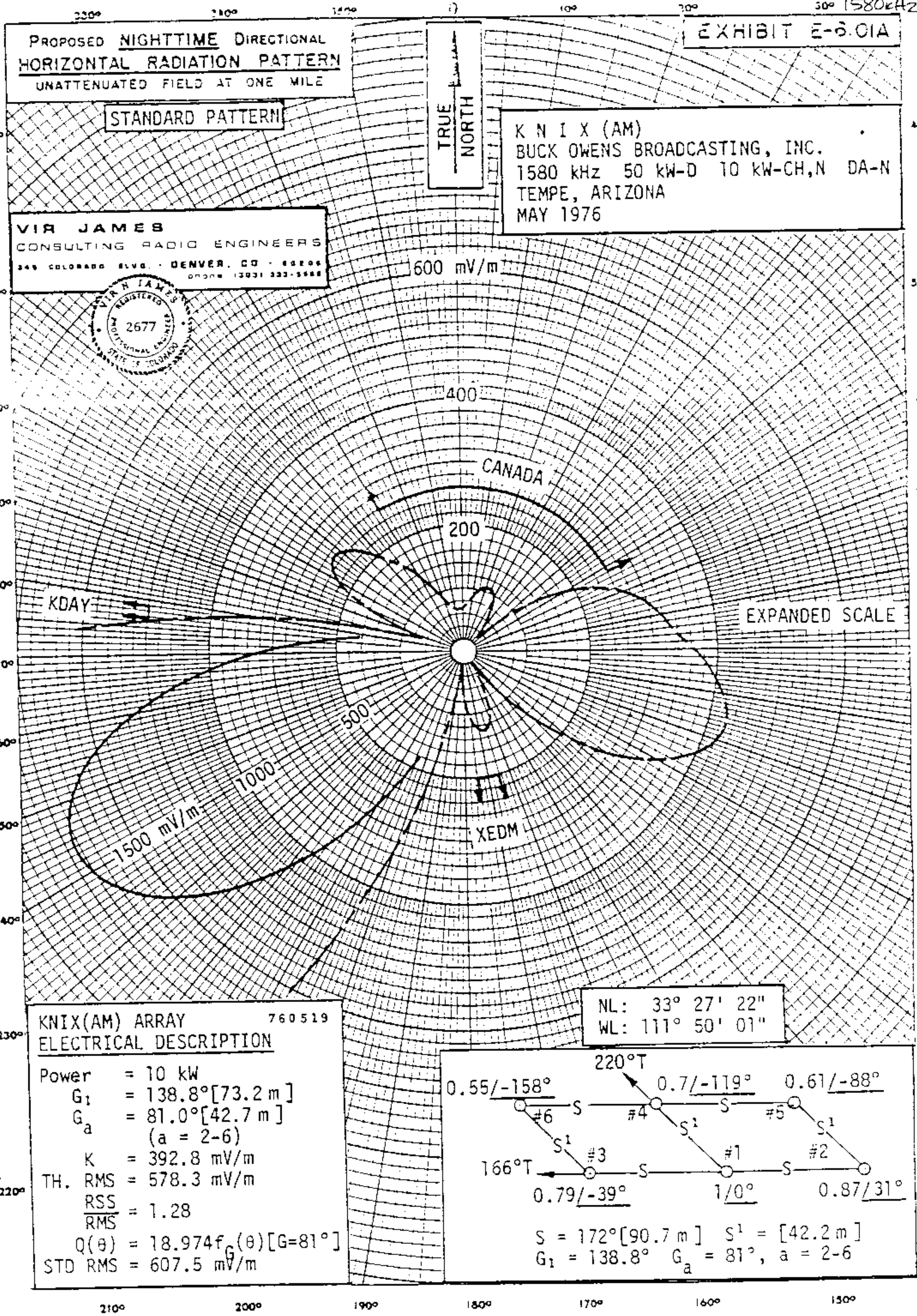


FCC File No. BL-10694
Accepted 12-1-64

Station KLOU
Lake Charles, Louisiana

1580 kc

KNIX 1580kHz



KNIX
1580 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KNIX

Main Studio: Tempe, Arizona

Frequency: 1580 kHz

Power: 10kw Night 50kw Day

Notification List No. 1783

Date: November 2, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 33° 27' 22"
West Longitude: 111° 50' 01"

ANTENNA CHARACTERISTICS

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

TOWER:	EC(#1)	NE(#2)	SE(#3)	WC(#4)	NW(#5)	SW(#6)
HEIGHT ABOVE INSULATORS:	138.8°	81°	81°	81°	81°	81°
NIGHT PHASING:	0°	31°	-39°	-119	-88°	-158°
NIGHT FIELD RATIO:	1.00	0.87	0.79	0.70	0.61	0.55

SPACING AND ORIENTATION: The towers are located in two parallel rows with 3 towers per row. Adjacent towers in a row are spaced 297.6' (172°) on a line bearing 166° true. End towers forming a side of the parallelogram are spaced 138.5' (80.1°) on a line bearing 220° true.

GROUND SYSTEM: 120-155.47' equally spaced copper radials plus 120-50' interspaced radials about each tower. Radials are shortened and bonded to transverse straps along int ersections between towers.

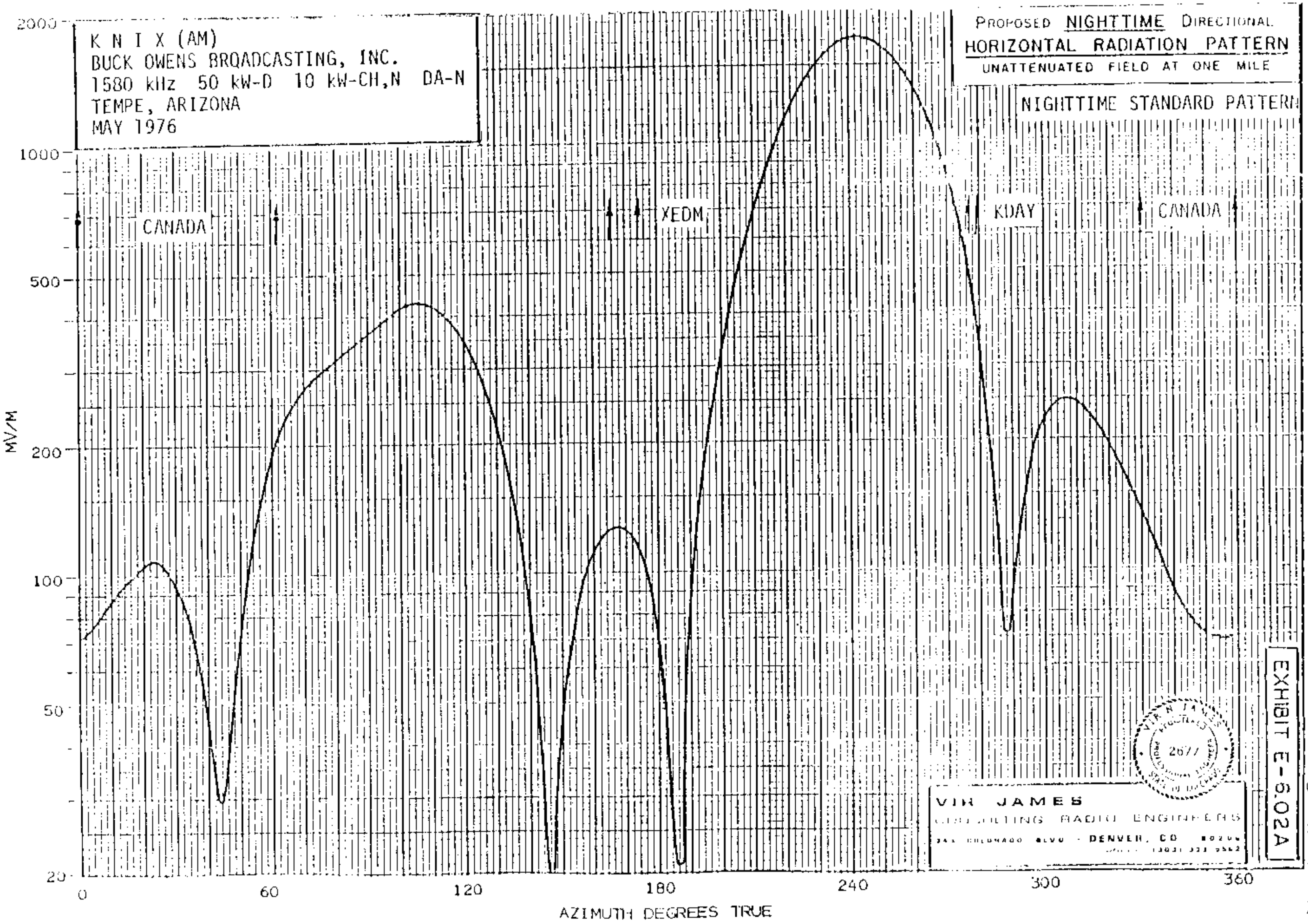
PREDICTED EFFECTIVE FIELDS AT RATED POWER;

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	1492 mv/m		
Night	578.3 mv/m	740.2 mv/m	607.5 mv/m

Note: Tower #1 used for daytime omnidirectional operation.

KNIX
1580 kHz DA-N

EXHIBIT E-6.02A



KRZI

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

Station KBGO
Waco, Texas

500

1580 kc

3-14-67
Granted
License

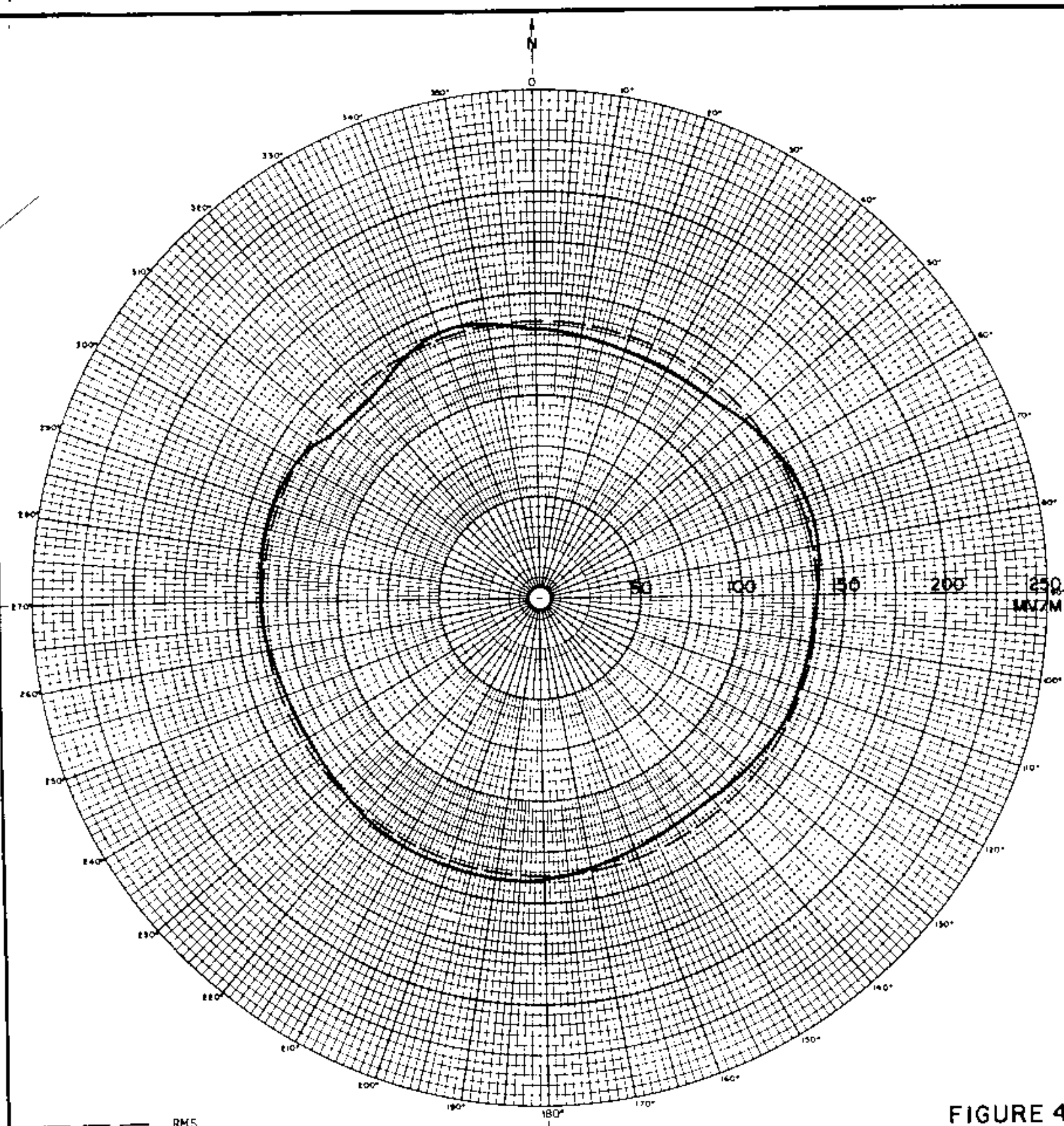


FIGURE 4

HORIZONTAL RADIATION PATTERN

APPLICANT	KBGO
LOCATION	WACO, TEXAS
FREQUENCY	1580 KC/S
POWER	0.5 KW
LATITUDE	31 DEG 31 MIN 04 SEC
LONGITUDE	97 DEG 05 MIN. 16 SEC.
WHEN USED	NON DA SURVEY
RMS FIELD	137
DATE	OCTOBER 1966

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

FCC File No.BL-11493
Accepted 12-29-66

Station KBGO
Waco, Texas

1580 kc

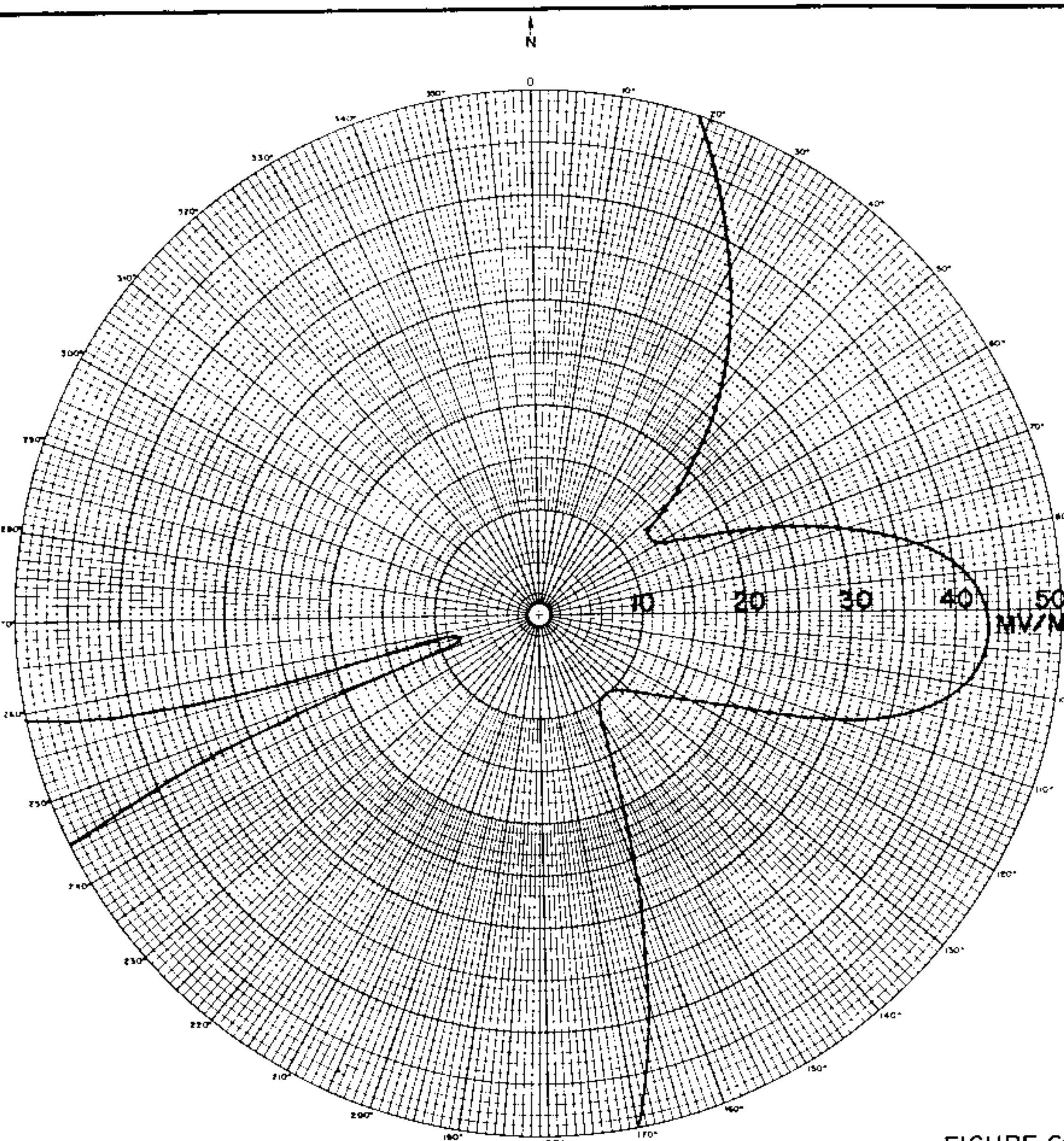
KRZI

Measured Night Nulls
(1-30-67ct)

Station KBGO
Waco, Texas

500w,1kw-LS,DA-2,U
1580 kc

3-14-67
granted
License



EXPANDED NIGHT

FIGURE 6-B

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

FCC File No.BL-11493
Accepted 12-29-66

Station KBGO
Waco, Texas

1580 kc

KRZ/

Measured Night (1-30-67ct) | Station KBGO Waco, Texas | 500w,1kw-LS,DA-2,U 1580 kc

3-14-67 Granted License

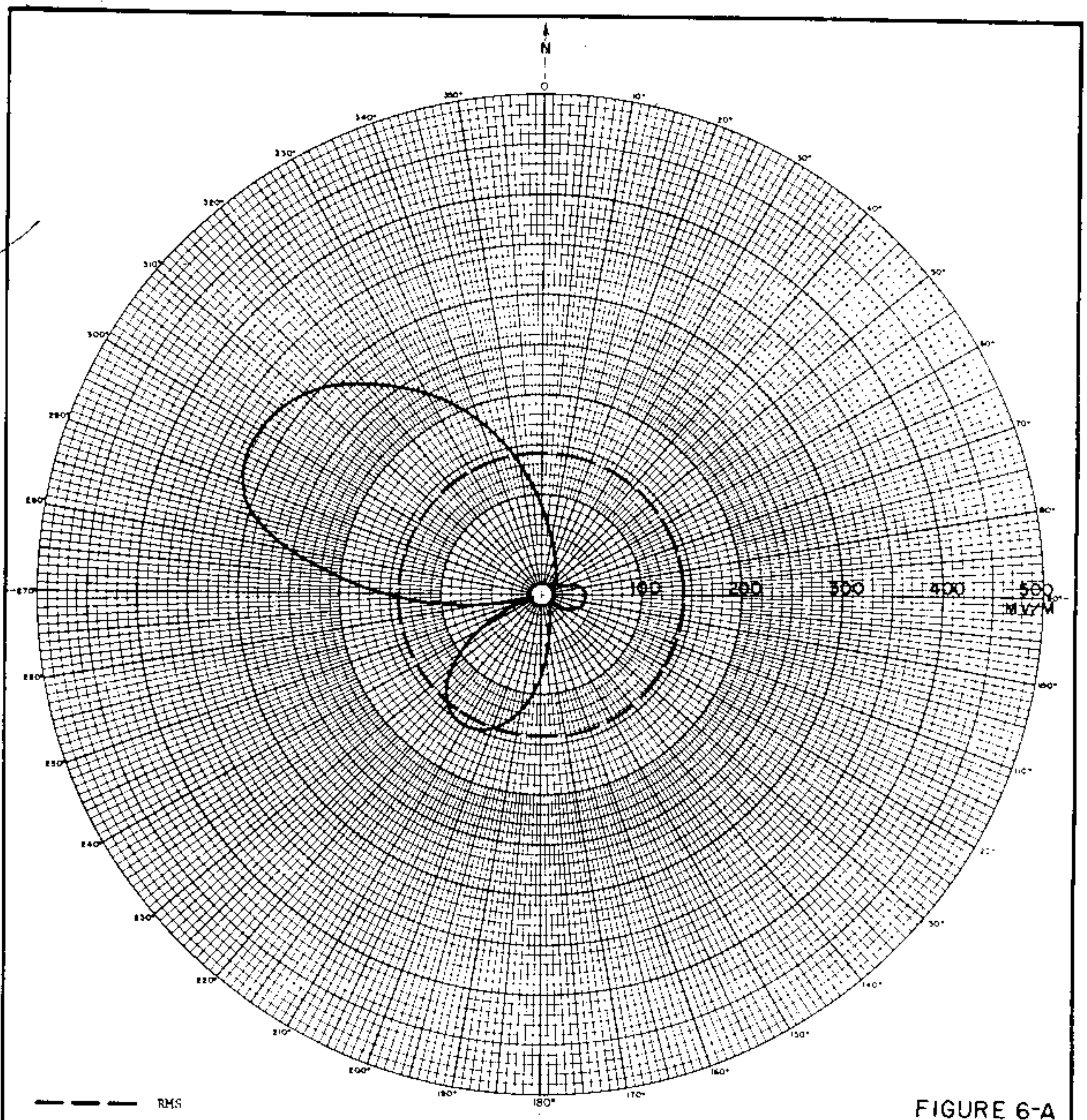
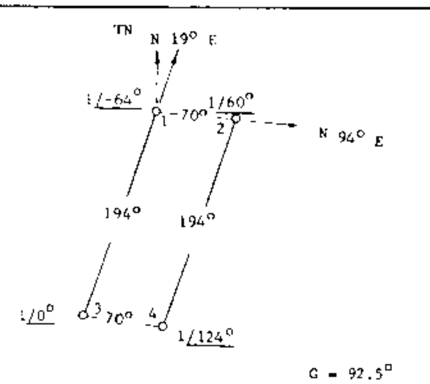


FIGURE 6-A

HORIZONTAL RADIATION PATTERN



APPLICANT	KBGO
LOCATION	WACO, TEXAS
FREQUENCY	1580 KC/S
POWER	0.5 KW
LATITUDE	31 DEG 31 MIN 04 SEC.
LONGITUDE	97 DEG 05 MIN 16 SEC
WHEN USED	NIGHTTIME
RMS FIELD	141
DATE	OCTOBER 1966

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

FCC File No. BL-11493 Accepted 12-29-66 | Station KBGO Waco, Texas | 1580 kc

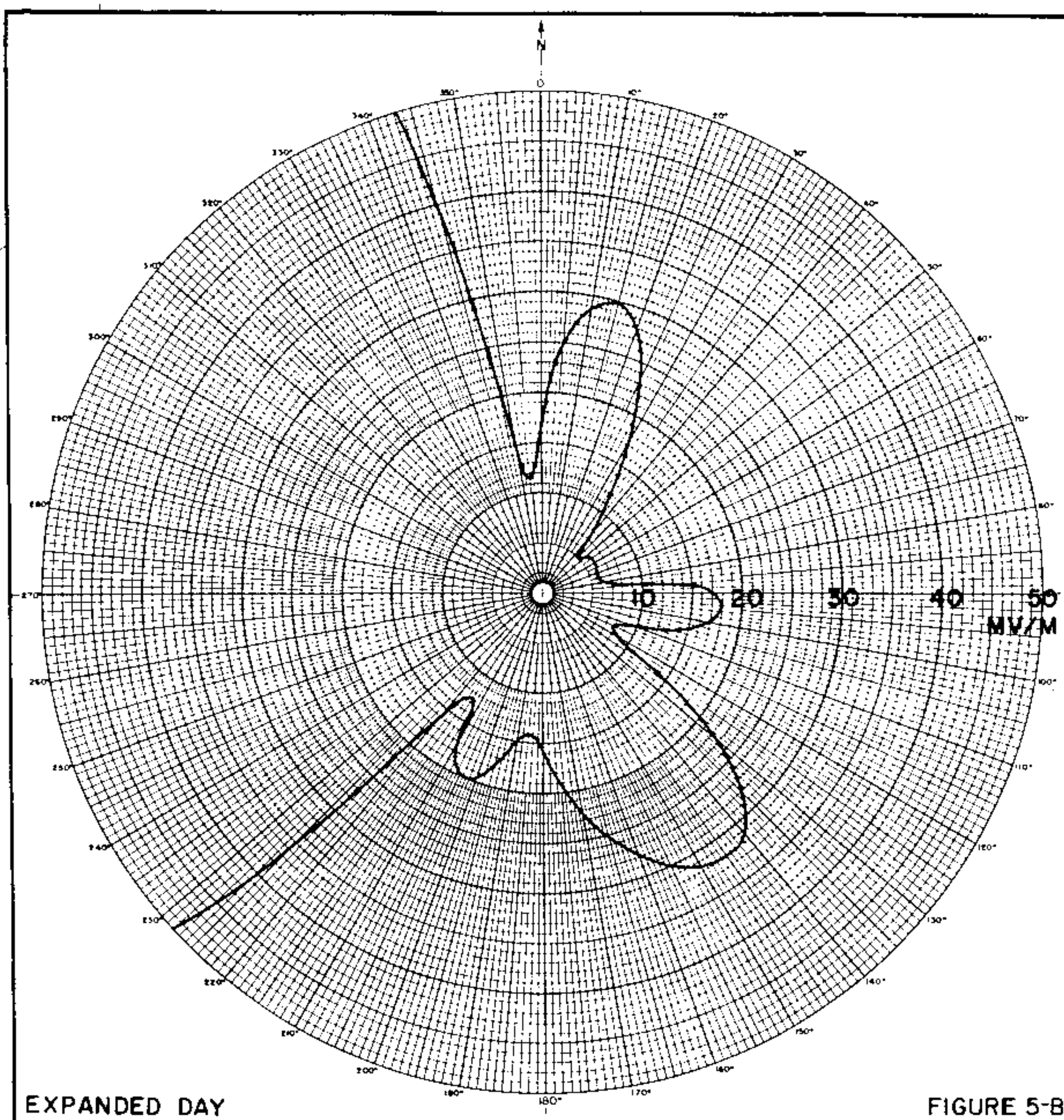
KRZ/

Measured Day Nulls
(1-30-67ct)

Station KBGO
Waco, Texas

500w,1kw-LS,DA-2,U
1580 kc

Limited License 3-14-67



EXPANDED DAY

FIGURE 5-B

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

FCC File No.BL-11493
Accepted 12-29-66

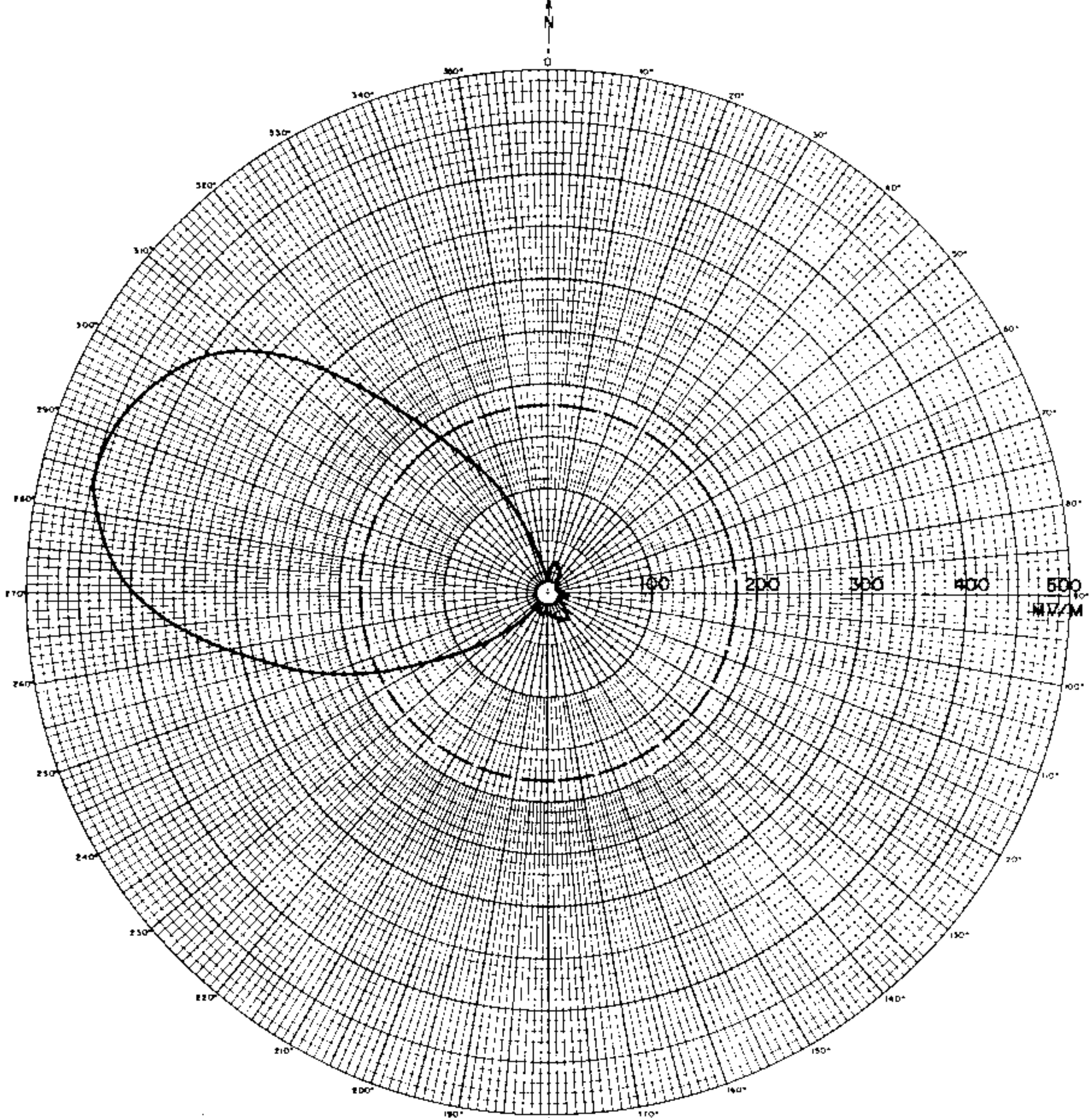
Station KBGO
Waco, Texas

1580 kc

KRZI

Measured Day (1-30-67ct)	Station KBGO Waco, Texas	500w,1kw-LS,DA-2,U 1580 kc

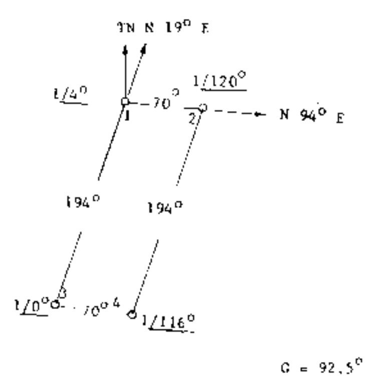
3-14-67



RMS

FIGURE 5-A

HORIZONTAL RADIATION PATTERN



APPLICANT	KBGO
LOCATION	WACO, TEXAS
FREQUENCY	1580 KC/S
POWER	1.0 KW
LATITUDE	31 DEG 31 MIN 04 SEC
LONGITUDE	97 DEG 05 MIN 16 SEC
WHEN USED	DAYTIME
RMS FIELD	179
DATE	OCTOBER 1966

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

FCC File No.BL-11493 Accepted 12-29-66	Station KBGO Waco, Texas	1580 kc

KRZI

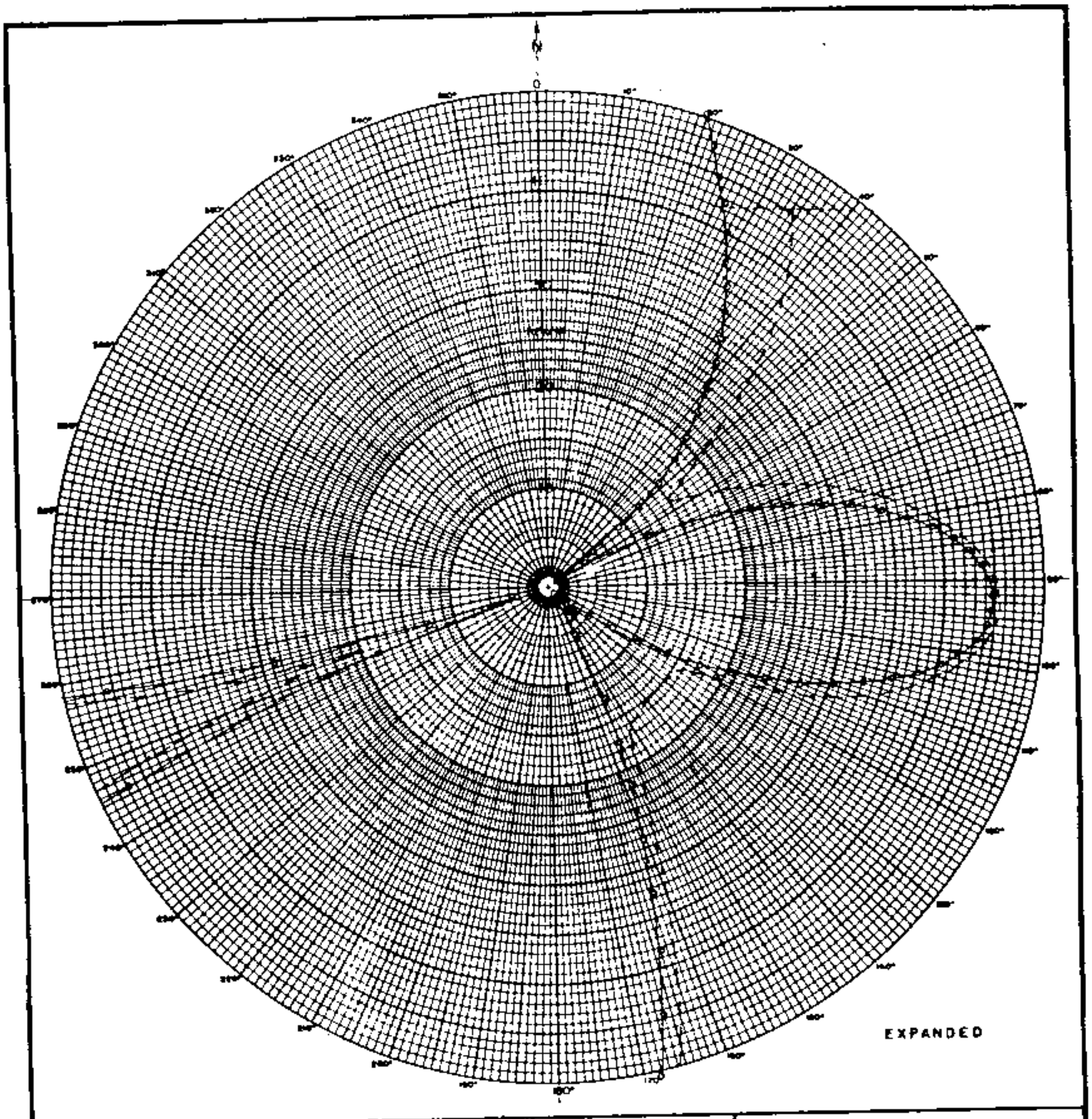
Proposed Night Nulls
(9-28-65ct)

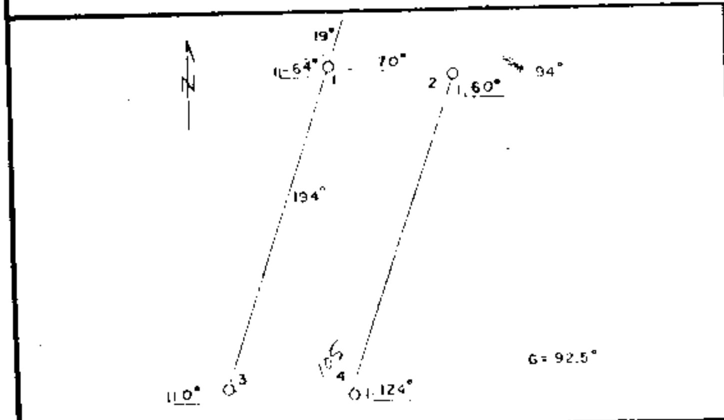
Station KBGO
Waco, Texas

500w,1kw-LS,DA-2,U
1580 kc

CP 9-10-65
CHG DA, D&N
BMP 11,643
MCP 12-22-65

FIGURE 3





APPLICANT:	AUDIOCASTING OF TEXAS, INC.
LOCATION	WACO, TEXAS
FREQUENCY	1580 KC/S
POWER	0.5 KW
LATITUDE	31° 31' 04"
LONGITUDE	97° 05' 15"
WHEN USED	NIGHTTIME
R.M.S. FIELD	139.45 mv/m
DATE	650406

William B. Carr
Consulting Engineer
Fort Worth, Texas

FCC File No. BP-16827
Accepted 8-30-65

Station KBGO
Waco, Texas

1580 kc

KRZI

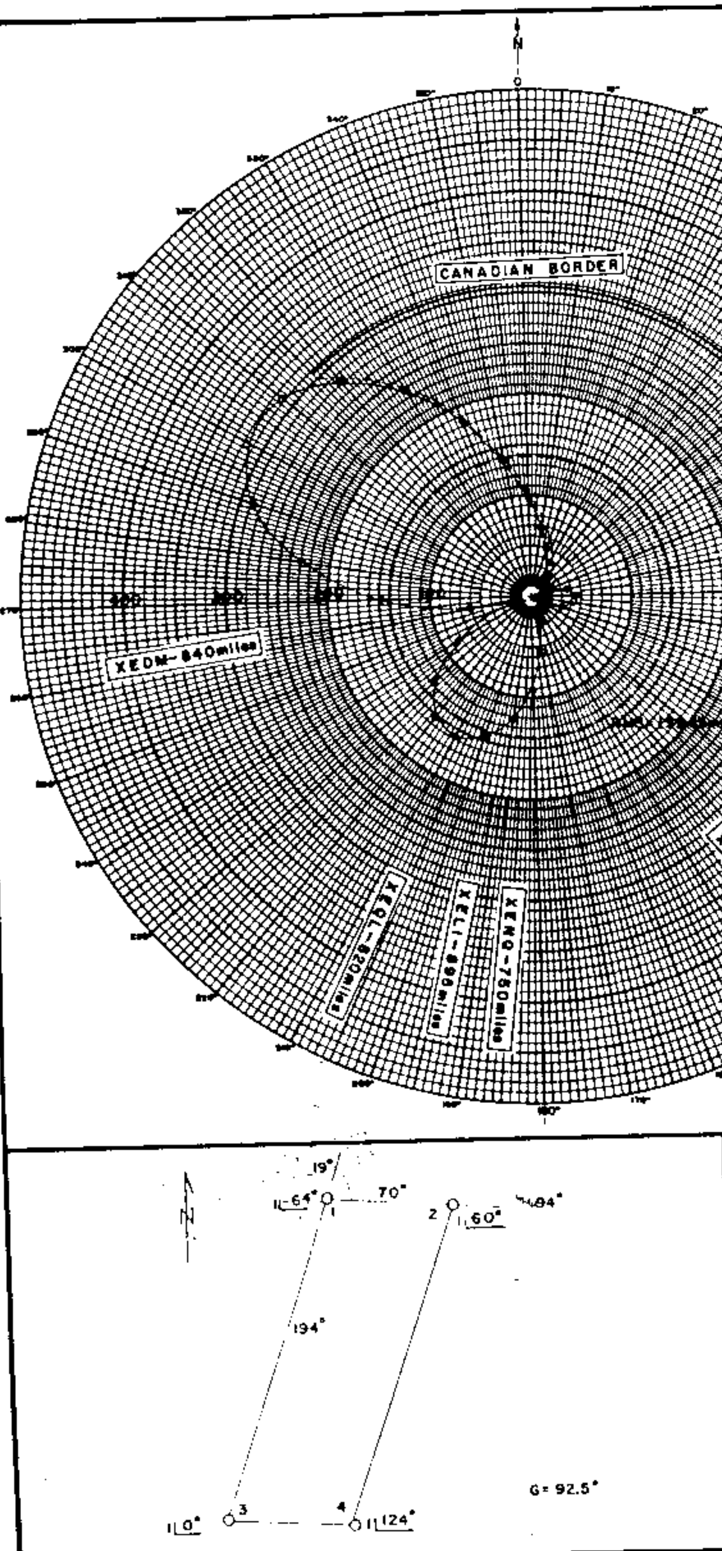
Proposed Night
(9-28-65ct)

Station KBGO
Waco, Texas

500w,1kw-LS,DA-2,U
1580 kc

CP 9-10-65
CHG-DA, P&N
BMP 11643
MCP 12-22-65

FIGURE 2



APPLICANT	AUDIOCASTING OF TEXAS, INC.
LOCATION	WACO, TEXAS
FREQUENCY	1580 KC/S
POWER	0.5 KW
LATITUDE	31° 31' 04"
LONGITUDE	97° 05' 16"
WHEN USED	NIGHT TIME
RMS FIELD	130.45 mv/m
DATE	650406

William B. Carr
CONSULTING ENGINEER
FORT WORTH, TEXAS

FCC File No. BP-16827
Accepted 8-30-65

Station KBGO
Waco, Texas

1580 kc

KRZI

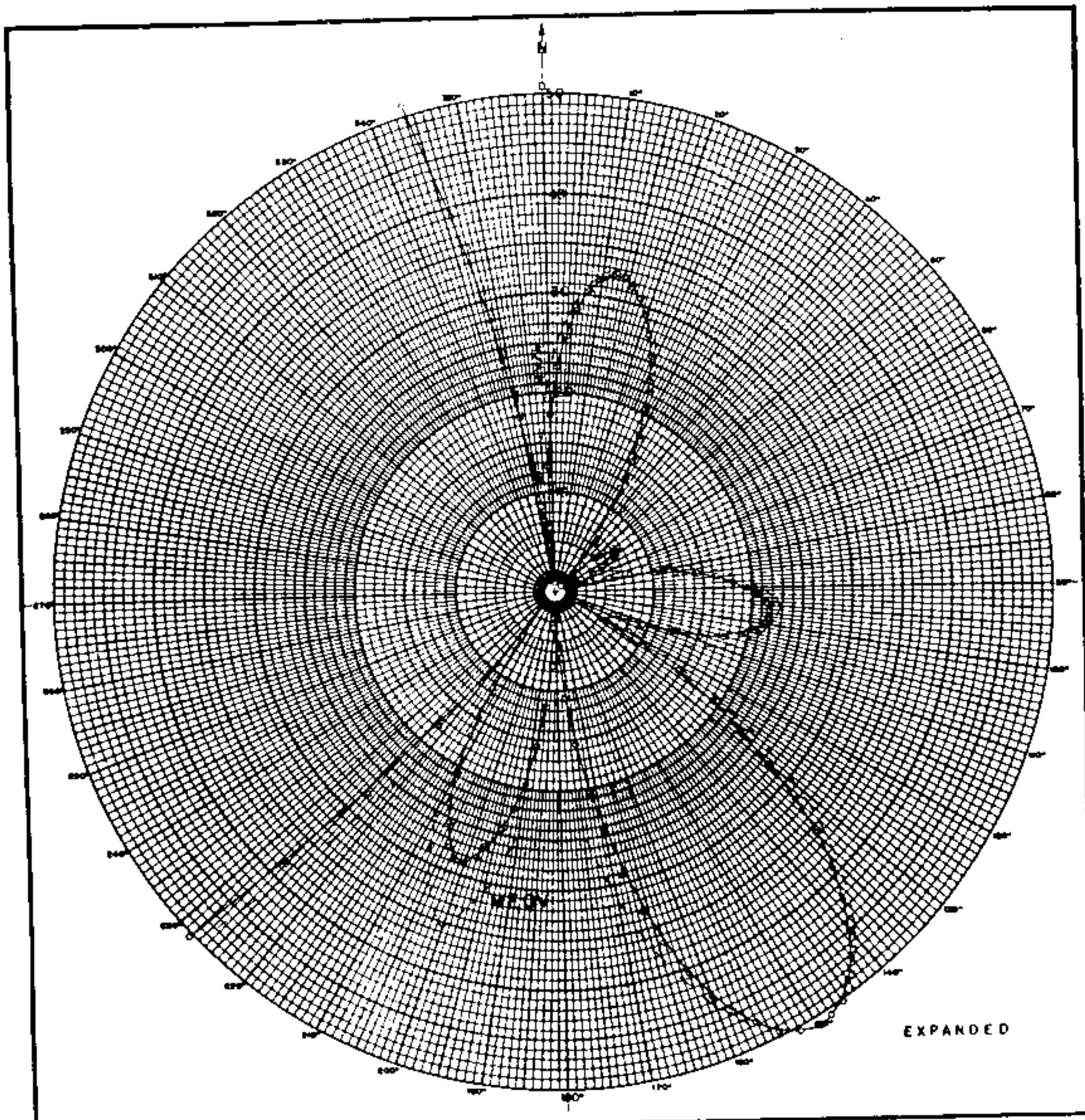
Proposed Day Nulls
(9-28-65ct)

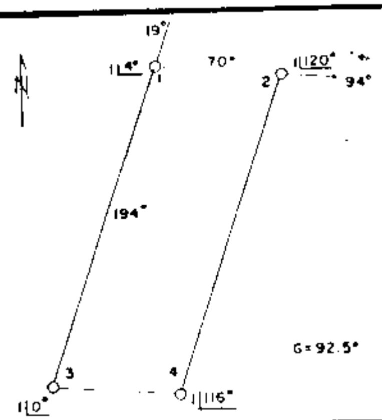
Station KBGO
Waco, Texas

500w,1kw-LS,DA-2,U
1580 kc

CP 9-10-65
CHG DA, DEN
BMP 11643
MCP 12-22-65

FIGURE 3





APPLICANT	AUDIOCASTING OF TEXAS, INC.
LOCATION	WACO, TEXAS
FREQUENCY	1580 KC/S
POWER	1.0 KW
LATITUDE	31° 31' 04"
LONGITUDE	97° 05' 16"
WHEN USED	DAYTIME
RMS FIELD	176.1 mv/m
DATE	650405

William B. Carr
Consulting Engineer
Fort Worth, Texas

FCC File No. BP-16827
Accepted 8-30-65

Station KBGO
Waco, Texas

1580 kc

KRZI

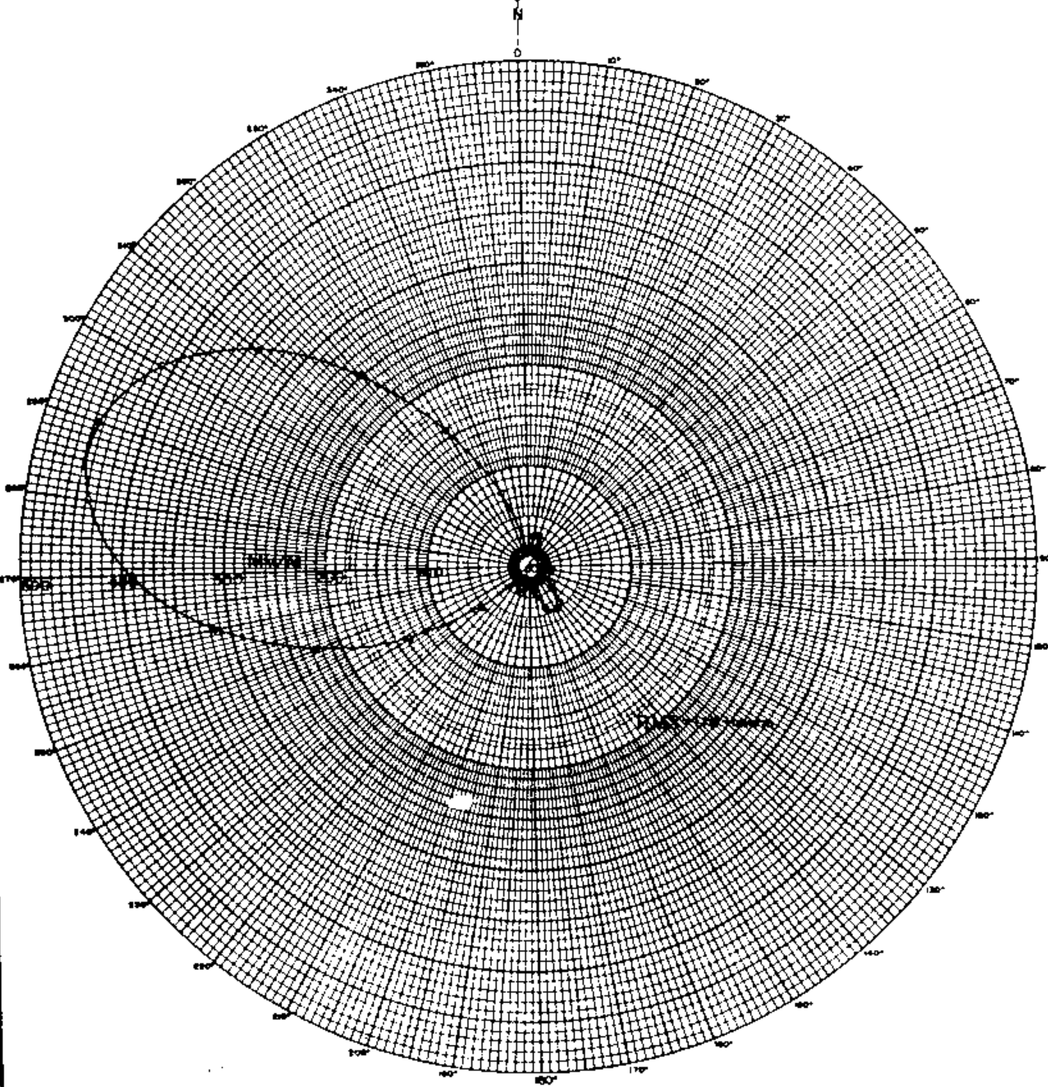
Proposed Day
(9-28-65ct)

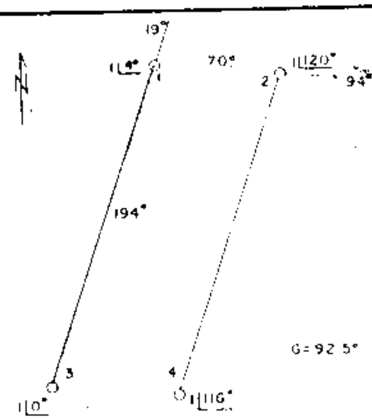
Station KBGO
Waco, Texas

500w,1kw-LS,DA-2,U
1580 kc

P 9-10-65
CHG DA, DEN
BMP 11643
MCP 12-22-65

FIGURE 2





APPLICANT	AUDIOCASTING OF TEXAS, INC
LOCATION	WACO, TEXAS
FREQUENCY	15[illegible] KC/S
POWER	1.0 KW
LATITUDE	31° 31' [illegible]4"
LONGITUDE	97° [illegible]5'16"
WHEN USED	DAYTIME
R.M.S. FIELD	176 [illegible] mv/m
DATE	65 [illegible]4 [illegible]5

William B. Carr
CONSULTING ENGINEER
FORT WORTH, TEXAS

FCC File No. BP-16827
Accepted 8-30-65

Station KBGO
Waco, Texas

1580 kc

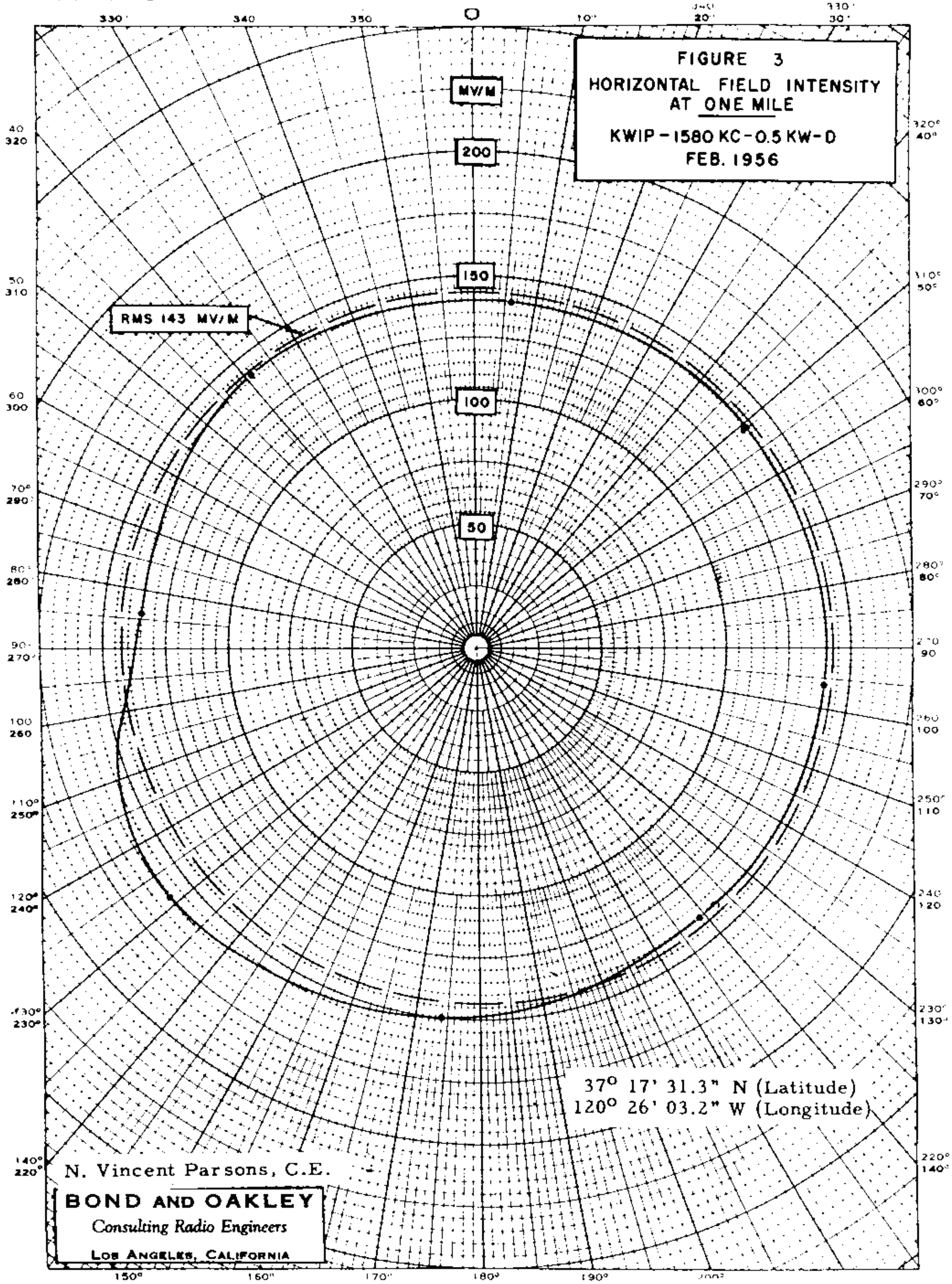
KWIP

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

STATION KWIP
MERCED, CALIF.

500 W
Non-DA, D

1580 KC



FCC File No. BL-6079

Accepted 3-5-56 KWIP, Merced, Calif.

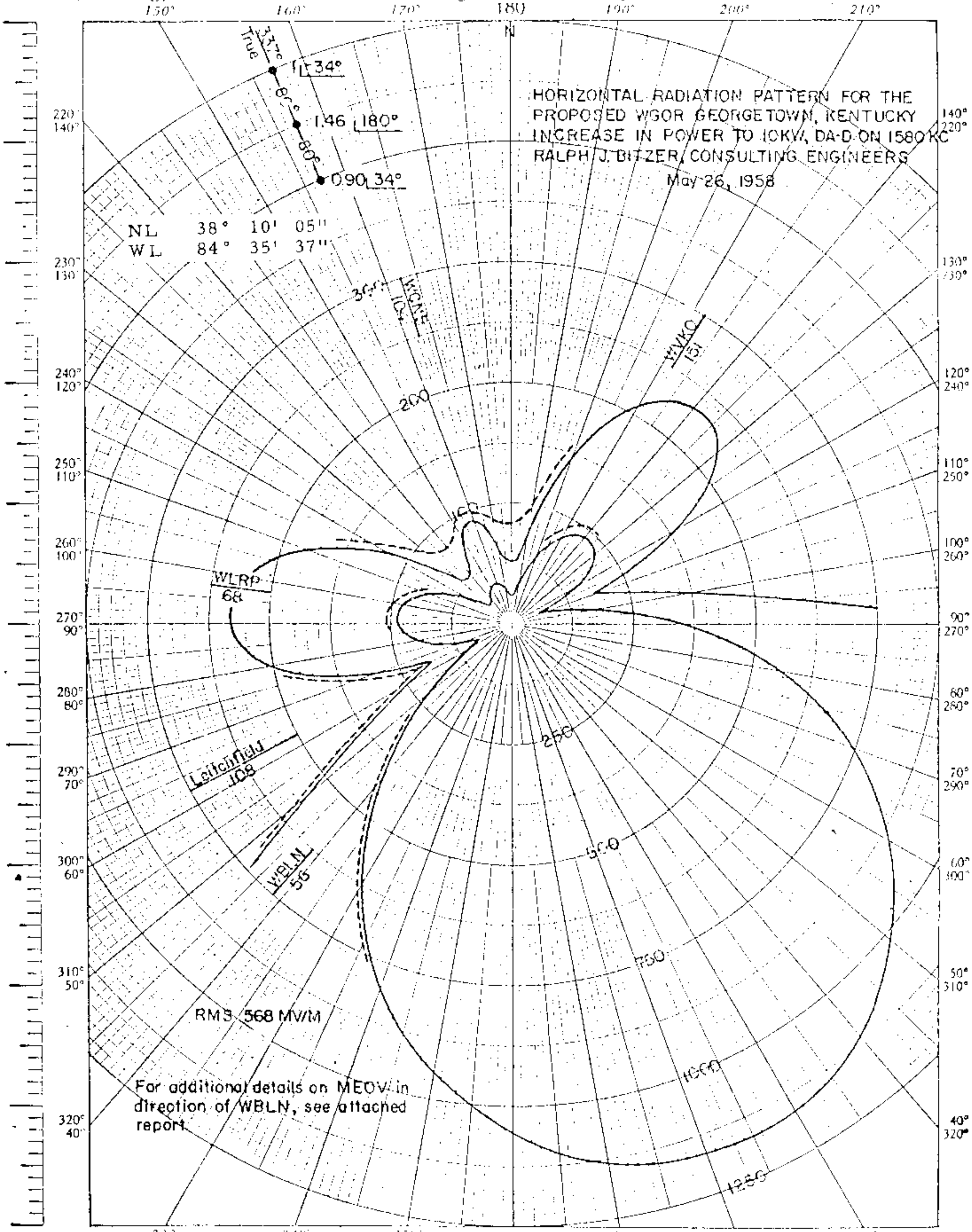
1580 KC

WAXU

PROPOSED DAY
(9-4-59g)

Station WGOR
Georgetown, Kentucky

10kw, DA-D,D
1580 KC



Granted map to change location
8-28-59

FCC File No. BMP-8668
Accepted 8-19-59

WGOR
Georgetown, Kentucky

1580 KC

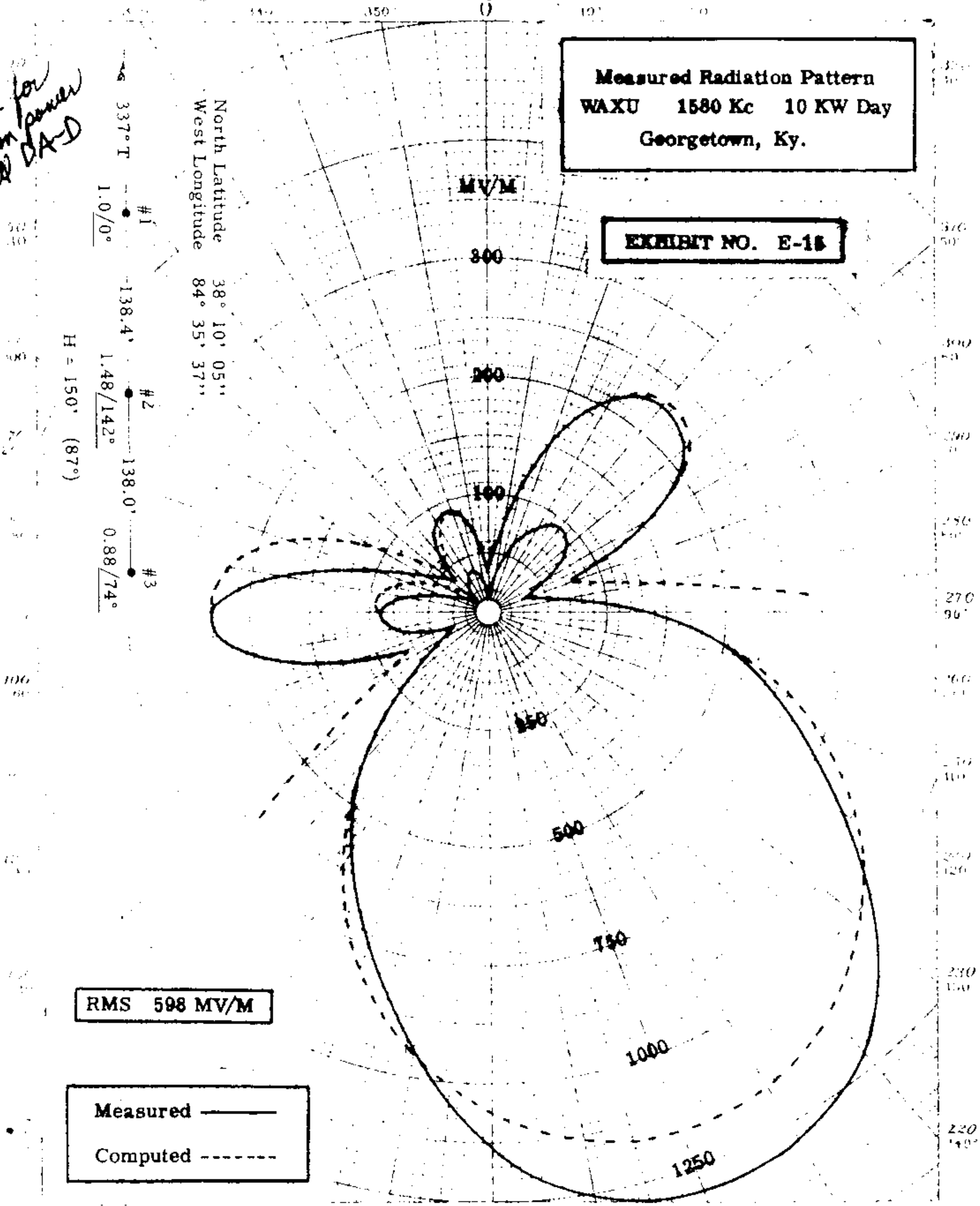
WAXU

MEASURED DAY
(7-29-60g)

Station WAXU
Georgetown, Kentucky

10kw, DA-D,D
1580 kc

-9-60 granted for increase in power and install DA-D



FCC File No. BL-7986
Accepted 7-12-60

WAXU
Georgetown, Kentucky

1580 kc

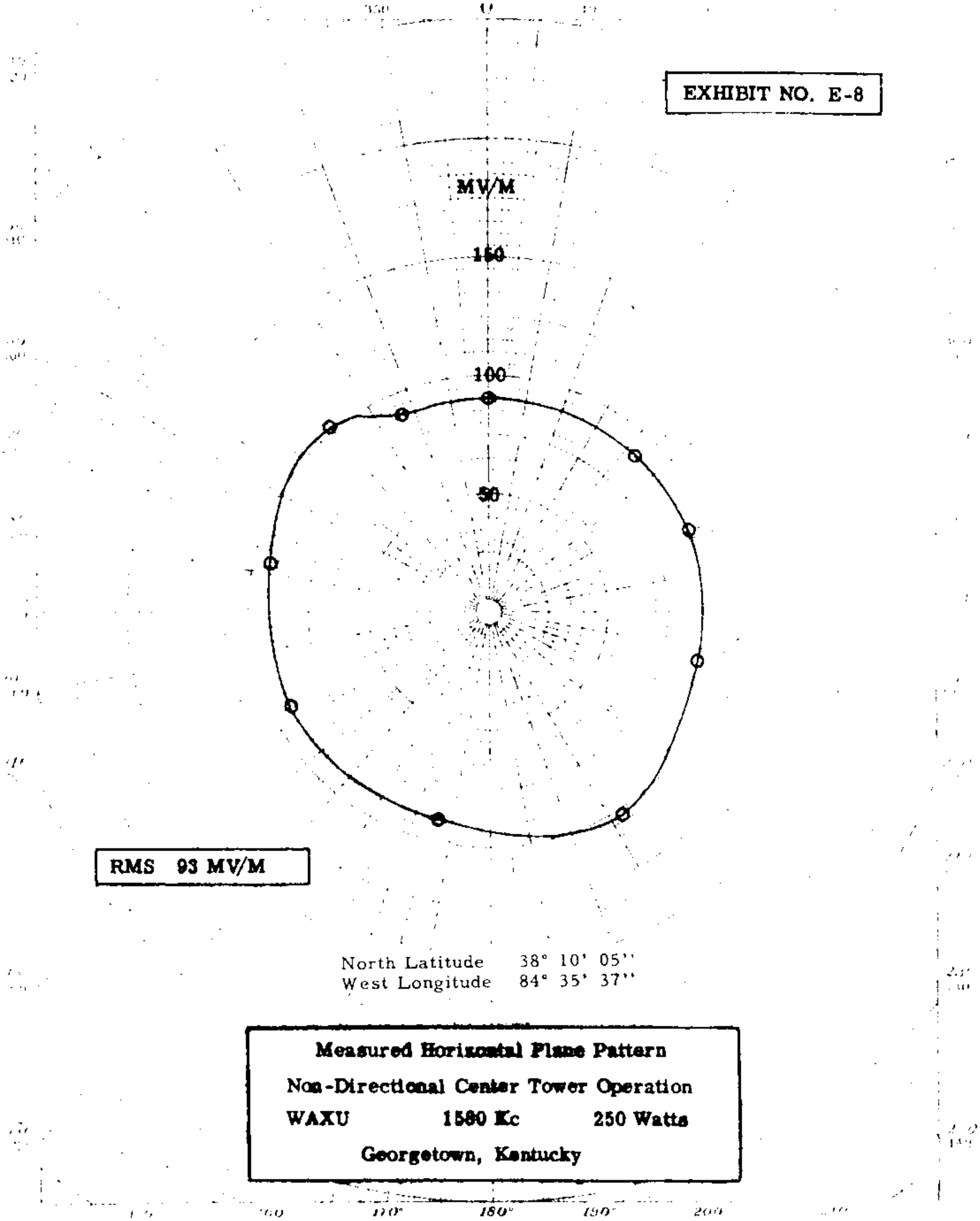
WAXU

MEASURED NON-DA
(7-29-60g)

Station WAXU
Georgetown, Kentucky

10kw, DA-D,D
1580 kc

EXHIBIT NO. E-8



RMS 93 MV/M

North Latitude 38° 10' 05''
West Longitude 84° 35' 37''

Measured Horizontal Plane Pattern

Non-Directional Center Tower Operation

WAXU 1580 Kc 250 Watts

Georgetown, Kentucky

FCC File No. BL-7986
Accepted 7-12-60

WAXU
Georgetown, Kentucky

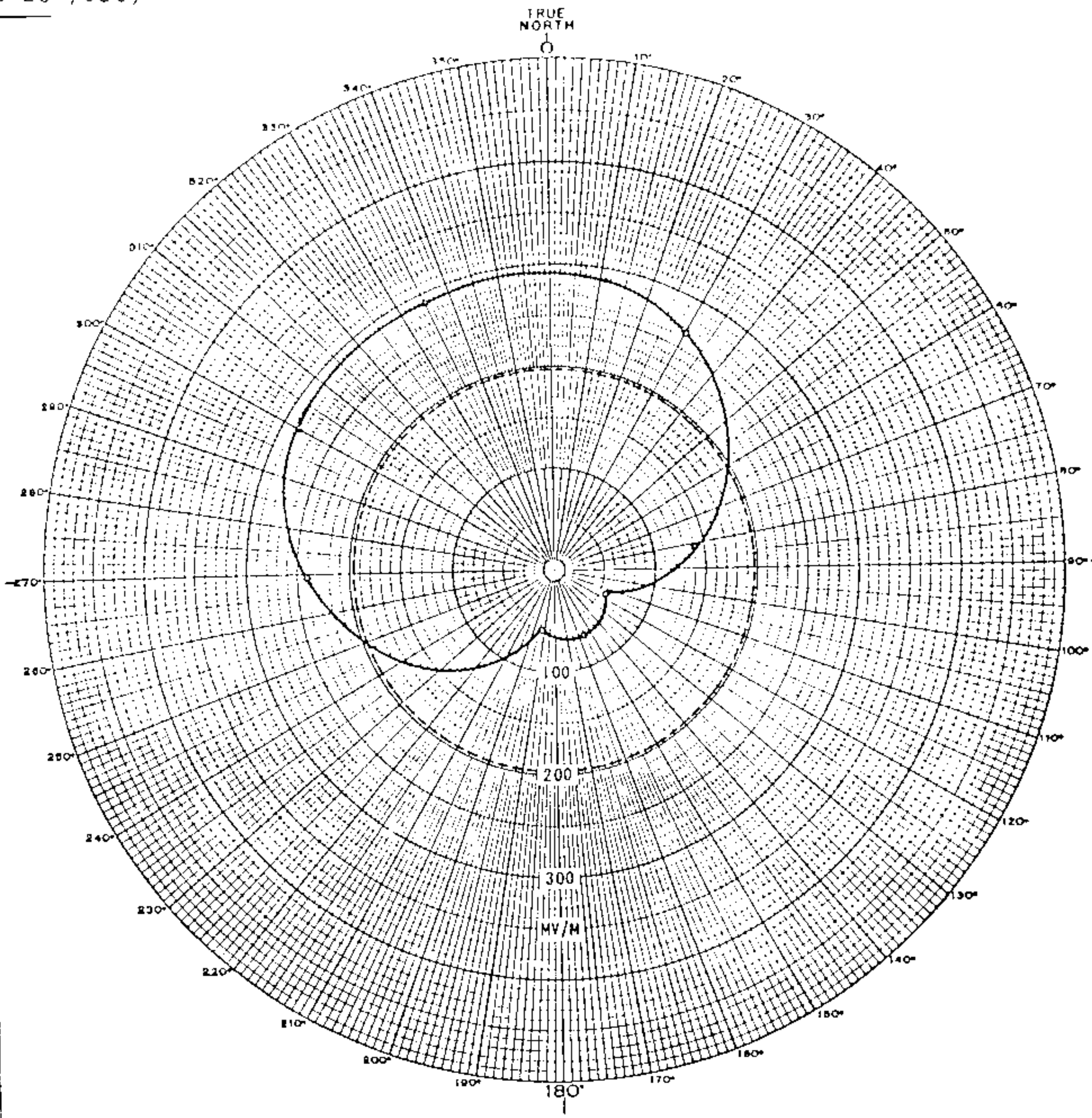
1580 kc

WCCF

1kw, DA-D, D
1580 kc

Measured Day
(10-26-70ct)

Station WCCF
Punta Gorda, Florida



#1 1.0/0°

S

#2 0.705/111°

155° True
G=90°=156' S=90°=156'

FIELD INTENSITY VERSUS AZIMUTH

ELEVATION ANGLE 0° RMS 197 MV/M	W C C F
N. LATITUDE 26° 53' 37" W. LONGITUDE 82° 03' 01"	CHARLOTTE RADIO COMPANY PUNTA GORDA, FLORIDA 1580 KC - 1 KW - DA-D
SUPERSEDES 610901 PATTERN NO. 630805	MEASURED DIRECTIONAL PATTERN
RUSSELL P. MAY CONSULTING RADIO ENGINEER WASHINGTON 5, D.C.	FIGURE NO. 4

FCC File No.BZ-7629
Accepted 9-30-70

Station WCCF
Punta Gorda, Florida

1580 kc

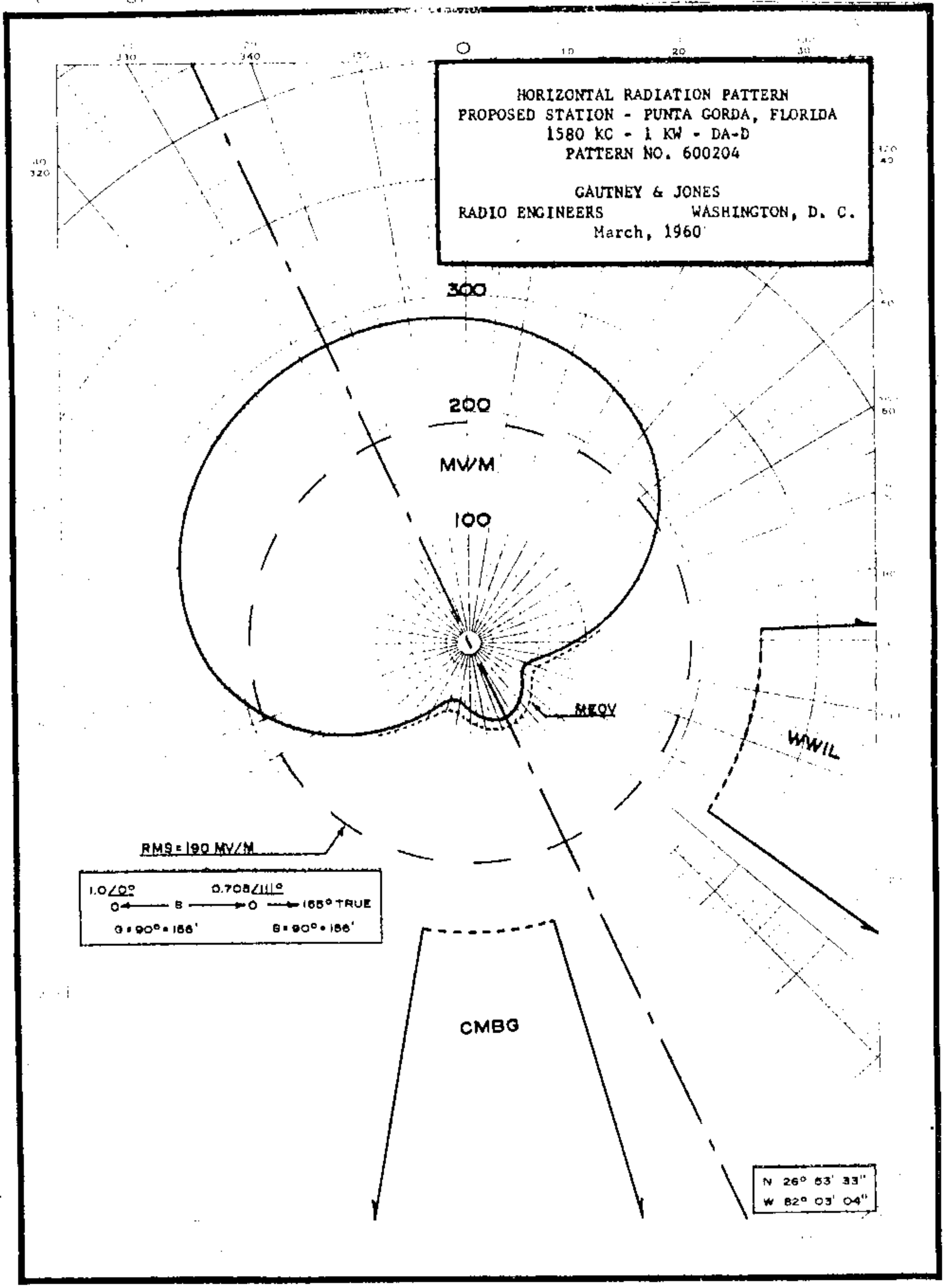
Punta Gorda, Fla. WCCF

PROPOSED DAY
(4-22-60g)

New; Charlotte Radio Co.
Punta Gorda, Florida

1kw, DA-D,D
1580 KC

Granted CP
7-21-60



FCC File No. BP-12658
Accepted 4-15-60 (Amended)

Charlotte Radio Company
Punta Gorda, Florida

1580 KC

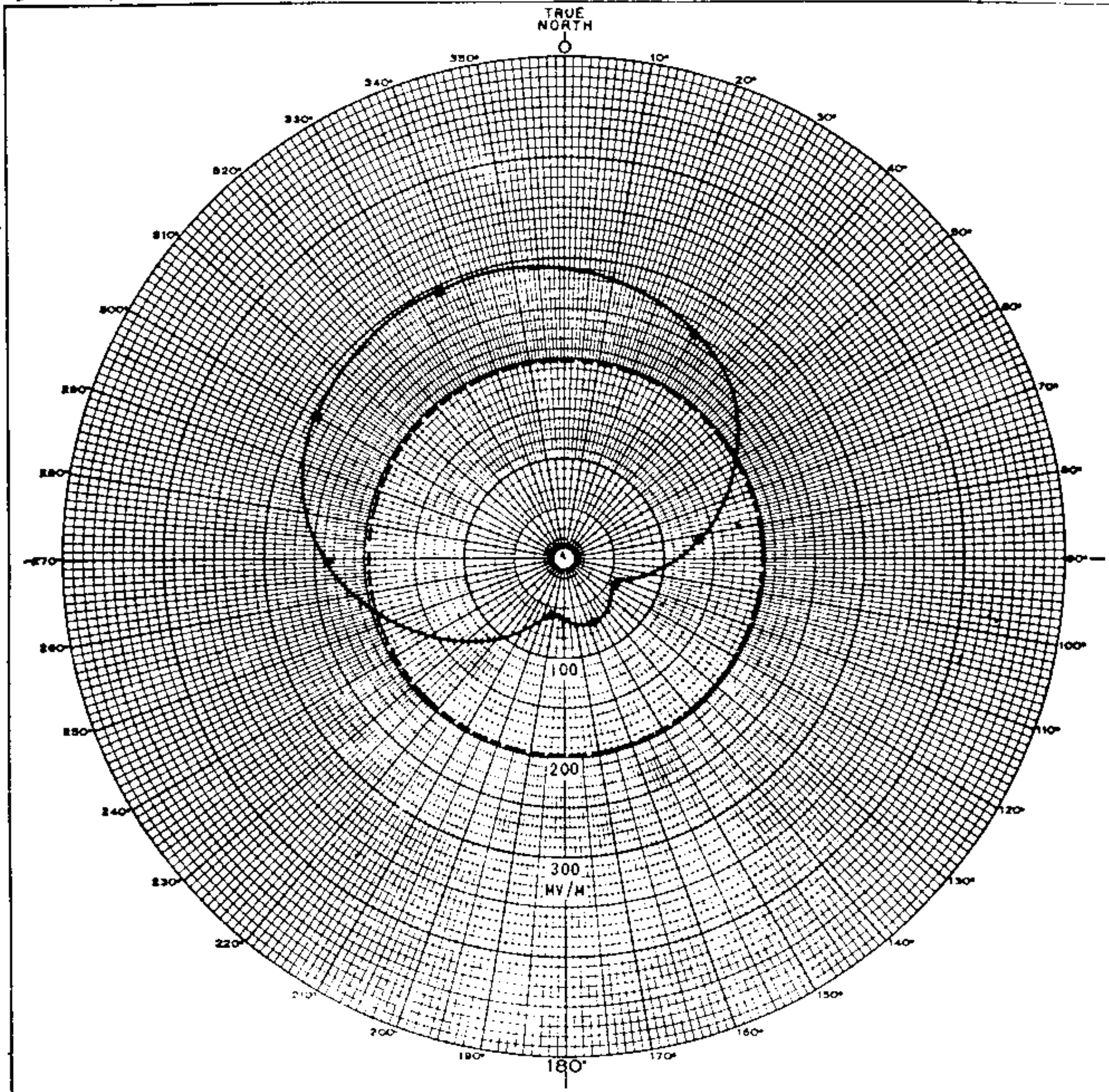
MEASURED DAY
(10-25-61ct)

Station WCCF
Punta Gorda, Florida

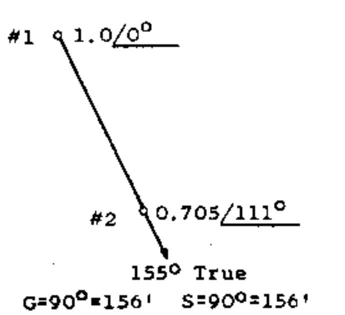
1kw,DA-D,D
1580 kc

finished 12-12-61

IT #170
granted for
new station



FIELD INTENSITY VERSUS AZIMUTH



ELEVATION ANGLE 0°	WCCF
RMS 197	CHARLOTTE RADIO COMPANY PUNTA GORDA, FLORIDA
N. LATITUDE 26° 53' 37"	
W. LONGITUDE 82° 03' 01"	1580 KC - 1 KW - DA-D
SUPERSEDES	MEASURED DIRECTIONAL PATTERN
PATTERN NO. 610901	
MAY & BATTISON CONSULTING RADIO ENGINEERS WASHINGTON 5, D.C.	FIGURE NO. 5

FCC File No. BL-8762
Accepted 9-18-61

Station WCCF
Punta Gorda, Florida

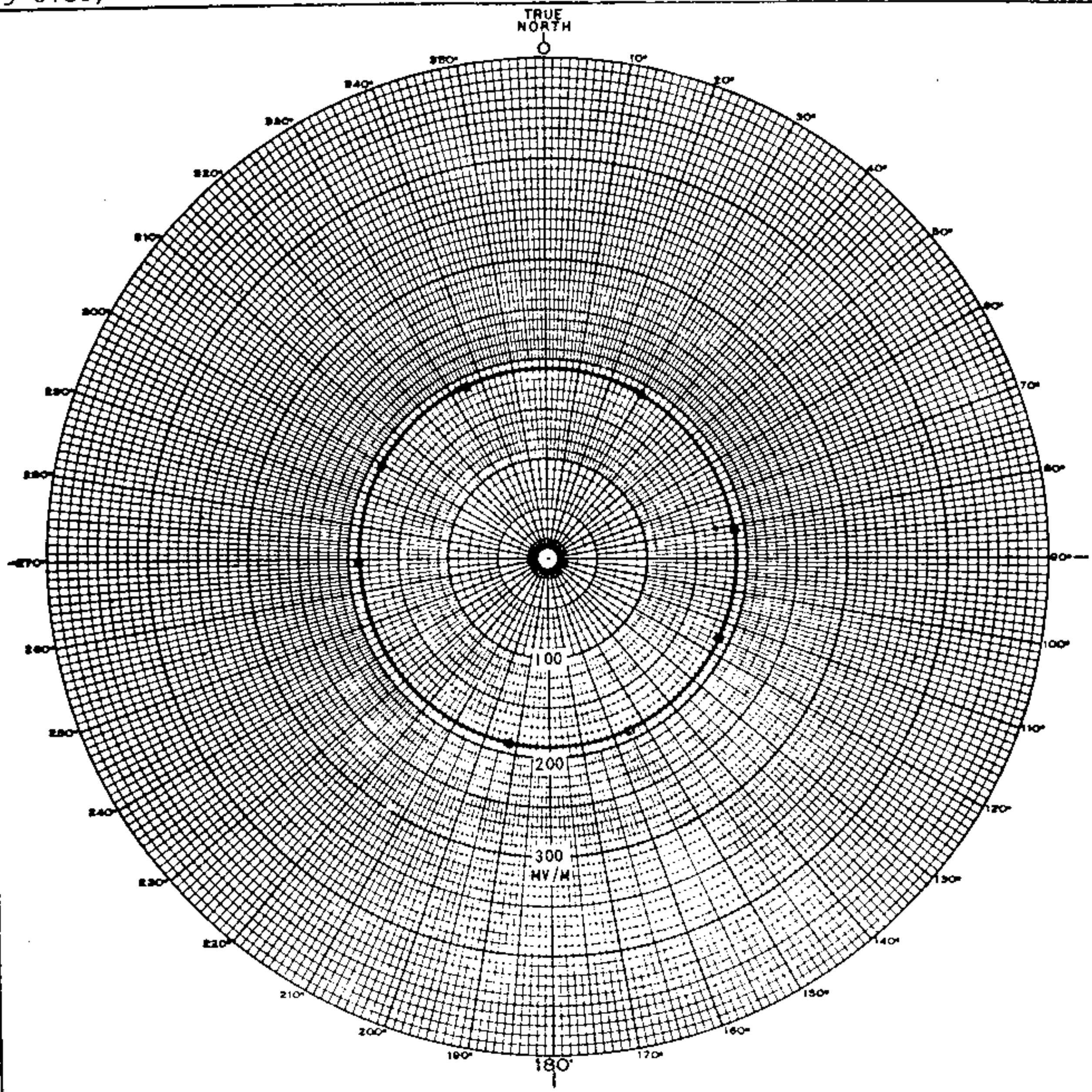
1580 kc

WCCF

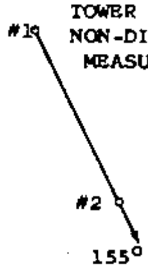
MEASURED NON-DA
(10-25-61ct)

Station WCCF
Punta Gorda, Florida

1kw,DA-D,D
1580 kc



TOWER USED FOR
NON-DIRECTIONAL
MEASUREMENTS



155° True

G=90°=156' S=90°=156'

FIELD INTENSITY VERSUS AZIMUTH	
ELEVATION ANGLE 0° RMS 190	W C C F CHARLOTTE RADIO COMPANY PUNTA GORDA, FLORIDA
N. LATITUDE 26° 53' 37" W. LONGITUDE 82° 03' 01"	1580 KC - 1 KW - DA-D
SUPERSEDES PATTERN NO.	MEASURED NON-DIRECTIONAL PATTERN
MAY & BATTISON CONSULTING RADIO ENGINEERS WASHINGTON 5, D.C.	FIGURE NO. 4

FCC File No. BL-8762
Accepted 9-18-61

Station WCCF
Punta Gorda, Florida

1580 kc

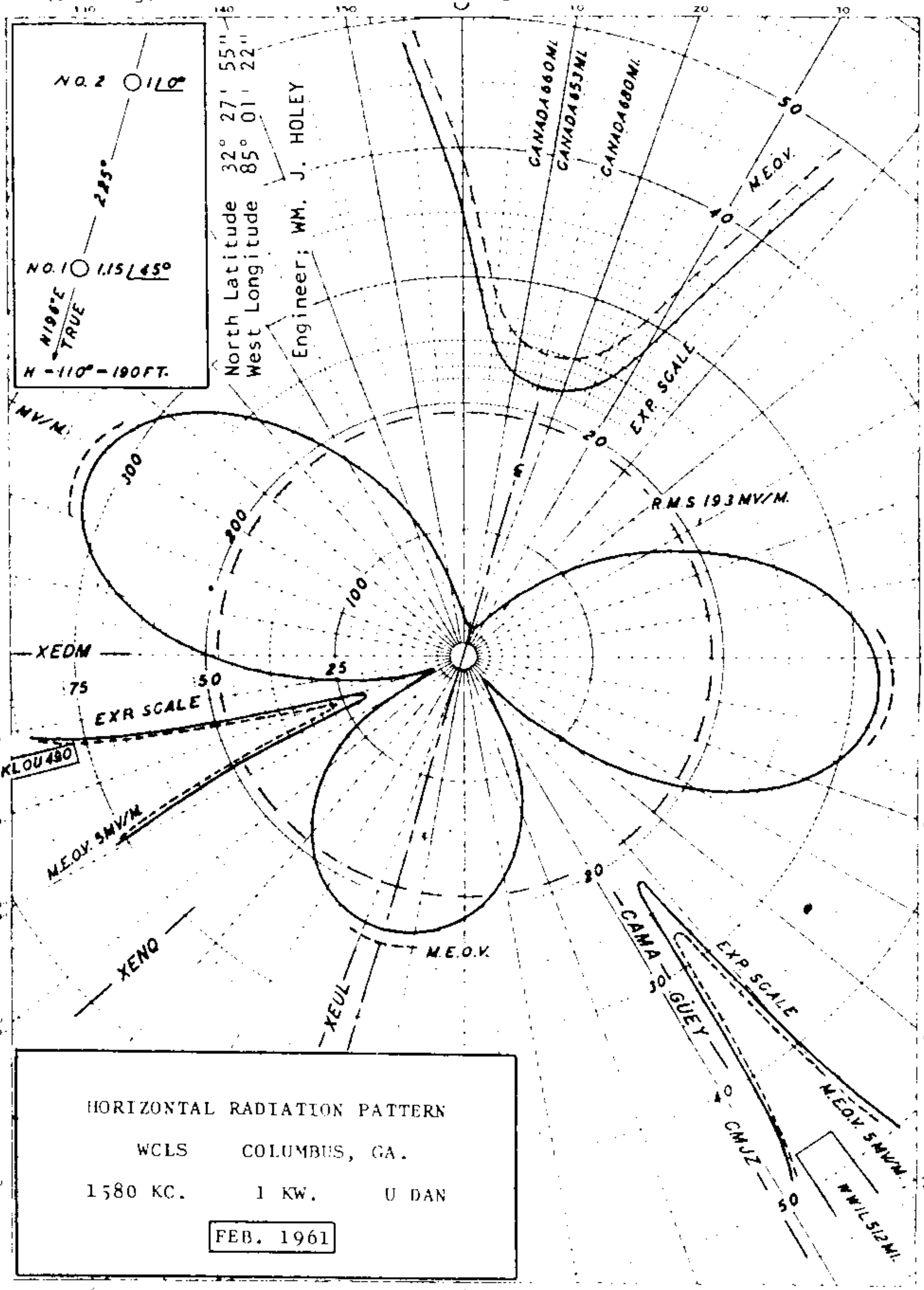
WCLS

PROPOSED NIGHT (5-8-61g)

Station WCLS
Columbus, Georgia

1kw, DA-N,U
1580 KC

7-26-61 granted for unlimited time operation with DA-N



HORIZONTAL RADIATION PATTERN

WCLS COLUMBUS, GA.

1580 KC. 1 KW. U DAN

FEB. 1961

FCC File No. BP-13249
Accepted 4-12-61 (Amended)

WCLS
Columbus, Georgia

1580 KC

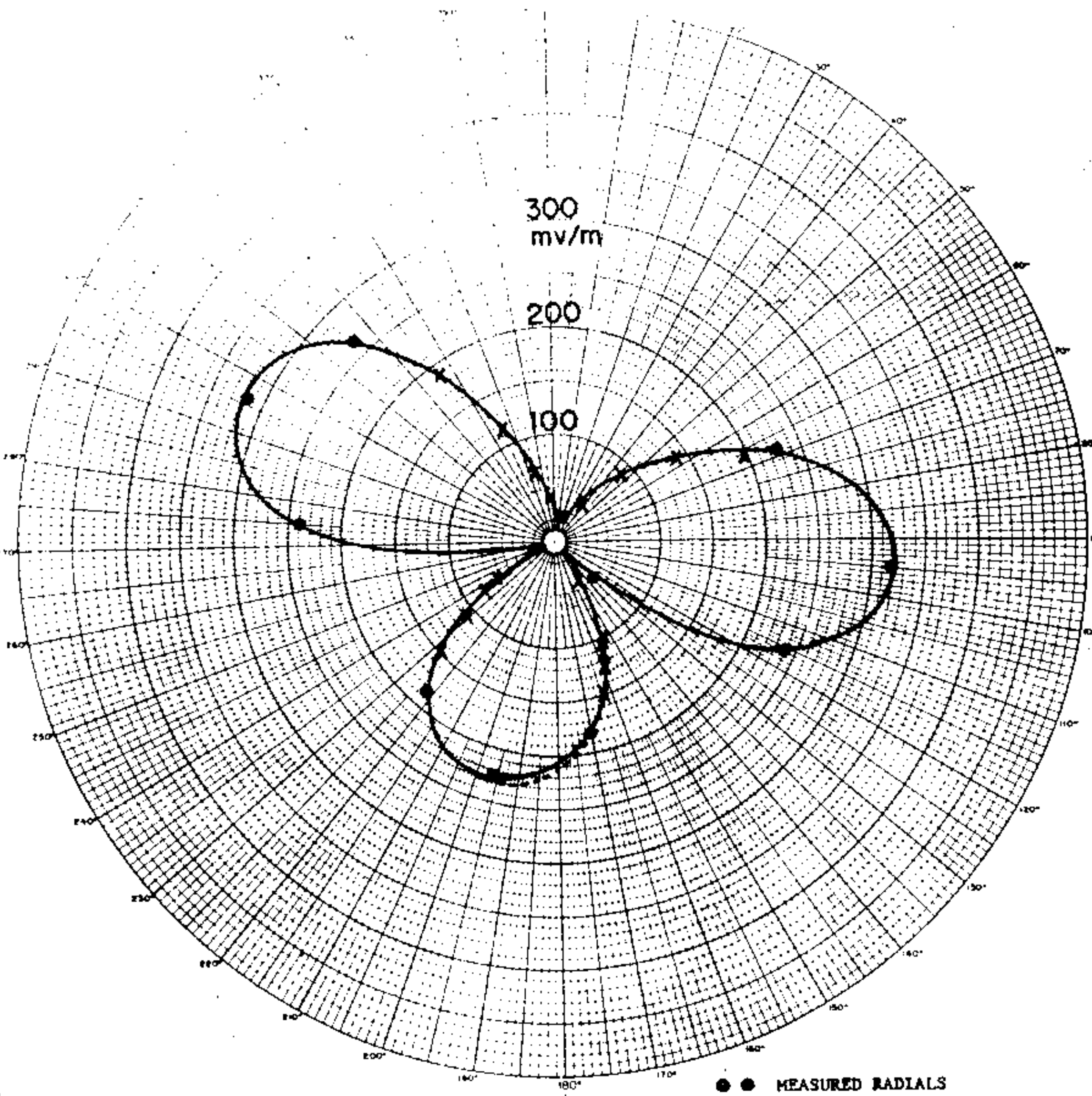
WCLS

Measured Night
(9-27-62ct)

Station WCLS
Columbus, Georgia

1kw,DA-N,U
1580 kc

12/27/62
granted L
for unlimited time,
DA-N- + change
Xmtr site.



E_{RMS} = 191.5

LATITUDE: N 32° 27' 54.8"
LONGITUDE: W 85° 01' 22"

AMBROSE W. KRAMER
CONSULTING RADIO ENGINEER

ANTENNA PARAMETERS

G = 110°
S = 225°
389 ft.
N16°E
1.0 /0°
0.914 /45°

FIGURE-17A

WCLS, COLUMBUS, GA.

NIGHT TIME HORIZONTAL
POLAR PATTERN
1580 kcs. 1 kw. U. DAN
MUSCOGEE BROADCASTING CO.

BP- 13,249

FCC File No.BL-9533
Accepted 8-29-62

Station WCLS
Columbus, Georgia

1580 kc

WCLS

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

Station WCLS
Columbus, Georgia

1kw,DA-N,U
1580 kc

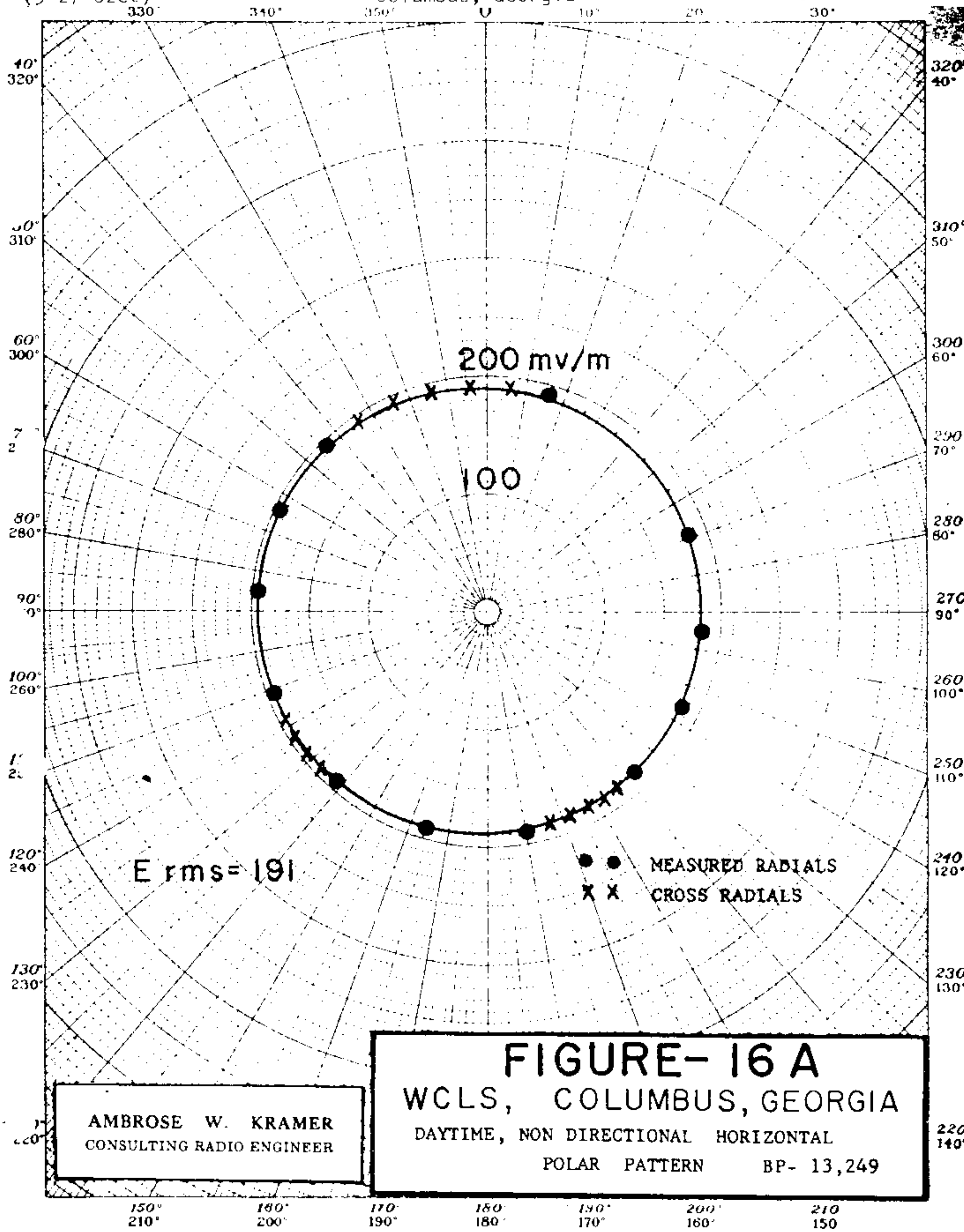


FIGURE- 16 A

WCLS, COLUMBUS, GEORGIA

DAYTIME, NON DIRECTIONAL HORIZONTAL

POLAR PATTERN BP- 13,249

AMBROSE W. KRAMER
CONSULTING RADIO ENGINEER

FCC File No.BL-9533
Accepted 8-29-62

Station WCLS
Columbus, Georgia

1580 kc

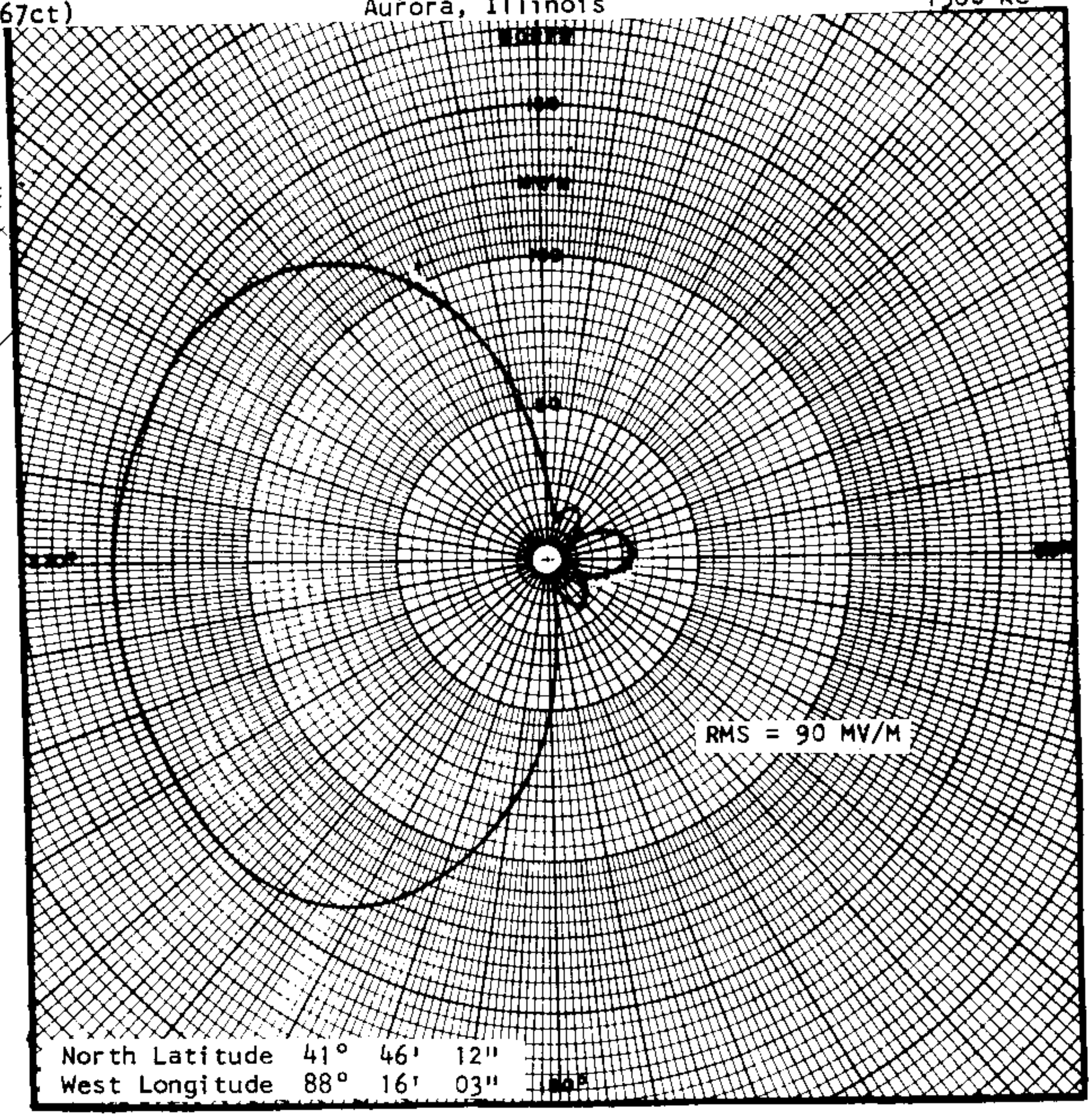
WFVR

Measured Day
(5-25-67ct)

Station WKKD
Aurora, Illinois

1580 kc

BL 11633 GRANTED LICENSE COV. CHANGE IN ANTENNA SYSTEM 5-1-67



266° T

1. 2. 3.

CAL. 1.0/-110 1.6/0 1.0/110

MEAS. 1.0/-101 .562/0 .97/117

S = 130° = 225'

H_1 = H_3 = 140' H_2 = 310'

WKKD

MEASURED RADIATION PATTERN

1580 KHZ 250 W DA-D

AURORA, ILLINOIS

OCT., 1966

ROBERT A. JONES
CONSULTING ENGINEERS
LA GRANGE, ILLINOIS

FCC File No. BL-11633
Accepted 5-3-67 Amended

Station WKKD
Aurora, Illinois

1580 kc

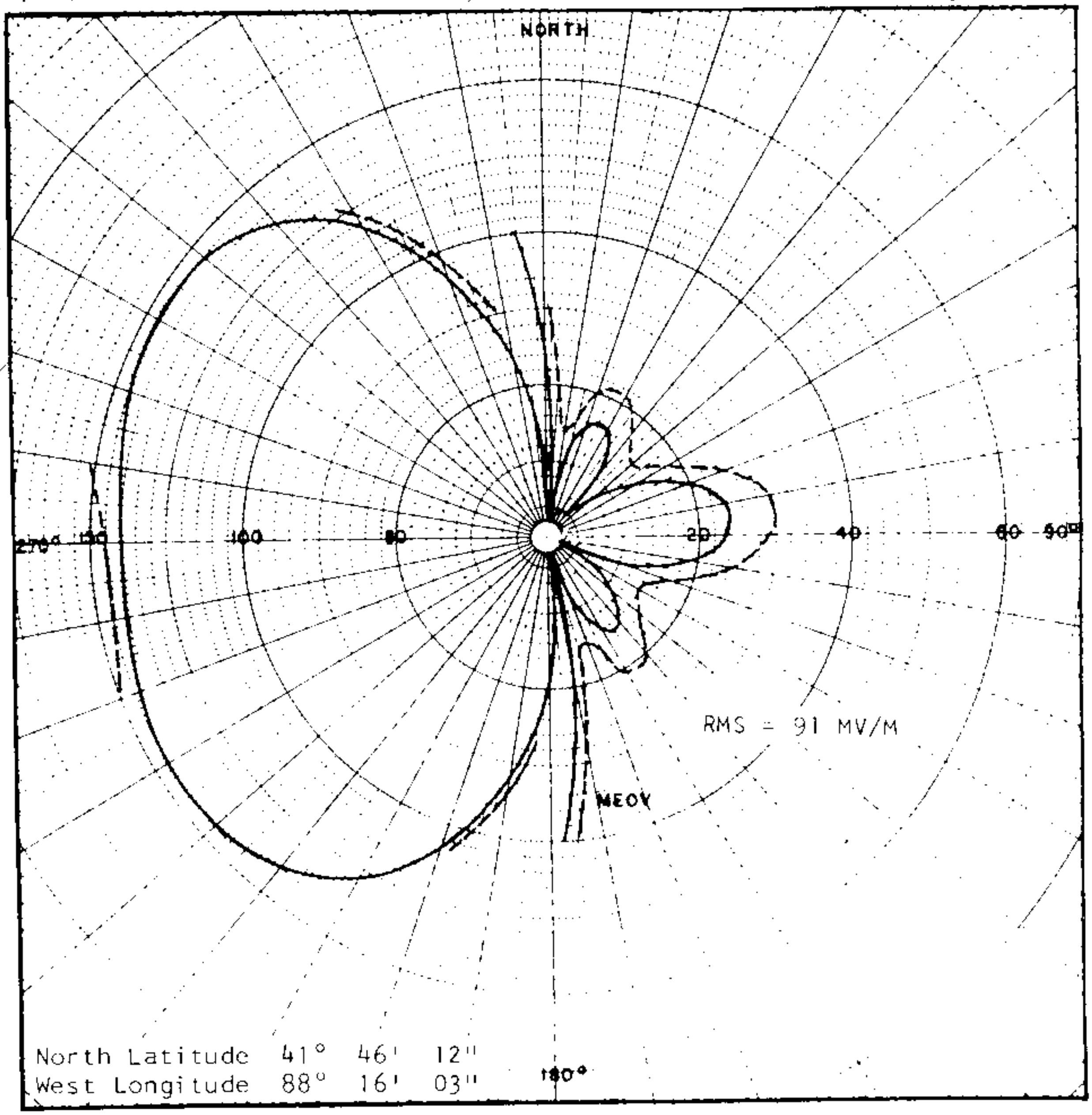
WFVR

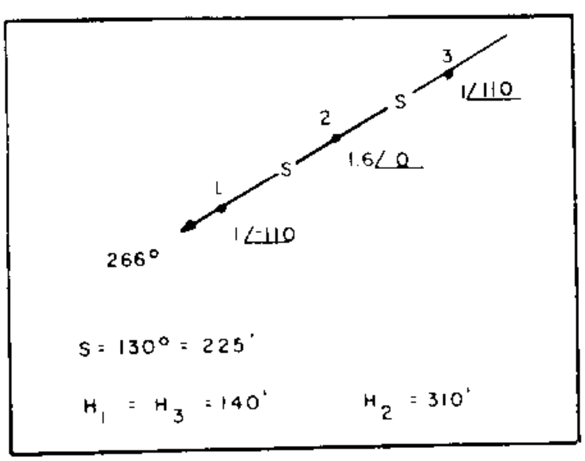
Proposed Day
(5-25-67ct)

Station WKKD
Aurora, Illinois

2

1580 kc





CALCULATED
WKKD RADIATION PATTERN
1580 KHZ 250 W
AURORA, ILLINOIS
DEC, 1966

ROBERT A. JONES
CONSULTING ENGINEERS
LA GRANGE, ILLINOIS

FCC File No.BL-11633
Accepted 5-3-67 Amended

Station WKKD
Aurora, Illinois

1580 kc

WPGC
1580KHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: W P G C — Main Studio: Morningside, Maryland

Frequency: 1580 kHz — Power: 50 kW Day

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

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 38° 51' 48"
West Longitude: 76° 54' 38"

ANTENNA CHARACTERISTICS

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

TOWER:	SW (#1)	NW (#2)	SE(#3)	NE (#4)
HEIGHT AVOVE INSULATORS:	156'	156'	156'	156' (90°)
DAY PHASING:	0°	30°	60°	90°
DAY FIELD RATIO:	1.0	2.618	1.451	3.798

SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 259.3'(150°) in length on a line bearing 10° true. The short sides are 242'(140°) in length on a line bearing 45° true.

GROUND SYSTEM: 120-156' equally sapced copper radials plus a 24' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

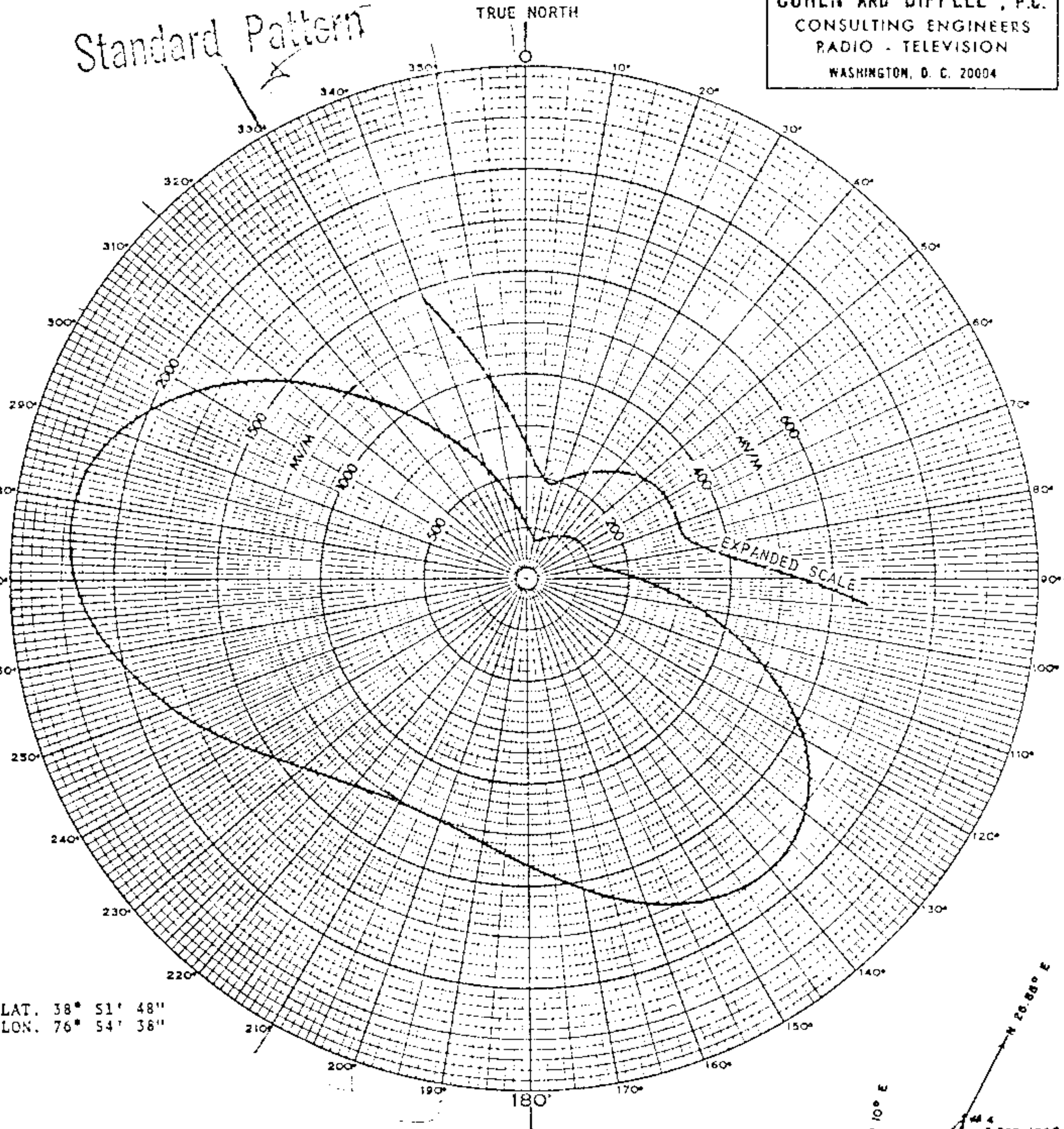
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	1266 mV/m	1228 mV/m	1330 mV/m

WPGC
1580KHz

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

Standard Pattern

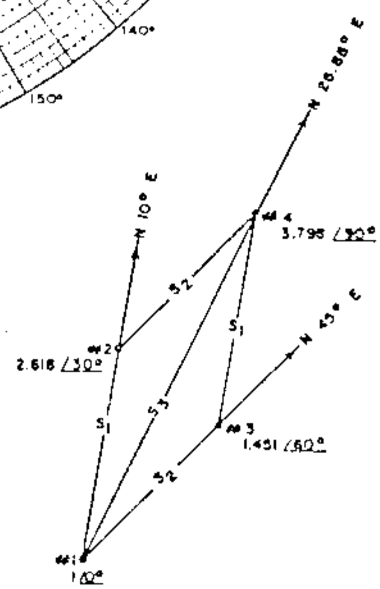


N.LAT. 38° 51' 48"
W.LON. 76° 54' 38"

RSS/RMS = 0.97
RSS_{TH} = 1228 MV/M
RMS_{TH} = 1266 MV/M
RMS_{STD} = 1330 MV/M

H = 90° = 156 FEET
S_1 = 150° = 259 FEET
S_2 = 140° = 242 FEET
S_3 = 276.6° = 478.1 FEET

STANDARD RADIATION PATTERN
HORIZONTAL PLANE
WPGC MORNINGSIDE, MARYLAND
1580 KHz - 50 KW - DA-D
FEBRUARY 1976



Standard Pattern

WPGC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WPGC

Main Studio: Morningside, Maryland

Frequency: 1580 kHz

Power: 10 kW

Notification List No. 1568

Date: February 21, 1974

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 38° 51' 48"
West Longitude: 76° 54' 38"

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:	S(#1)	N(#2)	
HEIGHT ABOVE INSULATORS:	165'	165'	(95.5°)
PHASING:	0°	+52°	
FIELD RATIO:	1.0	0.78	

SPACING AND ORIENTATION: Elements are spaced 233.45' (135°) on a line bearing 20° true.

GROUND SYSTEM: 120-160' equally spaced copper radials plus 120-50' inter-spaced radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

Predicted effective Field: 588 mv/m at rated power.

Note: This notification concerns only a change to add M.E.O.V.s of radiation in the directional antenna pattern.

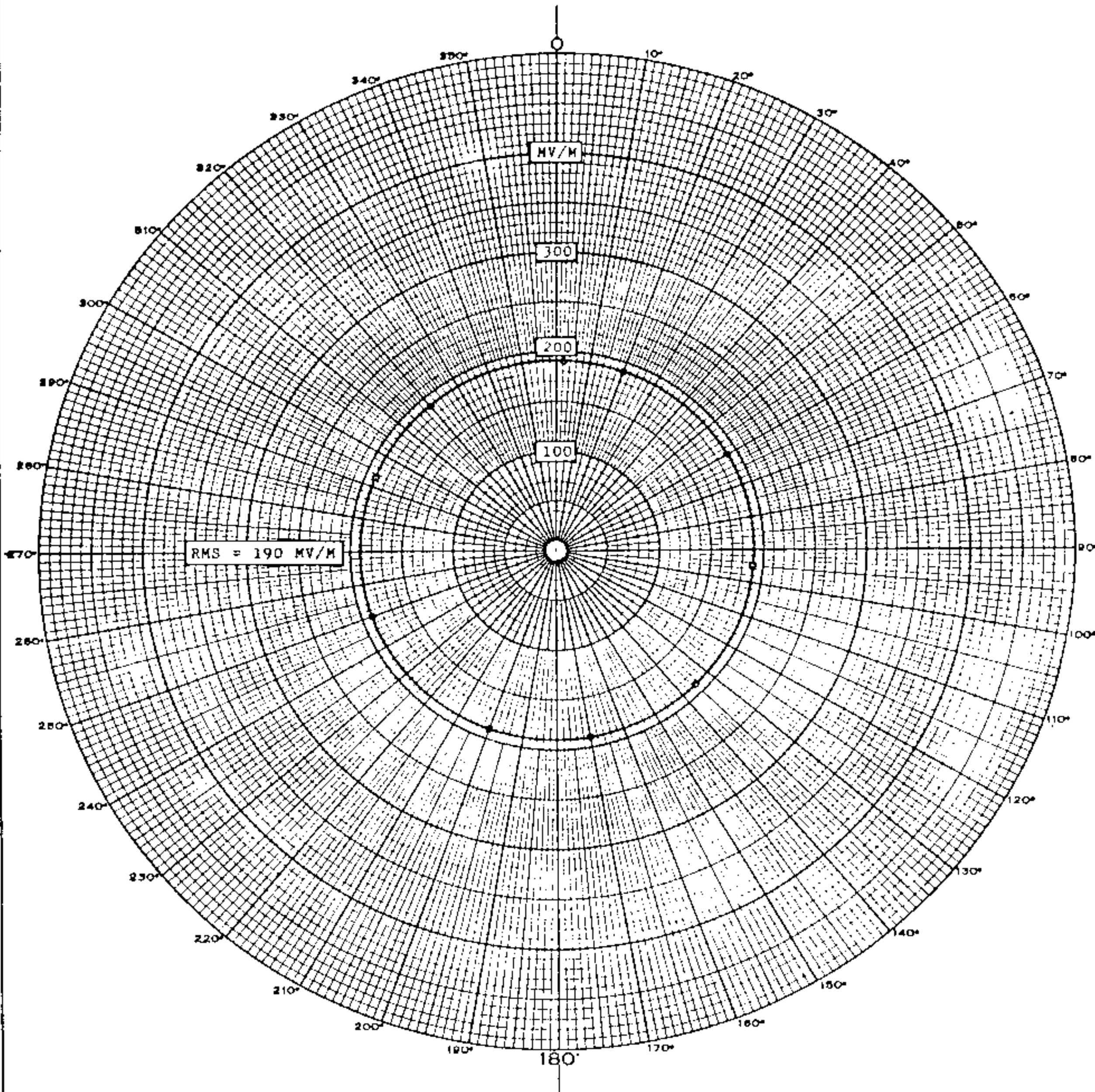
WPGC

MEASURED NON-DA
(6-20-58g)

Station WPGC
Washington, D.C. 1

10kw, DA-D,D
1580 KC

Granted 8/25/58 license for increase in power, & installation of DA antenna



MEASURED NONDIRECTIONAL HORIZONTAL PLANE PATTERN

TOWER NO. 2 (NORTH) EMPLOYED FOR NONDIRECTIONAL OPERATION	WPGC, INC. MORNINGSIDE MARYLAND Vandivere and Cohen Consulting Electronic Engineers	RADIO STATION WPGC 1580 KC 10 KW D DA MAY, 1958

FCC File No. BL-7119
Accepted 5-29-58

WPGC
Morningside, Maryland

1580 KC

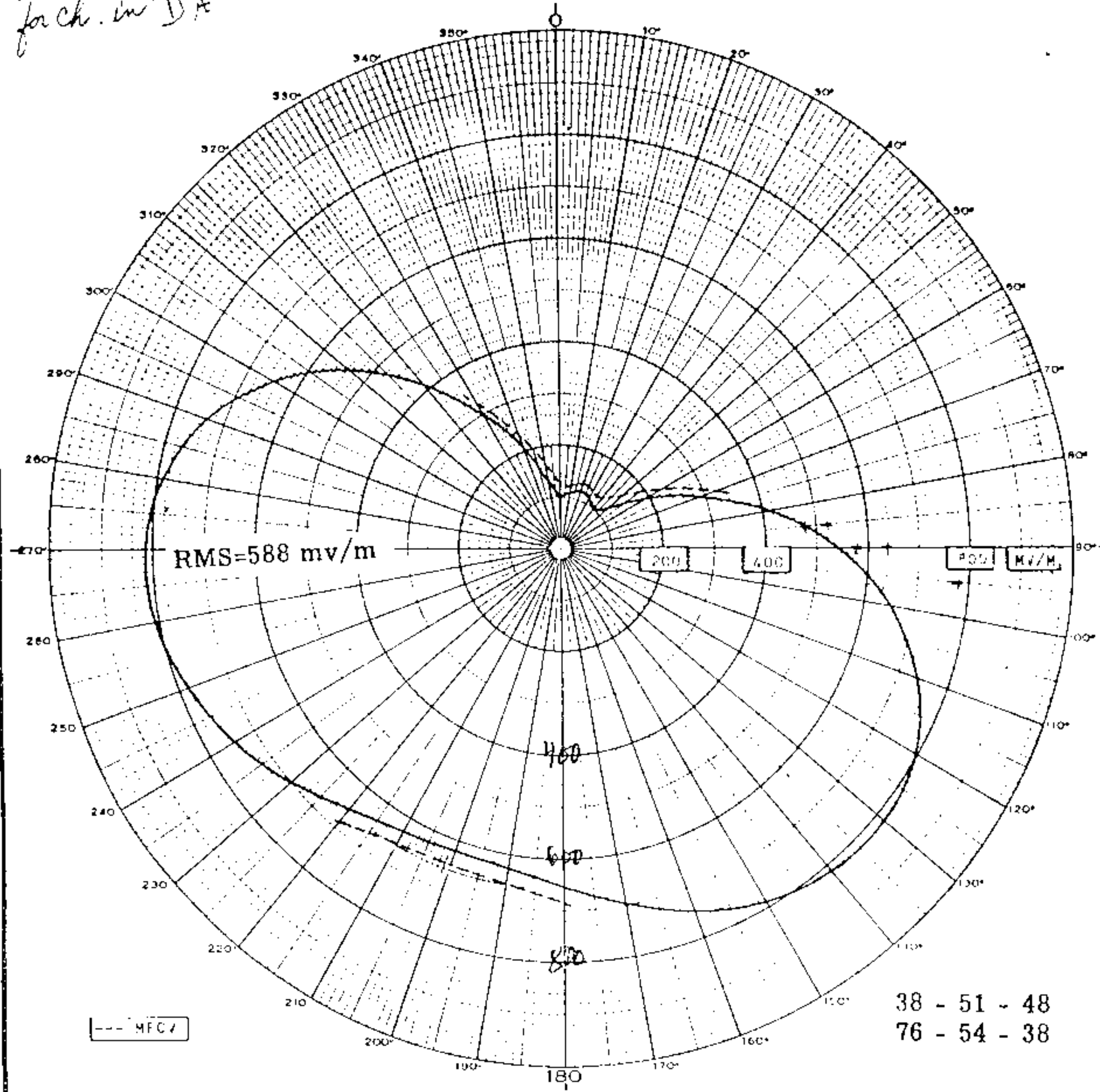
WPGC

PROPOSED DAY
(2/11/57g)

Station WPGC
Morningside, Maryland

10KW,DA-D,D
1580 KC

granted MCP 3/27/57
for ch. in DA



PROPOSED HORIZANTAL PLANE RADIATION PATTERN

20° True (2) 0.78/52° G=95.5° 135° 233.45' (1) 1.0/0°	WPGC, INC MORNINGSIDE MARYLAND Vandivere, Cohen and Wearn Consulting Electronic Engineers	Proposed Operation 1580 KC 10 KW- D,DA January, 1957

FCC File No. BMP-7523
Accepted 1/31/57

WPGC
Morningside, Maryland

1580 KC

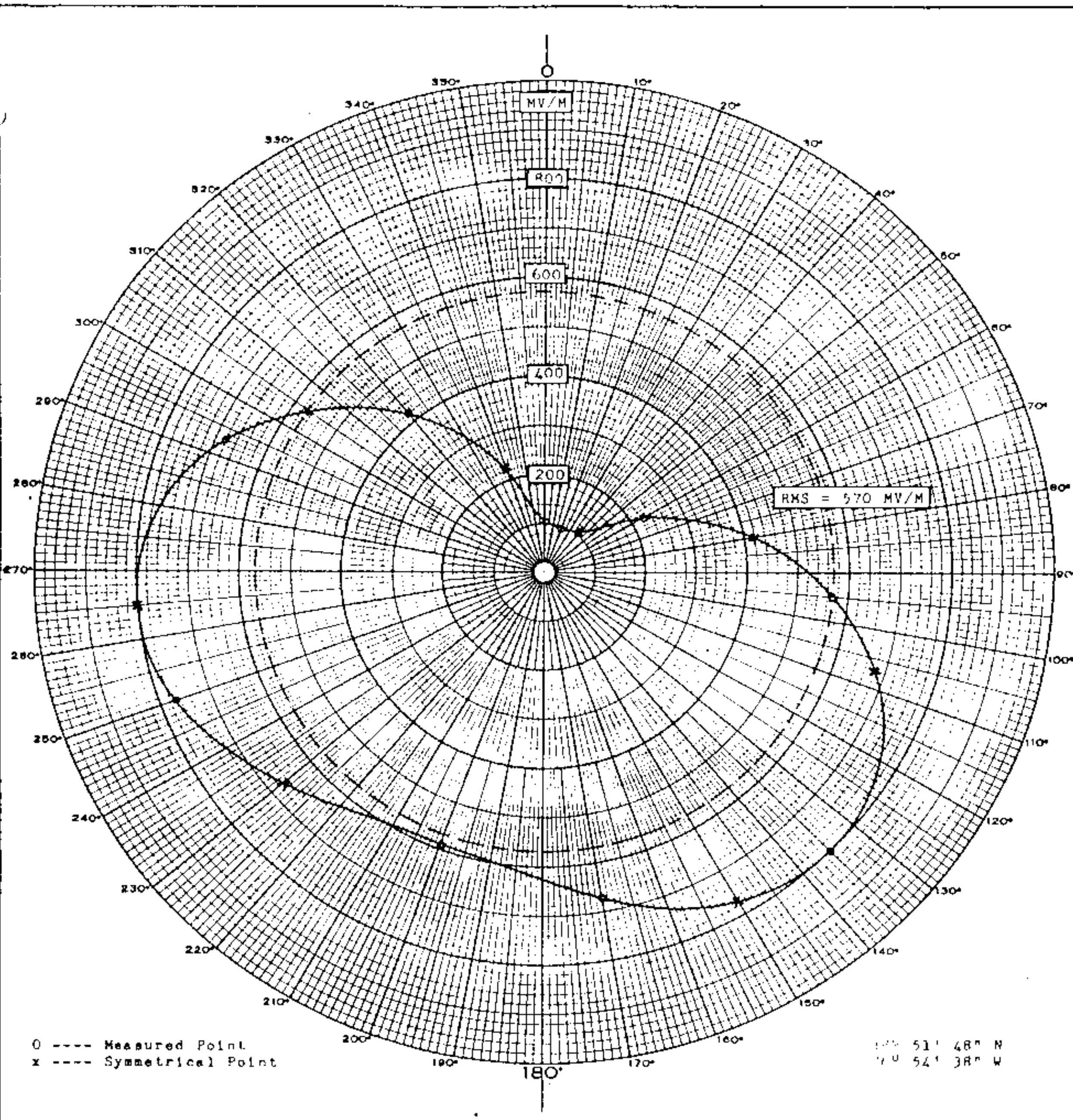
WPGC

MEASURED DAY
(6-20-58g)

Station WPGC 10kw, DA-D,D
Morningside, Maryland 1580 KC

Granted 8/25/58 license for increase in power & installation of DA antenna

Figure 8



MEASURED DIRECTIONAL HORIZONTAL PLANE PATTERN

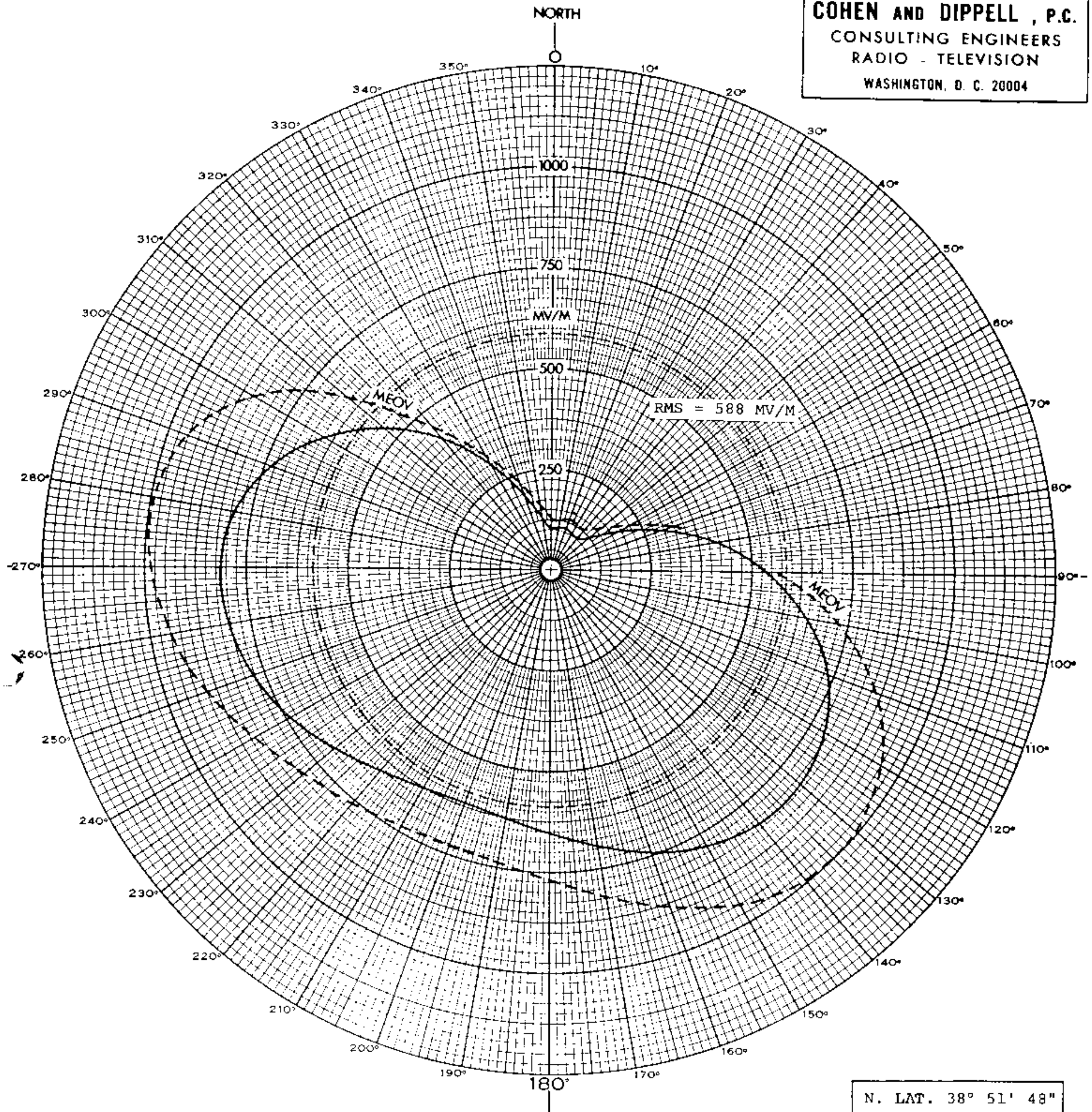
20° TRUE (2) 0.78/52° S = 95.5° 135° 233.45' (1) 1.0/0°	WPGC, INC. MORNINGSIDE MARYLAND Vandivere and Cohen Consulting Electronic Engineers	RADIO STATION WPGC 1580 KC 10 KW D DA MAY, 1958

FCC File No. BL-7119
Accepted 5-29-58

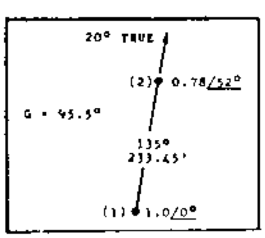
WPGC
Morningside, Maryland 1580 KC

WPGC

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



N. LAT. 38° 51' 48"
W. LON. 76° 54' 38"



HORIZONTAL PLANE RADIATION PATTERN
WPGC, MORNINGSIDE, MARYLAND
1580 KHz - 10 KW - DA-D
OCTOBER 1973

A

WPMP

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WPMP	Main Studio: Pascagoula-Moss Point, Mississippi
Frequency: 1580 kHz	Power 5kw Day
Notification List No. 1774	Date: April 26, 1978 Class: II
GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:	North Latitude: 30° 23' 01" West Longitude: 88° 32' 07"

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:	200 (116°)	360 (208°)
PHASING:	0°	-17°
FIELD RATIO:	1	0.6

SPACING AND ORIENTATION: With the Southeast (#1) tower as reference, the northwest (#2) tower is spaced 316' (183°) on a line bearing 325° true.

GROUND SYSTEM: 120-175' equally spaced copper radials plus a 24' square ground screen about the SE (#1) tower

120-235' equally spaced copper radials plus a 24' square ground screen about the NW(2) tower. Radials are shortened and bonded to a transverse strap along intersections between towers. Centers of system are bonded together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	449 mv/m	525 mv/m	472 mv/m

Note: This notification concerns a change in the antenna system and an increase in power.

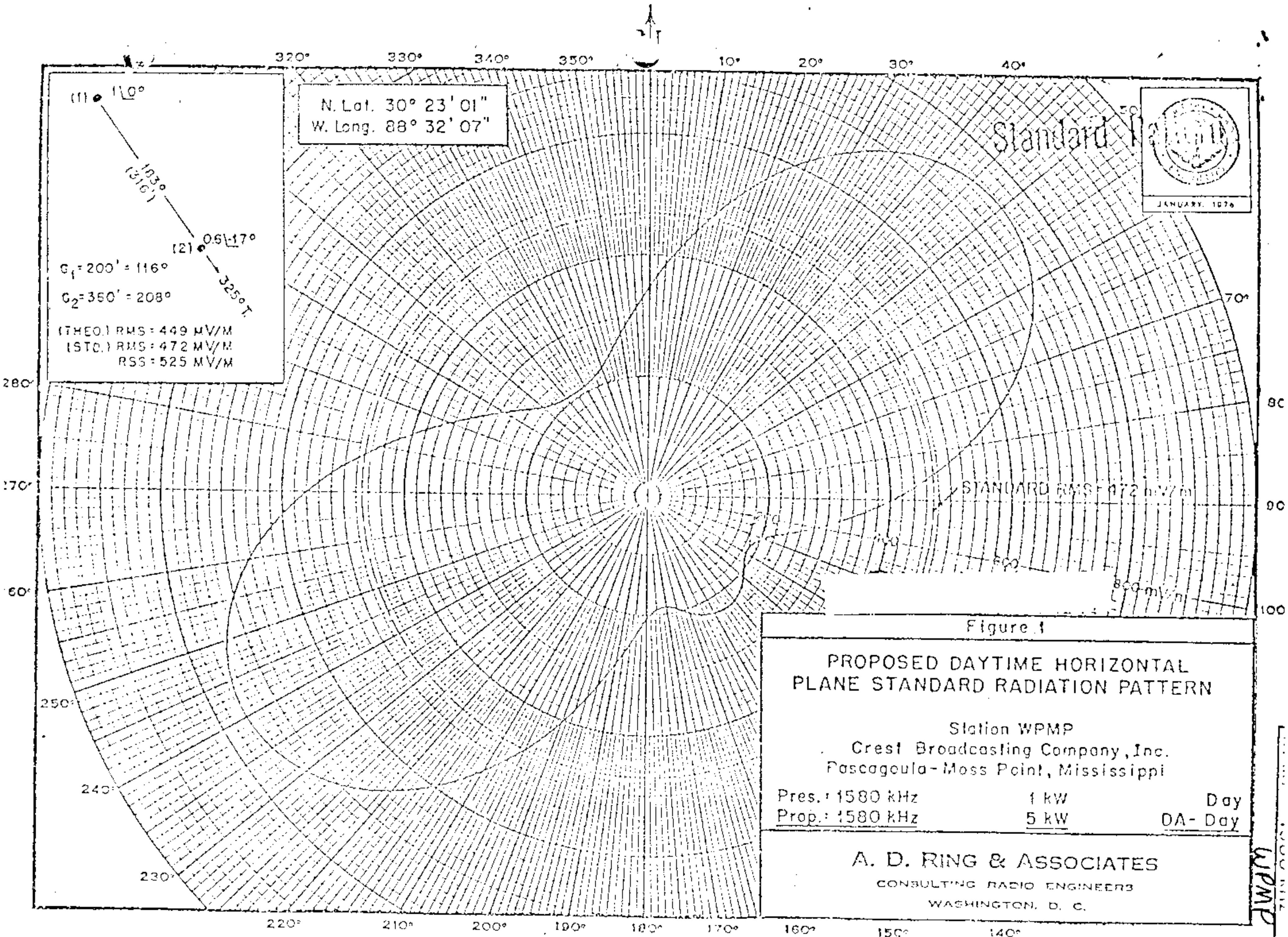


Figure 1

PROPOSED DAYTIME HORIZONTAL
PLANE STANDARD RADIATION PATTERN

Station WPMP
Crest Broadcasting Company, Inc.
Pascagoula-Moss Point, Mississippi

Pres.: 1580 kHz	1 kW	Day
Prop.: 1580 kHz	5 kW	DA-Day

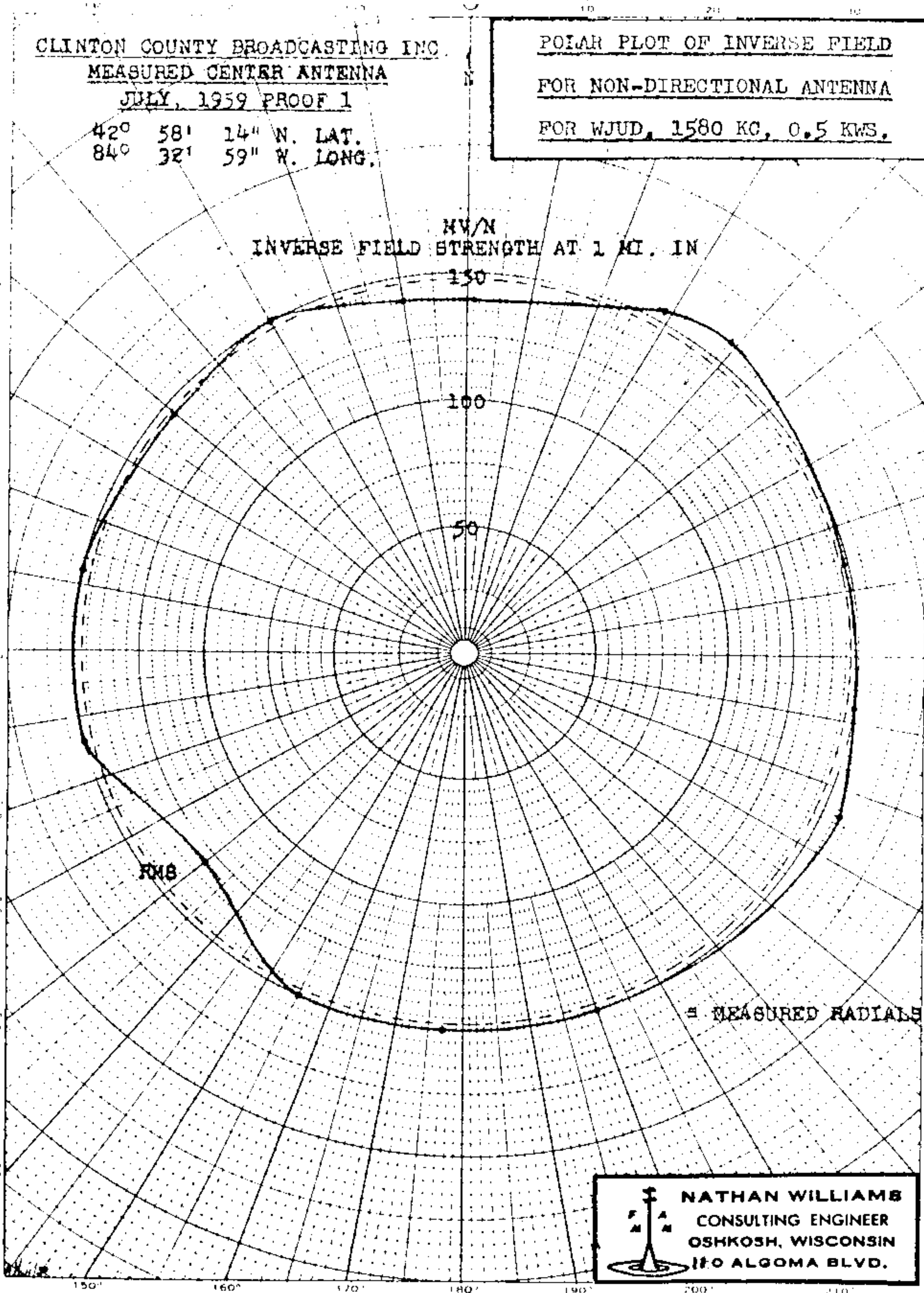
A. D. RING & ASSOCIATES
CONSULTING RADIO ENGINEERS
WASHINGTON, D. C.

WRBJ

MEASURED NON-DA
(12-21-59g)

Station WJUD
St. Johns, Michigan

1kw, DA-D, D
1580 KC



Granted license 8-5-60

FCC File No. BL-7725
Accepted 11-30-59

WJUD
St. Johns, Michigan

1580 KC

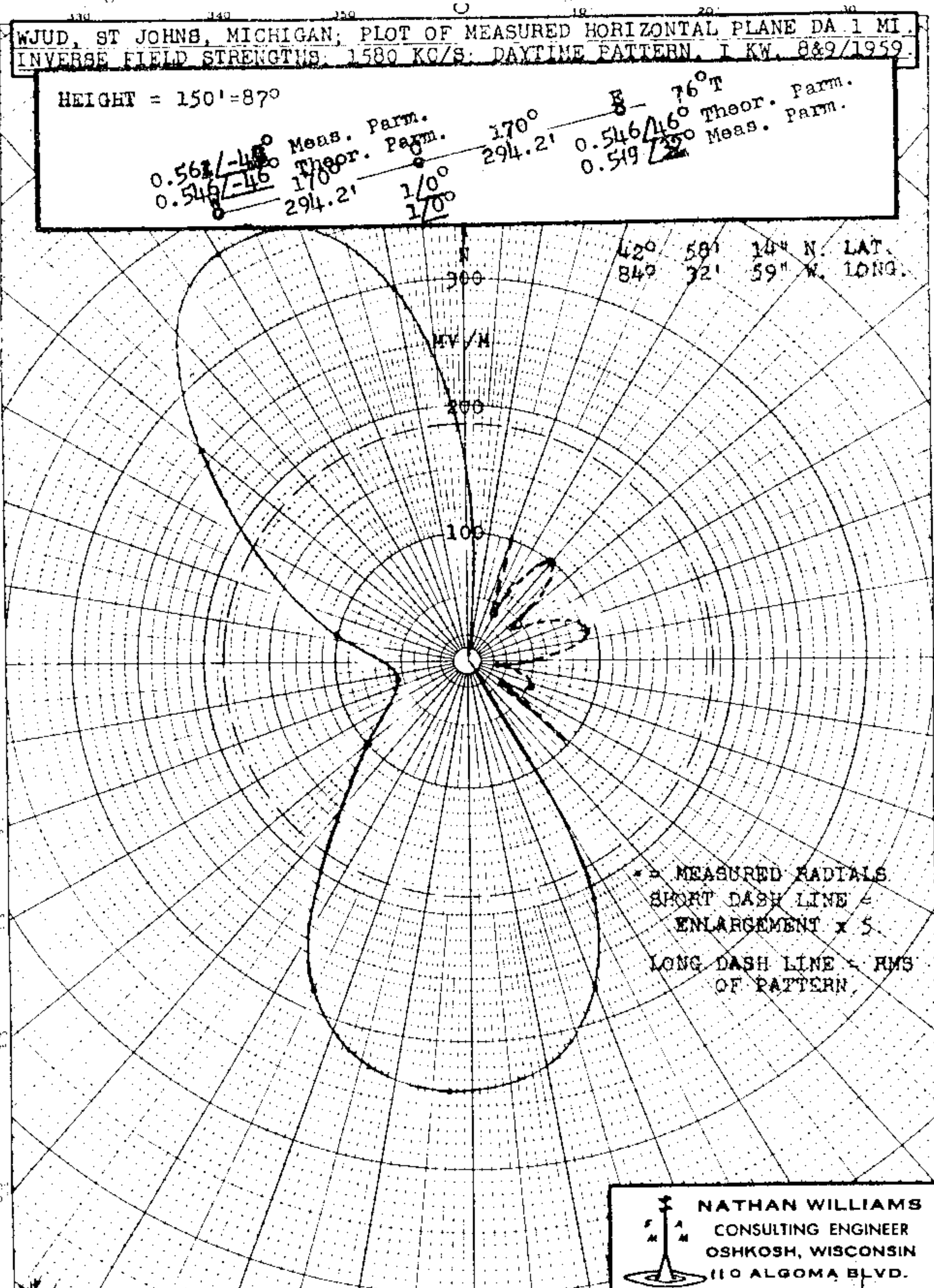
WRBJ

MEASURED DAY
(12-21-59g)

Station WJUD
St. Johns, Michigan

1kw, DA-D, D
1580 KC

WJUD, ST JOHNS, MICHIGAN; PLOT OF MEASURED HORIZONTAL PLANE DA 1 MI. INVERSE FIELD STRENGTHS. 1580 KC/S. DAYTIME PATTERN. 1 KW. 8&9/1959.



Granted license 8-5-60

FCC File No. BL-7725
Accepted 11-30-59

WJUD
St. Johns, Michigan

1580 KC

WRBJ

Proposed Day
(7-27-62ct)

Station WJUD
St. Johns, Michigan

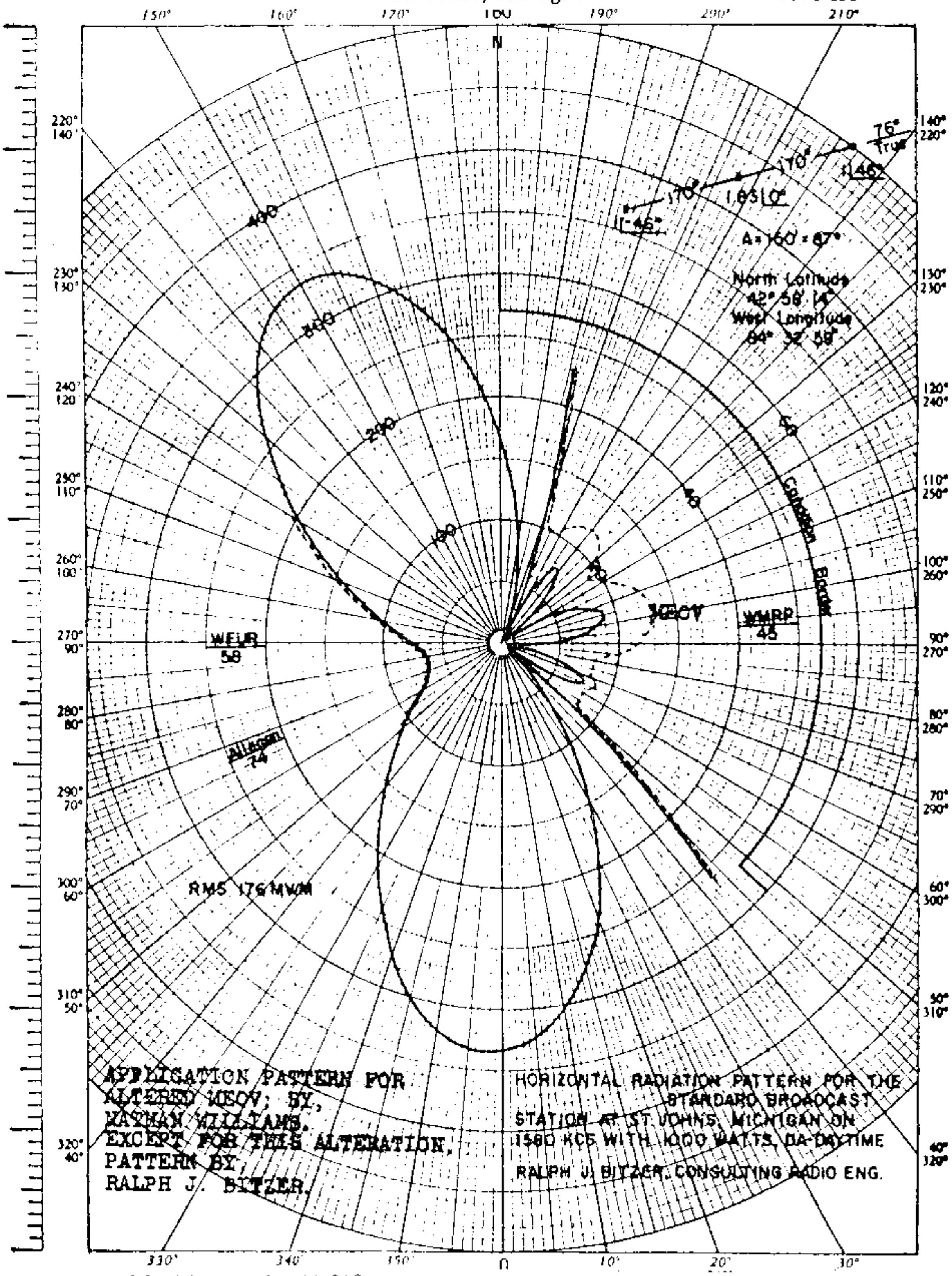
1kw,DA-D,D
1580 kc

CLINTON COUNTY BROADCASTING INC.
PROPOSED DAY

EXISTING STATION WJUD
1kw, DA-D,D

St. Johns, Michigan

1580 KC



FCC File No. BP-11,918

(Amended) St. Johns, Michigan

1580 KC

FCC File No.BP-15039
Granted 3-2-62

Station WJUD
St. Johns, Michigan

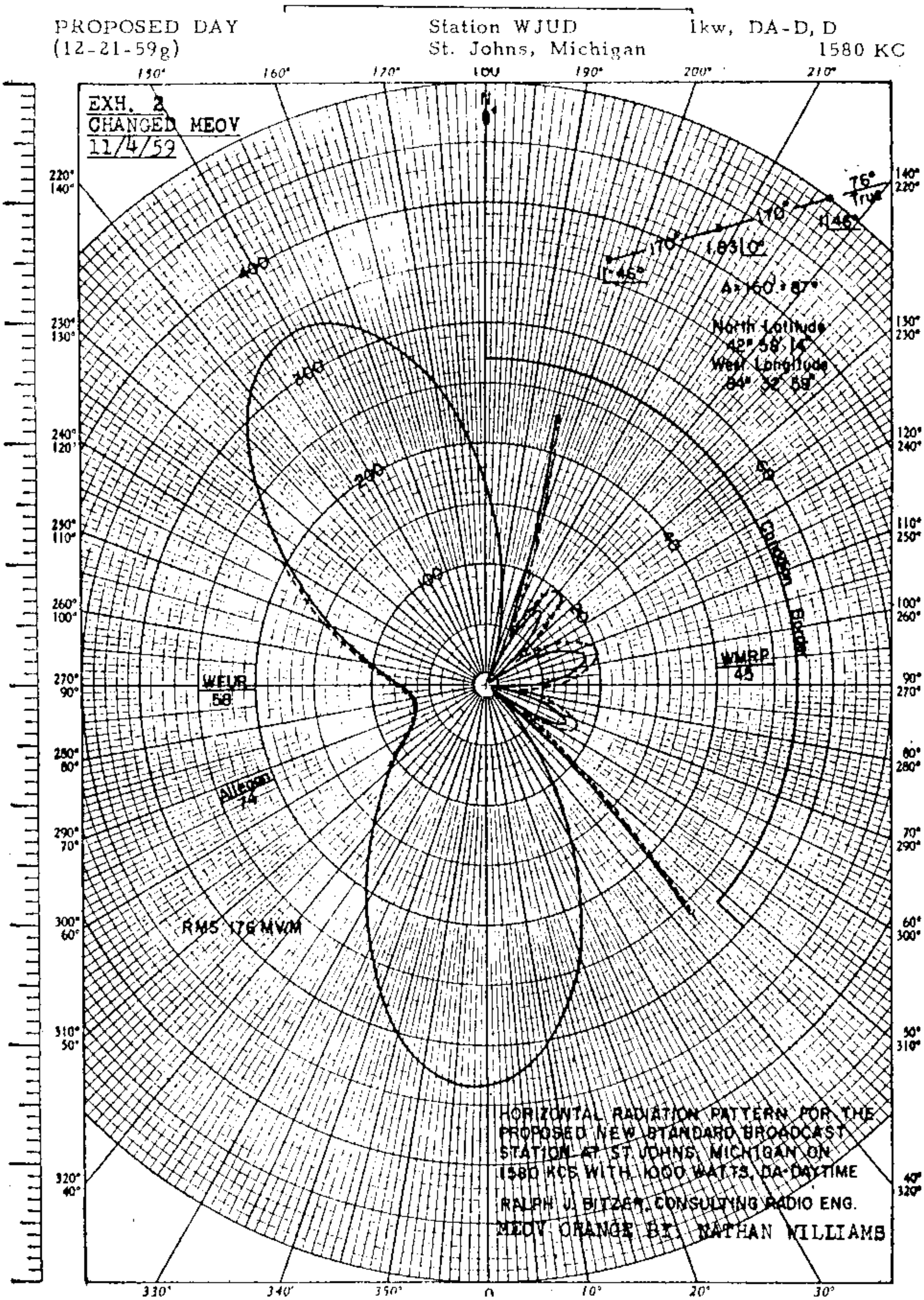
1580 kc

WRBJ

PROPOSED DAY
(12-21-59g)

Station WJUD
St. Johns, Michigan

1kw, DA-D, D
1580 KC



Granted MCP to change DA pattern 2-26-60

Granted license 8-5-60

FCC File No. BMP-8806
Accepted 12-8-59

WJUD
St. Johns, Michigan

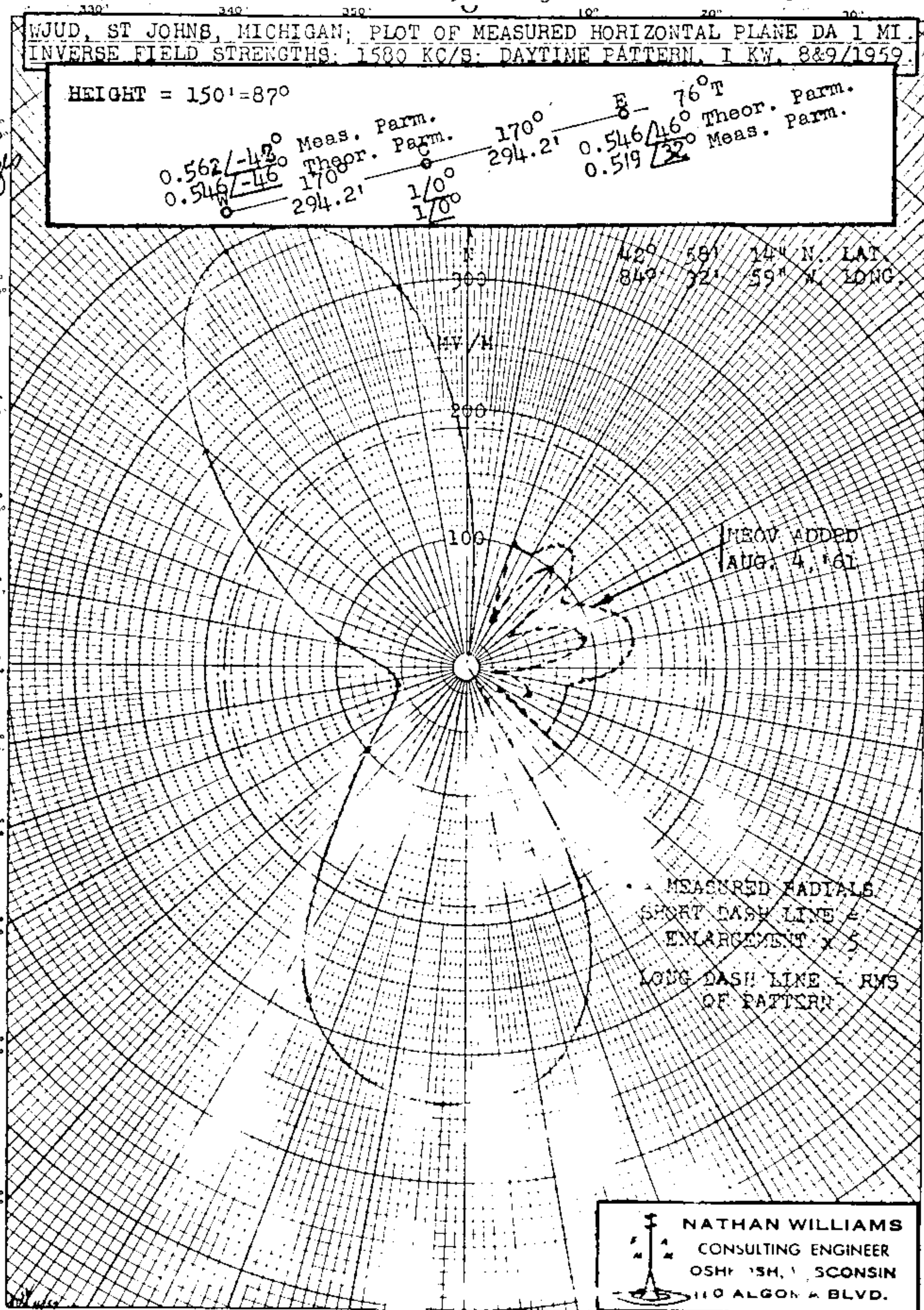
1580 KC

WRBJ

PROPOSED
~~MEASURED~~ DAY
(9-20-61ct)

Station WJUD 1k
St. Johns, Michigan 1580 kc

5-2-62 granted CP to make changes in day DA.



FCC File No.BP-15039
Accepted 8-25-61

Station WJUD
St. Johns, Michigan 1580 kc

WSKF

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WSRF

Main Studio: Fort Lauderdale, Florida

Frequency: 1580 kHz

Power: 5 kW Night 10 kW Day

Notification List No. 1624

Date: March 18, 1975

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 26° 04' 54"
West Longitude: 80° 13' 34"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-2)
Number of elements: 7
Type of elements: Series-excited, uniform cross-section, guyed, vertical steel tower.

TOWER:	SW(#2)	W(#1)	NW(#3)	WC(#4)	C(#5)	EC(#6)	E(#7)
HEIGHT ABOVE INSULATORS:	All towers 184' (107°)						
NIGHT PHASING:	---	-51.2°	-30.1°	+161.28°	+9.6°	-143.3°	+51.2°
NIGHT FIELD RATIO:	---	0.324	0.106	1.386	2.398	2.090	1
DAY PHASING:	+123°	0°	-123	---	---	---	---
DAY FIELD RATIO:	1.0	1.9563	1.0	---	---	---	---

SPACING AND ORIENTATION: Elements #2, #1 and #3 are spaced 156' (90°) on a line bearing 215° true. Elements #1, #4, #5, #6 and #7 are spaced 173' (100°) on a line bearing 92° true.

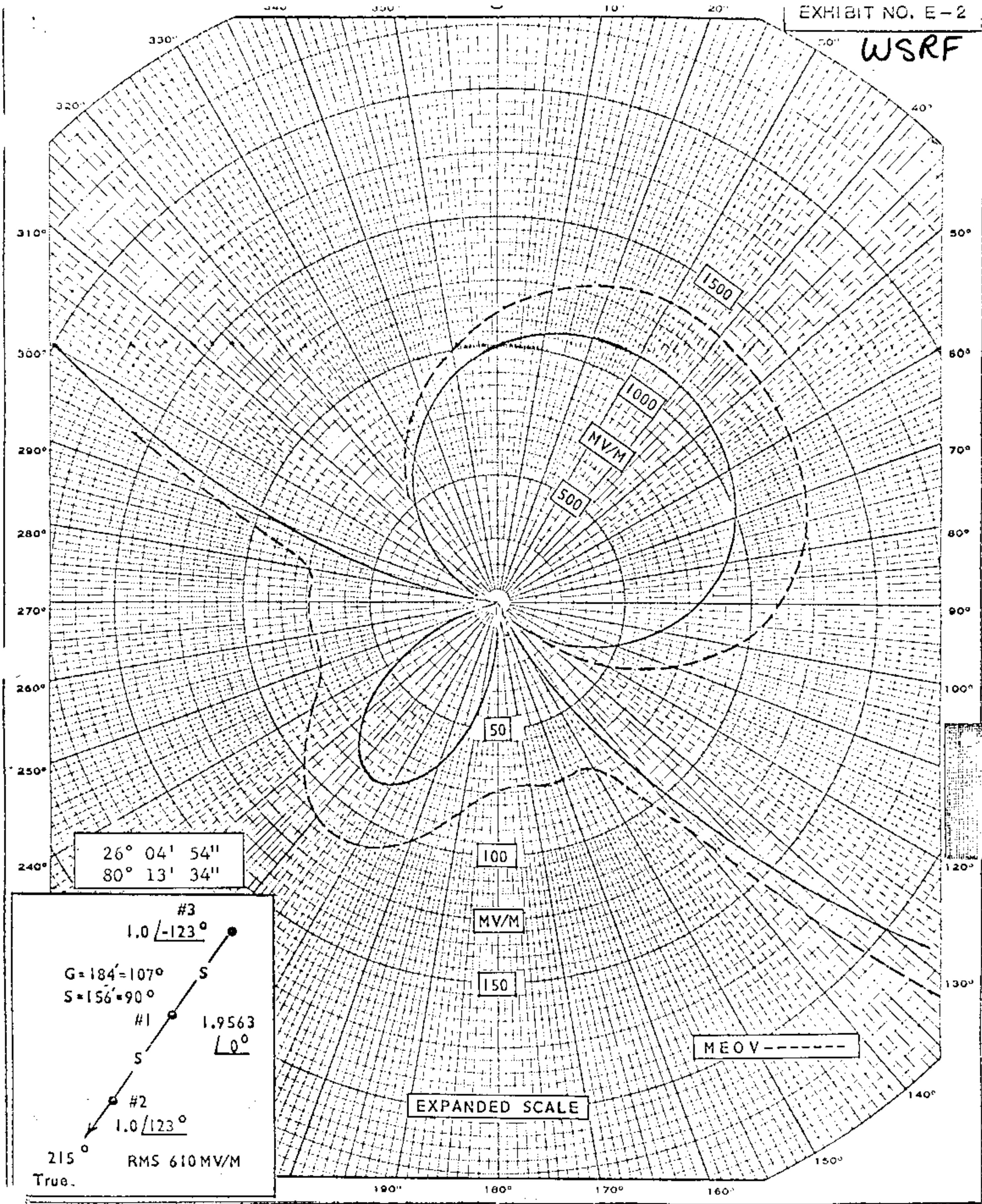
GROUND SYSTEM: 120-156' equally spaced copper radials plus a 48' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towers. Centers of systems are bonded together.

Predicted effective Night Field: 435 mv/m at rated power.

Predicted effective Day Field: 610 mv/m at rated power.

Note: This notification concerns only changes in meovs of radiation in the directional antenna patterns.

CTR NO 30575A3



EDWARD F. LORENTZ & ASSOCIATES
Consulting Radio Engineers
Washington, D.C.

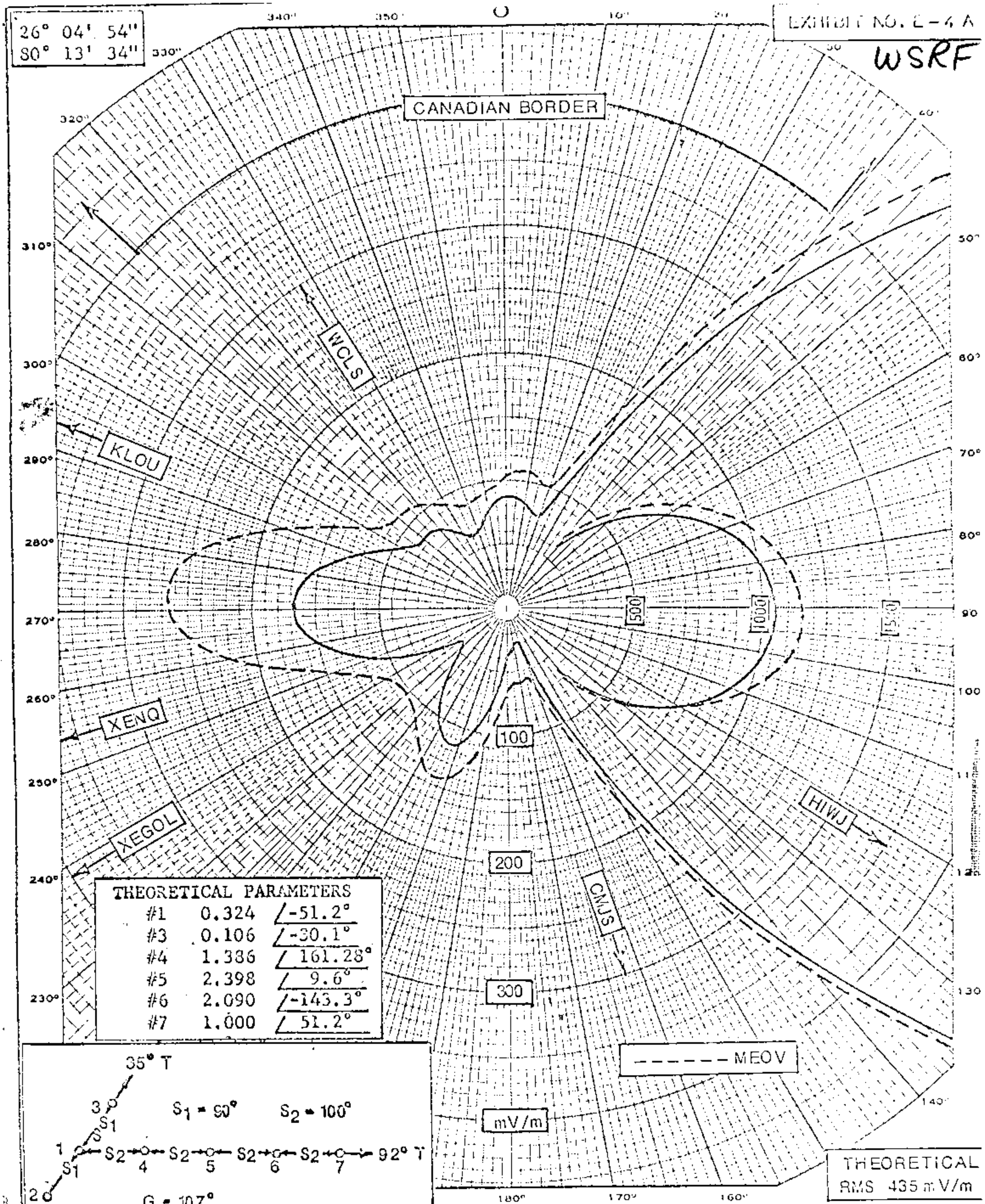
DAYTIME HORIZONTAL PLANE PATTERN
WSRF, FT. LAUDERDALE, FLORIDA
1580 KHz, 10 KW-D / 5 KW-N, DA-2

10/74

EXHIBIT NO. E-4 A

WSRF

26° 04' 54"
80° 13' 34"



THEORETICAL PARAMETERS

#1	0.324	∠-51.2°
#3	0.106	∠-30.1°
#4	1.336	∠161.28°
#5	2.398	∠9.6°
#6	2.090	∠-143.3°
#7	1.000	∠51.2°

EDWARD F. LORENTZ & ASSOCIATES
Consulting Radio Engineers
Washington, D.C.

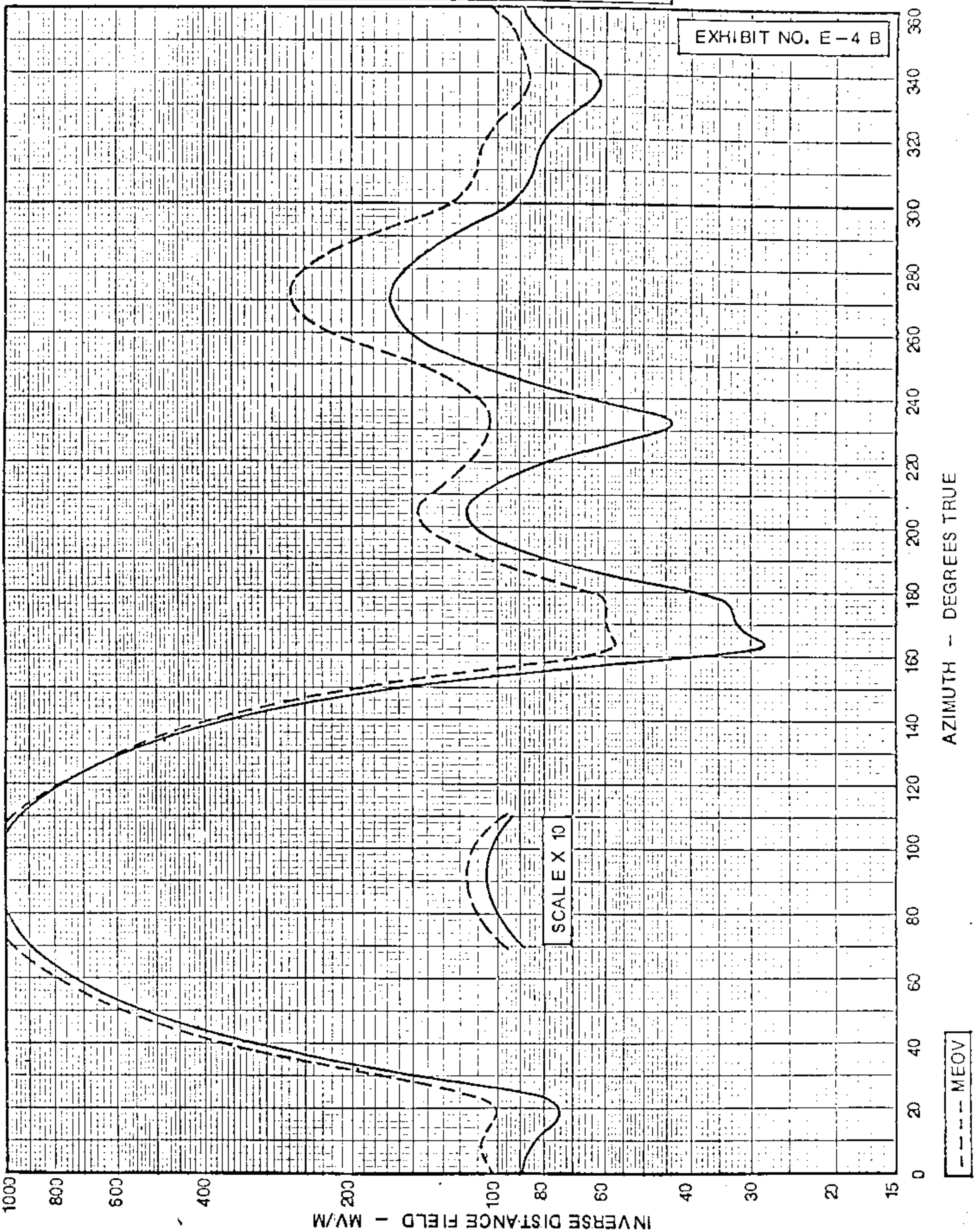
NIGHTTIME HORIZONTAL PLANE PATTERN
WSRF, FT. LAUDERDALE, FLORIDA
1580 KHz, 10 KW-D / 5 KW-N, DA-2

10/7-

EDWARD F. LORENTZ & ASSOCIATES
CONSULTING RADIO ENGINEERS WASHINGTON, D. C.

WSRF

HORIZONTAL RADIATION PATTERN
WSRF, FT. LAUDERDALE, FLORIDA



WSRF

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WSRF

Main Studio: Fort Lauderdale, Florida

Frequency: 1580 kHz

Power: 5 kW Night 10 kW Day

Notification List No. 1571

Date: March 14, 1974

Class: II

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 26° 04' 54"
West Longitude: 80° 13' 34"

ANTENNA CHARACTERISTICS

~~Authorized~~ for Daytime and Nighttime operation. (DA-2)
Number of elements: 7
Type of elements: Series-excited, uniform cross-section, guyed vertical steel towers.

TOWER:	W(#1)	SW(#2)	NW(#3)	WC(#4)	C(#5)	EC(#6)	E(#7)
HEIGHT ABOVE INSULATORS:	all towers 184' (107°)						
NIGHT PHASING:	-51.2°	-	-30.1°	+161.28°	+9.6°	-143.3°	+51.2°
NIGHT FIELD RATIO:	0.324	-	0.106	1.386	2.398	2.090	1.000
DAY PHASING:	0°	+123°	-123°	-	-	-	-
DAY FIELD RATIO:	1.9563	1.0	1.0	-	-	-	-

SPACING AND ORIENTATION: Adjacent elements #1, #4, #5, #6, and #7 are spaced 173' (100°) on a line bearing 92° true. Adjacent elements #2, #1 and #3 are spaced 156' (90°) on a line bearing 35° true.

GROUND SYSTEM: 120-156' equally spaced copper radials plus a 48' square ground screen about each tower. Radials are shortened and bonded to transverse straps along intersections between towers. Centers of systems are bonded together.

Predicted effective Night Field: 435 mv/m at rated power.

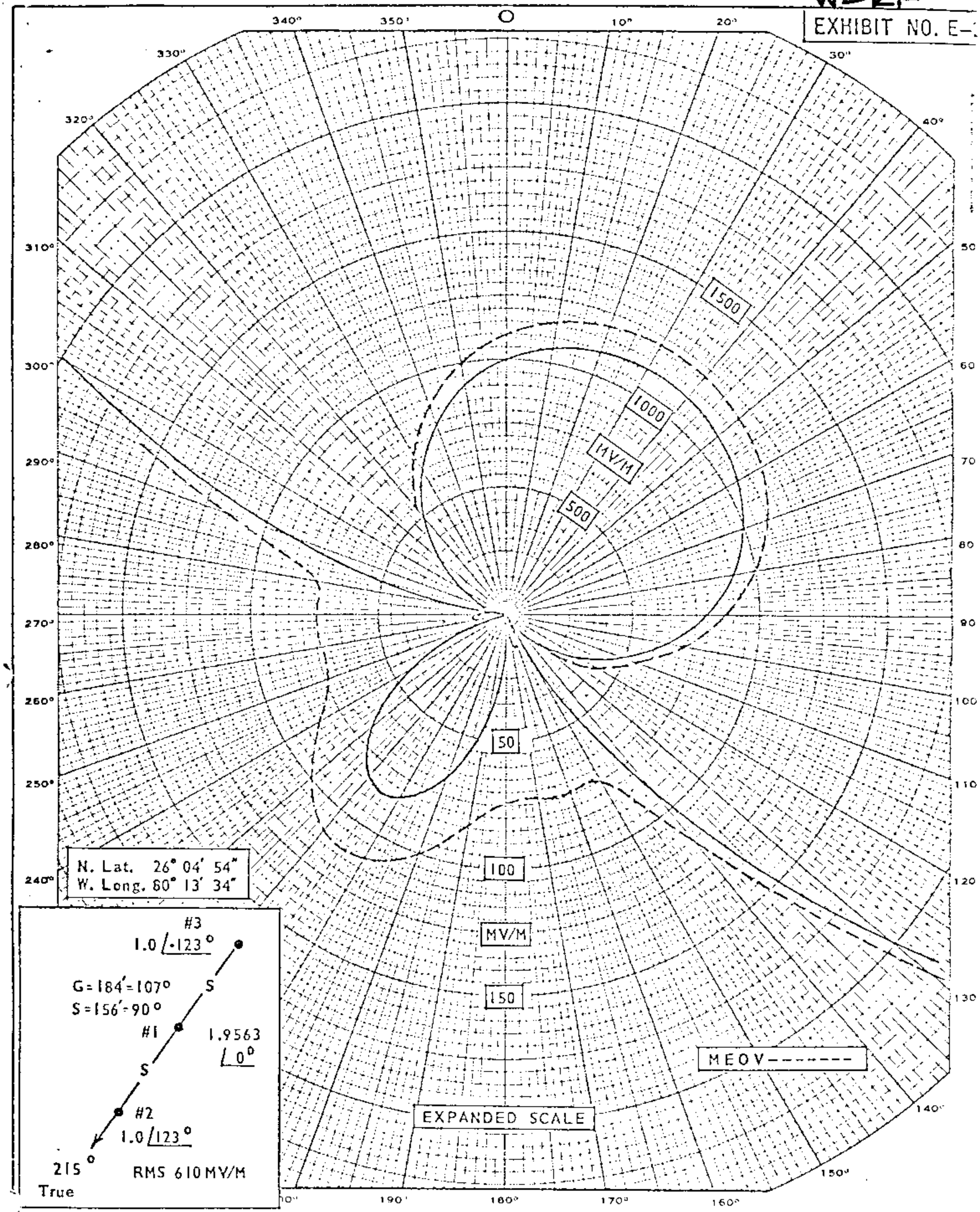
Predicted effective Day Field: 610 mv/m at rated power.

Note: Please retain the Nighttime directional antenna radiation patterns notified for Station WSRF in United States Change Lists Numbers 1225 dated July 19, 1967 and 1285 dated September 11, 1968 and attach to this Revised Description Sheet and Daytime pattern. This notification concerns only a change in the Daytime operation of the station with Nighttime operation continued as previously notified.

CTR NO 30575

WSRF

EXHIBIT NO. E-



EDWARD F. LORENTZ & ASSOCIATES
Consulting Radio Engineers
Washington, D.C.

DAYTIME HORIZONTAL PLANE PATTERN.

WSRF FT. LAUDERDALE, FLORIDA
1580 kHz 5 Kw/10 Kw-LS DA-2

WSRF

Measured Night
(1-28-69ct)

Station WSRF
Fort Lauderdale, Florida

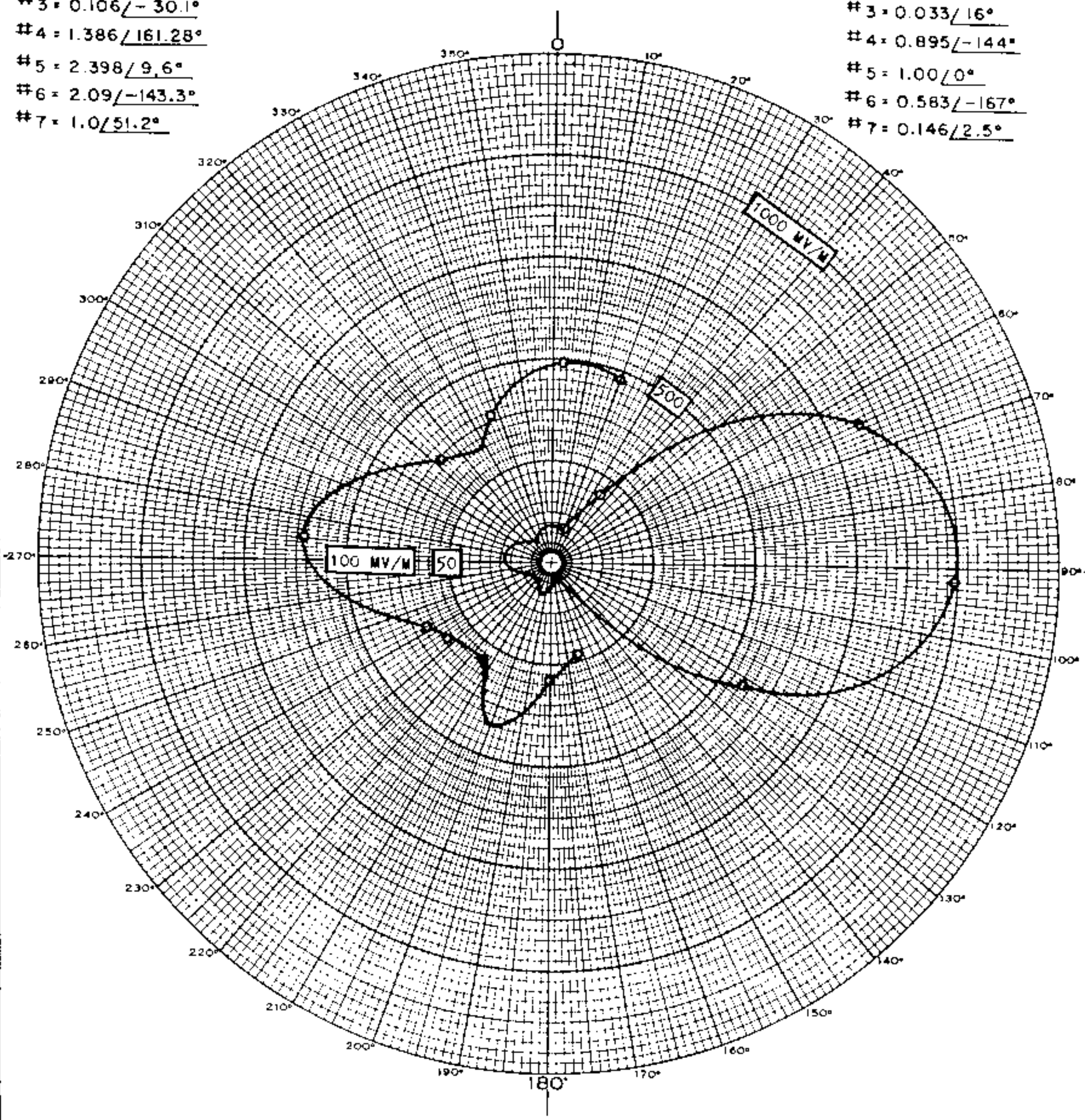
5kw,10kw-LS,DA-2,U
1580 kc

THEORETICAL PARAMETERS

#1 = 0.324/-51.2°
#3 = 0.106/-30.1°
#4 = 1.386/161.28°
#5 = 2.398/9.6°
#6 = 2.09/-143.3°
#7 = 1.0/51.2°

MEASURED PARAMETERS

#1 = 0.300/16°
#3 = 0.033/16°
#4 = 0.895/-144°
#5 = 1.00/0°
#6 = 0.583/-167°
#7 = 0.146/2.5°



E_{RMS} = 399 MV/M

⊙ MASURED RADIAL

LATITUDE: 26° 04' 54"
LONGITUDE: 80° 13' 34"

JOHN H. MULLANEY
AND
ASSOCIATES

ANTENNA PARAMETERS

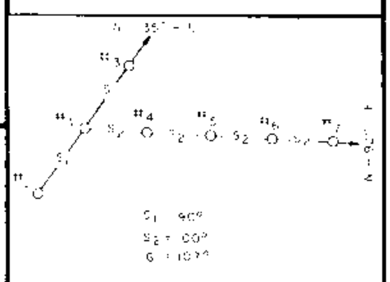


FIGURE 17

MEASURED NIGHTTIME
DIRECTIONAL PATTERN

RADIO STATION WSRF
FORT LAUDERDALE, FLA.

1580 KHz 5/10 KW-LS, DA-2

FCC File No.BL-12232
Accepted 1-14-69

Station WSRF
Fort Lauderdale, Florida

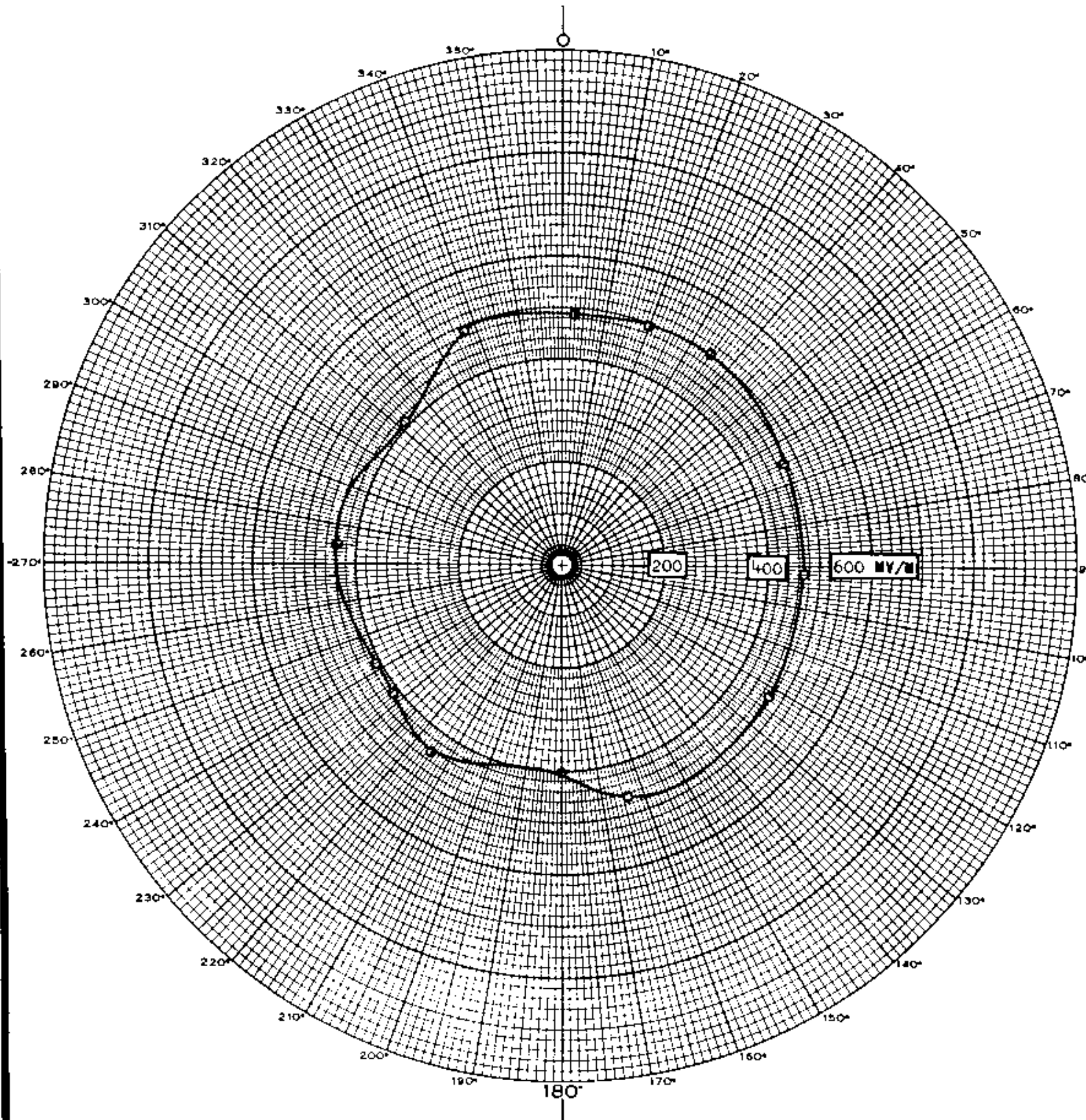
1580 kc

WSRF

Measured Non-DA
(1-28-69ct)

Station WSRF
Fort Lauderdale, Florida

5kw,10kw-LS,DA-2,U
1580 kc



E_{RMS} = 450 MV/M

o RADIAL VALUES

LATITUDE: 26° 04' 54" LONGITUDE: 80° 13' 34"	ANTENNA PARAMETERS	FIGURE 16 MEASURED NONDIRECTIONAL PATTERN RADIO STATION WSRF FORT LAUDERDALE, FLA.
JOHN H. MULLANEY AND ASSOCIATES		1580 KHz 5/10 KW-LS, DA-2

FCC File No.BL-12232
Accepted 1-14-69

Station WSRF
Fort Lauderdale, Florida

1580 kc

WSRF

Proposed Night
(7-26-67ct)

Station WSRF
Ft. Lauderdale, Florida

5kw,10kw-LS,DA-2,U
1580 kc

7-13-67
GRANTED
CP
changes in
nighttime DA
SYSTEM

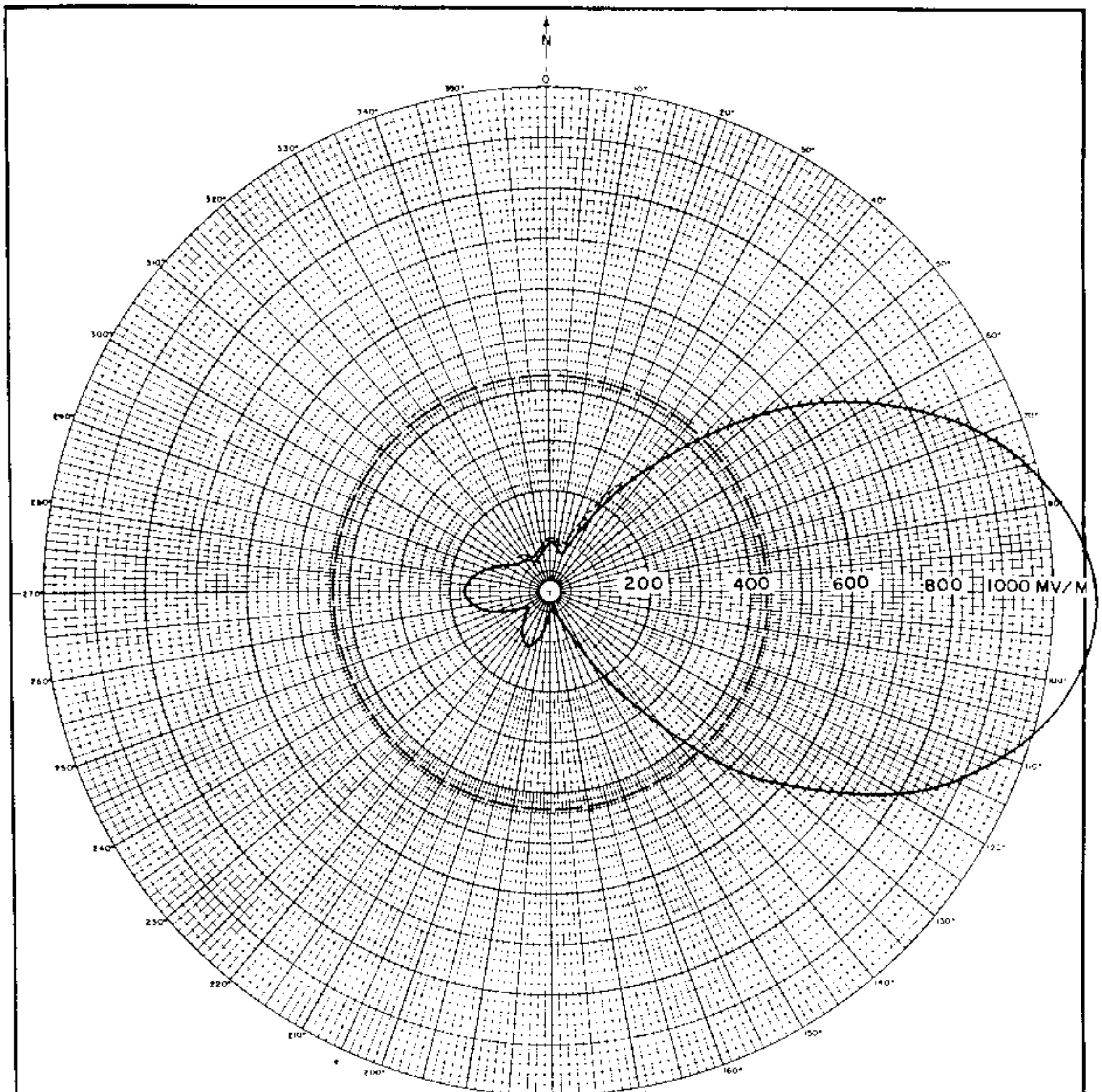
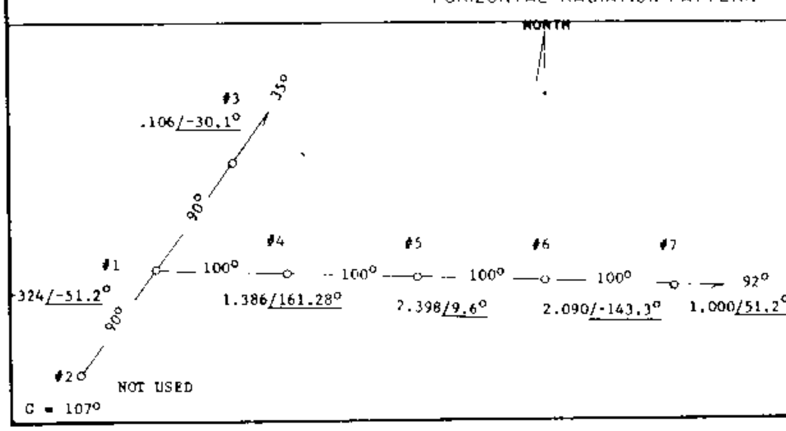


FIGURE I-A

HORIZONTAL RADIATION PATTERN



APPLICANT	WSRF
LOCATION	Ft. Lauderdale, Florida
FREQUENCY	1580 KC/S
POWER	5 KW
LATITUDE	26 DEG 04 MIN 54 SEC
LONGITUDE	80 DEG 13 MIN 42 SEC
WHEN USED	Nighttime
R.M.S. FIELD	435 MV/M
DATE	March 1967

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

FCC File No.BP-17768
Accepted 6-29-67

Station WSRF
Ft. Lauderdale, Florida

1580 kc

WSKF

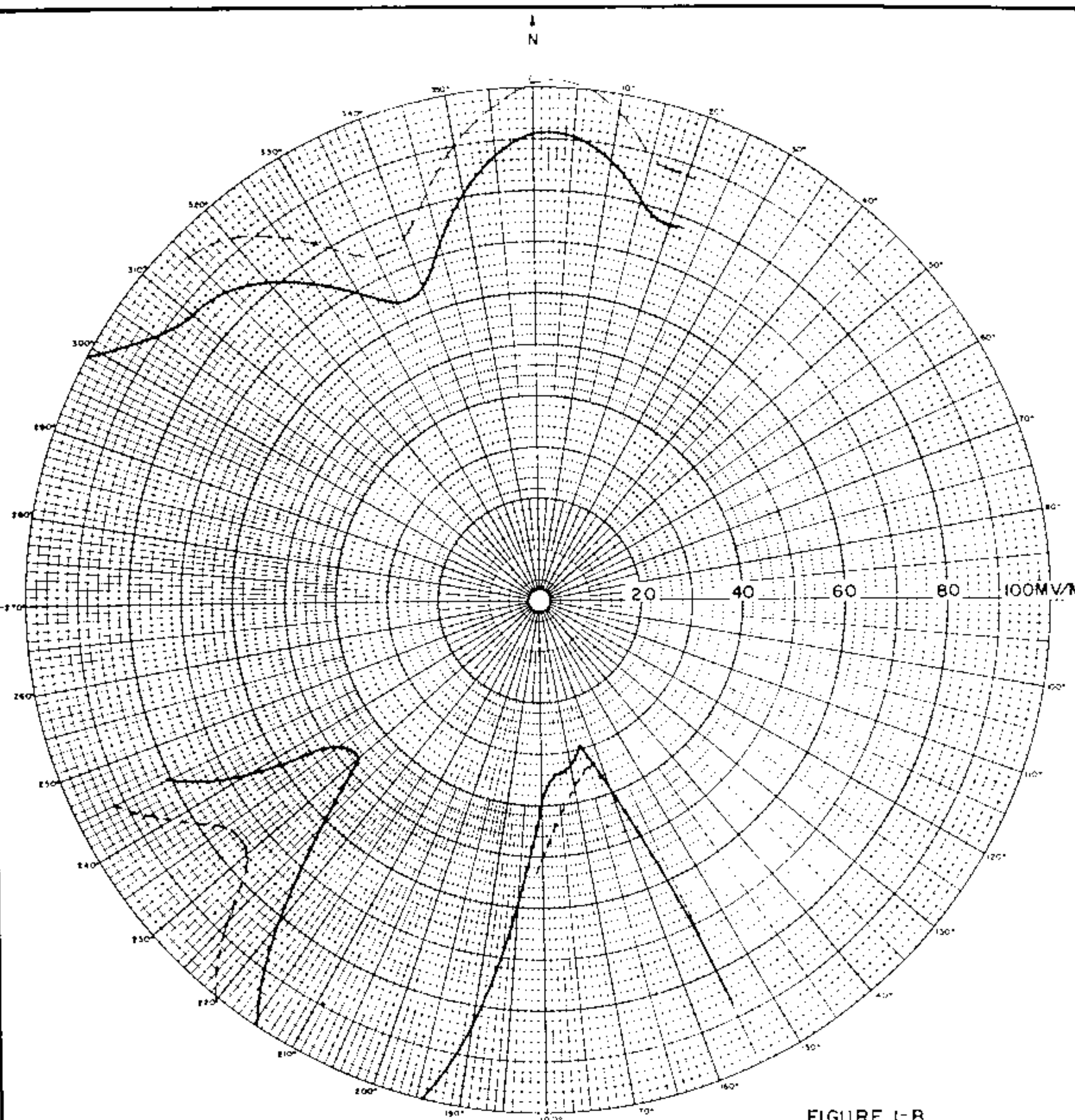
Proposed Night Nulls
(7-26-67ct)

Station WSRF
Ft. Lauderdale, Florida

5kw,10kw-LS,DA-2,U
1580 kc

7-13-67 REPRINTED CP for [illegible] night DA system

SEE SEMI-LOG PLOT FOR MEOV



MEOV_ _ _ _

FIGURE I-B

EXPANDED VIEW

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

FCC File No.BP-17768
Accepted 6-29-67

Station WSRF
Ft. Lauderdale, Florida

1580 kc

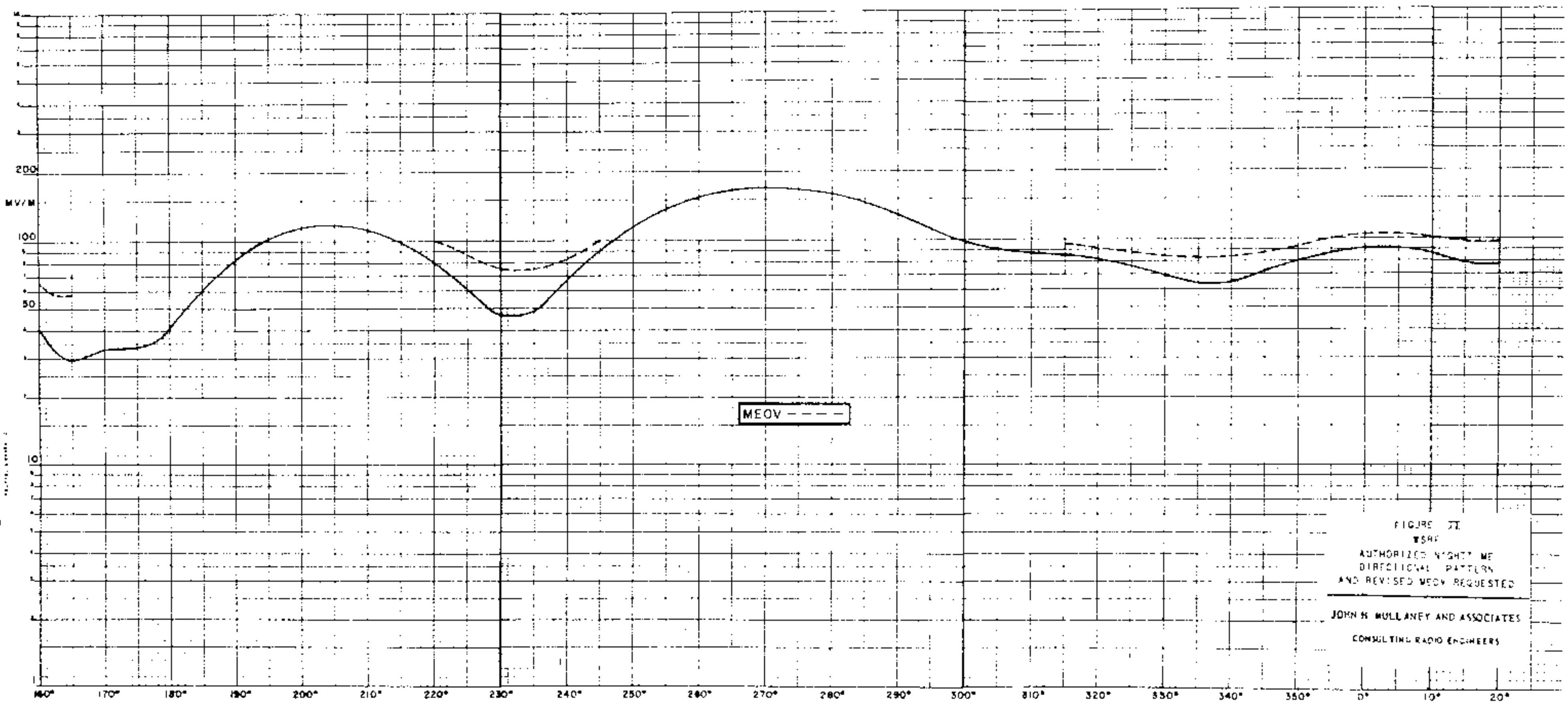
9/5/68
GRANTED Mod of C.P
TO INCREASE MEOV

WSRF

Proposed Night Nulls
(9-26-68ct)

Station WSRF
Ft. Lauderdale, Florida

5kw,10kw-LS,DA-2,U
1580 kc



FCC File No.BMP-12478
Accepted 9-3-68

Station WSRF
Ft. Lauderdale, Florida

1580 kc

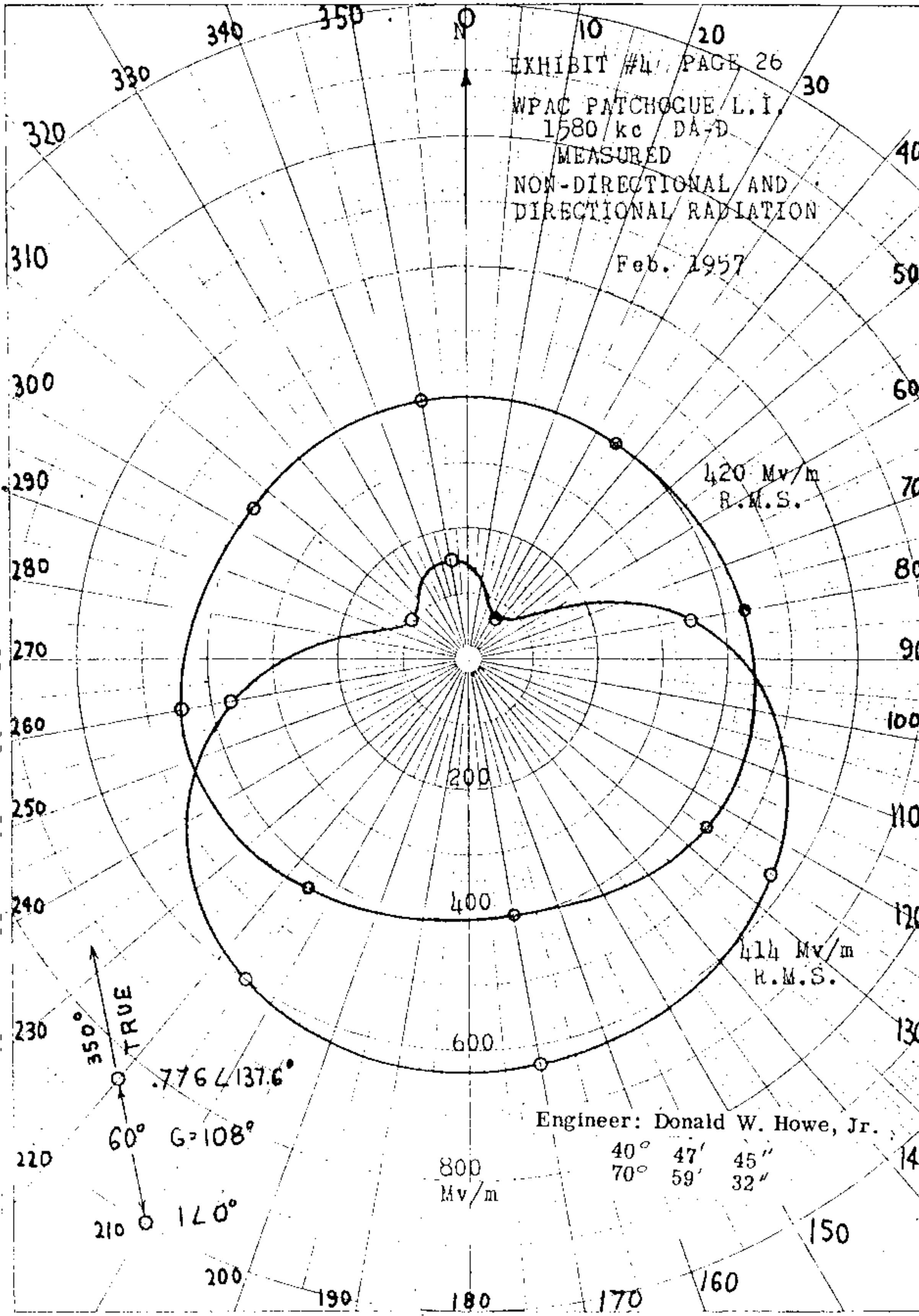
WSUF

MEASURED NON-DA (5/17/57g)

Station WPAC
Patchogue, New York

5kw, DA-D,D
1580 KC

Granted license 5/3/57 for increased power - DA antenna



FCC File No. BL-6620
Accepted 5/3/57

WPAC
Patchogue, New York

1580 KC

WSUF

MEASURED DAY (5/17/57g)

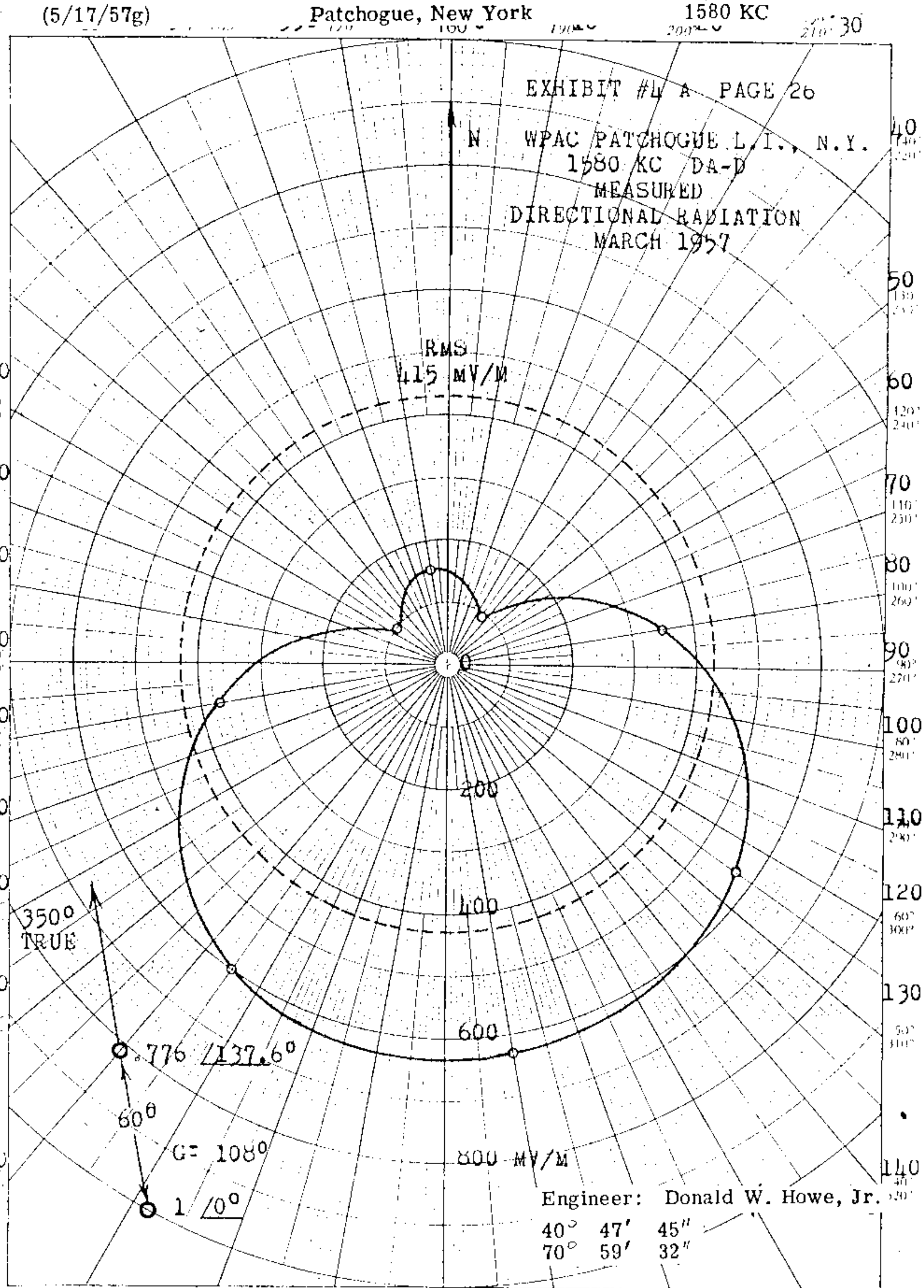
Station WPAC
Patchogue, New York

5kw, DA-D,D
1580 KC

Granted license 6/3/57 for increased power & DA antenna

Note! see reverse

10 mm DA-D (C.R. 5-DA-D) CP



FCC File No. BL-6620
Accepted 5/3/57

WPAC
Patchogue, New York 1580 KC

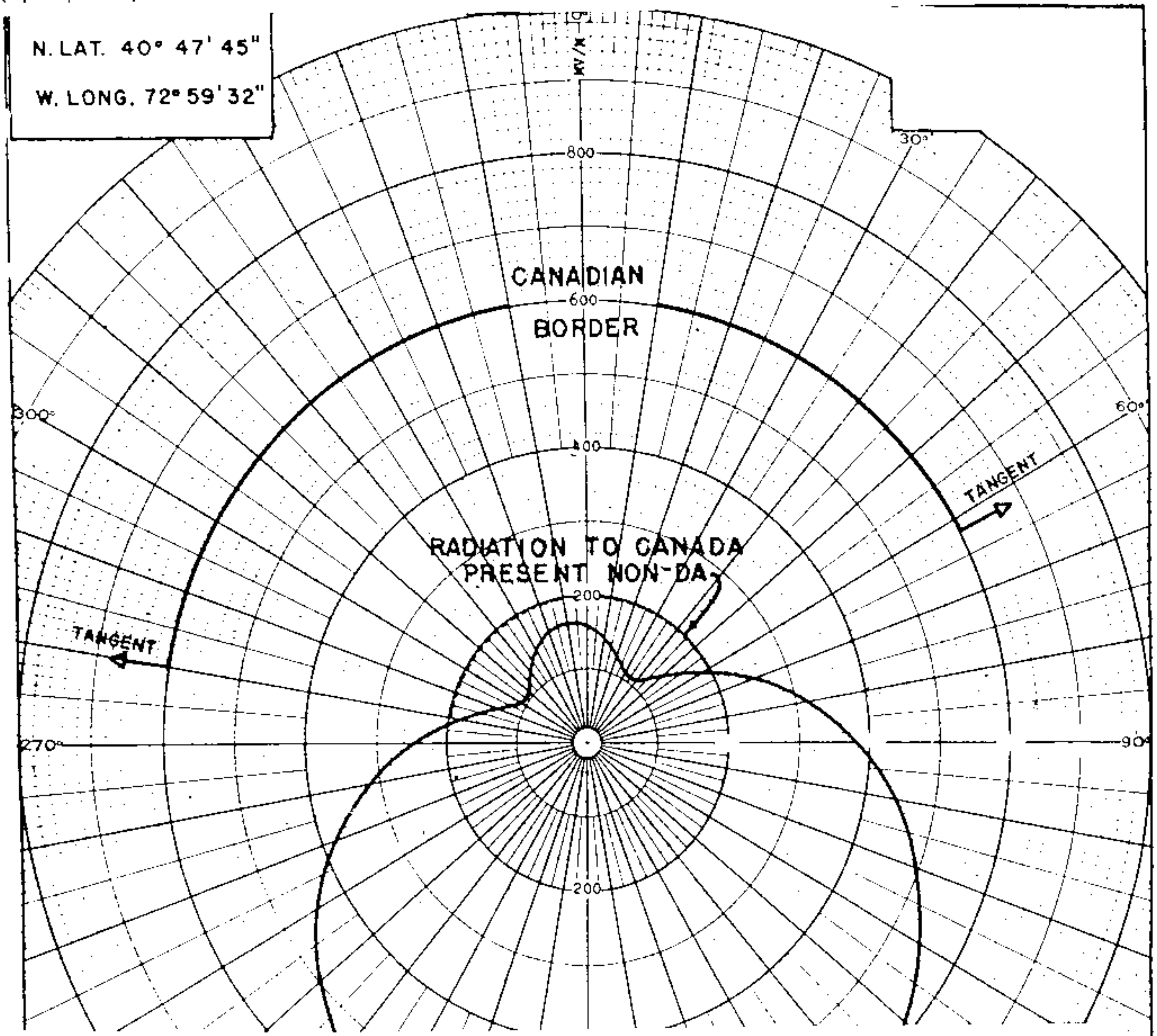
PROPOSED
DAY (2/21/56G)

STATION WPAC
PATCHOGUE, N.Y.

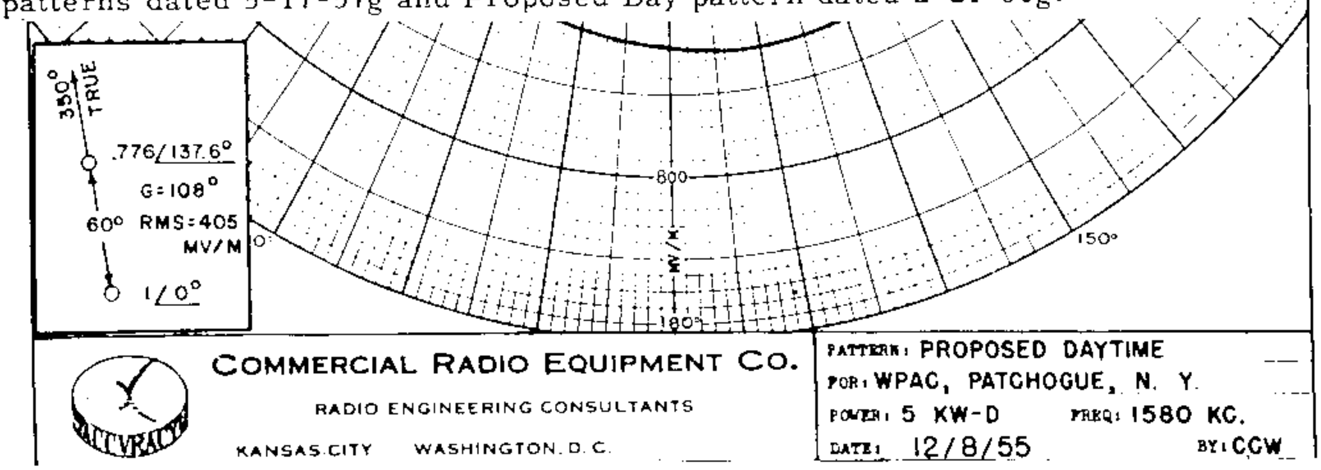
5 KW
DA-D,D

WSUF

1580 KC



1580 KC WPAC - Patchogue, New York; BL-7608. Granted license (1-2-60) covering increase in power, except during critical hours , while employing non-directional antenna, and change of studio location to "Brookhaven, New York." Make notation on Measured Day and Measured Non-DA patterns dated 5-17-57g and Proposed Day pattern dated 2-21-56g.

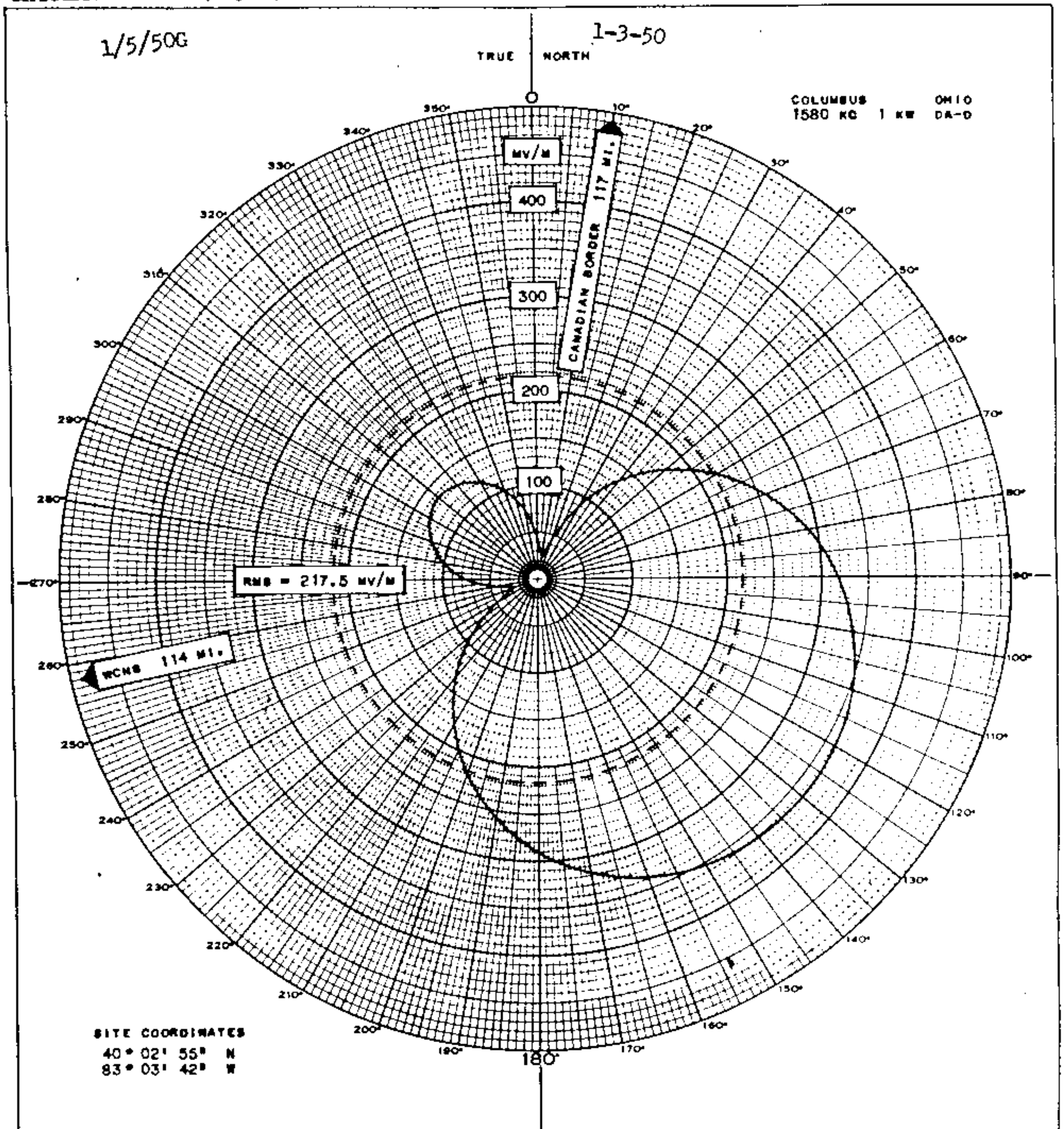


FCC File No. BP-9944 (Amended) Accepted 12-29-55 WPAC, Patchogue, N.Y. 1580 KC

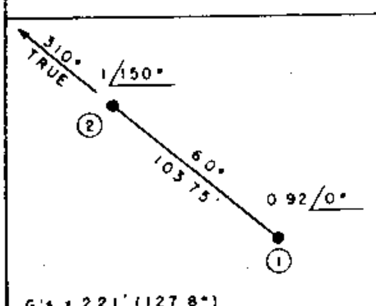
W??? [illegible]

PROPOSED DAYTIME | NEW, COLUMBUS, OHIO (Skyway Bg. Corp.) | 1kw, DA, D | 1580 kc

FIGURE 9.0



CALCULATED HORIZONTAL PLANE RADIATION PATTERN



SKYWAY BROADCASTING CORPORATION
COLUMBUS OHIO

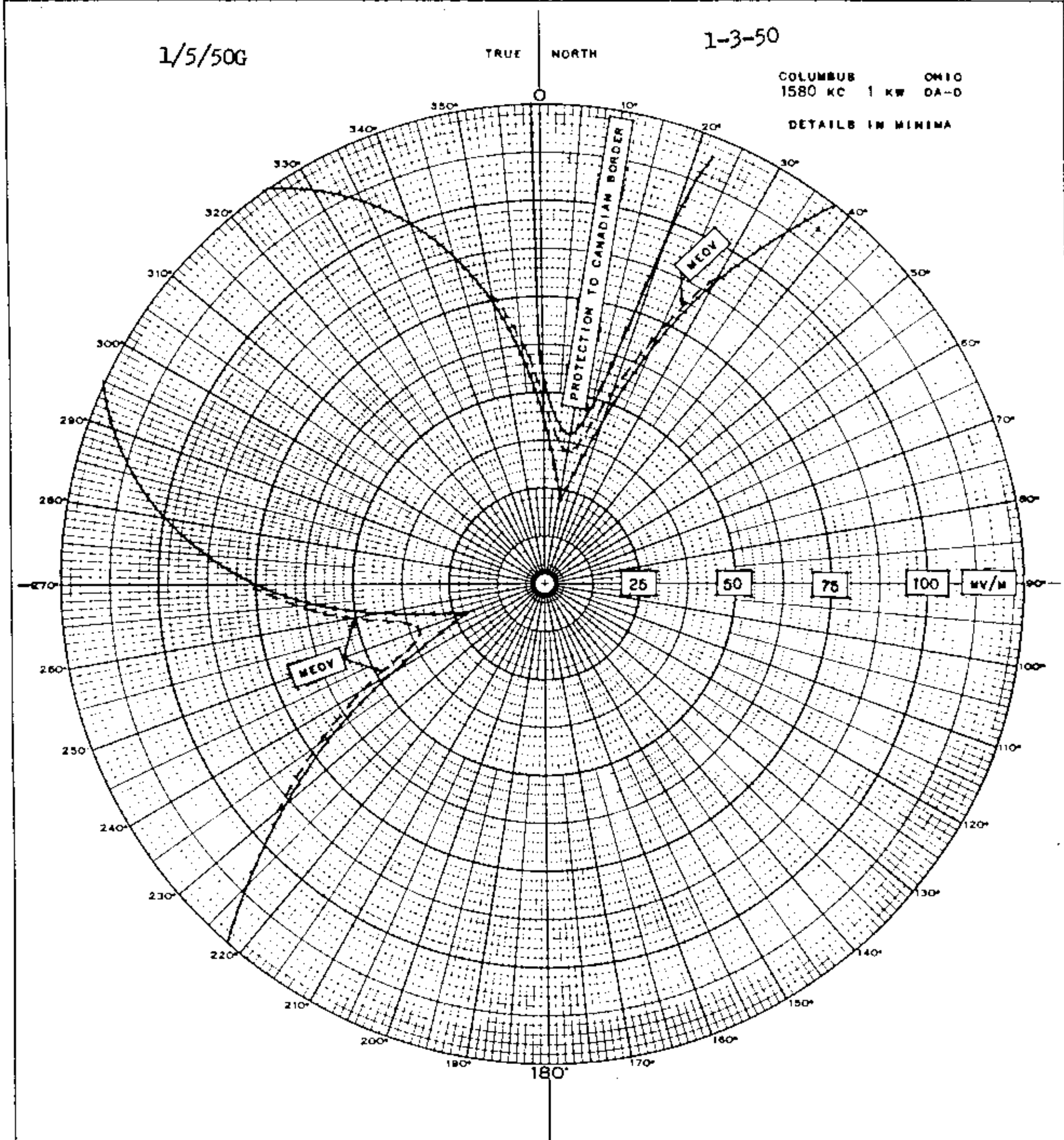
WELDON & CARR
CONSULTING RADIO ENGINEERS
WASHINGTON D.C. DALLAS TEXAS

PROPOSED NEW STATION
COLUMBUS OHIO
1580 KC 1 KW DA-D
W 491206 G

NEW, Columbus, Ohio 580 kc

WVKO ~~WELY~~
COLUMBUS, O.

PROPOSED DAY NULLS | NEW, COLUMBUS, OHIO (Skyway Bg. Corp.) | 1kw, DA, D | FIGURE 9.1 | 1580 kc



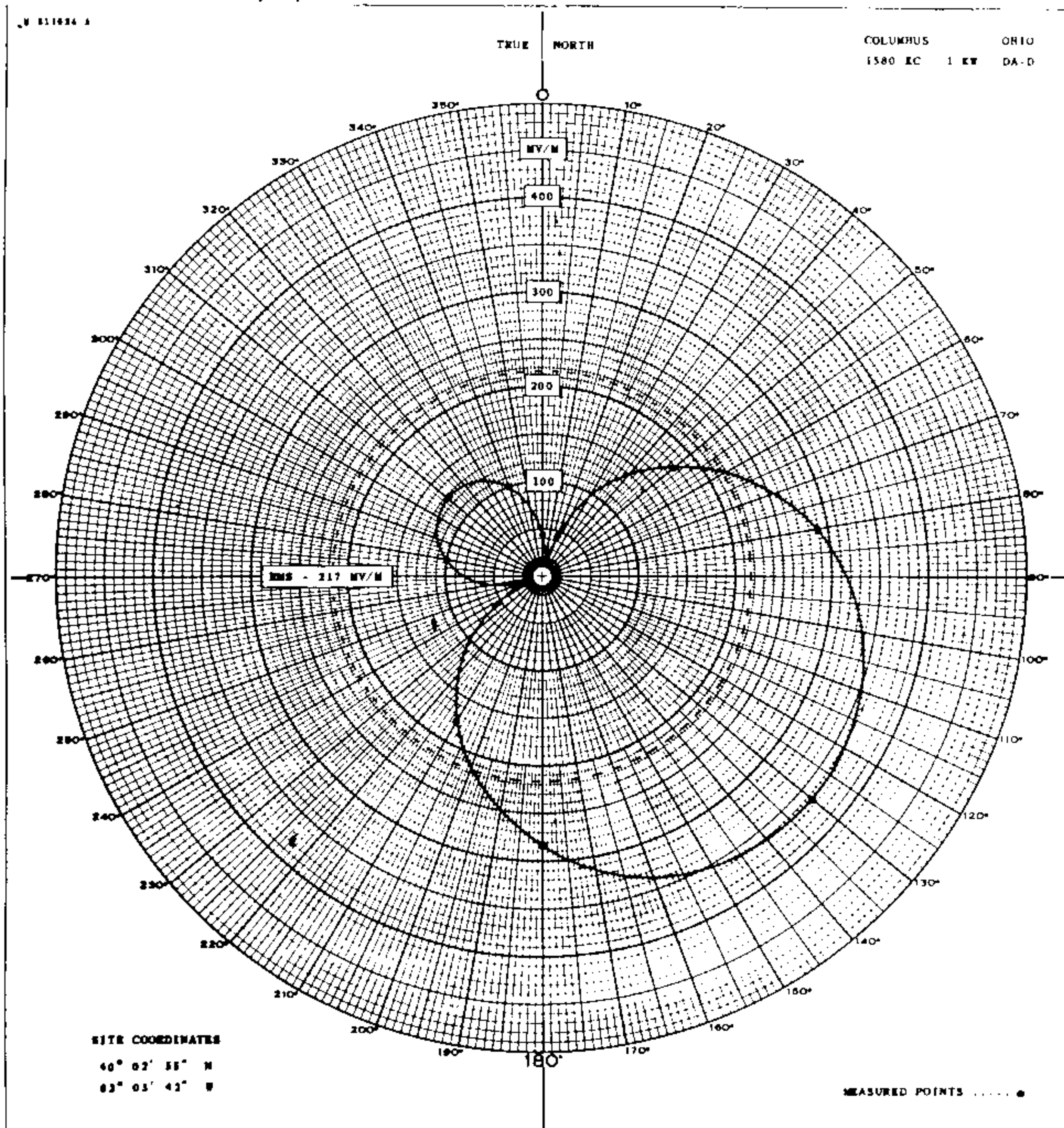
CALCULATED HORIZONTAL PLANE RADIATION PATTERN

DETAILS IN MINIMA	SKYWAY BROADCASTING CORPORATION COLUMBUS OHIO WELDON & CARR CONSULTING RADIO ENGINEERS WASHINGTON D.C. DALLAS TEXAS	PROPOSED NEW STATION COLUMBUS OHIO 1580 KC 1 KW DA-D W 491206 H

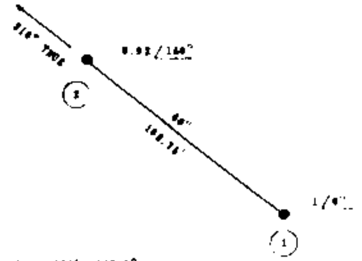
NEW, Columbus, Ohio 1580 kc

WRLY

MEASURED DAY | WRLY, COLUMBUS, OHIO 11/26/51G | 1 KW, DAY, DA WVKO 1580 KC



MEASURED HORIZONTAL PLANE DIRECTIONAL ANTENNA FIELD PATTERN



SKYWAY BROADCASTING CORPORATION

COLUMBUS OHIO

WELDON & CARR Consulting Radio Engineers

Dallas • Washington • Seattle

WRLY

COLUMBUS OHIO

1580 KC 1 KW DA-D

APPL RECD 10/29/51 BL-4578 WRLY, COLUMBUS, OHIO 1580 KC

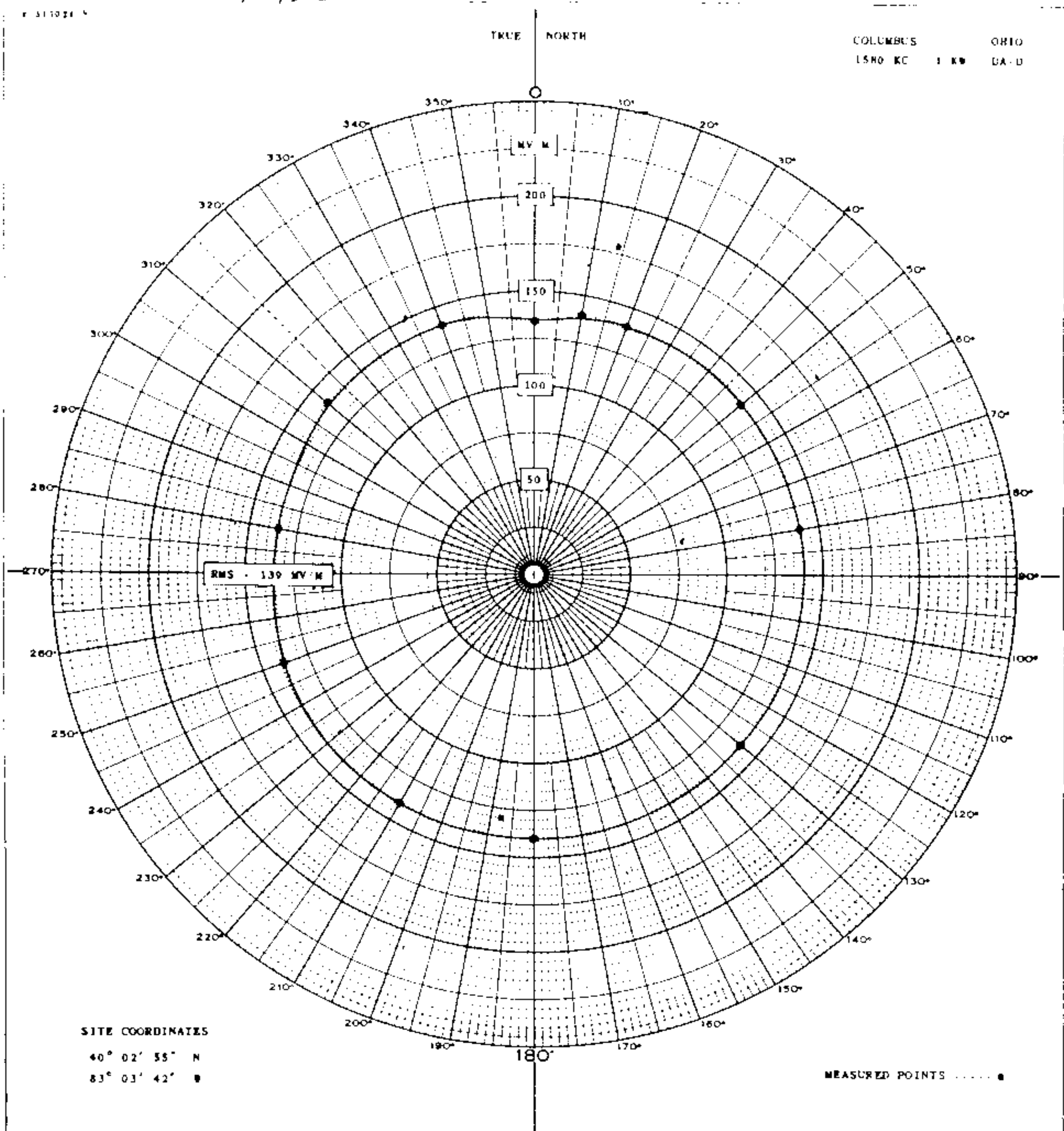
~~WRLY~~

MEASURED NON-DA

WRLY, COLUMBUS, OHIO 11/26/51G

1 KW, DAY, DA WVKO 1580 KC

COLUMBUS OHIO
1580 KC 1 KW DA-D



SITE COORDINATES
40° 02' 55" N
83° 03' 42" W

MEASURED POINTS ..... •

MEASURED NON-DIRECTIONAL ANTENNA FIELD PATTERN

TOWER No. 1

SKYWAY BROADCASTING CORPORATION
COLUMBUS OHIO

WELDON & CARR Consulting Radio Engineers
Dallas • Washington • Seattle

WRLY
COLUMBUS OHIO
1580 KC 1 KW DA-D

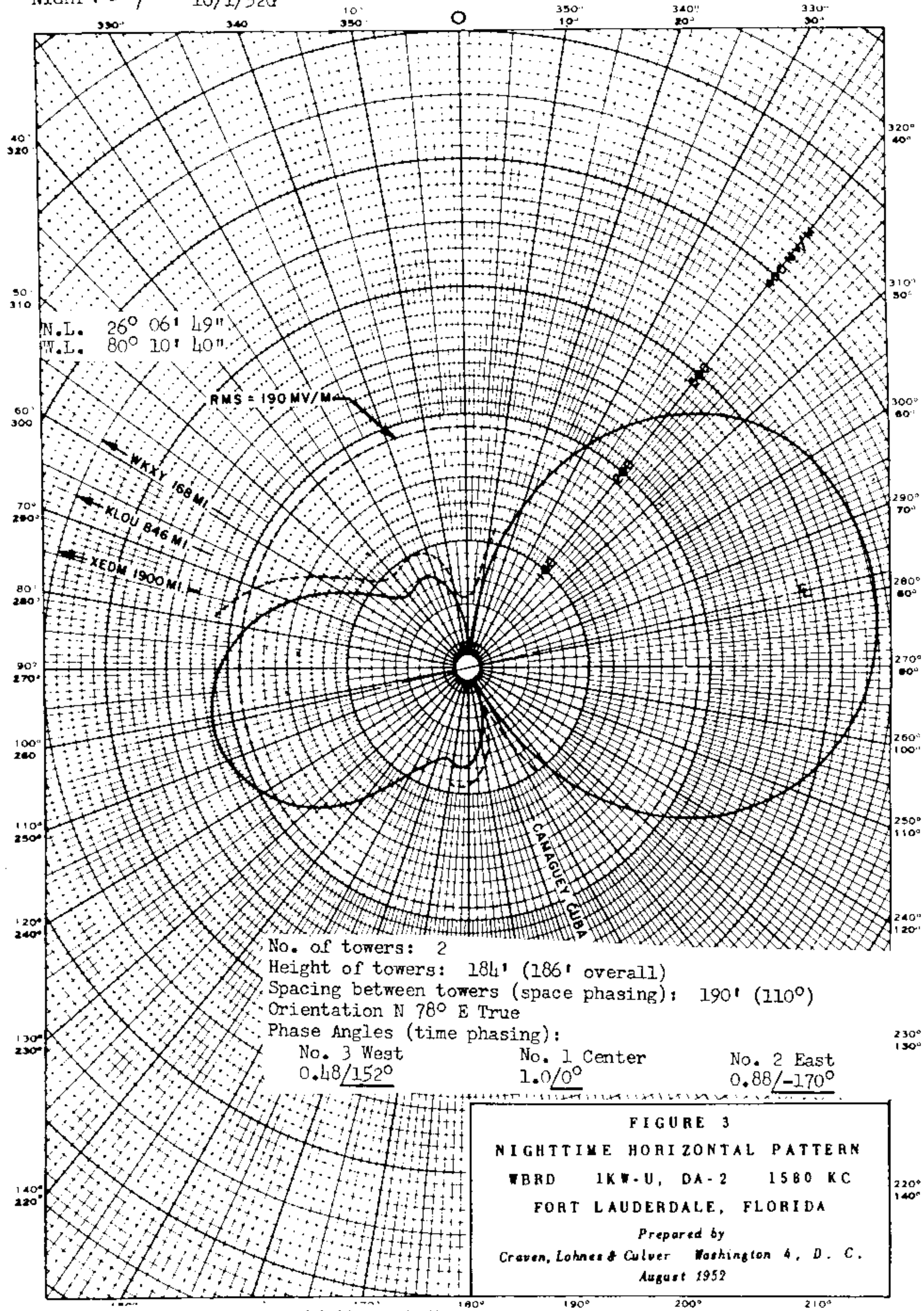
APPL RECD 10/29/51 BL-4578

WRLY, COLUMBUS, OHIO 1580 KC

WWIL ~~WBRD~~

PROPOSED NIGHT + Day — WBRD, FT. LAUDERDALE, FLA. — 1 KW, Unl., DA-2 — 1580 KC

10/1/52G



No. of towers: 2

Height of towers: 184' (186' overall)

Spacing between towers (space phasing): 190' (110°)

Orientation N 78° E True

Phase Angles (time phasing):

No. 3 West	No. 1 Center	No. 2 East
0.48/152°	1.0/0°	0.88/-170°

FIGURE 3

NIGHTTIME HORIZONTAL PATTERN

WBRD 1KW-U, DA-2 1580 KC

FORT LAUDERDALE, FLORIDA

Prepared by

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

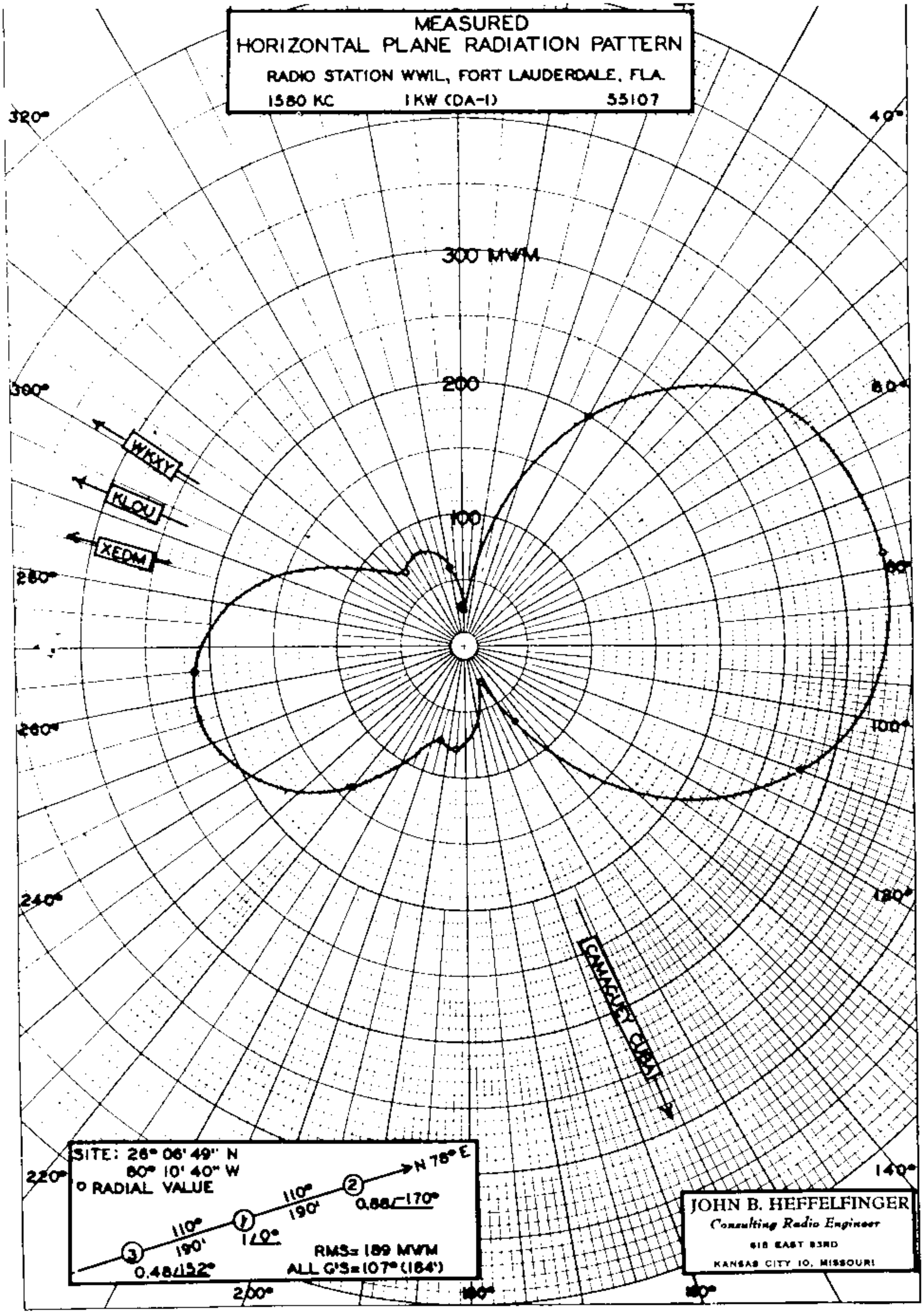
August 1952

AMD RECD FCC 9/9/52 ACC 9/24/52 BP-8164 Amd.

WBRD, FT. LAUDERDALE, FLA. 1580 KC

WWIL

MEASURED DAY & NIGHT (11-25-55G) STATION WWIL FORT LAUDERDALE, FLORIDA 1KW DA-1, U 1580 KC



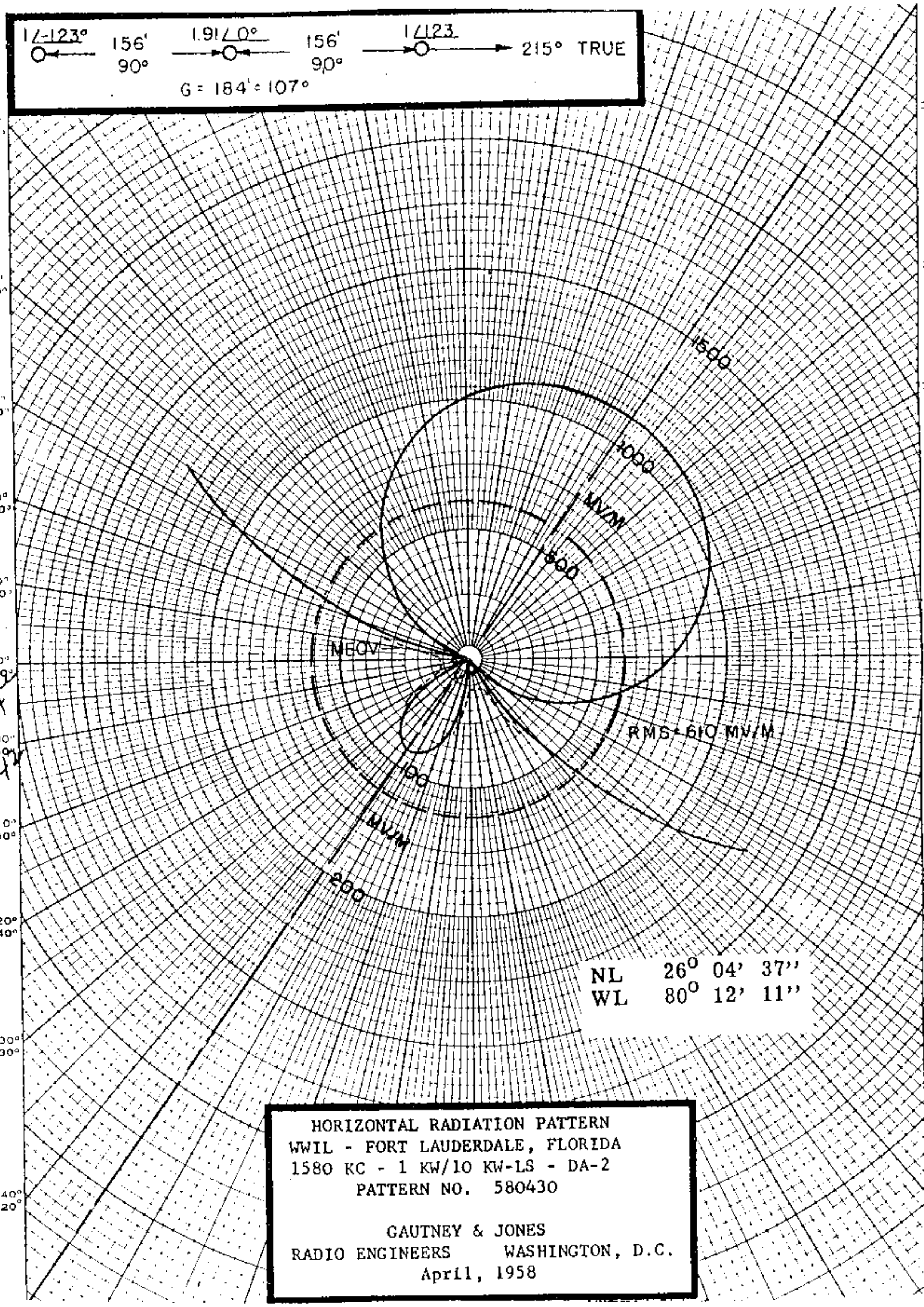
FILE NO. BL-5900 ACCEPTED 11-1-55 FCC WWIL, Ft. Lauderdale, Fla. 1580 KC

WWIL

PROPOSED DAY
(9-11-58g)

Station WWIL 1kw, 10kw-LS, DA-2,U
Fort Lauderdale, Florida 1580 KC

Granted mod. of CP to change antenna-trans. local.
North lat. 26° 06' 49''
West Long. 80° 10' 40''
7-20-60



HORIZONTAL RADIATION PATTERN
WWIL - FORT LAUDERDALE, FLORIDA
1580 KC - 1 KW/10 KW-LS - DA-2
PATTERN NO. 580430

GAUTNEY & JONES
RADIO ENGINEERS WASHINGTON, D.C.
April, 1958

CP day coordinates
26-04-54
80-13-42
FCC 6-28-61

FCC File No. BP-12180
Accepted 8-25-58

Station WWIL
Fort Lauderdale, Florida 1580 KC

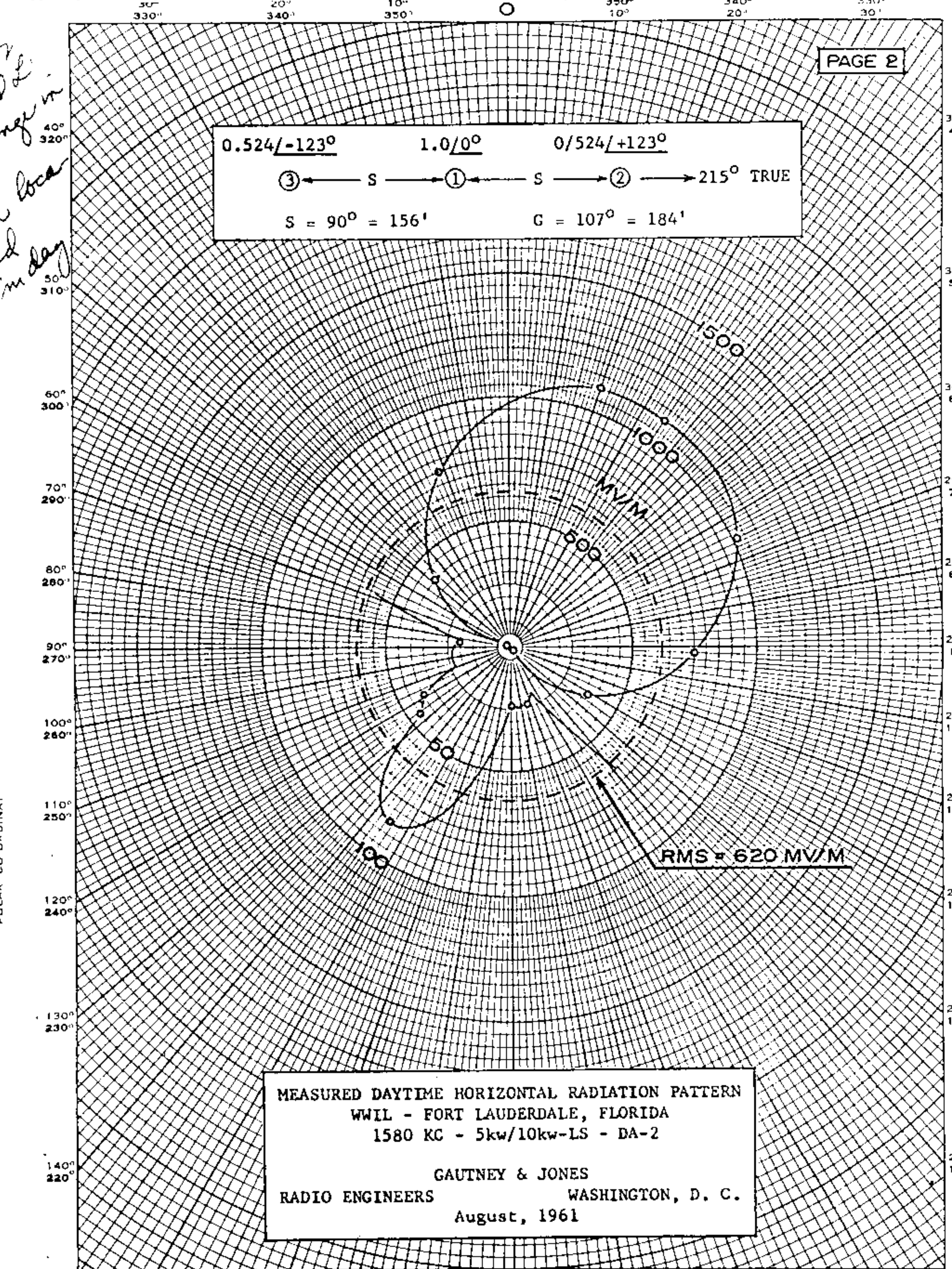
WWIL

Measured Day
(5-25-62ct)

Station WWIL
Fort Lauderdale, Florida

5kw, 10kw-LS, DA-2, U
1580 kc

-4-62 granted L. on change in power - # Xmtr location - and changes in day A pep.



FCC File No. BL-8659
Accepted 8-23-61

Station WWIL
Fort Lauderdale, Florida

1580 kc

WWIL

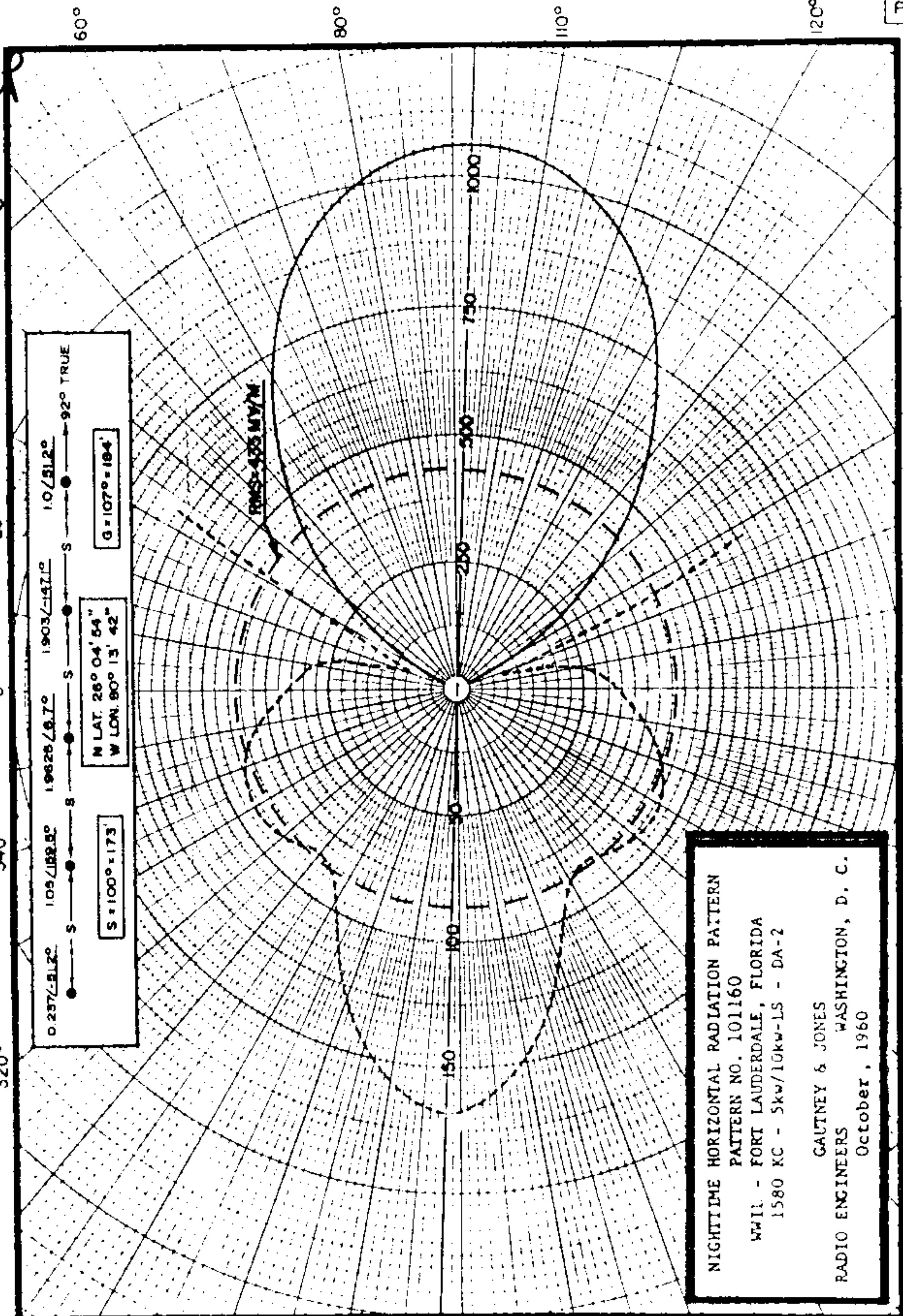
PROPOSED NIGHT
(11-11-60g)

Station WWIL
Fort Lauderdale, Florida

5kw,10kw-LS,DA-2,U
1580 KC

PAGE 6
(Revised)

1-25-61
Granted MCP
to increase
night power to
5kw.



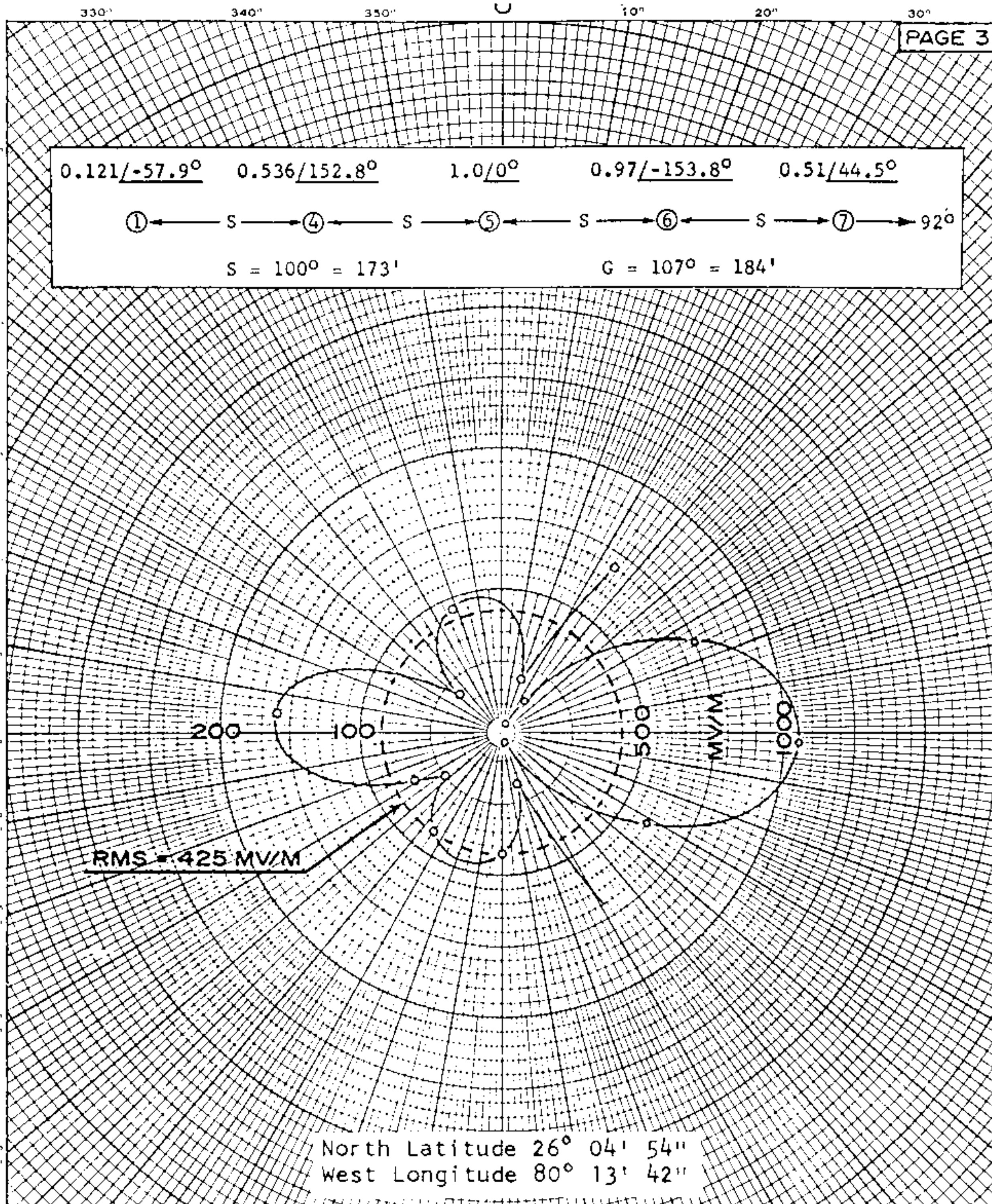
FCC File No. BMP-8632
Accepted 11-1-60 (Amended)

WWIL
Fort Lauderdale, Florida 1580 KC

MEASURED NIGHT
(9-20-61ct)

Station WWIL
Fort Lauderdale, Florida

5kw,10kw-LS,DA-2,U
1580 kc



MEASURED NIGHTTIME HORIZONTAL RADIATION PATTERN
WWIL - FORT LAUDERDALE, FLORIDA
1580 KC - 5kw/10kw-LS - DA-2

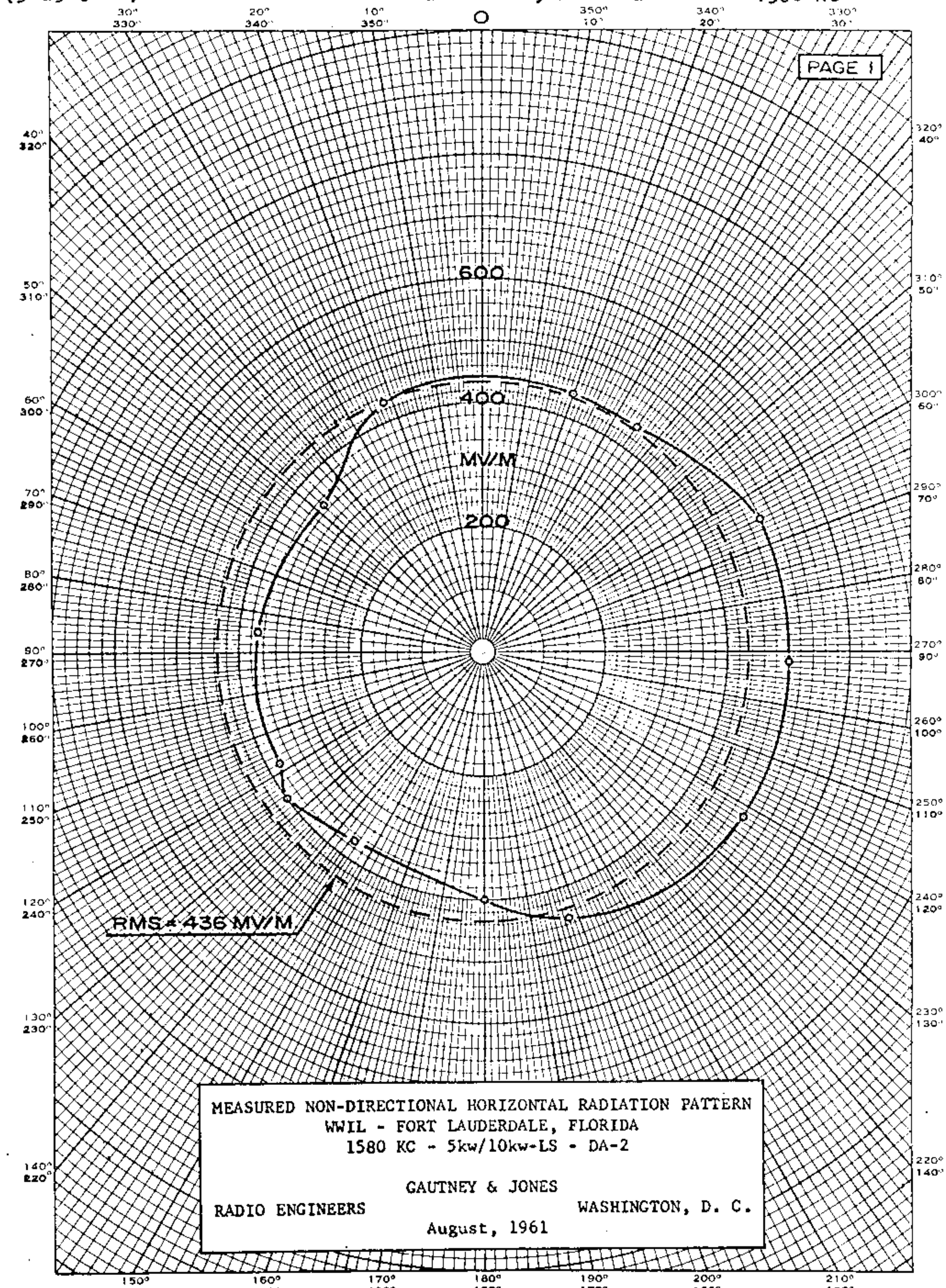
GAUTNEY & JONES
RADIO ENGINEERS WASHINGTON, D. C.
August, 1961

WWIL

Measured Non-DA
(5-25-62ct)

Station WWIL
Fort Lauderdale, Florida

5kw,10kw-LS,DA-2,U
1580 kc



MEASURED NON-DIRECTIONAL HORIZONTAL RADIATION PATTERN
WWIL - FORT LAUDERDALE, FLORIDA
1580 KC - 5kw/10kw-LS - DA-2

GAUTNEY & JONES
RADIO ENGINEERS WASHINGTON, D. C.
August, 1961

EUGENE DIETZGEN CO.

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

FCC File No.BL-8659
Accepted 8-23-61

Station WWIL
Fort Lauderdale, Florida

1580 kc

NEW

DESCRIPTION SHEET – DIRECTIONAL ANTENNA

NOTIFICATION LIST NO: 394

DATE : February 20, 1980

STATION CALL :

MAIN STUDIO: Cornwall, Ontario

FREQUENCY : 1590 kHz

POWER : 10.0 kW Daytime
2.5 kW Night-time

GEOGRAPHICAL COORDINATES : 45° 02' 53" N Latitude
74° 37' 32" W Longitude

CLASS : III-(U)

ARRAY CHARACTERISTICS

NUMBER OF ELEMENTS : 4

TYPE OF TOWERS : Uniform, cross-section; guyed; base insulated; series fed; no top loading

MODE OF OPERATION : DA-1

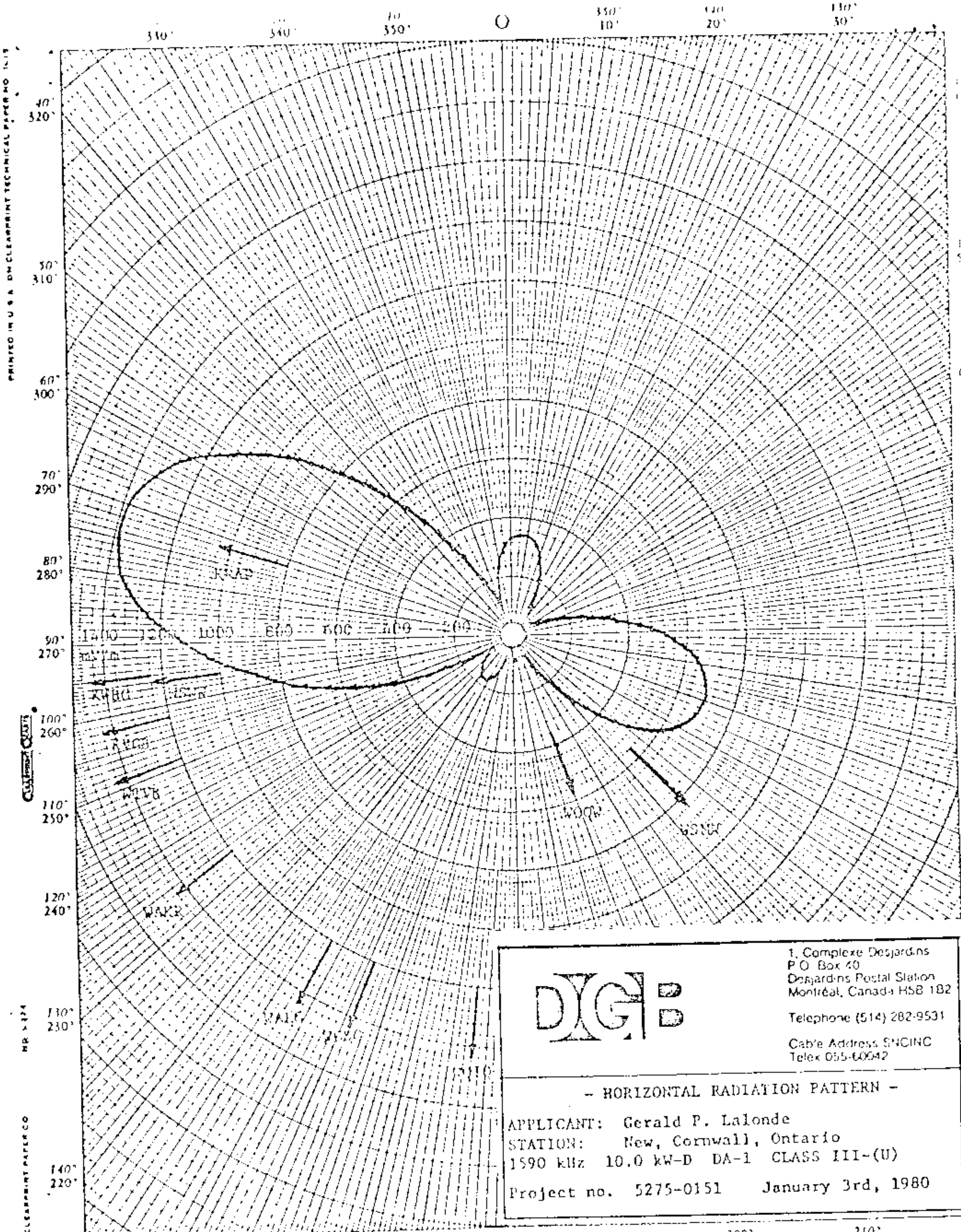
TOWER	No. 1	No. 2	No. 3	No. 4
HEIGHT ABOVE INSULATOR	155' (90°)	155' (90°)	155' (90°)	155' (90°)
OVERALL HEIGHT	160'	160'	160'	160'
SPACING	Reference	90.0°	229.0°	266.9°
ORIENTATION	Reference	121.0°	196.0°	177.0°
PHASING	0°	145.0°	0°	145.0°
CURRENT RATIO	1	1	1	1

GROUND SYSTEM : 120 uniformly spaced radials per tower of #10 AWG soft copper wire buried approximately 8" below grade. Where radials are less than 0.4λ due to the boundary of property, additional radials will be installed in order to obtain an equivalent of 0.4λ ground system.

PREDICTED EFFICIENCY : 577 mV/m at 1 mile for 10.0 kW radiated
289 mV/m at 1 mile for 2.5 kW radiated

THEORETICAL : 565 mV/m at 1 mile for 10.0 kW radiated
283 mV/m at 1 mile for 2.5 kW radiated

NEW



1, Complexe Desjardins
P.O. Box 40
Desjardins Postal Station
Montréal, Canada H5B 1B2

Telephone (514) 282-9531

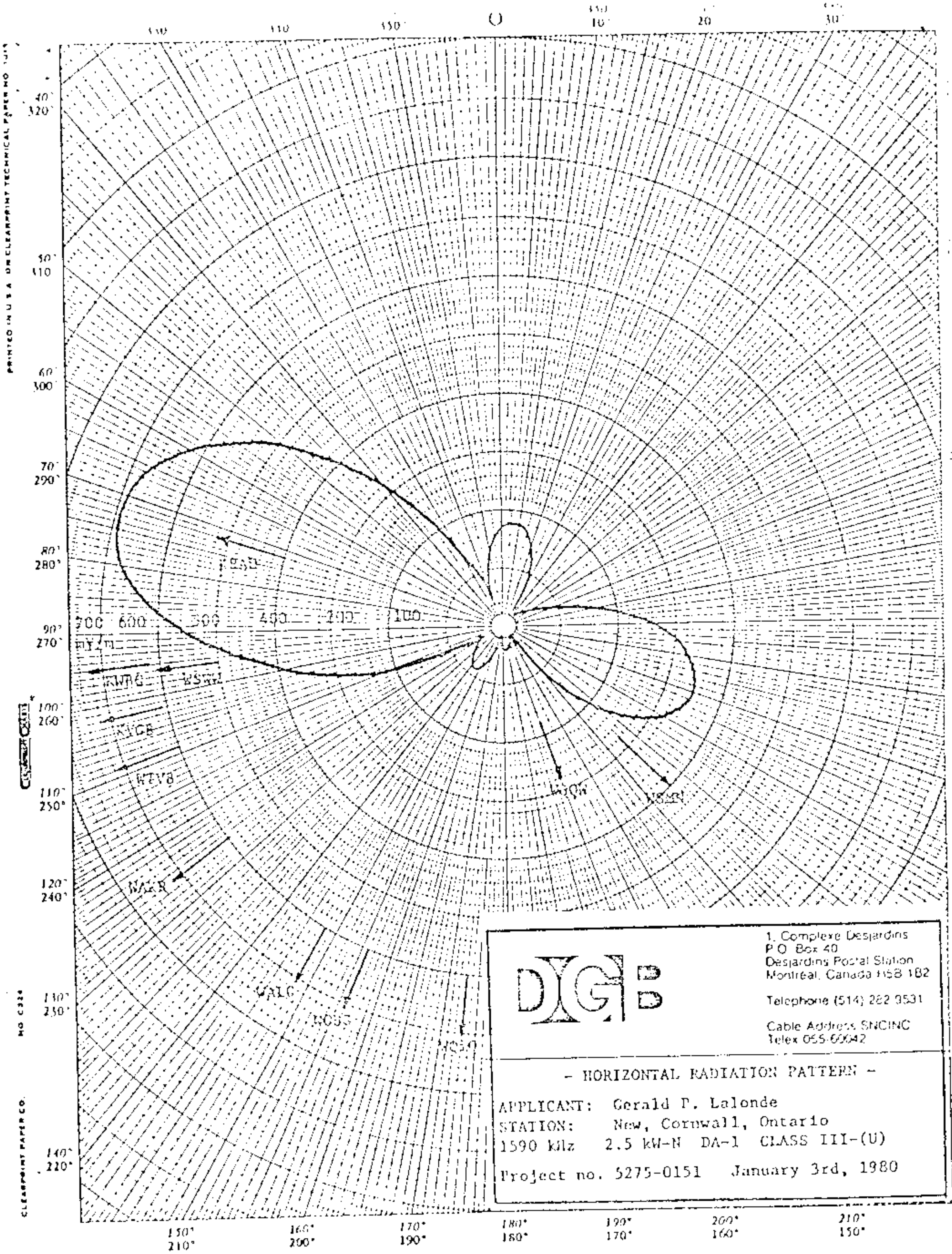
Cable Address SNCINC
Telex 055-60042

\- HORIZONTAL RADIATION PATTERN -

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 10.0 kW-D DA-1 CLASS III-(U)

Project no. 5275-0151 January 3rd, 1980

NEW



1, Complexe Desjardins
P.O. Box 40
Desjardins Postal Station
Montreal, Canada H5B 1B2

Telephone (514) 282 9531

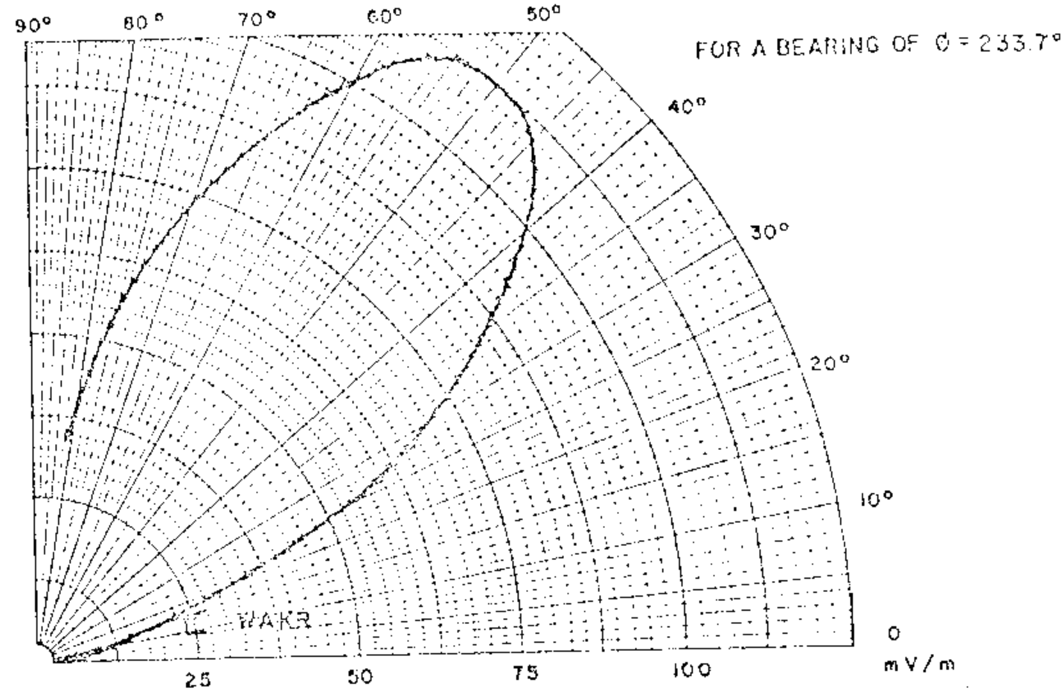
Cable Address SNCINC
Telex 055-60042

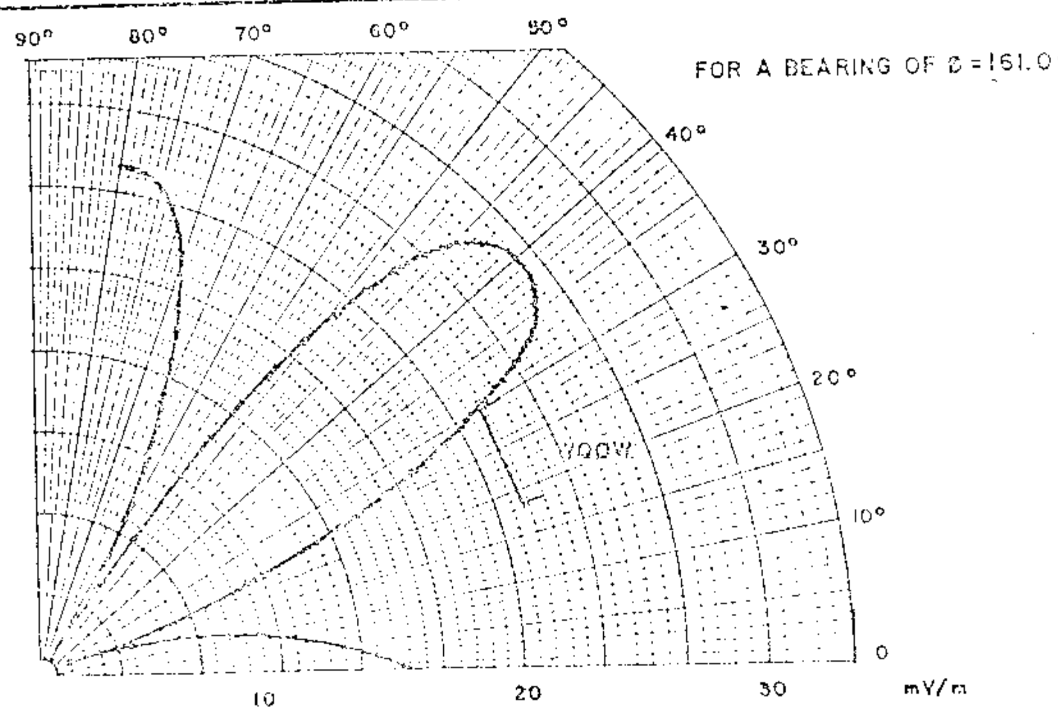
- HORIZONTAL RADIATION PATTERN -

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW-N DA-1 CLASS III-(U)

Project no. 5275-0151 January 3rd, 1980

NEW





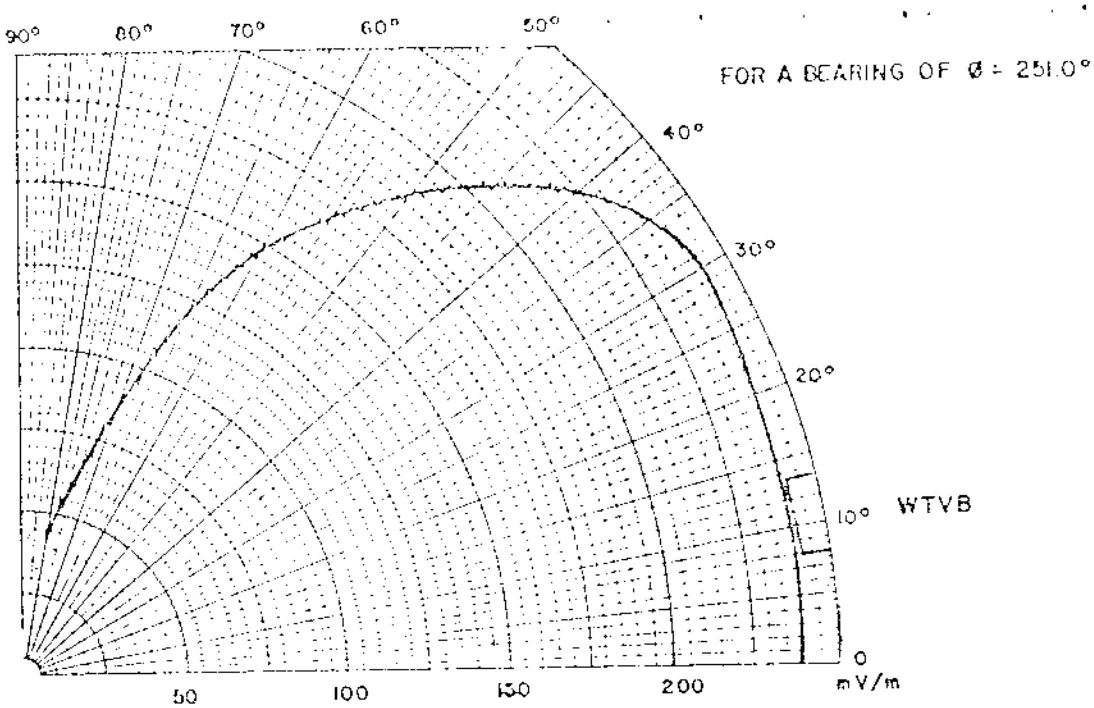
- VERTICAL RADIATION PATTERN -

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW DA-1 CLASS III-(F)
Project no. 5275-0151

January 3rd, 1980

FORMAT A

NEW

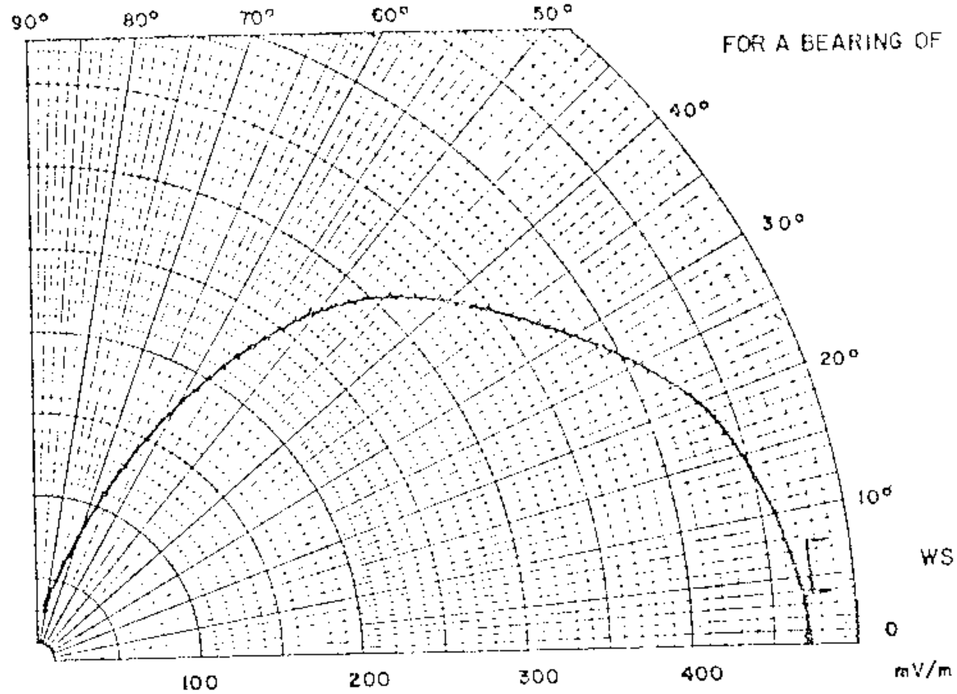


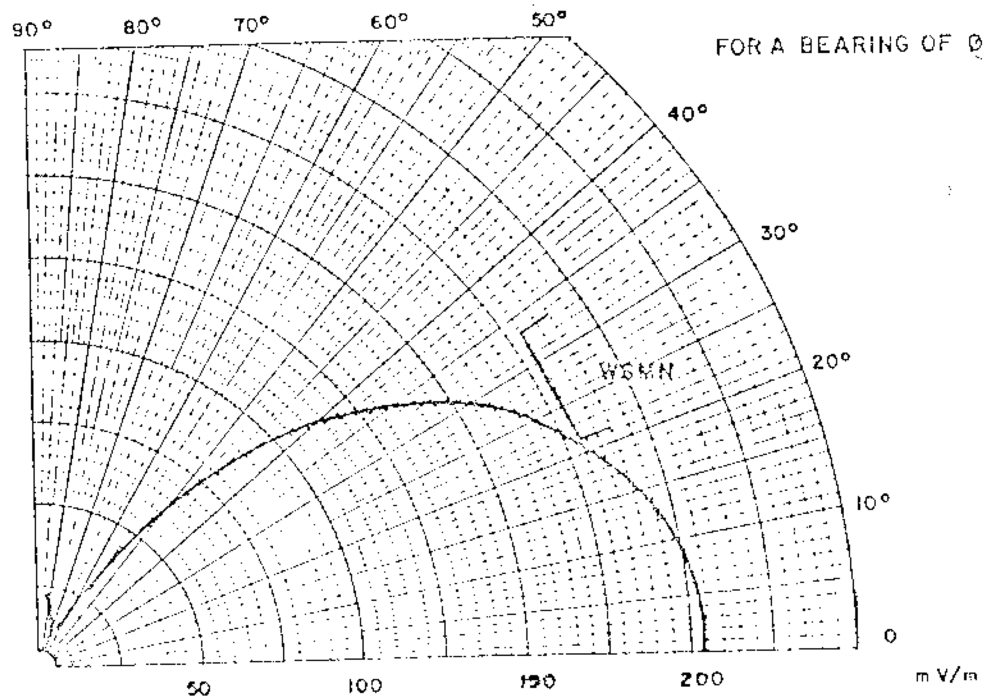
- VERTICAL RADIATION PATTERN -

DGB

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW DA-1 CLASS III-(B)
Project no. 5275-0151 January 3rd, 1980

NEW





- VERTICAL RADIATION PATTERN -

DGB

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW DA-1 CLASS III-(U)
Project no. 5275-9151

January 3rd, 1980

NEW

DESCRIPTION SHEET - DIRECTIONAL ANTENNA

NOTIFICATION LIST NO: 394		DATE	: February 20, 1980
STATION CALL	:	MAIN STUDIO:	Cornwall, Ontario
FREQUENCY	: 1590 kHz	POWER	: 10.0 kW Daytime 2.5 kW Night-time
GEOGRAPHICAL COORDINATES	: 45° 02' 53" N Latitude 74° 37' 32" W Longitude	CLASS	: III-(U)

ARRAY CHARACTERISTICS

NUMBER OF ELEMENTS: : 4

TYPE OF TOWERS : Uniform, cross-section; guyed; base insulated; series fed; no top loading

MODE OF OPERATION : DA-1

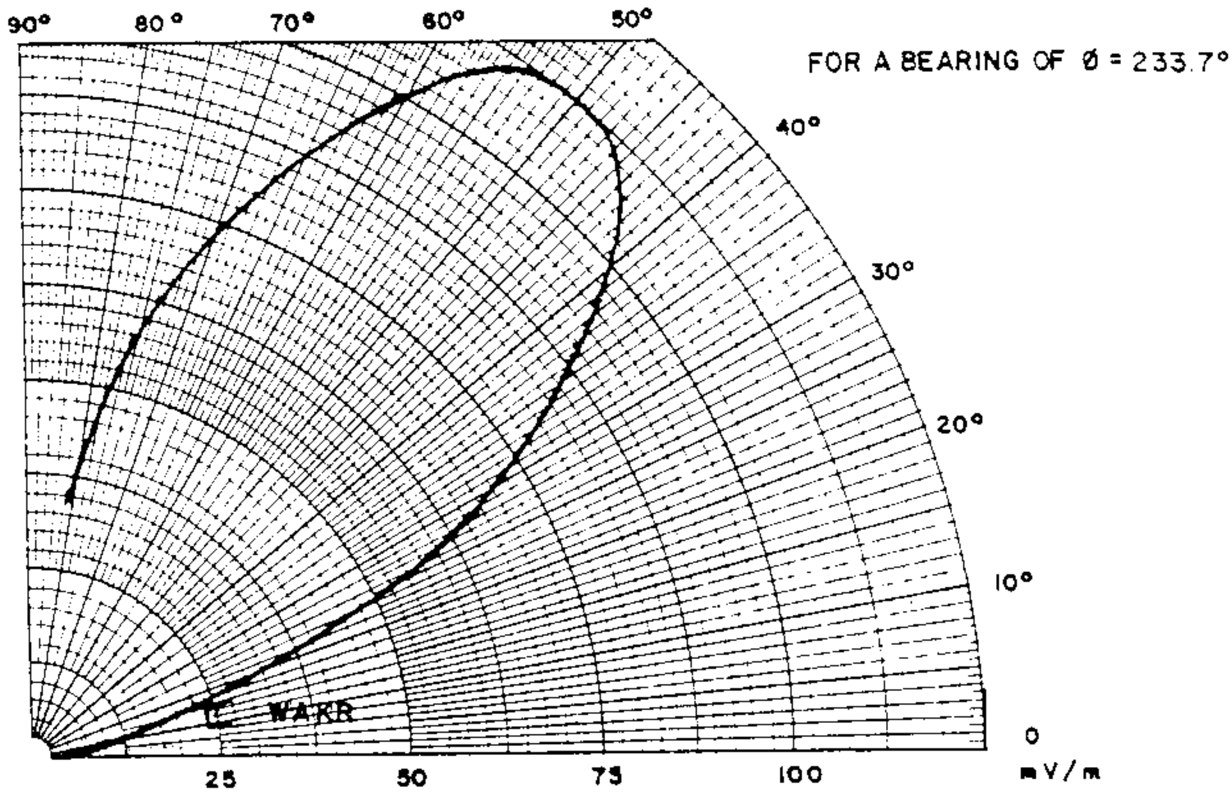
TOWER	No. 1	No. 2	No. 3	No. 4
HEIGHT ABOVE INSULATOR	155' (90°)	155' (90°)	155' (90°)	155' (90°)
OVERALL HEIGHT	160'	160'	160'	160'
SPACING	Reference	90.0°	229.0°	266.9°
ORIENTATION	Reference	121.0°	196.0°	177.0°
PHASING	0°	145.0°	0°	145.0°
CURRENT RATIO	1	1	1	1

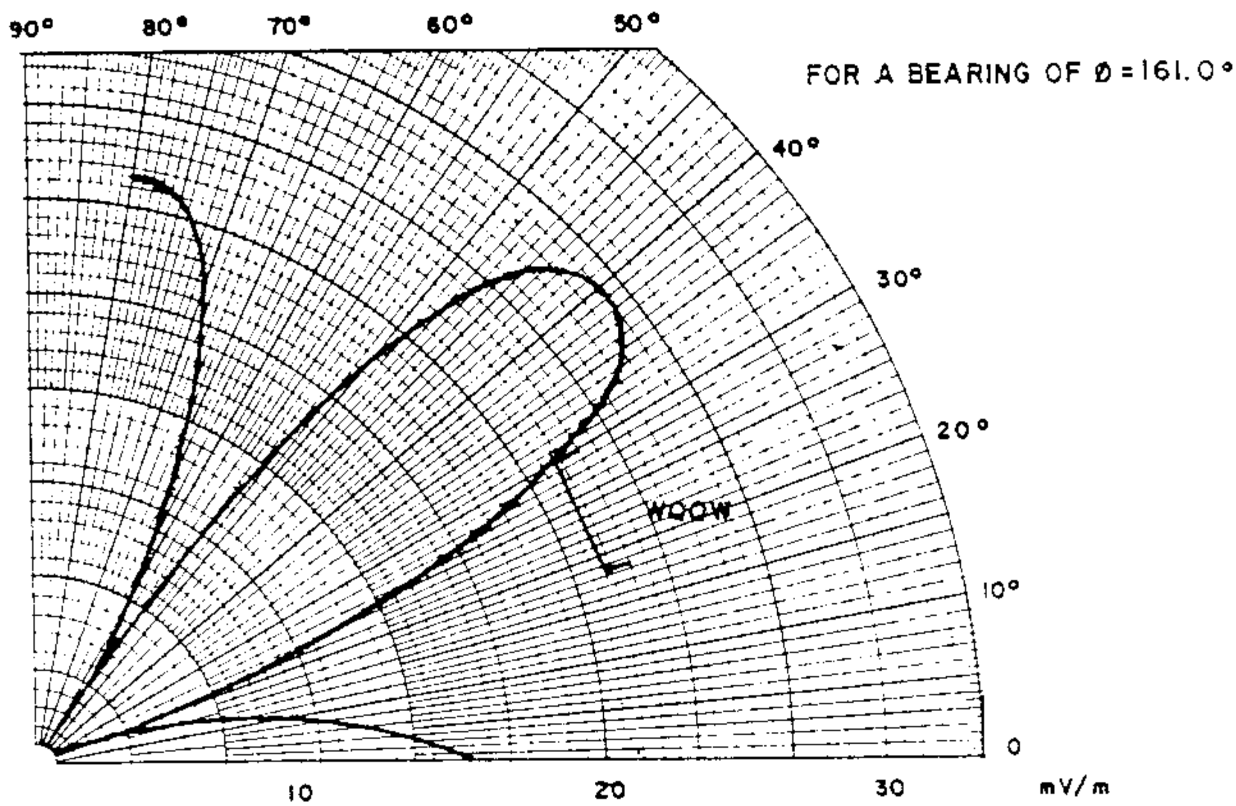
GROUND SYSTEM : 120 uniformly spaced radials per tower of #10 AWG soft copper wire buried approximately 8" below grade. Where radials are less than 0.4λ due to the boundary of property, additional radials will be installed in order to obtain an equivalent of 0.4λ ground system.

PREDICTED EFFICIENCY : 577 mV/m at 1 mile for 10.0 kW radiated
289 mV/m at 1 mile for 2.5 kW radiated

THEORETICAL : 565 mV/m at 1 mile for 10.0 kW radiated
283 mV/m at 1 mile for 2.5 kW radiated

NEW



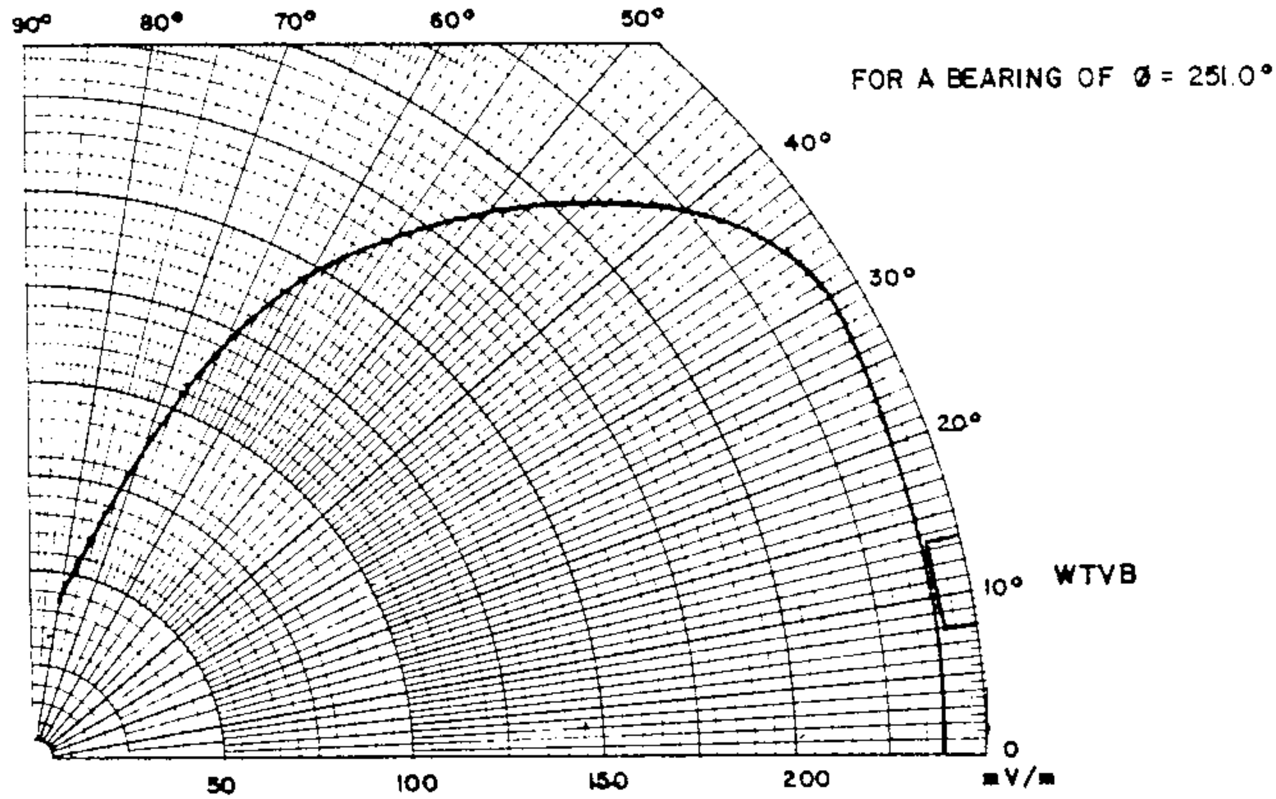


- VERTICAL RADIATION PATTERN -

DGB

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW DA-1 CLASS III-(U)
Project no. 5275-0151 January 3rd, 1980

NEW

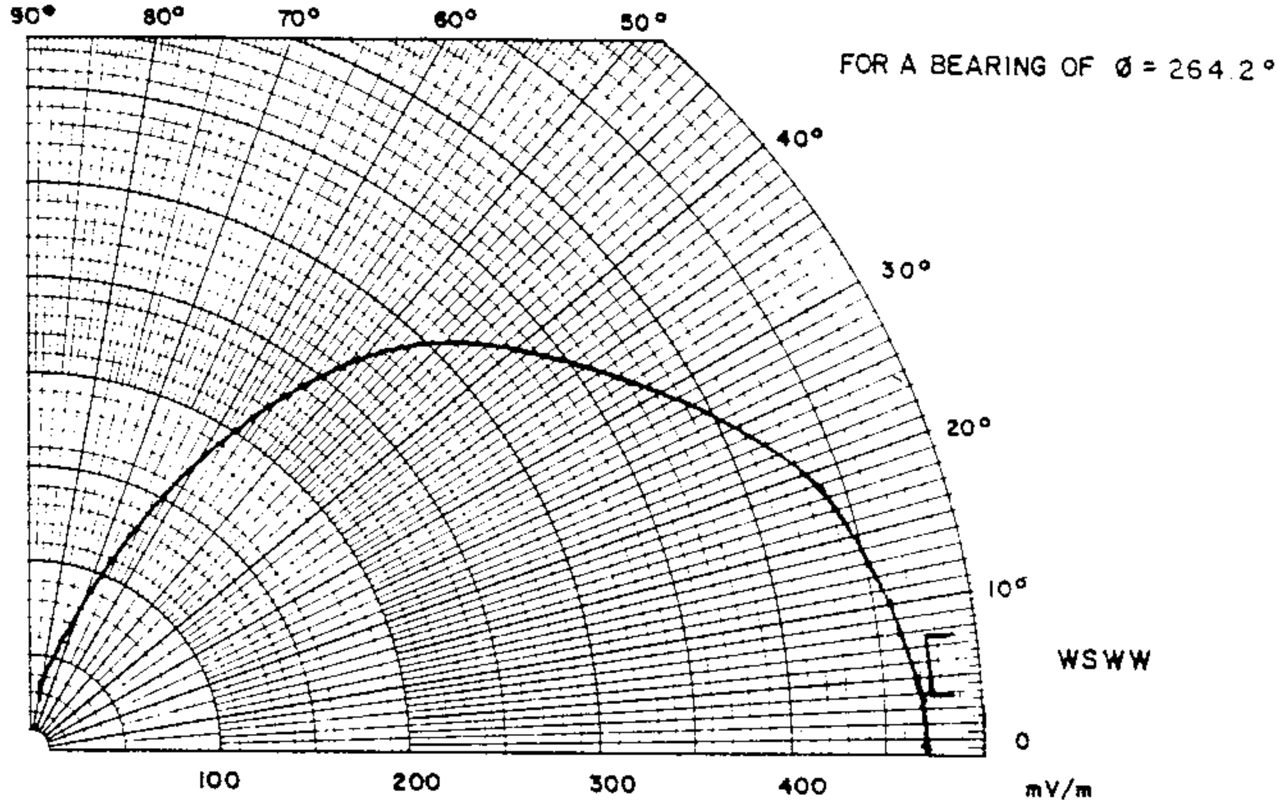


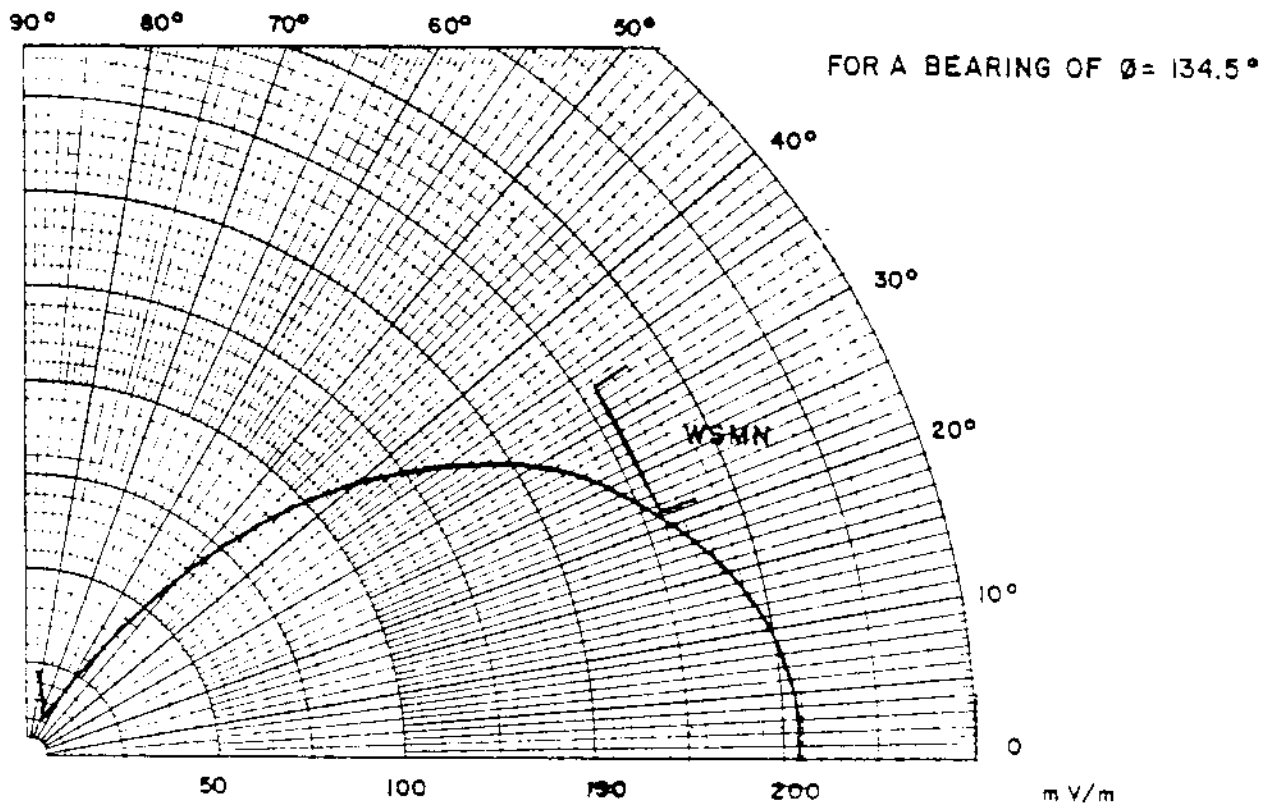
- VERTICAL RADIATION PATTERN -

DGB

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW DA-1 CLASS III-(U)
Project no. 5275-0151 January 3rd, 1980

NEW

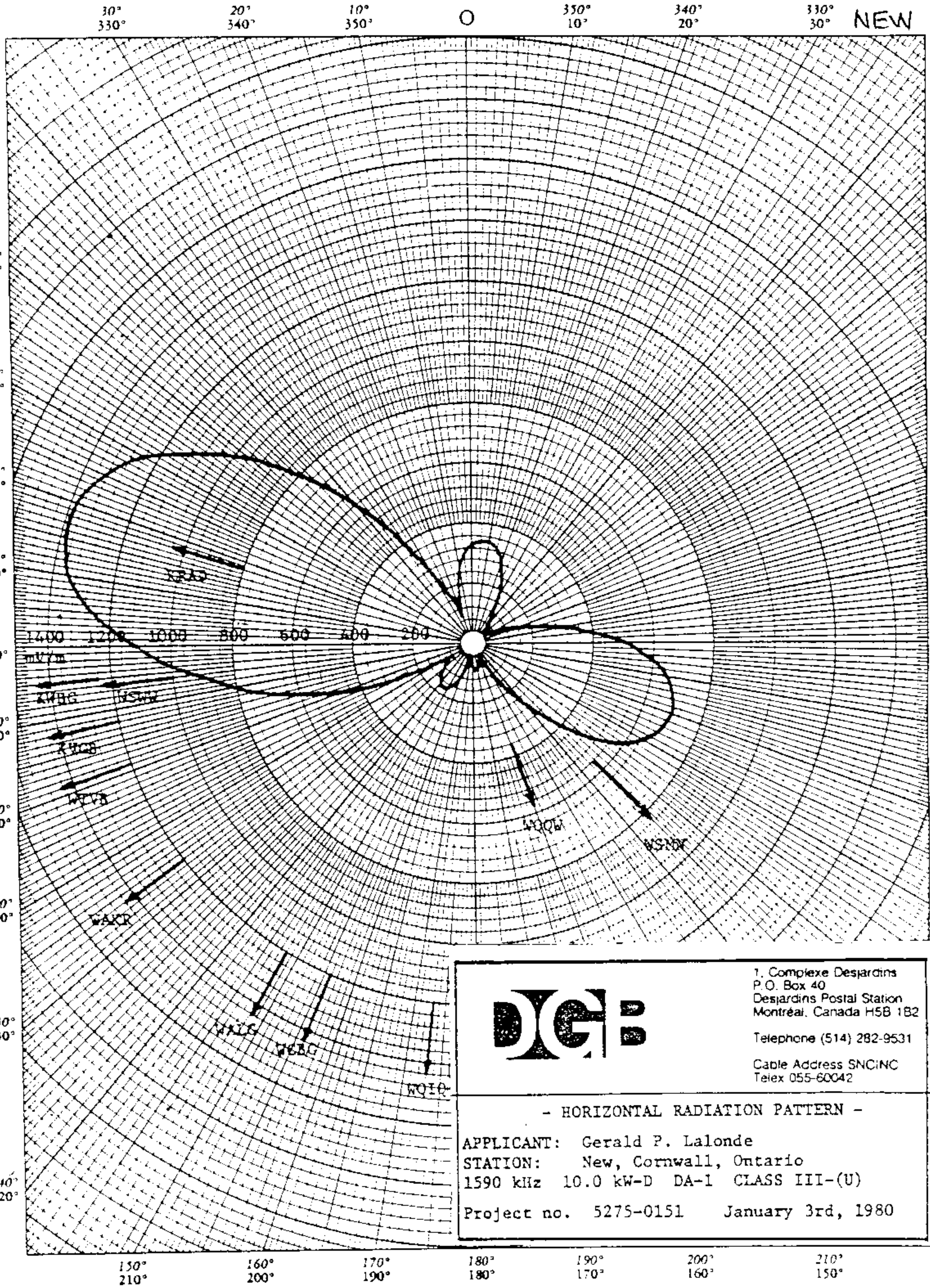




DGB

- VERTICAL RADIATION PATTERN -

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW DA-1 CLASS III-(U)
Project no. 3275-0151 January 3rd, 1980



DGB
1, Complexe Desjardins
P.O. Box 40
Desjardins Postal Station
Montréal, Canada H5B 1B2

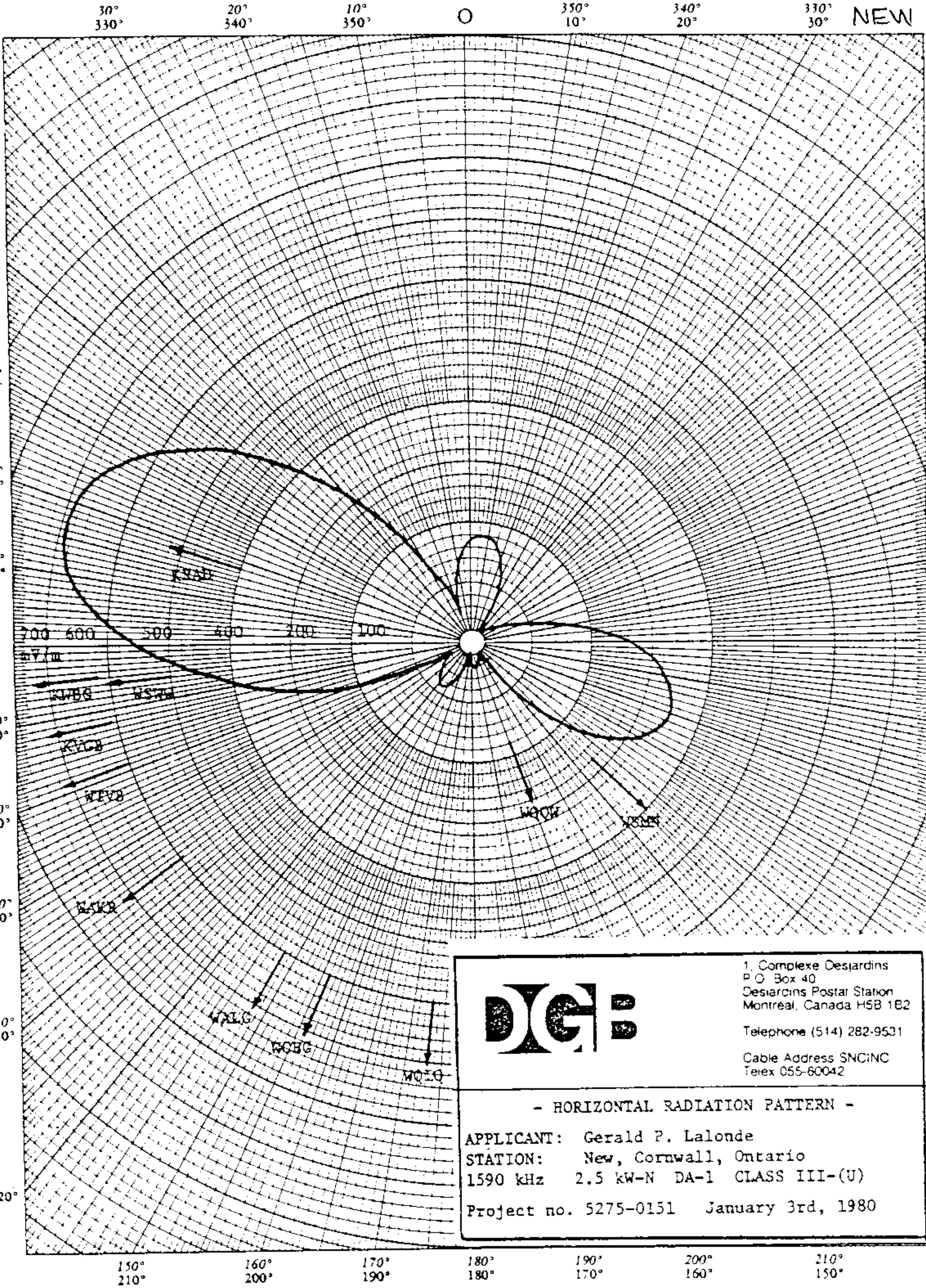
Telephone (514) 282-9531

Cable Address SNCINC
Telex 055-60042

- HORIZONTAL RADIATION PATTERN -

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 10.0 kW-D DA-1 CLASS III-(U)

Project no. 5275-0151 January 3rd, 1980



1, Complexe Desjardins
P.O. Box 40
Desjardins Postal Station
Montréal, Canada H5B 1B2

Telephone (514) 282-9531

Cable Address SNCINC
Telex 055-60042

- HORIZONTAL RADIATION PATTERN -

APPLICANT: Gerald P. Lalonde
STATION: New, Cornwall, Ontario
1590 kHz 2.5 kW-N DA-1 CLASS III-(U)

Project no. 5275-0151 January 3rd, 1980

ANTENNA DESCRIPTION SHEET

STATION: NEW

Main Studio: Guelph,Ontario

POWER: 10 KW

Frequency: 1590 kc/s, Cl: III

LOCATION: N43° 29' 38"
W80° 10' 52"

NOTIFICATION LIST NO: 264 DATE: January 15, 1970.

ANTENNA: Array of nine elements arranged in parallelogram form as per diagram. Elements are guyed, uniform cross section, base insulated, series fed, no top loading. Height: 155'(90°) plus 3' for base and obstruction lights.

TOWERS: Tower parameters as per attached diagram.

GROUND SYSTEM: 120 radials per tower of from 155' to 250' long, # 10 soft copper wire, buried 8" approximately.

PREDICTED EFFECTIVE
FIELD:

180 mv/m for 1 KW
568 mv/m for 10 KW

Note: This supplementary data supersedes that distributed concerning the notification on list # 240, dated March 11, 1968.

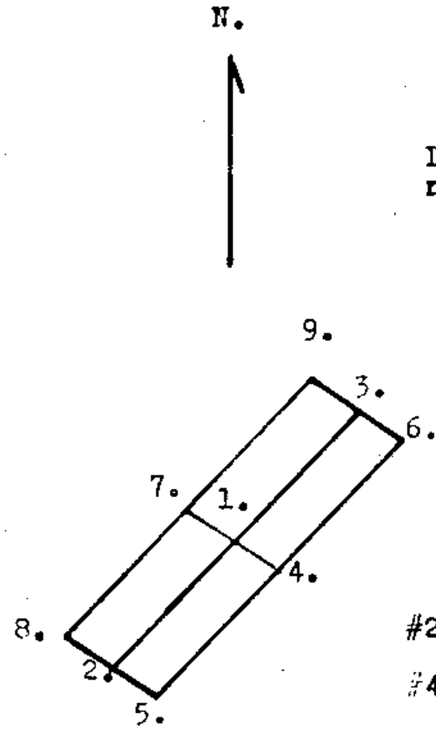


Diagram spacing and angles not to scale.

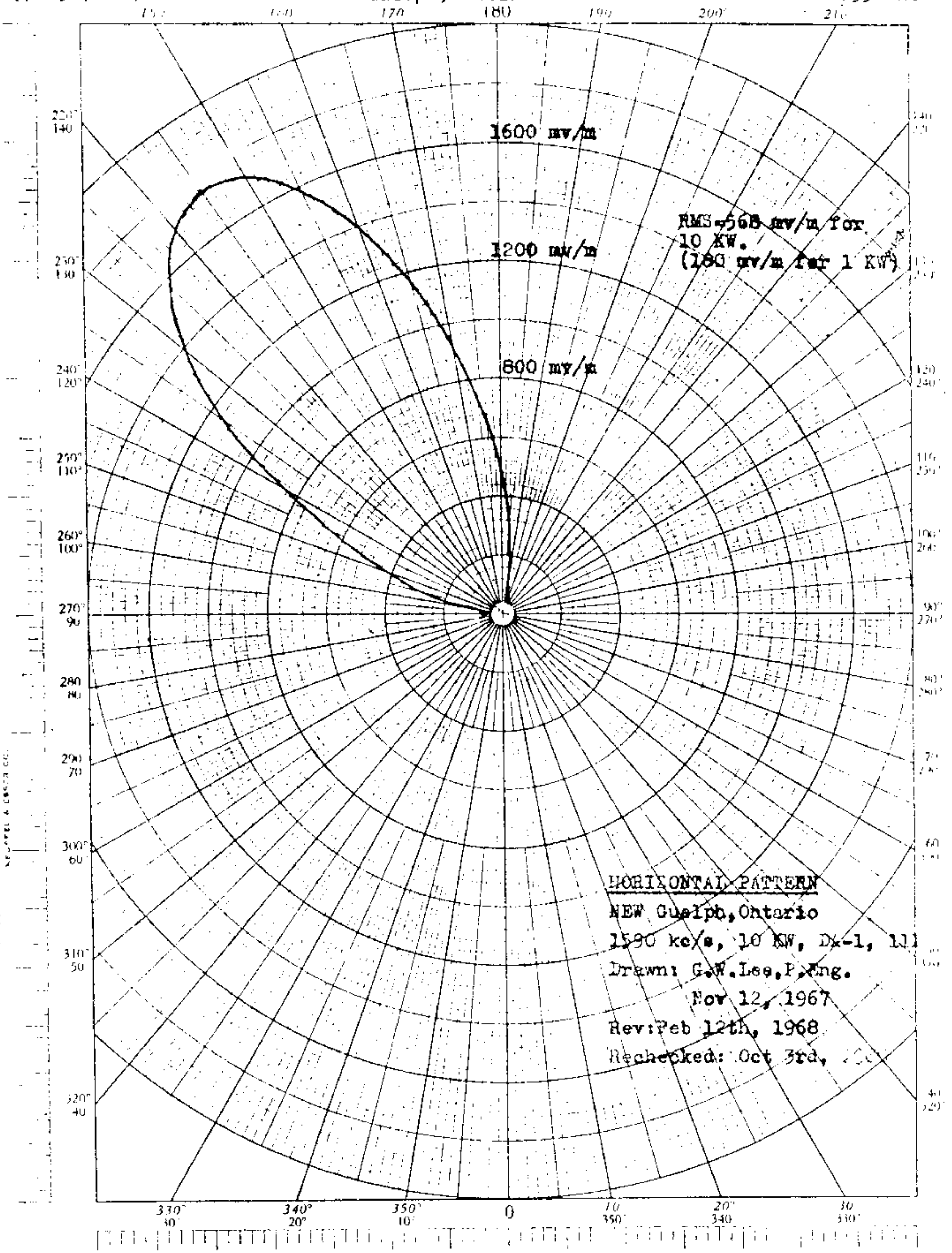
#2-1-3=8-7-9=5-4-6=210° @ 235°

#4-1-7=5-2-8=6-3-9=64° @ 315°

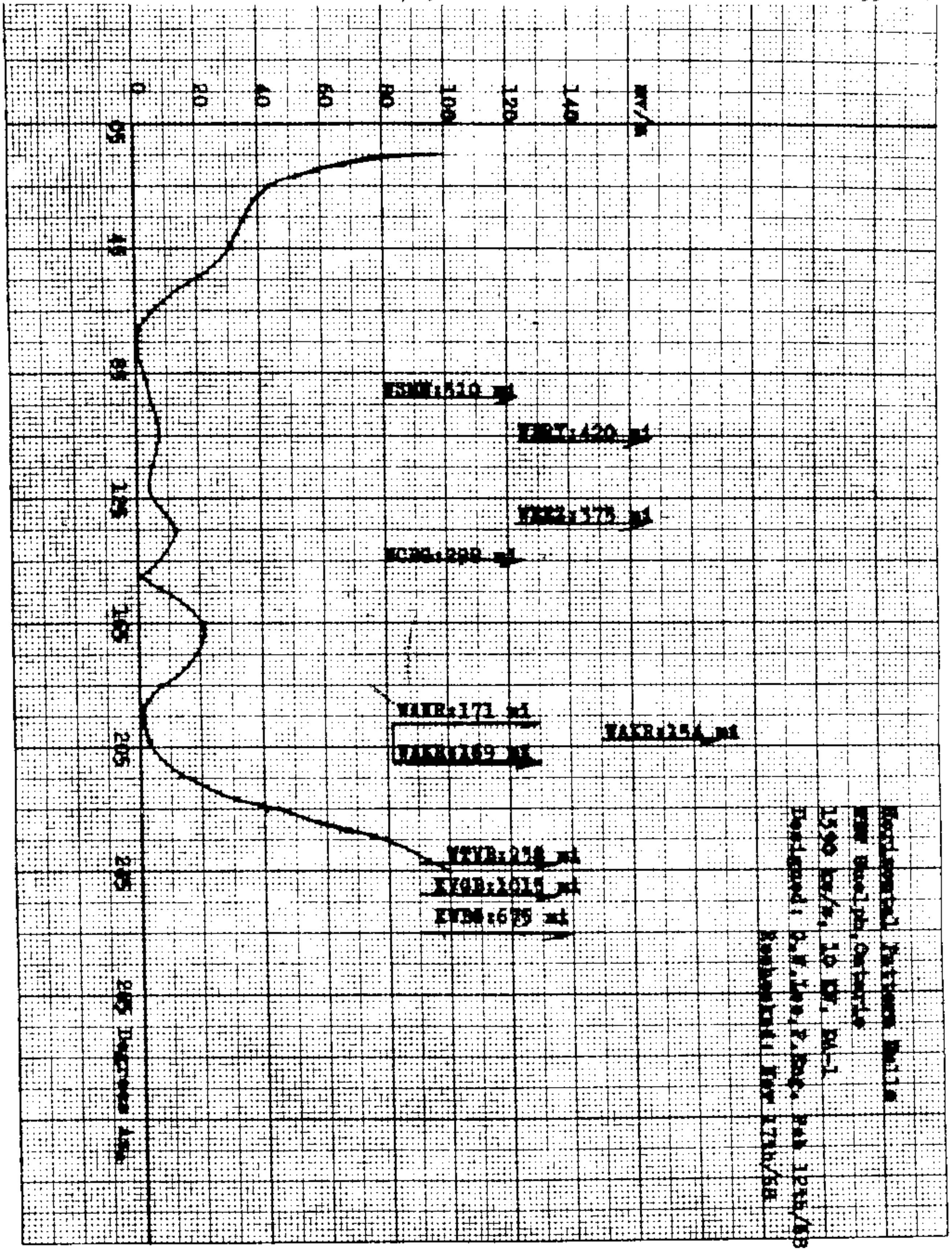
Parameters

#1= 1 /0°
#2= 0.45/+5°
#3= 0.45/-5°
#4= 0.52/+134°
#7= 0.52/-134°
#9=0.234/-139°
#6=0.234/+129°
#5=0.234/+139°
#3=0.234/-129

Proposed Day & Night (7-29-70ct) | New Station Guelph, Ontario | 10kw,DA-1,U,ClassIII 1590 kc



Proposed Day & Night Nulls (7-29-70ct) | New Station Guelph, Ontario | 10kw,DA-1,U,ClassIII 1590 kc



Description Sheet p.1
(3-28-68ct)

New Station
Guelph, Ontario

10kw,DA-1,U,Class III
1590 kc

ANTENNA DESCRIPTION SHEET

STATION: NEW

Main Studio: Guelph,Ontario

POWER: 10 KW

Frequency: 1590 kc/s, Cl: III

LOCATION: N43° 29' 38"
W80° 10' 52"

NOTIFICATION LIST NO: [illegible]

DATE: [illegible]

ANTENNA: Array of nine elements arranged in parallelogram form as per diagram. Elements are guyed, uniform cross section, base insulated, series fed, no top loading. Height: 155'(90°) plus 3' for base and obstruction lights.

TOWERS: Tower parameters as per attached diagram.

GROUND SYSTEM: 120 radials per tower of from 155' to [illegible]50' long, 10 soft copper wire, buried 8" approximately.

INCREASED EFFECTIVE FIELD:

180 mv/m for 1 KW
568 mv/m for 10 KW

Novemeber 12th/67

Gerald W. Lee & Associates

New Station
Guelph, Ontario

10kw,DA-1,U,Class III
1590 kc

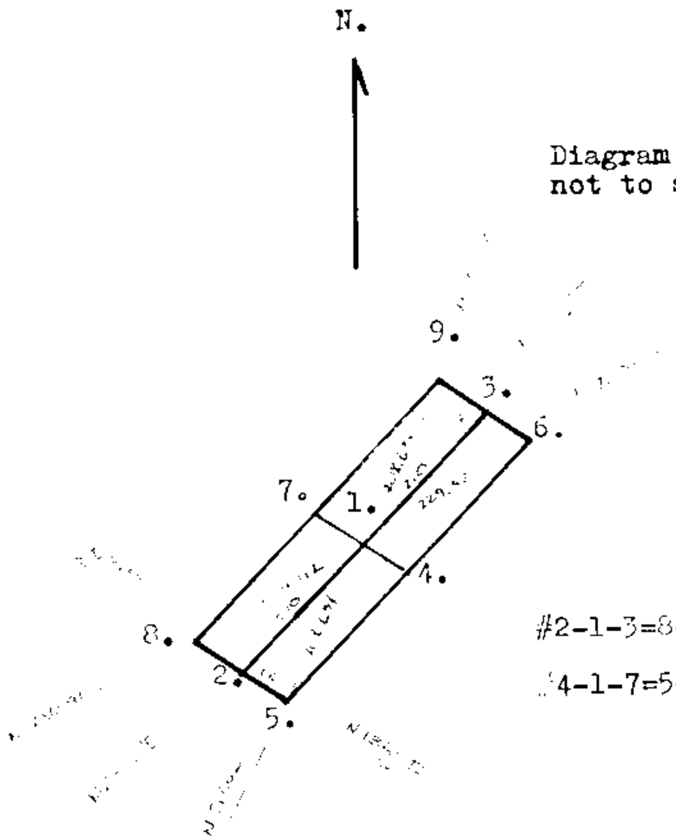


Diagram spacing and angles not to scale.

#2-1-3=8-7-9=5-4-6=210° 235°

#4-1-7=5-2-8=6-3-9=64° 315°

Parameters

#1= 1 ∠ 0°

#2= 0.45∠+5°

#3= 0.45∠-5°

#4= 0.52∠+134°

#7= 0.52∠-134°

#9=0.234∠-139°

#6=0.234∠+129°

#5=0.234∠+139°

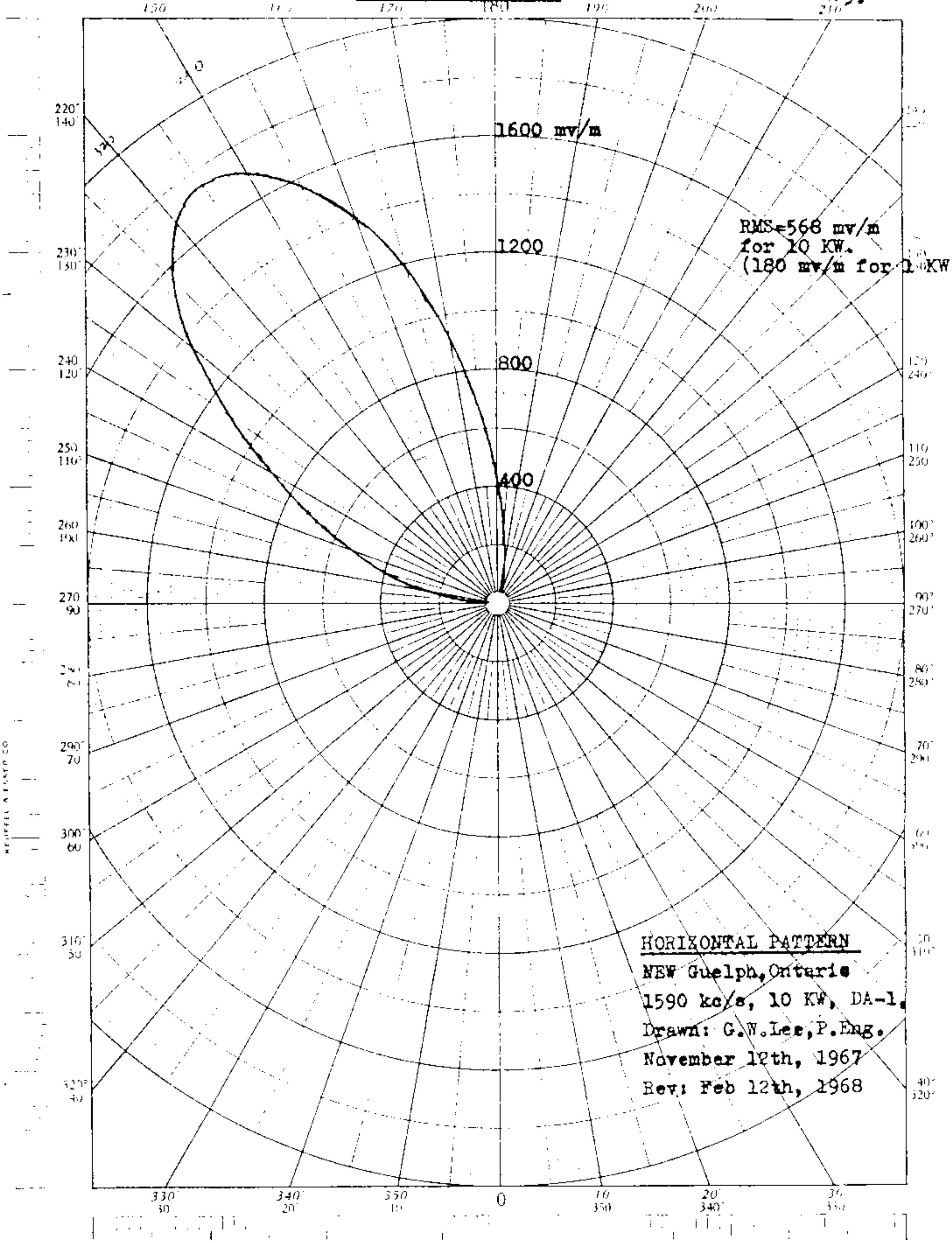
#8=0.234∠-129

Revised: Feb 12th/68

Proposed Day & Night
(3-28-68ct)

New Station
Guelph, Ontario

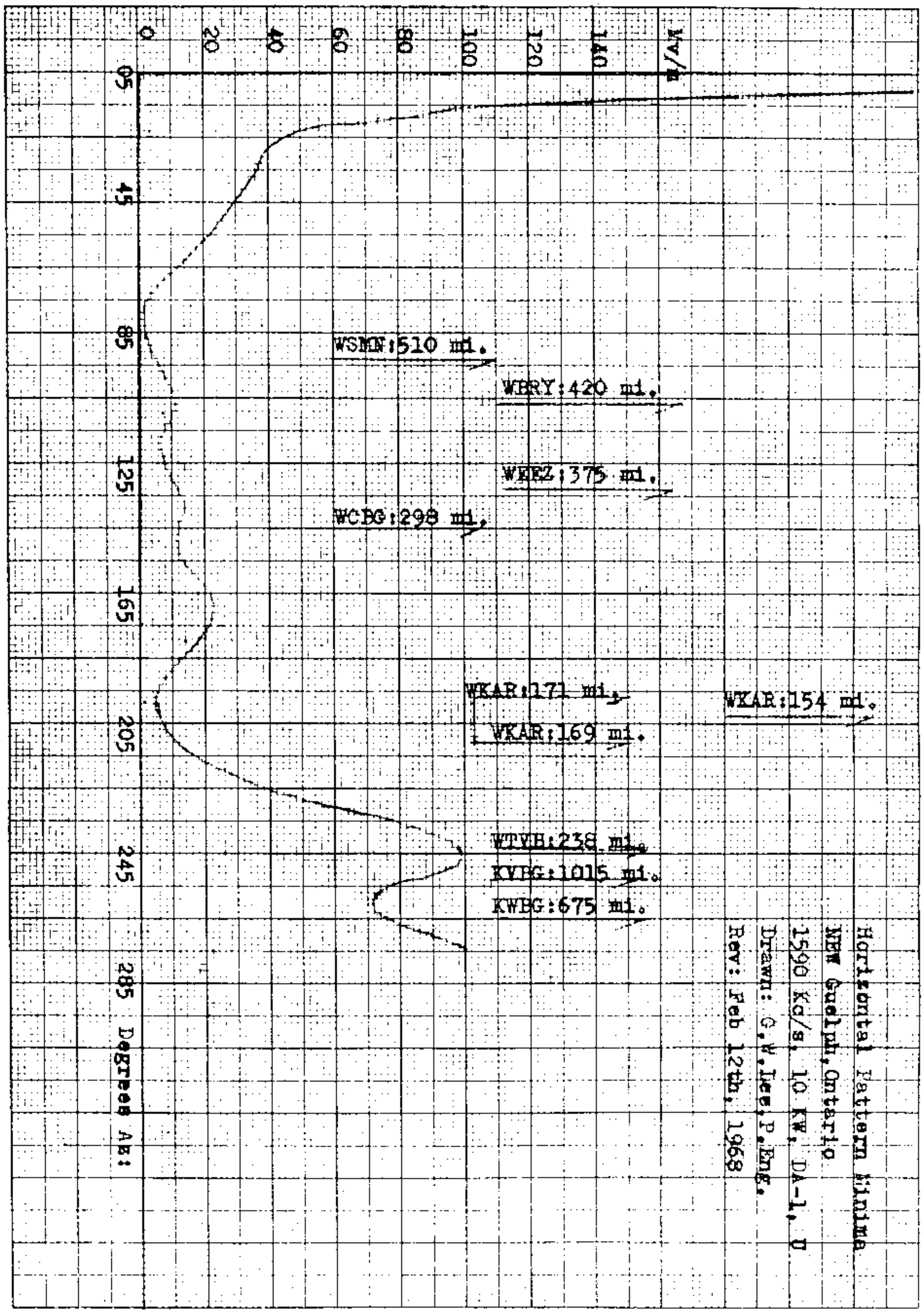
10kw,DA-1,U,Class III
1590 kc



Proposed Day & Night Nulls
(3-28-68ct)

New Station
Guelph, Ontario

10kw,DA-1,U,Class III
1590 kc



DIRECTIONAL ANTENNA DESCRIPTION SHEET

STATION: NEW Main Studio:Kitchener,Ontario

POWER: 10 KW Day and Night Frequency: 1590 KC/S. Cl. 111

GEOGRAPHICAL LOCATION OF THE CENTRE OF THE ANTENNA SYSTEM
North Latitude: 43° 22' 56"
West Longitude: 80° 28' 35"

NOTIFICATION LIST NO: 199 DATE: May 10, 1965

ANTENNA CHARACTERISTICS

Mode of Operation: DA-2
Number of Elements: 6
Type of Elements: Guyed, uniform cross-section, series fed, no top loading. Height: 205' (120°)

TOWERS: Tower parameters as per attached sheet.

GROUND SYSTEM: Ground System as per attached sheet.

PREDICTED EFFECTIVE FIELD: 585 MV/M for 10 KW
(185 MV/M for 1 KW)
(Day and Night)

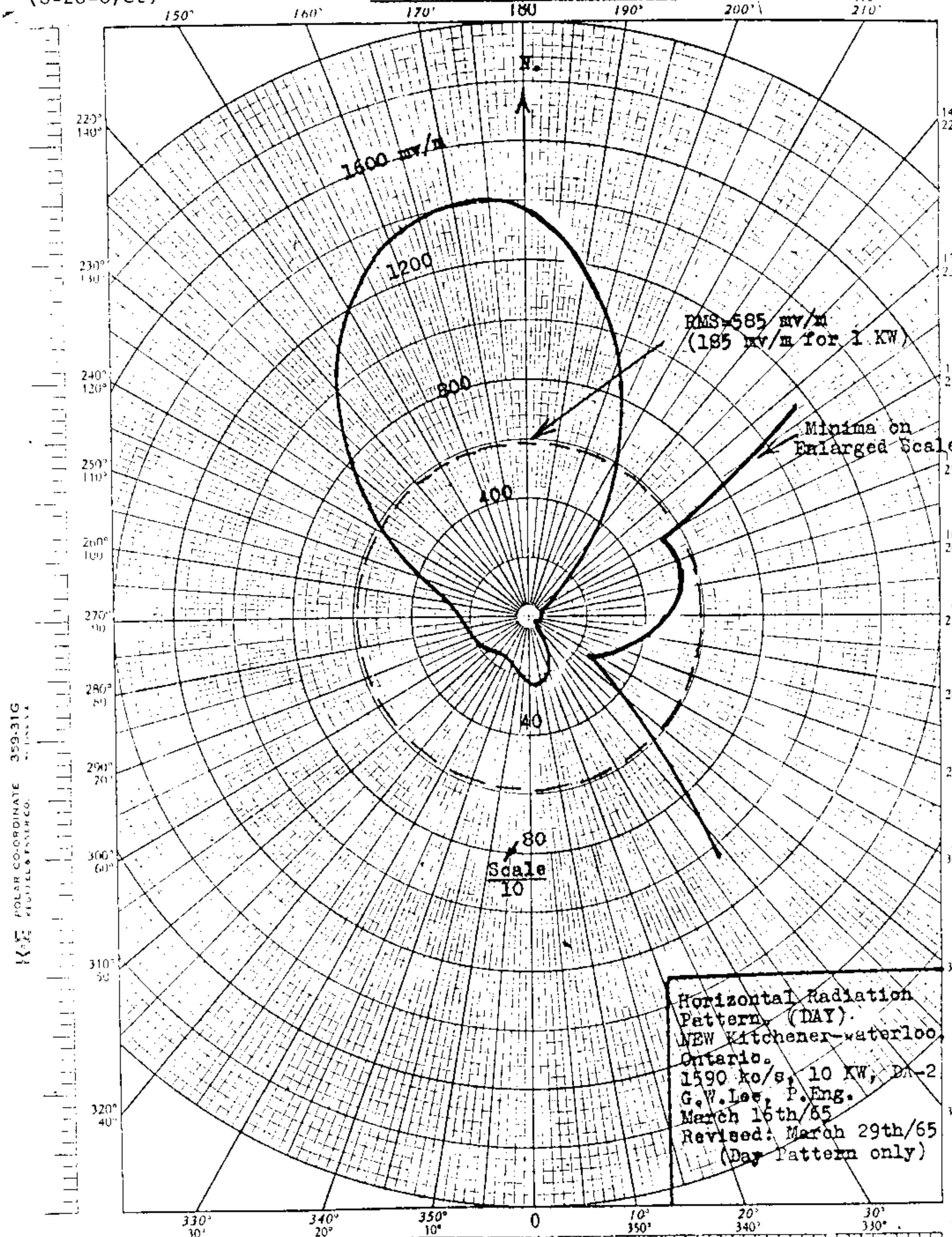
ORIENTATION: The towers to be arranged as shown by the diagram on the attached sheet.

Rev: March 29th/65

Proposed Day
(8-28-67ct)

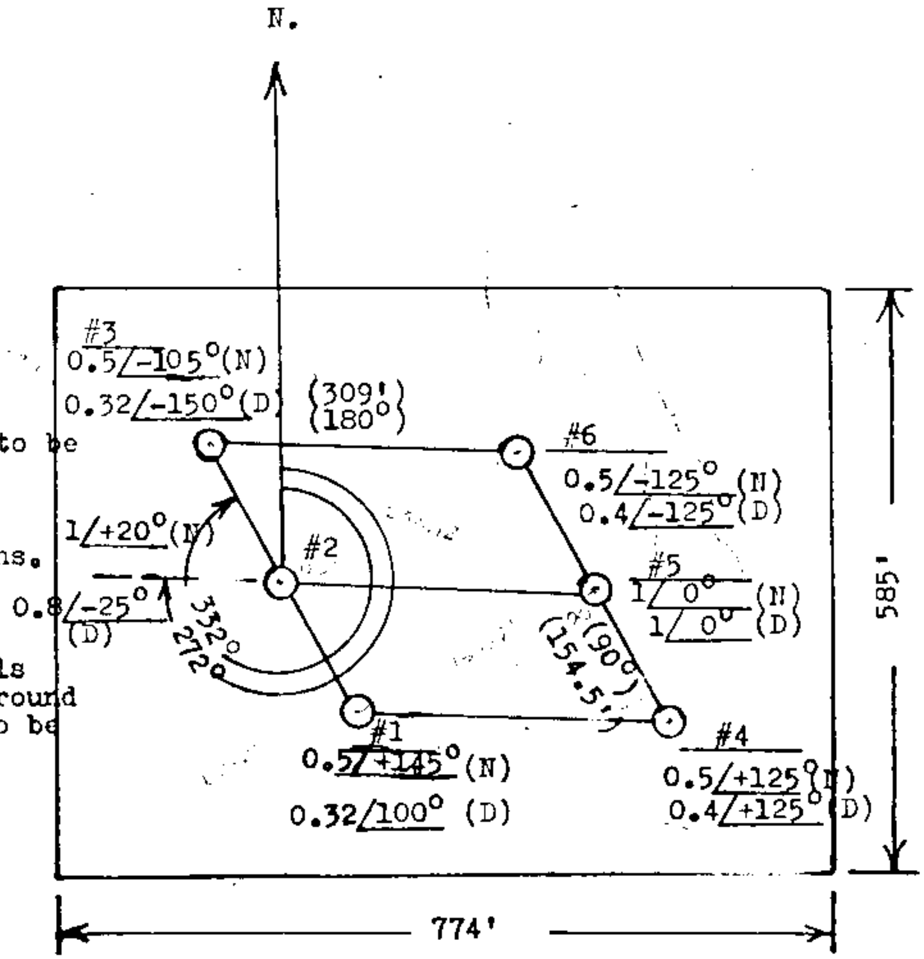
New Station
Kitchener, Ontario

10kw,DA-2,U,Class III
1590 kc



Ground System

The ground system to consist of 120 radials per tower, ranging in length from 155' to 250' (90°-144°), the radials to be of #10 AWG soft copper, and buried 8" approx. Radials to be joined to #4 copper at intersections. All towers to have their bases attached to the ground system by 4-3" copper straps. The radials to be joined to a ring around the towers. All joints to be silver soldered.

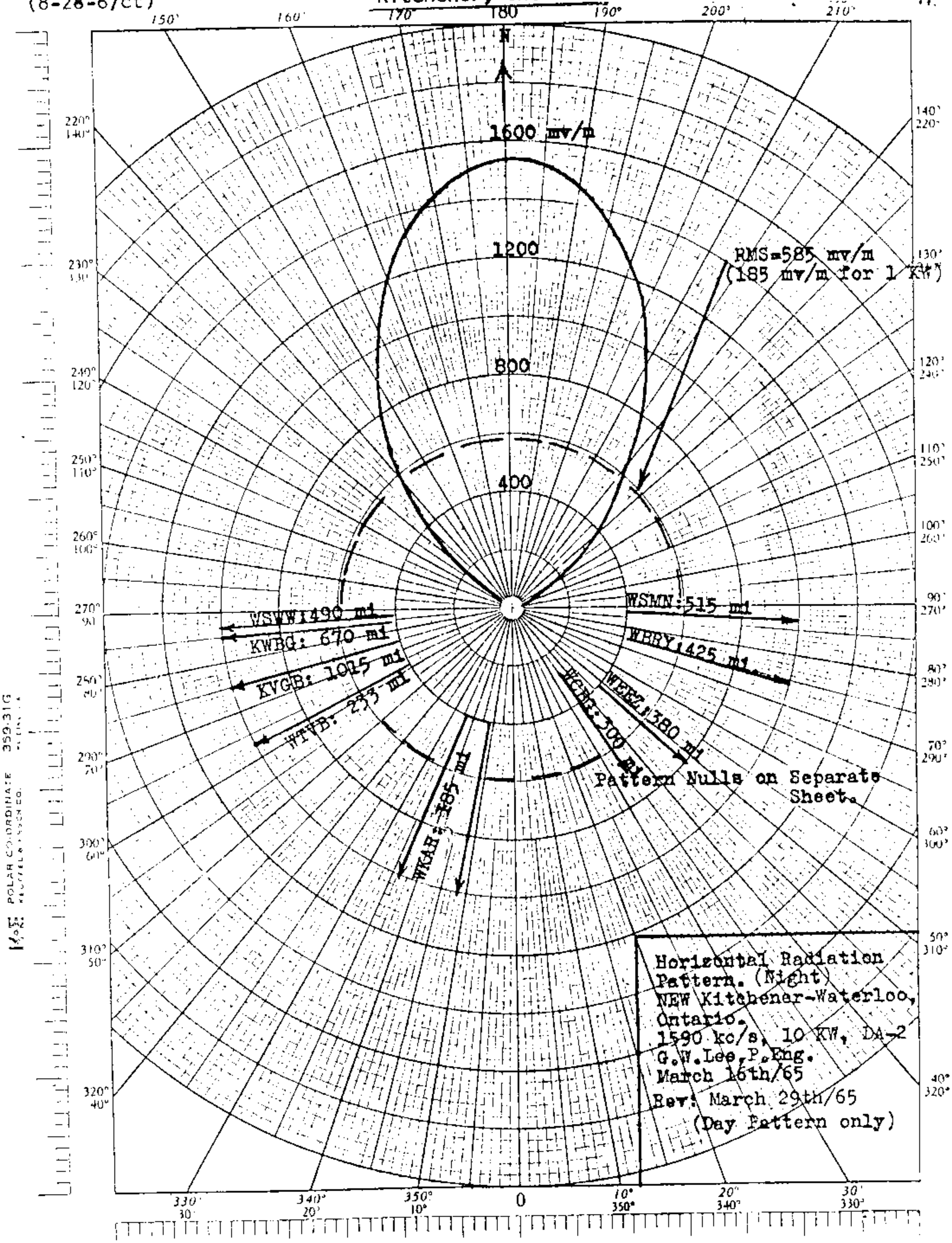


Tower parameters and orientation: NEW Kitchener-Waterloo, Ont.
1590 kc/s, 10 KW, DA-1
Rev: March 19th/65

Proposed Night
(8-28-67ct)

New Station
Kitchener, Ontario

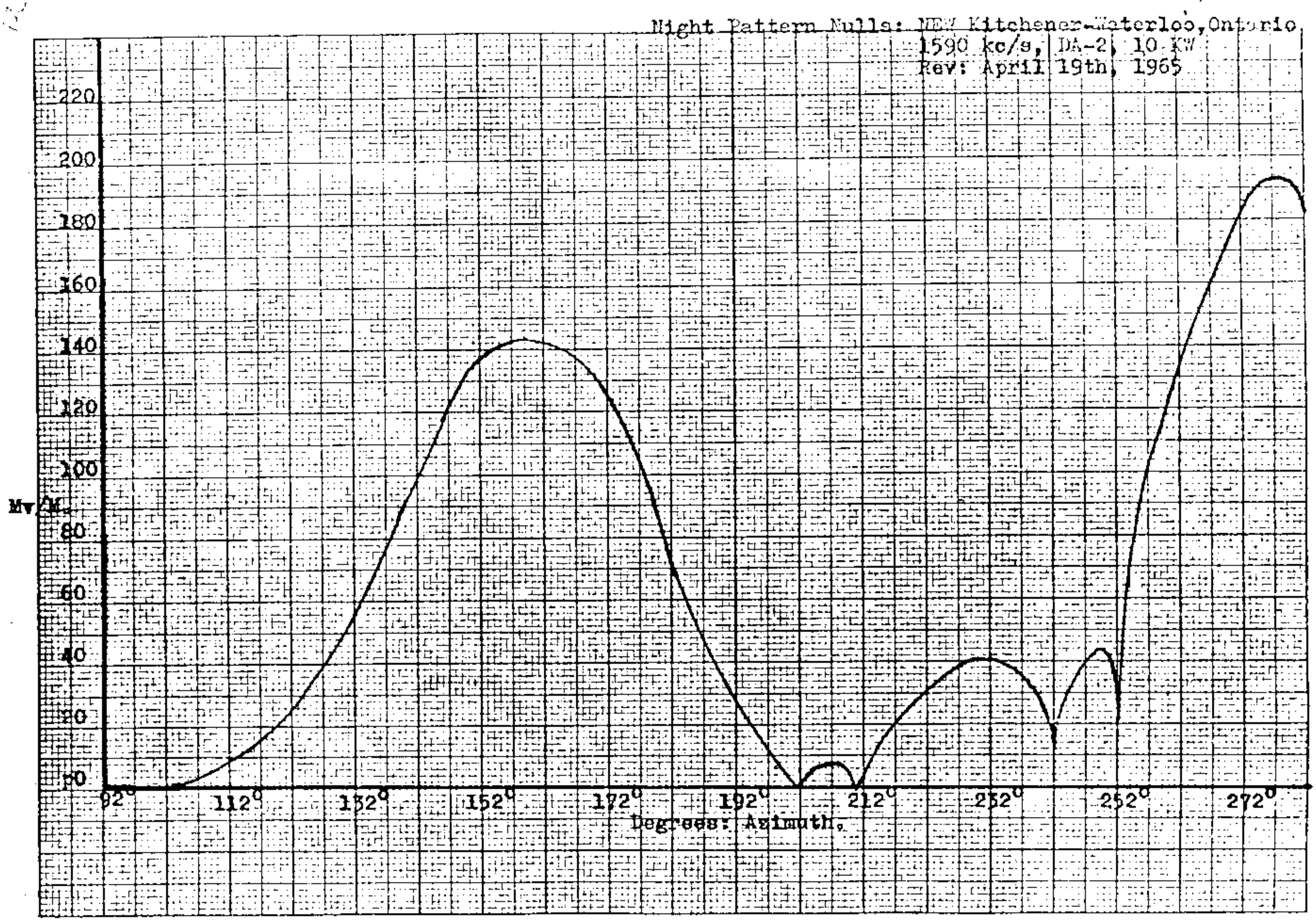
10kw,DA-2,U,Class III
1590 kc



Proposed Night Nulls
(8-28-67ct)

New Station
Kitchener, Ontario

10kw,DA-2,U,Class III
1590 kc



216

Description Sheet
(8-26-66ct)

New Station
St. Basile-de-Portneuf, Quebec

250w,D,Class III
1590 kc

PAGE

CLIENT: M. Jacques LaRoche

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

STATION CALL: New

MAIN STUDIO: CJLR Inc., Quebec, Que.

STATION LOCATION: ST.Basile-de-Portneuf, Que.

FREQUENCY: 1590 KHz

POWER: 250 watts (0.25 KW)

CLASS: III

TIME: Day

NOTIFICATION LIST NO.: 216 DATE: July 26, 1966

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM: 46° 48' 11" North Lat.
71° 47' 33" West Long.

ANTENNA CHARACTERISTICS

HEIGHT: 115 ft. (67°)

TYPE OF ELEMENT: Square, uniform cross-section, guyed, base insulated, series fed, no top loading.

GROUND SYSTEM : 120 equally spaced radials of #10 B&S bare, soft-drawn copper wire buried approx. 8" in ground. The radials extend to a distance of 250 ft. (0.4λ) in all directions.

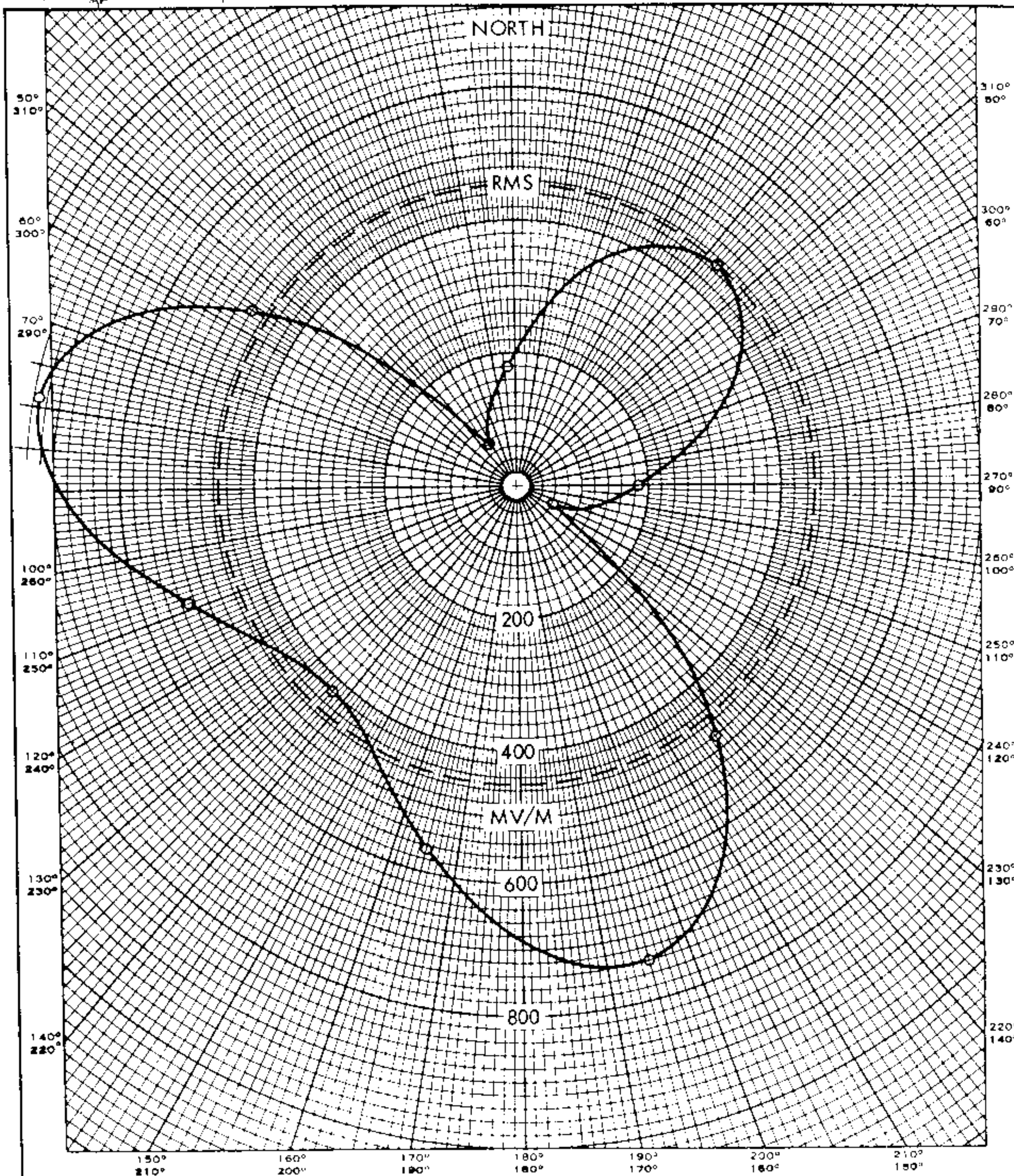
PREDICTED EFFICIENCY : 91 mV/m at 1 mile for 0.25 KW
or
182 mV/m at 1 mile for 1 KW

KBBQ

Measured Night (12-23-70ct)

Station KUDU Ventura, California

5kw, DA-2, U 1590 kc



N. LAT. 34° 14′ 12″ G1-173°-297′ S1=S2=180°=310′
W. LONG. 119° 12′ 11″ G3-G4-84°-145′

THEORETICAL RMS=450 MV/M
(NOT USED) 2
3 0.715 /113.9°
1 S2 1.000 /0°
4 S1 0.420 /-80.1°
N 223° E

MEASURED RMS=453 MV/M
(NOT USED) 2
3 1.573 /39.5°
1 S2 1.000 /0°
4 S1 1.046 /-165°
N 223° E

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KUDU
1590 KHZ. 5 KW. DA-2
VENTURA, CALIFORNIA

MEASURED HORIZONTAL RADIATION NIGHTTIME DIRECTIONAL

UNATTENUATED FIELD INTENSITY AT ONE MILE

700805

FIGURE 11C

FCC File No. BL-12806
Accepted 12-1-70

Station KUDU
Ventura, California

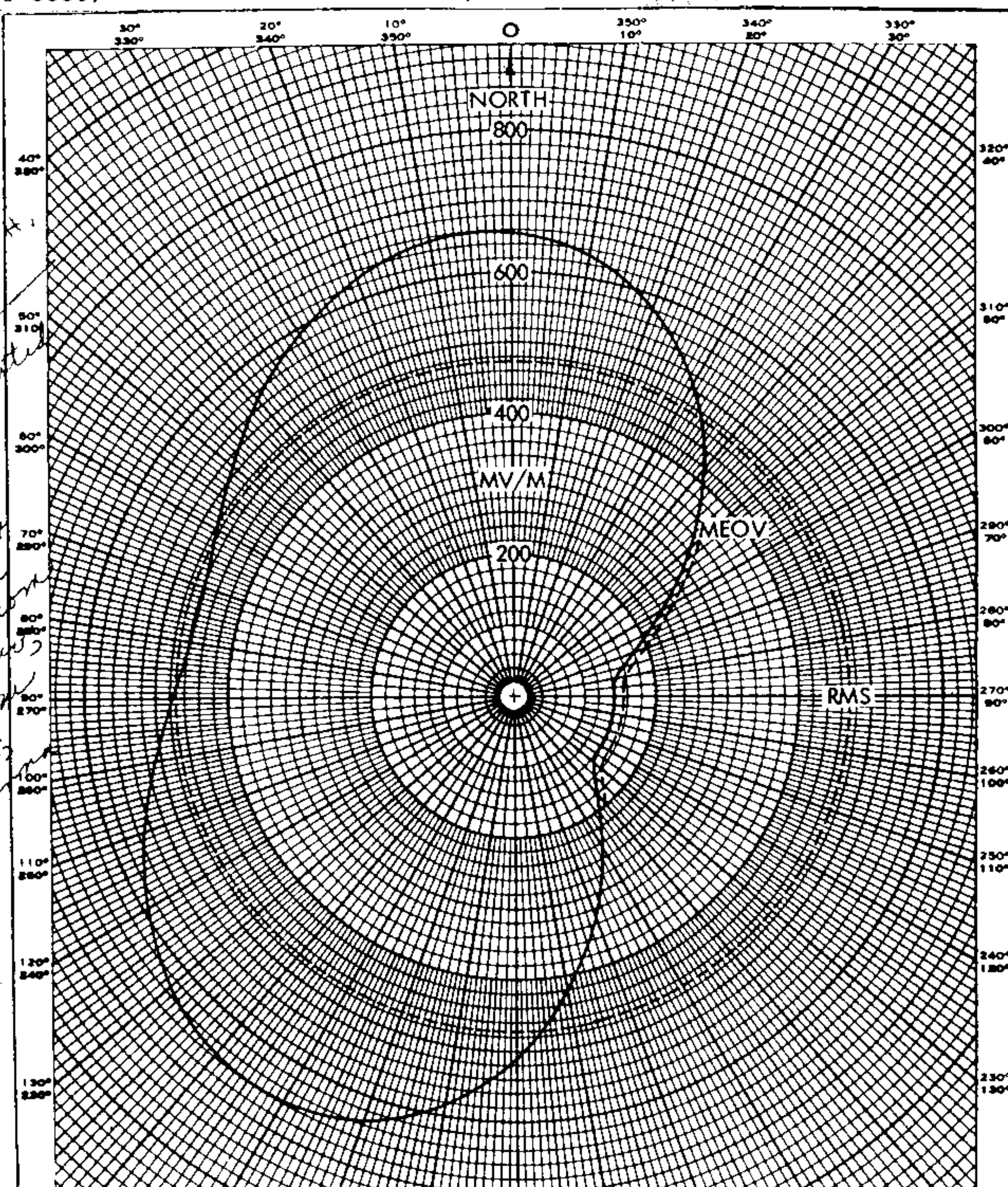
1590 kc

KBBQ ~~KUDU~~

Proposed Day (10-28-66ct)	Station KUDU Ventura, California	5kw,DA-2,U 1590 kc

3P-17654 GRANTED Appl. FOR TEMP. AUTH. 3-29-67

3P-17241 Granted 4-1-69) CP to increase daytime & nighttime power from 1kw to 5kw, change from DA-1 to DA-2; change antenna transmitter location



N. LAT. 34° 14' 12"
W LONG. 119° 12' 11"

0.65 /-45°   1 /0°

S = 140°=241'
G1 = 175°=300'
G2 = 86°=148'
RMS = 472 MV/M

N285°E

PROPOSED HORIZONTAL RADIATION DAYTIME

UNATTENUATED FIELD INTENSITY AT ONE MILE

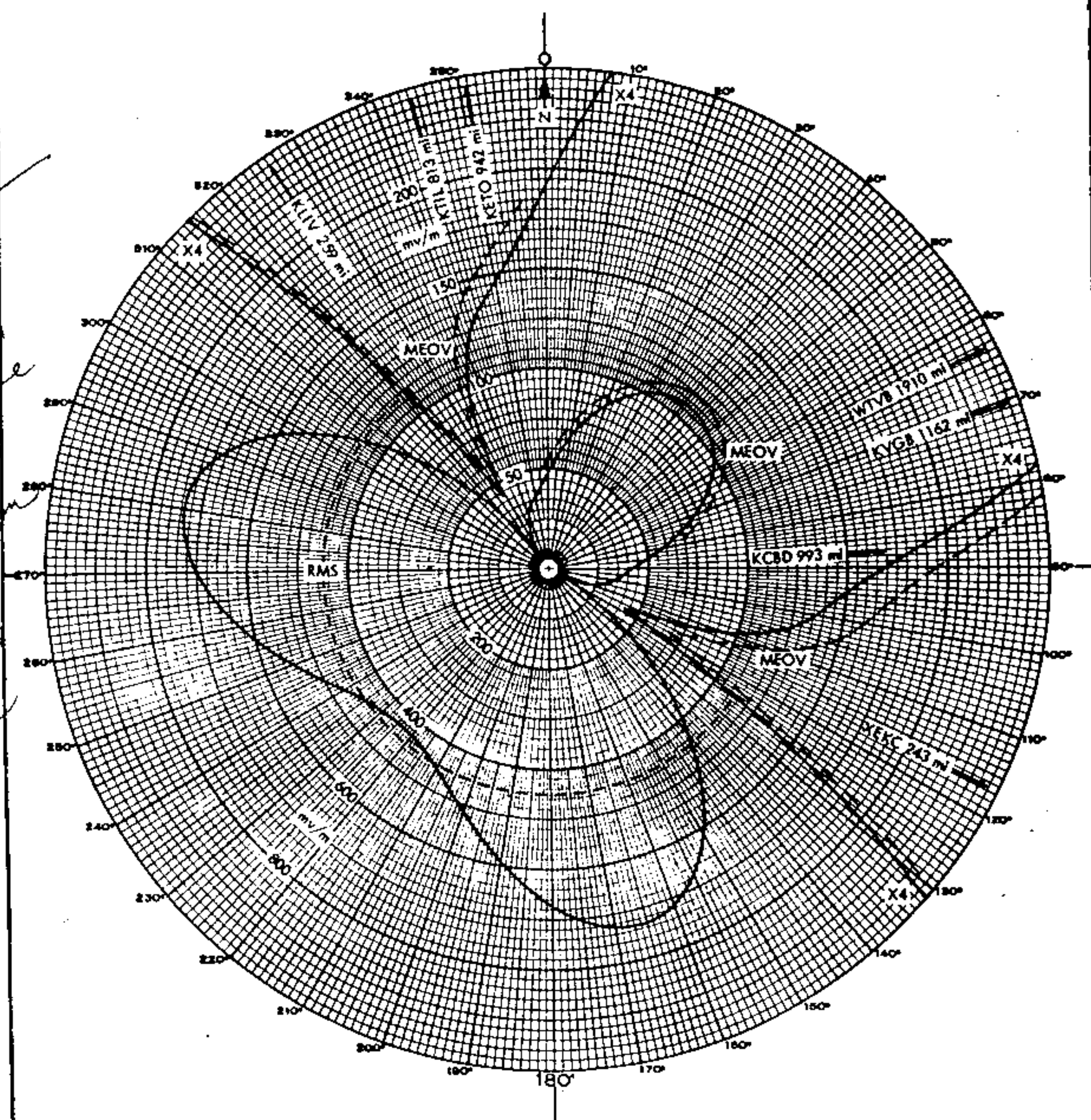
HAMMETT & EDISON CONSULTING RADIO ENGINEERS SAN FRANCISCO	RADIO STATION KUDU 1590 KC. 5 KW. DA-2 VENTURA, CALIFORNIA	650325	FIGURE 5B

FCC File No.BP-17241 Accepted 10-17-66	Station KUDU Ventura, California	1590 kc

KBBQ ~~KUDU~~

BP- 17654
GRANTED APPL
FOR TEMP.
AUTH.
3-29-67

BP-17241
Granted 4-1-69
CP to increase
daytime +
nighttime
power from
1 kw to
5 kw;
Change from
DA-1. Change
~~site and~~
transmitter
location



N. LAT. 34° 14' 12"
W. LONG. 119° 12' 11"

S = 180° = 310'
G_1 = 175° = 300'
G_3 = G_4 = 86° = 148'

RMS = 450 MV/M

3 0.7146/113.92°
2 (NOT USED)
1 1.0000/0°
4 0.4204/-80.08°
S
S
N22.3°E

HAMMETT & EDISON
CONSULTING RADIO ENGINEERS
SAN FRANCISCO

RADIO STATION KUDU
1590 KC. 5 KW. DA-2
VENTURA, CALIFORNIA

PROPOSED
HORIZONTAL RADIATION
NIGHTTIME
UNATTENUATED FIELD INTENSITY
AT ONE MILE

660425

FIGURE 5B1

KBBQ ~~KUDU~~

Proposed Night Nulls
(10-28-66ct)

Station KUDU
Ventura, California

5kw,DA-2,U
~~1590 kc~~

BP-17654
GRANTED APPL.
FOR TEMP.
AUTHORITY.
3-29-67

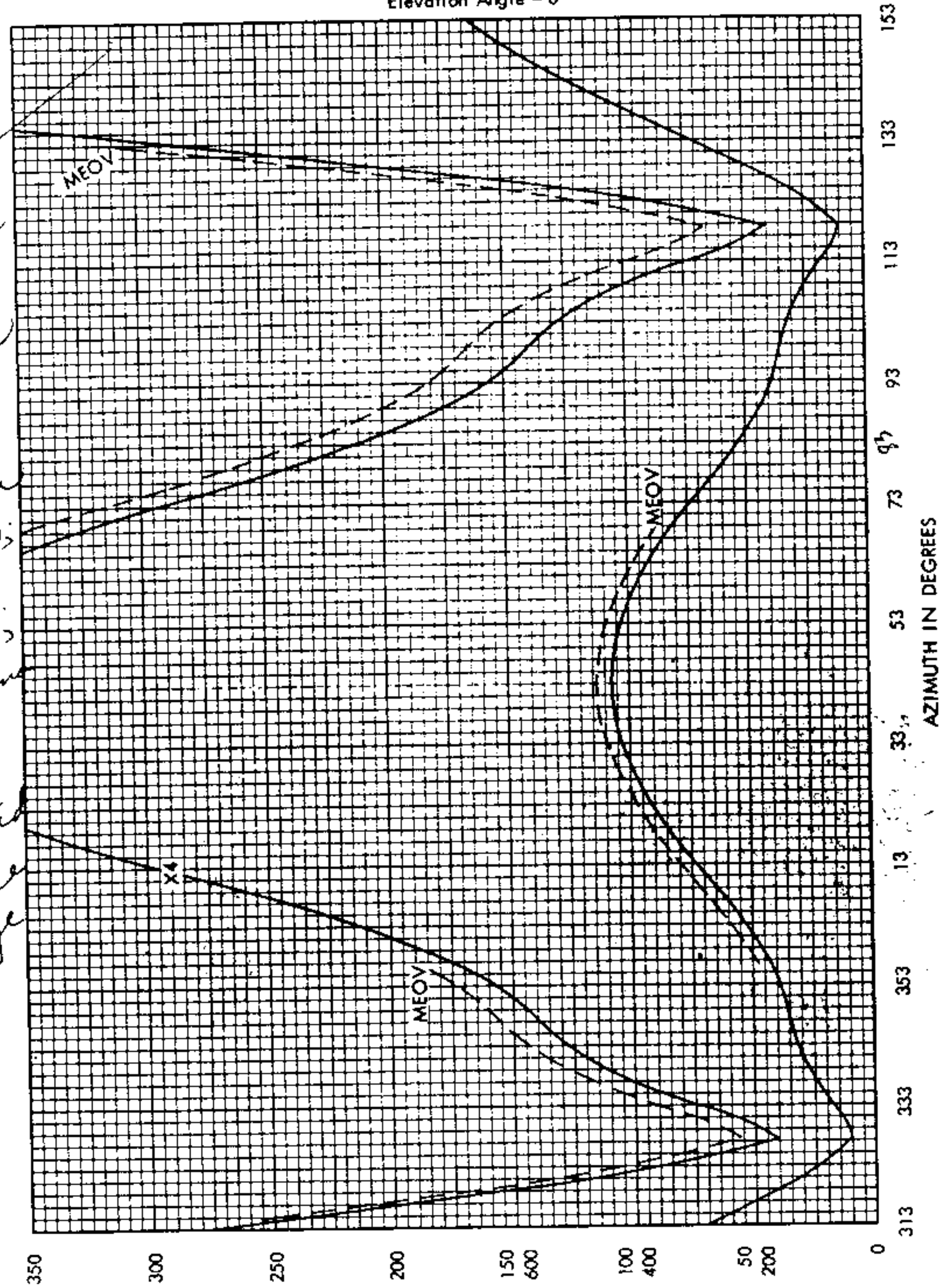
BP-17241 Granted
(4-1-69) CP
to increase
daytime &
nighttime
power from
1 kw to 5 kw;
change from
DA-1 to DA-2,
change antenna
transmitter
location

BP 12198 Granted
(4-1-69) license
covering change
in antenna-
transmitter
location &
change in

RADIO STATION KUDU
VENTURA, CALIFORNIA

CALCULATED RADIATION

Elevation Angle = 0°



UNATTENUATED RADIATION IN MV/M

Hammett & Edison
Consulting Radio Engineers

650609

FIGURE 5C

FCC File No.BP-17241
Accepted 10-17-66

Station KUDU
Ventura, California

1590 kc

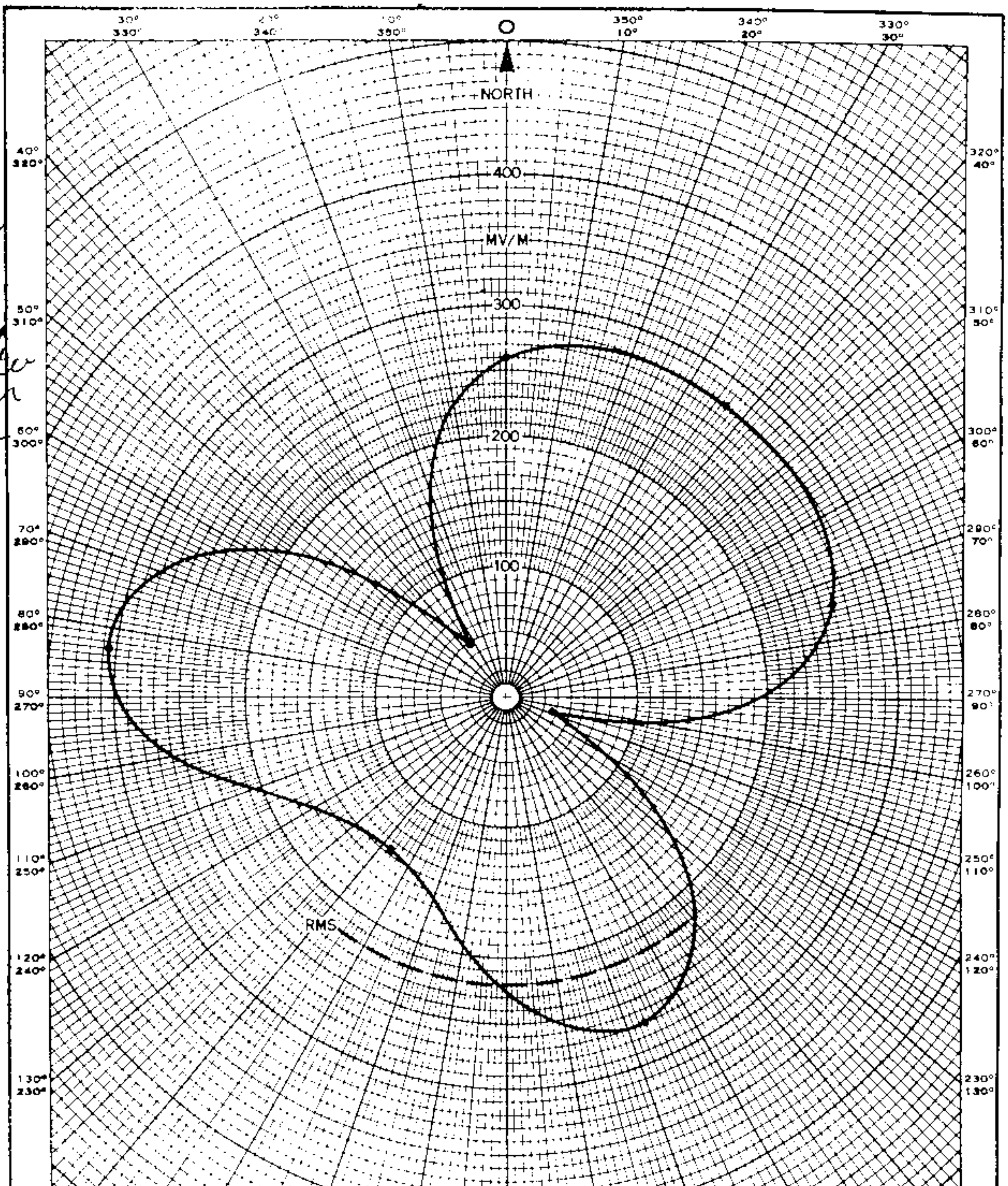
KBSQ ~~KUDU~~

Measured Day & Night
(12-27-68ct)

Station KUDU
Ventura, California

1kw,DA-1,U
1590 kc

BL-12198
Granted
4-11-69
license
covering
change in
antenna
system
& antenna
transmitter
location



S = 225° = 387'
$G_1 = G_2$ = 173° = 297'
RMS = 220 MV/M

THEORETICAL FIELDS
N37°E
S
1 1.0/111.9°
2 0.9/0°

INDICATED BASE CURRENTS
N37°E
S
1 1.0/145°
2 0.67/0°

N. LAT. 34° 14' 12" W. LONG. 119° 12' 11"

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KUDU
1590 KHZ. 1 KW. DA-1
VENTURA, CALIFORNIA

MEASURED DIRECTIONAL HORIZONTAL RADIATION

UNATTENUATED FIELD INTENSITY AT ONE MILE
(WITH RADIATION REDUCED FROM RMS OF 237 MV/M TO RMS OF 220 MV/M BY ADDITION OF RESISTOR)

670801.1

FIGURE 10B

FCC File No.BL-12198
Accepted 12-10-68

Station KUDU
Ventura, California

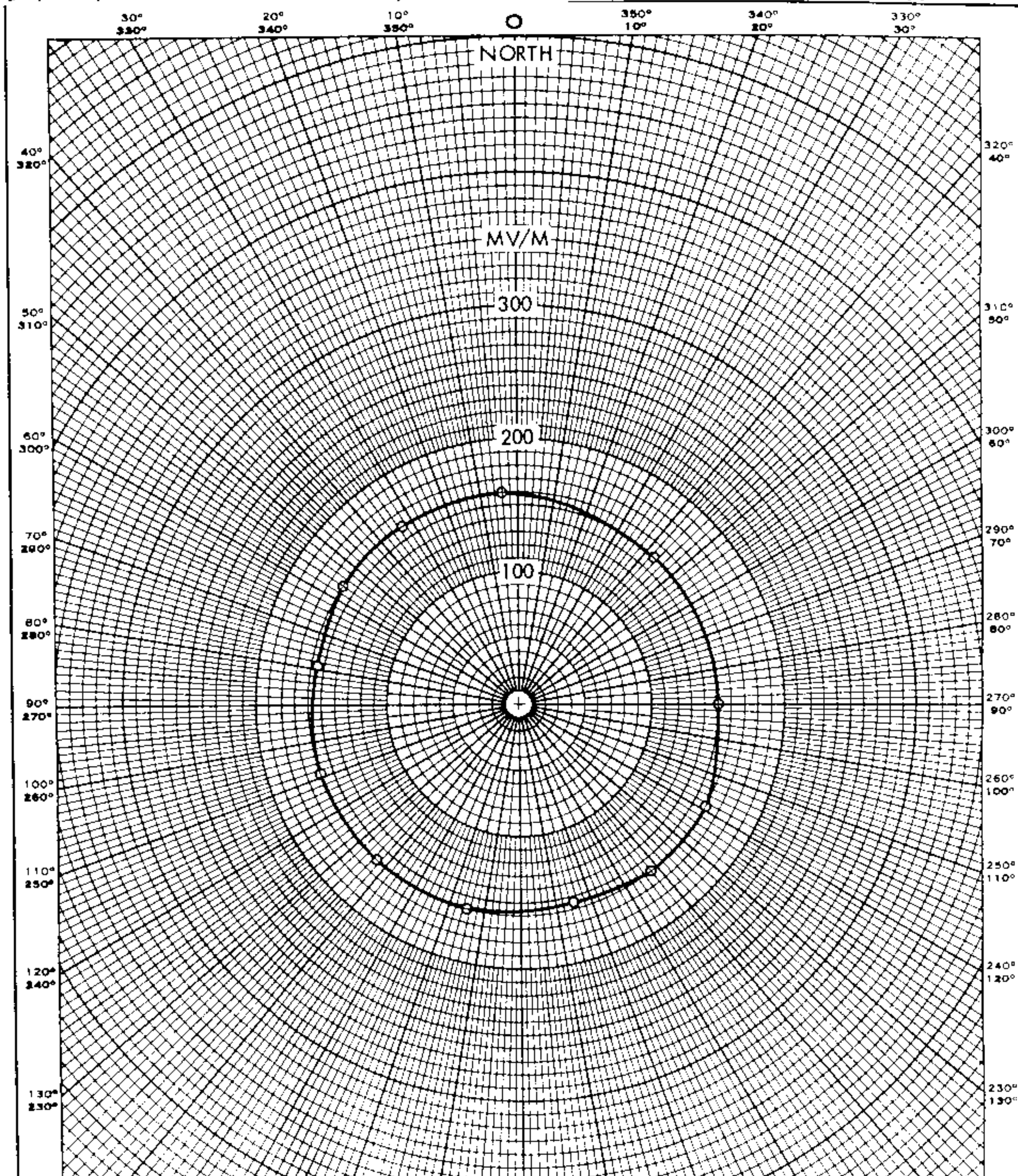
1590 kc

KUDU

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

Station KUDU
Ventura, California

5kw, DA-2, U
1590 kc



N. LAT. 34° 14' 12"
W. LONG. 119° 12' 11"

G_1=173°=297 FT
RMS=156 MV/M

TOWER 1 EXCITED, TOWERS 2, 3, AND 4 FLOATING

MEASURED HORIZONTAL RADIATION NON-DIRECTIONAL

UNATTENUATED FIELD INTENSITY AT ONE MILE

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KUDU
1590 KHZ. 5 KW. DA-2
VENTURA, CALIFORNIA

700805

FIGURE 11A

FCC File No. BL-12806
Accepted 12-1-70

Station KUDU
Ventura, California

1590 kc

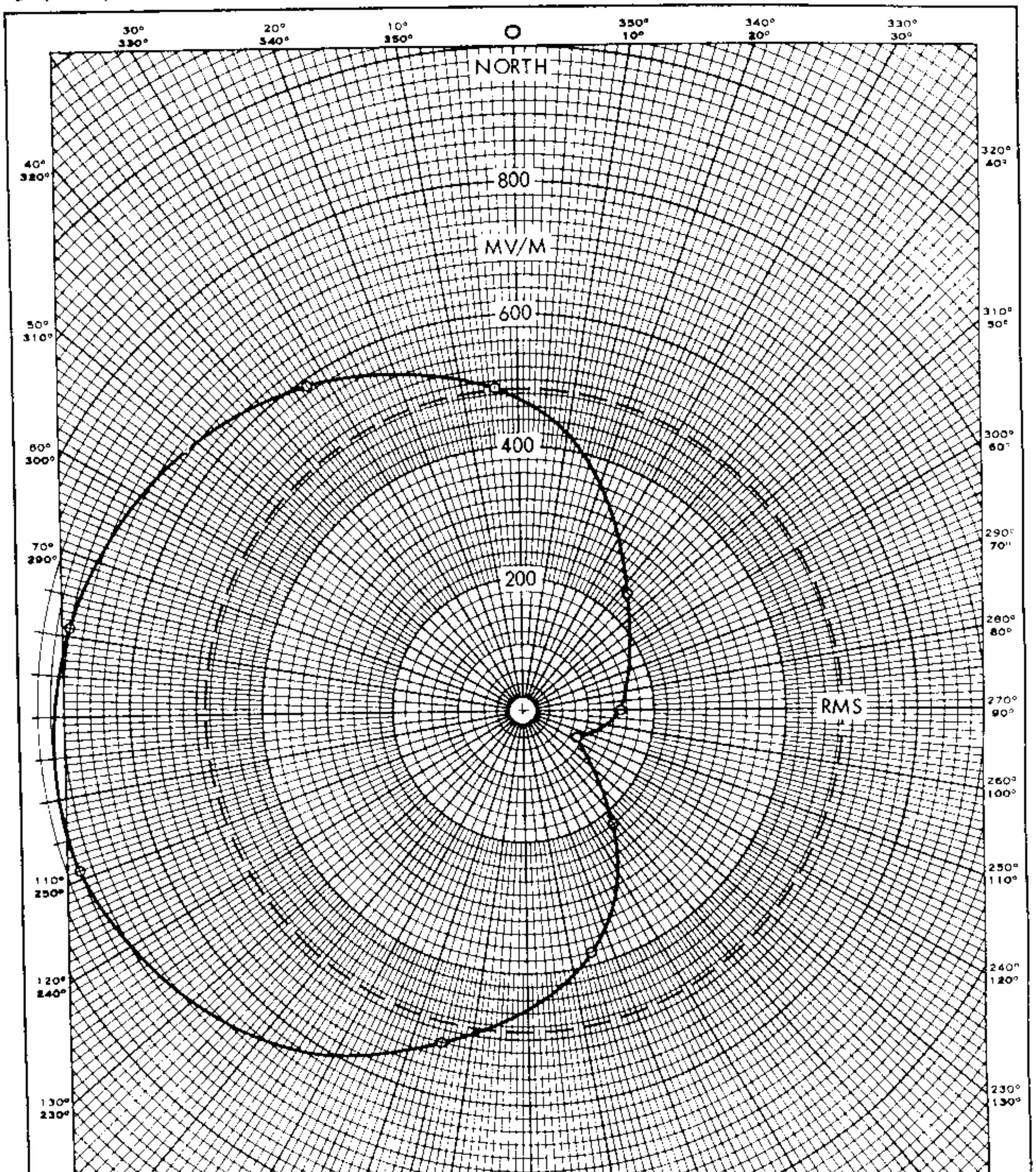
KBBQ

~~KUDU~~

Measured Day
(12-23-70ct)

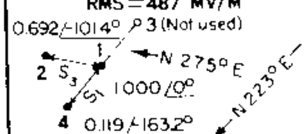
Station KUDU
Ventura, California

5kw,DA-2,U
1590 kc

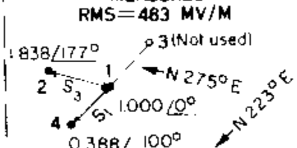


N. LAT. 34° 14′ 12″ G_1=173°=297′ S_1=180°=310′
W. LONG. 119° 12′ 11″ G_2=G_4=84°=145′ S_3=75°=129′

THEORETICAL
RMS=487 MV/M



MEASURED
RMS=483 MV/M



HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KUDU
1590 KHZ. 5 KW. DA-2
VENTURA, CALIFORNIA

MEASURED HORIZONTAL RADIATION DAYTIME DIRECTIONAL

UNATTENUATED FIELD INTENSITY
AT ONE MILE

700805

FIGURE 11B

FCC File No.BL-12806
Accepted 12-1-70

Station KUDU
Ventura, California

1590 kc

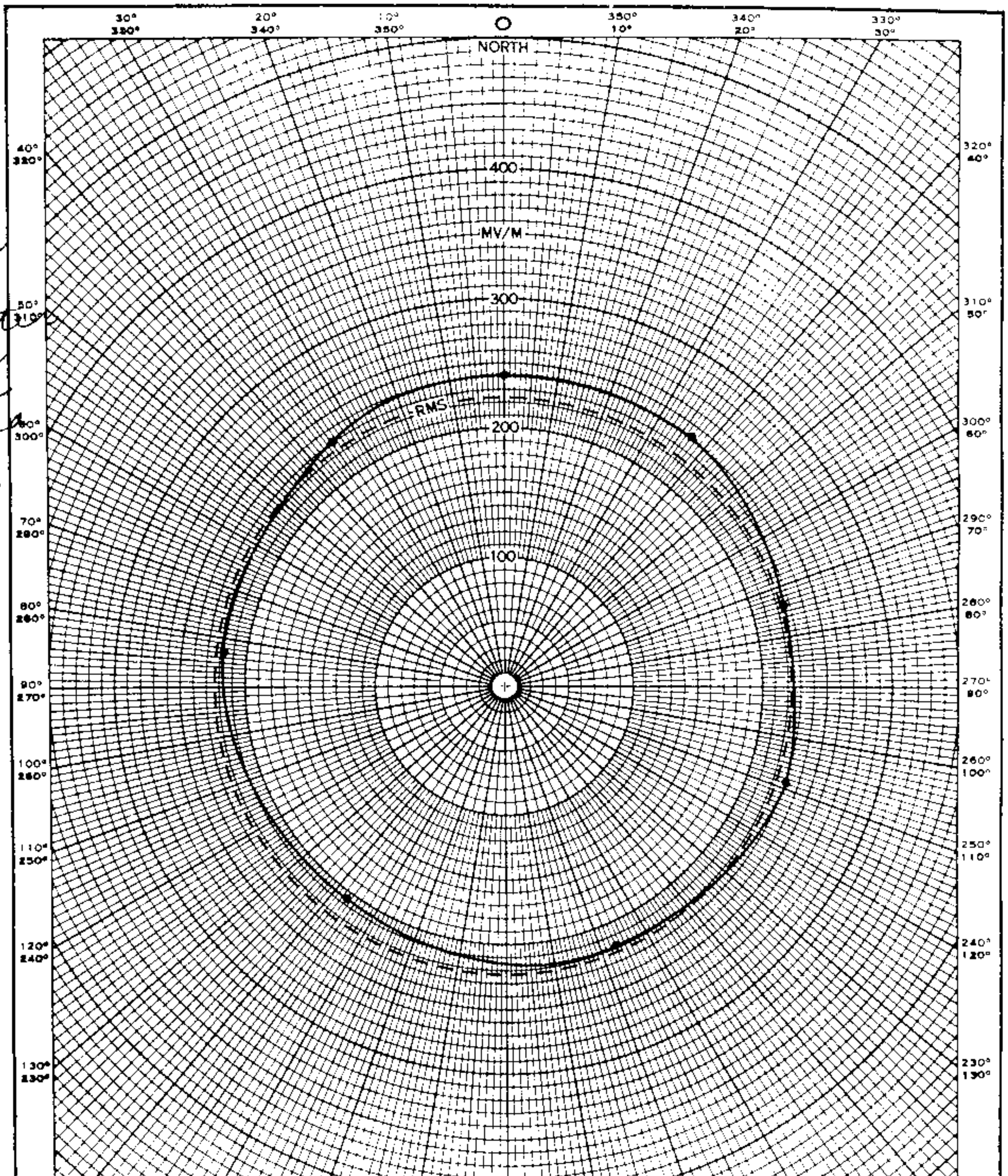
KIBQ KUDU

Measured Non-DA
(12-27-68ct)

Station KUDU
Ventura, California

1kw,DA-1,U
1590 kc

BL 12198
Granted
4-11-69
license
covering
change in
antenna
transmitter
location
& change
in antenna
system



N. LAT. 34° 14' 12"
W. LONG. 119° 12' 11"
G=173°=297'
RMS=223 MV/M
1 KW INTO TOWER 2

HAMMETT & EDISON
CONSULTING ENGINEERS
SAN FRANCISCO

RADIO STATION KUDU
1590 KHZ. 1 KW. DA-1
VENTURA, CALIFORNIA

MEASURED NON-DIRECTIONAL HORIZONTAL RADIATION

UNATTENUATED FIELD INTENSITY AT ONE MILE

670801

FIGURE 10A

FCC File No.BL-12198
Accepted 12-10-68

Station KUDU
Ventura, California

1590 kc

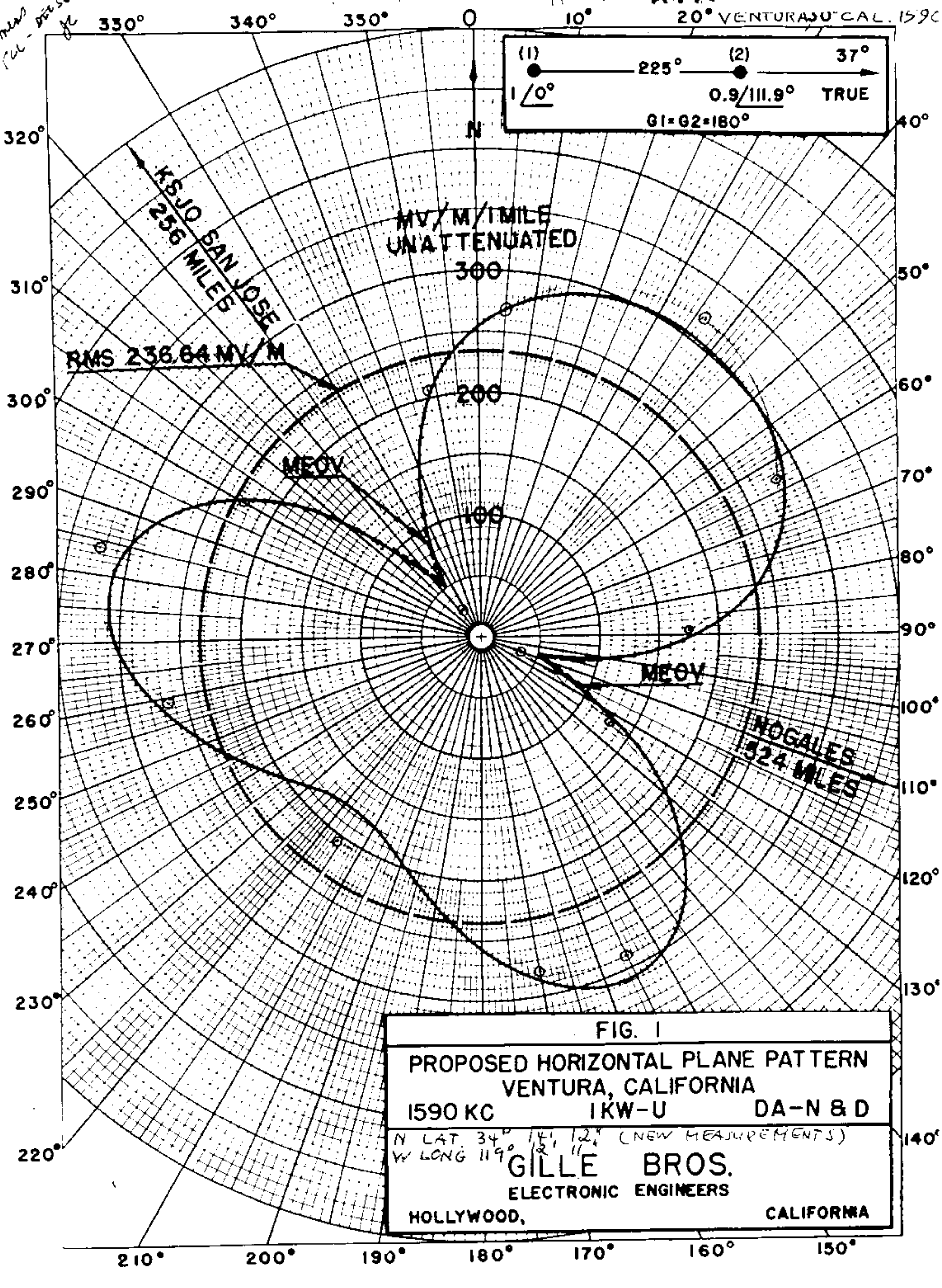


FIG. I

PROPOSED HORIZONTAL PLANE PATTERN
VENTURA, CALIFORNIA

1590 KC 1KW-U DA-N & D

N LAT. 34° 14' 12" (NEW MEASUREMENTS)
W LONG 119° 12' 11"

GILLE BROS.
ELECTRONIC ENGINEERS
HOLLYWOOD, CALIFORNIA

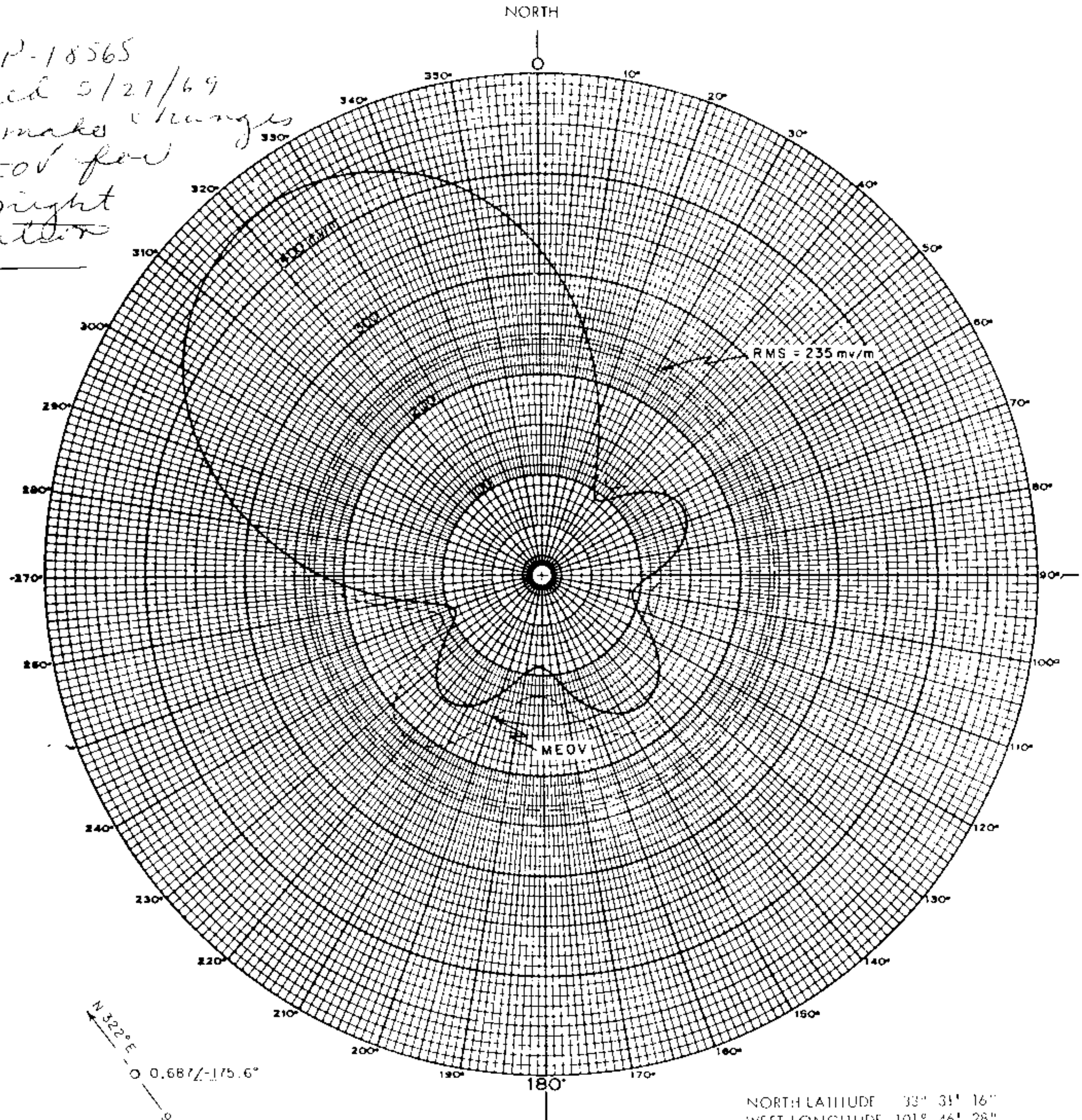
KEND

Proposed Day
(5-27-69ct)

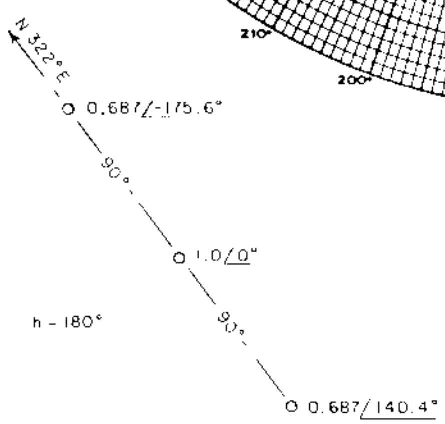
Station KCBD
Lubbock, Texas

1KW,DA-2,U
1590 kc

BP-18565
Granted 5/27/69
CP to make changes
in MEOV for
day & night
Operation



NORTH LATITUDE 33° 31' 16"
WEST LONGITUDE 101° 46' 28"



ANTENNA PLAN
(Theoretical Parameters shown)

FIGURE 1
DAYTIME PATTERN
BRYANT RADIO & TELEVISION, INC.
KCBD 1 KW-U DA-2 1590 KC
LUBBOCK, TEXAS

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

FCC File No.BP-18565
Accepted 5-26-69

Station KCBD
Lubbock, Texas

1590 kc

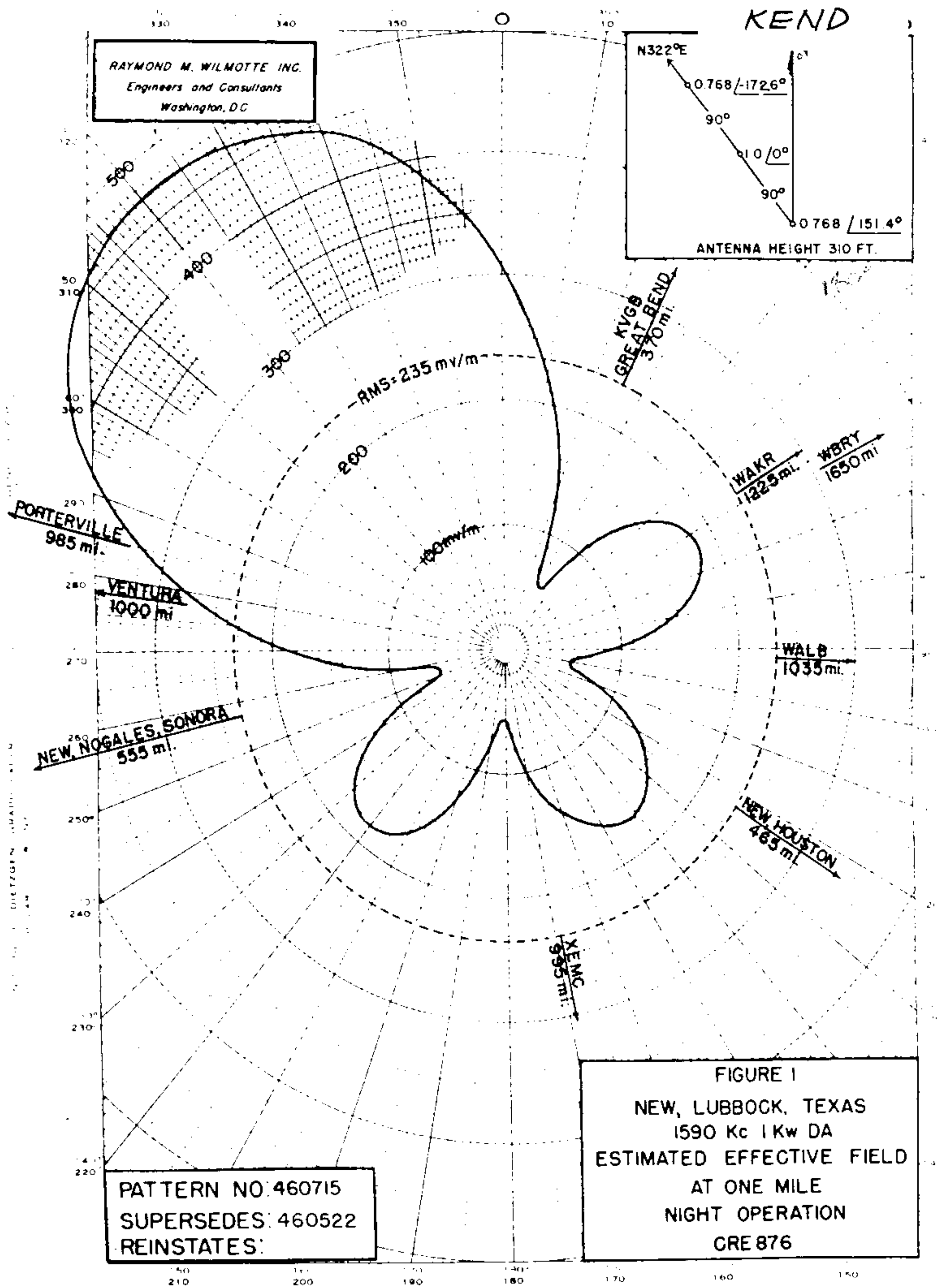


FIGURE 1

NEW, LUBBOCK, TEXAS

1590 Kc 1 Kw DA

ESTIMATED EFFECTIVE FIELD

AT ONE MILE

NIGHT OPERATION

CRE 876

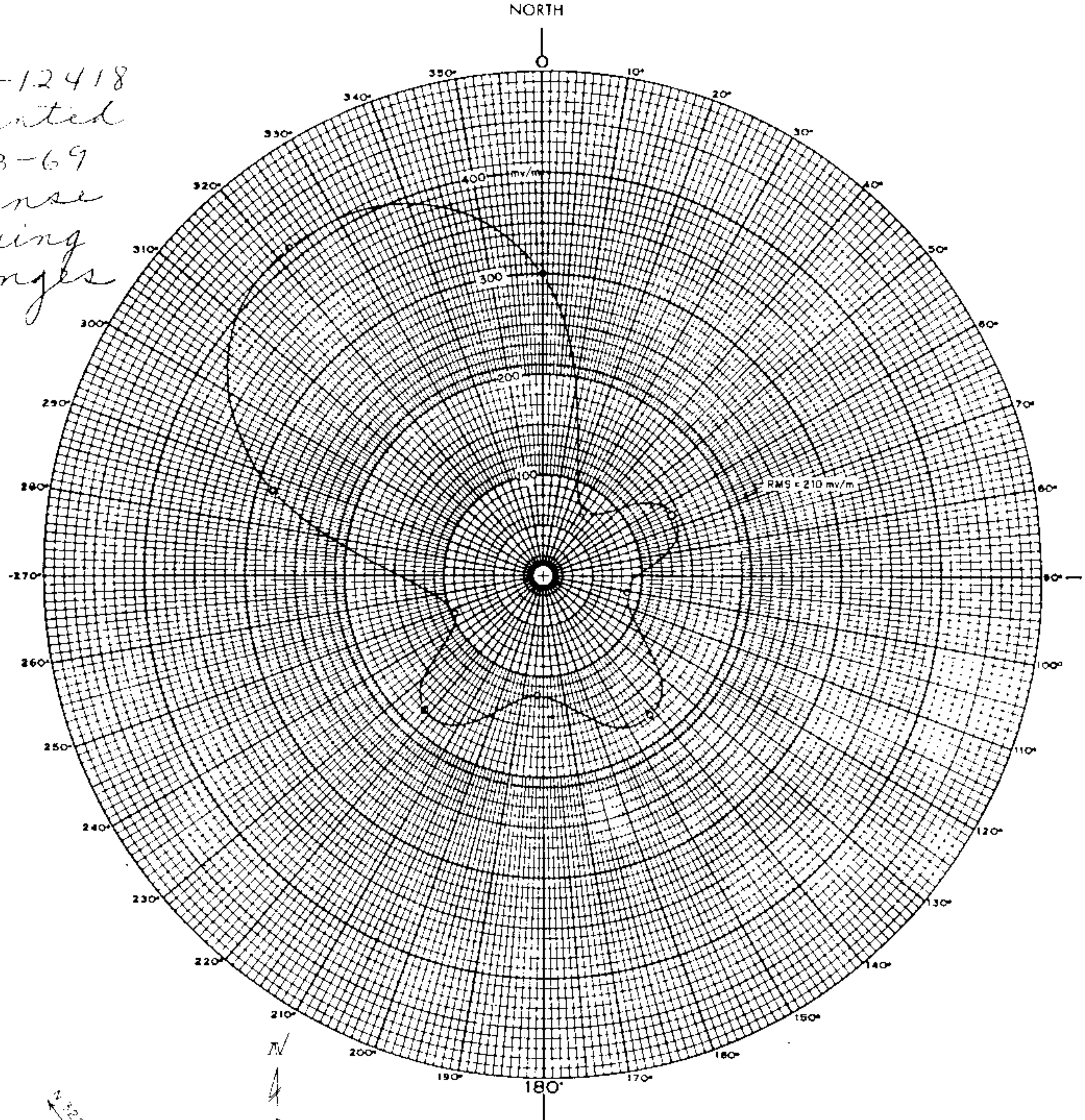
Measured Day
(8-22-69ct)

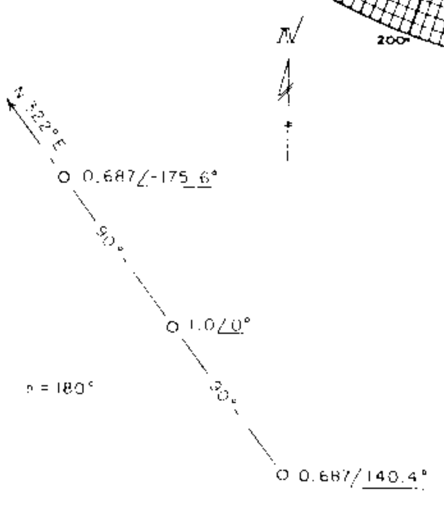
Station KCBD
Lubbock, Texas

KEND

1590 KC

BL-12418
Granted
12-3-69
License
covering
Changes





ANTENNA PLAN
(Theoretical Parameters shown)

FIGURE 8
MEASURED DAYTIME PATTERN
BRYANT RADIO & TELEVISION, INC.
KCBD 1 KW-U, DA-2 1590 KC
LUBBOCK, TEXAS

Prepared by
Lohnes and Culver Washington, D. C.
December, 1968

FCC File No. BL-12418
Accepted 8-14-69

Station KCBD
Lubbock, Texas

1590 kc

KEND

Measured Non-DA
(8-22-69ct)

Station KCBD
Lubbock, Texas

1590 kc

BL-12418 Granted
(12-3-69) license
covering
changes

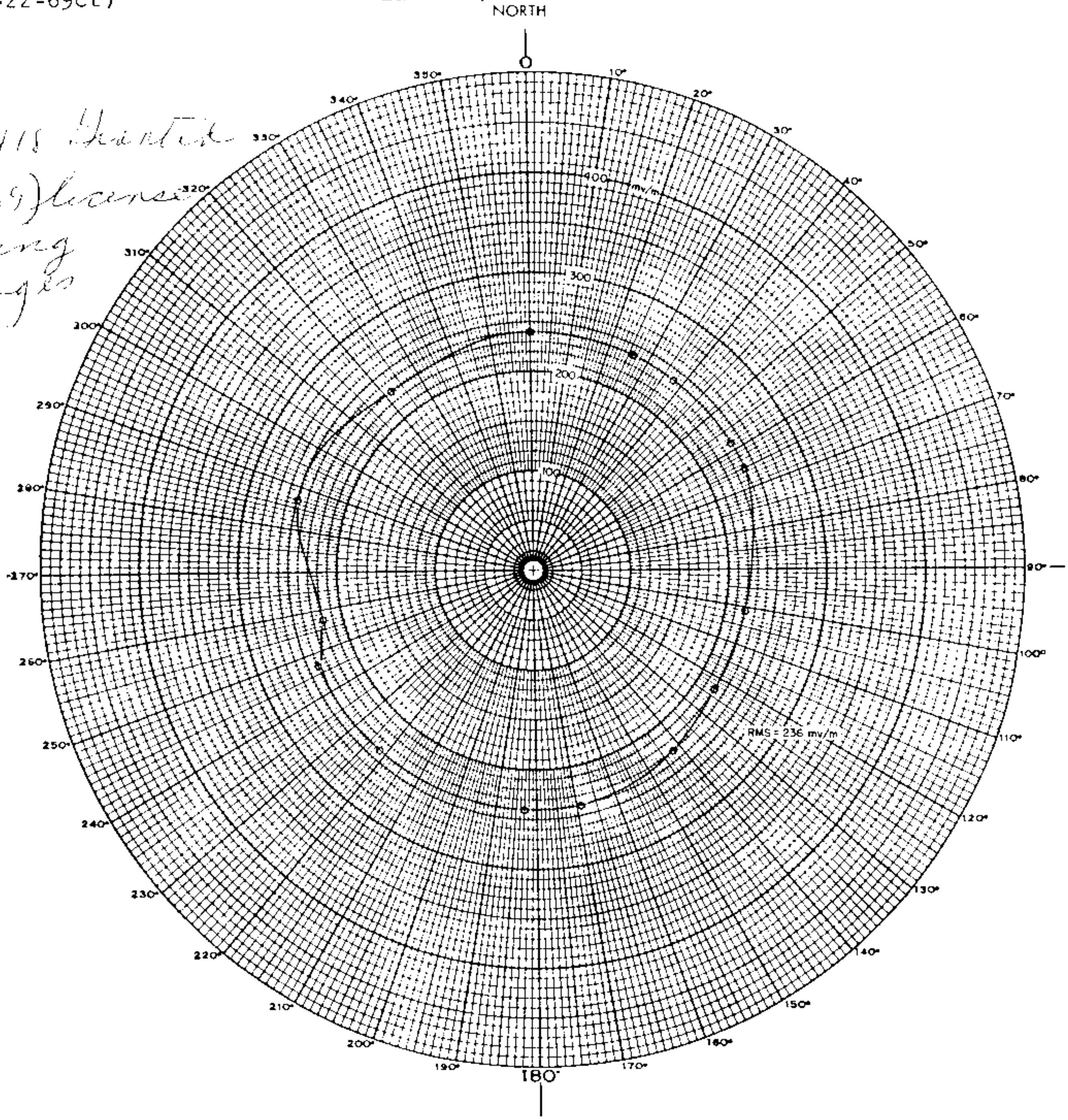


FIGURE 4
MEASURED NON-DIRECTIONAL PATTERN
BRYANT RADIO & TELEVISION, INC.
KCBD 1 KW-U, DA-2 1590 KC
LUBBOCK, TEXAS

Prepared by
Lohnes and Culver Washington, D. C.
December, 1968

FCC File No.BL-12418
Accepted 8-14-69

Station KCBD
Lubbock, Texas

1590 kc

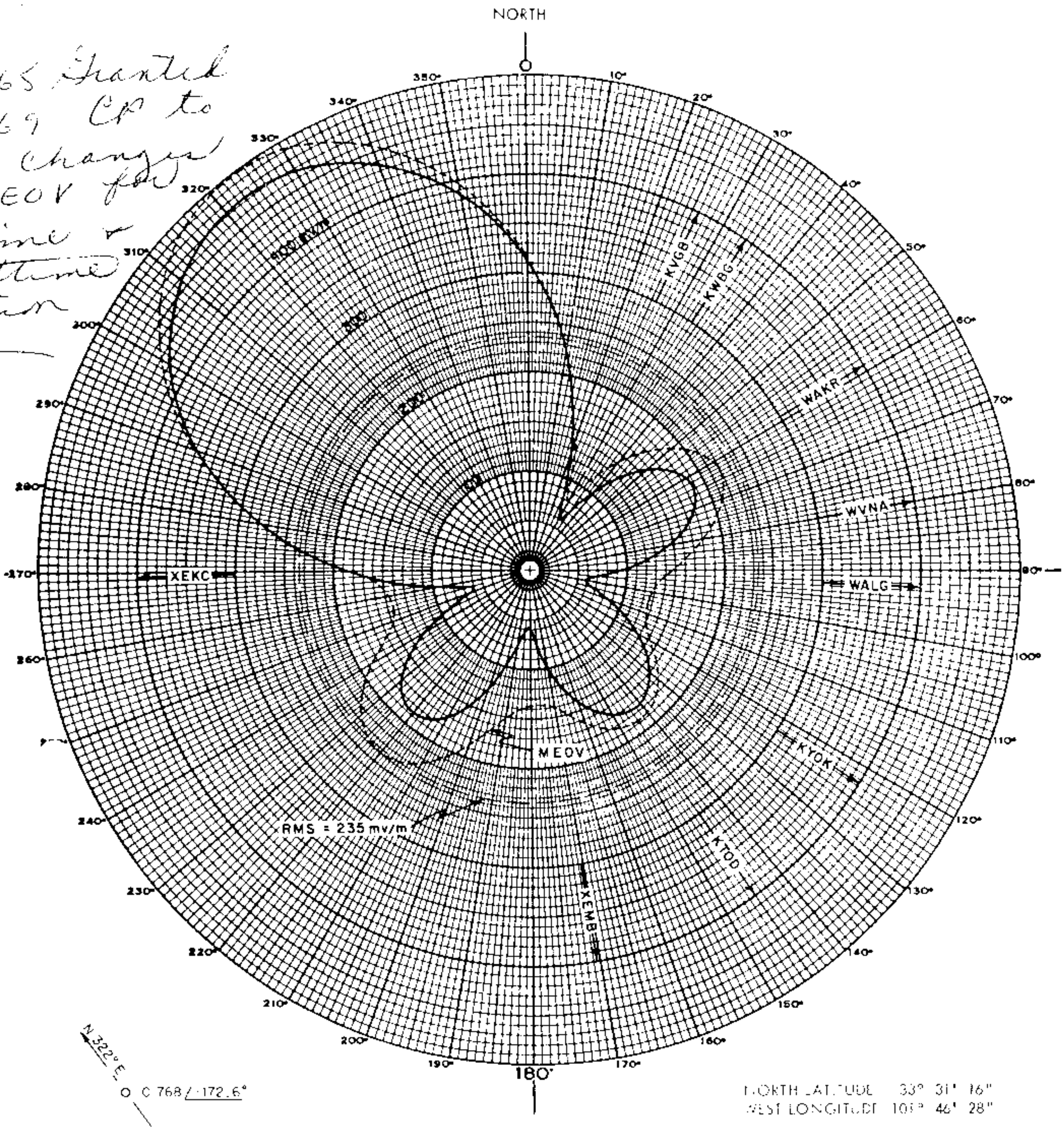
KEND

Proposed Night
(5-27-69ct)

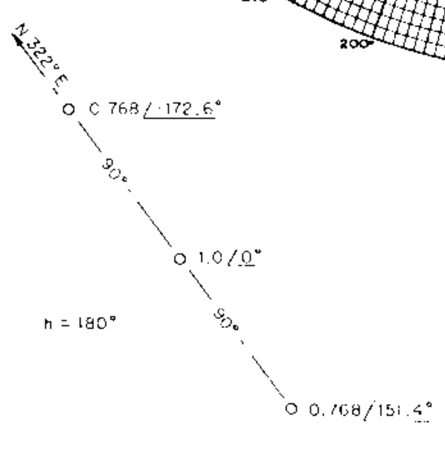
Station KCBD
Lubbock, Texas

1kw,DA-2,U
1590 kc

BP 18565 Granted
5-27-69 CP to
make changes
in MEOV for
daytime &
nighttime
operation



NORTH LATITUDE 33° 31' 16"
WEST LONGITUDE 101° 46' 28"



ANTENNA PLAN
(Theoretical Parameters shown)

FIGURE 2
NIGHTTIME PATTERN
VERTICAL ANGLE 0°
BRYANT RADIO & TELEVISION, INC.
KCBD 1 KW-U DA-2 1590 KC
LUBBOCK, TEXAS

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

FCC File No.BP-18565
Accepted 5-26-69

Station KCBD
Lubbock, Texas

1590 kc

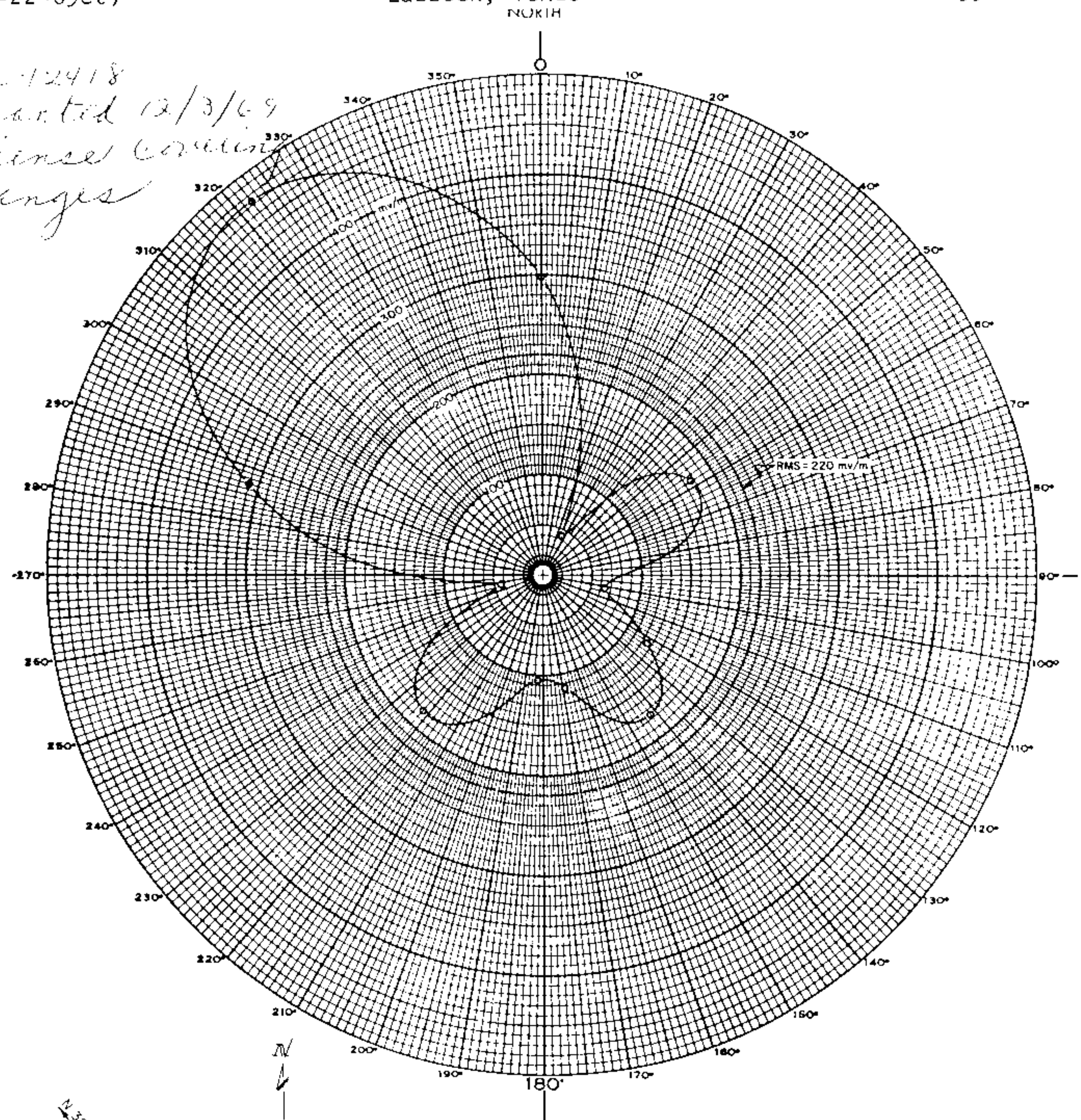
KEND

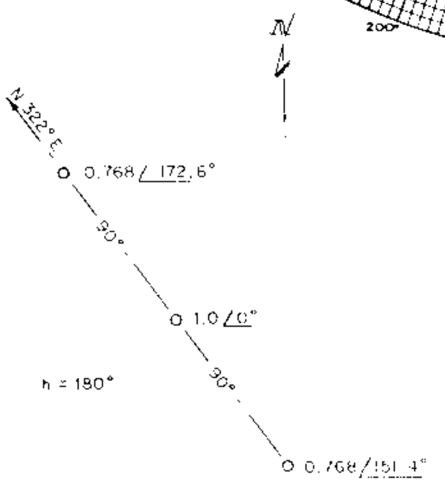
Measured Night
(8-22-69ct)

Station KCBD
Lubbock, Texas

1590 kc

BL-12418
Granted 12/3/69
License covering
changes





ANTENNA PLAN
(Theoretical Parameters shown)

FIGURE 11
MEASURED NIGHTTIME PATTERN
BRYANT RADIO & TELEVISION, INC.
KCBD 1 KW-U, DA-2 1590 KC
LUBBOCK, TEXAS

Prepared by
Lohnes and Culver Washington, D. C.
December, 1968

FCC File No. BL-12418
Accepted 8-14-69

Station KCBD
Lubbock, Texas

1590 kc

KEND

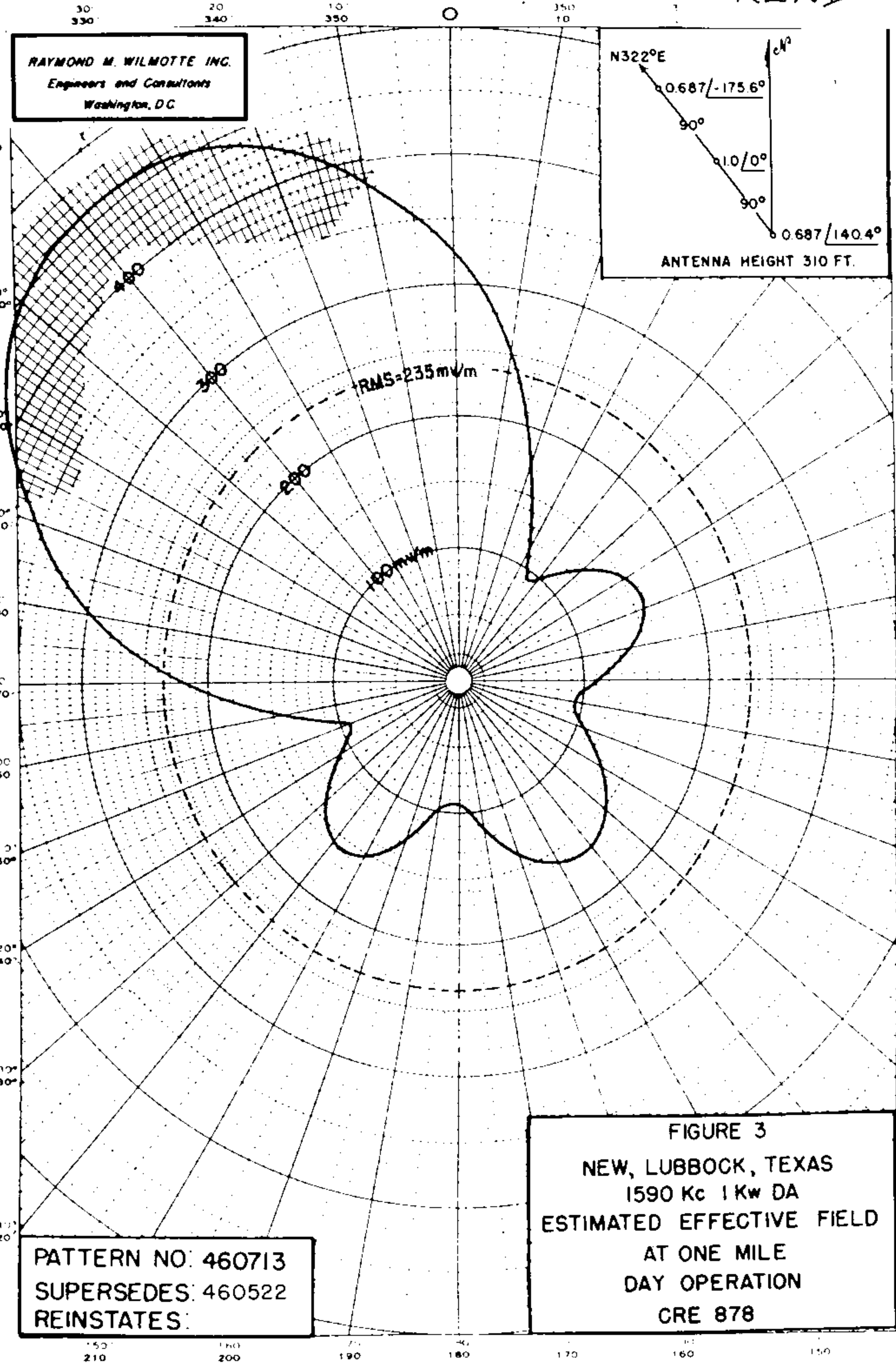


FIGURE 3

NEW, LUBBOCK, TEXAS

1590 Kc 1 Kw DA

ESTIMATED EFFECTIVE FIELD

AT ONE MILE

DAY OPERATION

CRE 878

KIKN

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KIKN

Main Studio: Sinton, Texas

Frequency: 1590 kHz

Power: 0.5 kW Night, 1 kW Day

Notification List No. 1623

Date: March 12, 1975 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 28° 01' 16"
West Lontitude: 97° 28' 14"

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:	NW(#1)	SW(#4)	NE(#2)	SE(#3)
HEIGHT ABOVE INSULATORS:	185'	185'	185'	185' (1(
NIGHT PHASING:	0°	-97°	-133°	-230°
NIGHT FIELD RATIO:	1	0.740	0.560	0.414
DAY PHASING:	0°	-90°	--	--
DAY FIELD RATIO:	1	1	--	--

SPACING AND ORIENTATION: The towers are located at the vertices of a parallelogram the long sides of which are 275' (160°) in length on a line bearing 95° true. The short sides are 154.7' (90°) in length on a line bearing 205° true.

GROUND SYSTEM: 120-245' equally spaced copper radials plus 120-50' interspaced radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers. Centers of systems are bonded together.

Predicted effective Night Field: 143 mv/m at rated power.

Predicted effective Day Field: 199 mv/m at rated power.

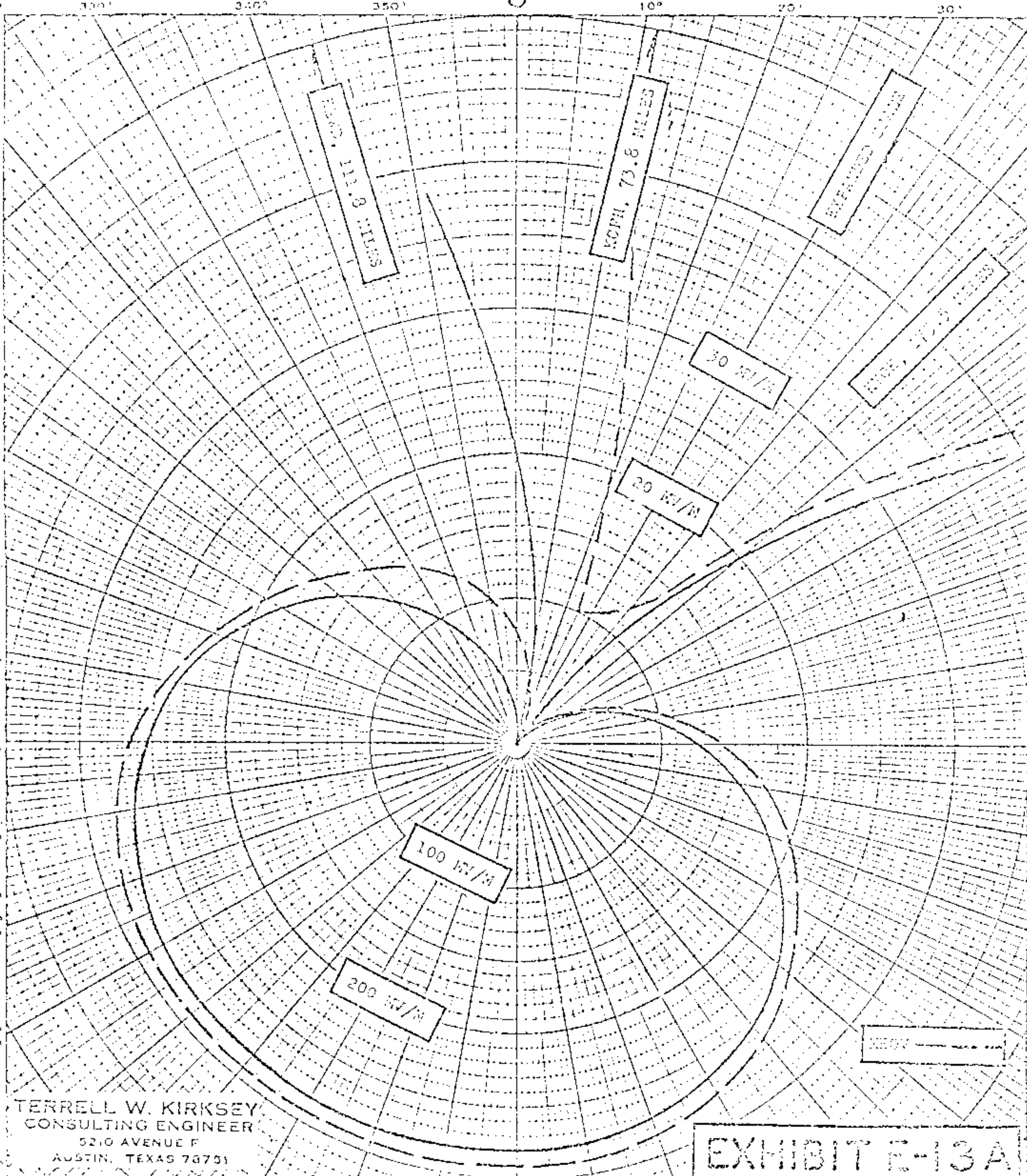
(Cont'd)

KIKN

Note: Please retain the Nighttime directional antenna radiation patterns notified for Station KIKN in United States Change List Number 1431 dated June 30, 1971, and attach to this Revised Description Sheet and Daytime pattern. This notification concerns only a change in the Daytime operation of the station with Nighttime operation continued as previously notified.

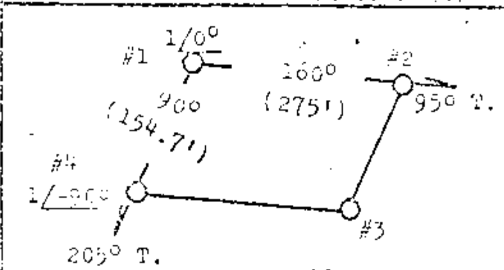
CTR NO 31234A4

KIKN



TERRELL W. KIRKSEY
CONSULTING ENGINEER
5210 AVENUE F
AUSTIN, TEXAS 78751

EXHIBIT E-13A



G = 108° (185')
RMS = 199 MV/M

PROPOSED DAYTIME HORIZONTAL PLANE RADIATION PATTERN

THEORETICAL PARAMETERS	PHASE	FIELD RATIO	
TOWER #1	0°	1.0	COORDINATES:
TOWER #4	-90°	1.0	N. LAT. 28° 01' 16"
TOWERS #2&3	DE-TUNED		W. LONG. 97° 28' 14"

RADIO STATION KIKN, SINTON, TEXAS
1590 kHz., 0.5 kW., 1 kW. LS, U, DA-2

FEBRUARY 6, 1975

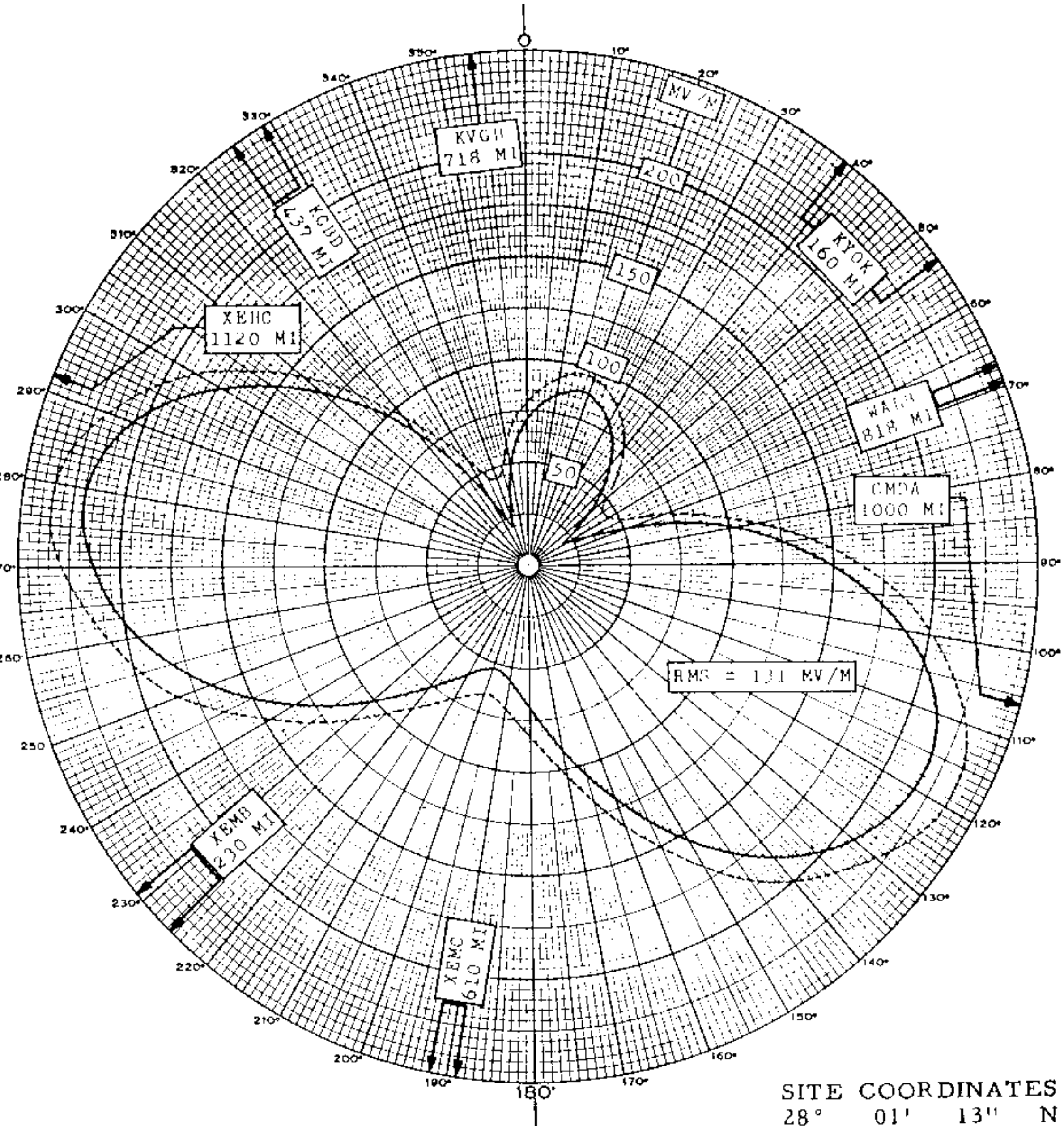
~~KTOD~~
KIKN

PROPOSED NIGHT
(8-8-59g)

Station KTOD
Sinton, Texas

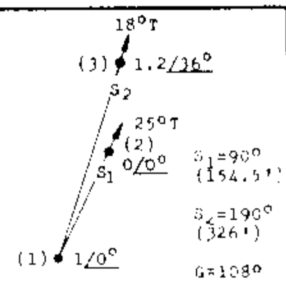
500w, 1kw-LS, DA-2, U
1590 KC

9-28-60
granted MCP to
change nighttime
array.
1-21-61
granted L for
DA-2



SITE COORDINATES
28° 01' 13" N
97° 28' 15" W

PROPOSED NIGHTTIME HORIZONTAL PLANE RADIATION PATTERN



SOUTHERN BROADCASTING CORP.
SINTON, TEXAS

Vandivere and Cohen
Consulting Electronic Engineers

PROPOSED OPERATION
KANN
1590 KC
0.5 KW, 1 KW-LS, DA-2
MARCH, 1959

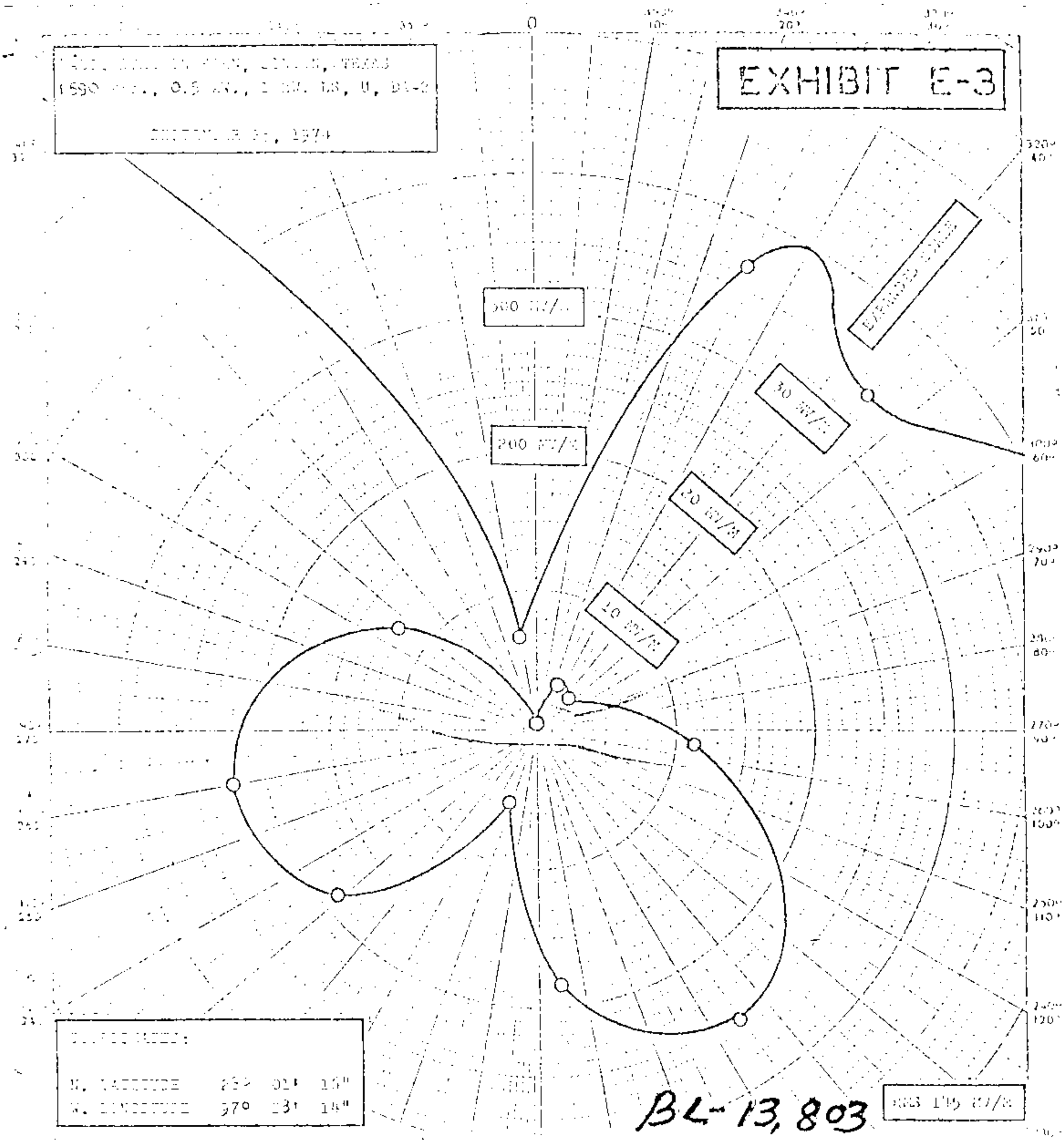
FCC File No. BMP-8624
Accepted 7-22-59

KTOD
Sinton, Texas

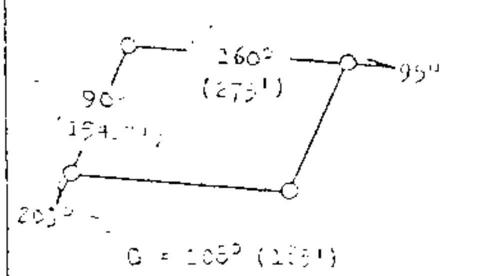
1590 KC

KIKN

EXHIBIT E-3



BL-13,803



MEASURED NIGHTTIME HORIZONTAL PLANE PATTERN

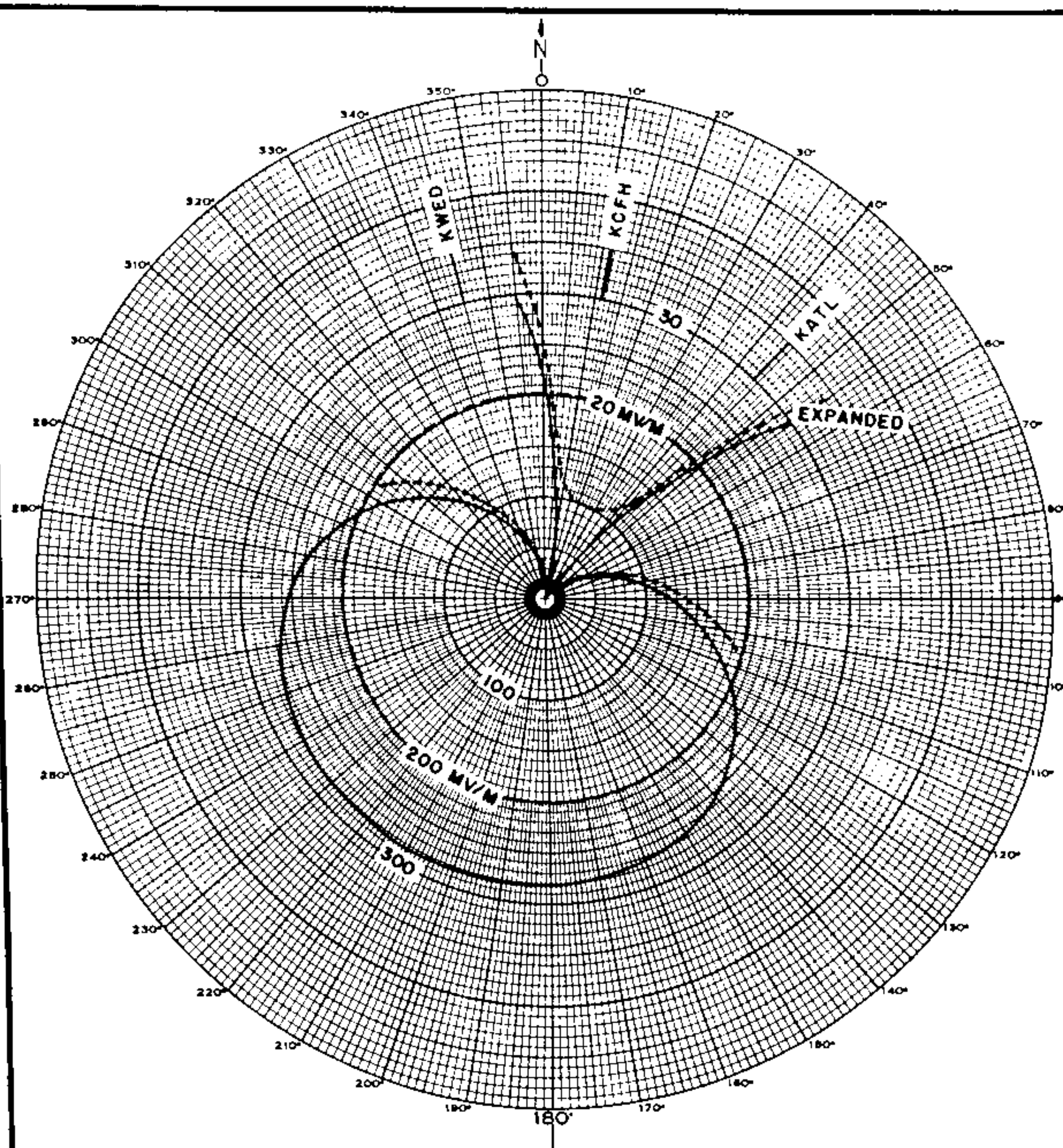
OPERATING PARAMETERS

TOWER	PHASE	LOOP RATIO	BASE RATIO
1	0°	100%	1.0
2	-140°	93.5%	0.972
3	-200°	67%	0.617
4	-93°	87%	0.958

~~KTOO~~
KIKN

Station KANN - Sinton, Texas

PROPOSED DAY (4/1/53G)   NEW, SAN MARCOS, TEXAS   1kw, D, DA-D   1590 kc



RMS = 199.2 MV/M

----- TOLERANCE

PATTERN NO. 020353
LATITUDE: 28° 01' 14"
LONGITUDE: 97° 28' 07"

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

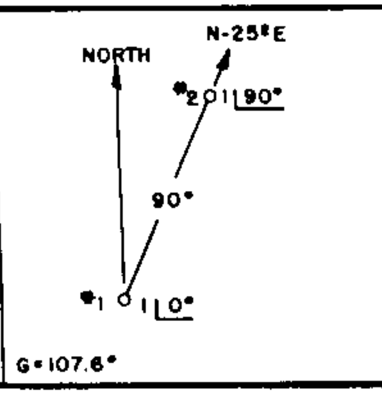


FIGURE 2

DAYTIME HORIZONTAL PATTERN

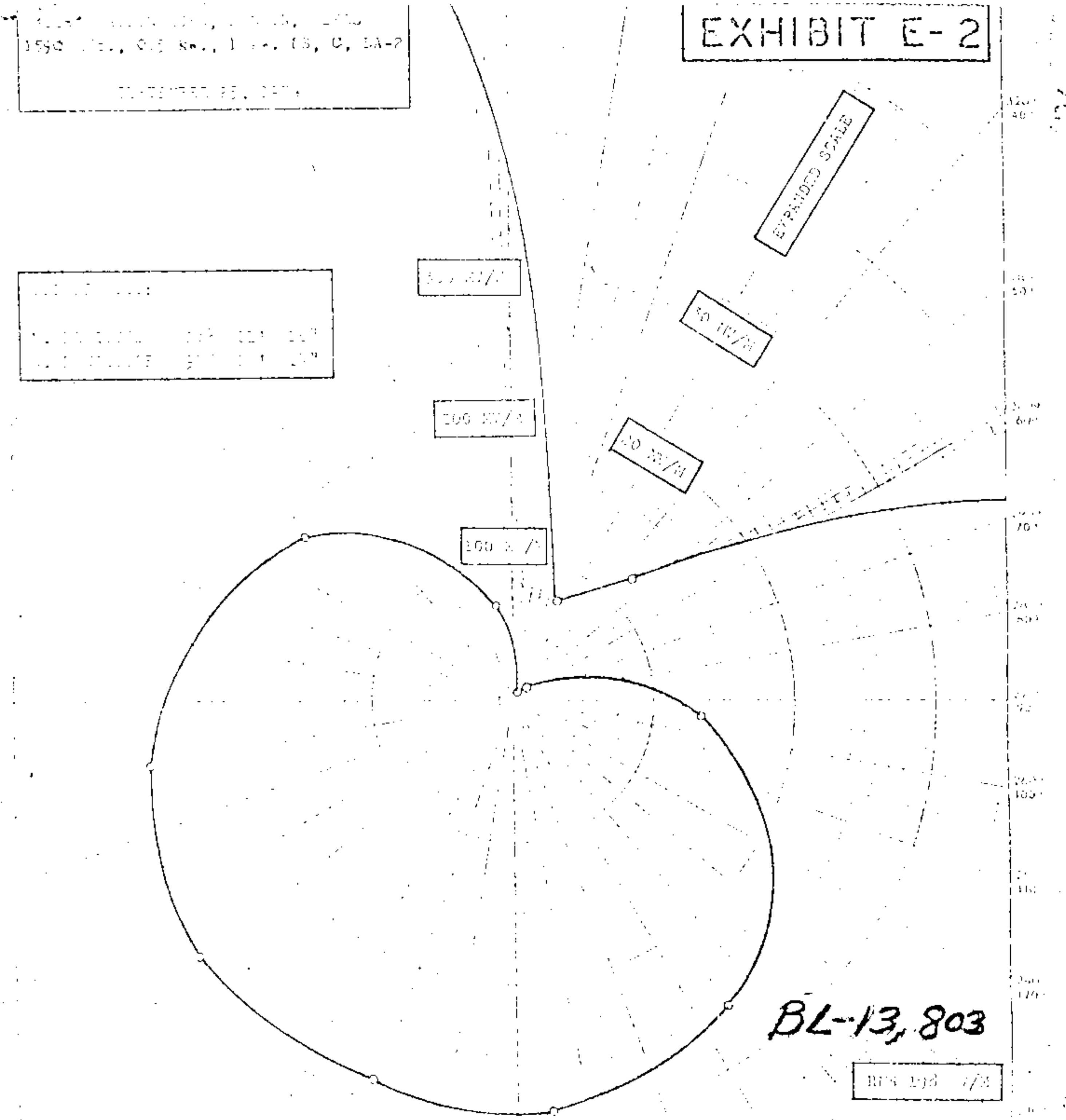
SAN PATRICIO BROADCASTING COMPANY
SINTON, TEXAS

1590 KC   1 KW-DA-D

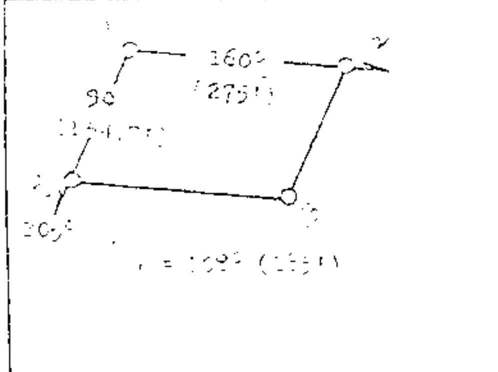
FCC FILE NO. BP-8758 Date Accepted 3/3/53   NEW, San Marcos, Texas   1590 kc

KIKN

EXHIBIT E-2



BL-13,803



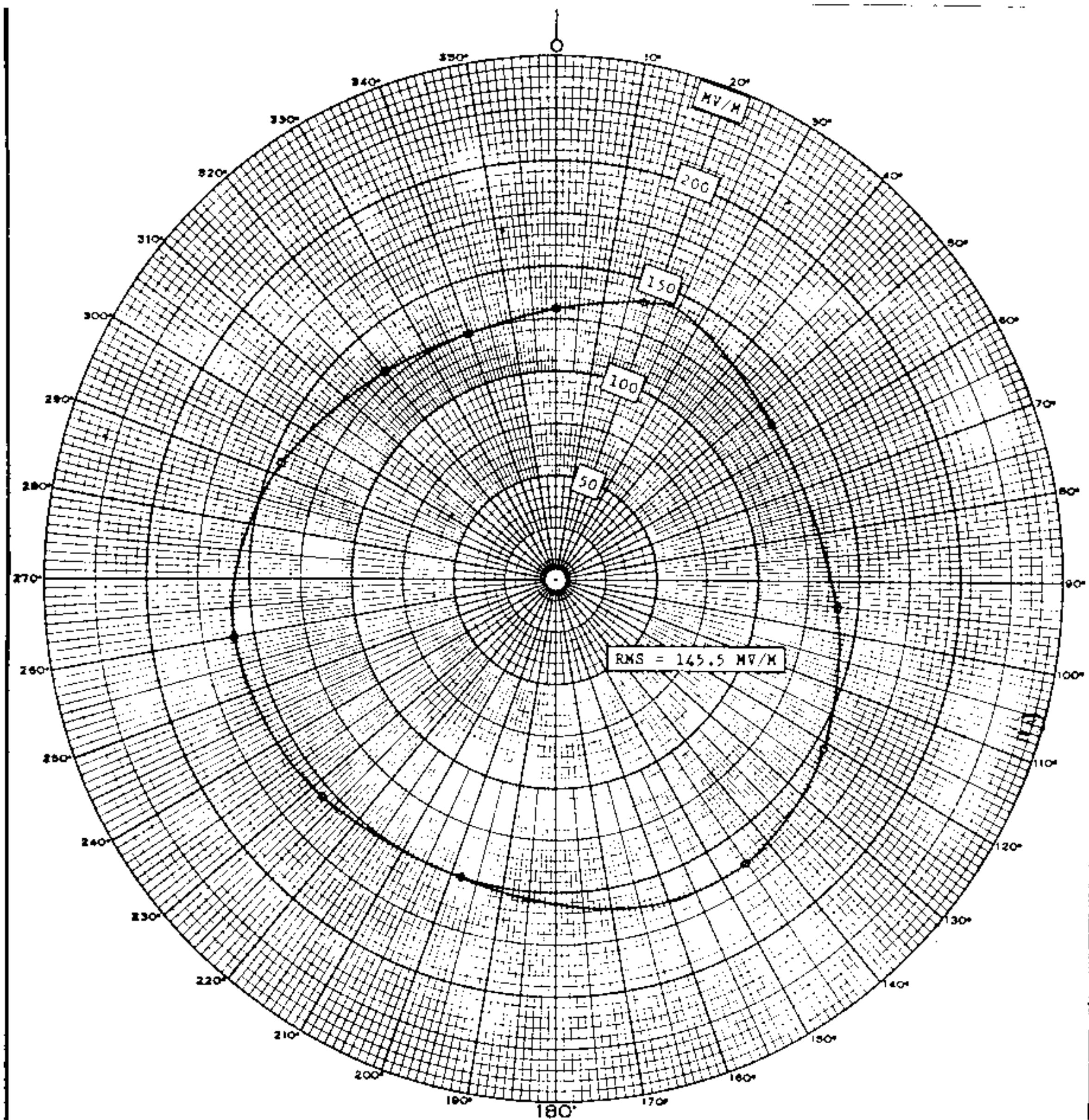
MEASURED DAYTIME HORIZONTAL PLANE PATTERN

OPERATING PARAMETERS

TOWER	PHASE	LOOP RATIO	BASE RATIO
1	0°	100%	1.0
2	DE-TUNED		
3	"		
4	-70°	95%	0.937

KIKN ~~KTOD~~

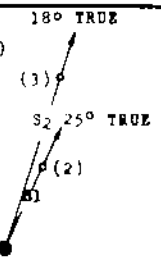
Measured Non-DA (11-30-61ct)	Station KTOD Sinton, Texas	500w,1kw-LS,DA-2,U 1590 kc



SITE COORDINATES
28° 01' 13" N
97° 28' 15" W

MEASURED NONDIRECTIONAL HORIZONTAL PLANE RADIATION PATTERN

S_1 = 90°
(154.5')
S_2 = 190°
(326')
G = 108°



SOUTHERN BROADCASTING CORP.

SINTON, TEXAS

Jules Cohen

Consulting Electronic Engineer

RADIO STATION KTOD

1590 KC

0.5 KW 1 KW-LS U DA-2

Pattern 610821

FCC File No.BL-8727 Accepted	Station KTOD Sinton, Texas	1590 kc

KLIV

Measured Non-DA
(7-28-69ct)

Station KLIV
San Jose, California

5kw,DA-N,U
1590 kc

BL-12393
Granted
8/26/69
license
covering
CP for
increase
in
nighttime
power
+ change
directional
antenna
system

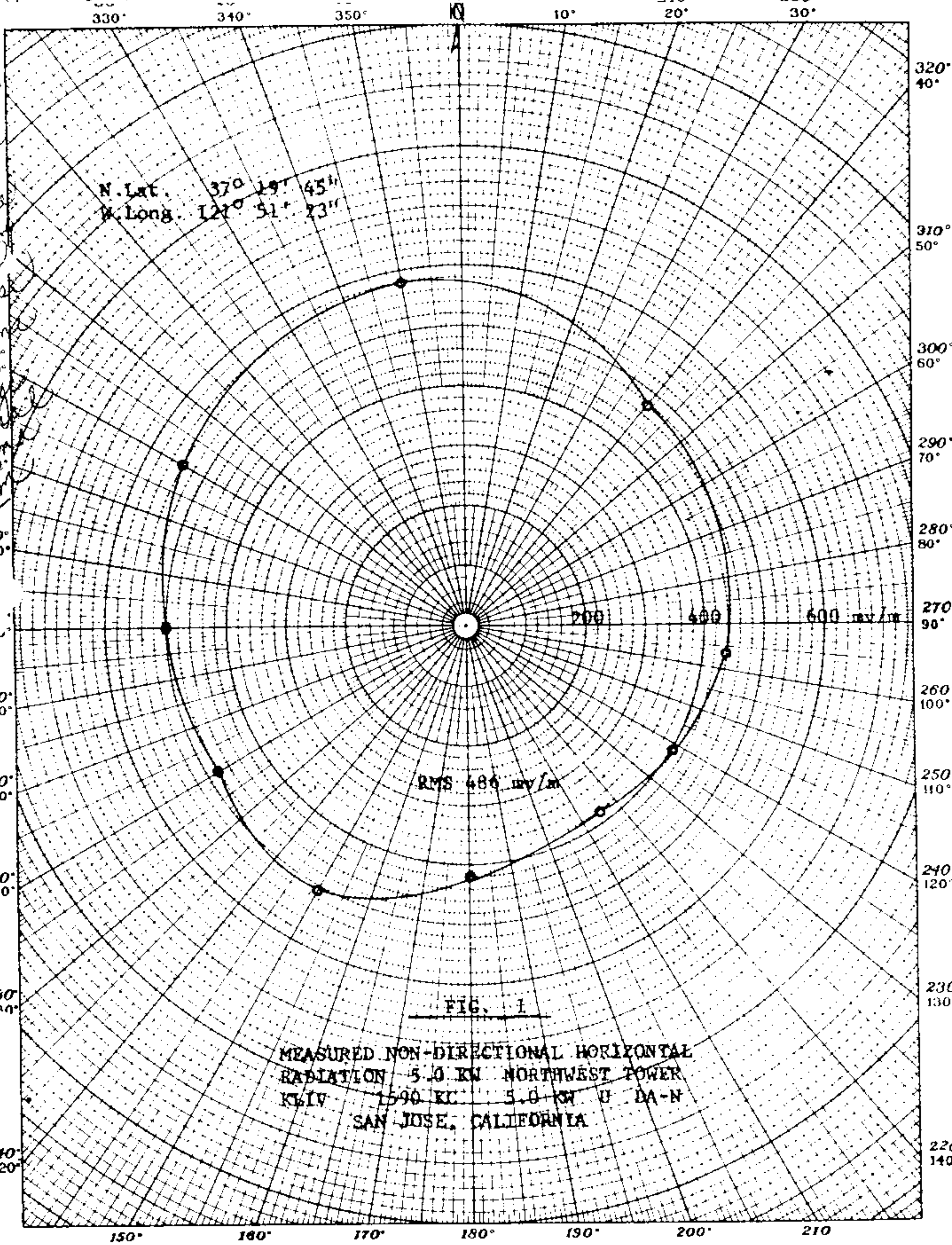


FIG. 1

MEASURED NON-DIRECTIONAL HORIZONTAL
RADIATION 5.0 KW NORTHWEST TOWER
KLIV 1590 KC 5.0 KW U DA-N
SAN JOSE, CALIFORNIA

FCC File No.BL-12393
Accepted 7-1-69

Station KLIV
San Jose, California

1590 kc

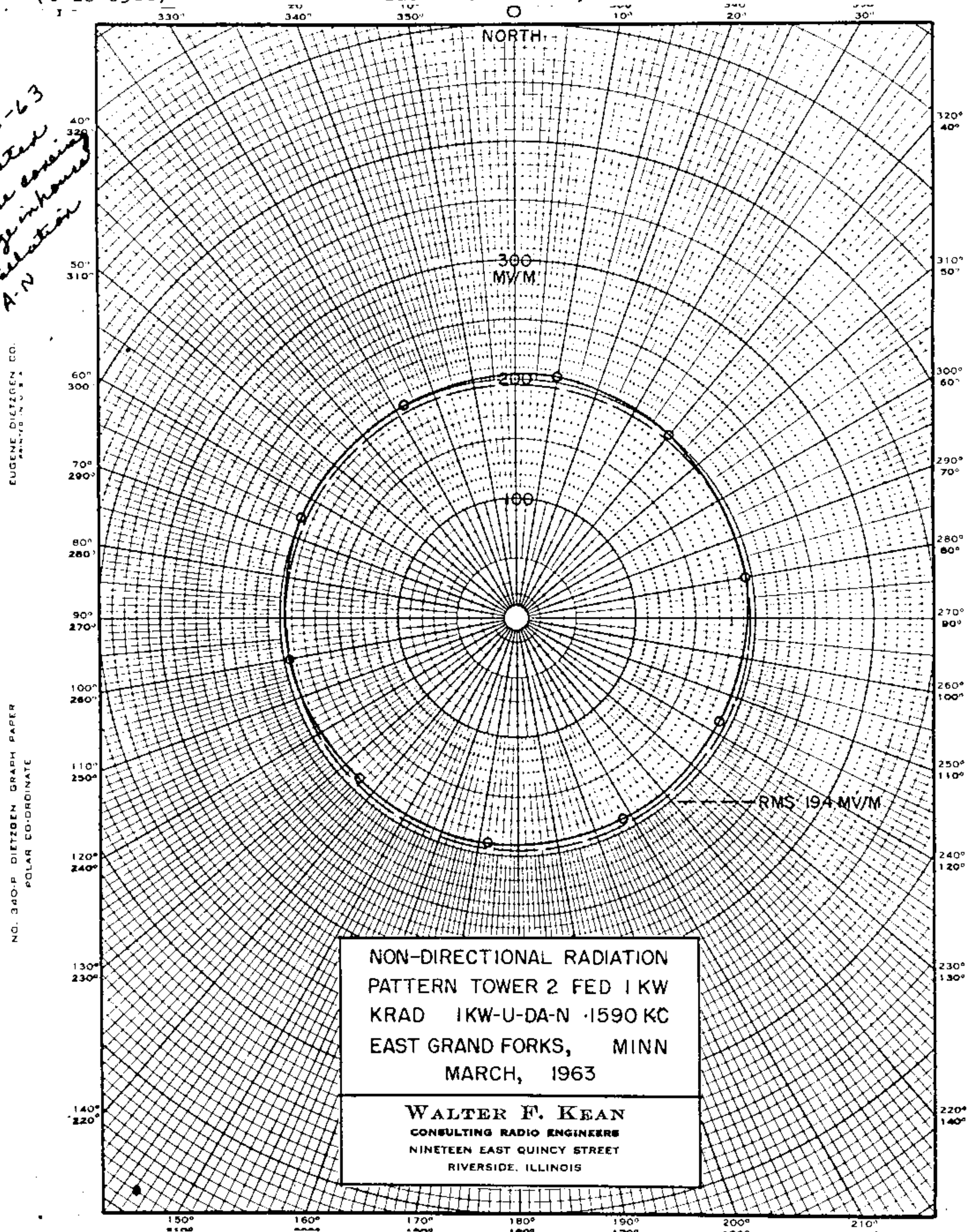
KRAD

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

Station KRAD
East Grand Forks, Minnesota

1kw,DA-N,U
1590 kc

8-16-63
treated noise causing change in house + installation of DA-N



FCC File No.BL-10053
Accepted 6-17-63

Station KRAD
East Grand Forks, Minnesota

1590 kc

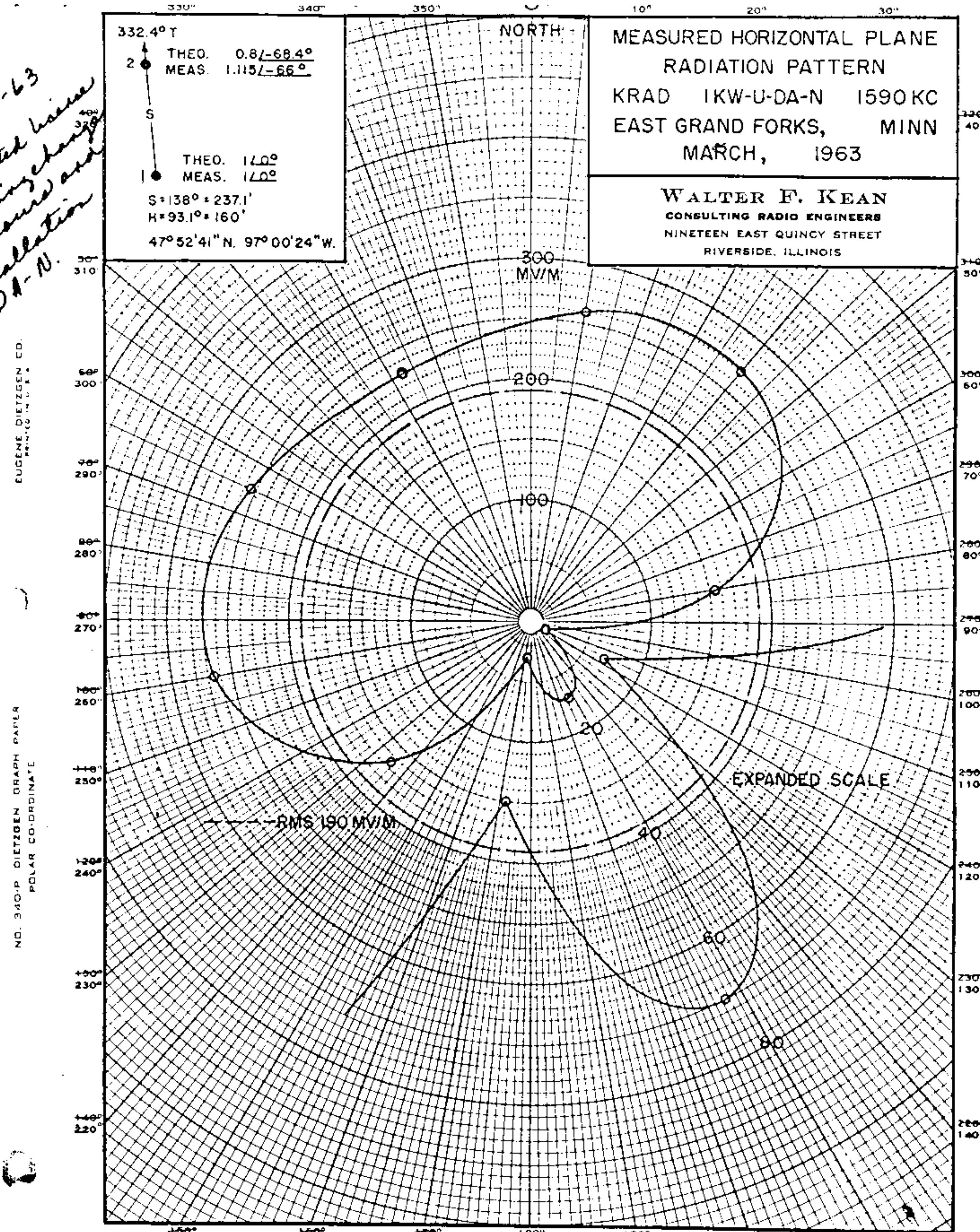
KRAD

Measured Night
(6-28-63ct)

Station KRAD
East Grand Forks, Minnesota

1kw,DA-N,U
1590 kc

8-16-63
rusted base
wiring change
in house and
installation
of DA-N.



FCC File No.BL-10053
Accepted 6-17-63

Station KRAD
East Grand Forks, Minnesota

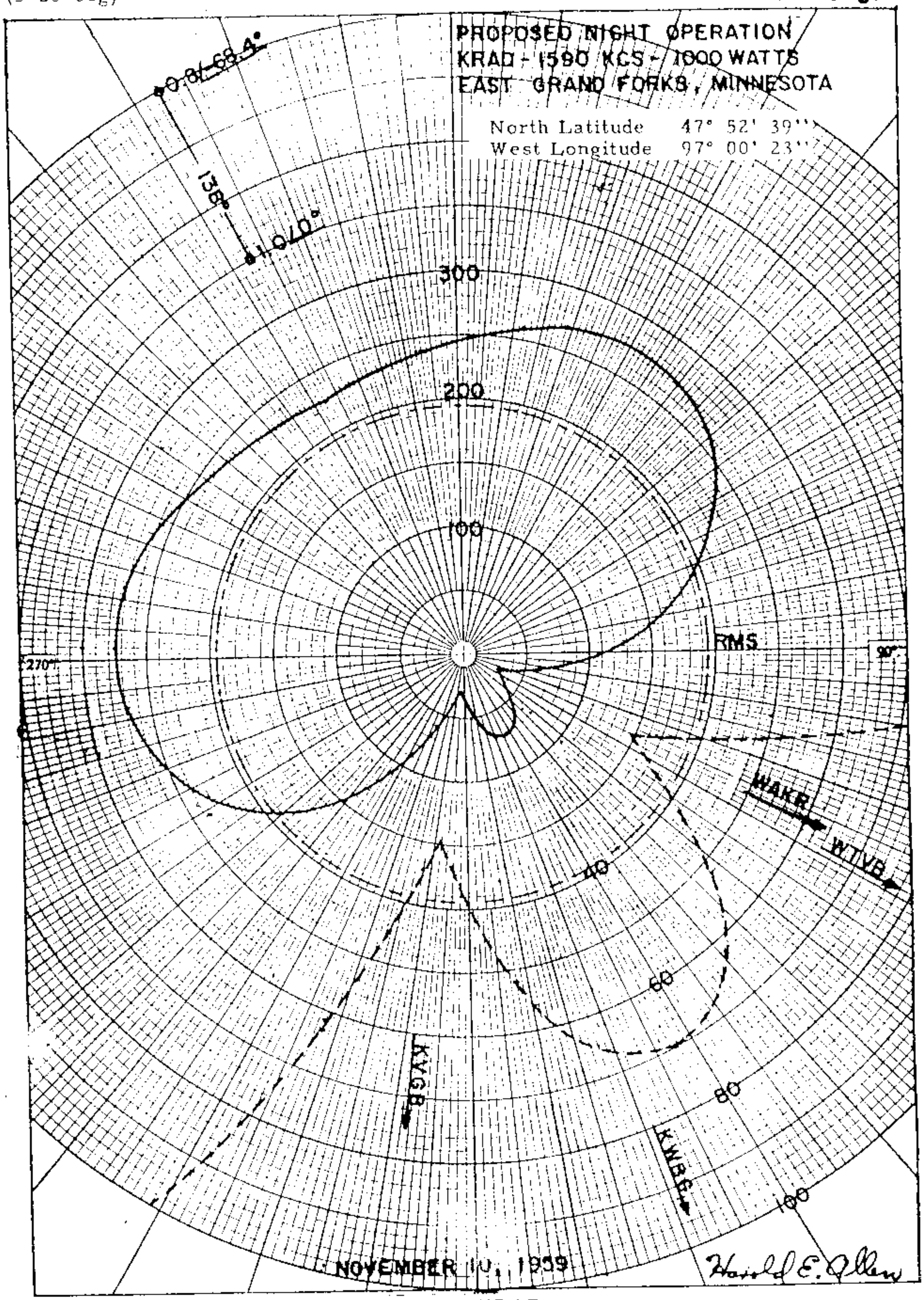
1590 kc

KRAD

PROPOSED NIGHT
(3-28-60g)

Station KRAD 1kw, DA-N,U
East Grand Forks, Minnesota 1590 KC

0-24-61
granted cp for
installation of DA-N



FCC File No. BP-13968
Accepted 3-24-60

KRAD
East Grand Forks, Minnesota 1590 KC

KTIL

Measured Night
(2-28-62ct)

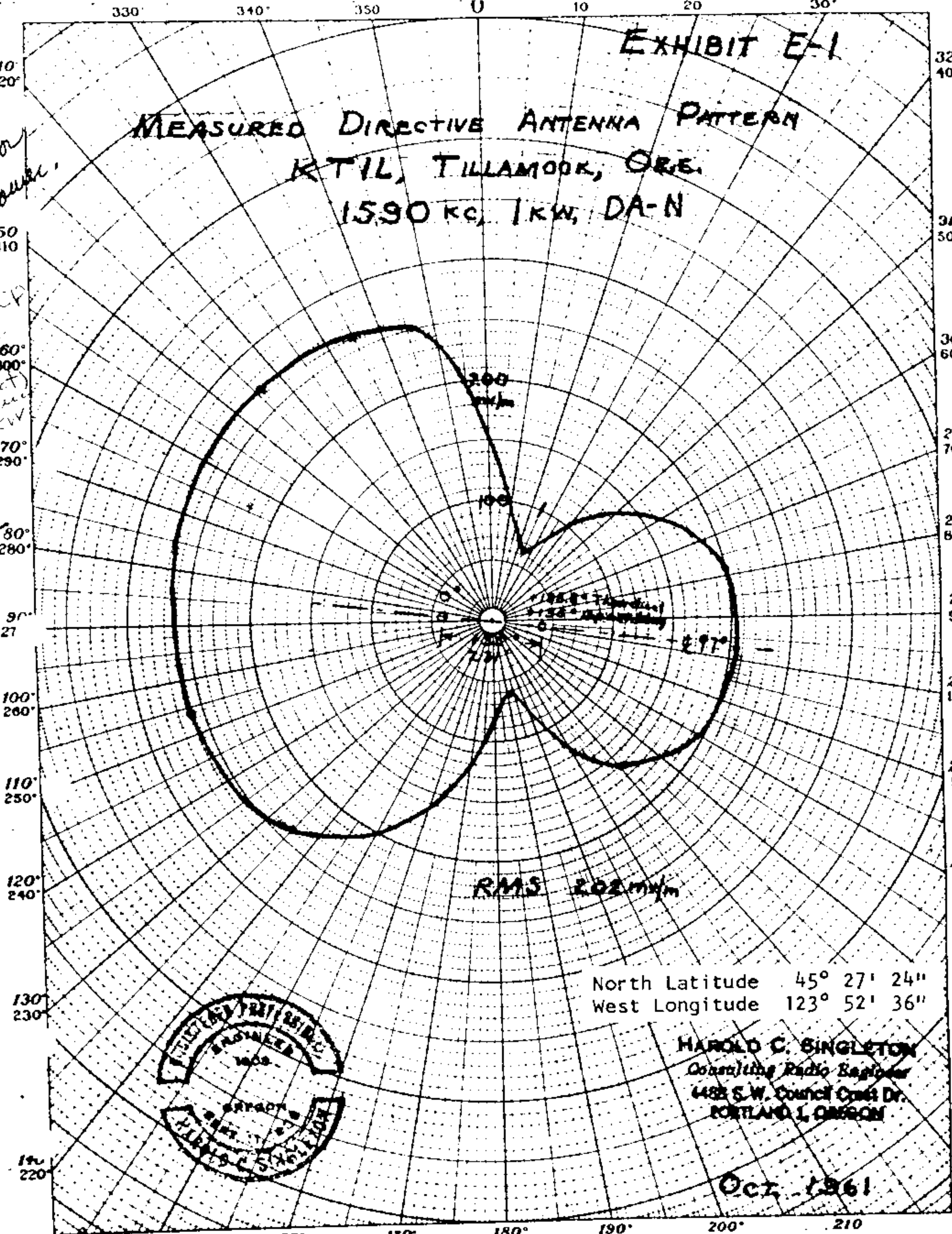
Station KTIL
Tillamook, Oregon

1kw,DA-N,U
1590 kc

T# 171
-30-62)
anted L for
crease in power.

-14-67
P-17133
RANTED CP

over



FCC File No.BL-8909
Accepted 2-12-62

Station KTIL
Tillamook, Oregon

1590 kc

PROPOSED NIGHT
(9-4-59g)

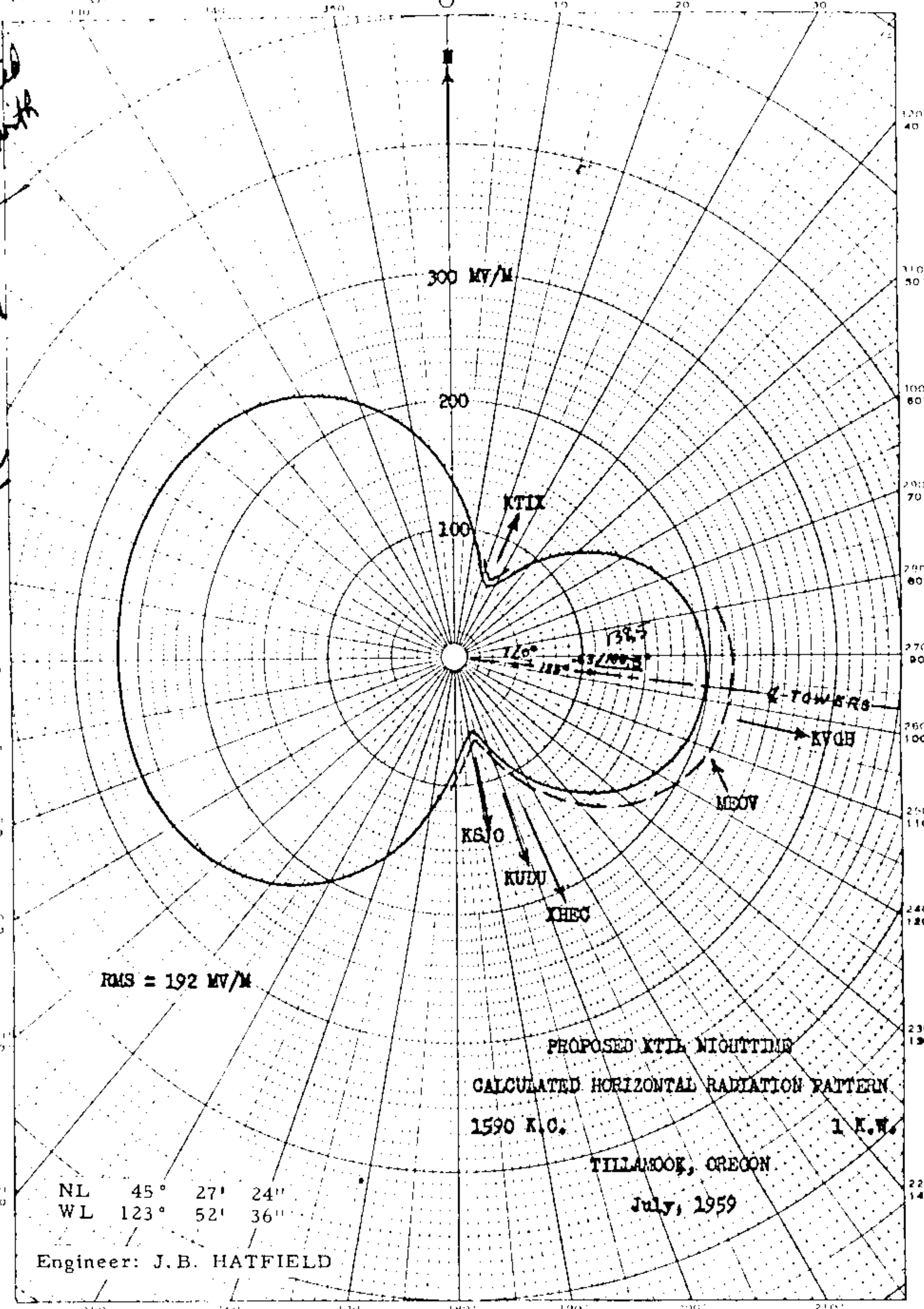
Station KTIL
Tillamook, Oregon

1kw, DA-N, U
1590 KC

2-15-61 Granted CP to change to unlimited time operation with DA-N

BL-11678
7-20-67 GRANTED LICENSE

cov. increase in daytime (NON-DA) 1 KW to 5 KW



NL 45° 27' 24"
WL 123° 52' 36"

Engineer: J.B. HATFIELD

FCC File No. BP-13361
Accepted 8-31-59

KTIL
Tillamook, Oregon

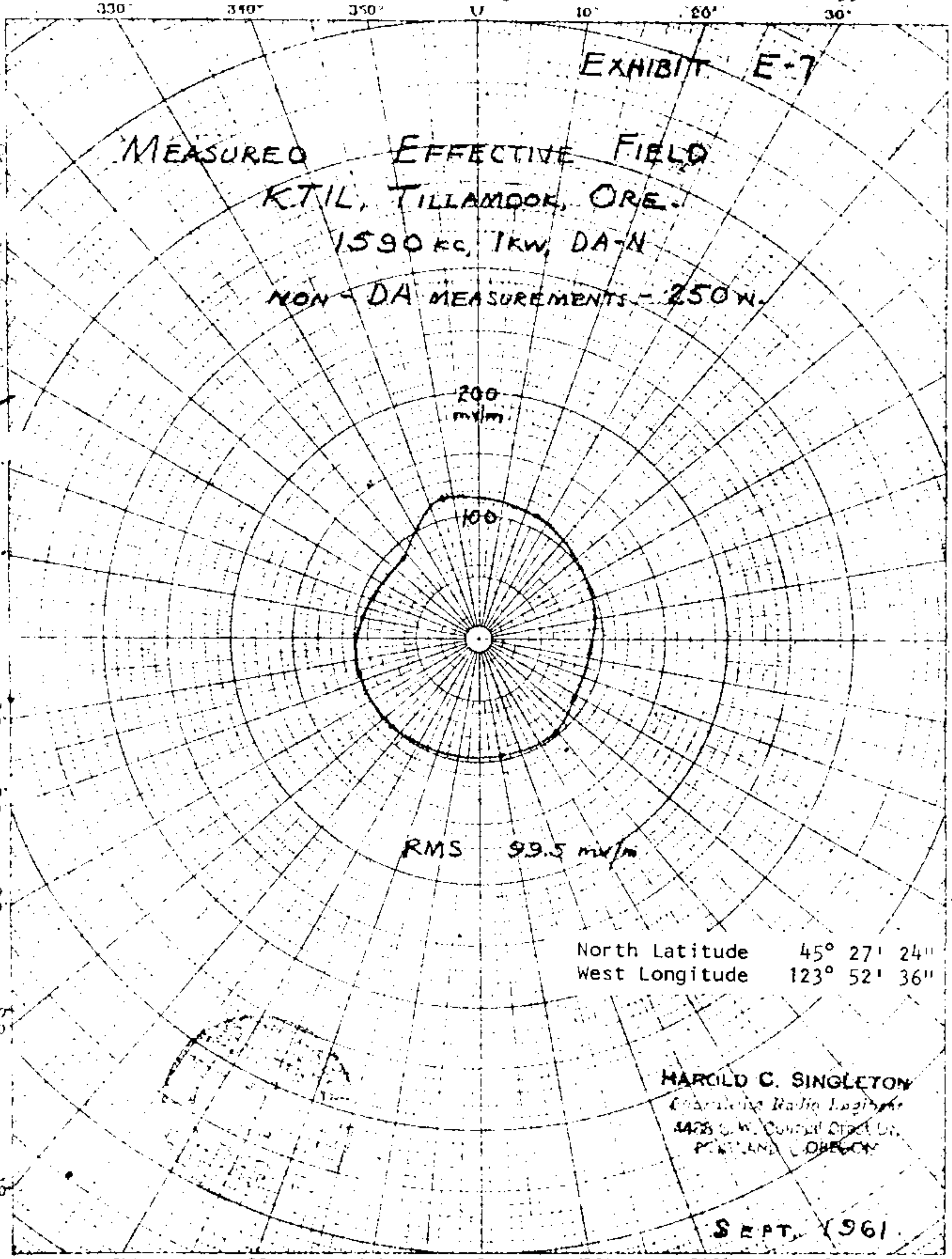
1590 KC

KTIL

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

Station KTIL
Tillamook, Oregon

1kw,DA-N,U
1590 kc



over

2

FCC File No.BL-8909
Accepted 2-12-62

Station KTIL
Tillamook, Oregon

1590 kc

KLIV

Proposed Night
(5-27-66ct)

Station KLIV
San Jose, California

5kw,DA-N,U
1590 kc

11-2-67
GRANTED
CP FROM
500W to 5KW

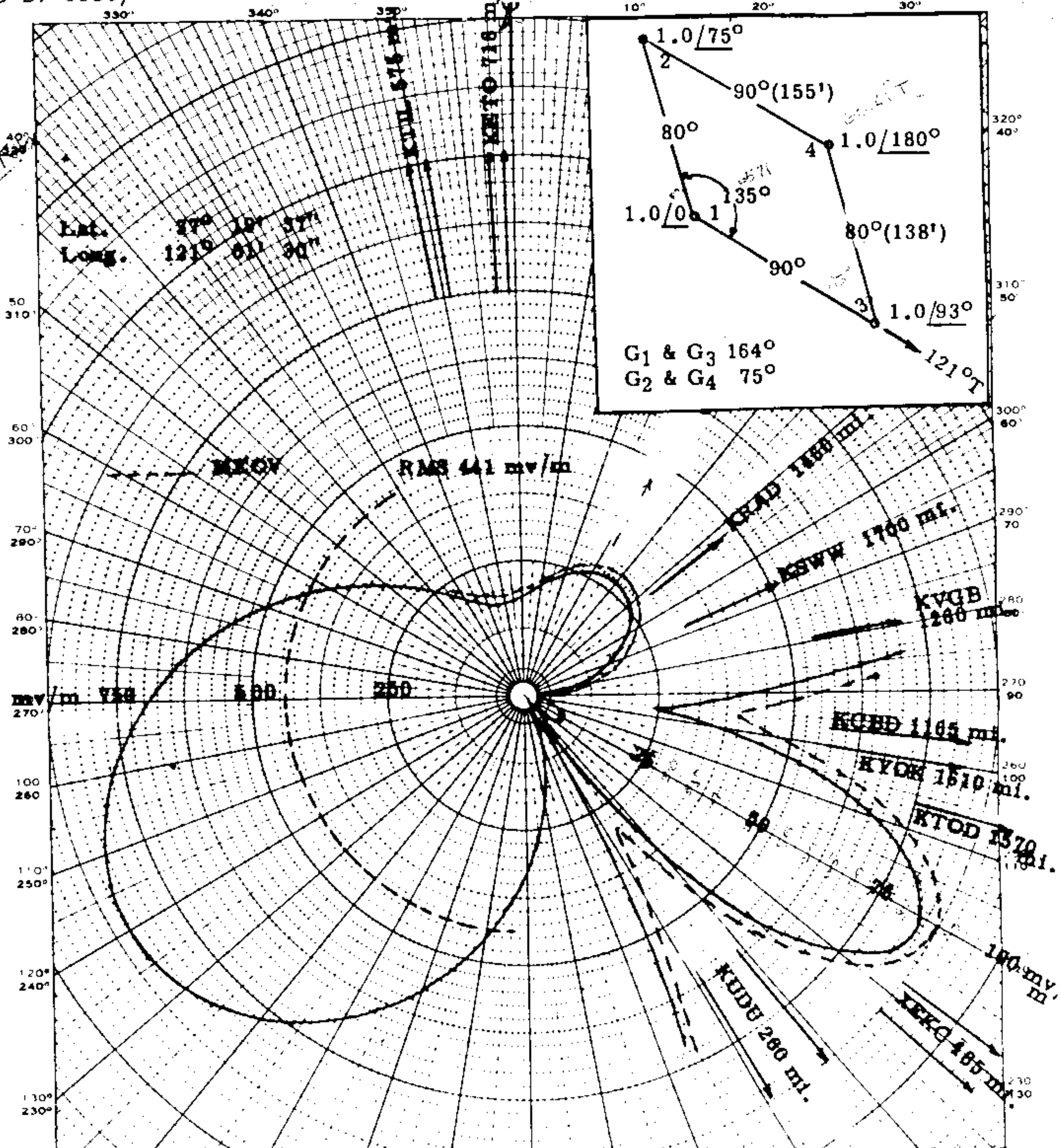


FIG. 1

PROPOSED NIGHTTIME HORIZONTAL RADIATION
KLIV 1590 KC 5.0 KW DA-N
SAN JOSE, CALIFORNIA

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

FCC File No. BP-16851
Accepted 5-12-66

Station KLIV
San Jose, California

1590 kc

BL-12393 Granted 8/26/69 License covering CP for increase in nighttime power & change DA system

KLIV

Measured Night
(7-28-69ct)

Station KLIV
San Jose, California

5kw, DA-N, U
1590 kc

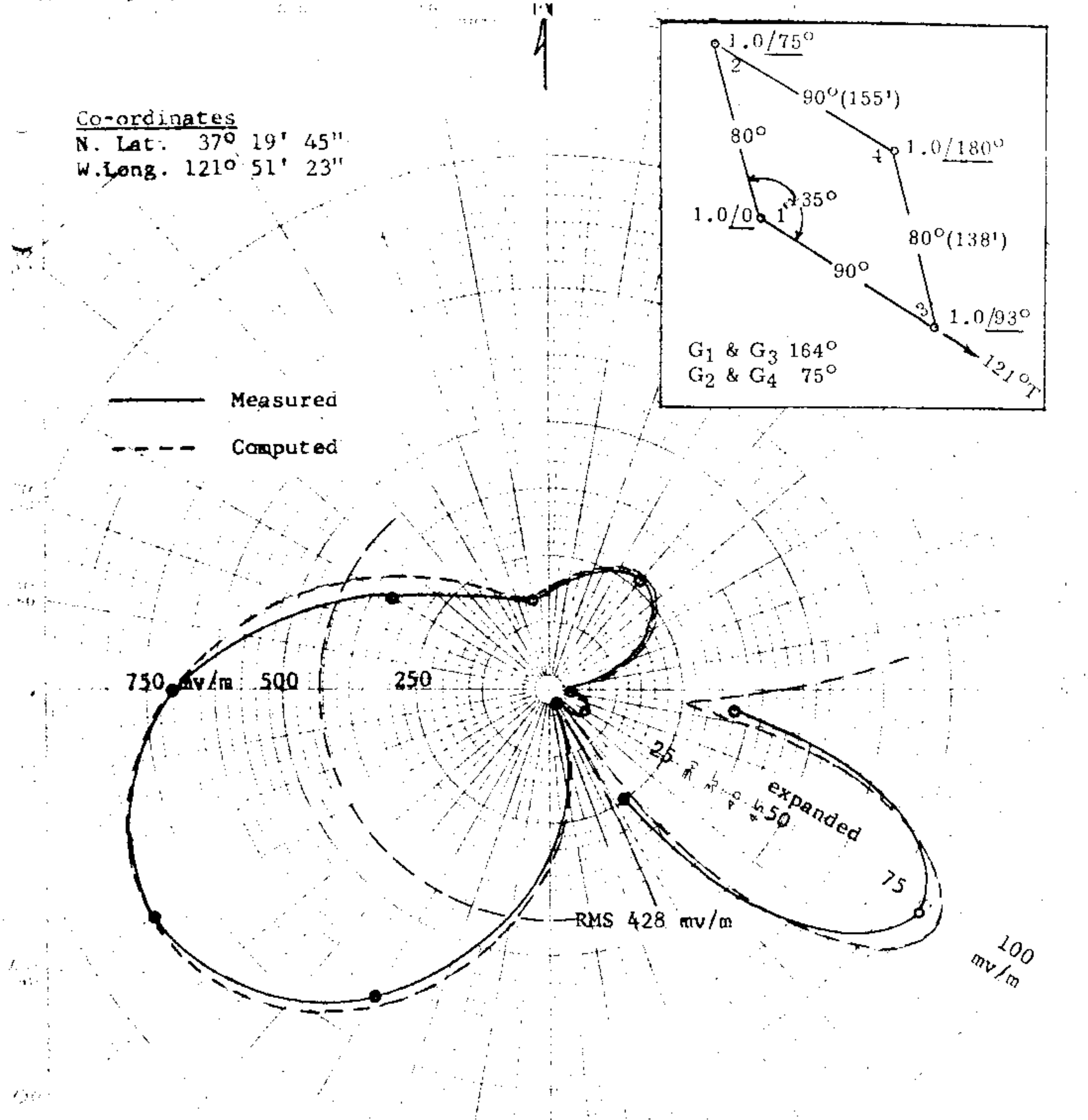


FIG. 2

MEASURED HORIZONTAL NIGHTTIME
RADIATION PATTERN
KLIV 1590 KC 5.0 KW U DA-N
SAN JOSE, CALIFORNIA

A.E.Towne Associates Inc., Engineering Consultants, San Carlos, California

FCC File No.BL-12393
Accepted 7-1-69

Station KLIV
San Jose, California

1590 kc

KMTI
1590kHz

SUPPLEMENTAL AND CORRECTED
DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KMTI

Main Studio: Manti, Utah

Frequency: 1590 kHz

Power: 1kw Night 5kw Day

Notification List No. 1785

Date: November 16, 1979 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 39° 16' 24"
West Longitude: 111° 39' 23"

PREDICTED EFFECTIVE DAY FIELD (Omnidirectional) 565.73 mv/m at rated power.

NOTE: Please retain the description sheets and directional antenna radiation patterns notified for station KMTI in United States Change List Number 1783 dated November 2, 1979 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 Daytime system.

KMTI
1590 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: KMTI

Main Studio: Manti, Utah

Frequency: 1590 kHz

Power: 1kw Night 5kw Day

Notification List No. 1783

Date: November 2, 1979, Class: III

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

DAYTIME				NIGHTTIME			
North Latitude:	39°	12'	24"	North Latitude:	39°	16'	24"
West Longitude:	111°	39'	25"	West Longitude:	111°	39'	23"

ANTENNA CHARACTERISTICS

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

TOWER:	W(#1)	E(#2)
HEIGHT ABOVE INSULATORS:	340' (197.9°)	140' (81.5°)
NIGHT PHASING:	0°	-22°
NIGHT FIELD RATIO:	1.00	0.75

SPACING AND ORIENTATION: The towers are spaced 316.6' (184.25°) on a line bearing 103.0° true

GROUND SYSTEMS: 120-150' (about the East tower) and 120-200' (about the west tower) equally spaced copper radials plus 120-50' interspaced radials about each tower. Radials are bonded to tower bases, tuning merits, coaxial ground, transmitter, etc. with 2' or wider strap.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	565.8 mv/m		
Night	213.7 mv/m	253.4 mv/m	224.5 mv/m

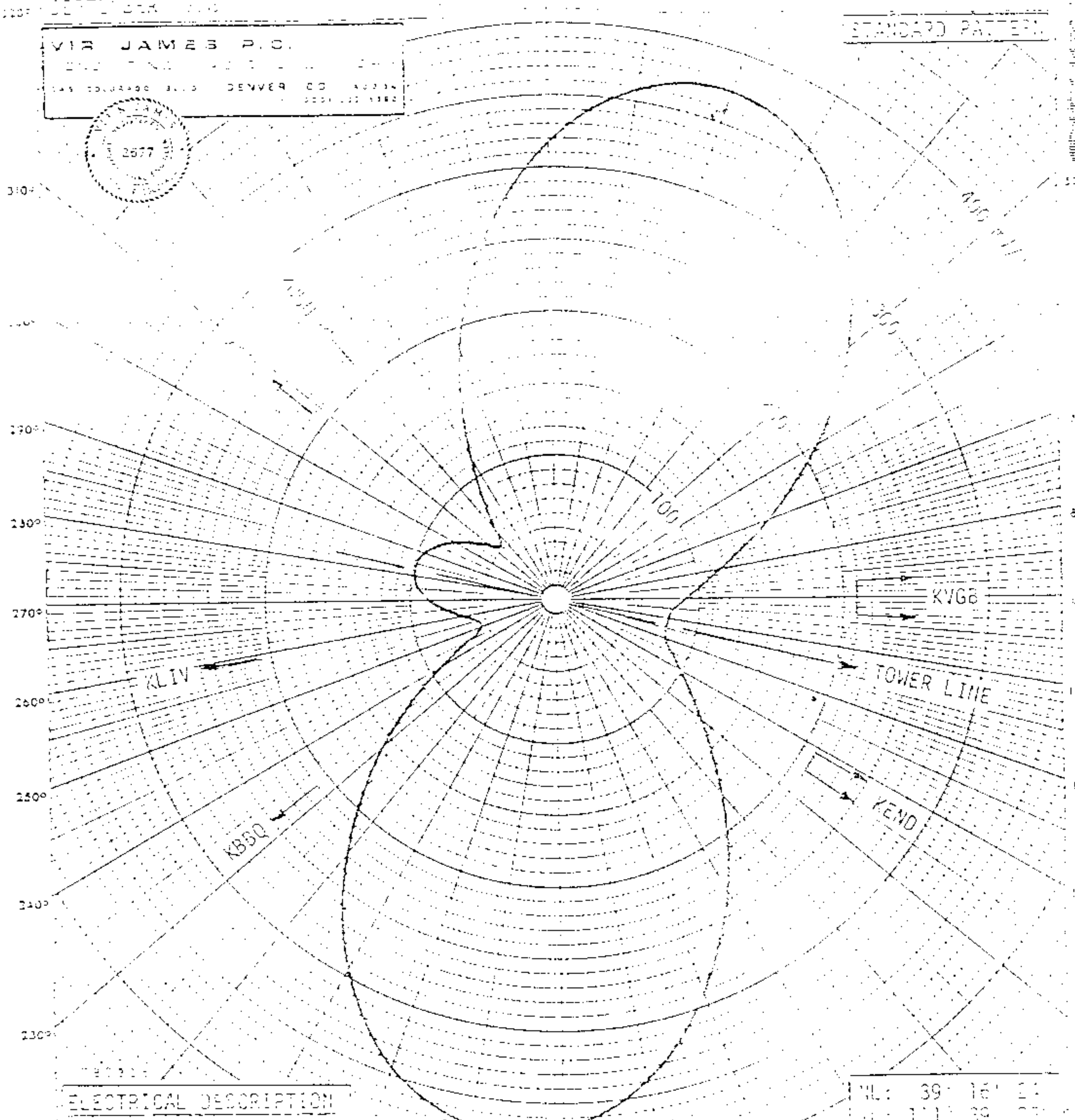
Note: Daytime non-directional operation to utilize the west tower of the array.

KMTI
1500 kHz

STANDARD PATTERN

VIR JAMES P.C.

DENVER CO



ELECTRICAL DESCRIPTION

Nom. Power = 1000 Watts

= 202.7 mV/m

RMS = 213.7 mV/m RSS = 263.1 mV/m

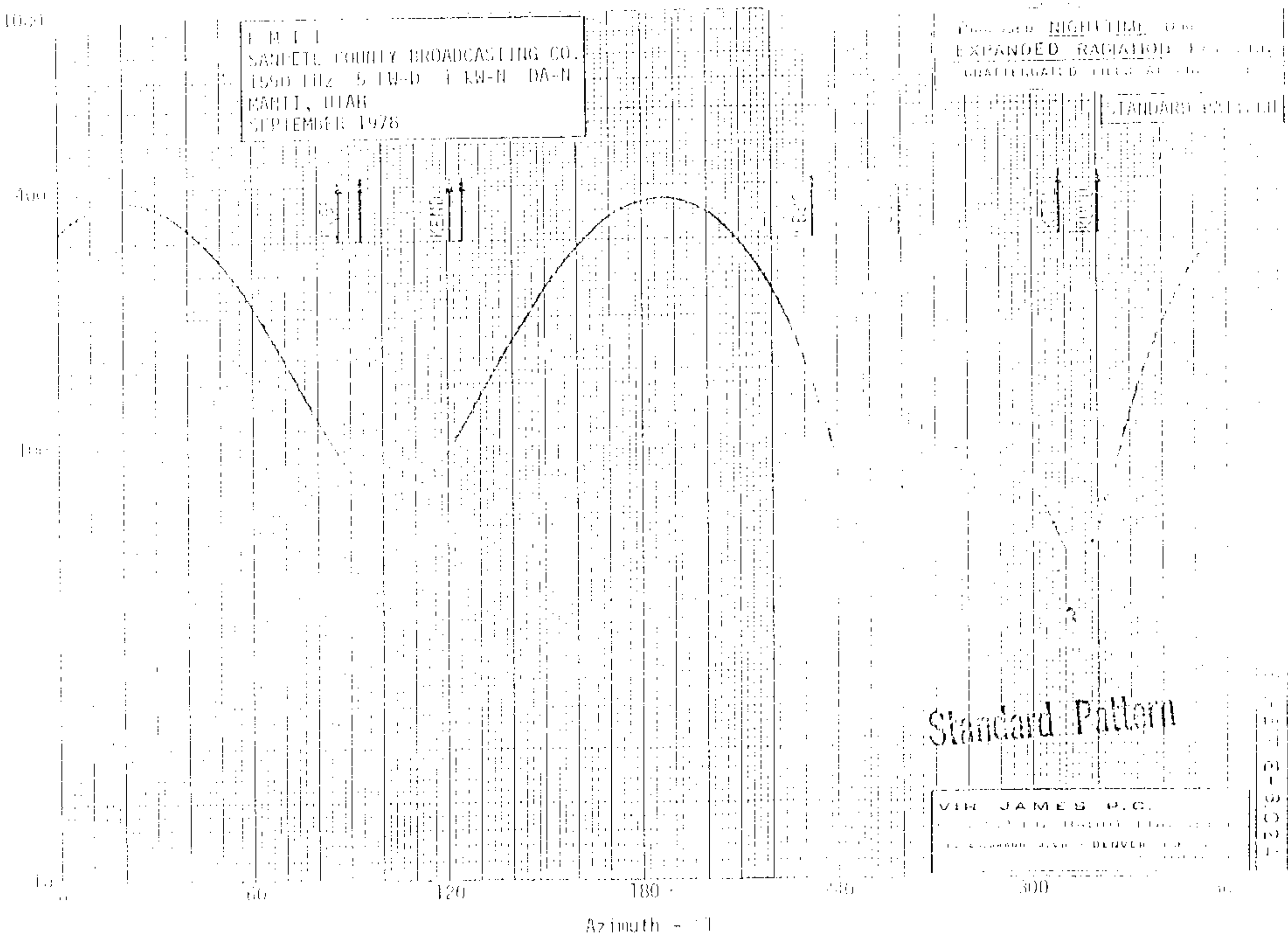
RMS = 224.4 [361.2]

$E(\phi,\theta)_{STD} = 1.05$

θ = 191.9 [103.6] θ = 31.6 [42.7]

210° 200° 190° 180° 170° 160° 150°

KMTI
1590kHz



KRAD
1590 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: K R A D

Main Studio: East Grand Forks, Minn.

Frequency: 1590 kHz

Power: 1 kW Night 5 kW Day

Notification List No. 1784

Date: Nobember 9, 1979 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 47° 52' 41"

West Longitude: 97° 00' 24"

ANTENNA CHARACTERISTICS

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

TOWER:	N (#1)	S (#2)	W (#3)
HEIGHT ABOVE INSULATORS:	160'	160'	160' (93.1°)
NIGHT PHASING:	0°	-68.4°	-
NIGHT FIELD RATIO:	1.00	0.8	-
DAY PHASING:	0°	-	60.0°
DAY FIELD RATIO:	1.00	-	0.51

SPACING AND ORIENTATION: With tower #1 as reference, tower #2 (the South tower) is spaced 237.1' (138°) on a line bearing 152.4° true, and tower #3 (the West tower) is spaced 206.5' (120°) on a line bearing 252.5° true.

GROUND SYSTEM: 120-180' equally spaced copper radials plus 120-50' interspaced radials about each tower. Radials are shortened and bonded to transverse straps along intersections between tower.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

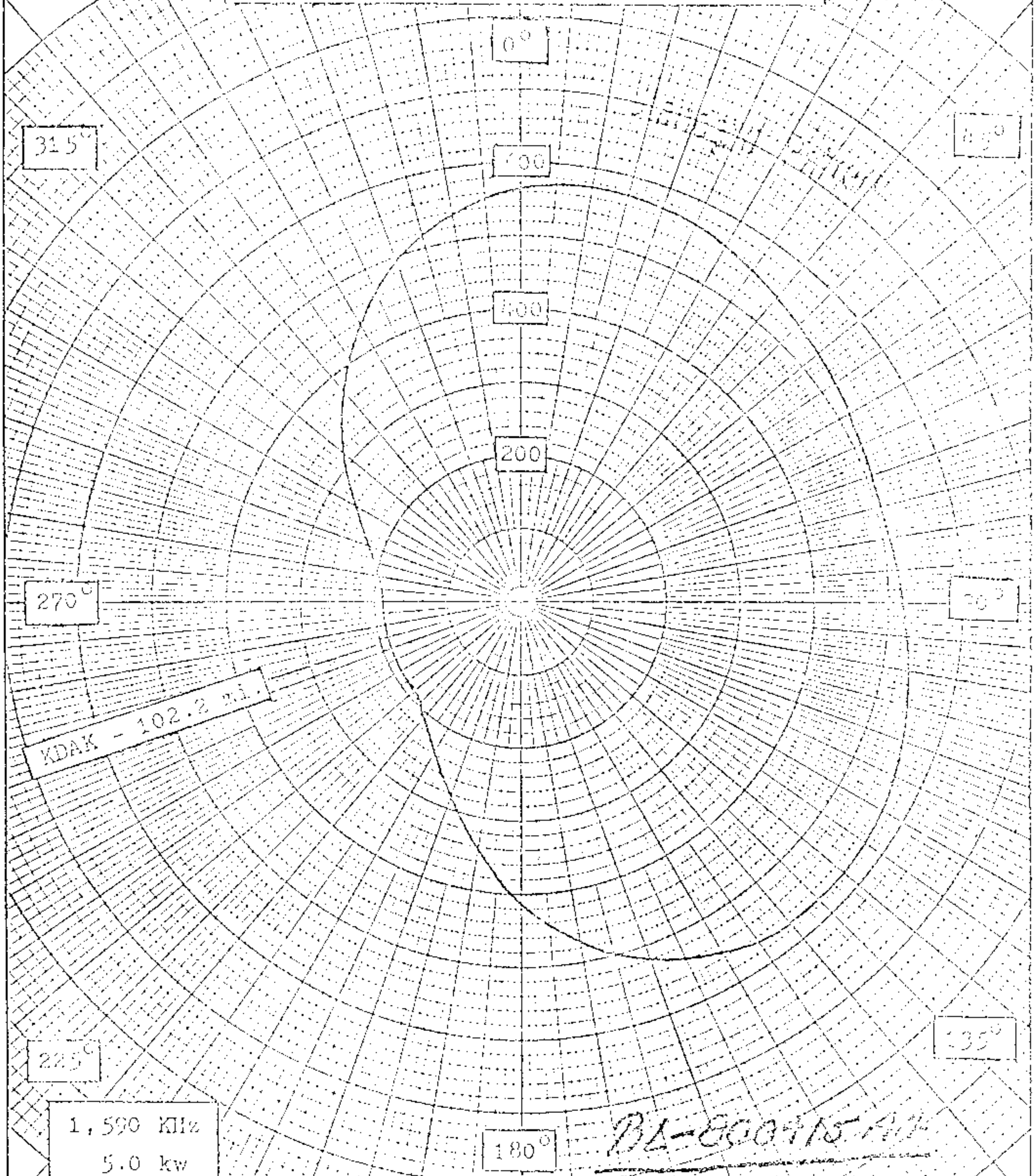
	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	422.59 mV/m	408.78 mV/m	443.94 mV/m
Night	186 mV/m		

KRAD
1590kHz

Note: Please retain the Nighttime directional antenna radiation pattern notified for Station KRAD in United States Change List Number 931 dated November 1, 1961 and attached to this Revised Description Sheet and Daytime pattern. This notification concerns only a change in the Daytime operation of the station with Nighttime operation continued as previously notified.

KRAD
1590kHz

- Standard Horizontal Plane Pattern -
- Day Pattern -



1,590 KHz
5.0 kw

RMS_{th} = 422.59
RMS_{std} = 443.94
RSS = 408.78

Lat 47° 52' 41"
Long 97° 00' 24"

0.51/60° 1.0/0°
252.5° ←—•—— 120° ——•
G = 93.1°

C. J. Thomforde
Consulting Engineer
Grand Forks, N.D.

Appendix DAD-A - Page 3
KRAD, East Grand Forks, MN.
June 1977 Revised May 1980

KTCH
1590 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: K T C H

Main Studio: Wayne, Nebraska

Frequency: 1590 kHz

Power: 2.5 kW Day

Notification List No. 1784

Date: November 9, 1979 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 42° 14' 03"

West Longitude: 97° 03' 19"

ANTENNA CHARACTERISTICS

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

TOWER:	W (#1)	E (#2)
HEIGHT ABOVE INSULATORS:	320' (186.1°)	150' (87.2°)
DAY PHASING:	0°	65°
DAY FIELD RATIO:	1.0	1.0

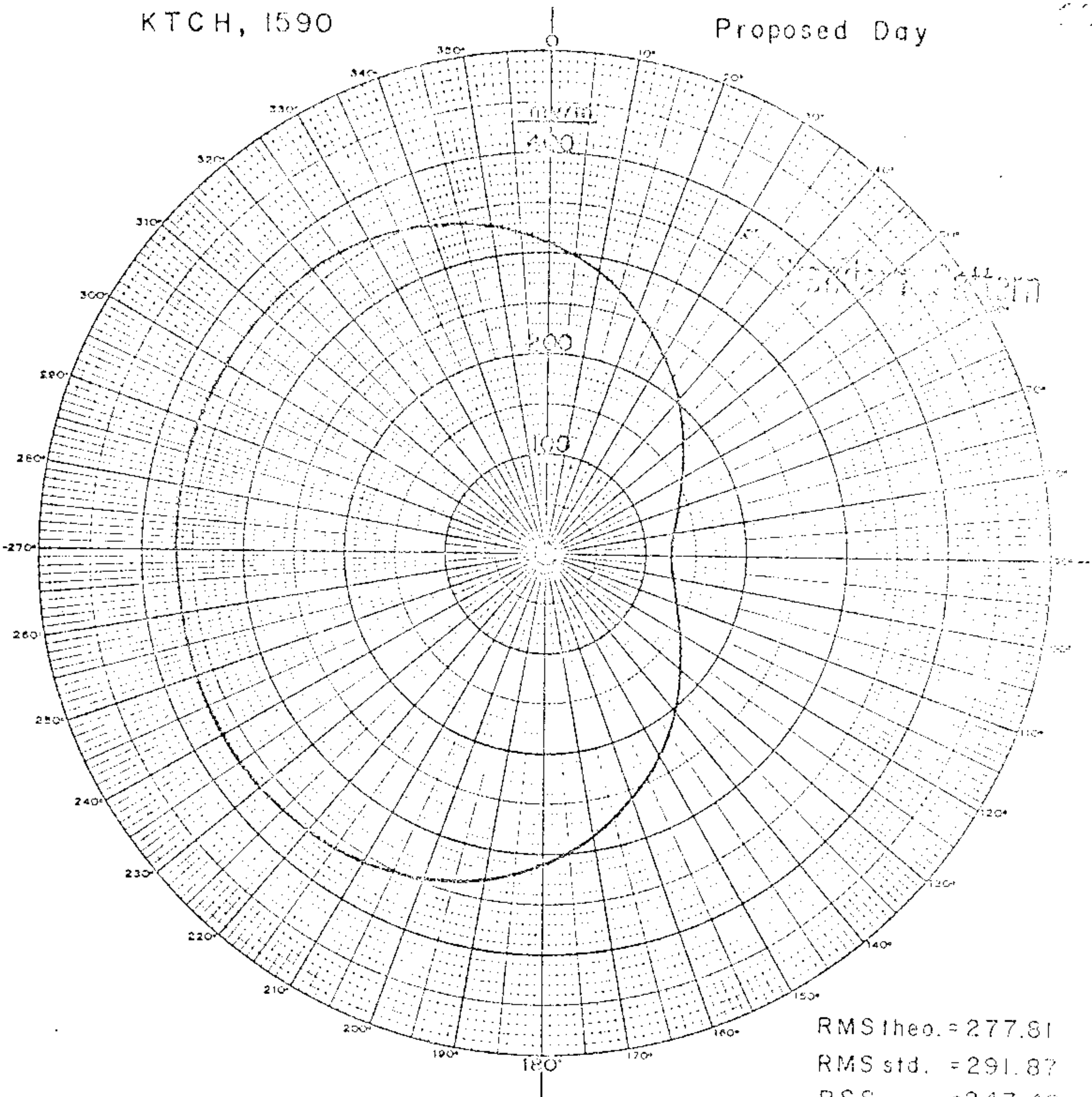
SPACING AND ORIENTATION: The towers are spaced 128.9' (75°) on a line bearing 90° true.

GROUND SYSTEM: 120-150' equally spaced copper radials tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL		STANDARD
	RMS	RSS	RMS
Day	277.81 mV/m	247.49 mV/m	291.87 mV/m

KTCH
1590kHz



RMS theo. = 277.81
RMS std. = 291.87
RSS = 247.49

HORIZONTAL RADIATION PATTERN—FIGURE No. 5

Antenna Parameters		
No. 1 Δ — 75° — No. 2 Δ —— 90° T 1∠0 1∠65 $G_1 = G_2 = 87.3°$	Floyd Hall Radio Engineering Consultant	Applicant: Theodore S. Storck, KTCH Location: Wayne, Neb. Freq: 1590 kc Power: 2.5 kw Lat: 42° 14' 03" Long: 97° 03' 19" Time of operation: Day Type of operation: DA-D RMS Field: 291.87 mv/m Pattern No. 770400 Supersedes Date: May 25, 1977

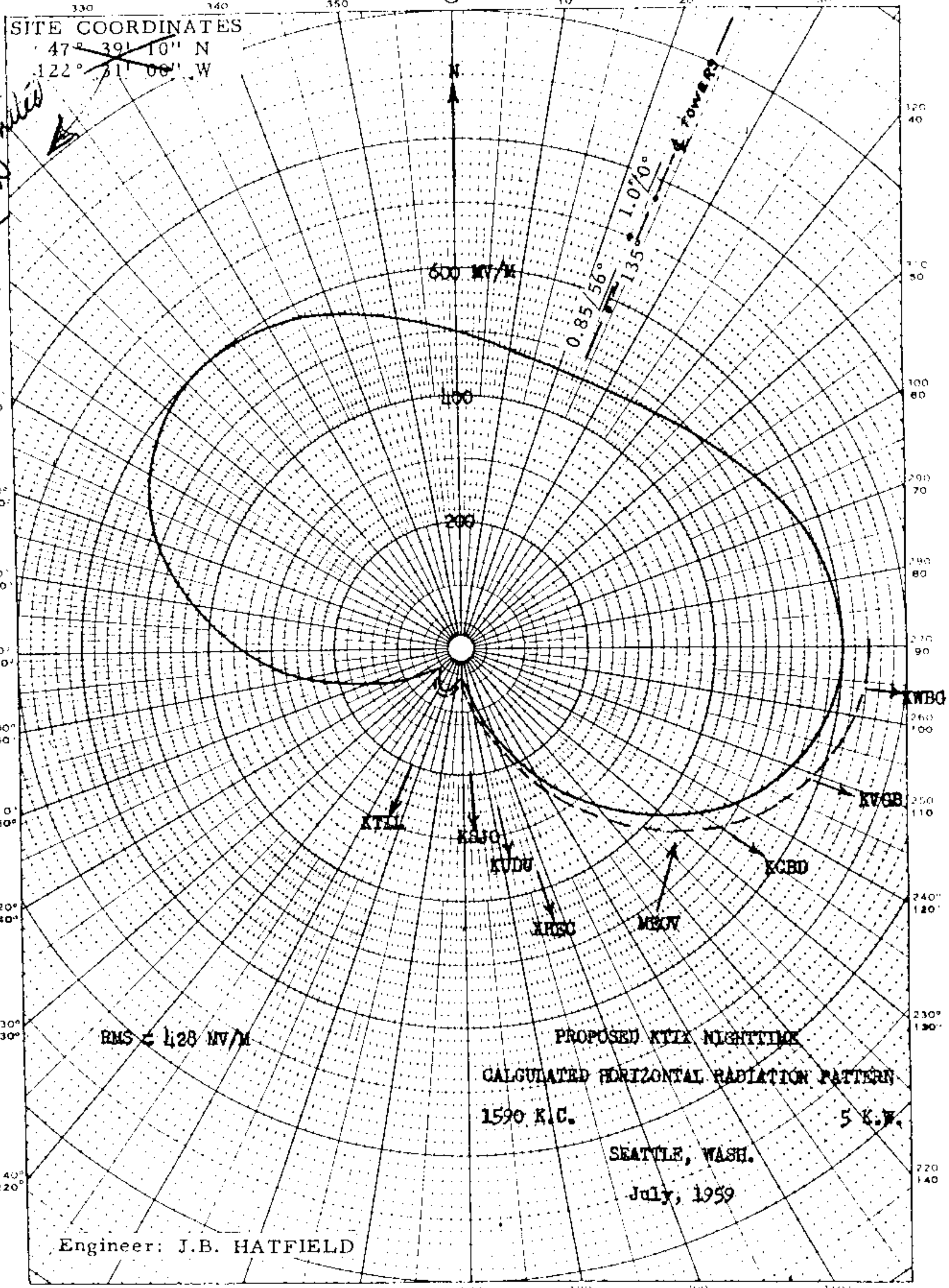
KUUU

PROPOSED NIGHT
(10-2-59g)

Station KTIX
Seattle, Washington

5kw, DA-N,U
1590 KC

2-15-61
granted cp to
change to unlimited
use with DA-N
over



FCC File No. BP-13433
Accepted 9-24-59

KTIX
Seattle, Washington

1590 KC

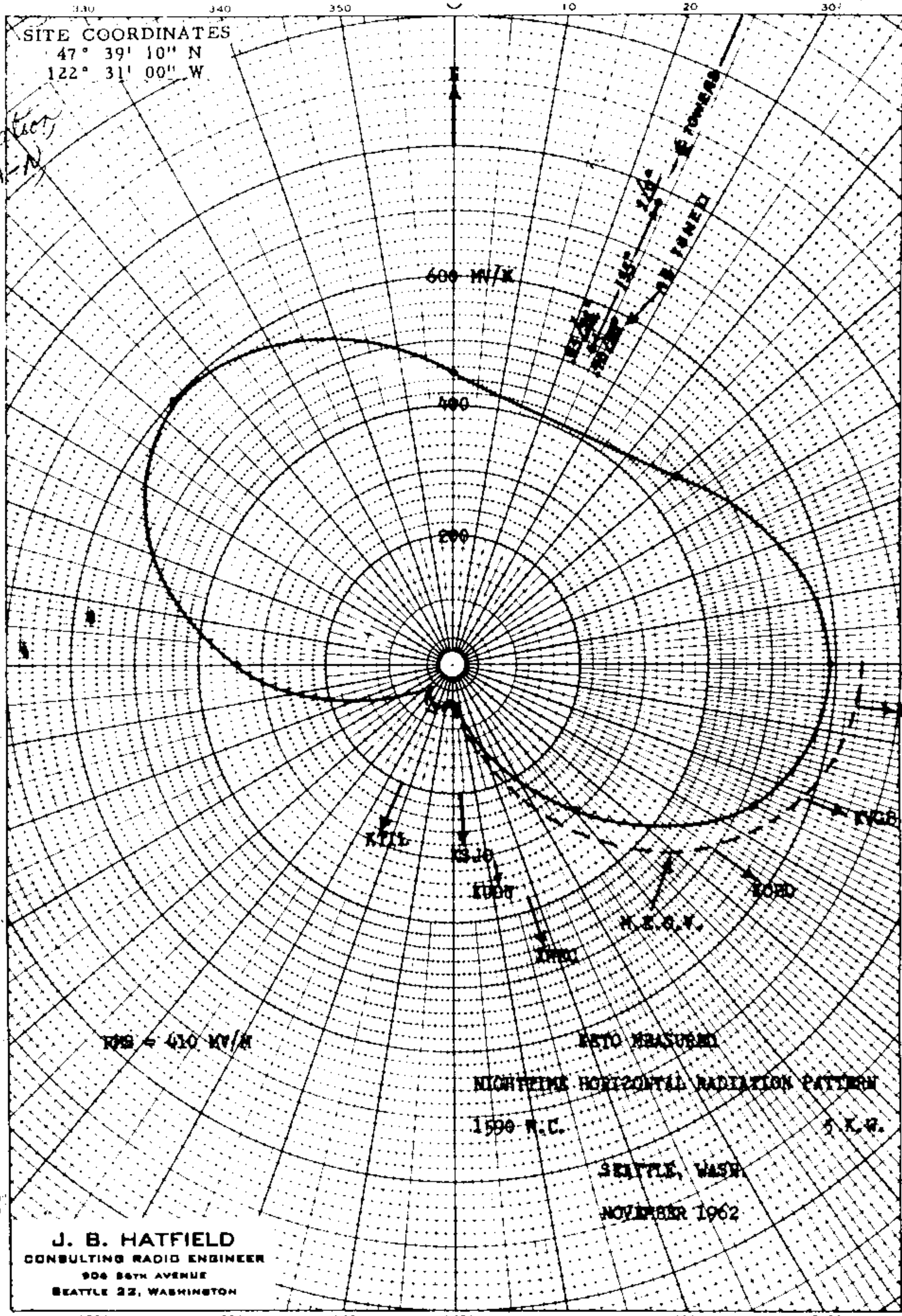
KUUU

Measured Night
(3-30-63ct)

Station KETO
Seattle, Washington

5kw,DA-N,U
1590 kc

4-18-63 granted license during change in hours of operation, installation of DA-N and T-xmter location.

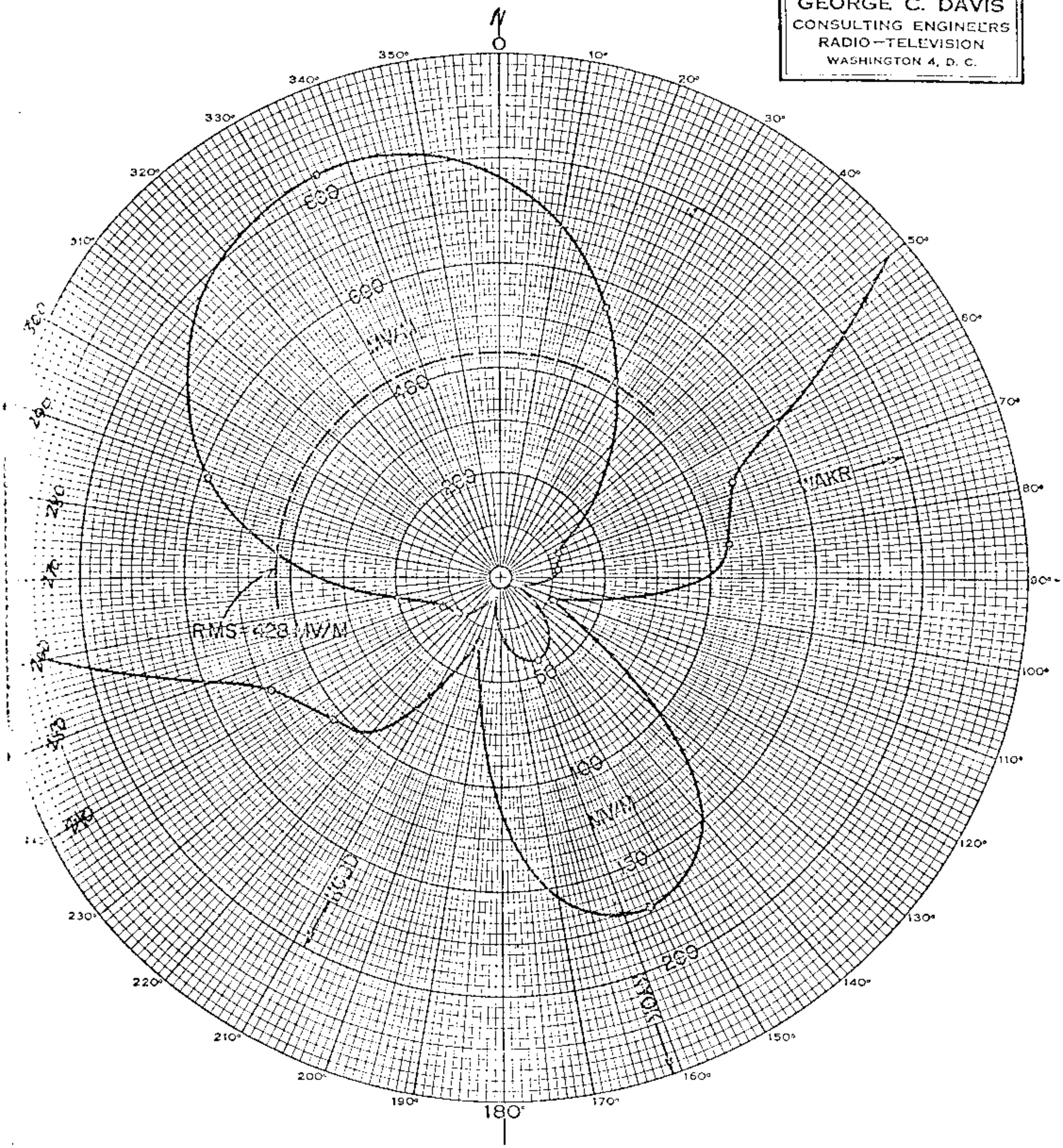


FCC File No. BL-9767
Accepted 2-25-63

Station KETO
Seattle, Washington

1590 kc

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



MEASURED HORIZONTAL
PLANE RADIATION PATTERN
FOR NIGHTTIME OPERATION
OF KVGB, GREAT BEND, KANSAS
1590 KC - 5 KW - DA-N-U
DECEMBER 1964

0.589/+150° — 90° — 1.00/0° — 90° — 0.866/-140°

N 155.75° E

MEASURED

S = 90° = 154.5'
H = 95.5° = 164'

N. LAT. 38° 18' 50.4"
W. LONG. 98° 47' 34.6"

FOR INFORMATION ONLY

KVGB

Proposed Night
(2-28-64ct)

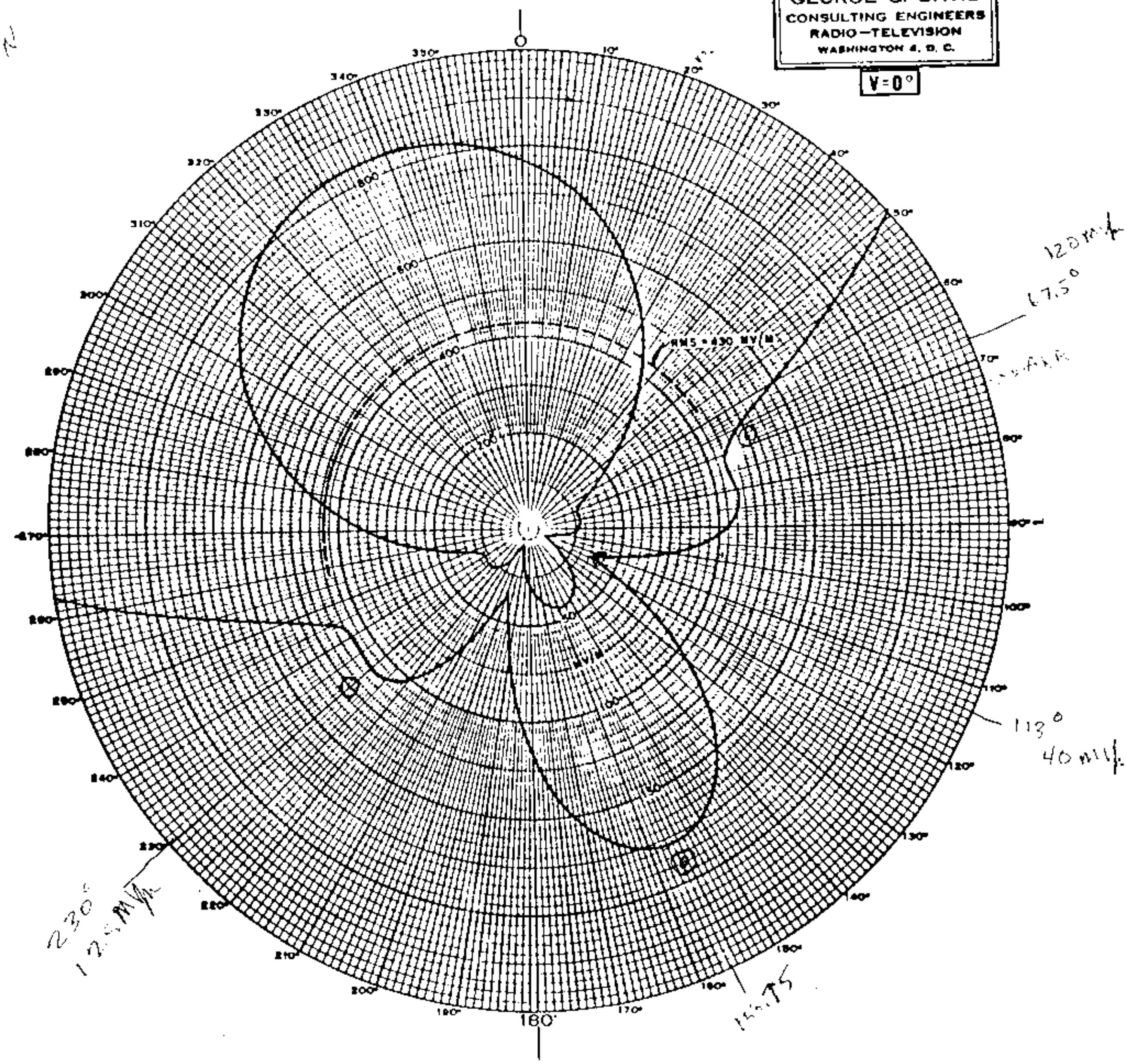
Station KVGB
Great Bend, Kansas

5kw,DA-N,U
1590 kc

7/15/64

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

V=0°



0.612/+292°   1.34/+141.5°   1.0/0°

← N 155.75° E —— 90° —— 90° ——

NORTH LATITUDE	38° 18' 50.4"
WEST LONGITUDE	98° 47' 34.6"

COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR PROPOSED NIGHTTIME OPERATION OF
KVGB, GREAT BEND, KANSAS
1590 KC 5 KW DA-N U
SEPTEMBER 1963

S=90°=154.5'   H=95.5°=164'

FCC File No.BP-16070
Accepted 2-5-64

Station KVGB
Great Bend, Kansas

1590 kc

KVGB

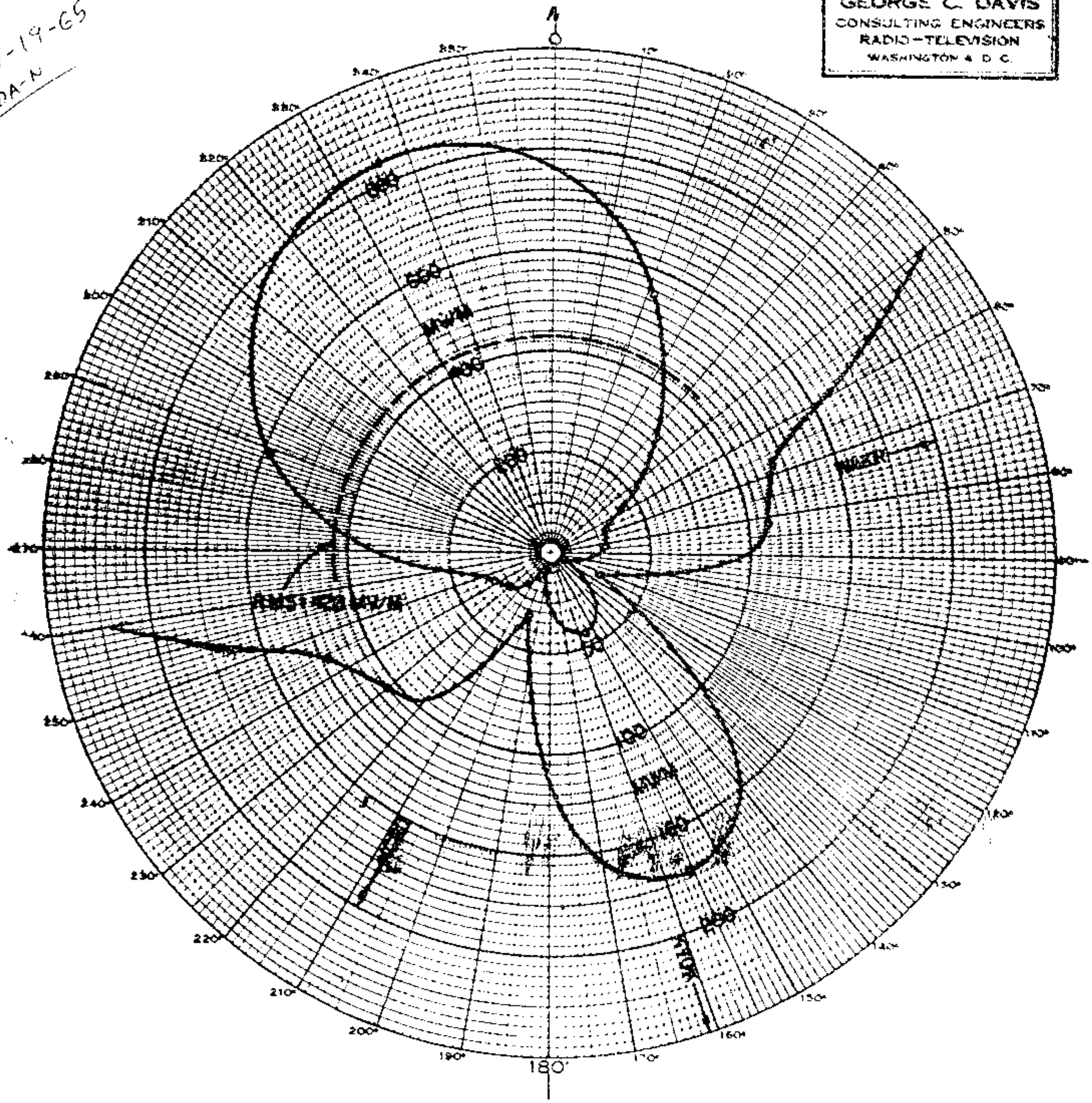
Measured Night
(5-27-65ct)

Station KVGB
Great Bend, Kansas

5kw,DA-N,U
1590 kc

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

LIC. 5-19-65
CHG DA-N



MEASURED HORIZONTAL
PLANE RADIATION PATTERN
FOR NIGHTTIME OPERATION
OF KVGB, GREAT BEND, KANSAS
1590 KC - 5 KW - DA-N-U
DECEMBER 1964

0.589/+150° — 90° — 1.00/0° — 90° — 0.866/-140°
N 155.75° E
MEASURED

S = 90° = 154.5'
H = 95.5° = 164'

N. LAT. 38° 18' 50.4"
W. LONG. 98° 47' 34.6"

FCC File No. BL-10880
Accepted 4-29-65

Station KVGB
Great Bend, Kansas

1590 kc

KVGB

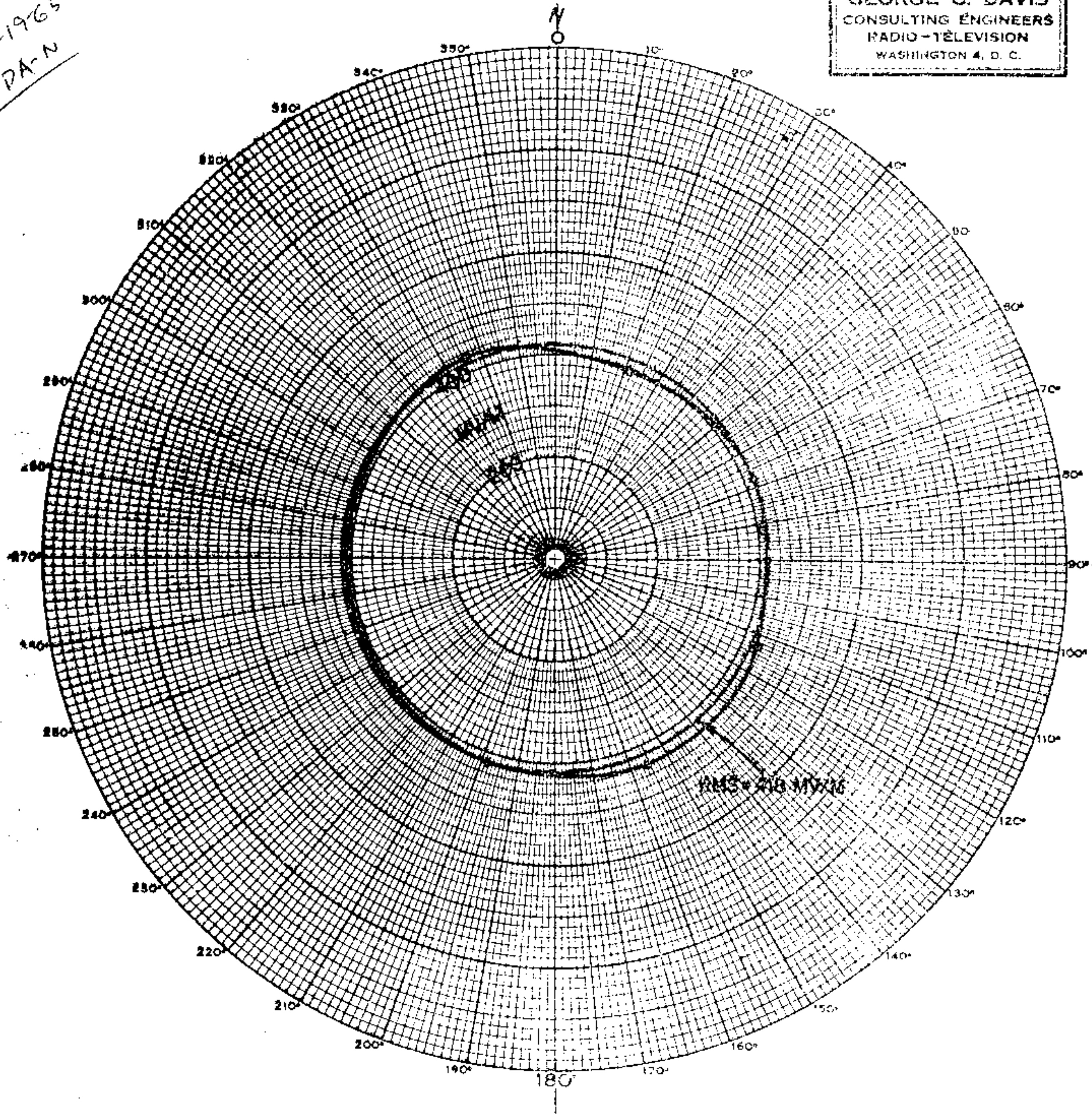
Measured Non-DA
(5-27-65ct)

Station KVGB
Great Bend, Kansas

5kw, DA-N, U
1590 kc

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

LIC 5-19-65
CHG. DA-N



NON-DIRECTIONAL UNATTENUATED
FIELD INTENSITY AT ONE MILE FOR
KVGB, GREAT BEND, KANSAS
1590 KC - 5 KW - DA-N-U
DECEMBER 1964

FCC File No. BL-10880
Accepted 4-29-65

Station KVGB
Great Bend, Kansas

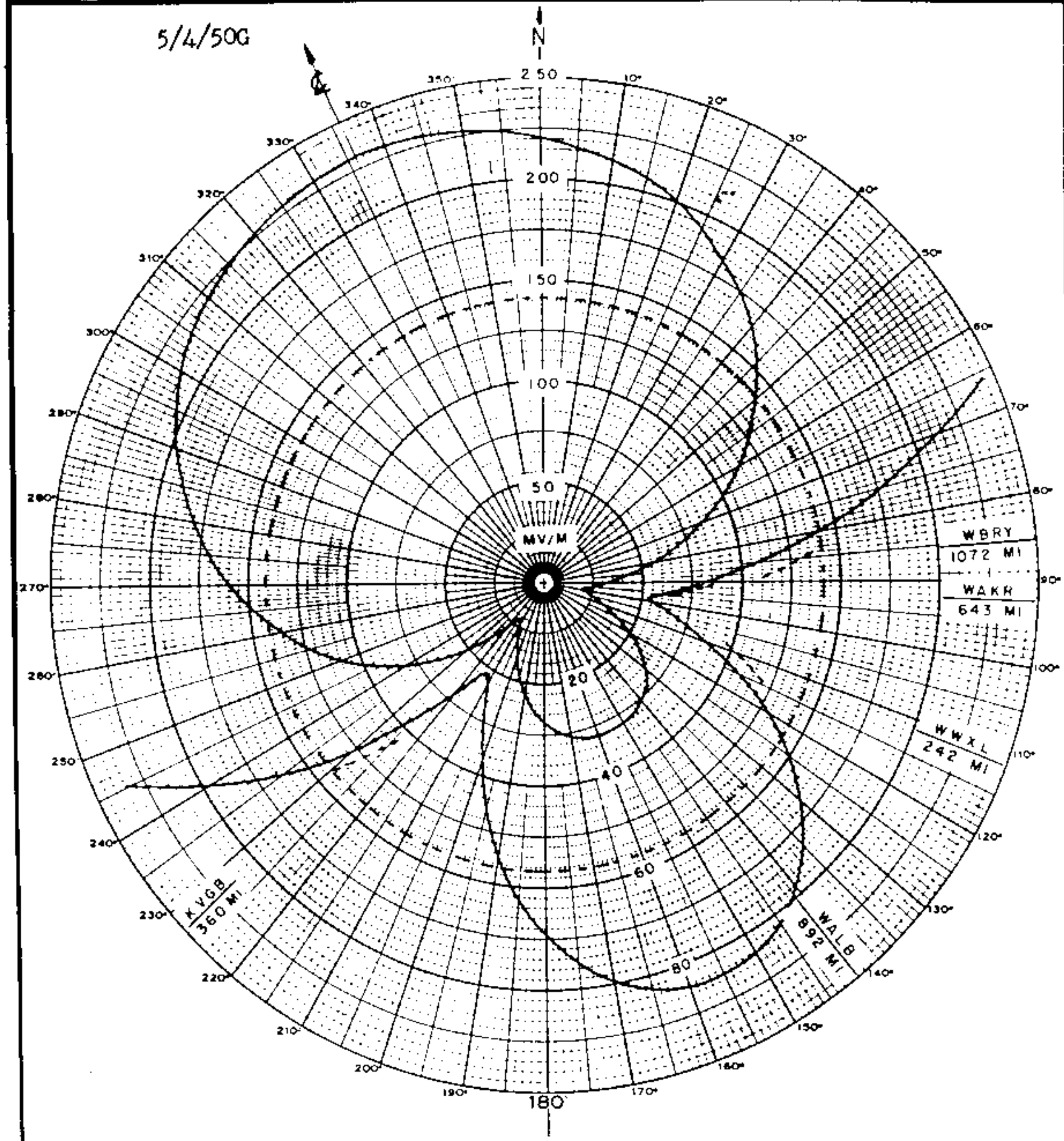
1590 kc

KWBG

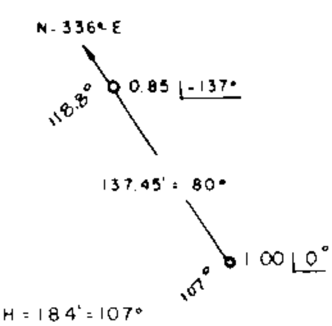
PROPOSED NIGHT — KWBG, BOONE, IOWA — 500w,1kw-LS,DAN — 1590 kc

1-15-64 [illegible] CP to increase height [illegible] North tower to 204/207

[illegible]



RMS = 142 MV/M — CALCULATED —— MAXIMUM EXPECTED ----

PATTERN NO. 500215 LATITUDE: 42°01'22" LONGITUDE: 93°52'36"		EXHIBIT NO. 6 (AMENDED) BOONE BROADCASTING CO BOONE, IOWA PROPOSED 1590 KC 500 W; 1 KW-LS-DA-N HORIZONTAL PLANE PATTERN
GEORGE B. BAIREY Consulting Radio Engineer Washington, D. C.		

AMENDMENT RECD 5-1-50 BP-7482 — KWBG, Boone, Iowa 1590 kc

KWBG

MEASURED
NIGHT

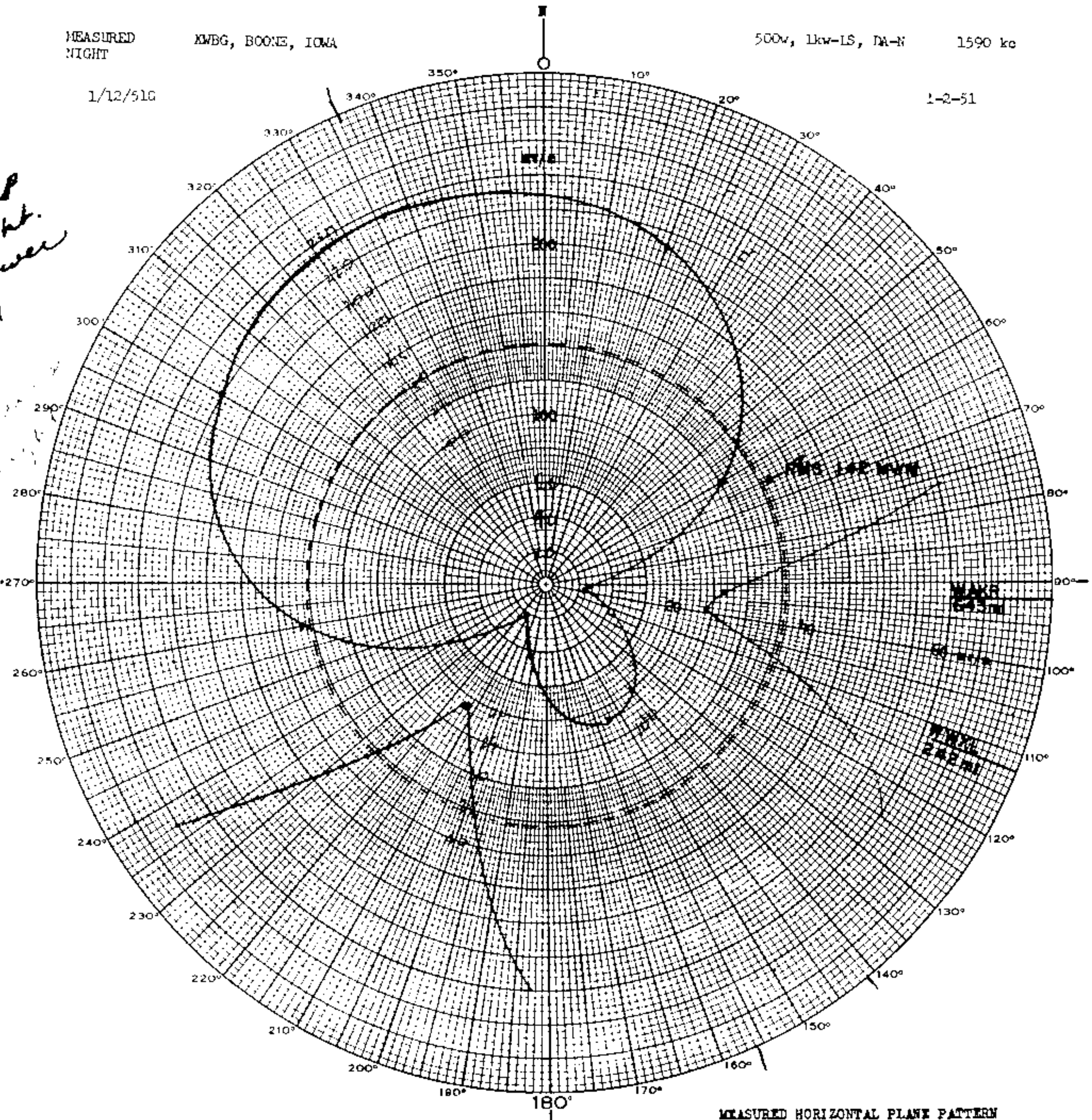
KWBG, BOONE, IOWA

500w, 1kw-LS, DA-N 1590 kc

1/12/51G

1-2-51

1-15-64
Granted CP
to increase ht.
of North Tower
to 204/207



MEASURED HORIZONTAL PLANE PATTERN
Lloyd R. Amoo, Des Moines, Iowa

TOWER PLACEMENT SKETCH

PATTERN PARAMETERS

TOWER No	ELECTRICAL HEIGHT G°	TRUE TOWER ORIENTATION $\phi°$	SPACING S°	PHASING $\psi°$	HORIZONTAL FIELD mv/m E	FIELD RATIO F	ELEV. ANGLE $\theta°$	ELEVATION RMS FIELD mv/m E_θ
1	107	0	0	0		1.0	0	
2	107(115)	336	80	-137		.55	10	
3							20	
4							30	
5							40	
6							50	
7							60	
8							70	
9							80	
10							E_s =	mv/m
DAYTIME OPERATION ☐			NIGHTTIME OPERATION ☒				P_r =	kw

STATION DATA

CALL	KWBG
FREQUENCY	1590 kc
POWER	0.5 kw
TIME OF OPERATION	U
TYPE OF OPERATION	0.5-1 LS-DAN
DAYTIME TOWERS	1 (No.1)
NIGHTTIME TOWERS	2
No. RADIALS PER TOWER	120
LENGTH OF RADIALS	90° 155 ft
GROUND SCREEN DIMENSION	50'D
LAT.	42 ° 01 ' 22 "
LONG.	93 ° 52 ' 36 "
SUPERSEDES	
PATTERN No.	

KWBG

MEASURED
DAY (NON-DA)

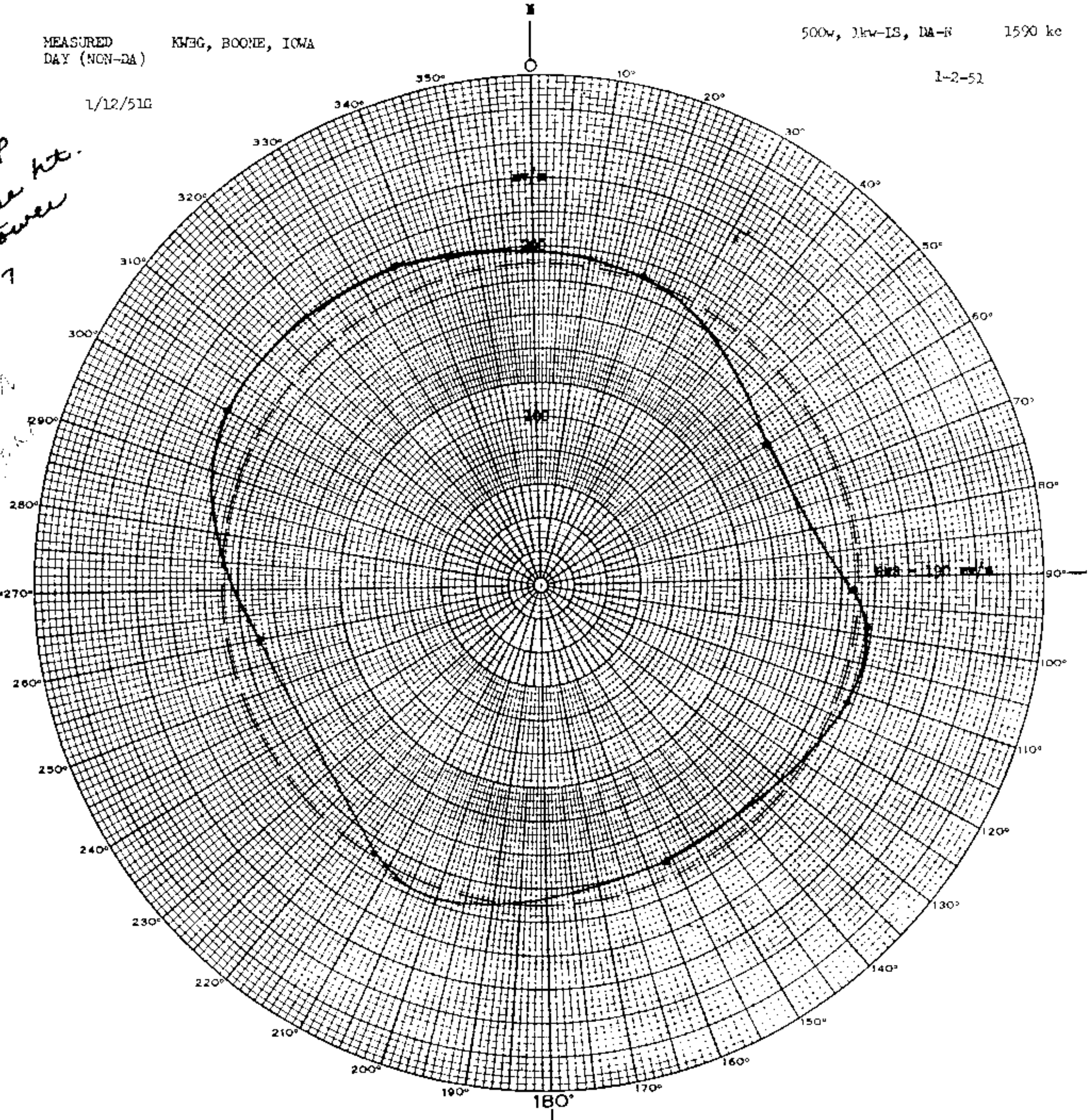
KWBG, BOONE, IOWA

500w, 1kw-LS, DA-N   1590 kc

1-2-51

1/12/51G

1-15-64
Granted CP
to increase ht.
of North tower
to 204/207



TOWER PLACEMENT SKETCH

PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT $G°$	TRUE TOWER ORIENTATION $\phi°$	SPACING $S°$	PHASING $\psi°$	HORIZONTAL FIELD mv/m E	FIELD RATIO F	ELEV. ANGLE $\theta°$	ELEVATION RMS FIELD mv/m E_θ
1	107						0	190
2	107		Floating				10	
3							20	
4							30	
5							40	
6							50	
7							60	
8							70	
9							80	
10							E_1 =	mv/m
							P_1 =	kw

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☐

STATION DATA

CALL	KWBG
FREQUENCY	1590 kc
POWER	1.0 kw
TIME OF OPERATION	Unlimited
TYPE OF OPERATION	1 D-0.5DAN
DAYTIME TOWERS	1- South
NIGHTTIME TOWERS	2
No. RADIALS PER TOWER	120
LENGTH OF RADIALS	90 - 155 ft
GROUND SCREEN DIMENSION	
LAT.	42 ° 01 ' 22 "
LONG.	93 ° 52 ' 36 "
SUPERSEDES	
PATTERN No.	

MEASURED HORIZONTAL PLANE PATTERN - NON-DIRECTIONAL

Lloyd R. Amoo
Des Moines, Iowa

KWBG, Boone, Iowa 1590 kc

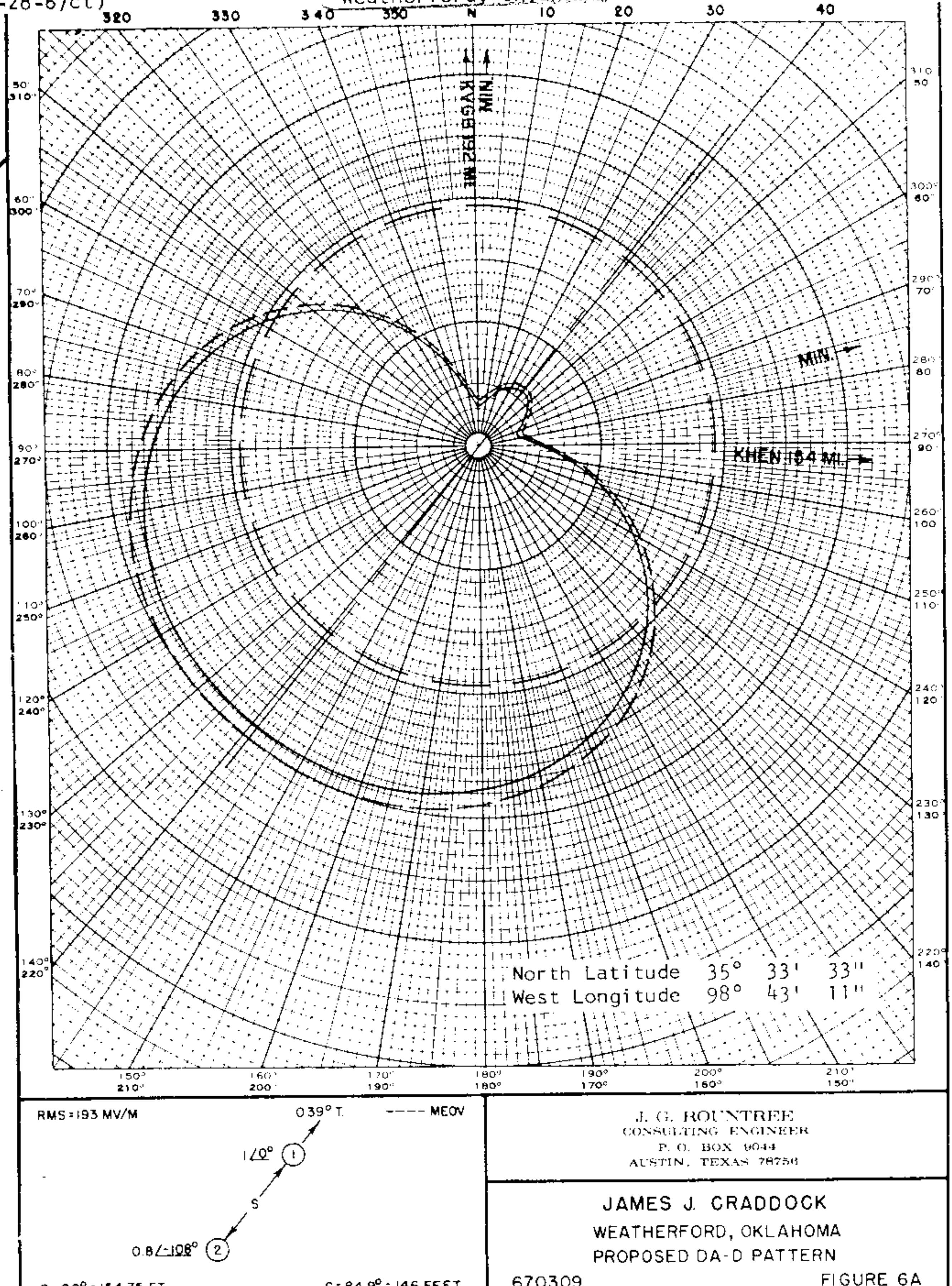
KWEY

Proposed Day
(6-28-67ct)

New; James J. Craddock
Weatherford, Oklahoma

1590 kc

OVER



J. G. ROUNTREE
CONSULTING ENGINEER
P. O. BOX 9044
AUSTIN, TEXAS 78756

JAMES J. CRADDOCK
WEATHERFORD, OKLAHOMA
PROPOSED DA-D PATTERN

670309

FIGURE 6A

FCC File No.BP-17677
Accepted 5-29-67

New; James J. Craddock
Weatherford, Oklahoma

1590 kc

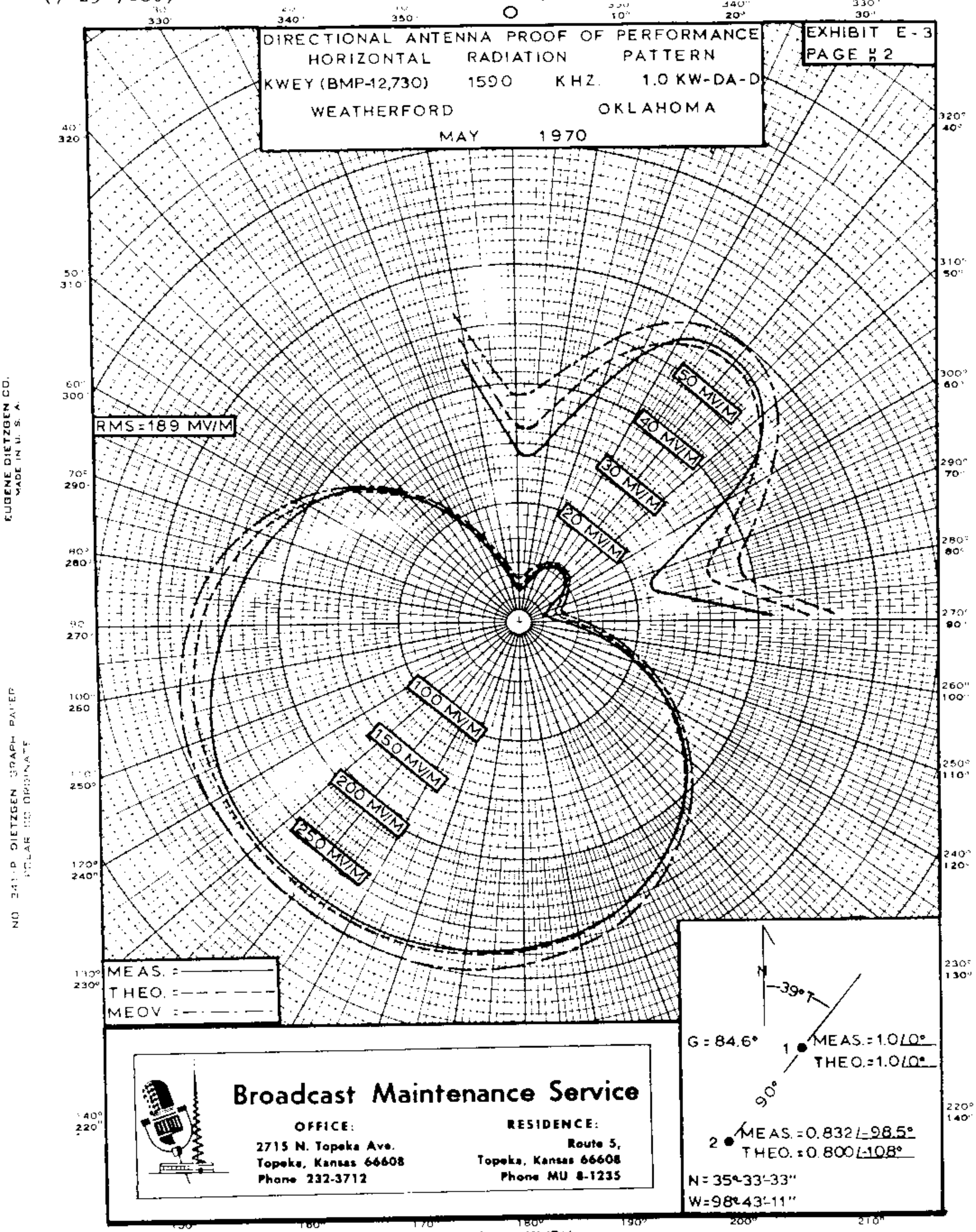
SEE REVERSE SIDE

KWEY

Measured Day
(7-29-70ct)

Station KWEY
Weatherford, Oklahoma

1kw,DA-D,D
1590 kc



FCC File No.BL-12673
Accepted 7-28-70

Station KWEY
Weatherford, Oklahoma

1590 kc

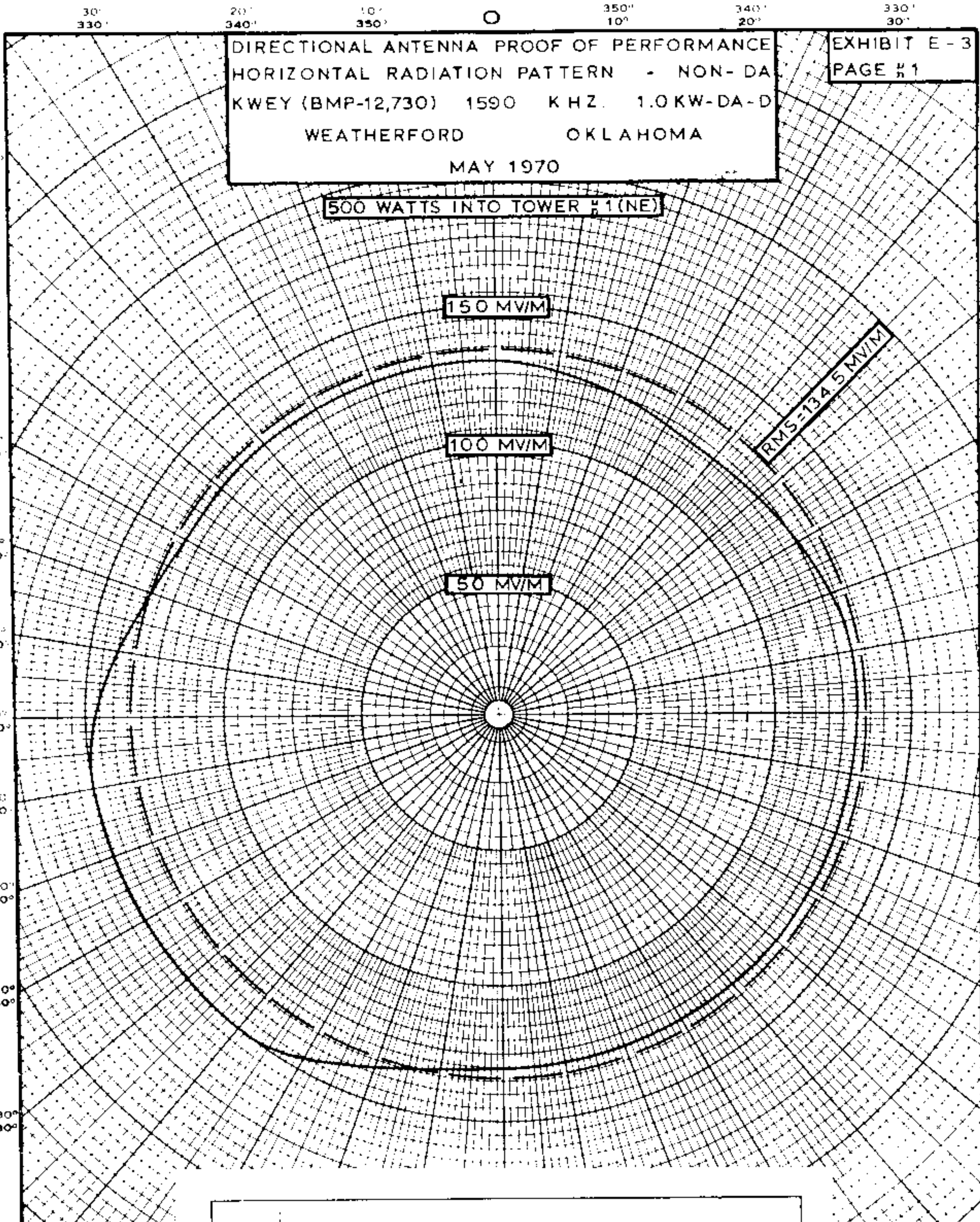
SEE REVERSE SIDE

KWEY

Measured Non-DA
(7-29-70ct)

Station KWEY
Weatherford, Oklahoma

1kw,DA-D,D
1590 kc



FCC File No.BL-12673
Accepted 7-28-70

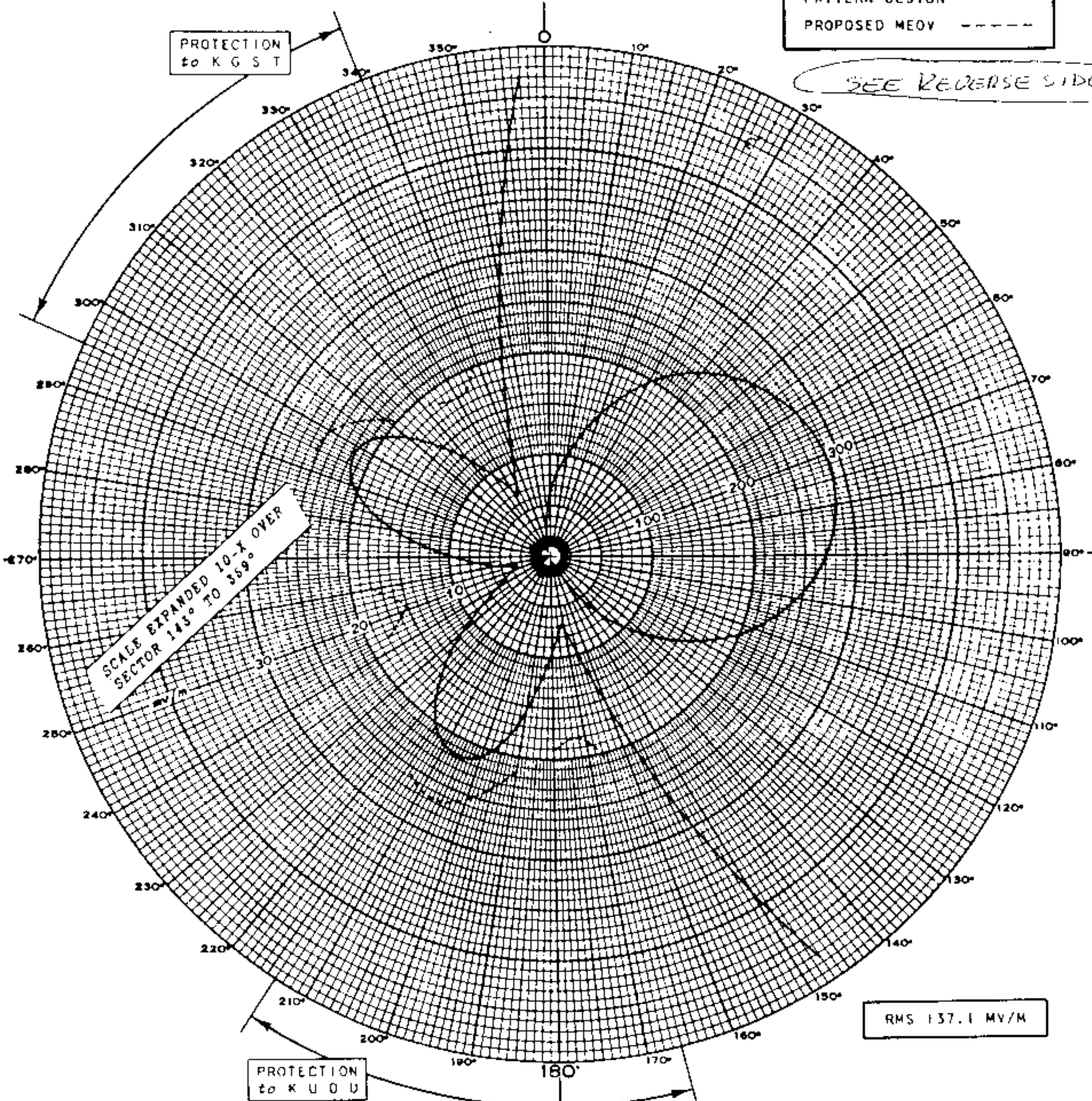
Station KWEY
Weatherford, Oklahoma

1590 kc

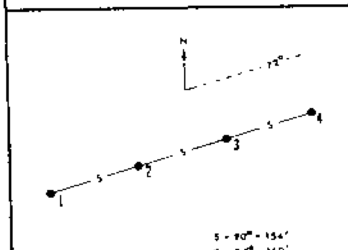
Proposed Day
(7-29-70ct)

Station KXEM
McFarland, California

KXEM
500w,DA-D,D
1590 kc



TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT	TRUE TOWER ORIENTATION	SPACING	PHASING	HORIZONTAL FIELD mv/m	FIELD RATIO	ELEV. ANGLE	ELEVATION RMS FIELD mv/m
1	87	0	0	-150		1.0	0	
2	87	72	90	+ 67		2.5	10	
3	87	72	180	- 67		2.5	20	
4	87	72	270	+150		1.0	30	
5							40	
6							50	
7							60	
8							70	
9							80	
10							E_r =	mv/m
							P_r =	kw

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐

STATION DATA

CALL	KXEM
FREQUENCY	1590 kc
POWER	0.5 kw
TIME OF OPERATION	DAYTIME
TYPE OF OPERATION	DA
DAYTIME TOWERS	4
NIGHTTIME TOWERS	
No. RADIALS PER TOWER	
LENGTH OF RADIALS	' "
GROUND SCREEN DIMENSION	
LAT.	35° 38' 40"
LONG	119° 16' 08"
SUPERSEDES	
PATTERN No.	

CECIL LYNCH, CONSULTING ENGINEER
MODESTO, CALIFORNIA

Amendment to Construction Permit
File BP-16,872

GOLDEN EMPIRE COMMUNICATIONS CO.
McFarland ~ California
June, 1970

FIGURE 1

FCC File No.BMP-13053
Accepted 7-23-70

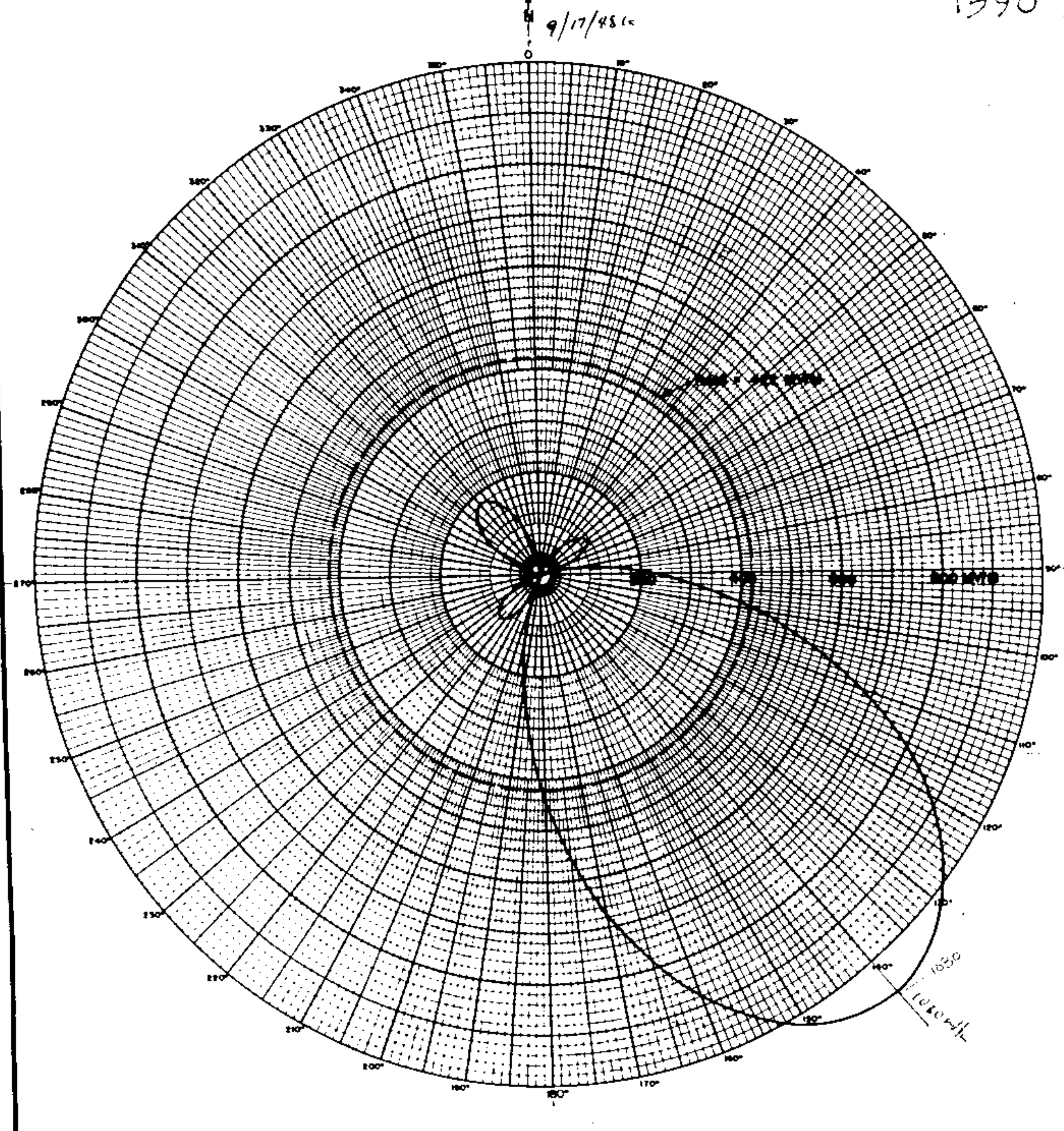
Station KXEM
McFarland, California

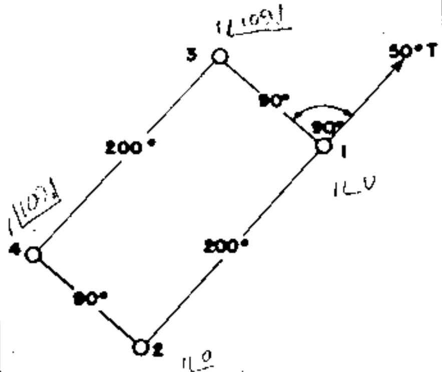
1590 kc

KYOK

1590

9/17/48





LATITUDE ~~29° 47' 44"~~ 29-50-~~42~~ 38.5

LONGITUDE ~~95° 27' 28"~~ 95-26-~~48~~ 51

BP 15179

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	SEE DIAGRAM	SEE DIAGRAM	0	1	198	107.5
2			0	1	198	107.5
3			+108.1	1	198	107.5
4			+108.1	1	198	107.5

CALCULATED HORIZONTAL PLANE PATTERN FOR PROPOSED KATL

HOUSTON, TEXAS

1590 KC 5 KW U, DA-N

KEAR AND KENNEDY

CONSULTING ENGINEERS

WASHINGTON, D. C.

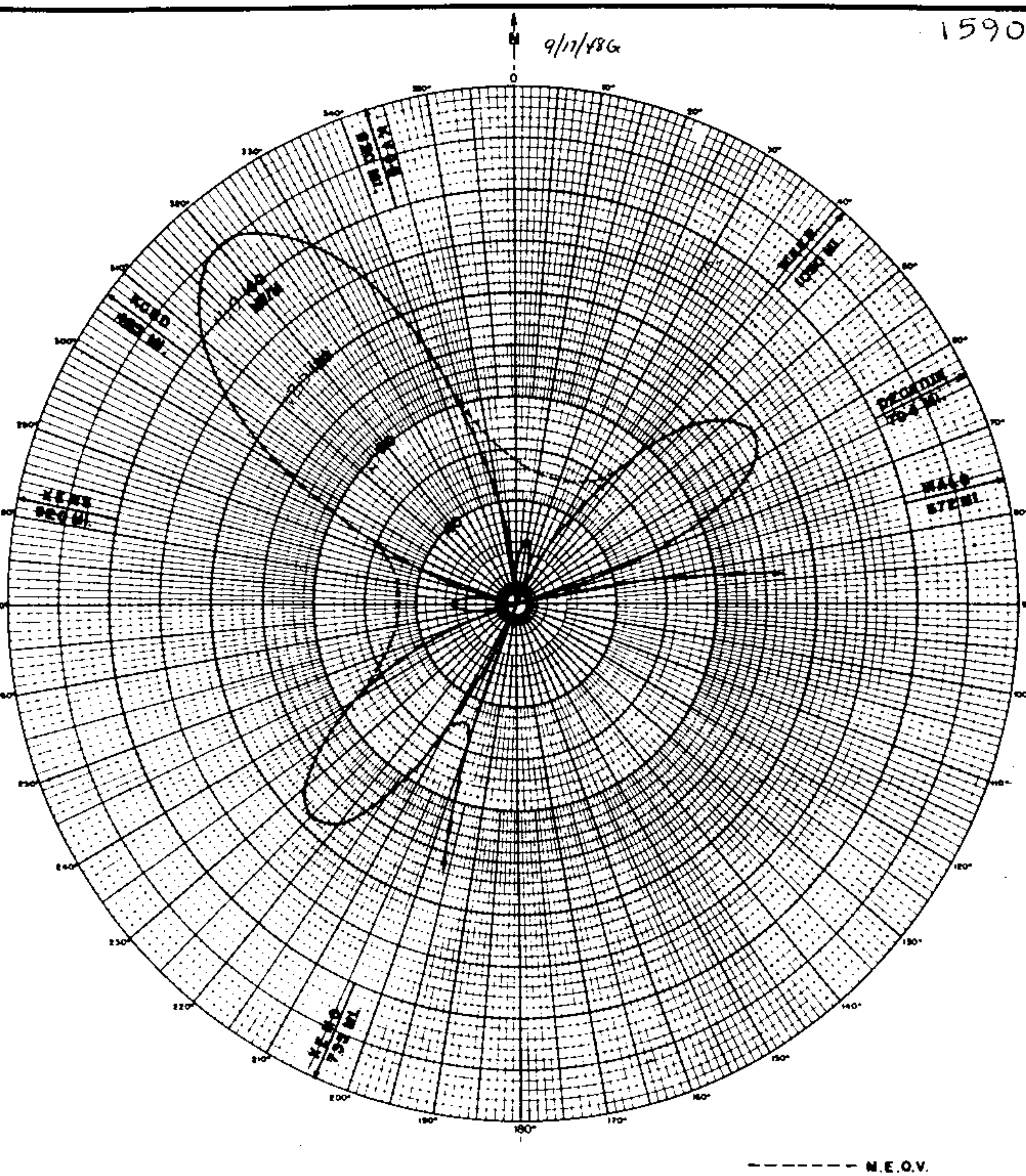
471230

P-1585

KYOK

1590

9/17/48G



LATITUDE
LONGITUDE

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

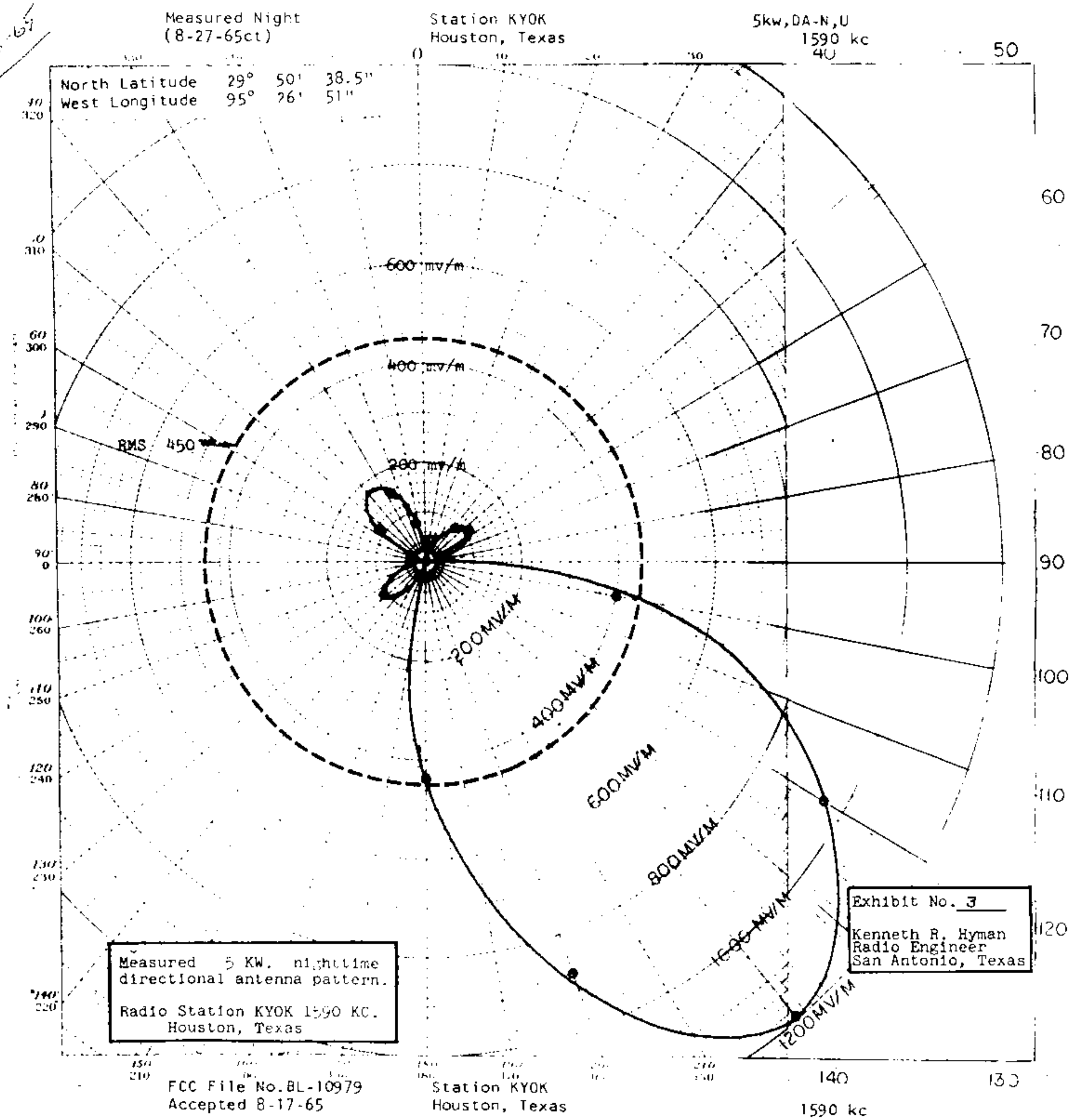
EXPANDED
CALCULATED HORIZONTAL
PLANE PATTERN
FOR
PROPOSED KATL
HOUSTON, TEXAS
1590 KC 5 KW U, DA-N

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.

471230

P-1525

KYOK



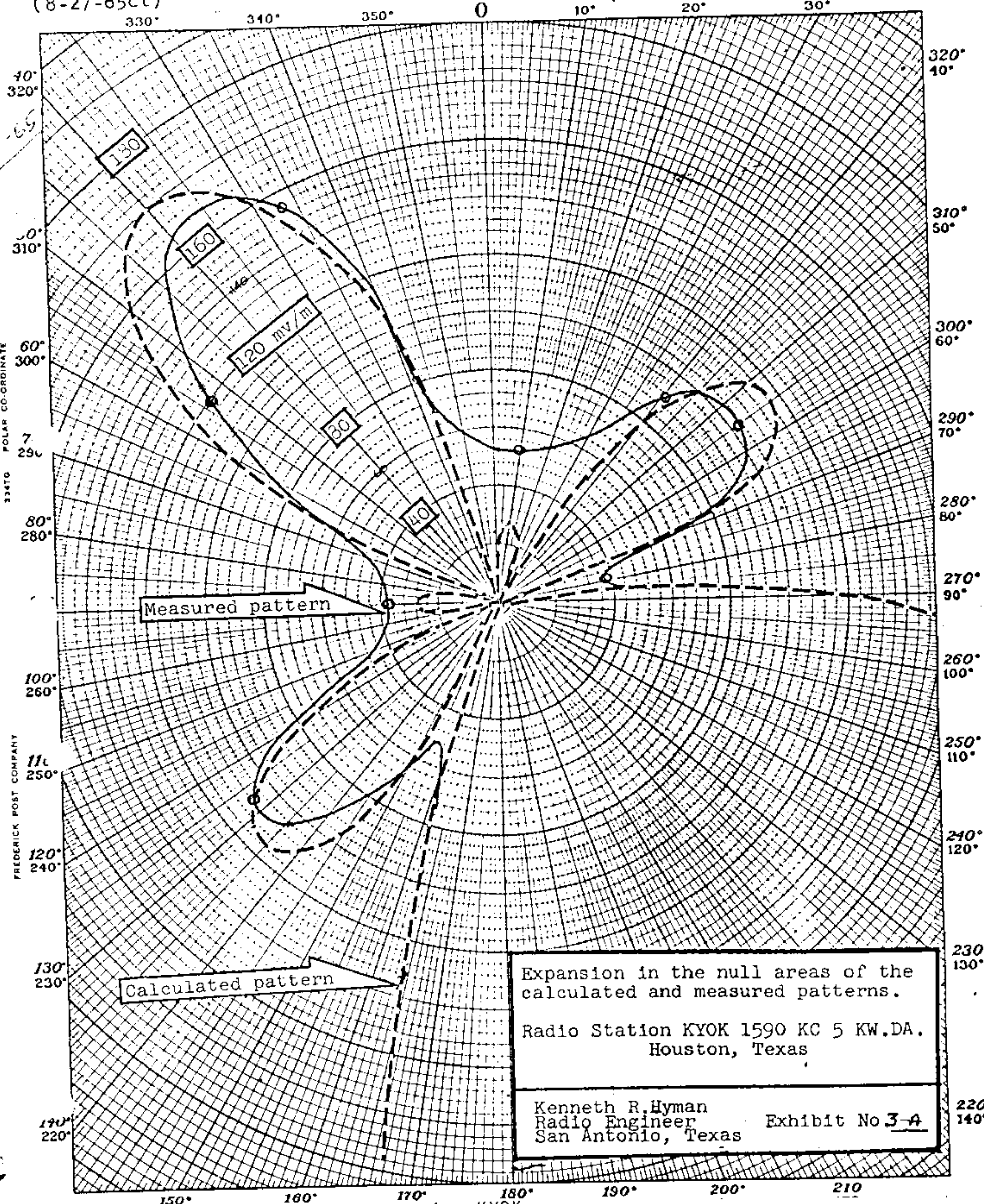
Measured Night
(8-27-65ct)
Station KYOK
Houston, Texas
5kw,DA-N,U
1590 kc
North Latitude 29° 50' 38.5"
West Longitude 95° 26' 51"
600 mv/m
400 mv/m
200 mv/m
RMS 450
200MV/M
400MV/M
600MV/M
800MV/M
1000MV/M
1200MV/M
40
50
60
70
80
90
100
110
120
140
130
Exhibit No. 3
Kenneth R. Hyman
Radio Engineer
San Antonio, Texas
Measured 5 KW. nighttime
directional antenna pattern.
Radio Station KYOK 1590 KC.
Houston, Texas
FCC File No.BL-10979
Accepted 8-17-65
Station KYOK
Houston, Texas
1590 kc

KYOK

Measured Night Nulls
(8-27-65ct)

Station KYOK
Houston, Texas

5kw,DA-N,U
1590 kc



Expansion in the null areas of the calculated and measured patterns.

Radio Station KYOK 1590 KC 5 KW.DA.
Houston, Texas

FCC File No.BL-10979
Accepted 8-17-65

Station KYOK
Houston, Texas

1590 kc

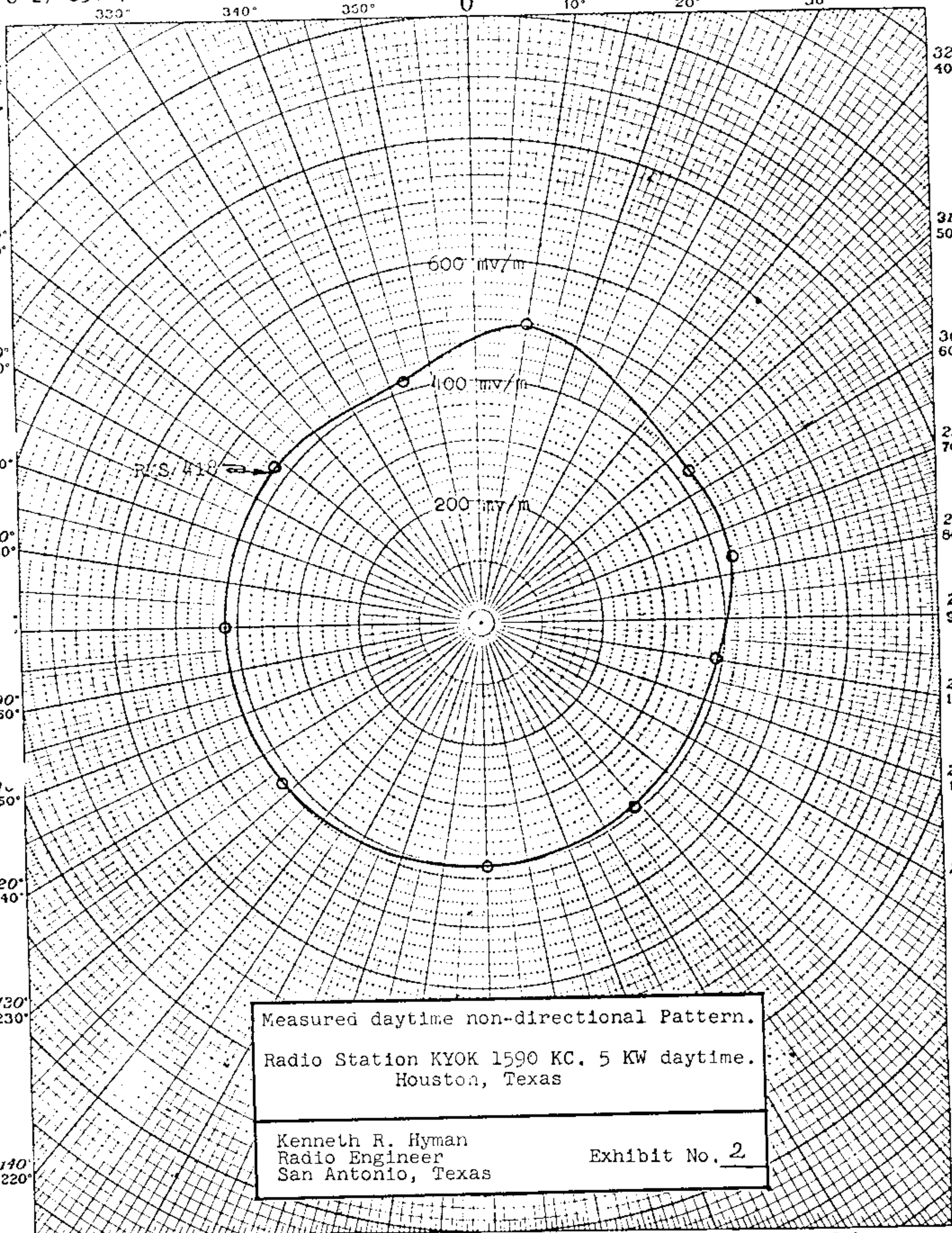
KYOK

Measured Non-DA
(8-27-65ct)

Station KYOK
Houston, Texas

5kw,DA-N,U
1590 kc

IC 12-28-64



Measured daytime non-directional Pattern.

Radio Station KYOK 1590 KC. 5 KW daytime.
Houston, Texas

Kenneth R. Hyman
Radio Engineer
San Antonio, Texas

Exhibit No. 2

FCC File No.BL-10979
Accepted 8-17-65

Station KYOK
Houston, Texas

1590 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: New

Main Studio: Gorham, Maine

Frequency: 1590 kHz

Power: 2.5 kW Night 5 kW Day

Notification List No. 1779

Date: September 27, 1978 Class: III

GEOGRAPHICAL LOCATION OF THE
CENTER OF THE ANTENNA SYSTEM:

North Latitude: 43° 41' 19"
West Longitude: 70° 30' 34"

ANTENNA CHARACTERISTICS

Authorised for Daytime and Nighttime operation operation (DA-2)
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:	411.63'(239.55°)	409.39'(238.25°)	408.57'(237.77°)	409.82'(238.50°)
NIGHT PHASING:	+133°	0°	-148.35°	65.97°
NIGHT FIELD RATIO:	0.574	1	0.868	0.476
DAY PHASING:	+157.24	0°	-158.52	41.51
DAY FIELD RATIO:	0.501	1	0.999	0.449

SPACING AND ORIENTATION: Adjacent towers in a row are spaced 189.016'(239.55°) on a line bearing 100° true.

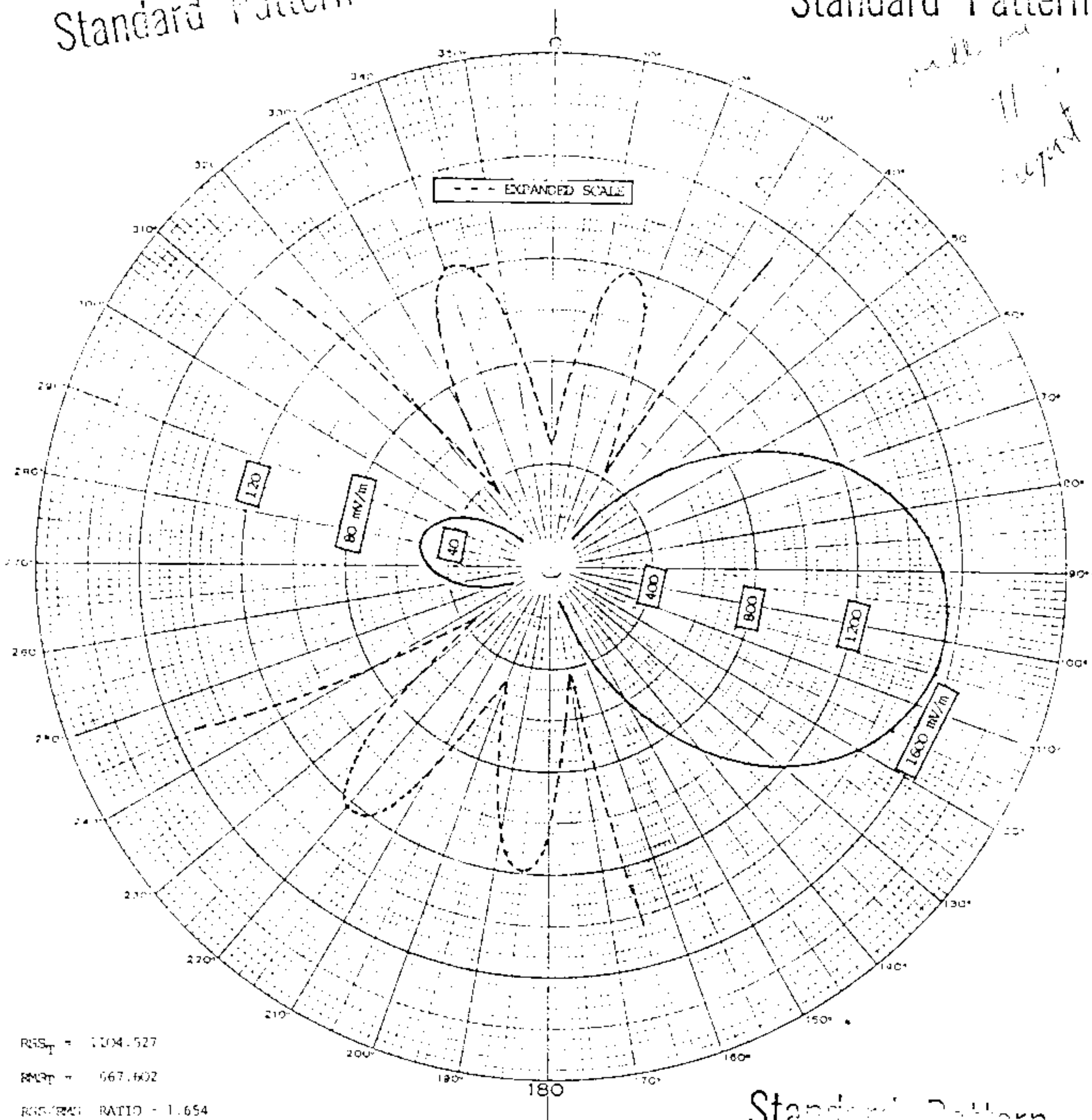
GROUND SYSTEM: 120-150' equally spaced copper radials plus 120-50' inter-spaced radials tower. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	667.602 mV/m	1104.527 mV/m	700.982 mV/m
Night	469.118 mV/m	626.279 mV/m	492.574 mV/m

Standard Pattern

Standard Pattern



Standard Pattern

RSS$_T$ = 1104.527

RMS$_T$ = 667.602

RSS/RMS RATIO - 1.654

RMS$_S$ = 700.982

MAY 1976

LATITUDE 43° 41' 39"

LONGITUDE 70° 30' 34"

ANTENNA PARAMETERS

G_1 = 239.55° G_2 = 238.25° G_3 = 237.77° G_4 = 238.50°

#1 — S — #2 — S — #3 — S — #4 →

S = 110° N-100°-E

POWER

# 1	.501/-157.24°
# 2	1/0°
# 3	.399/-158.57°
# 4	.440/-41.50°

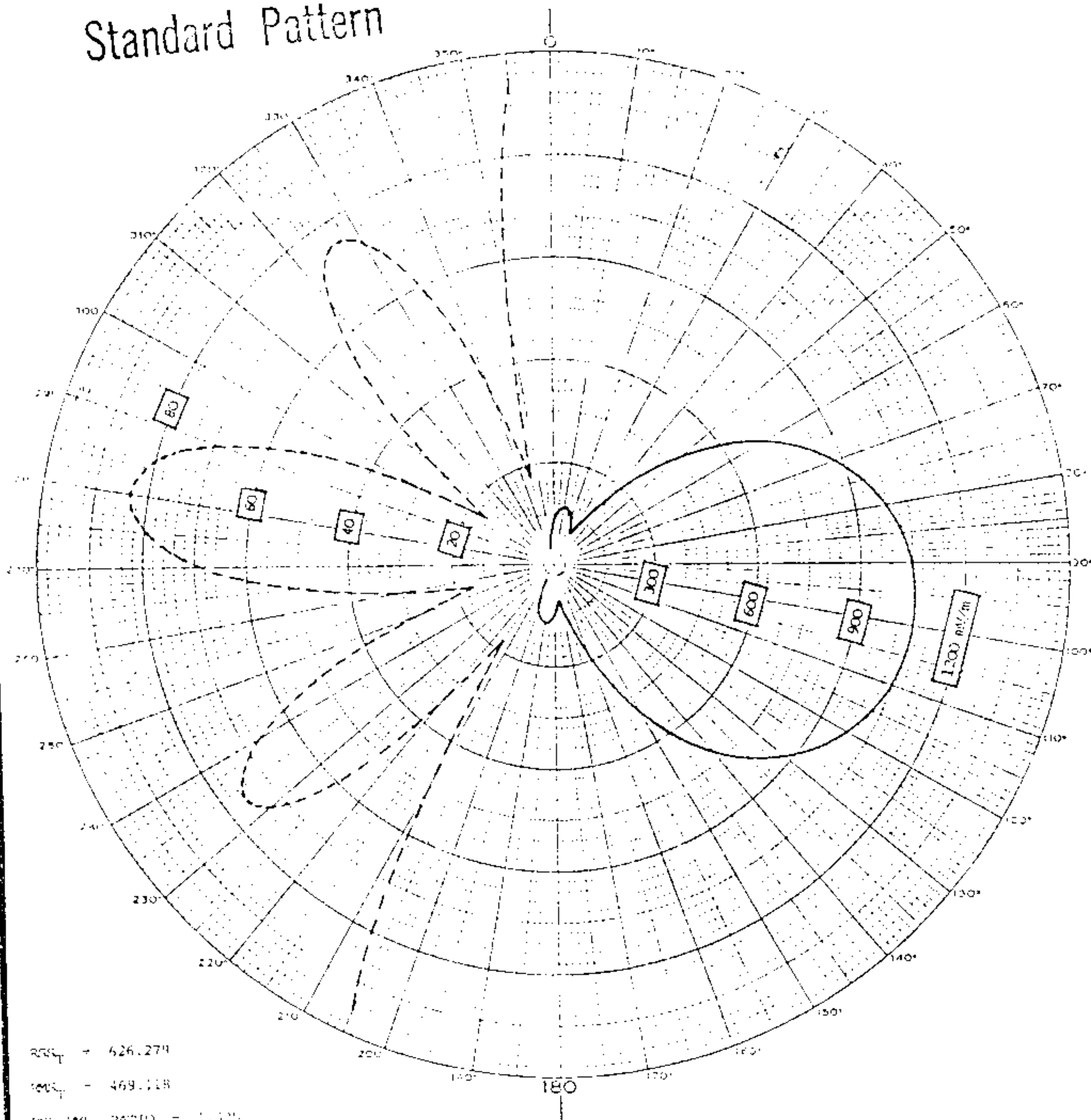
FIGURE 4

DAYTIME DIRECTIONAL HORIZONTAL PATTERN

DIRIGO COMMUNICATIONS INC.
GORHAM, MAINE

1590 KHz 2.5/5.0 KW-U, DA-2, U

Standard Pattern



RSS$_T$ = 626.279

RMS$_T$ = 469.118

RSS/RMS RATIO = 1.335

RSS$_{S}$ = 492.574

MAY 1976

Standard Pattern

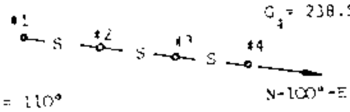
LATITUDE 43° 41' 29"

LONGITUDE 70° 30' 34"

ANTENNA PARAMETERS

G_1 = 239.55° G_2 = 238.25° G_3 = 237.77°

G_4 = 238.5°



S = 110°

TOWER
1 .574/ 131°
2 1/0°
3 .868/ -144.15°
4 .476/ 65.9°

FIGURE 7

NIGHTTIME DIRECTIONAL
HORIZONTAL PATTERN

DIRIGO COMMUNICATIONS INC.
GORHAM, MAINE

1590 KHz 2.5/5.0 KW-LS, DA-2

WAIK
1590 kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WAIK

Main Studio: Galesburg, Illinois

Frequency: 1590 kHz

Power: 5kw Day

Notification List No. 1783

Date: November 2, 1979 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 40° 57' 43"
West Longitude: 90° 18' 30"

ANTENNA CHARACTERISTICS

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

TOWER:	N(#1)	C(#2)	S(#3)
HEIGHT ABOVE INSULATORS:	350' (203.7°)	200' (116.4°)	200' (116.4°)
DAY PHASING:	74°	8.8°	-74°
DAY FIELD RATIO:	1.0	2.02	1.0

SPACING AND ORIENTATION: Adjacent towers are spaced 207' (120°) on a line bearing 0.0° true.

GROUND SYSTEM: 120-200' equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	RSS
Day	436 mv/m	

WALK

PROPOSED DAY (12-20-57g) | Station WQUB, Galesburg, Illinois | 5kw, DA-D,D | 1590 KC

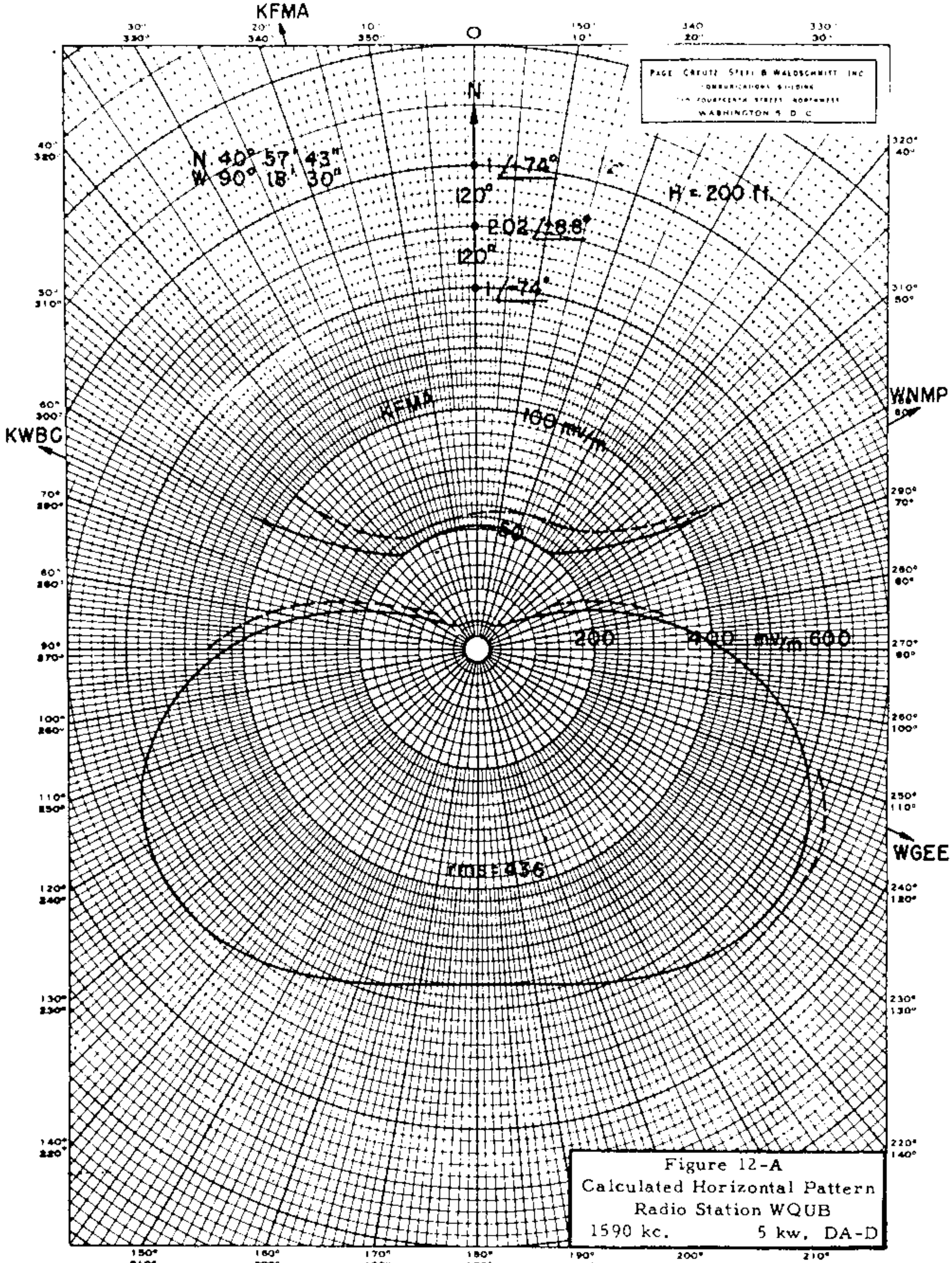


Figure 12-A
Calculated Horizontal Pattern
Radio Station WQUB
1590 kc. 5 kw, DA-D

FCC File No. BL-6902
Accepted 12-3-57

WQUB
Galesburg, Illinois

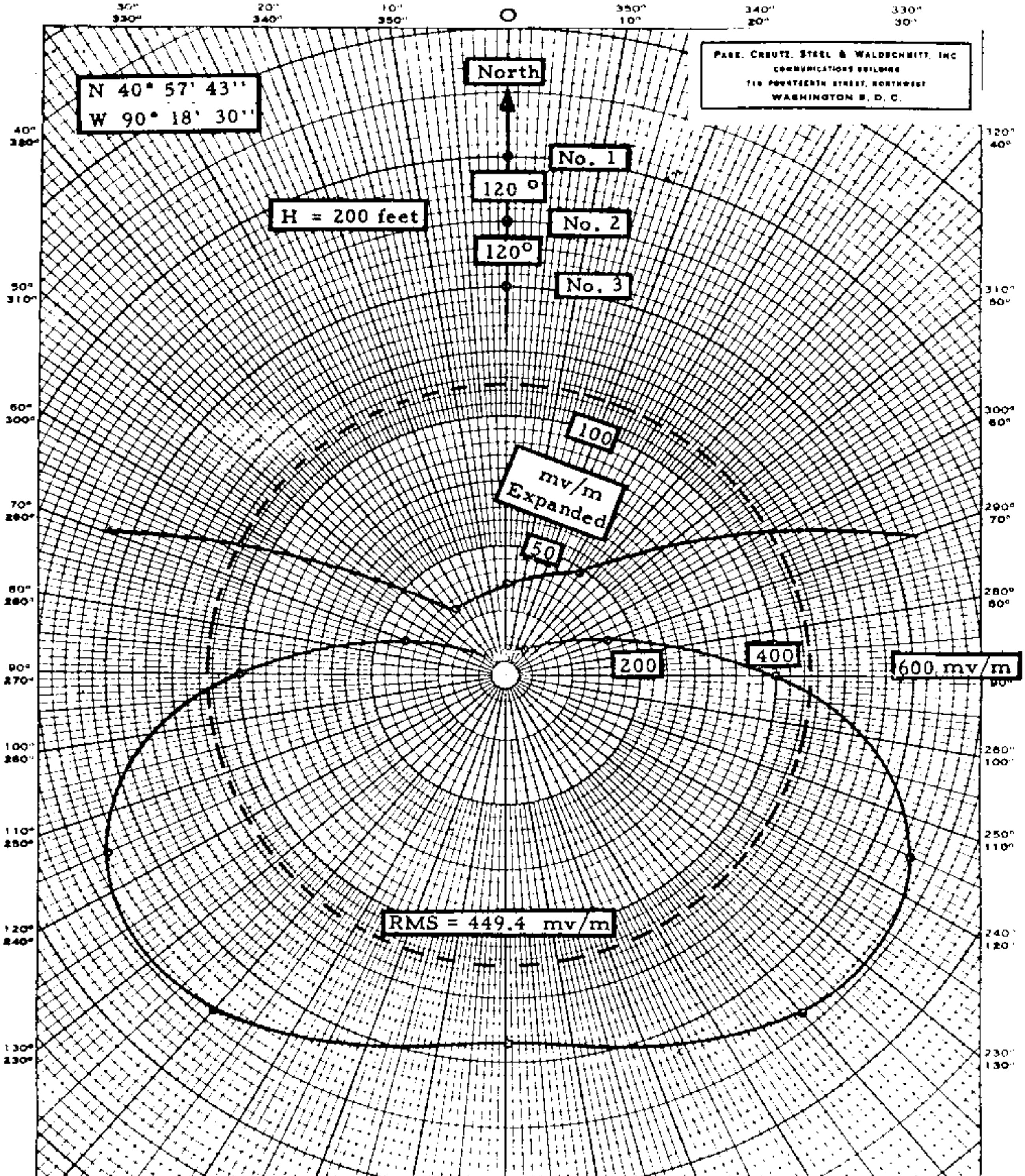
1590 KC

IWAIK.

MEASURED DAY
(12-20-57g)

Station WQUB
Galesburg, Illinois

5kw, DA-D,D
1590 KC



Antenna	No. 1(N)	No.2(C)	No.3(S)
Theo. Phase	74°	± 8.8°	-74°
Meas. Phase	81°	0°	-69°
Loop Ratio	.535	1.0	.651
Field Ratio	.579	1.0	.685

Figure 12
Measured Horizontal Pattern
Radio Station WQUB
1590 kc, 5 kw, DA-D
October, 1957

FCC File No. BL-6902
Accepted 12-3-57

WQUB
Galesburg, Illinois

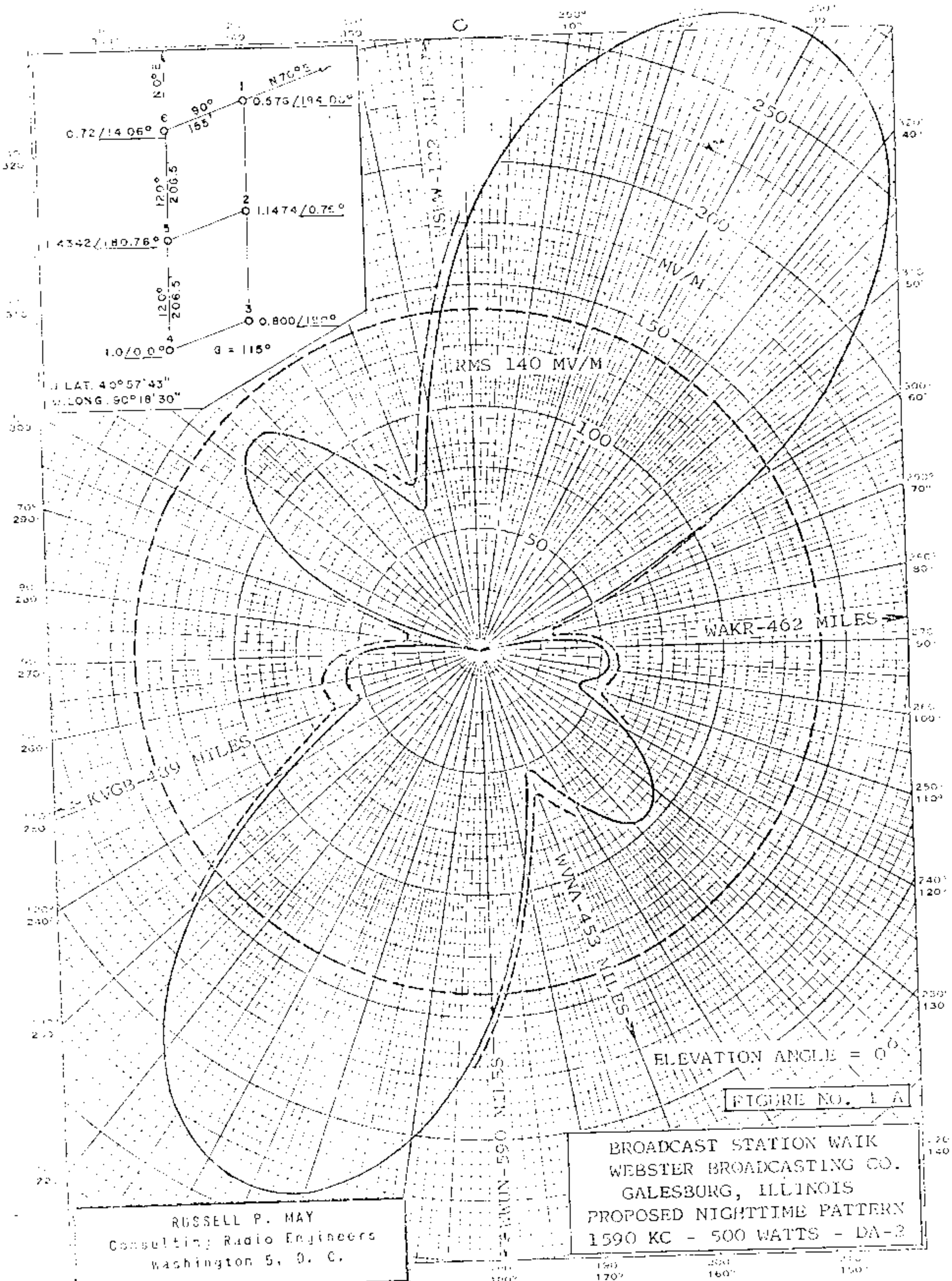
1590 KC

WAIK

Proposed Night
(3-29-67ct)

Station WAIK
Galesburg, Illinois

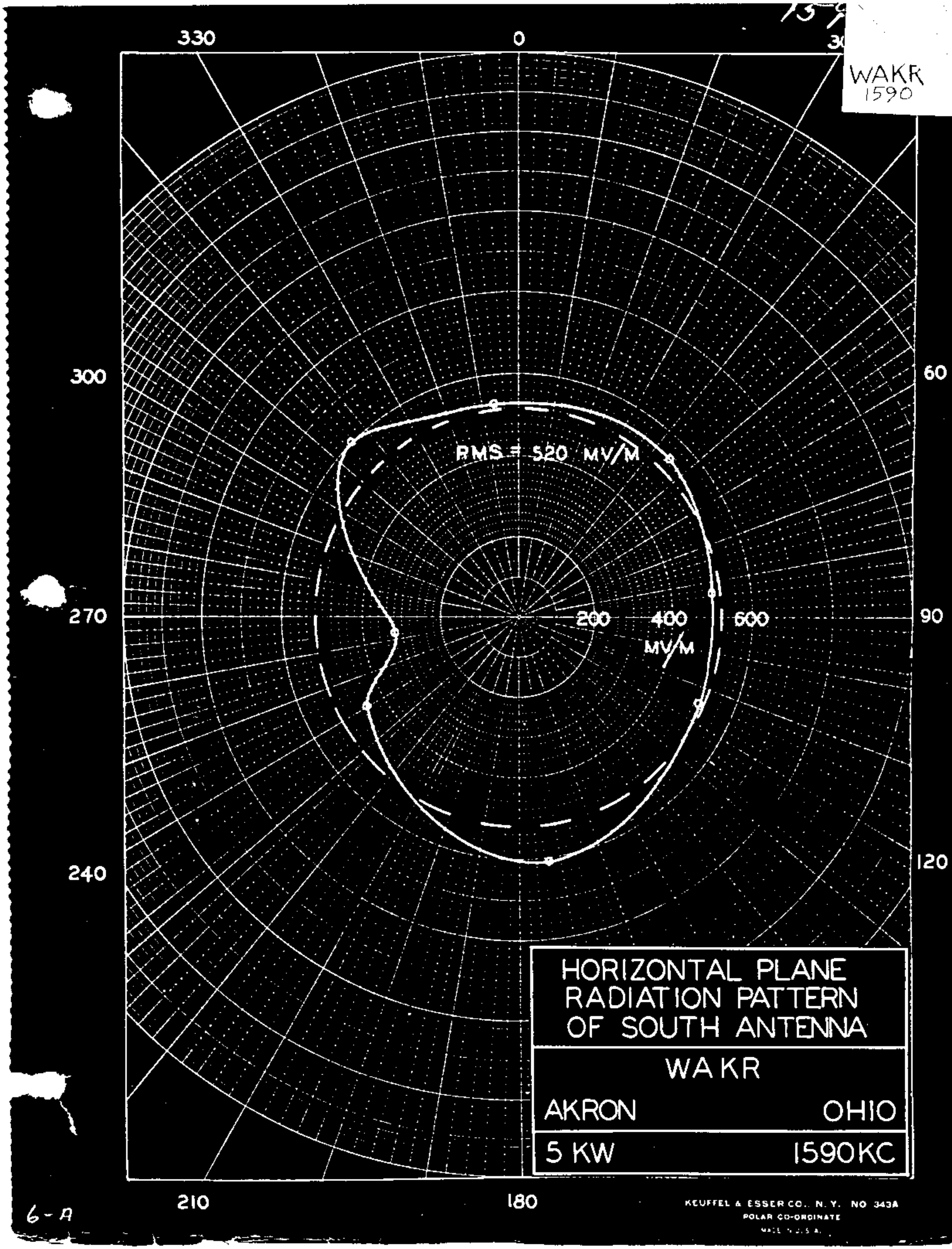
500w,5kw-LS,DA-2,U
1590 kc



FCC File No.BP-17508
Accepted 3-15-67

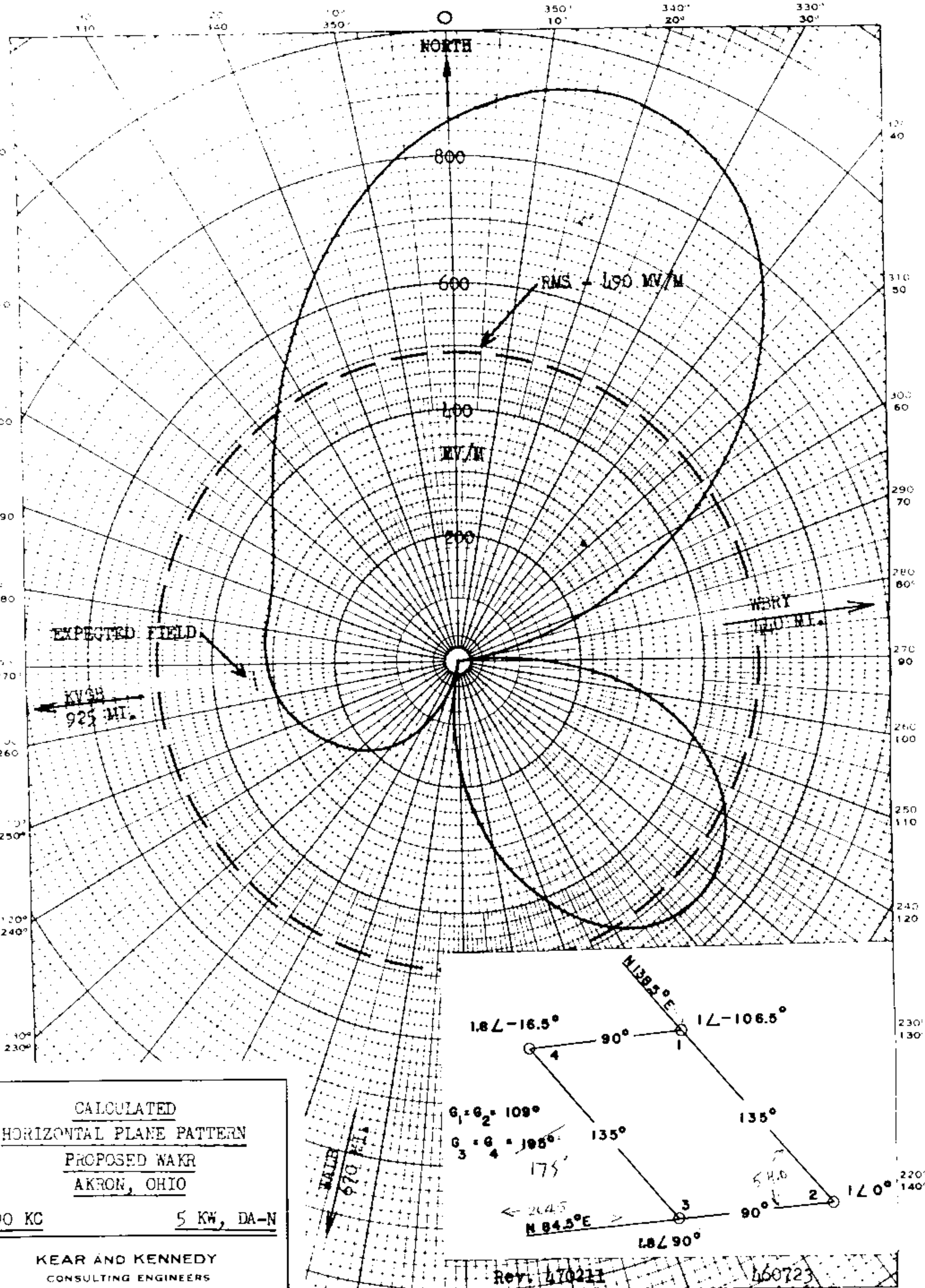
Station WAIK
Galesburg, Illinois

1590 kc



330
0
30
WAKR
1590
300
60
270
90
240
120
210
180
RMS = 520 MV/M
200
400
600
MV/M
HORIZONTAL PLANE
RADIATION PATTERN
OF SOUTH ANTENNA
WAKR
AKRON
OHIO
5 KW
1590 KC
KEUFFEL & ESSER CO., N.Y. NO. 343A
POLAR CO-ORDINATE
6-A

WAKR
1590



CALCULATED
HORIZONTAL PLANE PATTERN
PROPOSED WAKR
AKRON, OHIO

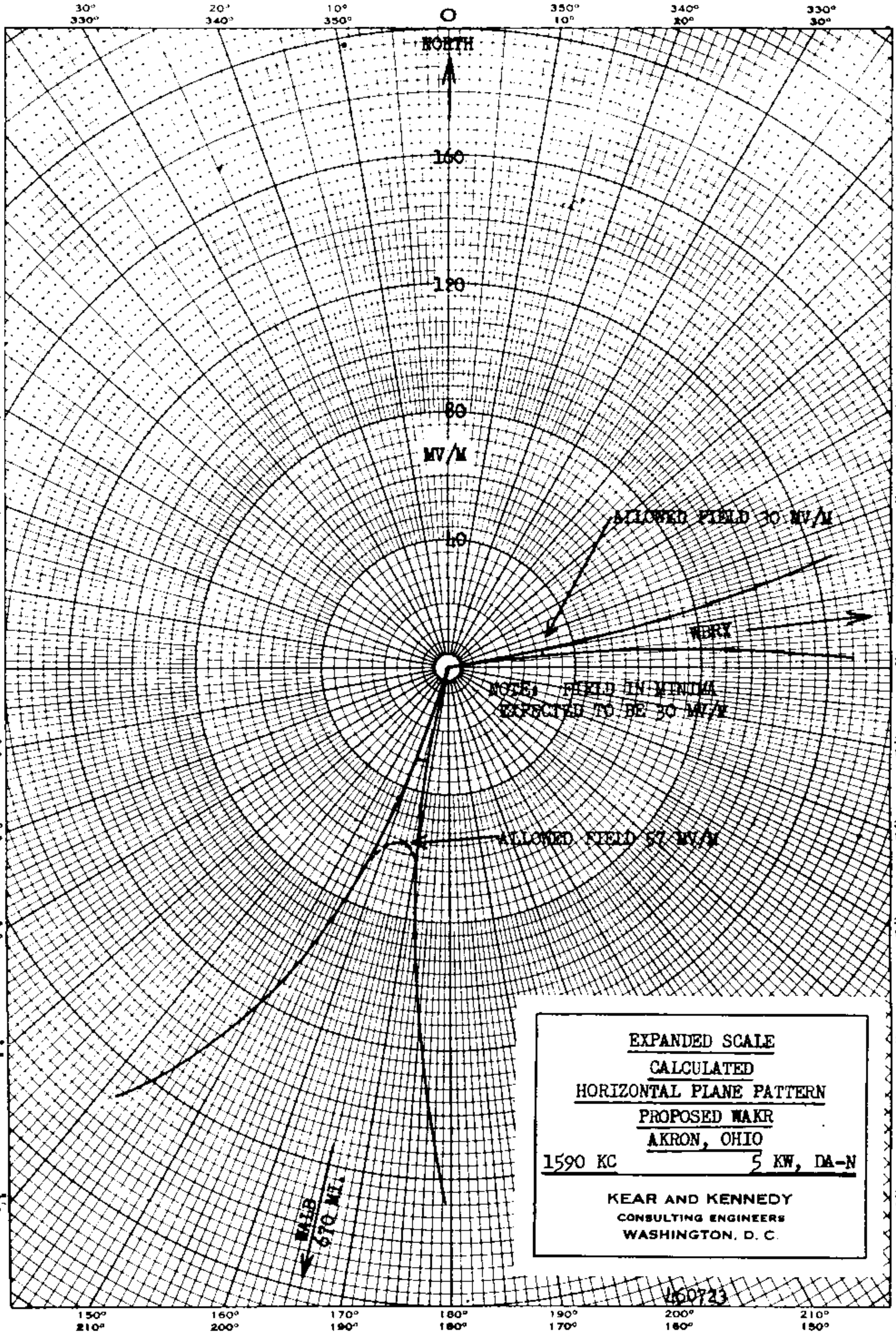
1590 KC | 5 KW, DA-N

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.

E = 532[(1 + cos (106.5 + 135 cos θ cos v)) (f(v)₁₉₅² + .556² f(v)₁₀₉² + 2×.556 f(v)₁₇₅ f(v)₁₀₉ cos (90 + 90 cos (θ - 126))]^½

∢ = 138.5 cw

WAKR
1590

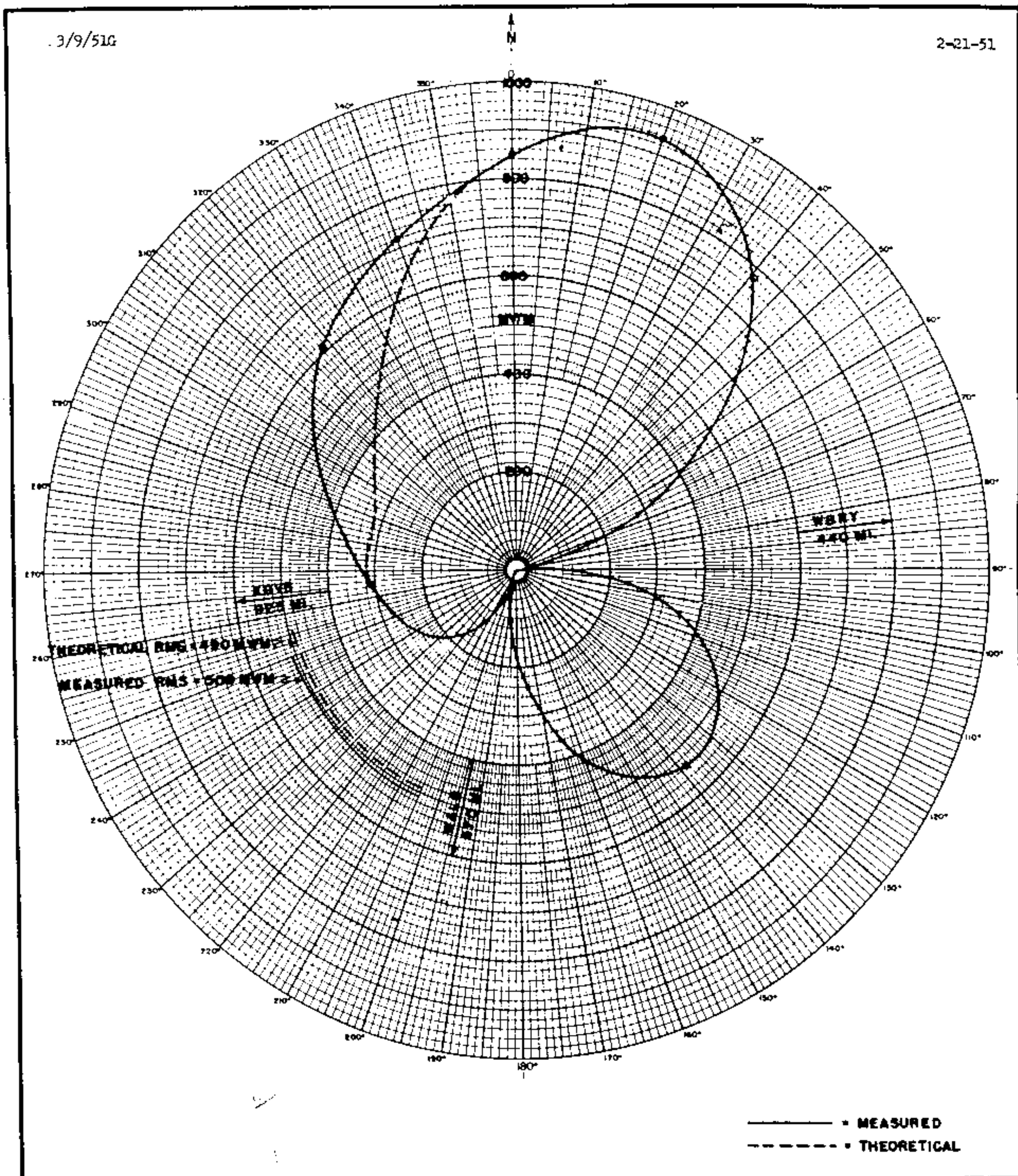


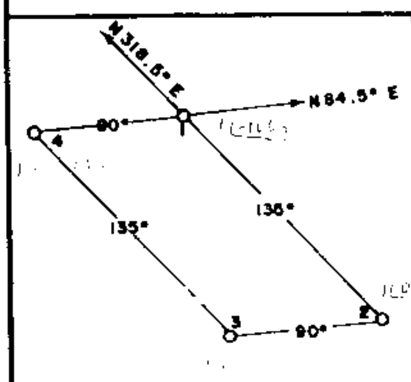
EUGENE DIETZGEN CO.

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

WAKR

MEASURED NIGHT WAKR, AKRON, OHIO BZ-3266 5kw, DA-N 1590 kc





LATITUDE 41° 01' 14"
LONGITUDE 81° 30' 20"

ANTENNA NUMBER	AZIMUTH DEG.	SPACING DEG.	PHASING DEG.	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG.
1	SEE DIAGRAM	SEE DIAGRAM	-106.5	1		109
2			0	1		109
3			+90	1.8		175
4			-16.5	1.8		175

MEASURED HORIZONTAL PLANE PATTERN

WAKR

AKRON, OHIO

1590 KC. 5 KW. DA-N

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.

510124

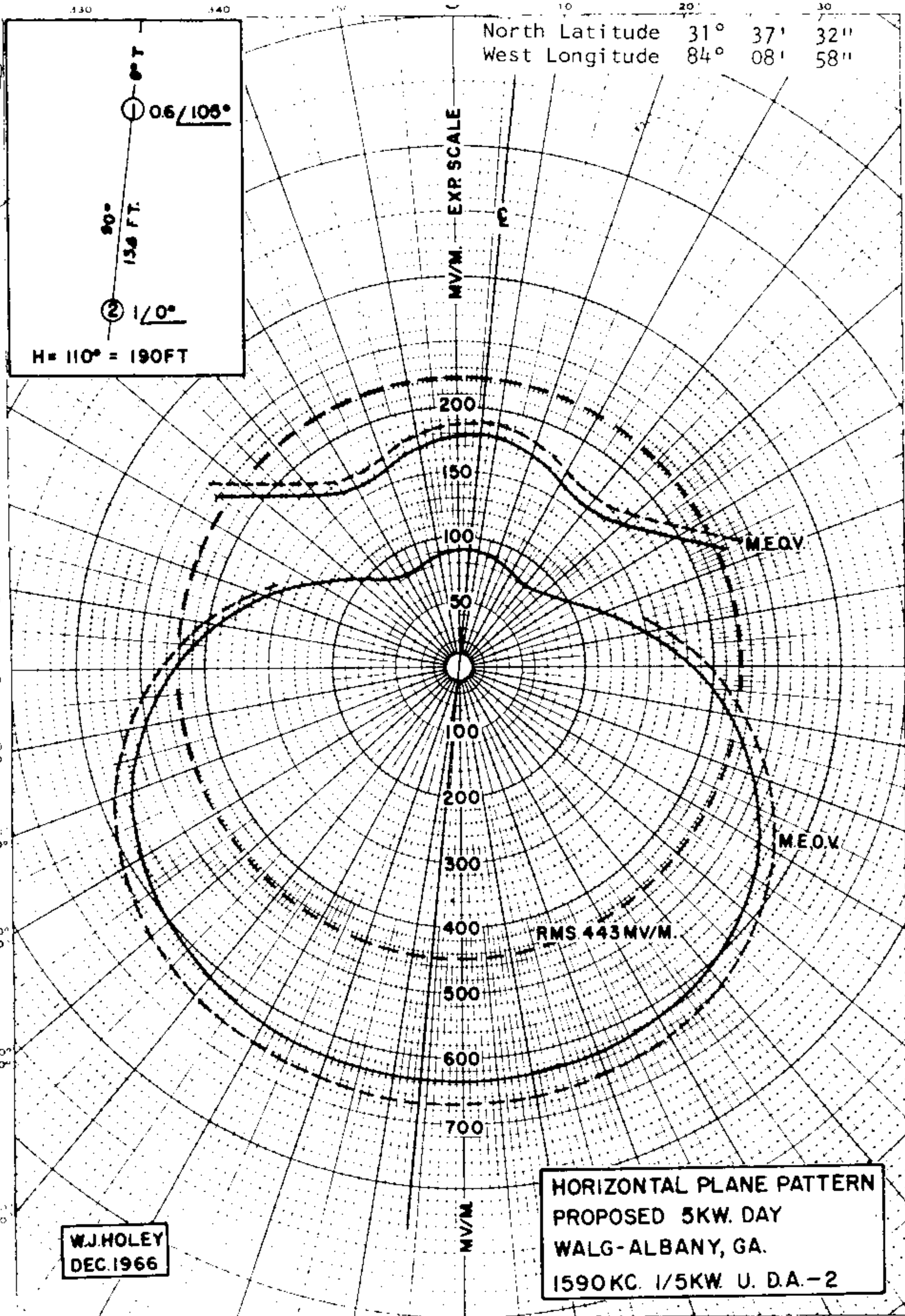
WALG

Proposed Day
(5-25-67ct)

Station WALG
Albany, Georgia

1kw,5kw-LS,DA-2,U
1590 kc

BP-17667
GRANTED
CP 12-26-67
FROM 1KW
TO 5KW
FROM DA-N
TO DA-2



FCC File No.BP-17667
Accepted 5-5-67

Station WALG
Albany, Georgia

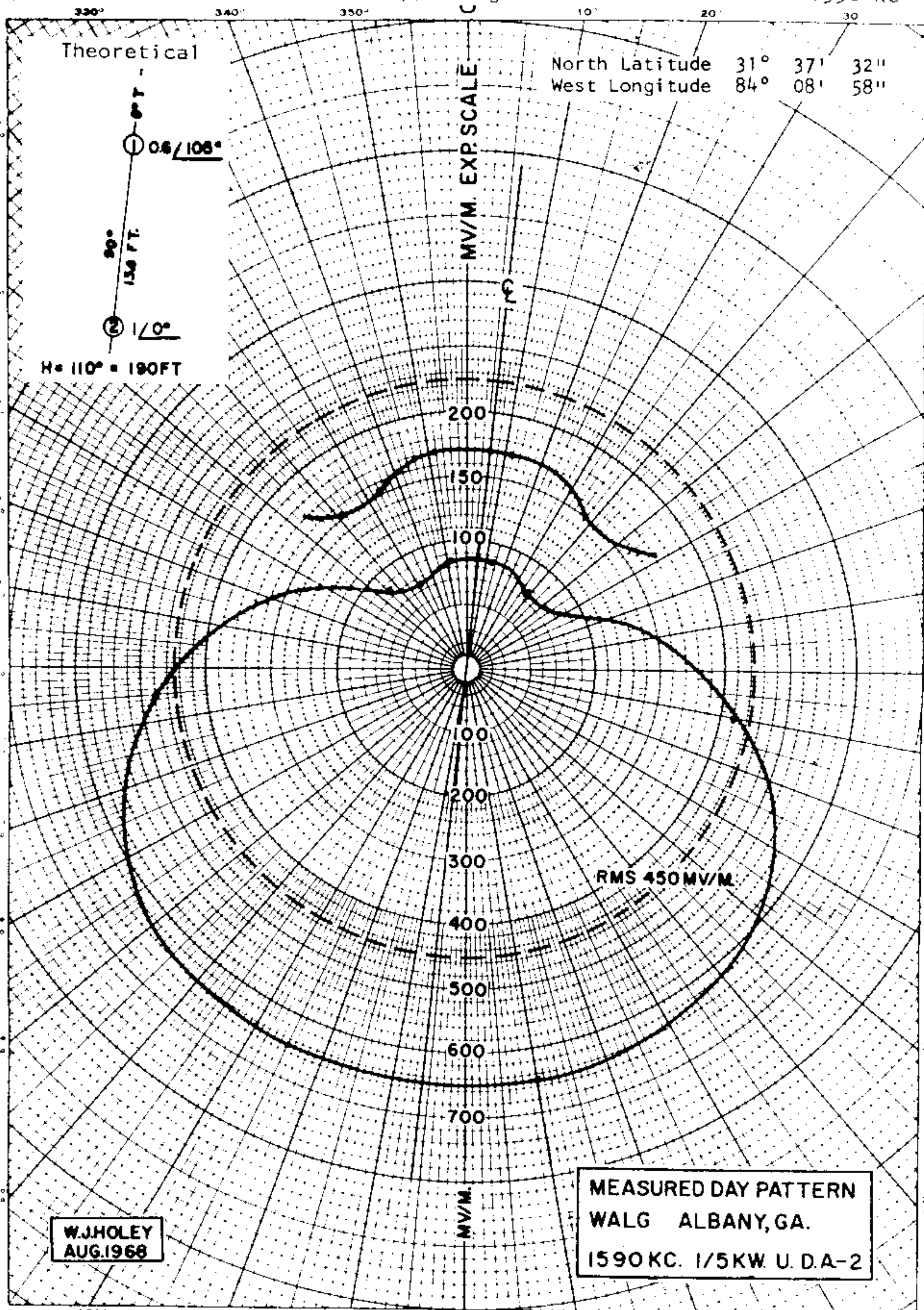
1590 kc

WALG

Measured Day (12-27-68ct)

Station WALG
Albany, Georgia

1kw,5kw-LS,DA-2,U
1590 kc



FCC File No.BL-12200
Accepted 12-12-68

Station WALG
Albany, Georgia

1590 kc

WALG

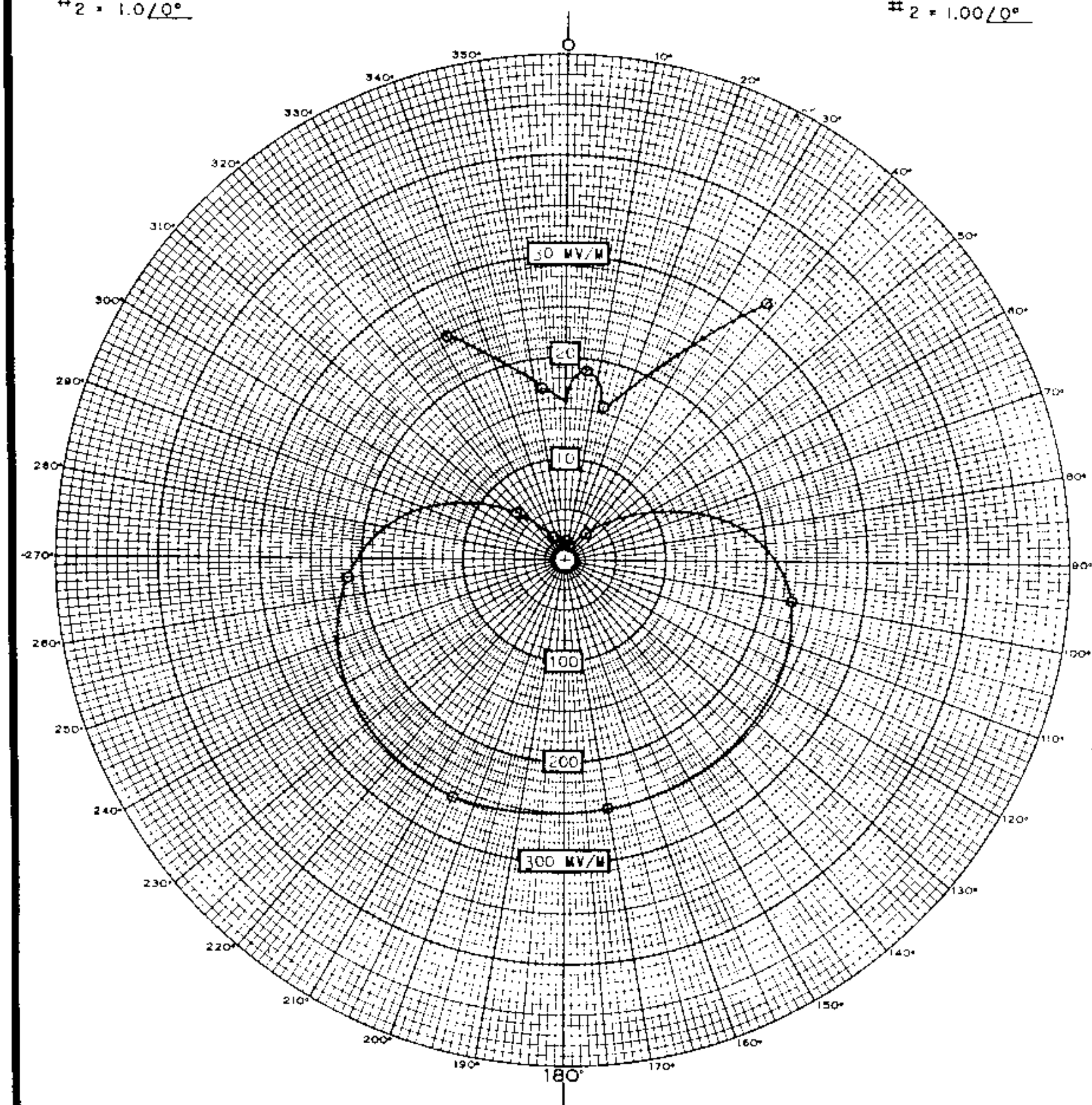
Measured Night
(12-27-68ct)

Station WALG
Albany, Georgia

1kw,5kw-LS,DA-2,U
1590 kc

THEORETICAL PARAMETERS
#1 = 1.0/95°
#2 = 1.0/0°

MEASURED PARAMETERS
#1 = 1.055/107.5°
#2 = 1.00/0°



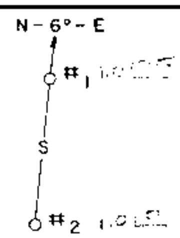
E_{RMS} = 188 MV/M

o MEASURED RADIALS

LATITUDE 31° 37' 32"
LONGITUDE 84° 08' 58"

JOHN H. MULLANEY
AND
ASSOCIATES

ANTENNA PARAMETERS



S = 90°
G = 110°

FIGURE II

MEASURED NIGHTTIME PATTERN

RADIO STATION WALG
ALBANY, GEORGIA

1590 KHz

1.0/5.0KW, DA-2, U

FCC File No.BL-12200
Accepted 12-12-68

Station WALG
Albany, Georgia

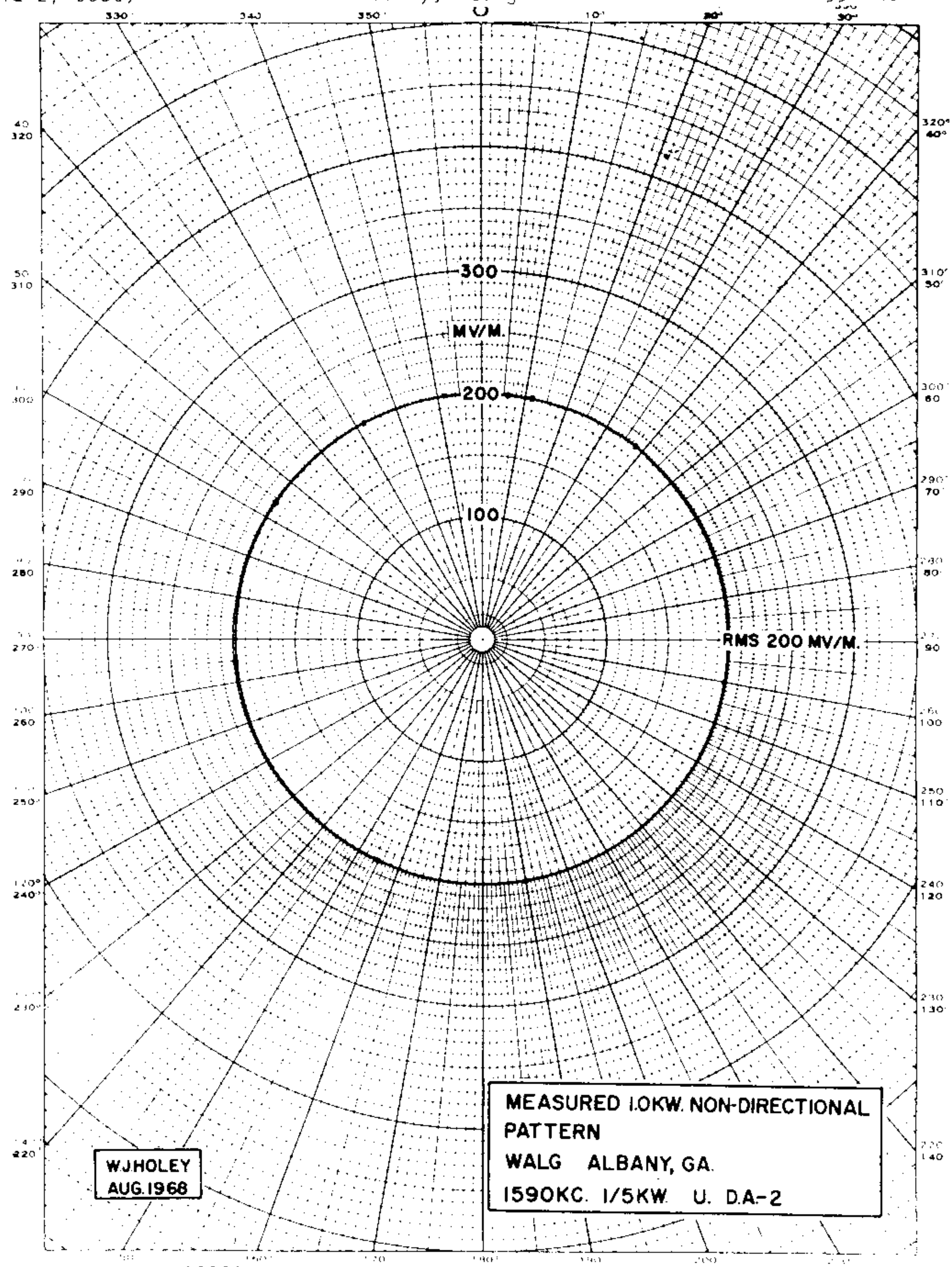
1590 kc

WALG

Measured Non-DA
(12-27-68ct)

Station WALG
Albany, Georgia

1kw,5kw-LS,DA-2,U
1590 kc

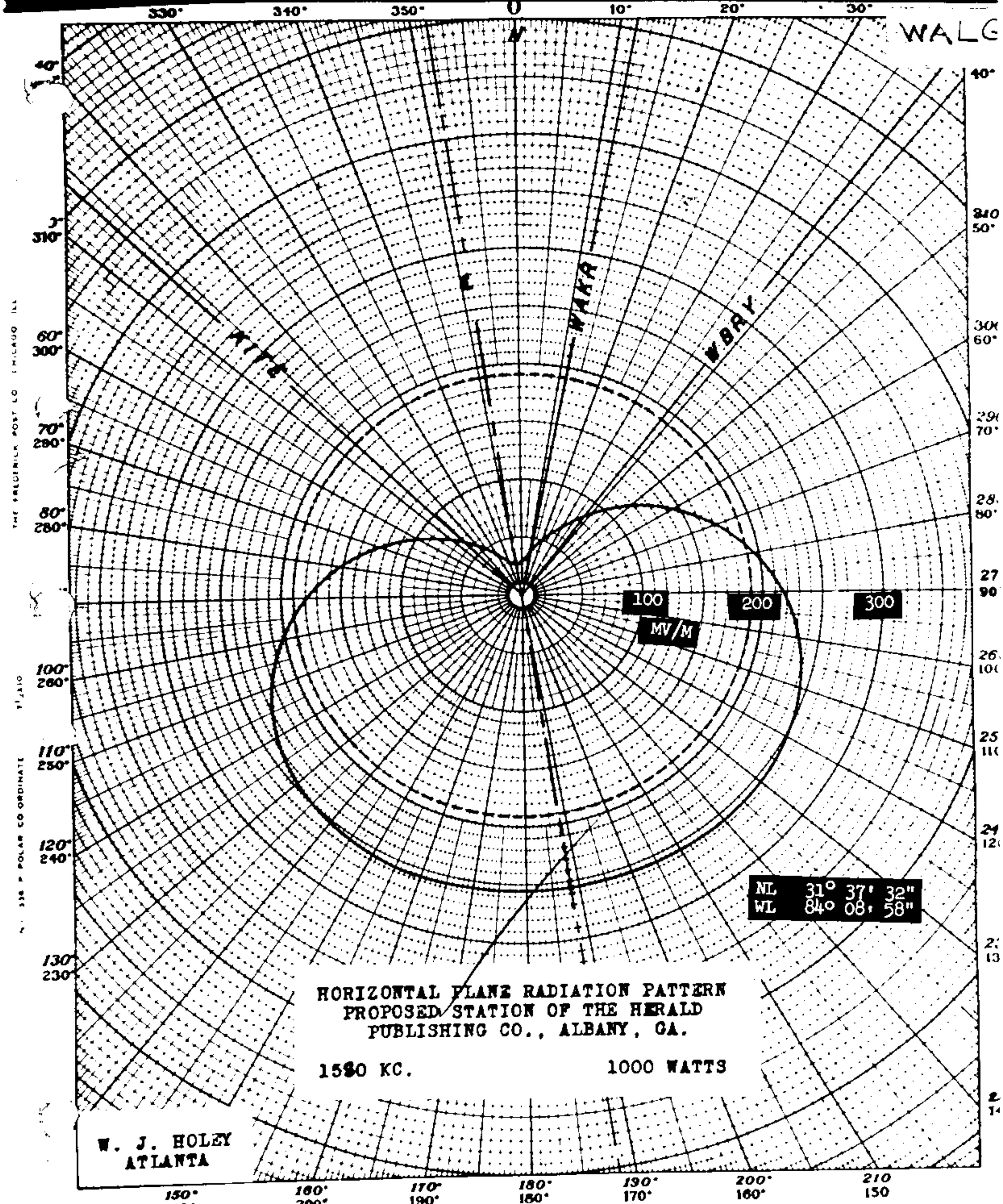


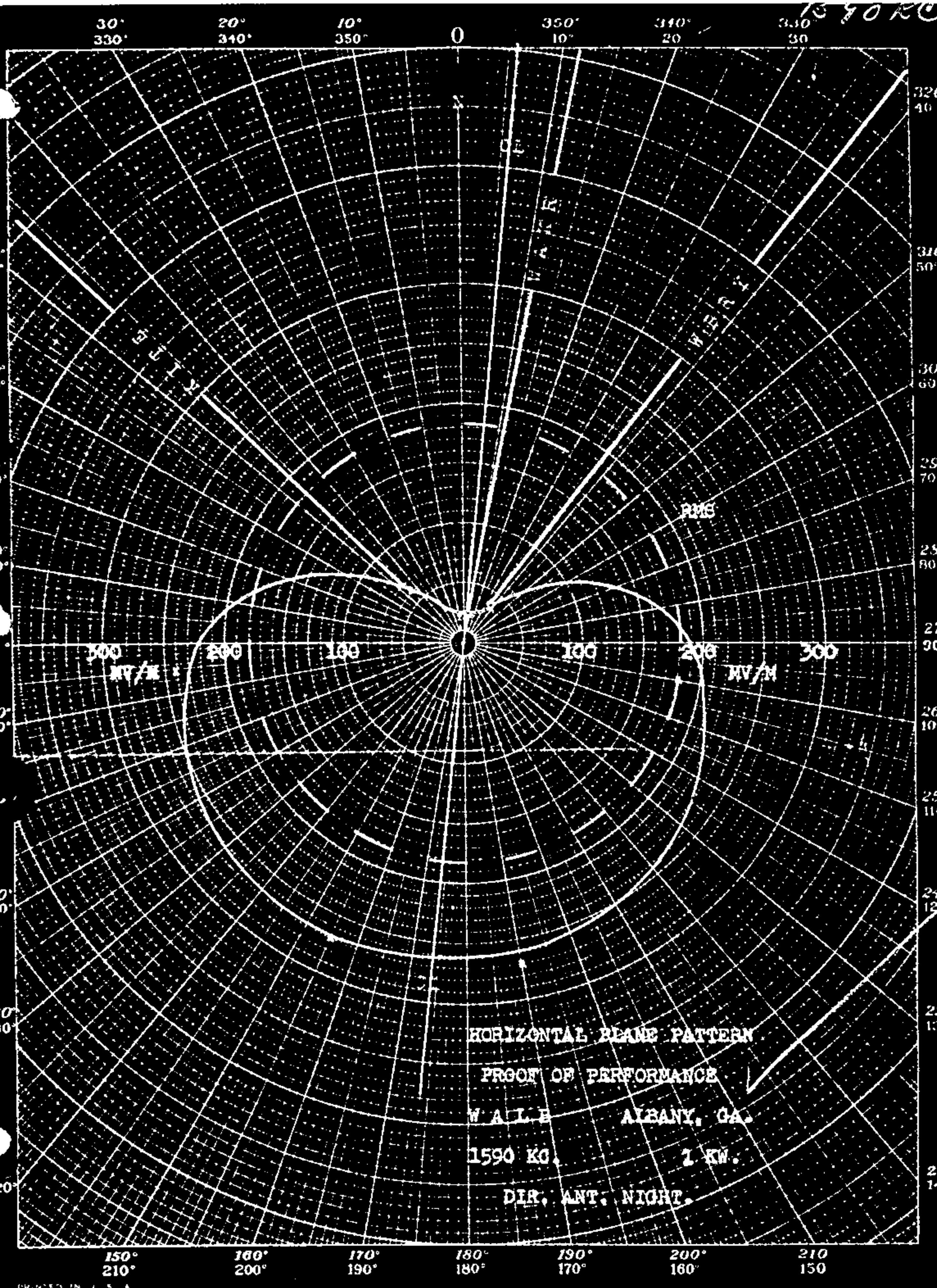
FCC File No.BL-12200
Accepted 12-12-68

Station WALG
Albany, Georgia

1590 kc

PROPOSED NIGHT Station WALB 1kw, DA-N,U
Albany, Georgia 1590 KC





HORIZONTAL PLANE PATTERN
PROOF OF PERFORMANCE
W A L B   ALBANY, GA.
1590 KC.   1 KW.
DIR. ANT. NIGHT.
RMS
MV/M
100
200
300

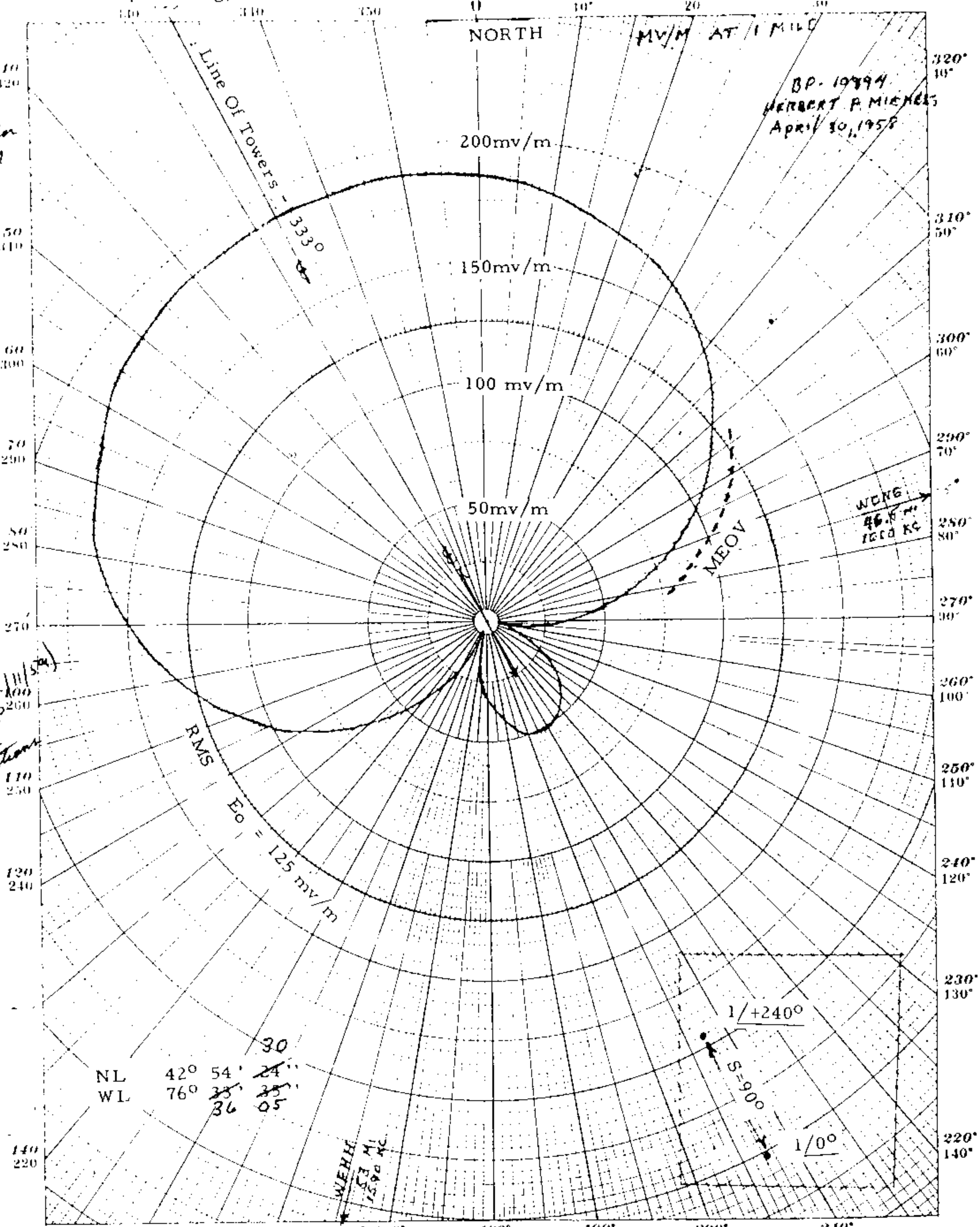
7

Auburn, N.Y. WAUB

PROPOSED DAY (5-29-58g) New; Herbert P. Michels Auburn, New York 500w, DA-D,D 1590 KC

Granted CP 5/21/58 for a new AM station

Granted (2/11/59) Mod. of CP to change antenna-tower location



FCC File No. BP-10,994 Herbert P. Michels
Accepted 5-9-58 (Amended) Auburn, New York 1590 KC

Auburn, N.Y. WAUB

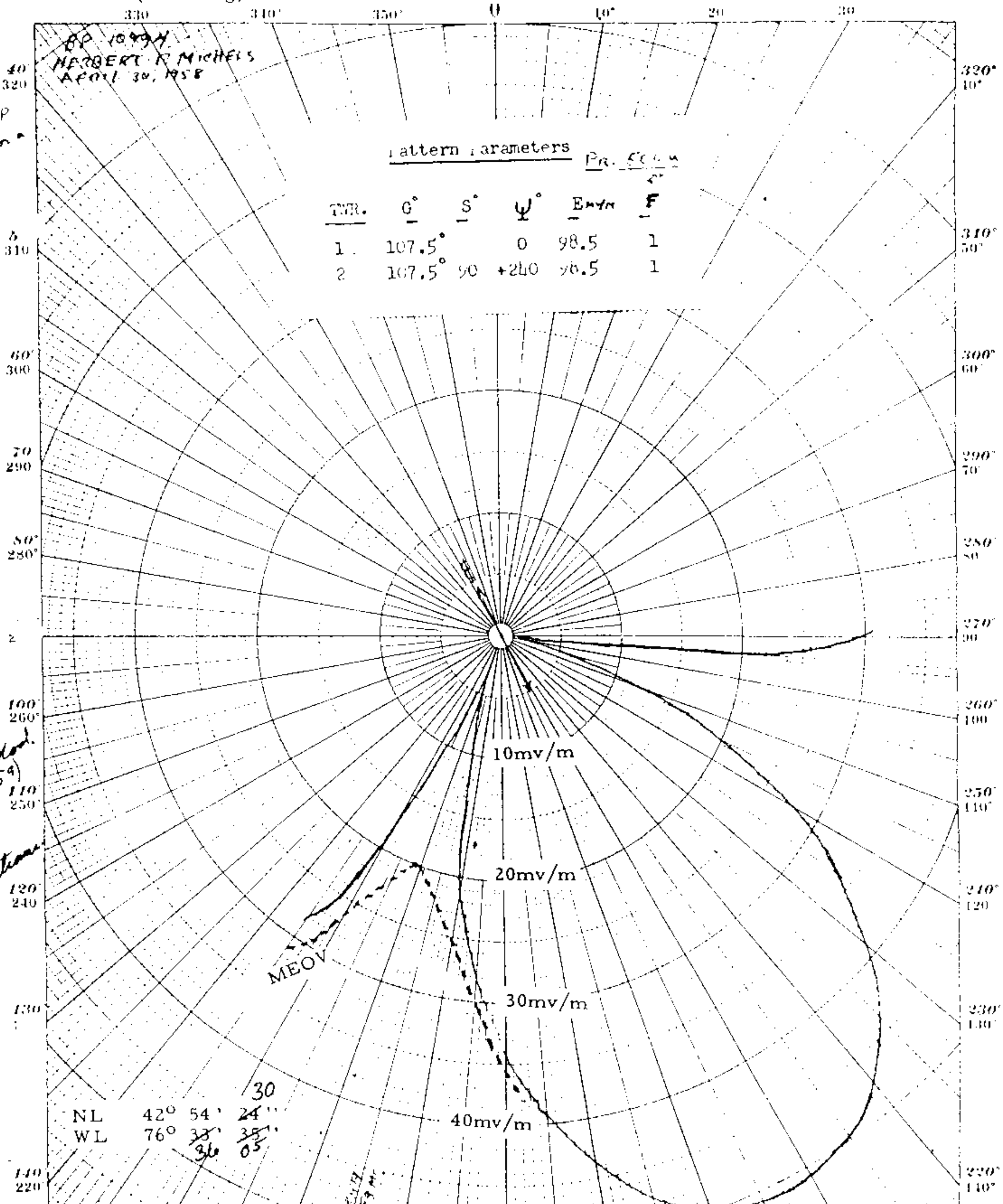
PROPOSED DAY NULLS (5-29-58g)

New; Herbert P. Michels
Auburn, New York

500w, DA-D,D
1590 KC

Granted CP 5/21/58 for a new AM station

Granted Mod. of CP (2/11/59) to change location of antenna/trans.



FCC File No. BP-10,994
Accepted 5-9-58 (Amended)

Herbert P. Michels
Auburn, New York

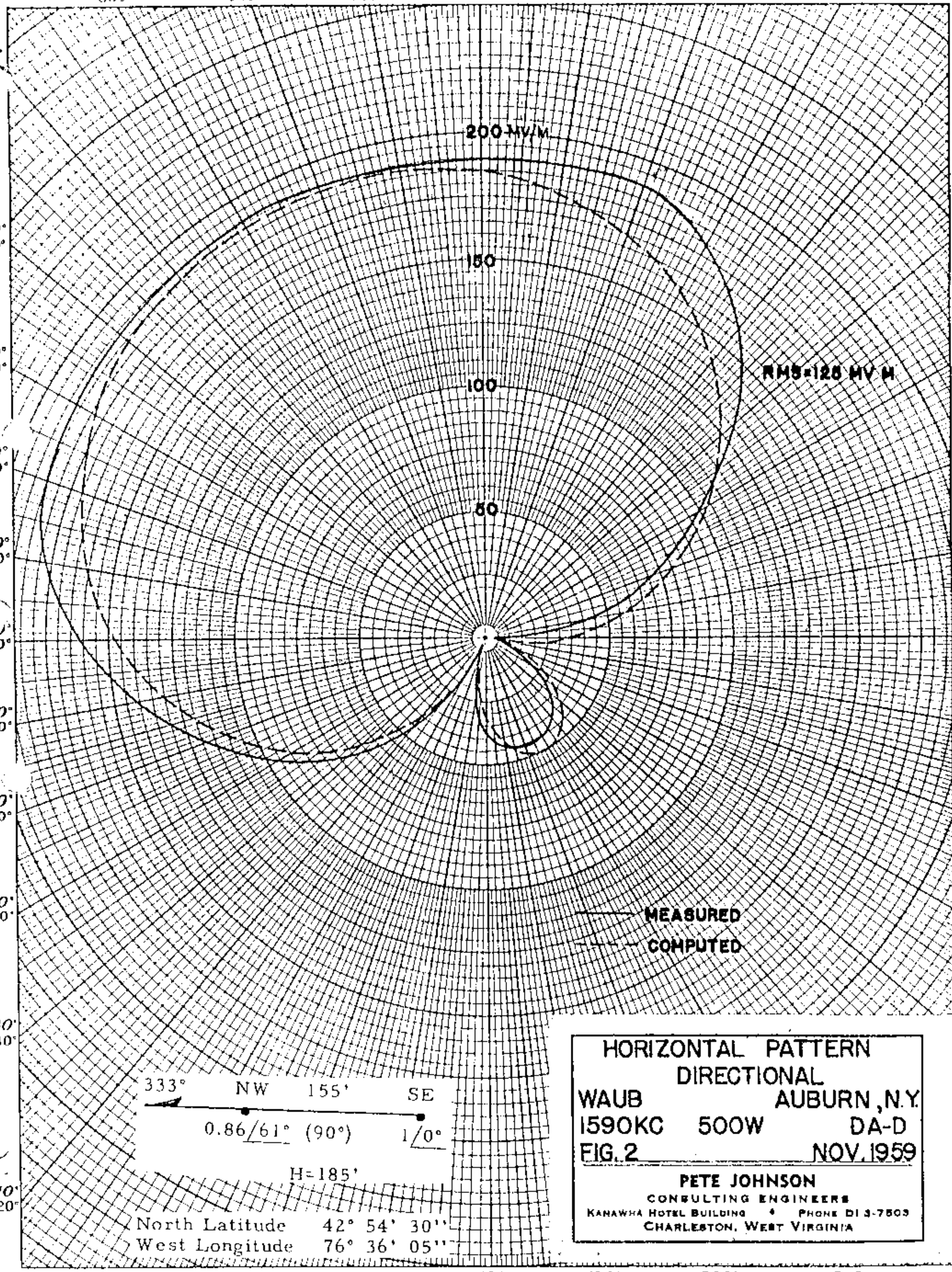
1590 KC

WAUB

MEASURED DAY
(3-28-60g)

Station WAUB
Auburn, New York

500w, DA-D,D
1590 KC



FCC File No. BL-7851
Accepted 2-2-60

WAUB
Auburn, New York

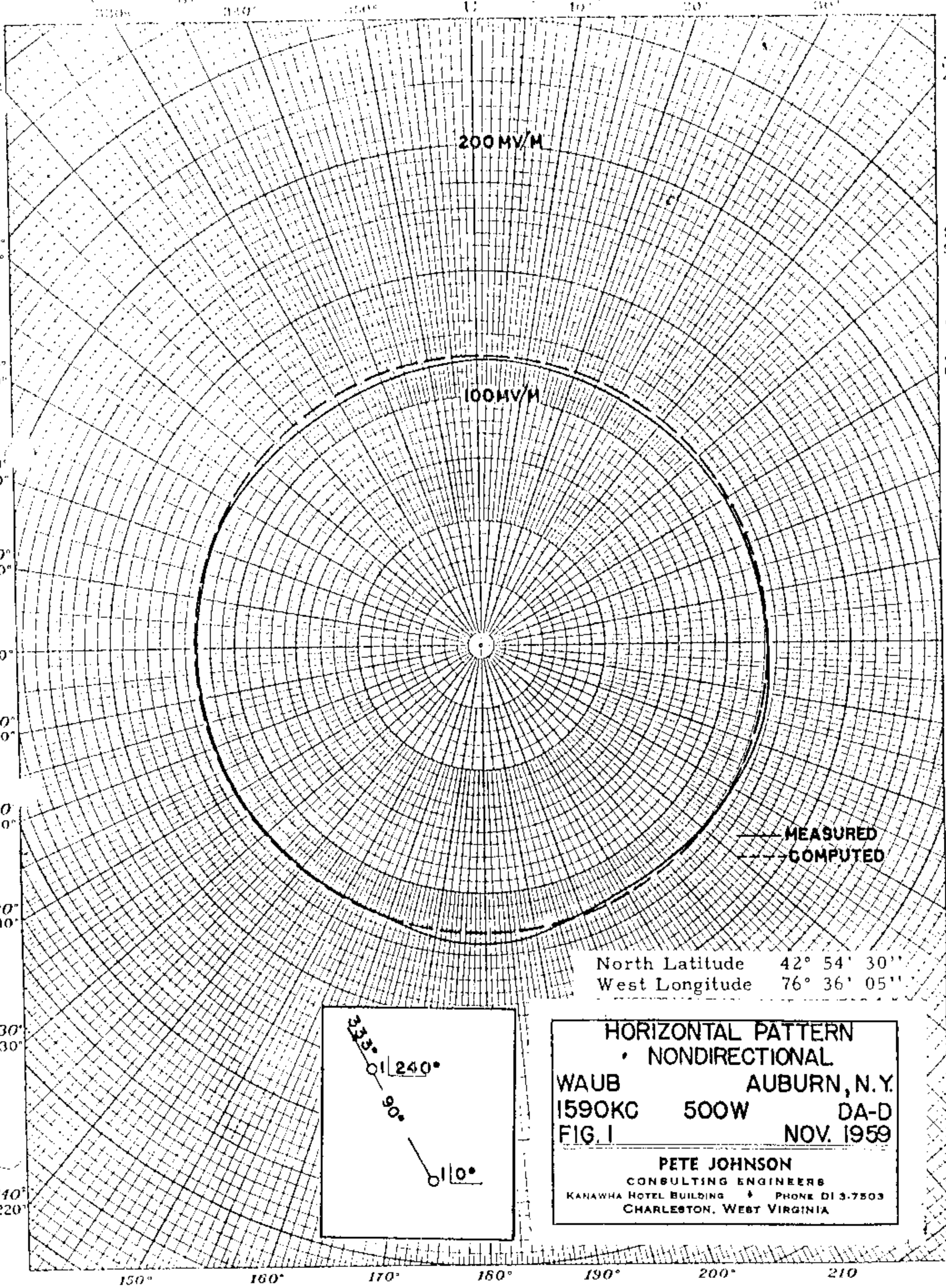
1590 KC

W/AUB

MEASURED NON-DA
(3-28-60g)

Station WAUB
Auburn, New York

500w, DA-D,D
1590 KC



Rewritten for new station 6-21-63

FCC File No. BL-7851
Accepted 2-2-60

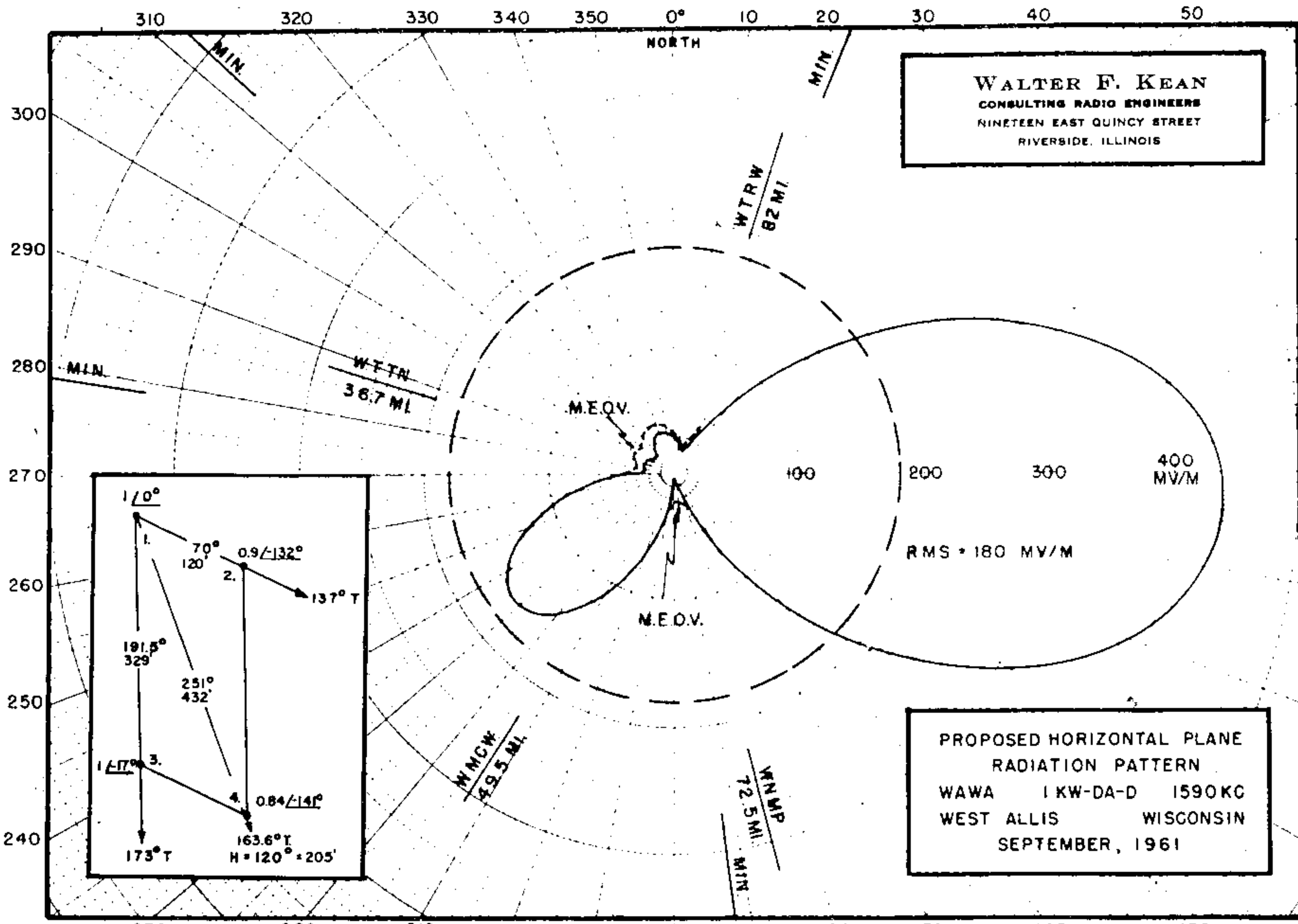
WAUB
Auburn, New York

1590 KC

PROPOSED DAY
(10-25-61ct)

Statior \WA
West Allis, Wisconsin

1kw,DA-D,D
1590 kc



FCC File No. BMP-9813
Accepted 10-5-61

Station WAWA
West Allis, Wisconsin

1590 kc

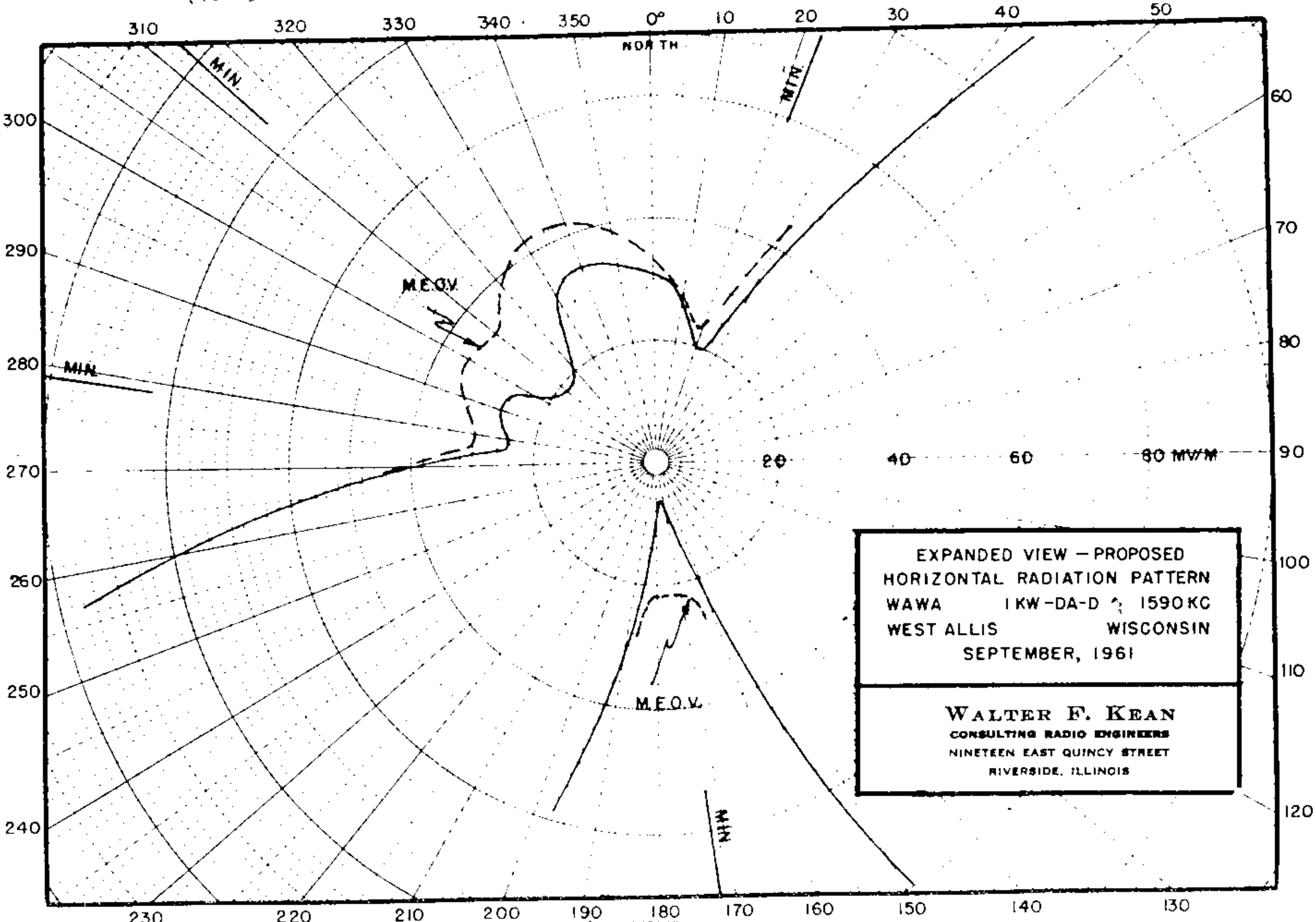
10-6-61 granted mcp
to make changes in DA system
10-19-61 - granted pkg on station

WAWA
1510b

PROPOSED DAY NULLS
(10-25-61ct)

Station WAWA
West Allis, Wisconsin

1kw,DA-D,D
1590 kc



FCC File No. BMP-9813
Accepted 10-5-61

Station WAWA
West Allis, Wisconsin

1590 kc

WAWA
1590 K

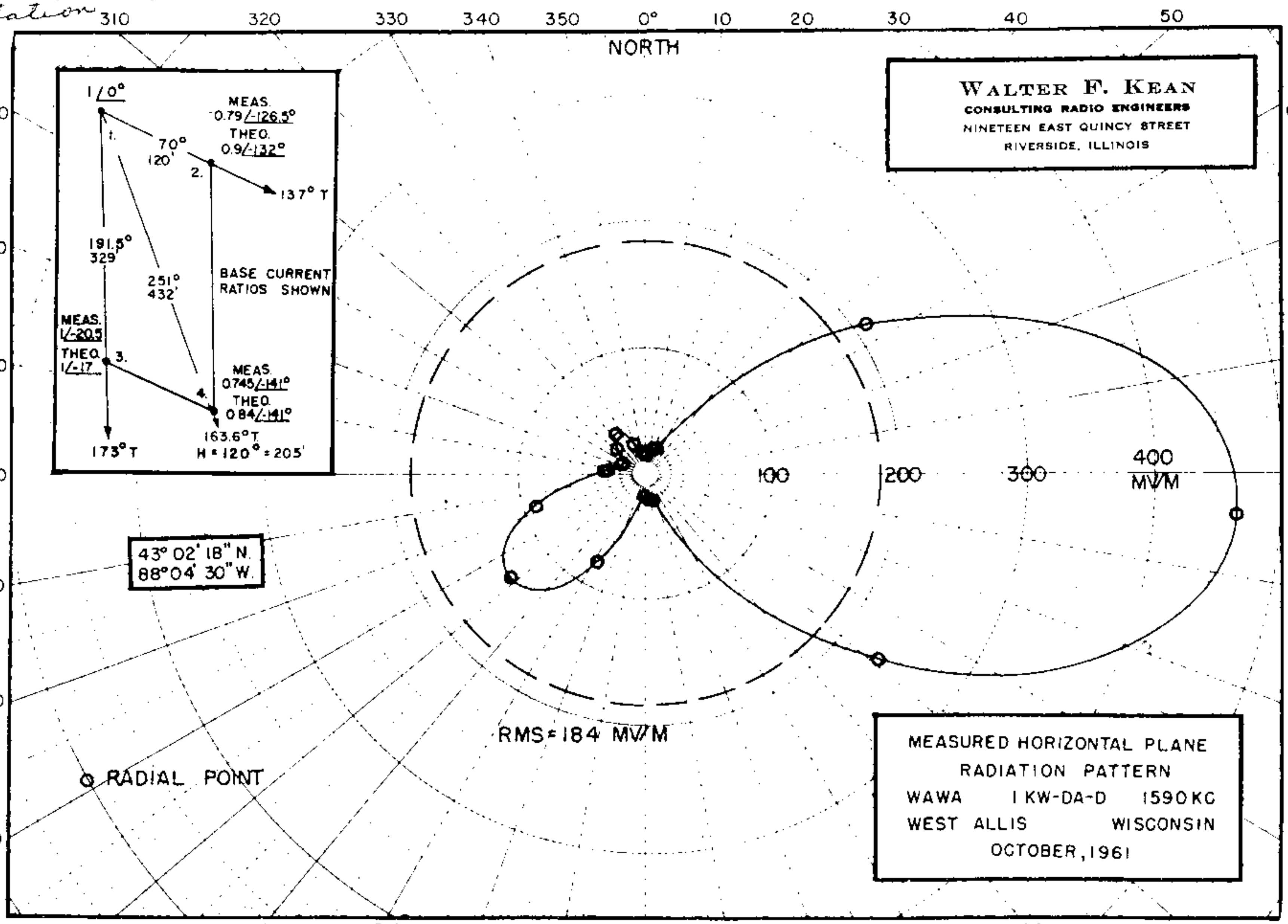
Measured Day
(5-25-62ct)

Station WAWA
West Allis, Wisconsin

1kw,DA-D,D
1590 kc

5/3/62
granted license for
new station

mea. day



WAWA
1590 KC

FCC File No. BL-8875
Accepted

Station WAWA
West Allis, Wisconsin

1590 kc

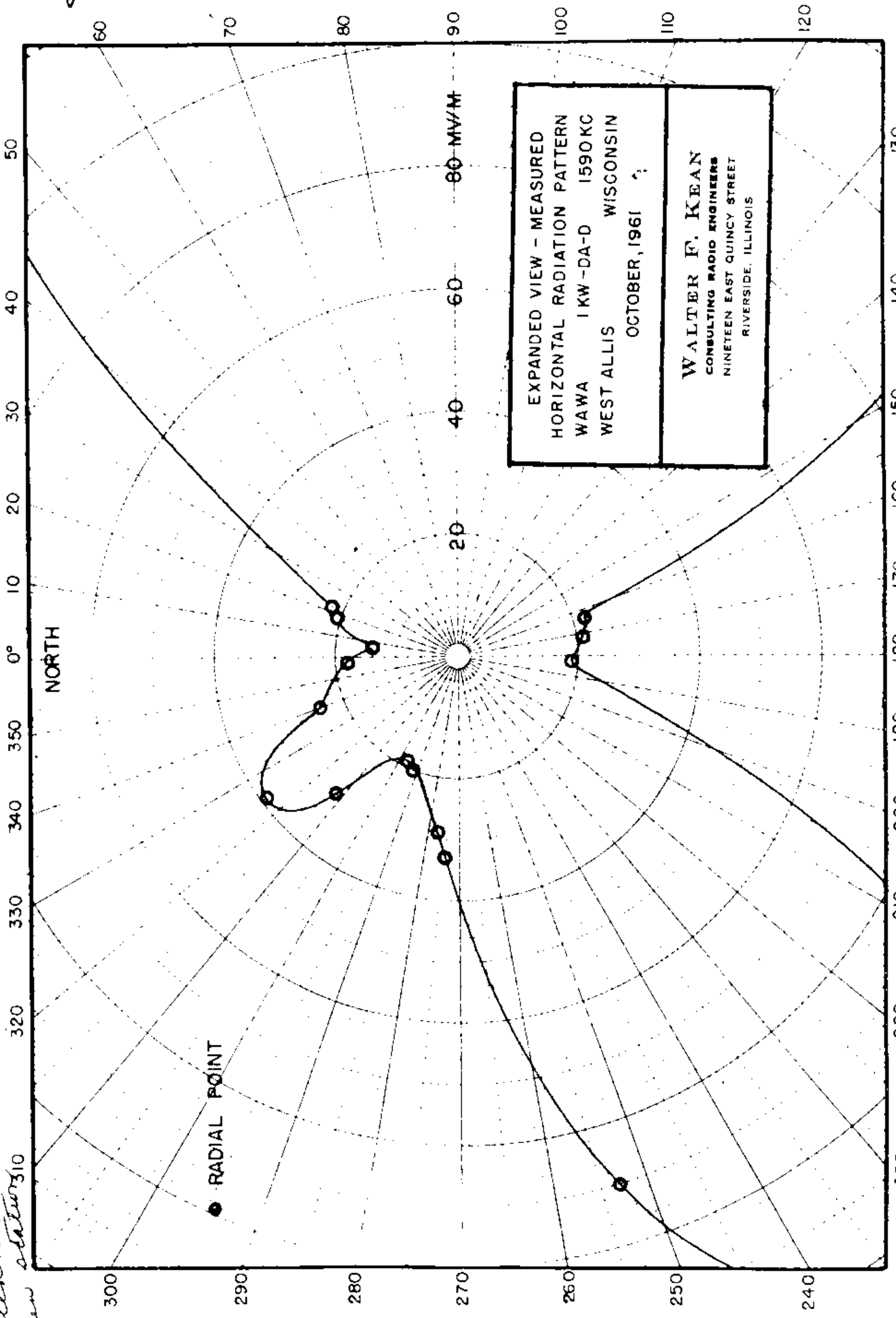
Mea. day nulls

WAWA
1590KC

Measured Day Nulls
(5-25-62ct)

Station. WAWA
West Allis, Wisconsin

1kw, DA-D, D
1590 kc



Station WAWA
West Allis, Wisconsin

1590 kc

FCC File No. BL-8875
Accepted

5/3/62
granted license
for new station

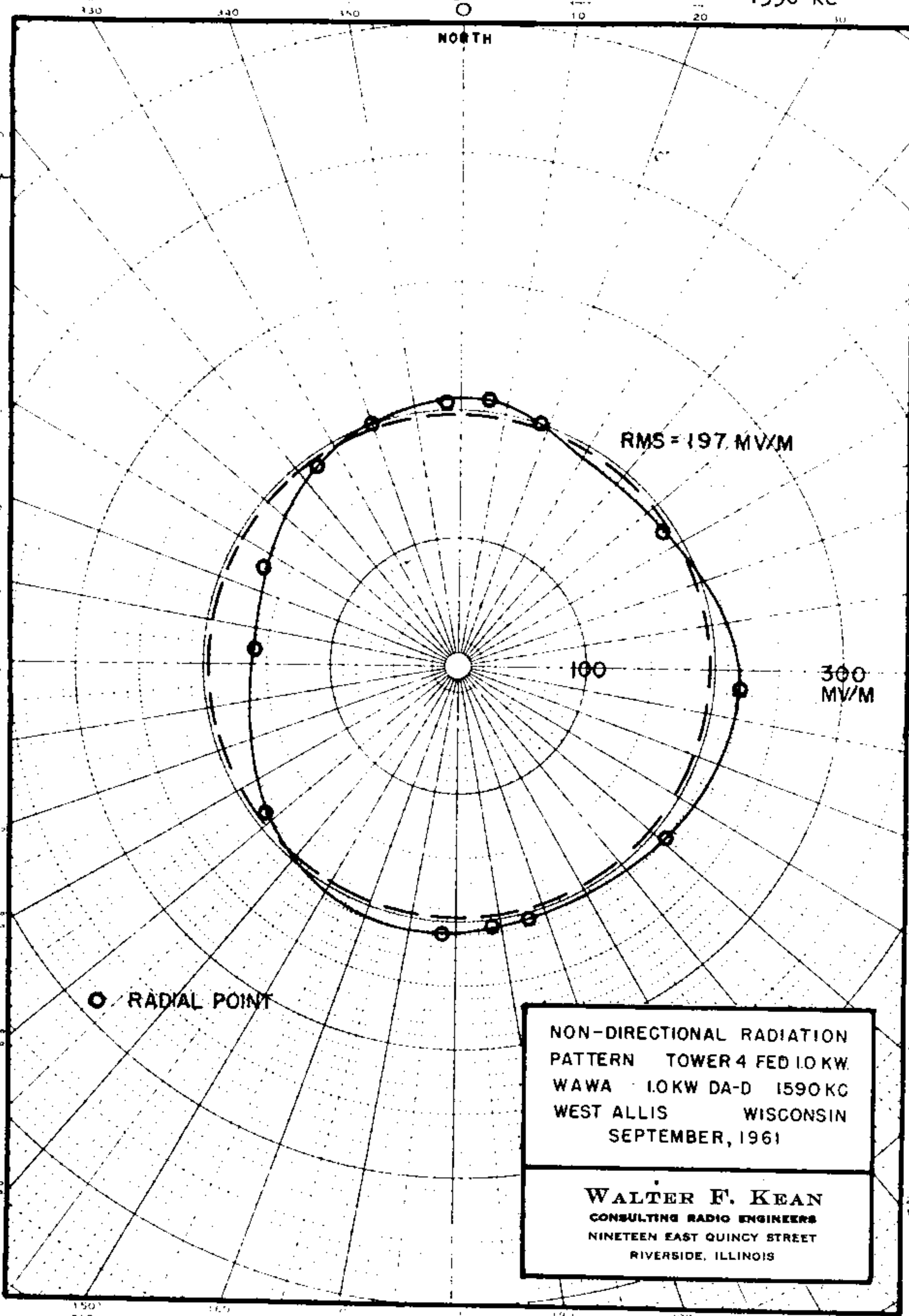
WAWA

Measured Non-DA
(5-25-62ct)

Station WAWA
West Allis, Wisconsin

1kw,DA-D,D
1590 kc

5/3/62
granted license for new station



NON-DIRECTIONAL RADIATION PATTERN TOWER 4 FED 1.0 KW.
WAWA 1.0 KW DA-D 1590 KC
WEST ALLIS WISCONSIN
SEPTEMBER, 1961

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

FCC File No. BL-8875
Accepted

Station WAWA
West Allis, Wisconsin

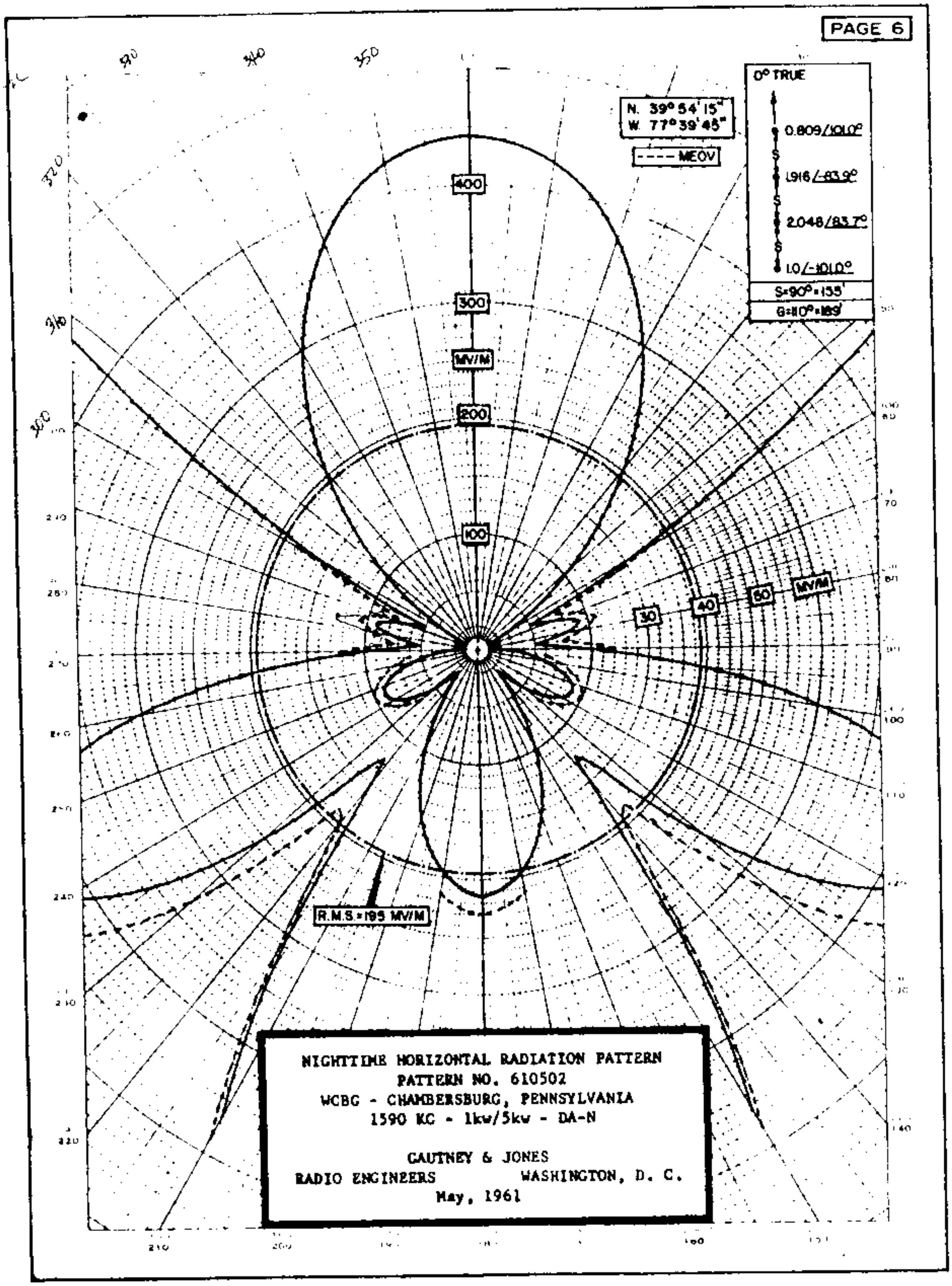
1590 kc

WCBG

1-25-63
unlit CP
change facil
5D to 1N,
5LS, DA-N

PROPOSED NIGHT
(6-14-61g)

Station WCBG 1kw,5kw-LS,DA-N,U
Chambersburg, Pennsylvania 1590 KC



FCC File No. BP-14851
Accepted 6-7-61

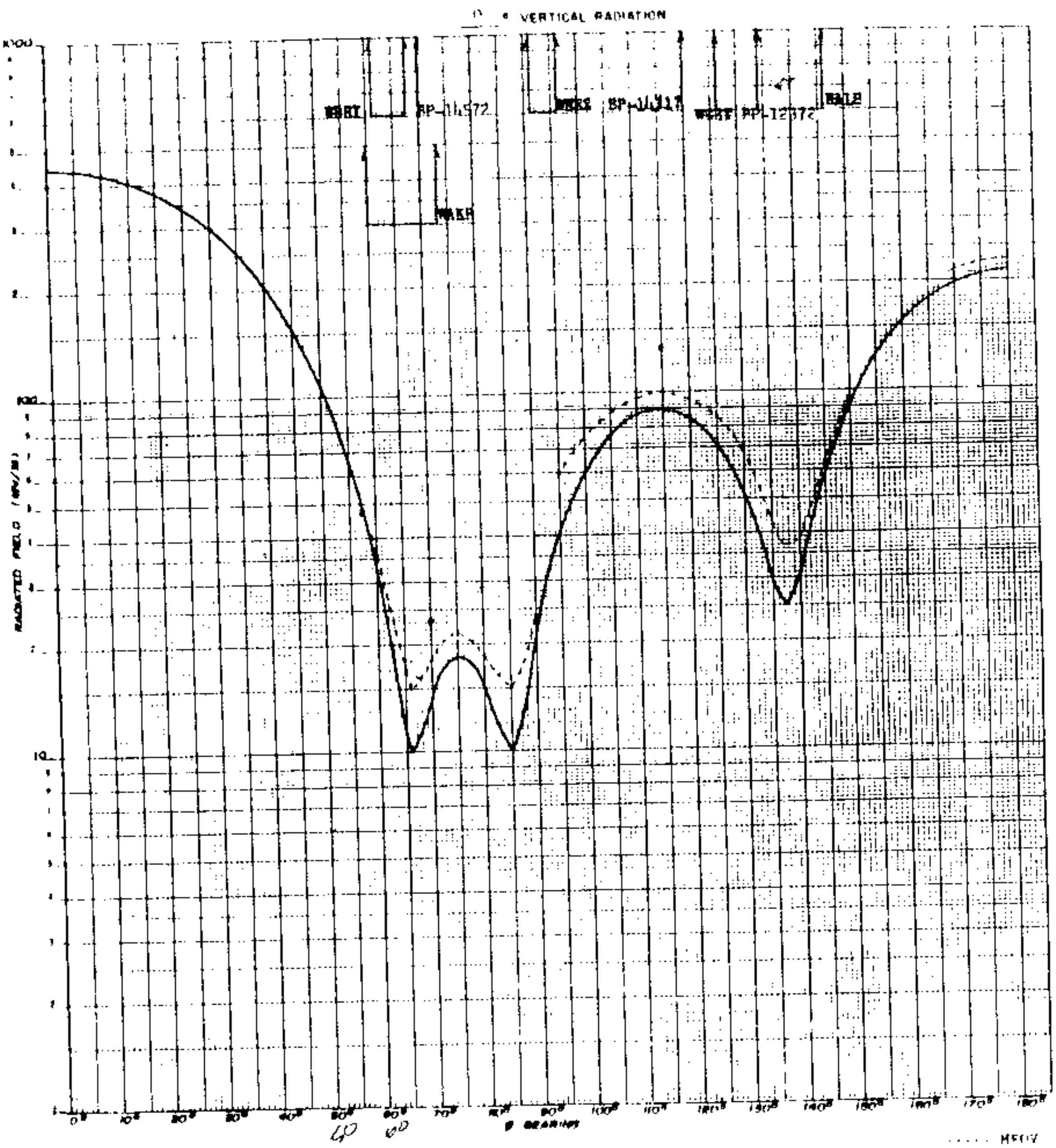
WCBG
Chambersburg, Pennsylvania 1590 KC.

WCBG

PROPOSED NIGHT NULL
(6-14-61g)

Station WCBG 1kw,5kw-LS,DA-N,U
Chambersburg, Pennsylvania 1590 KC

9-25-63
modified CP
change from
5D to 1N,
5LS,DA-N



NIGHTTIME VERTICAL RADIATION PATTERN
WCBG - CHAMBERSBURG, PENNSYLVANIA
1590 KC - 1kw/5kw - DA-N
PATTERN NO. 610507

GAUTNEY & JONES
RADIO ENGINEERS WASHINGTON, D. C.
May, 1961

FCC File No. BP-14851
Accepted 6-7-61

WCBG
Chambersburg, Pennsylvania 1590 KC

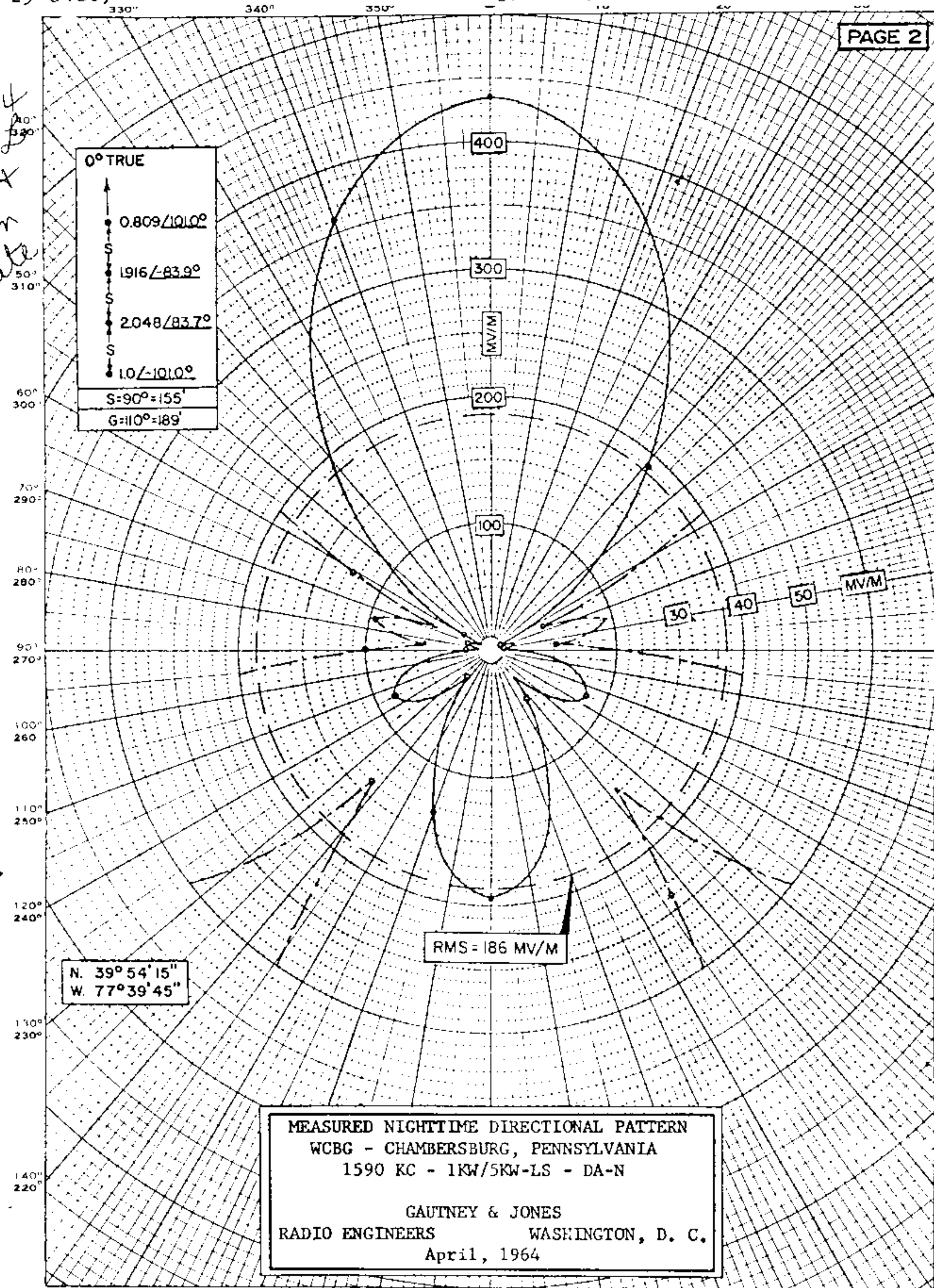
WCBG

Measured Night
(6-29-64ct)

Station WCBG
Chambersburg, Pennsylvania

1kw,5kw-LS,DA-N,U
1590 kc

#201
8-27-64
granted
w DAN +
change in
trans site



FCC File No.BL-10585
Accepted 5-27-64

Station WCBG
Chambersburg, Pennsylvania

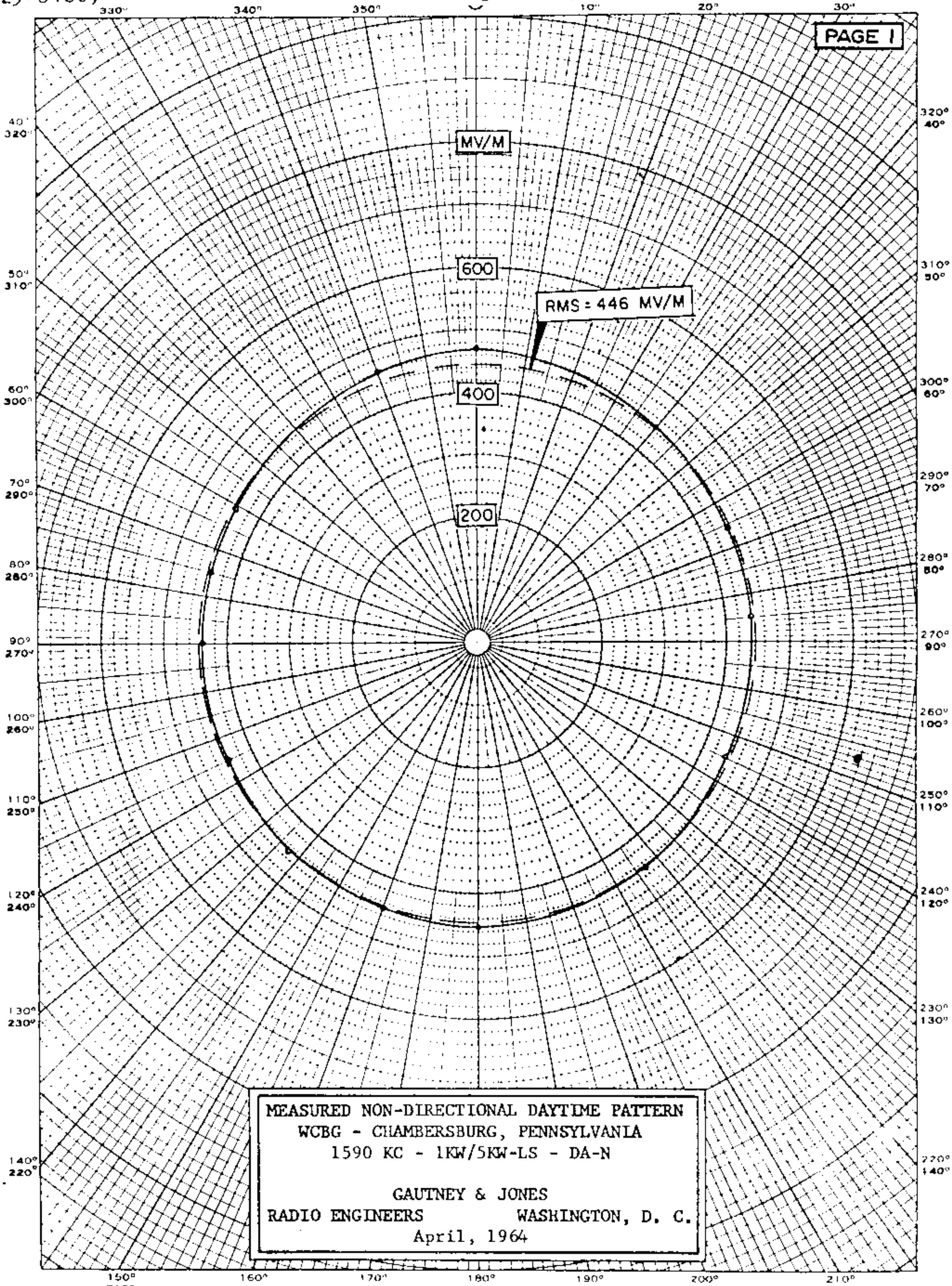
1590 kc

WCBG

Measured Non-DA
(6-29-64ct)

Station WCBG
Chambersburg, Pennsylvania

1kw,5kw-LS,DA-N,U
1590 kc



MEASURED NON-DIRECTIONAL DAYTIME PATTERN
WCBG - CHAMBERSBURG, PENNSYLVANIA
1590 KC - 1KW/5KW-LS - DA-N

GAUTNEY & JONES
RADIO ENGINEERS WASHINGTON, D. C.
April, 1964

FCC File No. BL-10585
Accepted 5-27-64

Station WCBG
Chambersburg, Pennsylvania

1590 kc

WEEW

Proposed Night
(6-27-69ct)

Station WEEW
Washington, North Carolina

1kw,5kw-LS,DA-N,U
1590 kc

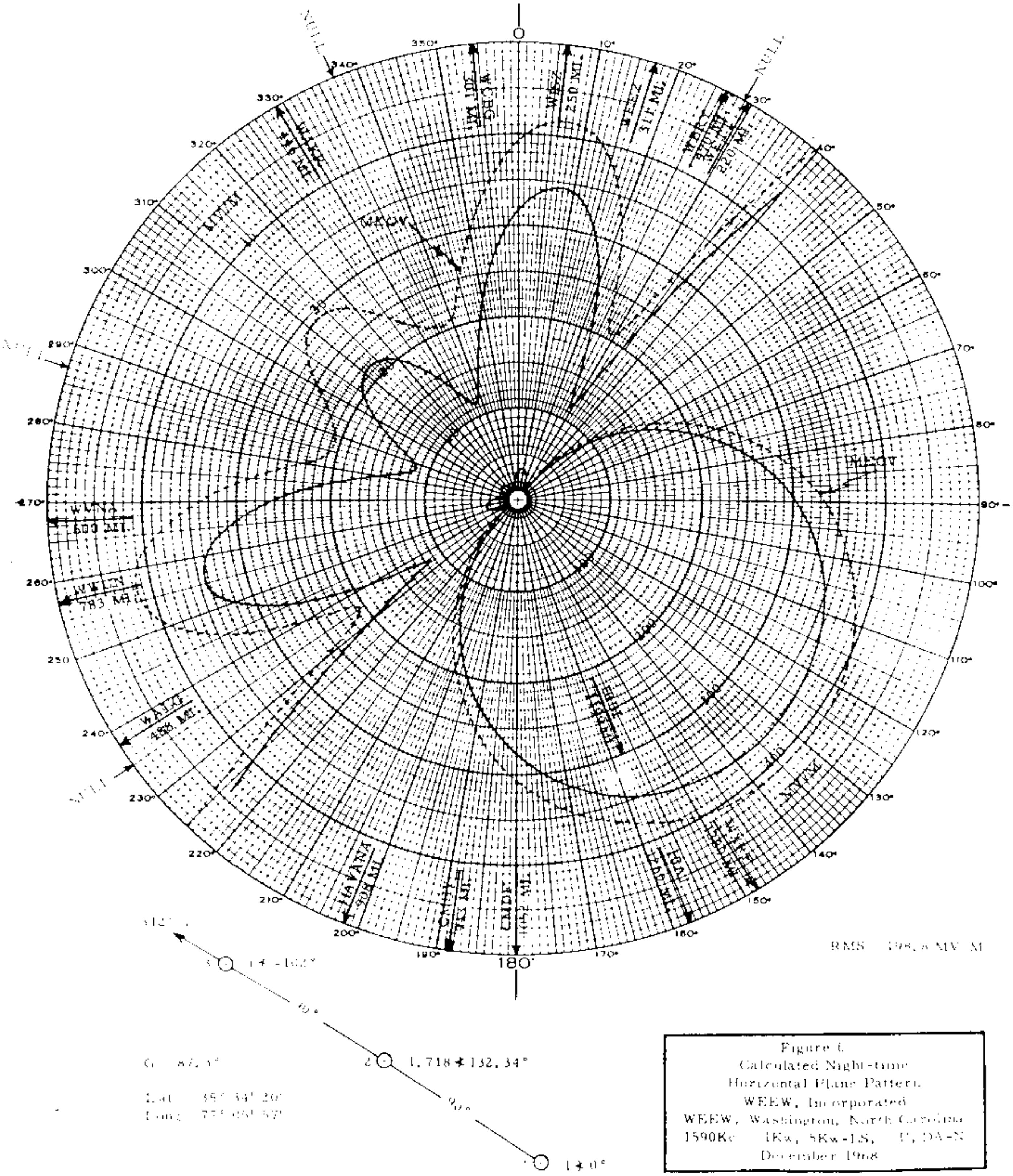


Figure 6
Calculated Night-time
Horizontal Plane Pattern
WEEW, Incorporated
WEEW, Washington, North Carolina
1590Kc 1Kw, 5Kw-LS, U, DA-N
December 1968

WILLIS C. BEECHER

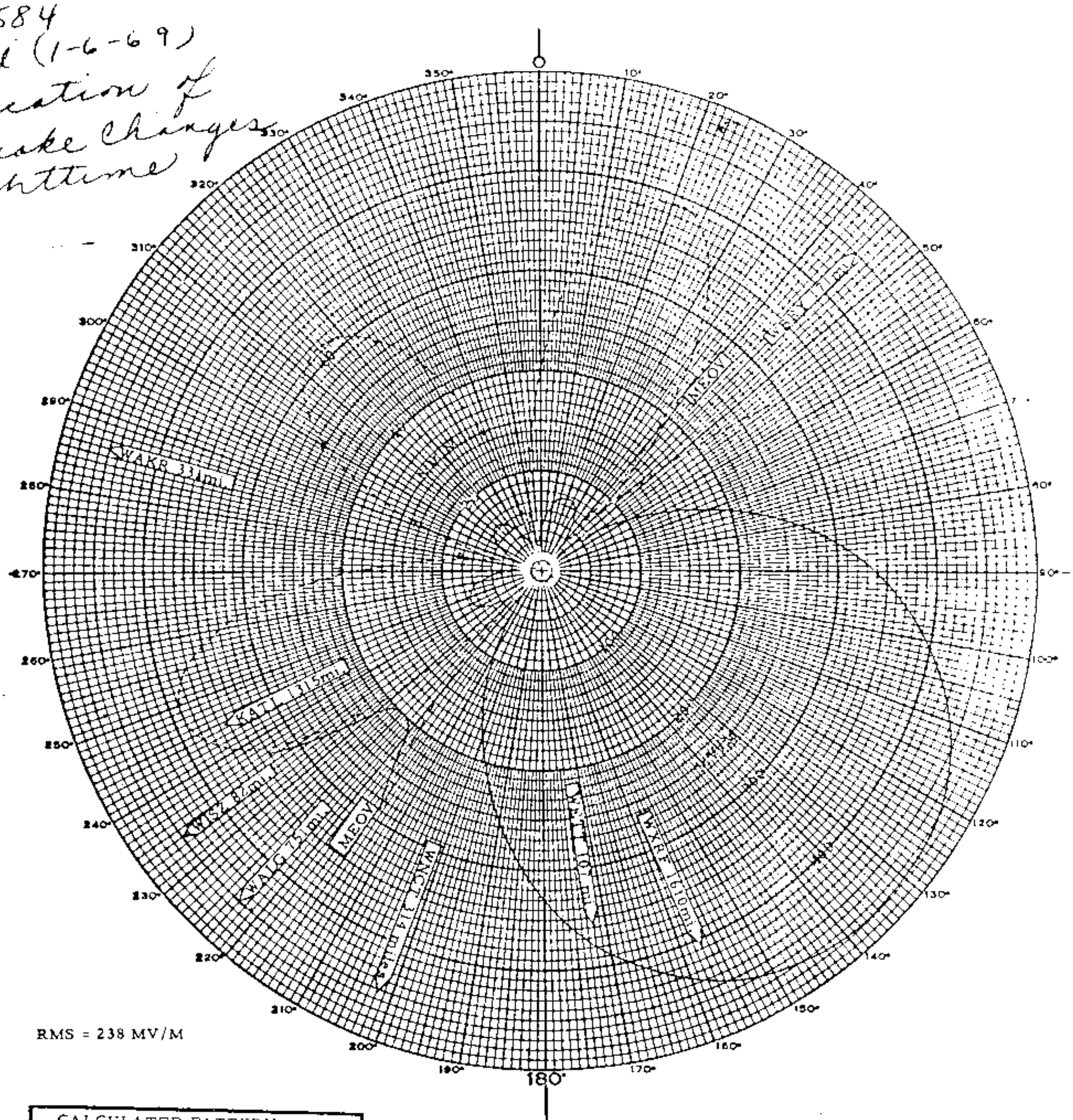
WEEZ

Proposed Night
(12-27-68ct)

Station WEEZ
Chester, Pennsylvania

1kw,DA-N,U
1590 kc

BMP-12584
Granted (1-6-69)
modification of
CP to make changes
in nighttime
MEOV



RMS = 238 MV/M

CALCULATED PATTERN

1 — 1/+143.5°
90°
2 — 1.55/0°
90°
3 — 1/-143.5°
134.5° T
G = 153°

CHARLES SMITH
WASHINGTON, D. C.

FIGURE 1
CALCULATED PATTERN SHOWING
PROPOSED NEW MEOV
RADIO DEL-VAL, INC.
RADIO STATION WEEZ
CHESTER, PENNSYLVANIA
1590KHz 1KW DA-N
OCTOBER 1968

North Latitude 39° 52' 23"
West Longitude 75° 23' 06"

FCC File No.BMP-12584
Accepted 12-12-68

Station WEEZ
Chester, Pennsylvania

1590 kc

WEEZ

Proposed Night (4-29-68ct)	Station WEEZ Chester, Pennsylvania	1kw,DA-N,U 1590 kc

4-19-68
GRANTED
CP
CHANGES IN
NIGHT MEOV

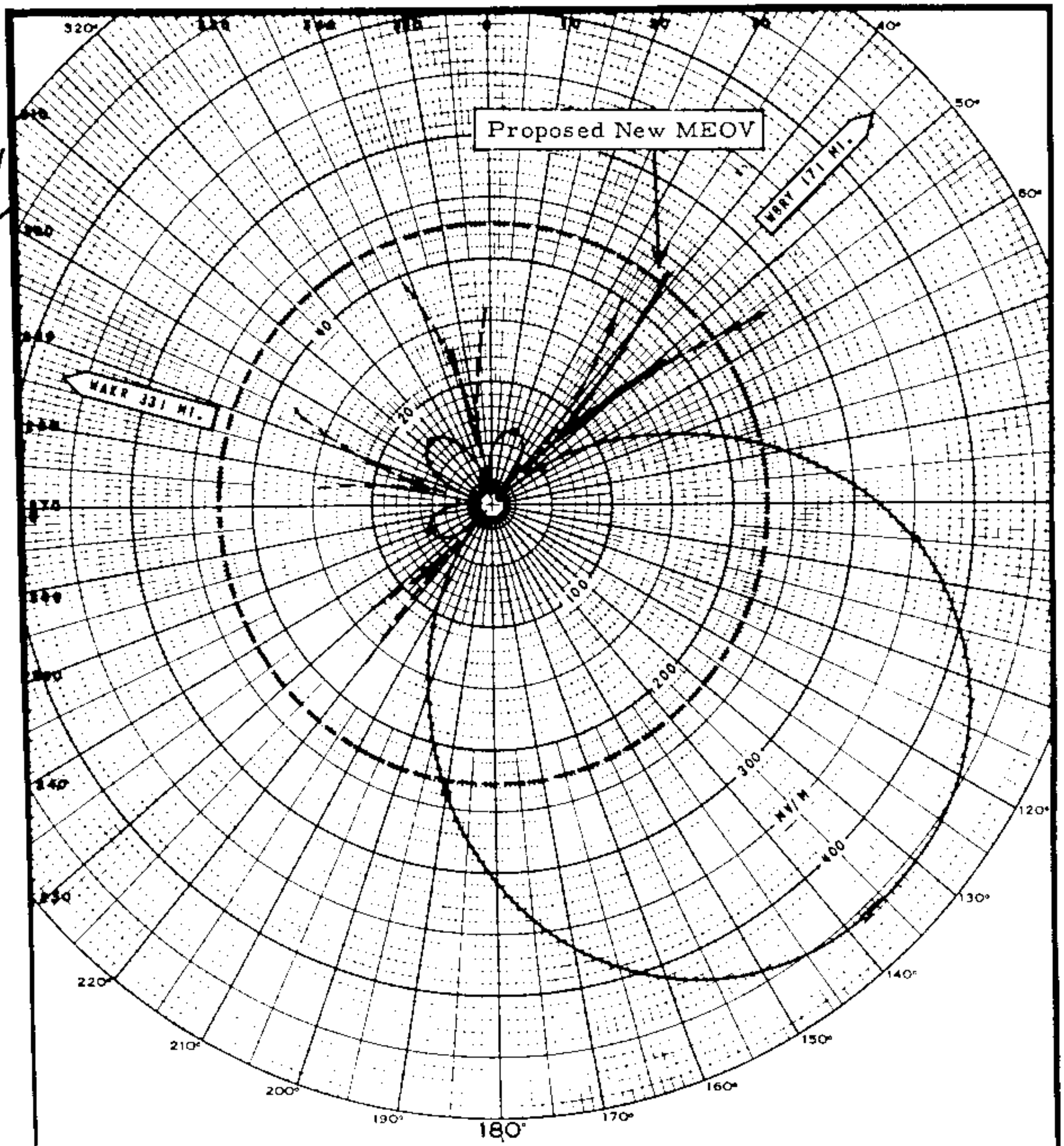


Figure III
Proposed Radiation Pattern for WEEZ
January 1968

JOHN CREUTZ
Consulting Engineer
724 - 14TH STREET NORTHWEST
WASHINGTON D. C. 20005

MAY 15, 1950 G • 153° ○— 90° —○— 90° —○— 134.5° 1 ∠+143.5° 1.55 ∠0° 1 ∠-143.5° # 1 # 2 # 3	LOU POLLER WPWA - 1590 KC - 1 KW - DA(N) - U CHESTER, PENNSYLVANIA MEASURED NIGHTTIME PATTERN

RUSSELL P. MAY Consulting Radio Engineers Washington 4, D.C.	LAT: 39° 52' 21" N LON: 75° 23' 06" W.	RMS 228 MV/M	EXHIBIT NO. 6

FCC File No.BP-18115 Accepted 4-15-68	Station WEEZ Chester, Pennsylvania	1590 kc

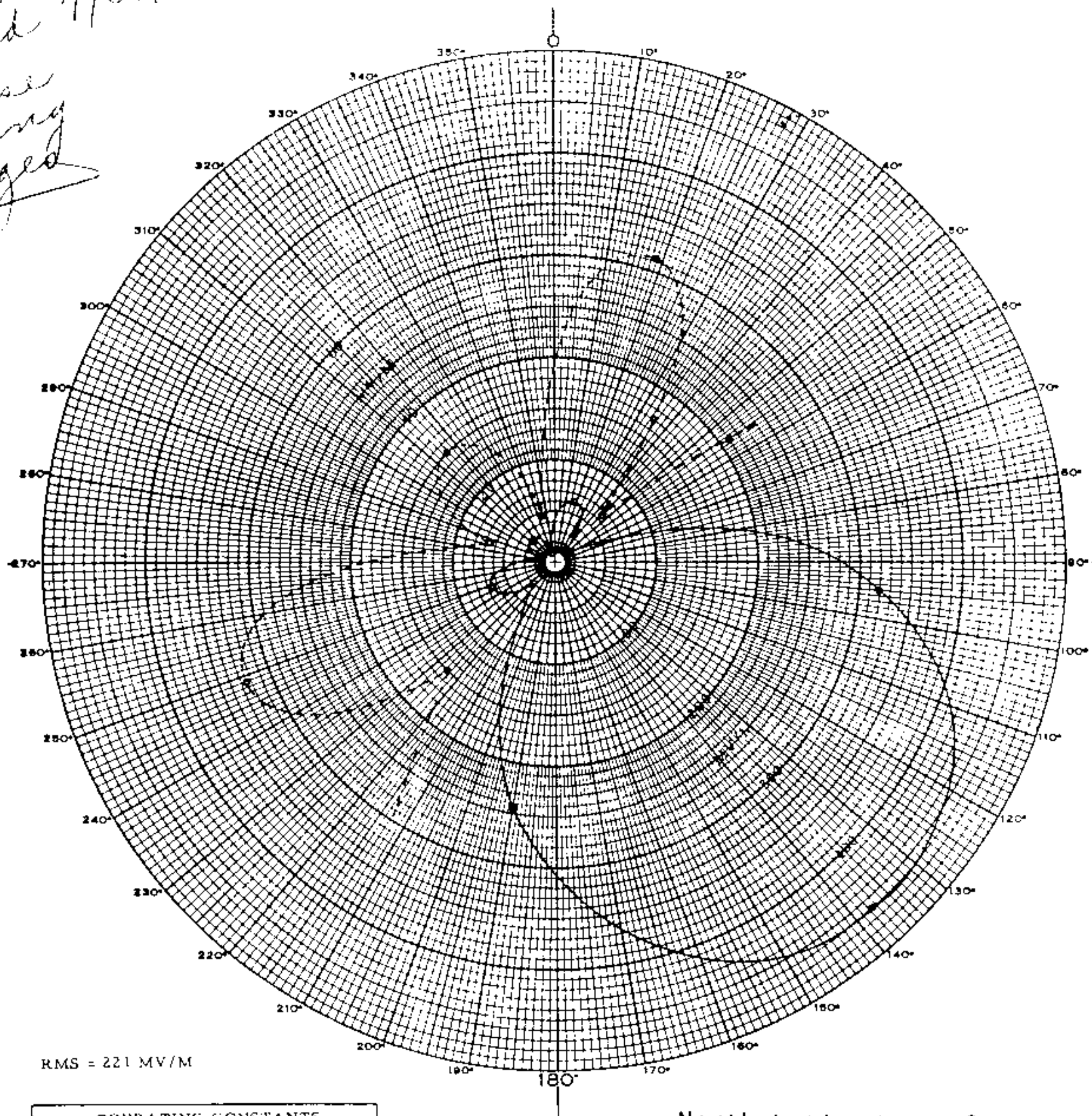
WEEZ

Measured Night
(5-27-69ct)

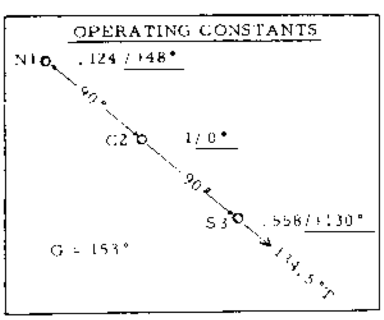
Station WEEZ
Chester, Pennsylvania

1kw,DA-N,U
1590 kc

BL-12339
Granted 7/31/69
license
covering
changed



RMS = 221 MV/M



North Latitude 39° 52' 23"
West Longitude 75° 23' 06"

Figure X
Measured Night Directional Pattern
Radio Del-Val, Inc.
Radio Station WEEZ
Chester, Pennsylvania
1590KHz 1Kw DA-N
November 1968 and March 1969

CHARLES SMITH
WASHINGTON, D.C.

FCC File No.BL-12339
Accepted 5-7-69

Station WEEZ
Chester, Pennsylvania

1590 kc

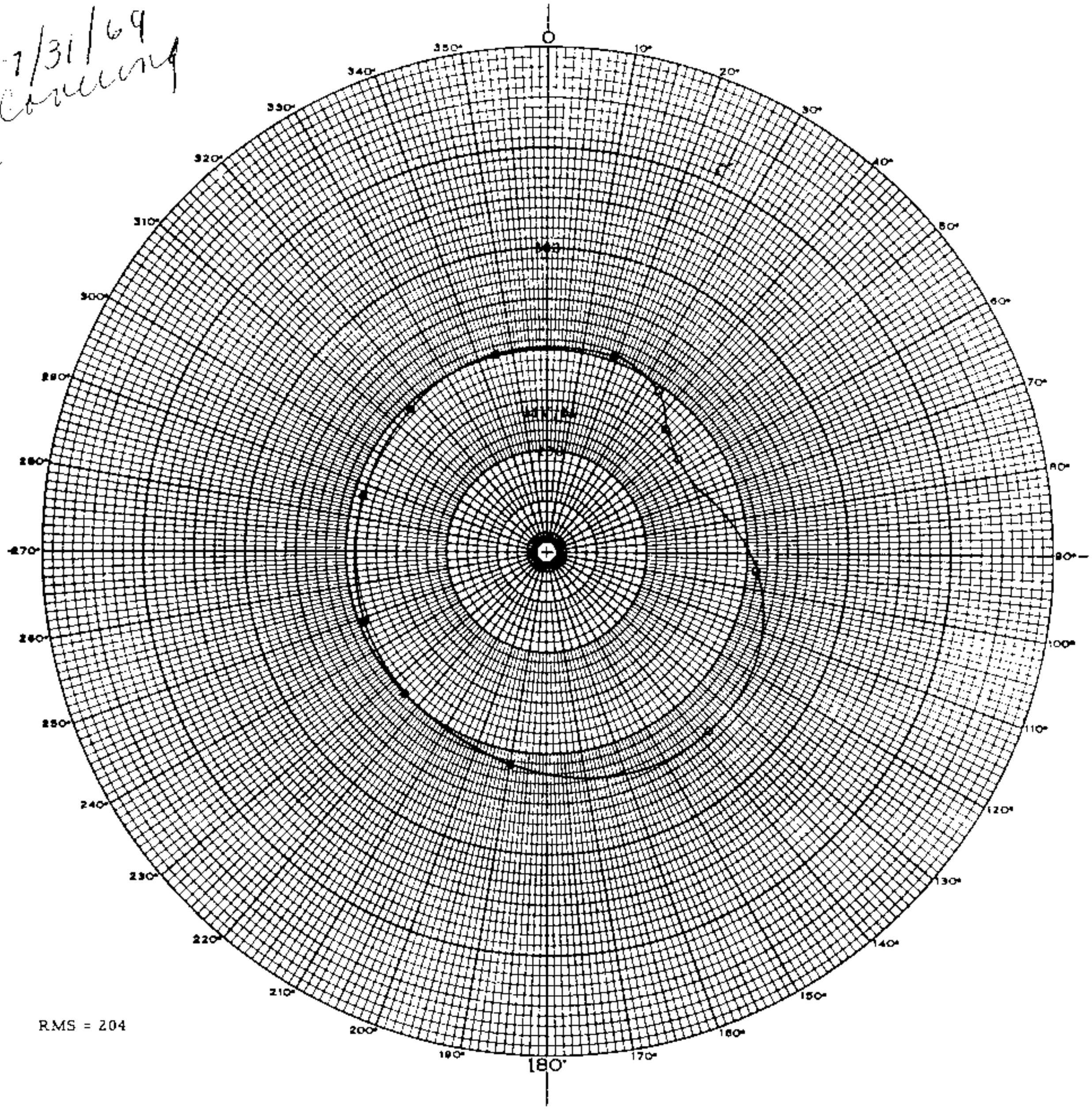
WEEZ

Measured Non-DA
(5-27-69ct)

Station WEEZ
Chester, Pennsylvania

1kw,DA-N,U
1590 kc

BL-12339
Granted 7/31/69
License Covering
Changes



RMS = 204

Figure VIII
Measured Non-Directional
Daytime Pattern
Radio Del-Val, Inc.
Radio Station WEEZ
Chester, Pennsylvania
1590KHz 1Kw DA-N
November 1968

CHARLES SMITH
WASHINGTON D.C.

FCC File No.BL-12339
Accepted 5-7-69

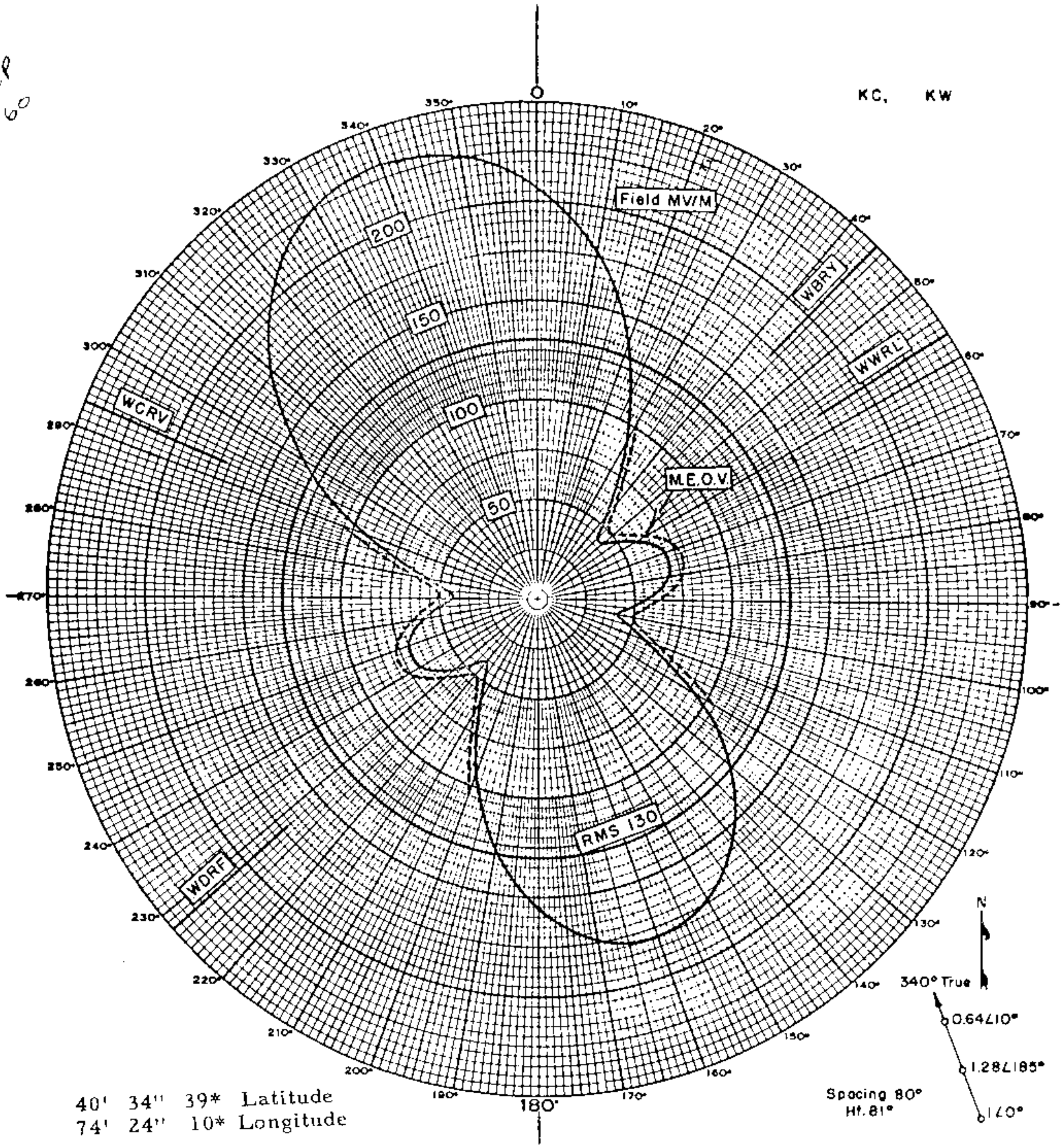
Station WEEZ
Chester, Pennsylvania

1590 kc

PLAIN WERA

PROPOSED DAY (11-16-56g) Tri-County Broadcasting Corp. Plainfield, New Jersey — 500 W, DA-D, D — 1590 KC

Granted CP 7-27-60



40° 34' 39* Latitude
74° 24' 10* Longitude

TRI-COUNTY BROADCASTING CORP. PLAINFIELD, NEW JERSEY	Figure 1
	1590 KC 500 WATTS DA-D
DIRECTIONAL ANTENNA PATTERN	**FRANK H. McINTOSH** *Consulting Radio Engineer* Wyatt Building Washington, D. C.

FCC File No. BP-10,878

Accepted 11-8-56 Tri County B/C Corp., Plainfield, N. J. 1590 KC

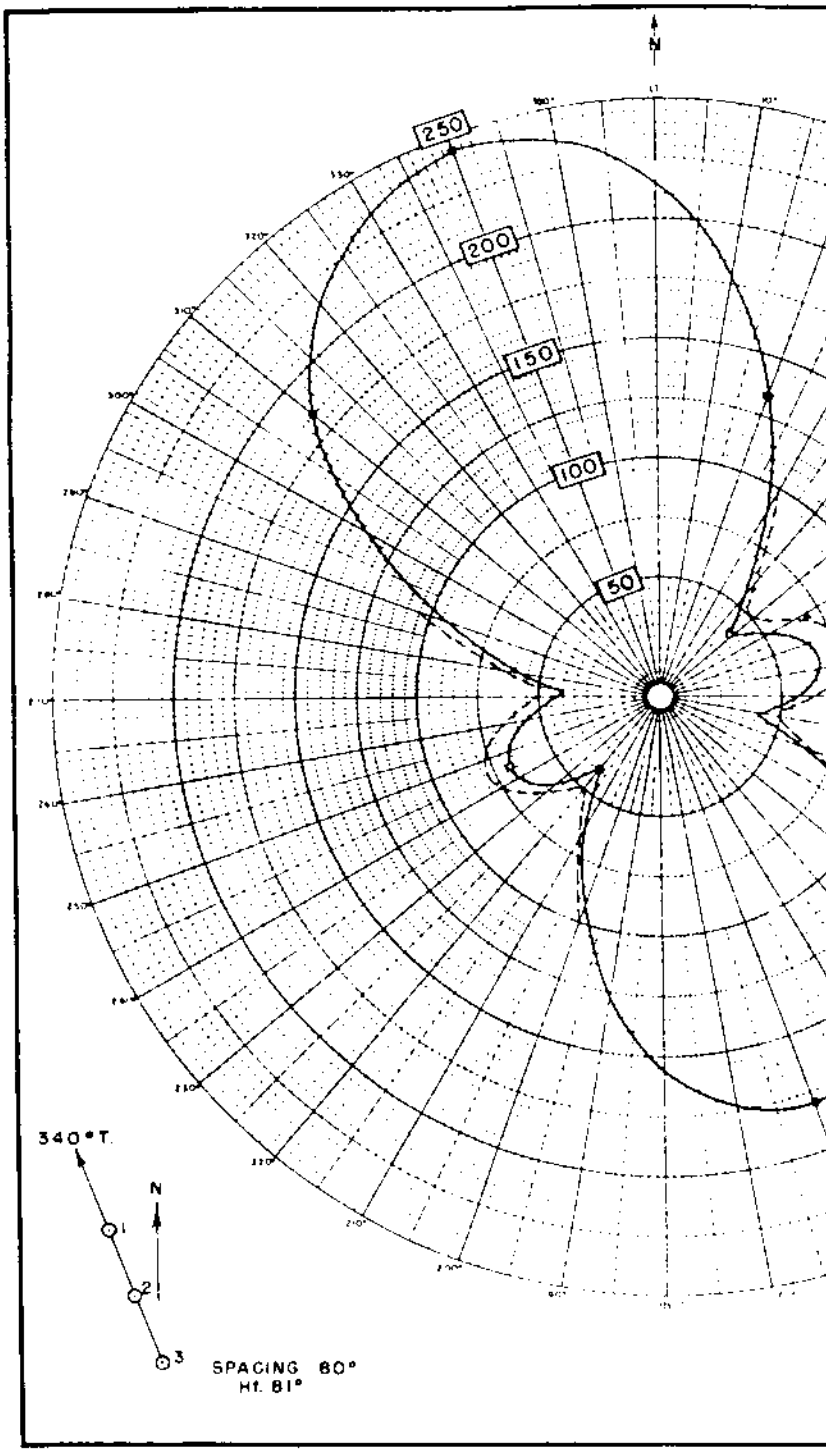
WERA

MEASURED DAY
(9-20-61ct)

Station WERA
Plainfield, New Jersey

500w,DA-D,D
1590 kc

11-21-61
painted 2 for
new station



MEASURED DIRECTIONAL ANTENNA PATTERN FOR WERA
PLAINFIELD, NEW JERSEY
1590 KC, 500 WATTS, DA-D

FCC File No.BL-8696
Accepted 8-30-61

Station WERA
Plainfield, New Jersey

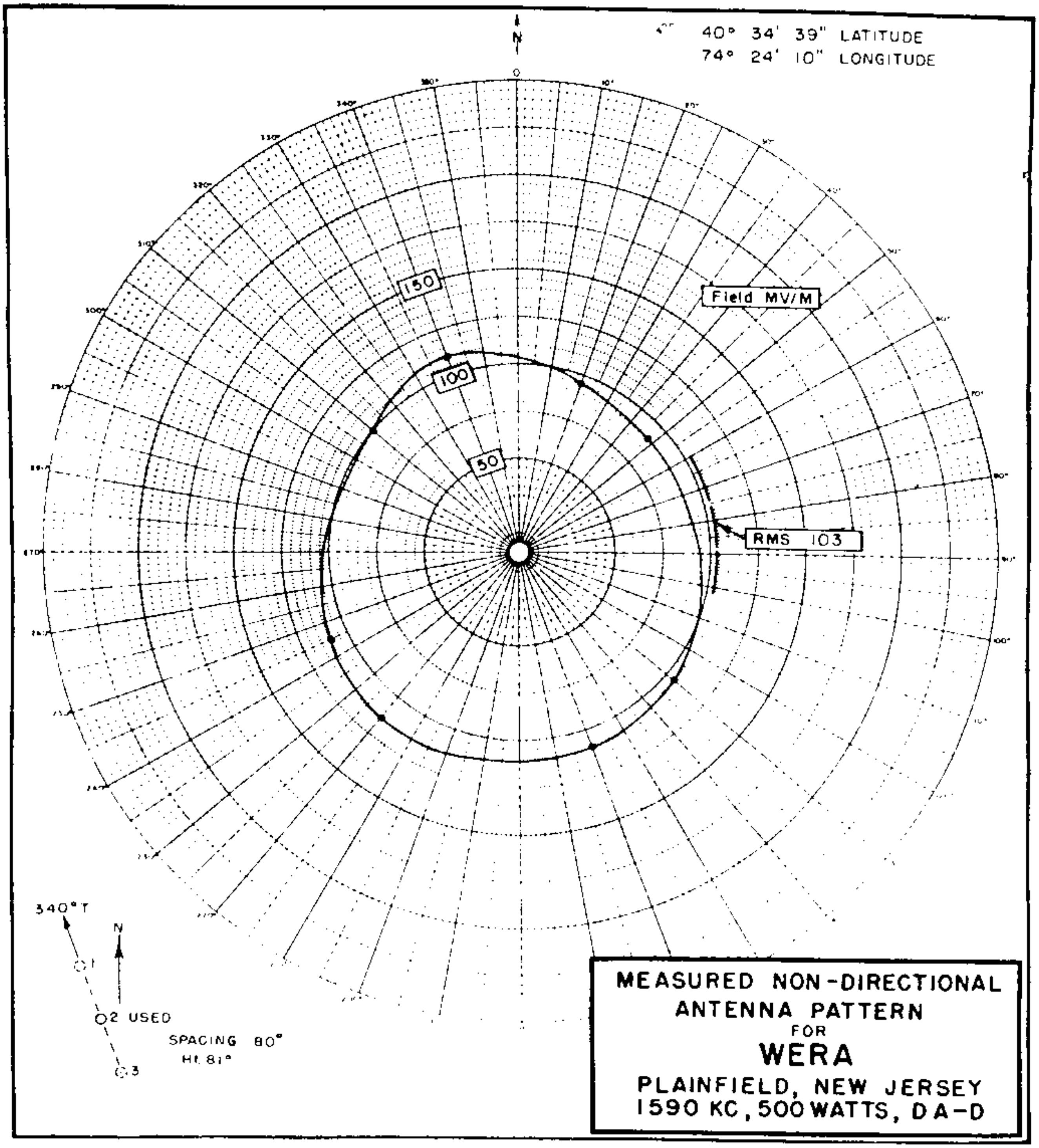
1590 kc

WERA

MEASURED NON-DA (9-20-61ct)

Station WERA
Plainfield, New Jersey

500w,DA-D,D
1590 kc



FCC File No. BL-8696
Accepted 8-30-61

Station WERA
Plainfield, New Jersey

1590 kc

WETT
1590KHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WETT

Frequency: 1590 kHz

Notification List No. 1785

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

Main Studio: Ocean City, Maryland

Power: 5kw Night 1kw Day

Date: November 16, 1979 Class: III-B

North Latitude: 38° 14' 16"
West Longitude: 75° 07' 37"

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:	C(#1)	NW(#2)	SE(#3)	SW(#4)
HEIGHT ABOVE INSULATORS:	140'	140'	140'	140' (81.5°
NIGHT PHASING:	0°	133°	-133°	---
NIGHT FIELD RATIO:	1.0	0.746	0.477	---
DAY PHASING:	---	30°	---	0°
DAY FIELD RATIO:	---	0.95	---	1.0

SPACING AND ORIENTATION: Three towers in a row are spaced 137.57' (80°) on a line bearing 125° true with a fourth tower spaced 283.7' (165°) on a line bearing 190° true from the northwest tower.

GROUND SYSTEM: 120 - 155 to equally spaced copper radials plus a 24' x 24' square ground screen about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers. Centers of system are bonded together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	RSS	STANDARD RMS
Day	185 mv/m		
Night	140 mv/m		

Note: Please retain the Daytime and Nighttime directional antenna radiation pattern notified for Station WETT in United States Change List Number 831 dated October 7, 1959.

WETT
1590 kHz

SUPPLEMENTAL AND CORRECTED
DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WLUZ

Main Studio: Bayamon, Puerto Rico

Frequency: 1600 kHz

Power: 5kw Night 5kw Day

Notification List No. 1785

Date: November 16, 1979 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

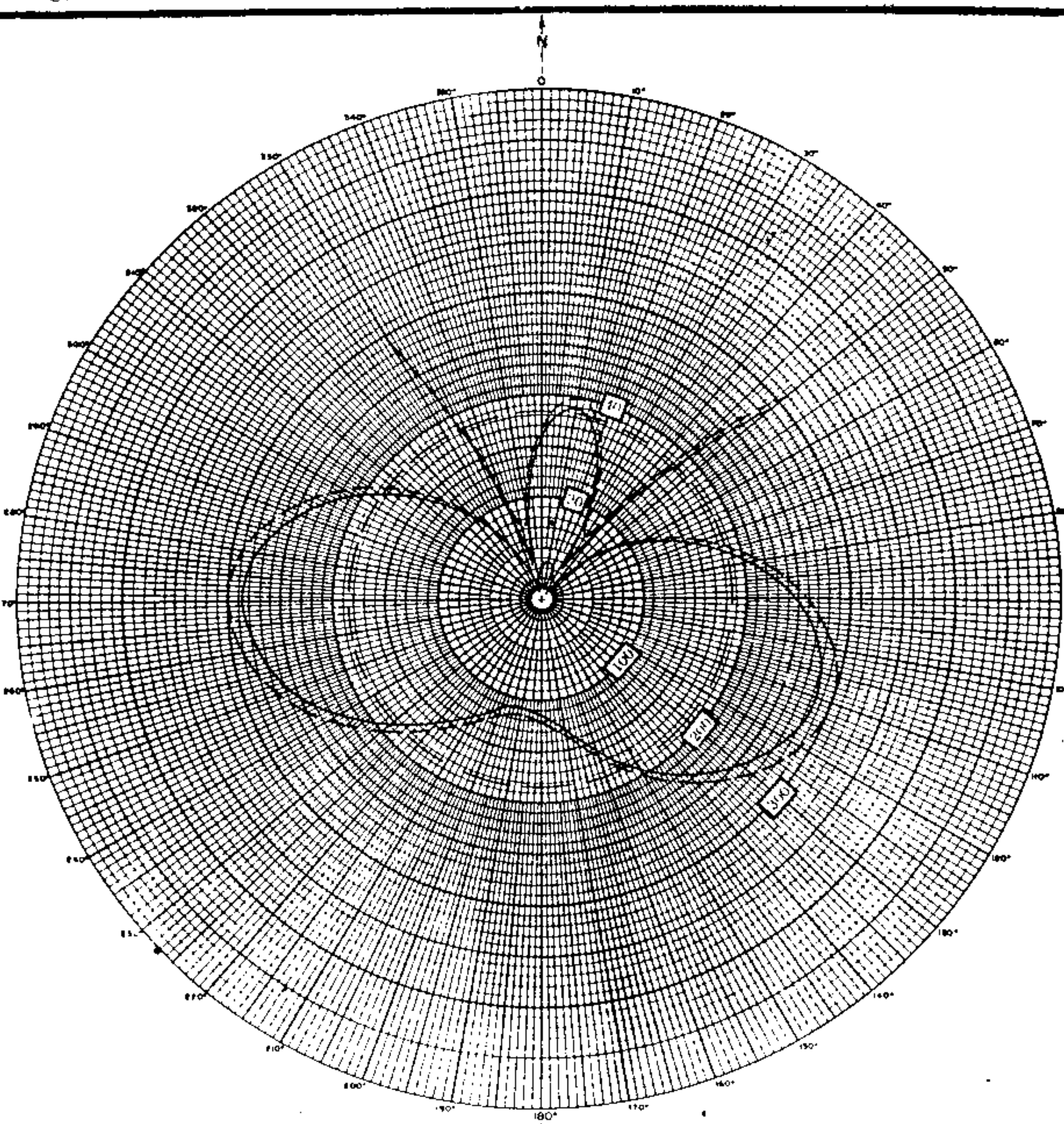
North Latitude: 18° 21' 38"
West Longitude: 66° 09' 30""

NOTE: Please retain the description sheet and directional antenna radiation patterns notified for station WLUZ in United States Change List Number 1783, dated November 2, 1979 and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only a change or correction in the geographical coordinates of the center of the antenna system.

Ocean City, Md.　　　　WE

PROPOSED DAY (5-28-59g) | New; The Wett Corp. Ocean City, Maryland | 500w, 1kw-LS, DA-2,U 1590 KC

granted CP for new station 10-7-59



E_{RMS} = 185 MV/M

---- MEOV

LATITUDE: 38° 19' 43"
LONGITUDE: 75° 06' 57"

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

ANTENNA PARAMETERS

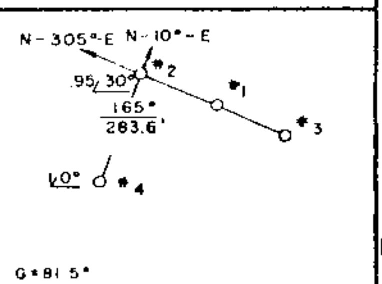


FIGURE 6

HORIZONTAL POLAR PATTERN (DAYTIME)

THE WETT CORPORATION
OCEAN CITY, MD.

1590KC 0.5KW, 1 KW-LS, DA-2

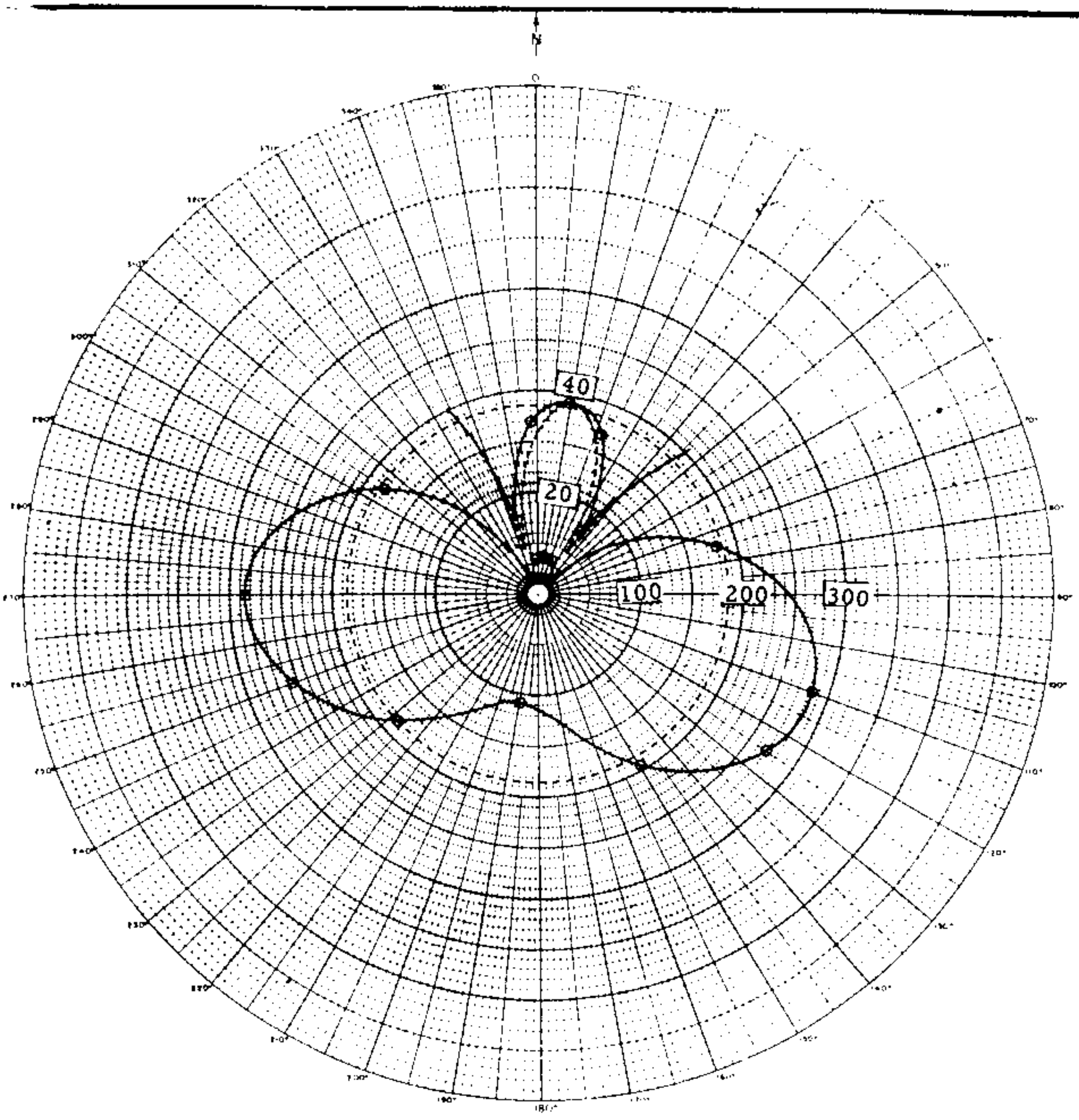
WETT

2-20-60
granted L for
new station

MEASURED DAY
(9-27-60g)

Station WETT
Ocean City, Maryland

500w, 1kw-LS, DA-2,U
1590 KC



O RADIAL VALUES
------ THEORETICAL
——— MEASURED

E_{RMS} = 185 MV/M (MEASURED)

LATITUDE	38° 19' 43''
LONGITUDE	75° 06' 57''

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

ANTENNA PARAMETERS

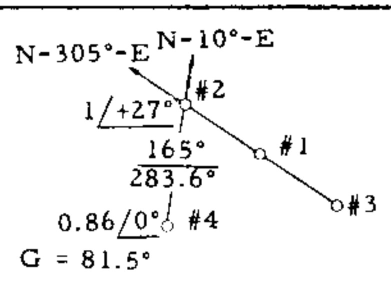


FIGURE 17

MEASURED
DAYTIME HORIZONTAL
DIRECTIONAL PATTERN

RADIO STATION WETT

OCEAN CITY, MARYLAND

1590 KC 0.5 KW-N / 1KW-D

FCC File No. BL-8089
Accepted 9-19-60

WETT
Ocean City, Maryland

1590 KC

Ocean City, Md.

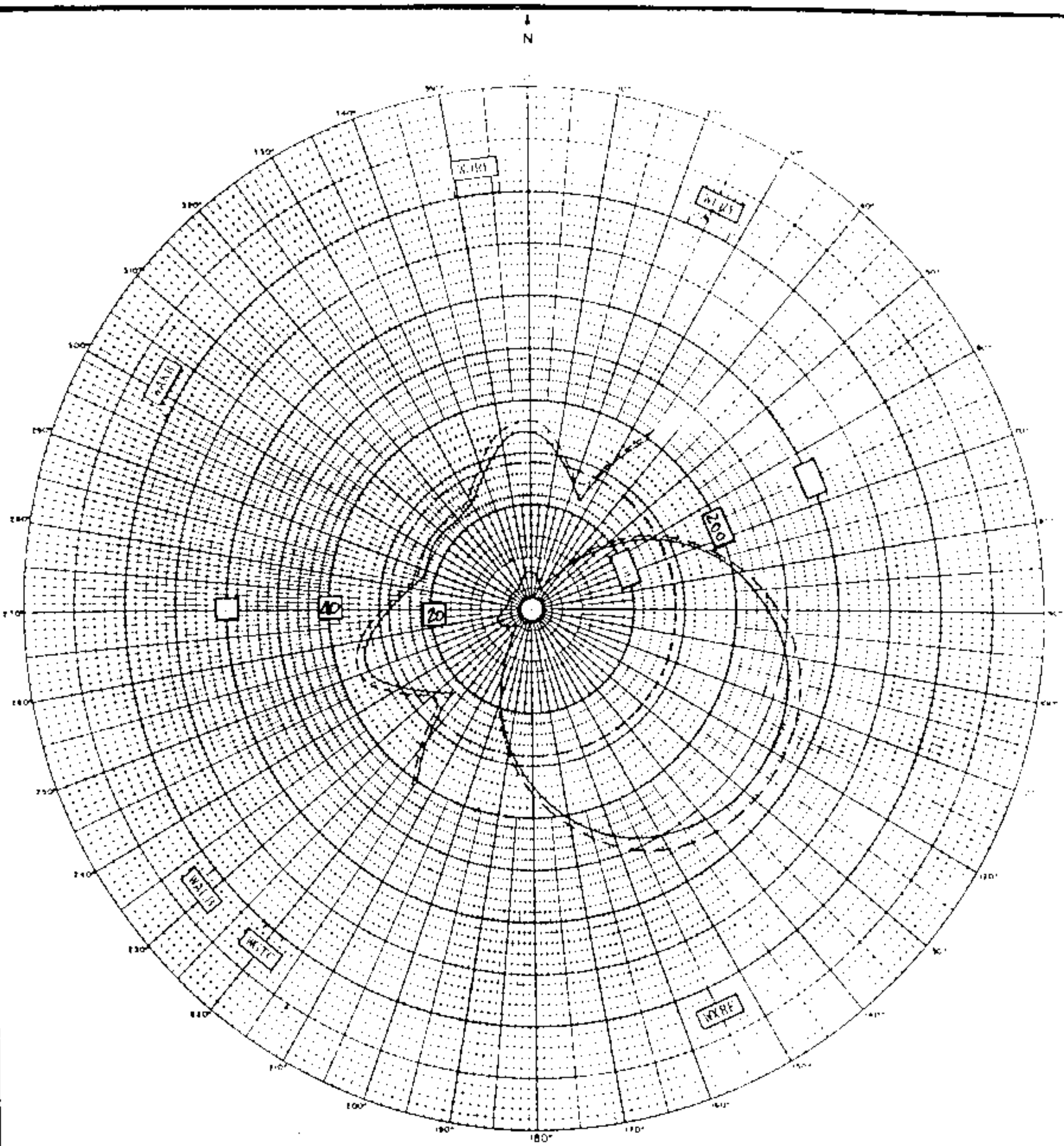
WETT

PROPOSED NIGHT
(3-23-59g)

New; The Wett Corp.
Ocean City, Maryland

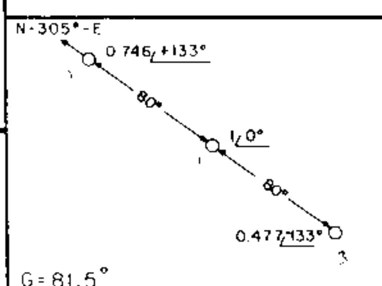
500w, 1kw-LS, DA-2,U
1590 KC

Granted CP for new station
10-7-59



E_{RMS} = 141 MV/M

----MEOV

LATITUDE 38° 19' 43" LONGITUDE 75° 06' 57"	ANTENNA PARAMETERS	FIGURE 6 HORIZONTAL POLAR PATTERN (NIGHTTIME) THE WETT CORPORATION OCEAN CITY, MD. 1590KC 0.5KW, 1KW-LS, DA-2
JOHN H MULLANEY Consulting Radio Engineers Washington D.C.		

FCC File No. BP-11857
Accepted 2-19-59 (Amended)

The Wett Corporation
Ocean City, Maryland

1590 KC

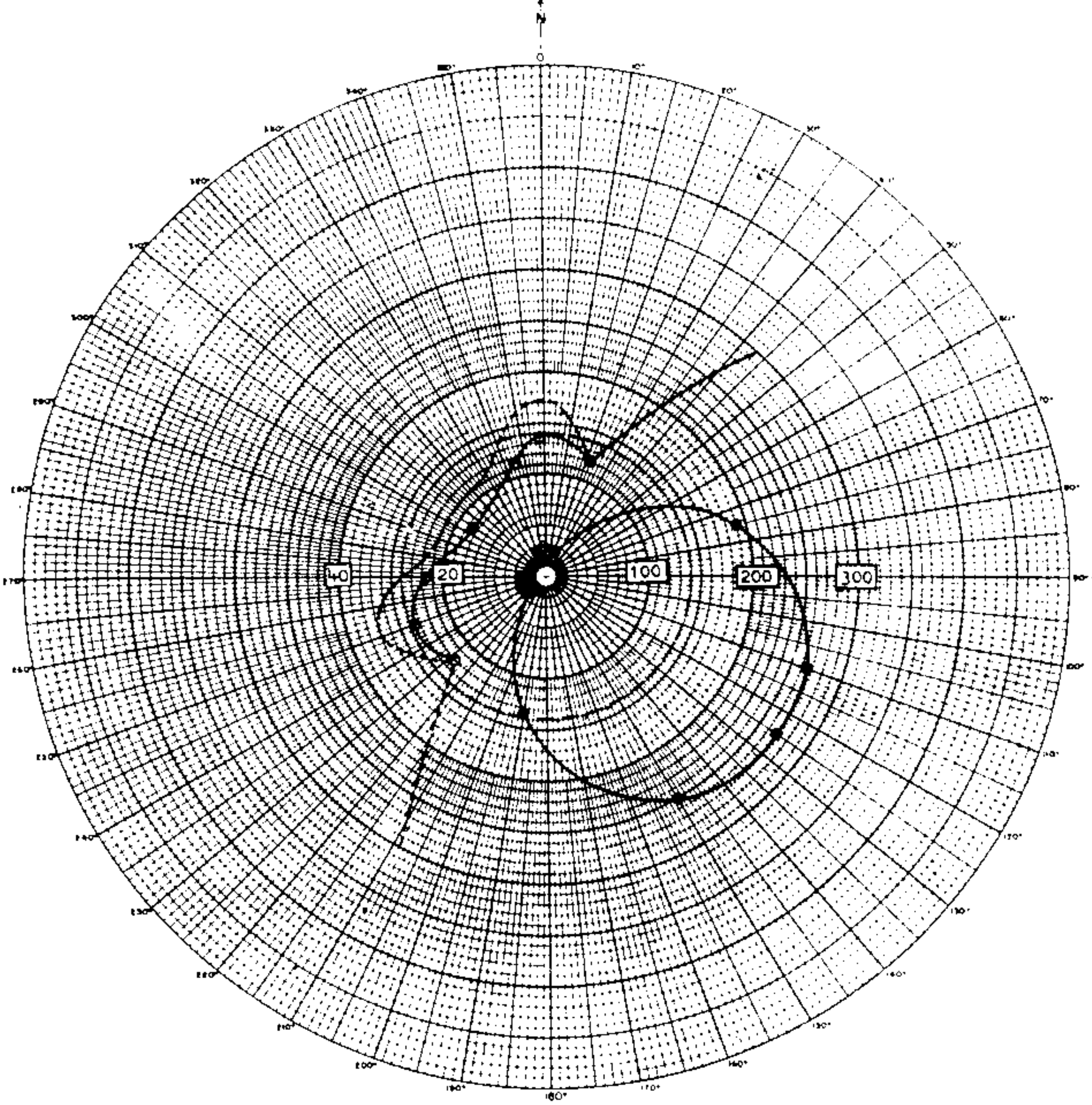
WETT

MEASURED NIGHT
(9-27-60g)

Station WETT
Ocean City, Maryland

500w, 1kw-LS, DA-2,U
1590 KC

-20-60
[illegible] L for
[illegible] station



○ RADIAL VALUES
-------- THEORETICAL
———— MEASURED

E_{RMS} = 140 MV/M (MEASURED)

LATITUDE 38° 19' 43"
LONGITUDE 75° 06' 57"

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

ANTENNA PARAMETERS

N-305°-E

#2 0.565/+134°

80°

#1 1/0°

80°

#3 0.659/-136°

G = 81.5°

FIGURE 1C

MEASURED
NIGHTTIME HORIZONTAL
DIRECTIONAL PATTERN

RADIO STATION WETT
OCEAN CITY, MARYLAND

1590 KC 0.5 KW DA-N

FCC File No. BL-8089
Accepted 9-19-60

WETT
Ocean City, Maryland

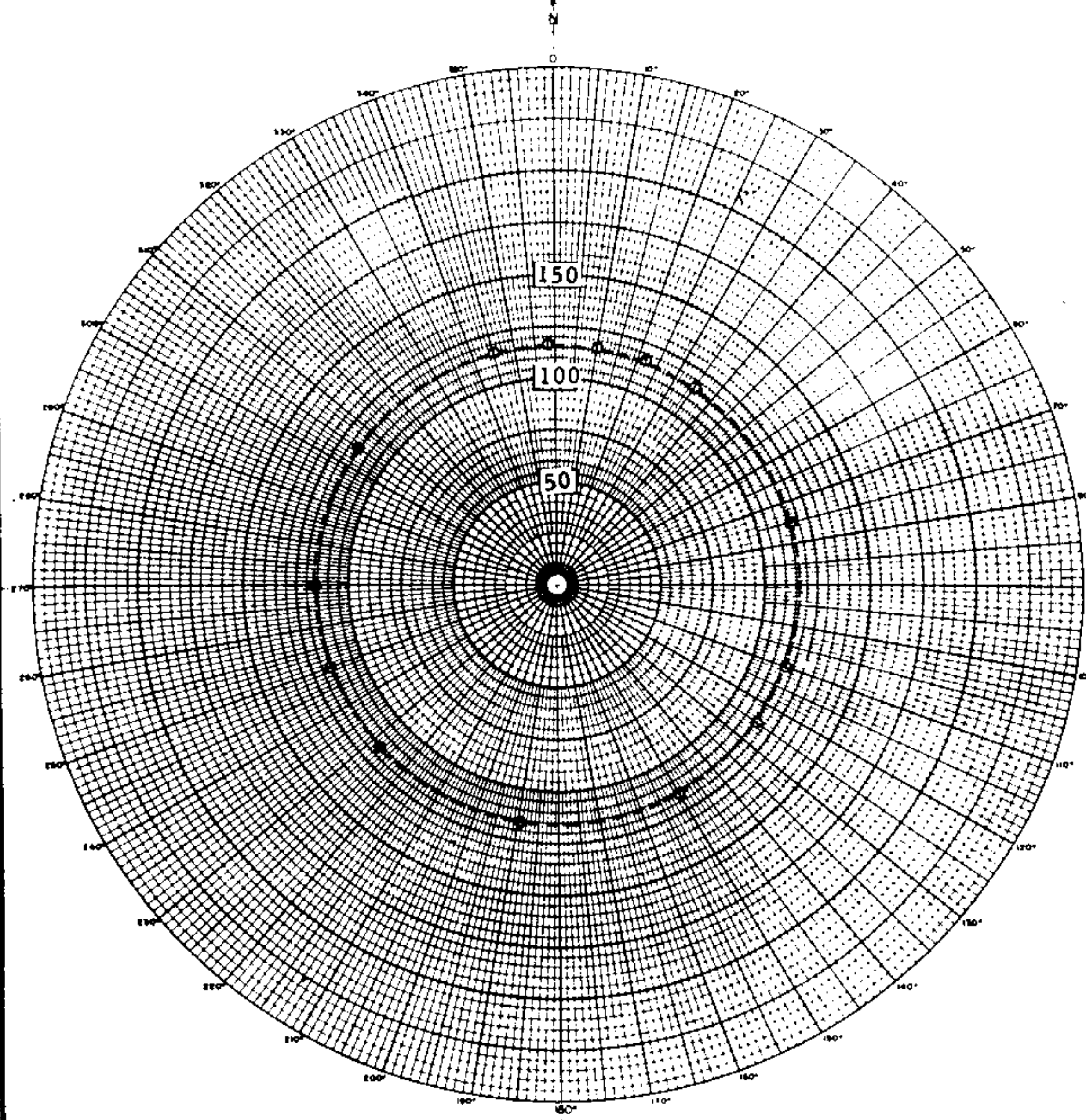
1590 KC

WETT

MEASURED NON-DA
(9-27-60g)

Station WETT
Ocean City, Maryland

500w, 1kw-LS, DA-2,U
1590 KC



E_{RMS} = 132 MV/M (MEASURED)

RADIAL VALUES

LATITUDE 38° 19' 43''
LONGITUDE 75° 06' 57''

JOHN H. MULLANEY
Consulting Radio Engineers
Washington, D. C.

ANTENNA PARAMETERS

#1 TOWER

G = 81.5°

FIGURE 16

MEASURED HORIZONTAL
NON-DIRECTIONAL PATTERN

RADIO STATION WETT
OCEAN CITY, MARYLAND

1590 KC 0.5 KW / 1 KW-D

FCC File No. BL-8089
Accepted 9-19-60

WETT
Ocean City, Maryland

1590 KC

WHPY

CORRECTED DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WHPY	Main Studio: Clayton, North Carolina
Frequency: 1590 kHz	Power: 5 kW
Notification List No. 1585	Date: June 19, 1974 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 35° 38' 49"
West Longitude: 78° 30' 21"

Authorized for Daytime operation. (DA-D)

Predicted effective Field: 425 mv/m at rated power.

---

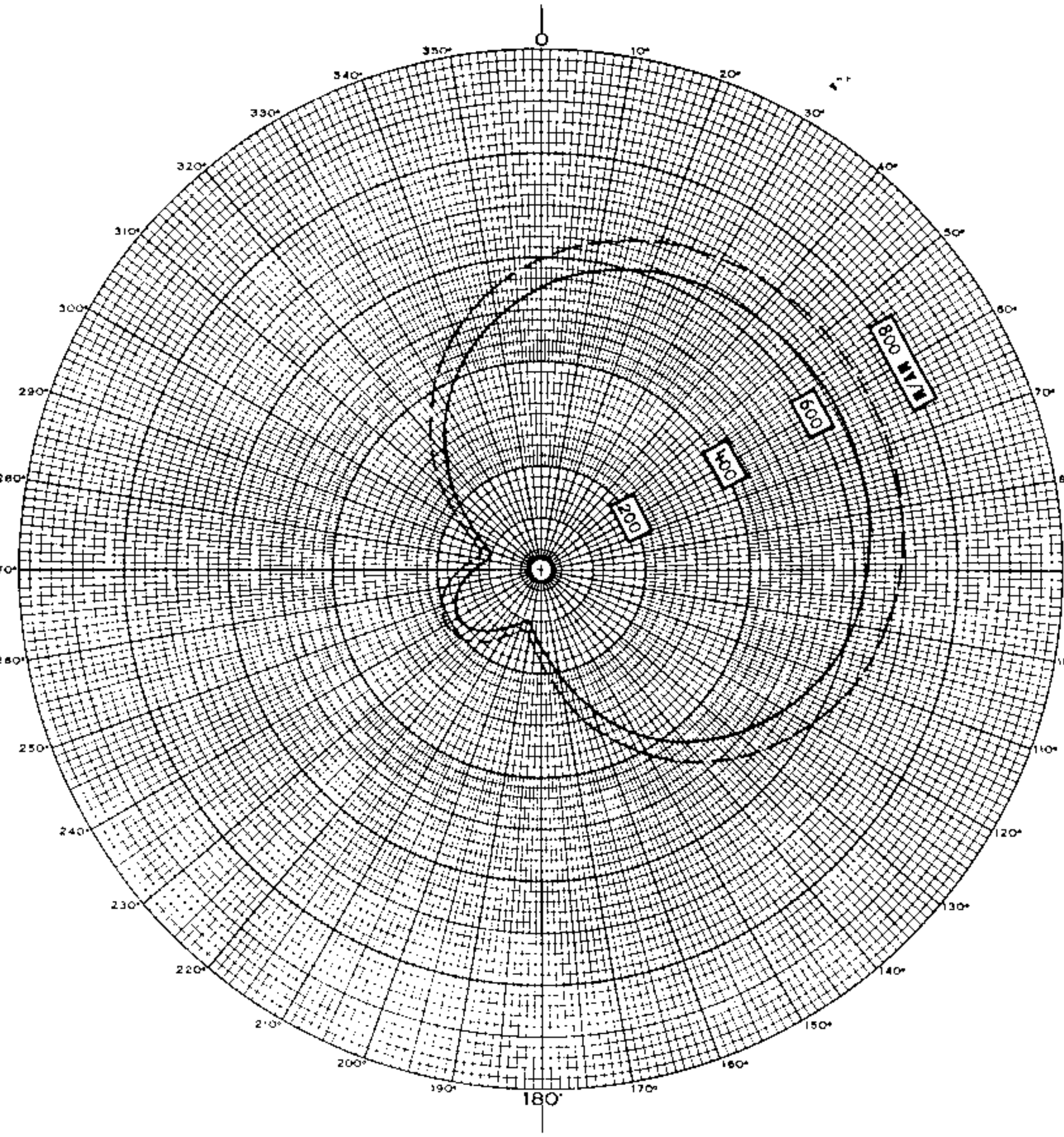
*Note: Please retain the description sheet and directional antenna radiation patterns notified for a new station at Clayton, North Carolina, in United States Change List Number 1489, dated August 9, 1972, and attach to this supplemental Description Sheet. This notification is for the purpose of indicating only a correction in the geographical coordinates of the center of the antenna system.

WHPY

Proposed Day (6-27-69ct)

New; Clayton Broadcasting Co.
Clayton, North Carolina

5kw,DA-D,D
1590 kc



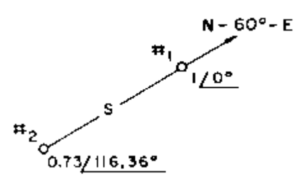
E_{RMS} = 425 MV/M

MEOV = - - - - -

LATITUDE 35° 38' 43"
LONGITUDE 78° 30' 20"

JOHN H. MULLANEY
AND
ASSOCIATES

ANTENNA PARAMETERS



S = 90°
G = 160°

FIGURE 4

PROPOSED DAYTIME DIRECTIONAL PATTERN

CLAYTON
NORTH CAROLINA

1590 KHz 5 KW, DA-D

FCC File No.BP-18472
Accepted 6-23-69

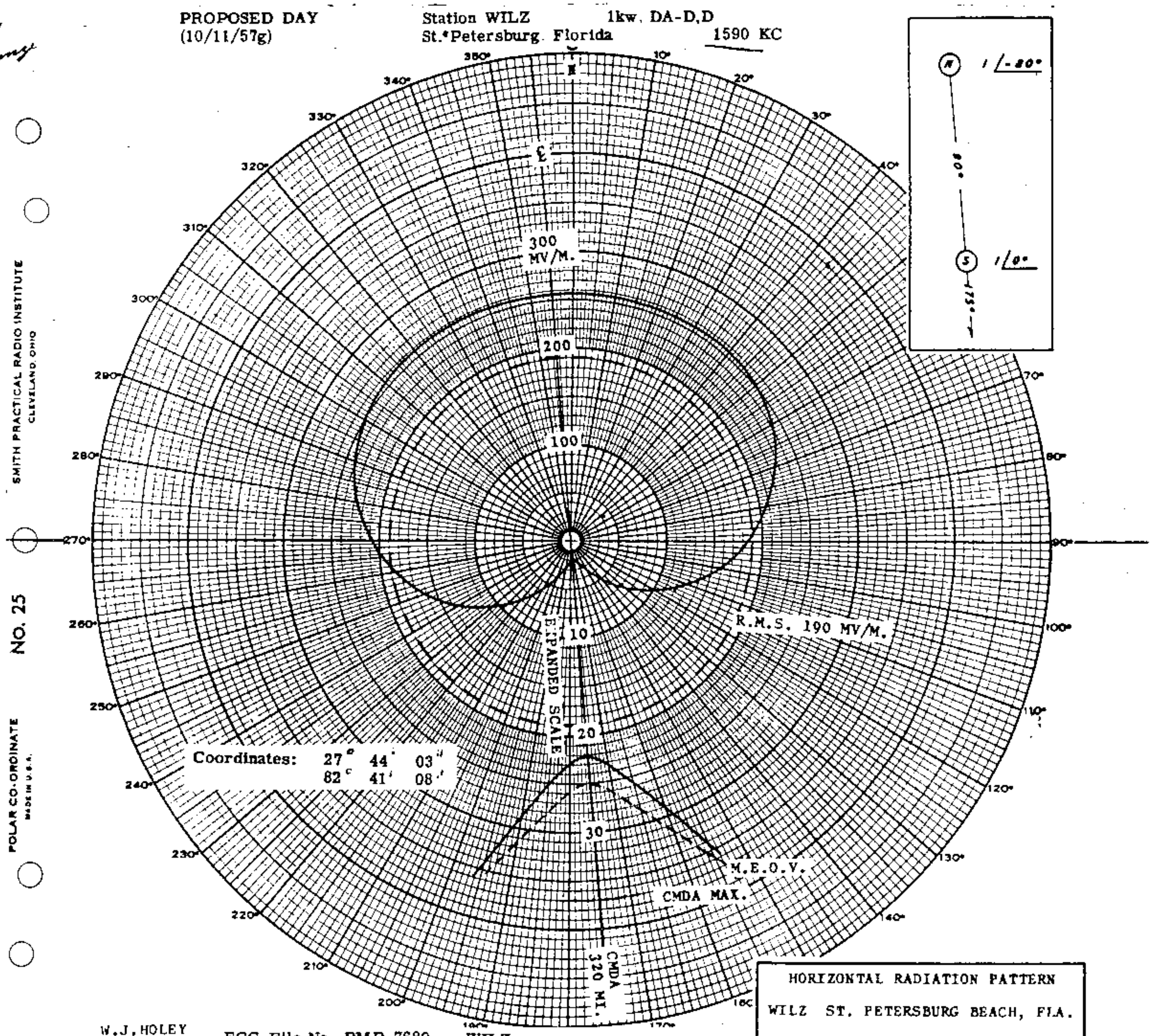
New; Clayton Broadcasting Co.
Clayton, North Carolina

1590 kc

Granted 10/2/57
mod of CP to change
location

PROPOSED DAY
(10/11/57g)

Station WILZ 1kw. DA-D,D
St. Petersburg, Florida 1590 KC



HORIZONTAL RADIATION PATTERN
WILZ ST. PETERSBURG BEACH, FLA.
1590 KC. 1 KW. DA.-D.

W.J. HOLEY
MAY 1957

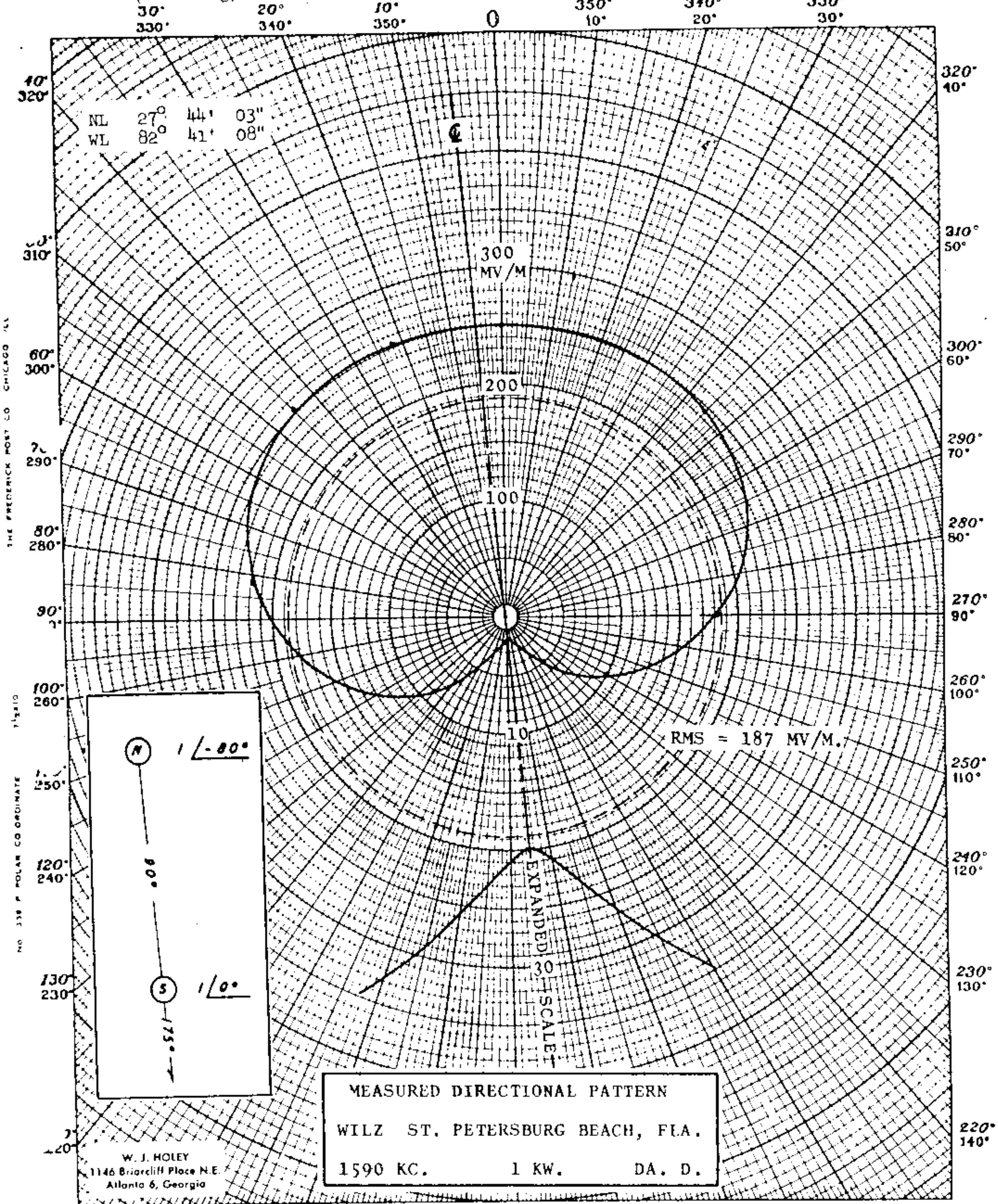
FCC File No. BMP-7680

WILZ
St. Petersburg, Florida 1590 KC

WILZ

MEASURED DAY
(2-11-58g)

Station WILZ 1kw, DA-D,D
St. Petersburg Beach, Florida 1590 KC



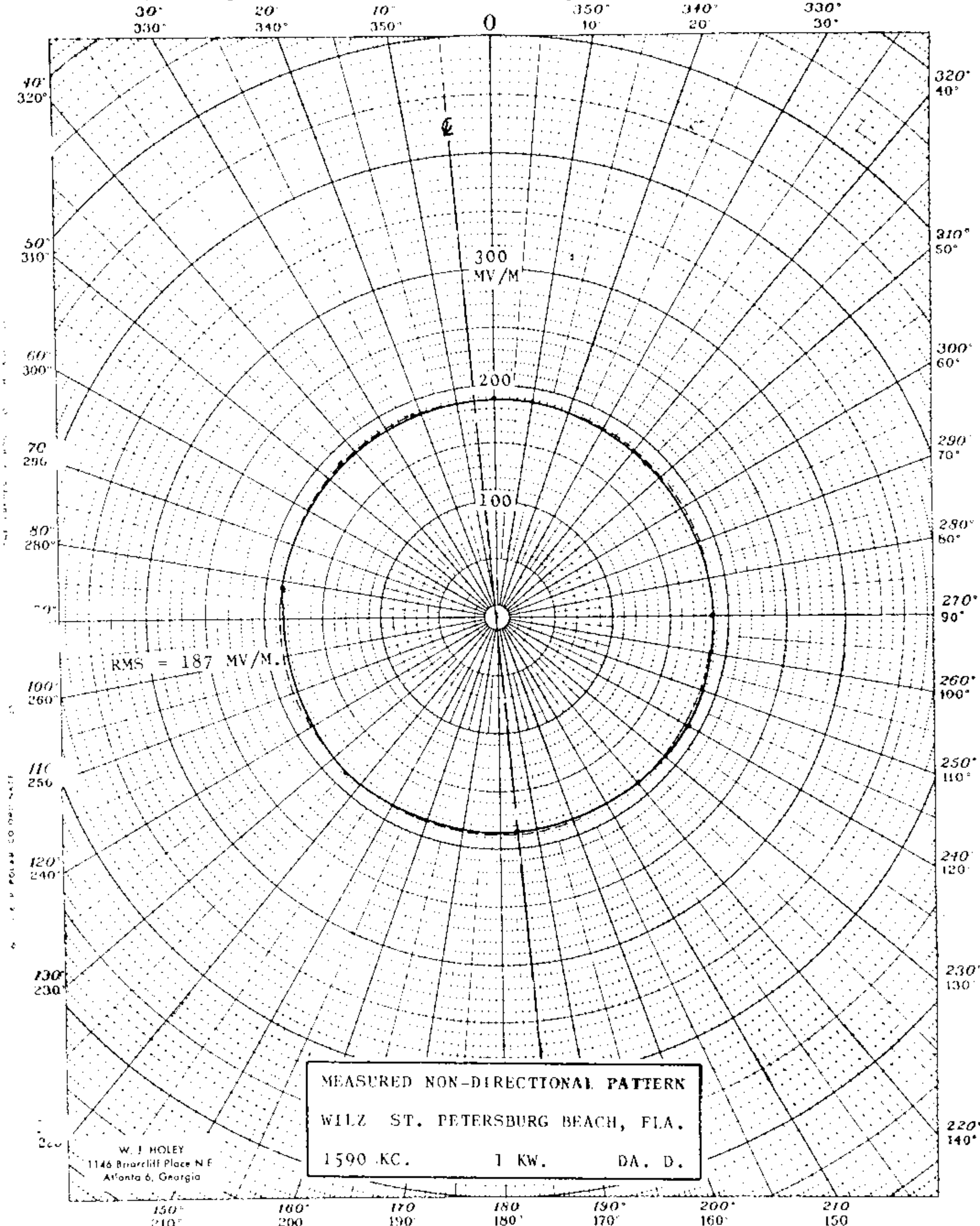
FCC File No. BL-6945
Accepted 1-20-58

WILZ
St. Petersburg Beach, Florida 1590 KC

WILZ

MEASURED NON-DA (2-11-58g)

Station WILZ 1kw, DA-D,D
St. Petersburg Beach, Florida 1590 KC



FCC File No. BL-6945
Accepted 1-20-58

WILZ
St. Petersburg Beach, Florida 1590 KC

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WJRO

Main Studio: Glen Burnie, Maryland

Frequency: 1590 kHz

Power: 1kw Night 1kw Day

Notification List No. 1789

Date: September 12, 1980 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 39° 10' 36"
West Longitude: 76° 37' 20"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation (DA-2)
Number of elements: 7
Type of elements: Series excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	SE(#1)	C(#2)	NE(#3)	NW(#4)	WNW(#5)	W(#6)	SW(#7)
HEIGHT ABOVE INSULATORS:	140'	140'	140'	140'	140'	140'	140' (81.5°)
NIGHT PHASING:	-126	—	0		-20	—	-156
NIGHT FIELD RATIO:	0.80	—	1.0		0.60	—	0.48
DAY PHASING:	+78.16	0	—	-75.28	—	+82.39	+100.37
DAY FIELD RATIO:	0.763	1.0	—	1.008	—	0.609	0.887

SPACING AND ORIENTATION: With tower #1(SE) as reference, tower #2(C) is spaced 189' (110°) at a bearing of 307° and tower #3(NE) is spaced 249.2' (145°) at a bearing of 355° true; With tower #2(C) as reference, tower #4 (NW) is spaced 426.2' (248°) at bearing of 292.58° True and Tower #6(W) is spaced 260.1' (151.4°) at bearing of 272.61° True and tower #7(SW) is spaced 331.4' (192.9°) at bearing of 242.56° True. With tower #3(NE) as reference tower #5(WNW) is spaced 446.8' (260°) at bearing of 265° True.

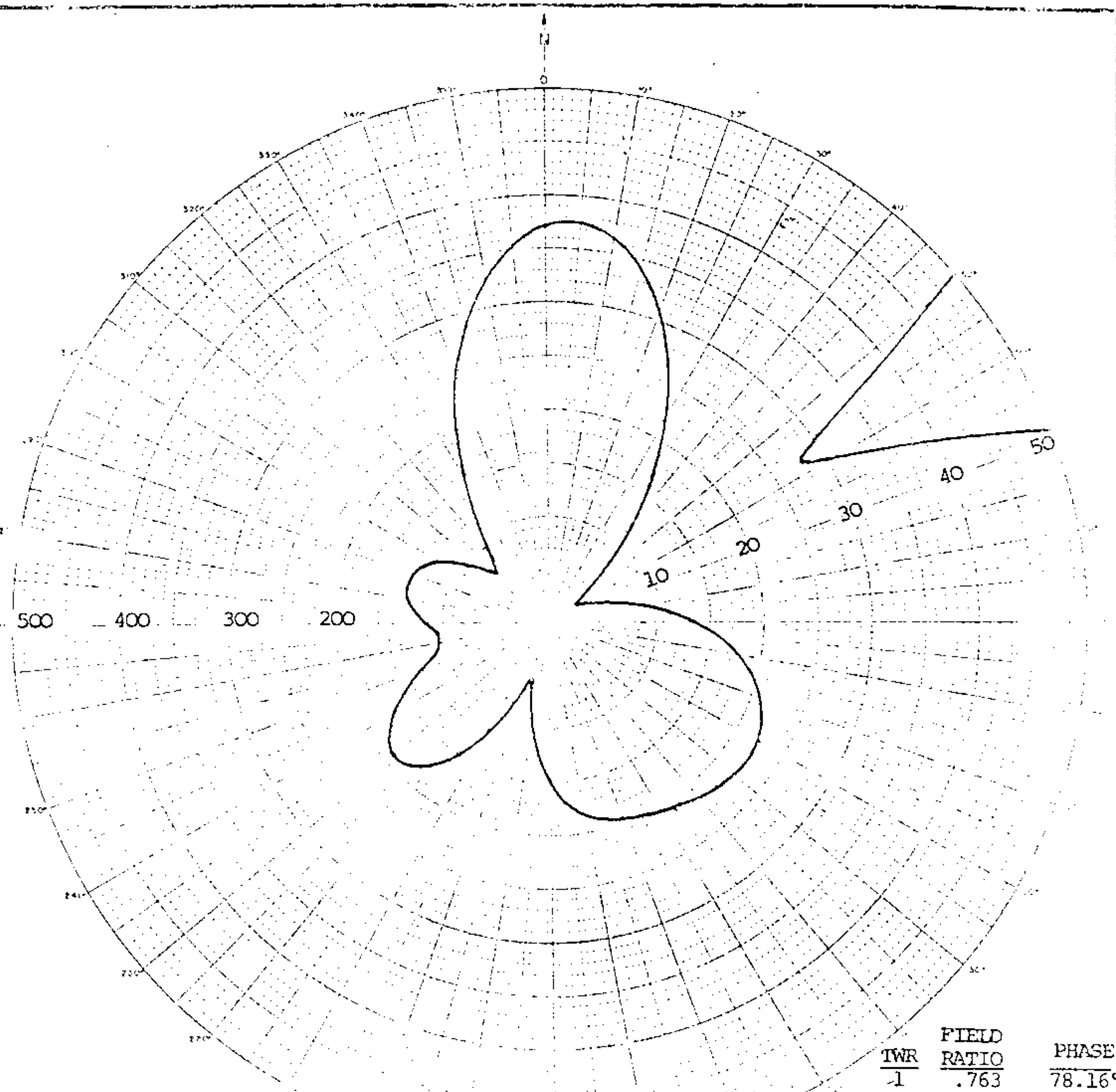
GROUND SYSTEM: 120-155 equally spaced copper radials plus 120 - 50' interspaced radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

WJRO

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	176 mv/m	180.17 mv/m	184.9 mv/m
Night	194.3 mv/m	211.3 mv/m	204.1 mv/m

WJRO

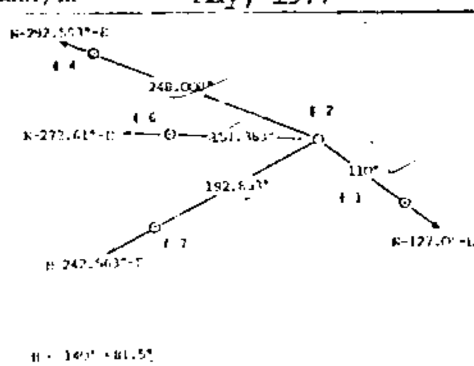


TWR	FIELD RATIO	PHASE
1	.763	78.16°
2	1.000	0°
4	1.008	-75.28°
6	.609	82.39°
7	.887	100.37°

ERMS = 176.01 (BY ADJUSTMENT)
RSS = 180.17
RSS/RMS = 1.024
STANDARD RADIATION RMS = 184.81mV/m

May, 1977

LATITUDE: 39°10'36"
LONGITUDE: 76°37'20"



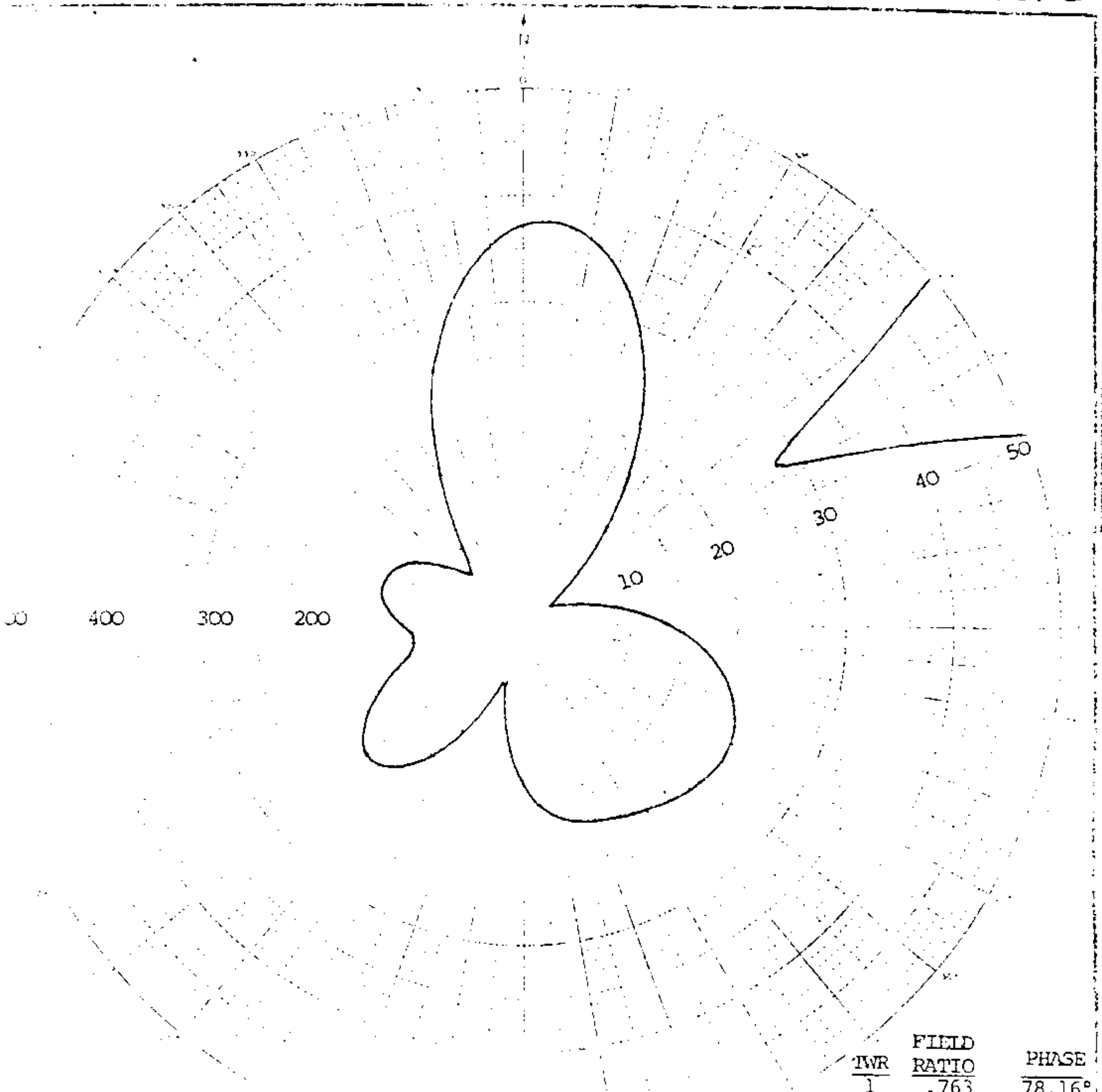
AMENDED

FIGURE 18

PROPOSED DAYTIME PATTERN
RADIO STATION WJRO
GLEN BURNIE, MARYLAND
1590 KHz 1 KW, DA-2, U

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

WJRO

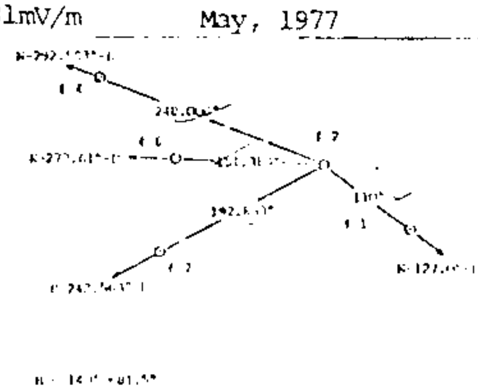


TWR	FIELD RATIO	PHASE
1	.763	78.16°
2	1.000	0°
4	1.008	-75.28°
6	.609	82.39°
7	.887	100.37°

: = 176.01 (BY ADJUSTMENT)
= 180.17
RMS = 1.024
DARD RADIATION RMS = 184.81mV/m

May, 1977

LATITUDE: 39°10'36"
LONGITUDE: 76°37'20"



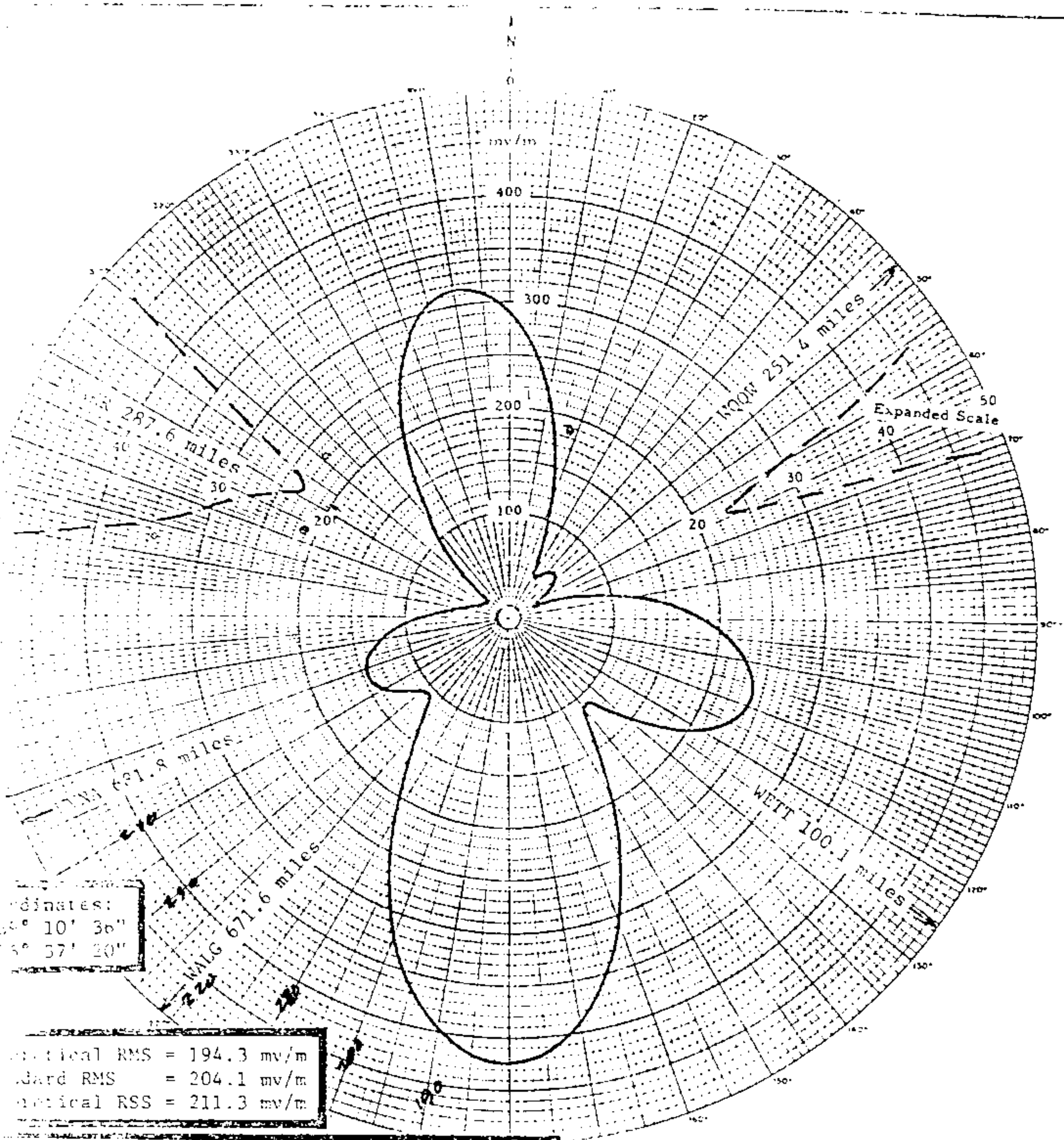
V. CARECKIS & ASSOC.
CONSULTING RADIO ENGINEERS
WASHINGTON, D.C.

AMENDED

FIGURE 18

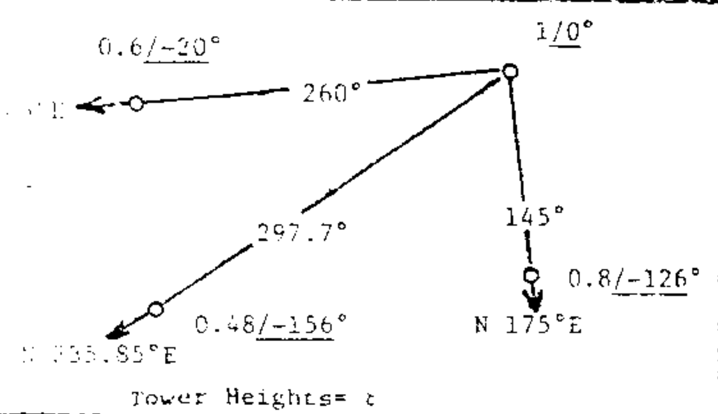
PROPOSED DAYTIME PATTERN
RADIO STATION WJRO
GLEN BURNIE, MARYLAND
1590 KHz 1 KW,DA-2,U

WJRO



...dinates:
...° 10' 36"
...° 37' 20"

...tical RMS = 194.3 mv/m
...dard RMS = 204.1 mv/m
...tical RSS = 211.3 mv/m



CONSULTING ENGINEERS
STEEL, ANDRUS & ADAIR
351 Scott Drive
Silver Spring, Md. 20904

Figure 1
Proposed Nighttime Horizontal
Standard Radiation Pattern
WJRO Glen Burnie, Maryland
1590KHz 1KW DA-2 U
October 1977

~~WISZ~~
WJRO

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WISZ Main Studio: Glen Burnie, Maryland

Frequency: 1590 kHz Power: 0.5 kW

Notification List No. 1583 Date: June 5, 1974 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 39° 10' 36" West Longitude: 76° 37' 20"

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-2)
Number of elements: 7
Type of elements: Series-excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	W(#4)	NW(#5)	SW(#7)	WC(#6)	EC(#2)	NE(#3)	SE(#1)
HEIGHT ABOVE INSULATORS:	140'	140'	140'	140'	140'	140'	140'(81.5
NIGHT PHASING:	-	+57°	-57°	-	-	+57°	-57°
NIGHT FIELD RATIO:	-	0.8682	0.7856	-	-	1.0	0.9049
DAY PHASING:	-208.55°	-	-	-36.84°	-152.81°	-	0°
DAY FIELD RATIO:	0.37	-	-	0.503	0.492	-	1

SPACING AND ORIENTATION: Daytime, the towers are located at the vertices of a parallelogram the long sides of which are 429.5' (250°) in length on a line bearing 107° true. The short sides are 189' (110°) in length on a line bearing 127° true.

Nighttime, the towers are located at the vertices of a parallelogram the long sides of which are 446.5' (260°) in length on a line bearing 85° true. The short sides are 249' (145°) in length on a line bearing 355° true.

GROUND SYSTEM: 120-155' equally spaced copper radials plus 120-50' interspaced radial about each tower. Radials are shortened and bonded to transverse stra along intersections between towers.

Predicted effective Night Field: 125.8 mv/m at rated power.

Predicted effective Day Field: 130 mv/m at rated power.

(Cont'd)

~~WISZ~~
WJRO

Note: Please retain the Nighttime directional antenna radiation patterns previously notified for Station WISZ and attach to this Revised Description Sheet and Daytime pattern. This notification concerns only a change in the Daytime operation of the station with Nighttime operation continued as previously notified.

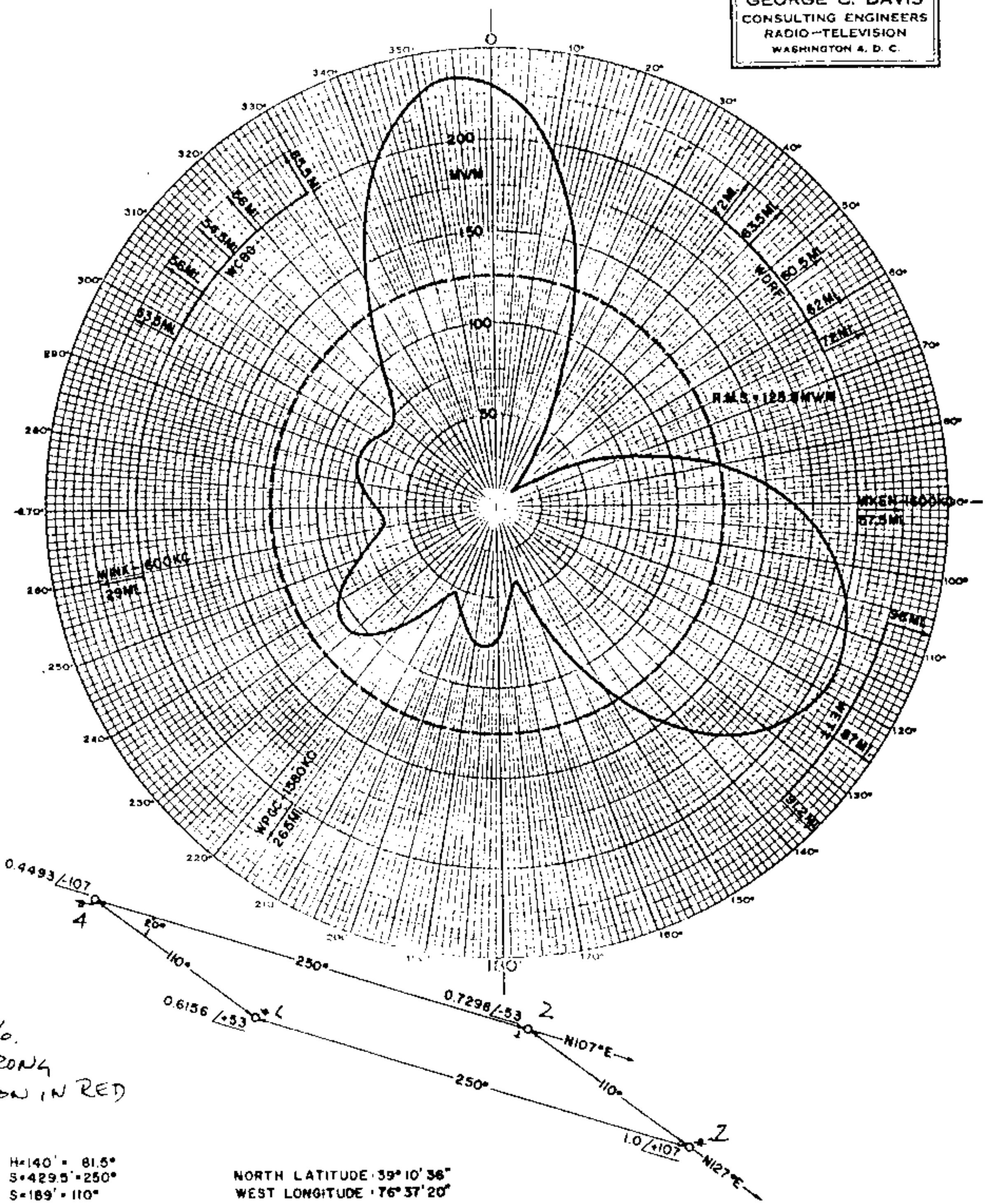
CTR NO 31226A5

~~W18Z~~ WJRO

PROPOSED DAY
(4-10-61g)

New; South ~~Smith~~field Bcstng. Co., Inc. 500w, DA-2,U
Glen Burnie, Maryland 1590 KC

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



Tower No.
WRONG
Correction in Red

H=140' = 81.5°
S=429.5' = 250°
S=189' = 110°

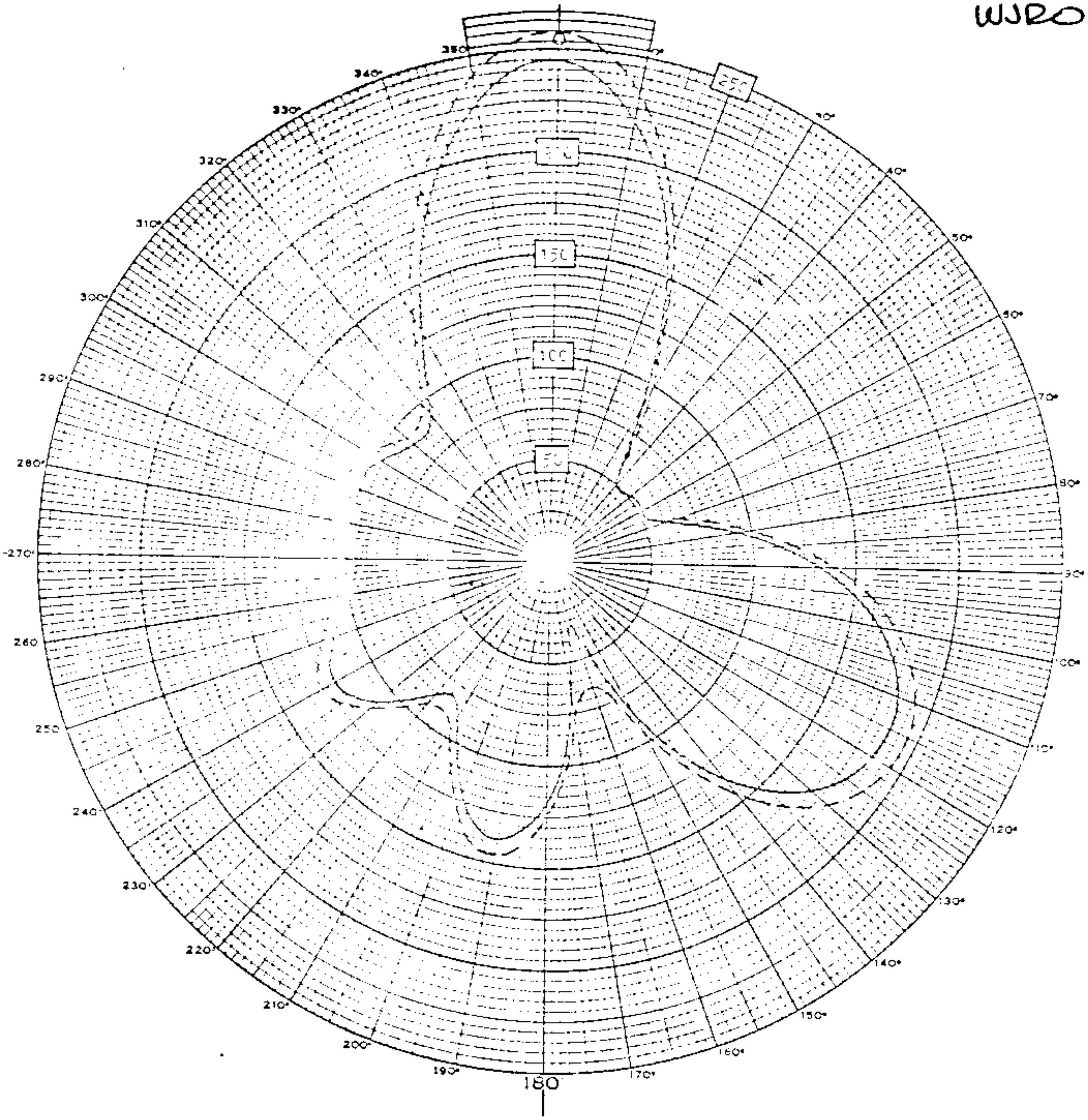
NORTH LATITUDE 39° 10' 36"
WEST LONGITUDE 76° 37' 20"

COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR PROPOSED DAYTIME OPERATION AT
GLEN BURNIE, MARYLAND
1590 KC - 0.5 KW - DA-2-U

FCC File No. BP-12372
Accepted 3-31-61 (Amended)

Smithfield Broadcasting Co., Inc.
Glen Burnie, Maryland 1590 KC

WISZ WJRO



E_{RMS} = 130 MV/M

RSS/RMS RATIO = [illegible]

DECEMBER 1973

LATITUDE 39° 10' 36"

LONGITUDE 76° 37' 20"

PETER V. [illegible]

CONSULTING [illegible] ENGINEER[illegible]

WASHINGTON, D.C.

ANTENNA PARAMETERS

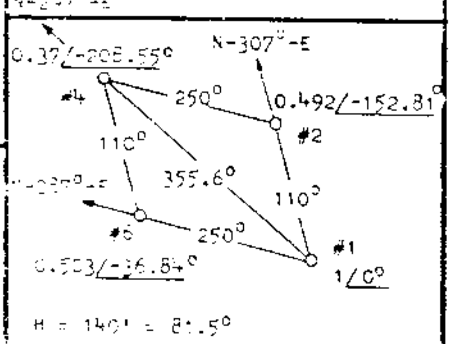


FIGURE 12

PLOT PROPOSED DAYTIME DIRECTIONAL PATTERN

RADIO STATION WISZ GLEN BURNIE, MARYLAND

1590 KHz

0.5 KW, DA-2,U

~~WISZ~~
WWRO

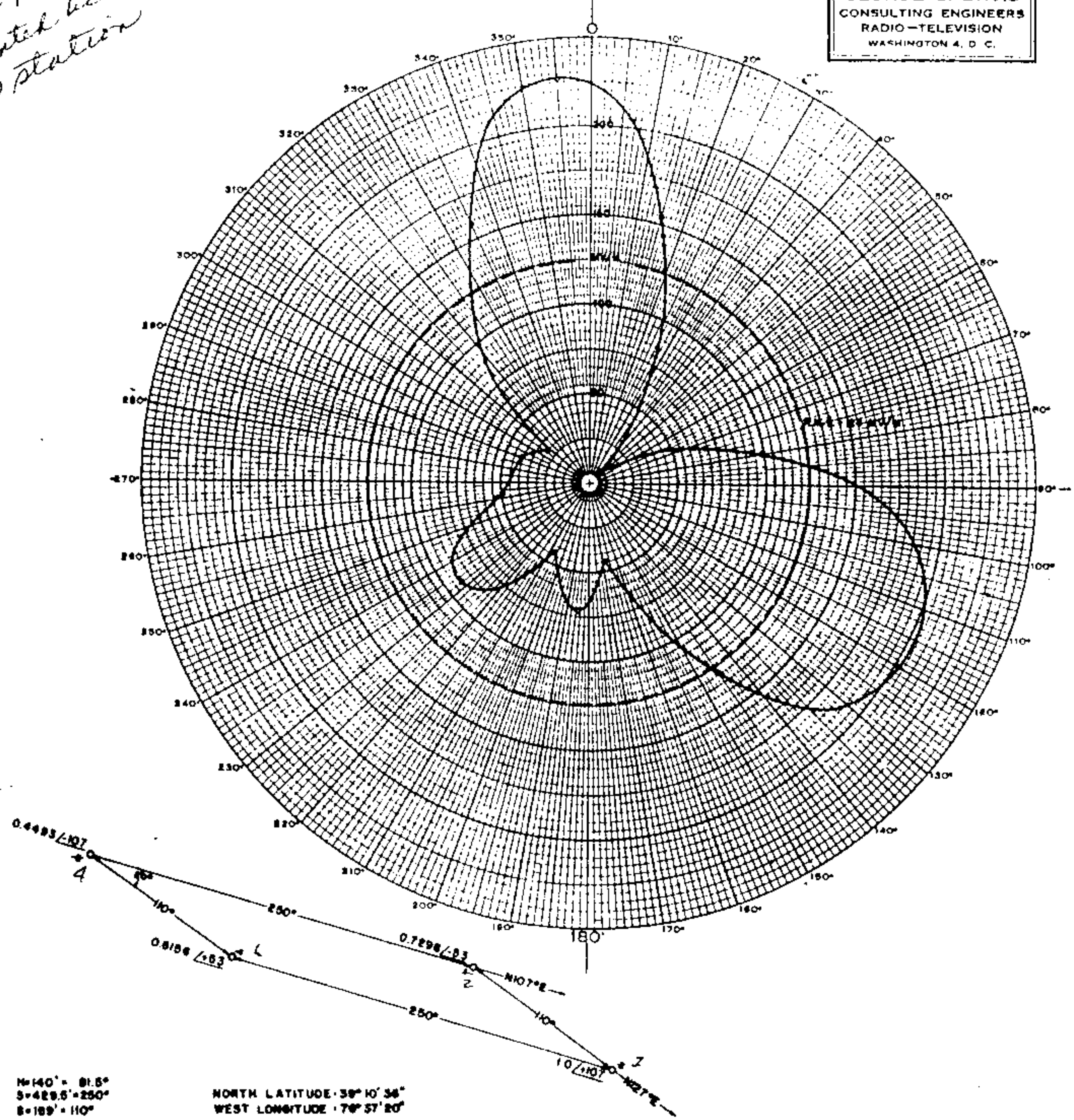
Measured Day
(6-28-63ct)

Station WISZ
Glen Burnie, Maryland

500w,DA-2,U
1590 kc

10-4-63
master license for
new station

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



MEASURED
HORIZONTAL PLANE PATTERN
FOR DIRECTIONAL DAYTIME OPERATION
WISZ GLEN BURNIE MARYLAND
1590 KC - 0.5 KW - DA-2-U
APRIL 1963

FCC File No.BL-10074
Accepted 6-18-63

Station WISZ
Glen Burnie, Maryland

1590 kc

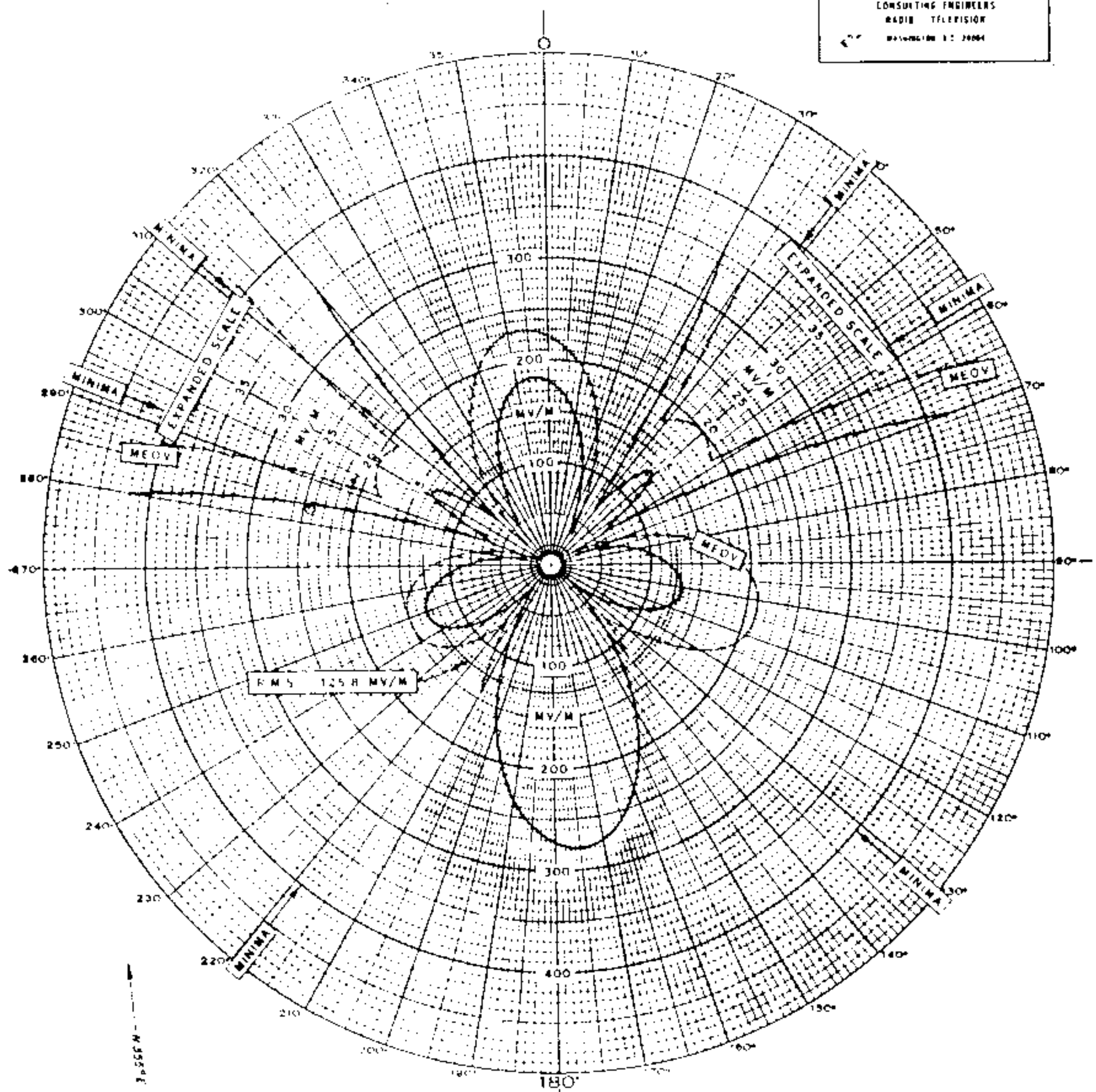
WWRO
~~WISZ~~

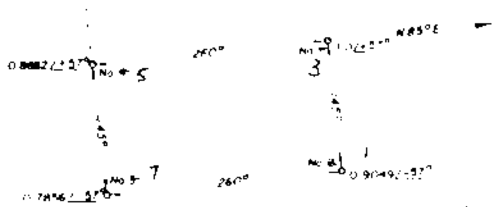
Proposed Night
(1-22-71ct)

Station WISZ
Glen Burnie, Maryland

500w,DA-2,U
1590 kc

COHEN & DIPPELL
CONSULTING ENGINEERS
RADIO · TELEVISION
WASHINGTON D.C.





NORTH LATITUDE 39° 10' 36"
WEST LONGITUDE 76° 37' 20"

H = 140 - 0.5°
S = 446.5' 260°
S = 249 - 45°

COMPUTED HORIZONTAL
PLANE RADIATION PATTERN
FOR PROPOSED NIGHTTIME OPERATION OF
WISZ, GLEN BURNIE, MARYLAND
1590 kHz - 0.5 kW - DA-2 - U
FEBRUARY 197

FCC File No.BP-18945
Accepted 1-8-71

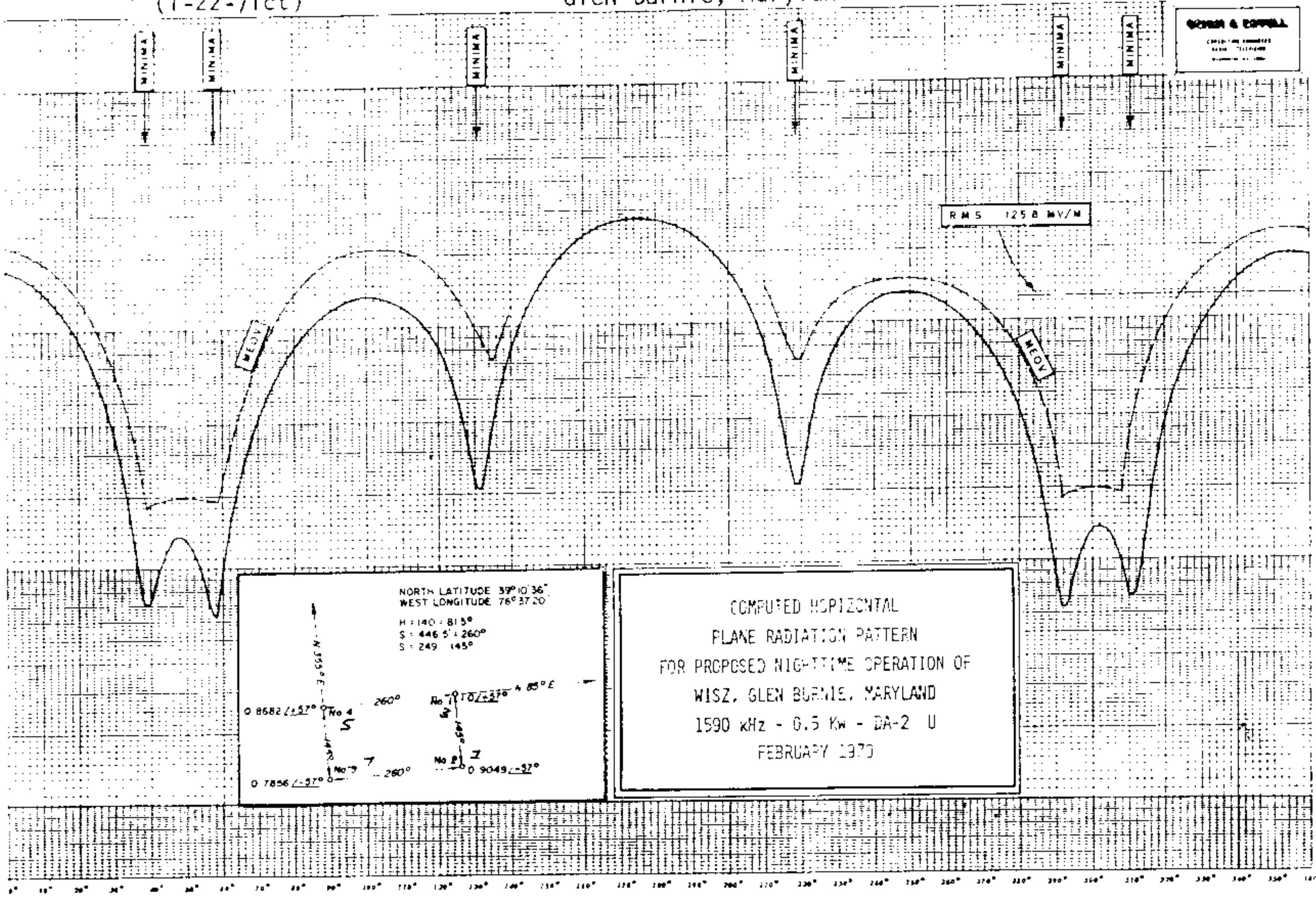
Station WISZ
Glen Burnie, Maryland

1590 kc

Proposed Night Nulls
(1-22-71ct)

Station WISZ
Glen Burnie, Maryland

500w, DA-2, U
1590 kc



FCC File No. BP-18945
Accepted 1-8-71

Station WISZ
Glen Burnie, Maryland

1590 kc

~~WISZ~~ WJRO

WJR O ~~WISZ~~

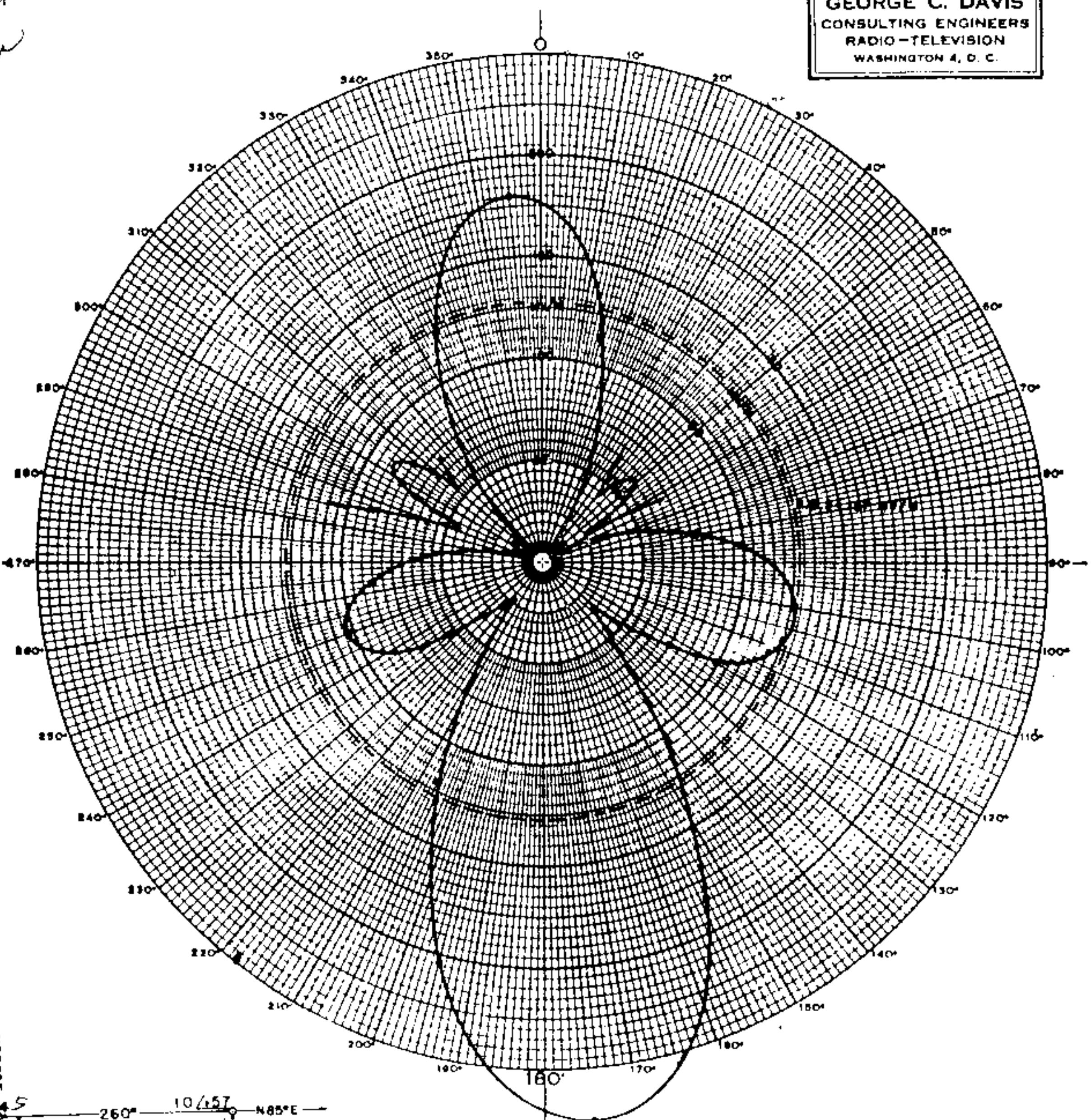
Measured Night
(6-28-63ct)

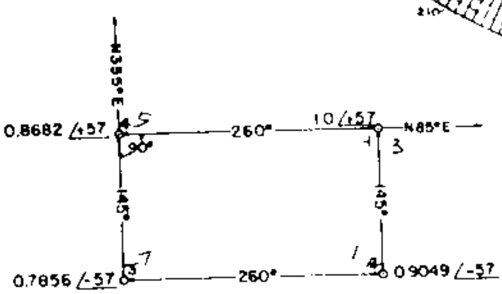
Station WISZ
Glen Burnie, Maryland

500w,DA-2,U
1590 kc

10-4-63
transfer for
new station

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





H=140' = 815°
S=446.5' = 260°
S=249' = 145°

NORTH LATITUDE 39°10'38"
WEST LONGITUDE 76°37'20"

MEASURED
HORIZONTAL PLANE PATTERN
FOR DIRECTIONAL NIGHTTIME OPERATION
WISZ GLEN BURNIE MARYLAND
1590 KC 0.5 KW DA-2-U
APRIL 1963

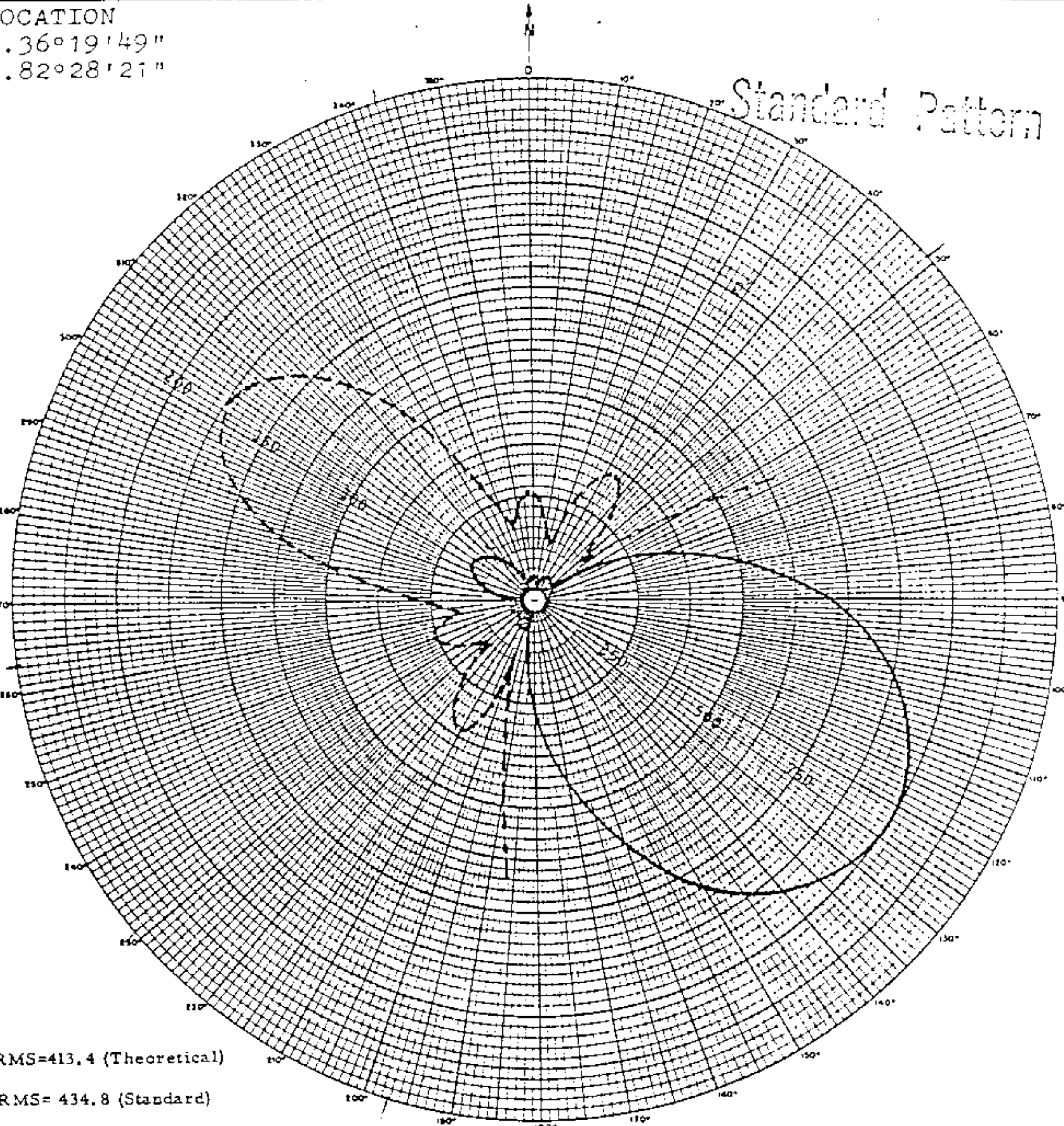
FCC File No.BL-10074
Accepted 6-18-63

Station WISZ
Glen Burnie, Maryland

1590 kc

WJSO
1590

LOCATION
N.36°19'49"
W.82°28'21"



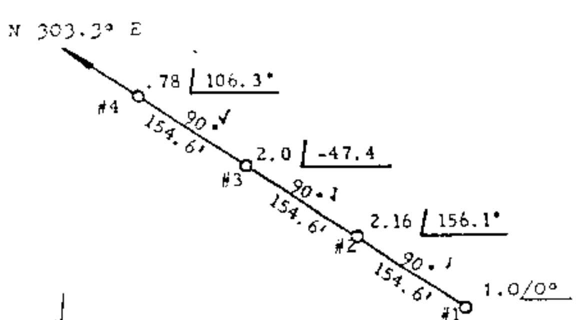
RMS=413.4 (Theoretical)

RMS= 434.8 (Standard)

RSS = 941.5

- - - - - - - EXPANDED

HORIZONTAL RADIATION PATTERN



G = 81.5°

PALMER A. GREER
227 FARR'S BRIDGE RD.
GREENVILLE, S. C. 29611

Fig. 4 (Rev.)
MOUNTAIN VIEW BROADCASTING CO.
RADIO STATION WJSO
JONESBORO, TENNESSEE
1590 KHz 5.0 KW's DA-N
HORIZONTAL RADIATION PATTERN

WJSO

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: W J S O   Main Studio: Jonesboro, Tennessee

Frequency: 1590 kHz   Power: 5 kW Night 5 kW Day

Notification List No. 1779   Date: September 27, 1978 Class: III

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

Daytime				Nighttime			
North Latitude:	36°	17'	36"	North Latitude:	36°	19'	49"
West Longitude:	82°	24'	23"	West Longitude:	82°	28'	21"

DAYTIME ANTENNA CHARACTERISTICS

Predicted effective daytime field (omni-directional) at rated power 594.79 mV/m

Authorized for Daytime operation. (ND-D)
Number of elements: 1
Type of elements: Series excited, uniform cross-section, guyed, vertical steel tower.

HEIGHT ABOVE INSULATORS: 360' (209.5°)

GROUND SYSTEM: 180-120' equally spaced copper radials about each tower.

NIGHTTIME 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	#1(SE)	#2(SC)	#3(NC)	#4(NW)
HEIGHT ABOVE INSULATORS:	140'	140'	140'	140'(81.5°)
NIGHT PHASING:	0°	+156.1°	-47.4	+106.3°
NIGHT FIELD RATIO:	1.0	2.16	2.0	0.78

WJSO

SPACING AND ORIENTATION: Adjacent towers in a row are spaced 154.6'(90°) on a line bearing 303.3° true.

GROUND SYSTEM: 120-155' 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:

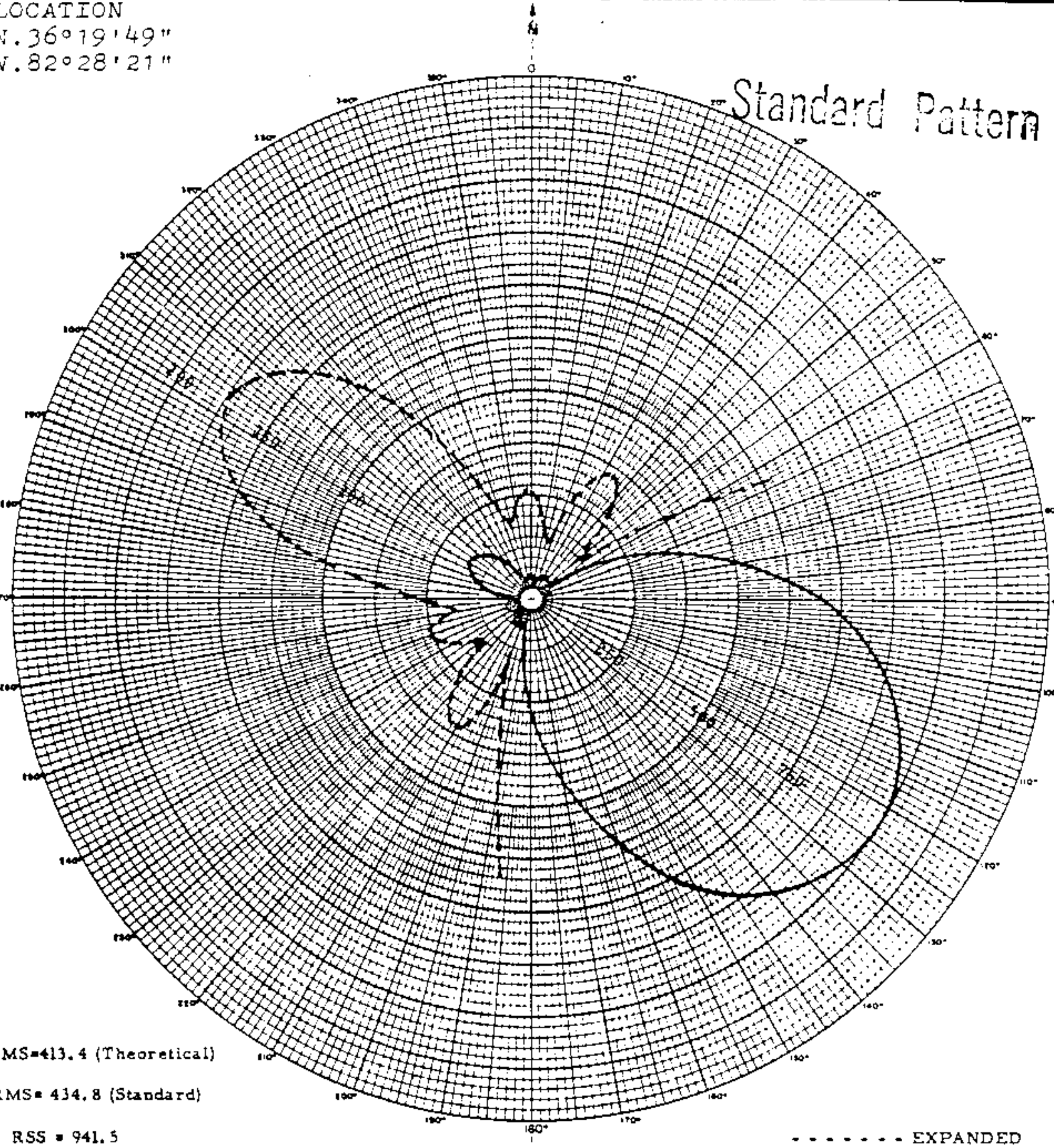
	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Night	413.4 mV/m	1046.1 mV/m	434.8 mV/m

Note: This notification concerns only a change in the Nighttime operation of the station with Daytime operation continued as previously notified.

WJSO

LOCATION
N.36°19'49"
W.82°28'21"

Standard Pattern



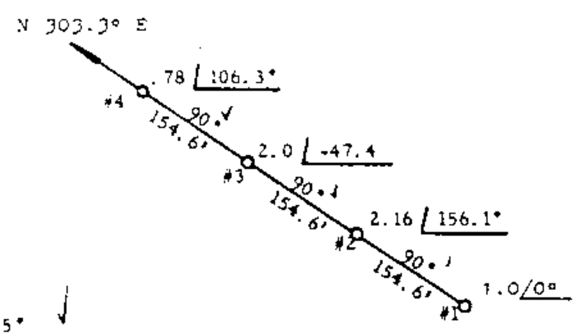
RMS=413.4 (Theoretical)

RMS= 434.8 (Standard)

RSS = 941.5

- - - - - - - EXPANDED

HORIZONTAL RADIATION PATTERN



G = 81.5°

PALMER A. GREER
227 FARR'S BRIDGE RD.
GREENVILLE, S. C. 29611

Fig. 4 (Rev.)
MOUNTAIN VIEW BROADCASTING CO.
RADIO STATION WJSO
JONESBORO, TENNESSEE
1590 KHz 5.0 KW's DA-N
HORIZONTAL RADIATION PATTERN

WISZ

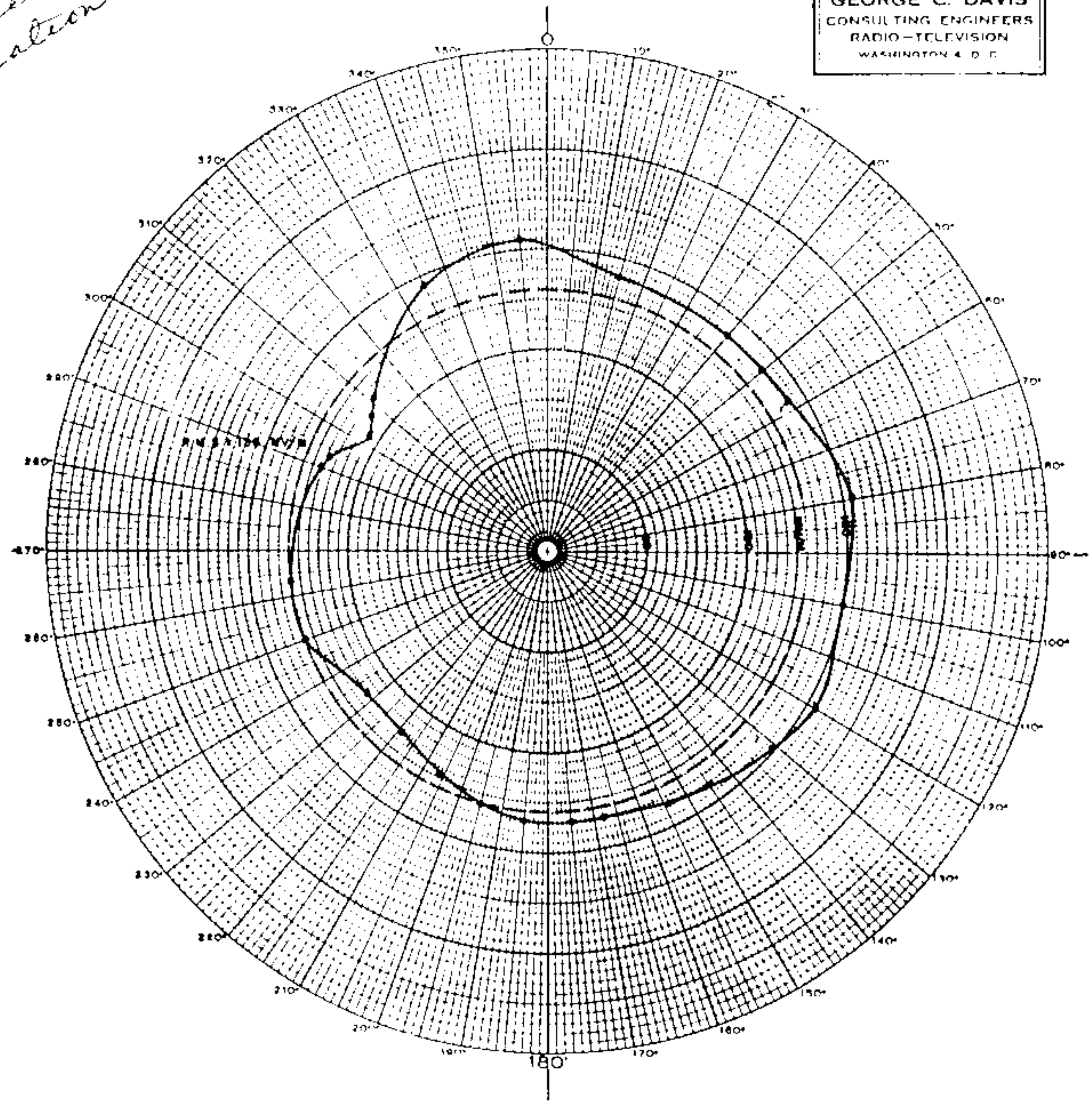
Measured Non-DA
(6-28-63ct)

Station WISZ
Glen Burnie, Maryland

500w, DA-2, U
1590 kc

10-4-63
Granted license
for new station

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



MEASURED
HORIZONTAL PLANE PATTERN
FOR NON-DIRECTIONAL DAYTIME OPERATION
WISZ GLEN BURNIE, MARYLAND
1590 KC 0.5 KW DA-2-U
APRIL 1963

FCC File No.BL-10074
Accepted 6-18-63

Station WISZ
Glen Burnie, Maryland

1590 kc

PROPOSED NIGHT
(3-28-60g)

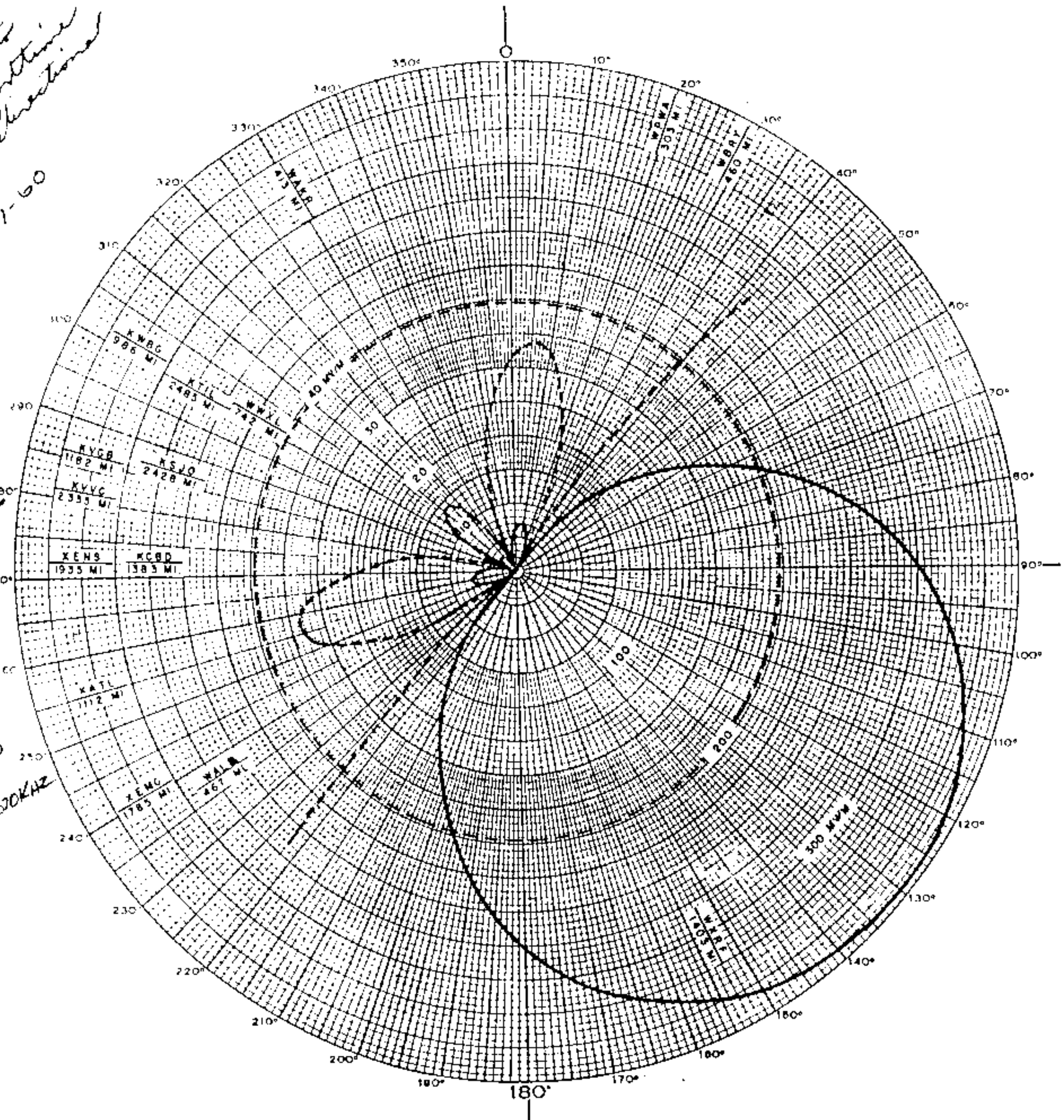
Station WGTC 1kw, 5kw-LS, DA-N,U
Greenville, North Carolina 1590 KC

WNCT

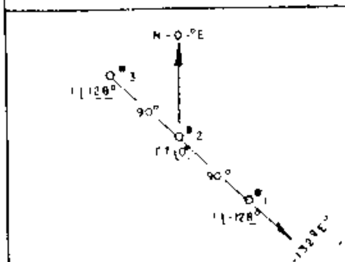
Granted CP to resume nighttime oper. with directional antenna 7-27-60

11-29-60 granted for unlimited time operation with DA-N

10/12/67 GRANTED CP TO CHANGE FREQUENCY TO 1070KHZ



TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No	ELECTRICAL HEIGHT G°	TRUE TOWER ORIENTATION ϕ°	SPACING S°	PHASING ψ°	HORIZONTAL FIELD mv/m E	FIELD RATIO F	ELEV ANGLE θ°	ELEVATION RMS FIELD mv/m E_θ
1	90	132	90	-128		1	0	197
2	90	132	90	0		1.7	10	
3	90	132	90	128		1	20	
4							30	
5							40	
6							50	
7							60	
8							70	
9							80	
10							E_s =	mv/m
							P_r =	kw

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☒

STATION DATA

CALL	WGTC
FREQUENCY	1590 kc
POWER	1 kw
TIME OF OPERATION	U
TYPE OF OPERATION	DA-N
DAYTIME TOWERS	1
NIGHTTIME TOWERS	1, 2, & 3
No RADIALS PER TOWER	120
LENGTH OF RADIALS	90 - 155 ft
GROUND SCREEN DIMENSION	48' SQ
Lat.	35° 37' 53''
Long.	77° 25' 24''
SUPERSEDES	
PATTERN No	500302

This pattern was originally filed in 1950. Engineering for BP-13956 refers to this application which was dismissed in 1951.

FIG. 12

Consulting Radio Engineers
DIXIE B. McKEY & ASSOCIATES

RADIO STATION WGTC
GREENVILLE, N.C.

NIGHT HORIZONTAL PATTERNS

5 KW, LS - 1 KW, U 1590 KC

FCC File No. BP-13956
Accepted 3-14-60

WGTC
Greenville, North Carolina 1590 KC

WNCT

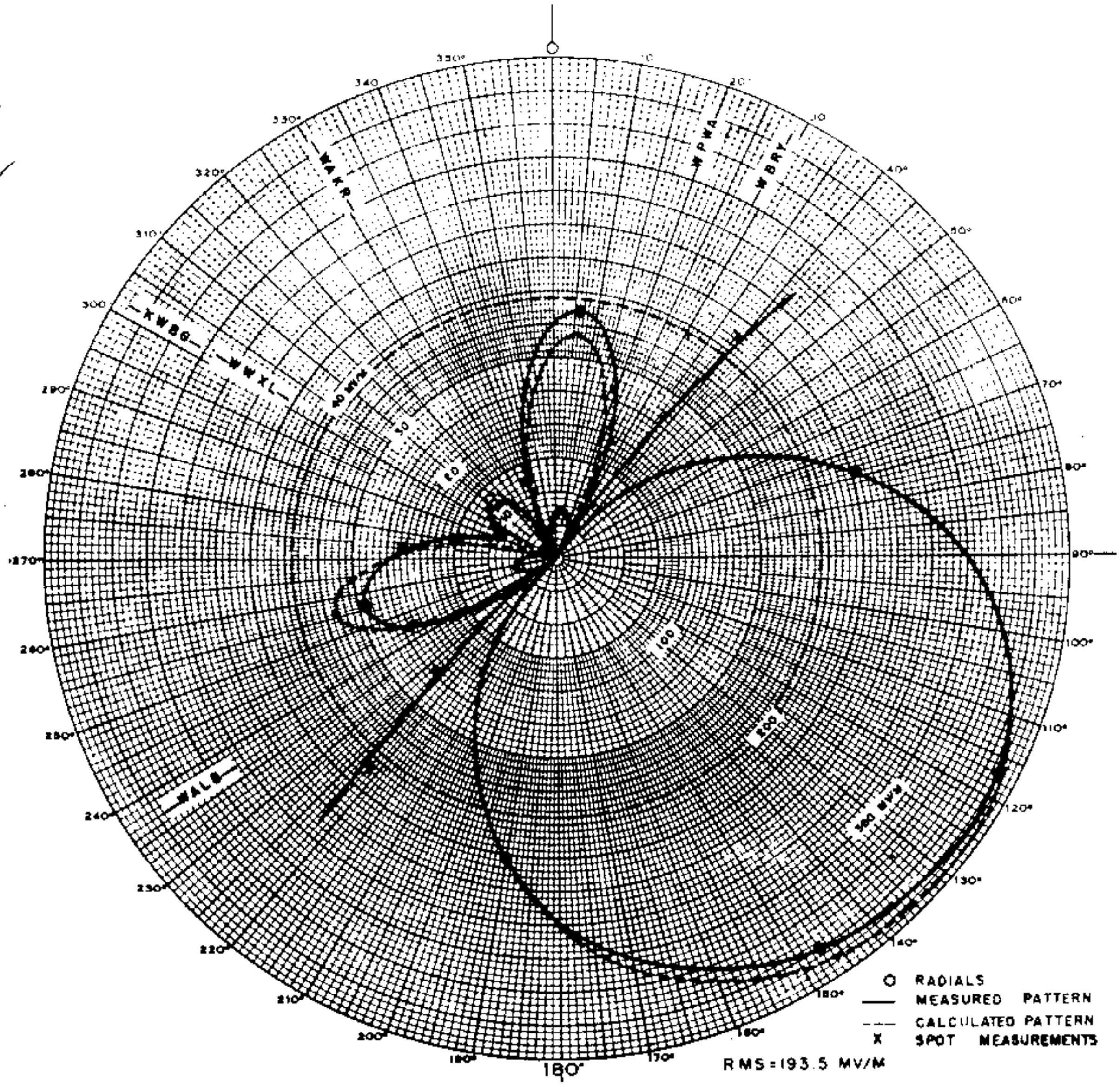
MEASURED NIGHT
(9-13-60g)

Station WGTC
Greenville, North Carolina

1kw,5kw-LS, DA-N,U
1590 KC

6-27-60
Granted for
unlimited time
operation with
DA-N

VIDE
1070 KHz



STATION DATA

CALL	WGTC
FREQUENCY	1590 kc
POWER	1 kw
TIME OF OPERATION	U
TYPE OF OPERATION	DA-N
DAYTIME TOWERS	1
NIGHTTIME TOWERS	1, 2, & 3
No RADIALS PER TOWER	120
LENGTH OF RADIALS	90 - 155 ft
GROUND SCREEN DIMENSION	48' 90
PATTERN No	500302

North Latitude 35° 37' 53''
West Longitude 77° 25' 24''

Consulting Radio Engineers
DIXIE B. McKEY & ASSOCIATES

MEASURED NIGHTTIME HORIZONTAL PATTERN

Proof of Performance for resumption of nighttime operation as filed by Pete Johnson - Engineer, does not include directional patterns.

FCC File No. BL-8075
Accepted 8-31-60

WGTC
Greenville, North Carolina

1590 KC

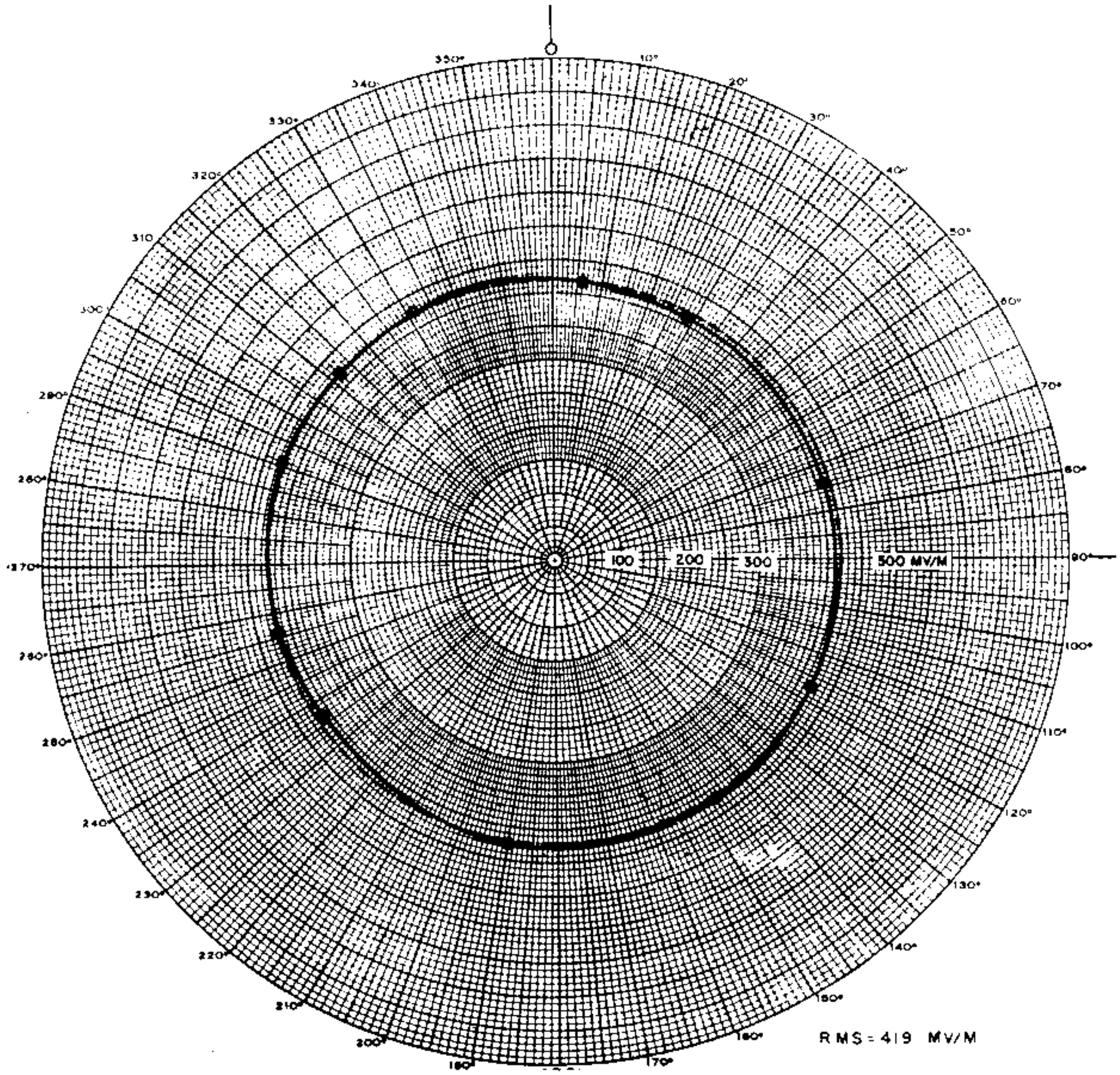
WNCT

VIDE 1070 KHz

MEASURED NON-DA
(9-13-60g)

Station WGTC
Greenville, North Carolina

1kw, 5kw-LS, DA-N,U
1590 KC



RMS = 419 MV/M

O • RADIALS

STATION DATA	
CALL	W G T C
FREQUENCY	1 5 9 0 kc
POWER	5 kw
TIME OF OPERATION	U
TYPE OF OPERATION	D A - N
DAYTIME TOWERS	1
NIGHTTIME TOWERS	1 , 2 , 3
No. RADIALS PER TOWER	1 2 0
LENGTH OF RADIALS	8 0 - 1 8 5 ft

North Latitude 35° 37' 53''
West Longitude 77° 25' 24''

PATTERN No.	5 0 0 3 0 2

Consulting Radio Engineers DIXIE B. McKEY & ASSOCIATES

MEASURED DAYTIME HORIZONTAL PATTERN

Proof of Performance for resumption of nighttime operation as filed by Pete Johnson - Engineer, does not include directional patterns.

FCC File No. BL-8075
Accepted 8-31-60

WGTC
Greenville, North Carolina

1590 KC

WNCT

MEASURED
DAY(NON-DA)

11/24/50G

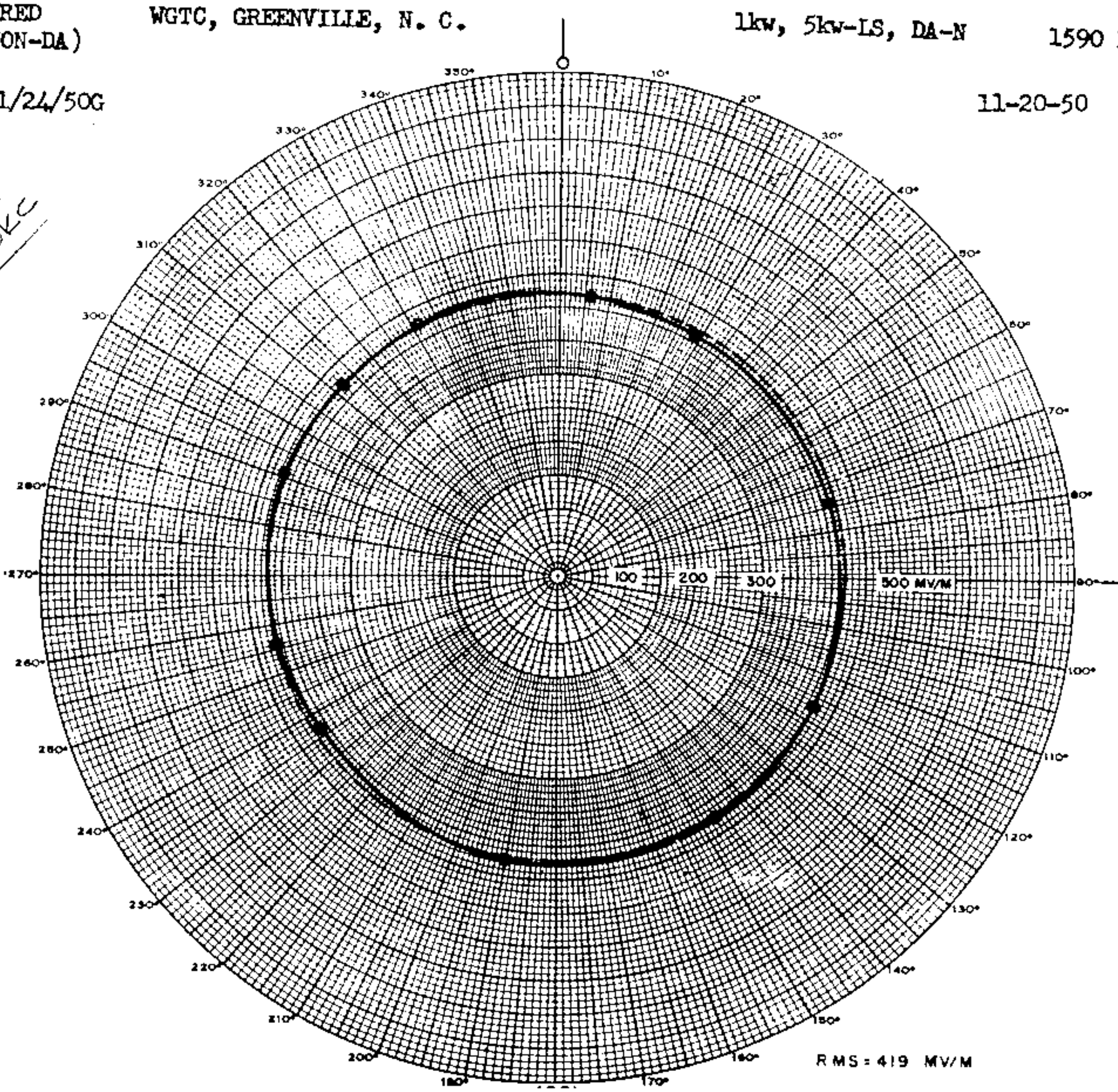
WGTC, GREENVILLE, N. C.

1kw, 5kw-LS, DA-N

1590 kc

11-20-50

VIDE
1070KC



O = RADIALS

STATION DATA	
CALL	W G T C
FREQUENCY	1590 kc
POWER	5 kw
TIME OF OPERATION	U
TYPE OF OPERATION	DA - N
DAYTIME TOWERS	1
NIGHTTIME TOWERS	1, 2, 3
No. RADIALS PER TOWER	120
LENGTH OF RADIALS	90 - 198 ft
GROUND SCREEN DIMENSION	48 SQ
LAT	35° 37' 37"
LONG.	77° 25' 03"
SUPERSEDES	
PATTERN No.	500302

Consulting
Radio Engineers

DIXIE B. McKEY
&
ASSOCIATES

MEASURED DAYTIME
HORIZONTAL PATTERN

WGTC, Greenville, N. C. 1590 kc

WNTS
1590kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WNTS

Frequency: 1590 kHz

Notification List No. [illegible]

Main Studio: Beech Grove, Indiana

Power: 0.7kw Night 5kw Day

Date: November 2, 1979 Class: III

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

DAYTIME	NIGHTTIME
North Latitude: [illegible] 44' 21"	North Latitude: 39° 44' 21"
West Longitude: [illegible] 05' 26"	West Longitude: 86° 05' 26"

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.

TOWERS:	W(#1)	WC(#2)	EC(#3)	E(#4)
HEIGHT ABOVE INSULATORS:	170'	170'	170'	170' (98.9°)
NIGHT PHASING:	-69°	----	0°	107.6°
NIGHT FIELD RATIO:	0.77	----	1.00	0.70
DAY PHASING:	0°	124.4°	-96.4°	----
DAY FIELD RATIO:	1.00	0.652	0.358	----
SPACING:	362.2'(210.6°)	181.1'(105.4°)	REF	364.5'(212.15°)
ORIENTATION:	290°	290°	REF	113°

GROUND SYSTEM: 120-150' equally spaced copper radials about towers #1, #2 and #3. 120-170' equally spaced copper radials about tower #4. Radials are shortened and bonded to transverse straps along intersections between towers.

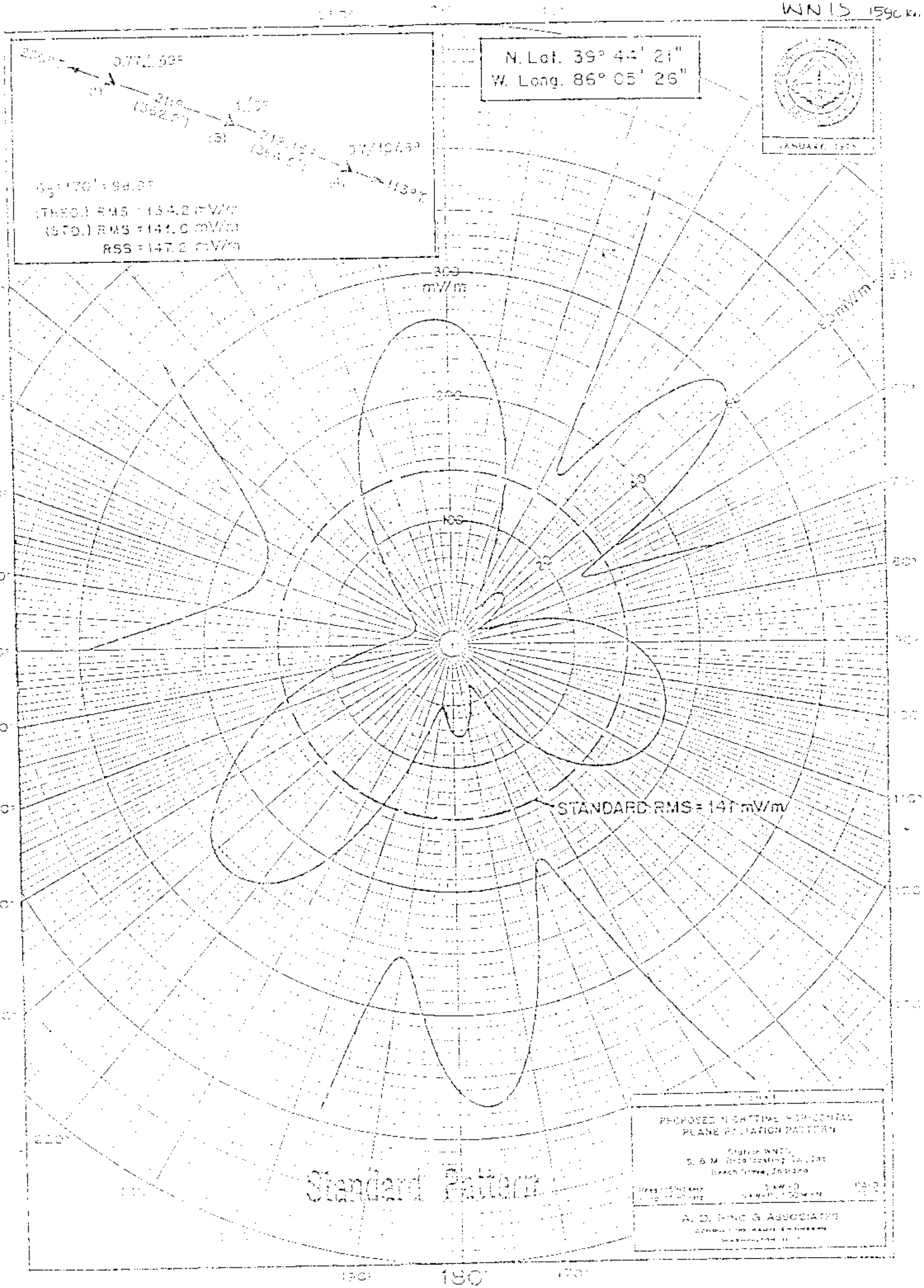
PREDICTED FIELD AT ONE MILE AT RATED POWER:

	THEORETICAL RMS	THEORETICAL RSS	STANDARD RMS
Day	435 mV/m		
Night	124.2 mV/m	137.2 mV/m	141.0 mV/m

WNTS
15[illegible] [illegible]

NOTE: [illegible] the Daytime Directional antenna [illegible] pattern [illegible] for Station [illegible] in United States Change List Number [illegible] dated December 21, 1955 and attach to this Revised Description Sheet and Nighttime pattern. This notification concerns only a change in the Nighttime operation of the station with Daytime operation continued as previously notified.

WNTS 1590 kc

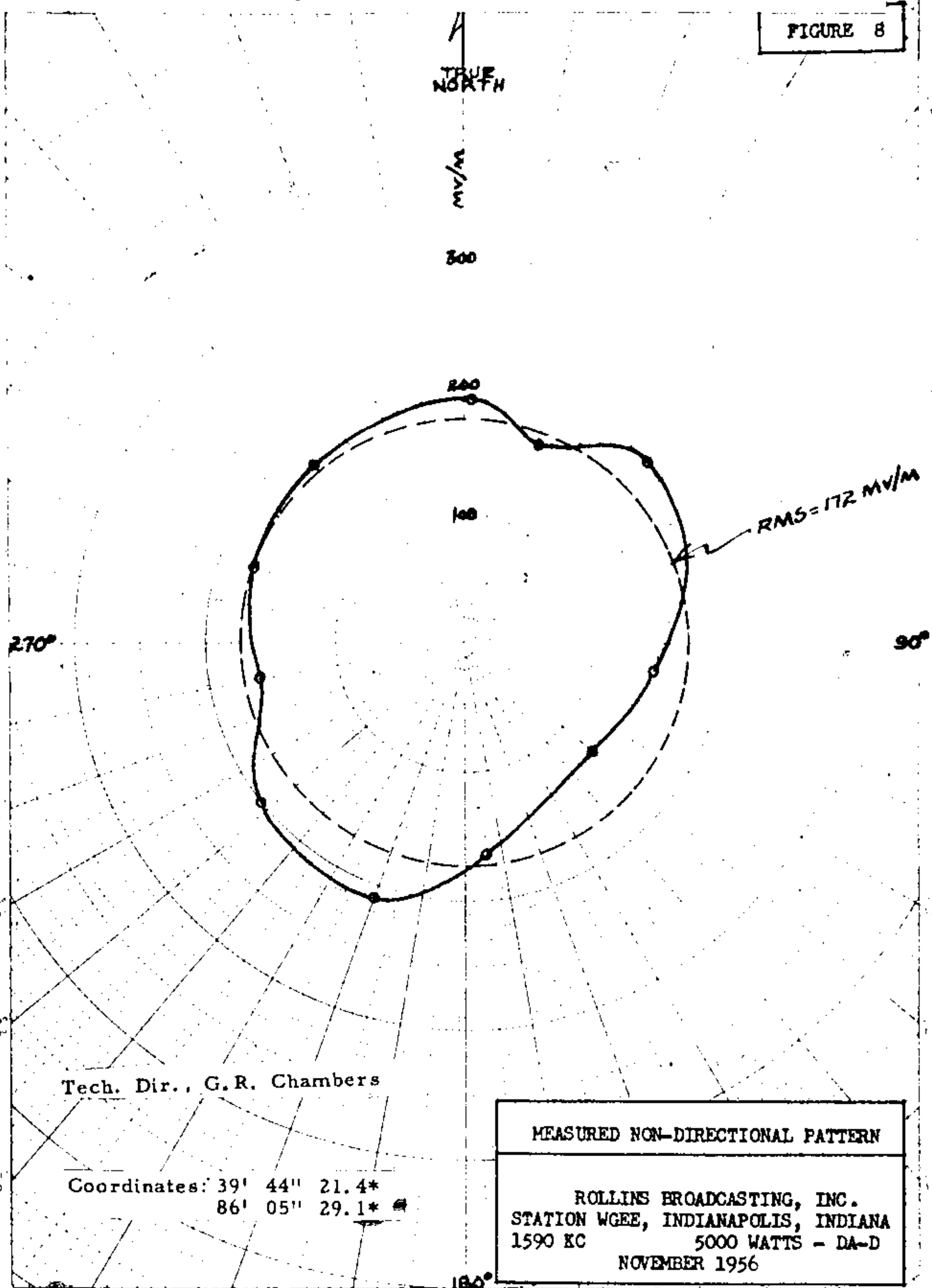


A. D. RING & ASSOCIATES - 4/81 - 8

WNTS

MEASURED NON-DA(1-18-57g) Radio Station W G E E Indianapolis, Indiana 5 KW, DA-D 1590 KC

Granted license 5/1/57 for DA-D



FCC File No. BL-6451

Accepted 12-28-56

WGEE Indianapolis, Indiana

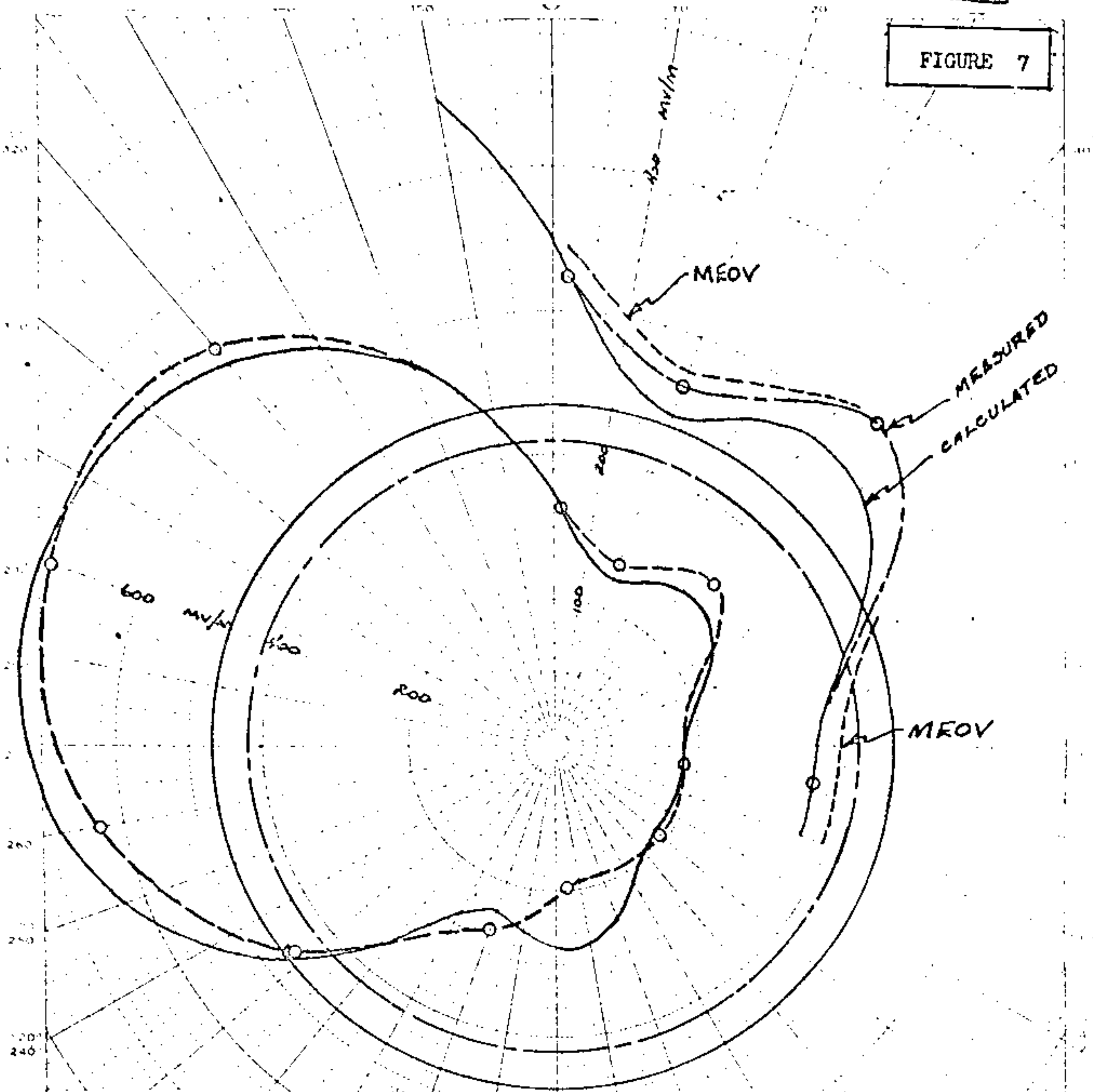
1590 KC

WNTS

MEASURED DAY (1-18-57g) Radio Station W G E E Indianapolis, Indiana 5 KW, DA-D

1590 KC

Granted license 5/1/57 for DA-D



Coordinates: 39' 44" 21.4*
86' 05" 29.1*

Tech. Dir., G.R. Chambers

CALCULATED RMS 435 MV/M
MEASURED RMS 410 MV/M

HORIZONTAL RADIATION PATTERN

ROLLINS BROADCASTING, INC.
STATION WGEE, INDIANAPOLIS, INDIANA
1590 KC 5000 WATTS - DA-D
NOVEMBER 1956

FCC File No. BL-6451 Accepted 12-28-56 WGEE Indianapolis, Indiana 1590 KC

WNTS

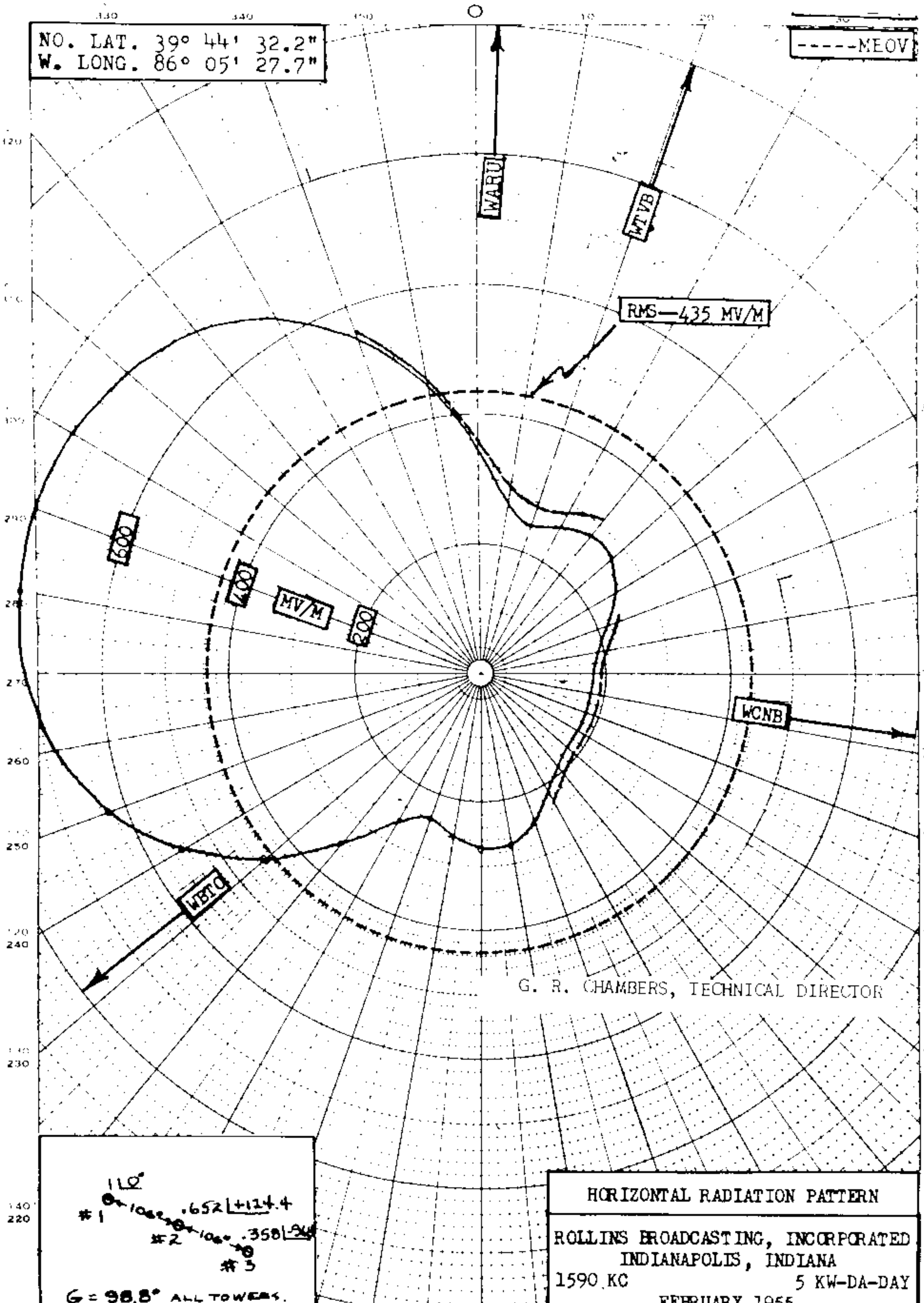
Station WGEE

PROPOSED DAY
(3/22/55G)

ROLLINS BROADCASTING, INC.
INDIANAPOLIS, INDIANA

5 KW
DA-D, D

1590 KC



HORIZONTAL RADIATION PATTERN

ROLLINS BROADCASTING, INCORPORATED
INDIANAPOLIS, INDIANA
1590 KC 5 KW-DA-DAY
FEBRUARY 1955

FILE BP-9414 (Amended) Accepted 3/9/55 FCC

Rollins Broadcasting, Inc.
Indianapolis, Indiana 1590 KC

WONX
1590kHz

NIGHTTIME DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WONX Main Studio: Evanston, Illinois

Frequency: 1590 kHz Power: 2.5kw Night 1kw Day

Notification List No. 1783 Date: November 2, 1979 Class: III

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

DAYTIME		NIGHTTIME	
North Latitude:	42° 02' 07"	North Latitude:	42° 00' 23"
West Longitude:	87° 42' 12"	West Longitude:	87° 43' 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:	S(#1)	C(#2)	N(#3)	NE(#4)
HEIGHT ABOVE INSULATORS:	150'	150'	150'	150' (87.3°)
NIGHT PHASING:	0°	-151.2°	63°	-90.2°
NIGHT FIELD RATIO:	1.0	2.2986	2.1081	0.8810

SPACING AND ORIENTATION: The adjacent towers S(#1), C(#2) and N(#3) are spaced 171.8' (100°) on a line bearing 15° true. The NE(#4) tower is spaced 515.5' (300°) from tower S(#1) on a line bearing 16.5° true.

GROUND SYSTEM: 120 - 172' 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	THEORETICAL RSS	STANDARD RMS
Day	197 mv/m		
Night	301.0 mv/m	490.41 mv/m	316.3 mv/m

WONX
1590kHz

DAYTIME ANTENNA CHARACTERISTICS

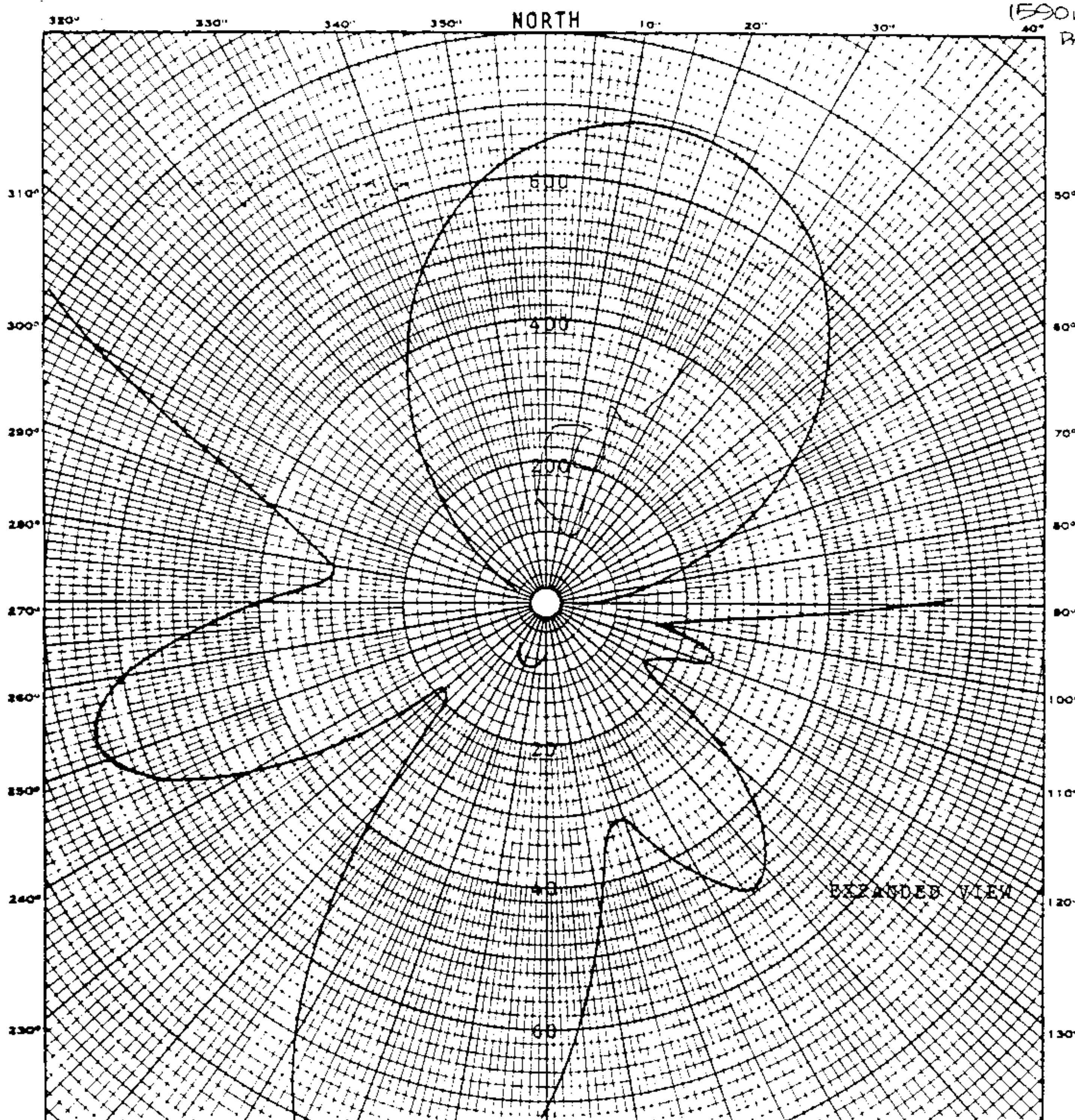
Authorized for Daytime operation (ND-D)
Number of elements: 1
Type of elements: Series excited, uniform cross-section, guyed, vertical steel tower.

HEIGHT ABOVE INSULATORS: 184'

GROUND SYSTEM: 180-105' to 280' equally spaced copper radials about the tower.

Note: This notification concerns only a change in the Nighttime operation of the station with Daytime operation continued as previously notified, at the existing site.

WONX
1590 kHz
DA-N



R.M.S. (THEO) 301 MV/M R.M.S. (STND) 316 MV/M R.S.S. 545.8 MV/M

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

PATTERN PARAMETERS

15° 16.5°

4. 0.8810 /-90.2°

300

3. 2.1081 /63°

100

2. 2.2986 /-151.2° G = 87.4°

100

1. 1.0 /0

KOVAS COMMUNICATIONS, INC.

☐ MEASURED ☒ PROPOSED

FREQ: 1590 (KHZ) POWER 2.5 (KW) ☐ DA-D

N. LAT. 42° 00' 23" ☒ DA-N

W. LONG. 87° 43' 04" ☐ N-D

LOCATION: Evanston, Illinois

DATE: June 1977

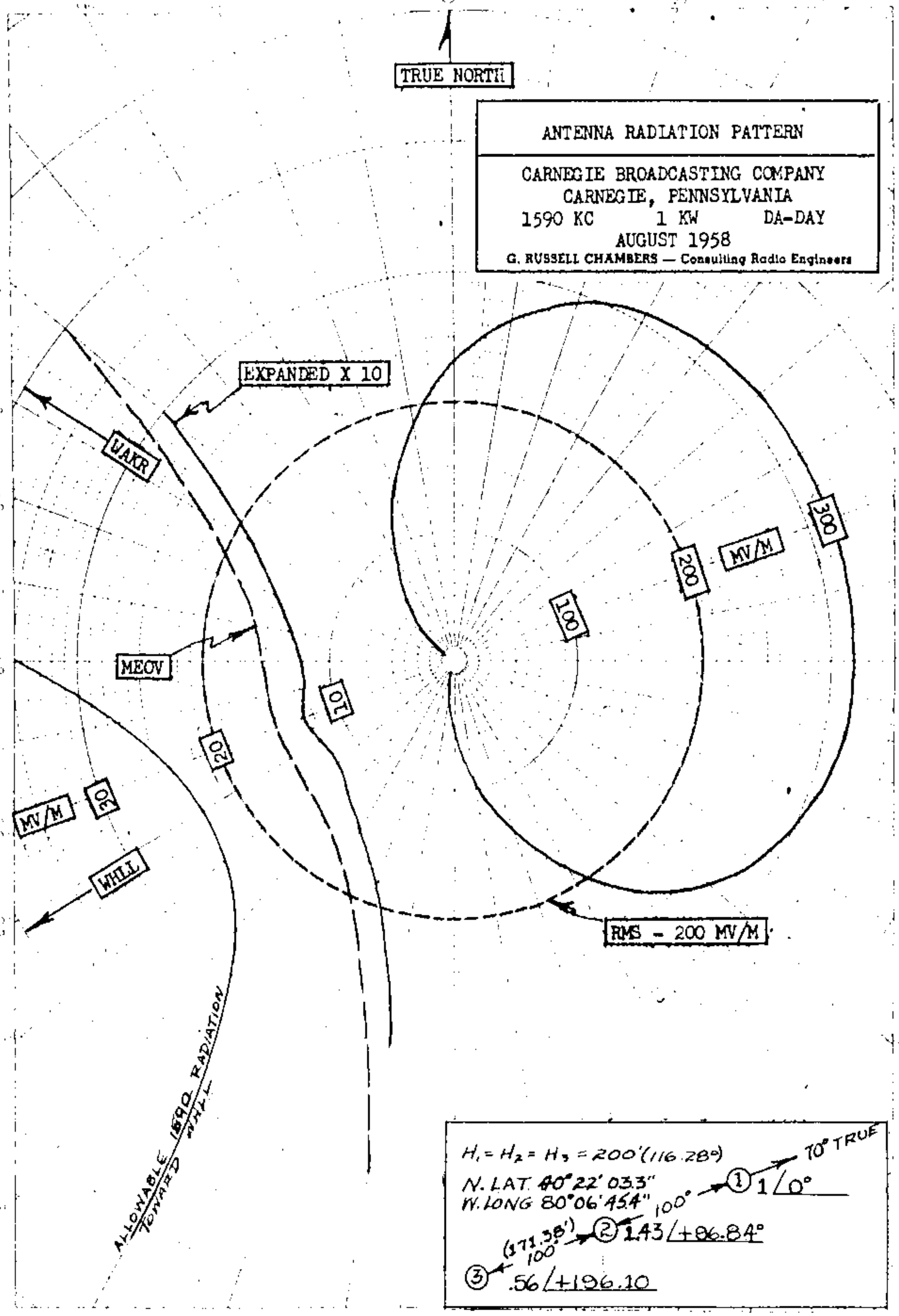
ROBERT A. JONES
CONSULTING ENGINEERS
LA GRANGE, ILLINOIS

WPLW

PROPOSED DAY
(9-25-58g)

New; Carnegie B/C Co.
Carnegie, Pennsylvania

1kw, DA-D,D
1590 KC



7-7-60 granted CP for new station

FCC File No. BP-11,863 Carnegie Broadcasting Company
Accepted 9-10-58 Amended Carnegie, Pennsylvania 1590 KC

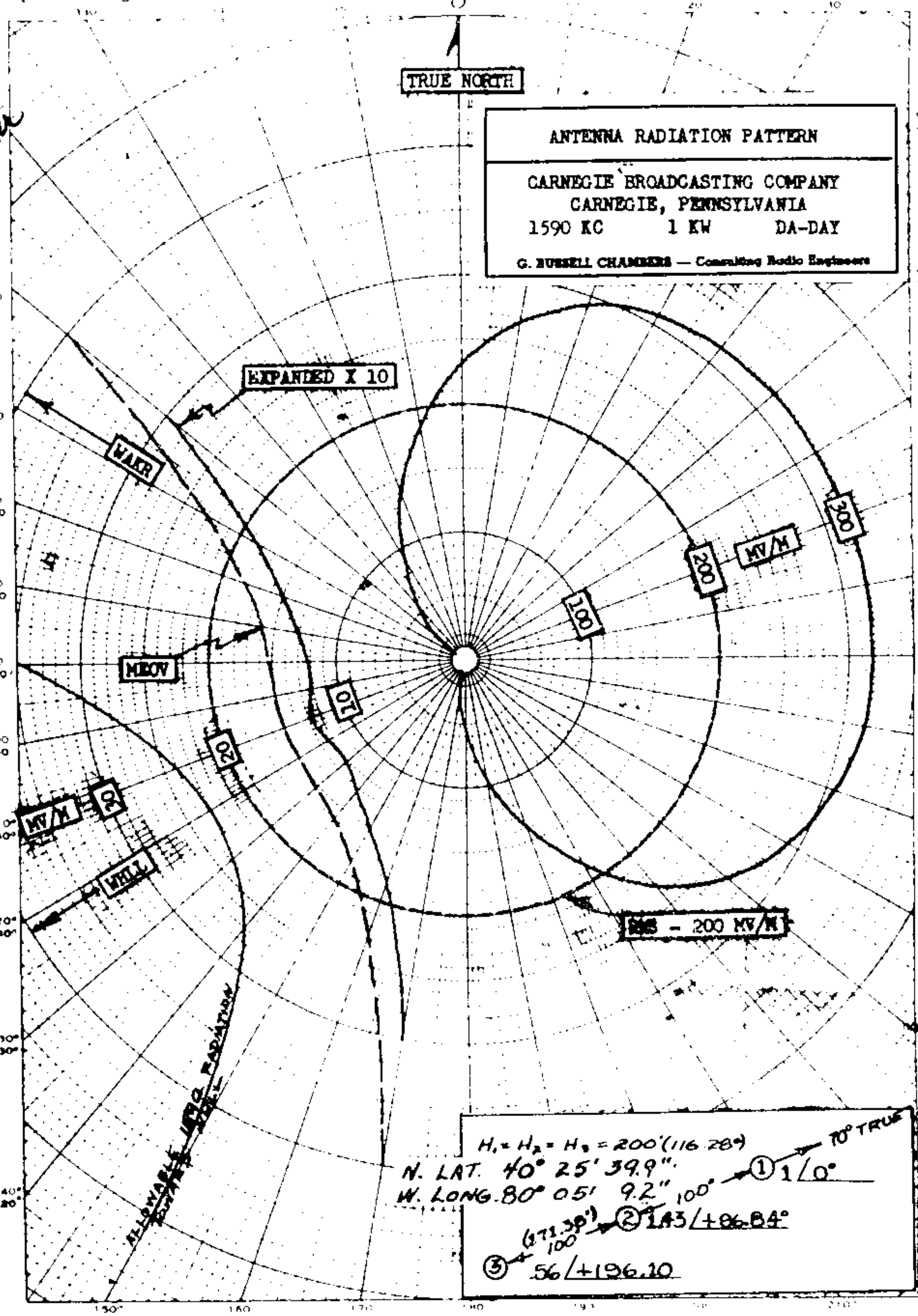
WPLW

PROPOSED DAY
(4-10-61g)

Station WCNE
Carnegie, Pennsylvania

1kw, DA-D,D
1590 KC

-28-61
granted NCP
0 change Y-xmtr
location



FCC File No. BMP-9340
Accepted 3-8-61

Station WCNE
Carnegle, Pennsylvania

1590 KC

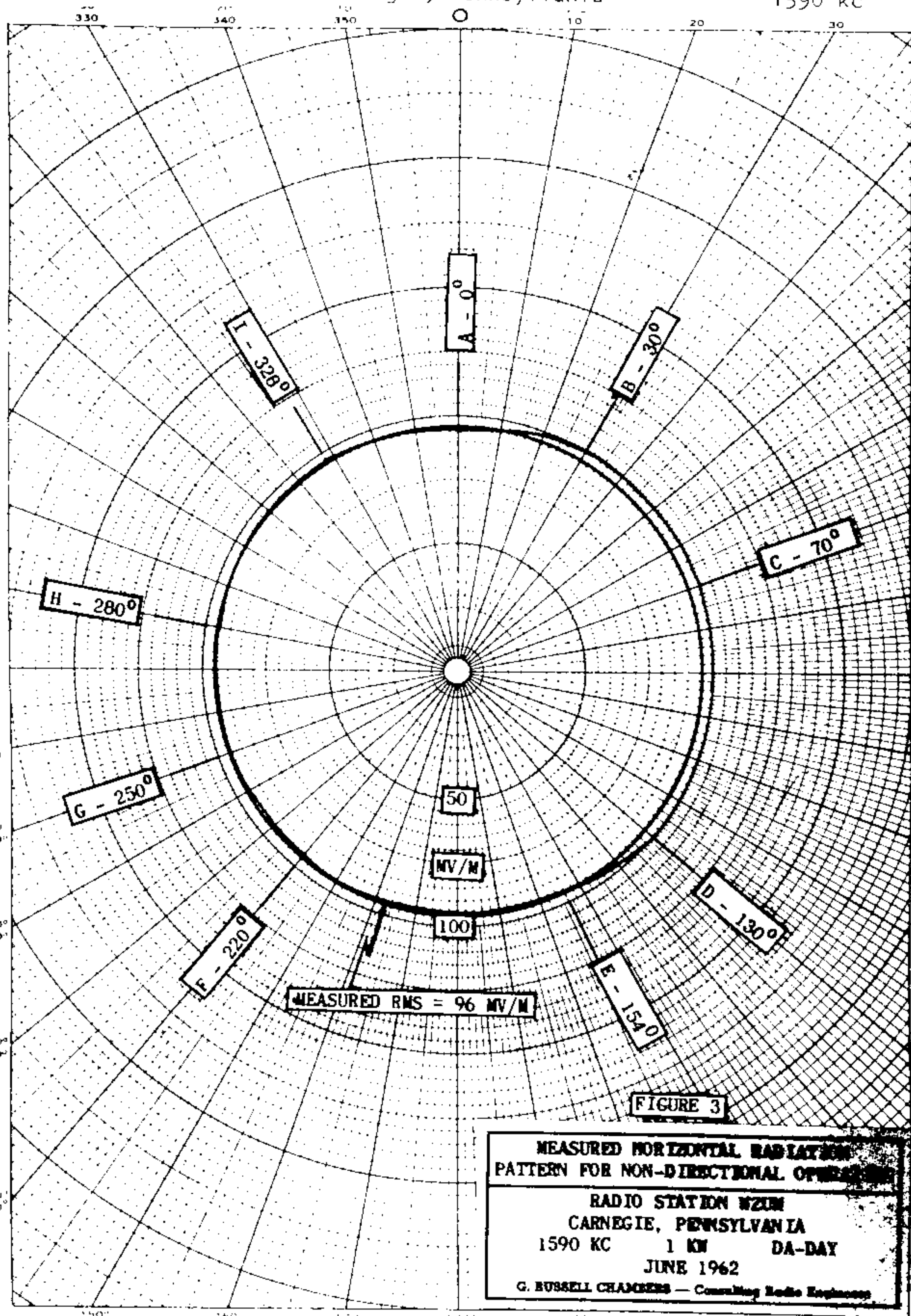
WPLW

Measured Non-DA
(8-24-62ct)

Station WZUM
Carnegie, Pennsylvania

1kw,DA-D,D
1590 kc

6/27/64
LG for new station



FCC File No.BL-9492
Accepted 8-14-62

Station WZUM
Carnegie, Pennsylvania

1590 kc

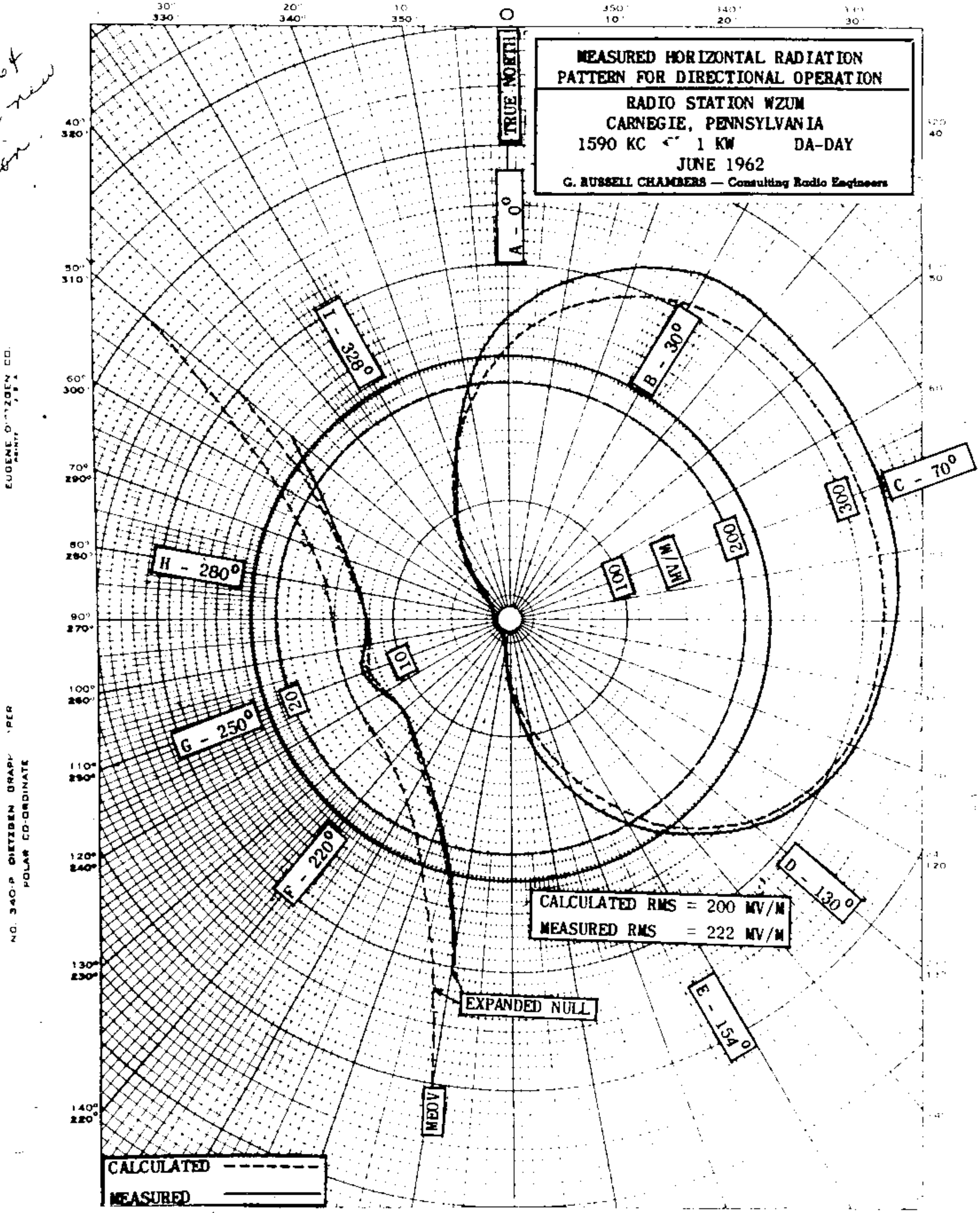
WPLW

Measured Day
(8-24-62ct)

Station WZUM
Carnegie, Pennsylvania

1kw,DA-D,D
1590 kc

6/24/64
FG for new station.



FCC File No.BL-9492
Accepted 8-14-62

Station WZUM
Carnegie, Pensylvania

1590 kc

WQQW
1590 kHz.

SUPPLEMENTAL AND CORRECTED
DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WQQW

Main Studio: Waterbury, Connecticut

Frequency: 1590 kHz

Power: 5kw Night 5kw Day

Notification List No. 1783

Date: November 2, 1979 Class: III

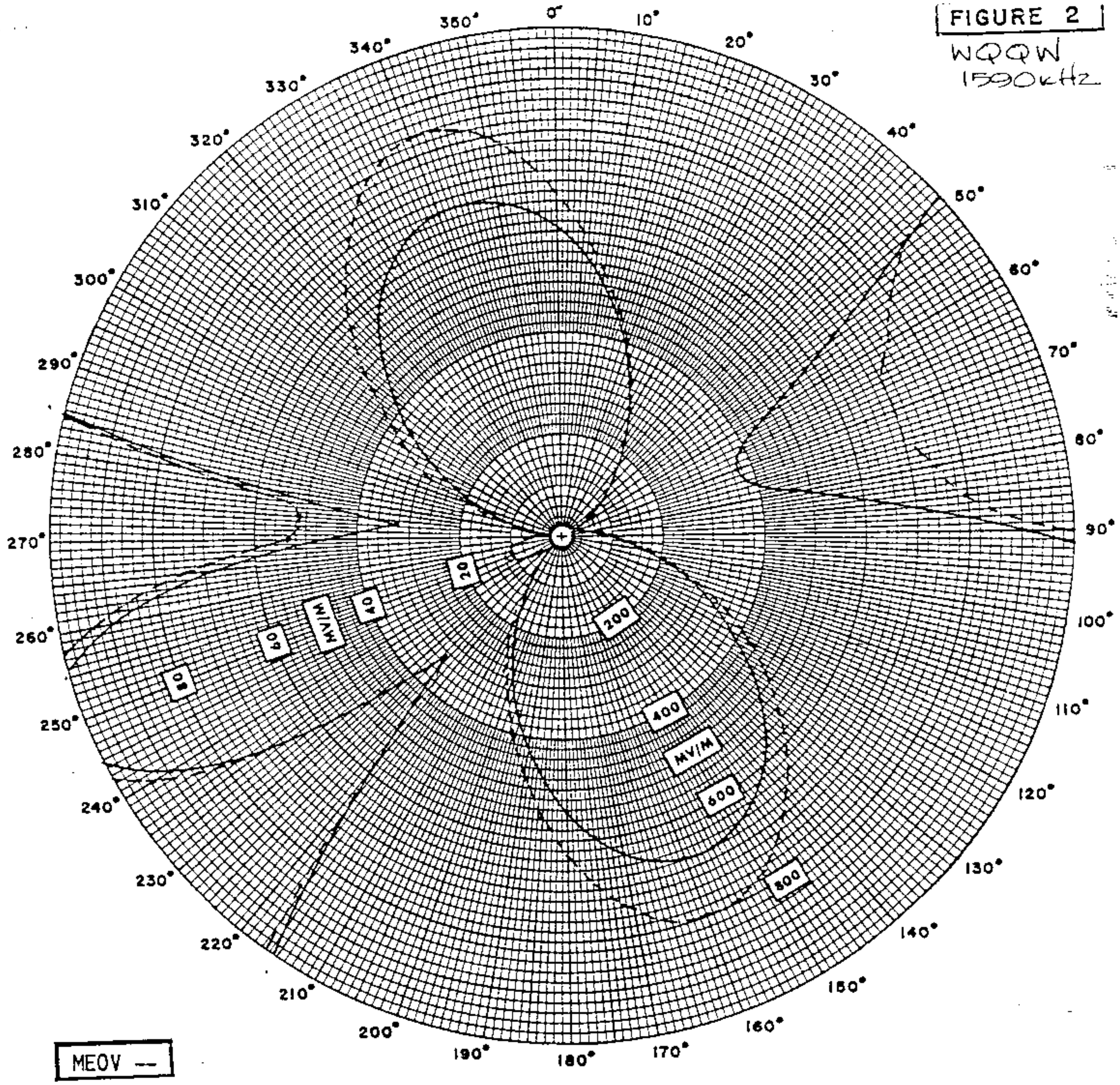
GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 41° 35' 27"
West Longitude: 73° 02' 34"

Note: Please retain the description sheet notified for station WTBY in United States Change List Number 1387, dated August 26, 1970 and attach to this supplemental Description Sheet. This notification is for the purpose of supplying new patterns to include MEOV's of radiation.

FIGURE 2

WQQW
1590kHz



MEOV --

N. LAT.	41 ° 35 ′ 27 ″
W. LONG.	73 ° 02 ′ 34 ″
RMS Th.	395 ~~395~~ mv/m
RSS Th.	482.364

(see Amend. 1/27/78)

ANTENNA NO.	1	2
FIELD	1.1	1
PHASE	10°	0°
SPACING	0°	187°
ORIENTATION	0°	70°
HEIGHT	110°	110°

HORIZONTAL RADIATION PATTERN
WQQW - WATERBURY, CONNECTICUT
1590 kHz - 5 kW - DA-1

AUGUST, 1976

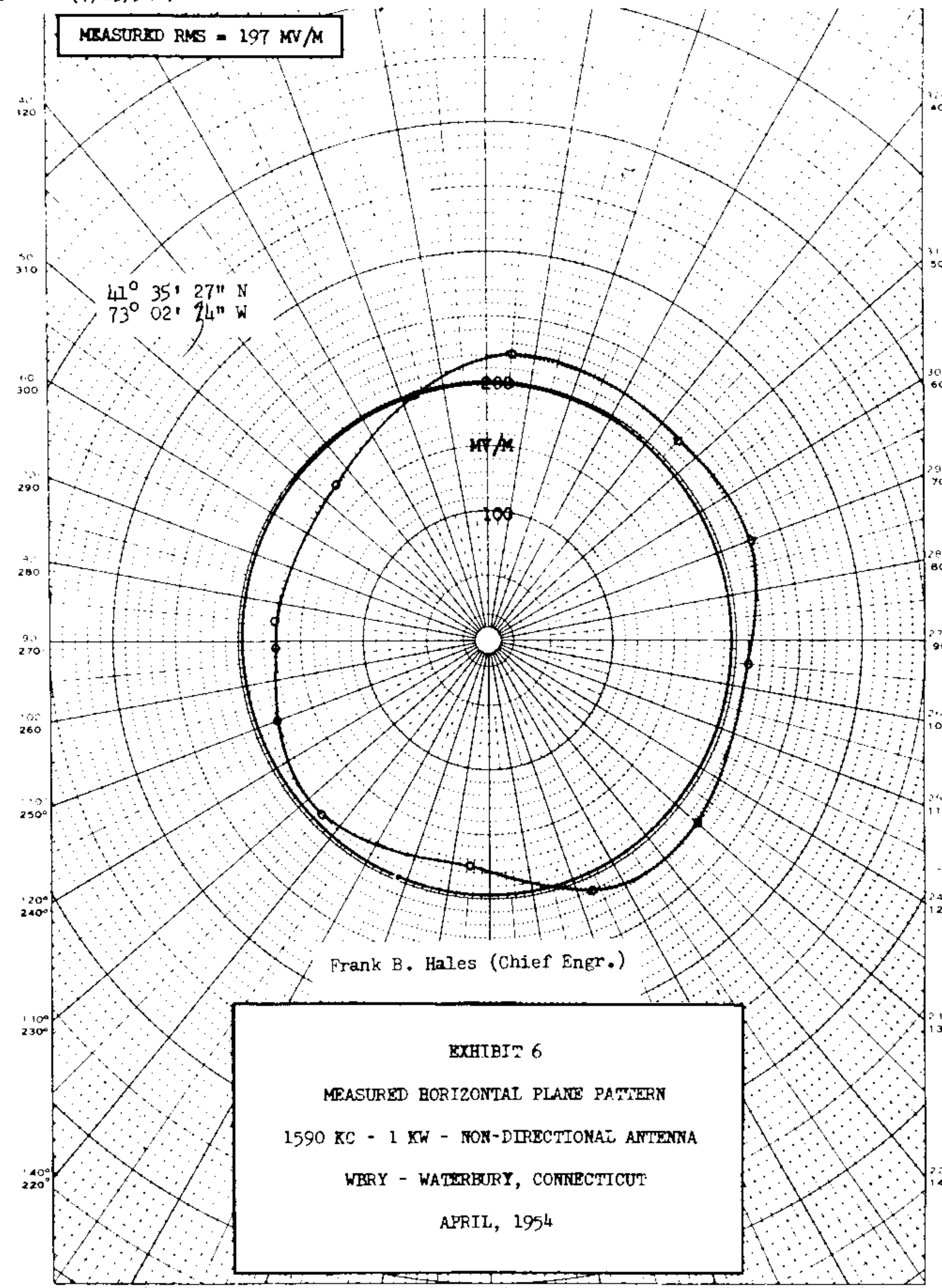
GAUTNEY & JONES - CONSULTING ENGINEERS

WQQW

MEASURED
NON-DA

WBRY, Waterbury, Conn.
(7/13/54G)

5KW, U, DA-1



FCC File No. BL-5331   Accepted 6/18/54   WBRY, Waterbury, Conn.   1590 kc

WQQW

MEASURED WBRY, Waterbury, Conn. 5KW, U, DA-1 1590 kc
DAY & NIGHT NULLS (7/13/54G)

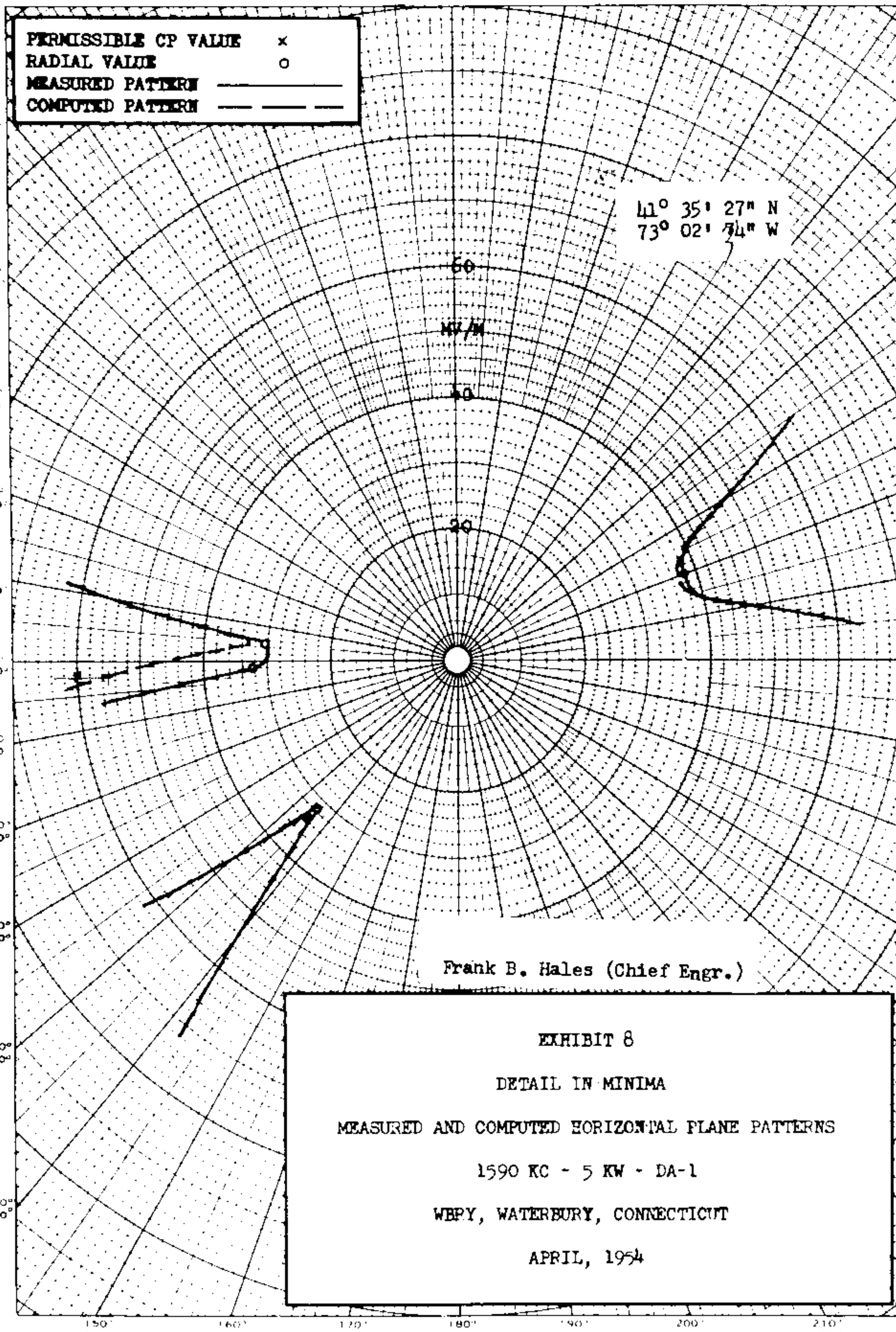


EXHIBIT 8

DETAIL IN MINIMA

MEASURED AND COMPUTED HORIZONTAL PLANE PATTERNS

1590 KC - 5 KW - DA-1

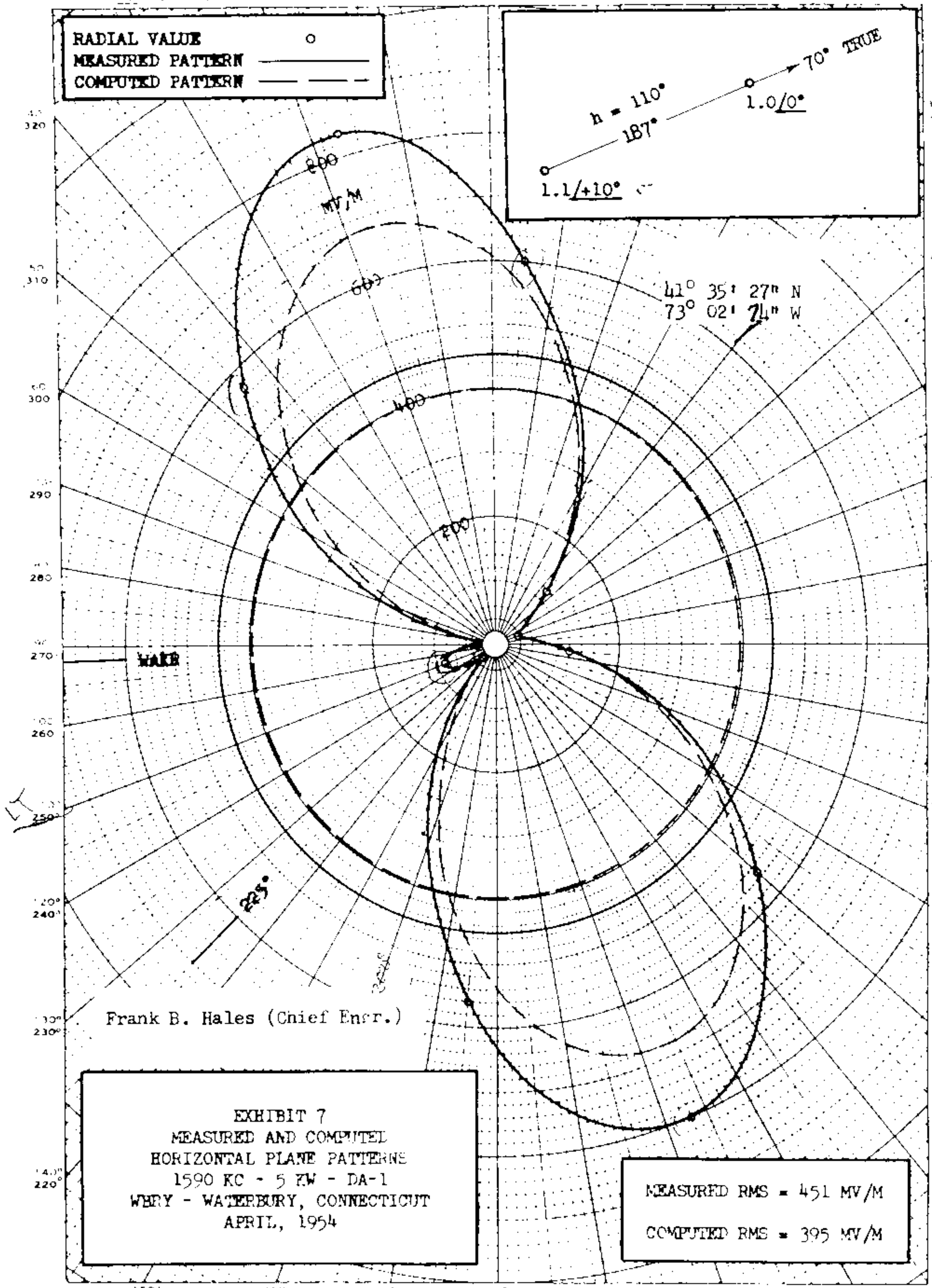
WBRY, WATERBURY, CONNECTICUT

APRIL, 1954

FCC File No. BL-5331 Accepted 6/18/54 WBRY, Waterbury, Conn. 1590 kc

MEASURED DAY & NIGHT WBRY, Waterbury, Conn. (7/13/54G) 5KW, U, DA-1

WQQW



Frank B. Hales (Chief Engr.)

EXHIBIT 7
MEASURED AND COMPUTED
HORIZONTAL PLANE PATTERNS
1590 KC - 5 KW - DA-1
WBRY - WATERBURY, CONNECTICUT
APRIL, 1954

MEASURED RMS = 451 MV/M

COMPUTED RMS = 395 MV/M

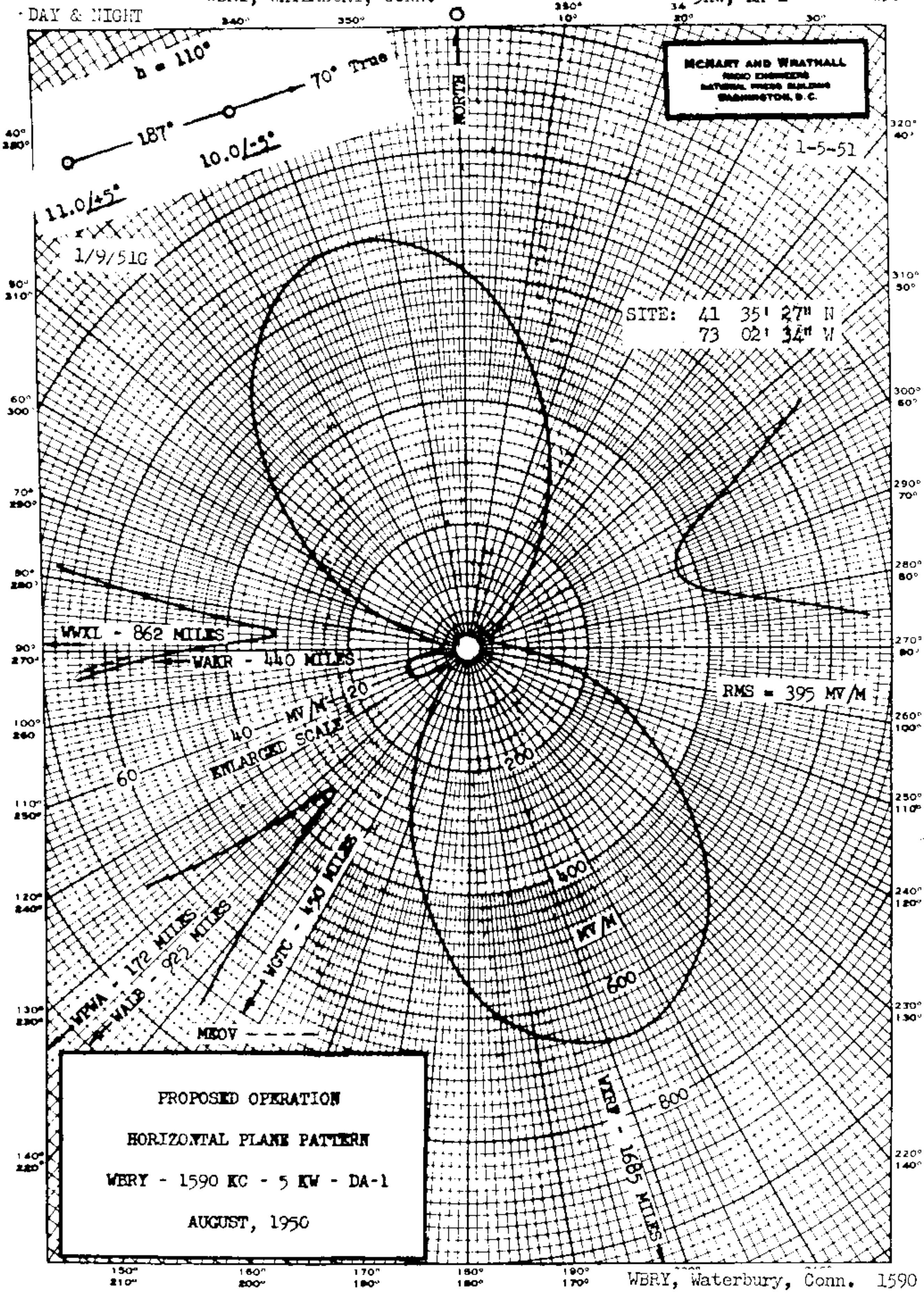
WQQW

PROPOSED
DAY & NIGHT

WBRY, WATERBURY, CONN.

5kW, DA-1

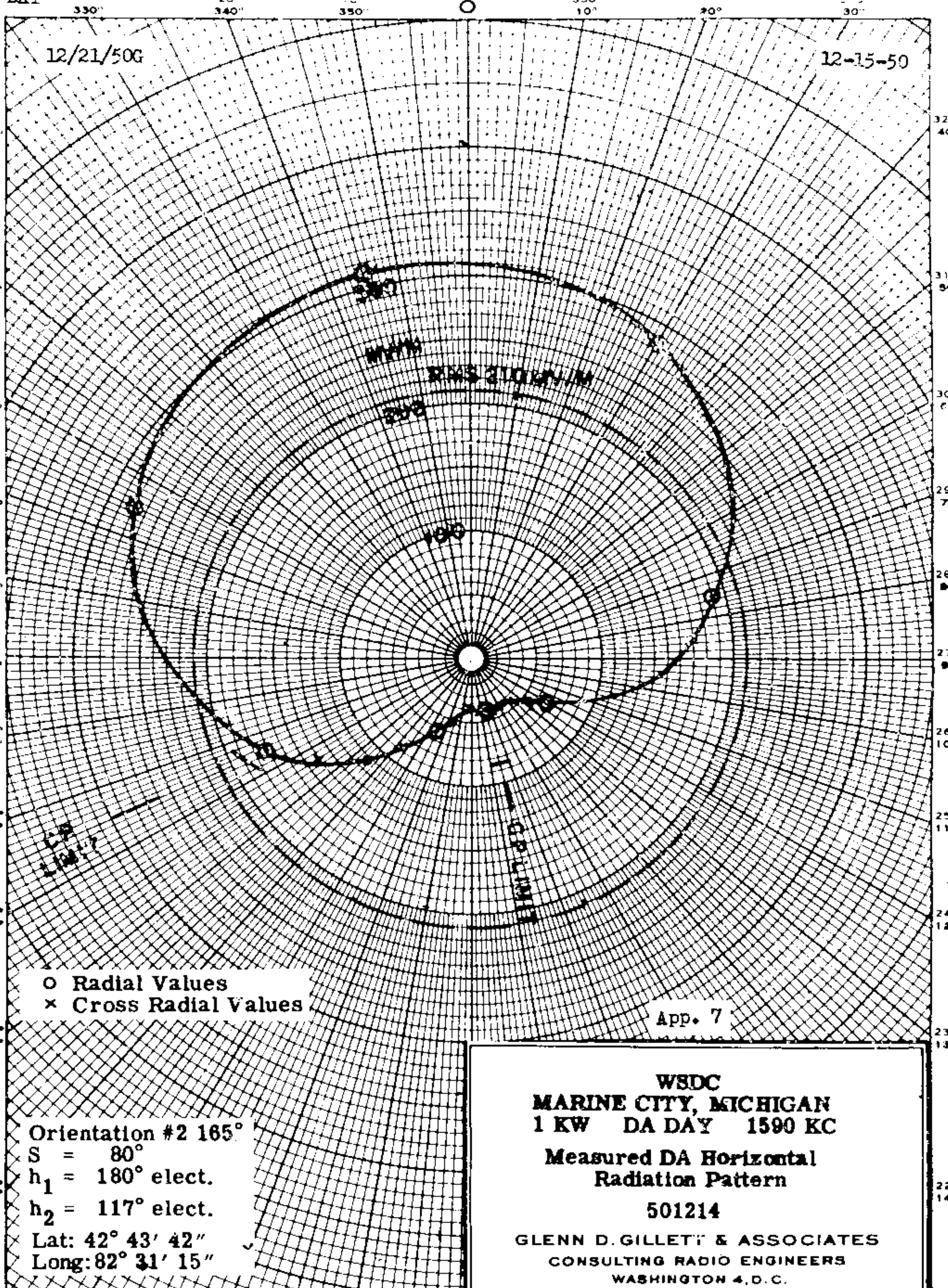
1590 kc



WBRY, Waterbury, Conn. 1590 kc

WSMA

MEASURED DAY WSDC, MARINE CITY, MICH. 1kw, DA, D 1590 kc



WSDC, Marine City, Mich. 1590 kc

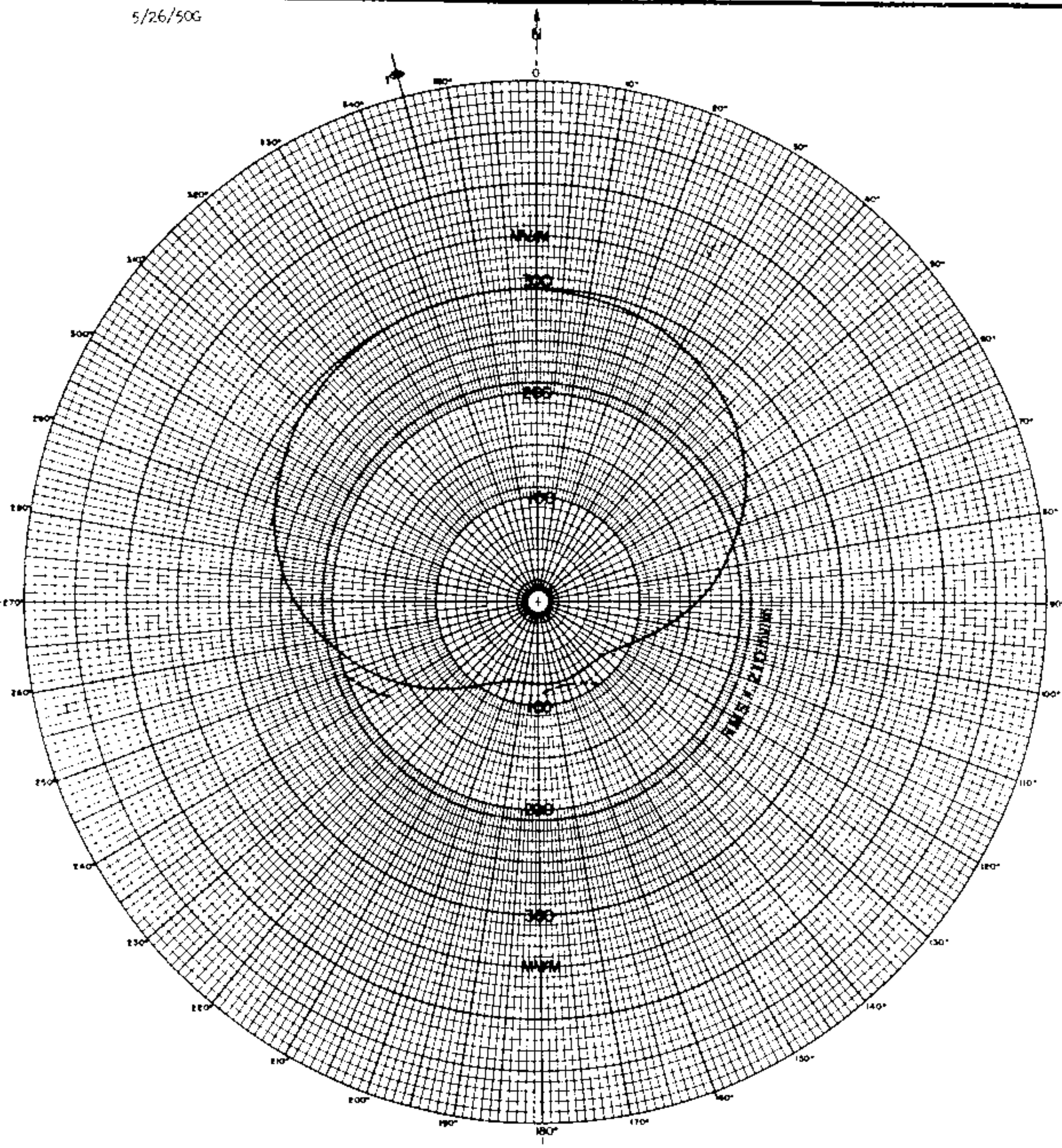
WSMA

PROPOSED
DAYTIME

NEW, MARINE CITY, MICH.
(Radio St. Clair, Inc.)

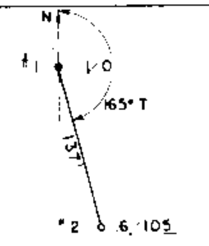
1590 kc

5/26/50G



----MEOV

ANTENNA PARAMETERS



Tower	Electrical Height	True Tower Orientation	Spacing	Phasing	Horizontal Field mv/m	Field Ratio	Elev. Angle	Elevation RMS Field mv/m
No.	G°	Φ°	S°	Ψ°	E	F	θ°	E_θ
G							0	
1	180				230	1.0	10	
2	115	165	80	105	190	0.6	20	
3							30	
4							40	
5							50	
6							60	
7							70	
8							80	
9							RSS. RMS h°	
							Ant. Gain g°	

Glenn D. Gillett And Associates
Consulting Radio Engineers
National Press Building
Washington, D.C.

RADIO ST. CLAIR, INC.
MARINE CITY, MICH.

1 KW DA - DAY 1590 KC

HORIZONTAL RADIATION PATTERN

Latitude 42° 43' 42"
Longitude 82° 31' 15"

Supersedes
Pattern No. 491024

APP. 4

AMENDMENT RECD 11-10-49 ACC 5-12-50 BP-6489

NEW, Marine City, Mich. 1590 kc

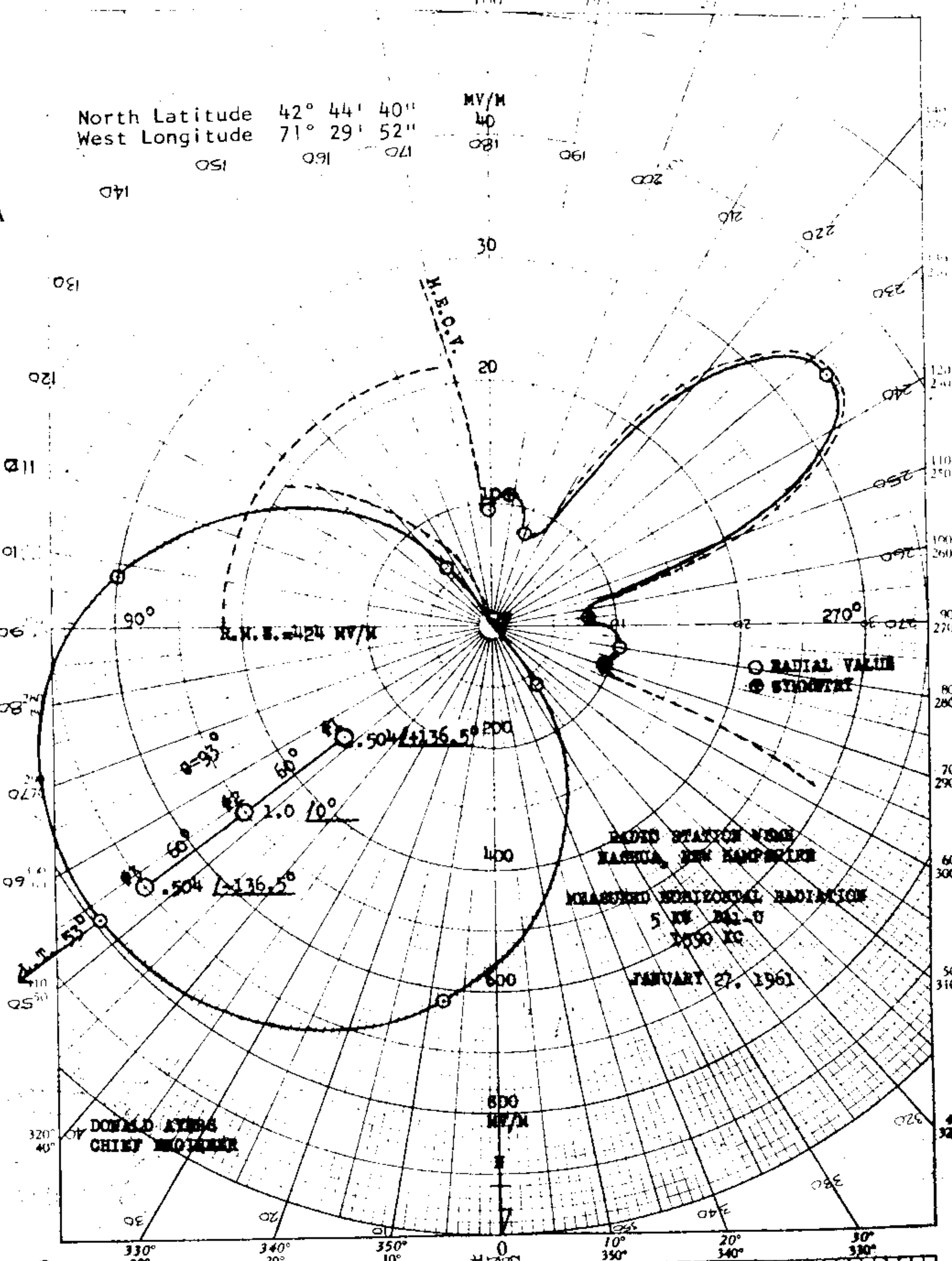
WSMN

MEASURED DAY & NIGHT
(7-26-61ct)

Station WSMN 5kw, DA-1,U
Nashua, New Hampshire 1590 KC

Granted L
for DA-1
operation
7-25-61

North Latitude 42° 44' 40"
West Longitude 71° 29' 52"



FCC File No. BL-8372
Accepted 6-26-61

WSMN
Nashua, New Hampshire 1590 KC

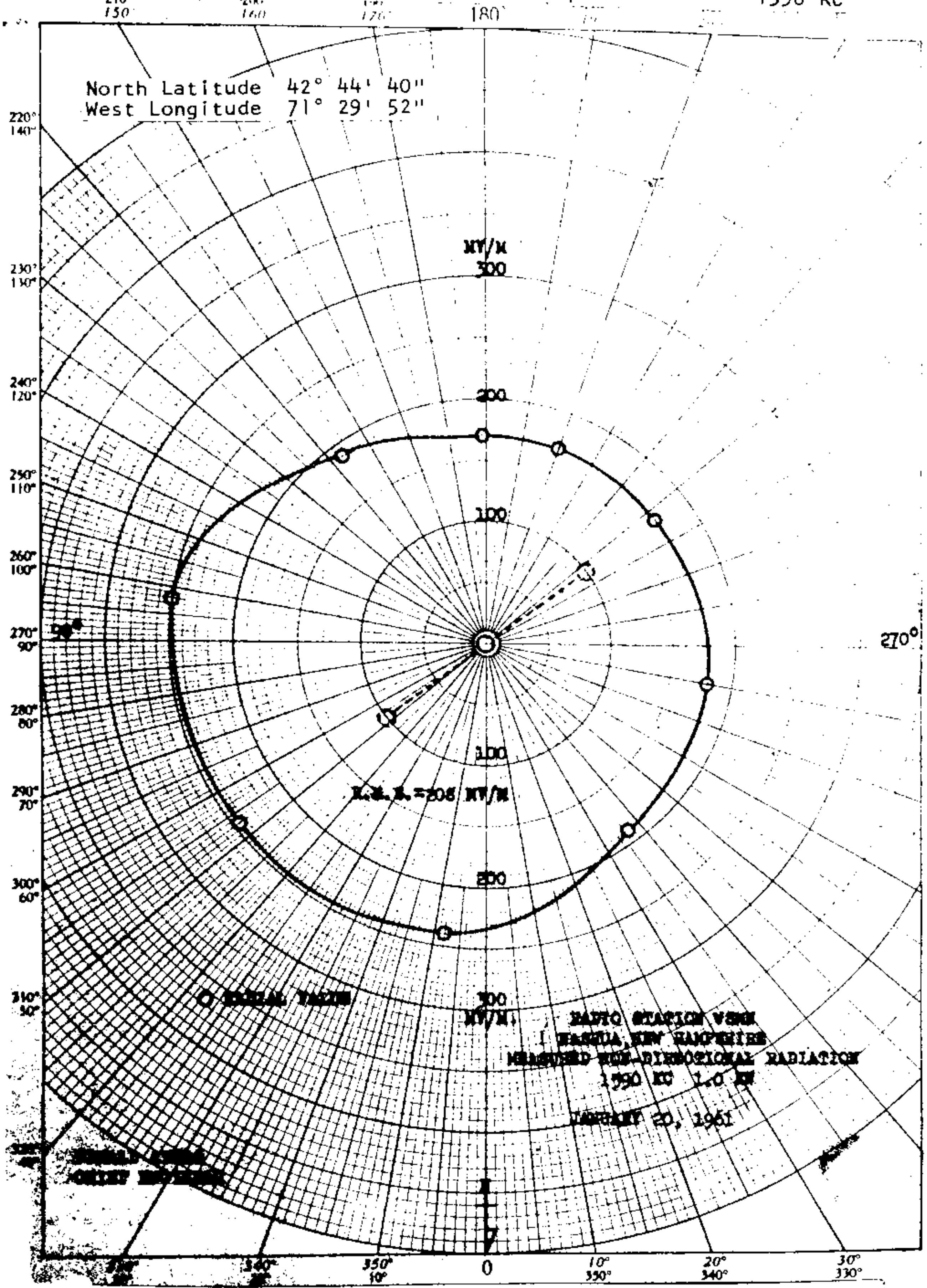
* PATTERN UP SIDE DOWN

WSMN

MEASURED NON-DA
(7-26-61ct)

Station WSMN
Nashua, New Hampshire

5kw, DA-1,U
1590 KC



FCC File No. BL-8372
Accepted 6-26-61

WSMN
Nashua, New Hampshire 1590 KC

UPSIDE DOWN

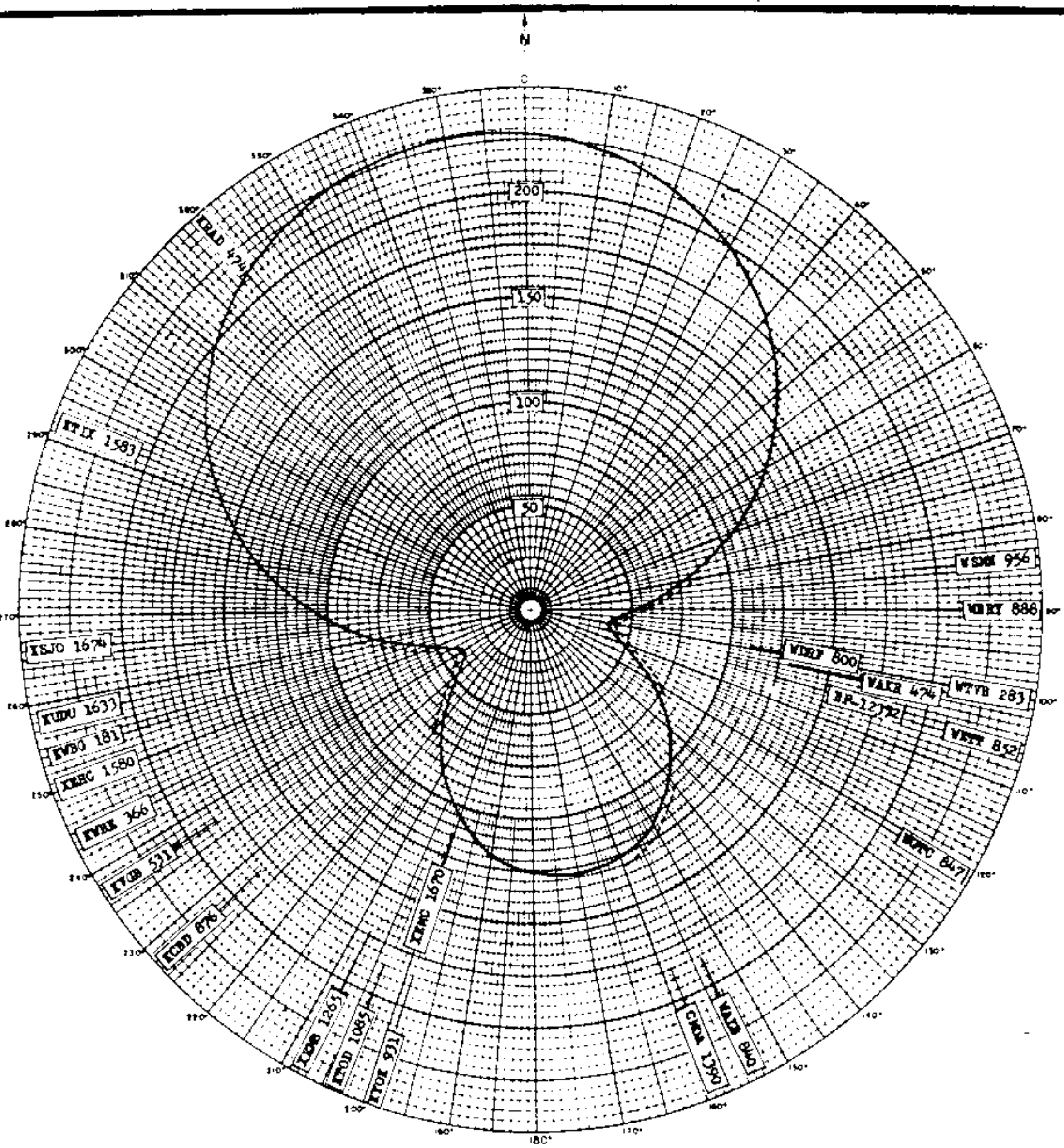
WSWW

11-2-60 granted cp for unlimited time and DA-N

PROPOSED NIGHT
(8-29-60g)

Station WSWW
Platteville, Wisconsin

500w, 1kw-LS, DA-N,U
1590 KC



E_{RMS} = 144 MV/M

SUPERSEDES FIGURE 6 - 590518

LATITUDE 42° 44' 50"
LONGITUDE 90° 28' 23"

CHARLES E. BRENNAN & ASSOCIATES
RADIO ENGINEERS
MILWAUKEE 7, WISCONSIN

ANTENNA PARAMETERS

N350°E

○ 0.76/-152°

S is 80° or 137.6'

○ 1.0/0°

All G's are 110°

600730

FIGURE 1

PROPOSED NIGHTTIME HORIZONTAL
RADIATION PATTERN

SOUTHWEST WISCONSIN COMPANY
PLATTEVILLE, WISCONSIN

1590 KC

1000 LS - 500 DA-N

FCC File No. BP-13280
Accepted 8-18-60 (Amended)

WSWW
Platteville, Wisconsin

1590 KC

WSWW

CORRECTED DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WSWW

Main Studio: Platteville, Wisconsin

Frequency: 1590 kHz

Power: 0.5 kW Night 1 kW Day

Notification List No. 1568

Date: February 21, 1974 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42° 44' 46"

West Longitude: 90° 28' 28"

Authorized for Night operation (DA-N)

Predicted effective Day Field: (omnidirectional) 199 mv/m at rated power.

Predicted effective Night Field: 144 mv/m at rated power.

Note: Please retain the description sheet and directional antenna radiation patterns notified for station WSWW in United States Change List Number 884, dated November 2, 1960 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.

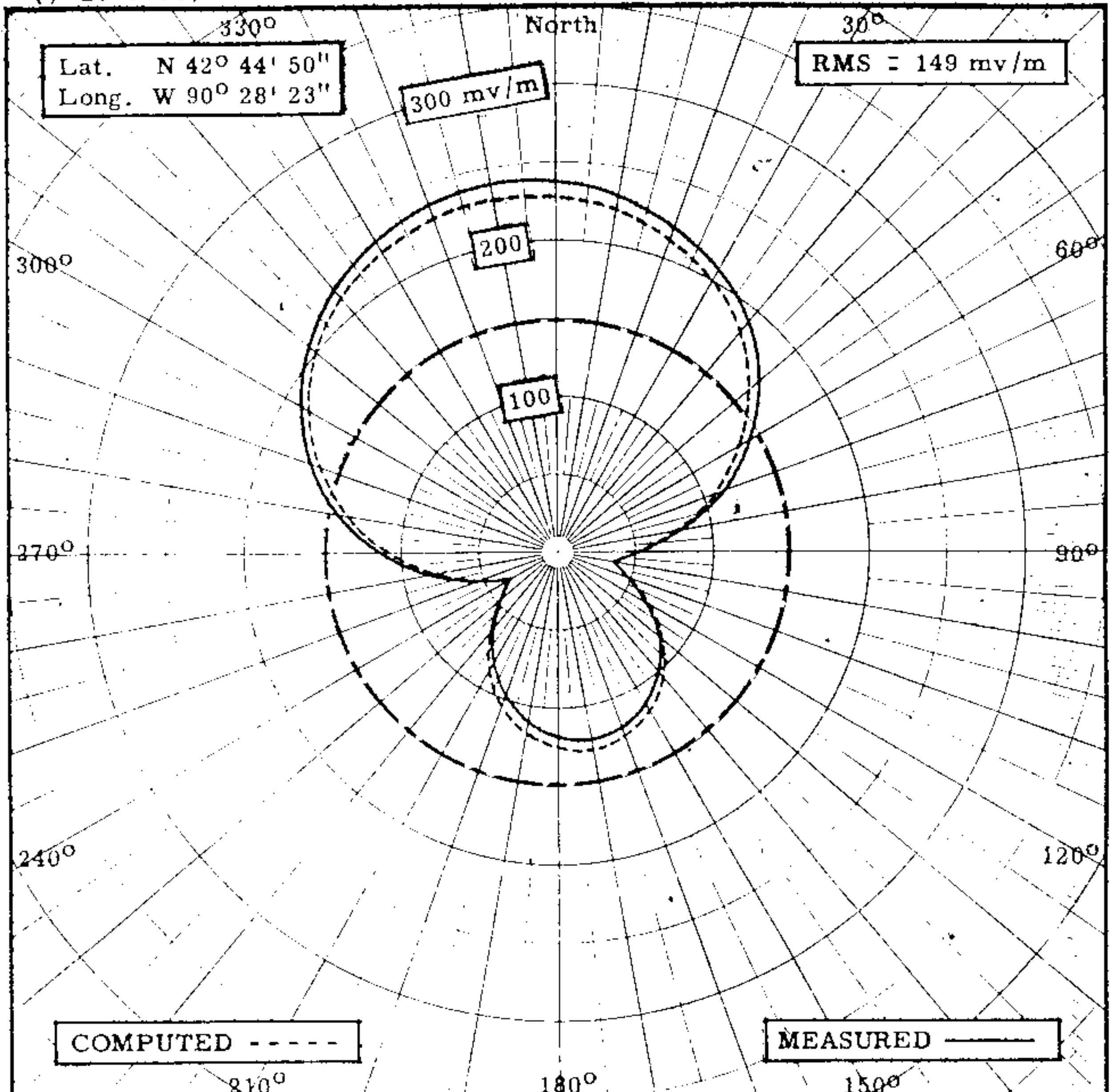
CTR NO 31235A4

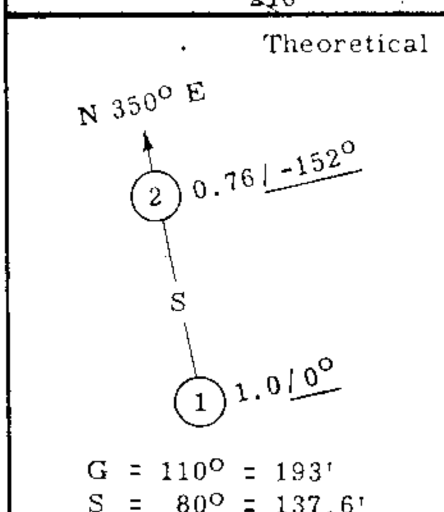
WSWW

-25-61
granted 2 for
DA-N

MEASURED NIGHT
(7-26-61ct)

Station WSWW   500w, 1kw-LS, DA-N, U.
Platteville, Wisconsin   1590 KC





RADIO STATION WSWW
PLATTEVILLE, WISCONSIN

MEASURED DIRECTIONAL
HORIZONTAL PLANE RADIATION PATTERN
1590 KC   500 WATTS

610328-3

FIGURE 3

MERL SAXON
CONSULTING RADIO ENGINEER
LUFKIN, TEXAS

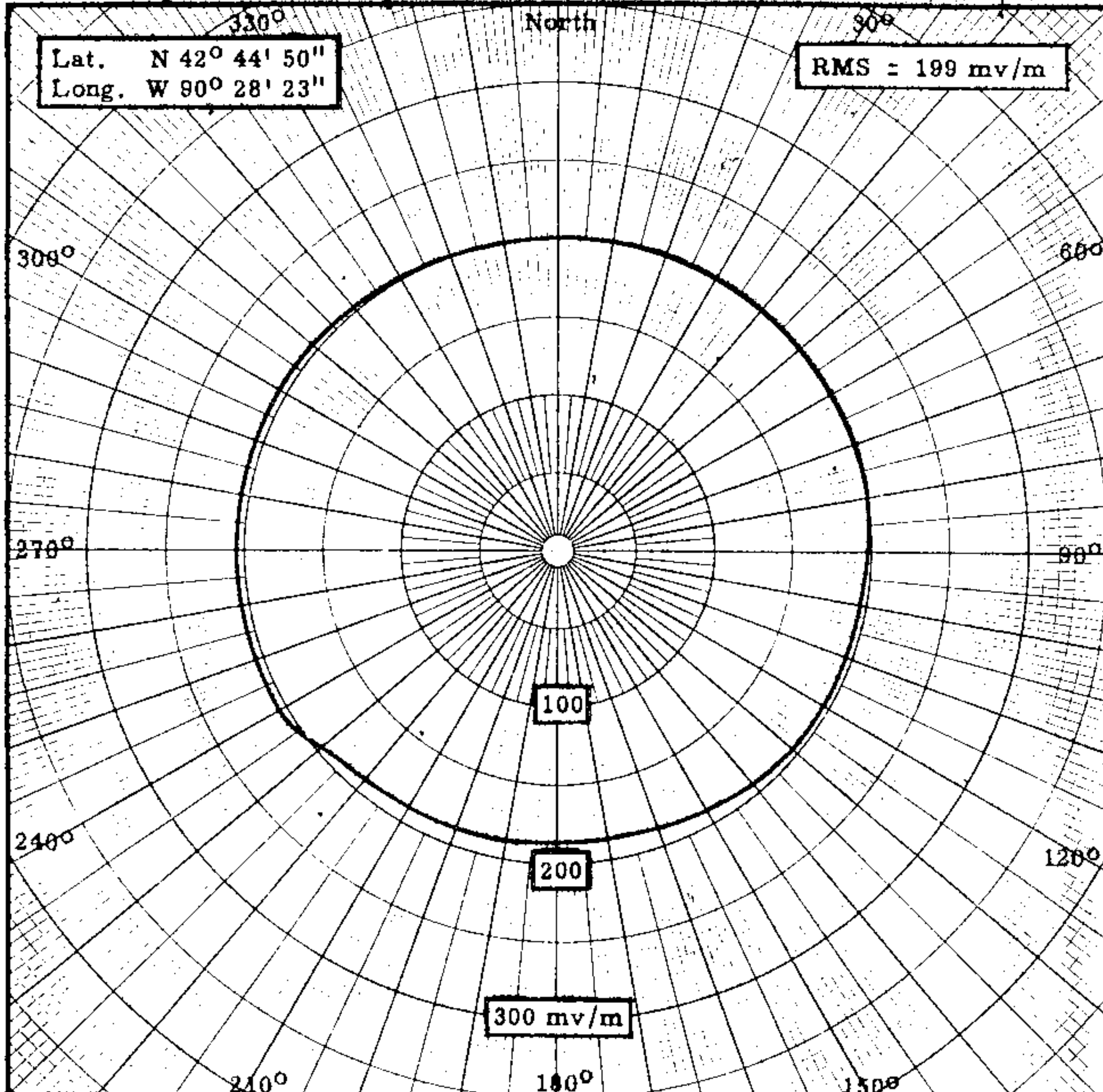
FCC File No. BL-8414
Accepted 6-30-61

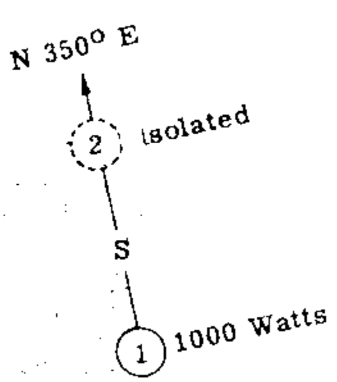
WSWW
Platteville, Wisconsin   1590 KC

WSWW

MEASURED NON-DA
(7-26-61ct)

Station WSWW 500w,1kw-LS,DA-N,U
Platteville, Wisconsin 1590 KC





G = 110° = 193'
S = 80° = 137.6'

RADIO STATION WSWW
PLATTEVILLE, WISCONSIN

MEASURED NON-DIRECTIONAL
HORIZONTAL PLANE RADIATION PATTERN
1590 KC 1000 WATTS

610328-2

FIGURE 2

MERL SAXON
CONSULTING RADIO ENGINEER
LUFKIN, TEXAS

FCC File No. BL-8414
Accepted 6-30-61

WSWW
Platteville, Wisconsin 1590 KC

WTVB

PROPOSED NIGHT
(9-13-60g)

Station WTVB
Coldwater, Michigan

1kw, 5kw-LS, DA-N,U
1590 KC

1-10-61 granted ok to decrease night directional power to 1 kw.

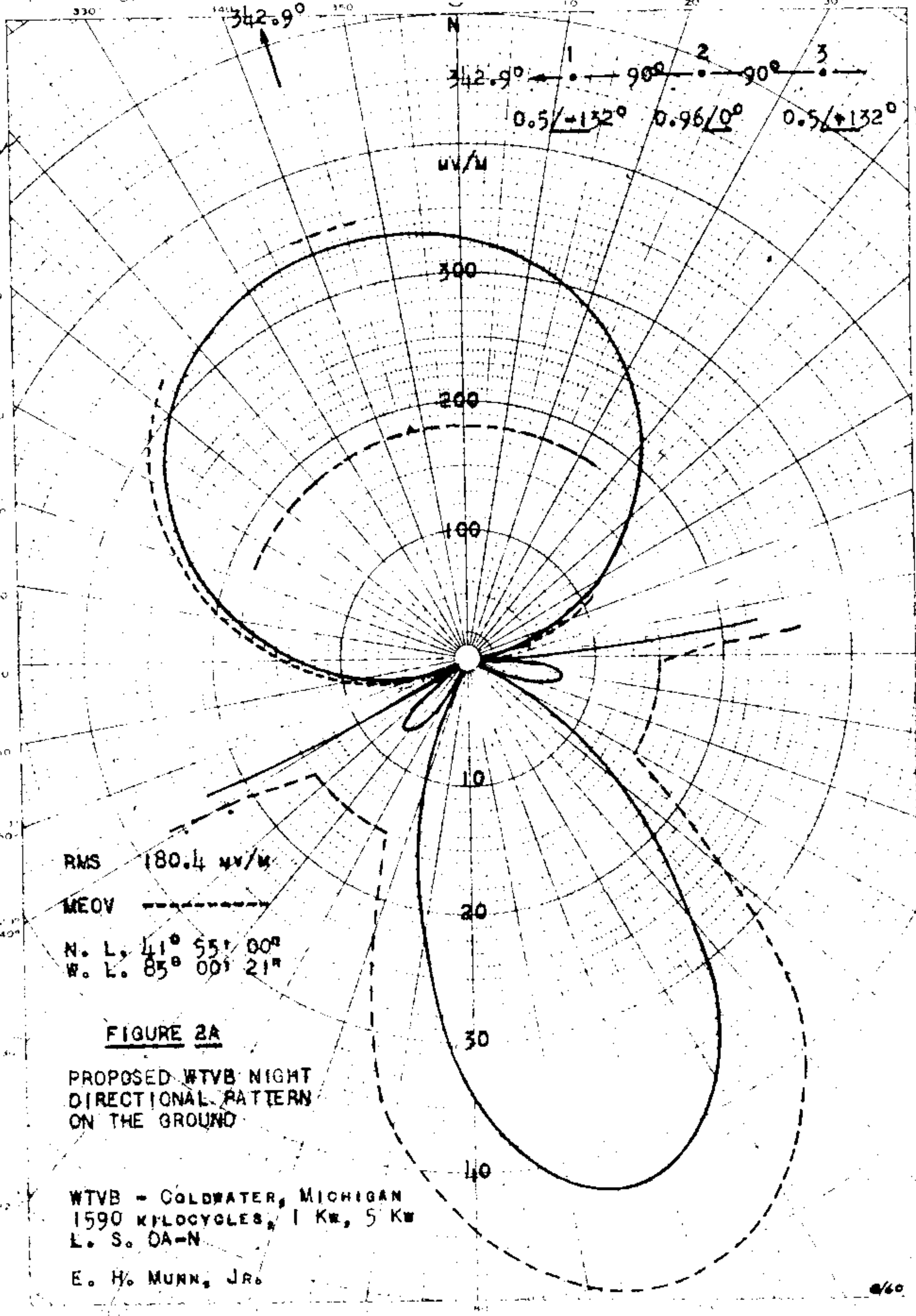


FIGURE 2A

PROPOSED WTVB NIGHT DIRECTIONAL PATTERN ON THE GROUND

WTVB - COLDWATER, MICHIGAN
1590 KILOCYCLES, 1 KW, 5 KW L. S. DA-N

E. H. MUNN, JR.

FCC File No. BP-14306
Accepted 9-2-60

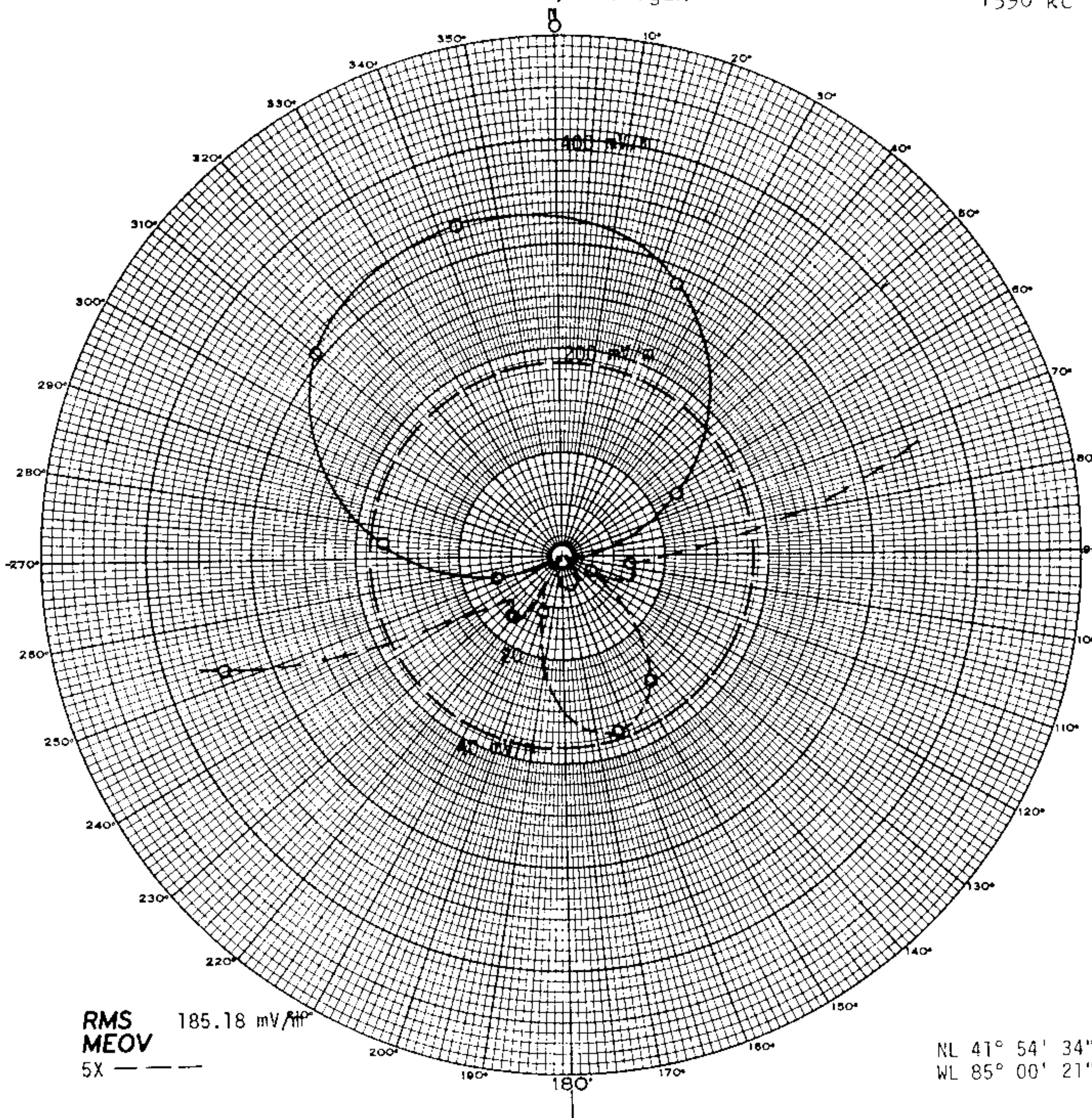
WTVB
Coldwater, Michigan

1590 KC

Measured Night
(11-29-69ct)

Station WTVB
Coldwater, Michigan

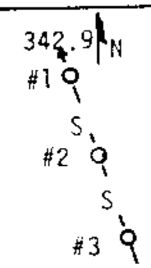
WTVB
1kw,5kw-LS,DA-N,U
1590 kc



RMS 185.18 mV/M
MEOV
5X — — —

NL 41° 54' 34"
WL 85° 00' 21"

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No.	ELECTRICAL HEIGHT G°	SPACING S°	PHASING Ψ°	FIELD RATIO F
1	107°	90°	-119°	0.67
2	107°	---	0°	1.00
3	107°	90°	+123°	0.57
4				
5				
6				
7				
8				
9				
10				

DAYTIME OPERATION ☐ NIGHTTIME OPERATION ☒

FIGURE 2

MEASURED NIGHT

DIRECTIONAL

1 KW

FEBRUARY 1969

$\theta^\circ = 0$

STATION DATA

CALL	WTVB
FREQ	1590 kHz
POWER	1 KW
TYPE	DA-N
TIME	NIGHT
LAT.	
LONG.	

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

FCC File No.BZ-7322
Accepted 10-31-69

Station WTVB
Coldwater, Michigan

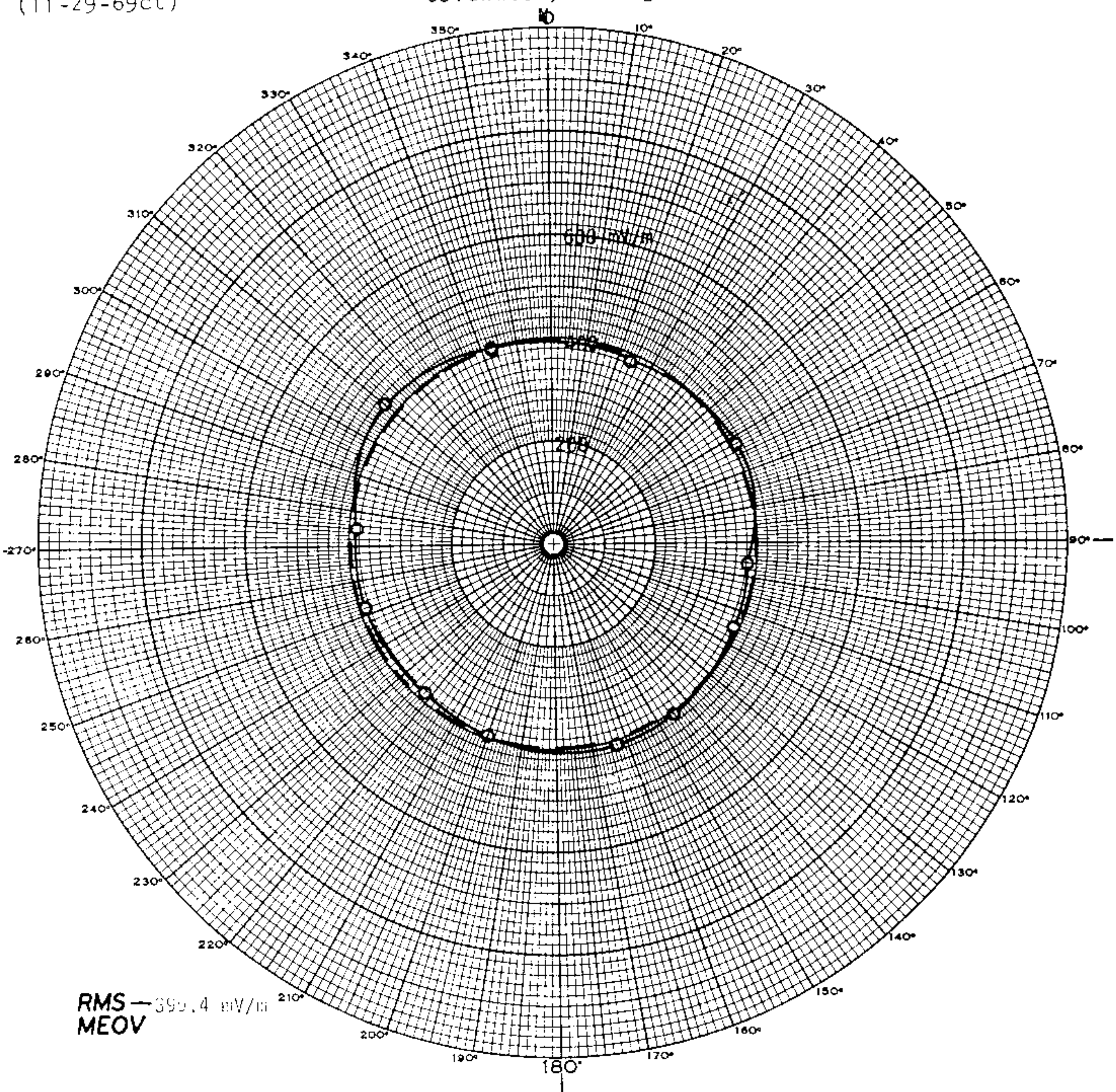
1590 kc

WTVB

1kw,5kw-LS,DA-N,U
1590 kc

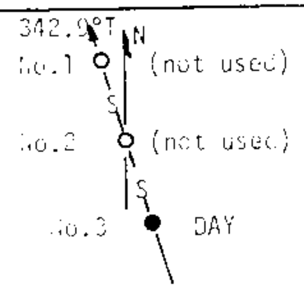
Measured Non-DA
(11-29-69ct)

Station WTVB
Coldwater, Michigan



RMS — 399.4 mV/m
MEOV

TOWER PLACEMENT SKETCH



PATTERN PARAMETERS

TOWER No	ELECTRICAL HEIGHT G°	SPACING S°	PHASING ψ°	FIELD RATIO F
1				
2				
3	107°	90°		
4				
5				
6				
7				
8				
9				
10				

DAYTIME OPERATION ☒ NIGHTTIME OPERATION ☐

FIGURE 1

MEASURED DAY
NON-DIRECTIONAL
5 KW
DECEMBER 1968

θ°

STATION DATA

CALL WTVB
FREQ 1590 kHz
POWER 5 kw
TYPE DA-N
TIME DAY
LAT. 41° 54' 34"
LONG. 85° 00' 21"

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

FCC File No.BZ-7322
Accepted 10-31-69

Station WTVB
Coldwater, Michigan

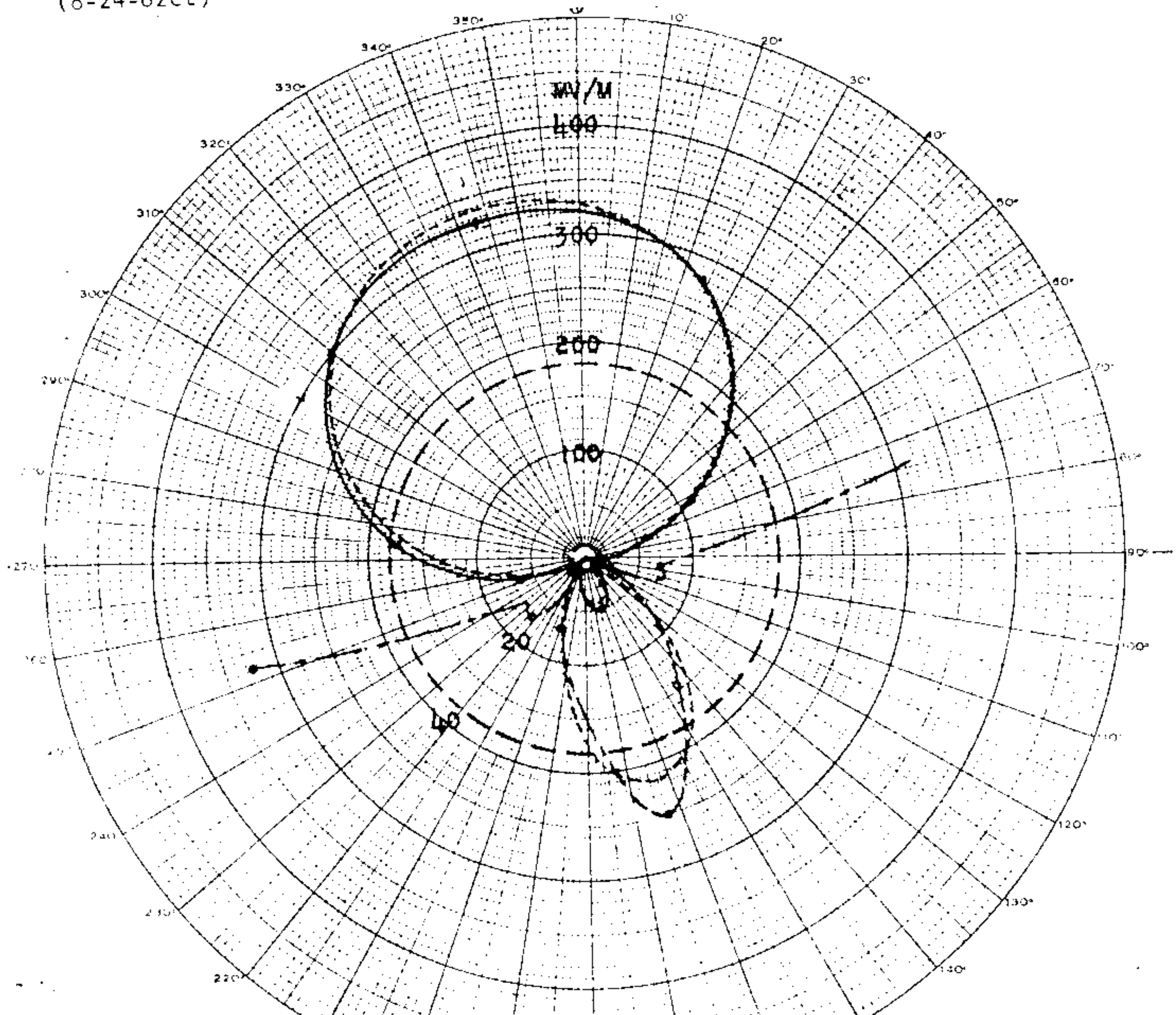
1590 kc

WTVB

Measured Night
(8-24-62ct)

Station WTVB
Coldwater, Michigan

1kw,5kw-LS,DA-N,U
1590 kc



RMS 180.7 MV/M
MEOV
PROP.
5 X
MEAS.

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 2	STATION DATA
342.9° T. No. 1 0.648/-129° S No. 2 1.0/0° G= 107° S No. 3 0.567/129° S= 90°, 154 5/62		MEASURED NIGHT DIRECTIONAL W T V B COLDWATER, MICH. θ^0 0	CALL WTVB FREQ 1590 POWER 1 Kw TYPE DA TIME NIGHT LAT. 41-55-00 LONG. 85-00-21 E.H.MUNN,JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No.BL-9461
Accepted 8-6-62

Station WTVB
Coldwater, Michigan

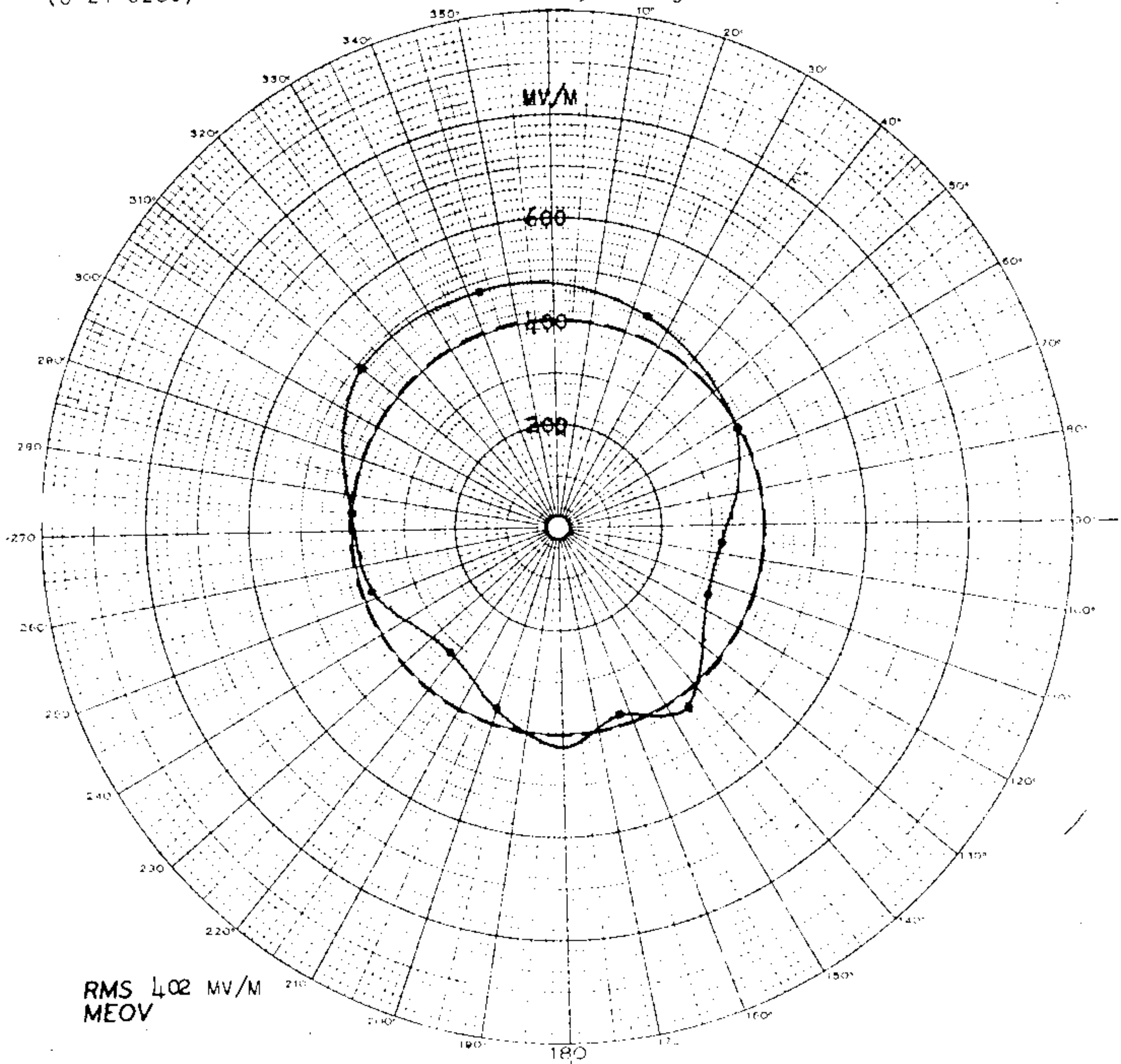
1590 kc

WTVB

Measured Non-DA
(8-24-62ct)

Station WTVB
Coldwater, Michigan

1kw,5kw-LS,DA-N,U
1590 kc



RMS 402 MV/M
MEOV

TOWER PLACEMENT SKETCH	PATTERN PARAMETERS	FIGURE 1	STATION DATA
342.9° T. No. 1 (NOT USED) S No. 2 (NOT USED) G= 107° S No. 3 DAY S= 90°, 154'	TOWER No. / ELECTRICAL HEIGHT / SPACING / PHASING / FIELD RATIO DAYTIME OPERATION X NIGHTTIME OPERATION	MEASURED DAY NON-DIRECTIONAL 5 KW MAY - 1962 θ°	CALL WTVB FREQ 1590 Kc POWER 5 Kw TYPE NON-DA TIME DAY LAT. 41-55-00 LONG. 85-00-21 E.H.MUNN,JR. RADIO ENGINEER COLDWATER, MICH.

FCC File No.BL-9461
Accepted 8-6-62

Station WTVB
Coldwater, Michigan

1590 kc

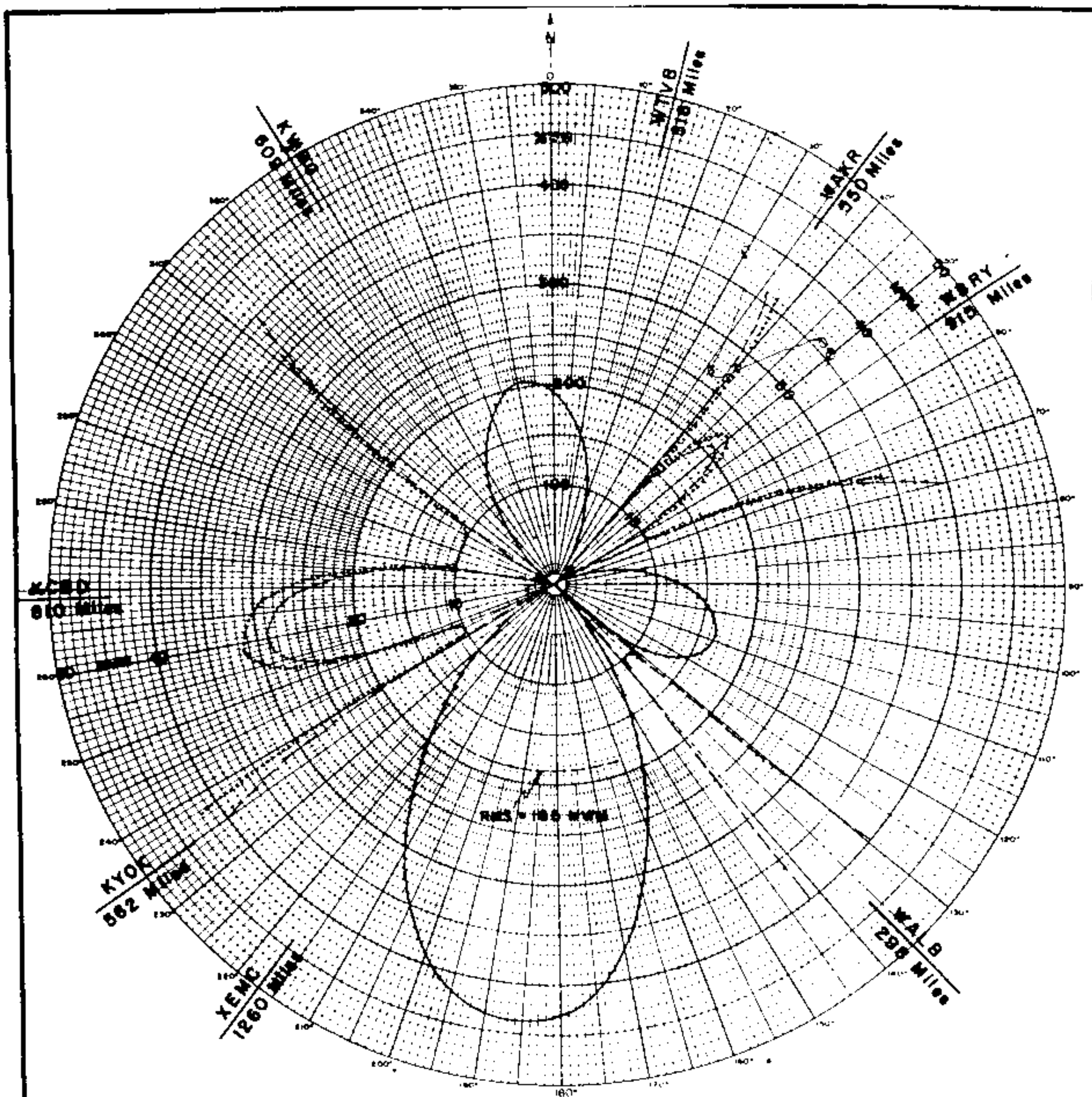
WVNA

2-6-63
wanted 1KW
JAN

Proposed Night
(11-30-61ct)

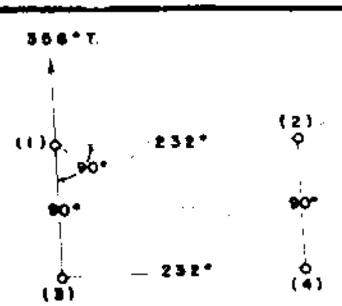
Station WVNA
Tuscumbia, Alabama

1kw,5kw-LS,U
1590 kc



θ = 0°

------- EXPANDED SCALE
.... MEOV
(AMENDED) EXHIBIT E



LATITUDE 34° 45' 24"
LONGITUDE 87° 41' 10"

ANTENNA NUMBER	AZIMUTH DEG	SPACING DEG	PHASING DEG	FIELD RATIO	MV/M FOR 1 KW	HEIGHT DEG
1	SEE DIAGRAM	SEE DIAGRAM	0	1.0		195
2			+34	1.0		195
3			-140	1.0		195
4			-106	1.0		195

NIGHTTIME
ELEVATION PATTERN
FOR
PROPOSED WVNA
TUSCUMBIA, ALABAMA
1590 KC. 1KW, 5KW LS, DA-N

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D.C.

FCC File No. BP-14317
Accepted 11-3-61 Amended

Station WVNA
Tuscumbia, Alabama

1590 kc

WVNA

Measured Night (4-24-64ct)	Station WVNA Tuscumbia, Alabama	1kw,5kw-LS,DA-N,U 1590 kc

#202
9-28-64
granted L for
DA-N & change
in xmtr site

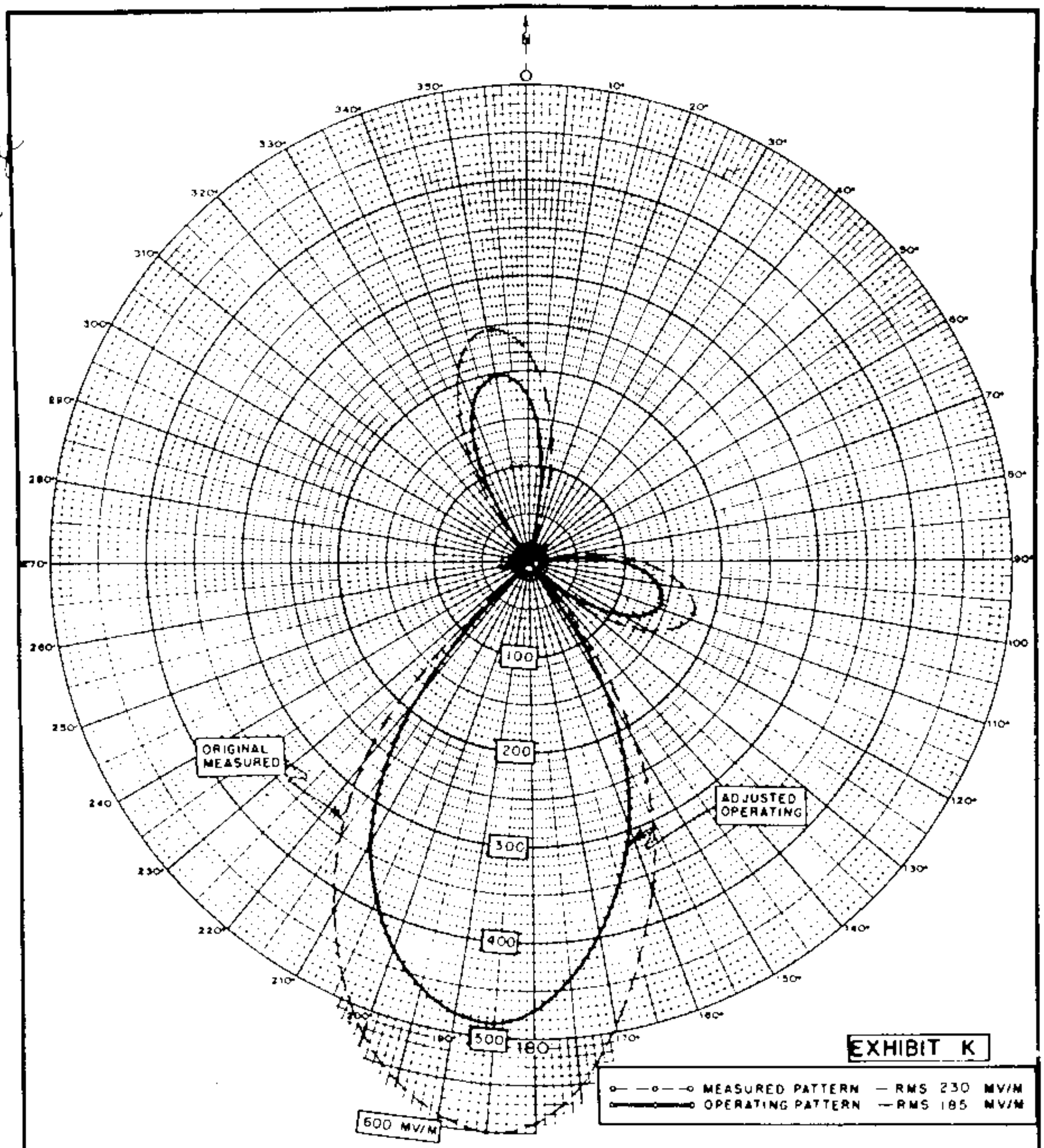
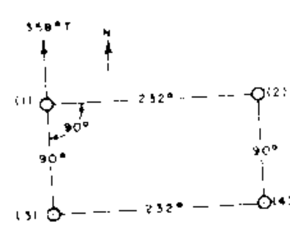


EXHIBIT K



LATITUDE 34° 45' 24" North
LONGITUDE 87° 41' 10" West

Antenna Number	Azimuth Deg	Spacing Deg	Phasing Deg	Field Ratio	MV/M for 1 KW	Height Deg
1	SEE DIAGRAM	SEE DIAGRAM	0	1.0		195
2			+24	2.0		195
3			-145	1.82		195
4			-105	1.95		195

MEASURED AND OPERATING NIGHTTIME PATTERNS FOR

WVNA

TUSCUMBIA, ALABAMA

1590 KC 1 KW, 5 KW, LS, DA-N-U

BP-14317

631210

KEAR & KENNEDY
CONSULTING ENGINEERS
WASHINGTON D. C.

FCC File No. BL-10486 Accepted 4-3-64	Station WVNA Tuscumbia, Alabama	1590 kc

WWBK

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : WWBK   Main Studio: Brockport, New York

Frequency : 1590 KHz   Power : 1 kW Night 1 kW Day

Notification : 1779   Date : September 27, 1978 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude:	43°	11'	44"
West Longitude:	77°	57'	05"

ANTENNA CHARACTERISTICS

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

TOWER :	#1 (N)	#2(C)	#3(S)	#4(NW)	#5(SE)	
HEIGHT ABOVE INSULATORS :	157.6'	157.6	157.6	157.6	157.6	(91.7°)
NIGHT PHASING :	-136.7°	0°	+136.8	--	--	
NIGHT FIELD RATIO:	0.693	1.00	0.389	--	--	
DAY PHASING :	--	0°	--	-121.7°	+124.0°	
DAY FIELD RATIO :	--	1.00	--	0.638	0.443	

SPACING AND ORIENTATION: With tower #2(C) as reference tower #1(N) is spaced 157.6' (91.7° on a line bearing 0° true, tower #3(S) is spaced 157.6 (91.7°) on a line bearing 180° true, tower #4(NW) is spaced 150.4' (87.5°) on a line bearing 309° true, and tower #5 (SE) is spaced 150.4° (87.5°) on a line bearing 129° true.

GROUND SYSTEM: 120-157.6' 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.

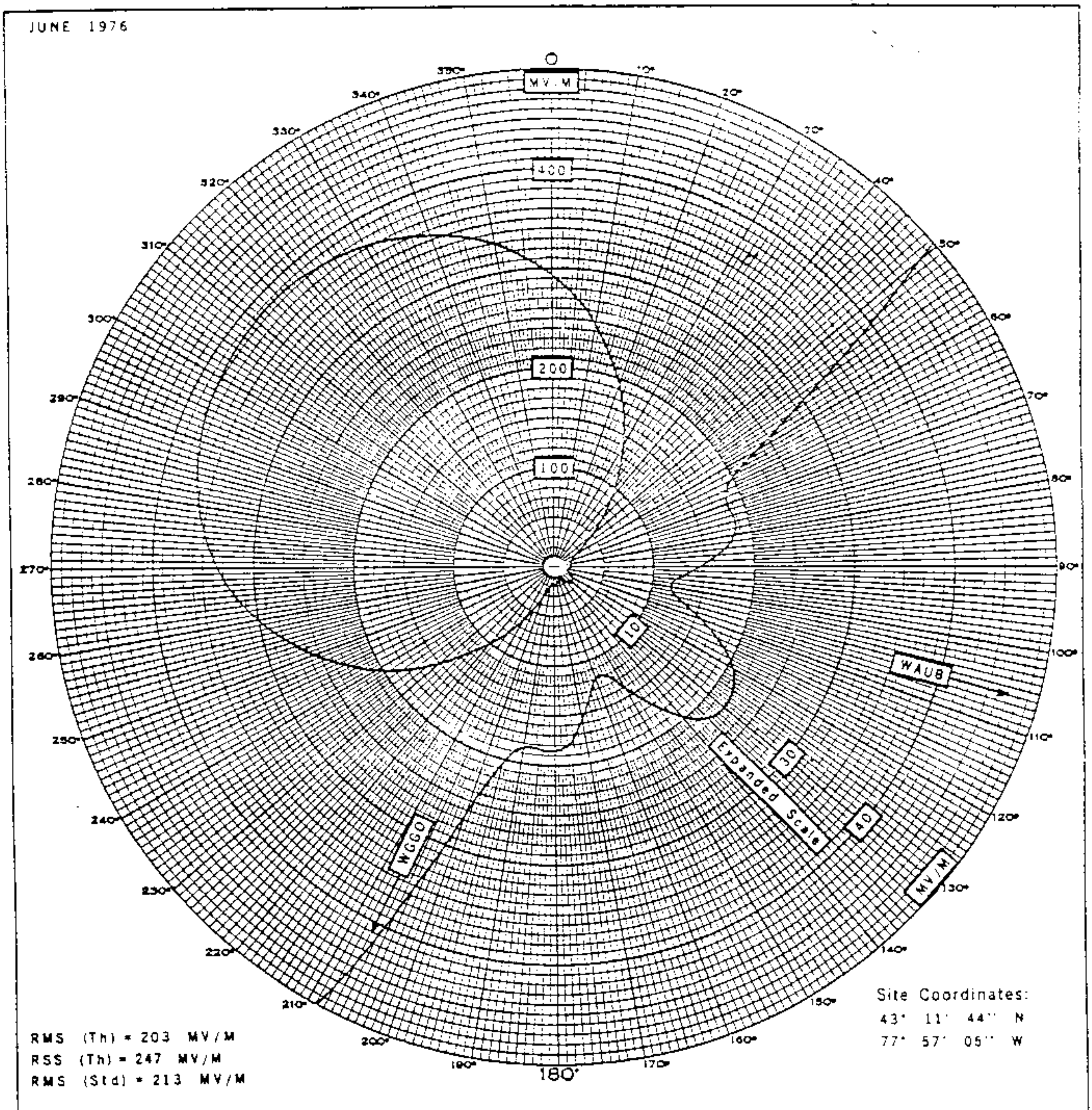
WWBK

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

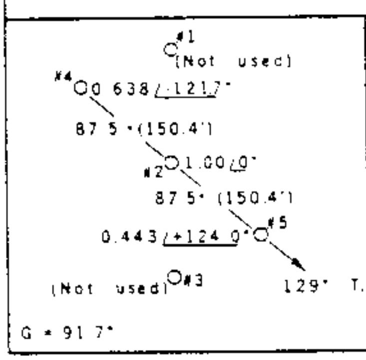
	THEORETICAL				STANDARD	
	RMS		RSS		RMS	
Day	203	mV/m	247	mV/m	213	mV/m
Night	206	mV/m	277	mV/m	216	mV/m

Note:

WWBK
Figure 7



PROPOSED DAYTIME HORIZONTAL PLANE STANDARD RADIATION PATTERN



CANAL COMMUNICATIONS, INC.
BROCKPORT, NEW YORK

Jules Cohen & Associates
Consulting Electronics Engineers

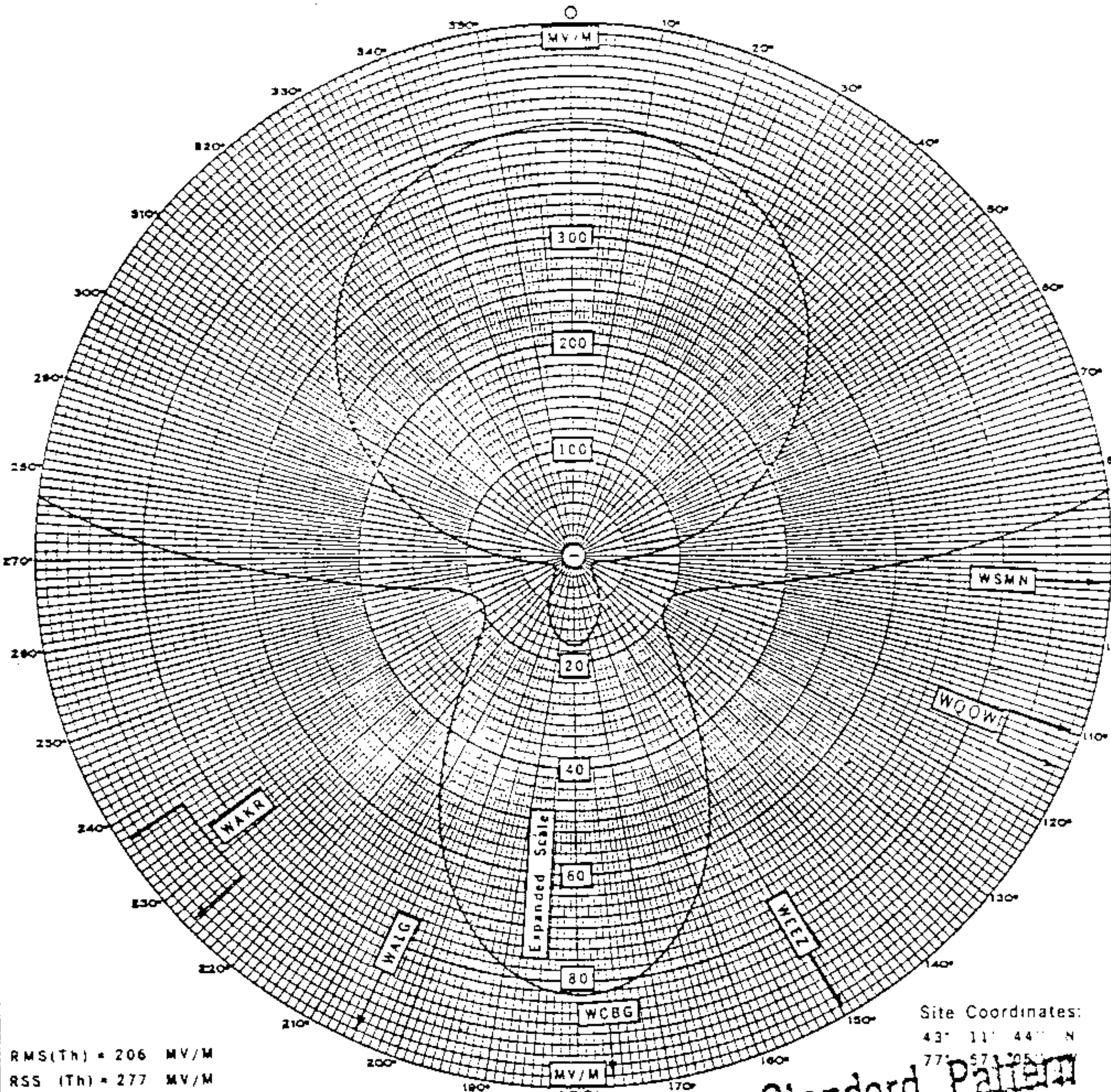
RADIO STATION WWBK

1590 KHZ

1 KW U DA-2

Pattern 760615D

JUNE 1976



Site Coordinates:
43° 11' 44'' N
77° 57' 05'' W

RMS(Th) = 206 MV/M
RSS (Th) = 277 MV/M
RMS (Std) = 216 MV/M

Standard Pattern

PROPOSED NIGHTTIME HORIZONTAL PLANE STANDARD RADIATION PATTERN

0° True
#1 0.693/-136.7°
(Not used)
#4
91.7°(157.6')
#2 1.00/0°
91.7°(157.6')
#5
(Not used)
#3 0.389/+136.8°
G=91.7

CANAL COMMUNICATIONS, INC.

BROCKPORT, NEW YORK

Jules Cohen & Associates
Consulting Electronics Engineers

RADIO STATION WWBK

1590 KHZ

1 KW U DA-2

Pattern 760615N

WVNA

Measured Non-DA
(4-24-64ct)

Station WVNA
Tuscumbia, Ala.

1kw,5kw-LS,DA-N,U
1590 kc

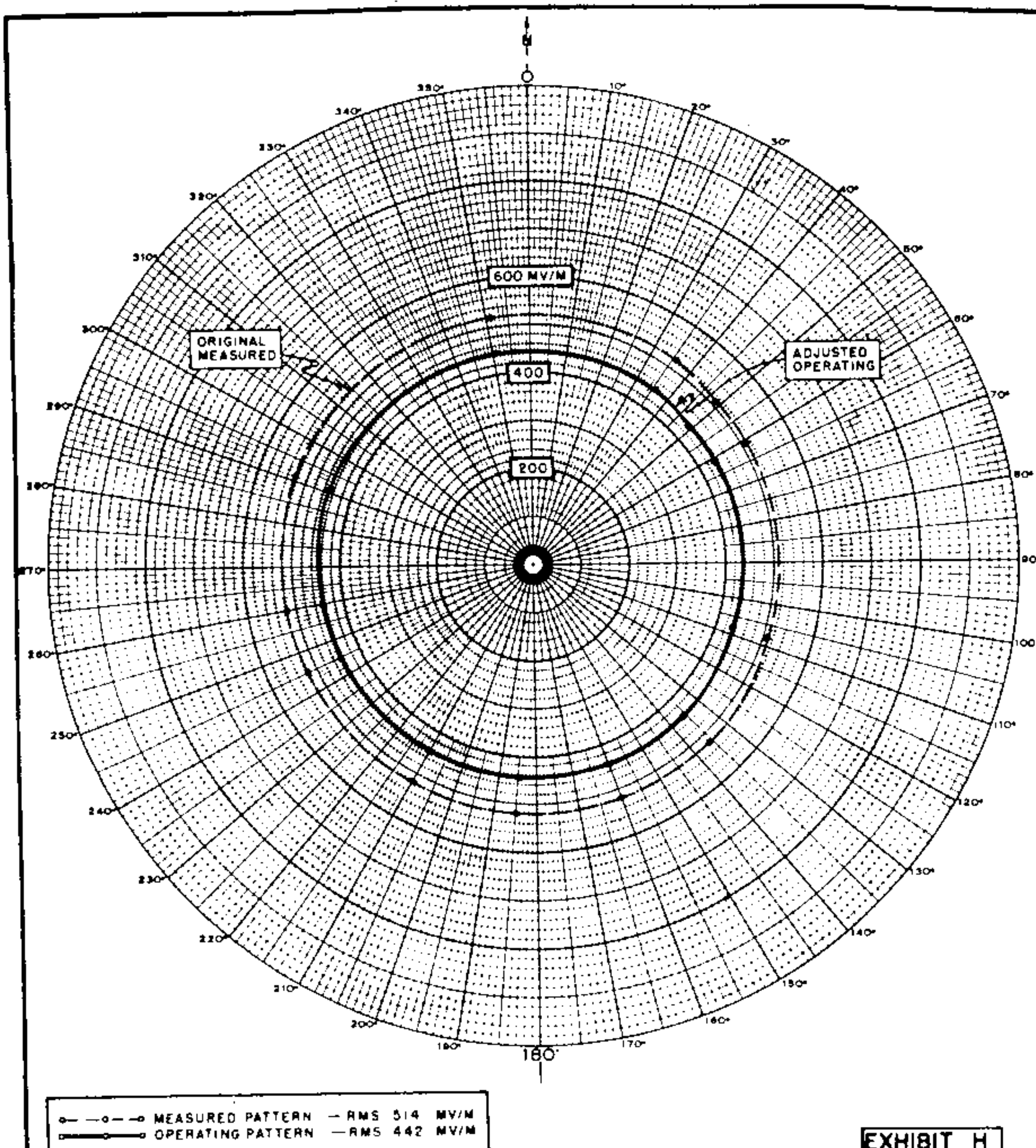


EXHIBIT H

TOWER NO. 1 EXCITED

TOWERS 2, 3, 4 ISOLATED

LATITUDE 34° 45' 24" North
LONGITUDE 87° 41' 10" West

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

MEASURED AND OPERATING DAYTIME PATTERNS
FOR
WVNA
TUSCUMBIA, ALABAMA
1590 KC 1 KW, 5 KW, LS, DA-N-U
BP-14317
631210

KEAR & KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.

FCC File No. BL-10486
Accepted 4-3-64

Station WVNA
Tuscumbia, Alabama

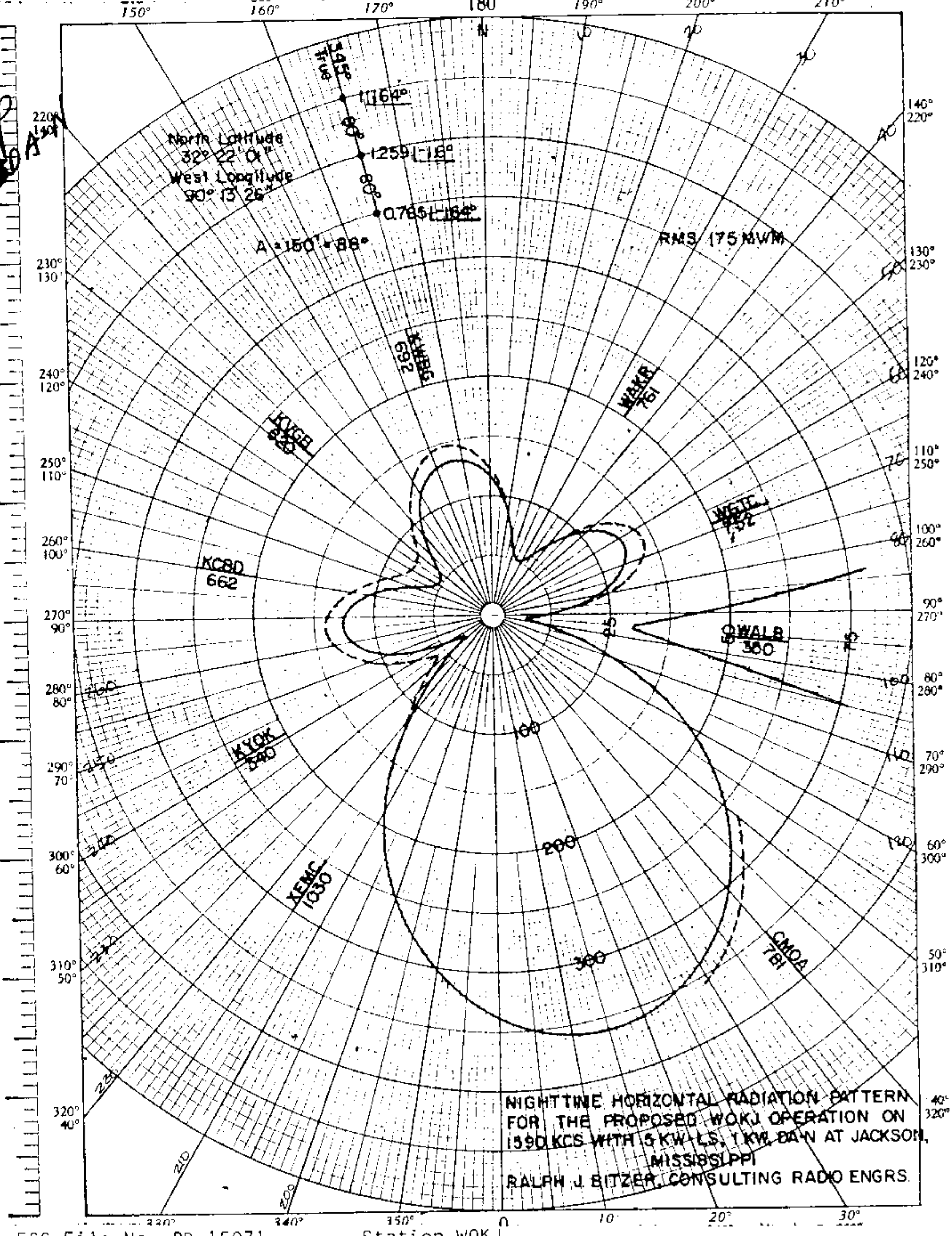
1590 kc

PROPOSED NIGHT
(10-25-61ct)

Station WOKJ
Jackson, Mississippi

WWUN
1kw,5kw-LS,DA-N,U
1590 kc

2-6-63 granted fd 1KW/DA-N



FCC File No. BP-15071
Accepted 9-18-61

Station WOKJ
Jackson, Mississippi

1590 kc

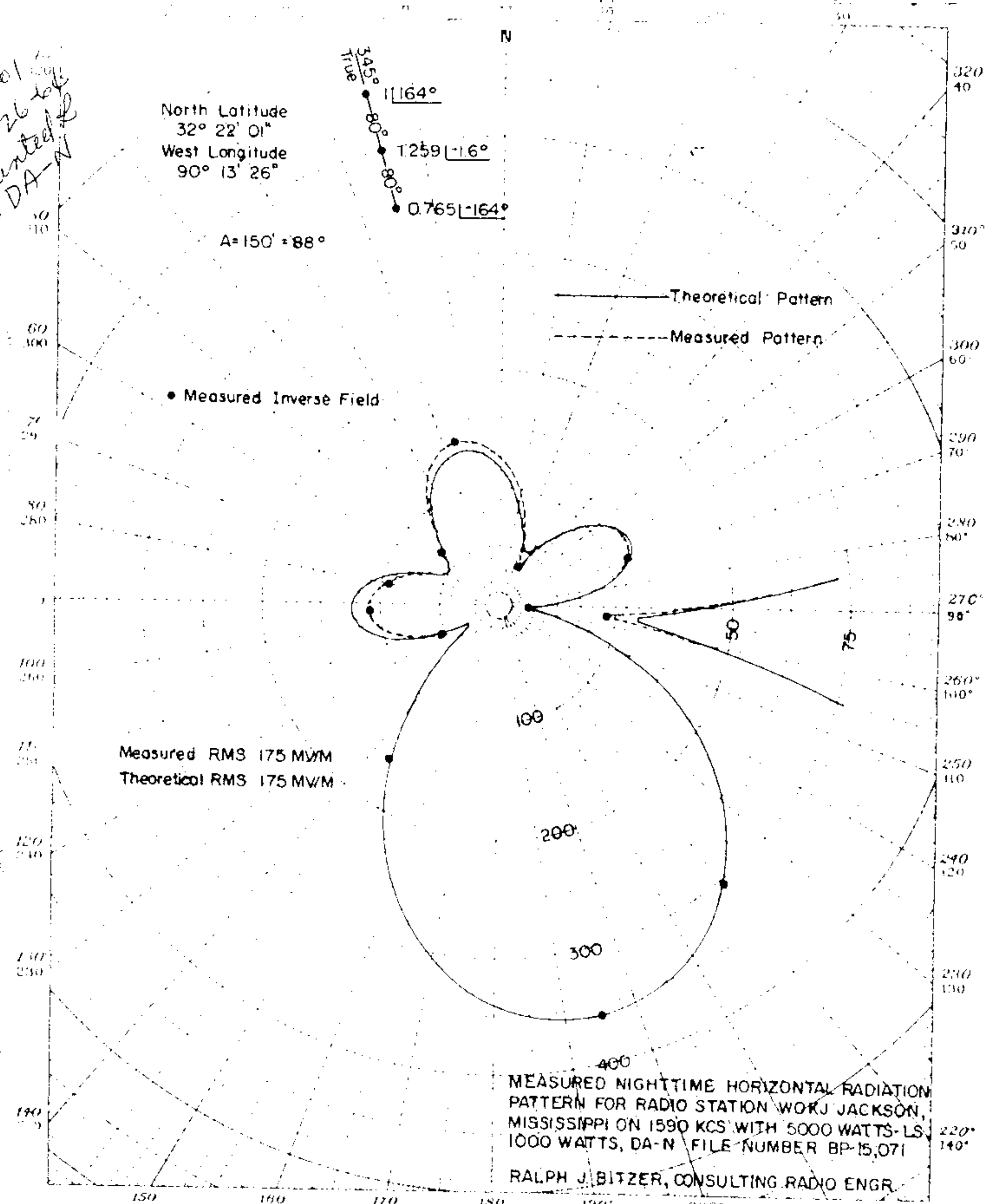
WWUN

Measured Night
(5-28-64ct)

Station WOKJ
Jackson, Mississippi

1kw,5kw-LS,DA-N,U
1590 kc

#201 8-26-64 granted for DA-N



MEASURED NIGHTTIME HORIZONTAL RADIATION PATTERN FOR RADIO STATION WOKJ JACKSON, MISSISSIPPI ON 1590 KCS WITH 5000 WATTS-LS, 1000 WATTS, DA-N FILE NUMBER BP-15,071

RALPH J. BITZER, CONSULTING RADIO ENGR.

FCC File No.BL-10532
Accepted 4-28-64

Station WOKJ
Jackson, Mississippi

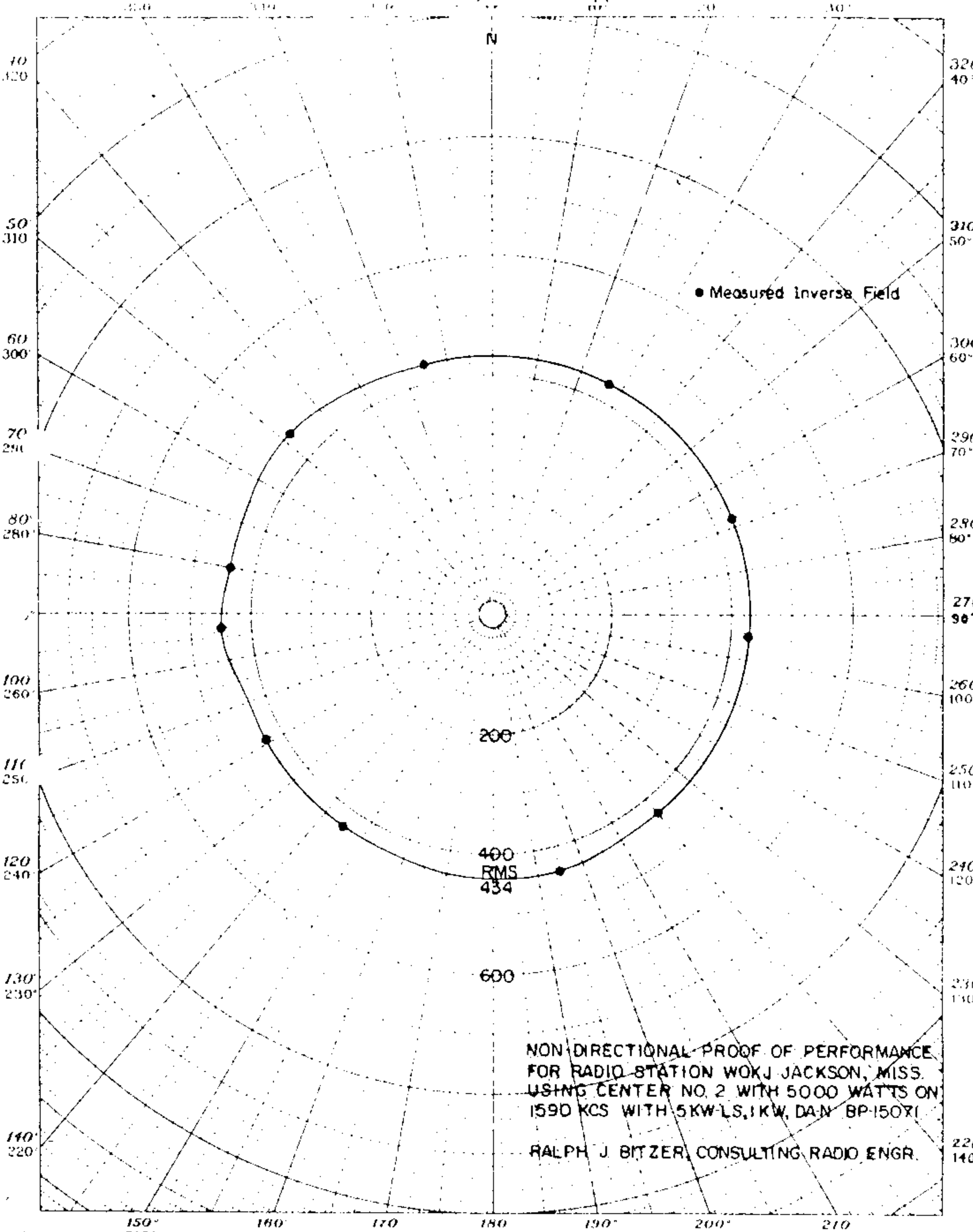
1590 kc

WWON

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

Station WOKJ
Jackson, Mississippi

1kw,5kw-LS,DA-N,U
1590 kc



FCC File No.BL-10532
Accepted 4-28-64

Station WOKJ
Jackson, Mississippi

1590 kc

XEACH

DIRECTIONAL ANTENNA DESCRIPTION SHEET
(ISSUED: February 12, 1973)

Station: XEACH | Main Studio: Monterrey, Nuevo Leon

Frequency: 1590 kHz | Power: 1kW

Notification List No. (*) | Date: (*) | Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: North Latitude: 25° 40' 58"
West Longitude: 100° 12' 09"

ANTENNA CHARACTERISTICS

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

TOWER:	S(#1)	N(#2)
HEIGHT ABOVE INSULATORS:	90°	90°
PHASING:	0°	0°
FIELD RATIO:	1	1

SPACING AND ORIENTATION: Elements are spaced 164° on a line bearing 11.80° true.

GROUND SYSTEM: 120-90° equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along inter-sections between towers.

Predicted effective Night Field: 190 mv/m at rated power.

(*)FCC Note - This supplementary information was not identified with any Mexican Change List. The last notification of basic information received for this station was in Mexican Change List No. 144, dated March 11, 1972, and no previous supplementary information has been received. Therefore, it is assumed that this supplementary information, transmitted by Mexican letter dated January 30, 1973, is intended to complete the notification in List No. 144.

CTR NO 2044[illegible]

XEACH

DESCRIPCION DE ANTENA DIRECCIONAL

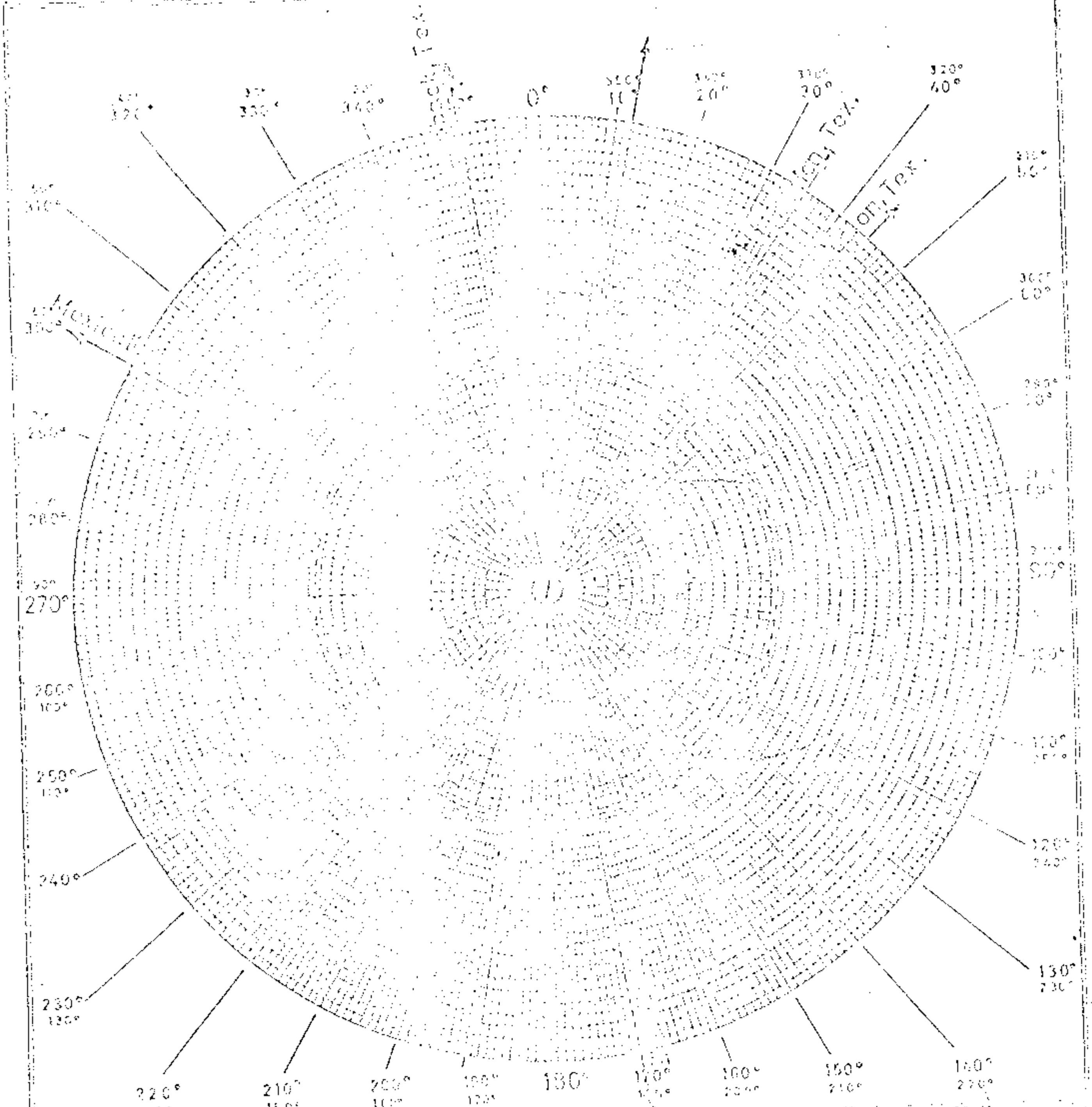
Estación: XEACH Lugar: MONTERREY, N.L.
Potencia: 1,000 Kw. Frecuencia: 1590 KHz.
Clase: III
Lista de notificaciones: - - - - - - - - - - - - -
Localización geográfica: Lat.N. 25° 40' 57.5"
Long.W. 100° 12' 08.96"

CARACTERISTICAS:

Forma de operación: AD N
Número de elementos: 2
Tipo de elementos: Torres de acero de sección transversal uniforme, soportada con retenidas, aislada en su base, alimentación tipo serie.

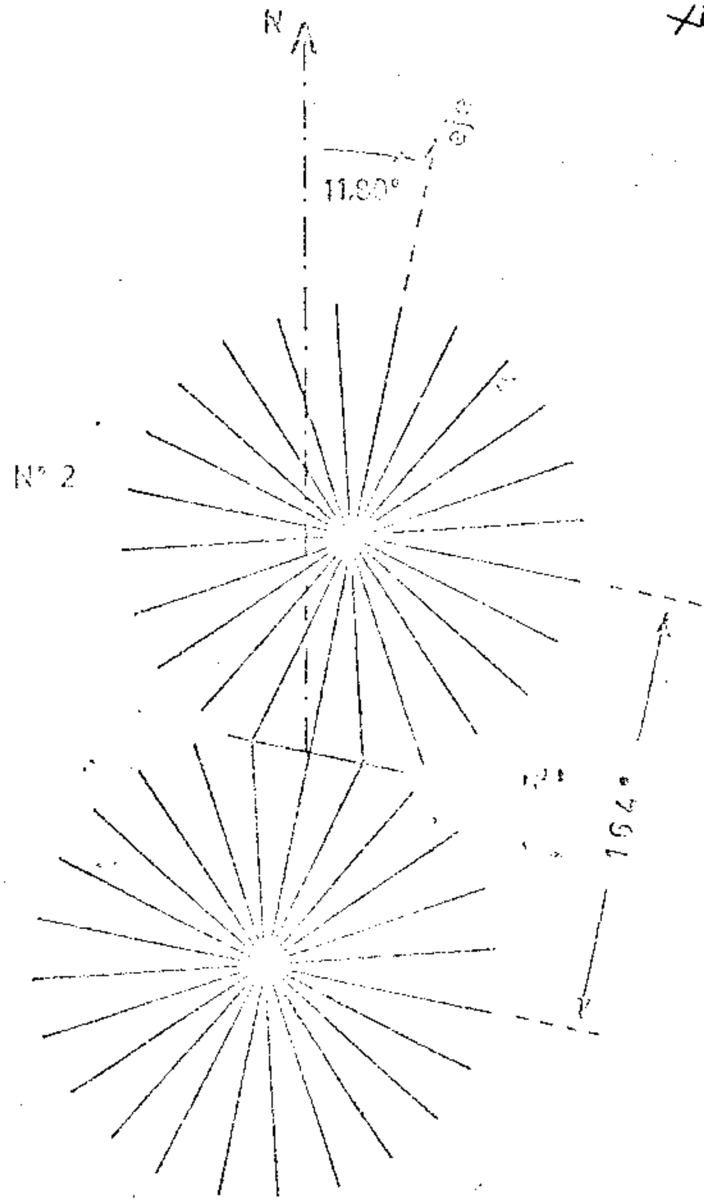
Torres:	Nº 1	Nº 2
Altura:	90°	90°
Separación:	0°	164°
Defasamiento:	0°	0°
Relación de campos:	1	1
Orientación del eje:	11,80°	
R.M.S. teórico:	190 mV/m	
Intensidad de campo no atenuado a 1 km por Kw. de potencia radiada:	190 mV/m	

XEACH



	XEACH	diseño
	frecuencia 1590 KHZ	dibujó
	ubicación MONTERREY, N.L.	fecha MAYO [illegible]

XEACH



SISTEMA DE TIERRA 120 radiales de alambre de cobre igualmente espaciados y extendidos desde la base de cada torre a una distancia de 90° excepto donde se unen por un alambre común.	siglas XEACH	diseñó
	frecuencia 1590 KHZ	dibujó
	lugar MONTERREY, N.L.	fecha MAYO 1972

XEART

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XEART

Main Studio: [illegible]tepec, Mor.

Frequency: 1590 kHz

Power: 1 kW

Notification List No. (*)

Date: (*) Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM: 18° 39' 12" North Latitude
99° 11' 38" West Longitude

ANTENNA CHARACTERISTICS

Authorized for Daytime and Nighttime operation. (DA-1)
Number of elements: 3
Type of elements: Series-excited, uniform cross-section, guyed, vertical steel towers.

TOWER:	NW(#3)	S(#1)	NE(#2)
HEIGHT ABOVE INSULATORS:	All towers 36.688 meters (70°)		
PHASING:	+110°	0°	+110°
FIELD RATIO:	1	1	1

SPACING AND ORIENTATION: From Tower #1, Tower #2 is spaced 41.929 meters (80°, on a line bearing 7° true and Tower #3 is spaced 41.929 meters (80°) on a line bearing 337° true.

GROUND SYSTEM: 120-47.17 meters equally spaced copper radials about each tower. Radials are shortened and bonded to transverse straps along intersections between towers.

Predicted effective Field: 170 mV/m at rated power.

FCC NOTE: This supplementary information was not identified with a notification list. Transmitted by letter, dated July 4, 1975.

[illegible]

XEAKT

DESCRIPCION DEL SISTEMA DIRECCIONAL DE RADIACION

OPERACION DIURNA Y NOCTURNA

ESTACION: XEART

FRECUENCIA: 1590 KHz

LISTA DE NOTIFICACIONES:

UBICACION: ZAÇATEPEC MOR.

POTENCIA: 1000 WATTS

CLASE: III

LOCALIZACION GEOGRAFICA DEL SISTEMA RADIADOR LONGITUD 99° 11' 35"
LATITUD 18° 39' 12"

CARACTERISTICAS DEL SISTEMA

AUTORIZADO PARA OPERACION: AD - I

NUMERO DE ELEMENTOS RADIADORES: TRES

TIPO DE ELEMENTOS RADIADORES: TORRES VERTICALES DE SECCION UNIFORME TRIANGULAR, ALIMENTADAS EN LA BASE CON RETENIDAS

ALTURA DE C/U SOBRE LOS AISLADORES: 36.688 mts. (70°)

SEPARACION ENTRE TORRES:
T_1 A T_2 80° (41.929 mts.)
T_1 A T_3 80° (41.929 mts.)
T_2 A T_3 41.41° (21.704 mts.)

MAGNITUD RELATIVA DE LAS CORRIENTES:
T_1 1
T_2 1
T_3 1

DESFASAMIENTO DE:
T_1 A T_2 110°
T_1 A T_3 110°
T_2 A T_3 0°

AZIMUT DE LOS EJES DE LAS TORRES
T_1 A T_2 7°
T_1 A T_3 -23°

AZIMUT DE LA BISECTRIZ DEL ARREGLO DE LAS TORRES -8°

RAIZ CUADRATICA MEDIA TEORICA Eo 165.408 mV/m

INTENSIDAD DE CAMPO R.C.M. NO ATENUADO A 1609 mts. POR KW DE POTENCIA RADIADA 170 mV/m

XEART

PATRON DE RADIACION HORIZONTAL TABULADO

XEART 1590 KHZ

ZACATEPEC, MOR. 1 KW

ECUACION $E_H = 332 \cos\left[40^\circ \cos(15^\circ - \emptyset) + 55^\circ\right] \cos\left[40^\circ \cos(-15^\circ - \emptyset) + 55^\circ\right]$

AZIMUT		$\emptyset$	$\cos\left[40^\circ\cos(15^\circ-\emptyset)+55^\circ\right]$	$\cos\left[40^\circ\cos(-15^\circ-\emptyset)+55^\circ\right]$	E_H
352	352	00.00	-0.063435	-0.063435	1.34
342	2	10	-0.034509	-0.021855	0.0[illegible]
338.045	5.955	13.955	-0.067040	0.000000	0.00
332	12	20	-0.034509	0.038980	1.05
322	22	30	-0.063435	0.116943	2.46
320	24	32	-0.056731	0.134333	2.53
312	32	40	-0.021855	0.208883	1.52
308.045	35.955	43.955	0.000000	0.248209	0.00
308	36	44	0.000266	0.248664	0.0[illegible]
302	42	50	0.038980	0.310598	4.02
292	[illegible]	60	0.116943	0.417031	16.19
284	60	68	0.172401	0.501892	28.7[illegible]
282	62	70	0.208883	0.522704	36.25
272	72	80	0.310598	0.622327	64.17
[illegible]	82	90	0.417031	0.711447	98.50
[illegible]	92	100	0.522704	0.7[illegible]	[illegible]
[illegible]	102	110	0.622327	0.847[illegible]	175.[illegible]
[illegible]	[illegible]	120	0.711447	0.893248	210.[illegible]
222	122	130	0.786986	0.925647	241.[illegible]
212	132	140	0.84783	0.946943	260.[illegible]
202	[illegible]	150	0.893248	0.959496	284.5[illegible]
[illegible]2	152	160	0.925647	0.968235	296.03
[illegible]	[illegible]	[illegible]	0.946943	0.965238	303.46
[illegible]	172	[illegible]	0.959496	0.959496	305.65

XEART

PATRON DE RADIACION HORIZONTAL CALCULADO EN MV/M A 1609 MTS

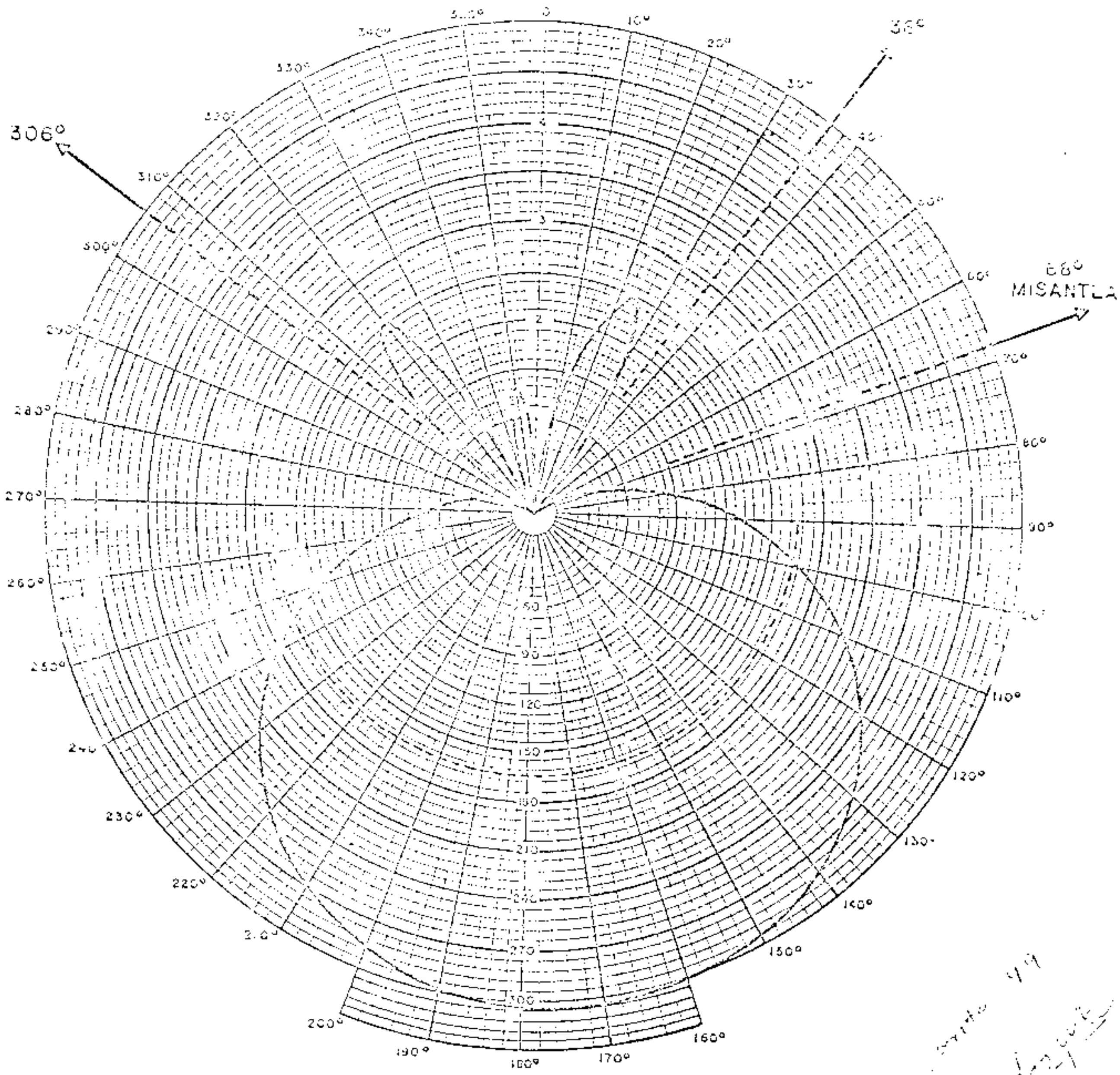
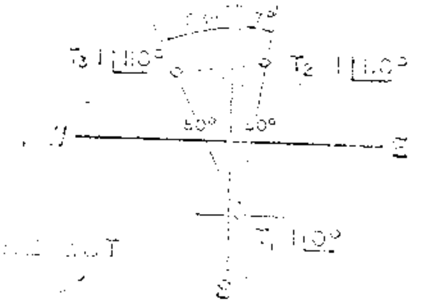


DIAGRAMA DE LAS TORRES Y SU ORIENTACION CON RESPECTO AL NORTE ASTRONOMICO



RADIODIFUSORA

XEART

ZACATEPEC MOR.

1650 KHZ

1000 W. D/N

DISEÑO:

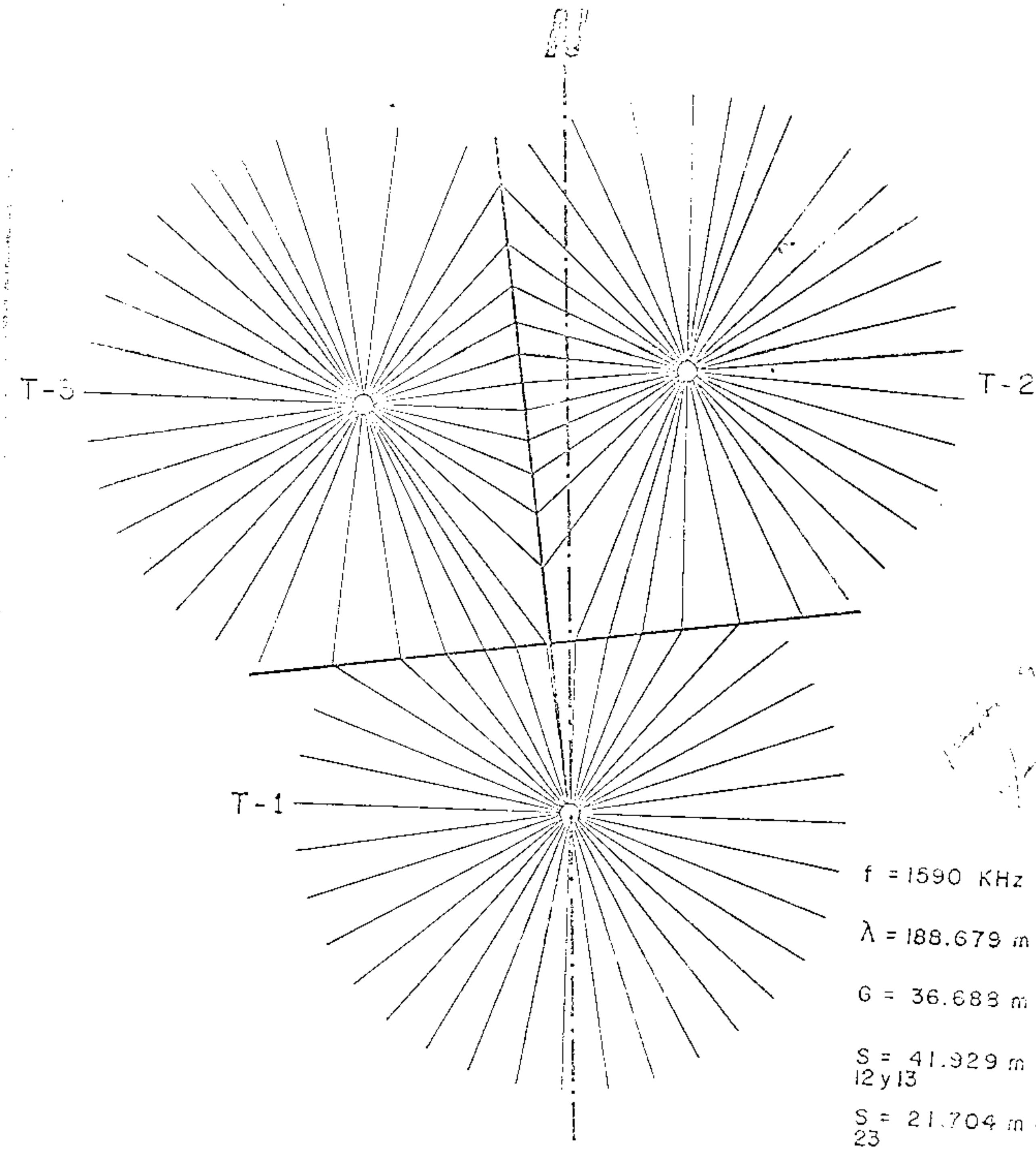
CONSTRUCCIONES ELECTRONICAS NACIONALES S.A.
ING. JESUS CHAVEZ C.

CONCESIONARIO:

C. GRACELY ROJAS MENDOZ

DIBUJO:

XEART



f = 1590 KHz

λ = 188.679 m = 360°

G = 36.688 m = 70°

$S_{12 y 13}$ = 41.929 m = 80°

S_{23} = 21.704 m = 41.4°

SISTEMA DE TIERRA

...ALES SON DE ALAMBRE DE COBRE No. 120 EN CADA TORRE ... M. DE LONGITUD Y UNIDOS AL CENTRO Y A LAS TORRES COMO LO INDICA LA FIGURA POR ALAMBRE DEL MISMO TIPO ... TODO EL SISTEMA ESTA ENTERRADO .30 M. LA SEPARACION DE EJES DE LAS TORRES ES DE 41.929 21.704 METROS

RADIODIFUSORA

XEART

ZACATEPEC ...OR.

1590 KHZ

1 KW

DISEÑO:

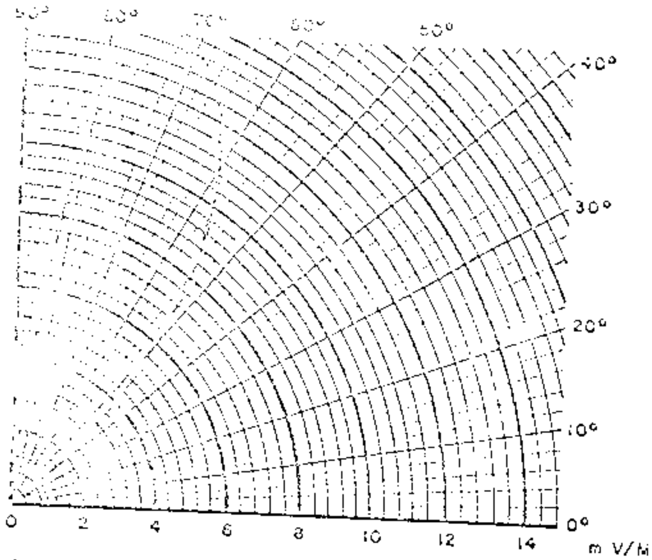
CONSTRUCCIONES ELECTRONICAS NACIONALES, S.A. ING. JESUS CHAVEZ ...

DIBUJO:

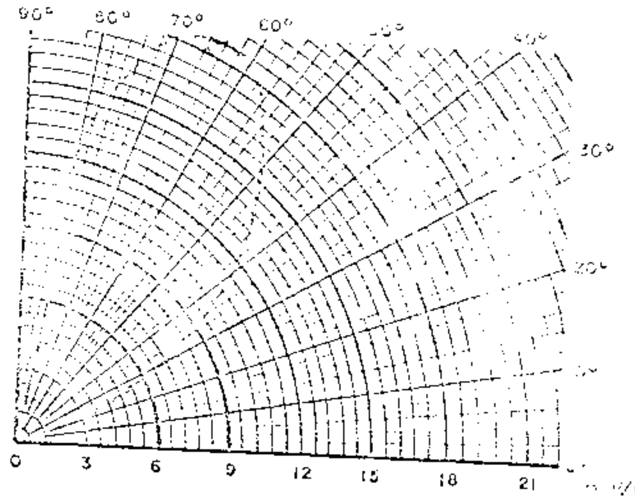
FECHA:

XEART

INTENSIDAD DEL CAMPO EN EL PLANO VERTICAL



AZIMUT = 352°
$\phi = 0°$



AZIMUT = 36° y 308°
$\phi = 44°$

$$E_\theta = 332\, f \left(6 \cdot \cos\left[40° \cos(15° - \phi) \cos\theta + 55°\right] \cos\left[40° \cos(-15° - \phi) \cos\theta + 55°\right]\right)$$

θ	E_θ mV/m
0°	1.34
10°	0.92
20°	0.16
30°	0.20
40°	2.13
50°	6.14
60°	10.95
70°	13.87
80°	11.34
90°	0.00

θ	E_θ mV/m
0°	0.02
10°	1.42
20°	3.07
30°	6.72
40°	11.29
50°	15.83
60°	18.84
70°	18.47
80°	12.74
90°	0.00

PATRONES DE RADIACION EN EL PLANO VERTICAL

RADIODIFUSORA

XEART

ZACATEPEC MOR.

1590 KHZ

[illegible]

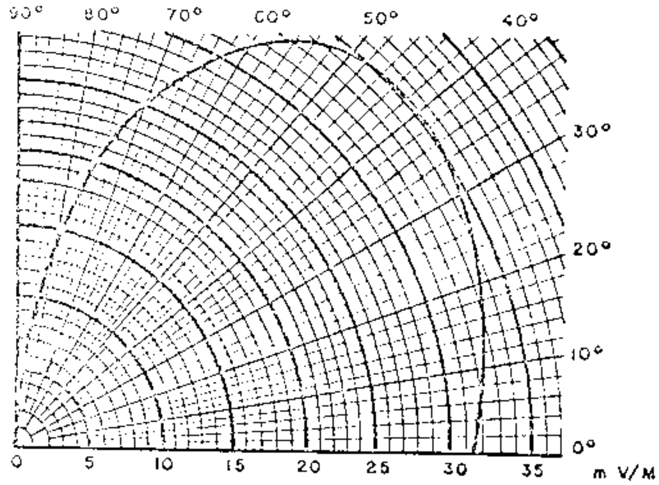
DISEÑO:

ELECTR[illegible] CONSTRUCCIONES [illegible] NACIONALES [illegible] JESUS CHAV[illegible]

DIBUJO:

XEART

INTENSIDAD DEL CAMPO EN EL PLANO VERTICAL



AZIMUT = 60°   Hacia Misantla Ver.

$\varnothing = 68°$

$$E_{\theta} = 332\, f(\theta) \cos\left(40° \cos(15°-\varnothing) \cos\theta + 55°\right) \cos\left(40° \cos(-15°-\varnothing) \cos\theta + 55°\right)$$

θ	E_{θ} mV/m
0°	31.59
10°	32.08
20°	33.34
30°	34.78
40°	35.58
50°	34.78
60°	31.48
70°	24.92
80°	14.53
90°	0.00

PATRON DE RADIACION EN EL PLANO VERTICAL

RADIODIFUSORA

XEART

ZACATEPEC MOR.

1590 KHZ

DISEÑO: ELECTRONICAS NACIONALES ... ING. JESUS CHAVEZ C.

DIBUJO: M. T. TEJ...

XEART

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: XEART

Main Studio: Facatepec, Morelos

Frequency: 1590 kHz

Power: 1kw

Notification List No. 243

Date: February 16, 1968 Class: III

GEOGRAPHICAL LOCATION OF THE CENTER OF THE ANTENNA SYSTEM:

North Latitude: 18° 39' 12"
West Longitude: 99° 11' 38"

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(S)	#2(N)
HEIGHT ABOVE INSULATORS:	154.8'	154.8' (90°)
PHASING:	0°	+122°
FIELD RATIO:	1	1

SPACING AND ORIENTATION: The towers are spaced(60°) on a line bearing 3° true.

GROUND SYSTEM: 120 - 154.8' equally spaced copper radials about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers. Centers of system are bonded together.

PREDICTED

THEORETICAL
RMS

196.2 mv/m

HOJA DESCRIPTIVA DEL SISTEMA RADIADOR DIRECCIONAL DE LA ESTACION XEART

1. Lista de cambios 243
2. Fecha 16 - FEBRERO - 1968
3. Frecuencia 1590 KHz.
4. Distintivo XEART
5. Población ZACATEPEC, MORELOS.
6. Ubicación
7. Potencia 1000 WATTS
8. Clase III

Latitud Norte 18° 39' 12"
Longitud Oeste 99° 11' 38"

CARACTERISTICAS TECNICAS DEL RADIADOR

9. Tipo de operación CONTINUO
10. Sistema del radiador AD - 1
11. Número de elementos 2

TIPO DE ELEMENTOS RADIADORES

12. Tipo de alimentación SERIE
13. Sección transversal forma TRIANGULAR Dimensiones 0.35 metros
14. Tipo de elemento radiador TORRES DE FIERRO
15. Tipo de soporte ARRIOSTRADO Tipo de retenes 20 POR ANTENA AISLADORES (3 EN LAS PUNTAS QUE LOS UNEN A LA ANTENA Y DESPUES CADA 5 A 7 MTS.
16. Longitud de topes capacitivo NO UTILIZA
17. Impedancia de Base Propia 38.34 + j22.22 Ω
Impedancia Mutua 27.88 + j22.77 Ω
18. Torre No. 1 Torre No. 2 Torre No.
19. Altura sobre el aislador # 1 47.17 (90°) # 2 47.17 (90°)
20. Defasamiento # 1 0° # 2 122°
21. Relación de campos 1 1
22. Descripción de la orientación del sistema radiador: SE DA POR SEPARADO

[illegible]
Departamento de [illegible]
Oficina de [illegible]

APROBO

SISTEMA DE TIERRA

23. No. de radiales por elemento 120
24. Longitud de los radiales 47.17 MTS. (90°)
25. Tipo del radial ALAMBRE DE Cu DEL Nº 12

RADIACION DEL SISTEMA

26. Intensidad de campo efectivo teórico (omnidireccional) de la potencia radiada (RCM) 196.2 mV/m
27. Intensidad de campo efectivo teórico a 1609 m por kilowatt de potencia radiada mV/m 194.9
28. Nota: PATRON NUEVO

Departamento de [illegible]
Oficina de Asignaciones

REVISO

Perito # 99
Nombre: Raúl Ruiz M

XEART

DIAGRAMA DE RADIACION HORIZONTAL TABULADO

1 DIURNA

2 XEART 3 1590 KHz.

4 ZACATEPEC, MOR. 5 1000 W.

6 $E = 178.3 \times 2 \cos(30 \cos(\varnothing k - 3) + 61)$

7

Azimut	A	B	C	D	E	F mV/m a 1609 m
Ø k	Cos (Ø k - 3)	30 x A	61 + B	Cos C	2 x D	178.3 x E
3	1.0000	30.000	91.000	0.0174	0.0349	6.223
13-353	0.9848	29.544	90.544	0.0094	0.0189	3.387
23-343	0.9396	28.190	89.190	0.0141	0.0282	5.036
33-333	0.8660	25.980	86.980	0.0526	0.1053	18.782
43-323	0.7660	22.981	83.981	0.0104	0.2097	37.390
53-313	0.6427	19.283	80.283	0.1687	0.3375	60.183
63-303	0.5000	15.000	76.000	0.2419	0.4838	86.269
73-293	0.3420	10.260	71.260	0.3212	0.6425	114.56
83-283	0.1736	5.209	66.209	0.4033	0.8679	143.85
93-273	0.0000	0.000	61.000	0.4848	0.9696	172.88
103-263	-0.1736	-5.209	55.730	0.5622	1.1244	200.49
113-253	-0.3420	-10.260	50.739	0.6328	1.2656	225.67
123-243	-0.5000	-15.000	46.000	0.6946	1.3893	247.71
133-233	-0.6427	-19.283	41.716	0.7464	1.4928	266.18
143-223	-0.7660	-22.981	38.018	0.7878	1.5756	280.93
153-213	-0.8660	-25.980	35.019	0.8159	1.6379	292.04
163-203	-0.93[illegible]	-28.190	32.809	0.8404	1.6809	299.71
173-193	-0.[illegible]8	-29.544	31.455	0.8530	1.7060	304.19
[illegible]	[illegible]000	-30.000	31.000	0.8571	1.7143	305.66

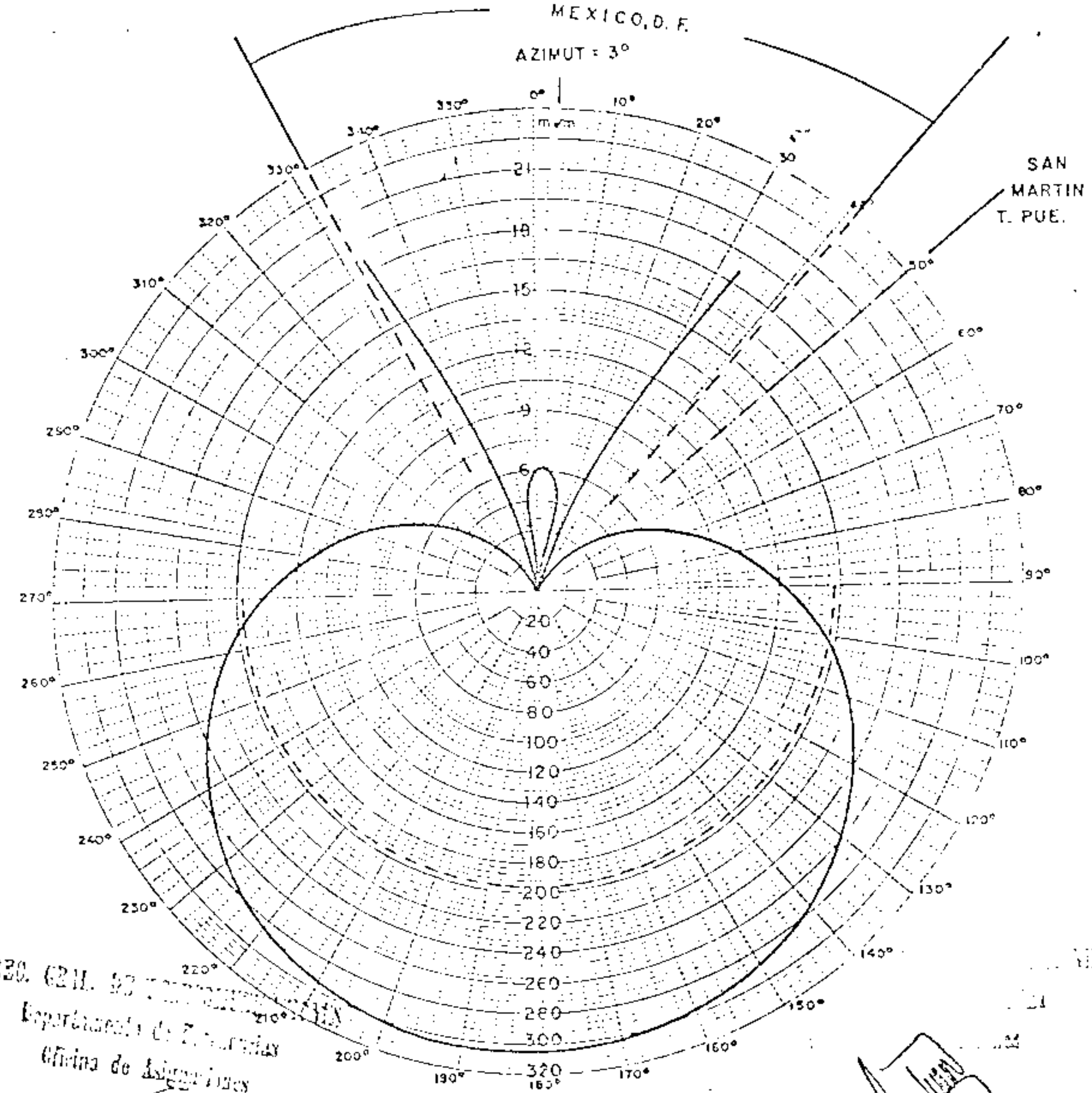
8 S = 60° ψ = 122° Ø = 3° E [illegible]8.3 mV/m

REVISO

APROBO

Raúl Ruiz M
Perito 99

XEART



DIREC. GRAL. DE [illegible]
Departamento de [illegible]
Oficina de Asignaciones

REVISO

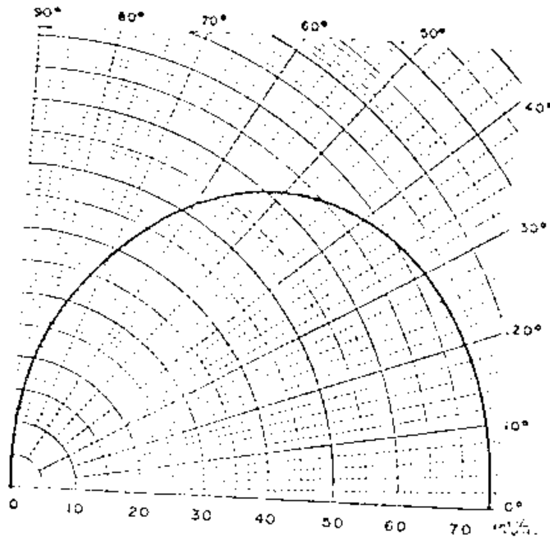
APROBO

DIAGRAMA DE RADIACION HORIZONTAL CALCULADO EN mV/m a 1600 m.

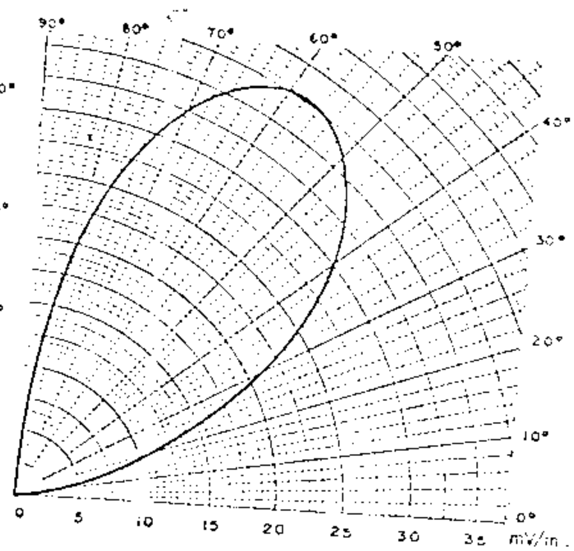
2 Esquema de las torres y su orientación con respecto al norte geográfico.	3 Frecuencia	4 Perito en Telecomunicaciones
N Ø = 3° T_2 I 122° S = 60° T_1 I 0° W E $G_1 = G_2 = 90°$ S	1590 KHz Distintivo de llamada. XEART Coordenadas geográficas de la ubicación. Latitud Norte 18° 39' 12" Longitud Oeste 99° 11' 38"	Nombre: Raúl Ruiz Meza Firma: [signature] Fecha: Marzo 1979

XEART

1



AZIMUT = 58.5°



AZIMUT = 20°

$$E = 2E_1 f(\theta) \cos\left[\frac{S_2}{2}\cos(\phi k - \phi)\cos\theta + \frac{\psi}{2}\right]$$

2

I	II
θ°	E_θ
0°	74.18
10°	74.08
20°	73.52
30°	71.83
40°	68.20
50°	61.84
60°	52.18
70°	38.83
80°	21.51
90°	0.00

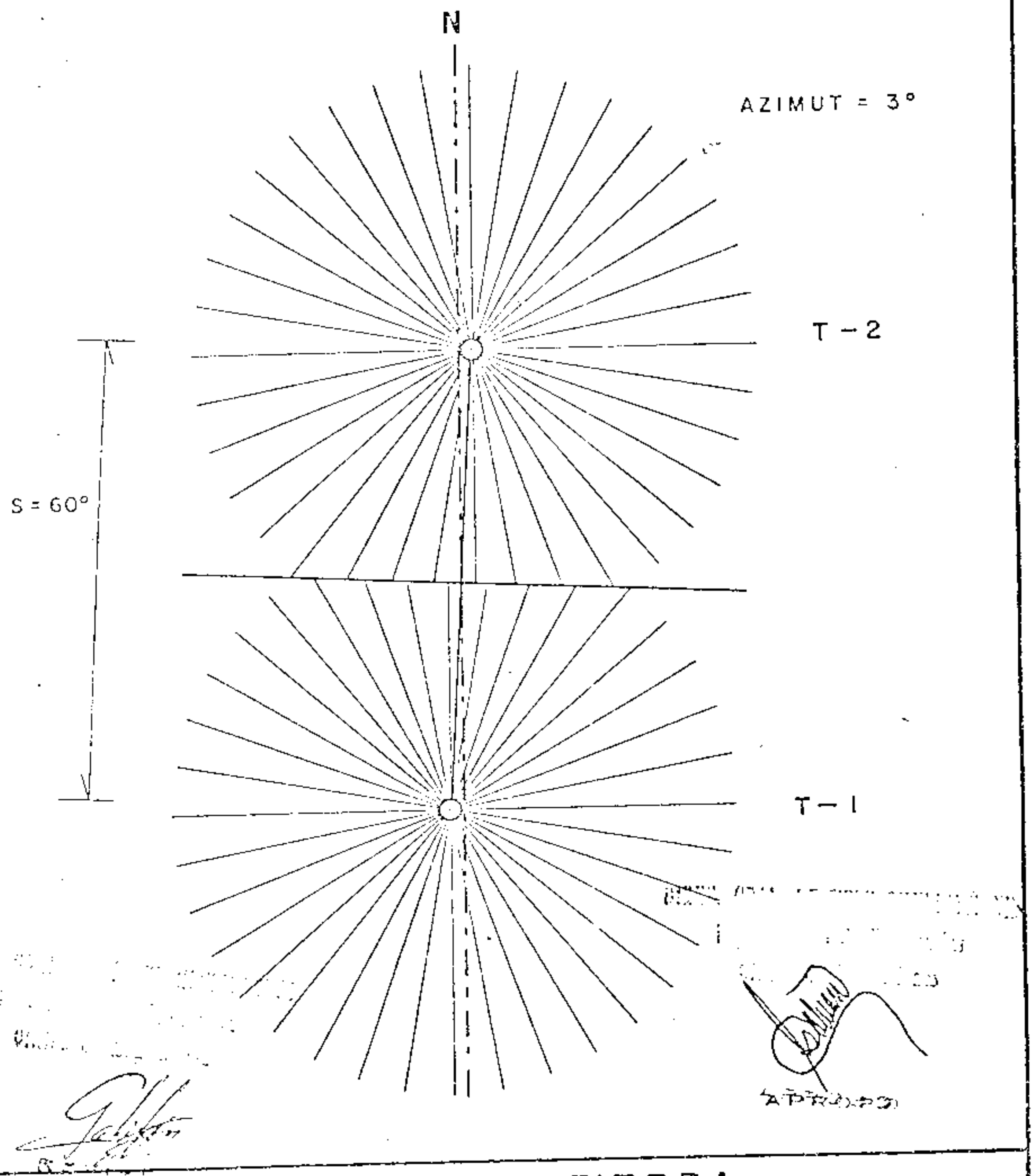
I	II
θ°	E_θ
0°	1.93
10°	4.54
20°	11.61
30°	21.09
40°	30.28
50°	36.52
60°	37.69
70°	32.41
80°	19.94
90°	0.00

APROBO

DIAGRAMA DE RADIACION VERTICAL CALCULADO EN mVm a 1609 m.

3 Frecuencia	4 Distintivo de llamada	5 Perito en Telecomunicaciones
1590 KHz	X E A R T Población ZACATEPEC, MOR.	Raúl Ruiz Meza Perito 94

XEART

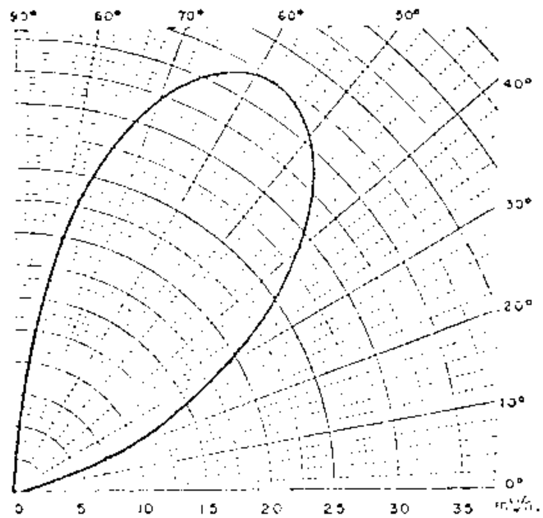


SISTEMA DE TIERRA

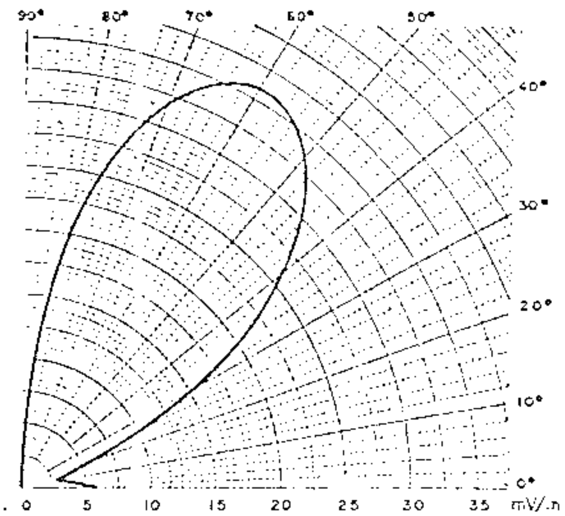
LOS RADIALES SON DE ALAMBRE DE COBRE DEL N° 12, 120 EN CADA TORRE 47.17 m DE LONGITUD Y UNIDOS AL CENTRO Y A LAS TORRES COMO LO INDICA LA FIGURA POR ALAMBRE DEL MISMO TIPO N° 00 TODO EL SISTEMA ESTA ENTERRADO 0.30m LA SEPARACION DE EJES DE LAS TORRES ES DE 60°	RADIODIFUSORA X E A R T ZACATEPEC, MOR.	1590 KHz 1000 W DISEÑO: Perito 99 Raúl Ruiz M. DIBUJO: I. C. M. FECHA: MARZO 1979

XEART

1



AZIMUT = 17°



AZIMUT = 6.5°

$$E = 2E_1 f(\theta)\cos\left[\frac{S_2}{2}\cos(\phi k - \phi)\cos\theta + \frac{\psi}{2}\right]$$

2

I	II
$\theta°$	E_θ
0°	0.67
10°	2.02
20°	9.36
30°	19.25
40°	28.90
50°	35.60
60°	37.16
70°	32.18
80°	19.88
90°	0.00

I	II
$\theta°$	E_θ
0°	5.87
10°	2.97
20°	4.90
30°	15.58
40°	26.15
50°	33.76
60°	36.11
70°	31.71
80°	19.77
90°	0.00

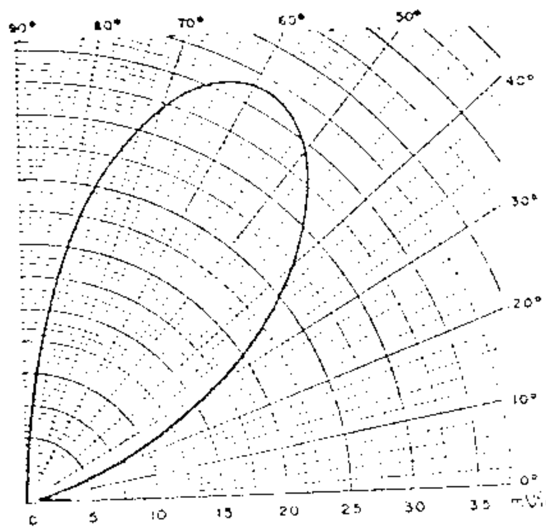
DIREC. GRAL. DE TELECOMUNICACIONES
Departamento de Frecuencias
Oficina de Asignaciones
REVISO

Oficina de Asignaciones
APROBO

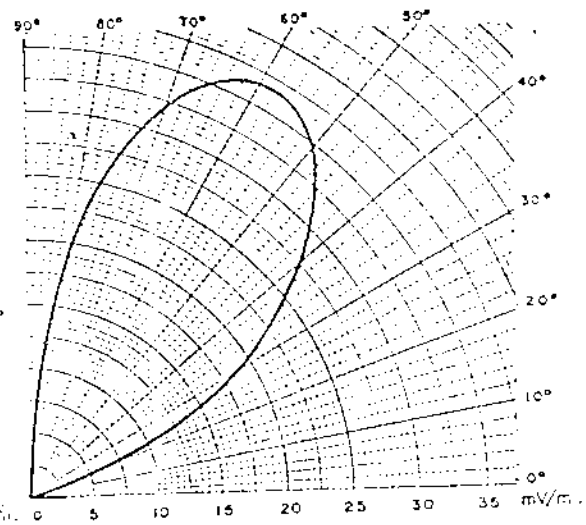
DIAGRAMA DE RADIACION VERTICAL CALCULADO EN mVm a 1609 m.

3 Frecuencia	4 Distintivo de Llamada	5 Perito en Telecomunicaciones
1590 KHz	X E A R T Población ZACATEPEC, MOR.	Raúl Ruiz Meza Perito 99

XEART



AZIMUT = 353°



AZIMUT = 352°

$$E = 2 E_1 f(\theta) \cos \left[\frac{S2}{2} \cos (\phi k - \phi) \cos \theta + \frac{\psi}{2} \right]$$

2

I	II
θ°	E_θ
0°	3.38
10°	0.58
20°	7.04
30°	17.33
40°	27.47
50°	34.64
60°	36.61
70°	31.93
80°	19.82
90°	0.00

I	II
θ°	E_θ
0°	2.79
10°	0.008
20°	7.55
30°	17.75
40°	27.78
50°	34.85
60°	37.73
70°	31.99
80°	19.84
90°	0.00

DIREC. GRAL. DE TELECOMUNICACIONES
Departamento de [illegible]
Oficina de Asignaciones

REVISO

APROBO

DIAGRAMA DE RADIACION VERTICAL CALCULADO EN mVm a 1609 m.

3 Frecuencia	4 Distintivo de llamada	5 Perito en Telecomunicaciones
1590 KHz	X E A R T Población ZACATEPEC, MOR.	Raúl Ruiz Meza Perito 99

DESCRIPTION SHEET (9-4-59g) | Station XETE Madero, Tamalipus, Mexico | 1kw, DA-D,D, Class III 1590 KC

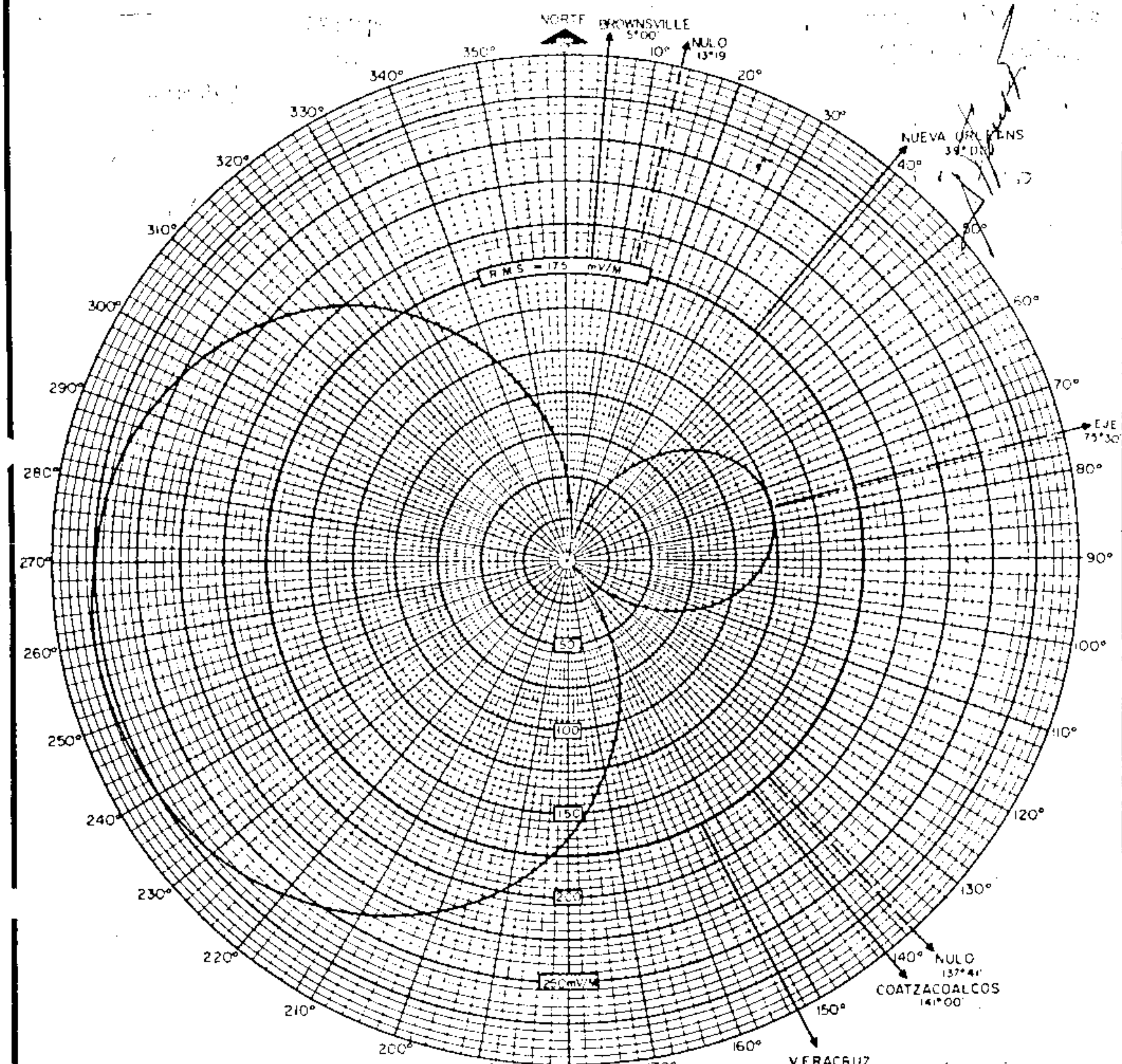
DESCRIPCION DEL SISTEMA DIRECCIONAL DE RADIACION.

Operacion Diurna

ESTACION: XE	ESTUDIOS EN: CD. MADERO, TAMS.	
FRECUENCIA: 1590 KHz.	POTENCIA: 1000 Watts	
CLASE: III	LISTA DE CAMBIOS: No. 312	
	FECHA: 23/X/58	
LOCALIZACION GEOGRAFICA DEL SISTEMA RADIADOR:	LONGITUD: 97° 50′ 00″ W LATITUD: 22° 12′ 50″ N	
AUTORIZADO PARA OPERACION:	A D - D	
NUMERO DE ELEMENTOS RADIADORES: 2		
TIPO DE ELEMENTOS RADIADORES:	TORRES VERTICALES DE ACERO DE SECCION CONSTANTE, TRIANGULAR SOPORTADAS POR RETENIDAS Y CON ALIMENTACION TIPO SERIE.	
TORRES:	1	2
ALTURA SOBRE LOS AISLADORES:	47.15 Mts. (90°)	47.15 Mts. (90°)
SEPARACION ENTRE TORRES:	47.15 Mts. (90°)	
MAGNITUDES RELATIVAS DE CORRIENTES:	1	1
DEFASAMIENTO:	0°	+138°
AZIMUT DEL EJE DE LAS TORRES:	75°30′	
RAIZ CUADRATICA MEDIA TEORICA:	175 mV/M	
INTENSIDAD DE CAMPO R.C.M. NO ATENUADO A 1609 METROS POR KILOWATT DE POTENCIA RADIADA.	175 mV/M	

PROPOSED DAY
(9-4-59g)

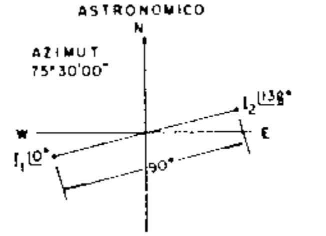
Station XETE   1kw, DA-D,D, Class III
Madero, Tamalipus, Mexico   1590 KC



OPERACION DIURNA

PATRON DE RADIACION HORIZONTAL CALCULADO EN mV/M. A1609 Mts.

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



RADIODIFUSORA

XE

Cd. Madero, Tamps.

1590 KHz.
1,000 Watts.

DISEÑO

P Ing Alberto Torres Soto

DIBUJO

Ernesto Sesma

Feb de 1959