COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENTUCKY RSA #4 CELLULAR GENERAL PARTNERSHIP FOR ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT A CELL SITE (FEATHERSBURG) IN RURAL SERVICE AREA #4 (TAYLOR COUNTY) OF THE COMMONWEALTH OF KENTUCKY

CASE NO. 2018-00092

APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY (FEATHERSBURG)

Kentucky RSA #4 Cellular General Partnership ("Kentucky RSA #4"), through counsel, pursuant to KRS 278.020 and 278.040 and 807 KAR 5:063, hereby submits this application for a certificate of public convenience and necessity to construct and operate a new 240 foot cell tower facility to provide cellular telephone service to be known as the Feathersburg cell site in and for rural service area ("RSA") #4 of the Commonwealth of Kentucky, namely the counties of Anderson, Green, Hardin, Larue, Marion, Mercer, Nelson, Spencer, Taylor and Washington, Kentucky. The proposed cell tower facility will be located at 242 A. Cox Road, Elkhorn, Kentucky, 42733.

1. Pursuant to the FCC Order, Docket No. 08-165, dated November 18, 2009, ¶ 32, pp. 11 & 12, the Commission has 150 days to process this application for a certificate of public convenience and necessity to construct a cell tower facility. If the Commission fails to act upon this application within 150 days, then Kentucky RSA #4 may seek redress with the U.S. District Court for the Eastern District of Kentucky.[1]

[1] In the Matter of: Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify all Wireless Siting Proposals as Requiring a Variance, FCC Order, Docket No. 08-165, November 18, 2009, pp 11 and 12. ("Specifically, we find that a "reasonable period of time" is, presumptively 90 days to process personal wireless service facility siting applications requesting collocations, and, also presumptively, 150 days to process all other applications. (Relevant pages attached as Exhibit "M"). Accordingly, if State or local governments do not act upon applications within those timeframes, then a "failure to act" has occurred and personal wireless service providers may seek redress in a court of competent jurisdiction

2. Pursuant to 807 KAR 5:001 Sections 8(l) and (3), and 807 KAR 5:063, Kentucky RSA #4 states that it is a Kentucky general partnership whose full name and post office address are: Kentucky RSA #4 Cellular General Partnership, 2902 Ring Road, Elizabethtown, Kentucky, 42701.

3. Pursuant to 807 KAR 5:063 § 1 (1)(b), a copy of the applicant's applications to and approvals from the Federal Aviation Administration and Kentucky Airport Zoning Commission are Exhibit "A."

4. Pursuant to 807 KAR 5:063 §1(1)(d), applicant is submitting as Exhibit "B" a geotechnical investigation report, signed and sealed by a professional engineer registered in Kentucky, that includes boring logs, foundation design recommendations, and a finding as to the susceptibility of the area surrounding the proposed site to flood hazard.

5. Pursuant to 807 KAR 5:063 §1(1)(e), clear directions from the county seat to the proposed site, including highway numbers and street names, if applicable, with the telephone number of the person who prepared the directions are Exhibit "C."

6. Pursuant to 807 KAR 5:063 §1(1)(f), a copy of the lease for the property on which the tower is proposed to be located, is Exhibit "D."

7. Pursuant to 807 KAR 5:063 §1(1)(g), experienced personnel will manage and operate the Feathersburg cell site. The President of Bluegrass Cellular Inc., Mr. Ron Smith, is ultimately responsible for all construction and operations of the cellular system of Kentucky RSA #4, of which system the Feathersburg cell site will be a part. Bluegrass Cellular Inc. provides management services to Kentucky RSA #4 under a management contract, just as it does with three (3) other wireless carriers in the Commonwealth. And, Bluegrass Cellular Inc. has been providing these management services to these other wireless carriers for well over twenty years. This extensive management experience with

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within 30 days, as provided in Section 332(c)(7)(B)(v).") See also Order Denying Motion for Reconsideration, issued August 4, 2010.

Bluegrass Cellular demonstrates Bluegrass Cellular Inc.'s management and technical ability to supervise the operations of a wireless carrier.

8. Pursuant to 807 KAR 5:063 §1(1)(g), World Tower Company, Inc. is responsible for the design specifications of the proposed tower (identified in Exhibit "B").

9. Pursuant to 807 KAR 5:063 §1(1)(h), a site development plan and survey, signed and sealed by a professional engineer registered in Kentucky, that shows the proposed location of the tower and all easements and existing structures within 500 feet of the proposed site on the property on which the tower will be located, and all easements and existing structures within 200 feet of the access drive, including the intersection with the public street system, is Exhibit "B."

10. Pursuant to 807 KAR 5:063 §1(1)(i), a vertical profile sketch of the tower, signed and sealed by a professional engineer registered in Kentucky, indicating the height of the tower and the placement of all antennas is Exhibit "B."

11. Pursuant to 807 KAR 5:063 §1(1)(j), the tower and foundation design plans and a description of the standard according to which the tower was designed, signed and sealed by a professional engineer registered in Kentucky, is Exhibit "B."

12. Pursuant to 807 KAR 5:063 § 1 (1)(k), a map, drawn to a scale no less than one (1) inch equals 200 feet, that identifies every structure and every owner of real estate within 500 feet of the proposed tower, is Exhibit "E."

13. Pursuant to 807 KAR 5:063 § 1 (1)(l), applicant's legal counsel hereby affirms that every person who owns property within 500 feet of the proposed tower has been: (i) notified by certified mail, return receipt requested, of the proposed construction; (ii) given the commission docket number under which the application will be processed; and (iii) informed of his right to request intervention.

14. Pursuant to KRS 278.665(2), applicant's legal counsel hereby affirms that every person who, according to the records of the property valuation administrator, owns property contiguous to the

property where the proposed cellular antenna tower will be located has been: (i) notified by certified mail, return receipt requested, of the proposed construction; (ii) given the commission docket number under which the application will be processed; and (iii) informed of his right to request intervention.

15. Pursuant to 807 KAR 5:063 §1(1)(m), a list of the property owners who received the notice together with copies of the certified letters sent to listed property owners, is Exhibit "F."

16. Pursuant to 807 KAR 5:063 § 1 (1)(n), applicant's legal counsel hereby affirms that the Taylor County Judge Executive has been: (i) notified by certified mail, return receipt requested, of the proposed construction; (ii) given the commission docket number under which the application will be processed; and (iii) informed of its right to request intervention.

17. Pursuant to 807 KAR 5:063 §1(1)(o), a copy of the notice sent to the Taylor County Judge Executive is Exhibit "G."

18. Pursuant to 807 KAR 5:063 § 1 (1)(p), applicant's legal counsel hereby affirms that (i) two written notices meeting subsection two (2) of this section have been posted, one in a visible location on the proposed site and one on the nearest public road; and (ii) the notices shall remain posted for at least two weeks after the application has been filed.

19. Pursuant to 807 KAR 5:063 § 1 (2)(a), applicant's legal counsel affirms that:

> (a) A written notice, of durable material at least two (2) feet by four (4) feet in size, stating that "***Kentucky RSA #4 Cellular General Partnership proposes to construct a telecommunications tower on this site,***" including the addresses of the applicant and the Kentucky Public Service Commission, has been posted and shall remain in a visible location on the proposed site until final disposition of the application; and
>
> (b) A written notice, of durable material at least two (2) feet by four (4) feet in size, stating that "***Kentucky RSA #4 Cellular General Partnership proposes to construct a telecommunications tower near this site,***" including the addresses of the applicant and the Kentucky Public Service Commission, has been posted on the public road nearest the site.

A copy of each sign is attached as Exhibit "H."

20. Pursuant to 807 KAR 5:063 § 1 (1)(q), a statement that notice of the location of the proposed construction has been published in a newspaper of general circulation in the county in which the construction is proposed is attached as Exhibit "I."

21. Pursuant to 807 KAR 5:063 § 1(1)(r), the cell site, which has been selected, is in a relatively undeveloped, rural area in Elkhorn, Kentucky. Existing land uses are characterized as agricultural.

22. Pursuant to 807 KAR 5:063 §1(1)(s), Kentucky RSA #4 has considered the likely effects of the installation on nearby land uses and values and has concluded that there is no more suitable location reasonably available from which adequate service to the area can be provided, and that there is no reasonably available opportunity to co-locate. Kentucky RSA #4 has attempted to co-locate on towers designed to host multiple wireless service providers' facilities or existing structures, such as a telecommunications tower, or another suitable structure capable of supporting the utility's facilities.

23. Pursuant to 807 KAR 5:063 § 1(1)(t), attached as Exhibit "J" is a map of the area in which the tower is proposed to be located, that is drawn to scale and that clearly depicts the search area in which a site should, pursuant to radio frequency requirements, be located.

24. Pursuant to KRS 100.987(2)(a), a grid map, that is drawn to scale, that shows the location of all existing cellular antenna towers and that indicates the general position of proposed construction sites for new cellular antenna towers is Exhibit "K."

25. Pursuant to 807 KAR 5:063, § 1(1)(c), attached as Exhibit "L" is a copy of the application to, and authorization from, the Federal Communications Commission.

26. No reasonably available telecommunications tower, or other suitable structure capable of supporting the cellular facilities of Kentucky RSA #4 and which would provide adequate service to the area exists.

27. Correspondence and communication with regard to this application should be addressed to:

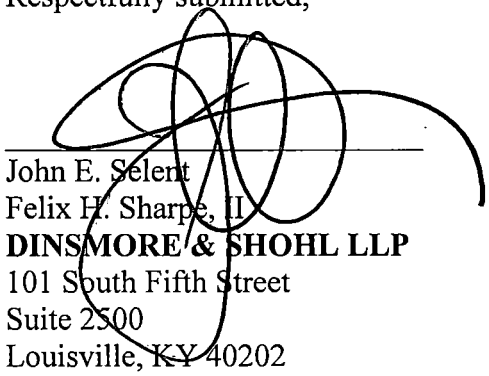
John E. Selent
Felix H. Sharpe, II
DINSMORE & SHOHL LLP
101 South Fifth Street
Suite 2500
Louisville, KY 40202
(502) 540-2300
john.selent@dinsmore.com
felix.sharpe@dinsmore.com

WHEREFORE, Kentucky RSA #4 Cellular General Cellular Partnership requests the Commission to enter an order:

1. Granting a certificate of public convenience and necessity to construct the Feathersburg cell site; and

2. Granting all other relief as appropriate.

Respectfully submitted,



John E. Selent
Felix H. Sharpe, II
DINSMORE & SHOHL LLP
101 South Fifth Street
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Louisville, KY 40202
(502) 540-2300
john.selent@dinsmore.com
felix.sharpe@dinsmore.com

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2018-ASO-4961-OE

Issued Date: 04/19/2018

Doug Updegraff
Bluegrass Cellular, Inc.
2902 Ring Road
Elizabethtown, KY 42701

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

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

Structure:	Antenna Tower Feathersburg
Location:	Elkhorn, KY
Latitude:	37-18-55.56N NAD 83
Longitude:	85-10-17.04W
Heights:	1041 feet site elevation (SE)
	255 feet above ground level (AGL)
	1296 feet above mean sea level (AMSL)

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

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 L Change 1, Obstruction Marking and Lighting, a med-dual system - Chapters 4,8(M-Dual),&12.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

This determination expires on 10/19/2019 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.

(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination does not constitute authority to transmit on the frequency(ies) identified in this study. The proponent is required to obtain a formal frequency transmit license from the Federal Communications Commission (FCC) or National Telecommunications and Information Administration (NTIA), prior to on-air operations of these frequency(ies).

This determination of No Hazard is granted provided the following conditional statement is included in the proponent's construction permit or license to radiate:

Upon receipt of notification from the Federal Communications Commission that harmful interference is being caused by the licencee's (permittee's) transmitter, the licensee (permittee) shall either immediately reduce the power to the point of no interference, cease operation, or take such immediate corrective action as is necessary to eliminate the harmful interference. This condition expires after 1 year of interference-free operation.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

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

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

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

If we can be of further assistance, please contact our office at (202) 267-5281, or lynnette.farrell@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ASO-4961-OE.

Signature Control No: 358862870-363062012 (DNE)
Lynnette Farrell
Technician

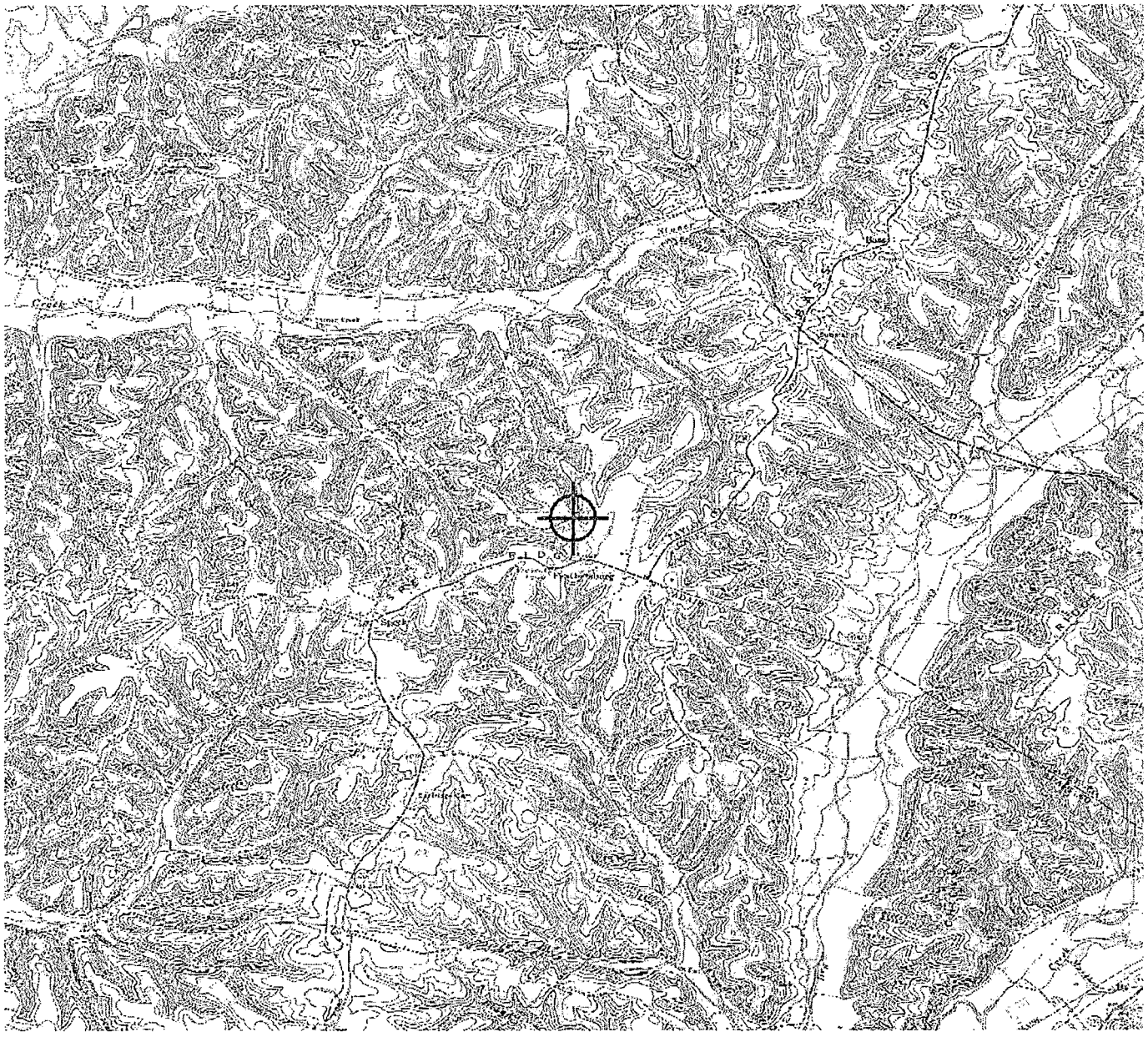
Attachment(s)
Frequency Data
Map(s)

cc: FCC

Frequency Data for ASN 2018-ASO-4961-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W

TOPO Map for ASN 2018-ASO-4961-OE



Leila Rezanavaz
8300 Greensboro Dr.
Suite 1200
Tysons, VA 22102

leila@fcclaw.com
(703) 584-8668
www.fcclaw.com

LLGS | LUKAS LAFURIA GUTIERREZ & SACHS LLP

March 6, 2018

Telephone

(703) 584-8668

Via Email

Mr. John Houlihan
Kentucky Airport Zoning Commission
90 Airport Road
Building 400
Frankfort, Kentucky 40601

Dear Mr. Houlihan:

Enclosed please find a completed TC 55-2 form, Application for Permit to Construct or Alter a Structure, for a new tower (Feathersburg) near Elkhorn, Kentucky. The Structure, including top-mounted antennas will have an overall height of 255 feet Above Ground Level.

Enclosed Form TC 55-2 and the attached exhibit include all the pertinent information for this existing tower structure. Also enclosed are copies of the completed FAA Form 7460-1 for the proposed site, a non-reduced 7-1/2' U.S. Geological Survey map indicating the exact location of the site, and a 2-C survey.

Please do not hesitate to contact the undersigned if there are questions regarding this matter.

Sincerely,

Leila Rezanavaz

Leila Rezanavaz

Consulting Engineer

KENTUCKY TRANSPORTATION CABINET

KENTUCKY AIRPORT ZONING COMMISSION

TC 55-2
Rev. 06/2016

APPLICATION FOR PERMIT TO CONSTRUCT OR ALTER A STRUCTURE

APPLICANT (*name*) Doug Updegraff	**PHONE** 270-769-0339	**FAX** 270-737-0580	**KY AERONAUTICAL STUDY #**	
ADDRESS (*street*) 2902 Ring Road	**CITY** Elizabethtown		**STATE** KY	**ZIP** 42702
APPLICANT'S REPRESENTATIVE (*name*) Leila Rezanavaz	**PHONE** 703-584-8668	**FAX** 703-584-8694		
ADDRESS (*street*) 8300 Greensboro Dr. Suite 1200	**CITY** McLean		**STATE** VA	**ZIP** 22102
APPLICATION FOR ☒ New Construction ☐ Alteration ☐ Existing **DURATION** ☒ Permanent ☐ Temporary (*months* *days*)			**WORK SCHEDULE** Start 04/20/18 End 04/25/18	
TYPE ☐ Crane ☐ Building ☒ Antenna Tower ☐ Power Line ☐ Water Tank ☐ Landfill ☐ Other	**MARKING/PAINTING/LIGHTING PREFERRED** ☐ Red Lights & Paint ☐ White- medium intensity ☐ White- high intensity ☒ Dual- red & medium intensity white ☐ Dual- red & high intensity white ☐ Other			
LATITUDE 37°18'55.56"	**LONGITUDE** 85°10'17.04"		**DATUM** ☒ NAD83 ☐ NAD27 ☐ Other	
NEAREST KENTUCKY City Elkhorn County Taylor	**NEAREST KENTUCKY PUBLIC USE OR MILITARY AIRPORT** Taylor County Airport (AAS)			
SITE ELEVATION (AMSL, *feet*) 1041	**TOTAL STRUCTURE HEIGHT** (AGL, *feet*) 255		**CURRENT** (*FAA aeronautical study #*) 2018-ASO-4961-OE	
OVERALL HEIGHT (*site elevation plus total structure height, feet*) 1296			**PREVIOUS** (*FAA aeronautical study #*) N/A	
DISTANCE (*from nearest Kentucky public use or Military airport to structure*) 8.1 Miles			**PREVIOUS** (*KY aeronautical study #*) N/A	
DIRECTION (*from nearest Kentucky public use or Military airport to structure*) ESE				

DESCRIPTION OF LOCATION (*Attach USGS 7.5 minute quadrangle map or an airport layout drawing with the precise site marked and any certified survey.*)
Site is located at: 242 A. Cox Road, Elkhorn, KY 42733

DESCRIPTION OF PROPOSAL
Proposed self-supporting tower with top-mounted antennas for overall height of 255' AGL.

FAA Form 7460-1 (*Has the "Notice of Construction or Alteration" been filed with the Federal Aviation Administration?*)
☐ No ☒ Yes, when? 03/06/2018

CERTIFICATION (*I hereby certify that all the above entries, made by me, are true, complete, and correct to the best of my knowledge and belief.*)
PENALITIES (*Persons failing to comply with KRS 183.861 to 183.990 and 602 KAR 050 are liable for fines and/or imprisonment as set forth in KRS 183.990(3). Noncompliance with FAA regulations may result in further penalties.*)

NAME	**TITLE**	**SIGNATURE**	**DATE**
Leila Rezanavaz	Sr. Consulting Engr	Leila Rezanavaz	03/06/2018

COMMISSION ACTION

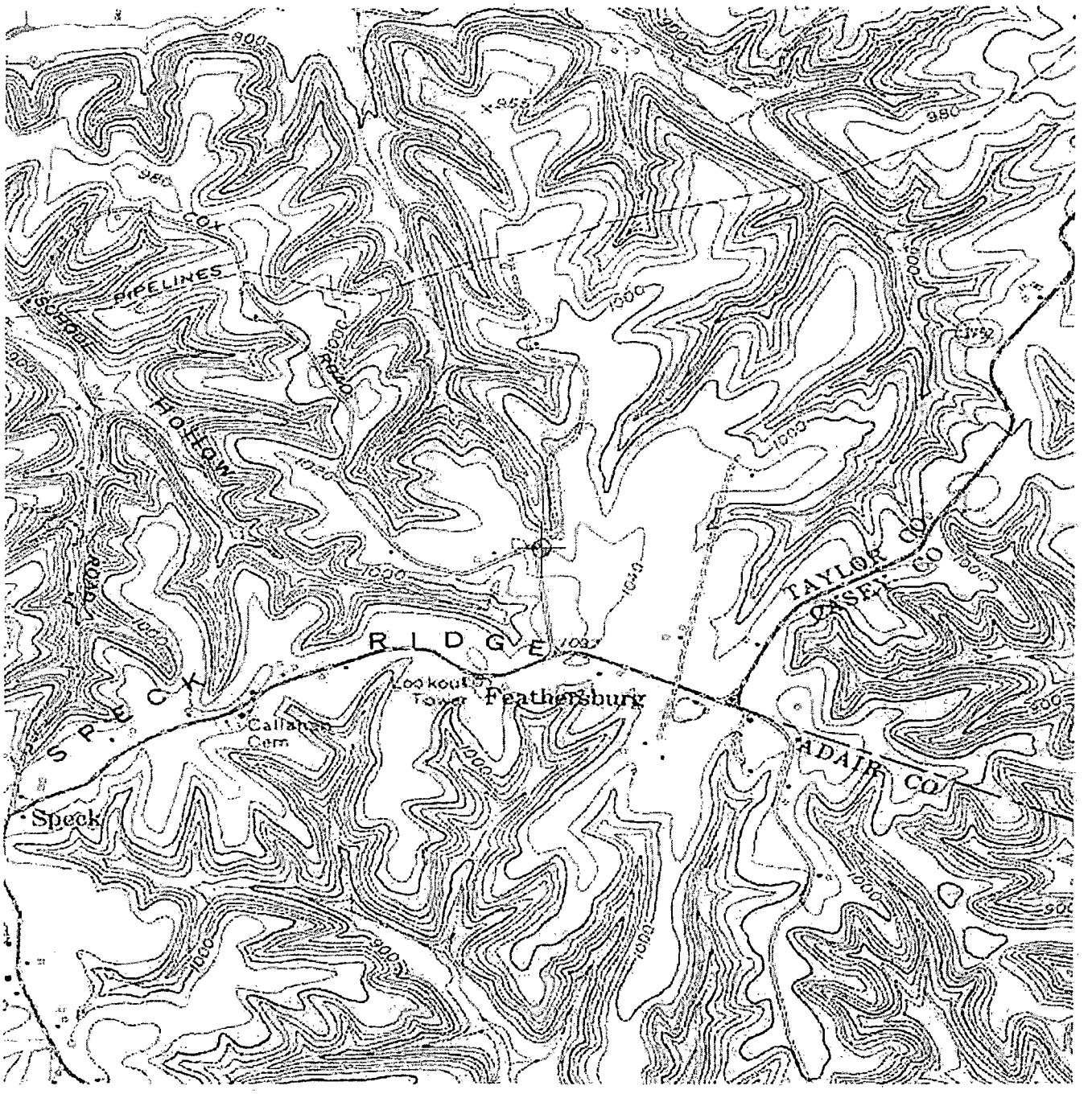
☐ Chairperson, KAZC
☐ Administrator, KAZC

☐ Approved
☐ Disapproved

SIGNATURE

DATE

Close Print


900
980
COX
PIPELINES
SCHOOL
HOLLOW
ROAD
1000
RIDGE
SPECK
Lookout Tower
Feathersburg
Callahan Cem
Speck
TAYLOR CO
CASEY CO
ADAIR CO

LANDMARK SURVEYING CO., INC.

15 N.E. 3RD STREET · WASHINGTON, INDIANA 47501
PHONE: 812.257.0950 · WEBSITE: WWW.LANDMARKSURVEYINGCO.COM
DARREN L. HELMS, P.S., PRESIDENT
DENNIS N. HELMS, P.S., CPESC, VICE-PRESIDENT

2C Certification

March 1, 2018

Designation: Feathersburg
Site ID No.: Not Available
Tower Type: Proposed Self-Support Tower
Location: 242 A. Cox Road, Elkhorn, Kentucky 42733

I certify that the latitude, longitude, ground elevation and height of the proposed self-support tower are as follows:

Latitude:	37 degrees 18 minutes 55.56 seconds North	(NAD 83-2011)
Longitude:	85 degrees 10 minutes 17.04 seconds West	(NAD 83-2011)
Ground Elevation:	1,040.6 feet or 317.18 meters	(NAVD 88)
Proposed Structure Height:	240.0 feet or 73.15 meters	(above ground level)
Proposed Overall Structure Height:	not available	(above ground level)

The accuracy of the latitude and longitude of the proposed self-support tower is ± 50 feet or ± 15 meters. The ground elevation and structure height are accurate to within ± 20 feet or ± 6 meters.

The information shown above is based upon field observations made on February 27, 2018 using the Kentucky Transportation Cabinet's KYCORS NAD83 2011 Network and the Kentucky State Plane Coordinate System, South Zone, NAD83 (2011). The field observations were completed by using a Topcon Hiper II GPS receiver and a Topcon GPT-8005A robotic total station. Geodetic computations were completed using AutoCAD Civil 3D 2018 software.

Landmark Surveying Co., Inc.

Darren L. Helms, P.L.S. 3386

STATE OF KENTUCKY
DARREN L. HELMS
3386
LICENSED
PROFESSIONAL
LAND SURVEYOR

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Add a new Case Off Airport - Desk Reference Guide V_2017.4.0

Add a New Case Off Airport for Wind Turbines - Met Towers - Desk Reference Guide V_2017.4.0

Project Name: BLUEG-000457816-18 **Sponsor:** Bluegrass Cellular, Inc.

Details for Case : Feathersburg

Show Project Summary

Case Status

ASN:	2018-ASO-4961-OE	**Date Accepted:**	03/06/2018
Status:	Accepted	**Date Determined:**	
		Letters:	None
		Documents:	03/06/2018 2C Certification ...
Public Comments:	None		
			Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
If Temporary :	Months: Days:
Work Schedule - Start:	04/20/2018
Work Schedule - End:	04/25/2018

For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.

State Filing: Filed with State

Structure Summary

Structure Type:	Antenna Tower
Structure Name:	Feathersburg
FDC NOTAM:	
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	37° 18' 55.56" N
Longitude:	85° 10' 17.04" W
Horizontal Datum:	NAD83
Site Elevation (SE):	1041 (nearest foot) PASSED
Structure Height (AGL):	255 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Minimum Operating Height (AGL): ** For aeronautical study of a crane or construction equipment the maximum height should be listed above as the Structure Height (AGL). Additionally, provide the minimum operating height to avoid delays if impacts are identified that require negotiation to a reduced height. If the Structure Height and minimum operating height are the same enter the same value in both fields.*	(nearest foot)
Requested Marking/Lighting:	Dual-red and medium intensity
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Elkhorn
Nearest State:	Kentucky
Description of Location: *On the Project Summary page upload any certified survey.*	Site is located at: 242 A. Cox Road Elkhorn, KY 42733
Description of Proposal:	Proposed self-supporting tower with top-mounted antennas for overall height of 255' AGL.

Proposed Frequency Bands

Select any combination of the applicable frequencies/powers identified in the Colo Void Clause Coalition, Antenna System Co-Location, Voluntary Best Practices, effective 21 Nov 2007, to be evaluated by the FAA with your filing. If not within one of the frequency bands listed below, manually input your proposed frequency(ies) and power using the Add Specific Frequency link.

Add Specific Frequency

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W

Previous Back to Search Result Next

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Add a new Case Off Airport - Desk Reference Guide V_2017.4.0

Add a New Case Off Airport for Wind Turbines - Met Towers - Desk Reference Guide V_2017.4.0

Project Name: BLUEG-000457816-18 **Sponsor:** Bluegrass Cellular, Inc.

Details for Case : Feathersburg

Show Project Summary

Case Status

ASN:	2018-ASO-4961-OE	**Date Accepted:**	03/06/2018
Status:	Accepted	**Date Determined:**	
		Letters:	None
		Documents:	03/06/2018 2C Certification ...
Public Comments:	None		
			Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	04/20/2018
Work Schedule - End:	04/25/2018

For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.

State Filing: Filed with State

Structure Summary

Structure Type:	Antenna Tower
Structure Name:	Feathersburg
FDC NOTAM:	
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	37° 18' 55.56" N
Longitude:	85° 10' 17.04" W
Horizontal Datum:	NAD83
Site Elevation (SE):	1041 (nearest foot) PASSED
Structure Height (AGL):	255 (nearest foot)
Current Height (AGL): ** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal*	(nearest foot)
Minimum Operating Height (AGL): ** For aeronautical study of a crane or construction equipment the maximum height should be listed above as the Structure Height (AGL). Additionally, provide the minimum operating height to avoid delays if impacts are identified that require negotiation to a reduced height. If the Structure Height and minimum operating height are the same enter the same value in both fields.*	(nearest foot)
Requested Marking/Lighting:	Dual-red and medium intensity
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Elkhorn
Nearest State:	Kentucky
Description of Location: *On the Project Summary page upload any certified survey.*	Site is located at: 242 A. Cox Road Elkhorn, KY 42733
Description of Proposal:	Proposed self-supporting tower with top-mounted antennas for overall height of 255' AGL.

Proposed Frequency Bands

Select any combination of the applicable frequencies/powers identified in the Colo Void Clause Coalition, Antenna System Co-Location, Voluntary Best Practices, effective 21 Nov 2007, to be evaluated by the FAA with your filing. If not within one of the frequency bands listed below, manually input your proposed frequency(ies) and power using the Add Specific Frequency link.

Add Specific Frequency

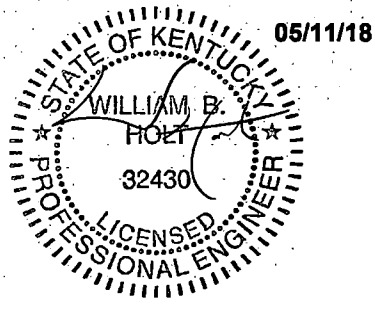
Low Freq	High Freq	Freq Unit	ERP	ERP Unit
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W

Previous Back to Search Result Next

World Tower
COMPANY, INC.

1213 Compressor Drive
P.O. Box 508
Mayfield, KY 42066
270-247-3642
FAX: 270-247-0909
E-mail: worldtower@worldtower.com
Web: www.worldtower.com

240' MODEL WSST TOWER FOR: BLUEGRASS CELLULAR SITE: FEATHERSBURG TAYLOR COUNTY, KY DESIGN PACKAGE

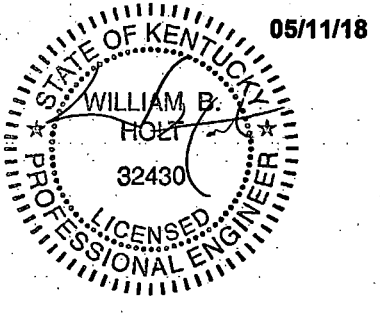


05/11/18

Fabrication, Installation, and Maintenance of TV, AM, FM, & Wireless Communications Towers

GENERAL NOTES

1. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISION OF THE AMERICAN WELDING SOCIETY AWS. D 1.1.
2. TOWER AND ALL FABRICATED ACCESSORIES ARE HOT-DIP GALVANIZED.
3. ALL BOLTS SHALL BE GALVANIZED ACCORDING TO THE STANDARD SPECIFICATION FOR ZINC COATING OF IRON AND STEEL HARDWARE ASTM A153.
4. LEG STEEL IS 50 KSI MIN YIELD SOLID ROUND OR PIPE AND BRACING STEEL IS 36 KSI MIN YIELD SOLID ROUND OR STRUCTURAL ANGLE.
5. ALL STRUCTURAL BOLTS ARE ASTM A325X, THREADS EXCLUDED FROM SHEAR PLANE.
6. TOWER SHOULD BE INSPECTED IN ACCORDANCE WITH TIA-222-G EVERY 5 YEARS.
7. TOWER INSPECTION SHOULD ONLY BE PERFORMED BY EXPERIENCED QUALIFIED PERSONNEL. FOR ASSISTANCE IN PROPER MAINTENANCE OF YOUR TOWER, CALL WORLD TOWER AT 270-247-3642.

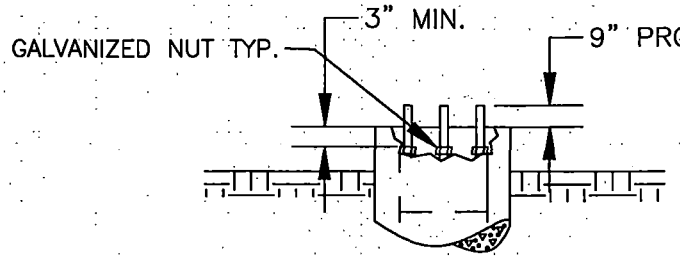


05/11/18

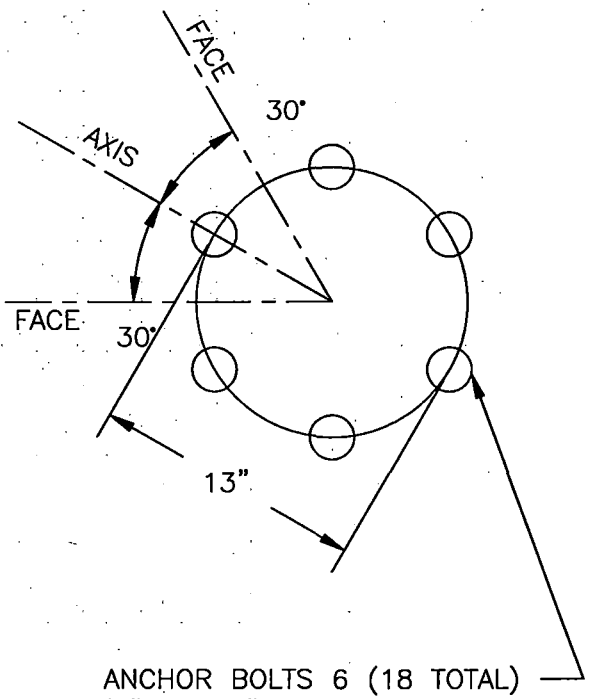
WORLD TOWER

TITLE:
240' MODEL WSST TOWER
FOR: BLUEGRASS CELLULAR
SITE: FEATHERSBURG
TAYLOR COUNTY, KY

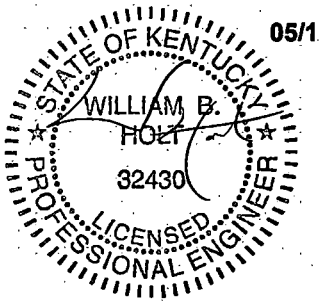
SCALE	DWN. LKG	CKD.	DATE 5-11-18
	DWG. NO. Q18381N		

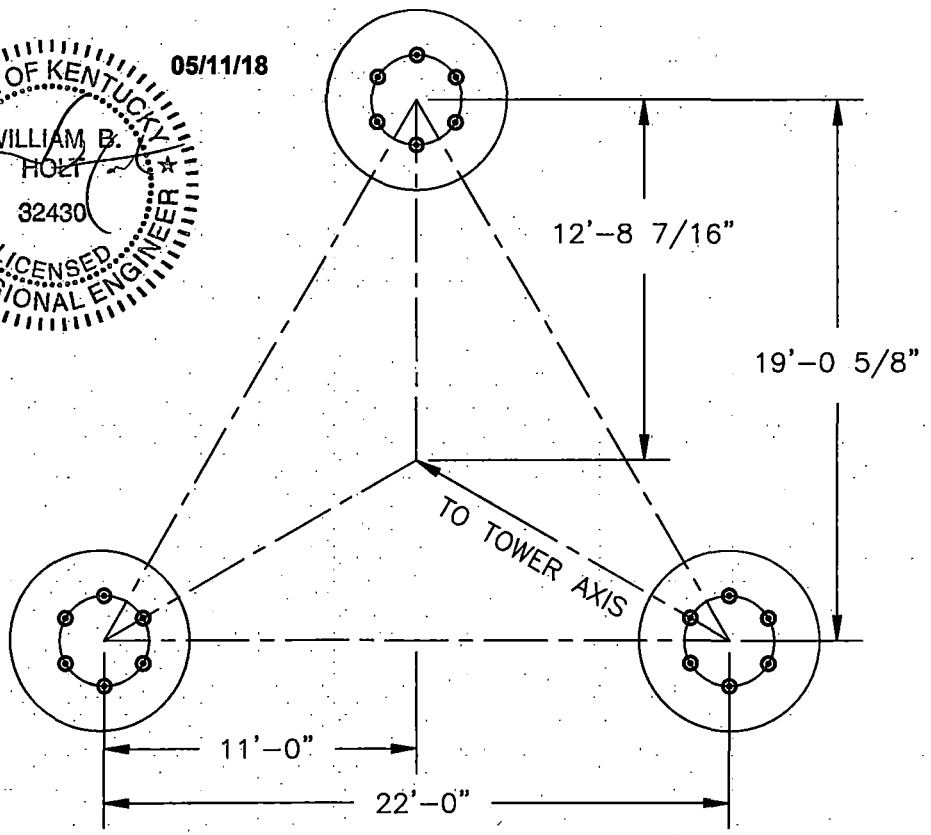


PIER ELEVATION



ANCHOR BOLTS 6 (18 TOTAL)
1 3/4"ø X 84" ASTM F1554-105
EQUALLY SPACED WITH TOP TEMPLATE
AND EMBEDDED PLATE

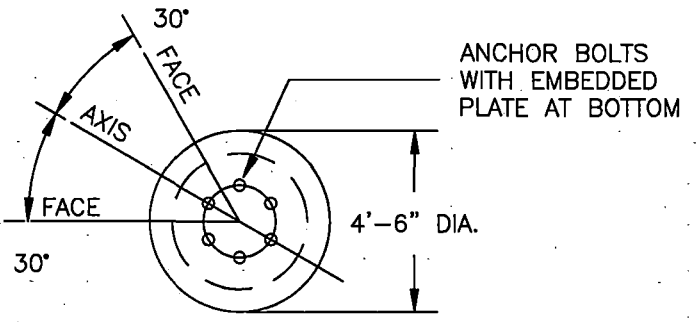




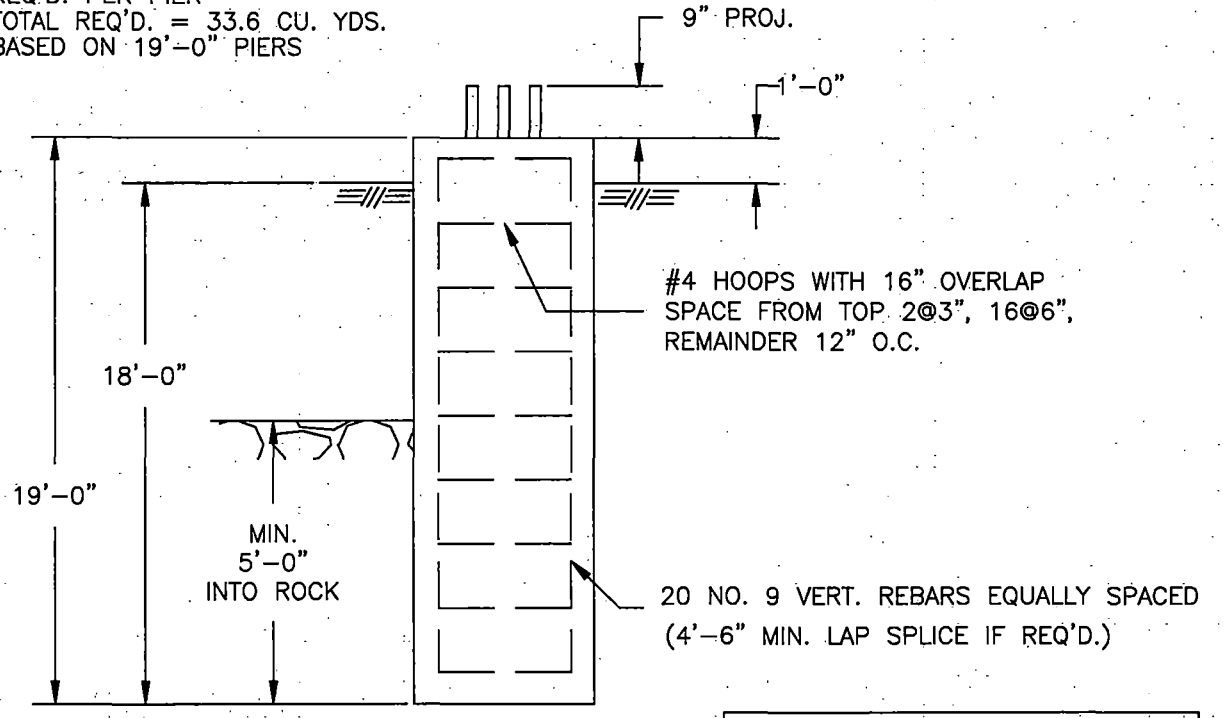
WORLD TOWER

TITLE:
ANCHOR BOLT LAYOUT
240' MODEL WSST TOWER
FOR: BLUEGRASS CELLULAR
SITE: FEATHERSBURG
TAYLOR COUNTY, KY

SCALE NONE	DWN. LKG	CKD.	DATE 5-11-18
FILE	DWG. NO. Q18381AB		



11.2 CU. YDS. CONCRETE
REQ'D. PER PIER
TOTAL REQ'D. = 33.6 CU. YDS.
BASED ON 19'-0" PIERS



05/11/18

STATE OF KENTUCKY
WILLIAM B. HOLT
32430
LICENSED PROFESSIONAL ENGINEER

BASE REACTIONS		
OTM:	13606.0	FT. KIPS
COMP.	754.0	KIPS
UPLIFT	661.0	KIPS
SHEAR (3 LEGS)	96.0	KIPS
WT. NO ICE	121.0	KIPS
WT. 3/4" ICE	367.0	KIPS

GENERAL NOTES

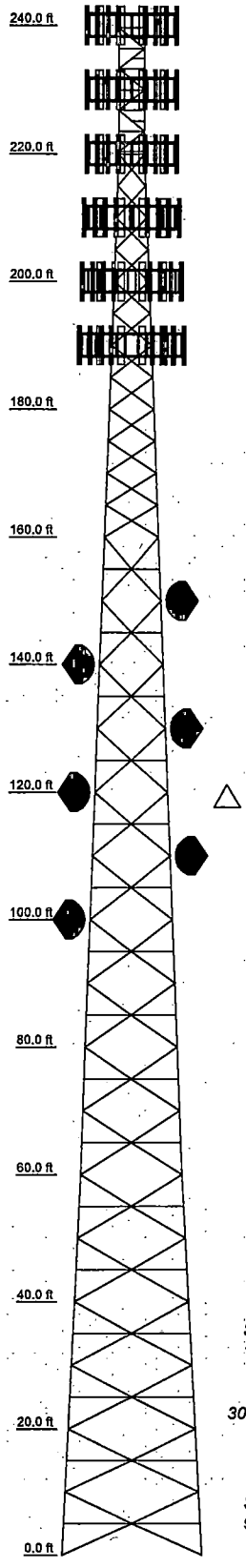
1. CONCRETE TO HAVE 4000 PSI MIN. COMPRESSIVE STRENGTH AFTER 28 DAYS.
2. ALL REINFORCMENT STEEL IS DEFORMED AND MEETS THE STRENGTH REQUIREMENTS OF ASTM A615 GRADE 60.
3. EMBEDDED STEEL TO HAVE 3" MIN. CONCRETE COVER.
4. FOUNDATION DESIGN IS BASED ON CUSTOMER SUPPLIED SOIL DATA FROM TERRACON. PROJECT NUMBER 57185007 DATED MARCH 28, 2018.

TITLE: FOUNDATION DETAIL
240' MODEL WSST TOWER
FOR: BLUEGRASS CELLULAR
SITE: FEATHERSBURG
TAYLOR COUNTY, KY

WORLD TOWER

SCALE	NONE	DWN.	LKG	CKD.		DATE	5-11-18
FILE				DWG. NO.	Q18381F		

Section	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	SR 5 1/4	SR 5		SR 4 3/4	SR 4 1/2	SR 4 1/4	SR 4	SR 3 3/4	SR 3 1/2	SR 3 1/4	SR 2 3/4	SR 1 3/4
Leg Grade	A572-50											
Diagonals	L4x4x5/16	L4x4x1/4	L3 1/2x3 1/2x1/4	L4x4x1/4	L3 1/2x3 1/2x1/4		L3x3x1/4	L3x3x3/16	L2 1/2x2 1/2x3/16	L2x2x1/4	L2x2x3/16	SR 1 1/4
Diagonal Grade	A36										L2x2x1/8	SR 1 1/8
Top Girts	N.A.											SR 1
Bottom Girts	N.A.											SR 1
Horizontals	L4x4x1/4	L3 1/2x3 1/2x1/4		L3x3x1/4	L3x3x3/16	L3 1/2x3 1/2x1/4	L2 1/2x2 1/2x3/16			N.A.		SR 1
Sec. Horizontals						N.A.						SR 1
Face Width (ft)	22	20	18	16	14.5	13	11.5	10	8.5	7	5.5	4
# Panels @ (ft)	6 @ 3.20833					44 @ 5						
Weight (K)	52.6	8.2	6.9	6.5	6.0	5.1	4.5	3.0	3.3	2.8	2.5	1.8	1.2



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	240	(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	210
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	240	WD13X53 Antenna Mounting Frame	210
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WD13X53 Antenna Mounting Frame	240	WD13X53 Antenna Mounting Frame	210
WD13X53 Antenna Mounting Frame	240	Fiber Box (20.5" X 19" X 6")	210
WD13X53 Antenna Mounting Frame	240	DC Box (20.5" X 19" X 6")	210
Fiber Box (20.5" X 19" X 6")	240	(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	200
DC Box (20.5" X 19" X 6")	240	(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	200
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	230	(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	200
WD13X53 Antenna Mounting Frame	230	WD13X53 Antenna Mounting Frame	200
WD13X53 Antenna Mounting Frame	230	WD13X53 Antenna Mounting Frame	200
WD13X53 Antenna Mounting Frame	230	WD13X53 Antenna Mounting Frame	200
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	230	Fiber Box (20.5" X 19" X 6")	200
		DC Box (20.5" X 19" X 6")	200
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	230	(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	190
Fiber Box (20.5" X 19" X 6")	230	WD13X53 Antenna Mounting Frame	190
DC Box (20.5" X 19" X 6")	230	(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	190
WD13X53 Antenna Mounting Frame	220	(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	190
WD13X53 Antenna Mounting Frame	220	WD13X53 Antenna Mounting Frame	190
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(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	220	DC Box (20.5" X 19" X 6")	190
WD13X53 Antenna Mounting Frame	220	6 FT DISH	150
Fiber Box (20.5" X 19" X 6")	220	6 FT DISH	140
DC Box (20.5" X 19" X 6")	220	6 FT DISH	130
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	210	6 FT DISH	120
		6 FT DISH	110
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	210	6 FT DISH	100

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Taylor County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 89.00 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 30.00 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Ultimate 3-second gust wind speed of 115 mph converted to a nominal 3-second gust windspeed of 89 mph
9. TOWER RATING: 96.5%

ALL REACTIONS ARE FACTORED

MAX. CORNER: DOWN: 754 K SHEAR: 62 K UPLIFT: -661 K SHEAR: 55 K

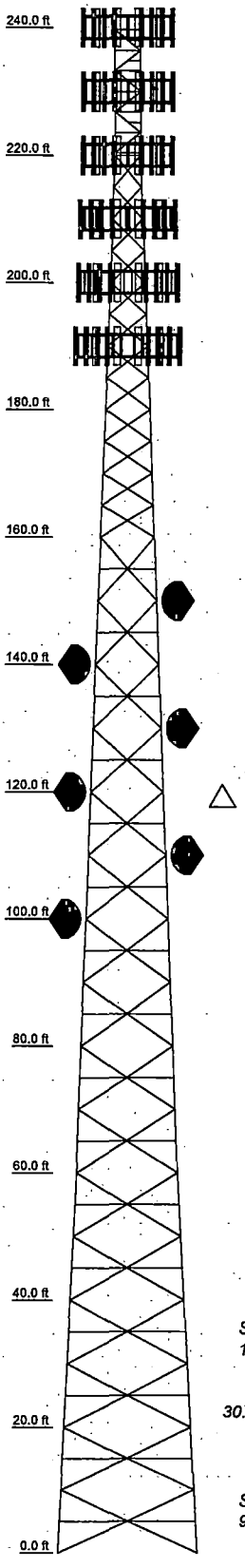
AXIAL 367 K
SHEAR 11 K *MOMENT 1623 kip-ft*
TORQUE 4 kip-ft
30.00 mph WIND - 0.75 in ICE

AXIAL 121 K
SHEAR 96 K *MOMENT 13606 kip-ft*
TORQUE 44 kip-ft
REACTIONS - 89.00 mph WIND

STATE OF KENTUCKY
WILLIAM B. HOLT
32430
LICENSED PROFESSIONAL ENGINEER
05/11/18

World Tower Company 1213 Compressor Drive Mayfield, KY Phone: (270) 247-3642 FAX:	Job: *240' WSST / Run Q18381*		
	Project: *Feathersburg*		
	Client: Bluegrass Cellular	Drawn by: WBH	App'd:
	Code: TIA-222-G	Date: 05/10/18	Scale: NTS
	Path: G:\World Tower\KY\Q18381 Featherburg\Analysis\Q18381.eri		Dwg No. E-1

Section	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	SR 5 1/4	SR 5		SR 4 3/4	SR 4 1/2	SR 4 1/4	SR 4	SR 3 3/4	SR 3 1/2	SR 3 1/4	SR 2 3/4	SR 1 3/4
Leg Grade	A572-50											
Diagonals	L4x4x5/16	L4x4x1/4	L3 1/2x3 1/2x1/4	L4x4x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3x3x1/4	L3x3x3/16	L2 1/2x2 1/2x3/16	L2x2x1/4	L2x2x3/16	SR 1 1/4
Diagonal Grade	A36											
Top Girts	N.A.										L2x2x1/8	SR 1 1/8
Bottom Girts	N.A.											SR 1
Horizontals	L4x4x1/4	L3 1/2x3 1/2x1/4		L3x3x1/4	L3x3x3/16	N.A.	L2 1/2x2 1/2x3/16			N.A.		SR 1
Sec. Horizontals						N.A.						SR 1
Face Width (ft)	22	20	18	16	13	11.5	10	8.5	7	5.5	4	
# Panels @ (ft)	52.6	6.9	6.5	6.0	5.1	4.5	3.9	3.3	2.8	2.5	1.8	1.2
Weight (K)	8.2					44 @ 5						6 @ 3.20833



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WD13X53 Antenna Mounting Frame	230	WD13X53 Antenna Mounting Frame	200
WD13X53 Antenna Mounting Frame	230	WD13X53 Antenna Mounting Frame	200
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MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Taylor County, Kentucky.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 89.00 mph basic wind in accordance with the TIA-222-G Standard.
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DOWN: 754 K
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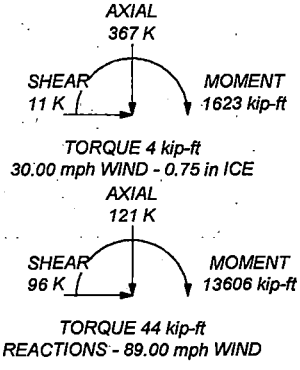


World Tower Company
1213 Compressor Drive
Mayfield, KY
Phone: (270) 247-3642
FAX:

Job: *240' WSST / Run Q18381*			
Project: *Feathersburg*			
Client: Bluegrass Cellular	Drawn by: WBH		App'd:
Code: TIA-222-G	Date: 05/10/18		Scale: NTS
Path: G:\World Tower\KY\Q18381 Featherburg\Analysis\Q18381.eri			Dwg No. E-1

tnxTower	Job	Page
	240' WSST / Run Q18381	1 of 26
World Tower Company 1213 Compressor Drive Mayfield, KY Phone: (270) 247-3642 FAX:	**Project** Feathersburg	**Date** 12:29:20 05/10/18
	Client Bluegrass Cellular	**Designed by** WBH

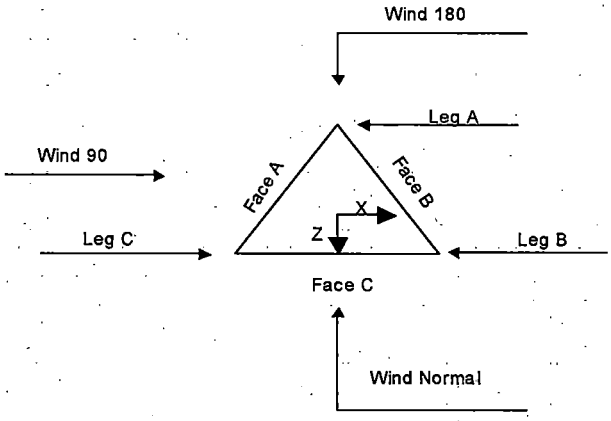
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 240.00 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 4.00 ft at the top and 22.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Taylor County, Kentucky.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 89.00 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.75 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 30.00 mph is used in combination with ice.
Temperature drop of 30 °F.
Deflections calculated using a wind speed of 60.00 mph.
Ultimate 3-second gust wind speed of 115 mph converted to a nominal 3-second gust windspeed of 89 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
√ SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	240.00-220.00			4.00	1	20.00
T2	220.00-200.00			4.00	1	20.00
T3	200.00-180.00			5.50	1	20.00
T4	180.00-160.00			7.00	1	20.00
T5	160.00-140.00			8.50	1	20.00
T6	140.00-120.00			10.00	1	20.00
T7	120.00-100.00			11.50	1	20.00
T8	100.00-80.00			13.00	1	20.00
T9	80.00-60.00			14.50	1	20.00
T10	60.00-40.00			16.00	1	20.00
T11	40.00-20.00			18.00	1	20.00
T12	20.00-0.00			20.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	240.00-220.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T2	220.00-200.00	5.00	X Brace	No	No	0.00	0.00
T3	200.00-180.00	5.00	X Brace	No	No	0.00	0.00

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
T4	180.00-160.00	5.00	X Brace	No	No	0.00	0.00
T5	160.00-140.00	5.00	Double K	No	Yes	0.00	0.00
T6	140.00-120.00	5.00	Double K	No	Yes	0.00	0.00
T7	120.00-100.00	5.00	Double K	No	Yes	0.00	0.00
T8	100.00-80.00	5.00	Double K	No	Yes	0.00	0.00
T9	80.00-60.00	5.00	Double K	No	Yes	0.00	0.00
T10	60.00-40.00	5.00	Double K	No	Yes	0.00	0.00
T11	40.00-20.00	5.00	Double K	No	Yes	0.00	0.00
T12	20.00-0.00	5.00	Double K	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 240.00-220.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T2 220.00-200.00	Solid Round	2 3/4	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T3 200.00-180.00	Solid Round	3 1/4	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T4 180.00-160.00	Solid Round	3 1/2	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 160.00-140.00	Solid Round	3 3/4	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 140.00-120.00	Solid Round	4	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T7 120.00-100.00	Solid Round	4 1/4	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T8 100.00-80.00	Solid Round	4 1/2	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T9 80.00-60.00	Solid Round	4 3/4	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T10 60.00-40.00	Solid Round	5	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T11 40.00-20.00	Solid Round	5	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T12 20.00-0.00	Solid Round	5 1/4	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	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 240.00-220.00	Solid Round	1 1/8	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T2 220.00-200.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Equal 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
T1 240.00-220.00	None	Single Angle		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T5 160.00-140.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 140.00-120.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T7 120.00-100.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T8 100.00-80.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T9 80.00-60.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T10 60.00-40.00	None	Double Angle		A36 (36 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T11 40.00-20.00	None	Double Angle		A36 (36 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T12 20.00-0.00	None	Double Angle		A36 (36 ksi)	Equal Angle	L4x4x1/4	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
T1 240.00-220.00	Solid Round	1	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

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	Double Angle Stitch Bolt Spacing Redundants in
T1 240.00-220.00	0.00	0.00	A36 (36 ksi)	1	1	1.05	0.00	0.00	36.00
T2 220.00-200.00	0.50	0.38	A36 (36 ksi)	1	1	1.06	0.00	0.00	36.00
T3 200.00-180.00	0.50	0.38	A36 (36 ksi)	1	1	1.06	0.00	0.00	36.00
T4 180.00-160.00	0.50	0.38	A36 (36 ksi)	1	1	1.06	0.00	0.00	36.00
T5 160.00-140.00	0.50	0.38	A36 (36 ksi)	1	1	1.07	0.00	0.00	36.00
T6	0.50	0.38	A36	1	1	1.07	0.00	0.00	36.00

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	Double Angle Stitch Bolt Spacing Redundants in
140.00-120.00			(36 ksi)						
T7	0.50	0.50	A36	1	1	1.07	0.00	0.00	36.00
120.00-100.00			(36 ksi)						
T8	0.50	0.50	A36	1	1	1.07	0.00	0.00	36.00
100.00-80.00			(36 ksi)						
T9 80.00-60.00	0.50	0.50	A36	1	1	1.08	0.00	0.00	36.00
			(36 ksi)						
T10	0.50	0.50	A36	1	1	1.08	0.00	0.00	36.00
60.00-40.00			(36 ksi)						
T11	0.50	0.50	A36	1	1	1.08	0.00	0.00	36.00
40.00-20.00			(36 ksi)						
T12 20.00-0.00	0.50	0.50	A36	1	1	1.08	0.00	0.00	36.00
			(36 ksi)						

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	Yes	Yes	1	1	1	1	1	1	1	1
240.00-220.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
220.00-200.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
200.00-180.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
20.00-0.00				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		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 240.00-220.00	0.00	1	0.00	1	0.00	1	0.00	1	0.00	0.75	0.00	1	0.00	1
T2 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
T3 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
T4 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
T5 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
T6 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
T7 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
T8 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
T9 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
T10 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
T11 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
T12 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 240.00-220.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.00 A325X	0	0.00 A325X	0
T2 220.00-200.00	Flange	1.00 A325X	4	0.63 A325X	1	0.63 A325X	1	0.00 A325X	0	0.63 A325X	0	0.00 A325X	0	0.00 A325X	0
T3 200.00-180.00	Flange	1.00 A325X	6	0.63 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.00 A325X	0	0.00 A325X	0
T4 180.00-160.00	Flange	1.00 A325X	6	0.63 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.00 A325X	0	0.00 A325X	0
T5 160.00-140.00	Flange	1.25 A325X>1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.75 A325X	1	0.00 A325X	0
T6 140.00-120.00	Flange	1.25 A325X>1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.75 A325X	1	0.00 A325X	0
T7 120.00-100.00	Flange	1.50 A325X>1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.75 A325X	1	0.00 A325X	0
T8 100.00-80.00	Flange	1.50 A325X>1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.75 A325X	1	0.00 A325X	0
T9 80.00-60.00	Flange	1.50 A325X>1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.75 A325X	1	0.00 A325X	0
T10 60.00-40.00	Flange	1.50 A325X>1"	6	0.75 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.75 A325X	1	0.00 A325X	0
T11 40.00-20.00	Flange	1.75 A325X>1"	6	0.88 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.88 A325X	1	0.00 A325X	0

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T12 20.00-0.00	Flange	1.75 A325X>1"	6	0.88 A325X	1	0.00 A325X	0	0.00 A325X	0	0.63 A325X	0	0.88 A325X	1	0.00 A325X	0

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
Safety Line 3/8	C	No	Ar (CaAa)	240.00 - 5.00	1	1	0.38	0.38		0.22
1 5/8	A	No	Ar (CaAa)	210.00 - 240.00	18	6	0.52	1.98		1.04
1 5/8	B	No	Ar (CaAa)	200.00 - 230.00	18	6	0.52	1.98		1.04
1 5/8	C	No	Ar (CaAa)	190.00 - 220.00	18	6	0.52	1.98		1.04
1 5/8	A	No	Ar (CaAa)	5.00 - 210.00	36	12	0.52	1.98		1.04
1 5/8	B	No	Ar (CaAa)	5.00 - 200.00	36	12	0.52	1.98		1.04
1 5/8	C	No	Ar (CaAa)	5.00 - 190.00	36	12	0.52	1.98		1.04
W/G LADDER RAIL*	A	No	Af (CaAa)	5.00 - 240.00	2	2	48.00	0.25		3.00
W/G LADDER RAIL*	B	No	Af (CaAa)	5.00 - 230.00	2	2	48.00	0.25		3.00
W/G LADDER RAIL*	C	No	Af (CaAa)	5.00 - 220.00	2	2	48.00	0.25		3.00
1/2	A	No	Ar (CaAa)	5.00 - 240.00	1	1	0.50	0.58		0.25
1/2	B	No	Ar (CaAa)	5.00 - 230.00	1	1	0.50	0.58		0.25
1/2	C	No	Ar (CaAa)	5.00 - 220.00	1	1	0.50	0.58		0.25
1/2	A	No	Ar (CaAa)	5.00 - 210.00	1	1	0.50	0.58		0.25
1/2	B	No	Ar (CaAa)	5.00 - 200.00	1	1	0.50	0.58		0.25
1/2	C	No	Ar (CaAa)	5.00 - 190.00	1	1	0.50	0.58		0.25
EW52	C	No	Ar (CaAa)	140.00 - 150.00	1	1	0.50 0.00	1.74		0.59
EW52	C	No	Ar (CaAa)	130.00 - 140.00	2	2	0.50 0.00	1.74		0.59
EW52	C	No	Ar (CaAa)	120.00 - 130.00	3	3	0.50 0.00	1.74		0.59
EW52	C	No	Ar (CaAa)	110.00 - 120.00	4	4	0.50 0.00	1.74		0.59
EW52	C	No	Ar (CaAa)	100.00 - 110.00	5	5	0.50 0.00	1.74		0.59
EW52	C	No	Ar (CaAa)	5.00 - 100.00	6	6	0.50 0.00	1.74		0.59
1 1/4	A	No	Ar (CaAa)	5.00 - 240.00	3	3	0.50	1.55		0.66
1 1/4	B	No	Ar (CaAa)	5.00 - 230.00	3	3	0.50	1.55		0.66
1 1/4	C	No	Ar (CaAa)	5.00 - 220.00	3	3	0.50	1.55		0.66
1 1/4	A	No	Ar (CaAa)	5.00 - 210.00	3	3	0.50	1.55		0.66
1 1/4	B	No	Ar (CaAa)	5.00 - 200.00	3	3	0.50	1.55		0.66
1 1/4	C	No	Ar (CaAa)	5.00 - 190.00	3	3	0.50	1.55		0.66

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	240.00-220.00	A	0.000	0.000	83.407	0.000	0.54
		B	0.000	0.000	41.703	0.000	0.27
		C	0.000	0.000	0.750	0.000	0.00
T2	220.00-200.00	A	0.000	0.000	124.277	0.000	0.75

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
		B	0.000	0.000	83.407	0.000	0.54
		C	0.000	0.000	84.157	0.000	0.54
T3	200.00-180.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	125.027	0.000	0.75
T4	180.00-160.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	165.897	0.000	0.96
T5	160.00-140.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	167.639	0.000	0.97
T6	140.00-120.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	174.610	0.000	0.99
T7	120.00-100.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	181.580	0.000	1.02
T8	100.00-80.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	186.807	0.000	1.03
T9	80.00-60.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	186.807	0.000	1.03
T10	60.00-40.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	186.807	0.000	1.03
T11	40.00-20.00	A	0.000	0.000	165.147	0.000	0.96
		B	0.000	0.000	165.147	0.000	0.96
		C	0.000	0.000	186.807	0.000	1.03
T12	20.00-0.00	A	0.000	0.000	123.860	0.000	0.72
		B	0.000	0.000	123.860	0.000	0.72
		C	0.000	0.000	140.106	0.000	0.77

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	240.00-220.00	A	1.821	0.000	0.000	103.814	0.000	2.27
		B		0.000	0.000	51.907	0.000	1.13
		C		0.000	0.000	8.036	0.000	0.10
T2	220.00-200.00	A	1.805	0.000	0.000	138.058	0.000	3.06
		B		0.000	0.000	103.391	0.000	2.25
		C		0.000	0.000	111.361	0.000	2.35
T3	200.00-180.00	A	1.787	0.000	0.000	172.081	0.000	3.84
		B		0.000	0.000	172.081	0.000	3.84
		C		0.000	0.000	145.403	0.000	3.13
T4	180.00-160.00	A	1.767	0.000	0.000	171.372	0.000	3.81
		B		0.000	0.000	171.372	0.000	3.81
		C		0.000	0.000	179.190	0.000	3.90
T5	160.00-140.00	A	1.745	0.000	0.000	170.583	0.000	3.77
		B		0.000	0.000	170.583	0.000	3.77
		C		0.000	0.000	183.411	0.000	3.95
T6	140.00-120.00	A	1.720	0.000	0.000	169.694	0.000	3.74
		B		0.000	0.000	169.694	0.000	3.74
		C		0.000	0.000	202.359	0.000	4.11
T7	120.00-100.00	A	1.692	0.000	0.000	168.672	0.000	3.70
		B		0.000	0.000	168.672	0.000	3.70

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
		C		0.000	0.000	211.084	0.000	4.23
T8	100.00-80.00	A	1.658	0.000	0.000	167.468	0.000	3.65
		B		0.000	0.000	167.468	0.000	3.65
		C		0.000	0.000	217.452	0.000	4.29
T9	80.00-60.00	A	1.617	0.000	0.000	165.994	0.000	3.59
		B		0.000	0.000	165.994	0.000	3.59
		C		0.000	0.000	215.556	0.000	4.21
T10	60.00-40.00	A	1.564	0.000	0.000	164.078	0.000	3.51
		B		0.000	0.000	164.078	0.000	3.51
		C		0.000	0.000	213.092	0.000	4.12
T11	40.00-20.00	A	1.486	0.000	0.000	161.293	0.000	3.40
		B		0.000	0.000	161.293	0.000	3.40
		C		0.000	0.000	209.511	0.000	3.98
T12	20.00-0.00	A	1.331	0.000	0.000	116.830	0.000	2.39
		B		0.000	0.000	116.830	0.000	2.39
		C		0.000	0.000	151.812	0.000	2.78

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	240.00-220.00	-4.70	-8.04	-4.25	-6.66
T2	220.00-200.00	-1.22	-4.25	-1.06	-2.07
T3	200.00-180.00	0.00	-6.99	0.00	-3.97
T4	180.00-160.00	0.00	-8.02	0.00	-3.98
T5	160.00-140.00	0.00	-9.03	0.00	-4.18
T6	140.00-120.00	0.00	-9.74	0.00	-3.97
T7	120.00-100.00	0.00	-11.00	0.00	-4.54
T8	100.00-80.00	0.00	-12.25	0.00	-5.13
T9	80.00-60.00	0.00	-13.50	0.00	-5.77
T10	60.00-40.00	0.00	-14.97	0.00	-6.56
T11	40.00-20.00	0.00	-16.64	0.00	-7.57
T12	20.00-0.00	0.00	-18.10	0.00	-8.90

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Safety Line 3/8	220.00 - 240.00	0.6000	0.5444
T1	2	1 5/8	220.00 - 240.00	0.6000	0.5444
T1	3	1 5/8	220.00 - 230.00	0.6000	0.5444
T1	8	W/G LADDER RAIL*	220.00 - 240.00	0.6000	0.5444
T1	9	W/G LADDER RAIL*	220.00 - 230.00	0.6000	0.5444
T1	11	1/2	220.00 - 240.00	0.6000	0.5444

tnxTower	Job: 240' WSST / Run Q18381	Page: 10 of 26
World Tower Company 1213 Compressor Drive Mayfield, KY Phone: (270) 247-3642 FAX:	Project: Feathersburg	Date: 12:29:20 05/10/18
	Client: Bluegrass Cellular	Designed by: WBH

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	12	1/2	220.00 - 230.00	0.6000	0.5444
T1	23	1 1/4	220.00 - 240.00	0.6000	0.5444
T1	24	1 1/4	220.00 - 230.00	0.6000	0.5444
T2	1	Safety Line 3/8	200.00 - 220.00	0.6000	0.5400
T2	2	1 5/8	210.00 - 220.00	0.6000	0.5400
T2	3	1 5/8	200.00 - 220.00	0.6000	0.5400
T2	4	1 5/8	200.00 - 220.00	0.6000	0.5400
T2	5	1 5/8	200.00 - 210.00	0.6000	0.5400
T2	8	W/G LADDER RAIL*	200.00 - 220.00	0.6000	0.5400
T2	9	W/G LADDER RAIL*	200.00 - 220.00	0.6000	0.5400
T2	10	W/G LADDER RAIL*	200.00 - 220.00	0.6000	0.5400
T2	11	1/2	200.00 - 220.00	0.6000	0.5400
T2	12	1/2	200.00 - 220.00	0.6000	0.5400
T2	13	1/2	200.00 - 220.00	0.6000	0.5400
T2	14	1/2	200.00 - 210.00	0.6000	0.5400
T2	23	1 1/4	200.00 - 220.00	0.6000	0.5400
T2	24	1 1/4	200.00 - 220.00	0.6000	0.5400
T2	25	1 1/4	200.00 - 220.00	0.6000	0.5400
T2	26	1 1/4	200.00 - 210.00	0.6000	0.5400
T3	1	Safety Line 3/8	180.00 - 200.00	0.6000	0.6000
T3	4	1 5/8	190.00 - 200.00	0.6000	0.6000
T3	5	1 5/8	180.00 - 200.00	0.6000	0.6000
T3	6	1 5/8	180.00 - 200.00	0.6000	0.6000
T3	7	1 5/8	180.00 - 190.00	0.6000	0.6000
T3	8	W/G LADDER RAIL*	180.00 - 200.00	0.6000	0.6000
T3	9	W/G LADDER RAIL*	180.00 - 200.00	0.6000	0.6000
T3	10	W/G LADDER RAIL*	180.00 - 200.00	0.6000	0.6000
T3	11	1/2	180.00 - 200.00	0.6000	0.6000
T3	12	1/2	180.00 - 200.00	0.6000	0.6000
T3	13	1/2	180.00 - 200.00	0.6000	0.6000
T3	14	1/2	180.00 - 200.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	15	1/2	180.00 - 200.00	0.6000	0.6000
T3	16	1/2	180.00 - 190.00	0.6000	0.6000
T3	23	1 1/4	180.00 - 200.00	0.6000	0.6000
T3	24	1 1/4	180.00 - 200.00	0.6000	0.6000
T3	25	1 1/4	180.00 - 200.00	0.6000	0.6000
T3	26	1 1/4	180.00 - 200.00	0.6000	0.6000
T3	27	1 1/4	180.00 - 200.00	0.6000	0.6000
T3	28	1 1/4	180.00 - 190.00	0.6000	0.6000
T4	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T4	5	1 5/8	160.00 - 180.00	0.6000	0.6000
T4	6	1 5/8	160.00 - 180.00	0.6000	0.6000
T4	7	1 5/8	160.00 - 180.00	0.6000	0.6000
T4	8	W/G LADDER RAIL*	160.00 - 180.00	0.6000	0.6000
T4	9	W/G LADDER RAIL*	160.00 - 180.00	0.6000	0.6000
T4	10	W/G LADDER RAIL*	160.00 - 180.00	0.6000	0.6000
T4	11	1/2	160.00 - 180.00	0.6000	0.6000
T4	12	1/2	160.00 - 180.00	0.6000	0.6000
T4	13	1/2	160.00 - 180.00	0.6000	0.6000
T4	14	1/2	160.00 - 180.00	0.6000	0.6000
T4	15	1/2	160.00 - 180.00	0.6000	0.6000
T4	16	1/2	160.00 - 180.00	0.6000	0.6000
T4	23	1 1/4	160.00 - 180.00	0.6000	0.6000
T4	24	1 1/4	160.00 - 180.00	0.6000	0.6000
T4	25	1 1/4	160.00 - 180.00	0.6000	0.6000
T4	26	1 1/4	160.00 - 180.00	0.6000	0.6000
T4	27	1 1/4	160.00 - 180.00	0.6000	0.6000
T4	28	1 1/4	160.00 - 180.00	0.6000	0.6000
T5	1	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T5	5	1 5/8	140.00 - 160.00	0.6000	0.6000
T5	6	1 5/8	140.00 - 160.00	0.6000	0.6000
T5	7	1 5/8	140.00 - 160.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	8	W/G LADDER RAIL*	140.00 - 160.00	0.6000	0.6000
T5	9	W/G LADDER RAIL*	140.00 - 160.00	0.6000	0.6000
T5	10	W/G LADDER RAIL*	140.00 - 160.00	0.6000	0.6000
T5	11	1/2	140.00 - 160.00	0.6000	0.6000
T5	12	1/2	140.00 - 160.00	0.6000	0.6000
T5	13	1/2	140.00 - 160.00	0.6000	0.6000
T5	14	1/2	140.00 - 160.00	0.6000	0.6000
T5	15	1/2	140.00 - 160.00	0.6000	0.6000
T5	16	1/2	140.00 - 160.00	0.6000	0.6000
T5	17	EW52	140.00 - 150.00	0.6000	0.6000
T5	23	1 1/4	140.00 - 160.00	0.6000	0.6000
T5	24	1 1/4	140.00 - 160.00	0.6000	0.6000
T5	25	1 1/4	140.00 - 160.00	0.6000	0.6000
T5	26	1 1/4	140.00 - 160.00	0.6000	0.6000
T5	27	1 1/4	140.00 - 160.00	0.6000	0.6000
T5	28	1 1/4	140.00 - 160.00	0.6000	0.6000
T6	1	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T6	5	1 5/8	120.00 - 140.00	0.6000	0.6000
T6	6	1 5/8	120.00 - 140.00	0.6000	0.6000
T6	7	1 5/8	120.00 - 140.00	0.6000	0.6000
T6	8	W/G LADDER RAIL*	120.00 - 140.00	0.6000	0.6000
T6	9	W/G LADDER RAIL*	120.00 - 140.00	0.6000	0.6000
T6	10	W/G LADDER RAIL*	120.00 - 140.00	0.6000	0.6000
T6	11	1/2	120.00 - 140.00	0.6000	0.6000
T6	12	1/2	120.00 - 140.00	0.6000	0.6000
T6	13	1/2	120.00 - 140.00	0.6000	0.6000
T6	14	1/2	120.00 - 140.00	0.6000	0.6000
T6	15	1/2	120.00 - 140.00	0.6000	0.6000
T6	16	1/2	120.00 - 140.00	0.6000	0.6000
T6	18	EW52	130.00 - 140.00	0.6000	0.6000
T6	19	EW52	120.00 - 130.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	23	1 1/4	120.00 - 140.00	0.6000	0.6000
T6	24	1 1/4	120.00 - 140.00	0.6000	0.6000
T6	25	1 1/4	120.00 - 140.00	0.6000	0.6000
T6	26	1 1/4	120.00 - 140.00	0.6000	0.6000
T6	27	1 1/4	120.00 - 140.00	0.6000	0.6000
T6	28	1 1/4	120.00 - 140.00	0.6000	0.6000
T7	1	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T7	5	1 5/8	100.00 - 120.00	0.6000	0.6000
T7	6	1 5/8	100.00 - 120.00	0.6000	0.6000
T7	7	1 5/8	100.00 - 120.00	0.6000	0.6000
T7	8	W/G LADDER RAIL*	100.00 - 120.00	0.6000	0.6000
T7	9	W/G LADDER RAIL*	100.00 - 120.00	0.6000	0.6000
T7	10	W/G LADDER RAIL*	100.00 - 120.00	0.6000	0.6000
T7	11	1/2	100.00 - 120.00	0.6000	0.6000
T7	12	1/2	100.00 - 120.00	0.6000	0.6000
T7	13	1/2	100.00 - 120.00	0.6000	0.6000
T7	14	1/2	100.00 - 120.00	0.6000	0.6000
T7	15	1/2	100.00 - 120.00	0.6000	0.6000
T7	16	1/2	100.00 - 120.00	0.6000	0.6000
T7	20	EW52	110.00 - 120.00	0.6000	0.6000
T7	21	EW52	100.00 - 110.00	0.6000	0.6000
T7	23	1 1/4	100.00 - 120.00	0.6000	0.6000
T7	24	1 1/4	100.00 - 120.00	0.6000	0.6000
T7	25	1 1/4	100.00 - 120.00	0.6000	0.6000
T7	26	1 1/4	100.00 - 120.00	0.6000	0.6000
T7	27	1 1/4	100.00 - 120.00	0.6000	0.6000
T7	28	1 1/4	100.00 - 120.00	0.6000	0.6000
T8	1	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T8	5	1 5/8	80.00 - 100.00	0.6000	0.6000
T8	6	1 5/8	80.00 - 100.00	0.6000	0.6000
T8	7	1 5/8	80.00 - 100.00	0.6000	0.6000
T8	8	W/G LADDER RAIL*	80.00 - 100.00	0.6000	0.6000
T8	9	W/G LADDER RAIL*	80.00 - 100.00	0.6000	0.6000
T8	10	W/G LADDER RAIL*	80.00 - 100.00	0.6000	0.6000
T8	11	1/2	80.00 - 100.00	0.6000	0.6000

tnxTower	Job: 240' WSST / Run Q18381	Page: 14 of 26
World Tower Company 1213 Compressor Drive Mayfield, KY Phone: (270) 247-3642 FAX:	Project: Feathersburg	Date: 12:29:20 05/10/18
	Client: Bluegrass Cellular	Designed by: WBH

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	12	1/2	80.00 - 100.00	0.6000	0.6000
T8	13	1/2	80.00 - 100.00	0.6000	0.6000
T8	14	1/2	80.00 - 100.00	0.6000	0.6000
T8	15	1/2	80.00 - 100.00	0.6000	0.6000
T8	16	1/2	80.00 - 100.00	0.6000	0.6000
T8	22	EW52	80.00 - 100.00	0.6000	0.6000
T8	23	1 1/4	80.00 - 100.00	0.6000	0.6000
T8	24	1 1/4	80.00 - 100.00	0.6000	0.6000
T8	25	1 1/4	80.00 - 100.00	0.6000	0.6000
T8	26	1 1/4	80.00 - 100.00	0.6000	0.6000
T8	27	1 1/4	80.00 - 100.00	0.6000	0.6000
T8	28	1 1/4	80.00 - 100.00	0.6000	0.6000
T9	1	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T9	5	1 5/8	60.00 - 80.00	0.6000	0.6000
T9	6	1 5/8	60.00 - 80.00	0.6000	0.6000
T9	7	1 5/8	60.00 - 80.00	0.6000	0.6000
T9	8	W/G LADDER RAIL*	60.00 - 80.00	0.6000	0.6000
T9	9	W/G LADDER RAIL*	60.00 - 80.00	0.6000	0.6000
T9	10	W/G LADDER RAIL*	60.00 - 80.00	0.6000	0.6000
T9	11	1/2	60.00 - 80.00	0.6000	0.6000
T9	12	1/2	60.00 - 80.00	0.6000	0.6000
T9	13	1/2	60.00 - 80.00	0.6000	0.6000
T9	14	1/2	60.00 - 80.00	0.6000	0.6000
T9	15	1/2	60.00 - 80.00	0.6000	0.6000
T9	16	1/2	60.00 - 80.00	0.6000	0.6000
T9	22	EW52	60.00 - 80.00	0.6000	0.6000
T9	23	1 1/4	60.00 - 80.00	0.6000	0.6000
T9	24	1 1/4	60.00 - 80.00	0.6000	0.6000
T9	25	1 1/4	60.00 - 80.00	0.6000	0.6000
T9	26	1 1/4	60.00 - 80.00	0.6000	0.6000
T9	27	1 1/4	60.00 - 80.00	0.6000	0.6000
T9	28	1 1/4	60.00 - 80.00	0.6000	0.6000
T10	1	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T10	5	1 5/8	40.00 - 60.00	0.6000	0.6000
T10	6	1 5/8	40.00 - 60.00	0.6000	0.6000
T10	7	1 5/8	40.00 - 60.00	0.6000	0.6000
T10	8	W/G LADDER RAIL*	40.00 - 60.00	0.6000	0.6000
T10	9	W/G LADDER RAIL*	40.00 - 60.00	0.6000	0.6000
T10	10	W/G LADDER RAIL*	40.00 - 60.00	0.6000	0.6000
T10	11	1/2	40.00 - 60.00	0.6000	0.6000
T10	12	1/2	40.00 - 60.00	0.6000	0.6000
T10	13	1/2	40.00 - 60.00	0.6000	0.6000
T10	14	1/2	40.00 - 60.00	0.6000	0.6000
T10	15	1/2	40.00 - 60.00	0.6000	0.6000
T10	16	1/2	40.00 - 60.00	0.6000	0.6000
T10	22	EW52	40.00 - 60.00	0.6000	0.6000
T10	23	1 1/4	40.00 - 60.00	0.6000	0.6000
T10	24	1 1/4	40.00 - 60.00	0.6000	0.6000
T10	25	1 1/4	40.00 - 60.00	0.6000	0.6000
T10	26	1 1/4	40.00 - 60.00	0.6000	0.6000
T10	27	1 1/4	40.00 - 60.00	0.6000	0.6000
T10	28	1 1/4	40.00 - 60.00	0.6000	0.6000
T11	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T11	5	1 5/8	20.00 - 40.00	0.6000	0.6000
T11	6	1 5/8	20.00 - 40.00	0.6000	0.6000
T11	7	1 5/8	20.00 - 40.00	0.6000	0.6000
T11	8	W/G LADDER RAIL*	20.00 - 40.00	0.6000	0.6000
T11	9	W/G LADDER RAIL*	20.00 - 40.00	0.6000	0.6000
T11	10	W/G LADDER RAIL*	20.00 - 40.00	0.6000	0.6000
T11	11	1/2	20.00 - 40.00	0.6000	0.6000
T11	12	1/2	20.00 - 40.00	0.6000	0.6000
T11	13	1/2	20.00 - 40.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T11	14	1/2	20.00 - 40.00	0.6000	0.6000
T11	15	1/2	20.00 - 40.00	0.6000	0.6000
T11	16	1/2	20.00 - 40.00	0.6000	0.6000
T11	22	EW52	20.00 - 40.00	0.6000	0.6000
T11	23	1 1/4	20.00 - 40.00	0.6000	0.6000
T11	24	1 1/4	20.00 - 40.00	0.6000	0.6000
T11	25	1 1/4	20.00 - 40.00	0.6000	0.6000
T11	26	1 1/4	20.00 - 40.00	0.6000	0.6000
T11	27	1 1/4	20.00 - 40.00	0.6000	0.6000
T11	28	1 1/4	20.00 - 40.00	0.6000	0.6000
T12	1	Safety Line 3/8	5.00 - 20.00	0.6000	0.6000
T12	5	1 5/8	5.00 - 20.00	0.6000	0.6000
T12	6	1 5/8	5.00 - 20.00	0.6000	0.6000
T12	7	1 5/8	5.00 - 20.00	0.6000	0.6000
T12	8	W/G LADDER RAIL*	5.00 - 20.00	0.6000	0.6000
T12	9	W/G LADDER RAIL*	5.00 - 20.00	0.6000	0.6000
T12	10	W/G LADDER RAIL*	5.00 - 20.00	0.6000	0.6000
T12	11	1/2	5.00 - 20.00	0.6000	0.6000
T12	12	1/2	5.00 - 20.00	0.6000	0.6000
T12	13	1/2	5.00 - 20.00	0.6000	0.6000
T12	14	1/2	5.00 - 20.00	0.6000	0.6000
T12	15	1/2	5.00 - 20.00	0.6000	0.6000
T12	16	1/2	5.00 - 20.00	0.6000	0.6000
T12	22	EW52	5.00 - 20.00	0.6000	0.6000
T12	23	1 1/4	5.00 - 20.00	0.6000	0.6000
T12	24	1 1/4	5.00 - 20.00	0.6000	0.6000
T12	25	1 1/4	5.00 - 20.00	0.6000	0.6000
T12	26	1 1/4	5.00 - 20.00	0.6000	0.6000
T12	27	1 1/4	5.00 - 20.00	0.6000	0.6000
T12	28	1 1/4	5.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	A	From Leg	3.00 0 0	0.000	240.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	B	From Leg	3.00 0 0	0.000	240.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	C	From Leg	3.00 0 0	0.000	240.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	240.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	240.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80

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
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	240.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	A	From Leg	3.00 0 0	0.000	230.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	B	From Leg	3.00 0 0	0.000	230.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	C	From Leg	3.00 0 0	0.000	230.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	230.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	230.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	230.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	A	From Leg	3.00 0 0	0.000	220.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	B	From Leg	3.00 0 0	0.000	220.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	C	From Leg	3.00 0 0	0.000	220.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	220.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	220.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	220.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	A	From Leg	3.00 0 0	0.000	210.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	B	From Leg	3.00 0 0	0.000	210.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	C	From Leg	3.00 0 0	0.000	210.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	210.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	210.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	210.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80

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
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	A	From Leg	3.00 0 0	0.000	200.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	B	From Leg	3.00 0 0	0.000	200.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	C	From Leg	3.00 0 0	0.000	200.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	200.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	200.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	200.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	A	From Leg	3.00 0 0	0.000	190.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	B	From Leg	3.00 0 0	0.000	190.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
(4) Kathrein 800 10965 w/ mt. pipe* (78.7" x 20" x 6.9")	C	From Leg	3.00 0 0	0.000	190.00	No Ice 1/2" Ice 1" Ice	13.81 14.35 14.89	7.39 8.51 9.41	0.12 0.22 0.32
WD13X53 Antenna Mounting Frame	A	From Leg	1.50 0 0	0.000	190.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	B	From Leg	1.50 0 0	0.000	190.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
WD13X53 Antenna Mounting Frame	C	From Leg	1.50 0 0	0.000	190.00	No Ice 1/2" Ice 1" Ice	9.71 13.89 18.07	5.18 7.60 10.02	0.40 1.60 2.80
****									
Fiber Box (20.5" X 19" X 6")	C	None		0.000	240.00	No Ice 1/2" Ice 1" Ice	3.25 3.47 3.70	1.06 1.21 1.36	0.02 0.04 0.07
DC Box (20.5" X 19" X 6")	C	None		0.000	240.00	No Ice 1/2" Ice 1" Ice	3.25 3.47 3.70	1.06 1.21 1.36	0.02 0.04 0.07
Fiber Box (20.5" X 19" X 6")	C	None		0.000	230.00	No Ice 1/2" Ice 1" Ice	3.25 3.47 3.70	1.06 1.21 1.36	0.02 0.04 0.07
DC Box (20.5" X 19" X 6")	C	None		0.000	230.00	No Ice 1/2" Ice 1" Ice	3.25 3.47 3.70	1.06 1.21 1.36	0.02 0.04 0.07
Fiber Box (20.5" X 19" X 6")	C	None		0.000	220.00	No Ice 1/2" Ice 1" Ice	3.25 3.47 3.70	1.06 1.21 1.36	0.02 0.04 0.07
DC Box (20.5" X 19" X 6")	C	None		0.000	220.00	No Ice 1/2" Ice 1" Ice	3.25 3.47 3.70	1.06 1.21 1.36	0.02 0.04 0.07
Fiber Box (20.5" X 19" X 6")	C	None		0.000	210.00	No Ice 1/2" Ice	3.25 3.47	1.06 1.21	0.02 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
						1" Ice	3.70	1.36	0.07
DC Box (20.5" X 19" X 6")	C	None		0.000	210.00	No Ice	3.25	1.06	0.02
						1/2" Ice	3.47	1.21	0.04
						1" Ice	3.70	1.36	0.07
Fiber Box (20.5" X 19" X 6")	C	None		0.000	200.00	No Ice	3.25	1.06	0.02
						1/2" Ice	3.47	1.21	0.04
						1" Ice	3.70	1.36	0.07
DC Box (20.5" X 19" X 6")	C	None		0.000	200.00	No Ice	3.25	1.06	0.02
						1/2" Ice	3.47	1.21	0.04
						1" Ice	3.70	1.36	0.07
Fiber Box (20.5" X 19" X 6")	C	None		0.000	190.00	No Ice	3.25	1.06	0.02
						1/2" Ice	3.47	1.21	0.04
						1" Ice	3.70	1.36	0.07
DC Box (20.5" X 19" X 6")	C	None		0.000	190.00	No Ice	3.25	1.06	0.02
						1/2" Ice	3.47	1.21	0.04
						1" Ice	3.70	1.36	0.07

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
6 FT DISH	B	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		150.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.05 29.83	0.14 0.29 0.44
6 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		140.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.05 29.83	0.14 0.29 0.44
6 FT DISH	B	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		130.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.05 29.83	0.14 0.29 0.44
6 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		120.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.05 29.83	0.14 0.29 0.44
6 FT DISH	B	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		110.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.05 29.83	0.14 0.29 0.44
6 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		100.00	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.05 29.83	0.14 0.29 0.44

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	240	Leg	A325X	0.75	4	11.23	29.82	0.377 ✓	1	Bolt Tension
T2	220	Leg	A325X	1.00	4	26.57	53.01	0.501 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	7.84	8.89	0.881 ✓	1	Member Block Shear
		Top Girt	A325X	0.63	1	1.95	5.93	0.328 ✓	1	Member Block Shear
T3	200	Leg	A325X	1.00	6	31.22	53.01	0.589 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	10.23	11.86	0.863 ✓	1	Member Block Shear
T4	180	Leg	A325X	1.00	6	43.85	53.01	0.827 ✓	1	Bolt Tension
		Diagonal	A325X	0.63	1	9.77	10.93	0.893 ✓	1	Member Block Shear
T5	160	Leg	A325X>1'	1.25	6	53.37	72.51	0.736 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	12.69	13.38	0.949 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	6.35	10.16	0.625 ✓	1	Member Block Shear
T6	140	Leg	A325X>1'	1.25	6	63.62	72.51	0.877 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	13.15	17.84	0.738 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	7.27	10.16	0.715 ✓	1	Member Block Shear
T7	120	Leg	A325X>1'	1.50	6	73.41	104.41	0.703 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	13.97	17.84	0.783 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	8.42	10.16	0.828 ✓	1	Member Block Shear
T8	100	Leg	A325X>1'	1.50	6	82.88	104.41	0.794 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	14.37	17.84	0.806 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	9.55	13.38	0.714 ✓	1	Member Bearing
T9	80	Leg	A325X>1'	1.50	6	91.85	104.41	0.880 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	14.65	17.84	0.822 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	10.63	17.84	0.596 ✓	1	Member Bearing
T10	60	Leg	A325X>1'	1.50	6	98.43	104.41	0.943 ✓	1	Bolt Tension
		Diagonal	A325X	0.75	1	10.27	17.84	0.576 ✓	1	Member Bearing
		Horizontal	A325X	0.75	1	11.49	17.84	0.644 ✓	1	Member Bearing
T11	40	Leg	A325X>1'	1.75	6	103.84	142.12	0.731 ✓	1	Bolt Tension
		Diagonal	A325X	0.88	1	10.67	20.88	0.511 ✓	1	Member Bearing
		Horizontal	A325X	0.88	1	12.21	20.88	0.585 ✓	1	Member Bearing
T12	20	Leg	A325X>1'	1.75	6	109.01	142.12	0.767 ✓	1	Bolt Tension
		Diagonal	A325X	0.88	1	11.15	26.10	0.427 ✓	1	Member Bearing
		Horizontal	A325X	0.88	1	12.92	20.88	0.619 ✓	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1 3/4	20.00	3.21	88.0 K=1.00	2.41	-44.13	61.44	0.718 [1]
T2	220 - 200	2 3/4	20.02	5.00	87.4 K=1.00	5.94	-117.40	152.99	0.767 [1]
T3	200 - 180	3 1/4	20.02	5.00	73.9 K=1.00	8.30	-206.70	250.37	0.826 [1]
T4	180 - 160	3 1/2	20.02	5.00	68.6 K=1.00	9.62	-288.01	306.80	0.939 [1]
T5	160 - 140	3 3/4	20.02	5.00	64.1 K=1.00	11.04	-350.80	368.18	0.953 [1]
T6	140 - 120	4	20.02	5.00	60.1 K=1.00	12.57	-419.29	434.40	0.965 [1]
T7	120 - 100	4 1/4	20.02	5.00	56.5 K=1.00	14.19	-485.77	505.39	0.961 [1]
T8	100 - 80	4 1/2	20.02	5.00	53.4 K=1.00	15.90	-550.70	581.08	0.948 [1]
T9	80 - 60	4 3/4	20.02	5.00	50.6 K=1.00	17.72	-613.41	661.41	0.927 [1]
T10	60 - 40	5	20.03	5.01	48.1 K=1.00	19.64	-662.54	746.17	0.888 [1]
T11	40 - 20	5	20.03	5.01	48.1 K=1.00	19.64	-704.29	746.17	0.944 [1]
T12	20 - 0	5 1/4	20.03	5.01	45.8 K=1.00	21.65	-745.08	835.68	0.892 [1]

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1 1/4	5.13	4.94	132.8 K=0.70	1.23	-10.01	15.71	0.637 [1]
T2	220 - 200	L2x2x3/16	7.03	3.34	106.4 K=1.04	0.71	-8.01	12.77	0.627 [1]
T3	200 - 180	L2x2x1/4	8.45	4.03	123.6 K=1.00	0.94	-10.28	13.59	0.756 [1]
T4	180 - 160	L2 1/2x2 1/2x3/16	9.70	4.64	114.4 K=1.02	0.90	-9.73	14.67	0.663 [1]
T5	160 - 140	L3x3x3/16	7.07	6.52	131.2 K=1.00	1.09	-12.95	14.21	0.911 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	140 - 120	L3x3x1/4	7.62	7.07	143.2 K=1.00	1.44	-13.64	15.86	0.860 [1] ✔
T7	120 - 100	L3 1/2x3 1/2x1/4	8.20	7.64	132.2 K=1.00	1.69	-14.50	21.83	0.664 [1] ✔
T8	100 - 80	L3 1/2x3 1/2x1/4	8.81	8.25	142.6 K=1.00	1.69	-15.09	18.78	0.804 [1] ✔
T9	80 - 60	L4x4x1/4	9.43	8.87	133.9 K=1.00	1.94	-16.04	24.41	0.657 [1] ✔
T10	60 - 40	L3 1/2x3 1/2x1/4	10.30	9.72	168.2 K=1.00	1.69	-10.99	13.50	0.814 [1] ✔
T11	40 - 20	L4x4x1/4	11.18	10.57	159.6 K=1.00	1.94	-11.87	17.21	0.690 [1] ✔
T12	20 - 0	L4x4x5/16	12.08	11.47	174.0 K=1.00	2.40	-12.63	17.91	0.705 [1] ✔

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1	4.00	3.85	129.5 K=0.70	0.79	-1.84	10.52	0.174 [1] ✔
T5	160 - 140	L2 1/2x2 1/2x3/16	9.63	4.49	114.4 K=1.05	0.90	-6.35	14.67	0.433 [1] ✔
T6	140 - 120	L2 1/2x2 1/2x3/16	11.13	5.23	126.8 K=1.00	0.90	-7.27	12.54	0.580 [1] ✔
T7	120 - 100	L2 1/2x2 1/2x3/16	12.63	5.97	144.7 K=1.00	0.90	-8.42	9.73	0.865 [1] ✔
T8	100 - 80	L3x3x3/16	14.13	6.71	135.1 K=1.00	1.09	-9.55	13.49	0.708 [1] ✔
T9	80 - 60	L3x3x1/4	15.63	7.45	151.0 K=1.00	1.44	-10.63	14.27	0.745 [1] ✔
T10	60 - 40	L3 1/2x3 1/2x1/4	17.50	8.38	144.8 K=1.00	1.69	-11.49	18.21	0.631 [1] ✔
T11	40 - 20	L3 1/2x3 1/2x1/4	19.50	9.35	161.7 K=1.00	1.69	-12.21	14.59	0.837 [1] ✔
T12	20 - 0	L4x4x1/4	21.50	10.34	156.1 K=1.00	1.94	-12.92	17.98	0.719 [1] ✔

[1] $P_u / \phi P_n$ controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	240 - 220	1	2.00	1.93	83.8 K=0.91	0.79	-0.00	17.58	0.000 [1] ✓

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	240 - 220	1 1/8	4.00	3.85	115.1 K=0.70	0.99	-2.29	16.03	0.143 [1] ✓
T2	220 - 200	L2x2x1/8	4.00	3.56	113.8 K=1.06	0.48	-2.12	7.85	0.270 [1] ✓

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	240 - 220	1	4.00	3.85	129.5 K=0.70	0.79	-3.15	10.52	0.300 [1] ✓

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
T1	240 - 220	1 3/4	20.00	0.38	10.3	2.41	44.93	108.24	0.415 [1] ✓
T2	220 - 200	2 3/4	20.02	5.00	87.4	5.94	106.28	267.28	0.398 [1] ✓
T3	200 - 180	3 1/4	20.02	5.00	73.9	8.30	187.33	373.31	0.502 [1] ✓
T4	180 - 160	3 1/2	20.02	5.00	68.6	9.62	263.13	432.95	0.608 [1] ✓

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	160 - 140	3 3/4	20.02	5.00	64.1	11.04	320.51	497.01	0.645 [1] ✔
T6	140 - 120	4	20.02	5.00	60.1	12.57	382.02	565.49	0.676 [1] ✔
T7	120 - 100	4 1/4	20.02	5.00	56.5	14.19	440.81	638.38	0.691 [1] ✔
T8	100 - 80	4 1/2	20.02	5.00	53.4	15.90	497.68	715.69	0.695 [1] ✔
T9	80 - 60	4 3/4	20.02	5.00	50.6	17.72	551.50	797.42	0.692 [1] ✔
T10	60 - 40	5	20.03	5.01	48.1	19.64	591.12	883.57	0.669 [1] ✔
T11	40 - 20	5	20.03	5.01	48.1	19.64	623.56	883.57	0.706 [1] ✔
T12	20 - 0	5 1/4	20.03	5.01	45.8	21.65	654.57	974.14	0.672 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1 1/4	5.13	4.94	189.7	1.23	10.04	39.76	0.252 [1] ✔
T2	220 - 200	L2x2x3/16	7.03	3.34	67.9	0.43	7.84	18.74	0.418 [1] ✔
T3	200 - 180	L2x2x1/4	8.15	3.88	79.3	0.56	10.23	24.49	0.418 [1] ✔
T4	180 - 160	L2 1/2x2 1/2x3/16	8.76	4.18	66.7	0.57	9.77	24.84	0.393 [1] ✔
T5	160 - 140	L3x3x3/16	6.81	6.26	84.2	0.69	12.69	30.21	0.420 [1] ✔
T6	140 - 120	L3x3x1/4	7.34	6.79	91.9	0.92	13.15	39.84	0.330 [1] ✔
T7	120 - 100	L3 1/2x3 1/2x1/4	8.20	7.64	87.8	1.10	13.97	48.00	0.291 [1] ✔
T8	100 - 80	L3 1/2x3 1/2x1/4	8.81	8.25	94.5	1.10	14.37	48.00	0.299 [1] ✔
T9	80 - 60	L4x4x1/4	9.43	8.87	88.3	1.29	14.65	56.16	0.261 [1] ✔
T10	60 - 40	L3 1/2x3 1/2x1/4	9.86	9.29	106.0	1.10	10.27	48.00	0.214 [1] ✔
T11	40 - 20	L4x4x1/4	11.18	10.57	105.1	1.27	10.67	55.14	0.193 [1] ✔
T12	20 - 0	L4x4x5/16	12.08	11.47	114.6	1.57	11.15	68.10	0.164 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1	4.00	3.85	185.0	0.79	1.86	25.45	0.073 [1]
T5	160 - 140	L2 1/2x2 1/2x3/16	9.63	4.49	107.7	0.55	6.35	24.08	0.264 [1]
T6	140 - 120	L2 1/2x2 1/2x3/16	11.13	5.23	124.8	0.55	7.27	24.08	0.302 [1]
T7	120 - 100	L2 1/2x2 1/2x3/16	12.63	5.97	142.0	0.55	8.42	24.08	0.350 [1]
T8	100 - 80	L3x3x3/16	14.13	6.71	131.8	0.69	9.55	30.21	0.316 [1]
T9	80 - 60	L3x3x1/4	15.63	7.45	147.4	0.92	10.63	39.84	0.267 [1]
T10	60 - 40	L3 1/2x3 1/2x1/4	17.50	8.38	141.1	1.10	11.49	48.00	0.239 [1]
T11	40 - 20	L3 1/2x3 1/2x1/4	19.50	9.35	157.6	1.08	12.21	46.98	0.260 [1]
T12	20 - 0	L4x4x1/4	21.50	10.34	151.6	1.27	12.92	55.14	0.234 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1	2.00	1.93	92.5	0.79	0.00	25.45	0.000 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1 1/8	4.00	3.85	164.4	0.99	2.29	32.21	0.071 [1]
T2	220 - 200	L2x2x1/8	4.00	3.56	73.9	0.29	1.95	12.74	0.153 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	240 - 220	1	4.00	3.85	185.0	0.79	3.34	25.45	0.131 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	240 - 220	Leg	1 3/4	1	-44.13	61.44	71.8	Pass
T2	220 - 200	Leg	2 3/4	50	-117.40	152.99	76.7	Pass
T3	200 - 180	Leg	3 1/4	80	-206.70	250.37	82.6	Pass
T4	180 - 160	Leg	3 1/2	107	-288.01	306.80	93.9	Pass
T5	160 - 140	Leg	3 3/4	134	-350.80	368.18	95.3	Pass
T6	140 - 120	Leg	4	167	-419.29	434.40	96.5	Pass
T7	120 - 100	Leg	4 1/4	200	-485.77	505.39	96.1	Pass
T8	100 - 80	Leg	4 1/2	233	-550.70	581.08	94.8	Pass
T9	80 - 60	Leg	4 3/4	266	-613.41	661.41	92.7	Pass
T10	60 - 40	Leg	5	299	-662.54	746.17	88.8	Pass
							94.3 (b)	
T11	40 - 20	Leg	5	332	-704.29	746.17	94.4	Pass
T12	20 - 0	Leg	5 1/4	365	-745.08	835.68	89.2	Pass
T1	240 - 220	Diagonal	1 1/4	12	-10.01	15.71	63.7	Pass
T2	220 - 200	Diagonal	L2x2x3/16	66	-8.01	12.77	62.7	Pass
							88.1 (b)	
T3	200 - 180	Diagonal	L2x2x1/4	83	-10.28	13.59	75.6	Pass
							86.3 (b)	
T4	180 - 160	Diagonal	L2 1/2x2 1/2x3/16	109	-9.73	14.67	66.3	Pass
							89.3 (b)	
T5	160 - 140	Diagonal	L3x3x3/16	137	-12.95	14.21	91.1	Pass
							94.9 (b)	
T6	140 - 120	Diagonal	L3x3x1/4	170	-13.64	15.86	86.0	Pass
T7	120 - 100	Diagonal	L3 1/2x3 1/2x1/4	203	-14.50	21.83	66.4	Pass
							78.3 (b)	
T8	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	237	-15.09	18.78	80.4	Pass
							80.6 (b)	
T9	80 - 60	Diagonal	L4x4x1/4	270	-16.04	24.41	65.7	Pass
							82.2 (b)	
T10	60 - 40	Diagonal	L3 1/2x3 1/2x1/4	303	-10.99	13.50	81.4	Pass
T11	40 - 20	Diagonal	L4x4x1/4	336	-11.87	17.21	69.0	Pass
T12	20 - 0	Diagonal	L4x4x5/16	369	-12.63	17.91	70.5	Pass
T1	240 - 220	Horizontal	1	30	-1.84	10.52	17.4	Pass
T5	160 - 140	Horizontal	L2 1/2x2 1/2x3/16	136	-6.35	14.67	43.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							62.5 (b)	
T6	140 - 120	Horizontal	L2 1/2x2 1/2x3/16	169	-7.27	12.54	58.0	Pass
							71.5 (b)	
T7	120 - 100	Horizontal	L2 1/2x2 1/2x3/16	202	-8.42	9.73	86.5	Pass
T8	100 - 80	Horizontal	L3x3x3/16	235	-9.55	13.49	70.8	Pass
							71.4 (b)	
T9	80 - 60	Horizontal	L3x3x1/4	268	-10.63	14.27	74.5	Pass
T10	60 - 40	Horizontal	L3 1/2x3 1/2x1/4	301	-11.49	18.21	63.1	Pass
							64.4 (b)	
T11	40 - 20	Horizontal	L3 1/2x3 1/2x1/4	334	-12.21	14.59	83.7	Pass
T12	20 - 0	Horizontal	L4x4x1/4	367	-12.92	17.98	71.9	Pass
T1	240 - 220	Secondary Horizontal	1	20	-0.00	17.58	0.1	Pass
T1	240 - 220	Top Girt	1 1/8	5	-2.29	16.03	14.3	Pass
T2	220 - 200	Top Girt	L2x2x1/8	54	-2.12	7.85	27.0	Pass
							32.8 (b)	
T1	240 - 220	Bottom Girt	1	9	-3.15	10.52	30.0	Pass
							Summary	
						Leg (T6)	96.5	Pass
						Diagonal (T5)	94.9	Pass
						Horizontal (T7)	86.5	Pass
						Secondary Horizontal (T1)	0.1	Pass
						Top Girt (T2)	32.8	Pass
						Bottom Girt (T1)	30.0	Pass
						Bolt Checks	94.9	Pass
						RATING =	**96.5**	**Pass**

Terracon GeoReport

Geotechnical Engineering Report

Feathersburg Tower
240-foot Self-Support Telecommunications Tower
Feathersburg, Taylor County, Kentucky

March 28, 2018
Terracon Project No. 57185007

Prepared for:
Bluegrass Cellular, Inc.
Elizabethtown, KY

Prepared by:
Terracon Consultants, Inc.
Louisville, KY

March 28, 2018

Terracon GeoReport

Bluegrass Cellular, Inc.
2902 Ring Road
Elizabethtown, KY 42701

Attn: Mr. Tim Ash
P: [270] 765 6361
E: tash@bluegrasscellular.com

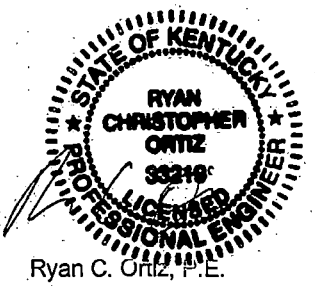
Re: Geotechnical Engineering Report
Feathersburg Tower
240-foot Self-Support Telecommunications Tower
A. Cox Road
Feathersburg, Taylor County, Kentucky
Terracon Project No. 57185007

Dear Mr. Ash:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical subsurface exploration, field testing, laboratory testing, and engineering evaluation for the Feathersburg Tower project. The purpose of this report is to provide geotechnical parameters for the subsurface materials for foundation design and earthwork considerations. This study was performed in general accordance with Terracon's Master Service Agreement dated March 7, 2001 and Kentucky RSA#4 Cellular General Partnership d/b/a Bluegrass Cellular Purchase Order PO-4902 dated January 11, 2018.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.



Ryan C. Ortiz, P.E.
Staff Geotechnical Engineer

Ronald J. Ebelhar, P.E., D.GE.
Senior Principal

Terracon GeoReport

REPORT TOPICS

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon GeoReport logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS (Boring Logs, Rock Core Photo Logs, and Laboratory Data)
SUPPORTING INFORMATION (General Notes and Unified Soil Classification System)

Geotechnical Engineering Report
Feathersburg Tower
A. Cox Road
Feathersburg, Taylor County, Kentucky
Terracon Project No. 57185007
March 28, 2018

INTRODUCTION

This report presents the results of our subsurface exploration and \geotechnical engineering services performed for the proposed Feathersburg Tower to be located about 125 feet east of the intersection of A. Cox Road and Cox Spur Road in Feathersburg, Taylor County, Kentucky. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Earthwork and site preparation
- Foundation design and construction
- Seismic site classification per IBC
- Floor slab design and construction

The geotechnical engineering scope of services for this project included the advancement of one test boring, which extended to about 33 feet below existing site grades. An additional boring was performed to obtain an undisturbed sample. The borings were located at the staked tower center.

Maps showing the site and boring locations are shown in the **Site Location Plan**, **Karst Potential Map**, and **Exploration Plan**, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring log in the **Exploration Results** section of this report.

SITE CONDITIONS

The following description of site conditions is derived from our review of publicly-available geologic, topographic, and aerial maps.

Item	Description
Parcel Information	Based on review of the Site Sketch (located in the Site Candidate Information Form) dated December 21, 2017, the project is located about 125 feet east of the intersection of A. Cox Road and Cox Spur Road in Feathersburg, Taylor County, Kentucky. Approximate Latitude/ Longitude: 37.315472°, -85.171333° (tower center) Please see the **Site Location Plan (Exhibit A-1)**
Existing Improvements	A Cox Road is located about 125 west of the tower and Cox Spur Road is located about 85 feet north of the tower.
Current Ground Cover	The area surrounding the site is dominantly used for agricultural purposes. Based on review of aerial photographs, the area near the site contains grass-, soil-, and tree-covered areas.
Existing Topography	Based on review of USGS publicly available existing topographic contours, the site contains an 8 percent grade downhill to the northeast, with ground surface elevations ranging from about 1042 to 1034 feet within a 50-foot radius of the tower center. Based on review of the Site Sketch dated December 21, 2017, the ground surface elevation at the tower center is 1,020 feet. There is a discrepancy between the USGS and survey data. We have have considered the survey elevations in our boring logs.

PROJECT DESCRIPTION

Our initial understanding of the project was discussed in the project planning stage. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

ITEM	DESCRIPTION
Proposed construction	A new 240-foot-tall self-support tower is planned at the subject property. An equipment shelter may be constructed for equipment support.

ITEM	DESCRIPTION
240-foot Self-Support Tower: Maximum loads (to be confirmed)	The following loading conditions are anticipated at each tower leg. ■ Vertical: 600 kips (to be confirmed) ■ Shear: 80 kips (to be confirmed) ■ Uplift: 500 kips (to be confirmed) These anticipated loads are based on experience with similar projects. Loads should be confirmed by the project structural engineer. If loading conditions vary from those stated above, Terracon should review the recommendations in this report and confirm they are applicable.
240-foot Self-Support Tower: Maximum allowable settlement (to be confirmed)	1-inch (to be confirmed)
Equipment building: Maximum loads (to be confirmed)	Column: 34 kips (to be confirmed) Wall: 1.5 kips/ft (to be confirmed) These anticipated loads that are shown are based on experience with similar projects. Loads should be confirmed by the project structural engineer. If loading conditions vary from those stated above, Terracon should review the recommendations in this report and confirm they are applicable.
Equipment building: Maximum allowable settlement (to be confirmed)	Total: 1-inch (to be confirmed) Differential: ¾ inch over 40 feet (to be confirmed)
Grading (to be confirmed)	Please see the **Site Conditions** for additional details regarding the existing site topography. Based on our understanding of the existing site topography, we anticipate cuts and fills of 5 feet or less will be required. Terracon should be retained to review the topographic plan and grading plan upon availability relative to the recommendations provided in this report.

GEOTECHNICAL CHARACTERIZATION

Regional Soil Geology

Formation	Description
Salem and Warsaw Limestones [1]	Limestone and claystone Limestone, yellowish gray to medium gray, fine to coarse grained, medium to thick bedded, with sand and clay, fossiliferous, weathers to siltstone, also weathers to red cherty soils locally. Siltstone, locally sandy and karst-susceptible.
Borden Formation [1]	Sandstone, siltstone, limestone and claystone Sandstone, variable from very light gray to yellowish-gray and light-brown, very fine grained to fine-grained; weathers to siltstone. Siltstone, generally gray, karst susceptible locally, with shale, with chert. Limestone, variable from yellowish-gray and brownish-gray, medium- to very coarse grained, thin- to thick-bedded. Clay shale and claystone, variable from pale-green to grayish-green, with some high plasticity soils, locally very fossiliferous.

1. Based on the Geologic map of the Mannsville quadrangle, Taylor County, published by U.S. Geological Survey (Quadrangle GQ-562).

The Salem and Warsaw Limestone is moderately susceptible to dissolution along joints and bedding planes in the rock mass. This results in voids and solution channels developing within the rock strata creating a highly irregular bedrock surface. The weathering of the bedrock and subsequent collapse or erosion of the overburden into these openings results in what is referred to as karst topography. Any construction in karst topography is accompanied by some degree of risk for future internal soil erosion and ground subsidence that could affect the stability of structures situated above the karst features. The risks associated with karst geology are common for the project vicinity and are not unique to this site.

Subsurface Profile

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction. The following table provides our geotechnical characterization at Boring B-1.

Subsurface conditions at the boring location can be generalized as follows:

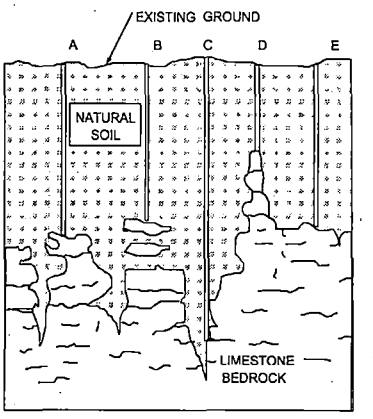
Stratum	Approximate Depth to Bottom of Stratum (feet)	Material Description	Consistency/Density
Surficial Material [1]	0.5	Topsoil	N/A
Stratum 1	13	Fat Clay (CH) [2]	Medium Stiff to Stiff SPT N-values of 8 to 14 bpf Hand penetrometer values of 2,000 to 8,000+ psf Unconfined compression strength of 1370 psf
Stratum 2	Undetermined	Limestone [3]	Recovery: 92 to 93% RQD: 58 to 87% Unconfined compressive strength results ranging from 7740 to 9120 psi

1. Topsoil was encountered at Boring B-1 and B-1A.
2. Fat Clay (CH) was encountered at Boring B-1 and B-1A. Atterberg limit tests on representative samples resulted in liquid limit (LL) test results ranging from 51 to 79 percent and plastic limit (PL) test results ranging from 25 to 33 percent and moisture content test results ranging from 28 to 41 percent.
3. Auger refusal in limestone bedrock was encountered at the test boring location at a depth of about 13 feet below existing grade. Boring B-1 was advanced into this stratum by rock sampling techniques to 33 feet below existing grade. Unit Weight test results range from about 155.8 to 162.9 pcf.

Auger refusal was encountered at a depth of approximately 13 feet below existing grade at Boring B-1 and the boring was extended using rock coring techniques to a depth of about 33 feet below existing grade. Auger refusal is defined as the depth below the ground surface at which a test boring can no longer be advanced with the soil drilling technique being used. In an area of limestone bedrock, auger refusal can result on slabs of unweathered limestone suspended in the residual soil matrix ("floaters"), on rock "pinnacles" rising above the surrounding bedrock surface, in widened joints that may extend well below the surrounding bedrock surface, or on the upper surface of continuous bedrock. Several of these possible auger refusal conditions are illustrated in the adjacent figure.

The Salem and Warsaw Limestone bedrock formation is known for producing several obstructions that can cause the augers to refuse above sound bedrock. These obstructions can range from floaters to rock pinnacles as illustrated in Examples A, B, C, and D in the figure. Depth to competent bedrock in areas of karst geology can vary greatly over short distances. The possibility of varying depths to bedrock should be considered when developing the design and construction plans for this project. Rock core operations were performed to better explore the refusal materials. See the Karst Potential Plan in the Appendix (Exhibit A-1B) The risks associated with karst geology are common for the project vicinity and are not unique to this site.

AUGER REFUSAL ILLUSTRATION



THIS FIGURE IS FOR ILLUSTRATIVE PURPOSES ONLY AND DOES NOT NECESSARILY DEPICT THE SPECIFIC BEDROCK CONDITIONS AT THIS SITE

Competent limestone bedrock was encountered at about 13 feet below existing grade. Sample recovery in competent limestone ranged from 92 to 93 percent. The quality of the core obtained in competent bedrock is considered to be fair to good with RQD values ranging from of 58 to 87 percent.

Specific conditions encountered at the boring location are indicated on the attached boring log. Stratification boundaries on the boring log represent the approximate location of changes in soil types; in-situ, the transition between materials may be gradual. Further details of the boring can be found on the boring log in the Appendix of this report. Photographs of the rock core samples can be observed in the Rock Core Photography Log (Exhibit A-5).

Groundwater Conditions

The boreholes were observed while drilling for the presence and level of groundwater. No groundwater was observed in the remaining borings for the short duration that the borehole was open. Due to the low permeability of the soils encountered in the borings, a relatively long period of time may be necessary for a groundwater level to develop and stabilize in a borehole in these materials. Long-term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels in materials of this type. As water was introduced into the borehole for the coring operation, the groundwater table could be present within the depth of our boring.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should

be considered when developing the design and construction plans for the project. In particular, this project has potential for trapped/perched water at the overburden/bedrock interface.

GEOTECHNICAL OVERVIEW

The following sections describe pertinent geotechnical considerations identified by the exploration and laboratory testing. Site preparation recommendations, including subgrade improvement, fill placement, and excavations are provided in the **Site Preparation** section.

Karst Features

The project site has been located at an area with moderate karst potential. Soil softening, which is the decrease of strength with depth, was observed in the overburden soil in our boring. Karst features, including calcite pockets, were observed in the recovered rock sample from our boring located at the tower center.

Any structure with shallow foundation constructed at this site could experience subsidence (settlement) due to karst activity. Should shallow foundations be selected for tower or equipment building structural support, the client should be prepared to accept the risk for of construction in karst topography with known buried karst features.

Competent limestone bedrock was encountered at a depth of 13 feet below existing grade, at auger refusal. To mobilize the strength parameters recommended in the **Foundations** section of our report, the pier should be embedded a minimum of 3 feet into competent bedrock at 13 feet below existing grade. The drilled pier should be tipped at a minimum depth of about 16 feet below existing grade.

High Plasticity Clay

High plasticity fat clays (CH) were encountered at Boring B-1 below topsoil. Atterberg tests on a representative samples resulted in a liquid limits (LL) of 51 to 79 percent and plastic limits (PL) of about 25 to 33 percent. High plasticity clays may be encountered at bearing elevations for any shallow foundations or floor slabs on this project.

High-plasticity soils are potentially expansive and could adversely affect lightly-loaded structures, such as foundations and floor slabs. The presence of fat clay should be anticipated at nearly all foundation and floor slab bearing elevations. Where high plasticity soils are encountered within the foundation excavations, the excavations should be over-excavated to provide a minimum 2-foot-thick layer of low volume change material. Low volume change material used for backfilling overexcavations should meet the requirements of the **Material Types** section of this report. The low volume change layer will reduce risk but not eliminate the risk of the high plasticity clays adversely

affecting lightly-loaded structures. To eliminate this risk, deep foundations (i.e. drilled piers) would be considered for foundation support. Additional recommendations concerning foundation over-excavation are provided in the **Foundations** section.

Soft to Medium Stiff Soils

Soft to medium stiff soils were encountered within 3 feet of the existing ground surface at Boring B-1A. Soft to medium stiff soils should be anticipated locally at this site. Prior to floor slab construction, subgrade material should be proof-rolled with a loaded dump truck to help delineate any soft, medium stiff, or otherwise unsuitable material. Soils at the foundation bearing elevation should be tested by the geotechnical engineer or representative during foundation excavations to delineate any soft, medium stiff, or otherwise unsuitable material. Any soft to medium stiff soils identified by proof-rolling or foundation inspection should be remediated. After initial stripping, site preparation, and foundation excavations, medium stiff soils should be stabilized undercutting and re-compacting to stiff or better material.

Variable Geologic Conditions

The proposed cell tower is planned near the interface of two distinct geologic formations. Please see the **Site Characterization** section of this report for additional details. Limestone was encountered in our boring located at the tower center. We are available to perform additional borings at each tower leg to confirm material type. If material types are encountered during construction, we should be retained to perform additional work and revise the recommendations provided in this report.

Foundation Support

Site grading, structural loading, and foundation plans are unknown at this time. Anticipated loads are based on experience with similar projects. Loads should be confirmed by the project structural engineer. If loading conditions vary from those stated above, Terracon should be retained to review the recommendations in this report.

Should shallow foundations be selected for tower foundation support, the tower mat foundation can be dimensioned for a net allowable soil bearing pressure of 3,000 psf, bearing at or below frost depth of 24 inches below surrounding grade. However, a tower supported by 15-foot-square mat foundation at each tower leg with the assumed loading conditions may experience 2 inches of settlement. These foundation dimension would be considered for axial conditions only, if these dimensions are inadequate for overturning, lateral loads, or uplift, deep foundations may be considered. If 2 inches of settlement exceeds tolerable limits, deep foundations should be considered. Design parameters for deep foundations have also been provided. The equipment shelter foundation can be dimensioned for a net allowable soil bearing pressure of 3,000 psf for isolated spread footings and 2,500 for continuous wall footings.

If shallow foundations are selected, the tower or equipment structure can be supported by shallow foundations bearing on undisturbed, at least **stiff** natural cohesive soils or new lean clay engineered fill or lean concrete placed directly on at least stiff native soils. However, inspection of the bearing conditions should be performed by a geotechnical engineer or representative to identify any potential karst conditions. Any undercut and replacement of unsuitable soils should be replaced with new engineered fill meeting the requirements of the Material Types in the **Site Preparation** section of this report. Additional recommendations for design and construction of foundations are presented in the following sections.

EARTHWORK

Earthwork will include clearing and grubbing, excavations and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria as necessary to render the site in the state considered in our geotechnical engineering evaluation for foundations.

Site Preparation

The following presents recommendations for site preparation, excavation, and fill placement. Special considerations will be needed where site grading may expose unstable soils. Our recommendations presented for design and construction of earth supported elements (i.e. foundations, slabs, etc.) are contingent upon following the recommendations outlined in this section. Due to the karst features, high-plasticity clays, and soft soils encountered in our borings, earthwork activities on the project should be observed and evaluated by Terracon.

Prior to placing fill to raise grades (if needed), the site should be grubbed and all vegetation, topsoil and any otherwise unsuitable material should be removed from the construction area. Wet or dry material should either be removed or moisture conditioned and recompacted to the project specified densities and moisture contents. Any unsuitable materials should be undercut and replaced with low volume change material meeting the requirements of the **Fill Material Requirements** section of this report. We recommend the actual stripping depth and undercutting of unsuitable soils be observed and documented by a representative of Terracon during construction. After stripping, excavation, and filling to planned final grades, the subgrade should be proof-rolled with a loaded dump truck where possible to aid in locating loose or soft areas. Unstable materials delineated by proofrolling should be removed and replaced with suitable compacted fill material.

Following rough grading, and prior to placement of foundations, the subgrade should be evaluated by proofrolling where possible to aid in locating unstable subgrade soils. Any soft, loose, or otherwise unsuitable areas identified during the proofroll will require undercutting or improvement.

Where proofrolling is not possible, the subgrade should be evaluated by observation and probing to aid in locating unsuitable or unstable areas. The appropriate method and amount of stabilization, if required, should be determined at the time of construction based on observations by the geotechnical engineer.

It should be noted that the on-site clayey soils may be susceptible to disturbance from construction activity, particularly if the soil has high natural moisture and is wetted by surface water or seepage. Therefore, care should be taken during the site grading operation to provide adequate site drainage and minimize disturbance of the bearing soils.

Fill Material Requirements

All imported material or on-site material proposed for reuse should be tested to verify conformance with the material property and placement recommendations in this section. Engineered fill should meet the following material property requirements:

Fill Type [1]	USCS Classification	Acceptable Location for Placement
Lean Clay [2]	CL (LL<50% & PI>15)	All locations and elevations. Lean clay was not encountered in our test boring.
Fat Clay [2]	CH (LL>50%)	Not recommended for use as structural fill within 2 feet of any structures (i.e. floor slabs and foundations).
Well graded granular and silty gravel	GM-GW GM	All locations and elevations
Low Volume Change Material	CL or GM-GW, GM [3] and (LL<50% & 5<PI<15)	All locations and elevations

1. Controlled, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation.
2. Delineation of lean clays and fat clays should be performed in the field by a qualified geotechnical engineer or their representative, and could require additional laboratory testing.
3. Similar to KYTC DGA or crushed stone base limestone, limestone screenings, or granular material such as sand, gravel or crushed stone containing not more than 14% non-plastic fines.

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

ITEM	DESCRIPTION
Fill Lift Thickness	8-inches or less loose thickness for heavy, self-propelled compaction equipment. 4- to 6-inches loose thickness for hand-guided equipment (i.e. jumping jack or plate compactor).
Compaction Requirements [1] (Structural Areas)	At least 98% of the materials Standard Proctor maximum dry density (ASTM D 698)
Compaction Requirements (Landscape Areas)	At least 95% of Standard Proctor maximum dry density (provided long-term plans do not include a structure in these areas)
Moisture Content - Cohesive Soils	Within the range of 2% below to 3% above the optimum moisture content (OMC) as determined by the Standard Proctor test at the time of placement and compaction
Moisture Content - Granular Material [2]	Within workable moisture levels / ±2% of OMC

1. Engineered fill should be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.
2. Specifically, moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without the cohesionless fill material pumping when proofrolled.

Utility Trench Backfill

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction. If utility trenches are backfilled with relatively clean granular material, they should be capped with at least 18 inches of cohesive soil to reduce the infiltration and conveyance of surface water through the trench backfill.

Utility trenches are a common source of water infiltration and migration. All utility trenches that penetrate beneath the foundation should be effectively sealed to restrict water intrusion and flow through the trenches that could migrate below the foundation with a clay plug. The plug material should consist of clay compacted at a water content at or above the soil's optimum water content. The clay fill should be placed to completely surround the utility line and be compacted in accordance with recommendations in this report.

Grading and Drainage

Effective site drainage is important both during construction and during the life of the structures.

Adequate drainage will be necessary to control and divert stormwater runoff away from the site. Final surrounding grades should be sloped away from the foundations to prevent ponding of water.

Excess materials generated during site grading, including soils unsuitable for use as engineered fill (i.e. high-plasticity material, topsoil, etc.), and may be placed as fill in non-structural landscape areas and in the construction of landscape berms. To the extent possible, these materials should be placed in accordance with the **Fill Compaction Requirements**.

Earthwork Construction Considerations

Although the exposed subgrade may be relatively stable upon initial exposure, unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. It is recommended that construction activities be performed during drier weather, if possible. Some subgrade instability should be anticipated if construction is planned during wet weather that may require undercutting and/or stabilization. The use of light construction equipment would aid in reducing subgrade disturbance. Should unstable subgrade conditions develop, stabilization measures will need to be implemented.

Shallow excavations are anticipated to be accomplished with conventional construction equipment. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to placement of utilities. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over, or adjacent to, construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted, prior to foundation construction.

At a minimum, all temporary excavations should be sloped or braced as required by OSHA guidelines to provide stability and safe working conditions, and to protect the integrity of adjacent structures. Temporary excavations will probably be required during grading operations and utility trenches. The grading contractor, by his contract, is usually responsible for designing and constructing stable temporary excavations and should shore, slope or bench the sides of the excavations as required, to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state and federal safety regulations, including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation; proof-rolling; placement and compaction of controlled compacted fills; backfilling of excavations into the completed subgrade, and just prior to construction.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the recommendations in this report, the following design parameters are applicable for shallow foundations.

Tower Mat Foundation Design Parameters

Parameter	Mat
Maximum net allowable bearing pressure on existing soils or engineered fill placed on acceptable subgrade [1]	3,000 psf
Minimum foundation plan dimensions	24 inches
Required bearing stratum [2]	Engineered fill or lean concrete extending to at least stiff clay
Ultimate coefficient of sliding friction	0.30
Ultimate passive pressure [3]	350 psf (below 3 feet)
Minimum embedment below finished grade for frost protection [4]	24 inches (48 inches for fat clays)
Est. total settlement from structural loads [5]	< 2 inch

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the mat base elevation. An appropriate factor of safety has been applied.
2. Unsuitable or soft soils should be undercut, and the mat should be deepened to bear on the competent bearing stratum or could bear on lean concrete or new engineered fill extending from the foundation base to competent bearing stratum. Fat clays at this site should be undercut a minimum 24 inches below the mat foundation bearing elevation and replaced with suitable materials, or deepened to bear 48 inches below existing grade.
3. The sides of the excavation for the mat foundation must be nearly vertical and the concrete should be placed neat against these vertical faces for the passive earth pressure value to be valid. If the loaded side is sloped or benched, and then backfilled, the allowable passive pressure will be significantly reduced. Passive resistance in the upper 3 feet of the subsurface profile should be neglected.
4. To reduce the effects of seasonal moisture variations in the subgrade soils.
5. The foundation settlement will depend upon embedment depth of the mat, the quality of the earthwork operations, and conformance with soil improvement methods recommended in this report. The estimated

settlements are based on recommended allowable bearing pressures, long-term settlement will depend on the quality and uniformity of the engineered fill placement.

Equipment Shelter Shallow Foundation Design Parameters

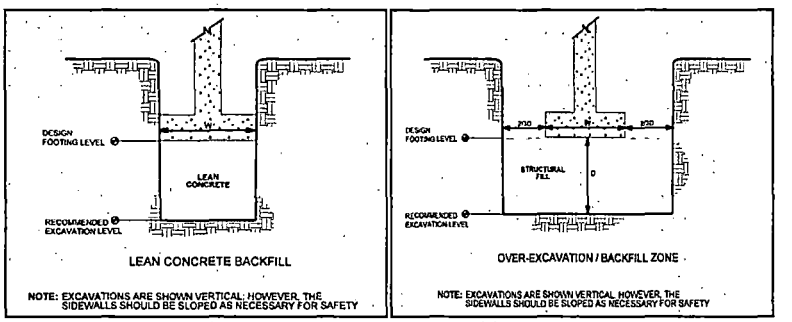
Parameter	Mat	
Maximum net allowable bearing pressure on existing soils or engineered fill placed on acceptable subgrade [1]	3,000 psf	2,500 psf
Minimum foundation plan dimensions	24 inches	18 inches
Required bearing stratum [2]	Engineered fill or lean concrete extending to at least stiff clay	
Ultimate coefficient of sliding friction	0.30	
Ultimate passive pressure [3]	350 psf (below 3 feet)	
Minimum embedment below finished grade for frost protection [4]	24 inches (48 inches for fat clays)	
Est. total settlement from structural loads [5]	< 1 inch	
Estimated differential settlement [5]	< 3/4 inch	

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied.
2. Unsuitable or soft soils should be undercut, and the footings should be deepened to bear on the competent bearing stratum or could bear on lean concrete or new engineered fill extending from the foundation base to competent bearing stratum. Fat clays at this site should be undercut a minimum 24 inches and replaced with suitable materials, or deepened to bear 48 inches below existing grade.
3. The sides of the excavation for the spread footing foundation must be nearly vertical and the concrete should be placed neat against these vertical faces for the passive earth pressure value to be valid. If the loaded side is sloped or benched, and then backfilled, the allowable passive pressure will be significantly reduced. Passive resistance in the upper 3 feet of the subsurface profile should be neglected.
4. For perimeter footing and footings beneath unheated areas. Also to reduce the effects of seasonal moisture variations in the subgrade soils.
5. The foundation settlement will depend upon embedment depth of the footings, the quality of the earthwork operations, and conformance with soil improvement methods recommended in this report. The estimated settlements are based on recommended allowable bearing pressures, long-term settlement will depend on the quality and uniformity of the engineered fill placement.

Foundation Construction Considerations

The base of all foundation excavations should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Should the soils at bearing level become excessively dry, disturbed or saturated, or frozen, the affected soil should be removed prior to placing concrete. Place a lean concrete mud-mat over the bearing soils if the excavations must remain open over night or for an extended period of time. It is recommended that the geotechnical engineer be retained to observe and test the soil foundation bearing materials.

If unsuitable bearing soils are encountered in footing excavations, the excavations should be extended deeper to suitable soils and the footings could bear directly on these soils at the lower level or on lean concrete backfill (minimum of 500 psi) placed in the excavations. The footings could also bear on properly compacted lean clay backfill extending down to the suitable soils. Overexcavation for compacted lean clay backfill placement below footings should extend laterally beyond all edges of the footings at least 8 inches per foot of overexcavation depth below footing base elevation. The overexcavation should then be backfilled up to the footing base elevation with engineered fill as described in the **Compaction Requirements** section placed in lifts of 8 inches or less in loose thickness and compacted to at least 98 percent of the material's maximum dry density as defined by the Standard Proctor (ASTM D 698). The overexcavation and backfill procedure is illustrated in the following figures for lean concrete or lean clay structural fill.



DEEP FOUNDATIONS

Design/Analysis Parameters for Deep Foundations

Based on the results of the test boring data and laboratory testing, we have developed the following drilled pier soil and rock design parameters:

Approximate Depth (feet)	Allowable Skin Friction (psf)	Allowable End Bearing Capacity (psf)	Undrained Shear Strength, c (psf)	Unit Weight (pcf)	Strain ε_{50}	Lateral Subgrade Modulus, k (pci)	Model
0 – 3	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore
Fat Clay 3 – 13	400	–	1500	115	0.007	120	Stiff Clay w/o water
Competent Limestone Bedrock 13 – 33	9,000	50,000	350,000	155	k_{rm}=0.00001	3000	Strong Rock (RQD=58)

The above indicated cohesion, friction angle, lateral subgrade modulus and strain values have no factors of safety, and the allowable skin friction and bearing capacity have a factor of safety of at least 2. The cohesion, internal friction angle, lateral subgrade modulus and strain values given in the above table are based on our boring, published values and our past experience with similar soil and rock types. These values should, therefore, be considered approximate. To mobilize the higher rock strength parameters, the pier should be socketed at least 3 feet into the bearing stratum. The allowable end bearing pressure provided in the table has an approximate factor of safety of at least 3. If the drilled pier is designed using the above parameters and bear within the limestone bedrock, settlement is anticipated to be about ½ inch or less

Deep Foundation Construction Considerations

Water was introduced into the borehole for our coring operations. Long-term monitoring of the groundwater was not a part of this scope of work. Groundwater could be encountered during the drilling for the drilled pier. If groundwater seepage is encountered, water should be removed from each pier hole prior to concrete placement Care should be taken so that the sides and bottom of the excavations are not disturbed during construction.

Due to the combination of potentially soft soils due to karst and groundwater, the contractor should have temporary casing available onsite during construction of the drilled pier to control seepage and/or caving soil and/or rock, if encountered. The casing should be extracted from the drilled pier excavation following concrete placement.

Difficult drilling conditions may be encountered due to hard, karst limestone. The contractor should be prepared to penetrate bedrock with chert and competent limestone. Due to the karst features encountered at our boring location, the bottom of the excavation should be inspected carefully by a

qualified geotechnical engineer or representative for voids, clay layers, or any otherwise unsuitable bearing conditions due to karst topography.

Drilled piers should be designed with a minimum shaft diameter of 30 inches to facilitate clean out and inspection of the bedrock surface from the ground. The pier should be mobilized 3 feet below the top of competent bedrock depth of 13 feet. This would result in a minimum drilled pier tip depth of 16 feet below existing grades.

If groundwater seepage is encountered, water should be removed from each pier hole prior to concrete placement. Care should be taken so that the sides and bottom of the excavations are not disturbed during construction. The contractor should have temporary casing available onsite during construction of the drilled pier to control seepage and/or caving soil, if encountered.

Based on compressive strength and rock quality data, we expect that advancement of piers to minimum embedment in rock could be achieved by a rock auger equipped with self-rotating cutter bits or by rock coring. However, advancement method may vary between contractors depending on experience and their evaluation of penetration rates for the site conditions.

The bottom of the shaft should be free of loose soil or debris prior to reinforcing steel and concrete placement. We recommend that the specifications state that reinforcing steel and pier concrete be placed the same day as the shaft is drilled. No completed shaft excavation should be allowed to remain open overnight. It is suitable, however, for the contractor to excavate a portion of the drilled shaft and then complete the shaft excavation the next day.

If pier concrete cannot be placed in dry conditions, a tremie should be used for concrete placement. Free-fall concrete placement in piers will only be acceptable if provisions are taken to avoid striking the concrete on the sides of the hole or reinforcing steel. The use of a bottom-dump hopper or tremie discharging near the bottom of the hole where concrete segregation will be minimized, is recommended. Due to potential sloughing and raveling, foundation concrete quantities may exceed calculated geometric volumes.

Adequate performance of the drilled shaft foundations will be highly dependent on the contractors installation techniques used to construct the foundation elements. At a minimum, the following inspection criteria should be incorporated as a requirement for construction of the drilled piers.

Bearing conditions of the drilled pier foundations should be evaluated by a qualified geotechnical engineer at the time of construction to confirm suitable end bearing on competent bedrock and to provide recommendations if unsuitable bearing materials are encountered. Entry of personnel into the drilled pier foundations is not required and is strongly discouraged for this project. The evaluation of the piers should include the following:

- Contractor should advance a test hole with an air track drill through the bedrock bearing surface to a depth of at least two times the pier diameter to check for discontinuities in the bedrock that may require additional rock removal.
- The number of test holes at each pier location would be determined by the geotechnical engineer's representative based on the field test results.
- Significant discontinuous rock layers may require additional rock removal as directed by the engineer's representative.
- Prior to installation of the reinforcing steel cage, the base of each pier should be sounded to check for voids or clay seams in the underlying bedrock. This could be done by dropping the drill rig Kelly bar onto the exposed bedrock surface at selected locations.
- Visual evaluation of the exposed bearing surface should be performed by the engineer's representative to confirm that the base is free from loose material, soil, water or other unsuitable materials. Visual inspection to determine the suitability of the shaft bottom using either a flashlight or reflected light with a mirror may be conducted from the ground surface.

SEISMIC CONSIDERATIONS

Design of buildings and other structures subject to earthquake ground motions requires classification of the upper 100 feet of the site profile in accordance with Chapter 20 of ASCE 7. The Site Class types are listed below and are basically defined by an average value of either shear wave velocity, standard penetration resistance, or undrained shear strength.

- A. Hard Rock
- B. Rock
- C. Very dense soil and soft rock
- D. Stiff soil
- E. Soft clay soil
- F. Soils vulnerable to potential failure or collapse under seismic loading

Based on the results of our site characterization program, we conclude that Site Class C is appropriate for the subject site. Note that the scope of services did not include site profile determination to a depth of 100 feet. Exploration for this project extended to a maximum depth of 33 feet below existing grade. We have assumed that the limestone layer encountered above our termination depth extend to 100+ feet

FLOOR SLABS

Where fat clays are encountered at the subgrade elevation, a minimum 2-foot undercut and replacement should be performed below the floor slab bearing elevation. Following the 2-foot undercut, the exposed material should pass a proof-roll. Native soils below the floor slab bearing elevation should pass a proof-roll observed by a geotechnical engineer or representative. Please refer to the **Site Preparation** section of this report for additional details regarding the partial undercut and replacement below floor slab subgrade elevation.

Design Parameters

Item	Description
Floor slab support	New engineered fill, at least 2-feet of low volume change material (CL), or lean concrete extending to at least very stiff native soils
Modulus of subgrade reaction	100 pounds per square inch per in (psi/in) for point loading conditions
Aggregate base course/capillary break [1]	Minimum 4 inches of free-draining granular material
Vapor Barrier	Project Specific [2]
Structural considerations	Floor slabs should be structurally independent of building [3]

1. The floor slab design should include a capillary break, comprised of free-draining, compacted, granular material, at least 4 inches thick. Free-draining granular material should have less than 5 percent fines (material passing the #200 sieve).
2. The use of a vapor retarder should be considered beneath concrete slabs on grade that will be covered with wood, tile, carpet or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.
3. Floor slabs should be structurally independent of any building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation. Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates that any differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks that occur beyond the length of the structural dowels. The structural engineer should account for this potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

Floor Slab Construction Considerations

Prior to construction of grade supported slabs, varying levels of remediation may be required to reestablish stable subgrades within slab areas due to construction traffic, rainfall, disturbance, desiccation, etc. As a minimum, the following measures are recommended.

- Confirm that interior trench backfill placed beneath slabs is compacted in accordance with recommendations outlined in the **Site Preparation** section of this report.
- All floor slab subgrade areas should be moisture conditioned and properly compacted to the recommendations in this report immediately prior to placement of the stone base and concrete.

Floor Slab Subgrade Preparation

On most project sites, the site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed due to utility excavations, construction traffic, desiccation, rainfall, etc. As a result, the floor slab subgrade may not be suitable for placement of aggregate base and concrete and corrective action will be required. Additional protection, stabilization measures may be necessary and requires specific field evaluation. We recommend floor subgrades be maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become desiccated prior to construction of floor slabs, the affected material should be removed or the materials scarified, moistened, and recompacted. Upon completion of grading operations in the building areas, care should be taken to maintain the recommended subgrade moisture content and density prior to construction of the equipment building floor slabs.

We recommend the area underlying the floor slab be rough graded and then thoroughly proof-rolled with a loaded tandem-axle dump truck prior to final grading and placement of aggregate base. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are located should be repaired by removing and replacing the affected material with properly compacted fill. All floor slab subgrade areas should be moisture conditioned and properly compacted to the recommendations in this report immediately prior to placement of the aggregate base and concrete.

GENERAL COMMENTS

As the project progressd, we addressed assumptions by incorporating information provided by the design team, if any. Revised project information that reflects actual conditions important to our services has been reflected in the final report. The design team should collaborate with Terracon to confirm these assumptions and to prepare the final design plans and specifications This facilitates the incorporation of our opinions related to implementation of our geotechnical

recommendations. Any information conveyed prior to the final report is for informational purposes only and should not be considered or used for decision-making purposes.

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in the final report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our scope of services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third party beneficiaries intended. Any third party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

A geotechnical engineering study has been completed for the proposed Feathersburg Tower, located about 125 feet east of the intersection of A. Cox Road and Cox Spur Road in Feathersburg, Taylor County, Kentucky. One test boring was advanced to a depth about 33 feet below existing grade. An additional boring was performed to obtain an undisturbed sample. Individual boring logs and **Exploration Plan** (**Exhibit A-2)** are included in the appendix.

Boring Layout and Elevations: The location of the tower center were established by Landmark Surveying Co., Inc representative Mr. Darren Helms. The presence of the tower location stake was confirmed in a site visit by Terracon representative Mrs. Jenny Guest. Elevations, included in our boring logs, were obtained from the Site Sketch (located in the Site Candidate Information Form) dated December 21, 2017.

Subsurface Exploration Procedures: We advanced the borings with a track-mounted drill rig using continuous flight augers (hollow stem). Four split-barrel samples were obtained in the upper 10 feet of the boring. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration was recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. This value is used to estimate the in-situ relative density of cohesionless soils and consistency of cohesive soils. We also obtained a thin-walled Shelby tube sample to obtain a relatively undisturbed soil sample and perform laboratory strength testing.

At auger refusal, we obtained a rock sample using a double-walled, diamond-faced, NX core barrel. The rock samples obtained were placed in a core box, sealed and returned to our laboratory for observation, classification and compression testing.

The sampling depths, penetration distances, and other sampling information were recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. Our exploration team prepared field boring logs as part of the drilling operations. The field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the geotechnical engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory. Information provided on the test boring logs include soil descriptions, consistency evaluations, boring depths, sampling intervals, and groundwater conditions.

We observed groundwater levels during drilling and sampling. For safety purposes, the borings were backfilled with auger cuttings immediately after completion.

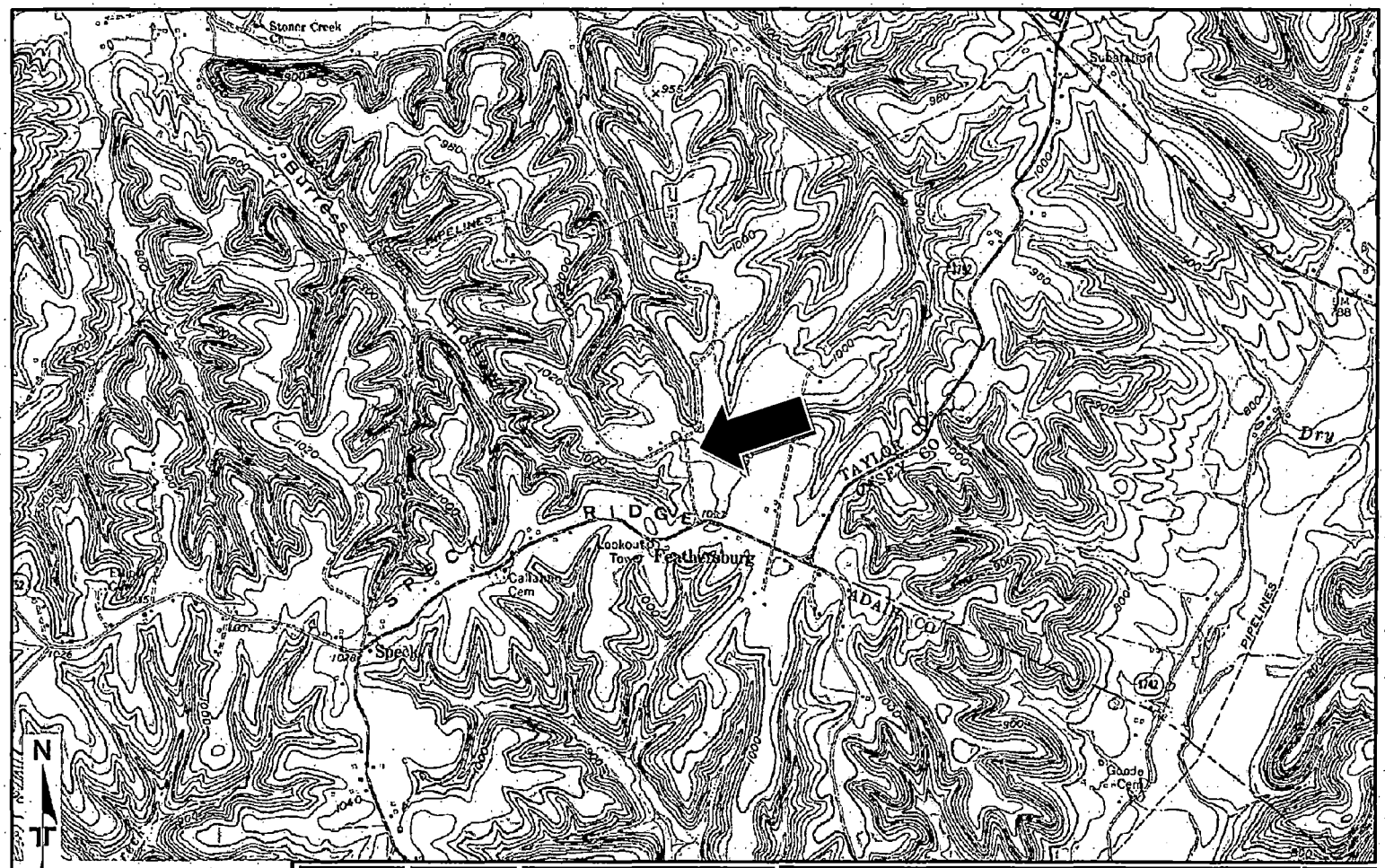
Laboratory Testing

The project engineer reviewed the field data and assigned various laboratory tests to better understand the engineering properties of the various soil and rock strata as necessary for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods are applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216-10 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318-10e1 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D2166/D2166M-13 Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
- ASTM D7012 Standard Test Methods for Compressive Strength and Elastic Moduli of Intact Rock Core Specimens under Varying States of Stress and Temperatures

The laboratory testing program included examination of soil samples by the project engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

SITE LOCATION AND EXPLORATION PLANS



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: MANNSVILLE, KY (1/1/1970).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	RCO
Drawn by:	RCO
Checked by:	RJE
Approved by:	RJE

Project No.	57185007
Scale:	1"=2,000'
File Name:	Plans
Date:	3/23/2018

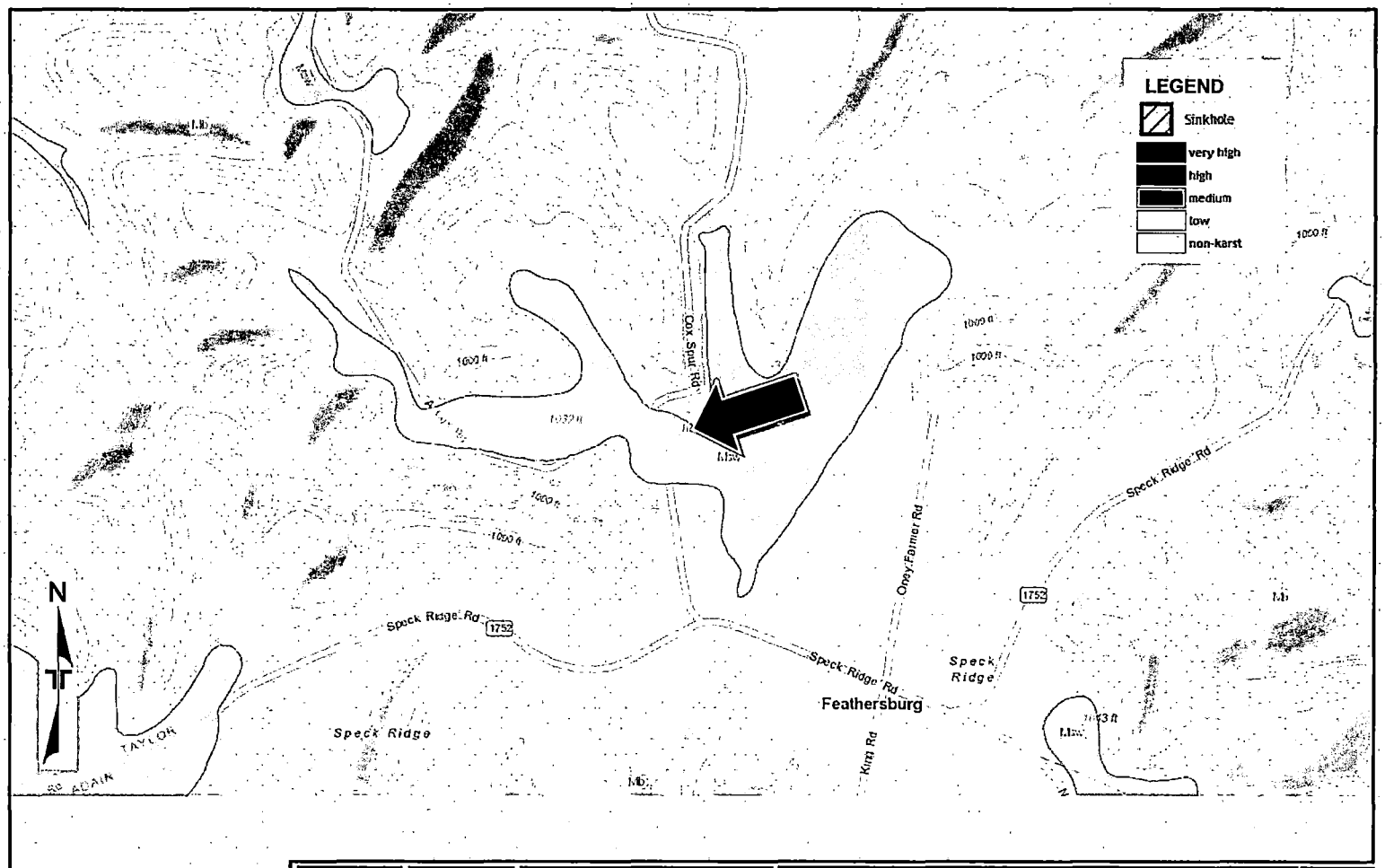
Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY 40223-3915

SITE LOCATION PLAN

Proposed Feathersburg Tower
A. Cox Road
Feathersburg, KY

Exhibit

A 1A



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: MANNSVILLE, KY (1/1/1970).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	RCO
Drawn by:	RCO
Checked by:	RJE
Approved by:	RJE

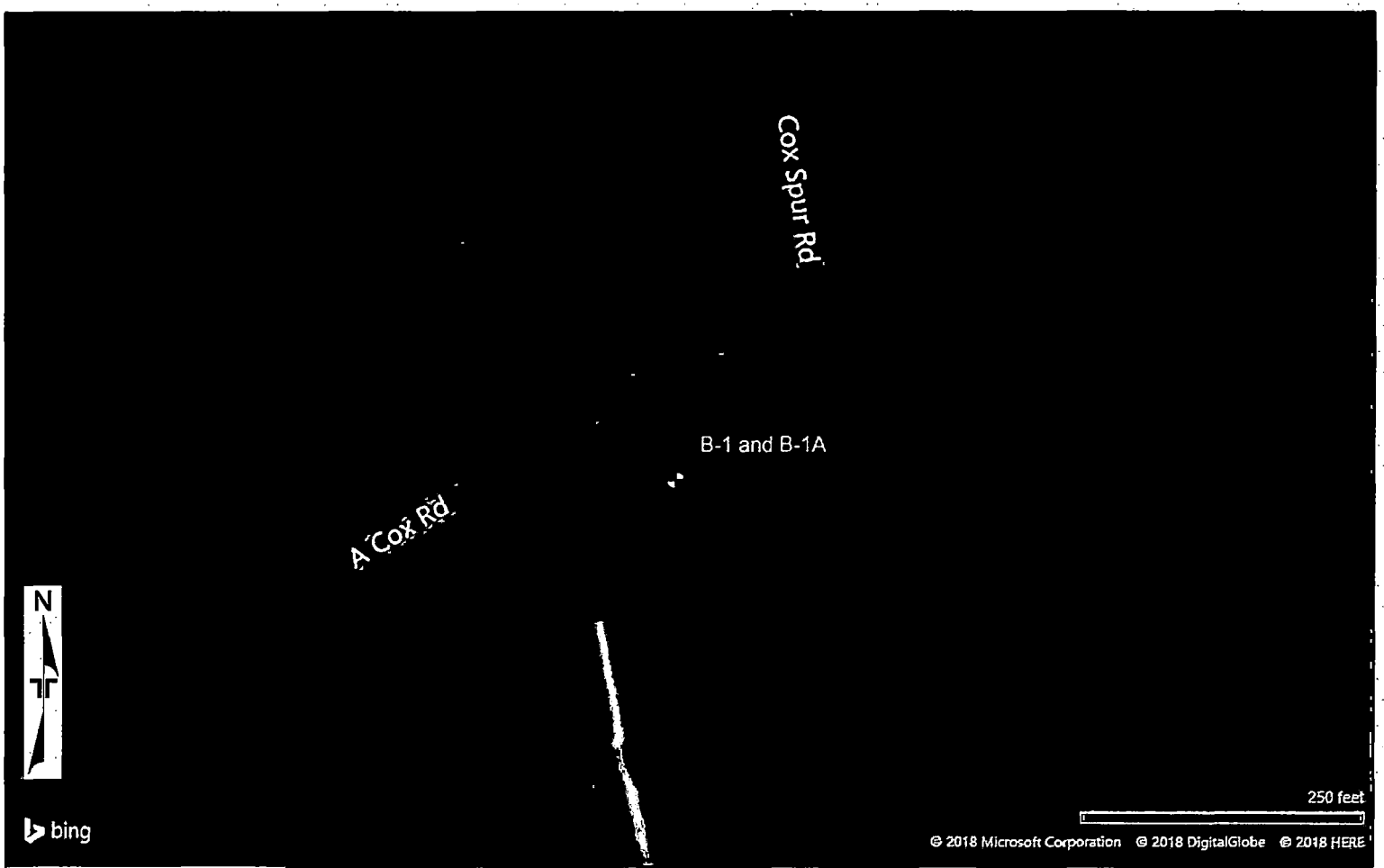
Project No.	57185007
Scale:	1"=2,000'
File Name:	Plans
Date:	3/23/2018

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY 40223-3915

KARST POTENTIAL MAP

Proposed Feathersburg Tower
A. Cox Road
Feathersburg, KY

Exhibit
A-1B



MICROSOFT BING MAPS
AERIAL PHOTOGRAPHY PROVIDED BY

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	RCO
Drawn by:	RCO
Checked by:	RJE
Approved by:	RJE

Project No.	57185007
Scale:	AS SHOWN
File Name:	Plans
Date:	3/23/2018

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY 40223-3915

EXPLORATION PLAN

Proposed Feathersburg Tower
A. Cox Road
Feathersburg, KY

Exhibit

A-2

EXPLORATION RESULTS

BORING LOG NO. B-1

PROJECT: Proposed Feathersburg Tower

CLIENT: Bluegrass Cellular Partnership
Elizabethtown, KY

SITE: A. Cox Road
Feathersburg, KY

LOCATION See Exhibit A-2

Latitude: 37.3155° Longitude: -85.1713°

Approximate Surface Elev: 1020 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ROCK CORE UNIAXIAL STRENGTH (psi)	ROCK CORE UNIT WEIGHT (pcf)	LABORATORY HP (psi)	UNCONFINED COMPRESSIVE STRENGTH (psi)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI
	0.5	1019.5+/-												
		FILL - TOPSOIL.												
		FAT CLAY (CH), reddish brown, stiff												
						16	2-3-7 N=10			8000+ (HP)		32		
		- with light brown												
						18	4-5-6 N=11			4500 (HP)		34		67-33-34
	6.0	1014+/-	5											
		FAT CLAY (CH), with silt, yellowish brown, stiff				18	6-6-8 N=14			2000 (HP)		41		
						17	4-4-4 N=8			2500 (HP)		28		51-25-26
	13.0	1007+/-	10											
		LIMESTONE, light gray, coarse-grained, close fracture spacing, thin bedding, unweathered, strong rock, with shale streamers												
		- with approximate 1/4- to 1/2-inch calcite pockets at 15.5 ft	15											
	17.0	1003+/-												
		LIMESTONE, light gray, fine-grained, close fracture spacing, laminated bedding, unweathered, strong rock				112	RQD = 58%	9120	155.8					
	20.5	999.5+/-	20											
		LIMESTONE, light gray, coarse-grained, close fracture spacing, thin bedding, unweathered, strong rock, with shale streamers				110								
			25											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25-inch Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.
Based on survey data from Landmark Surveying

Notes:

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 03-02-2018	Boring Completed: 03-02-2018
Drill Rig: B-53	Driller: Ron Mathes
Project No.: 57185007	Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 57185007 PROPOSED FEATHERS.GPJ TERRACON_DATATEMPLATE.GDT 3/28/18

BORING LOG NO. B-1

PROJECT: Proposed Feathersburg Tower

CLIENT: Bluegrass Cellular Partnership
Elizabethtown, KY

SITE: A. Cox Road
Feathersburg, KY

LOCATION See Exhibit A-2

Latitude: 37.3155° Longitude: -85.1713°

Approximate Surface Elev: 1020 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ROCK CORE UNAXIAL STRENGTH (psi)	ROCK CORE UNIT WEIGHT (pcf)	LABORATORY HP (psf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI
	27.0	993+/-												
		LIMESTONE, light gray with dark gray, fine-grained, close fracture spacing, laminated bedding, unweathered, strong rock	30			110	RQD = 87%	7740	162.9					
		with an approximate 1/2-inch calcite layer at 31 ft												
	33.0	987+/-												
		Boring Terminated at 33 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25-inch Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.
Based on survey data from Landmark Surveying

Notes:

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 03-02-2018	Boring Completed: 03-02-2018
Drill Rig: B-53	Driller: Ron Mathes
Project No.: 57185007	Exhibit: A-3

BORING LOG NO. B-1A

PROJECT: Proposed Feathersburg Tower

CLIENT: Bluegrass Cellular Partnership
Elizabethtown, KY

SITE: A. Cox Road
Feathersburg, KY

LOCATION See Exhibit A-2

Latitude: 37.3155° Longitude: -85.1713°

Surface Elev.: 1020 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	ROCK CORE UNAXIAL STRENGTH (psi)	ROCK CORE UNIT WEIGHT (pcf)	LABORATORY HP (psf)	UNCONFINED COMPRESSIVE STRENGTH (psf)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI
	0.5	1019.5												
FILL - TOPSOIL.														
FAT CLAY (CH), reddish brown, medium stiff					■						1370	30	89	79-33-46
	3.0	1017												
Boring Terminated at 3 Feet														

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
3.25-inch Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exhibit A-3 for description of field procedures.
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.
Based on survey data from Landmark Surveying

Notes:

WATER LEVEL OBSERVATIONS

No free water observed

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

Boring Started: 03-02-2018 | Boring Completed: 03-02-2018
Drill Rig: B-53 | Driller: Ron Mathes
Project No.: 57185007 | Exhibit: A-4

Rock Core Photograph Log
Feathersburg Tower ■ Feathersburg, Taylor County, Kentucky
March 26, 2018 ■ Terracon Project 57185007

Terracon

PHOTO #1 – Rock core sample at B-1 from about 13 to 23 feet below existing grade

PHOTO #2 – Rock core sample at B-1 from about 23 to 33 feet below existing grade

Summary of Laboratory Results

BORING ID	Depth	USCS Classification and Soil Description	Compressive Strength (psf)	Liquid Limit	Plastic Limit	Plasticity Index	% <#200 Sieve	% Gravel	% Sand	% Silt	% Clay	Water Content (%)	Dry Density (pcf)
B-1	1 - 2.5	FAT CLAY										32.4	
B-1	3.5 - 5	FAT CLAY		67	33	34						34.4	
B-1	6 - 7.5	FAT CLAY										41.0	
B-1	8.5 - 10	FAT CLAY		51	25	26						27.8	
B-1	13 - 23	LIMESTONE											
B-1	23 - 33	LIMESTONE											
B-1A	1 - 3	FAT CLAY	1369	79	33	46						30.3	88.8

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. OLD-LAB SUMMARY: USCS-NO ASSIGNMENT 57185007 PROPOSED FEATHERS.GPJ TERRACON_DATATEMPLATE.GDT 3/28/18

PROJECT: Proposed Feathersburg Tower

SITE: A. Cox Road
Feathersburg, KY

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

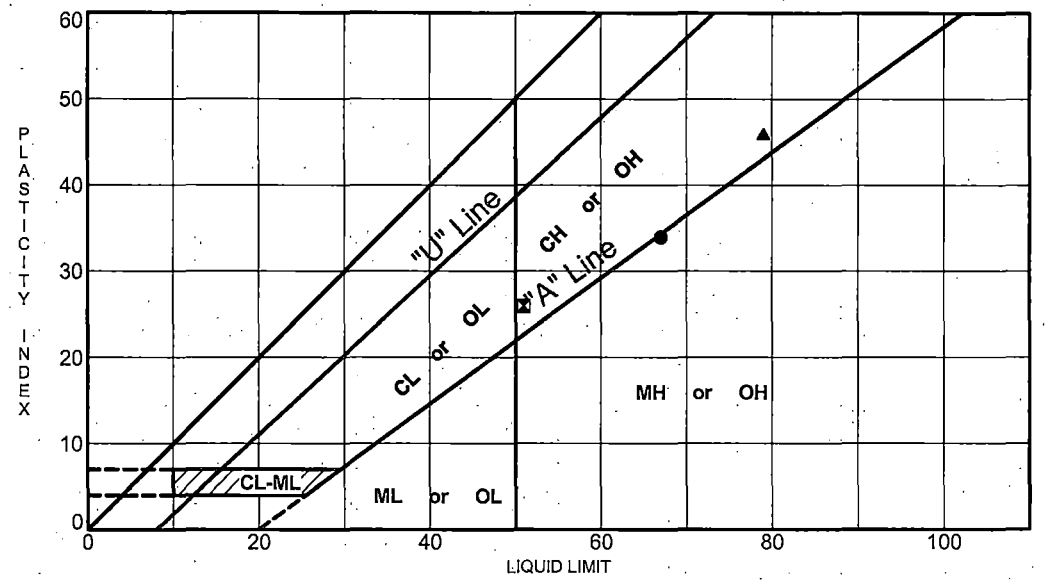
PROJECT NUMBER: 57185007

CLIENT: Bluegrass Cellular Partnership
Elizabethtown, KY

EXHIBIT: B-1

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID	Depth	LL	PL	PI	Fines	USCS	Description
● B-1	3.5 - 5	67	33	34		CH	FAT CLAY
■ B-1	8.5 - 10	51	25	26		CH	FAT CLAY
▲ B-1A	1 - 3	79	33	46		CH	FAT CLAY

PROJECT: Proposed Feathersburg Tower

SITE: A. Cox Road
Feathersburg, KY

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

PROJECT NUMBER: 57185007

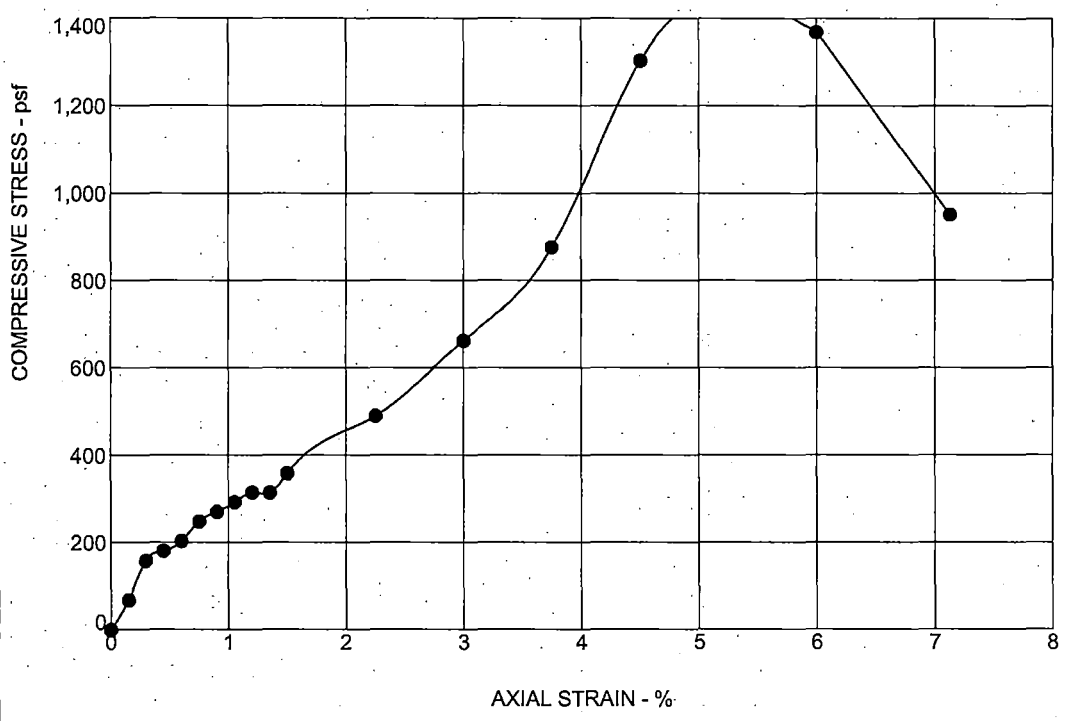
CLIENT: Bluegrass Cellular Partnership
Elizabethtown, KY

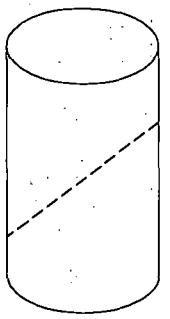
EXHIBIT: B-2

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS 57185007 PROPOSED FEATHERS.GPJ TERRACON_DATATEMPLATE.GDT 3/28/18

UNCONFINED COMPRESSION TEST

ASTM D2166



SPECIMEN FAILURE MODE	SPECIMEN TEST DATA		
	Moisture Content:	%	30
	Dry Density:	pcf	89
	Diameter:	in.	2.84
	Height:	in.	5.61
	Height / Diameter Ratio:		1.98
	Calculated Saturation:	%	
	Calculated Void Ratio:		
	Assumed Specific Gravity:		
	Failure Strain:	%	6.00
	Unconfined Compressive Strength	(psf)	1369
	Undrained Shear Strength:	(psf)	684
	Strain Rate:	in/min	0.0842
	Remarks:		

Failure Mode: Shear (dashed)

SAMPLE TYPE: Shelby Tube	SAMPLE LOCATION: B-1A @ 1 - 3 feet			
DESCRIPTION: FAT CLAY	LL	PL	PI	Percent < #200 Sieve
	79	33	46	

PROJECT: Proposed Feathersburg Tower

SITE: A. Cox Road
Feathersburg, KY

Terracon
13050 Eastgate Park Way Ste 101
Louisville, KY

PROJECT NUMBER: 57185007

CLIENT: Bluegrass Cellular Partnership
Elizabethtown, KY

EXHIBIT: B-3

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. UNCONFINED 57185007 PROPOSED FEATHERS.GPJ TERRACON_DATATEMPLATE.GDT 3/28/18

SUPPORTING INFORMATION

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING

WATER LEVEL

Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

N	Standard Penetration Test Resistance (Blows/Ft.)
(HP)	Hand Penetrometer
(T)	Torvane
(DCP)	Dynamic Cone Penetrometer
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (psf)	Standard Penetration or N-Value Blows/Ft.
Very Loose	0 - 3	Very Soft	less than 500	0 - 2
Loose	4 - 9	Soft	500 to 1,000	2 - 3
Medium Dense	10 - 29	Medium Stiff	1,000 to 2,000	4 - 6
Dense	30 - 50	Stiff	2,000 to 4,000	7 - 12
Very Dense	> 50	Very Stiff	4,000 to 8,000	13 - 26
		Hard	> 8,000	> 26

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

Terracon

Exhibit: C-1

UNIFIED SOIL CLASSIFICATION SYSTEM

Feathersburg Tower ■ Feathersburg, Taylor County, Kentucky

March 28, 2018 ■ Terracon Project No. 57185007

Terracon GeoReport

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OL	Organic clay [K, L, M, N] / Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay [K, L, M, P] / Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

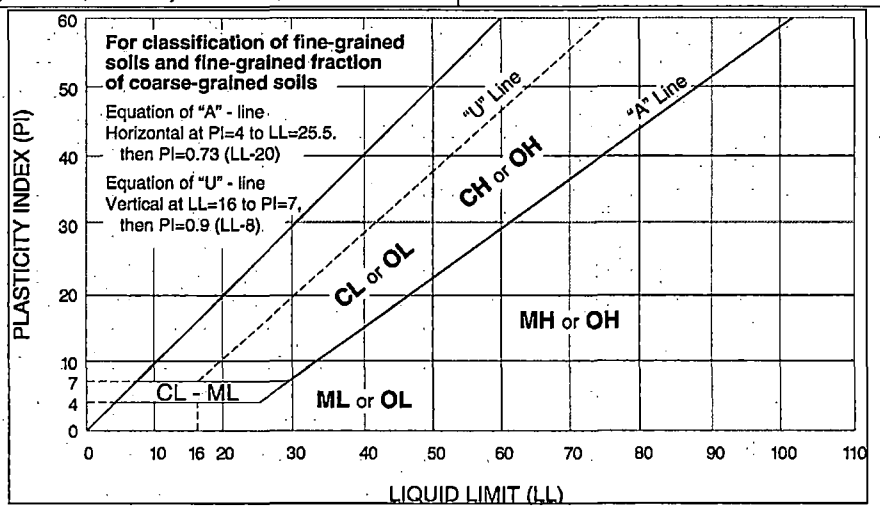
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



DESCRIPTION OF ROCK PROPERTIES

Feathersburg Tower ■ Feathersburg, Taylor County, Kentucky
March 28, 2018 ■ Terracon Project No. 57185007

Terracon GeoReport

WEATHERING	
Term	**Description**
Unweathered	No visible sign of rock material weathering, perhaps slight discoloration on major discontinuity surfaces.
Slightly weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition.
Moderately weathered	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a continuous framework or as corestones.
Highly weathered	More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones.
Completely weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.
Residual soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported.

STRENGTH OR HARDNESS		
Description	**Field Identification**	**Uniaxial Compressive Strength, psi (MPa)**
Extremely weak	Indented by thumbnail	40-150 (0.3-1)
Very weak	Crumbles under firm blows with point of geological hammer, can be peeled by a pocket knife	150-700 (1-5)
Weak rock	Can be peeled by a pocket knife with difficulty, shallow indentations made by firm blow with point of geological hammer	700-4,000 (5-30)
Medium strong	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with single firm blow of geological hammer	4,000-7,000 (30-50)
Strong rock	Specimen requires more than one blow of geological hammer to fracture it	7,000-15,000 (50-100)
Very strong	Specimen requires many blows of geological hammer to fracture it	15,000-36,000 (100-250)
Extremely strong	Specimen can only be chipped with geological hammer	>36,000 (>250)

DISCONTINUITY DESCRIPTION			
Fracture Spacing (Joints, Faults, Other Fractures)		**Bedding Spacing (May Include Foliation or Banding)**	
Description	**Spacing**	**Description**	**Spacing**
Extremely close	< ¾ in (<19 mm)	**Laminated**	< ½ in (<12 mm)
Very close	¾ in – 2-1/2 in (19 - 60 mm)	**Very thin**	½ in – 2 in (12 – 50 mm)
Close	2-1/2 in – 8 in (60 – 200 mm)	**Thin**	2 in – 1 ft. (50 – 300 mm)
Moderate	8 in – 2 ft. (200 – 600 mm)	**Medium**	1 ft. – 3 ft. (300 – 900 mm)
Wide	2 ft. – 6 ft. (600 mm – 2.0 m)	**Thick**	3 ft. – 10 ft. (900 mm – 3 m)
Very Wide	6 ft. – 20 ft. (2.0 – 6 m)	**Massive**	> 10 ft. (3 m)

Discontinuity Orientation (Angle): Measure the angle of discontinuity relative to a plane perpendicular to the longitudinal axis of the core. (For most cases, the core axis is vertical; therefore, the plane perpendicular to the core axis is horizontal.) For example, a horizontal bedding plane would have a 0-degree angle.

ROCK QUALITY DESIGNATION (RQD) [1]	
Description	**RQD Value (%)**
Very Poor	0 - 25
Poor	25 – 50
Fair	50 – 75
Good	75 – 90
Excellent	90 - 100

1. The combined length of all sound and intact core segments equal to or greater than 4 inches in length, expressed as a percentage of the total core run length.

Reference: U.S. Department of Transportation, Federal Highway Administration, Publication No FHWA-NHI-10-034, December 2009 Technical Manual for Design and Construction of Road Tunnels – Civil Elements

SITE: FEATHERSBURG

Lease Boundary and Topographic Survey

Taylor County, Kentucky

Basis of Bearings

The bearing system of this survey is based upon the Kentucky State Plane Coordinate System, South Zone, NAD 83 (2011), as determined by G.P.S. observations made on February 27, 2018 using the Kentucky Transportation Cabinet's KYCORS NAD83 2011 Network. This bearing system is grid north.

Tower Location Information

Designation: Feathersburg
Site ID#: None
Horizontal Datum: NAD 83 (2011)
Latitude: 37°18'55.56" North
Longitude: 85°10'17.04" West
Vertical Datum: NAVD 88
Ground Elevation: 1,040.6 feet (317.18 m)

State Plane Coordinates
Northing: 1,998,508.05 feet (609,144.646 m)
Easting: 1,808,675.54 feet (551,385.407 m)

Landowner Information

Landowners: Bobby and Dorothy Burress

Address: 5204 Speck Ridge Road
Elkhorn, KY 42733

Contact Person: Bobby Burress
Phone Number: 270-465-3490

PVA Map Number: 73-011

Project Bench Mark

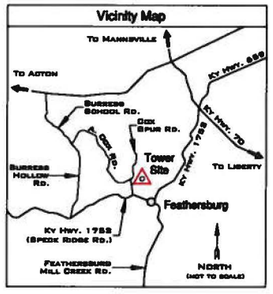
Northing: 1,998,461 feet (609,138 m)
Easting: 1,808,605 feet (551,264 m)
Elevation: 1,044.11 feet (318.245 m)

Description: A MAG nail set in the south side of a 24" white oak, 6" above grade, that lies 74 feet westerly of the center of the tower.

Flood Plain Statement

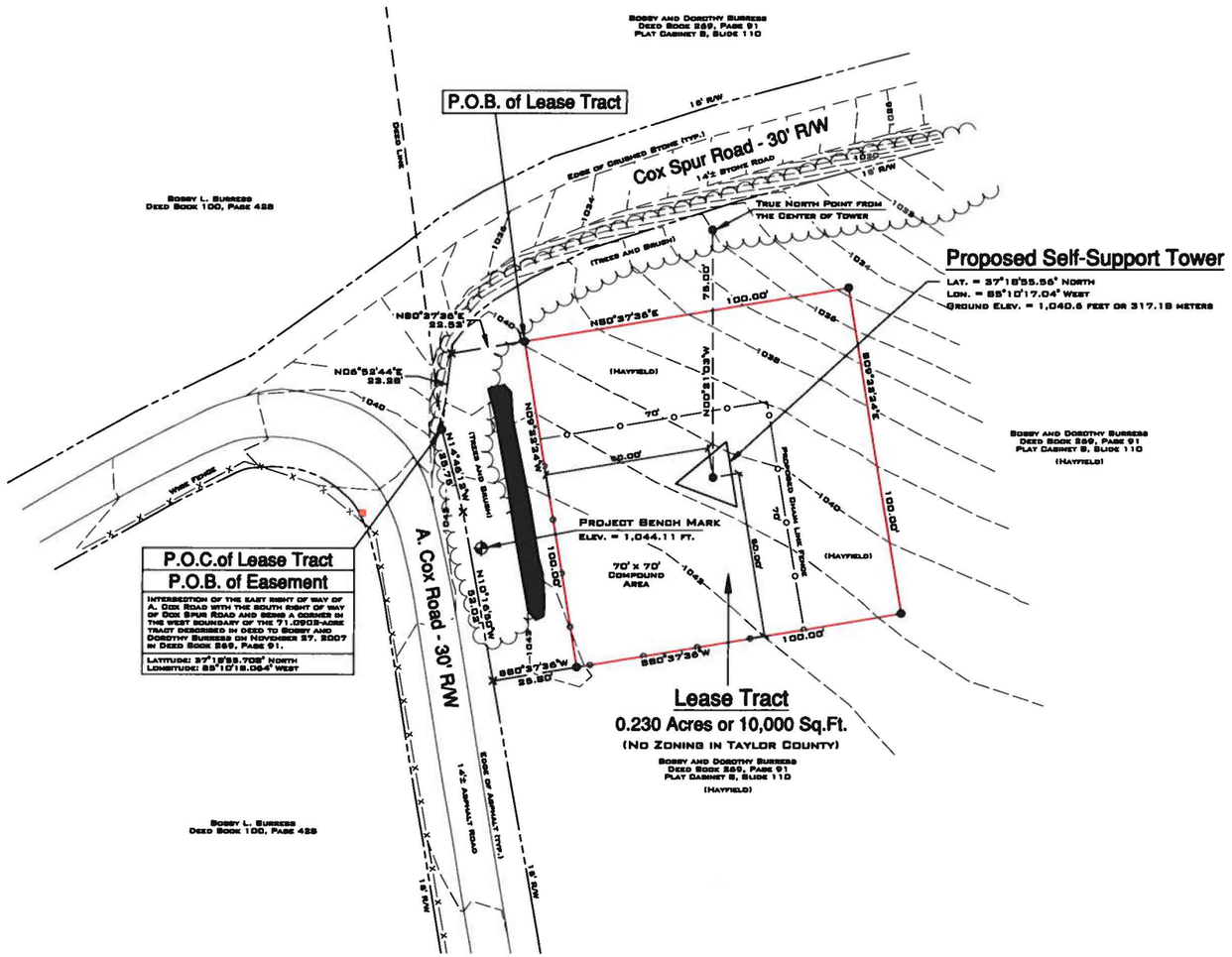
According to the Flood Insurance Rate Map (FIRM) for Taylor County, Kentucky, Map No. 21217C0185D, dated May 24, 2011, the subject site lies within "Other Areas - Zone X", which is defined as "Areas determined to be outside the 0.2% annual chance floodplain".

Vicinity Map



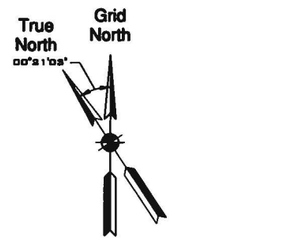
Directions to the Site

From Elizabethtown, Kentucky: travel southeasterly on Kentucky Highway 61 (Lincoln Parkway) for about 12 miles to Kentucky Highway 210 (Campbellsville Road) on the southeast side of Hodgenville; turn right onto Kentucky Highway 210 and continue to travel southeasterly for 27 miles to U.S. Highway 68 (Broadway Street) on the west side of Campbellsville; turn left onto U.S. Highway 68 and travel east for 1 mile to downtown Campbellsville and Kentucky Highway 70 (Central Avenue and Liberty Road); turn right onto Kentucky Highway 70 and travel southeasterly for 4.8 miles to Kentucky Highway 76 (Knifley Road); turn right onto Kentucky Highway 76 and travel easterly for 1.7 miles to Kentucky Highway 1755 (Speck Ridge Road); turn left onto Kentucky Highway 1755 and continue to travel easterly for 5.3 miles to A. Cox Road; turn left onto A. Cox Road and travel north for 0.25 miles to the tower site in a hayfield on the east side of the road at the intersection of A. Cox Road and Cox Spur Road.



Legend

- ● 5/8" Rebar, 24" in length, Set Flush With A Survey Cap Inscribed "D.L. Helms PLS 3386"
- ○ 5/8" Rebar Set Flush - No Survey Cap
- ⊙ 1/2" Rebar Found Flush With A Survey Cap Inscribed "Dabney 1069 3219"
- × Calculated Location
- Lease Boundary
- Right of Way
- Easement Boundary
- Deed Line
- Telephone Pedestal



GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.
Contour Interval = 1-foot

Lease Boundary and Easement Description

A tract of land that is located at the intersection of A. Cox Road and Cox Spur Road in the Feathersburg Community of Taylor County, Kentucky; said tract being described as follows:

Commending at a 1/2-inch rebar found flush with a survey cap inscribed "Dabney 1069 3219" at the intersection of the east right of way of A. Cox Road with the south right of way of Cox Spur Road and being a corner in the west boundary of the 71.0903-acre tract described in in deed to Bobby Burress and Dorothy Burress in Deed Book 269, Page 91 in the office of the County Clerk of Taylor County, Kentucky; said rebar has a latitude of 37 degrees 18 minutes 55.708 seconds North and a Longitude of 85 degrees 10 minutes 18.064 seconds West; thence, along the south right of way of Cox Spur Road, North 09 degrees 22 minutes 24 seconds East 23.53 feet; thence, leaving said right of way, North 80 degrees 37 minutes 36 seconds East 23.53 feet to a 5/8-inch rebar set flush with a survey cap inscribed "D.L. Helms PLS 3386" (referred to as a rebar set in the remarks of this description) at the POINT OF BEGINNING of this description: thence continue North 80 degrees 37 minutes 36 seconds East 100.00 feet to a rebar set flush; thence South 09 degrees 22 minutes 24 seconds East 100.00 feet to a rebar set flush; thence South 80 degrees 37 minutes 36 seconds West 100.00 feet to a rebar set flush; thence North 09 degrees 22 minutes 24 seconds West 100.00 feet to the POINT of BEGINNING and containing 0.230 acres (10,000 square feet), more or less.

TOGETHER with an access and utility easement from the above-described 0.230-acre lease tract to A. Cox Road and Cox Spur Road; said easement being described as follows: Beginning at a 1/2-inch rebar found flush with a survey cap inscribed "Dabney 1069 3219" at the intersection of the east right of way of A. Cox Road with the south right of way of Cox Spur Road and being a corner in the west boundary of the 71.0903-acre tract described in in deed to Bobby Burress and Dorothy Burress in Deed Book 269, Page 91 in the office of the County Clerk of Taylor County, Kentucky; said rebar has a Latitude of 37 degrees 18 minutes 55.708 seconds North and a Longitude of 85 degrees 10 minutes 18.064 seconds West; thence, along the south right of way of Cox Spur Road, North 09 degrees 22 minutes 24 seconds East 23.53 feet; thence, leaving said right of way, North 80 degrees 37 minutes 36 seconds East 23.53 feet to a 5/8-inch rebar set flush with a survey cap inscribed "D.L. Helms PLS 3386" at the northwest corner of the above-described 0.230-acre lease tract; thence South 09 degrees 22 minutes 24 seconds East 100.00 feet to a 5/8-inch rebar set flush with said Helms survey cap at the southwest corner of the above-described 0.230-acre lease tract; thence South 80 degrees 37 minutes 36 seconds West 23.50 feet to the east right of way of A. Cox Road 115 feet from the center of the road); thence along said right of way the following two (2) courses: (1) North 10 degrees 16 minutes 50 seconds West 55.03 feet and (2) North 14 degrees 46 minutes 12 seconds West 55.75 feet to the point of beginning.

The bearing system of this description is based upon the Kentucky State Plane Coordinate System, South Zone, NAD 83 (2011), as determined by G.P.S. observations made on February 27, 2018 using the Kentucky Transportation Cabinet's KYCORS NAD83 2011 Network. This bearing system is grid north.

This description is based upon a survey completed by Landmark Surveying Co., Inc. and certified by Darren L. Helms, P.L.S. 3386, on March 6, 2018.

Source of Title: Being a portion of and lying entirely within the 71.0903-acre tract described in deed to Bobby Burress and Dorothy Burress on November 27, 2007 in Deed Book 269, Page 91 in the office of the County Clerk of Taylor County, Kentucky.

Surveyor's Notes

1. This survey is subject to a statement of facts which may be disclosed by an Abstract of Title or a Title Commitment Policy. This documentation was not provided by the client.

2. 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.

3. The utilities shown on this plat may or may not represent all of the utilities located on the subject site. The presence of utilities was determined by a visual inspection of the property surface. No utility locate was called in prior to this survey. It shall be the responsibility of the contractor to locate utilities prior to construction of the tower.

4. The topographic information contained on this plat was as requested by the client and may or may not represent all of the topographic features located on the subject property.

5. According to the office of Mr. Eddie Rogers, Taylor County Judge Executive, no local planning unit exists which has geographical jurisdiction of the subject tower site. The County Judge Executive's office may be contacted at 270-465-7729 for confirmation.

6. The proposed location of the Feathersburg tower site will be located outside of an incorporated city.

7. The county road right of way was determined from the record documents identified hereon and monuments found that are referenced in said documents. The right of way shown is consistent with roadway use and maintenance.

Surveyor's Certification

I hereby certify that this plat was compiled from a survey actually made upon the ground under my direct supervision on February 27, 2018 by the method of baseline survey with sideshots. The unadjusted precision ratio of the baseline was 1:13,500 and it was not adjusted. This plat represents a Rural Boundary Survey and complies with the requirements of 201 KAR 19:150.

Darren L. Helms, P.L.S. 3386

March 6, 2018
Date

STATE of KENTUCKY
Darren L. Helms
3386
LICENSED PROFESSIONAL LAND SURVEYOR

Landmark Surveying Co., Inc.
15 N.E. 3rd Street
Washington, Indiana 47501
(812) 257-0950
Email: landmark97@sbcglobal.net

Project No. 18-02-0118

Lease Boundary Survey
242 A. Cox Road
Elkhorn, Kentucky 42733

Bluegrass Cellular
2902 Ring Road
Elizabethtown, KY 42701

Revisions	Date

Date: March 6, 2018
Drawn by: J. Hamilton
Checked by: D. L. Helms

Sheet No. 1 of 1 Sheets

File Name: feather.dwg

BLUEGRASS CELLULAR

APPROVAL SIGNATURES

BLUEGRASS CELLULAR PROJECT SUPERVISOR: _____

DATE: _____

CITY REPRESENTATIVE: _____

TITLE: _____

DATE: _____

PROPERTY OWNER/OWNERS: _____

_____

DATE: _____

TOWER OWNER/OWNERS: _____

_____

DATE: _____

SITE NAME: FEATHERSBURG

911 ADDRESS: 242 A. COX RD.
ELK HORN, KY.
42733

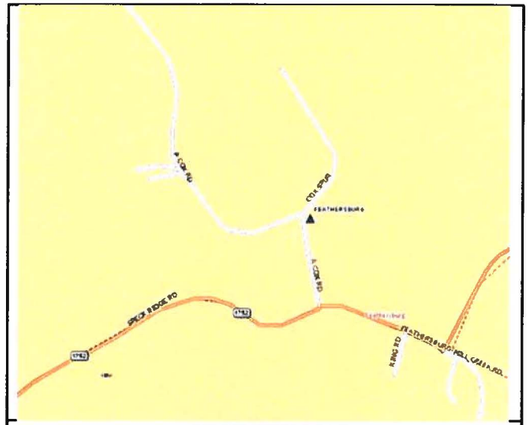
COUNTY: TAYLOR

TOWER LATITUDE & LONGITUDE

N37* 18' 55.07" W85* 10' 16.80"

SHEET INDEX

SHEET NO.	DESCRIPTION	REVISION
TITLE SHEET	TITLE SHEET	
SURVEY	SURVEY	
A-1	SITE PLAN	
A-2	FENCE DETAIL	
ANTENNA DETAILS 1	ANT.SPECS/TOWER ELEV.	
ANTENNA DETAILS 2	ANTENNA DETAILS 2	
E-1	SITE PLAN - ELECTRICAL	
E-2	ELECTRICAL DETAILS	
LYNCOLE	LYNCOLE GROUNDING	
E-3	ELEC. PLAN - GROUNDING	
E-4	GROUNDING - DETAILS	
S-1	FOUNDATION DETAILS	
GENERATOR DETAILS	GENERATOR DETAILS	
GENERAL NOTES	GENERAL NOTES	



VICINITY MAP
NOT TO SCALE

DIRECTIONS TO SITE

FROM ELIZABETHTOWN, KENTUCKY: TRAVEL SOUTHEASTERLY ON KENTUCKY HIGHWAY 61 (LINCOLN PARKWAY) FOR ABOUT 12 MILES TO KENTUCKY HIGHWAY 210 (CAMPBELLSVILLE ROAD) ON THE SOUTHEAST SIDE OF HODGENVILLE; TURN RIGHT ONTO KENTUCKY HIGHWAY 210 AND CONTINUE TO TRAVEL SOUTHEASTERLY FOR 27 MILES TO U.S. HIGHWAY 68 ON THE WEST SIDE OF CAMPBELLSVILLE; TURN LEFT ONTO U.S. HIGHWAY 68 (BROADWAY STREET) AND TRAVEL EAST FOR 1.0 MILES TO DOWNTOWN CAMPBELLSVILLE AND KENTUCKY HIGHWAY 70; TURN RIGHT ONTO KENTUCKY HIGHWAY 70 AND TRAVEL SEVERAL MILES TO S.R.76 (KNIFLEY RD.) TAKE A RIGHT ON S.R. 76 AND TRAVEL SOUTHAPPROX. 1.7 MILES TO S.R. 1752 (SPECK RIDGE RD.) TAKE A LEFT ONTO S.R.1752 AND TRAVEL APPROX. 5.2 MILES TO A COX RD. ON THE LEFT. TAKE A LEFT ON A COX RD. AND TRAVEL A VERY SHORT DISTANCE TO TOWER LOCATION ON RIGHT SIDE OF ROAD IN FIELD.

SITE DATA

PROPERTY OWNER:	BOBBY & DORTHY BURRESS 5204 SPECKRIDGE RD. ELK HORN, KY. 42733 (270) 465-3490
TOWER OWNER:	BLUEGRASS CELLULAR (270) 789-0339
POWER COMPANY:	TAYLOR CO. RECC 1-270-465-4101
TELEPHONE COMPANY:	WINDSTREAM (855) 575-7625
BLUEGRASS PROJECT MANAGER:	BILL BURKS (270) 734-1028
BLUEGRASS PROJECT SUPERVISOR:	MASON McDOWELL (270) 734-1002

RSB DESIGN

ROBIN BECKER
(502) 599-9427
OFFICE

SITE: FEATHERSBURG

Lease Boundary and Topographic Survey

Taylor County, Kentucky

Basis of Bearings

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Tower Location Information

Designation: Feathersburg
Site ID#: None
Horizontal Datum: NAD 83 (2011)
Latitude: 37°18'55.56" North
Longitude: 85°10'17.04" West
Vertical Datum: NAVD 88
Ground Elevation: 1,040.6 feet (317.18 m)

State Plane Coordinates
Northing: 1,998,502.05 feet (609,144.645 m)
Easting: 1,808,575.54 feet (551,285.407 m)

Landowner Information

Landowners: Bobby and Dorothy Surress

Address: 5204 Speck Ridge Road
Elkhorn, KY 42733

Contact Person: Bobby Surress
Phone Number: 270-465-3490

PVA Map Number: 73-011

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Elevation: 1,044.11 feet (318.245 m)

Description: A mag nail set in the south side of a 24" white oak, 6' above grade, that lies 74 feet westerly of the center of the tower.

Flood Plain Statement

According to the Flood Insurance Rate Map (FIRM) for Taylor County, Kentucky, Map No. 21217C0185C, dated May 24, 2011, the subject site lies within "Other Areas - Zone X", which is defined as "Areas determined to be outside the 0.2% annual chance floodplain".

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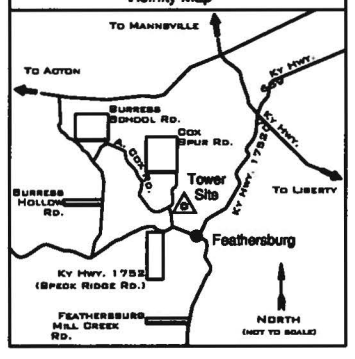
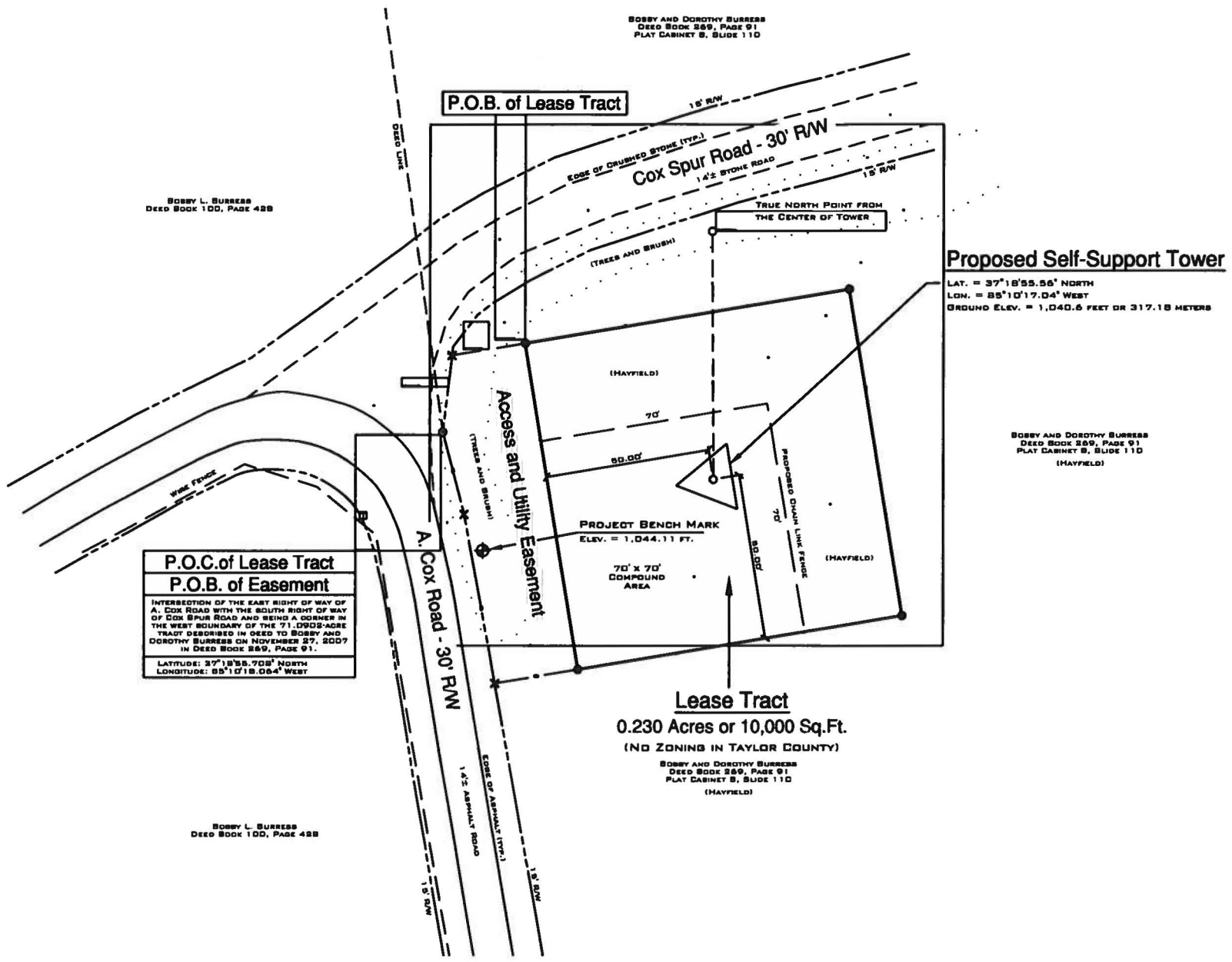


Directions to the Site

From Elizabethtown, Kentucky: Travel southeasterly on Kentucky Highway 61 (Lincoln Parkway) for about 12 miles to Kentucky Highway 210 (Campbellsville Road) on the southeast side of Hodgenville; turn right onto Kentucky Highway 210 and continue to travel southeasterly for 27 miles to U.S. Highway 68 (Broadway Street) on the west side of Campbellsville; turn left onto U.S. Highway 68 and travel east for 1 mile to downtown Campbellsville and Kentucky Highway 70 (Central Avenue and Liberty Road); turn right onto Kentucky Highway 70 and travel southeasterly for 4.8 miles to Kentucky Highway 76 (Knifley Road); turn right onto Kentucky Highway 76 and travel easterly for 1.7 miles to Kentucky Highway 1752 (Speck Ridge Road); turn left onto Kentucky Highway 1752 and continue to travel easterly for 5.3 miles to A. Cox Road; turn left onto A. Cox Road and travel north for 0.25 miles to the tower site in a hayfield on the east side of the road at the intersection of A. Cox Road and Cox Spur Road.

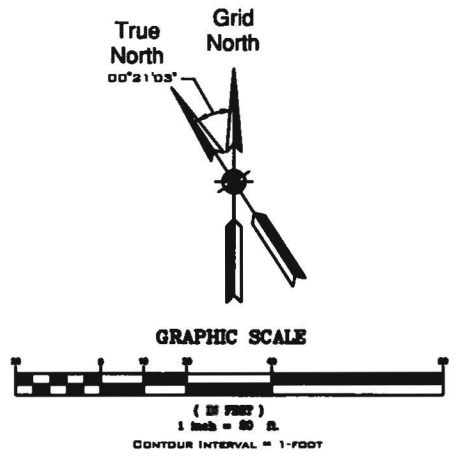


Proposed Self-Support Tower

Lat. = 37°18'55.56" North
Lon. = 85°10'17.04" West
Ground Elev. = 1,040.6 feet or 317.18 meters

Legend

- ● 5/8" Rebar, 24" in length, Set Flush With A Survey Cap Inscribed "D.L. Helms PLS 3386"
- ○ 5/8" Rebar Set Flush - No Survey Cap
- ● 1/2" Rebar Found Flush With A Survey Cap Inscribed "Dabney 1069 3319"
- × Calculated Location
- Lease Boundary
- Right of Way
- Easement Boundary
- Deed Line
- Telephone Pedestal



Contour Interval = 1-foot

Lease Boundary and Easement Description

A tract of land that is located at the intersection of A. Cox Road and Cox Spur Road in the Feathersburg Community of Taylor County, Kentucky; said tract being described as follows:

Commencing at a 1/2-inch rebar found flush with a survey cap inscribed "Dabney 1069 3319" at the intersection of the east right of way of A. Cox Road with the south right of way of Cox Spur Road and being a corner in the west boundary of the 71.0905-acre tract described in in deed to Bobby Surress and Dorothy Surress in Deed Book 269, page 91 in the office of the County Clerk of Taylor County, Kentucky; said rebar has a Latitude of 37 degrees 18 minutes 55.703 seconds North and a Longitude of 85 degrees 10 minutes 18.054 seconds West; thence, along the south right of way of Cox Spur Road, North 05 degrees 52 minutes 44 seconds East 23.28 feet; thence, leaving said right of way, North 80 degrees 37 minutes 36 seconds East 22.53 feet to a 5/8-inch rebar set flush with a survey cap inscribed "D.L. Helms PLS 3386" (referred to as a rebar set in the remainder of this description) at the POINT OF BEGINNING of this description: thence continue North 80 degrees 37 minutes 36 seconds East 100.00 feet to a rebar set flush; thence South 09 degrees 23 minutes 24 seconds East 100.00 feet to a rebar set flush; thence South 80 degrees 37 minutes 36 seconds West 100.00 feet to a rebar set flush; thence North 09 degrees 23 minutes 24 seconds West 100.00 feet to the POINT OF BEGINNING and containing 0.230 acres (10,000 square feet), more or less.

TOGETHER with an access and utility easement from the above-described 0.230-acre lease tract to A. Cox Road and Cox Spur Road; said easement being described as follows: BEGINNING at a 1/2-inch rebar found flush with a survey cap inscribed "Dabney 1069 3319" at the intersection of the east right of way of A. Cox Road with the south right of way of Cox Spur Road and being a corner in the west boundary of the 71.0905-acre tract described in in deed to Bobby Surress and Dorothy Surress in Deed Book 269, page 91 in the office of the County Clerk of Taylor County, Kentucky; said rebar has a Latitude of 37 degrees 18 minutes 55.703 seconds North and a Longitude of 85 degrees 10 minutes 18.054 seconds West; thence, along the south right of way of Cox Spur Road, North 05 degrees 52 minutes 44 seconds East 23.28 feet; thence, leaving said right of way, North 80 degrees 37 minutes 36 seconds East 22.53 feet to a 5/8-inch rebar set flush with a survey cap inscribed "D.L. Helms PLS 3386" at the northwest corner of the above-described 0.230-acre lease tract; thence South 09 degrees 23 minutes 24 seconds East 100.00 feet to a 5/8-inch rebar set flush with said Helms survey cap at the southwest corner of the above-described 0.230-acre lease tract; thence South 80 degrees 37 minutes 36 seconds West 55.80 feet to the east right of way of A. Cox Road (15 feet from the center of the road); thence along said right of way the following two (2) courses: (1) North 10 degrees 16 minutes 50 seconds West 52.02 feet and (2) North 14 degrees 46 minutes 13 seconds West 25.75 feet to the point of beginning.

The bearing system of this description is based upon the Kentucky State Plane Coordinate System, South Zone, NAD 83 (2011), as determined by G.P.S. observations made on February 27, 2018 using the Kentucky Transportation Cabinet's KYCORS NAD83 2011 Network. This bearing system is grid north.

This description is based upon a survey completed by Landmark Surveying Co., Inc. and certified by Darren L. Helms, P.L.S. 3386, on March 6, 2018.

Source of Title: Being a portion of and lying entirely within the 71.0902-acre tract described in deed to Bobby Surress and Dorothy Surress on November 27, 2007 in Deed Book 269, page 91 in the office of the County Clerk of Taylor County, Kentucky.

Surveyor's Notes

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Surveyor's Certification

I hereby certify that this plat has been compiled from a survey actually made upon the ground under my direct supervision on February 27, 2018 by the method of baseline survey with sideshots. The unadjusted precision ratio of the baseline was 1:12,500 and it was not adjusted. This plat represents a Rural Boundary Survey and complies with the requirements of 201 KAR 18:150.

Darren L. Helms, P.L.S. 3386

Date

Landmark Surveying Co., Inc.
15 N.E. 3rd Street
Washington, Indiana 47501
(812) 257-0950
Email: landmark97@sbcglobal.net

Project No. 18-02-0112

Lease Boundary Survey
242 A. Cox Road
Elkhorn, Kentucky 42733

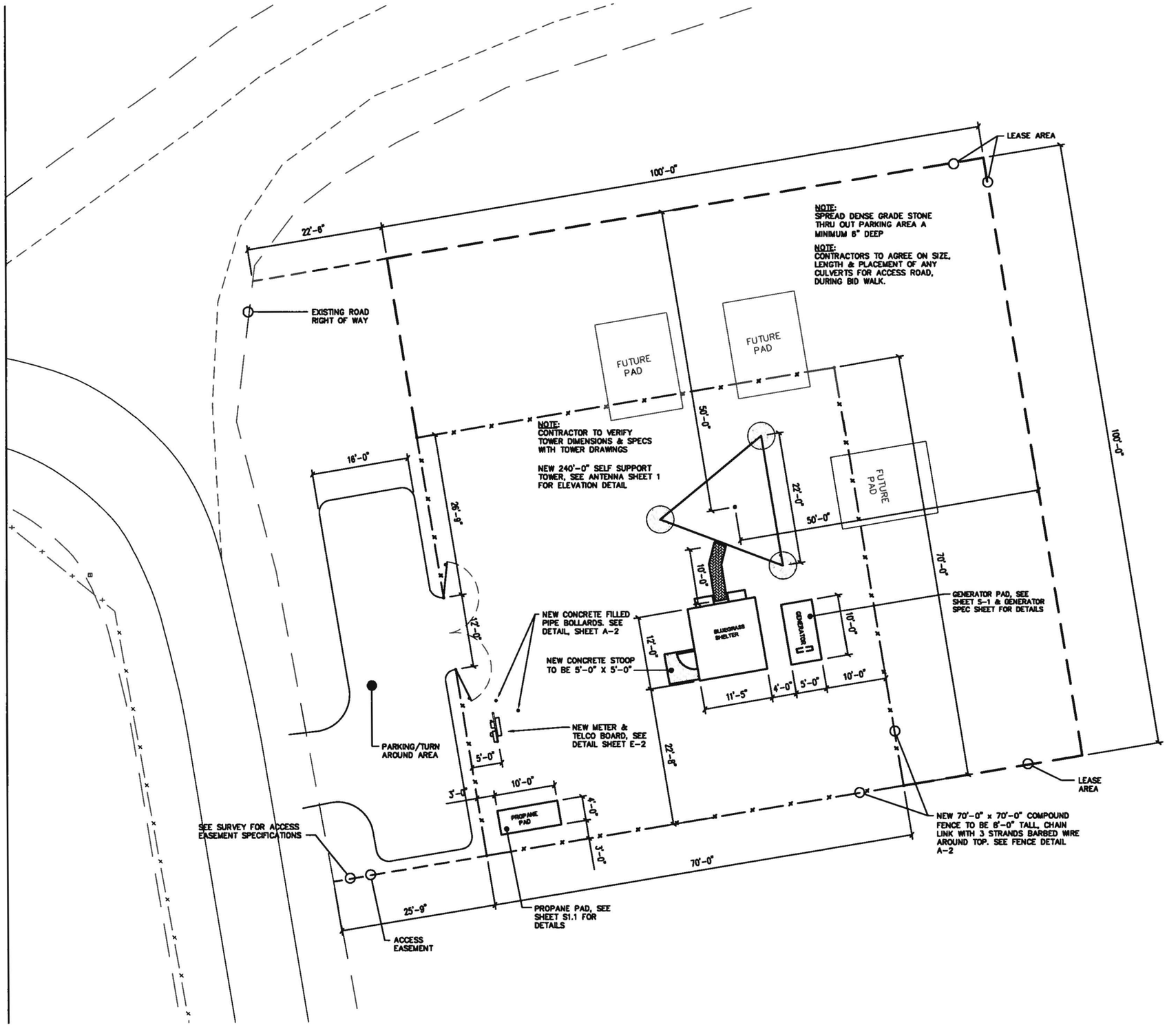
Bluegrass Cellular
2902 Ring Road
Elizabethtown, KY 42701

REVISIONS	DATE

Date: March 6, 2018
Drawn by: J. Hamilton
Checked by: D. L. Helms

SHEET No. 1 of 1 SHEETS

FILE NAME
feather.dwg



SITE PLAN

SCALE: 1/16"= 1'-0"

GENERAL NOTES:

1) EQUIPMENT PICK-UP AND DELIVERY TO SITE FROM BLUEGRASS CELLULAR STAGING FACILITY TO BE THE CONTRACTORS RESPONSIBILITY, INCLUDING CRANE SET, AND ALL COST INCURRED.

2) FOR, BUILDING AND ALL CONCRETE PAD DETAILS REFER TO STRUCTURALS AND SHEET S1.1

3) ANY DAMAGE DUE TO CONSTRUCTION, TO BE REPAIRED OR REPLACED TO ORIGINAL CONDITION. (SUBJECT TO BLUEGRASS CELLULAR'S APPROVAL).

4) ANY DAMAGE OF NATURAL SURROUNDINGS , INCLUDING BUT NOT LIMITED TO, GRASS, TREES, LANDSCAPING, ETC.. TO BE REPAIRED OR REPLACED TO ORIGINAL CONDITION AT BLUEGRASS CELLULAR'S APPROVAL.

5) ROADWAYS TO BE GRADED SMOOTH AND EVEN, REMOVING ALL POTHOLES. ROADS TO HAVE PROPER DRAINAGE AND RUNOFF PER BLUEGRASS CELLULAR'S APPROVAL.

6) ANY RELOCATION OF EXISTING UTILITIES TO BE DONE IN ACCORDANCE WITH LOCAL CODES AND RECOMMENDATIONS, CONSULTING ALL UTILITY COMPANIES INVOLVED FOR APPROVAL AND SPECIFICATIONS REQUIRED.

7) FOR GRADING DETAILS, SEE GENERAL NOTESHEET

8) CONTRACTOR TO FIELD VERIFY ALL TOWER DIMENSIONS WITH TOWER MANUFACTURER PRIOR TO JOB BIDDING OR START OF ANY CONSTRUCTION

9) CONTRACTOR RESPONSIBLE FOR APPLYING FOR SERVICE TO SITE AND PAYING ANY FEES REQUIRED FOR PERMITS, HOOKUP, ETC..

RSB DESIGN
rbdesign1@bellsouth.net (502)599-9427

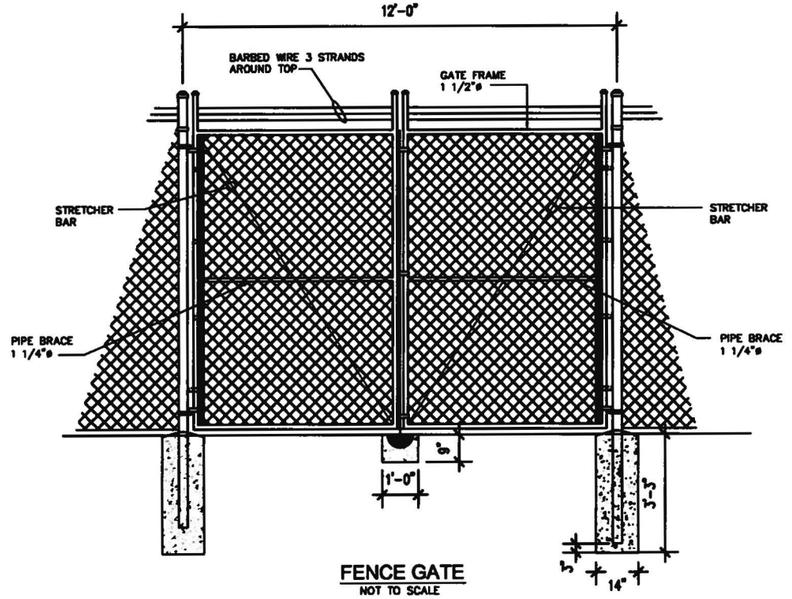
REVISION

NO.	DATE

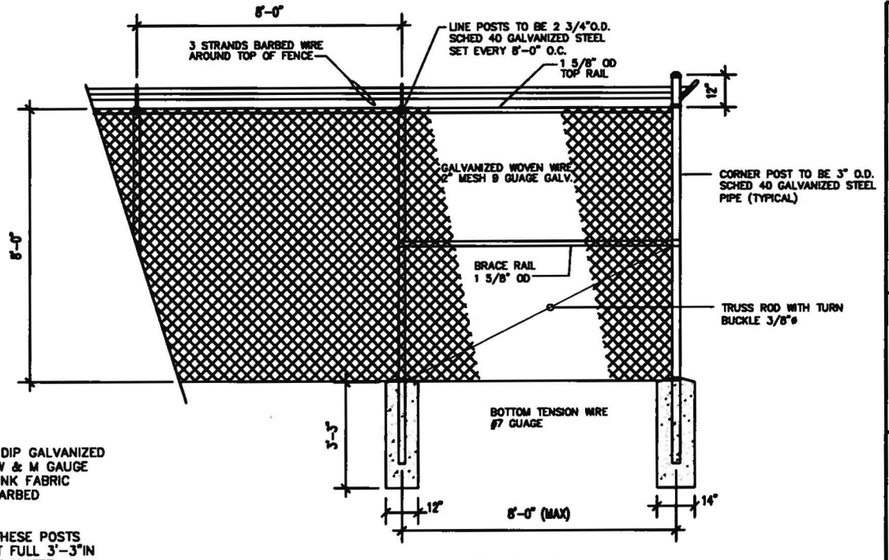
BLUEGRASS CELLULAR, INC.
STANDARD CELLULAR SITE
FEATHERSBURG
242 A. COX RD. ELK HORN, KY. 42733

DRAWN BY: R. BECKER
ISSUE DATE: 3-09-18
SCALE: LISTED

SHEET NUMBER
A-1



FENCE GATE
NOT TO SCALE



FENCE DETAIL END POLES
NOT TO SCALE

CHAIN LINK FENCING NOTES:

1 FABRIC: THE FABRIC SHALL BE COMPOSED OF INDIVIDUAL HOT DIP GALVANIZED WIRE PICKETS HELICALLY WOUND AND INTERWOVEN FROM NO.9 W & M GAUGE COPPER BEARING STEEL WIRE TO FORM A CONTINUOUS CHAIN LINK FABRIC HAVING A 2" MESH. TOP EDGES SHALL HAVE A TWISTED AND BARBED

2 POSTS: SHALL BE 2 3/4" O.D. SS 40 PIPE HOT GALVINIZED. THESE POSTS SHALL BE SPACED APPROXIMATELY 8'-0" ON CENTERS AND SET FULL 3'-3"IN BELL – SHAPED CONCRETE FOOTING, CROWNED AT TOP TO SHED WATER.

3 TOP RAIL: SHALL BE 1 5/8" O.C. STANDARD PIPE HOT GALVANIZED AND SHALL BE FURNISHED IN RANDOM LENGTHS AVRERAGING NOT LESS THAN 20".

4 FABRIC TIES: FOR ATTACHING FABRIC TO LINE POST, TOP RAIL OR TOP WIRE, SHALL BE ALUMINUM STRIP OF WIRE OF APPROVED GUAGE AND DESIGN. USED ON TOP OF RAIL EVERY 24" AND ONE POST EVERY 12".

5 EXTENSION ARMS: CAST STEEL GALVANIZED TO ACCOMODATE 3 STRANDS OF BARB WIRE, SINGLE ARM SLOPED TO 45°, AND VERTICAL ON TOP OF SWING GATES.

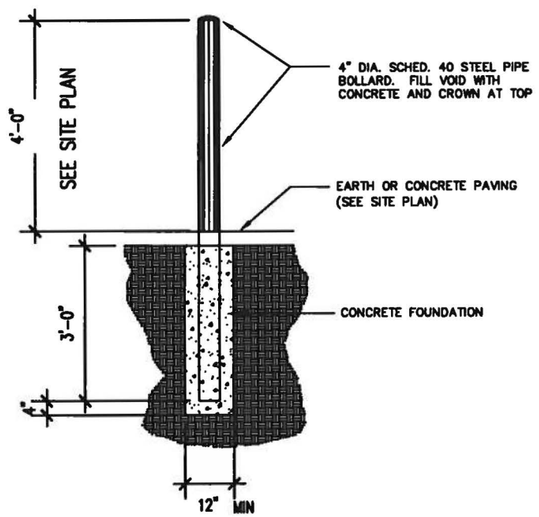
6 BARBED WIRE (STEEL): ASTM A121 GALVINIZED STEEL, 12 GUAGE THICK WIRE, 3 STRANDS 4 POINTS AT 3" O.C.

7 SWING GATE POSTS: SHALL BE 3" O.C. STANDARD HOT GALVINIZED, WEIGHING 5.79 LBS. PER FOOT.

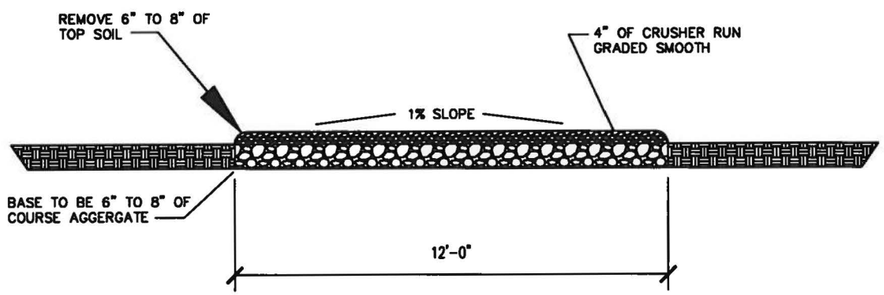
8 GATES: (a) SWING GATES: 2" O.C. STANDARD PIPE WITH INTERNAL BRACING OF 1 5/8" O.D. STANDARD PIPE; WELDED AT ALL JOINTS TO PROVIDE RIGID WATERTIGHT CONSTRUCTION. FABRIC SAME AS FENCE.

9 FENCE TO BE 100% ERECTED WITHIN TEN(10) DAYS OF COMPLETION OF CONSTRUCTION, IF TIME FRAME CANNOT BE MET, PLEASE NOTIFY PROJECT SUPERVISOR.

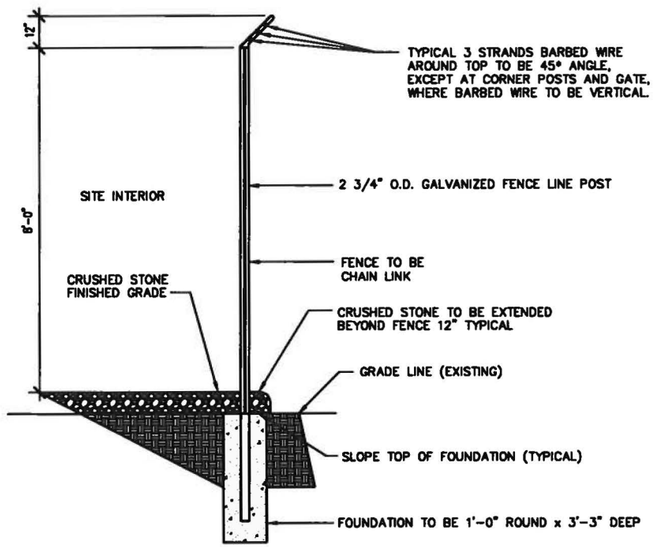
10 FENCE STOPS TO BE PLACED ON INSIDE OF COMPOUND PER ACCESS GATE SPECIFICATIONS.



BOLLARD DETAIL
NOT TO SCALE



ROAD DETAIL
NOT TO SCALE



FENCE DETAIL LINE POLES
NOT TO SCALE

RSB DESIGN
rsbdesign1@bellsouth.net (502)599-9427

REVISION

NO.	DATE

BLUEGRASS CELLULAR, INC.
STANDARD CELLULAR SITE
FEATHERSBURG
242 A. COX RD. ELK HORN, KY. 42733

DRAWN BY: R. BECKER
ISSUE DATE: 3-09-18
SCALE: LISTED

SHEET NUMBER
A-2

BLUEGRASS CELLULAR GENERAL NOTES & ANTENNA SPECS

ALL LINES AND ANTENNAS TO BE PROPERLY MOUNTED TO TOWER OR STRUCTURE PER BLUEGRASS CELLULAR SPECIFICATIONS.

ALL GROUND BARS TO BE INSTALLED AND CAD WELDED TO GROUND FIELD (WHERE REQUIRED)

ALL COAX LINES TO BE GROUNDED AT THE TOP AND BASE OF STRUCTURE OR TOWER.

ALL COAX LINES TO BE GROUNDED AT ENTRANCE OF SHELTER/CABINET BEFORE WAVE GUIDE PORTS. (EXTERIOR OF BUILDING)

LINES ARE TO BE SECURED TO ICE BRIDGE

WAVE-GUIDE BOOTS ARE TO BE INSTALLED ON ALL LINES (BOTH INSIDE AND OUTSIDE, WHERE APPLICABLE)

ALL COAX CONNECTIONS ARE TO BE WEATHER PROOFED.

INVENTORY OF ALL MATERIAL IS TO BE DONE PRIOR TO INSTALLATION BY CONTRACTOR. (LIST WILL BE PROVIDED)

ALL TRASH AND REFUGE IS TO BE PROPERLY DISPOSED OF.

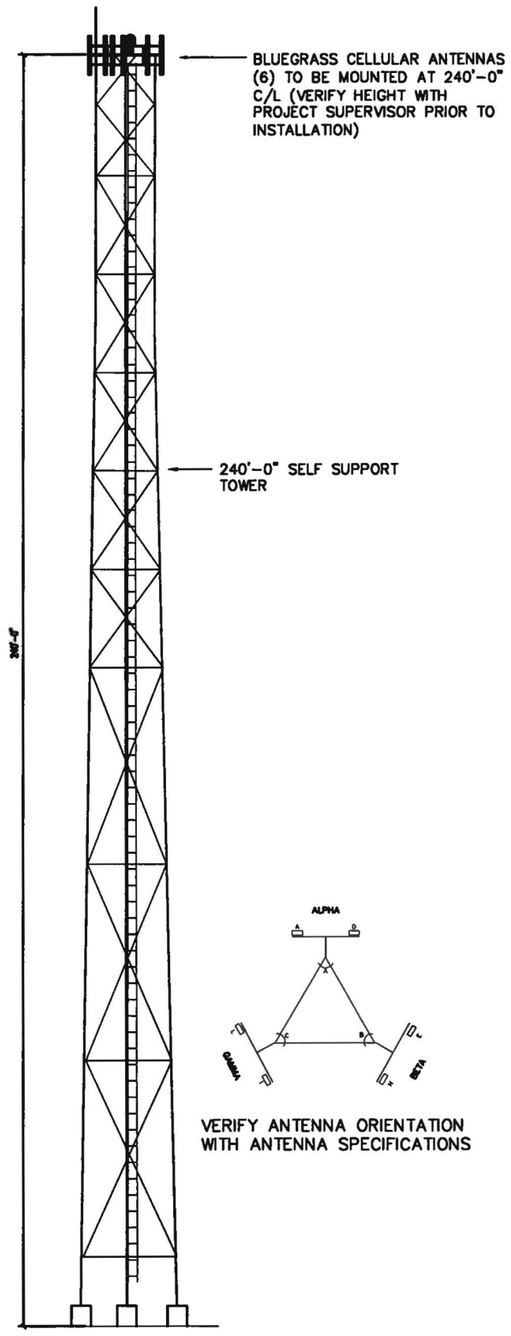
GENERAL CONTRACTOR TO MOUNT ANTENNA MOUNTS AT TOP OF STRUCTURE OR TOWER BY BLUEGRASS CELLULAR SPECIFICATIONS.

ALL ICE BRIDGE TO BE SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR.

TRAPEZE KIT TO BE SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR.

CONTRACTOR TO INSTALL GPS SYSTEM COMPLETE. CONTRACTOR TO SUPPLY (1) 10' PIECE OF 1" RIGID CONDUIT AND STRUT CLAMPS TO SUPPORT GPS ANTENNA.

CONTRACTOR TO STOP HARDLINES AT END OF ICE BRIDGE, INSTALL POLYPHASER AND RUN GROUND THROUGH REMOVABLE WEATHERPROOFING "CAN" TO GROUND BAR. BE SURE GROUND WIRE EXITS THE BOTTOM OF CAN. ROUTE JUMPER FROM POLYPHASER, DOWN TO CABINET SIDE ENTRY AND UP TO RADIOS. INSTALL 90 DEGREE CONNECTOR BETWEEN JUMPER AND RADIO.



SELF SUPPORT TOWER ELEVATION (TYPICAL)

VERIFY ANTENNA ORIENTATION WITH ANTENNA SPECIFICATIONS

TOWER HEIGHT & TYPE

240' SELF SUPPORT TOWER

ANTENNA SPECS

	TYPE	SIZE L x W x D	NUMBER	AZIMUTH	MOUNTING HEIGHT
ANTENNA (PRIMARY)	KATHREIN 800-1096S		6	175*, 265*, 345*	240'-0" C/L VERIFY WITH CONSTRUCTION SUPERVISOR
ANTENNA (SECONDARY)	RRUS 2212 B13		3	A, B, G	240'-0" C/L

ANTENNA MOUNTING HARDWARE SPECS

	TYPE	SIZE	NUMBER
MOUNT (PRIMARY)	MODEL RMQP-4128		1
MOUNT (SECONDARY)			

ANTENNA TRANSMISSION LINES SPECS

	TYPE	SIZE	NUMBER
TRANSMISSION LINE (PRIMARY)	(7) #8AWG	7/8"	1
TRANSMISSION LINE (SECONDARY)	(24) Fiber	1/2"	1

DISH SPECS

	MICROWAVE/DONOR	SIZE	NUMBER	AZIMUTH	MOUNTING HEIGHT
DISH #1					
DISH #2					

DISH MOUNT SPECS

	TYPE	SIZE	NUMBER
MOUNT #1			
MOUNT #2			

DISH TRANSMISSION LINES

	TYPE	SIZE	NUMBER
TRANSMISSION LINE #1			
TRANSMISSION LINE #2			

ANTENNA SYNOPSIS

* ANTENNAS TO HAVE A 2*E DOWNTILT
* ANTENNAS TO HAVE A 0*M
* ANTENNA FREQUENCY 698.00 – 2690.00

RSB DESIGN
mb.design1@bellsouth.net (502)599-9427

REVISION

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STANDARD CELLULAR SITE
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242 A. COX RD. ELK HORN, KY. 42733

DRAWN BY: R. BECKER
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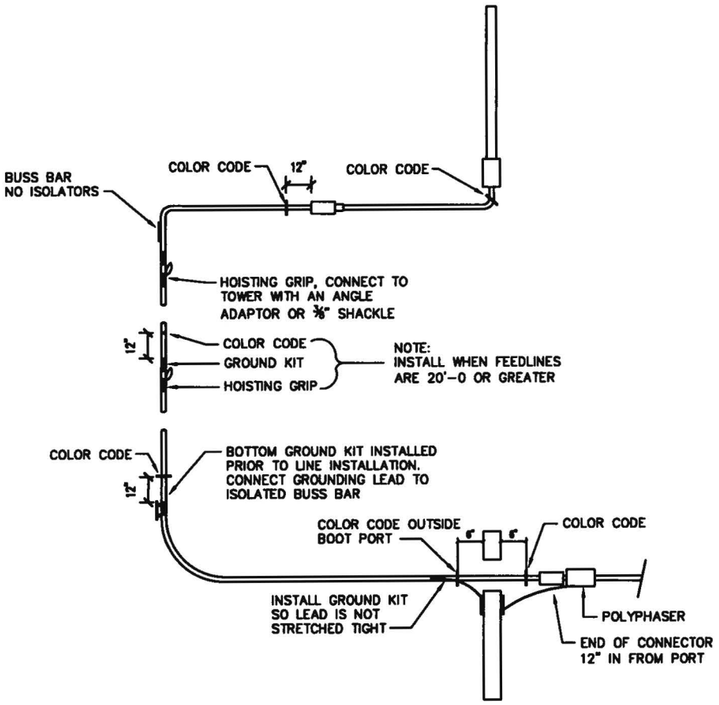
ANTENNA DETAILS 1



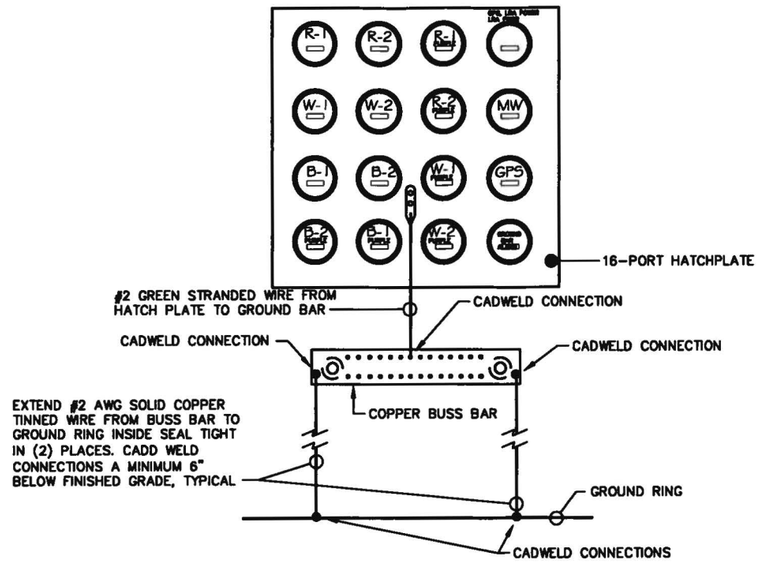
COLOR CODING DETAIL

NO SCALE

COLOR CODE DETAILS:

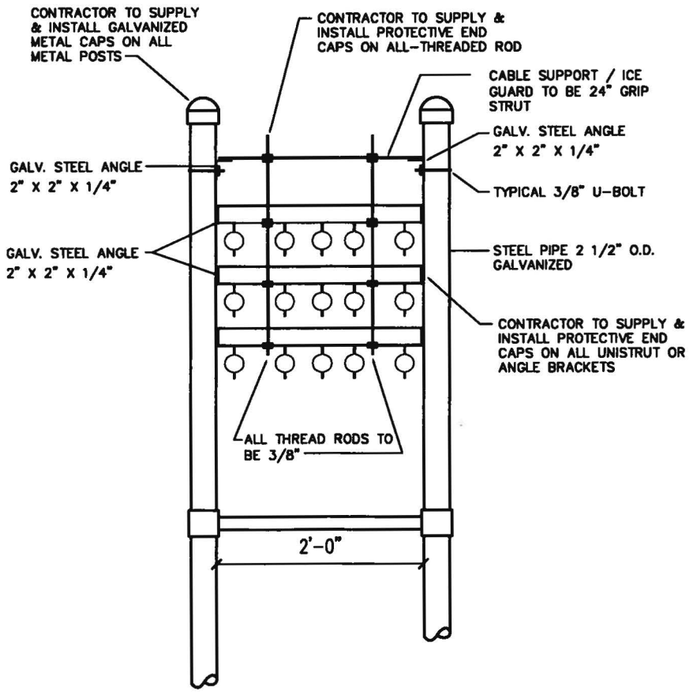
CDMA–NO COLOR OTHER THAN THE SECTOR DESIGNATORS
BCI LTE–ALWAYS 1 PURPLE BAND AFTER RED, WHITE OR BLUE SECTOR DESIGNATOR COLORS.
LRA LTE–ALWAYS HAS 1 ORANGE BAND AFTER RED, WHITE OR BLUE SECTOR DESIGNATOR COLORS.
AWS–ALWAYS HAS 2 ORANGE BANDS AFTER RED, WHITE OR BLUE SECTOR DESIGNATOR COLORS. AWS POWER AND FIBER TRUNK CABLES JUST HAVE 2 ORANGE BANDS WITH NO SECTOR DESIGNATOR COLORS SINCE ALL 3 SECTORS ARE IN TRUNK.

THE SECTOR DESIGNATOR COLORS ARE:
ALPHA 1–1 RED BAND
ALPHA 2–2 RED BANDS
DELTA 1–3 RED BANDS
DELTA 2–4 RED BANDS
BETA 1–1 WHITE BAND
BETA 2 –2 WHITE BANDS
EPSILON1 –3 WHITE BANDS
EPSILON 2–4 WHITE BANDS
GAMMA 1– 1 BLUE BAND
GAMMA 2– 2 BLUE BANDS
ZETA 1 – 3 BLUE BANDS
ZETA 2 – 4 BLUE BANDS
BCI LTE (PURPLE BAND)
1 RED 1 PURPLE (ALPHA 1 BCI LTE)
2 RED 1 PURPLE (ALPHA 2 BCI LTE)
1 WHITE 1 PURPLE (BETA 1 BCI LTE)
2 WHITE 1 PURPLE (BETA 2 BCI LTE)
1 BLUE 1 PURPLE (GAMMA 1 BCI LTE)
2 BLUE 1 PURPLE (GAMMA 2 BCI LTE)



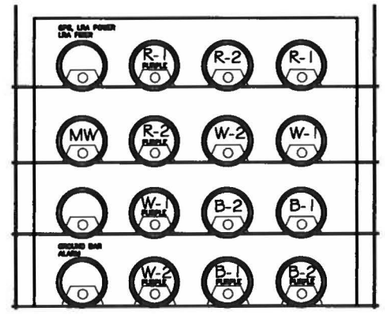
BOOT PORT GROUNDING DETAIL

NO SCALE



ICE BRIDGE / COAX SUPPORT DETAIL

NO SCALE



COAX ENTRY DETAIL POWER SIDE (VIEW FROM INSIDE SHELTER)

NO SCALE

RB DESIGN
rbdesign1@bellsouth.net (502)599-9427

REVISION

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STANDARD CELLULAR SITE
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242 A. COX RD. ELK HORN, KY. 42733

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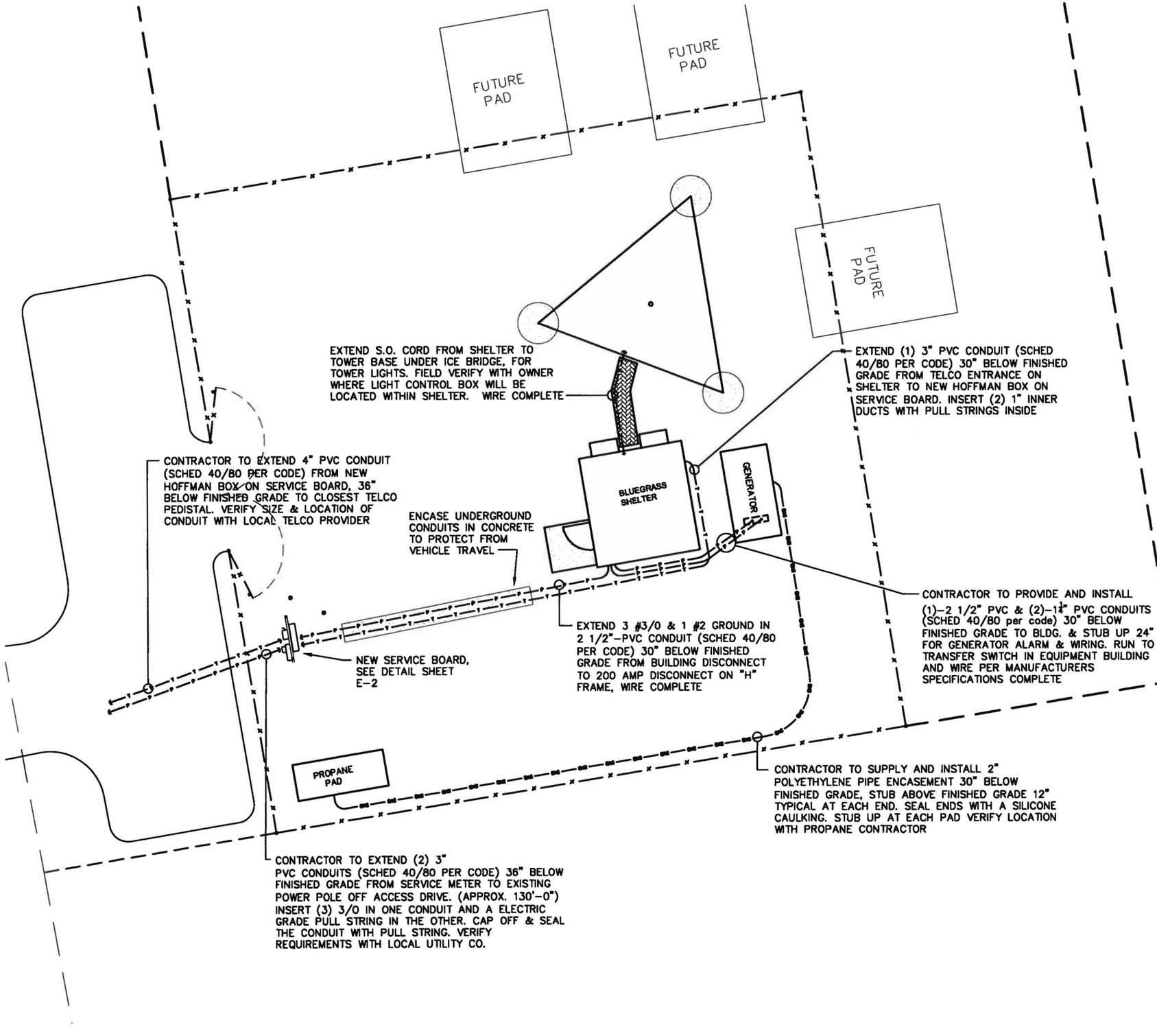
SHEET NUMBER
ANTENNA DETAILS 2



SITE PLAN- ELECTRICAL

SCALE: 3/32" = 1'–0"

GENERAL ELECTRICAL NOTES:

1) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL UTILITIES FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.

2) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL TELEPHONE COMPANY FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.

3) GROUND RING TO BE CONTAINED WITH IN THE COMPOUNDS FENCED AREA.

4) FENCE TO BE GROUNDED FROM GROUND RING TO ALL CORNER POST & GATES. SPACE FENCE GROUNDING APPROXIMATELY 20'–0" O/C. (CAD WELD ALL CONNECTIONS)

5) ALL GROUND RING CONNECTIONS TO BE AS CLOSE AS POSSIBLE, SHARP BENDS WILL NOT BE PERMITTED AS WELL AS "T" CONNECTIONS. ALL CONNECTIONS TO HAVE A SWEEPING RADIUS OF 8" MINIMUM. GROUNDING CONFIGURATION TO BE IN PARALLEL.

6) CONTACT POINTS FOR GROUNDING TO BE CLEANED OF ANY RUST, PAINT, DIRT, ETC. TO CREATE A GOOD BOND FOR CONDUCTOR. AREA THAT HAS BEEN CLEANED TO BE RESEALED TO PREVENT RUSTING.

7) PROPERLY GROUND ANY EXPOSED METAL THAT MAY EXIST ON EXTERIOR OF EQUIPMENT SHELTER OR CABINET.

8) WHERE GROUND CONDUCTORS REQUIRE MECHANICAL BONDING, STAINLESS STEEL CONNECTORS ARE REQUIRED AT EACH CONNECTING POINT USING LOCK WASHERS.

9) CONTRACTOR RESPONSIBLE FOR SEEING THAT UTILITY PERSONNEL MAKE FINAL CONNECTIONS, MAKING SURE THE TOWER ALARM IS CONNECTED AND WORKING. A TELEPHONE NUMBER FOR THE ALARM MUST BE SUPPLIED.

10) CONTRACTOR RESPONSIBLE FOR MEG TESTING THE SITE AND SUPPLYING OWNER WITH FINAL READINGS IN OWNERS SPECIFICATIONS.

11) IF CONDUIT RUNS BURIED LESS THAN REQUIRED DEPTHS, CONTACT BLUEGRASS CELLULAR FOR FURTHER INSTRUCTIONS

NOTE:
CONTRACTOR TO PROVIDE WARNING TAPE IN TRENCHES FOR ALL POWER AND TELCO RUNS UNDER GROUND. TAPE TO BE INSTALLED 1'–0" ABOVE CONDUIT RUNS. (TAKE PICTURES)

SYMBOLS LEGEND

- P — POWER
- G — GAS
- T — TELEPHONE
- X — FENCE
- SWITCH (DISCONNECT)
- METER PACK

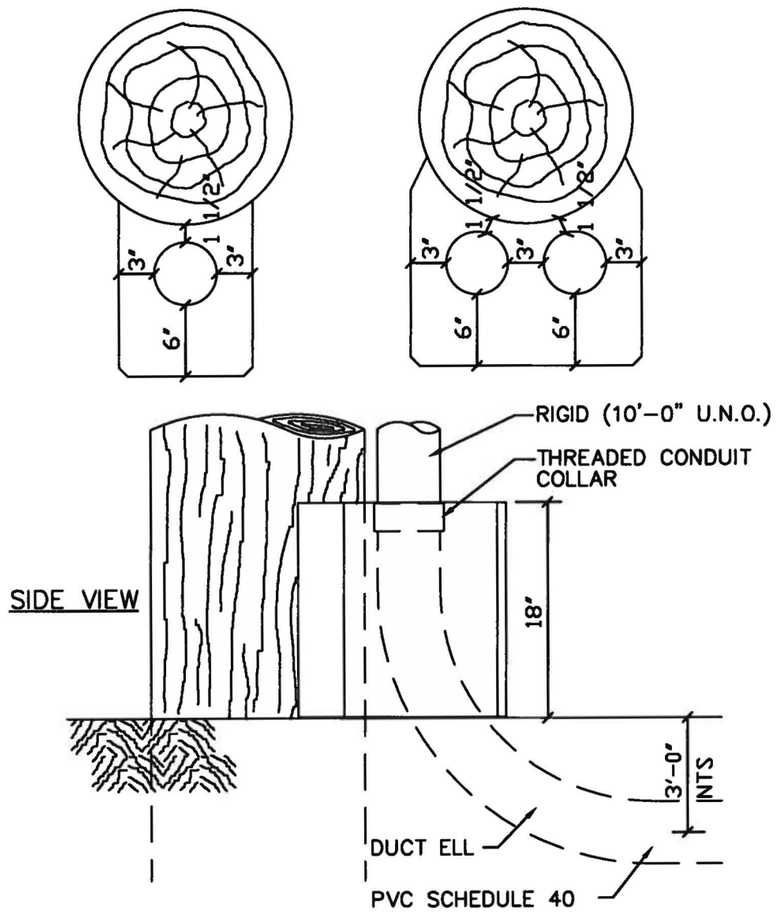
RSB DESIGN
rsb-design1@bellsouth.net (502)599-9427

NO.	DATE	REVISION

BLUEGRASS CELLULAR, INC.
STANDARD CELLULAR SITE
FEATHERSBURG
242 A. COX RD. ELK HORN, KY. 42733

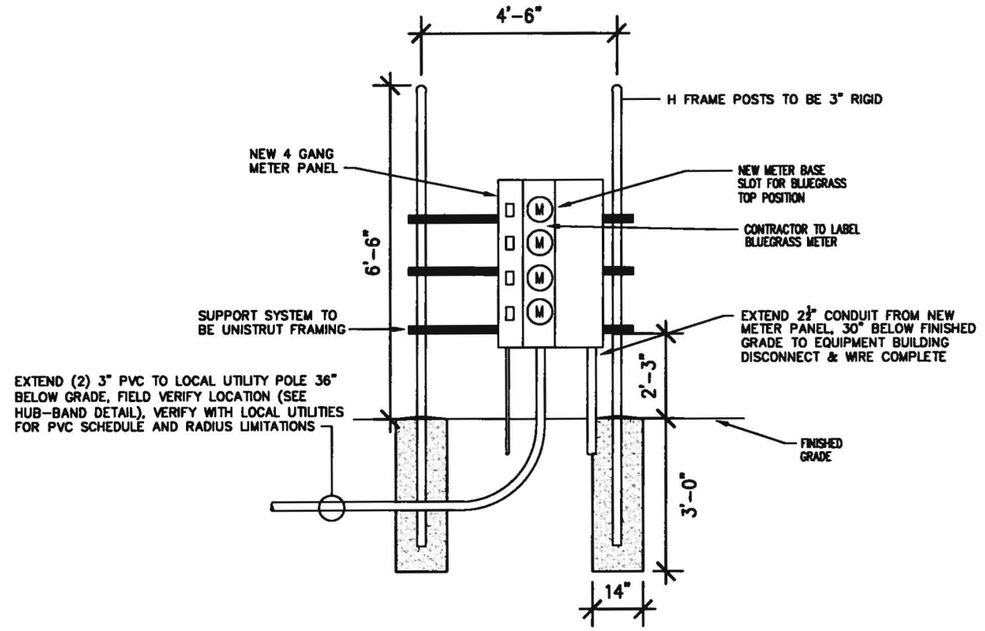
DRAWN BY: R. BECKER
ISSUE DATE: 3-09-18
SCALE: LISTED

SHEET NUMBER
E–1



HUB-BAND DETAIL

NO SCALE



SERVICE BOARD DETAIL

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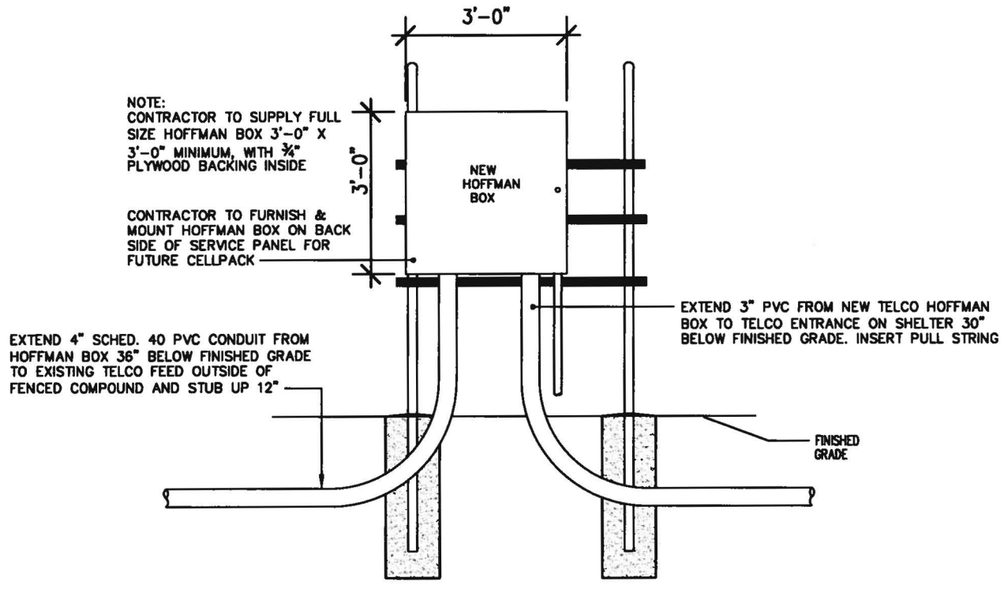

BACKBOARD DETAIL

NO SCALE

RSB DESIGN
rsb-design1@bellsouth.net (502)599-9427

NO.	DATE	REVISION

BLUEGRASS CELLULAR, INC.
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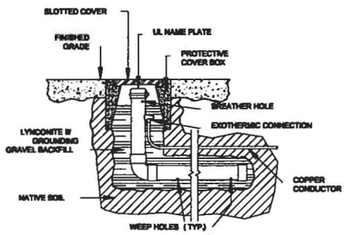
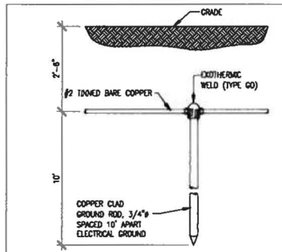
SHEET NUMBER
E-2

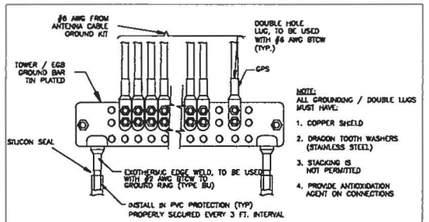


L-SHAPE MODEL
LYNCOLE XIT GROUNDING
(800) 962-2610

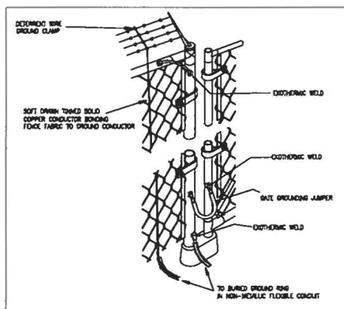
DETAIL 1



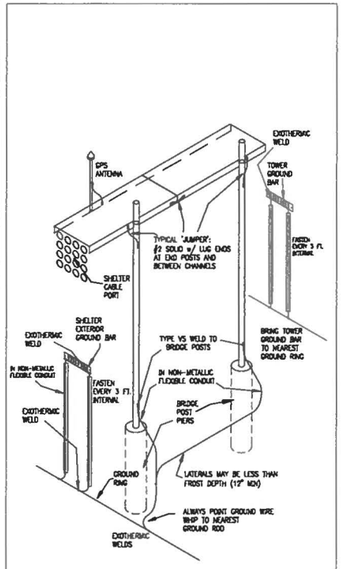
TYPICAL GROUND ROD
DETAIL 2



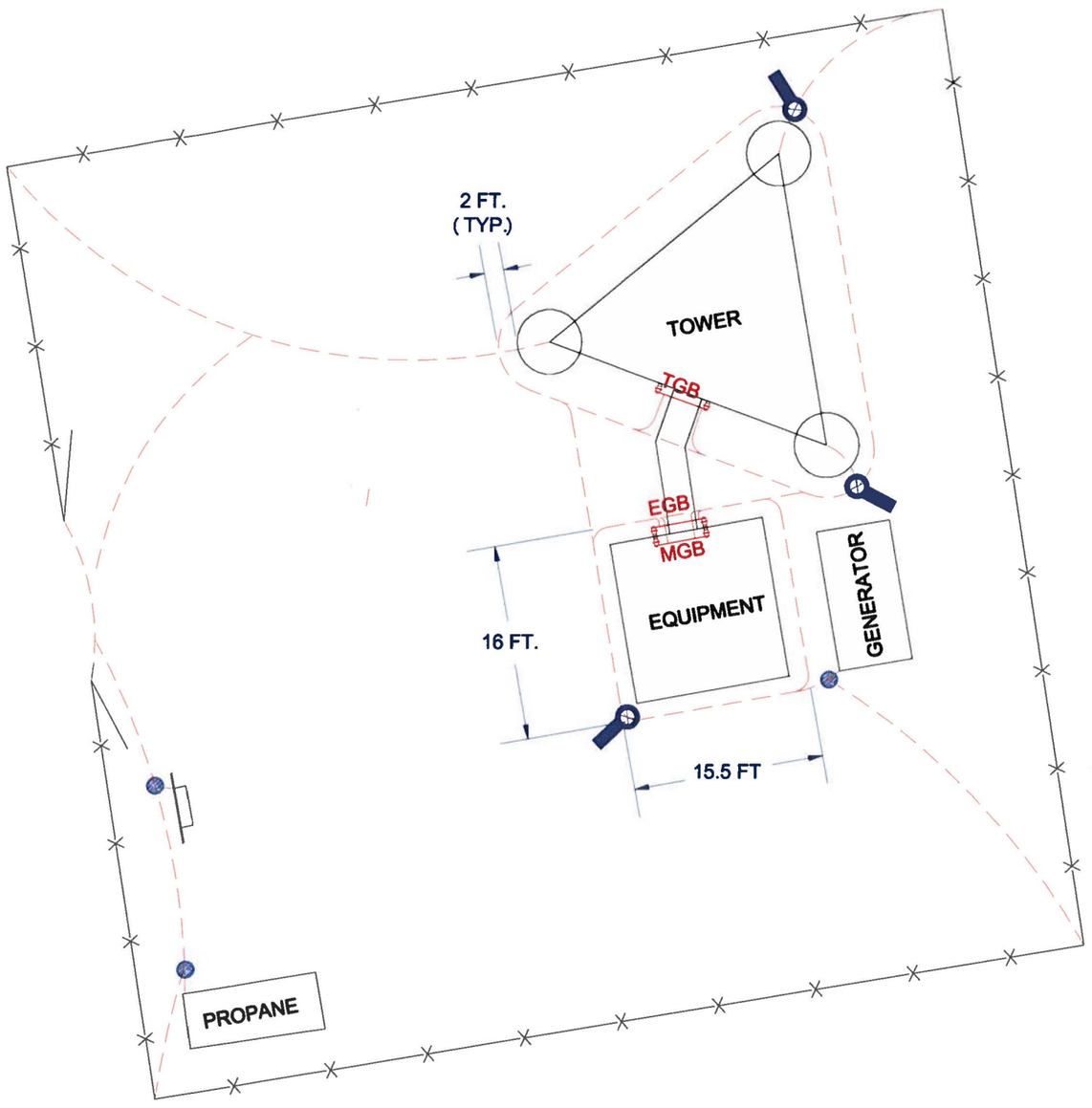
TYPICAL TOWER / EXTERIOR GROUND BAR DETAIL 3



FENCE POST GROUNDING & JUMPER DETAIL 4



CABLE ICE BRIDGE GROUNDING DETAIL 5

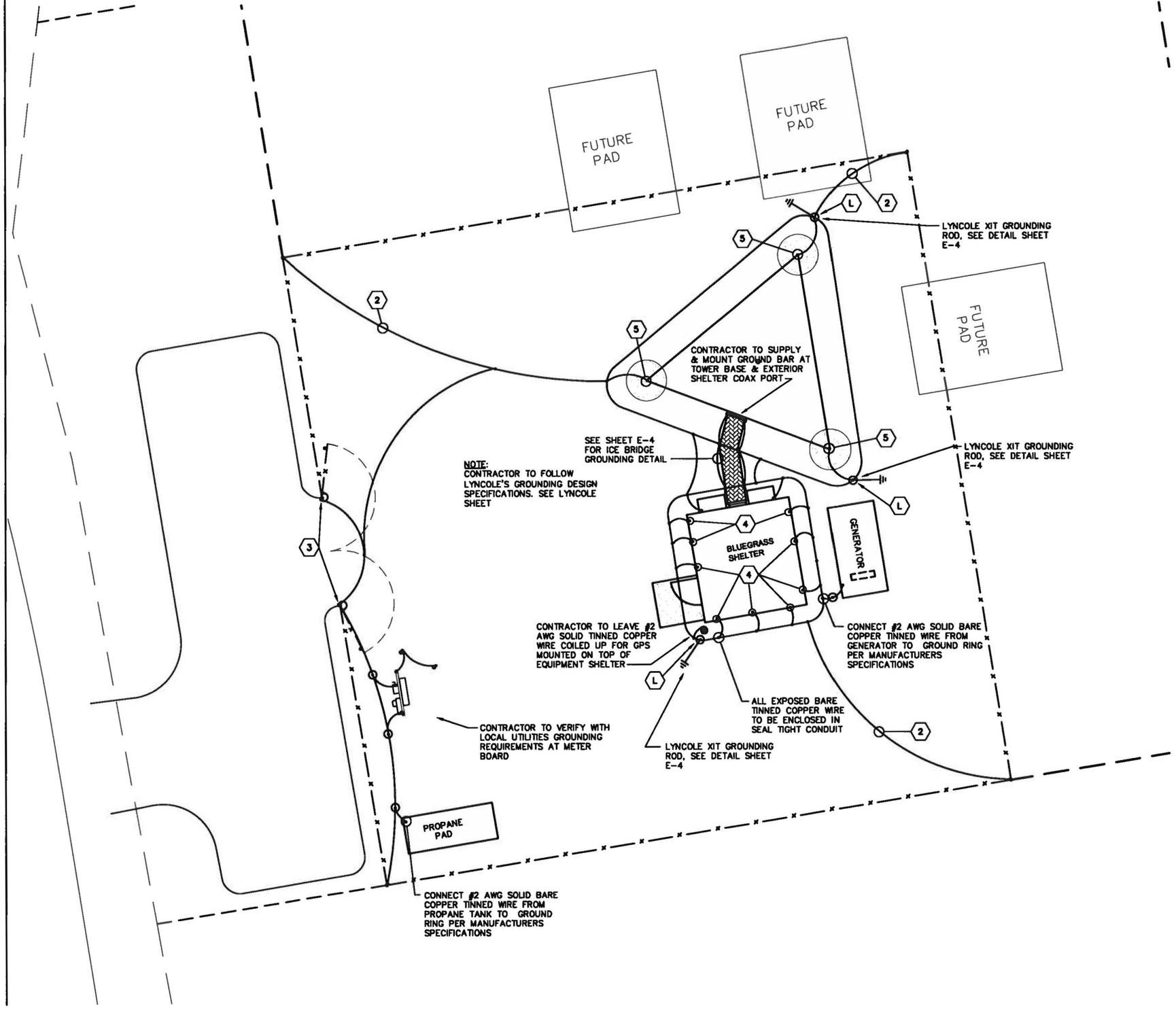


NOTES:

- CHAIN LINK FENCE
- BARE #2 TINNED SOLID COPPER CONDUCTOR BURIED 30 IN. BELOW GRADE OR 6 IN. BELOW FROST LINE
- BARE #2 TINNED SOLID COPPER CONDUCTOR IN NON-METALLIC FLEXIBLE CONDUIT
- ALL BENDS IN GROUND CONDUCTORS TO BE MADE WITH 12 IN. RADIUS OR LARGER
- K2L-10CS-24 (SEE DETAIL)
- 3/4 IN. X 10 FT. COPPER CLAD GROUND ROD (SEE DETAIL)
- GROUND BAR

LYNCOLE
TECHNICAL SERVICES
3547 VOYAGER STREET, SUITE 204
TORRANCE, CA. 90503
(800)962-2610 FAX (310)214-1114
ENGINEERING@LYNCOLE.COM

CLIENT / END USER: BLUEGRASS CELLULAR			
DRAWING: 1	PROJECT NAME: FEATHERSBURG		
TITLE: GROUNDING OPTION			
LOCATION: CITY, STATE: ELK HORN, KY		CALCULATED RESISTANCE: < 5 OHMS	
DRAWN BY: PD	APPROVED BY:	DATE: 05/18/2018	
SOIL DATA PROVIDED BY: TERRACON	REFERENCE NUMBER: N/A	SCALE: NONE	LTS NUMBER: 20181174



GENERAL ELECTRICAL NOTES:

1) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL UTILITIES FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.

2) CONTRACTOR RESPONSIBLE FOR MAKING ALL ARRANGEMENTS WITH THE LOCAL TELEPHONE COMPANY FOR SERVICE AND FEE PAYMENTS REQUIRED TO OBTAIN SERVICE.

3) GROUND RING TO BE CONTAINED WITH IN THE COMPOUNDS FENCED AREA.

4) FENCE TO BE GROUNDED FROM GROUND RING TO ALL CORNER POST & GATES. SPACE FENCE GROUNDING APPROXIMATELY 20'-0" O/C. (CAD WELD ALL CONNECTIONS)

5) ALL GROUND RING CONNECTIONS TO BE AS CLOSE AS POSSIBLE, SHARP BENDS WILL NOT BE PERMITTED AS WELL AS "T" CONNECTIONS. ALL CONNECTIONS TO HAVE A SWEEPING RADIUS OF 8" MINIMUM. GROUNDING CONFIGURATION TO BE IN PARALLEL.

6) CONTACT POINTS FOR GROUNDING TO BE CLEANED OF ANY RUST, PAINT, DIRT, ETC. TO CREATE A GOOD BOND FOR CONDUCTOR. AREA THAT HAS BEEN CLEANED TO BE RESEALED TO PREVENT RUSTING.

7) PROPERLY GROUND ANY EXPOSED METAL THAT MAY EXIST ON EXTERIOR OF EQUIPMENT SHELTER OR CABINET.

8) WHERE GROUND CONDUCTORS REQUIRE MECHANICAL BONDING, STAINLESS STEEL CONNECTORS ARE REQUIRED AT EACH CONNECTING POINT USING LOCK WASHERS.

9) CONTRACTOR RESPONSIBLE FOR SEEING THAT UTILITY PERSONNEL MAKE FINAL CONNECTIONS, MAKING SURE THE TOWER ALARM IS CONNECTED AND WORKING. A TELEPHONE NUMBER FOR THE ALARM MUST BE SUPPLIED.

10) CONTRACTOR RESPONSIBLE FOR MEG TESTING THE SITE AND SUPPLYING OWNER WITH FINAL READINGS IN OWNERS SPECIFICATIONS.

NOTE:
CONTRACTOR TO PROVIDE WARNING TAPE IN ALL POWER & TELCO TRENCHES, 12" ABOVE CONDUIT RUNS, BUT BELOW FINISHED GRADE.

NOTE:
CONTRACTOR TO FOLLOW LYNCOLES GROUNDING SPECIFICATIONS WHEN USING THEIR XIT GROUNDING RODS. SEE DETAIL SHEET E-4.

KEYNOTES:

(L) LYNCOLE XIT GROUNDING ROD TO BE INSTALLED WHERE SHOWN AND TO MANUFACTURERS SPECIFICATIONS. (SEE LYNCOLE SPECIFICATIONS)

(1) GROUNDING RODS 10'-0" LONG x 3/4" COPPER BONDED GROUND RODS

(2) INSTALL AND PROVIDE SOLID BARE TINNED COPPER WIRE #2 AWG, GROUND RING BELOW GRADE 30". USE #2 AWG SOLID BARE TINNED COPPER GROUND "TAP" CONNECTING CONDUCTORS. (CONNECTIONS FOR ALL TAP CONDUCTORS TO BE PARALLEL AND "CAD WELD" CONNECTIONS)

(3) FLEXIBLE GROUNDING STRAP TO BE USED TO PROVIDE A COMMON BOND BETWEEN GATE AND CHAIN LINK FENCE. #2 AWG SOLID COPPER BARE TINNED CONDUCTOR FROM GROUND RING TO FENCE USING CAD WELD CONNECTIONS. GROUND TAP TO BE PROVIDED ON EACH 4 SIDES TO GROUND RING AS DESCRIBED ABOVE.

(4) BONDED GROUND TO BE PROVIDED TO GROUND RING FOR EACH OF THE FOLLOWING: BUILDING STEEL, HATCH PLATE, EMERGENCY RECEPTACLE, WAVE GUIDE STRUCTURE, FRAME WORK, BUILDING DISCONNECT.

(5) FOR TOWER FRAME GROUNDING, REMOVE GALVANIZED COATING COMPLETELY AT SPOT TO "CAD WELD" TO AND CLEAN. #2 AWG SOLID BARE TINNED COPPER CONDUCTOR TO BE CAD WELDED APPROXIMATELY 1'-0" ABOVE FOUNDATION OR AT FLANGE IF PROVIDED BY TOWER MANUFACTURER.

EXTEND CONDUCTOR TO GROUND RING. RIGHT ANGLES NOT ACCEPTED ALL BENDS TO BE SWEEPING.

SITE PLAN-GROUNDING

SCALE: 3/32" = 1'-0"

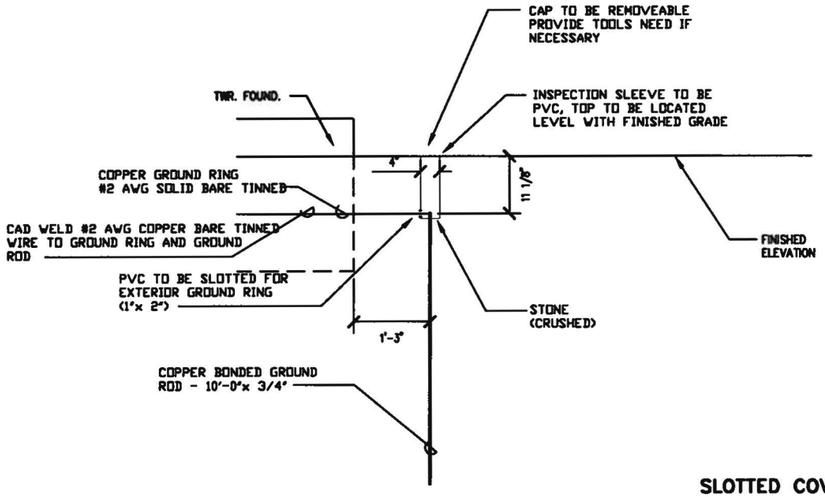
RSB DESIGN
2501 FLORA AVE. LOUISVILLE, KY. 40216
(502)599-9427

NO.	DATE	REVISION

BLUEGRASS CELLULAR, INC.
STANDARD CELLULAR SITE
FEATHERSBURG
242 A. COX RD. ELK HORN, KY. 42733

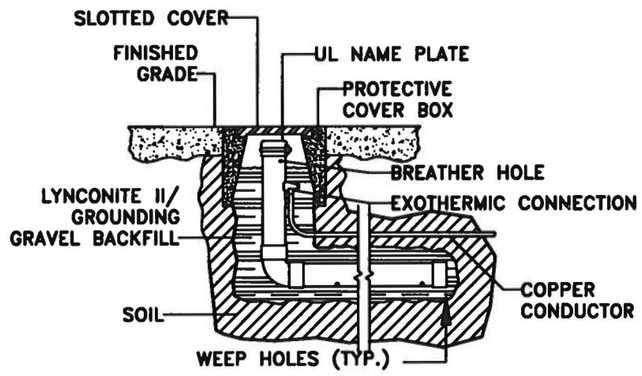
DRAWN BY: R. BECKER
ISSUE DATE: 3-09-18
SCALE: LISTED

SHEET NUMBER
E-3



GROUND ROD DETAIL

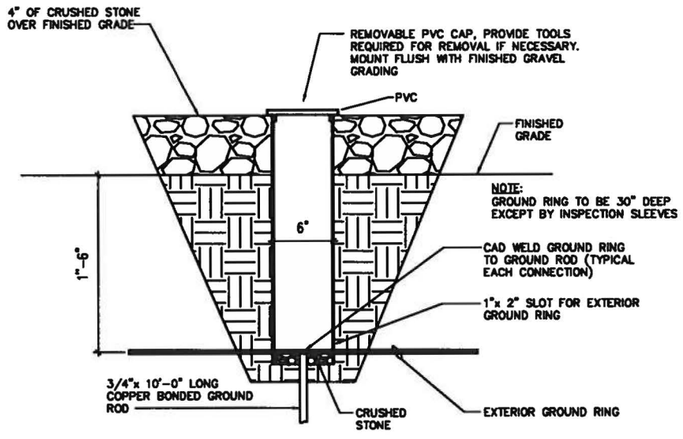
NO SCALE



L-SHAPE MODEL
LYNCOLE XIT GROUNDING
(800) 962-2610

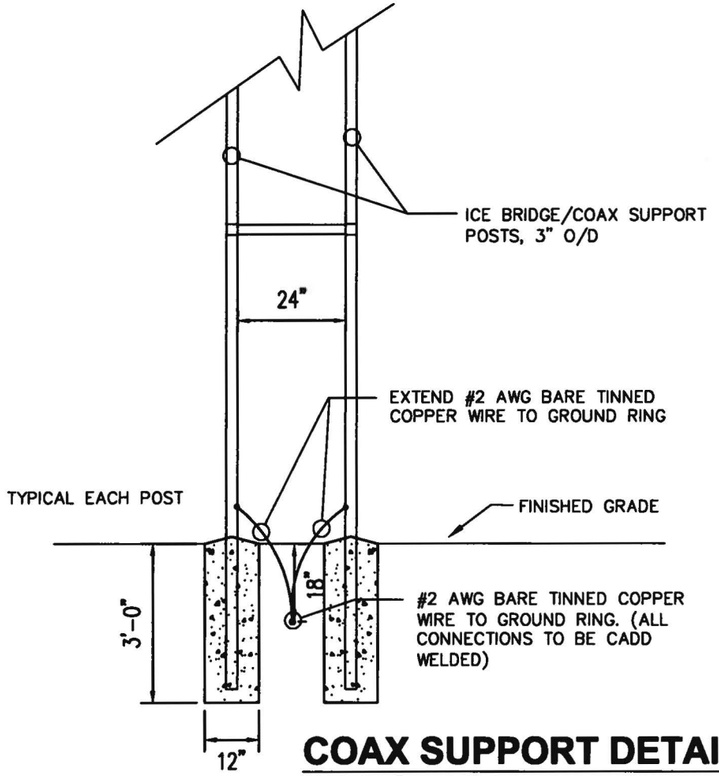
LYNCOLE XIT ROD DETAIL

NO SCALE



GROUND SLEEVE DETAIL

NO SCALE



COAX SUPPORT DETAIL

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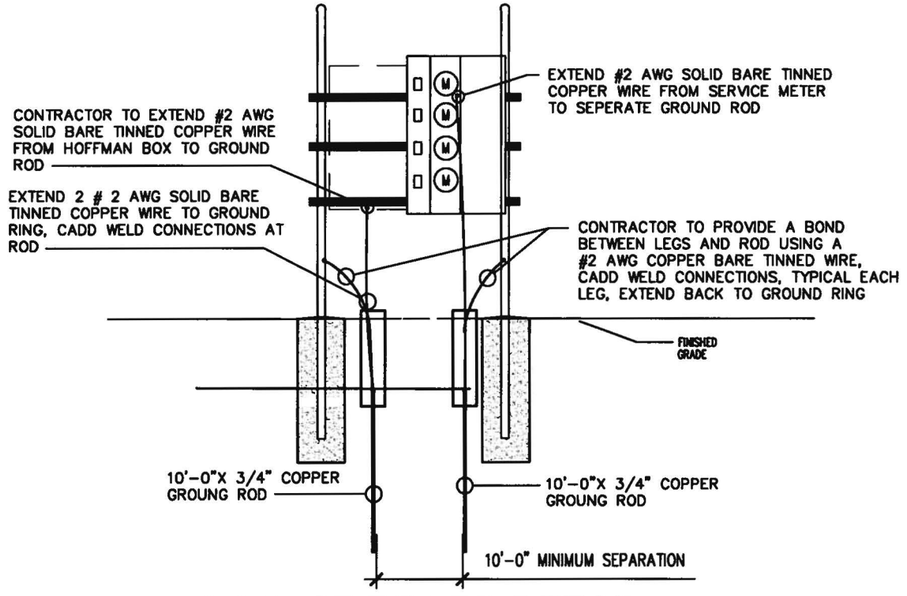

SERVICE BOARD DETAIL

NO SCALE

RSB DESIGN
rsb design1@bellsouth.net (502)599-9427

REVISION

NO.	DATE

BLUEGRASS CELLULAR, INC.
STANDARD CELLULAR SITE
FEATHERSBURG
242 A. COX RD. ELK HORN, KY. 42733

DRAWN BY: R. BECKER
ISSUE DATE: 3-09-18
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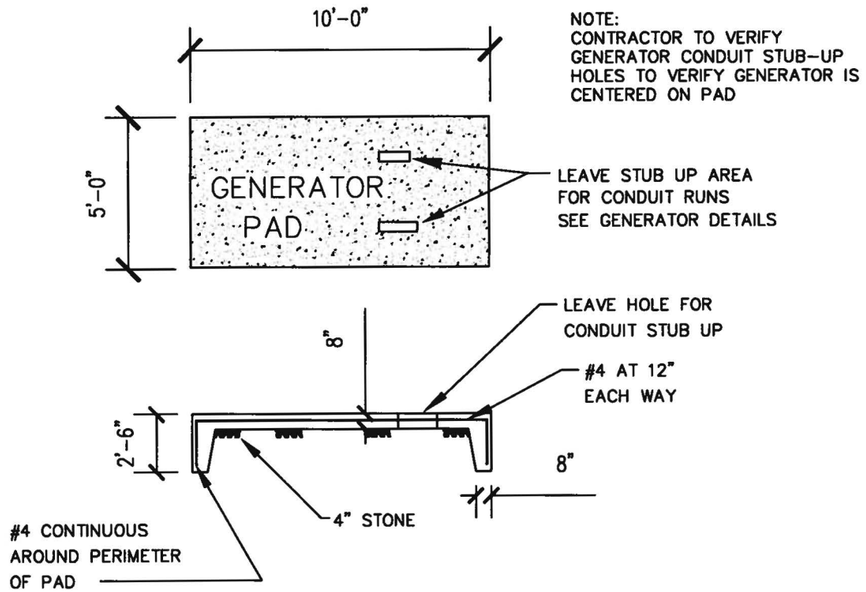
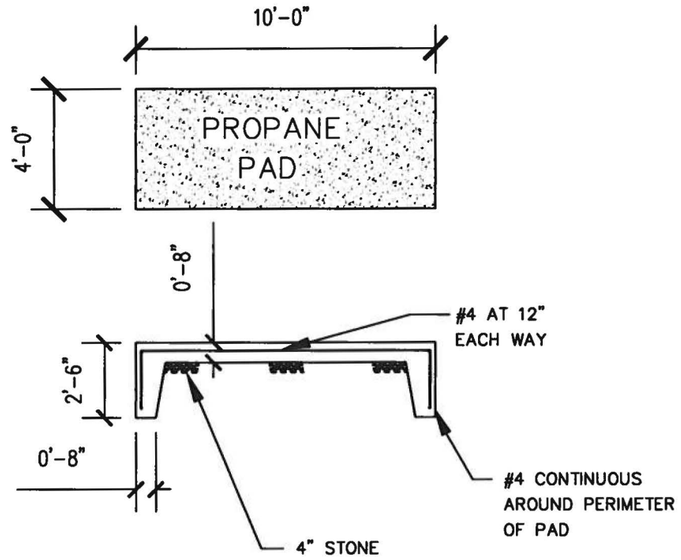
SHEET NUMBER
E-4



FOUNDATION DETAIL

NO SCALE



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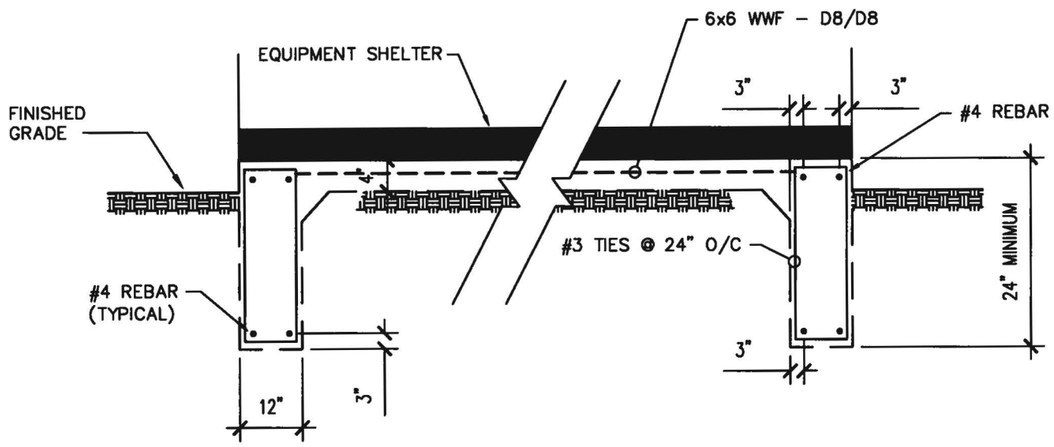
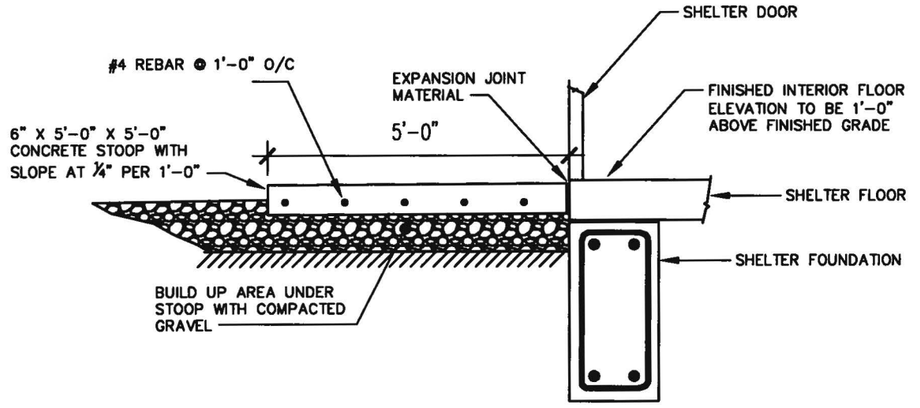


SHELTER FOUNDATION PLAN

NO SCALE



CONCRETE STOOP DETAIL

NO SCALE

RSB DESIGN
rsbdesign1@bellsouth.net (502)599-9427

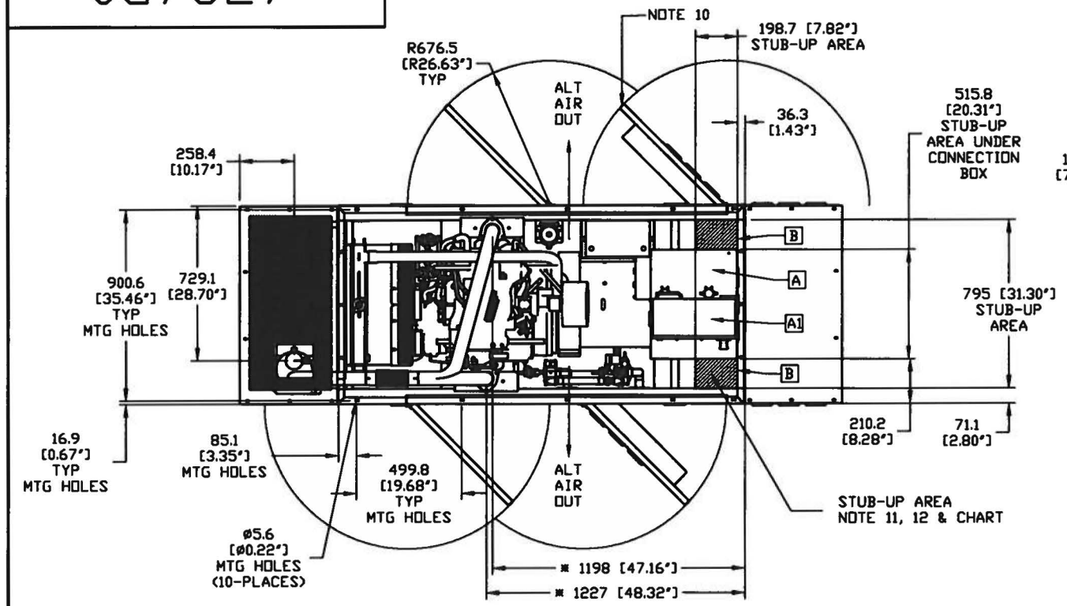
NO. | DATE | REVISION

BLUEGRASS CELLULAR, INC.
STANDARD CELLULAR SITE
FEATHERSBURG
242 A. COX RD. ELK HORN, KY. 42733

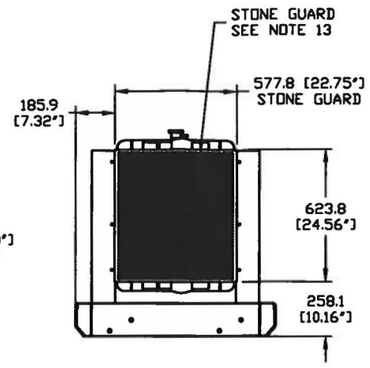
DRAWN BY: R. BECKER
ISSUE DATE: 3-09-18
SCALE: LISTED

SHEET NUMBER
S-1

0G7627



TOP OR PLAN VIEW



RADIATOR END VIEW WITH STONE GUARD OPTION

RECOMMENDED FUEL/ELECTRICAL STUB-UPS (SEE TOP VIEW)	
DESCRIPTION	INSIDE BASE
AC LOAD LEAD CONDUIT (RIGHT)	A
(LEFT)	A1
ADDITIONAL STUB UP AREA FOR 120VAC GFCI OUTLET, (STANDARD BLOCK HEATER, BATTERY CHARGER, AND OTHER 120 VAC OPTIONS).	B

NOTE:
FUEL SYSTEM SET UP WITH OUTSIDE STUB-UPS (SEE RIGHT SIDE VIEW).

WEIGHT DATA
UNIT: ??? kg [??? lbs.]
STEEL ENCLOSURE: ??? kg [??? lbs]

UNITS: mm [INCHES]

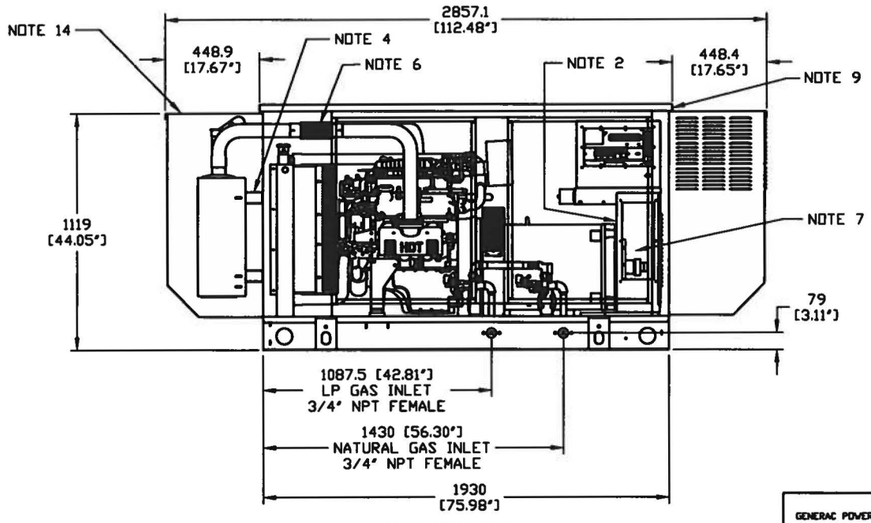
ENGINE SERVICE CONNECTIONS

INLET L/P GAS = 3/4" NPT COUPLING
INLET NATURAL GAS = 3/4" NPT COUPLING
OIL DRAIN = 1/2" NPT COUPLING
EXHAUST OUTLET - EXHAUST MANIFOLDS AS SHOWN ON OPEN SET, 3" OD MUFFLER OUTLET WITH ENCLOSURE

NOTES:

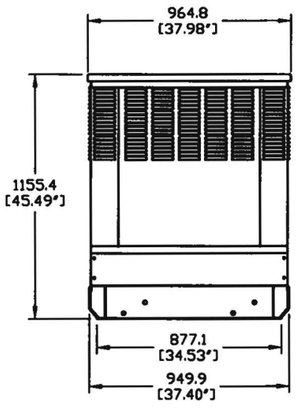
1. CONTROL PANEL MAY BE ROTATED 180° IN EITHER DIRECTION.
2. STANDARD 20A GFCI DUPLEX OUTLET - 120VAC REQUIRED.
3. CONNECTION POINTS FOR CONTROL WIRES PROVIDED IN AC CONNECTION PANEL.
4. EXHAUST MUFFLER SUPPORT BRACKETS SUPPLIED WITH OPTIONAL ENCLOSURE.
5. 12 VOLT NEGATIVE GROUND SYSTEM.
6. 2.5" I.D. FLEX EXHAUST, STANDARD WITH ENCLOSURE UNITS, OPTIONAL WITHOUT.
7. MAIN LINE CIRCUIT BREAKER (MLCB) AND AC LOAD LEAD CONNECTION.
8. REMOVABLE BLANK PANEL FOR OPTIONAL 2nd MAIN LINE CIRCUIT BREAKER.
9. OPTIONAL ENCLOSURE.
10. DOORS MUST BE ABLE TO OPEN 90 DEG. TO BE REMOVED.
11. STUB-UPS:
    STANDARD BASE TANK REQUIRES ALL STUB-UPS TO BE OUTSIDE OR IN THE REAR TANK STUB-UP AREA.
12. A OR A1 IS THE STUB UP AREA UNDER THE MLCB, DEPENDING ON CIRCUIT BREAKER LOCATION. AREA B IS STUB UP AVAILABLE FOR UNITS WITH A BASE TANK.
13. STONE GUARD AND AIR DUCT ADAPTER STANDARD WITH OPEN SET ONLY.
14. SEE DRAWING 0C3850 FOR DUCT REMOVAL. REMOVAL OF FRONT DUCT WILL PROVIDE ACCESS TO MUFFLER FOR SERVICING.

*NOTE: DIMENSIONS TO THE CENTER OF EXHAUST FLANGE SHOULD BE USED AS A REFERENCE WHEN EXHAUST SYSTEM IS NOT ORDERED. APPLIES TO OPEN SET ONLY.

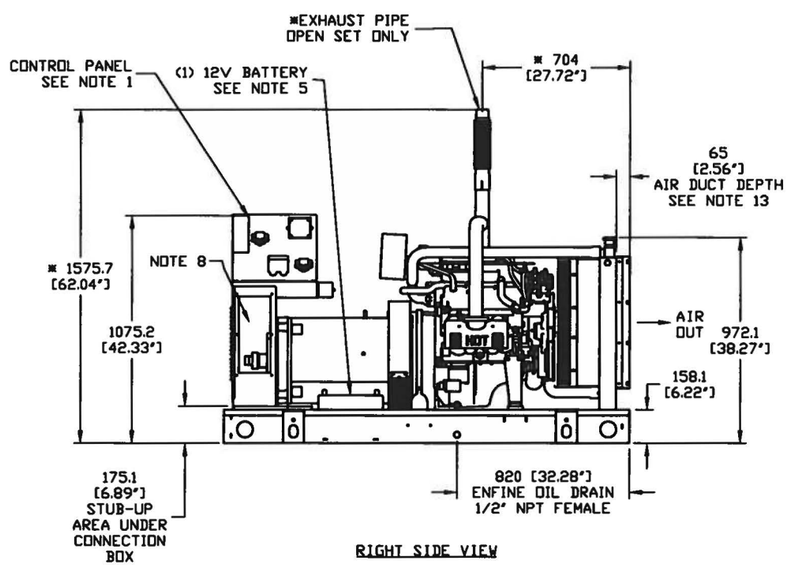


LEFT SIDE VIEW

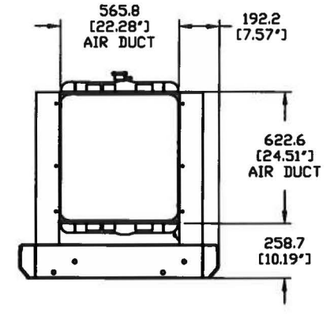
APPLICABLE TO 4.5L G3 35, 40 & 45KW



REAR VIEW



RIGHT SIDE VIEW



RADIATOR END VIEW WITH AIR DUCT ADAPTER OPTION

INSTALLATION DRAWING

SG 35, 40, 45 KW (UPSIZED 100 KW)

4.2L DIRECT DRIVE

ACOUSTIC ENCLOSURE

ISSUE DATE: 11/13/07

GENERAC POWER SYSTEMS
Waukesha
P.O. BOX 8
WAUKESHA, WIS. 53187

FILE NAME	0G7627-A.DWG	SIZE	B
SCALE	NTS	FIRST USE	4.2L G3
DWG NO.	0G7627	REV	A

GENERAL NOTES:

1) THE CONTRACTOR IS RESPONSIBLE FOR EQUIPMENT PICK UP DELIVERY TO SITE, ERECTION OF TOWER, AND CRANE SET, ALL COSTS INCURRED.

2) THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE SITE PRIOR TO BIDDING AND REVIEWING EXISTING STRUCTURES OR UTILITIES THAT MIGHT BE LOCATED ON OR AROUND THE COMPOUND THAT COULD INTERFERE.

3) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING LOCAL AUTHORITIES NECESSARY FOR INSPECTIONS IF REQUIRED, PLEASE PROVIDE AMPLE NOTICE.

4) THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING PERSONS RESPONSIBLE FOR ANY MATERIALS TESTING, PLEASE PROVIDE AMPLE NOTICE.

5) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH FINAL TEST RESULTS ON ALL MATERIALS TESTING. IF ANY PROBLEMS ARE FOUND PRIOR TO FINAL RESULTS PLEASE NOTIFY A&E OR OWNER IMMEDIATELY.

6) THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ADJOINING PROPERTY, AND REPAIRING OR REPLACING WHAT IS NECESSARY TO OWNERS APPROVAL.

7) THE CONTRACTOR IS TO VERIFY DIMENSIONS ON SITE PRIOR TO CONSTRUCTION STARTING, ANY PROBLEMS OR CHANGE FOUND CONTACT A&E OR OWNER TO VERIFY.

8) THE CONTRACTOR IS RESPONSIBLE FOR ANY TEMPORARY LIGHTING ON THE TOWER AND CONTACTING PROPER AUTHORITIES IF ANY LIGHTING PROBLEMS OCCUR, ALL FINAL LIGHTING TO BE MOUNTED ON TOWER DURING CONSTRUCTION, NOTIFY OWNER WHEN TOWER HAS REACHED FINAL HEIGHT.

9) THE CONTRACTOR IS RESPONSIBLE FOR ALL ON SITE WORK MEANS AND METHODS.

10) CONTRACTOR, ANY CONTRACTOR EMPLOYEES OR REPRESENTATIVES, OR SUB-CONTRACTOR, ANY SUB-CONTRACTOR EMPLOYEES OR REPRESENTATIVES, WILL CONFORM TO ALL LAWS AND REGULATIONS APPLICABLE TO THE WORK BEING PERFORMED, INCLUDING BUT NOT LIMITED TO, ALL OCCUPATIONAL SAFETY AND HEALTH ACT ("OSHA") STATUTES AND REGULATIONS AS WELL AS ALL OTHER FEDERAL, STATE AND/OR LOCAL LAWS OR REGULATIONS APPLICABLE TO THE WORK BEING PERFORMED BY CONTRACTOR.

11) THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SITE DRAINAGE, AND PROVIDING SILT AND EROSION CONTROL NECESSARY TO MAINTAIN ANY RUN OFF.

12) THE CONTRACTOR IS RESPONSIBLE FOR ALL SEED AND STRAW WORK NECESSARY TO REPAIR DAMAGED AREAS.

13) CONTRACTOR TO GRADE SMOOTH OR REPAIR ANY POT HOLES OR DITCHING ON PROPERTY OR ROAD THAT HAS OCCURRED DURING CONSTRUCTION AT CONTRACTORS EXPENSE.

14) CONTRACTOR'S RESPONSIBILITIES REGARDING BUILD OUT ON FIBREBOND EQUIPMENT SHELTERS TO INCLUDE:

- INSTALLING THE DOOR CANOPY
- INSTALLING EXTERIOR LIGHT ON WALL DETERMINED BY PROJECT SUPERVISOR AND PHOTOCELL REQUIREMENTS
- INSTALLING INTRUDER ALARMS
- CHECK OPERATIONS OF DOOR AND DOOR HARDWARE
- ADJUST WEATHERSTRIPPING ON DOORS AS NEEDED
- INSPECT ROOF FOR DAMAGE AND POSSIBLE LEAKS
- INSPECT INTERIOR FINISH FOR IMPERFECTIONS AND REPAIR AS NEEDED
- CHECK OPERATION OF LIGHTS AND ELECTRICAL OUTLETS
- CHECK OPERATION OF INTAKE AND EXHAUST LOUVERS AND ADJUST AS NEEDED
- CHECK OPERATION OF ENVIRONMENTAL CONTROLS AND HVAC UNITS
- INSTALL AND PAINT SHELTER TIE-DOWNS TO MATCH

15) INSTALL CONCRETE PADS FOR BUILDING, PROPANE TANK, GENERATOR PAD.

16) INSTALL ELECTRIC AND GROUND FIELD FOR COMPOUND.

17) GC WILL BE RESPONSIBLE FOR ALL CRANE OPERATIONS IN ORDER TO SET FIBREBOND BUILDING. COORDINATE BUILDING DELIVERY DATE THROUGH BLUEGRASS CELLULAR.

18) GC WILL BE RESPONSIBLE FOR OFF LOADING AND STACKING OF TOWER WHEN APPLICABLE.

19) GC WILL BE RESPONSIBLE FOR MOUNTING ALL LINES AND ANTENNAS.

20) GC WILL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING ICE BRIDGE.

21) GC WILL BE RESPONSIBLE FOR SCHEDULING PROPANE TANK DELIVERY AND HOOK-UP. PREFERRED SUPPLIERS ARE EMPIRE & AMERIGAS

22) GC WILL BE RESPONSIBLE FOR COORDINATING THE CLEANING OF THE INSIDE OF THE BUILDING WITH THE PROJECT SUPERVISOR AFTER THE SITE HAS BEEN TURNED OVER TO THE OPERATIONS DEPARTMENT AND ALL TURN-UP PROCEDURES HAVE BEEN COMPLETED. THIS WILL INCLUDE SUPPLYING A 30 GALLON TRASHCAN, 30 GALLON TRASH BAGS, BROOM, DUST PAN AND DOORMAT FOR BUILDING.

23) GC TO VERIFY ALL BLUEGRASS CELLULAR EQUIPMENT DIMENSIONS & SPECIFICATIONS WITH MANUFACTURER'S DRAWINGS, (FIBREBOND, GENERAC, EASTPOINTE ETC.) PRIOR TO CONSTRUCTION. ADDRESS ANY ISSUES WITH PROJECT SUPERVISOR BEFORE WORK BEGINS.

24) ALL WAREHOUSE MATERIAL (LINES, ANTENNAS, MOUNTING HARDWARE, GENERATOR, TOWER FOUNDATION KIT, ETC.) WILL NEED TO BE PICKED UP BY GC.

25) GC WILL BE RESPONSIBLE FOR SCHEDULING GENERATOR START-UP WITH CONTACT SCOTT ANDERSON (EVAPAR) 502-267-6315

26) T1 CONDUIT WILL NEED TO BE PLACED FROM POLE TO BUILDING. (IF A MICROWAVE DISH IS USED, THE T1 CONDUIT WILL STILL BE INSTALLED FOR FUTURE USE.)

27) GC WILL BE RESPONSIBLE FOR INSTALLATION OF ALL FENCING.

28) ALL TRASH AND DEBRIS TO BE REMOVED BY GC

29) GC WILL BE RESPONSIBLE FOR APPLYING FOR ELECTRICAL SERVICE AND PAYING NECESSARY FEES REQUIRED.

30) GC WILL BE RESPONSIBLE FOR SUPPLYING & INSTALLING PROTECTIVE END CAPS ON ANY EXPOSED THREADED ROD OR UNISTRUT USED ON SITE. VERIFY TYPE WITH PROJECT SUPERVISOR PRIOR TO INSTALLATION.

31) GC WILL BE RESPONSIBLE FOR HAVING A CERTIFIED ELECTRICIAN HOOK UP THE BATTERIES (IMMEDIATELY) AFTER POWER HAS BEEN TURNED UP AT THE SITE, PREVENTING THE DELAY OF ANY WORK FOR OPERATIONS. THE GENERAL CONTRACTOR MUST NOTIFY THE PROJECT SUPERVISOR IMMEDIATELY AT THIS TIME SO HE CAN COORDINATE A CELL TECH TO BE ONSITE WHEN THIS OCCURS.

32) GC WILL BE RESPONSIBLE FOR RUNNING (CAT5) FROM THE GENERATOR ALARM PANEL MOUNTED ON THE SIDE OF THE TRANSFER SWITCH (BY THE CONTRACTOR), THROUGH THE TRANSFER SWITCH AND UP TO THE EXISTING CONDUIT BESIDE THE A/C POWER FAIL RELAY. THE (CAT5) WILL BE PULLED THROUGH EXISTING CONDUIT AROUND THE SHELTER AND EXTENDED TO THE ALARM BLOCK. THERE SHOULD BE A MINIMUM 3'-0" OF (CAT5) LEFT HANGING ON EACH END FOR THE CELL TECH TO HOOK UP THE GENERATOR ALARMS.

33) GC MUST SUBMIT A COPY OF THE BUILDING PERMIT AND CONSTRUCTION SCHEDULE TO THE PROJECT SUPERVISOR PRIOR TO RECEIVING (NTP) TO BEGIN CONSTRUCTION (NO EXCEPTIONS).

34) GC MUST DISPLAY FCC TOWER REGISTRATION NUMBER AND EMERGENCY PHONE NUMBERS ON 3'-0 X 4'-0" MINIMUM WOODEN BACKBOARD SOMEWHERE ON SITE LOCATION PRIOR TO BREAKING GROUND.

GRADING & EXCAVATING NOTES:

1) ANY DAMAGE TO EXISTING UTILITIES, STRUCTURES, ROADS AND PARKING AREAS TO BE REPAIRED OR REPLACED TO OWNERS SATISFACTION.

2) PREPARATION FOR FILL:
REMOVAL OF ALL DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, TOPSOIL, VEGETATION, AND HARMFUL MATERIALS FROM SURFACE OF GROUND PRIOR TO PLOWING, STRIPPING, PLACING FILLS OR BREAKING UP OF SLOPED SURFACES GREATER THAN 1 VERTICAL TO 4 HORIZONTAL SO MATERIAL FOR FILL WILL BOND TO EXISTING SURFACE. WHEN AREA TO RECEIVE FILL HAS A DENSITY LESS THAN REQUIRED, BREAK UP GROUND SURFACE TO DEPTH REQUIRED, AERATE, MOISTURE - CONDITION, OR PULVERIZE SOIL AND RECOMPACT TO REQUIRED DENSITY.

3) BACK FILLING:
- EXCAVATED AREA SHALL BE CLEARED FROM STONES OR CLODS OVER 2 1/2" MAXIMUM DIAMETER
- SHALL BE PLACED IN LAYERS OF 6" AND COMPACTED TO A 95% STANDARD PROCTOR, USE A 90% PROCTOR IN GRASSED / LANDSCAPED AREAS WHERE REQUIRED.
- SHALL BE APPROVED MATERIALS CONSISTING OF SANDY CLAY, GRAVEL AND SAND, SOFT SHALE, EARTH OR LOAM. CONSULT WITH OWNER PRIOR TO FILL BEING ADDED.

4) ALL MATERIAL FOR FILL TO BE APPROVED BY OWNER AND ALL COMPACTING TEST TO BE COMPLETED TO SPEC'S ALL COMPACTING RESULTS TO BE TURNED OVER TO OWNER.

5) AFTER COMPLETION OF BELOW GRADE EXCAVATING, AREA TO BE CLEANED AND CLEARED OF ANY UNSUITABLE MATERIALS, SUCH AS TRASH, DEBRIS, VEGETATION AND SO FORTH.

6) ANY EXCAVATING IN WHICH CONCRETE IS TO BE PLACED SHALL BE SUBSTANTIALLY HORIZONTAL ON UNDISTURBED AND UNFROZEN SOIL AND BE FREE OF ANY LOOSE MATERIAL AND EXCESS GROUND WATER.

7) IF SOUND SOIL IS NOT REACHED AT DESIGNATED EXCAVATION DEPTH, THE POOR SOIL IS TO BE EXCAVATED TO ITS FULL DEPTH AND EITHER REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION TO BE FILLED WITH THE SAME QUALITY CONCRETE SPECIFIED FOR THE FOUNDATION. PLEASE NOTIFY THE PROJECT SUPERVISOR AND THEY WILL HAVE A 3RD PARTY ENGINEERING FIRM CONTACT YOU WITH RECOMMENDATIONS.

8) MECHANICALLY COMPACTED GRANULAR MATERIAL OR CONCRETE OF THE SAME QUALITY SPECIFIED FOR THE FOUNDATIONS TO BE USED IF EXCAVATION EXCEEDED THE OVERALL REQUIRED DEPTH. FOR STABILIZATION OF THE BOTTOM OF THE EXCAVATION, CRUSHED STONE MAY BE USED. STONE, IF USED, SHALL NOT BE USED AS COMPILING CONCRETE THICKNESS. PLEASE NOTIFY THE PROJECT SUPERVISOR AND THEY WILL HAVE A 3RD PARTY ENGINEERING FIRM CONTACT YOU WITH RECOMMENDATIONS.

9) EXCAVATION TO COMPOUND TO INCLUDE WEED CONTROL MAT.

10) SITE TO HAVE PROPER DRAINAGE & EROSION CONTROL (CROWNED FORMATION)

11) GC WILL BE RESPONSIBLE FOR REPAIR OF ALL AREAS DISTURBED DURING CONSTRUCTION. (EXCAVATING ISSUES)

"CALL BEFORE YOU DIG"

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE UTILITY PROTECTION CENTER, PHONE 811 IN KENTUCKY , 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 BELOW GRADE.

SYMBOLS LEGEND

- KEYNOTE
- INSPEC. SLEEVE / GRND ROD
- INSPECTION SLEEVE
- CAD WELD CONNECTION
- T — TRANSFORMER
- LA — LIGHTNING SUPPRESSOR
- SWITCH (DISCONNECT)
- METER PACK
- P — POWER
- G — GAS LINE
- W — WATER LINE
- SS — SANITARY SEWER
- T — TELEPHONE
- SSD — STORM SEWER DRAIN
- X — FENCE

RSB DESIGN
rsbdesign1@bellsouth.net (502)599-9427

NO.	DATE	REVISION

BLUEGRASS CELLULAR, INC.
STANDARD CELLULAR SITE
FEATHERSBURG
242 A. COX RD. ELK HORN, KY. 42733

DRAWN BY: R. BECKER
ISSUE DATE: 3-09-18
SCALE: LISTED

SHEET NUMBER
General Notes

LANDMARK SURVEYING CO., INC.

15 N.E. 3RD STREET · WASHINGTON, INDIANA 47501
PHONE: 812.257.0950 · WEBSITE: WWW.LANDMARKSURVEYINGCO.COM
DARREN L. HELMS, P.S., PRESIDENT
DENNIS N. HELMS, P.S., CPESC, VICE-PRESIDENT

Directions to the Site

From the County Seat of Taylor County, Kentucky

Feathersburg Site

From the intersection of U.S. Highway 68 (Broadway Street) and Kentucky Highway 70 (Central Avenue) in downtown Campbellsville, Kentucky: travel southeasterly on Kentucky Highway 70 (Liberty Road) for 4.2 miles to Kentucky Highway 76 (Knifley Road); turn right onto Kentucky Highway 76 and travel easterly for 1.7 miles to Kentucky Highway 1752 (Speck Ridge Road); turn left onto Kentucky Highway 1752 and continue to travel easterly for 5.3 miles to A. Cox Road; turn left onto A. Cox Road and travel north for 0.25 miles to the tower site in a hayfield on the east side of the road at the intersection of A. Cox Road and Cox Spur Road. The address of the site is 242 A. Cox Road, Elkhorn, Kentucky 42733.

Darren L. Helms
Darren L. Helms, P.L.S. 3386

March 6, 2018
Date

STATE OF KENTUCKY
DARREN L. HELMS
3386
LICENSED
PROFESSIONAL
LAND SURVEYOR

Site Name: Feathersburg

OPTION TO LEASE AND LEASE AGREEMENT

I.

OPTION TO LEASE REAL PROPERTY

THIS OPTION TO LEASE REAL PROPERTY (the "Option Agreement") is made and entered into this 29 day of January, 20 17, by and between Bobby Burress & Dorothy Burress, whose address is 5204 Speck Ridge Road, Elk Horn, KY 42733 (the "Optionor (s)" and Kentucky RSA 4 Cellular General Partnership (a Kentucky general Partnership) with principal office and place of business at 2902 Ring Road, Elizabethtown, KY 42701 (the "Optionee").

WITNESSETH:

WHEREAS, the Optionor(s) is the owner of certain real property located in Taylor County, **Kentucky** as more particularly described on Exhibit A attached hereto and incorporated herein by reference (the "Property"); and

WHEREAS, the Optionor(s) wishes to grant to the Optionee, and the Optionee wishes to obtain from the Optionor(s), an option to lease a portion of the Property upon the terms and conditions set forth herein;

NOW, THEREFORE, in consideration of the foregoing premises and for other good and valuable consideration, the mutuality, receipt and sufficiency of which are hereby acknowledged, the parties hereto do agree as follows.

1. In consideration of the payment of **One Thousand Eight Hundred Dollars and Zero Cents ($1,800.00)** paid by the Optionee to the Optionor(s) (the "Option Consideration"), the receipt of which is hereby acknowledged by the Optionor(s),

the Optionor(s) hereby grants to the Optionee an exclusive and irrevocable option to lease a portion of the Property upon the terms and conditions hereinafter set forth (the "Option") for a period of eighteen (18) months, commencing on the date of full execution (the "Option Period"), as set forth in Paragraph 5 thereof.

2. The parties hereto anticipate that the portion of the Property which is the subject of this Option will comprise approximately a **One Hundred Foot by One Hundred Foot** area, together with a right of way across the Property for the purposes of ingress and egress throughout the term of the lease. The Optionee shall obtain an accurate survey of the portion of the Property to be leased by it by a registered land surveyor licensed in the Commonwealth of Kentucky at the sole expense of the Optionee. A copy of the survey shall be provided to the Optionor(s). The description of the portion of the Property to be leased by the Optionee, including the right of way, shall be determined by the surveyor and shall hereafter be referred to as the "Leased Premises." The Optionee shall obtain said survey within a reasonable time following the date of the Option Agreement.

3. During the term of the Option, the Optionee may enter onto the Property at its own risk to obtain soil samples and to bore soil for the purposes of determining the suitability of the Leased Premises for a communications tower.

4. Upon the Optionee's proper exercise of the Option in accordance with Paragraph 5 hereof, the Optionor(s) shall be deemed to have immediately executed, acknowledged and delivered to the Optionee the Lease Agreement contained in Section II hereof. The description of the Leased Premises shall be that determined by the registered land surveyor in accordance with Paragraph 2 hereof.

5. If the Optionee elects to exercise the Option in accordance with the terms hereof, notice of such election shall be deemed sufficient if personally delivered or sent by

registered or certified mail, return receipt requested, to the address of the Optionor(s) set forth in Paragraph 14 hereof.

6. The Optionor(s) agrees not to sell, lease or offer for sale or lease the Property, or any portion thereof, during the term of this Option or any renewal or extension of the Option.

7. In the event the Optionee fails to exercise the Option as set forth herein (unless such failure is due to the discovery of a defect in the Leased Premises or other matter unsatisfactory to the Optionee), the Optionor(s) shall have the right to retain the Option Consideration.

8. The Optionee may assign this Option with written consent of the Optionor(s), which consent shall not be unreasonably withheld, and upon any assignment such assignee shall have all the rights, remedies and obligations as if it were the original Optionee hereunder. From and after any such assignment, the term "Optionee" shall refer to such assignee.

9. Each party hereto shall bear any and all of its own expenses in connection with the negotiation, execution or settlement of this Option.

10. Risk of loss with respect to the Property during the term of this Option and during the term of the lease shall be upon the Optionor(s). If, during the term of the Option, any portion of the Leased Premises shall be acquired by public authority under the right or threat of eminent domain, the Optionee may, at its sole option, either (i) exercise the Option, and in such event, all sums received from the public authority by the Optionor(s) by reason of the taking of a portion of the Leased Premises shall reduce the rent due under the lease, or (ii) terminate this Option and thereupon the Optionor(s) shall be obligated to return to the Optionee the full amount of the

Option Consideration previously paid to the Optionor(s) in "good and collected funds."

11. The parties hereto represent to each other that neither has engaged any broker to represent their interests in connection with the transactions contemplated hereby, and each agrees to indemnify the other against any and all claims made by any brokers engaged or purported to be engaged by the other for brokerage commissions or fees in connection with the transactions contemplated hereby.

12. The Optionor(s) represents, warrants and covenants to the Optionee that the Optionor(s) has not caused or permitted, and shall not cause or permit, and to the best of Optionor(s)' knowledge no other person has caused or permitted any hazardous material (as defined by any applicable federal, state or local law, rule or regulation) to be brought upon, placed, held, located or disposed of at the Leased Premises. In the event any such contamination occurs for which the Optionee becomes legally liable, the Optionor(s) shall indemnify the Optionee against all claims, damages, judgments, penalties and costs and expenses, including reasonable attorneys' fees, which Optionee may incur.

13. This Option Agreement and the rights and obligations of the parties hereto shall be construed in accordance with the laws of the Commonwealth of Kentucky.

14. For the purposes of giving notice as permitted or required herein, the address of the Optionor(s)shall be: **5204 Speck Ridge Road, Elk Horn, KY 42733**; the Optionee's address shall be: P.O Box 5012, Elizabethtown, KY 42702-5012. Any inquiry by the Optionor to the Optionee regarding the terms and conditions of the Option Agreement or Lease Agreement, or otherwise related to the Option Agreement or Lease Agreement, shall be made in writing and submitted to the attention of the Optionee's Lease Administrator at the above address.

15. The parties agree that without the express written consent of the other party, neither party shall reveal, disclose or publish to any third party the terms of this Option Agreement or Lease Agreement or any portion thereof, except to such party's auditor, accountant, lender, attorney or to a government entity if required by regulation, subpoena or government order to do so. Notwithstanding the foregoing, either party may disclose the terms of this Option Agreement or Lease Agreement to any of its affiliated entities, and Optionee may disclose the terms of this Option Agreement or Lease Agreement to any of its lenders or creditors or to third parties that are potential lessees or licensees of space at the Leased Premises as may be reasonably necessary with respect to the operation, leasing, licensing and marketing of the Leased Premises.

16. The Optionee shall have the right, in its sole discretion, to record this Option in the Office of the Clerk of the County Court of Taylor County, Kentucky.

II.

LEASE AGREEMENT

17. In the event the Optionee elects to exercise the Option to lease the Leased Premises, the terms of the Lease Agreement ("Lease Agreement" or "Lease") shall become immediately effective upon such exercise and shall be as follows.

a. The term of the Lease shall commence on the date that the Optionor(s) receives proper notice that the Optionee has exercised the Option, pursuant to Paragraph 5 therein. The initial term shall expire **five (5) year(s)** from the commencement date of the Lease Agreement and shall include **six (6) additional five (5)-year terms** per the Lease Agreement. Optionee may, by

providing written notice at least sixty (60) days prior to the expiration of the original or any renewal Lease term, elect to unilaterally terminate this Lease at the end of any original or renewal Lease term. Such notice must be personally delivered or sent via registered or certified mail, return receipt requested, to the address of the Optioner(s) set forth in Paragraph 14 hereof. The Lease amount shall be adjusted at the end of each term by an increase of 12%.

b. The Optionee shall pay to the Optionor(s) rent for the Leased Premises in the sum of Four Thousand Eight Hundred Dollars and Zero Cents ($4,800.00) yearly, to be paid in advance. All rent payments shall be personally delivered or mailed to the Optionor(s) at the address set forth in Paragraph 14 hereof. Any check payment of the rent due under the Lease shall be payable to the order of Optionor(s).

c. The Optionee shall be entitled to use and occupy the Leased Premises for the purpose of erecting, maintaining and operating a communications tower ("Tower") and communications facilities ("Facilities") thereon and for all such other uses as Optionee may, in its sole discretion, deem necessary in connection therewith.

d. The Optionor(s) hereby grants Optionee easements on, under and across the Property for ingress, egress, utilities and access (including access for the purposes described in Paragraph 2) to the Leased Premises adequate to install and maintain utilities, including, but not limited to, the installation of power and telephone service cable, and to service the Leased Premises and the Tower and Facilities at all times during the Initial Term of the Lease and any Renewal Term ("Easement"). The Easements provided hereunder shall have the same term as this Lease.

e. In the event the Property is encumbered by a mortgage or deed of trust, Optionor(s) agrees, upon request of Optionee, to obtain and furnish to Optionee a non-disturbance and attornment agreement for each such mortgage or deed of trust.

f. The Optionor(s) shall be responsible for the payment of all real estate taxes which shall be assessed against the Property during the term of the Lease. In the event Optionor(s) fails to pay, when due, real estate taxes assessed against the Property ("Delinquent Taxes"), Optionee shall have the right, but not the obligation, to pay said Delinquent Taxes on Optionor(s) behalf and withhold such amount from future rental payments described in Paragraph 17(b) above. Optionee's election to pay any Delinquent Taxes in no way binds or obligates Optionee to continue to pay any such Delinquent Taxes thereafter. The responsibility to pay all real estate taxes assessed against the Property remains with Optionor(s). The Optionee shall pay all charges for heat, water, gas, electricity, sewer use charges and any other utility used or consumed on the Leased Premises. The Optionee shall, at its own cost and expense, maintain and keep in full force and effect during the term of the lease public liability insurance with coverage in the amount of at least one million dollars ($1,000,000.00) per person for bodily injury, disease, or death and shall maintain property insurance on any property of the Optionee located on the Leased Premises.

g. The Optionee may assign the lease. The Optionee may sublet all or part of the space on the tower or ground space.

h. The Optionor(s) covenants that upon the Optionee's payment of the rent agreed upon herein, as well as Optionee's observing and performing all of

the covenants and conditions contained in the Lease, the Optionee may peacefully and quietly enjoy the Leased Premises subject to the terms and conditions set forth in the Lease.

i. The Optionee agrees to maintain an access road in a passable manner for the term of the lease.

j. Optionee's Payment of Taxes, Fees and Assessments. Optionee shall pay directly to the applicable federal, state or local governmental unit or agency ("Governmental Entity") or to Optionor if Optionor is invoiced by such Governmental Entity, all taxes, fees, assessments or other charges assessed by any Governmental Entity directly against Optionee's Equipment and/or Optionee's use of the Facilities. Optionee shall also pay to Optionor Optionee's Pro Rata Share of all taxes, fees, assessments or charges including, but not limited to, personal property taxes attributable to Optionee's equipment and antenna(s), municipal franchise fees, use fees, municipal application fees, installation fees and increases thereof. "Pro Rata Share" shall mean the fraction of decimal equivalent of dividing one (1) by the total number of then existing users occupying a tower on the last day of the applicable calendar year.

18. This Option and Lease Agreement contains the entire agreement between the parties hereto and no modification or amendment shall be binding upon any party unless made in writing and signed by each of the parties hereto.

19. Upon the termination or other end of this Lease Agreement, Optionee shall have the right to remove any and all of its property (real or personal) from the Leased Premises regardless of whether or not such property may be considered a fixture thereto.

20. Upon abandonment of the property, Optionee shall have thirty (30) days to dismantle and remove the Tower and any/all equipment located on Optionor's property.

21. Before any interest in Optionor(s)' interest in the Property or Lease, or any part thereof, whether separately or in connection with other property owned by the Optionor(s), is sold, assigned or transferred in any manner whatsoever (with or without consideration), the Optionee shall have a right of first refusal to acquire whatever interest in the Property or Lease that the Optionor(s) proposes to transfer (the "Proposed Transfer"), on the terms and conditions set forth in this Paragraph 21 (the "Right of First Refusal").

a. Optionor(s) shall deliver to the Optionee a written notice (the "Notice") stating (i) the name of the proposed purchaser or transferee and the material terms and conditions of the Proposed Transfer, together with a complete copy of any written offer made to the Optionor(s) to acquire any interest in the Property ("Offer").

b. At any time within thirty (30) days after receipt of the Notice, the Optionee may, by giving written notice to the Optionor (s) ("Optionee's Notice"), elect to exercise its Right of First Refusal and acquire the interest in the Property or Lease proposed to be transferred pursuant to the Proposed Transfer at the purchase price and on the same terms and conditions as are contained in the Offer. If the Offer includes consideration other than cash, the cash equivalent value of the non-cash consideration shall be determined by the Optionee in good faith. In the event, Optionee exercises its right to acquire the interest in the Property or Lease, the Optioner(s)

shall convey, assign and/or transfer said interest to Optionee free and clear of all liens and encumbrances whatsoever (other than this Lease, which Lease shall remain in effect). All taxes, rents and other assessments applicable to the transferred interest, if any, shall be prorated to the date of closing. The Closing shall occur within thirty (30) days from the date of Optionee's Notice.

c. If the Optionee declines to exercise its Right of First Refusal to acquire the interest in the Property or Lease proposed to be transferred, the Optioner(s) may sell or transfer same in accordance with the terms of the Offer subject, however, to this Lease and the Optionee's rights thereunder.

[Remainder of Page Intentionally Left Blank]

EXECUTION OF AGREEMENT(S)

IN WITNESS WHEREOF, the parties hereto have set their hands and affixed their respective seals.

Print Name: Bobby L Burress
Sign: Bobby L Burress
Date: 1-26-18

Print Name: Dorothy J. Burress
Sign: Dorothy J. Burress
Date: 1-26-18
("Optionor(s)")
Property Owner(s)

Sign: [signature]
Date: 1-29-18
("Optionee")
By: Doug Updegraff
Authorized Representative

STATE OF Ky
COUNTY OF Taylor

The foregoing instrument was acknowledged before me this 26 day of January, 2018, by Bobby + Dorothy Burress to be his/her free act and deed.

Joni Burress
NOTARY PUBLIC STATE AT LARGE

My commission expires: 10-7-2020

STATE OF Ky
COUNTY OF Taylor

The foregoing instrument was acknowledged before me this 26 day of January, 2018, by ~~Joni B~~ Bobby + Dorothy Burress ~~to~~ be his/her free act and deed.

Joni Burress
NOTARY PUBLIC STATE AT LARGE

My commission expires: 10-7-2020

STATE OF KENTUCKY

COUNTY OF HARDIN

The foregoing instrument was acknowledged before me this 18 day of January, 20 19, by, **Doug Updegraff**, as Authorized Representative on behalf of Kentucky RSA 4 Cellular General Partnership to be his free act and deed.

NOTARY PUBLIC STATE AT LARGE

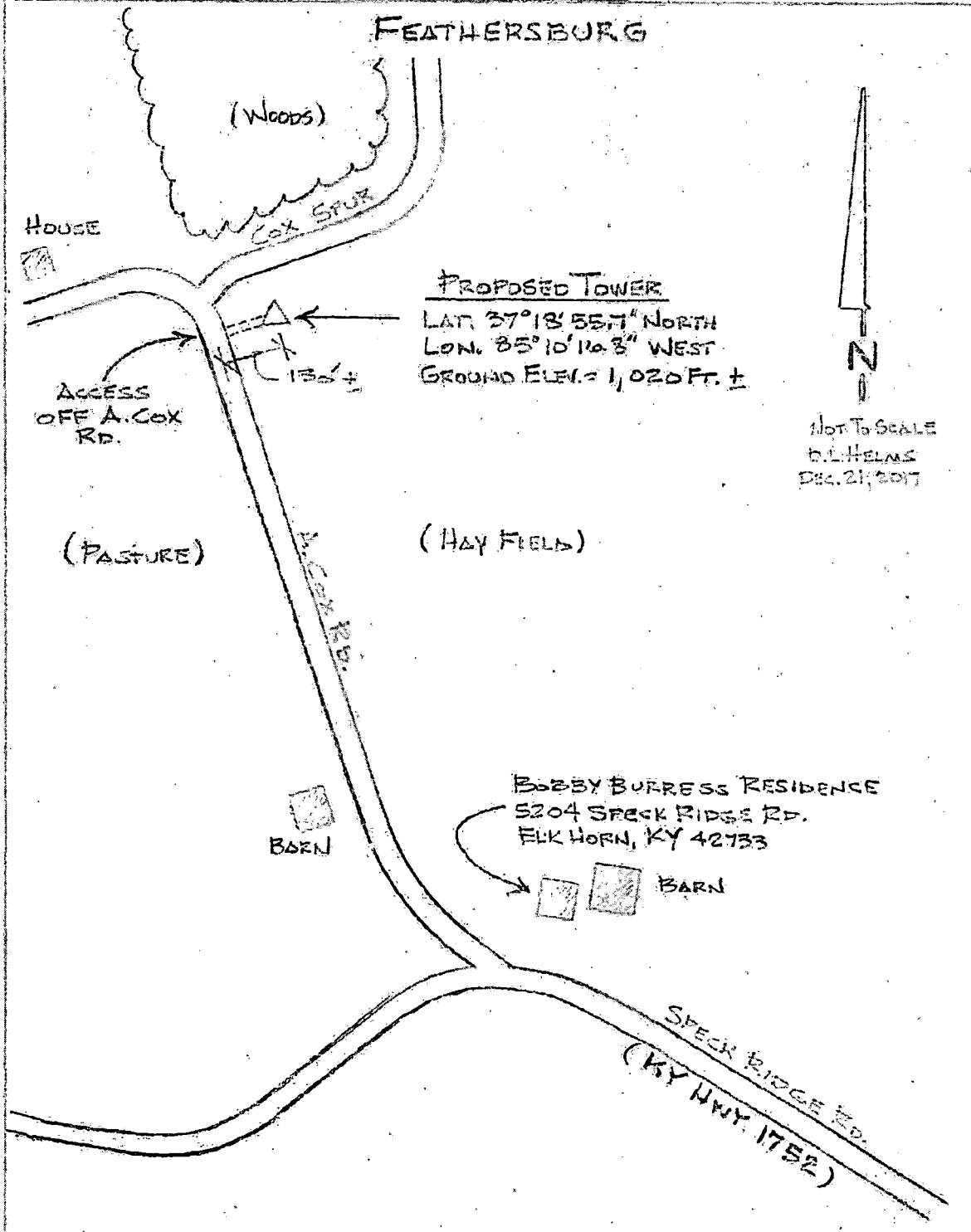
My commission expires: 1-21-21

This instrument prepared by:

John R. Rhorer, Jr.
DINSMORE & SHOHL LLP
250 West Main Street, Suite 1400
Lexington, KY 40507
(859) 425-1000

EXHIBIT 'A'

SITE SKETCH

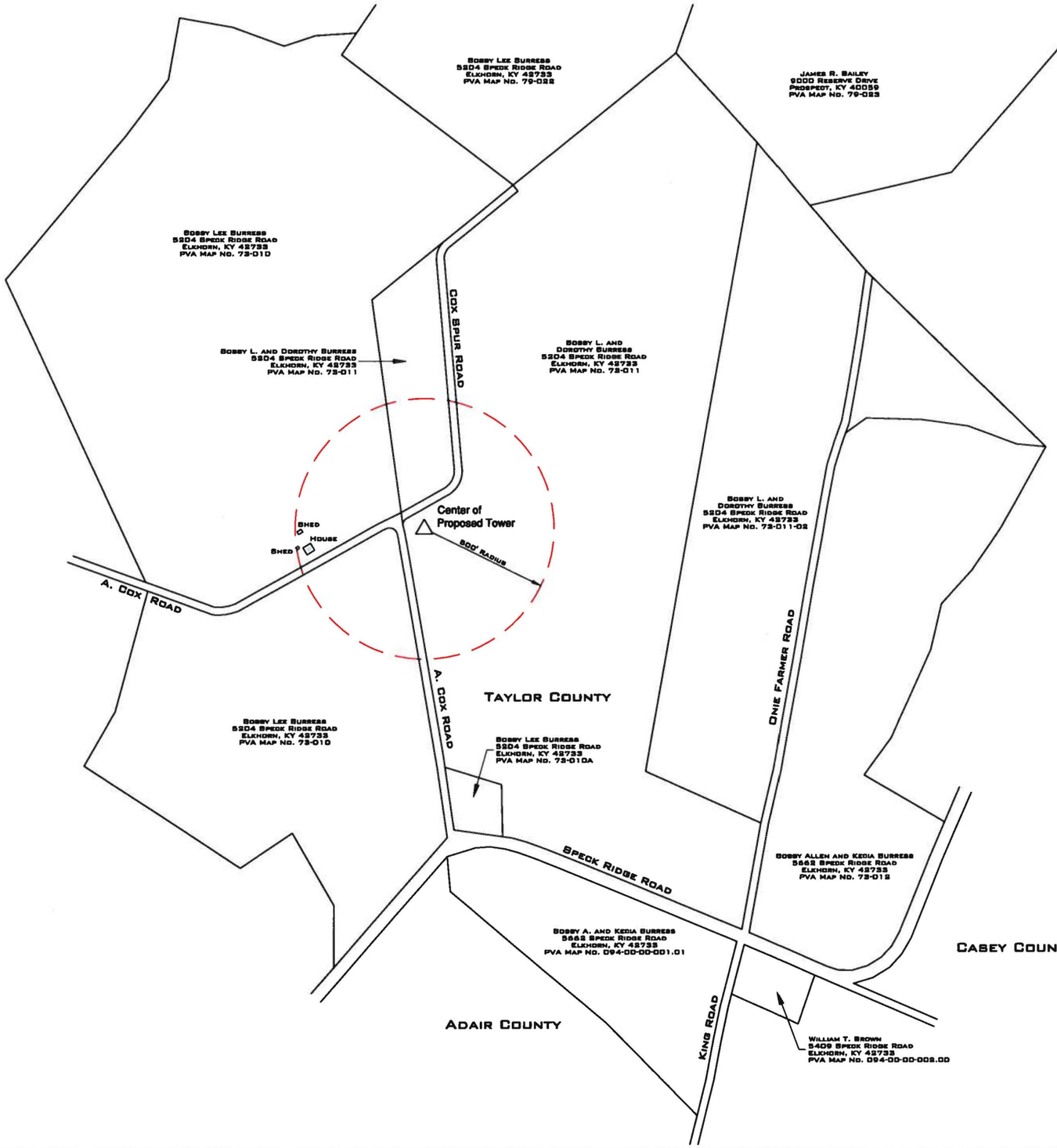


LANDMARK SURVEYING CO., INC.
15 N.E. 3rd ST.
WASHINGTON, IN 47501
(812) 257-0950

SITE: FEATHERSBURG

500-Foot Radius Map for Structures and Landowners

Taylor County, Kentucky



GRAPHIC SCALE

(IN FEET)
1 inch = 200 ft.

Note

The location of the boundaries shown are approximate, and they are based upon information on file in the offices of the Property Valuation Administrators and County Clerks of Taylor and Adair Counties, Kentucky.

Surveyor's Certification

I hereby certify that the information shown is correct to the best of my knowledge; and it is in accordance with the records found in the offices of the Property Valuation Administrators and County Clerks of Taylor and Adair Counties, Kentucky on February 27, 2018.

Darren L. Helms
DARREN L. HELMS, P.L.S. 3386

MARCH 6, 2018
DATE

STATE of KENTUCKY
Darren L. Helms
3386
LICENSED PROFESSIONAL LAND SURVEYOR

LANDMARK SURVEYING CO., INC.
15 N.E. 3RD STREET
WASHINGTON, INDIANA 47501
(812) 257-0950
EMAIL: LANDMARK7@FRONTIER.NET

PROJECT# NM2018112

500-Foot Radius Map
242 A. Cox Road
Elkhorn, Kentucky 42733

Bluegrass Cellular
2902 Ring Road
Elizabethtown, KY 42701

REVISIONS	DATE

DATE March 6, 2018
DRAWN BY J. Hamilton
CHECKED BY D. L. Helms

SHEET No. 1 of 1 SHEETS

FILE NAME
feather-radius.dwg

LANDMARK SURVEYING CO., INC.

15 N.E. 3RD STREET · WASHINGTON, INDIANA 47501
PHONE: 812.257.0950 · WEBSITE: WWW.LANDMARKSURVEYINGCO.COM
DARREN L. HELMS, P.S., PRESIDENT
DENNIS N. HELMS, P.S., CPESC, VICE-PRESIDENT

Landowner and Adjacent Landowner List

Feathersburg Site

Bobby A. and Kecia Burress
5662 Speck Ridge Road
Elkhorn, KY 42733

Bobby L. and Dorothy Burress
5204 Speck Ridge Road
Elkhorn, KY 42733

James R. Bailey
9000 Reserve Drive
Prospect, KY 40059

William T. Brown
5409 Speck Ridge Road
Elkhorn, KY 42733

Darren L. Helms

Darren L. Helms, P.L.S. 3386

March 6, 2018
Date

STATE OF KENTUCKY
DARREN L. HELMS
3386
LICENSED
PROFESSIONAL
LAND SURVEYOR

March 12, 2018

Bobby L. and Dorothy Burress
5204 Speck Ridge Road
Elkhorn, Kentucky 42733

Public Notice

Kentucky RSA #4 Cellular General Partnership is a Kentucky general partnership that markets its services as Bluegrass Cellular. Bluegrass Cellular has been serving Central Kentucky with wireless communications services for over 20 years.

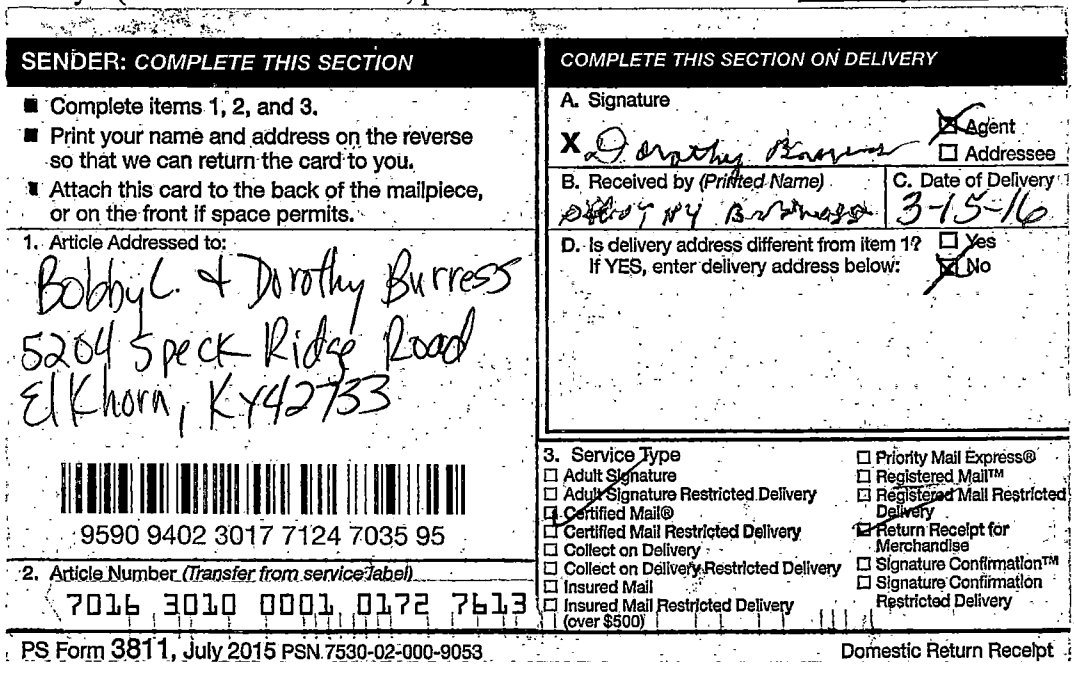
Kentucky RSA #4 Cellular General Partnership is applying to the Public Service Commission of the Commonwealth of Kentucky (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new cellular facility to provide cellular telephone service. This facility will include a 240 foot tower and an equipment shelter to be located at 242 A. Cox Road, Elkhorn, Taylor County, Kentucky, 42733. A map showing the location is attached.

The Commission invites your comments regarding this proposed construction. Also, the Commission wants you to be aware of your right to intervene in this matter. Your comments and request for intervention should be addressed to:

Executive Director's Office
Public Service Commission of Kentucky
P.O. Box 615
Frankfort, Kentucky, 40602.

Please refer to Case Number 2018-00072 in your correspondence.

Bluegrass Cellular welcomes the opportunity to serve and provide wireless service in your community! (For more information, please check us out online at www.myblueworks.com)



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Bobby L. & Dorothy Burress
5204 Speck Ridge Road
Elkhorn, KY 42733

9590 9402 3017 7124 7035 95

2. Article Number (Transfer from service label)
7016 3010 0001 0172 7613

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Dorothy Burress ☒ Agent ☐ Addressee

B. Received by (Printed Name) Dorothy Burress C. Date of Delivery 3-15-16

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☑ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

March 12, 2018

Bobby A. and Kecia Burress
5662 Speck Ridge Road
Elkhorn, Kentucky 42733

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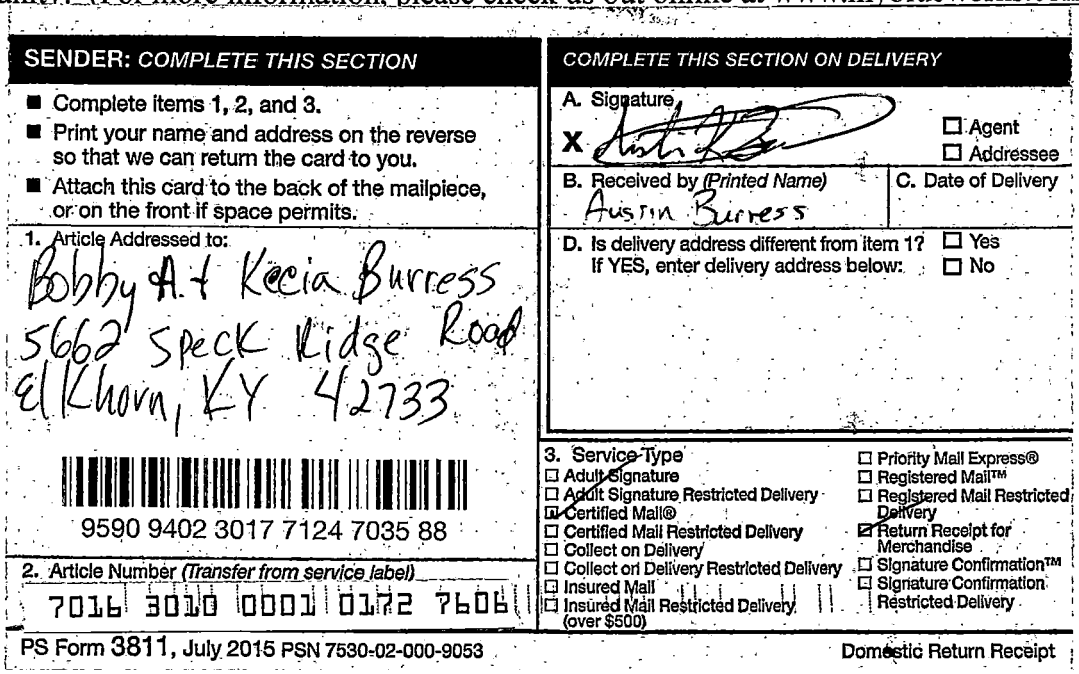

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Bobby A. & Kecia Burress
5662 Speck Ridge Road
Elkhorn, KY 42733

9590 9402 3017 7124 7035 88

2. Article Number (Transfer from service label)
7016 3010 0001 0172 7606

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Austin Burress
C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☑ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

March 12, 2018

James R. Bailey
9000 Reserve Drive
Prospect, Kentucky 40059

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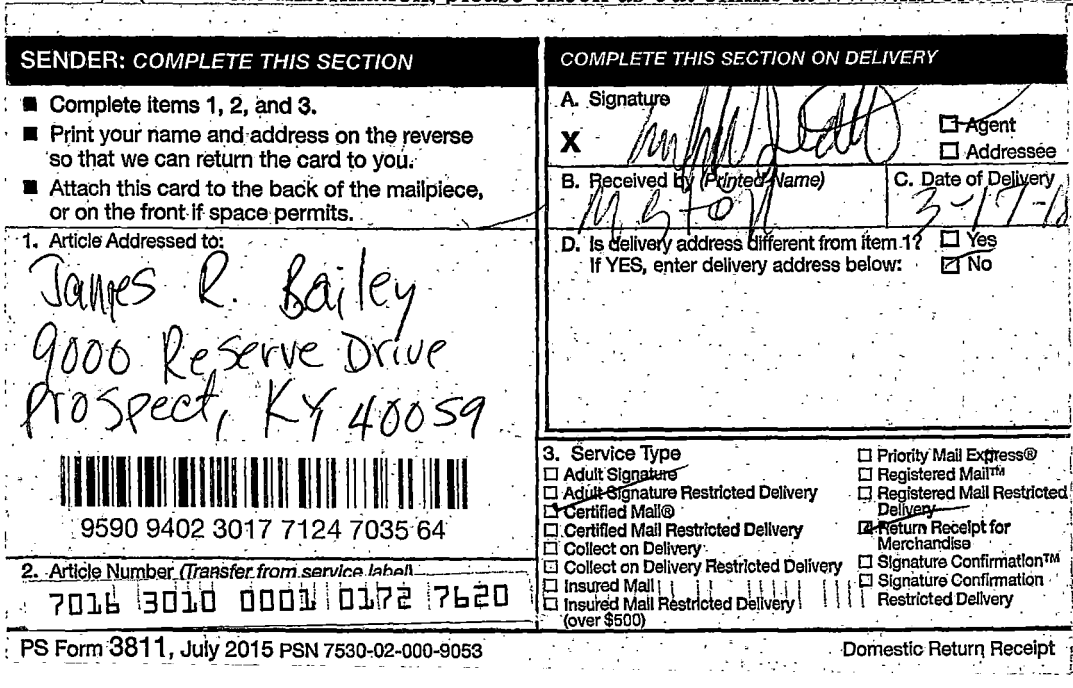

SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

James R. Bailey
9000 Reserve Drive
Prospect, KY 40059

9590 9402 3017 7124 7035 64

2. Article Number (Transfer from service label)
7016 3010 0001 0172 7620

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) M Stoll C. Date of Delivery 3-17-18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☑ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☑ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

March 12, 2018

William T. Brown
5409 Speck Ridge Road
Elkhorn, Kentucky 42733

Public Notice

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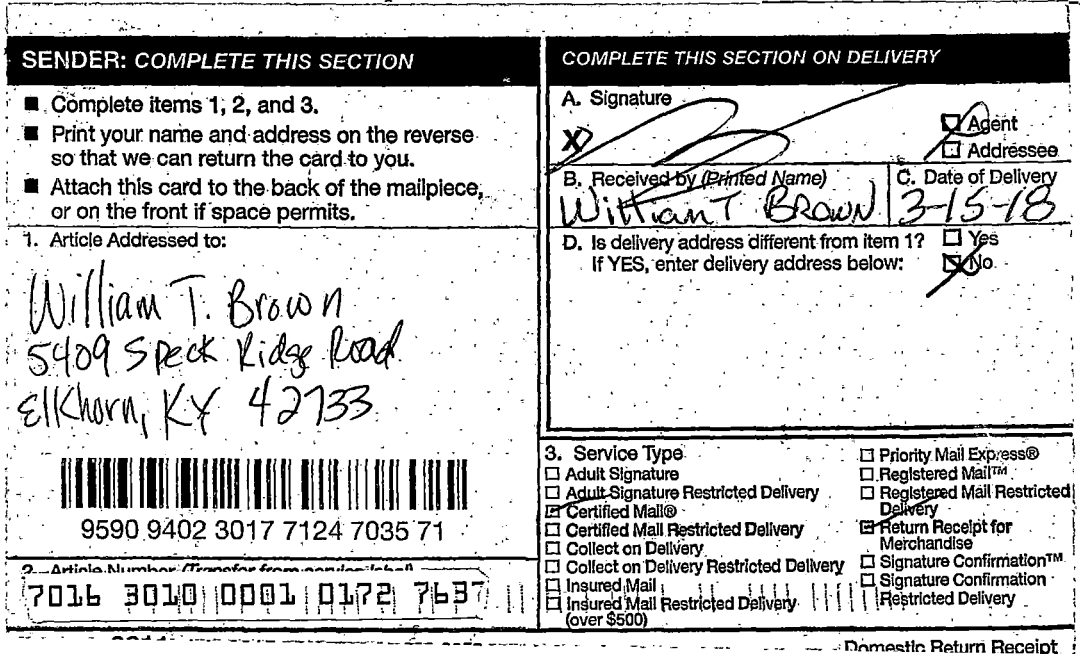

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

William T. Brown
5409 Speck Ridge Road
Elkhorn, KY 42733

9590 9402 3017 7124 7035 71

2. Article Number (Transfer from service label)
7016 3010 0001 0172 7637

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☑ Agent
☐ Addressee

B. Received by (Printed Name) William T Brown
C. Date of Delivery 3-15-18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Adult Signature
☐ Adult Signature Restricted Delivery
☑ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
☐ Priority Mail Express®
☐ Registered Mail™
☐ Registered Mail Restricted Delivery
☑ Return Receipt for Merchandise
☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

Domestic Return Receipt

Dinsmore

Legal Counsel.

DINSMORE & SHOHL LLP
101 South Fifth Street ^ Suite 2500 ^ Louisville, KY 40202
www.dinsmore.com

Kerry W. Ingle
502-540-2354 (Direct Dial)
kerry.ingle@dinsmore.com

March 12, 2018

Via Certified Mail
Honorable Eddie Rogers
Taylor County Judge Executive
203 North Court Street, Suite # 4
Campbellsville, Kentucky 42718

Re: ***Application of Kentucky RSA #4 Cellular General Partnership d/b/a Bluegrass Cellular for a Certificate of Public Convenience and Necessity to construct a new cellular facility to be located at 242 A. Cox Road, Elkorn, Taylor County Kentucky, 42733, before the Public Service Commission of the Commonwealth of Kentucky, Case No. 2018-00092***

Judge Rogers:

Kentucky RSA #4 Cellular General Partnership is applying to the Public Service Commission of Kentucky (the "Commission") for a Certificate of Public Convenience and Necessity to construct and operate a new cellular facility to provide cellular telephone service. This facility will include a 240 foot tower and an equipment shelter to be located at 242 A. Cox Road, Elkhorn, Taylor County, Kentucky, 42718. A map showing the location of the proposed new facility is enclosed.

The Commission invites your comments regarding the proposed construction. You also have the right to intervene in this matter.

Your comments and request for intervention should be addressed to: Executive Director's Office, Public Service Commission, P.O. Box 615, Frankfort, Kentucky 40602. Please refer to Case No. 2018-00092 in your correspondence.

Very Truly Yours,

DINSMORE & SHOHL LLP

Kerry W. Ingle
Paralegal

Enclosure

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Hon. Eddie Rogers
Taylor County Judge Executive
203 N. ~~Green~~ Court Street, Suite 44
Campbellsville, KY 42718

9590 9402 3017 7124 7036 01

2. Article Number (Transfer from service label)
7016 3010 0001 0172 7590

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Debra McNeal ☐ Agent ☐ Addressee

B. Received by (Printed Name) Debra McNeal
C. Date of Delivery 3/15/18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☑ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

7016 3010 0001 0172 7590

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$

Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$

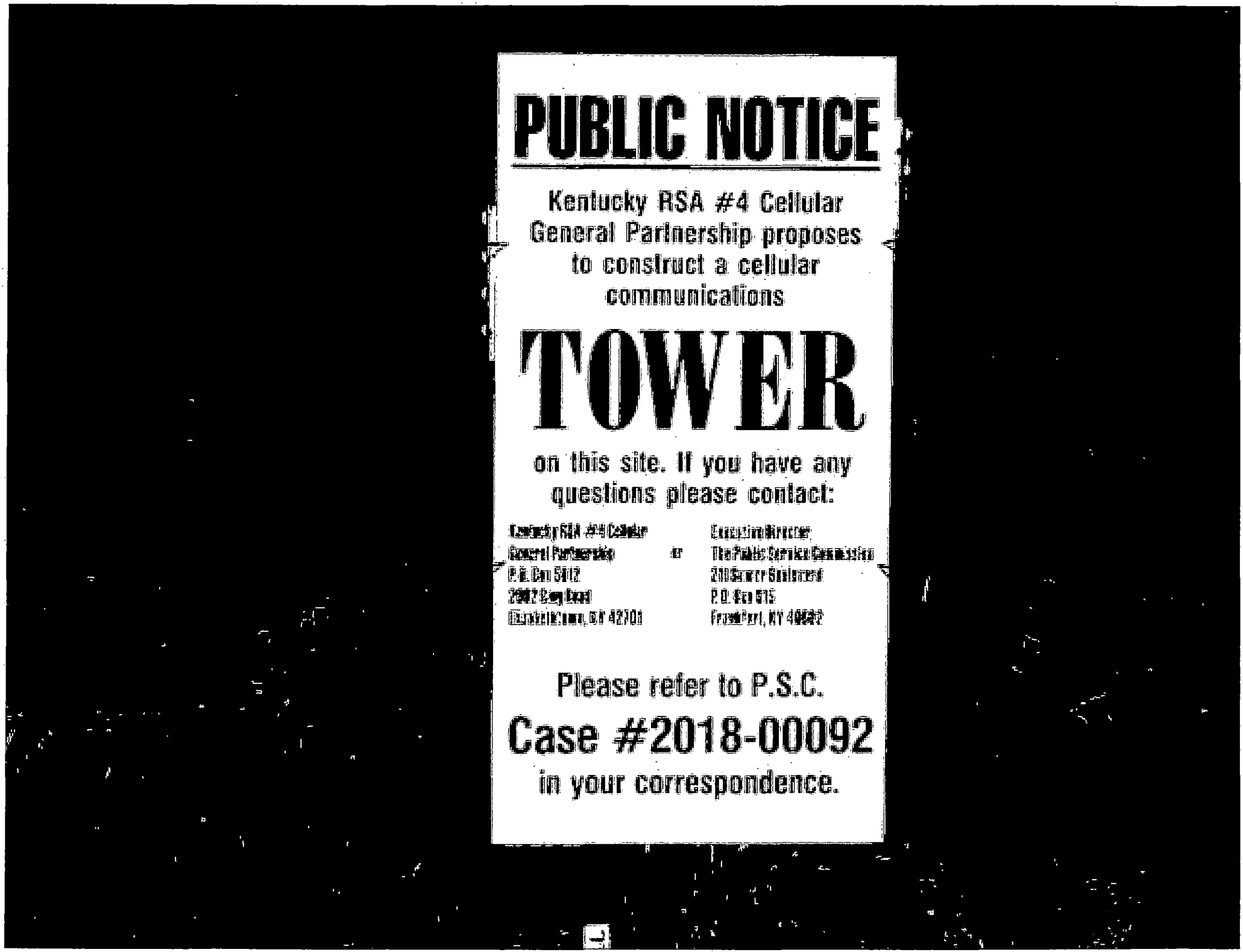
Total Postage and Fees
$

Postmark Here

Sent To Taylor County Judge Exec.
Street and Apt. No., or PO Box No.
City, State, ZIP+4®

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions.

PRESS RELEASE


PUBLIC NOTICE
Kentucky RSA #4 Cellular
General Partnership proposes
to construct a cellular
communications
TOWER
on this site. If you have any
questions please contact:
or
Executive Director
P.O. Box 615
Please refer to P.S.C.
Case #2018-00092
in your correspondence.

CENTRAL KENTUCKY NEWS-JOURNAL
P.O. Box 1138 ◆ Campbellsville, Kentucky 42719 ◆ (270) 465-8111 ◆ www.cknj.com ◆ publisher@cknj.com ◆ Published Mondays, Thursdays

Affidavit of Insertion

Before me, a notary public, personally appeared Geoff Botkin, senior sales consultant, who certifies that any and all advertising material for Dinsmore & Shohl LLP – Mannsville Cell Site application – appeared in the Central Kentucky News-Journal on Thursday, March 15, 2018 and March 22, 2018.

Geoff Botkin
Signature

Senior Sales Consultant
Title

State of Kentucky
County of Taylor
Sworn to and subscribed before me on this day March 30, 2018.

Suzanne Houk
Suzanne Houk, Notary Public

My commission expires January 14, 2021.

Notary ID 570712

FIND AN AD

Agricultural
Farm Equipment 060
Farmers Market 061
Feed, Seed & Hay 063
Horses 057
Lawn & Garden 046
Livestock 059
Machinery & Tools 048
Pet Services 058
Pets 055

Automotive
Auto Parts & Services 040
Autos 035
Autos Wanted 039
Boats 070
Motorcycles & ATVs 080
RVs & Campers 068
Sport Utility Vehicles 037
Trucks 036
Vans 038

Real Estate
Apartments for Rent 120
Auctions 050
Commercial Property 122
Lots & Acreage 132
Mobile Home Lots & Parks 105
Mobile Home Rentals 110
Manufactured Home Sales 115
Real Estate Rentals 125
Real Estate Sales 130
Real Estate Wanted 131
Resorts Vacation Homes 127
Room Mate Wanted 100

Yard Sales
Yard & Garage Sales 090

Employment
Business Opportunities 100
Education 083
Employment 095
Employment Wanted 096
Job Training 094
Merchandise Distributors 098

Odds & Ends
Antiques 063
Appliances 061
Arts & Crafts 068
Building Materials 066
Business & Services Directory 210
Card of Thanks 010
Child Care 097
Christmas Items 067
Computers & Services 033
Entertainment 014
Found Items 022
Free Items 015

Odds & Ends
Good Things to Eat 087
Happy Ads 005
Home Furnishings 082
Homeimprovement 047
Items Wanted 185
Legal Notices 300
Legal Services 007
Loans 009
Lost Items 020
Memory 012
Miscellaneous Items 085
Sporting Goods
Jewelry
Office Equipment
TVs & Electronics
Firewood
Cemetery Plots
Musical Instruments 084
Notices 008
Personals 001
Services & Repairs 045
Situations Wanted 200
Travel 003

To Place an Ad Call Toll Free
1-844-465-1237
WHEN TO CALL

READER (Line) ADS
10 a.m. Tuesday

DISPLAY ADS
5 p.m. Monday

Deadlines are the same for placing or canceling ads.

Call Toll Free
1-844-465-1237

We Accept For Display Ads

For Reader Ads

Kentucky Classified Network

To Place an Ad Call Toll Free
1-844-465-1237

95 Employment

WANTED CLASS A CDL TRUCK DRIVERS
Home Weekends, .40 cents per mile. Also have dedicated lanes available, but hurry! No Touch Freight
Call 270-404-2905

Come to We're HIRING

Full time
Day shift positions
7:00 AM - 4:00 PM
Apply in person
(no phone calls)
Lebanon Oak Flooring Co., LLC
215 Taylor Avenue, Lebanon, KY 40033
Equal Opportunity Employer

99 Caregiver

A PLACE FOR MOM. The nation's largest senior living referral service. Contact our trusted, local experts today! Our service is FREE/no obligation. CALL 1-855-670-0188

95 Employment

Alltech® Operations Associates
Springfield, Kentucky

Alltech is a global leader in the animal health and nutrition industry and among the top ten animal health companies in the world. We have immediate openings at our Springfield, Kentucky facility for production associates.

Responsibilities include: Blending, packaging, handling, palletizing and wrapping all products. Most positions are required to work 12-hour stationary shifts (day or night), including every other weekend.

Requirements include a High School Diploma or GED, the ability to lift 50-55 lbs., and the ability to work any shift. Forklift experience is a plus. Must be able to pass a post-offer physical and drug screen as well as continual random screening. Background checks are also required.

Alltech offers a starting pay of $13.50 per hour and a comprehensive benefits package **effective date of hire!** This includes medical, dental, vision, life insurance, 401K, vacation, and holidays. We are an equal opportunity employer and do not discriminate against otherwise qualified applicants based on race, color, creed, religion, ancestry, age, sex, marital status, national origin, disability or handicap, or veteran status.

Please send your resume to careers@alltech.com or apply in person at 223 Progress Road, Springfield, KY between the hours of 8:00 a.m.-5:00 p.m. Monday through Friday. No phone calls please.

STEWART
HOME & SCHOOL
If TLC is your specialty, we may have the job for YOU!!

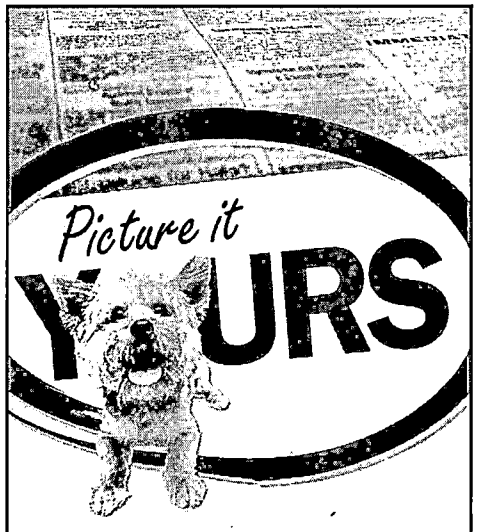
Houseparent (Live-In Caregiver)
Starting $27,000 - $30,000/Year
Plus...Housing Meals and More

Consider a unique and rewarding opportunity as a full-time Houseparent at a private, residential school and home for intellectually-challenged individuals. Ideal full-time candidates would live on the beautiful 850 acre campus in Frankfort, KY. Regular Full-Time Schedule: 3 weeks on, 1 week off (8-hour work schedule per day with overnight (sleep time) required.)

Excellent salary and benefits package with extras: housing, utilities, cable television, meals and use of school fitness center.

For information, please call Machele W. Lawless or Melissa Ford at Stewart Home & School (502) 783-2317 or (502) 783-2325 www.stewarthome.com EOE

95 Employment



You'll love what you find in the Classifieds.

CENTRAL KENTUCKY NEWS-JOURNAL
CLASSIFIEDS
In Print & Online
www.cknj.com

120 Apartments For Rent

102 LAMANDA - 2 bedroom, 2 bath apartment. $600 deposit. $630 rent. 1 yr. lease. Credit check, proof of employment. Not HUD approved. Call Mandy, (270) 469-0010.

SCOTT TERRACE APARTMENTS, 615-617 Collins St. Campbellsville
2 bedroom, all electric, laundry room, playground, near schools and shopping.
Call (270) 403-3545 9am-5pm.

AIR VIEW APARTMENTS
Rental Assistance On Most Units
All electric, fully carpeted, free water, sewer & garbage pickup. Appliances furnished, maintenance provided, on-site laundry facilities, ample parking
For information call:
270-789-2191
Office Hours: Mon. & Wed. 7 a.m. - 2 p.m.
Hearing Impaired Number
1-800-648-6056

NOW ACCEPTING APPLICATIONS FOR:
- Jackson Towers
- Campbellsville Public Housing
- Section 8

Federally subsidized, eligible applicants pay 30% of adjusted income
Housing Counseling Available
For details call: (270) 465-3576 or pickup application packet at 400 Ingram Ave.
Equal Housing Opportunity

132 Lots & Acreage

WANTED STANDING TIMBER
10 acres or more. Nolin River Logging, LLC. Kentucky Master Logger. Many references available. In business since 1983. Call Robert Miller, (270) 528-1537.

Call Toll Free 1-844-465-1237 to place your classified today!

300 Legals

300 Legals

NOTICE
Kentucky RSA #4 Cellular General Partnership is applying to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular radio telecommunications service in rural service area #4 of the Commonwealth of Kentucky (Mannsville Cell Site). The facility is a 240 tower and an equipment shelter to be located at 242 A. Cox Road, Elkhorn, Taylor County, Kentucky, 42733. Your comments and requests for intervention should be addressed to: Executive Director's Office, Public Service Commission, Post Office Box 615, 211 Sower Boulevard, Frankfort, Kentucky 40602. Please refer to Case No. 2018-00092 in your correspondence.

EQUAL HOUSING OPPORTUNITY

All real estate advertising in this newspaper is subject to the Fair Housing Act which makes it illegal to advertise "any preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status or national origin, or an intention to make any such preference, limitation or discrimination." Familial status includes children under the age of 18 living with parents or legal custodians, pregnant women and people securing custody of children under 18.

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis. To complain of discrimination call HUD toll-free at 1-800-669-9777. The toll-free telephone number for the hearing impaired is 1-800-927-9275.

CLASSIFIEDS
Something for Everyone.
NEWS-JOURNAL

Pets · Automotives · Furniture
Rentals · Livestock · More!
Call Today! 1-844-465-1237

Turn Your Clutter INTO CASH!

Advertise Your Garage Sale to Thousands of Readers

Each Kit Includes:
- 2 Fluorescent 11" x 14" All-weather Signs
- 140 Bright Pre-Priced Labels
- Successful Garage Sale Tips
- Pre-Sale Checklist
- Sales Record Form

20 Words or Less Only $19.00
Ad Posted Online at www.cknj.com

Deadline is Tuesday at 10 a.m. for Thursday's paper
ALL ADS MUST BE PRE-PAID

Call Toll-Free 1-844-465-1237
To Schedule Your Ad!

CENTRAL KENTUCKY NEWS-JOURNAL
Serving Campbellsville and Taylor County since 1910

Pick up your kit at our office at 200 Albion Way

Central Kentucky News-Journal CLASSIFIEDS

www.cknj.com

KENTUCKY CLASSIFIED NETWORK
It's Easy, It's Quick, It Sells!

95 Employment

Carbide Industries LLC

Carbide Industries in Louisville, KY, seeking qualified candidates for the following positions:

- Chemical Production $21.90/hr
- Electrical Maintenance $31.24/hr
- Mechanical Maintenance $28.98/hr

HS education & related experience needed. Must be willing and able to work any shift schedule, weekends and holidays. OT required. Reliable transportation will be needed. Uniform provided. Competitive benefits & paid time off after completion of introductory period.

Qualified candidates should send a resume to jobs@carbidellc.com.

Equal Opportunity Employer M/F/D/V

95 Employment

OPENING

FULL TIME LUMBER GRADER
Green Chain, Day Shift, 7am-4pm
Lebanon Oak Flooring CO LLC
215 Taylor Avenue
Lebanon KY 40033
PH: 270-692-2128
Equal Opportunity Employer

Come to We're HIRING

Full time
Day shift positions
7:00 AM - 4:00 PM
Apply in person
(no phone calls)
Lebanon Oak Flooring Co., LLC
215 Taylor Avenue,
Lebanon, KY 40033
Equal Opportunity Employer

95 Employment

Superintendent, Carpenters & Backhoe Operators

To work in Louisville & surrounding counties. Competitive Wages and Benefits.

Send Resume to: tduvall@fmowens.com

or call 502-637-4226

95 Employment

COX INTERIOR, Inc.

Cox Interior is accepting applications for full time employment.

Benefits Include:
Health, Vision, Dental, Short & Long Term Disability, Life Insurance, 401K, 7 Paid Holidays & Paid Vacations, Competitive Pay

Applications Accepted 7:30 am-4:00 pm
1751 Old Columbia Rd. Campbellsville, KY
or Call 270-849-3504
Equal Opportunity Employer

99 Caregiver

A PLACE FOR MOM. The nation's largest senior living referral service. Contact our trusted, local experts today! Our service is FREE/no obligation. CALL 1-855-870-0186

120 Apartments For Rent

102 LAMANDA - 2 bedroom, 2 bath apartment. $600 deposit. $600 rent. 1 yr. lease. Credit check, proof of employment. Not HUD approved. Call Mandy, (270) 469-0010.

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SCOTT TERRACE APARTMENTS,
615-617 Collins St.
Campbellsville
2 bedroom, all electric, laundry room, playground, near schools and shopping.
Call (270) 403-3545
8am-5pm.

AIR VIEW APARTMENTS
Rental Assistance On Most Units
All electric, fully carpeted, free water, sewer & garbage pickup. Appliances furnished, maintenance provided, on-site laundry facilities, ample parking
For information call:
270-789-2191
Office Hours: Mon. & Wed. 7 a.m. - 2 p.m.
Hearing Impaired Number
1-800-648-6048

120 Apartments For Rent

NOW ACCEPTING APPLICATIONS FOR:

- Jackson Towers
- Campbellsville Public Housing
- Section 8

Federally subsidized, eligible applicants pay 30% of adjusted income
Housing Counseling Available
For details call: (270) 465-3576
or pickup application packet at 400 Ingram Ave.

Equal Housing Opportunity

130 Real Estate Sales

PROPERTY FOR SALE
270-465-7348

131 Real Estate Wanted

$$$$$$$$

WANTED 45MINS FROM Campbellsville,Secluded 1 bedroom, 1 bath. Wanted 10+ acres Secluded House/cabin with electric, well, septic. Fixer/upper. Paying cash for right price.
Secluded.....call to send pictures. Gary 270.999.0149

132 Lots & Acreage

BUILDING LOTS
111 Johnson St.,
Campbellsville, Ky.
#29 & #30.
For more info, call (502) 774-5136

Call Toll Free 1-844-465-1237 to place your classified today!

300 Legals

PUBLIC NOTICE

On March 15, 2018, an application was filed by Tri-County Radio Broadcasting Corp. with the Federal Communications Commission in Washington, DC for a new FM translator construction permit to serve Campbellsville, KY operating on Channel 294 with 250 watts ERP from a transmitter site with geographic coordinates of: 37° 20' 07" N / 85° 22' 33"W, rebroadcasting WTCO(AM), 1450 AM, Campbellsville, KY.

NOTICE

Kentucky RSA #4 Cellular General Partnership is applying to the Public Service Commission of Kentucky for a Certificate of Public Convenience and Necessity to construct and operate a new facility to provide cellular radio telecommunications service in rural service area #4 of the Commonwealth of Kentucky (Mannsville Cell Site). The facility is a 240 tower and an equipment shelter to be located at 242 A. Cox Road, Elkhorn, Taylor County, Kentucky, 42733. Your comments and requests for intervention should be addressed to: Executive Director's Office, Public Service Commission, Post Office Box 615, 211 Sower Boulevard, Frankfort, Kentucky 40602. Please refer to Case No. 2018-00092 in your correspondence.

300 Legals

PUBLIC NOTICE

An ordinance amending the Taylor County budget for Fiscal Year 2017-2018, to include unanticipated receipts from the General Fund, Road Fund and Jail Fund totaling $1,301,257.31 and increasing accounts in the same funds, was adopted by the Taylor County Fiscal Court on February 13, 2018. A copy of the adopted ordinance is available for public inspection at the Office of the County Judge/Executive during normal business hours.

PUBLIC NOTICE

An ordinance amending the Taylor County budget for Fiscal Year 2017-2018, to include unanticipated receipts from the ASAP Fund totaling $5,247.29 and increasing accounts in the same fund, was adopted by the Taylor County Fiscal Court on March 13, 2018. A copy of the adopted ordinance is available for public inspection at the Office of the County Judge/Executive during normal business hours.

NOTICE TO BIDDERS

The County of Taylor will receive bids until 4:30 p.m. EST on Friday, April 6, 2018. All bids must be sealed and presented to the office of the County Judge/Executive. On April 10, 2018 at 5:30 p.m. (Special Called Meeting) the bids will be publicly opened and read aloud. Winnings bids will be awarded at the regular meeting at 6:00 p.m.

Bid specification sheets can be picked up from 8:00 a.m. to 4:30 p.m. EST at the County Judge / Executive's office. Bids must be presented on the specification sheets provided for consideration of acceptance.

Bids will be received for the following:

Crushed Limestone – various sizes
Chip and Seal
Hot Mix – FOB plant also lay in place
Road Tile
Petroleum
Pest Control – each bid should list the following area individually with a bid total for all buildings (Courthouse, Animal Shelter, Community Center, Detention Center, Judicial, New Fire Dept and County Road Barn)

Taylor County Fiscal Court reserves the right to reject any or all bids and to waive any irregularities in awarding a contract.

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The County of Taylor County will receive bids until 4:30 p.m. EST on Friday, April 6, 2018. All bids must be sealed and presented to the office of the County Judge/Executive. On April 10, 2018 at 5:30 p.m. (Special Called Meeting) the bids will be publicly opened and read aloud. Winning bids will be awarded at the regular meeting at 6:00 p.m.

Bids specification sheets can be picked up from 8:00 to 4:30 p.m. at the County Judge/Executive's office. Bids must be presented on the specification sheets provided for consideration of acceptance.

Bids should include contracted services for one year.

You are required to call the County Judge's office to schedule a tour of the buildings and to receive specifications. The dates for tours will be between April 2 - April 6, call for a scheduled time.

1. Janitorial – Old Courthouse (203 N. Court Street)
2. Maintenance - Judicial Building (300 E. Main Street)
3. Maintenance - Detention Center Building (120 S. Central Ave)

All contracted companies must supply their own workers compensation (to include self and all employees) and limited liability insurance of ($1,000,000.00) and list Taylor County Fiscal Court as an additional insured and give a copy to Taylor County Fiscal Court, if awarded bid. All contracted companies must be incorporated. If awarded, this will be required before July 1. (Background checks will be required.)

Taylor County Fiscal Court reserves the right to reject any and all bids and to waive any irregularities in awarding a contract.

IMMEDIATE OPENING

REPORTER/ PAGE DESIGNER

Position available
The LaRue County Herald News
Hodgenville, KY

Qualifications: Practical journalism experience preferred, including writing, reporting, design and pagination. Proficient in using InDesign, Photoshop and other computer programs. Strong communication, organization and time management skills. Must meet frequent deadlines. 40-hour full-time position, some nights and weekend work may be necessary. Company benefits available. Paid vacation, holiday, and sick days.

Deadline to apply: March 30, 2018
Apply at www.lcni.com under Job Opportunities.

Interested persons apply at www.lcni.com

SERVPRO
Fire & Water - Cleanup & Restoration™
of Marion, Adair & Russell Counties
1550 Springfield Rd.
Lebanon, KY 40033
Office:270-402-8170
Fax: 270-506-2079

A growing company seeks

PRODUCTION TECHNICIANS.

Experience in water, and/or fire damage restoration is preferred. Candidates with restoration or construction work will be considered. Training is provided and ongoing. Room for advancement for the right professional candidate. Pay commensurate with experience. Company vehicle provided for daytime work use. Benefits available.

Send resume to:
Servpro10020@gmail.com
Equal Employment Opportunity

Advertising Sales Representative
The Kentucky Standard
BARDSTOWN, KENTUCKY

The Kentucky Standard in Nelson County has an immediate opening for a Retail Advertising Sales Representative. This position will be responsible for growing an existing account base and developing new advertising clients for all print and online products. The Kentucky Standard publishes Sunday, Wednesday and Friday with 8,000 circulation.

Qualifications: Candidate must have proven sales experience with excellent results. Strong listening, written and oral communication skills. The ability to develop, plan and implement sales presentations. Commitment to outstanding customer service. Ability to overcome objections and work under considerable amount of pressure meeting deadlines in a fast paced environment. Self-motivated with good organizational skills and an ability to work well in a team environment. Must be computer proficient. Must have reliable transportation, a valid driver's license, automobile insurance with specified coverage amounts, and an acceptable driving record.

Schedule: Position is exempt 40 hours per week Monday-Friday 8 a.m.- 5 p.m. Variable days and hours including some occasional weekend work for sales or event coordination.

Benefits: Position includes a base salary, monthly commissions and bonuses. Landmark Community Newspapers offers a full benefit package including medical, dental and eye care. Paid time off including seven paid holidays, your birthday, vacation and sick time. 401-K company match savings program available.

Interested persons should e-mail cover letter and resume to jslzemore@kystandard.com.

Deadline to apply is March 29, 2018.

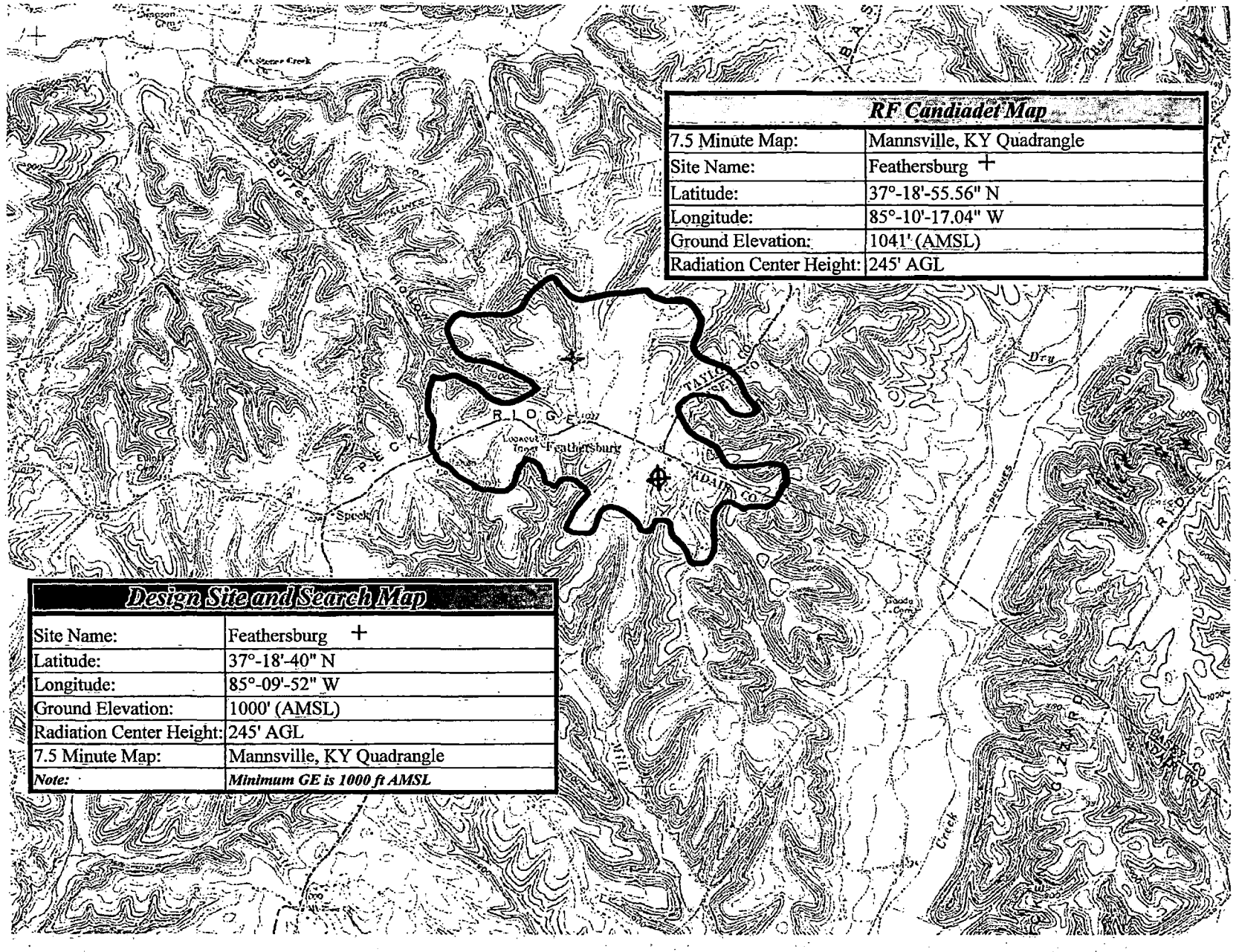
The Kentucky Standard
Get the story. Get The Standard.

Equal Opportunity Employer

EQUAL HOUSING OPPORTUNITY

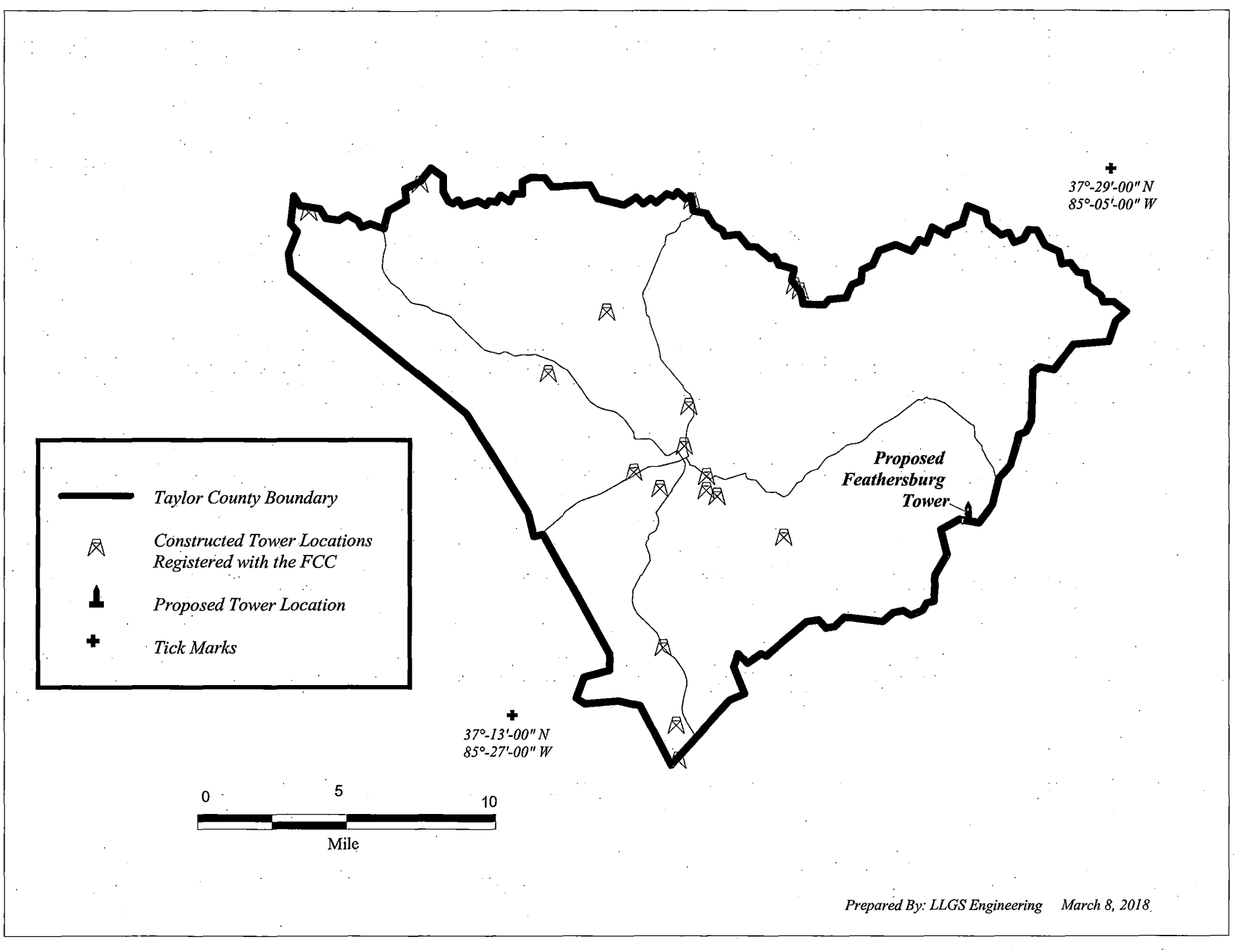
All real estate advertising in this newspaper is subject to the Fair Housing Act which makes it illegal to advertise "any preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status or national origin, or an intention to make any such preference, limitation or discrimination." Familial status includes children under the age of 18 living with parents or legal custodians, pregnant women and people securing custody of children under 18.

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis. To complain of discrimination call HUD toll-free at 1-800-669-9777. The toll-free telephone number for the hearing impaired is 1-800-927-9275.



RF Candiadet Map	
7.5 Minute Map:	Mannsville, KY Quadrangle
Site Name:	Feathersburg +
Latitude:	37°-18'-55.56" N
Longitude:	85°-10'-17.04" W
Ground Elevation:	1041' (AMSL)
Radiation Center Height:	245' AGL

Design Site and Search Map	
Site Name:	Feathersburg +
Latitude:	37°-18'-40" N
Longitude:	85°-09'-52" W
Ground Elevation:	1000' (AMSL)
Radiation Center Height:	245' AGL
7.5 Minute Map:	Mannsville, KY Quadrangle
Note:	***Minimum GE is 1000 ft AMSL***


37°-29'-00" N
85°-05'-00" W
Proposed
Feathersburg
Tower
Taylor County Boundary
Constructed Tower Locations
Registered with the FCC
Proposed Tower Location
Tick Marks
37°-13'-00" N
85°-27'-00" W
0
5
10
Mile
Prepared By: LLGS Engineering
March 8, 2018

Information on Constructed Towers Registered with the FCC
in Taylor County and 1/2 Mile Area Outside of the County Boundary

FCC ASR Nunber	*North Latitude*				*West Longitude*				*Nearest City*	*State*	*Tower Owner*
1042222	37	19	24	N	85	19	29	W	Campbellsville	KY	Global Tower, LLC. through American Towers, LLC
1043056	37	23	0.2	N	85	25	41.9	W	Campbellsville	KY	Kentucky RSA 4 Cellular General Partnership DBA BLUEGRASS CELLULAR
1043442	37	19	38	N	85	21	35	W	Campbellsville	KY	City of Campbellsville
1044280	37	24	48	N	85	23	33	W	Campbellsville	KY	Kinder Morgan - TGP
1044516	37	28	32.2	N	85	30	23.9	W	Hodgenviile	KY	EAST KENTUCKY POWER COOPERATIVE, INC
1044801	37	25	25	N	85	16	27	W	Spurlington	KY	Kntucky, Commonwealth of DBA = KY EMERGENCY WARNING SYSTEM KEWS
1046182	37	20	7	N	85	22	33	W	Campbellsville	KY	First Corbin Realty, LLC
1052450	37	28	3	N	85	20	25	W	Finley	KY	P & B TOWERS, LLC
1214265	37	19	34.2	N	85	19	52.8	W	Campbellsville	KY	Kentucky RSA 4 Cellular General Partnership d/b/a Bluegrass Cellular
1218250	37	19	59.2	N	85	19	52.8	W	Campbellsville	KY	AMERICAN FAMILY ASSOCIATION
1227279	37	27	43.2	N	85	34	27.8	W	Gotton	KY	Kentucky RSA 4 Cellular General Partnership d/b/a Bluegrass Cellular
1241661	37	14	59	N	85	21	27.8	W	Campbellsville	KY	Kentucky RSA 4 Cellular General Partnership
1242907	37	20	53	N	85	20	42	W	Campbellsville	KY	SBA Infrastructures, LLC
1243210	37	12	42.6	N	85	20	58.8	W	Columbia	KY	SBA Infrastructures, LLC
1265531	37	18	12.2	N	85	17	2.9	W	Campbellsville	KY	SBA Monarch Towers II, LLC
1268209	37	11	40.7	N	85	20	55.2	W	Columbia	KY	Cumberland Cellular Partnership
1278437	37	25	34	N	85	16	39	W	MARION CO	KY	Thomas C Peavy
1294366	37	22	2.2	N	85	20	31.3	W	Campbellsville	KY	Kentucky Utilities Company

ASR Registration Search

Registration 1306590

Map Registration

Registration Detail

Reg Number	1306590	Status	Granted
File Number	A1102160	Constructed	
EMI	No	Dismantled	
NEPA			

Antenna Structure

Structure Type LTOWER - Lattice Tower

Location (in NAD83 Coordinates)

Lat/Long	37-18-55.6 N 085-10-17.0 W	Address	Feathersburg, 242 A. Cox Road
City, State	Elkhorn , KY		
Zip	42733	County	TAYLOR
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
317.3	77.7
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
395.0	73.2

Painting and Lighting Specifications

FAA Chapters 4, 8, 12
Paint and Light in Accordance with FAA Circular Number 70/7460-1L

FAA Notification

FAA Study	2018-ASO-4961-OE	FAA Issue Date	04/19/2018

Owner & Contact Information

FRN	0001786722	Owner Entity Type	General Partnership

Owner

KENTUCKY RSA 4 CELLULAR GENERAL PARTNERSHIP
Attention To: Jill Vice
P.O. Box 5012
ELIZABETHTOWN , KY 42702

P: (502)769-0339
F:
E: jvice@bluegrasscellular.com

Contact

Gist , Pamela L Esq
8300 Greensboro Drive
Suite 1200
Tysons , VA 22102

P: (703)584-8665
F:
E: pgist@fcclaw.com

Last Action Status

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance	)	WT Docket No. 08-165

DECLARATORY RULING

Adopted: November 18, 2009 **Released:** November 18, 2009

By the Commission: Chairman Genachowski and Commissioners Copps, McDowell, Clyburn, and Baker issuing separate statements.

TABLE OF CONTENTS

I. INTRODUCTION

1. This Declaratory Ruling by the Commission promotes the deployment of broadband and other wireless services by reducing delays in the construction and improvement of wireless networks. Wireless operators must generally obtain State and local zoning approvals before building wireless towers or attaching equipment to pre-existing structures. To encourage the expansion of wireless networks, Congress has required these entities to act "within a reasonable period of time" on such requests.[1] In many cases, delays in the zoning process have hindered the deployment of new wireless infrastructure.[2]

[1] 47 U.S.C. § 332(c)(7)(B)(ii).

[2] *See* para. 33, *infra.*

Commission, should determine whether such processing is reasonable based on the individual facts in each case.[87] They argue that some applications require greater time to consider than others, and that sufficient time is needed to compile a written record as required by Section 332(c)(7)(B)(iii)[88] and to seek collaborative solutions with wireless providers and the surrounding communities impacted by the proposed wireless service facilities.[89] Finally, they assert that rigid timeframes do not account for time to amend applications that are often incomplete when submitted by wireless providers, and may provide incentive for wireless providers to submit incomplete applications and to delay correcting them until the application is "deemed granted" (as proposed by the Petitioner).[90]

29. Wireless providers argue that the Commission has the authority to define "reasonable period of time" and "failure to act," and that such definition is necessary because some State and local governments are unreasonably delaying action on their applications.[91] They further contend that without defined timeframes, it is unclear when governments have failed to act and when they may go to court for redress.[92] They claim that the Petitioner's proposed timetables are reasonable.[93]

30. State and local government commenters also urge the Commission to reject both the "deemed granted" proposal and the alternative presumption in favor of injunctive relief proposed in the Petition.[94] They argue that Congress directed applicants aggrieved by a failure to act to seek a remedy in court, and assigned to the courts the task of deciding the appropriate remedy.[95] Moreover, they assert, under the Petitioner's proposed regime, local governments would have no say over siting of facilities once an application is deemed granted, even where safety factors justify modification or rejection of the facility.[96]

31. Sprint Nextel proposes that the Commission adopt the alternative remedy in the Petition. It argues that a presumptive grant is consistent with the Commission's approach in the *Local Franchising Order*, in which the Commission did not deem a franchise application granted, but provided for an interim authorization, upon the local government's failure to act upon an application in a timely fashion.[97] The Petitioner argues in its Reply that because a State or local authority's failure to act within a reasonable time is specifically declared unlawful under the statute, an automatic grant is appropriate.[98]

32. *Discussion.* The evidence in the record demonstrates that personal wireless service providers have often faced lengthy and unreasonable delays in the consideration of their facility siting applications, and that the persistence of such delays is impeding the deployment of advanced and

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[87] *See, e.g.*, NATOA et al. Comments at 12-14; City of Philadelphia Comments at 3-4; Florida Cities Comments at 2-4; City of Dublin, OH Comments at 2-3.

[88] 47 U.S.C. § 332(c)(7)(B)(iii) (denial of a personal wireless service facility siting application must be rendered "in writing and supported by substantial evidence contained in a written record").

[89] *See, e.g.*, California Cities Comments at 13-16; Florida Cities Comments at 15-20.

[90] *See, e.g.*, Fairfax County, VA Comments at 13; City of Bellingham, WA Comments at 1-2; Michigan Municipalities Comments at 19-20.

[91] *See, e.g.*, Sprint Nextel Comments at 4-5; CalWA Comments at 2-3; T-Mobile Comments at 6-9.

[92] *See, e.g.*, CalWA Comments at 4; Rural Cellular Association Comments at 4-5; T-Mobile Comments at 9-10.

[93] *See, e.g.*, Rural Cellular Association Comments at 6; T-Mobile Comments at 11-12; MetroPCS Comments at 7-8.

[94] *See, e.g.*, California Cities Comments at 17-21; SCAN NATOA Comments at 10-12.

[95] *See, e.g.*, Florida Cities Comments at 6; University of Michigan Comments at 3-4.

[96] *See, e.g.*, Stokes County, N.C. Comments at 2.

[97] Sprint Nextel Comments at 9-11 (*citing Local Franchising Order*, 22 FCC Rcd 5101, 5139 (2007)).

[98] CTIA Reply Comments at 26.

emergency services. To provide guidance, remove uncertainty and encourage the expeditious deployment of wireless broadband services, we therefore determine that it is in the public interest to define the time period after which an aggrieved party can seek judicial redress for a State or local government's inaction on a personal wireless service facility siting application. Specifically, we find that a "reasonable period of time" is, presumptively, 90 days to process personal wireless service facility siting applications requesting collocations, and, also presumptively, 150 days to process all other applications. Accordingly, if State or local governments do not act upon applications within those timeframes, then a "failure to act" has occurred and personal wireless service providers may seek redress in a court of competent jurisdiction within 30 days, as provided in Section 332(c)(7)(B)(v). The State or local government, however, will have the opportunity to rebut the presumption of reasonableness.[99]

33. Need for Action. Initially, we find that the record shows that unreasonable delays are occurring in a significant number of cases. The Petition states that based on data the Petitioner compiled from its members, there were then more than 3,300 pending personal wireless service facility siting applications before local jurisdictions.[100] "Of those, approximately 760 [were] pending final action for more than one year. More than 180 such applications [were] awaiting final action for *more than 3 years.*"[101] Moreover, almost 350 of the 760 applications that were pending for more than one year were requests to collocate on existing towers, and 135 of those collocation applications were pending for more than three years.[102] In addition, several wireless providers supplemented the record with their individual experiences in the personal wireless service facility siting application process. For example, Sprint Nextel asserts that the typical processing times for personal wireless service facility siting applications range from 28 to 36 months in several California communities.[103] Verizon Wireless asserts that "in Northern California, 27 of 30 applications took more than 6 months, with 12 applications taking more than a year, and 6 taking more than two years to be approved"; and that "in Southern California, 25 applications took more than two years to be approved, with 52 taking more than a year, and 93 taking more than 6 months."[104] NextG Networks describes delays of 10 to 25 months for its proposals to place facilities in public rights-of-way, and states that such delay occurred even when NextG Networks merely sought to replace old equipment.[105] Moreover, two wireless providers offer evidence that the personal wireless service facility siting applications process is getting longer in several jurisdictions. For example, T-Mobile contends that in Maryland, the typical zoning process went from two months to nine months in four years and in Florida, from two months to nine months in two years.[106] Verizon Wireless notes that in

[99] We note that the operation of this presumption differs significantly from the Petitioner's alternative proposal that the Commission establish a presumption in favor of a court-ordered injunction granting the application. Under the approach we are adopting today, if a court finds that the State or local authority has failed to rebut the presumption that it failed to act within a reasonable time, the court would then review the record to determine the appropriate remedy. The State or local authority's exceeding a reasonable time for action would not, in and of itself, entitle the siting applicant to an injunction granting the application. *See* para. 39, *infra*.

[100] Petition at 15.

[101] *Id.* (emphasis in original).

[102] *Id.* The Petition claims that in "many jurisdictions" it was taking longer to obtain personal wireless service facility approvals than in prior years. *Id.*

[103] Sprint Nextel Comments at 5. Sprint Nextel also notes problems with processing in a New Jersey community. *Id.* The California Wireless Association also describes several instances of delays that ranged from 16 months to two years in California. CalWA Comments at 2-3.

[104] Verizon Wireless Comments at 6-7. T-Mobile also cites specific problems it encountered in four States. T-Mobile Comments at 7-9. Likewise, MetroPCS describes its experience with application processing delays in four jurisdictions. MetroPCS Comments at 8-12.

[105] NextG Networks Comments at 5-8.

[106] T-Mobile Comments at 6. In its comments, T-Mobile also references a collocation application submitted in LaGrange, New York, that was denied following a lengthy review process, despite the fact that the existing tower

(continued....)