

ENGINEERING STATEMENT

This engineering data contained herein have been prepared on behalf of BUTRON MEDIA CORPORATION, licensee of AM station WGSF, 1030 kHz in Memphis, Tennessee, and FM translator K268DA, Channel 268D in Memphis, Tennessee, in support of this Application for Construction Permit to operate the FM translator station at a new site and to operate it as a translator of WGSF(AM).

It is proposed to mount a three-bay, half-wave-spaced, circularly polarized FM antenna at the 73-meter level of the existing 75-meter WGSF(AM) tower. In Exhibit B, we provide a map upon which the newly proposed site is plotted. To that map, we have added the proposed 60 dBu service contour. Exhibit C shows the proposed K268DA service contour with respect to the WGSF(AM) 2.0 mV/m service contour. As shown, the FM translator's proposed 60 dBu contour is located completely within the AM station's service contour, as required by the Commission for the filing of an FM translator application which serves an AM facility.

In Exhibit D, we have plotted the proposed K268DA service contour in relation to that licensed to the station in BLFT-20161223AAY. It is clear from this exhibit that there is ample overlap of the two contours, as required by the FCC for FM translator minor-change applications.

We provide a contour protection study in Exhibit E. It shows that the proposed facility meets the Commission's protection requirements to all facilities except with regard to second-adjacent-channel stations KJMS(FM), Channel 266C1 in Olive Branch, Mississippi, and KWNW(FM), Channel 270C3 in Crawfordsville, Arkansas.

EXHIBIT A

As a result, a waiver of the Commission's second-adjacent-channel interference Rules is requested with regard to both of these stations. In Exhibit E we provide justification for the proposed waiver request.

A power density calculation is provided in Exhibit F.

Since no change in the overall height or location of the existing tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1238177 to this tower.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher". The signature is stylized with a large initial "K" and a long horizontal stroke at the end.

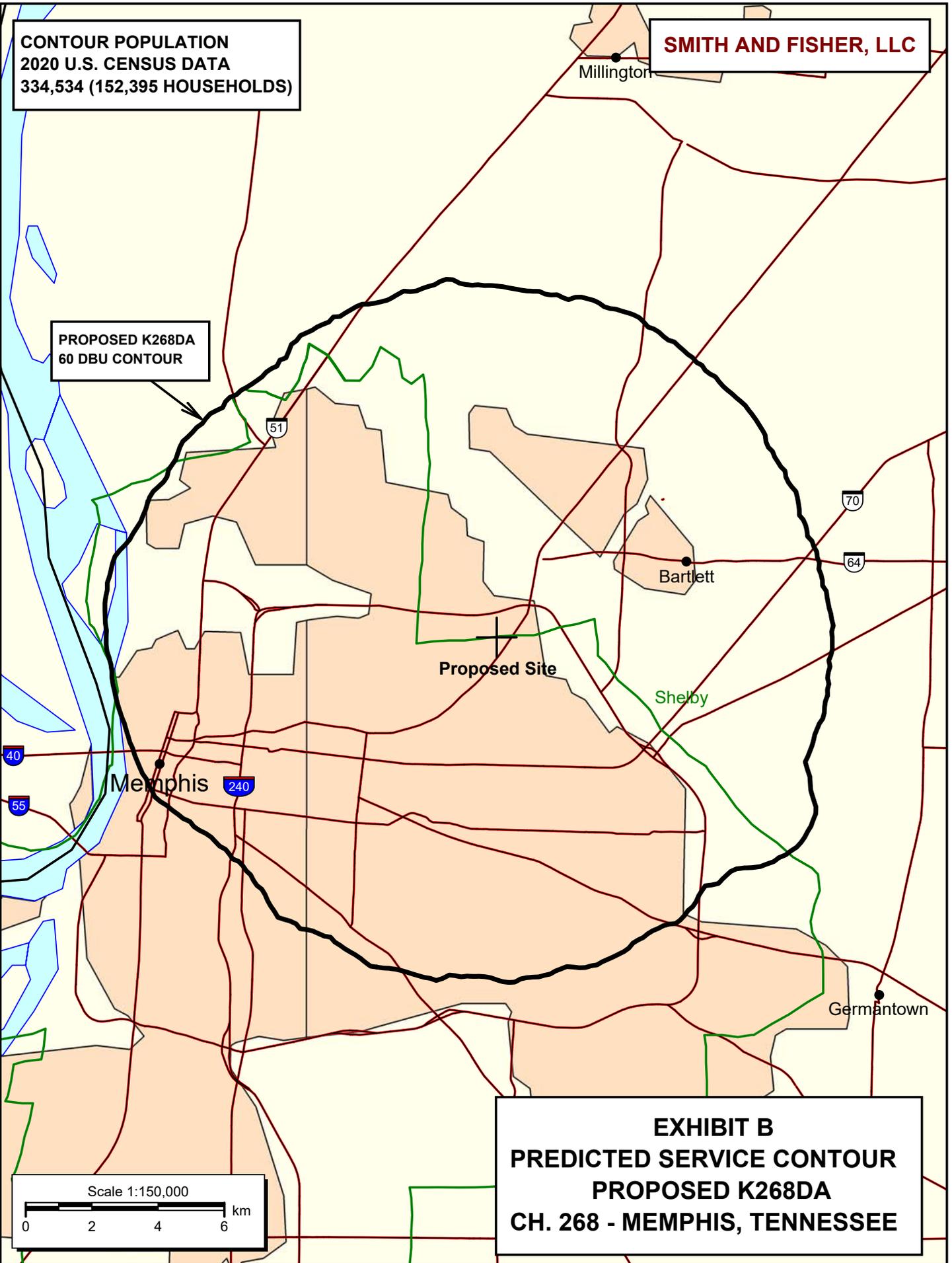
KEVIN T. FISHER

March 2, 2023

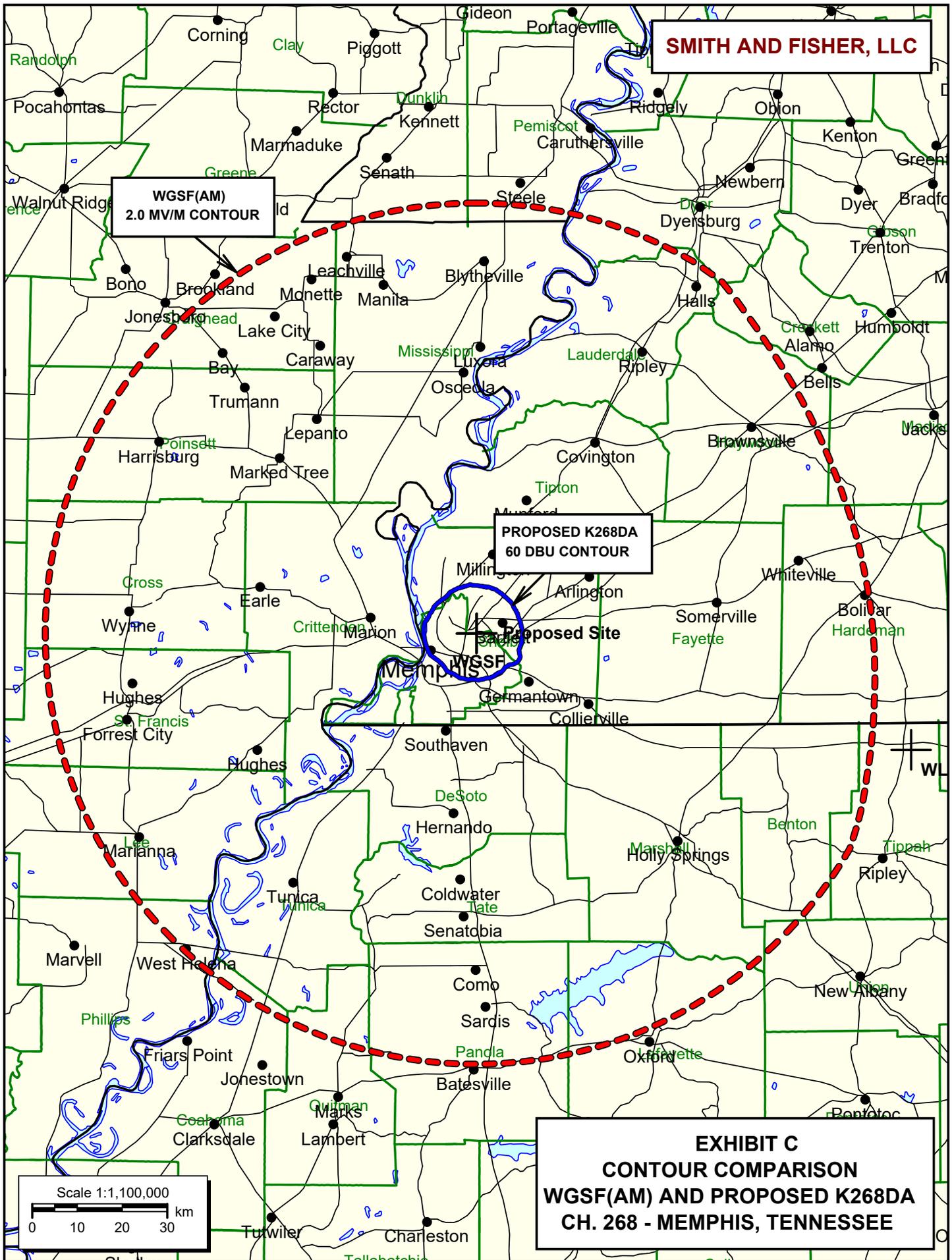
**CONTOUR POPULATION
2020 U.S. CENSUS DATA
334,534 (152,395 HOUSEHOLDS)**

SMITH AND FISHER, LLC

**PROPOSED K268DA
60 DBU CONTOUR**



**EXHIBIT B
PREDICTED SERVICE CONTOUR
PROPOSED K268DA
CH. 268 - MEMPHIS, TENNESSEE**



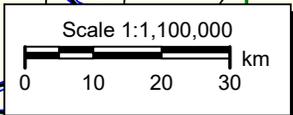
SMITH AND FISHER, LLC

**WGSF(AM)
2.0 MV/M CONTOUR**

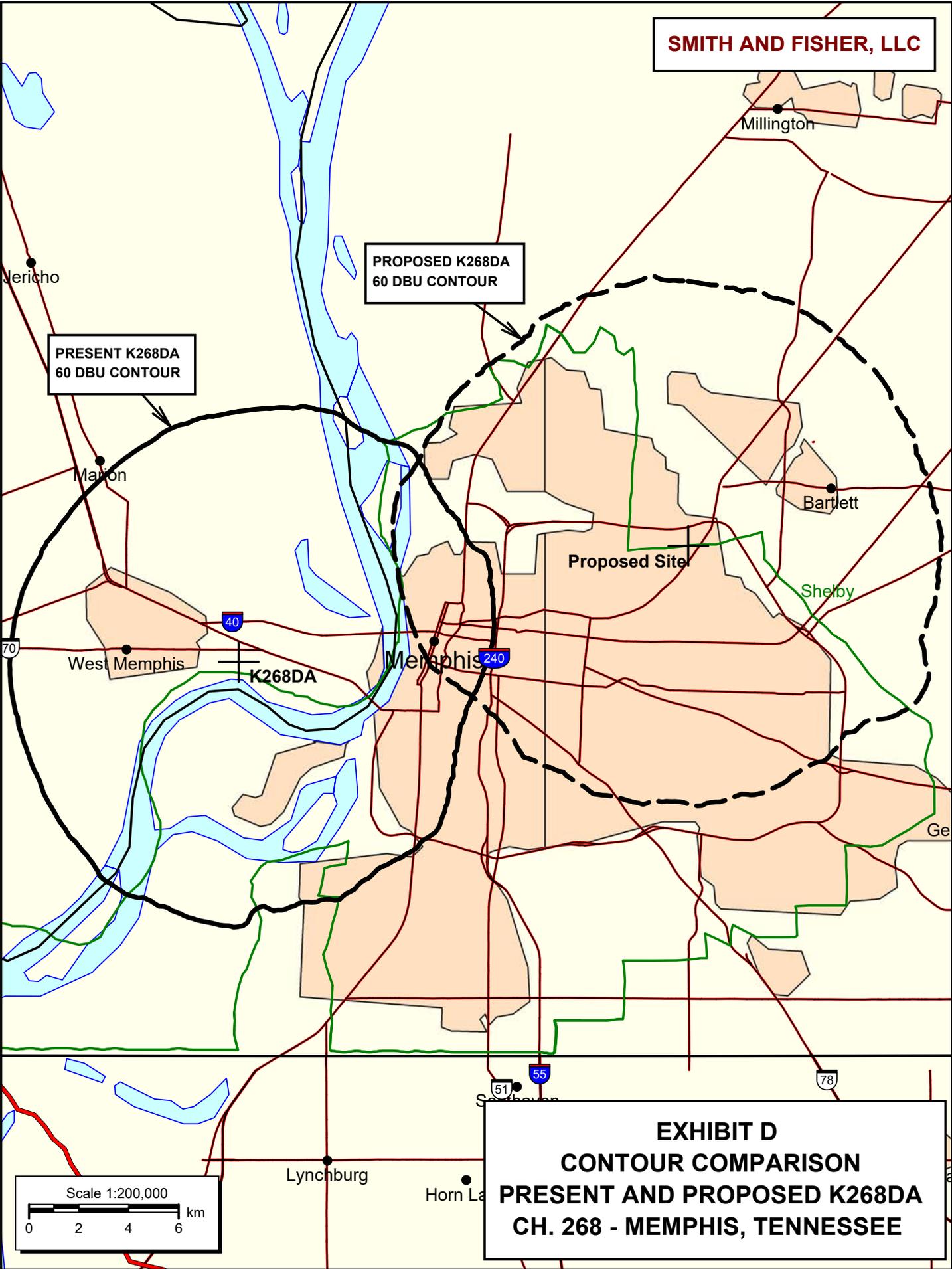
**PROPOSED K268DA
60 DBU CONTOUR**

Proposed Site

**EXHIBIT C
CONTOUR COMPARISON
WGSF(AM) AND PROPOSED K268DA
CH. 268 - MEMPHIS, TENNESSEE**



SMITH AND FISHER, LLC



**EXHIBIT D
CONTOUR COMPARISON
PRESENT AND PROPOSED K268DA
CH. 268 - MEMPHIS, TENNESSEE**

CONTOUR PROTECTION ANALYSIS AND
SECOND-ADJACENT-CHANNEL WAIVER REQUEST
PROPOSED K268DA
CH. 268 – MEMPHIS, TENNESSEE

In Exhibit E-2, we provide the results of a contour protection analysis for the proposed K268DA facility. As shown, there are three stations of concern: KJMS(FM), Channel 266C1 in Olive Branch, Mississippi; KWNW(FM), Channel 270C3 in Crawfordsville, Arkansas; and, WWUN-FM, Channel 268C3 in Friars Point, Mississippi.

We have plotted the protected 60 dBu F(50,50) contour of WWUN-FM as well as the co-channel 40 dBu F(50,10) interference contour of proposed K268DA on a map in Exhibit E-3. As shown, there is significant overlap between the two contours. Thus, the Commission's contour protection requirements are met with respect to WWUN-FM.

With regard to KJMS(FM) and KWNW(FM) a waiver of the Commission's Rules regarding contour protection of second-adjacent-channel stations is respectfully requested and believed to be justified for the reasons stated below.

In Exhibit E-4, we have plotted the proposed K268DA site. As shown, the KWNW(FM) 75.5 dBu F(50,50) contour passes close to the proposed site. In the same exhibit, we also show that the 94.4 dBu contour of KJMS(FM) passes close to the proposed site. With a 40 dB d/u ratio that applies for stations that are second-adjacent-channel to each other, as these full-power stations would be to proposed K268DA, the predicted interference contour from proposed K268DA would be its 105.4 dBu contour and its 124.3 dBu contour to KWNW(FM) and KJMS(FM), respectively, assuming full radiated ERP in all vertical planes.

EXHIBIT E-1

In order to minimize the likelihood of interference to the above-referenced full-power stations, the applicant proposes to utilize Micronetixx Technologies FML-3 half-wave-spaced antenna for K268DA at this site. The antenna has suppressed radiation values at the steeper elevation angles, as shown in Exhibit E-5.

In Exhibit E-6, we have tabulated the calculated free-space field values at five degree increments from horizontal that result from use of this antenna and the assumed effective radiated power of 250 watts. We employed the following formula for calculating these field strength values: $F=137+10(\log ERP)-20(\log d)$, where F is the field strength in terms of dBu, ERP is in watts (and factors in the relative field value from the elevation pattern at the given depression angle) and d is distance from the base of the tower in meters. As shown, at every distance from the tower base the field strength from proposed K268DA is lower than that required to protect KWNW(FM) and KJMS(FM) from interference.

Exhibit E-7 is a Google Earth plot of the proposed site. In addition to meeting the Commission's d/u ratios for interference to second-adjacent-channel stations, it is clear that the area surrounding the proposed site is uninhabited, which is normal for AM stations due to the extensive ground radial system that originates from each tower in the array.

As a result, a waiver of the FCC's 2nd-adjacent-channel spacing Rule with regard to KWNW(FM) and KJMS(FM) is respectfully requested and believed to be justified.

Spacings to Other Stations

Proposed K268DA - Memphis, Tennessee

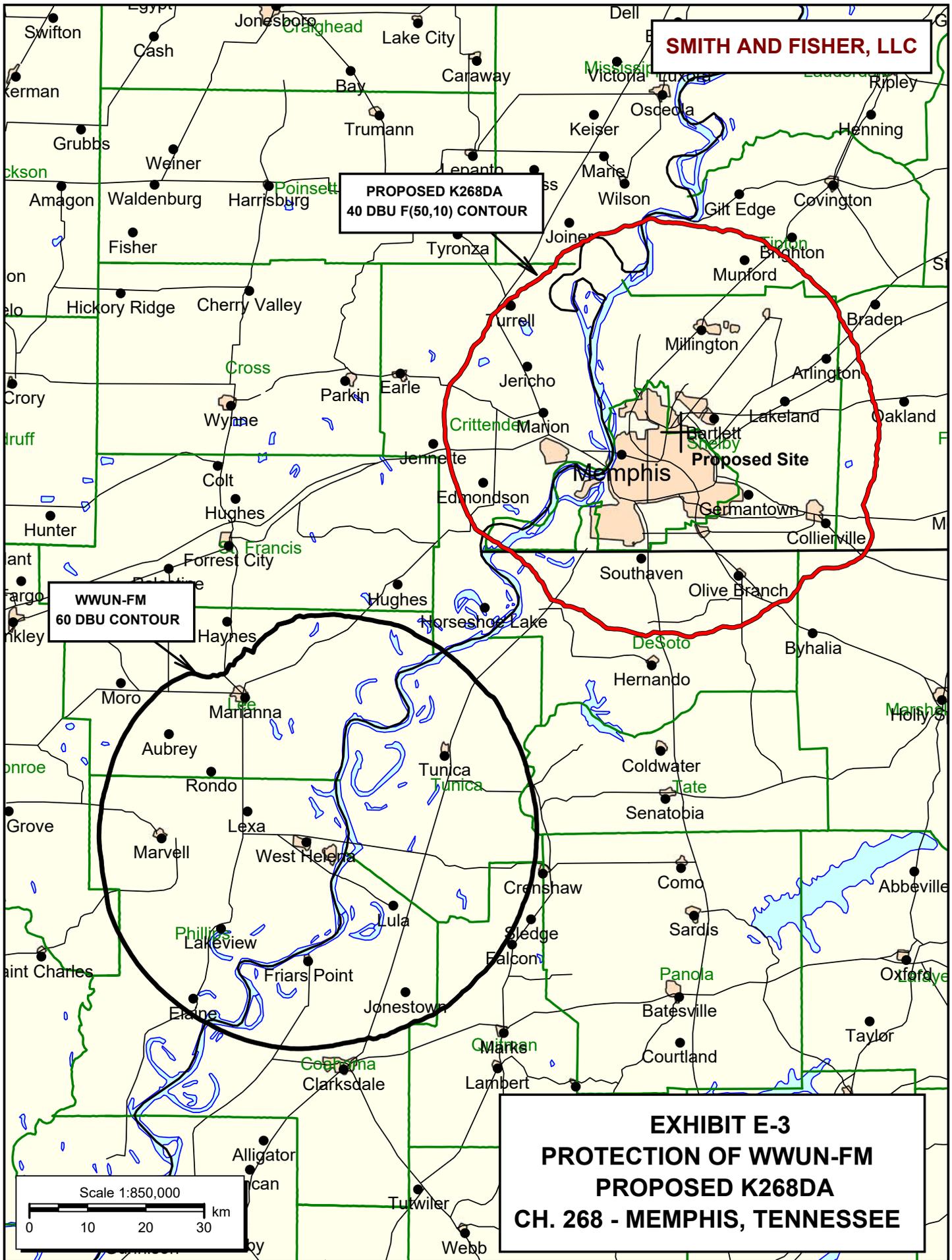
REFERENCE
35 11 02.0 N.
89 56 13.0 W.

CH# 268D - 101.5 MHz, Pwr= 0.25 kW, HAAT= 64.8 M, COR= 148.6 M
Average Protected F(50-50)= 10.53 km
Omni-directional

DISPLAY DATES
DATA 03-01-23
SEARCH 03-02-23

CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
266C1 Olive Branch	KJMS	LIC_CN MS	294.2 114.1	10.61 BLH20060906ABL	35 13 22.3 90 02 36.3	100.000 171	7.5 244	60.5 Ihm Licenses, LLC	-8.1*	-53.4*
270C3 Crawfordsville	KWNW	LIC_NCN AR	248.6 68.5	15.36 BLH20100910ACA	35 08 00.3 90 05 38.3	8.500 147	3.5 215	35.9 Ihm Licenses, LLC	0.4	-24.2*
268C3 Friar's Point	WWUN-FM	LIC_NCN MS	222.8 42.4	93.05 BMLED20090629AAE	34 34 02.4 90 37 37.4	14.000 120	105.3 180	38.0 CSN International	-22.7*	19.5
268A Jackson	WNWS-FM	LIC_CN TN	63.6 244.2	117.93 BLH19930920KE	35 38 59.2 88 46 11.2	2.200 116	75.5 248	24.9 Grace Broadcasting Service	32.4	59.5
269C2 Walnut Ridge	KIYS	LIC_ZCN AR	321.5 141.1	109.63 BLH20100916ACV	35 57 14.3 90 41 41.4	10.500 327	65.4 426	43.8 East Arkansas Broadcasters	33.7	51.2
270D Covington	W270DR	LIC_DHN TN	31.0 211.2	52.24 0000159638	35 35 12.3 89 38 21.3	0.250	0.0 184	2.2 Grace Broadcasting Service	41.7	46.7

Terrain database is USGS 03 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference zone= , Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beam tilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

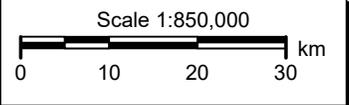


SMITH AND FISHER, LLC

**PROPOSED K268DA
40 DBU F(50,10) CONTOUR**

**WWUN-FM
60 DBU CONTOUR**

**EXHIBIT E-3
PROTECTION OF WWUN-FM
PROPOSED K268DA
CH. 268 - MEMPHIS, TENNESSEE**



SMITH AND FISHER, LLC

**KJMS(FM)
94.3 DBU CONTOUR**

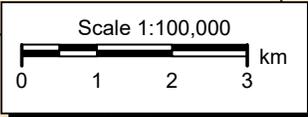
Bartlett

Proposed Site

**KWNW(FM)
75.4 DBU CONTOUR**

Shelby

his



**EXHIBIT E-4
SECOND-ADJACENT-CHANNEL
WAIVER REQUEST
PROPOSED K268DA
CH. 268 - MEMPHIS, TENNESSEE**

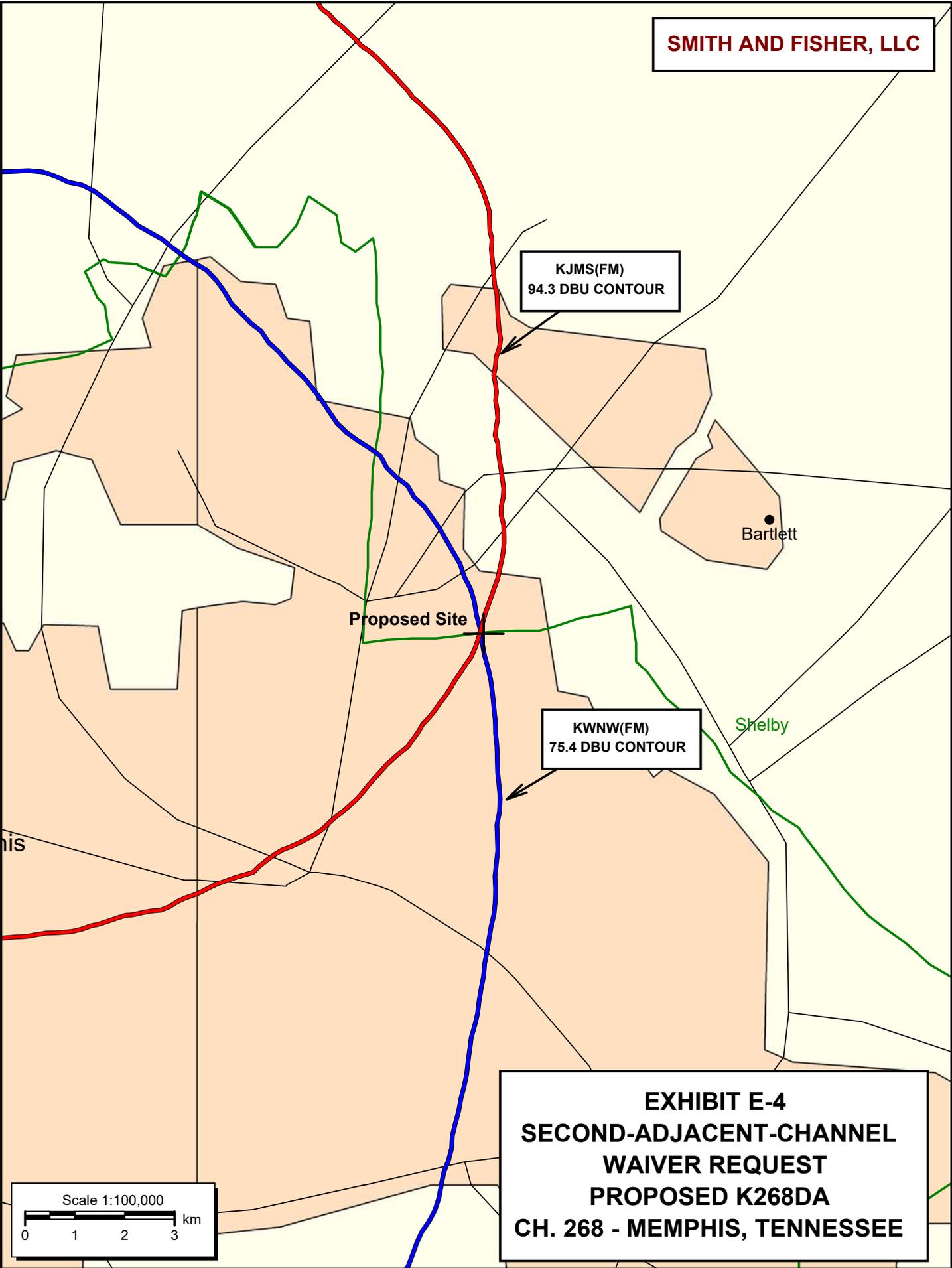
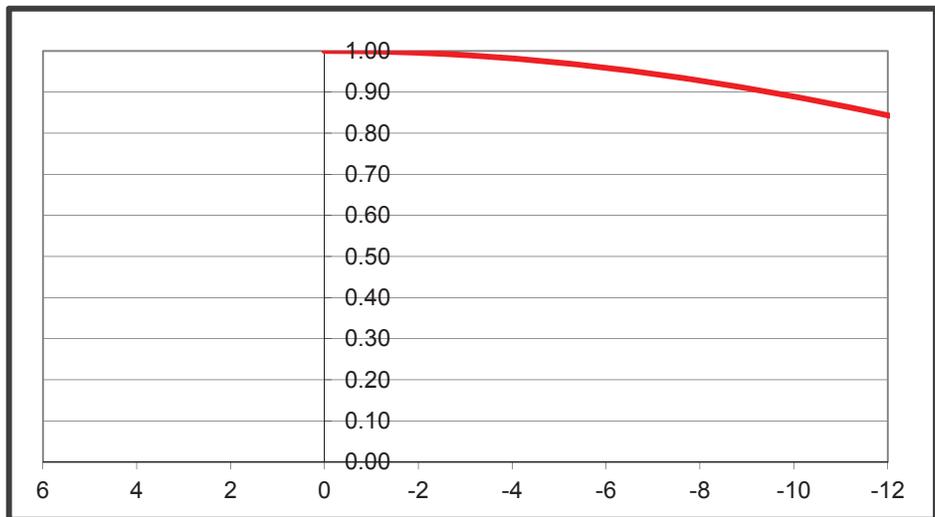
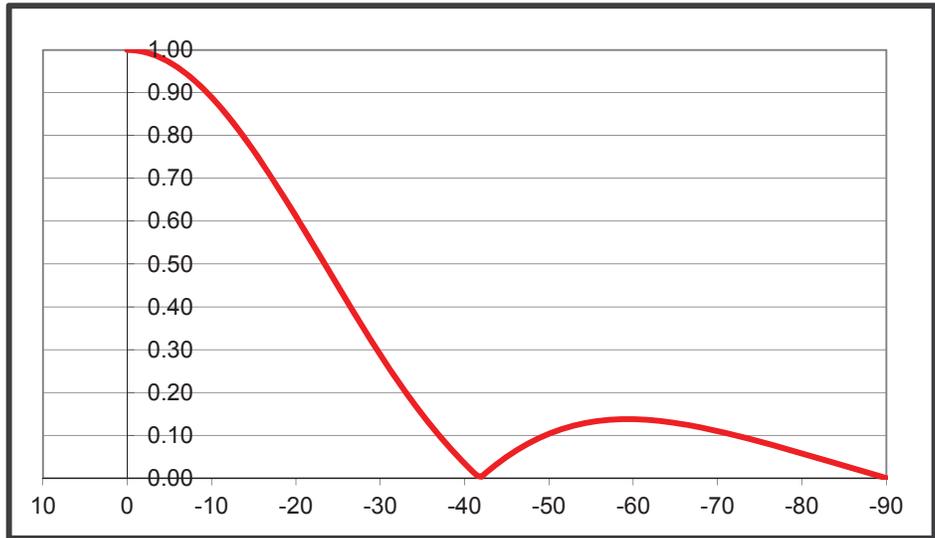


EXHIBIT E-5

Angle	Field
0	1
-0.5	0.999711
-1	0.998846
-1.5	0.997405
-2	0.99539
-2.5	0.992804
-3	0.989651
-3.5	0.985934
-4	0.981658
-4.5	0.97683
-5	0.971455
-5.5	0.96554
-6	0.959093
-6.5	0.952123
-7	0.944638
-7.5	0.936649
-8	0.928165
-8.5	0.919198
-9	0.909758
-9.5	0.899859
-10	0.889512
-10.5	0.878731
-11	0.867529
-11.5	0.85592
-12	0.843919
-12.5	0.83154
-13	0.818799
-13.5	0.805712
-14	0.792293
-14.5	0.77856
-15	0.764528
-15.5	0.750215
-16	0.735637
-16.5	0.720811
-17	0.705755
-17.5	0.690485
-18	0.675019
-18.5	0.659374
-19	0.643568
-19.5	0.627618
-20	0.611541
-20.5	0.595355
-21	0.579077
-21.5	0.562724
-22	0.546312
-22.5	0.529859
-23	0.513381
-23.5	0.496895
-24	0.480416
-24.5	0.46396
-25	0.447544
-25.5	0.431181
-26	0.414887
-26.5	0.398676
-27	0.382563
-27.5	0.366561
-28	0.350684
-28.5	0.334944
-29	0.319355
-29.5	0.303928
-30	0.288675
-30.5	0.273607
-31	0.258735
-31.5	0.24407
-32	0.22962
-32.5	0.215395
-33	0.201405
-33.5	0.187657
-34	0.174159
-34.5	0.160918
-35	0.147942

Gain: 2.00 (3.01 dB)
C/P Gain: 1.00 (0.00 dB)



SMITH AND FISHER

EXHIBIT E-6

CALCULATED FIELD STRENGTHS
PROPOSED K268DA
CHANNEL 268 – MEMPHIS, TENNESSEE

Dep. Ang. (degrees)	R. Field (elevation)	Dist. From Tower (m.)	Effective Power (w)	Free-Space Field (dBu)	KJMS(FM) Clear (dBu)	KWNW(FM) Clear (dBu)
90	0.001	0	0.00025	101.0	33.3	14.4
85	0.029	6	0.21025	114.1	20.2	1.3
80	0.058	13	0.841	114.1	20.2	1.3
75	0.085	20	1.80625	113.7	20.6	1.7
70	0.110	27	3.025	113.3	21.0	2.1
65	0.129	34	4.16025	112.6	21.7	2.8
60	0.138	42	4.761	111.3	23.0	4.1
55	0.131	51	4.29025	109.2	25.1	6.2
50	0.104	61	2.704	105.6	28.7	9.8
45	0.050	73	0.625	97.7	36.6	17.7
40	0.034	87	0.289	92.8	41.5	22.6
35	0.148	104	5.476	104.0	30.3	11.4
30	0.289	126	20.88025	108.2	26.1	7.2
25	0.448	157	50.176	110.1	24.2	5.3
20	0.615	201	94.55625	110.7	23.6	4.7
15	0.765	272	146.30625	109.9	24.4	5.5
10	0.900	414	202.5	107.7	26.6	7.7
5	0.971	834	235.71025	102.3	32.0	13.1
2	0.995	2090	247.50625	94.5	39.8	20.9

EXHIBIT E-7

PROPOSED K268DA SITE

Creek

PROPOSED SITE



POWER DENSITY CALCULATION
PROPOSED K268DA
CHANNEL 268 – MEMPHIS, TENNESSEE

Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 250 watts (H,V), an antenna radiation center 73 meters above ground level and based on the elevation pattern of the Micronetixx 3-bay, half-wave-spaced antenna, maximum power density two meters above ground of 0.000047 mW/cm^2 is calculated to occur 38 meters from the base of the antenna supporting structure. Since this RF value is significantly less than 0.1 percent of the 0.20 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating in the FM band, a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing electromagnetic radiation.