

ENGINEERING STATEMENT  
RE APPLICATION FOR LICENSE AUXILIARY OPERATION  
AUTHORIZED BY OUTSTANDING CONSTRUCTION PERMIT  
FCC FILE NO. BXPB-20120723ACJ  
WSGS(FM), HAZARD, KENTUCKY  
MOUNTAIN BROADCASTING SERVICE, INC.  
CHANNEL 266C (101.1 MHZ) 3.16 KW MAX ND ERP 310.2 M HAAT

AUGUST 2012

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington            )  
  ) ss  
District of Columbia         )

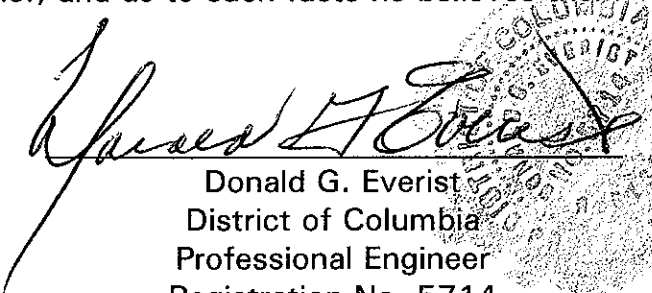
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1420 N Street, N.W., Suite One, Washington, D.C. 20005;

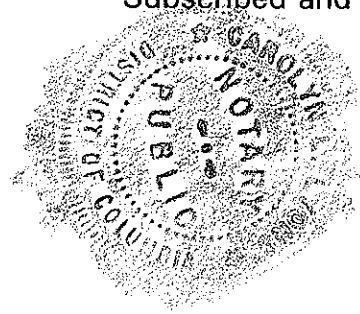
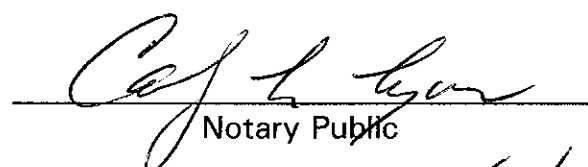
That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

  
Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 5714

Subscribed and sworn to before me this 14<sup>th</sup> day of August, 2012.

  
  
Notary Public

My Commission Expires: 2/28/2013

### Introduction

This engineering report has been prepared on behalf of Mountain Broadcasting Service, Inc., is in support of a request for license for auxiliary operation authorized by the outstanding construction permit, FCC File No. BXPB-20120723ACJ. The Channel 266 auxiliary FM operation is located on an existing tower.

### Auxiliary Antenna Site

The proposed one-bay FM antenna is side-mounted on the existing guyed, uniform cross-section tower (see Exhibit E-1). The existing antenna is located on Buffalo Mountain approximately 6.994 km (4.3 miles) south of the center of Hazard, Kentucky.

The geographic coordinates of the existing antenna site are as follows:

North Latitude: 37° 11' 36"

West Longitude: 83° 11' 04"

NAD-27

Antenna Structure Registration No. 1048810

The following tabulation shows the pertinent data for the auxiliary installation.

### Equipment Data

Transmitter:	Type-approved
Transmission Line:	Andrew, Type LDF7-50A, foam Heliax, 1-5/8", 96.9 meters (318 feet) (loss 0.210 dB/100 ft)
Antenna:	Jampro, Type JHCP-1, non-directional one-bay, circularly polarized antenna. See Exhibit E-2 for antenna manufacturer data.

Power Data

Transmitter output power (nominal)	8 kW	9.03 dB
Transmission line loss/efficiency	85.7%	-0.668 dB
Power input to antenna	6.862 kW	8.362 dB
Antenna gain (1 bay)	0.46	-3.37 dB
Effective Radiated Power (H&V)	3.16 kW	5.0 dBk

Elevation Data

Elevation of the site above mean sea level	620.9 meters (2037 feet)
Elevation of the top of supporting structure above ground	157.6 meters (517.1 feet)
Elevation of the top of supporting structure above mean sea level	778.5 meters (2554.1 feet)
Height of radiation center above ground (H&V)	93.0 meters (305 feet)
Height of radiation center above mean sea level (H&V)	713.9 meters (2342 feet)
Height of radiation center above average terrain (H&V)	310.2 meters (1017.7 feet)

The overall height of the existing tower structure with the side mounted auxiliary antenna is 157.6 meters (517.1 feet) in height above ground. WSGS(FM) will coordinate with other operations located on the tower when tower work is being performed.

**ABOVE GROUND**

**ABOVE MEAN SEA LEVEL**

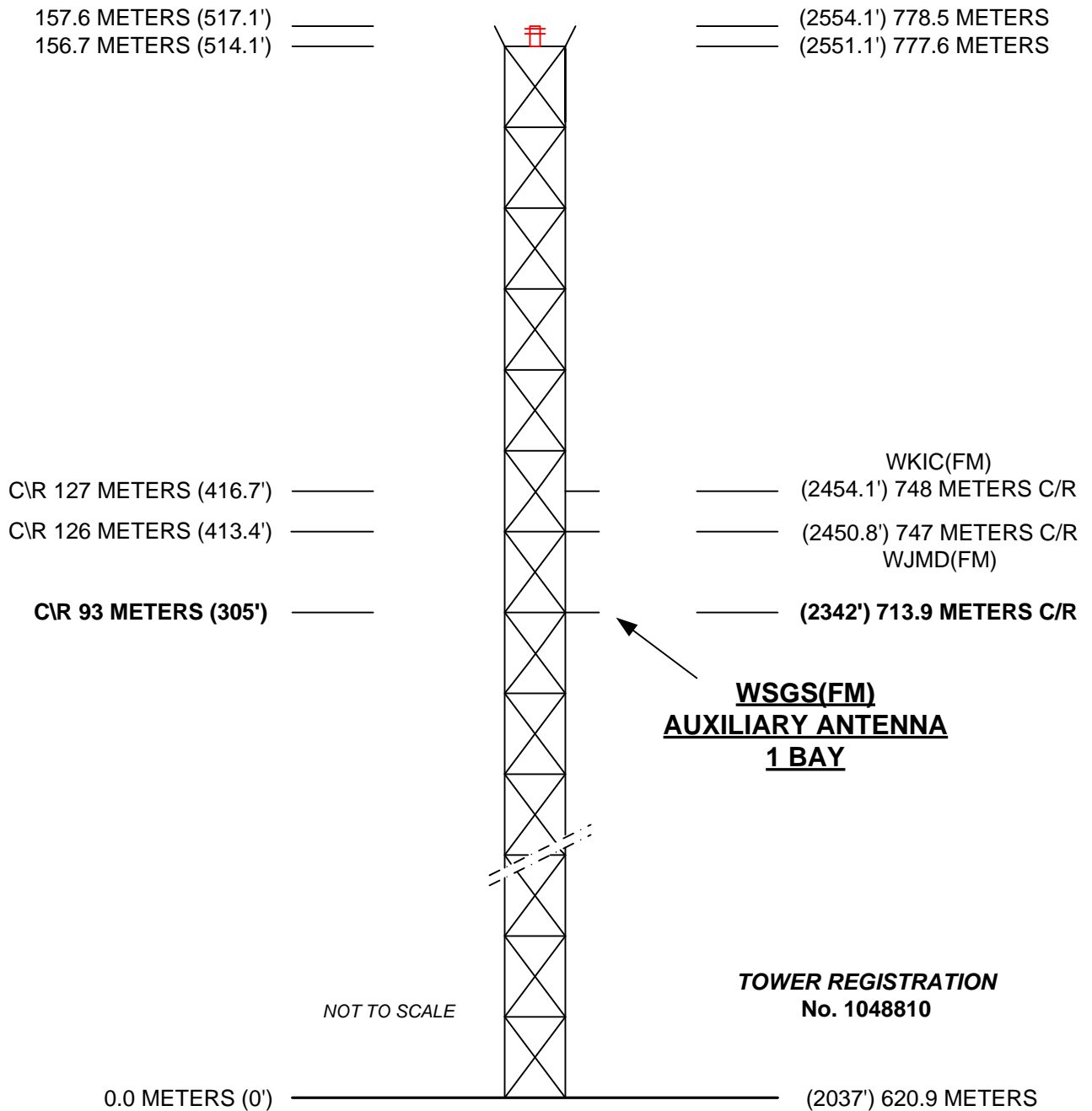


EXHIBIT E-1  
PROPOSED AUXILIARY ANTENNA AT  
MOUNTAIN BROADCASTING SERVICE, INC. TOWER  
FOR  
**WSGS(FM), HAZARD, KENTUCKY**  
AUGUST 2012

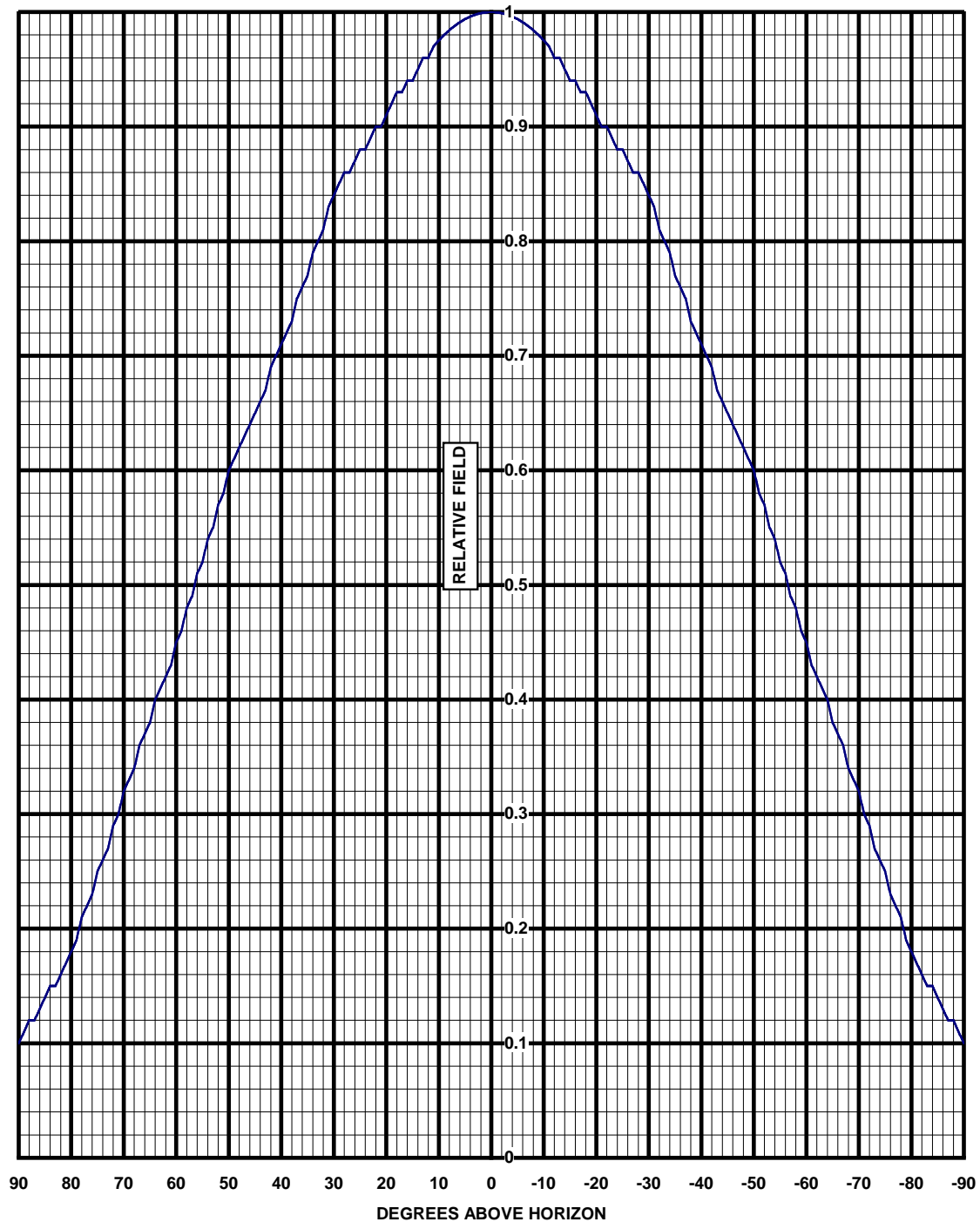
COHEN, DIPPELL AND EVERIST, P.C.

EXHIBIT E-2

WSGS(FM), HAZARD, KENTUCKY



# COMPUTED ELEVATION PATTERN

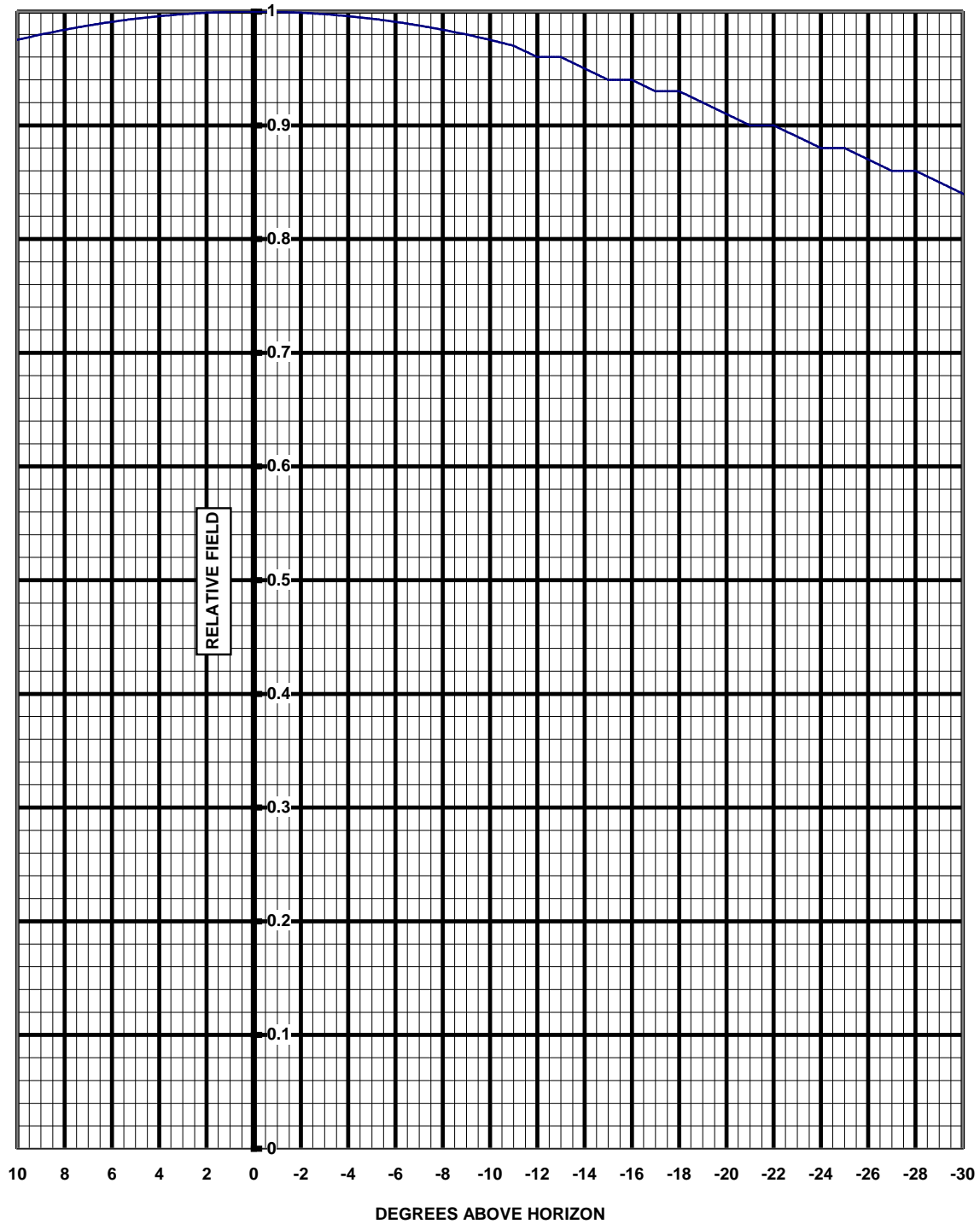


Frequency: Band II (mid-band)

Model: JHCP-1  
Description: FM Sidemount Antenna  
**-0° Beam Tilt, 0% Null Fill**



COMPUTED ELEVATION PATTERN



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## Elevation Pattern Tabulation

### ELEVATION PATTERN TABULATION

#### RELATIVE FIELD VS ELEVATION ANGLE

<u>ELEVATION ANGLE</u>	<u>RELATIVE FIELD</u>	<u>ELEVATION ANGLE</u>	<u>RELATIVE FIELD</u>	<u>ELEVATION ANGLE</u>	<u>RELATIVE FIELD</u>
10	0.975	-26	0.870	-61	0.430
9	0.980	-27	0.860	-62	0.420
8	0.984	-28	0.860	-63	0.410
7	0.988	-29	0.850	-64	0.400
6	0.991	-30	0.840	-65	0.380
5	0.994	-31	0.830	-66	0.370
4	0.996	-32	0.810	-67	0.360
3	0.998	-33	0.800	-68	0.340
2	0.999	-34	0.790	-69	0.330
1	1.000	-35	0.770	-70	0.320
0	1.000	-36	0.760	-71	0.300
-1	1.000	-37	0.750	-72	0.290
-2	0.999	-38	0.730	-73	0.270
-3	0.998	-39	0.720	-74	0.260
-4	0.996	-40	0.710	-75	0.250
-5	0.994	-41	0.700	-76	0.230
-6	0.991	-42	0.690	-77	0.220
-7	0.988	-43	0.670	-78	0.210
-8	0.984	-44	0.660	-79	0.190
-9	0.980	-45	0.650	-80	0.180
-10	0.975	-46	0.640	-81	0.170
-11	0.970	-47	0.630	-82	0.160
-12	0.960	-48	0.620	-83	0.150
-13	0.960	-49	0.610	-84	0.150
-14	0.950	-50	0.600	-85	0.140
-15	0.940	-51	0.580	-86	0.130
-16	0.940	-52	0.570	-87	0.120
-17	0.930	-53	0.550	-88	0.120
-18	0.930	-54	0.540	-89	0.110
-19	0.920	-55	0.520	-90	0.100
-20	0.910	-56	0.510		
-21	0.900	-57	0.490		
-22	0.900	-58	0.480		
-23	0.890	-59	0.460		
-24	0.880	-60	0.450		
-25	0.880				

Frequency: Band II (mid-band)

Model: JHCP-1  
Description: FM Sidemount Antenna  
-0° Beam Tilt, 0% Null Fill

### Section III - 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: \_\_\_\_\_
2. a. Effective Radiated Power: \_\_\_\_\_ kW (H) \_\_\_\_\_ kW (V)  
b. Maximum Effective Radiated Power: ☐ Not applicable \_\_\_\_\_ kW (H) \_\_\_\_\_ kW (V)  
(Beam-Tilt Antenna ONLY)
3. Transmitter Power Output: \_\_\_\_\_ kW
4. Antenna Data

Manufacturer	Model	Number of Sections	Spacing Between Sections (wavelength)
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**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

All applicants must complete this section.

5. **Main Studio Location.** The main studio location complies with 47 C.F.R. Section 73.1125. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
6. **Transmitter Power Output.** The operating transmitter power output produces the authorized effective radiated power. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

#### APPLICATIONS FILED TO COVER A CONSTRUCTION PERMIT.

**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.

7. **Constructed Facility.** The facility was constructed as authorized in the underlying construction permit or complies with 47 C.F.R. Section 73.1690. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
8. **Special Operating Conditions.** The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

Exhibit No.

An exhibit may be required. Review the underlying construction permit.

**PREPARER'S CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.**

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**APPLICATION FILED PURSUANT TO 47 C.F.R. SECTIONS 73.1675(c) or 73.1690(c).**

Only applicants filing this application pursuant to 47 C.F.R. Sections 73.1675(c) or 73.1690(c) must complete the following

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9. **Changing transmitter power output.** Is this application being filed to authorize a change in transmitter power output caused by the replacement of omnidirectional antenna with another omnidirectional antenna or an alteration of the transmission line system? See 47 C.F.R. Sections 73.1690(c)(1) and (c)(10). ☐ Yes ☐ No
10. **Increasing effective radiated power.** Is this application being filed to authorize an increase in ERP for a station operating in the nonreserved band (Channels 221-300)? See 47 C.F.R. Sections 73.1690(c)(4), (c)(5) and (c)(7). ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **Spacing Requirements.** The increase in ERP was authorized pursuant to MM Docket 88-375 (Class A stations) OR the facility complies with the spacing requirements of 47 C.F.R. Section 73.207. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
- b. **International Coordination.** The transmitter site is greater than 320 km from the Canadian or Mexican borders OR coordination for the station's international class is complete. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
- c. **Interference.** The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied OR are not applicable. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

**Exhibit required.** If the proposed facility must be notified to the entities set forth in 47 C.F.R. Section 73.1030, the applicant must provide a copy of the written approval for the ERP increase from the affected entity.

Exhibit No.

- d. **Multiple Ownership Showing.** The increase in ERP will not require the consideration of a multiple ownership showing pursuant to 47 C.F.R. Section 73.3555. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
- e. **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.** ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

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.

11. **Increasing vertically polarized effective radiated power.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(4) to authorize an increase in the vertically polarized ERP for a station operating in the reserved band (Channels 200-220)? ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **TV Channel 6 Protection Requirements.** The facility complies with the spacing requirements of 47 C.F.R. Section 73.525(a)(1). ☐ Yes ☐ No 

See Explanation in Exhibit No.
- b. **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**. ☐ Yes ☐ No 

See Explanation in Exhibit No.

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.

12. **Decreasing effective radiated power (non-reserved channel).** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(8) to authorize a decrease in the ERP for a station operating in the nonreserved band (Channels 221-300)? ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **Community Coverage.** The proposed facility complies with the community coverage requirements of 47 C.F.R. Section 73.315 where the distance to the 3.16 mV/m contour is predicted using the standard prediction method in 47 C.F.R. Section 73.313. ☐ Yes ☐ No 

See Explanation in Exhibit No.
- b. **Auxiliary Facilities.** The authorized or pending auxiliary facilities for this station comply with 47 C.F.R. Section 73.1675(a). ☐ Yes ☐ No 

See Explanation in Exhibit No.
- c. **Multiple Ownership Showing.** The decrease in ERP is not requested or required to establish compliance with 47 C.F.R. Section 73.3555. ☐ Yes ☐ No 

See Explanation in Exhibit No.

13. **Decreasing effective radiated power (reserved channel).** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(8) to authorize a decrease in the ERP for a station operating in the reserved band (Channels 200-220)? ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **Community Coverage.** The proposed facility complies with the community coverage requirements of 47 C.F.R. Section 73.1690(c)(8)(i) where the distance to the 1 mV/m contour is predicted using the standard prediction method in 47 C.F.R. Section 73.313. ☐ Yes ☐ No 

See Explanation in Exhibit No.
- b. **Auxiliary Facilities.** The authorized or pending auxiliary facilities for this station comply with 47 C.F.R. Section 73.1675(a). ☐ Yes ☐ No 

See Explanation in Exhibit No.

14. **Replacing a directional antenna.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(2) to replace a directional antenna with another directional antenna? ☐ Yes ☐ No

If "Yes" to the above, the applicant certifies the following:

- a. **Measurement of Directional Antenna.** The composite measured pattern and measurement procedures comply with 47 C.F.R. Section 73.1690(c)(2). **Exhibit required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

Exhibit No.

- b. **Installation of Directional Antenna.** The installation of the directional antenna complies with 47 C.F.R. Section 73.1690(c)(2). **Exhibit required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

Exhibit No.

15. **Deleting contour protection status.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(6) to delete contour protection status (47 C.F.R. Section 73.215) for a station operating in the nonreserved band (Channels 221-300)? ☐ Yes ☐ No

- a. If "Yes" to the above, the applicant certifies that the facility complies with the spacing requirements of 47 C.F.R. Section 73.207. ☐ Yes ☐ No 

See Explanation in Exhibit No.

16. **Use a formerly licensed main facility as an auxiliary facility.** Is this application being filed pursuant to 47 C.F.R. Section 73.1675(c)(1) to request authorization to use a formerly licensed main facility as an auxiliary facility and/or change the ERP of the proposed auxiliary facility? ☐ Yes ☐ No

If "Yes" to the above, the applicant certifies the following:

- a. **Auxiliary antenna service area.** The proposed auxiliary facility complies with 47 C.F.R. Section 73.1675(a). ☐ Yes ☐ No 

See Explanation in Exhibit No.

- b. **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.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

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.

17. **Change the license status.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(9) to change the license status from commercial to noncommercial or from noncommercial to commercial? ☐ Yes ☐ No

Exhibit No.

If "Yes" to the above, submit an exhibit providing full particulars. For applications changing license status from commercial to noncommercial, include Section II of FCC Form 340 as an exhibit to this application.

**PREPARER'S 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 <i>David G. Everist</i>		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature <i>David G. Everist</i>		Date August 14, 2012	
Mailing Address Cohen, Dippell and Everist, P.C., 1420 N Street, NW, Suite One			
City Washington	State or Country (if foreign address) DC		ZIP Code 20005
Telephone Number (include area code) (202) 898-0111		E-Mail Address (if available) cde@attglobal.net	

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).