

TECHNICAL EXHIBIT  
APPLICATION FOR FM CONSTRUCTION PERMIT  
RADIO STATION KHVG-FM  
CRYSTAL, NEVADA

APRIL 5, 2010

CH 261C3    1.8 KW (MAX-DA)    232 M

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Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for radio station KHWG-FM assigned to Crystal, Nevada. The purpose of this application is to modify the orientation of the directional antenna system.

Special Conditions

It is requested that the Commission do not require the typical directional antennas special conditions on the issued construction permit. Specifically, the applicant requests the antenna manufacturer's proof-of-performance and the licensed surveyor's affidavit not be required. The fundamental reason for the proposed directional antenna is to decrease the transmitter output power (TPO) requirements, as the transmitter site is solely powered by on-side electrical generation (generators).

Therefore, the elimination of these directional antenna special conditions is warranted as (1) the directional antenna is not required to provide allocation protection to any other stations and also (2) not requiring these requirements is would result in a tremendous cost savings to the applicant.

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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. As the overall tower height is less than 200 feet and not located near any public airports, an FAA *Determination of No Aeronautical Hazard* is not required.

Interference Concerns

The 115 dBu predicted "blanketing" contour of the proposed station would extend radially less than 1 kilometer from the transmitting site. No interference is expected. 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 terrain elevations from 3 to 16 kilometers along eight radials evenly spaced at 45-degree intervals were obtained from a N.G.D.C. 30-second terrain database. The terrain elevations were then used in combination with the effective radiated power for determining the distances to coverage contours.

The U.S. Census has not defined a boundary for the community of Crystal, Nevada. Therefore, the undersigned defined an approximate community boundary based upon the encompassment of the population centroids located nearby the community of Crystal. Therefore, based upon this defined community boundary, the FCC predicted 70 dBu coverage contour encompasses all of Crystal, Nevada.

#### Allocation Study

Figure 4 is an allocation study for channel 264C3 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 Analysis

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. 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, a horizontal-only polarized ERP of 1.8 kilowatts is employed with a radiation center of 10 meters above ground level. It is calculated that the power density will not exceed 0.4 mW/cm<sup>2</sup> at ground level. This is less than 100 percent of the Commission's guideline value for a controlled environment for a FM radio station. There are no other known high-powered emitters in the nearby vicinity. This site can be classified as a controlled environment as it is secured from unauthorized access.

Access to the transmitting site will be 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.

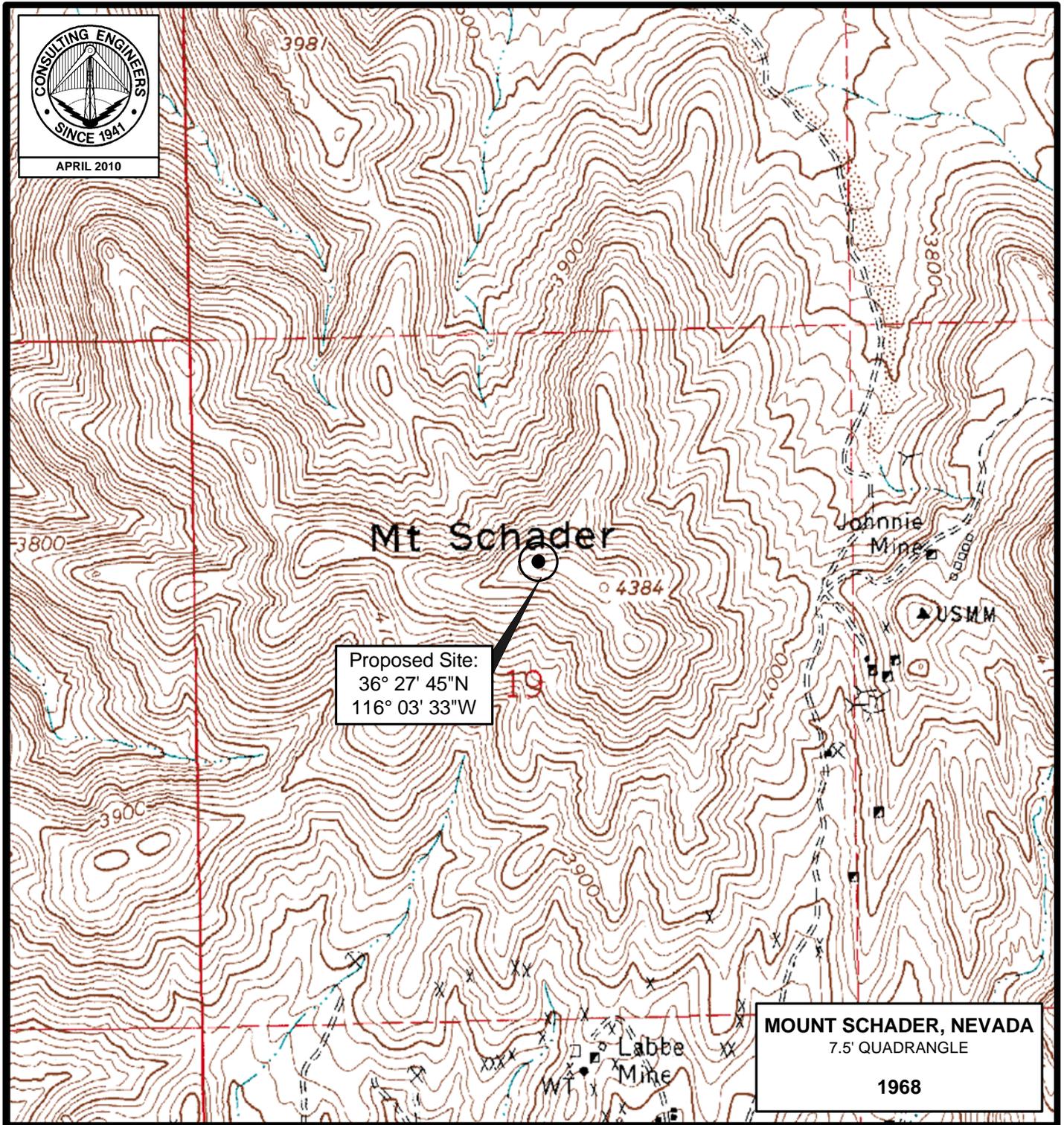
It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be completed by the tower owner.

Charles A. Cooper

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 34237  
941.329.6000

April 5, 2010

Figure 1



**PROPOSED TRANSMITTER SITE**

NEW FM RADIO STATION  
CRYSTAL, NEVADA  
CH 261C3 1.8 KW (MAX-DA) 232 M

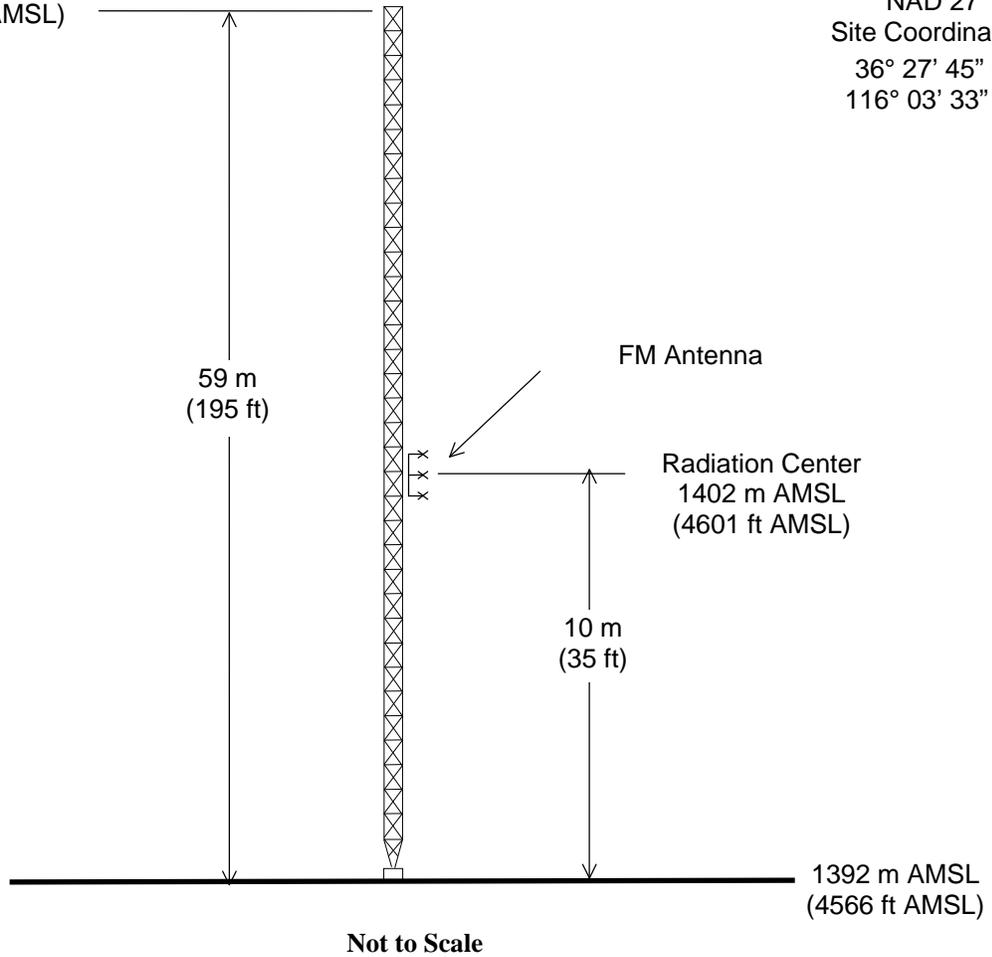
du Treil, Lundin & Rackley, Inc. Sarasota, Florida



ASRN: N/A

1451 m AMSL  
(4761 ft AMSL)

NAD 27  
Site Coordinates:  
36° 27' 45" N  
116° 03' 33" W



## ANTENNA AND SUPPORTING STRUCTURE

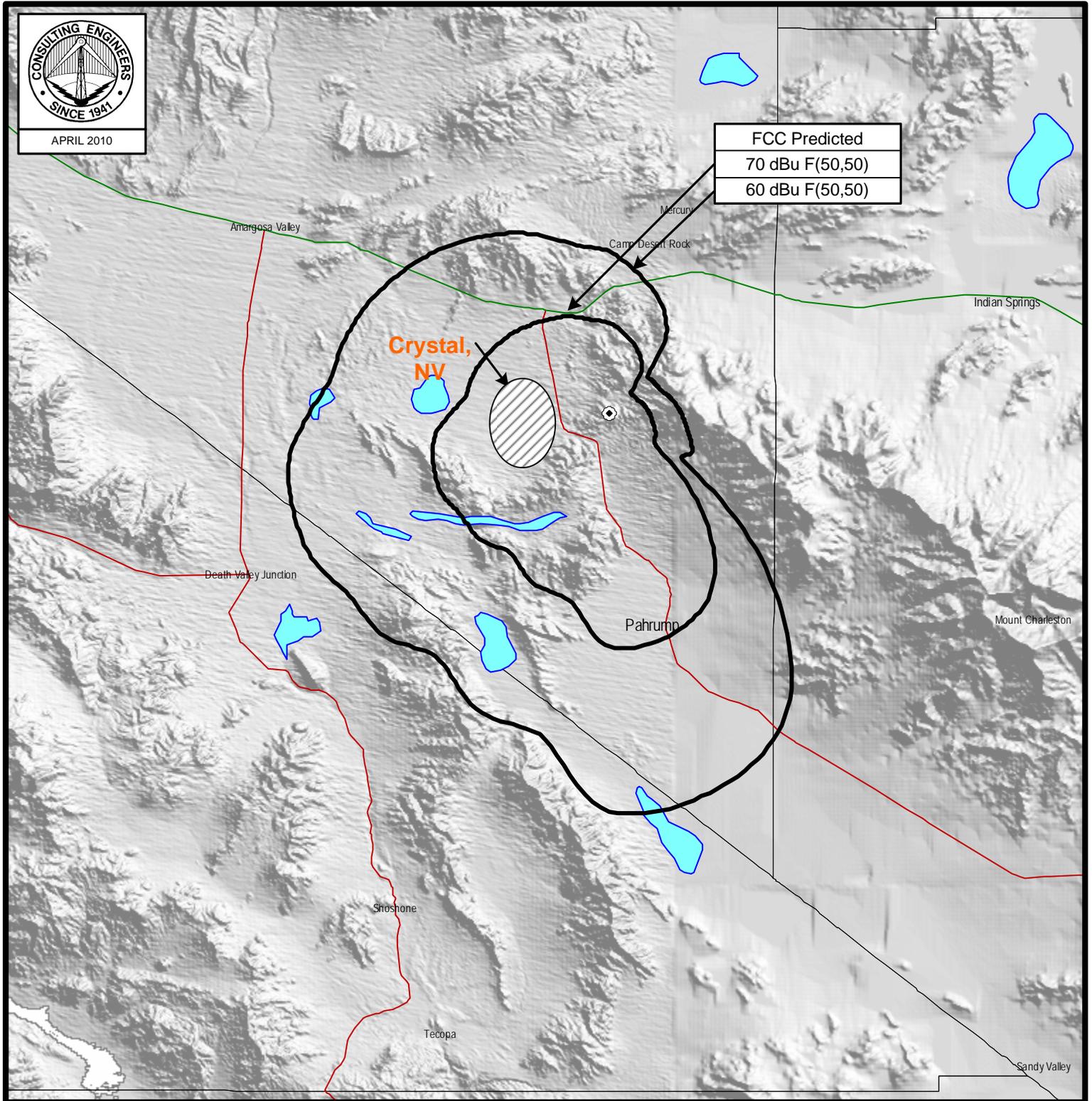
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Figure 3



**PREDICTED COVERAGE CONTOURS**

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Channel 261C3 Crystal, Nevada Allocation Study

36° 27' 45" North Latitude  
 116° 03' 33" West Longitude

Call Id	City St	File Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km)
KWHZ 165946	CRYSTAL NV CP	BMPH C	20090625ABY	261C3 100.1	1.2 232	Y	36-27-45 116-03-33	N	90.0	0.00	153.0
<i>(Applicant's Authorized Facility.)</i>											
KHWZ 34557	LUDLOW CA LIC	BLH C	20041221AAP	261B1 100.1	25 76	N	34-42-34 116-09-02	Y	182.5	194.68	175.0
KKJJ 12560	HENDERSON NV LIC	BMLH C	20070406ABM	263C 100.5	100 357	N	36-00-30 115-00-20	N	117.8	107.29	96.0