OWL ENGINEERING & EMC TEST LABS, INC.

CONSULTING COMMUNICATIONS ENGINEERS · EMC TEST LABORATORIES

MINNESOTA OFFICE
5844 Hamline Avenue North, Shoreview, MN 55126
651-784-7445 • Fax 651-784-7541

800-797-1338

ENGINEERING EXHIBIT FOR AN
APPLICATION FOR A CONSTRUCTION PERMIT
KSTH-FM
JULESBURG/HOLYOKE MEDIA ASSOC
HOLYOKE, CO

CHANNEL 221 100 KW (H&V) 64 METERS HAAT

January 12, 2007

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ENGINEERING STATEMENT

This engineering exhibit, of which this Statement is a part, was prepared in accordance with the Rules and Regulations of the Federal Communications Commission and pursuant to the provisions of Section III-B of FCC Form 301 on behalf of Julesburg/Holyoke Media Assoc (hereafter "**JHMA**") in support of an application for authority to modify an existing FM broadcast facility. (KSTH). The purpose of this application is to change the Class to C1, the operating frequency from Channel 222 to 221 and increase the effective radiated power to 100 KW, both in the horizontal and vertical plane. This power/height combination is an allowable Class C1 facility permitted under the current rules and regulations.

"**JHMA"** proposes to operate from a site uniquely described by the geographic coordinates:

(NAD 27)
40° 34' 49" North Latitude
102° 19' 11" West Longitude

(NAD 83)
40° 34' 50" North Latitude
102° 19' 13" West Longitude

The tower is already registered and has registration #1026472. Engineering Figure 1 is a portion of the Julesburg SW, CO 7.5 minute USGS map that shows the exact location of the tower. A search was performed for the presence of any other communications facilities located nearby and none were found.

Figure 2 shows an aerial view of the proposed site and that the surrounding area is rural. Because the area is rural, there is not expected to be any problem with blanketing interference. The applicant is aware of the provisions of §73.318 of the FCC's Rules and the requirement for satisfying all complaints of blanketing interference that are received within a one-year period. The main studio for the station is located in the Holyoke area and complies with §73.1125.

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ENGINEERING EXHIBIT 24

COVERAGE CONTOURS

The three-to-sixteen-kilometer average terrain elevations were derived from the Defense Mapping Agency 3-second topography database.

The effective antenna radiation center height for each of the eight standard 45-degree spaced radials was used in conjunction with the F(50,50) metric curves of Figure 1 of Section 73.333 of the Rules to determine the distances to the 70 dBu and 60 dBu coverage contours. The contours drawn from the data are depicted on the map included as Engineering Figure 3. As is readily evident, all of Holyoke, CO is included within the proposed 70 dBu coverage contour as required by the rules.

DISTANCE TO CONTOURS

DISTANCES TO CONTOURS (Kilometers):
Antenna COR elevation (AMSL): 1217 meters Average HAAT: 64 meters
Frequency: 92.1000 MHz
Coordinates: N 40 34 49 W 102 19 11
F(50,50) Curves Number of Contours: 2

AZ (degs)	HAAT (m)	ERPd (kW)	CONTOUR LEVELS (dBu): 70.0	60.0
0.0	55	100.0000	24.2	40.8
45.0	78	100.0000	28.5	46.6
90.0	94	100.0000	31.1	50.0
135.0	78	100.0000	28.5	46.6
180.0	60	100.0000	25.3	42.2
225.0	46	100.0000	21.9	37.6
270.0	38	100.0000	20.0	34.3
315.0	43	100.0000	21.4	36.6

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ENGINEERING EXHIBIT 26

ALLOCATION CONSIDERATIONS

A review of allotments and assignments on channel 221, on the three immediately upper adjacent, the three immediately lower adjacent channels and the two channels removed by 53 and 54 channels (274 & 275) shows that the site proposed would be in full compliance with §73.207 and processing using §73.215 is requested.

FM CHANNEL SPACING STUDY

REFERENCE — DISPLAY DATES
40 34 49.0 N. — CLASS = C1 — DATA 01-12-07
102 19 11.0 W. — Current Spacings — SEARCH 01-12-07

Channel 221 - 92.1 MHz

Call	Channel		Location		Azi	Dist	FCC	Margin
KPNE-FM	LIC	219C1	North Platte	NE	63.0	109.97	82.0	27.97
KHZZ.C	CP	221C1	Sargent	NE	65.9	275.62	245.0	30.62
KADL	LIC	275A	Imperial	NE	97.3	57.72	22.0	35.72
KTCC	LIC	220A	Colby	KS	140.7	172.04	133.0	39.04
KJMN	LIC-N	221C2	Castle Rock	CO	241.1	268.15	224.0	44.15
AU7055920	VAC	222A	Hugo	CO	211.8	188.12	133.0	55.12
KUWR	LIC	220C	Laramie	WY	288.2	276.14	209.0	67.14

POPULATION AND AREA DATA

Based on the 2000 U.S. Census of Population, the numbers of persons enclosed by the proposed 60 dBu coverage contour are 6,848 persons. The population count was made through the employment of a computer program containing a database including the geographic coordinates of the centroids of population groupings. The area within the proposed 60 dBu coverage contour is 5,630 square kilometers. A computerized integration program determined this area.

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ENGINEERING EXHIBIT 31

ANSI Power Density Calculations

The power density at the base of the tower was calculated using the following formula from OST Bulletin Number 65, August, 1997:

$$S = \frac{(0.64)(1.64)(ERP)(1000)(milliwatts/watt)}{pi(R)^2}$$

where: S = power density in milliwatts per square centimeter
ERP = effective radiated power in watts
R = distance to radiation source in centimeters
pi = 3.14

Using this formula and the values shown below, a power density of 0.66 mW/cm^2 is found to exist at the base of the tower. This predicted value is 662% of the public exposure maximum limit of 0.2 mW/cm^2.

ERP = 200 KW watts
R = 7,100 cm.

ANSI Power Density Calculations

The proposed antenna will be energized such that it produces an effective radiated power of 100 kW from a center of radiation 71 meters above ground level.

Using the FCC FM Model program the maximum RF Radiation level assuming A Type 3 antenna antennas the predicted radiation levels is 0.039 mW/cm^2 or 19.8% of the maximum public exposure limit.

Access to RF circuitry is restricted by a metal fence that surrounds the property that limits access to the public. Signs are posted warning of the potential danger. When persons require access to the site, tower or antenna for maintenance purposes, the transmitter power will be reduced or completely eliminated to comply with ANSI guidelines. Hence, the conditions of §1.1306(b)(3) would not be involved.

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ENVIRONMENTAL IMPACT STATEMENT

The instant proposal is categorically excluded from environmental processing since none of the conditions of §1.1306(b)(2) and (3) would be involved for the following reasons:

1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.

2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting do not apply since this tower is not utilizing this type of lighting.

3) Compliance to Section 1.1306(b)(3) regarding human exposure to RF radiation was examined for multiple sources. A search was made about the proposed site coordinates to locate any additional sources of RF radiation and none were found.

CONCLUSIONS

Based on the engineering studies provided, the following conclusions can be obtained:

(1) Implementation of the instant proposal will continue to provide Holyoke with a full time aural broadcast service.

(2) 6,848 persons in 5,630 square kilometers would have an available signal strength of 60 dBu or greater from the proposed construction location.

(3) All of Holyoke would be served with a signal of 70 dBu or greater from the proposed construction site.

(4) The proposal is in complete conformance with all technical rules of the Federal Communications Commission.

Garrett G. Lysiak, P.E.
January 12, 2007

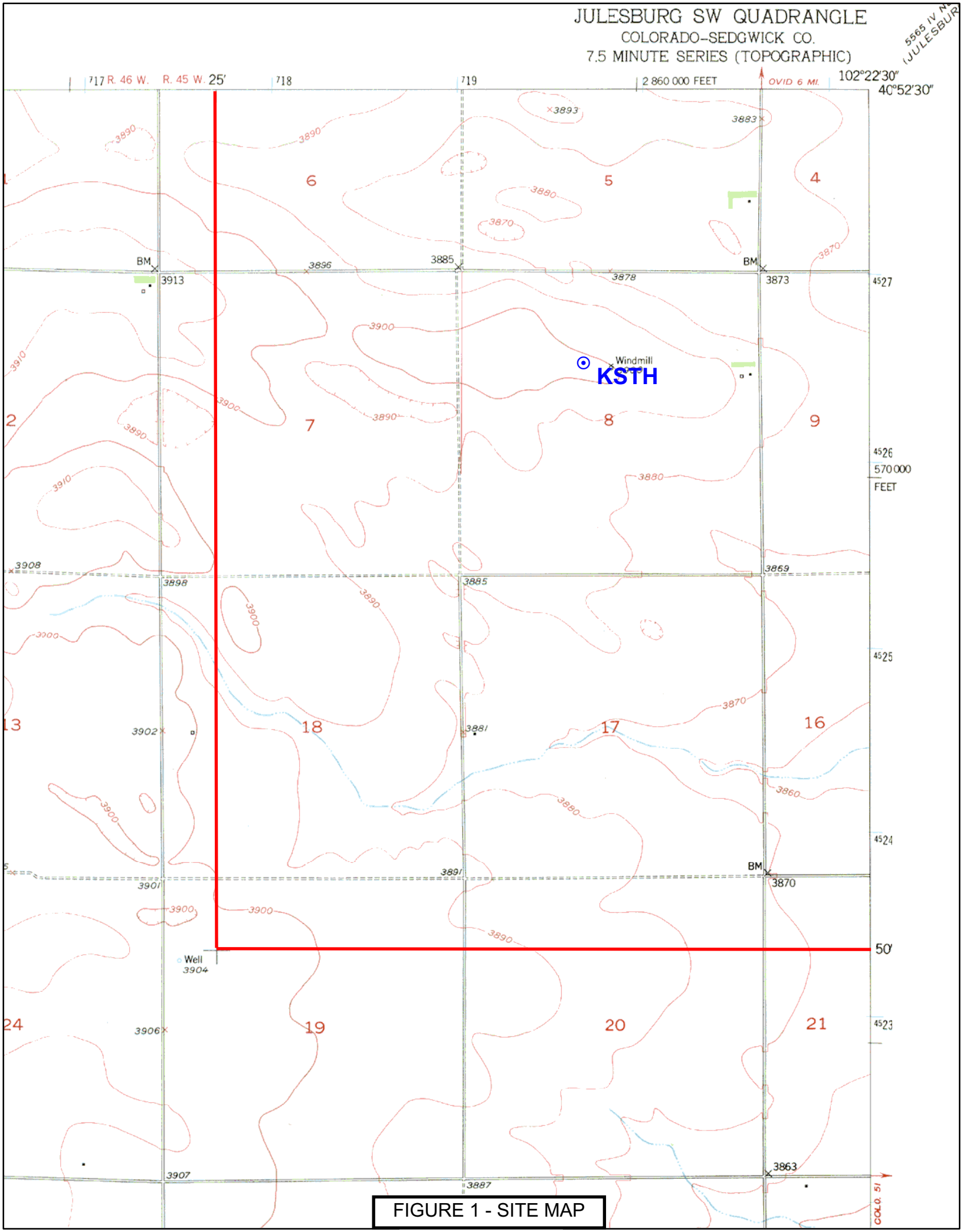


FIGURE 1 - SITE MAP

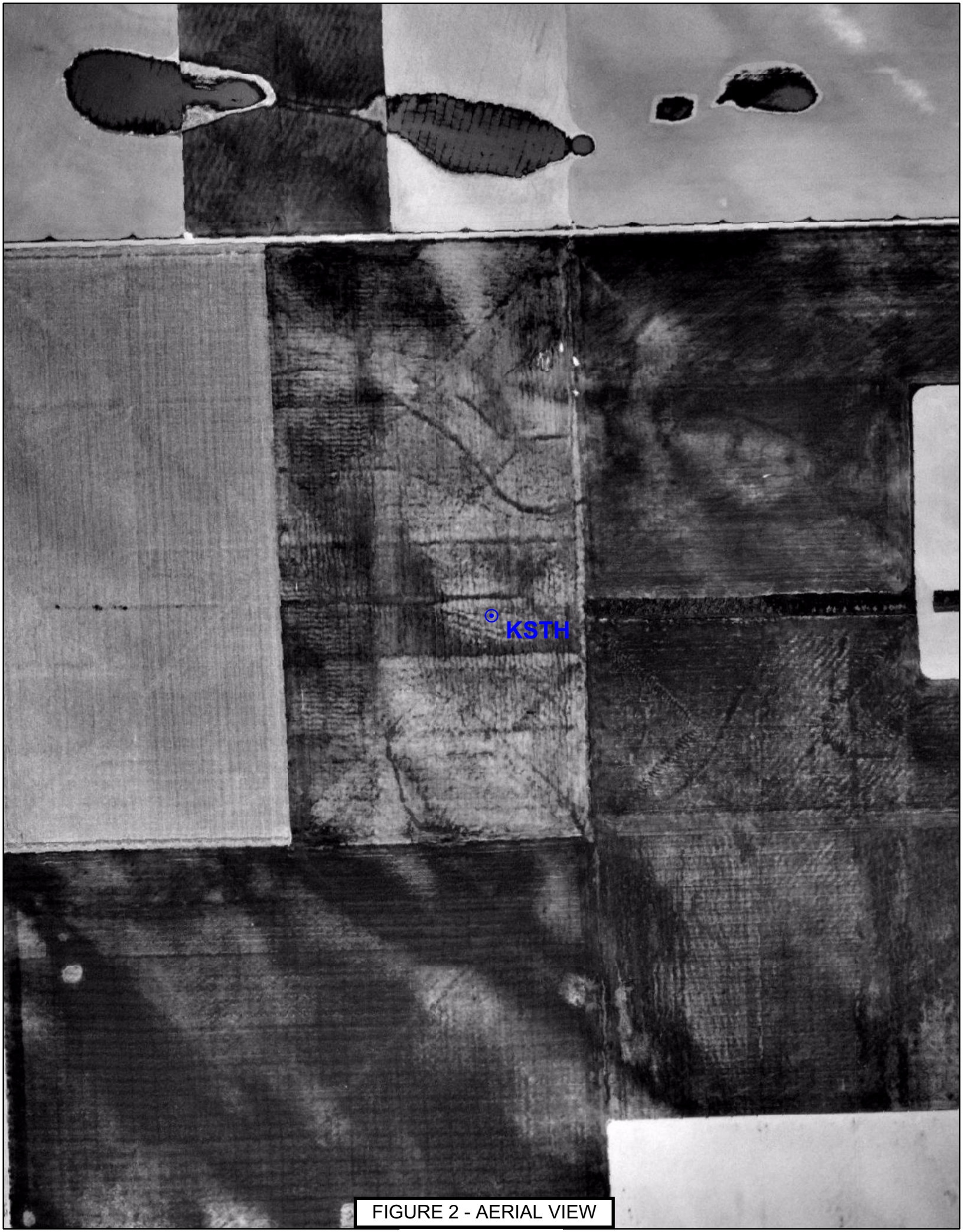
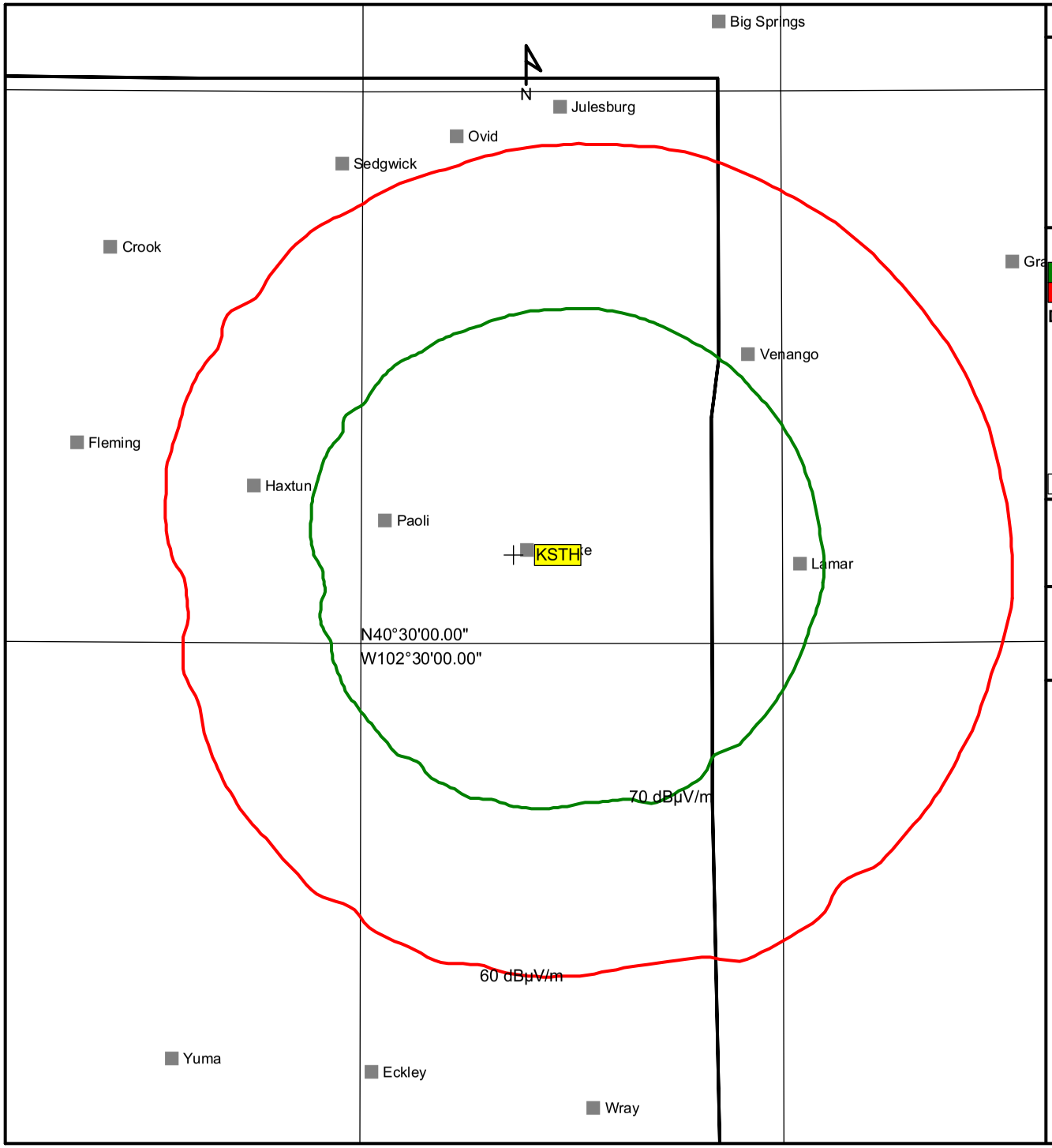


FIGURE 2 - AERIAL VIEW



Prop. model: FCC-EDX
Time: 50.0% Loc.: 50.0%
Prediction Confidence Margin: 0.0dB
Climate: Continental Temperate
Land use (clutter): none
Atmospheric Abs.: none
K Factor: 1.333
RX Antenna - Type: OMNI
Height: 9.10 m AGL Gain: 0 dBd

Field strength at remote

= 70.0 dBµV/m
= 60.0 dBµV/m

Display threshold level: -120.0 dBmW

Sites

Site: HOLYOKE
N40°34'49.00" W102°19'11.00" 1152.3 m
KSTH Tx.Ht.AGL: 64.7 m Total ERPd: 100.00kW
Grp: 1 omni-horizontal/0.0° 92.1000 MHz

Reference Grid (spacing: 30')

KILOMETERS

-5 0 20

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KSTH SIGNAL CONTOURS

FIGURE 3 **JANUARY 12, 2007**