



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

▶ **FILE #:** 6-B-08-UR **AGENDA ITEM #:** 60  
POSTPONEMENT(S): 6/12/2008 **AGENDA DATE:** 7/10/2008

▶ **APPLICANT:** WIRELESS PROPERTIES, LLC.  
OWNER(S): RONNIE & EDITH CHANDLER

TAX ID NUMBER: 80 L D 024  
JURISDICTION: City Council District 3

▶ **LOCATION:** Northeast side of Pleasant Ridge Rd., southeast of I-640

▶ **APPX. SIZE OF TRACT:** 3600 square feet

SECTOR PLAN: Central City  
GROWTH POLICY PLAN: Urban Growth Area

ACCESSIBILITY: Access is via Pleasant Ridge Rd., a minor arterial street with a 32' pavement width within a 70' right-of-way.

UTILITIES: Water Source: Knoxville Utilities Board  
Sewer Source: Knoxville Utilities Board

WATERSHED: Third Creek

▶ **ZONING:** C-3 (General Commercial)

▶ **EXISTING LAND USE:** Vacant

▶ **PROPOSED USE:** 180' monopole telecommunications tower

HISTORY OF ZONING: Property was rezoned to C-3 in 2000 (4-L-00-RZ/4-F-00-PA).

SURROUNDING LAND USE AND ZONING: North: I-640 & residences / C-3 (General Commercial) & R-1 (Low Density Residential)

South: Apartments / RP-1 (Planned Residential)

East: Landscape business & residences / C-3 (General Commercial) & R-1 (Low Density Residential)

West: I-640 & residences / C-3 (General Commercial) & R-1 (Low Density Residential)

NEIGHBORHOOD CONTEXT: This site is located in a small commercial node that is surrounded by established residences at the intersection of Pleasant Ridge Rd. and I-640.

**STAFF RECOMMENDATION:**

▶ **APPROVE the request for a 180' monopole telecommunications tower in the C-3 zoning district, subject to the following 8 conditions:**

1. Meeting all applicable requirements of the Knoxville Zoning Ordinance.
2. Meeting all applicable requirements of the Knoxville Department of Engineering.
3. In addition to the "flagpole" structural design of the proposed tower, there shall be no exterior antennas.
4. Submitting a graphic depicting the tower's visibility from I-640.
5. Since the FAA does not require any lighting for this facility, there shall be no lighting on the tower.
6. In addition to an 8' wooden privacy fence around the tower and equipment area, the perimeter of the fenced area will be landscaped with Leyland Cypress on 8' centers.

7. Installing the proposed landscaping as shown on the landscape plan within six months of the tower becoming operational.
8. 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.

#### **COMMENTS:**

This is a request for a new 180' monopole telecommunications tower to be located within a 3,600 square foot lease area located along Pleasant Ridge Rd., just south of I-640. The subject property is zoned C-3 (General Commercial), and telecommunication towers are considered as a use on review in this district. The proposed tower will accommodate up to 6 wireless carriers. Antennas on the proposed monopole tower are mounted on the exterior with 12 antennas per carrier (see attached documentation). According to the information submitted by the applicant, this tower will help to satisfy current demands in this area along I-640.

In 2002, MPC approved a 120' monopole tower directly across the interstate from the proposed site (5-K-02-UR). It was designed in such a way that it has face mounted antennas and no extension devices. This type of design, flagpole, is commonly used to reduce the visual impact on nearby residences by blending in with the surrounding landscape and skyline. Staff is recommending a condition that the proposed tower be constructed with a similar flagpole design (stealth). This would mean that the antennas would be flush mounted with no extension devices. This would help to reduce the visual impact on near-by residences and along one of Knoxville's urban expressways.

The proposed site is immediately adjacent to a residence and the Meadowood Apartment complex. According to the Knoxville Zoning Ordinance, all towers shall be setback from all properties zoned residential, 110% of the height of the tower. The current proposal provides for a 200' setback between the tower and the neighboring residential property line. According to the Knoxville-Knox County Wireless Communications Facility Plan, the proposed location for the 180' monopole is considered to be in a "Sensitive Area" since it is located within 500' of a residence; however, if the tower is designed as a flagpole (stealth), it would be encouraged in residential areas according to the plan.

In order to further reduce the visual impact on nearby residences, staff is recommending an additional condition that the proposed tower and equipment area be surrounded by an 8' high wooden security fence, and the perimeter of the fenced area be landscaped with Leyland Cypress on 8' centers. This new vegetation must be installed within 30 days of tower installation. 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.

According to the applicant there are no existing or acceptable structures within this area along this section of I-640. The proposed site is to relieve capacity of existing or nearby sites. Co-location is not an option. No other structure exists within the area needed to provide coverage (see attached letter from Larry Wells). This includes the existing nearby 120' telecommunication tower which is at full capacity.

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 180' tower is technically justified by the materials submitted by the applicant; however, he recommends that the monopole be of a similar type as that one across the interstate as to color (gray) and antenna type mounts so as to be unobtrusive as possible and that the facility be landscaped to reduce the visual impact from the interstate and adjoining residences (see attached report).

An agreement has been submitted stating that Wireless Properties, LLC. agrees to make all of its facilities available to other wireless providers (see attached letter from Larry Wells).

#### **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 all utilities are in place to serve this development.
2. The tower, being located adjacent to residential uses, is required to be heavily screened. The applicant will be required to install an 8' tall wooden fence and provide landscaping around the perimeter of the fence. The base of the tower and the tower enclosure will be well screened. This will reduce the impact of the proposed tower on existing residential property.
3. The recommended flagpole design of the structure, which is similar to the existing tower located across the interstate on Pleasant Ridge Rd., will reduce the visual impact along the I-640 skyline.

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

1. The proposed commercial telecommunications tower at this location, with the recommended conditions, meets the standards required in the C-3 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 and One Year Plan. The use is in harmony with the general purpose and intent of the Zoning Ordinance. By requiring extensive screening and an alternative design, the use will not significantly injure the value of adjacent property. The use will not draw additional traffic through residential areas.

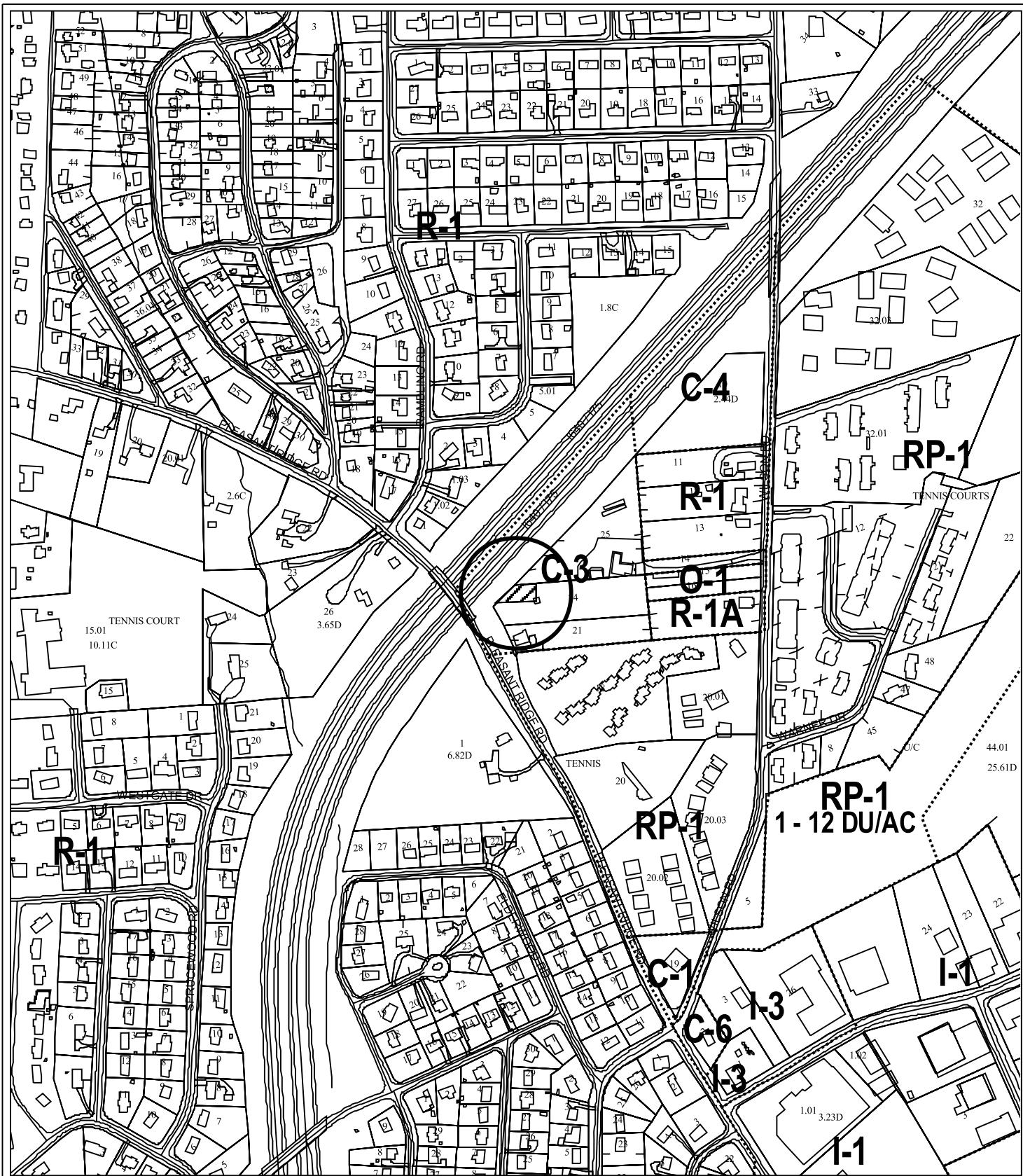
CONFORMITY OF THE PROPOSAL TO ADOPTED PLANS

1. The Central City Sector Plan identifies this property as being General Commercial. The proposed development is consistent with this land designation.
2. The Wireless Communications Facility Plan identifies the proposed 180' monopole as a "tall" monopole. Under the guidelines for Tower Placement section of the Facility Plan, the proposed tower falls within the "Avoidance Area" category since it is within 500' of a residence and abuts an apartment complex. Under the "Opportunity Area" category, the Plan takes a neutral position on moderate monopoles located in along urban expressway corridors (see attached matrix). As previously stated, the tower will be setback approximately 200' from any residential property line. According to the conditions recommended by staff, based on the flagpole/stealth-like design, the proposed 180' tower would be "encouraged" and appropriate at this location.


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.



6-B-08-UR  
 USE ON REVIEW

 180' monopole telecommunications tower in C-3 (General Commercial)

Original Print Date: 05/23/08    Revised:  
 Metropolitan Planning Commission \* City / County Building \* Knoxville, TN 37902

Petitioner: Wireless Properties, LLC.

Map No: 80

Jurisdiction: City



ARTHUR G. SEYMOUR, JR.  
FRANCIS A. CAIN  
ROBERT L. KAHN  
REGGIE E. KEATON  
DONALD D. HOWELL  
DEBRA L. FULTON  
MICHAEL W. EWELL  
IMOGENE A. KING  
JOHN M. LAWHORN  
JAMES E. WAGNER  
BEVERLY D. NELMS  
MARY ELIZABETH MADDOX  
BENJAMIN C. MULLINS  
RICHARD T. SCRUGHAM, JR.  
MATTHEW A. GROSSMAN  
SHARON POTTER  
KEVIN A. DEAN

LAW OFFICES  
**FRANTZ, McCONNELL & SEYMOUR LLP**  
ESTABLISHED 1992

Email: [ajseymour@fmsllp.com](mailto:ajseymour@fmsllp.com)  
Direct Fax: 865-541-4612

550 W. MAIN STREET  
SUITE 500  
P.O. Box 39  
KNOXVILLE, TENNESSEE 37901  
TELEPHONE: 865-546-9321  
FACSIMILE: 865-637-5249  
WEB SITE: [WWW.FMSLLP.COM](http://WWW.FMSLLP.COM)

May 30, 2008

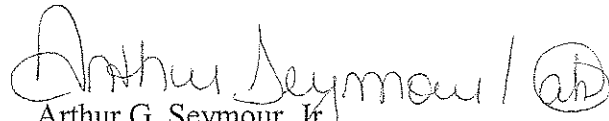
Mr. Tom Brechko  
**Metropolitan Planning Commission**  
400 Main Street, Suite 403  
Knoxville, TN 37902

Re: TN 119 - Pleasant Ridge Rd at I-640

Dear Mr. Brechko:

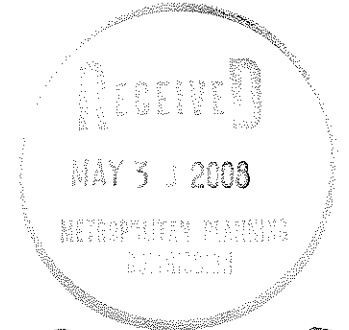
Enclosed herewith please find some additional information from Mr. G. Larry Wells regarding the flag pole design. The stealth tower will cause the need to have four (4) times the number of towers (12 antennas per level will be needed to provide voice, data and LTE/WiMAX).

Sincerely,

  
Arthur G. Seymour, Jr.  
FRANTZ, McCONNELL & SEYMOUR, LLP

AGSJ:alh  
Enc.

cc: Ms. Kelly Schlitz



6-B-08-UR

## Introduction

What is an AMS System?

The EEI AMS System (Antenna Mounting Spool) is used to enclose antennas into an RF transparent cylinder to give an aesthetically pleasing look. Antennas are mounted to a center pipe that has a plate attached at both ends. An RF transparent panel enclosure is then attached to the end plates to conceal the antennas.

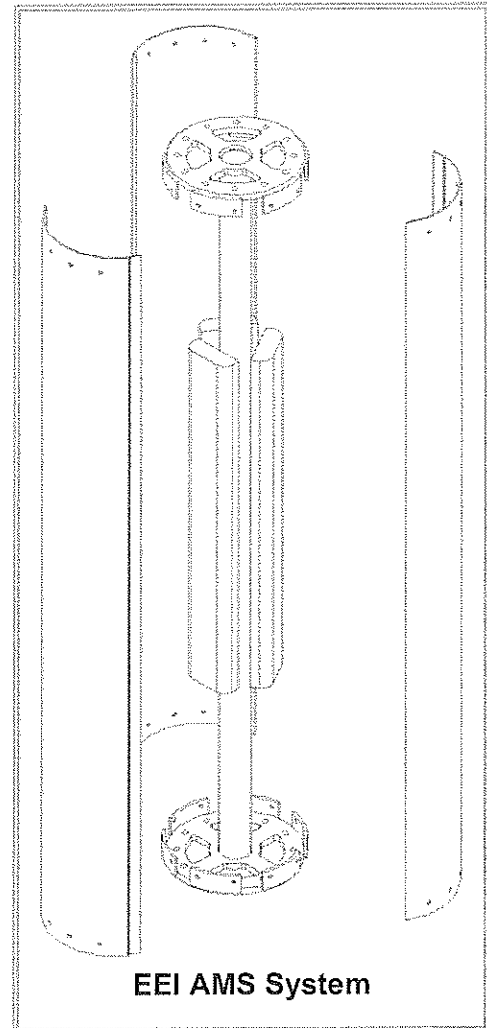
The EEI AMS System has been designed to allow multiple carriers in a variety of configurations. EEI can also custom design the AMS system to meet your specific site requirements.

EEI's standard AMS diameters are 16 *inch*, 18 *inch*, 20 *inch* and 26 *inch*. Other diameters are available upon request. All the standard diameters represent the inside diameter of the enclosure. Actual outside diameter is approximately 1/2 *inch* larger than the inside diameter. As an example, the 20 *inch* diameter AMS has an inside diameter of 20 *inches* available for mounting antennas and the outside diameter is approximately 20 1/2 *inches*.

AMS's have been designed for both PCS and cellular applications. As a general rule, PCS antennas are typically smaller than the cellular antennas and can be concealed in a smaller enclosure. Typical AMS diameters for PCS are 16 *inch*, 18 *inch*, and 20 *inch*. The typical cellular AMS diameter is 26 *inch*.

EEI's standard AMS lengths are 6 *feet*, 8 *feet*, and 10 *feet*. Each AMS diameter has three standard models; Light Duty (top), Medium Duty (middle), & Heavy Duty (bottom). All lengths are stackable and interchangeable to achieve a wide variety of vertical antenna separations and various heights. In some cases, additional Custom Heavy Duty AMS's may be required to achieve taller configurations.

EEI's RF Transparent enclosures have been tested throughout the frequency spectrum. Test results are available upon request.





WIRELESS PROPERTIES



May 30, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: Wireless Properties, LLC  
Introduction: I-640 Bypass / Pleasant Ridge Rd.  
Proposed 180' Monopole communications tower

Dear Mr. Brechko:

There is a strong need to enhance and upgrade wireless services at the proposed tower location along I-640 and Pleasant Ridge Road. Wireless Properties has multiple wireless carriers needing to co-locate on the proposed tower.

Wireless Properties is proposing a six (6) broadband, five (5) narrowband tenant tower. This will provide the ability for multiple tenants to collocate at the same location. Therefore, creating less of a need for towers in the immediate surrounding area that the tower will provide coverage to.

The proposed tower will be a traditional 180' Monopole. The tower will be built structurally to hold twelve (12) antennas at each level. The demand for wireless services is growing every day. With current demand and newer generations of technology on their way, there is an increased need for additional antennas at tower and rooftop locations. The need for additional antennas is due to the recent FCC spectrum auctions, future wireless technology upgrades (4G, LTE, WiMax), and new entrants into the Knoxville wireless market place. This need affects both the new wireless service companies and the incumbent wireless providers for the Knoxville metropolitan area.

707 Republic Centre • 633 Chestnut Street  
Chattanooga, Tennessee 37450  
Tel: 423.757.7010 • Fax: 423.757.7020  
E-mail: mail@wirelessproperties.com  
www.wirelessproperties.com

Mr. Tom Brechko  
May 30, 2008

This tower site cannot be modified to a stealth tower location and still meet the needs and demands of the wireless service providers, due to the fact that wireless carriers are having to provide advanced wireless services to the area to meet the demands of present and future consumers. A stealth tower location will take away from the structural ability to hold more than three antennas per level. This would create the need for multiple towers to meet demand as opposed to a single traditional monopole tower.

Currently there are seven (7) providers of broadband cellular services in the Knoxville metropolitan area. Some four (4) new wireless providers (cellular and 700 MHz) bought spectrum in the recent FCC auctions in addition to the Sprint-Clearwire WiMAX wireless services which should be built in the Knoxville area soon. It is in the public's best interest, need and necessity to build multi-tenant towers thus lowering the need for many more towers to serve the existing and upcoming wireless providers in Knoxville.

Best regards,

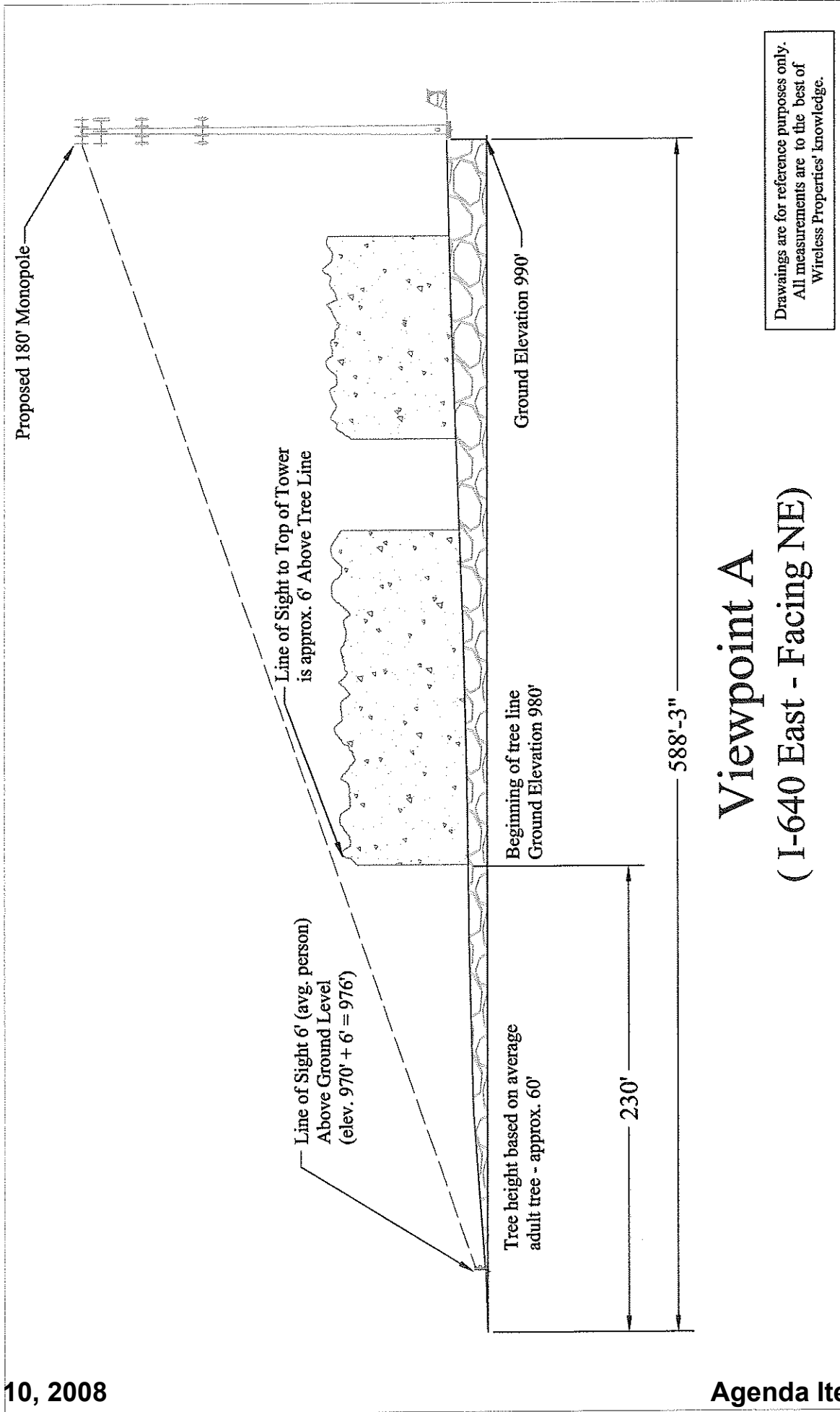


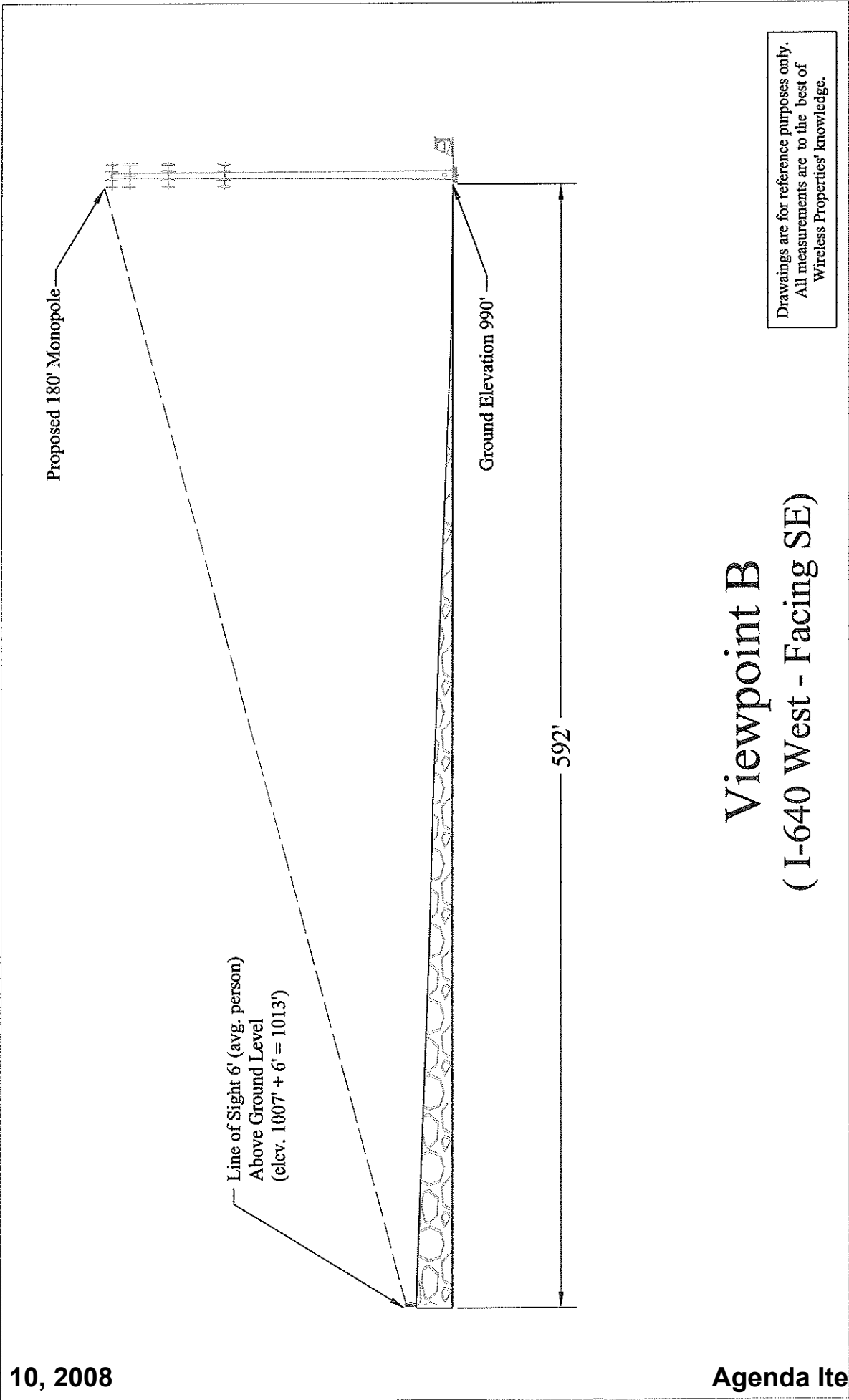
G. Larry Wells

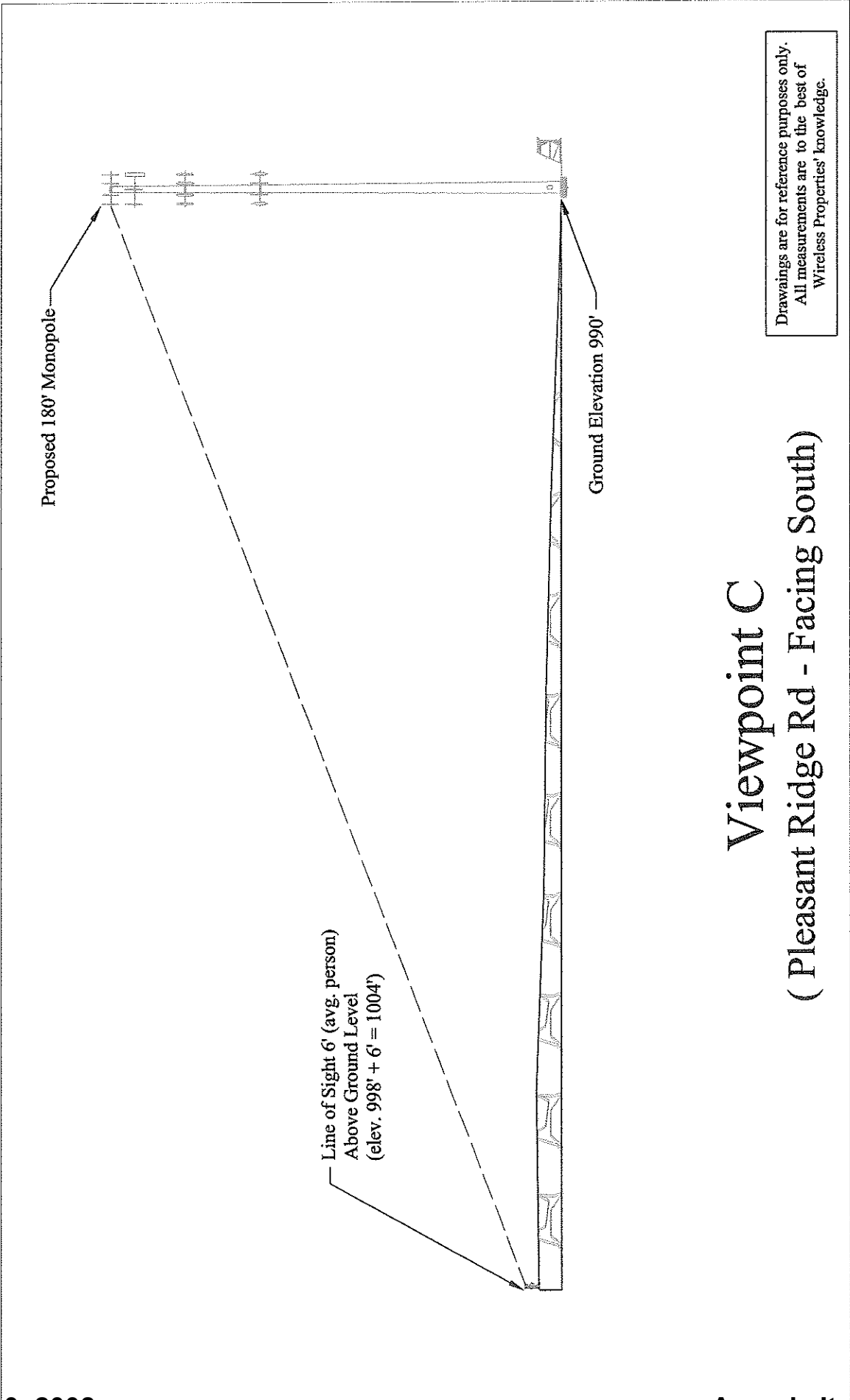
President and Chief Manager

GLW/jrl





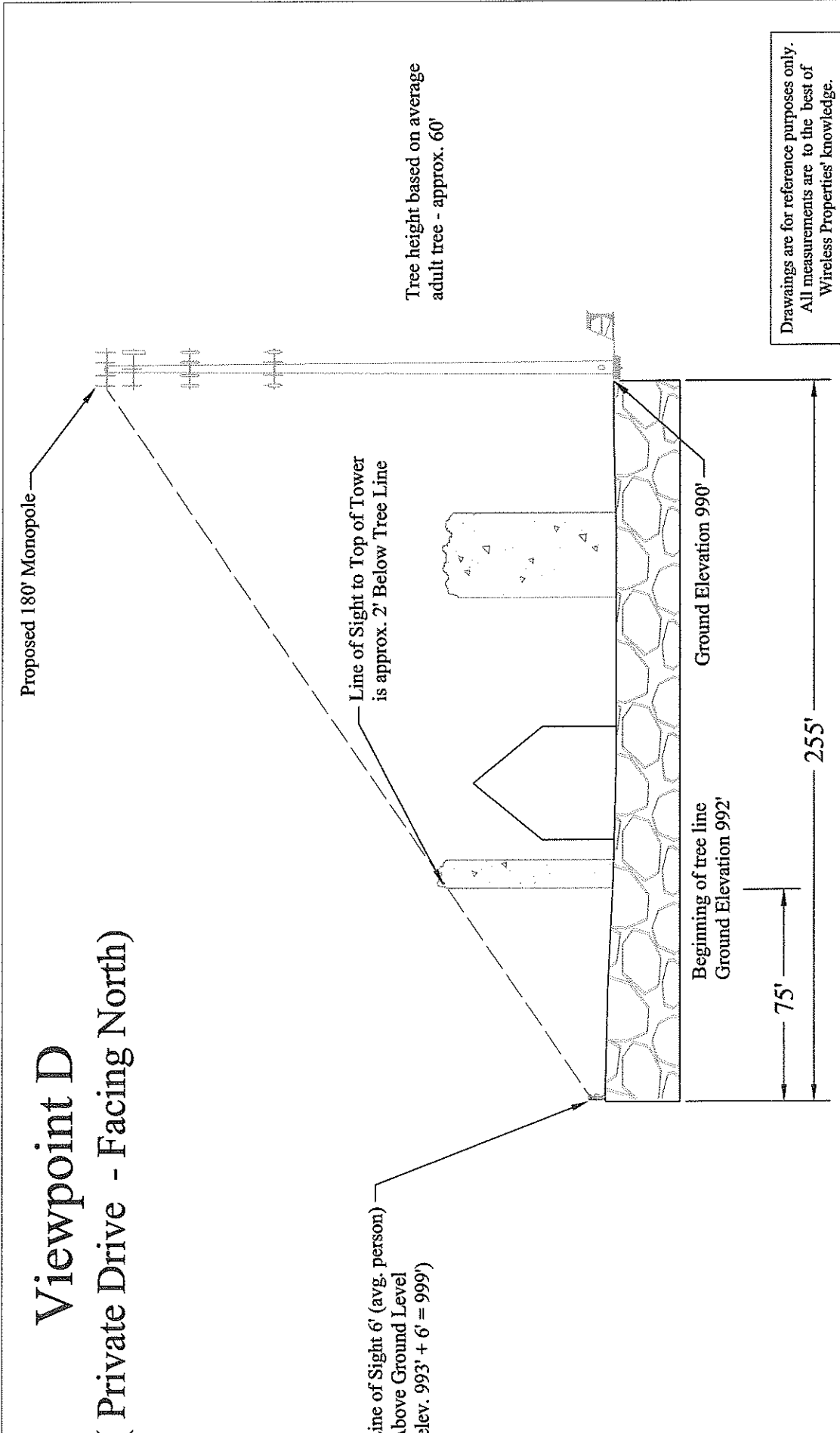




Drawings are for reference purposes only.  
 All measurements are to the best of  
 Wireless Properties' knowledge.

## Viewpoint C ( Pleasant Ridge Rd - Facing South)

# Viewpoint D (Private Drive - Facing North)



Tree height based on average adult tree - approx. 60'

Drawings are for reference purposes only.  
All measurements are to the best of  
Wireless Properties' knowledge.



**Wireless Properties**  
**Telecommunications Tower Site Review**  
**USE ON REVIEW APPLICATION # 6-B-08-UR**  
**CONSULTANT'S SUMMARY**

**Pleasant Ridge Site**

**Knoxville City**

**Location:** 4126 Pleasant Ridge Road

**Proposed Tower Height:** 180 foot Monopole

**Address:** 4126 Pleasant Ridge Road  
Knoxville, Tennessee

**District:** # 3 City   **Map Number:** 80   **Parcel** 021

**Use:** Telecommunications antenna support structure

**Zoning:** C-3 (Commercial)

**Variances:** None required or requested

**Waiver:** None required provided the applicant landscape the area around the fence to provide some isolation from local land uses.

**Need:** The applicant is a tower provider with commitments from licensed PCS carriers by the Federal Communications Commission and possibly other users.

**Instant Proposal:** Construct a 180 foot monopole type support structure.

**Consultant's Recommendation:** The site and application meets the requirements of the Ordinance and the spirit of the Facilities Plan. I do make the following recommendations: (1) that the monopole be of a similar type as that one across the interstate as to color (gray) and antenna type mounts so as to be unobtrusive as possible; (2) that the facility be landscaped around the fenced area with deciduous plants and bushes so as to isolate it from view from the interstate and from the residences along Pleasant Ridge Road including the condos and apartment complexes located nearby.



**REPORT TO  
METROPOLITAN PLANNING COMMISSION**

for

Proposed Telecommunications Tower Site  
Located at 4126 Pleasant Ridge Road  
Knoxville, TN known as

**PLEASANT RIDGE SITE**

**WIRELESS PROPERTIES**

**UOR 6-B-08-UR**

**COMPLIANCE WITH**

**THE MPC TELECOMMUNICATIONS FACILITY ORDINANCE**

5/27/2008

The proposed site for the applicant is a 180 foot monopole antenna support structure (including antennas and lightning rod) to be located near the overpass of Pleasant Ridge Road and I 640. 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 capacity site (explained in the report).

**REQUESTED**

1. **Location.** The location is within the City of Knoxville limits in **District 3** and is located on **Tax Map Number 80 Parcel 024**
2. **Zoning.** C-3 (Commercial)
3. **Tower height.** The requested height is 180 feet above ground level will support up to 6 telecommunications carriers' antennas for a total of 6 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 "C-3" sites requires that the structure be set back a minimum distance of 110% of the structure height or in this case 198 feet from the nearest residential property line. The proposed site meets that requirement and no variances are required. However, there is a residence located near the tower base owned by the Hurst family, but it is within the commercial zoning area.

5. **Site.** This application is for the construction of a new monopole type antenna support structure to be located near the intersection of I 640 and Pleasant Ridge Road on the property of a landscape nursery.

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 Wireless Properties for T Mobile, Sprint and Cricket Communications and there are 3 possible additional telecommunications users for the facility.

7. **Setbacks.** The setback requirements are that the facility must be 110% height of the tower from any dwelling unit/property line. The applicant meets that requirement and no variances are required. There are no property lines within that zone.

8. **Height.** The proposed structure is for 180 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 met with several neighbors in the area to discuss same. None had any objections.

The site elevation at this location is 995 feet. It is located in an unused portion of a landscape nursery and is proposed as a 180 foot monopole type structure. It is recommended that the antennas be the face mounted type so that the final structure would be flag pole appearing and blend in with the area surrounding. This means that the final structure will look like a metal telephone pole without the usual triangle platform at the top. The antennas should be of the type to blend with the sides of the structure.

This a "capacity" site. By that is meant that the coverage is adequate in the area at the present from present facilities in the area, but that the traffic in the area often exceeds the present capacity of existing facilities and the cell coverage needs to be split among several sites to accommodate the extra traffic. The additional usage of I 640 due to the closure of I 40 through Knoxville has increased the traffic count for many of the cellular carriers who are unable to meet the demand for clear channels.

There is a cellular monopole across the interstate in the back of the church that is only 120 feet, but that uses the face mounted antennas. However, it is too short to allow other users. If the applicant can design its structure in a similar manner to that structure, it would not have a major impact on the surrounding area.

It is located in an C-3 zoned area immediately adjacent to an RP-1 zoned area. There are apartment houses, condos and a residence located nearby. The residence is located within the fall zone of the structure. I talked with the owner and they had no objection to the structure as it would be separated from the residence by a line of trees that are to remain after construction.

I would classify this site as a Sensitive Area due to the fact that it is within 500 feet of residential areas in the Wireless Communications Facilities Plan. In a Sensitive area the applicant needs to be sensitive to area land uses and its final construction should have minimal impact based upon the aesthetics of the structure. Thus, the recommendation that the structure be of a type similar to the structure across the expressway whereby the antennas of the carriers are face mounted on the monopole to make it blend into the area. The location of the proposed structure should no impact on the land values surrounding the facility due to the present land use.

The applicant has demonstrated a need for the site and meets the federal requirements for same.

## **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 (180 feet) coupled with no lighting requirements and located in a commercial zoned area adjacent to the Interstate and thus, this structure should have little or minimal impact on the view in the area.

(2) **Land Use Compatibility**---The proposed site is located on the back lot of a landscaping/nursery company immediately adjacent to the interstate. The site will be unmanned and will have no impact on noise, traffic or air pollution.

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

## **SUMMARY**

(1) The proposed antenna support structure is a 180 foot monopole. 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 6 potential users in the future.

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

- (4) There is a residence located within the setback zone of the tower and also located within the fall zone, however, the resident who resides there has no objection to the structure.
- (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 5.20 (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. While there is no landscaping plans accompanying the application, it is recommended that the applicant follow the landscaping of the site separating it from the adjacent landowner and the expressway so as to conceal the on ground facilities from the public view as much as possible.
- (7) The applicant's carriers have 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) Although there is another cell site very close to the proposed site, it cannot be expanded to accommodate other users. Also 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 waiver needed for the landscaping.
- (11) The proposed site and structure will have no environmental impact within the federal guidelines.
- (12) 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.
- (13) Assuming that there are 6 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.

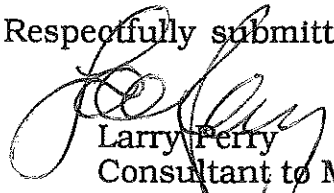
(14) There is a need for the structure in this area to provide for the wide spectrum wireless internet service and for other wireless voice and data services to be provided under government regulation by the various proposed carriers who plan to use the site due to the added traffic on the interstate 640 because of rerouting of vehicular traffic along that route and the present facilities although adequate coverage, cannot handle the added demand for traffic coverage, thus the need for the site.

(15) In meeting with several of the neighbors in the immediate area, there didn't appear to be any concern about the proposed structure.

### 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. I do make the following recommendations: (1) that the monopole be of a similar type as that one across the interstate as to color (gray) and antenna type mounts so as to be unobtrusive as possible; (2) that the facility be landscaped around the fenced area with deciduous plants and bushes so as to isolate it from view from the interstate and from the residences along Pleasant Ridge Road including the condos and apartment complexes located nearby.

Respectfully submitted,

  
Larry Perry  
Consultant to MPC

5/28/08



WIRELESS PROPERTIES

April 4, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: Wireless Properties, LLC  
Introduction: I-640 Bypass / Pleasant Ridge Rd.  
Proposed 180' Monopole communications tower

Dear Mr. Brechko:

Please find the following documents regarding our building permit application for a telecommunications tower to be located at 4126 Pleasant Ridge Rd., which complies with Regulations stated in Article 5, Section 20 of the Knoxville Zoning Ordinance.

Your assistance in the facilitation of this matter is appreciated. Should you require additional information, please call.

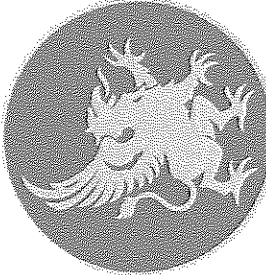
Best Regards,

A handwritten signature in black ink, appearing to read "G. Larry Wells".

G. Larry Wells  
President

GLW/esd

707 Republic Centre • 633 Chestnut Street  
Chattanooga, Tennessee 37450  
Tel: 423.757.7010 • Fax: 423.757.7020  
Email: mail@wirelessproperties.com  
www.wirelessproperties.com



# WIRELESS PROPERTIES

SITE NUMBER: TN-119  
 SITE NAME: PLEASANT RIDGE RD  
 LATITUDE: 35° 59' 02.26"N  
 LONGITUDE: 83° 58' 34.82" W

911 ADDRESS:  
 4126 PLEASANT RIDGE RD  
 KNOXVILLE, TN  
 37921

PROPERTY OWNER:  
 RONNIE & EDITH CHANDLER  
 P.O. BOX 12309  
 KNOXVILLE, TN 37912

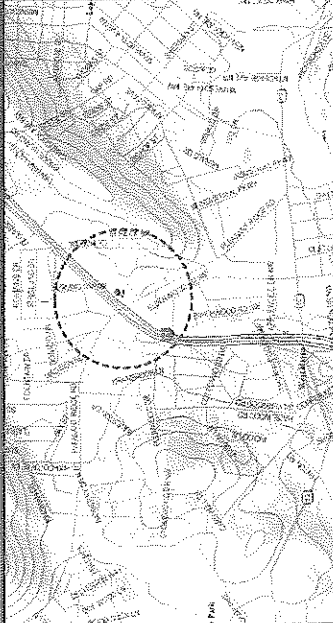
POWER COMPANY:  
 KNOXVILLE UTILITY BOARD  
 445 SOUTH GAY STREET  
 KNOXVILLE, TN 37902

TELEPHONE COMPANY:  
 BELLSOUTH  
 TBD  
 TBD

APPLICANT ADDRESS:  
 WIRELESS PROPERTIES, LLC.  
 707 REPUBLIC CENTRE  
 633 CHESTNUT STREET  
 CHATTANOOGA, TN 37450  
 MATT BATES (423) 802-7707

SITE DESIGN ENGINEER:  
 ENVIRONMENTAL ENGINEERS, INC.  
 11578 U.S. HIGHWAY 411  
 BRANCHVILLE, AL 35120  
 PHONE: (205)629-3868

C0	INDEX OF DRAWINGS
C1	COVER SHEET
C2	GENERAL NOTES AND LEGEND
C3	OVERALL SITE LAYOUT PLAN
C4	SITE LAYOUT PLAN
C5	SITE GRADING PLAN
C6	SITE DETAILS
C7	FENCE DETAILS
E1	UTILITY ROUTING PLAN
E2	SITE GROUNDING PLAN
E3	ELECTRICAL NOTES
E4	ELECTRICAL DETAILS
E5	ELECTRICAL DETAILS
E6	UTILITY CENTER DETAILS
E7	GROUNDING SINGLE LINE



DIRECTIONS: FROM CHATTANOOGA, TAKE I-75 NORTH TO KNOXVILLE. STAY ON I-75 NORTH TO EXIT 1, TURN RIGHT ONTO WESTERN AVENUE (HWY 62) AND GO TO PLEASANT RIDGE ROAD. TURN LEFT ON PLEASANT RIDGE ROAD AND GO TO LAST ROAD ON RIGHT BEFORE CROSSING I-75. SITE IS AT END OF ROAD ON THE RIGHT JUST PAST LAST HOUSE.

PROPOSED UNMANNED WIRELESS SITE  
 KNOX COUNTY, TENNESSEE  
 TOWER OWNER: WIRELESS PROPERTIES, LLC  
 TOWER TYPE: 180' MONOPOLE RAWLAND

TITLE	SIGNATURE	DATE
SITE ACQUISITION		
ZONING		
RF MANAGER		
CONSTRUCTION MANAGER		
LANDOWNER		

WIRELESS PROPERTIES, LLC	
TITLE	SIGNATURE
PROPERTY MANAGER	
CONSTRUCTION MANAGER	
OPERATIONS MANAGER	
NATIONAL DIRECTOR MGR	

<b>ENVIRONMENTAL ENGINEERS, INC.</b> 11578 U.S. HIGHWAY 411 BRANCHVILLE, AL 35120 PHONE: (205)629-3868 FAX: (205)629-3868	COVER SHEET TN-119 PLEASANT RIDGE RD DATE: 04/04/08 REVISION: A
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**GENERAL NOTES**

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL APPLICABLE PERMITTING AUTHORITIES.
2. THE CONTRACTOR SHALL VERIFY THAT ALL EXISTING TOPOGRAPHY AND HORIZONTAL GEOMETRY IS AS INDICATED ON THESE DRAWINGS. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE OR REPAIR TO THESE FACILITIES CAUSED BY THE CONTRACTORS WORK FORCE. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES OR INTERFERENCE WHICH AFFECT THE WORK OF THIS CONTRACT.
3. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES, CODES, AND REGULATIONS.
4. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION ON SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
5. THE CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES. DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTORS EXPENSE.
6. ALL WASTE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE OR AS DIRECTED BY THE CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.
7. CONTRACTOR SHALL MAINTAIN 20' HORIZONTAL CLEARANCE FROM CENTERLINE OF EXISTING POWER LINES OR AS REQUESTED BY THE POWER COMPANY.
8. SEED AND MULCH ALL DISTURBED AREAS NOT COVERED BY OTHER MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS.
9. ANY PROPERTY DAMAGE CAUSED BY THE CONTRACTOR OR HIS OPERATIONS SHALL BE CORRECTED AND/OR RESTORED TO THE SATISFACTION OF THE PROPERTY OWNER(S) AND THE CONSTRUCTION MANAGER AT NO ADDITIONAL COST TO THE OWNER.
10. NOTIFY WIRELESS PROPERTIES, LLC TWENTY-FOUR HOURS PRIOR TO CONSTRUCTION TO ALLOW THE REPRESENTATIVES TO LOOK AT THE SITE PRIOR TO EXCAVATION.
11. THE CONTRACTOR SHALL INCLUDE ALL WORK REQUIRED TO CO-LOCATE ON THE EXISTING TOWER INCLUDING ALL NECESSARY SITE IMPROVEMENTS, FOUNDATIONS, ELECTRICAL IMPROVEMENTS, ICE BRIDGE, WAVEGUIDE LADDER, SNAP INS, AND OTHER ACCESSORIES FOR COMPLETE INSTALLATION.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF THE FOLLOWING EQUIPMENT THAT WILL BE SUPPLIED BY CO-LOCATOR: ANTENNAS, COAX CABLES, AND EQUIPMENT CABINETS. THE EQUIPMENT CABINETS SHALL BE TRANSPORTED TO THE SITE BY THE CONTRACTOR. WIRELESS PROPERTIES, LLC WILL SUPPLY ANTENNA MOUNTS.
13. CONTRACTOR TO NOTIFY WIRELESS PROPERTIES, LLC REPRESENTATIVES FORTY-EIGHT HOURS BEFORE CONCRETE POURS.

**UTILITY NOTES**

1. APPLY FOR THE UTILITY SERVICE (TELEPHONE AND ELECTRIC) NO LATER THAN THE NEXT BUSINESS DAY FOLLOWING AWARD OF CONTRACT. COORDINATE WITH THE ELECTRIC UTILITY COMPANY FOR EXACT TRANSFORMER LOCATION, METERING REQUIREMENTS, AND SERVICE ROUTING. COORDINATE WITH THE TELEPHONE UTILITY COMPANY FOR EXACT TELEPHONE REQUIREMENTS AND ROUTING OF SERVICE.
2. ALL UTILITY RELATED WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE UTILITY REQUIREMENTS. FIELD VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT UTILITIES AND LOCATOR SERVICE A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION. (TN ONE-CALL 1-800-351-1111).
4. CONTRACTOR SHALL PROVIDE TRENCHING AND CONDUITS AS SHOWN OR AS REQUIRED BY LOCAL UTILITY.

**LEGEND**

**EXISTING**

- 1-100.5
- SPOT ELEVATION
- CONTOUR LINE
- FENCE
- SILT FENCE
- WOODS LINE
- STORM DRAIN
- CATCH BASIN
- RIGHT OF WAY
- IRON PIN SET (IPS) 5/8" REBAR
- IRON PIN FOUND (IPF)
- BENCHMARK
- CONCRETE MON. FOUND
- CONCRETE MON. SET
- CENTERLINE
- TELEPHONE PEDESTAL
- OVERHEAD TELEPHONE
- UNDERGROUND TELEPHONE
- OVERHEAD POWER
- UNDERGROUND POWER
- UTILITY POLE
- LIGHT POLE
- WATER LINE
- WATER VALVE
- NATURAL GAS LINE
- GAS VALVE
- SANITARY SEWER
- MANHOLE

**NEW**

- SPOT ELEVATION
- CONTOUR LINE
- FENCE
- SILT FENCE
- WOODS LINE
- STORM DRAIN
- CATCH BASIN
- RIGHT OF WAY

NOTE: THIS IS A GENERAL LEGEND. SOME ITEMS MAY NOT APPLY TO THIS SITE.

NO.	DATE	ISSUED FOR	BY
4	04-04-08	ISSUED FOR PERMIT	WJG
		REVISION OF ISSUE	BY



WIRELESS PROPERTIES

TN-119  
PLEASANT RIDGE RD

GENERAL NOTES  
& LEGEND

**WIRELESS PROPERTIES, LLC**  
 1000 W. WINDYBROOK AVENUE  
 SUITE 200  
 WINDYBROOK, TN 37188  
 PHONE: (615) 930-3000  
 FAX: (615) 930-3000  
 WWW.WIRELESSPROPERTIES.COM


NOT VALID UNLESS SIGNED & DATED

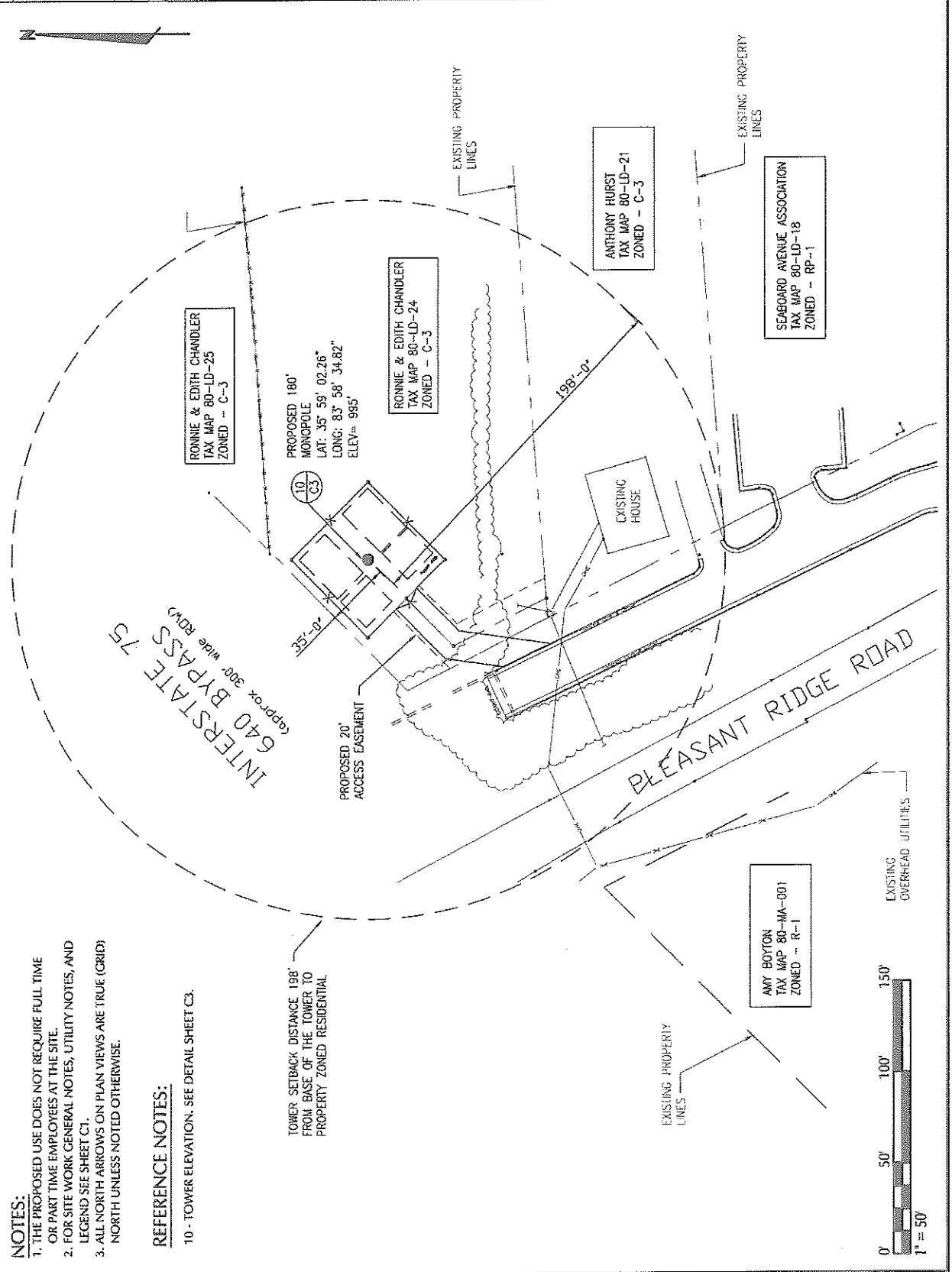
DRAWN BY: DMB

CHECKED BY: ABG

PROJECT MGR: ABG

SHEET NUMBER: C1

2000			
WIRELESS PROPERTIES TN-119 PLEASANT RIDGE RD OVERALL SITE LAYOUT PLAN		BENTLEY SYSTEMS, INC. 1000 BENTLEY DRIVE, SUITE 100 BENTLEY, MISSISSIPPI 39310 PHONE: (662) 833-3333 FAX: (662) 833-3333 WWW.BENTLEY-INC.COM	
DATE:	ISSUED FOR PERMIT:	BY:	DATE:
REV:	REVISIONS:	BY:	DATE:
DRAWN BY: DMB		CHECKED BY: ABG	
PROJECT MGR: ABG		SHEET NUMBER: C2	



- NOTES:**
1. THE PROPOSED USE DOES NOT REQUIRE FULL TIME OR PART TIME EMPLOYEES AT THE SITE.
  2. FOR SITE WORK GENERAL NOTES, UTILITY NOTES, AND LEGEND SEE SHEET C1.
  3. ALL NORTH ARROWS ON PLAN VIEWS ARE TRUE (GRID) NORTH UNLESS NOTED OTHERWISE.

**REFERENCE NOTES:**

10 - TOWER ELEVATION. SEE DETAIL SHEET C3.



NO.	DATE	ISSUED FOR PERMIT	BY
A	04-04-08	REVISION OF SCALE	ABG



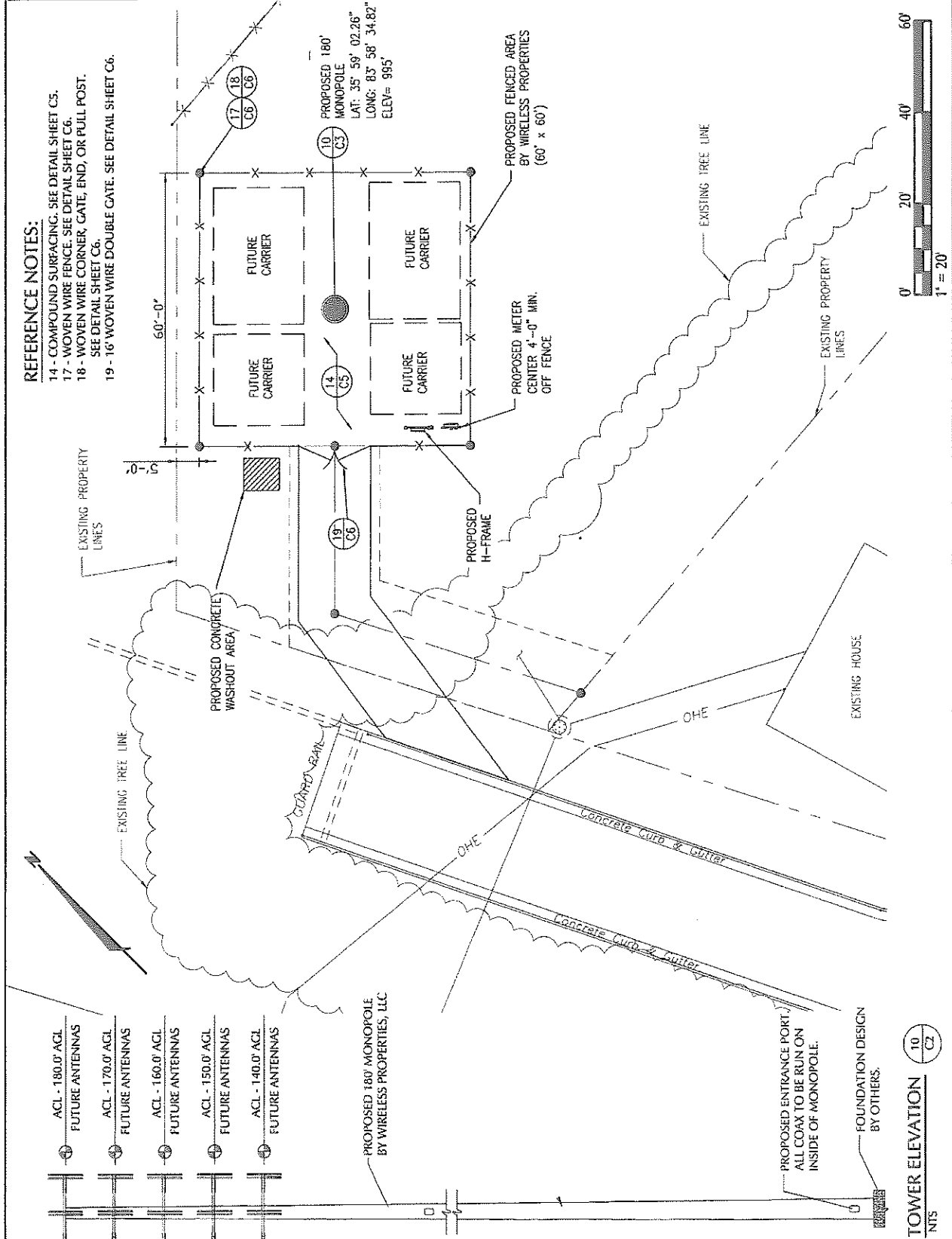
WIRELESS PROPERTIES  
 TN-119  
 PLEASANT RIDGE RD  
 SITE LAYOUT  
 PLAN

**ENGINEERING, INC.**  
 1000 W. UNIVERSITY BLVD., SUITE 300  
 MEMPHIS, TN 38117  
 (901) 521-1111

NOT VALID UNLESS SIGNED & DATED  
 DRAWN BY: DMB  
 CHECKED BY: ABG  
 PROJECT MGR: ABG  
 SHEET NUMBER: C3


**REFERENCE NOTES:**

- 14 - COMPOUND SURFACING. SEE DETAIL SHEET C5.
- 17 - WOVEN WIRE FENCE. SEE DETAIL SHEET C6.
- 18 - WOVEN WIRE CORNER, GATE, END, OR PULL POST. SEE DETAIL SHEET C6.
- 19 - 16' WOVEN WIRE DOUBLE GATE. SEE DETAIL SHEET C6.

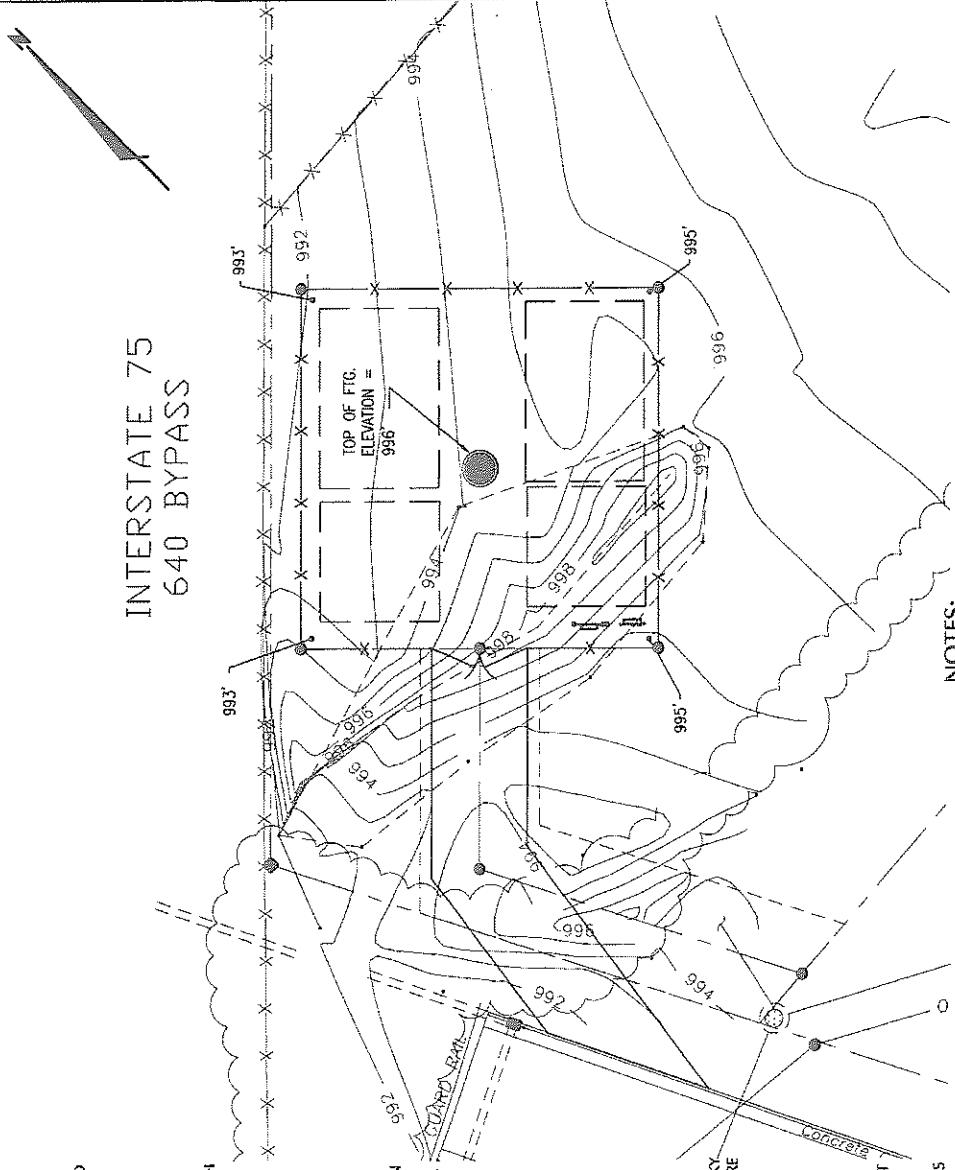


- ACL - 180.0' ACL  
FUTURE ANTENNAS
- ACL - 170.0' ACL  
FUTURE ANTENNAS
- ACL - 160.0' ACL  
FUTURE ANTENNAS
- ACL - 150.0' ACL  
FUTURE ANTENNAS
- ACL - 140.0' ACL  
FUTURE ANTENNAS

TOWER ELEVATION  
 NTS

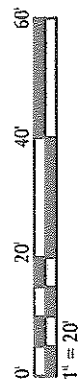
ENVIRONMENTAL DESIGNERS, INC. 2020	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:10%;">REV.</th> <th style="width:10%;">DATE</th> <th style="width:40%;">REASON FOR REVISION</th> <th style="width:10%;">DRAWN BY</th> <th style="width:10%;">CHECKED BY</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV.	DATE	REASON FOR REVISION	DRAWN BY	CHECKED BY						 <p><b>WIRELESS PROPERTIES</b></p>	<p>TN-119 PLEASANT RIDGE RD</p> <p><b>SITE GRADING PLAN</b></p>	<p><b>ENVIRONMENTAL DESIGNERS, INC.</b>          11070 V.P. MONROE WAY #11          MEMPHIS, TN 38118          (901) 504-1234 FAX (901) 504-1235          WWW.EDINC.COM</p>	<p style="text-align: center; font-size: small;">NOT VALID UNLESS SIGNED &amp; DATED</p> <p><b>DRAWN BY: DMB</b></p> <p><b>CHECKED BY: ABG</b></p> <p><b>PROJECT MGR: ABG</b></p> <p><b>SHEET NUMBER: C4</b></p>
REV.	DATE	REASON FOR REVISION	DRAWN BY	CHECKED BY											


# INTERSTATE 75 640 BYPASS

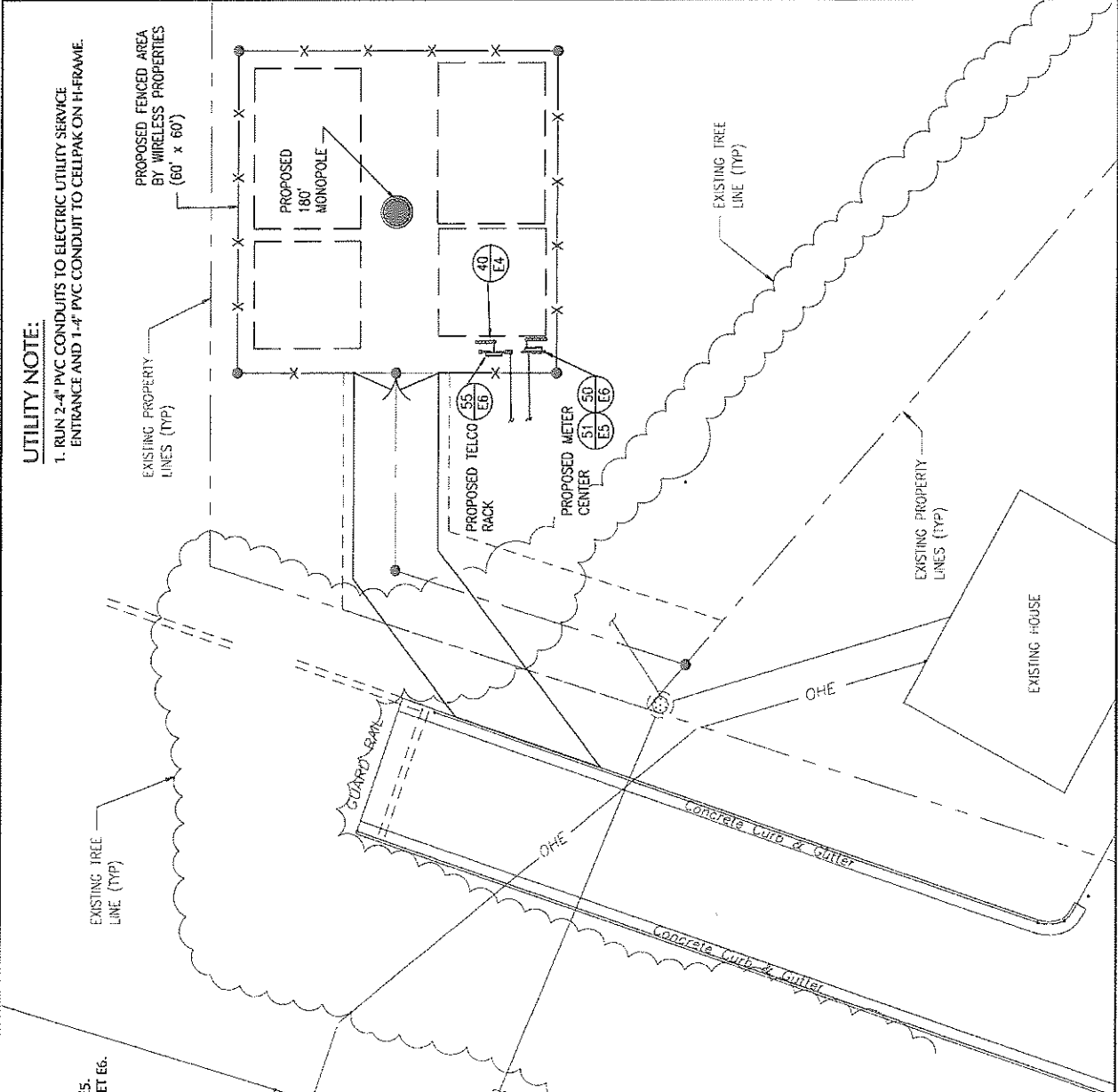


- GRADING NOTES:**
1. PROPOSED CONTOURS AND SPOT ELEVATIONS ARE SHOWN AT TOP OF CRUSHED STONE, TOP OF FOUNDATION, OR TOP OF TOPSOIL. SEE DETAILS FOR THICKNESS OF CRUSHED STONE, MASS GRADED AREAS AND CRUSHED STONE SHALL BE FINISHED WITHIN 4" OF GRADES SHOWN. FOUNDATIONS SHALL BE FINISHED WITHIN 0.5" OF GRADES SHOWN.
  2. ALL TREES, ROOTS, BRUSH, AND ORGANIC MATTER (TOPSOIL) SHALL BE REMOVED BEFORE BEGINNING FILL. FILL MATERIAL SHALL BE CLEAR SOIL CONTAINING NO ROCKS LARGER THAN 6 INCHES.
  3. ALL AREAS TO RECEIVE FILL SHALL FIRST BE PROOF ROLLED WITH A FULLY LOADED TANDEM DUMP TRUCK (25 TON MINIMUM) UNDER THE SUPERVISION OF THE ENGINEER OR TESTING LAB PERSONNEL. ANY AREAS WHICH EXHIBIT "PUMPING" SHALL BE UNDERCUT (OR OTHERWISE STABILIZED) TO A FIRM SOIL BEFORE PLACING FILL. ALSO, ALL FINAL SUBGRADES, WHETHER IN CUT OR FILL, SHALL BE PROOF ROLLED PRIOR TO CONSTRUCTING SLABS OR PAVEMENTS. CONTACT ENGINEER FOR DIRECTION IN SITUATIONS WHERE SOIL COMPACTION OR BEARING CAPACITY MAY BE INADEQUATE.
  4. FILLS SHALL BE FORMED OF SATISFACTORY MATERIAL PLACED IN SUCCESSIVE HORIZONTAL LAYERS OF NOT MORE THAN 6 INCHES IN LOOSE DEPTH FOR THE FULL WIDTH OF EACH STRIP.
  5. FILL SOIL SHALL BE PLACED AT A MOISTURE CONTENT THAT IS WITHIN MINUS 1% OR PLUS 3% POINTS OF THE OPTIMUM MOISTURE CONTENT AND TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM 698 (STANDARD PROCTOR). THE UPPER 12 INCHES OF FILL SHALL BE COMPACTED TO 98%.
  6. STANDARD PROCTOR TESTS (ASTM 698) SHALL BE DONE BY AN INDEPENDENT TESTING LABORATORY EMPLOYED BY THE CONTRACTOR. IN-PLACE DENSITY TESTS SHALL BE PERFORMED ON EACH LIFT TO ENSURE PROPER PLACEMENT OF FILL MATERIAL.
  7. ALL DISTURBED AREAS SHALL RECEIVE GROUND COVER. ALL AREAS TO RECEIVE GROUND COVER SHALL HAVE A MINIMUM OF 4 INCHES OF TOPSOIL. ALL FOREIGN DEBRIS SHALL BE REMOVED BEFORE PLACING TOPSOIL. AREAS WITH LESS THAN 4:1 SLOPE SHALL BE SEEDDED WITH FOUR POUNDS OF KENTUCKY 31 FESCUE AND ONE POUND OF ANNUAL RYE PER 1,000 SQUARE FEET. SLOPES STEEPER THAN 4:1 SHALL BE SEEDDED WITH A MIXTURE OF 1/4 POUND SCARIFIED SERICEA LESPEDEZA, 1/4 POUND CROWN VETCH, AND ONE POUND KENTUCKY 31 FESCUE PER 1,000 SQUARE FEET WITH 30 POUNDS PER 1,000 SQUARE FEET OF 6-12-12 FERTILIZER. SLOPES 3:1 OR STEEPER SHALL BE COVERED WITH NORTH AMERICAN GREEN EROSION CONTROL BLANKET S150 INSTALLED PER MANUFACTURER'S SPECIFICATIONS (OR ENGINEER APPROVED EQUAL) TO PREVENT EROSION. CONTRACTOR SHALL WARRANT GROUND COVER AND SLOPES FOR A PERIOD OF 1 YEAR.
  8. CONFINE ALL CONSTRUCTION ACTIVITY TO PROPERTY OWNERS' PARCEL. DO NOT ENTER ADJACENT PROPERTY WITHOUT OBTAINING APPROVAL THROUGH WIRELESS PROPERTIES, LLC.
  9. CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FENCE AND OTHER TEMPORARY EROSION CONTROL MEASURES AFTER GRASS IS ESTABLISHED AND STABILIZED.
  10. SEE SURVEY FOR SITE BENCHMARK/CONTROL POINT.

- NOTES:**
1. OWNER REPRESENTATIVE FOR EROSION CONTROL IS MATT BATES / WIRELESS PROPERTIES, LLC.
  2. STATE AND FEDERAL 1/2" RAINSTORM LOG TO BE KEPT ON SITE AND A COPY TO BE SUBMITTED BACK TO THE CITY IN REPORT FORM.
  3. SITE EROSION CONTROLS SHALL BE CHECKED AND IF NECESSARY REPAIRED WEEKLY AND WITHIN 24 HOURS AFTER EACH RAINFALL GREATER THAN OR EQUAL TO 1/2". IN EVENT OF CONTINUOUS RAINFALL EROSION CONTROL SHALL BE CHECKED DAILY.
  4. ALL AREAS THAT REMAIN BARE GREATER THAN 15 DAYS MUST BE TEMPORARILY STABILIZED.
  5. SITE IS IN THE 100 YEAR FLOOD PLAIN



	
<b>WIRELESS PROPERTIES</b> TN-119 PLEASANT RIDGE RD UTILITY ROUTING PLAN	
<b>WIRELESS COMMERCIAL ENGINEERING, INC.</b> <small>1000 W. WASHINGTON AVENUE          SUITE 200          MEMPHIS, TENNESSEE 38103          TEL: (901) 521-0000          FAX: (901) 521-0000</small>	
NOT VALID UNLESS SIGNED & DATED <b>DRAWN BY: DMB</b> <b>CHECKED BY: ABG</b> <b>PROJECT MGR: ABG</b> <b>SHEET NUMBER: E1</b>	



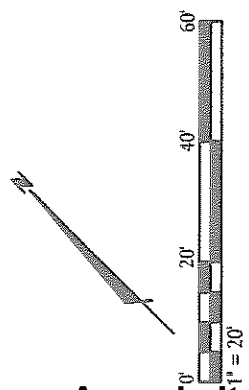
**UTILITY NOTE:**  
 1. RUN 2-4" PVC CONDUITS TO ELECTRIC UTILITY SERVICE ENTRANCE AND 1-4" PVC CONDUIT TO CELLPACK ON H-FRAME.


**REFERENCE NOTES:**  
 40 - CONDUIT TRENCH DETAIL. SEE DETAIL SHEET E4.  
 50 - UTILITY CENTER DETAIL. SEE DETAIL SHEET E6.  
 51 - ELECTRICAL SINGLE LINE DIAGRAM. SEE DETAIL SHEET E5.  
 55 - BELLSOUTH CELLPACK H-FRAME DETAIL. SEE DETAIL SHEET E6.

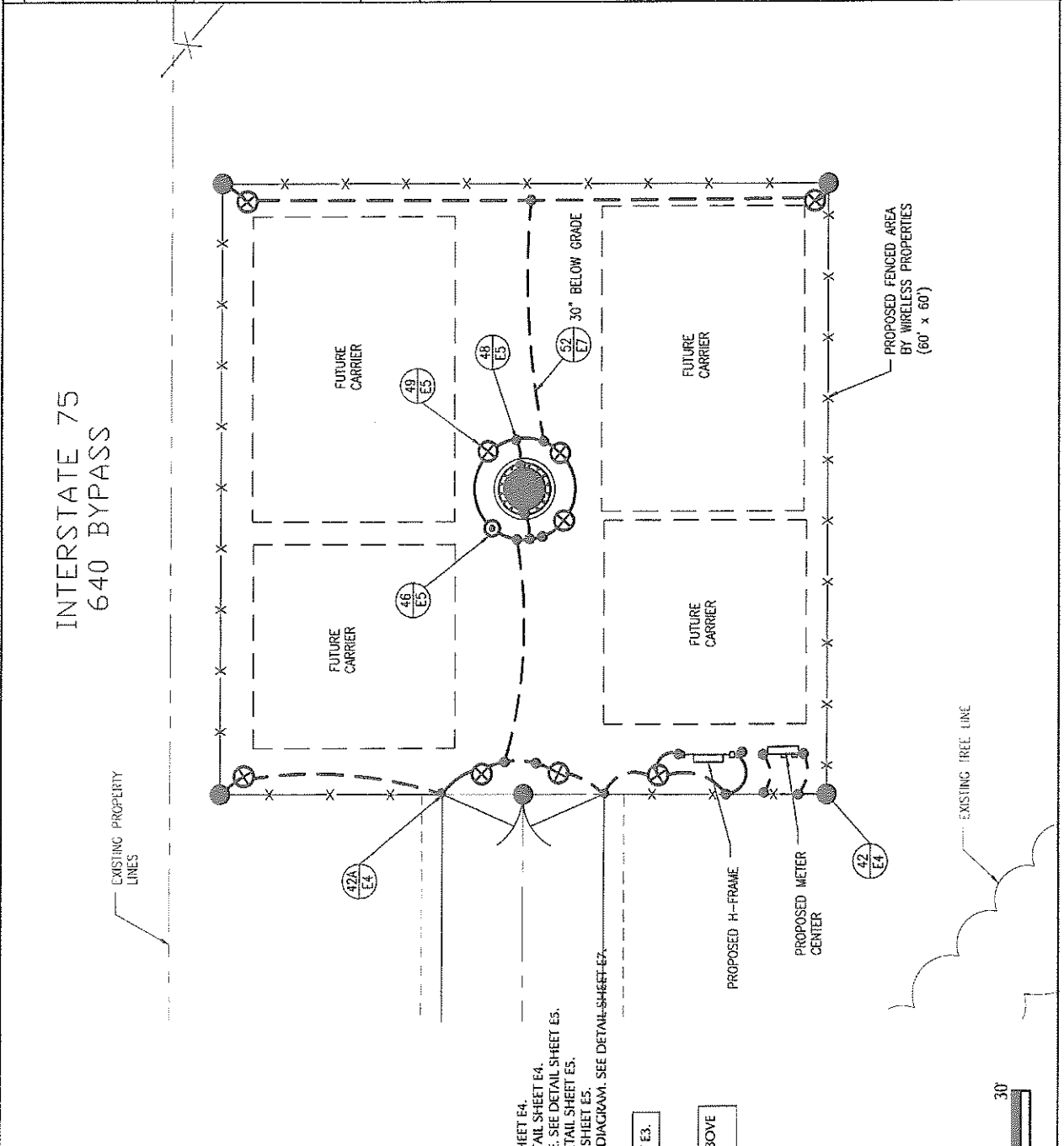
FOR ELECTRICAL NOTES, SEE SHEET E3.

**ELECTRICAL LEGEND:**

- TELEPHONE PEDESTAL
- OVERHEAD TELEPHONE
- UNDERGROUND TELEPHONE
- OVERHEAD POWER
- UNDERGROUND POWER



ENVIRONMENTAL ENGINEERS, INC.						
	<b>WIRELESS PROPERTIES</b> TN-119 PLEASANT RIDGE RD <b>SITE GROUNDING PLAN</b>	<b>ENVIRONMENTAL ENGINEERS, INC.</b> 1100 W. UNIVERSITY BLVD SUITE 200 ANN ARBOR, MI 48106 PH: 734.769.8800 FAX: 734.769.8801 WWW: ENVIRONMENTAL-ENGINEERS.COM	DRAWN BY: <b>DMB</b> CHECKED BY: <b>ABC</b> PROJECT MGR: <b>ABC</b> SHEET NUMBER: <b>E2</b>	NOT VALID UNLESS SIGNED & DATED	DATE: 01-04-08 ISSUED FOR PERMIT REVISION OF ISSUE: 1/4/08	SHEET NO. 2 OF 2



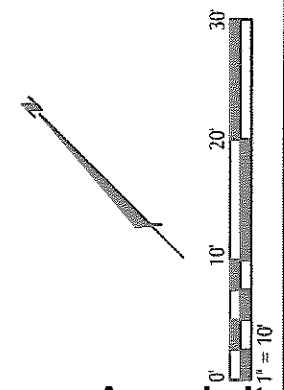
ELECTRICAL LEGEND	
	#2 AWG SOLID TINNED COPPER GROUND CABLE RUN 30' BELOW GRADE
	#2 AWG SOLID TINNED COPPER GROUND CABLE RUN ABOVE GRADE
	10' X 5/8" DIAMETER COPPER CLAD, STEEL GROUND ROD.
	PARALLEL CADWELD
	CADWELD WITH INSPECTION SLEEVE
	CHEMICAL GROUND ROD

**REFERENCE NOTES:**

42 - FENCE GATE GROUNDING. SEE DETAIL SHEET E4.  
 46 - FENCE GATE GROUNDING. SEE DETAIL SHEET E4.  
 48 - EXOTHERMIC WELD TO BASE PLATE. SEE DETAIL SHEET E5.  
 49 - INSPECTION SLEEVE DETAIL. SEE DETAIL SHEET E5.  
 52 - GROUNDING SYSTEM SINGLE LINE DIAGRAM. SEE DETAIL SHEET E7.

FOR GROUNDING NOTES, SEE SHEET E3.

ALL GROUND LEADS THAT EXTEND ABOVE GRADE ARE TO BE CADWELDED.



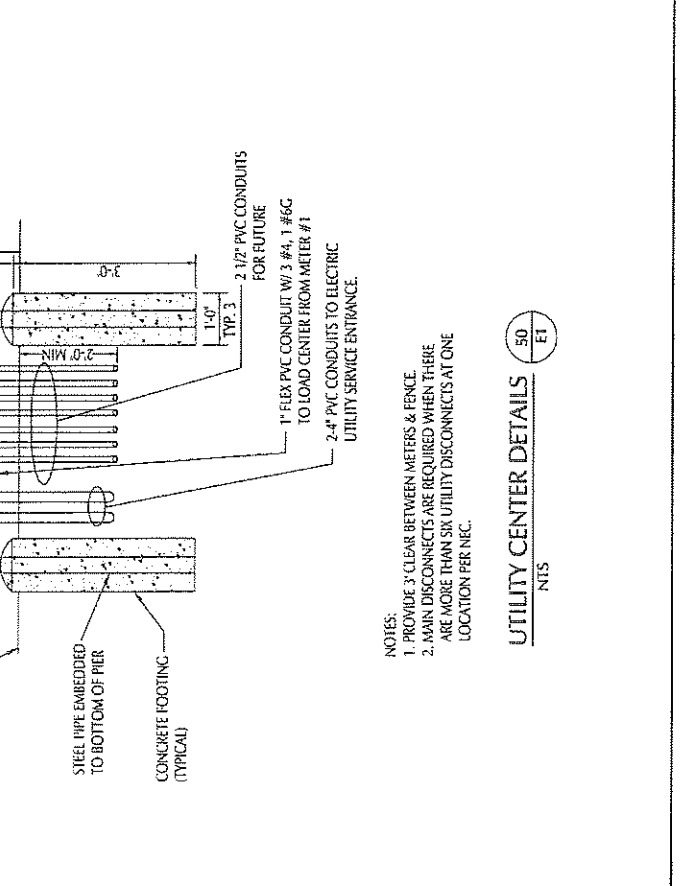
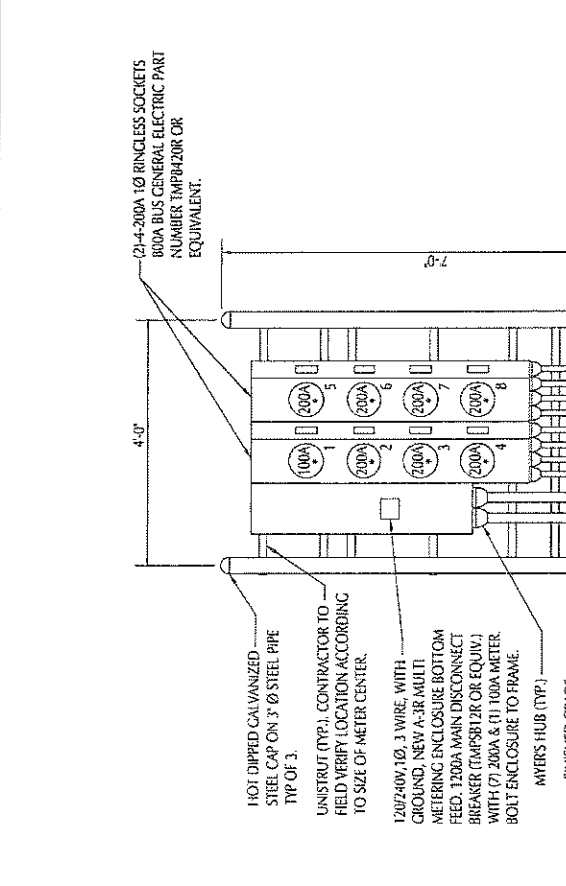
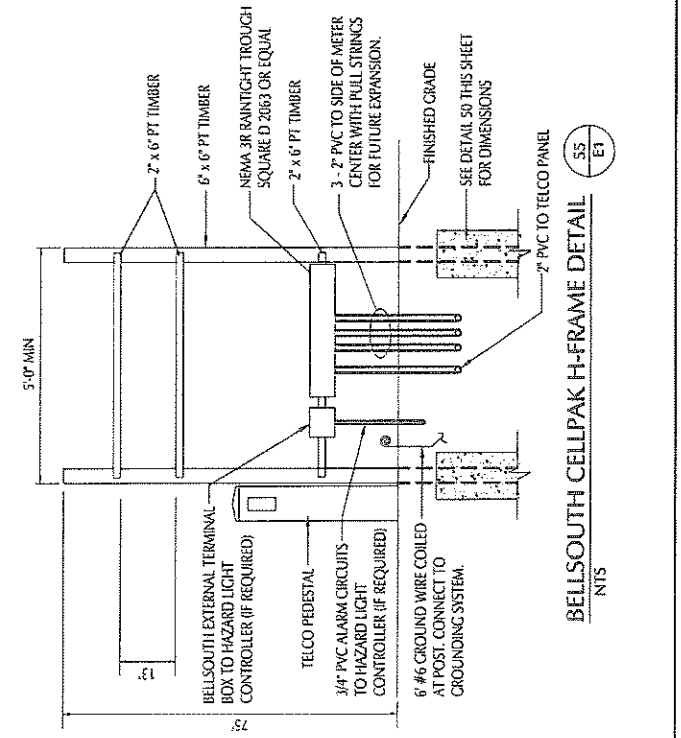
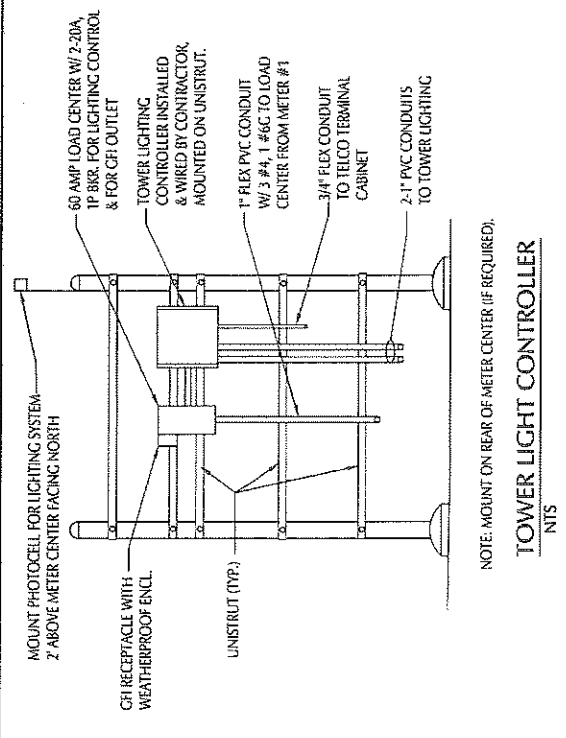
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04-24-03	DMB
DATE	BY
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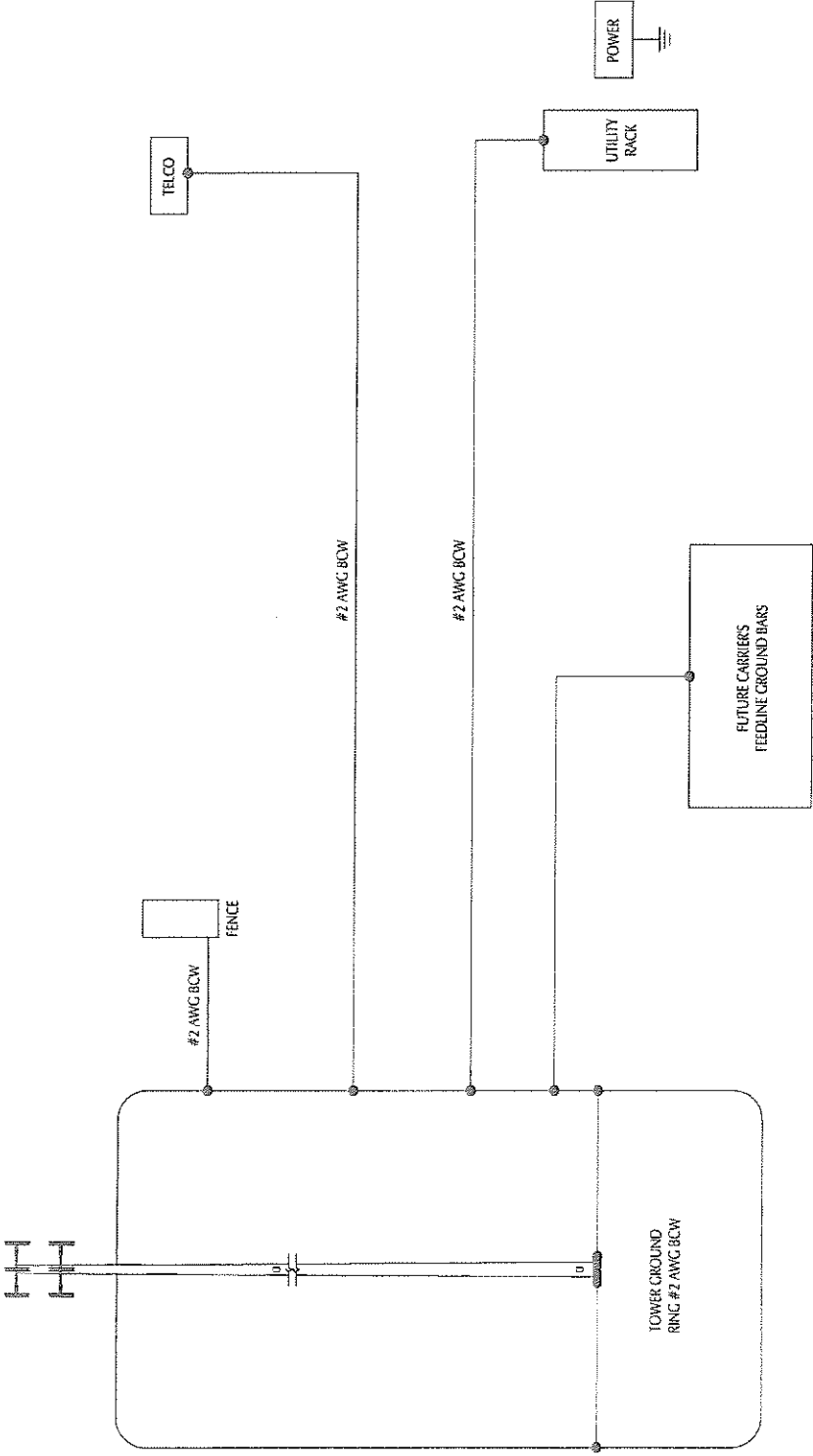
WIRELESS PROPERTIES  
 TN-119  
 PLEASANT RIDGE RD  
 UTILITY CENTER  
 DETAILS

ENVIRONMENTAL INSURANCE, INC.  
 15100 V.G. SHREVEWAY OIL  
 INDUSTRIAL PARK, ABILENE  
 TEXAS 79602  
 PHONE: (817) 692-3000  
 FAX: (817) 692-3000

DRAWN BY: DMB  
 CHECKED BY: ABC  
 PROJECT MGR: ABC  
 SHEET NUMBER: EG



ENVIRONMENTAL ENGINEERS, INC. 2005	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">ISSUED FOR PERMIT</td> <td style="width: 50%; text-align: center;">E60</td> </tr> <tr> <td style="width: 50%; text-align: center;">RECORD OF ISSUE</td> <td style="width: 50%; text-align: center;">BY</td> </tr> <tr> <td style="width: 50%; text-align: center;">DATE</td> <td style="width: 50%; text-align: center;">BY</td> </tr> </table>	ISSUED FOR PERMIT	E60	RECORD OF ISSUE	BY	DATE	BY		<b>WIRELESS PROPERTIES</b> TN-119 PLEASANT RIDGE RD <b>GROUNDING SINGLE LINE</b>	<b>ENVIRONMENTAL ENGINEERS, INC.</b> 1100 W. WILSON BLVD. SUITE 200 MEMPHIS, TENNESSEE 38110 PHONE: (901) 988-0808 FAX: (901) 988-0809 WEBSITE: WWW.EEINC.COM	607 9480 WIRELESS SIGNED & SEALED <b>DRAWN BY: DMB</b> <b>CHECKED BY: ABG</b> <b>PROJECT MGR: ABG</b> <b>SHEET NUMBER: E7</b>
ISSUED FOR PERMIT	E60										
RECORD OF ISSUE	BY										
DATE	BY										



52  
E7

GROUNDING SYSTEM SINGLE LINE DIAGRAM  
NTS



WIRELESS PROPERTIES

April 4, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: Wireless Properties, LLC  
Existing Unavailability: I-640 Bypass / Pleasant Ridge Rd.  
Proposed 180' Monopole communications tower

Dear Mr. Brechko:

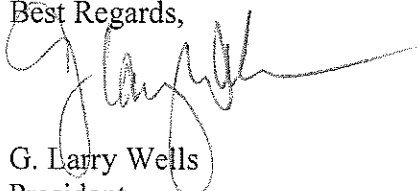
We have not found any suitable existing structures that will serve the public need, safety and necessity for the some of the wireless carriers in the I-640 Bypass / Pleasant Ridge Rd. area. There are not any structurally adequate communication towers in the immediate vicinity, thus prompting the need for our proposed tower. There is an existing 120' flagpole type tower across I-640 but it will not serve the public need in this area due to its lack of height. The lack of compound space at the flagpole tower on the ground precludes the co-location of multiple wireless carriers. Our proposed tower and will accommodate up to six wireless carriers. Please see the attached letters from Sprint and T-Mobile. The proposed location is zoned "C-3".

We have placed this site in an area that should be the least obtrusive of all of the potential sites we reviewed, but will still efficiently meet the needs of several wireless carriers and the public.

Wireless Properties, LLC respectfully requests a permit for a telecommunications tower. Our proposed 180' Monopole is engineered to provide service for up to six (6) broadband carriers and ten (10) narrowband carriers. The effective radiated power of each user on the tower is approximately one hundred (100) watts.

Please call me if additional information is required.

Best Regards,

  
G. Larry Wells  
President

GLW/esd

707 Republic Centre • 633 Chestnut Street  
Chattanooga, Tennessee 37450  
Tel: 423.757.7010 • Fax: 423.757.7020  
Email: mail@wirelessproperties.com  
www.wirelessproperties.com



Monday, April 07, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: TN 119-Wireless Properties Proposed Site (T-Mobile South LLC's 9KX0303A  
Pleasure Ridge)

Mr. Brechko:

T-Mobile South LLC is looking to collocate on the intended Wireless Properties tower site at Pleasant Ridge Rd. RF has deemed that there is not an acceptable existing structure for collocation purposes. To serve the public need, necessity and convenience, T-Mobile South LLC needs an antenna center line of one hundred and eighty feet. Anything less will require more tower sites in the immediate area.

Thank you,

A handwritten signature in cursive script, appearing to read 'Matt Chastain'.

Matt Chastain  
T-Mobile South LLC  
Project Manager 4 – Development  
3800 Ezell Road  
Suite 815  
Nashville, TN 37211



Thursday, April 10, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: TN 119-Wireless Properties Proposed site

Dear Mr. Brechko:

In accordance to the City of Knoxville's zoning regulations, Sprint has reviewed the existing structures in the area and has determined that the existing structures will not meet the needed height requirements for cellular broadcast. Therefore, Sprint is looking to collocate on the proposed Wireless Properties tower located at Pleasant Ridge and I-640.

Thank you,

Bryan Smith

  
Sprint-Nextel

RF Engineer III - Knoxville / Chattanooga



WIRELESS PROPERTIES

April 4, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: Wireless Properties, LLC  
RF Explanation: I-640 Bypass / Pleasant Ridge Rd.  
Proposed 180' Monopole communications tower

Dear Mr. Brechko:

The need behind this tower location is slightly different for the basic "coverage" location. This tower site is driven by multiple factors.

The purpose of the proposed tower is to Cell-split the existing sites located along I-640 and to provide additional coverage for the heavy cellular traffic in this area. The proposed tower would enhance indoor coverage for mobile phones and other cellular devices. Additionally, this site will enhance the capabilities of the spectrum allotted for this region.

Please pass along this explanation to Knoxville's engineering consultants to better assist them in their study of the area. Also please call me if additional information is required.

Best Regards,

A handwritten signature in black ink, appearing to read "G. Larry Wells".

G. Larry Wells  
President

GLW/esd

707 Republic Centre • 633 Chestnut Street  
Chattanooga, Tennessee 37450  
Tel: 423.757.7010 • Fax: 423.757.7020  
Email: [mail@wirelessproperties.com](mailto:mail@wirelessproperties.com)  
[www.wirelessproperties.com](http://www.wirelessproperties.com)





1/4 mile increments



Data Zoom 13-3



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 www.delorme.com





North Arrow  
MN (5.0° W)

Data use subject to license  
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www.delorme.com



WIRELESS PROPERTIES

April 4, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: Wireless Properties, LLC  
Letter of Intent: I-640 Bypass / Pleasant Ridge Rd.  
Proposed 180' Monopole communications tower

Dear Mr. Brechko:

In compliance with City of Knoxville's Ordinances we are submitting this Letter of Intent indicating Wireless Properties, LLC's commitment to allow and promote feasible shared use of our proposed telecommunications tower to be located at 4126 Pleasant Ridge Road, Knoxville, TN. Our company is in the tower development and rental business, and our intent is to lease space to all of the broadband and narrowband providers in the Knoxville area.

It is our specific intention to erect a 180' monopole structure that will accommodate up to six (6) broadband carriers and ten (10) narrow-band carriers. Our towers are engineered and sites are built to hold multiple carriers thereby eliminating the number of towers needed in the City of Knoxville to provide adequate wireless services for citizens and visitors.

Please call me if additional information is required.

Best Regards,

A handwritten signature in black ink, appearing to read 'G. Larry Wells', written over a circular stamp or mark.

G. Larry Wells  
President

GLW/esd

707 Republic Centre • 633 Chestnut Street  
Chattanooga, Tennessee 37450  
Tel: 423.757.7010 • Fax: 423.757.7020  
Email: mail@wirelessproperties.com  
www.wirelessproperties.com



## WIRELESS PROPERTIES

April 4, 2008

Mr. Tom Brechko  
Subdivision and Development Plan Review  
Knoxville/Knox County Metropolitan Planning Commission  
Suite 403, City/County Building  
400 Main Street  
Knoxville, Tennessee 37902

Re: Wireless Properties, LLC  
Identification of Intended Users: I-640 Bypass / Pleasant Ridge Rd.  
Proposed 180' Monopole communications tower

Dear Mr. Brechko:

Wireless Properties is requesting a special permit to build a telecommunications tower to be built at 4126 Pleasant Ridge Road. Our proposed 180' monopole is engineered to provide service for six (6) broadband carriers (cellular/PCS/ESMR) and ten (10) narrow-band carriers (paging/two-way/mobile data, etc.).

Wireless Properties, LLC has relationships with most all of the FCC licensed carriers in the City of Knoxville. We will offer feasible shared use of the space on our tower to AT&T Wireless (formerly Cingular), Verizon Wireless, CricKet, T-Mobile, SprintNextel, US Mobility, US Cellular, along with any other carrier with legitimate needs in the Knoxville area.

Best Regards,

G. Larry Wells  
President

GLW/esd

707 Republic Centre • 633 Chestnut Street  
Chattanooga, Tennessee 37450  
Tel: 423.757.7010 • Fax: 423.757.7020  
Email: [mail@wirelessproperties.com](mailto:mail@wirelessproperties.com)  
[www.wirelessproperties.com](http://www.wirelessproperties.com)



No.: 08-3760-CJP

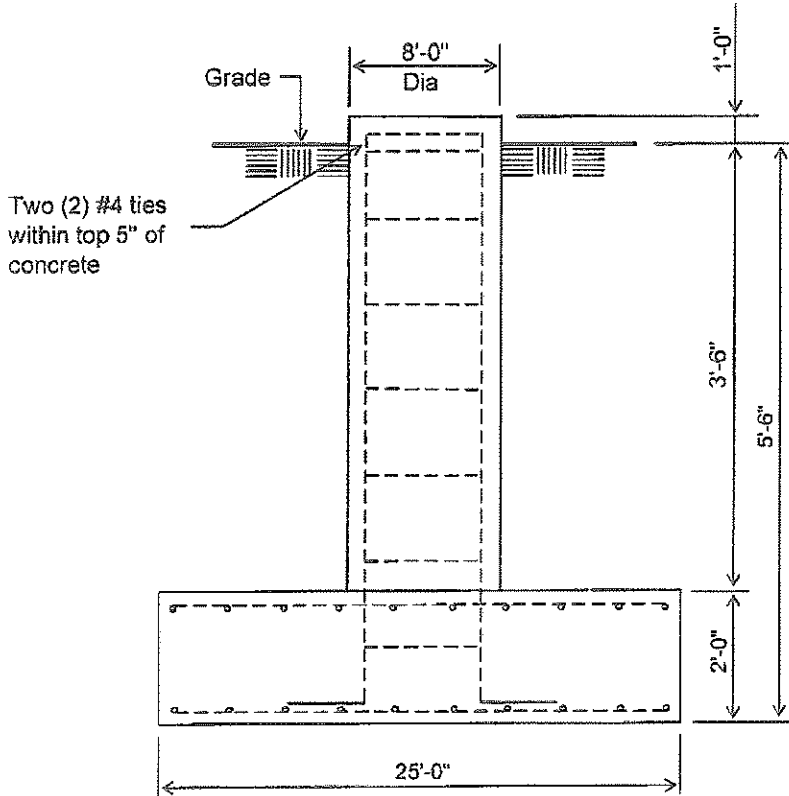
Date: 10/17/07

By: HAC

**Customer: WIRELESS PROPERTIES LLC**  
**Site: I-640 Pleasant Ridge, TN**

180' Monopole at  
 90 mph Wind with 0" ice and 30 mph Wind with 0.5" ice per ANSI/TIA-222-G-2005

**PRELIMINARY -NOT FOR CONSTRUCTION-**



**Notes:**

- 1) Concrete shall have a minimum 28-day compressive strength of 4000 PSI, in accordance with ACI 318-02
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover
- 4) All exposed concrete corners to be chamfered 3/4"
- 5) The foundation design is based on presumptive clay soil as defined in ANSI/TIA-222-G. It is recommended that a soil analysis of the site be performed to verify the soil parameters used in the design

**ELEVATION VIEW**

(54.67 Cu. Yds. each)  
 (1 REQUIRED)

Rebar Schedule per Pad and Pier	
Pier	(38) #9 vertical rebar w/hooks at bottom w/#4 ties, two within top 5" of top of pier then 12" C/C
Pad	(49) #8 horizontal rebar evenly spaced each way top and bottom (196 Total)

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2101 Murray St - P.O. Box 658 - Sioux City, IA 51102-0658 - Phone 712 258 6690 - Fax 712 253 8250



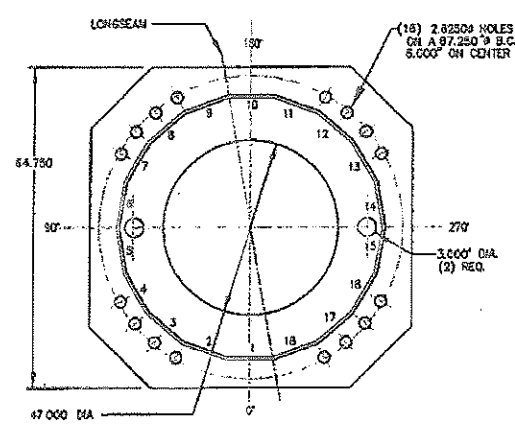
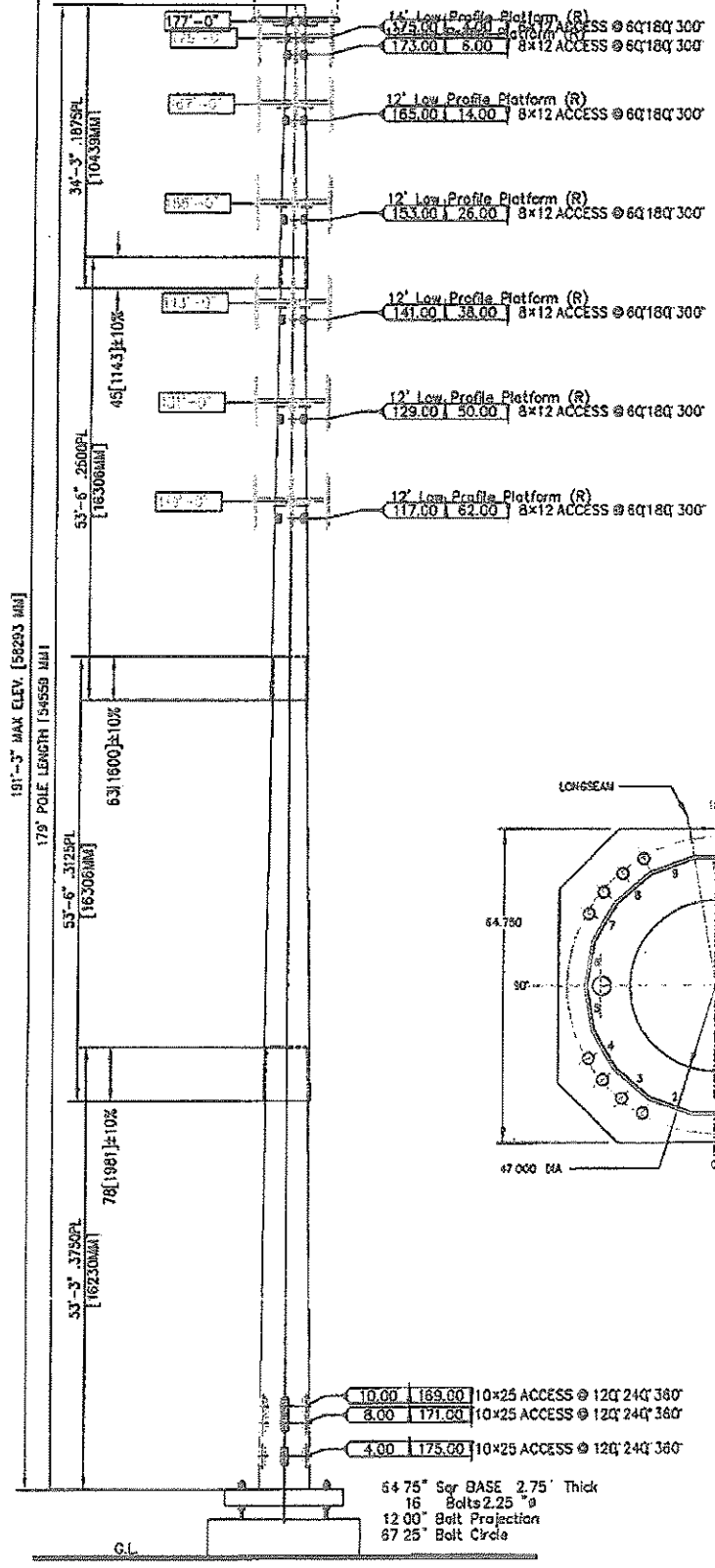
POLE SPECIFICATIONS	
POLE HEIGHT	179.00 FEET
TAPER	2230 IN/FT
POLE SHAPE	18 SIDED POLYGON
ORIENTATION	FLAT-FLAT

Lev	Qty	Elev ft	Future	DESCRIPTION
1	1	177.00		14' Low Profile Platform (R)
	5	185.13		08809KE-XC
2	1	175.00	F	12' Low Profile Platform (R)
	9	175.00	F	6' X 1' X 7"
3	1	167.00	F	12' Low Profile Platform (R)
	9	167.00	F	6' X 1' X 7"
4	1	165.00	F	12' Low Profile Platform (R)
	9	165.00	F	6' X 1' X 7"
5	1	143.00	F	12' Low Profile Platform (R)
	9	143.00	F	6' X 1' X 7"
6	1	131.00	F	12' Low Profile Platform (R)
	9	131.00	F	6' X 1' X 7"
7	1	119.00	F	12' Low Profile Platform (R)
	9	119.00	F	6' X 1' X 7"

Load Case	DESCRIPTION	Wind (mph)	OLF	Rad Vert	Ice	Factors	Wind Gust	Cl	Wind (psf)
1)	3s Gusted Wind	90.0	1.20			1.10	65		34.7
2)	3s Gusted Wind 0.9	90.0	0.9			1.10	65		34.7
3)	3s Gusted Wind&Ice	30.0	1.20	50	110	1.20	2.4		
4)	Service Loads	80.0	1.00			1.10	.65		8.6

Load Case	DESCRIPTION	Res Axial (kips)	Base Shear (kips)	React Morn (ft-k)	Disp @Top (ft)	Top SWAY (deg)
1)	3s Gusted Wind	86.4	33.6	4447	13.4	8.16
2)	3s Gusted Wind 0.9	90.0	33.6	4335	12.9	7.83
3)	3s Gusted Wind&Ice	87.7	3.8	493	1.5	.91
4)	Service Loads	54.6	8.4	1091	3.3	1.99

- 1) FULL HEIGHT STEP BOLTS
- 2) ANTENNA FEED LINES RUN INSIDE POLE
- 3) THE MONOPOLE WAS DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-G, STRUCTURE CLASS II EXPOSURE CATEGORY B, TOPOGRAPHIC CATEGORY I



ESTIMATED STRUCTURE WEIGHT= 33.5 Kips

**WIRELESS PROPERTIES LLC**  
 1-640 Pleasant Ridge, TN  
 TN-119  
 180.00 MONOPOLE

**Sabre**  
 COMMUNICATIONS CORPORATION  
 CONFIDENTIAL  
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00-0000	SIZE A	DRAWING NO 08-3760-PE	REV
DATE 170ct07	REFERENCE DRAWING	SCALE N.T.S.	PAGE 1
DRAWN BY	CHECKED BY TRC		

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

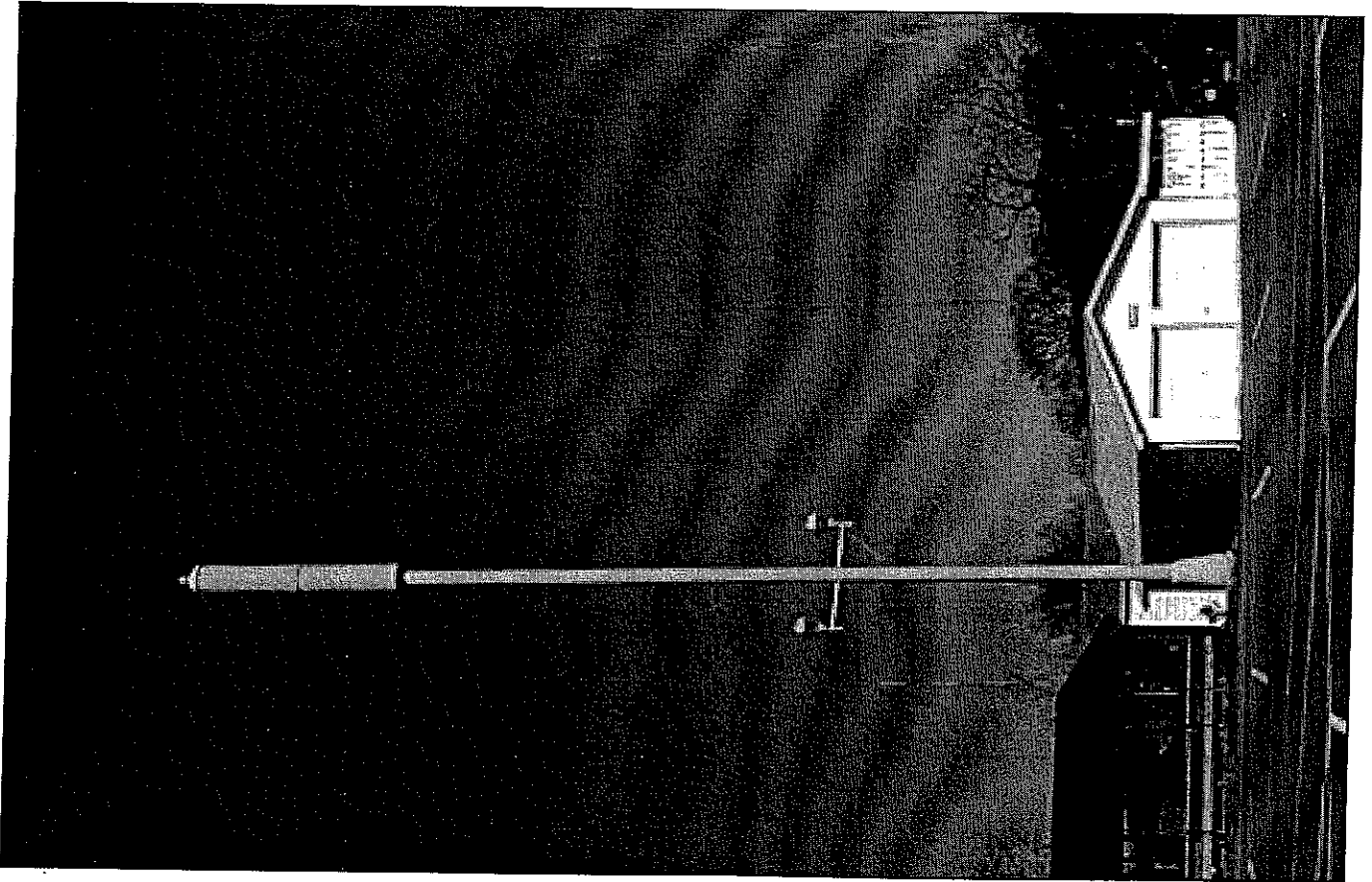
	Co-Location	Stealth Structure	Low Monopole Below 90'	Moderate Monopole 90'-150'	Tall Monopole 150'-199'	Lattice Tower	Guyed Tower
<b>Opportunity Areas</b>							
Industrial/Business Park							
Industrial Use							
Pre-approved Government-owned Property							
Urban Expressway Corridor					X		
Rural/Heavily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

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

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

	Encouraged		Neutral		Discouraged
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Ex. Flagpole Design



## MEMO

To: City of Knoxville  
From: Gordon Snyder, RF Engineering  
Date: June 3, 2008  
Re: Need for PCS Communication facility

T-Mobile currently does not provide PCS mobile telephone service in the Knoxville area. It is our goal to provide exceptional communication services to customers while staying mindful of the communities these facilities impact.

T-Mobile will require new communications facilities this year in order to provide service in Knoxville and provide improved coverage for Knoxville's growing subscriber base. The transmitting locations are determined by statistical analysis, simulations, traffic projections, and customer feedback.

The Pleasure Ridge site is designed to carry a large amount of traffic in the Pleasure Ridge area as well as the main traffic routes and Interstate 75. The design for this site will require 3 antennas per sector. The need for these antennas is based upon capacity and technology. The first two antennas deployed for this site will be for GSM coverage and capacity. These two antennas will provide for radio capacity as well as coverage area. In the future a third antenna will be deployed to accommodate the deployment of UMTS. To restrict the carriers to a flush mount design will require increased height to the tower as the carriers will need to expand vertically to use two or three levels on the tower rather than one level. If the carriers are restricted to one level on this tower it will require that another tower will be required in this same general area in the near future.

If there are any questions, concerns, or comments I can be reached at 502-291-7870.

Gordon Snyder  
RF Engineer  
I-Mobile