



Your business
is our business.

REDACTED - FOR PUBLIC INSPECTION

7852 Walker Drive, Suite 200
Greenbelt, Maryland 20770
phone: 301-459-7590, fax: 301-577-5575
internet: www.jsitel.com, e-mail: jsi@jsitel.com

April 28, 2016

Via Hand Delivery

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

**Re: WC Docket No. 10-90
Wabash Telephone Coop., Inc. and Grafton Telephone Company
Challenge to A-CAM V2.2 - Competitive Coverage of Wisper ISP**

Dear Ms. Dortch:

On behalf of Wabash Telephone Coop., Inc. and Grafton Telephone Company (the “Companies”), JSI files the attached confidential version of the Companies’ comments to challenge the competitive coverage contained in Alternative Connect America Cost Model (“A-CAM”) version 2.2 pursuant to the streamlined challenge process established by Public Notice.¹ A redacted version has been filed this date via the Electronic Comment Filing System. The Companies seek confidential treatment as a Reviewing Party licensed under the Third Supplemental Protective Order for protection of Connect America Cost Model derived data.²

Please direct any questions regarding the filing to the undersigned.

Sincerely,

John Kuykendall
JSI Vice President
301-459-7590
jkuykendall@jsitel.com

cc: Katie King, Telecommunications Access Policy Division (two copies, confidential)
Margaret Avril Lawson, CostQuest Counsel, (via email)

¹ See Wireline Competition Bureau Releases Alternative Connect America Cost Model Version 2.2 and Illustrative Results and Commences Challenge Process to Competitive Coverage, WC Docket No. 10-90, Public Notice (rel. Apr. 7, 2016) (“Public Notice”).

² In the Matter of Connect America Fund, Third Supplemental Protective Order, DA 12-1995, rel. Dec. 11, 2012.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
) WC Docket No. 10-90
Connect America Fund)

A-CAM COMPETITIVE CHALLENGE

**JOINT COMMENTS OF WABASH TELEPHONE COOP., INC.
AND
GRAFTON TELEPHONE COMPANY**

CHALLENGING A-CAM COMPETITORS PURSUANT TO PUBLIC NOTICE

Wabash Telephone Coop., Inc. (“Wabash”) and Grafton Telephone Company (“Grafton”) (collectively, the “Companies”) hereby submit the following joint comments regarding the Federal Communications Commission’s (“FCC” or “Commission”) April 7, 2016 Public Notice which published the preliminary determination of unsubsidized competitive coverage for rate-of-return Incumbent Local Exchange Carrier (“ILEC”) study areas.¹

Pursuant to the *Public Notice* and paragraph 71 the Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking released on March 30, 2016 in the above-reference proceedings by the Federal Communications Commission (“FCC” or “Commission”),² The Companies hereby challenges the competitive coverage in certain census blocks contained in the latest version of the A-CAM model (ver. 2.2).

¹ See Wireline Competition Bureau Releases Alternative Connect America Cost Model Version 2.2 and Illustrative Results and Commences Challenge Process to Competitive Coverage, WC Docket No. 10-90, Public Notice (rel. Apr. 7, 2016) (“*Public Notice*”).

² See *Connect America Fund et al.*, WC Docket No. 10-90 *et al.*, Order, FCC 16-33 (rel. Mar. 30, 2016) (“*USF Reform Order*”).

I. BACKGROUND

The Study Area Code (“SAC”) for Wabash is 341088, while Grafton’s SAC is 341020. The Companies are filing a Joint Challenge Pursuant to Paragraph 71 of the Order to highlight the dramatic over-reporting of competitive overlap as conveyed in the information filed by Wisper ISP in conjunction with its June 30, 2015 477 filing. The Companies have grave concerns over the implications of the information filed by Wisper, and wish to insure such concerns are lodged and addressed by the Commission. As reflected in the Exhibits A and B lists of census blocks, Wisper claims to provide 10/1 service spanning 394 census blocks, covering 1,702 locations in the service territory of Wabash, and 58 Census Blocks and 679 locations for Grafton.

Both Companies operate in highly rural areas located in Southern Illinois with service areas reflective of varied terrain, and material tree cover. Against the backdrop of such challenging conditions, Wisper has represented coverage which blankets large portions of both service territories. The data presented in Wisper’s 477 conveys a similar representation for Hamilton Telephone Co-op (Hamilton) which prepared a comprehensive challenge in response thereto. We concur with the arguments set forth in Hamilton’s challenge and echo their call for a plausibility standard to be applied to Wisper’s 477, and that based on the comprehensive evidence submitted in conjunction with that challenge, find Wisper’s 477 to be sufficiently flawed that it be ignored for the purposes of defining competitive overlap associated with the service territories served by the Companies.

II. ARGUMENT

As noted by Hamilton in its 477 Challenge, the FCC has consistently articulated the importance of a robust broadband infrastructure to the country’s economy, and the central role regulatory policy must play in promoting broadband deployment in rural high-cost areas. In his statement accompanying the release of the USF Reform Order, Chairman Wheeler Noted:

The Commission’s universal service program is one of the most important tools at our disposal to spur broadband deployment in unserved areas, maintain existing broadband service in high-

cost areas, and ensure that consumers and businesses in rural America have the same online opportunities as their urban and suburban counterparts.” (emphasis added)

We further concur with the assertion contained in Hamilton’s filing that given the importance of USF as a tool to achieve Broadband coverage, and given the reliance of the FCC on the Form 477 as a mechanism to establish relative distribution of that critical mechanism, some basic litmus test of reasonableness must be applied when forms filed by a particular provider are subject to challenge and introduced to a process explicitly designed to consider them.

We understand the logistical difficulty faced by the FCC attendant with consideration of multiple challenges, and thus will not burden FCC staff with repeating the scope of Hamilton’s arguments here. Nevertheless the central point that does demand repeating is that the FCC has explicitly recognized the intimate and inherent tie between accurate 477 information, distribution of USF support, and availability of broadband to rural consumers. The Commission has noted:

“The collection of accurate broadband information is a critical tool for the Commission to meet its statutory obligations and to promote the availability of broadband to every American.³”

With this explicit recognition, there simply must be some level of process integrity associated with insuring 477 data is accurate, and that in the face of prima facie evidence to the contrary, such data must be rejected as a basis to determine competitive overlap, and hence available support.

Based on the exceedingly tight timeframe established by the current challenge process, the appearance is that despite the inescapable importance of the 477 to the integrity of the ACAM process, little importance is being assigned to assure the accuracy of the data contained within such filings. We are hopeful that this is a conclusion which will be dispelled based on the careful examination of the challenges posed. Nevertheless, the timeline established, and lack of guidance on the nature of the evidence that must be provided by potential support recipients to successfully challenge data places a burden of proof on the Companies which is both untenably high, and

³ FCC Enforcement Advisory – FCC Form 477 Filing Requirements – DA 11-1992

misplaced. In the FCC's Order the Commission noted with regard to determination of Competitive Overlap for modified legacy support:

We conclude that utilizing the procedural requirements adopted for the Phase II challenge process, *coupled with putting the burden of proof on the competitor to establish that it serves a census block, will best meet the Commission's objectives for ensuring that support is not provided in areas where other providers are providing service without subsidies.*" Para. 134, FCC USF Reform Order 16-33 [emphasis added].

Reversing this process, and placing the burden of proof on the ILEC to disprove the veracity of a filer's information without sufficient time to assemble a case to do so not only undermines the integrity of the process, it inherently creates a condition in which support will be withdrawn, and hence broadband service availability compromised. Further, such a standard is at utter odds with an explicitly articulated policy conclusion as to where the burden of proof should reside as it pertains to the determination of competitive overlap for modified legacy support.

Irrespective of the foregoing, the Companies have done their best to create a substance oriented challenge within the confines of the limited time available. Due to the exceedingly abbreviated timeline set forth by the Order associated with the ACAM 477 challenge process, the Companies simply could not secure the third party resources necessary to conduct the exhaustive level of testing conducted by Hamilton in conjunction with its challenge. Nevertheless drive testing and network assessment was conducted in order to test the credibility of the basic claims made by Wisper via the data filed in its June 30th 2015 477. While drive tests are ongoing, the preliminary results of the engineering assessment clearly illustrate that Wisper's plausible ability to deliver 10/1 service to the 452 combined census blocks conveyed in Wisper's 477 is dubious at best (see Exhibit C).

III. CONCLUSION

The Commission labored extensively over a long period of time to craft a set of mechanisms designed to encourage an accelerated expansion of Broadband service to rural

REDACTED - FOR PUBLIC INSPECTION

America. The 477 is a tool to not only inform the Commission of progress towards that goal, but as a mechanism playing an extremely influential role in shaping the distribution of USF funds.

The 477 represents the prism through which progress is assessed (visibility to the issue – broadband progress), as well as the mechanism that shapes the manner in which the Commission’s most direct tool – USF – is deployed/used (execution to achieve the desired outcome). Without a commitment to the form’s accuracy, both sides of the equation will be compromised, as will the opportunity to achieve rural/urban broadband subscription parity.

Should the FCC fail to invest the time necessary to insure underlying accuracy in the data reported, it stands the risk of undermining the very mechanisms it worked so hard to reform and create, but worse yet, *decelerating* progress towards a broader level of rural broadband deployment.

For the reasons cited above, we would ask the Commission to extend to Wabash and Grafton the same relief sought by Hamilton, and to eliminate from consideration the application of Wisper’s 477 data for the purposes of determining competitive overlap for the Companies in conjunction with the Challenge process as contemplated in paragraph 71 of the Order.

Respectfully submitted,

/s/ Barry Adair

Barry Adair, Executive Vice President, General Manager
Wabash Telephone Coop., Inc.

/s/ Mike Arnold

Mike Arnold, President/General Manager
Grafton Telephone Company

April 28, 2016

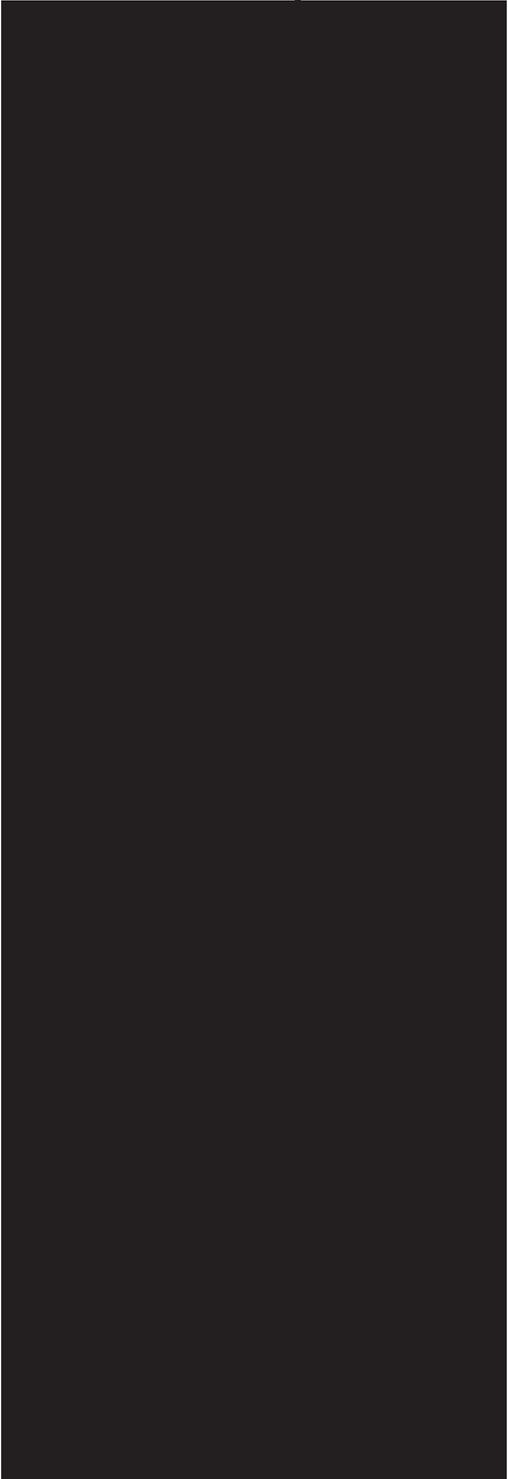
Attachments

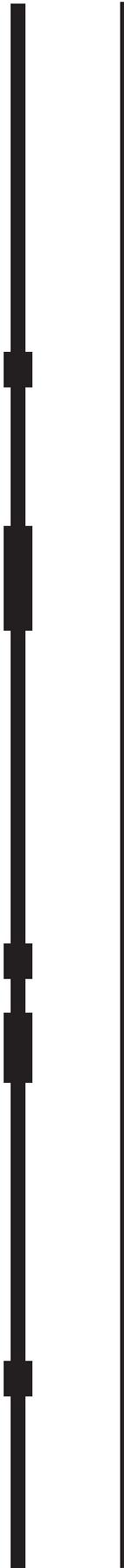
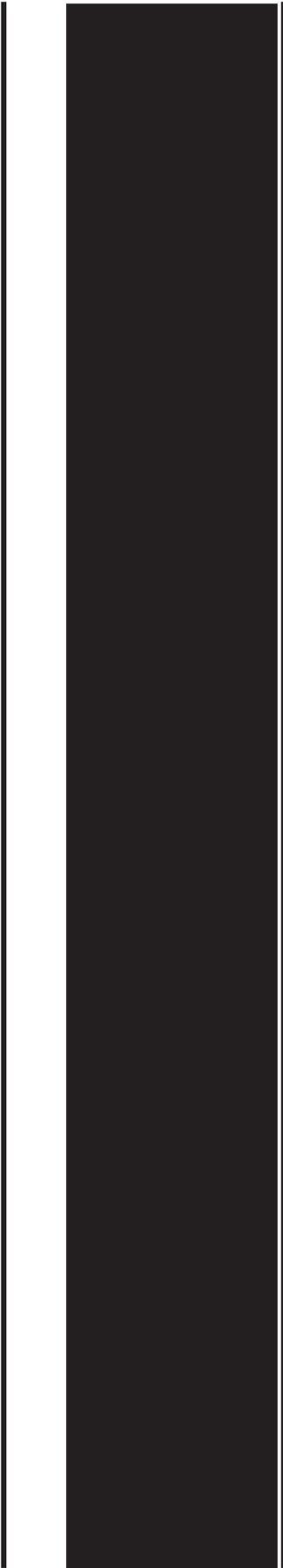
REDACTED - FOR PUBLIC INSPECTION

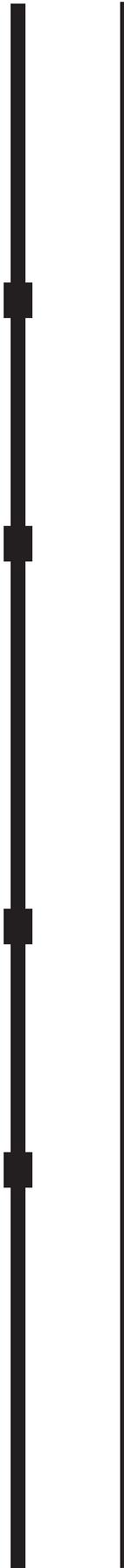
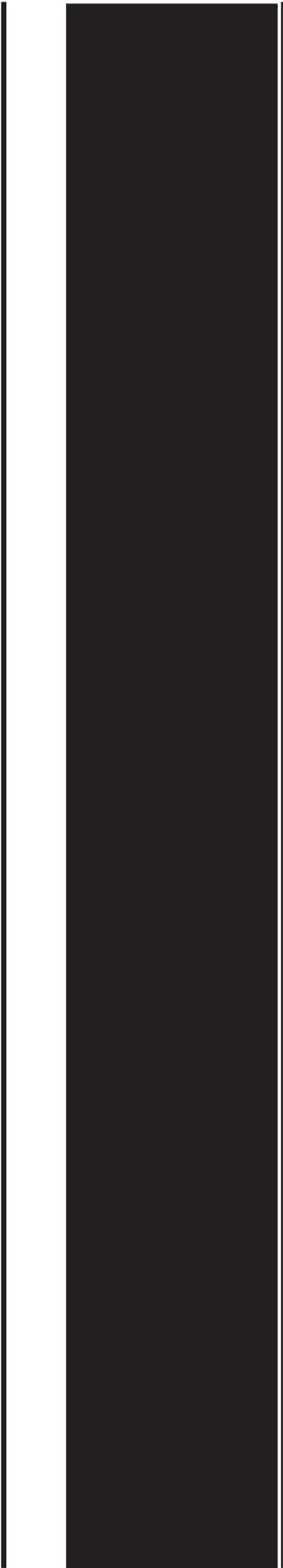
EXHIBIT A

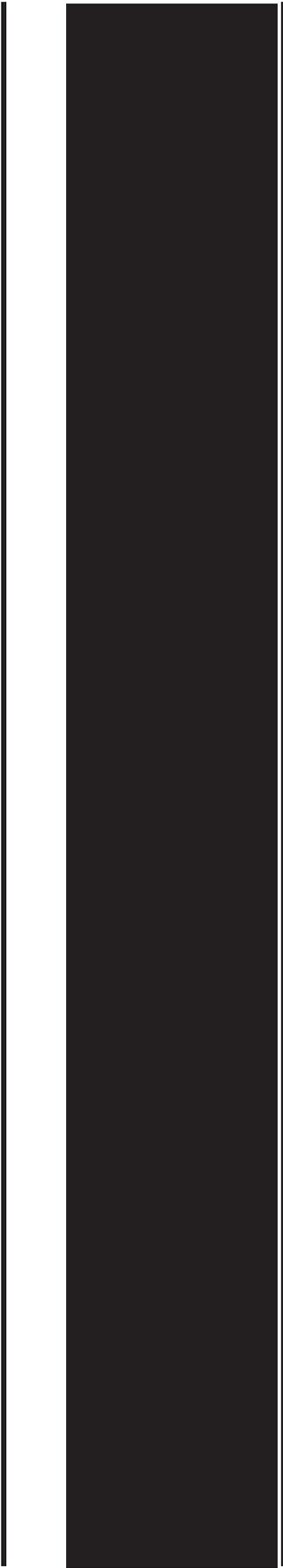
**WISPER CLAIMED CENSUS BLOCK COVERAGE -
WABASH TELEPHONE COOP, INC.**

**Wisper Claimed Coverage Affecting Wabash
Telephone Coop., Inc.**

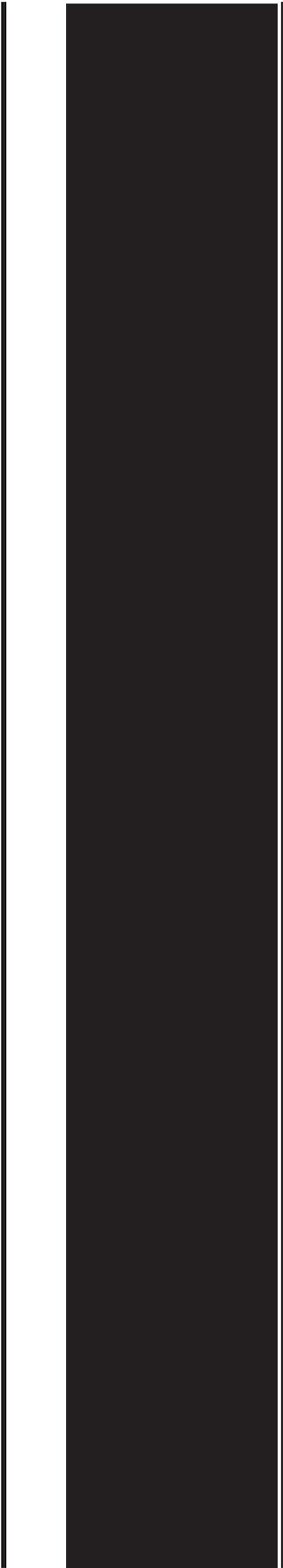
Census Blocks	Total Locations Within Census Block
	

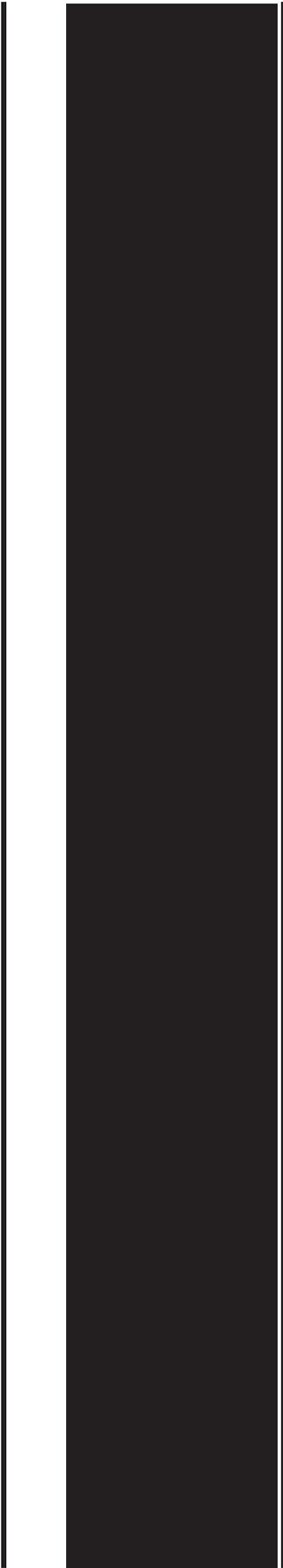




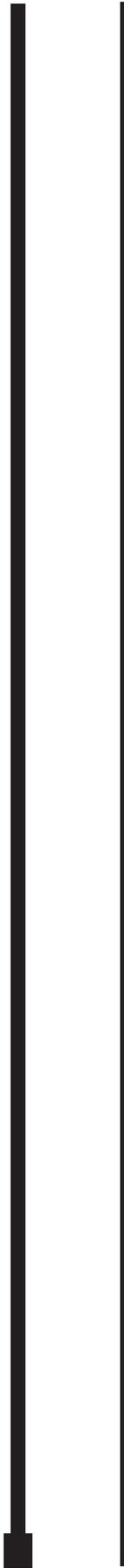
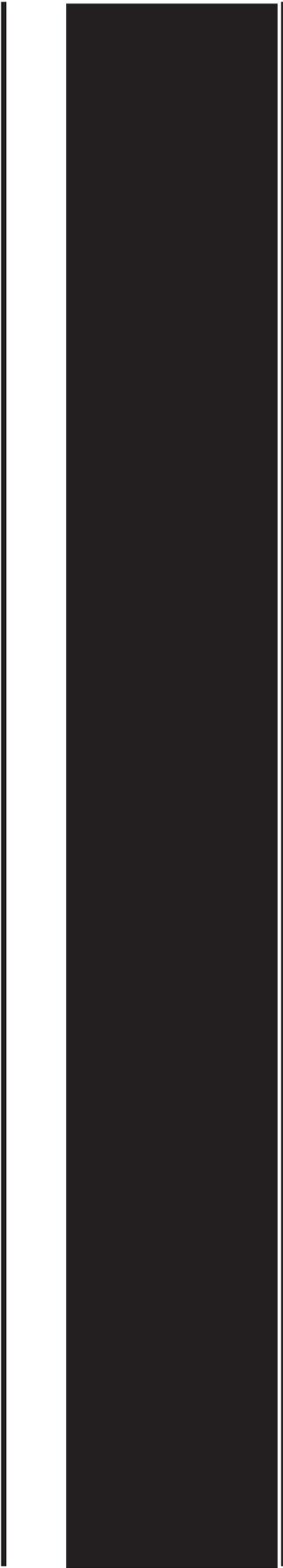


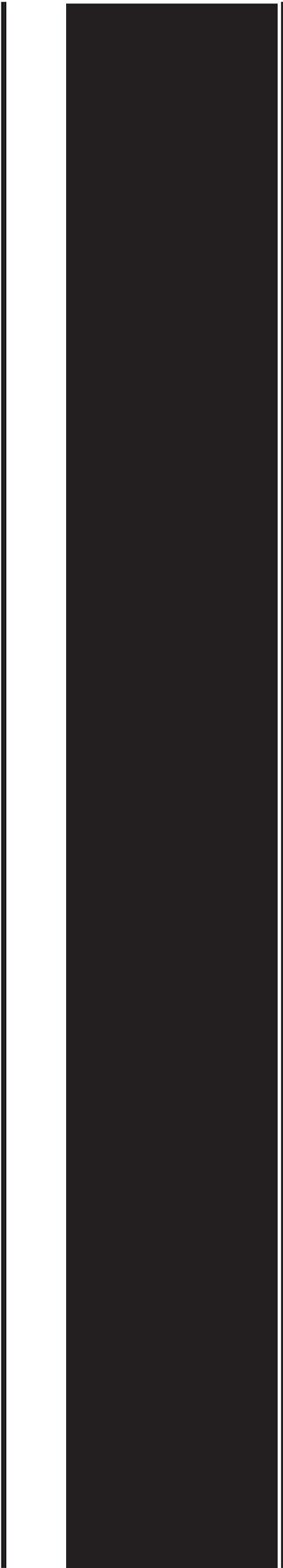
REDACTED - FOR PUBLIC INSPECTION

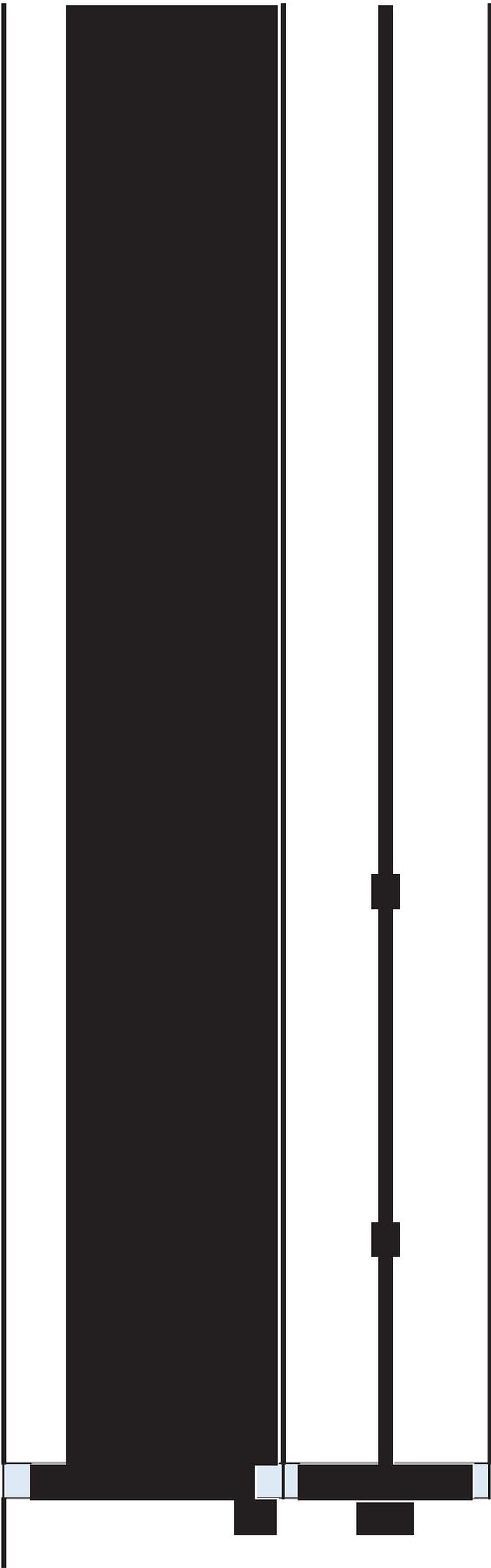




REDACTED - FOR PUBLIC INSPECTION



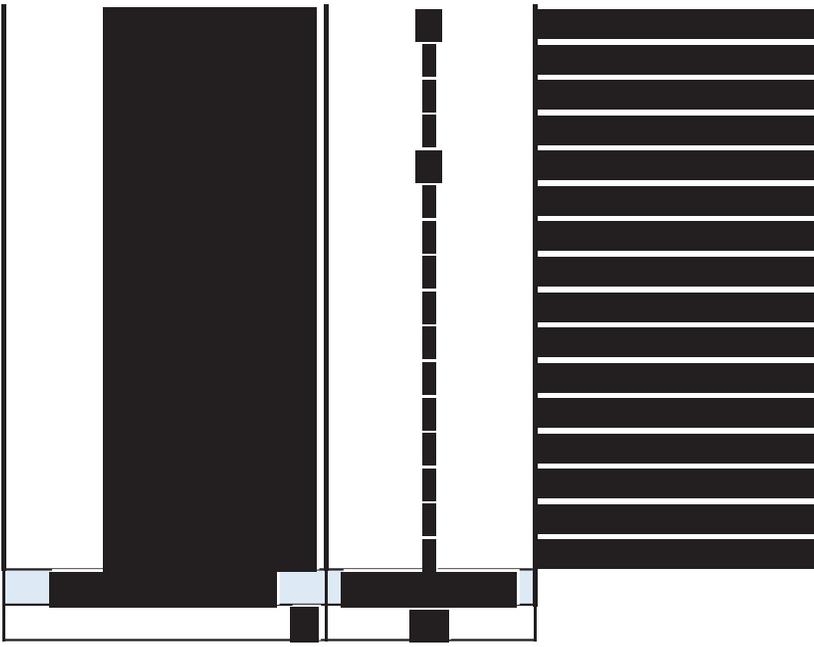




REDACTED - FOR PUBLIC INSPECTION

EXHIBIT B

**WISPER CLAIMED CENSUS BLOCK COVERAGE –
GRAFTON TELEPHONE COMPANY**



REDACTED - FOR PUBLIC INSPECTION

EXHIBIT C

PALMETTO ENGINEERING AND CONSULTING REPORT

REDACTED - FOR PUBLIC INSPECTION



April 28, 2016

**Grafton Telephone Company
Wabash Telephone Cooperative**

Form 477 Wireless Overlap Coverage Analysis

Prepared by:
Palmetto Engineering and Consulting, LLC.
WWW.PALMETTOENG.COM

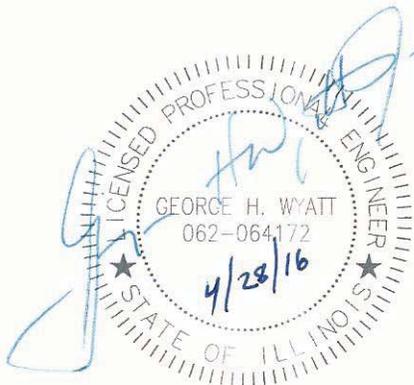


Table of Contents

1.0	Executive Summary	2
2.0	Introduction	2
3.0	Factors Affecting Serviceable Wireless Coverage at 10/1.....	2
4.0	Wisper Grafton Wireless Towers	3
5.0	Wisper Wabash Wireless Towers.....	4
6.0	Wisper Spectrum & Channel Sizing.....	4
7.0	Wisper 10/1 Service Claims	4
8.0	Wisper Maximum Subscriber Base	5
9.0	Conclusion.....	5
10.0	Appendix: Service Testing Results	5

1.0 Executive Summary

Palmetto Engineering & Consulting (PEC) reviewed and assessed the capabilities and capacity of the Wisper Internet Service within the service territories of Grafton Telephone Company (Grafton) & Wabash Telephone Cooperative (Wabash).

PEC notes that form 477 filings are very specific in their requirements, reflecting only current network capabilities and not future network augmentations or modifications. This assessment is of Wisper's network capability as of April, 2016, and may include additional network enhancements that were not in operation as of the reporting period.

Based upon PEC's testing and analysis, PEC concludes that Wisper Internet Service is categorically unable to provide the level of Internet service represented in their Form 477 reporting data as of June 30, 2015 in the respective service areas of Grafton and Wabash. As such, Wisper's representations of service coverage are implausible and their Form 477 provides a fundamentally inaccurate representation of 10/1 service availability.

2.0 Introduction

Wisper Internet is a wireless internet service provider (WISP) that provides fixed wireless service to portions of Southern Illinois and has claimed the ability to provide 10/1 service census blocks within both Grafton & Wabash service areas.

3.0 Factors Affecting Serviceable Wireless Coverage at 10/1

There are several physical characteristics that limit and restrict the serviceable coverage area and throughput of a wireless network.

1. **Level of Bandwidth Feeding the Tower:** – Customers will share available backhaul bandwidth, the upper limit of which will be defined by the level of broadband provisioned to the Tower.
 2. **The number of Sectors on a tower:** Each tower will have a series of radios "pointing" in a distinct direction which collectively creates a coverage area. Each sector is controlled by a radio or Access Point (AP) that has a finite/fixed ability to extend service to a customer at a given level of bandwidth.
 3. **Channel Bandwidth:** Each sector AP radio utilizes a specific Radio Frequency (RF) channel bandwidth at a specific frequency. The channel bandwidth options depend on the frequency band being utilized, the
-

amount of spectrum available, other users of the same frequency band, and other interference sources. The channel bandwidth will categorically limit the amount of throughput that can be achieved.

4. **Signal Strength:** The ability to establish and maintain a strong signal will define the ability of a customer to get service at any bandwidth level. The stronger the signal, the more bandwidth can be consistently delivered up to the theoretical sector bandwidth. The minimum serviceable signal that could provide 10/1 service to the sector is defined as -75dBm. At that signal level, any customers on the sector will be effectively sharing the 10/1 service. This would be similar to multiple subscribers sharing a single 10/1 DSL service. A low signal customer will categorically degrade the service of all customers connected to that sector. Locations with a higher negative value than -75dBm are not capable of obtaining 10/1 service from the sector.
5. **Customers Served and Bandwidth Used:** Each of the previous factors creates a finite level of network capacity to serve a potential geography and the customers or subscribers residing within it. Customer number on a given tower/access point, and the amount of bandwidth they subscribe to, will affect the ability to serve the scope of additional customers.

The above identified factors create a categorical limit to a fixed wireless provider's serviceable coverage potential, and the interplay between them can and will limit overall serviceable coverage.

As just one example, ample signal strength may be available at the customer location, but limitations in channel capacity or backhaul bandwidth will impose a categorical limitation to the number of customers capable of receiving service.

4.0 Wisper Grafton Wireless Towers

PEC has identified towers that Wisper operates in the service areas of Grafton Telephone Company & Wabash Telephone Cooperative. To identify these towers, PEC utilized test equipment to identify all operations in the unlicensed bands of 900 MHz, 2.4 GHz, and 5.8 GHz.

The following tower sites were identified within or near Grafton's service area with Wisper Internet equipment:

1. Dow – Only two sectors visible in service area
 2. Elsay Farm – Only two sectors visible in service area
 3. Joywood/Elsay – Appears to have two sectors, one pointed toward the service area.
-

The following tower sites were identified significantly outside Grafton's service area with Wisper Internet equipment, but do not provide a signal level strong enough for service to Grafton's service area:

1. Godfrey
2. Jerseyville
3. Portage
4. St. Charles

5.0 Wisper Wabash Wireless Towers

The following tower sites were identified within or near Wabash's service area with Wisper Internet equipment:

1. Johnsonville – Appears to be a 5 Ghz site with a single radio
2. Cinse – Single 2.4Ghz Omni site.

The following tower sites were identified significantly outside Wabash's service area with Wisper Internet equipment, but do not provide a signal level strong enough for service to Wabash's service area:

1. Wayne City

6.0 Wisper Spectrum & Channel Sizing

PEC has prepared a more fully developed capacity analysis of the Wisper Internet equipment in the Hamilton County Telephone Co-op challenge. In this capacity analysis, PEC notes the statements of Wisper's CTO on the maximum number of subscribers that can be supported:

Earlier in 2016, Ian Ellison, CTO of Wisper Internet said, "We have found that once we connected more than 20 subscribers on a single Access Point, things started to degrade, and that when there were more than 30 per access point, really started to fall apart. In the 2.4 GHz band our numbers trend lower than that, probably closer to 10 to 20 subscribers per sector." http://www.converge-tech.com/v/vspfiles/assets/pdfs/CS_Wisper_03142016a.pdf

7.0 Wisper 10/1 Service Claims

For a census block to be removed from ACAM consideration, an unsubsidized competitor must be able to serve at least one location in the census block at 10/1. Wisper claimed the ability to provide 10/1 service to the following census blocks and locations in Table 1:

Table 1 - Wisper 10/1 Census Block Claims

Service Area	Census Blocks	Locations
Grafton	58	679
Wabash	394	1702

8.0 Wisper Maximum Subscriber Base

With the short timeframe for challenging the 10/1 census block coverage, limited signal measurements were able to be gathered; however several tower locations and signal readings were obtained in both service areas.

In the Grafton service area, two towers are located outside the Grafton service area. As a result, only weak signals from two of the four sectors on one tower and one of two sectors on the second tower propagate to the service area. If five sectors are able to provide strong signals to the service area, potentially 100 customers could be connected based on Wisper’s maximum customer count/sector. However, nearly all of the signals are below the -75dBm threshold for obtaining service at any speed on Wisper’s network.

In the Wabash service area, two towers are located within the Wabash service area. The first appears to be operating at 5.8 Ghz only. One Access Point at 5.8 Ghz was all that was able to be identified from the first site. The second site is operating a single 2.4 Ghz omnidirectional AP. Due to the omnidirectional configuration, this site will incur additional noise and have a reduced coverage area. The two identified sectors/APs could provide service to 40 potential customers with strong signals; however most locations measured had either no signal or signals below the -75dBm threshold for obtaining service at any speed on Wisper’s network.

9.0 Conclusion

Based on the capacity limitations of Wisper Internet’s network, PEC concludes that Wisper’s network is categorically unable to provide the level of service that is claimed in Wisper’s Form 477, and that Wisper’s Form 477 is prima facie false and unusable for an exercise requiring an accurate depiction or understanding of 10/1 service availability offered by Wisper.

10.0 Appendix: Service Testing Results

Tables 2 & 3 show the locations where service levels were tested, the identified tower/access points, and the measured signal levels for the respective service areas:

REDACTED - FOR PUBLIC INSPECTION

Grafton Telephone Company
 Wabash Telephone Cooperative
 Form 477 Wireless Overlap Coverage Analysis

Table 2 - Grafton Signal Measurements

LAT/LONG	SIGNAL	SSID PRESENT	LOS/NLOS	FREQ/CHAN	LOCATION
39.02156, -90.38235	-86	WISPERZONE 9-35	NLOS	5.8/160	DOW
39.02156, -90.38235	-78	WISPERZONE 9-34W	NLOS	2.442/7	DOW
39.02130, -90.42614	-79	WISPERZONE 9-34W	NLOS	2.442/7	DOW
38.99954, -90.39178	-79	WISPERZONE 9-34W	NLOS	2.442/7	DOW
38.98350, -90.35461	-88	WISPERZONE 9-34S	NLOS	2.412/1	DOW
38.97051, -90.45140	-85	WISPERZONE 9-32W	NLOS	2.412/1	ELSAH FARM
38.99209, -90.41924	-86	WISPERZONE 9-32W	NLOS	2.412/1	ELSAH FARM
38.96968, -90.43790	-74	WISPERZONE 9-32W	NLOS	2.412/1	ELSAH FARM
38.97311, -90.43967	-86	WISPERZONE 9-32W	LOS	2.412/1	ELSAH FARM
38.99837, -90.44161	-89	WISPERZONE 9-22	NLOS	2.427/4	GODFREY
39.03087, -90.40185	None	N/A	NLOS	N/A	GRAFTON
38.96964, -90.43521	None	N/A	NLOS	N/A	GRAFTON
38.96872, -90.50648	None	N/A	NLOS	N/A	GRAFTON
38.59613, -90.20124	None	N/A	NLOS	N/A	GRAFTON
38.98726, -90.36997	None	N/A	NLOS	N/A	GRAFTON
39.02130, -90.42614	-88	WISPERZONE 9-12	NLOS	2.427/4	JERSEYVILLE
39.01791, -90.41019	-90	WISPERZONE 9-99S	NLOS	2.452/9	JERSEYVILLE
39.01791, -90.41019	-82	WISPERZONE 9-99W	NLOS	2.432/5	JERSEYVILLE
38.99952, -90.46082	-87	WISPERZONE 9-18	NLOS	2.457/10	JERSEYVILLE SW
38.97063, -90.36298	-33	WISPERZONE 19-77N	LOS	2.427/4	JOYWOOD/ELSAH
38.97063, -90.36298	-35	WISPERZONE 19-77S	LOS	2.442/7	JOYWOOD/ELSAH
38.97311, -90.43967	-87	WISPERZONE 19-50N	NLOS	2.427/4	PORTAGE
38.97311, -90.43967	-86	WISPERZONE 19-9N	LOS	2.427/4	ST. CHARLES

REDACTED - FOR PUBLIC INSPECTION

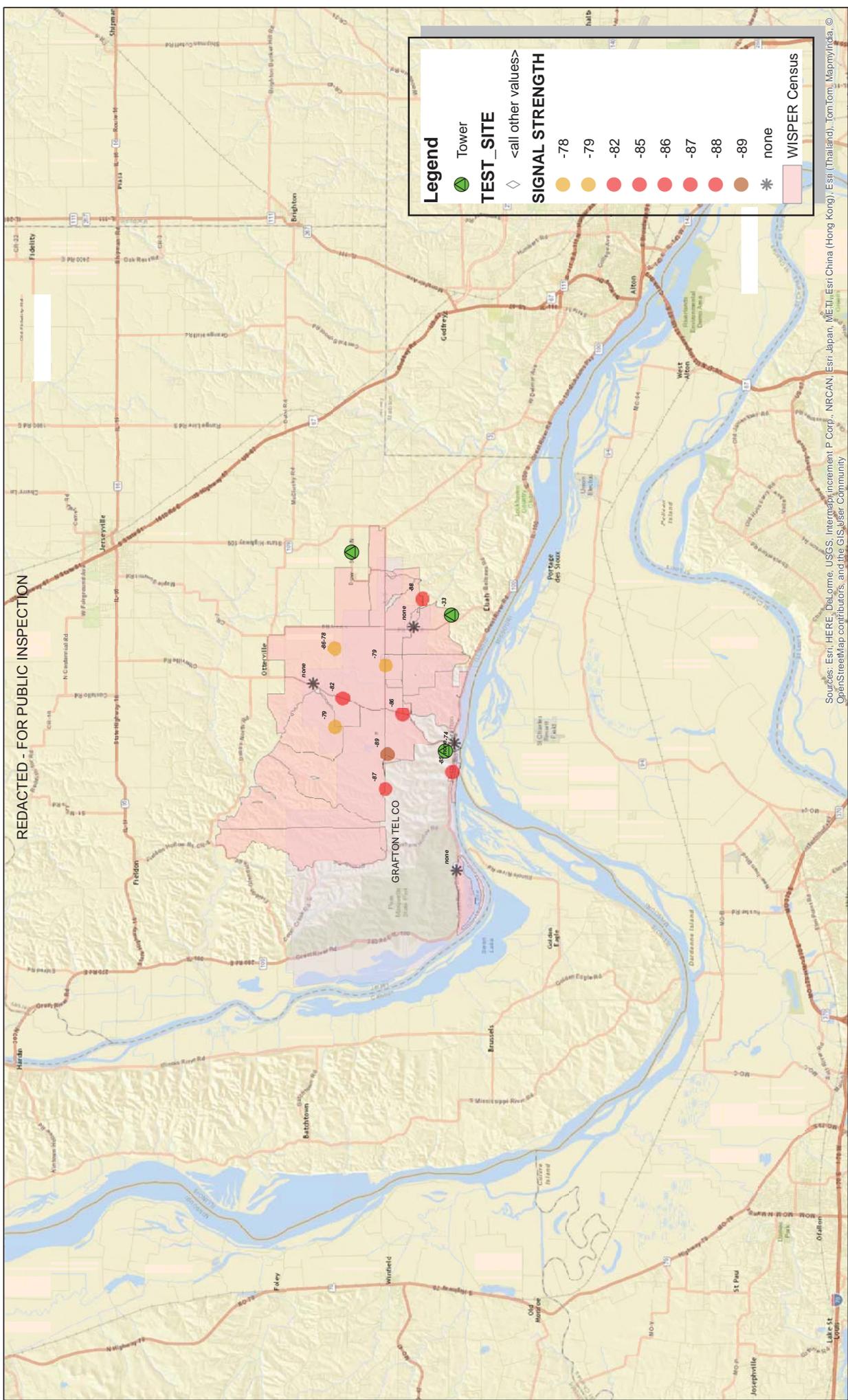
Grafton Telephone Company
 Wabash Telephone Cooperative
 Form 477 Wireless Overlap Coverage Analysis

Table 3 - Wabash Signal Measurements

LAT/LONG	SIGNAL	SSID PRESENT	LOS/NLOS	FREQ/CHAN	LOCATION
38.51678, -88.49159	-87	JVILLEAST	NLOS	5.835/167	JOHNSONVILLE
38.51627, -88.45339	-86	JVILLEAST	LOS	5.835/167	JOHNSONVILLE
38.53754, -88.43974	N/A	N/A	NLOS	N/A	JOHNSONVILLE
38.52354, -88.59462	N/A	N/A	NLOS	N/A	JOHNSONVILLE
38.52247, -88.54156	-78	JVILLEAST	LOS	5.835/167	JOHNSONVILLE
38.50624, -88.53674	-89	JVILLEAST		5.835/167	JOHNSONVILLE
38.55199, -88.43867	N/A	N/A	NLOS	N/A	CINSE
38.57331, -88.40186	N/A	N/A	NLOS	N/A	CINSE
38.55869, -88.36972	N/A	N/A	NLOS	N/A	CINSE
38.51521, -88.37659	-87	CISNEAP1	LOS	2.422/3	CINSE
38.51165, -88.32125	N/A	N/A	NLOS	N/A	CINSE
38.37215, -88.53229	-77	WCAP1-EAST	NLOS	2.427/4	WAYNE CITY
38.40890, -88.54030	-78	WCAP1-NORTH	LOS	2.442/7	WAYNE CITY
38.43915, -88.56678	-83	WCAP1-NORTH	LOS	2.442/7	WAYNE CITY
38.46156, -88.60133	-79	WCAP1-NORTH	NLOS	2.442/7	WAYNE CITY

The attached maps graphically shows the measured signal levels and technical parameters for the Wisper Internet service in each respective service area based on the data shown in Tables 2 & 3.

REDACTED - FOR PUBLIC INSPECTION



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, TomTom, Mapbox, OpenStreetMap contributors, and the GIS User Community



REDACTED - FOR PUBLIC INSPECTION
DECLARATION OF George H. Wyatt, Jr., P.E.

I, George H. Wyatt, Jr., P.E., under penalty of perjury, attest to the following:

1. I am an Electrical Engineer, employed by the firm of Palmetto Engineering and Consulting (PEC), and I have been practicing in the field of telecommunications for over 23 years. I serve as President and CEO of PEC, and I am one of the senior professional engineers in this practice.

2. I graduated from Clemson University in May 1982, with a Bachelor's of Science (BS) degree in Electrical and Computer Engineering.

3. Palmetto Engineering & Consulting has been retained by Grafton Telephone Company to review and assess the capabilities of the Wisper Internet Service ("Wisper") within the service territory of Grafton Telephone Company, as indicated by Wisper's Form 477 filing with the Federal Communications Commission in July 2015.

4. I confirm that the statements contained in this specific report prepared by PEC, other than those which are a matter of public record and need not be verified, accurately reflect the testing of speeds for broadband throughput from the Wisper system in the Grafton Telephone Company service area, analysis of data related to capabilities of the Ubiquiti AirMax N Nanostation M2 equipment, and calculations relative to the assertions made by Wisper in their 477 filing as to the ability to deliver throughput as declared.

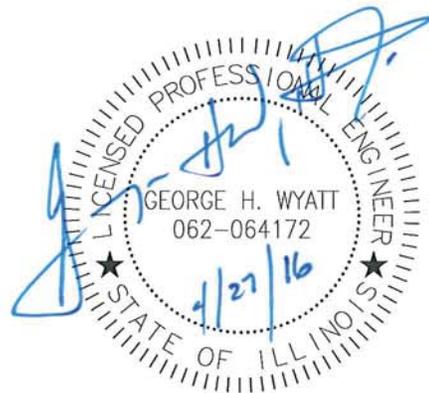
5. The above statements are true and correct to the best of my knowledge and belief.



George H. Wyatt, Jr.

Illinois License Number 062064172

Dated: April 27, 2016



REDACTED - FOR PUBLIC INSPECTION
DECLARATION OF George H. Wyatt, Jr., P.E.

I, George H. Wyatt, Jr., P.E., under penalty of perjury, attest to the following:

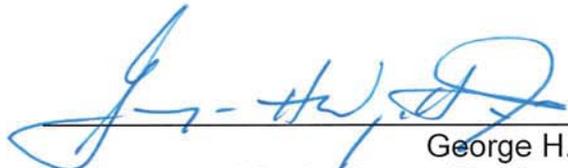
1. I am an Electrical Engineer, employed by the firm of Palmetto Engineering and Consulting (PEC), and I have been practicing in the field of telecommunications for over 23 years. I serve as President and CEO of PEC, and I am one of the senior professional engineers in this practice.

2. I graduated from Clemson University in May 1982, with a Bachelor's of Science (BS) degree in Electrical and Computer Engineering.

3. Palmetto Engineering & Consulting has been retained by Wabash Telephone Cooperative to review and assess the capabilities of the Wisper Internet Service ("Wisper") within the service territory of Wabash Telephone Cooperative, as indicated by Wisper's Form 477 filing with the Federal Communications Commission in July 2015.

4. I confirm that the statements contained in this specific report prepared by PEC, other than those which are a matter of public record and need not be verified, accurately reflect the testing of speeds for broadband throughput from the Wisper system in the Wabash Telephone Cooperative service area, analysis of data related to capabilities of the Ubiquiti AirMax N Nanostation M2 equipment, and calculations relative to the assertions made by Wisper in their 477 filing as to the ability to deliver throughput as declared.

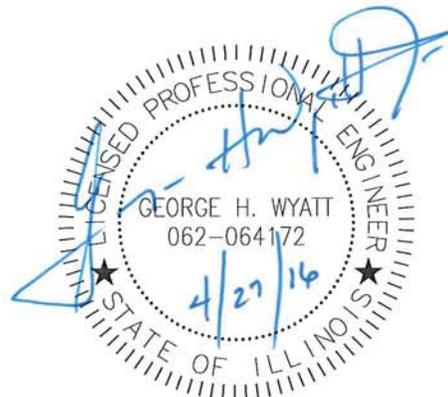
5. The above statements are true and correct to the best of my knowledge and belief.



George H. Wyatt, Jr.

Illinois License Number 062064172

Dated: April 27, 2016



REDACTED - FOR PUBLIC INSPECTION
DECLARATION OF Howard J. Gorter, P.E.

I, Howard J. Gorter, P.E., under penalty of perjury, declare the following:

1. I am a Telecommunications Electrical Engineer and employed by the firm of CT&T, Inc. which is a wholly owned subsidiary of Palmetto Engineering & Consulting ("PEC") as Vice President of Engineering Operations. I have been practicing in the field of telecommunications for over 13 years.
2. I graduated from Dordt College in May, 2002, with a Bachelor's of Science (BS) degree in Engineering and a Bachelor of Arts (BA) in Computer Science.
3. Palmetto Engineering & Consulting has been retained by Grafton Telephone Company to review and assess the capabilities of the Wisper Internet Service ("Wisper") within the service territory of Grafton Telephone Company.
4. I declare that the statements contained in foregoing report of PEC, other than those which are a matter of public record and need not be verified, accurately reflect the testing of signals and speeds for broadband throughput from the Wisper system in the Grafton Telephone Company service area, analysis of data related to capabilities of the equipment, and calculations relative to the assertions made by Wisper in their 477 filing as to the ability to deliver throughput as declared.
5. The above statement is true and correct to the best of my knowledge and belief.



Howard J. Gorter, P.E.

Dated: April 27, 2016

REDACTED - FOR PUBLIC INSPECTION
DECLARATION OF Howard J. Gorter, P.E.

I, Howard J. Gorter, P.E., under penalty of perjury, declare the following:

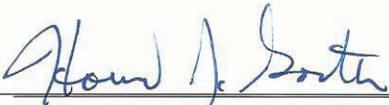
1. I am a Telecommunications Electrical Engineer and employed by the firm of CT&T, Inc. which is a wholly owned subsidiary of Palmetto Engineering & Consulting ("PEC") as Vice President of Engineering Operations. I have been practicing in the field of telecommunications for over 13 years.

2. I graduated from Dordt College in May, 2002, with a Bachelor's of Science (BS) degree in Engineering and a Bachelor of Arts (BA) in Computer Science.

3. Palmetto Engineering & Consulting has been retained by Wabash Telephone Cooperative to review and assess the capabilities of the Wisper Internet Service ("Wisper") within the service territory of Wabash Telephone Cooperative.

4. I declare that the statements contained in foregoing report of PEC, other than those which are a matter of public record and need not be verified, accurately reflect the testing of signals and speeds for broadband throughput from the Wisper system in the Wabash Telephone Cooperative service area, analysis of data related to capabilities of the equipment, and calculations relative to the assertions made by Wisper in their 477 filing as to the ability to deliver throughput as declared.

5. The above statement is true and correct to the best of my knowledge and belief.



Howard J. Gorter, P.E.

Dated: April 27, 2016