

▶ **FILE #:** 1-M-08-UR

AGENDA ITEM #: 93

AGENDA DATE: 1/10/2008

▶ **APPLICANT:** U. S. CELLULAR CORP.
 OWNER(S): TIMOTHY & TAMARA BERRY

TAX ID NUMBER: 123 G A 017

JURISDICTION: City Council District 1

▶ **LOCATION:** Northern terminus of Echodale Ln., southwest of Chapman Hwy.

▶ **APPX. SIZE OF TRACT:** 3.67 acres

SECTOR PLAN: South City

GROWTH POLICY PLAN: Urban Growth Area (Inside City Limits)

ACCESSIBILITY: Access is via Echodale Ln. a local street with a 13' pavement width within a 40' right-of-way.

UTILITIES: Water Source: Knoxville Utilities Board

Sewer Source: Knoxville Utilities Board

WATERSHED: Goose Creek

▶ **ZONING:** R-1 (Low Density Residential)

▶ **EXISTING LAND USE:** Residence

▶ **PROPOSED USE:** 120' monopole telecommunications tower

HISTORY OF ZONING: None noted

SURROUNDING LAND USE AND ZONING: North: Vacant land and self-storage facility / C-4 (Highway and Arterial Commercial)

South: Vacant lots / R-1 (Low Density Residential)

East: Vacant lots / R-1 (Low Density Residential)

West: Residents / R-1 (Low Density Residential)

NEIGHBORHOOD CONTEXT: The site is located in a residential neighborhood that borders the south side of the Chapman Highway commercial corridor.

STAFF RECOMMENDATION:

▶ **APPROVE the development plan for a 120 foot monopole commercial telecommunications tower with internal mount antenna arrays at this location, subject to 6 conditions:**

1. Meeting all applicable requirements of the Knox County Zoning Ordinance.
2. Obtaining all Federal, State and local approvals for the proposed tower.
3. Installation of landscaping as shown on the development plan within six months of the tower becoming operational.
4. Meeting all applicable requirements of the Knoxville Engineering Division.
5. Since the FAA does not require any lighting for this facility, there shall be no lighting on the tower.
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 R-1 zoning district.

COMMENTS:

This is a request for a new 120' monopole telecommunications tower to be located on a 1500 square foot lease parcel located on the southeast end of the northern terminus of Echodale Ln.

The subject property is zoned R-1 (Low Density Residential) and telecommunication towers are considered as a use on review in this district. The proposed tower is required to be located 132' (110% of the tower height) from the nearest residence. The nearest residence is located approximately 210' to the west of the proposed tower and is the residence of the property owner. The closest residence off of the property is located approximately 275' to the northwest.

The majority of the 3.67 acre parcel is wooded and the proposed tower and equipment area will be surrounded by a 6' high security fence, with supplemental landscaping being placed along the western edge of the enclosure. FAA does not require any lighting for the tower. The tower will support up to two telecommunications carrier antenna arrays. The antenna arrays will be internal to the tower structure (see attached drawings and photo of a similar tower built at Bookwalter Evangelical United Church on Central Avenue Pike).

According to the Knoxville-Knox County Wireless Communications Facility Plan, this site is located within a "Sensitive Area" since it is located within 500' of a residence. At a proposed height of 120' the tower is considered to be a moderate monopole tower and the plan takes a neutral position at this location. Since the adoption of the Facility Plan, the Knox County Zoning Ordinance has been amended to increase setback from residences to 110% of the towers height. The proposed telecommunication tower far exceeds that requirement. Being designed as an internal mount monopole, the tower could be considered to be more stealth in design which is encouraged in sensitive areas.

The visual impact on nearby residences will be minimal due to the fact that the proposed site is heavily wooded. This vegetation will provide a natural buffer between the tower and adjacent residences. The applicant will be required to install a 6' high security fence prior to the tower becoming operational. A landscape screen is also being provided around the site.

The tower is designed so it will collapse upon itself in case of a natural disaster or other failure. FAA does not require any lighting for the tower. The tower will support up to 2 telecommunication carrier antenna arrays. U. S. Cellular Corporation will be the principal client for the tower. A letter has been submitted stating that U. S. Cellular Corporation agrees to make this facility available to other wireless providers for co-location. There are no other towers within one mile of the proposed tower that could provide the coverage needed by the applicant

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 120' tower is technically justified by the materials submitted by the applicant (see attached report).

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 utilities are available to serve this site.
2. With the tower being an internal mount monopole and being located on a heavily wooded parcel, the impact on nearby residences will be minimal.

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

1. The proposed commercial telecommunications tower at this location meets the standards required in the R-1 zoning district.
2. The proposed tower with the recommended conditions 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 and South City Sector Plan. The use is in harmony with the general purpose and intent of the Zoning Ordinance. Since this is a heavily wooded area, the use will not significantly injure the value of adjacent property. The use will not draw additional traffic through residential areas.

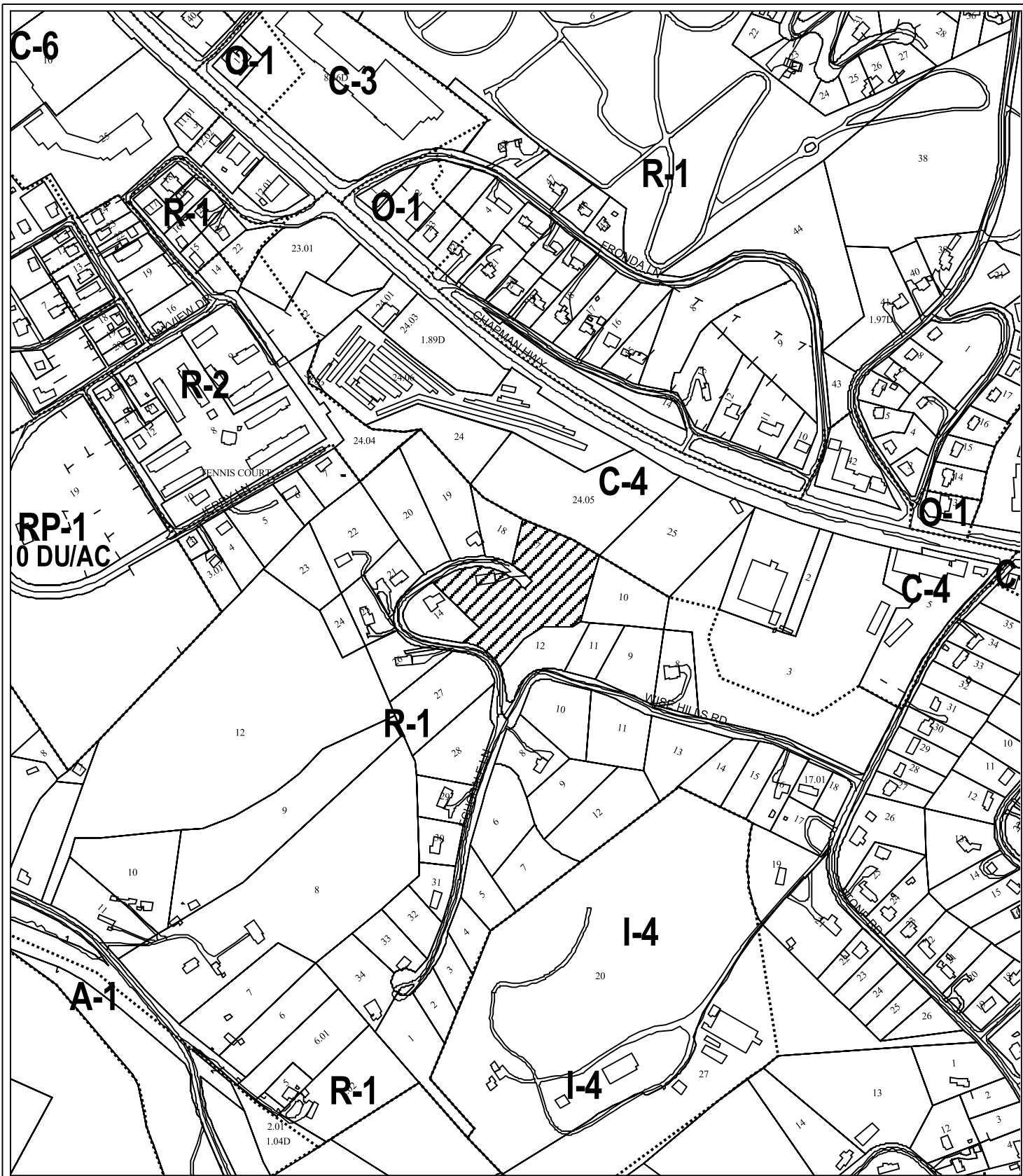
CONFORMITY OF THE PROPOSAL TO ADOPTED PLANS

1. The South City Sector Plan proposes low density residential uses for this area. The proposed development is consistent with this land designation.
2. The Wireless Communications Facility Plan identifies the proposed 120' monopole as a "moderate" monopole. Under the guidelines in the Tower Placement section of the Facility Plan, the proposed tower falls within the "Sensitive Area" category. The Plan takes a neutral position on moderate monopoles located in "Sensitive Areas" Being located on a wooded parcel and designed as an internal mount monopole, the tower should have minimal impact on the area.

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 Knoxville City Council. The date of the Knoxville City Council hearing will depend on when the appeal application is filed. Appellants have 15 days to appeal an MPC decision in the City.



**1-M-08-UR
USE ON REVIEW**



120' monopole telecommunications tower in C-4 (Highway and Arterial Commercial)

Original Print Date: 12/28/07 Revised:
Metropolitan Planning Commission * City / County Building * Knoxville, TN 37902

Petitioner: U. S. Cellular Corp.

Map No: 123

Jurisdiction: City



US CELLULAR

Telecommunications Tower Site Review

USE ON REVIEW APPLICATION # 1-M-08-UR

CONSULTANT'S SUMMARY

Moody Site

Knoxville City

Location: 201 Echodale Lane, South Knoxville

Proposed Tower Height: 120 foot Monopole

Address: 201 Echodale Lane
Knoxville, Tennessee

District: # 1 City **Map Number:** 123GA **Parcel** 017

Use: Telecommunications antenna support structure

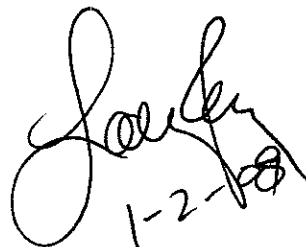
Zoning: R 1 (Single Family residential)

Variances and waivers: (1) Waiver of 110% of tower height setback requirement as the site is within 110% of a public right of way. (2) a waiver of the requirement for additional landscaping as the site is in a heavily wooded area and the landowner requested no additional landscaping if possible.

Need: The applicant is US Cellular a licensed PCS carrier by the Federal Communications Commission and possibly other users.

Instant Proposal: Construct a 120 foot monopole stealth type support structure.

Consultant's Recommendation: The site and application meets the requirements of the Ordinance and the spirit of the Facilities Plan.



Handwritten signature of J. L. L. and date 1-2-08

**REPORT TO
METROPOLITAN PLANNING COMMISSION**

for

Proposed Telecommunications Tower Site
Located at 201 Echodale Lane
Knoxville, TN known as

MOODY SITE

US CELLULAR

UOR 1-M-08-UR

COMPLIANCE WITH

THE MPC TELECOMMUNICATIONS FACILITY ORDINANCE

1/2/2008

The proposed site for the applicant is a 120 foot monopole antenna support structure (including antennas and lightning rod) to be located just off Chapman Highway at 201 Echodale Lane. The supporting material from applicant has been reviewed for technical and Federal/State legal compliance As well as with the Knoxville City Wireless Communication Facilities Plan from 2002. This is a new telecommunications site. This site is known as a fill site (explained in the report).

REQUESTED

1. **Location.** The location is within the **City** of Knoxville limits in **District 1** and is located on **Tax Map Number 123GA Parcel 017**

2. **Zoning.** R1 (Residential single family)

3. **Tower height.** The requested height is 120 feet above ground level will support up to 1 additional telecommunications carrier antennas for a total of 2 users. Lighting will not be required on this structure.

4. **Variances.** The set back requirements in Article 5 of the Ordinance for Knoxville City for "R" sites requires that the structure be set back a minimum distance of 110% of the structure height or in this case 132 feet from the nearest property line. The proposed site is located closer than 132 feet from the nearest property line, but the property is the Echodale Lane public right of way. There are other residences located within 500 feet of the proposed site, but none within 132 feet. The variance is required for the setbacks from the public right of way. In addition, the applicant requests a

waiver of the landscaping requirement since the landowner has requested little landscaping as the property for the proposed site is heavily wooded already.

5. **Site.** This application is for the construction of a new monopole type antenna support structure to be located in a heavily wooded parcel and is on a ridgetop overlooking Chapman Highway.

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 is 1 possible additional telecommunications user for the facility.

7. **Setbacks.** The setback requirements are that the facility must be 110% height of the tower from any dwelling unit. The applicant requires a variance for this requirement as it is within 132 feet (110% of tower height) from the public right of way. There are no residential houses within this 110% area.

8. **Height.** The proposed structure is for 120 feet.

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 City 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. I also talked with Mr. Tim Berry, the owner of the parcel of land.

The site elevation at this location is 1180 feet. There is another monopole structure approximately 900 feet from the proposed location that is owned by SBA but it is already near capacity loading and the space available for the applicant here is much too low to have effective coverage for the area required. There is a Crown Castle tower approximately 1 mile from the proposed site, but it is too low in a valley to have any effective coverage where needed.

The request is for a 120 foot monopole of which US Cellular will use the top 15 feet and the additional usable lower 15 feet is for other carriers' expansion. The proposed antenna will be an omnidirectional stealth type antenna so as to have as low an aesthetic profile as possible.

This a "fill" site. By that is meant that the coverage is inadequate in the area at the present from present facilities in the area and that the site is to be used as primary signal coverage to "fill in" a hole in the present coverage.

The site is a fairly high elevation location and by the addition of a cell site here, it would probably eliminate the need for other sites nearby.

The proposed structure should not affect adjacent property as it is very heavily wooded and isolated from adjacent residences. The trees on the property are an estimated 75 feet tall and thus the proposed structure will exceed their height by about 45 feet.

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 (120 feet) coupled with no lighting requirements and located in a fairly isolated wooded area should present no problems as to view although it can be seen from Chapman Highway in places.

(2) **Land Use Compatibility**---The proposed site is on a wooded parcel of land in a largely isolated residential area on a ridge in South Knoxville. The structure and associated building/facilities would be compatible with the local land use and the surrounding area is wooded. The site will be unmanned and will have no impact on noise, traffic or air pollution.

(3) **Design Compatibility**---The proposed landscaping and facility design would blend in with surrounding agricultural land usage and design. The new structure will be a monopole stealth type structure which is the least obtrusive type antenna support structures.

(A) **Opportunity Areas**---This proposed site is in an area zoned Residential Single Family and is wooded and meets the requirements of an opportunity area. It is unlikely to become a blighting influence on the surrounding area.

(B) **Sensitive Areas**---This site is not in a sensitive area as it is isolated and surrounded by woods.

(C) **Avoidance Areas**---This location is in an avoidance area in that it is located on a ridgetop in a low density residential area, however the fact that it is proposed as a stealth type monopole structure and very short in elevation would tend to minimize the impact.

SUMMARY

(1) The proposed antenna support structure is a 120 foot monopole including antennas. There are no lighting requests for this structure nor are any required by the FAA.

(2) A review of the structure stress analysis on the proposed structure and specifications support the use of the monopole by one other potential user in the future.

- (3) The structure design meets or exceeds FCC and EIA requirements.
- (4) The area surrounding the site is wooded and zoned Residential. There are no residences within 110% of the tower height.
- (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 5 Section 20(C) 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 fenced area will be surrounded by wooded vegetation that is presently existing. Should additional landscaping be required, the applicant is agreeable to providing same.
- (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 little impact on the community involved when compared with the benefits to be derived from the advanced service offered by the applicant.
- (9) There are no other antenna support structures within 1 mile of the proposed site that are usable for the coverage required. There are two other structures within a mile, but neither of which will provide the coverage to the area needed by the applicant.
- (10) There is a waiver of the setback requirements for the proposed site as it is to be located within 132 feet (110% of tower height) from a public right of way (Echodale Lane).
- (11) The proposed site and structure will have no environmental impact within the federal guidelines.
- (12) A variance to the Knoxville City Ordinance is required for this site due to the location within a residential area and the distance from a public right of way.
- (13) The nature of the development in the surrounding area is not such as to pose a potential hazard to the proposed tower or to create an undesirable environment for the proposed structure.

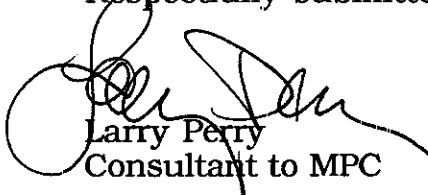
(14) Assuming that there are 2 carriers operating cellular or PCS transmitters/receivers at this site and all are operating at the same time, the radiation produced by the combination of all the users at the same time using the standards and protocols proposed and used by the carriers today, will be considerably below that established by the Federal Communications Commission and the EPA as creating any danger to humans or animals.

(15) There is a need for the structure in this area to provide for the wide spectrum wireless internet 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 sit

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 spirit of the Facilities Plan as discussed above and is required for the applicant to meet their coverage requirements for the City of Knoxville.

Respectfully submitted,



Larry Perry
Consultant to MPC

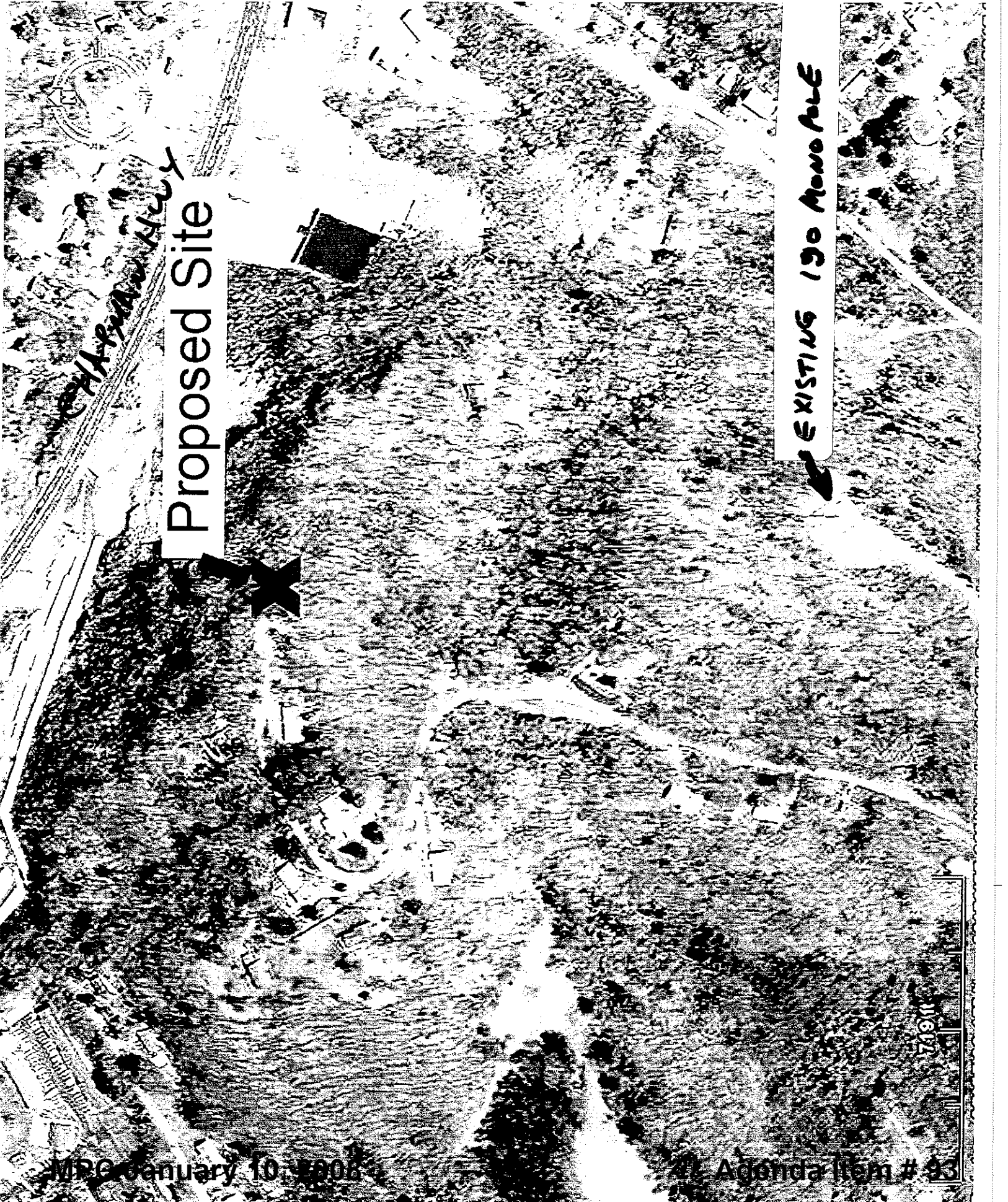
1-M-08-UR

Proposed Site

EXISTING 190 MONOPILE

Chapman Ave

74011



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ATTORNEYS AT LAW

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KNOXVILLE, TENNESSEE 37901-0629

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TELECOPIER 865 522-5723

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

R. R. KRAMER (1988-1966)
CARTER B. WALL (1915-1968)
ANDREW JOHNSON (1918-1985)
JACKSON C. KRAMER (1921-1993)
R. ARNOLD KRAMER (1918-1993)

E. H. RAYSON
JOHN B. RAYSON
JOHN T. JOHNSON, JR.
WARREN L. GOOCH
WAYNE R. KRAMER
EDWARD G. PHILLIPS
THOMAS M. HALE
JACKSON G. KRAMER
BEECHER A. BARTLETT, JR.
ROBERT W. KNOLTON
JOHN C. BURGIN, JR.
ADRIENNE L. ANDERSON
CHARLES M. FINN
ROBERT A. CRAWFORD
ROBERT P. MURRIAN
JOHN E. WINTERS
ROBERT L. BOWMAN
CHARLES E. YOUNG, JR.
FRANCIS L. LLOYD, JR.
AMANDA M. BELEW
R. JACKSON POPE
ANN E. SARTWELL
THOMAS C. CRAVENS IV
KATE E. TUCKER
BETSY J. BECK
WILLIAM J. CARVER
SUSAN E. SCHULTZ

December 10, 2007

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

**Re: U.S. Cellular Corporation
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 January 10, 2008 Metropolitan Planning Commission meeting. Such Use-On-Review Application requests approval for a proposed cellular communications monopole to be located on property owned by Timothy E. and Tamara R. Berry at 214 Echodale Lane in the City of Knoxville, 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 Timothy E. Berry, the property owner.
2. Information Summary and Table of Contents.
3. Ten (10) copies of the Development Plan with Exhibits 1 through 13 attached.
4. Our Firm's check in the amount of Five Hundred Eighty Dollars (\$580.00), made payable to the Metropolitan Planning Commission in payment of the review fee.
5. Our Firm's check in the amount of One Thousand Five Hundred Dollars (\$1,500.00), made payable to the Metropolitan Planning Commission for the Escrow deposit relative to the Professional Engineering Consultant's fee.

As noted, USCC is proposing that a cellular communications monopole be placed on property owned by Timothy E. and Tamara R. Berry at 214 Echodale Lane in the City of Knoxville, Knox County, Tennessee. USCC has entered into a lease with the property owner for the proposed site.

USCC recognizes that pursuant to Article 5.20(B)(1)(f) of the City of Knoxville 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 120 foot stealth monopole structure. Since the proposed monopole will be less than 200 feet in height, FAA regulations will not require the monopole to be lighted. In addition, as required by Article 5.20(B)(1)(a) of the City of Knoxville Zoning Ordinance, the monopole will be constructed to support two (2) antenna arrays for co-location purposes. USCC's letter of intent setting forth its commitment to permit co-location on the proposed monopole is included with the Application as Exhibit 5.

The monopole is proposed for this area in order to fill a radio frequency coverage gap experienced by USCC along Chapman Highway (U.S. Highway 441), Moody Avenue, Martin Mill Pike, Maryville Pike, Stone Road, Wise Hill Road, and other areas in the vicinity, and to address capacity issues on existing USCC sites. Moreover, signal hand-offs from USCC's existing sites surrounding this area are impeded because of terrain blocking and because of capacity constraints.

Radio frequency coverage maps showing coverage with and without the proposed monopole are attached to the Application as Exhibits 7 and 8.

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 1, two existing towers are located within a one-mile search ring, but neither tower meets USCC's needs. The first structure, owned by Crown Castle, is located almost one mile from the proposed site, and is located in a valley with too low of an elevation to allow USCC to meet its coverage objectives. The second tower is owned by SBA Communications and is located south of USCC's proposed site. The SBA tower is also located at a lower elevation than USCC's proposed site, and limited space on such tower means that only the lowest spot is available for USCC's use. These two factors would result in USCC being terrain blocked from the needed coverage area by Wise Hill and other ridges to the north. USCC conducted simulations of coverage from the SBA tower, which simulations are attached to Exhibit 9 of the Application. The results of such simulations showed that USCC would not meet its primary coverage objective of filling coverage gaps along Chapman Highway in the Moody Avenue area.

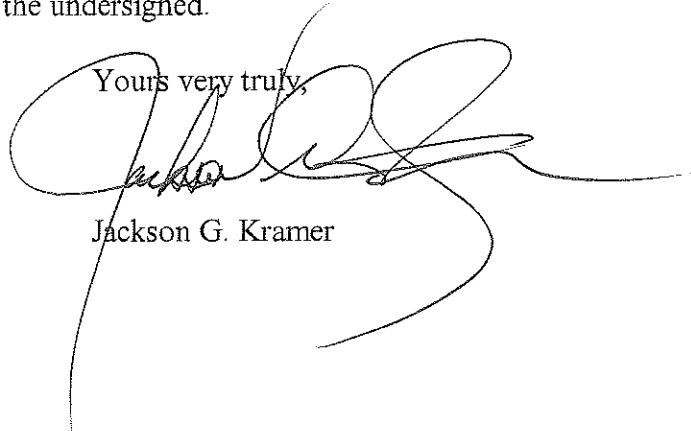
USCC also searched for other existing structures within the area of the proposed site on which co-location might be feasible. No other suitable existing structures are present in this area.

This proposed monopole 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. Although the proposed site is residentially zoned, the monopole is considered a "moderate" monopole in height. Further, the proposed structure is a "stealth" type monopole design, and is located in a heavily wooded area below the ridgeline.

In addition, the proposed monopole meets the Plan's objective of being separated from any nearby residents by a distance of at least one hundred ten percent (110%) of the tower height (in this instance, one hundred thirty-two (132) feet). The only property line located within one hundred thirty-two (132) feet of the proposed monopole is the public right of way of Echodale Lane. Finally, it should be noted that no residential structures are located within one hundred thirty-two (132) feet of the proposed site.

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 large, stylized handwritten signature in black ink, appearing to read 'Jackson G. Kramer', is written over the typed name below it.

Jackson G. Kramer

JGK/tsg
Enclosures

J:\US CELLULAR\MOODY ZONING MATTER\METROPOLITAN PLANNING COMMISSION 12-10-07.DOC

INFORMATION SUMMARY AND TABLE OF CONTENTS

USE ON REVIEW APPLICATION FOR

U. S. CELLULAR'S MOODY SITE NUMBER 223468

1. Site Plan - Construction Drawings, Page C0.01
2. Two towers registered with the FCC as telecommunications towers were found on the FCC Data Base within a one-mile search ring. (See Exhibit 1). As set forth in Exhibit 8, neither of such towers is a feasible co-location alternative. FCC Data Base results of search ring is attached as Exhibit 2 (Note: Search ring shown on Exhibit 2 is a five-mile radius).
3. & 4. Application is made directly by the carrier -

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

Contact: John Locascio
Telephone: (865) 777-7039
Facsimile: (865) 777-7012

5. Basic Tower Information:
 - (a) U. S. Cellular Corporation ("USCC") proposes a monopole to be manufactured by Telestructures, Inc. The pole will be located on property owned by Timothy E. and Tamara R. Berry at 214 Echodale Lane in the City of Knoxville, Knox County, Tennessee. The equipment compound and the base of the pole will be enclosed within a chain link fence six (6) feet in height.
 - (b) The monopole will be one hundred twenty (120) feet in height.
 - (c) Since the monopole will be less than 200 feet in height, no FAA lighting will be necessary.
 - (d) The Telestructures, Inc. specifications for an almost identical tower are provided in Exhibit 3. In addition, a photograph of a nearly identical stealth monopole is attached as Exhibit 4. The monopole is designed and will be constructed to permit co-location for one additional carrier.
 - (e) An area fifty (50) feet by thirty (30) 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. C1.01. The monopole and all ancillary equipment will be located within this fenced compound.

6. USCC's Letter of Intent committing itself to allow shared use of the proposed monopole is attached as Exhibit 5. Other likely candidates for co-location:

AT&T
Cricket (Leap Wireless)
Verizon
Sprint/Nextel
T-Mobile

7. Zoning Map:

Proposed site is 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.

8. Coverage Map without proposed site - Exhibit 7.

9. Coverage Map with proposed site - Exhibit 8.

10. Proposed landscaping – The site is heavily wooded and pursuant to Section 5.20(B)(4)(b) of the City of Knoxville, Tennessee Zoning Ordinance, USCC believes that existing natural vegetation will achieve the required screening. See photographs of site attached as Collective Exhibit 11. In addition, at the property owner's request, USCC has agreed to install certain landscaping in locations identified by the property owner. However, should the determination be made that additional landscaping is necessary, USCC will meet the landscaping requirements of Section 5.20(B)(4) of said Zoning Ordinance.

11. Technical Justifications Narrative - Exhibit 9.

12. Variances or Waivers from Ordinance - Exhibit 10.

13. Photographs of proposed site – Collective Exhibit 11.

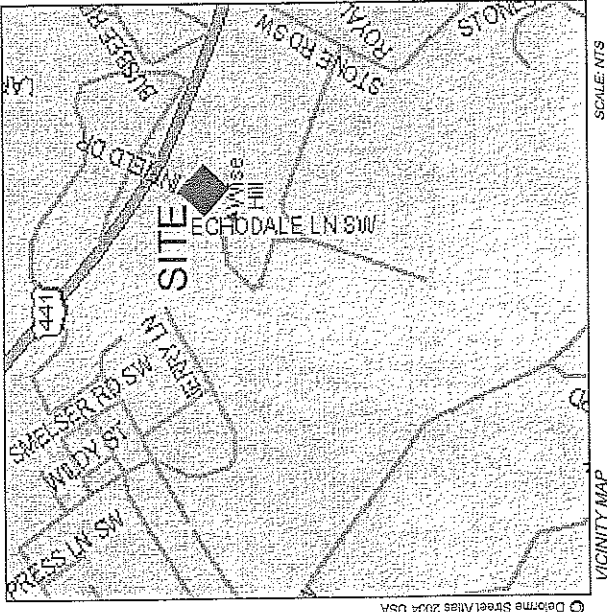
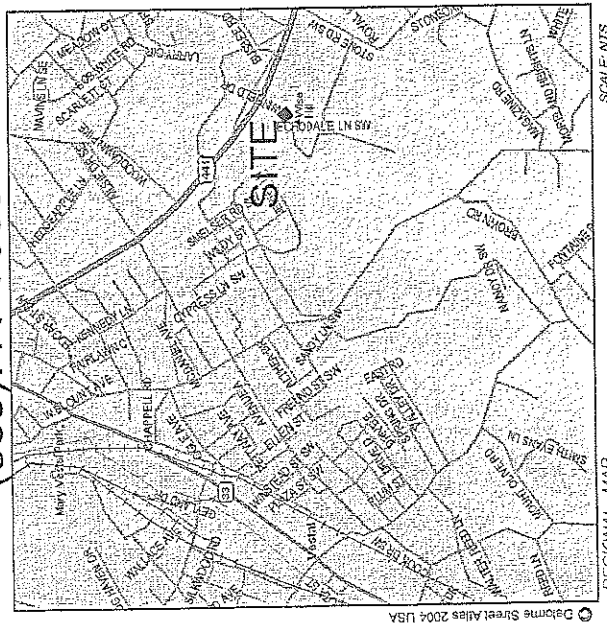
16. Safety Statements - Exhibit 12.

17. Photosimulation of monopole on proposed site - Exhibit 13.

U.S. Cellular
 9731 COGDILL ROAD,
 SUITE 200
 KNOXVILLE, TN 37932
 (865)777-7035

**U.S. CELLULAR
 RAW LAND
 MOODY
 #223-468**

120' LIGHT POLE
 WITH STEALTH TELECOMMUNICATIONS ANTENNAE
 AND MULTIPLE CARRIERS



BWSC
 ENGINEERS ARCHITECTS
 LANDSCAPE ARCHITECTS AND SURVEYORS

**BARGE
 WAGGONER
 SUMNER &
 CANNON, INC.**
 PLANNERS
 AND SURVEYORS

FILE NO. 33105-30
 DATE: AUGUST 28, 2006

10133 SHERRILL BLVD., SUITE 200
 KNOXVILLE, TENNESSEE 37929
 PH: (865) 637-2010

DIRECTIONS TO SITE

FROM DOWNTOWN KNOXVILLE, TAKE US-441 (TN-37) SOUTHWEST FOR 2.5 MILES TO A RIGHT TURN ONTO STONE ROAD. TRAVEL WEST FOR 0.1 MILE TO A RIGHT TURN ONTO WISE HILLS ROAD. TRAVEL 0.2 MILE TO A RIGHT TURN ONTO ECHODALE LANE. PROCEED 2.0 MILE TO THE END OF THE ROAD AND THE SITE IS ON THE LEFT PAST THE SWIMMING POOL.

SITE NAME
 MOODY

SITE NUMBER
 #223-468

SITE ADDRESS
 201 ECHODALE LANE
 KNOXVILLE, TN 37920

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
 R-1

AREA OF LEASE
 0.034 ACRES
 1,500 SQ. FT.

PARCEL NUMBER(S)
 TAX MAP 1236, GROUP A, PARCEL 17

SITE SUMMARY

SHEET NUMBER	DESCRIPTION
G0.01	TITLE SHEET / SITE INFORMATION
SITE NOTES:	
G0.02	GENERAL NOTES
G0.03	SITE WORK NOTES
SURVEY PLANS	
S0.01	SITE SURVEY
S0.02	LEGAL DESCRIPTIONS
SITE PLANS	
C1.01	DETAILED SITE PLAN
C2.01	TOWER ELEVATION & PLATFORM DETAIL
C3.01	GROUNDING PLAN
C4.01	SITE WORK DETAILS
C7.02	SITE WORK DETAILS
C7.03	SITE WORK DETAILS
ELECTRICAL PLANS	
E1.01	UTILITIES PLAN
E1.10	ELECTRIC SPECIFICATIONS
E2.01	GROUNDING PLAN
E2.10	GROUNDING NOTES
E7.01	ELECTRICAL NOTES
E7.02	ELECTRICAL NOTES
E7.03	ELECTRICAL DETAILS

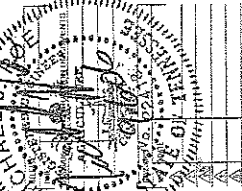
SHEET INDEX

U.S. Cellular
 9731 COGDILL ROAD
 KNOXVILLE, TN 37932
 (865)777-7035

BWSC
 ENGINEERS ARCHITECTS
 LANDSCAPE ARCHITECTS AND SURVEYORS

BARB WAGGONER
 WAGGONER
 CANNON, INC.

10133 SHERRILL BLVD., SUITE 200
 KNOXVILLE, TENNESSEE 37929



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OWNER: U.S. CELLULAR
 CHECKED BY: M.P.
 PROJECT: MAP

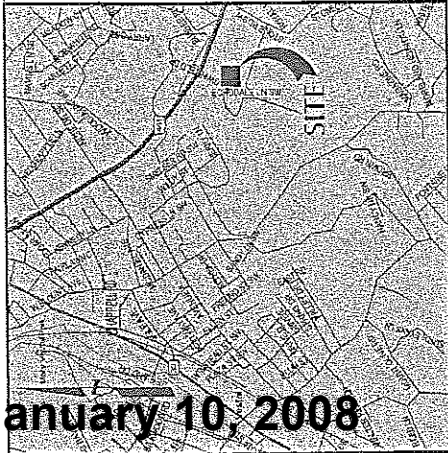
SITE NAME
 U.S. CELLULAR
 MOODY

SITE NUMBER
 223-468

SITE ADDRESS
 201 ECHODALE LANE
 KNOXVILLE, TN 37920

TITLE SHEET / SITE INFORMATION
 PROJECT # 33105-30
 SHEET NUMBER
 G0.01

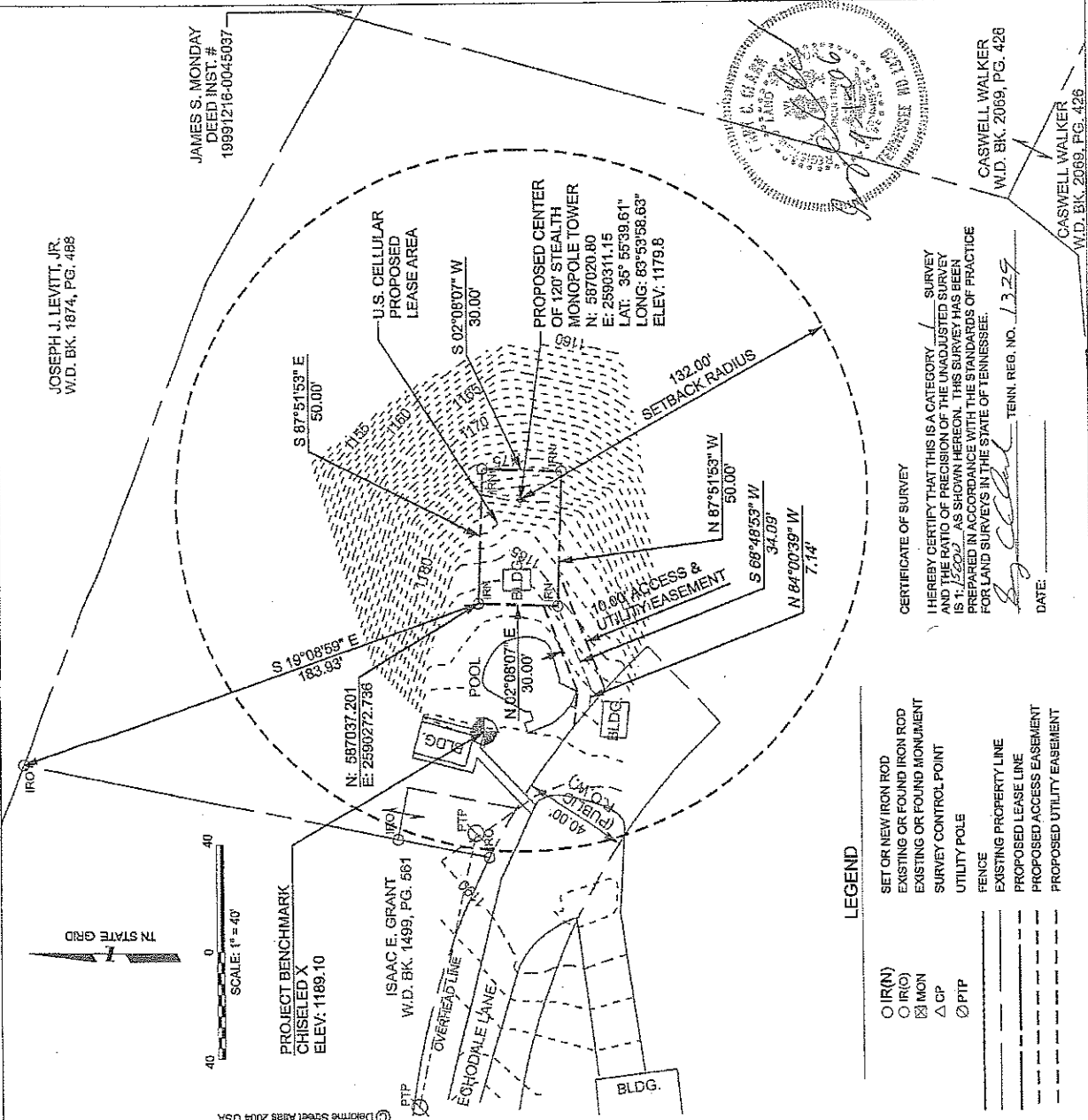
1 of 1



VICINITY MAP
SCALE: 1" = 40'

**U.S. CELLULAR
LEASE AREA: 1500 SQ. FT.**

- NOTES:**
- PROPERTY REFERENCES
OWNER: TIMOTHY E. BERRY
PARCEL MAP 125G, GROUP A, PARCEL 17
W.D. BK. 2018, PG. 1131
ZONING: R-1
 - PROPERTY LOCATION
KNOX COUNTY, TENNESSEE
201 ECHODALE LANE
KNOXVILLE, TENNESSEE 37902
 - CORNERS NOTED AS IRON RODS SET (IRS) ARE 6"Ø REBAR WITH PLASTIC CAPS STAMPED BVSC.
 - THE APPROXIMATE LOCATION OF UNDERGROUND UTILITIES ARE SHOWN BASED ON VISIBLE APPURTENANCES AND AVAILABLE DOCUMENTATION. THESE LOCATIONS MUST BE VERIFIED PRIOR TO ANY DRILLING OR EXCAVATION.
- ELEVATIONS SHOWN ARE RELATIVE TO NAVD83 DATUM AND WERE ESTABLISHED BY DIFFERENTIAL SURVEY GRADE GPS.
- GRID COORDINATES SHOWN ARE STATE PLANE WITH NO SCALE FACTOR APPLIED. GEODETIC AND GRID COORDINATES ARE RELATIVE TO NAD83 DATUM AND WERE ESTABLISHED BY DIFFERENTIAL SURVEY GRADE GPS.
- PROPERTY LINES SHOWN WITHOUT BEARINGS AND DISTANCES ARE SHOWN WITH BEARINGS AND DISTANCES INDICATED (N00°00'00"E, 50.00') ARE COMPOSED FROM EXISTING MAPS AND DEED DESCRIPTIONS AND NOT BY FIELD SURVEY.
- THIS SURVEY WAS PREPARED WITHOUT BENEFIT OF A TITLE COMMITMENT AND ADDITIONAL EASEMENTS NOT SHOWN HEREON MAY BE REVEALED BY A CURRENT TITLE SEARCH BY A TITLE ATTORNEY.



US Cellular
8731 COGDELL ROAD
KNOXVILLE, TN 37932
(605) 777-0635

BVSC
BAHNS
WAGGONER
DANNEN & INP
ENGINEER ARCHITECTS AND PLANNERS
10733 SHERILL BLVD, SUITE 200
KNOXVILLE, TENNESSEE 37922

PROJECT TITLE: U.S. CELLULAR MOODY

DATE: 2/23/08

PROJECT # 33105-30

SHEET NUMBER: C0.01

SCALE: 1" = 1'

ISSUED BY: MDH
CHECKED BY: BHP
FIELD NO.: MJP

DATE: 2/23/08

PROJECT: U.S. CELLULAR MOODY

DATE: 2/23/08

PROJECT # 33105-30

SHEET NUMBER: C0.01

SCALE: 1" = 1'

JOSEPH J. LEVITT, JR.
W.D. BK. 1874, PG. 488

JAMES S. MONDAY
DEED INST. #
189971216-0045037



CASWELL WALKER
W.D. BK. 2069, PG. 428

CASWELL WALKER
W.D. BK. 2069, PG. 428

CERTIFICATE OF SURVEY

I HEREBY CERTIFY THAT THIS IS A CATEGORY 1 SURVEY AND THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY IS 1:1220, AS SHOWN HEREON. THIS SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH THE STANDARDS OF PRACTICE FOR LAND SURVEYS IN THE STATE OF TENNESSEE.

DATE: 2/23/08

LEGEND

○ (R/N)	SET OR NEW IRON ROD
○ (R/O)	EXISTING OR FOUND IRON ROD
○ (MON)	EXISTING OR FOUND MONUMENT
△ CP	SURVEY CONTROL POINT
⊙ PTP	UTILITY POLE
---	FENCE
---	EXISTING PROPERTY LINE
---	PROPOSED LEASE LINE
---	PROPOSED ACCESS EASEMENT
---	PROPOSED UTILITY EASEMENT

PROJECT BENCHMARK
CHISELED X
ELEV.: 1189.10

SCALE: 1" = 40'

ISAAC E. GRANT
W.D. BK. 1499, PG. 561

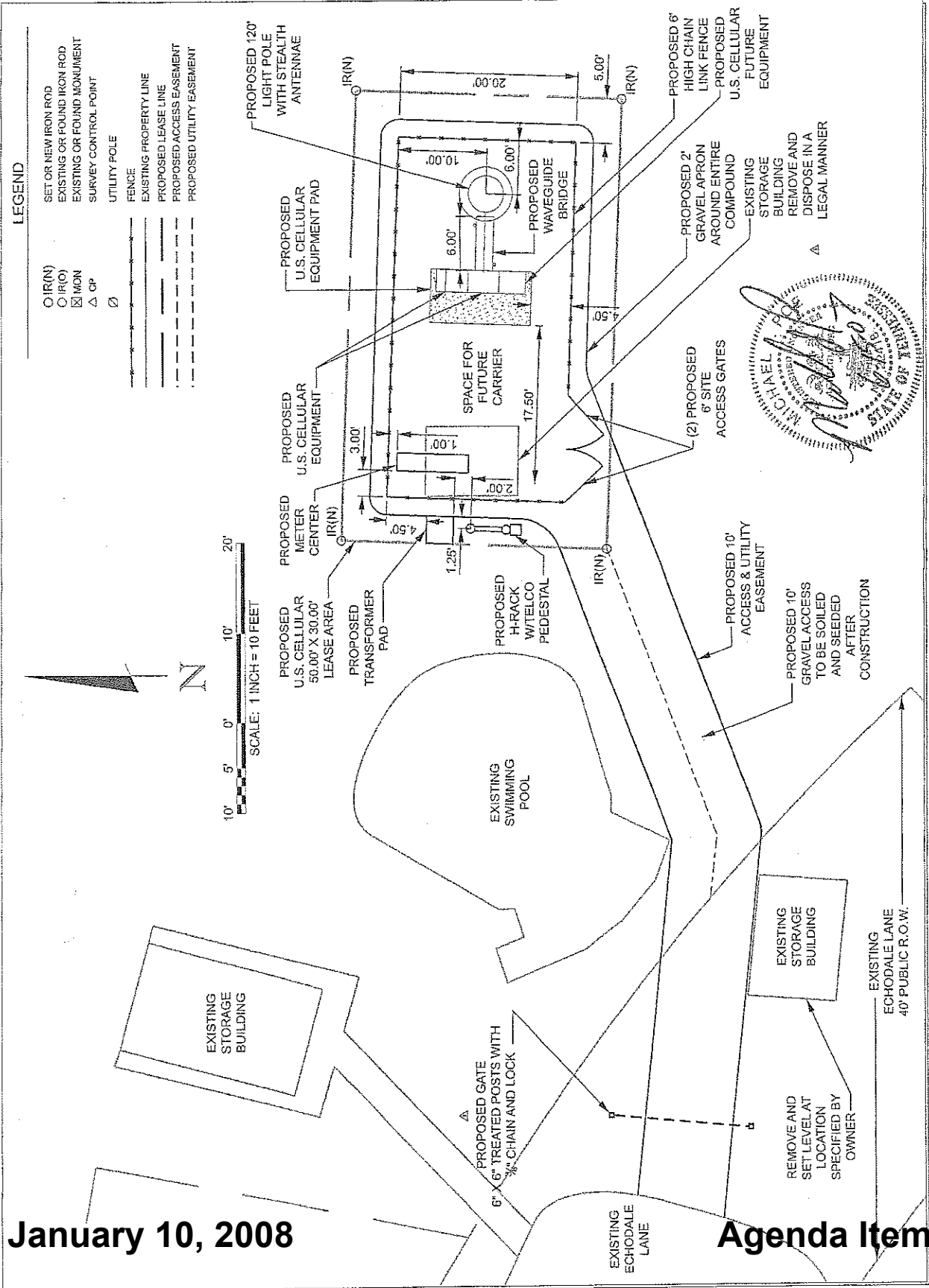
© Delorme Street Atlas 2004 USA

U.S. Cellular
 9731 COGDILL ROAD
 KNOXVILLE, TN 37932
 (615)777-7035

BWSC
 ENGINEERS ARCHITECTS AND SURVEYORS
 1033 SHERILL BLVD, SUITE 200
 KNOXVILLE, TENNESSEE 37932

BARB WAGNER
 PLANNER
DANNON
 INDIANAPOLIS, IN

PROJECT NO.	223-468
SHEET NO.	1
DATE	1/10/08
DESIGNED BY	DAS
CHECKED BY	MLP
IN CHARGE	MLP
CLIENT	U.S. CELLULAR
MOODY	
PROJECT ADDRESS	201 ECHODALE LANE KNOXVILLE, TN 37920
SHEET TITLE	DETAILED SITE PLAN
PROJECT #	33105-30
SHEET NUMBER	1
DATE	1/10/08
PLANT SCALE	1" = 1'



US Cellular
 9731 COGDILL ROAD
 KNOXVILLE, TN 37932
 (865) 777-7035

BWSC
 ENGINEERS ARCHITECTS AND PLANNERS
 10133 SHERILL BLVD., SUITE 200
 KNOXVILLE, TENNESSEE 37932

NO.	DATE	BY	FOR	REVISIONS
1				
2				
3				
4				
5				

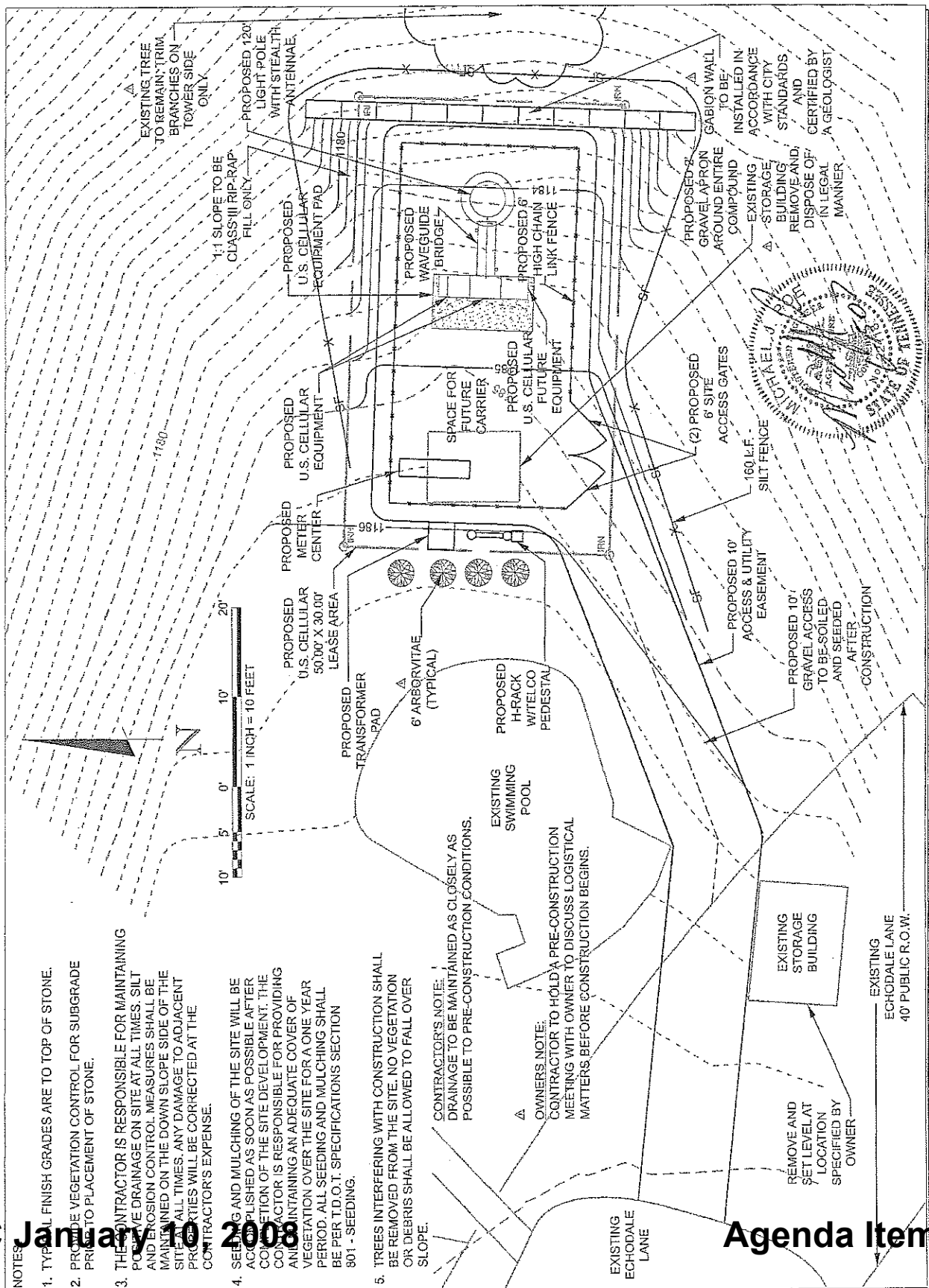
THE OWNER'S RESPONSIBILITY IS TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES AND TO MAINTAIN ALL NECESSARY RECORDS AND DOCUMENTATION FOR THE PROJECT.

DESIGNED BY: DMS
 CHECKED BY: RMP
 PROJECT NO.: RMP
 SITE NAME:
U.S. CELLULAR
MOODY

SHEET NUMBER:
 223-468
 SITE ADDRESS:
 201 ECHODALE LANE
 KNOXVILLE, TN 37920

SHEET TITLE:
 GRADING
 PLAN

PROJECT # 33105-30
 SHEET NUMBER:
 C3.01
 PLOT SHEET: 1-1



- NOTES:**
1. TYPICAL FINISH GRADES ARE TO 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 SECTION 801 - SEEDING.
 5. TREES INTERFERING WITH CONSTRUCTION SHALL BE REMOVED FROM THE SITE. NO VEGETATION OR DEBRIS SHALL BE ALLOWED TO FALL OVER SLOPE.

CONTRACTOR'S NOTE:
 DRAINAGE TO BE MAINTAINED AS CLOSELY AS POSSIBLE TO PRE-CONSTRUCTION CONDITIONS.

OWNER'S NOTE:
 CONTRACTOR TO HOLD A PRE-CONSTRUCTION MEETING WITH OWNER TO DISCUSS LOGISTICAL MATTERS BEFORE CONSTRUCTION BEGINS.

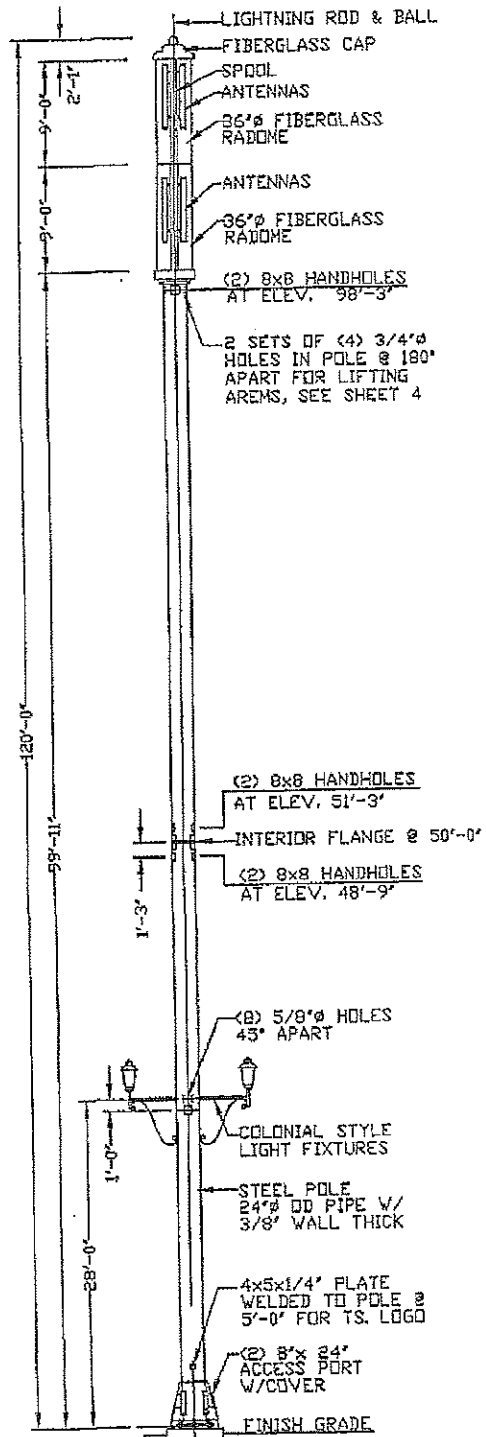
REMOVE AND SET LEVEL AT LOCATION SPECIFIED BY OWNER

EXISTING STORAGE BUILDING

EXISTING ECHODALE LANE
 40' PUBLIC R.O.W.

DESIGN NOTES:

- DESIGN CRITERIA: EIA/TIA-222-F-1996
70 MPH BASIC WIND SPEED WITHOUT ICE and
61 MPH BASIC WIND $\sqrt{1/2}$ RADIAL ICE
- MAXIMUM BASE REACTIONS (UNFACTORED):
MOMENT: 401.0 KIP-FT
SHEAR: 5.0 KIP
AXIAL: 13.0 KIP
- THIS STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADING:
(1) (2) 36"Øx9ft RADDOME WITH ANTENNA AT TOP.
- MAIN POLE STEEL USE ASTM A53 TYPE E GRADE B STEEL (ERW).
TOP PIPE STEEL USE ASTM A53 TYPE E GRADE B STEEL (ERW).
BASE PLATE USE ASTM A572 GRADE 50 STRUCTURAL STEEL.
ANCHOR BOLTS USE ASTM A615 GRADE 75 STEEL.
ALL BOLTS SHALL BE ASTM A-325 WITH NUTS AND PAL NUTS,
UNLESS OTHERWISE SHOWN.
WELDING SHALL BE DONE BY CERTIFIED WELDERS PER A.W.S.
REQUIREMENTS, USE E70XX SERIES ELECTRODES.
- ALL COAX CABLES ARE ASSUMED ROUTED INSIDE THE POLE.
- ALL WORK SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS, INCLUDING OSHA.



NO.	REV.	DESCRIPTION	DATE
1		ISSUE FOR PERMITS	04/14
2		ISSUE FOR FABRICATION	
3		ISSUE FOR INSTALLATION	
4		ISSUE FOR AS-BUILT	

PROJECT: 7801553-1	SHEET: 1 of 7
US CELLULAR-HAZELWOOD NOKWILLE, TN PROJECT: 7801553-1 SHEET: 1 of 7	

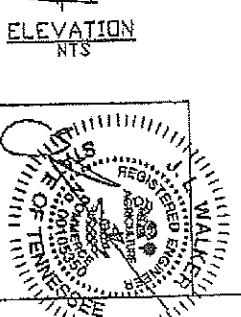
CONFIDENTIAL

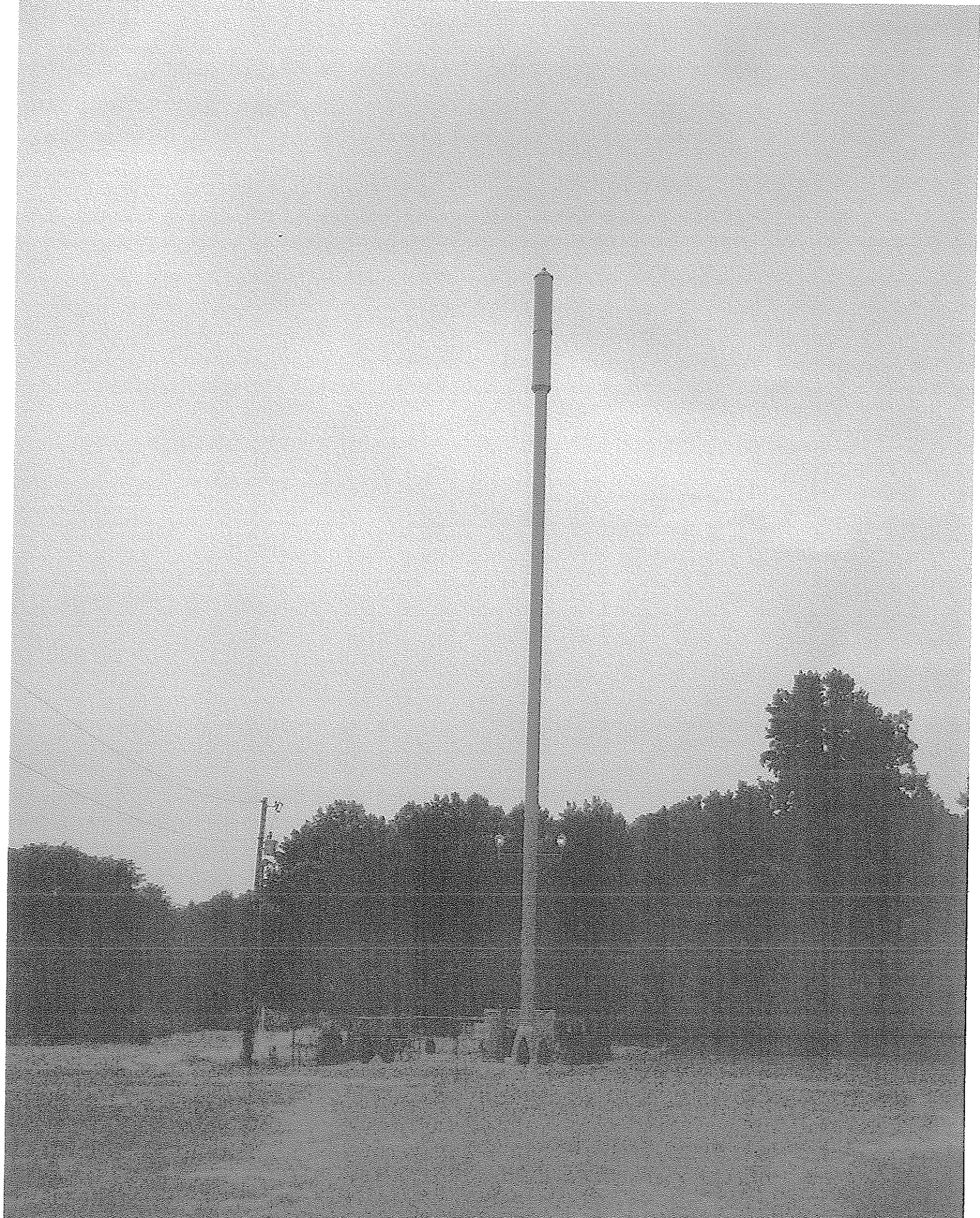
TELESTRUCTURES
 4010 Heston's Ferry Road
 Alpharetta, Georgia 30005
 Tel: 770-281-3100
 Fax: 770-281-3150

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WALKER ENGINEERING, INC.
 1025 University Plaza, Knoxville TN, 37924
 (615) 528-2100





MPC January 10, 2008

Agenda Item # 93
EXHIBIT 4



December 10, 2007

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

**Re: U.S. Cellular Corporation
Proposed Moody 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 monopole site at 201 Echodale Road in Knoxville, Knox County, Tennessee.

As you are aware, City of Knoxville Zoning Ordinance Article 5.20(B)(1)(a) requires that any proposed communications tower less than 130 feet in height be built to accommodate at least two antenna arrays for co-location purposes. USCC is proposing that the monopole on Echodale Road be 120 feet in height. As is evident from Page C2.01 of the engineering plan submitted with the Use on Review Application to which this letter is attached, the specifications show that USCC is constructing the tower to accommodate the required two antenna arrays.

Furthermore, please accept this letter as confirmation that pursuant to City of Knoxville Zoning Ordinance Article 5.20(B)(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.

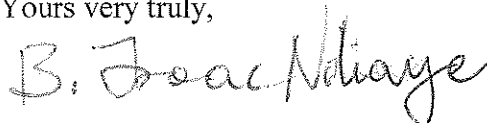
Metropolitan Planning Commission

December 10, 2007

Page 2

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

B. ISAAC NDIAYE
RF ENGINEER

J:\US Cellular\Moody Zoning Matter\Metropolitan Planning Commission from Locascio 12-10-07.doc

**TECHNICAL JUSTIFICATION FOR PROPOSED
MOODY CELLSITE 232-468**

Prepared by: Isaac Ndiaye
RF Engineer
US Cellular

Proposal: Build a digital only CDMA 2000 cellular telephone communications monopole at 214 Echodale Road, Knoxville, Knox County, Tennessee on approximately 3.7 acres of property owned and occupied by Timothy and Tamara Berry.

Tower: US Cellular Corporation ("USCC") proposed to construct a 120 feet above ground level stealth monopole structure. The proposed site is at 1179.8 feet AMSL per the mandatory 2C survey. Because the height of the tower is less than 200 feet above ground level, it will require no lighting pursuant to FAA regulations.

RF Justification: USCC proposes to build this facility in this area to fill in radio frequency coverage gaps as well as strengthen coverage in the areas of Chapman Highway (Hwy-441), Moody Avenue, Martin Mill Pike, Maryville Pike, Stone Road, Wise Hill Road, and other areas in the vicinity. This facility will also augment existing coverage, provide additional capacity, and reduce access failures and dropped calls on existing USCC sites in the area in question.

USCC's existing cell sites at View Park and Shooks Gap are located a significant distance away from the coverage gaps and thus are not able to provide adequate service. The UT Hospital, Blount Avenue, and Crenshaw sites are terrain blocked from the areas of proposed coverage improvements. In an attempt to address customer requests for better service around the Chapman Highway and Moody Avenue area, USCC is proposing this tower at this specific location to improve the coverage in this area. This poor coverage, as shown by the weak signal in USCC's coverage map, can only be corrected by a full cell site at the proposed location. Otherwise, the alternative will be to build several cell sites to cover the same coverage gap.

Collocation: The alternatives of collocating USCC's equipment and antennas on existing structures in the surrounding area were considered. In accordance with the City of Knoxville zoning ordinance, a search was performed to identify any existing registered structures within one mile of the proposed site. There were two towers found within one mile of the proposed site, but neither tower meets USCC's needs. The first tower, owned by Crown Castle, is located almost one mile from the proposed site and is in a valley that has too low of an elevation to allow USCC to meet its coverage objectives. The second is an SBA tower located South of USCC's proposed location. However, the SBA tower is located at a lower elevation than USCC's proposed site. In addition, three other carriers are already located on the SBA tower, and only the lowest spot on such tower is available for USCC's use. These two factors result in Wise Hill and other adjacent ridges being terrain barriers to the north, thus blocking signals in the area of Chapman Highway. At the request of the property owner (who is also a radio frequency engineer), USCC conducted simulations of coverage from the available spot on the SBA tower, a copy of which is attached hereto as Exhibit A, and from the proposed site, a copy of which is attached hereto as Exhibit B. As shown by such Exhibits, USCC's proposed location on the SBA tower would not allow USCC to meet its primary coverage objective, which is to fill coverage gaps along Chapman Highway and in the Moody Avenue area.

EXHIBIT 10

List of Variances and/or Waivers From Zoning Ordinance Requirements

Applicant is requesting two (2) variances and/or waivers from the City of Knoxville, Tennessee zoning ordinance requirements:

1. Setback Variance / and/or Waiver: Section 5.20(B)(2)(a) of said zoning ordinance states that telecommunications towers are to be set back from properties zoned R-1 a minimum distance equal to one hundred ten percent (110%) of the height of the tower (i.e., in this instance, one hundred thirty-two (132) feet), or the minimum principal use setback of the zoning district in which the tower is located, whichever is greater.

No residences are located within one hundred thirty-two (132) feet of the proposed tower (i.e., within one hundred ten percent (110%) of the height of the proposed tower). However, as shown by the survey on p. C0.01 of the Site Plan, the proposed tower does not meet the one hundred ten percent (110%) of the height of the tower setback requirement from the property line that is the public right of way of Echodale Lane. Applicant hereby requests a variance from such setback requirement as to Echodale Lane, if such a variance is deemed necessary.

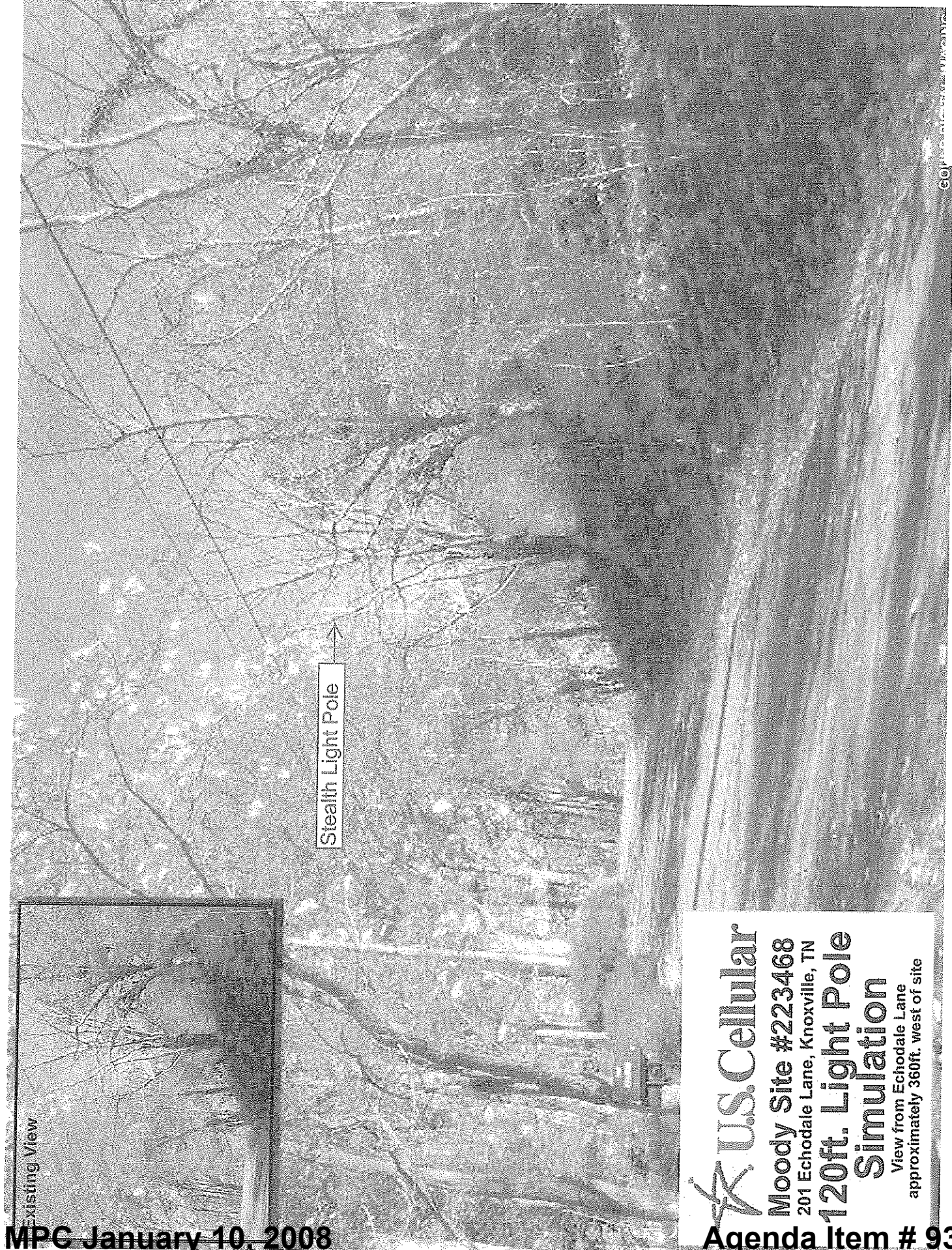
2. Landscaping Variance and/or Waiver: Article 5.20(B)(4) sets forth landscaping requirements for telecommunications towers. Section 5.20(B)(4)(b) states that “new or existing vegetation, earth berms, existing topographic features, walls, fences, building and features other than those described above 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 11, 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. In addition, at the property owner’s request, Applicant has agreed to install landscaping in locations identified by the property owner. 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.

EXHIBIT 12

Site Plan shows that proposed site provides satisfactory protection from hazardous energies by children and passersby:

Applicant states that its site and the planned structures will more than adequately provide a barrier and act as a deterrent to any hazardous energies by children or other passersby in the area. The proposed pole and all equipment cabinets and ancillary equipment will be placed within a fenced enclosure that meets the fencing requirements of the zoning ordinance. The fence will be six (6) feet in height and will be topped with 3 strands of barbed wire (see Construction Drawings Page C1.01). The proposed pole will have no steps so as to prevent climbing.

J:\US CELLULAR\MOODY ZONING MATTER\MOODY EXHIBIT 12.DOC



© 2008 U.S. Cellular

U.S. Cellular
Moody Site #223468
201 Echodale Lane, Knoxville, TN
120ft. Light Pole
Simulation
View from Echodale Lane
approximately 360ft. west of site

**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	Guyed 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