

TECHNICAL EXHIBIT  
FOR A NEW DIGITAL REPLACEMENT TRANSLATOR  
FOR STATION KOLD-DT  
TUCSON, ARIZONA  
CH 13 0.3 KW

Technical Narrative

This Technical Exhibit supports an application for a new digital replacement translator for digital television (DTV) station KOLD-DT at Tucson, Arizona. Station KOLD-DT is licensed to operate on digital channel 32 from a location atop Mt. Bigelow, with a directional antenna maximum effective radiated power (ERP) of 108 kilowatts (kW) and an antenna radiation center height above average terrain (HAAT) of 1123 meters.<sup>1</sup> The antenna structure registration number is 1007178. The site coordinates are 32-24-56 N, 110-42-50 W (NAD-27).

Significant terrain shadowing exists to the northern suburbs of Tucson, due to Mt. Lemmon, near the KOLD-DT site. These analog loss areas are depicted by the red triangles to the west/northwest of the DTV site in Figure 1. It is the intention of this translator to serve these viewers that cannot receive service from the primary KOLD-DT transmitter on Mt. Bigelow

Proposed Facilities

This application proposes digital operation on channel 13, at the KOLD-TV analog transmitter site on Tucson Mountain. The proposed translator will utilize the KOLD-TV analog, non-directional antenna after KOLD-TV turns off its analog operation.

This will allow KOLD to implement the translator at much less cost than purchasing a new antenna.

A non-directional ERP of 0.3 kW and an antenna radiation center above mean sea level (RCAMSL) of 1374.7 meters is proposed (see Figure 2). The antenna structure registration number is 1218220. Both the antenna radiation center height and site coordinates have been corrected based on the tower registration information. The proposed coordinates are 32-14-57 N, 111-06-57 W (NAD-27) and the site is 42 kilometers west-southwest of the licensed DTV site.

The proposed translator would serve an area that is entirely within the predicted 41 dBu contour of KOLD-DT's authorized post-transition digital facility, except that the proposed facility would cause slight extension of approximately 1,020 meters toward the west as compared to KOLD-DT's authorized facility. This slight extension is necessary because the transmitter site for the proposed translator differs from the currently licensed site that KOLD-DT operates from. However, the extension would be *de minimis* because it would serve no additional viewers.

Figure 3 is a map showing the licensed KOLD 64 dBu (analog) and 41 dBu (digital) coverage contours as well as the proposed digital translator 48 dBu contour. As can be seen on the map, there is common area where both contours overlap.

#### Allocation Considerations – Post-Transition

A study has been conducted to assure that the proposal will not create prohibited interference with other licensed, authorized or pending analog or digital TV, LPTV/translator and Class A TV stations. Using the procedures outlined in the FCC's OET-69 Bulletin, a standard 1 kilometer grid and 1 kilometer terrain distance increment, and 2000

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<sup>1</sup> See BLCDT-20030911AAI

U.S. Census, the proposal complies with the current FCC policy (i.e., less than 0.5% new interference caused to other pertinent assignments).

The applicant recognizes the proposal is secondary to other authorized full-service analog and DTV operations. The applicant understands that it must correct and/or eliminate prohibited interference that may result from its proposed operation.

#### Mexican Coordination

Although the proposed transmitter site is located 92 kilometers from the U.S.-Mexican border, the proposal will not impact any existing Mexican station since the proposed ERP is 30 dB less than the existing analog ERP. However, to the extent that the Commission determines that coordination is required, it is respectfully requested.

#### Radio Astronomy

The proposed transmitter site is located 57 kilometers from the Kitt Peak Radio Astronomy site. Because this is a reduction in the current ERP level by 30 dB (24 dB if you convert to average power), it is believed that notification to the Arecibo radio astronomy installation is not necessary, per Section 73.1030(a)(2).

#### Radiofrequency Electromagnetic Field Exposure

The proposed digital facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the antenna is located 49.5 meters above ground level. The proposed ERP is 0.3 kW. Based on a worst case downward relative field of 1.0, the calculated power density at a point 2 meters (6.6 feet) above ground level will not exceed 2.5% of the FCC's recommended limit of  $0.2 \text{ mW/cm}^2$  for channel 13 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site and agreement will control site access. 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.

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 or already have been provided to the FCC by the tower owner.



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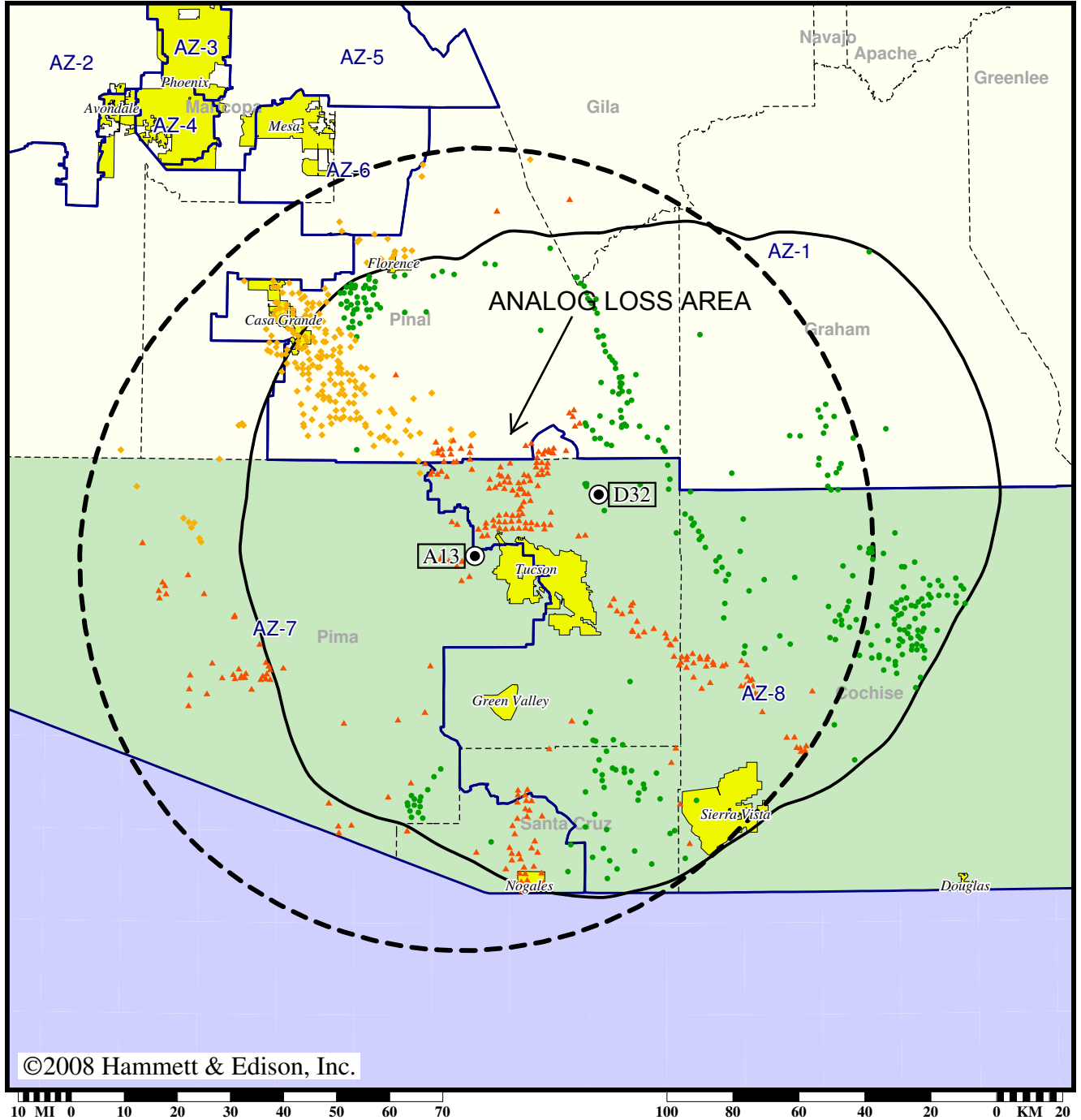
February 26, 2009

Station KOLD-TV • Analog Channel 13, DTV Channel 32 • Tucson, AZ

Expected Change In Coverage: Licensed Operation

Licensed (solid): 108 kW ERP at 1123 m HAAT, Network: CBS  
vs. Analog (dashed): 302 kW ERP at 622 m HAAT, Network: CBS

Market: Tucson, AZ

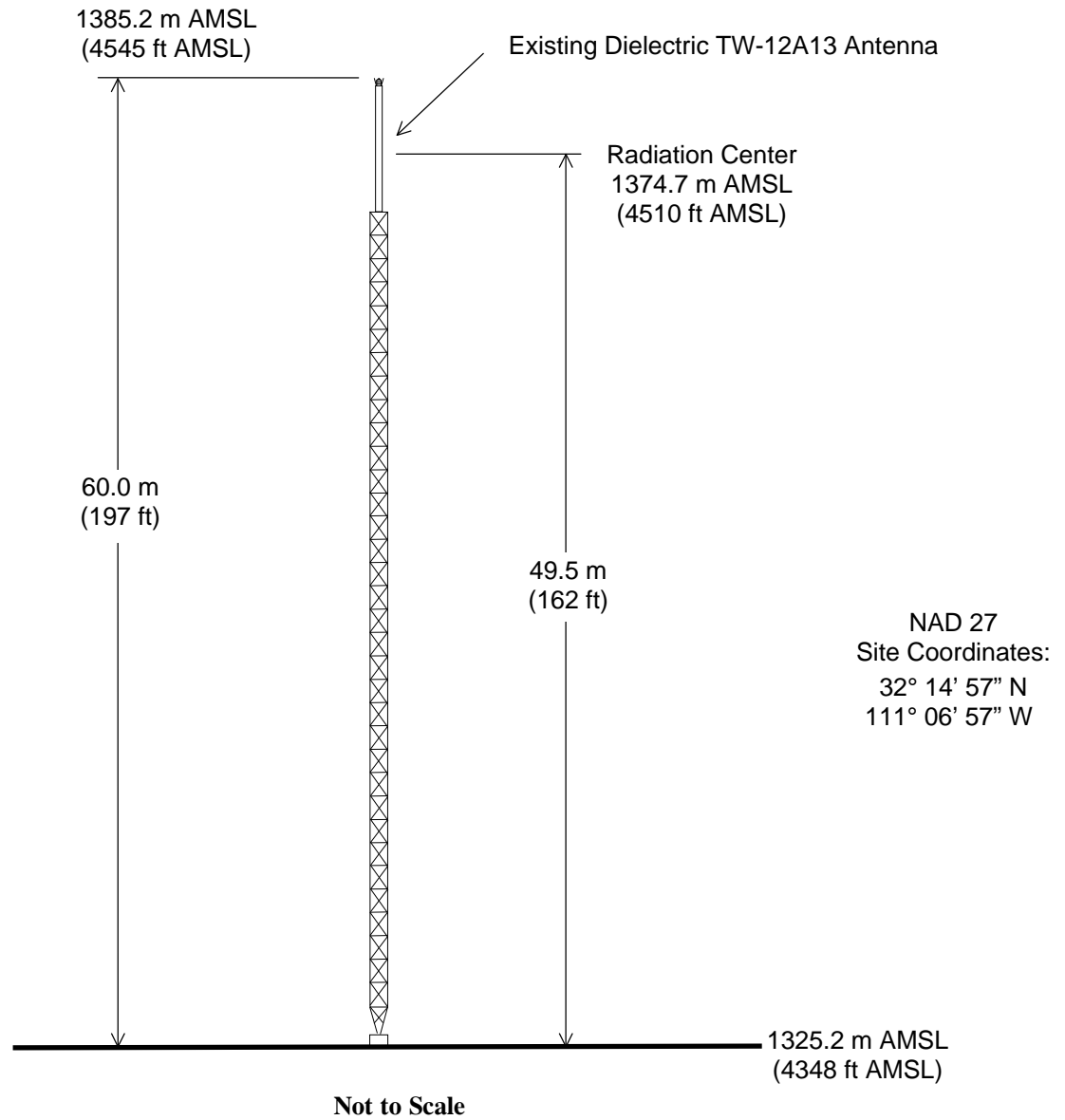


- Coverage gained after DTV transition
- (no symbol) No change in coverage
- ◆ Coverage lost but still served by same network
- ▲ Coverage lost and no other service by same network

Figure 2



Registration No. 1218220



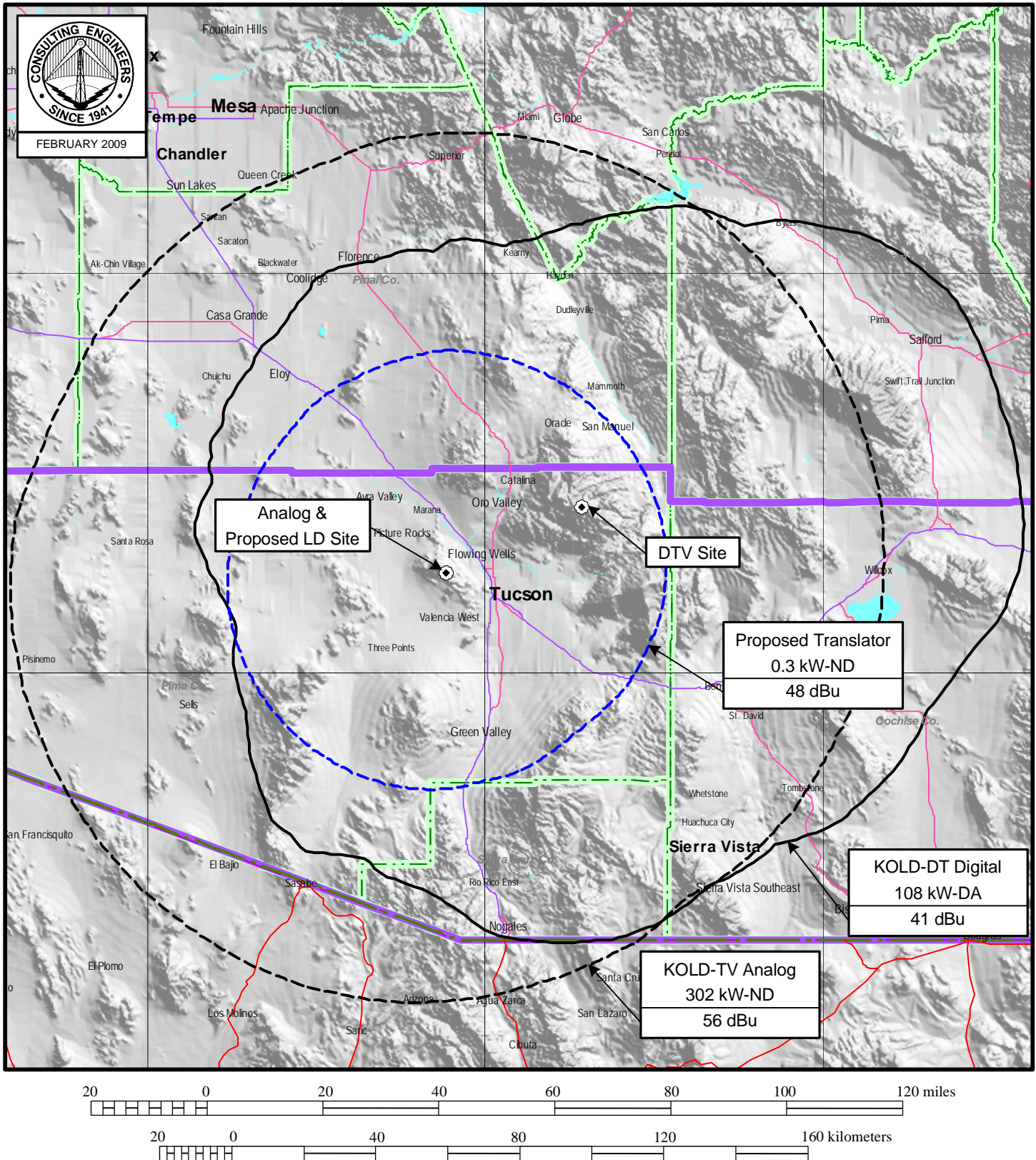
## ANTENNA AND SUPPORTING STRUCTURE

STATION KOLD-DT

TUCSON, ARIZONA

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

Figure 3



## PREDICTED COVERAGE CONTOURS

STATION KOLD-DT

TUCSON, ARIZONA

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