

(McBRAYER)

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March 19, 2015

RECEIVED

MAR 19 2015

PUBLIC SERVICE
COMMISSION

Via Hand Delivery

Mr. Jeff R. Derouen
Executive Director
Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40602-0615

Case No. 2015-00090

**RE: Tower Access Group, LLC, Application for Declaratory Order as to
Jurisdiction over a 190-foot Monopole Constructed on the Campus of
Eastern Kentucky University**

Dear Mr. Deroeun:

Enclosed for filing with the Commission, please find one original and 10 copies of the above-referenced application. If you need any additional information, please do not hesitate to contact the undersigned. Thank you.

Sincerely,



W. Brent Rice
Counsel for Tower Access Group, LLC

WBR/dkw
Enclosures

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION
CASE NO. 2015-00090

ORIGINAL

IN RE: TOWER ACCESS GROUP, LLC, APPLICATION FOR
DECLARATORY ORDER AS TO JURISDICTION OVER A 190-FOOT
MONOPOLE CONSTRUCTED ON THE CAMPUS OF EASTERN
KENTUCKY UNIVERSITY

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PUBLIC SERVICE
COMMISSION

APPLICATION FOR AN EXPEDITED DECLARATORY ORDER

Comes Applicant, Tower Access Group, LLC ("TAG"), by and through counsel, and pursuant to 807 KAR 5:001 §19, hereby applies to the Kentucky Public Service Commission ("the Commission") for a Declaratory Order with respect to the jurisdiction of the Commission over the construction of a communication tower (the "monopole") located on the campus of Eastern Kentucky University. In support of this application, TAG respectfully states the following facts upon which the Application is based, and further states its proposed resolution or conclusion:

I. Statement of Fact and Background Information.

1. TAG's complete name, address and telephone number are: Tower Access Group LLC, 108 Forbes Court, Suite 1, Richmond, Kentucky 40475, (859) 623-5513.
2. TAG is a Delaware limited liability company engaged in the business of wireless communication tower construction and their operation, and is authorized to conduct business in the Commonwealth of Kentucky. A copy of the Certificate of Authority issued by the Delaware Secretary of State and the Kentucky Secretary of State are attached. (See Exhibit "A.").

3. On September 19, 2012, Eastern Kentucky University (“EKU”) issued a Request for Proposal (“RFP”) for the construction of a monopole on its campus. (see **Exhibit “B”**). The RFP indicated that EKU intended the monopole to “expand cellular telephone service on campus and surrounding areas,” but the RFP also expressly stated that, upon approval by EKU, the monopole could be used for “other service[s]” than cellular telephone service. (Exhibit B at Section 3.2(A)).

EKU ultimately awarded the contract from the RFP to TAG on March 7, 2013. After lengthy negotiations, the two parties executed a Master Ground Lease Agreement in November of 2013. (See **Exhibit “C”**). This lease agreement is the primary document governing the relationship between EKU and TAG – including TAG’s use of EKU’s land and the “improvements” that TAG is permitted to make on the land. The Master Lease Agreement defines “improvements” as “a wireless communications facility, including tower structures, equipment shelters, meter boards and related improvements and structures and uses incidental thereto.” (Exhibit C at Section 1).

4. After this lease agreement was completed, TAG began undertaking activity necessary to begin construction of the monopole on the campus of Eastern Kentucky University. Among other things, TAG secured a site development survey (see **Exhibit “D”**), a monopole and foundation design (see **Exhibit “E”**), a geotechnical investigation report (see **Exhibit “F”**), and determinations from the Federal Aviation Association and the Kentucky Airport Zoning Commission (see **Exhibit “G”**). TAG also contacted the City of Richmond Department of Planning and Zoning, which informed TAG that there were no zoning regulations or permit requirements from the City of Richmond that were applicable to the monopole. (See **Exhibit “H”**). TAG also

submitted design proposals to the Kentucky Public Protection Cabinet Department of Housing, Buildings and Construction and received authorization to proceed with construction. (See **Exhibit "I"**).

5. Importantly, much of the activity noted above took place before any wireless carrier had entered into an agreement to utilize the monopole. The first wireless carrier to enter into a sublease for use of the monopole was AT&T in August of 2014, ten months after the Master Lease Agreement was entered into by TAG and ECU. Construction began on the site on or about September 22, 2014 and the foundation for the monopole was constructed in late October of 2014 after TAG received the approval letter from the Public Protection Cabinet Division of Building Code Enforcement to proceed with construction. The monopole is now fully constructed and the facility is complete; however, no utilities have been connected to the site. The monopole is located at 4409 Kit Carson Drive, Richmond, Kentucky 40475, and has the following coordinates: Latitude: N 37° 43' 52.06"; Longitude: W 84° 17' 52.57".

6. TAG did not petition the Public Service Commission for a Certificate of Public Convenience and Necessity before constructing the monopole for two primary reasons. First, TAG was advised by counsel who informed it was unaware of any application ever being filed with the Commission solely by an independent tower company. Second, TAG believed, based on a prior Commission Staff opinion letter, that it was the internal policy of the Commission to defer to local planning commissions to regulate the construction of telecommunications towers built within the geographic boundaries of its authority. This belief is not unreasonable. TAG's counsel contacted the City of Richmond's Planning Commission and Division of Code Enforcement. As

evidenced by a letter provided by the City of Richmond, city officials also believed that they had jurisdiction over this matter. (See **Exhibit “J”**).

7. Because TAG needed to provide verification to a third party that the Commission had no jurisdiction in this circumstance, on October 22, 2014, TAG's counsel contacted the Commission's legal department seeking written confirmation that it had no jurisdiction over this matter. The Commission Staff Opinion was issued on November 13, 2014, and unexpectedly concluded that the Commission did have jurisdiction over this matter.

8. On December 1, 2014, TAG asked for reconsideration of that opinion, including additional information as to the fact that TAG was not a utility nor did it have an agreement with a utility at the time it was undertaking activity necessary to begin construction of the monopole. Further, TAG requested that, if the Commission Staff would not reverse their opinion, they would provide some guidance as to a possible method in which this monopole could come into compliance. On March 9, 2015, the Commission Staff responded that, although this was a unique situation and that a tower construction company had never filed a CPCN on its own, the Staff upheld its prior opinion and did not provide TAG with any guidance as to how to bring the monopole into compliance because it had never permitted a CPCN in this situation in the past. The response also stated that the Commission retained the right to investigate and assess penalties against it for violations based on the monopole.

9. TAG met with several members of the Commission Staff in an informal meeting on March 13, 2015. At that meeting, the Commission acknowledged the uniqueness of this case, noted potential gaps in the statutory and regulatory framework

related to the circumstances of this case, and invited TAG to request a declaratory order addressing these issues, which is the subject of the instant application.

II. Standard for Application for Declaratory Order.

Applications for Declaratory Orders are governed by 807 KAR 5:001 §19. Specifically, that regulation provides that “the commission may, upon application by a person substantially affected, issue a declaratory order with respect to the jurisdiction of the commission, the applicability to a person, property, or state of facts of an order or administrative regulation of the commission or provision of KRS Chapter 278, or with respect to the meeting and scope of an order or administrative regulation of the commission or provision of KRS Chapter 278.” Pursuant to 807 KAR 5:001 §19, the Application must be in writing, contain a complete statement of the facts, fully disclose the applicant's interest, identify all related statutes and regulations, and state the applicant's proposed resolution.

III. Arguments and Proposed Alternative Resolutions

1. The Public Service Commission does not have jurisdiction to require TAG to receive a CPCN with respect to the monopole because that structure is located within the territorial boundaries of the City of Richmond

According to governing statutes, regulations, case law, and policy statements from the Commission, the City of Richmond has jurisdiction over cell towers constructed within the geographic boundaries of its city, including the monopole at issue in this case.

KRS 100.987 provides that local planning commissions may plan for and regulate the siting of cellular antenna towers within its jurisdiction. KRS 100.987(1). The Kentucky legislature has specifically directed companies that are in the business of providing required infrastructure in a jurisdiction that has adopted planning and zoning

regulations to seek approval of those local authorities. Specifically, KRS 100.987(2) states in relevant part as follows:

Every utility or a company that is engaged in the business of providing the required infrastructure to a utility that proposes to construct an antenna tower for cellular telecommunications services or personal communications services within the jurisdiction of a planning unit that has adopted planning and zoning regulations in accordance with this chapter shall....[meet certain requirements].

KRS 100.987(2). The Public Service Commission only has jurisdiction in the event that “an applicant proposes construction of an antenna tower for cellular telecommunications services or personal communications services which is to be located in an area outside the jurisdiction of a local planning commission...” KRS 278.650.

In *Kentucky Public Service Com’n v. Shadoan*, the Kentucky Supreme Court has interpreted these provisions to mean that when an area in question contains a local planning commission everything within the geographic boundaries of that area are governed by the cell tower regulations of that area rather than the Public Service Commission. 325 S.W.3d 360, 365 (2010). Specifically, the Kentucky Supreme Court stated as follows:

Rather, we read the word “shall” in section (2) of KRS 100.987, in requiring “every” applicant to submit a copy of the application “to the planning commission of the affected planning unit[,]” as demonstrating the Legislature’s intent that jurisdiction over cellular tower siting and construction would always be in the local planning commission if the area in question has such a commission. See *Kentucky Ins. Guar. Ass’n v. Jeffers ex rel. Jeffers*, 13 S.W.3d 606 (Ky.2000) (cardinal rule of statutory construction is to give effect to the intent of the Legislature). **This interpretation is more consistent with KRS 278.650, in that it gives the phrase “in an area outside the jurisdiction of a planning commission” its plain meaning of outside the geographical jurisdiction of the local planning commission.** See *Devasier v. James*, 278 S.W.3d 625 (Ky.2009) (plain, commonly accepted meaning of language in statute controls). The mandatory “shall” language in KRS 100.987(4), regarding the planning commission’s duty to review and

approve or disapprove each application, further evinces an intent to vest jurisdiction of cellular tower applications in the local planning commission

....

Pursuant to KRS 100.203, the planning unit may choose to regulate one type of activity or structure, but not another. Thus, our reading of the word "may" in KRS 100.987(1) is that a planning unit has the discretion to enact regulations pertaining to cellular antenna towers, as they do with any other activities or structures, but this exercise of discretion is not a condition of jurisdiction. **If the area of the proposed cellular tower has a planning unit that has adopted planning and zoning regulations, the jurisdiction over matters relating to cellular tower placement and construction rests with that planning commission, not the PSC, regardless of whether the planning unit has enacted regulations specifically relating to cellular towers.** If there are no regulations specifically pertaining to cellular towers, as in the present case, the applicant will, however, still need to meet the general restrictions of the particular zone in which the proposed cell tower is to be constructed, e.g. permitted uses within the zone, height and setback requirements, etc.

Id. Thus, the Kentucky Supreme Court has ruled – without carving out an exception – that cell towers being constructed within the boundaries of a local government having adopted planning and zoning are not subject to the jurisdiction of the Commission, but of the local government.

In his dissent, Justice Will T. Scott recognized the logical implication of the Kentucky Supreme Court's broad ruling – that the majority's opinion vastly reduces the jurisdiction of the Commission as it relates to cell towers since most areas are located inside the boundaries of municipalities with local planning commissions.

My belief that the majority misconstrues KRS 100.987 is bolstered by the question begged by the majority's opinion: **when does the PSC have jurisdiction over the placement of cellular towers?** Applying the rule announced by the Court today, and given the fact that every single jurisdiction in this Commonwealth has a fiscal court or a planning unit as defined in KRS 100.111,1 the answer is **never.**

Id. at 367 (Scott, J., dissenting).

This rationale is seemingly consistent with previous policy advice that the Commission Staff has provided counsel for TAG. On April 12, 2006, counsel for TAG contacted the Commission Staff of the Commission to inquire whether its website reflects whether a city or county has an ordinance about cell towers. Kyle Willard of the Commission's Division of Engineering responded stating, in relevant part as follows:

At one time the Commission tracked local planning units that adopted regulations/ordinances to regulate cellular/PCS antenna tower construction. However, the law that required such filings was superseded by new legislation. Under the current law, tower construction within the jurisdiction of a local planning unit must comply with the local requirements, whether or not the local planning unit has adopted regulations to regulate the construction. **Only if there is no planning unit, must an application be filed with the Public Service Commission.**

(See Exhibit "K").

Additionally, this was the understanding of the City of Richmond's Planning Commission and Division of Code Enforcement. As memorialized in the letter dated November 17, 2014, the City of Richmond stated, "[t]he proposed tower located at 4409 Kit Carson Drive is on property owned by ECU, an entity of the state, within Richmond city limits. Therefore, the Richmond Planning Commission had jurisdiction over this property." (See Exhibit "J").

As demonstrated by the aforementioned statutes, case law, and policy directives, the Public Service Commission does not have jurisdiction to require submission of a CPCN within the territorial boundaries of the City of Richmond. Therefore, the Public Service Commission should enter an Order declaring that the City of Richmond, not the Public Service Commission, has jurisdiction over this matter.¹

¹ It is true that KRS 100.361 provides that land use proposals involving agencies or instrumentalities of the State do not require the approval of the local planning commission. However, this

2. The Public Service Commission does not have jurisdiction to require TAG to receive a CPCN with respect to the monopole because TAG is not a utility and had not entered into an agreement with a utility when it began undertaking activity necessary to begin construction of the monopole.

The Commission lacks jurisdiction over this matter not only because of *where* the monopole was being constructed, but, as demonstrated in the factual background provided above, in and around the time of the issuance and award of the RFP and the signing of the Master Lease Agreement, TAG and its monopole were neither the *type of entity* nor *the type of structure* that the Commission typically regulates under its statutory and regulatory framework.

KRS 278.650 provides that "if an applicant proposes construction of an antenna tower for cellular telecommunications services or personal communications services which is to be located in an area outside the jurisdiction of a planning commission, the applicant shall apply to the Public Service Commission for a certificate of public convenience and necessity pursuant to KRS 278.020(1), 278.665, and this section." KRS 278.665(1) requires the Commission to promulgate regulations to govern the applications to construct cell towers. Those regulations, codified in 807 KAR 5:063, apply without exception to utilities only. See, e.g., 807 KAR 5:063 (1) ("To apply for a certificate of public convenience and necessity, a utility proposing to construct a

fact does not change the clear legal conclusion of the statutes and cases cited above that clearly show that the local planning commission has jurisdiction over this matter. As stated by the City of Richmond, "although the tower in question is within the Richmond city limits and the Planning Commission has jurisdiction to regulate cell towers within the city's boundary, the tower does not require the Planning Commission's approval in this case because the property is owned by an instrumentality of the State." This may illuminate a gap in the governing statutes, but the remedy for that is not punishment of TAG, but amending the statutes.

telecommunications antenna tower in an area which is not within the jurisdiction of a planning unit that has adopted planning and zoning administrative regulations in accordance with KRS Chapter 100, shall file with the Public Service Commission the following information...”).

The regulations define “utility” to have the same meaning as the one set forth in KRS 278.010(3)(e), which in relevant part states as follows: “‘Utility’ means any person....who owns, controls, operates, or manages any facility used or to be used for or in connection with....[t]he transmission or conveyance over wire, in air, or otherwise, of any message by telephone or telegraph for the public, for compensation...” KRS 278.010(3)(e). While it is easy to speculate about who and what the General Assembly meant by this definition, it has left a clear indication of at least one entity that it does not consider to be a utility. In KRS 100.987, before providing certain requirements that must be shown to local planning commissions before siting cellular antenna towers within their jurisdiction, the General Assembly stated as follows:

Every utility *or a company that is engaged in the business of providing the required infrastructure to a utility* that proposes to construct an antenna tower for cellular telecommunications services or personal communications services within the jurisdiction of a planning unit that has adopted planning and zoning regulations in accordance with this chapter shall....[certain requirements are articulated].

KRS 100.987(2) (emphasis added). Thus, it is clear from this provision that a company that is engaged in the business of providing required infrastructure to a utility is something different than the utility itself under Kentucky statute. It is equally clear that, while such companies may be required to submit to the jurisdiction of local planning commissions, they are not subject to the jurisdiction of the Public Service Commission.

As is made clear from the facts articulated above, TAG is a company that is engaged in the business of providing the required infrastructure to a utility. Not only is TAG not a utility, but in this circumstance it also was not in a formal relationship with a utility at the time that it answered the RFP, entered into the Master Lease Agreement, and began required preparation to construct the monopole. It is true that TAG and EKU were hopeful that they would be able to recruit cellular telephone companies to lease tower space to provide wireless services, but at the beginning of the venture and while TAG was securing the other necessary approvals, the venture was speculative. Further, the RFP and Master Lease Agreement contemplates other types of communications companies may locate on the monopole.

Thus, had TAG applied to the Commission for a Certificate of Public Convenience and Necessity at the time that it answered the RFP, entered into the Master Lease Agreement, and began required preparation to construct the monopole, it would have done so as something other than a utility and with no evidence that cellular telephone services would ever be provided from the monopole. As conceded by the Commission Staff in its recent opinion letter, had TAG applied as the sole applicant to the Commission under these circumstances, it would have been the first to ever do so. Specifically, the Commission Staff opinion letter stated that “Commission Staff acknowledges that **in all prior CPCN cases for communications towers, a utility was individually or jointly an applicant.**”

The reason that no tower construction companies have ever applied for a CPCN on their own is because they are not and have not ever been required to submit to the jurisdiction of the Commission and file an application for a CPCN when it has not

entered into an agreement with a telecommunications company. Certainly, no one would argue that TAG would have needed to apply to the Commission in the event the first communication company to sublease space on the monopole was the local radio station or 911 agency. Any cellular telephone company choosing to collocate on the monopole subsequently would merely have to provide notice to the Commission of its intent to locate on the monopole. This is the Commission's long standing policy.

Throughout the pendency of this matter, the Commission Staff seemed concerned that issuing an opinion such as this would encourage actual utilities to circumvent the CPCN process. However, this concern would seem to affect a very small subset of potential applicants. Under most circumstances, companies like TAG will still be required by KRS 100.987 to apply with the local planning commissions and obtain approval from the Public Protection Cabinet Department of Housing, Buildings and Construction.

Therefore, as TAG is not a utility and did not have an agreement with a utility at the relevant time, the Public Service Commission had no jurisdiction to require them to take the unprecedented action of filing for a CPCN as an individual tower construction company. At most, TAG, or the appropriate wireless carrier, should be required to provide the Commission with notice at the time a cellular telephone company chooses to go on the monopole. Therefore, the Public Service Commission should enter an Order declaring that TAG was not required to apply for a CPCN.

3. In the alternative, the CPCN should take no adverse action against TAG and enter an order declaring that the monopole is available and suitable for collocation by utilities and not subject to any penalties from this Commission.

Even if the Commission were to find that TAG is within its jurisdiction, it is clear from the facts articulated above that TAG had no improper intention of circumventing regulatory oversight. TAG found itself in a position that even the Commission Staff concedes as being unique. Specifically, the March 9, 2014 letter of the Commission Staff characterized TAG's position as follows:

Commission Staff notes that the circumstances surrounding the construction of this tower are unique. First, it is being built at the behest of a state institution. Second, it is being built on state property which is exempt from local planning and zoning, even if the site is located within the political boundary of a planning and zoning commission. Third, construction began on a speculative basis to the extent that there was no pre-existing contract with a utility guaranteeing colocation. Commission Staff also notes that TAG, according to construction sites listed on its website, has only built towers in Kentucky in counties that have adopted county wide planning and zoning. Therefore, TAG has no prior cause to apply to the Commission for a CPCN for other construction projects.

Moreover, finding itself in these unique circumstances, TAG approached all of the governmental agencies from which it reasonably believed that there was a need to secure approval, including the Planning Commission of the City of Richmond and the Public Protection Cabinet Department of Buildings and Construction. Indeed, though TAG began construction of the monopole before contacting the Public Service Commission, it is important to note that TAG is not currently before the Commission because the complaint of a third party has compelled it to be. TAG petitioned the Commission on its own accord to confirm to a third party that it was in compliance with the law, which it believed in good faith that it was.

Nevertheless, it is important to note that TAG has already undertaken most of the actions and received the required approvals that would have been required of it had it been applying for a CPCN from the Public Service Commission under 807 KAR 5:063.

Moreover, most of the information that would have been included in the application for a CPCN is referred to and provided in this Application.

To the extent TAG should have filed a CPCN to the Public Service Commission, its failure to do so was born out of unique circumstances and not bad faith. Further, TAG has secured approval for several other regulatory entities and through this Application has provided much the same information as would be provided under an application for a CPCN. Therefore, the TAG respectfully requests that, in the event that the Public Service Commission finds that it has jurisdiction over this matter, that the Commission will issue an Order declaring that the Commission will take no adverse action against TAG related to the monopole and declare that it is available and suitable for colocation by utilities and not subject to any penalties from this Commission.

IV. Conclusion

EKU issued a RFP to construct a monopole on which to locate, among other things, an additional cell site, for which the University perceived a need on its campus due to the loss of a previous site. TAG constructed the monopole and has agreements finalized with various telecommunications companies to colocate on the monopole. This colocation would provide better and stronger cellular service in a location in which it is needed. All that remains is to finalize this matter with the Commission. As stated in a prior conference call, the Commission has a policy favoring proliferation of cellular connectivity throughout the state. However, the Commission Staff has found that this matter is within the Commission's jurisdiction, that a CPCN should have been requested but now it is too late to do so, that they have no guidance as to how TAG can come into compliance, and that they reserve the right to assess violations against TAG. TAG

believes these conclusions are not only misguided under the law and reactionary, but counter to the mission and policies of the Commission, as well as the Commonwealth's need for wireless connectivity.

Therefore, for the aforementioned reasons, Tower Access Group, LLC hereby applies to the Public Service Commission of the Commonwealth of Kentucky for a Declaratory Order consistent with this Application. Due to the nature of this case, past delays, and the need – of TAG, wireless companies, and wireless users – for the cell site to become operational, TAG hereby requests that the Commission expedite its review of this Application for Declaratory Order. Specifically, TAG requests that the Declaratory Order reflect the following alternative resolutions and conclusions:

(1) That the Public Service Commission does not have jurisdiction to require TAG to receive a CPCN with respect to the monopole because that structure is located within the territorial boundaries of the City of Richmond; or

(2) The Public Service Commission does not have jurisdiction to require TAG to receive a CPCN with respect to the monopole because TAG is not a utility and had not entered into an agreement with a utility when it began undertaking activity necessary to begin construction of the monopole; or

(3) That Public Service Commission will take no adverse action against TAG and enter an order declaring that the monopole is available and suitable for collocation by utilities and not subject to any penalties from this Commission.

Respectfully submitted,

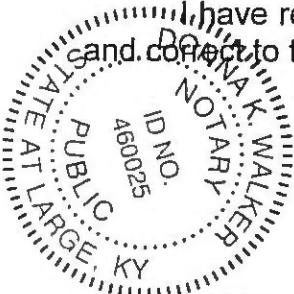
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Lexington, Kentucky 40507
859-231-8780

BY: *W. Brent Rice*

W. BRENT RICE
CHRIS WESTOVER
ANDREW H. TRIMBLE
COUNSEL FOR TOWER ACCESS GROUP

VERIFICATION

I have read the foregoing and verify that the information contained therein is true and correct to the best of my information and belief.



David L. Ginter

DAVID L. GINTER
PRESIDENT AND CEO
TOWER ACCESS GROUP

COMMONWEALTH OF KENTUCKY)

COUNTY OF FAYETTE)

) ss:

SUBSCRIBED, SWORN TO AND ACKNOWLEDGED before me, a Notary Public, by David L. Ginter, this 19th day of March, 2015.

My commission expires: 3/4/16

Donald K. Walker

NOTARY PUBLIC/STATE AT LARGE

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Motion was served upon the following parties via hand deliver on this 18th day of March, 2015:

19th

Mr. Jeff Derouen
Executive Director
Public Service Commission of Kentucky
P.O. Box 615
211 Sower Boulevard
Frankfort, Kentucky 40602



W. BRENT RICE

LIST OF EXHIBITS

Exhibit A	TAG Certificate of Authority
Exhibit B	EKU Request for Proposal
Exhibit C	Master Ground Lease Agreement
Exhibit D	Site Development Survey
Exhibit E	Monopole and Foundation Design
Exhibit F	Geotechnical Investigation Report
Exhibit G	FAA and KAZC Determinations
Exhibit H	August 21, 2014 City of Richmond Letter
Exhibit I	Public Protection Cabinet Approval Letter
Exhibit J	November 17, 2014 City of Richmond Letter
Exhibit K	April 12, 2006 Email from Commission Staff

Commonwealth of Kentucky
Alison Lundergan Grimes, Secretary of State

Alison Lundergan Grimes
Secretary of State
P. O. Box 718
Frankfort, KY 40602-0718
(502) 564-3490
<http://www.sos.ky.gov>

Certificate of Authorization

Authentication number: 161672
Visit <https://app.sos.ky.gov/ftshow/certvalidate.aspx> to authenticate this certificate.

I, Alison Lundergan Grimes, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

TOWER ACCESS GROUP LLC

, a limited liability company authorized under the laws of the state of Delaware, is authorized to transact business in the Commonwealth of Kentucky, and received the authority to transact business in Kentucky on March 19, 2014.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that an application for certificate of withdrawal has not been filed; and that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 18th day of March, 2015, in the 223rd year of the Commonwealth.



Alison Lundergan Grimes
Alison Lundergan Grimes
Secretary of State
Commonwealth of Kentucky
161672/0882459

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "TOWER ACCESS GROUP, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE EIGHTEENTH DAY OF MARCH, A.D. 2015.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "TOWER ACCESS GROUP, LLC" WAS FORMED ON THE SIXTEENTH DAY OF JULY, A.D. 2008.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.

4575757 8300

150374299



You may verify this certificate online
at corp.delaware.gov/authver.shtml

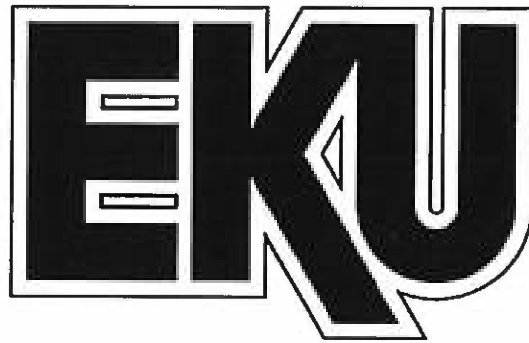
A handwritten signature in black ink, appearing to read "JB", is written over a horizontal line.

Jeffrey W. Bullock, Secretary of State

AUTHENTICATION: 2210829

DATE: 03-18-15

**Request for Proposal
Eastern Kentucky University
Telecommunication Tower (RFP 02-13)**



**Issued: September 19, 2012
Due: October 24, 2012, 2pm, ET
521 Lancaster Avenue
Richmond, Kentucky 40475**





Eastern Kentucky University
 Purchases & Stores-CPO 8A, 213 Jones Building
 521 Lancaster Avenue
 Richmond, KY 40475

RFP No. **02.13**

REQUEST FOR PROPOSAL

ATTENTION: This is not an order. Read all instructions, terms, and conditions carefully.

Issue Date: September 19, 2012
 Purchasing Officer: Lora Snider
 Phone: (859) 622-2246
 Service: Monopole Tower Lease

IMPORTANT: PROPOSALS MUST BE RECEIVED BY:
 October 24, 2012, 2pm, ET

1. It is the intention of the Request for Proposal (RFP) to enter into competitive negotiation as authorized by KRS 45A.085.
2. Proposals for competitive negotiation shall not be subject to public inspection until negotiations between the purchasing agency and all Offerors have been concluded and a contract awarded to the responsible Offeror submitting the proposal determined in writing to be the most advantageous to the University. Price and the evaluation factors set forth in the advertisement and solicitations for proposals will be considered.
3. An award of contract may be made upon the basis of the initial written proposals received without written or oral discussions.
4. Contracts resulting from this RFP must be governed by and in accordance with the laws of the Commonwealth of Kentucky.
5. The University reserves the right to request proposal amendments or modifications after the proposal receiving date.
6. **THE TERMS AND CONDITIONS OF THIS REQUEST FOR PROPOSAL INCLUDE ALL GENERAL CONDITIONS, AS SET FORTH BY EASTERN KENTUCKY UNIVERSITY PLUS ANY SPECIAL CONDITIONS ENUMERATED HEREIN.**

NOTICE

1. Any agreement or collusion among Offerors or prospective Offerors, which restrains, tends to restrain, or is reasonably calculated to restrain competition by agreement to proposal at a fixed price or to refrain from offering, or otherwise, is prohibited.
2. Any person who violates any provisions of KRS 45A.325 shall be guilty of a class D felony and shall be punished by a fine of not less than five thousand dollars nor more than ten thousand dollars, or be imprisoned not less than one year nor more than five years, or both such fine and imprisonment. Any firm, corporation, or association who violates any of the provisions of KRS 45A.325 shall, upon conviction, be fined not less than ten thousand dollars or more than twenty thousand dollars.

AUTHENTICATION OF RFP AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

- I hereby swear (or affirm) under the penalty for false swearing as provided by KRS 523.040:
1. That I am the Offeror (if the Offeror is an individual), a partner (if the Offeror is a partnership), or an Officer or employee of the bidding corporation having authority to sign on its behalf (if the Offeror is a corporation);
 2. That the attached proposal has been arrived at by the Offeror independently and has been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other Contractor of materials, supplies, equipment or services described in the Request for Proposal, designed to limit independent offering or competition;
 3. That the contents of the proposal have not been communicated by the Offeror or its employees or agents to any person not an employee or agent of the Offeror or its surety on any bond furnished with the proposal and will not be communicated to any such person prior to the official closing of the RFP;
 4. That the Offeror is legally entitled to enter into contracts with the Eastern Kentucky University and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 45A.330 through KRS 45A.340 and KRS 164.390, and
 5. That I have fully informed myself regarding the accuracy of the statement made above.

SWORN STATEMENT OF COMPLIANCE WITH CAMPAIGN FINANCE LAWS

In accordance with KRS 45A.110(2), the undersigned hereby swears under penalty of perjury that he/she has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to an Offeror will not violate any provision of the campaign finance laws of the Commonwealth of Kentucky.

OFFEROR REPORT OF PRIOR VIOLATIONS OF KRS CHAPTERS 136, 139, 141, 337, 338, 341 & 342

The Offeror by signing and submitting a proposal agrees as required by KRS 45A.485 to submit final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341 and 342 that have occurred in the previous five (5) years prior to the award of a contract and agrees to remain in continuous compliance with the provisions of the statutes during the duration of any contract that may be established. Final determinations of violations of these statutes must be provided to the University by the successful Offeror prior to the award of a contract.

CERTIFICATION OF NON-SEGREGATED FACILITIES

The Offeror, by submitting a proposal, certifies that he/she is in compliance with the Code of Federal Regulations, 41 CFR 60-1.8 that prohibits the maintaining of segregated facilities.

SMOKE FREE ZONE POLICY

The Offeror, by signing and submitting a Proposal, agrees to comply with the University's Smoke Free Zone Policy. See: http://www.hi.eku.edu/Policy_and_Procedure/docs/Smoke_free_zone_policy.pdf

SUSTAINABILITY POLICY

The University is committed to reducing the adverse environmental impact of its purchasing decisions; it is committed to buying goods and services from contractors who share its environmental concern and commitment. The University encourages bidders to include in their responses economical and environmentally friendly products and service options that serve to minimize waste, reduce excess packing, recycle, reduce, reuse, prevent pollution, and/or offer resource efficiency. It's the University's goal to maximize environmental responsibility on its campuses.

COMPETITIVE NEGOTIATION DETERMINATION

In accordance with KRS 45A.085(1) the Purchasing Officer listed above has determined that the use of competitive sealed bidding is not practicable. This Request for Proposals shall indicate the relative importance of price and other evaluation criteria (KRS 45A.085(4)).

SIGNATURE REQUIRED: This proposal cannot be considered valid unless signed and dated by an authorized agent of the Offeror. Type or print the signatory's name, title, address, phone number and fax number in the spaces provided. Offers signed by an agent are to be accompanied by evidence of his/her authority unless such evidence has been previously furnished to the issuing office.

Company Name	Authorized Signature	Date
Address	Typed or Printed Name	
City, State, ZIP	Title	
Phone Number	Fax Number	Federal I D Number

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1.0 DEFINITIONS

The term "Academic Year" when used herein is defined as the nine (9) calendar months beginning mid August of each year and ending mid May of the following year.

The terms "Addenda" or "Addendum" are defined as written or graphic instructions issued by Eastern Kentucky University prior to the receipt of Proposals that modify or interpret the Request for Proposal documents by addition, deletion, clarification, or correction.

The term "Competitive Negotiation" is defined as the method authorized in Kentucky Revised Statutes, Chapter 45A.085.

The terms "Contract" and "Resulting Contract" are used interchangeably and are defined as the official agreement and contract award resulting from the Successful Offeror's response to this Request for Proposal.

The terms "Contractor" or "Successful Offeror" are defined as the individual or entity receiving a contract award.

The term "Fiscal Year" when used herein is defined as the twelve (12) calendar months beginning July 1 of each year and ending on June 30 of the following year. The Contractor's year-to-date reports will coincide with the Fiscal Year of the University.

The terms "Offer" or "Proposal" are defined as the Offeror's response to this Request for Proposal.

The term "Offeror" is defined as the individual or entity submitting a Proposal.

The term "Purchasing Agency" is defined as Eastern Kentucky University, Division of Purchases & Stores, Room 213 Jones Building, 521 Lancaster Ave., Richmond, KY 40475.

The term "Purchasing Official" is defined as Eastern Kentucky University's designated contracting representative.

The term "Responsible Offeror" is defined as a person, company, or corporation with the capability in all respects to perform fully the contract requirements and with the integrity and reliability ensuring good faith performance.

The term "Solicitation" is defined as this Request for Proposal.

The term "University" is defined as Eastern Kentucky University.

2.0 GENERAL OVERVIEW

2.1 Intent and Scope

Eastern Kentucky University desires to enter into an agreement for property located at the Richmond campus for the location and operation of a monopole. It has been determined by the University that perhaps the most feasible and responsible means for operating a tower site at this location is by and with private participation. The desired objective is an agreement with a private entity, which will maintain, manage, operate, and furnish a first class, high quality telecommunications tower.

2.2 Background Information

Eastern Kentucky University currently has several cellular sites located on university building rooftops. The monopole tower(s) will serve as an alternate location for these cellular sites.

2.3 University Information

Eastern Kentucky University is a comprehensive university serving approximately 16,000 students on its 725-acre Richmond, Kentucky campus, its educational centers in Corbin, Danville, Lancaster and Manchester, and other sites in Kentucky. Charles D. Whitlock serves as the 11th president of the University, focusing on three overarching points for the University: student success, regional stewardship and the Quality Enhancement Plan. Additional information about Eastern Kentucky University is available at <http://www.ir.eku.edu/web/FastFacts> and at www.eku.edu.

3.0 SCOPE OF SERVICES

3.1 General

The land area that encompasses this site is managed by Eastern Kentucky University. Based on the detailed requirements, plans and specifications, terms and conditions set forth in the Request for Proposals (RFP) document, Eastern Kentucky University herewith solicits proposals from prospective operators who can demonstrate the necessary capability to successfully maintain, operate, furnish, and manage the tower at optimum potential for a fifteen year period, with a ten year option to be negotiated at the end of the initial fifteen years. The renewal term must be mutually agreed upon by the parties to be effective.

In consideration of the Offeror's operation of the tower and revenues received, Eastern Kentucky University is willing to lease to the successful Offeror the property described herein for a lease period beginning on date of execution of the lease between Eastern Kentucky University and the successful Offeror or the date successful Offeror is granted written permission to begin construction of the telecommunications towers, whichever date is earlier, and ending fifteen years thereafter, and subject to the terms and conditions of the resulting lease agreement.

3.2 Service Requirements

A. Type of Telecommunications Tower to be Constructed

The successful Offeror shall construct a monopole not to exceed 140 feet to expand cellular telephone service on campus and surrounding areas. Any other service offered by the successful Offeror shall be approved by Eastern Kentucky University. The successful Offeror shall keep to a minimum the size of an equipment building to be constructed adjacent to the monopole. The Offeror shall also construct and maintain an access road to the monopole site. All construction shall first be approved by Eastern Kentucky University and completed with minimal disturbance to the aesthetic beauty of the campus.

B. EKU Image

The monopole should be constructed in a manner as to draw as little attention as possible so that the natural beauty of the campus is not adversely affected. The leased property and monopole operation will be perceived by the general public as being a part of the campus which over the years has created and presently enjoys a positive image and reputation. The Offeror shall be responsible for assuring that the tower operations provide services to the best standards prevailing for similar businesses.

NOTE: EASTERN KENTUCKY UNIVERSITY WILL NOT PROVIDE ANY PERSONAL PROPERTY FOR THE OPERATION OF THE TOWER. ALL NECESSARY PERSONAL PROPERTY SHALL BE THE RESPONSIBILITY AND AT THE SOLE EXPENSE OF THE OFFEROR.

The successful Offeror shall, at its sole expense, post signage, which shall be conspicuously displayed and must conform to the existing University signage, on the leased premises reflecting that the tower operation is privately owned and operated through an agreement with the Eastern Kentucky University. The Offeror shall also post a sign on the fencing gate to indicate the site identification number and emergency numbers.

C. Security

The successful Offeror shall install fencing around the tower and equipment building for both security and liability purposes in order to limit access to the tower site.

D. Utilities

It shall be the responsibility of the Offeror to provide and pay for all utilities for the operation of the monopole including but not limited to electric and telecommunication services if necessary. This responsibility includes, but is not limited to, securing and paying for separate master meters for all utilities, repairs/replacement of meters, and obtaining all necessary easements and rights-of-way from the various private, local, state, and federal government agencies involved. All expenses and costs resulting from the granting and installation of such easements and rights-of-way will be borne by the Offeror. The Offeror shall also be responsible for all costs associated with utility upgrades, changes in utility providers, and to provide rerouting.

Payment of all utilities for operation of the monopole will be the responsibility of the Offeror and will be placed in the name of the Offeror. The Offeror shall be responsible for obtaining all necessary regulatory agency approvals (federal, state and local).

E. Maintenance Responsibilities

Offeror shall be responsible for all maintenance duties, including but not limited to the following:

- The Offeror, at its sole expense, shall be required to police the leased area on a monthly basis and remove trash and debris on an as needed basis or as reasonably directed by Eastern Kentucky University.
- Offeror, at its sole expense, shall be responsible for preventative maintenance of all equipment and structures placed on the leased premises.
- Offeror, at its sole expense, shall be responsible for all rebuilding, restoration and replacement of Eastern Kentucky University property necessitated by casualty resulting from the negligence or intentional act of the Offeror, its agents or employees.
- The Offeror shall assume responsibility for the leased premises, at the time a lease is finalized.
- In addition to the aforementioned maintenance responsibilities of the Offeror and during the original lease term or any renewal thereof, the Offeror shall keep any and all proposed buildings, structures, and other improvements, located on the leased premises, both interior and exterior, and all equipment and personal property within said buildings and structures in good repair, and not suffer or permit any waste to be committed or anything to be done on the leased premises that would constitute a nuisance.

G. Warranty of Suitability

Eastern Kentucky University makes no guaranty or warranty, either expressed or implied, with respect to the property. The Offeror is expected to have examined the property and to submit with Offeror's proposal his/her own formed conclusions as to its suitability of the property for the stated purpose.

3.3 Agreement Requirements

A. General

The lease between Eastern Kentucky University and the successful Offeror shall consist of: (1) the RFP (and any addenda thereto), and (2) the successful Offeror's proposal submitted in response to the RFP. In the event of a conflict in language between the documents referenced above, the provisions and requirements set forth and/or referenced in the RFP shall govern. All written addenda and supplements shall take precedence over the documents they modify.

In the event that an issue is addressed in one document that is not addressed in the other document, no conflict in language shall be deemed to occur. However, Eastern Kentucky University reserves the right to clarify any lease relationship in writing with the concurrence of the successful Offeror, and such written clarification shall govern in case of conflict with the applicable requirements stated in the RFP or the successful Offeror's proposal. In all other matters not affected by the written clarification, if any, the RFP shall govern.

The successful Offeror shall be responsible for assuring that the monopole operations authorized by the resulting lease, provides services to the best standards prevailing for similar businesses.

No modification or change of any provision in the lease shall be made, or construed to have been made, unless such modification is mutually agreed to in writing by the successful Offeror and Eastern Kentucky University and incorporated as a written amendment to the lease prior to the effective date of such modification or change. Memoranda of Understanding and correspondence shall not be construed as amendments to the lease.

The lease shall be construed and interpreted according to the laws of the Commonwealth of Kentucky. Any legal proceedings against Eastern Kentucky University regarding this RFP or any resultant lease shall be brought in Commonwealth of Kentucky administrative or judicial forums. Venue will be in Franklin County, Commonwealth of Kentucky.

B. Lease Agreement

The lease agreement will be for a period commencing from the date the lease is fully executed between the successful Offeror and the Eastern Kentucky University or the date the successful Offeror is granted written permission to begin construction and site preparation for the tower, whichever date is earlier, and ending fifteen years thereafter, with a ten year option to be negotiated at the end of the initial fifteen year term.

C. Basis of Bid Quotations

As rental compensation, Eastern Kentucky expects to receive an annual flat fee; the flat fee shall increase by five percent (5%) annually during the term of the resulting lease agreement. However, at the end of the initial fifteen year period and prior to any renewal of the resulting lease, the University shall review the current monetary consideration given by the Offeror and shall determine whether there is a need to increase the rental consideration paid by the Offeror. If the parties agree on a rental increase, then the lease agreement shall be amended to reflect the change.

D. Records and Reports

The successful Offeror is required to keep complete and accurate financial records, pursuant to 304 KAR 1:010, and any and all other applicable laws or regulations, of all transactions relating to the tower site and to maintain such additional records as Eastern Kentucky University deems necessary to adequately reflect the operations conducted on the leased premises.

E. Liens Against the Leased Premises

Nothing in this agreement shall in any way be deemed or construed as constituting an order or request by Eastern Kentucky University, expressed or implied, to any contractor, sub-contractor, supplier, materialman, or laborer for the performance of any labor or the furnishing of any materials for the maintenance of any improvements on, alterations to, or other improvements of the leased premises; nor as giving the successful Offeror any right, power, or authority to grant for or permit the rendering of any services or furnishings of any materials that would give rise to the filing of any mechanic's liens against Eastern Kentucky University's property or the successful Offeror's leasehold interest therein.

Furthermore, the successful Offeror shall not suffer or permit any mechanic's or materialman lien to be filed against Eastern Kentucky University's property or the successful Offeror's leasehold interest in the leased premises by reason of work, labor, services, or materials supplied to or claimed to be supplied to the successful Offeror. If a mechanic's or materialman's lien shall be filed against the leased premises or the successful Offeror's leasehold interest at any time, the successful Offeror shall cause the same to be discharged within thirty (30) days after the notice of filing thereof by payment, deposit, bond, an Order of a Court of competent jurisdiction or otherwise. If the successful Offeror, in good faith, disputes the validity or correctness of any such lien, then it may refrain from paying or causing the same to be discharged of record, but it shall diligently proceed to initiate and conduct appropriate proceedings to determine the correctness or validity of such lien. The successful Offeror shall not be deemed to be in default under this agreement while such proceedings or litigation are being conducted in good faith by it. However, if the successful Offeror fails to cause any such lien to be discharged within the period aforesaid, or fails to contest the same as provided above, then the successful Offeror shall be deemed to be in default of this lease which shall be a basis for termination of said lease.

F. Alterations/Renovations of the Premises

1. The parties hereto agree that the premises are to be utilized in their "as is" condition.
2. As soon as practical, but no longer than one hundred and twenty (120) days after the execution of the resulting agreement between the parties, the successful Offeror shall submit for prior written approval all plans and specifications for the monopole site and obtain prior written approvals from all local, state, and federal regulatory agencies, including but not limited to Eastern Kentucky University. Plans and specifications for the new monopole shall be submitted to and approved by all local, state, and federal regulatory agencies, including but not limited to Eastern Kentucky University, prior to beginning construction. The successful Offeror shall not be authorized to construct, erect, or place any structure or other facility upon the premises without the prior written approval of Eastern Kentucky University.
3. All construction, alterations, renovations, repairs to the premises shall be subject to all applicable building codes of the Commonwealth of Kentucky and the Americans with Disabilities Act (ADA). This shall include any and all building inspections, which are required by law to be performed prior to commencement of the successful Offeror's operation of the monopole.
4. Any alteration, renovation, major repair, or other improvements which the successful Offeror desires to make to the premises shall receive the prior written approval of Eastern Kentucky University. Upon receiving a written request from the successful Offeror for permission to make alterations, renovations, major repairs, or other improvements to the premises, Eastern Kentucky University shall, within a reasonable amount of time of receipt thereof, either approve or disapprove said request in writing. This request must include copies of any and all construction/renovation plans.
5. Eastern Kentucky University shall routinely monitor all construction/renovation work performed by the successful Offeror or its agents under the terms of the resulting Agreement.

G. Protection of Work, Property, Employees, and Public

The successful Offeror shall continuously maintain adequate protection of all its work from damages and shall protect the successful Offeror's and Eastern Kentucky University's property from injury or loss arising in connection with the resulting agreement. The successful Offeror shall make good any such damage, injury, or loss. The successful Offeror shall take all necessary precautions for the safety of employees on the work site and shall comply with all applicable provisions of the Kentucky workers compensation laws and all federal, state, and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed. The successful Offeror shall designate a responsible member of its organization on the work as safety officer, whose duty shall be to enforce safety regulations. The name and position of the person so designated shall be reported to Eastern Kentucky University.

1. The successful Offeror shall submit a safety plan to Eastern Kentucky University that complies with OSHA industry regulations, including but not limited to the use of hard hats, fall protection, hazardous material handling and clean-up.

H. Title to Improvements and Additions and Removal of Equipment and Supplies Upon Expiration or Termination of Agreement

1. It is understood and agreed by the parties that as a part of the consideration given by the successful Offeror for the privilege of utilizing the property, all improvements and/or additions to the property, including fixtures and equipment, shall remain the sole property of the successful Offeror whether by expiration of the agreement term or by reason of default as provided for in the resulting agreement.
2. Upon the expiration or termination of the resulting agreement, all of the successful Offeror's equipment and inventory, excluding fixtures belonging to the successful Offeror, shall be removed from the premises at its expense prior to such expiration or termination. Failure to comply with this provision indicates lack of interest on the part of the successful

Offeror in such property, and consequently, the aforementioned articles shall be deemed abandoned by the successful Offeror and shall automatically become the property of Eastern Kentucky University to dispose of as it determines to be in the interest of the University.

I. Antennae Sublicense Agreements

The successful Offeror shall annually maintain and keep an antenna license agreement for every monopole renter which shall be an antenna rental agreement between the successful Offeror and the telecommunications providers. The agreement shall be updated annually, and a copy of the antenna rental agreement shall be provided to Eastern Kentucky University. The successful Offeror shall utilize an antenna license agreement, which form shall hold harmless Eastern Kentucky University from any negligent acts of the telecommunications providers.

J. Maintenance of Eastern Kentucky University's Property

In addition to Subsection E, Maintenance Responsibilities, page 4, the successful Offeror shall be responsible for the property care and custody of any Eastern Kentucky University property furnished for successful Offeror's use in connection with the performance of the lease. This responsibility includes the repair and/or replacement due to loss, damage, or negligence, normal wear and tear expected, and to cure deficiencies noted in regular inspection of the monopole and facilities by Eastern Kentucky University, as depicted below. A landscaping plan and maintenance scheduled shall be submitted as part of this bid. The successful Offeror shall comply with the landscaping installation and maintenance plan and any failure to execute the provisions of the installation and maintenance plan shall constitute a breach of contract. Non-compliance with deficiencies outlined in the annual inspection report within the permitted time frame may result in Eastern Kentucky University implementing default proceedings against the Offeror.

The successful Offeror shall do those acts necessary to (1) maintain the property in a reasonably attractive, clean, efficient, and safe condition; (2) prolong the useful life of the property, and (3) cause the property to be in conformity with all federal, state, and local regulatory standards. All damage or destruction by accident, fire, flood, hail, wind, or other casualty, not resulting from the negligence of the successful Offeror shall be excluded from the provisions of this section. All new construction pursuant to this Agreement shall become the sole responsibility of the successful Offeror for its repair and replacement.

Eastern Kentucky University, individuals from interested parties, and the successful Offeror shall annually inspect the property together by June 30 of each year to determine (1) whether the successful Offeror is in conformity with the provisions of this section, and (2) to specify what act or acts are necessary to conform to the provisions of this section. As soon thereafter as practicable, Eastern Kentucky University shall provide to the successful Offeror a written inspection report detailing the findings and recommendations pertaining to maintenance. The successful Offeror shall have thirty (30) days following receipt of the Finance's report to either (1) complete the maintenance recommendations made by the University's representatives or (2) present a written plan, for approval by the University's representatives, which details the actions to be taken in order to correct any maintenance deficiencies including an anticipated completion date. In the event the successful Offeror fails either to (1) complete the maintenance recommendations made by the University within thirty (30) days, or (2) submit a reasonable plan within thirty (30) days, together with a projected date of completion by which to accomplish those maintenance recommendations made by the University's representatives, and to complete such plan of maintenance as agreed, unless good cause be shown for delay, then the University may enter upon the property and do that which is necessary to maintain or repair the property. The successful Offeror shall indemnify and hold harmless the University from all costs and expenses of any such maintenance accomplished by the University. Should the University be required to do that which is necessary to maintain or repair the property, then the University may, at its sole discretion, declare the successful Offeror in default of the agreement.

K. Protection of Work, Property, Employees, and Public

The successful Offeror shall continuously maintain adequate protection of all his/her work from damage and shall protect Eastern Kentucky University's property from injury or loss arising in connection with this lease. Successful Offeror shall make good any such damage, injury, or loss. Successful Offeror shall adequately protect adjacent property as provided by law and the lease documents.

The successful Offeror shall take all necessary precautions for the safety of employees on the work site and shall comply with all applicable provisions of the Kentucky Worker's Compensation laws and all federal, state, and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being

performed. The successful Offeror shall designate a responsible member of his/her organization on the work as safety officer, whose duty shall be to enforce safety regulations. The name and position of the person so designated shall be reported to Eastern Kentucky University, upon the successful Offeror's written notification to begin construction of the monopole site or the date the lease is fully executed, whichever date is earlier.

L. Right of Entry

The right is hereby reserved to Eastern Kentucky University, its officers, agents, and employees, and agents, to enter upon the leased premises at reasonable times to inspect the premises, operation, and equipment, or for any purposes in connection with work necessary to the benefit of Eastern Kentucky University, including, if necessary, any ingress or egress in the form of an easement that shall not unreasonably interfere with the lessee's operations.

M. Level of Assets

The successful Offeror promises and commits to maintain its assets in the tower site for the purposes of providing and producing revenue, and for the purpose of providing security to the University to ensure the successful Offeror's performance of its obligations under the resulting Agreement. For the purpose of the Agreement, the term "assets" shall be construed to mean: (1) physical properties to include, but not be limited to, monopoles, equipment buildings and fencing; and (2) accounts receivables in an amount equal to its expenses to operate, to pay the license fee(s) to Eastern Kentucky University, and an amount equal to the sum necessary to pay its secured creditors. The Offeror's response to the "Monopole Site Operation" section of this RFP will be incorporated into the resulting lease as a portion of the Offeror's "Level of Assets".

Further, the successful Offeror agrees to maintain its current level of "assets", as defined in above paragraph and as will be described in the resulting lease, as will be existing as of the effective date of the resulting agreement and, shall thereafter, not remove said "assets" from the monopole site, nor allow the current level of assets to diminish, without prior written approval from the University.

N. Prohibition from Removal of Vegetation and Minerals

The successful Offeror agrees that no live trees will be cut, no vegetation dug, nor the landscape altered in any way without prior consultation and written approval of Eastern Kentucky University. The Offeror shall be responsible for all landscaping around the site compound. The landscaping must be approved by Eastern Kentucky University. The successful Offeror shall be required to replace any grass or trees that have to be removed from the construction site. In no event shall the successful Offeror extract or remove any minerals, oil, or gas from the premises.

4.0 PROPOSAL REQUIREMENTS

4.1 Key Event Dates

RFP issued by University	09/19/12
Notification by Offeror of intent to respond to RFP	09/26/12
Deadline for written questions from Offeror	09/26/12
Pre-proposal conference	10/09/12
Proposal due from Offeror	10/24/12
Contract award by University	11/13/12
Contract effective	11/13/12

Note: All dates are estimated. Any change in dates will be announced to all parties.

4.2 Offeror Communication

To ensure that RFP documentation and any subsequent information (modifications, clarifications, addenda, etc.) is directed to the appropriate primary contact person with the Offeror, each Offeror who intends to participate in this RFP is required to provide immediately the following information to the Purchasing Official:

Name of primary contact
Mailing address of primary contact
Telephone number of primary contact

Fax number of primary contact
Email address of primary contact
Secondary contact person(s) including all information above

This information shall be transmitted electronically to:

Lora Snider, Director
Division of Purchases & Stores
Eastern Kentucky University
Jones Building, Room 213
521 Lancaster Avenue
Richmond, KY 40475
Phone: (859) 622-2246
Fax: (859) 622-2047
Email: Lora.Snider@eku.edu

Note: All communication with the University regarding this RFP shall be directed only to the University Purchasing Official listed above.

4.3 Questions

All questions should be submitted in writing to Lora Snider, Purchasing Officer, no later than September 26, 2012, 5pm, ET. Please submit questions electronically to: Lora.Snider@eku.edu.

4.4 Pre-Proposal Conference

A pre-proposal conference will be held October 9, 2012. The meeting will begin promptly at 2:00 PM in 213 Jones Building at Eastern Kentucky University. The purpose of this conference is to fully acquaint potential Offerors with all proposal conditions. During this conference questions concerning the RFP will be answered.

Attendance at the pre-proposal conference is a prerequisite requirement to be qualified to submit a proposal. Proposals will be accepted only from Offerors who are represented at the pre-proposal conference, as evidenced by an Offeror's representative signature on an appropriate attendance roster. Any Offeror failing to attend this meeting will be disqualified from submitting a proposal to the University.

Attendance at the conference will be limited to five (5) employees per Offeror. Attendees should bring a copy of this solicitation to the conference. Any changes resulting from this conference or subsequent written questions will be issued in an Addendum. Any information obtained from discussions or informal correspondence with University administrators or staff does not supersede the requirements of this RFP. Changes or clarifications to requirements shall be issued by Addenda.

Note: Temporary parking permits are available thru EKU Parking and Transportation, Mattox Hall, Ste. A, 521 Lancaster Avenue, Richmond, KY 40475, 859-622-1063. Please request parking permits at least 72 hours prior to campus visits.

4.5 Offeror Presentations

Offerors may be requested to appear before the University evaluation committee to discuss and explain their proposal and to respond to questions from the Committee. The Committee reserves the right to request additional information.

Offerors are prohibited from electronically recording these meetings.

4.6 Preparation of Proposal

Offerors are expected to follow all specifications, terms, conditions, and instructions in this RFP.

Offerors will furnish all information required by this Solicitation. Offerors will sign and return the Authentication of Proposal and Statement of Non Collusion and Non Conflict of Interest form (page 2 of this RFP) and print or type the primary contact name, firm, address, telephone number and date. The person signing the Offer must initial erasures or other changes. An offer signed by an agent is to be accompanied by evidence of his or her authority unless such evidence has been

previously furnished to the Purchasing Official. The signer shall further certify that the proposal is made without collusion with any other person, persons, company, or parties submitting a proposal, that it is in all respects fair and in good faith without collusion or fraud, and that the signer is authorized to bind the Offeror.

Proposals should be prepared simply and economically, providing a description of the Offeror's capabilities to satisfy the requirements of the Solicitation. Emphasis should be on completeness and clarity of content. Each copy of the Proposal should be bound in a single volume, where practical. All documentation submitted with the proposal should be bound in a single volume except as otherwise specified.

Any Proposal containing terms and conditions not in conformity with the statutes of the Commonwealth of Kentucky may be rejected.

Note: Eastern Kentucky University, as an agency of the Commonwealth of Kentucky, is prohibited from entering into contracts that require the University to indemnify the other party.

4.7 Proposed Deviations from the Request for Proposal

The stated requirements appearing elsewhere in this RFP shall become a part of the terms and conditions of any resulting contract. Any and all deviations must be specifically defined in accordance with the Transmittal Letter, Section 5.3. If accepted by the University, deviations shall become part of the contract, but such deviations must not be in conflict with the basic nature of this RFP.

Offerors may submit more than one alternative proposal, each of which must comply with proposal response guidelines and satisfy the requirements of this RFP. The Offeror's primary proposal must be complete and comply with all instructions. Alternative proposal(s) may be in abbreviated form following the proposal response guidelines, providing complete information for sections that differ in any way from sections contained in the Offeror's primary proposal. If alternative proposal(s) are submitted, the Offeror must explain reasons for the alternative(s) and comparative benefits. Each proposal submitted will be evaluated on its own merit.

4.8 Proposal Submission and Deadline

Offeror must provide one (1) original and six (6) printed copies of each proposal. The Proposal and copies must be delivered under sealed cover prior to 2:00 PM, ET October 24, 2012.

Deliver to:

Lora Snider, Director
Division of Purchases & Stores
Eastern Kentucky University
Jones Building, Room 213
521 Lancaster Avenue
Richmond, KY 40475

Proposals shall be enclosed in sealed envelope(s) and must clearly show the closing date and time specified, the Solicitation number, and the name and address of the Offeror on the face of the envelope(s). Please indicate which envelope contains the original Proposal.

Note: Proposals received after the closing date and time will not be considered.

Note: In accordance with Kentucky Revised Statute 45A.085 and 200 KAR 5, there will be no public opening of Proposals. All Proposals will be kept confidential until such time that a contract is awarded. After a contract is awarded, all Proposals will become public record, as described herein.

4.9 Addenda

Any Addenda or instructions issued by the Purchasing Official prior to the proposal deadline shall become a part of this RFP. Such Addenda shall be acknowledged in the Proposal. No instructions or changes shall be binding unless documented by a proper and duly issued addendum.

4.10 Offeror Response and Proprietary Information

The RFP specifies the format, required information, and general content of Proposals submitted in response to this request. The University will not disclose any portion of any Proposal prior to contract award to anyone outside the Division of Purchases & Stores, the University's administrative staff, representatives of the State or Federal Government, if required, and the members of the University evaluation committee. After a contract is awarded in whole or in part, the University shall have the right to duplicate, use, or disclose all Proposal data submitted by Offerors in response to this RFP as a matter of public record.

Any submitted Proposal shall remain a valid proposal through June 30, 2013.

4.11 Restrictions on Communications with University Staff

From the issue date of this RFP until a contract award is made, Offerors are strictly forbidden to communicate about the subject of the RFP with any University administrator, faculty, staff, or member of the University's Board of Regents. Offerors may communicate only with the Purchasing Official named herein, or other persons authorized in writing by the Purchasing Official.

The University reserves the right to reject the Proposal from any Offeror violating this provision.

4.12 Cost of Preparing Proposal

Costs for developing the Proposals and any subsequent activities prior to contract award are solely the responsibility of the Offeror. Eastern Kentucky University will provide no reimbursement for such costs.

4.13 Disposition of Proposals

All Proposals become the property of Eastern Kentucky University. The successful Proposal will be incorporated by reference into the resulting contract.

4.14 Section Titles in the Request for Proposal

Titles of paragraphs used herein are for the purpose of facilitating ease of reference only and shall not be construed to infer a contractual construction of language.

4.15 Proposal Addenda and Rules for Withdrawal

Prior to the date specified for receipt of Proposals, a submitted Proposal may be withdrawn by the Offeror. The Offeror must submit a duly signed, written request for withdrawal to the Purchasing Official. Unless requested by the University, the University will not accept revisions or alterations to Proposals after the proposal due date.

4.16 Acceptance or Rejection of Proposals

The University will review all properly submitted Proposals. The University reserves the right, if in its best interests, to reject all Proposals, to reject any proposal that does not meet mandatory requirements, to request amendment to Proposal(s), or to cancel entirely the RFP.

Grounds for rejection of proposals include, but are not limited to 1) failure of a Proposal to conform to the essential requirements of the RFP; 2) A Proposal imposing conditions that would significantly modify the terms and conditions of the Solicitation or limit the Offeror's liability to the University under the Resulting Contract on the basis of such Solicitation; 3) failure of the Offeror to appropriately sign the RFP as a part of the Proposal, including the Authentication of Proposal, Statement of Non-collusion and Non-conflict of Interest statements; and 4) A Proposal received after the closing date and time specified in the RFP.

The University also reserves the right to waive minor technicalities or irregularities in Proposals providing such action is in the best interest of the University. Such waiver shall in no way modify the RFP requirements or excuse the Offeror from full compliance with the RFP specifications and other Resulting Contract requirements if the Offeror is awarded the Contract.

4.17 Kentucky Educational Purchasing Cooperative

Offerors shall indicate if they are willing to extend any contract resulting from this solicitation to the members of the Kentucky Educational Purchasing Cooperative. Members include; University of Kentucky, University of Louisville, Western Kentucky University, Northern Kentucky University, Murray State, Morehead State and Kentucky State. Please include detailed information regarding any differences, if any, in the service or pricing for each institution.

5.0 PROPOSAL FORMAT AND CONTENT

5.1 Proposal Information and Criteria

The following list specifies the items to be addressed in the Proposal. Please read the list carefully and address it completely and in the order presented to facilitate the University's review of the proposal. Proposals should be organized into the sections identified. The content of each section is further described below.

Signed Authentication of Proposal and Statement of Non-Collusion and Non-Conflict of Interest Form (See page 2)
Completed Vendor Taxpayer ID form
Completed Reciprocal Preference Affidavit (if applicable)
Transmittal Letter
Executive Summary and Proposal Overview
Offeror Qualifications
Program Plan – Services Defined
References and Past Experience
Financial Proposal
Optional Services

5.2 Signed Authentication of Proposal and Statements of Non-Collusion and Non- Conflict of Interest Form

The Offeror will sign, print or type name, firm, address, telephone number, date, and return page 2 of this RFP. The signer on page 2 will be required to initial subsequent erasures or other changes. A Proposal signed by an agent must be accompanied by evidence of authority unless such evidence has been previously furnished to the Purchasing Official. The signatory shall further certify that the Proposal is made without collusion with any other person, persons, company or parties submitting a Proposal, that it is in all respects fair and in good faith without collusion or fraud, and that the signer is authorized to bind the Offeror.

5.3 Transmittal Letter

The Transmittal Letter accompanying the RFP shall be in the form of a standard business letter and shall be signed by an individual authorized to legally bind the Offeror. The transmittal letter shall include:

- 1) A statement referencing all Addenda to this RFP issued by the University and received by the Offeror. If no Addenda have been received, a statement to that effect should be included.
- 2) A statement that the Offeror's Proposal shall remain valid through June 30, 2013.
- 3) A statement that the Offeror will accept financial responsibility for all travel expenses incurred for oral presentations (if required) and candidate interviews.
- 4) A statement that summarizes any deviations or exceptions to the RFP requirements, including a detailed justification for the deviation or exception.

5.4 Executive Summary and Proposal Overview

The Executive Summary and Proposal Overview shall condense and highlight the contents of the technical proposal in such a way as to provide the evaluation committee with a broad understanding of the entire Proposal.

5.5 Offeror Financial Background and Proposed Method of Financing Project

Provide brief narrative of the Company's history, expertise and financial viability. Including but not limited to:

1. An audited financial statement for each of the last three (3) years must be provided for the applicable legal entity submitting a proposal. This statement should, at a minimum, list all assets and liabilities and be certified by a registered Certified Public Accountant (CPA) who is not an officer of the company or individual submitting the proposal. Offeror should also include a statement of changes in financial position of the business entity within the last three (3) years. If the Offeror is a new entity incorporated for the purposes of operation of this monopole site, then Offeror must provide individual income tax records for each of the last three (3) years.
2. A current (unaudited) financial statement.
3. Bank references for the Offeror shall be provided, including name, address, and current telephone number of the given financial institution. This should include a signed authorization for release of financial information from each bank listed.
4. Except for governmental agencies, provide the names, addresses, and telephone numbers of at least two commercial or institutional credit references from which the Offeror has previously obtained financing. Attach a letter authorizing each credit reference to respond to inquiries from the government.
5. A description of the proposed financing plan for the first three years, including, but not limited to, source of credit, terms of credit, and repayment schedule. Source of credit will identify credit for construction, as well as long-term financing of the structures.
6. Provide a preliminary budget, projected cash flow, estimated operating costs, and detailed plans of financing including identity of proposed lenders. Identify all interim and permanent sources of funds and include copies of loan documents used to implement the assignment.
7. Provide an annual estimated gross income from the monopole site.

Please complete, sign, and include Attachment A, Vendor Taxpayer Identification form and Affidavit, if applicable, with Proposal.

5.6 Operational Plan – Services Defined

Provide a brief narrative of how Offeror proposes to accomplish services described in this RFP. The Proposal shall, at a minimum, meet all mandatory services described in Section 3.0 and include the following:

1. A general narrative description of the proposed monopole site operation, including the location of the tower, a time schedule for completion of construction, operation date and a list of personal property inventory and itemized cost estimate. The Offeror must also indicate the services to be offered, proposed area security, landscaping, proposed access to each site, signage, preventative maintenance schedule, safety equipment replacement schedule, emergency procedures for fire and accidents, and any other information pertinent to the proposed operation of the monopole site.
2. Offeror shall provide comprehensive and detailed specification material relative to all operation, materials, equipment, etc. (i.e. height of monopole, size of equipment building, etc.) for the tower site that will enable the University to determine the quality of these items.
3. Describe management structure/organization; identify management personnel by name, if selected, titles; and show how management staff will interact with each other in managing the site.
4. Offeror shall provide comprehensive and detailed specification material relative to construction of the monopole, equipment building and fencing that will enable the University to determine quality of these structures.
5. Provide an initial five year business plan for operation and development of the leased premises. The plan must show goals and objectives for each year showing the estimated cost of any development. The plan must be revised every three years for the upcoming five year period.

Please provide examples and exhibits of reports that will be made available to the University.

5.7 References and Past Experience

The corporate background and experience section shall include from the Offeror details of the background of the company, date established, ownership (public company, partnership, subsidiary, etc.), company resources, and details of company experience relevant to the proposed development. List, if any, current or past telecommunications towers managed by the company. (Note: If the proposal is submitted by an individual, the same type of information will be required.)

Should the proposal be submitted by a corporation or business venture formed solely for the purpose of responding to this RFP, the above information shall be submitted for each individual within the said corporation, business venture, or partnership.

Offeror shall supply the names, addresses, telephone numbers and complete contact information for which work has been accomplished. Include a complete description of the type of service(s) provided. References should be relevant with regard to the scope of services outlined in this RFP. By submitting a Proposal, the Offeror grants permission to the University to contact references.

5.8 Financial Proposal

Fully describe and explain revenue to be paid to the University.

5.9 Landscape Installation & Maintenance Plan

Fully describe and explain any landscape installation and maintenance plan for initial installation and ongoing maintenance.

6.0 EVALUATION CRITERIA PROCESS

The University's evaluation of each proposal will be based upon the information provided in the Proposal, additional information requested by the University, information obtained from references and independent sources, and formal presentations, if requested. The University evaluation committee will evaluate proposals in accord with the requirements and criteria set forth in this Solicitation, including any Addenda issued. The University may award the Contract to the Successful Offeror submitting the Proposal determined to be the most advantageous to the University.

- The Offeror's monopole site operation plan. (30 points)
- Financial background of Offeror including, but not limited to, the Offeror's ability to provide financial backing for the proposed tower site operations. (20 Points)
- Corporate background and experience (10 Points)
- Revenue Payable to the University (40 Points)
- Landscape installation & maintenance (10 Points)

The evaluation of proposals will involve the point scoring of each proposal into five (5) areas. A maximum of one hundred and ten (110) points will be available for each proposal as follows:

The maximum number of points that can be received in any category, or area is forty (40). The proposal receiving the highest point total will be awarded the lease contract.

Note: Proposals must contain responses to each of the criteria listed in Section 5.0 even if Offeror's response cannot satisfy those criteria. A Proposal may be rejected if in the sole judgment of the University it is deemed to be conditional or incomplete.

7.0 SPECIAL CONDITIONS AND CONTRACT TERMS

7.1 Effective Date

The effective date of the Contract is anticipated to be November 13, 2012.

7.2 Contract Term

The Contract resulting from this RFP and the Successful Offeror's Proposal shall have an initial term of fifteen (15) years, from November 13, 2012 through November 12, 2027. The Contract shall be renewable on an annual basis for up to ten (10) consecutive one (1)-year renewal periods. The total contract period will not exceed twenty-five (25) years. Annual renewal will be contingent upon the University's satisfaction with the services performed and the overall performance of the Contractor.

The lease between Eastern Kentucky University and the successful Offeror shall consist of: (1) the RFP (and any addenda thereto), and (2) the successful Offeror's proposal submitted in response to the RFP. In the event of a conflict in language between the documents referenced above, the provisions and requirements set forth and/or referenced in the RFP shall govern. All written addenda and supplements shall take precedence over the documents they modify.

In the event that an issue is addressed in one document that is not addressed in the other document, no conflict in language shall be deemed to occur. However, Eastern Kentucky University reserves the right to clarify any lease relationship in

writing with the concurrence of the successful Offeror, and such written clarification shall govern in case of conflict with the applicable requirements stated in the RFP or the successful Offeror's proposal. In all other matters not affected by the written clarification, if any, the RFP shall govern.

The successful Offeror shall be responsible for assuring that the monopole operations authorized by the resulting lease, provides services to the best standards prevailing for similar businesses.

No modification or change of any provision in the lease shall be made, or construed to have been made, unless such modification is mutually agreed to in writing by the successful Offeror and Eastern Kentucky University and incorporated as a written amendment to the lease prior to the effective date of such modification or change. Memoranda of Understanding and correspondence shall not be construed as amendments to the lease.

The lease shall be construed and interpreted according to the laws of the Commonwealth of Kentucky. Any legal proceedings against Eastern Kentucky University regarding this RFP or any resultant lease shall be brought in Commonwealth of Kentucky administrative or judicial forums. Venue will be in Madison County, Commonwealth of Kentucky.

The University reserves the right to renegotiate any term and/or condition as may be necessary to meet requirements for any renewal period. The Successful Offeror will be advised of any proposed revisions prior to the renewal period.

7.3 Competitive Negotiation

It is the intention of the Request for Proposal (RFP) to enter into competitive negotiation as authorized by KRS 45A.085 and 200 KAR 5:307.

Offeror(s) selected to participate in negotiations may be given an opportunity to submit a best and final offer to the University. All information received prior to the deadline for the best and final offer will be considered part of the Offeror's best and final offer.

7.4 No Contingent Fees

No person or selling agency shall be employed or retained or given anything of monetary value to solicit or secure the resulting contract, except bona fide employees of the Offeror or bona fide established commercial or selling agencies maintained by the Offeror for the purpose of securing business. For breach or violation of this provision, the University shall have the right to reject the proposal, annul a resulting contract without liability, or, at its discretion, deduct from the contract price or otherwise recover the full amount of such commission, percentage, brokerage, contingent fee or other benefit.

7.5 Contract Changes

No modification or change of any provision in the Contract shall be made, unless such modification is mutually agreed to in writing by the Contractor and the duly authorized University Representative and incorporated as a written amendment to the Contract. Memoranda of understanding and correspondence shall not be interpreted as amendments to the Contract.

7.6 Entire Agreement

The RFP shall be incorporated into any Contract. The Contract, including the RFP and those portions of the Offeror's response accepted by the University, shall become the entire agreement between the parties.

7.7 Governing Law

Contractor shall conform to and observe all laws, ordinances, rules and regulations of the United States of America, the Commonwealth of Kentucky, and all other local governments, public authorities, boards or offices relating to the services provided. This Agreement shall be governed by Kentucky law and any claim relating to this Contract brought by Contractor shall only be brought in the Franklin Circuit Court.

7.8 Termination of Contract

7.8.1 Termination Provisions

The Contract shall be subject to the following termination provisions without prejudice to any other right or remedy. The Contract may be terminated by the University for 1) default by the successful Offeror, 2) for Offeror's insolvency or unavailability of funds, or 3) for convenience.

In case of termination of the Contract, it shall be incumbent on the Contractor to continue operations until relieved by a successor Contractor.

7.8.2 Termination for Default

A default in performance by Contractor for which a Contract may be terminated may include, but shall not be limited to, failure to perform the Contract according to its terms, conditions, and specifications, and failure to diligently perform the work under the Contract.

The University shall not be liable for any further payment to Contractor under a Contract terminated for default after the date of notice to Contractor of such default as determined by the Purchasing Official, except for work performed at the request of the University until a successor Contractor is named.

7.8.3 Termination for Contractor Insolvency or Unavailability of Funds

In the event of insolvency, unavailability of funds, or the filing of a petition of bankruptcy by or against the Contractor, the University shall have the right to terminate the Contract upon the same terms and conditions as a termination for default.

7.8.4 Termination for Convenience

If it is determined to be in the University's best interest to do so, the Contract may be terminated, upon ninety (90) days notice, at the convenience of the University.

7.8.5 Procedure for Termination

Upon delivery by certified mail to Contractor of a Notice of Termination specifying the nature of the termination, the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective, the Contractor shall stop work under the Contract on the date and to the extent specified in the Notice of Termination, except where Contractor is notified to continue work until Contractor can be relieved by a successor Contractor.

7.9 Employment Practices

7.9.1 Non Discrimination

Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age, veteran's status, or disability. Contractor must take affirmative action to ensure that employees, as well as applicants for employment, are treated without discrimination because of their race, color, religion, sex, national origin, age, veteran's status, or disability. Such action shall include, but is not limited to, recruitment, hiring, placement, promotion, transfer, training and apprenticeship, compensation, layoff, termination, and physical facilities. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this clause.

7.9.2 Executive Order 11246

Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, national origin, and age, veteran's status or disability. Contractor shall comply with the nondiscrimination clause contained in Federal Executive Order 11246, relative to Equal Employment Opportunity for all persons with regard to race, color, religion, sex, national origin, and the implementation of rules and regulations prescribed by the Secretary of Labor and with Title 41 Code of Federal Regulations, Chapter 60. Contractor shall comply with all related Commonwealth of Kentucky laws and regulations.

7.9.3 Title 20

Contractor shall comply with the regulations issued by the Secretary of Labor of the United States in Title 20, Code of Federal Regulations, Part 741, pursuant to the provisions of Executive Order 1178 and the Federal Rehabilitation Act of 1973.

7.9.4 Other Acts

Contractor shall comply with the Civil Rights Act of 1964, any amendments thereto, and the rules and regulations there under; Section 504 of Title V of the Vocational Rehabilitation Act of 1973 as amended; and the Kentucky Civil Rights Act.

Contractor shall comply with the Americans with Disabilities Act of 1990.

7.9.5 Future Acts, Laws, and Regulations

Contractor shall comply with any future federal acts, laws, and regulations, and Kentucky state acts, laws, and regulations as they relate to employment programs when such acts, laws, and regulations become effective.

7.10 Conflict of Interest

No official or employee of Eastern Kentucky University and no other public official of the Commonwealth of Kentucky or the federal government who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of the Contract shall, prior to completion of the Contract, voluntarily acquire any personal interest, direct or indirect, in this Contract or proposed Contract.

Contractor covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. Contractor further covenants that in the performance of the Contract no person having any such known interests shall be employed.

7.11 Severability

If any provision or provisions of the RFP, responses to the RFP, any Contract or personal service contract, or similar document executed as a result of this RFP shall be deemed invalid or unenforceable in whole or in part, these documents shall be deemed amended to thereof in order to render it valid and enforceable.

7.12 Contract Administrator

All notices, requests and other communications that a party to any Contract, personal services contract, or similar document executed as a result of this RFP is required or elects to deliver shall be in writing and shall be delivered personally, by facsimile (provided such delivery is confirmed), by email clearly identifying the source of notice, or by recognized overnight courier service to the other party at the address set forth below, or to such other address as such party may hereafter designate by notice given pursuant to this section.

Upon award of Contract, the sole point of contact for administration of the Contract will be:

Lora Snider, Director
Division of Purchases & Stores
Eastern Kentucky University
213 Jones Building, CPO 8A
521 Lancaster Avenue
Richmond, KY 40475
(859) 622-2246
(859) 622-2047 (fax)
Lora.Snider@eku.edu

Copy to:
University Counsel
Eastern Kentucky University
205 Coates Building, CPO 40A
521 Lancaster Avenue
Richmond, KY 40475
(859) 622-6693
(859) 622-8030

7.13 Prime Contractor Responsibility

Any Contract resulting from the RFP shall specify that the Contractor is solely responsible for fulfillment of the Contract with the University.

7.14 Assignment and Subcontracting

During the course of the lease agreement, the successful Offeror shall not, with the exception of agreements relative to the attachment of antennae to the monopole and equipment stored in the equipment building, voluntarily, involuntarily, or by operation of law assign, sublet, mortgage, or transfer the lease agreement or any interest created therein to any other person, partnership, corporation, or other entity without first notifying and obtaining the prior written consent of Eastern Kentucky University. Any attempt to assign, sublet, mortgage, or transfer the lease agreement or any interest created therein without such consent shall be void. If an assignment, sublet, mortgage, or transfer of this agreement is made with the consent of the Commonwealth, the successful Offeror shall not be relieved from payment of all rent according to the terms of the lease or from the performance of all other terms, covenants, and conditions of the lease. If consent is once given by Eastern Kentucky University to any such assignment, mortgage, or subletting, such consent shall not operate as a waiver of the necessity for obtaining Eastern Kentucky University's consent to any subsequent assignment, mortgage, or subletting. Furthermore, any change in the successful Offeror's business status (i.e., partnership, corporation) should be reported to Eastern Kentucky University immediately.

No assignment, subletting, transfer, or mortgage of successful Offeror's interest in the property shall be effective or binding against Eastern Kentucky University until such time as the assignee and Eastern Kentucky University execute an amendment to this agreement reflecting such transfer.

7.15 Permits, Licenses, Taxes, and Registration

Contractor shall secure all necessary permits, licenses, and registrations and abide by all applicable laws, regulations, and ordinances of the United States, the Commonwealth of Kentucky, and any political subdivision(s) in which work under this Contract is performed.

Contractor shall pay any sales, use, local, and personal property taxes arising from this Contract. Any taxes on the services delivered pursuant hereto shall be borne by the Contractor.

7.16 Attorneys' Fees

In the event that either party deems it necessary to take legal action to enforce any provision of a Contract, the University and Contractor agree to pay their own respective expenses of such action, including attorney's fees and costs at all stages of litigation as set by the court or hearing officer.

7.17 Patents, Copyrights, and Trademark

The Contractor shall protect the University from any and all damages or liability arising from alleged infringements of patents, copyrights or trademarks.

7.18 Hold Harmless

Contractor agrees to indemnify, defend, and hold harmless Eastern Kentucky University, its officers, agents, and employees from any claims for losses for service rendered by Contractor, person, or firm performing or supplying services in connection with performance of the Contract; any claims or losses to any person or firm injured or damaged by the erroneous or negligent acts of Contractor, its officers or employees in the performance of the Contract, any claims or losses resulting to any person or firm injured or damaged by Contractor, its officers or employees by the publication, translation, reproduction, delivery, performance, use, or disposition of any data processed under the Contract in a manner not authorized by the Contract, or by federal or Commonwealth of Kentucky regulations, laws, and statutes, and any failure of Contractor, its officers or employees to observe Commonwealth of Kentucky regulations, laws, and statutes, including but not limited to labor laws, minimum wage laws, and other applicable regulations, laws, and statutes.

7.19 Insurance

Contractor shall procure and maintain, at its expense, the following minimum insurance coverage insuring all services, work activities, and contractual obligations undertaken in this Contract. These insurance policies must be with insurers acceptable to Eastern Kentucky University.

Workers' Compensation	\$1,000,000
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General Liability	\$1,000,000
Excess Liability	\$1,000,000
Casualty & property	\$1,000,000
Business Automobile Liability	\$1,000,000 (each occurrence, any auto owned, non-owned, hired, or borrowed)

Contractor agrees to furnish Certificates of Insurance for each insurance policy to the Purchasing Official. Eastern Kentucky University, its regents, and employees must be added as Additional Insured on the General Liability policy with regard to the scope of this Contract. During the term of the leasing arrangement, the Offeror shall maintain, at the Offeror's total expense, fire and extended coverage insurance, including theft and vandalism, covering the monopole site in an amount equal to their full replacement cost value. Offeror shall also carry and maintain during the term of the lease, at Offeror's sole cost and expense, fire and extended coverage insuring all contents and inventories in the premises to the extent of their full insurable value. In the event of a loss, the successful Offeror must repair/replace the monopole and/or equipment building within a twelve-month (12) period from the date of loss, and there shall be no abatement of the fixed monthly rental to the University for the loss period. The successful Offeror shall, at its sole expense, keep insured during the term hereof, and any extension thereof, the entire monopole site at successful Offeror's sole expense, against loss of damage by fire, lightning, wind storm, or other casualty in an amount not less than one hundred percent (100%) of the full insurable value thereof. The term "full insurable value" shall mean the actual replacement cost excluding foundation and excavation costs less physical depreciation, as mutually agreeable to both parties.

Any deductibles or self-insured retentions in the insurance policies must be paid by and are the sole responsibility of the Contractor. Coverage is to be primary and non-contributory with other coverage, if any, purchased by the University. All required insurance policies must include a Waiver of Subrogation in favor of Eastern Kentucky University, its regents, and employees.

7.20 Performance Bond

1. The successful Offeror or its assignee shall furnish separate performance and payment bonds to Eastern Kentucky University. The successful Offeror, or its designee, shall furnish a performance bond satisfactory to Eastern Kentucky University in an amount equal to one hundred percent (100%) of the monopole project construction contract as security for the faithful performance of the project. The successful Offeror or its designee shall also furnish a payment bond satisfactory to Eastern Kentucky University in an amount equal to one hundred percent (100%) of the project construction contract for the protection of all persons performing labor or furnishing materials, equipment or supplies for the successful Offeror or its subcontractors for the performance of the work provided for in the project, including security for payment of all unemployment contributions which become due and payable under Kentucky Unemployment Insurance Law.
2. Each bond furnished by the successful Offeror or its designee shall incorporate by reference the terms of the project as fully as though they were set forth verbatim in such bonds. In the event the project construction contract is adjusted by written document executed by both parties, the penal sum of both the performance bond and the payment bond shall be deemed increased by like amount.
3. The performance and payment bonds shall be executed by a surety company authorized to do business in this Commonwealth, and the contract instrument of bonds must be countersigned by a duly appointed and licensed resident agent.
4. Unless the project is exempt from the prevailing wage requirements of KRS 337.505-337.550, the successful Offeror's bond(s), or contract secured by said bond, shall include a provision as will guarantee the faithful performance and payment of the prevailing hourly wage.

7.21 Events Beyond Control

Anything herein to the contrary notwithstanding, the University shall not be liable or responsible for any failure to furnish the services set forth in this RFP and the Contract, occasioned by strike or other work stoppage, federal, state or local government action, breakdown or failure of apparatus, equipment or machinery employed in supplying services, any temporary stoppage for the repair, improvement, or enlargement thereof, or any act or condition beyond its reasonable control.

7.22 Method of Award

It is the intent of the University to award a Contract to the qualified Successful Offeror whose offer, conforming to the conditions and requirements of the RFP, is determined to be the most advantageous to the University, cost and other factors considered. The method of determining the best offer is detailed in Section 6.0.

Notwithstanding the above, this RFP does not commit the University to contract for any requirements detailed in this document. The University reserves the right to reject any or all offers and to waive formalities and minor irregularities in the Proposal(s) received.

7.23 Reciprocal Preference to be given by Public Agencies to Resident Bidders

In accordance with KRS 45A.494, a resident Offeror of the Commonwealth of Kentucky shall be given a preference against a non-resident Offeror. In evaluating proposals, the University will apply a reciprocal preference against an Offeror submitting a proposal from a state that grants residency preference equal to the preference given by the state of the nonresident Offeror. Residency and non-residency shall be defined in accordance with KRS 45A.494 (2) and 45A.494 (3), respectively. Any Offeror claiming Kentucky residency status shall submit with its proposal Attachment B, a notarized affidavit affirming that it meets the criteria as set for in the above referenced statute.

7.24 Disbarment

Offeror's signature on this solicitation response certifies that the Offeror, and where applicable subcontract vendor, or any other person performing service under this agreement (a) is not now nor have ever been excluded, suspended, disbarred or otherwise deemed ineligible to participate in governmental procurement or other programs (b) and if disbarred, suspended or excluded during the life of the contract, the vendor will notify the University buyer of record within seventy two(72) hours of the vendor becoming aware of the governmental ineligibility.

Attachment A – TAXPAYER IDENTIFICATION NUMBER REQUEST

Eastern Kentucky University requires a Federal Tax Identification number or Social Security number for all vendors or persons doing business with the University in order to comply with Federal Regulations and tax reporting requirements. Please take a few minutes to fill out this information and return to us to ensure prompt payment of your invoices. Thank you for the valuable service you have provided Eastern Kentucky University, and we look forward to a long and lasting relationship. **IF SENDING A W-9, PLEASE RETURN THIS FORM ALSO.**
 For your convenience, you may return the information one of the following ways:

FAX: Vendor File @ 859-622-2047

Mail: Purchasing Division
 Eastern Kentucky University
 Jones 213, CPO 8A
 521 Lancaster Avenue
 Richmond, Kentucky 40475

EMAIL: andrea.cashell@eku.edu

Phone # (859)622-2246

Please type or print legibly

VENDOR INFORMATION

Name of Firm * (Company or Individual)	Phone Number *	Make Checks Payable To *
Address *	Fax Number *	Payment Address *
Address	Web Site Address or E-mail	Payment Address
Address	Vendor Representative	Name on Invoice *
City * State * Zip*	Federal Tax ID Number **	Social Security Number **
Willing to accept ACH payments * Yes <input type="checkbox"/> No <input type="checkbox"/> Bank Name & Routing # _____ Bank Account # _____	Willing to accept credit card payments* Yes <input type="checkbox"/> No <input type="checkbox"/>	Payment Terms *

* required fields

**Federal Tax ID Number- This field *must* be completed if "Name of Firm" is a company name.

Social Security Number- This field *must* be completed if "Name of Firm" is an individual's name.

***REGISTRATION**

Any foreign corporation (outside the State of Kentucky) must obtain a certificate of authority from the Secretary of State as is required by KRS 271B.15-010 & KRS/014A06/010

- Certificate #: _____ (<http://www.sos.kv.gov/business/>)
- Claimed exemption: _____

Any "person" (business or individual) making retail sales in the state are to be registered to collect Kentucky sales and use tax. If the foreign individual (or business) is making retail sales they should be registered for Kentucky sales and use tax purposes by completing a Tax Registration Application (form 10A100), available at the link below. If they are under contract to perform services that do not include the sale of tangible personal property or digital property, or do not perform services subject to tax per KRS 139.200 (such as admissions, provision of telecommunication services, sewer services, and so on), then they are not required to register. KRS 139

- Consumer Use Tax Account number: _____ (<http://revenue.kv.gov/>)
- Sales Tax Account Number: _____

CERTIFICATION

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me) and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U. S. person (including a U.S. resident alien).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholdings because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct Taxpayer Identification Number.

Signature of U.S. Person _____ Date _____

Type of Ownership (Check Appropriate Box(es)) * <input type="checkbox"/> (01) Individual/Sole Proprietorship <input type="checkbox"/> (05) Non-Resident Alien <input type="checkbox"/> (02) Partnership <input type="checkbox"/> (06) Exempt from backup withholding <input type="checkbox"/> (03) Corporation-Incorporated in (State) _____ <input type="checkbox"/> Other: _____ <input type="checkbox"/> (04) Non-profit/Education		Business Classification (Check Appropriate Box(es)) * <input type="checkbox"/> (SM) Small Business <input type="checkbox"/> (SD) Small Disadvantaged Business <input type="checkbox"/> (LG) Large Business <input type="checkbox"/> (GA) Government Agency <input type="checkbox"/> (CT) In County <input type="checkbox"/> (NP) Non-Profit <input type="checkbox"/> (MN) Minority Owned <input type="checkbox"/> (AL) Alumni Owned <input type="checkbox"/> (WO) Women Owned <input type="checkbox"/> (HZ) Hub Zone Small Business <input type="checkbox"/> Other (Specify) _____	
---	--	--	--

Business Classification Reference Links: www.ecr.gov/sizesstandard.asp, <http://ecwb.sba.gov/hubzoneinternet/general/whowcare.cfm>, and

<http://app1.sba.gov/fips/fipsindex.cfm?arcalD=11>

Printed Name of Authorizing Official: _____

Authorized Signature: _____

Date: _____

Attachment B - Affidavit

Solicitation #: RFP-02-13

REQUIRED AFFIDAVIT FOR BIDDERS, OFFERORS AND CONTRACTORS CLAIMING RESIDENT BIDDER STATUS

FOR BIDS AND CONTRACTS IN GENERAL:

The bidder or offeror hereby swears and affirms under penalty of perjury that, in accordance with KRS 45A.494(2), the entity bidding is an individual, partnership, association, corporation, or other business entity that, on the date the contract is first advertised or announced as available for bidding:

1. Is authorized to transact business in the Commonwealth;
2. Has for one year prior to and through the date of advertisement
 - a. Filed Kentucky corporate income taxes;
 - b. Made payments to the Kentucky unemployment insurance fund established in KRS 341.49; and
 - c. Maintained a Kentucky workers' compensation policy in effect.

The BIDDING AGENCY reserves the right to request documentation supporting a bidder's claim of resident bidder status. Failure to provide such documentation upon request shall result in disqualification of the bidder or contract termination.

Signature	Printed Name
Title	Date
Company Name	
Address	
Subscribed and sworn to before me by	
	(Affiant) (Title)
of _____	this _____ day of _____, 20____.
(Company Name)	

Notary Public	
[seal of notary]	My commission expires: _____



EASTERN KENTUCKY UNIVERSITY

Serving Kentuckians Since 1906

University Counsel
(859) 622-6693 ♦ Fax (859) 622-8030
University.counsel@eku.edu ♦ www.eku.edu

204 Coates Building, Coates CPO 40 A
521 Lancaster Avenue
Richmond, Kentucky 40475-3102

November 25, 2013

Mr. David Ginter, President
Tower Access Group (TAG)
108 Forbes Court, Suite 1
Richmond, KY 40475

*Via e-mail to: dginter@toweraccessgroup.com
and First Class Mail*

Dear Mr. Ginter,

Please find enclosed one original fully executed Master Ground Lease Agreement between Eastern Kentucky University and Tower Access Group, LLC.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

Judith W. Spain
DK

Judith W. Spain, J.D.
University Counsel

JWS:dgk



MASTER GROUND LEASE AGREEMENT

THIS MASTER GROUND LEASE AGREEMENT (the "Agreement") is made as of the date of the final signature below by and between Eastern Kentucky University ("Lessor") and Tower Access Group, LLC, a Delaware limited liability company ("Lessee").

I. Definitions.

"Agreement" means this Master Ground Lease Agreement.

"Approvals" means all certificates, permits, licenses and other approvals necessary for Lessee's intended use of each Leased Premises.

"Agreement Commencement Date" means the first day of the month following the month in which this Agreement was fully executed.

"Defaulting Party" means the party to this Agreement that has defaulted as provided for in Section 34 of this Agreement.

"Easements" and "Utility Easement" have the meanings set forth in Section 9 of this Agreement.

"Hazardous Material" means any substance which is (i) designated, defined, classified or regulated as a hazardous substance, hazardous material, hazardous waste, pollutant or contaminant under any Environmental Law, as currently in effect or as hereafter amended or enacted, (ii) a petroleum hydrocarbon, including crude oil or any fraction thereof and all petroleum products, (iii) PCBs, (iv) lead, (v) asbestos, (vi) flammable explosives, (vii) infectious materials, or (viii) radioactive materials. "Environmental Law(s)" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601, et seq., the Resource Conservation and Recovery Act of 1976, 42 U.S.C. Sections 6901, et seq., the Toxic Substances Control Act, 15 U.S.C. Sections 2601, et seq., the Hazardous Materials Transportation Act, 49 U.S.C. 5101, et seq., and the Clean Water Act, 33 U.S.C. Sections 1251, et seq., as said laws have been supplemented or amended to date, the regulations promulgated pursuant to said laws and any other federal, state or local law, statute, rule, regulation or ordinance which regulates or proscribes the use, storage, disposal, presence, clean-up, transportation or release or threatened release into the environment of Hazardous Material.

"Improvements" means a wireless communications facility, including tower structures, equipment shelters, meter boards and related improvements and structures and uses incidental thereto.

"Initial Term" means a period of ten (10) years following the Commencement Date of this Agreement.

"Leased Premises" means that portion of Lessor's Property as set forth and designated on any applicable Supplement (as defined below) as described in the sketch attached to such Supplement attached thereto. The boundaries of the Leased

Premises for each Supplement may be subject to modification as set forth in Section 8 of this Agreement.

"Lessee's Notice Address" means Tower Access Group, LLC, 108 Forbes Court, Suite 1, Richmond, Kentucky 40475.

"Lessor's Notice Address" means Eastern Kentucky University, Jones Building, Room 213, 521 Lancaster Avenue, Richmond, Kentucky 40475.

"Lessor's Property" means those parcels of land located in the County of Madison, State of Kentucky, as shown on the Tax Map of said County as Tax Parcel Number 0055-0000-0019 described on the attached Exhibit A.

"Non-Defaulting Party" means the party to this Agreement that has not defaulted as provided for in Section 34 of this Agreement.

"Renewal Term" means three (3) successive periods of five (5) years commencing upon the expiration of the Initial Term.

"Rent" means the consideration payable by Lessee to Lessor in exchange for each of the Leased Premises in the amount of \$14,400.00 per year to be paid in equal monthly installments of \$1,200.00 per month, due and payable on the first day of each month (hereinafter "Base Rent"), plus any Additional Rent (as defined below). On each anniversary of each Supplement Commencement Date, (each an "Adjustment Date"), the Base Rent payable under each Supplement shall increase by an amount equal to five percent (5%) over the rent payable for each such Supplement for the immediately preceding year.

"Additional Rent" shall mean the following: For each individual Leased Premises, the amount of Two Hundred and No/100's Dollars (\$200.00) per month for the second tenant, subtenant or licensee collocating equipment on the Improvement; and, the amount of Three Hundred and No/100's Dollars (\$300.00) per month for the third tenant, subtenant or licensee collocating equipment on the Improvement; and, the amount of Four Hundred and No/100 Dollars (\$400.00) per month for the fourth tenant, subtenant or licensee collocating equipment on the Improvement. The Additional Rent shall be payable for all tenants, licensees or sublessees using space on the Improvements, excepting only the installation of any subtenant, licensee or tenant providing regional or localized internet or data services only or the installation of emergency response equipment (i.e. 911 equipment) owned or operated for the benefit of any local municipality or governmental entity for which no rent or other monetary compensation is paid to Lessee by such entity for the use of the Improvements.

"Supplement" means that Master Ground Lease Supplement in substantially the same form as set forth on the attached Exhibit B, setting forth the specific Leased Premises for each such Supplement.

"Supplement Commencement Date" means the first day of the month in which Lessee commences physical construction of the Improvements upon the Leased Premises.

2. Property and Premises. Commencing upon the Supplement Commencement Date Lessor hereby agrees to lease, let and remise to Lessee, that certain ground space within the Lessors Property as more particularly set forth on each Supplement to be executed by the parties hereto, which specific portion subject to each Supplement.

3. Access. Lessee shall have the non-exclusive right for access, ingress and egress, seven (7) days a week, twenty four (24) hours per day, on foot or motor vehicle, including trucks, to and from each Leased Premises to an open public right of way. Lessor also grants to Lessee an easement and right to install and maintain wires, cables, conduits and pipes within, over, under or along the Lessors Property to the Leased Premises as shown and set forth in each Supplement. All associated costs with the installation specified in this section will be paid by Lessee. Lessor retains right of full access to any installation specified in this section at any time. All installations specified under this section are owned by Lessor. Each such Supplement may set forth any other specific right of way or access to the Leased Premises as set forth therein. Lessor will not unreasonably withhold approval of any additional right of way or easement either to Lessee or to any public utility as may be required by such public utility, with the parties agreeing to engage in negotiations regarding additional costs of such right of way or easement to be paid by Lessee.

4. Lessor's Cooperation. During the Lease Term, Lessor shall: (i) reasonably cooperate with Lessee in its efforts to obtain all of the Approvals, including all appeals; and (ii) take no action that would adversely affect the Leased Premises. Lessor acknowledges that Lessee's ability to use the Leased Premises is contingent upon Lessee obtaining and maintaining the Approvals. Lessor agrees to execute such documents as may be necessary to obtain and thereafter maintain the Approvals, and agrees to be named as the applicant for said Approvals, if necessary.

5. Subdivision. In the event that a subdivision of Lessor's Property is legally required to lease the Leased Premises to Lessee, Lessor agrees to seek subdivision approval at Lessee's expense.

6. Term. This Agreement shall commence as of the Agreement Commencement Date and shall continue for the Initial Term. The term of this Agreement shall automatically be extended for the Renewal Term unless this Agreement is terminated pursuant to the provisions set forth herein. Notwithstanding the foregoing, the terms and conditions of this Agreement shall survive and continue to govern with respect to each Supplement in effect for the Initial Term and the Renewal Term unless terminated as set forth herein.

7. Rent and Additional Rent. Beginning on the Supplement Commencement Date, Lessee shall pay Base Rent for the Leased Premises subject to the applicable Supplement. All payments of Additional Rent for any applicable Supplement shall commence upon the completion of the installation of such

tenant's, subtenant's or licensee's equipment on the Improvement within such specific Leased Premises subject to such Supplement, and continue thereafter for so long as such tenant, subtenant or licensee occupies space within the applicable Leased Premises.

8. Leased Premises; Survey. Prior to the commencement of construction of the wireless communications facility on the any Leased Premises, Lessee shall provide Lessor with a copy of a survey, which shall depict and identify the boundaries of the Leased Premises and the Easements, and replace and supersede the sketch attached to such Supplement as Supplement Exhibit 1. The survey shall be deemed to be incorporated into this Agreement and to each Supplement as Supplement Exhibit 2 even if not physically affixed hereto, upon the approval thereof by both Lessor and Lessee as evidenced by their respective signatures thereon. The description of each such Leased Premises set forth in Supplement Exhibit 2 to each Supplement shall control in the event of discrepancies between the site sketch initially attached to such Supplement as Supplement Exhibit 1 and the survey approved by Lessor and Lessee as Supplement Exhibit 2.

9. Easements. Upon the full execution of any Supplement, Lessor grants the following easements and rights-of-way over, under and upon Lessor's Property to Lessee, Lessee's employees, agents, contractors, sublessees, licensees and their employees, agents and contractors: (i) an easement over such portions of Lessor's Property as is reasonably necessary for the construction, repair, maintenance, replacement, demolition and removal of the facility to be located upon each such Leased Premises; (ii) an easement over such portion of Lessor's Property as is reasonably necessary to obtain or comply with any Approvals; (iii) a thirty foot (30') wide easement in the location shown in Supplement Exhibit 1 to the Supplement, as may be amended by the survey approved for each such Supplement and attached as Supplement Exhibit 2 thereto, for construction, use, maintenance and repair of an access road for ingress and egress seven (7) days per week, twenty-four (24) hours per day, for pedestrians and all types of motor vehicles, to extend from the nearest public right-of-way to such Leased Premises; (iv) a utility easement (the "Utility Easement") in the location shown in Supplement Exhibit 1 to such Supplement, as may be amended by Supplement Exhibit 2, for the installation, repair, replacement and maintenance of utility wires, poles, cables, conduits and pipes, provided that in the event that any public utility is unable or unwilling to use the Utility Easement in the location shown in Supplement Exhibit 1 as may be amended by Supplement Exhibit 2, at the sole option of Lessor. Lessor will not unreasonably withhold approval of an alternate easement either to Lessee or directly to the public utility and in a location acceptable to Lessor, Lessee and the public utility (collectively, the "Easements"). Lessor and Lessee agree to engage in negotiations regarding additional costs of such right of way or easement to be paid by Lessee. TO HAVE AND TO HOLD the Easements for the purposes provided during the Lease Term and thereafter for a reasonable period of time for Lessee to remove its improvements.

10. Utilities. Lessee shall bear all costs associated with the installation, construction and operation of any and all utilities required for Lessee's use of the Improvements, including,

without limitation, the installation of separate electric meters for Lessee in the name of the Lessee and Lessee's licensees, sublessees and users of the Improvements. Lessee shall be responsible for all costs associated with the granting or installation of any rights of way or utility improvements, utility upgrades, changes in utility providers and any re-routing of utility lines or equipment as may be necessary for the use and operation of the Improvements. Lessor retains ownership of any and all utility improvements and upgrades. The location of the utilities will be subject to prior written approval by Lessor; such approval not to be unreasonably withheld.

11. Lessee's Right to Terminate; Effect of Termination by Lessee. Lessee shall have the right to terminate this Agreement, at any time, without cause, by providing Lessor with one hundred eighty (180) days' prior written notice. Upon such termination, this Agreement shall become null and void and neither party shall have any further rights or duties hereunder, except that any monies owed by either party to the other up to the date of termination shall be paid within thirty (30) days of the termination date.

12. Lessor's Right to Terminate During Initial Term; Effect of Termination by Lessor. Lessor shall have the right to terminate this Agreement in the event Lessee shall be in breach of this Agreement beyond any applicable notice and cure periods as set forth in Section 34 hereof. Upon such termination, this Agreement shall become null and void and neither party shall have any further rights or duties hereunder, except that any monies owed by either party to the other up to the date of termination shall be paid within thirty (30) days of the termination date. Further, Lessor shall have the right, during the Initial Term to terminate any Supplement in the event (1) the Leased Premises set forth in such Supplement is required for the development, construction or operation of buildings or other improvements related to the operations of Lessor and (2) the Leased Premises are no longer suitable for the placement, operation or use as a communications tower facility by Lessor or any other party. In the event of such election to terminate, Lessor shall provide Lessee with notice at least one hundred eighty (180) days prior to the date of such termination ("Lessor's Termination Notice"). Lessor shall not have the right to terminate any such Supplement for the purpose of using such Leased Premises by Lessor, re-leasing or granting the right of any other person or entity to use a portion of the Property for the placement or operation of a communications tower facility.

Upon such termination by Lessor for (1) convenience, (2) the Leased Premises set forth in such Supplement is required for the development, construction or operation of buildings or other improvements related to the operations of Lessor and (3) the Leased Premises are no longer suitable for the for the placement, operation or use as a communications tower facility by Lessor or any other party, Lessor shall pay to Lessee the amount of \$20,000, multiplied by the total number of whole years remaining on the Initial Term of such Supplement ("Termination Payment"). Notwithstanding the foregoing, Lessor and Lessee shall, following the receipt of Lessor's Termination Notice, work cooperatively and in good faith to identify a suitable location for the relocation of the Improvements set forth in any such Supplement identified in

Lessor's Termination Notice. In the event the Improvements set forth in any Supplement subject to a Lessor's Termination Notice can be relocated to a suitable location, mutually acceptable to Lessor and Lessee in their reasonable discretion, Lessor shall not be required to make any such Termination Payment and the parties will execute an amendment to such Supplement setting forth the new location of the Improvements subject to such Supplement.

13. Lessor's Right to Terminate During Renewal Term; Effect of Termination by Lessor.

Lessor shall have the right to terminate this Agreement in the event Lessee shall be in breach of this Agreement beyond any applicable notice and cure periods as set forth in Section 34 hereof. Upon such termination, this Agreement shall become null and void and neither party shall have any further rights or duties hereunder, except that any monies owed by either party to the other up to the date of termination shall be paid within thirty (30) days of the termination date.

Further, Lessor shall have the right, following the Initial Term of any Supplement, to terminate such Supplement in the event (1) for convenience, (2) the Leased Premises set forth in such Supplement is required for the development, construction or operation of buildings or other improvements related to the operations of Lessor and (3) the Leased Premises are no longer suitable for the for the placement, operation or use as a communications tower facility by Lessor or any other party. In the event of such election to terminate, Lessor shall provide Lessee with notice at least one hundred eighty (180) days prior to the date of such termination ("Lessor's Termination Notice").

Notwithstanding the foregoing, Lessor and Lessee shall, following the receipt of Lessor's Termination Notice, work cooperatively and in good faith to identify a suitable location for the relocation of the Improvements set forth in any such Supplement identified in Lessor's Termination Notice. In the event the Improvements set forth in any Supplement subject to a Lessor's Termination Notice can be relocated to a suitable location, mutually acceptable to Lessor and Lessee in their reasonable discretion, the parties will execute an amendment to such Supplement setting forth the new location of the Improvements subject to such Supplement.

Lessor shall not have the right to terminate any such Supplement for the purpose of using such Leased Premises by Lessor, re-leasing or granting the right of any other person or entity to use a portion of the Property for the placement or operation of a communications tower facility.

14. Use of Property. Each such Leased Premises and the associated or related Easements shall be used for the purpose of constructing, maintaining and operating the Improvements and uses incidental thereto, and for no other purpose without the consent of the Lessor. Lessee shall construct, operate, and maintain the Improvements in compliance with all applicable laws, rules and ordinances. Lessee shall place a security fence, around the perimeter of each Leased Premises, and shall attach thereto signage as prior approved in writing by the Lessor, setting forth the details of the Leased Premises, the fact that the Improvements thereon are privately owned and operated, and

containing emergency contact information and phone numbers. All Improvements shall be constructed at Lessee's sole expense. All construction and any modification, alteration or amendment thereto shall be constructed during the normal business hours of Lessor. Lessee will maintain the Leased Premises in a safe condition. It is the intent of the parties that Lessee's wireless communications facility shall not constitute a fixture.

15. Maintenance and Landscaping by Lessee. Lessee shall, at Lessee's sole cost and expense: (1) inspect and police each Leased Premises subject to any Supplement on a regular basis, but not less than monthly, and remove trash and debris from such Leased Premises as needed or as reasonably requested by Lessor, (2) perform preventative maintenance of all Improvements owned by Lessee on any such Leased Premises, (3) be responsible for any rebuilding, restoration and replacement of any property owned by Lessor necessitated by any casualty resulting from the negligence or intentional misconduct of Lessee, its agents or employees, (4) shall keep all Improvements in good repair, and shall not suffer or permit any waste to be committed or any nuisance on any Leased Premises (it being agreed and accepted that the permitted use of the Leased Premises by Lessee as set forth in this Agreement shall not be considered nuisance). In addition, Lessee shall maintain any and all landscaping as required for any Leased Premises as set forth in the terms of the applicable Supplement or within the plans and specifications for the Improvements related to such Supplement. Lessee agrees that no live trees will be cut, no vegetation dug, nor the landscape altered in any way without prior written approval by Lessor. Lessee shall be required to replace any grass or trees that have been removed from the construction site. In no event shall Lessee extract or remove any minerals, oil, or gas from the Leased Premises. Lessor and Lessee shall inspect each Leased Premises annually, no later than June 30 of each year, to confirm the compliance of Lessee with the provisions of this Section. In the event Lessee is not in compliance with the terms of this Section for any specific Leased Premises, Lessor may provide to Lessee a written inspection report detailing such issues or deficiencies (hereinafter "Inspection Report"). Lessee shall have a period of thirty (30) days following the receipt of the Inspection Report to either (1) complete such maintenance as recommended or required by Lessor, or (2) present a written plan, for approval by Lessor setting forth the details of actions to be taken by Lessee to correct any agreed upon maintenance deficiency, including the estimated date of completion thereof by Lessee. In the event Lessee fails to abide by the terms of this Section or fails to complete any agreed upon maintenance requirements following the Inspection Report within thirty (30) days, Lessee shall be in default under the terms of this Agreement and, in addition to the remedies set forth in this Agreement with respect to a default, Lessor may, upon the expiration of such thirty (30) day period, enter upon any such Leased Premises and complete the required maintenance as set forth in the Inspection Report, and Lessee shall indemnify and hold Lessor harmless from all costs and expenses of such maintenance. This Lease shall not automatically terminate or be affected in any manner by reason of the damage or destruction by fire or other casualty, in whole or in part of the reason of untenability of the Lessee or by reason of the disrepair of any of the Structure, and Lessee shall pay rent specified in this Lease

without abatement, diminution, or reduction of rent on account of any such damage or destruction.

16. Construction of Improvements. Prior to the commencement of the Improvements, Lessee shall obtain any and all Approvals as may be required from any applicable local, state and federal regulatory agencies. Further, all plans and specifications for any Improvements shall be approved by Lessor, which approval shall not be unreasonably withheld, delayed or conditioned. Any alteration, renovation, addition, or major repair to be installed on the Improvements following the initial construction thereof by Lessee shall first be approved by Lessor. Lessee shall deliver plans, specifications and drawings of such improvement, addition, or repair to Lessor for Lessor's consent, which consent shall not be unreasonably withheld, delayed or conditioned. Lessee shall, during the construction of the Improvements or during any improvement, alteration or modification thereto, maintain adequate protection of such work from damages and shall protect the Lessor's property from injury or loss arising from the activities of Lessee. Lessee shall comply with all applicable workers compensation, local, state and federal safety laws and all applicable building codes and rules associated with the Improvements or the construction, alteration or amendment thereof. If required by applicable law, Lessee shall prepare a safety plan setting forth the use of hard hats, fall protection, hazardous handling and clean up, and shall provide a copy of such plan to Lessor upon request.

17. Requirements of Public Authority

(A) Lessee to Comply

During the Initial Term and Renewal Term, Lessee shall, at its sole cost and expense, observe and comply with all present and future laws, ordinances, orders, rules and regulations of the federal, state, county, municipal and other governmental authorities affecting all or any part of the improvements, appurtenances thereto whether the same are in force at the commencement date or which may in the future be passed, enacted or directed. Lessee shall pay any and all costs, expenses, liabilities, losses, damages, fines, penalties, claims and demands incurred by Lessee including without limitation, reasonable attorney's fees and expenses, that may in any manner arise out of or be imposed because of the failure of Lessee to comply with this Section.

(B) Right to contest

Lessee may contest by appropriate legal proceeding conducted in good faith in the name of Lessee, Lessor or both, without cost or expense to Lessor, the validity or application of any law, ordinance order, rule or regulation of the nature referred to this Section and, if by the terms of any such law, ordinance, order rule or regulation of the nature referred to in this Section.

(C) Assistance by Lessor

Lessor shall execute and deliver any appropriate instruments which may be necessary or proper to permit Lessee to contest the validity or application of any such law, ordinance, order, rule, or regulation and reasonably cooperate with Lessee in such contest.

18. Compliance with Americans with Disability Act Amendment Act of 2008.

All construction, alterations, renovations, repairs to the Lessor's premises shall be subject to all applicable building codes of the Commonwealth of Kentucky and the Americans for Disabilities Act prior to commencement of the Lessee's operation.

19. Images of Improvement. The tower structure to be located in the area adjacent to the Sayre Building must be silver in color; the tower structure to be located in the area adjacent to the New Science Building must be a rust brown in color; the tower structure to be located in the Lancaster parking lot must be rust brown in color. Lessee shall dispose of any materials removed at Lessee's cost.

20. Lessor Access. In the event of Termination of this Agreement, Lessor may lawfully enter upon Structure or any part thereof and repossess the same as of the former estate of Lessor and expel Lessee and those claiming under and through Lessee, and remove Lessee's effects, without being deemed guilty of any manner of trespass, or liable for any claim for damages and without prejudice to any remedies which might otherwise be used for arrears of rent or breach of covenants, and upon entry as and damages which may be due or sustained prior thereto.

21. Hazardous Materials.

(A) **Lessee's Obligation and Indemnity.** Lessee shall not (either with or without negligence) cause or permit the escape, disposal or release of any Hazardous Materials on or from the Leased Premises in any manner prohibited by law. Lessee shall indemnify and hold Lessor harmless from any and all claims, damages, fines, judgments, penalties, costs, liabilities or losses (including, without limitation, any and all sums paid for settlement of claims, attorneys' fees, and consultants' and experts' fees) from the release of any Hazardous Materials on the Leased Premises if caused by Lessee or persons acting under Lessee.

(B) **Lessor's Obligation.** Lessor shall not (either with or without negligence) cause or permit the escape, disposal or release of any Hazardous Materials on or from Lessor's Property or Leased Premises in any manner prohibited by law.

22. Real Estate Taxes. Lessor shall pay all real estate taxes on Lessor's Property, if any. Lessee agrees to reimburse Lessor for any documented increase in real estate or personal property taxes levied against Lessor's Property that are directly attributable to the Improvements constructed by Lessee on any such Leased Premises. Lessor agrees to provide Lessee any documentation evidencing the increase and how such increase is attributable to Lessee's use. Lessee reserves the right to challenge any such assessment, and Lessor agrees to cooperate with Lessee in connection with any such challenge.

23. Insurance. Lessee, at its sole expense, shall obtain and keep in force insurance with at least the following limits: General Liability - \$1,000,000.00, Employers Liability: \$1,000,000.00, Auto Liability: \$1,000,000.00, and an overall umbrella policy of not less than \$5,000,000.00 with Lessor named as an Additional Insured on all policies. Lessee shall

provide to Lessor a certificate evidencing such insurance coverages upon request by Lessor.

24. Waiver of Claims and Rights of Subrogation. The parties hereby waive any and all rights of action for negligence against the other on account of damage to the Improvements, Lessor's Property or to any Leased Premises resulting from any fire or other casualty of the kind covered by property insurance policies with extended coverage, regardless of whether or not, or in what amount, such insurance is carried by the parties. All policies of property insurance carried by either party for the Improvements, Lessor's Property or each Leased Premises shall include a clause or endorsement denying to the insurer rights by way of subrogation against the other party to the extent rights have been waived by the insured before the occurrence of injury or loss.

25. Eminent Domain. If Lessor receives notice of a proposed taking by eminent domain of any part of any Leased Premises or the Easements, Lessor will notify Lessee of the proposed taking within five (5) days of receiving said notice and Lessee will have the option to: (i) declare such Supplement related to the specific Leased Premises so condemned null and void and thereafter neither party will have any liability or obligation under such Supplement, but all other Supplements and this Agreement shall remain in full force and effect; or (ii) remain in possession of that portion of such Leased Premises and Easements that will not be taken, in which event there shall be an equitable adjustment in rent on account of the portion of the specific Leased Premises and Easements so taken. With either option Lessee shall have the right to contest the taking and directly pursue an award for the value of the Lessee's Leased Premises pursuant to such Supplement and any Improvements owned by Lessee.

26. Sale of Property. If Lessor sells all or part of Lessor's Property, of which the Leased Premises is a part then such sale shall be under and subject to this Agreement.

27. Surrender of Property. Upon expiration or termination of this Agreement or any such Supplement, Lessee shall, prior to the date of such expiration or termination, remove all above ground Improvements and restore such Leased Premises as nearly as reasonably possible to its original condition, without, however, being required to replace any trees or other plants removed, or alter the then existing grading.

28. Hold Harmless. Lessee shall indemnify and defend the other party against, and hold the Lessor harmless from, any claim of liability or loss from personal injury or property damage arising from the use and occupancy of any such Leased Premises or Lessor's Property by such indemnifying party, its employees, contractors, servants or agents, except to the extent such claims are caused by the intentional misconduct or negligent acts or omissions of the Lessor, its employees, contractors, servants or agents.

29. Lessor's Covenant of Title. Lessor covenants that Lessor holds good and marketable fee simple title to Lessor's Property and each Leased Premises and has full authority to enter into and execute this Agreement. Lessor further covenants that

there are no encumbrances or other impediments of title that might interfere with or be adverse to Lessee.

30. No Representations. Except as specifically set forth herein, Lessor makes no guaranty or warranty, express or implied, with respect to any Leased Premises as to suitability for Lessee's Improvements or use thereof. Except as set forth herein, each Leased Premises is conveyed to Lessee in an "AS IS, WHERE IS, and WITH ALL FAULTS" condition.

31. Interference with Lessee's Business. Lessor agrees that it will not permit the construction, installation or operation on Lessor's Property of (i) any additional wireless communications facilities or (ii) any equipment or device that interferes with Lessee's use of each Leased Property for a wireless communications facility. Each of the covenants made by Lessor in this Section is a covenant running with the land for the benefit of each Leased Premises.

32. Quiet Enjoyment. Lessor covenants that Lessee, on paying Rent and performing the covenants of this Agreement and each Supplement, shall peaceably and quietly have, hold and enjoy each Leased Premises and Easements.

33. Mortgages. This Agreement and each Supplement, as well as Lessee's leasehold interest and the Easements created thereby shall be subordinate to any mortgage given by Lessor which currently encumbers Lessors Property, provided that any mortgagee shall recognize the validity of this Agreement in the event of foreclosure. In the event that the Lessors Property or any Leased Premises subject to a Supplement as set forth herein is or shall be encumbered by such a mortgage, Lessor shall obtain and furnish to Lessee a non-disturbance agreement for each such mortgage, in recordable form.

34. Default.

(A) **Notice of Default; Cure Period.** In the event that there is a default by Lessor or Lessee (the "Defaulting Party") with respect to any of the provisions of this Agreement, any Supplement or Lessor's or Lessee's obligations under this Agreement or any Supplement, the other party (the "Non-Defaulting Party") shall give the Defaulting Party written notice of such default. After receipt of such written notice, the Defaulting Party shall have thirty (30) days in which to cure any monetary default and sixty (60) days in which to cure any non-monetary default. The Defaulting Party shall have such extended periods as may be required beyond the sixty (60) day cure period to cure any non-monetary default if the nature of the cure is such that it reasonably requires more than sixty (60) days to cure, and Defaulting Party commences the cure within the sixty (60) day period and thereafter continuously and diligently pursues the cure to completion. The Non-Defaulting Party may not maintain any action or effect any remedies for default against the Defaulting Party unless and until the Defaulting Party has failed to cure the same within the time periods provided in this Section.

(B) **Limitations On Damages.** In no event shall Lessee or Lessor be liable to the other party for consequential, indirect, speculative or punitive damages in connection with or arising out of any default.

(C) **Consequences of Lessor's Default.** In the event that Lessor is in default beyond the applicable periods set forth above, Lessee may, at its option, upon written notice: (i) terminate this Agreement and all Supplements, or terminate any such Supplement that is the basis of such default without terminating this Agreement as a whole, and thereafter vacate the Leased Premises related to such Supplement then in default and be relieved from all further obligations under that specific Supplement; (ii) take any actions that are consistent with Lessee's rights under this Agreement or pursuant to applicable law; (iv) sue for injunctive relief, and/or sue for specific performance, and/or sue for damages, and/or set-off from Rent due under any such Supplement any amount reasonably expended by Lessee as a result of such default.

35. Liens. Lessee will not permit any mechanics, materialman's or other liens to stand against the Lessor's Property for any labor or material furnished to the Lessee in connection with work of any character performed on any such Leased Premises by or at the direction of the Lessee. In the event that any notice of lien will be filed or given, Lessee will, within thirty (30) days after the date of filing cause the same to be released or discharged by either payment, deposit, or bond. Lessor will be indemnified by Lessee from and against any losses, damages, costs, expenses, fees or penalties suffered or incurred by Lessor on account of the filing of the claim or lien. Notwithstanding the foregoing, in the event Lessee, in good faith, disputes the validity or correctness of any such lien, Lessee may refrain from paying or causing the same to be discharged of record, but Lessee shall diligently proceed to initiate and conduct appropriate proceedings to determine the correctness or validity of such lien. The Lessee shall not be deemed to be in default under the terms of this Agreement while such proceedings or litigation are being conducted in good faith. However, in the event Lessee fails to cause any such lien to be discharged within the period set forth in this Section, or fails to contest the same as provided herein, then Lessee shall be deemed to be in default of this Agreement.

36. Applicable Law. This Agreement and the performance thereof shall be governed, interpreted, construed and regulated by the laws of the Commonwealth of Kentucky. The parties agree that the venue for any litigation regarding this Agreement shall be Franklin County, Kentucky.

37. Assignment, Sublease, Licensing and Encumbrance.

Lessee has the right to sublease or license use of the Leased Premises, Easements and Improvements that are the subject of any Supplement to any other party or multiple parties, subject to the payment of Additional Rent as set forth herein and the prior written consent of Lessor, which consent shall not be unreasonably withheld, delayed or conditioned.

Prior to the execution of any such sublease by Lessee, Lessee shall deliver notice to Lessor of the name of such sublessee and the frequencies such sublessee intends to operate on the Improvements. Lessor shall have a period of thirty (30) days from receipt of such notice to either approve of such sublease or issue any objections thereto. In the event Lessor fails to

respond within said thirty (30) day period, the grant of sublease by Lessee shall be deemed approved.

Following the execution of any such sublease by Lessee, Lessee shall provide a copy of any such sublease to Lessor. All such subleases shall include a provision requiring such sublessee or licensee to hold Lessor harmless from any negligent acts or intentional misconduct of such sublessee or licensee; shall include a provision requiring such sublessee or licensee to not advertise, promote, or reference the location of the sublessee's or the licensee's broadcasting location on a tower located on Lessor's property without prior written approval by Lessor; and shall further require that such sublessee or licensee operate within the terms of any license or permit granted by the Federal Communications Commission or, if such operation is to be within spectrum that is unlicensed by the Federal Communications Commission, within or subject to those terms and requirements set forth by Lessor if Lessor consents to such use as set forth above.

Lessee shall have the right to assign this Agreement together with all Supplements upon the prior written approval of Lessor, which approval shall not be unreasonably withheld, delayed or conditioned, except as set forth below. Notwithstanding the foregoing, Lessee may assign this Agreement and all Supplements related hereto without the consent of Lessor to Lessee's affiliates or subsidiaries, or to entities that control, are controlled by or in common control with Lessee, or to any entity whose business includes the construction, operation, or ownership of communications tower facilities and related improvements. In such event, Assignment of this Agreement by Lessee shall be effective upon Lessee sending prior written notice to Lessor and shall relieve Lessee from any further liability or obligation. Lessee has the further right to pledge or encumber its interest in this Agreement or any specific Supplement. Upon request to Lessor from any leasehold mortgagee, Lessor agrees to give the holder of such leasehold mortgage written notice of any default by Lessee and an opportunity to cure any such default within fifteen (15) days after such notice with respect to monetary defaults and within a commercially reasonable period of time after such notice with respect to any non-monetary default.

38. Miscellaneous.

Recording. Lessee shall have the right to record a memorandum of this Agreement with the appropriate recording officer, and to thereafter record a memorandum of each Supplement made and executed by the parties pursuant to this Agreement. Lessor shall execute and deliver such memorandums, for no additional consideration, upon Lessee's request.

Entire Agreement. Lessor and Lessee agree that this Agreement and each of the related Supplements shall contain all of the agreements, promises and understandings between Lessor and Lessee. No oral agreements, promises or understandings shall be binding upon either Lessor or Lessee in any dispute, controversy or proceeding at law. Any addition, variation or modification to this Agreement shall be void and ineffective unless made in writing and signed by the parties hereto. The terms of any Supplement shall control in the event

there is any inconsistency or direct conflict between such Supplement and the terms of this Agreement.

Captions. The captions preceding the Sections of this Agreement and any Supplement are intended only for convenience of reference and in no way define, limit or describe the scope of this Agreement or the intent of any provision hereof.

Construction of Document. Lessor and Lessee acknowledge that this document and any Supplement shall not be construed in favor of or against the drafter by virtue of said party being the drafter and that this Agreement and any Supplement shall not be construed as a binding offer until signed by Lessee.

Notices. All notices hereunder shall be in writing and shall be given by (i) established national courier service which maintains delivery records, (ii) hand delivery, or (iii) certified or registered mail, postage prepaid, return receipt requested. Notices are effective upon receipt, or upon attempted delivery if delivery is refused or if delivery is impossible because of failure to provide reasonable means for accomplishing delivery. The notices shall be sent to Lessor at Lessor's Notice Address and to Lessee at Lessee's Notice Address.

Partial Invalidity. If any term of this Agreement or any Supplement is found to be void or invalid, then such invalidity shall not affect the remaining terms of this Agreement or the specific Supplement, which shall continue in full force and effect.

IRS Form W-9. Lessor agrees to provide Lessee with a completed IRS Form W-9, or its equivalent, upon execution of this Agreement and at such other times as may be reasonably requested by Lessee.

IN WITNESS WHEREOF, Lessor and Lessee having read the foregoing and intending to be legally bound hereby, have executed this Agreement as of the day and year this Agreement is fully executed.

LESSOR:
EASTERN KENTUCKY UNIVERSITY

Witness

By: Michael T. Benson
Print Name: Michael T. Benson
Print Title (if any): President
Date: 11-25-13

LESSEE:
TOWER ACCESS GROUP, LLC
a Delaware limited liability company

Donal L. Reed
Witness

By: David S. Ginter
Print Name: David Ginter
Print Title: President
Date: 11/22/13

EXHIBIT "A"
Lessor's Property

Tax Parcel Number 0055-0000-0019

EXHIBIT "B"
Form of Supplement

MASTER GROUND LEASE AGREEMENT SUPPLEMENT

This Master Ground Lease Supplement is made and entered into this _____ day of _____, 20____, by and between Eastern Kentucky University ("Lessor") and Tower Access Group, LLC, a Delaware limited liability company ("Lessee").




1. **Master Ground Lease Agreement.** This Master Ground Lease Supplement is a Supplement as referenced in that certain Master Ground Lease Agreement between Lessor and Lessee dated _____ (hereinafter "Agreement"). All of the terms and conditions of the Agreement are incorporated herein by reference and made a part hereof without the necessity of repeating or attaching the Agreement. In the event of a contradiction, modification or inconsistency between the terms of the Agreement and this Supplement, the terms of this Supplement shall govern. Capitalized terms used in this Supplement shall have the same meaning described for them in the Agreement unless otherwise indicated herein.
2. **Leased Premises.** The Leased Premises leased by Lessor to Lessee hereunder is described as a parcel of property containing _____ (____) square feet of ground space as depicted on Supplement Exhibit 1, attached hereto and incorporated herein. Lessee shall have the non-exclusive right to access and ingress and egress, seven (7) days a week, twenty-four (24) hours a day to and from the Leased Premises and from and to _____, a public right-of-way. Lessor also grants to Lessee the easement and right as is reasonably necessary to access, install and maintain wires, cables, conduits and pipes either within, over, under or along the Lessor's Property, subject to prior written approval by Lessor, as shown on Supplement Exhibit 1.
3. **Survey.** As set forth in the Agreement, Lessee shall order and complete a survey of the Leased Premises and/or that portion of the Landlord's Property surrounding the Leased Premises and said survey shall, upon Lessor's consent, which shall not be unreasonably withheld, conditioned or delayed, automatically become Supplement Exhibit 2 and made a part hereof, and which shall control in the event of any discrepancies between it and Supplement Exhibit 1.
4. **Term.** As set forth in the Agreement, the term of this Supplement shall commence upon the commencement of construction of the Improvements and shall continue thereafter for a period of ten (10) years, which term shall automatically renew for three (3) successive periods of five (5) years (the "Renewal Term") unless this Supplement or the Agreement is terminated as set forth in the Agreement.
5. **Special Provisions.**

THE REMAINDER OF THIS PAGE IS INTENTIONALLY BLANK
SIGNATURE PAGES FOLLOW

ATTACHMENTS:

Supplement Exhibit 1 – Sketch of Leased Premises completed at time of Supplement
Supplement Exhibit 2 – Survey of Leased Premises as approved by Lessor

SHEET 1

-  - VICINITY AND 500' STRUCTURAL MAP
-  - ABUTTING PROPERTY OWNERS
-  - U.S.G.S. QUAD MAP



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



0056-0000-0004 /6229
 EKU UNIVERSITY COUNSEL
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
 DEED BOOK 97, PAGE 416

0056-0000-0004 /6229
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 RICHMOND, KY 40475
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0055-0000-0023 /65822
 MADISON COUNTY AMBULANCE SER.
 P O BOX 762
 RICHMOND, KY 40475
 DEED BOOK 416, PAGE 322

0056-0000-0001 /23066
 EASTERN KENTUCKY UNIVERSITY
 CAMPUS
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
 DEED NOT FOUND

TAX: INFORMATION NOT FOUND
 NAME: INFORMATION NOT FOUND
 ADDRESS: INFORMATION NOT FOUND
 CURRENT USE: KENTUCKY STATE
 POLICE BARRACKS

0055-0000-0019 /6234
 EASTERN KENTUCKY UNIVERSITY
 CAMPUS
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
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0055-0000-0022 /72960
 COMMONWEALTH OF KENTUCKY
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
 DEED BOOK 672, PAGE 303

0055-0000-0021
 CITY OF RICHMOND
 (FIRE STATION #3)
 RICHMOND, KY 40475
 DEED BOOK 276, PAGE 697



Formerly F.S. Land & T. Alan Neal Company
 Land Surveyors and Consulting Engineers
 2540 Ridgeman Court, Suite 102
 Louisville, KY 40299
 Phone: (502) 635-5856 (502) 636-5111
 Fax: (502) 636-2263

SITE NUMBER:
 NOT PROVIDED

SITE NAME:
 MCKINNEY

SITE ADDRESS:
 534 John Hanlon Drive
 Richmond, KY 40475

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

PROPERTY OWNER:
 EASTERN KENTUCKY UNIVERSITY
 Richmond, KY 40475

MAP NUMBER:
 0055

PARCEL NUMBER:
 0019

SOURCE OF TITLE:
 D.B. 97, PG. 416

DWG BY: SNS	CHKD BY: FSH	DATE: 12-22-14
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FSTAN PROJECT NO.:
 13-8891

SHEET 2 OF 2

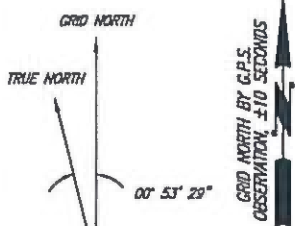
REVISIONS:
 REVISE 500' RAD OWNER - 3.16.15

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STATE OF KENTUCKY

FRANK L. SELLINGER
 3282

LICENSED
 PROFESSIONAL
 LAND SURVEYOR

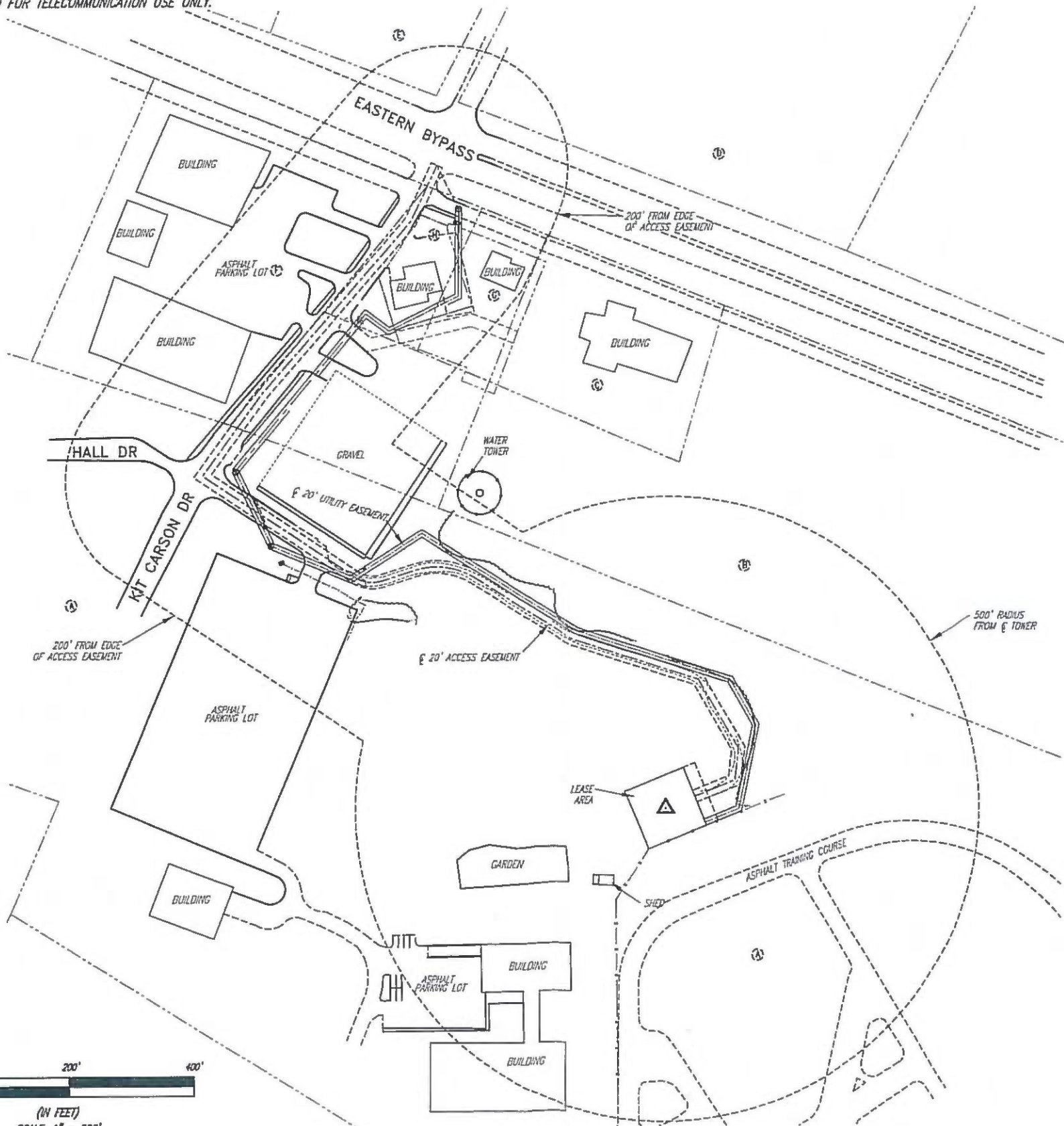


NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON DECEMBER 13, 2013






QUAD MAP
 SCALE: 1"=2000'

U.S.G.S. 7 1/2 MINUTE QUAD MAP OF RICHMOND SOUTH



SHEET 1

-  - VICINITY AND 500' STRUCTURAL MAP
-  - ABUTTING PROPERTY OWNERS
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 RICHMOND, KY 40475
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 ADDRESS: INFORMATION NOT FOUND
 CURRENT USE: KENTUCKY STATE
 POLICE BARRACKS

0055-0000-0019 /6234
 EASTERN KENTUCKY UNIVERSITY
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 521 LANCASTER AVENUE
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 DEED NOT FOUND

0055-0000-0022 /72960
 COMMONWEALTH OF KENTUCKY
 521 LANCASTER AVENUE
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0055-0000-0021
 CITY OF RICHMOND
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 RICHMOND, KY 40475
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 AREA = 10,000 sq.ft.

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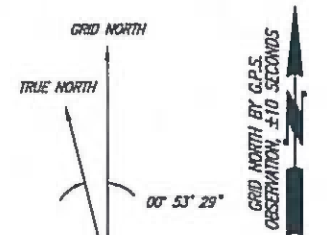
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SHEET 2 OF 2

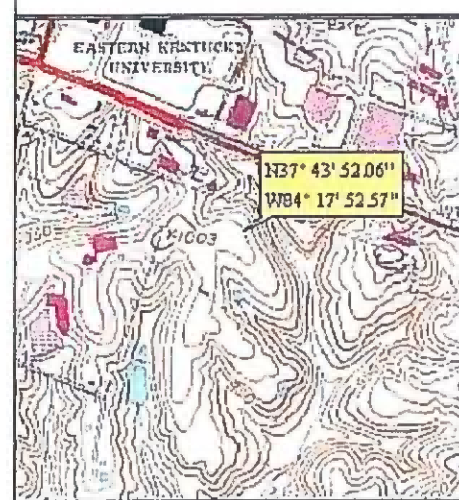
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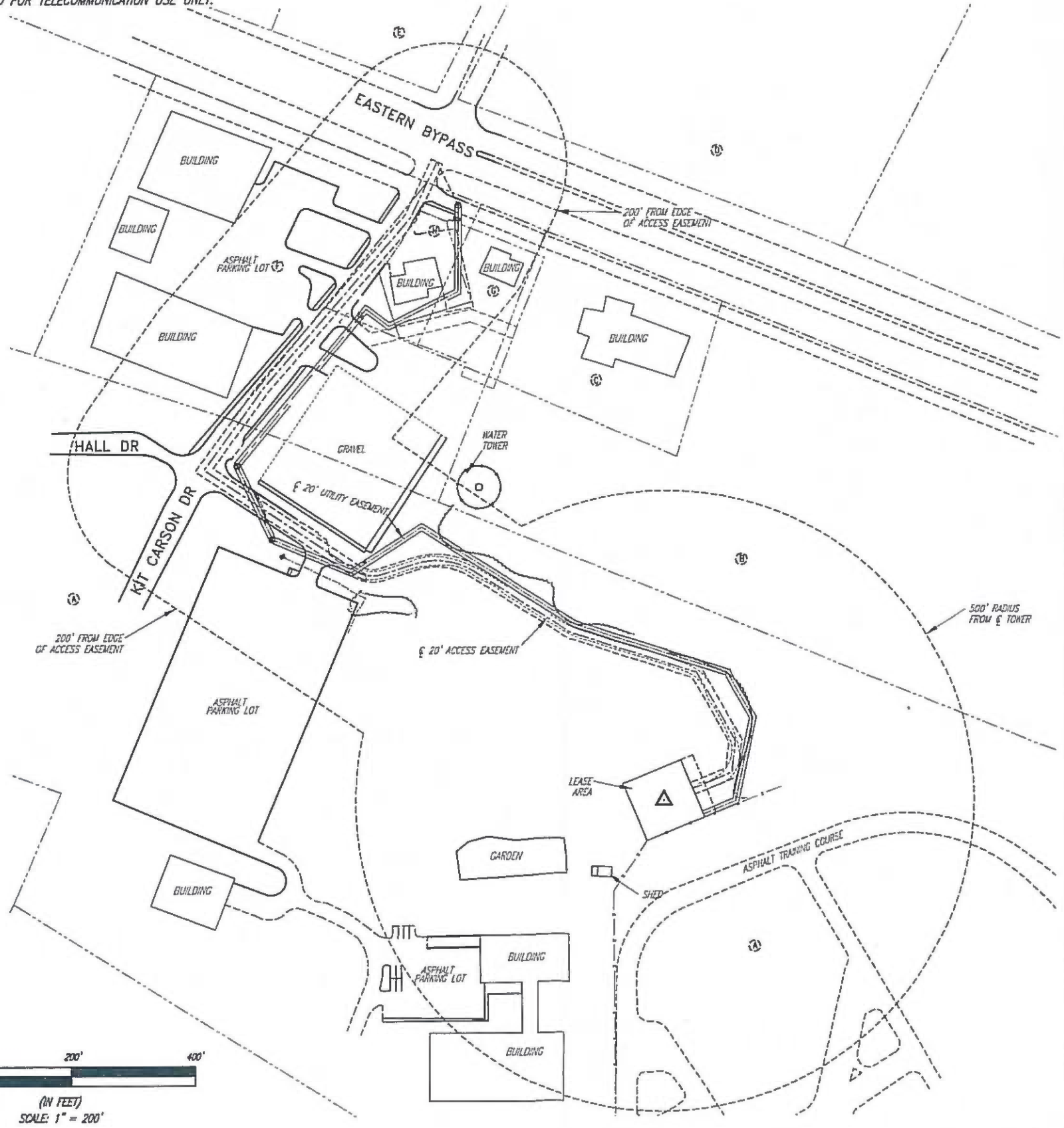


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




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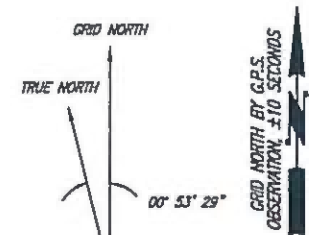
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SHEET 2 OF 2

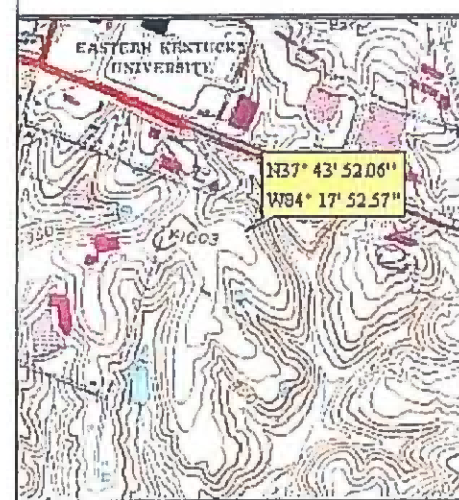
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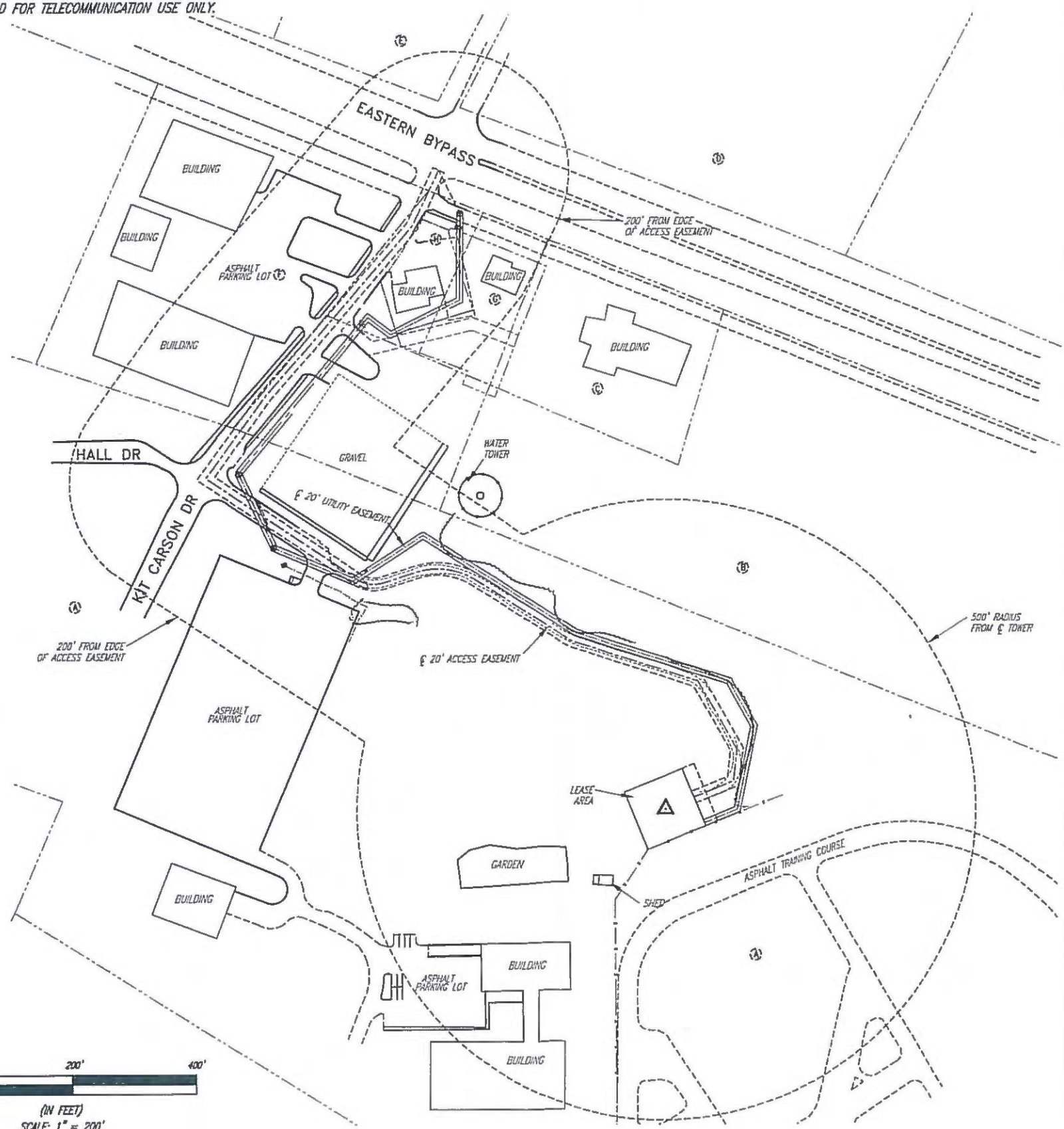
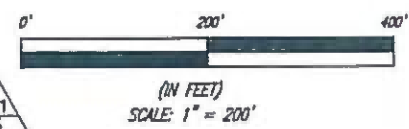


NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON DECEMBER 13, 2013






QUAD MAP
 SCALE: 1"=2000'

U.S.G.S. 7 1/2 MINUTE QUAD MAP OF RICHMOND SOUTH



SHEET 1

-  - VICINITY AND 500' STRUCTURAL MAP
-  - ABUTTING PROPERTY OWNERS
-  - U.S.G.S. QUAD MAP



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



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 ERU UNIVERSITY COUNSEL
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
 DEED BOOK 97, PAGE 416



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 ERU UNIVERSITY COUNSEL
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 RICHMOND, KY 40475
 DEED BOOK 97, PAGE 416



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 Fax: (502) 636-2263



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0055-0000-0001 /23066
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 NAME: INFORMATION NOT FOUND
 ADDRESS: INFORMATION NOT FOUND
 CURRENT USE: KENTUCKY STATE
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 DEED BOOK 672, PAGE 303



0055-0000-0021
 CITY OF RICHMOND
 (FIRE STATION #3)
 RICHMOND, KY 40475
 DEED BOOK 276, PAGE 697

SITE NUMBER: NOT PROVIDED

SITE NAME: MCKINNEY

SITE ADDRESS: 534 John Hanlon Drive Richmond, KY 40475

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

PROPERTY OWNER: EASTERN KENTUCKY UNIVERSITY Richmond, KY 40475

MAP NUMBER: 0055

PARCEL NUMBER: 0019

SOURCE OF TITLE: D.B. 97, PG. 416

DWG BY:	CHKD BY:	DATE:
SNS	FSII	12-22-14

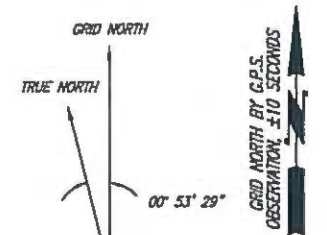
FS TAN PROJECT NO.: 13-8891

SHEET 2 OF 2

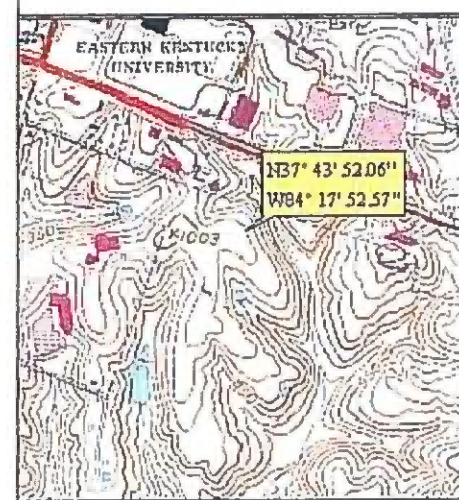
REVISIONS: REVISE 500' RAD OWNER - 3.16.15

C1

STATE OF KENTUCKY
 FRANK L. SELLINGER
 3282
 15-15
 LICENSED PROFESSIONAL LAND SURVEYOR

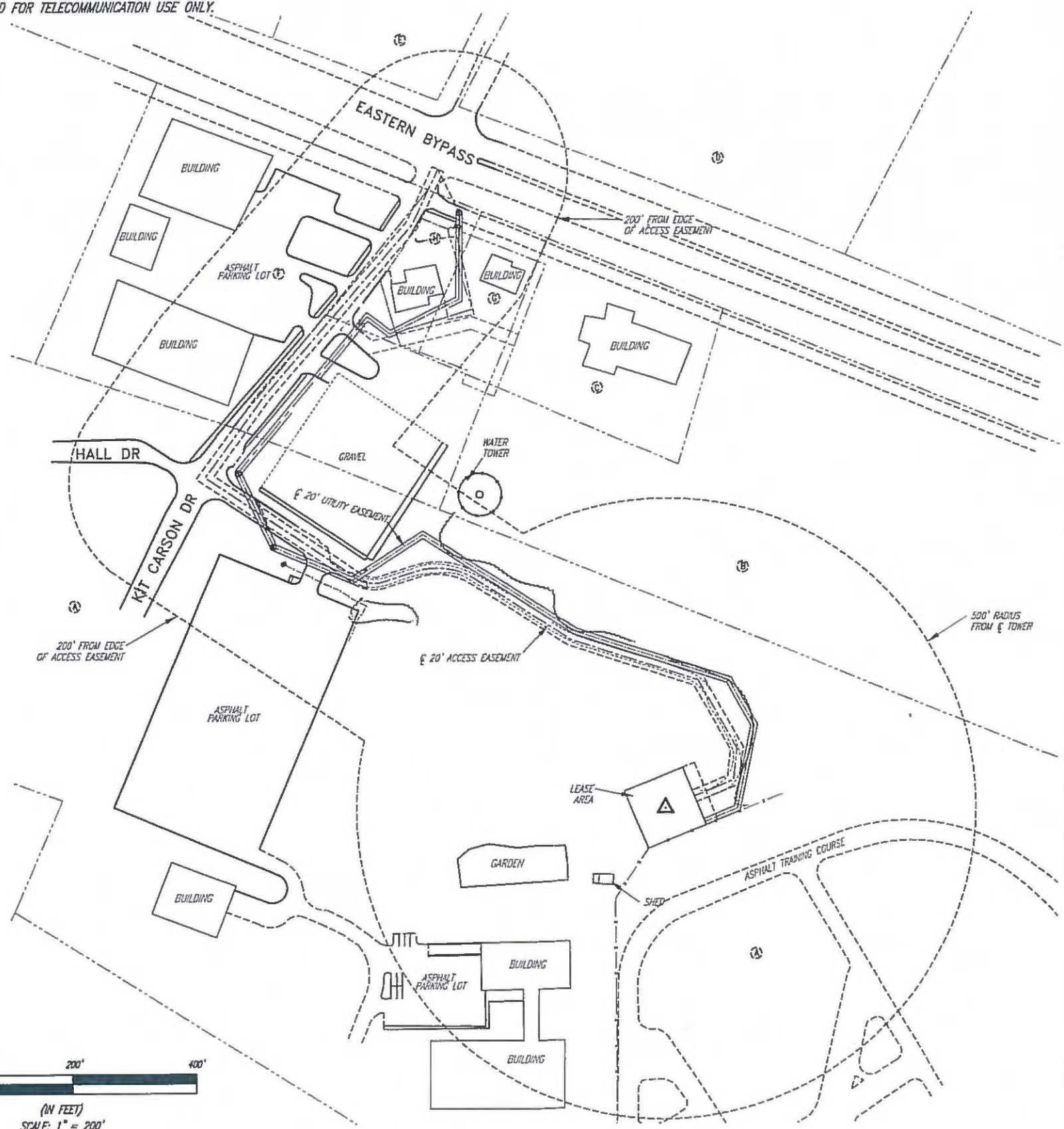


NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON DECEMBER 13, 2013





QUAD MAP
 SCALE: 1"=2000'

U.S.G.S. 7 1/2 MINUTE QUAD MAP OF RICHMOND SOUTH



SHEET 1

-  - VICINITY AND 500' STRUCTURAL MAP
-  - ABUTTING PROPERTY OWNERS
-  - U.S.G.S. QUAD MAP



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 521 LANCASTER AVENUE
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TAX: INFORMATION NOT FOUND
 NAME: INFORMATION NOT FOUND
 ADDRESS: INFORMATION NOT FOUND
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 RICHMOND, KY 40475
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0055-0000-0021
 CITY OF RICHMOND
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 RICHMOND, KY 40475
 DEED BOOK 276, PAGE 697

SITE NUMBER:
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SITE NAME:
 MCKINNEY

SITE ADDRESS:
 534 John Hanlon Drive
 Richmond, KY 40475

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

PROPERTY OWNER:
 EASTERN KENTUCKY UNIVERSITY
 Richmond, KY 40475

MAP NUMBER:
 0055

PARCEL NUMBER:
 0019

SOURCE OF TITLE:
 D.B. 97, PG. 416

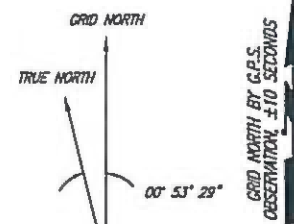
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SNS	FSII	12-22-14

FSTAN PROJECT NO.:
 13-8891

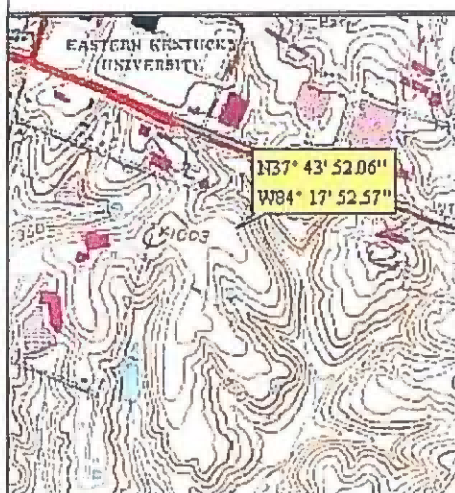
SHEET 2 OF 2

REVISIONS:
 REVISE 500' RAD OWNER - 3.16.15

STATE OF KENTUCKY
 FRANK L. SELLINGER
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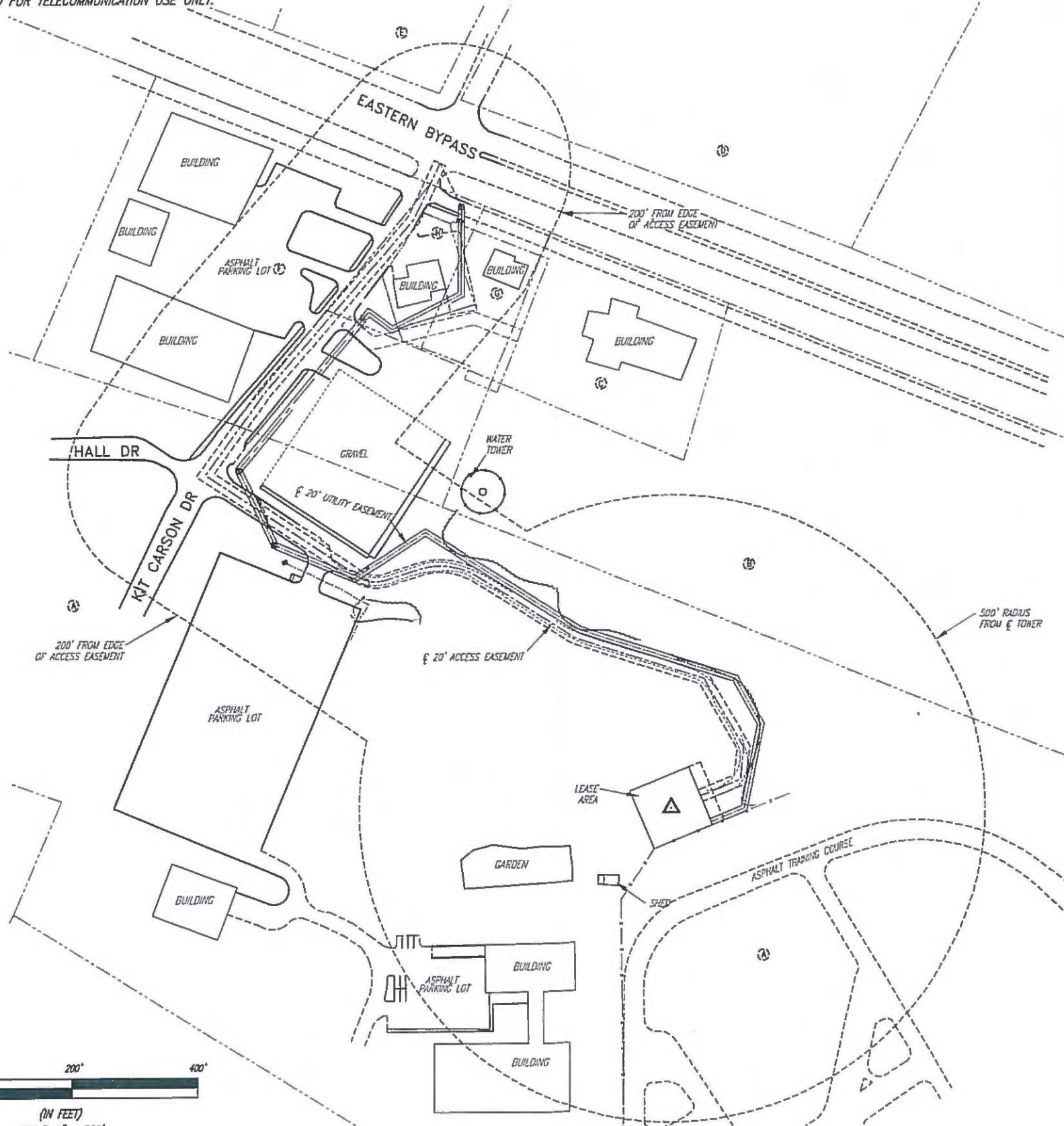
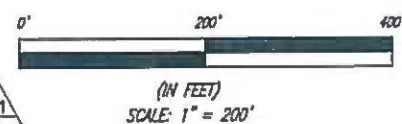


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


QUAD MAP
 SCALE: 1"=2000'

U.S.G.S. 7 1/2 MINUTE QUAD MAP OF RICHMOND SOUTH



C1

- SHEET 1
-  - VICINITY AND 500' STRUCTURAL MAP
 -  - ABUTTING PROPERTY OWNERS
 -  - U.S.G.S. QUAD MAP

 S1 1

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 S1 2

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 DEED BOOK 97, PAGE 416

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 521 LANCASTER AVENUE
 RICHMOND, KY 40475
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 DEED BOOK 416, PAGE 322

0055-0000-0001 /23066
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 CAMPUS
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
 DEED NOT FOUND

TAX: INFORMATION NOT FOUND
 NAME: INFORMATION NOT FOUND
 ADDRESS: INFORMATION NOT FOUND
 CURRENT USE: KENTUCKY STATE
 POLICE BARRACKS

0055-0000-0019 /6234
 EASTERN KENTUCKY UNIVERSITY
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 521 LANCASTER AVENUE
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0055-0000-0021
 CITY OF RICHMOND
 (FIRE STATION #3)
 RICHMOND, KY 40475
 DEED BOOK 276, PAGE 697



Formerly F.S. Land & T. Alan Neal Company
 Land Surveyors and Consulting Engineers
 2540 Ridgemoor Court, Suite 102
 Louisville, KY 40299
 Phone: (502) 636-5656 (502) 636-3111
 Fax: (502) 636-5283

SITE NUMBER:
 NOT PROVIDED

SITE NAME:
 MCKINNEY

SITE ADDRESS:
 534 John Hanlon Drive
 Richmond, KY 40475

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

PROPERTY OWNER:
 EASTERN KENTUCKY UNIVERSITY
 Richmond, KY 40475

MAP NUMBER:
 0055

PARCEL NUMBER:
 0019

SOURCE OF TITLE:
 D.B. 97, PG. 416

DWG BY: SNS	CHKD BY: FSH	DATE: 12-22-14
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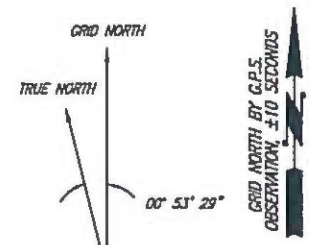
FSTAN PROJECT NO.:
 13-8891

SHEET 2 OF 2

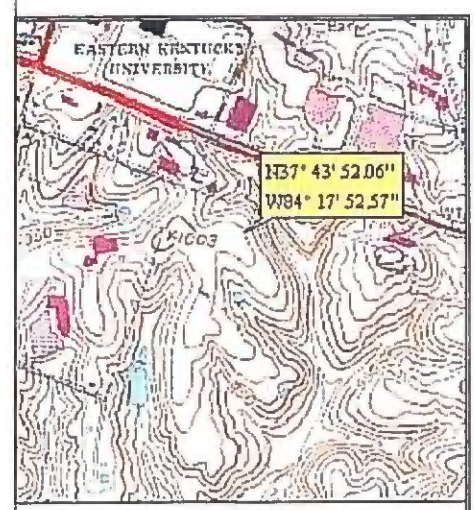
REVISIONS:
 REVISE 500' RAD OWNER - 3.16.15

C1

STATE OF KENTUCKY
 FRANK L. SELLINGER
 3282
 15-15
 LICENSED PROFESSIONAL LAND SURVEYOR

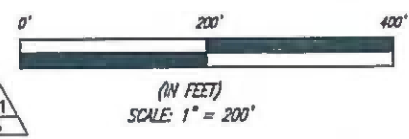


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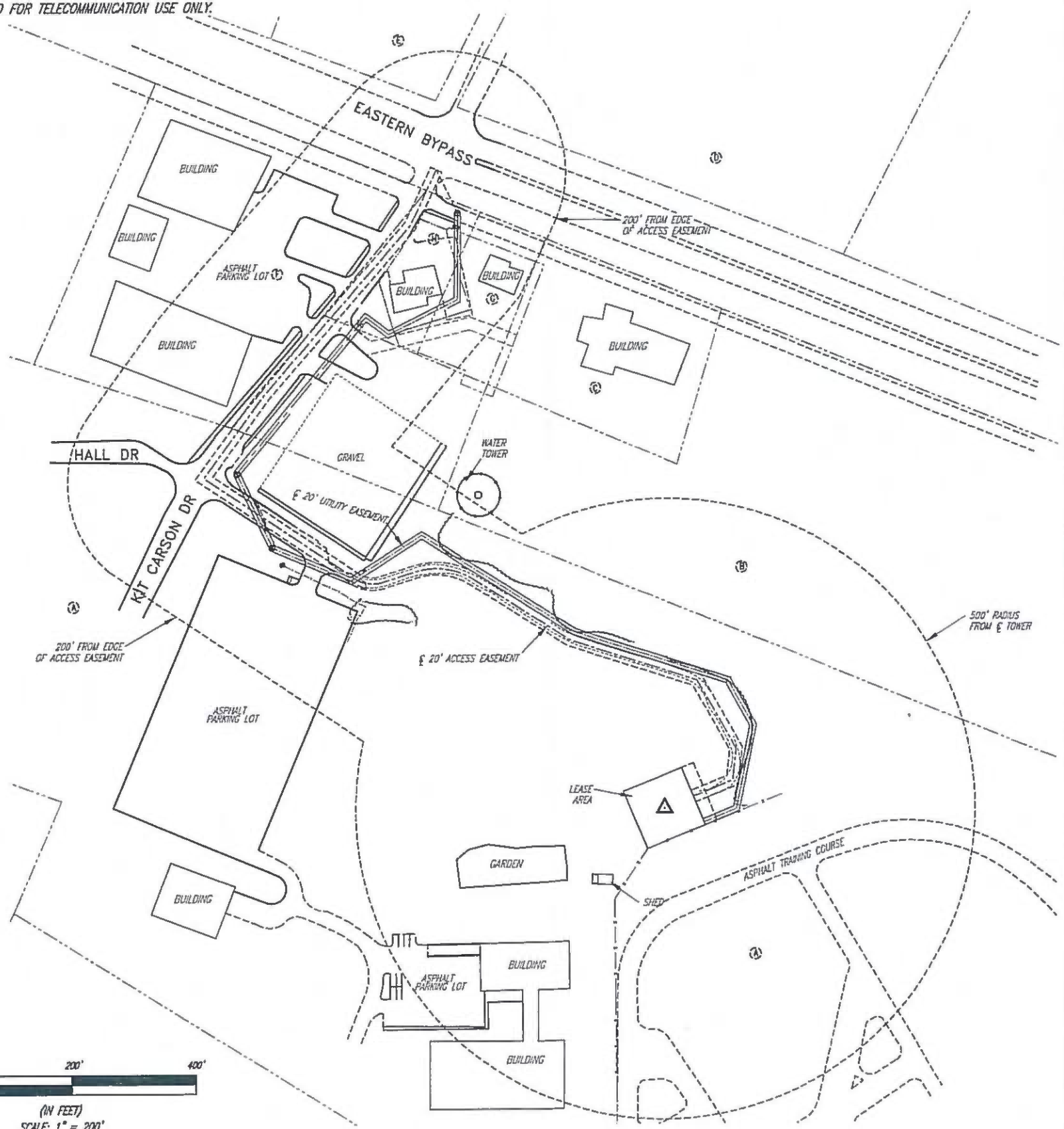


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
U.S.G.S. 7 1/2 MINUTE QUAD MAP OF RICHMOND SOUTH



 S1 3



SHEET 1

-  - VICINITY AND 500' STRUCTURAL MAP
-  - ABUTTING PROPERTY OWNERS
-  - U.S.G.S. QUAD MAP



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 DEED BOOK 416, PAGE 322

SITE NUMBER:
 NOT PROVIDED

SITE NAME:
 MCKINNEY

SITE ADDRESS:
 534 John Hanlon Drive
 Richmond, KY 40475

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



0056-0000-0001 /23066
 EASTERN KENTUCKY UNIVERSITY
 CAMPUS
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
 DEED NOT FOUND

PROPERTY OWNER:
 EASTERN KENTUCKY UNIVERSITY
 Richmond, KY 40475



TAX: INFORMATION NOT FOUND
 NAME: INFORMATION NOT FOUND
 ADDRESS: INFORMATION NOT FOUND
 CURRENT USE: KENTUCKY STATE
 POLICE BARRACKS

MAP NUMBER:
 0055

PARCEL NUMBER:
 0019

SOURCE OF TITLE:
 D.B. 97, PG. 416



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 EASTERN KENTUCKY UNIVERSITY
 CAMPUS
 521 LANCASTER AVENUE
 RICHMOND, KY 40475
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DWG BY:	CHKD BY:	DATE:
SNS	FSH	12-22-14

FSTAN PROJECT NO.:
 13-8891

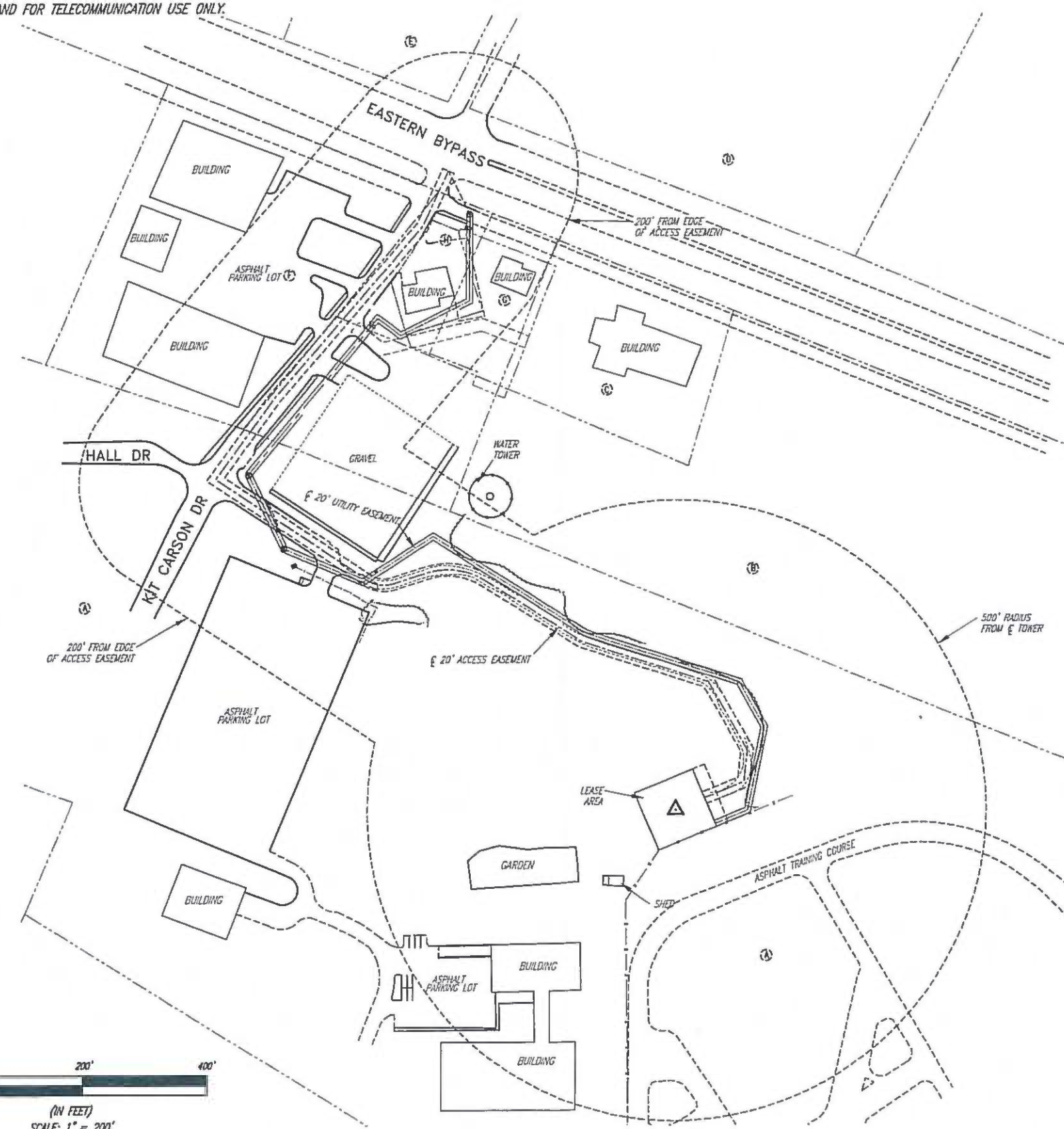
SHEET 2 OF 2

REVISIONS:
 REVISE 500' RAD OWNER - 3.16.15

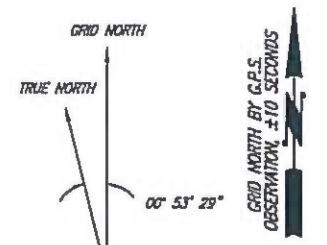


0055-0000-0021
 CITY OF RICHMOND
 (FIRE STATION #3)
 RICHMOND, KY 40475
 DEED BOOK 276, PAGE 697

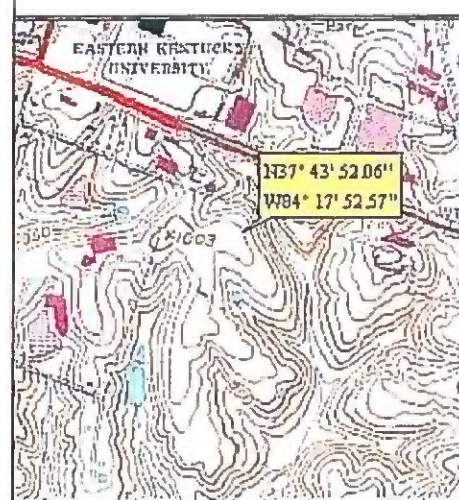
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STATE OF KENTUCKY
 FRANK L. SELLINGER
 3282
 15-15
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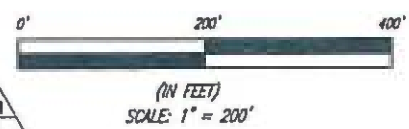


NORTH IS BASED ON THE KENTUCKY STATE PLANE COORDINATE SYSTEM, SINGLE ZONE AND WAS DETERMINED BY COMPUTATION FROM G.P.S. OBSERVATION ON DECEMBER 13, 2013



QUAD MAP
 SCALE: 1" = 2000'

U.S.G.S. 7 1/2 MINUTE QUAD MAP OF RICHMOND SOUTH





Structural Design Report
190' Monopole
Site: McKinney, KY

Prepared for: TOWER ACCESS GROUP
by: Sabre Towers & Poles™

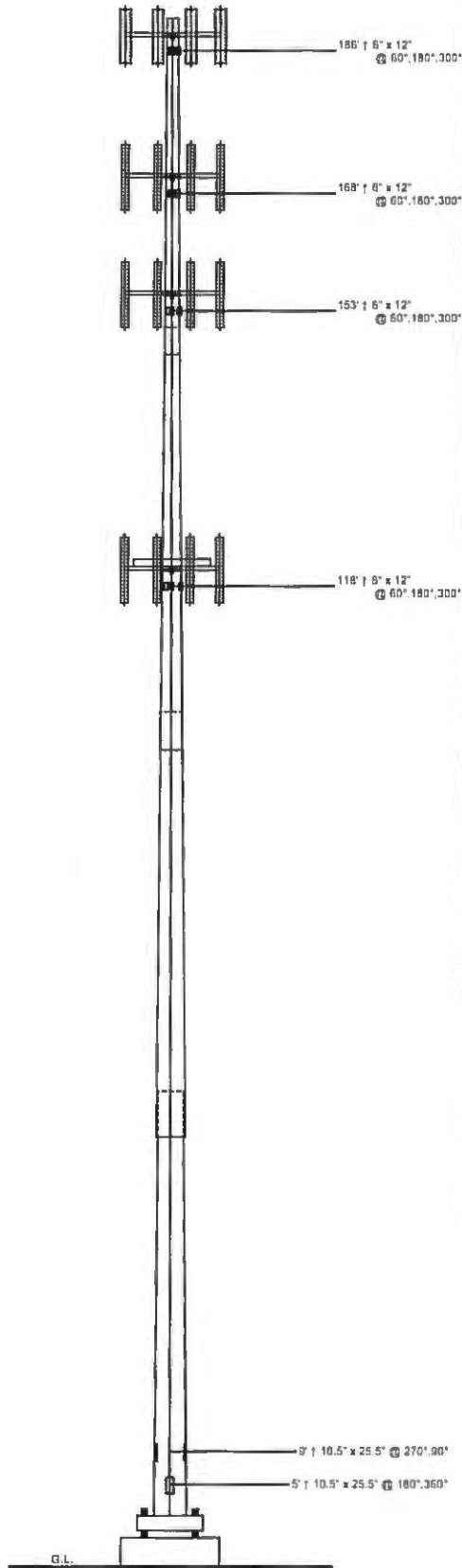
Job Number: 105583

June 12, 2014

Monopole Profile.....	1
Foundation Design Summary (Option 1).....	2
Foundation Design Summary (Option 2).....	3
Pole Calculations.....	4-13
Foundation Calculations.....	14-23



Section	1	2	3	4
Length (ft)	42'-8"	53'-5"	53'-6"	53'-3"
Number Of Sides	18	18	18	18
Thickness (in)	1/4"	5/16"	3/8"	3/8"
Lap Splice (ft)	A	4'-9"	5'-9"	5'-9"
Top Diameter (in)	16.5"	23.34"	31.84"	40.91"
Bottom Diameter (in)	24.43"	33.34"	41.84"	49.97"
Taper (in/ft)			0.187	
Grade		A572-85	A572-85	
Weight (lbs)	2691	5448	8350	11832



Designed Appurtenance Loading

Elev	Description	Tx-Line
190	L.P. Platform (Monopole Only) - 12'	
190	(1) FRIE	
190	(3) FXFBs	
190	(1) 21in x 20in x 8in TMA	(2) 1 5/8"
190	(9) CMA-BDHH/8521/EG-5a	
190	(3) Frig RRU's	
170	L.P. Platform (Monopole Only) - 12'	
170	(3) DC6-48-60-18-8Fs	(2) 1 5/8"
170	(8) RRHs	
170	(12) 8' x 1' x 3in Panels	
155	L.P. Platform (Monopole Only) - 12'	
155	(3) DC6-48-60-18-8Fs	(2) 1 5/8"
155	(9) RRHs	
155	(12) 8' x 1' x 3in Panels	
120	L.P. Platform (Monopole Only) - 12' w/ Handrail	
120	(4) DC6-48-60-18-8Fs	(2) 1/2"
120	(18) RRUS 11s	(8) 7/8"
120	(3) RRUS A2 Modules	(1) 3/8"
120	(6) SBNH-1D65Ca	
120	(3) SBNH-1D8585Ca	

Load Case Reactions

Description	Axial (kips)	Shear (kips)	Moment (ft-k)	Deflection (ft)	Sway (deg)
3a Gusted Wind	47.3	30.2	4053	22.3	12.4
3a Gusted Wind 0.9 Dead	35.8	30.2	3953	21.5	11.95
3a Gusted Wind/Ice	59.4	3.2	413	2.2	1.21
Service Loads	38.3	7.6	1003	5.5	3.08

Base Plate Dimensions

Shape	Diameter	Thickness	Bolt Circle	Bolt Qty	Bolt Diameter
Round	62.25"	2.5"	58.25"	14	2.25"

Anchor Bolt Dimensions

Length	Diameter	Hole Diameter	Weight	Type	Finish
84"	2.25"	2.825"	1091	A815-75	Galv-18"

Material List

Display	Value
A	3' - 6"

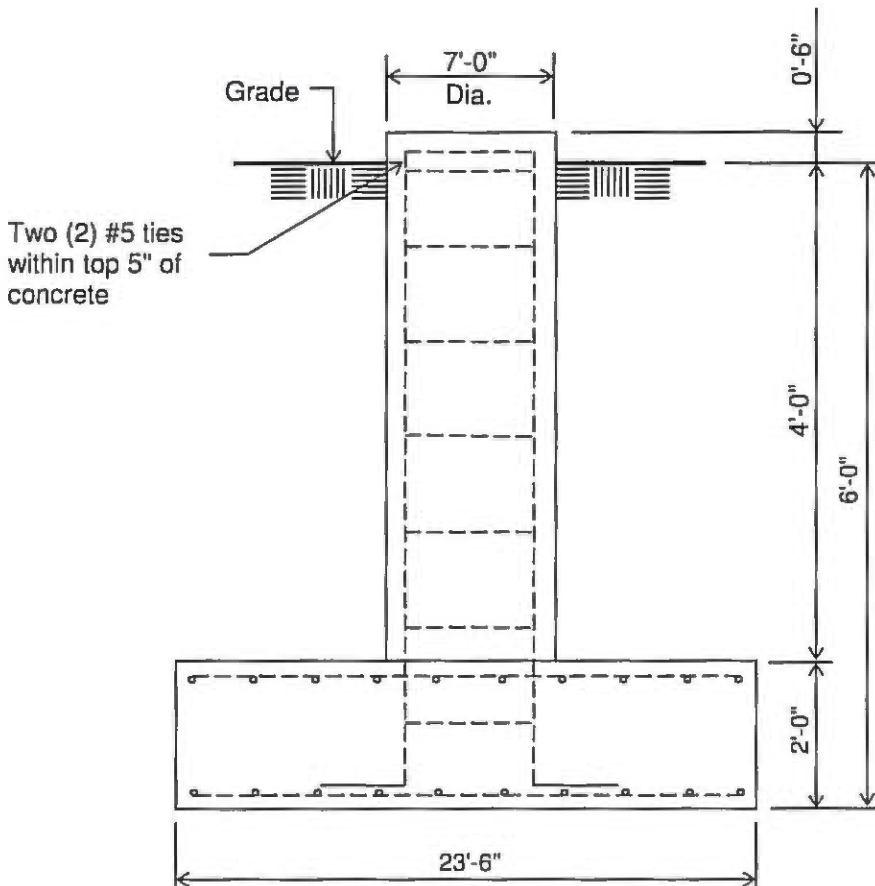
Notes

- 1) Antenna Feed Lines Run Inside Pole
- 2) All dimensions are above ground level, unless otherwise specified.
- 3) Weights shown are estimates. Final weights may vary.
- 4) The Monopole was designed for a basic wind speed of 90 mph with 0" of radial ice, and 30 mph with 3/4" of radial ice, in accordance with ANSI/TIA-222-G-2 (2009), Structure Class II, Exposure Category C, Topographic Category 1.
- 5) Full Height Step Bolts

	Sabre Communications Corporation 7101 Southbridge Drive P.O. Box 658 Sioux City, IA 51102-0658 Phone (712) 258-6680 Fax (712) 278-0814	Job: 105583 Customer: TOWER ACCESS GROUP Site Name: McKinney, KY Description: 190' Monopole Date: 6/12/2014
	<small>Information contained herein is the sole property of Sabre Communications Corporation, constitutes a trade secret as defined by Iowa Code Ch. 650 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Communications Corporation.</small>	By: TTW

Customer: TOWER ACCESS GROUP
Site: McKinney, KY

190' Monopole at
90 mph Wind with no ice and 30 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G.
Antenna Loading per Page 1



ELEVATION VIEW
(47.32 Cu. Yds. each)
(1 REQUIRED; NOT TO SCALE)

Notes:

- 1). Concrete shall have a minimum 28-day compressive strength of 4000 PSI, in accordance with ACI 318-05
- 2). Rebar to conform to ASTM specification A615 Grade 60.
- 3). All rebar to have a minimum of 3" concrete cover.
- 4). All exposed concrete corners to be chamfered 3/4".
- 5). The foundation design is based on the geotechnical report by Terracon, Project No. 57145022, dated May 23, 2014.
- 6). See the geotechnical report for compaction requirements, if specified.
- 7). The foundation is based on the following factored loads:
Moment (kip-ft) = 4053.33
Axial (kips) = 47.29
Shear (kips) = 30.16

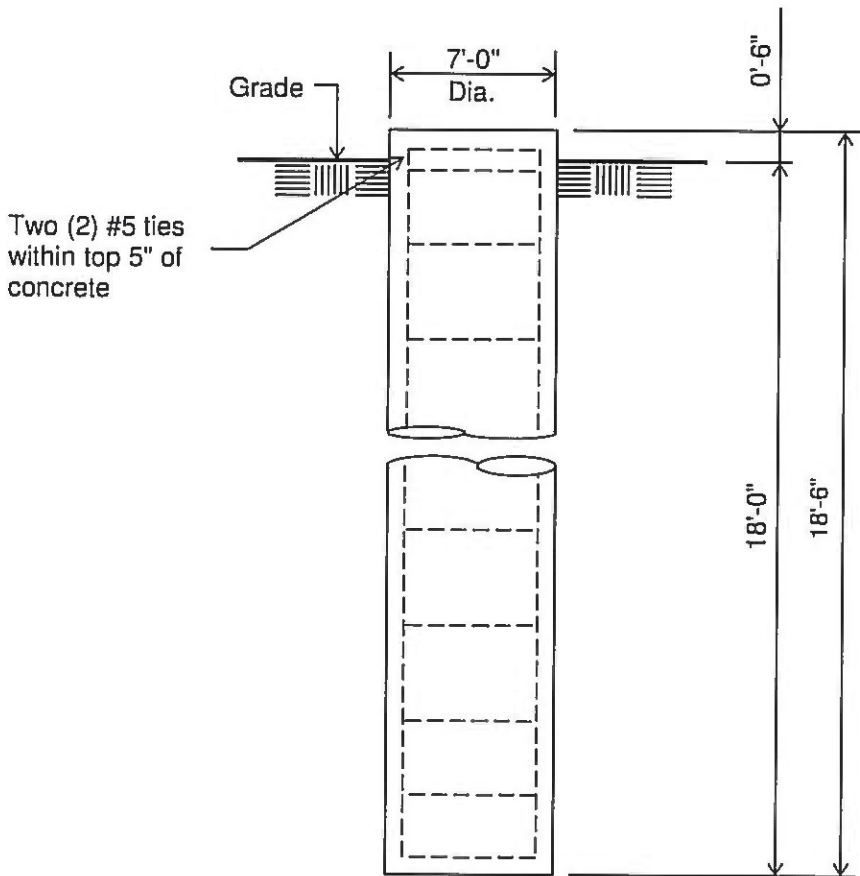
Rebar Schedule per Pad and Pier	
Pier	(36) #8 vertical rebar w/hooks at bottom w/#5 ties, two within top 5" of top of pier then 12" C/C
Pad	(33) #8 horizontal rebar evenly spaced each way top and bottom (132 Total)

9). This design assumes the bottom the foundation bears on intact limestone.

8). This is a design drawing only. Please see final construction drawings for all installation details.

Customer: TOWER ACCESS GROUP
Site: McKinney, KY

190' Monopole at
90 mph Wind with no ice and 30 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G.
Antenna Loading per Page 1



ELEVATION VIEW
(26.37 Cu. Yds. each)
(1 REQUIRED; NOT TO SCALE)

Notes:

- 1). Concrete shall have a minimum 28-day compressive strength of 4000 PSI, in accordance with ACI 318-05.
- 2). Rebars to conform to ASTM specification A615 Grade 60.
- 3). All rebar to have a minimum of 3" concrete cover.
- 4). All exposed concrete corners to be chamfered 3/4".
- 5). The foundation design is based on the geotechnical report by Terracon, Project No. 57145022, dated May 23, 2014.
- 6). See the geotechnical report for drilled pier installation requirements, if specified.
- 7). The foundation is based on the following factored loads:
Moment (kip-ft) = 4053.33
Axial (kips) = 47.29
Shear (kips) = 30.16

Rebar Schedule per Pier	
Pier	(32) #9 vertical rebar w/#5 ties, two within top 5" of pier then 8" C/C

- 8). This is a design drawing only. Please see final construction drawings for all installation details.

SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-10558
TOWER ACCESS GROUP
McKinney, KY

12-Jun-14 09:08
 Ph 712.258.6690
 Fx 712.258.8250

TOP DIAMETER 16.50 in. [16.75 in. Point-Point]
 BOTTOM DIAMETER 49.97 in. [50.74 in. Point-Point]
 POLE HEIGHT 189.00 ft. 18 SIDED FLAT ORIENTATION
 BASE HEIGHT 1.00 ft. ABOVE GROUND
 E-MODULUS 29000 ksi [12000 ksi SHEAR MODULUS]

APPURTENANCES

ATTACH POINTS:	NO.	X,ft	Qty	Description	Status
	1	187.00	1	User Defined Loading	Future Appurt
	2	186.90	1	User Defined Loading	Future Appurt
	3	169.00	1	User Defined Loading	Future Appurt
	4	154.00	1	User Defined Loading	Future Appurt
	5	119.00	1	User Defined Loading	Future Appurt
	6	118.90	1	User Defined Loading	Future Appurt

Some wind forces may have been derived from full-scale wind tunnel tests.

Pole Section	Bottom X,ft.	Thick in.	Connect Type	LAP in.	Taper in/ft	Length ft.	Weight lbs	Steel Spec	Pole Finish
1	42.75	.25000	SLIP-JNT	42.	.1870	42.75	2336	A572-65	GALVANIZE
2	92.75	.31250	SLIP-JNT	57.	.1870	53.50	5061	A572-65	GALVANIZE
3	141.50	.37500	SLIP-JNT	69.	.1870	53.50	7899	A572-65	GALVANIZE
4	189.00	.37500	C-WELD		.1870	53.25	9621	A572-65	GALVANIZE

SECTION PROPERTIES

X,ft	UP,ft	D,in	T,in	Area in ²	Iz in ⁴	IxIy in ⁴	SxSy in ³	w/t	d/t	F _y (ksi)	
189.00	.00	16.50	.2500	12.89	860	430	51.3	9.87	66.0	65.00	TOP
187.00	2.00	16.87	.2500	13.19	922	461	53.8	10.14	67.5	65.00	P01
186.90	2.10	16.89	.2500	13.21	924	462	53.9	10.15	67.6	65.00	P02
181.90	7.10	17.83	.2500	13.95	1088	544	60.1	10.81	71.3	65.00	
176.90	12.10	18.76	.2500	14.69	1272	636	66.8	11.47	75.1	65.00	
171.90	17.10	19.70	.2500	15.43	1476	738	73.8	12.13	78.8	65.00	
169.00	20.00	20.24	.2500	15.86	1600	800	77.9	12.51	81.0	65.00	P03
164.00	25.00	21.17	.2500	16.60	1836	918	85.4	13.17	84.7	65.00	
159.00	30.00	22.11	.2500	17.35	2094	1047	93.3	13.83	88.4	65.00	
154.00	35.00	23.04	.2500	18.09	2374	1187	101.5	14.49	92.2	65.00	P04
149.75	39.25	23.84	.2500	18.72	2632	1316	108.7	15.05	95.4	65.00	Slip-B01
146.25	42.75	23.99	.3125	23.49	3328	1664	136.6	11.78	76.8	65.00	Slip-T02
141.25	47.75	24.93	.3125	24.42	3736	1868	147.6	12.30	79.8	65.00	
136.25	52.75	25.86	.3125	25.34	4180	2090	159.2	12.83	82.8	65.00	
131.25	57.75	26.80	.3125	26.27	4656	2328	171.1	13.36	85.8	65.00	
126.25	62.75	27.73	.3125	27.20	5168	2584	183.5	13.89	88.7	65.00	
121.25	67.75	28.67	.3125	28.13	5712	2856	196.2	14.41	91.7	65.00	
119.00	70.00	29.09	.3125	28.54	5970	2985	202.1	14.65	93.1	65.00	P05
118.90	70.10	29.11	.3125	28.56	5984	2992	202.5	14.66	93.1	65.00	P06
113.90	75.10	30.04	.3125	29.49	6584	3292	215.8	15.19	96.1	65.00	
108.90	80.10	30.98	.3125	30.42	7226	3613	229.7	15.72	99.1	65.00	
103.90	85.10	31.91	.3125	31.34	7908	3954	244.0	16.24	102.1	65.00	
101.00	88.00	32.46	.3125	31.88	8322	4161	252.5	16.55	103.9	65.00	Slip-B02
96.25	92.75	32.72	.3750	38.50	10174	5087	306.2	13.62	87.3	65.00	Slip-T03
91.25	97.75	33.65	.3750	39.61	11082	5541	324.3	14.06	89.7	65.00	
86.25	102.75	34.59	.3750	40.72	12044	6022	342.9	14.50	92.2	65.00	
81.25	107.75	35.52	.3750	41.83	13058	6529	362.0	14.94	94.7	65.00	
76.25	112.75	36.46	.3750	42.95	14126	7063	381.6	15.38	97.2	65.00	
71.25	117.75	37.39	.3750	44.06	15254	7627	401.7	15.82	99.7	65.00	
66.25	122.75	38.33	.3750	45.17	16438	8219	422.3	16.26	102.2	65.00	
61.25	127.75	39.26	.3750	46.29	17684	8842	443.5	16.70	104.7	65.00	
56.25	132.75	40.20	.3750	47.40	18990	9495	465.2	17.14	107.2	65.00	
53.25	135.75	40.76	.3750	48.07	19804	9902	478.5	17.40	108.7	65.00	Slip-B03
48.25	140.75	40.95	.3750	48.29	20076	10038	482.9	17.49	109.2	65.00	
47.50	141.50	41.09	.3750	48.45	20286	10143	486.2	17.56	109.6	65.00	Slip-T04
42.50	146.50	42.02	.3750	49.57	21716	10858	508.9	17.99	112.1	65.00	
37.50	151.50	42.96	.3750	50.68	23212	11606	532.2	18.43	114.5	65.00	
32.50	156.50	43.89	.3750	51.79	24774	12387	555.9	18.87	117.0	65.00	
27.50	161.50	44.83	.3750	52.91	26406	13203	580.1	19.31	119.5	65.00	
22.50	166.50	45.76	.3750	54.02	28108	14054	604.9	19.75	122.0	65.00	
17.50	171.50	46.70	.3750	55.13	29882	14941	630.2	20.19	124.5	65.00	
12.50	176.50	47.63	.3750	56.24	31728	15864	656.0	20.63	127.0	65.00	
7.50	181.50	48.57	.3750	57.36	33646	16823	682.3	21.07	129.5	65.00	
2.50	186.50	49.50	.3750	58.47	35644	17822	709.1	21.51	132.0	65.00	
.00	189.00	49.97	.3750	59.03	36672	18336	722.8	21.73	133.2	65.00	BASE

SABRE COMMUNICATIONS CORP
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JOB: 00-10558
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 McKinney, KY

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CASE - 1: 3s Gusted Wind

ANSI-TIA-222-G

WIND OLF	1.60	GUSTED WIND (3sec)	90.0 mph	144.8 kph
VERTICAL OLF	1.20	EXP-CAT/STRUC_CLASS	C-II	
DESIGN ICE	.00 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	.65	PRESSURE @ 32.7 ft	34.7 psf	1659.0 Pa
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.95	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCES

Sabre Areas

#	Qty	Description	Center Line		AREA each	Tx-CABLE		WIND Psf	FORCES		MOM. Lg-K
			Elev-Ft	WEIGHT Lbs		Type	Qty #/Ft		Tra-Y Kips	Ax-Z Kips	
1	1	User Defined Loading	187.0	1239	75.1			50.1	3.77	-1.5	-.2
9		CMA-BDHH/6521/E0-6	189.0	62	.0	None	1 .00	50.2	.00	-.7	
3		FRIG RRU	189.0	55	.0	None	1 .00	50.2	.00	-.2	
1		21IN X 20IN X 8IN	189.0	30	.0	1 5/8"	2 1.04	50.2	.00	-.5	
2	1	User Defined Loading	186.9	0	.0			50.1	.00	.0	.0
1		FRIE	189.0	22	.0	None	1 .00	50.2	.00	.0	
3		FXFB	189.0	55	.0	None	1 .00	50.2	.00	-.2	
3	1	User Defined Loading	169.0	1239	79.0			49.1	3.88	-1.5	-.2
12		8' X 1' X 3IN PANEL	169.0	80	.0	None	1 .00	49.1	.00	-1.2	
9		RRH	169.0	44	.0	None	1 .00	49.1	.00	-.5	
3		DC6-48-60-18-8F	169.0	20	.0	1 5/8"	2 1.04	49.1	.00	-.5	
4	1	User Defined Loading	154.0	1239	79.0			48.1	3.80	-1.5	-.2
12		8' X 1' X 3IN PANEL	154.0	80	.0	None	1 .00	48.1	.00	-1.2	
9		RRH	154.0	44	.0	None	1 .00	48.1	.00	-.5	
3		DC6-48-60-18-8F	154.0	20	.0	1 5/8"	2 1.04	48.1	.00	-.5	
5	1	User Defined Loading	119.0	1491	105.3			45.6	4.80	-1.8	-.2
6		SBNHH-1D65C	119.0	49	.0	None	1 .00	45.6	.00	-.4	
3		SBNH-1D8585C.	119.0	57	.0	None	1 .00	45.6	.00	-.2	
3		RRUS A2 MODULE	119.0	22	.0	7/16"	1 .27	45.6	.00	-.1	
6	1	User Defined Loading	118.9	0	.0			45.6	.00	.0	.0
4		DC6-48-60-18-8F	119.0	20	.0	1/2"	2 .40	45.6	.00	-.2	
18		RRUS 11	119.0	55	.0	7/8"	8 .54	45.6	.00	-1.8	

RESULTS

X, ft	Kzt	WIND psf	ICE in	:--- FORCES, kips ---:			:---MOMENTS, ft-kips---:			F'y ksi	Inter 4.8.2
				ShearX	ShearY	AxiaZ	BendX	BendY	TorqZ		
189.00	1.00	32.65	.00	.0	.01	-.1	.0	.0	.0	82.55	.000
187.00	1.00	32.58	.00	.0	4.36	-2.1	-.3	.0	.0	82.55	.003
186.90	1.00	32.57	.00	.0	4.60	-2.4	-.7	.0	.0	82.55	.005
181.90	1.00	32.39	.00	.0	4.89	-2.7	-23.7	.0	.0	82.55	.067
176.90	1.00	32.20	.00	.0	5.19	-3.0	-48.2	.0	.0	82.55	.119
171.90	1.00	32.01	.00	.0	5.44	-3.3	-74.1	.0	.0	82.55	.165
169.00	1.00	31.89	.00	.0	10.23	-6.3	-90.1	.0	.0	82.55	.193
164.00	1.00	31.69	.00	.0	10.55	-6.6	-141.3	.0	.0	82.55	.273
159.00	1.00	31.49	.00	.0	10.87	-7.0	-194.0	.0	.0	82.55	.342
154.00	1.00	31.28	.00	.0	15.61	-10.3	-248.5	.0	.0	82.55	.404
149.75	1.00	31.10	.00	.0	15.90	-10.9	-314.8	.0	.0	82.55	.476
146.25	1.00	30.94	.00	.0	16.23	-11.6	-370.5	.0	.0	82.55	.445
141.25	1.00	30.72	.00	.0	16.59	-12.3	-451.7	.0	.0	82.55	.501
136.25	1.00	30.49	.00	.0	16.92	-12.9	-534.6	.0	.0	82.55	.550
131.25	1.00	30.25	.00	.0	17.26	-13.6	-619.3	.0	.0	82.55	.592
126.25	1.00	30.01	.00	.0	17.60	-14.2	-705.5	.0	.0	82.55	.628
121.25	1.00	29.75	.00	.0	17.84	-14.7	-793.5	.0	.0	82.55	.661
119.00	1.00	29.64	.00	.0	23.05	-16.6	-834.2	.0	.0	82.55	.675
118.90	1.00	29.63	.00	.0	23.52	-19.0	-835.8	.0	.0	82.55	.676
113.90	1.00	29.37	.00	.0	23.83	-19.7	-954.2	.0	.0	82.55	.724
108.90	1.00	29.09	.00	.0	24.15	-20.5	-1073.3	.0	.0	82.55	.764
103.90	1.00	28.81	.00	.0	24.40	-21.3	-1193.3	.0	.0	82.28	.802
101.00	1.00	28.64	.00	.0	24.70	-22.4	-1264.2	.0	.0	81.92	.825
96.25	1.00	28.35	.00	.0	25.08	-23.8	-1381.7	.0	.0	82.55	.737
91.25	1.00	28.04	.00	.0	25.42	-25.0	-1507.5	.0	.0	82.55	.760
86.25	1.00	27.71	.00	.0	25.74	-26.0	-1634.2	.0	.0	82.55	.779
81.25	1.00	27.37	.00	.0	26.06	-27.0	-1763.3	.0	.0	82.55	.796
76.25	1.00	27.01	.00	.0	26.37	-28.0	-1893.3	.0	.0	82.55	.811
71.25	1.00	26.64	.00	.0	26.68	-29.1	-2025.0	.0	.0	82.55	.823
66.25	1.00	26.24	.00	.0	26.98	-30.2	-2158.3	.0	.0	82.26	.838
61.25	1.00	25.81	.00	.0	27.28	-31.3	-2293.3	.0	.0	81.74	.853
56.25	1.00	25.36	.00	.0	27.52	-32.4	-2430.0	.0	.0	81.22	.867
53.25	1.00	25.08	.00	.0	27.77	-33.7	-2512.5	.0	.0	80.91	.875
48.25	1.00	24.57	.00	.0	27.94	-34.6	-2650.8	-.1	.0	80.81	.916

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47.50	1.00	24.49	.00	.0	28.10	-35.6	-2672.5	-.1	.0	80.73	.918
42.50	1.00	23.94	.00	.0	28.36	-37.0	-2812.5	-.1	.0	80.22	.929
37.50	1.00	23.33	.00	.0	28.59	-38.3	-2954.2	-.1	.0	79.70	.939
32.50	1.00	22.66	.00	.0	28.81	-39.5	-3097.5	-.1	.0	79.18	.949
27.50	1.00	21.90	.00	.0	29.03	-40.7	-3241.7	-.1	.0	78.66	.958
22.50	1.00	21.03	.00	.0	29.25	-42.0	-3386.7	-.1	.0	78.15	.967
17.50	1.00	19.99	.00	.0	29.46	-43.3	-3532.5	-.1	.0	77.63	.974
12.50	1.00	19.16	.00	.0	29.68	-44.6	-3680.0	-.1	.0	77.11	.982
7.50	1.00	19.16	.00	.0	29.90	-46.0	-3828.3	-.1	.0	76.59	.989
2.50	1.00	19.16	.00	.0	30.06	-47.0	-3978.3	-.1	.0	76.08	.995
.00	1.00	19.16	.00	.0	30.16	-47.3	4053.3	.1	.0	75.82	.998

DISPLACEMENTS

ELEV	DEFLECTION feet				ROTATION, degrees			
X, ft	X	Y	Z	XY-Result	X	Y	Z	XY-Result
189.00	.00	22.26	-1.77	22.26<11.78%>	-12.40	.00	.00	12.40

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CASE - 2: 3s Gusted Wind 0.9 Dead

ANSI-TIA-222-G

WIND OLF	1.60	GUSTED WIND (3sec)	90.0 mph	144.8 kph
VERTICAL OLF	.90	EXP-CAT/STRUC_CLASS	C-II	
DESIGN ICE	.00 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	.65	PRESSURE @ 32.7 ft	34.7 psf	1659.0 Pa
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.95	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCES

Sabre Areas

#	Qty	Description	Center	WEIGHT	AREA	Tx-CABLE		WIND	FORCES		MOM.
			Elev-Ft	each	each	Type	Qty	#/Ft	Psf	Tra-Y	Ax-Z
				Lbs	Ft^2				Kips	Kips	Ft-K
1	1	User Defined Loading	187.0	1239	75.1			50.1	3.77	-1.1	-2
	9	CMA-BDHH/6521/E0-6	189.0	62	.0	None	1	.00	50.2	.00	-.5
	3	FRIG RRU	189.0	55	.0	None	1	.00	50.2	.00	-.1
	1	21IN X 20IN X 8IN	189.0	30	.0	1 5/8"	2	1.04	50.2	.00	-.4
2	1	User Defined Loading	186.9	0	.0			50.1	.00	.0	.0
	1	FRIE	189.0	22	.0	None	1	.00	50.2	.00	.0
	3	FXFB	189.0	55	.0	None	1	.00	50.2	.00	-.1
3	1	User Defined Loading	169.0	1239	79.0			49.1	3.88	-1.1	-2
	12	8' X 1' X 3IN PANEL	169.0	80	.0	None	1	.00	49.1	.00	-.9
	9	RRH	169.0	44	.0	None	1	.00	49.1	.00	-.4
	3	DC6-48-60-18-8F	169.0	20	.0	1 5/8"	2	1.04	49.1	.00	-.4
4	1	User Defined Loading	154.0	1239	79.0			48.1	3.80	-1.1	-2
	12	8' X 1' X 3IN PANEL	154.0	80	.0	None	1	.00	48.1	.00	-.9
	9	RRH	154.0	44	.0	None	1	.00	48.1	.00	-.4
	3	DC6-48-60-18-8F	154.0	20	.0	1 5/8"	2	1.04	48.1	.00	-.3
5	1	User Defined Loading	119.0	1491	105.3			45.6	4.80	-1.3	-2
	6	SBNHH-1D65C	119.0	49	.0	None	1	.00	45.6	.00	-.3
	3	SBNH-1D8585C.	119.0	57	.0	None	1	.00	45.6	.00	-.2
	3	RRUS A2 MODULE	119.0	22	.0	7/16"	1	.27	45.6	.00	-.1
6	1	User Defined Loading	118.9	0	.0			45.6	.00	.0	.0
	4	DC6-48-60-18-8F	119.0	20	.0	1/2"	2	.40	45.6	.00	-.2
	18	RRUS 11	119.0	55	.0	7/8"	8	.54	45.6	.00	-1.4

RESULTS

X, ft	Kzt	WIND psf	ICE in	:--- FORCES, kips ---:			:---MOMENTS, ft-kips---:			F'y ksi	Inter 4.8.2
				ShearX	ShearY	Axiaz	BendX	BendY	TorqZ		
189.00	1.00	32.65	.00	.0	.01	.0	.0	.0	.0	82.55	.000
187.00	1.00	32.58	.00	.0	4.19	-1.4	-.3	.0	.0	82.55	.002
186.90	1.00	32.57	.00	.0	4.41	-1.7	-.7	.0	.0	82.55	.004
181.90	1.00	32.39	.00	.0	4.68	-1.9	-22.8	.0	.0	82.55	.063
176.90	1.00	32.20	.00	.0	4.97	-2.1	-46.2	.0	.0	82.55	.114
171.90	1.00	32.01	.00	.0	5.20	-2.3	-71.0	.0	.0	82.55	.158
169.00	1.00	31.89	.00	.0	9.79	-4.4	-86.3	.0	.0	82.55	.183
164.00	1.00	31.69	.00	.0	10.09	-4.7	-135.3	.0	.0	82.55	.260
159.00	1.00	31.49	.00	.0	10.40	-5.0	-185.7	.0	.0	82.55	.326
154.00	1.00	31.28	.00	.0	14.95	-7.2	-237.9	.0	.0	82.55	.385
149.75	1.00	31.10	.00	.0	15.22	-7.7	-301.4	.0	.0	82.55	.454
146.25	1.00	30.94	.00	.0	15.54	-8.3	-354.7	.0	.0	82.55	.424
141.25	1.00	30.72	.00	.0	15.89	-8.8	-432.4	.0	.0	82.55	.478
136.25	1.00	30.49	.00	.0	16.22	-9.3	-511.8	.0	.0	82.55	.525
131.25	1.00	30.25	.00	.0	16.56	-9.8	-592.9	.0	.0	82.55	.565
126.25	1.00	30.01	.00	.0	16.90	-10.3	-675.8	.0	.0	82.55	.600
121.25	1.00	29.75	.00	.0	17.15	-10.7	-760.3	.0	.0	82.55	.631
119.00	1.00	29.64	.00	.0	22.26	-12.0	-799.1	.0	.0	82.55	.645
118.90	1.00	29.63	.00	.0	22.66	-13.8	-801.3	.0	.0	82.55	.646
113.90	1.00	29.37	.00	.0	22.99	-14.4	-914.2	.0	.0	82.55	.691
108.90	1.00	29.09	.00	.0	23.32	-15.0	-1029.2	.0	.0	82.55	.731
103.90	1.00	28.81	.00	.0	23.59	-15.6	-1145.8	.0	.0	82.28	.768
101.00	1.00	28.64	.00	.0	23.89	-16.4	-1214.2	.0	.0	81.92	.790
96.25	1.00	28.35	.00	.0	24.27	-17.5	-1328.3	.0	.0	82.55	.707
91.25	1.00	28.04	.00	.0	24.63	-18.4	-1449.2	.0	.0	82.55	.728
86.25	1.00	27.71	.00	.0	24.98	-19.2	-1572.5	.0	.0	82.55	.747
81.25	1.00	27.37	.00	.0	25.32	-20.0	-1697.5	.0	.0	82.55	.764
76.25	1.00	27.01	.00	.0	25.67	-20.8	-1824.2	.0	.0	82.55	.779
71.25	1.00	26.64	.00	.0	26.01	-21.7	-1952.5	.0	.0	82.55	.792
66.25	1.00	26.24	.00	.0	26.34	-22.5	-2082.5	.0	.0	82.26	.806
61.25	1.00	25.81	.00	.0	26.68	-23.4	-2214.2	.0	.0	81.74	.821
56.25	1.00	25.36	.00	.0	26.95	-24.2	-2347.5	.0	.0	81.22	.836
53.25	1.00	25.08	.00	.0	27.23	-25.2	-2428.3	.0	.0	80.91	.844
48.25	1.00	24.57	.00	.0	27.42	-25.9	-2564.2	.0	.0	80.81	.884

SABRE COMMUNICATIONS CORP	JOB: 00-10558	12-Jun-14 09:08
2101 Murray Street	TOWER ACCESS GROUP	Ph 712.258.6690
Sioux City, IA 51101	McKinney, KY	Fx 712.258.8250

47.50	1.00	24.49	.00	.0	27.60	-26.7	-2585.0	-.1	.0	80.73	.886
42.50	1.00	23.94	.00	.0	27.90	-27.8	-2723.3	-.1	.0	80.22	.897
37.50	1.00	23.33	.00	.0	28.19	-28.8	-2862.5	-.1	.0	79.70	.908
32.50	1.00	22.66	.00	.0	28.46	-29.7	-3003.3	-.1	.0	79.18	.918
27.50	1.00	21.90	.00	.0	28.74	-30.7	-3145.8	-.1	.0	78.66	.928
22.50	1.00	21.03	.00	.0	29.01	-31.7	-3289.2	-.1	.0	78.15	.936
17.50	1.00	19.99	.00	.0	29.29	-32.7	-3434.2	-.1	.0	77.63	.945
12.50	1.00	19.16	.00	.0	29.57	-33.7	-3580.8	-.1	.0	77.11	.953
7.50	1.00	19.16	.00	.0	29.85	-34.8	-3729.2	-.1	.0	76.59	.961
2.50	1.00	19.16	.00	.0	30.06	-35.6	-3878.3	-.1	.0	76.08	.968
.00	1.00	19.16	.00	.0	30.16	-35.8	3953.3	.1	.0	75.82	.971

DISPLACEMENTS

ELEV	DEFLECTION feet				ROTATION, degrees			
X, ft	X	Y	Z	XY-Result	X	Y	Z	XY-Result
189.00	.00	21.51	-1.65	21.51<11.38%>	-11.95	.00	.00	11.95

SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-10558
TOWER ACCESS GROUP
 McKinney, KY

12-Jun-14 09:08
 Ph 712.258.6690
 Fx 712.258.8250

CASE - 3: 3s Gusted Wind&Ice

ANSI-TIA-222-G

WIND OLF	1.00	GUSTED WIND (3sec)	30.0 mph	48.3 kph
VERTICAL OLF	1.20	EXP-CAT/STRUC_CLASS	C-II	
DESIGN ICE	.75 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	1.20	PRESSURE @ 32.7 ft	2.4 psf	115.2 Pa
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.95	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCES

Sabre Areas

#	Qty	Description	Center	WEIGHT	AREA	Tx-CABLE		WIND	FORCES		MOM.
			Elev-Ft	each	each	Type	Qty		#/Ft	Tra-Y	
				Lbs	Ft^2			Psf	Kips	Kips	Ft-K
1	1	User Defined Loading	187.0	1362	82.6			3.5	.29	-1.6	.0
9		CMA-BDHH/6521/E0-6	189.0	120	.0	None	1	.00	3.5	.00	-.7
3		FRIG RRU	189.0	74	.0	None	1	.00	3.5	.00	-.2
1		21IN X 20IN X 8IN	189.0	55	.0	1 5/8"	2	1.04	3.5	.00	-.5
2	1	User Defined Loading	186.9	0	.0			3.5	.00	.0	.0
1		FRIE	189.0	44	.0	None	1	.00	3.5	.00	.0
3		FXFB	189.0	74	.0	None	1	.00	3.5	.00	-.2
3	1	User Defined Loading	169.0	1362	86.9			3.4	.30	-1.6	.0
12		8' X 1' X 3IN PANEL	169.0	131	.0	None	1	.00	3.4	.00	-1.2
9		RRH	169.0	62	.0	None	1	.00	3.4	.00	-.5
3		DC6-48-60-18-8F	169.0	39	.0	1 5/8"	2	1.04	3.4	.00	-.5
4	1	User Defined Loading	154.0	1362	86.9			3.3	.29	-1.6	.0
12		8' X 1' X 3IN PANEL	154.0	131	.0	None	1	.00	3.3	.00	-1.2
9		RRH	154.0	62	.0	None	1	.00	3.3	.00	-.5
3		DC6-48-60-18-8F	154.0	39	.0	1 5/8"	2	1.04	3.3	.00	-.5
5	1	User Defined Loading	119.0	1640	115.9			3.2	.37	-2.0	.0
6		SBNHH-1D65C	119.0	115	.0	None	1	.00	3.2	.00	-.4
3		SBNH-1D8585C.	119.0	112	.0	None	1	.00	3.2	.00	-.2
3		RRUS A2 MODULE	119.0	32	.0	7/16"	1	.27	3.2	.00	-.1
6	1	User Defined Loading	118.9	0	.0			3.2	.00	.0	.0
4		DC6-48-60-18-8F	119.0	39	.0	1/2"	2	.40	3.2	.00	-.2
18		RRUS 11	119.0	74	.0	7/8"	8	.54	3.2	.00	-1.8

RESULTS

X, ft	Kzt	WIND psf	ICE in	:--- FORCES, kips ---:			:---MOMENTS, ft-kips---:			F'y ksi	Inter 4.8.2
				ShearX	ShearY	AxiaZ	BendX	BendY	TorqZ		
189.00	1.00	4.19	1.79	.0	.00	-.1	.0	.0	.0	82.55	.000
187.00	1.00	4.18	1.79	.0	.36	-3.2	.0	.0	.0	82.55	.003
186.90	1.00	4.18	1.78	.0	.40	-3.7	-.1	.0	.0	82.55	.004
181.90	1.00	4.15	1.78	.0	.45	-4.2	-2.1	.0	.0	82.55	.010
176.90	1.00	4.13	1.78	.0	.49	-4.7	-4.3	.0	.0	82.55	.015
171.90	1.00	4.10	1.77	.0	.53	-5.1	-6.8	.0	.0	82.55	.019
169.00	1.00	4.09	1.77	.0	.95	-9.3	-8.3	.0	.0	82.55	.025
164.00	1.00	4.06	1.76	.0	1.00	-9.9	-13.1	.0	.0	82.55	.033
159.00	1.00	4.04	1.76	.0	1.05	-10.5	-18.0	.0	.0	82.55	.039
154.00	1.00	4.01	1.75	.0	1.46	-14.9	-23.3	.0	.0	82.55	.048
149.75	1.00	3.99	1.75	.0	1.50	-15.6	-29.5	.0	.0	82.55	.055
146.25	1.00	3.97	1.74	.0	1.55	-16.5	-34.8	.0	.0	82.55	.051
141.25	1.00	3.94	1.74	.0	1.61	-17.4	-42.6	.0	.0	82.55	.056
136.25	1.00	3.91	1.73	.0	1.66	-18.3	-50.6	.0	.0	82.55	.061
131.25	1.00	3.88	1.72	.0	1.71	-19.1	-58.9	.0	.0	82.55	.065
126.25	1.00	3.85	1.72	.0	1.76	-20.0	-67.4	.0	.0	82.55	.069
121.25	1.00	3.81	1.71	.0	1.80	-20.6	-76.3	.0	.0	82.55	.073
119.00	1.00	3.80	1.71	.0	2.22	-23.5	-80.3	.0	.0	82.55	.075
118.90	1.00	3.80	1.71	.0	2.28	-25.9	-80.5	.0	.0	82.55	.076
113.90	1.00	3.77	1.70	.0	2.32	-26.9	-91.9	.0	.0	82.55	.081
108.90	1.00	3.73	1.69	.0	2.37	-27.8	-103.5	.0	.0	82.55	.085
103.90	1.00	3.69	1.68	.0	2.41	-28.7	-115.4	.0	.0	82.28	.089
101.00	1.00	3.67	1.68	.0	2.45	-29.9	-122.4	.0	.0	81.92	.092
96.25	1.00	3.64	1.67	.0	2.51	-31.6	-134.1	.0	.0	82.55	.082
91.25	1.00	3.60	1.66	.0	2.56	-32.9	-146.6	.0	.0	82.55	.084
86.25	1.00	3.55	1.65	.0	2.61	-34.1	-159.3	.0	.0	82.55	.086
81.25	1.00	3.51	1.64	.0	2.65	-35.4	-172.4	.0	.0	82.55	.088
76.25	1.00	3.46	1.63	.0	2.70	-36.6	-185.7	.0	.0	82.55	.090
71.25	1.00	3.41	1.62	.0	2.75	-37.9	-199.2	.0	.0	82.55	.092
66.25	1.00	3.36	1.61	.0	2.79	-39.2	-212.8	.0	.0	82.26	.093
61.25	1.00	3.31	1.60	.0	2.83	-40.6	-226.8	.0	.0	81.74	.095
56.25	1.00	3.25	1.58	.0	2.87	-41.8	-241.0	.0	.0	81.22	.097
53.25	1.00	3.21	1.58	.0	2.91	-43.4	-249.6	.0	.0	80.91	.098
48.25	1.00	3.15	1.56	.0	2.93	-44.4	-264.1	.0	.0	80.81	.103

SABRE COMMUNICATIONS CORP

JOB: 00-10558

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2101 Murray Street

TOWER ACCESS GROUP

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McKinney, KY

Fx 712.258.8250

47.50	1.00	3.14	1.56	.0	2.95	-45.5	-266.3	.0	.0	80.73	.103
42.50	1.00	3.07	1.54	.0	2.99	-47.2	-281.1	.0	.0	80.22	.105
37.50	1.00	2.99	1.52	.0	3.02	-48.7	-296.0	.0	.0	79.70	.106
32.50	1.00	2.90	1.50	.0	3.06	-50.2	-311.2	.0	.0	79.18	.108
27.50	1.00	2.81	1.48	.0	3.09	-51.7	-326.4	.0	.0	78.66	.109
22.50	1.00	2.70	1.45	.0	3.12	-53.2	-341.8	.0	.0	78.15	.110
17.50	1.00	2.56	1.42	.0	3.15	-54.7	-357.5	.0	.0	77.63	.112
12.50	1.00	2.46	1.37	.0	3.18	-56.3	-373.3	.0	.0	77.11	.113
7.50	1.00	2.46	1.31	.0	3.22	-57.9	-389.2	.0	.0	76.59	.114
2.50	1.00	2.46	1.20	.0	3.24	-59.1	-405.3	.0	.0	76.08	.115
.00	1.00	2.46	1.06	.0	3.25	-59.4	413.3	.0	.0	75.82	.115

DISPLACEMENTS

ELEV	DEFLECTION feet				ROTATION, degrees			
X, ft	X	Y	Z	XY-Result	X	Y	Z	XY-Result
189.00	.00	2.21	-.02	2.21< 1.17%>	-1.21	.00	.00	1.21

SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-10558
 TOWER ACCESS GROUP
 McKinney, KY

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CASE - 4: Service Loads

ANSI-TIA-222-G

WIND OLF	1.00	GUSTED WIND (3sec)	60.0 mph	96.6 kph
VERTICAL OLF	1.00	EXP-CAT/STRUC_CLASS	C-II	
DESIGN ICE	.00 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	.65	PRESSURE @ 32.7 ft	8.6 psf	412.3 Pa
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.85	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCES

Sabre Areas

#	Qty	Description	Center Elev-Ft	WEIGHT each Lbs	AREA each Ft^2	Tx-CABLE		WIND Psf	FORCES		MOM. Lg-X Ft-K
						Type	Qty #/Ft		Tra-Y Kips	Ax-Z Kips	
1	1	User Defined Loading	187.0	1239	75.1			12.5	.94	-1.2	.0
	9	CMA-BDHH/6521/E0-6	189.0	62	.0	None	1 .00	12.5	.00	-.6	
	3	FRIG RRU	189.0	55	.0	None	1 .00	12.5	.00	-.2	
	1	21IN X 20IN X 8IN	189.0	30	.0	1 5/8"	2 1.04	12.5	.00	-.4	
2	1	User Defined Loading	186.9	0	.0			12.5	.00	.0	.0
	1	FRIE	189.0	22	.0	None	1 .00	12.5	.00	.0	
	3	FXFB	189.0	55	.0	None	1 .00	12.5	.00	-.2	
3	1	User Defined Loading	169.0	1239	79.0			12.2	.96	-1.2	.0
	12	8' X 1' X 3IN PANEL	169.0	80	.0	None	1 .00	12.2	.00	-1.0	
	9	RRH	169.0	44	.0	None	1 .00	12.2	.00	-.4	
	3	DC6-48-60-18-8F	169.0	20	.0	1 5/8"	2 1.04	12.2	.00	-.4	
4	1	User Defined Loading	154.0	1239	79.0			12.0	.94	-1.2	.0
	12	8' X 1' X 3IN PANEL	154.0	80	.0	None	1 .00	12.0	.00	-1.0	
	9	RRH	154.0	44	.0	None	1 .00	12.0	.00	-.4	
	3	DC6-48-60-18-8F	154.0	20	.0	1 5/8"	2 1.04	12.0	.00	-.4	
5	1	User Defined Loading	119.0	1491	105.3			11.3	1.19	-1.5	-.1
	6	SBNHH-1D65C	119.0	49	.0	None	1 .00	11.3	.00	-.3	
	3	SBNH-1D8585C.	119.0	57	.0	None	1 .00	11.3	.00	-.2	
	3	RRUS A2 MODULE	119.0	22	.0	7/16"	1 .27	11.3	.00	-.1	
6	1	User Defined Loading	118.9	0	.0			11.3	.00	.0	.0
	4	DC6-48-60-18-8F	119.0	20	.0	1/2"	2 .40	11.3	.00	-.2	
	18	RRUS 11	119.0	55	.0	7/8"	8 .54	11.3	.00	-1.5	

RESULTS

X, ft	Kzt	WIND psf	ICE in	:--- FORCES, kips ---:			:--- MOMENTS, ft-kips ---:			F'y ksi	Inter 4.8.2
				[ShearX	ShearY	Axiaz]	BendX	BendY	TorqZ]		
189.00	1.00	8.11	.00	.0	.00	.0	.0	.0	.0	82.55	.000
187.00	1.00	8.10	.00	.0	1.08	-2.4	-.1	.0	.0	82.55	.003
186.90	1.00	8.10	.00	.0	1.14	-2.7	-.2	.0	.0	82.55	.003
181.90	1.00	8.05	.00	.0	1.21	-3.0	-5.9	.0	.0	82.55	.019
176.90	1.00	8.00	.00	.0	1.28	-3.2	-11.9	.0	.0	82.55	.032
171.90	1.00	7.95	.00	.0	1.34	-3.4	-18.3	.0	.0	82.55	.043
169.00	1.00	7.93	.00	.0	2.52	-6.6	-22.3	.0	.0	82.55	.052
164.00	1.00	7.88	.00	.0	2.60	-6.9	-34.9	.0	.0	82.55	.072
159.00	1.00	7.83	.00	.0	2.68	-7.2	-47.9	.0	.0	82.55	.089
154.00	1.00	7.77	.00	.0	3.85	-10.5	-61.4	.0	.0	82.55	.105
149.75	1.00	7.73	.00	.0	3.92	-10.9	-77.7	.0	.0	82.55	.123
146.25	1.00	7.69	.00	.0	4.00	-11.5	-91.4	.0	.0	82.55	.115
141.25	1.00	7.63	.00	.0	4.08	-12.0	-111.4	.0	.0	82.55	.129
136.25	1.00	7.58	.00	.0	4.17	-12.4	-131.8	.0	.0	82.55	.140
131.25	1.00	7.52	.00	.0	4.25	-12.9	-152.7	.0	.0	82.55	.151
126.25	1.00	7.46	.00	.0	4.33	-13.3	-173.9	.0	.0	82.55	.160
121.25	1.00	7.40	.00	.0	4.39	-13.7	-195.6	.0	.0	82.55	.168
119.00	1.00	7.37	.00	.0	5.69	-15.8	-205.5	.0	.0	82.55	.172
118.90	1.00	7.36	.00	.0	5.79	-17.8	-206.1	.0	.0	82.55	.173
113.90	1.00	7.30	.00	.0	5.87	-18.3	-235.0	.0	.0	82.55	.184
108.90	1.00	7.23	.00	.0	5.95	-18.8	-264.4	.0	.0	82.55	.194
103.90	1.00	7.16	.00	.0	6.01	-19.3	-294.1	.0	.0	82.28	.204
101.00	1.00	7.12	.00	.0	6.09	-20.1	-311.6	.0	.0	81.92	.209
96.25	1.00	7.05	.00	.0	6.18	-21.2	-340.5	.0	.0	82.55	.187
91.25	1.00	6.97	.00	.0	6.27	-22.0	-371.3	.0	.0	82.55	.192
86.25	1.00	6.89	.00	.0	6.35	-22.7	-402.7	.0	.0	82.55	.197
81.25	1.00	6.80	.00	.0	6.43	-23.5	-434.4	.0	.0	82.55	.201
76.25	1.00	6.71	.00	.0	6.51	-24.2	-466.6	.0	.0	82.55	.205
71.25	1.00	6.62	.00	.0	6.59	-25.0	-499.1	.0	.0	82.55	.208
66.25	1.00	6.52	.00	.0	6.67	-25.7	-532.1	.0	.0	82.26	.212
61.25	1.00	6.42	.00	.0	6.75	-26.5	-565.4	.0	.0	81.74	.216
56.25	1.00	6.30	.00	.0	6.82	-27.3	-599.2	.0	.0	81.22	.219
53.25	1.00	6.23	.00	.0	6.88	-28.3	-619.7	.0	.0	80.91	.222
48.25	1.00	6.11	.00	.0	6.93	-29.0	-654.1	.0	.0	80.81	.232

SABRE COMMUNICATIONS CORP	JOB: 00-10558	12-Jun-14 09:08
2101 Murray Street	TOWER ACCESS GROUP	Ph 712.258.6690
Sioux City, IA 51101	McKinney, KY	Fx 712.258.8250

47.50	1.00	6.09	.00	.0	6.97	-29.7	-659.3	.0	.0	80.73	.232
42.50	1.00	5.95	.00	.0	7.04	-30.8	-694.1	.0	.0	80.22	.235
37.50	1.00	5.80	.00	.0	7.11	-31.7	-729.3	.0	.0	79.70	.238
32.50	1.00	5.63	.00	.0	7.17	-32.6	-764.8	.0	.0	79.18	.241
27.50	1.00	5.44	.00	.0	7.24	-33.5	-800.8	.0	.0	78.66	.243
22.50	1.00	5.23	.00	.0	7.30	-34.4	-836.7	.0	.0	78.15	.245
17.50	1.00	4.97	.00	.0	7.37	-35.4	-873.3	.0	.0	77.63	.247
12.50	1.00	4.76	.00	.0	7.43	-36.3	-910.0	.0	.0	77.11	.249
7.50	1.00	4.76	.00	.0	7.50	-37.3	-947.5	.0	.0	76.59	.251
2.50	1.00	4.76	.00	.0	7.55	-38.1	-985.0	.0	.0	76.08	.253
.00	1.00	4.76	.00	.0	7.57	-38.3	1003.3	.0	.0	75.82	.254

DISPLACEMENTS

ELEV	DEFLECTION feet				ROTATION, degrees				MicroW
X, ft	X	Y	Z	XY-Result	X	Y	Z	XY-Result	Allow
189.00	.00	5.52	-.11	5.52< 2.92%>	-3.06	.00	.00	3.06	

SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-10558
 TOWER ACCESS GROUP
 McKinney, KY

12-Jun-14 09:08
 Ph 712.258.6690
 Fx 712.258.8250

SHAPE: 18 SIDED POLYGON with FLAT-FLAT ORIENTATION
 BOLTS: EVENLY SPACED BOLTS 12.52 in. ON CENTER
 LOCATE:

POLE DATA

DIAMETER =	49.97 in.	BASE	AXIAL FORCE=	-47.3 kips	Vert
PLATE =	.3750 in.	ACTIONS	SHEAR X =	30.2 kips	Long
TAPER =	.1870 in/ft		SHEAR Y =	.0 kips	Tran
POLE Fy =	65.00 ksi		X-AXIS MOM =	2865.7 ft-kips	Tran
			Y-Axis MOM =	2865.7 ft-kips	Long
			Z-Axis MOM =	.0 ft-kips	Vert

DESIGN CASE = 1 3s Gusted Wind

Design: ANY Orientation Reactions at 45.00 deg to X-AXIS

BOLT LOADS

AXIAL - COMPRESSION	=	250.44 kips	
AXIAL - TENSION	=	243.68 kips	
SHEAR	=	2.15 kips	
AXIAL STRESS	=	77.06 ksi	
SHEAR STRESS	=	.70 ksi	
YIELD STRENGTH Fy	=	75.00 ksi	
ULT. STRENGTH Fu	=	100.00 ksi	
ALLOW STRESS Fa [.80 x 1.00]	=	80.00 ksi	Interaction .981 TIA-G
SHEAR Fv [.80 x .40]	=	32.00 ksi	
TENSION AREA REQUIRED	=	3.13 in ²	
TENSION AREA FURNISHED	=	3.25 in ²	
ROOT AREA FURNISHED	=	3.07 in ²	

A615 ::: ANCHOR BOLT DESIGN USED

14 Bolts on a 56.250 in. Bolt Circle SHIP
 2.250 in. Diameter 67.13 in. Embedded (lbs)
 12.00 in. Exposed 84.00 in. Total Length 1917

CONCRETE - Fc= 4000 psi

ANCHOR BOLTS are STRAIGHT w\ UPLIFT NUT

BASE PLATE

[Bend Model: 1/4 Circ]
 YIELD STRENGTH = 50.0 ksi
 BEND LINE WIDTH = 34.0 in.
 PLATE MOMENT = 2143.0 in-k
 THICKNESS REQD = 2.368 in.
 BENDING STRESS = 40.4 ksi
 ALLOWABLE STRESS = 45.0 ksi
 [Fy x .90 x 1.00]

BASE PLATE USED

2.50 in. THICK SHIP
 62.25 in. ROUND (lbs)
 37.75 in. CENTER HOLE 1303

LOAD CASE SUMMARY

LC	FORCES-(kips)			MOMENTS-(ft-k)			CSR	ABolt-Str		Plate-Str		Code
	Axial	ShearX	ShearY	X-axis	Y-axis	TorQ		Allow	Actual	Allow	Design	
1	47.3	30.2	.0	4053	0	0	.981	75.00	40.36	45.00	TIA-G	
2	35.8	30.2	.0	3953	0	0	.954	75.00	39.24	45.00	TIA-G	
3	59.4	3.3	.0	413	0	0	.115	75.00	4.79	45.00	TIA-G	
4	38.3	7.6	.0	1003	0	0	.250	75.00	10.32	45.00	TIA-G	

MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES

190' Monopole TOWER ACCESS GROUP McKinney, KY (105583) 6-12-14 TTW

Overall Loads:

Factored Moment (ft-kips)	4053.33
Factored Axial (kips)	47.29
Factored Shear (kips)	30.16
Bearing Design Strength (ksf)	7.5
Water Table Below Grade (ft)	999
Width of Mat (ft)	23.5
Thickness of Mat (ft)	2
Depth to Bottom of Slab (ft)	6
Quantity of Bolts in Bolt Circle	14
Bolt Circle Diameter (in)	56.25
Top of Concrete to Top of Bottom Threads (in)	60
Diameter of Pier (ft)	7
Ht. of Pier Above Ground (ft)	0.5
Ht. of Pier Below Ground (ft)	4
Quantity of Bars in Mat	33
Bar Diameter in Mat (in)	1
Area of Bars in Mat (in ²)	25.92
Spacing of Bars in Mat (in)	8.59
Quantity of Bars Pier	36
Bar Diameter in Pier (in)	1
Tie Bar Diameter in Pier (in)	0.625
Spacing of Ties (in)	12
Area of Bars in Pier (in ²)	28.27
Spacing of Bars in Pier (in)	6.61
f'c (ksi)	4
fy (ksi)	60
Unit Wt. of Soil (kcf)	0.115
Unit Wt. of Concrete (kcf)	0.15

Max. Net Bearing Press. (ksf)	6.95
Allowable Bearing Pressure (ksf)	5.00
Safety Factor	2.00
Ultimate Bearing Pressure (ksf)	10.00
Bearing Φ s	0.75

Minimum Pier Diameter (ft)	6.19
Equivalent Square b (ft)	6.20

Recommended Spacing (in)	6 to 12
--------------------------	---------

Minimum Pier A _s (in ²)	27.71
Recommended Spacing (in)	6 to 12

Volume of Concrete (yd³) 47.32

Two-Way Shear Action:

Average d (in)	20
ϕV_c (kips)	1405.1
$\phi V_c = \phi(2 + 4/\beta_c)f'_c{}^{1/2}b_o d$	2107.7
$\phi V_c = \phi(\alpha_s d/b_o + 2)f'_c{}^{1/2}b_o d$	1562.7
$\phi V_c = \phi 4f'_c{}^{1/2}b_o d$	1405.1
Shear perimeter, b _o (in)	326.73
β_c	1

V _u (kips)	97.4
-----------------------	------

One-Way Shear:

ϕV_c (kips)	606.4
-------------------	-------

V _u (kips)	306.6
-----------------------	-------

Stability:

Overturning Design Strength (ft-k)	4942.7
------------------------------------	--------

Total Applied M (ft-k)	4249.4
------------------------	--------

Pier Design:

ϕV_n (kips)	609.5	V_u (kips)	30.2
$\phi V_c = \phi 2(1 + N_u / (2000 A_g)) f'_c{}^{1/2} b_w d$	609.5		
V_s (kips)	0.0	*** $V_s \text{ max} = 4 f'_c{}^{1/2} b_w d$ (kips)	1428.0
Maximum Spacing (in)	8.77	(Only if Shear Ties are Required)	
Actual Hook Development (in)	19.00	Req'd Hook Development l_{dh} (in)	13.28
		*** Ref. To Spacing Requirements ACI 11.5.4.3	

Flexure in Slab:

ϕM_n (ft-kips)	2238.0	M_u (ft-kips)	2230.5
a (in)	1.62		
Steel Ratio	0.00460		
β_1	0.85		
Maximum Steel Ratio (ρ_t)	0.0181		
Minimum Steel Ratio	0.0018		
Rebar Development in Pad (in)	100.78	Required Development in Pad (in)	28.32

Condition	1 is OK, 0 Fails
Maximum Soil Bearing Pressure	1
Pier Area of Steel	1
Pier Shear	1
Interaction Diagram Visual Check	1
Two-Way Shear Action	1
One-Way Shear Action	1
Overturning	1
Flexure	1
Steel Ratio	1
Length of Development in Pad	1
Hook Development	1

LPile Plus for windows, version 2013-07.005

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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Files Used for Analysis

Path to file locations: C:\Progra-2\Ensoft\LPile2013\
Name of input data file: 105583.lp7d
Name of output report file: 105583.lp7o
Name of plot output file: 105583.lp7p
Name of runtime message file: 105583.lp7r

Date and Time of Analysis

Date: June 12, 2014 Time: 9:07:21

Problem Title

190' Monopole TOWER ACCESS GROUP McKinney, KY (105583) 6-12-14 TTW

Job Number:

Client:

Engineer:

Description:

Program Options and Settings

Engineering Units of Input Data and Computations:
- Engineering units are US Customary Units (pounds, feet, inches)

Analysis Control Options:
- Maximum number of iterations allowed = 300
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

Computational Options:
- Use unfactored loads in computations (conventional analysis)
- Compute pile response under loading and nonlinear bending properties of pile
(only if nonlinear pile properties are input)
- Use of p-y modification factors for p-y curves not selected
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- No p-y curves to be computed and reported for user-specified depths
- Values of pile-head deflection, bending moment, shear force, and
soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 3

 Pile Structural Properties and Geometry

Total number of pile sections = 1
 Total length of pile = 18.50 ft
 Depth of ground surface below top of pile = 0.50 ft
 Pile diameter values used for p-y curve computations are defined using 2 points.
 p-y curves are computed using pile diameter values interpolated with depth over the length of the pile.

Point	Depth X ft	Pile Diameter in
1	0.00000	84.0000000
2	18.500000	84.0000000

 Input Structural Properties:

Pile Section No. 1:

Section Type = Drilled Shaft (Bored Pile)
 Section Length = 18.50000 ft
 Section Diameter = 84.00000 in

 Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
 = 0.000 radians
 Pile Batter Angle = 0.000 degrees
 = 0.000 radians

 Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970

Distance from top of pile to top of layer = 0.50000 ft
 Distance from top of pile to bottom of layer = 3.50000 ft
 Effective unit weight at top of layer = 119.92320 pcf
 Effective unit weight at bottom of layer = 119.92320 pcf
 Undrained cohesion at top of layer = 14.40000 psf
 Undrained cohesion at bottom of layer = 14.40000 psf
 Epsilon-50 at top of layer = 0.10000
 Epsilon-50 at bottom of layer = 0.10000

Layer 2 is stiff clay without free water

Distance from top of pile to top of layer = 3.50000 ft
 Distance from top of pile to bottom of layer = 4.50000 ft
 Effective unit weight at top of layer = 119.92320 pcf
 Effective unit weight at bottom of layer = 119.92320 pcf
 Undrained cohesion at top of layer = 1500.48000 psf
 Undrained cohesion at bottom of layer = 1500.48000 psf
 Epsilon-50 at top of layer = 0.00700
 Epsilon-50 at bottom of layer = 0.00700

Layer 3 is stiff clay without free water

Distance from top of pile to top of layer = 4.50000 ft
 Distance from top of pile to bottom of layer = 6.50000 ft
 Effective unit weight at top of layer = 160.01280 pcf
 Effective unit weight at bottom of layer = 160.01280 pcf
 Undrained cohesion at top of layer = 2000.16000 psf
 Undrained cohesion at bottom of layer = 2000.16000 psf
 Epsilon-50 at top of layer = 0.00600
 Epsilon-50 at bottom of layer = 0.00600

Layer 4 is stiff clay without free water

Distance from top of pile to top of layer = 6.50000 ft
 Distance from top of pile to bottom of layer = 30.50000 ft
 Effective unit weight at top of layer = 160.01280 pcf
 Effective unit weight at bottom of layer = 160.01280 pcf
 Undrained cohesion at top of layer = 7899.84000 psf
 Undrained cohesion at bottom of layer = 7899.84000 psf
 Epsilon-50 at top of layer = 0.0000100
 Epsilon-50 at bottom of layer = 0.0000100

(Depth of lowest soil layer extends 12.00 ft below pile tip)

**** Warning - Possible Input Data Error ****

Values entered for effective unit weights of soil were outside the limits of 0.011574 pci (20 pcf) or 0.0810019 pci (140 pcf)
This data may be erroneous. Please check your data.

Summary of Soil Properties

Layer Num.	Layer Soil Type (p-y Curve Criteria)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Strain Factor Epsilon 50
1	Soft Clay	0.500	119.923	14.400	0.10000
		3.500	119.923	14.400	0.10000
2	Stiff Clay w/o Free Water	3.500	119.923	1500.480	0.00700
		4.500	119.923	1500.480	0.00700
3	Stiff Clay w/o Free Water	4.500	160.013	2000.160	0.00600
		6.500	160.013	2000.160	0.00600
4	Stiff Clay w/o Free Water	6.500	160.013	7899.840	1.00E-05
		30.500	160.013	7899.840	1.00E-05

Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length
1	1	V = 40213. lbs	M = 64853280. in-lbs	63053.	No

V = perpendicular shear force applied to pile head

M = bending moment applied to pile head

y = lateral deflection relative to pile axis

S = pile slope relative to original pile batter angle

R = rotational stiffness applied to pile head

Axial thrust is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	18.50000 ft
Shaft Diameter	=	84.00000 in
Concrete Cover Thickness	=	3.62481 in
Number of Reinforcing Bars	=	32 bars
Yield Stress of Reinforcing Bars	=	60000. psi
Modulus of Elasticity of Reinforcing Bars	=	29000000. psi
Gross Area of Shaft	=	5541.76944 sq. in.
Total Area of Reinforcing Steel	=	32.00000 sq. in.
Area Ratio of Steel Reinforcement	=	0.58 percent
Edge-to-Edge Bar Spacing	=	6.28429 in
Maximum Concrete Aggregate Size	=	0.75000 in
Ratio of Bar Spacing to Aggregate Size	=	8.38
Offset of Center of Rebar Cage from Center of Pile	=	0.0000 in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	20653.217 kips
Tensile Load for Cracking of Concrete	=	-2398.630 kips
Nominal Axial Tensile Capacity	=	-1920.000 kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar	Bar Diam.	Bar Area	X	Y
-----	-----------	----------	---	---

Number	inches	sq. in.	105583.Tpo	
			inches	inches
1	1.12800	1.00000	37.81119	0.00000
2	1.12800	1.00000	37.08466	7.37660
3	1.12800	1.00000	34.93298	14.46972
4	1.12800	1.00000	31.43886	21.00677
5	1.12800	1.00000	26.73655	26.73655
6	1.12800	1.00000	21.00677	31.43886
7	1.12800	1.00000	14.46972	34.93298
8	1.12800	1.00000	7.37660	37.08466
9	1.12800	1.00000	0.00000	37.81119
10	1.12800	1.00000	-7.37660	37.08466
11	1.12800	1.00000	-14.46972	34.93298
12	1.12800	1.00000	-21.00677	31.43886
13	1.12800	1.00000	-26.73655	26.73655
14	1.12800	1.00000	-31.43886	21.00677
15	1.12800	1.00000	-34.93298	14.46972
16	1.12800	1.00000	-37.08466	7.37660
17	1.12800	1.00000	-37.81119	0.00000
18	1.12800	1.00000	-37.08466	-7.37660
19	1.12800	1.00000	-34.93298	-14.46972
20	1.12800	1.00000	-31.43886	-21.00677
21	1.12800	1.00000	-26.73655	-26.73655
22	1.12800	1.00000	-21.00677	-31.43886
23	1.12800	1.00000	-14.46972	-34.93298
24	1.12800	1.00000	-7.37660	-37.08466
25	1.12800	1.00000	0.00000	-37.81119
26	1.12800	1.00000	7.37660	-37.08466
27	1.12800	1.00000	14.46972	-34.93298
28	1.12800	1.00000	21.00677	-31.43886
29	1.12800	1.00000	26.73655	-26.73655
30	1.12800	1.00000	31.43886	-21.00677
31	1.12800	1.00000	34.93298	-14.46972
32	1.12800	1.00000	37.08466	-7.37660

NOTE: The positions of the above rebars were computed by L.Pile

Minimum spacing between any two bars not equal to zero = 6.28429 inches between Bars 1 and 32

Spacing to aggregate size ratio = 8.37905

Concrete Properties:

Compressive Strength of Concrete	=	4000.00000 psi
Modulus of Elasticity of Concrete	=	3604997. psi
Modulus of Rupture of Concrete	=	-474.34164 psi
Compression Strain at Peak Stress	=	0.00189
Tensile Strain at Fracture of Concrete	=	-0.0001154
Maximum Coarse Aggregate Size	=	0.75000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	63.053

Definitions of Run Messages and Notes:

- C = concrete in section has cracked in tension.
- Y = stress in reinforcing steel has reached yield stress.
- T = ACI 318-08 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than than 0.003. See ACI 318-08, Section 10.3.4.
- Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
 Position of neutral axis is measured from edge of compression side of pile.
 Compressive stresses and strains are positive in sign.
 Tensile stresses and strains are negative in sign.

Axial Thrust Force = 63.053 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Concrete Stress ksi	Max Steel Stress ksi	Run Msg
0.000000313	3408.1859552	10906195057.	50.3288084	0.0000157	-0.0000105	0.0658740	0.4522986	
0.000000625	6801.9548795	10883127807.	46.1761635	0.0000289	-0.0000236	0.1203679	0.8293305	
0.000000938	10181.	10859286787.	44.7920452	0.0000420	-0.0000368	0.1744822	1.2063650	
0.000001250	13544.	10835249288.	44.1000298	0.0000551	-0.0000499	0.2282167	1.5834011	
0.000001563	16892.	10811132910.	43.6848513	0.0000683	-0.0000630	0.2815713	1.9604386	
0.000001875	20226.	10786977017.	43.4080901	0.0000814	-0.0000761	0.3345460	2.3374774	
0.000002188	23544.	10762798543.	43.2104245	0.0000945	-0.0000892	0.3871408	2.7145176	
0.000002500	26847.	10738605940.	43.0621933	0.0001077	-0.0001023	0.4393557	3.0915590	
0.000002813	26847.	9545427502.	21.5725266	0.0000607	-0.0001756	0.2483347	-5.0574846	C
0.000003125	26847.	8590884752.	21.1735605	0.0000662	-0.0001963	0.2703321	-5.6555836	C
0.000003438	26847.	7809895229.	20.8419404	0.0000716	-0.0002171	0.2921918	-6.2542003	C
0.000003750	26847.	7159070627.	20.5655744	0.0000771	-0.0002379	0.3139871	-6.8528188	C
0.000004063	26847.	6608372886.	20.3214687	0.0000826	-0.0002587	0.3355489	-7.4526457	C

105583.7po								
0.0001172	68095.	581078134.	13.6472788	0.0015993	-0.0082445	3.8729294	-60.0000000	CY
0.0001197	68209.	569889895.	13.5724375	0.0016245	-0.0084293	3.8905017	-60.0000000	CY
0.0001222	68321.	559152841.	13.5012293	0.0016497	-0.0086141	3.9068120	-60.0000000	CY
0.0001247	68433.	548839744.	13.4334416	0.0016750	-0.0087988	3.9218495	-60.0000000	CY
0.0001272	68545.	538925512.	13.3688785	0.0017004	-0.0089834	3.9356030	-60.0000000	CY
0.0001297	68655.	529386988.	13.3073594	0.0017258	-0.0091680	3.9480611	-60.0000000	CY
0.0001322	68764.	520202766.	13.2487178	0.0017513	-0.0093524	3.9592125	-60.0000000	CY
0.0001347	68873.	511353024.	13.1927995	0.0017769	-0.0095368	3.9690454	-60.0000000	CY
0.0001372	68981.	502819388.	13.1394616	0.0018026	-0.0097212	3.9775479	-60.0000000	CY
0.0001522	69415.	456116748.	12.8051668	0.0019488	-0.0108350	3.9999978	-60.0000000	CY
0.0001672	69716.	416991461.	12.5131333	0.0020920	-0.0119517	3.9999731	-60.0000000	CY
0.0001822	69993.	384179566.	12.2836773	0.0022379	-0.0130658	3.9989243	60.0000000	CY
0.0001972	70241.	356213398.	12.0882016	0.0023836	-0.0141801	3.9923742	60.0000000	CY
0.0002122	70465.	332087750.	11.9154892	0.0025283	-0.0152954	3.9942890	60.0000000	CY
0.0002272	70634.	310906354.	11.7617516	0.0026721	-0.0164116	3.9940227	60.0000000	CY
0.0002422	70745.	292109891.	11.6171099	0.0028135	-0.0175302	3.9963070	60.0000000	CY
0.0002572	70827.	275390680.	11.4892513	0.0029549	-0.0186489	3.9839229	60.0000000	CY
0.0002722	70905.	260501174.	11.3791638	0.0030973	-0.0197665	3.9975680	60.0000000	CYT
0.0002872	70965.	247102261.	11.2768523	0.0032386	-0.0208852	3.9920071	60.0000000	CYT
0.0003022	71016.	235004937.	11.1806347	0.0033786	-0.0220051	3.9720887	60.0000000	CYT
0.0003172	71065.	224046142.	11.0958605	0.0035195	-0.0231243	3.9890601	60.0000000	CYT
0.0003322	71097.	214025486.	11.0329793	0.0036650	-0.0242387	3.9986231	60.0000000	CYT
0.0003472	71121.	204847858.	10.9826814	0.0038130	-0.0253507	3.9902384	60.0000000	CYT

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003 or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	63.053	70851.792	0.00300000

Note note that the values of moment capacity in the table above are not factored by a strength reduction factor (phi-factor).

In ACI 318-08, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318-08, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

Axial Load No.	Resistance Factor for Moment	Nominal Moment Capacity in-kip	Ultimate (Factored) Axial Thrust kips	Ultimate (Factored) Moment Capacity in-kip	Bending Stiffness at Ult. Mom. Cap. kip-in ²
1	0.65	70851.792	40.985	46053.663	1498579823.035
1	0.70	70851.792	44.137	49596.254	1492413848.391
1	0.75	70851.792	47.290	53138.844	1449006081.316

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 40213.3 lbs
 Applied moment at pile head = 64853280.0 in-lbs
 Axial thrust load on pile head = 63053.3 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness lb-in ²	Soil Res. p lb/in	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	0.7350	64853280.	40213.	-0.0112	0.000	8.671E+11	0.000	0.000	0.000
0.555	0.6621	65125699.	40208.	-0.0107	0.000	8.480E+11	-4.5934	15.4024	0.000
1.110	0.5925	65397729.	40158.	-0.0102	0.000	8.246E+11	-10.3874	38.9168	0.000
1.665	0.5265	65669099.	40084.	-0.009639	0.000	7.986E+11	-11.0637	46.6464	0.000
2.220	0.4642	65939749.	40012.	-0.009081	0.000	7.738E+11	-10.6085	50.7353	0.000
2.775	0.4056	66209690.	39943.	-0.008504	0.000	7.504E+11	-10.1421	55.5090	0.000
3.330	0.3510	66478935.	39877.	-0.007906	0.000	7.278E+11	-9.6644	61.1323	0.000
3.885	0.3004	66734193.	34830.	-0.007288	0.000	7.076E+11	-903.1471	6778.5556	0.000
4.440	0.2539	66949138.	28858.	-0.006651	0.000	6.914E+11	-889.7195	7778.1478	0.000
4.995	0.2118	67119671.	21234.	-0.005999	0.000	6.790E+11	-1185.3467	12425.	0.000
5.550	0.1740	67237363.	13434.	-0.005335	0.000	6.698E+11	-1156.2392	14748.	0.000
6.105	0.1407	67303502.	5841.9030	-0.004663	0.000	6.639E+11	-1123.1044	17715.	0.000
6.660	0.1119	67319555.	-16052.	-0.003987	0.000	6.624E+11	-14181.	281234.	0.000
7.215	0.0876	66898189.	-111254.	-0.003325	0.000	6.951E+11	-14409.	365077.	0.000
7.770	0.0675	65837446.	-207978.	-0.002721	0.000	7.830E+11	-14638.	481119.	0.000
8.325	0.0512	64127207.	-306229.	-0.002210	0.000	9.176E+11	-14867.	644842.	0.000
8.880	0.0379	61757324.	-406011.	-0.001790	0.000	1.082E+12	-15098.	883860.	0.000
9.435	0.0272	58719404.	-505648.	-0.001446	0.000	1.253E+12	-14539.	1186938.	0.000

105583.7po									
9.990	0.0186	55037089.	-598788.	-0.001160	0.000	1.399E+12	-13412.	1605082.	0.000
10.545	0.0117	50760281.	-683917.	-0.000916	0.000	1.486E+12	-12121.	2307328.	0.000
11.100	0.006295	45946670.	-759574.	-0.000700	0.000	1.499E+12	-10542.	3717636.	0.000
11.655	0.002287	40667337.	-822864.	-0.000508	0.000	1.509E+12	-8303.4177	8059477.	0.000
12.210	-0.000526	35063751.	-844843.	-0.000342	0.000	1.522E+12	2441.2736	10302471.	0.000
12.765	-0.002317	29551281.	-802080.	-0.000201	0.000	1.538E+12	8568.0196	8209169.	0.000
13.320	-0.003326	24406682.	-741605.	-0.000132	0.000	1.076E+13	9509.0791	6347053.	0.000
13.875	-0.004158	19683255.	-675929.	-0.000118	0.000	1.079E+13	10193.	5442022.	0.000
14.430	-0.004909	15411606.	-606081.	-0.000108	0.000	1.082E+13	10770.	4869910.	0.000
14.985	-0.005597	11617421.	-532638.	-9.938E-05	0.000	1.085E+13	11277.	4472876.	0.000
15.540	-0.006237	8323305.	-455971.	-9.329E-05	0.000	1.087E+13	11740.	4178450.	0.000
16.095	-0.006844	5549826.	-376331.	-8.907E-05	0.000	1.089E+13	12172.	3948581.	0.000
16.650	-0.007427	3316187.	-293885.	-8.638E-05	0.000	1.091E+13	12584.	3761478.	0.000
17.205	-0.007997	1640664.	-208747.	-8.489E-05	0.000	1.091E+13	12982.	3603950.	0.000
17.760	-0.008559	540916.	-120992.	-8.425E-05	0.000	1.091E+13	13370.	3467762.	0.000
18.315	-0.009120	34188.	-30671.	-8.411E-05	0.000	1.091E+13	13752.	3347730.	0.000

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.7349895 inches
 Computed slope at pile head = -0.0111999 radians
 Maximum bending moment = 67319671. inch-lbs
 Maximum shear force = -846068. lbs
 Depth of maximum bending moment = 6.4750000 feet below pile head
 Depth of maximum shear force = 12.0250000 feet below pile head
 Number of iterations = 74
 Number of zero deflection points = 1

 Summary of Pile Response(s)

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, lbs, and Load 2 = Moment, in-lbs
 Load Type 2: Load 1 = Shear, lbs, and Load 2 = Slope, radians
 Load Type 3: Load 1 = Shear, lbs, and Load 2 = Rotational Stiffness, in-lbs/radian
 Load Type 4: Load 1 = Top Deflection, inches, and Load 2 = Moment, in-lbs
 Load Type 5: Load 1 = Top Deflection, inches, and Load 2 = Slope, radians

Load Case No.	Load Type No.	Pile-head Condition 1 V(lbs) or y(inches)	Pile-head Condition 2 in-lb, rad., or in-lb/rad.	Axial Loading lbs	Pile-head Deflection inches	Maximum Moment in Pile in-lbs	Maximum Shear in Pile lbs	Pile-head Rotation radians
1	1	V = 40213.	M = 64853280.	63053.	0.73498949	67319671.	-846068.	-0.01119995

The analysis ended normally.

1805.7.2.1 (2006 IBC) & 1807.3.2.1 (2009 IBC & 2012 IBC)

$$d = A/2 \cdot (1 + (1 + (4.36 \cdot h/A))^{0.5})$$

Monopole

Moment (ft-k)	4053.33
Shear (k)	30.2
Caisson Diameter, b (ft)	7
Caisson Height Above Ground (ft)	0.5
Caisson Height Below Ground (ft)	18
Lateral soil pressure per foot (lb/ft ³)	845

Applied lateral force, P (lbs)	30160
Dist. from ground to application of P, h (ft)	134.89
A = 2.34 * P / (S1 * b)	1.99
Min. Depth of Embedment Required, d (ft)	18.13

Geotechnical Engineering Report

Proposed 190' Monopole Tower
Site Name: McKinney Tower
Richmond, Madison County, Kentucky

May 23, 2014
Project No. 57145022

Prepared for:
Tower Access Group
Richmond, Kentucky

Prepared by:
Terracon Consultants, Inc.
Louisville, Kentucky

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

May 23, 2014



Tower Access Group
108 Forbes Court, Suite 1
Richmond, KY 40475

Attn: Mr. David Ginter

Regarding: Geotechnical Engineering Report
Proposed 190' Monopole Tower
Site Name: McKinney Tower (EKU #1)
Richmond, Madison County, KY
Terracon Project No.: 57145022

Dear Mr. Ginter:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations for the proposed project. This study was performed in general accordance with our proposal #PN3130032 dated May 1, 2013 and purchase order number TAG2497 dated December 5, 2013.

Terracon's geotechnical design parameters and recommendations within this report apply to the existing planned tower height and would apply to adjustments in the tower height, up to a 20% increase or decrease in height, as long as the type of tower does not change. If changes in the height of the tower dictate a change in tower type (i.e. monopole to self-support), Terracon should be contacted to evaluate our recommendations with respect to these changes.

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.

A handwritten signature in black ink, appearing to read "M. Todd England".

M. Todd England, P.G.
Project Geologist
Kentucky PG# 2575

A circular professional engineer seal for the State of Kentucky. The seal contains the text "STATE OF KENTUCKY" around the top edge, "ROBERT N. KENNEDY" in the center, and "LICENSED PROFESSIONAL ENGINEER" around the bottom edge. The number "23117" is also visible. A handwritten signature is written over the seal.

Robert N. Kennedy, P.E.
Office Manager
Kentucky PE# 23117

Reviewed by: J. Samuel Vance, PE – Geotechnical Manager

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APPENDIX

- Site Location Map
- Boring Location Plan
- Boring Log
- Field Exploration and Laboratory Testing
- General Notes
- Unified Soil Classification
- General Notes - Sedimentary Rock Classification

GEOTECHNICAL ENGINEERING REPORT
PROPOSED 190' MONOPOLE TOWER
SITE NAME: MCKINNEY TOWER
RICHMOND, MADISON COUNTY, KENTUCKY
Terracon Project No. 57145022
May 23, 2014

1.0 PROJECT INFORMATION

1.1 Project Description

ITEM	DESCRIPTION
Site layout	See the Boring Location Plan (Exhibit A-2) in the Appendix
Leased Area	Information regarding the lease area was not provided for review prior to the issuance of this report.
Tower	Monopole, 190 feet
Maximum loads	Vertical: 35 kips (assumed) Shear: 28 kips (assumed) Moment: 4,700 kip-ft (assumed)
Equipment Building: Maximum Loads	Column: 25 kips (assumed) Wall: 1.5 kips/ft (assumed)
Grading	We assume minimal cut and fill slopes will be required. A grading plan was not provided at the time of this report.

1.2 Site Location and Description

ITEM	DESCRIPTION
Location	The proposed tower location is located to the northeast of Kit Carson Dr. and McKinney Skills Dr. in Richmond, KY Lat./Long.: 37° 43' 52.06" N/ 84° 17' 52.57" W
Existing improvements	Vacant
Current ground cover	Grass
Existing topography	The site slopes gently downward towards the northeast

2.0 SUBSURFACE CONDITIONS

2.1 Geology

FORMATION ¹	DESCRIPTION
Ashlock	Limestone; argillaceous streaks and calcite are common, fine to medium grained; medium to light olive-gray, mottled with grayish green; thin to thick bedded.

1. Based on the *Geologic Map of the Richmond South Quadrangle, Kentucky*, published by U.S. Geological Survey (GQ-479 - 1966).

The Ashlock formation within this area has a low to medium susceptibility 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. Our review of the available geologic maps noted multiple sinkholes within a 1 mile radius of the property. However, the boring advanced on-site did not disclose any significant signs of karst related activity.

2.2 Typical Profile

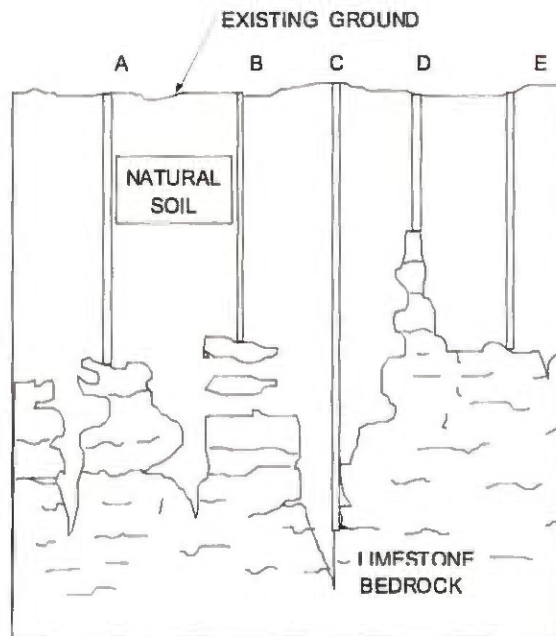
One boring was drilled near the center of the tower as staked in the field by the owner's representative. Based on the results of our boring, the subsurface conditions on the project site can be generalized as follows:

Description	Approximate Depth to Bottom of Stratum (feet)	Material Encountered	Consistency/Density
Surface Materials	1	Topsoil	NA
Stratum 1	4	Lean Clay	Stiff to very stiff ¹
Stratum 2	14.5 (boring termination)	Limestone, moderate to completely weathered, very thin to medium bedded	Recovery: 92 -100% RQD: 67 - 100%

1. Standard penetration results encountered refusal conditions at each test interval. Measured unconfined strength (determined from correlations with a hand penetrometer) was found to be approximately 3500 psf.

Auger refusal was encountered at a depth of 4 ½ 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 limestone bedrock geology, 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.

AUGER REFUSAL ILLUSTRATION



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

The Ashlock 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, 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. The bedrock materials sampled consisted of a light to medium gray, fine to medium grained, hard, slight to moderately weathered limestone with shale and trace clay layers. The sample obtained from 4 ½ to 9 ½ feet resulted in 92 percent recovery and 67 percent RQD. The sample obtained from 9 ½ to 14 ½ feet exhibited 100 percent recovery and RQD.

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 appended log.

2.3 Groundwater

The borehole was checked while drilling and after completion of soil drilling activities for the presence and level of groundwater. Groundwater was not observed in the boring while drilling the soil overburden. Water was used to obtain the rock core sample from this site, negating any post

boring groundwater measurement. Due to the low permeability of the soils encountered in the boring, 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.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the boring was performed. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

3.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

3.1 Geotechnical Considerations

Based on the encountered subsurface conditions, the proposed tower can be either founded on a drilled pier or on a buried footing foundation. The equipment building may be supported on shallow spread footings. Design recommendations for the tower drilled pier and buried foundation as well as shallow footings for the equipment building are presented in the following report sections.

3.2 Foundation Recommendations

3.2.1 Drilled Pier Foundation

The proposed tower can be founded on a straight shaft drilled pier. Based on the results of field and laboratory testing, we have developed the following drilled pier design parameters.

Approximate Depth (feet) ¹	Allowable Skin Friction (psf)	Allowable End Bearing Pressure (psf)	Allowable Passive Pressure (psf)	Cohesion (psf)	Internal Angle of Friction (Degrees)	Strain ϵ_{50}	Lateral Subgrade Modulus (pci)
0 – 3	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore	Ignore
Lean Clay 3 – 4	425	--	1,500	1,500	--	0.007	125
Weathered Limestone 4 – 6	475	5,000	2,000	2,000	--	.006	160
Intact Limestone 6 – 14½	5,000 ²	40,000	10,000 ²	100,000 ²	--	0.00001	3,000

1. Pier observation is recommended to adjust pier length if variable soil conditions are encountered. A total unit weight of 120 and 160 pcf can be assumed for the clay and limestone bedrock, respectively.
2. The pier should be embedded a minimum of 3 feet into competent limestone to mobilize these higher rock strength parameters. Furthermore, it is assumed the rock socket will be extended using coring techniques rather than blasting/shooting.

The above indicated cohesion, friction angle, lateral subgrade modulus and strain values have no factors of safety, and the allowable skin friction and the passive resistances have a factor of safety of about 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 types. These values should, therefore, be considered approximate. 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 bears on or within the limestone bedrock, settlements are not anticipated to exceed ½ inch.

The upper 3 feet of soil should be ignored due to the potential effects of frost action, and construction disturbance. To avoid a reduction in uplift and lateral resistance caused by variable bedrock depths and bedrock quality, we recommend that a minimum pier length and minimum competent rock socket length be stated on the design drawings. Competent rock was encountered in our boring below a depth of about 6 feet, but could vary if the tower is moved from the location of our boring, or if significant grade changes occur at the site. Considering the site geology, variable rock depths should be anticipated if the tower location is moved from the location of our boring. If the tower center is moved more than 10 feet, our office should be notified to review our recommendations and determine whether an additional boring is required. To facilitate pier length adjustments that may be necessary because of variable rock conditions, we recommend that a Terracon representative observe the drilled pier excavation.

A drilled pier foundation should be designed with a minimum shaft diameter of 30 inches to facilitate clean out and possible dewatering of the pier excavation. Temporary casing may be required during the pier excavation in order to control possible groundwater seepage and support the sides of the excavation in weak soil zones. Care should be taken so that the sides and bottom of the excavations are not disturbed during construction. The bottom of the shaft should be free of loose soil or debris prior to reinforcing steel and concrete placement.

A concrete slump of at least 6 inches is recommended to facilitate temporary casing removal. It should be possible to remove the casing from a pier excavation during concrete placement provided that the concrete inside the casing is maintained at a sufficient level to resist any earth and hydrostatic pressures outside the casing during the entire casing removal procedure.

3.2.2 Shallow Buried Foundation

If desired, a shallow buried foundation can be used to support the proposed tower. The mat foundation can be designed using the following native soil/engineered fill, and bedrock parameters.

DESCRIPTION	VALUE
Foundation Subgrade ¹	Suitable natural soil or engineered fill extending to suitable natural soil/bedrock
Net allowable bearing pressure ²	Soil: 3,000 psf Bedrock: 5,000 psf
Allowable passive pressure ³	1,500 psf (below 3 feet)
Coefficient of sliding friction ³	0.35
Minimum embedment below finished grade for frost protection	24 inches
Approximate total settlement ⁴	1 inch

1. A geotechnical engineer should verify footing subgrade prior to concrete placement.
2. Assumes any soft or unsuitable soils, if encountered, will be undercut and replaced with approved engineered granular fill or lean concrete. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. Higher values are available for bedrock support; however it may be difficult to obtain a level bedrock surface to support the buried foundation over a large area.
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 values 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 soil profile should be neglected. Lateral resistance due to friction at the base of the footing should be ignored where uplift also occurs.
4. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footing, the thickness of compacted fill, and the quality of the earthwork operations. The stated settlement value does not include any movement associated with karst activity.

Uplift forces can be resisted by the dead weight of the footing and the effective weight of any soil above the footing. A unit weight of soil not exceeding 115 pcf is appropriate for the on-site soils backfilled above the foundation, assuming that it is compacted to at least 98 percent of standard Proctor maximum dry density (ASTM D-698). A unit weight of 150 pcf could be used for mat foundation concrete. The ground surface should be sloped away from the foundation to avoid ponding of water and saturation of the backfill materials.

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. A lean concrete mud-mat should be

placed over the bearing soils if the excavations must remain open over night or for an extended period of time. We recommend that the geotechnical engineer be retained to observe and test the soil foundation bearing materials.

3.2.3 Equipment Building/Cabinet Foundations

Stiff to very stiff surficial soils were encountered in the boring advanced for the proposed tower. A boring within the proposed equipment building footprint was beyond the scope of this exploration.

DESCRIPTION	VALUE
Foundation Subgrade ¹	Suitable natural soils
Net allowable bearing pressure ²	3,000 psf
Minimum footing sizes Isolated:	2 feet by 2 feet
Wall :	16 inches wide
Coefficient of sliding friction	0.35
Minimum embedment below finished grade for frost protection ³	24 inches
Approximate total settlement ⁴	1 inch

1. A geotechnical engineer should verify footing subgrade prior to concrete placement.
2. Assumes any soft or unsuitable soils, if encountered, will be undercut and replaced with approved engineered fill. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.
3. For perimeter footing and footings beneath unheated areas.
4. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of any compacted fill, and the quality of the earthwork operations. The stated settlement value does not include any movement associated with karst activity.

3.3 Earthwork

Site preparation should begin with removal of topsoil, vegetation, organics and any soft or otherwise unsuitable materials from the entire construction area. We recommend the actual stripping depth along with any soft soils that will require undercutting be evaluated by the geotechnical engineer at the time of construction. Engineered fill should meet the following material property requirements:

Fill Type ¹	USCS Classification	Acceptable Location for Placement ¹
Well graded granular material	GW ⁴ , SW, SM, and SC ²	All locations and elevations

Low Volume Change Material ³	CL or GW ⁴ (LL<50 & PI<22)	All locations and elevations
On-site soils	CL	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. Any fill to be placed beneath the tower footing should consist of well graded granular material.
2. Similar to crushed limestone aggregate or limestone screenings or granular material such as sand, gravel or crushed stone (pug mix).
3. Low plasticity cohesive soil or granular soil having at least 18% low plasticity fines.
4. Similar to KDOT Section 302 for dense graded aggregate or crushed stone base limestone, limestone screenings, or granular material such as sand, gravel or crushed stone containing not more than 18% non-plastic fines.

3.3.1 Compaction Requirements

Fill Lift Thickness	9-inches or less in loose thickness
Compaction Requirements¹	98% of the materials standard Proctor maximum dry density (ASTM D-698)
Moisture Content – Granular Material	Moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without the cohesionless fill material pumping when proofrolled
Moisture Content – Cohesive Soil	Within the range of optimum moisture content to 2% above or 1% below optimum moisture content as determined by the standard Proctor test at the time of placement

1. We recommend that engineered fill 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.

3.3.2 Construction Considerations

Although the exposed subgrade is anticipated to 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. The use of light construction equipment would aid in reducing subgrade disturbance. Should unstable subgrade conditions develop stabilization measures will need to be employed.

Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become frozen, desiccated, saturated, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and recompacted.

Temporary excavations will probably be required during grading operations. 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 OSHA Excavation and Trench Safety Standards.

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 of foundations.

4.0 GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the boring performed at the indicated location and from other information discussed in this report. This report does not reflect variations that may occur across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of geotechnical services for this project 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.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX

Field Exploration Description

The boring was drilled at the center of the tower as staked in the field by the owner's representative. The approximate boring location is shown on the enclosed boring location plan. The surface elevation was not provided to Terracon and has been omitted from the log.

Drilling was performed using an ATV mounted rotary drill rig. Hollow stem augers were used to advance the borehole. Representative soil samples were obtained by the split-barrel sampling procedure. In this procedure, the number of blows required to advance a standard 2-inch O.D. split-barrel sampler the last 12 inches of the typical total 18-inch penetration by means of a rope and cathead safety hammer with a free fall of 30 inches, is the standard penetration resistance value (N). This value is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils. The sampling depths and penetration distance, plus the standard penetration resistance values, are shown on the boring log. The samples were sealed and returned to the laboratory for testing and classification.

Auger refusal was encountered at a depth of about 4 ½ feet. Below this depth, the boring was advanced into the refusal materials using a diamond bit attached to the outer barrel of a double core barrel. The inner barrel collected the cored material as the outer barrel was rotated at high speeds to cut the rock. The barrel was retrieved to the surface upon completion of each drill run. Once the core samples were retrieved, they were placed in a box and logged. The rock was later classified by an engineer and the "percent recovery" and rock quality designation (RQD) were determined.

The "percent recovery" is the ratio of the sample length retrieved to the drilled length, expressed as a percent. An indication of the actual in-situ rock quality is provided by calculating the sample's Rock Quality Designation (RQD), which is the ratio of the cumulative length of 4-inch or longer cores (discounting mechanical breaks) to the drilled length. The percent recovery and RQD are related to rock soundness and quality as illustrated below:

Relation of RQD and In-situ Rock Quality	
RQD (%)	Rock Quality
90 - 100	Excellent
75 - 90	Good
50 - 75	Fair
25 - 50	Poor
0 - 25	Very Poor

A field log of the boring was prepared by the drill crew. This log included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. The final boring log included with this report represents an interpretation of the field log and includes modifications based on laboratory observation and tests of the samples.

Geotechnical Engineering Report

Proposed McKinney Tower ■ Richmond, KY

May 23, 2014 ■ Terracon Project Number 57145022



The soil samples were classified in the laboratory based on visual observation, texture and plasticity. The descriptions of the soils indicated on the boring log are in general accordance with the enclosed General Notes and the Unified Soil Classification System. Estimated group symbols according to the Unified Soil Classification System are given on the boring log. A brief description of this classification system is attached to this report.

Classification and descriptions of rock core samples are in general accordance with the enclosed General Notes, and are based on visual and tactile observations. Petrographic analysis of thin sections may indicate other rock types. Percent recovery and rock quality designation (RQD) were calculated for these samples and are noted at their depths of occurrence on the boring log.

Laboratory Testing

The laboratory testing program consisted of performing water content tests and an Atterberg Limits test on representative soil samples. A hand penetrometer was used to estimate the approximate unconfined compressive strength of the soil samples. The hand penetrometer has been correlated with unconfined compression tests and provides a better estimate of soil consistency than visual examination alone. Information from these tests was used in conjunction with field penetration test data to evaluate soil strength in-situ, volume change potential, and soil classification. In addition an unconfined compressive strength test was conducted on a select sample of the rock core specimen. Results of these tests are provided on the boring log.



Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 2601 Meacham Boulevard
 Fort Worth, TX 76193

Aeronautical Study No.
 2014-ASO-2939-OE
 Prior Study No.
 2014-ASO-2881-OE

Issued Date: 04/15/2014

David Ginter
 Tower Access Group, LLC
 108 Forbes Court
 Suite 1
 Richmond, KY 40475

**** 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: Monopole McKinney
 Location: Richmond, KY
 Latitude: 37-43-52.06N NAD 83
 Longitude: 84-17-52.57W
 Heights: 988 feet site elevation (SE)
 199 feet above ground level (AGL)
 1187 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:

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)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 10/15/2015 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 is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

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

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

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.

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 (404) 305-7082. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2014-ASO-2939-OE.

Signature Control No: 209167069-214017352
Earl Newalu
Specialist

(DNE)

Attachment(s)
Frequency Data

cc: FCC

Frequency Data for ASN 2014-ASO-2939-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
698	806	MHz	1000	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
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
1850	1910	MHz	1640	W
1930	1990	MHz	1640	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W

From: Houlihan, John (KYTC) John.Houlihan@ky.gov
Subject: RE: EKU Telecommunications Tower Locations
Date: February 26, 2014 at 10:20 AM
To: David Ginter dginter@toweraccessgroup.com

The above subject does not require a permit from the Kentucky Airport Zoning Commission. The structures does not exceed any of the following criteria:
602 KAR 50:030. Jurisdiction of the Kentucky Airport Zoning Commission.

RELATES TO: KRS 183.861, 183.865, 183.867, 183.870
STATUTORY AUTHORITY: KRS 183.861

NECESSITY, FUNCTION, AND CONFORMITY: KRS 183.867 specifies that the commission has jurisdiction over zoning for all public use and military airports. This administrative regulation defines the areas over which the Kentucky Airport Zoning Commission has jurisdiction for the purpose of zoning in accordance with KRS Chapter 183 and specifics when the owner or person who has control over a structure which encroaches on the jurisdiction of the Kentucky Airport Zoning Commission shall apply for a permit.

Section 1. The commission has zoning jurisdiction over that airspace over and around the public use and military airports within the Commonwealth which lies above the imaginary surface that extends outward and upward at one (1) of the following slopes:

(1) 100 to one (1) for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each public use and military airport with at least one (1) runway 3,200 feet or more in length; or

(2) Fifty (50) to one (1) for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each public use and military airport with its longest runway less than 3,200 feet in actual length.

Section 2. The commission has zoning jurisdiction over the use of land and structures within public use airports within the state.

Section 3. The commission has jurisdiction from the ground upward within the limits of the primary and approach surfaces of each public use and military airport as depicted on Airport Zoning Maps approved by the Kentucky Airport Zoning Commission.

Section 4. The commission has jurisdiction over the airspace of the Commonwealth that exceeds 200 feet in height above ground level.

Section 5. The owner or person who has control over a structure which penetrates or will penetrate the airspace over which the commission has jurisdiction shall apply for a permit from the commission in accordance with 602 KAR 50:090. (KAV-9-1; 1 Ky.R. 807; eff. 5-14-75; Am. 2 Ky.R. 306; eff. 3-10-76; 5 Ky.R. 599; eff. 3-7-79; 10 Ky.R. 445; eff. 1-4-84; 14 Ky.R. 267; eff. 9-10-87; 19 Ky.R. 800; eff. 11-4-92; 27 Ky.R. 2228; 2774; eff. 4-9-2001.)

Please keep this email for your records. Thank you.

Kentucky Airport Zoning Commission (KAZC)

John Houlihan, Administrator

90 Airport Road, Building 400

Frankfort, KY 40601

Direct Line 502-564-0310, Cell 502-330-3955, Office 502-564-4480, Fax 502-564-7953

KAZC webpage: <http://transportation.ky.gov/Aviation/Pages/Zoning-Commission.aspx>

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From: David Ginter [mailto:dginter@toweraccessgroup.com]

Sent: Wednesday, February 26, 2014 10:03 AM

To: Houlihan, John (KYTC)

Subject: EKU Telecommunications Tower Locations

Mr. Houlihan,

Thank you for speaking with me this morning. As requested, please review the (3) three attached 1A Surveys and let me know if they are within the jurisdiction of the Kentucky Airport Zoning Commission and whether I need to file a TC 56-50 with the KAZC. Each tower location will be a 190' monopole with an overall AGL (including appurtenances) of 199'. Thank you again and I look forward to speaking with you.

DAVID GINTER

President
Tower Access Group
108 Forbes Court, Suite 1
Richmond, KY 40475

Mobile - 859.544.5000
<http://www.toweraccessgroup.com>



108 Forbes Court, Suite 1 • Richmond, Kentucky 40475 • ph. 859.623.5513 • fx. 859.623.5213

August 21, 2014

Jason Hart
Director of Planning and Zoning
City of Richmond, Kentucky
239 W. Main Street
Richmond, KY 40475

RE: Tower Access Group Tower Development on Eastern Kentucky University Campus:
Zoning Compliance Letter / Letter of No Zoning

Mr. Hart:

Thank you for your time in speaking with me today. As mentioned on our call, we were awarded the contract to build communications towers on Eastern Kentucky University Campus. Based upon our phone conversation, it is my understanding that there are no zoning regulations or construction permit requirements from the City of Richmond that would be applicable to the construction of cell towers on Eastern Kentucky University Campus.

If this information is correct, please sign the bottom of this letter and return a copy to my office at the fax number above.

Please feel free to contact me at 859.544.5000 with any question regarding this topic and thank you in advance for your cooperation.

Sincerely,

David L. Ginter

David L. Ginter
Tower Access Group, LLC

Jason Hart

Name

Planning & Zoning Director

Title

Jason Hart

Signature

8-27-14

Date



108 Forbes Court, Suite 1 • Richmond, Kentucky 40475 • ph. 859.623.5513 • fx. 859.623.5213

August 21, 2014

Jason Hart
Director of Planning and Zoning
City of Richmond, Kentucky
239 W. Main Street
Richmond, KY 40475

RE: Tower Access Group Tower Development on Eastern Kentucky University Campus: Zoning Compliance Letter / Letter of No Zoning

Mr. Hart:

Thank you for your time in speaking with me today. As mentioned on our call, Tower Access Group has been awarded the contract to construct, develop, own and operate certain communications towers and related facilities on the campus of Eastern Kentucky University. Presently, there are three (3) towers anticipated to be constructed. The locations of those facilities are currently anticipated to be as set forth on the attached Exhibit A.

Based upon our conversation, it is my understanding that there are no zoning regulations, conditional use permit requirements, or construction permit requirements from the City of Richmond that would be applicable to the construction, use, ownership and operation of cell towers and the related facilities by Tower Access Group on Eastern Kentucky University Campus.

If this information is correct, please sign the bottom of this letter and return a copy to my office at the fax number above.

Please feel free to contact me at 859.544.5000 with any question regarding this topic and thank you in advance for your cooperation.

Sincerely,

David L. Ginter

David L. Ginter
Tower Access Group, LLC

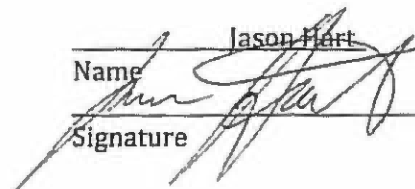
Name	<u>Jason Hart</u>	Title	<u>Director of Planning & Zoning</u>
Signature		Date	<u>September 16, 2014</u>

Exhibit "A"

McKinney - 534 John Hanlon Drive, ECU Campus

Brockton - 100 Daniel Boone Drive, ECU Campus

Lancaster Parking Lot - 518 Lancaster Avenue, ECU Campus



PUBLIC PROTECTION CABINET

Department of Housing, Buildings and Construction

Division of Building Code Enforcement
101 Sea Hero Road, Suite 100
Frankfort, KY 40601-5412
Phone: 502-573-0373, Fax: 502-573-1059
www.dhbc.ky.gov

Steven L. Beshear
Governor

Ambrose Wilson IV
Commissioner

Larry R. Bond
Acting Secretary

Jack L. Coleman
Deputy Commissioner

October 22, 2014

Richard Pennington
Tower Access Group LLC
108 Forbes Court Ste. 1
Richmond, KY 40475

RE: Case No: 127640-000-0
Tower Access Group / EKU
McKinney Tower
4409 Kit Carson Drive
Richmond, KY/Madison County
Code Year: 2013 Kentucky Building Code
Tower Approval

Dear Richard Pennington:

The Division of Building Code Enforcement has reviewed the drawings for the above referenced project under the provisions of the 2013 Kentucky Building Code. This letter is authorization to proceed with construction subject to any conditions that may be noted on the attached page.

This authorization does not release the owner from complying with local planning/zoning requirements or the requirement to obtain a local building permit. Please note the electrical plans were not reviewed for compliance with the National Electrical Code. All electrical wiring and equipment will be subject to the approval of the certified electrical inspector required by Section 2701.3 of the 2007 Kentucky Building Code and a copy of that inspectors' certificate of compliance will be required at the completion of the project.

A final inspection shall be made by this office before the issuance of a "Final Letter". A final letter by this office does not relieve the owner from complying with any local planning/zoning requirements prior to structure completion.

Any changes made during construction must be agreed to, in writing, by this office. This authorization to construct will become null and void if construction does not begin within six (6) months of the date of this letter.

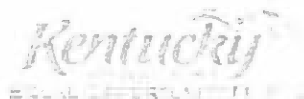
Sincerely,

Kevin Carlin
Plan Reviewer
kevin.carlin@ky.gov

KC/lr

Copy: Phil Heid/BTM Engineering
George Lillis/Building Official

General Note: Notify Field Inspector (*Brian Reed @ 859 248-2125*) to schedule the foundation inspection and structure installation inspection. The final electrical inspection approvals shall be available at the time of the final inspection.



CITY OF RICHMOND

MAYOR
Jim Barnes

MAYOR PRO-TEM
Robert Blythe

CITY MANAGER
James H. Howard

P.O. Box 250 – 239 W. Main St.
Richmond, KY 40476
www.richmond.ky.us

COMMISSIONERS
Donna Baird
Robert Blythe
Laura King
Jim Newby

LEGAL COUNSEL
Garrett T. Fowles

The City of Richmond has enacted zoning regulations pursuant to KRS Chapter 100 governing land use within its boundary. The Planning Commission's jurisdiction to regulate cellular antenna towers, as authorized by KRS 100.985-987, is contained in Section 413 "Cellular Antenna Towers" and further explained in appendix E "Regulations of Cellular Antenna Towers" of the City of Richmond Development Ordinance.

The proposed tower located at 4409 Kit Carson Drive is on property owned by EKU, an entity of the State, within Richmond city limits. Therefore, the Richmond Planning Commission has jurisdiction over this property. However, pursuant to KRS 100.361(2), land use proposals involving agencies or instrumentalities of the State do not require the Planning Commission's approval. Thus, although the tower in question is within Richmond city limits and the Planning Commission has jurisdiction to regulate cell towers within the city's boundary, the tower does not require the Planning Commission's approval in this case because the property is owned by an instrumentality of the State.

Despite its immunity from land use approval, the city has oversight over its construction because the tower is subject to the city's building code, including the requirement that the installer submit its construction plans to the Office of Building Inspection and obtain a building permit prior to construction. This ensures that the tower will be installed according to acceptable standards in order to protect the public health, safety, and welfare.


Jason Hart

November 17, 2014
Date

Brent Rice

From: Donna Walker
Sent: Wednesday, April 12, 2006 4:13 PM
To: Brent Rice
Subject: FW: Question

From: Willard, Kyle (PSC) [mailto:kwillard@ky.gov]
Sent: Wednesday, April 12, 2006 4:09 PM
To: Donna Walker
Cc: Cline, Jeff D (PSC)
Subject: RE: Question

Ms. Walker,

At one time, the Commission tracked local planning units that adopted regulations/ordinances to regulate cellular/PCS antenna tower construction. However, the law that required such filings was superseded by new legislation. Under the current law, tower construction within the jurisdiction of a local planning unit must comply with local requirements, whether or not the local planning unit has adopted regulations to regulate the construction. Only if there is no planning unit, must an application be filed with the Public Service Commission.

The next question is probably whether or not a proposed construction site is within the jurisdiction of a city/county planning unit. Unfortunately, this question must be directed to the local authorities since the information available to the Commission is not nearly specific enough to make such a determination.

I suggest you contact either the Mayor or Judge Executive of the area in question to find out this type of information.

I hope this helps. Feel free to contact me if you have further questions or need additional information.

Kyle B Willard, Manager
Communications Branch
Division of Engineering
Kentucky Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, KY 40602
PH: (502) 564-3940 ext. 418
FAX: (502) 564-1582
Kyle.Willard@ky.gov

From: Cline, Jeff D (PSC)
Sent: Wednesday, April 12, 2006 2:51 PM
To: Willard, Kyle (PSC)
Subject: FW: Question

Kyle: Do you know the answer to this one? I remember the listing that used to be on the site, but not sure where such a list may be now.

Hey Jeff

Hope all is well with you.

Question for you - is there a place on the PCS website that reflects whether a city or county P&Z has an ordinance re: cell towers?

Seems like there used to be one - can't seem to find it.

Donna K. Walker
Assistant to W. Terry McBrayer
W. Brent Rice and James G. Amato
McBrayer, McGinnis, Leslie & Kirkland, PLLC
201 East Main Street, Suite 1000
Lexington, Kentucky 40507
859-231-8780
859-231-6518 fax

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