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: 45

2. Frequency Offset:

☐ No offset ☐ Zero offset ☐ Plus offset ☒ Minus offset

3. Translator Input Channel No. Satellite

4. Primary station proposed to be rebroadcast:

Call Sign	City	State	Channel
KTBN-TV	Santa Ana	California	40

5. Antenna Location Coordinates: (NAD 27)

39° 21' 40" ☒ N ☐ S Latitude

74° 25' 05" ☐ E ☒ W Longitude

6. Antenna Structure Registration Number: 1027700

☐ Not applicable ☐ FAA Notification Filed with FAA

7. Antenna Location Site Elevation Above Mean Sea Level: 0 meters

8. Overall Tower Height Above Ground Level: 140.2 meters

9. Height of Radiation Center Above Ground Level: 127 meters

10. Maximum Effective Radiated Power (ERP) Towards Radio Horizon: 22.3 kW

11. Maximum ERP in any Horizontal and Vertical Angle: 22.3 kW

12. Transmitting Antenna: ☐ Nondirectional ☒ Directional "Off-the-shelf" ☐ Directional composite

Manufacturer	Model
Andrew	ALP12L2-HSER

Directional Antenna Relative Field Values:

Rotation: 310 ° ☐ No rotation ☐ N/A (Nondirectional)

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

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

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. Check all those that apply. ☐ Yes ☒ No See Explanation in Exhibit No. D

TV broadcast analog system protection.

a. ☐ 47 C.F.R. Section 74.705.

Digital TV station protection.

b. ☐ 47 C.F.R. Section 74.706.

Low Power TV and TV translator station protection.

c. ☒ 47 C.F.R. Section 74.707.

14. **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 RF compliance. An **Exhibit is required.** ☒ Yes ☐ No See Explanation in Exhibit No. E

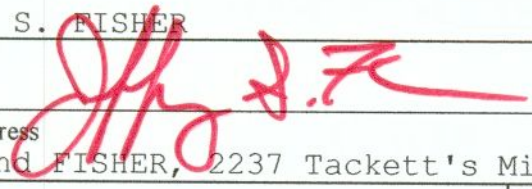
Exhibit No. E

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.

PREPARER'S CERTIFICATION ON PAGE 6 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 JEFFREY S. FISHER	Relationship to Applicant (e.g., Consulting Engineer) Broadcast Consultant	
Signature 	Date November 3, 2003	
Mailing Address SMITH and FISHER, 2237 Tackett's Mill Drive		
City Lake Ridge	State or Country (if foreign address) Virginia	ZIP Code 22192
Telephone Number (include area code) (703) 494-2101	E-Mail Address (if available) jeff@smithandfisher.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).

EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING NETWORK, licensee of television translator W60CX, Channel 60 in Atlantic City, New Jersey, in support of this Application for Construction Permit to specify operation on Channel 45 from the licensed W60CX site. This proposal is being submitted in response to the Commission's reclamation of Channel 60 spectrum for future auction, thereby placing this translator in a displacement situation.

It is proposed to mount a standard Andrew directional antenna at the authorized height on the side of an existing 140-meter communications tower. Exhibit B is a map upon which the predicted service contours are plotted. It is important to note that the newly proposed 74 dBu contour encompasses a significant portion of that which obtains from the licensed W60CX facility. Operating parameters for the proposed facility are tabulated in Exhibit C. A contour overlap analysis and interference study are provided in Exhibit D, and a power density calculation follows as Exhibit E.

Because no change in the overall height or location of the existing tower is proposed, the FAA has not been notified of this application. The FCC issued Antenna Structure Registration Number 1027700 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.

JEFFREY S. FISHER

November 3, 2003

EXHIBIT C

PROPOSED OPERATING PARAMETERS

PROPOSED W60CX
CHANNEL 45 – ATLANTIC CITY, NEW JERSEY

Transmitter Power Output:	1.0 kw
Transmission Line Efficiency:	91.5%
Antenna Power Gain – Toward Horizon:	24.4
Antenna Power Gain – Main Lobe:	24.4
Effective Radiated Power – Toward Horizon:	22.3 kw
Effective Radiated Power – Main Lobe:	22.3 kw
Transmitter Make and Model:	Type-accepted
Rated Output	1.0 kw
Transmission Line Make and Model:	Andrew LDF7-50A
Size and Type:	1-5/8" foam heliax
Length:	60 feet
Antenna Make and Model:	Andrew ALP12L2-HSER
Orientation	310°T
Beam Tilt	0.5 degrees
Effective Height Above Ground:	127 meters
Effective Height Above Mean Sea Level:	127 meters

EXHIBIT D-1

CONTOUR OVERLAP AND LONGLEY-RICE INTERFERENCE STUDIES PROPOSED W60CX CHANNEL 45 – ATLANTIC CITY, NEW JERSEY

We conducted a computer analysis of the interference situation for the proposed facility, the results of which are shown in Exhibit D-2. The study is based on contour protection requirements of Sections 74.705, 74.706, and 74.707 of the FCC's Rules with respect to analog full-power, digital full-power, and low power television stations, respectively. It concludes that the facility proposed herein meets these requirements except to five stations: WABC-DT, Channel 45, New York, New York; WOLF-DT (Allot., STA, CP), Channel 45, Hazleton, Pennsylvania; WMCN-DT (CP, STA), Channel 44, Atlantic City, New Jersey; WWAC-DT (Allot.), Channel 44, Atlantic City, New Jersey; and, WBFF (Lic., CP, Appl.), Channel 45 in Baltimore, Maryland.

We then conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to these facilities of concern. The software utilizes a 2-square kilometer cell size, calculates signal strength at 1.0 kilometer increments along each radial studied, and employs the 1990 U.S. Census to count population within cells. In addition, the program does not attribute interference to the proposed facility in cells within each station's protected contour where interference from another source (other than Trinity's proposed W60CX) already is predicted to exist (also known as "masking"). The results of these studies are

EXHIBIT D-1

provided in Exhibit D-3. It concludes that the facility proposed herein causes no new interference to any of the above stations.

As a result, a waiver of Section 74.705 of the Commission's Rules with respect to interference to WBFF(TV), and Section 74.706 with respect to interference to WABC-DT, WOLF-DT, WMCN-DT, and WWAC-DT, are requested and believed to be justified based on the aforementioned Longley-Rice studies.

EXHIBIT D-2

PROPOSED W60CX
ATLANTIC CITY - NEW JERSEY

REFERENCE
39 21 40 N
74 25 04 W

LPTV Pwr = 22.3 kW, HAMSL COR= 127 M

DISPLAY DATES
DATA 11-01-03
SEARCH 11-03-03

..... Channel 45-, 656 MHz .....

Call	Channel	Location		Dist	Azi	FCC	Margin
WABC-D*CPM	45	New York	NY	153.90	12.8	304.94	-151.04
WABC-D*ST	45	New York	NY	159.20	13.2	295.67	-136.47
WOLF-D*GRR	45	Hazleton	PA	237.03	329.2	313.70	-76.67
WOLF-D*CP	45	Hazleton	PA	237.03	329.2	313.70	-76.67
WMCN-D*CP	44	Atlantic City	NJ	54.80	318.3	089.96	-34.65
WOLF-D*DS	45	Hazleton	PA	236.96	329.2	271.15	-34.19
WMCN-D*ST	44	Atlantic City	NJ	54.80	318.3	083.31	-28.15
WWAC-D*GRR	44	Atlantic City	NJ	59.46	295.0	082.37	-20.87
WBFF* CP	45Z	Baltimore	MD	192.42	269.9	207.06	-14.64
WBFF* LI	45Z	Baltimore	MD	192.42	269.9	205.57	-13.15
WBFF* AP	45Z	Baltimore	MD	192.42	269.9	203.96	-11.54
WEDH-D*AP	45	Hartford	CT	292.75	26.7	315.87	2.35
WNJT LI	52-	Trenton	NJ	104.88	347.5	100.00	4.88
WPPX* AP	31+	Wilmington	DE	103.14	317.5	085.79	19.15
W45CH* AP	45+	Salisbury	MD	127.03	232.9	094.61	33.41
WEDN-D*CP	45	Norwich	CT	306.51	37.7	269.69	36.82
WEDN* ALD	45	NORWICH	CT	306.43	37.7	264.30	42.38
WNYW ALD	44	NEW YORK	NY	153.90	12.8	109.96	43.94
WNYW-D AP	44	New York	NY	158.37	13.3	111.66	46.71
WPXNTV LI	31-	New York	NY	153.90	12.8	101.10	52.80
WDPB ALD	44	SEAFORD	DE	129.82	233.1	075.03	54.79
WDPB-D CP	44	Seaford	DE	129.82	233.1	072.17	57.65
WNYW-D LI	44	New York	NY	158.37	13.3	099.98	58.39
WFMZ-D AP	46	Allentown	PA	159.62	327.3	100.69	58.93
W45CH CP	45+	Salisbury	MD	147.38	224.3	085.59	61.79
WFMZ-D CPM	46	Allentown	PA	159.62	327.3	093.15	66.47
WNYW-D ST	44	New York	NY	158.37	13.3	091.41	66.96

* Actual radials antenna height and directional patterns used (if any)

EXHIBIT D-3

INTERFERENCE SUMMARY

PROPOSED W60CX
CHANNEL 45 – ATLANTIC CITY, NEW JERSEY

Call Sign	Status	City, State	Ch.	Longley-Rice Service Population	Unmasked Interference From Proposed Facility	%
WABC-DT BMPCDT-20000508AAS	CPM	New York, NY	45	17,770,721	231	
WABC-DT BDSTA-20031024AAW	STA	New York, NY	45	16,951,802	1,872	
WOLF-DT PBCDT-19980825KI	CP	Hazleton, PA	45	2,194,731	1,312	
WOLF-DT BPRM-20000413AAD	Allot.	Hazleton, PA	45	2,194,731	1,312	
WMCN-DT BPCDT-19990604KF	CP	Atlantic City, NJ	44	5,724,192	0	
WOLF-DT BDSTA-20030117ACM	STA	Hazleton, PA	45	727,700	0	
WMCN-DT BDSTA-20020612AEK	STA	Atlantic City, NJ	44	5,395,012	0	
WWAL-DT BPRM-20000724ACE	Allot.	Atlantic City, NJ	44	5,258,173	0	
WBFF BPCT-20020430ABF	CP	Baltimore, MD	45	5,879,689	0	
WBFF BLCT-19890526KF	Lic.	Baltimore, MD	45	5,790,120	0	
WBFF BMPCT-20030116AAX	Appl.	Baltimore, MD	45	5,603,909	0	

EXHIBIT E

POWER DENSITY CALCULATION

PROPOSED W60CX
CHANNEL 45 – ATLANTIC CITY, NEW JERSEY

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Atlantic City facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 22.3 kw, an effective antenna height of 127 meters above ground, and the vertical pattern of the Andrew antenna, maximum power density two meters above ground of 0.0015 mw/cm^2 is calculated to occur 51 meters from the base of the tower. Since this is only 0.3 percent of the 0.50 mw/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 45 (746-752 MHz), this proposal may be excluded from consideration with respect to public exposure to nonionizing 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 nonionizing radiation.