

**Comprehensive Technical Exhibit**  
*Application for Construction Permit*  
**WJYS-DT – Hammond, Indiana**  
**Jovon Broadcasting Corporation**  
**June, 2008**

**General**

The following engineering statement and attached exhibits have been prepared for **Jovon Broadcasting Corporation** (“Jovon”), licensee of digital television station WJYS-DT at Hammond, Indiana, and are in support of their application for construction permit to modify that facility.<sup>1</sup>

WJYS-DT currently operates with a maximum effective radiated power of 50 kW at a center of radiation of 455 meters above average terrain utilizing a directional antenna. This application seeks to maximize the WJYS-DT facilities. As a result of the maximization, WJYS-DT would migrate to a combined antenna system, increase effective radiated power, increase the center of radiation above average terrain, and utilize a different directional antenna pattern.

**Discussion of WJYS-DT Allotment and Proposed Facilities**

In the Appendix B table of allotments, WJYS-DT is specified as operating in the post-transition environment on channel 36. The technical parameters specified in the appropriate entry are consistent with the parameters authorized under the current WJYS-DT license.<sup>2</sup> This application, however, seeks to modify those parameters in order to maximize the coverage of WJYS-DT in the post-transition environment.

WJYS would migrate from its current antenna, to a combined antenna system on a different antenna structure at Sears Tower. Although the actual location of the current WJYS-DT antenna is on the East antenna structures at Sears Tower, the current license is consistent with the West antenna structures. As a result, this application will specify geographic coordinates which are

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<sup>1</sup> The facility ID for WJYS is 32334.

<sup>2</sup> See FCC File Number BLCDT-20020801ABI.

slightly different from those specified in the current authorization.<sup>3</sup> In addition, a different antenna structure registration number will also be specified.<sup>4</sup>

Pursuant to the proposed changes, WJYS-DT would increase its maximum effective radiated power from 50 kW to 145 kW. The center of radiation above mean sea level would increase from the current value of 637 meters to 689.5 meters. Correspondingly, the center of radiation above average terrain would increase from 455 meters to 510 meters. No change in the channel of operation (36) is proposed.

As expected since this application is to maximize the WJYS-DT facilities, the proposed technical parameters would increase the noise limited service contour of the facility beyond that specified in the Appendix B entry by more than five miles in certain directions. In addition, the proposed facility will result in a larger population within the service area. Due to these circumstances, items 1(d) and 1(e) in Section III-D of FCC Form 301 have been answered as “No” and “N/A” respectively.

For illustrative purposes Exhibits E-1 and E-2 have been included. Exhibit E-1 is a contour map comparing the licensed noise limited service contour to the proposed noise limited service contour. Exhibit E-2 depicts the predicted service area of the proposed WJYS-DT facility with a tabulation of the population served and received interference immediately following. As Exhibit E-2 demonstrates, the proposed facility would result in an increase in the service area population from the Appendix B value of 7,988 thousand to 9,203,952.

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<sup>3</sup> Current coordinates are 41-52-44 North Latitude and 87-38-10 West Longitude. Proposed coordinates are 41-52-44 North Latitude and 87-38-08 West Longitude. Both sets are in NAD27 datum.

<sup>4</sup> Current ASRN is 1032959, which corresponds to the West antenna structures. Proposed ASRN is 1032960.

The antenna that would be utilized by the proposed facility is an RFS broadband panel antenna model PHP24C. This antenna is fed through the use of a multi-station combiner system for which WJYS-DT will be provided an input port. This antenna is a directional antenna and operates with 1.0 degree of electrical beamtilt and no mechanical beamtilt. The items required under Section 73.625(c) have been included in this application as Exhibit E-3.

The tower that would be utilized by the facility is colloquially known as the “East Tower” and is a constituent part of the east antenna structures on the roof of Sears Tower. Multiple other television, FM and broadcast auxiliary facilities utilize this structure. This structure is not, however, part of an AM radiation system and is not located in close proximity to an AM directional antenna system.

The proposed facility would be in compliance with the post-transition interference protection provisions of Section 73.616 of the Commission’s Rules. Exhibit E-4 contains a Longley-Rice based interference study for the proposed facility. In the creation of this study, a 3-second linearly interpolated terrain database was utilized. The cell size utilized was 2.0 km with terrain elevations sampled at a 1.0 km spacing per OET Bulletin 69. As this study demonstrates, the proposed facility would cause interference to the appendix B and construction permit facilities of KWQC-DT at Davenport, Iowa, the appendix B and construction permit facilities of WFFT-DT at Fort Wayne, Indiana, and the licensed facilities of WMVT-DT and WNIT-DT at Milwaukee, Wisconsin and South Bend, Indiana respectively.<sup>5</sup> In each case, less than interference would be caused by WJYS-DT to less than 0.5 percent of the resident population within the respective service areas.

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<sup>5</sup> Licensed facilities for WMVT-DT (Facility ID: 42665) and WNIT-DT (Facility ID: 41671) have been established for several years, and are identical to Appendix B facilities.

The proposed WJYS-DT facilities would satisfy the principal community coverage requirements of Section 73.625 of the Commission's Rules. Exhibit E-5 contains a map illustrating the 48 dBu and 41 dBu F(50,90) service contours along with the corresponding Longley-Rice determined signal level bounded by the 41 dBu F(50,90) service contour. As this map demonstrates, the community of license (Hammond, Indiana) would not only lie entirely within the predicted 48 dBu F(50,90) service contour, but also would receive a signal well in excess of 48 dBu as predicted by the Longley-Rice propagation model.

The proposed WJYS-DT facility would not constitute a substantial environmental impact. The construction of the proposed facility simply requires the addition of another combiner module to the existing system. As a result, no excavation or additional environmental impact to the area would result.

In addition, an RF exposure hazard would not result to the general public from the proposed facility. The rooftop level of Sears Tower is a restricted access area, to which only persons trained in the hazards and exposure mitigation procedures relevant to non-ionizing radiation are granted access. Access to the tower structures at the building is further limited as the shafts over which the towers are located are only accessible through locked doors access to which is only permitted after approval by the General Manager of Broadcast Facilities or RF Safety Contractor. As a result, casual access by the general public or other persons to the WJYS-DT antenna, or other antennas at the facility, is not possible.

Since the rooftop of the building is a controlled access area, the controlled environment condition of the applicable safety standard is applicable. Due to the physical dimensions of the

building, all points on the rooftop lie within a depression angle between 60.7 and 90 degrees from the antenna. The maximum relative field within this range is 0.2367 at 60.7 degrees, and neglecting trigonometric dimensions and assuming the distance is simply the vertical distance above the rooftop of the antenna (232 feet), the maximum predicted power density from the proposed WJYS-DT proposed facility  $53.8 \mu\text{W}/\text{cm}^2$ , which is considerably less than the  $2027 \mu\text{W}/\text{cm}^2$  permissible under the controlled environment condition of the applicable safety standard.

In order to ensure that the proposed facility does not result in the creation of additional restricted areas on the rooftop levels of the building, a survey of the rooftop non-ionizing radiation levels will be performed following construction of the facility. Such surveys are performed regularly at Sears Tower and are also completed following the installation of new or additional broadcast facility.

WJYS-DT will coordinate with other users of the broadcast platform to ensure that workers are not exposed to levels of non-ionizing radiation which may exceed the applicable safety standards. Sears Tower utilizes an RF safety program with a solitary RF safety contractor responsible for all coordination and notification of antenna work. During such periods of work, the contractor requires affected facilities to switch to alternate antennas, reduce power, or cease operation as necessary to protect workers.

The requirements of Section 73.1030 of the Commission's Rules are not applicable in this particular case. The proposed facility would not operate in any of the zones described in the referenced section, and is not in close proximity to any of the installations described in that section. In addition, the proposed facility is not located in proximity to any protected FCC installation.

The structure utilized for the facilities described in this application has been registered with the Commission. Specifically an Antenna Structure Registration Number of 1032960 has been assigned to the tower.

**Affidavit**

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature  
License Expires November 30, 2009

**Jeremy D. Ruck, PE**  
**June 6, 2008**

**WJYS-DT.LIC**

BLCDT20020801ABI  
Latitude: 41-52-44 N  
Longitude: 087-38-10 W  
ERP: 50.00 kW  
Channel: 36  
Frequency: 605.0 MHz  
AMSL Height: 637.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: Yes  
Elec Tilt: 0.0  
Prop Model: FCC Method

**WJYS-DT.PRO**

PROPOSED  
Latitude: 41-52-44 N  
Longitude: 087-38-08 W  
ERP: 145.00 kW  
Channel: 36  
Frequency: 605.0 MHz  
AMSL Height: 689.5 m  
Horiz. Pattern: Directional  
Vert. Pattern: Yes  
Elec Tilt: 1.0  
Prop Model: FCC Method

**Exhibit E-1**

Noise Limited Contour Comparison  
WJYS-DT - Hammond, Indiana  
Jovon Broadcasting Corporation  
June, 2008

**D.L. Markley & Associates, Inc.**

- Licensed 41 dBu F(50,90) Contour
- Proposed 41 dBu F(50,90) Contour

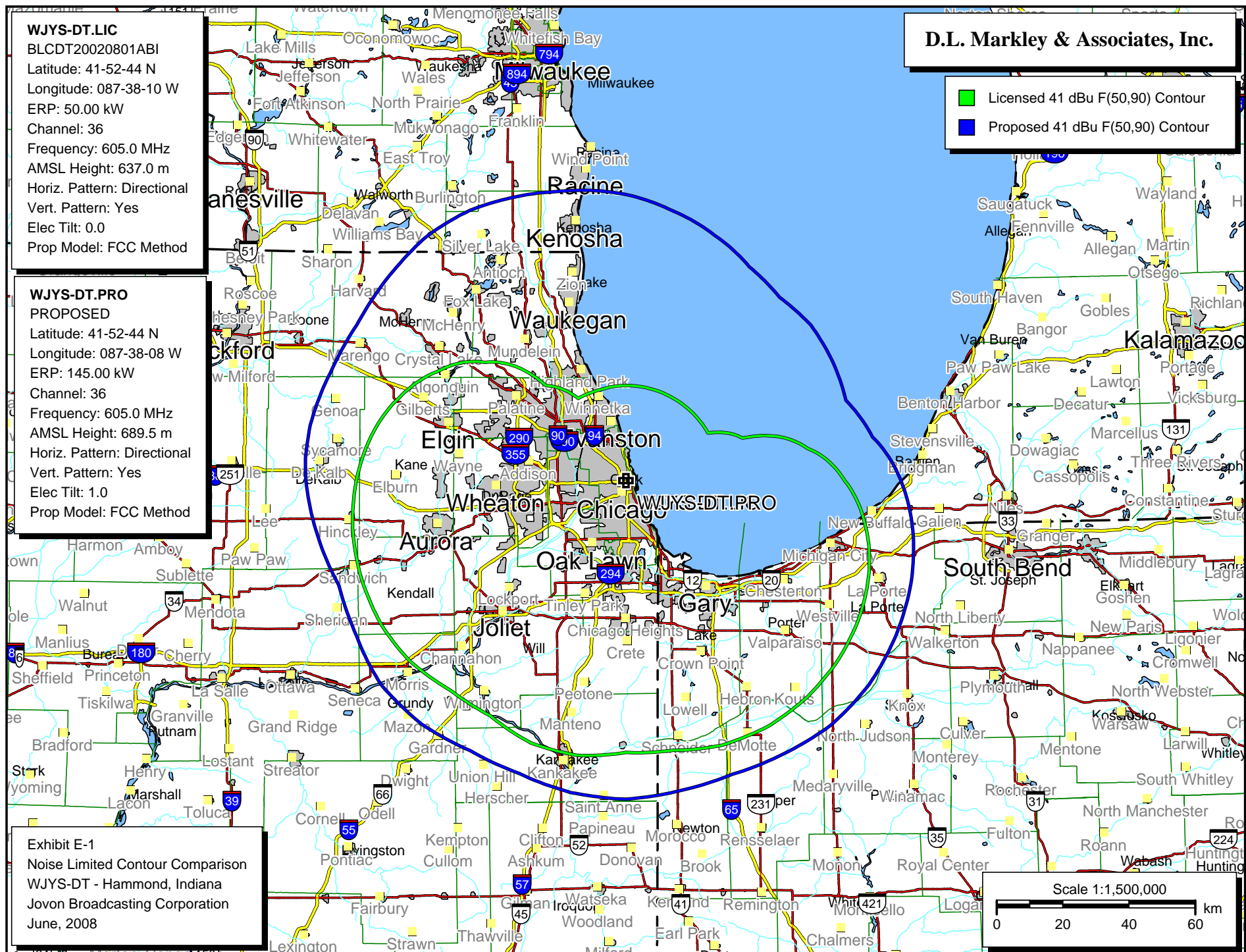




Exhibit E-2

Proposed WJYS-DT Service Area Population Summary

WJYS-DT.PRO (36) Chicago, IL - PROPOSED

Broadcast Type: Digital Service: V

Lat: 41-52-44 N Lng: 087-38-08 W ERP: 145.0 kW AMSL: 689.5 m

TV Incoming Interference Study

Interference Considered Within: FCC Contour: 40.86 dBu

Signal Resolution: 1.0 km

LR Profile Spacing Increment: 0.1 km

Consider NTSC Taboo: Yes

KWX error points are considered to  
be interference free coverage.

# of radials computed for protected contour: 360

Protected contour calculated using 8 radial HAAT.

Threshold for reception: 40.8576

Pop Centroid DB: 2000 US Census (SF1)

Study Date: 6/5/2008

TV Database Date: 6/5/2008

Primary Terrain: V-Soft 3 Second US Terrain

Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 9,269,159.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
KWQC-D (36)	15667	40563	0.438	374.37
KWQC-D.C (36)	19062	48954	0.528	488.75
NEW-DT.A (36)	2325	5678	0.061	30.14
WFFT-D (36)	6822	15720	0.170	160.10
WFFT-D.C (36)	6822	15720	0.170	160.10
WJRT-D (36)	0	0	0.000	0.91
WLNS-D (36)	19	42	0.000	2.74
WLNS-D.C (36)	19	42	0.000	1.82
WMVT-D (35)	199	569	0.006	11.70
WNIT-D (35)	803	1978	0.021	40.23
WTWO-D (36)	0	0	0.000	2.74
WTWO-D.C (36)	0	0	0.000	2.74
WUHO-L (36+)	19	42	0.000	1.82
WUPW (36-)	19	42	0.000	1.82

Masking Summary:

Call Letters	Total Interference		Unique Interference	
	Population	%	Population	%
KWQC-D (36)	40563	0.438	0	0.000
KWQC-D.C (36)	48954	0.528	8391	0.091
NEW-DT.A (36)	5678	0.061	0	0.000

WFFT-D (36)	15720	0.170	0	0.000
WFFT-D.C (36)	15720	0.170	0	0.000
WJRT-D (36)	0	0.000	0	0.000
WLNS-D (36)	42	0.000	0	0.000
WLNS-D.C (36)	42	0.000	0	0.000
WMVT-D (35)	569	0.006	520	0.006
WNIT-D (35)	1978	0.021	20	0.000
WTWO-D (36)	0	0.000	0	0.000
WTWO-D.C (36)	0	0.000	0	0.000
WUHO-L (36+)	42	0.000	0	0.000
WUPW (36-)	42	0.000	0	0.000

Stations considered which do not cause interference:

AP196-D (36)  
 W08DP-D.C (36)  
 W36BS (36Z)  
 W36BS.C (36Z)  
 W36BZ.A (36Z)  
 W36CE (36Z)  
 W36DH (36-)  
 WFBN-L-D.C (35)  
 WJRT-D (36)  
 WTWO-D (36)  
 WTWO-D.C (36)

Call Letters	City	State	Dist	Bear
AP196-D (36)	Springfield	IL	298.5	216.2
KWQC-D (36)	DAVENPORT	IA	237.2	255.5
KWQC-D.C (36)	Davenport	IA	237.2	255.5
NEW-DT.A (36)	Springfield	IL	277.1	214.4
W08DP-D.C (36)	Springfield	IL	281.3	216.6
W36BS (36Z)	Quincy	IL	376.4	237.0
W36BS.C (36Z)	Quincy	IL	376.1	237.0
W36BZ.A (36Z)	Traverse City	MI	357.6	25.4
W36CE (36Z)	Houghton Lake	MI	356.5	40.3
W36DH (36-)	Waupaca	WI	300.6	340.1
WFBN-L-D.C (35)	Rockford	IL	126.3	290.4
WFFT-D (36)	FORT WAYNE	IN	221.0	111.9
WFFT-D.C (36)	Fort Wayne	IN	221.0	111.9
WJRT-D (36)	Flint	MI	329.8	61.7
WLNS-D (36)	LANSING	MI	283.4	70.4
WLNS-D.C (36)	Lansing	MI	283.4	70.4
WMVT-D (35)	Milwaukee	WI	137.0	350.8
WNIT-D (35)	South Bend	IN	123.9	103.3
WTWO-D (36)	TERRE HAUTE	IN	293.5	175.9
WTWO-D.C (36)	Terre Haute	IN	293.5	175.9
WUHO-L (36+)	Kalamazoo	MI	169.8	74.3
WUPW (36-)	Toledo	OH	349.3	92.7

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Totals for WJYS-DT.PRO (36)

Calculation Area Population:	9,269,218	( 25377.1 sq. km )
Not Affected by Terrain Loss:	9,269,159	( 25370.8 sq. km )
Total NTSC Interference:	42	( 1.8 sq. km )
DTV Only Interference:	65,165	( 655.1 sq. km )
Total DTV Interference:	65,207	( 657.0 sq. km )
Interfered Population:	65,207	( 657.0 sq. km )
Interference Free:	9,203,952	( 24713.8 sq. km )

Percent Interference: 0.70

Terrain Blocked Population:	59	( 6.3 sq. km)
Contour Area Population:	9,270,342	

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Interference Free Breakdown:

White:	5,478,157	( 59.5% )
Black:	1,695,837	( 18.4% )
Hispanic:	1,494,218	( 16.2% )
Native American:	12,527	( 0.1% )
Asian:	384,292	( 4.2% )
Pacific Islander:	2,424	( 0.0% )
Mixed Race:	125,200	( 1.4% )
Other:	11,297	( 0.1% )
Total:	9,203,952	

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	Housing Units	Population	% of County
Illinois			
Boone County			
County Pop	15,414	41,786	
WJYS-DT.PRO (36)	3	9	
KWQC-D (36)	3	9	100.00
KWQC-D.C (36)	3	9	100.00
Cook County			
County Pop	2,096,121	5,376,741	
WJYS-DT.PRO (36)	2,096,121	5,376,741	
Ix Free	2,096,121	5,376,741	100.00
DeKalb County			
County Pop	32,988	88,969	
WJYS-DT.PRO (36)	29,276	79,074	
KWQC-D (36)	13,688	35,644	45.08
KWQC-D.C (36)	15,830	40,853	51.66
NEW-DT.A (36)	1,824	4,281	5.41

Ix Free	13,446	38,221	48.34
DuPage County			
County Pop	335,621	904,161	
WJYS-DT.PRO (36)	335,621	904,161	
Ix Free	335,621	904,161	100.00
Grundy County			
County Pop	15,040	37,535	
WJYS-DT.PRO (36)	13,616	33,840	
Ix Free	13,616	33,840	100.00
Kane County			
County Pop	138,998	404,119	
WJYS-DT.PRO (36)	138,998	404,119	
KWQC-D (36)	391	1,128	0.28
KWQC-D.C (36)	1,124	3,194	0.79
Ix Free	137,874	400,925	99.21
Kankakee County			
County Pop	40,610	103,833	
WJYS-DT.PRO (36)	38,672	98,765	
Ix Free	38,672	98,765	100.00
Kendall County			
County Pop	19,519	54,544	
WJYS-DT.PRO (36)	19,519	54,544	
KWQC-D (36)	503	1,382	2.53
KWQC-D.C (36)	515	1,404	2.57
NEW-DT.A (36)	381	1,012	1.86
WTWO-D (36)	0	0	0.00
WTWO-D.C (36)	0	0	0.00
Ix Free	19,004	53,140	97.43
Lake County			
County Pop	225,919	644,356	
WJYS-DT.PRO (36)	225,919	644,356	
Ix Free	225,919	644,356	100.00
La Salle County			
County Pop	46,438	111,509	
WJYS-DT.PRO (36)	2,266	5,915	
KWQC-D (36)	150	455	7.69
KWQC-D.C (36)	215	656	11.09
NEW-DT.A (36)	75	230	3.89
Ix Free	2,051	5,259	88.91
McHenry County			
County Pop	92,908	260,077	
WJYS-DT.PRO (36)	87,913	245,919	
KWQC-D (36)	525	1,426	0.58
KWQC-D.C (36)	588	1,621	0.66
NEW-DT.A (36)	45	155	0.06
WFFT-D (36)	112	260	0.11
WFFT-D.C (36)	112	260	0.11
Ix Free	87,213	244,038	99.24
Will County			
County Pop	175,524	502,266	
WJYS-DT.PRO (36)	175,524	502,266	
Ix Free	175,524	502,266	100.00

	Housing Units	Population	% of County
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Indiana			
Jasper County			
County Pop	11,236	30,043	
WJYS-DT.PRO (36)	5,580	15,206	
Ix Free	5,580	15,206	100.00
Lake County			
County Pop	194,992	484,564	
WJYS-DT.PRO (36)	194,992	484,564	
Ix Free	194,992	484,564	100.00
LaPorte County			
County Pop	45,621	110,106	
WJYS-DT.PRO (36)	42,618	103,452	
WFFT-D (36)	6,692	15,416	14.90
WFFT-D.C (36)	6,692	15,416	14.90
WLNS-D (36)	19	42	0.04
WLNS-D.C (36)	19	42	0.04
WNIT-D (35)	789	1,949	1.88
WUHO-L (36+)	19	42	0.04
WUPW (36-)	19	42	0.04
Ix Free	35,918	88,016	85.08
Newton County			
County Pop	5,726	14,566	
WJYS-DT.PRO (36)	2,487	6,867	
Ix Free	2,487	6,867	100.00
Porter County			
County Pop	57,616	146,798	
WJYS-DT.PRO (36)	57,616	146,798	
Ix Free	57,616	146,798	100.00
Starke County			
County Pop	10,201	23,556	
WJYS-DT.PRO (36)	133	347	
WFFT-D (36)	2	11	3.17
WFFT-D.C (36)	2	11	3.17
WNIT-D (35)	1	3	0.86
Ix Free	131	336	96.83
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	Housing Units	Population	% of County

Michigan

Berrien County			
County Pop	73,445	162,453	
WJYS-DT.PRO (36)	6,515	8,767	
WFFT-D (36)	13	26	0.30
WFFT-D.C (36)	13	26	0.30
WNIT-D (35)	13	26	0.30
Ix Free	6,502	8,741	99.70

	Housing Units	Population	% of County
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Wisconsin

Kenosha County

County Pop	59,989	149,577	
WJYS-DT.PRO (36)	59,458	148,328	
KWQC-D (36)	407	519	0.35
KWQC-D.C (36)	787	1,217	0.82
WFFT-D (36)	3	7	0.00
WFFT-D.C (36)	3	7	0.00
WMVT-D (35)	199	569	0.38
Ix Free	58,490	146,591	98.83

Racine County

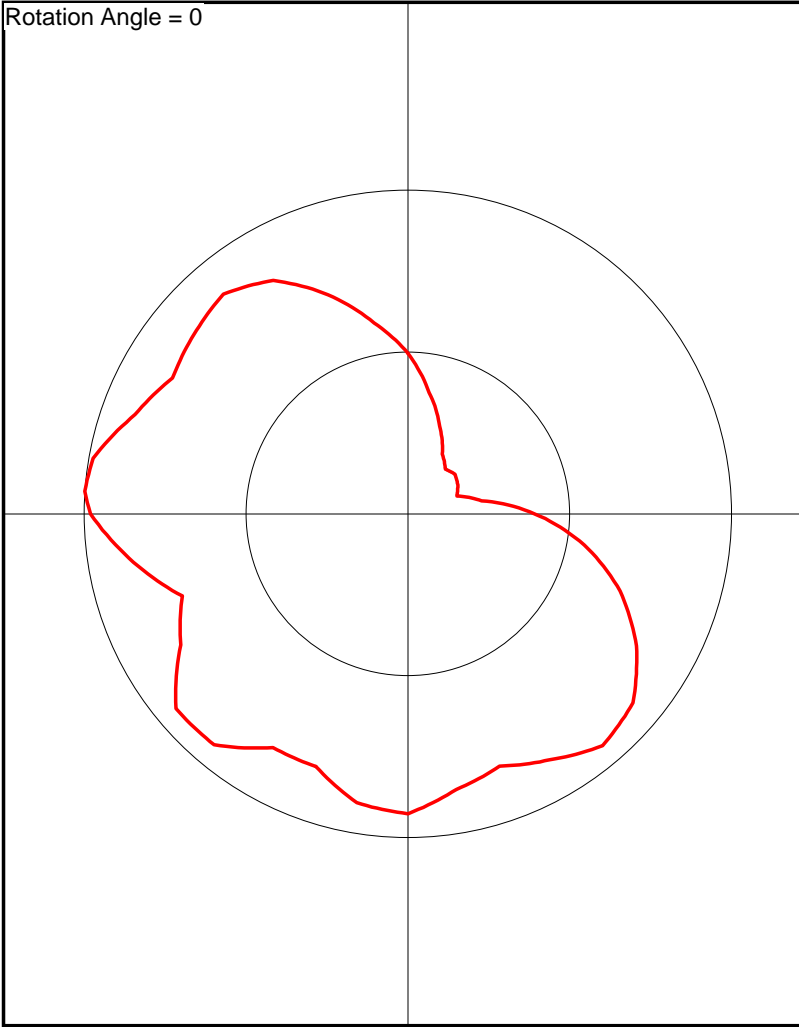
County Pop	74,718	188,831	
WJYS-DT.PRO (36)	19	52	
Ix Free	19	52	100.00

Walworth County

County Pop	43,783	93,759	
WJYS-DT.PRO (36)	2,086	5,069	
Ix Free	2,086	5,069	100.00

Exhibit E-3 - WJYS-DT Horizontal Plane Pattern  
Pre-Rotation Antenna Pattern....

Azimuth (deg)	Effective Field
0.0	0.496
10.0	0.380
20.0	0.288
30.0	0.213
40.0	0.180
50.0	0.190
60.0	0.178
70.0	0.161
80.0	0.231
90.0	0.392
100.0	0.553
110.0	0.698
120.0	0.815
130.0	0.908
140.0	0.935
150.0	0.877
160.0	0.829
170.0	0.864
180.0	0.926
190.0	0.906
200.0	0.830
210.0	0.833
220.0	0.931
230.0	0.935
240.0	0.810
250.0	0.741
260.0	0.860
270.0	0.980
274.0	1.000
280.0	0.987
290.0	0.896
300.0	0.839
310.0	0.862
320.0	0.886
330.0	0.832
340.0	0.720
350.0	0.599



# Exhibit E-3 - Proposed Television Directional Antenna System

Station: WJYS-DT

Maximum ERP: 145 kW

Azimuth	Relative Field	Relative Power	ERP (kW)	ERP (dBk)
000	0.496	0.2460	35.67	15.52
010	0.380	0.1444	20.94	13.21
020	0.288	0.0829	12.03	10.80
030	0.213	0.0454	6.58	8.18
040	0.180	0.0324	4.70	6.72
050	0.190	0.0361	5.23	7.19
060	0.178	0.0317	4.59	6.62
070	0.161	0.0259	3.76	5.75
080	0.231	0.0534	7.74	8.89
090	0.392	0.1537	22.28	13.48
100	0.553	0.3058	44.34	16.47
110	0.698	0.4872	70.64	18.49
120	0.815	0.6642	96.31	19.84
130	0.908	0.8245	119.55	20.78
140	0.935	0.8742	126.76	21.03
150	0.877	0.7691	111.52	20.47
160	0.829	0.6872	99.65	19.98
170	0.864	0.7465	108.24	20.34
180	0.926	0.8575	124.33	20.95
190	0.906	0.8208	119.02	20.76
200	0.830	0.6889	99.89	20.00
210	0.833	0.6939	100.61	20.03
220	0.931	0.8668	125.68	20.99
230	0.935	0.8742	126.76	21.03
240	0.810	0.6561	95.13	19.78
250	0.741	0.5491	79.62	19.01
260	0.860	0.7396	107.24	20.30
270	0.980	0.9604	139.26	21.44
<b>274</b>	1.000	1.0000	145.00	21.61
280	0.987	0.9742	141.25	21.50
290	0.896	0.8028	116.41	20.66
300	0.839	0.7039	102.07	20.09
310	0.862	0.7430	107.74	20.32
320	0.886	0.7850	113.82	20.56
330	0.832	0.6922	100.37	20.02
340	0.720	0.5184	75.17	18.76
350	0.599	0.3588	52.03	17.16

**D.L. Markley & Associates, Inc.**

*Consulting Engineers*

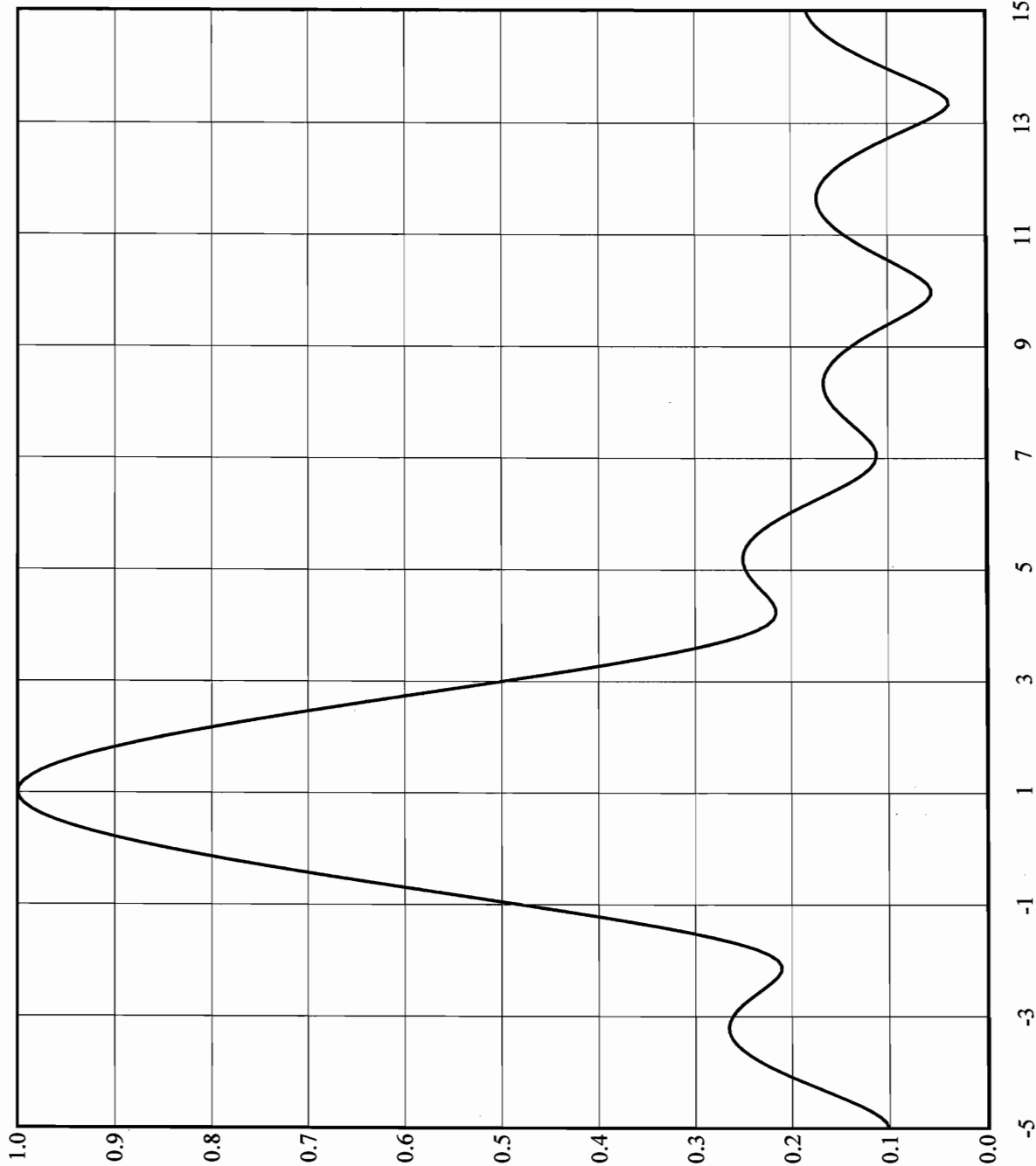
2104 West Moss Avenue

Peoria, Illinois 61604



# Vertical Radiation Pattern

E / Emax



Date : 6/5/2008

Station : WJYS-DT

Frequency (MHz) : 605.00

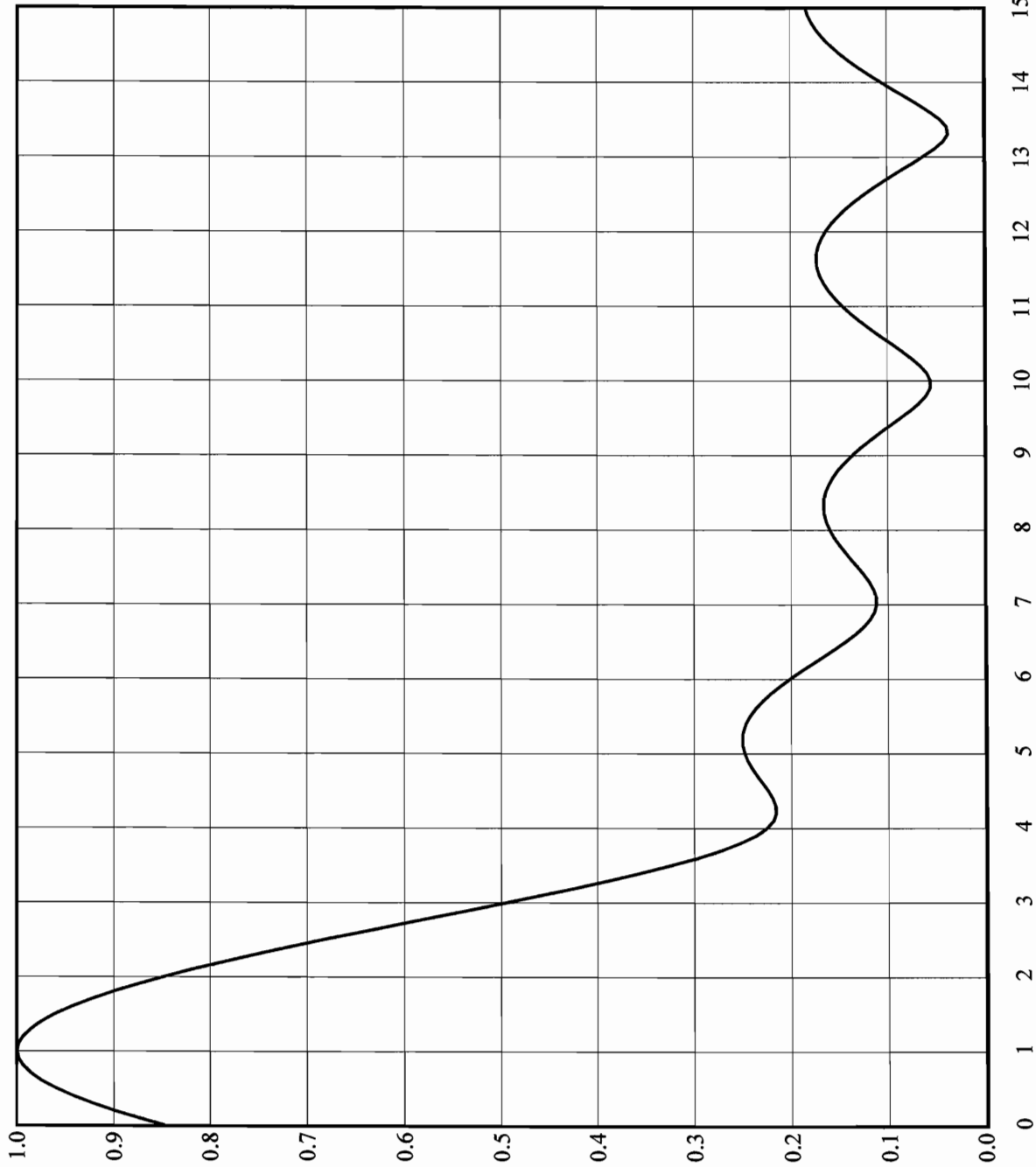
Beam Tilt (deg) : 1.0

Vertical Spacing (m) : 1.150

Level	Power	Phase
1	1.0	130.0
2	1.0	80.0
3	1.0	56.0
4	1.0	40.0
5	1.0	20.0
6	1.0	17.0
7	1.0	0.0
8	1.0	32.0

# Vertical Radiation Pattern

E / E<sub>max</sub>



Date : 6/5/2008

Station : WJYS-DT

Frequency (MHz) : 605.00

Beam Tilt (deg) : 1.0

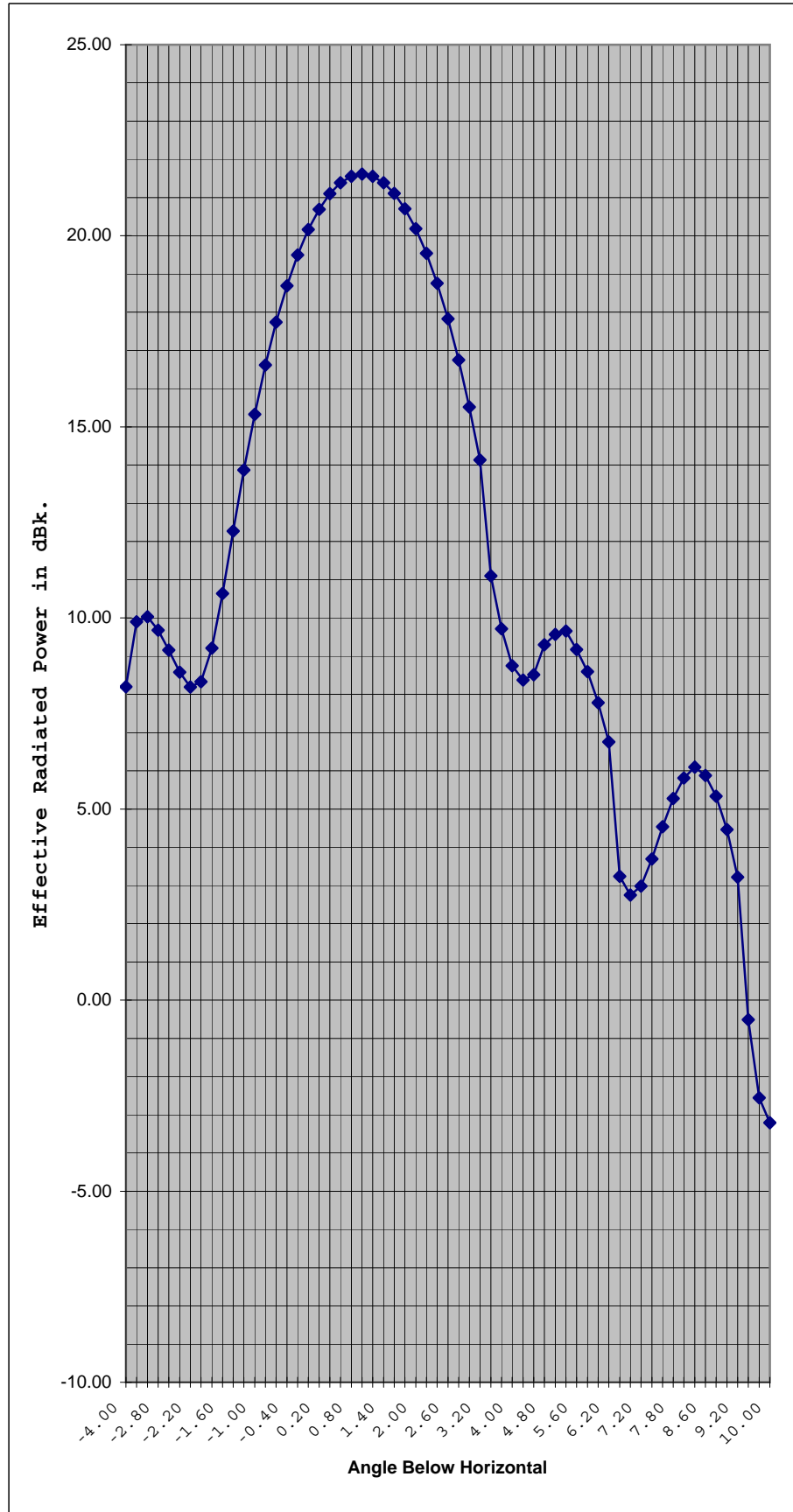
Vertical Spacing (m) : 1.150

Level	Power	Phase
1	1.0	130.0
2	1.0	80.0
3	1.0	56.0
4	1.0	40.0
5	1.0	20.0
6	1.0	17.0
7	1.0	0.0
8	1.0	32.0

# Exhibit E-3 - VERTICAL RADIATION PATTERN

Angle	Relative Field	ERP dBk.
-4.00	0.214	8.20
-3.50	0.260	9.90
-3.00	0.264	10.03
-2.80	0.253	9.68
-2.60	0.238	9.16
-2.40	0.223	8.58
-2.20	0.213	8.19
-2.00	0.217	8.33
-1.80	0.240	9.21
-1.60	0.283	10.64
-1.40	0.341	12.27
-1.20	0.410	13.87
-1.00	0.485	15.33
-0.80	0.563	16.62
-0.60	0.640	17.74
-0.40	0.715	18.69
-0.20	0.784	19.50
0.00	0.846	20.16
0.20	0.900	20.69
0.40	0.943	21.10
0.60	0.974	21.39
0.80	0.993	21.56
1.00	1.000	21.61
1.20	0.994	21.56
1.40	0.975	21.39
1.60	0.944	21.11
1.80	0.901	20.71
2.00	0.849	20.19
2.20	0.788	19.54
2.40	0.720	18.76
2.60	0.647	17.83
2.80	0.571	16.75
3.00	0.496	15.52
3.20	0.423	14.13
3.60	0.298	11.10
3.80	0.254	9.71
4.00	0.227	8.75
4.20	0.218	8.38
4.40	0.221	8.52
4.80	0.242	9.30
5.00	0.250	9.57
5.20	0.252	9.66
5.60	0.239	9.17
5.80	0.223	8.60
6.00	0.204	7.78
6.20	0.181	6.75
6.80	0.121	3.24
7.00	0.114	2.75
7.20	0.117	2.98
7.40	0.127	3.70
7.60	0.140	4.54
7.80	0.153	5.28
8.00	0.162	5.81
8.20	0.168	6.10
8.60	0.163	5.88
8.80	0.154	5.34
9.00	0.139	4.46
9.20	0.120	3.22
9.60	0.078	-0.51
9.80	0.062	-2.55
10.00	0.057	-3.21

Note: Relative field same for all azimuths.  
ERP in dBk based on maximum ERP azimuths.



**WJYS-DT.PRO****PROPOSED**

Latitude: 41-52-44 N

Longitude: 087-38-08 W

ERP: 145.00 kW

Channel: 36

Frequency: 605.0 MHz

AMSL Height: 689.5 m

Horiz. Pattern: Directional

Vert. Pattern: Yes

Elec Tilt: 1.0

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 301.0

Receiver Ht AG: 10.0 m

Receiver Gain: 0 dB

Time Variability: 10.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

**D.L. Markley & Associates, Inc.**

- ☒ WJYS-DT.PRO
- KWQC-D
- KWQC-D.C
- WEDE-C
- WFBN-L-D.C
- WFFT-D
- WFFT-D.C
- WJRT-D
- WLNS-D
- WLNS-D.C
- WMVT-D
- WNIT-D
- WTWO-D
- WTWO-D.C
- WUPW

WMVT-D

WFBN-L-D.C

WEDE-DT.PRO

WNIT-D

KWQC-D.C

WFFT-D.C

**Exhibit E-4**

Outgoing Interference Study

WJYS-DT - Hammond, Indiana

Jovon Broadcasting Corporation

June, 2008

Scale 1:3,000,000

0 40 80 120 km

Exhibit E-4  
 Outgoing Interference Population Report  
 Based on Proposed WJYS-DT Facilities

WJYS-DT.PRO (36) Hammond, IN - PROPOSED  
 Broadcast Type: Digital Service: V  
 Lat: 41-52-44 N Lng: 087-38-08 W ERP: 145.0 kW AMSL: 689.5 m  
 TV Outgoing Interference Study  
 Signal Resolution: 2.0 km  
 Consider NTSC Taboo: Yes  
 KWX error points are considered to  
     be interference free coverage.  
 Default # of radials computed for contours: 360  
 Contours calculated using 8 radial HAAT.  
 LR Profile Spacing Increment: 1.0 km  
 Masked interference points are being  
     counted as interference.  
 Pop Centroid DB: 2000 US Census (SF1)

Study Date: 6/6/2008  
 TV Database Date: 6/6/2008

Primary Terrain: V-Soft 3 Second US Terrain  
 Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

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 Stations Considered:

Call Letters	City	State	Dist	Bear
KWQC-D (36)	DAVENPORT	IA	237.2	255.5
KWQC-D.C (36)	Davenport	IA	237.2	255.5
WEDE-C (34Z)	Arlington Heights	IL	0.0	270.0
WFBN-L-D.C (35)	Rockford	IL	126.3	290.4
WFFT-D (36)	FORT WAYNE	IN	221.0	111.9
WFFT-D.C (36)	Fort Wayne	IN	221.0	111.9
WJRT-D (36)	Flint	MI	329.8	61.7
WLNS-D (36)	LANSING	MI	283.4	70.4
WLNS-D.C (36)	Lansing	MI	283.4	70.4
WMVT-D (35)	Milwaukee	WI	137.0	350.8
WNIT-D (35)	South Bend	IN	123.9	103.3
WTWO-D (36)	TERRE HAUTE	IN	293.5	175.9
WTWO-D.C (36)	Terre Haute	IN	293.5	175.9
WUPW (36-)	Toledo	OH	349.3	92.7

Call	Area	HUnits	Contour	Masked Ix	Unmasked Ix	%
KWQC-D (36)	58.7	379	1,013,260	0	813	0.1
KWQC-D.C (36)	40.3	645	1,083,148	0	1,521	0.1

WEDE-C (34Z)	0.0	0	3,457,793	0	0	0.0
WFBN-L-D.C (35)	0.0	0	336,130	0	0	0.0
WFFT-D (36)	3.7	89	1,055,401	0	216	0.0
WFFT-D.C (36)	3.7	89	1,055,512	0	216	0.0
WJRT-D (36)	0.0	0	2,053,339	0	0	0.0
WLNS-D (36)	0.0	0	3,136,443	0	0	0.0
WLNS-D.C (36)	0.0	0	3,040,661	0	0	0.0
WMVT-D (35)	32.6	4,696	2,780,775	0	12,166	0.4
WNIT-D (35)	54.9	2,073	1,215,635	0	5,033	0.4
WTWO-D (36)	0.0	0	722,030	0	0	0.0
WTWO-D.C (36)	0.0	0	723,171	0	0	0.0
WUPW (36-)	0.0	0	1,466,644	0	0	0.0

---

	Housing Units	Population
Illinois		
Bureau County		
Total	15,331	35,503
KWQC-D (36)	0	0
KWQC-D.C (36)	192	529
Carroll County		
Total	7,945	16,674
KWQC-D (36)	5	2
KWQC-D.C (36)	0	0
Fulton County		
Total	16,240	38,250
KWQC-D (36)	0	0
Jo Daviess County		
Total	12,003	22,289
KWQC-D (36)	0	0
Lake County		
Total	225,919	644,356
WMVT-D (35)	4,045	10,466
Marshall County		
Total	5,914	13,180
KWQC-D (36)	8	10
KWQC-D.C (36)	0	0
McHenry County		
Total	92,908	260,077
WMVT-D (35)	651	1,700
Peoria County		
Total	78,204	183,433
KWQC-D (36)	284	742
KWQC-D.C (36)	446	976
Putnam County		
Total	2,888	6,086
KWQC-D (36)	65	25
Tazewell County		
Total	52,973	128,485
KWQC-D.C (36)	0	0
Woodford County		

Total	13,487	35,469
KWQC-D (36)	0	0
Indiana		
Elkhart County		
Total	69,791	182,791
WFFT-D (36)	89	216
WFFT-D.C (36)	89	216
LaGrange County		
Total	12,938	34,909
WFFT-D (36)	0	0
WFFT-D.C (36)	0	0
Porter County		
Total	57,616	146,798
WNIT-D (35)	2,073	5,033
Iowa		
Jackson County		
Total	8,949	20,296
KWQC-D (36)	17	34
KWQC-D.C (36)	7	16

**WJYS-DT.PRO****PROPOSED**

Latitude: 41-52-44 N  
Longitude: 087-38-08 W  
ERP: 145.00 kW  
Channel: 36  
Frequency: 605.0 MHz  
AMSL Height: 689.5 m  
Horiz. Pattern: Directional  
Vert. Pattern: Yes  
Elec Tilt: 1.0  
Prop Model: Longley/Rice  
Climate: Cont temperate  
Conductivity: 0.0050  
Dielec Const: 15.0  
Refractivity: 311.0  
Receiver Ht AG: 10.0 m  
Receiver Gain: 0 dB  
Time Variability: 90.0%  
Sit. Variability: 50.0%  
ITM Mode: Broadcast

■ > 48.0 dBu  
■ 41.0 - 48.0

**D.L. Markley & Associates, Inc.**

City of License  
Hammond, Indiana

Exhibit E-5  
Predicted Coverage  
WJYS-DT - Hammond, Indiana  
Jovon Broadcasting Corporation  
June, 2008

Scale 1:1,250,000

0 10 20 30 km