

TECHNICAL EXHIBIT  
MINOR CHANGE APPLICATION FOR  
FM STATION WCEZ (FACILITY ID 79019)  
CARTHAGE, ILLINOIS

JULY 12, 2001

CH 230A    6 KW    100 M

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Technical Narrative

This Technical Exhibit supports a minor change application for FM station WCEZ at Carthage, Illinois. The license application (pending) specifies an operation with a non-directional effective radiated power (ERP) of 6 kW and an antenna height above average terrain (HAAT) of 60 meters (BLH-20010507AAK).

Proposed Facilities

This application proposes an increase in antenna height to achieve equivalent maximum Class A FM facilities. WCEZ(FM) proposed operation its current site coordinates: 40-24-54 N, 91-15-11 W, with a non-directional ERP of 6 kW and antenna HAAT of 100 meters (8 evenly spaced radials were employed for HAAT average). The FCC antenna structure registration number is 1227484.

The proposed transmitter site is more than 700 kilometers from the closest point of the Canadian border. The site is more than 1,500 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Allegan, Michigan, more than 500 kilometers to the northeast. The closest point of the National Radio Quiet Zone (VA/WV) is more than 900 kilometers to the east. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1,100 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at North Liberty, Iowa, approximately 152

kilometers to the north. These separations are sufficient to not be a concern for coordination purposes.

### Allocation Study

Figure 4 contains a tabulation of actual and required separation distances with respect to other pertinent stations as specified in Section 73.207(b) of the Commission's Rules. The FCC's FM database was used as the basis for the separation study. The study does not indicate any "short-spacings" and, therefore, it is believed the proposal is in compliance with the FCC's FM allocation rules.

### Radiofrequency Electromagnetic Field Exposure

The proposed FM facility was evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The "worst-case" relative field reaches 0.45 at a downward angle of 63° (see Figure 3) from the proposed antenna, along with a combined ERP of 12 kW (6 kW horizontal polarization & 6 kW vertical polarization). Therefore, the "worst-case" calculated power density at a point 2 meters above ground level is 0.0093 mW/cm<sup>2</sup>, which is less than 5% of the FCC's recommended limit of 0.2 mW/cm<sup>2</sup> for FM channels, applicable to general population/uncontrolled exposure areas. Therefore, the proposal appears to comply with the FCC's RFR limits.

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. The proposed FM operation appears to be otherwise categorically excluded from environmental processing.

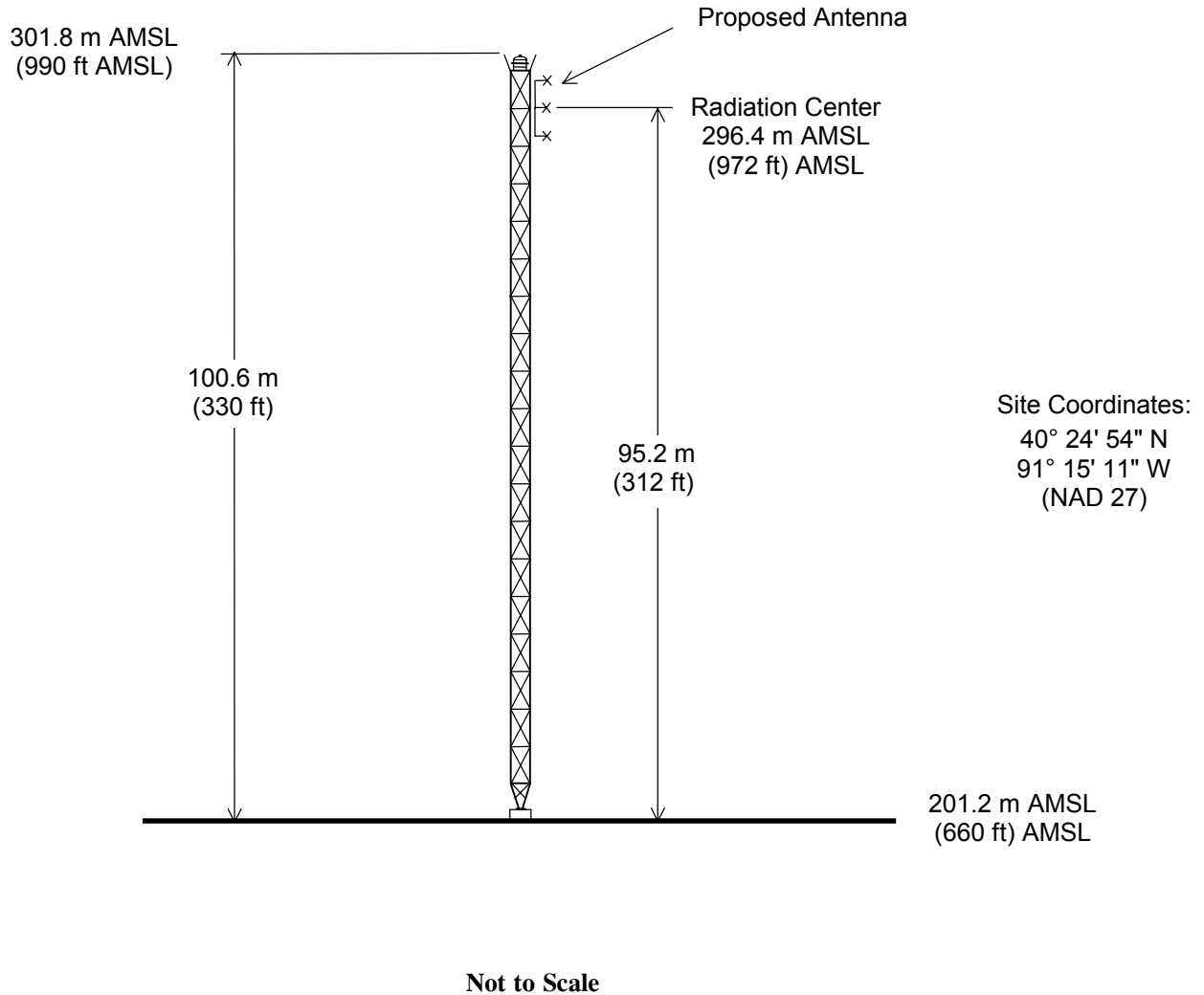
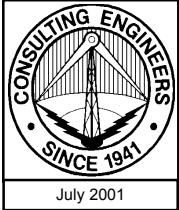
If there are questions concerning the technical portion of this application,  
please contact the office of the undersigned.

Jonathan N. Edwards

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 34237  
(941) 329-6000

July 12, 2001

Tower Registration No. 1227484



## PROPOSED ANTENNA AND SUPPORTING STRUCTURE

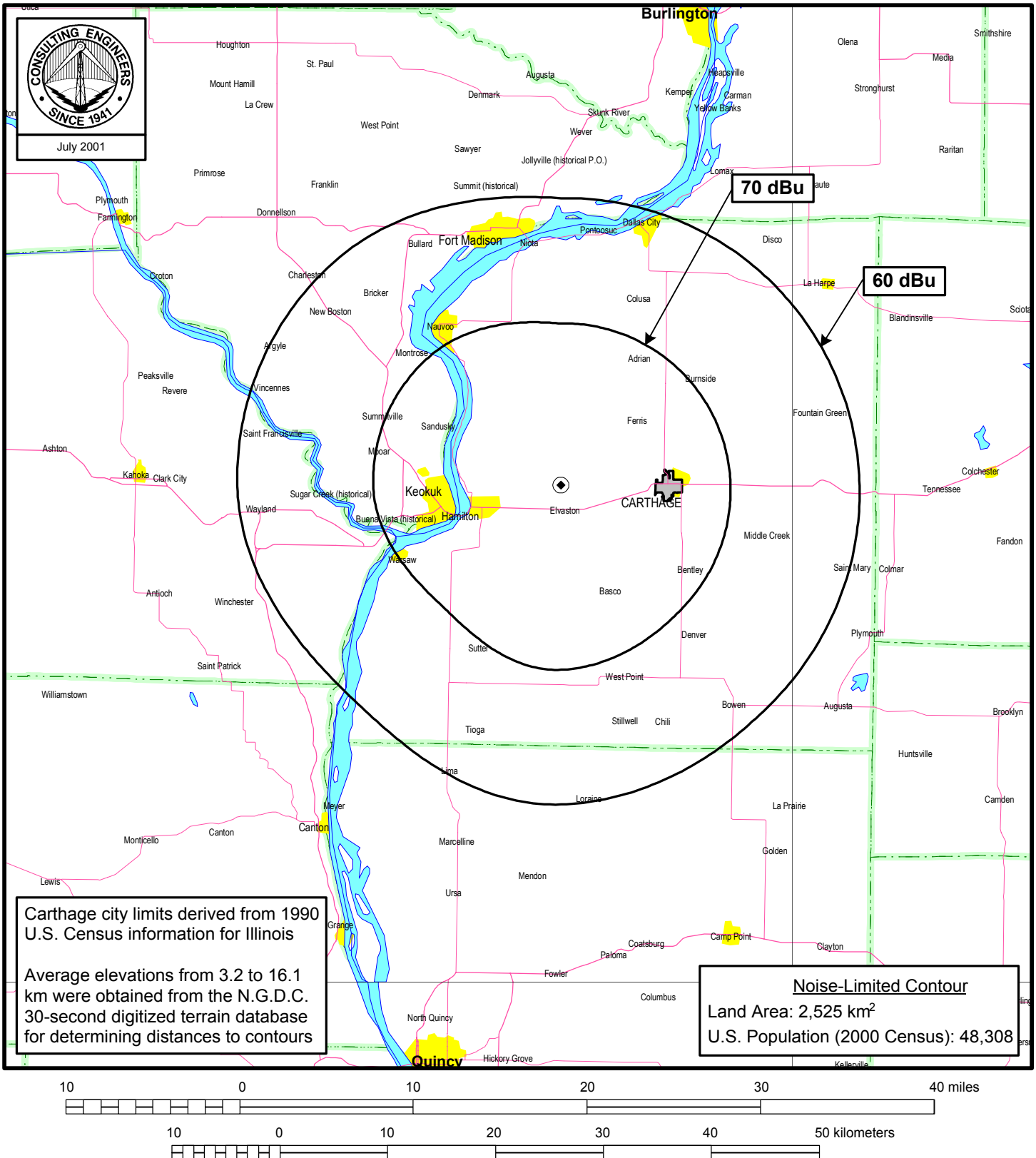
FM STATION WCEZ

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

Figure 2



## PREDICTED F(50,50) COVERAGE CONTOURS

FM STATION WCEZ

CARTHAGE, ILLINOIS

CH 230A 6 KW 100 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

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

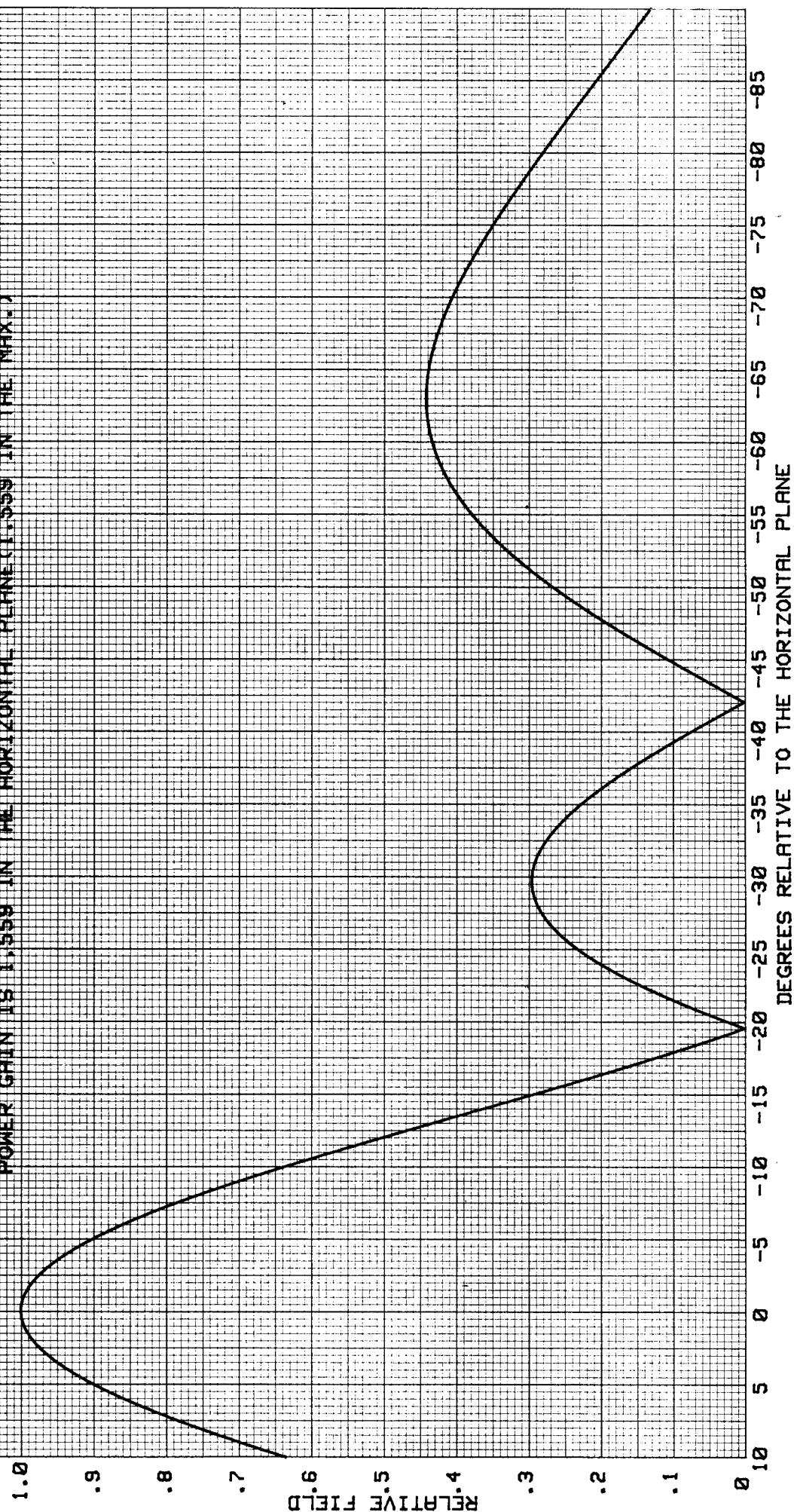
----- THEORETICAL -----  
VERTICAL PLANE RELATIVE FIELD

MAY 24, 1993  
ELEMENT SPACING:  
1.0 WAVELENGTH

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

FIGURE F3

POWER GAIN IS 1.559 IN THE HORIZONTAL PLANE(1.559 IN THE MAX.)





Call Id	City St	Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km)
KKMI 53604	BURLINGTON IA	BLH LIC	C 19990122KE	228 A 93.5	6.000 93	N	40-49-11 091-07-02	N	14.2	46.39 15.39	31.0 Close
KTUF 471	KIRKSVILLE MO	BLH LIC	C 19910328KB	229 C2 93.7	50.000 150	N	40-11-16 092-31-32	N	257.2	111.09 5.09	106.0 Close
WCEZ 79019	CARTHAGE IL	BMPH CP	C 20010410ADL	230 A 93.9	6.000 60	N	40-24-54 091-15-11	N	90.0	0.00	
WCEZ 79019	CARTHAGE IL	BPH CP	C 19960116MH	230 A 93.9	6.000 100	N	40-25-51 091-14-57	N	10.6	1.79	
WJRE 70277	KEWANEE IL	BLH LIC	C 19961004KD	230 A 93.9	3.100 138	N	41-16-40 089-55-15	N	49.0	147.66 32.66	115.0 Clear
WMHX 9964	LINCOLN IL	BLH LIC	C 19941020KB	230 B1 93.9	15.000 131	N	39-59-25 089-30-46	N	107.2	155.50 12.50	143.0 Close
KSSZ 5227	FAYETTE MO	BLH LIC	C 19960923KD	230 C3 93.9	25.000 100	N	39-03-28 092-28-49	N	215.2	183.78 41.78	142.0 Clear
KPCR-FM 52572	BOWLING MO	GRE BLH LIC	C 19911018KG	231 C3 94.1	25.000 82	N	39-21-57 091-10-45	N	176.9	116.66 27.66	89.0 Clear
KRNA 35555	IOWA CITY IA	BLH LIC	C 19911115KA	231 C1 94.1	100.000 299	N	41-45-00 091-50-16	N	341.9	156.19 23.19	133.0 Clear
WRMS-FM 13650	BEARDSTOWN IL	BMLH LIC	C 19900904KE	232 A 94.3	6.000 91	N	40-04-45 090-25-58	N	117.9	79.13 48.13	31.0 Clear
KRXL 34973	KIRKSVILLE MO	BLH LIC	C 19900604KE	233 C 94.5	100.000 308	N	40-14-34 092-25-42	N	259.5	101.70 6.70	95.0 Close