

BERNARD R. SEGAL, P. E.  
CONSULTING ENGINEER  
KENSINGTON, MARYLAND

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ENGINEERING STATEMENT

PREPARED FOR

M. BELMONT VERSTANDIG, INC.

STATION WHBG, HARRISONBURG, VIRGINIA

1360KHZ      5.0 KW, DAY; 9.2 W, NIGHT

The instant Engineering Statement is in support of an application for construction permit to relocate station WHBG, Harrisonburg, Virginia, to the site of co-owned 550 kHz station WSVA, also, Harrisonburg, Virginia. Station WHBG is authorized for operation on 1360 kHz with daytime power of 4.7 kW and nighttime power of 25 watts. A non-directional antenna is employed for both the daytime and nighttime operations. At the WSVA site, which is located approximately 5 kilometers north of the existing WHBG site, the center tower of the WSVA three tower nighttime directional antenna system will be employed for the non-directional daytime and nighttime operations for WHBG. This tower is used, also, for non-directional daytime operation for WSVA.

The WSVA center tower has an electrical height of  $172.8^\circ$  ( 0.48 wavelength ) at 1360 kHz. The radiation efficiency for a tower of this electrical height above a ground system of at least 120 copper radials having an electrical length of one-quarter wavelength is 371 mV/m at one kilometer per kilowatt according to Figure 8 of Section 73.190 of the FCC Rules. The WSVA ground system consists of 120 copper radials about each tower with each radial 0.65 wavelength at 1360 kHz, except where overlapping would otherwise occur. Those radials that would otherwise overlap are truncated and bonded to a copper strap laid transversely and mid-way between adjacent towers. A square copper ground screen with side dimensions of 15 meters surrounds the base of each tower. The ground system and tower at the WSVA site are more than adequate to permit the proposed diplexing of WHBG with WSVA. The frequency separation of the two stations is adequate, too.

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WHBG will operate at a power level of 5 kW during daytime hours. The unattenuated field strength at one kilometer will be 830 mV/m. An allocation study for the daytime mode is furnished in two parts. Figure 1 shows co-channel conditions and demonstrates that no prohibited contour overlap occurs with either of the two stations that are close enough to merit consideration. These stations are WPTT, McKeesport, PA, and WWLG, Baltimore, MD.

Figure 2 shows adjacent channel allocation conditions. Station WVMR, Frost, WV, 1370 kHz, is the only station within plus or minus 30 kHz that is close enough to merit consideration. For the 10 kHz separation that is here involved, the desired to undesired signal strength ratio for interference concern is 2:1. Overlap of the existing WHBG 0.5 mV/m contour with the 0.25 mV/m contour of WVMR, and vice versa already occurs. In such a circumstance, the FCC Rules do not permit an exacerbation of the overlap. Figure 2 demonstrates that the proposed WHBG operation will result in reduced overlap of the pertinent contours, and compliance with the Rules will be achieved.

The site change and facilities proposed to be employed for WHBG do not raise any concern with respect to the provision of adequate service to the principal community, Harrisonburg. Figure 3 shows the principal community 5mV/m service contours for both the existing and proposed operations for WHBG. Harrisonburg is completely encompassed by both 5mV/m contours.

In preparing the maps of Figures 1, 2 and 3, use was made of FCC Figure M-3 conductivities taking into account the corrections required when paths with different conductivities were encountered. The algorithm developed by EDX was employed. The unattenuated field strengths for stations using non-directional radiators was obtained from

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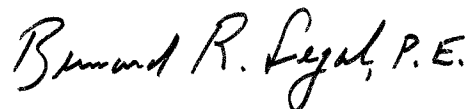
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the FCC's consolidated database system (CDBS). The radiation values for directional antennas were obtained, also, from the CDBS.

WHBG's nighttime operation is non-protected, and the general rules regarding principal community service do not apply. Only the concern regarding avoidance of interference to the nighttime operations of other protected stations merits consideration. A separate attachment entitled, "Nighttime Allocation Considerations", provides support for the use of 9.2 watts for the proposed WHBG operation during nighttime hours.

I certify under penalty of perjury that the foregoing is true and correct. Executed on June 26, 2001.



Bernard R. Segal, P. E.

FIGURE 1

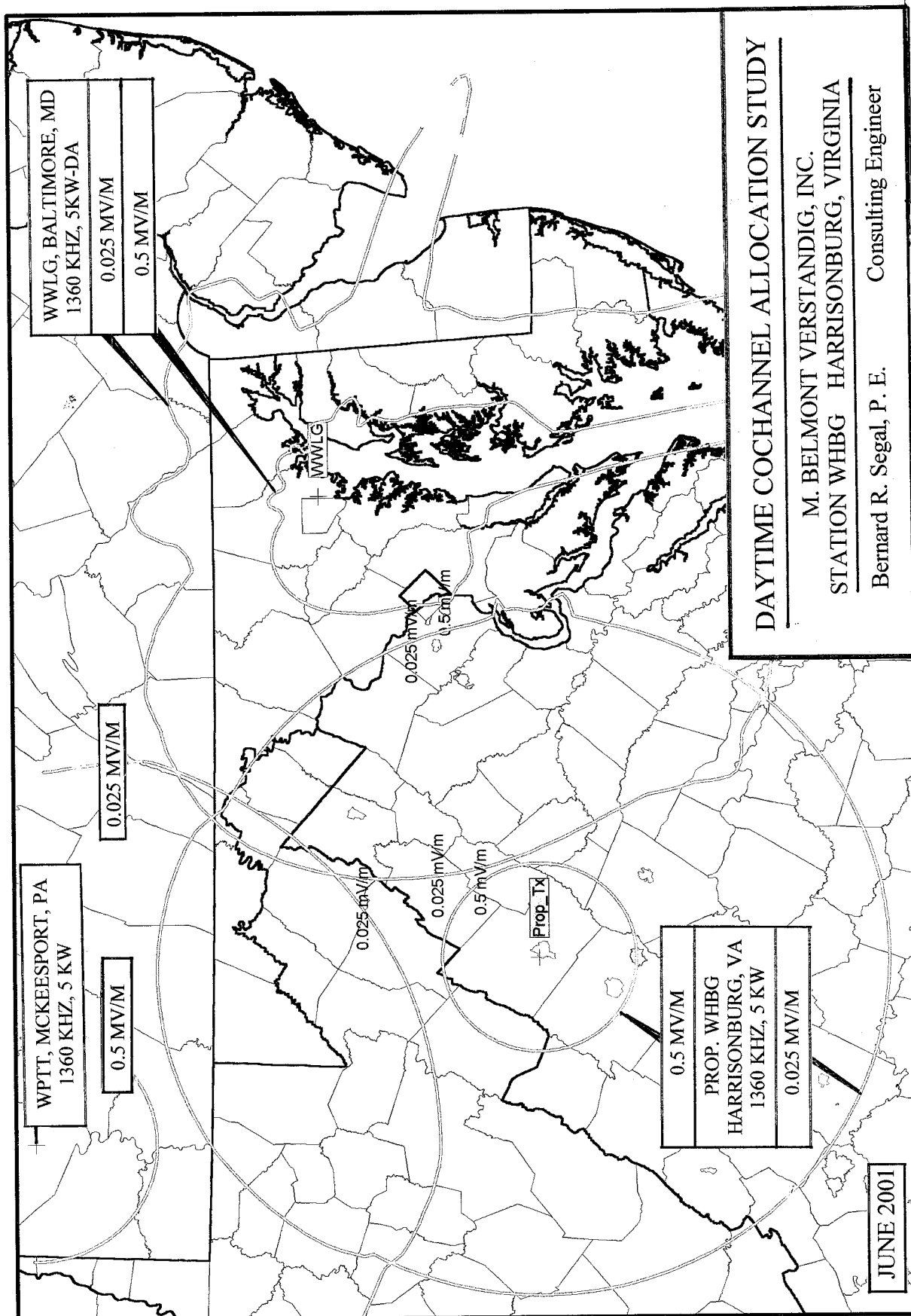


FIGURE 2

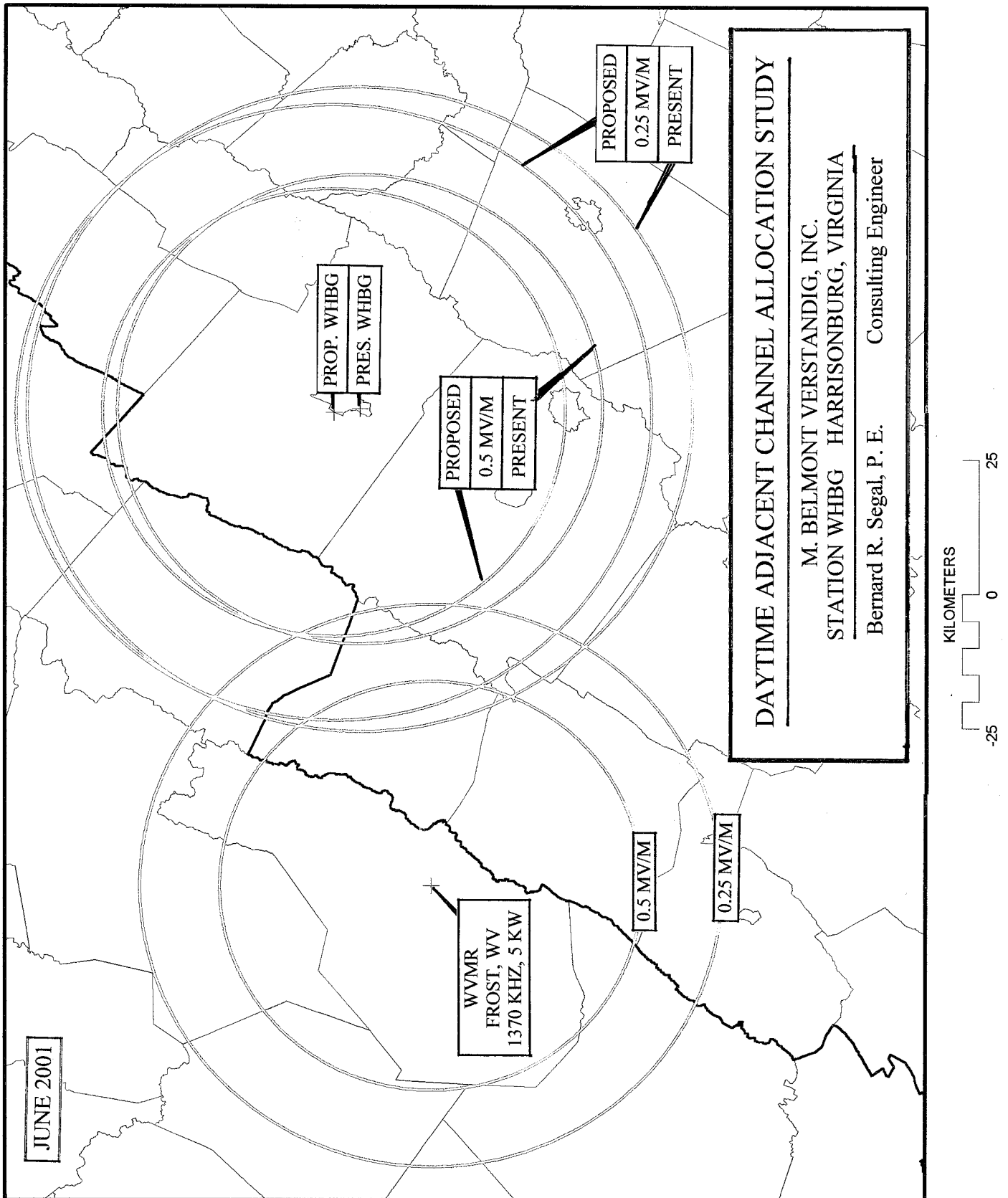


FIGURE 3

