Engineering Exhibit

APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

prepared for

Citadel Broadcasting Company

WGFX(FM) Gallatin, Tennessee

Facility ID 16893

Ch. 283C1 58 kW (MAX-DA) 368 m

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FCC Form 301, Section III-B

Exhibit 24

Exhibit 29

This material supplies a "hard copy" of the engineering portions of this application as entered April 11, 2002 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.

Section III-B - FM Engineering

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1.	Channel Number: 283		
2.	Class (select one): ○ A ○ B1 ○ B ○ C3 ○ C2 ◉ C1 ○ C0 ○ C ○ D		
3.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 36 Minutes 16 Seconds 5 ◉ North ○ South Longitude: Degrees 86 Minutes 47 Seconds 45 ◉ West ○ East		
4.	One Step Proposal Allotment Coordinates: (NAD 27) ☑ Not Applicable Latitude: Degrees Minutes Seconds ○ North ○ South Longitude: Degrees Minutes Seconds ○ West ○ East		
5.	Antenna Structure Registration Number: 1223152 ☐ Not Applicable ☐ Notification filed with FAA		
6.	Overall Tower Height Above Ground Level:	392.9meters	
7.	Height of Radiation Center Above Mean Sea Level:	551.7 meters(H)	551.7 meters(V)
8.	Height of Radiation Center Above Ground Level:	320meters(H)	320meters(V)
9.	Height of Radiation Center Above Average Terrain:	368meters(H)	368meters(V)
10.	Effective Radiated Power:	58 kW(H)	58 kW(V)
11.	Maximum Effective Radiated Power: ☑ Not Applicable (Beam-Tilt Antenna ONLY)	kW(H)	kW(V)
12.	Directional Antenna Relative Field Values: ☐ Not applicable (Nondirectional) Rotation (Degrees): ☑ No Rotation		

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	1	10	1	20	1	30	1	40	1	50	1
60	1	70	1	80	1	90	1	100	1	110	1
120	1	130	1	140	1	150	1	160	1	170	0.871
180	0.759	190	0.956	200	1	210	1	220	1	230	1
240	1	250	1	260	1	270	1	280	1	290	1
300	1	310	1	320	1	330	1	340	1	350	1
Additional Azimuths		164	1	168	0.912	178	0.75	188	0.913	192	1

NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

CERTIFICATION

AUXILIARY ANTENNA APPLICANTS ARE NOT REQUIRED TO RESPOND TO ITEMS 13-16. PROCEED TO ITEM 17.

13.	**Allotment.** The proposed facility complies with the allotment requirements of 47 C.F.R. Section 73.203.	(•) Yes ( ) No See Explanation in [Exhibit 21]
14.	**Community Coverage.** The proposed facility complies with 47 C.F.R. Section 73.315.	(•) Yes ( ) No See Explanation in [Exhibit 22]
15.	**Main Studio Location.** The proposed main studio location complies with 47 C.F.R. Section 73.1125.	(•) Yes ( ) No See Explanation in [Exhibit 23]
16.	**Interference.** The proposed facility complies with all of the following applicable rule sections: Check all those that apply: **Separation Requirements.** ☑ a) 47 C.F.R. Section 73.207 **Grandfathered Short-Spaced.** ☑ b) 47 C.F.R. Section 73.213(a) with respect to station(s): [Exhibit 25] **Exhibit required** ☐ c) 47 C.F.R. Section 73.213(b) with respect to station(s): [Exhibit 26] **Exhibit required** ☐ d) 47 C.F.R. Section 73.213(c) with respect to station(s): [Exhibit 27] **Exhibit required.** **Contour Protection** ☑ e) 47 C.F.R. Section 73.215 with respect to station(s): [Exhibit 28] **Exhibit required.**	(•) Yes ( ) No See Explanation in [Exhibit 24]
17.	**Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an **Exhibit is required.** By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.	(•) Yes ( ) No See Explanation in [Exhibit 29]

PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.

SECTION III - PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JONATHAN A. SCHULTZ	Relationship to Applicant (e.g., Consulting Engineer) CONSULTANT	
Signature	Date 4/11/2002	
Mailing Address CAVELL, MERTZ & DAVIS, INC. 7839 ASHTON AVENUE		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20109 -
Telephone Number (include area code) 7033929090	E-Mail Address (if available) JSCHULTZ@CMDCONSULTING.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

Exhibits

Exhibit 24
Description: EXHIBIT 24 - ALLOCATION CONSIDERATIONS

EXHIBIT 24 - ALLOCATION CONSIDERATIONS - ATTACHED AS A PDF DOCUMENT

Attachment 24

Description	Type	Conversion	
		Status	File
EXHIBIT 24 - STATEMENT A, FIGURES 1,2,3,4,4A	Adobe Acrobat File	not needed	PDF

Exhibit 25
Description: SEE EXHIBIT 24

Attachment 25

Exhibit 28
Description: SEE EXHIBIT 24

Attachment 28

Exhibit 29
Description: EXHIBIT 29 - ENVIRONMENTAL CONSIDERATIONS

EXHIBIT 29 - ENVIRONMENTAL CONSIDERATIONS - ATTACHED AS A PDF DOCUMENT

Attachment 29

Description	Type	Conversion	
		Status	File
EXHIBIT 29 - STATEMENT B	Adobe Acrobat File	not needed	PDF

Exhibit 29 - Statement B

ENVIRONMENTAL CONSIDERATIONS

prepared for

Citadel Broadcasting Company

WGFX(FM) Gallatin, Tennessee

Facility ID 16893

Ch. 283C1 58 kW (MAX-DA) 368 m

The instant proposal is not believed to have a significant environmental impact as defined under Section 1.1306 of the Commission's Rules. Consequently, preparation of an Environmental Assessment is not required.

Nature of The Proposal

Citadel Broadcasting Company ("Citadel") herein proposes minor modification of an existing Construction Permit for WGFX(FM), to provide updated transmitter site data, a decrease in antenna height above average terrain, and an increase in effective radiated power. The antenna will be mounted on a new tower structure that has been registered with the Commission.

Based on information provided by the applicant, it is believed that the provisions of Section 1.1307(a)(1-7) would not apply in this case. The proposed structure will utilize dual lighting (red lights nighttime and high intensity white strobe daytime). The daytime use of high intensity white strobe lighting is not anticipated to be objectionable. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

Human Exposure to Radiofrequency Radiation

The proposed operation was evaluated for human exposure to radiofrequency energy using the procedures outlined in the Commission's OET Bulletin No. 65 ("OET 65"). OET 65 describes a means of determining whether a proposed facility exceeds the radiofrequency exposure guidelines adopted in §1.1310. Under present Commission policy, a facility may be presumed to comply with the limits specified in §1.1310 if it satisfies the exposure criteria set forth in OET 65. Based upon that methodology, and as demonstrated in the following, the proposed transmitting system will comply with the cited adopted guidelines.

The WGFX transmitting antenna will be installed such that its center of radiation is 320.0 meters above ground level. An effective radiated power ("ERP") of 58 kilowatts, circularly polarized, will be employed. The "uncontrolled/general population" limit specified in §1.1310 for FM Broadcast facilities is 200 μW/cm². The formula used for calculating signal density in this analysis is essentially the same as equation (9) in OET-65.

$$S = \frac{(33.4098)\ (F^2)\ (ERP)}{D^2}$$

Where:

S	=	power density in microwatts/cm^2
ERP	=	total ERP (Hpol + Vpol) in Watts
F	=	relative field factor
D	=	distance in meters

Using this formula, assuming a "worst-case" downward field of 100 percent, the proposed facility would contribute a power density of 38.32 μW/cm² at two meters above ground level near antenna support structure, or 19.16 percent of the general population/uncontrolled limit. At ground level locations away from the base of the tower, the calculated RF power density is even lower, due to the increasing distance from the transmitting antenna.

One pending DTV application (WNPX-DT, Ch. 36, Cookeville, TN, BMPCDT-20020315AAH) and one pending Low Power Television application (WVIE-LP, Ch. 20, Nashville, TN, BMPTTL-20020320ABV) are located at the proposed WGFX site. For completeness, the total RF signal density at ground level was computed considering the simultaneous operation of these other facilities. The calculated power density contribution at a point near the WGFX tower base two meters above ground level from each of the TV and FM stations is summarized in the table on the following page.

Summary of Radiofrequency Radiation Calculations

Station	Channel	ERP (kW)	Polari-zation	Field	Distance (meters)	S - Calculated ($\mu W/cm^2$)	S - Limit ($\mu W/cm^2$)	% of Limit
WGFX (proposed)	283C1	58	C	1	318.0	38.32	200.0	19.16
WNPX-DT (APP) BMPCDT-20020315AAH	36	733	H	1	379.0	170.49	403.3	42.27
WVIE-LP (APP) BMPTTL-20020320ABV	20-	21	H	1	215.6	7.55	338.17	2.23
							Total Calculated Signal Density:	*63.66*

ERP:	Effective Radiated Power
Polarization:	C - Circular; H - Horizontal
Field:	Vertical Plane Field Value worst case value of 1.0 assumed
Distance:	Height of radiation center above ground level, minus two meters
S-Calculated:	Calculated value of signal density at two meters above ground level (from formulae in OET-65)
S-Limit	§1.1310 uncontrolled/general population limit for signal density

As summarized in the table, the total calculated RF density at 2 meters above ground at the base of the tower, considering all facilities listed above is 63.66 percent of the §1.1310 uncontrolled/general population limit. Note that a worst case value for vertical plane (elevation) relative field was assumed for all three facilities. When the actual vertical plane patterns of the various facilities are considered, the calculated RF density is expected to be much lower.

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy will not be caused at publicly accessible areas at ground level near the antenna supporting structure. Consequently, members of the general public will not be exposed to RF levels in excess of the Commission's guidelines. Nevertheless, tower access will

be restricted and controlled through the use of a locked fence. Additionally, appropriate RF exposure warning signs will be posted.

With respect to worker safety, it is believed that based on the preceding analysis, excessive exposure would not occur in areas at ground level. A site exposure policy will be employed protecting maintenance workers from excessive exposure when work must be performed on the tower in areas where high RF levels may be present. Such protective measures may include, but will not be limited to, restriction of access to areas where levels in excess of the guidelines may be expected, power reduction, or the complete shutdown of facilities when work or inspections must be performed in areas where the exposure guidelines will be exceeded. On-site RF exposure measurements may also be undertaken to establish the bounds of safe working areas. *Citadel* will coordinate exposure procedures with all pertinent stations.

Conclusion

Based on the preceding, it is believed that the instant proposal may be categorically excluded from environmental processing under Section 1.1306 of the Rules, hence preparation of an Environmental Assessment is not required.