

H.P. PATTERN THRU
ZONES OF MINIMA
RADIO STATION WINS
1010K 50KW D.A., NYC.

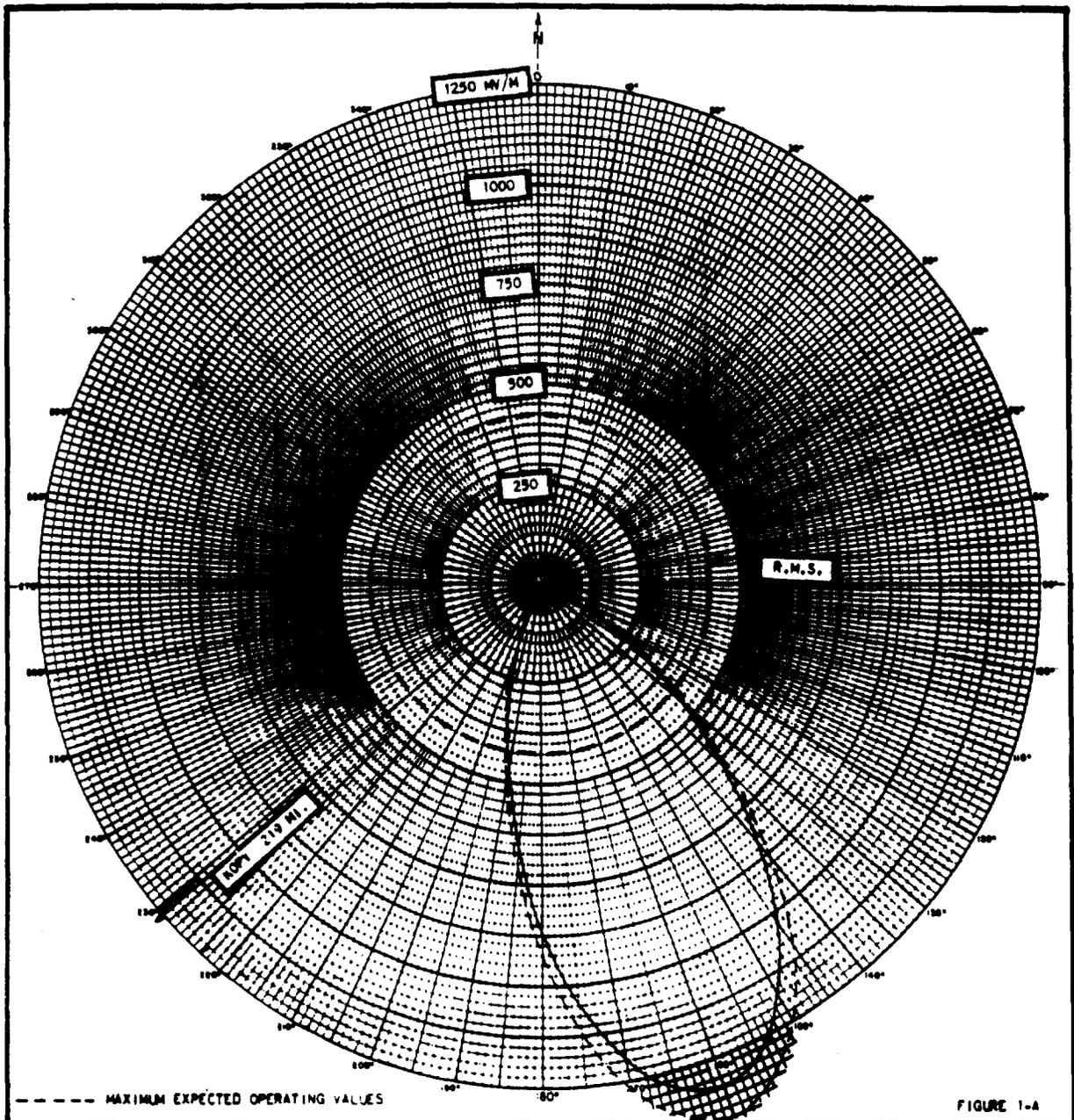
FIG. 2

Proposed ~~Day~~ & Night
(9-29-64ct)

New; Lake Huron B/cg Corp.
Houston, Texas

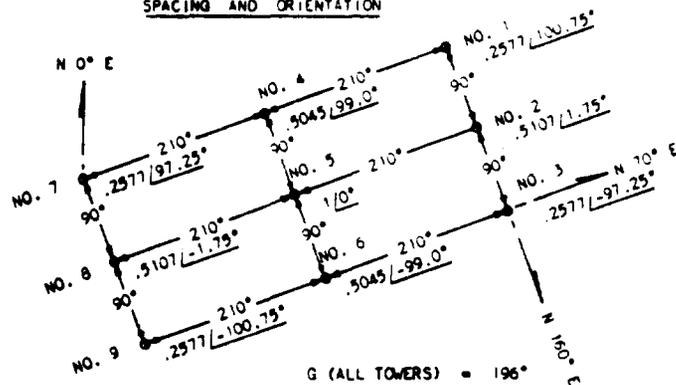
5kw, DA-1, U
1070 kc

Handwritten notes:
a new AM station
for the
area
approx
separate
with



HORIZONTAL RADIATION PATTERN

SPACING AND ORIENTATION



APPLICANT	LAKE HURON B/C.G. CORP.
LOCATION	HOUSTON, TEXAS.
FREQUENCY	1070 KCS
POWER	5 KW DA-1
LATITUDE	29 DEG 59 MIN 33 SEC.
LONGITUDE	95 DEG 28 MIN 25 SEC.
WHEN USED	UNLIMITED
R.M.S. FIELD	424.8 MV/M
DATE	JULY 1964

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

FCC File No. BP-13097
Accepted 7-28-64

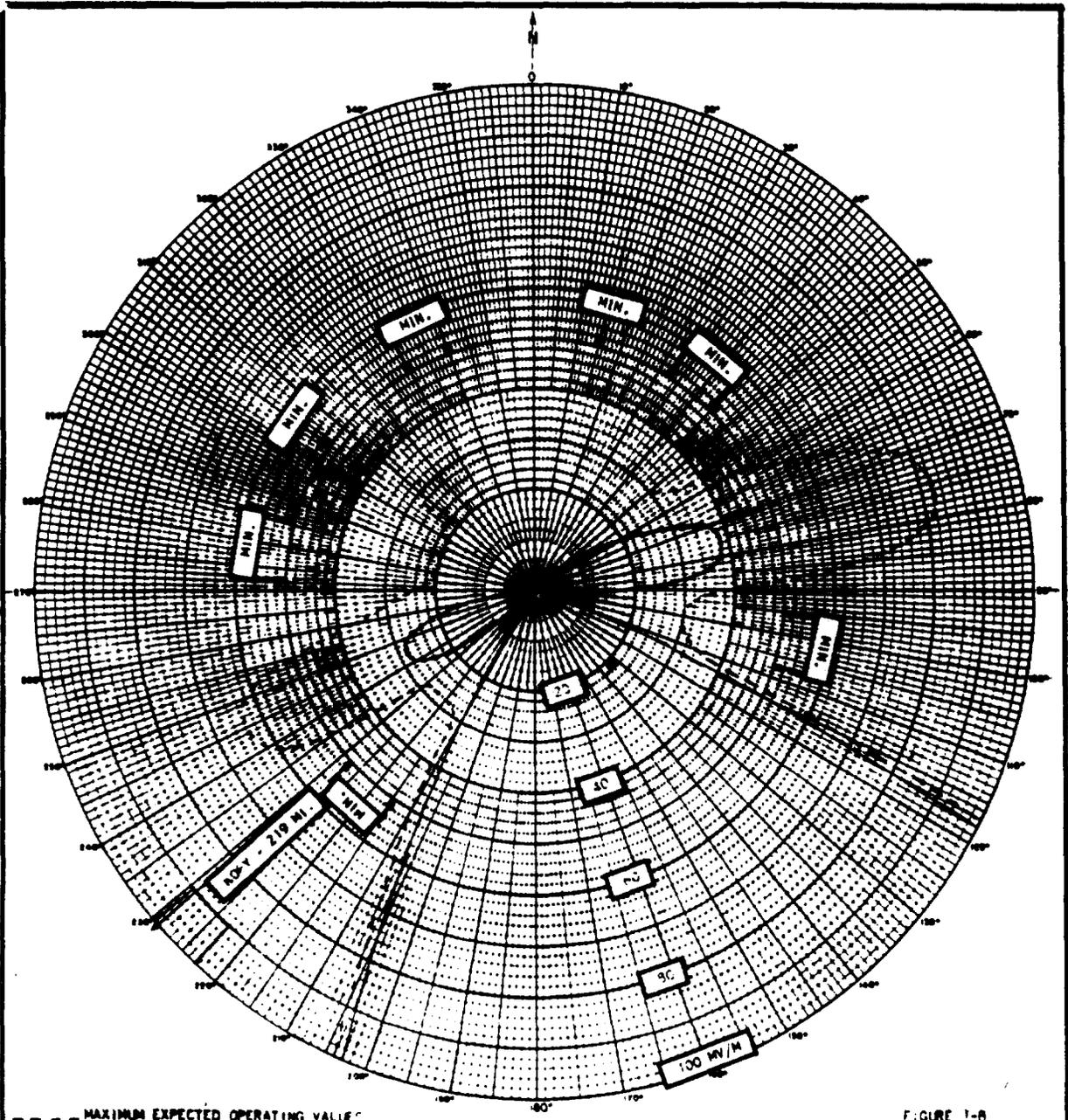
New; Lake Huron B/cg Corp.
Houston, Texas

1070 kc

Proposed ~~Station~~ & Night Nulls New; Lake Huron B/cg Corp.
 (9-29-64ct) Houston, Texas

5kw, DA-1, U
 1070 kc

Handwritten notes:
 1. All nulls
 part of application
 necessary to
 operate will show
 DA is nullified
 antenna part
 of application
 necessary to operate
 null new



--- MAXIMUM EXPECTED OPERATING VALUE. FIGURE 1-B

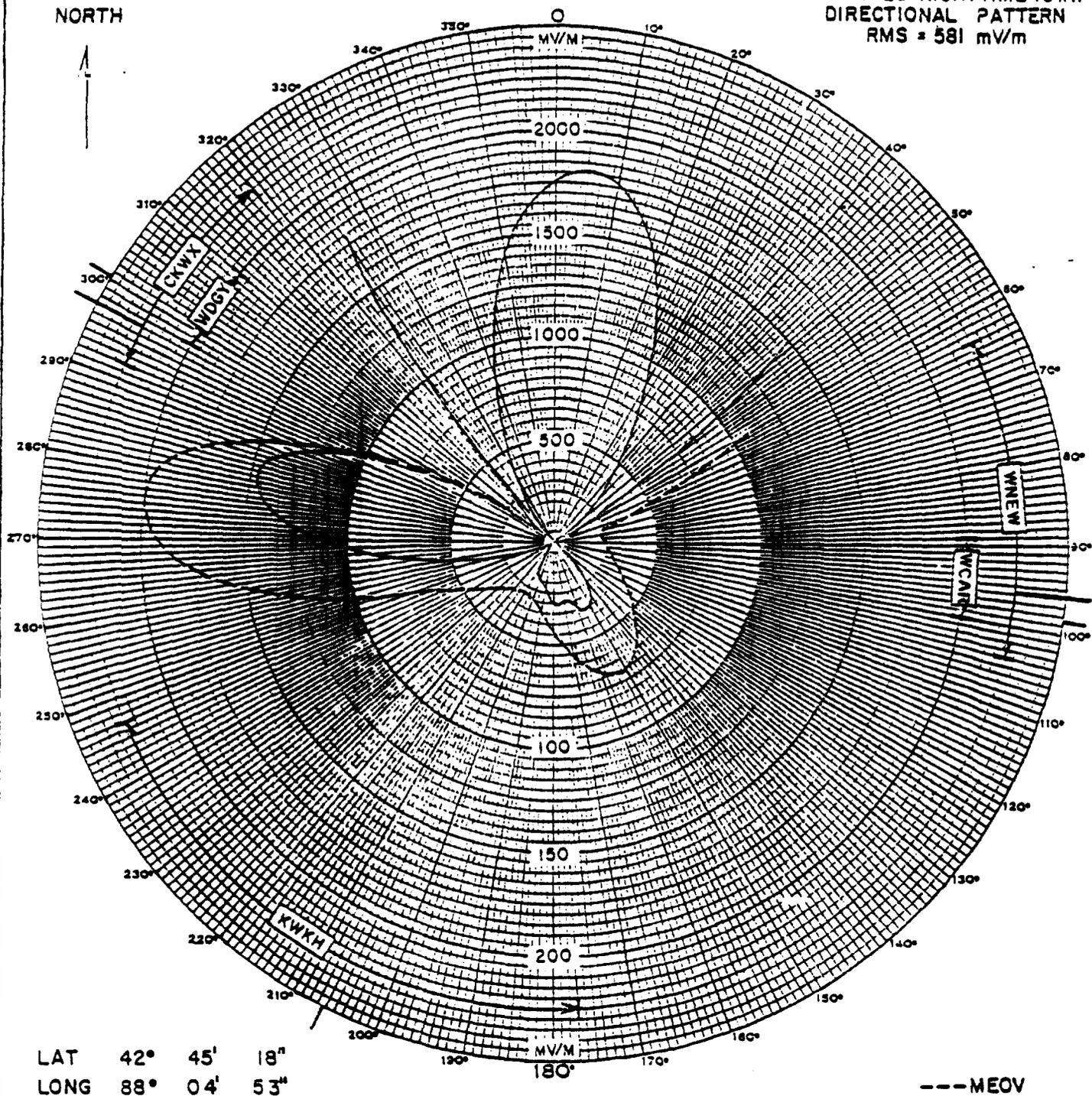
<p>HORIZONTAL RADIATION PATTERN</p>	
<p>EXPANDED VIEW</p>	<p>APPLICANT LAKE HURON B/CG. CORP.</p>
	<p>LOCATION HOUSTON, TEXAS</p>
	<p>FREQUENCY 1070 KC/S</p>
	<p>POWER 5 KW DA-1</p>
	<p>LATITUDE 29 DEG 59 MIN 35 SEC</p>
	<p>LONGITUDE 95 DEG 28 MIN 23 SEC</p>
	<p>WHEN USED: UNLIMITED</p>
<p>RMS FIELD: 424.8 MV/M</p>	
<p>DATE JULY 1964</p>	
<p>SILLIMAN, MOFFET & KOWALSKI CONSULTING RADIO ENGINEERS WASHINGTON, D.C.</p>	

FCC File No: BP-10397
 Accepted 7-28-64

New; Lake Huron B/cg Corp.
 Houston, Texas

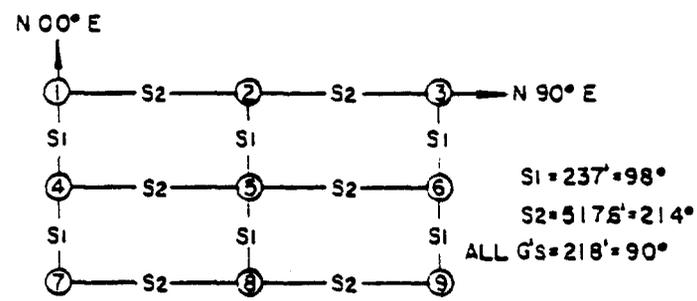
1070 kc

COMPUTED NIGHTTIME 10kW
DIRECTIONAL PATTERN
RMS = 581 mV/m



LAT 42° 45' 18"
LONG 88° 04' 53"

---MEOV



NIGHTTIME THEORETICAL PARAMETERS

TOWER	FIELD	PHASE
1	0.278	-87°
2	0.550	-106°
3	0.278	-125°
4	0.506	19°
5	1.000	0°
6	0.506	-19°
7	0.278	129°
8	0.550	110°
9	0.278	91°

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

RADIO STATION WISN
1130 KHZ - 10 KW - 50 KW LS DA-2
760810.2
FIGURE 2C

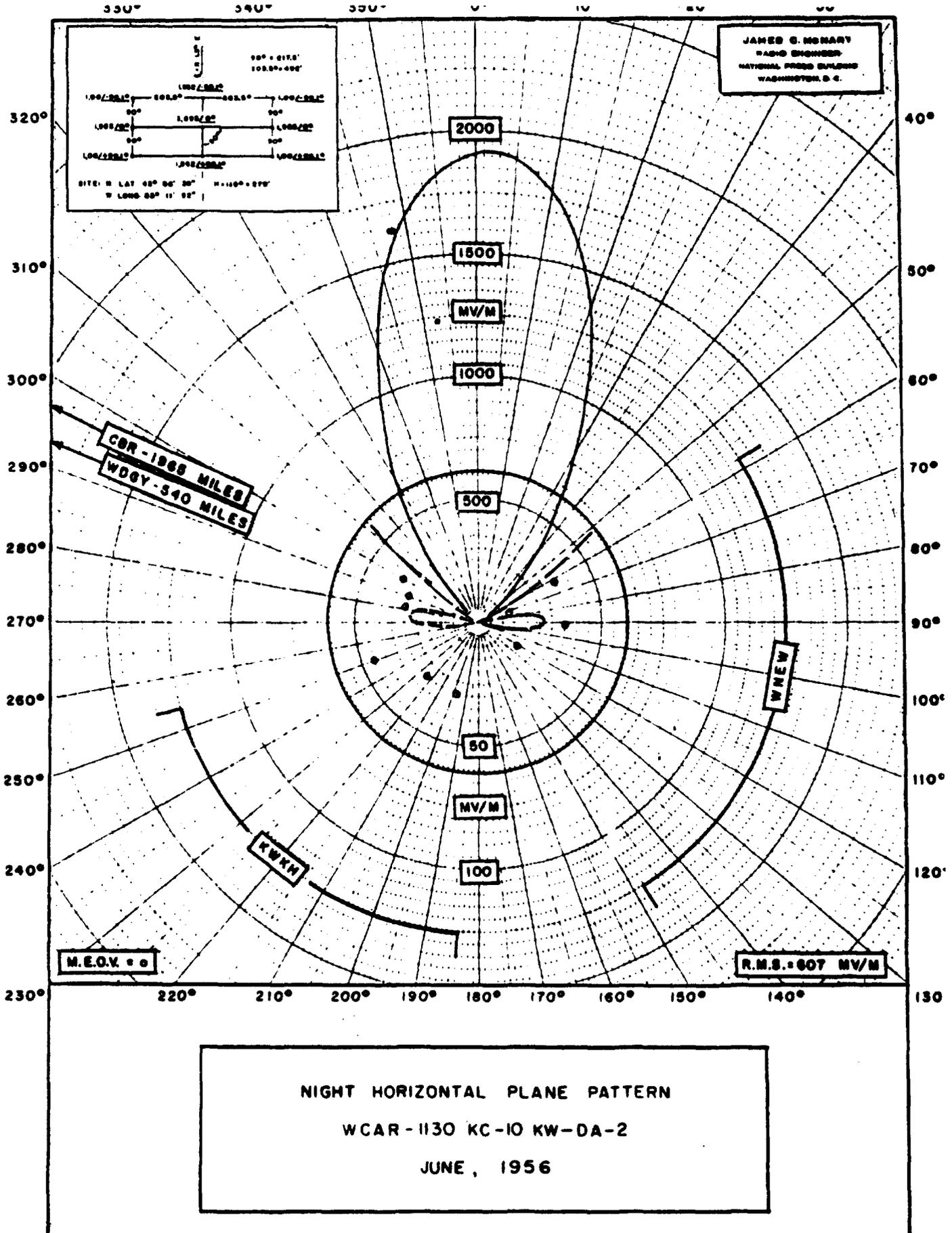
Granted C.P. 8/29/56

PROPOSED
NIGHT (8-17-56g)

STATION WCAR
DETROIT, MICH.

10 KW
DA-2, U

1130 KC

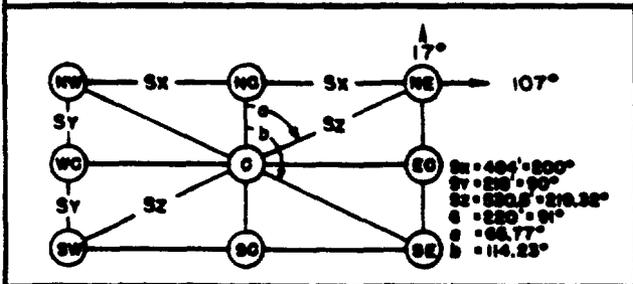
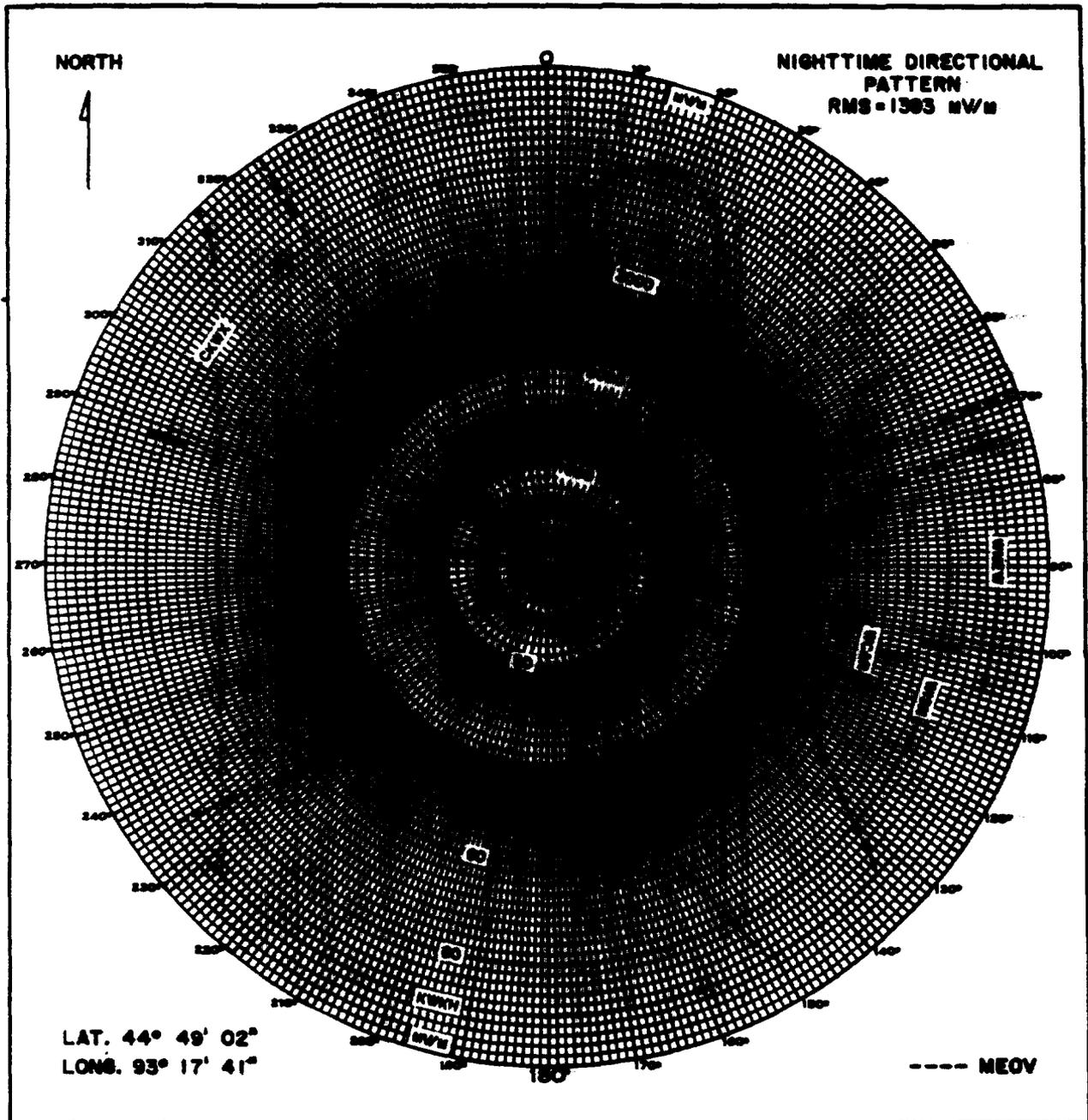


Proposed Night
(8-28-67ct)

Station WDGY
Minneapolis, Minnesota

50kw, DA-2, U
1130 kc

Handwritten:
5/29/68 CP to
Minnesota
Regulatory
Division from
25124 T
50124



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

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

RADIO STATION WDGY
MINNEAPOLIS, MINNESOTA
661201.2A FIGURE 2B

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

Station WDGY
Minneapolis, Minnesota.

1130 kc

Proposed Night
(10-28-67ct)

Station KLIF
Dallas, Texas

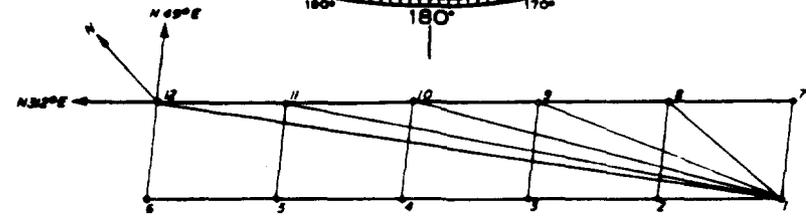
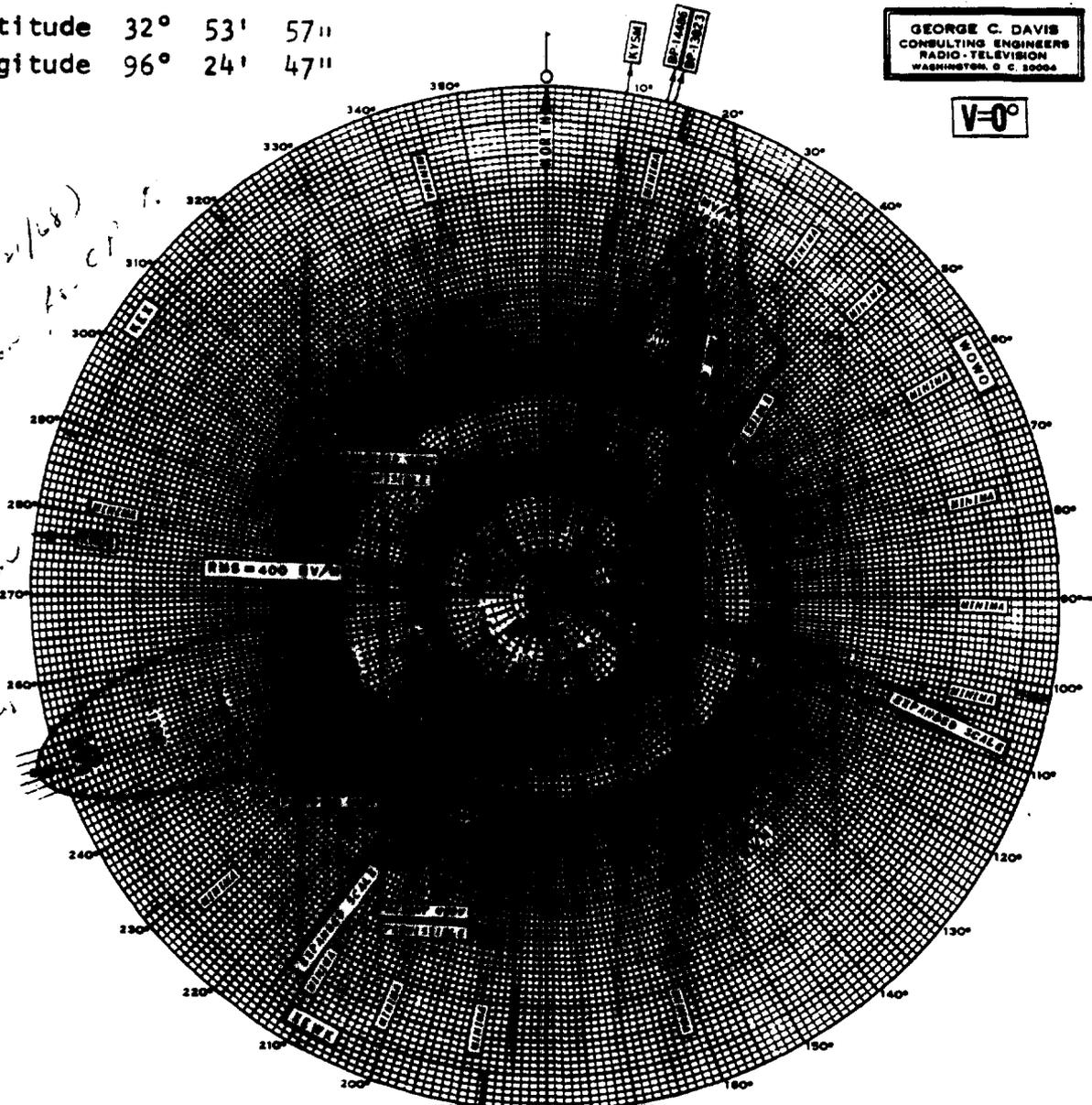
5kw, 50kw-LS, DA-2, U
1190 kc

Latitude 32° 53' 57"
Longitude 96° 24' 47"

GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO-TELEVISION
WASHINGTON, D. C. 20004

V=0°

*Amended (2/21/68)
Application for CP
renew
application
power from
1190*



HEIGHT	FIELD RATIO	SPACING	L. O. T.	PHASING
1	07.2	1	0	0
2	07.2	2.17	210	238
3	07.2	2.024	420	138.9
4	07.2	3.369	630	59.5
5	07.2	1.25	840	316.9
6	07.2	1.43	1050	210.5
7	07.2	1	45	110
8	07.2	2.17	216.7	334.9
9	07.2	2.020	418.3	323.6
10	07.2	3.369	623.3	319.7
11	07.2	1.25	833.9	317.8
12	07.2	1.43	1043	316.6

COMPUTED HORIZONTAL PLANE RADIATION PATTERN
FOR THE PROPOSED NIGHTTIME OPERATION OF
KLIF, DALLAS, TEXAS
1190 KHz - 5/50 KW - DA-2 U
JULY 1967

FCC File No. BP-14367
Accepted 10-25-67 Amended

Station KLIF
Dallas, Texas

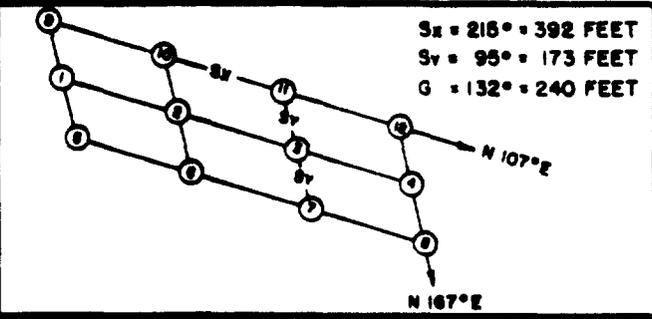
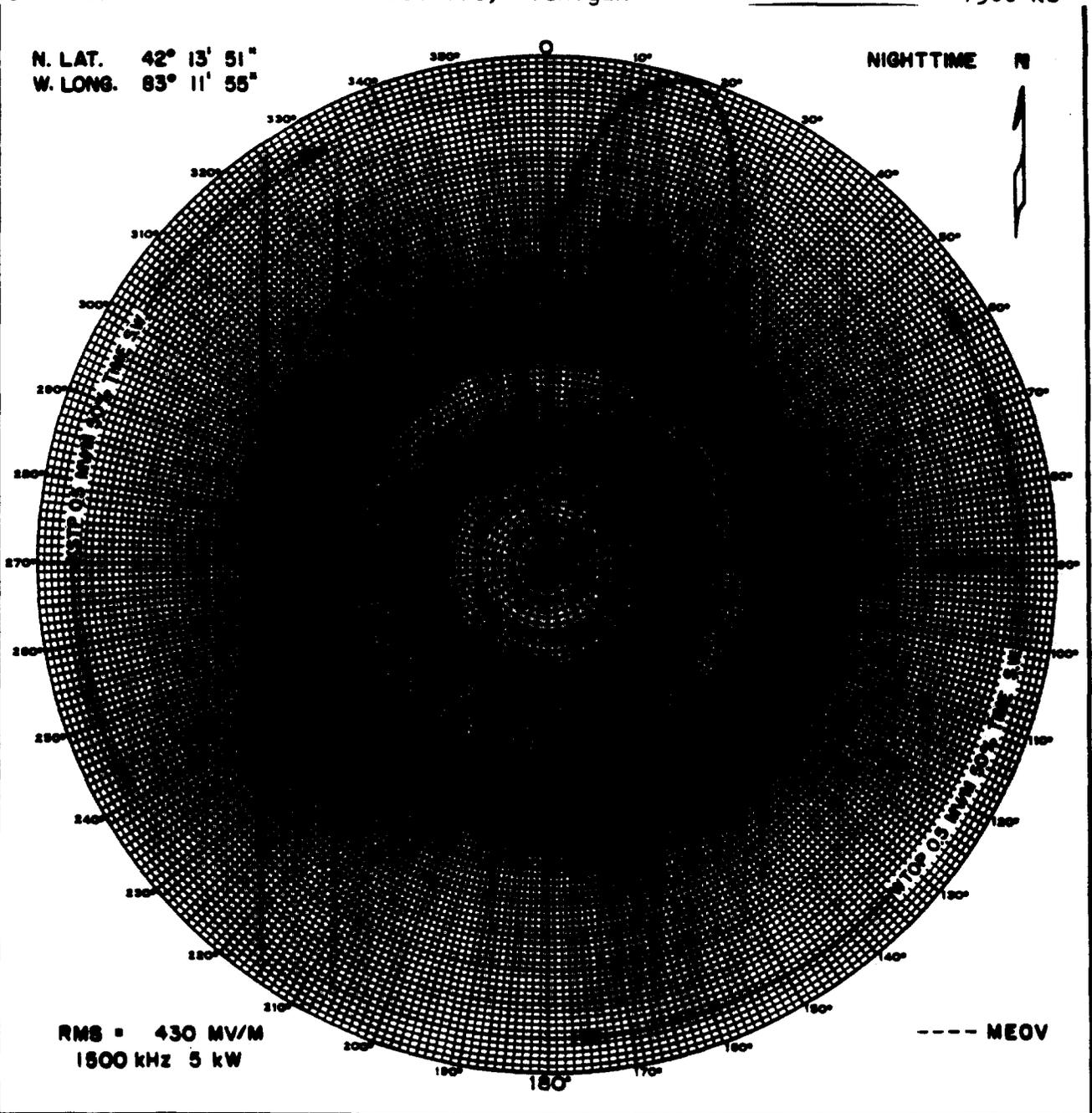
1190 kc

Proposed Night
(1-29-68ct)

Station WJBK
Detroit, Michigan

5kw, 50kw-LS, DA-2, U
1500 kc

*Permit
7/17/68
Modification
of 297 to make
changes -
my letter 2/11
follow*



$\frac{9}{1.00 \mid +0}$	$\frac{10}{2.78 \mid +0}$	$\frac{11}{2.78 \mid +0}$	$\frac{12}{1.00 \mid +0}$
$\frac{1}{1.47 \mid +99}$	$\frac{2}{4.08 \mid +99}$	$\frac{3}{4.08 \mid +99}$	$\frac{4}{1.47 \mid +99}$
$\frac{5}{50 \mid +204}$	$\frac{6}{1.38 \mid +204}$	$\frac{7}{1.38 \mid +204}$	$\frac{8}{50 \mid +204}$

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

RADIO STATION WJBK
DETROIT, MICHIGAN
671211
FIGURE 1A

FCC File No. BMP-12244
Accepted 1-2-68

Station WJBK
Detroit, Michigan

1500 kc

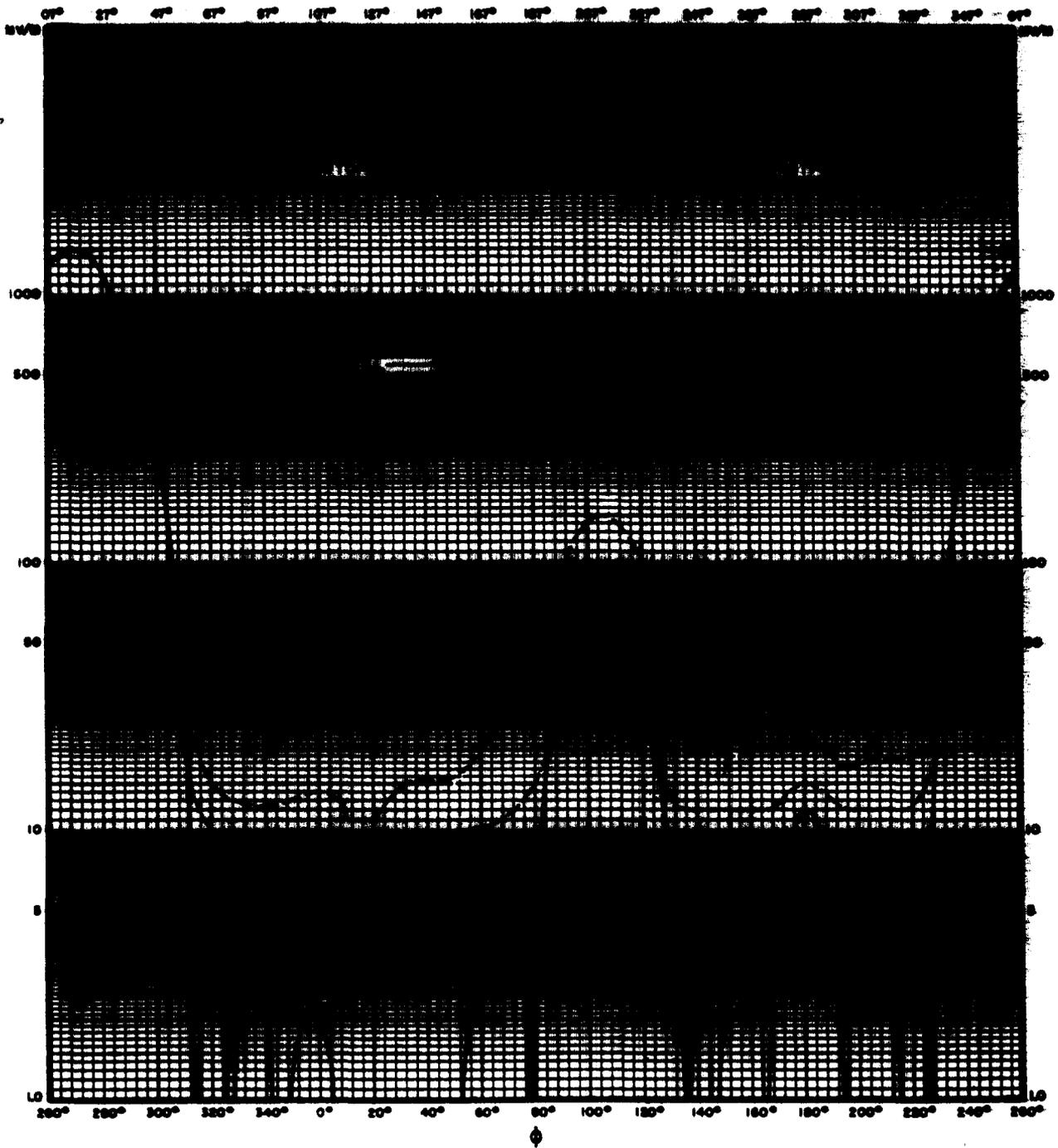
Proposed Night Nulls
(1-29-68ct)

Station WJBK
Detroit, Michigan

5kw, 50kw-LS, DA-2, U
1500 kc

AZIMUTH

Handwritten notes:
2/16/68
216 min change
in my file
DA puller



PROPOSED 1500 kHz 5 kW NIGHTTIME
MEOV --- 0° ELEVATION

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

RADIO STATION WJBK
DETROIT, MICHIGAN
671211 FIGURE 1B

FCC File No, BMP-12244
Accepted 1-2-68

Station WJBK
Detroit, Michigan

1500 kc

NOT TO SCALE. DISTANCE UNMARKED. PLOT ON COORDINATE

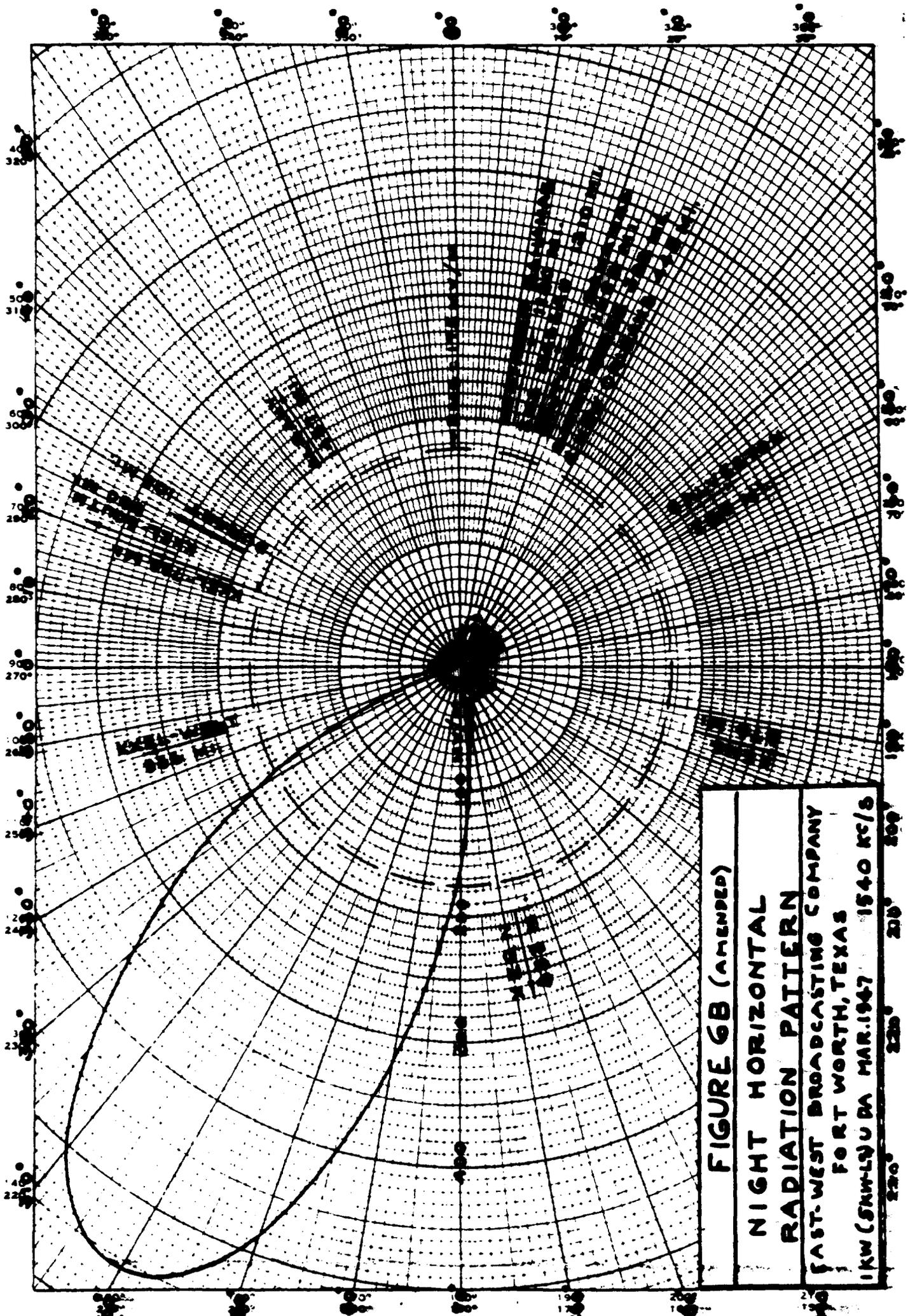


FIGURE 6B (AMENDED)

NIGHT HORIZONTAL
RADIATION PATTERN

FAST-WEST BROADCASTING COMPANY
FORT WORTH, TEXAS
1KW (5A-W-L) U DA MAR. 1947 1540 KC/S

740
MILAM (U) UNLIMITED

740

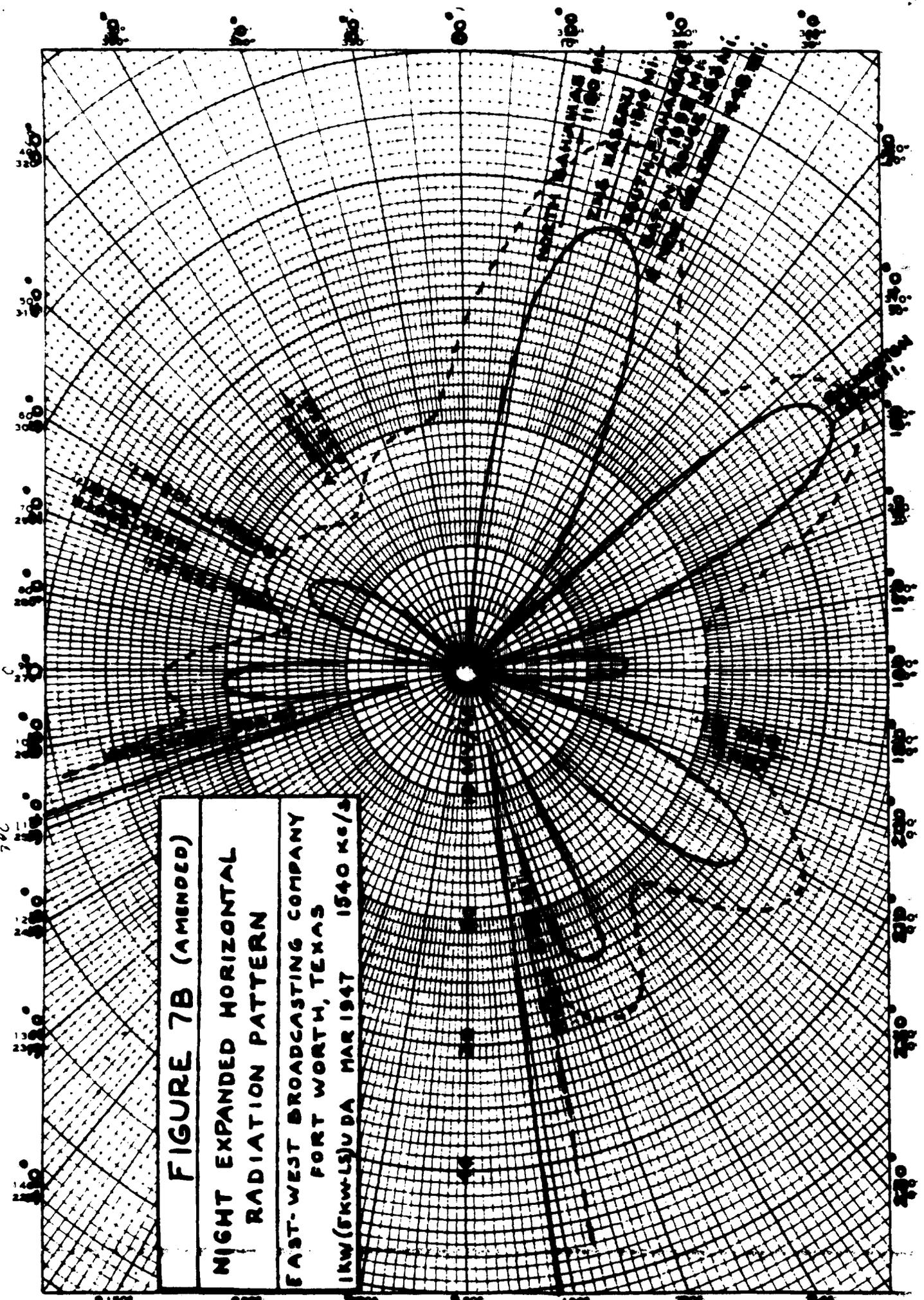


FIGURE 7B (AMENDED)
**NIGHT EXPANDED HORIZONTAL
RADIATION PATTERN**
EAST-WEST BROADCASTING COMPANY
FORT WORTH, TEXAS
1KW(6KW-LS)UDA MAR 1947 1540 KC/S

LAW OFFICES
MCKENNA, WILKINSON & KITTNER
1150 SEVENTEENTH STREET, N. W.
WASHINGTON, D. C. 20036
(202) 861-2600

EXHIBIT 5

JAMES A. MCKENNA, JR.
JOSEPH M. KITTNER
ROBERT W. COLL
THOMAS N. FROMOCK
CARL R. RAMEY
EDWARD P. TAPTICH
STEVEN A. LERMAN
R. MICHAEL SENKOWSKI
RANGOLPH J. MAY
LAWRENCE J. NOVSHIN
JAMES S. BLASZAK
WILLIAM R. KEANE
DENNIS P. CORBETT
JILL ABESHOUSE STERN
CHARLES C. HUNTER
JEAN L. KIDDOO
PATRICK J. WHITTLE
TIMOTHY J. COONEY
GEORGE L. LYON, JR.
LAURA C. MOW
ROBERT B. KELLY

VERNON L. WILKINSON
COUNSEL

DIRECT DIAL NO.

861-2618

July 7, 1983

ADMITTED IN VIRGINIA ONLY

Douglas S. Land, Esquire
ABC, Inc.
1330 Avenue of the Americas
New York, New York 10019

Dear Doug:

Enclosed is the "Petition for Rulemaking", filed today, requesting revision of processing procedures applicable to fulltime stations on Class I-A frequencies.

Sincerely,



Robert W. Coll

Enclosure

cc: (no enc.)
Everett Erlick

(w/enc.)
Messrs. Brown, Cowen and Hidle

BEFORE THE
Federal Communications Commission

WASHINGTON, D. C. 20554

In the Matter of)
)
Directional Antenna Systems For)
Fulltime Stations on Class I-A)
Frequencies) RM -
)
Request for Revision of Processing)
Procedures)

To: The Commission

PETITION FOR RULEMAKING

American Broadcasting Companies, Inc. ("ABC"),
by its attorneys, pursuant to Rule 1.401, hereby
respectfully requests that the Commission institute
a rulemaking proceeding looking toward adoption of
a rule to govern the processing of applications for
new fulltime stations, or modifications by fulltime
stations, on U.S. Class I-A frequencies. In support
whereof the following is shown:

Attached hereto is an Engineering Statement of
Kenneth J. Brown which describes the problems which
have been encountered in the Commission's processing
of fulltime applications for Class I-A channels.
In processing applications for fulltime stations on

Class I-A frequencies, under current policies, if the Commission determines that parameter variations of $\pm 1\%$ and $\pm 1^\circ$ will not exceed the standard pattern (and thus will not cause interference) the application is granted, subject to no specific restrictions, and the station is permitted to operate with the usual $\pm 5\%$ and $\pm 3^\circ$ operating tolerances, even though its operation with such greater tolerances may result in the station's exceeding the proposed standard pattern and causing interference to a Class I-A station. It is only where the standard pattern is exceeded by variations within $\pm 1\%$ and $\pm 1^\circ$ that the station is granted with operating tolerances restricted to $\pm 1\%$ and $\pm 1^\circ$.

ABC respectfully submits that these processing procedures cannot logically be justified nor reconciled with the Commission's stated purpose (in its Clear Channel decision) to minimize interference to the skywave service of Class I-A stations. By allowing stations to operate with a standard tolerance of $\pm 5\%$ and $\pm 3^\circ$, even though it can be demonstrated that variations within such tolerances will produce interference,

the Commission is acting affirmatively to authorize interference in a manner inconsistent with its stated purpose in the Standard Pattern and Clear Channel decisions referred to in the Engineering Statement attached hereto. In each case, the Commission should determine whether interference would result from a variation within the $\pm 5\%$ and $\pm 3^\circ$ tolerances and, if so, limit the permissible variations to tolerances which will prevent interference. For example, if interference will result from variations, in a particular case, of $\pm 2\%$ and $\pm 1^\circ$, the station should be restricted accordingly.

ABC is here limiting its request for relief to the Class I-A frequencies. Logically, the same arguments could be made with respect to Class I-B and III frequencies. However, this method of processing has been applied to those frequencies for such a long period of time that a revision of procedures would probably make little difference.

In the case of the Class I-A frequencies, however, relatively few fulltime stations have yet been autho-

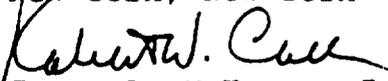
rized. If the Commission will revise its processing procedures, for these frequencies, it can avoid the accumulation of unnecessary interference which current processing policies promote.

ABC therefore respectfully requests that the Commission institute a rulemaking proceeding to revise its current processing standards so that directional antenna systems, at least on the Class I-A channels, will be restricted to operating tolerances (determined in each individual case) which will insure that interference will not be caused to other stations.

Respectfully submitted,

AMERICAN BROADCASTING COMPANIES, INC.

Everett H. Erlick
Douglas S. Land
1780 Avenue of the Americas
New York, New York 10019


James A. McKenna, Jr.

Robert W. Coll
McKenna, Wilkinson & Kittner
1150 Seventeenth Street, N.W.
Washington, D.C. 20036

Its Attorneys

July 7, 1983

ENGINEERING STATEMENT OF KENNETH J. BROWN
IN CONNECTION WITH
PETITION FOR RULEMAKING
DESIGNATION OF A DIRECTIONAL ARRAY AS CRITICAL
ON A US CLASS I-A CHANNEL

Petitioner: American Broadcasting Companies, Inc.

I am an Allocations and R F Systems Engineer employed by the American Broadcasting Companies, Inc. (ABC), with offices located in New York City. My education and experience are a matter of record with the Federal Communications Commission.

For at least the last ten years, the FCC has utilized a specific "policy" for determining whether or not a proposed directional antenna is "critical" - if it can be expected to evince instability. The Commission's policy is, simply, to permit a proposed antenna system to operate with no specific restrictions, with the usual $\pm 5\%$ and $\pm 3^\circ$ operating tolerance, if the theoretical pattern produced by parameter variations of $\pm 1\%$ and $\pm 1^\circ$ does not exceed the proposed standard pattern. If a theoretical pattern produced by varying the parameters within $\pm 1\%$ and $\pm 1^\circ$ is found to exceed the standard pattern, then the array is routinely granted with operating tolerances restricted to $\pm 1\%$ and $\pm 1^\circ$. Only if the standard pattern is exceeded with parameter variations of $\pm 0.1\%$ and $\pm 0.1^\circ$ is any question of grantability raised.

We believe this policy to be inconsistent with the mandate establishing the standard pattern concept and the amount of interference stated to be acceptable to Class I-A station service areas in the disposition of the Clear Channel Case.

In the document establishing the Standard Pattern, the Commission stated:

...we emphasized that we expected patterns would be designed providing a reasonable tolerance, in each protected direction, between the computed field and the maximum permitted field in that direction, to provide for day-to-day operating variations.¹

¹ Docket 16222 Report and Order, 20 RR 2d 1747

ENGINEERING STATEMENT OF KENNETH J. BROWN
PETITION FOR RULEMAKING
Page 2

Also:

...we have said that we will permit measured radiation to be initially adjusted up to the limits depicted by the standard pattern, but will question the feasibility of a directional proposal where a reasonable tolerance is not provided between the standard pattern field in a particular direction and the maximum permissible field in that direction.²

In both of these statements, it is clearly intended that the maximum permissible field not be exceeded under normal operating conditions, even after a "real world" imperfect adjustment of the directional antenna.

Further, in the Report and Order terminating the Clear Channel Case, the Commission stated:

...[a] limited amount of intermittent interference may be expected to occur not more than 10% of the time at some outermost portions of the secondary service areas.³

No mention is made of interference to be also permitted to the secondary service areas of Class I-A stations by excessive radiation due to antenna arrays of Class II stations exceeding maximum permissible field during operation.

Yet what the Commission's policy actually permits is that an array which would not exceed its standard pattern with theoretical parameter variations of $\pm 1\%$ and $\pm 1^\circ$ from perfect initial adjustment would be licensed to operate with parameter variations up to $\pm 5\%$ and $\pm 3^\circ$ from an initial adjustment which could already equal the standard field in the critical direction(s), and that standard field could also be (and effectively has been) allowed to equal the maximum permissible field. This would leave no operating tolerance at all between the initial adjustment of the pattern and the maximum permissible field toward the service area of a Class I-A station, which is virtually guaranteed to produce interference to the Class I-A station well in excess of the 10% of the time anticipated due to skywave propagation. This policy has been applied for many years on Class III and Class I-B channels, and all indications are that it is intended to be employed for Class I-A channels, despite the above difficulty.

² Docket 16222 Report and Order, 20 RR 2d 1751

³ Docket 20642, FCC 80-317 pg. 28

ENGINEERING STATEMENT OF KENNETH J. BROWN
PETITION FOR RULEMAKING
Page 3

When broadcasting was new and there were few stations on the air, the engineering art was primitive enough that merely getting a directional array into an almost proper initial adjustment was usually considered sufficient, and indeed many arrays were built and licensed which turned out to have serious stability problems. As more stations came on the air, allocated more tightly together with more directions of concern, the likelihood increased of an unstable array causing more damaging interference to more surrounding stations. The Commission's temporary policy of permitting new stations to cause limited amounts of interference to existing stations postponed any serious general consideration of the stability problem, until the Commission realized that cumulative effects of individually small amounts of interference were choking stations to death and abandoned that allocations approach.

The Standard Pattern was introduced as an allocations tool which was also supposed to clearly define the limits of a station's "radiation rights" - this much is clear from perusing the records of the proceeding. At that time, the question of stability was raised, and procedures were proposed to identify arrays likely to be unstable. However, the matter was left not totally resolved, in that there was no clear requirement given that arrays be monitored within specific operating tolerances, the emphasis then being on monitor point measurements, which were used to determine if fields in critical directions were below the maximum permissible.

Since that time, new strides have been made in sampling systems and antenna monitors, and the reliance on monitor points has diminished. Also, allocations are now made even tighter - in fact, we are unaware of any case where an application has been denied on the grounds of inadequate tolerance between the standard pattern and the maximum permissible field in any direction, despite the wording of the decision in the Standard Pattern Case, under the apparent assumption that the standard pattern defined the absolute limits of a station's permissible radiation within normal operating tolerance. However, we have been unable to find any array which could not exceed its Standard Pattern with the "standard" $\pm 5\%$ and $\pm 3^\circ$ tolerances. This means, simply, that most arrays can probably be expected to cause interference to other stations, with the only possible check being the stability of a monitor point checked only monthly, whose readings are known to be subject to seasonal variations in soil conductivities over most of the US.

The Regional and most of the I-B channels have already been thoroughly "polluted" by grandfathered antenna systems,

ENGINEERING STATEMENT OF KENNETH J. BROWN
PETITION FOR RULEMAKING
Page 4

but the I-A channels have, for the most part, not been subjected to this kind of problem: where there are Class II DA stations on the channel, usually they were granted recently enough that stability was considered.

Knowing how fragile skywave service is, we would suggest that the Commission should consider very carefully before carrying over into the primary remaining source of long-distance radio service a policy which may well cause serious damage to that service. After all, this long-distance skywave service is a national resource which, once damaged, cannot easily be restored.

What is perhaps most disturbing is that the Commission has cited Radio Nevada Corp. (KDWN) in denying Petitions to Deny based on this analysis. Review of this decision clearly shows that the end result was assurance to WGN of full protection to its 50% skywave contour under actual operating conditions of KDWN. At the conclusion of the case, conditions were placed on the KDWN construction permit restricting the permissible parameter variation in operation within limits which would protect the WGN 0.5 mV/m 50% skywave contour and assuring in other ways that the WGN service would not be subjected to objectionable interference.

ABC did not object to the reduction of protection to Class I-A stations to the levels spelled out at the termination of Docket 20642. ABC might not object to the additional levels of interference produced by the mechanisms described above, in event proper engineering analysis in the public forum were able to demonstrate that such interference would be in fact *de minimus* or swamped by other mechanisms. ABC does believe that it is now time that this questionable policy of basing all interference analyses on the standard pattern with no concern for actual interference criteria be examined in the public forum, before excessive skywave interference destroys the sole remaining domestic long distance radio service available to the American general public - a service which the Commission depends on to provide service to citizens residing in or travelling through areas too sparsely populated to make local services economically viable. We suggest that directional antenna systems, at least on Class I-A channels, should be restricted to operating tolerances (determined for each case) which would not cause interference to other stations.

DATED: July 1, 1983

Kenneth J. Brown
Kenneth J. Brown

