

TECHNICAL EXHIBIT
MINOR MODIFICATION APPLICATION
STATION KAYO-FM (FACILITY ID 16747)
ELMA, WASHINGTON

JULY 15, 2004

CH 257C 41 KW (MAX-DA) 620 M

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Technical Narrative

This Technical Exhibit was prepared on behalf of radio station KAYO-FM at Elma, Washington, in support of a minor modification application. Station KAYO-FM is currently licensed to operate as a Class C1 station on channel 257 (99.3 MHz) with an effective radiated power (ERP) of 12 kilowatts with an antenna height above average terrain (HAAT) of 650 meters (BLH-20020614AAH). KAYO-FM is also authorized to operate at a new site location with a maximum directional antenna ERP of 41 kilowatts and antenna HAAT of 638 meters (BPH-20021227ACD).

By this instant application, it is proposed to slightly change the site coordinates, reduce antenna height and modify the directional antenna pattern. Section 73.215 short-spaced processing at the proposed transmitter site is also requested towards station KQSN(FM) on channel 257A, at Naches, Washington (facility id 88006).

Proposed Transmitter Location

It is proposed to operate on channel 257 at a location immediately adjacent to the currently authorized site. The proposed coordinates 47-19-12 N, 123-20-41 W differ by 1 second in latitude and longitude (see Figure 1). A directional antenna maximum ERP of 41

kW and antenna HAAT of 620 meters is proposed.¹ The existing 40 meter (131 foot) structure does not require tower registration as it is less than 200 feet tall and meets the FCC's TOWAIR minimum slope requirement with respect to nearby airports.

Blanketing Interference Concerns

The 115 dBu predicted "blanketing" contour of the proposed station would extend radially 2.5 kilometers from the transmitting site. The applicant recognizes its responsibility to resolve complaints of interference, including blanketing and receiver-induced interference as required by Sections 73.315(b), 73.316(e) and 73.318.

FCC Predicted Coverage Contours

The predicted coverage contours for the proposed operation were calculated in accordance with the provisions of Section 73.313. Pursuant with current FCC practice, the distances to the contours were calculated without consideration given to terrain roughness correction factors. Figure 3 is a map showing the predicted coverage contours. It is indicated that the FCC predicted 70 dBu coverage contour encompasses all of the Elma city limits.

The proposed 60 dBu reference contour, based on 41 kilowatts ERP and an HAAT of 620 meters, will exceed 83.6 kilometers. The proposed reference Class C0 contour distance, as specified in Section 73.211(b) is 83 kilometers. Therefore, this facility can be classified as a Class C facility as it exceeds the maximum reference contour distance for a Class C0 facility.

Sheet 1 of Figure 6 is a horizontal relative field "envelope" for the directional antenna, used in calculating the contours from the proposed site. The pattern meets the 2 dB-decade and 15 dB min-to-max requirements of Section 73.316(b) and thus the 20 dB min-to-max ratio of the U.S./Canadian FM Agreement.

¹ Twelve (12) evenly spaced radials every 30 degrees of azimuth were used in conjunction with the N.G.D.C. 30-second terrain database to determine the average HAAT value.

Site Allocation Study

Channel 257C at the proposed site will satisfy the Commission's minimum separation distance requirements, specified in Section 73.207(b) of the Rules, to all domestic assignments except to station KQSN(FM) at Naches, Washington (see Sheet 1 of Figure 4).

Section 73.215 processing is requested towards KQSN(FM). The actual separation distance is 204.8 kilometers from the proposed KAYO-FM site; the minimum fully spaced (Section 73.207) separation distance is 226 kilometers; the minimum short-spaced (Section 73.215) separation distance is 203 kilometers. The map in Sheet 2 of Figure 4 indicates that there will be no predicted prohibited contour overlap between the proposed KAYO-FM and KQSN(FM). Since station KQSN(FM) already operates pursuant to Section 73.215, its actual facilities were used in determining its protected (60 dBu) and interfering contour (40 dBu).

Canadian Compliance

Figure 5 is a map showing the KAYO-FM authorized and proposed 52 dBu and 38 dBu F(50,10) interfering contours with respect to Canadian assignments. Both proposed contours are completely within the authorized contours, thus indicating no further impact to Canadian stations than that authorized for KAYO-FM.

Environmental Considerations

The proposed KAYO-FM facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed 10-bay $\frac{1}{2}$ -wave -spaced antenna is located 31 meters above ground level with a maximum ERP of 41 kW. A conservative relative field value of 0.1 was assumed for the proposed antenna (see Sheet 2 of Figure 6). The "worst-case" calculated power density at a point 2 meters above ground level will be 0.33 mW/cm^2 . This is 17% of the FCC's recommended limit of 0.2 mW/cm^2 for FM frequencies for an "uncontrolled"

environment. The only other known broadcast operation in the vicinity is translator station K205DH. Since K205DH only operates with an ERP of 3 Watts, it is believed that the contributions from both K205DH and the proposed KAYO-FM will not exceed the 0.2 mW/cm² limit.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

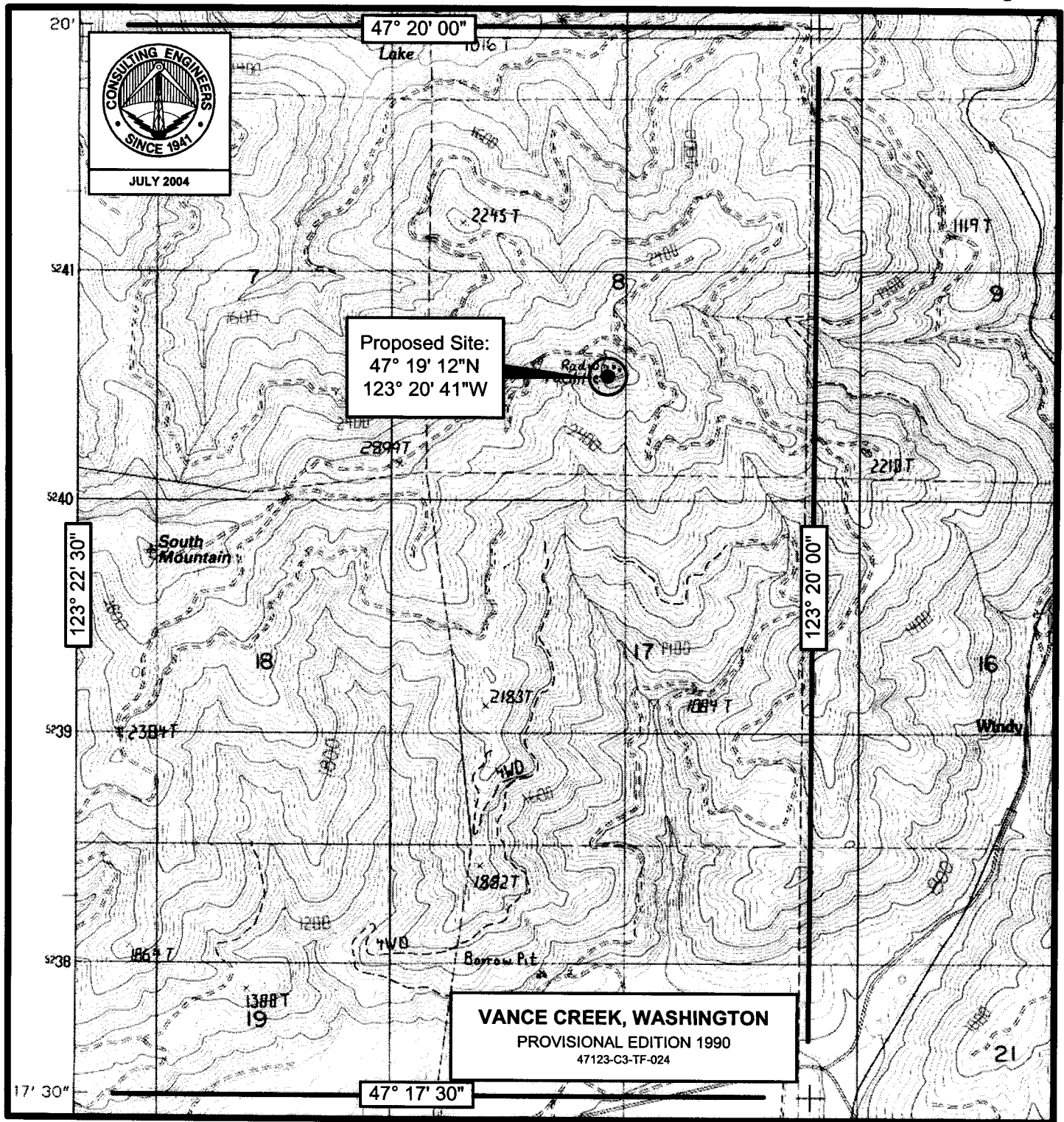


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July 15, 2004

Figure 1

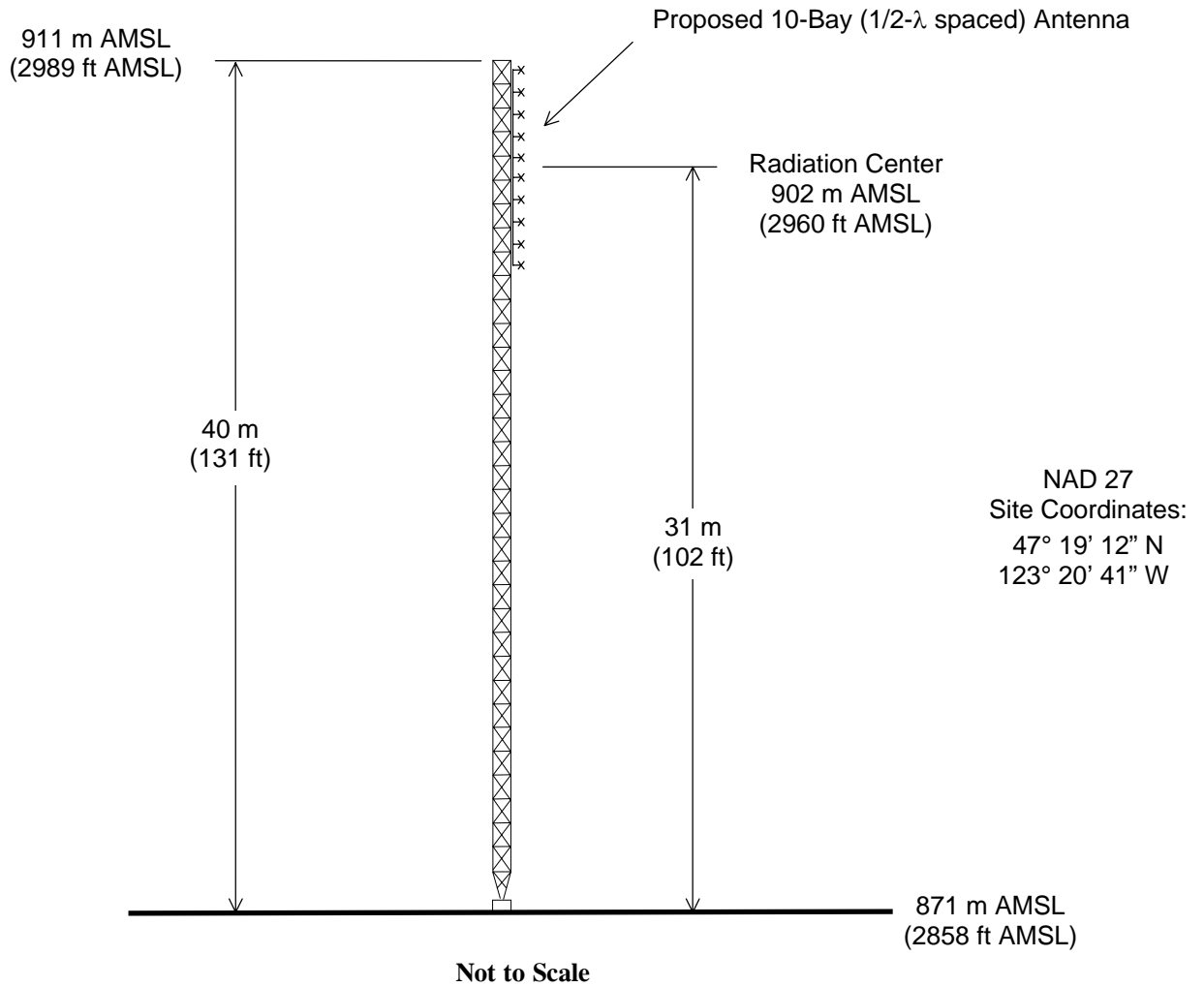
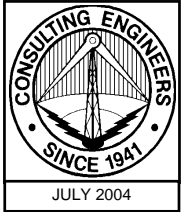


PROPOSED TRANSMITTER SITE

STATION KAYO-FM
ELMA, WASHINGTON
CH 257C 41 KW (MAX-DA) 620 M

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Figure 2



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

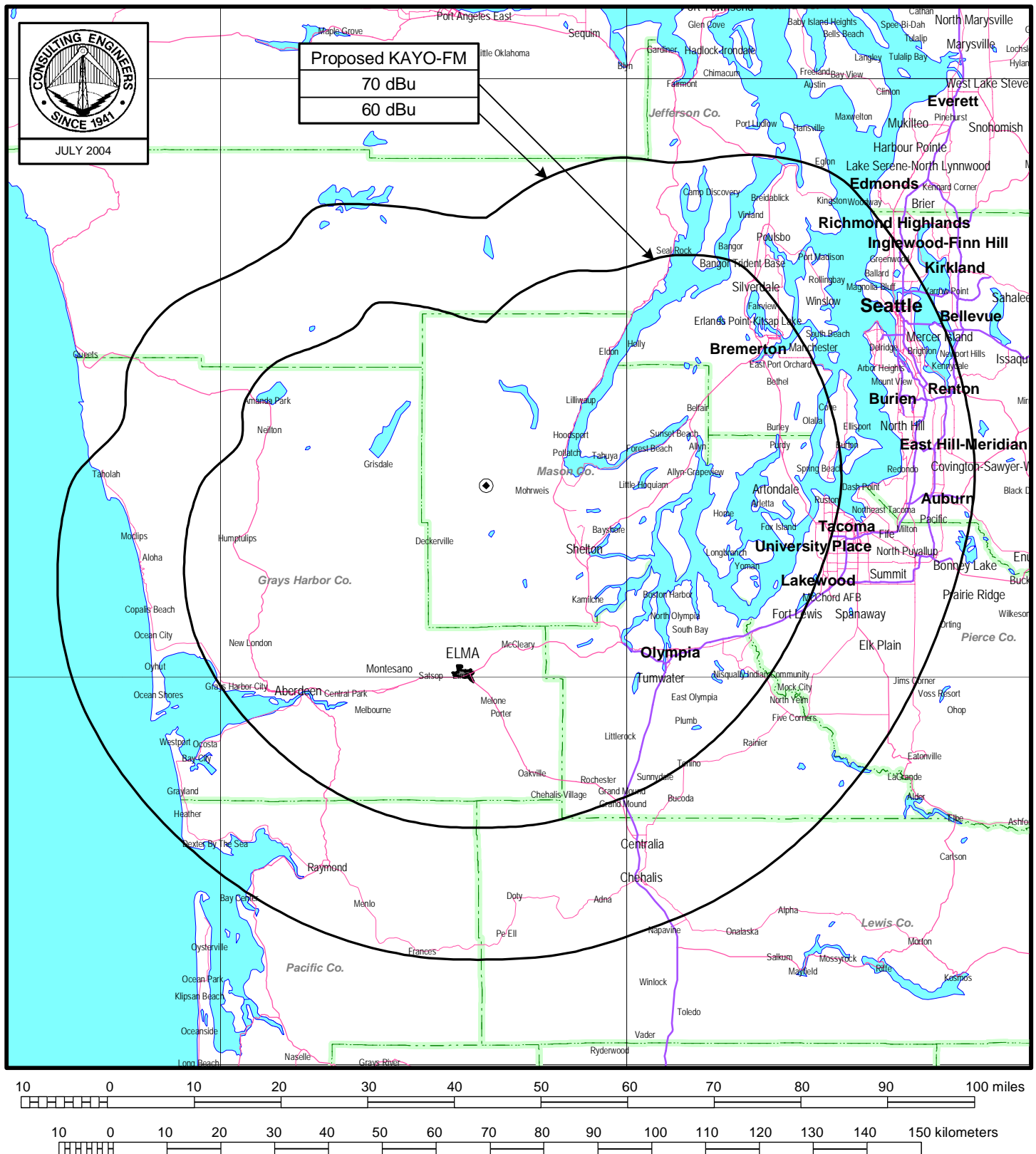
STATION KAYO-FM

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Figure 3



PREDICTED COVERAGE CONTOURS

STATION KAYO-FM

ELMA, WASHINGTON

CH 257C 41 KW (MAX-DA) 620 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

CDBS FM SEPARATION STUDY - PROPOSED SITE

Channel: 257C Separation Buffer: 32 km
Coordinates: 47-19-12 N 123-20-41 W

Call Id	City St	File Status	Channel Num	ERP Freq	DA HAAT	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km)	73.215	73.207
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KWJZ 57843	SEATTLE WA	BLH LIC C	19970317KB	255C 98.9	58.0 714	Y 15000	47-30-14 121-58-29	N	78.3	105.40	99.0	105.0 CLOSE
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KAYO-FM 33622	ELMA WA	BLH CP C	20021227ACD	257C 99.3	41.0 638	Y 46332	47-19-11 123-20-42	Y	213.7	0.04		
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KAYO-FM 33622	ELMA WA	BLH LIC C	20020614AAH	257C1 99.3	12.0 650	Y 39954	46-58-31 123-08-21	Y	157.9	41.37		
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KQSN 88006	NACHES WA	BLH LIC C	20000210ABI	257A 99.3	0.79 274	N	46-36-02 120-52-06	Y	112.1	204.76	203.0	226.0 SHORT
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Contour overlap provisions of Section 73.215 used. See Technical Narrative

CFOXFM 96554	VANCOUVER BC	C		257C 99.3	72.0 686	Y	49-21-29 122-57-09	N	7.1	228.48		306.0
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No extension of contours beyond KAYO-FM authorized operation. See Technical Narrative

95032	SOOKE BC	C		258A 99.5		N	48-21-28 123-41-10	N	347.7	118.18		182.0
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No extension of contours beyond KAYO-FM authorized operation. See Technical Narrative

	METCHOSIN BC	E RM C		258A 99.5		N	48-24-09 123-34-20	N	352.1	121.56		182.0
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No extension of contours beyond KAYO-FM authorized operation. See Technical Narrative

KWJJ-FM 13738	PORTLAND OR	BLH LIC C	199111106KG	258C1 99.5	52.0 386	N	45-29-20 122-41-40	N	166.0	209.60	188.0	209.0 CLOSE
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	ILWACO WA	RM ADD C	bg-21	259A 99.7			46-18-33 124-02-31		205.5	124.33	89.0	95.0 CLEAR
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KISW 47750	SEATTLE WA	BLH LIC C	20000204AAG	260C 99.9	58.0 714	Y 15848	47-30-14 121-58-29	Y	78.3	105.40	99.0	105.0 CLOSE
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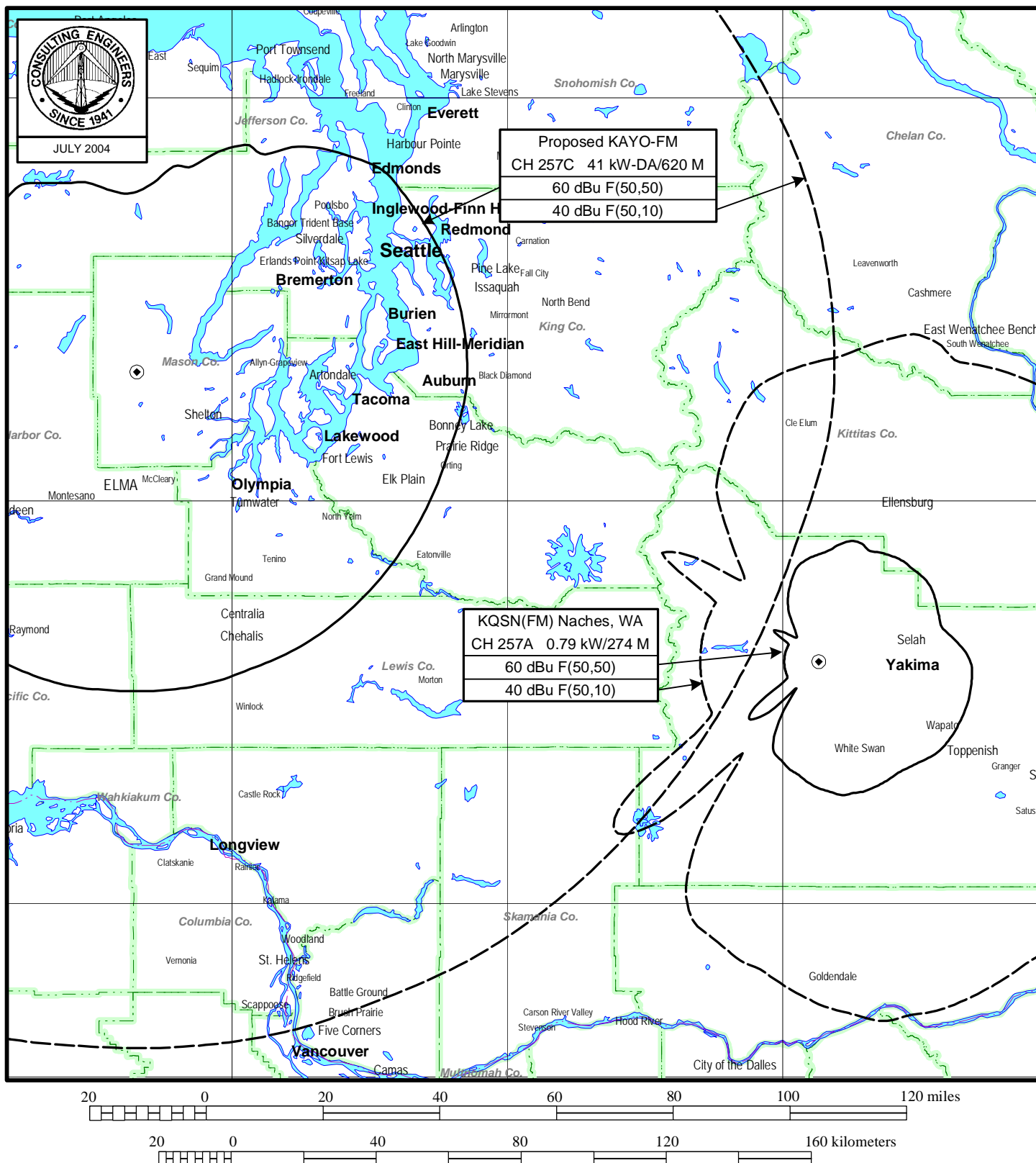
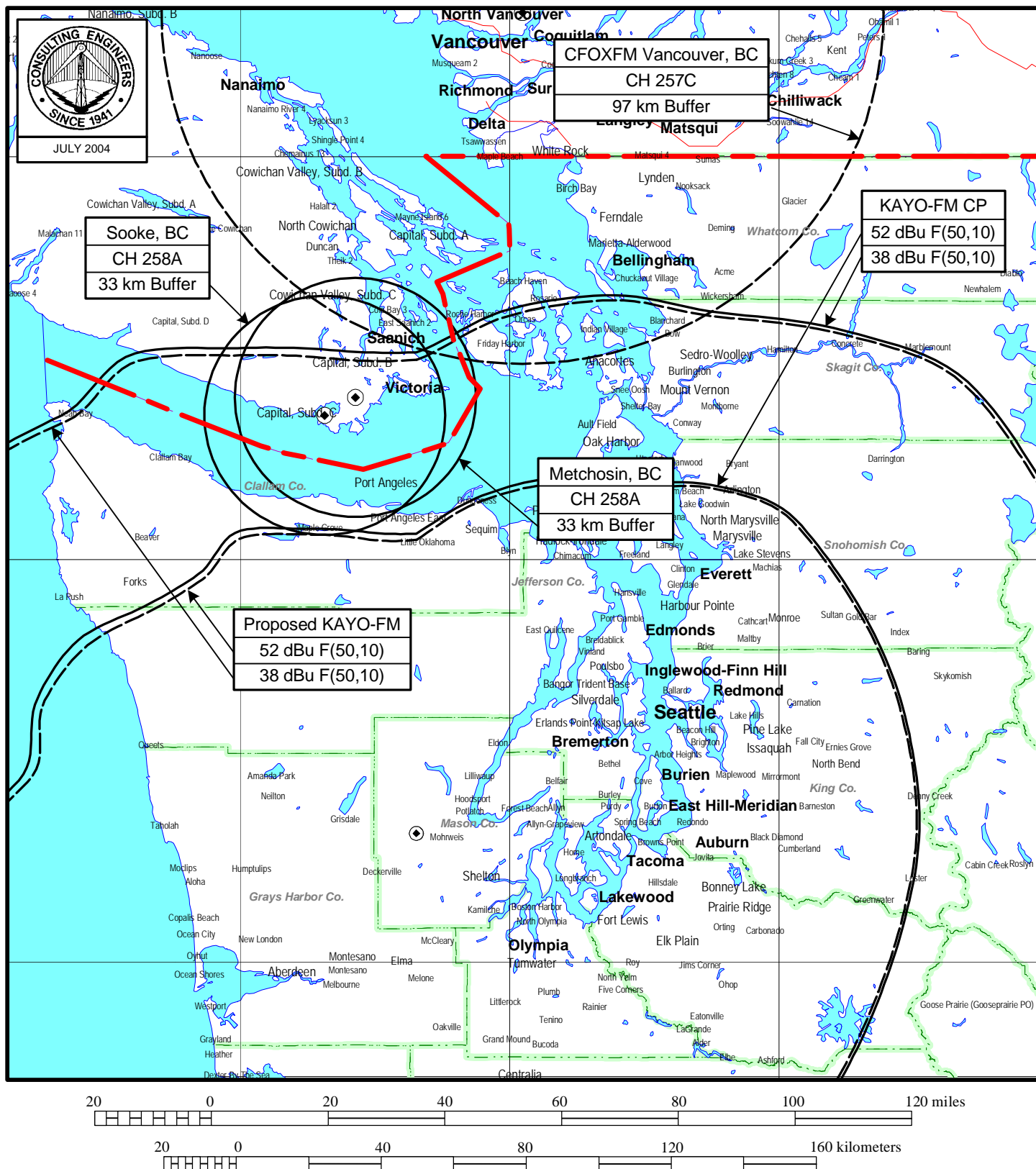


Figure 5



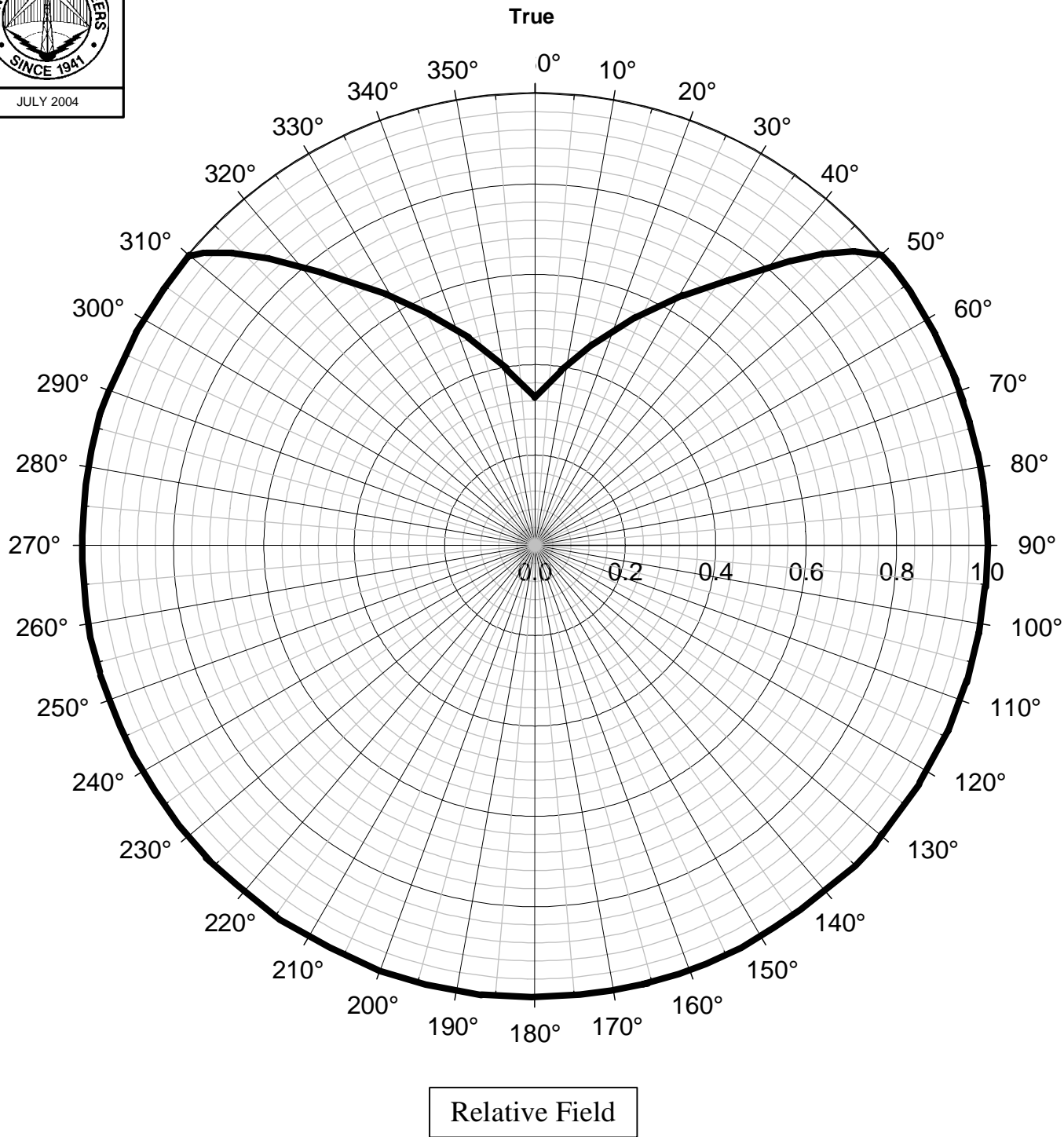
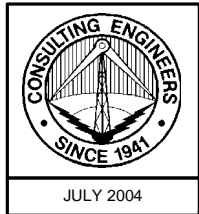
PREDICTED COVERAGE CONTOURS

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du Treil, Lundin & Rackley, Inc Sarasota, Florida

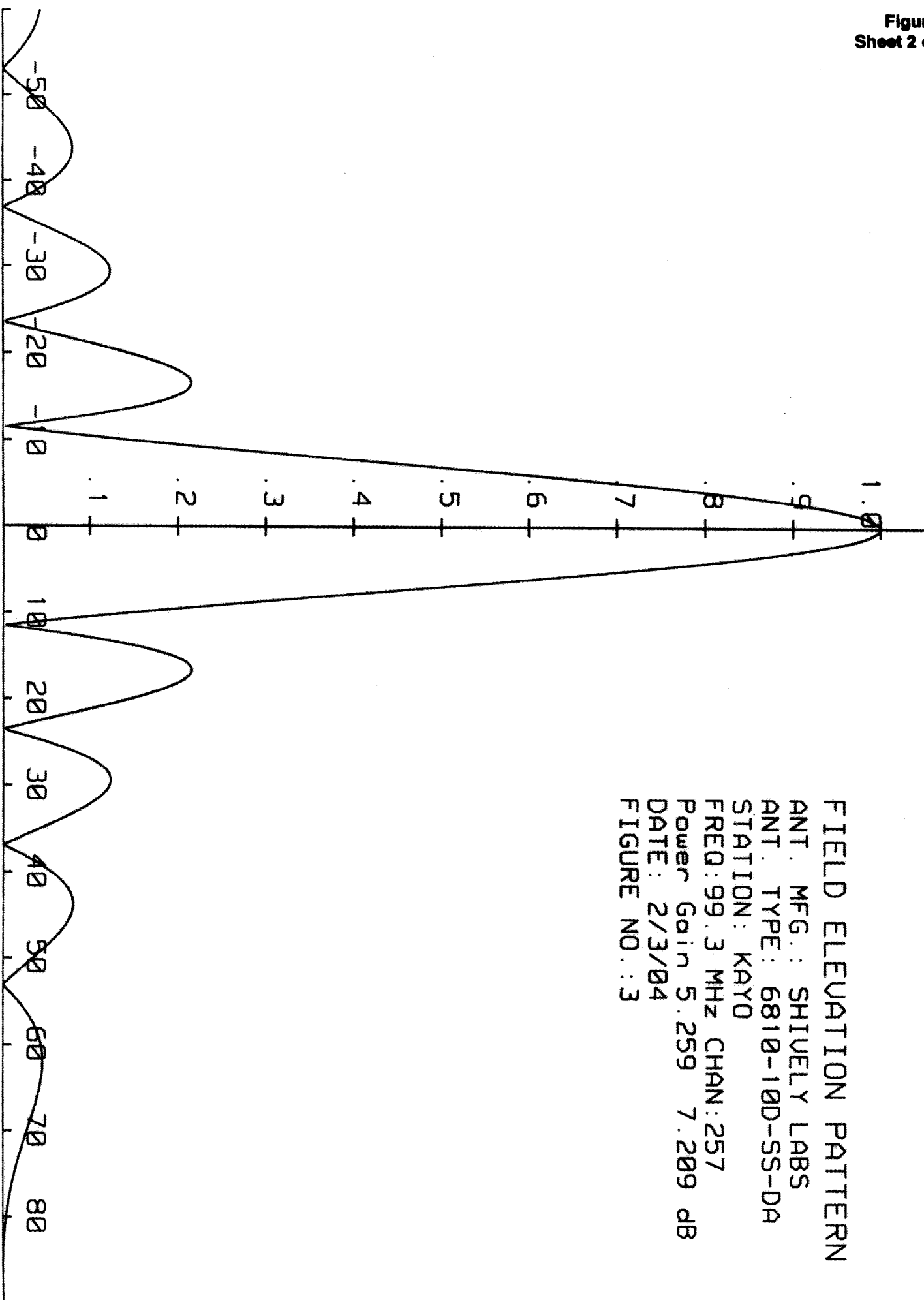


PROPOSED DIRECTIONAL ANTENNA ENVELOPE

STATION KAYO-FM
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FIELD ELEVATION PATTERN
ANT. MFG.: SHIVELY LABS
ANT. TYPE: 6810-10D-SS-DA
STATION: KAYO
FREQ: 99.3 MHz CHAN: 257
Power Gain 5.259 7.209 dB
DATE: 2/3/04
FIGURE NO.: 3