ENGINEERING EXHIBIT

Application For A Construction Permit
To Flash-Cut A Class A Television Station

prepared for

Polnet Communications, Ltd.
WPVN-CA Aurora, Illinois
Facility ID 72079
Ch. 20 (Digital) 15 kW (MAX-DA)

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FCC Form 301-CA, Section III – Engineering Data (Digital)

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Exhibit 10

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This material supplies a "hard copy" of the engineering portions of this application as entered March 23, 2011 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 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	Relationship to Applicant (e.g., Consulting Engineer)
RICHARD H. MERTZ	CONSULTANT
Signature	Date
	03/23/2011

Mailing Address		
CAVELL, MERTZ & ASSOCIATES, INC. 7732 DONEGAN DRIVE		
City	State or Country (if foreign address)	Zip Code
MANASSAS	VA	20109-
Telephone Number (include area code)	E-Mail Address (if available)	
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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).

SECTION III - Engineering (Digital)

TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. All items must be completed. The response "on file" is not acceptable.

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.

TECH BOX

1. Channel Number:
20

2. Antenna Location Coordinates: (NAD 27)
Latitude:
Degrees 41 Minutes 53 Seconds 21 ◉ North ○ South

Longitude:
Degrees 87 Minutes 37 Seconds 36 ◉ West ○ East

3. Antenna Structure Registration Number:
☐ Not Applicable [Exhibit 8] ☑ Notification filed with FAA

4. Antenna Location Site Elevation Above Mean Sea Level: 182.3 meters

5. Overall Tower Height Above Ground Level: 419.1 meters

6. Height of Radiation Center Above Ground Level: 390.4 meters

7. Maximum Effective Radiated Power (ERP): 15 kW

8. Transmitter Output Power: 0.64 kW

9. a. Transmitting Antenna:
Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under CDBS Public Access (http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.
○ Nondirectional ◉ Directional "Off-the-shelf" ○ Directional composite

Manufacturer DIE Model TLP-8E

b. Electrical Beam Tilt: 1.0 degrees ☐ Not Applicable

c. Directional Antenna Relative Field Values: ☑ N/A (Nondirectional or Directional "Off-the-shelf")

Rotation (Degrees): 270 ☐ No Rotation

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

Relative Field Polar Plot

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.

	which a "No" response is provided.	
10.	**Out-of-channel Emission Mask:** ○ Simple ◉ Stringent	
CERTIFICATION		
11.	**Interference.** The proposed facility complies with all of the following applicable rule sections. 47.C.F.R Sections 73.6016, 73.6017, 73.6018, 73.6019, 73.6020, 73.6027 and 74.794(b).	◉ Yes ○ No See Explanation in [Exhibit 9]
12.	**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.** 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 10]
13.	**Channels 52-59.** If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable: ☐ The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available. ☐ Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licenses of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.	

PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.

Exhibits

Exhibit 9
Description: WPVN-CA EXHIBIT 9

EXHIBIT 9 CONTAINS STATEMENT A, NATURE OF THE PROPOSAL, ALLOCATIONS CONSIDERATIONS; FIGURES 1 THROUGH 4 AND; AND TABLE I.

Attachment 9

Description
WPVN-CA Exhibit 9

Exhibit 10
Description: WPVN-CA EXHIBIT 10

EXHIBIT 10 CONTAINS STATEMENT B, ENVIRONMENTAL CONSIDERATIONS, TABLE OF CONTENTS, AND A COPY OF THE ENGINEERING PORTIONS OF THE FCC FORM.

Attachment 10

Description
WPVN-CA Exhibit 10

Exhibit 10 - Statement B

ENVIRONMENTAL CONSIDERATIONS

prepared for

Polnet Communications, Ltd.

WPVN-CA Aurora, Illinois

Facility ID 72079

Ch. 20 (Digital) 15 kW (MAX-DA)

Introduction

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

Polnet Communications, Ltd., herein proposes to construct a digital WPVN-CA facility at a different site. A directional transmitting antenna will be employed, to be located on an existing tower structure located atop a tall building. The building is the Trump Tower in Chicago which has received an FAA Determination of No Hazard (see 2009-AGL-6739-OE). The applicant will request that the building owner register the tower with the Commission.

The use of existing building structure has been characterized as being environmentally preferable by the Commission, according to Note 1 of §1.1306 of the FCC Rules. No change in structure height is proposed, thus no change in current structure marking and lighting requirements is anticipated. 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 Electromagnetic Field

The proposed operation was evaluated for human exposure to radiofrequency electromagnetic field using the procedures outlined in the Commission's OET Bulletin 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 WPVN-CA Channel 20 antenna center of radiation will be 44.6 meters above the building roof level where the public might have easy access. An effective radiated power of 15 kilowatts, horizontally polarized, will be employed utilizing a Dielectric model TLP8-E directional antenna. A "worst-case" relative field value of 23 percent is assumed for purposes of the calculation. The "uncontrolled/general population" limit specified in §1.1310 for Channel 20 (center frequency 509 MHz) is 339.3 $\mu W/cm^2$.

OET 65's formula for television transmitting antennas is based on the NTSC transmission standards, where the average power is normally much less than the peak power. For the DTV facility in the instant proposal, the peak-to-average ratio is different than the NTSC ratio. The DTV ERP figure herein refers to the average power level. The formula used for calculating DTV signal density in this analysis is essentially the same as equation (10) in OET 65.

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

Where:

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

Using this formula and the above assumptions, the proposed facility would contribute a power density of 14.6 $\mu W/cm^2$ at two meters above roof level near antenna support structure, or 4.3 percent of the general population/uncontrolled limit. At ground level locations away from the base of the building, the calculated RF power density is even lower, 0.18 $\mu W/cm^2$ or 0.05% of the general population/uncontrolled limit due to the increasing distance from the transmitting antenna. Based on building drawings provided by the applicant, there is an elevated structure on the roof that provides a guy anchor for the tower structure. This area is inaccessible to the public and the applicant considers this area to be an occupational/controlled access area. At this location, the calculated RF power density is 18.2 $\mu W/cm^2$ or 1.07 percent of the occupational/controlled limit of 1,696.7 $\mu W/cm^2$.

§1.1307(b)(3) states that facilities are categorically excluded from responsibility for taking any corrective action in the areas where their contribution is less than five percent of the exposure limit. Since the instant situation meets the five percent exclusion test at all ground level and roof access areas, the impact of any other facilities near this site may be considered independently from this proposal. Accordingly, it is believed that the impact of the proposed operation should not be considered to be a factor at or near ground level as defined under §1.1307(b).

Safety of Tower Workers and the General Public

As demonstrated herein, excessive levels of RF energy attributable to the proposal will not be caused at publicly accessible areas at ground level or near the base of 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, roof access will be restricted and controlled through the use of a locked door. 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 or at the base of the top mounted tower structure. A site exposure policy will be employed protecting maintenance workers from excessive exposure when work must be performed on the tower or 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. The applicant 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 §1.1306 of the Rules; hence preparation of an Environmental Assessment is not required.