

T Z SAWYER TECHNICAL CONSULTANTS

2130 HUTCHISON GROVE COURT, SUITE 100
FALLS CHURCH, VIRGINIA 22043
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DIGITAL LPTV FACILITY MINOR CHANGE APPLICATION WSIO-LD TELEVISION CHANNEL 19

APPLICATION ENGINEERING STATEMENT

FCC FACILITY ID: 1013

PEORIA, IL

ENGINEERING NARRATIVE

Minor Change Application

WSIO-LD, seeks to MODIFY its construction permit to make minor changes to the proposed antenna system (height, type, rotation, ERP) at the current construction permit location. All of the changes proposed herein are classified as “minor changes” in accordance with the Commission’s application processing rules.

The maximum effective radiated power (ERP) will be 15.0 kilowatts using horizontal polarization only.

The proposed antenna is a PSI PSILP120I, a directional UHF slot antenna, employing 0-degrees of electrical beam tilt. A full-service filter mask is to be employed. The facility requested is not contingent upon a grant or channel move of any other known facility at the time of filing.

A graphical plot and tabulation of the relative field values from the proposed directional antenna have been provided in the application.

Modification Compliance:

Pursuant to 47 CFR §74.787(b) the instant application is considered a “minor” change because;

- There is no change in transmitting antenna location such that the protected service contour resulting from the change does not overlap some portion of the protected service contour of the authorized facilities of the existing station as illustrated in Figure 1, Present & Proposed Service Contours.
- There is no change in transmitting antenna location greater than 30 miles (48 km) from the reference coordinates of the existing station’s licensed location, as noted below:

CALCULATED DISTANCE BETWEEN EXISTING LICENSED AND PROPOSED SITES

SITE	LAT (NAD83)	LON (NAD83)	(KM)	(MI)
CURRENT/EXISTING LIC	40-50-36.20 N	89-54-39.90 W	23.03	14.31
PROPOSED (CP MOD)	40-44-28.15 N	89-10-25.38 W		

FCC Tower Registration (ASR) - FAA Notification - No Hazard

The proposed site is an existing communications tower site. This is a leased tower site in which an FCC tower/structure antenna structure registration is not required. A determination of “NO HAZARD” has been issued to the tower owner by the FAA. Lighting and Marking of the support structure is not required. A copy of the FAA determination has been uploaded as a part of this application.

The overall height of the communications tower is 59.4 meters (~195') above ground level. No changes in the supporting structure are required that would require notification to the FAA. The antenna is side-mounted upon the structure.

Proposed Antenna Elevations:

The center of radiation of the proposed antenna is 44.2 meters AGL, 226.2 meters AMSL. The ground elevation at the site is 182.0 meters.

Antenna/Structure Elevations	
Site Elevation (m)	182.0
Overall Height of Structure (m)	59.4
Antenna Radiation Center AGL (m)	44.2
Antenna Radiation Center AMSL (m)	226.2

FCC TVStudy Parameters and Study Results:

FCC TVSTUDY STUDY PARAMETERS REQUESTED	
STUDY CELL SIZE	1.0
STUDY PROFILE SPACING INCREMENT	0.1

The results of a interference study of the proposal using the FCC TVStudy program (Version 2.2.5), shows that no prohibitive interference will occur from the proposal. A copy of the summary report has been included in this application. The applicant accepts any incoming interference that is predicted to exist to the proposed facility by any authorized or pending, primary or secondary TV station at the time this application is submitted.

Processing of the application using FCC TVStudy with a Profile Point Spacing (interval) of 0.1 km is requested due to the mixture of the basic terrain characteristics from urban river-front, to hilly country side, to farmland.

The results of an interference study of the proposal using the FCC TVStudy program (Version 2.2.5), shows that no prohibitive interference will occur from the proposal. A copy of the summary report has been included in this application.

Nearby AM Radio Station of Concern	None
Land Mobile Stations of Concern	None
International Border Considerations	None
FCC Monitoring Stations of Concern	None
National Radio or Observatory Quiet Zones of Concern	None

Incoming Interference:

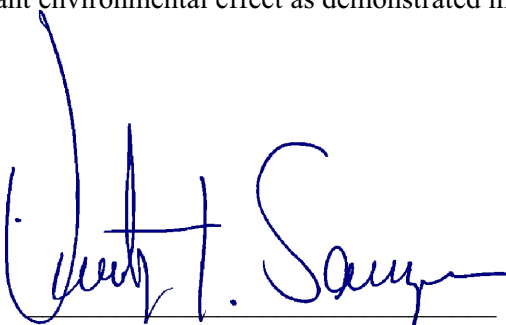
The applicant accepts any incoming interference that is predicted to occur to the proposed facility by any authorized or pending, primary or secondary TV station at the time this application is submitted.

Environmental Evaluation Statement:

The environmental evaluation statement concerning this proposal has been included in this application and can be found as a separate file upload within the application. A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in the environmental evaluation statement.

Respectfully submitted,

February 15, 2024

A handwritten signature in blue ink, appearing to read "Timothy Z. Sawyer", written over a horizontal line.

Timothy Z. Sawyer, Consulting Engineer

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Falls Church, VA 22043
Tel.: (703) 848-2130
e-mail: tzsawyer@tzsawyer.com

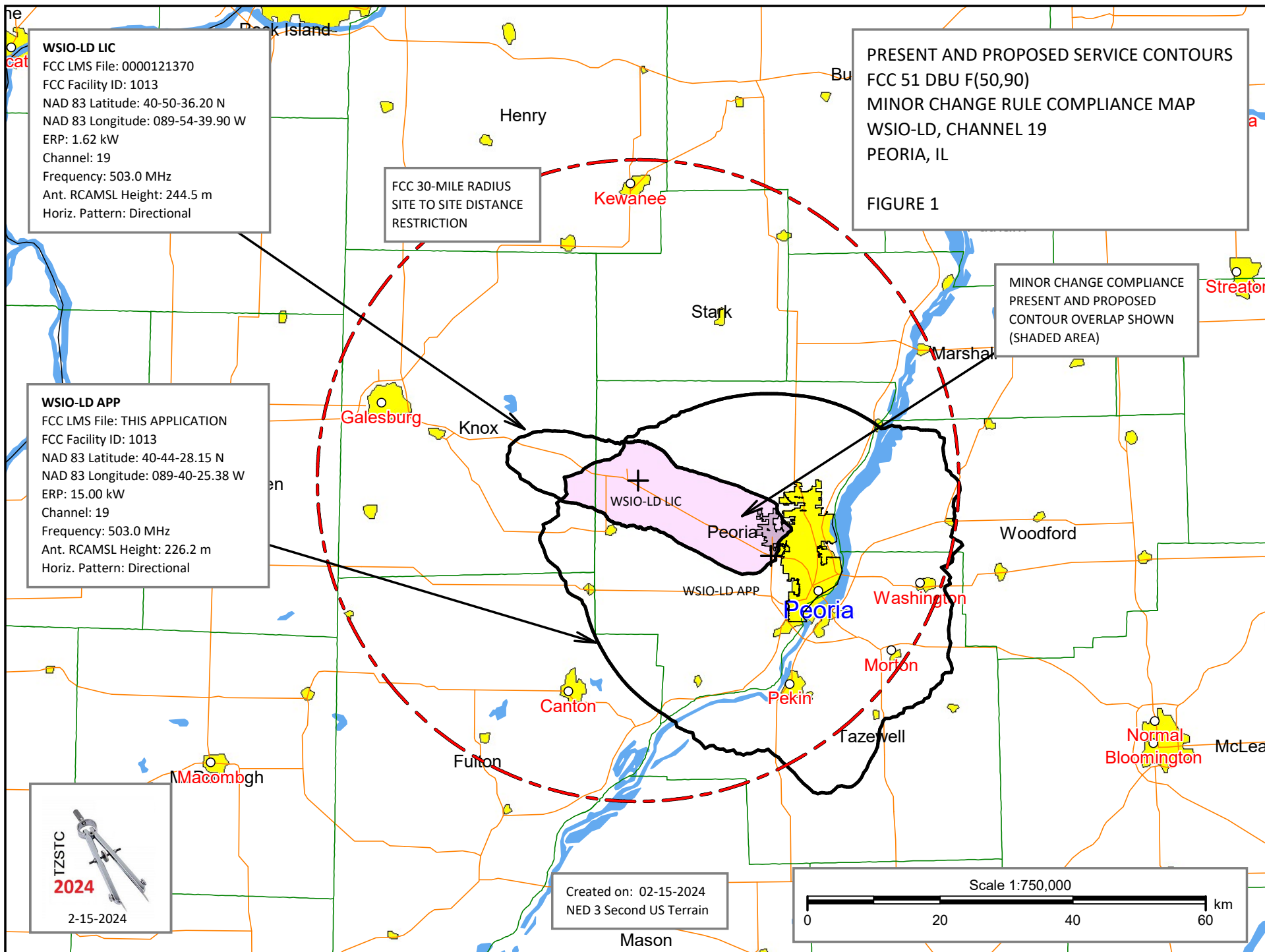
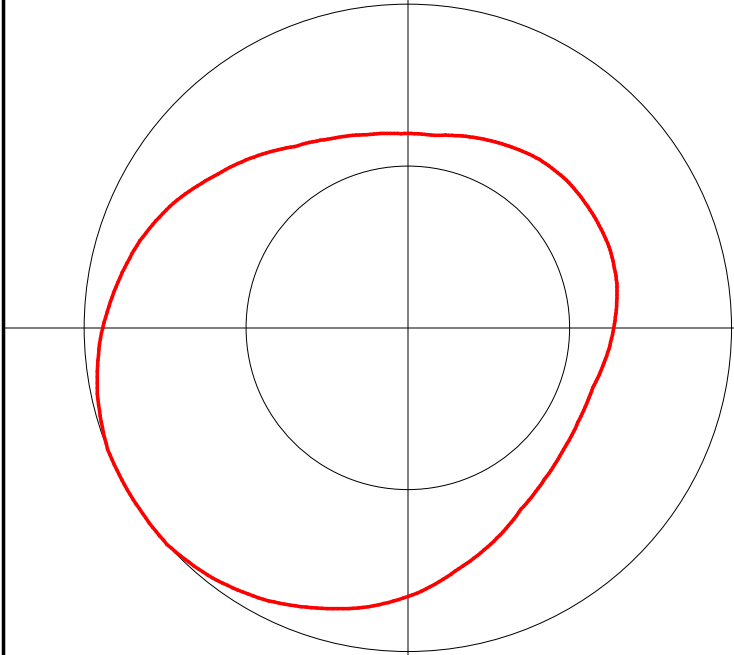


FIGURE 2 WSIO-LD PSILP12OI DA PATTERN

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	1.0
10.0	1.0
20.0	0.98
30.0	0.95
40.0	0.91
50.0	0.87
60.0	0.82
70.0	0.76
80.0	0.71
90.0	0.66
100.0	0.63
110.0	0.61
120.0	0.6
130.0	0.6
140.0	0.62
150.0	0.64
160.0	0.66
170.0	0.67
180.0	0.67
190.0	0.67
200.0	0.66
210.0	0.64
220.0	0.62
230.0	0.6
240.0	0.6
250.0	0.61
260.0	0.63
270.0	0.66
280.0	0.71
290.0	0.76
300.0	0.82
310.0	0.87
320.0	0.91
330.0	0.95
340.0	0.98
350.0	1.0

Rotation Angle = 238



GRAPHICAL PLOT IS ROTATED
PATTERN

FIGURE 3 FCC TVSTUDY SUMMARY REPORT WSIO-LD MINOR CHANGE APPLICATION

TVSTUDY STUDY PARAMETERS REQUESTED

CELL SIZE 1.0

PROFILE SPACING 0.10

Proposal: WSIO-LD D19 LD APP PEORIA, IL
 File number: WSIO-LD APP CP MOD
 Facility ID: 1013
 Station data: User record
 Record ID: 748
 Country: U.S.

Build options:
 Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	K18GU-D	D18	LD	LIC	OTTUMWA, IA	BLDTT20091229AES	228.0 km
No	WBXC-CD	D18	DC	LIC	CHAMPAIGN/URBANA, IL	BLANK0000112220	139.8
No	WMEU-CD	D18	DC	LIC	CHICAGO, IL	BLANK0000086889	212.0
No	WMEU-CD	D18	DC	CP	CHICAGO, IL	BLANK0000196962	214.1
No	WSEC	D18	DT	LIC	JACKSONVILLE, IL	BLANK0000150703	130.4
No	WTVK	D18	LD	LIC	OSWEGO, IL	BLANK0000125101	14.3
No	W27DF-D	N18-	TX	LIC	QUINCY, IL	BLTTL20011120AAN	164.1
No	DWMB-LP	D18z	LD	APP	Rochelle, IL	BLANK0000054707	144.9
No	WAWV-TV	D18	DT	LIC	TERRE HAUTE, IN	BLANK0000087258	256.0
No	WMSN-TV	D18	DT	LIC	MADISON, WI	BLANK0000113879	257.5
No	KDMI	D19	DT	LIC	DES MOINES, IA	BLCDT20120627AAE	350.7
No	K19KX-D	D19	LD	LIC	KEOKUK, IA	BLANK0000063796	150.6
Yes	WGN-TV	D19	DT	LIC	CHICAGO, IL	BLANK0000235154	212.0
No	W19EE-D	D19	LD	LIC	JACKSONVILLE, IL	BLANK0000195988	107.2
Yes	WGEM-TV	D19	DT	CP	QUINCY, IL	BLANK0000235415	164.4
No	WHBF-TV	D19	LD	CP	ROCK ISLAND, IL	BLANK0000080887	114.0
No	W19EW-D	D19	LD	LIC	EVANSVILLE, IN	BLANK0000212357	354.3
No	WIPB	D19	DT	LIC	MUNCIE, IN	BLANK0000087336	369.4
No	W19FD-D	D19	LD	LIC	TERRE HAUTE, IN	BLANK0000213529	256.0
No	WPSD-TV	D19	DT	LIC	PADUCAH, KY	BLANK0000116960	399.0
No	WXMI	D19	DT	LIC	GRAND RAPIDS, MI	BLANK0000143294	406.0
No	KPTN-LD	D19	LD	LIC	ST. LOUIS, MO	BLANK0000124668	247.2
No	WMTV	D19	DT	LIC	MADISON, WI	BLCDT20100413AAW	257.2
No	K20KF-D	D20	LD	LIC	DAVENPORT, IA	BLDTL20120821AAP	146.4
No	WWME-CD	D20	DC	LIC	CHICAGO, IL	BLANK0000086882	212.0
No	WWME-CD	D20	DC	CP	CHICAGO, IL	BLANK0000196954	214.1
Yes	WAND	D20	DT	LIC	DECATUR, IL	BLANK0000203433	113.0
No	WHA-TV	D20	DT	LIC	MADISON, WI	BLANK0000089074	257.5

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D19
 Mask: Full Service
 Latitude: 40 44 28.15 N (NAD83)
 Longitude: 89 40 25.38 W
 Height AMSL: 226.2 m
 HAAT: 0.0 m
 Peak ERP: 15.0 kW
 Antenna: PSI-PSILP120I (ID 20364) 238.0 deg
 Elev Pattn: Generic

49.3 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	5.40 kW	15.3 m	26.5 km
45.0	6.67	36.3	29.2
90.0	6.07	37.8	29.2
135.0	5.84	55.5	33.5
180.0	10.3	36.5	31.2
225.0	14.8	20.7	31.0
270.0	13.3	47.8	35.6
315.0	7.88	33.6	29.1

Database HAAT does not agree with computed HAAT
 Database HAAT: 0 m Computed HAAT: 35 m

Distance to Canadian border: 562.7 km
Distance to Mexican border: 1615.5 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 54.9 degrees Distance: 371.7 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 272.2 degrees Distance: 1315.3 km

No land mobile station failures found

Study cell size: 1.00 km
Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Proposal causes no interference to BLANK0000235154 LIC
Proposal causes 0.01% interference to BLANK0000235415 CP scenario 1
Proposal causes 0.44% interference to BLANK0000203433 LIC scenario 1

---- Below is IX received by proposal WSI0-LD APP CP MOD ----

Proposal receives 10.59% interference from scenario 1

No IX check failures found.

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DIGITAL LPTV FACILITY
MINOR CHANGE APPLICATION
WSIO-LD
TELEVISION CHANNEL 19
FCC FACILITY ID: 1013
PEORIA, IL

ENVIRONMENTAL EVALUATION STATEMENT

A grant of this proposal would NOT be an action which would have a significant environmental effect as demonstrated in this environmental evaluation statement. Any changes in equipment, or construction, if necessary will not trigger any event with regards to Section 106 of the National Historical Preservation Act (NHPA).

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights. Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

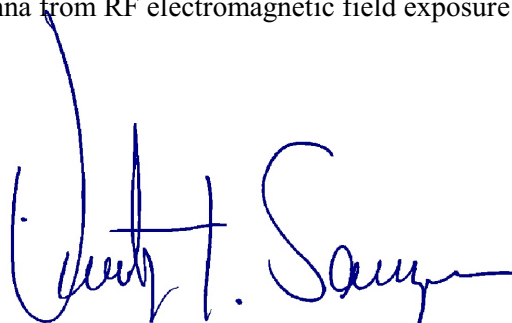
CALCULATED POWER DENSITY AT 2 METERS AGL (0.3 ANTENNA RELATIVE FIELD VALUE) ERP MAX (H)

CR AGL 44.2 M ERP MAX 15.0 KW (H)	MPE ($\mu\text{W}/\text{CM}^2$)	CALCULATED VALUE ($\mu\text{W}/\text{CM}^2$)	% OF MPE	PASS/FAIL
CONTROLLED AREA	1676.7	25.3195	1.51%	PASS
PUBLIC AREA	335.3		7.55%	PASS

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs are posted at the site. The applicant will coordinate exposure procedures with any co-located facilities and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

February 15, 2024

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e Mail to: tzsawyer@tzsawyer.com



Timothy Z. Sawyer, Consulting Engineer



AMERICAN TOWER®

SITE NAME: INTERCHANGE 87

SITE NUMBER: 50693

FCC REGISTRATION: NOT REQUIRED

FOR LEASING INFORMATION:

877-282-7483

877-ATC-SITE

FOR OPERATIONS & ACCESS:

877-518-6937

877-51-TOWER

NO TRESPASSING

www.americantower.com

POSTING OF THIS SIGN REQUIRED BY LAW

04/21/2021





Federal Aviation Administration
Great Lakes Regional Office
2300 East Devon Avenue-AGL-520
Des Plaines, IL 60018

Interchange 87

Aeronautical Study No.
2004-AGL-4855-OE
Prior Study No.
2002-AGL-6816-OE

Issued Date: 11/29/2004

Lottie Thompson # 50693
American Tower-Schaumburg, IL
1101 Perimeter Drive
Schaumburg, IL 60173

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure Type: Antenna Tower
Location: Norwood, IL
Latitude: 40-44-28.15 NAD 83
Longitude: 89-40-25.38
Heights: 195 feet above ground level (AGL)
792 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking and/or lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory Circular 70/7460-1 K Chg 1.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission if the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (847)294 8084.
On any future correspondence concerning this matter, please refer to Aeronautical
Study Number 2004-AGL-4855-OE.

Signature Control No: 392881-328432

(DNE)

Richard H Farrell, III
Specialist

Attachment(s)
Case Description
Frequency Data

277 Coon Rapids Boulevard, Suite 304
Coon Rapids, MN 55433
Office: 763-786-1445

For aeronautical study no. _____ I, Bradley F. Shamla, P.E., certify the Latitude 40°44' 28.15" North and Longitude 89°40' 25.38" West are accurate to within +/- 50 feet horizontally; and the site elevations, below, are within +/- 20 feet vertically. The horizontal datum (coordinates) are in terms of the North American Datum of 1983 (NAD83) and expressed as degrees, minutes and seconds. The vertical datum (elevation) is in terms of the North American Vertical Datum of 1988 (NAVD88), and is determined to the nearest foot.

LOCATION	ELEVATION (AMSL-FEET)	HEIGHT (AGL-FEET)
Ground at Tower Base	597	0
Top of Tower Steel	785	188
Top of Lightning Rod (Highest Appurtenance)	792	195

I, as a duly licensed Professional Engineer under the laws of the State of Illinois do hereby certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Bradley F. Shamla, P.E.

Printed Name

Bradley F. Shamla

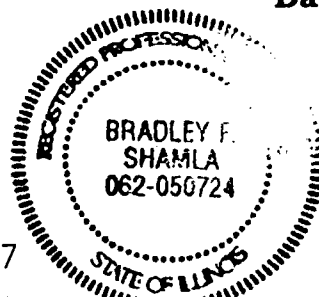
Signature

062-050724

Registration Number

6/25/04

Date



Site Name: Interchange 87
City: Peoria
County: Peoria

expires 11-30-10 *2005*

Site No.: 50693
State: Illinois
Region: Midwest