PIKE LEGAL

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January 24, 2006

VIA HAND DELIVERY

Kentucky Public Service Commission
Attn: Mr. Jeff Cline
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602-0615

RE: Application to Construct Wireless Communications Facility
Location: 4625 Ogden Colvin Circle, Kevil, Kentucky 42053
Applicant: Cellco Partnership, d/b/a Verizon Wireless
Site Name: Monkey's Eyebrow
Case No.: 2006-00035

Dear Mr. Cline:

On behalf of our client, Cellco Partnership d/b/a, d/b/a Verizon Wireless, we are submitting the enclosed original and five (5) copies of an Application for Certificate of Public Convenience and Necessity for Construction of a Wireless Communications Facility in an area of Ballard County outside the jurisdiction of a planning commission. We have also enclosed two (2) additional copies of this cover letter. Thank you for your assistance and do not hesitate to contact us if you have any comments or questions concerning this matter.

Sincerely,

David A. Pike
Attorney for Cellco Partnership
d/b/a Verizon Wireless

Enclosures

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF	)	
CELLCO PARTNERSHIP, D/B/A VERIZON WIRELESS	)	
FOR ISSUANCE OF A CERTIFICATE OF PUBLIC	)	CASE NO.:2006-00035
CONVENIENCE AND NECESSITY TO CONSTRUCT	)	
A WIRELESS COMMUNICATIONS FACILITY AT	)	
4625 OGDEN COLVIN CIRCLE	)	
KEVIL, KENTUCKY 42053	)	
IN THE WIRELESS COMMUNICATIONS LICENSE AREA	)	
IN THE COMMONWEALTH OF KENTUCKY	)	
IN THE COUNTY OF BALLARD	)	

SITE NAME: MONKEY'S EYEBROW

* * * * * * *

APPLICATION FOR
CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
FOR CONSTRUCTION OF A WIRELESS COMMUNICATIONS FACILITY

Cellco Partnership, a Delaware General Partnership d/b/a, d/b/a Verizon Wireless ("Applicant"), by counsel, pursuant to (i) KRS §§ 278.020, 278.040, 278.665 and the rules and regulations applicable thereto, and (ii) the Telecommunications Act of 1996, respectfully submits this Application requesting issuance of a Certificate of Public Convenience and Necessity ("CPCN") from the Kentucky Public Service Commission ("PSC") to construct, maintain, and operate a Wireless Communications Facility ("WCF") to serve the customers of the Applicant with wireless telecommunications services.

In support of this Application, Applicant respectfully provides and states the following information:

1. The complete name and address of the Applicant:

   Cellco Partnership, d/b/a Verizon Wireless
   180 Washington Valley Road

Bedminster, New Jersey, 07921

2. Applicant proposes construction of an antenna tower for cellular telecommunications services or personal communications services which is to be located in an area outside the jurisdiction of a planning commission, and Applicant submits the within application to the Commission for a certificate of public convenience and necessity pursuant to KRS §§ 278.020(1), 278.650, and 278.665.

3. Applicant entity is not a corporation and, therefore, the requirements of 807 KAR 5:001(8) and 807 KAR 5:001(9) that applicant submit a certified copy of articles of incorporation is inapplicable.

4. The proposed WCF will serve an area completely within the Applicant's Federal Communications Commission ("FCC") licensed service area in the Commonwealth of Kentucky. A copy of the Applicant's FCC license to provide wireless services is attached to this Application or described as part of **Exhibit A**.

5. The public convenience and necessity require the construction of the proposed WCF. The construction of the WCF will bring or improve the Applicant's services to an area currently not served or not adequately served by the Applicant by increasing coverage and thereby enhancing the public's access to innovative and competitive wireless telecommunications services, including digital services. The WCF will provide a necessary link in the Applicant's telecommunications network that is designed to meet the increasing demands for wireless services in Kentucky's wireless communications licensed area. The WCF is an integral link in the Applicant's network design that must be in place to provide adequate coverage to the service area.

6. To address the above-described service needs, Applicant proposes to construct a WCF at 4625 Ogden Colvin Circle, Kevil, KY 42053 (37° 10' 55.43" North latitude, 88° 56' 43.75" West longitude), in an area located entirely within the county referenced in the caption of this application. The property on which the WCF will be located is owned by Billy Wayne Owsley pursuant to a Deed recorded at Deed Drawer 24, Page 48799 in the office of the Ballard County Clerk. The proposed WCF will consist of a 300-foot tall tower. The WCF will also include concrete foundations to accommodate the placement of the Applicant's proprietary radio electronics equipment. The equipment will be housed in a prefabricated cabinet or shelter that will contain: (i) the transmitting and receiving equipment required to connect the WCF with the Applicant's users in Kentucky, (ii) telephone lines that will link the WCF with the Applicant's other facilities, (iii) battery back-up that will allow the Applicant to operate even after a loss of outside power, and (iv) all other necessary appurtenances. The Applicant's equipment cabinet or shelter will be approved for use in the Commonwealth of Kentucky by the relevant building inspector. The WCF compound will be fenced and all access gate(s) will be secured. A description of the manner in which the proposed WCF will be constructed is attached as **Exhibit B** and **Exhibit C**. Periodic inspections will be performed on the WCF in accordance with the applicable regulations or requirements of the PSC.

7. A list of competing utilities, corporations, or persons is attached as **Exhibit D,** along with a map showing the location of the proposed new construction as well as the location of any like facilities located anywhere within the map area, along with a map key showing the owner of such other facilities.

8. The site development plan and a vertical profile sketch of the WCF signed and sealed by a professional engineer registered in Kentucky depicting the tower height, as well as a proposed configuration for the antennas of the Applicant and future antenna mounts, has also been included as part of **Exhibit B**. Foundation design plans and a description of the standards according to which the tower was designed, and which have been signed and sealed by a professional engineer registered in Kentucky, are included as part of **Exhibit C**.

9. Applicant has considered the likely effects of the installation of the proposed WCF on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate services can be provided, and that there are no reasonably available opportunities to co-locate Applicant's antennas on an existing structure. Applicant has attempted to co-locate on suitable existing structures such as telecommunications towers or other suitable structures capable of supporting Applicant's facilities, and no other suitable or available co-location site was found to be located in the vicinity of the site.

10. FAA notice is required for the proposed construction, and lighting or marking requirements may be applicable to this facility. A copy of the Notice of Proposed Construction or Alteration filed by Applicant with the FAA is attached as **Exhibit E**. Upon receiving authorization from the FAA, the Applicant will forward a copy of the determination as a supplement to this Application proceeding.

11. A copy of the Kentucky Airport Zoning Commission ("KAZC") Application for the proposed WCF is attached as **Exhibit F**. Upon receiving authorization from the KAZC,

the Applicant will forward a copy of the determination as a supplement to this Application proceeding.

12. The WCF will be registered with the FCC pursuant to applicable federal requirements. Appropriate required FCC signage will be posted on the site upon receipt of the tower registration number.

13. A geotechnical engineering firm has performed soil boring(s) and subsequent geotechnical engineering studies at the WCF site. A copy of the geotechnical engineering report and evaluation, signed and sealed by a professional engineer registered in the Commonwealth of Kentucky, is attached as **Exhibit G**. The name and address of the geotechnical engineering firm and the professional engineer registered in the Commonwealth of Kentucky who supervised the examination of this WCF site are included as part of this exhibit.

14. Clear directions to the proposed WCF site from the County seat are included in **Exhibit B**. The name and telephone number of the preparer of **Exhibit B** is included as part of this exhibit.

15. Applicant, pursuant to a written agreement, has acquired the right to use the WCF site and associated property rights. A copy of the agreement or a redacted agreement recorded with the County Clerk is attached as **Exhibit H**. Also included as part of **Exhibit H** is the portion of the full agreement demonstrating that in the case of abandonment a method is provided to dismantle and remove the cellular antenna tower, including a timetable for removal.

16. Personnel directly responsible for the design and construction of the

proposed WCF are well qualified and experienced. FWT, Inc. ("Tower Manufacturer") performed the tower and foundation design. The tower and foundation drawings for the proposed tower submitted as part of **Exhibit C** bear the signature and stamp of Richard W. Hoffman, a professional engineer registered in the Commonwealth of Kentucky. All tower designs meet or exceed applicable laws and regulations.

17. The proposed facility will be constructed under the supervision of Applicant Cellco Partnership, and the identity and qualifications of each person directly responsible for design of the proposed tower are contained in **Exhibit C**.

18. Based on a review of Federal Emergency Management Agency Flood Insurance Rate Maps, the registered land surveyor has noted in **Exhibit B** that the proposed WCF is not located within any flood hazard area.

19. The possibility of high winds has been considered in the design of this tower. The tower has been designed and engineered by professional engineers using computer assistance and the same accepted codes and standards as are typically used for high-rise building construction. The tower design is in accordance with EIA/TIA-222-F standards.

20. The site development plan signed and sealed by a professional engineer registered in Kentucky was prepared by Woodrow W. Marcum, Jr. The site survey was performed by Frank L. Sellinger, II. Page C-1 of **Exhibit B** is drawn to a scale of no less than one (1) inch equals 200 feet, and identifies every owner of real estate within 500 feet of the proposed tower (according to the records maintained by the County Property Valuation Administrator). Every structure and every easement within 500 feet of the proposed tower or within 200 feet of the access road including intersection with the public

street system is illustrated in **Exhibit B**.

21. Applicant has notified every person who, according to the records of the County Property Valuation Administrator, owns property which is within 500 feet of the proposed tower or contiguous to the site property, by certified mail, return receipt requested, of the proposed construction. Each notified property owner has been given the docket number under which the proposed Application will be processed and has been informed of their right to request intervention. A list of the nearby property owners who received the notices, together with copies of the certified letters, are attached as **Exhibit I** and **Exhibit J**, respectively.

22. Applicant has notified the Ballard County Judge/Executive by certified mail, return receipt requested, of the proposed construction. This notice included the PSC docket number under which the application will be processed and informed the Ballard County Judge/Executive of his/her right to request intervention. A copy of this notice is attached as **Exhibit K**.

23. Two notice signs meeting the requirements prescribed by 807 KAR 5:063 measuring at least two (2) feet in height and four (4) feet in width with all required language in letters of required height have been posted in a visible location on the proposed site and on the nearest public road. Such signs shall remain posted for at least two (2) weeks after filing of the Application, and a copy of the posted text is attached as **Exhibit L**. Notice of the location of the proposed facility has also been published in a newspaper of general circulation in the county where the WCF is located.

24. The general area where the proposed facility is to be located is rural

farmland. There are no residential structures located within a 500-foot radius of the proposed tower location.

25. The process that was used by the Applicant's radio frequency engineers in selecting the site for the proposed WCF was consistent with the general process used for selecting all other existing and proposed WCF facilities within the proposed network design area. Applicant's radio frequency engineers have conducted studies and tests in order to develop a highly efficient network that is designed to serve the Federal Communications Commission licensed service area. The engineers determined an optimum area for the placement of the proposed facility in terms of elevation and location to provide the best quality service to customers in the service area. A radio frequency design search area prepared in reference to these radio frequency studies was considered by the Applicant when searching for sites for its antennas that would provide the coverage deemed necessary by the Applicant. Before beginning the site acquisition process, Applicant carefully evaluated locations within the search area for co-location opportunities on existing structures, and no suitable towers or other existing tall structures were found in the immediate area that would meet the technical requirements for the element of the telecommunications network to be provided by the proposed facility. A map of the area in which the tower is proposed to be located which is drawn to scale and clearly depicts the necessary search area within which the site should be located pursuant to radio frequency requirements is attached as **Exhibit M**.

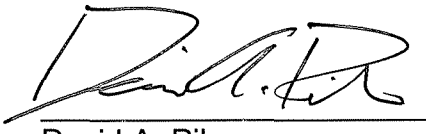
26. All Exhibits to this Application are hereby incorporated by reference as if fully set out as part of the Application.

27. All responses and requests associated with this Application may be directed to:

David A. Pike
Pike Legal Group, PLLC
1578 Highway 44 East, Suite 6
P. O. Box 369
Shepherdsville, KY 40165-0369
Telephone: (502) 955-4400
Telefax: (502) 543-4410

WHEREFORE, Applicant respectfully request that the PSC accept the foregoing Application for filing, and having met the requirements of KRS §§ 278.020(1), 278.650, and 278.665 and all applicable rules and regulations of the PSC, grant a Certificate of Public Convenience and Necessity to construct and operate the WCF at the location set forth herein.

Respectfully submitted,



David A. Pike
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Telefax: (502) 543-4410
Attorney for Cellco Partnership
d/b/a Verizon Wireless

LIST OF EXHIBITS

A - FCC License Documentation

B - Site Development Plan:

500' Vicinity Map
Legal Descriptions
Flood Plain Certification
Site Plan
Vertical Tower Profile

C - Tower and Foundation Design

D - Competing Utilities, Corporations, or Persons List and Map of Like Facilities in Vicinity

E - Application to FAA

F - Application to Kentucky Airport Zoning Commission

G - Geotechnical Report

H - Copy of Real Estate Agreement

I - Notification Listing

J - Copy of Property Owner Notification

K - Copy of County Judge/Executive Notice

L - Copy of Posted Notices

M - Copy of Radio Frequency Design Search Area

EXHIBIT A
FCC LICENSE DOCUMENTATION

Federal Communications Commission
Wireless Telecommunications Bureau

Radio Station Authorization (Reference Copy)

This is not an official FCC license. It is a record of public information contained in the FCC's licensing database on the date that this reference copy was generated. In cases where FCC rules require the presentation, posting, or display of an FCC license, this document may not be used in place of an official FCC license.

Licensee: Cellco Partnership

ATTN Regulatory
Cellco Partnership
One Verizon Place (MC: GA3B1REG)
Alpharetta, GA 30004-8511

FCC Registration Number (FRN): 0003290673	
Call Sign: KNKN568	**File Number:**
Radio Service: CL - Cellular	
Market Number CMA522	**Channel Block** A
Market Name Missouri 19 - Stoddard	**Sub-Market Designator** 0

Grant Date	Effective Date	Expiration Date	Five Yr Build-Out Date	Print Date
11/07/2000	08/27/2003	10/01/2010	03/25/1996	10/20/2005

Site Information

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)		Antenna Structure Registration No.
1	36-49-50.2 N	089-58-20.3 W				
Address			**City**	**County**	**State**	**Construction Deadline**
COUNTY ROAD 415, 1.5 MILES N OF HWY. 60			DEXTER	STODDARD	MO	

Antenna: 1 Azimuth (degrees from true north)	0°	45°	90°	135°	180°	225°	270°	315°
Antenna Height AAT (meters)	130.6	112.7	158.5	163.2	146.2	151.8	149.9	139.7
Transmitting ERP (watts)	144.000	144.000	144.000	144.000	144.000	144.000	144.000	144.000

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)		Antenna Structure Registration No.
2	36-45-46.2 N	090-26-03.4 W	130.0			
Address			**City**	**County**	**State**	**Construction Deadline**
2.33 MILES WEST OF			POPLAR BLUFF	BUTLER	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	141.6	150.0	167.9	165.3	169.8	148.3	150.6	122.7
Transmitting ERP (watts)	127.400	126.300	124.500	168.000	55.600	27.500	38.000	40.700

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**		**Antenna Structure Registration No.**
3	36-21-01.2 N	089-49-54.3 W				
Address			**City**	**County**	**State**	**Construction Deadline**
0.8 MILES WEST OF			WARDELL	PEMISCOT	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	54.7	52.9	53.1	53.9	57.3	57.8	56.2	55.0
Transmitting ERP (watts)	140.100	133.800	47.500	30.000	119.300	172.400	38.600	54.500
Antenna: 2 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	48.9	47.1	47.3	48.1	51.5	52.0	50.4	49.3
Transmitting ERP (watts)	113.900	189.000	32.100	60.900	116.500	158.600	70.200	27.300

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**		**Antenna Structure Registration No.**
4	36-12-53.2 N	090-03-50.3 W				
Address			**City**	**County**	**State**	**Construction Deadline**
East side of County Road 504 1/2 mile South of			Kennett	DUNKLIN	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	34.3	35.8	37.7	39.4	39.3	36.4	36.7	34.7
Transmitting ERP (watts)	32.300	227.300	267.600	206.100	265.600	181.800	19.200	10.300

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**		**Antenna Structure Registration No.**
5	37-12-06.2 N	089-38-07.3 W	480.0			
Address			**City**	**County**	**State**	**Construction Deadline**
0.4 miles east of Route M at Rockview, 1.6 miles NE of			Chaffee	SCOTT	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	97.6	107.6	96.4	89.0	85.7	114.4	102.3	90.5
Transmitting ERP (watts)	24.300	2.800	3.300	27.800	86.400	95.300	95.200	76.900

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**	**Antenna Structure Registration No.**

6	36-32-33.2 N	090-01-49.3 W	88.0		
Address		**City**	**County**	**State**	**Construction Deadline**
150' West of end of County Rd. 208 3.2 miles Southwest of		Malden	DUNKLIN	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	68.5	71.4	73.0	73.6	73.1	63.7	58.7	56.5
Transmitting ERP (watts)	163.000	160.000	162.000	110.000	49.000	38.000	49.000	116.000

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**	**Antenna Structure Registration No.**
7	36-57-05.2 N	089-04-53.2 W	137.2		
Address		**City**	**County**	**State**	**Construction Deadline**
Approx. 1 mile SSE of		Wickliffe	BALLARD	KY	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	69.8	44.2	51.5	60.0	45.7	78.6	77.7	79.6
Transmitting ERP (watts)	0.500	33.000	283.800	425.600	77.600	2.300	0.400	1.200

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**	**Antenna Structure Registration No.**
8	36-10-08.2 N	089-38-52.3 W	82.0		
Address		**City**	**County**	**State**	**Construction Deadline**
600' West of end of Route 363, 0.6 miles Southeast of		Caruthersville	PEMISCOT	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	43.1	43.3	43.5	44.0	45.6	44.0	44.2	41.9
Transmitting ERP (watts)	38.000	9.000	2.000	3.000	23.000	56.000	57.000	57.000

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**	**Antenna Structure Registration No.**
9	36-38-57.2 N	089-32-59.3 W	91.0		
Address		**City**	**County**	**State**	**Construction Deadline**
Southwest corner of intersection of US Hwy. 61/62 and, County Rd. 634, north of		New Madrid	NEW MADRID	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	60.2	63.7	65.0	65.4	69.0	67.4	68.2	66.8
Transmitting ERP (watts)	331.000	54.000	12.000	22.000	151.000	349.000	266.000	311.000

Location	**Latitude**	**Longitude**	**Ground Elevation**	**Structure Hgt to Tip**	**Antenna Structure**

			(meters)	(meters)		Registration No.
10	36-55-17.2 N	089-29-57.3 W				
Address			**City**	**County**	**State**	**Construction Deadline**
3.3 MILES NE OF			SIKESTON	SCOTT	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	64.0	65.0	65.0	66.0	69.0	67.0	65.0	65.0
Transmitting ERP (watts)	414.000	50.000	3.000	0.800	1.000	0.800	13.000	156.000
Antenna: 2 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	64.0	65.0	65.0	66.0	69.0	67.0	65.0	65.0
Transmitting ERP (watts)	0.700	16.000	196.000	372.000	36.000	2.000	0.700	0.800
Antenna: 3 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	64.0	65.0	65.0	66.0	69.0	67.0	65.0	65.0
Transmitting ERP (watts)	0.700	1.000	0.700	2.000	37.000	364.000	223.000	14.000

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**		**Antenna Structure Registration No.**
11	37-12-25.5 N	089-30-44.0 W	128.6	50.3		1200145
Address			**City**	**County**	**State**	**Construction Deadline**
County Road 312			Scott City	SCOTT	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	66.2	59.1	39.9	67.8	52.3	50.5	65.7	59.6
Transmitting ERP (watts)	21.800	5.200	16.200	80.900	97.700	88.900	100.000	84.700

Location	**Latitude**	**Longitude**	**Ground Elevation (meters)**	**Structure Hgt to Tip (meters)**		**Antenna Structure Registration No.**
12	36-45-47.0 N	090-26-05.2 W	122.8	143.2		1229586
Address			**City**	**County**	**State**	**Construction Deadline**
2579 Roxie Road			Poplar Bluff	BUTLER	MO	

Antenna: 1 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	133.2	142.3	160.4	157.8	162.4	140.3	122.9	115.5
Transmitting ERP (watts)	150.000	109.420	29.180	3.680	0.890	3.110	27.360	112.740
Antenna: 2 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**
Antenna Height AAT (meters)	133.2	142.3	160.4	157.8	162.4	140.3	122.9	115.5
Transmitting ERP (watts)	6.590	50.710	132.770	139.990	80.370	15.140	1.120	0.480
Antenna: 3 Azimuth (degrees from true north)	**0°**	**45°**	**90°**	**135°**	**180°**	**225°**	**270°**	**315°**

Antenna Height AAT (meters)	133.2	142.3	160.4	157.8	162.4	140.3	122.9	115.5
Transmitting ERP (watts)	16.500	0.310	0.300	10.170	68.980	31.590	28.500	70.890

Control Points

Control Point No.	Address	City	County	State	Telephone Number
1	1Verizon Wireless-NOC; 180 Washington Valley Rd.	Bedminster		NJ	(800)852-2671

Waivers/Conditions

None

Conditions
Pursuant to Section 309(h) of the Communications Act of 1934, as amended, 47 U.S.C. Section 309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. Section 310(d). This license is subject in terms to the right of use or control conferred by Section 706 of the Communications Act of 1934, as amended. See 47 U.S.C. Section 706.

FCC 601 - C
August 2002

CLOSE WINDOW

EXHIBIT B

SITE DEVELOPMENT PLAN:

500' VICINITY MAP
LEGAL DESCRIPTIONS
FLOOD PLAIN CERTIFICATION
SITE PLAN
VERTICAL TOWER PROFILE

MONKEY'S EYEBROW

CELLCO PARTNERSHIP

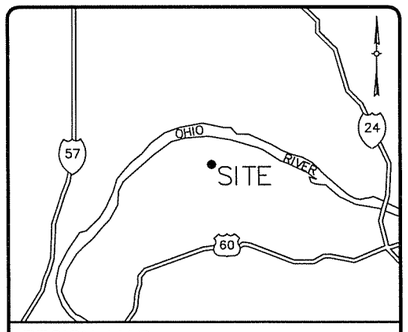
D/B/A VERIZON WIRELESS

4625 OGDEN COLVIN CIRCLE
BALLARD COUNTY
KEVIL, KY 42053

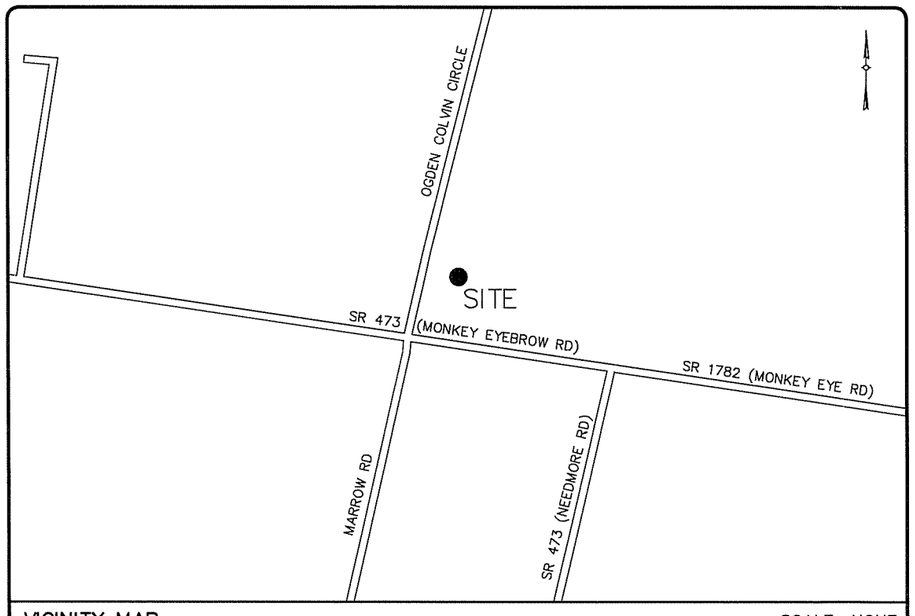
PROPOSED 285' SELF-SUPPORT TOWER
WITH MULTIPLE CARRIERS

UTILITY PROTECTION NOTE

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE UTILITY PROTECTION CENTER, PHONE 1-800-752-6007, WHICH WAS ESTABLISHED TO PROVIDE ACCURATE LOCATIONS OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE UTILITY PROTECTION CENTER 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ON THIS PROJECT. ALL NEW SERVICE AND GROUNDING TRENCHES PROVIDE A WARNING TAPE @ 12 INCHES ABOVE THE UNDERGROUND INSTALLATION (SEE NEC 300.5).



REGION MAP SCALE: NONE



VICINITY MAP SCALE: NONE

DIRECTIONS FROM COUNTY SEAT:
FROM WICKLIFFE, TAKE US 60 NORTHEAST TO SR 358 (BROADWAY). TURN LEFT ON SR 358. TRAVEL APPROXIMATELY 8 MILES TO SR 1782 AND TURN LEFT. TRAVEL APPROX. 0.9 MILES AND BEAR RIGHT ON SR 473. FOLLOW APPROX. 0.3 MILES AND TURN RIGHT ON OGDEN COLVIN CIRCLE. FOLLOW TO SITE LOCATED ON THE RIGHT.

DIRECTIONS FROM LOUISVILLE:
FROM LOUISVILLE, TAKE I-65 SOUTH TO WESTERN KENTUCKY PARKWAY. FOLLOW WEST TO I-24 W. TAKE I-24 W TO US 60 (EXIT 4). TURN LEFT FROM RAMP ONTO US 60. FOLLOW US 60 APPROXIMATELY 12 MILES AND MAKE A RIGHT ON SR 473. TRAVEL APPROX. 2.2 MILES AND BEAR RIGHT. CONTINUING ON SR 473, TRAVEL ANOTHER 4.9 MILES, THEN TURN RIGHT ON SR 358. FOLLOW SR 358 APPROX. 2.5 MILES AND TURN LEFT ON SR 1782. TRAVEL 0.9 MILES AND BEAR RIGHT ON SR 473. TRAVEL 0.3 MILES AND TURN RIGHT ON OGDEN COLVIN CIRCLE. FOLLOW TO SITE LOCATED ON THE RIGHT.

DIRECTIONS TO SITE

ARCHITECTURAL DESIGN ENGINEER

BTM ENGINEERING, INC.
3001 TAYLOR SPRINGS DRIVE
LOUISVILLE, KENTUCKY 40220
(502) 459-8402 PHONE
(502) 459-8427 FAX

SURVEYING

F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineering
PO Box 17546, 2313/2315 Crittenden Drive
Louisville, Kentucky 40217
Phone: (502) 635-5866, (502) 636-5111
Fax: (502) 636-5263

SITE NAME
MONKEY'S EYEBROW

SITE ADDRESS
4625 OGDEN COLVIN CIRCLE
KEVIL, KY 42053

SITE OWNER
BILLY OWSLEY
4625 OGDEN COLVIN CIRCLE
KEVIL, KY 42053

APPLICANT
VERIZON WIRELESS
2441 HOLLOWAY ROAD
LOUISVILLE, KY 40299
CONTACT: AMY HARPER
PHONE: (502) 552-0330

MAP NUMBER
53

PARCEL NUMBER
02

AREA OF PARCEL
LEASE AREA = 10,000 S.F.

SOURCE OF TITLE
DEED DRAWER 24, CARD 48799

PROJECT INFORMATION

SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET & SHEET INDEX
ZONING	
Z-3	SITE LAYOUT
Z-4	NORTH & SOUTH ELEVATION
Z-5	EAST & WEST ELEVATION

SHEET INDEX

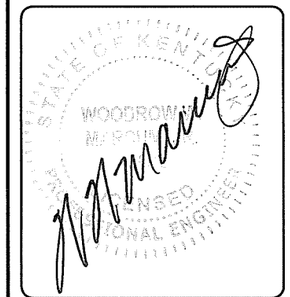
ELECTRIC COMPANY
JACKSON PURCHASE ELECTRIC
PHONE: 800--633--4044

TELEPHONE COMPANY
BALLARD RURAL TELEPHONE CO.
PHONE: 270-665-5186

UTILITY CONTACTS

CELLCO PARTNERSHIP

BTM ENGINEERING, INC.
3001 TAYLOR SPRINGS DRIVE, LOUISVILLE, KENTUCKY 40220
(502) 459-8402 PHONE (502) 459-8427 FAX



SITE NAME: MONKEY'S EYEBROW

SITE ADDRESS: 4625 OGDEN COLVIN CIRCLE KEVIL, KY 42053

AREA: LEASE AREA = 10,000 SQ. FT.

TOWER TYPE: SELF-SUPPORT

TOWER HEIGHT: 285'

LATITUDE: 37°10'55.43" N
LONGITUDE: 88°56'43.75" W

NO.	REVISION/ISSUE	DATE
1.	ZONING PLANS	3/7/05
2.	ISSUE FOR ZONING	10/18/05

TITLE: TITLE SHEET, SITE INFO AND SHEET INDEX

SHEET: T-1

J:\VERIZON\Monkeys Eyebrow\Zoning\MonkeysEB-T1.dwg, Model

SITE PLAN NOTES

1. THE PROPOSED DEVELOPMENT IS FOR A 285 FOOT SELF-SUPPORT TOWER AND MULTIPLE EQUIPMENT LOCATIONS. ITS LOCATION IS AT 4625 OGDEN COLVIN CIRCLE, KEVIL, KY. 42053

2. THE TOWER WILL BE ACCESSED BY A PROPOSED STABILIZED DRIVE FROM AN EXISTING ASPHALT ROADWAY (OGDEN COLVIN CIR.) A PUBLIC RIGHT OF WAY. THE ACCESS ROAD IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LOCAL HIGHWAY DEPARTMENT OF TRANSPORTATION STANDARDS. WATER, SANITARY SEWER, AND WASTE COLLECTIONS SERVICES ARE NOT REQUIRED FOR THE PROPOSED DEVELOPMENT.

3. CENTERLINE OF PROPOSED TOWER GEOGRAPHIC LOCATIONS:
   LATITUDE: 37° 10' 55.43" N, NORTHING: 1965173.1687
   LONGITUDE: 88° 56' 43.75" W, EASTING: 709687.4396

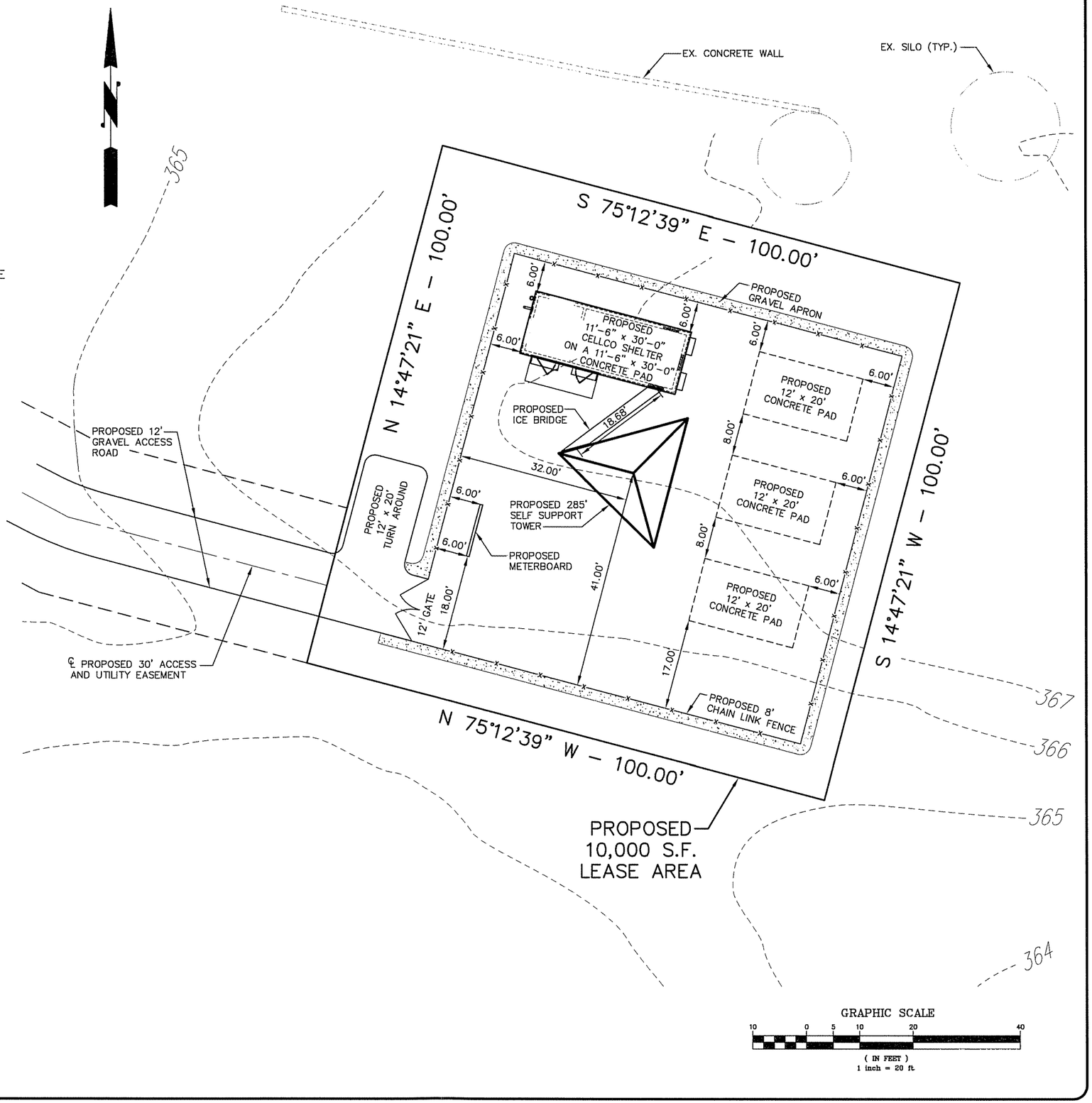
4. REMOVE ALL VEGETATION & CLEAN AREA IN LEASE AREA (WHERE REQUIRED).

5. FINISH GRADING TO PROVIDE EFFECTIVE DRAINAGE WITH A SLOPE OF NO LESS THAN ONE EIGHTH INCH (1/8") PER FOOT FLOWING AWAY FROM EQUIP. FOR A MIN. DISTANCE OF SIX FEET (6') IN ALL DIRECTIONS.

6. LOCATE ALL U.G. UTILITIES PRIOR TO ANY CONSTRUCTION.

7. COMPOUND FINISHED SURFACE TO BE FENCED

UNDERGROUND UTILITIES
CALL 2 WORKING DAYS
BEFORE YOU DIG
INDIANA 1-800-382-5544
KENTUCKY 1-800-752-6007
UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST CALL DIRECTLY



LEGEND

E	EXISTING OVERHEAD ELECTRIC
T	EXISTING OVERHEAD TELEPHONE
UE	EXISTING UNDERGROUND ELECTRIC
UT	EXISTING UNDERGROUND TELEPHONE
UE	PROPOSED UNDERGROUND ELECTRIC
UT	PROPOSED UNDERGROUND TELEPHONE
x	FENCE LINE
	POWER POLE
TELE PED	TELEPHONE PEDESTAL
	WATER VALVES
	FIRE HYDRANTS
	BOLLARDS

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 20 ft

CELLCO PARTNERSHIP

BTM ENGINEERING, INC.
3001 TAYLOR SPRINGS DRIVE, LOUISVILLE, KENTUCKY 40220
(502) 459-8402 PHONE (502) 459-8427 FAX

STATE OF KENTUCKY
WOODROW MATTINGLY
LICENSED PROFESSIONAL ENGINEER

SITE NAME: MONKEY'S EYEBROW

SITE ADDRESS: 4625 OGDEN COLVIN CIRCLE KEVIL, KY 42053

AREA: LEASE AREA = 10,000 SQ. FT.

TOWER TYPE: SELF-SUPPORT

TOWER HEIGHT: 285'

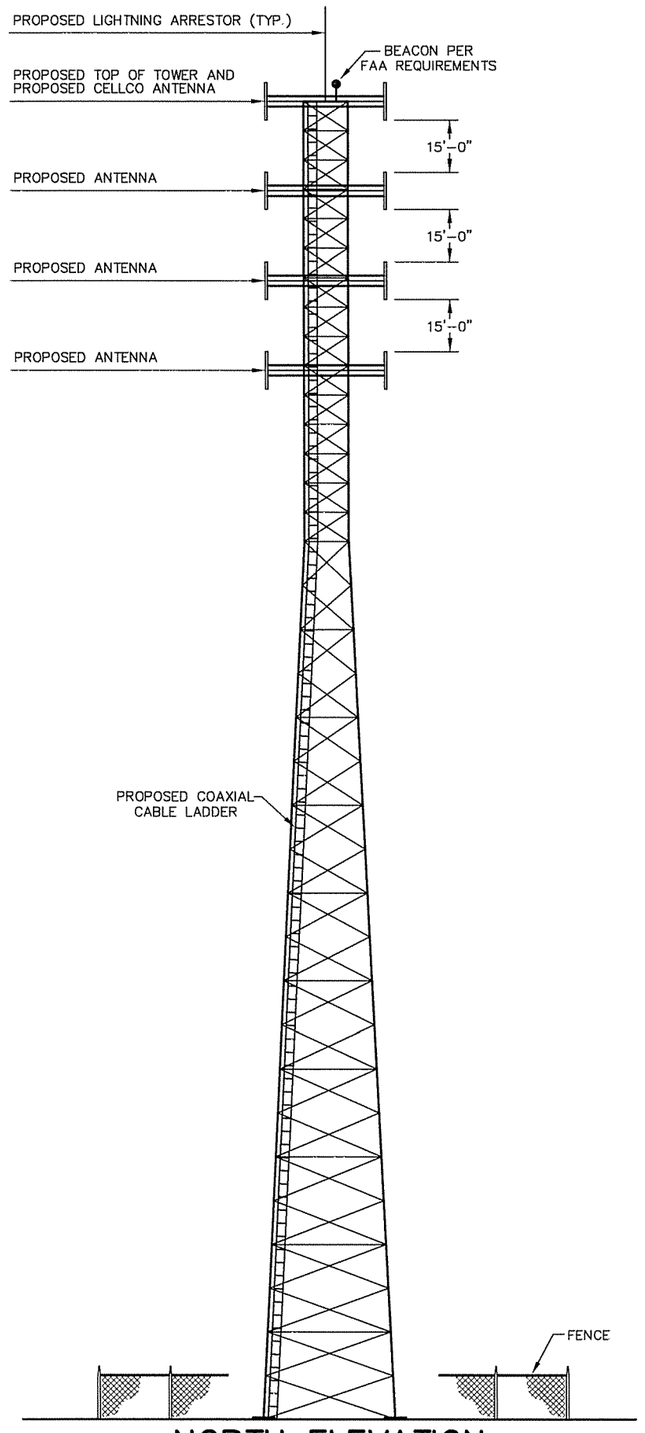
LATITUDE: 37°10'55.43" N
LONGITUDE: 88°56'43.75" W

NO.	REVISION/ISSUE	DATE
1.	ZONING PLANS	3/7/05
2.	ISSUE FOR ZONING	10/18/05

TITLE: SITE LAYOUT

SHEET: Z-3

J:\VERIZON\Monkeys Eyebrow\Zoning\MonkeysEB-Z3.dwg, Model

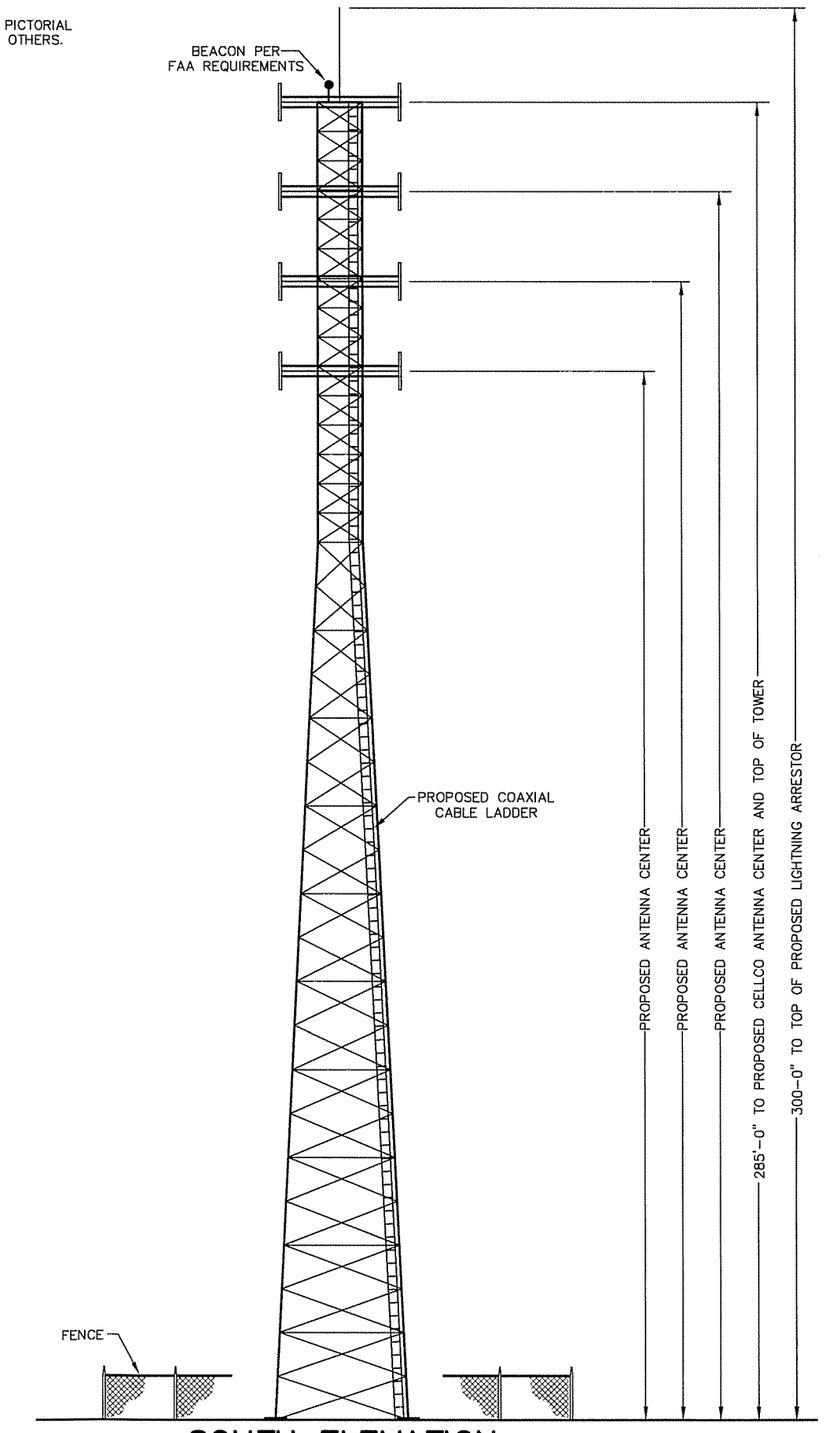


NORTH ELEVATION

NOT TO SCALE

NOTE:

THE ELEVATIONS SHOWN ON THIS SHEET ARE FOR PICTORIAL PURPOSES ONLY. THIS DESIGN WAS PROVIDED BY OTHERS. REFER TO TOWER PLANS FOR TOWER DESIGN.



SOUTH ELEVATION

NOT TO SCALE

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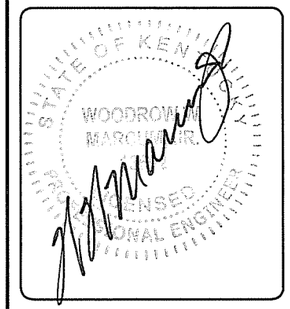
CELLCO PARTNERSHIP

BTM ENGINEERING, INC.
3001 TAYLOR SPRINGS DRIVE, LOUISVILLE, KENTUCKY 40220
(502) 459-8402 PHONE (502) 459-8427 FAX



SITE NAME: MONKEY'S EYEBROW

SITE ADDRESS: 4625 OGDEN COLVIN CIRCLE KEVIL, KY 42053

AREA: LEASE AREA = 10,000 SQ. FT.

TOWER TYPE: SELF-SUPPORT

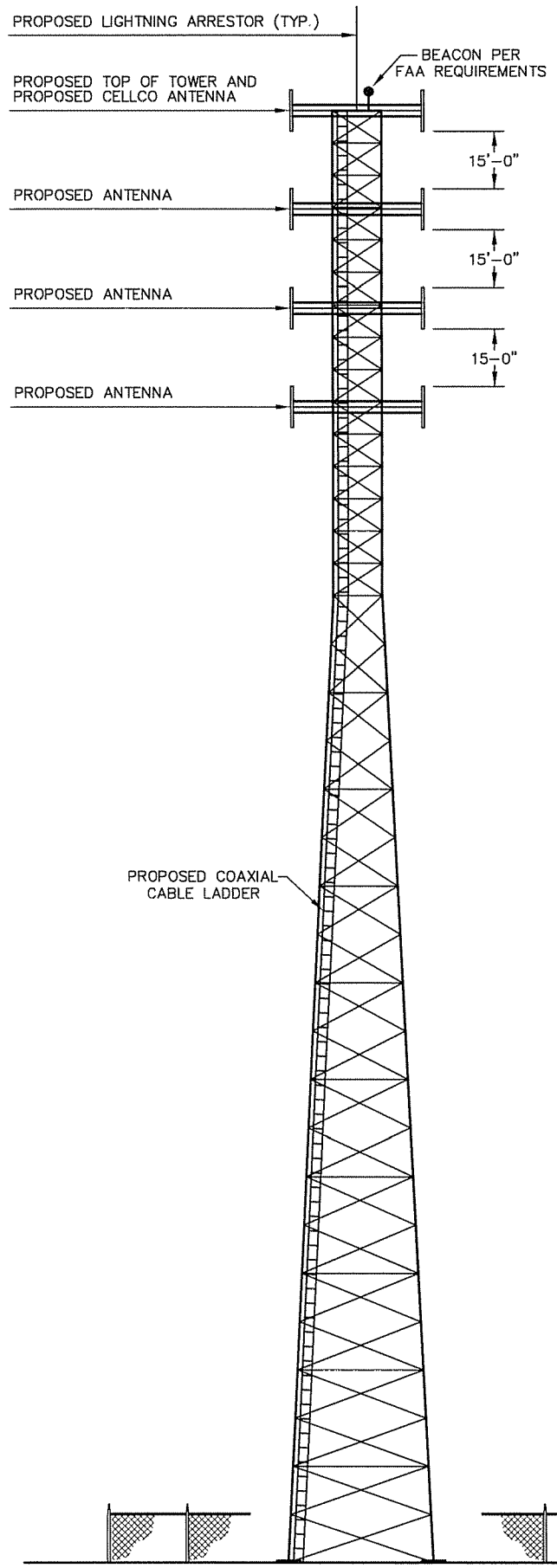
TOWER HEIGHT: 285'

LATITUDE: 37°10'55.43" N
LONGITUDE: 88°56'43.75" W

NO.	REVISION/ISSUE	DATE
1.	ZONING PLANS	3/7/05
2.	ISSUE FOR ZONING	10/18/05

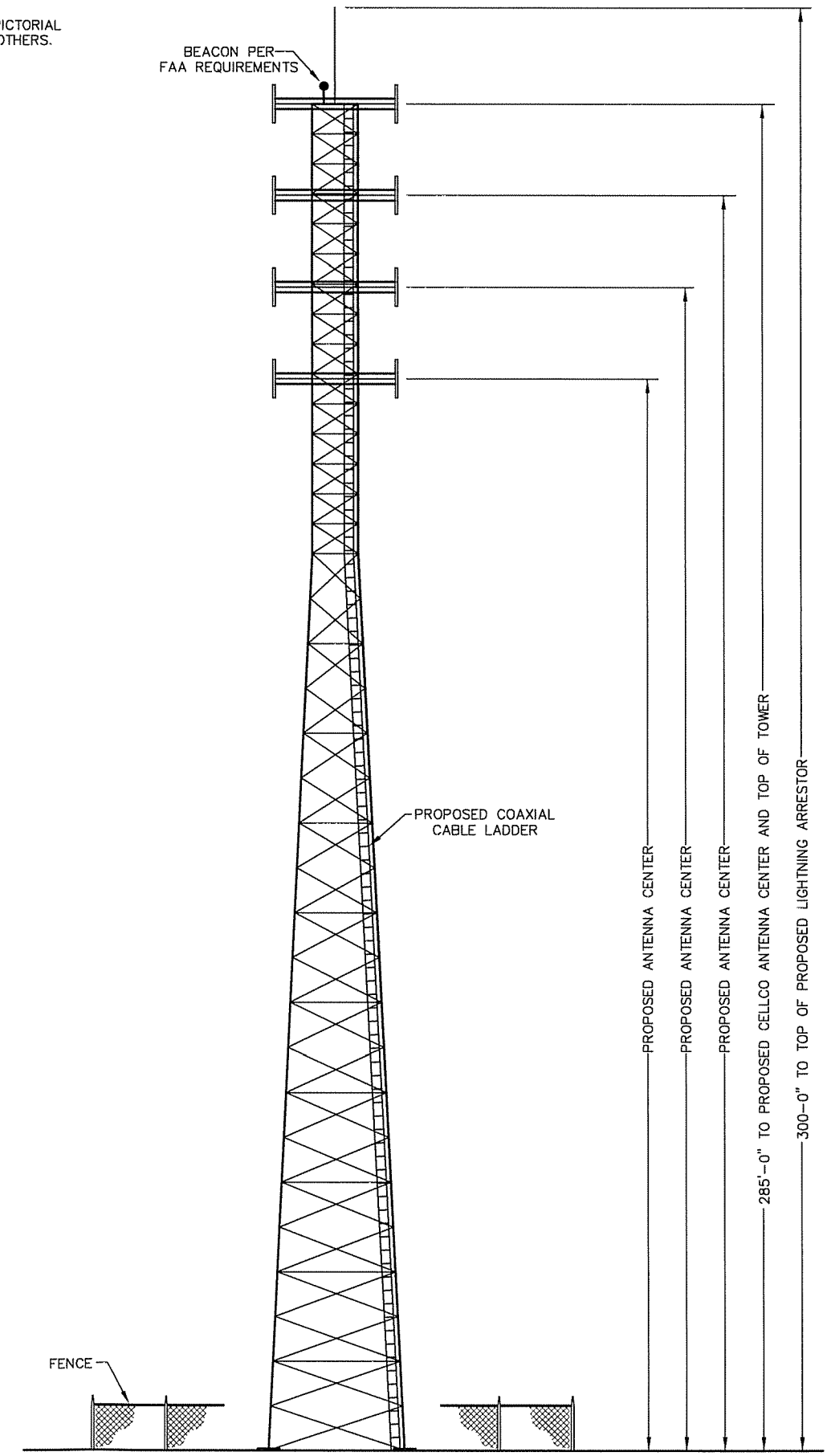
TITLE: NORTH / SOUTH ELEVATIONS

SHEET: Z-4



EAST ELEVATION
NOT TO SCALE

NOTE:
THE ELEVATIONS SHOWN ON THIS SHEET ARE FOR PICTORIAL PURPOSES ONLY. THIS DESIGN WAS PROVIDED BY OTHERS. REFER TO TOWER PLANS FOR TOWER DESIGN.



WEST ELEVATION
NOT TO SCALE

J:\VERIZON\Monkeys Eyebrow\Zoning\MonkeysEB-Z5.dwg, Model

CELLCO PARTNERSHIP

BTM ENGINEERING, INC.
3001 TAYLOR SPRINGS DRIVE, LOUISVILLE, KENTUCKY 40220
(502) 459-8402 PHONE (502) 459-8427 FAX

STATE OF KENTUCKY
WOODROW W. MATTINGLY, JR.
LICENSED PROFESSIONAL ENGINEER

SITE NAME: MONKEY'S EYEBROW

SITE ADDRESS: 4625 OGDEN COLVIN CIRCLE KEVIL, KY 42053

AREA: LEASE AREA = 10,000 SQ. FT.

TOWER TYPE: SELF-SUPPORT

TOWER HEIGHT: 285'

LATITUDE: 37°10'55.43" N
LONGITUDE: 88°56'43.75" W

NO.	REVISION/ISSUE	DATE
1.	ZONING PLANS	3/7/05
2.	ISSUE FOR ZONING	10/18/05

TITLE: EAST / WEST ELEVATIONS

SHEET: Z-5

SHEET 1

S1/1 – VICINITY AND 500' STRUCTURAL MAP

S1/2 – ABUTTING PROPERTY OWNERS

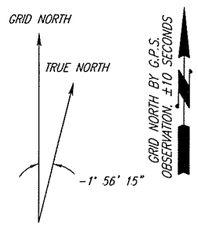
S1/3 – U.S.G.S. QUAD MAP

SHEET 2

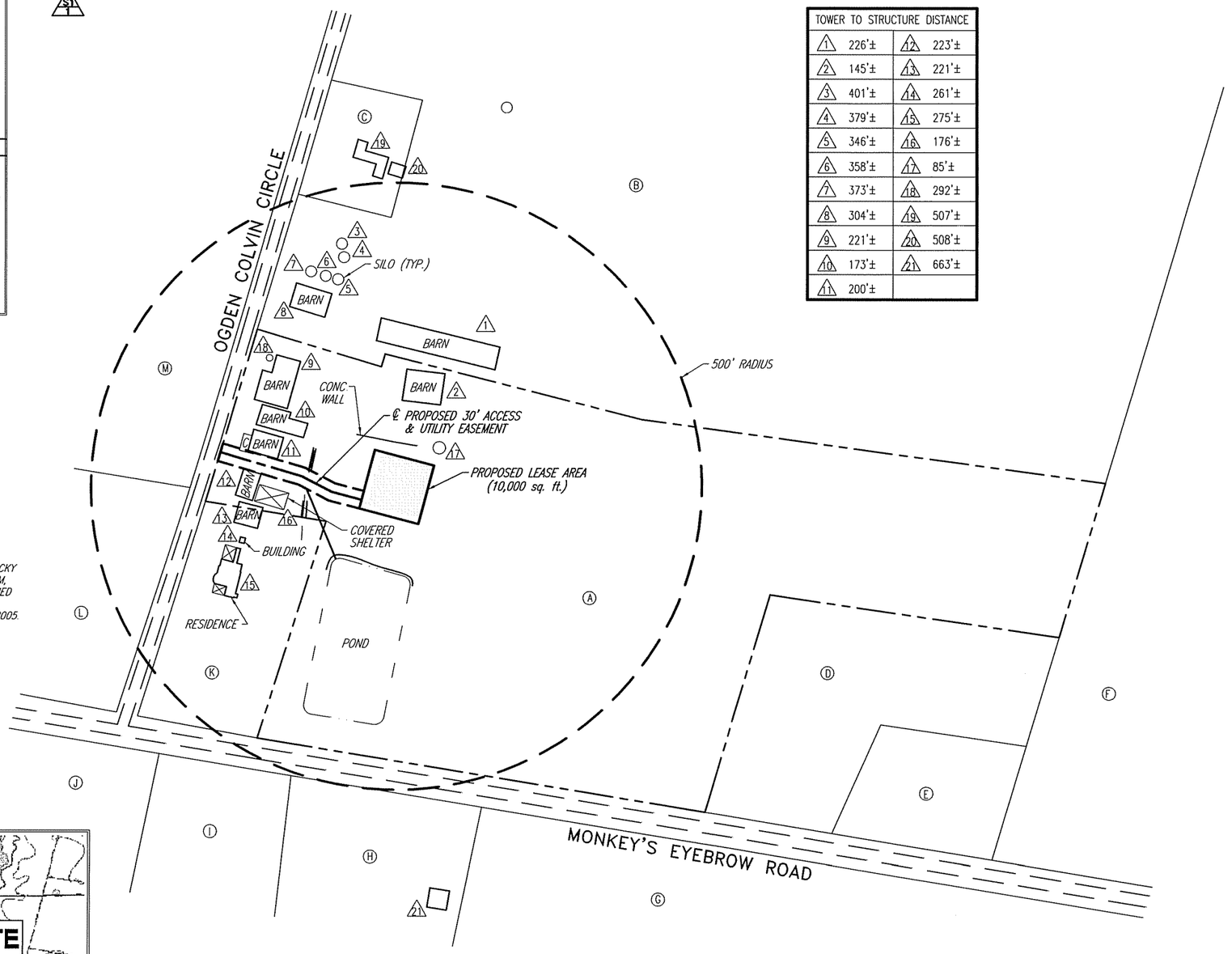
S2/1 – PROPOSED CELLCO PARTNERSHIP LEASE AREA

S2/2 – LEGAL DESCRIPTIONS

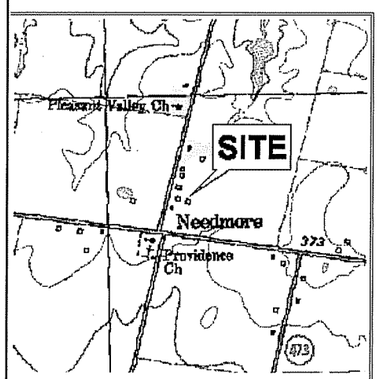
S2/3 – FLOOD ZONE DATA



NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON FEBRUARY 7, 2005.



TOWER TO STRUCTURE DISTANCE			
1	226'±	12	223'±
2	145'±	13	221'±
3	401'±	14	261'±
4	379'±	15	275'±
5	346'±	16	176'±
6	358'±	17	85'±
7	373'±	18	292'±
8	304'±	19	507'±
9	221'±	20	508'±
10	173'±	21	663'±
11	200'±		



S1/3 QUAD MAP
SCALE: 1"=2000'

U.S.G.S. 7 1/2 MINUTE QUAD MAP OF BANDANA, KY.

0' 200' 400'
(IN FEET)
SCALE: 1" = 200'

* ADJOINING LAND OWNERS LISTED ARE BASED ON PROPERTY VALUATION ADMINISTRATION ("PVA") RECORDS ISSUED BY A REPRESENTATIVE FROM BALLARD COUNTY, TO BE IN COMPLIANCE WITH ALL STATUTORY AND REGULATORY REQUIREMENTS BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION AND FOR TELECOMMUNICATION USE ONLY.

S1/2

Ⓐ MAP 53, LOT 02
OWSLEY, BILLY
4625 OGDEN COLVIN CIRCLE
KEVIL, KY. 42053
DEED DRAWER 24, CARD 48799
NO ZONING

Ⓑ MAP 53, LOT 02-03
BOLIN, NELWYN & ASLEIGH HARNED
4485 MURPHY ROAD
ONA, FL. 33865
DEED DRAWER 24, CARD 48452
NO ZONING

Ⓒ MAP 53, LOT 01
OWSLEY, BILLY
4625 OGDEN COLVIN CIRCLE
KEVIL, KY. 42053
DEED DRAWER 24, CARD 48799
NO ZONING

Ⓓ MAP 53, LOT 03
OWSLEY, KENNETH A. & SONDRA G.
4668 MONKEY'S EYEBROW ROAD
KEVIL, KY. 42053
DEED DRAWER 5, CARD 6187
NO ZONING

Ⓔ MAP 53, LOT 03
OWSLEY, KENNETH A. & SONDRA G.
4668 MONKEY'S EYEBROW ROAD
KEVIL, KY. 42053
DEED DRAWER 5, CARD 6187
NO ZONING

Ⓕ MAP 53, LOT 04
RANDOLPH, CLARA T.
919 SYCAMORE STREET
MURRAY, KY. 42071
NO DEED OF RECORD FOUND
NO ZONING

Ⓖ MAP 53, LOT 19
TILFORD, LOUISE L.
10815 OGDEN LANDING ROAD
KEVIL, KY. 42053
DEED DRAWER 68, CARD 425
NO ZONING

MAP 53, LOT 18
DOOM, JERRY & ROSE
97 MITCHELL LAKE DRIVE
BARLOW, KY. 42024
DEED DRAWER 74, CARD 20
NO ZONING

Ⓗ MAP 53, LOT 18-01
FONDAW, GREGORY
802 MARROW ROAD
KEVIL, KY. 42053
DEED DRAWER 9, CARD 14858
NO ZONING

Ⓘ MAP 43, LOT 21
FONDAW, GARTH & PATRICIA
NO ADDRESS LISTED
AT PVA
DEED DRAWER 2, CARD 694
NO ZONING

Ⓙ MAP 53, LOT 02-01
OWSLEY, KENNETH A. & SONDRA G.
4668 MONKEY'S EYEBROW ROAD
KEVIL, KY. 42053
DEED DRAWER 21, CARD 43884
NO ZONING

Ⓚ MAP 43, LOT 07-02
HALL, ROBERT
11510 U.S. HWY 60 WEST
KEVIL, KY. 42053
DEED DRAWER 14, CARD 27582
NO ZONING

Ⓛ MAP 43, LOT 07
FONDAW, GARY & NANCY
3920 WOODVILLE ROAD
KEVIL, KY. 42053
DEED DRAWER 71, CARD 440
NO ZONING

CELLCO PARTNERSHIP

F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Crittenden Drive Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263

SITE NUMBER:

SITE NAME:
MONKEY'S EYEBROW

SITE ADDRESS:
4625 OGDEN COLVIN CIRCLE
KEVIL, KY. 42053

PROPOSED CELLCO PARTNERSHIP LEASE AREA:
AREA = 10,000 sq. ft.

PROPERTY OWNER:
BILLY OWSLEY
4625 OGDEN COLVIN CIRCLE
KEVIL, KY. 42053

MAP NUMBER:
53

LOT NUMBER:
02

SOURCE OF TITLE:
DEED DRAWER 24, CARD 48799

DWG BY:	CHKD BY:	DATE:
JMW	FSII	02.16.05

FSTAN PROJECT NO.:
05-3141

SHEET 1 OF 2

REVISIONS:

C1

SHEET 1

S1/1 – VICINITY AND 500' STRUCTURAL MAP

S1/2 – ABUTTING PROPERTY OWNERS

S1/3 – U.S.G.S. QUAD MAP

SHEET 2

S2/1 – PROPOSED CELLCO PARTNERSHIP LEASE AREA

S2/2 – LEGAL DESCRIPTIONS

S2/3 – FLOOD ZONE DATA

COORDINATE POINT LOCATION

NAD 1983
LATITUDE: 37° 10' 55.43"
LONGITUDE: 88° 56' 43.75"
NAVD 1988
ELEVATION: 337'
STATE PLANE COORDINATE SOUTH ZONE (BLUE MARBLE GEOGRAPHIC CALCULATOR VERSION 3.0)
NORTHING: 1965173.1687
EASTING: 709687.4396

POWER POLE

UTILITY COMPANY: JACKSON PURCHASE ELECTRIC
IDENTIFICATION #: UNKNOWN

PROJECT BENCHMARK

NORTH: 1965069.8231
EAST: 709636.9492
ELEVATION: 367.00'
LOCATION: BEING A SET IPC LOCATED 68'± SOUTH & 11'± EAST OF THE SW CORNER OF THE PROP. LEASE AREA

SYMBOL LEGEND

- WOOD POWER POLE
- LIGHT POLE
- TELEPHONE PEDESTAL
- GUY ANCHOR
- MANHOLE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- F.P. FENCE POST
- SET #5 REBAR (UNLESS OTHERWISE NOTED)
- FOUND #5 REBAR (UNLESS OTHERWISE NOTED)

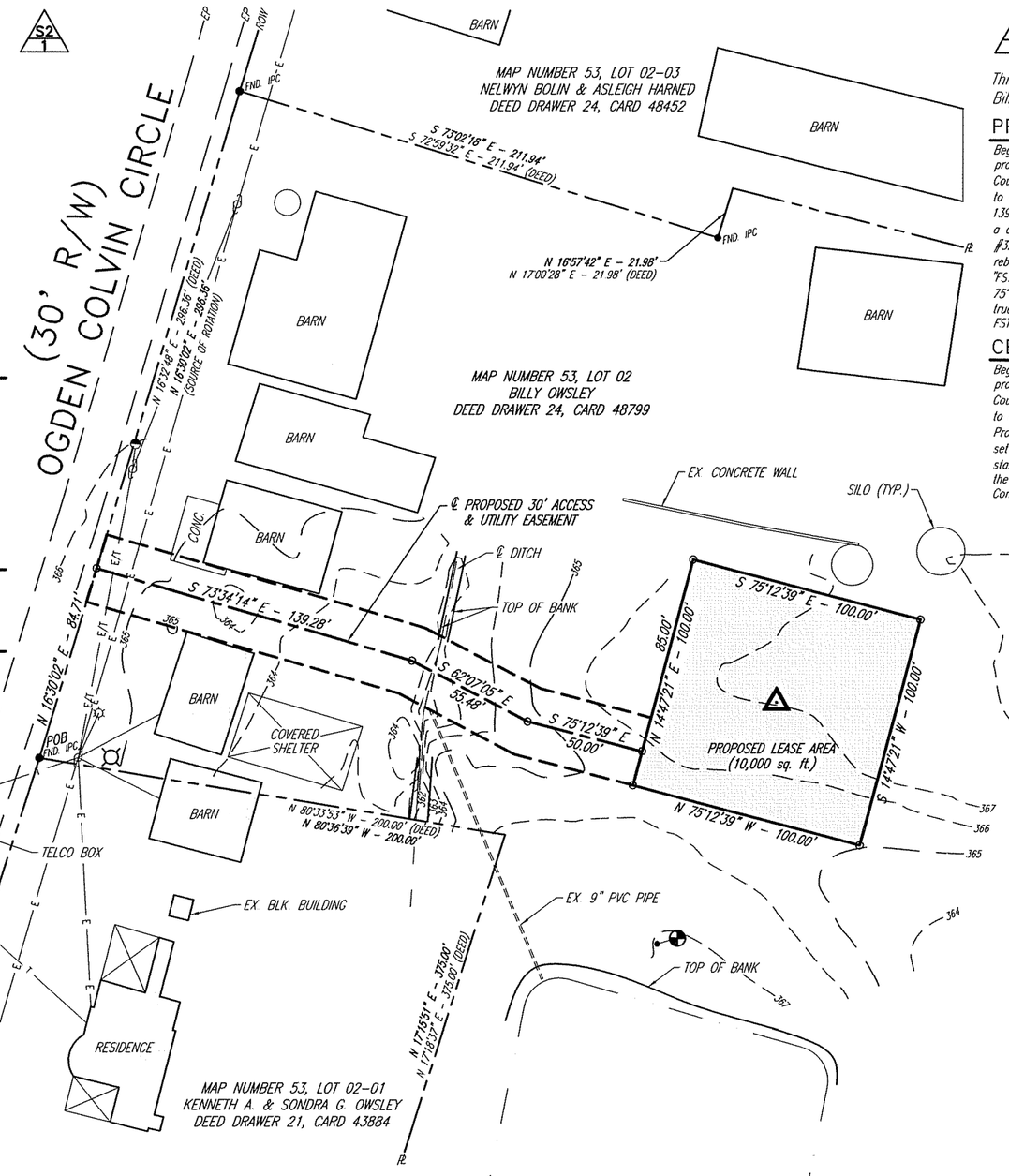
ABBREVIATIONS

EP	EDGE OF PAVEMENT
ROW	RIGHT OF WAY
℄	CENTERLINE
RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
PL	SUBJECT PROPERTY LINE
POB	POINT OF BEGINNING

LINE LEGEND

- —P—P—P— OVERHEAD ELECTRIC
- —G—G—G— UNDERGROUND GAS LINE
- —T—T— OVERHEAD TELEPHONE LINE
- —X—X—X— EXISTING FENCE
- SUBJECT PROPERTY BOUNDARY
- RIGHT OF WAY CENTERLINE

NOTE: SYMBOLS, ABBREVIATIONS, OR LINESTYLES DO NOT NECESSARILY APPEAR ON DRAWING(S). USE ONLY AS APPLICABLE



SURVEYORS NOTES

SOURCE OF BEARING IS A G.P.S. OBSERVATION ON FEBRUARY 7, 2005.

SOURCE OF ROTATION BASED ON THE WEST PROPERTY LINE OF THE OWSLEY PROPERTY HAVING THE BEARING OF N 16° 32' 48" E PER CAB. 1, DR. 18, CARD 39125, AND THE CALCULATED BEARING OF N 16° 32' 48" E

SITE SHOWN SUBJECT TO RIGHT OF WAYS AND EASEMENTS SHOWN HEREON OR NOT.

NO SEARCH OF PUBLIC RECORDS HAS BEEN PERFORMED BY THIS FIRM TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT TRACT.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

EXISTING CONTOURS ARE AT ONE FOOT INTERVALS.

S2/2

LEGAL DESCRIPTIONS:

This is a description for Cellco Partnership, of an area to be leased from the property of Billy Owsley, which is further described as follows:

PROPOSED CELLCO PARTNERSHIP LEASE AREA

Beginning at an existing IPC, located on the east right-of-way of Ogden Colvin Circle and the southwest corner of the property conveyed to Billy Owsley as recorded in Deed Drawer 24, Card 48799 in the Office of the Clerk of the County Court of Ballard County, Kentucky; thence following the west line of said Billy Owsley property N 16°30'02" E – 84.71' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence traversing said Billy Owsley property S 73°34'14" E – 139.28' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 62°07'05" E – 55.48' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 75°12'39" E – 50.00' to a set #5 rebar with a cap stamped "FSTAN #3282" and the TRUE POINT OF BEGINNING of the Proposed Lease Area; thence N 14°47'21" E – 85.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 75°12'39" E – 100.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 14°47'21" W – 100.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence N 75°12'39" W – 100.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence N 14°47'21" E – 15.00' to the true point of beginning containing 10,000 square feet as per survey by Frank L. Sellinger, II, PLS. No. 3282 with FSTAN Land Surveyors and Consulting Engineers dated February 21, 2005

CENTERLINE OF PROPOSED 30' ACCESS & UTILITY ESMT.

Beginning at an existing IPC, located on the east right-of-way of Ogden Colvin Circle and the southwest corner of the property conveyed to Billy Owsley as recorded in Deed Drawer 24, Card 48799 in the Office of the Clerk of the County Court of Ballard County, Kentucky; thence following the west line of said Billy Owsley property N 16°30'02" E – 84.71' to a set #5 rebar with a cap stamped "FSTAN #3282" and the TRUE POINT OF BEGINNING of the Centerline of the Proposed 30' Access and Utility Easement, thence traversing said Billy Owsley property S 73°34'14" E – 139.28' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 62°07'05" E – 55.48' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 75°12'39" E – 50.00' to a set #5 rebar with a cap stamped "FSTAN #3282" and the end of said easement as per survey by Frank L. Sellinger, II, PLS. No. 3282 with FSTAN Land Surveyors and Consulting Engineers dated February 21, 2005

UNDERGROUND UTILITIES

CALL 2 WORKING DAYS
BEFORE YOU DIG
INDIANA 1-800-382-5544
KENTUCKY 1-800-752-6007
UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST CALL DIRECTLY

The utility information shown on this plat, prepared by FSTAN was obtained from existing records and or by field locations. It is the contractor's responsibility to verify their existence and location, and to contact the appropriate utility company for field locations.

NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON FEBRUARY 7, 2005.

LAND SURVEYOR'S CERTIFICATE

STATE OF KENTUCKY
FRANK L. SELLINGER #3282
LICENSED PROFESSIONAL LAND SURVEYOR

TYPE "A" SURVEY: UNADJUSTED TRAVERSE CLOSURE BETTER THAN 1 IN 24,500.

TO ALL PARTIES INTERESTED IN TITLE TO PREMISES SURVEYED
I hereby certify that this plat and survey were made under my supervision, and that the angular and linear measurements, as witnessed by monuments shown hereon, are true and correct to the best of my knowledge and belief.
This survey and plat meets or exceeds the minimum standards of the governing authorities.
This property is subject to any recorded easements or right of ways not shown hereon.

2-24-05
Frank L. Sellinger, II Ky. Reg. No. 3282

"CELLULAR COMMUNICATION TOWER SITE SURVEY"
REFERENCED AS "EXHIBIT B"

OWNER APPROVAL: _____ DATE: _____
CELLCO PARTNERSHIP APPROVAL: _____ DATE: _____

S2/3

I HAVE REVIEWED THE FLOOD INSURANCE RATE MAPS (FIRM) MAP NO. 210268 0050 B, DATED 09-29-89 AND THE PROPOSED CELLCO PARTNERSHIP LEASE AREA DOES NOT APPEAR TO BE IN A FLOOD PRONE AREA.
THE PROPOSED CELLCO PARTNERSHIP LEASE AREA IS LOCATED IN ZONE X.

CELLCO PARTNERSHIP

F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Crittenden Drive
Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263

SITE NUMBER:

SITE NAME:
MONKEY'S EYEBROW

SITE ADDRESS:
4625 OGDEN COLVIN CIRCLE
KEVIL, KY. 42053

PROPOSED CELLCO PARTNERSHIP LEASE AREA:
AREA = 10,000 sq. ft.

PROPERTY OWNER:
BILLY OWSLEY
4625 OGDEN COLVIN CIRCLE
KEVIL, KY. 42053

MAP NUMBER:
53

LOT NUMBER:
02

SOURCE OF TITLE:
DEED DRAWER 24, CARD 48799

DWG BY:	CHKD BY:	DATE:
JMW	FSII	02.16.05

FSTAN PROJECT NO.:
05-3141

SHEET 2 OF 2

REVISIONS:

C2

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 1500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com

PJF #01905-029

FWT, Inc.
P.O. BOX 8597 FORT WORTH, TX 76124-0597
(817) 255-3060 FAX (817) 255-8656

Customer: VERIZON WIRELESS
Site: MONKEY'S EYEBROW, KY
Job # J050420002

Tower Height 285 FT.
Design No. S05-0463 Date November 06, 2005
Revision No. ____ Date ____
Page 1 of 3 Design By: TW Chk'd By: CMM

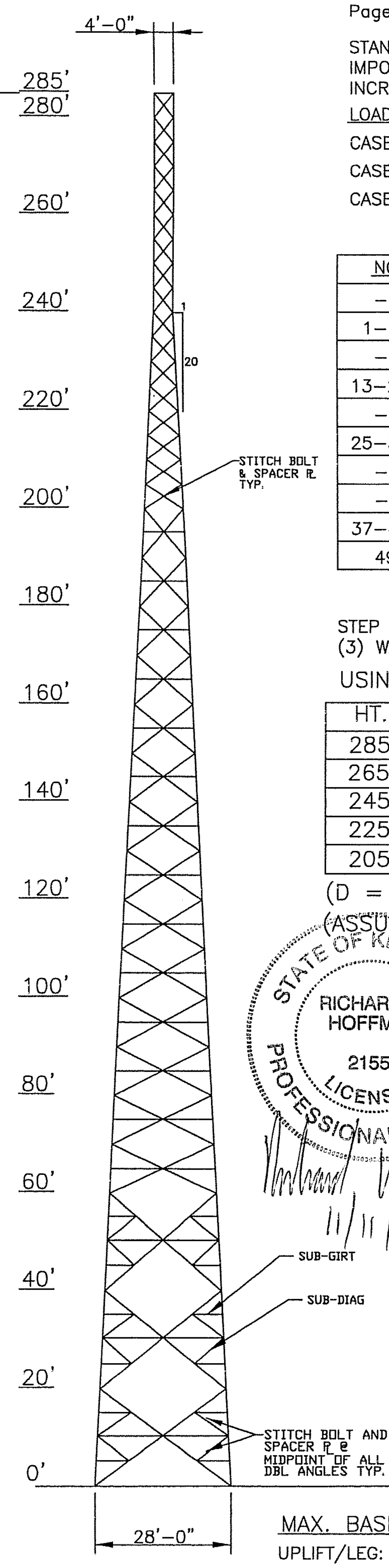
STANDARD -EIA/TIA-222-F
IMPORTANCE FACTOR = 1.0
INCREASE IN ALLOWABLE STRESSES = 33.3%

LOAD CASES:
CASE 1-BASIC WIND= 75.0 MPH, NO ICE
CASE 2-WIND= 65.0 MPH, 1/2" ICE
CASE 3-OPERATIONAL WIND= 50.0 MPH, NO ICE

ASTM		Section 1 (top)	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9	Section 10	Section 11	Section 12	Section 13	Section 14	Section 15 (bottom)
50 KSI	LEGS ("ø)	2	2	2 1/2	2 3/4	3	3	3 1/4	3 1/4	3 1/2	3 1/2	3 3/4	3 3/4	4	4	4
A36	DIAGONALS	Y	Y	Y	Y	Y	C	C	C	D	D	E	CC	CC	CC	CC
A36	GIRTS	B	N/R	N/R	N/R	N/R	B	B	B	C	C	D	D	BB	BB	CC
A36	INT BRACING	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	D	D	D	F
A36	SUB DIAG	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	C	D	D
A36	SUB GIRT	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	B	C	C
A325	DIAG BOLTS ("ø)	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8	2-5/8
A325	RDNT BOLTS ("ø)	1-5/8	N/R	N/R	N/R	N/R	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8	1-5/8
A325	SPLICE BOLTS ("ø)		4-5/8	4-5/8	6-3/4	6-3/4	6-7/8	6-7/8	6-1	6-1	6-1	6-1	6-1 1/8	6-1 1/8	6-1 1/4	6-1 1/4
A36	ANCHOR BOLTS ("ø)	6-1 3/4ø x 5'- 6" TOTAL ANCHOR BOLT LENGTH														

NOTE: DOUBLE LETTERS SIGNIFY BACK TO BACK ANGLES.

SSTDRAW 7.2.1



ANTENNA LIST

NO.	EL	ANTENNA	AZ	COAX
–	TOP	Lightning Rod	–	–
1-12	TOP	12-SC 9014-DIN	–	(12)-LDF7
–	TOP	AM110-P-14	–	–
13-24	265'	12-SC 9014-DIN	–	(12)-LDF7
–	265'	AM110-P-14	–	–
25-36	245'	12-SC 9014-DIN	–	(12)-LDF7
–	245'	AM110-P-14	–	–
–	225'	AM110-P-14	–	–
37-48	225'	12-SC 9014-DIN	–	(12)-LDF7
49	205'	8'ø STD-NO RADOME	0°	(1)-EW220

LINEAR APPURTENANCES

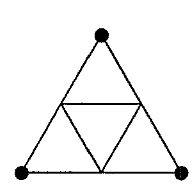
STEP BOLTS ON ONE LEG
(3) WAVEGUIDE LADDERS: (10'-285', 10'-285', 10'-285')

USING STACKABLE HANGERS AS FOLLOWS:

HT.	FACE 1	FACE 2	FACE 3	TOTAL
285'	4	4	4	12
265'	4D	4D	4D	12
245'	4D	4D	4D	12
225'	4D	4D	4D	12
205'	1	–	–	1

(D = DOUBLE STACKED)
(ASSUMED STACKED CABLES EXCEPT TOP CARRIER)

STATE OF KENTUCKY
RICHARD W. HOFFMAN
21551
LICENSED
PROFESSIONAL ENGINEER
11/11/05



INTERIOR BRACING
(1) 5/8"ø BOLT EA END
(EL 10'-0" TO 75'-0")

MEMBER TABLE	
Y	L1 3/4 X 1 3/4 X 3/16
B	L2 X 2 X 3/16
C	L2 1/2 X 2 1/2 X 3/16
D	L3 X 3 X 3/16
E	L3 X 3 X 1/4
F	L3 1/2 X 3 1/2 X 1/4

MAX. BASE REACTIONS (UNFACTORED)

UPLIFT/LEG: 311.9 KIPS. O.T. MOMENT: 8481.4 FT-KIPS.
COMP./LEG: 374.4 KIPS. MAX. DOWNLOAD: 102.7 KIPS.
HORIZ./LEG: 32.4 KIPS. TOTAL SHEAR: 52.2 KIPS.

EST.WEIGHT: 42.4 KIPS (No SPL or Gussets)

FWT
5750 EAST I20 FORT WORTH, TEXAS 76119
PH: (817) 255-3060 FAX: (817) 255-2957

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 1500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com

Tower 285 FT SELF SUPPORT

Location MONKEY'S EYEBROW, KENTUCKY

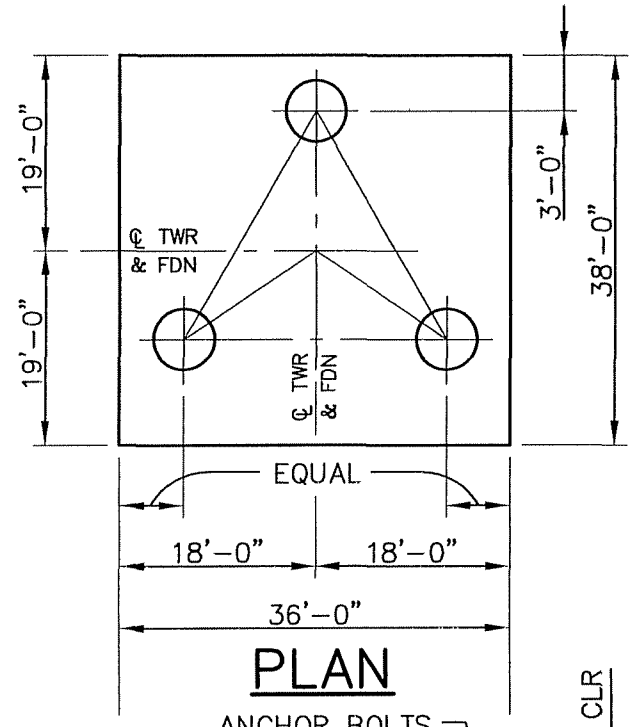
Design 75 MPH/65 MPH + 1/2" RADIAL ICE
According to ANSI/EIA 222-F 1996

Page 2 Of 3

By CMM Date 11-11-2005

Job No. 1905-029

Revision No. Date



PLAN

NOTES:

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF AT LEAST 3000 PSI AT 28 DAYS.

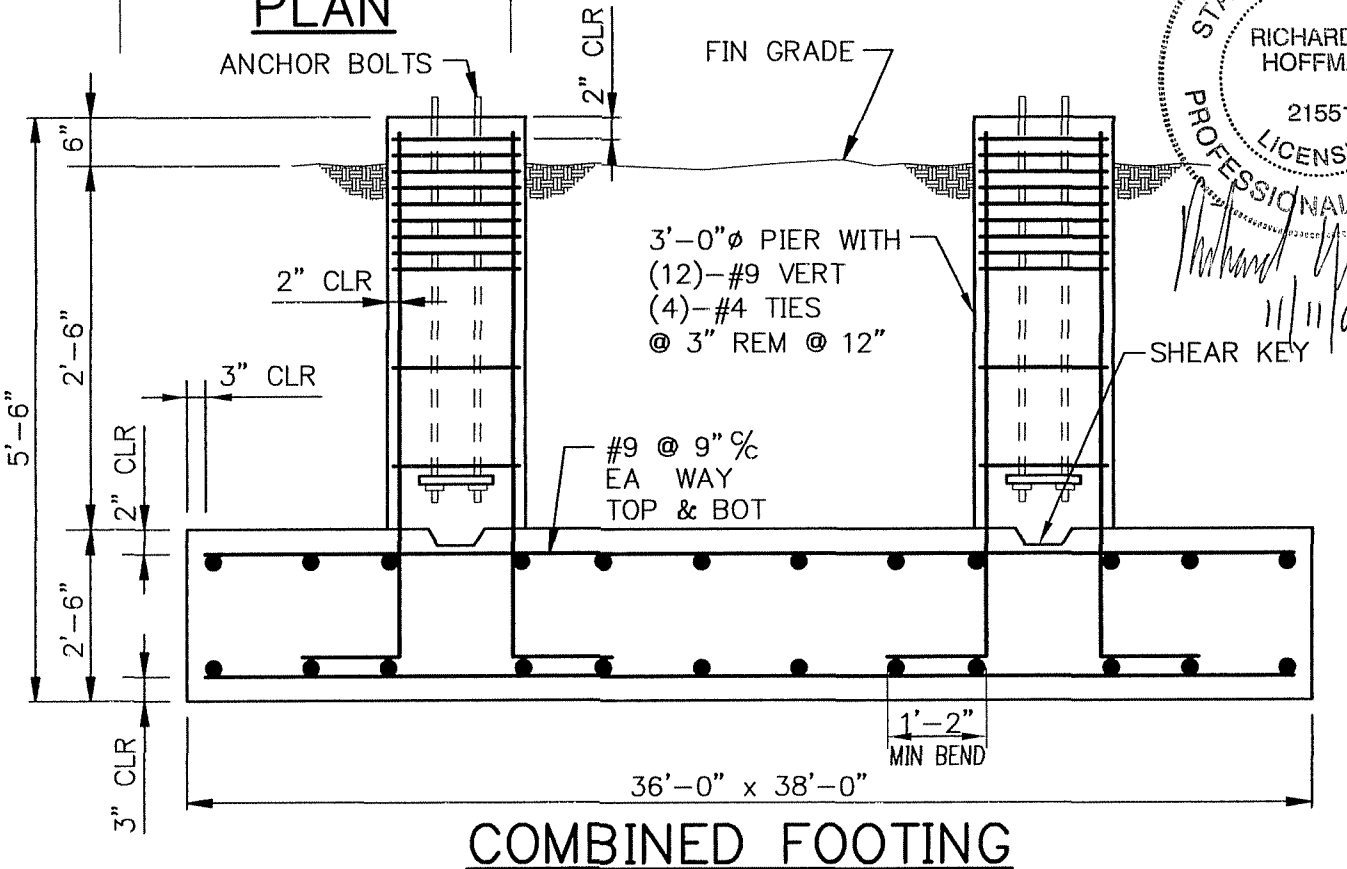
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (GRADE 60) EXCEPT PIER TIES MAY BE ASTM A615 (GRADE 40).

3. CONTRACTOR SHALL CONTACT FWT FOR ANCHOR BOLT SIZE, EMBEDMENT DEPTH AND ORIENTATION.

4. TOTAL CONCRETE = 130 CUBIC YARDS.

5. FOUNDATION DESIGN BASED UPON GEOTECHNICAL REPORT #05-3142 BY FSTAN DATED MARCH 23, 2005.

STATE OF KENTUCKY
RICHARD W. HOFFMAN
21551
LICENSED
PROFESSIONAL ENGINEER
11/11/05

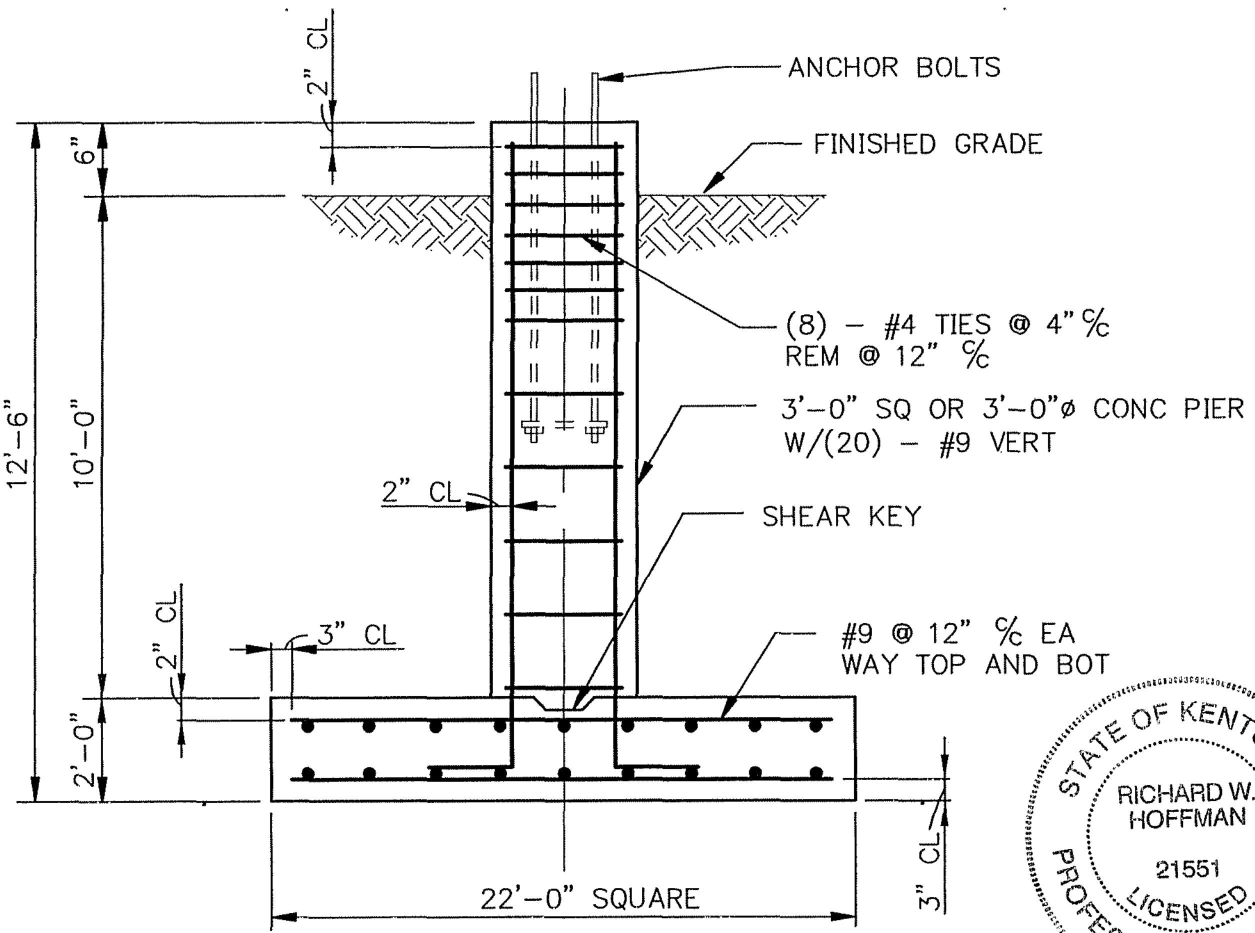


COMBINED FOOTING
(OPTION #1)

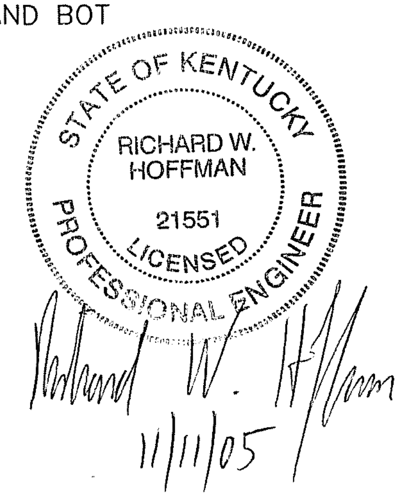
FWT
5750 EAST I20 FORT WORTH, TEXAS 76119
PH: (817) 255-3060 FAX: (817) 255-2957

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 1500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com

Tower	285 FT SELF SUPPORT	Page	3 Of 3
Location	MONKEY'S EYEBROW, KENTUCKY	By	CMM Date 11-11-2005
Design	75 MPH/65 MPH + 1/2" RADIAL ICE	Job No.	1905-029
	According to ANSI/EIA 222-F 1996	Revision No.	Date



FOUNDATION
(TYPICAL OF THREE)
(OPTION #2)



NOTES:

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF AT LEAST 3000 PSI AT 28 DAYS.

2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (GRADE 60) EXCEPT PIER TIES MAY BE ASTM A615 (GRADE 40).

3. CONTRACTOR SHALL CONTACT FWT FOR ANCHOR BOLT SIZE, EMBEDMENT DEPTH AND ORIENTATION.

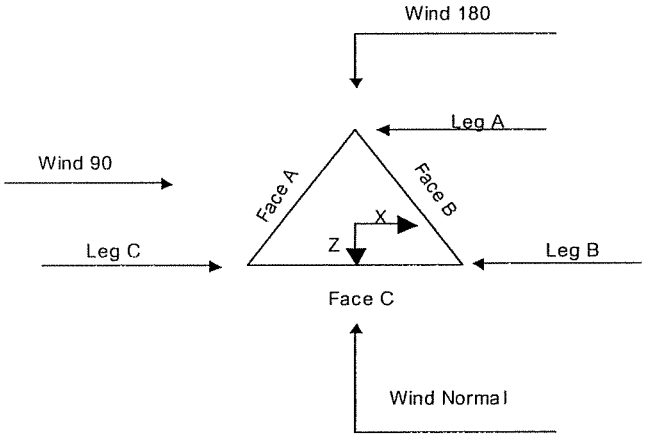
4. TOTAL CONCRETE = 130 CUBIC YARDS.

5. FOUNDATION DESIGN BASED UPON GEOTECHNICAL REPORT #05-3142 BY FSTAN DATED MARCH 23, 2005.

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 285.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 4.0 ft at the top and 28.0 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Ballard County, Kentucky.
Basic wind speed of 75.00 mph.
Nominal ice thickness of 0.50 in.
Ice density of 56 pcf.
A wind speed of 64.95 mph is used in combination with ice.
Deflections calculated using a wind speed of 50.00 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	285.00-280.00			4.0	1	5.00
T2	280.00-260.00			4.0	1	20.00
T3	260.00-240.00			4.0	1	20.00
T4	240.00-220.00			4.0	1	20.00
T5	220.00-200.00			6.0	1	20.00
T6	200.00-180.00			8.0	1	20.00
T7	180.00-160.00			10.0	1	20.00
T8	160.00-140.00			12.0	1	20.00
T9	140.00-120.00			14.0	1	20.00
T10	120.00-100.00			16.0	1	20.00
T11	100.00-80.00			18.0	1	20.00
T12	80.00-60.00			20.0	1	20.00
T13	60.00-40.00			22.0	1	20.00
T14	40.00-20.00			24.0	1	20.00
T15	20.00-0.00			26.0	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	285.00-280.00	5.0	X Brace	No	No	0.00	0.00
T2	280.00-260.00	4.0	X Brace	No	No	0.00	0.00
T3	260.00-240.00	5.0	X Brace	No	No	0.00	0.00
T4	240.00-220.00	5.0	X Brace	No	No	0.00	0.00
T5	220.00-200.00	5.0	X Brace	No	Yes	0.00	0.00
T6	200.00-180.00	5.0	Double K	No	Yes	0.00	0.00
T7	180.00-160.00	5.0	Double K	No	Yes	0.00	0.00
T8	160.00-140.00	5.0	Double K	No	Yes	0.00	0.00
T9	140.00-120.00	5.0	Double K	No	Yes	0.00	0.00
T10	120.00-100.00	5.0	Double K	No	Yes	0.00	0.00
T11	100.00-80.00	5.0	Double K	No	Yes	0.00	0.00
T12	80.00-60.00	5.0	Double K	No	Yes	0.00	0.00
T13	60.00-40.00	10.0	Double K1	No	Yes	0.00	0.00
T14	40.00-20.00	10.0	Double K1	No	Yes	0.00	0.00
T15	20.00-0.00	10.0	Double K1	No	Yes	0.00	0.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 285.00-280.00	Solid Round	2" solid	A572-50 (50 ksi)	Single Angle	L 1.75 x 1.75 x 3/16	A36 (36 ksi)
T2 280.00-260.00	Solid Round	2" solid	A572-50 (50 ksi)	Single Angle	L 1.75 x 1.75 x 3/16	A36 (36 ksi)
T3 260.00-	Solid Round	2 1/2" solid	A572-50	Single Angle	L 1.75 x 1.75 x 3/16	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
240.00			(50 ksi)			(36 ksi)
T4 240.00-220.00	Solid Round	2 3/4" solid	A572-50 (50 ksi)	Single Angle	L 1.75 x 1.75 x 3/16	A36 (36 ksi)
T5 220.00-200.00	Solid Round	3" solid	A572-50 (50 ksi)	Single Angle	L 1.75 x 1.75 x 3/16	A36 (36 ksi)
T6 200.00-180.00	Solid Round	3" solid	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T7 180.00-160.00	Solid Round	3 1/4" solid	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T8 160.00-140.00	Solid Round	3 1/4" solid	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T9 140.00-120.00	Solid Round	3 1/2" solid	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T10 120.00-100.00	Solid Round	3 1/2" solid	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T11 100.00-80.00	Solid Round	3 3/4" solid	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 1/4	A36 (36 ksi)
T12 80.00-60.00	Solid Round	3 3/4" solid	A572-50 (50 ksi)	Double Angle	2L 2.5 x 2.5 x 3/16 (1/2)	A36 (36 ksi)
T13 60.00-40.00	Solid Round	4" solid	A572-50 (50 ksi)	Double Angle	2L 2.5 x 2.5 x 3/16 (1/2)	A36 (36 ksi)
T14 40.00-20.00	Solid Round	4" solid	A572-50 (50 ksi)	Double Angle	2L 2.5 x 2.5 x 3/16 (1/2)	A36 (36 ksi)
T15 20.00-0.00	Solid Round	4" solid	A572-50 (50 ksi)	Double Angle	2L 2.5 x 2.5 x 3/16 (1/2)	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 285.00-280.00	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T6 200.00-180.00	None	Single Angle		A36 (36 ksi)	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)
T7 180.00-160.00	None	Single Angle		A36 (36 ksi)	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)
T8 160.00-140.00	None	Single Angle		A36 (36 ksi)	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)
T9 140.00-120.00	None	Single Angle		A36 (36 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T10 120.00-100.00	None	Single Angle		A36 (36 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T11 100.00-	None	Single Angle		A36	Single Angle	L 3 x 3 x 3/16	A36

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
80.00				(36 ksi)			(36 ksi)
T12 80.00-60.00	None	Single Angle		A36 (36 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T13 60.00-40.00	None	Single Angle		A36 (36 ksi)	Double Angle	2L 2 x 2 x 3/16 (1/2)	A36 (36 ksi)
T14 40.00-20.00	None	Single Angle		A36 (36 ksi)	Double Angle	2L 2 x 2 x 3/16 (1/2)	A36 (36 ksi)
T15 20.00-0.00	None	Single Angle		A36 (36 ksi)	Double Angle	2L 2.5 x 2.5 x 3/16 (1/2)	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T12 80.00-60.00	Single Angle		A36 (36 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T13 60.00-40.00	Single Angle		A36 (36 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T14 40.00-20.00	Single Angle		A36 (36 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T15 20.00-0.00	Single Angle		A36 (36 ksi)	Single Angle	L 3.5 x 3.5 x 1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T13 60.00-40.00	A36 (36 ksi)	Horizontal (1)	Single Angle	L 2 x 2 x 3/16	1
		Diagonal (1)	Single Angle	L 2.5 x 2.5 x 3/16	1
T14 40.00-20.00	A36 (36 ksi)	Horizontal (1)	Single Angle	L 2.5 x 2.5 x 3/16	1
		Diagonal (1)	Single Angle	L 3 x 3 x 3/16	1
T15 20.00-0.00	A36 (36 ksi)	Horizontal (1)	Single Angle	L 2.5 x 2.5 x 3/16	1
		Diagonal (1)	Single Angle	L 3 x 3 x 3/16	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 285.00-280.00	0.00	0.25	A36 (36 ksi)	1	1	1.1	0.00	0.00
T2 280.00-	0.00	0.25	A36	1	1	1.1	0.00	0.00

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
260.00			(36 ksi)					
T3 260.00-240.00	0.00	0.25	A36 (36 ksi)	1	1	1.1	0.00	0.00
T4 240.00-220.00	0.00	0.25	A36 (36 ksi)	1	1	1.1	0.00	0.00
T5 220.00-200.00	0.00	0.25	A36 (36 ksi)	1	1	1.1	0.00	0.00
T6 200.00-180.00	0.00	0.38	A36 (36 ksi)	1	1	1.2	0.00	0.00
T7 180.00-160.00	0.00	0.38	A36 (36 ksi)	1	1	1.2	0.00	0.00
T8 160.00-140.00	0.00	0.38	A36 (36 ksi)	1	1	1.2	0.00	0.00
T9 140.00-120.00	0.00	0.38	A36 (36 ksi)	1	1	1.2	0.00	0.00
T10 120.00-100.00	0.00	0.38	A36 (36 ksi)	1	1	1.2	0.00	0.00
T11 100.00-80.00	0.00	0.38	A36 (36 ksi)	1	1	1.2	0.00	0.00
T12 80.00-60.00	0.00	0.38	A36 (36 ksi)	1	1	1.2	0.00	0.00
T13 60.00-40.00	0.00	0.50	A36 (36 ksi)	1	1	1.25	0.00	0.00
T14 40.00-20.00	0.00	0.50	A36 (36 ksi)	1	1	1.25	0.00	0.00
T15 20.00-0.00	0.00	0.50	A36 (36 ksi)	1	1	1.25	0.00	0.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec Horiz. X Y	Inner Brace X Y
T1 285.00-280.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 280.00-260.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 260.00-240.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 240.00-220.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 220.00-200.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 200.00-180.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 180.00-160.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 160.00-140.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 140.00-120.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 120.00-	Yes	No	1	1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
100.00				1	1	1	1	1	1	1	1	1	1	1	1
T11 100.00-80.00	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T12 80.00-60.00	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T13 60.00-40.00	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T14 40.00-20.00	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
T15 20.00-0.00	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 285.00-280.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T2 280.00-260.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T3 260.00-240.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T4 240.00-220.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T5 220.00-200.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T6 200.00-180.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T7 180.00-160.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T8 160.00-140.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T9 140.00-120.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T10 120.00-100.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T11 100.00-80.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T12 80.00-60.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T13 60.00-40.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T14 40.00-20.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T15 20.00-0.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 285.00-280.00	Flange	0.63 A325N	4	0.50 A325N	2	0.63 A325N	1	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0
T2 280.00-260.00	Flange	0.63 A325N	4	0.50 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0
T3 260.00-240.00	Flange	0.75 A325N	6	0.50 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0
T4 240.00-220.00	Flange	0.75 A325N	6	0.50 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0
T5 220.00-200.00	Flange	0.88 A325N	6	0.50 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0
T6 200.00-180.00	Flange	0.88 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	0
T7 180.00-160.00	Flange	1.00 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T8 160.00-140.00	Flange	1.00 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T9 140.00-120.00	Flange	1.00 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T10 120.00-100.00	Flange	1.00 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T11 100.00-80.00	Flange	1.13 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T12 80.00-60.00	Flange	1.13 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T13 60.00-40.00	Flange	1.25 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T14 40.00-20.00	Flange	1.25 A325N	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1
T15 20.00-0.00	Flange	1.75 A307	6	0.63 A325N	2	0.63 A325N	0	0.63 A325N	0	0.63 A325N	0	0.63 A325N	1	0.63 A325N	1

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1.5" flat Cable Ladder Rail	A	Yes	Af (CfAe)	285.00 - 6.00	2	2	1.50	1.50	6.00	1.8
1.5" flat Cable Ladder Rail	B	Yes	Af (CfAe)	285.00 - 6.00	2	2	1.50	1.50	6.00	1.8
1.5" flat Cable Ladder Rail	C	Yes	Af (CfAe)	285.00 - 6.00	2	2	1.50	1.50	6.00	1.8
LDF7-50A (1 5/8" foam)	A	Yes	Ar (CfAe)	285.00 - 6.00	4	4	0.52 1.98	1.98		0.9
LDF7-50A (1 5/8" foam)	B	Yes	Ar (CfAe)	285.00 - 6.00	4	4	0.52 1.98	1.98		0.9
LDF7-50A (1 5/8" foam)	C	Yes	Ar (CfAe)	285.00 - 6.00	4	4	0.52 1.98	1.98		0.9
LDF7-50A (1 5/8" foam)	A	Yes	Ar (CfAe)	265.00 - 6.00	4	2	0.52	1.98		0.9

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1 5/8" foam)	B	Yes	Ar (CfAe)	265.00 - 6.00	4	2	0.52	1.98		0.9
LDF7-50A (1 5/8" foam)	C	Yes	Ar (CfAe)	265.00 - 6.00	4	2	0.52	1.98		0.9
LDF7-50A (1 5/8" foam)	A	Yes	Ar (CfAe)	245.00 - 6.00	4	2	0.52	1.98		0.9
LDF7-50A (1 5/8" foam)	B	Yes	Ar (CfAe)	245.00 - 6.00	4	2	0.52	1.98		0.9
LDF7-50A (1 5/8" foam)	C	Yes	Ar (CfAe)	245.00 - 6.00	4	2	0.52	1.98		0.9
LDF7-50A (1 5/8" foam)	A	Yes	Ar (CfAe)	225.00 - 6.00	4	2	0.52	1.98		0.9
LDF7-50A (1 5/8" foam)	B	Yes	Ar (CfAe)	225.00 - 6.00	4	2	0.52	1.98		0.9
LDF7-50A (1 5/8" foam)	C	Yes	Ar (CfAe)	225.00 - 6.00	4	2	0.52	1.98		0.9
EW220	C	Yes	Ar (CaAa)	205.00 - 6.00	1	1	0.51	0.51		0.1

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight plf
1" lighting conduit	C	No	CaAa (In Face)	285.00 - 6.00	1	No Ice	0.10	2.0
						1/2" Ice	0.20	2.9

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
T1	285.00-280.00	A	3.300	1.250	0.000	0.000	0.04
		B	3.300	1.250	0.000	0.000	0.04
		C	3.300	1.250	0.500	0.000	0.05
T2	280.00-260.00	A	14.850	5.000	0.000	0.000	0.16
		B	14.850	5.000	0.000	0.000	0.16
		C	14.850	5.000	2.000	0.000	0.20
T3	260.00-240.00	A	21.450	5.000	0.000	0.000	0.24
		B	21.450	5.000	0.000	0.000	0.24
		C	21.450	5.000	2.000	0.000	0.28
T4	240.00-220.00	A	28.050	5.000	0.000	0.000	0.31
		B	28.050	5.000	0.000	0.000	0.31
		C	28.050	5.000	2.000	0.000	0.35
T5	220.00-200.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	2.254	0.000	0.41
T6	200.00-180.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T7	180.00-160.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T8	160.00-140.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T9	140.00-120.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T10	120.00-100.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T11	100.00-80.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	33.000	5.000	3.016	0.000	0.41
T12	80.00-60.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T13	60.00-40.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T14	40.00-20.00	A	33.000	5.000	0.000	0.000	0.37
		B	33.000	5.000	0.000	0.000	0.37
		C	33.000	5.000	3.016	0.000	0.41
T15	20.00-0.00	A	23.100	3.500	0.000	0.000	0.26
		B	23.100	3.500	0.000	0.000	0.26
		C	23.100	3.500	2.111	0.000	0.29

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	285.00-280.00	A	0.500	1.242	4.931	0.000	0.000	0.08
		B		1.242	4.931	0.000	0.000	0.08
		C		1.242	4.931	1.000	0.000	0.10
T2	280.00-260.00	A	0.500	6.208	20.764	0.000	0.000	0.39
		B		6.208	20.764	0.000	0.000	0.39
		C		6.208	20.764	4.000	0.000	0.45
T3	260.00-240.00	A	0.500	11.175	24.931	0.000	0.000	0.58
		B		11.175	24.931	0.000	0.000	0.58
		C		11.175	24.931	4.000	0.000	0.64
T4	240.00-220.00	A	0.500	16.142	29.097	0.000	0.000	0.78
		B		16.142	29.097	0.000	0.000	0.78
		C		16.142	29.097	4.000	0.000	0.84
T5	220.00-200.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	4.754	0.000	0.99
T6	200.00-180.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T7	180.00-160.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T8	160.00-140.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T9	140.00-120.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T10	120.00-100.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T11	100.00-80.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T12	80.00-60.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T13	60.00-40.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T14	40.00-20.00	A	0.500	19.867	32.222	0.000	0.000	0.93
		B		19.867	32.222	0.000	0.000	0.93
		C		19.867	32.222	7.017	0.000	1.00
T15	20.00-0.00	A	0.500	13.907	22.556	0.000	0.000	0.65
		B		13.907	22.556	0.000	0.000	0.65
		C		13.907	22.556	4.912	0.000	0.70

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	285.00-280.00	A	0.000	0.000	0.577	1.118
		B	0.000	0.000	0.577	1.118
		C	0.000	0.000	0.577	1.118
T2	280.00-260.00	A	0.000	0.000	2.047	3.999
		B	0.000	0.000	2.047	3.999
		C	0.000	0.000	2.047	3.999
T3	260.00-240.00	A	0.000	0.000	2.470	4.799
		B	0.000	0.000	2.470	4.799
		C	0.000	0.000	2.470	4.799
T4	240.00-220.00	A	0.000	0.000	2.748	5.321
		B	0.000	0.000	2.748	5.321
		C	0.000	0.000	2.748	5.321
T5	220.00-200.00	A	0.000	0.000	2.732	5.281
		B	0.000	0.000	2.732	5.281
		C	0.000	0.000	2.747	5.344
T6	200.00-180.00	A	0.000	0.000	3.009	5.396
		B	0.000	0.000	3.009	5.396
		C	0.000	0.000	3.077	5.651
T7	180.00-160.00	A	0.000	0.000	2.778	4.985
		B	0.000	0.000	2.778	4.985
		C	0.000	0.000	2.840	5.221
T8	160.00-140.00	A	0.000	0.000	2.634	4.729
		B	0.000	0.000	2.634	4.729
		C	0.000	0.000	2.692	4.953
T9	140.00-120.00	A	0.000	0.000	3.077	5.315
		B	0.000	0.000	3.077	5.315
		C	0.000	0.000	3.146	5.566
T10	120.00-100.00	A	0.000	0.000	2.997	5.178
		B	0.000	0.000	2.997	5.178
		C	0.000	0.000	3.064	5.423
T11	100.00-80.00	A	0.000	0.000	3.098	5.301
		B	0.000	0.000	3.098	5.301
		C	0.000	0.000	3.167	5.551
T12	80.00-60.00	A	0.000	0.000	2.704	4.736
		B	0.000	0.000	2.704	4.736
		C	0.000	0.000	2.764	4.960
T13	60.00-40.00	A	0.000	0.000	3.050	5.498
		B	0.000	0.000	3.050	5.498
		C	0.000	0.000	3.118	5.757
T14	40.00-20.00	A	0.000	0.000	3.340	5.877
		B	0.000	0.000	3.340	5.877
		C	0.000	0.000	3.415	6.155
T15	20.00-0.00	A	0.000	0.000	2.349	4.115
		B	0.000	0.000	2.349	4.115

Section	Elevation	Face	A_R	A_R Ice	A_F	A_F Ice
	ft		ft^2	ft^2	ft^2	ft^2
		C	0.000	0.000	2.402	4.309

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Beacon	C	From Leg	0.00 0 0	0.000	285.00	No Ice 1/2" Ice	3.60 4.00	3.60 4.00	0.10 0.15
(4) SC 9014-DIN	A	From Leg	4.00 0 0	0.000	285.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	B	From Leg	4.00 0 0	0.000	285.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	C	From Leg	4.00 0 0	0.000	285.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
Generic Sector Frame	A	From Leg	2.00 0 0	0.000	285.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	B	From Leg	2.00 0 0	0.000	285.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	C	From Leg	2.00 0 0	0.000	285.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
(4) SC 9014-DIN	A	From Leg	4.00 0 0	0.000	265.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	B	From Leg	4.00 0 0	0.000	265.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	C	From Leg	4.00 0 0	0.000	265.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
Generic Sector Frame	A	From Leg	2.00 0 0	0.000	265.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	B	From Leg	2.00 0 0	0.000	265.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	C	From Leg	2.00 0 0	0.000	265.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
(4) SC 9014-DIN	A	From Leg	4.00 0 0	0.000	245.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	B	From Leg	4.00 0 0	0.000	245.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	C	From Leg	4.00	0.000	245.00	No Ice	6.24	7.29	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0 0			1/2" Ice	6.77	7.82	0.08
Generic Sector Frame	A	From Leg	2.00 0 0	0.000	245.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	B	From Leg	2.00 0 0	0.000	245.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	C	From Leg	2.00 0 0	0.000	245.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
(4) SC 9014-DIN	A	From Leg	4.00 0 0	0.000	225.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	B	From Leg	4.00 0 0	0.000	225.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
(4) SC 9014-DIN	C	From Leg	4.00 0 0	0.000	225.00	No Ice 1/2" Ice	6.24 6.77	7.29 7.82	0.04 0.08
Generic Sector Frame	A	From Leg	2.00 0 0	0.000	225.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	B	From Leg	2.00 0 0	0.000	225.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80
Generic Sector Frame	C	From Leg	2.00 0 0	0.000	225.00	No Ice 1/2" Ice	15.00 17.50	10.00 12.50	0.60 0.80

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
8 ft standard	C	Paraboloid w/o Radome	From Leg	1.00 0 0	0.000		205.00	8.00	No Ice 1/2" Ice	50.27 51.32	0.26 0.55

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice

Comb. No.	Description
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice
15	Dead+Wind 0 deg+Ice
16	Dead+Wind 30 deg+Ice
17	Dead+Wind 60 deg+Ice
18	Dead+Wind 90 deg+Ice
19	Dead+Wind 120 deg+Ice
20	Dead+Wind 150 deg+Ice
21	Dead+Wind 180 deg+Ice
22	Dead+Wind 210 deg+Ice
23	Dead+Wind 240 deg+Ice
24	Dead+Wind 270 deg+Ice
25	Dead+Wind 300 deg+Ice
26	Dead+Wind 330 deg+Ice
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	23	381.70	30.02	-17.33
	Max. H_x	23	381.70	30.02	-17.33
	Max. H_z	4	-317.61	-24.53	14.16
	Min. Vert	4	-317.61	-24.53	14.16
	Min. H_x	4	-317.61	-24.53	14.16
	Min. H_z	23	381.70	30.02	-17.33
Leg B	Max. Vert	19	381.31	-30.04	-17.26
	Max. H_x	12	-307.21	23.88	13.70
	Max. H_z	12	-307.21	23.88	13.70
	Min. Vert	12	-307.21	23.88	13.70
	Min. H_x	19	381.31	-30.04	-17.26
	Min. H_z	19	381.31	-30.04	-17.26
Leg A	Max. Vert	15	381.31	-0.07	34.64
	Max. H_x	24	37.95	2.17	2.72
	Max. H_z	15	381.31	-0.07	34.64
	Min. Vert	8	-307.21	0.08	-27.53
	Min. H_x	18	45.39	-2.24	3.27
	Min. H_z	8	-307.21	0.08	-27.53

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	75.14	0.00	0.00	1	1	0
Dead+Wind 0 deg - No Ice	75.14	1.74	-51.30	-8556	-358	-2
Dead+Wind 30 deg - No Ice	75.14	25.54	-42.09	-7118	-4364	0
Dead+Wind 60 deg - No Ice	75.14	42.16	-24.34	-4155	-7196	0
Dead+Wind 90 deg - No Ice	75.14	49.22	-1.07	-220	-8346	0
Dead+Wind 120 deg - No Ice	75.14	45.30	24.15	3968	-7589	2
Dead+Wind 150 deg - No Ice	75.14	23.94	41.49	6996	-4034	3
Dead+Wind 180 deg - No Ice	75.14	-0.22	47.45	8057	47	4
Dead+Wind 210 deg - No Ice	75.14	-24.35	42.05	7112	4123	3
Dead+Wind 240 deg - No Ice	75.14	-44.45	25.66	4282	7417	0
Dead+Wind 270 deg - No Ice	75.14	-48.60	0.06	14	8221	-3
Dead+Wind 300 deg - No Ice	75.14	-41.21	-23.53	-3987	7001	-4
Dead+Wind 330 deg - No Ice	75.14	-23.97	-41.48	-6991	4042	-3
Dead+Ice	115.33	0.00	0.00	2	3	0
Dead+Wind 0 deg+Ice	115.33	1.33	-50.98	-8314	-273	-1
Dead+Wind 30 deg+Ice	115.33	24.37	-40.57	-6727	-4078	0
Dead+Wind 60 deg+Ice	115.33	40.03	-23.11	-3870	-6704	0
Dead+Wind 90 deg+Ice	115.33	47.32	-0.82	-169	-7865	0
Dead+Wind 120 deg+Ice	115.33	44.82	24.34	3920	-7337	1
Dead+Wind 150 deg+Ice	115.33	23.15	40.12	6636	-3824	2
Dead+Wind 180 deg+Ice	115.33	-0.17	45.28	7550	38	3
Dead+Wind 210 deg+Ice	115.33	-23.47	40.55	6725	3896	2
Dead+Wind 240 deg+Ice	115.33	-44.17	25.50	4162	7208	0
Dead+Wind 270 deg+Ice	115.33	-46.85	0.05	12	7772	-2
Dead+Wind 300 deg+Ice	115.33	-39.30	-22.49	-3742	6558	-3
Dead+Wind 330 deg+Ice	115.33	-23.17	-40.11	-6630	3835	-2
Dead+Wind 0 deg - Service	75.14	0.77	-22.80	-3802	-158	-1
Dead+Wind 30 deg - Service	75.14	11.35	-18.71	-3163	-1939	0
Dead+Wind 60 deg - Service	75.14	18.74	-10.82	-1846	-3197	0
Dead+Wind 90 deg - Service	75.14	21.87	-0.48	-97	-3709	0
Dead+Wind 120 deg - Service	75.14	20.13	10.73	1764	-3372	1
Dead+Wind 150 deg - Service	75.14	10.63	18.45	3110	-1792	1
Dead+Wind 180 deg - Service	75.14	-0.10	21.09	3581	22	2
Dead+Wind 210 deg - Service	75.14	-10.82	18.69	3162	1833	1
Dead+Wind 240 deg - Service	75.14	-19.76	11.41	1904	3297	0
Dead+Wind 270 deg - Service	75.14	-21.60	0.03	7	3655	-1
Dead+Wind 300 deg - Service	75.14	-18.31	-10.46	-1772	3112	-2
Dead+Wind 330 deg - Service	75.14	-10.66	-18.43	-3107	1797	-1

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-75.14	0.00	0.00	75.14	0.00	0.000%
2	1.74	-75.14	-51.30	-1.74	75.14	51.30	0.000%
3	25.54	-75.14	-42.09	-25.54	75.14	42.09	0.000%
4	42.16	-75.14	-24.34	-42.16	75.14	24.34	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
5	49.22	-75.14	-1.07	-49.22	75.14	1.07	0.000%
6	45.30	-75.14	24.15	-45.30	75.14	-24.15	0.000%
7	23.94	-75.14	41.49	-23.94	75.14	-41.49	0.000%
8	-0.22	-75.14	47.45	0.22	75.14	-47.45	0.000%
9	-24.35	-75.14	42.05	24.35	75.14	-42.05	0.000%
10	-44.45	-75.14	25.66	44.45	75.14	-25.66	0.000%
11	-48.60	-75.14	0.06	48.60	75.14	-0.06	0.000%
12	-41.21	-75.14	-23.53	41.21	75.14	23.53	0.000%
13	-23.97	-75.14	-41.48	23.97	75.14	41.48	0.000%
14	0.00	-115.33	0.00	0.00	115.33	0.00	0.000%
15	1.33	-115.33	-50.98	-1.33	115.33	50.98	0.000%
16	24.37	-115.33	-40.57	-24.37	115.33	40.57	0.000%
17	40.03	-115.33	-23.11	-40.03	115.33	23.11	0.000%
18	47.32	-115.33	-0.82	-47.32	115.33	0.82	0.000%
19	44.82	-115.33	24.34	-44.82	115.33	-24.34	0.000%
20	23.15	-115.33	40.12	-23.15	115.33	-40.12	0.000%
21	-0.17	-115.33	45.28	0.17	115.33	-45.28	0.000%
22	-23.47	-115.33	40.55	23.47	115.33	-40.55	0.000%
23	-44.17	-115.33	25.50	44.17	115.33	-25.50	0.000%
24	-46.85	-115.33	0.05	46.85	115.33	-0.05	0.000%
25	-39.30	-115.33	-22.49	39.30	115.33	22.49	0.000%
26	-23.17	-115.33	-40.11	23.17	115.33	40.11	0.000%
27	0.77	-75.14	-22.80	-0.77	75.14	22.80	0.000%
28	11.35	-75.14	-18.71	-11.35	75.14	18.71	0.000%
29	18.74	-75.14	-10.82	-18.74	75.14	10.82	0.000%
30	21.87	-75.14	-0.48	-21.87	75.14	0.48	0.000%
31	20.13	-75.14	10.73	-20.13	75.14	-10.73	0.000%
32	10.64	-75.14	18.44	-10.63	75.14	-18.45	0.013%
33	-0.10	-75.14	21.09	0.10	75.14	-21.09	0.000%
34	-10.82	-75.14	18.69	10.82	75.14	-18.69	0.000%
35	-19.76	-75.14	11.41	19.76	75.14	-11.41	0.000%
36	-21.60	-75.14	0.03	21.60	75.14	-0.03	0.000%
37	-18.31	-75.14	-10.46	18.31	75.14	10.46	0.000%
38	-10.65	-75.14	-18.43	10.66	75.14	18.43	0.013%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	7	0.00000001	0.00000720
3	Yes	8	0.00000001	0.00000974
4	Yes	9	0.00000001	0.00000917
5	Yes	8	0.00000001	0.00000974
6	Yes	7	0.00000001	0.00000720
7	Yes	8	0.00000001	0.00000660
8	Yes	9	0.00000001	0.00000687
9	Yes	8	0.00000001	0.00000777
10	Yes	7	0.00000001	0.00000679
11	Yes	8	0.00000001	0.00000777
12	Yes	9	0.00000001	0.00000687
13	Yes	8	0.00000001	0.00000660
14	Yes	4	0.00000001	0.00000001
15	Yes	6	0.00000001	0.00000801
16	Yes	8	0.00000001	0.00000932
17	Yes	9	0.00000001	0.00000820

18	Yes	8	0.00000001	0.00000932
19	Yes	6	0.00000001	0.00000801
20	Yes	8	0.00000001	0.00000699
21	Yes	9	0.00000001	0.00000662
22	Yes	8	0.00000001	0.00000787
23	Yes	6	0.00000001	0.00000699
24	Yes	8	0.00000001	0.00000787
25	Yes	9	0.00000001	0.00000662
26	Yes	8	0.00000001	0.00000699
27	Yes	4	0.00000001	0.00000477
28	Yes	5	0.00000001	0.00000404
29	Yes	5	0.00000001	0.00000587
30	Yes	5	0.00000001	0.00000404
31	Yes	4	0.00000001	0.00000477
32	Yes	14	0.00000001	0.00000000
33	Yes	5	0.00000001	0.00000512
34	Yes	5	0.00000001	0.00000350
35	Yes	4	0.00000001	0.00000435
36	Yes	5	0.00000001	0.00000350
37	Yes	5	0.00000001	0.00000512
38	Yes	14	0.00000001	0.00000000

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	285 - 280	20.44	35	0.818	0.025
T2	280 - 260	19.57	35	0.816	0.024
T3	260 - 240	16.19	35	0.769	0.022
T4	240 - 220	13.09	35	0.666	0.019
T5	220 - 200	10.51	35	0.551	0.018
T6	200 - 180	8.34	35	0.465	0.015
T7	180 - 160	6.52	35	0.386	0.010
T8	160 - 140	5.00	35	0.323	0.007
T9	140 - 120	3.73	35	0.264	0.004
T10	120 - 100	2.69	35	0.215	0.003
T11	100 - 80	1.85	35	0.169	0.002
T12	80 - 60	1.18	35	0.131	0.001
T13	60 - 40	0.67	35	0.093	0.001
T14	40 - 20	0.32	35	0.061	0.001
T15	20 - 0	0.08	31	0.030	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
285.00	Beacon	35	20.44	0.818	0.025	71114
265.00	(4) SC 9014-DIN	35	17.02	0.787	0.022	24602
245.00	(4) SC 9014-DIN	35	13.82	0.695	0.020	8889
225.00	(4) SC 9014-DIN	35	11.11	0.577	0.018	11134
205.00	8 ft standard	35	8.85	0.485	0.016	13447

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	285 - 280	45.93	10	1.838	0.056
T2	280 - 260	44.00	10	1.834	0.054
T3	260 - 240	36.40	10	1.729	0.049
T4	240 - 220	29.43	10	1.497	0.044
T5	220 - 200	23.64	10	1.238	0.040
T6	200 - 180	18.76	10	1.046	0.034
T7	180 - 160	14.67	10	0.867	0.022
T8	160 - 140	11.25	10	0.726	0.015
T9	140 - 120	8.40	10	0.593	0.010
T10	120 - 100	6.06	10	0.484	0.007
T11	100 - 80	4.15	10	0.381	0.005
T12	80 - 60	2.65	10	0.294	0.003
T13	60 - 40	1.52	10	0.210	0.002
T14	40 - 20	0.71	2	0.138	0.001
T15	20 - 0	0.19	10	0.068	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
285.00	Beacon	10	45.93	1.838	0.056	32032
265.00	(4) SC 9014-DIN	10	38.27	1.769	0.051	11008
245.00	(4) SC 9014-DIN	10	31.07	1.562	0.045	3962
225.00	(4) SC 9014-DIN	10	24.99	1.298	0.041	4960
205.00	8 ft standard	10	19.91	1.091	0.036	5994

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	285	Leg	A325N	0.63	4	0.65	13.48	0.048	1.333	Bolt Tension
		Diagonal	A325N	0.50	2	1.04	4.12	0.252	1.333	Bolt Shear
		Top Girt	A325N	0.63	1	0.64	6.44	0.100	1.333	Bolt Shear
T2	280	Leg	A325N	0.63	4	7.60	13.50	0.563	1.333	Bolt Tension
		Diagonal	A325N	0.50	2	2.18	4.12	0.529	1.333	Bolt Shear
T3	260	Leg	A325N	0.75	6	14.05	19.44	0.723	1.333	Bolt Tension
		Diagonal	A325N	0.50	2	3.76	4.12	0.911	1.333	Bolt Shear
T4	240	Leg	A325N	0.75	6	19.45	19.44	1.001	1.333	Bolt Tension
		Diagonal	A325N	0.50	2	1.87	4.12	0.454	1.333	Bolt Shear
T5	220	Leg	A325N	0.88	6	24.01	26.46	0.907	1.333	Bolt Tension
		Diagonal	A325N	0.50	2	1.96	4.12	0.476	1.333	Bolt Shear
T6	200	Leg	A325N	0.88	6	27.72	26.46	1.048	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	2.73	6.44	0.424	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.47	6.44	0.074	1.333	Bolt Shear
T7	180	Leg	A325N	1.00	6	31.25	34.56	0.904	1.333	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.63	2	2.41	6.44	0.374	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.46	6.44	0.071	1.333	Bolt Shear
T8	160	Leg	A325N	1.00	6	34.39	34.56	0.995	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	2.44	6.44	0.379	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.44	6.44	0.069	1.333	Bolt Shear
T9	140	Leg	A325N	1.00	6	37.29	34.56	1.079	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	2.58	6.44	0.401	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.44	6.44	0.069	1.333	Bolt Shear
T10	120	Leg	A325N	1.00	6	40.08	34.56	1.160	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	2.75	6.44	0.426	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.44	6.44	0.069	1.333	Bolt Shear
T11	100	Leg	A325N	1.13	6	42.76	43.74	0.978	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	3.00	6.44	0.466	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.48	6.44	0.074	1.333	Bolt Shear
T12	80	Leg	A325N	1.13	6	45.35	43.74	1.037	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	3.43	12.89	0.266	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.58	6.44	0.091	1.333	Bolt Shear
T13	60	Leg	A325N	1.25	6	46.89	54.00	0.868	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	4.59	12.89	0.356	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.43	12.89	0.034	1.333	Bolt Shear
T14	40	Leg	A325N	1.25	6	49.52	54.00	0.917	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	4.16	12.89	0.323	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.49	12.89	0.038	1.333	Bolt Shear
T15	20	Leg	A307	1.75	6	51.68	48.11	1.074	1.333	Bolt Tension
		Diagonal	A325N	0.63	2	4.62	12.89	0.359	1.333	Bolt Shear
		Horizontal	A325N	0.63	1	0.38	12.89	0.029	1.333	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	285 - 280	2" solid	5.00	5.00	120.0 K=1.00	10.37	3.14	-3.65	32.58	0.112
T2	280 - 260	2" solid	20.00	4.00	96.0 K=1.00	15.62	3.14	-35.09	49.07	0.715
T3	260 - 240	2 1/2" solid	20.00	5.00	96.0 K=1.00	15.62	4.91	-92.66	76.67	1.209
T4	240 - 220	2 3/4" solid	20.03	5.01	87.4 K=1.00	17.49	5.94	-129.40	103.87	1.246
T5	220 - 200	3" solid	20.03	5.01	80.1 K=1.00	18.99	7.07	-159.95	134.20	1.192
T6	200 - 180	3" solid	20.03	5.01	80.1 K=1.00	18.99	7.07	-183.69	134.20	1.369
		H1-3 (1.37 CR) - 127								
T7	180 - 160	3 1/4" solid	20.03	5.01	74.0 K=1.00	20.19	8.30	-207.29	167.50	1.238
T8	160 - 140	3 1/4" solid	20.03	5.01	74.0 K=1.00	20.19	8.30	-229.09	167.50	1.368
		H1-3 (1.37 CR) - 193								

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T9	140 - 120	3 1/2" solid	20.03	5.01	68.7 K=1.00	21.18	9.62	-250.18	203.78	1.228
T10	120 - 100	3 1/2" solid	20.03	5.01	68.7 K=1.00	21.18	9.62	-271.02	203.78	1.330
T11	100 - 80	3 3/4" solid	20.03	5.01	64.1 K=1.00	22.00	11.04	-292.06	243.03	1.202
T12	80 - 60	3 3/4" solid	20.03	5.01	64.1 K=1.00	22.00	11.04	-313.34	243.03	1.289
T13	60 - 40	4" solid	20.03	5.01	60.1 K=1.00	22.70	12.57	-327.33	285.26	1.147
T14	40 - 20	4" solid	20.03	5.01	60.1 K=1.00	22.70	12.57	-351.47	285.26	1.232
T15	20 - 0	4" solid	20.03	5.01	60.1 K=1.00	22.70	12.57	-371.30	285.26	1.302

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	285 - 280	L 1.75 x 1.75 x 3/16	6.40	2.84	104.4 K=1.05	12.41	0.62	-2.07	7.71	0.269
T2	280 - 260	L 1.75 x 1.75 x 3/16	5.66	2.48	95.0 K=1.10	13.60	0.62	-4.36	8.45	0.516
T3	260 - 240	L 1.75 x 1.75 x 3/16	6.40	2.81	103.5 K=1.06	12.53	0.62	-7.51	7.78	0.966
T4	240 - 220	L 1.75 x 1.75 x 3/16	7.62	3.60	124.3 K=0.99	9.65	0.62	-3.75	6.00	0.625
T5	220 - 200	L 1.75 x 1.75 x 3/16	9.22	4.38	145.3 K=0.95	7.07	0.62	-3.92	4.39	0.892
T6	200 - 180	L 2.5 x 2.5 x 3/16	6.73	6.06	136.6 K=0.93	8.01	0.90	-5.23	7.22	0.725
T7	180 - 160	L 2.5 x 2.5 x 3/16	7.81	7.15	152.7 K=0.88	6.40	0.90	-4.77	5.77	0.826
T8	160 - 140	L 2.5 x 2.5 x 3/16	8.60	7.95	164.7 K=0.85	5.51	0.90	-4.88	4.97	0.982
T9	140 - 120	L 3 x 3 x 3/16	9.44	8.77	154.8 K=0.88	6.23	1.09	-5.17	6.79	0.760
T10	120 - 100	L 3 x 3 x 3/16	10.30	9.64	165.5 K=0.85	5.45	1.09	-5.49	5.94	0.924
T11	100 - 80	L 3 x 3 x 1/4	11.18	10.52	177.2 K=0.83	4.75	1.44	-5.86	6.83	0.857
T12	80 - 60	2L 2.5 x 2.5 x 3/16 (1/2)	11.63	10.97	150.2 K=0.89	6.62	1.80	-6.85	11.94	0.574
T13	60 - 40	2L 2.5 x 2.5 x 3/16 (1/2)	15.62	14.92	146.3 K=1.00	6.98	1.80	-9.18	12.60	0.729
T14	40 - 20	2L 2.5 x 2.5 x 3/16 (1/2)	16.40	15.70	154.0 K=1.00	6.30	1.80	-8.01	11.36	0.705
T15	20 - 0	2L 2.5 x 2.5 x 3/16 (1/2)	17.21	16.51	161.9 K=1.00	5.70	1.80	-9.25	10.28	0.899

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T6	200 - 180	L 2 x 2 x 3/16	9.50	8.92	173.4 K=1.00	4.97	0.71	-0.47	3.55	0.134
T7	180 - 160	L 2 x 2 x 3/16	11.50	10.90	211.9 K=1.00	3.33	0.71	-0.46	2.38	0.193
T8	160 - 140	L 2 x 2 x 3/16	13.50	12.90	250.8 K=1.00	2.37	0.71	-0.44	1.70	0.260
		KL/R > 250 (C) - 196								
T9	140 - 120	L 2.5 x 2.5 x 3/16	15.50	14.88	229.2 K=1.00	2.84	0.90	-0.44	2.56	0.173
T10	120 - 100	L 2.5 x 2.5 x 3/16	17.50	16.88	260.0 K=1.00	2.21	0.90	-0.44	1.99	0.223
		KL/R > 250 (C) - 268								
T11	100 - 80	L 3 x 3 x 3/16	19.50	18.85	240.9 K=1.00	2.57	1.09	-0.48	2.81	0.170
T12	80 - 60	L 3 x 3 x 3/16	21.50	10.43	209.8 K=1.00	3.39	1.09	-0.58	3.70	0.158
T13	60 - 40	2L 2 x 2 x 3/16 (1/2)	23.00	11.17	217.1 K=1.00	3.17	1.43	-0.43	4.53	0.096
T14	40 - 20	2L 2 x 2 x 3/16 (1/2)	25.00	12.17	236.5 K=1.00	2.67	1.43	-0.49	3.82	0.127
T15	20 - 0	2L 2.5 x 2.5 x 3/16 (1/2)	27.00	13.17	203.0 K=1.00	3.62	1.80	-0.38	6.54	0.058

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	285 - 280	L 2 x 2 x 3/16	4.00	3.50	113.3 K=1.06	11.22	0.71	-0.64	8.02	0.079

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T13	60 - 40	L 2 x 2 x 3/16	5.75	5.58	170.1 K=1.00	5.16	0.71	-4.92	3.69	1.331
T14	40 - 20	L 2.5 x 2.5 x 3/16	6.25	6.08	147.5 K=1.00	6.87	0.90	-5.28	6.19	0.852
T15	20 - 0	L 2.5 x 2.5 x 3/16	6.75	6.58	159.6 K=1.00	5.86	0.90	-5.58	5.29	1.054

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T13	60 - 40	L 2.5 x 2.5 x 3/16	7.81	7.59	183.9 K=1.00	4.42	0.90	-3.34	3.98	0.839
T14	40 - 20	L 3 x 3 x 3/16	8.20	7.98	160.7 K=1.00	5.78	1.09	-3.46	6.30	0.550
T15	20 - 0	L 3 x 3 x 3/16	8.60	8.39	168.9 K=1.00	5.23	1.09	-3.55	5.70	0.623

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T12	80 - 60	L 3 x 3 x 3/16	10.75	10.75	216.3 K=1.00	3.19	1.09	-0.01	3.48	0.004
T13	60 - 40	L 3 x 3 x 3/16	11.50	11.50	231.4 K=1.00	2.79	1.09	-0.01	3.04	0.004*
T14	40 - 20	L 3 x 3 x 3/16	12.50	12.50	251.5 K=1.00	2.36	1.09	-0.02	2.57	0.007
		KL/R > 250 (C) - 435								
T15	20 - 0	L 3.5 x 3.5 x 1/4	13.50	13.50	233.4 K=1.00	2.74	1.69	-0.01	4.63	0.003*

* DL controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	285 - 280	2" solid	5.00	5.00	120.0	30.00	3.14	2.59	94.25	0.028
T2	280 - 260	2" solid	20.00	4.00	96.0	30.00	3.14	30.41	94.25	0.323
T3	260 - 240	2 1/2" solid	20.00	5.00	96.0	30.00	4.91	84.29	147.26	0.572
T4	240 - 220	2 3/4" solid	20.03	5.01	87.4	30.00	5.94	116.69	178.19	0.655
T5	220 - 200	3" solid	20.03	5.01	80.1	30.00	7.07	144.06	212.06	0.679
T6	200 - 180	3" solid	20.03	5.01	80.1	30.00	7.07	166.51	212.06	0.785
		H1-3 (1.37 CR) - 127								
T7	180 - 160	3 1/4" solid	20.03	5.01	74.0	30.00	8.30	187.75	248.87	0.754
T8	160 - 140	3 1/4" solid	20.03	5.01	74.0	30.00	8.30	206.59	248.87	0.830
		H1-3 (1.37 CR) - 193								
T9	140 - 120	3 1/2" solid	20.03	5.01	68.7	30.00	9.62	224.00	288.63	0.776
T10	120 - 100	3 1/2" solid	20.03	5.01	68.7	30.00	9.62	240.72	288.63	0.834
T11	100 - 80	3 3/4" solid	20.03	5.01	64.1	30.00	11.04	256.85	331.34	0.775
T12	80 - 60	3 3/4" solid	20.03	5.01	64.1	30.00	11.04	272.39	331.34	0.822
T13	60 - 40	4" solid	20.03	5.01	60.1	30.00	12.57	282.56	376.99	0.750
T14	40 - 20	4" solid	20.03	5.01	60.1	30.00	12.57	298.34	376.99	0.791
T15	20 - 0	4" solid	20.03	5.01	60.1	30.00	12.57	311.02	376.99	0.825

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	285 - 280	L 1.75 x 1.75 x 3/16	6.40	2.84	68.6	29.00	0.38	2.07	10.96	0.189
T2	280 - 260	L 1.75 x 1.75 x 3/16	5.66	2.48	60.6	29.00	0.38	4.30	10.96	0.392
T3	260 - 240	L 1.75 x 1.75 x 3/16	6.40	2.81	67.8	29.00	0.38	7.19	10.96	0.656
T4	240 - 220	L 1.75 x 1.75 x 3/16	7.62	3.60	85.5	29.00	0.38	3.59	10.96	0.327
T5	220 - 200	L 1.75 x 1.75 x 3/16	9.22	4.38	103.1	29.00	0.38	3.92	10.96	0.358
T6	200 - 180	L 2.5 x 2.5 x 3/16	6.40	5.74	96.0	29.00	0.57	5.04	16.56	0.305
T7	180 - 160	L 2.5 x 2.5 x 3/16	7.07	6.41	106.3	29.00	0.57	4.64	16.56	0.280
T8	160 - 140	L 2.5 x 2.5 x 3/16	8.20	7.55	123.8	29.00	0.57	4.64	16.56	0.280
T9	140 - 120	L 3 x 3 x 3/16	9.02	8.35	113.0	29.00	0.71	4.91	20.65	0.238
T10	120 - 100	L 3 x 3 x 3/16	9.86	9.21	123.9	29.00	0.71	5.28	20.65	0.256
T11	100 - 80	L 3 x 3 x 1/4	10.74	10.07	136.2	29.00	0.94	5.75	27.19	0.211
T12	80 - 60	2L 2.5 x 2.5 x 3/16 (1/2)	11.63	10.97	176.7	29.00	1.14	6.43	33.13	0.194
T13	60 - 40	2L 2.5 x 2.5 x 3/16 (1/2)	15.62	14.92	151.1	29.00	1.14	7.61	33.13	0.230
T14	40 - 20	2L 2.5 x 2.5 x 3/16 (1/2)	15.62	14.92	151.1	29.00	1.14	8.33	33.13	0.251
T15	20 - 0	2L 2.5 x 2.5 x 3/16 (1/2)	16.40	15.71	158.8	29.00	1.14	7.64	33.13	0.231

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T6	200 - 180	L 2 x 2 x 3/16	9.50	8.92	179.9	29.00	0.43	0.33	12.49	0.026
T7	180 - 160	L 2 x 2 x 3/16	11.50	10.90	218.4	29.00	0.43	0.33	12.49	0.027
T8	160 - 140	L 2 x 2 x 3/16	13.50	12.90	257.3	29.00	0.43	0.34	12.49	0.027
T9	140 - 120	L 2.5 x 2.5 x 3/16	15.50	14.88	234.4	29.00	0.57	0.34	16.56	0.021
T10	120 - 100	L 2.5 x 2.5 x 3/16	17.50	16.88	265.2	29.00	0.57	0.38	16.56	0.023
T11	100 - 80	L 3 x 3 x 3/16	19.50	18.85	245.1	29.00	0.71	0.39	20.65	0.019
T12	80 - 60	L 3 x 3 x 3/16	21.50	10.43	135.3	29.00	0.71	0.40	20.65	0.019
T13	60 - 40	2L 2 x 2 x 3/16 (1/2)	23.00	11.17	220.3	29.00	0.86	0.10	24.98	0.004
T14	40 - 20	2L 2 x 2 x 3/16 (1/2)	25.00	12.17	239.7	29.00	0.86	0.12	24.98	0.005
T15	20 - 0	2L 2.5 x 2.5 x 3/16 (1/2)	27.00	13.17	205.6	29.00	1.14	0.04	33.13	0.001

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	285 - 280	L 2 x 2 x 3/16	4.00	3.50	74.6	29.00	0.43	0.64	12.49	0.052

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T13	60 - 40	L 2 x 2 x 3/16	5.75	5.58	108.6	21.60	0.71	4.92	15.44	0.318
T14	40 - 20	L 2.5 x 2.5 x 3/16	6.25	6.08	93.7	21.60	0.90	5.28	19.48	0.271
T15	20 - 0	L 2.5 x 2.5 x 3/16	6.75	6.58	101.4	21.60	0.90	5.58	19.48	0.286

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T13	60 - 40	L 2.5 x 2.5 x 3/16	7.81	7.59	116.9	21.60	0.90	3.34	19.48	0.171
T14	40 - 20	L 3 x 3 x 3/16	8.20	7.98	102.0	21.60	1.09	3.46	23.54	0.147
T15	20 - 0	L 3 x 3 x 3/16	8.60	8.39	107.2	21.60	1.09	3.55	23.54	0.151

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T12	80 - 60	L 3 x 3 x 3/16	10.75	10.75	137.3	21.60	1.09	0.01	23.54	0.000
T13	60 - 40	L 3 x 3 x 3/16	11.50	11.50	146.9	21.60	1.09	0.01	23.54	0.000
T14	40 - 20	L 3 x 3 x 3/16	12.50	12.50	159.7	21.60	1.09	0.01	23.54	0.000
T15	20 - 0	L 3.5 x 3.5 x 1/4	13.50	13.50	148.5	21.60	1.69	0.01	36.50	0.000

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	285 - 280	Leg	2" solid	1	-3.65	43.43	8.4	Pass
T2	280 - 260	Leg	2" solid	13	-35.09	65.41	53.7	Pass
T3	260 - 240	Leg	2 1/2" solid	46	-92.66	102.20	90.7	Pass
T4	240 - 220	Leg	2 3/4" solid	73	-129.40	138.46	93.5	Pass
T5	220 - 200	Leg	3" solid	100	-159.95	178.89	89.4	Pass
T6	200 - 180	Leg	3" solid	127	-183.69	178.89	102.7	Pass
T7	180 - 160	Leg	3 1/4" solid	160	-207.29	223.28	92.8	Pass
T8	160 - 140	Leg	3 1/4" solid	193	-229.09	223.28	102.6	Pass
T9	140 - 120	Leg	3 1/2" solid	226	-250.18	271.63	92.1	Pass
T10	120 - 100	Leg	3 1/2" solid	259	-271.02	271.63	99.8	Pass
T11	100 - 80	Leg	3 3/4" solid	292	-292.06	323.96	90.2	Pass
T12	80 - 60	Leg	3 3/4" solid	325	-313.34	323.96	96.7	Pass
T13	60 - 40	Leg	4" solid	364	-327.33	380.25	86.1	Pass
T14	40 - 20	Leg	4" solid	409	-351.47	380.25	92.4	Pass
T15	20 - 0	Leg	4" solid	454	-371.30	380.25	97.6	Pass
T1	285 - 280	Diagonal	L 1.75 x 1.75 x 3/16	11	-2.07	10.28	20.2	Pass
T2	280 - 260	Diagonal	L 1.75 x 1.75 x 3/16	20	-4.36	11.26	38.7 39.7 (b)	Pass
T3	260 - 240	Diagonal	L 1.75 x 1.75 x 3/16	53	-7.51	10.37	72.5	Pass
T4	240 - 220	Diagonal	L 1.75 x 1.75 x 3/16	77	-3.75	7.99	46.9	Pass
T5	220 - 200	Diagonal	L 1.75 x 1.75 x 3/16	103	-3.92	5.86	66.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T6	200 - 180	Diagonal	L 2.5 x 2.5 x 3/16	147	-5.23	9.63	54.4	Pass
T7	180 - 160	Diagonal	L 2.5 x 2.5 x 3/16	171	-4.77	7.70	62.0	Pass
T8	160 - 140	Diagonal	L 2.5 x 2.5 x 3/16	204	-4.88	6.62	73.7	Pass
T9	140 - 120	Diagonal	L 3 x 3 x 3/16	237	-5.17	9.06	57.0	Pass
T10	120 - 100	Diagonal	L 3 x 3 x 3/16	270	-5.49	7.92	69.3	Pass
T11	100 - 80	Diagonal	L 3 x 3 x 1/4	297	-5.86	9.11	64.3	Pass
T12	80 - 60	Diagonal	2L 2.5 x 2.5 x 3/16 (1/2)	353	-6.85	15.92	43.0	Pass
T13	60 - 40	Diagonal	2L 2.5 x 2.5 x 3/16 (1/2)	382	-9.18	16.79	54.7	Pass
T14	40 - 20	Diagonal	2L 2.5 x 2.5 x 3/16 (1/2)	416	-8.01	15.15	52.9	Pass
T15	20 - 0	Diagonal	2L 2.5 x 2.5 x 3/16 (1/2)	472	-9.25	13.70	67.5	Pass
T6	200 - 180	Horizontal	L 2 x 2 x 3/16	130	-0.47	4.73	10.0	Pass
T7	180 - 160	Horizontal	L 2 x 2 x 3/16	163	-0.46	3.17	14.4	Pass
T8	160 - 140	Horizontal	L 2 x 2 x 3/16	196	-0.44	2.26	19.5	Pass
T9	140 - 120	Horizontal	L 2.5 x 2.5 x 3/16	235	-0.44	3.42	13.0	Pass
T10	120 - 100	Horizontal	L 2.5 x 2.5 x 3/16	268	-0.44	2.66	16.8	Pass
T11	100 - 80	Horizontal	L 3 x 3 x 3/16	295	-0.48	3.74	12.7	Pass
T12	80 - 60	Horizontal	L 3 x 3 x 3/16	328	-0.58	4.93	11.9	Pass
T13	60 - 40	Horizontal	2L 2 x 2 x 3/16 (1/2)	367	-0.43	6.04	7.2	Pass
T14	40 - 20	Horizontal	2L 2 x 2 x 3/16 (1/2)	412	-0.49	5.09	9.5	Pass
T15	20 - 0	Horizontal	2L 2.5 x 2.5 x 3/16 (1/2)	471	-0.38	8.72	4.3	Pass
T1	285 - 280	Top Girt	L 2 x 2 x 3/16	5	-0.64	10.70	5.9 7.5 (b)	Pass
T13	60 - 40	Redund Horz 1 Bracing	L 2 x 2 x 3/16	369	-4.92	4.92	99.9	Pass
T14	40 - 20	Redund Horz 1 Bracing	L 2.5 x 2.5 x 3/16	414	-5.28	8.26	63.9	Pass
T15	20 - 0	Redund Horz 1 Bracing	L 2.5 x 2.5 x 3/16	476	-5.58	7.05	79.1	Pass
T13	60 - 40	Redund Diag 1 Bracing	L 2.5 x 2.5 x 3/16	393	-3.34	5.31	62.9	Pass
T14	40 - 20	Redund Diag 1 Bracing	L 3 x 3 x 3/16	438	-3.46	8.40	41.2	Pass
T15	20 - 0	Redund Diag 1 Bracing	L 3 x 3 x 3/16	498	-3.55	7.60	46.7	Pass
T12	80 - 60	Inner Bracing	L 3 x 3 x 3/16	355	-0.01	3.83	0.5	Pass
T13	60 - 40	Inner Bracing	L 3 x 3 x 3/16	389	-0.01	3.04	0.5	Pass
T14	40 - 20	Inner Bracing	L 3 x 3 x 3/16	435	-0.02	3.43	0.5	Pass
T15	20 - 0	Inner Bracing	L 3.5 x 3.5 x 1/4	479	-0.01	4.63	0.6	Pass
							Summary	
						Leg (T6)	102.7	Pass
						Diagonal (T8)	73.7	Pass
						Horizontal (T8)	19.5	Pass
						Top Girt (T1)	7.5	Pass
						Redund Horz 1 Bracing (T13)	99.9	Pass
						Redund Diag 1 Bracing (T13)	62.9	Pass
						Inner Bracing (T15)	0.6	Pass
						Bolt Checks	87.0	Pass
						RATING =	**102.7**	**Pass**

COMBINED FOOTING PROGRAM BY PAUL J. FORD and COMPANY

JOB NO. 01905-029 DATE 11-10-2005 PAGE 1

INPUT: COMBINED FOOTING

LEG LOADS: COMPRESSION = 382.00 kips
TENSION = 318.00 kips
HORIZONTAL = 35.00 kips

TOWER LOADS: TOWER WEIGHT = 75.00 kips
OVERTURNING MOMENT = 8768.00 ft-k
DESIGN SAFETY FACTOR AGAINST OVERTURNING = 1.50

CONCRETE: CONCRETE STRENGTH = 3000 psi at 28 days
REINFORCING STEEL STRENGTH = 60000 psi (ASTM A615)

SOIL: WATER TABLE AT 4.0 ft below grade
SOIL WT = 100 pcf (dry) 37.6 pcf bouyant
ALLOWABLE SOIL BEARING = 3000 psf

FOOTING SIZE: WIDTH = 36.0 ft LENGTH = 38.0 ft
THICKNESS = 2.50 ft DEPTH = 5.00 ft to bottom
PIERS = 3.00 ft round PIER 0.5 ft above grade
CONCRETE WEIGHT = 150 pcf (87.6 pcf if bouyant)

OUTPUT: COMBINED FOOTING

VOLUME OF SOIL = 3353 ft^2
VOLUME OF CONCRETE = 3484 ft^2 (129.02 cubic yards)

WEIGHT OF TOWER ====> 75.00 kips
WEIGHT OF CONCRETE => 522.54 kips
WEIGHT OF SOIL =====> 335.25 kips
WEIGHT OF WATER ====> - 85.36 kips

TOTAL WEIGHT = 847.43 kips

RESISTING MOMENT = 847.43 x 36.00/2 = 15254 ft-kips

SAFETY FACTOR = Mresist / O.T.M. = 15254 / 8768 = 1.74

GROSS SOIL BEARING = 1688 psf
NET SOIL BEARING = 1188 psf

ALLOWABLE PIER LOAD = 745 kips (based upon punching shear)

PIER REINFORCING REQUIRED = 12.05 sq in = 8 no. 11 bars ∴ Use (12)-#9 bars
0.5 % REINF = 5.09 sq in

FOOTING REINFORCING = 1.32 in^2/ft = 40 no. 10 bars @ 11.52 in. o.c.

∴ Use #9 @ 9" c/c —> A_s = 1.33 in²/ft ✓ok

SPREAD FOOTING PROGRAM BY PAUL J. FORD and COMPANY

JOB NO. 01905-029 DATE 11-11-2005 PAGE 1

INPUT: SPREAD FOOTING (pad and pier)

LEG LOADS: COMPRESSION = 382.00 kips
TENSION = 318.00 kips
HORIZONTAL = 35.00 kips

DESIGN: UPLIFT SAFETY FACTOR = 1.25 FOR CONCRETE
UPLIFT SAFETY FACTOR = 2.00 FOR SOIL
ALLOWABLE SOIL BEARING = 3000 psf

CONCRETE: CONCRETE STRENGTH = 3000 psi at 28 days
REINFORCING STEEL STRENGTH = 60000 psi (ASTM A615)

SOIL: WATER TABLE AT 4.0 ft below grade
SOIL DENSITY = 100 pcf (37.6 if bouyant)
SOIL PYRAMID OF UPLIFT = 25.0 degrees

FOOTING SIZE: WIDTH = 22.0 ft LENGTH = 22.0 ft
THICKNESS = 2.00 ft DEPTH = 12.00 ft to bottom
PIER = 3.00 ft square 0.5 ft above grade
CONCRETE DENSITY = 150 pcf (87.6 pcf if bouyant)

OUTPUT: VOLUME OF CONCRETE = 39.35 cubic yards x 3 = 118.06
VOLUME OF EXCAVATION = 215 cubic yards

	VOLUME (ft^2)	DENSITY (pcf)	WEIGHT (kips)	SAFETY FACTOR	SAFE CAPACITY (kips)
WEIGHT OF CONCRETE=>	1063 x	150.0 =	159.38 /	1.25 =	127.50
WEIGHT OF SOIL ====>	7092 x	100.0 =	709.17 /	2.00 =	354.58
WEIGHT OF WATER ===>-	4673 x	62.4 =	-291.61 /	1.78 =	-163.93
	TOTAL WEIGHT =		576.93 kips		-------
			UPLIFT RESISTANCE =		318.16 kips > 318.00

NET SAFETY FACTOR IN UPLIFT = TOTAL WEIGHT / UPLIFT = 577 / 318 = 1.81 > 1.5

GROSS SOIL BEARING = 1949 psf (including soil overburden)
NET SOIL BEARING = 1249 psf < 3000 psf

MAXIMUM LEG COMPRESSION = 917.84 kips (based upon soil bearing)

ALLOWABLE PIER LOAD = 664 kips (based upon punching shear)

TOTAL OVERTURNING MOMENT = 438 ft-k
BENDING MOMENT IN PIER = 368 ft-k
BENDING MOMENT IN FOOTING = 1283 ft-k

PIER REINFORCING REQUIRED = 16.95 sq in = 12 no. 11 bars
1/2 % REINF = 6.48 sq in

FOOTING REINFORCING = 0.91 in^2/ft for strength or 0.78 in^2/ft minimum steel
REINFORCING = 34 no. 7 bars by 21.50 ft long @ 7.82 in. o.c.

EXHIBIT D
COMPETING UTILITIES, CORPORATIONS, OR PERSONS LIST AND MAP OF LIKE FACILITIES IN VICINITY

License Search

Search Results

Specified Search

State = **Kentucky**
County = **BALLARD**
Radio Service = **CL, CW**
Status = **Active**

Matches 1 - 9 (of 9)

PA = Pending Application(s)
TP = Termination Pending

	Call Sign	Licensee Name	FRN	Radio Service	Status	Expiration Date
1	KNKN568	Cellco Partnership	0003290673	CL	Active	10/01/2010
2	KNKN830	Orange Licenses Holding, LLC	0012362919	CL	Active	10/01/2011
3	KNKQ306	KENTUCKY RSA NO. 1 PARTNERSHIP	0001836709	CL	Active	10/01/2011
4	KNLF251	New Cingular Wireless PCS, LLC	0003291192	CW	Active	06/23/2015
5	KNLF252	WIRELESSCO, L.P.	0002316545	CW	Active	06/23/2015
6	KNLH404	POWERTEL KENTUCKY LICENSES, INC.	0001831189	CW	Active	04/28/2007
7	KNLH405	POWERTEL KENTUCKY LICENSES, INC.	0001831189	CW	Active	04/28/2007
8	KNLH653	Northstar Technology, LLC	0005869136	CW	Active	04/28/2007
9	WPOI215	BLUE LICENSES HOLDING, LLC	0012362869	CW	Active	06/23/2015

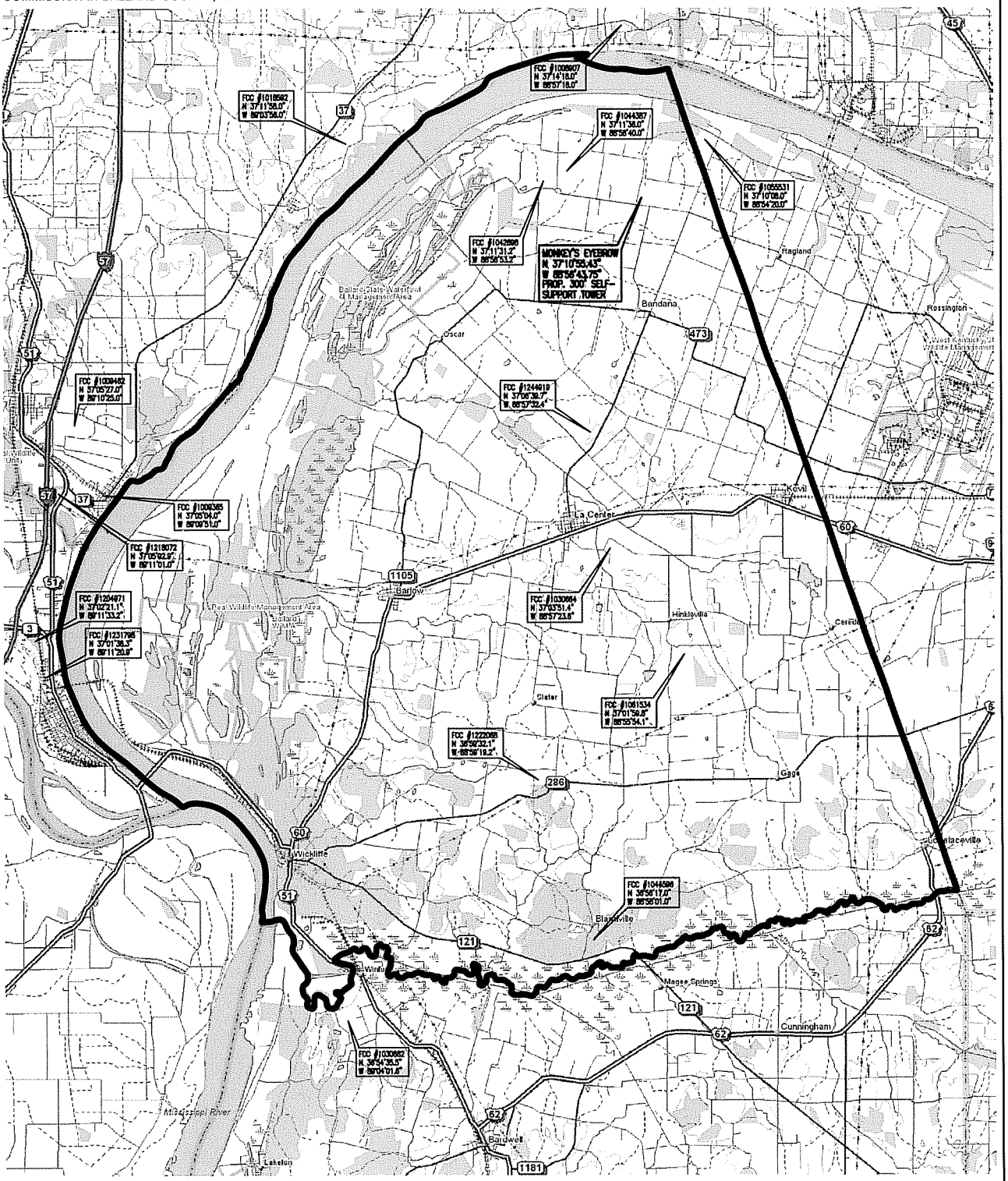
Call Sign	Licensee Name	FRN	Radio Service	Status	Expiration Date

BALLARD COUNTY, KENTUCKY

CELLCO PARTNERSHIP SITE NAME: MONKEY'S EYEBROW

TOWER LOCATION EXHIBIT

TOWERS DEPICTED ARE ALL KNOWN TOWER SITES REGISTERED WITH THE FEDERAL COMMUNICATIONS COMMISSION IN BALLARD COUNTY, KENTUCKY



7.5 MINUTE U S G S QUADRANGLE MAP (NOT TO SCALE)

FS land

F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers

P.O. Box 17546 2313/2315 Crittenden Drive, Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111 Fax: (502) 636-5263

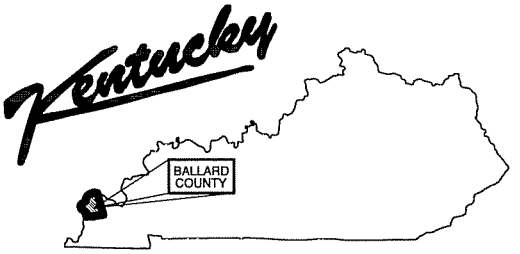


EXHIBIT E
APPLICATION TO FAA

Notice of Proposed Construction or Alteration (7460-1)

Project Name: KENTU-000030436-05 **Sponsor:** Kentucky RSA 1 Partnership

Details for Case : Monkey's Eyebrow

Show Project Summary

Case Status

Status: *Accepted*
ASN: 2005-ASO-6483-OE
Next Step: None

Date Submitted: 12/21/2005
Date Accepted:
Date Determined:
Letter: None

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
***if Temporary*:** Months: Days:
Work Schedule - Start:
Work Schedule - End:

Structure Summary

Structure Name: Monkey's Eyebrow
Structure Type: Tower
***Other*:**
FCC Number:
Prior ASN:

Structure Details

Latitude: 37° 10' 55.43" N
Longitude: 88° 56' 43.75" W
Horizontal Datum: NAD83
Horizontal Accuracy: None
Site Elevation (SE): 337 (nearest foot)
Structure Height (AGL): 325 (nearest foot)
***Marking/Lighting*:** Dual-red and medium intensity
***Other*:**
Nearest City: Kevil
Nearest State: Kentucky
Traverseway: No Traverseway
Description of Location: 4625 Ogden Colvin Circle Kevil, KY 42053
Description of Proposal: Applicant proposes to construct a 325 ft self support tower.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
869	894	MHz	500	W
1930	1990	MHz	1640	W
2305	2310	MHz	2000	W

Specific Frequencies

CELLCO PARTNERSHIP

1A Report

Date: February 9, 2005
FSTAN Project No: 05-3141

Site Name: **MONKEY'S EYEBROW**
Site No:

For Aeronautical Study No.

Location:	City	Kevil, Ky.
	County	Ballard
U.S.G.S. Quadrangle:		Bandana, Ky.
(NAD 27)	LATITUDE	37° 10' 55.24"
	LONGITUDE	88° 56' 43.52"
(NAD 83)	LATITUDE	37° 10' 55.43"
	LONGITUDE	88° 56' 43.75"

SITE ELEVATION (NAVD 88)	337' ± AMSL
PROPOSED TOWER HEIGHT	300' ± FAA AGL
PROPOSED LIGHTNING ARRESTOR HEIGHT	325' ± FAA AGL
OVERALL HEIGHT ELEVATION	662' ± AMSL

I Certify, to the best of my knowledge and belief, that the horizontal and vertical datum as established from the referenced U.S.G.S. Quadrangle, is accurate to 1A Reporting requirements of ± 20 feet horizontally and ± 3 feet vertically.

The horizontal datum (coordinates) are in terms of the North American Datum of 1927 (NAD 27) and 1983 (NAD 83) and expressed as degrees, minutes and seconds.

The vertical datum (heights) are in terms of the National Geodetic Vertical Datum of 1988 and are determined to the nearest foot.

Kentucky State Plane Coordinates (South Zone) were established with Trimble Global Positioning Systems (GPS) receivers. This site has ties to the National Geodetic Reference System established by the National Geodetic Survey, formerly the U.S. Coast & Geodetic Survey by measurements to PID Station "HB0391", designated as "KEVIL".

CONSULTANT

Frank L. Sellinger, II, KY PLS No. 3282
FSTAN Land Surveyors and Consulting Engineers
2313/2315 Crittenden Drive, Louisville, Ky. 40217
Phone: 502-635-5866 Fax: 502-636-5263

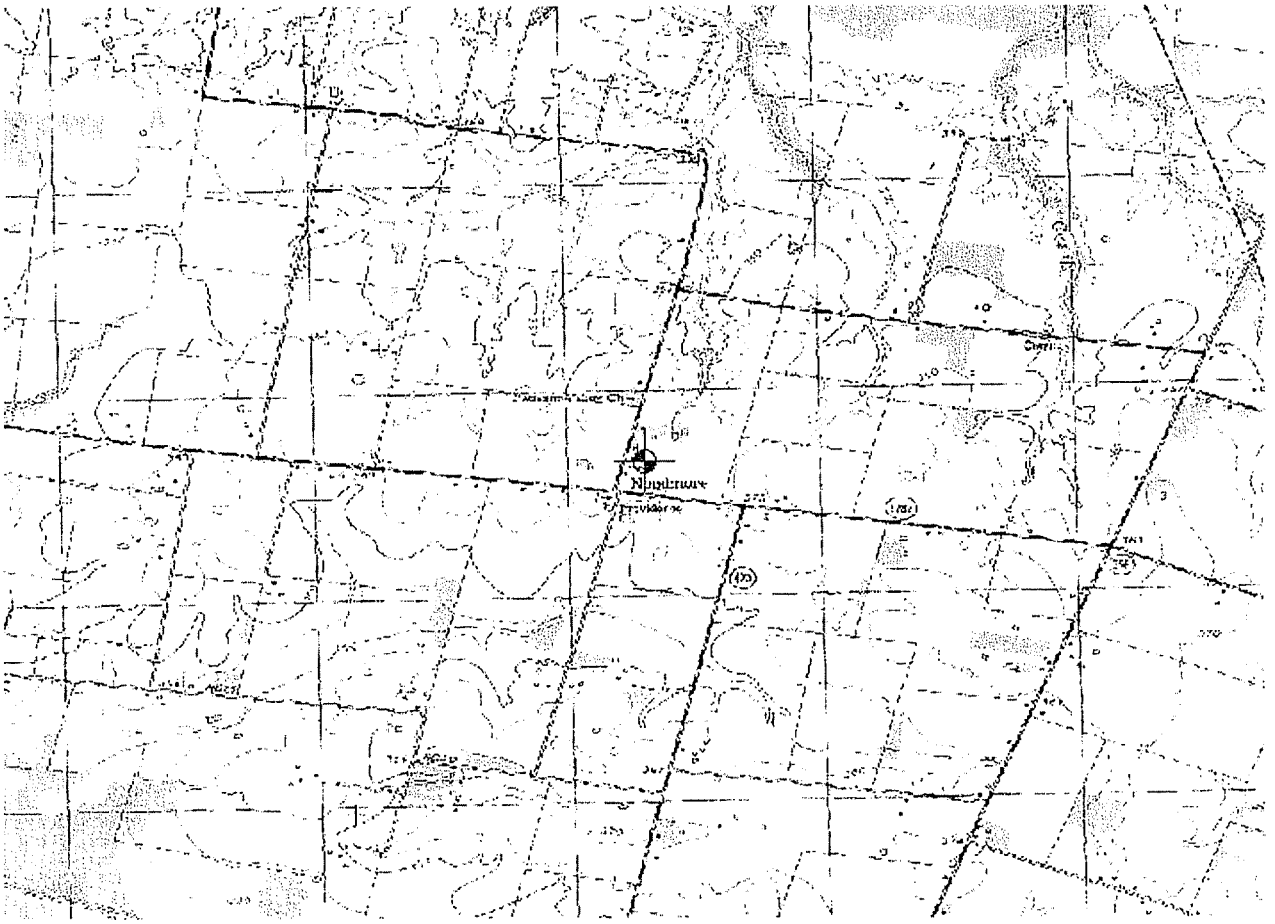


EXHIBIT F
APPLICATION TO KENTUCKY AIRPORT ZONING COMMISSION

Kentucky Transportation Cabinet, Kentucky Airport Zoning Commission, 200 Mero Street, Frankfort KY 40622

Kentucky Aeronautical Study Number

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

1. APPLICANT – Name, Address, Telephone, Fax, etc.

Kentucky RSA 1 Partnership
30 Independence Blvd.
Warren, NJ 07059
908-607-8132

2. Representative of Applicant – Name, Address, Telephone, Fax

Jennifer Flynn
Verizon Wireless
30 Independence Blvd.
Warren, NJ 908-607-8132

3. Application for: ☒ New Construction ☐ Alteration ☐ Existing

4. Duration: ☒ Permanent ☐ Temporary (Months _____ Days _____)

5. Work Schedule: Start _____ End _____

6. Type: ☒ Antenna Tower ☐ Crane ☐ Building ☐ Power Line
☐ Landfill ☐ Water Tank ☐ Other _____

7. Marking/Painting and/or Lighting Preferred:
☐ Red Lights and Paint ☒ Dual – Red & Medium Intensity White
☐ White – Medium Intensity ☐ Dual – Red & High Intensity White
☐ White – High Intensity ☐ Other _____

FAA Aeronautical Study Number ___ _____

9. Latitude: 37___° __10____' __55.43_____"

10. Longitude: 088____° ___56___' __43.75__"

11. Datum: ☒ NAD 83 ☐ NAD 27 ☐ Other
_____

12. Nearest Kentucky City Kevil County: Ballard

13. Nearest Kentucky public use or Military airport:
Shawnee Community College

14. Distance from #13 to Structure 6.5818 NM

15. Direction from #13 to Structure: 320.86 degrees

16. Site Elevation (*AMSL*): 337 Feet

17. Total Structure Height (*AGL*): 325 _ Feet

18. Overall Height (#16 + #17) (*AMSL*): 662 Feet

19. Previous FAA and/or Kentucky Aeronautical Study Number(s):
_ _____

Description of Location: (Attach a USGS 7.5 minute Quadrangle Map or an Airport Layout Drawing with the precise site marked and any certified survey)

4625 Ogden Colvin Circle
Kevil, KY 42053

20. Description of Proposal:
We are proposing to construct a 325 ft self support tower.

22. Has a "NOTICE OF CONSTRUCTION OR ALTERATION" (FAA Form 7460-1) been filed with the Federal Aviation Administration?
☐ No
☒ Yes, When 12/21/2005

CERTIFICATION: I hereby certify that all the above statements made by me are true, complete and correct to the best of my knowledge and belief.

Jennifer Flynn _____ 12/21/2005
Printed Name Signature Date

PENALTIES: Persons failing to comply with Kentucky Revised Statutes (KRS 183.861 through 183.990) and Kentucky Administrative Regulations (602 KAR 050: Series) are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Non-compliance with Federal Aviation Administration Regulations may result in further penalties.

Commission Action: ☐ Chairman, KAZC ☐ Administrator, KAZC

☐ Approved
☐ Disapproved _____ Date _____

EXHIBIT G
GEOTECHNICAL REPORT

FStan

Land Surveyors & Consulting Engineers

GEOTECHNICAL ENGINEERING STUDY

Proposed Monkey's Eyebrow, Tower Site
4625 Ogden Colvin Circle, Kevil, Ballard County, Kentucky
FStan Project No. 05-3142

FStan Land Surveyors &
Consulting Engineers
2315 Crittenden Drive
PO Box 17546
Louisville, KY 40217
Phone: (502) 636-5111
Fax: (502) 636-5263

Prepared For:

Ms. Jana Luecke
Craig & Associates
2508 Newburg Road
Louisville, KY 40205

Date: March 23, 2005

FStan
Land Surveyors and Consulting Engineers
Formerly F.S. Land & T. Alan Neal Companies

March 23, 2005

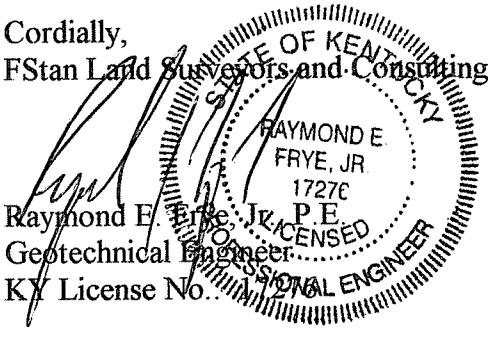
Ms. Jana Luecke
2508 Newburg Road
Louisville, KY 40205-2478

Re: Geotechnical Engineering Study
Proposed 300-foot SST
Cellco Partnership Site Name: Monkeys Eyebrow
4625 Ogden Colvin Circle, Kevil, Ballard County, KY 42053
FStan Project No. 05-3142

Dear Ms. Luecke:

Transmitted herewith is our geotechnical engineering report for the referenced project. This report contains our findings, an engineering interpretation of these findings with respect to the available project characteristics, and recommendations to aid design and construction of the tower foundations. We appreciate the opportunity to be of service to you on this project. If you have any questions regarding this report, please contact our office.

Cordially,
FStan Land Surveyors and Consulting Engineers



Raymond E. Frye, Jr., P.E.
Geotechnical Engineer
KY License No.: 17270

Copies submitted: (3) Ms. Jana Luecke

2315 Crittenden Drive PO Box 17546 Louisville, KY 40217
Phone: (502) 636-5111 (502) 635-5866 Fax: (502) 636-5263

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GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed 300-foot Self-Supporting Telecommunications Tower
Cellco Partnership – Monkeys Eyebrow
4625 Ogden Colvin Circle, Kevil, Ballard County, Kentucky
FStan Project No. 05-3142

1. PURPOSE AND SCOPE

The purpose of this study was to determine the general subsurface conditions at the location of the proposed tower by drilling four soil test borings and to evaluate this data with respect to foundation concept and design for the proposed self-supported tower. Also included is an evaluation of the site with respect to potential construction problems and recommendations for quality control during construction.

2. PROJECT CHARACTERISTICS

Cellco Partnership is proposing to construct a 300 feet tall self-supporting communications tower on property owned by Billy Owsley located on 4625 Ogden Colvin Circle, Kevil, Ballard County, Kentucky. The site explored consists of a plowed agricultural field, located behind several barn structures that front Ogden Colvin Circle. The site topography is generally flat lying with topographic relief of about 3 feet. The site sloped gradually from the northeast property corner downhill to the southwest property corner. The approximate ground elevation at the anticipated tower center was 337 feet msl. An access road runs west from the site to Ogden Colvin Circle. The location of the proposed tower is shown on the Boring Location Plan in the Appendix.

Preliminary information provided us indicates that this project will consist of constructing a self-support communications tower 300 feet tall. We have assumed the following structural information:

- Compression (per leg) = 500 kips
- Uplift (Per Leg) = 400 kips
- Total shear = 45 kips

The development will also include a small equipment shelter near the base of the tower. The

wall and floor loads for the shelter are assumed to be less than 4 kip/ln.ft. and 200 lbs/sq.ft., respectively.

Site Geology

The 1969 Bandana and Olmsted Geologic Quadrangle map indicates the tower site is underlain by Quaternary aged loess deposits. The loess deposits were formed by windblown soils deposited as dunes on the highest terrace surface in the Ohio River valley during the Illinoian and Wisconsin glaciation. The loess is typically yellowish brown, is unstratified with small amounts of clay and fine to coarse sand. The thickness of the loess over the quadrangle area can vary up to 40 feet thick. Below the Loess, Continental deposits were mapped. The upper portion of the continental deposits consists of yellowish to reddish brown silt and sand.

3. SUBSURFACE CONDITIONS

The subsurface conditions were explored by drilling 3 soil test borings near the center of the proposed tower as located and staked on site by the project surveyor. The Geotechnical Boring Logs, which are included in the Appendix, describes the materials and conditions encountered. A reference sheet defining the terms and symbols used on the boring logs has also been included in the Appendix. The general subsurface conditions disclosed by the test borings are discussed in the following paragraphs.

The thickness of the topsoil encountered at the boring locations was about 12 inches thick. Below the topsoil, the borings encountered brown to mottled brown and gray clayey silt to silty lean clay. The standard penetration test values (N-values) ranged from 14 blows per foot (bpf) to 24 bpf. These values generally represent stiff to very stiff soil conditions. Our engineer using standard soil classification techniques classified the soil as CL/ML according to the unified soil classification system, USCS. The CL/ML soil was encountered to a depth of 33.5 feet in each of the borings.

Below the CL/ML soil, the borings encountered stiff mottled brown to reddish brown lean clay (USCS: CL). N-values of lean clay ranged from 22 bpf to 36 bpf, which represent very stiff to hard cohesive soil consistency. The soil was encountered to the predetermined boring

termination level of 40 feet in borings B-1 and B-2, and was encountered to a depth of 43.5 feet in boring B-3.

Below the lean clay the boring B-3 encountered reddish brown sandy lean clay to clayey sand to the boring termination level of 50 feet. The N-values obtained in this stratum were greater than 50 blows per 6-inch increment; which represent dense cohesionless soil conditions. Boring B-3 was terminated at a depth of 50.0 feet. Refusal materials were not encountered in the borings advanced at this site.

Water was detected in our borings at depths ranging widely from 4.0 to 20.0 feet 24 hours after drilling. It must be noted however, that short-term water readings in test borings are not necessarily a reliable indication of the actual groundwater level. Furthermore, it must be emphasized that the groundwater level is not stationary, but will fluctuate seasonally.

According to the 2002 Kentucky Building Code, Ballard County, Kentucky is within seismic design category E (an UBC equivalent seismic zone of 4). In this system, Zone E is the most seismically active while Zone B has the lowest earthquake potential. Based on the limited subsurface conditions encountered at the site and using Table 1615.1.1 of the building code, the site class is considered D. Seismic design requirements for telecommunication towers are given in section 1622 of the code. A detailed seismic study was beyond the scope of this report.

4. GEOTECHNICAL DESIGN RECOMMENDATIONS

The following geotechnical design recommendations have been developed on the basis of the previously described project characteristics (Section 2.0) and subsurface conditions (Section 3.0). This office must be notified if the project description included herein is incorrect, or if the proposed structure location is changed, to establish if revisions to the following recommendations are necessary.

4.1. Tower

4.1.1 General

The following design recommendations are based on the previously described project information, the subsurface conditions encountered in our borings, the results of our laboratory testing, empirical correlations for the soil types encountered, our analyses, and our experience. If there is any change in the project criteria or structure location, you should retain us to review our recommendations so that we can determine if any modifications are required. The findings of such a review can then be presented in a supplemental report or addendum.

We recommend FStan be retained to review the near-final project plans and specifications, pertaining to the geotechnical aspects of the project, prior to bidding and construction. We recommend this review to check that our assumptions and evaluations are appropriate based on the current project information provided to us, and to check that our foundation and earthwork recommendations were properly interpreted and implemented.

4.1.1 Mat Foundation

Bearing Capacity: A mat foundation is recommended for support of the proposed tower foundation. We recommend the mat foundation be designed to act as a rigid structure. The mat foundation should bear on the stiff clayey silt that was encountered below about 5.0 feet in the borings at an allowable static net bearing pressure of 3000 kips per square foot (ksf). The mat foundation should be buried sufficiently deep to resist uplift and overturning forces. We estimate that the tower mat foundation designed and constructed in accordance with the guides of this report will result in total settlement of about 2.5, inches and differential settlement of about one inch. If these settlement values are considered unacceptable FStan should be contacted for additional evaluation.

Modulus of Subgrade Reaction: Based on the conditions encountered by the borings and our experience, we recommend sizing the mat foundation for a modulus of subgrade reaction (k_s) of 14 kcf. The k_s value was determined using the estimated total settlement of 2.5 inches and the total contact pressure applied to the foundation subgrade. The total pressure applied to the

foundation subgrade beneath the mat was assumed to be distributed uniformly across the plan dimension of the mat. A more rigorous analysis, such as using the computer program *PCA-Mats*, was beyond the scope of our services.

Lateral Load Resistance: Lateral foundation load may be resisted using passive earth pressure. We recommend that the passive resistance of the upper 3 feet of the native silty lean clay to clayey silt stratum be neglected due to environmental effects and lack of confinement. The allowable passive earth pressure to resist lateral loads below this level is calculated as follows:

$$P_p = 40(D-3) + 1{,}000 \text{ psf}$$

Where D is the depth to the level of interest.

4.2. Equipment Building

The equipment building may be supported on shallow spread footings bearing in the stiff to very stiff native clayey silt to silty lean clay sized for a maximum allowable soil pressure of 2,000 pounds per square foot. The footings should be at least 12 inches wide. The footings should bear at a depth of at least 30 inches. All existing fill, topsoil or soft natural soil should be removed beneath footings.

The floor slab for the new equipment building may be subgrade supported on a properly prepared subgrade. The slab should be designed and adequately reinforced to resist the loads proposed. The exposed subgrade should be carefully inspected by probing and testing as needed. Any organic material still in place, frozen or excessively soft soil and other undesirable materials should be removed.

Once the subgrade has been properly prepared and evaluated, fill may be placed to attain the desired final grade. Any non-organic, naturally occurring, non-expansive soils can be used for structural fill, including those encountered on this site, pending evaluation by the geotechnical engineer. If more than 3 feet of fill is placed below the tower foundation, the geotechnical engineer should be contacted.

4.3. Drainage and Groundwater Considerations

Good site drainage must be provided. Surface run-off water should be drained away from the shelter building and not allowed to pond.

At the time of this investigation, groundwater was encountered at depths ranging widely from 4 feet bgs to 38 feet bgs. We believe that ground water could be encountered during the foundation construction for the tower mat foundation; however, because the soils are silty, we believe that any seepage into the foundation excavation will be slow and that seepage water may be removed by pumping from a sump pit adjacent to the excavation.

5. GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

It is possible that variations in subsurface conditions will be encountered during construction. Although only minor variations that can be readily evaluated and adjusted for during construction are anticipated, it is recommended the geotechnical engineer or a qualified representative be retained to perform continuous inspection and review during construction of the soils-related phases of the work. This will permit correlation between the test boring data and the actual soil conditions encountered during construction.

5.1 Shallow Foundations

The following is recommended for the mat and equipment building foundations:

We recommend that foundation inspections be performed at the time of foundation construction in an effort to identify unsuitable soils and remove them prior to foundation construction. We recommend the foundation subgrades be protected from exposure to water. Surface run-off water should be drained away from the excavation and not allowed to pond. If possible, all concrete should be placed that same day the excavation is made. If this is not practical, the excavation should be adequately protected. The following guides address protection of footing subgrades and our recommended remediation for any soft soils encountered.

- Protect foundation support materials exposed in open excavations from freezing weather, severe drying, and water accumulation.

- Remove any soils disturbed by exposure prior to foundation concrete placement.

- Groundwater may be encountered in the tower foundation excavation and equipment building foundation excavations. Protect the silty foundation bearing surface by placing a "lean" concrete mud-mat over the bearing soils.

- Level or suitably bench the foundation bearing area.

- Remove loose soil, debris, and excess surface water from the bearing surface prior to concrete placement.

- Retain the geotechnical engineer to observe all foundation excavations and provide recommendations for treatment of any unsuitable conditions encountered.

5.2 Fill Compaction

All engineered fill placed adjacent to and above the tower foundation should be compacted to a dry density of at least 95 percent of the standard Proctor maximum dry density (ASTM D-698). This should be increased to 98 percent for any fill placed below the foundations of equipment building. The compaction should be accomplished by placing the fill in about 8 inch (or less) loose lifts and mechanically compacting each lift to at least the specified minimum dry density. Field density tests should be performed on each lift as necessary to insure that adequate moisture conditioning and compaction is being achieved.

Compaction by flooding is not considered acceptable. This method will generally not achieve the desired compaction and the large quantities of water will tend to soften the foundation soils.

5.3 Construction Dewatering

No serious dewatering problems are anticipated for shallow excavations; however 24 hour ground water levels were measured at depths ranging widely from 4 feet bgs to 20 feet bgs. Any seepage encountered should be slow and can be removed by pumping from a sump pit adjacent to the foundation excavation. At the time of our investigation, ground water was not

encountered. Depending upon seasonal conditions, some minor seepage into excavations may be experienced in shallow excavations. It is anticipated that any such seepage into shallow excavations can be handled by conventional dewatering methods such as pumping from sumps.

6. FIELD AND LABORATORY INVESTIGATION

The soil test boring was drilled at the tower center location established in the field by the project surveyor. Split-spoon samples were obtained by the Standard Penetration Test (SPT) procedure (ASTM D1586) in the test boring. The boring was extended to refusal materials. The refusal materials were sampled in one boring to the predetermined termination depth of 40.0 feet. The split-spoon and rock core samples were inspected and visually classified by a geotechnical engineer. Representative portions of the soil samples were sealed in glass jars and the rock core were placed in standard sample boxes and returned to our laboratory.

The boring logs are included in the Appendix along with a reference sheet defining the terms and symbols used on the log and an explanation of the Standard Penetration Test (SPT) procedure. The log presents visual descriptions of the soil strata encountered, Unified Soil Classification System designations, groundwater observations, sampling information, laboratory test results, and other pertinent field data and observations.

7. LIMITATIONS OF STUDY

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. FStan is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

This geotechnical study is inherently limited since the engineering recommendations are developed from information obtained from test borings that only depict subsurface conditions at that specific location, time and depths shown on the log. Soil conditions at other locations may differ from those encountered in the test borings, and the passage of time may cause the soil conditions to change from those described in this report.

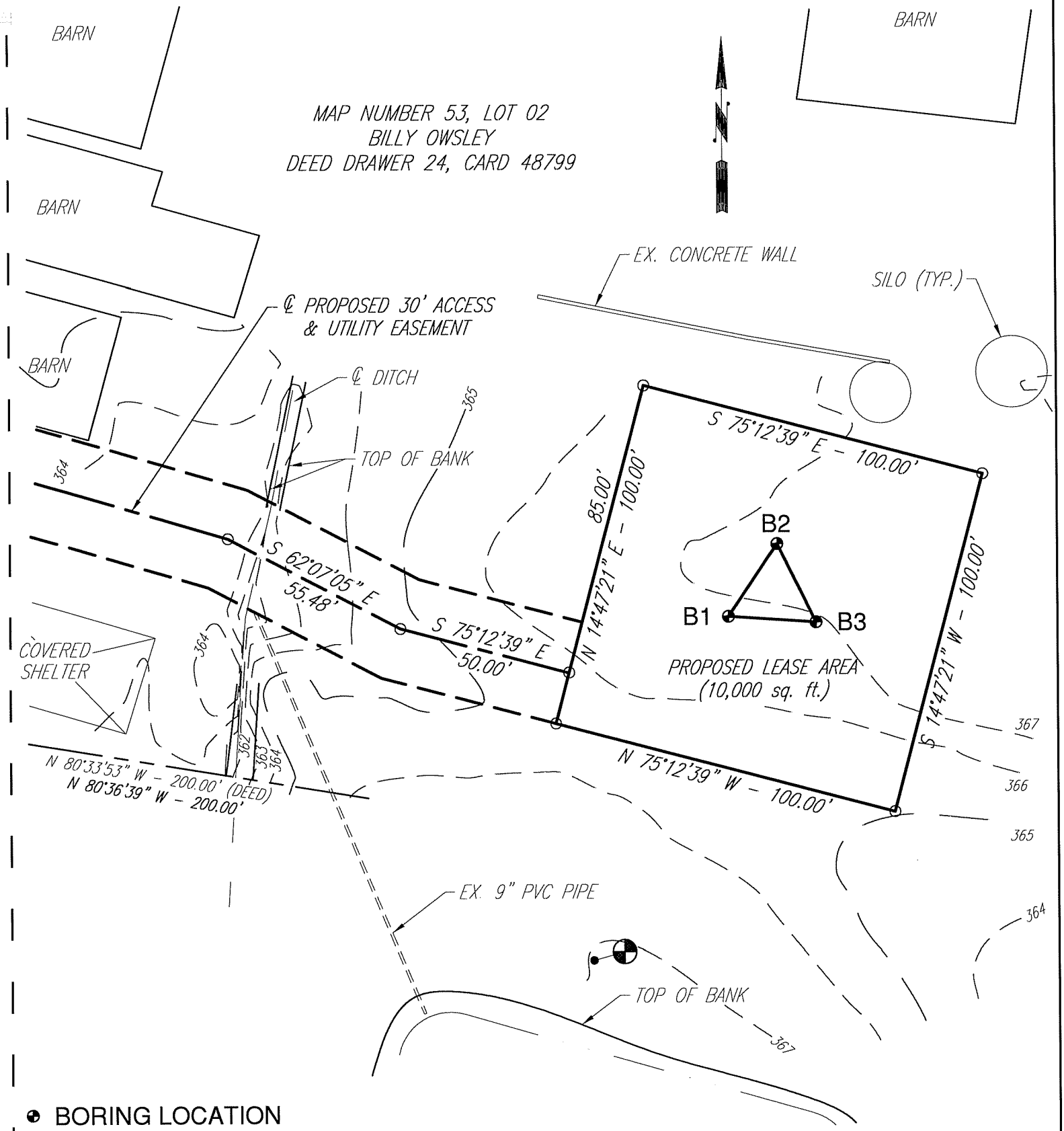
The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or a representative is therefore considered necessary to verify the subsurface conditions and to check that the soils connected construction phases are properly completed. If significant variations or changes are in evidence, it may then be necessary to re-evaluate the recommendations of this report. Furthermore, if the project characteristics are altered significantly from those discussed in this report, if the project information contained in this report is incorrect, or if additional information becomes available, a review must be made by this office to determine if any modification in the recommendations will be required.

APPENDIX

BORING LOCATION PLAN

GEOTECHNICAL BORING LOG

SOIL SAMPLE CLASSIFICATION



● BORING LOCATION

BORING LOCATION PLAN

SITE NAME: MONKEY'S EYEBROW
PROPOSED 300' SELF-SUPPORT TOWER
4625 OGDEN COLVIN CIRCLE
KEVIL, KY. 42053

NOT TO SCALE

FSTAN PROJECT #:
05-3141

DATE:
03-22-05

FSTAN
F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Crittenden Drive
Louisville, KY 40217
Phone: (502) 635-5866 (502) 636-5111
Fax: (502) 636-5263

FStan Land Surveyors and Consulting Engineers
P.O. Box 17546
2315 Crittenden Drive
Louisville, KY 40217
(502) 636-5866
(502) 636-5263

Geotechnical Boring Log

Boring No: **B-1**

Client: CELLCO Partnership	Project Number: 05-3142
Project: Proposed Monkey's Eyebrow Tower	Drilling Firm: Keen Exploration
Location: 4625 Ogden Colvin Circle, Kevil, KY	Project Manager: Ray Frye
Date Started: 3/11/2005	Total Depth of Boring: 40 ft
Date Completed: 3/11/2005	NA on rods
Boring Method: 2 1/4" ID HSA	NA at completion
Surface Elevation: NA	▼ 4 ft 24 hours after completion

Layer Depth ft	Legend	Material Description	Depth Scale ft	Sample Data No.	Type	Blows	Rec. %	PP tsf	W %	Remarks
1.0		TOPSOIL								
		Stiff to very stiff, brown to mottled, brown and gray, silty LEAN CLAY to CLAYEY SILT (CL/ML).	▼	1	SS	3-5-8	100		26.3	Hammer type: manual
			5	2	SS	6-7-9	100		26.7	
				3	SS	7-8-10	100		28.3	
				4	SS	8-10-12	100		27.6	
			10							
				5	SS	9-7-8	100		24.4	
			15							
				6	SS	8-8-10	100		23.2	
			20							
				7	SS	9-9-9	100			
			25							
				8	SS	10-12-11	100		25.2	
			30							
33.5		Hard, mottled, brown, reddish brown and gray, LEAN CLAY (CL) with some SAND.		9	SS	18-16-17	100		20.3	
			35							
				10	SS	15-17-19	100		18.6	
40.0		Bottom of Boring at 40 ft	40							Boring terminated at 40 feet.
			45							
			50							
			55							

GEOTECHNICAL BORING LOG 05-3142.GPJ FSTAN.GDT 3/24/05

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2315 Crittenden Drive
Louisville, KY 40217
(502) 636-5866
(502) 636-5263

Geotechnical Boring Log

Boring No: **B-2**

Client: CELLCO Partnership	Project Number: 05-3142
Project: Proposed Monkey's Eyebrow Tower	Drilling Firm: Keen Exploration
Location: 4625 Ogden Colvin Circle, Kevil, KY	Project Manager: Ray Frye
Date Started: 3/14/2005	Total Depth of Boring: 40 ft
Date Completed: 3/14/2005	▽ 25 ft on rods
Boring Method: 2 1/4" ID HSA	▼ 37 ft at completion
Surface Elevation: NA	NA NA hours after completion

Layer Depth ft	Material Description	Depth Scale ft	No.	Type	Blows	Rec. %	PP tsf	W %	Remarks
1.0	TOPSOIL Stiff to very stiff, brown to mottled, brown and gray, silty LEAN CLAY to CLAYEY SILT (CL/ML).		1	SS	5-8-10	100		27.6	Hammer type: manual
		5	2	SS	6-8-10	100		27	
			3	SS	6-6-8	100		27.4	
		10	4	SS	9-9-11	100		27.2	
		15	5	SS	7-7-7	100		24.4	
		20	6	SS	5-7-9	100		25.1	
		▽ 25	7	SS	9-9-10	100		21.6	
		30	8	SS	11-12-11	100		22	
33.5	Very stiff to hard, mottled brown, reddish brown and gray, LEAN CLAY (CL) with some SAND.	▼ 35	9	SS	11-11-11	100		22.7	
		40	10	SS	11-16-16	100		17.7	
40.0	Bottom of Boring at 40 ft								Boring terminated at 40 feet.
		45							
		50							
		55							

GEOTECHNICAL BORING LOG 05-3142.GPJ FSTAN.GDT 3/24/05

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P.O. Box 17546
2315 Crittenden Drive
Louisville, KY 40217
(502) 636-5866
(502) 636-5263

Geotechnical Boring Log

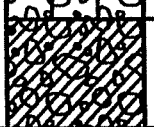
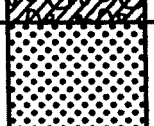
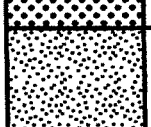
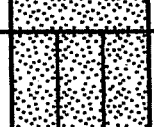
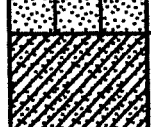
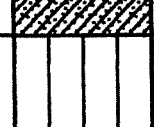
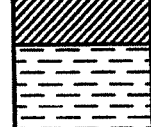
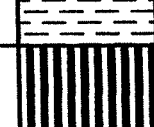
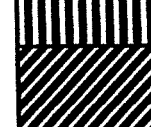
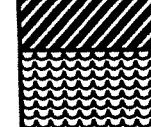
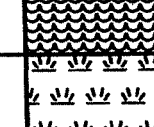
Boring No: **B-3**

Client: CELLCO Partnership	Project Number: 05-3142
Project: Proposed Monkey's Eyebrow Tower	Drilling Firm: Keen Exploration
Location: 4625 Ogden Colvin Circle, Kevil, KY	Project Manager: Ray Frye
Date Started: 3/11/2005	Total Depth of Boring: 50 ft
Date Completed: 3/11/2005	NA on rods
Boring Method: 2 1/4" ID HSA	NA at completion
Surface Elevation: NA	▼ 20 ft 24 hours after completion

Layer Depth ft	Material Description	Depth Scale ft	No.	Type	Blows	Rec. %	PP tsf	W %	Remarks
1.0	TOPSOIL Stiff to very stiff, brown to mottled, brown and gray, silty and LEAN CLAY, to CLAYEY SILT. (CL/ML).		1	SS	3-5-8	100		25.3	Hammer type: manual
		5	2	SS	8-7-9	100		28.9	
			3	SS	7-8-9	100		27.5	
		10	4	SS	7-8-11	100		26.4	
		15	5	SS	9-9-10	100		23	
		▼ 20	6	SS	8-10-14	100		24.4	
		25	7	SS	6-6-9	100		23.6	
		30	8	SS	7-10-13	100		23.8	
33.5	Very stiff, mottled brown, reddish brown and gray, LEAN CLAY (CL) with some SAND.	35	9	SS	11-13-14	100		26.6	
		40	10	SS	9-13-13	100		14.8	
43.5	Hard, reddish brown, SANDY CLAY grading to dense, reddish brown CLAYEY SAND (SC).	45	11	SS	16-50/5"	100		17.5	
		50	12	SS	13-50/5"	100		21.5	
50.0	Bottom of Boring at 50 ft								Boring terminated at 50 feet.
		55							

GEOTECHNICAL BORING LOG 05-3142.GPJ FSTAN.GDT 3/24/05

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

EXHIBIT H
COPY OF REAL ESTATE AGREEMENT

Site Name: Monkeys Eyebrow
Project No. 2004067191

DOC# 07-22-96(5) Rev. 11/17/98

OPTION AND LEASE AGREEMENT

This Agreement made this 1st day of [illegible], 2005, between Billy Wayne Owsley, a single male, with a mailing address of 4625 Ogden Colvin Circle, Kevil, Kentucky 42053, hereinafter designated LESSOR and Cellco Partnership, a Delaware general partnership, d/b/a Verizon Wireless, with its principal offices located at 180 Washington Valley Road, Bedminster, New Jersey, 07921, hereinafter designated LESSEE. The LESSOR and LESSEE are at times collectively referred to hereinafter as the "Parties" or individually as the "Party".

LESSOR is the owner of that certain real property located on Ogden Colvin Circle in Kevil, Ballard County, State of Kentucky, as shown on the Tax Map of the County of Ballard as Map 53, Lot 2, and being further described in Deed Cabinet 1, Drawer 24, Card 48799, as recorded in the Office of the Ballard County Court Clerk (the entirety of LESSOR's property is referred to hereinafter as the "Property").. LESSEE desires to obtain an option to lease a portion of said Property , with a right-of-way for access thereto (hereinafter referred to as the "Premises"), containing approximately ten thousand (10,000) square feet, more specifically described as a 100 foot by 100 foot parcel and as substantially shown on Exhibit "A" attached hereto and made a part hereof.

NOW THEREFORE,

LESSOR hereby grants to LESSEE the right and option to lease said Premises including a right-of-way for access thereto, for the term and in accordance with the covenants and conditions set forth herein.

The option may be exercised at any time on or prior to one year from the date of execution by Lessor. At LESSEE's election and upon LESSEE's prior written notification to LESSOR, the time during which the option may be exercised may be further extended for one additional period of one year through and including two years from the date of execution by Lessor, . The time during which the option may be exercised may be further extended by mutual agreement in writing. If during said option period, or during the term of the lease, if the option is exercised, the LESSOR decides to subdivide, sell or change the status of the Property or his property contiguous thereto he shall immediately notify LESSEE in writing so that LESSEE can take steps necessary to protect LESSEE's interest in the Premises.

This option may be sold, assigned or transferred by the LESSEE without any approval or consent of the LESSOR to the LESSEE's principal, affiliates, subsidiaries of its principal; to any entity which acquires all or substantially all of LESSEE's assets in the market defined by the Federal Communications Commission in which the Property is located by reason of a merger, acquisition or other business reorganization; or to any entity which acquires or receives an interest in the majority of communication towers of the LESSEE in the market defined by the Federal Communications Commission in which the Property is located. As to other parties, this Agreement may not be sold, assigned or transferred without the written consent of the LESSOR, which such consent will not be unreasonably withheld or delayed.

Should LESSEE fail to exercise this option or any extension thereof within the time herein limited, all rights and privileges granted hereunder shall be deemed completely surrendered, this option terminated, and LESSOR shall retain all money paid for the option, and no additional money shall be payable by either Party to the other.

LESSOR shall cooperate with LESSEE in its effort to obtain all certificates, permits and other approvals that may be required by any Federal, State or Local authorities which will permit LESSEE use of the Premises. LESSOR shall take no action which would adversely affect the status of the Property with respect to the proposed use by LESSEE.

The LESSOR shall permit LESSEE, during the option period, free ingress and egress to the Premises to conduct such surveys, inspections, structural strength analysis, subsurface soil tests, and other activities of a similar nature as LESSEE may deem necessary, at the sole cost of LESSEE.

LESSOR agrees to execute a Memorandum of this Option to Lease Agreement which LESSEE may record with the appropriate Recording Officer. The date set forth in the Memorandum of Option to Lease is for recording purposes only and bears no reference to commencement of either term or rent payments.

Notice of the exercise of the option shall be given by LESSEE to the LESSOR in writing by certified mail, return receipt requested. Notice shall be deemed effective on the date it is posted. On the date of such notice the following agreement shall take effect:

LEASE AGREEMENT

1. PREMISES. LESSOR hereby leases to LESSEE a portion of that certain parcel of property (the entirety of LESSOR's property is referred to hereinafter as the "Property") containing ten thousand (10,000) square feet situated on Map 53, Lot 2 all as shown on the Tax Map of the County of Ballard, Kentucky, together with the non-exclusive right for ingress and egress, seven (7) days a week, twenty-four (24) hours a day, on foot or motor vehicle, including trucks, and for the installation and maintenance of utility wires, poles, cables, conduits, and pipes over, under, or along a thirty (30) foot wide right-of-way extending from the nearest public right-of-way, Ogden Colvin Circle, to the demised premises, said demised premises and right-of-way (hereinafter referred to as the "Premises") for access being substantially as described herein in Exhibit "A" attached hereto and made a part hereof.

In the event any public utility is unable to use the aforementioned right-of-way, the LESSOR hereby agrees to grant an additional right-of-way either to the LESSEE or to the public utility at no cost to the LESSEE.

2. SURVEY. LESSOR also hereby grants to LESSEE the right to survey the Property and the Premises, and said survey shall then become Exhibit "B" which shall be attached hereto and made a part hereof, and shall control in the event of boundary and access discrepancies between it and Exhibit "A". Cost for such work shall be borne by the LESSEE.

3. TERM. This Agreement shall be for an initial term of five (5) years, and beginning on the date the option is exercised by LESSEE at an annual rental of ( ) to be paid in equal monthly installments on the first day of the month, in advance, to Lessor, or to such other person, firm or place as the LESSOR may, from time to time, designate in writing at least thirty (30) days in advance of any rental payment date. The obligation to pay rent will begin immediately upon the exercise of the option, at which time rental payments and term will begin.

4. EXTENSIONS. This Agreement shall automatically be extended for four (4) additional five (5) year terms unless the LESSEE terminates it at the end of the then current term by giving the LESSOR written notice of the intent to terminate at least six (6) months prior to the end of the then current term.

5. EXTENSION RENTALS.

6. ADDITIONAL EXTENSIONS. If at the end of the fourth (4th) five (5) year extension term this Agreement has not been terminated by either Party by giving to the other written notice of an intention to terminate it at least six (6) months prior to the end of such term, this Agreement shall continue in force upon the same covenants, terms and conditions for a further term of five (5) years and for five (5) year terms thereafter until terminated by either Party by giving to the other written notice of its intention to so terminate at least six (6) months prior to the end of such term.

7. USE; GOVERNMENTAL APPROVALS. LESSEE shall use the Premises for the purpose of constructing, maintaining and operating a communications facility and uses incidental and all necessary appurtenances. A security fence consisting of chain link construction or similar but comparable construction may be placed around the perimeter of the Premises at the discretion of LESSEE (not including the access easement). All improvements shall be at LESSEE's expense and the installation of all improvements shall be at the discretion and option of the LESSEE. LESSEE shall have the right to replace, repair, add or otherwise modify its equipment or any portion thereof, whether the equipment is specified or not on any exhibit attached hereto, during the term of this Agreement. LESSEE will maintain the Premises in a good condition reasonable wear and tear excepted. LESSOR will maintain the Property, excluding the Premises, in good condition, reasonable wear and tear excepted. It is understood and agreed that LESSEE's ability to use the Premises is contingent upon its obtaining after the execution date of this Agreement all of the certificates, permits and other approvals that may be required by any Federal, State or Local authorities as well as satisfactory soil boring tests which will permit LESSEE use of the Premises as set forth above. LESSOR shall cooperate with LESSEE in its effort to obtain such approvals and shall take no action which would adversely affect the status of the Property with respect to the proposed use by LESSEE. In the event that any of such applications should be finally rejected or any certificate, permit, license or approval issued to LESSEE is canceled, expires, lapses, or is otherwise withdrawn or terminated by governmental authority or soil boring tests are found to be unsatisfactory so that LESSEE in its sole discretion will be unable to use the Property for its intended purposes or the LESSEE determines that the Premises is no longer technically compatible for its intended use, LESSEE shall have the right to terminate this Agreement. Notice of the LESSEE's exercise of its right to terminate shall be given to LESSOR in writing by certified mail, return receipt requested, and shall be effective upon the mailing of such notice by the LESSEE. All rentals paid to said termination date shall be retained by the LESSOR. Upon such termination, this Agreement shall become null and void and all the Parties shall have no further obligations including the payment of money, to each other.

8. INDEMNIFICATION. Each Party shall indemnify and hold the other harmless against any claim of liability or loss from personal injury or property damage resulting from or arising out of the use and occupancy of the Premises or the Property by the Party, its servants or agents, excepting, however, such claims or damages as may be due to or caused by the acts or omissions of the other Party, or its servants or agents.

9. INSURANCE. The Parties hereby waive any and all rights of action for negligence against the other which may hereafter arise on account of damage to the premises or to property, resulting from any fire, or other casualty of the kind covered by standard fire insurance policies with extended coverage, regardless of whether or not, or in what amounts, such insurance is now or hereafter carried by the Parties, or either of them. LESSOR and LESSEE each agree that at its own cost and expense, each will maintain comprehensive general liability and property liability insurance with liability limits of not less than or injury to or death of one or more persons in any one occurrence for damage or destruction to property in any one occurrence. LESSOR agrees that LESSEE may self-insure against any loss or damage which could be covered by a comprehensive general public liability insurance policy.

10. ANNUAL TERMINATION. Notwithstanding anything to the contrary contained herein, provided LESSEE is not in default hereunder and shall have paid all rents and sums due and payable to the LESSOR by LESSEE, LESSEE shall have the right to terminate this Agreement upon the annual anniversary of this Agreement provided that three (3) months prior notice is given the LESSOR.

11. INTERFERENCE. LESSOR agrees that LESSOR and/or any other tenants of the Property who currently have or in the future take possession of the Property will be permitted to install only such radio equipment that is of the type and frequency which will not cause measurable interference the existing equipment of the LESSEE. The Parties acknowledge that there will not be an adequate remedy at law for non-compliance with the provisions of this paragraph and therefore, LESSEE shall have the right to specifically enforce the provisions of this paragraph in a court of competent jurisdiction.

12. REMOVAL UPON TERMINATION. LESSEE, upon termination of the Agreement, shall, within ninety (90) days, remove its building(s), antenna structure(s) (except footings), fixtures and all personal property and otherwise restore the Property to its original condition, reasonable wear and tear excepted. If such time for removal causes LESSEE to remain on the Property after termination of this Agreement, LESSEE shall pay rent at the then existing monthly rate or on the existing monthly pro-rata basis if based upon a longer payment term, until such time as the removal of the building, antenna structure, fixtures and all personal property are completed.

13. RIGHT OF FIRST REFUSAL. If the LESSOR during the lease term or any extension of the lease term elects to sell all or any portion of the Property, whether separately or as part of the larger parcel of which the Property are a part, the LESSEE shall have the right of first refusal to meet any bona fide offer of sale on the same terms and conditions of such offer. If LESSEE fails to meet such bona fide offer within thirty (30) days after notice thereof from LESSOR, LESSOR may sell the Property or portion thereof to such third person in accordance with the terms and conditions of his offer. For purposes of this Paragraph, any transfer, bequest or devise of the LESSOR's interest in the Property as a result of the death of the LESSOR, whether by will or intestate succession, shall not be considered a sale of the Property for which the LESSEE has any right of first refusal.

14. RIGHTS UPON SALE. Should the LESSOR, at any time during the term of this Agreement, decide to sell all or any part of the Property to a purchaser other than LESSEE, such sale shall be under and subject to this Agreement and LESSEE's rights hereunder, and any sale by the LESSOR of the portion of this Property underlying the right-of-way herein granted shall be under and subject to the right of the LESSEE in and to such right-of-way.

15. QUIET ENJOYMENT. LESSOR covenants that LESSEE, on paying rent and performing the covenants shall peaceably and quietly have, hold and enjoy the Premises.

16. TITLE. LESSOR covenants that LESSOR is seized of good and sufficient title and interest to the Property and has full authority to enter into and execute this Agreement. LESSOR further covenants that there are no other liens, judgments or impediments of title on the Property, or affecting LESSOR's title to the same and that there are no covenants, easements or restrictions which prevent the use of the Premises by the LESSEE as set forth above.

17. INTEGRATION. It is agreed and understood that this Agreement contains all agreements, promises and understandings between the LESSOR and LESSEE and that no verbal or oral agreements, promises or understandings shall be binding upon either the LESSOR or LESSEE in any dispute, controversy or proceeding at law, and any addition, variation or modification to this Agreement shall be void and ineffective unless made in writing and signed by the Parties. In the event any provision of the Agreement is found to be invalid or unenforceable, such finding shall not effect the validity and enforceability of the remaining provisions of this Agreement. The failure of either Party to insist upon strict performance of any of the terms or conditions of this Agreement or to exercise any of its rights under

the Agreement shall not waive such rights and such Party shall have the right to enforce such rights at any time and take such action as may be lawful and authorized under this Agreement, either in law or in equity.

18. GOVERNING LAW. This Agreement and the performance thereof shall be governed, interpreted, construed and regulated by the laws of the State in which the Property is located.

19. ASSIGNMENT. This Agreement may be sold, assigned or transferred by the LESSEE without any approval or consent of the LESSOR to the LESSEE's principal, affiliates, subsidiaries of its principal; to any entity which acquires all or substantially all of LESSEE's assets in the market defined by the Federal Communications Commission in which the Property is located by reason of a merger, acquisition or other business reorganization; or to any entity which acquires or receives an interest in the majority of communication towers of the LESSEE in the market defined by the Federal Communications Commission in which the Property is located. As to other parties, this Agreement may not be sold, assigned or transferred without the written consent of the LESSOR, which such consent will not be unreasonably withheld or delayed. LESSEE may sublet the Premises within its sole discretion, upon notice to LESSOR. Any sublease that is entered into by LESSEE shall be subject to the provisions of this Agreement and shall be binding upon the successors, assigns, heirs and legal representatives of the respective parties hereto.

20. NOTICES. All notices hereunder must be in writing and shall be deemed validly given if sent by certified mail, return receipt requested or by commercial courier, provided the courier's regular business is delivery service and provided further that it guarantees delivery to the addressee by the end of the next business day following the courier's receipt from the sender, addressed as follows (or any other address that the Party to be notified may have designated to the sender by like notice):

LESSOR: Billy Wayne Owsley
4625 Ogden Colvin Circle
Kevil, KY 42053

LESSEE: Cellco Partnership
d/b/a Verizon Wireless
180 Washington Valley Road
Bedminster, New Jersey 07921
Attention: Network Real Estate

Notice shall be effective upon mailing or delivering the same to a commercial courier, as permitted above.

21. SUCCESSORS. This Agreement shall extend to and bind the heirs, personal representatives, successors and assigns of the Parties hereto.

22. SUBORDINATION AND NON-DISTURBANCE. At LESSOR's option, this Agreement shall be subordinate to any mortgage or other security interest or other security interest by LESSOR which from time to time may encumber all or part of the Property or right-of-way; provided, however, every such mortgage or other security interest or other security interest shall recognize the validity of this Agreement in the event of a foreclosure of LESSOR's interest and also LESSEE's right to remain in occupancy of and have access to the Premises as long as LESSEE is not in default of this Agreement. LESSEE shall execute whatever instruments may reasonably be required to evidence this subordination clause. In the event the Property is encumbered by a mortgage or other security interest or other security interest, the LESSOR immediately after this Agreement is executed, will obtain and furnish to LESSEE, a

non-disturbance agreement for each such mortgage or other security interest or other security interest in recordable form. In the event the LESSOR defaults in the payment and/or other performance of any mortgage or other security interest encumbering the Property, LESSEE, may, at its sole option and without obligation, cure or correct LESSOR's default and upon doing so, LESSEE shall be subrogated to any and all rights, titles, liens and equities of the holders of such mortgage or security interest and the LESSEE shall be entitled to deduct and setoff against all rents that may otherwise become due under this Agreement the sums paid by LESSEE to cure or correct such defaults.

23. RECORDING. LESSOR agrees to execute a Memorandum of this Lease Agreement which LESSEE may record with the appropriate Recording Officer. The date set forth in the Memorandum of Lease is for recording purposes only and bears no reference to commencement of either term or rent payments.

24. DEFAULT. In the event there is a default by the LESSEE with respect to any of the provisions of this Agreement or its obligations under it, including the payment of rent, the LESSOR shall give LESSEE written notice of such default. After receipt of such written notice, the LESSEE shall have fifteen (15) days in which to cure any monetary default and thirty (30) days in which to cure any non-monetary default, provided the LESSEE shall have such extended period as may be required beyond the thirty (30) days if the nature of the cure is such that it reasonably requires more than thirty (30) days and the LESSEE commences the cure within the thirty (30) day period and thereafter continuously and diligently pursues the cure to completion. The LESSOR may not maintain any action or effect any remedies for default against the LESSEE unless and until the LESSEE has failed to cure the same within the time periods provided in this Paragraph.

25. ENVIRONMENTAL.

a. LESSOR will be responsible for all obligations of compliance with any and all environmental and industrial hygiene laws, including any regulations, guidelines, standards, or policies of any governmental authorities regulating or imposing standards of liability or standards of conduct with regard to any environmental or industrial hygiene conditions or concerns as may now or at any time hereafter be in effect, that are or were in any way related to activity now conducted in, on, or in any way related to the Property, unless such conditions or concerns are caused by the activities of the LESSEE.

b. LESSOR shall hold LESSEE harmless and indemnify the LESSEE from and assume all duties, responsibility and liability at LESSOR's sole cost and expense, for all duties, responsibilities, and liability (for payment of penalties, sanctions, forfeitures, losses, costs, or damages) and for responding to any action, notice, claim, order, summons, citation, directive, litigation, investigation or proceeding which is in any way related to: a) failure to comply with any environmental or industrial hygiene law, including without limitation any regulations, guidelines, standards, or policies of any governmental authorities regulating or imposing standards of liability or standards of conduct with regard to any environmental or industrial hygiene concerns or conditions as may now or at any time hereafter be in effect, unless such compliance results from conditions caused by the LESSEE; and b) any environmental or industrial hygiene conditions arising out of or in any way related to the condition of the Property or activities conducted thereon, unless such environmental conditions are caused by the LESSEE.

26. CASUALTY. In the event of damage by fire or other casualty to the Premises that cannot reasonably be expected to be repaired within forth-five (45) days following same or, if the Property is damaged by fire or other casualty so that such damage may reasonably be expected to disrupt LESSEE's operations at the Premises for more than forty-five (45) days, then LESSEE may at any time following such fire or other casualty, provided LESSOR has not completed the restoration required to permit LESSEE to resume its operation at the Premises, terminate this Lease upon fifteen (15) days written notice to LESSOR. Any such notice of termination shall cause this Lease to expire with the same force and effect as though the date set forth in such notice were the date originally set as the expiration date of this Lease and the parties shall make an appropriate adjustment, as of such termination date, with respect to

payments due to the other under this Lease. Notwithstanding the foregoing, all rental shall abate during the period of such fire or other casualty.

27. CONDEMNATION. In the event of any condemnation of the Property, LESSEE may terminate this Lease upon fifteen (15) days written notice to LESSOR if such condemnation may reasonably be expected to disrupt LESSEE's operations at the Premises for more than forty-five (45) days. LESSEE may on its own behalf make a claim in any condemnation proceeding involving the Premises for losses related to the antennas, equipment, its relocation costs and its damages and losses (but not for the loss of its leasehold interest). Any such notice of termination shall cause this Lease to expire with the same force and effect as though the date set forth in such notice were the date originally set as the expiration date of this Lease and the parties shall make an appropriate adjustment as of such termination date with respect to payments due to the other under this Lease.

28. SUBMISSION OF LEASE. The submission of this Lease for examination does not constitute an offer to lease the Premises and this Lease becomes effective only upon the full execution of this Lease by the Parties. If any provision herein is invalid, it shall be considered deleted from this Lease and shall not invalidate the remaining provisions of this Lease. Each of the Parties hereto warrants to the other that the person or persons executing this Lease on behalf of such party has the full right, power and authority to enter into and execute this Lease on such Party's behalf and that no consent from any other person or entity is necessary as a condition precedent to the legal effect of this Lease.

29. APPLICABLE LAWS. LESSEE shall use the Premises as may be required or as permitted by applicable laws, rules and regulations. LESSOR agrees to keep the Property in conformance with all applicable, laws, rules and regulations and agrees to reasonably cooperate with the LESSEE regarding any compliance required by the LESSEE in respect to its use of the Premises.

30. SURVIVAL. The provisions of the Agreement relating to indemnification from one Party to the other Party shall survive any termination or expiration of this Agreement. Additionally, any provisions of this Agreement which require performance subsequent to the termination or expiration of this Agreement shall also survive such termination or expiration.

31. CAPTIONS. The captions contained in this Agreement are inserted for convenience only and are not intended to be part of the Agreement. They shall not affect or be utilized in the construction or interpretation of the Agreement.

IN WITNESS WHEREOF, the Parties hereto have set their hands and affixed their respective seals the day and year first above written.

LESSOR: Billy Wayne Owsley

Billy Wayne Owsley

Billy Wayne Owsley

05/11/05

Site Name: Monkeys Eyebrow

LESSEE: Cellco Partnership, d/b/a Verizon Wireless

WITNESS

BY: _____
Howard H. Bower
Midwest Area Vice President - Network

LESSOR ACKNOWLEDGEMENT

STATE OF Kentucky)
COUNTY OF McCracken)

This instrument was subscribed, sworn to, and acknowledged before me by Billy Wayne Owsley, Lessor, on this 13th day of May, 2005. My commission expires: 8-7-05.

Nancy Sellars
Notary Public, State at Large

STATE OF Indiana)
COUNTY OF Hamilton)

LESSEE ACKNOWLEDGEMENT

On this, the 1st day of July, 2005 before me, the subscriber, a Notary Public, in and for the State of Indiana, personally appeared to me Howard H. Bower, as authorized officer and/or agent of Cellco Partnership, d/b/a Verizon Wireless, and in due form of law, acknowledged that he or she is authorized on behalf of said entity to execute all documents pertaining hereto and acknowledged to me that he or she executed the same as his or her voluntary act and deed on behalf of said entity.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my seal in said County and State on the day and year last above written. My commission expires:

TAMARA L. GRANT
Public, State of Indiana
Marion County
My Commission Expires
July 12, 2008

Tamara L. Grant
Notary Public, State at Large

05/11/05

SHEET 1

S1/1 – VICINITY AND 500' STRUCTURAL MAP

S1/2 – ABUTTING PROPERTY OWNERS

S1/3 – U.S.G.S. QUAD MAP

SHEET 2

S2/1 – PROPOSED CELLCO PARTNERSHIP LEASE AREA

S2/2 – LEGAL DESCRIPTIONS

S2/3 – FLOOD ZONE DATA

COORDINATE POINT LOCATION

NAD 1983
LATITUDE: 37° 10' 55.43"
LONGITUDE: 88° 56' 43.75"
NAVD 1988
ELEVATION: 337'
STATE PLANE COORDINATE SOUTH ZONE (BLUE MARBLE GEOGRAPHIC CALCULATOR VERSION 3.0)
NORTHING: 1965173.1687
EASTING: 709687.4396

POWER POLE

UTILITY COMPANY: JACKSON PURCHASE ELECTRIC
IDENTIFICATION #: UNKNOWN

PROJECT BENCHMARK

NORTH: 1965069.8231
EAST: 709636.9492
ELEVATION: 367.00'
LOCATION: BEING A SET IPC LOCATED 68'± SOUTH & 11'± EAST OF THE SW CORNER OF THE PROP. LEASE AREA

SYMBOL LEGEND

- WOOD POWER POLE
- LIGHT POLE
- TELEPHONE PEDESTAL
- GUY ANCHOR
- MANHOLE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- F.P. FENCE POST
- SET #5 REBAR (UNLESS OTHERWISE NOTED)
- FOUND #5 REBAR (UNLESS OTHERWISE NOTED)

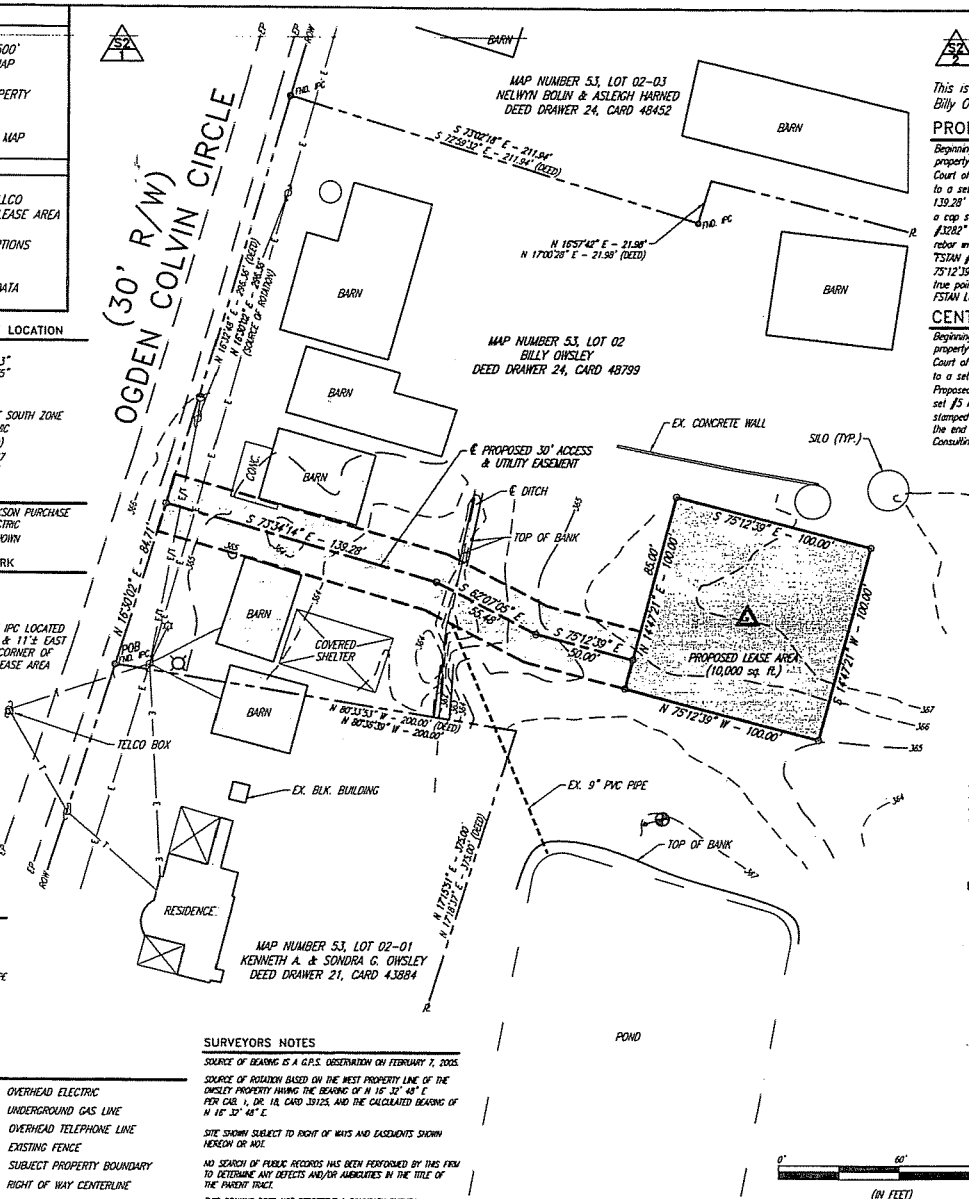
ABBREVIATIONS

EP	EDGE OF PAVEMENT
ROW	RIGHT OF WAY
℄	CENTERLINE
RCP	REINFORCED CONCRETE PIPE
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
℘	SUBJECT PROPERTY LINE
POB	POINT OF BEGINNING

LINE LEGEND

- OVERHEAD ELECTRIC
- UNDERGROUND GAS LINE
- OVERHEAD TELEPHONE LINE
- EXISTING FENCE
- SUBJECT PROPERTY BOUNDARY
- RIGHT OF WAY CENTERLINE

NOTE: SYMBOLS, ABBREVIATIONS, OR LINESTYLES DO NOT NECESSARILY APPEAR ON DRAWING(S). USE ONLY AS APPLICABLE



LEGAL DESCRIPTIONS:

This is a description for Cellco Partnership, of an area to be leased from the property of Billy Owsley, which is further described as follows:

PROPOSED CELLCO PARTNERSHIP LEASE AREA

Beginning at an existing IPC, located on the east right-of-way of Ogden Colvin Circle and the southwest corner of the property conveyed to Billy Owsley as recorded in Deed Drawer 24, Card 48799 in the Office of the Clerk of the County Court of Ballard County, Kentucky; thence following the west line of said Billy Owsley property N 16°30'02" E – 84.71' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence traversing said Billy Owsley property S 73°34'14" E – 139.28' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 62°07'05" E – 55.48' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 75°12'39" E – 50.00' to a set #5 rebar with a cap stamped "FSTAN #3282" and the TRUE POINT OF BEGINNING of the Proposed Lease Area; thence N 14°47'21" E – 85.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 75°12'39" E – 100.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 14°47'21" W – 100.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence N 75°12'39" W – 100.00' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence N 14°47'21" E – 15.00' to the true point of beginning containing 10,000 square feet as per survey by Frank L. Sellinger, II, P.L.S. No. 3282 with FSTAN Land Surveyors and Consulting Engineers dated February 21, 2005.

CENTERLINE OF PROPOSED 30' ACCESS & UTILITY ESMT.

Beginning at an existing IPC, located on the east right-of-way of Ogden Colvin Circle and the southwest corner of the property conveyed to Billy Owsley as recorded in Deed Drawer 24, Card 48799 in the Office of the Clerk of the County Court of Ballard County, Kentucky; thence following the west line of said Billy Owsley property N 16°30'02" E – 84.71' to a set #5 rebar with a cap stamped "FSTAN #3282" and the TRUE POINT OF BEGINNING of the Centerline of the Proposed 30' Access and Utility Easement; thence traversing said Billy Owsley property S 73°34'14" E – 139.28' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 62°07'05" E – 55.48' to a set #5 rebar with a cap stamped "FSTAN #3282"; thence S 75°12'39" E – 50.00' to a set #5 rebar with a cap stamped "FSTAN #3282" and the end of said easement as per survey by Frank L. Sellinger, II, P.L.S. No. 3282 with FSTAN Land Surveyors and Consulting Engineers dated February 21, 2005.

UNDERGROUND UTILITIES
CALL 2 WORKING DAYS
BEFORE YOU DIG
INDIANA 1-800-382-5544
KENTUCKY 1-800-752-6007
UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST CALL DIRECTLY

The utility information shown on this plat, prepared by FSTAN was obtained from existing records and or by field locations. It is the contractor's responsibility to verify their existence and location, and to contact the appropriate utility company for field locations.

NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SOUTH ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON FEBRUARY 7, 2005.

SURVEYORS NOTES

SOURCE OF BEARING IS A G.P.S. OBSERVATION ON FEBRUARY 7, 2005.

SOURCE OF ROTATION BASED ON THE WEST PROPERTY LINE OF THE OWSLEY PROPERTY HAVING THE BEARING OF N 16° 32' 48" E PER CAB. 1, DR. 18, CARD 39125, AND THE CALCULATED BEARING OF N 16° 32' 48" E.

SITE SHOWN SUBJECT TO RIGHT OF WAYS AND EASEMENTS SHOWN HEREON OR NOT.

NO SEARCH OF PUBLIC RECORDS HAS BEEN PERFORMED BY THIS FIRM TO DETERMINE ANY DEFECTS AND/OR AMBIGUITIES IN THE TITLE OF THE PARENT TRACT.

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY.

EXISTING CONTOURS ARE AT ONE FOOT INTERVALS.

STATE OF KENTUCKY
FRANK L. SELLINGER #3282
LICENSED PROFESSIONAL LAND SURVEYOR

LAND SURVEYOR'S CERTIFICATE

TYPE "A" SURVEY: UNADJUSTED TRAVERSE CLOSURE BETTER THAN 1 IN 24,500.

TO ALL PARTIES INTERESTED IN TITLE TO PREMISES SURVEYED
I hereby certify that this plat and survey were made under my supervision, and that the angular and linear measurements, as witnessed by monuments shown hereon, are true and correct to the best of my knowledge and belief.
This survey and plat meets or exceeds the minimum standards of the governing authorities.
This property is subject to any recorded easements or right of ways not shown hereon.

Frank L. Sellinger, II — Ky. Reg. No. 3282 — 2-24-05

"CELLULAR COMMUNICATION TOWER SITE SURVEY"
REFERENCED AS "EXHIBIT B"
OWNER APPROVAL: Billy Owsley DATE: 5-13-05
CELLCO PARTNERSHIP APPROVAL: _____ DATE: _____

S2/3 *I HAVE REVIEWED THE FLOOD INSURANCE RATE MAPS (FIRM) MAP NO. 210268 0050 B, DATED 09-29-89 AND THE PROPOSED CELLCO PARTNERSHIP LEASE AREA DOES NOT APPEAR TO BE IN A FLOOD PRONE AREA. THE PROPOSED CELLCO PARTNERSHIP LEASE AREA IS LOCATED IN ZONE X.*

CELLCO PARTNERSHIP

FSTan
F.S. Land Company
T. Alan Neal Company
Land Surveyors and Consulting Engineers
PO Box 17546 2313/2315 Colmenden Drive Louisville, KY 40217
Phone: (502) 635-5888 (502) 636-5111 Fax: (502) 634-3263

SITE NUMBER:

SITE NAME: MONKEY'S EYEBROW

SITE ADDRESS: 4625 OGDEN COLVIN CIRCLE KEVIL, KY. 42053

PROPOSED CELLCO PARTNERSHIP LEASE AREA: AREA = 10,000 sq. ft.

PROPERTY OWNER: BILLY OWSLEY 4625 OGDEN COLVIN CIRCLE KEVIL, KY. 42053

MAP NUMBER: 53

LOT NUMBER: 02

SOURCE OF TITLE: DEED DRAWER 24, CARD 48799

DWG BY:	CHKD BY:	DATE:
JMW	FSII	02.16.05

FSTAN PROJECT NO.: 05-3141

SHEET 2 OF 2

REVISIONS:

C2

EXHIBIT I
NOTIFICATION LISTING

MONKEY'S EYEBROW LANDOWNER NOTICE LISTING

Billy Owsley
4625 Ogden Colvin Circle
Kevil, KY 42053

Nelwyn & Asleigh Harned Bolin
74 Moonstone Drive
Franklin, NC 28734

Kenneth A. & Sondra G. Owsley
4668 Monkey's Eyebrow Road
Kevil, KY 42053

Clara T. Randolph Estate
c/o Paul Gene Randolph
919 Sycamore Street
Murray , KY 42071

Louise L. Tilford
10815 Ogden Landing Road
Kevil, KY 42053

Jerry & Rose Doom
4493 Monkey's Eyebrow Road
Kevil , KY 42053

Gregory Fondaw
802 Marrow Road
Kevil , KY 42053

Providence Missionary Baptist Church
4409 Monkey's Eyebrow Road
La Center, KY 42056

Providence Southern Missionary Baptist Church
4073 Monkey's Eyebrow Road
La Center, KY 42056

Gary & Nancy Fondaw
3920 Woodville Road
Kevil, KY 42053

EXHIBIT J
COPY OF PROPERTY OWNER NOTIFICATION

PIKE
LEGAL

1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

Notice of Proposed Construction of Wireless Communications Facility Site Name: Monkey's Eyebrow

Dear Landowner:

Cellco Partnership, a Delaware General Partnership d/b/a, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 4625 Ogden Colvin Circle, Kevil, Kentucky 42053 (37° 10' 55.43" North latitude, 88° 56' 43.75" West longitude). The proposed facility will include a 300-foot tall antenna tower, plus related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

This notice is being sent to you because the Ballard County Property Valuation Administrator's records indicate that you own property that is within a 500' radius of the proposed tower site or contiguous to the property on which the tower is to be constructed. You have a right to submit testimony to the Kentucky Public Service Commission ("PSC"), either in writing or to request intervention in the PSC's proceedings on the application. You may contact the PSC for additional information concerning this matter at: Kentucky Public Service Commission, Executive Director, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2006-00035 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Verizon Wireless' radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area. Please feel free to contact us toll free at (800) 516-4293 if you have any comments or questions about this proposal.

Sincerely,
David A. Pike
Attorney for Verizon Wireless

enclosure

EXHIBIT K
COPY OF COUNTY JUDGE/EXECUTIVE NOTICE

PIKE LEGAL

1578 Highway 44 East, Suite 6
P.O. Box 369
Shepherdsville, KY 40165-0369
Phone (502) 955-4400 or (800) 516-4293
Fax (502) 543-4410 or (800) 541-4410

January 23, 2006

VIA CERTIFIED MAIL

Hon. Bob Buchanan
Ballard County Judge Executive
Ballard County Courthouse
437 Ohio St.
P.O. Box 276
Wickliffe, KY 42087

RE: Notice of Proposal to Construct Wireless Communications Facility
Kentucky Public Service Commission Docket No. 2006-00035
Site Name: Monkey's Eyebrow

Dear Judge Buchanan:

Cellco Partnership, a Delaware General Partnership d/b/a, d/b/a Verizon Wireless has filed an application with the Kentucky Public Service Commission ("PSC") to construct a new wireless communications facility on a site located at 4625 Ogden Colvin Circle, Kevil, Kentucky 42053 (37° 10' 55.43" North latitude, 88° 56' 43.75" West longitude). The proposed facility will include a 300-foot tall antenna tower, plus related ground facilities. This facility is needed to provide improved coverage for wireless communications in the area.

You have a right to submit comments to the PSC or to request intervention in the PSC's proceedings on the application. You may contact the PSC at: Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2006-00035 in any correspondence sent in connection with this matter.

We have attached a map showing the site location for the proposed tower. Cingular's radio frequency engineers assisted in selecting the proposed site for the facility, and they have determined it is the proper location and elevation needed to provide quality service to wireless customers in the area.

Please feel free to contact us with any comments or questions you may have.

Sincerely,

David A. Pike
Attorney for Verizon Wireless

Enclosure

EXHIBIT L
COPY OF POSTED NOTICES

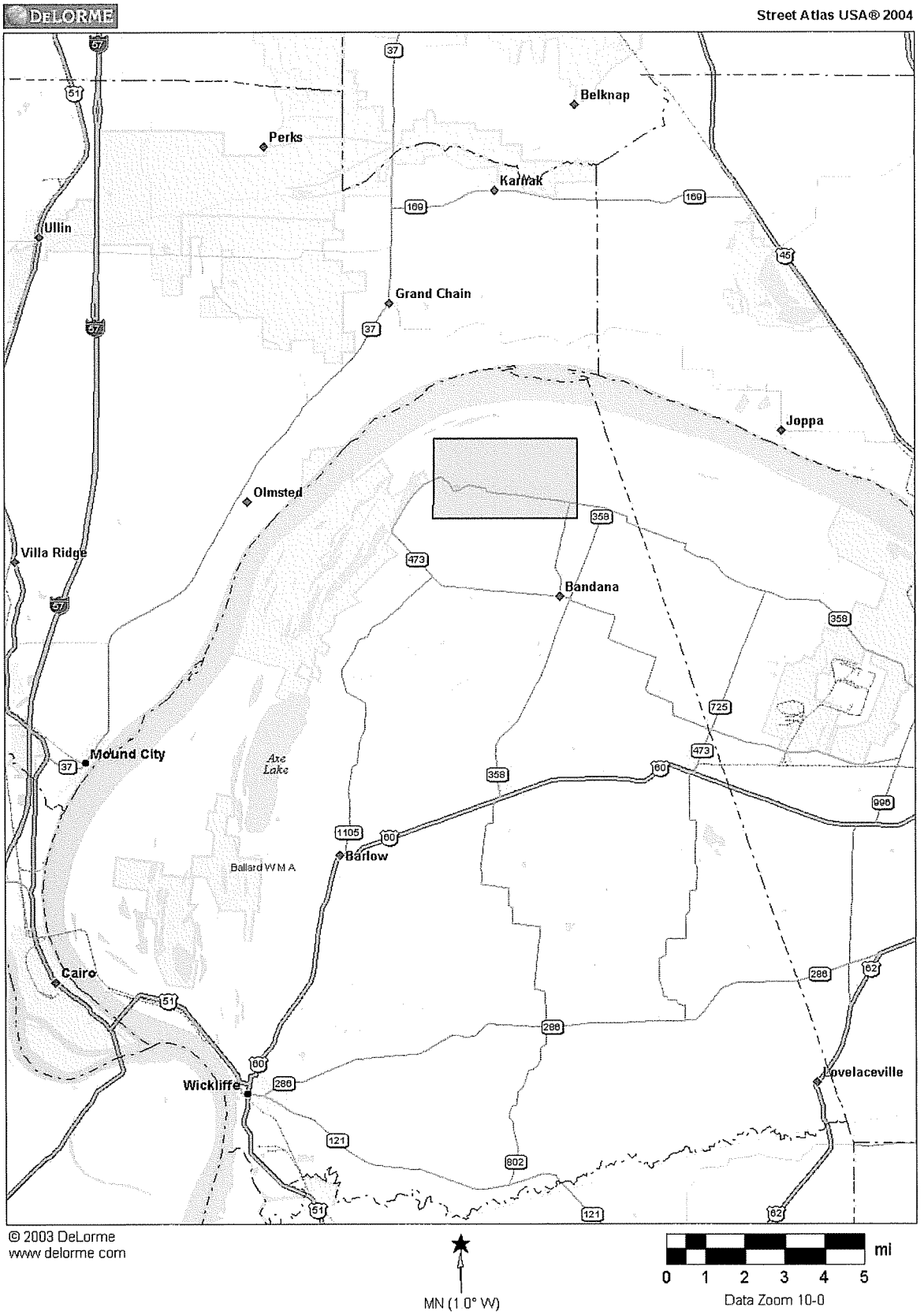
MONKEY'S EYEBROW NOTICE SIGNS

Two signs at least (2) feet by four (4) feet in size, of durable material, with the text printed in black letters at least one (1) inch in height against a white background, except for the word "**tower**," which should be at least four (4) inches in height.

Cellco Partnership, d/b/a Verizon Wireless, proposes to construct a telecommunications **tower** on this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165. (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2006-00035 in your correspondence.

Cellco Partnership, d/b/a Verizon Wireless, proposes to construct a telecommunications **tower** near this site. If you have questions, please contact Pike Legal Group, PLLC, P.O. Box 369, Shepherdsville, KY 40165 (800) 516-4293, or the Executive Director, Public Service Commission, 211 Sower Boulevard, PO Box 615, Frankfort, Kentucky 40602. Please refer to docket number 2006-00035 in your correspondence.

EXHIBIT M
COPY OF RADIO FREQUENCY DESIGN SEARCH AREA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Street Atlas USA® 2004
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Villa Ridge
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