

**KNOXVILLE/KNOX COUNTY METROPOLITAN PLANNING COMMISSION
 USE ON REVIEW REPORT**

▶ **FILE #:** 8-I-12-UR

AGENDA ITEM #: 40

AGENDA DATE: 8/9/2012

▶ **APPLICANT:** U. S. CELLULAR CORPORATION

OWNER(S): John Locascio

TAX ID NUMBER: 47 026

JURISDICTION: County Commission District 7

▶ **LOCATION:** West side of Façade Ln., south of E. Copeland Dr.

▶ **APPX. SIZE OF TRACT:** 8.24 acres

SECTOR PLAN: North County

GROWTH POLICY PLAN: Planned Growth Area

ACCESSIBILITY: Access is via Façade Ln., a local street with a 20' pavement width within a required 50' right-of-way.

UTILITIES: Water Source: Hallsdale-Powell Utility District

Sewer Source: Hallsdale-Powell Utility District

WATERSHED: Beaver Creek

▶ **ZONING:** A (Agricultural)

▶ **EXISTING LAND USE:** Church

▶ **PROPOSED USE:** 250' Lattice Telecommunications Tower

HISTORY OF ZONING: None noted

SURROUNDING LAND USE AND ZONING: North: Residences / A (Agricultural)

South: Vacant land / A (Agricultural)

East: I-75 / A (Agricultural)

West: Vacant land / A (Agricultural)

NEIGHBORHOOD CONTEXT: The site is located in a transition area between the more urban development to the south at the I-75/Emory Rd. exit and the rural/agricultural area to the north.

STAFF RECOMMENDATION:

▶ **APPROVE the request for a 250' lattice telecommunications tower in the A zoning district and a waiver of the landscaping requirements around the tower enclosure, subject to 6 conditions.**

1. Meeting all applicable requirements of the Knox County Zoning Ordinance.
2. The access drive and turnaround area at the tower site shall meet the utility access driveway standards of the Knox County Fire Prevention Bureau.
3. Meeting all applicable requirements of the Knox County Department of Engineering and Public Works.
4. Providing lighting on the tower in compliance with FAA standards.
5. Tower construction within the 50' setback from the sinkhole located in the northwest corner of this property may be permitted if a geotechnical study prepared by a registered engineer states that the tower construction within the 50' sinkhole setback area is acceptable and the study is approved by the Knox County Department

of Engineering and Public Works.

6. At the time of the request for a building permit, posting a bond or other approved financial surety that would ensure the removal of the tower if it is abandoned.

With the conditions noted above, this request meets all criteria for a use-on-review in the A zoning district.

COMMENTS:

This is a request for a new 250 foot lattice telecommunications tower to be located within a 10,000 square foot lease area located on a portion of a 8.24 acre tract. The subject property is zoned A (Agricultural) and telecommunication towers are considered as a use on review in this district.

The proposed tower site will have access to Façade Ln., a dead-end local street that parallels the western side of I-75, by a new 16' wide paved driveway that will meet utility access driveway standards of the Knox County Fire Prevention Bureau.

The proposed tower is required to be located 275 feet (110% of the tower height) from the nearest residence. The proposed tower far exceeds that minimum standard since the nearest residence is approximately 690' from the proposed tower. The applicant is proposing a 6' high security fence topped with three strands of barbed wire around the tower and equipment area. Due to the height of the tower, FAA does require lighting for the tower.

In the area of the proposed tower site there is a small sinkhole/closed contour area. The proposed tower will be located within the 50' setback area for the sinkhole. Construction may be permitted within the setback area if a geotechnical study prepared by a registered engineer states that the tower construction within the 50' sinkhole setback area is acceptable and the study is approved by the Knox County Department of Engineering and Public Works.

The applicant is requesting a waiver of the landscaping requirements around the tower enclosure since the enclosure will not be visible due to existing vegetation on the site. Staff is recommending approval of the waiver.

The applicant states that there are no existing structures in the area that can be used for antenna placement to obtain the required coverage. The tower will support up to 4 telecommunication carrier antenna arrays. U. S. Cellular Corporation will be the principal user for the tower. An agreement has been submitted stating that U. S. Cellular Corporation agrees to make all of its facilities available to other wireless providers.

Attached to the staff report are several support documents, including a report from MPC's tower consultant, Mr. Larry E. Perry. Mr. Perry's report describes the proposal and highlights his findings. Mr. Perry concludes that the proposed tower is technically justified by the materials submitted by the applicant (see attached report). He also recommends that the applicant design the tower to hold an additional antenna array for a total of 5 antenna arrays.

EFFECT OF THE PROPOSAL ON THE SUBJECT PROPERTY, SURROUNDING PROPERTY AND THE COMMUNITY AS A WHOLE

1. The proposed development will have minimal impact on local services since the required utilities are available to serve this site.
2. The tower site, being located in an area made up of primarily large tracts along the interstate should have minimal impact on nearby residences.

CONFORMITY OF THE PROPOSAL TO CRITERIA ESTABLISHED BY THE KNOXVILLE ZONING ORDINANCE

1. With the recommended conditions, the proposed commercial telecommunications tower at this location meets the standards required in the A (Agricultural) zoning district.
2. The proposed tower is consistent with the general standards for uses permitted on review: The proposed development is consistent with the adopted plans and policies of the General Plan, North County Sector Plan and Wireless Communications Facility Plan. The use is in harmony with the general purpose and intent of the Zoning Ordinance. Since this site is in a rural area, the use will not significantly injure the value of adjacent property. The use will not draw additional traffic through residential areas.

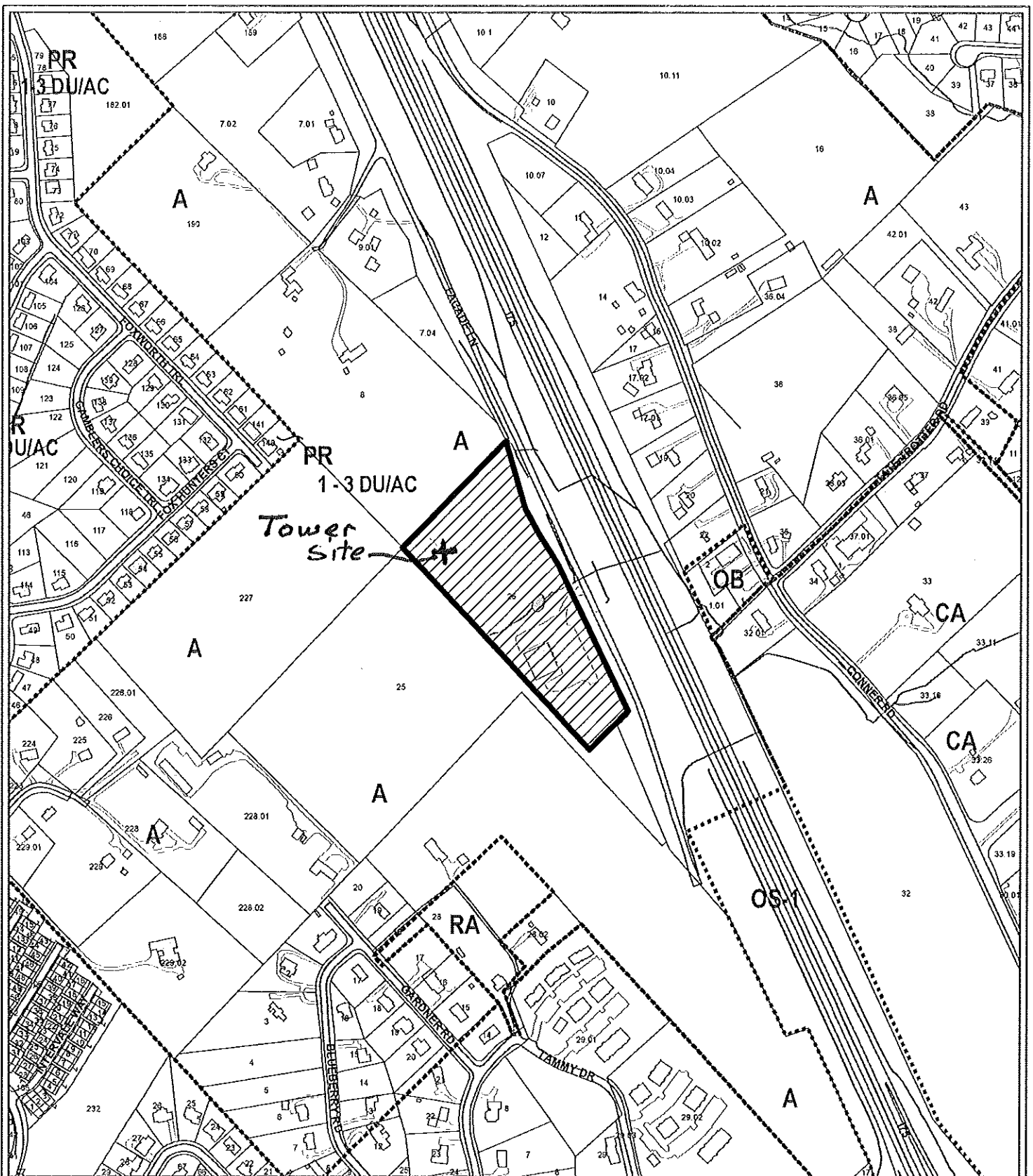
CONFORMITY OF THE PROPOSAL TO ADOPTED PLANS

1. The North County Sector Plan proposes low density residential uses on this property. With the minimal site alteration required for the proposed tower and the proposed location back in a wooded area, the proposed development is consistent with this land designation.
2. Under the guidelines for tower placement in the Wireless Communications Facility Plan, this proposed tower falls within the "Sensitive Area" since the proposed tower site is located on a hill below a ridgeline. The Plan takes a neutral position on lattice towers located on a hill below a ridgeline.
3. The site is located within the Planned Growth Area on the Knoxville-Knox County-Farragut Growth Policy Plan map.

ESTIMATED TRAFFIC IMPACT: Not calculated.

ESTIMATED STUDENT YIELD: Not applicable.

MPC's approval or denial of this request is final, unless the action is appealed to the Knox County Board of Zoning Appeals. The date of the Knox County Board of Zoning Appeals hearing will depend on when the appeal application is filed. Appellants have 30 days to appeal an MPC decision in the County.



8-1-12-UR
 USE ON REVIEW

Petitioner: U. S. Cellular Corporation

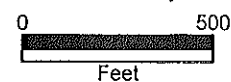


250' Lattice Telecommunications Tower in A (Agricultural)

Map No: 47

Jurisdiction: County

Original Print Date: 7/17/2012 Revised:
 Metropolitan Planning Commission * City / County Building * Knoxville, TN 37902



US CELLULAR

Telecommunications Tower Site Review

USE ON REVIEW APPLICATION # 8-I-12-UR

CONSULTANT'S SUMMARY

DRY GAP SITE

Location: 8015 Facade Lane (near I 75 and E. Copeland Dr)
Knox County

Proposed Tower Height: 250 foot lattice

Address: 8015 Facade Lane
Knoxville, Tennessee

District: # 7 County **Map Number:** 047 **Parcel** 026

Use: Telecommunications antenna support structure

Zoning: A (Agricultural)

Land Planning Area: Planned Growth

Variations and waivers: A waiver/variance of the landscaping requirement in section 4.92.02(4) is requested in that instead of landscaping as required by the Ordinance. The site is inside a heavily wooded area and will be surrounded by trees and heavy growth and the base of the tower and fenced area will not be viewable from Facade Lane or from adjacent property owners. A variance/waiver of this requirement is recommended.

Need: The applicant is US Cellular a licensed cellular carrier by the Federal Communications Commission and possibly other users. The applicant has proven a need for the site for its coverage requirements for its 4G service.

Instant Proposal: Construct a 250 foot lattice type support structure.

Consultant's Recommendation: The site and application meets the requirements of the Ordinance, but with the following suggestion: The structure should be designed initially that it will support 4 additional carriers' set of antennas for a total of 5 sets of antennas and feedlines. This to allow for future co-location of other carriers and to eliminate the need for addition towers in the immediate area. It should be noted that the grade of the access road to the site is proposed to be 14.6%. It will be up to others to determine if this meets the county EMS access requirements for an unmanned site.

A handwritten signature in black ink, followed by the date "8-1-2012". The signature is stylized and appears to be "Joe".

**REPORT TO
METROPOLITAN PLANNING COMMISSION**

for

Proposed Telecommunications Tower Site
Located at 8015 Facade Lane
Knoxville, TN known as

SITE

US CELLULAR

8-I-12-UR

COMPLIANCE WITH

THE MPC TELECOMMUNICATIONS FACILITY ORDINANCE

7/31/2012

The proposed site for the applicant is a 250 foot lattice antenna support structure (including antennas and lightning rod) to be located west of Facade Lane in North Knox County near E. Copeland Drive. The supporting material from applicant has been reviewed for technical and Federal/State legal compliance As well as with the Knox County Wireless Communication Facilities Plan from 2002. This is a new telecommunications site. This site is known as a capacity site. This means that there is coverage at the site at the present, but the capacity of the existing coverage does not provide sufficient signal levels for the new 4G (4th Generation) technology.

REQUESTED

1. **Location.** The location is within the **County** of Knox in **District 7** and is located on **Tax Map Number: 047 Parcel: 026**

2. **Zoning.** A (Agricultural)

3. **Land Planning Area:** Planned Growth--LDR and HP

4. **Proposed Tower Height:** 250 foot lattice

5. **Address:** 8015 Facade Lane
Knoxville, Tennessee

3. **Tower height.** The requested height is 250 feet above ground level should support up to 3 additional telecommunications carrier antennas for a total of 4 users. Lighting **WILL** be required on this structure.

4. **Variances.** The set back requirements in Article 4.92.02(4)(b) of the Ordinance for Knox County for "A" sites requires that the structure be set back a minimum distance of 110% of the structure height or in this case 275 feet from the nearest dwelling unit (residence). The proposed site meets that requirement and no variances are required as the nearest dwelling is more than 500 feet from the base of the lattice. Also, the setback from Facade Lane is greater than 50 feet as required by the Ordinance. However, the applicant is requesting a variance/waiver of the landscaping requirement in section 4 as the proposed site is located in a heavily wooded area and when completed the base and fence of the tower site will not be viewable by a public road or nearby property line.

5. **Site.** This application is for the construction of a new lattice type antenna support structure to be located in a wooded lot located near the Lighthouse Christian Church.

6. **Use.** This antenna support structure will be used for telecommunications with the present state of the art communications technology using PCS and cellular communication sources. The applicant is US Cellular Corporation and there are 3 possible additional telecommunications users for the facility according to the application, but it is recommended that the structure be initially designed for a total of 5 users, 4 in addition to the current applicant. This will eliminate the need for additional towers in this area by other carriers in the future.

7. **Setbacks.** The setback requirements are that the facility must be 110% height of the tower (275 feet) from any dwelling unit and a minimum of 50 feet from the centerline of a roadway right of way. The applicant meets that requirement and no variances are required for any setbacks.

8. **Height.** The proposed structure is for 250 feet **WITH** lighting required.

EVALUATION

The following is a list of items reviewed:

Zoning Ordinance for Knoxville Tennessee by Metropolitan Planning Commission---Telecommunication Facilities Section (as amended thru October 1, 2004)

Knoxville Wireless Communications Facilities Plan dated 2002.

Check for other existing towers capable of supporting the load and elevation clearance requested by the applicant herein and within 1 mile radius of site.

Check for Antenna Support Structure stress analysis for co-location users' equipment support

Review support structure drawings and specifications with applicant

Review FAA lighting and marking requirements and proposals

Review FCC requirements regarding signal coverage, towers and lighting

Review applicant's justification for site in compliance with the FCC's requirements for telecommunication company providers compliance with required coverage for the use of the general public.

Review Site plan by applicant

Check Zoning

Check setbacks for building and antenna support structure

Check for compliance with Wireless Communication Facility Plan

Check proximity to other structures and district boundaries

Check nature of surrounding land uses

Check surrounding foliage and tree coverage

Check design of tower for esthetic changes

Check height requirements necessary for coverage

Check separation from other towers

Check frequencies proposed for possible interference to TV and radio reception in the immediate vicinity of the structure.

DISCUSSION

I visited the proposed tower site that is a part of this review and discussed the area with the applicant.

The site elevation at this location is 1178 feet. It is located in the wooded field adjacent to a church. It is located on a hill below the ridgeline to the west of the site.

The request is for a 250 foot lattice of which US Cellular will use the top 15 feet and the additional usable lower portion of the structure is for other carriers' expansion.

This a "capacity" site. By that is meant that there is coverage in this

area, but that the capacity of the present coverage is not sufficient to allow for the use of the new 4G technology this is used with handheld devices that are so popular. The use of 4G technology reduces the signal coverage area somewhat while increasing the speed of the data that is transmitted, thus the requirement for this additional site.

The applicant proposed to design the tower for 3 additional users for a total of 4, however, it is my suggestion that the structure be initially designed for a total of 5 carrier antennas and feedlines allowing for future co-locaters without the need for additional towers in the immediate vicinity. There are 7 carriers in the local area (of a total of 13 licensed by the FCC) and as the 4G technology becomes more popular, the other carriers are going to need similar coverage in the area and thus the recommendation for the added design capability of the lattice.

The proposed structure should not affect adjacent property as it is on a parcel of land that is zoned agricultural, but is heavily wooded field surrounding the proposed location. It will be seen from subdivisions located several thousand feet away to the east and west of the site, but should not have any impact on those properties.

EMS access to the site would be via Facade Lane. The grade on the access road is 14.6% as proposed. It will be up to others to determine if that is too great for EMS personnel to access the unmanned site in an emergency.

Using the MPC's Wireless Facilities Matrix the site qualifies as a SENSITIVE AREA site in that it is a lattice tower and located on a hill below a ridgeline and is consider NEUTRAL under the Matrix.

There are two other antenna support structures within 1 mile of this site, but both are already full and in one case overloaded and cannot accommodate the added antennas and feedlines required for the 4 G equipment.

DISCUSSION RE FACILITIES PLAN

The Facilities plan is a guideline adopted by the MPC in 2002 for the placement and appearance of wireless communications facilities. The following discussion is based on this application and how it relates to the Plan. The plan is an advisory plan and not a legal requirement.

(1) **View Protection**--The structure (250 feet) even though located near I 75 and Facade Lane and E. Copeland Drive and being a lattice should have little impact on the view aesthetics of the area as the area is largely wooded except across I 75 to the east about a thousand feet away and a subdivision to the west about the same distance.

(2) **Land Use Compatibility**---The site will be unmanned and will have no impact on noise, traffic or air pollution.

(3) **Design Compatibility**---The new structure will be a lattice type structure 250 feet.

(A) **Opportunity Area**---This location is in a SENSITIVE AREA and is NEUTRAL by the Matrix.

SUMMARY

(1) The proposed antenna support structure is a 250 foot lattice including antennas. Lighting **will be required** for this structure by the FAA due to its proposed height. Dual lighting is recommended for this site.

(2) A review of the structure analysis on the proposed structure and specifications support the use of the lattice by three other potential users in the future, but the recommendation here is for four other users in the initial design of the structure. It is not the intent of this report to redesign the applicant's structure, but rather to encourage initial design for one or more additional future users than those proposed to eliminate additional future similar structures in the area by other carriers.

(3) The structure design meets or exceeds FCC and EIA requirements.

(4) The area surrounding the site is zoned Agriculture and is heavily wooded and along the I 75 corridor. There are no residences within 500 feet of the tower.

(5) There is no general use technology (such as satellite communications) that is available at the present time nor in the immediate future that would negate the need for the structure. However, should such a technology become available and the structure of no further use, the Ordinance at Article 4.92 requires it to be removed.

(6) The proposed equipment housing facility is an outdoor cabinet and will have no impact on the aesthetics of the adjacent land uses. The landscape plan indicates that the compound will be enclosed with a safety chain link fence and the surrounding woods will provide adequate landscaping as required in section 4.92.02.04.a. Under 4.92.02.04.b screening using landscaping is not required here since the base of the structure is not visible from adjoining property or from Facade Lane.

(7) The applicant has received authorization from the various governmental agencies, including the Federal Communications Commission, to provide communication service to the citizens of Knoxville, Tennessee.

(8) The requested site will have minimal impact on the community when considering the service it will provide for the immediate area in

the use of handheld devices using the 4 G technology.

(9) There are no other antenna support structures within 1 mile of the proposed site that are usable for the coverage required.

(10) There is a waivers/variance required and the applicant is requesting a variance on the landscape requirements in 4.92.02(4) in that the site is located in a heavily wooded area which itself would meet the landscaping requirements of the Ordinance.

(11) The proposed site and structure will have no environmental impact within the federal guidelines.

(12) Assuming that there are 5 carriers operating cellular or PCS transmitters/receivers at this site and all are operating at the same time, the radiation produced by the combination of all the users at the same time using the standards and protocols proposed and used by the carriers today, will be considerably below that established by the Federal Communications Commission and the EPA as creating any danger to humans or animals.

(13) There is a need for the structure in this area to provide for the 4G wide spectrum wireless data service and for other wireless voice and data services to be provided under government regulation by the various proposed carriers who plan to use the site.

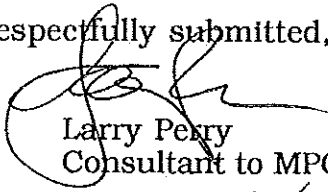
(14) Access road for emergency personnel will be via Facade Lane. However, the site is an unmanned site.

(15) There are no other antenna structures within a 1 mile radius that would allow the coverage needed by the applicant for this area.

RECOMMENDATION

In light of the analysis and review of documents, it is my professional opinion that the applicant meets all requirements of the Ordinance and the federal requirements with following suggestion to the applicant: The structure should be designed initially that it will support 4 additional carriers set of antennas for a total of 5 sets of antennas and feedlines.

Respectfully submitted,


Larry Perry
Consultant to MPC
8-1-12

MEMO TO MPC MEMBERS RE TOWERS

Larry Perry, Consultant to Knoxville MPC

As MPC members and City/County administrators, you are going to see more applications for new structures (towers) from several cellular carriers over the next several months. I think you need to know what this is all about and why they are needed. Let me see if I can explain it in a non technical way for you.

Cellular technologies have always been confusing, but we didn't always have to worry about which technology our cell phone or our cellular provider employed. When cell phones were only used for voice transmissions, we got whatever technology was available and we were pretty happy with it. Of course, times have changed and things have become a bit more complicated.

Now many of us not only talk on a cell phone, we use our cell phones to check email, surf the Web, text our friends, play games, and do many other things with applications called "apps". This means that we transfer both voice and data over the cellular connections. To accommodate our growing need for increased transmissions, cellular technologies have changed considerably. You have probably heard the terms 2G, 3G, and 4G. These are generations that represent the advancements in cellular technology. Although these various technologies are quite complex, I'll give you a brief history, hopefully, without any techno-babble.

Let's start at the beginning when the only cellular technology was 1G, that is first generation. This was actually the equivalent of telephone technology. It was a narrow band (think two lane highway), analog service that only accommodated voice transmissions.

The next generation was 2G. This was the first digital cell service, so it was more efficient. It provided voice transmissions with limited data transmissions.

The big step forward, however, was 3G. This is a digital broadband service that uses packet data transmission. You don't need to understand all the underlying technology. All you need to know is that this makes for much higher data speeds allowing you to surf the Web and get email on your cell phone quickly and easily.

Although 3G was good, the up-and-coming 4G technology is even better. Cellular transmission speeds have a lot of variables like the underlying technology, the carrier, the location of the cell tower, and the amount of congestion on the network, so it is difficult to tell you exactly how speedy 4G will be. You can, however, expect full 4G to be about 10 times faster than 3G, and in the future, it has the possibility of being even faster. At their current speeds, this new technology

has transmission speeds similar to those you get on your PC with a cable or DSL connection. With 4G, unlike 3G, voice and data will be transmitted over the same connection. Also, delays will go down dramatically, so there will be a much faster response time.

In order to accomplish this faster speed, the transmission systems have to be upgraded with a wider bandwidth (think 12 lane highway compared to a 2 lane highway). The faster the data is sent to your hand held device, the wider the road (bandwidth) has to be. But the wider the bandwidth the shorter the coverage area for the most part. Remember in the early 1G voice only cellular days, there was roughly one tower about every two miles. Then along came 2 G (digital telephone) and the towers were about every mile. When 3 G (data and voice) came along, the towers moved even closer because the coverage area was reduced because of the speed with which the information (voice and data) was being sent. Now along comes 4G where you can do about anything with your had held device and the speed has increased many many times over the original 1 G Voice only network and the coverage area is reduced significantly, thus the need for more towers. Many schools are doing away with printed books and going to hand held devices for learning (and texting). So the demand for more and faster service is growing exponentially.

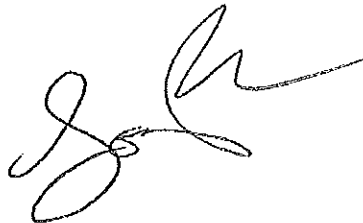
All of the national carriers are working hard to get their 4G networks in place. As a matter of fact, 4G is coming faster than ever expected it. Many large cities already have 4G including parts of Knoxville. You can check out the carrier's websites for details about where each has enabled 4G.

The 4G technology will actually reduce the cost per megabyte for the cellular networks. However, because US Cellular, AT&T, Verizon, and Sprint will all be trying to recoup the investment costs for implementing this new technology, you can expect cellular providers, at least initially, to charge a premium for 4G.

4G phones will be backwardly compatible with the 3G network of the cellular provider that you use. So if you are in an area where 4G is not available, your 4G cell phone will be able to automatically jump on the 3G network.

For those of you who use your cell phone only for voice calls, the upgrade to 4G, won't mean much, but those of you who use a smartphone will see a big change in the near future.

Hopefully this will help you understand the current need for additional towers by the various cellular carriers (incidentally there are now 13 different licensed carriers in the US...not all are in Knoxville yet!!!!)

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**EXHIBIT 7.
LAND USE/WIRELESS FACILITIES MATRIX**

	Co-Location	Stealth Structure	Low Monopole Below 90'	Moderate Monopole 90'-150'	Tall Monopole 150'-199'	Lattice Tower	Cuyed Tower
Opportunity Areas	Industrial/Business Park						
	Industrial Use						
	Pre-approved Government-owned Property						
	Urban Expressway Corridor						
	Rural/Heavily Wooded						
	Pasture						
	Central Business District						
	Office/Commercial Corridor						
Shopping Center							

Sensitive Areas	Within 500' of a residence						
	Rural Residential						
	Non-residential Properties in a Residential Area (church, cemetery, library, etc.)						
	Multi-family Residential						
On Hill Below Ridgeline						*	

Avoidance Areas	Conservation Open Space						
	Scenic Highway						
	Public Park						
	Ridge Top/Ridge Line						
	Scenic Vista						
	Historic District/Site						
	Single-family Residential						
	Vacant Residential Lot						

Encouraged
 Neutral
 Discouraged

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R.R. KRAMER (1888-1966)
CARTER B. WALL (1915-1968)
ANDREW JOHNSON (1918-1985)
JACKSON C. KRAMER (1921-1993)
R. ARNOLD KRAMER (1918-1993)

July 2, 2012

Metropolitan Planning Commission
City-County Building, Suite 403
400 Main Avenue
Knoxville, Tennessee 37902

**Re: U.S. Cellular Corporation / Dry Gap Site
Application for Tower Site Use-On-Review**

Dear Sir or Madam:

Please be advised that the undersigned represents U.S. Cellular Corporation ("USCC"). USCC hereby files the enclosed Use-On-Review Application and requests that it be placed on the agenda for the August 9, 2012 Metropolitan Planning Commission meeting. Such Use-On-Review Application requests approval for a proposed cellular communications tower to be located on property owned by Lighthouse Christian Church at 8015 Facade Lane, Powell, Knox County, Tennessee. Accordingly, enclosed herewith please find the following items:

1. Completed Application Form as signed by an authorized representative of USCC and as signed by an authorized representative of the property owner, Lighthouse Christian Church.
2. Information Summary and Table of Contents.
3. Ten (10) copies of the Development Plan with Exhibits 1 through 14 attached.
4. Our firm's check in the amount of Two Thousand Four Hundred Dollars (\$2,400.00), made payable to the Metropolitan Planning Commission. This check represents payment of (i) \$900.00, which amount is double the usual \$450.00 fee for filing a Use-on-Review Application for a site in an agricultural zone that is

less than one (1) acre, and (ii) \$1,500.00 for the escrow deposit relative to the Professional Engineering Consultant's fee.

As noted, USCC is proposing that a cellular communications tower be placed on a parcel consisting of approximately ten thousand (10,000) square feet leased from the owner, Lighthouse Christian Church, and located at 8015 Facade Lane, Powell, Knox County, Tennessee. USCC has entered into a lease with the property owner for the proposed site.

USCC recognizes that pursuant to Article 4.92.02(1)(f) of the Knox County Zoning Ordinance, a professional engineering consultant qualified in the design and installation of wireless communications facilities may be employed to review its application. Accordingly, the One Thousand Five Hundred Dollar (\$1,500.00) escrow fee specified in the Zoning Ordinance is enclosed. USCC further understands that such fee shall not exceed One Thousand Five Hundred Dollars (\$1,500.00) in total.

USCC proposes to construct a 250 foot self-support tower. Since the proposed tower will exceed 200 feet in height, it will be lighted as required by FAA Regulations. In addition, as required by Article 4.92.02(1)(a) of the Knox County Zoning Ordinance, the tower will be constructed to support at least four (4) antenna arrays for co-location purposes. USCC's letter of intent setting forth its commitment to permit co-location on the proposed tower is included with the Application as Exhibit 5.

The tower is proposed for this area in order for USCC to provide additional spectrum capacity for its network. The explosive growth in usage of hand-held devices (*i.e.*, smart phones) requires that USCC significantly increase the capacity of its network to transmit data. New technology known as "4G LTE" supports data transmission and provides the necessary additional capacity. Installation of 4G LTE technology requires that USCC split its current spectrum between its existing CDMA/EVDO network and 4G LTE technology, which necessitates additional antennae. Thus, this tower will provide additional capacity and relieve spectrum usage at USCC's existing Halls, Diggs Gap, Harrill Hills and Bell Bridge sites.

Radio frequency coverage maps showing coverage with and without the proposed tower are attached to the Application as Exhibits 8 and 9.

In an effort to address tower proliferation concerns, USCC performed a search in the proposed coverage area for other existing towers on which co-location might be possible. As noted on Exhibit 3, two (2) existing towers are located within a one-mile search ring. However, neither of such towers is a viable candidate for co-location. One of such towers is not a cellular communications tower; instead, it is a private tower owned and utilized exclusively by the Tennova / St. Mary's Health System for emergency helicopter communications, hospital pager transmissions and other similar hospital communications needs. The remaining tower located

within the one-mile search ring is owned by Crown Castle Communications. Such tower is fully loaded, and there is no available space for additional antennae.

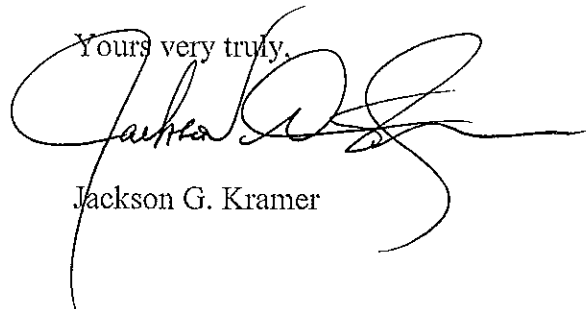
USCC also searched for other existing structures within the area of the proposed site on which co-location might be feasible. No suitable existing structures are present in this area.

This proposed tower is also consistent with the Goals, Objectives and Policies of the Wireless Communications Facilities Plan ("Plan") adopted by the Metropolitan Planning Commission in September, 2002. The proposed site is located on a rural, wooded, agriculturally-zoned parcel and is located very near the Interstate 75 corridor. As shown by the photographs of the proposed site attached as Collective Exhibit 12, wooded areas are located between Facade Lane and the proposed site, and the base of the tower will not be visible from Facade Lane.

In addition, the proposed tower meets the Plan's objective of being separated from any nearby residents by a distance of more than five hundred (500) feet, and also meets the Zoning Ordinance requirement of being separated from any residential structure by a distance of at least one hundred ten percent (110%) of the tower height (in this instance, two hundred seventy-five (275) feet). As shown by the Zoning Setback Drawing attached as Exhibit 2 to the Application, no residential structures are located within two hundred seventy-five (275) feet of the proposed site. The closest residence to this site is located more than seven hundred (700) feet from the proposed site. Further, such residence is separated from the site by a heavily wooded area and an existing stand of trees that will remain in place.

Thank you very much for your assistance in this matter. Should you need any additional information, please do not hesitate to contact the undersigned.

Yours very truly,

A handwritten signature in black ink, appearing to read "Jackson G. Kramer", written over the typed name below.

Jackson G. Kramer

JGK/tsg
Enclosures

KRAMER RAYSON LLP

ATTORNEYS AT LAW

POST OFFICE BOX 629
KNOXVILLE, TENNESSEE 37901-0629

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KNOXVILLE, TENNESSEE 37929
TELEPHONE 865 525-5134
TELECOPIER 865 522-5723

105 DONNER DRIVE, SUITE A
OAK RIDGE, TENNESSEE 37830
TELEPHONE 865 220-5134
TELECOPIER 865 220-5132

R.R. KRAMER (1888-1966)
CARTER B. WALL (1915-1968)
ANDREW JOHNSON (1918-1985)
JACKSON C. KRAMER (1921-1993)
R. ARNOLD KRAMER (1918-1993)

July 31, 2012

VIA HAND-DELIVERY

Mr. Tom Brechko
Metropolitan Planning Commission
City-County Building, Suite 403
400 Main Avenue
Knoxville, TN 37902

**Re: U.S. Cellular Corporation
Use-On-Review Application No. 8-I-12-UR
Dry Gap – Site No. 223528**

Dear Mr. Brechko:

In accordance with our conversations at our recent meeting on July 16, 2012, U.S. Cellular Corporation hereby submits five (5) copies of certain revised Construction Drawings as set forth below relative to its pending Use-On-Review Application No. 8-I-12-UR, which is scheduled to be heard on Thursday, August 9, 2012. Such Use-On-Review Application requests approval of a cellular communications monopole at 8015 Facade Lane, in Knox County, Tennessee.

Specifically, please note the following changes to the construction documents:

1. Ms. Pionke had indicated that it appeared that the proposed tower site was located too close to an existing sinkhole on the north side of the leasehold compound. To address that concern, U.S. Cellular has moved the tower site from the northwest corner of the leasehold compound to the southeast corner of such compound. Further, it is our understanding that Knox County's Storm Water Ordinance requires that there be no grading within five (5) feet of the sinkhole's outside rim. By changing the location of the tower within the leased compound, U.S. Cellular

has moved further away from the sinkhole and will not encroach upon such five (5) foot distance. I enclose herewith five (5) copies of revised Sheet C3.10, Site Plan, and revised Sheet C3.30, Grading Plan, confirming the above.

2. Ms. Pionke also expressed concerns about the steepness of the road profile where the access road leaves the public road. Accordingly, the access road has been redesigned to reflect that the grade where the access road leaves the public road begins at 4%. The access road increases to a maximum grade of 15.00%, before leveling off to a grade of 5.72% closer to the site. Further, this redesign of the access road moves the access road further away from the property line. I enclose herewith revised Sheet C3.00, Access Plan, Sheet C3.01, Access Plan and Profile, and Sheet C3.02, Access Plan and Profile, which reflect the redesign of the access road.
3. In addition, Ms. Pionke had expressed concern about the proposed surface of the access road. The access road design has been revised to reflect six (6) inches of base stone and two (2) inches of "TDOT D mix." I enclose herewith five (5) copies of revised Sheet C1.11 and Sheet C4.20 setting forth these changes.

Thank you for your assistance in this matter. Please do not hesitate to contact me if you have any questions.

With kind regards, I am

Yours very truly,


Jackson G. Kramer

JGK/tsg

Enclosures

cc: Mr. John Locascio
Mr. Charles Burton

INFORMATION SUMMARY AND TABLE OF CONTENTS

USE ON REVIEW APPLICATION FOR

U. S. CELLULAR'S DRY GAP SITE NUMBER 223528

1. Site Plan - Construction Drawings, attached as Exhibit 1
2. Zoning Setback Drawing attached as Exhibit 2
3. Two (2) towers registered with the FCC as Telecommunications Towers were found on the FCC data base within a one-mile search ring (See Exhibit 3). As set forth in Exhibit 10, neither of such towers is a feasible co-location alternative.
4. & 5. Application is made directly by the carrier -

U.S. Cellular Corporation
9731 Cogdill Road, Suite 200
Knoxville, Tennessee 37932

Contact: John Locascio, Senior Project Manager
Telephone: (865) 777-7039
Facsimile: (865) 777-7012

6. Basic Tower Information:
 - (a) U. S. Cellular Corporation ("USCC") proposes a self-support tower two hundred fifty (250) feet in height. The tower will be located on property owned by Lighthouse Christian Church at 8015 Facade Lane, Knox County, Tennessee. The equipment compound and the base of the tower will be enclosed within a chain link fence six (6) feet in height.
 - (b) The tower will be two hundred fifty (250) feet in height.
 - (c) The tower will be lighted in accordance with FAA requirements.
 - (d) The specifications for an almost identical tower are provided in Exhibit 4. The tower is designed and will be constructed to permit co-location for at least three (3) additional carriers.
 - (e) The leasehold area is one hundred (100) feet by one hundred (100) feet. An area approximately sixty (60) feet by sixty (60) feet will be enclosed by a chain link fence six (6) feet in height and topped with three (3) strands of barbed wire. See Construction Drawings, p. C4.30. The tower and all ancillary equipment will be located within this fenced compound.

7. USCC's Letter of Intent committing itself to allow shared use of the proposed tower is attached as Exhibit 5. Other likely candidates for co-location:
 - AT&T
 - Verizon
 - Sprint/Nextel
 - T-Mobile
 - Cricket (Leap Wireless)
8. Zoning Map:

Proposed site and adjacent properties are zoned "A." Site zoning and zoning of adjacent parcels are shown on Exhibit 6. Map of larger area within one mile of proposed site to be provided by the Metropolitan Planning Commission. General map of area attached as Exhibit 7.
9. Coverage Map without proposed site - Exhibit 8
10. Coverage Map with proposed site - Exhibit 9
11. Proposed landscaping – The site is heavily wooded and pursuant to Section 4.92.02(4)(b) of the Knox County, Tennessee Zoning Ordinance, USCC believes that existing natural vegetation will achieve the required screening. See photographs of site attached Collective Exhibit 12. However, should the determination be made that additional landscaping is necessary, USCC will meet the landscaping requirements of Section 4.92.02(4) of said Zoning Ordinance.
12. Technical Justifications Narrative - Exhibit 10
13. Variances or Waivers from Ordinance - Exhibit 11
14. Photographs of proposed site – Collective Exhibit 12
15. Google Earth photographs showing approximate locations from which photographs in Collective Exhibit 12 were taken – Collective Exhibit 13
16. Safety Statements - Exhibit 14



Metropolitan Planning Commission
of Knoxville/Knox County
4th Floor, City-County Building
400 Main Avenue
Knoxville, Tennessee 37902

June 26, 2012

**Re: U.S. Cellular Corporation
Proposed Dry Gap Site**

Dear Sir or Madam:

This letter is written to confirm U.S. Cellular Corporation's ("USCC") commitment to shared use of its proposed cellular communications tower site at 8015 Facade Lane in Knox County, Tennessee.

As you are aware, Knox County Zoning Ordinance Article 4.92.02(1)(a) requires that any proposed communications tower 130 feet in height or greater be built to accommodate at least three antenna arrays for co-location purposes. USCC is proposing that the tower on Facade Lane be 250 feet in height. USCC hereby states that it will construct the tower to accommodate the required three antenna arrays.

Furthermore, please accept this letter as confirmation that pursuant to Knox County Zoning Ordinance Article 4.92.02(1)(b), USCC and its successors are committed to allowing shared use of the tower at rental rates commensurate to those being charged in similar situations, so long as any additional user agrees in writing to meet reasonable terms and conditions concerning use of USCC's tower and so long as space on such tower remains available.

I trust that this letter is sufficient to address the inquiries posed concerning shared use. However, should you need additional information, please do not hesitate to contact either the undersigned at (865) 777-7039 or USCC's attorney, Jackson G. Kramer, at (865) 525-5134.

Yours very truly,

John Locascio
Senior Project Manager

TECHNICAL JUSTIFICATION FOR PROPOSED NEW TOWER
U.S. CELLULAR SITE NAME: DRY GAP
U.S. CELLULAR SITE: 223528

Prepared by: Isaac Ndiaye
Sr. RF Engineer
U.S. Cellular®

Proposal: Install CDMA Spectrum Relief Antennae on a new tower to be constructed on a site located at 8015 Facade Lane, Knox County, Tennessee on a ten thousand (10,000) square foot parcel, more or less, leased from the property owner, Lighthouse Christian Church.

Tower: U.S. Cellular Corporation ("USCC") proposes to construct a 250 ft. above ground level self-support tower. The height of 250 ft. is necessary in order for signals to carry over the surrounding terrain and connect with USCC's existing network. The tower will require lighting pursuant to FAA regulations.

RF Justification: USCC proposes to build this facility in this area to provide additional capacity to its existing customers. With the explosive growth in usage of handheld devices (i.e., smart phones), the need for increased capacity to transmit data has grown tremendously. The newest technology which supports data transmission and provides the requisite capacity is known as "4G LTE" technology. To facilitate the rollout of 4G LTE in USCC's local network, USCC is splitting its current spectrum between the existing network (CDMA/EVDO) and the future 4G LTE network. Such "spectrum splitting" requires additional antennae to address the increased demand for spectrum usage. Specifically, this proposed tower will relieve spectrum usage on adjacent USCC antennae at USCC's Halls, Diggs Gap, Harrill Hills and Bell Bridge sites, thus providing sufficient spectrum to install LTE 4G technology. This necessary spectrum relief, as shown by USCC's coverage maps, can be efficiently corrected by a full cell site at this proposed location.

Co-location: The alternatives of co-locating USCC's equipment and antennae on existing structures in the surrounding area were considered. In accordance with the Knox County Zoning Ordinance, a search was performed to identify any existing registered structures within one mile of the proposed site. Two (2) towers are located within one mile of the proposed site. One of such towers is not a cell tower; it is a private tower owned and utilized exclusively by the Tennova / St. Mary's Health System for emergency helicopter and hospital pager communications and other hospital needs. The other tower is owned by Crown Castle Communications, but such tower is fully loaded and there is no available space for additional antennae.

EXHIBIT 11

List of Variances and/or Waivers from Zoning Ordinance Requirements

Applicant is requesting one (1) variance from the Knox County, Tennessee Zoning Ordinance relative to landscaping.

Landscaping Variance and/or Waiver: Article 4.92.02(4) sets forth landscaping requirements for telecommunications towers. Section 4.92.02(4)(b) states that “new or existing vegetation, earth berms, existing topographic features, walls, fences, building and features other than those described above may be used to meet the requirements of these regulations if the code administrator finds that they achieve the same degree of screening as 4.a.” As can be seen from photographs of the proposed site attached as Collective Exhibit 12, the proposed site is heavily wooded. Applicant intends to leave as much natural vegetation in place as possible, and Applicant therefore respectfully submits that the existing natural vegetation will accomplish the desired screening objectives set forth in the Zoning Ordinance. Therefore, Applicant respectfully requests a waiver of the landscape requirements set forth in the Zoning Ordinance. However, should the determination be made that landscaping is required, Applicant will comply with the landscaping requirements set forth in the Zoning Ordinance.

JAUS Cellular\Dry Gap Zoning Matter\Dry Gap - Exhibit 11.doc



Google earth



DRY GAP: PHOTO PERSPECTIVE

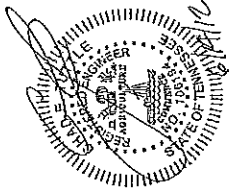


Google earth

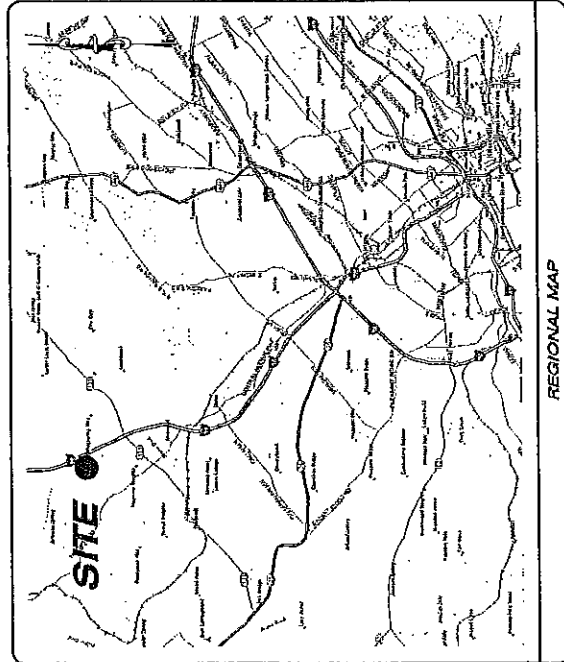




**9731 COGDILL ROAD,
SUITE 200
KNOXVILLE, TN 37932
(865) 777-7039**

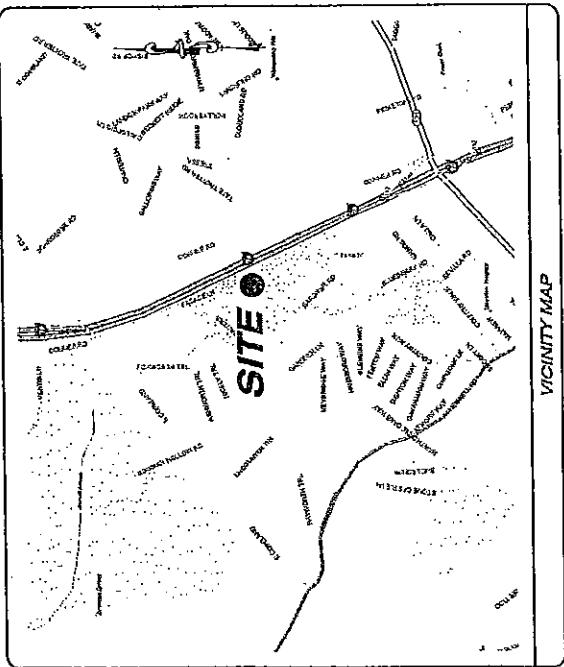


**U.S. CELLULAR
RAW LAND
DRY GAP
223528
250' SELF SUPPORT
TELECOMMUNICATIONS TOWER
WITH MULTIPLE CARRIERS**



REGIONAL MAP

DIRECTIONS TO SITE
FROM THE INTERSECTION OF I-75 & I-257 IN KNOXVILLE:
TAKE I-75 NORTH 4.3 MILES TO TN-131 (EXIT 112). TAKE EXIT 112 AND TURN RIGHT ON TO TN-131/NE
ENRY ROAD. PROCEED 0.10 MILES AND TURN LEFT ON TO CONNOR ROAD. PROCEED 1.4 MILES AND
TURN LEFT ON TO EAST COPELAND DRIVE. PROCEED 443 FEET, AND TURN LEFT ON TO FACADE LANE.
PROCEED 0.6 MILES TO SITE ON THE RIGHT.



VICINITY MAP

CONSULTANTS
POINT TO POINT LAND SURVEYORS
810 JACKSON GROVE,
GEORGIA 30248
(P) 678-565-4440
B&T ENGINEERING
1717 S. BOULDER, SUITE 300
TULSA, OK 74119
(P) 918-587-4630
8-T-12-OK

SITE NAME:
DRY GAP
SITE NUMBER:
223528
SITE ADDRESS:
8015 FACADE LANE
POWELL, TN 37849
SITE OWNER:
U.S. CELLULAR CORPORATION
9731 COGDILL ROAD, SUITE 200
KNOXVILLE, TN 37932
APPLICANT:
U.S. CELLULAR CORPORATION
9731 COGDILL ROAD, SUITE 200
KNOXVILLE, TN 37932
ZONING:
A
AREA OF LEASE:
0.230 ACRES
10,000 SQ. FT.
PARCEL NUMBER(S):
047 026
(KNOX COUNTY)

SITE SUMMARY

SHEET NO.	DESCRIPTION
TJ.00	TITLE SHEET/SITE INFORMATION
CL.00	GENERAL NOTES
CL.10	SITE WORK NOTES
CL.11	SITE WORK NOTES
1 OF 3	SITE SURVEY
2 OF 3	SITE SURVEY
3 OF 3	SITE SURVEY
CA.00	ACCESS PLAN
CA.01	ACCESS PLAN & PROFILE
CA.02	ACCESS PLAN & PROFILE
CL.10	SITE PLAN
CL.20	ELEVATION AND PLATFORM DETAIL
CL.30	GRADING PLAN
CA.00	SITE WORK DETAILS
CA.10	SITE WORK DETAILS
CA.20	SITE WORK DETAILS
CA.30	SITE WORK DETAILS
EL.00	UTILITIES SERVICE PLAN
EL.10	UTILITIES PLAN
EL.20	ELECTRIC SPECIFICATIONS & NOTES
EL.30	GROUNDING PLAN
EL.10	GROUNDING NOTES
EL.00	ELECTRICAL DETAILS
EL.10	ELECTRICAL DETAILS
EL.20	ELECTRICAL DETAILS

SHEET INDEX

8741 COGDILL ROAD
KNOXVILLE, TN 37932
(865) 777-7039

Wireless Vision LLC
Site Development Services

SCALE: N.T.S.
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WIRELESS VISION, LLC.

1717 S. BOULDER
SUITE 300 TULSA, OK 74119
PH: (918) 587-4630

CHAD TUTTLE
PROFESSIONAL ENGINEER
REGISTRATION NO. 10304

US CELLULAR
DRY GAP
SITE NUMBER
223528
SITE ADDRESS
8015 FACADE LANE
POWELL, TN 37849

SHEET TITLE
TITLE SHEET
SITE INFORMATION
SHEET NUMBER
T1.00

9731 CASCILL ROAD
COLUMBIA, TN 37622
(615) 775-2222

Site Development Services

SCALE: 1"=100'

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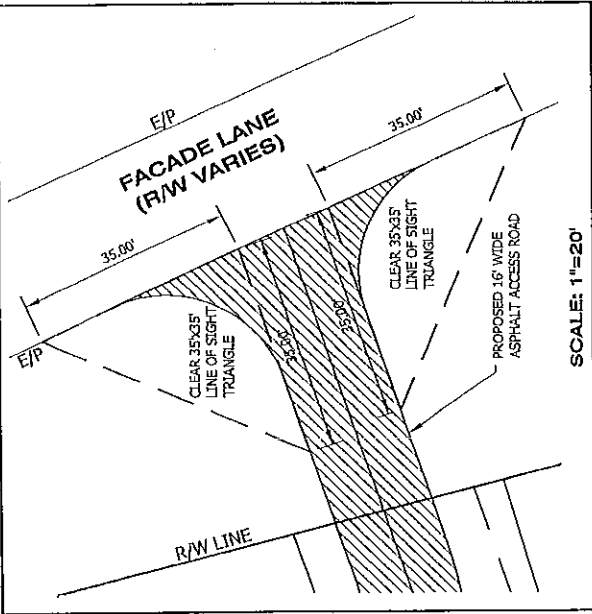
18728 BOLDER
SUITE 300 TULSA, OK 74119
PH: (918) 581-4039

CHAD TUTTLE
PROFESSIONAL ENGINEER
REGISTRATION NO.: 165164

SHEET NUMBER: 222522S
SITE ADDRESS: 8825 FACADE LANE POWELL, TN 37849

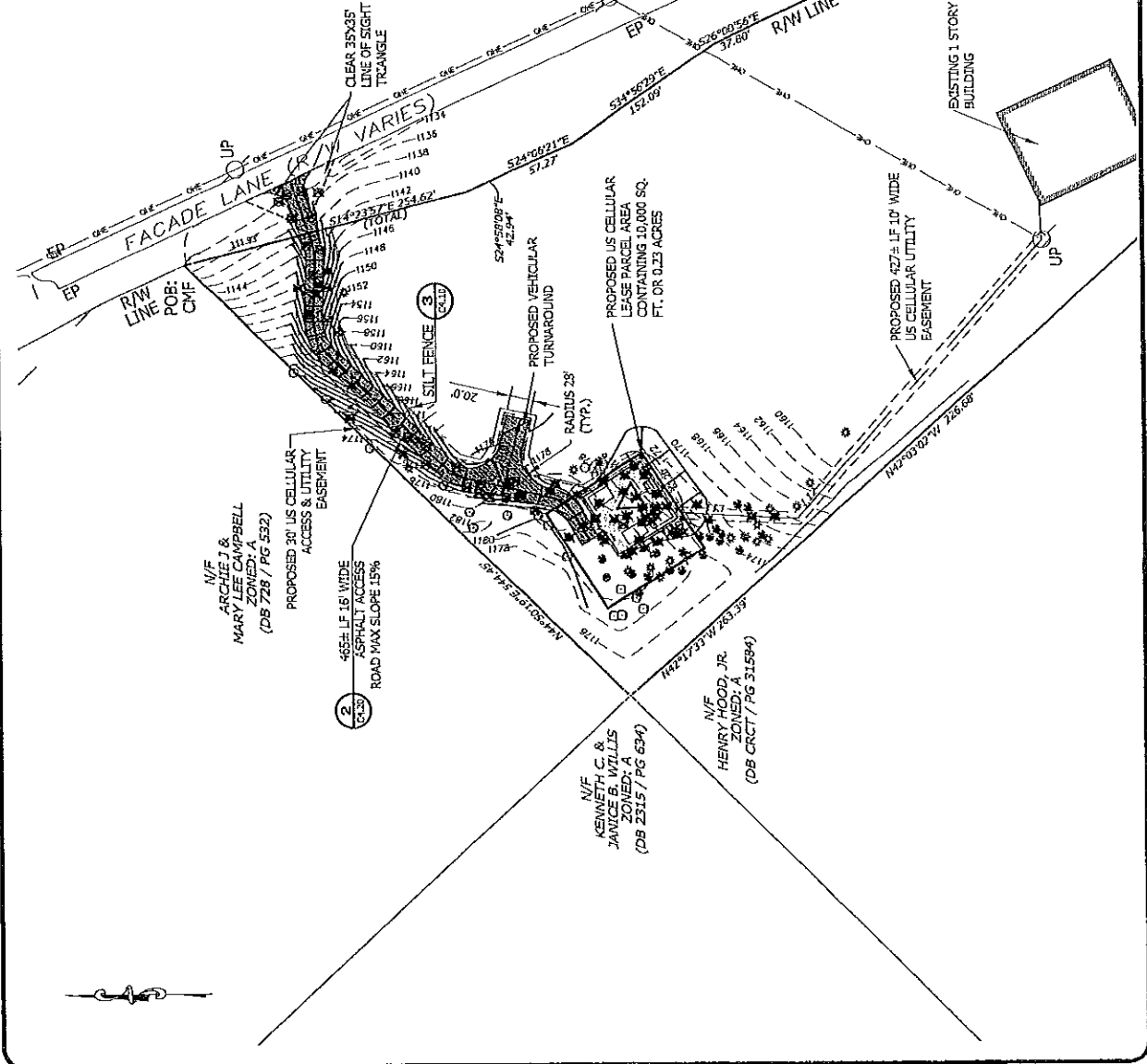
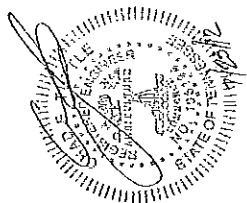
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SHEET NUMBER: C3.00



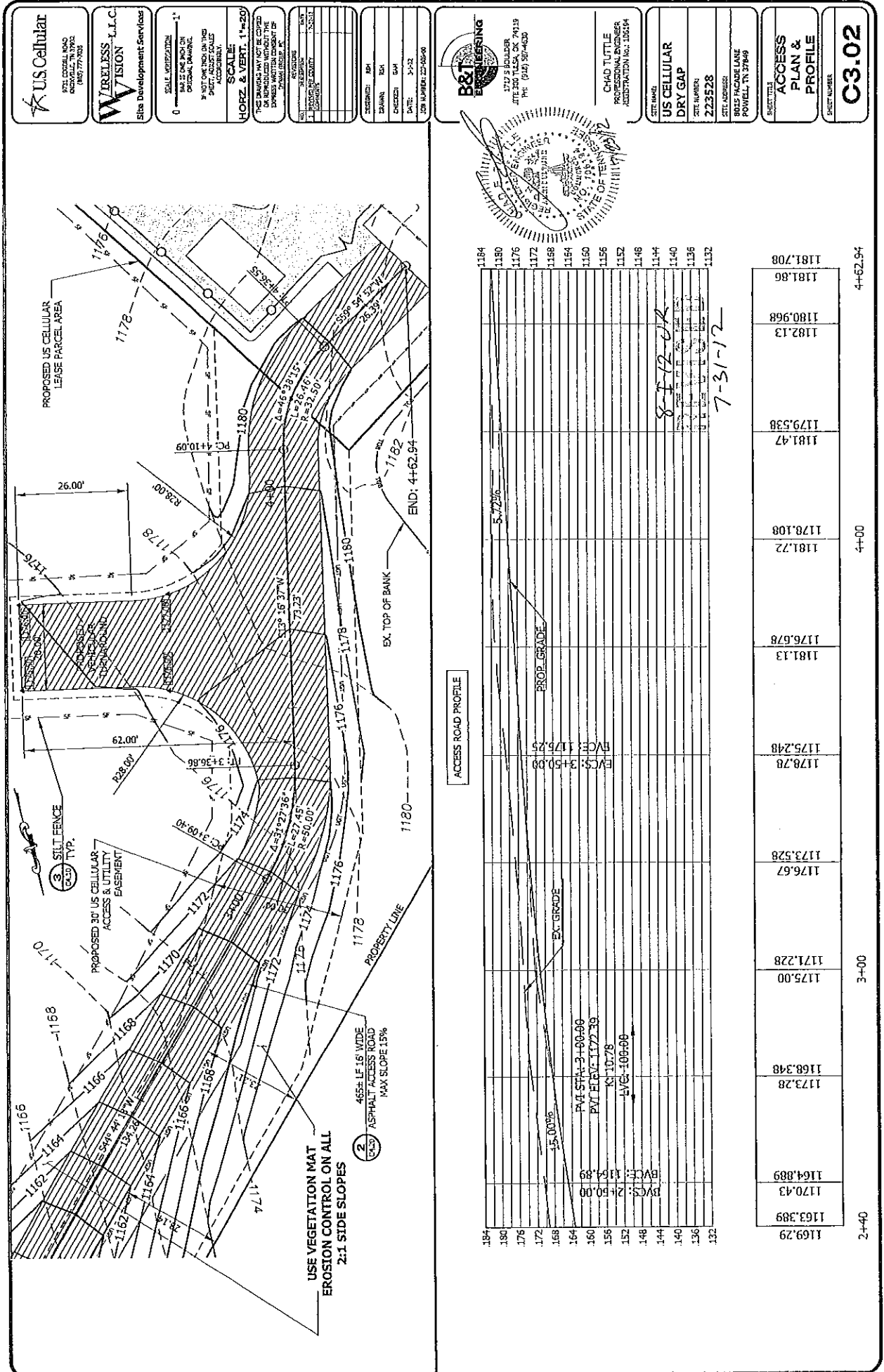
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L2	N87°43'30"W	56.24'
L3	S81°50'38"W	48.60'
L4	S44°50'19"W	95.40'
L5	S29°35'09"W	52.46'
L6	S19°16'37"W	101.33'
L7	S57°36'47"W	100.00'
L8	N32°23'15"W	100.00'
L9	N57°36'47"E	100.00'
L10	S32°23'15"E	100.00'
L11	S03°40'43"W	101.55'
L12	S48°50'15"E	325.46'

- LEGEND:**
- ☒ TREE TO BE REMOVED
 - HARDWOOD
 - ⊙ CHERRY
 - ⊙ PINE
 - ⊙ OAK
 - ⊙ POPLAR
 - ⊙ BEECH
 - ⊙ HICKORY
 - PROPOSED GRAVEL
 - PROPOSED ASPHALT

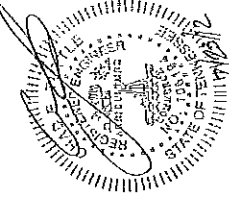
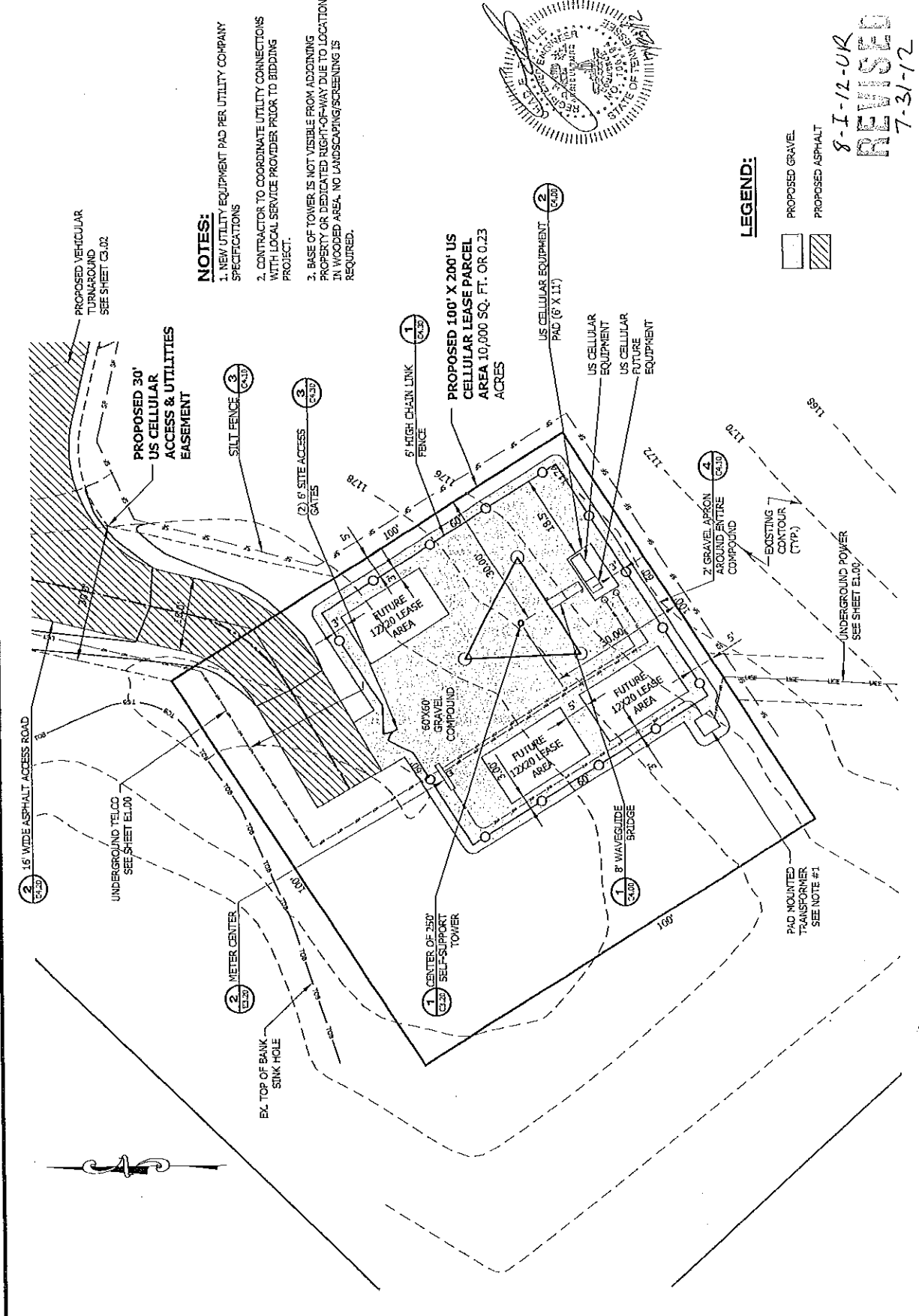


REVISED

8-T-12-UK
7-31-12



	WIRELESS L.L.C. Site Development Services	SCALE: 1" = 20' IF NOT DIMENSIONS ON THIS PLAN, ADJUST DIMENSIONS TO MATCH THIS SCALE.	DATE: 11/12/11 DRAWN BY: BSA CHECKED BY: BSA DATE: 11/12/11 JOB NUMBER: 27-086-00	B&T ENGINEERING 1217 S HOLLER SUITE 300 TULSA, OK 74139 PH: (918) 587-4630	CHAD TUTTLE PROFESSIONAL ENGINEER REGISTRATION NO. 110104	US CELLULAR DRY GAP SITE NUMBER: 223528 SITE ADDRESS: 8015 FARMER LANE MOWELL, TN 37069	SITE PLAN SHEET TITLE	C3.10 SHEET NUMBER
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8-I-12-UR
REVISED
7-31-12

<p>U.S. Cellular 972 CORDILL ROAD ROSELLE, TN 38862 (865) 777-9622</p>	<p>WIRELESS VISION L.L.C. Site Development Services</p>	<p>SCALE: VERTICALLY 1" = 10' HORIZONTALLY 1" = 20'</p> <p>THIS DRAWING MAY NOT BE COPIED OR REPRODUCED WITHOUT THE EXPRESS WRITTEN CONSENT OF THE ENGINEER.</p>	<p>DATE: 3-1-12 DRAWN BY: [Redacted] CHECKED BY: [Redacted] DESIGNED BY: [Redacted]</p>	<p>B&T ENGINEERING 3712 S. COLLIER SUITE 200 TULSA, OK 74116 PH: (918) 587-4600</p>	<p>CHAD TUTTLE PROFESSIONAL ENGINEER REGISTRATION NO. 13854-A</p>	<p>US CELLULAR DRY GAP</p>	<p>223528</p>	<p>815 PACADRE LANE POWELL, TN 37849</p>	<p>GRADING PLAN</p>	<p>C3.30</p>
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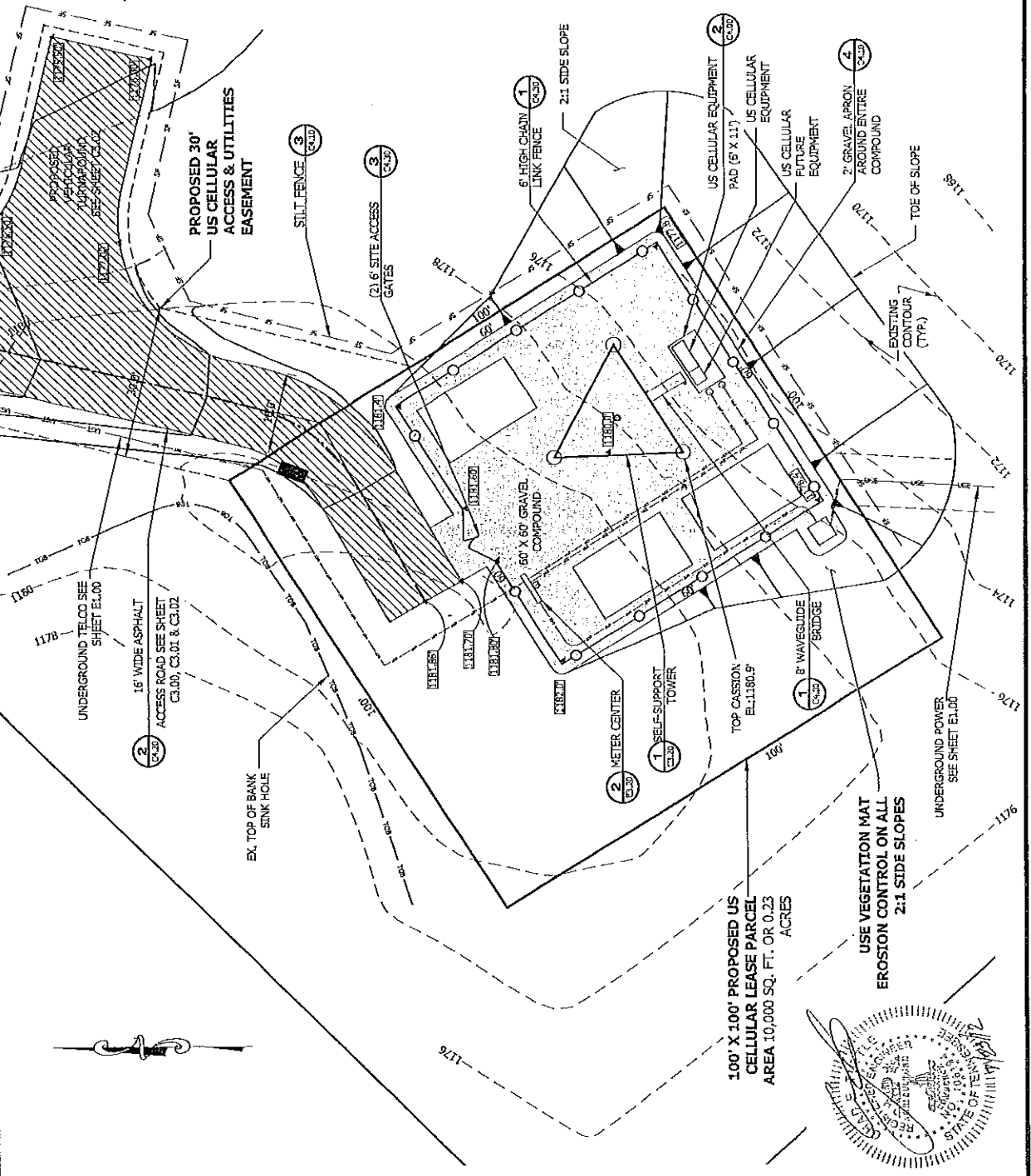
LEGEND:

- PROPOSED GRAVEL
- PROPOSED ASPHALT
- PROPOSED FINISHED GRADE

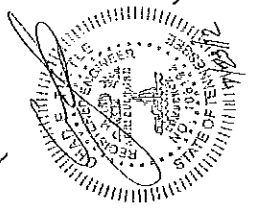
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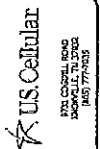
NOTES:

1. TYPICAL FINISH GRADES ARE TOP OF STONE.
2. PROVIDE VEGETATION CONTROL FOR SUBGRADE PRIOR TO PLACEMENT OF STONE.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE ON SITE AT ALL TIMES. SILT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED ON THE DOWN-SLOPE SIDE OF THE SITE AT ALL TIMES. ANY DAMAGE TO ADJACENT PROPERTIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
4. SEEDING AND MULCHING OF THE SITE WILL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER COMPLETION OF THE SITE DEVELOPMENT. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING AN ADEQUATE COVER OF VEGETATION OVER THE SITE FOR A ONE YEAR PERIOD. ALL SEEDING AND MULCHING SHALL BE PER T.D.O.T. SPECIFICATIONS.
5. PLACE SOG ON ALL SLOPES GREATER THAN 4:1. PIN SOG ON ALL SLOPES GREATER THAN 3:1. PLACE EROSION CONTROL BLANKET ON ALL SLOPES GREATER THAN 2:1. ALL VEGETATIVE CONTROL MEASURES SHALL BE PER T.D.O.T.
6. TREES INTERFERING WITH CONSTRUCTION SHALL BE REMOVED FROM THE SITE. NO VEGETATION OR DEBRIS SHALL BE ALLOWED TO FALL OVER SLOPE.
7. PERMISSION FOR GRADING OUTSIDE THE LEASE AREA IS PROVIDED BY U.S. CELLULAR AGREEMENT WITH OWNER.
8. CONTRACTOR TO MINIMIZE CLEARING AND GRUBBING LIMITS TO MAINTAIN VEGETATION IN NATURAL STATE AS MUCH AS POSSIBLE.
9. ALL DISTURBED AREAS SHALL BE TREATED WITH PERMANENT EROSION CONTROL MEASURES.
10. SEE SITE SURVEY FOR BENCHMARKS.




8-I-12-UK
REVISION
7-31-12





8700 CORNELL ROAD
PO BOX 1111
POWELL, TN 37448
(615) 779-6535




Site Development Services

0 SCALE UNLESS NOTED
ALL DIMENSIONS IN INCHES
UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
FOR CONSTRUCTION PURPOSES
UNLESS OTHERWISE SPECIFIED

SCALE: N.T.S.

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DATE: 8-1-12
JOB NUMBER: 277-000-000



CHAD TUTTLE
PROFESSIONAL ENGINEER
REGISTRATION NO. 40564

DATE: 8-1-12
JOB NUMBER: 277-000-000

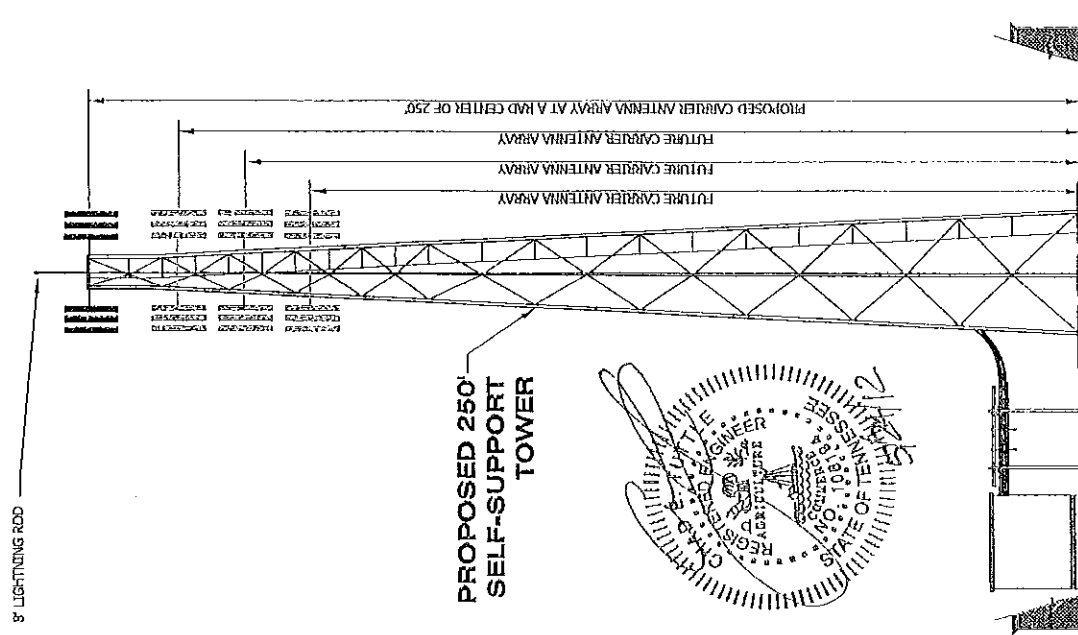
PROJECT NAME:
**US CELLULAR
DRY GAP**

EST. NUMBER:
223528

SITE ADDRESS:
8025 FRISCO LANE
POWELL, TN 37448

SHEET TITLE:
**ELEVATION AND
PLATFORM
DETAIL**

PROJECT NUMBER:
C3.20



PROPOSED 250' SELF-SUPPORT TOWER

8' LIGHTNING ROD

PROPOSED CARRIER ANTENNA ARRAY AT A RAD CENTER OF 250'

FUTURE CARRIER ANTENNA ARRAY

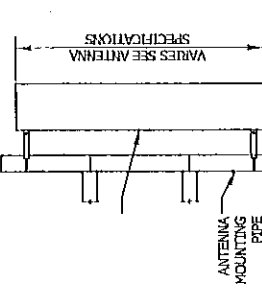
FUTURE CARRIER ANTENNA ARRAY

FUTURE CARRIER ANTENNA ARRAY

FUTURE CARRIER ANTENNA ARRAY

1

TOWER ELEVATION
N.T.S.



ANTENNA MOUNTING PIPE

VARIES SEE ANTENNA SPECIFICATIONS

2

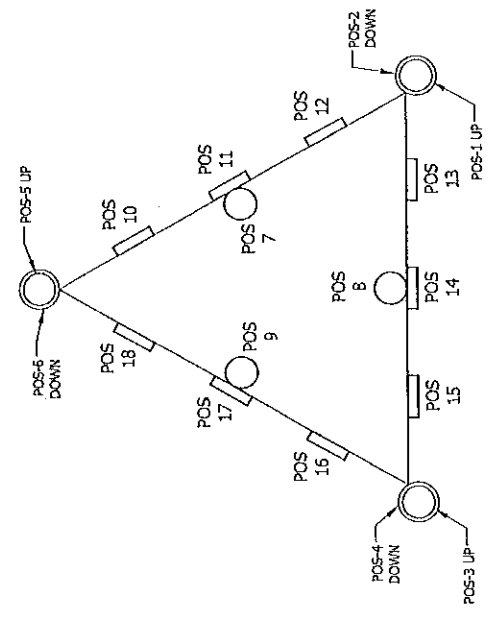
ANTENNA SECTION
N.T.S.

SECTOR	COLOR	# OF STRIPES		
		TX	RX1	RX2
ALPHA X	RED	1	2	3
BETA Y	WHITE	1	2	3
GAMMA Z	BLUE	1	2	3

REV '09' INFORMATION:
STRUCTURE CLASS II
EXPOSURE CATEGORY B
TOPOGRAPHIC CATEGORY 3 (HILL TOP)

3

ANTENNA PLATFORM ASSIGNMENT
N.T.S.



POS #	ANTENNA ID	ANTENNA MODEL	GAIN	ANT. ERP	PA SETTING	MECH DT	ELEC DT	ANT. HEIGHT	AZMUTH	CABLE LENGTH	CABLE SIZE
1											
2											
3											
4											
5											
6											
7											
8											
9											
0											
11											
12											

4

ANTENNA SCHEDULE
N.T.S.