

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF FM CONSTRUCTION PERMIT
RADIO STATION KWKD(FM)
RANDOLPH, UTAH

JANUARY 28, 2002

CH 272C 89 KW-H/38 KW-V 647 M

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Technical Narrative

The technical exhibit of which this narrative is part was prepared as to modify the outstanding construction permit for station KWKD(FM) in Randolph, Utah. KWKD(FM) is presently licensed for an effective radiated power of 89 kilowatts with an antenna height above average terrain of 633 meters on Channel 272C.¹ The Commission authorized a construction permit to decrease the antenna height above average terrain to 611 meters and increase the effective radiated power to 96 kilowatts.²

By this instant application, it is proposed to modify the existing construction permit by increasing the antenna height above terrain to 647 meters and decrease the effective radiated power to 89 kilowatts, horizontal polarization and 38 kilowatts, vertical polarization (using an elliptically polarized Shively 6814-16D-SS antenna). No transmitter site change is proposed. Co-located station KPKK(FM) on Channel 268C1 will also be seeking authorization to be diplexed on this same antenna system.

¹ See FCC License Number: BLH-20001116AAO.

² See FCC Construction Permit: BPH-20010612AEH.

The proposal would not be subject to environmental processing in accordance with Section 1.1306. It is believed that this proposal conforms with all applicable rules and regulations of the FCC.

Proposed Transmitter Location

A map showing the transmitter site location is provided in Figure 1. A sketch showing the proposed antenna and supporting structure is shown on Figure 2. Since the overall tower height is less than 200 feet and no public airports are located within 10 kilometers, a tower registration number is not required.

Interference Concerns

The 115 dBu predicted "blanketing" contour of the proposed station would extend radially 4 kilometers from the transmitting site. No interference is expected as the proposed transmitter site is located in a rural area. However, 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.

Coverage Contours

The predicted coverage contours for the proposed operation were calculated in accordance with the provisions of Section 73.313. In accordance with current FCC practice, the distances to the contours were calculated without consideration given to terrain roughness correction factors.

The average terrains over the evenly spaced radials to determine the overall average terrain were obtained from the past KWKD(FM) application for construction permit.

As can be seen, the FCC predicted 70 dBu coverage contour does not encompass the principal community of Randolph. However, as discussed below, the use of an alternate propagation model will, in fact, demonstrate 70 dBu coverage over Randolph.

Prediction of 70 dBu Coverage Over Community of Randolph

The 70 dBu contour, calculated by employing the FCC propagation curves, is predicted to extend a radial distance of approximately 75 kilometers toward the principal community of Randolph as shown on Sheet 1 of Figure 5. The community is located beyond the FCC predicted 70 dBu contour but within the FCC predicted 60 dBu contour.

Study of the elevation profile between the transmitter site and Randolph, shown in Sheet 2 of Figure 5, indicates that a higher field strength would be expected over the community than predicted using the FCC propagation curves. In order to verify the enhanced propagation path, a computer model employing the Commission's proposed alternate propagation model was employed. Using this point-to-point irregular terrain model, data was obtained and plotted on the attached graph, provided on Sheet 3 of Figure 5.

Employing the Commission's interpolating procedure, the 70 dBu coverage contour is actually predicted to extend beyond the FCC predicted 60 dBu coverage contour, thereby entirely encompassing the community of Randolph.

Additionally, the Commission's present staff policies, with respect to the application of the Longley-Rice model, are satisfied. As evident within the exhibit, the FCC predicted 60 dBu coverage contour entirely encompasses the principal community of Randolph and the radial distance to the alternate propagation model contour exceeds the distance to the comparable FCC coverage contour by ten percent.

Allocation Study

Figure 4 is an allocation study for channel 272C at the proposed site. The figure contains a tabulation of actual and required separation distances from other pertinent stations and allotments. The proposed site meets the FCC's minimum separation requirements, specified in Section 73.207(b) of the Commission's Rules, to all assignments and stations.

Radiofrequency Electromagnetic Field Exposure

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, *Evaluating Compliance with FCC Specified Guidelines for*

*Human Exposure to Radiofrequency Electromagnetic Fields.*³

The power density at the base of the tower was calculated using the appropriate procedure contained in Section 2, Supplement A, *Additional Information for Radio and Television Broadcast Stations*, of the Bulletin.

For the calculation, an assumed downward vertical factor of 0.1 was employed (see the plot of the proposed antenna vertical radiation pattern in Figure 6) with a combined (horizontal and vertical polarization) effective radiated power of 127 kilowatts and radiation center of 47 meters (155 feet) above ground level. It is calculated that the power density would not exceed 0.025 mW/cm² at ground level. This is less than 15 percent of the Commission's guideline value in an uncontrolled environment for a FM radio station.⁴

The only other authorized co-located high powered emitter is KPKK(FM) on Channel 268C1 assigned to Oakley, Utah. KPKK(FM) will be submitting an application, modifying their existing authorization, to be diplexed with the herein KWKD(FM) with the same effective radiated power. Therefore, KPKK(FM) will also have a ground level power density less than 15% of the Commission's uncontrolled standard. Therefore, the herein proposed KWKD(FM) and the proposed KPKK(FM) facilities are predicted to have a cumulative ground level power density of less than 30% of the uncontrolled standard.

³ OET Bulletin 65, Second Edition 97-01, August, 1997.

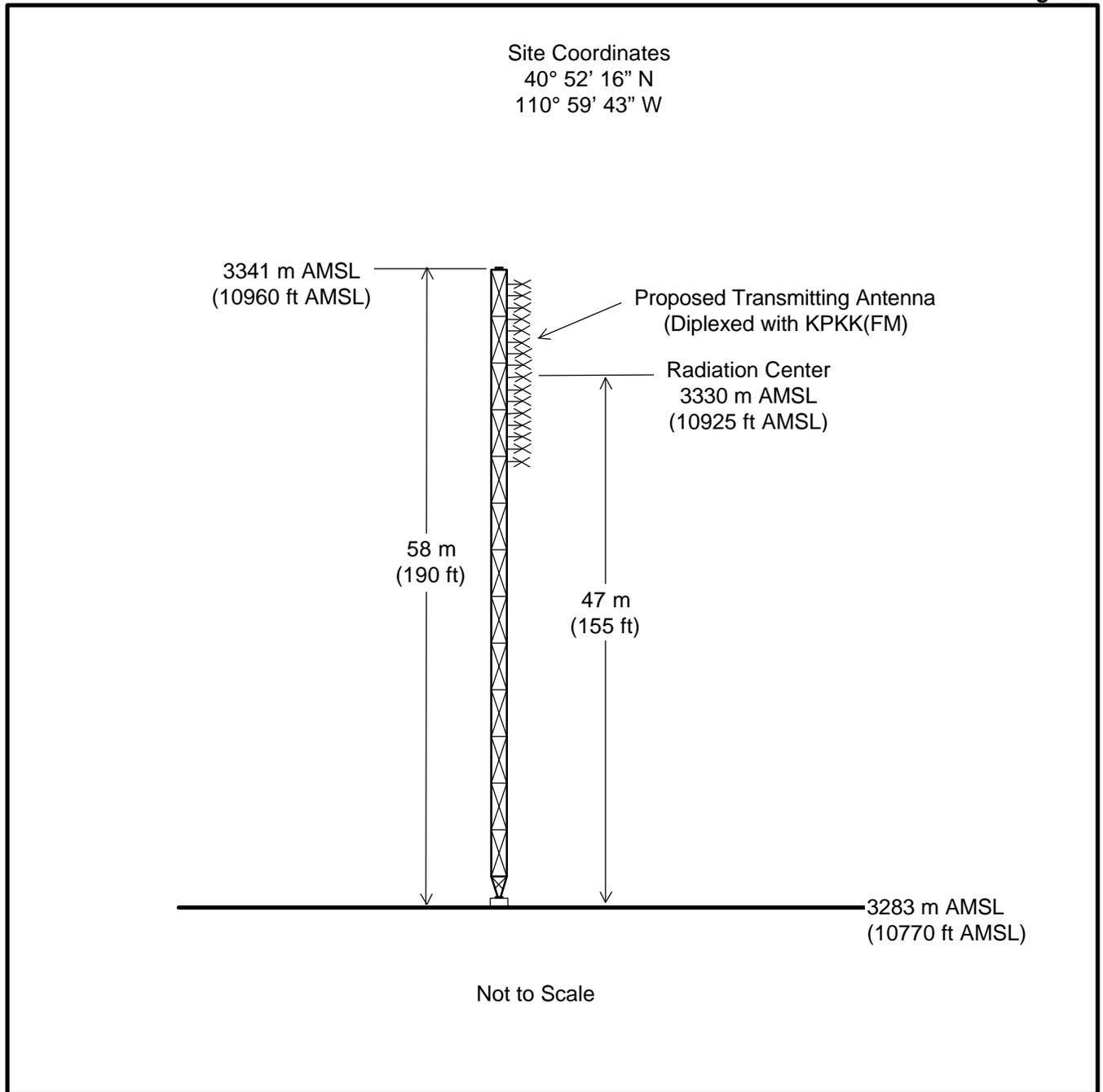
Access to the transmitting site is restricted and appropriately marked with warning signs. When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shut down of power if necessary, shall be taken to ensure that the human exposure to radiofrequency radiation will not exceed the FCC guidelines.

Charles A. Cooper

January 29, 2002

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⁴ The FCC maximum guideline for a FM broadcast station in an uncontrolled environment is 0.2 mW/cm².



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

RADIO STATION KWKD(FM)

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FCC PREDICTED COVERAGE CONTOURS

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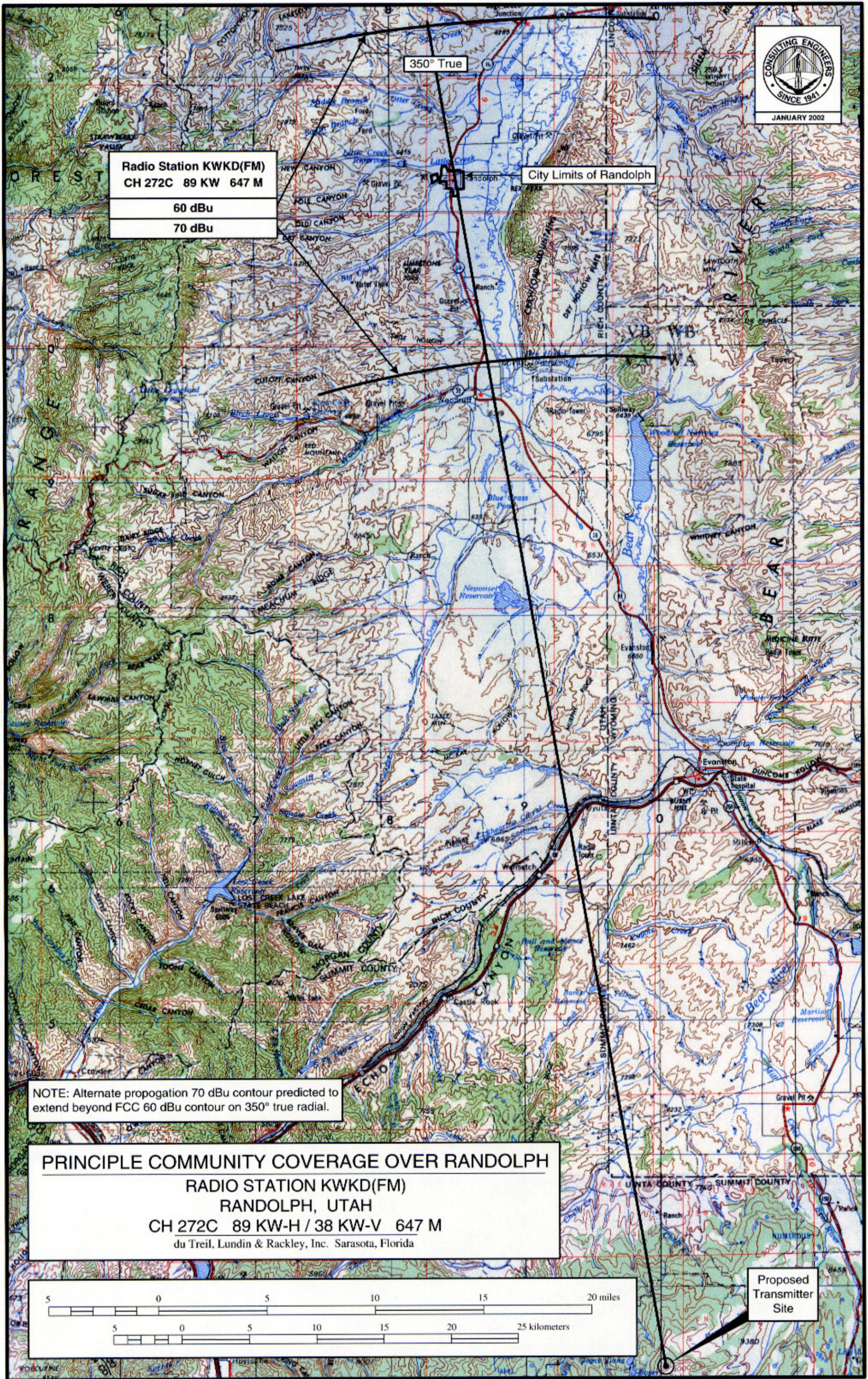
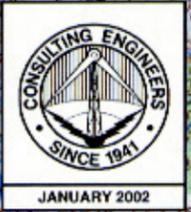
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Channel 272C Allocation Study

40° 52' 16" North Latitude
 110° 59' 53" West Longitude

Call Status	City State	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-Tru	Dist. (km)	Req. (km)
KKAT 2444	OGDEN UT	BLH LIC C 19830912AH	270C 101.9	26 1140	40-39-35 112-12-05	N 257.4	104.51	105.0
<i>(Separation distance rounds to 105 kilometers. No allocation issue.)</i>								
KKAT 2444	OGDEN UT	BPH APP C 20011210AAL	270C 101.9	25 1140	N 40-39-34 112-12-05	N 257.3	104.52	105.0
KWKD 88272	RANDOLPH UT	BPH CP C 20010612AEH	272C 102.3	96 611	N 40-52-16 110-59-43	N 97.6	0.00	
<i>(Applicant's authorized facility.)</i>								
KWKD 88272	RANDOLPH UT	BLH LIC C 20001116AAO	272C 102.3	89 633	N 40-52-16 110-59-43	N 97.6	0.00	
<i>(Applicant's licensed facility.)</i>								
KVUW 84328	WENDOVER NV	BLH LIC C 20010507AAX	272A 102.3	3 8	N 40-44-30 114-02-10	N 267.8	257.00	226.0
KVUW 84328	WENDOVER NV	BPH CP C 20010529ABJ	272C 102.3	50 600	N 41-07-19 114-34-02	N 276.5	301.84	290.0
KMGI 51215	POCATELLO ID	BLH LIC C 19871216KF	273C 102.5	100 312	N 42-51-57 112-30-46	N 331.0	254.87	241.0
KQZR 86173	CRAIG CO	BPH CP C 19970407MY	273C 102.5	100 379	N 40-11-45 107-56-00	N 105.2	270.05	241.0
KQMB 54156	MIDVALE UT	BLH LIC C 19980311KE	274C 102.7	25.5 1139	N 40-39-34 112-12-05	N 257.3	104.52	105.0
<i>(Separation distance rounds to 105 kilometers. No allocation issue.)</i>								



Radio Station KWKD(FM)
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60 dBu

70 dBu

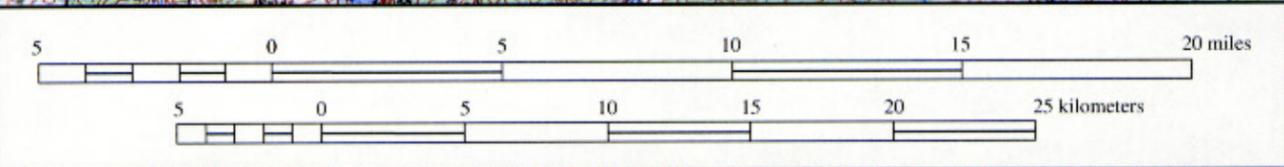
350° True

City Limits of Randolph

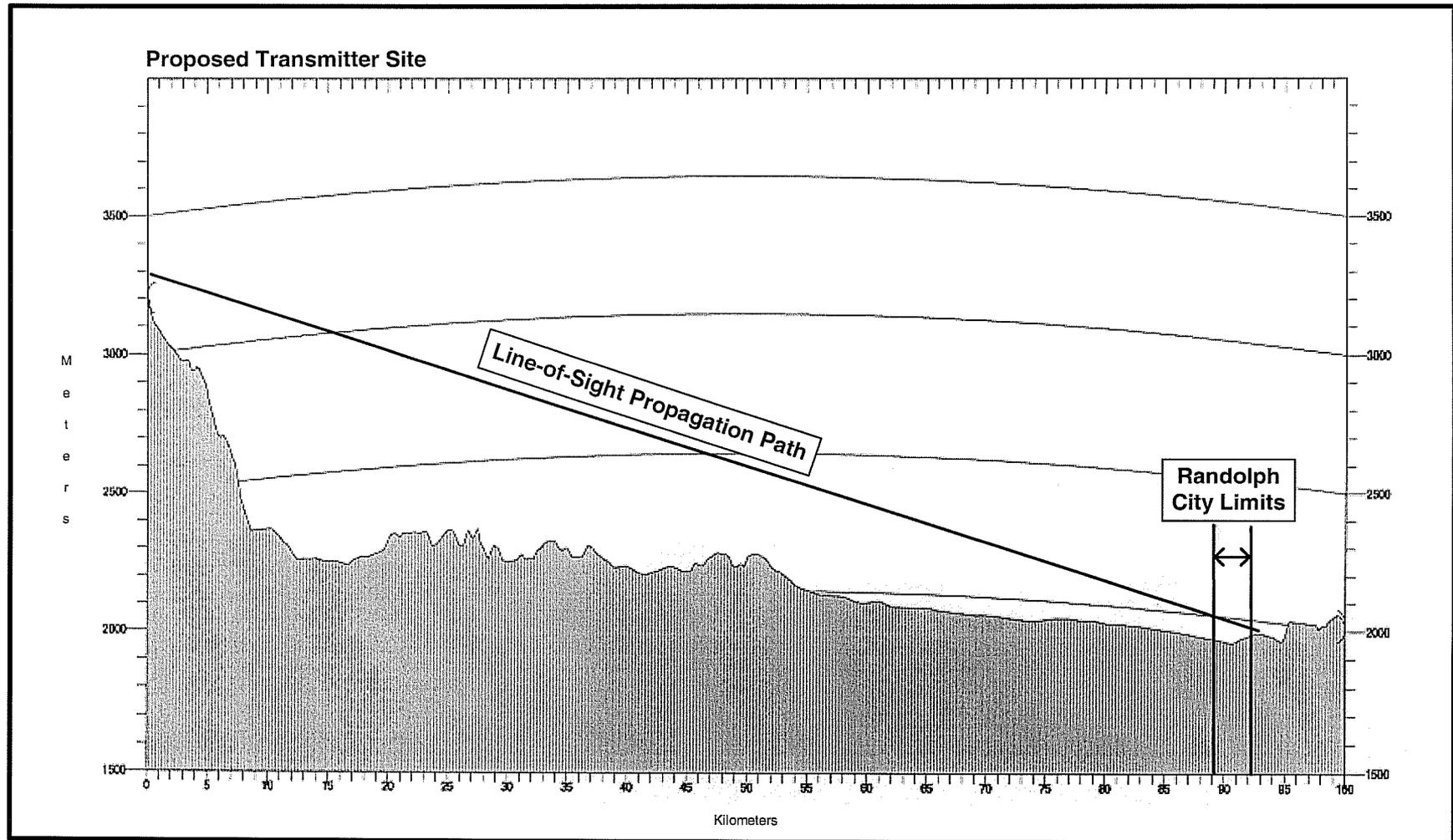
NOTE: Alternate propagation 70 dBu contour predicted to extend beyond FCC 60 dBu contour on 350° true radial.

PRINCIPLE COMMUNITY COVERAGE OVER RANDOLPH

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Proposed Transmitter Site



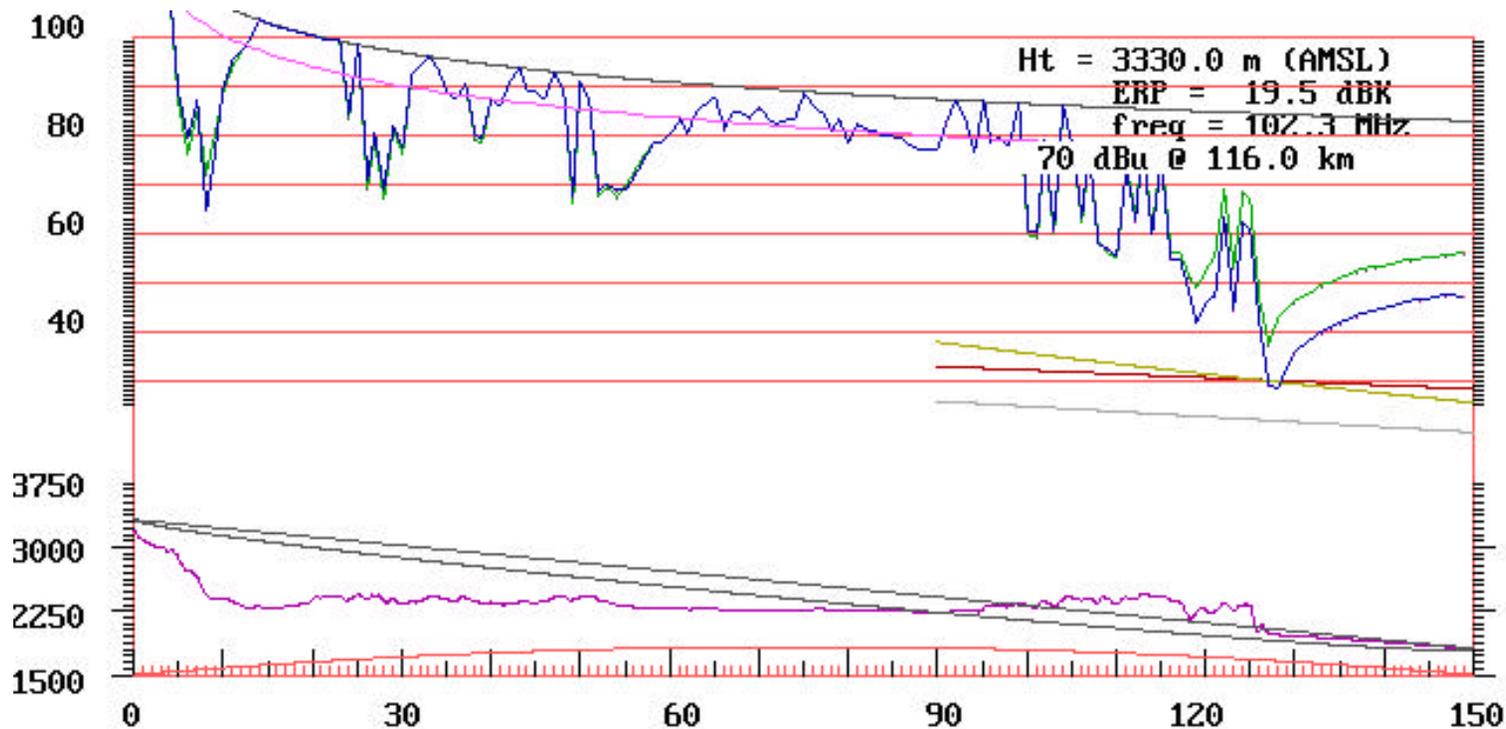
**TERRAIN PROFILE FROM PROPOSED TRANSMITTER SITE
TO RANDOLPH, UTAH**

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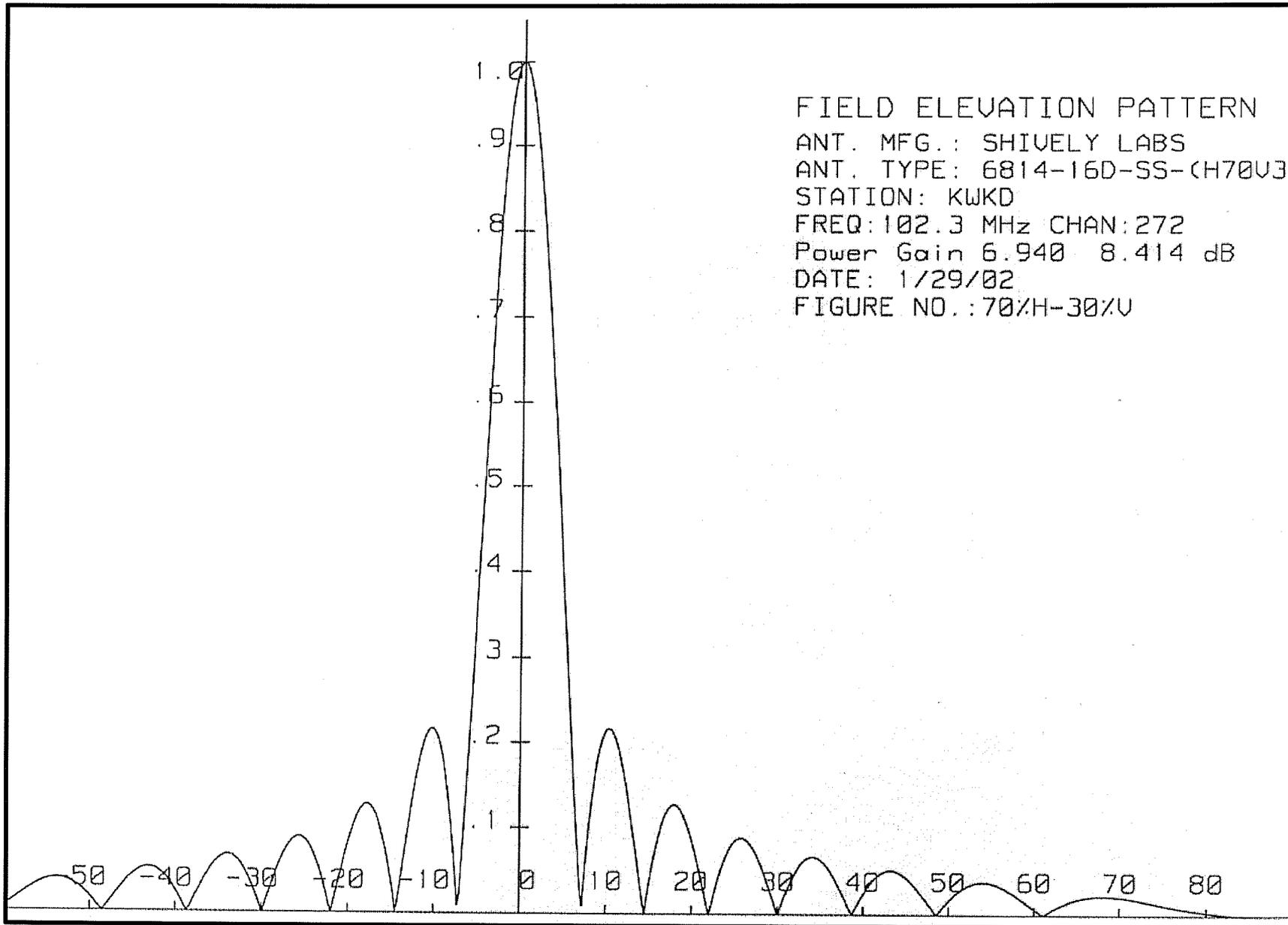
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**PROPOSED FCC PROPAGATION MODEL
350° TRUE (TOWARD RANDOLPH)**

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ANTENNA VERTICAL PLANE PATTERN (RELATIVE FIELD)

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