

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
RADIO STATION KYKX  
LONGVIEW, TEXAS

September 26, 2005

CH 289C    100 KW (MAX-DA)    463 M

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
RADIO STATION KYKX  
LONGVIEW, TEXAS  
CH 289C 100 KW (MAX-DA) 463 M

Table of Contents

	Technical Statement
Figure 1	Technical Specifications
Figure 2	Tower Sketch
Figure 3	Proposed Directional Antenna Pattern Envelope
Figure 4	Predicted Coverage Contours
Figure 5	Allocation Study
Appendix	Antenna Vertical Radiation Pattern

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
RADIO STATION KYKX  
LONGVIEW, TEXAS  
CH 289C    100 KW (MAX-DA)    463 M

Technical Statement

This Technical Exhibit was prepared on behalf of radio station KYKX, channel 289C, Longview, Texas, in support of a minor change application to modify the facilities of KYKX. By means of this application, the applicant proposes to increase the height of its antenna at the existing transmitter site and continue operation on channel 289C.

Proposed Facilities

The proposed transmitting facility will operate on Channel 289C with a maximum effective radiated power (ERP) of 100 kW (circular polarization) and an antenna height above average terrain (HAAT) of 463 M. It is proposed to employ a directional antenna to be side-mounted on a new, taller tower to be constructed at the same site as the present facility. The proposed transmitting facility consists of a 8-bay, circularly polarized, directional FM antenna to be side-mounted at 427 meters above ground level (568 meters AMSL). This represents an increase in antenna height of 111 meters above the height of the licensed KYKX antenna, resulting in a calculated antenna height above average terrain of 463 meters (based on the terrain information on file for the licensed KYKX operation). The proposed facilities exceed the minimum for a class C FM station.

The FAA is being notified of the proposed construction, and antenna structure registration will be completed after receipt of the FAA's determination. Specifications for the proposed operation are provided in Figure 1. A tower sketch is provided as Figure 2. A plot and tabulation of the proposed directional antenna pattern envelope are provided in Figure 3.

KYKX  
Longview, Texas

Page 2

### Predicted Coverage Contours

The predicted coverage contours were calculated in accordance with Section 73.313 of the FCC Rules. The average terrain elevations from 3 to 16 km from the proposed site were computed using the U.S.G.S 3-second terrain database. The distances to the predicted coverage contours were determined using the average elevations of 3-16 km portions of radials spaced every 5-degrees of azimuth. The antenna radiation center HAAT in each radial direction and the ERP were used in conjunction with the propagation prediction curves of Section 73.333 to determine the distances to contours. Figure 4 is a map showing the predicted coverage contours.

As indicated in Figure 4, the normally predicted 70 dBu contour encompasses 100 percent of Longview, Texas. The city limits shown for Longview were obtained from the 2000 U.S. Census.

### Allocation Considerations

Figure 5 is an allocation study for channel 289C at Longview. As outlined in Sheet 1 of Figure 5, the proposed facility meets the separation requirements of Section 73.207 of the FCC Rules with respect to all pertinent allotments and assignments with the exception of three licensed stations and one vacant allotment. These facilities are: KNCB-FM, Vivian, LA; KVVP, Leesville, LA; KRNB, Decatur, TX and the vacant allotment on channel 288A at Haynesville, LA. With respect to these facilities, the proposal provides contour protection and processing pursuant to 47 CFR 73.215 is requested. Maps demonstrating that the proposed KYKX facility does provide contour protection to these four facilities are provided in Figure 5, Sheets 2 through 4.

It is also noted that there are two proposed allotments that are short-spaced to KYKX: channel 288A at Hall Summit, Louisiana and channel 290A at Pleasant Hill, Louisiana. These two proposed allotments require that KYKX be downgraded from channel 289C to channel 289C0; since this application proposes

KYKX  
Longview, Texas

Page 3

facilities in excess of the class C minimum requirements and is timely-filed pursuant to the Order to Show Cause issued to KYKX in RM-11158 (proposal to allot channel 288A to Hall Summit, Louisiana), KYKX is not required to provide contour protection to these two proposed allotments.

There is one, licensed TV station (KCEB, channel 54) and two licensed FM stations (KTAA, channel 214 and KFRO-FM, channel 237) within 10 kilometers of the proposed transmitter site; no interference is expected with respect to these or any other facilities. The predicted blanketing contour extends approximately 3.9 km from the transmitter site. No problems with blanketing interference are anticipated, however, if any problems arise the applicant recognizes its responsibility to remedy complaints of blanketing interference as required by 47 CFR 73.318.

#### Environmental Considerations

With respect to human exposure to radiofrequency radiation, the proposed facility is categorically excluded from environmental processing. The proposed 8-bay antenna is to be mounted 427 meters above ground level. Based on the vertical radiation pattern for a typical 8-bay FM antenna<sup>\*</sup>, the relative field is less than 0.35 at all angles greater than 6° below the horizontal. Assuming 200 kW of radiated power (100 kW horizontal/100 kW vertical) and a “worst-case” pattern relative field in the downward direction of 0.35, the “worst-case” calculated RFR power density from Equation 8 on page 22 of OET Bulletin 65 (Edition 97-01, August 1997) at 2 meters above ground level at the tower base is 0.0045 mW/cm<sup>2</sup> or 2.25% of the FCC limit for uncontrolled environments. Therefore, the proposal complies with the FCC limits for human exposure to RF radiation, and with respect to RF radiation it is categorically excluded from environmental processing. The applicant certifies that access to the

---

\* See the Appendix for a typical 8-bay FM antenna vertical radiation pattern.

---

KYKX  
Longview, Texas

Page 4

tower will be restricted by means of a fence, and that it will reduce power or cease operation, as necessary, to protect persons having access to the tower from RFR exposure in excess of the FCC guidelines.

The applicant will address certification with respect to all other environmental issues in the antenna structure registration process.

David E. Dickmann

September 26, 2005

**Figure 1**

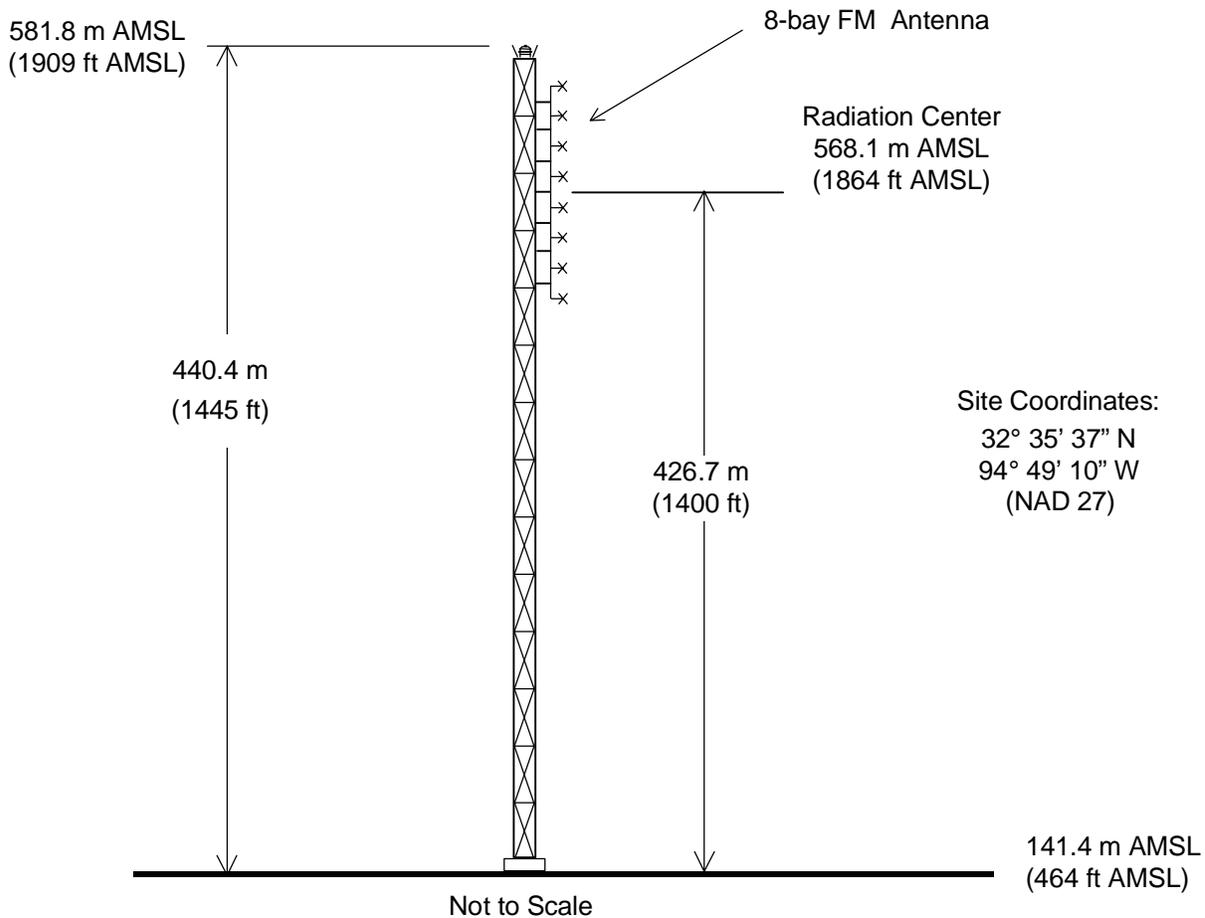
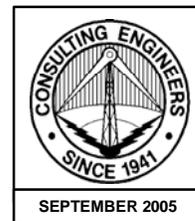
TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
RADIO STATION KYKX  
LONGVIEW, TEXAS  
CH 289C 100 KW (MAX-DA) 463 M

Technical Specifications

Channel / Frequency	289C / 105.7 MHz
Site Coordinates (NAD'27)	32°35'37"North Latitude 94°49'10"West Longitude
Site elevation	141.4 m (464 feet) AMSL
Overall height of proposed structure	440.4 m (1445 feet) AGL / 581.8 m (1909 feet) AMSL
Height of antenna radiation center	426.7 m (1400 feet) AGL / 568.1 m (1864 feet) AMSL
Antenna radiation center HAAT	463 M
Transmitter	as required
Transmitter power output	27.34 kW
Transmission line	Andrew, HJ9-50*
Transmission line length	442 m (1450 ft)
Transmission line efficiency	76.3 %
Antenna	8-bay, directional
Polarization	Circular
Power gain (assumed DA)	4.80
Antenna input power	20.86 kW
Effective radiated power (H & V)	100 kW

\*or equivalent

Figure 2



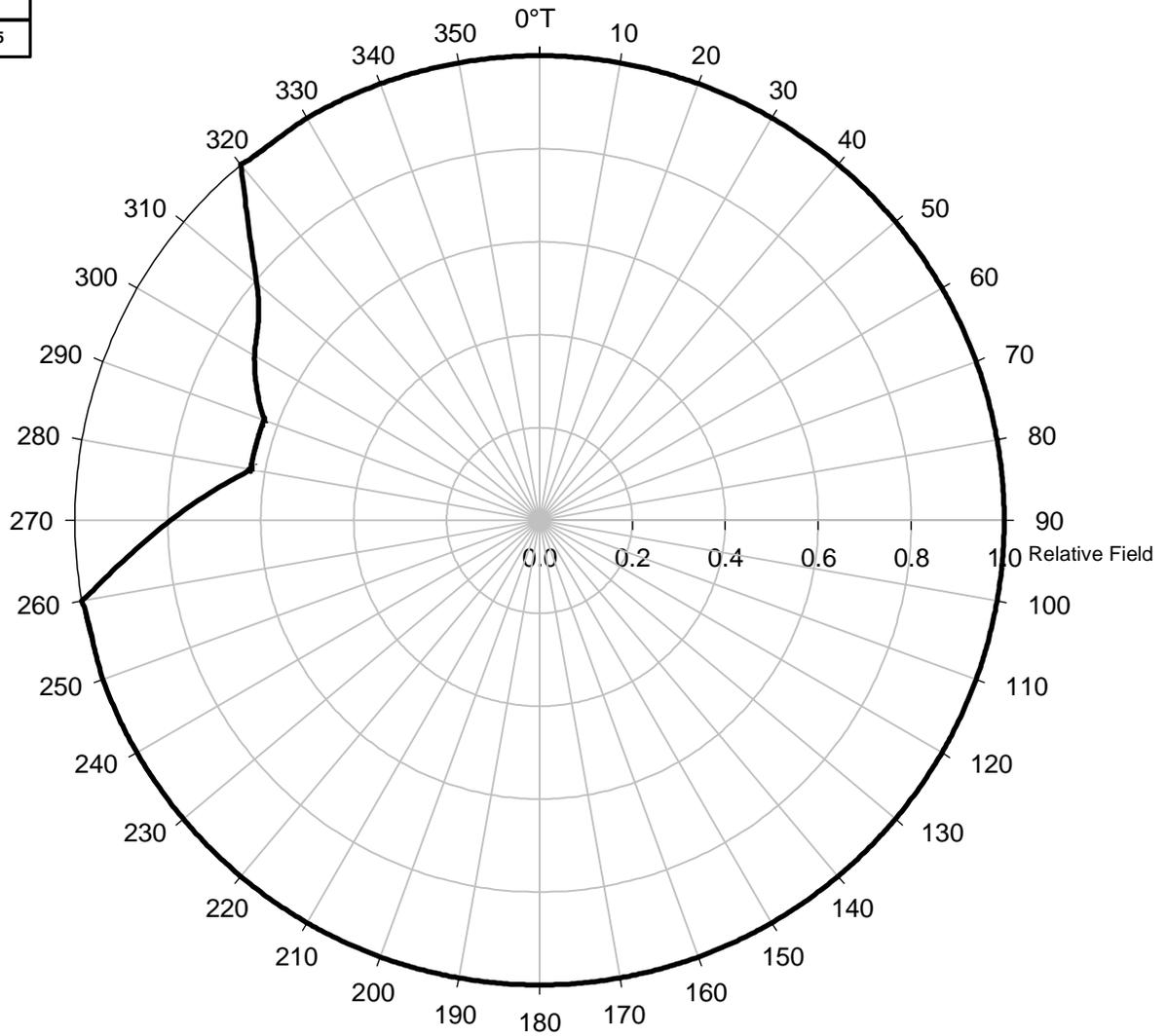
## PROPOSED ANTENNA AND SUPPORTING STRUCTURE

RADIO STATION KYKX  
LONGVIEW, TEXAS  
CH 289C 100 KW (MAX-DA) 463 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



SEPTEMBER 2005



## DIRECTIONAL ANTENNA PATTERN ENVELOPE

RADIO STATION KYKX  
LONGVIEW, TEXAS  
CH 289C 100 KW (MAX-DA) 463 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

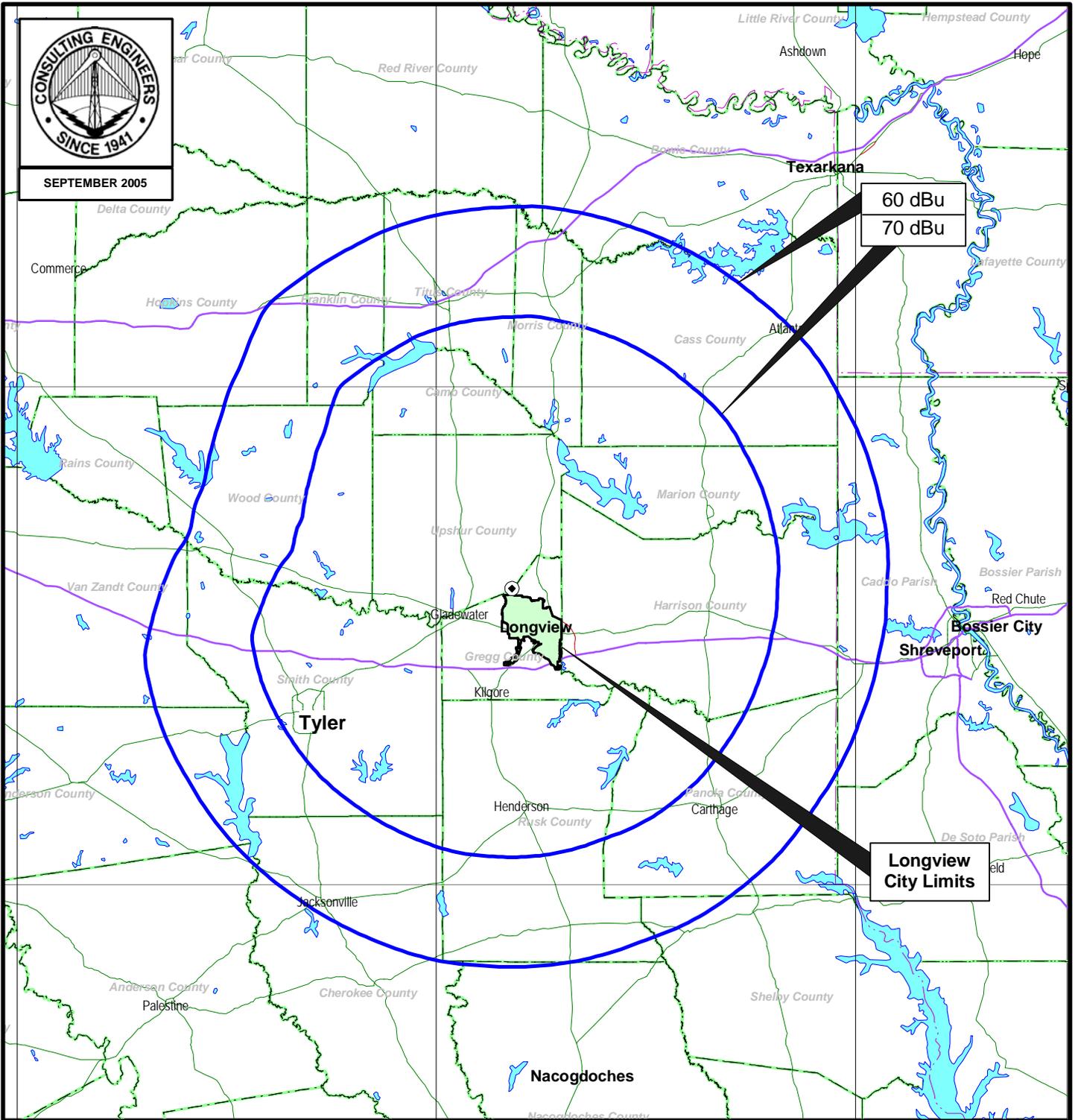
TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
RADIO STATION KYKX  
LONGVIEW, TEXAS  
CH 289C 100 KW (MAX-DA) 463 M

Tabulation of Relative Field Envelope\*

Azimuth (deg. True)	Relative Field	Azimuth (deg. True)	Relative Field
0	1.000	180	1.000
10	1.000	190	1.000
20	1.000	200	1.000
30	1.000	210	1.000
40	1.000	220	1.000
50	1.000	230	1.000
60	1.000	240	1.000
70	1.000	250	1.000
80	1.000	260	1.000
90	1.000	270	0.794
100	1.000	280	0.631
110	1.000	290	0.631
120	1.000	300	0.708
130	1.000	310	0.794
140	1.000	320	1.000
150	1.000	330	1.000
160	1.000	340	1.000
170	1.000	350	1.000

\* Note: Minimum relative field of 0.631 from 280° T to 290° T

Figure 4



SEPTEMBER 2005

## PREDICTED COVERAGE CONTOURS

RADIO STATION KYKX

LONGVIEW, TEXAS

CH 289C 100 KW (MAX-DA) 463 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

**ALLOCATION STUDY**  
**RADIO STATION KYKX**  
**LONGVIEW, TEXAS**  
**CH 289C 100 KW (MAX-DA) 463 M**

Job Title: KYKX  
Channel: 289 C

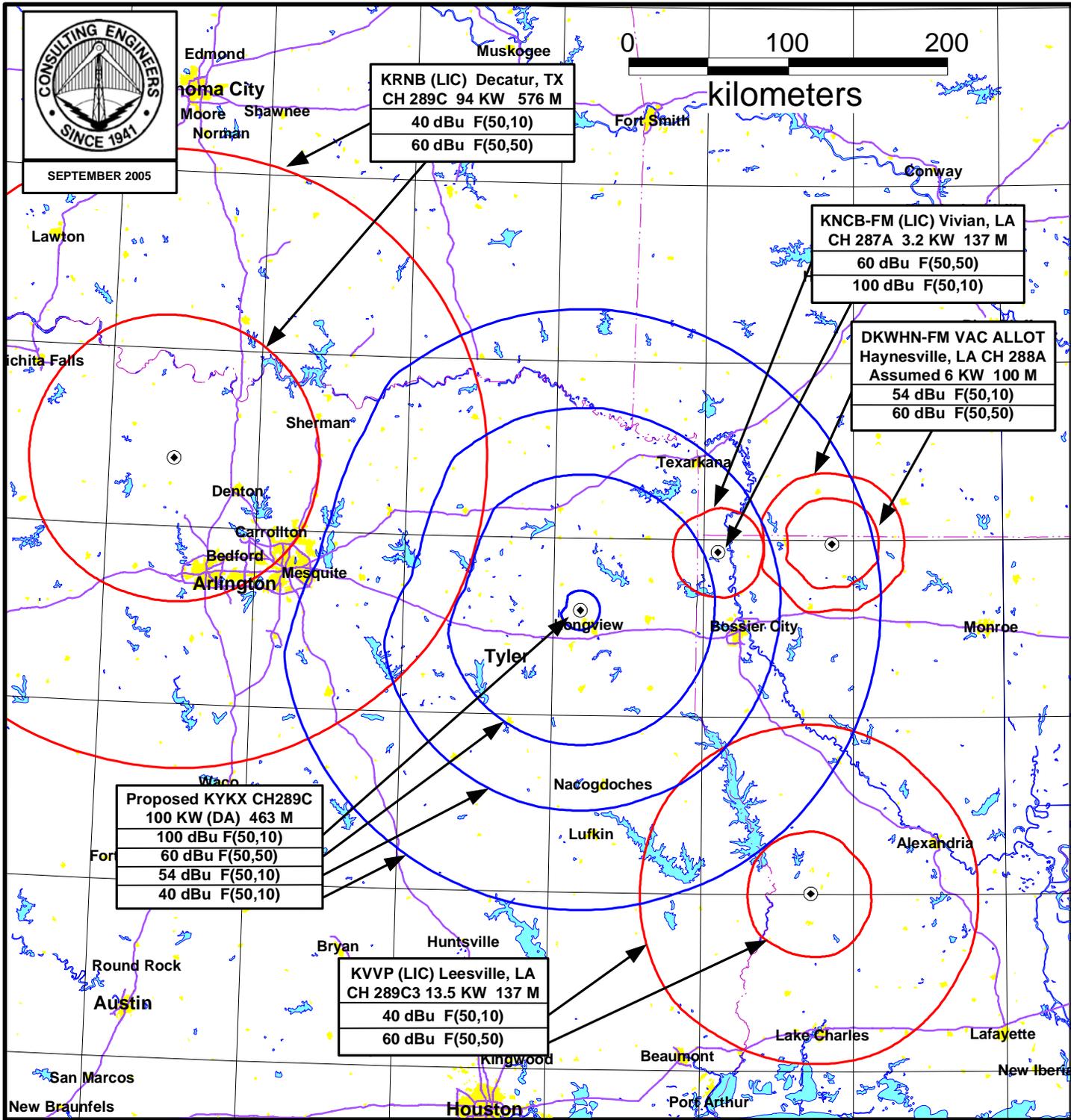
Coordinates: 323537 0944910

Call Id	City St	File Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km)
NEW 165365	NEW BOSTON TX	BSPH APP C	20050812ASJ	286 A 105.1	0.000		33-24-32 094-30-49		17.4	94.83	95.0 <sup>3</sup>
DK0ZL 89495	NEW BOSTON TX	VAC C		286 A 105.1	0.000	N	33-27-41 094-31-00	N	16.2	100.31	95.0
KNCB-FMVIVIAN 49155	LA LIC C	BLH 20020910AAE		287 A 105.3	3.200 137	N	32-55-54 093-54-22	Y	66.0	93.43	95.0 <sup>1</sup>
0	HALL SUMMIT RM LA ADD C	11158		288 A 105.5	0.000		32-15-33 093-13-27		103.5	154.56	165.0 <sup>2</sup>
DKWHN-FHAYNESVILLE 26464	LA VAC C			288 A 105.5	0.000	N	32-58-47 093-08-38	N	74.2	162.70	165.0 <sup>1</sup>
KNAS 54822	NASHVILLE AR LIC C	BLH 7309		288 A 105.5	3.000 26	N	33-55-45 093-51-01	N	31.0	173.48	165.0
0	LOVELADY TX ADD C	RM 11030		288 A 105.5	0.000		31-03-14 095-32-34		202.0	183.95	165.0
0	CLAYTON OK ADD C	RM 11193		289 A 105.7	0.000		34-35-18 095-21-12		347.6	226.72	226.0
KVVP 62277	LEESVILLE LA LIC C	BLH 19960405KD		289 C3 105.7	13.500 137	N	31-00-19 093-16-42	Y	140.1	228.73	237.0 <sup>1</sup>
KRNB 9747	DECATUR TX LIC C	BMLH 20031209AAL		289 C 105.7	94.000 576	N 28594	33-23-12 097-33-57	Y	289.7	271.34	290.0 <sup>1</sup>
0	PLEASANT HI LA ADD C	RM 11231		290 A 105.9	0.000		31-54-00 093-26-00		120.2	151.59	165.0 <sup>2</sup>
KUZN 9087	CENTERVILLE TX LIC C	BLH 19990329KC		290 C3 105.9	25.000 100	N	31-16-56 095-53-42	N	215.1	177.45	176.0
KYGL 12312	TEXARKANA AR LIC C	BLH 19950427KC		292 C2 106.3	50.000 150	N	33-18-30 093-56-54	Y	45.4	113.66	105.0

<sup>1</sup> Contour protection pursuant to 47 CFR 73.215 provided.

<sup>2</sup> Protection not required of these proposed allotments, see Technical Narrative.

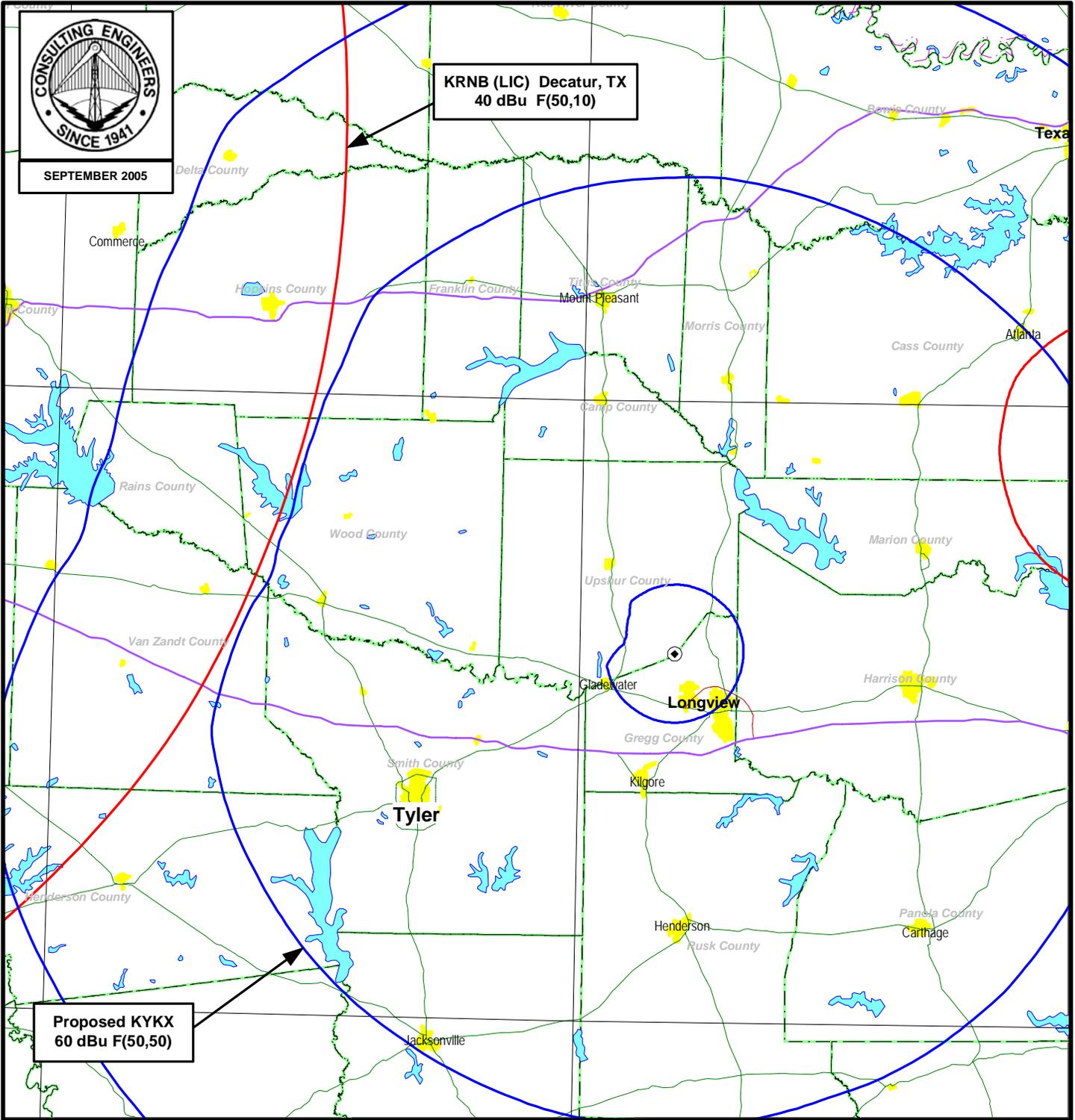
<sup>3</sup> Distance rounds to 95 km.



## ALLOCATION STUDY

RADIO STATION KYKX  
LONGVIEW, TEXAS  
CH 289C 100 KW (MAX-DA) 463 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida



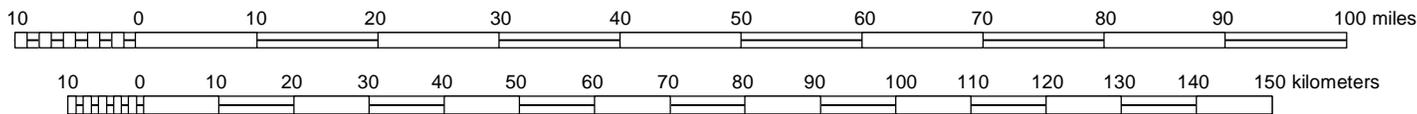
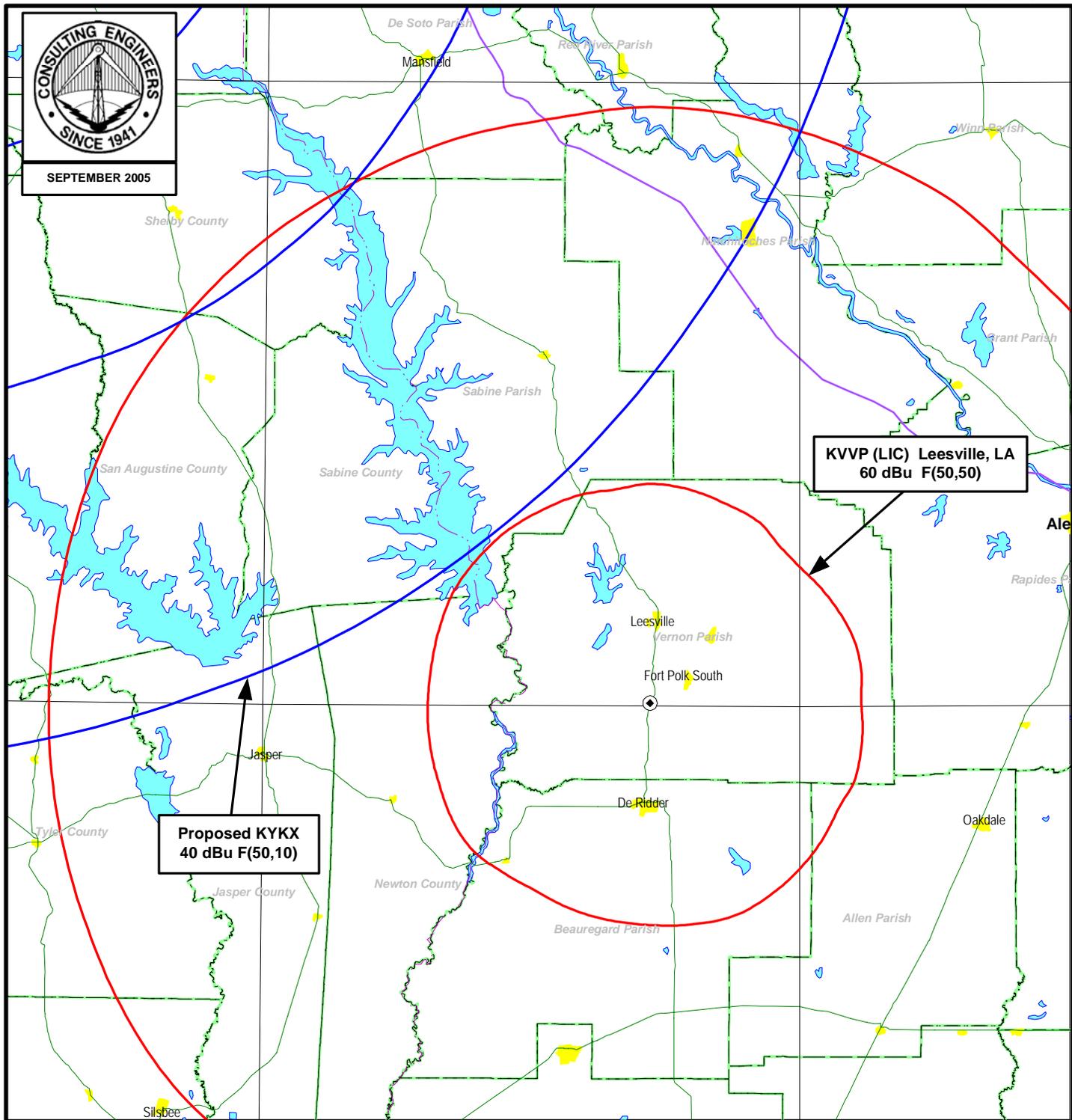
SEPTEMBER 2005

KRNB (LIC) Decatur, TX  
40 dBu F(50,10)

Proposed KYKX  
60 dBu F(50,50)



**ALLOCATION STUDY**  
**RADIO STATION KYKX**  
**LONGVIEW, TEXAS**  
**CH 289C 100 KW (MAX-DA) 463 M**  
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



**ALLOCATION STUDY**  
**RADIO STATION KYKX**  
**LONGVIEW, TEXAS**  
**CH 289C 100 KW (MAX-DA) 463 M**  
du Treil, Lundin & Rackley, Inc. Sarasota, Florida

APPENDIX – ANTENNA VERTICAL RADIATION PATTERN  
*(one page follows)*

ELECTRONICS RESEARCH, INC.  
128 MARKET STREET  
NEWBURGH, IN. 47630

-----THEORETICAL-----  
VERTICAL PLANE RELATIVE FIELD

MAY 24, 1993  
ELEMENT SPACING:  
1.0 WAVELENGTH

8 ERI TYPE SHP, SHPX, LP, OR LFX ELEMENTS  
0 DEGREE(S) BEAM TILT  
0 PERCENT FIRST NULL FILL  
0 PERCENT SECOND NULL FILL

FIGURE F8

POWER GAIN IS 4.487 IN THE HORIZONTAL PLANE(4.487 IN THE MAX.)

1.0  
.9  
.8  
.7  
.6  
.5  
.4  
.3  
.2  
.1  
0

DEGREES RELATIVE TO THE HORIZONTAL PLANE

10 5 0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60 -65 -70 -75 -80 -85

