

TECHNICAL EXHIBIT  
APPLICATION FOR FM CONSTRUCTION PERMIT  
RADIO STATION WHMA-FM  
ALEXANDRIA, ALABAMA

SEPTEMBER 26, 2007

CH 237A    0.4 KW (MAX-DA)    332 M

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Technical Narrative

The technical exhibit of which this narrative is part was prepared to support an application for a modification of radio station WHMA-FM presently on Channel 238A at Hobson City, Alabama to Channel 237A at Alexandria, Alabama.

WBTS-FM on Channel 238 assigned to Doraville, Georgia is filing on the same date, pursuant to Section 73.3517(e) of the Commission's Rules, a contingent amendment to its pending application for construction permit. This change to WHMA-FM is necessary so WBTS-FM can maintain its Class C1 classification at its new transmitter site.

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.

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Proposed Facilities at Alexandria, Alabama

The proposed transmitting facility will continue to operate at its present transmitter site on Channel 237A with a maximum effective radiated power (ERP) of 0.4 kW (circular polarization) and an antenna height above average terrain (HAAT) of 332 meters. It is proposed to continue to employ a directional antenna mounted on an existing tower. A tower sketch is provided as Figure 4.

Predicted Coverage Contours

The predicted coverage contours were calculated in accordance with Section 73.313 of the FCC Rules. The average terrain elevations from 3 to 16 km from the proposed site were computed using the U.G.D.C. 30-second terrain database. The distances to the predicted coverage contours were determined using the average elevations of 3-16 km portions of radials spaced every 10-degrees of azimuth. The antenna radiation center HAAT in each radial direction and the ERP were used in conjunction with the propagation prediction curves of Section 73.333 to determine the distances to contours.

Sheet 1 of Figure 6 is a map showing the predicted coverage contours. As indicated in Sheet 1 of Figure 6, although the predicted 60 dBu contour based on the normal FCC prediction method does encompass the entire CDP of Alexandria, the predicted 70 dBu contour does not.

Due to relatively smooth terrain between the proposed WHMA-FM transmitter site and the city Alexandria and pursuant to Section 73.313(e) of the FCC Rules, a supplemental method for contour prediction has been employed to predict the extent of the 70 dBu contour over Alexandria. Use of a supplemental prediction method is justified in this instance since the terrain roughness in the direction of Alexandria "departs widely" from the average 50-meter terrain roughness ( $\Delta h$ ) employed in the normal FCC prediction method. The terrain roughness ( $\Delta h$ ) was determined to be 20 meters along a radial through Alexandria.<sup>1</sup>

The supplemental prediction method used was the Commission's Point-to-Point propagation model. Based on this model, the predicted 70 dBu contour extends 25.0 km from the transmitter site along the 0° T bearing toward Inglis. Based on a 70 dBu contour distance of 25.0 km, the predicted 70 dBu contour for WHMA-FM will entirely encompass the city of Alexandria. Sheet 2 of Figure 6 shows the field strength versus distance graphs obtained from the point-to-point propagation model for three bearings toward Alexandria. Since the normally predicted 70 dBu contour extends 15.1 km from the proposed WHMA-FM transmitter site, the Point-to-Point model predicts an increase of 9.9 km (65%) in the distance to the 70 dBu contour. Therefore, it is concluded that the proposal complies with all of the Commission technical requirements.

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<sup>1</sup> The delta-h was calculated pursuant to the procedure provided in Sections 73.313(f) and 73.313(g) of the Commission's Rules for the 12.5 degree, true radial to the end of the Alexandria CDP limit using the 30-second N.G.D.C. terrain database.

Allocation Considerations - Alexandria, Alabama

Channel 237A can be allotted to Alexandria with a proposed allotment reference site at coordinates: 33° 48' 20" N / 85° 57' 50" W. Figure 3 is a separation study for the proposed allotment reference site for channel 237A at Alexandria, Alabama. Figure 1 is a map showing the assumed reference point is suitable for a tower. Figure 2 is a map demonstrating that from the proposed allotment reference site a class A, 70 dBu reference circle (16 km radius) encompasses the entire community of Alexandria.

As for the allocation short-spacing to WSRM(FM) on Channel 237A at Coosa, WSRM(FM) has a construction permit (as part of a contingent application pack) for operation on Channel 228A (BPH-20070629BXU). Therefore, WSRM(FM) will cease to be an allocation issue for this instant proposal upon implementation of operation on Channel 228A

Sheet 1 of Figure 6 is an allocation study for channel 237A at Alexandria, Alabama for the proposed transmitter site. As shown on Sheet 1 of Figure 6, the proposed facility meets the separation requirements of 47 CFR 73.207 with respect to all pertinent allotments and assignments with the exception of the following: WRLD-FM on Channel 237C3 at Valley, Alabama and WSRM(FM) on Channel 237A at Coosa, Georgia. In order to protect station WRLD-FM, the applicant proposes contour protection under 47 CFR 73.215. Sheet 2 of Figure 6 contain a map demonstrating that the proposal causes no prohibited overlap with the contours of the licensed maximum Class C3 WRLD-FM facility.

The Section 73.215 map predicted coverage and interfering contours were calculated in accordance with Section 73.313 of the FCC Rules. The average terrain elevations from 3 to 16 km from the proposed site were computed using the U.S.G.S. 3-second terrain database. The distances to the predicted coverage contours were determined using the average elevations of 3-16 km portions of radials spaced every 10-degrees of azimuth. The antenna radiation center HAAT in each radial direction and the ERP were used in conjunction with the propagation prediction curves of Section 73.333 to determine the distances to contours.

The predicted blanketing contour extends approximately 0.3 kilometer from the proposed transmitter site. No interference problems are anticipated, however, if any problems arise the applicant recognizes its responsibility to remedy complaints of blanketing interference as required by 47 CFR 73.318 and to protect existing facilities in accordance with applicable FCC Rules.

Community of License Change - Section 307(b)

*1. Proposal*

It is proposed to re-allot Channel 238A from Hobson City, Alabama to Channel 237A at Alexandria, Alabama.

*2. City Populations and Local Service*

The town of Hobson City has a 2000 U.S. Census population of 878 persons. Hobson City would have one assigned aural transmission services remaining, WHOG(AM), 1120 kHz. The Census Designed Place (CDP) of Alexandria has a U.S. Census population of 3,692 persons and has no local FM or AM transmission service. Thus, the proposal will

result in first local aural transmission service at Alexandria, Alabama.

### *3. Urbanized Area Considerations*

Both Hobson City and Alexandria are partially contained by the Anniston Urbanized Area. The proposed 70 dBu reference contour for the allotment reference coordinates will encompass 19.7% of the Anniston urbanized population and 25.0% of its area. A 70 dBu reference contour from the proposed transmitter site would encompass 86.1% of the Anniston urbanized population and 88.0% of its area. The 70 dBu existing reference contour for the existing Channel 238A at Hobson City would encompass the same Anniston Urbanized population and area as its proposed transmitter site.

### *4. 60 dBu Gain and Loss Areas and Available Aural Services*

The 60 dBu reference contours assuming uniform terrain were determined from both the existing Hobson City, Channel 238A allotment reference point and the proposed Alexandria Channel 237A allotment reference point. The Channel 238A Hobson City loss area contains 27,600 persons and 1,150 square kilometers of land area. The Channel 237A Alexandria gain area contains 88,600 persons and 1,150 square kilometers of land area. The populations were determined based on the 2000 U.S. Census; the areas were calculated using a root mean square algorithm. Sheet 1 of Figure 7 contains a map showing the other available services.

The actual 60 dBu contours were determined from both the existing Hobson City, Channel 238A transmitter site and the proposed Alexandria Channel 237A transmitter site. Using the actual 60 dBu contours, the Channel 238A Hobson City loss area contains 10,400 persons and 842 square kilometers of land area. The Channel 237A Alexandria gain area contains 7,910 persons and 251 square kilometers of land area. The populations were determined based on the 2000 U.S. Census; the areas were calculated using a root

mean square algorithm. Sheet 2 of Figure 7 contains a map showing the other available services. As can be determined from the map, all regions containing population within the loss area have 5 or more other fulltime aural services remaining.

#### *5. 70 dBu and 60 dBu Coverage*

The following table summarizes the area and population within the 70 dBu and 60 dBu contours depicted in Figure 5.

Contour	Population (2000 Census)	Land Area (sq. km)
70 dBu	54,900	452
60 dBu	111,100	1,400

Contour locations were calculated in accordance with the provisions of Section 73.313. Populations were calculated using a computer program that utilizes the 2000 U.S. Census database of "population centroids".

#### *6. Protected FM and AM Services Available*

It has been determined that there are more than two other protected FM services available to both Hobson City and Alexandria as shown in Figure 7. It is noted that the proposed channel 237A operation at Alexandria would also provide a predicted 60 dBu contour over all of Hobson City.

### Groundlevel Radiofrequency Electromagnetic Considerations

The proposed WHMA-FM 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 proposed antenna is located 31 meters above ground level. The total ERP (horizontal & vertical polarizations) is 0.8 kW. The calculated power

density at a point two meters above ground level for the proposed facility, assuming a conservative downward relative field value of 0.5, will not exceed  $0.007 \text{ mW/cm}^2$ . This is less than five percent of the FCC's recommended limit of  $0.2 \text{ mW/cm}^2$  for FM frequencies for an "uncontrolled" environment. There are no other known broadcast facilities on the proposed supporting structure.

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 electromagnetic will not exceed the FCC guidelines.

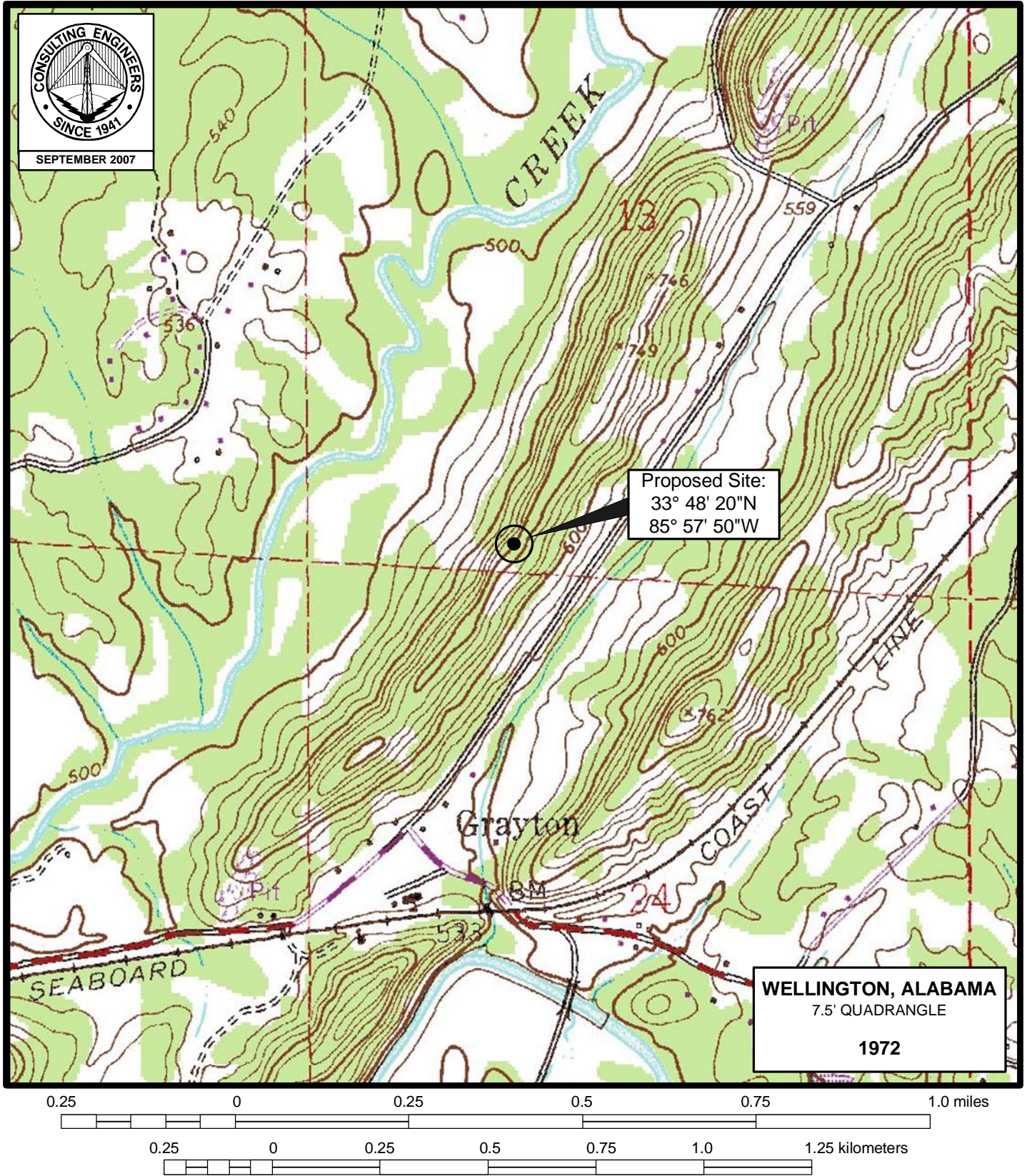
It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner as part of the tower registration process.

Charles A. Cooper

September 26, 2007

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

### Figure 1

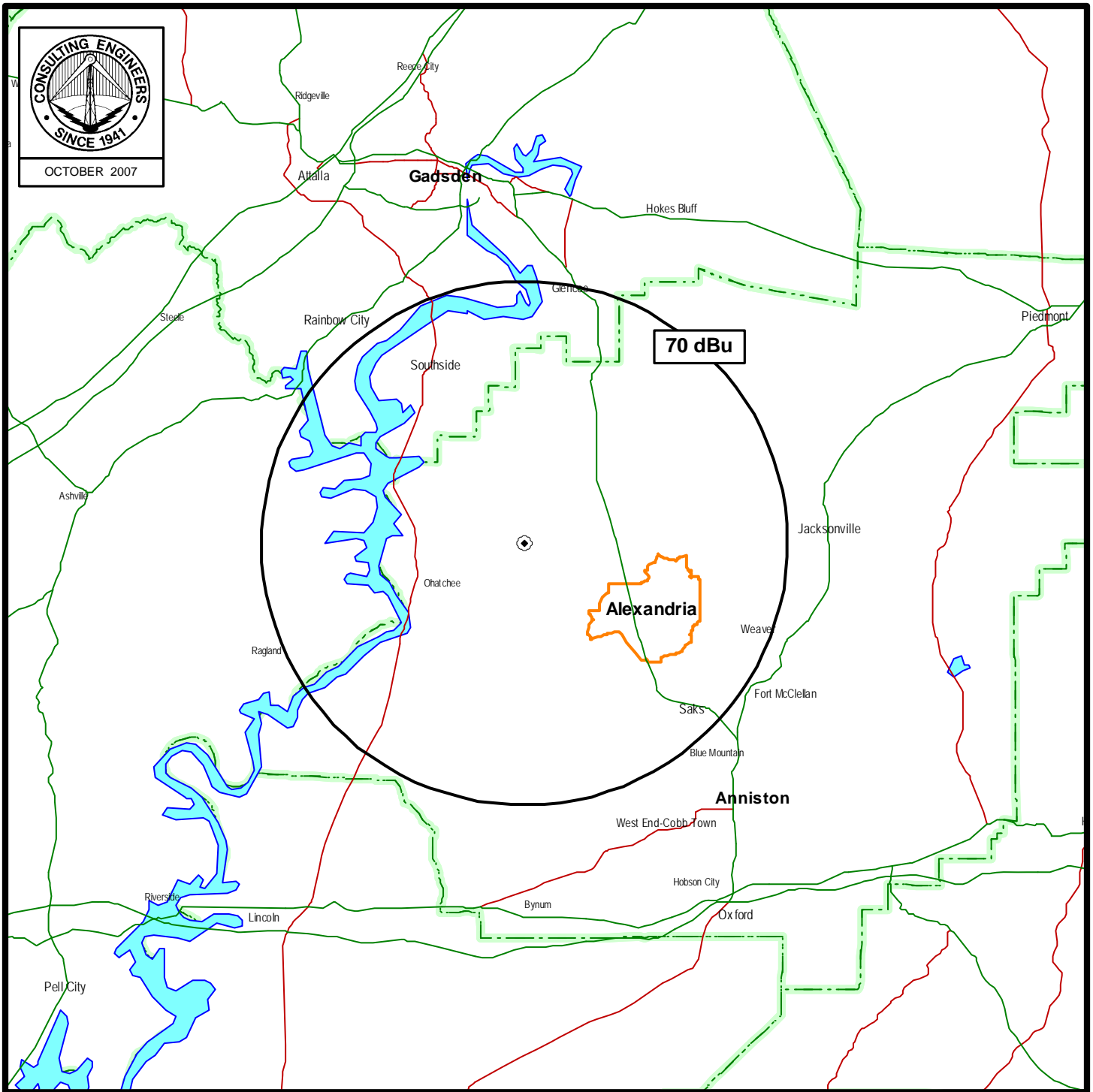


## PROPOSED ALLOCATION SITE

FM STATION WHMA-FM  
ALEXANDRIA, ALABAMA  
CH 237A 0.4 KW (MAX-DA) 332 M

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Figure 2



**PROPOSED ALLOTMENT SITE 70 DBU COVERAGE  
ASSUMING UNIFORM TERRAIN**

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

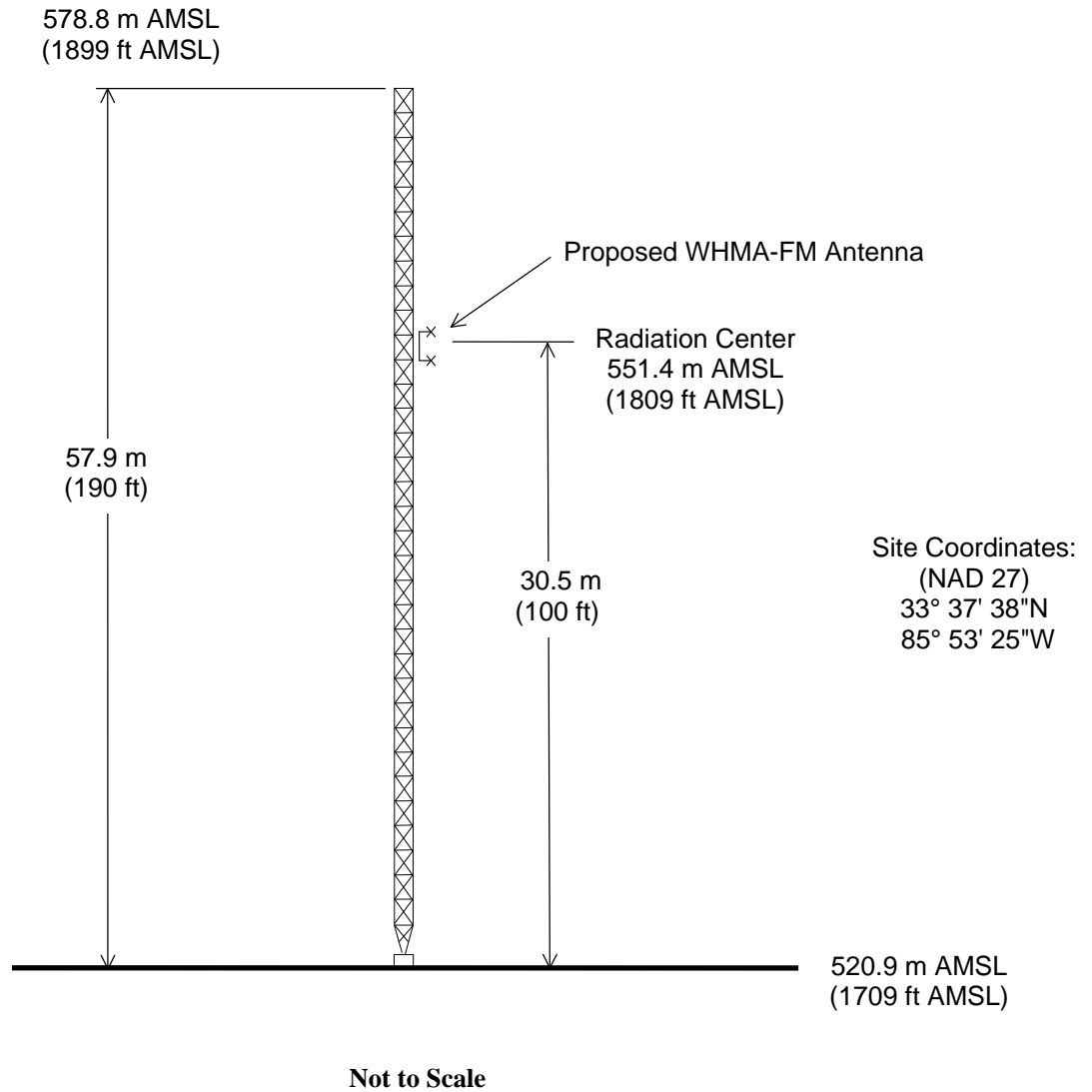
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Channel 237A Allocation Study at Reference Site

33° 48' 20" North Latitude  
085° 57' 50" West Longitude

Call Id	City St	Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. min
WRTT-FM 71462	HUNTSVILLE AL	LIC C	BLH 20000522AAT	236C2 95.1	12 277	Y 31018	34-47-53 086-38-24	Y	330.8	126.47	106.0
WSRM 30623	COOSA GA	LIC C	BLH 20050225AAC	237A 95.3	6 22	N	34-11-51 085-21-21	Y	52.0	71.03	115.0
<i>(WSRM(FM) has a construction permit for operation on Channel 228A (BPH-20070629BXU). Therefore, WSRM will cease to be an allocation issue for this instant proposal upon implementation of operation on Channel 228A)</i>											
WHJK 66956	OOTTEWAH TN	BPH APP C	BPH 20070629BXS	237C3 95.3	11 152	N	34-57-23 085-17-32	N	25.5	141.82	142.0
<i>(Separation distance rounds to 142 kilometers. No allocation issue.)</i>											
WRLD-FM 52040	VALLEY AL	BLH LIC C	BLH 20011119ABL	237C3 95.3	25 100	N	32-44-03 085-07-53	N	146.8	141.90	142.0
<i>(Separation distance rounds to 142 kilometers. No allocation issue.)</i>											
WFFN 54797	COALING AL	BLH LIC C	BLH 20050603ABJ	237C2 95.3	17.5 256	N	33-03-15 087-32-57	Y	240.8	169.35	166.0
WHMA-FM 52320	HOBSON CITY AL	BLH LIC C	BLH 20050527BCT	238A 95.5	0.53 332	Y 67900	33-37-38 085-53-25	Y	161.0	20.92	72.0
<i>(Applicant's presently licensed facility.)</i>											
WTWX-FM 25674	GUNTERS VILL AL	BLH LIC C	BLH 19950712KC	240C3 95.9	10.5 157	N	34-20-14 086-16-46	N	333.9	65.77	42.0
WRHY 10701	CENTRE AL	BPH CP C	BPH 20051219AAJ	290A 105.9	0.53 332	N	34-01-44 085-40-18	N	47.3	36.66	10.0

ASRN: 1020310



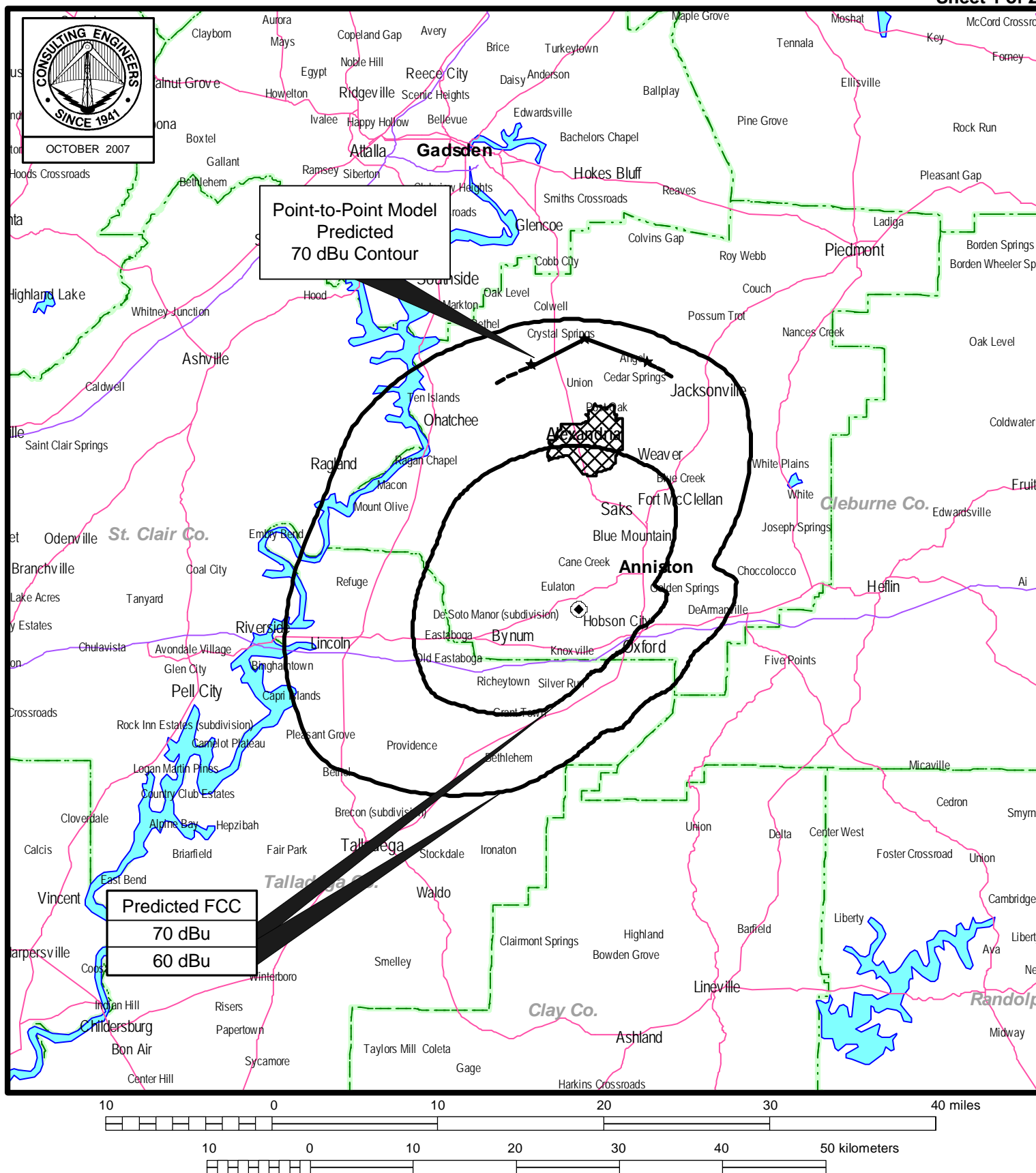
## **ANTENNA AND SUPPORTING STRUCTURE**

RADIO STATION WHMA-FM

ALEXANDRIA, ALABAMA

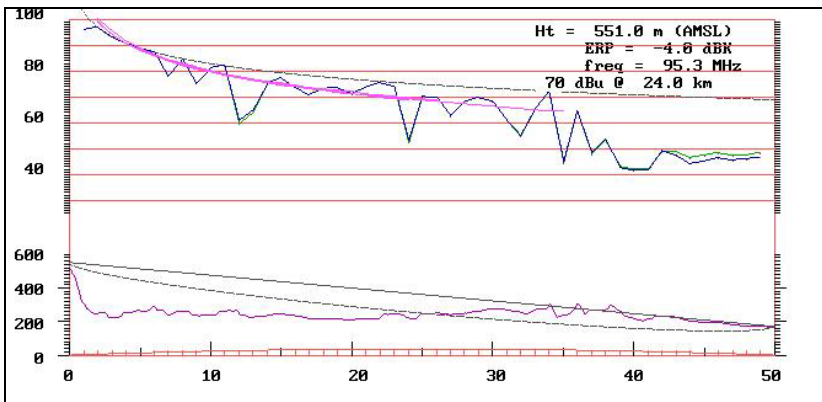
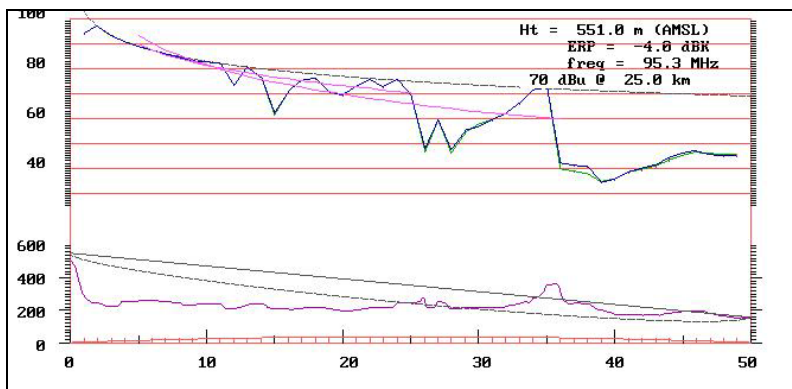
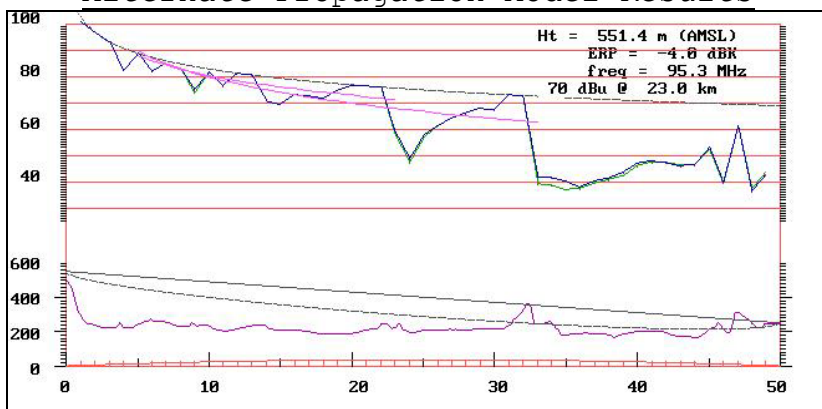
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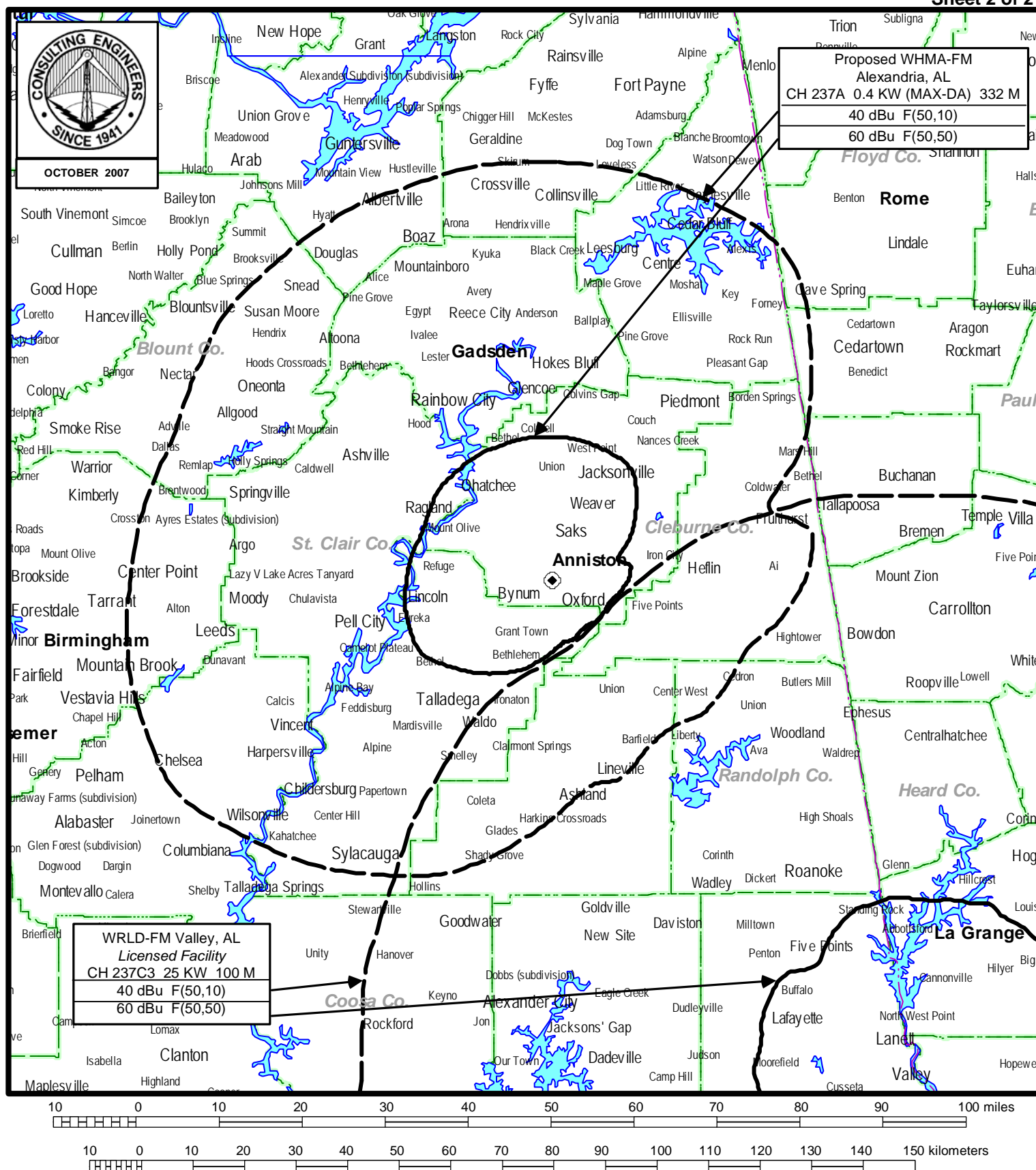
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Alternate Propagation Model Results



33° 37' 38" North Latitude  
085° 53' 25" West Longitude

Call Id	City St	Status	File Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. min
WSRM 30623	COOSA GA		BLH LIC C	237A 20050225AAC	6 95.3	N 22	34-11-51 085-21-21	Y	37.7	80.27	115.0
(WSRM(FM) has a construction permit for operation on Channel 228A (BPH-20070629BXU). Therefore, WSRM will cease to be an allocation issue for this instant proposal upon implementation of operation on Channel 228A)											
WRLD-FM 52040	VALLEY AL		BLH LIC C	237C3 20011119ABL	25 95.3	N 100	32-44-03 085-07-53	N	144.4	121.73	142.0
(Section 73.215 processing requested towards WRLD-FM at Valley, AL.)											
WHJK 66956	OOLTEWAH TN		BPH APP C	237C3 20070629BXS	11 95.3	N 152	34-57-23 085-17-32	N	20.2	157.38	142.0
WFFN 54797	COALING AL		BLH LIC C	237C2 20050603ABJ	17.5 95.3	N 256	33-03-15 087-32-57	Y	248.0	167.00	166.0
WHMA-FM 52320	HOBSON AL	CITY LIC C	BLH 20050527BCT	238A 95.5	0.53 332	Y 67900	33-37-38 085-53-25	Y	96.4	0.00	72.0
(Applicant's presently licensed facility.)											



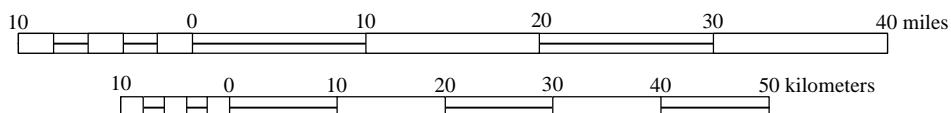
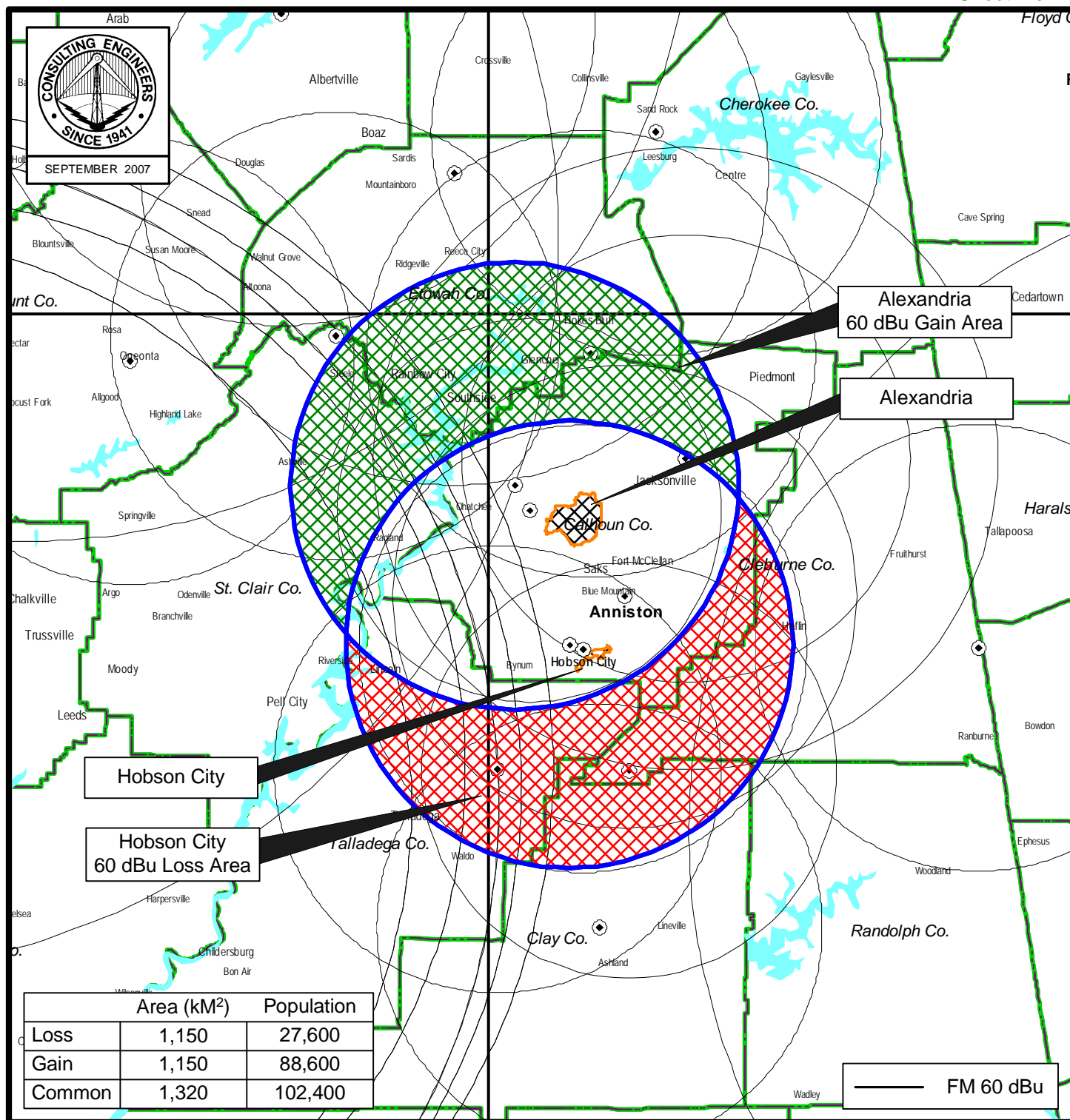
# ALLOCATION STUDY

## RADIO STATION WHMA-FM

### ALEXANDRIA, ALABAMA

#### CH 237A 0.4 KW (MAX-DA) 332 M

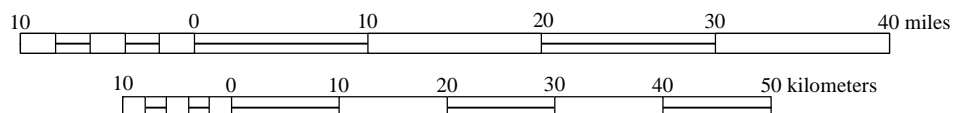
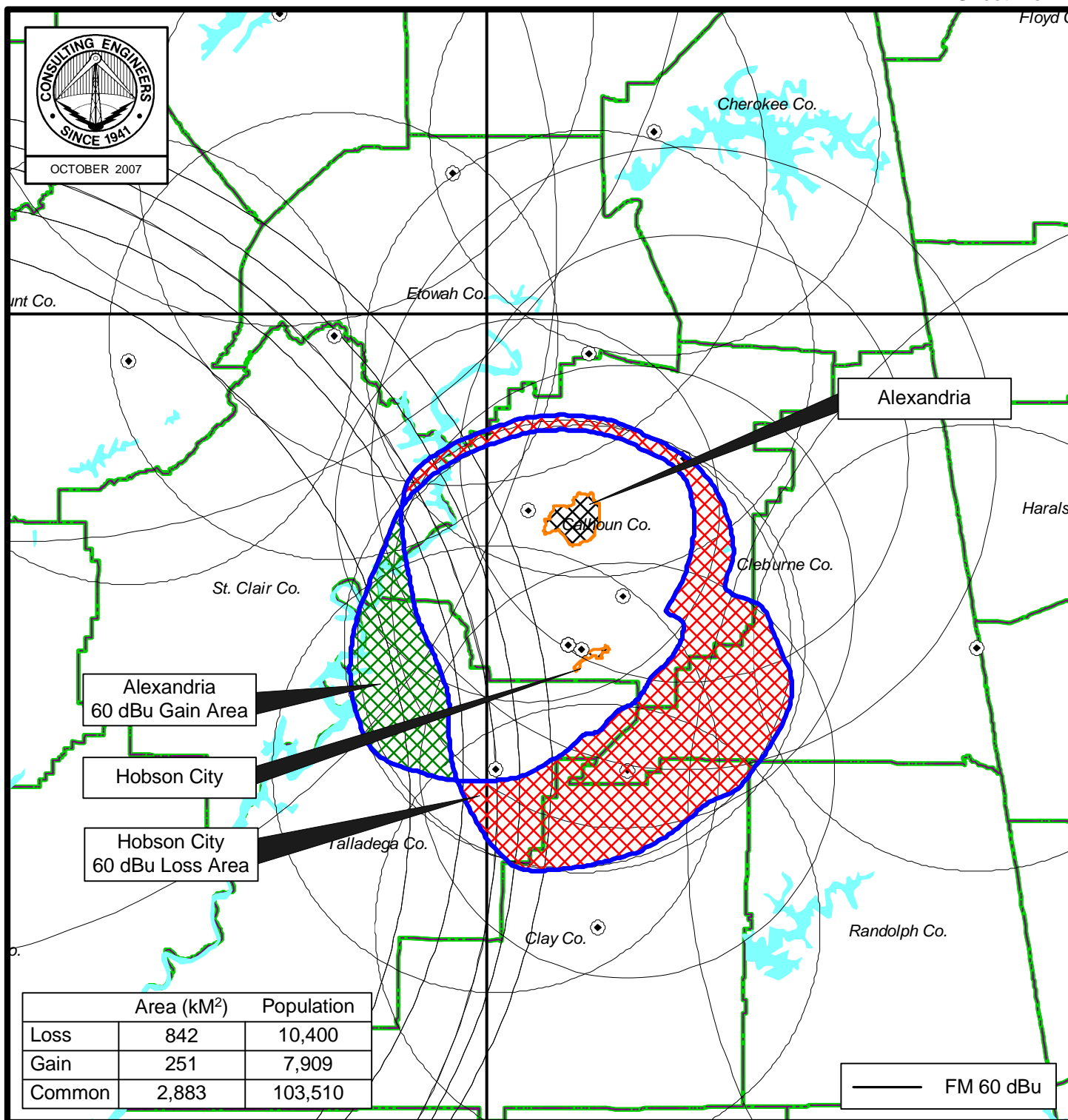
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### 307(B) ANALYSIS - GAIN/LOSS ANALYSIS REFERENCE SITES AND UNIFORM TERRAIN

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## 307(B) ANALYSIS - GAIN/LOSS ANALYSIS ACTUAL 60 DBU CONTOURS

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