

1220-1240

Station	Main Studio	Freq	Power	Date
NEW	Rimouski, QU	1220	10 kW/DA-N	3/15/77
NEW	Boissevain, MB	1220	10 kW/DA-2	12/15/72
CFVM	Amqui, QU	1220	5 kW/DA-N	12/27/79
CHSC	St. Catherines, ON	1220	10 kW/DA-2	1/29/82
CHSC	St. Catherines, ON	1220	1/0.5 kW/DA-1	5/25/66
CJOC	Lethbridge, AB	1220	10/5 kW/DA-N	8/23/63
CJRL	Kenora, ON	1220	1 kW	12/20/52
CJSS	Cornwall, ON	1220	1/10 kW/DA-2	1/29/60
CKCW	Moncton, MB	1220	25 kW/DA-2	6/30/80
CKCW	Moncton, MB	1220	10 kW/DA-N	11/20/52
CKDA	Victoria, BC	1220	50 kW/DA-1	6/5/69
CKDA	Victoria, BC	1220	25 kW/DA-1	7/26/66
CKDA	Victoria, BC	1220	50 kW/DA-1	3/28/68
CKDA	Victoria, BC	1220	10 kW/DA-1	6/7/57
CKSM	Shawinigan Falls, QU	1220	2.5/10 kW/DA-2	5/28/68
CKSM	Shawinigan Falls, QU	1220	1 kW/DA-1	10/19/50
KASY	Auburn, WA	1220	2.5 kW/DA-D	10/26/79
KKAR	Pomona, CA	1220	0.25 kW/DA-D	5/28/59
WABF	Farihope, AL	1220	1 kW/DA-D	1/8/59
WCDQ	Hamden, CT	1220	1 kW/DA-D	3/26/58
WGAR	Cleveland, OH	1220	50 kW/DA-1	8/60
WGNY	Newburgh, NY	1220	5 kW/DA-D	7/15/57
WKRS	Waukegan, IL	1220	1 kW/DA-D	9/25/74
WKTZ	Jacksonville, FL	1220	5 kW/DA-D	11/17/75
WLPO	La Salle, IL	1220	1 kW/DA-D	3/19/56
WQSA	Sarasota, FL	1220	1 kW/DA-D	10/11/57
WSLM	Salem, IN	1220	5 kW/DA-D	8/24/62

1220-1240

Station	Main Studio	Freq	Power	Date
NEW	Midwest City, OK	1220	0.5 kW/DA-D	10/25/61
NEW	Midwest City, OK	1220	0.25 kW/DA-D	4/22/59
NEW	Sapulpa, OK	1220	1 kW/DA-D	5/28/59
NEW	Wainwright, AB	1230	1/0.25 kW	7/5/83
NEW	Canmore, AB	1230	1/0.25 kW	1/10/83
CFBV	Smithers, BC	1230	0.25/1 kW	
CFGR	Gravelbourg, Sask.	1230	0.25 kW	12/10/56
CFKL	Schefferville, QU	1230	0.25 kW	10/30/57
CFPA	Arthur, ON	1230	0.25 kW	11/19/52
CFYT	Dawson, YT	1230	0.1 kW	8/8/59
CJNL	Merritt, BC	1230	1/0.25 kW	12/20/67
CKLD	Thetford Mines, QU	1230	0.25 kW	11/25/52
CKMP	Midland, ON	1230	1/0.25 kW	10/26/65
CKTK	Kitimat, BC	1230	1/0.25 kW	10/30/63
CKVD	Val D'or QU	1230	0.25 kW	3/23/59
VOAR	St. John's, NF	1230	0.25 kW	12/20/52
KRIZ	Phoenix, AZ	1230	1 kW/DA-D	6/14/61
WEEX	Easton, PA	1230	0.25/1 kW/DA-D	9/25/63
CHQR	Castlegar, BC	1230	0.25/1 kW/DA-D	4/29/68
NEW	Powell River, BC	1230	1 kW/DA-2	4/28/66
NEW	Liskeard, ON	1230	1/0.25 kW	2/25/66
NEW	Dolbeau, PQ	1230	0.25 kW	10/26/62
NEW	Ste. Agathe-Des Mons, ON	1230	0.25/1 kW/ND	2/28/66
NEW	Bracebridge, ON	1240	1/0.25 kW	6/6/83
NEW	Castlegar, BC	1240	0.25 kW	12/20/67
NEW	Osoyoos, BC	1240	0.25/1 kW	2/25/66
NEW	Chibougamau, QU	1240	1/0.25 kW	5/28/68

1220-1240

Station	Main Studio	Freq	Power	Date
CFLM	La Tuque and Three Rivers, QU	1240	1/0.25 kW	5/28/59
CFVR	Abbotsford, BC	1240	1/0.25 kW	8/28/67
CFVR	Chilliwack, BC	1240	0.25 kW	10/25/61
CJAV	Port Alberni, BC	1240	0.25 kW	5/10/74
CJCS	Stratford, ON	1240	0.25/0.5 kW	2/28/62
CJRW	Summerside, PE Isle	1240	1/0.25 kW	7/26/83
CJWA	Wawa, ON	1240	0.25/1 kW	10/30/63
CKBS	St. Hyacinthe, QU	1240	0.25 kW	5/28/59
CKLS	La Sarre, QU	1240	1/0.25 kW	5/10/75
CKWL	Williams Lake, BC	1240	0.25 kW	2/28/68
WINK	Fort Myers, FL	1240	0.25/1 kW/DA-D	11/16/79
WJIM	Lansing, MI	1240	0.25 kW	9/15/54

I - DESCRIPTION DU SYSTEME A ANTEENNE DIRECTIONNELLE

1. LETTRES D'APPEL: (nouveau poste)
 2. EMPLACEMENT: Rimouski, Qué.
 3. FREQUENCE: 1220 KHz.
 4. PUISSANCE: 10 KW jour et nuit.
 5. CLASSE: II.

COLEN AND DIPPELL
 RECEIVED

JUN 7 1977

WASHINGTON, D.C.

6. NOTIFICATION NO: 362 DATE: le 15 mars 1977

7. COORDONNEES: Latitude nord: 48 24' 15"
 Longitude ouest: 68 29' 26"

8. SYSTEME D'ANTENNE: a) Fonctionnement: AD-II.
 b) Type: deux (2) éléments de section uniforme, haubanés et alimentés en série.
 c) Mise à la terre: 120 fils #10 par élément, espacés également, d'une longueur équivalente à 0.4λ et enfouis à environ 8 pouces sous la surface.

9. MÂTS D'ANTENNE:	#1 (sud)	#2 (nord)
Hauteur au-dessus de l'isolateur:	93.7	93.7 (210.0')
Orientation (Az):	Réf.	4.0
Espacement:	Réf.	90.0 (201.6')
Phasage:	Jour: -	0
	Nuit: 0	-134.5
Rapport d'intensité de champ:	Jour: -	1.00
	Nuit: 1.00	0.94

10. EFFICACITE PREVUE: a) Jour: 600.0 mV/m à 1 mille pour 10 KW.
 189.7 mV/m à 1 mille pour 1 KW.
 b) Nuit: 610.0 mV/m à 1 mille pour 10 KW.
 192.0 mV/m à 1 mille pour 1 KW.

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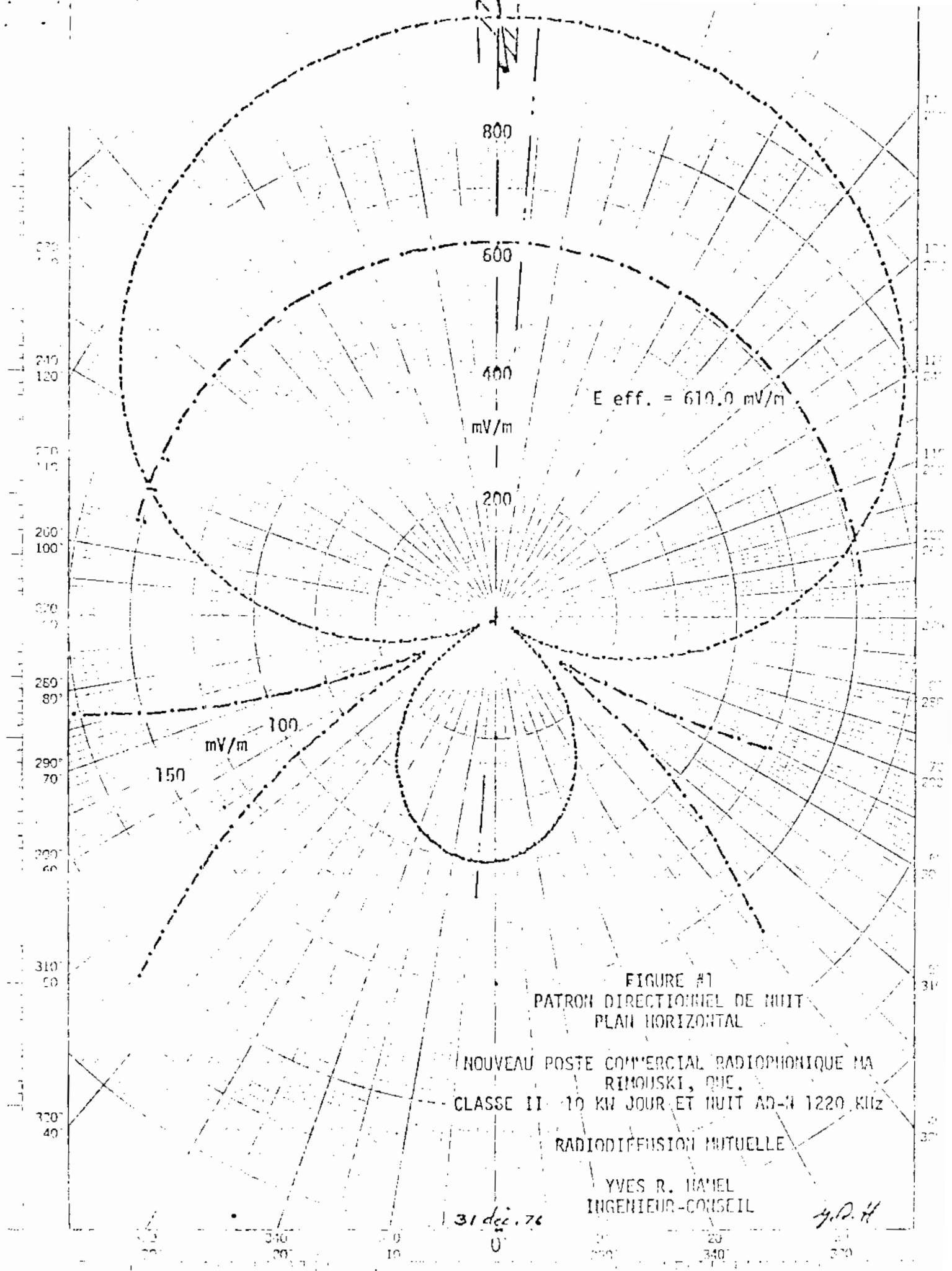


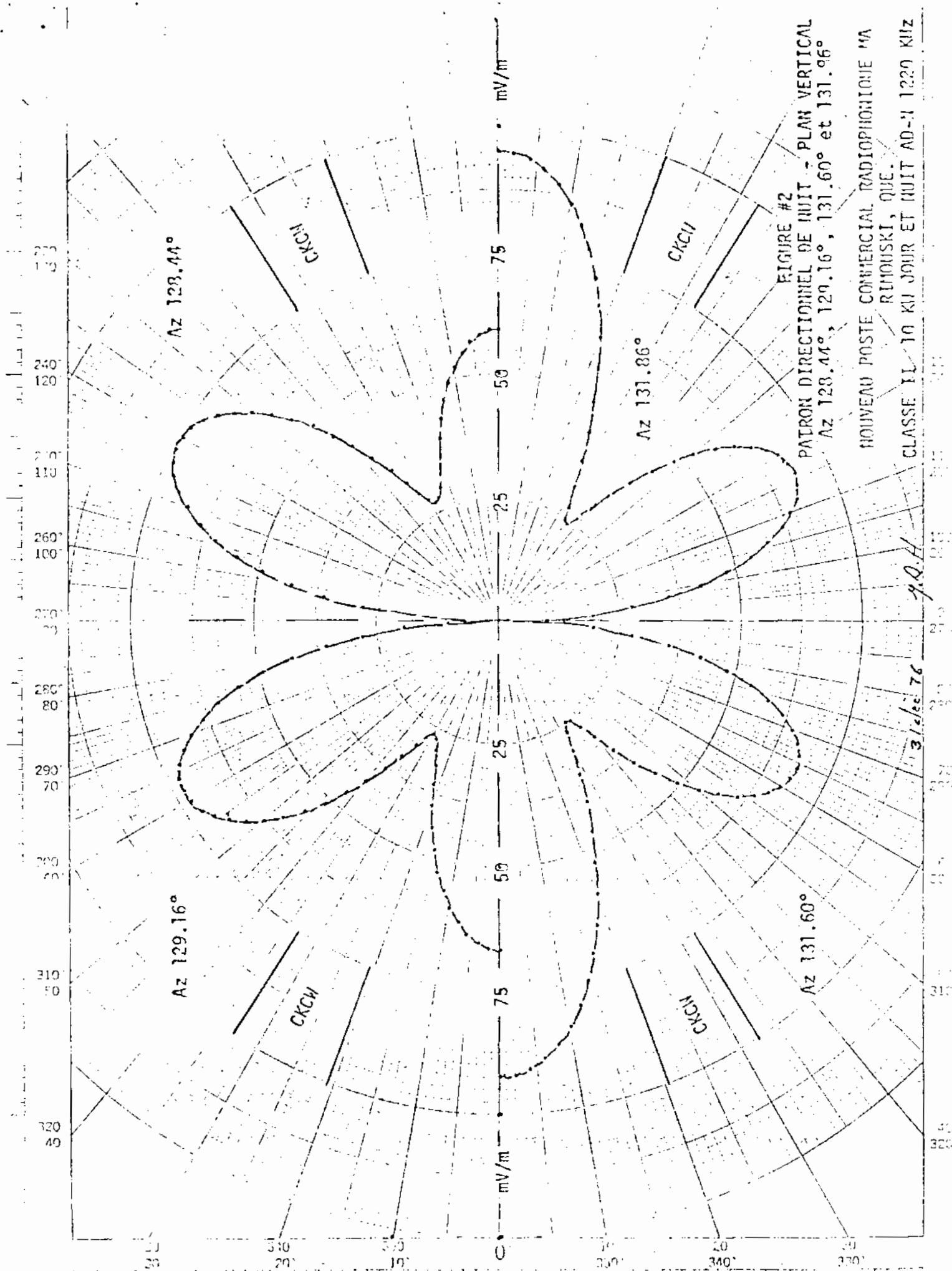
FIGURE #1
PATRON DIRECTIONNEL DE NUIT
PLAN HORIZONTAL

NOUVEAU POSTE COMMERCIAL RADIOPHONIQUE MA
RIMOUSKI, QUE.
CLASSE II 10 KW JOUR ET NUIT AD-N 1220 kHz
RADIODIFFUSION MUTUELLE

YVES R. HAMEL
INGENIEUR-CONSEIL

31 dec. 76

4.P.H.



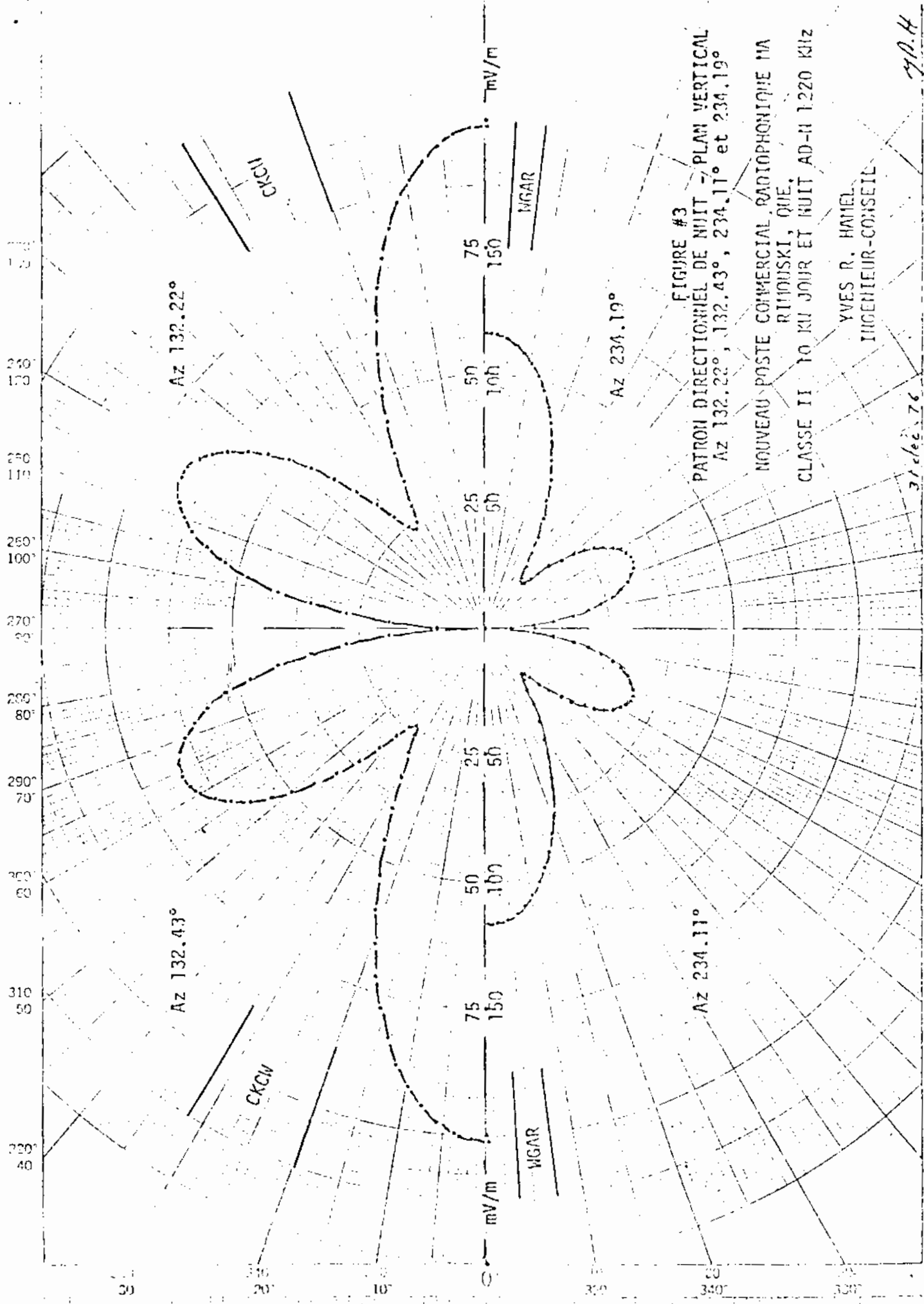


FIGURE #3

PATRON DIRECTIONNEL DE NUIT - PLAN VERTICAL
Az 132.22°, 132.43°, 234.11° et 234.19°

NOUVEAU POSTE COMMERCIAL, RADIOPHONIQUE MA
RIMOUSKI, QUE.
CLASSE II 10 KI LOUR ET NUIT AD-N 1220 KHz

YVES R. HAMEL
INGENIEUR-CONSEIL

Y.R.H.

31 dec 76

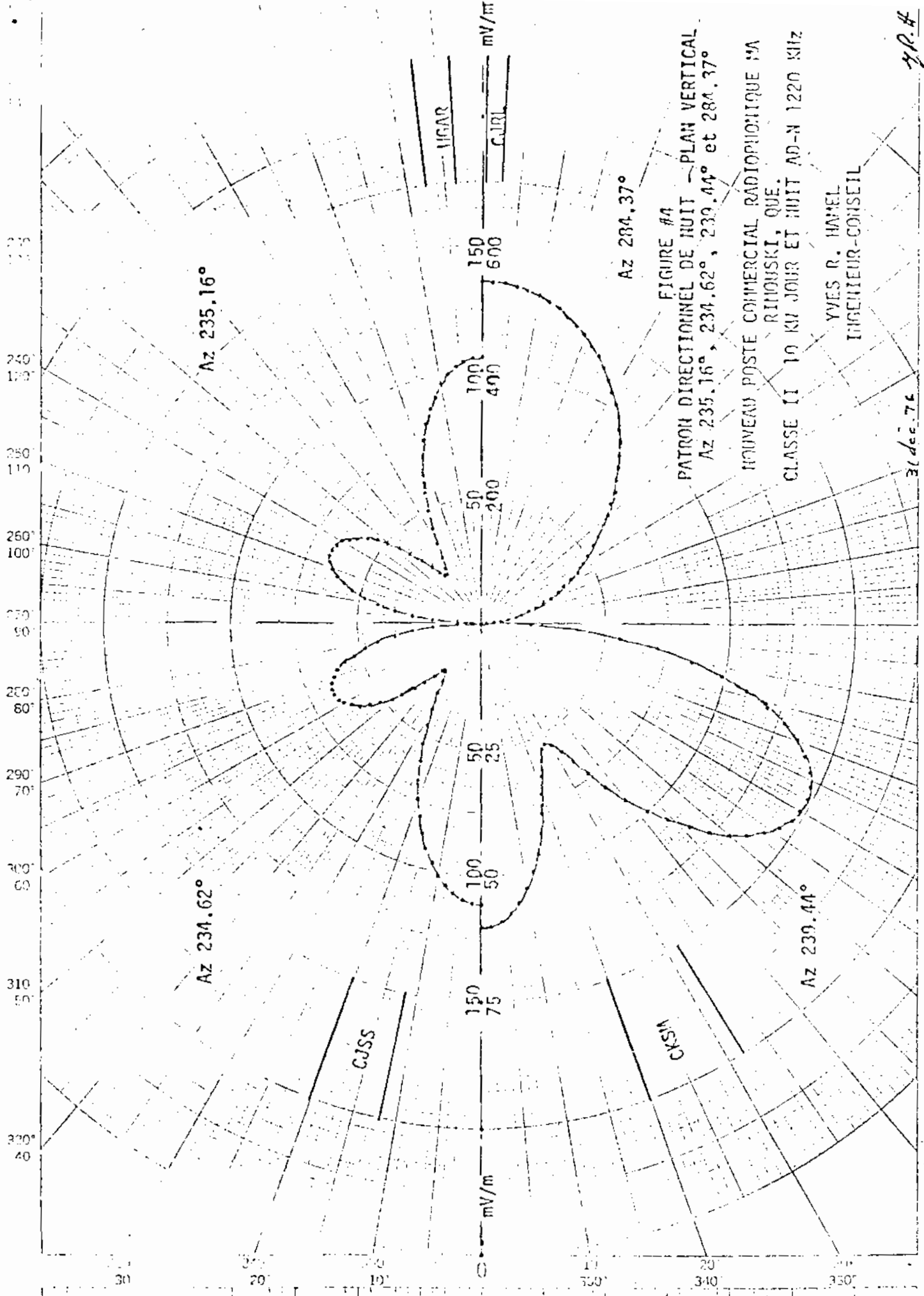


FIGURE #4

PATRON DIRECTIONNEL DE NUIT - PLAN VERTICAL
Az 235.16°, 234.62°, 239.44° et 284.37°

HAUT-LEVEAU POSTE COMMERCIAL RADIOPHONIQUE "A"
RINOUSKI, QUE.

CLASSE II 10 KW JOUR ET NUIT AD-N 1220 KHz

YVES R. HAMEL
INGENIEUR-CONSEIL

4P.4

31 Dec 76

ANTENNA DESCRIPTION SHEET

DIRECTIONAL DA-2

STATION CALL

LOCATION

FREQUENCY

POWER

CLASS

TIME

Boisbrun, Manitoba.

1220 kc/a

10,000 watts

II

Unlimited

NOTIFICATION REFERENCE

202 December 15, 1972

GEOGRAPHICAL COORDINATES

Lat 49°15'26", Lon 100°03'24"

ARRAY CHARACTERISTICS

Four elements, guyed, uniform cross section, base insulated, series feed. Height 201.7 feet or 90 degrees. No top loading.

ELEMENT	ONE	TWO	THREE	FOUR
bearing	ref	000°	000°	000°
spacing	ref	90° 201.7'	180° 403.4'	270° 605.1'
Day R	1000	1605	1214	443
β	-164°	+70°	-70°	+164°
Night R	1000	1876	1614	636
β	-125°	+75°	-75°	+125°

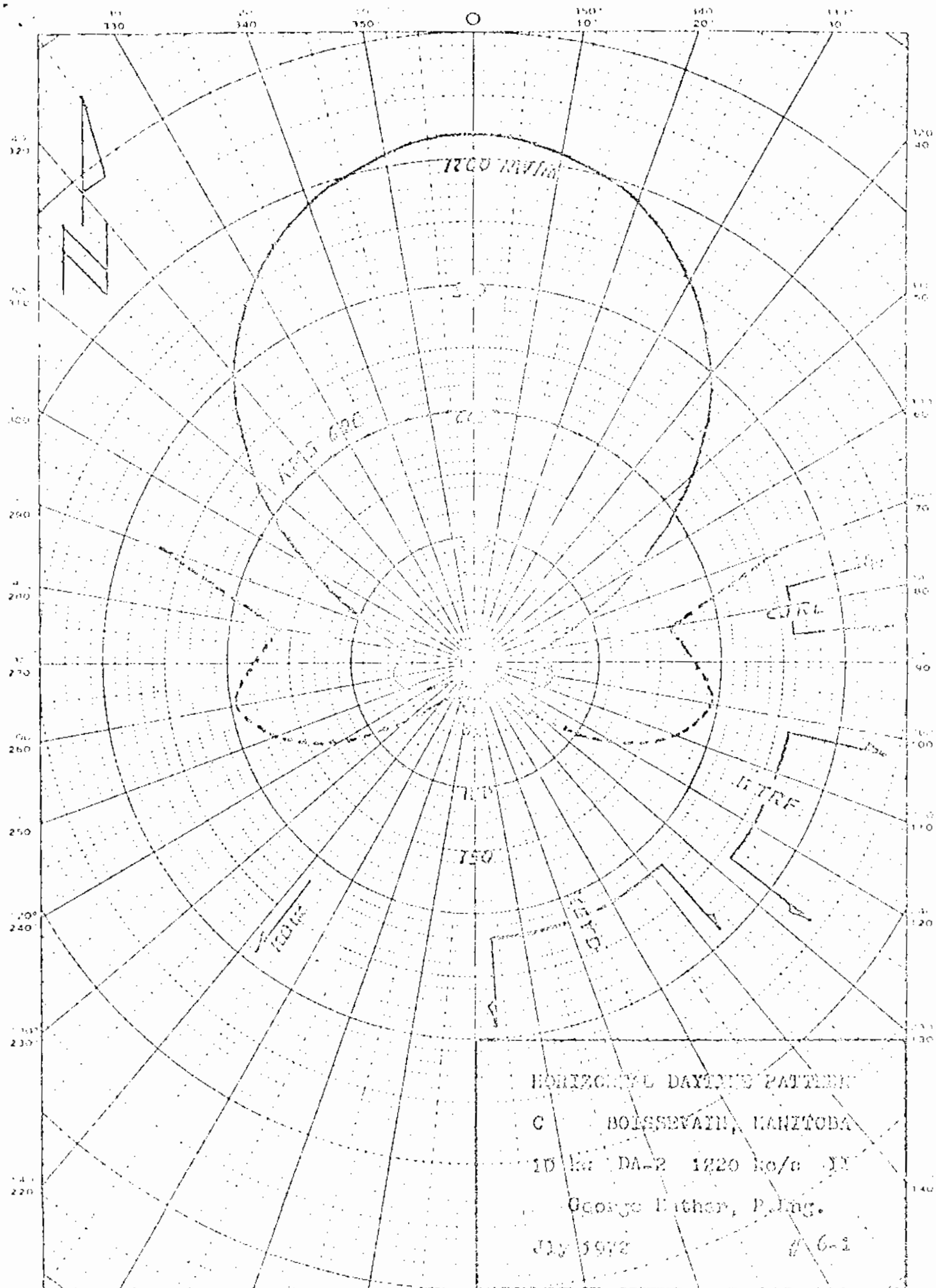
Ground System

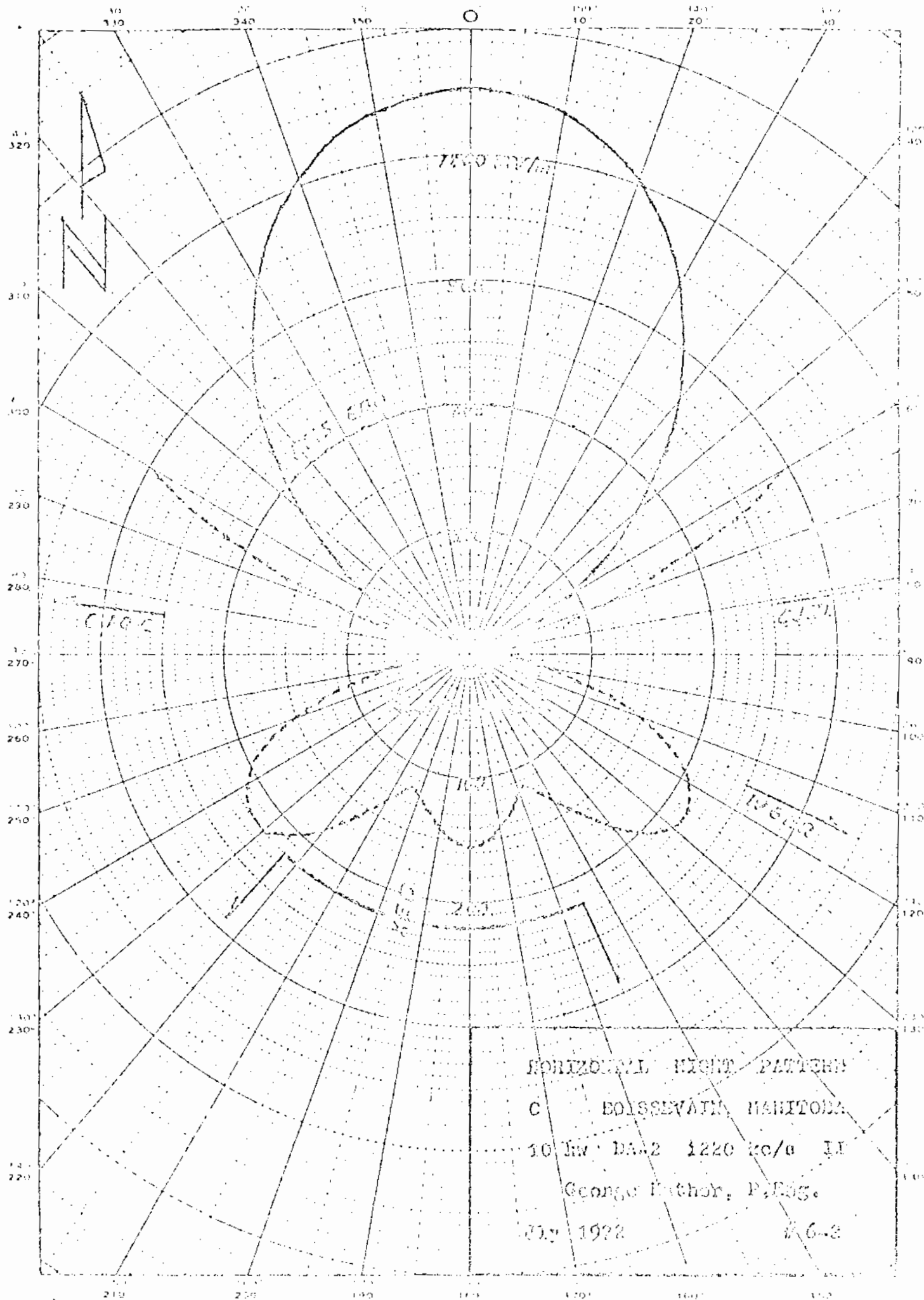
120 radials per tower; #10 AWG bare, soft copper wire, spaced uniformly, depth approximately 8 inches. Radials bonded along line between towers and bonded to soft copper strap at tower base. Maximum length 323 feet.

Predicted RMS

Day 600 mv/m at 1 mi for 10 kw
190 mv/m at 1 mi for 1 kw

Night 600 mv/m at 1 mi for 10 kw
190 mv/m at 1 mi for 1 kw





HORIZONTAL FIELD PATTERN

C BOISSEVAIN, MANITOBA

10 kW DA-2 1220 kc/s 11

George Lathor, P.Eng.

July 1972

W-6-2

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

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

PART I GENERAL INFORMATION

Ⓒ Administration.

CANADA

Sheet No. 424

Date 83:108

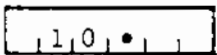
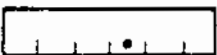
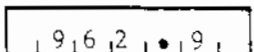
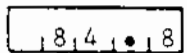
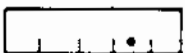
Assigned frequency (kHz)		02	1 2 2 0
Transmitting station	Name of the station	03	A M Q U I Q U
	Call sign	04	C F V M
	Additional Identification	05	
	Station class	06	B
	Operational Status	07	P
Country		08	CAN
Geographical coordinates of the transmitting station		09	6 7 W 2 8 4 3 4 8 N 2 6 3 3

11) a) New assignment ☐ b) Modification of characteristic of an assignment recorded in the plan ☒ c) Cancellation of an assignment ☐

12) Modification under Section 4.2.14 Yes ☐ No ☒

13) Date of bringing into service or cessation of operation

Year Month Day

STATION PARAMETERS	DAYTIME OPERATION	NIGHT-TIME OPERATION
Station power (kW)	(21) 	(31)  No change
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	X						
	ACCEPTANCE OBTAINED							

I - DESCRIPTION DU SYSTEME A ANTENNE DIRECTIONNELLE

1. LETTRES D'APPEL: CFVM
2. EMLACEMENT: Amqui, Qué.
3. FREQUENCE: 1220 KHz.
4. PUISSANCE: 5 KW jour et nuit.
5. CLASSE: II.
6. NOTIFICATION NO: 392 DATE: 27 décembre, 1979
7. COORDONNEES: Latitude nord: 48° 26' 33"
Longitude ouest: 67° 28' 43"
8. SYSTEME D'ANTENNE:
- a) Fonctionnement: AD-II.
 - b) Type: deux (2) éléments de section uniforme, haubanés et alimentés en série.
 - c) Mise à la terre: 120 fils #10 par élément, espacés également, d'une longueur équivalente à 0.4λ et enfouis à environ 8 pouces sous la surface.
9. RATS D'ANTENNE:
- | | #1 (N.E.) | #2 (S.O.) |
|-----------------------------------|-------------|----------------|
| Hauteur au-dessus de l'isolateur: | 84.8° | 84.8° (190.0') |
| Orientation (Az): | Réf. | 194.5° |
| Espacement: | Réf. | 90.0° (201.6') |
| Phasage: | Jour: 0° | - |
| | Nuit: 0° | +132.5° |
| Rapport d'intensité de champ: | Jour: 1.000 | - |
| | Nuit: 1.000 | 0.825 |

2...

10. EFFICACITE PREVUE:
- a) Jour: 423.0 mV/m à 1 mille pour 5 KW.
189.2 mV/m à 1 mille pour 1 KW.
 - b) Nuit: 422.8 mV/m à 1 mille pour 5 KW.
189.1 mV/m à 1 mille pour 1 KW.

Revisé le: 9 novembre 1979.

N.B: Les paramètres et les patrons du nouveau poste de Amqui, Qué.
accompagnant la notification #375, en date du 29 juin 1978,
demeurent inchangés. Cette revision porte seulement sur une
correction des coordonnées géographiques.

YVES R. HAMEL
INGENIEUR-CONSEIL
3772, AVENUE KENT
MONTREAL, QUE. H3S 1K3

TABLE 1-1

ANTENNA DESCRIPTION SHEET

STATION CALL: CHSC
STUDIO LOCATION: ST. CATHARINES, ONTARIO
FREQUENCY: 1220 kHz
POWER: 10 kW
CLASS: II
MODE: DA-2
TIME: UNLIMITED

NOTIFICATION LIST NO.: 410..... DATE: January 29, 1982...

GEOGRAPHICAL LOCATION: Latitude: 43° 03' 23" North
Longitude: 79° 13' 22" West

ARRAY CHARACTERISTICS: Nine guyed steel towers of uniform cross section; base insulated; series fed; no top loading; overall height 205'; electrical height 200' (89.3°)

TOWER NUMBER	SPACING		ORIENTATION DEGREES	FIELD RATIO		PHASE DEGREES	
	DEGREES	FEET		DAY	NIGHT	DAY	NIGHT
1	Reference		Reference	0.354	0.48	-143.3	- 37.7
2	77.41	(173.35)	169.65	0.55	0.978	- 21.2	106.6
3	152.72	(342.01)	169.81	0.286	0.536	101.6	-108.4
4	169.58	(379.76)	50.97	0.553	0.337	-120.5	- 90.4
5	151.78	(339.90)	86.43	1	0.603	0	52
6	181	(405.34)	112.59	0.451	0.322	121	-159.6
7	329.52	(737.94)	57.35	0.296	0.553	- 96	-146.4
8	307.38	(688.36)	71.23	0.505	1	20.1	0
9	301.62	(675.46)	86.58	0.236	0.482	140.9	140.9

PREDICTED EFFICIENCY: Day 614.157 mV/m (194.213 mV/m for 1 kW)
Night 628.408 mV/m (198.70 mV/m for 1 kW)

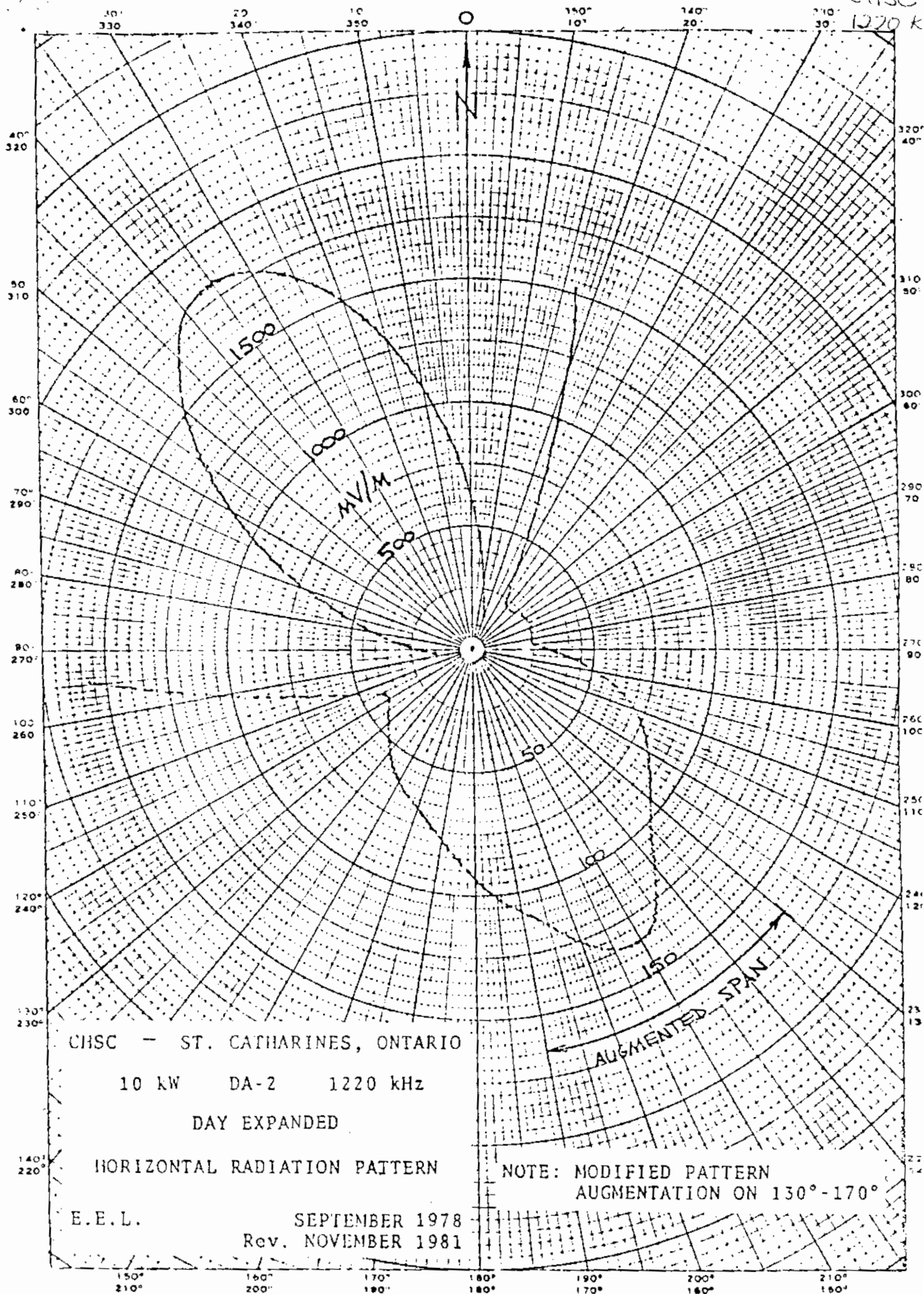
MODIFIED DAY PATTERN AUGMENTATION

SPAN OF AUGMENTATION	AZIMUTH OF MAXIMUM AUGMENTATION	AUGMENTED RADIATION
130° - 170°	150°	135 mV/m

DIETZEN CORPORATION
MADE IN U.S.A.

NO JAG-R DIETZEN GRAPH PAPER
POLAR CO-ORDINATE

CHSC
1220 kHz



ANTENNA DESCRIPTION SHEET

STATION CALL: CHSC
 STUDIO LOCATION: ST. CATHARINES, ONTARIO
 FREQUENCY: 1220 kHz
 POWER: 10 kW
 CLASS: II
 MODE: DA-2
 TIME: UNLIMITED

NOTIFICATION LIST NO.: 410..... DATE: January 29, 1982...

GEOGRAPHICAL LOCATION: Latitude: 43° 03' 23" North
 Longitude: 79° 13' 22" West

ARRAY CHARACTERISTICS: Nine guyed steel towers of uniform cross section; base insulated; series fed; no top loading; overall height 205'; electrical height 200' (89.3°)

TOWER NUMBER	SPACING		ORIENTATION DEGREES	FIELD RATIO		PHASE DEGREES	
	DEGREES	FEET		DAY	NIGHT	DAY	NIGHT
1	Reference		Reference	0.334	0.48	-143.3	- 37.7
2	77.41	(173.35)	169.65	0.55	0.978	- 21.2	106.6
3	152.72	(342.01)	169.81	0.286	0.536	101.6	-108.4
4	169.58	(379.76)	50.97	0.553	0.337	-120.5	- 90.4
5	151.78	(339.90)	86.43	1	0.603	0	52
6	181	(405.34)	112.59	0.451	0.322	121	-159.6
7	329.52	(737.94)	57.35	0.296	0.553	- 96	-146.4
8	307.38	(688.36)	71.23	0.505	1	20.1	0
9	301.62	(675.46)	86.58	0.236	0.482	140.9	140.9

PREDICTED EFFICIENCY: Day 614.157 mV/m (194.213 mV/m for 1 kW)
 Night 628.408 mV/m (198.70 mV/m for 1 kW)

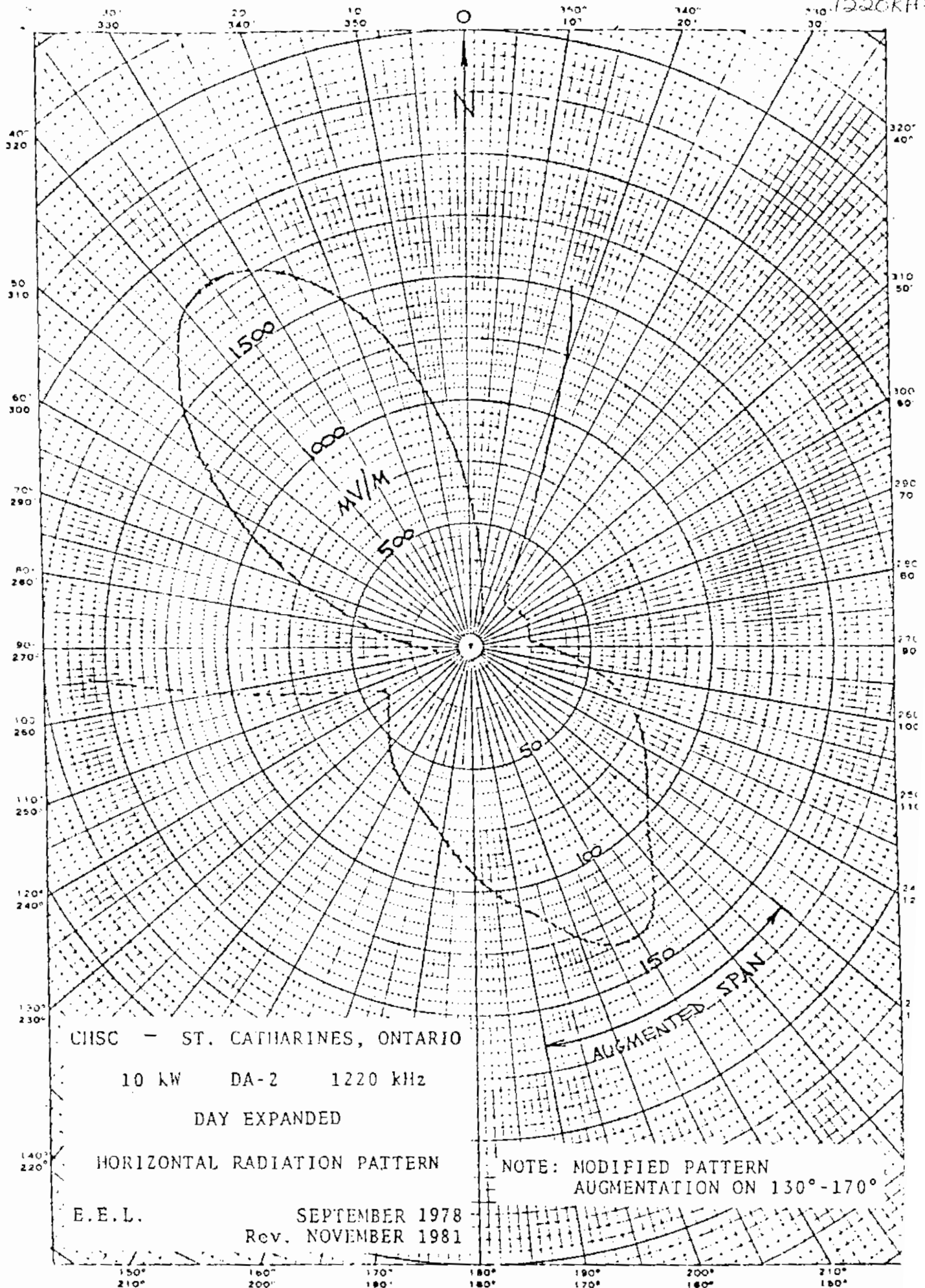
MODIFIED DAY PATTERN AUGMENTATION

SPAN OF AUGMENTATION	AZIMUTH OF MAXIMUM AUGMENTATION	AUGMENTED RADIATION
130° - 170°	150°	135 mV/m

CHSC 1220 kHz

DIETZEN CORPORATION
MADE IN U.S.A.

NO 340-B DIETZEN GRAPH PAPER
POLAR CO-ORDINATE



CHSC

Description Sheet
(7-26-67ct)

Station CHSC 500w, 1kw-LS, DA-1, U, Class II
St. Catharines, Ontario 1220 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET (REVISED)

STATION : CHSC MAIN STUDIO : St. Catharines, Ontario
FREQUENCY : 1220 Kc/s POWER : 1 KW - D/.5KW - N Class II
NOTIFICATION LIST NO : 212 DATE : May 25, 1966.

GEOGRAPHICAL LOCATION : North Latitude : 43° 06' 48"
OF THE ANTENNA SYSTEM : West Longitude : 79° 12' 46"

ANTENNA CHARACTERISTICS

MODE OF OPERATION : DA - 1 (Same pattern with different power day and night)

NUMBER OF ELEMENTS : Six (6)

TYPE OF ELEMENTS : Uniform cross-section guyed steel towers, base insulated for series feed, no top loading.

HEIGHT ABOVE INSULATORS : All towers equal height of 220' (98.2°)

OVERALL HEIGHT : 225'

TOWER	:	1 (SW)	2 (SC)	3 (SE)
FIELD RATIO	:	$\frac{1.00}{1.96}$	$\frac{1.96}{1.00}$	$\frac{1.00}{1.00}$
PHASING	:	0°	+40°	+80°

TOWER	:	4 (NW)	5 (NC)	6 (NE)
FIELD RATIO	:	$\frac{1.00}{1.96}$	$\frac{1.96}{1.00}$	$\frac{1.00}{1.00}$
PHASING	:	-134°	-94°	-54°

SPACING & ORIENTATION : Towers 1, 2 and 3 and Towers 4, 5 and 6 are spaced 349.5 ft. (156°) apart on parallel lines oriented 77° East of True North. Towers 1 and 4, 2 and 5, and 3 and 6 respectively are spaced 134.4 ft. (60°) apart and the lines joining them are oriented 25° East of True North.

GROUND SYSTEM : 120 equally spaced radials of A.W.G. No. 10 bare soft drawn copper wire per tower, extending to a distance of no less than 202 ft. (.25 wavelength) except where bonded along the common chords equidistant between towers and covering an area equivalent to that of a standard system with .4 wave-length radials. Wires are buried approximately 8 inches.

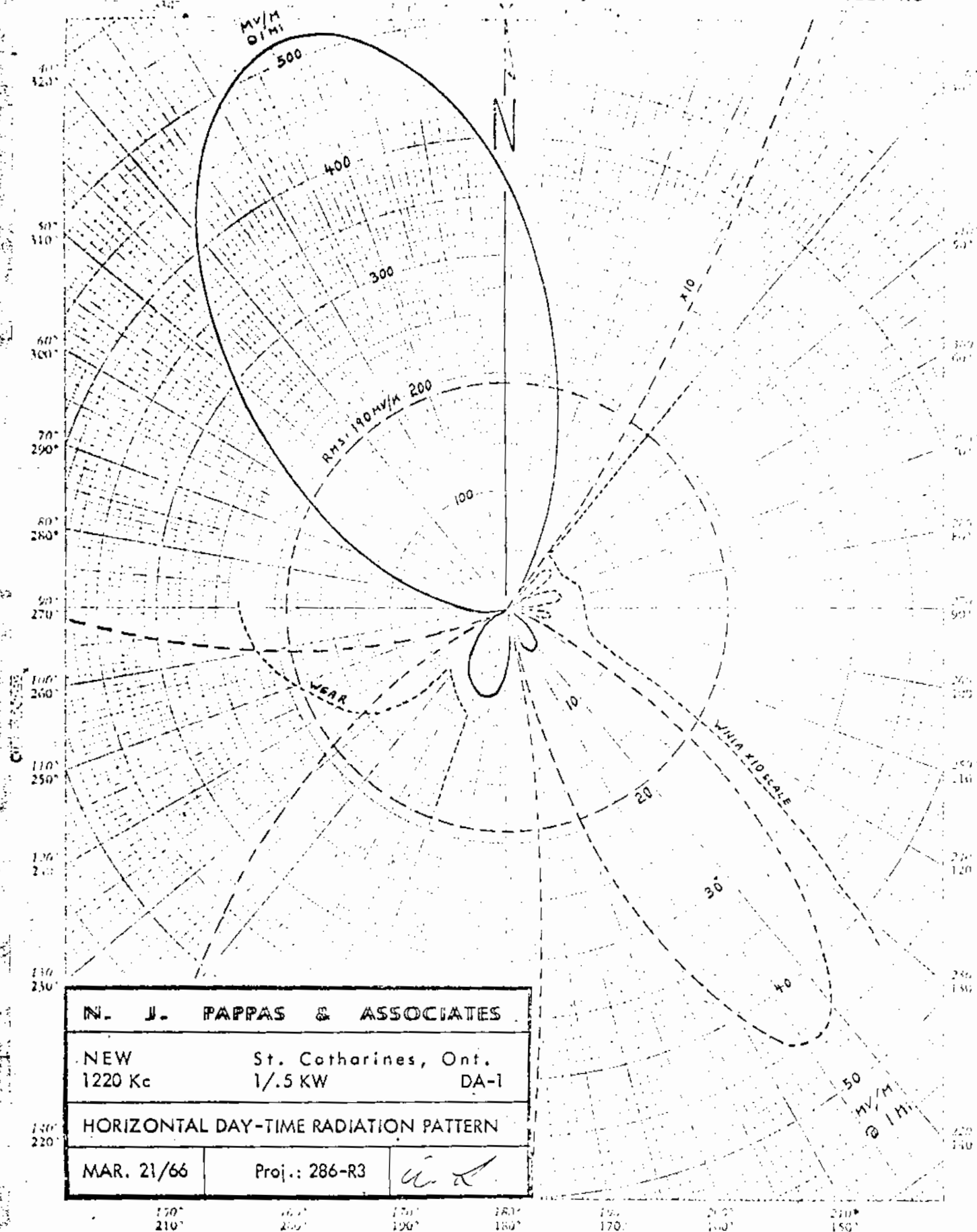
PREDICTED EFFECTIVE FIELD: Day : 190 MV/M for 1 KW
Night : 134 MV/M for .5 KW

CHSC

Proposed Day
(7-26-67ct)

Station CHSC
St. Catharines, Ontario

500w, 1kw-LS, DA-1, U, Class II
1220 kc

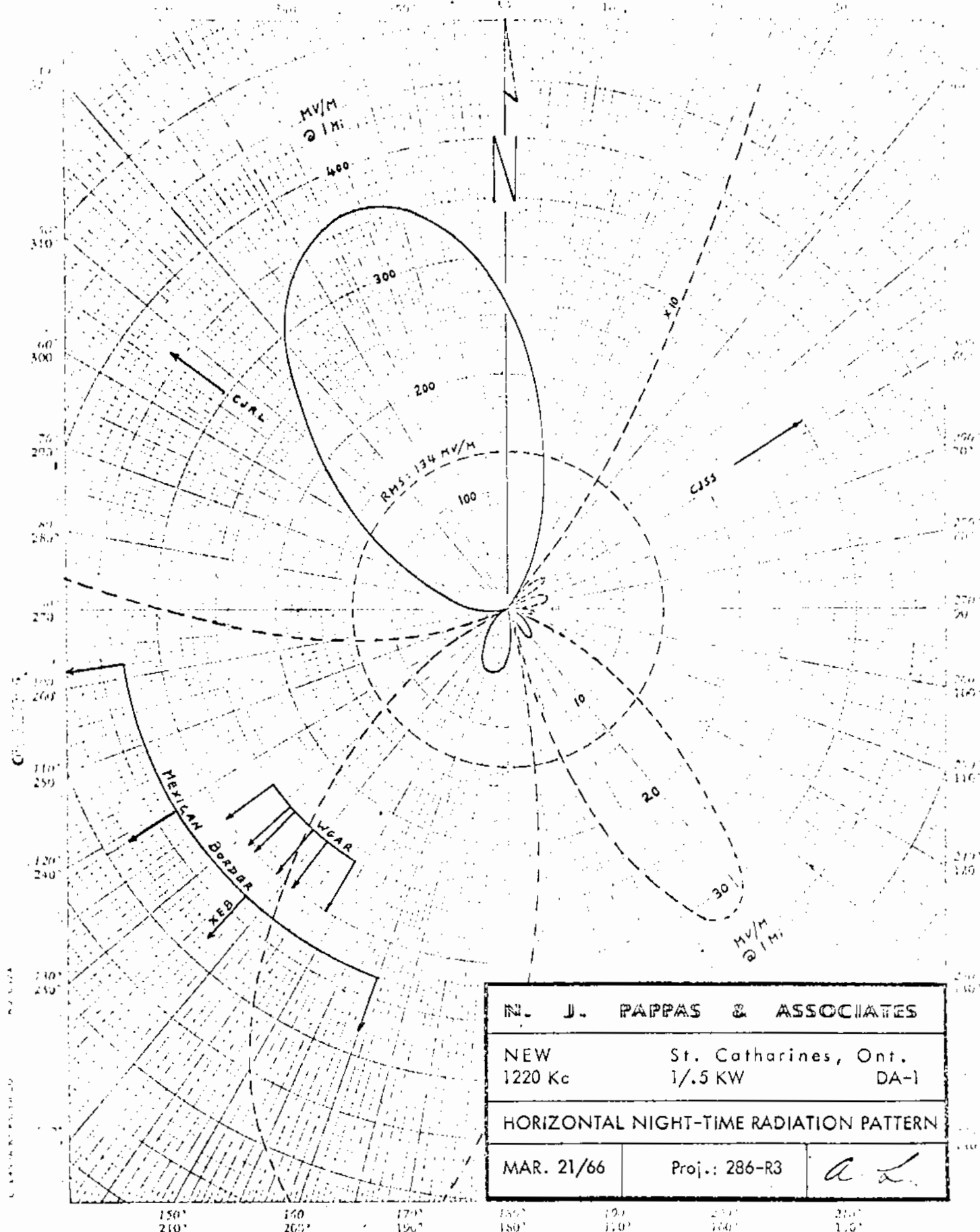


CHSC

Proposed Night
(7-26-67ct)

Station CHSC
St. Catharines, Ontario

500w, 1kw-LS, DA-1, U, Class II
1220 kc



N. J. PAPPAS & ASSOCIATES		
NEW	St. Catharines, Ont.	
1220 Kc	1/.5 KW	DA-1
HORIZONTAL NIGHT-TIME RADIATION PATTERN		
MAR. 21/66	Proj.: 286-R3	<i>a. L.</i>

ANTENNA DESCRIPTION SHEET

STATION CALL: CHSC
 STUDIO LOCATION: ST. CATHARINES, ONTARIO
 FREQUENCY: 1220 kHz
 POWER: 10 kW
 CLASS: II
 MODE: DA-2
 TIME: UNLIMITED

NOTIFICATION LIST NO.: ..366. DATE: August 26, 1977

GEOGRAPHICAL LOCATION: Latitude: 43° 03' 23" North
 Longitude: 79° 13' 22" West

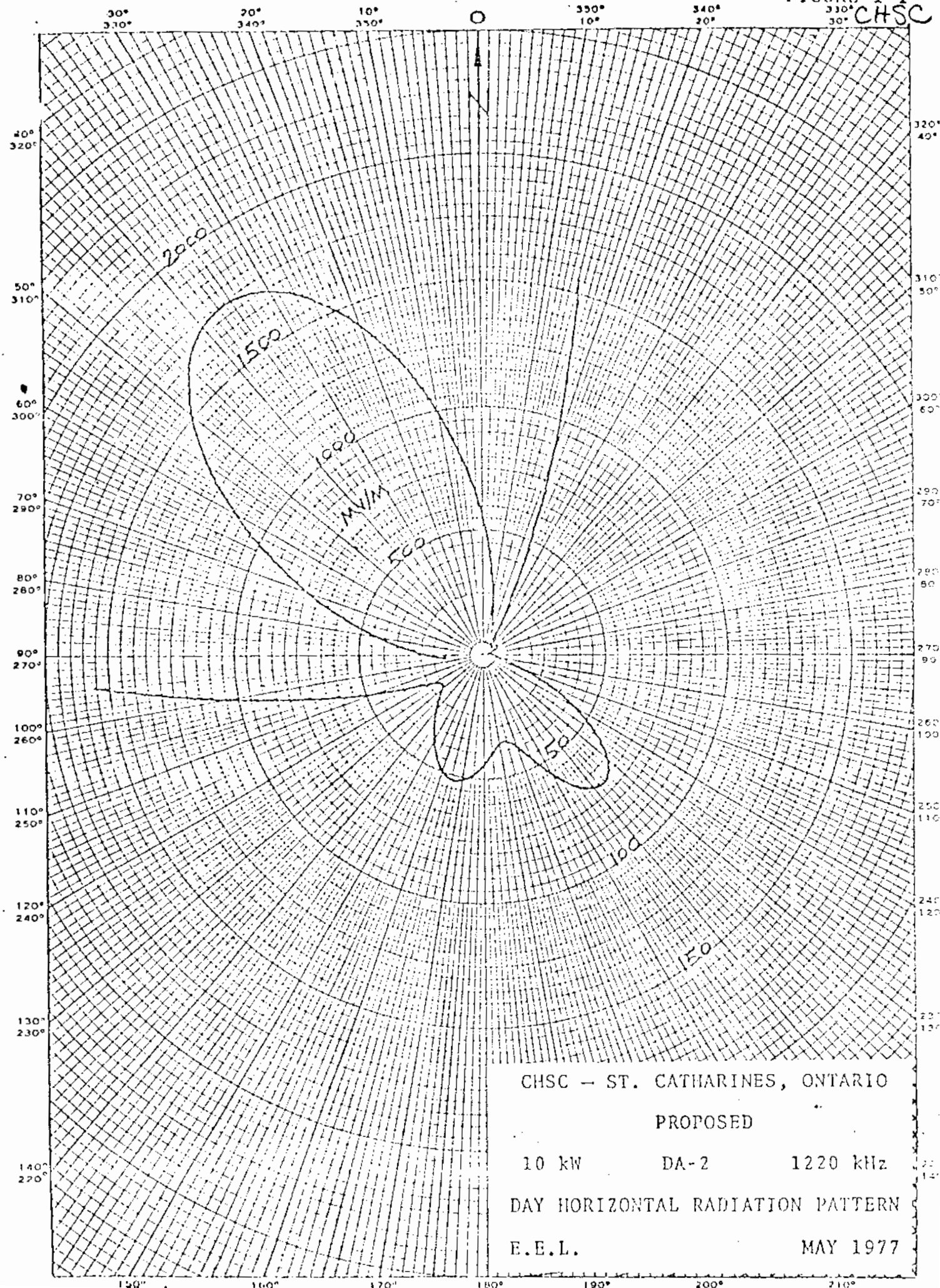
ARRAY CHARACTERISTICS: Twelve guyed steel towers of uniform cross section; base insulated; series fed; no top loading; overall height 205'; electrical height 200' (89.3°); 210' overall.

TOWER NUMBER	SPACING		ORIENTATION DEGREES	FIELD RATIO		PHASE DEGREES	
	DEGREES	(FEET)		DAY	NIGHT	DAY	NIGHT
1	165.15	(369.84)	237.37	—	0.374	—	-130.5
2	208.58	(467.10)	216.38	—	0.695	—	0
3	275.83	(617.70)	204.14	—	0.346	—	130.3
4	Reference		Reference	0.317	0.544	-144.5	-131.6
5	80	(179.15)	170	0.518	1	-24.3	0
6	160	(358.31)	170	0.251	0.513	101.6	128.3
7	165	(369.51)	57	0.600	0.437	-120.5	166.5
8	152.68	(341.92)	85.84	1	0.842	0	-63.2
9	179.43	(401.82)	112.17	0.496	0.435	121.0	67.7
10	329.2	(737.22)	57.56	0.279	0.337	-96.0	154.6
11	308.88	(691.72)	70.85	0.477	0.628	22.1	-72
12	302.15	(676.65)	86.64	0.252	0.320	142.9	61.3

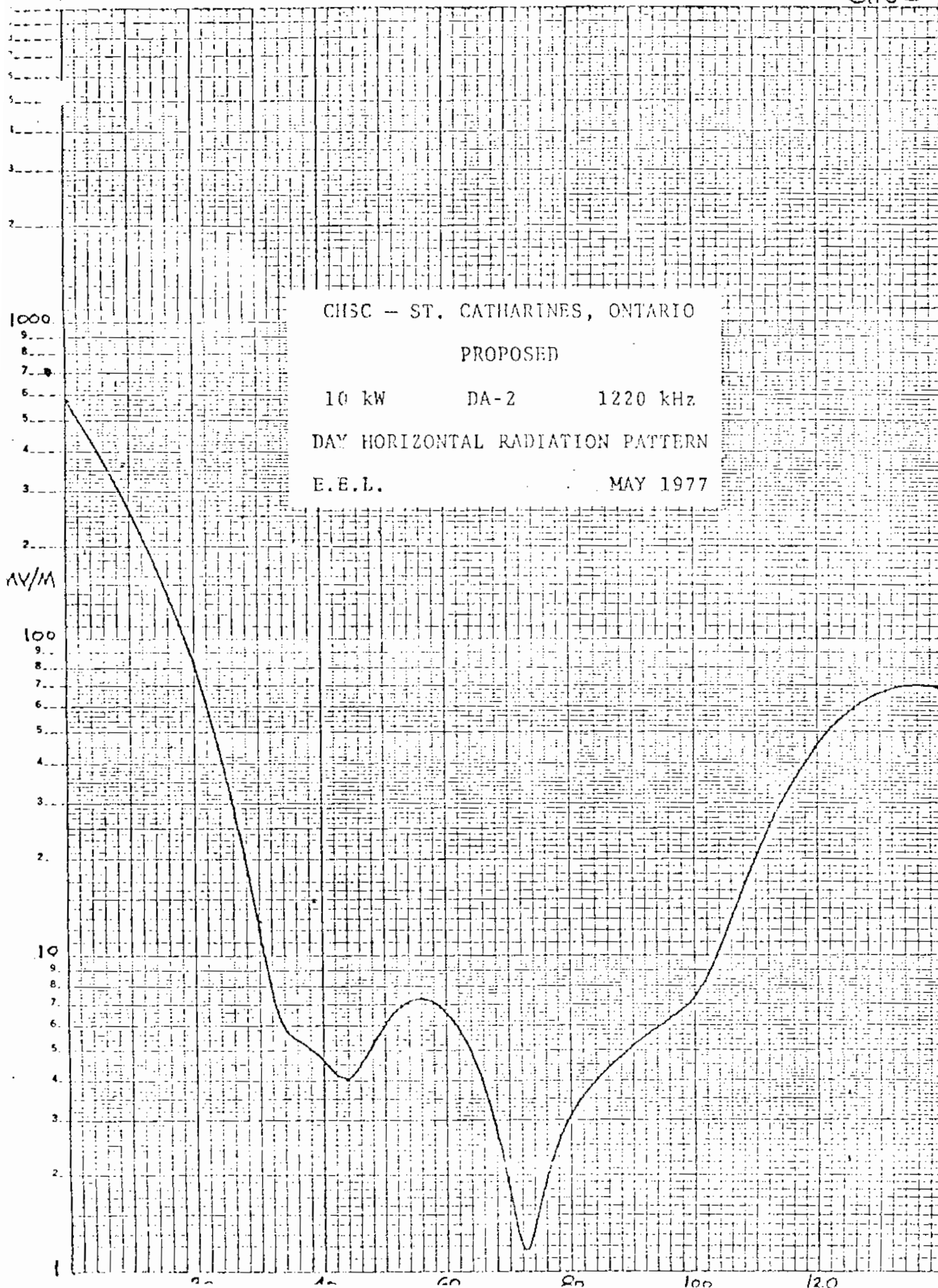
PREDICTED EFFICIENCY: Day 616.728 mV/m (195.027 mV/m for 1 kW)
 (UNATTENUATED FIELD AT ONE MILE) Night 615.520 mV/m (194.645 mV/m for 1 kW)

ANTENNA DESCRIPTION SHEET

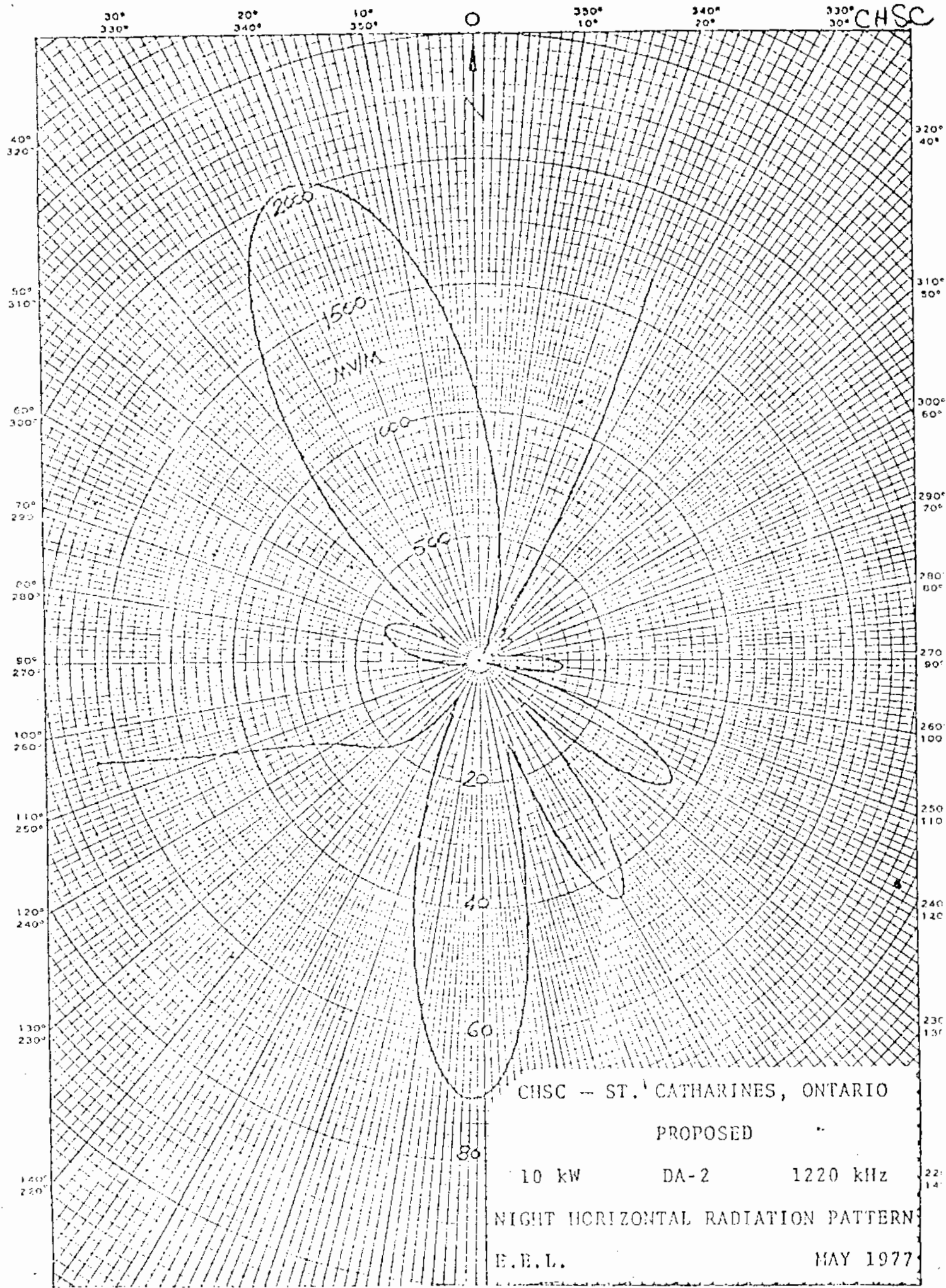
GROUND SYSTEM: 120 equally spaced radials per tower of #10 AWG soft drawn bare copper buried 6" to 18" deep where possible, of average length 322' (0.4 λ) and minimum length 202' (0.25 λ), excluding those along common chords; counterpoise at the base of each tower.



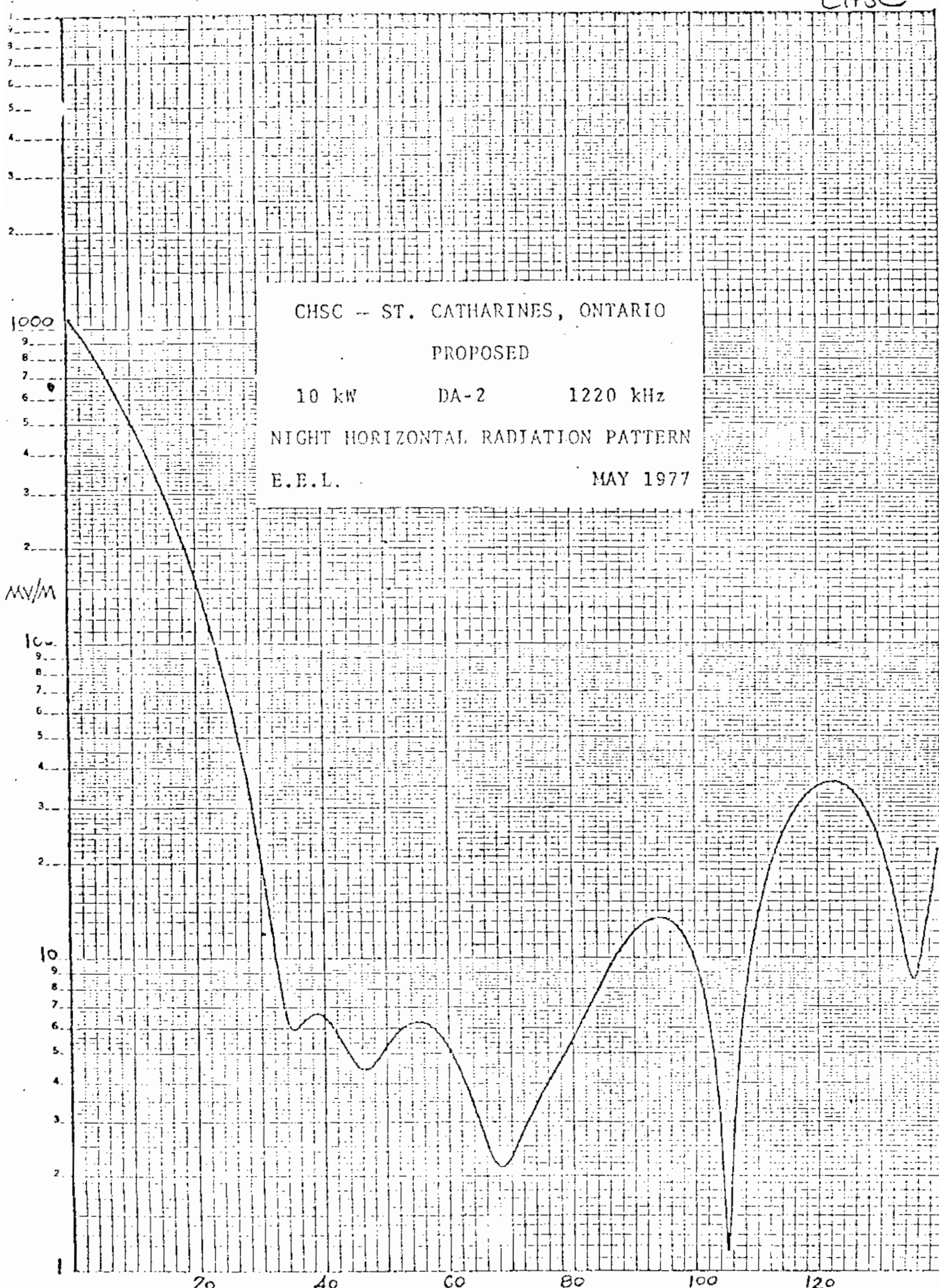
CHSC

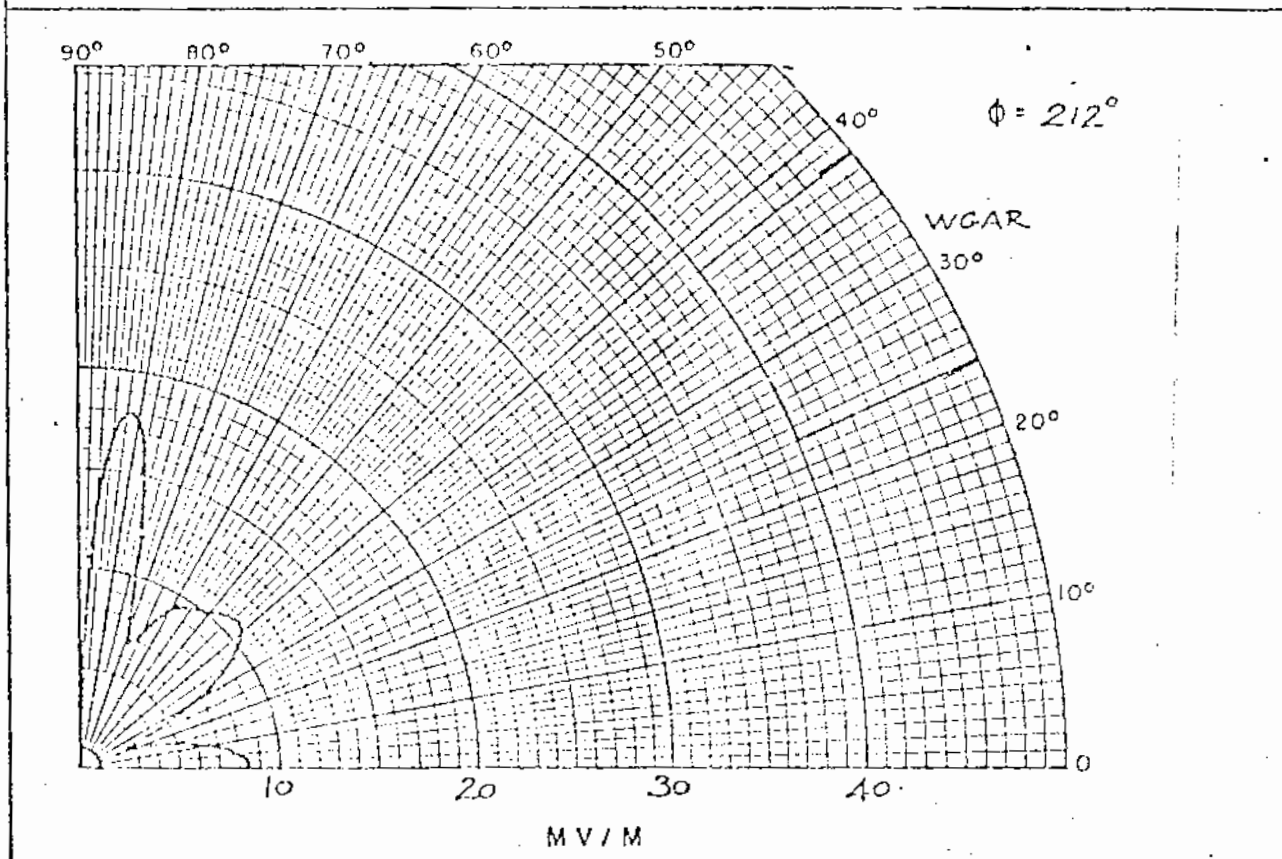
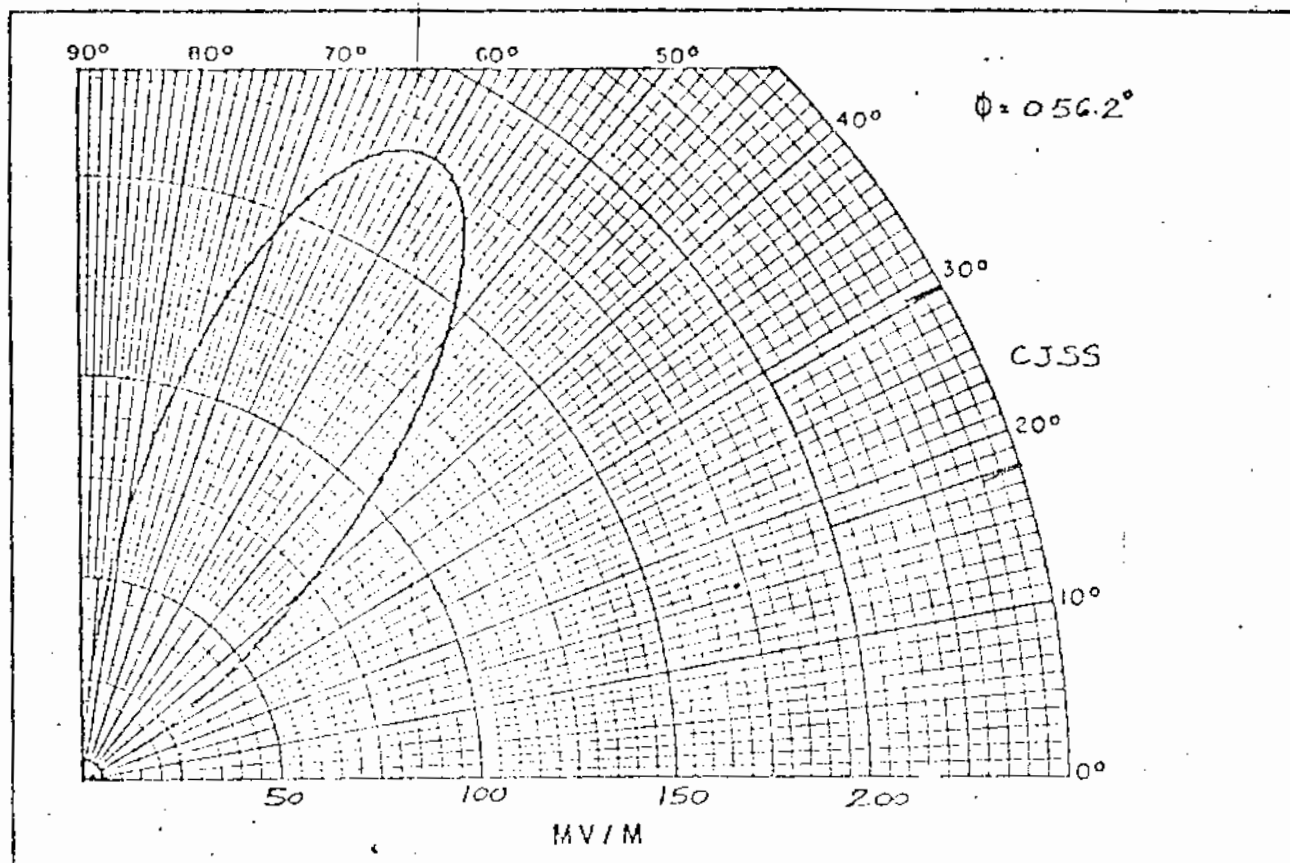


POLAR CO-ORDINATE



CHSC





VERTICAL RADIATION PATTERNS

CHSC - ST. CATHARINES, ONTARIO

PROPOSED

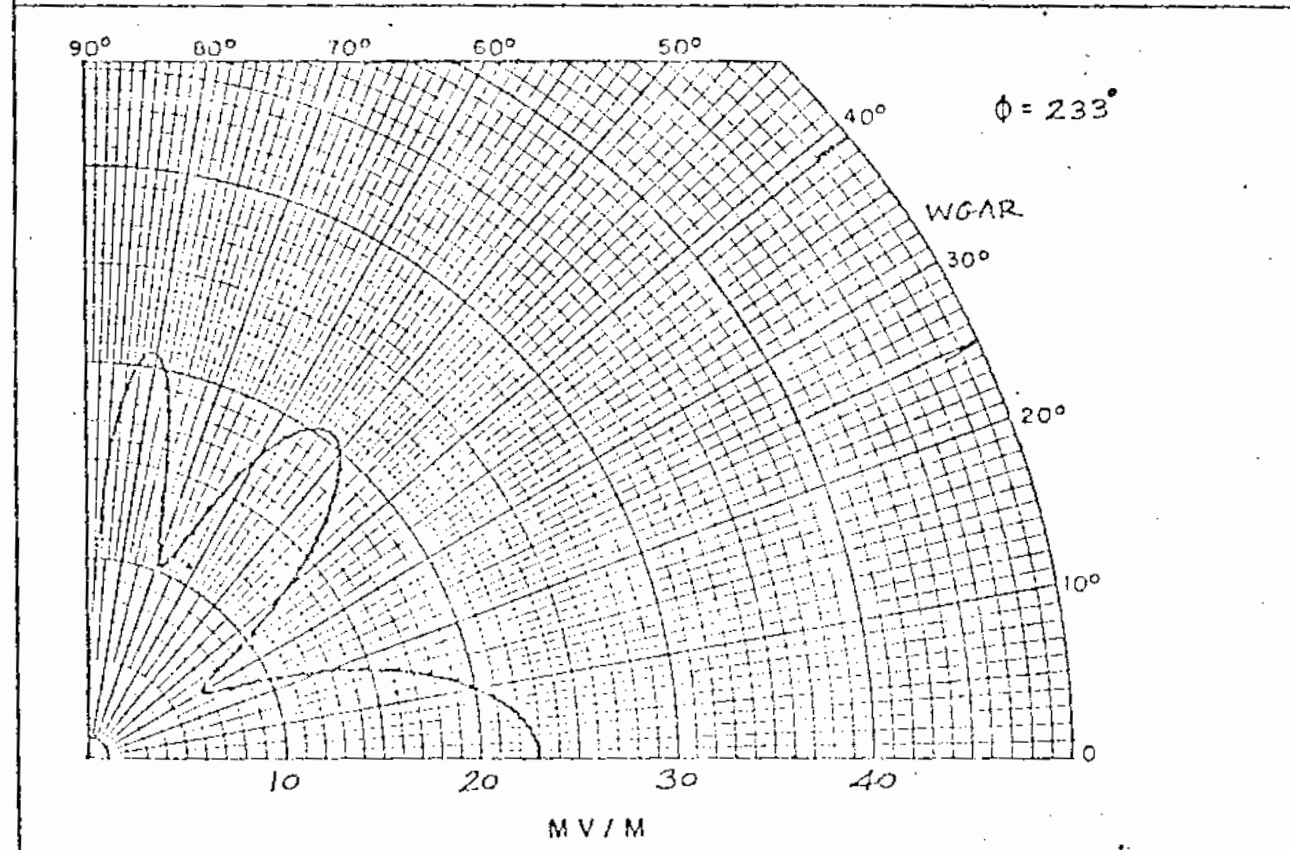
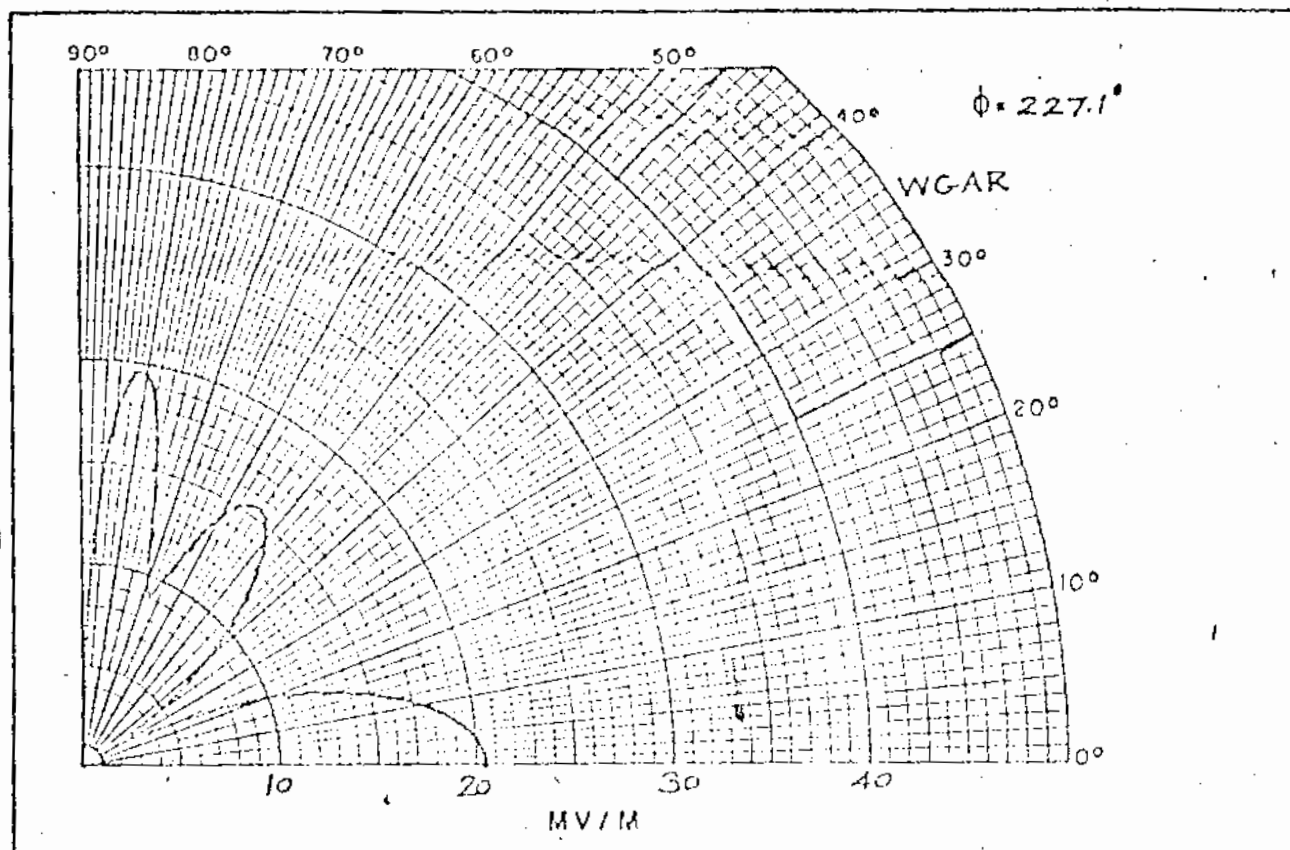
10 kW

DA-2

1220 kHz

E.E.L.

MAY 1977



VERTICAL RADIATION PATTERNS

CHSC - ST. CATHARINES, ONTARIO

PROPOSED

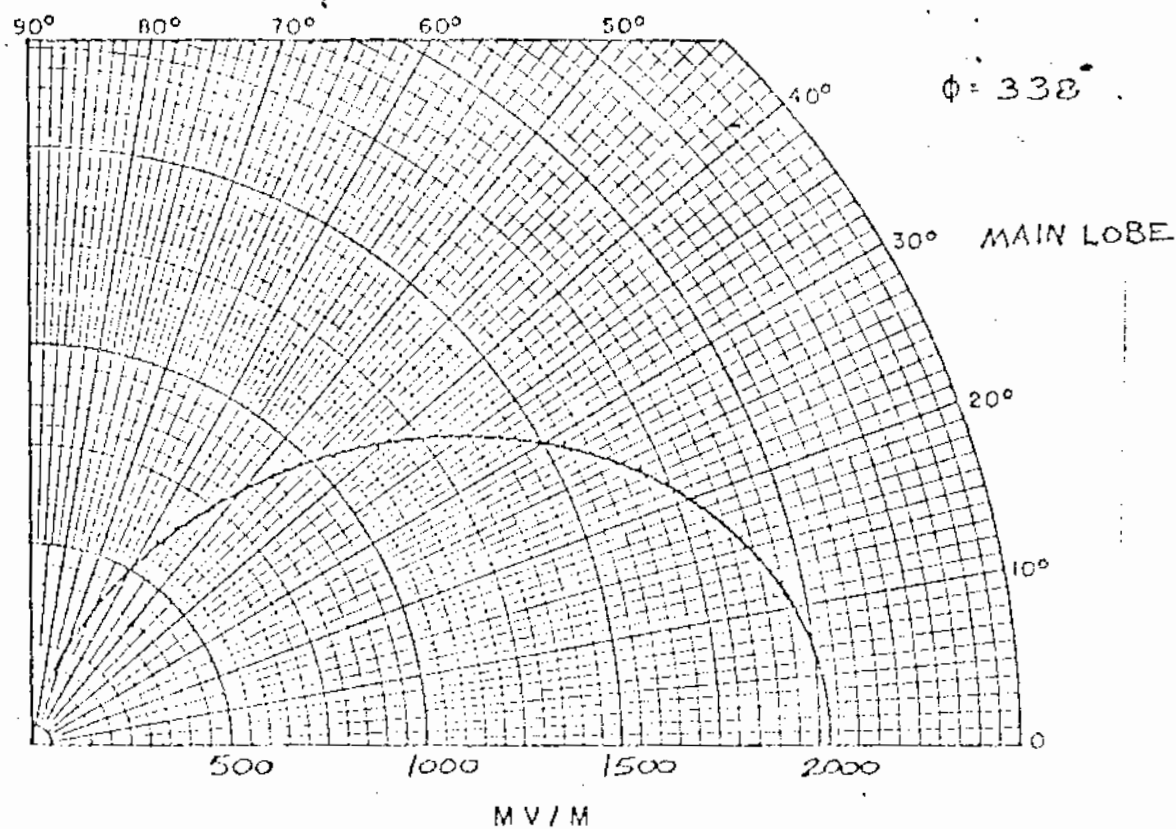
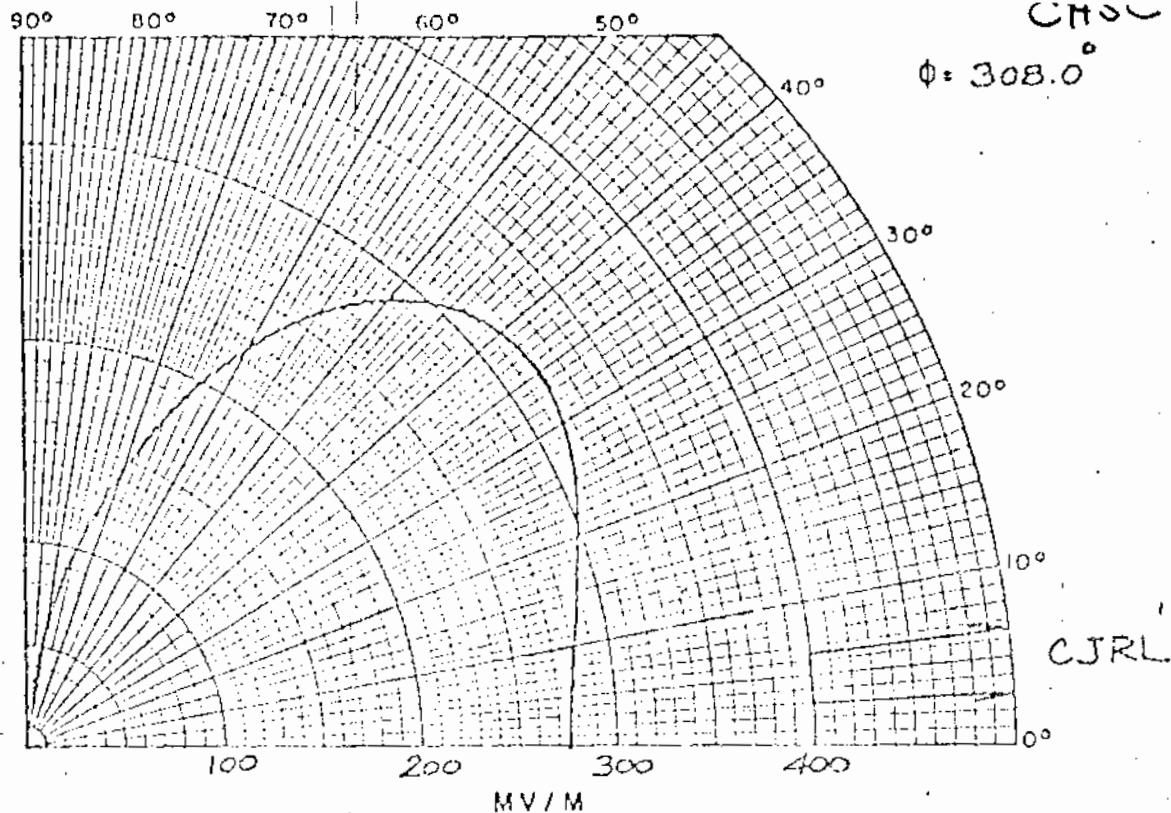
10 kW

DA-2

1220 kHz

E.F.L.

MAY 1977



VERTICAL RADIATION PATTERNS

CHSC - ST. CATHARINES, ONTARIO

PROPOSED

10 kW

DA-2

1220 kHz

E.E.L.

MAY 1977

CJOC

#179
Description Sheet
(8-23-63ct)

Station CJOC
Lethbridge, Alberta

5kw, 10kw-LS, DA-N, U, Class II
1220 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CJOC

Main Studio: Lethbridge, Alberta

Frequency: 1220 kc

Power: 10 kw D/5 kw N Class: II

Notification List No. 179

Date: July 26, 1963

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM:

North Latitude: 49° 42' 40"

West Longitude: 112° 43' 20"

ANTENNA CHARACTERISTICS

Mode of Operation: DA-N
Number of elements: 2
Type of elements: guyed, uniform
cross-section,
no top loading

TONER:	<u>North</u>	<u>South</u>
HEIGHT ABOVE INSULATORS:	400' (179°)	155' (69°)
OVERALL HEIGHT:	405'	160'
SPACING:	168' (75°)	
PHASING:	125° lag	0°
FIELD RATIO:	1.0	1.175
ORIENTATION:	Line through towers bears N 12° W.	
GROUND SYSTEM	120 radials, 370' long, spaced 3° around each tower base.	
Predicted Effective Field:	Day: 746 mv/m at 1 mile (236 per kw) Night: 462 " " 1 " (207 per kw)	

#179

CJOC

Proposed Night
(8-23-63ct)

Station CJOC
Lethbridge, Alberta

5kw, 10kw-LS, DA-N, U, Class II
1220 kc

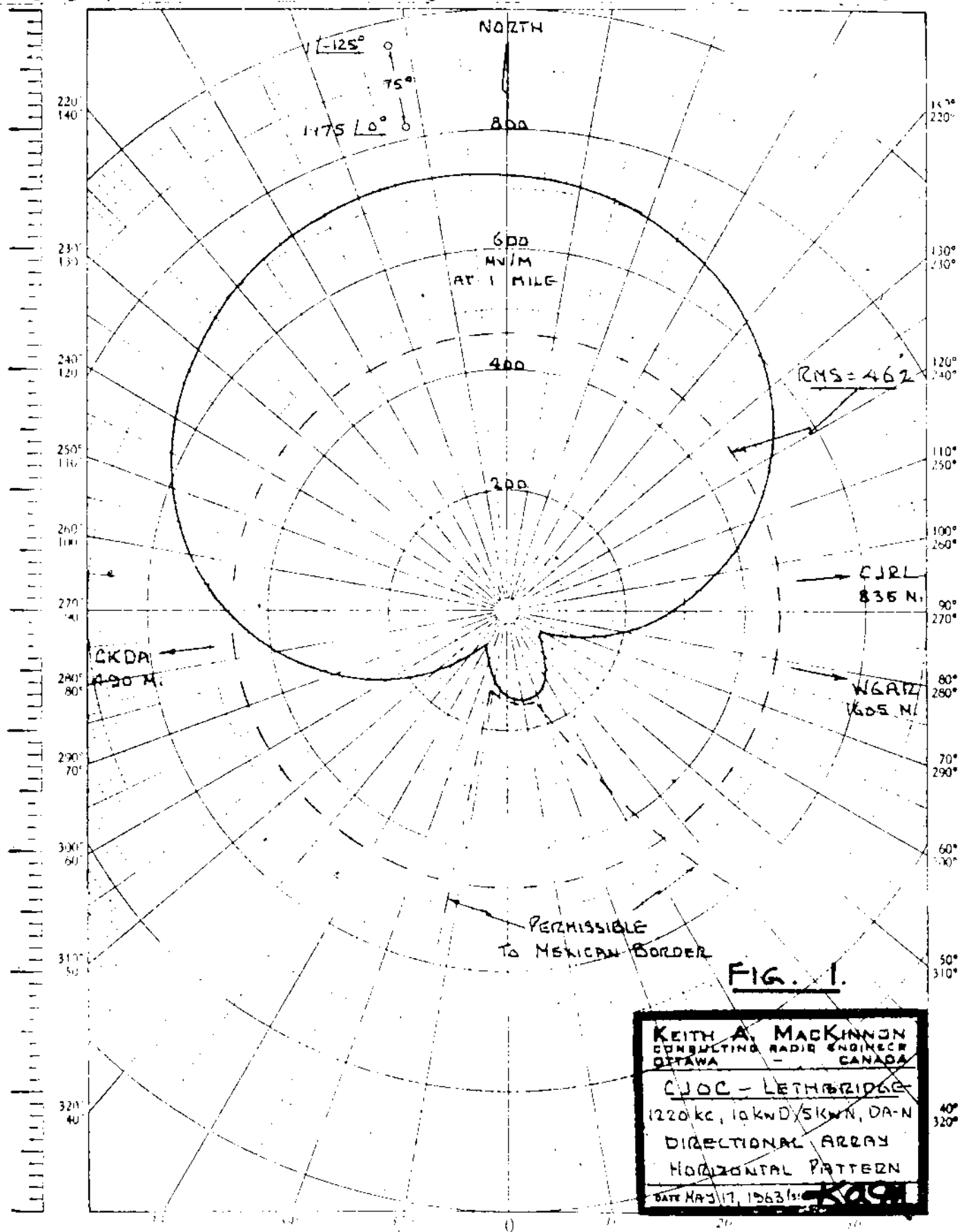


FIG. 1.

KEITH A. MACKINNON
CONSULTING RADIO ENGINEER
OTTAWA - CANADA

CJOC - LETHBRIDGE
1220 kc, 10kw/5kw, DA-N
DIRECTIONAL ARRAY
HORIZONTAL PATTERN

DATE MAY 17, 1963

DEC 20-52
AIR SERVICES

Telecommunications Division
(5-10-109)



CANADA

DEPARTMENT OF TRANSPORT
OTTAWA

CJRL
1220

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CJRL
Main Studio: Kenora, Ontario
Frequency: 1220 Kc/s.
Power: 1 Kw.
Class: II
Time: U

Notification Reference: NARBA Annex 3

Geographical Location:

North Latitude: $49^{\circ} 45' 53''$
West Longitude: $94^{\circ} 26' 40''$

Antenna Characteristics:

Height: 201 ft. 90 degrees
Expected Efficiency: mv/m at 1 mi. for Kw.
or: 183 mv/m at 1 mi. for 1 Kw.

Ground System:

160 radials 300 feet long, buried varying depth, due to rock formation.

Type of Element:

Uniform square cross section, base insulated for series feed.

December 20, 1952

#1A2
DESCRIPTION SHEET
(1-29-60g)

Station CJSS 1kw, 10kw-LS, DA-2, U, Class II
Cornwall, Ontario, Canada 1220 KC

SECTION 5 - DESCRIPTION OF ARRAY

DIRECTIONAL ARRAY - DESCRIPTION SHEET

STATION: CJSS MAIN STUDIO: Cornwall, Ont.

FREQUENCY: 1220 KC POWER: 1 KW-N/10 KW-D CLASS: II

Notification List No.: 142 Date: December 30, 1959

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:

NORTH LATITUDE: 45° 04' 47"

WEST LONGITUDE: 74° 46' 08"

ANTENNA CHARACTERISTICS:

Mode of Operation: Directional full time, different pattern day and night (DA-2)

Number of Elements: Three (3)

Type of Elements: Square uniform cross-section, guyed, insulated from ground, series fed, no top loading.

TOWER:	#1 (E)	#2 (N)	#3 (W)
HEIGHT ABOVE INSULATORS:	200'	200'	200' (90°)
OVERALL HEIGHT:	205'	205'	205'
SPACING:	See orientation		
PHASING:	Day: 0	180	-138
	Night: 0	180	not used
FIELD RATIO:	Day: 1	0.75	0.5
	Night: 1	0.765	not used

ORIENTATION: Reference tower: tower No. 1
Towers No. 1 and 2 separated 201.5' (90°), on a line bearing 327° East of True North.
Towers No. 1 and 3 separated 201.5' (90°), on a line bearing 261.5° East of True North.

GROUND SYSTEM: Equivalent to 120 equally spaced radials per mast extending to a maximum of 322 feet (0.4 of a wavelength) and bonded together at points equidistant between towers.

PREDICTED EFFECTIVE FIELD: Day: 566 mv/m at 1 mile for 10 Kw. radiated
or 179 mv/m at 1 mile per Kw. radiated

Night: 177.5 mv/m at 1 mile for 1 Kw. radiated

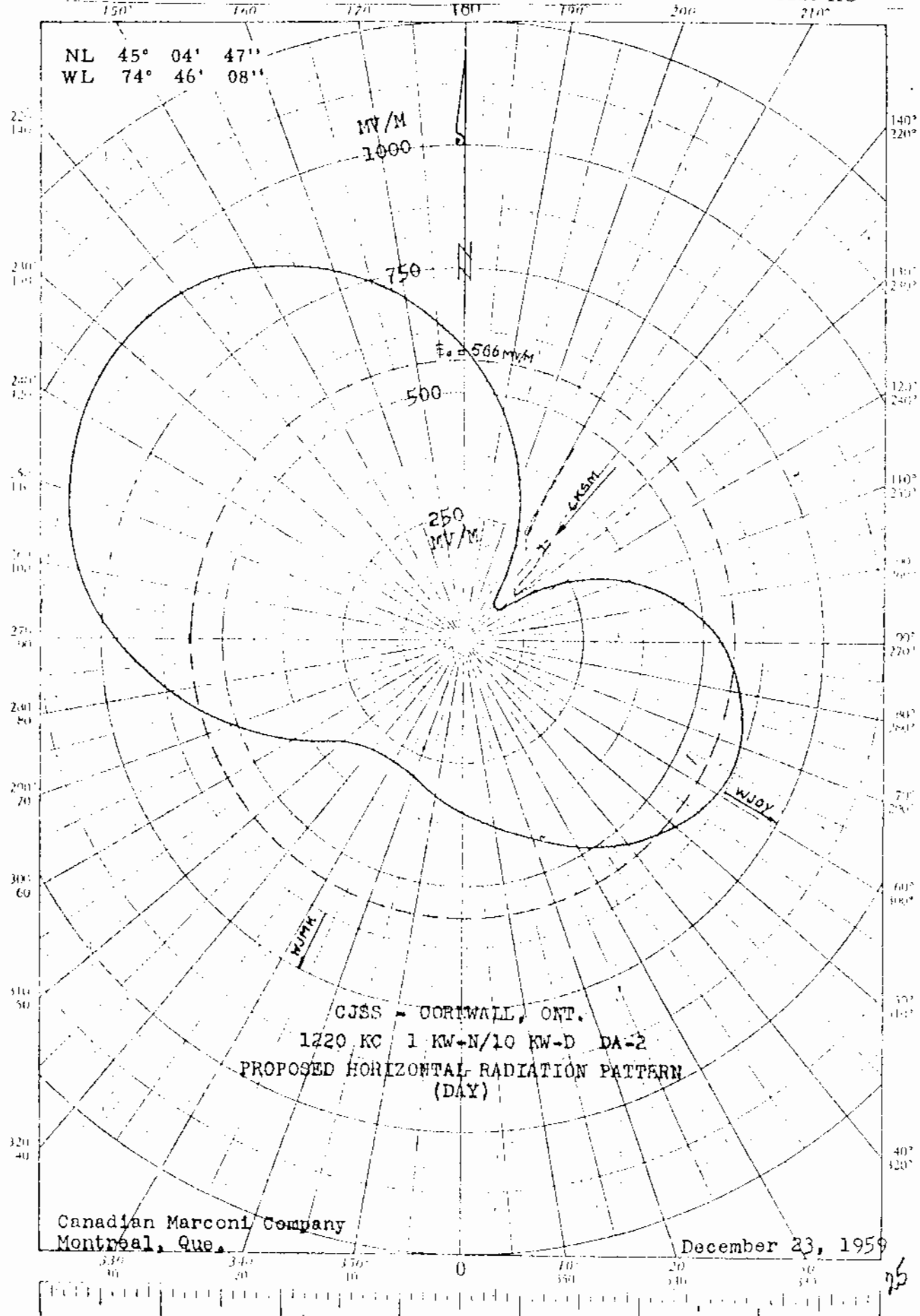
#142

CJSS

PROPOSED DAY
(1-29-60g)

Station CJSS
Cornwall, Ontario, Canada

1kw, 10kw-LS, DA-2, U, Class II
1220 KC



75

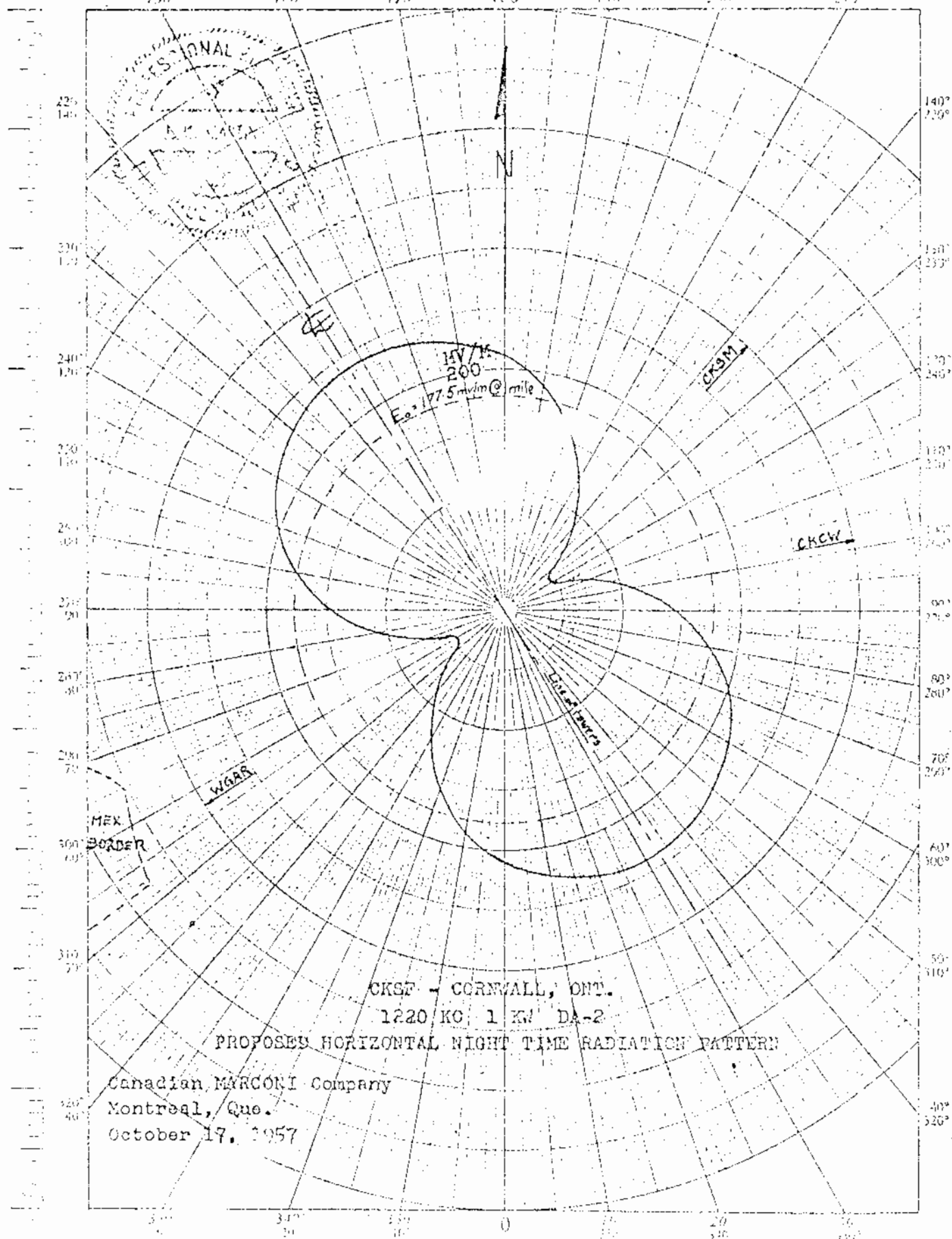
OCT 17-57

CJSS

PROPOSED NIGHT
(3-3-58g)

Station CKSF
Cornwall, Ontario

1kw, DA-2, U, Class II
1220 KC



CKCW - MONCTON, N.B.DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CKCW Main Studio: Moncton, N.B.
 Frequency: 1220 kHz Power: 25 kW
 Time: Unlimited Class: 11
 Notification List No. 597 Date: June 30, 1980
 Geographical Location:

North Latitude 46° 03' 30"
 West Longitude 64° 56' 30"

Antenna characteristics:

Mode of operation: D4-2
 Number of elements: two (2)
 Type of elements: Uniform cross section steel, gaged, vertical,
 series fed. No top loading.

<u>Tower</u>	<u>No. 1</u>	<u>No. 2</u>
Height above insulators:	202.5' (90°)	202.5' (90°)
Overall height:	207'	207'
Spacing:	0° (Ref.)	90°
Orientation:	0° (Ref.)	86°
Phase (day):	0°	-135°
Field ratio (day):	1.0	0.5
Phase (night):	0°	-93°
Field ratio (night):	1.0	0.8

Report of antenna structure and its location to be submitted by the licensee to the Commission (see section 14) and the Commission shall cause the antenna to be inspected internally along the common chord. Wires continuous or bonded together at junction point.

Predicted Effective Field:

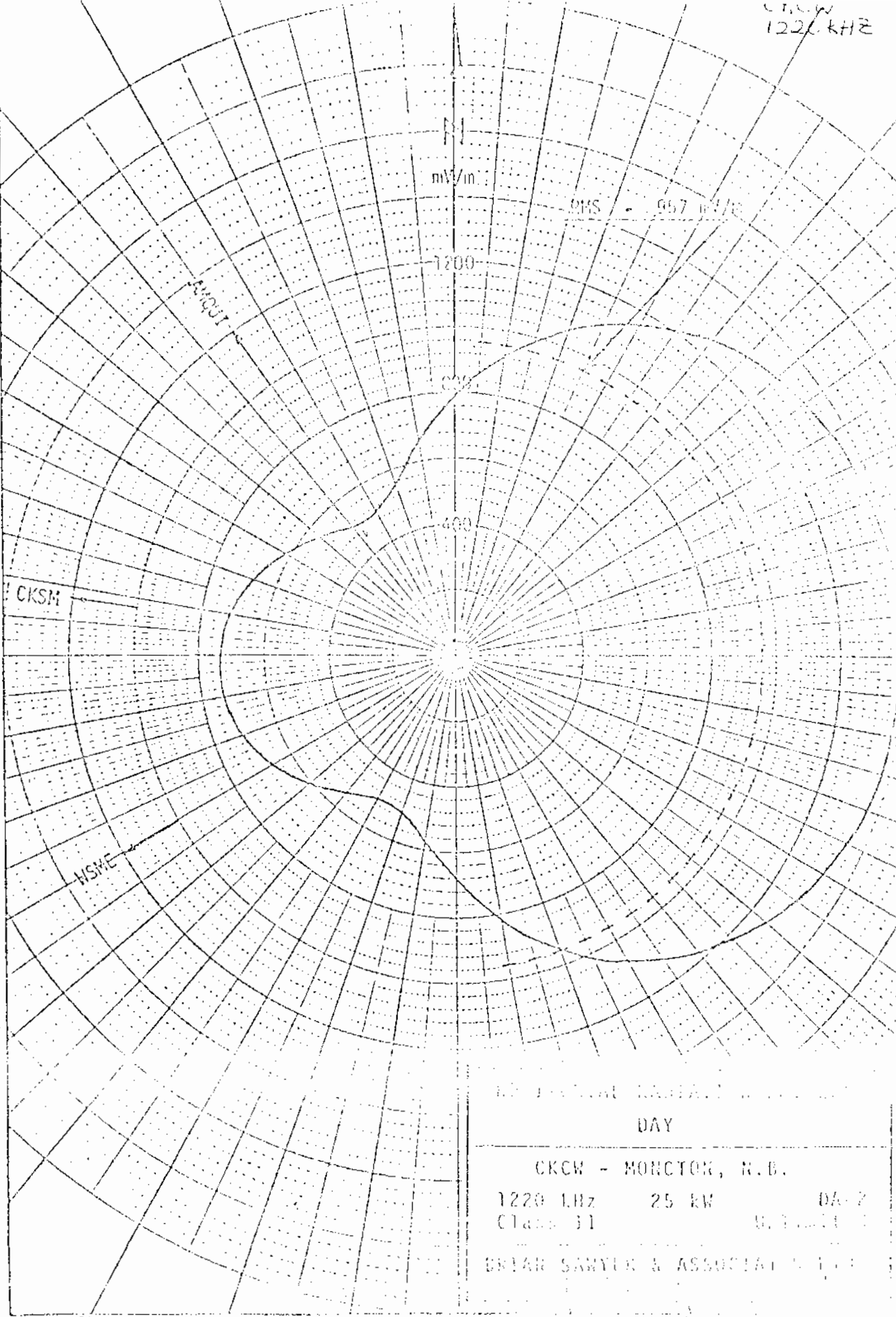
Day: 357 mV/m at 1 mile for 25 kW
 191.4 mV/m at 1 mile for 1 kW
 Night: 928 mV/m at 1 mile for 25 kW
 160.6 mV/m at 1 mile for 1 kW

CKCW
1220 kHz

45 1010

16Z POINT TO COORDINATE
NUMBER A FORM LO

220° 140
230 130
240 120
250 110
260 100
270 90
280 80
290 70
300 60
310 50
320 40



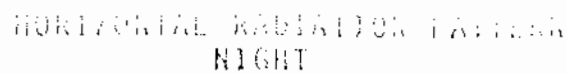
1220 kHz
DAY

CKCW - MONCTON, N.B.
1220 kHz 25 kW DA-7
Class B1
BRIAR SAWYER & ASSOCIATES

330° 30' 340° 20' 350° 10' 0° 10 20 30 40

0.42

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815 2816 2817 2818



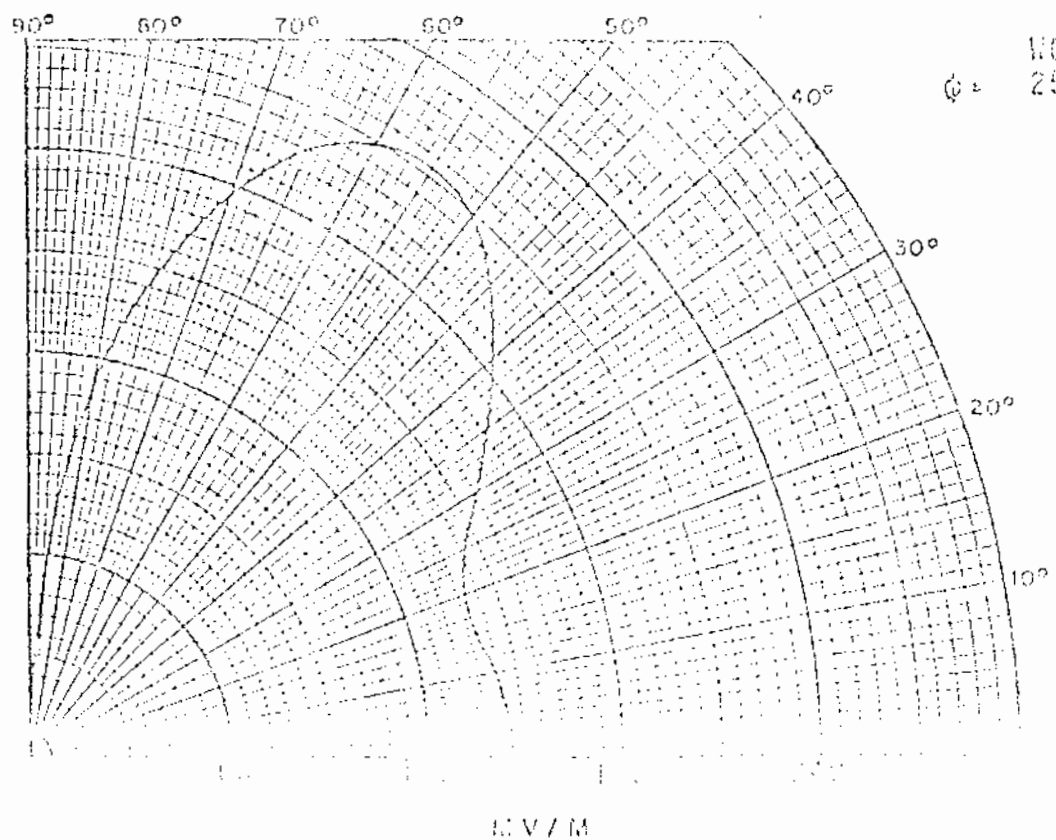
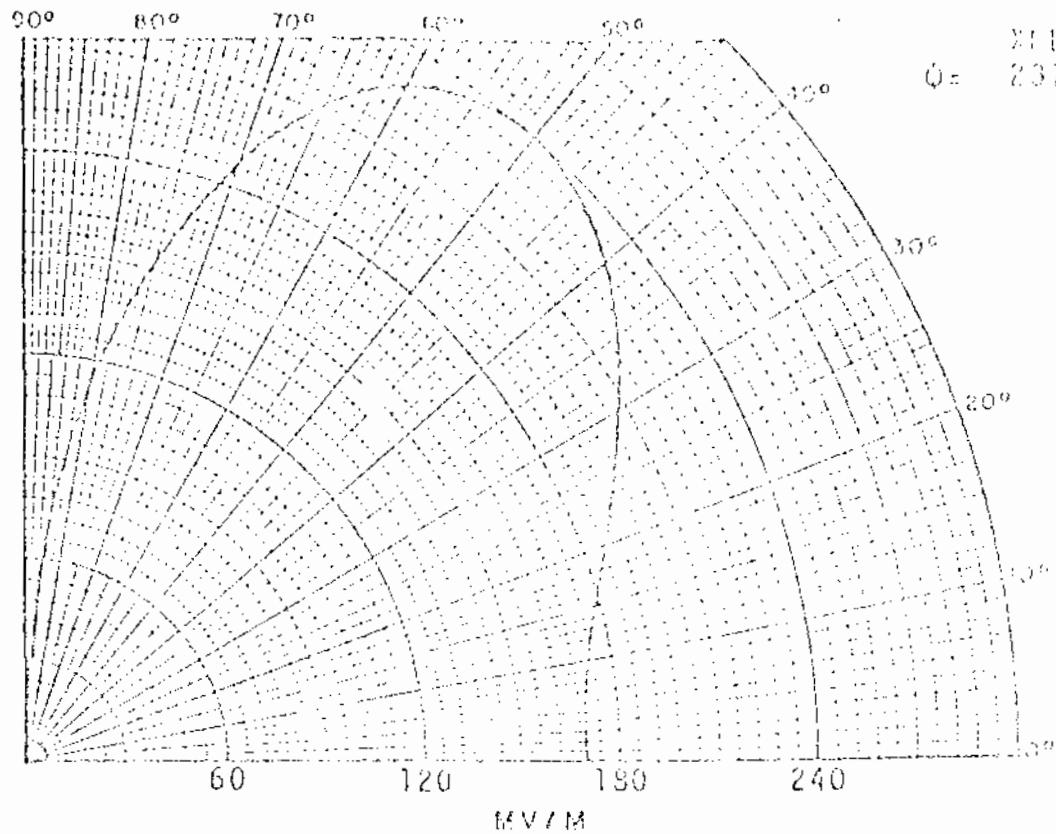
CKCW - MONCTON, N.B.
1220 KHZ 25 KW DA-2
Class 11 UHF 11

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CLEVELAND INSTITUTE OF RADIO ELECTRONICS
CLEVELAND, OHIO

NO. 10 LV

POLAR CO-ORDINATE
MADE IN U.S.A.



VERTICAL RADIATION PATTERNS

CRCM - HORTON, N.E.
1220 kHz 25 kW OA-2 II U

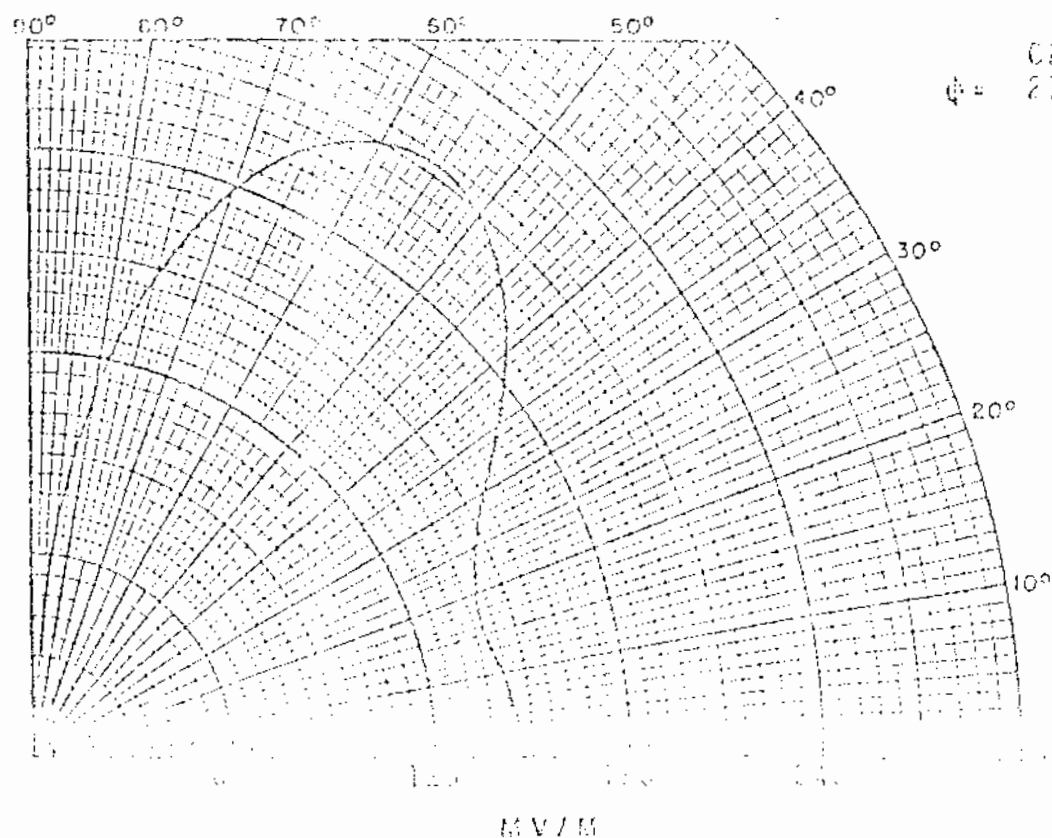
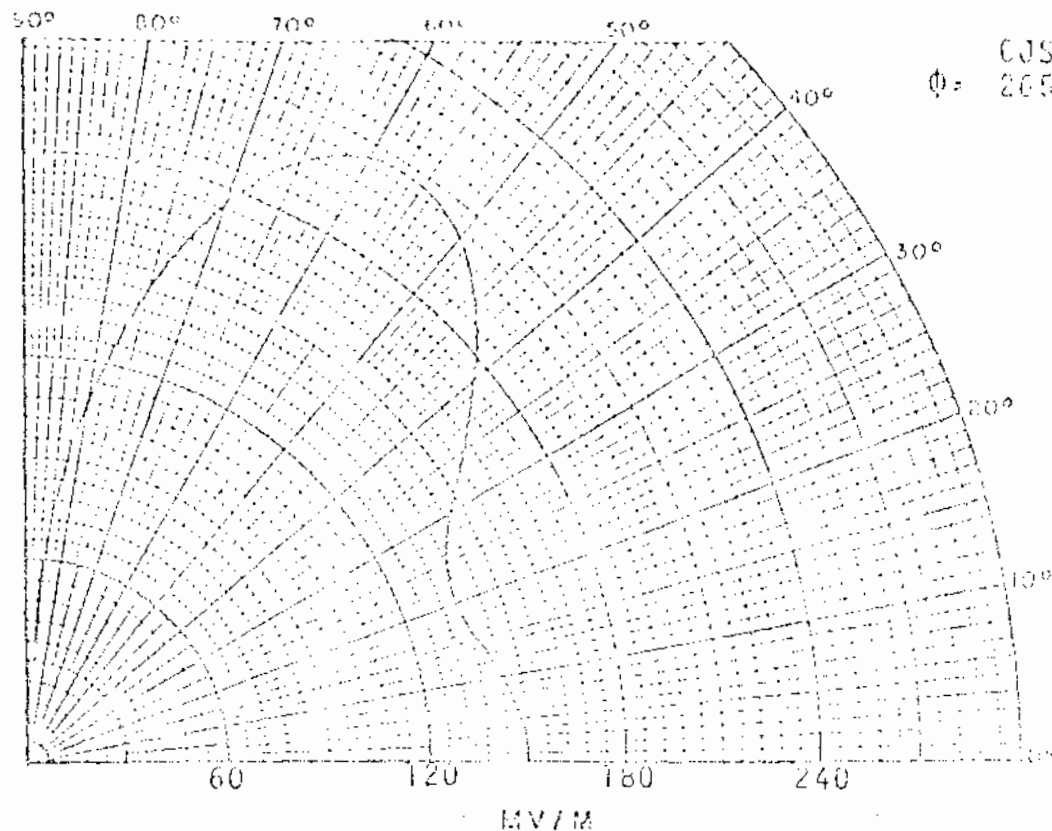
BRIAN SAWYER & ASSOCIATES LTD

DAVIDSON, QUEENSLAND, AUSTRALIA

CLEVELAND INSTITUTE OF RADIO ELECTRONICS
CLEVELAND, OHIO

NO. 10 LV

POLAR CO-ORDINATE
MADE IN U.S.A.



VERTICAL RADIATION PATTERNS

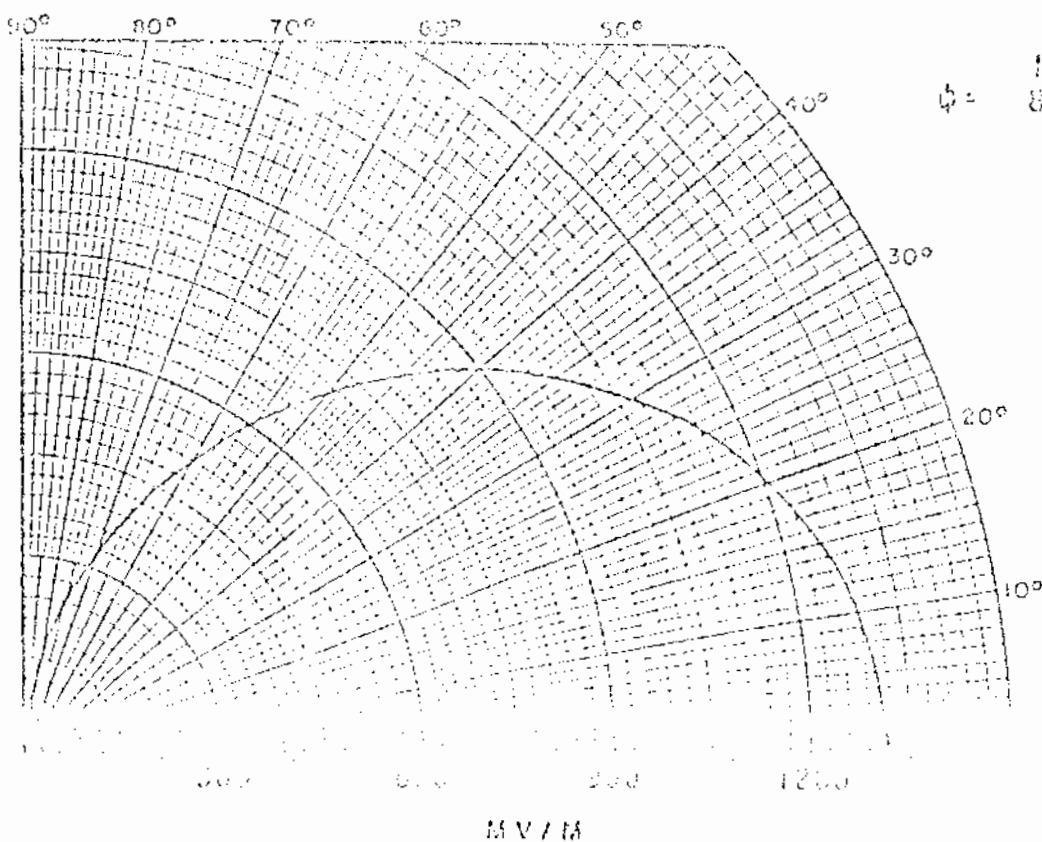
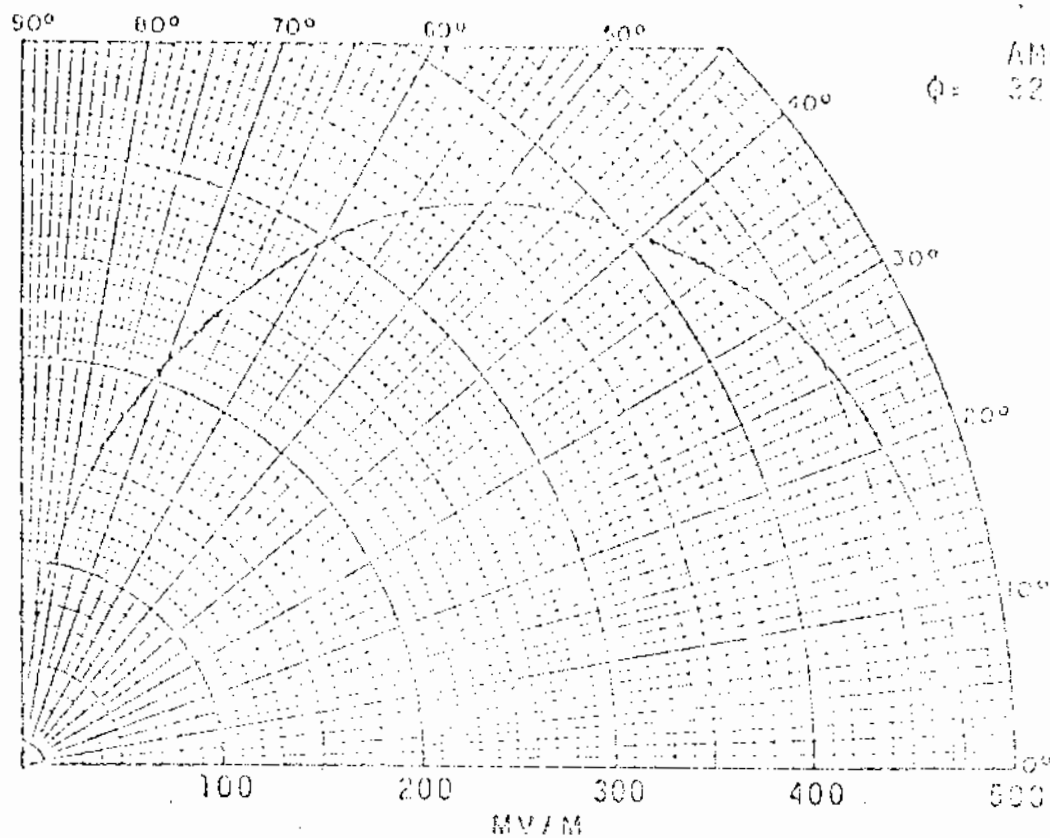
CECW - MORCION, R.B.
1220 kHz 25 KW BA-2 II U

BRIAN SAWYER & ASSOCIATES LTD
10111 101st Ave S.E. 10111

CLEVELAND INSTITUTE OF RADIO ELECTRONICS
CLEVELAND, OHIO

NO. 10 LV

WILSON CO-ORDINATE
MADE IN U.S.A.



VERTICAL RADIATION PATTERNS

CRCR - MONITOR, N.E.L.
1220 KHz 25 KW DA-2 11 U

BRIAN SAUER & ASSOCIATES LTD

WILSON CO-ORDINATE

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: CKCW

Main Studio: Moncton, N.B.

Frequency: 1220 Kc.

Power: 10 Kw.

NOTIFICATION LIST #73

Date: November 20, 1952

Geographical Location of the
Center of the Antenna System:

North Latitude: 46° 08' 47"
West Longitude: 64° 48' 02"

ANTENNA CHARACTERISTICS

Authorized for non-directional Day and directional Nighttime operation
(DA-N)

Number of Elements: Two (2)

Type of Elements: Series fed, triangular, uniform cross-section, guyed
steel towers, base insulated.

Towers:

#1 (East)

#2 (West,

Height above insulators:

135' (60°)

135' (60°)

Spacing:

302.45' (135°)

Phasing:

0°

+ 25°

Field Ratio:

1.0

0.77

Ground System:

120 radials per tower equiangularly spaced wires, 322 ft. long
(0.4 wavelength) with the exception of those joining internally
along the common chord. Wires continuous or bonded together at
junction point.

Predicted Effective Field: 528 mv/m (167 mv/m for 1 Kw.)

Orientation: From the West element the East element bears 75° East
of True North.

ALLOCATION SECTION

2010 1953

**ENGINEERING BUREAU
STANDARD BROADCAST DIVISION**

**INFORMATION COPY
REC'D 6/9/53 ACC 16-24-53**

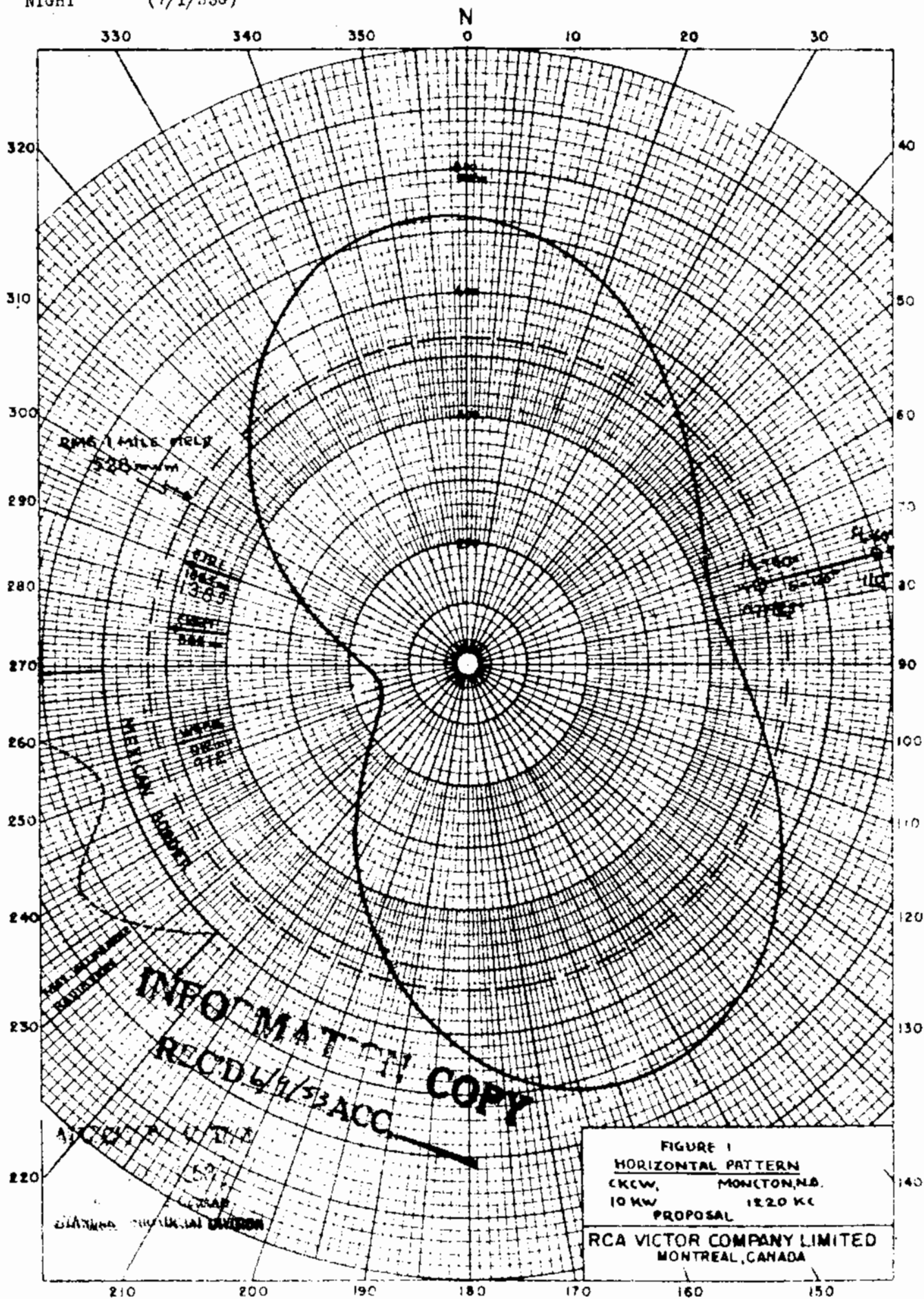
#13

PROPOSED
NIGHT

CKCW, MONCTON, N. B.
(7/1/53G)

10 kw, DA-N

1220 kc



CKDA

Description Sheet
(6-27-69ct)

Station CKDA
Victoria, B. C.

50kw, DA-1, U, Class II
1220 kc

DESCRIPTION SHEET

Directional Antenna System

STATION: CKDA

MAIN STUDIO: Victoria, B. C.

FREQUENCY: 1220 Kc/s

POWER: 50 Kw

TIME: Unlimited

CLASS: II

NOTIFICATION LIST NO: 257

DATE: June 5, 1969

Geographic Location:

48° 26' 00" N. Latitude
123° 14' 55" W. Longitude

ANTENNA SYSTEM:

Mode of Operation - DA-1

Elements - Five uniform, cross section, guyed, steel towers, base insulated and fitted for series fed. Each tower top loaded with folded umbrella to electrical height of 105°

TOWERS:	# 1	# 2	# 3	# 4	# 5
HEIGHT OVER INSULATORS:	202' (90°)	202'	202'	202'	202'
OVERALL HEIGHT	212'	212'	212'	212'	212'
ELECTRICAL HEIGHT:	105°	105°	105°	105°	105°
SPACING:	314' (140°)	157' (70°)	Ref.	157' (70°)	314' (140°)
PHASING:	-102.25	+128.95	0	-128.95	+102.25
CURRENT RATIOS:	.174	.674	1.0	.674	.174
ORIENTATION:	135°T	135°T	Ref.	315°T	315°T

GROUND SYSTEM:

The ground system shall consist of 120, 0.4 wavelength copper radials, buried as practical considering ground characteristics. The ground radials for the northwest towers will be extended into the salt water and anchored to the ocean floor. The radials will be shortened where the ground system is joined by a common chord between two towers.

PREDICTED FIELD:

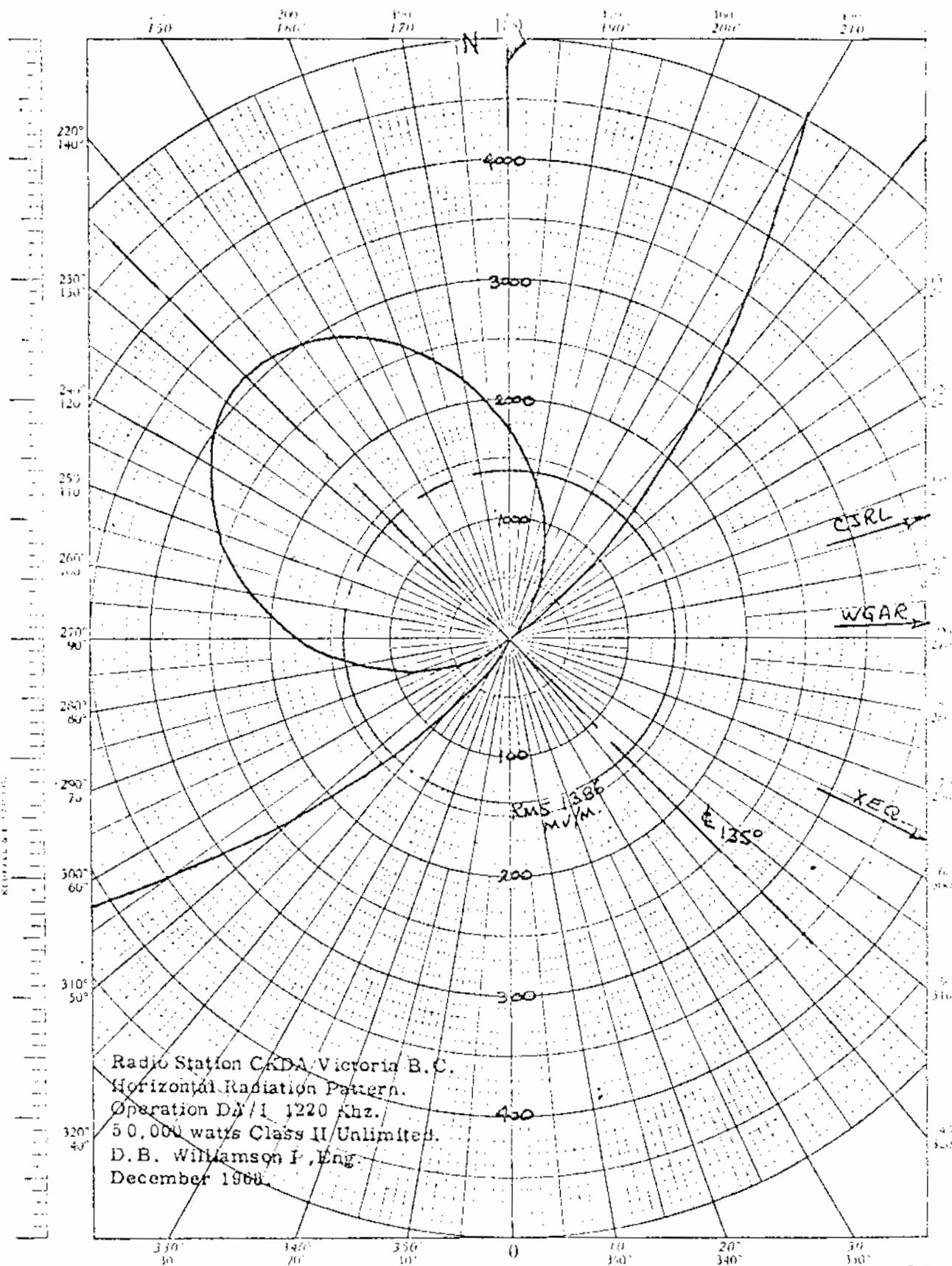
196 mv/m for 1 kw
1386 mv/m for 50 kw

CKDA

Proposed Day & Night
(6-27-69ct)

Station CKDA
Victoria, B. C.

50kw, DA-1, U, Class II
1220 kc



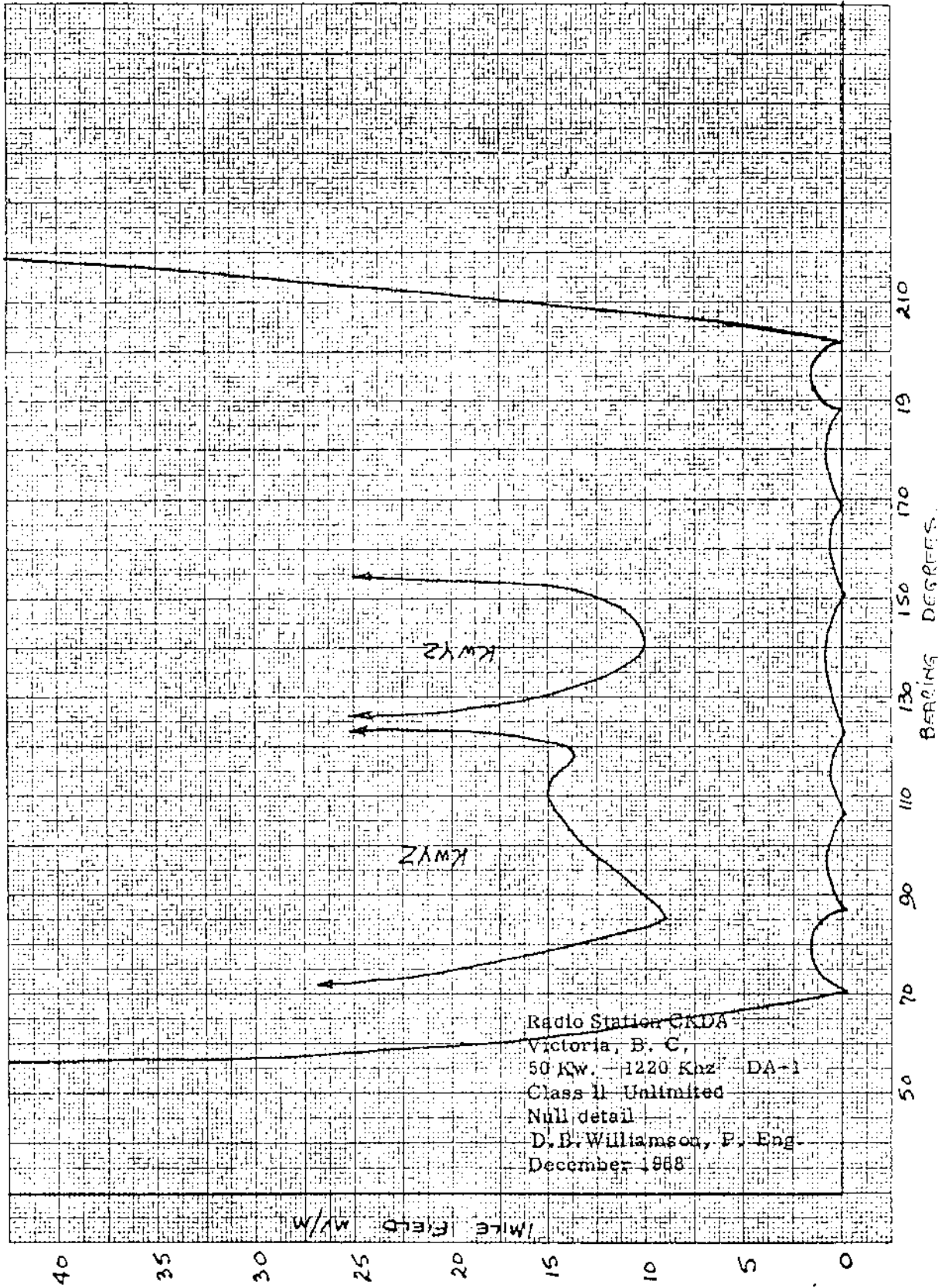
CKDA

K₂ 10 X 10 TO THE CENTIMETER 46 1513
10 X 10 CM

Proposed Day & Night Nulls
(6-27-69ct)

Station CKDA
Victoria, B. C.

50kw, DA-1, U, Class II
1220 kc



Description Sheet
(3-28-68ct)

Station CKDA
Victoria, B. C.
DESCRIPTION OF ARRAY

50kw, DA-1, U, Class II
1220 kc

STATION: CKDA

MAIN STUDIO: Victoria, B. C.

FREQUENCY: 1220 KHZ

POWER: 50 Kw

TIME: Unlimited

CLASS: 11

NOTIFICATION LIST: 240

DATE: March 11, 1968

Geographical Location; 43 - 37 - 01 North
123 - 18 - 35 West

ANTENNA SYSTEM:

Mode DA - 1

NUMBER OF ELEMENTS:

4 Uniform cross section, guyed, steel radiators, series fed.

<u>TOWERS:</u>	1 (S)	2 (SC)	3 (NC)	4 (N)
<u>HEIGHT OVER INSULATORS:</u>	275' (123°)	275' (123°)	275' (123°)	275' (123°)
<u>OVERALL HEIGHT:</u>	280'	280'	280'	280'
<u>SPACING:</u>	0	314' (140°)	628' (280°)	942' (420°)
<u>PHASING:</u>	0	295.5°	230.6°	166.1°
<u>RATIOS:</u>	1.0000	2.8405	2.8405	1.0000
<u>ORIENTATION:</u>	0	290°	290°	290°

GROUND SYSTEM:

The ground system shall consist of 120 copper radials spaced evenly about each tower. The radials shall be shortened where the ground system is joined by a common chord between tower. All radials will be at least 0.25 long and the entire system shall cover an area equivalent to a 0.4 system.

PREDICTED
EFFECTIVE
FIELD:

1550 mv/m @ 1 mi. for 50 Kw
219 mv/m @ 1 mi. for 1 Kw.

D. B. Williamson & Assoc.,
Consulting Engineers
Radio CHUC BLDG.
Cobourg, Ontario.

Description Sheet
(6-28-67ct)

Station CKDA
Victoria, B. C.

50kw, DA-1, U, Class II
1220 kc

DESCRIPTION SHEET
Directional Antenna System

Station: CKDA

Main Studio: Victoria, B. C.

Frequency: 1220 kc/s

Power: 50 kw

Time: Unlimited

Class: II

Notification List No. 225

Date: April 17, 1967.

Geographic Location: 48° 37' 01" N. Latitude
123° 18' 35" W. Longitude

ANTENNA SYSTEM:

Mode of Operation - DA-1

Elements - Six uniform, cross
section, guyed, steel towers, base
insulated and fitted for series feed.

TOWERS:	1	2	3	4	5	6
HEIGHT OVER INSULATORS	202'(90°)	202'(90°)	202'(90°)	202'(90°)	202'(90°)	202'(90°)
OVERALL HEIGHT:	208'	208'	208'	208'	208'	208'
SPACING:	0.0	155°	310.0°	160°	268.603°	408.348°
PHASING:	0.0	-28.0	-56.0	-25.0	-53.0	-81.0
CURRENT RATIOS:	1.0	1.999	1.0	1.0	1.999	1.0
ORIENTATION:	0.0	314°	314°	251.00°	281.939°	293.564°

GROUND SYSTEM: The ground system shall consist of 120 copper radials spaced evenly about each tower. The radials shall be shortened where the ground system is joined by a common chord between tower. All radials will be at least 0.25λ long and the entire system shall cover an area equivalent to a 0.4λ system.

PREDICTED FIELD: 180 mv/m for 1 kw
1270 mv/m for 50 kw

DESCRIPTION SHEET
Directional Antenna System

Station: CKDA Main Studio: Victoria, B. C.
Frequency: 1220 kc/s Power: 25 kw
Time: Unlimited Class: II
Notification List No. 216 Date: July 26, 1966

Geographic Location: 48°26'00" N. Latitude
123°14'55" W. Longitude

ANTENNA SYSTEM:

Mode of Operation - DA-1

Elements - Five uniform, cross section, guyed, steel towers, base insulated and fitted for series feed.

TOWERS:	1	2	3	4	5
HEIGHT OVER INSULATORS:	202'	202'	202'	202'	202'
OVERALL HEIGHT:	212'	212'	212'	212'	212'
SPACING:	314'(140°)	157'(70°)	Ref.	157'(70°)	314'(140°)
PHASING:	-102.25	+128.95	0	-128.95	+102.25
CURRENT RATIOS:	.174	.674	1.0	.674	.174
ORIENTATION:	135°T	135°T	Ref.	315°T	315°T

GROUND SYSTEM: The ground system shall consist of 120, 0.4A copper radials, supported above ground within a 15 foot radius from the tower base and then buried as practical considering ground characteristics. The ground radials for the northwest towers will be extended into the salt water and anchored to the ocean floor. The radials will be shortened where the ground system is joined by a common chord between two towers.

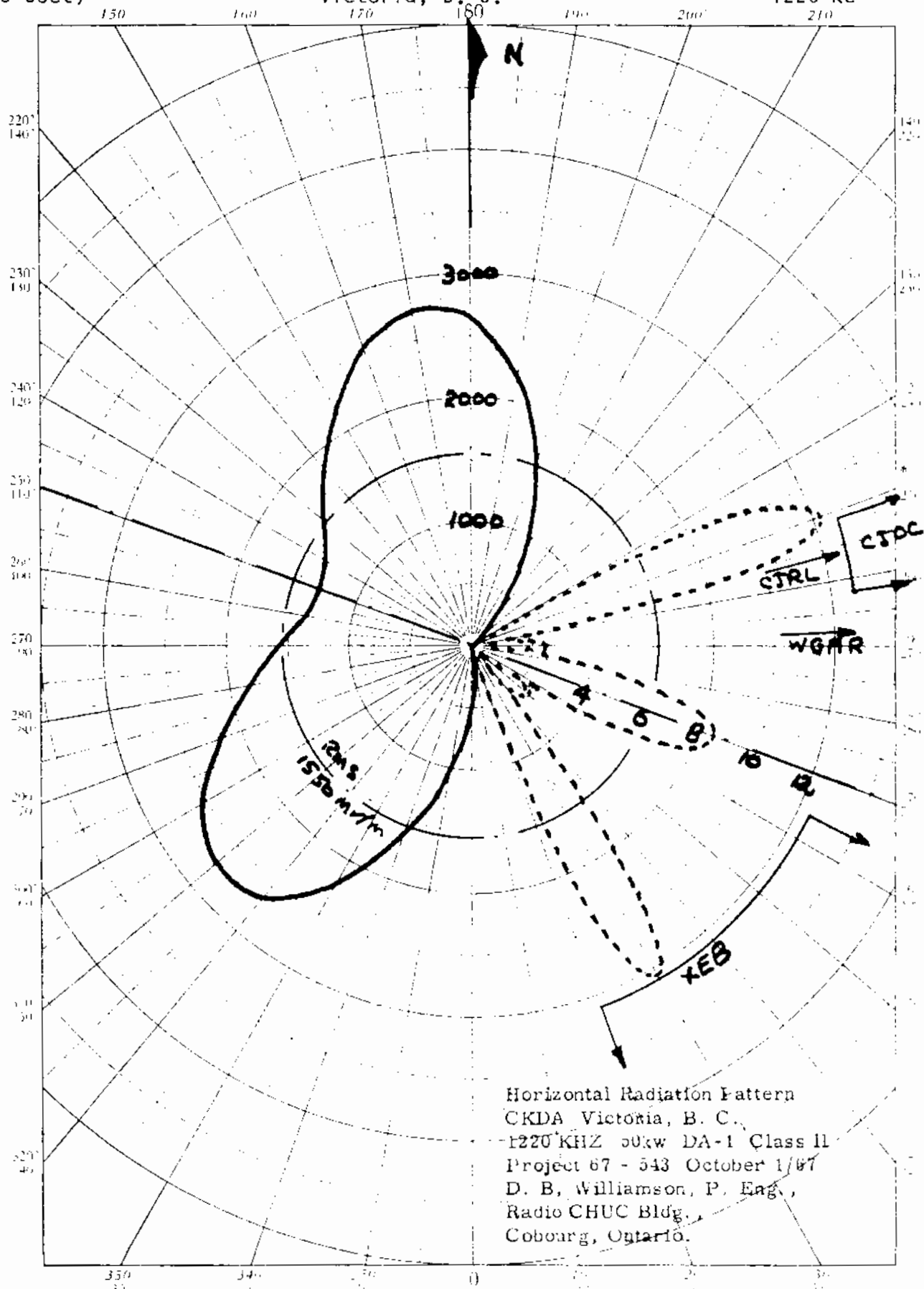
PREDICTED FIELD: 180 mv/m for 1 kw
900 mv/m for 25 kw

CKDA

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

Station CKDA
Victoria, B. C.

50kw, DA-1, U, Class II
1220 kc



100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000

CKDA

Proposed Day & Night
(6-28-67ct)

Station CKDA
Victoria, B. C.

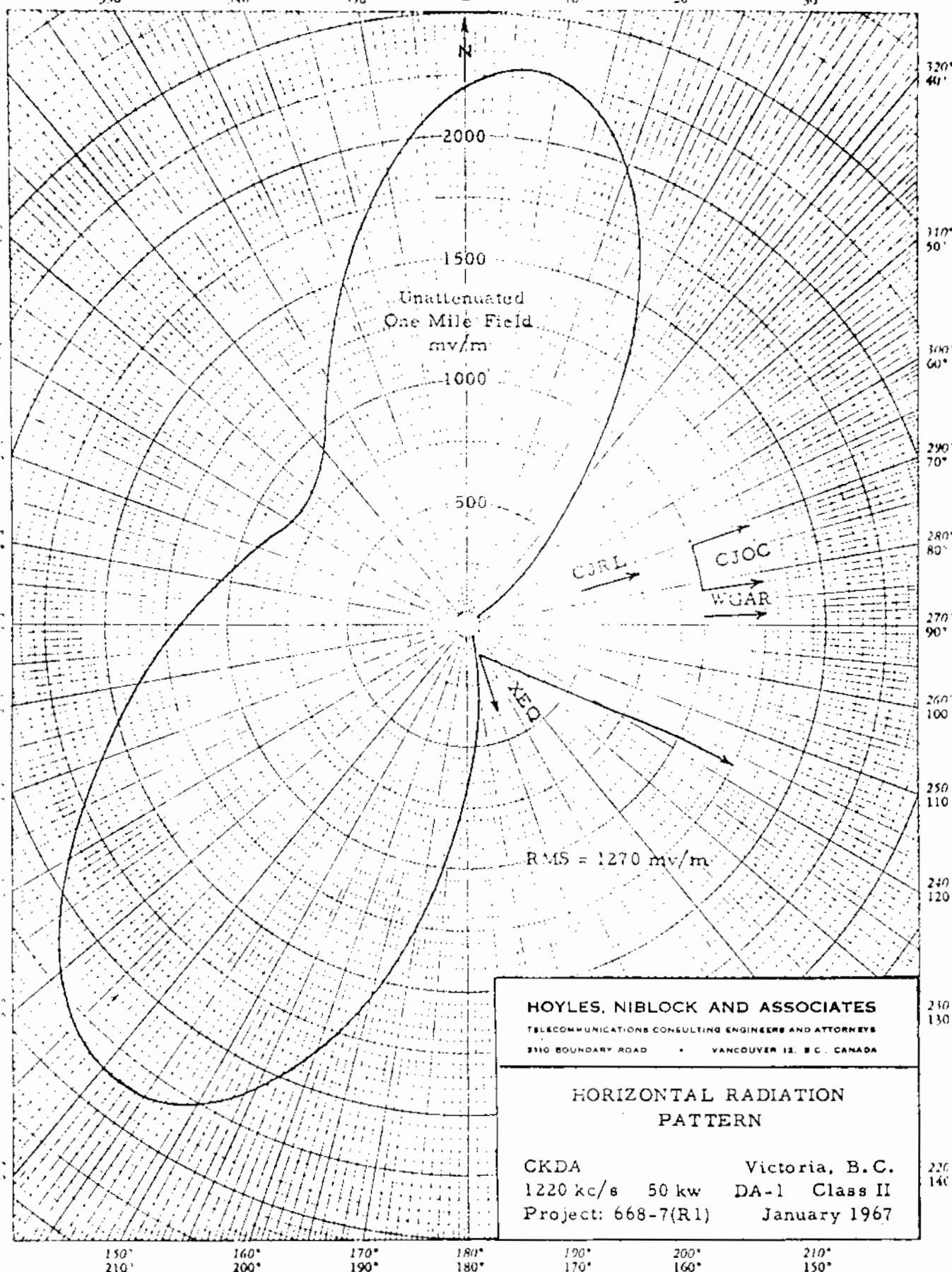
50kw, DA-1, U, Class II
1220 kc.

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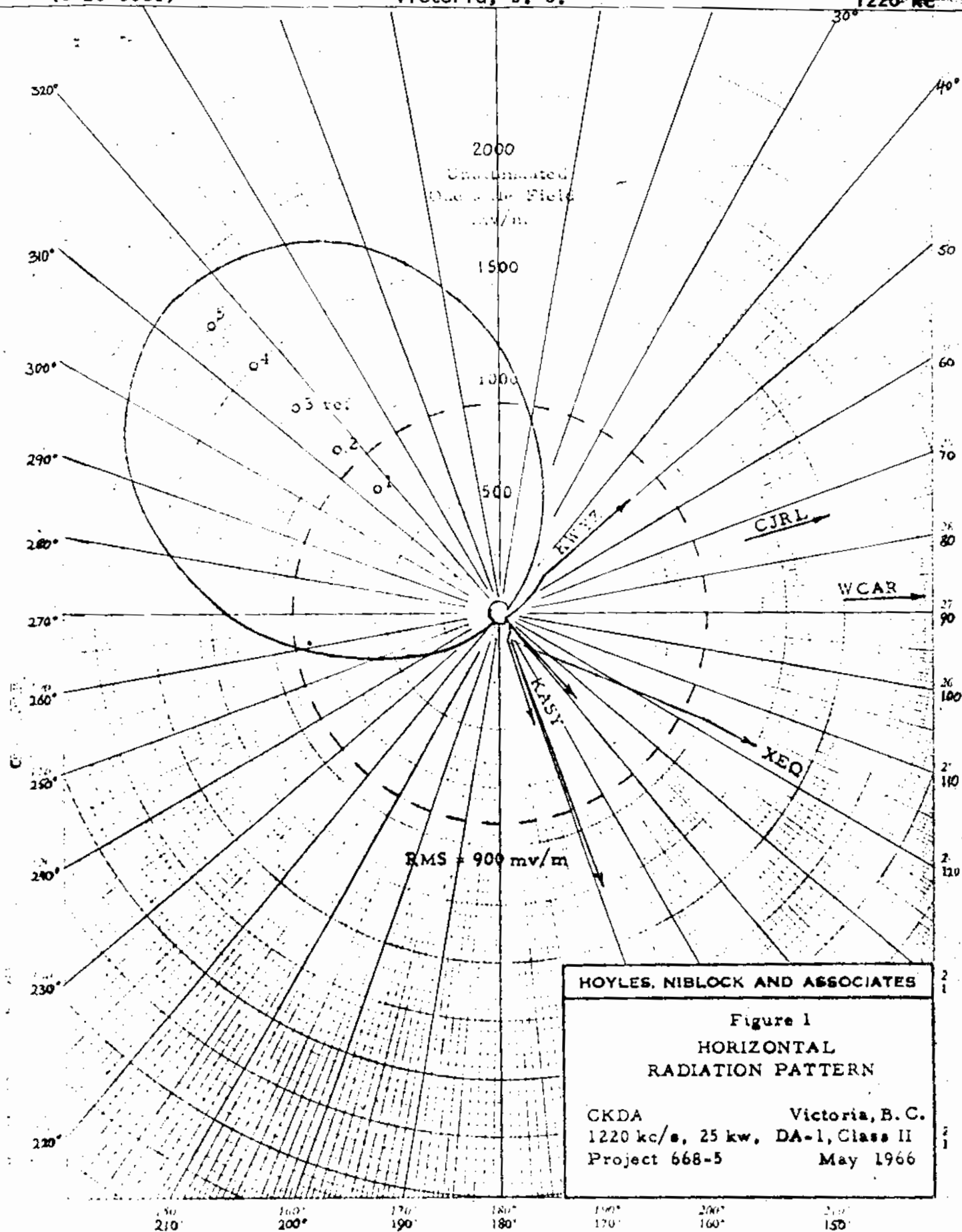
NO. C324

CLEARPRINT PAPER CO.



216

CKDA

Proposed Day & Night
(8-26-66ct)Station CKDA
Victoria, B. C.25kw, DA-1, II, Class II
1220 kc

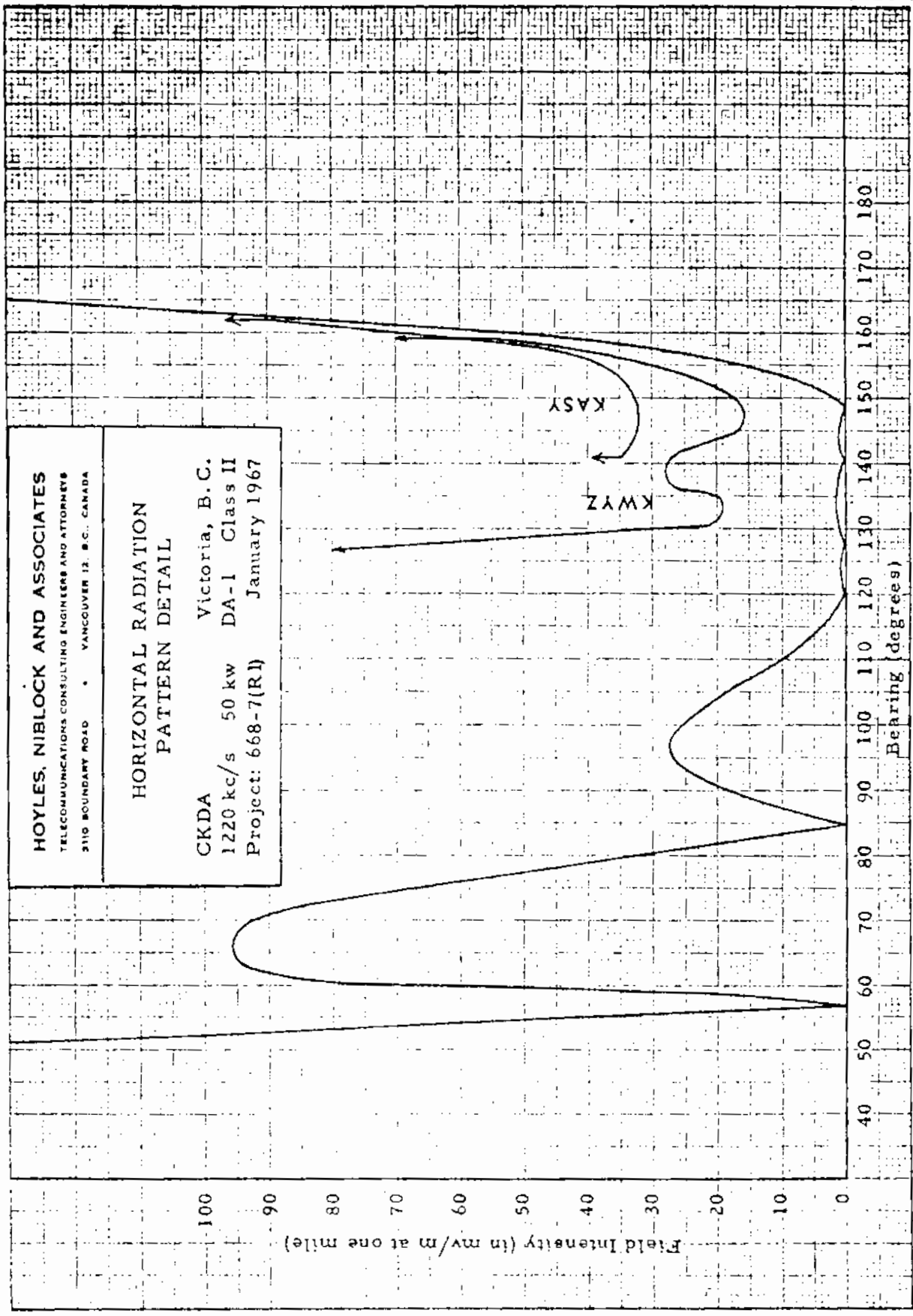
CKDA

Proposed Day & Night Nulls
(6-28-67ct)

Station CKDA
Victoria, B. C.

50kw, DA-1, U, Class II
1220 kc

FIG. 10 X 10 TO 15 INCH 46 1328
7 X 10 IN. 4 ALBANY, N.Y.
NEUPPEL & ESSER CO.



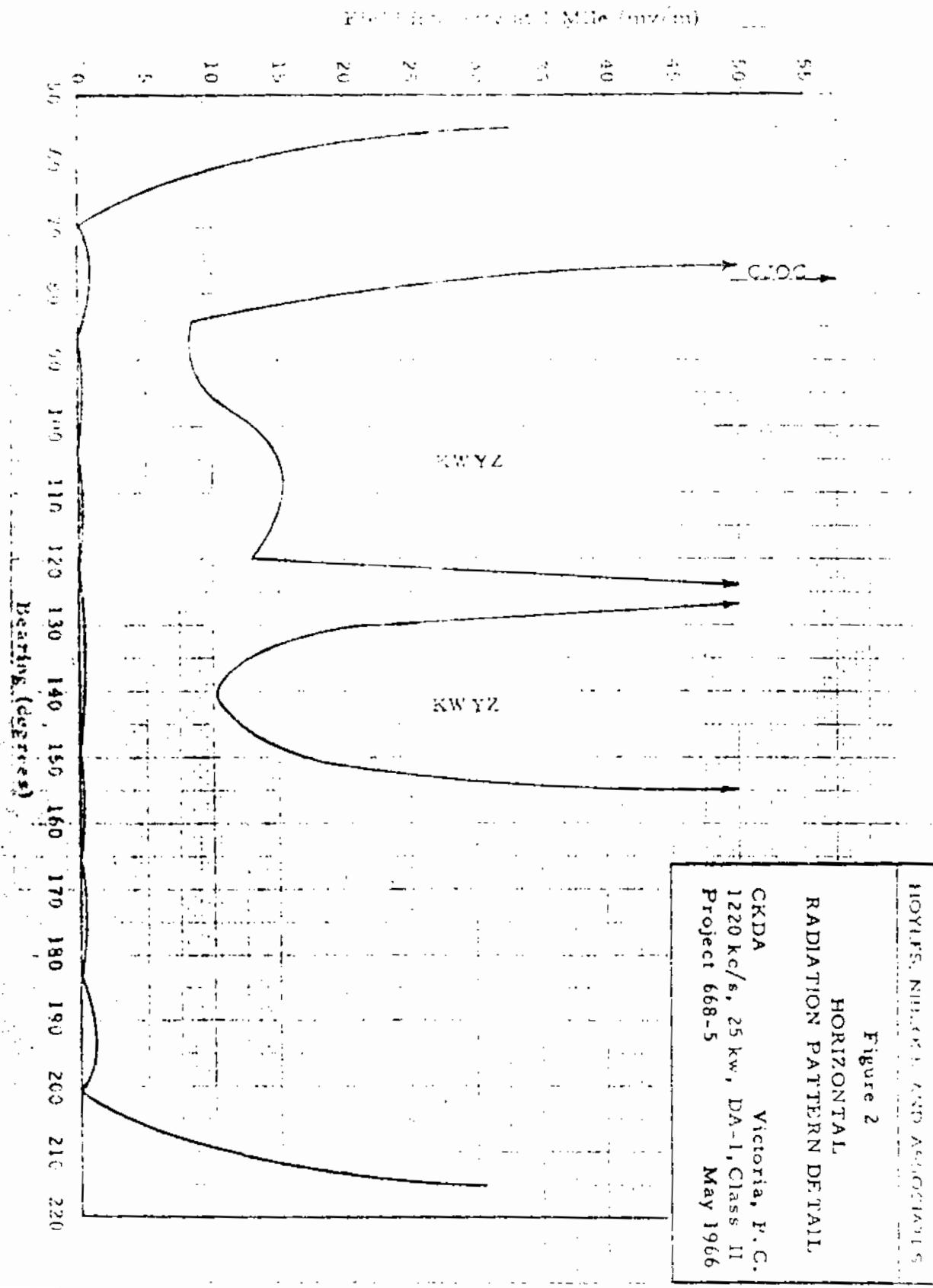
216

CKDA

Proposed Day & Night Nulls
(8-26-66ct)

Station CKDA
Victoria, B. C.

25kw, DA-1, U, Class II
1220 kc



#111
PO

CKDA

Description Sheet
(6/7/57g)

Station CKDA 10kw, DA-1, U
Victoria, British Columbia 1220 KC

DESCRIPTION OF ARRAY

Station: CKDA

Main Studio: Victoria, British Columbia

Power: 10 KW. Frequency: 1220 kcs. Class: II

Location: Latitude - $48^{\circ} 26' 2''$ N.

Notification List No. 111

Longitude - $123^{\circ} 14' 53''$ W.

Date: April 12, 1957

Antenna: Mode of Operation - DA-1

3 elements, uniform cross-section,
guyed, series fed, no top loading.

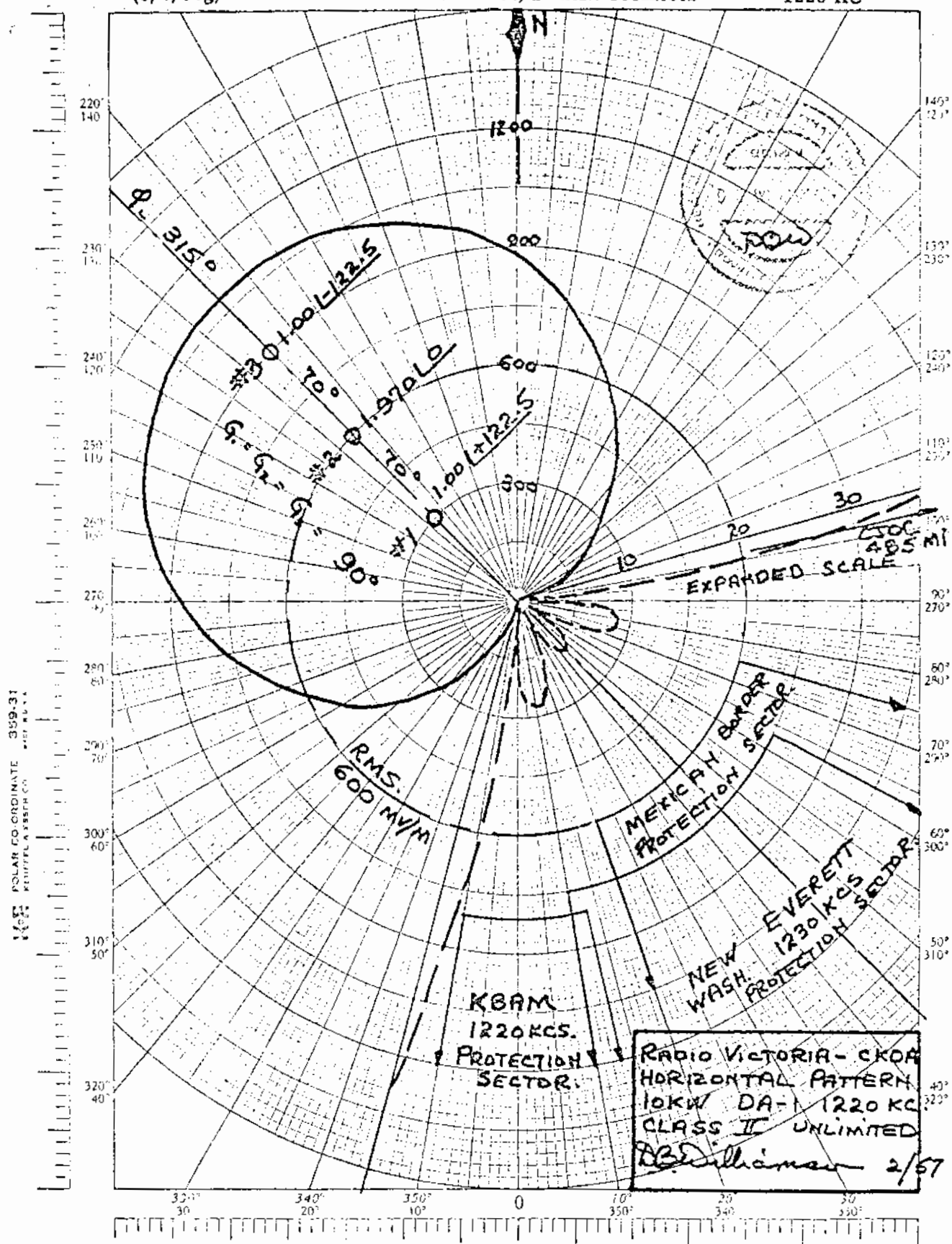
Towers:	S#1	C#2	N#3
Height over insulators:	192' (90°)	192' (90°) (velocity assumed at 0.95C)	192' (90°)
Spacing:	70°	0°	70°
Field Ratio:	1.000	1.970	1.000
Phasing:	$+122.5^{\circ}$	0	-122.5
Orientation:	135°	0	315°
Ground System:	120 radials per tower 0.4 wavelengths long, buried 8 inches deep.		

Predicted Effective Field: 600 mv/m for 10 KW. (180 mv/m for 1 KW.)



CKDA

10kw, DA-1,U
Columbia 1220 KC



Description Sheet
(5-28-68ct)

Station CKSM 2.5kw, 10kw-LS, DA-2, U, Class II
Shawinigan Falls, Quebec 1220 kc

I - DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM

1. CALL SIGN: CKSM
2. SITE: Shawinigan-Falls, Quebec.
3. FREQUENCY: 1220 KHz
4. POWER: 10 Kw Day - 2.5 KW Night.
5. CLASS: 11
6. NOTIFICATION NO: 242 DATE: May 10, 1968.
7. COORDINATES: Latitude North: $46^{\circ} 35' 26.5''$
Longitude West: $72^{\circ} 45' 46.5''$
8. ANTENNA SYSTEM:
 - a) Operation: AD-2 Directional
 - b) Type: three uniform triangular-section elements, guyed and series fed.
 - c) Ground : 120 - No. 10 wires equally spaced, 0.4 length, approximately 8 inches below the surface.
9. ANTENNA MASTS:

	#1 Southeast	#2 Northwest	#3 South
Height above isolator:	201'	201'	201' (90°)
Orientation: (Ref. at centre) Az.	108°	288°	138°
Spacing:	112.5°	112.5°	120°
Phase: Day:	-52°	$+52^{\circ}$	$+70^{\circ}$
Night:	-27°	$+27^{\circ}$	$+123^{\circ}$
Ratio of field intensity: Day:	1.0	0.59	0.508
Night:	1.0	0.745	0.325
10. EXPECTED EFFICIENCY: Day: 600 mV/m
Night: 297 mV/m

YVES R. HAMEL
CONSULTING ENGINEER
3772 KENT AVENUE
MONTREAL 26, QUE.

10/50
PROPOSED
DAY & NIGHT
SPEC. SHEET

CKSM, SHAWINIGAN FALLS, QUE.

10/19/50G

1kw, DA-1

CKSM
1220 kc

STATION: C K S M

MAIN STUDIO: SHAWINIGAN FALLS, QUEBEC.

POWER: 1KW

FREQUENCY: 1220KC

CLASS: 11

LOCATION OF ANTENNA SYSTEM:

NORTH LATITUDE: $46^{\circ} 35' 30''$

WEST LONGITUDE: $72^{\circ} 45' 56''$

ANTENNA:

AUTHORIZED FOR DAY AND NIGHT OPERATION. (DA-1)

TWO ELEMENTS, INSULATED, GUYED, UNIFORM CROSS-SECTION,
NO TOP LOADING.

TOWER:

SOUTHEAST

NORTHWEST.

HEIGHT ABOVE INSULATORS:

201'

201' (90°)

SPACING:

225° (504')

PHASING:

0°

45°

FIELD RATIO:

1.0

0.9

GROUND SYSTEM: 120 RADIALS 0.4 WAVELENGTH (322') LONG EQUALLY
SPACED EVERY 3 DEGREES ABOUT EACH TOWER, WITH
120 - 30' INTERSPACED RADIALS.

ORIENTATION: ON A LINE BEARING 108° TRUE.

PREDICTED EFFECTIVE FIELD: 190 MV/M FOR 1KW.

INFORMATION COPY

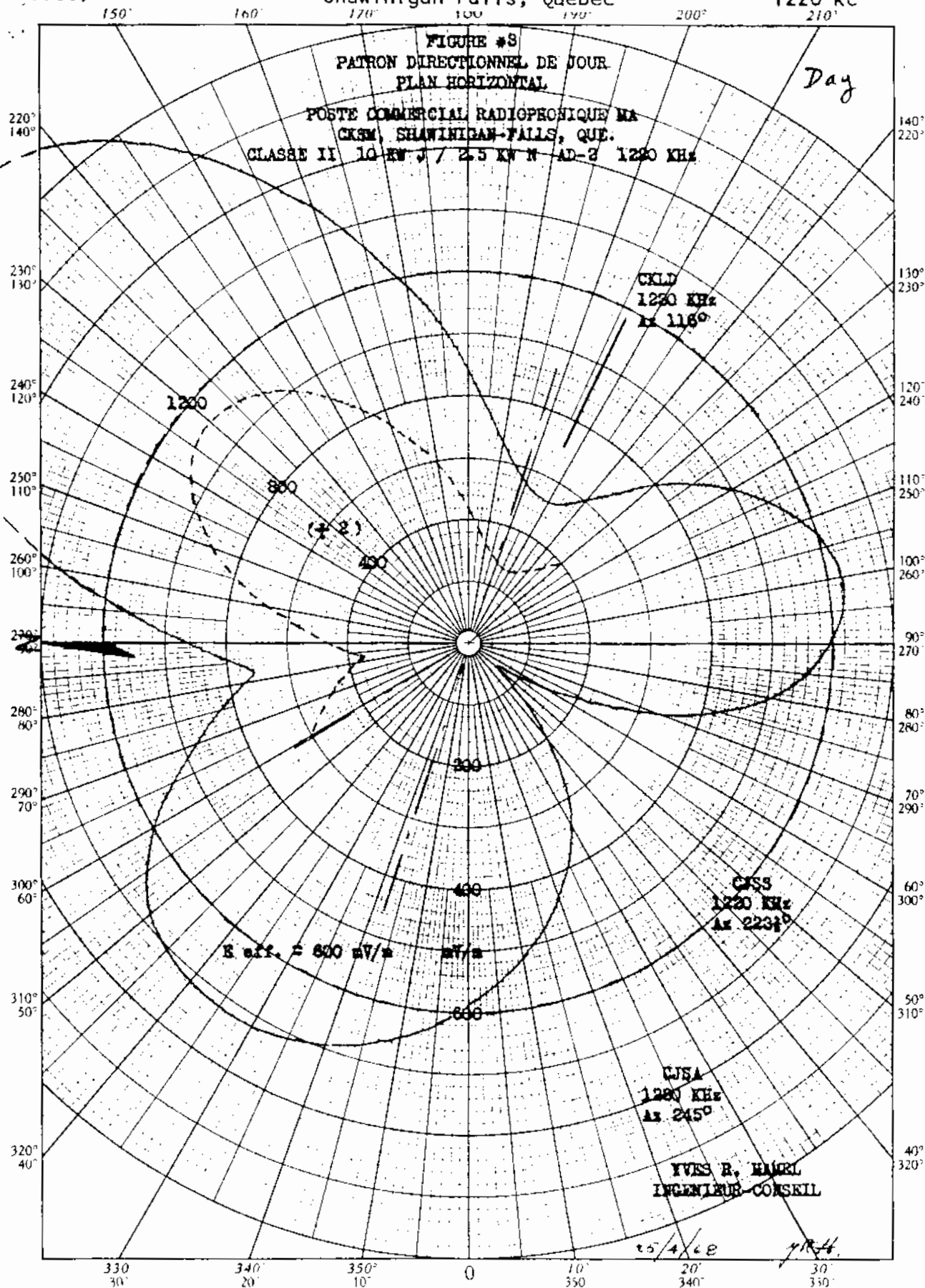
REC'D 10/19/50 ACC. 10/20/50

CKSM, Shawinigan Falls, Que. 1220 kc

CKSM

Proposed Day
(5-28-68ct)

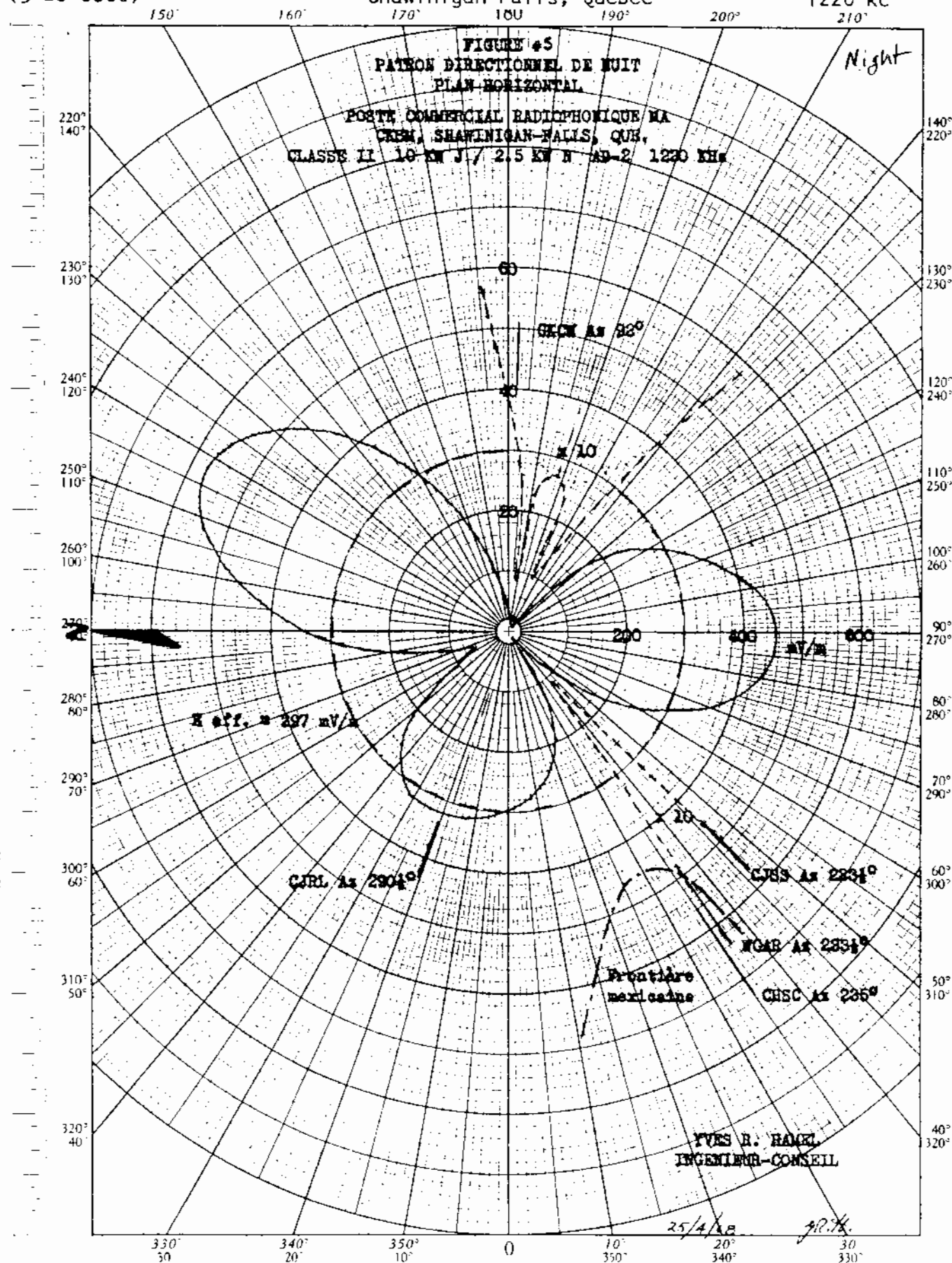
Station CKSM 2.5kw, 10kw-LS, DA-2, U, Class II
Shawinigan Falls, Quebec 1220 kc



KcE POLAR CO-ORDINATE 46.4413
STUFFEL & PETER CO

Proposed Night
(5-28-68ct)

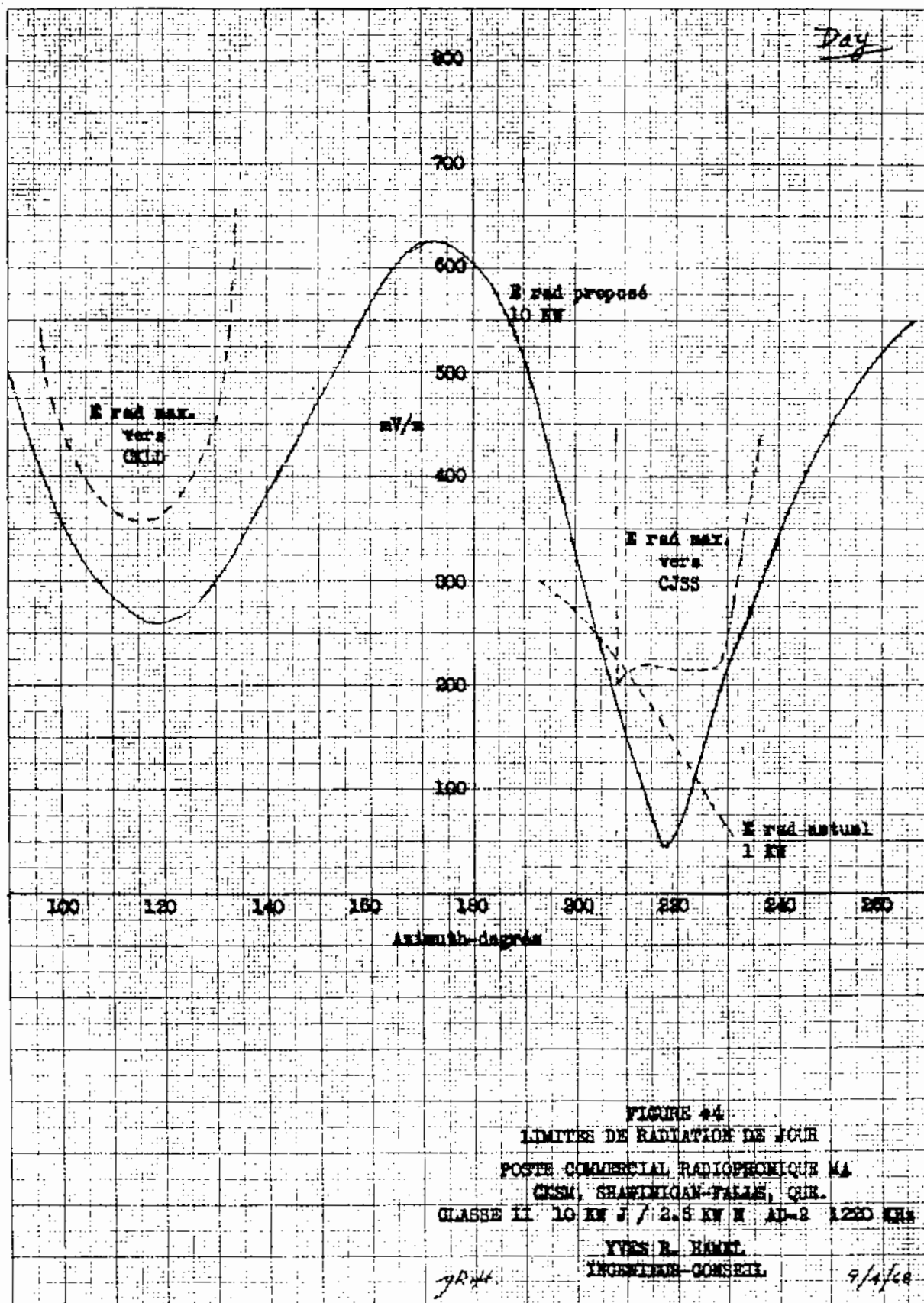
Station CKSM 2.5kw, 10kw-LS, DA-2, U, Class II
Shawinigan Falls, Quebec 1220 kc



Proposed Day Nulls
(5-28-68ct)-

Station CKSM
Shawinigan Falls, Quebec

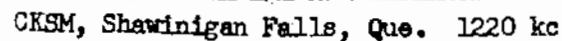
2.5kw, 10kw-LS, DA-2, U, Class II
1220 kc



160-10 X 10 TO THE CENTIMETER 46 1513
 10 X 10 TO THE CENTIMETER 46 1513
 10 X 10 TO THE CENTIMETER 46 1513

CKSM

HORIZONTAL RADIATION PATTERN
CKSM-SHAMWIGAN FALLS, QUE.
1KH---DA-1---1220KC



KASY

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station : KASY Main Studio: Auburn, Washington
 Frequency : 1220 KHz Power : Night 2.5 kW Day
 Notification: 1782 Date : October 26, 1979 Class: II

GEOGRAPHICAL LOCATION OF THE

CENTER OF THE ANTENNA SYSTEM: North Latitude: 47 ° 18 ' 19 "
 West Longitude: 122 ° 14 ' 51 "

ANTENNA CHARACTERISTICS

Authorized for Daytime operation. (DA-D)

Number of elements: 2

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

TOWER : S(#1) N(#2) _____
 HEIGHT ABOVE
 INSULATORS : 190' 190'(84.8°) _____
 DAY PHASING: : 0° 70' _____
 DAY FIELD RATIO: 1.0 1.53 _____

SPACING AND
ORIENTATION:

The towers in a row are spaced 268.735' (120°) on a line bearing 340° true.

GROUND SYSTEM: 120 radials of #10 AWG Copper Wire about each tower. Radials about #1 200' length, except shortened along Junction which extends from midway between towers to intersection of outer radials and except shortened to minimum of 190' about tower #2 from 235° true through 330° true. Junctions and tower bases joined with 1" strap bonded to intersecting radials.

KASY

2.

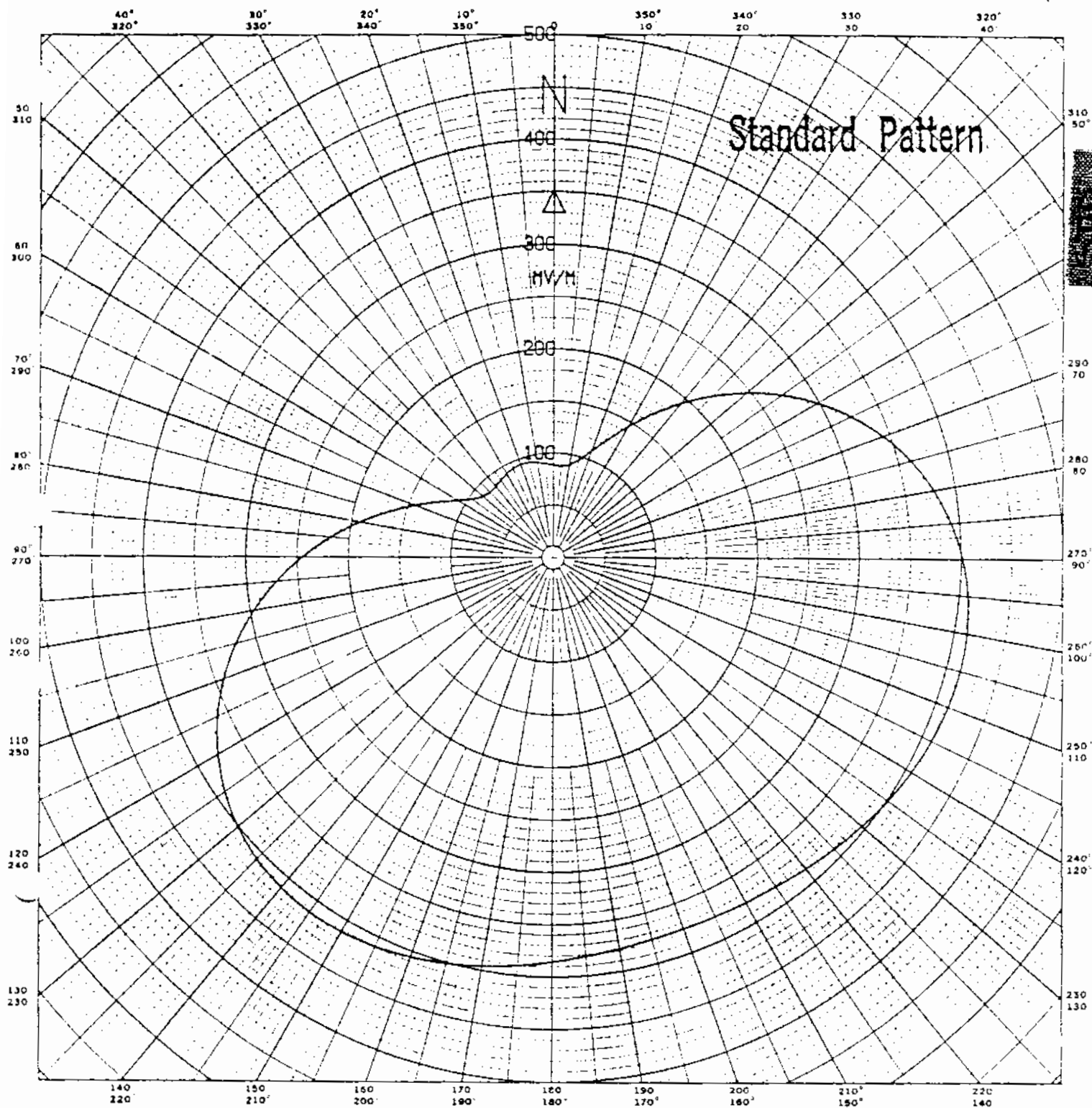
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

	<u>RMS</u>	THEORETICAL	<u>RSS</u>		STANDARD	<u>RMS</u>	
Day <u>1</u> /	<u>291.8375</u>	mV/m	<u>284.3726</u>	mV/m	<u>306.5912</u>		mV/m

1/ By adjustment of input power.

Note:

KASY



HATFIELD & DAWSON
CONSULTING ELECTRICAL ENGINEERS
3525 STONE WAY N.
SEATTLE, WASHINGTON 98103

RADIO STATION KASY
Auburn, Washington, USA

DAYTIME DIRECTIONAL ANTENNA 1220 kHz.

RMS theo = 291.8375 (by adjustment) RMS Std = 305.5913 mv/m
RSS = 284.3726 mv/m K = 155.5808 mv/m

②

#	F	d	S	Ø	G
1	1.0	0.0	0.0	0.0	84.80
2	1.53	70.0	120.0	340.0	84.80

①

HORIZONTAL PLANE STANDARD PATTERN 2.5 kw. CA-D

7/78

Figure E-1

SITE 47° 18' 20" x 122° 14' 51"

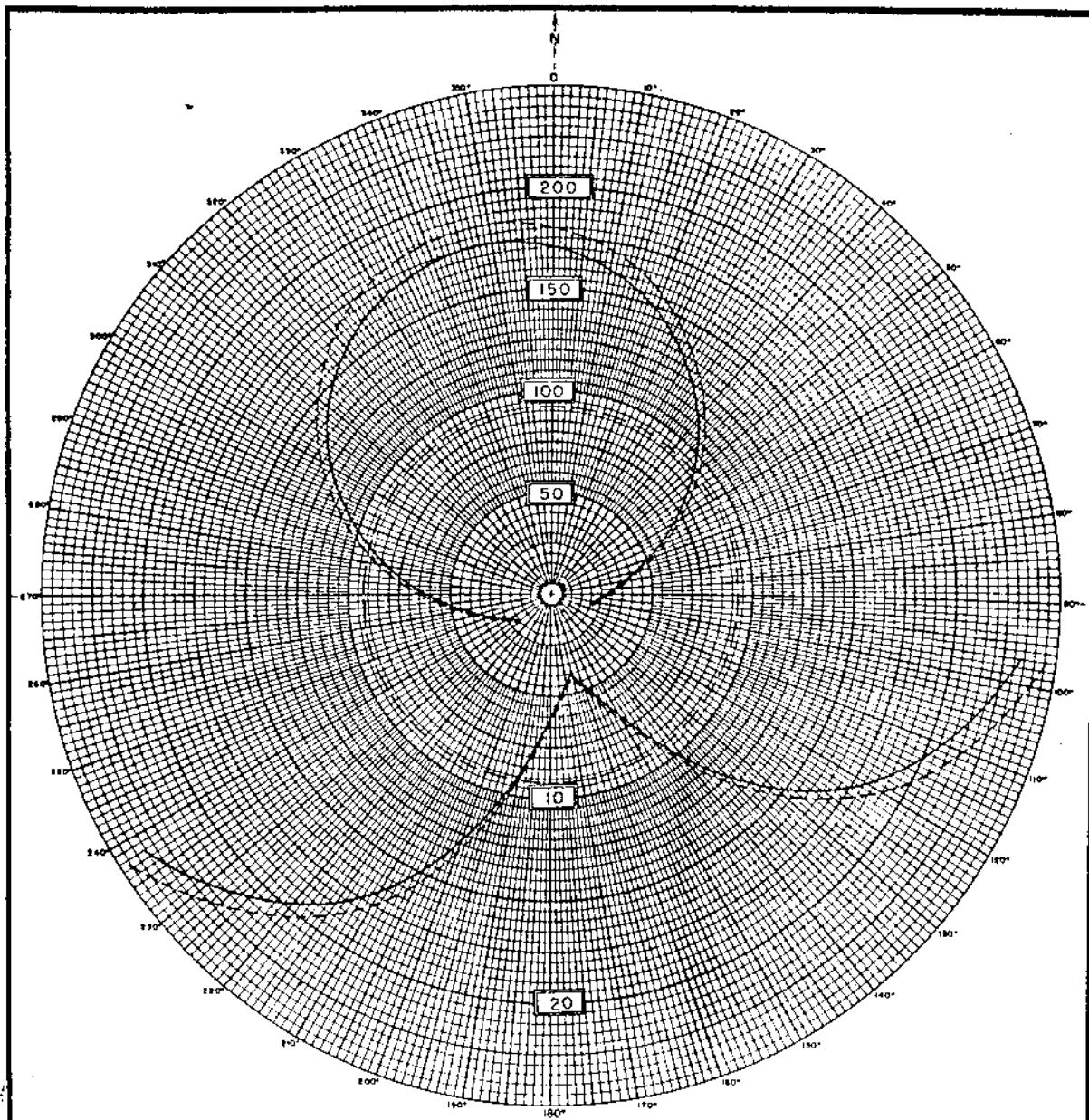
Pomona, Calif.

KKAR

PROPOSED DAY
(5-28-59g)

New; Intra-State Bcstrs.
Pomona, California

250w, DA-D,D
1220 KC



$E_{RMS} = 92.5 \text{ MV/M}$

-----MEOV

LATITUDE: $34^{\circ} 02'$
LONGITUDE: $117^{\circ} 43'$

38.2
31.5
38.7
33.7

ANTENNA PARAMETERS

N-347°-E
#3 $0.67, +79^{\circ}$
#2 $1.53, -135.5^{\circ}$
#1 $1.0, 0^{\circ}$
G-62.5°+TL

FIGURE 4

HORIZONTAL POLAR
PATTERN

INTRA-STATE BROADCASTERS
POMONA
CALIFORNIA

1220 KC 250W-DA-D

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

FCC File No. BP-11687
(Amended)

Intra-State Broadcasters
Pomona, California

1220 KC

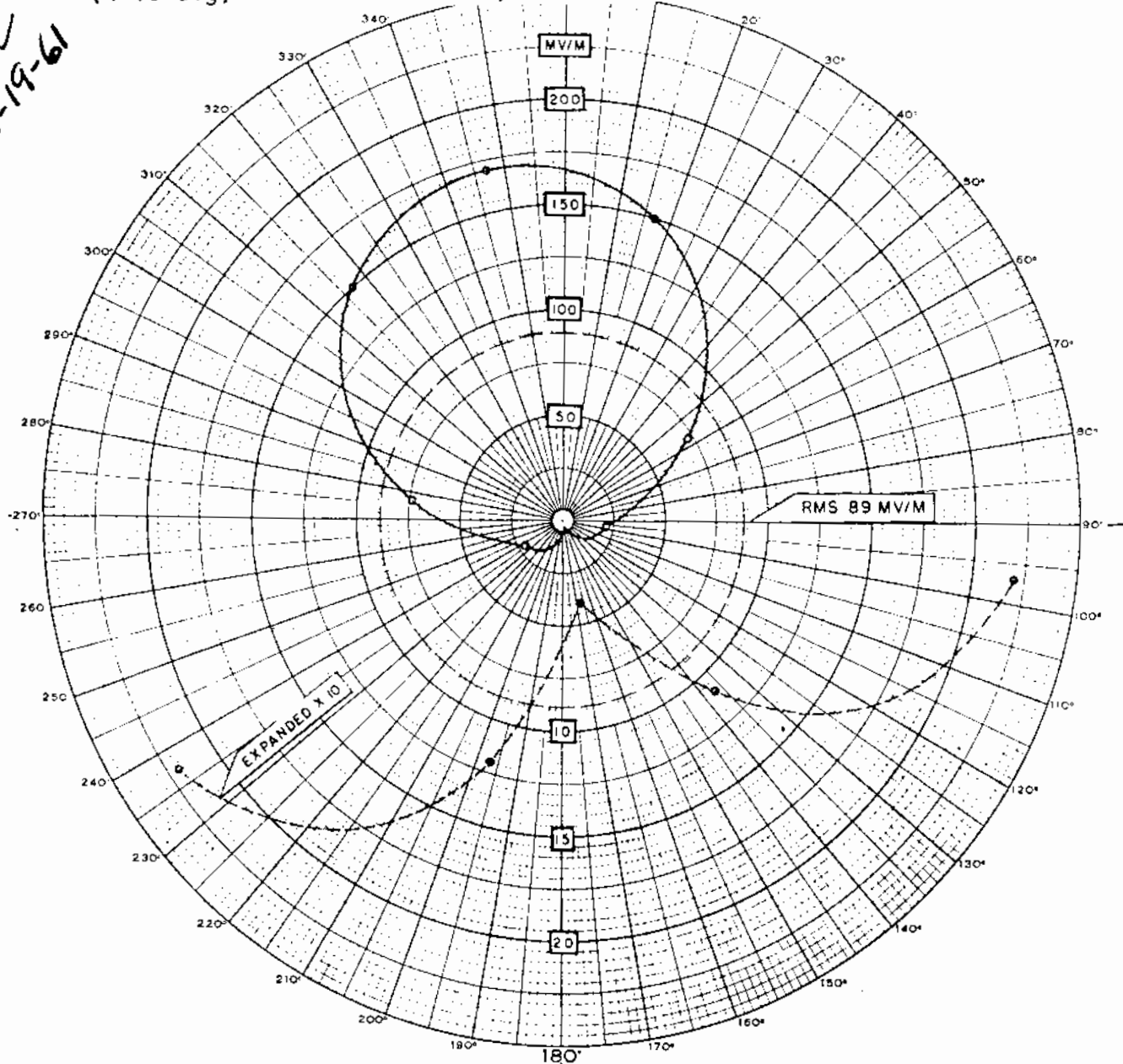
granted 4 for new station
9-2-59
7-18-61 granted to gov and station

KKAR

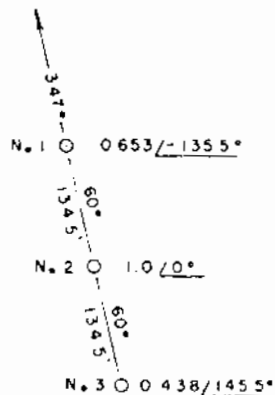
MEASURED DAY
(4-10-61g)

Station KKAR
Pomona, California

250w, DA-D,D
1220 KC



G = 62.5° + TL



LATITUDE : 34° 02' 38.2"

LONGITUDE : 117° 43' 33.7"

FCC File No. BL-8258
Accepted 3-24-61

FIGURE 6

DIRECTIONAL FIELD INTENSITY AT ONE MILE
KKAR, POMONA, CALIFORNIA
1220 KC - 0.25 KW - DA-D
DECEMBER 1960

BOND AND OAKLEY
Consulting Radio Engineers

KKAR
Pomona, California

1220 KC

KKAR

MEASURED NON-DA
(4-10-61g)

Station KKAR
Pomona, California

250w, DA-D,D
1220 KC

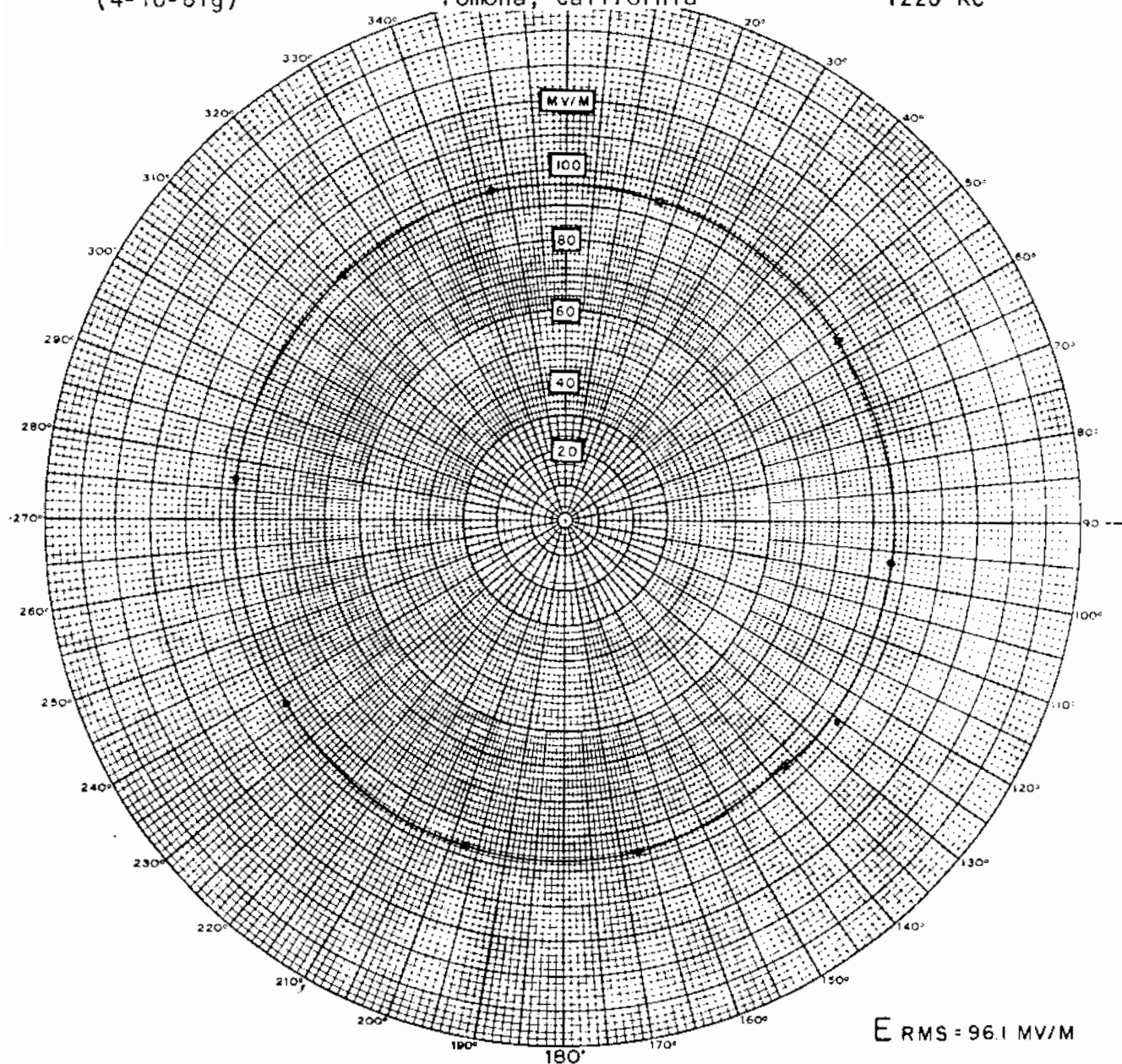


FIGURE NO. 5

NON-DIRECTIONAL FIELD INTENSITY AT ONE MILE

KKAR, POMONA, CALIFORNIA

DECEMBER 1960

North Latitude 34° 02' 38.2"
West Longitude 117° 43' 33.7°

BOND AND OAKLEY
Consulting Radio Engineers

FCC File No. BL-8258
Accepted 3-24-61

KKAR
Pomona, California

1220 KC

Fairhope, Ala.

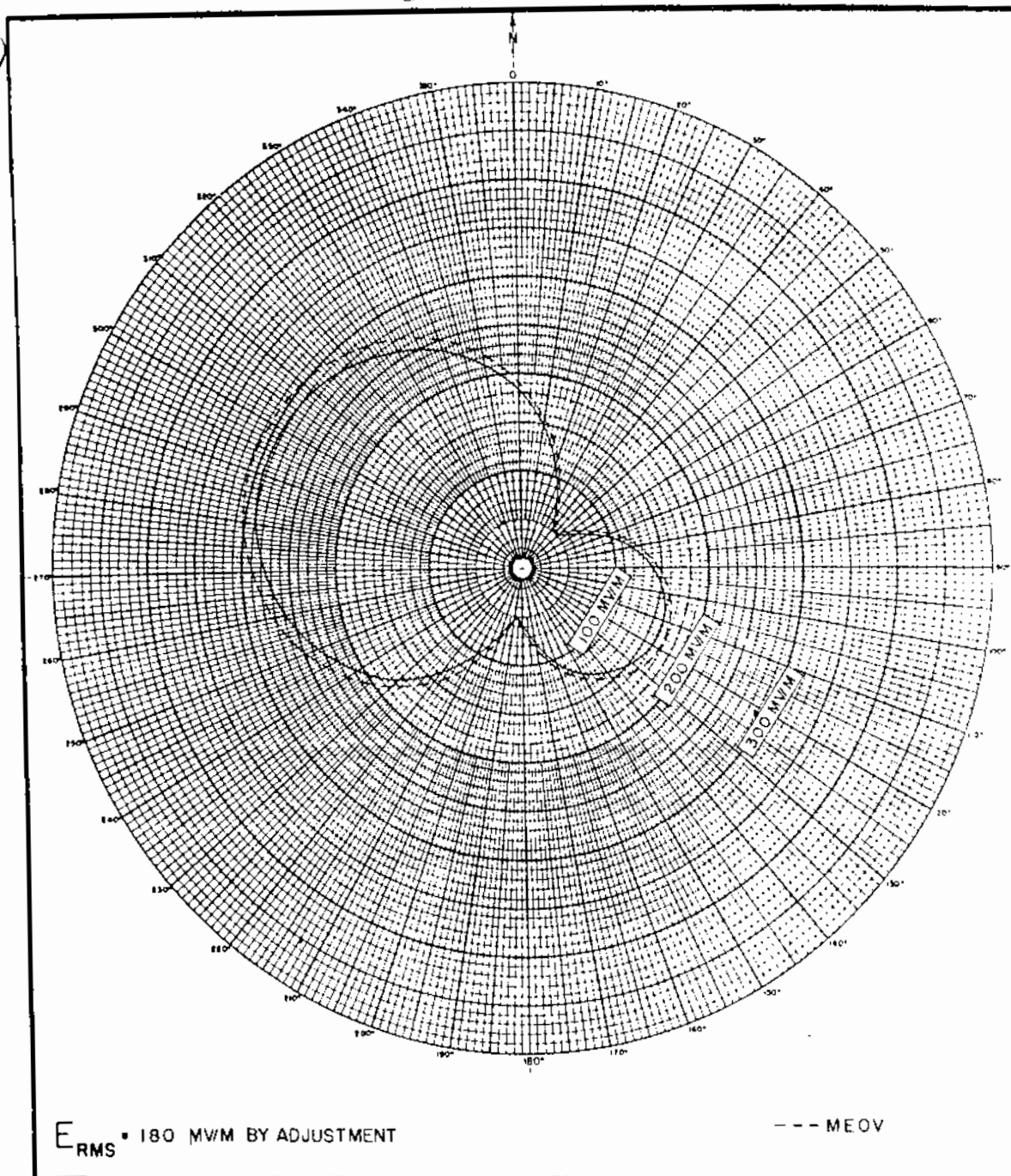
WABT

PROPOSED DAY
(1-8-59g)

New; Price Bcstng. Corp.
Fairhope, Alabama

1kw, DA-D, D
1220 KC

12-21-60
wanted up for
new station



LATITUDE: 30° 30' 38" LONGITUDE: 87° 54' 12.5"	ANTENNA PARAMETERS	FIGURE 3 PROPOSED DAYTIME HORIZONTAL PATTERN PRICE BCSTG. CORP, INC. FAIRHOPE, ALABAMA 1220 KC 1 KW, DA-D
JOHN H. MULLANEY CONSULTING RADIO ENGINEERS WASHINGTON, D. C.		

FCC File No. BP-12654
Accepted 12-31-58

Price Broadcasting Corporation
Fairhope, Alabama 1220 KC

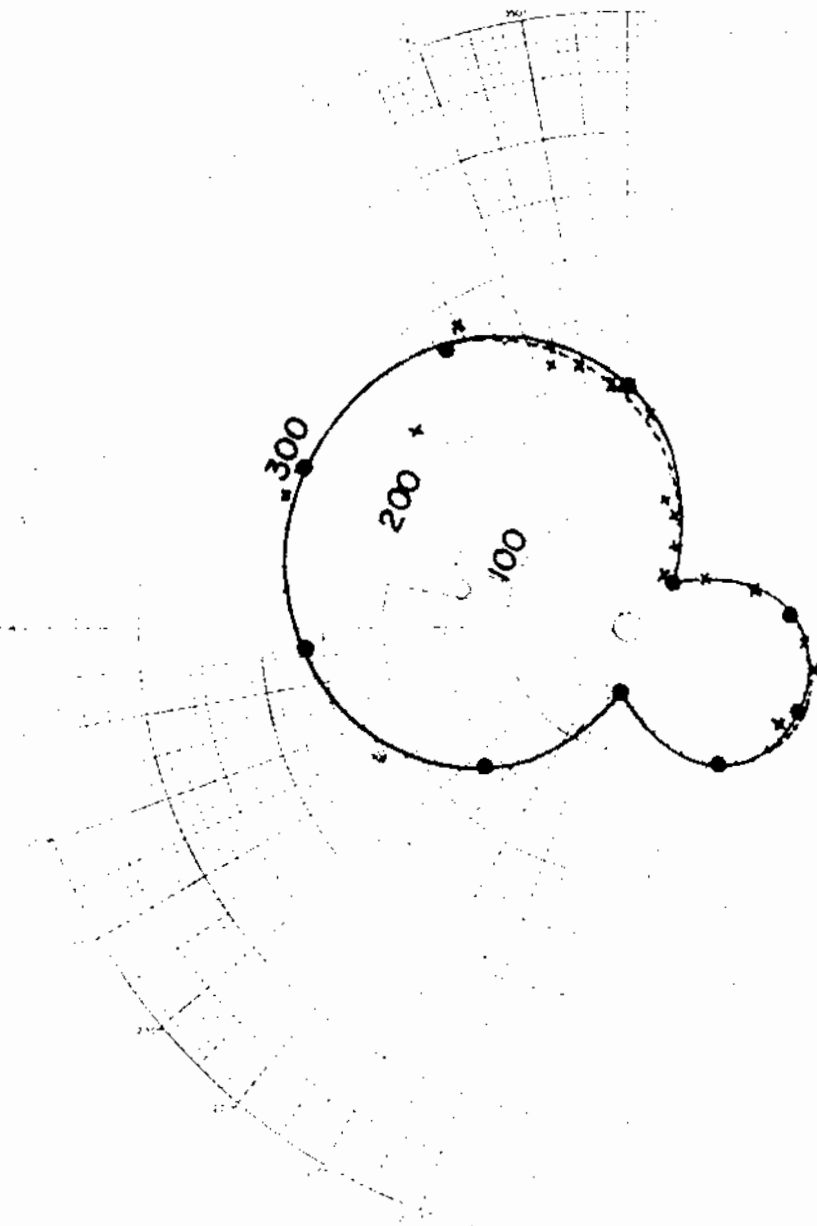
WABF

MEASURED DAY
(9-20-61ct)

Station WABF
Fairhope, Alabama

1kw, DA-D, D
1220 kc

10-25-61
Antenna for
new station

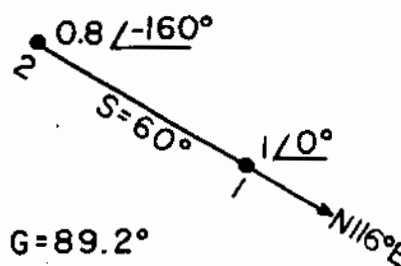


...measured radials
+++ cross radials
--- COMPUTED PATTERN
— MEASURED PATTERN

E_{RMS} = 180.3

LATITUDE 30° 30' 38"
LONGITUDE 87° 54' 12.5"

ANTENNA PARAMETERS



G=89.2°

Station WABF
Fairhope, Alabama

FIGURE-17

MEASURED HORIZONTAL
DAYTIME PATTERN

WABF

PRICE BROADCASTING CORP. INC.
FAIRHOPE, ALABAMA

1220 KC

1 KW, DA-D, D

AMBROSE W. KRAMER
CONSULTING RADIO ENGINEER

FCC File No. BL-8648
Accepted 8-23-61

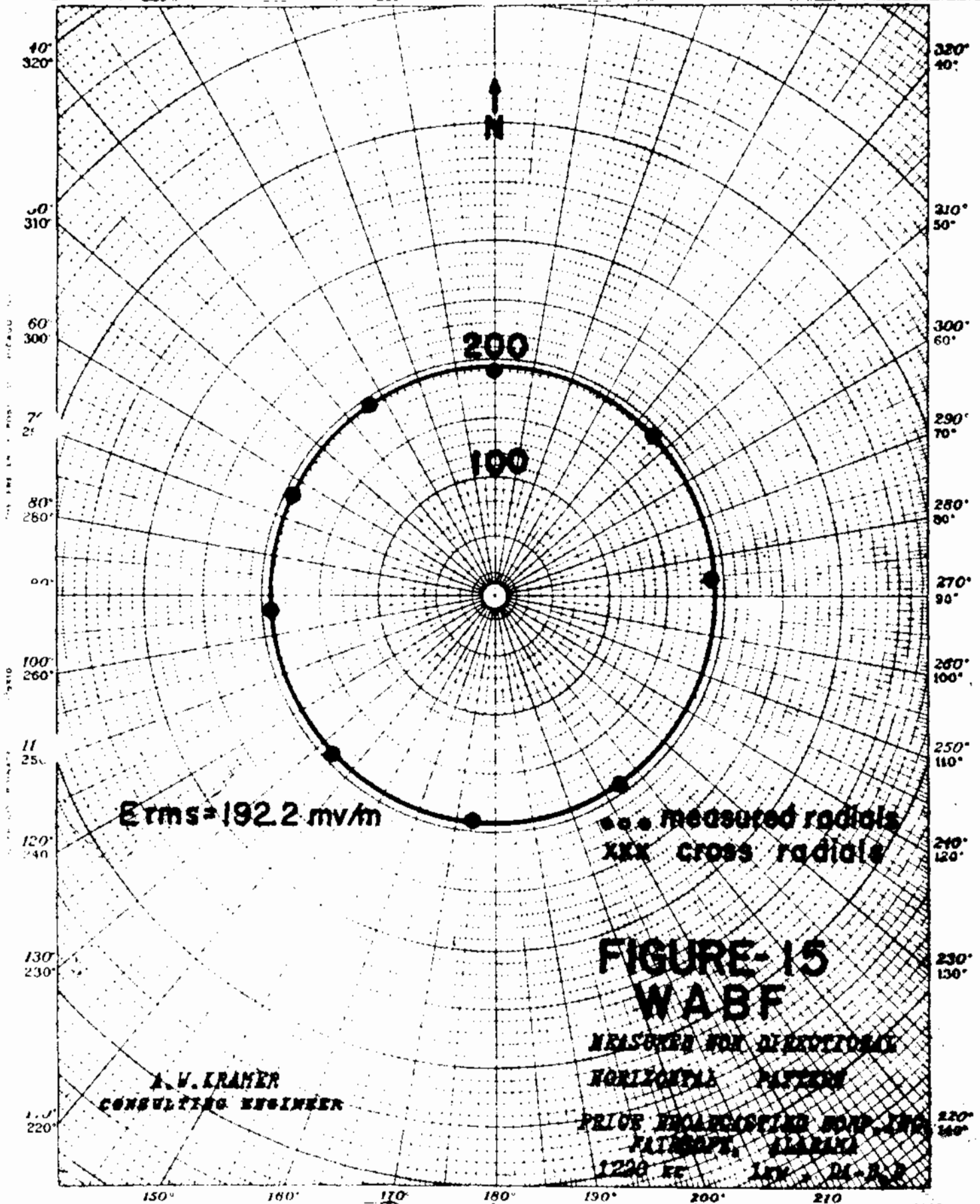
1220 kc

WABF

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

Station WABF
Fairhope, Alabama

1kw, DA-D, D
1220 kc



FCC File No. BL-8648
Accepted 8-23-61

Station WABF
Fairhope, Alabama

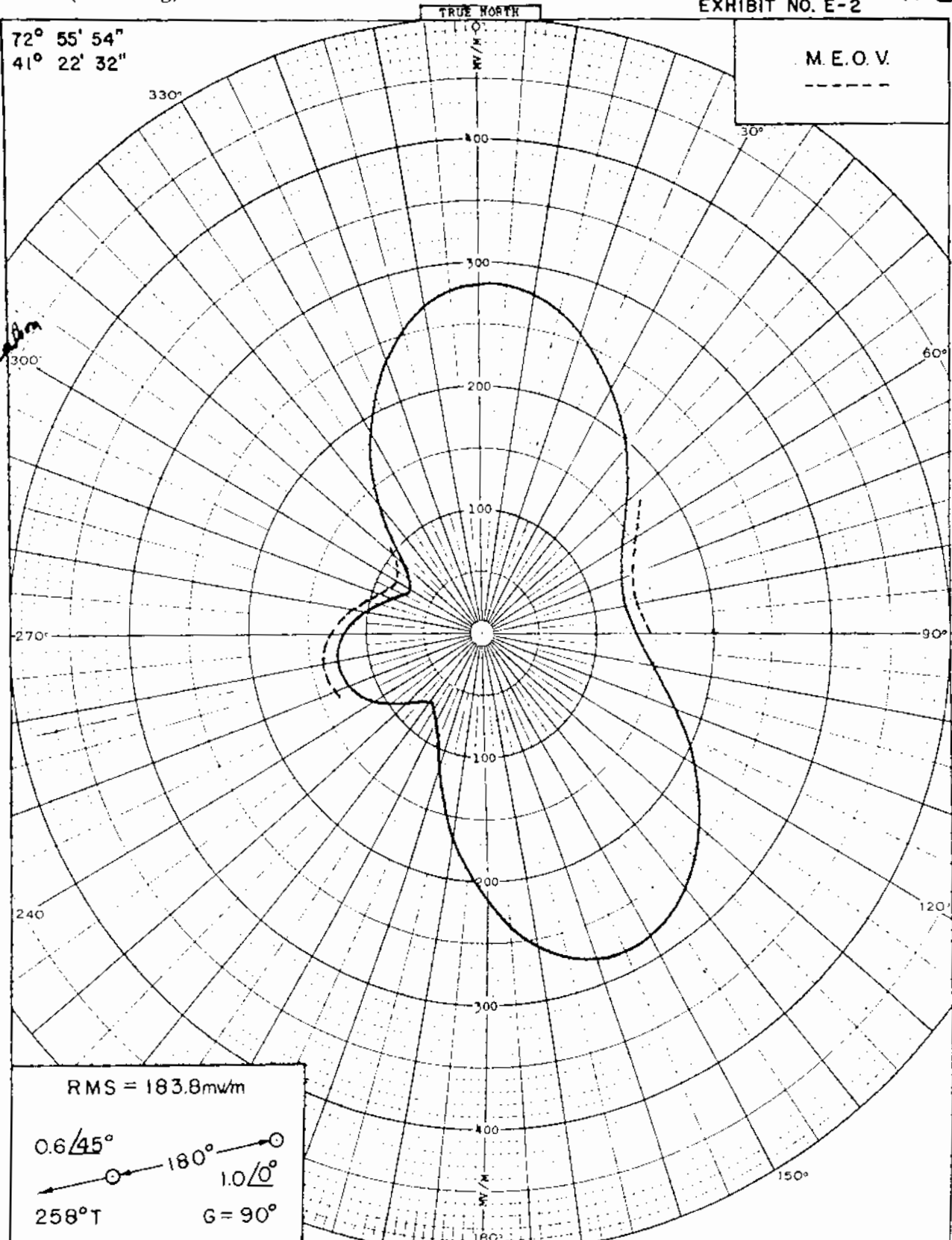
1220 kc

PROPOSED DAY
(3-26-58g)

New; Vincent de Laurentis
Hamden, Connecticut

1kw, DA-D,D
1220 KC
EXHIBIT NO. E-2

~~WDEF~~
WCDQ



COMMERCIAL RADIO EQUIPMENT CO.

RADIO ENGINEERING CONSULTANTS

WASHINGTON, D.C.

PATTERN: PROPOSED DAYTIME

FOR: HAMDEN, CONNECTICUT

POWER: 1KW FREQ: 1220 KC

DATE: 3/5/58

BY: C.I.G.

FCC File No. BP-11,607
Accepted 3-17-58

Vincent de Laurentis
Hamden, Connecticut

1220 KC

WDEE

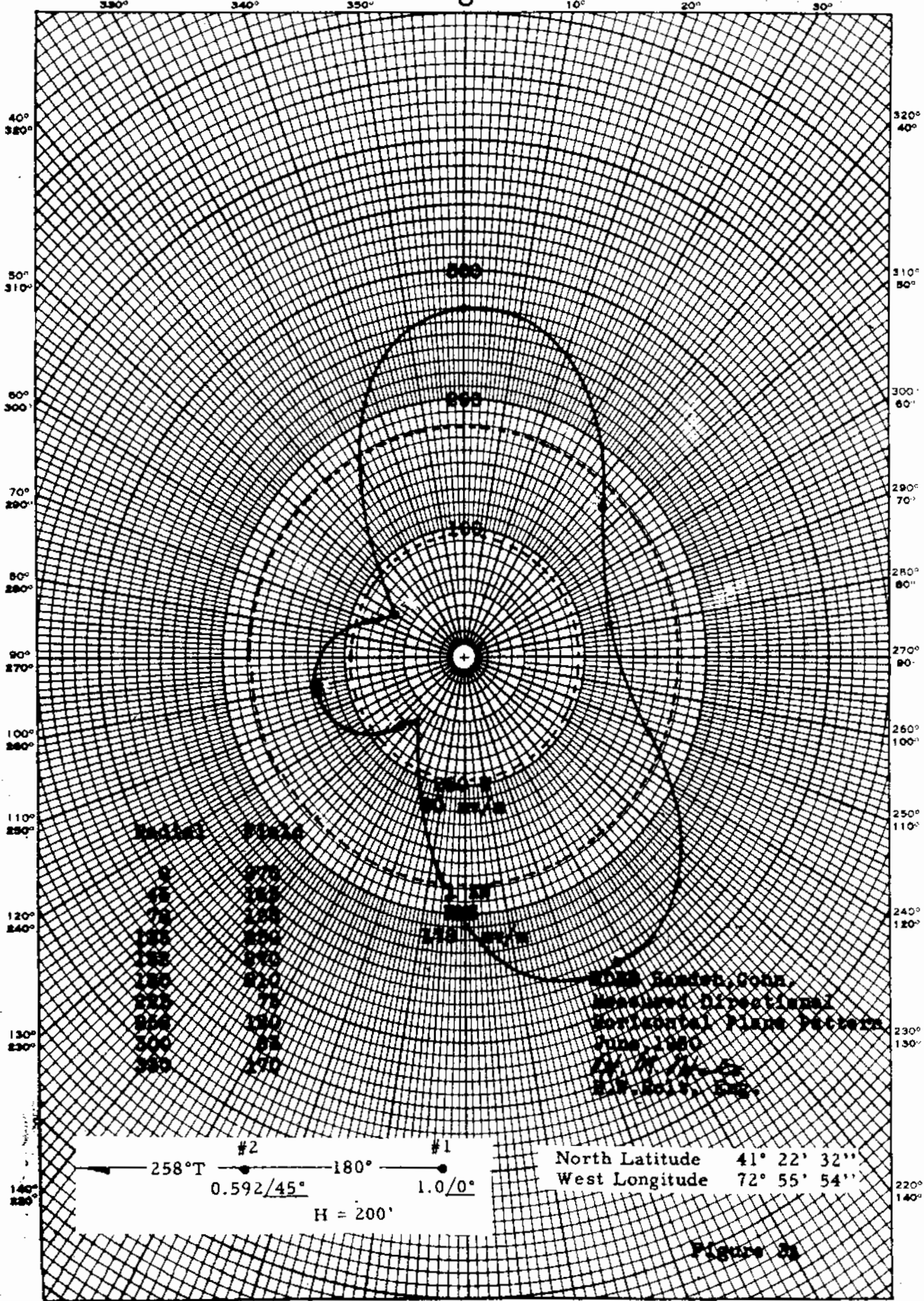
MEASURED DAY
(7-29-60g)

Station WDEE
Hamden, Connecticut

1kw, DA-D,D
1220 kc

WCDQ

MD. 341-P DIETZEN GRAPH PAPER
POLAR CO-ORDINATE
EUGENE DIETZEN CO.
MADE IN U.S.A.

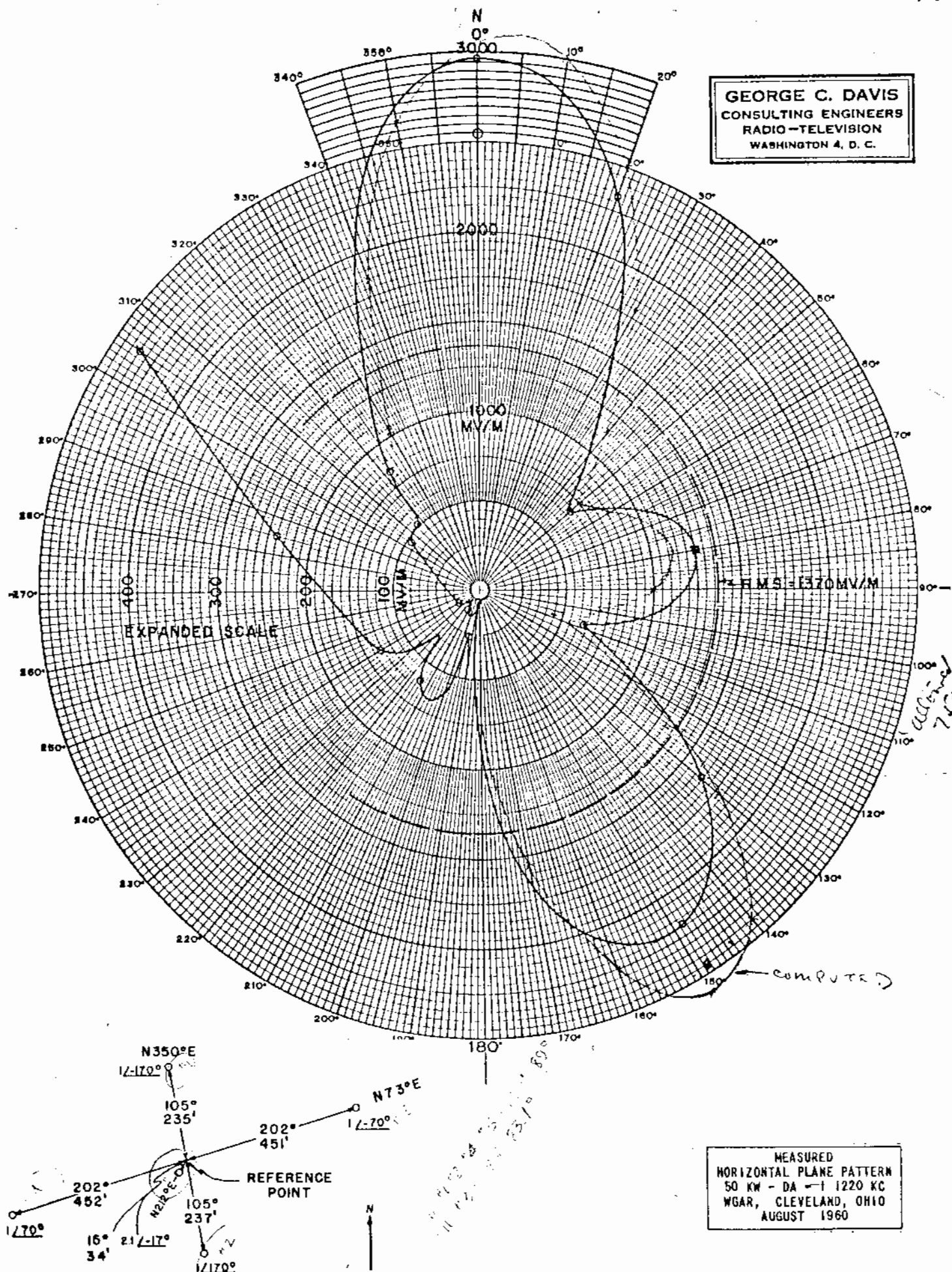


FCC File No. BL-8001
Accepted 7-20-60

WDEE
Hamden, Connecticut

1220 kc

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

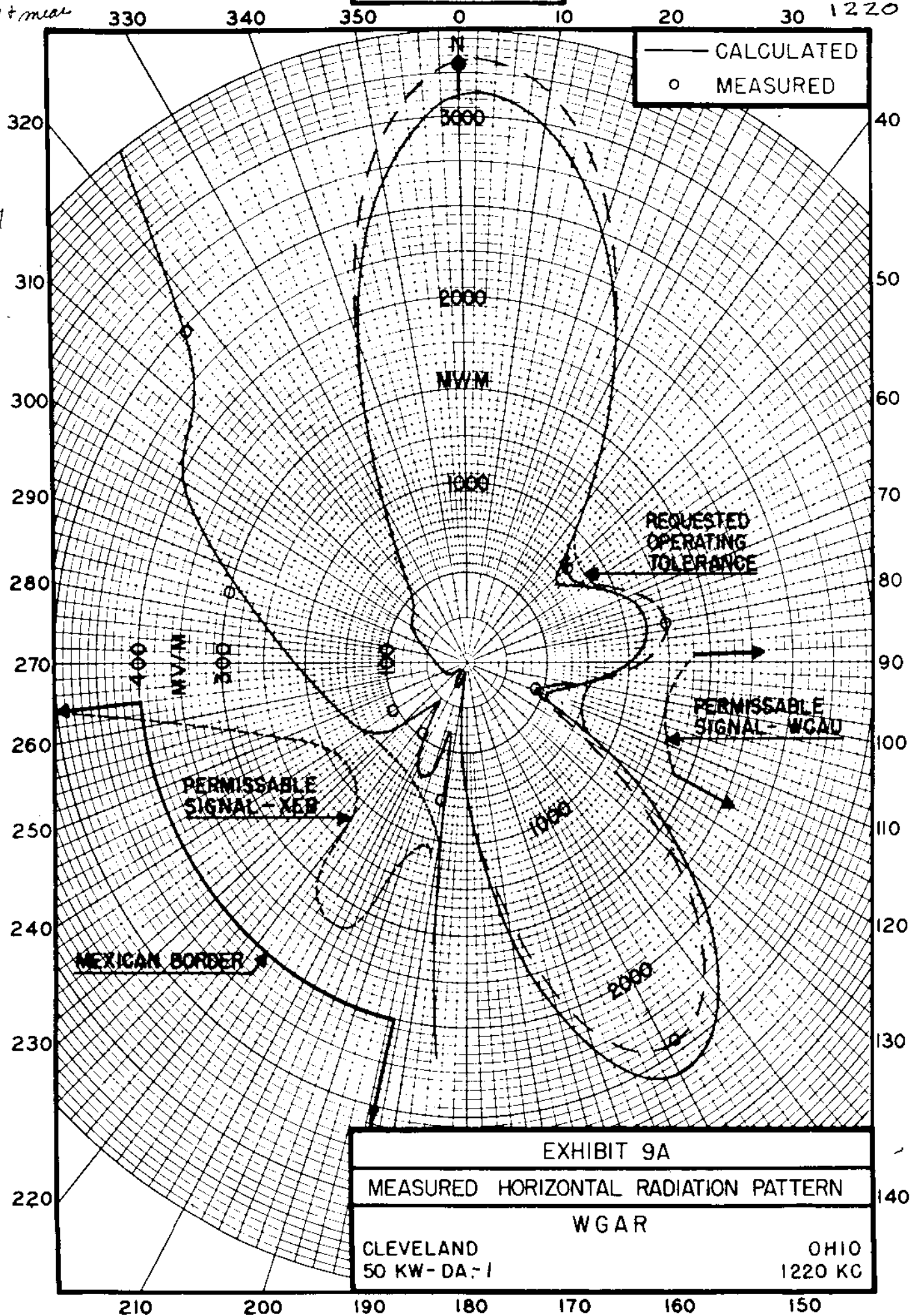


MEASURED
HORIZONTAL PLANE PATTERN
50 KW - DA - 1220 KC
WGAR, CLEVELAND, OHIO
AUGUST 1960

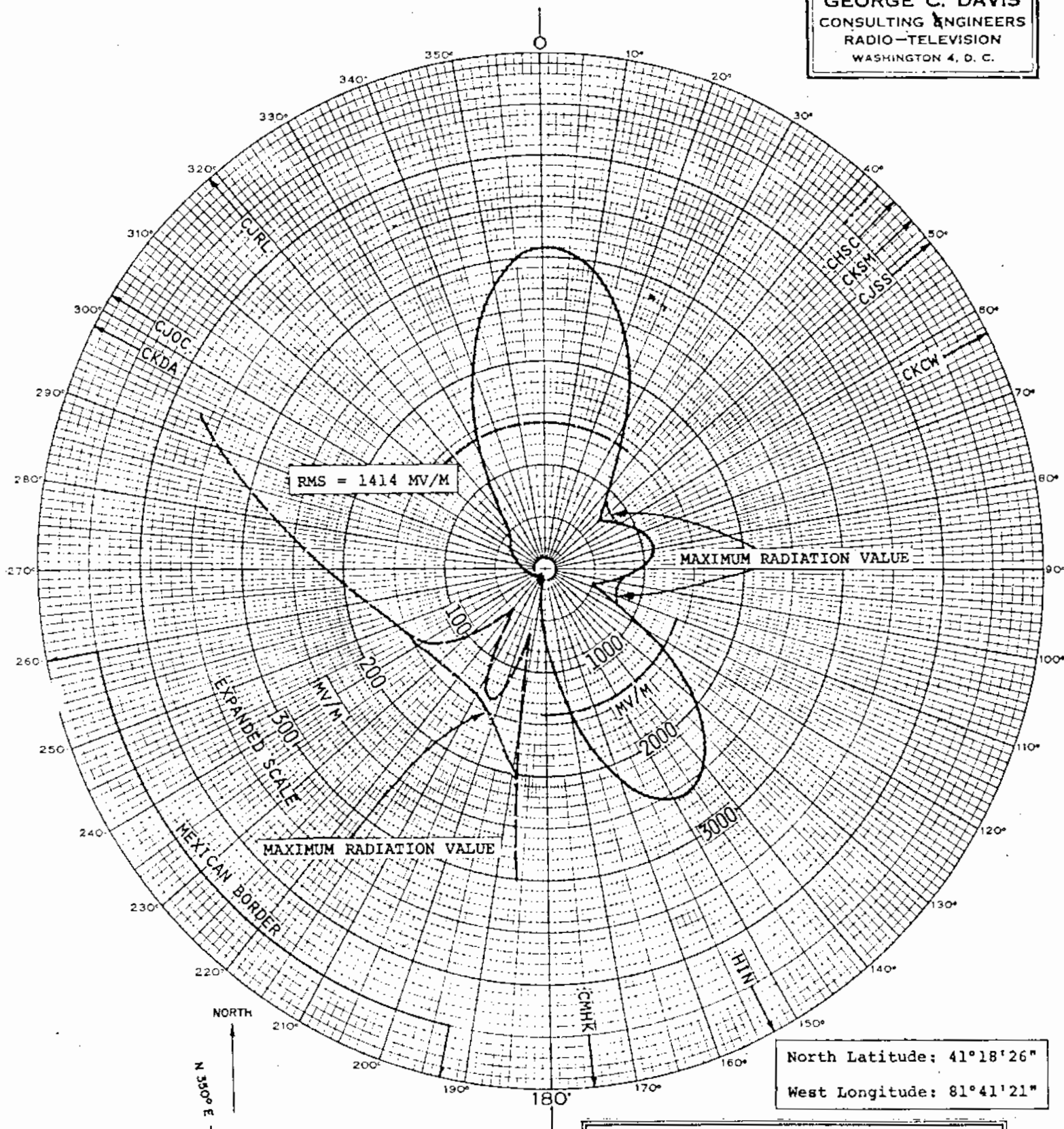
PATTERN NO:
SUPERSEDES:

WGAK

prop + meas

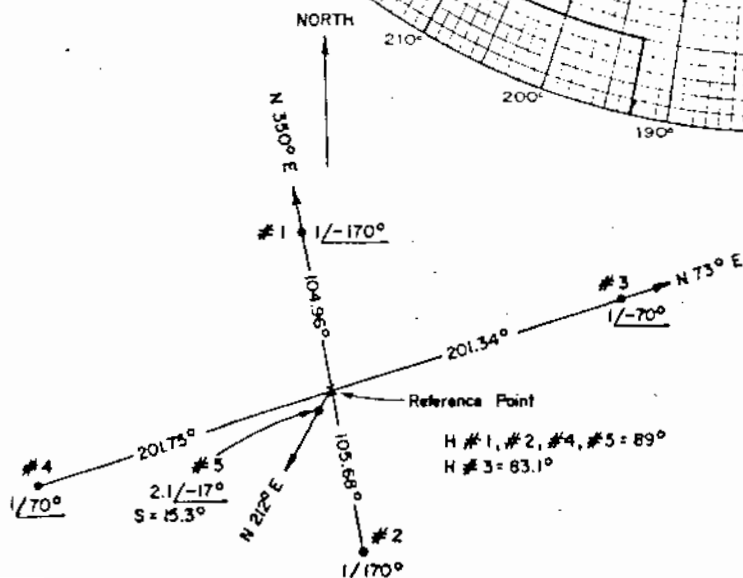


GEORGE C. DAVIS
CONSULTING ENGINEERS
RADIO-TELEVISION
WASHINGTON 4, D. C.

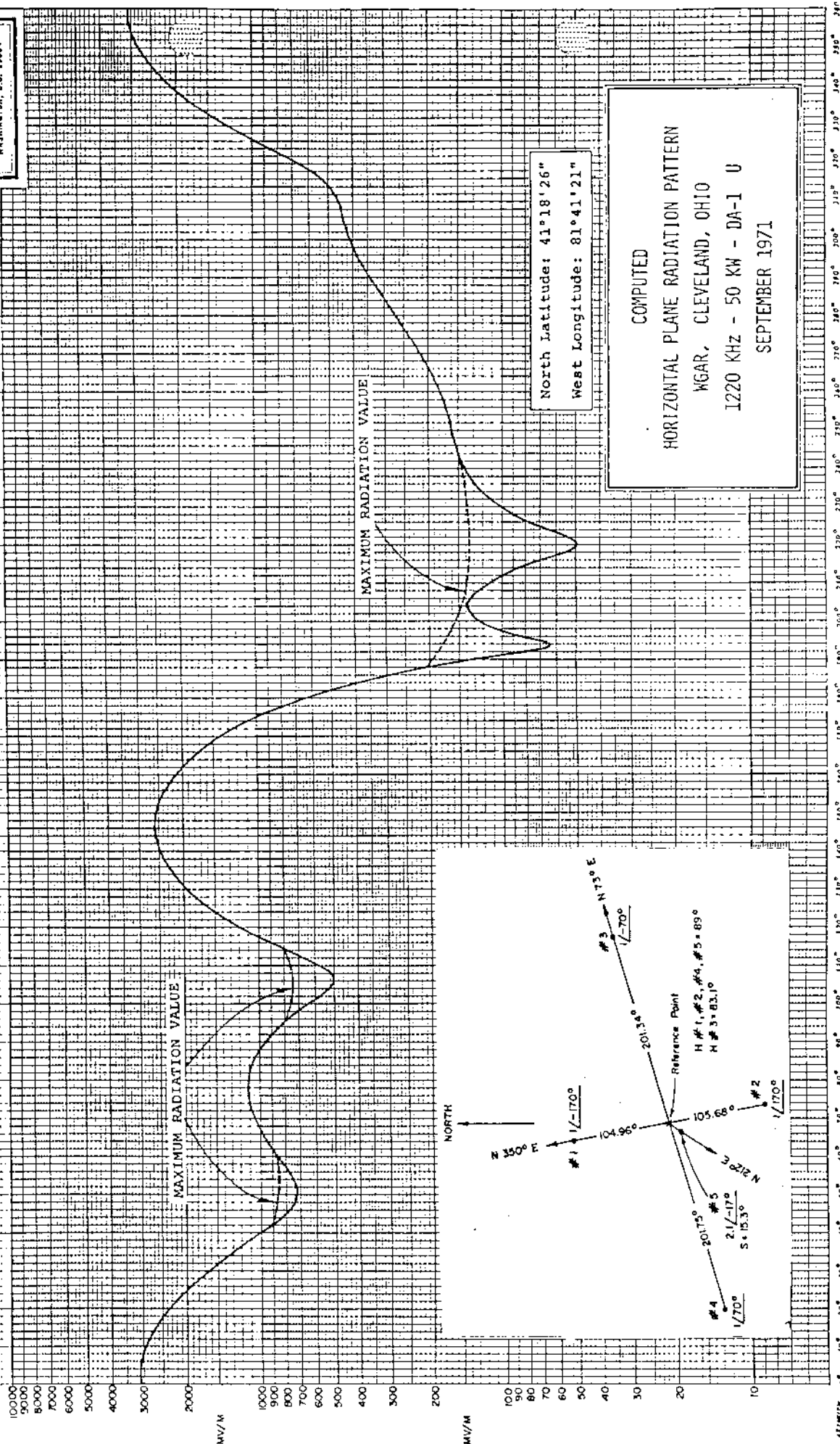


North Latitude: 41°18'26"
West Longitude: 81°41'21"

COMPUTED
HORIZONTAL PLANE RADIATION PATTERN
WGAR, CLEVELAND, OHIO
1220 KHz - 50 KW - DA-1 U
SEPTEMBER 1971



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



PATTERN NO.:
SUPERSEDES:

prop P-37-1 WGAR-1220/KC

330

340

350

0

10

20

30

RMS = 1414.2 MV/M

320

310

300

290

280

270

260

250

240

230

220

40

50

60

70

80

90

100

110

120

130

140

MEXICAN BORDER

PERMISSABLE
SIGNAL

PERMISSABLE
SIGNAL - WCAU

OPERATING
TOLERANCE

EXHIBIT 3
HORIZONTAL PLANE DIAGRAM
PROPOSED DIRECTIONAL ANTENNA

WGAR
CLEVELAND OHIO
50KW. - DA 1220 KC.

210

200

190

180

170

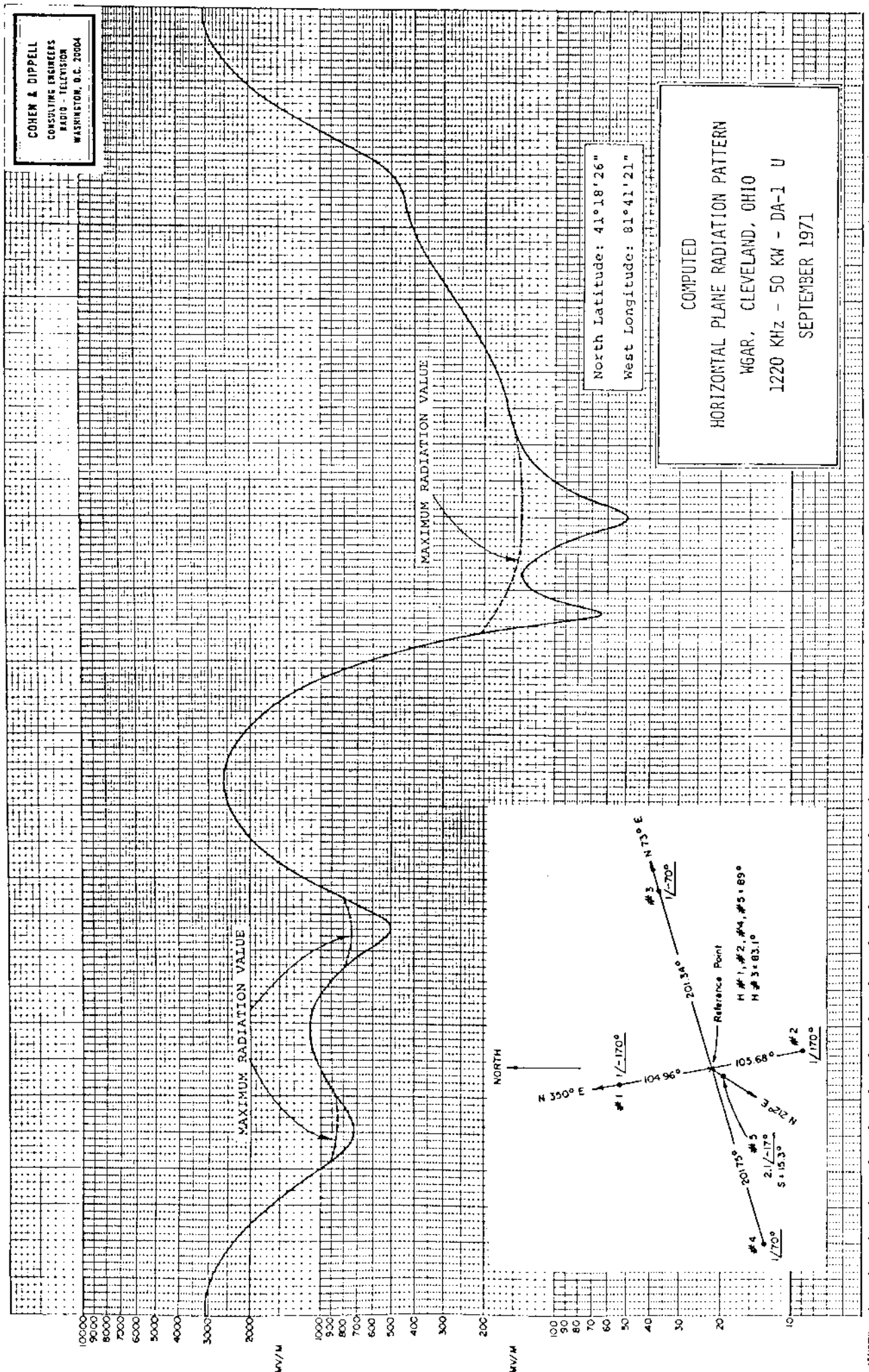
160

150

COHEN & DIPPILL
CONSULTING ENGINEERS
RADIO - TELEVISION
WASHINGTON, D. C. 20004

North Latitude: $41^{\circ}18'26''$
West Longitude: $81^{\circ}41'21''$

COMPUTED
HORIZONTAL PLANE RADIATION PATTERN
WGAR, CLEVELAND, OHIO
1220 KHz - 50 KW - DA-1 U
SEPTEMBER 1971



WGNY

PROPOSED DAY
(7/15/57g)

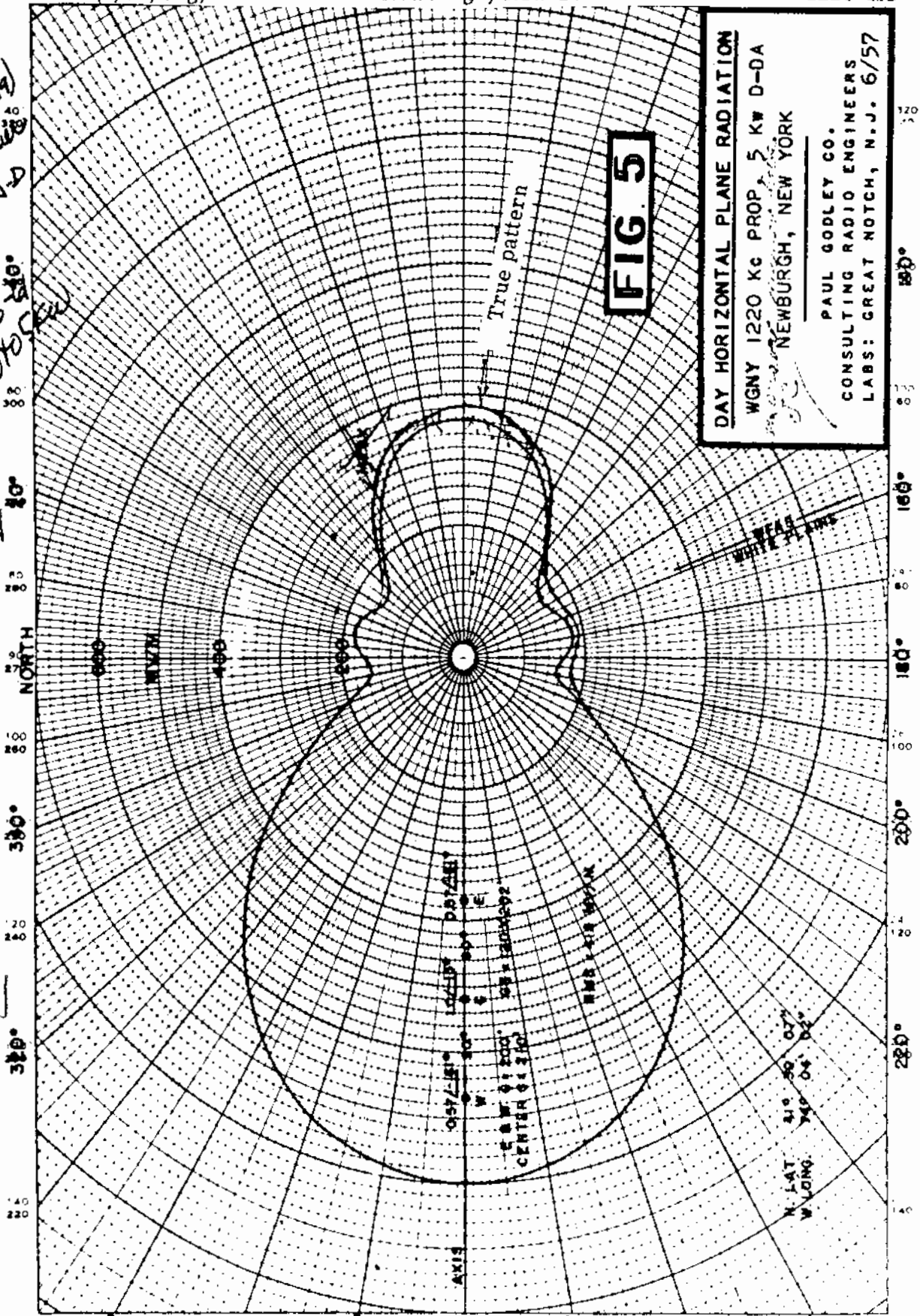
Station WGNY
Newburgh, New York

5kw, DA-D,D

1220 KC

*revised CP (6-17-54)
increase in day power
and directive-DA-D
of 3000
further CP-7-26
increase power to 5kw
and in day DA-D*

11
57-15-00 (MAY 1957)



FCC File No. BP-11,365
Accepted 6/28/57

WGNY
Newburgh, New York

1220 KC

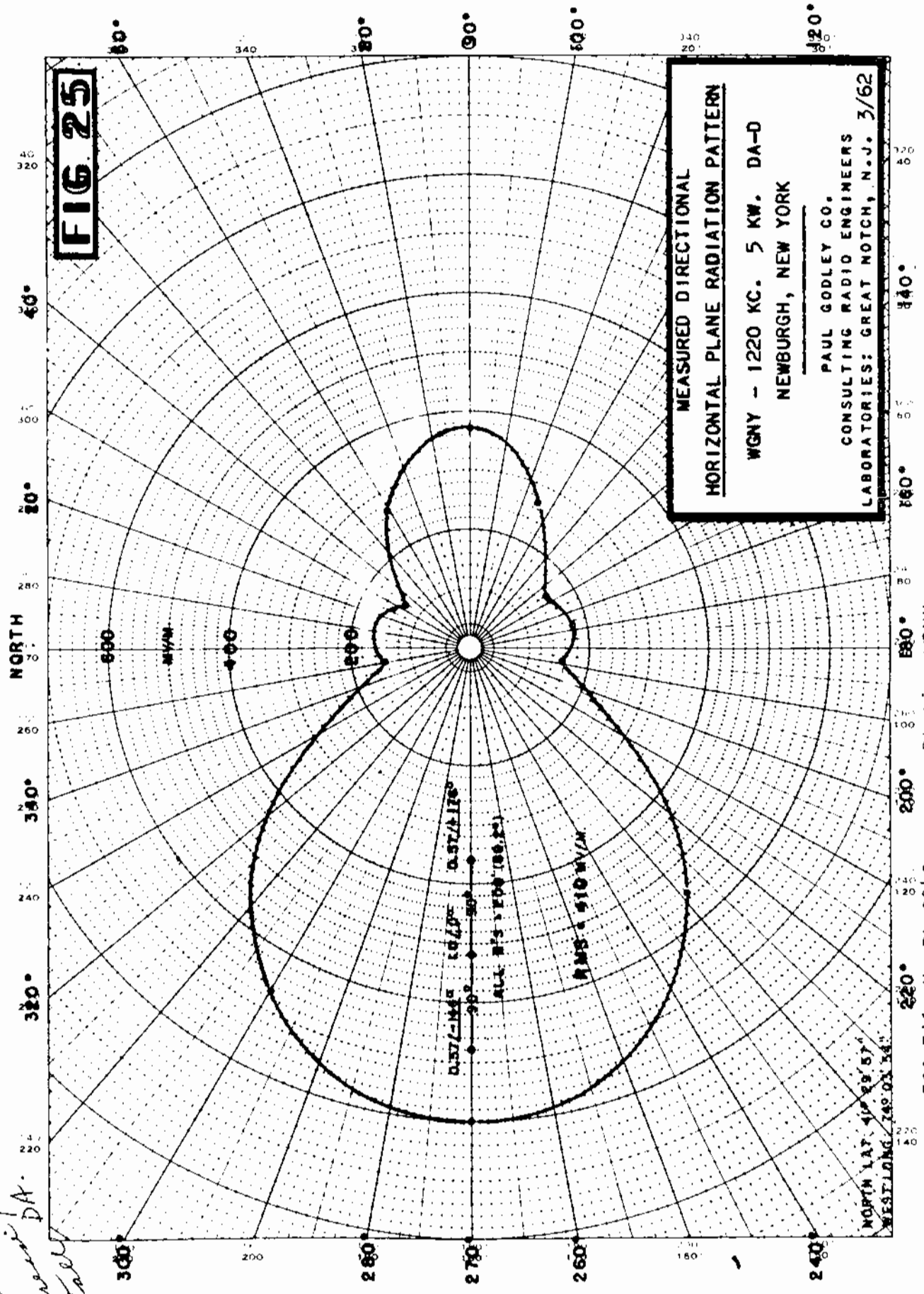
WGN Y
1220

5kw, DA-D, D
1220 kc

Station WGN Y
Newburgh, New York

Measured Day
(5-25-62ct)

8/13/62 letter
to install
transmitter power
to 5kw DA-D



FCC File No. BL-9249
Accepted 5-14-62

Station WGN Y
Newburgh, New York

1220 kc

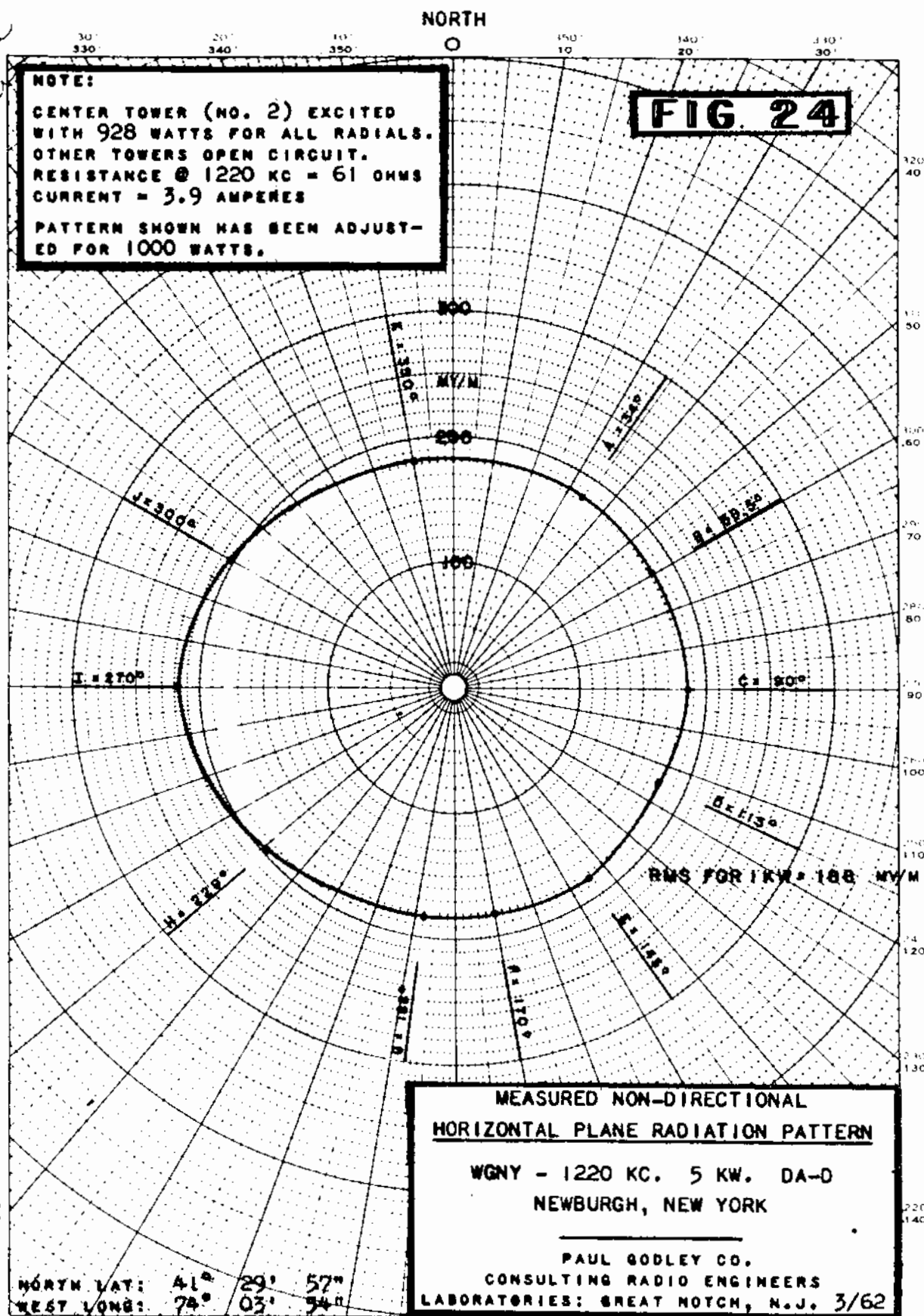
WGNY

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

Station WGNY
Newburgh, New York

5kw, DA-D, D
1220 kc

8/15/62
power license
increase power
install DA



FCC File No. BL-9249
Accepted 5-14-62

Station WGNY
Newburgh, New York

1220 kc

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WKRS Main Studio: Waukegan, Illinois
Frequency: 1220 kHz Power: 1 kW
Notification List No. 1599 Date: September 25, 1974 Class: II

GEOGRAPHICAL LOCATION OF THE
CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42° 20' 59"
West Longitude: 87° 52' 53"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation (DA-D).

Number of elements: 2

Type of elements: Series-excited, vertical steel towers. Uniform cross-section, guyed. Tower #1 is Self-supporting, tapered. Tower #2 is uniform cross-section, guyed.

TOWER:	S(#1)	N(#2)
HEIGHT ABOVE INSULATORS:	317' (142°)	220' (98.5°)
PHASING:	0°	-129°
FIELD RATIO:	1	0.9

SPACING AND

ORIENTATION: Elements are spaced 134.5' (60°) on a line bearing 14° true.

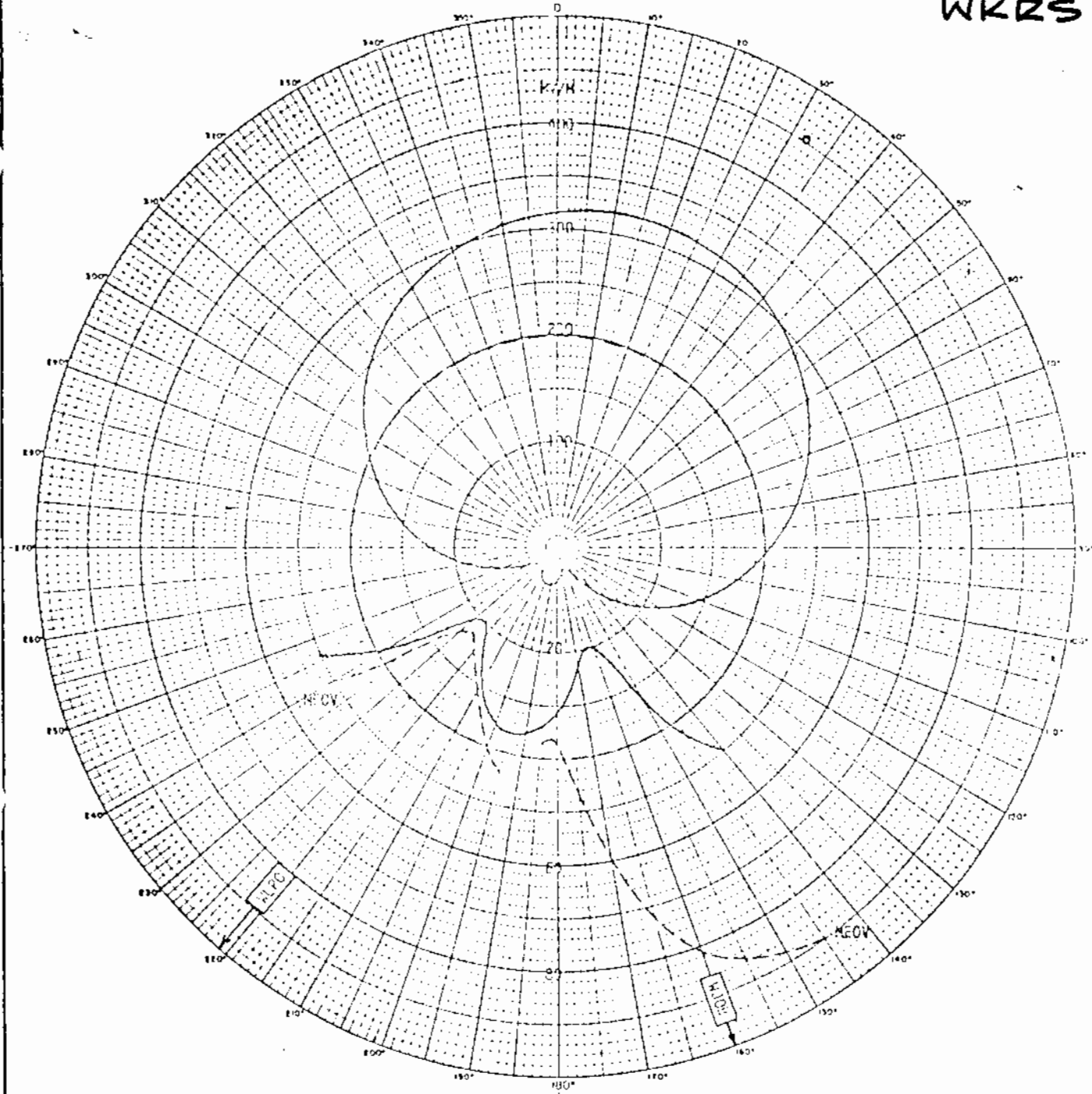
GROUND SYSTEM: 120-200' equally spaced copper radials plus 120-50' inter-spaced radials about each tower.

Predicted effective Field: 200 mv/m at rated power.

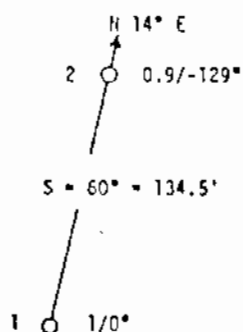
Note: This notification concerns only a change in means of radiation
in the directional antenna pattern.

1220 kb

WYKE, Waukegan, Ill. 1220 lbs



HORIZONTAL RADIATION PATTERN



$$G_1 = 142^\circ = 317^\circ$$

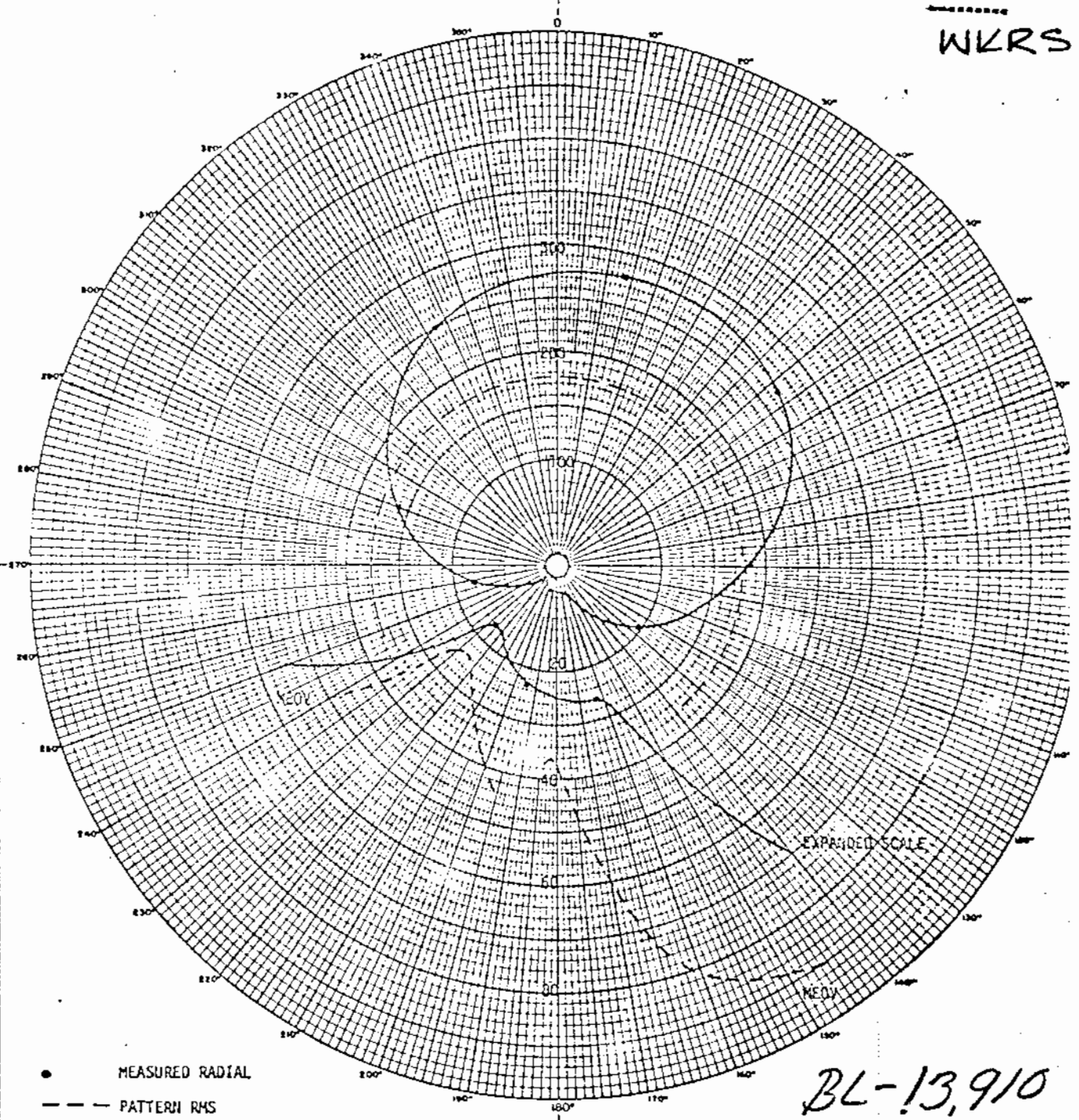
$$G_2 = 98.5^\circ = 220^\circ$$

APPLICANT :	WKRS
LOCATION :	WAUKEGAN, ILLINOIS
FREQUENCY :	1220 KC/S
POWER :	1 KW DA-D
LATITUDE :	42 DEG 20 MIN 59 SEC
LONGITUDE :	87 DEG 52 MIN 53 SEC
WHEN USED :	DAYTIME
RMS FIELD :	200 mv/m
DATE :	JULY, 1974

RALPH E. EVANS ASSOCIATES

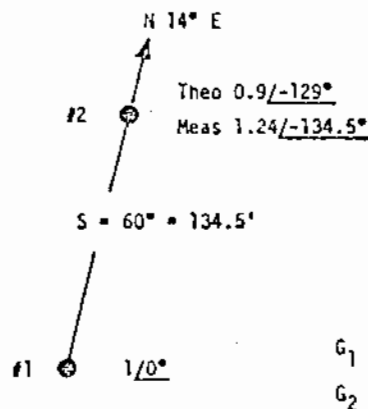
Consulting Radio Engineers
 3500 North Sherman Boulevard
 Milwaukee, Wisconsin 53215
 Telephone: 442-4210 (Area Code 414)

WKRS



BL-13,910

HORIZONTAL RADIATION PATTERN



APPLICANT :	WKRS
LOCATION :	WAUKEGAN, ILLINOIS
FREQUENCY :	1220 MC/S
POWER :	1 KW DA-D
LATITUDE :	42 DEG. 20 MIN. 59 SEC
LONGITUDE :	87 DEG. 52 MIN. 53 SEC
WHEN USED:	Daytime
RMS FIELD:	176 mv/m by adjustment
DATE :	March, 1975

RALPH E. EVANS ASSOCIATE
 Consulting Radio Engineers
 3500 North Sherman Boulevard
 Milwaukee, Wisconsin 53216
 Telephone 442-4210 Ltrms Code 4141

SUPPLEMENTAL DIRECTIONAL ANTENNA
DESCRIPTION SHEET

Station: WKRS

Main Studio: Waukegon, Illinois

Frequency: 1220 kHz

Power: 1 kW

Notification List No. 1708

Date: November 9, 1976 Class: II

GEOGRAPHICAL LOCATION OF THE
CENTER OF THE ANTENNA SYSTEM:

North Latitude: 42 ° 20 ' 59 "

West Longitude: 87 ° 52 ' 53 "

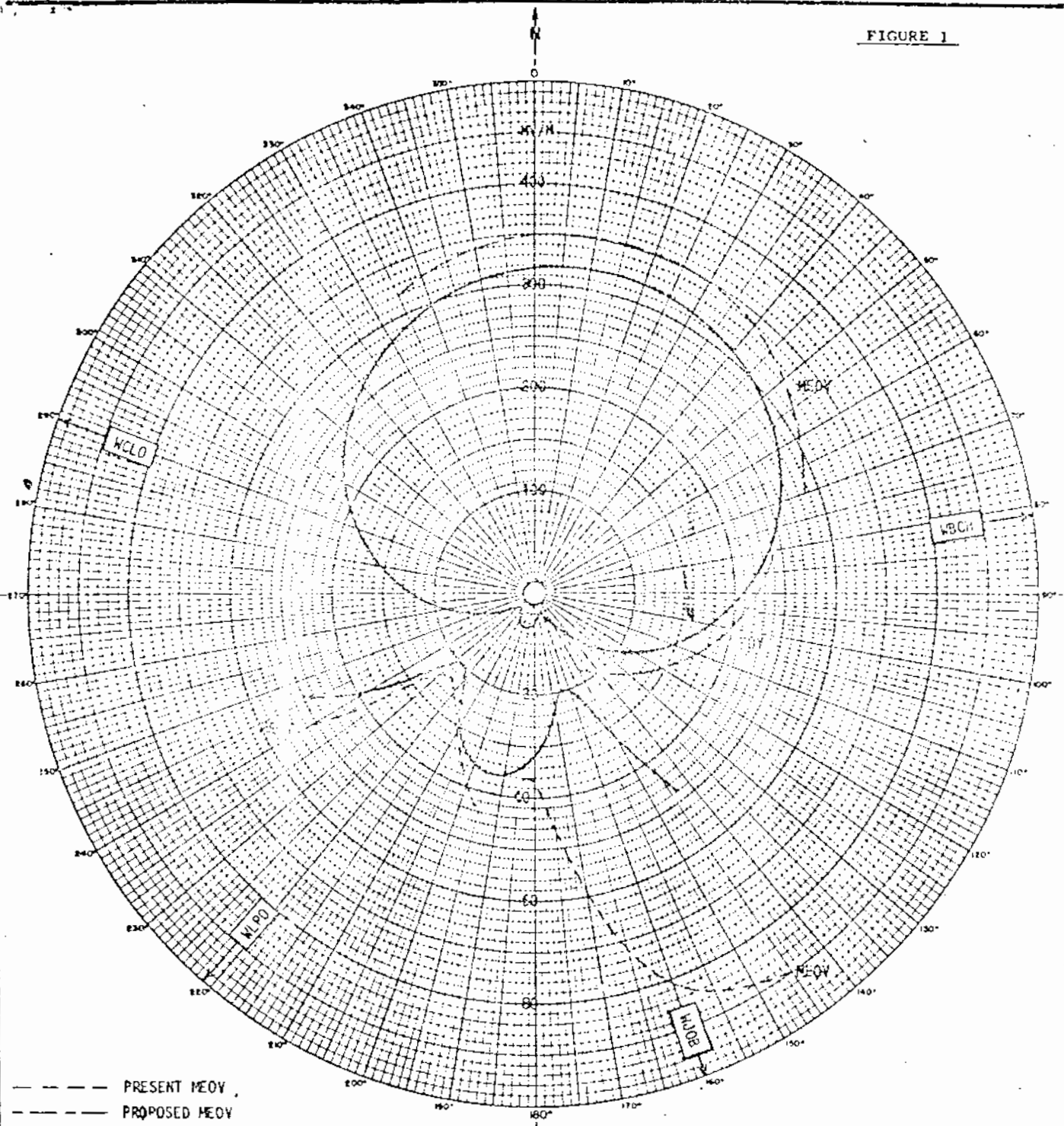
Authorized for Daytime operation (DA-D).

Predicted effective Field: 200 mv/m at rated power.

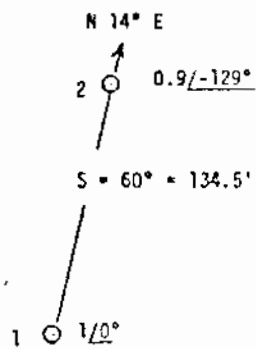
Note: Please retain the description sheet notified for station WKRS in United States Change List Number 1599, dated September 25, 1974 and attach to this supplemental Description Sheet and directional antenna radiation pattern. This notification is for the purpose of indicating only a change in means of radiation in the directional antenna pattern.

FIGURE 1

WKRS



HORIZONTAL RADIATION PATTERN



$$G_1 = 142^\circ = 317'$$

$$G_2 = 98.5^\circ = 220'$$

APPLICANT :	WKRS
LOCATION :	WAUKEGAN, ILLINOIS
FREQUENCY :	1220 KC/S
POWER :	1 KW. DA-D
LATITUDE :	42° 54' 40" N 89° 53' 53" W
LONGITUDE :	87° 08' 52" W 53° 53' 53" N
WHEN USED :	DAYTIME
R.M.S. FIELD :	200 MV/M
DATE :	NOV. 1975

RALPH E. EVANS ASSOCIATES

Consulting Radio Engineers
3500 North Sherman Boulevard
Milwaukee, Wisconsin 53216

Telephone 442 4210 (Area Code 414)

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WKTZ

Main Studio: Jacksonville, Florida

Frequency: 1220 kHz

Power: 5 kW

Notification List No. 1659

Date: November 17, 1975

Class: II

GEOGRAPHICAL LOCATION OF THE
CENTER OF THE ANTENNA SYSTEM:

North Latitude: 30° 19' 25"
West Longitude: 81° 34' 07"

ANTENNA CHARACTERISTICS

Authorized for Daytime operation. (DA-D) STANDARD PATTERN

Number of elements: 2

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

TOWER: W(#2) E(#1)

HEIGHT ABOVE
INSULATORS: 210' 210' (93.8°)

PHASING: -134.6° 0°

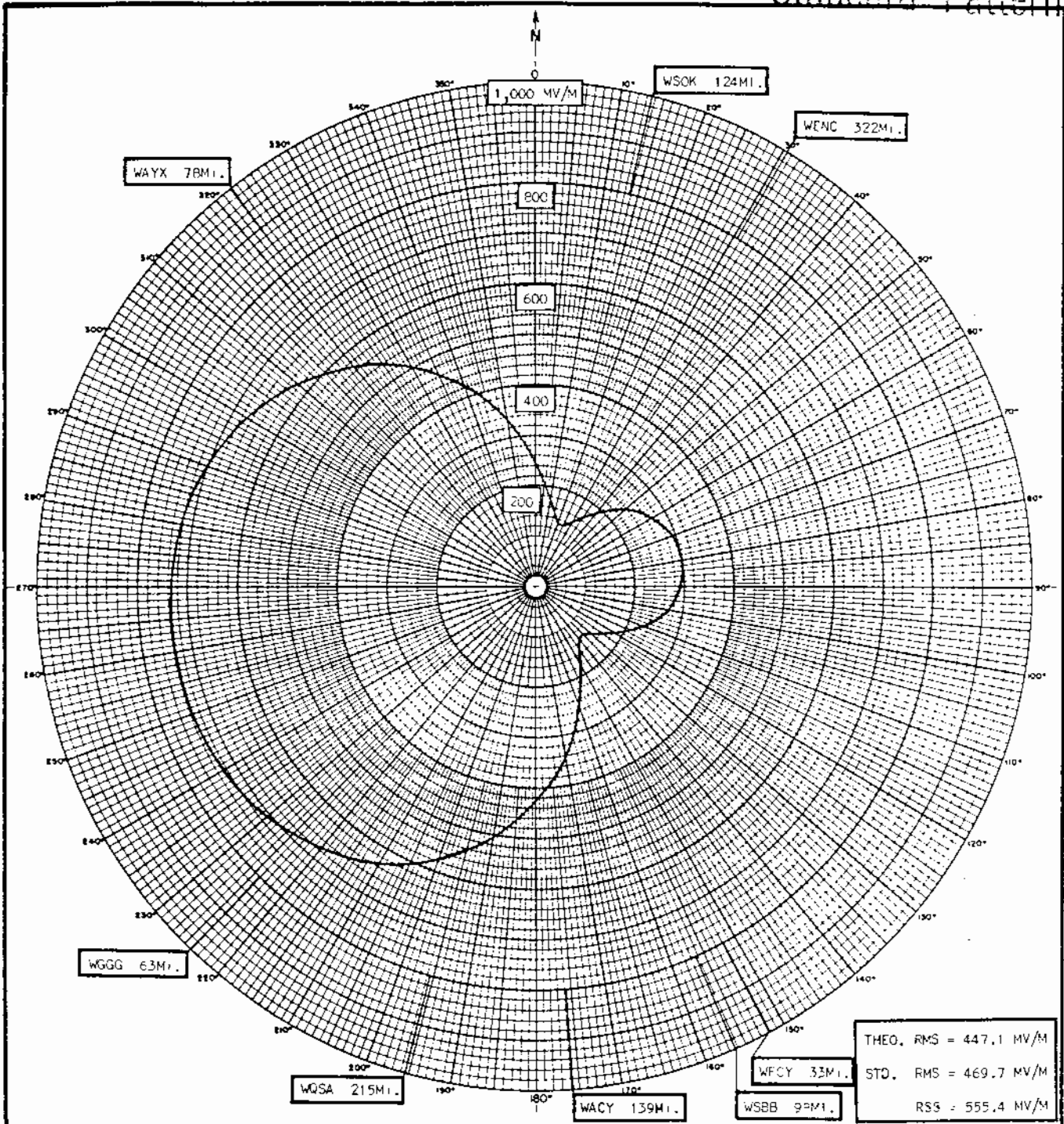
FIELD RATIO: 0.727 1

SPACING AND
ORIENTATION: Elements are spaced 189' (84.4°) on a line bearing 259.6° true

GROUND SYSTEM: 120-98' to 420' equally spaced copper radials plus a 24' square ground screen about each tower. Radials are shortened and bonded to a transverse strap along intersections between towers.

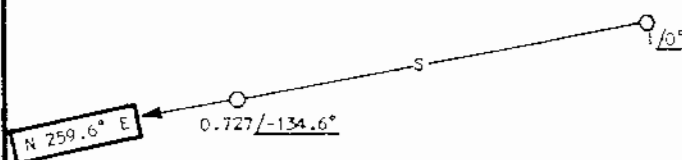
PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL		STANDARD
<u>RMS</u>	<u>RSS</u>	<u>RMS</u>
447.1 mv/m	555.4 mv/m	469.7 mv/m



STANDARD HORIZONTAL PLANE PATTERN

FIGURE 2A



S = 84.4°

G1 = G2 = 93.8°

APPLICANT : W K T Z
 LOCATION : JACKSONVILLE, FLORIDA
 FREQUENCY : 1220 KHZ
 POWER : 5 KW DA - D
 LATITUDE : 30 DEG 19 MIN 25 SEC
 LONGITUDE : 81 DEG 34 MIN 07 SEC
 WHEN USED : DAY TIME
 R.M.S. FIELD : SEE ABOVE
 DATE : APRIL 1974

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

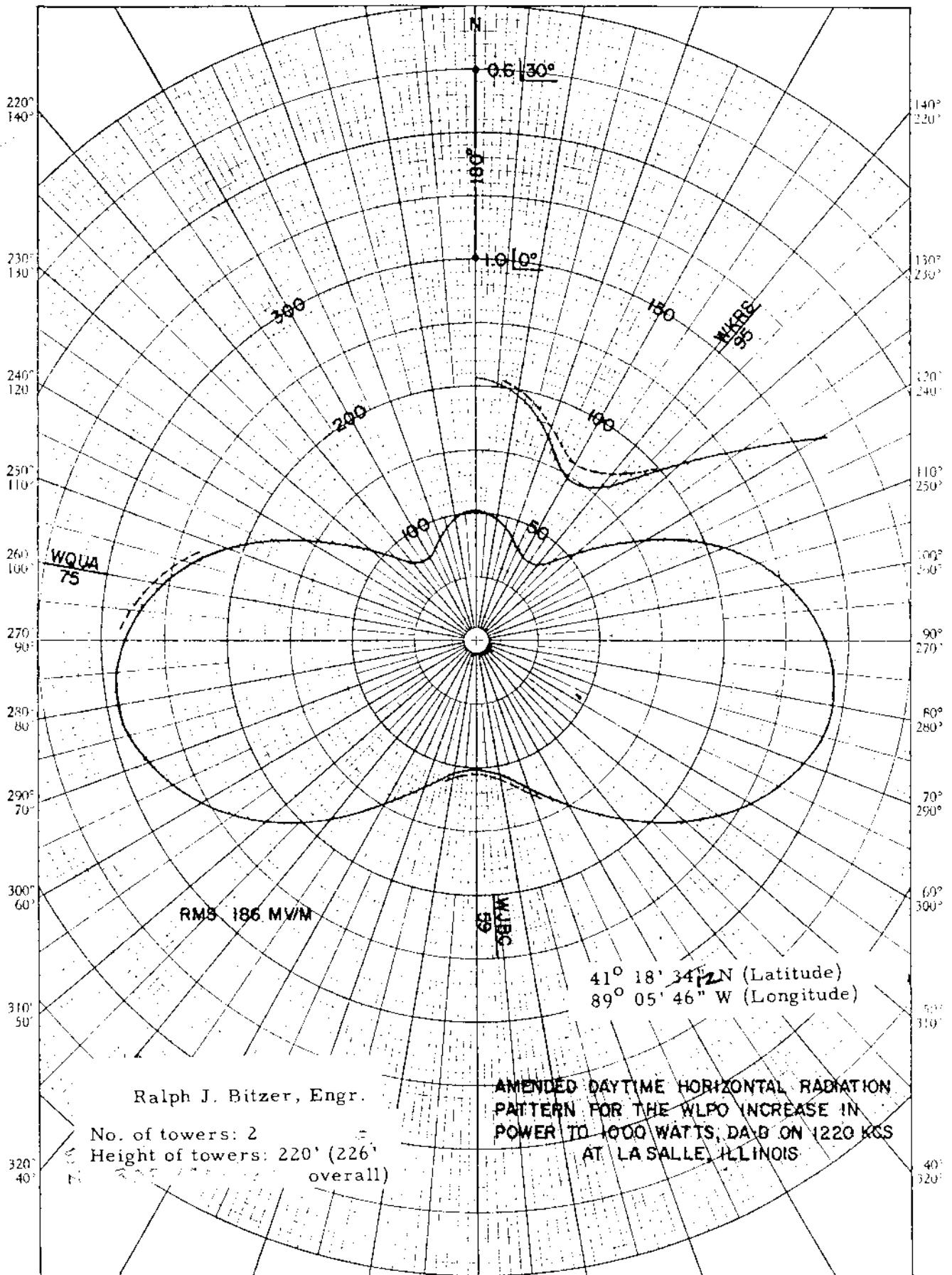
WLPO

PROPOSED
DAY (3-19-56g)

STATION WLPO
LA SALLE, ILLINOIS

1 KW
DA-D

1220 KC



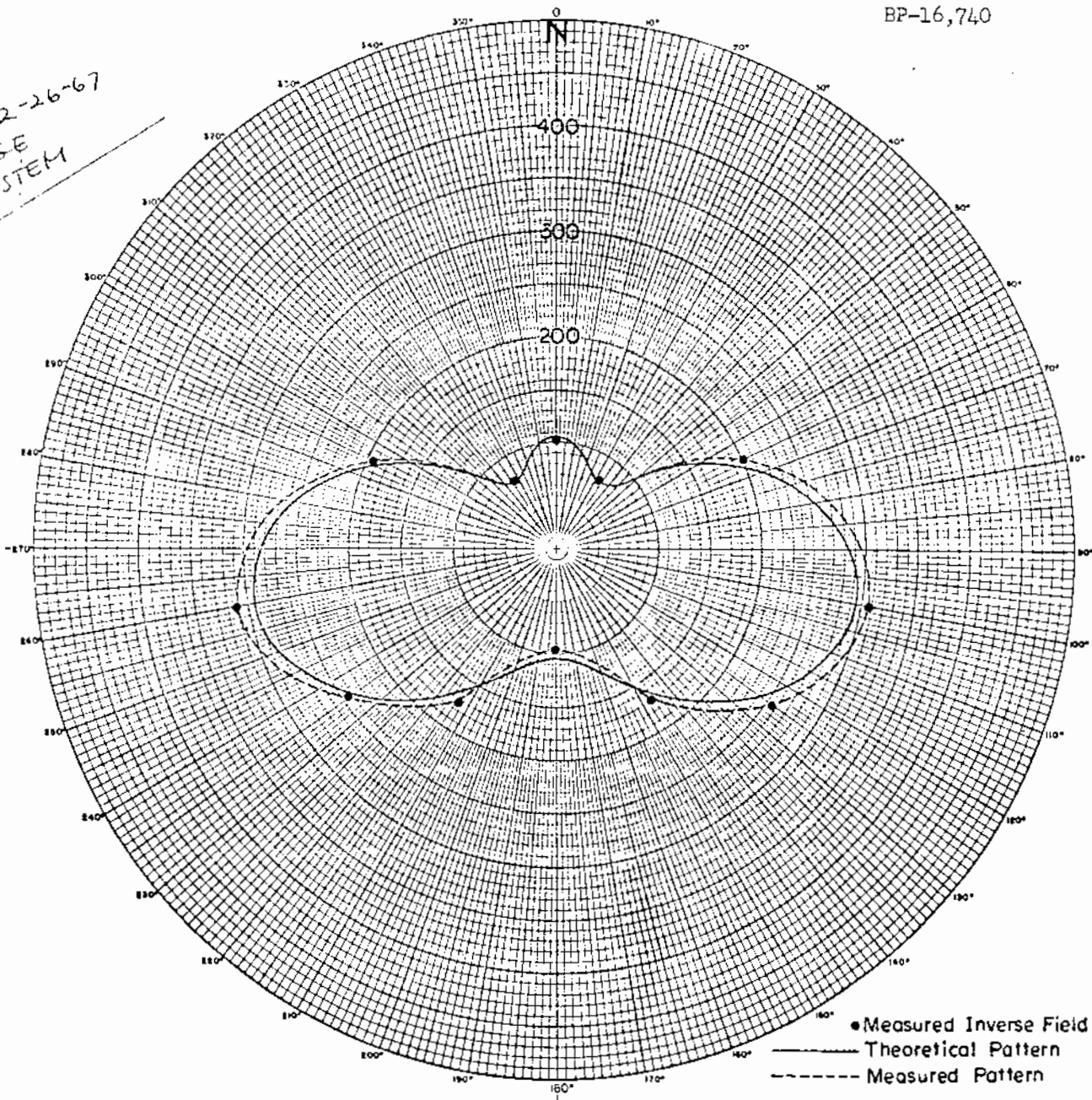
WLPO

Measured Day
(11-28-67ct)

Station WLPO
LaSalle, Illinois

1kw, DA-D, D
1220 kc
BP-16,740

GRANTED
LICENSE 12-26-67
CCV, CHANGE
IN DA SYSTEM



HORIZONTAL RADIATION PATTERN

Theoretical
RMS 186 MV/M

True
0°
0.6 (30°
h = 303' (135°)
180°
110°
h = 220' (98.6°)

APPLICANT :	WLPO
LOCATION :	La Salle, Illinois
FREQUENCY :	1220 KC/S
POWER :	1 KW, DA-D
LATITUDE :	41 DEG. 18 MIN. 13 SEC.
LONGITUDE :	89 DEG. 05 MIN. 46 SEC.
WHEN USED:	Daytime
R.M.S. FIELD:	193 MV/M
DATE :	Sept. 30th, 1967

RALPH J. BITZER
CONSULTING RADIO ENGINEERS

FCC File No. BL-11813
Accepted 11-9-67

Station WLPO
LaSalle, Illinois

1220 kc

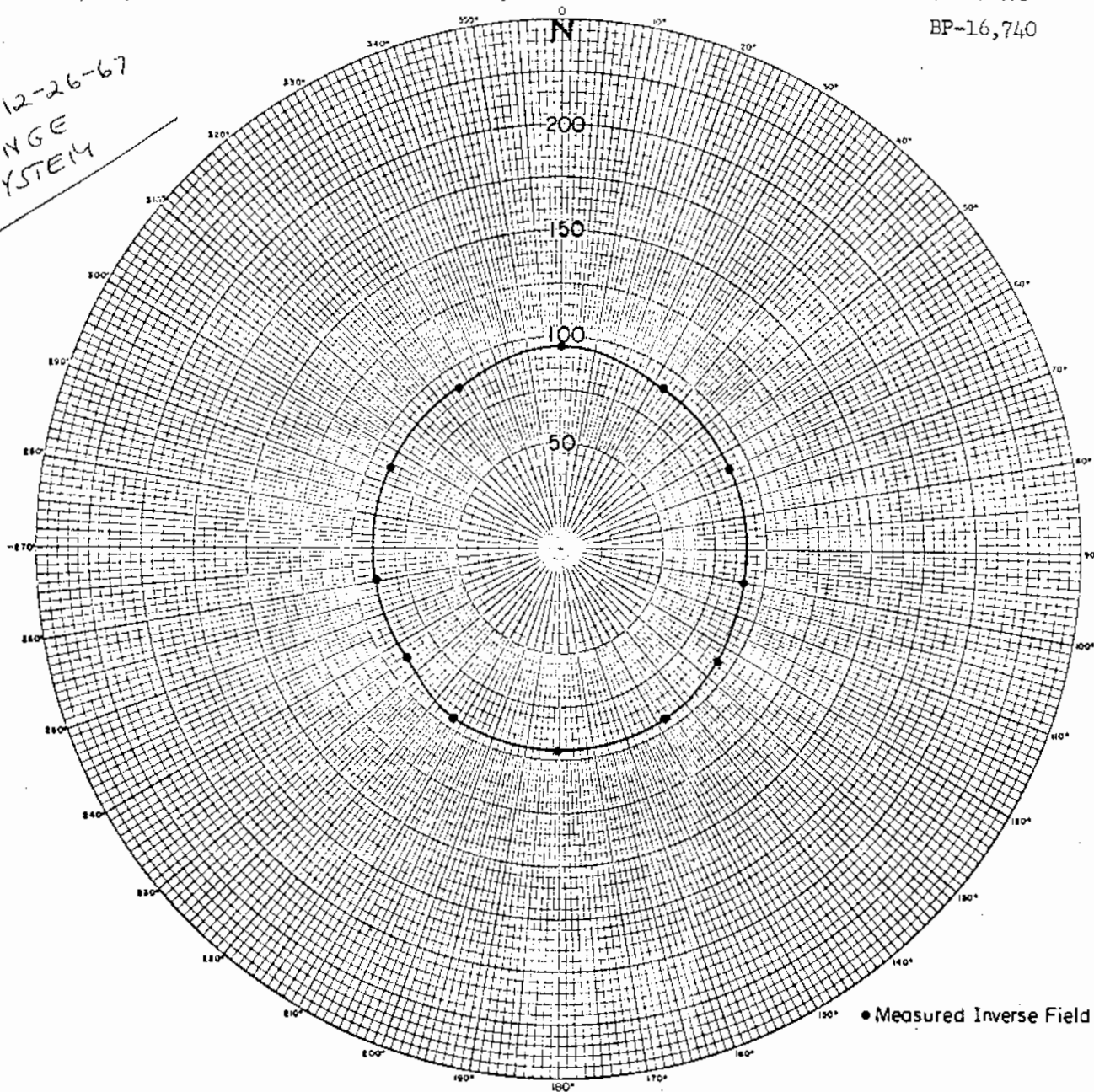
WLP0

Measured Non-DA
(11-28-67ct)

Station WLP0
LaSalle, Illinois

1kw, DA-D, D
1220 kc
BP-16,740

GRANTED
LICENSE 12-26-67
CONV. CHANGE
IN DA SYSTEM



HORIZONTAL RADIATION PATTERN

APPLICANT : WLP0
LOCATION : La Salle, Illinois
FREQUENCY : 1220 KC/M
POWER : 0.25 KW, Non-D
LATITUDE : 41 DEG. 18 MIN. 13 SEC.
LONGITUDE : 89 DEG. 05 MIN. 46 SEC.
WHEN USED: Non-D Proof
R.M.S. FIELD: 92 MV/M
DATE : Sept. 30th, 1967

RALPH J. BITZER
CONSULTING RADIO ENGINEERS

FCC File No. BL-11813
Accepted 11-9-67

Station WLP0
LaSalle, Illinois

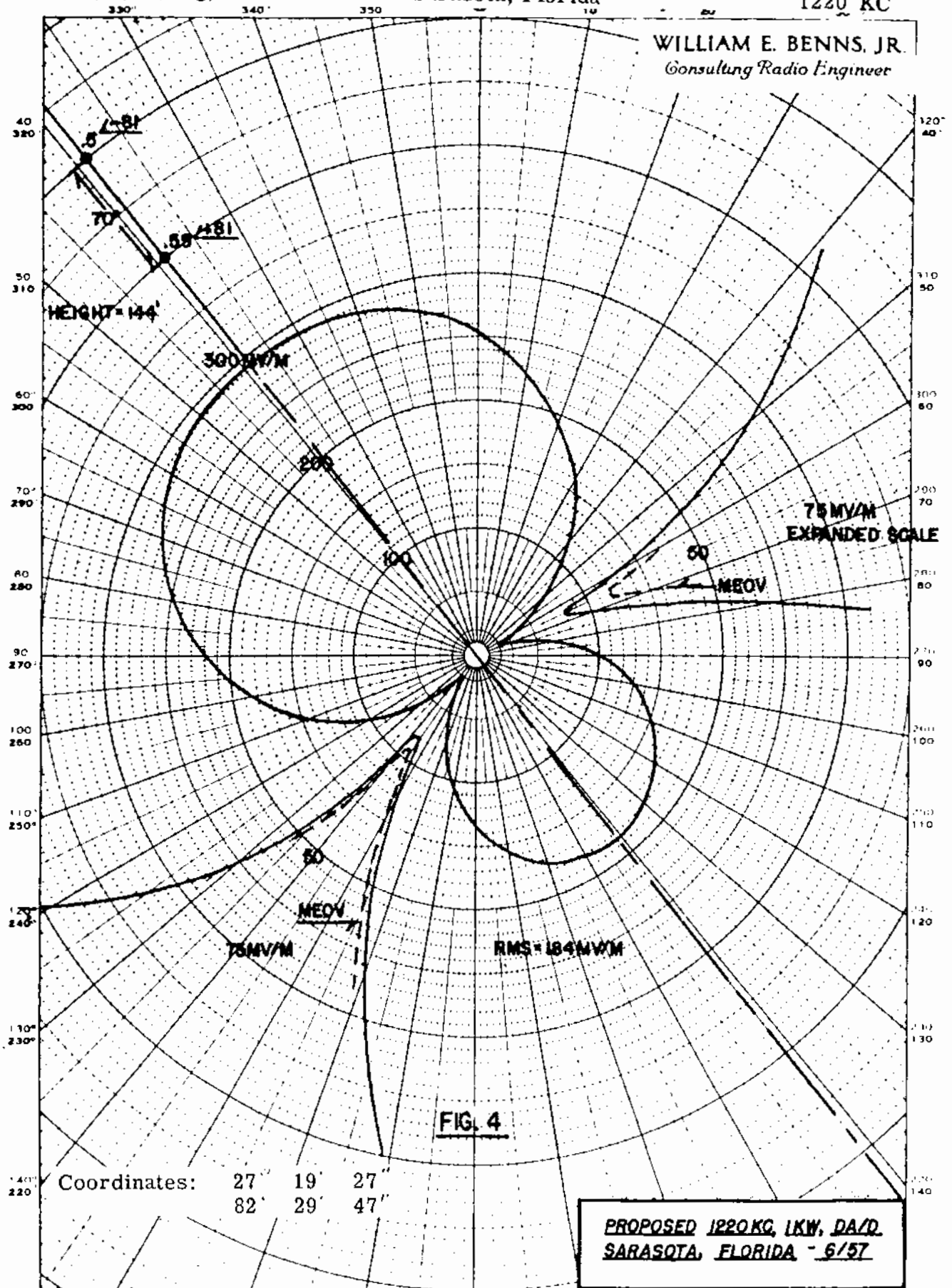
1220 kc

PROPOSED DAY
(10/11/57g)

Sarasota, F12.
New; Radio Sarasota Co.
Sarasota, Florida

WQSA
1kw, DA-D, D
1220 KC

WILLIAM E. BENNS, JR.
Consulting Radio Engineer



FCC File No. BP-11551
Accepted 9/26/57

Radio Sarasota Co.
Sarasota, Florida

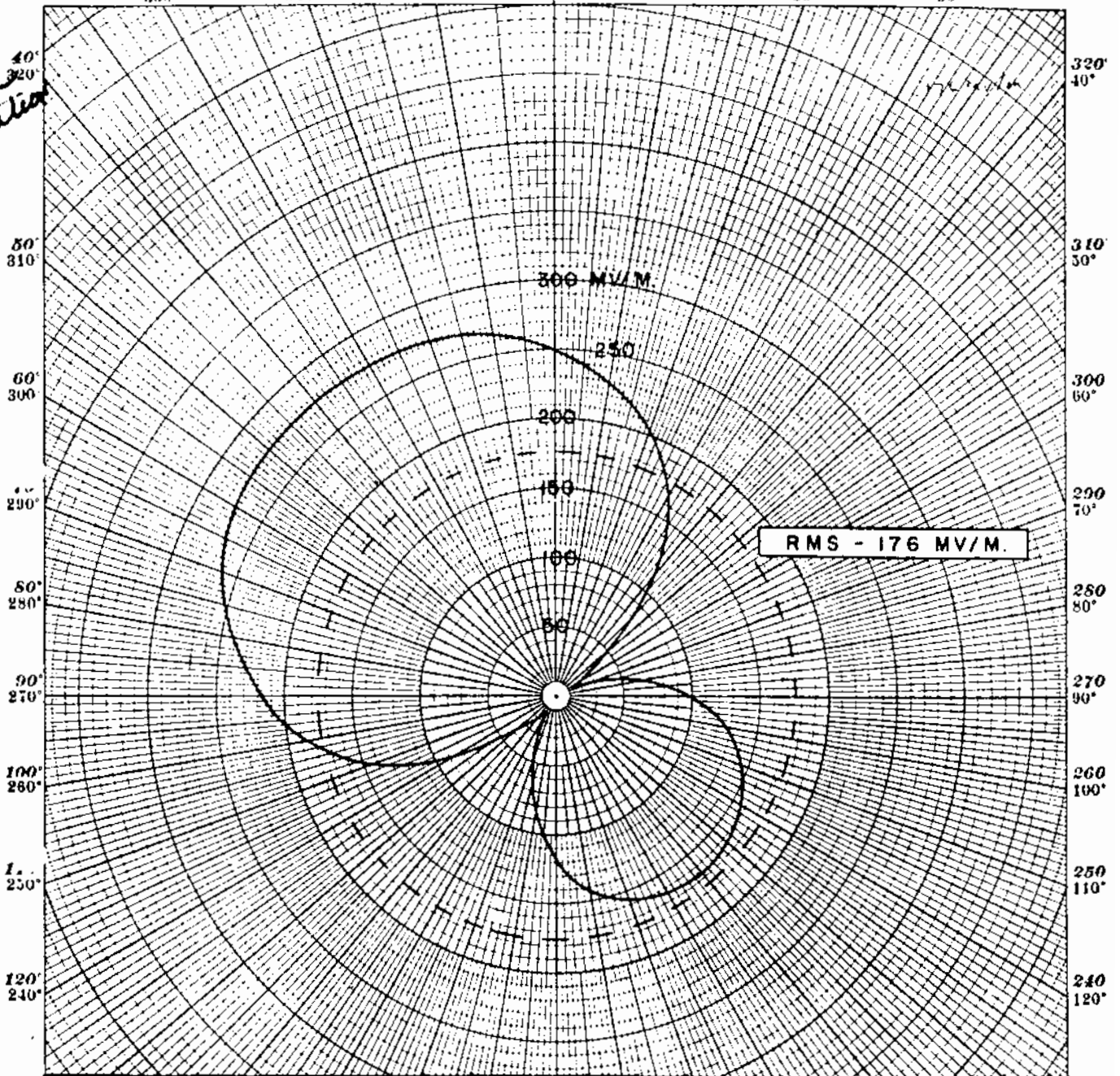
1220 KC

WQSA

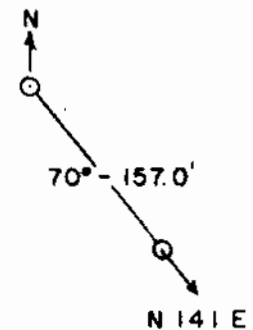
MEASURED DAY
(4-10-61g)

Station WSAF
Sarasota, Florida

1kw, DA-D,D
1220 KC



HORIZONTAL RADIATION PATTERN
MEASURED - DEC., 1960.
WSAF - SARASOTA, FLORIDA
1220 KC. 1 KW. DAY - DA.
LAT. 27° 19' 27"
LONG. 82° 29' 47"



W L A K ELECTRONICS SERVICE, INC.-RADIO ENGINEERS - LAKE LAND, FLORIDA.

FCC File No. BL-8255
Accepted 3-28-61

WSAF
Sarasota, Florida

1220 KC

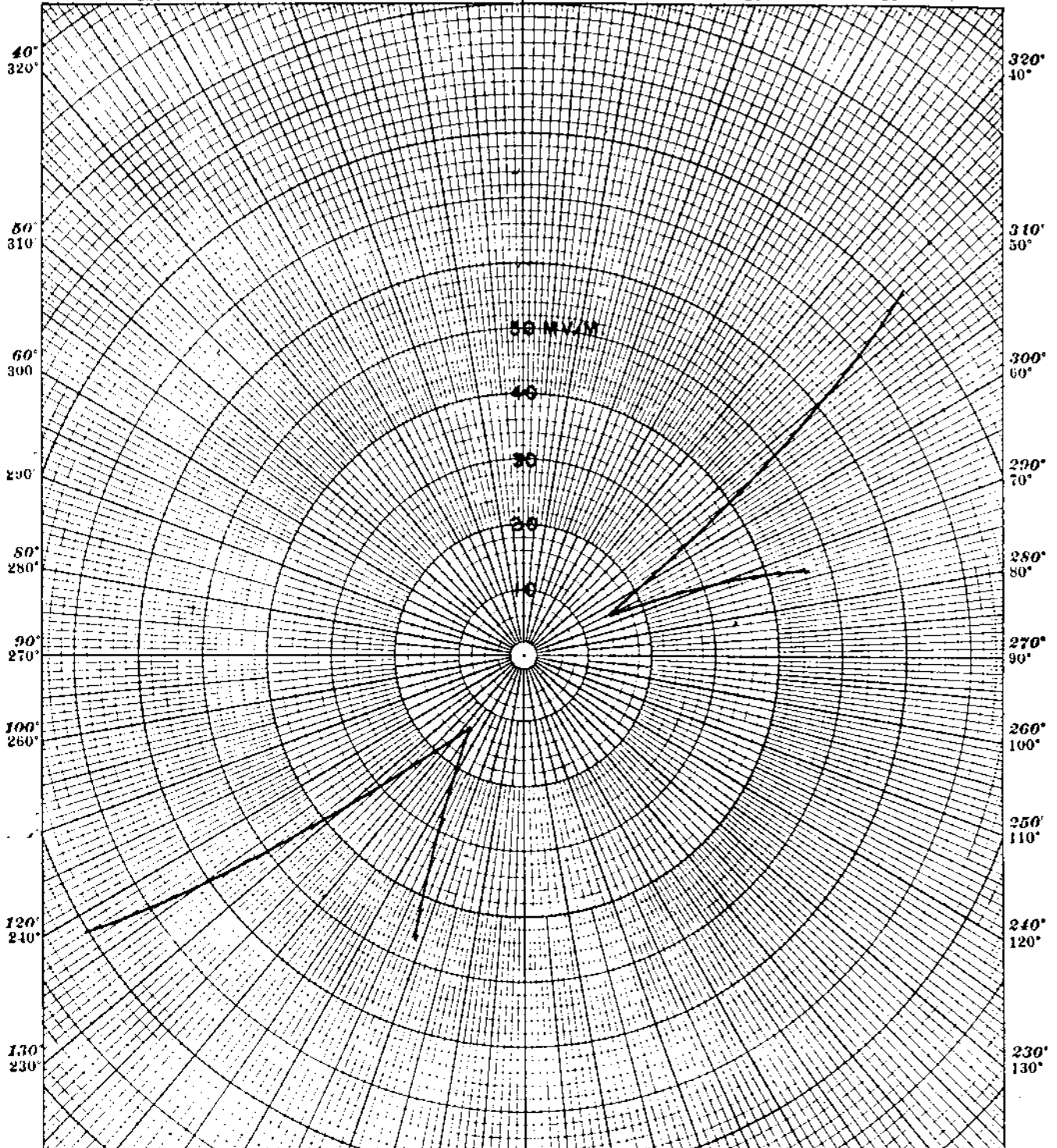
WQSA

MEASURED DAY NULLS
(4-10-61g)

Station WSAF
Sarasota, Florida

1kw, DA-D,D
1220 KC

30° 20° 10° 0 350° 340° 330°



HORIZONTAL RADIATION PATTERN - EXPANDED SCALE.
MEASURED - DECEMBER, 1960.

WSAF - SARASOTA, FLORIDA
1220 KC. 1 KW. DAY - DA.

North Latitude 27° 19' 27"
West Longitude 82° 29' 47"

W L A K ELECTRONICS SERVICE, INC. - RADIO ENGINEERS - LAKE LAND, FLA.

FCC File No. BL-8255
Accepted 3-28-61

WSAF
Sarasota, Florida

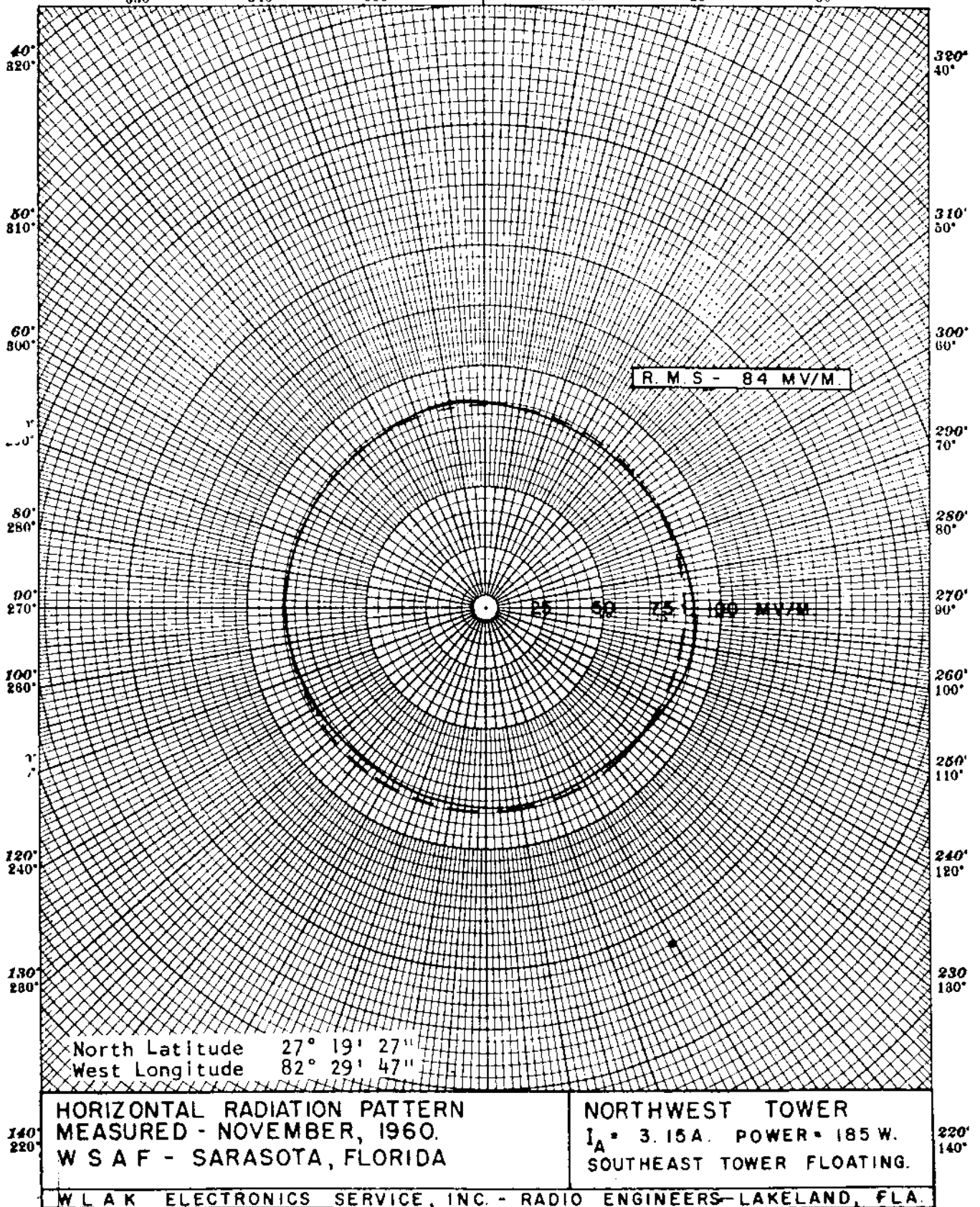
1220 KC

WQSA

MEASURED NON-DA
(4-10-61g)Station WSAF
Sarasota, Florida1kw, DA-D,D
1220 KC

CODEX BOOK COMPANY, INC. NORWOOD, MASSACHUSETTS

NO. 3224 POLAR CO-ORDINATE.

FCC File No. BL-8255
Accepted 3-28-61WSAF
Sarasota, Florida

1220 KC

Proposed Day
(8-24-62ct)

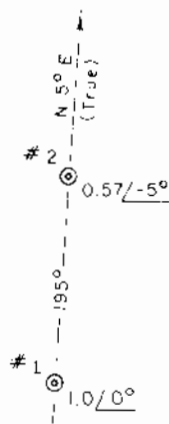
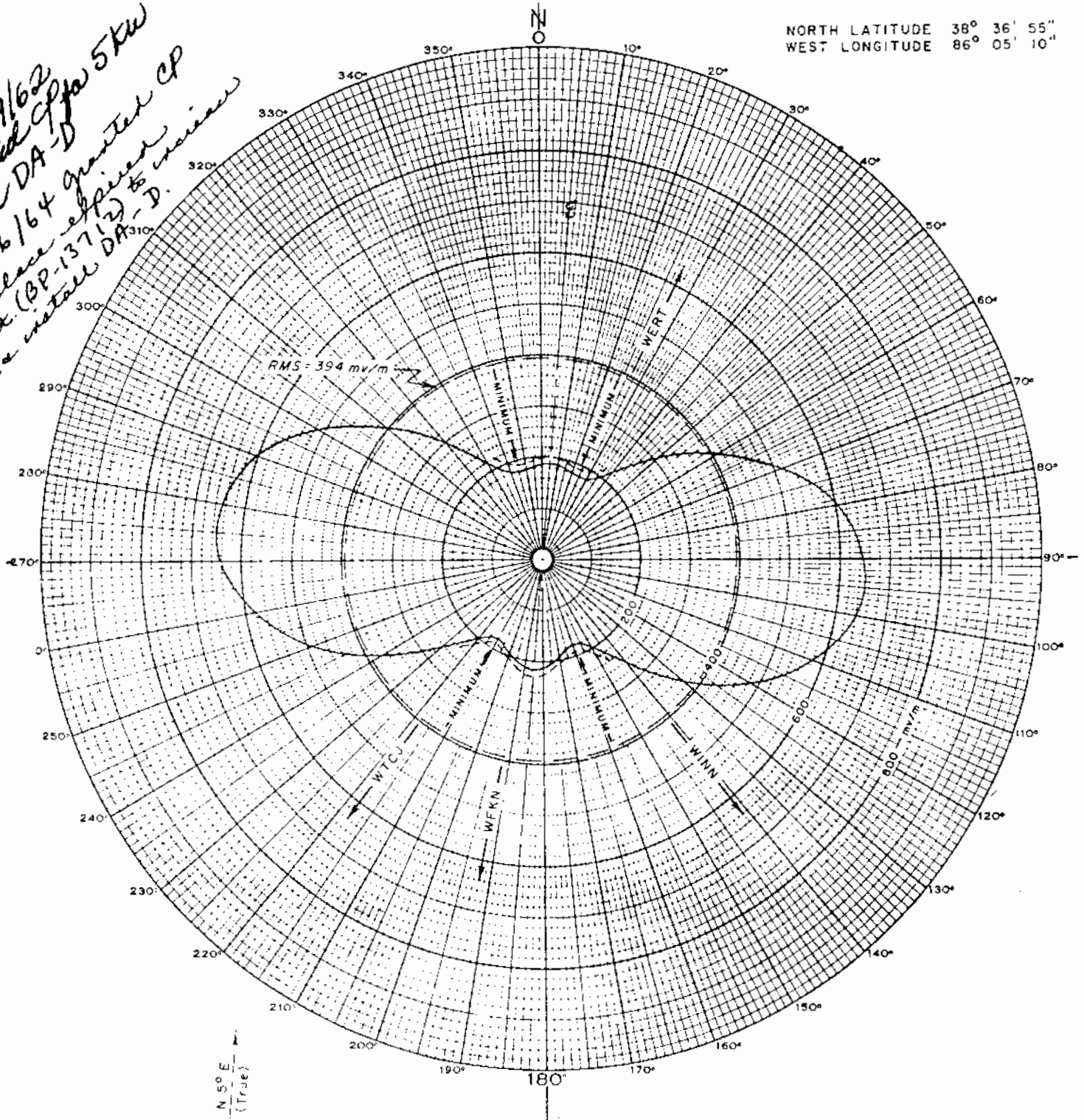
Station WSLM
Salem, Indiana

5kw, DA-D, D
1220 kc

WDL M

NORTH LATITUDE 38° 36' 55"
WEST LONGITUDE 86° 05' 10"

12/19/62
replaced CP for 5kw
and DA-D
2/6/64 granted CP
to replace expired
emit (BP-13712) to install
over & install DA-D.



ANTENNA PLAN

FCC File No. BP-13712
Accepted 8-6-62 Amended

Station WSLM
Salem, Indiana

FIGURE 5
HORIZONTAL RADIATION PATTERN
DON H. MARTIN
WSLM 5 KW-D, DA 1220 KC
SALEM, INDIANA

Prepared by
Lohnes and Culver Washington 4, D.C.
June 1962
1220 kc

WSLM

Measured Day
(5-27-65ct)

Station WSLM
Salem, Indiana

5kw, DA-D, D
1220 kc

IC 8-11-65
NCR PWR
DA-D

Latitude: $38^{\circ} 36' 55''$
Longitude: $86^{\circ} 05' 10''$

RMS = 396 MV/M

$0.57 \angle -5^{\circ}$

$h_p = h_s = 90^{\circ}$

FIGURE 87
HORIZONTAL FIELD INTENSITY
(Directional Pattern)

WSLM
Salem, Indiana

1220kc 5kw DA-D July, 1964

Electronic Laboratories, Inc.

FCC File No. BL-10896
Accepted 4-30-65

Station WSLM
Salem, Indiana

1220 kc

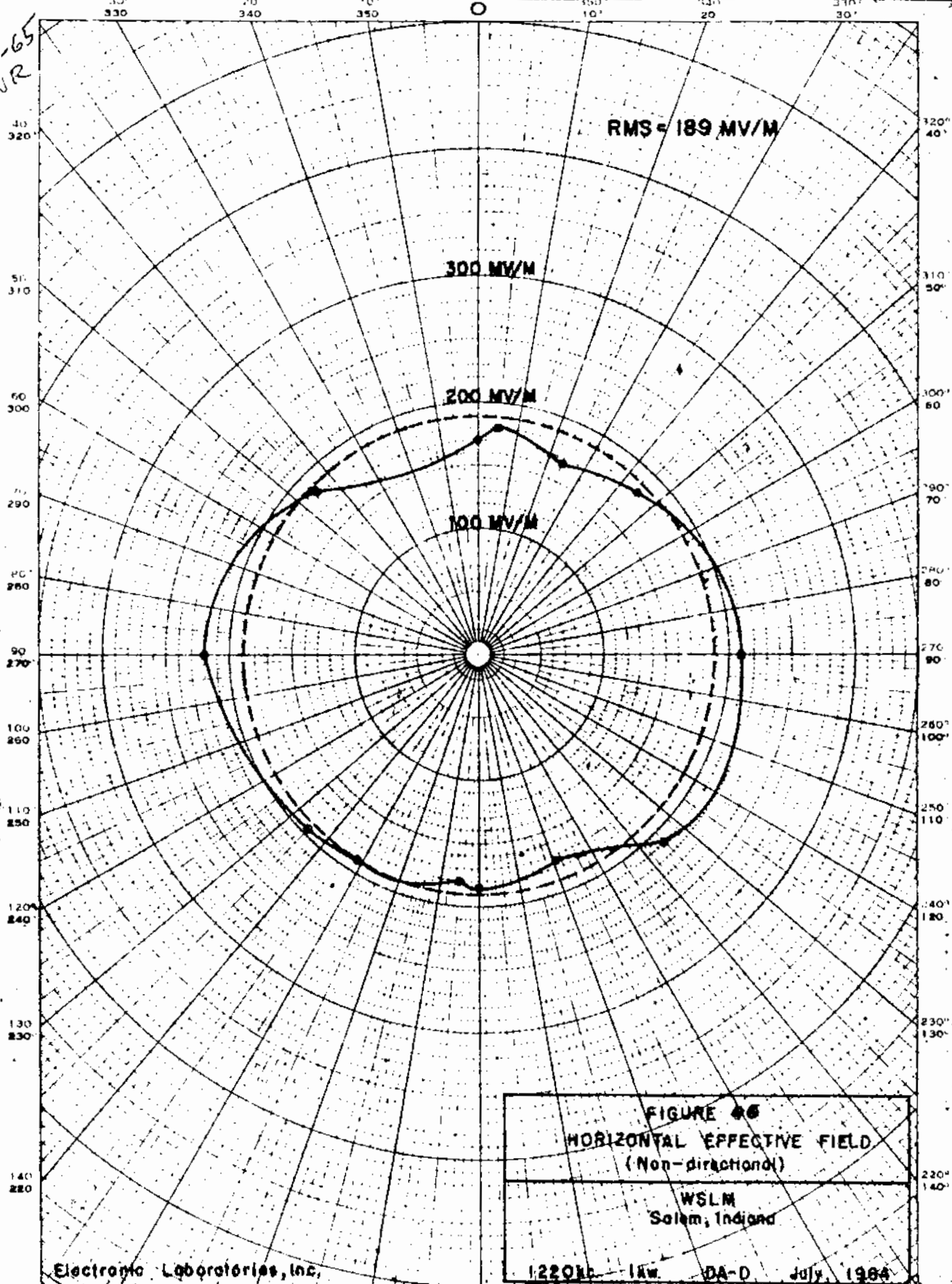
WSLM

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

Station WSLM
Salem, Indiana

5kw, DA-D, D
1220 kc

IC 8-11-65
NCR PWR
DA-D



Electronic Laboratories, Inc.

FCC File No. BL-10896
Accepted 4-30-65

Station WSLM
Salem, Indiana

1220 kc

PROPOSED DAY
(10-25-61ct)

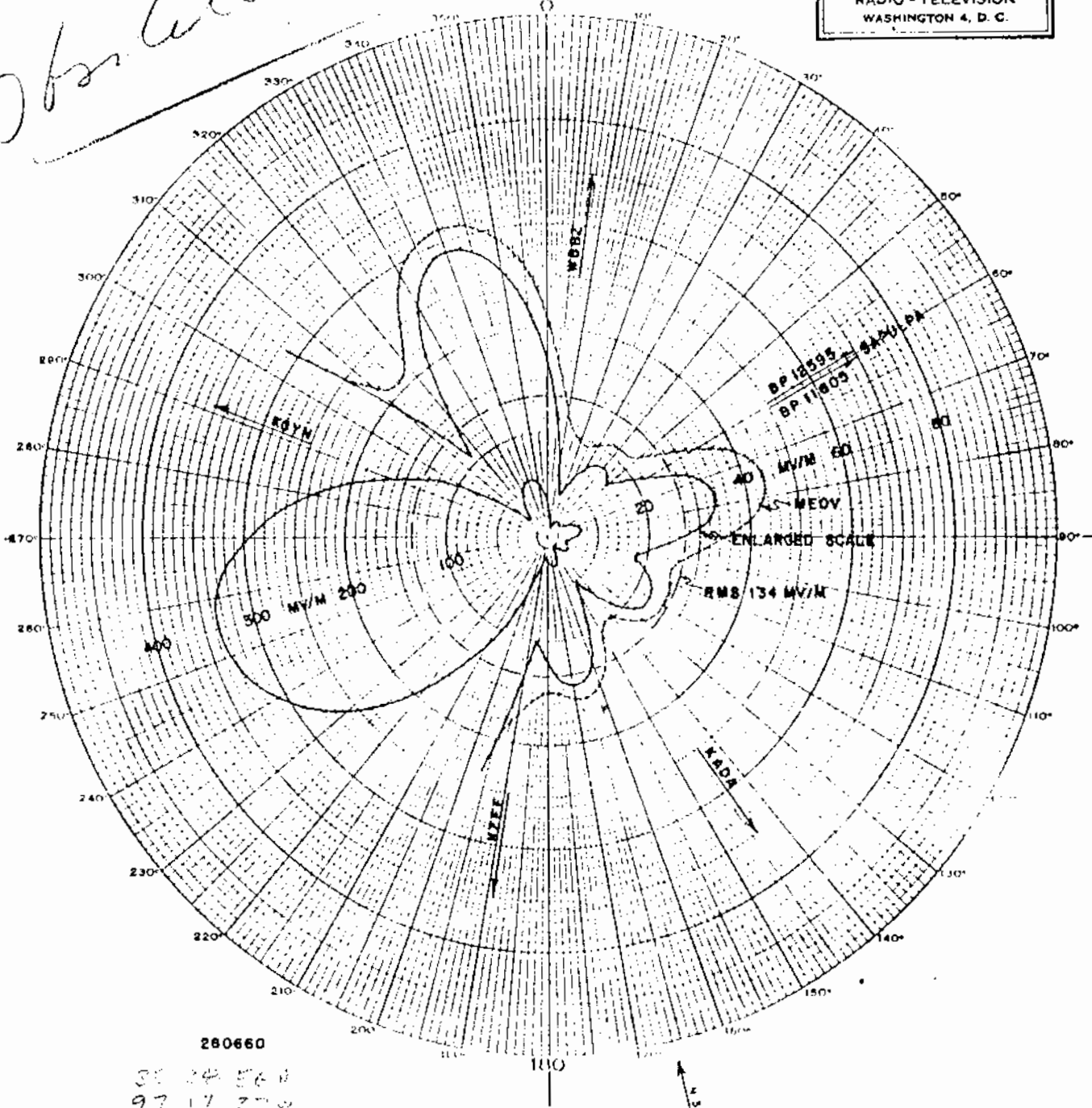
New; Tinker Area B/C Co.
Midwest City, Oklahoma

500w, DA-D, D

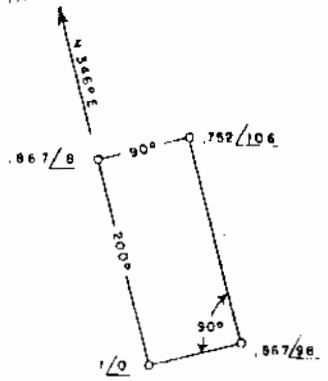
1220 kc

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

Obs. ltr



COMPUTED
HORIZONTAL PLANE PATTERN
UNATTENUATED FIELD AT ONE MILE
FOR PROPOSED STATION
AT MIDWEST CITY, OKLAHOMA
1220 KC, 500 W, DA-D
JUNE 1960



FCC File No. BP-12410 Amended
Accepted 9-18-61

New; Tinker Area B/C Co.
Midwest City, Oklahoma

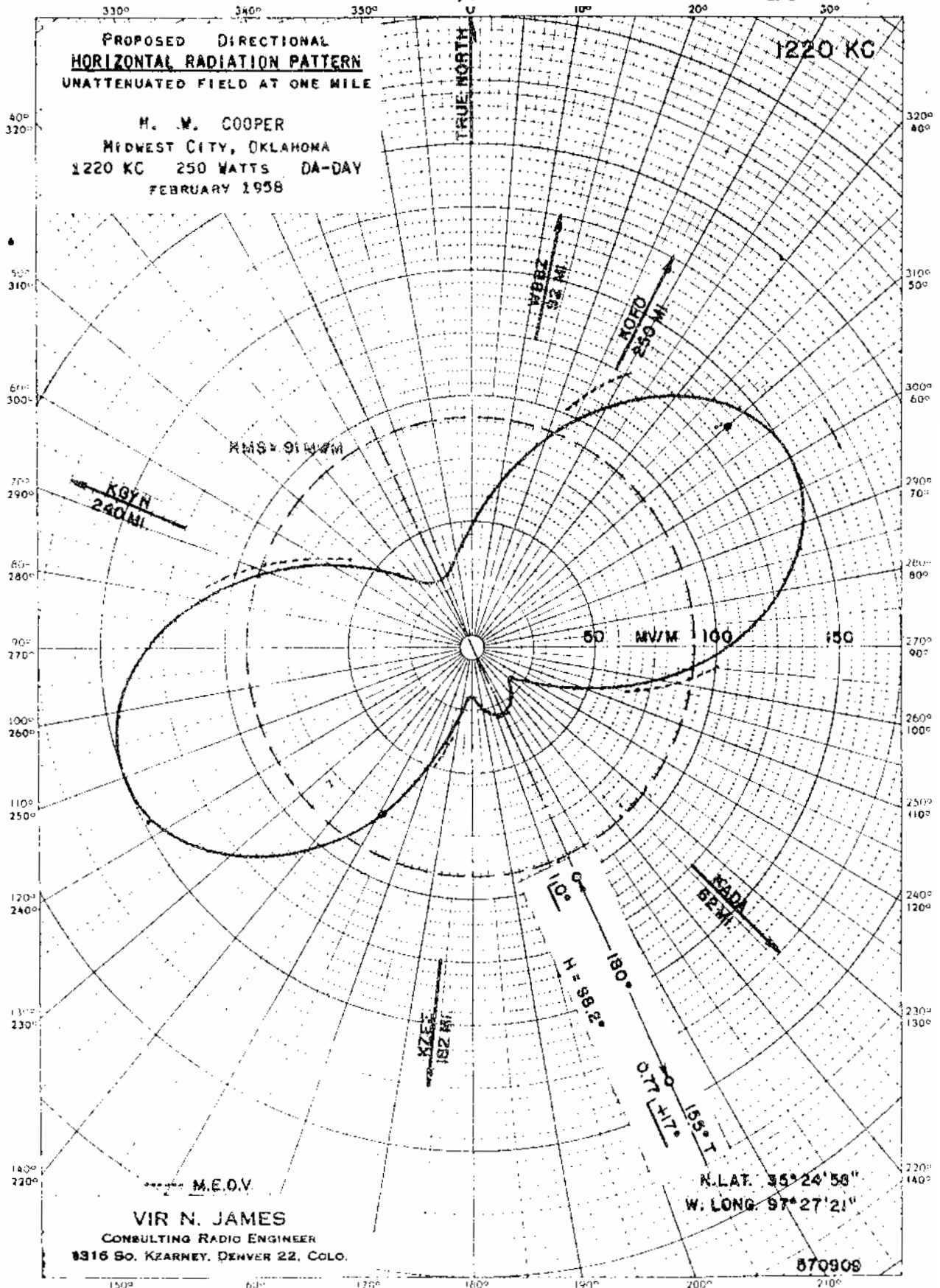
1220 kc

Midwest City, Okla

PROPOSED DAY
(4-22-59g)

New; M.W. Cooper
Midwest City, Oklahoma

250w, DA-D,D
1220 KC



FCC File No. BP-12887
Accepted 4-2-59

M.W. Cooper
Midwest City, Oklahoma

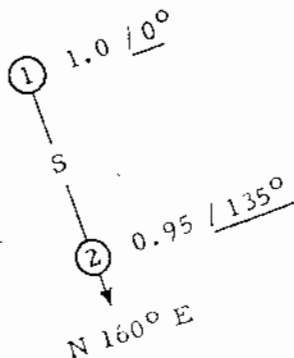
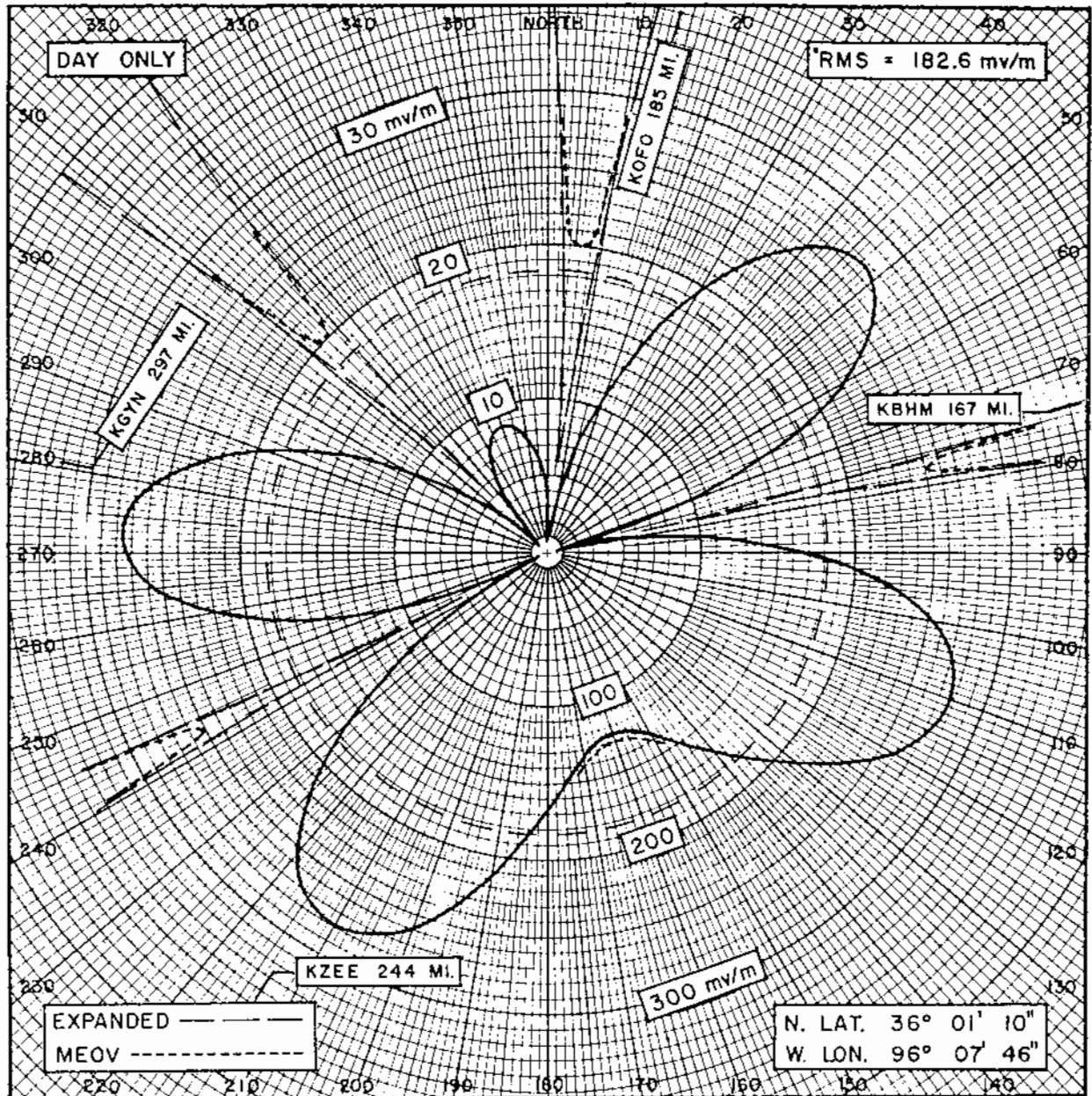
1220 KC

Sapulpa, Okla

PROPOSED DAY
(5-28-59g)

New; Creek County B/C Co.
Sapulpa, Oklahoma

1kw, DA-D,D
1220 KC



S = 352° = 762'

G = 90° = 200'

CREEK COUNTY BROADCASTING COMPANY
PROPOSED RADIO STATION
SAPULPA, OKLAHOMA
1220 KC DA-D 1000 WATTS

581117-2

MERL SAXON
CONSULTING RADIO ENGINEER
LUFKIN, TEXAS

FIGURE B

FCC File No. BP-11605
Accepted 5-6-59 (Amended)

Creek County Broadcasting Company
Sapulpa, Oklahoma

1220 KC

CHARACTERISTICS OF A REGION 2 BROADCASTING STATION IN THE BAND 535 - 1 605 kHz

PART I GENERAL INFORMATION

ⓐ Administration

CANADA

Sheet No. 420

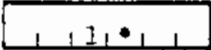
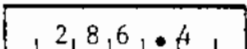
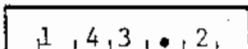
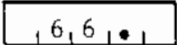
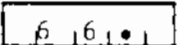
Date | 830705

Assigned frequency (kHz)		(02)	1 2 3 0
Transmitting station	Name of the station	(03)	W A I N W R I G H T A B
	Call sign	(04)	
	Additional Identification	(05)	
	Station class	(06)	C
	Operational Status	(07)	P
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	11 0 W 51 0 5 2 N 125 12 N 49 31 W

11 a) New assignment ☒ b) Modification of characteristic of an assignment recorded in the plan ☐ c) Cancellation of an assignment ☐
 12 Modification under Section 4.2.14 Yes ☐ No ☐
 13 Date of bringing into service or cessation of operation

--	--	--

Year Month Day

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

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

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

8 0 1 0

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

PART I GENERAL INFORMATION

① Administration

CANADA

Sheet No.

416

Date

830110

Assigned frequency (kHz)		②	1, 2, 3, 0
Transmitting station	Name of the station	③	CANMORE AB
	Call sign	④	
	Additional Identification	⑤	
	Station class	⑥	C
	Operational Status	⑦	P
Country		⑧	CAN
Geographical coordinates of the transmitting station		⑨	1 1 5W, 2 0 5, 8, 5 1 NO 4 4 2

⑪ a) New assignment ☐ b) Modification of characteristic of an assignment recorded in the plan ☐ c) Cancellation of an assignment ☒

⑫ Modification under Section 4.2.14

Yes ☐No ☐

⑬ Date of bringing into service or cessation of operation

Year Month Day

STATION PARAMETERS	DAYTIME OPERATION	NIGHT-TIME OPERATION
Station power (kW)	⑳ 1 .	㉑ . 2 5
r.m.s. value of radiation for station power (mV/m at 1 km)	㉒ 3 0 7 . 3 2	㉓ 1 5 3 . 6 6
Antenna type	㉔ A	㉕ A
Simple vertical antenna electrical height (degrees)	㉖ 9 0 .	㉗ 9 0 .

④ Remarks

COORDINATION UNDER ARTICLE 4:

COUNTRY

USA

IN PROGRESS

ACCEPTANCE OBTAINED

CFBV

#177
Description Sheet
(6-28-63ct)

New Station
Smithers, B.C.

250w, 1kw-LS, U, Class IV
1230 kc

NEW IN OPERATION
CHG. LIST 190

DESCRIPTION SHEET

OMNIDIRECTIONAL ANTENNA

<u>STATION CALL:</u>	NEW
<u>MAIN STUDIO:</u>	Smithers, B. C.
<u>FREQUENCY:</u>	1230 Kcs.
<u>POWER:</u>	1000/250 Watts Day Night
<u>CLASS:</u>	1V
<u>TIME:</u>	Unlimited
<u>NOTIFICATION LIST # 177</u>	Date: <u>May 7, 1963</u>
<u>GEOGRAPHICAL LOCATION: OF THE ANTENNA SYSTEM.</u>	North Lat. $54^{\circ} 47' 30''$ West Long. $127^{\circ} 11' 30''$
<u>ANTENNA CHARACTERISTICS</u>	Height 135' (60 ⁰) Type Single steel, guyed, uniform. tower no top loading.
<u>GROUND SYSTEM:</u>	120 radials, spaced 3 ⁰ buried 8" 0.4 wavelength long
<u>EXPECTED EFFICIENCY:</u>	180 mV/m @ 1 m. for 1 KW 90 mV/m @ 1 m. for 250 W



DEPARTMENT OF TRANSPORT

CFGR
1230
REFER TO FILE NUMBER

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CFGR
Main Studio: Gravelbourg, Saskatchewan
Frequency: 1230 KC
Power: 250 watts
Class: IV
Time: Nighttime Operation only

Notification List No. 107

Dated: December 10, 1956.

Geographical Location:

North Latitude: 49° 52' 20"

West Longitude: 106° 28' 34"

Antenna Characteristics:

Height: 245 feet (above insulator), 110 degrees

Expected Efficiency: 200 mv/m at 1 mi. for 1 KW

or: 100 mv/m at 1 mi. for $\frac{1}{4}$ KW

Ground System: 120 radials spaced every 3° about the tower. The length of radials over an arc of 192° will vary between 690 feet and 350 feet. The remaining radials will be 690 feet long. Effective area equals 120 radials 554 feet long equally spaced about the tower.

Type of element: Uniform triangular construction, guyed, base insulated.

#116

Schefferville, Que.

CFKL

DESCRIPTION SHEET
(3-3-58g)New Station
Schefferville, Quebec250w, U, Class IV
1230 KCDESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: New
Main Studio: Schefferville, Quebec
Frequency: 1230 Kc/s
Power: 0.25 KW
Class: IV
Time: U
Notification Reference: 116, Date: October 30, 1957

Geographical Location:

North Latitude: $54^{\circ} 47' 15''$ West Longitude: $66^{\circ} 49' 20''$

Antenna Characteristics:

Height: 175 ft. 78.8 degrees

Expected Efficiency: 93 mv/m at 1 mi. for .25 KW

186 mv/m at 1 mi. for 1 KW

Ground System:

120 radials spaced every 3° extend 320 feet from the base of the tower. Radials are #10 AWG soft copper wire buried to a depth of approximately 8 inches.

Type of Element:

Guyed steel tower, uniform cross section, base insulated for series feed.

NOV 19 1952

CFPA
1230

Air Services
Telecommunications Division



DEPARTMENT OF TRANSPORT
OTTAWA

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CFPA
Main Studio: Port Arthur, Ontario.
Frequency: 1230 Kc/s.
Power: 0.25 Kw.
Class: III
Time: U

Notification Reference: MARBA Annex 3

Geographical Location:

North Latitude: $48^{\circ} 24' 40''$
West Longitude: $89^{\circ} 15' 37''$

Antenna Characteristics:

Height: 300 ft. 145 degrees

Expected Efficiency: 108 mv/m at 1 mi. for
0.25 Kw.

or: 216 mv/m at 1 mi. for
1 Kw.

ALLOCATION SECTION

Ground System:

120 radials each 500 feet long, laid
on top of ground (muskeg).

Type of Element:

Self-supporting, square cross-section
steel tower.

NOV 22 1952
STANDARD TIME BUREAU
STANDARD TIME BUREAU

November 19, 1952

11

CFYT

DESCRIPTION SHEET
(8-8-59g)

Station CFYT
Dawson, Y. T., Canada

100w, U, Class IV
1230 KC

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CFYT

Main Studio: Dawson, Y.T.

Frequency: 1230 Kc/s

Power: 100 watts

Class: U

Time:

Notification List No.: 71 Date: August 1, 1952

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM:

North Latitude: 64° 03' 18"

West Longitude: 139° 23' 35"

ANTENNA CHARACTERISTICS:

Height: 60 feet degrees

Type of Element: T-type

Ground System: Buried wire system

Expected Efficiency:

39 mv/m at 1 mile for 100 watts

or: 125 mv/m at 1 mile for 1 kw.

Description Sheet
(1-29-68ct)

New Station
Merritt, B.C.

250w, 1kw-LS, U, Class IV
1230 kc

CJNL

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

STATION CALL: NEW
TRANSMITTER SITE: MERRITT, B. C.
MAIN STUDIO: KAMLOOPS, B. C..
FREQUENCY: 1230 kHz
POWER: 1 kW Day, 0.25 kW Night
CLASS: IV
TIME: U
NOTIFICATION LIST: 236 DATE: December 20, 1967

GEOGRAPHICAL LOCATION:

Latitude 50° 06' 29" North
Longitude 120° 46' 06" West

ANTENNA CHARACTERISTICS:

Height above the base insulator: 200 feet (90°)

Type of Element: A guyed steel tower,
uniform cross section,
base insulated for series
feed.

Ground System: 120 equally spaced radials
of #10 B & S gauge bare
soft copper wire, buried
approximately 8", extending
from the base of the tower
for a distance of 320'
(0.4 wavelength)

Expected Efficiency: 190 mv/m at 1 mile for 1 kW
95 mv/m at 1 mile for 0.25 kW

D. E. M. ALLEN, P. ENG.

BROADCAST CONSULTING ENGINEER

Nov 25 1952

CKLD
1230

AIR SERVICES
TELECOMMUNICATIONS DIVISION
(5-10-90)



DEPARTMENT OF TRANSPORT

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CKLD
Main Studio: Thetford Mines, Quebec.
Frequency: 1230 Kc/s.
Power: 0.25 Kw.
Class: IV
Time: U

Notification Reference: NARBA Annex 3

Geographical Location:

North Latitude: $46^{\circ} 04' 58''$
West Longitude: $71^{\circ} 17' 38''$
16 13

REGISTRATION SECTION
DEC 2 1952
FEDERAL BUREAU
STANDARD TIME DIVISION

Antenna Characteristics:

Height: 133 ft. 59.8
Expected Efficiency: 92.5 mv/m at 1 mi. for 0.25 Kw.
or: 185 mv/m at 1 mi. for 1 Kw.

Ground System:

120 radials each 320 feet long, equiangularly spaced.
Wires of #10 A.W.G. soft copper wire buried to a depth of
approximately 8 inches.

Type of Element:

Steel tower of uniform square cross-section construction.

November 25, 1952

#202

CKMP

Description Sheet
(10-26-65ct)Station CKMP
Midland, Ontario250w, 1kw-LS, U, Class IV
1230 kcDESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

STATION CALL : CKMP

MAIN STUDIO : Midland, Ontario

FREQUENCY : 1230 Kc/s

POWER : 1 KW - Day/.25 KW - Night

CLASS : IV

TIME : Unlimited

NOTIFICATION L ST NO. 202

DATE: July 16, 1965

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM:

North Latitude: 44° 43' 33"

West Longitude: 79° 53' 38"

ANTENNA CHARACTERISTICS

HEIGHT ABOVE INSULATOR 150 feet (67.5 degrees)

TYPE OF ELEMENT Guyed uniform cross-section, base insulated,
series fed, no top loading.GROUND SYSTEM 120 evenly spaced radials of No. 10 AWG,
bare soft drawn copper wire, buried to a
depth of 8 inches and extending to a distance
of no less than 235 feet (.296 wavelength).
Area covered is equivalent to that of Standard
System with 320 feet (.4 wavelength) radials.

EXPECTED EFFICIENCY 182 MV/M for 1 KW

91 MV/M for .25 KW

Oficina Interamericana de Radiog. PAU
OIR/NARBA 2942 Canada C. 3007
La Habana 25.VIII.65

#120
DESCRIPTION SHEET
(2-2-59g)

Midland, Ontario, Can.

CKMP

New Station
Midland, Ontario, Canada

250 w, U, Class IV
1230 KC

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: New
Main Studio: Midland, Ontario
Frequency: 1230 Kc/s
Power: 0.25 KW
Class: IV
Time: U
Notification Reference: #128 Date December 23, 1958

Geographical Location:

North Latitude: $44^{\circ} 43' 35''$

West Longitude: $79^{\circ} 53' 38''$

Antenna Characteristics:

Height: 150 ft. 67.5 degrees

Expected Efficiency: 91 mv/m at 1 mi. for .25 KW

182 mv/m at 1 mi. for 1 KW

Ground System:

120 radials spaced every 3° extend to a minimum distance of 235 feet (.295 wavelength). The proposed ground system covers an area equivalent to 120 radials spaced every 3° extended to a distance of 320 ft. (.4 wavelength). The ground wires will be #10 AWG soft copper wire buried to a depth of approximately 8 inches.

Type of Element:

Guyed steel tower, uniform cross section, base insulated for series feed.

CKTK

1180

Description Sheet
(10-30-63ct)

New Station
Kitimat, B. C.

250w, 1kw-LS, U, Class IV
1230 kc

HOYLES, NIBLOCK AND ASSOCIATES

DESCRIPTION SHEET

Omnidirectional Antenna

Station Call: New

Location: Kitimat, B. C.

Frequency: 1230 kc/s

Power: 1 kw D/0.25 kw N.

Class: IV Operation - Unlimited

Notification List No. 180 Date: September 16, 1963

Geographic Coordinates: 54° 03' 05" N. Latitude
Antenna System 128° 40' 50" W. Longitude

Antenna Characteristics: Height 150' (67°)

Type of Element: A guyed uniform cross-section single-tower base-insulated and fitted for series feed.

Ground System: 120 - 0.4λ copper radials buried approximately 8" below grade

Expected Efficiency: 183 mv/m at 1 mile for 1 kw
91.5 mv/m at 1 mile for 0.25 kw



#1

CKVD

DESCRIPTION SHEET
(3-23-59g)

Station CKVD
Val D'or, Quebec, Canada

250w, U, Class IV
1230 KC

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CKVD

Main Studio: Val D'or, Quebec

Frequency: 1230 Kc/s

Power: 250 watts

Class: IV

Time: U

Notification List No. 7

Date: May 1942

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM:

North Latitude: $48^{\circ} 08' 18''$

West Longitude: $77^{\circ} 49' 42''$

ANTENNA CHARACTERISTICS:

Height: 133' $\pm$ 64 degrees

Type of Element: Guyed, uniform
cross-section, base insulated,
series fed.

Ground System: 120 radials of #10
AWG soft drawn bare copper wire,
length 320' buried 8" approximate

Expected Efficiency:

90 mv/m at 1 mile

or

180 mv/m at 1 mile for 1 kw.

DEC 20 '52

AIR SERVICES

Telecommunications Division
(5-10-112)



CANADA

DEPARTMENT OF TRANSPORT
OTTAWA

VOAR
1230

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: VOAR
Main Studio: St. John's, Newfoundland
Frequency: 1230 Kc/s.
Power: 0.25 Kw.
Class: IV
Time: U

Notification Reference: NARBA Annex 3

Geographical Location:

North Latitude: $47^{\circ} 33' 52''$
West Longitude: $52^{\circ} 43' 26''$

Antenna Characteristics:

Height: 100 ft. 45 degrees
Expected Efficiency: 65 mv/m at 1 mi. for 0.25 Kw.
or: 130 mv/m at 1 mi. for 1 Kw.

Ground System:

30 radials approximately 60 feet long and buried six inches.

Type of Element:

Uniform, triangular construction, 20-foot sections,
base insulated, series feed.

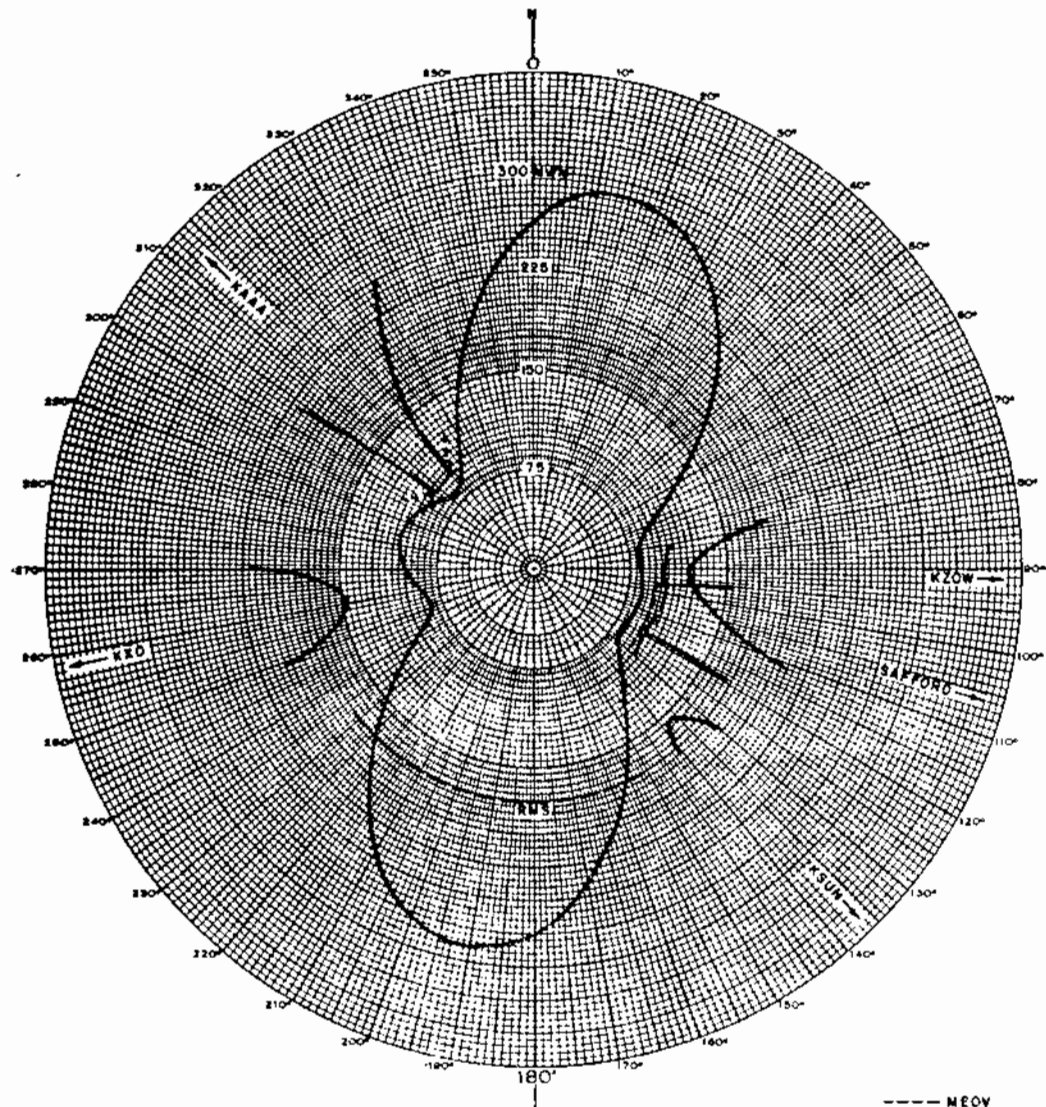
December 20, 1952.

KRIZ

PROPOSED DAY
(6-14-61g)

Station KRIZ
Pheonix, Arizona

1kw, DA-D,D
1230 KC



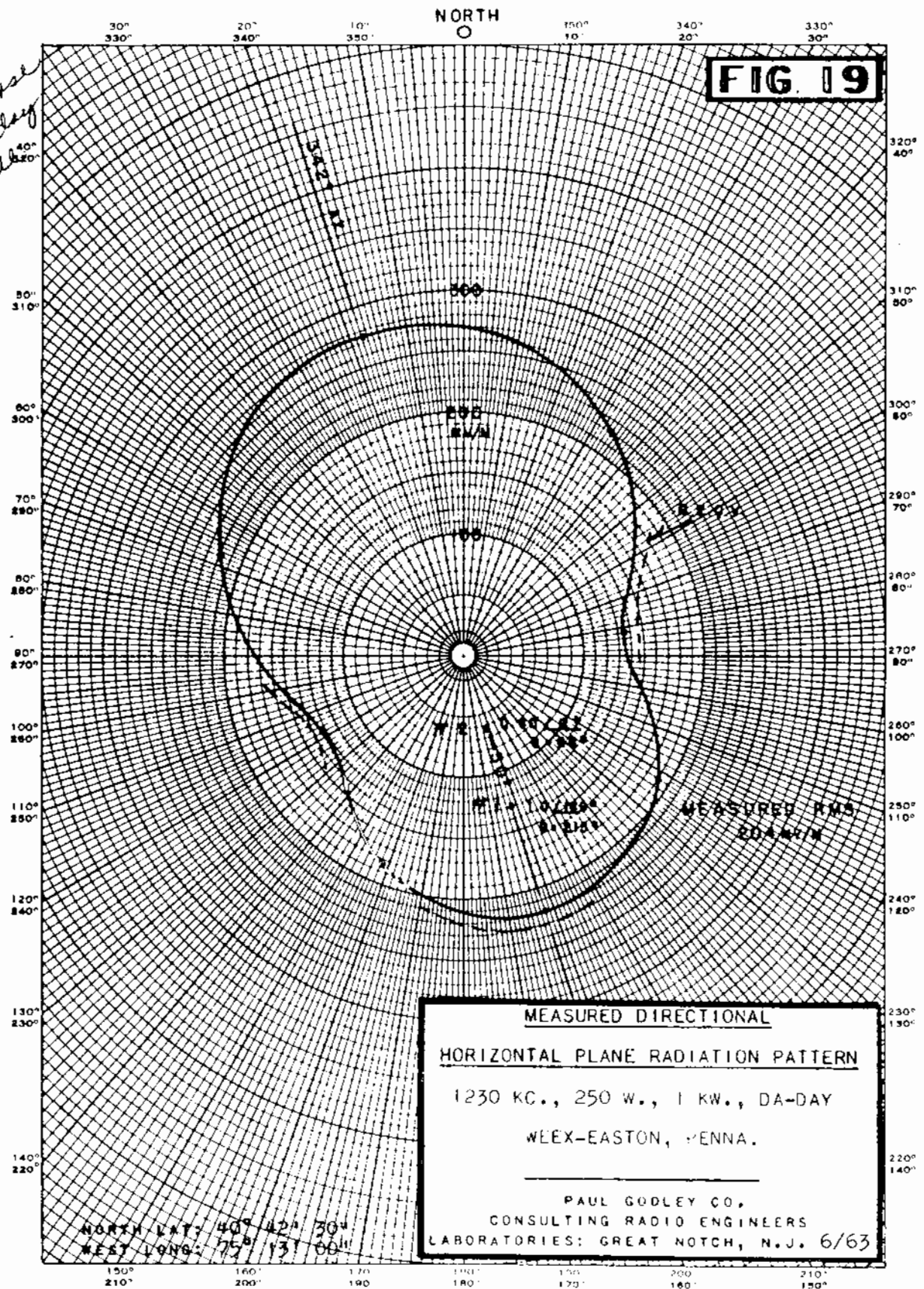
TOWER PLACEMENT SKETCH		PATTERN PARAMETERS										STATION DATA	
		POWER	ELECTRICAL HEIGHT	TRUE TOWER ORIENTATION	SPACING	PHASING	HORIZONTAL FIELD	FIELD RATIO	ELEV ANGLE	ELEVATION ANGLE	CALL	KRIZ	
		W	FT	°	FT	°	DB	DB	°	°	FREQUENCY	1230 KC	
		1	90	---	---	0	186.23	1.0	0	176	POWER	10 kW	
		2	90	N283°E	200	8	104.3	0.58	10	---	TIME OF OPERATION	DAY	
		3	---	---	---	---	---	---	20	---	TYPE OF OPERATION	DA-D	
		4	---	---	---	---	---	---	30	---	DAYTIME TOWERS	2	
		5	---	---	---	---	---	---	40	---	NIGHTTIME TOWERS	1	
		6	---	---	---	---	---	---	50	---	NO RADIALS PER TOWER	120	
		7	---	---	---	---	---	---	60	---	LENGTH OF RADIALS	100-222 FT	
		8	---	---	---	---	---	---	70	---	GROUND SCREEN DIMENSION	40-110'	
		9	---	---	---	---	---	---	80	---	WAT	35 24 48	
		10	---	---	---	---	---	---	90	---	LONG	112 05 00	
		11	---	---	---	---	---	---	---	---	SUPERSEDES	---	
		12	---	---	---	---	---	---	---	---	PATTERN NO	610180	
		KRIZ PHOENIX, ARIZONA										FIGURE 1 DATE 1-25-61	
		GEORGE P. ADAMS ENGINEERING COMPANY WASHINGTON, D. C.											

FCC File No. BP-14776
Accepted 5-8-61

KRIZ
Pheonix, Arizona

1230 KC

250w, 1kw-LS, DA-D, U
1230 kc



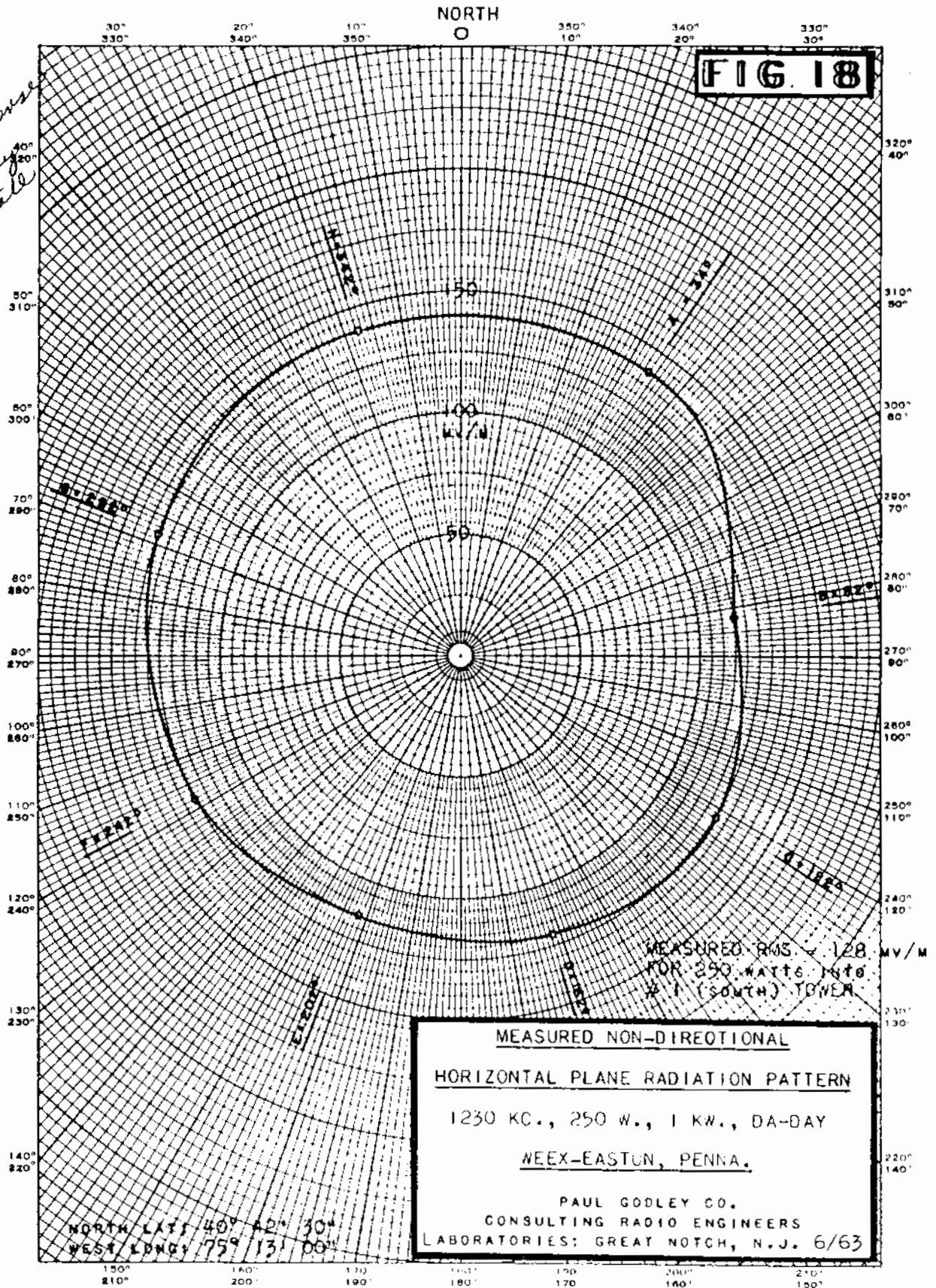
WEEX

Measured Non-DA
(9-25-63ct)

Station WEEX
Easton, Pennsylvania

250w, 1kw-LS, DA-D, U
1230 kc

#191
11-12-63
excited because
excess day
power & install
DA-D



FCC File No. BL-10254
Accepted 9-3-63

Station WEEX
Easton, Pennsylvania

1230 kc

WEEK

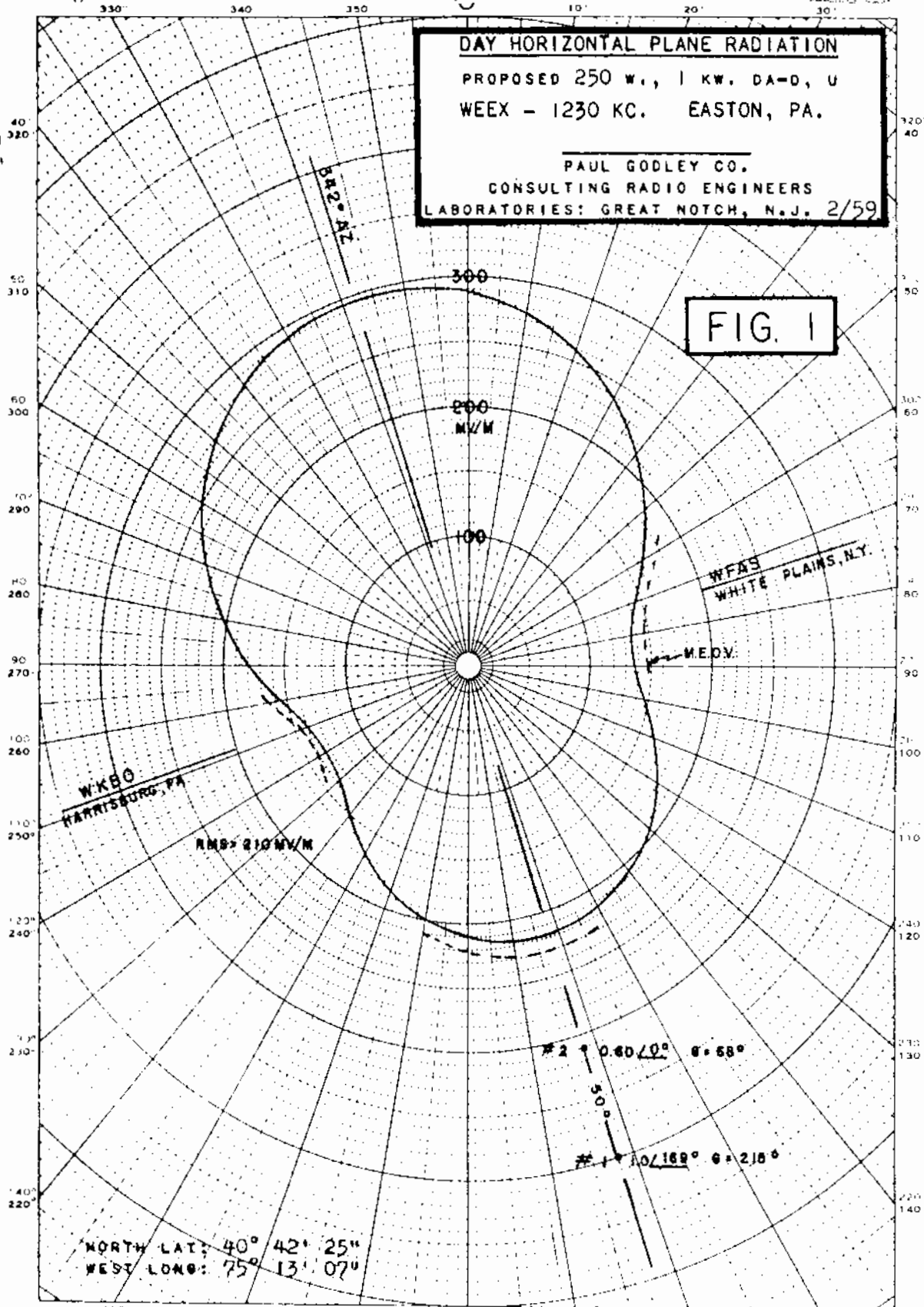
EASTON, PA

PROPOSED DAY
(6-16-59g)

New; Easton Publishing Co.
Easton, Pennsylvania

WEEK
250w, 1kw-LS, DA-D, U
1230 KC

10-10-62
parted CP for
increase in day
power to 1 Kw.



FCC File No. BP-11779
Accepted 5-18-59 (Amended)

Easton Publishing Company
Easton, Pennsylvania

1230 KC

Description Sheet
(4-29-68ct)

New Station 250w, 1kw-LS, DA-D, U, Class II
Castlegar, British Columbia 1230 kc

DESCRIPTION SHEET

<u>Station</u>	NLA	<u>Main Studio</u> - Castlegar, British Columbia
<u>Power</u>	1000/250 Class IV	
<u>Frequency</u>	1230 kHz	
<u>Notification List:</u>	#241	Dated: March 26, 1968.
<u>Location</u>	Castlegar, B.C.	
	49° 18' 4.8" North Lat.	
	117 36 50.0 West. Long.	
<u>Antenna</u>	Mode of Operation - M-J	Number of Elements - 2
<u>Type of Elements</u>	Guyed Uniform cross Section, base insulated, no top loading.	
<u>Height above Insulators</u>	#1 RA - 413' (186°)	#2 SL - 413' (186°)
<u>Height overall</u>	415'	415'
<u>Spacing</u>	466' (213°)	
<u>Orientation</u>	Ref.	135° T
<u>Day Phasing</u>	0°	-5°
<u>Day Ratio</u>	1.00	0.610
<u>Ground System</u>	120 Radials per tower. Bonded to common Chord. Radials 0.4 wavelength equivalent length or not less than 320', buried approximately 8". #10 AWG soft bare Copper Wire	
<u>Predicted Effective Field (mv/m at one mile):</u>	Day	229 mv/m
<u>OMNI Night Effective Field (mv/m at one mile):</u>	Night	121 mv/m

March 4, 1968.

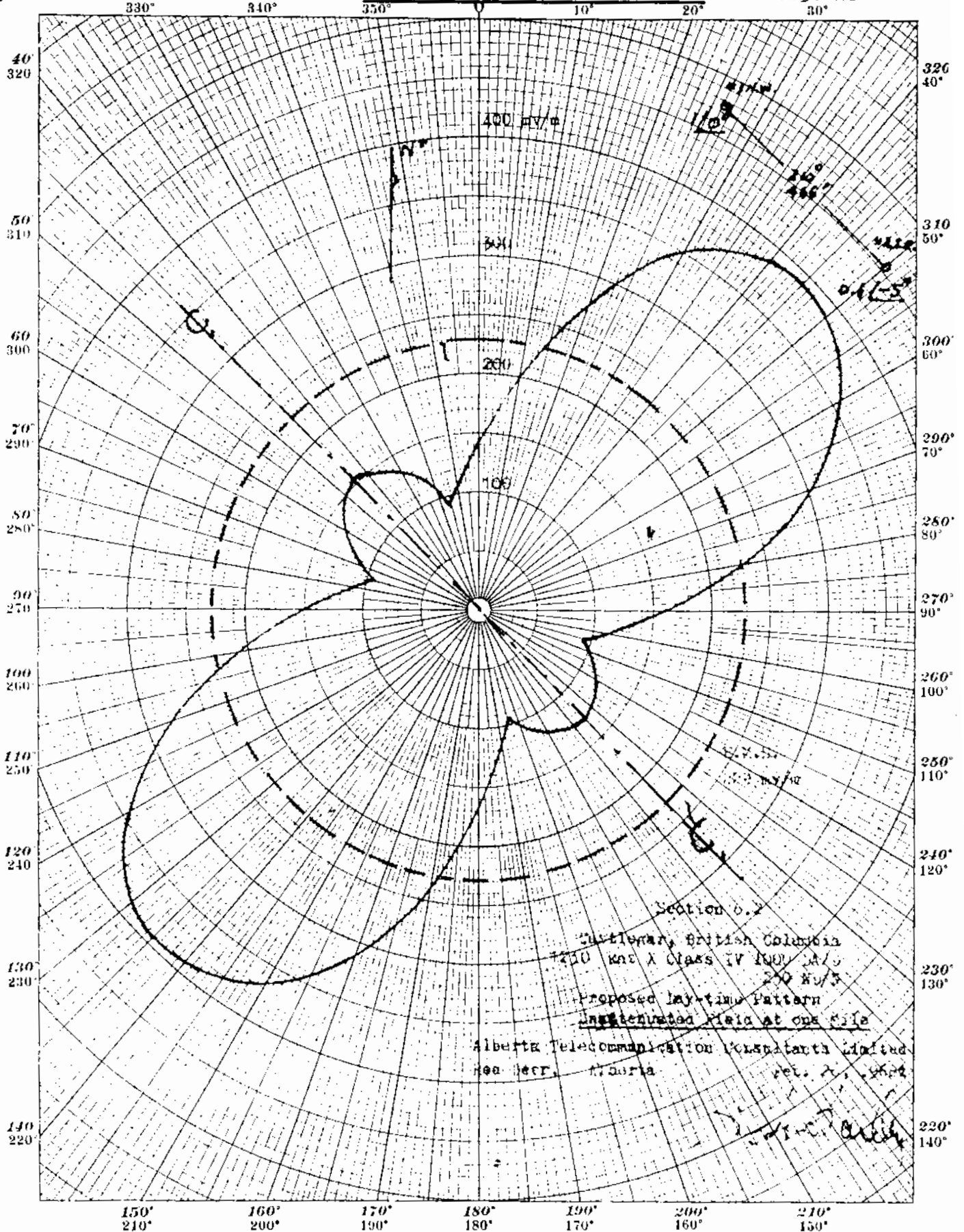
CHQR

Proposed Day
(4-29-68ct)

New Station
Castlegar, British Columbia

250w, 1kw-LS, DA-D, U, Class II
1230 kc

COLE & NEOP COMPANY, 71 NORWOOD, MASSACHUSETTS, U.S.A.



DESCRIPTION SHEET
Directional Antenna System

Station: New

Main Studio: Powell River, B. C.

Frequency: 1230 kc/s

Power: 1 kw

Time: Unlimited

Class: IV

Notification List No.: 210

Date: March 15, 1966

Geographic Location - 49°47'51" North Latitude
124°36'15" West Longitude

ANTENNA SYSTEM:

Mode of Operation - DA-2

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

TOWERS:

N (No. 1)	SW (No. 2)	SE (No. 3)
-----------	------------	------------

HEIGHT OVER INSULATORS:

133' (60°)	133' (60°)	133' (60°)
------------	------------	------------

OVERALL HEIGHT:

138'	138'	138'
------	------	------

SPACING:

-	400' (180°)	411' (185°)
---	-------------	-------------

PHASING: Night -
Day -

0		+33
0	+19.6°	

CURRENT: Night -
Day -

1.0		1.0
1.0	1.0	

ORIENTATION:

Ref.	168°	160°
------	------	------

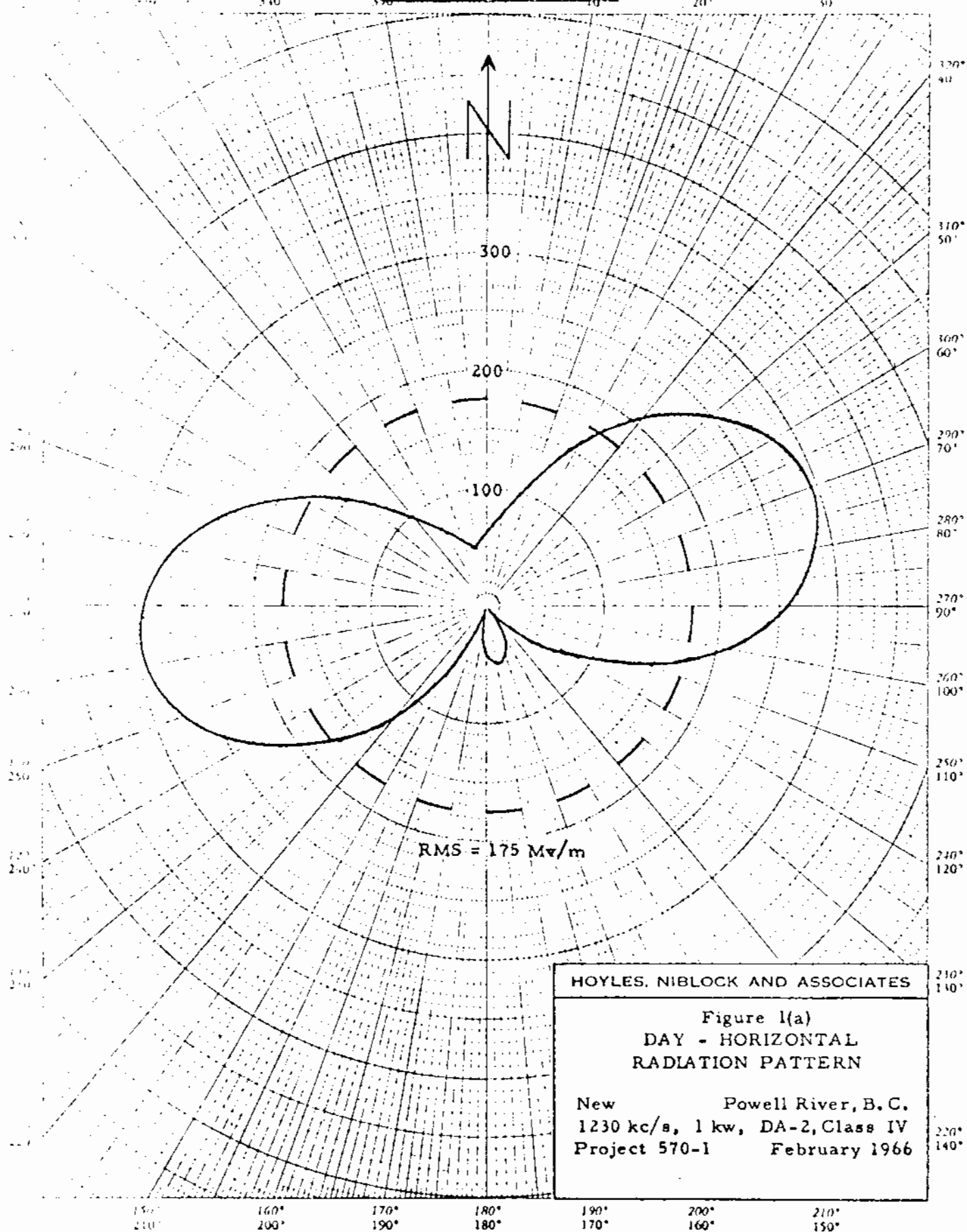
GROUND SYSTEM:

The ground system shall consist of 120,
0.4 λ copper radials about each tower
buried as practical considering ground
characteristics. The radials will be
shorter where the ground system is
joined by common chords between the
towers.

PREDICTED FIELD:

178 Mv/m for 1 kw Night
175 Mv/m for 1 kw Day

#210

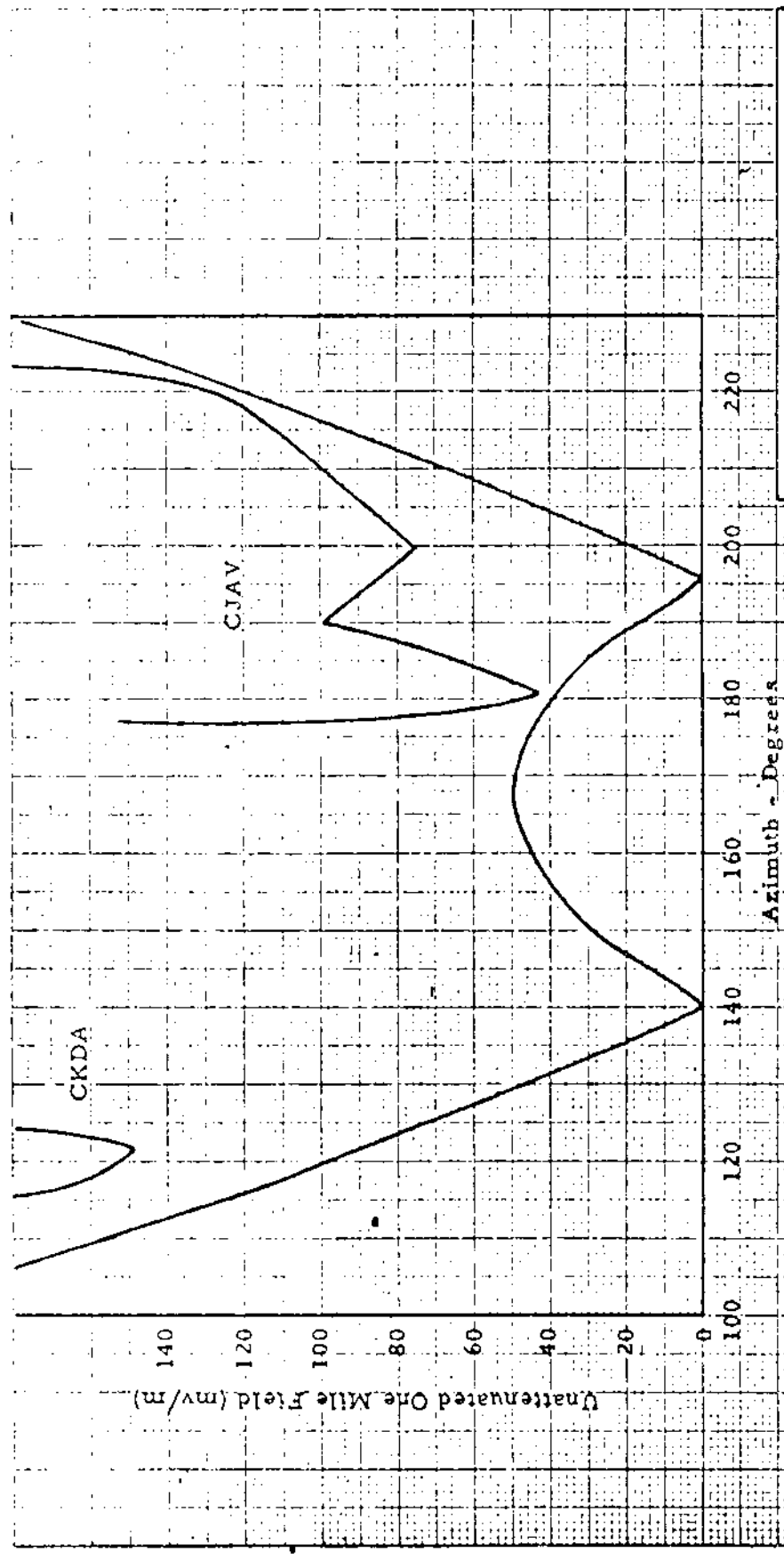
Proposed Day
(4-28-66ct)New Station
Powell River, B. C.1kw, DA-2, U, Class IV
1230 kc

#210

1kw, DA-2, U, Class IV
1230 kc

New Station
Powell River, B. C.

Proposed Day Nulls
(4-28-66ct)



HOYLES, NIBLOCK AND ASSOCIATES

Figure 2(a)
DETAIL OF
DAY HORIZONTAL PATTERN

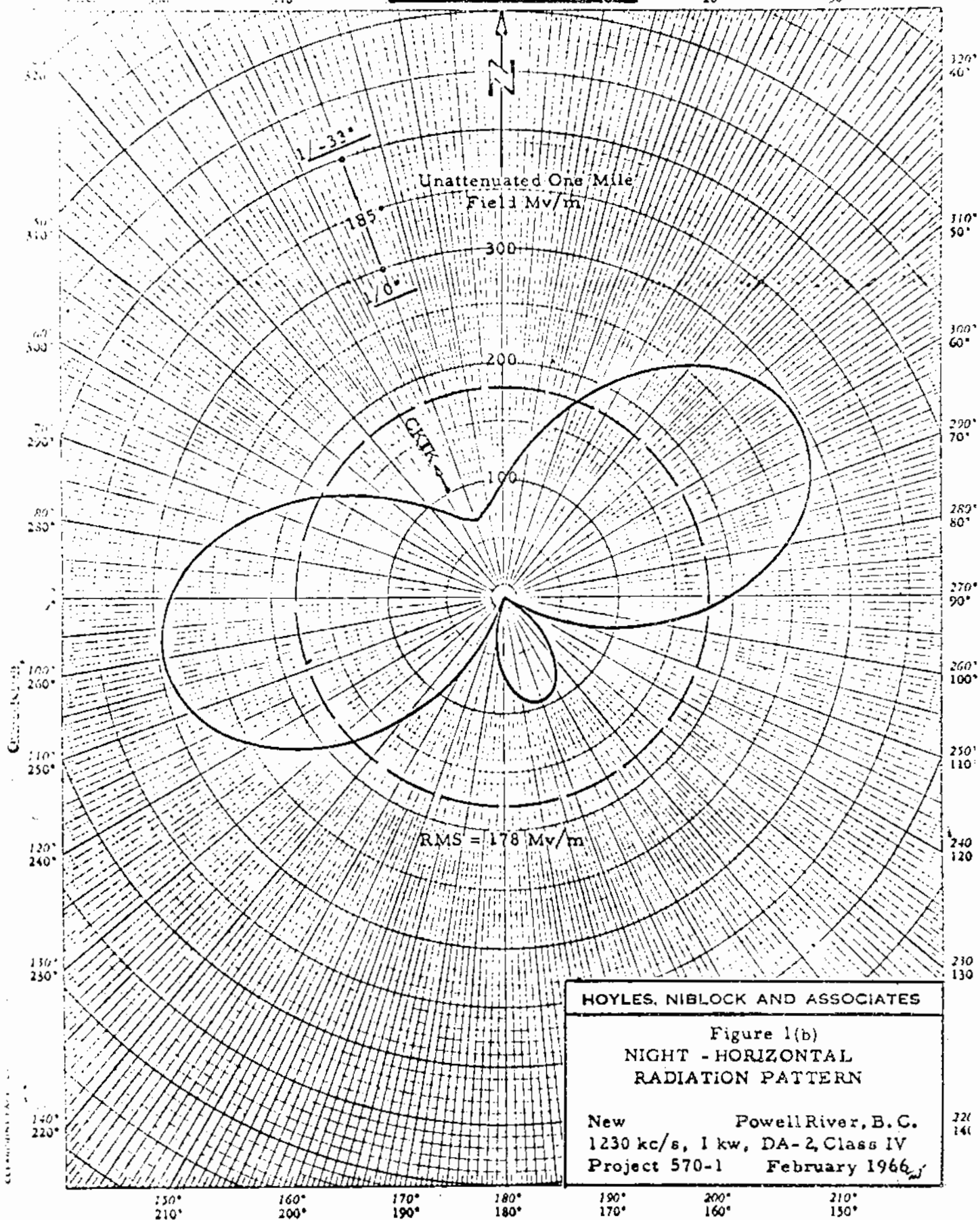
New Powell River, B.C.
1230 kc/s, 1 kw, DA-2, Class IV
Project 570-1 February 1966

#210

Proposed Night
(4-28-66ct)

New Station
Powell River, B. C.

1kw, DA-2, U, Class IV
1230 kc

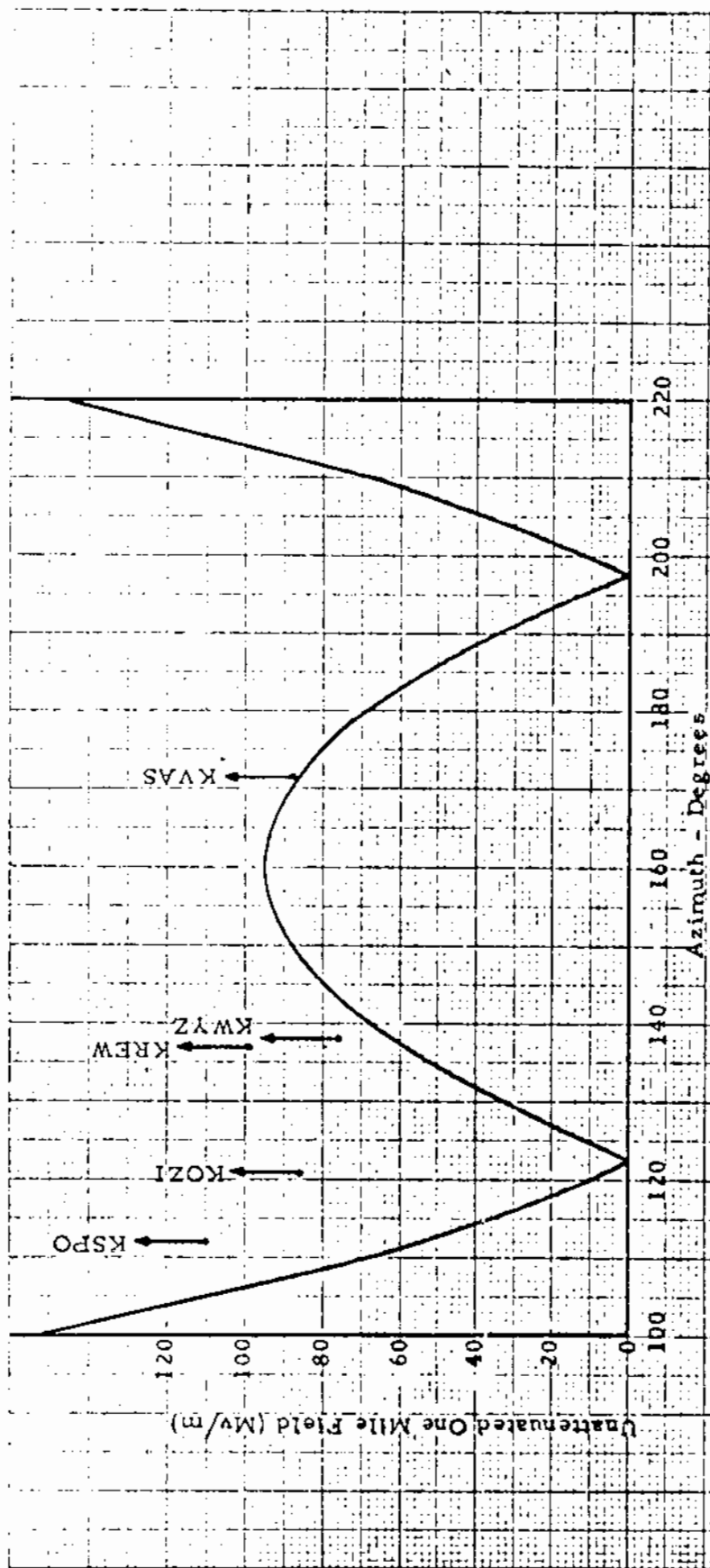


#-10

Proposed Night Nulls
(4-28-66ct)

New Station
Powell River, B. C.

1kw, DA-2, U, Class IV
1230 kc



HOYLES, NIBLOCK AND ASSOCIATES

Figure 2 (b)
DETAIL OF
NIGHT HORIZONTAL PATTERN

New Powell River, B. C.
1230 kc/s, 1 kw, DA-2, Class IV
Project 570-I February 1966

#208

Description Sheet
(4-28-66ct)New Station
New Liskeard, Ontario250w, 1kw-LS, U, Class 1V
1230 kc

ANTENNA DESCRIPTION SHEET

OMNI-DIRECTIONAL

STATION CALL

LOCATION

New Liskeard, Ontario

MAIN STUDIO

Kirkland Lake, Ontario

FREQUENCY

1230 kc/s

POWER

Day 1000 W, 250 W Night

CLASS

IV

TIME

Unlimited

NOTIFICATION REFERENCE 208

Date: February 25, 1966

GEOGRAPHICAL LOCATION

Lat 47°29'36", Lon 79°36'44"

ARRAY CHARACTERISTICS

One element, guyed, uniform
cross section, base insulated
series feed. Height 133 feet
or 60 degrees. No top loading

Ground system

120 radials #10 AWG bare, soft
copper wire, spaced uniformly,
depth 8 inches approximately.
Radials bonded to soft copper
strap at tower base. Maximum
radial length 320 feet.

Predicted E M S

180 mv/m at 1 mile for 1000 W

90 mv/m at 1 mile for 250 W



Jan 1966

5

#173
Description Sheet
(10-26-62ct)

New Station
Dolbeau, P.Q.

250w, U, Class IV
1230 kc

CLIENT: Dolbeau, P.Q.

PAGE 10

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

STATION CALL: NEW
MAIN STUDIO: Dolbeau, P.Q.
FREQUENCY: 1230 Kc/s.
POWER: 250 Watts
CLASS: IV
TIME: Omnidirectional full time (ND)

NOTIFICATION LIST No. 173 DATE: September 14, 1962

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:

NORTH LATITUDE: 48° 51' 27"

WEST LONGITUDE: 72° 13' 19"

ANTENNA CHARACTERISTICS:

HEIGHT: 135 feet (61°)

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

GROUND SYSTEM: 120 320 feet long (0.4 of a wavelength)
equally spaced radials of #10 B & S bare
soft drawn copper wire buried at a
depth of approximately 8 inches.

PREDICTED EFFECTIVE FIELD: 90 mv/m at 1 mile for 250 W. radiated
or 180 mv/m at 1 mile per Kw. radiated.

#207

Description Sheet
(2-28-66ct)

New Station
(Ste. Agathe-Des-Monts, Que.)

250w, 1kw-LS, U, Class IV
1230 kc

CLIENT: Ste. Agathe-Des-Monts, Que.

PAGE 10

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA



STATION CALL:

NEW

MAIN STUDIO:

Ste. Agathe-Des-Monts, Que.

FREQUENCY:

1230 Kc/s.

POWER:

1 KW-D/0.25 KW-N

CLASS:

IV

TIME:

omnidirectional full time (ND)

NOTIFICATION LIST:

207

DATE: December 17, 1965

GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:

NORTH LATITUDE: 46° 04' 25"

WEST LONGITUDE: 74° 19' 05"

ANTENNA CHARACTERISTICS:

HEIGHT:

160 feet (72°)

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 at a depth of approximately 8 inches. These radials extend to the limits of the property at a minimum distance of 300 feet (equivalent to a 0.4 of a wavelength ground system)

PREDICTED EFFECTIVE FIELD: 184 mv/m at 1 mile for 1 KW. radiated.

NEW
1240

PART I

Date	830606
------	--------

Assigned frequency (kHz)		(02)	1 2 4 0
Transmitting station	Name of the station	(03)	B R A C E B R I D G E O N
	Call sign	(04)	
	Additional Identification	(05)	
	Station class	(06)	C
	Operational Status	(07)	P
Country		(08)	CAN
Geographical coordinates of the transmitting station		(09)	7 9 W 2 1 0 6 4 5 N 0 2 3 0

11) a) New assignment ☒ b) Modification of characteristic of an assignment recorded in the plan ☐ c) Cancellation of an assignment ☐

12) Modification under Section 4.2.14 Yes ☐ No ☒

13) Date of bringing into service or cessation of operation

--	--	--

Year Month Day

STATION PARAMETERS	DAYTIME OPERATION	NIGHT-TIME OPERATION
Station power (kW)	(21) 1.5	(31) 2.5
r.m.s. value of radiation for station power (mV/m at 1 km)	(25) 2.89.6	(35) 1.44.8
Antenna type	(26) A	(36) A
Simple vertical antenna electrical height (degrees)	(27) 6.8.1	(37) 6.8.1

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

DESCRIPTION SHEET

Omnidirectional Antenna

STATION CALL:	New
MAIN STUDIO:	Castlegar, B.C.
FREQUENCY:	1240 kc/±
POWER:	0.25 kw
CLASS: IV	OPERATION: Unlimited
NOTIFICATION LIST NO. 236	DATE: December 20, 1967.
GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:	49° 19' 25" North Latitude 117° 39' 05" West Longitude
ANTENNA CHARACTERISTICS:	Height 135' (61')
TYPE OF ELEMENT:	A guyed uniform cross-section, single tower, base-insulated and fitted for series feed.
GROUND SYSTEM:	120 - 0.4λ copper radials buried approximately 8" below grade
EXPECTED EFFICIENCY:	88 mv/m at 1 mile for 0.25 kw 176 mv/m at 1 mile for 1 kw

#200
Description Sheet
(4-28-66ct)

New Station
Osoyoos, B. C.

250w, 1kw-LS, U, Class 1V
1240 kc

DESCRIPTION SHEET - OMNI-DIRECTIONAL ANTENNA

Station Call: New
Location: Osoyoos, B.C.
Frequency: 1240 Kc/s
Power: 1 Kw Day, 0.25 Kw Night
Class: IV
Time: U

Notification List No. 208 Date: February 25, 1966

Geographical Location: Lat. 49° 04' 57" N.
Long. 119° 31' 21" W.

Antenna Characteristics: Height Above the Base
Insulator: 200 feet (91 degrees)

Type of Element: A guyed steel tower, uniform
cross section, base insulated
for series feed.

Ground System: 120 equally spaced radials of
#10 B & S gauge bare soft copper,
buried approximately 8" extending
from the base of the tower for a
distance of 318' (0.4 wavelength)

Expected Efficiency: 190 mv/m at 1 mile for 1 Kw
95 mv/m at 1 mile for .25 Kw



Description Sheet
(5-28-68ct)

New Station
Chibougamau, Quebec

250w, 1kw-LS, U, Class IV
1240 kc

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

STATION CALL : New (Satellite of CHVD-Dolbeau, Quebec)

TRANSMITTER : Chibougamau, Quebec

MAIN STUDIO : Dolbeau, Quebec

FREQUENCY : 1240 Kc/s

POWER : 1 KW - Day/.25 Kw - Night

CLASS : IV

TIME : Unlimited

NOTIFICATION LIST NO. : 242 DATE: May 10, 1968

GEOGRAPHICAL LOCATION OF THE North Latitude: 49° 54' 13"

ANTENNA SYSTEM : West Longitude: 74° 23' 05"

Antenna Characteristics

```

HEIGHT ABOVE INSULATOR: 140 feet      63.5 degrees

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

GROUND SYSTEM        :   120 evenly spaced radials of No. 10 A.W.G.
                        :   bare soft-drawn copper wire, buried to a depth
                        :   of 8 inches and extending to a distance of 318 ft.
                        :   (.4 ).

EXPECTED EFFICIENCY   :   180 MV/M for 1 KW
                        :   90 MV/M for .25 Kw

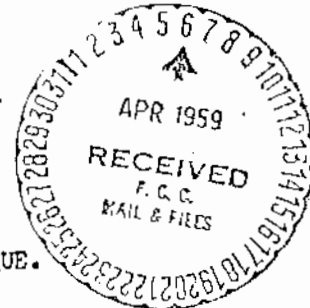
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#131

Three Rivers, Quebec, Can.

CFLM
LA TUQUEDESCRIPTION SHEET
(5-28-59g)New Station 250w, 1kw-LS, U, Class IV
La Tuque and Three Rivers, Quebec, Canada

1240 KC

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

STATION CALL: NEW

MAIN STUDIO: LA TUQUE AND THREE RIVERS, QUE.

FREQUENCY: 1240 KC

POWER: 1 KW DAY/250 W NIGHT

CLASS: IV

TIME: U

GEOGRAPHICAL LOCATION: NORTH LATITUDE 47° 27' 42"
WEST LONGITUDE 72° 46' 32"

ANTENNA CHARACTERISTICS: HEIGHT: 200 FEET (90°)
EXPECTED EFFICIENCY: 190 MV/M AT 1 MILE FOR 1 KW
95 MV/M AT 1 MILE FOR .25 KW
GROUND SYSTEM: 120 RADIALS, EQUALLY SPACED EVERY 3
DEGREES AND BURIED FROM 6 TO 8 INCHES DEEP WITH A MINIMUM
LENGTH OF 250 FT. (.314 WAVELENGTH) IN SOME DIRECTIONS
BUT SO AS TO COVER THE SAME AREA AS A NORMAL SYSTEM
HAVING RADIALS 0.4 WAVELENGTH LONG. (318').
TYPE OF ELEMENT: UNIFORM, BASE INSULATED, SQUARE CROSS-
SECTION, SERIES FED, GUYED, NO TOP LOADING.

NOTIFICATION LIST NO. 131

DATE: February 27, 1959

Description Sheet
(8-28-67ct)

Station CFVR
Abottsford, B. C.

250w, 1kw-LS, DA-D, U, Class IV
1240 kc

DESCRIPTION OF ARRAY

STATION: CFVR

MAIN STUDIO: Abbotsford, B. C.

FREQUENCY: 1240 Kc/s.

POWER: 1000/260 Class 1V

GEOGRAPHICAL LOCATION
OF ANTENNA SYSTEM:

48 - 04 - 02 North

122 - 17 - 09 West

ANTENNA CHARACTERISTICS

Mode of Operation: DA / D

Number of Elements: 2

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

TOWER: # 1 (NE)

2 (SW)

HEIGHT OVER
INSULATORS:

135' (61.5')

 $135^{\circ} (61.5^{\circ})$

OVERALL HEIGHT: 140'

140'

SPACING:

132 (609)

ORIENTATION: Ref.

200° TRUE

DAY PHASING: 0

+ 60

DAY RATIO: 1.00

1.00

GROUND SYSTEM:

120 Radials per tower. Bonded to
Common chord, Radials 0.4.
Wavelength equivalent length.

PREDICTED DAY EFFECTIVE FIELD: 190 mv/m @ 1 mi. for 1 Kw.

OMNI NIGHT EFFECTIVE FIELD: 85.0 mv/m @ 1 mi. for 250 W.

NOTIFICATION LIST NO. 199

DATE: May 10, 1965



#163

DESCRIPTION SHEET
(10-25-61ct)Station CHWK-1
Chilliwack, B.C.250w, U, Class IV
1240 kcCHWK-1
CFYRDESCRIPTION SHEET
OMNIDIRECTIONAL ANTENNA

Station Call: CHWK-1 (Repeater of CHWK)
Main Studio: Chilliwack, B.C. (Auxiliary studio
Abbotsford, B.C.)
Frequency: 1240 KCS
Power: 250 Watts
Class: IV
Time: Unlimited

Notification List No: 163

Date: September 15, 1961Geographical Location
of the Antenna System:North Latitude: 49° 04' 02"
West Longitude: 122° 17' 09"

Antenna Characteristics:

Height: 135' (60°)

Type: Single steel, guyed, uniform tower.
No top loading.

Ground System:

120 radials

Spaced 3' buried 8". 0.4 wavelength long.

Expected Efficiency:

90 mv/m @ 1 mi for 250 watts

180 mv/m @ 1 mi for 1 KW

CFVR Abbotsford BC.
1000/250 DA/D
1240 KCS. CLASS IV
HORIZONTAL DAY
PATTERN PLOT.
S. Williamson 3/65



DEPARTMENT OF TRANSPORT
OTTAWA

CJAV
1240

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CJAV
Main Studio: Fort Alberni, British Columbia
Frequency: 1240 Kc/s.
Power: 0.25 Kw.
Class: IV
Time: U

Notification Reference: NARBA Annex 3

Geographical Location:

North Latitude: 49° 14' 42"
West Longitude: 124° 48' 27"

Antenna Characteristics:

Height: (See below) ft. degrees

Expected Efficiency: 74.5 mv/m at 1 mi. for 0.25 Kw.
or: 149 mv/m at 1 mi. for 1 Kw.

Ground System:

The ground system is of a limited nature.

Type of Element:

Series-fed, 150-foot horizontal antenna,
tapped at centre, supported between two
90-foot poles.

November 24, 1952

#166

CJCS

Description Sheet
(2-28-62ct)Station CJCS
Stratford, Ontario250w, 500w, U, Class IV
1240 kc

ANTENNA DESCRIPTION SHEET

OMNI-DIRECTIONAL

STATION CALL: C J C S
 MAIN STUDIO: Stratford, Ontario.
 FREQUENCY: 1240 kc/s
 POWER: Day 500 watts - 250 watts Night
 CLASS: IV
 TIME: Unlimited

NOTIFICATION REFERENCE: 166 Date: January 5, 1962

GEOGRAPHICAL LOCATION: Lat. $43^{\circ}20'35''$
 Lon. $81^{\circ}00'40''$

ARRAY CHARACTERISTICS: One element, guyed, uniform
 cross section, base insulated,
 series feed.

Height 132 feet (60°)

Ground system 120 radials per tower, #10 AWG
 bare soft copper wire, uniformly
 spaced, depth approximately 8
 inches. Maximum radial length
 318 feet.

Orientation One element

Measured R.M.S. 87 mv/m at 1 mile for 250 watts

Predicted R.M.S. 123 mv/m at 1 mile for 500 watts



5

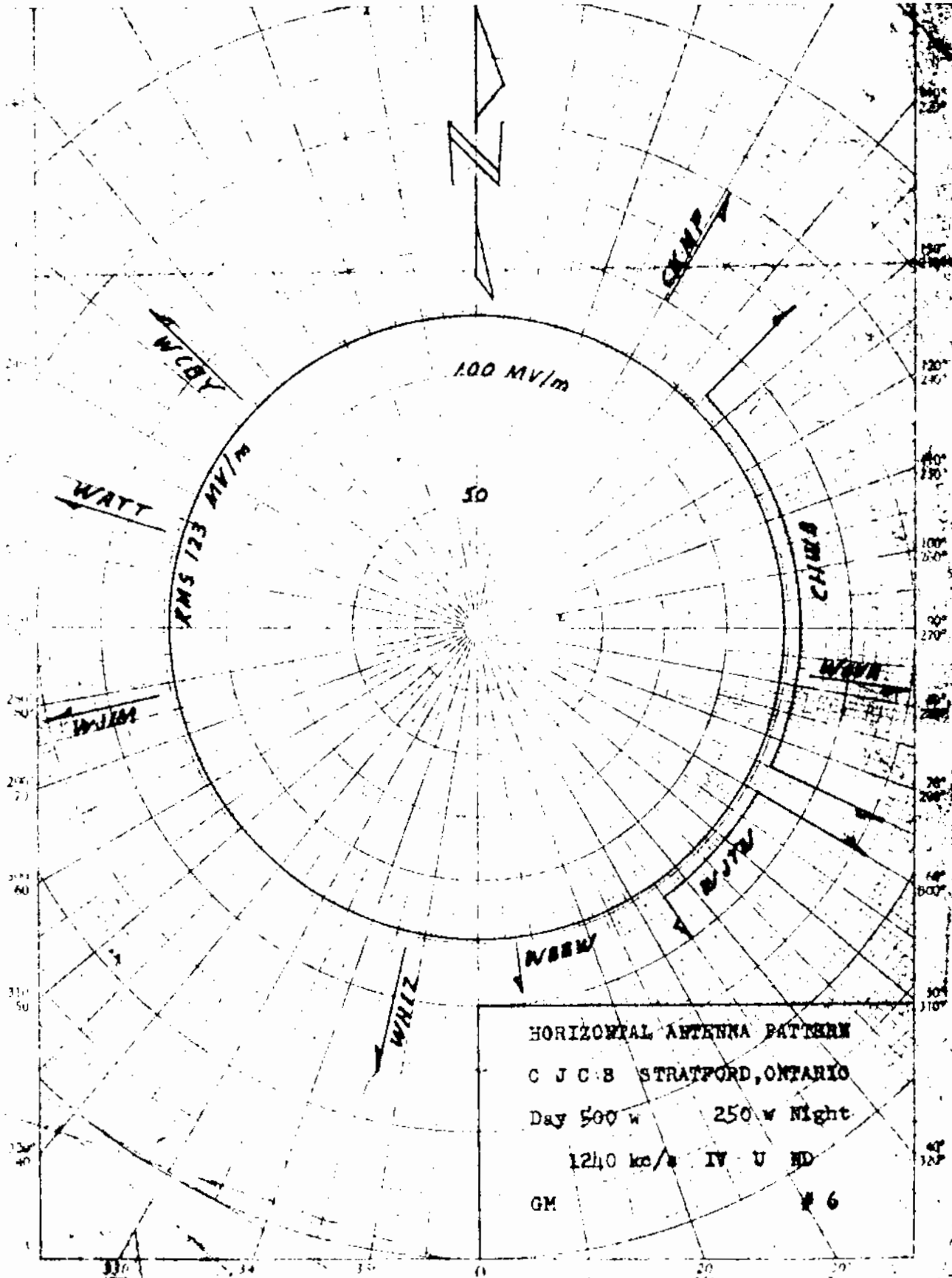
F166

CJCS

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

Station CJCS
Stratford, Ontario

250w, 500w, U, Class IV
1240 kc



162 POLAR COORDINATE 355.34
1000000 1000000

FORM FOR THE APPLICATION OF ARTICLE 4 OF THE AGREEMENT

2	2	6	4		
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CHARACTERISTICS OF A REGION 2 BROADCASTING STATION IN THE BAND 535 - 1 605 kHz

PART I GENERAL INFORMATION

ⓐ Administration

CANADA

Sheet No.

421

Date _____

830726

Assigned frequency (kHz)		02	1 2 4 0
Transmitting station	Name of the station	03	S U M M E R S I D E P E
	Call sign	04	C J R N
	Additional Identification	05	
	Station class	06	C
	Operational Status	07	P
Country		08	CAN
Geographical coordinates of the transmitting station		09	6 3W 4 5 0 3 4 6N2 4 1 0

11) a) New assignment ☐ b) Modification of characteristic of an assignment recorded in the plan ☒ c) Cancellation of an assignment ☐

12) Modification under Section 4.2.14 Yes ☐ No ☒

13) Date of bringing into service or cessation of operation

Year	Month	Day

STATION PARAMETERS	DAYTIME OPERATION	NIGHT-TIME OPERATION
Station power (kW)	(21) 1.0	(31) .25 No change
r.m.s. value of radiation for station power (mV/m at 1 km)	(25) 305.8	(35) 1.529
Antenna type	(26) A	(36) A
Simple vertical antenna electrical height (degrees)	(27) 90	(37) 90

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



DEPARTMENT OF TRANSPORT
OTTAWA

CJRW
1240

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CJRW
Main Studio: Summerside, Prince Edward Island.
Frequency: 1240 Kc/s.
Power: 0.25 Kw.
Class: IV
Time: U

Notification Reference: NARBA Annex 3

Geographical Location:

North Latitude: $46^{\circ} 24' 10''$
West Longitude: $63^{\circ} 45' 03''$

Antenna Characteristics:

Height: 200 ft. 90 degrees

Expected Efficiency: 95 mv/m at 1 mi. for 0.25 Kw.

or: 190 mv/m at 1 mi. for 1 Kw.

Ground System:

120 equally spaced radials of #10 B. & S.
bare copper wire, each 317.5 feet long,
and buried approximately 8 inches.

Type of Element:

One vertical radiator, guyed, square
uniform cross-section, insulated from ground,
series-fed, no top loading.

November 22, 1952

180

CJWA

Description Sheet
(10-30-63ct)

New Station
Wawa, Ontario

250w, 1kw-LS, U, Class IV
1240 kc

PROJ. 2697-L

NOW IN OPERATION
CHG. LIST 191

DESCRIPTION SHEET

STATION: New

MAIN STUDIO: Wawa, Ontario

POWER: 1KWD/.25KWN

FREQUENCY: 1240 Kc/s CLASS: IV

NOTIFICATION REFERENCE: 180

DATE: September 16, 1963.

LOCATION:

North Latitude 47° 58' 43"

West Longitude 84° 48' 25"

ANTENNA:

Mode of Operation:

ND (Non-directional Day and Night)
One element uniform cross-section
guyed steel tower, base insulated for
series feed.

HEIGHT ABOVE INSULATORS:

140' (63.5°)

GROUP SYSTEM:

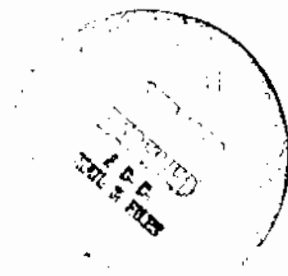
120 equiangularly spaced radials
average length 320 feet (0.4)
extending from the base of the tower.
Radials are #10 B&S bare soft copper
wire buried approximately 8 inches.

PREDICTED EFFECTIVE FIELD:

182 Mv/m at 1 mile for 1 Kw

DAY AND NIGHT OPERATION:

91 Mv/m at 1 mile for 0.25 Kw



#132

St. Hyacinthe, Quebec, Can.

CKBS

DESCRIPTION SHEET
(5-28-59g)New Station 250 w, U, Class IV
St. Hyacinthe, Quebec, Canada 1240 KC

OMNIDIRECTIONAL ANTENNA

Station Call: NEW
Main Studio: Ste. Hyacinthe, Quebec
Frequency: 1240 Kc/s
Power: 0.25 KW
Class: IV
Time: U

Modification List No. 132 Date: April 9, 1959

Geographical Location of
the Antenna System: North Latitude 45° 37' 56"
West Longitude 72° 55' 18"

Antenna Characteristics:
Height: 140 feet 61 degrees
Type of Element: Guyed Steel
Tower, uniform cross section,
base insulated for series feed.
Ground System: 120 radials
spaced every 3 degrees extend
318 feet from base of tower.
Radials are #10 AWG soft copper
wire buried approximately 8 inches.
Expected Efficiency:
90 mv/m at 1 mile for 0.25 kw
or
180 mv/m at 1 mile for 1 KX



DEPARTMENT OF TRANSPORT
OTTAWA

CKLS
1240

DESCRIPTIVE SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: CKLS
Main Studio: La Sarre, Q uebec.
Frequency: 1240 Kc/s.
Power: 0.25 Kw.
Class: IV
Time: U

Notification Reference: MARBA Annex 3

Geographical Location:

North Latitude: 48° 49' 43"
West Longitude: 72° 12' 14"

Antenna Characteristics:

Height: 133 ft. 60.3 degrees
Expected Efficiency: 91 mv/m at 1 mi. for 0.25 Kw.
or: 182 mv/m at 1 mi. for 1 Kw.

Ground System:

120 radials each 320 feet long, buried
approximately 8 inches; #10 A.W.G. bare copper
wire, properly soldered to bus ring around
tower base.

Type of Element:

1 Vertical radiator, uniform cross-section,
November 24, 1952. guyed, series-fed.

CKLS

Description Sheet
(2-28-69ct)

Station CKLS
La Sarre, P.Q.

250w, 1kw-LS, U, Class IV
1240 kc

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

STATION CALL:	CKLS
MAIN STUDIO:	La Sarre, P.Q.
FREQUENCY:	1240 kHz
POWER:	1 kw D/0.25 kw N
CLASS:	IV
TIME:	U
NOTIFICATION LIST No. 251	DATE: January 28, 1969
GEOGRAPHICAL LOCATION OF THE ANTENNA SYSTEM:	North Lat. 48° 49' 46" West Long. 79° 12' 09"
ANTENNA CHARACTERISTICS:	
Height -	133 feet (60.3 degrees)
Type of Element -	Uniform cross section, guyed, series fed, vertical element.
Ground System -	120 radials each 320 ft (0.4λ) spaced 3° apart, buried approx. eight inches, #10 AWG bare copper wire, soldered to bus ring around tower base.
Expected Efficiency -	91 mv/m at one mile for 0.25 kw or 182 mv/m at one mile for 1 kw.

CKWL

Description Sheet
(2-28-68ct)

Station CKWL
Williams Lake, B.C.

250w, U, Class IV
1240 kc

DESCRIPTION OF ARRAY

Station Call: CKWL
Main Studio: Williams Lake, B. C.
Frequency: 1240 KHz
Power: 250 watts
Class: IV
Time: Unlimited
Notification Reference: 237 Dated: January 10, 1968.
Geographical Location: 52° 7' 16" N.
122° 7' 28" W.
Antenna Characteristics: Single steel, guyed tower,
uniform, no top loading
Element: 150 feet (68°)
Height over insulator: 150'
Height above ground: 155'
Ground System: 120 radials #10 AWG uniformly spaced,
buried 8" below grade. Radial length
0.4 wavelengths
RMS. Efficiency: 90 MV/M @ 1 mile for 250 watts
180 MV/M @ 1 mile for 1 KW

B. R. Tupper, P. Eng.
Telecommunications Consultant

8133

QUESNEL, B.C. CANADA

CKWL
WILLIAMS LAKE

DESCRIPTION SHEET
(9-4-59g)

* New Station 250w, U, Class IV
Quesnel, British Columbia, Canada 1240 KC

*Satellite of Station CKCQ

DESCRIPTION SHEET - OMNIDIRECTIONAL ANTENNA

Station Call: NEW (Satellite of CKCQ)
Main Studio: Quesnel, B.C. (Satellite at Williams Lake)
Frequency: 1240 kos.
Power: 250 watts
Class: IV
Time: Unlimited

Notification List No. 133 Date: May 8, 1959

GEOGRAPHICAL LOCATION
OF THE ANTENNA SYSTEM:

North Latitude: 52° 7' 23"
West Longitude: 122° 7' 14"

ANTENNA CHARACTERISTICS:

Height: 150 feet 68 degrees
Type of element: Single steel, guyed tower, uniform, no top loading.
Ground System: 120 radials spaced 3° buried 8" 0.4 wavelength long.
Expected Efficiency:
90 mv/m @ 1 mile for 250 watts
or: 180 mv/m @ 1 mile for 1 KW.

WINK
1240kHz

DIRECTIONAL ANTENNA DESCRIPTION SHEET

Station: WINK

Main Studio: Fort Myers, Florida

Frequency: 1240 kHz

Power: 0.25kw Night 1kw Day

Notification List No. 1785

Date: November 16, 1979 Class: IV

GEOGRAPHICAL LOCATION OF THE
CENTER OF THE ANTENNA SYSTEM:

North Latitude: 26° 37' 28"

West Longitude: 81° 49' 52"

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:	N(#1)	S(#2)
HEIGHT ABOVE INSULATORS:	198.4	198.4 (90°)
DAY PHASING:	0°	90°
DAY FIELD RATIO:	1.0	0.334

SPACING AND
ORIENTATION

Adjacent towers are spaced 198.4' (90°) on a line bearing
0° true.

GROUND SYSTEM:

GROUND SYSTEM:

120 - 200' equally spaced copper radials about each tower.
Radials are shortened and bonded to a transverse strap along
intersections between towers. Centers of system are bonded
together.

PREDICTED EFFECTIVE FIELDS AT RATED POWER:

THEORETICAL

RMS

Day: 190 mv/m

Night: 171.63 mv/m

WINK
1240 KHz

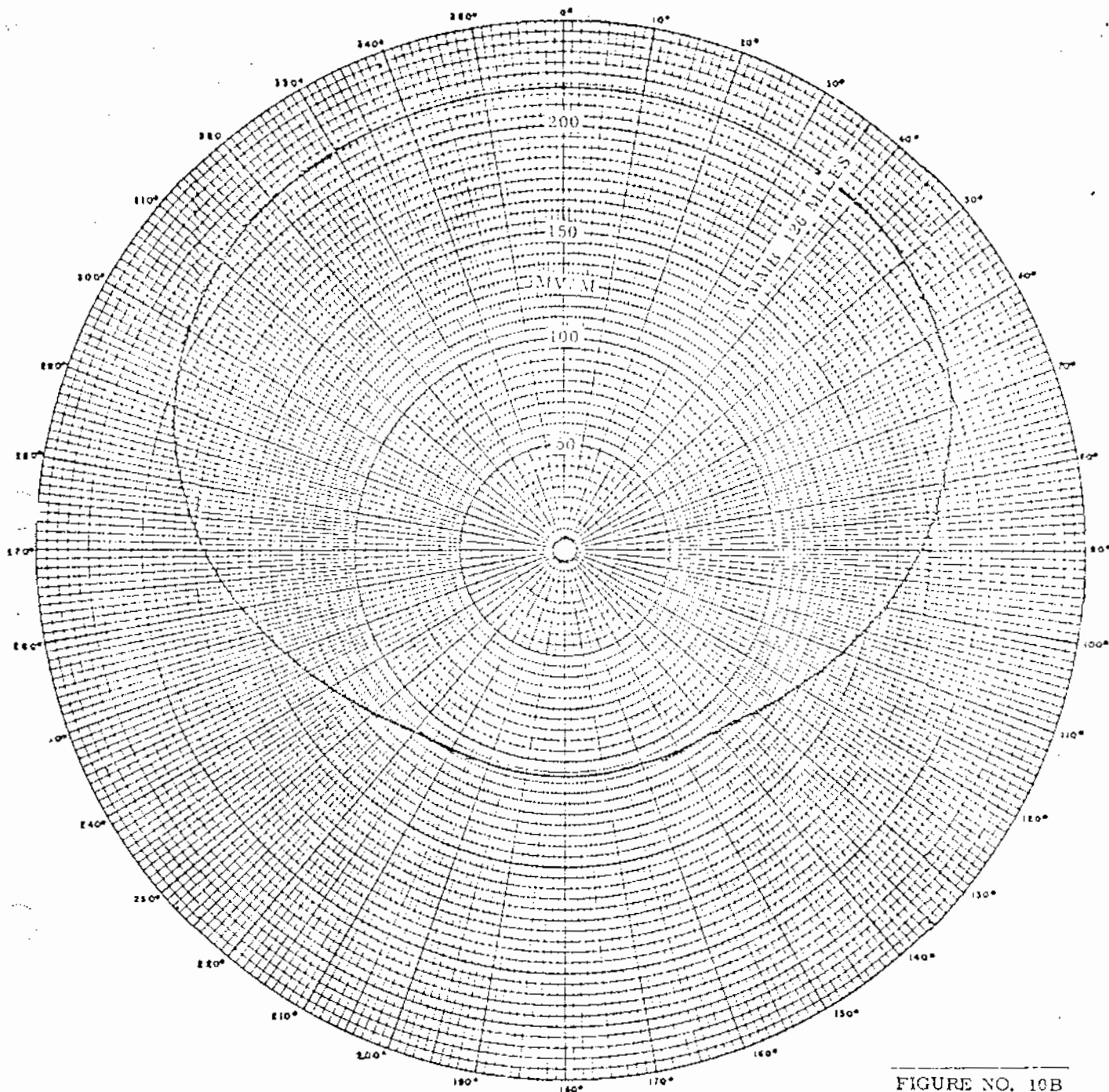


FIGURE NO. 10B

TRUE NORTH
NO. 1 $\frac{1.0}{0^\circ}$
90°
198.4'
NO. 2 $\frac{0.34}{90^\circ}$
G = 90° (198.4')

HORIZONTAL PLANE PATTERN

RMS STANDARD
RMS THEORETICAL 171.63 mv/m
RSS THEORETICAL 171.00 mv/m
N. LATITUDE N 26° 37' 28"
W. LONGITUDE W 81° 49' 52"
DATE 7 - 30 - 1979
SUPERSEDES

RADIO STATION WINK
FORT MYERS, FLORIDA
1240 KHz - .25/1 KW - DA-D

PROPOSED
DAYTIME PATTERN

RUSSELL P. MAY
Consulting Radio Engineer
Indianapolis, Florida

WINK

SUPPLEMENTAL DIRECTIONAL ANTENNA
DESCRIPTION SHEET

Station: WINK

Main Studio: Fort Myers, Florida

Frequency: 1240 kHz

Power: 0.25 kW Night 1 kW Day

Notification List No. 1690

Date: June 24, 1976

Class: IV

GEOGRAPHICAL LOCATION OF THE

CENTER OF THE ANTENNA SYSTEM: North Latitude: 26° 39' 03"

West Longitude: 81° 51' 20"

Authorized for Daytime operation (DA-D).

Predicted effective Day Field: 172 mv/m at rated power.

Predicted effective Night Field: (omnidirectional tower #1) 105 mv/m at
rated power.

Note: Please retain the description sheet and directional antenna
radiation patterns notified for station WINK in United States
Change List Number 1078, dated September 16, 1964, and attach
to this supplemental Description Sheet. This notification
is for the purpose of indicating only a change in the height
of tower#1 to 303' and nighttime antenna radiation.

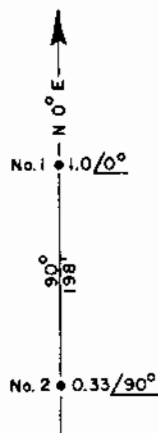
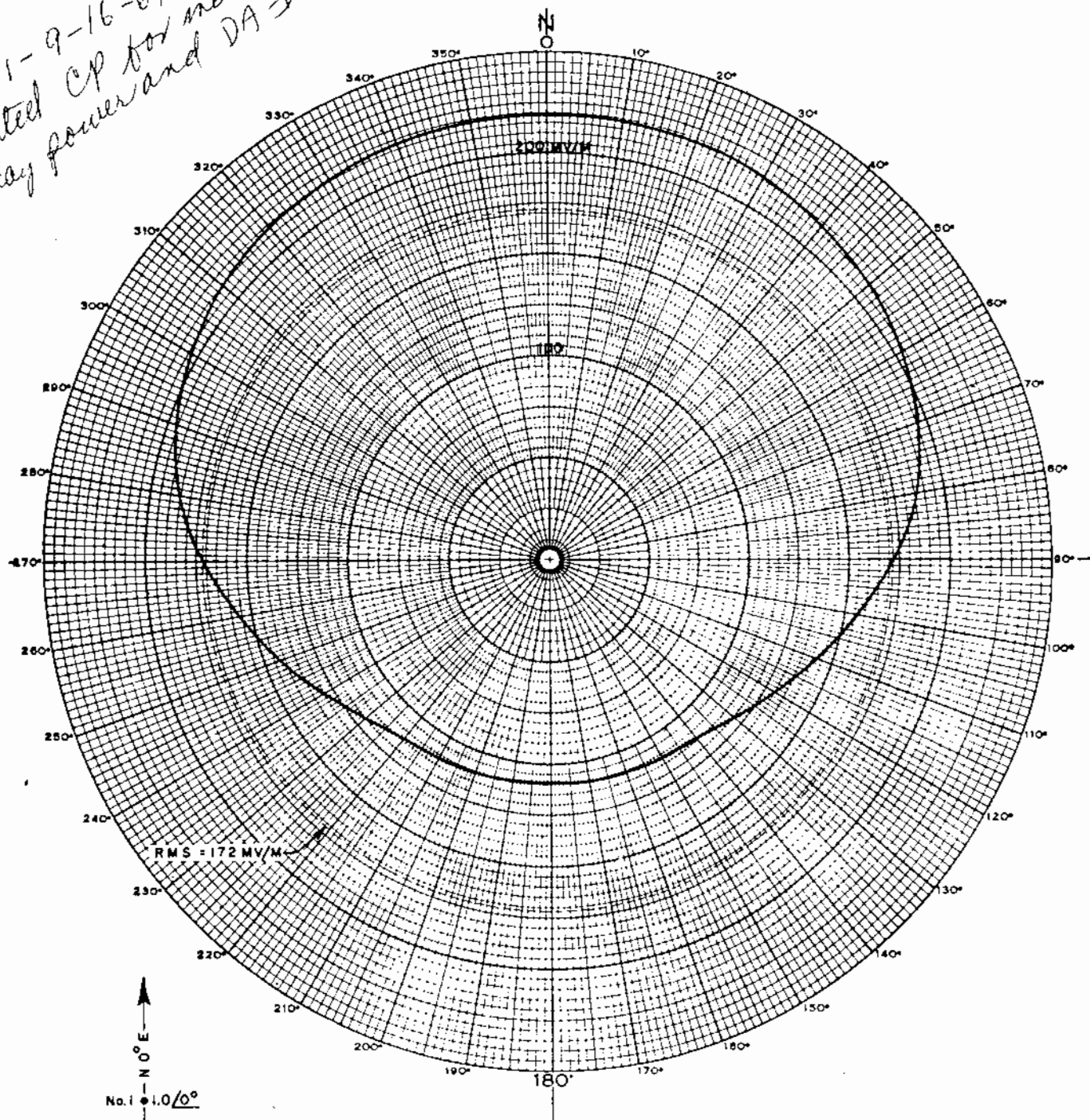
WINK

Proposed Day
(7-29-64ct)

Station WINK
Fort Myers, Florida

250w, 1kw-LS, DA-D, U
1240 kc

#201-9-16-64
granted CP for increase
in day power and DA-D



ANTENNA PLAN

N 26° 39' 03"
W 81° 51' 20"

FIGURE 3

HORIZONTAL PLANE RADIATION PATTERN
PROPOSED INCREASE IN DAYTIME POWER
FORT MYERS BROADCASTING COMPANY
WINK 1240 KC-U 1 KW-DA-D, 0.25 KW-N
FORT MYERS, FLORIDA

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

FCC File No. BP-15745
Accepted 7-23-64

Station WINK
Fort Myers, Florida

1240 kc

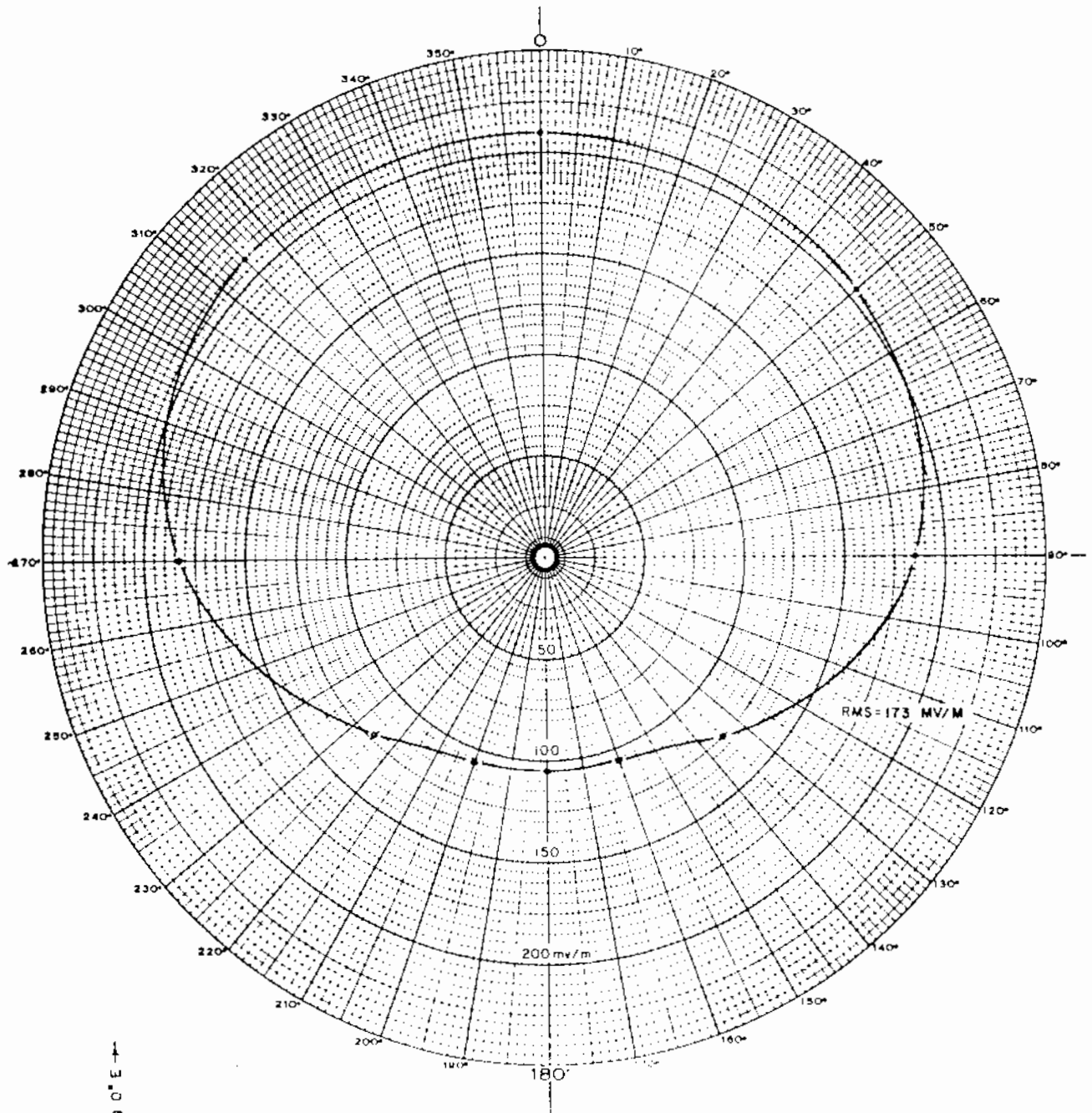
WINK

Measured Day
(11-29-65ct)

Station WINK
Fort Myers, Florida

250w, 1kw-LS, DA-D, D
1240 kc

LC 3-28-66



NO. 1 • 1.0 / 0°
NO. 2 • 0.33 / 90°

NORTH LATITUDE 26° 39' 03"
WEST LONGITUDE 81° 51' 20"

HEIGHT
NO. 1 = 154.3'
NO. 2 = 90'

FIGURE 7
HORIZONTAL RADIATION PATTERN
(DA-DAY OPERATION)
FORT MYERS BROADCASTING COMPANY
WINK .25 KW, 1 KW-LS DA-D 1240 KC
FORT MYERS, FLORIDA
Prepared by
Lohnes and Culver Washington, D. C.
July, 1965

FCC File No. BL-11078
Accepted 11-1-65

Station WINK
Fort Myers, Florida

1240 kc

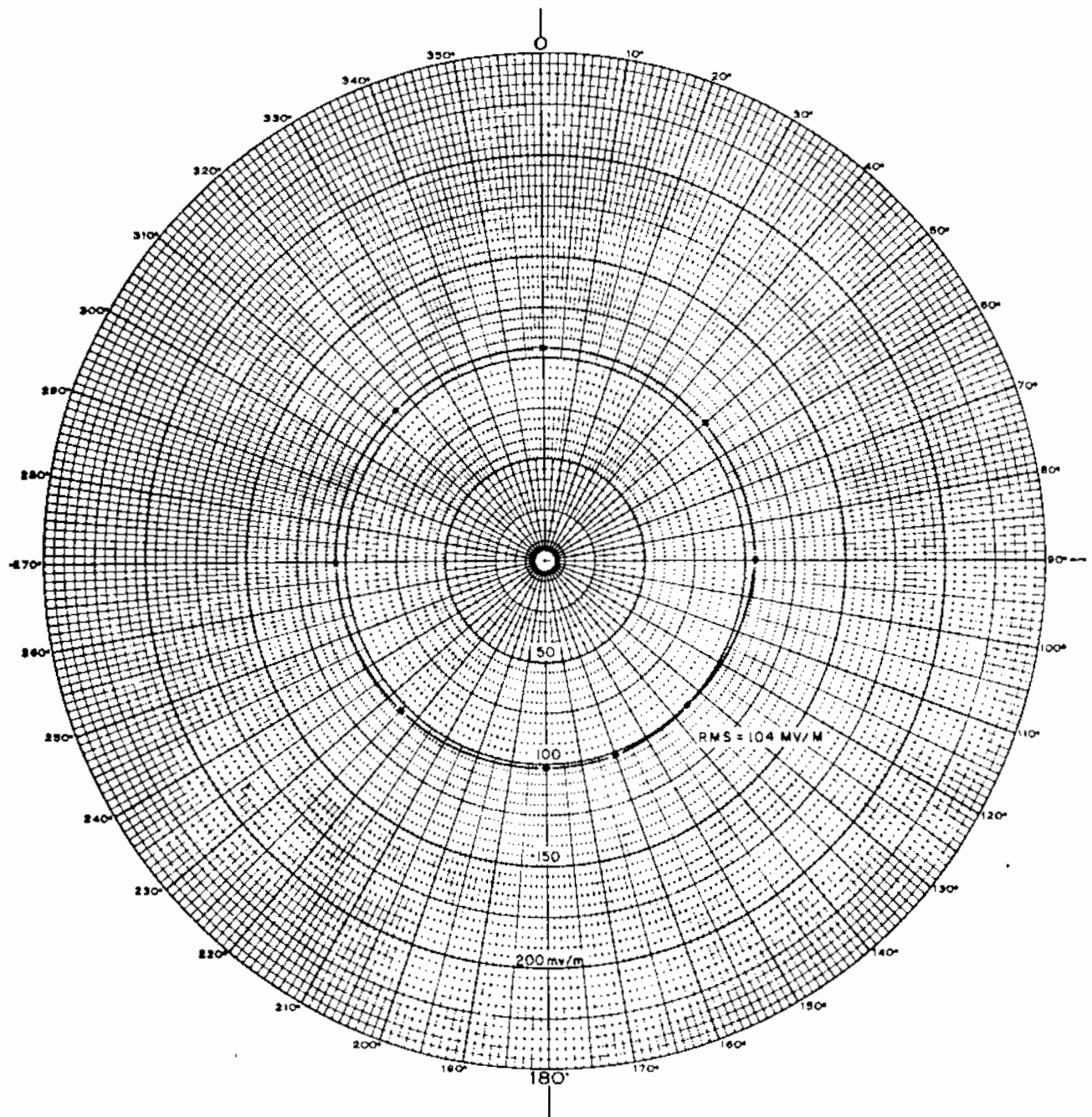
WINK

Measured Non-DA
(11-29-65ct)

Station WINK
Fort Myers, Florida

250w, 1kw-LS, DA-D, D
1240 kc

1C 3-28-66



NORTH LATITUDE 26° 39' 03"
WEST LONGITUDE 81° 51' 20"

FIGURE 6
HORIZONTAL RADIATION PATTERN
(NON-DA OPERATION NORTH TOWER)
FORT MYERS BROADCASTING COMPANY
WINK .25 KW, 1 KW-LS DA-D 1240 KC
FORT MYERS, FLORIDA

Prepared by
Lohnes and Culver Washington, D.C.

FCC File No. BL-11078
Accepted 11-1-65

Station WINK
Fort Myers, Florida

1240 kc

WJIM

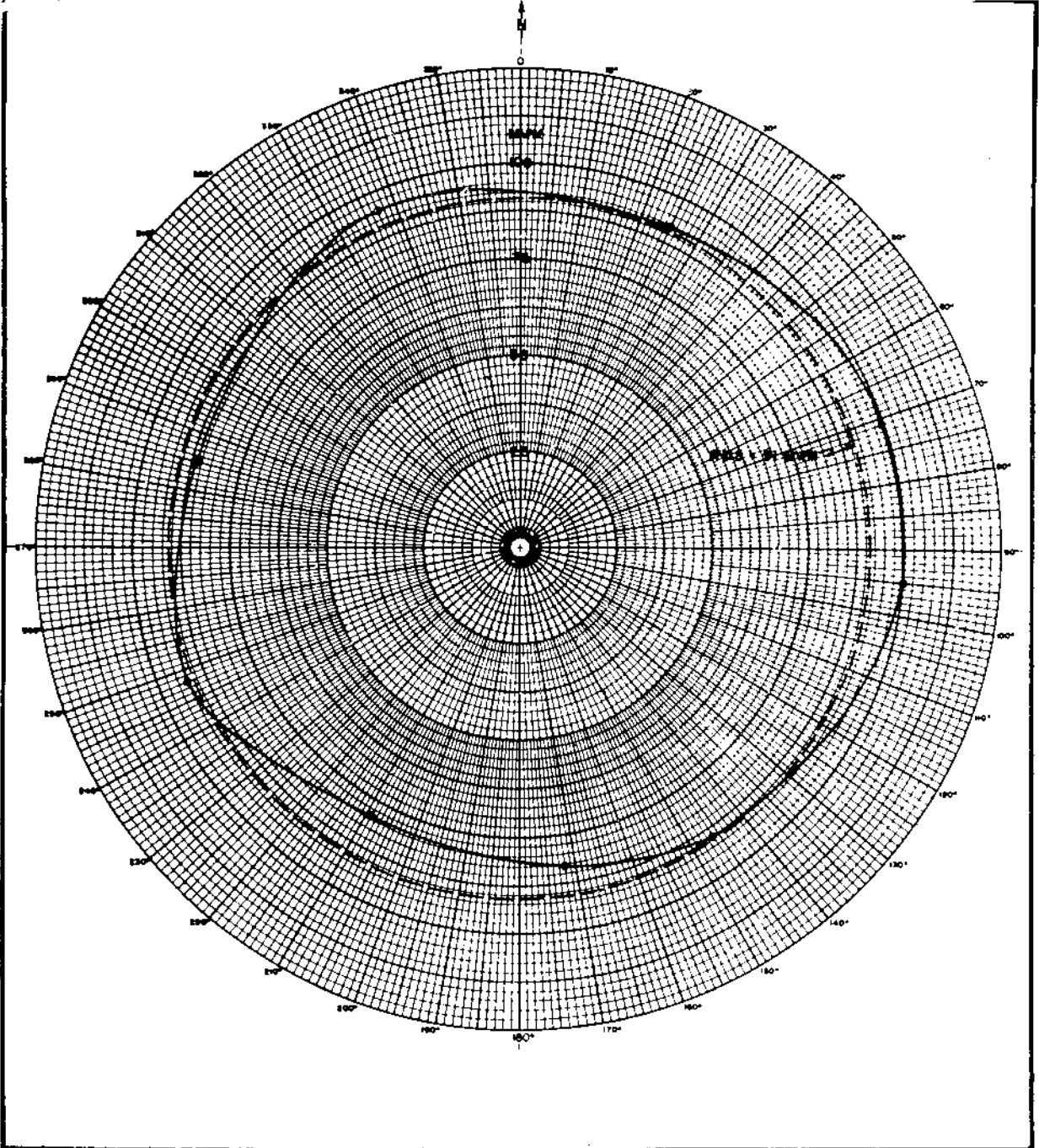
1240

MEASURED BOTH
(9/15/54G)

WJIM
LANSING, MICHIGAN

NON-DA
UNLIMITED 250W

1240 KC



ANTENNA HEIGHT = 500 FEET ABOVE
BASE INSULATOR.

LATITUDE 42° 44' 22" N.
LONGITUDE 84° 30' 49" W.

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

MEASURED
HORIZONTAL RADIATION PATTERN
WJIM
LANSING, MICHIGAN
1240 KC 250W U
540822

KEAR AND KENNEDY
CONSULTING ENGINEERS
WASHINGTON, D. C.