

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

▶ **FILE #:** 3-G-08-UR **AGENDA ITEM #:** 56  
 POSTPONEMENT(S): 3/13/2008-5/8/2008 **AGENDA DATE:** 6/12/2008  
 ▶ **APPLICANT:** T-MOBILE SOUTH LLC LANNIE GREENE  
 OWNER(S): LOYAL ORDER OF MOOSE LODGE #1560

TAX ID NUMBER: 57 135  
 JURISDICTION: County Commission District 7  
 ▶ **LOCATION:** North of Ward Rd., south of E. Beaver Creek Dr.  
 ▶ **APPX. SIZE OF TRACT:** 10000 square feet  
 SECTOR PLAN: North County  
 GROWTH POLICY PLAN: Urban Growth Area (Outside City Limits)  
 ACCESSIBILITY: Access is via a 20' wide easement from Ward Rd., a local street with an 14' to 15' pavement width within a 40' right-of-way.  
 UTILITIES: Water Source: Hallsdale-Powell Utility District  
 Sewer Source: Hallsdale-Powell Utility District  
 WATERSHED: Knob Fork Creek

▶ **ZONING:** A (Agricultural)  
 ▶ **EXISTING LAND USE:** Vacant land  
 ▶ **PROPOSED USE:** 300' Telecommunications Lattice Tower - Revision

HISTORY OF ZONING: None noted  
 SURROUNDING LAND USE AND ZONING: North: Vacant land / A (Agricultural)  
 South: Moose Lodge / RB (General Residential)  
 East: Vacant land / A (Agricultural)  
 West: Vacant land / A (Agricultural) & RB (General Residential)

NEIGHBORHOOD CONTEXT: The site is located in a primarily wooded hillside surrounded by a mix of vacant land, residential and institutional development.

**STAFF RECOMMENDATION:**

- ▶ **APPROVE the request for a 300' telecommunications lattice tower in the A zoning district subject to 4 conditions .**
1. Meeting all applicable requirements of the Knox County Zoning Ordinance.
  2. Meeting all applicable requirements of the Knox County Department of Engineering & Public Works.
  3. Meeting FAA requirements for required lighting for the tower.
  4. At the time of the request for a building permit, posting a bond or other approved financial surety that would ensure the removal of the tower if it is abandoned.

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

**COMMENTS:**

## REVISED TOWER PROPOSAL:

The applicant has submitted a revised proposal for a telecommunications tower at this 21.14 acre site located north of Dante Rd., off of Ward Rd. The original proposal was for a 180' monopole located at the top of the ridge on property owned by the Loyal Order of the Moose Lodge. Due to design problems in gaining access to the ridge top the applicant has submitted a revised plan for a 300' lattice tower that will be located approximately 150' below the top of the ridge and closer to the parking lot for the Moose Lodge. At the new location, the top of the proposed lattice tower will be approximately 30' lower than the top of the proposed 180' monopole.

The proposed access to the site is via an access easement with a 12' wide gravel driveway approximately 200' in length with a driveway grade of approximately 19%. (The previous tower proposal had driveway grades up to 35.6%.)

The proposed tower will be located over 700' from any existing residence. The Knox County Zoning Ordinance requires the tower to be located at least 330' (110% of the tower's height) from any residence. The proposed tower far exceeds that minimum standard. The proposed tower will be approximately 180' from the Loyal Order of the Moose Lodge (owner of the property being leased).

The applicant is proposing an 8' high security fence around the tower and equipment area. Due to the height of the tower, FAA does require lighting for the tower.

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

Attached to the staff report are several support documents, including a report from MPC's tower consultant, Mr. Larry E. Perry. Mr. Perry's report describes the proposal and highlights his findings. Mr. Perry concludes that the 300' tower is technically justified by the materials submitted by the applicant, however.

## 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 required utilities are available to serve this development.
2. Since this site is located in a heavily wooded area which provides a natural vegetative buffer between the proposed lease area and nearby properties.

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

1. The proposed tower site is consistent with the standards for a commercial telecommunications tower located within the A (Agricultural) district, and with the general standards for uses permitted on review.

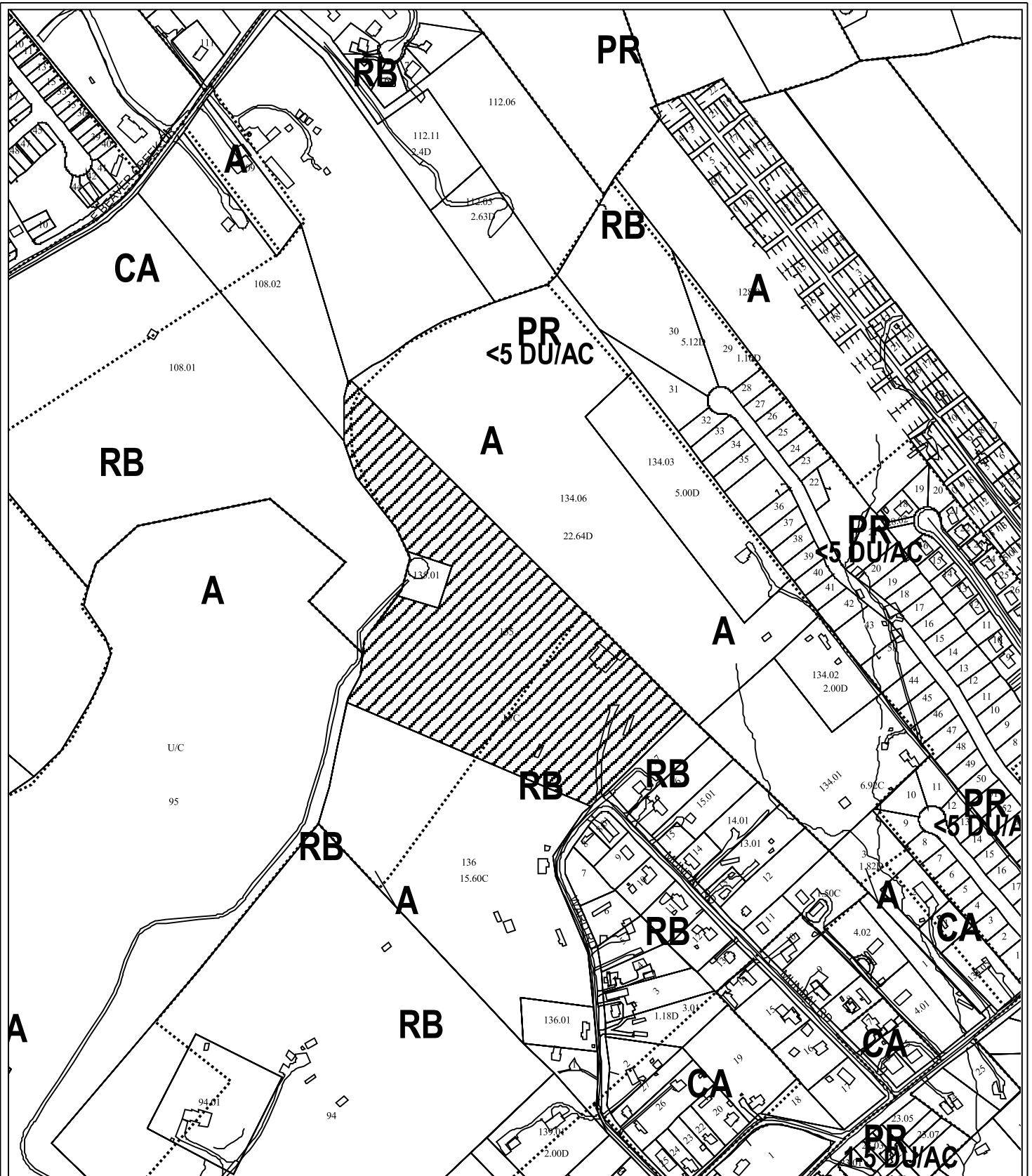
## CONFORMITY OF THE PROPOSAL TO ADOPTED PLANS

1. The North County Sector Plan proposes public institutional uses and slope protection on this property. With the revised design, the impact to the slopes along the ridge will be minimized.
2. Under the guidelines for tower placement in the Wireless Communications Facility Plan this proposed tower falls within both an "Opportunity Area" and "Sensitive Area". The site is considered to be in an "Opportunity Area" because the tower would be located in a rural/heavily wooded area. The Plan takes a neutral position on lattice towers located under that category in the "Opportunity Area". The site is also considered to be in a "Sensitive Area" since the tower will be located on a hill below the ridge top/ridge line. The plan also takes a neutral position for lattice towers in this category. The previous proposal which was for a tall monopole tower located on a ridge top/ridge line, was considered to be in an "Avoidance Area" which is discouraged by the Plan.


ESTIMATED TRAFFIC IMPACT: Not calculated.

ESTIMATED STUDENT YIELD: Not applicable.

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



3-G-08-UR  
 USE ON REVIEW

 190' Telecommunications Monopole in A (Agricultural)

Original Print Date: 02/26/08    Revised:  
 Metropolitan Planning Commission \* City / County Building \* Knoxville, TN 37902

Petitioner: T-Mobile South LLC

Map No: 57

Jurisdiction: County



Revised Location

**T MOBILE**

**Telecommunications Tower Site Review**

**USE ON REVIEW APPLICATION # 03-G-08-UR**

**CONSULTANT'S SUMMARY**

**Revised Ward Road Site**

**Knox County**

**Location:** Ward Road near Dante School Road (East Knox County)

**Proposed Tower Height:** 300 foot Lattice Self Supported Tower

**Address:** 6909 Ward Road  
Knoxville, Tennessee

**District:** # 7th County **Map Number:** 57 **Parcel** 135

**Use:** Telecommunications antenna support structure

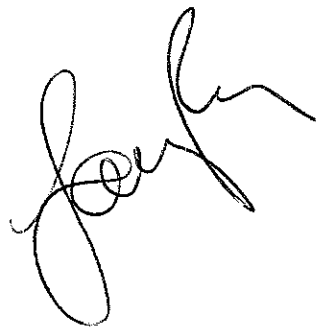
**Zoning:** A (Agricultural/Urban Growth)

**Variances and waivers:** None required

**Need:** The applicant is T Mobile, a licensed PCS carrier by the Federal Communications Commission and possibly other users.

**Instant Proposal:** Construct a 300 foot lattice tower type support structure.

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

A handwritten signature in black ink, appearing to be 'J. L. ...', located in the lower right quadrant of the page.

**REPORT TO  
METROPOLITAN PLANNING COMMISSION**

for

Proposed Telecommunications Tower Site  
Located at 6909 Ward Road  
Knoxville, TN known as

**REVISED WARD ROAD SITE**

**T-MOBILE**

**UOR 3-G-08-UR**

**COMPLIANCE WITH**

**THE MPC TELECOMMUNICATIONS FACILITY ORDINANCE  
06/01/2008**

The proposed site for the applicant is a 300 foot lattice self supported antenna support structure (including antennas and lightning rod) to be located just off Dante School Road at 6909 Ward Road. The supporting material from applicant has been reviewed for technical and Federal/State legal compliance As well as with the Knox County Wireless Communication Facilities Plan from 2002. This is a new telecommunications site. This site is known as a fill site (explained in the report). **NOTE:** This is a revised application replacing a 190 foot monopole originally placed at the top of the ridge above the present proposed site. There was an access problem with the original site, thus this revision.

**REQUESTED**

1. **Location.** The location is within the **County** of Knox limits in **District 7** and is located on **Tax Map Number 57 Parcel 135**

2. **Zoning.** A (Agricultural/Urban Growth)

3. **Tower height.** The requested height is 300 feet above ground level will support up to 3 additional telecommunications carrier antennas for a total of 4 users. Lighting **will be** required on this structure.

4. **Variances.** The set back requirements in Article 4 of the Ordinance for Knox County for "A" sites are met with the instant proposal. Section 4.92.02(2)(a) of the Knox County Zoning Ordinance requires a proposed tower to be more than 110% of the tower height (330 feet in this case) from a residential home. There are no residential homes near this proposed site although the Moose Club lodge building is located about 75 feet East of the

Tower base. The use of the land at this proposed site is permitted under section 5-5.22.03S.

5. **Site.** This application is for the construction of a new lattice type self supported antenna support structure to be located on an area adjacent to the existing Moose Lodge and slightly up the hill. The site is located on a 21 acre parcel of wooded land.

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 T- Mobile 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 or 330 feet in this case. The applicant meets that requirement.(Art. 4 Section 4.92.02(2)(a).

8. **Height.** The proposed structure is for 300 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)

Knox County Wireless Communications Facilities Plan dated 2002.

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

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

Review support structure drawings and specifications with applicant

Review FAA lighting and marking requirements and proposals

Review FCC requirements regarding signal coverage, towers and lighting

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

Review Site plan by applicant  
Check Zoning

Check setbacks for building and antenna support structure

Check for compliance with Wireless Communication Facility Plan

Check proximity to other structures and district boundaries

Check nature of surrounding land uses  
Check surrounding foliage and tree coverage

Check design of tower for esthetic changes

Check height requirements necessary for coverage

Check separation from other towers

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

## **DISCUSSION**

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

The site elevation at this location is 1172 feet. There are trees around the proposed site that exceed an estimated 65 feet tall.

The request is for a 300 foot lattice self supported tower of which T Mobile will use the top 25 feet and the additional usable lower 50 feet is for other carriers' expansion.

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 fairly isolated and there are no residential homes near the site as it is fairly isolated. There are residential homes at the foot of the ridge, but these are more than 1,000 feet away.

The proposed structure should not affect adjacent property as it is very wooded or constitute a safety hazard.

All that being said, it should be noted that this is a revised version of the original application which was for a 190 foot monopole to be located at the top of the ridge above the Moose Club Lodge. There were several access problems associated with that site, including the road around the existing water tank to the site. That would take extensive grading and back filling to make it level at that location. In addition the access road up to the original site was very steep and would present serious problems for the construction of the facility. In discussing this with the applicant, it was decided by the applicant to revise the original application to move the tower down the hill just up from the Moose Lodge without any road access problems. The 300



feet proposed is necessary to make the top equivalent to the original elevation taking into account the elevation of the ridge itself.

## **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 lattice structure (300 feet) coupled with required lighting requirement will make the structure obvious to the area. The heavily wooded surroundings will isolate the structure somewhat, but it will still be visible from anywhere in the area and the required lighting will make it that much more visible.

(2) **Land Use Compatibility**---The proposed site is on a slightly wooded parcel of land immediately adjacent to a Moose Lodge in East Knox county. 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 lattice type structure which will stand out from the adjacent land area uses and will be lit at night to comply with FAA regulations.

(A) **Opportunity Areas**---This proposed site is in an area zoned Agricultural/Urban Growth and is wooded and meets the requirements of an opportunity 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 not in an avoidance area.

## **SUMMARY**

(1) The proposed antenna support structure is a 300 foot lattice type self supported structure including antennas. There are lighting requirements for this structure required by the FAA.

(2) A review of the structure stress analysis on the proposed structure and specifications support the use of the tower by three other potential users in the future.

- (3) The structure design meets or exceeds FCC and EIA requirements.
- (4) The area surrounding the site is wooded and zoned Agricultural. There are no residences in the immediate area.
- (5) There is no general use technology (such as satellite communications) that is available at the present time nor in the immediate future that would negate the need for the structure. However, should such a technology become available and the structure of no further use, the Ordinance at Article 4.92.03 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.
- (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.
- (10) There are no additional setback requirements for the proposed site.
- (11) The proposed site and structure will have no environmental impact within the federal guidelines.
- (12) No variance to the Knox County Ordinance is required for this site.
- (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 4 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.

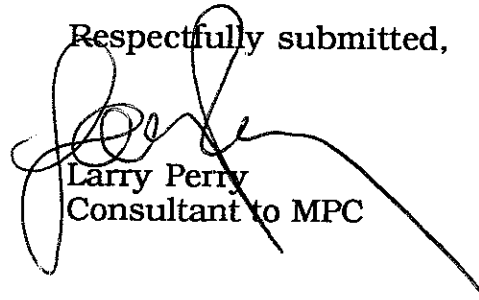
(15) There is a need for the structure in this area to provide for the wide spectrum wireless internet service and for other wireless voice and data services to be provided under government regulation by the various proposed carriers who plan to use the sit

(16) This is a "fill"site meaning that there are holes in the present coverage of the carrier, applicant, T Mobile in the surrounding area and this site will be used to "fill in" those holes.

### **RECOMMENDATION**

In light of the analysis and review of documents, it is my professional opinion that the applicant meets all the technical and federal requirements and 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 County of Knox.

Respectfully submitted,

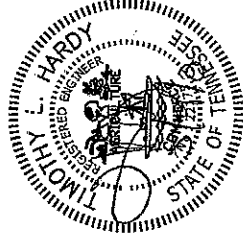
A handwritten signature in black ink, appearing to read "Larry Perry", is written over the typed name and title. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Larry Perry  
Consultant to MPC

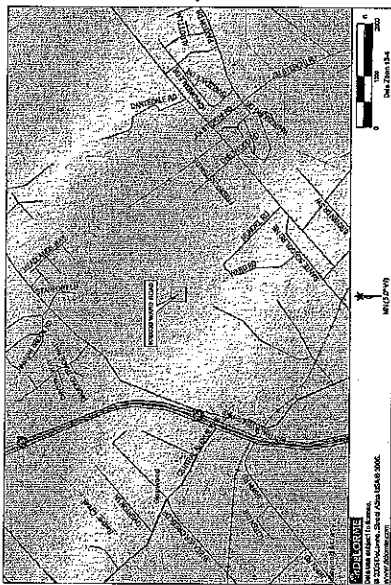
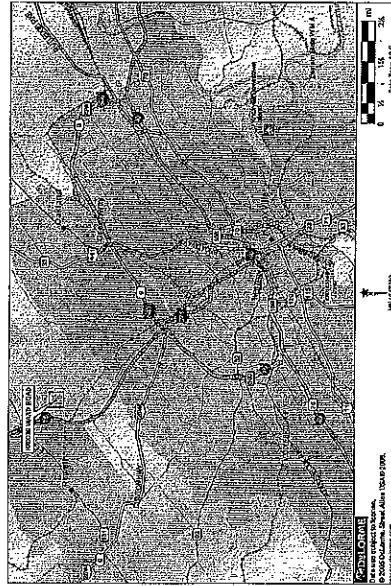
# SITE DEVELOPMENT PLANS FOR T-MOBILE SOUTH LLC

**SITE #:** 9KX00391  
**SITE NAME:** WARD ROAD  
**SITE ADDRESS:** 6909 WARD ROAD  
**KNOXVILLE, TENNESSEE 37902**

SIGNATURE AUTHORIZATIONS:	
RF ENGINEER APPROVAL SIGNATURE _____	DATE: _____
CONSTRUCTION MANAGER APPROVAL SIGNATURE _____	DATE: _____
SITE ACQUISITION AGENT APPROVAL SIGNATURE _____	DATE: _____
LAND OWNER APPROVAL SIGNATURE _____	DATE: _____
OPS APPROVAL SIGNATURE _____	DATE: _____
ZONING/PERMITTING APPROVAL SIGNATURE _____	DATE: _____



3-G-08-UK  
REVISED  
Location



**DIRECTIONS:** TAKE I-40 EAST TOWARDS KNOXVILLE AND TAKE I-75 NORTH TO EXIT #355. TAKE EXIT RAMP AND TURN RIGHT ONTO GALLAHAN DRIVE. CONTINUE EAST CENTRAL AVENUE PKE ONTO DANTE SCHOOL ROAD NE. FOLLOW DANTE SCHOOL ROAD NE AND TURN LEFT ONTO WARD ROAD. CONTINUE ON WARD ROAD TO THE INTERSECTION WITH MUNDEL ROAD. THE SITE WILL BE ON THE LEFT.

**Tennessee One Call System, Inc.**  
1-800-351-1111

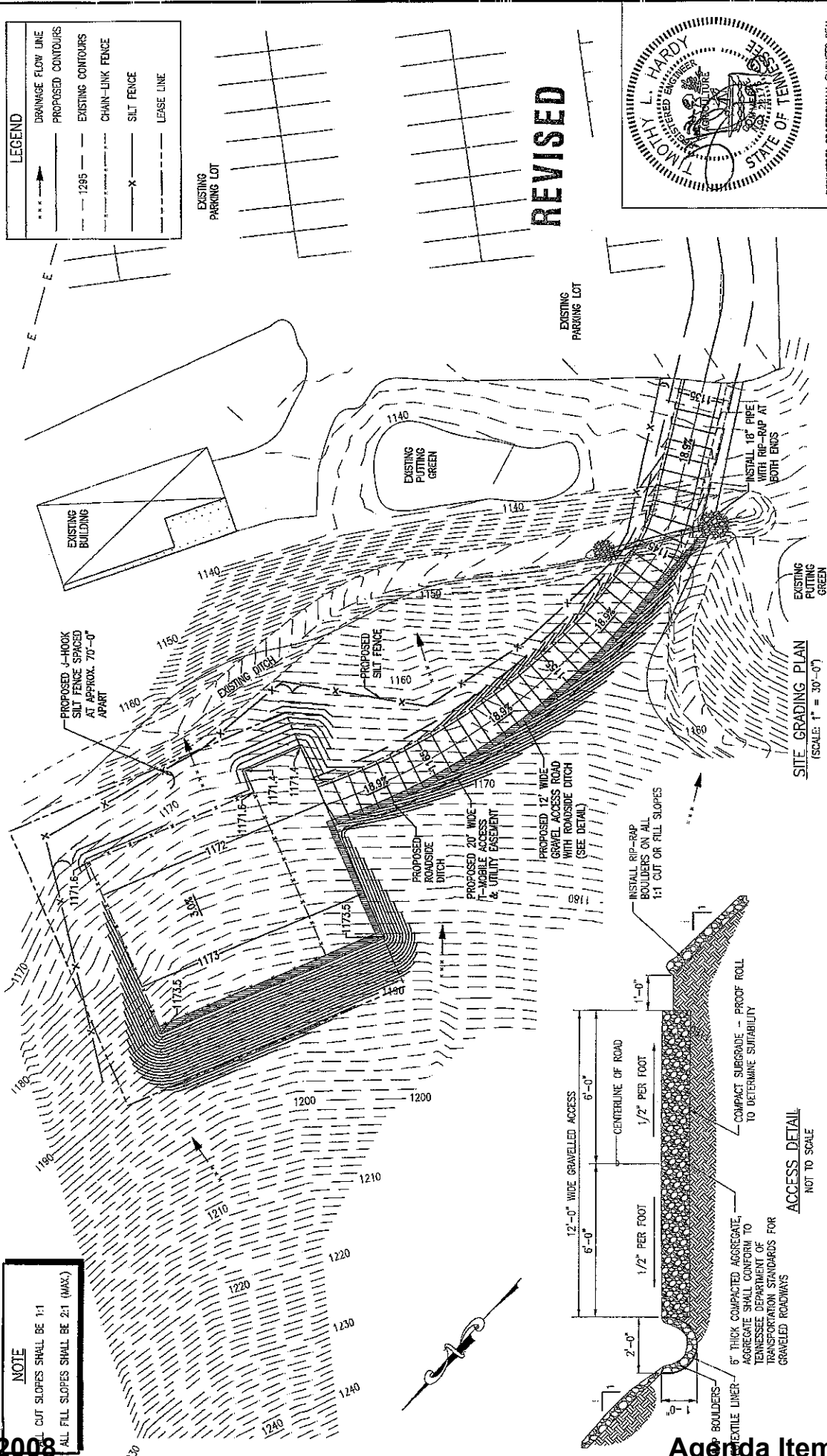
**NOTICE TO CONTRACTORS**  
SHOULD CONTACT ARCHAELOGICAL FEATURES OR HUMAN SKELETAL REMAINS BE ENCOUNTERED DURING PROJECT ACTIVITIES: STOP WORK IMMEDIATELY AND CONTACT THE T-MOBILE FIELD CONSTRUCTION MANAGER FOR INSTRUCTIONS.

- GENERAL NOTES:**
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE CITY OF KNOXVILLE REGULATIONS.
  - CONTRACTOR SHALL NOTIFY TENNESSEE ONE CALL AT LEAST 3 BUSINESS DAYS PRIOR TO START OF CONSTRUCTION TO VERIFY LOCATION OF ALL UTILITIES SHOWN OR NOT SHOWN.
  - ALL UTILITIES WITHIN ROADWAY SHALL BE BACKFILLED WITH STONE.
  - CONTRACTOR SHALL REPAIR AT HIS EXPENSE DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, CURBS, SIDEWALKS, DRIVEWAYS, DRIVEWAYS, CURES, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL UNUSABLE MATERIALS FROM THE SITE.
  - CONTRACTOR SHALL COORDINATE WITH POWER COMPANY PROVIDING TEMPORARY SERVICE FOR CONSTRUCTION FACILITIES DURING CONSTRUCTION.
  - THE CONTRACTOR IS SPECIFICALLY CAUTIONED ABOUT THE LOCATION AND/ELEVATIONS OF EXISTING UTILITIES SHOWN ON THIS DRAWING. CONTRACTOR SHALL VERIFY ALL UTILITIES SHOWN ON THIS DRAWING, DEEDS, AND PLATS OF RECORD AND WHERE POSSIBLE ACTUALLY FIELD MEASUREMENTS. THIS INFORMATION IS NOT TO BE TAKEN EXACT OR COMPLETE.
  - IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION OF ALL UTILITIES WHICH MAY CONFLICT WITH PROPOSED IMPROVEMENTS.
  - THIS PROJECT WILL NOT REQUIRE WATER OR SEWER SERVICE.
  - CONTRACTOR SHALL REMOVE ANY DIRT OR MUD FROM TIRES OF ANY CONSTRUCTION VEHICLES PRIOR TO LEAVING SITE.
  - REFER TO BUILDING/TOWER PLANS FOR PROPOSED DIMENSIONS AND OTHER SPECIFICS WHICH ARE NOT SHOWN.
  - CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A PROPER TRAFFIC CONTROL PLAN FOR PUBLIC SAFETY ADJACENT TO CONSTRUCTION SITE. THE TRAFFIC CONTROL PLAN MUST BE IN ACCORDANCE WITH LATEST MUTCD EDITION.

<b>TELEPHONE CO.:</b> BELL SOUTH CONTACT: CUSTOMER SERVICE PHONE: (865) 620-6000	<b>ELECTRIC CO.:</b> KNOXVILLE UTILITIES P.O. BOX 59017 KNOXVILLE, TN 37950-9017 CONTACT: CUSTOMER SERVICE PHONE: (865) 524-2811	<b>COORDINATES:</b> LATITUDE: 36° 02' 16.97" LONGITUDE: 83° 58' 22.97" GROUND ELEV: 1323' AMSL	<b>PROPERTY ZONING:</b> ZONED A, AGRICULTURAL PARCEL I.D. KNOX COUNTY I.D. PARCEL NO. 057-135	<b>INDEX:</b> T1 TITLE SHEET C0 SURVEY C0 SITE GRADING PLAN C1 OVERALL SITE LAYOUT C1.5 DETAILED COMPOUND LAYOUT C2 TOWER ELEVATION C3 ANTENNA & COAX GROUNDING DETAILS C3.1 COAX GROUNDING DETAIL C3.2 GROUND RISER DIAGRAM C4 ELECTRICAL DETAILS C5 ELECTRICAL DETAILS C7 GROUNDING LAYOUT C8 EQUIPMENT & GENERATOR PAD DETAILS C9 WIRING DIAGRAM C10 UTILITY TRENCH DETAILS C11 FENCE DETAILS C12 SILT FENCE DETAILS	<b>REV. DATE:</b> 5-09-08 5-09-08 5-09-08 5-09-08
<b>LESSOR:</b> T-Mobile T-MOBILE - NASHVILLE MARKET 3800 EZELL ROAD, SUITE 815 NASHVILLE, TENNESSEE 37211 CONTACT: REAL ESTATE DEPARTMENT		<b>ENGINEER:</b> HARDY ENGINEERING, INC. 209 LINDEN STREET BRUSSVILLE, ALABAMA 35173 CONTACT: TIM HARDY PHONE: (205) 655-1427 MOBILE: (205) 222-7565		<b>INDEX:</b> T1 TITLE SHEET C0 SURVEY C0 SITE GRADING PLAN C1 OVERALL SITE LAYOUT C1.5 DETAILED COMPOUND LAYOUT C2 TOWER ELEVATION C3 ANTENNA & COAX GROUNDING DETAILS C3.1 COAX GROUNDING DETAIL C3.2 GROUND RISER DIAGRAM C4 ELECTRICAL DETAILS C5 ELECTRICAL DETAILS C7 GROUNDING LAYOUT C8 EQUIPMENT & GENERATOR PAD DETAILS C9 WIRING DIAGRAM C10 UTILITY TRENCH DETAILS C11 FENCE DETAILS C12 SILT FENCE DETAILS	

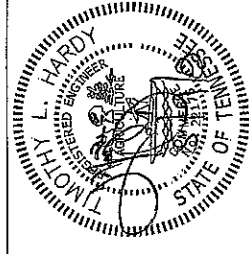


**NOTE**  
 ALL CUT SLOPES SHALL BE 1:1  
 ALL FILL SLOPES SHALL BE 2:1 (MAX.)



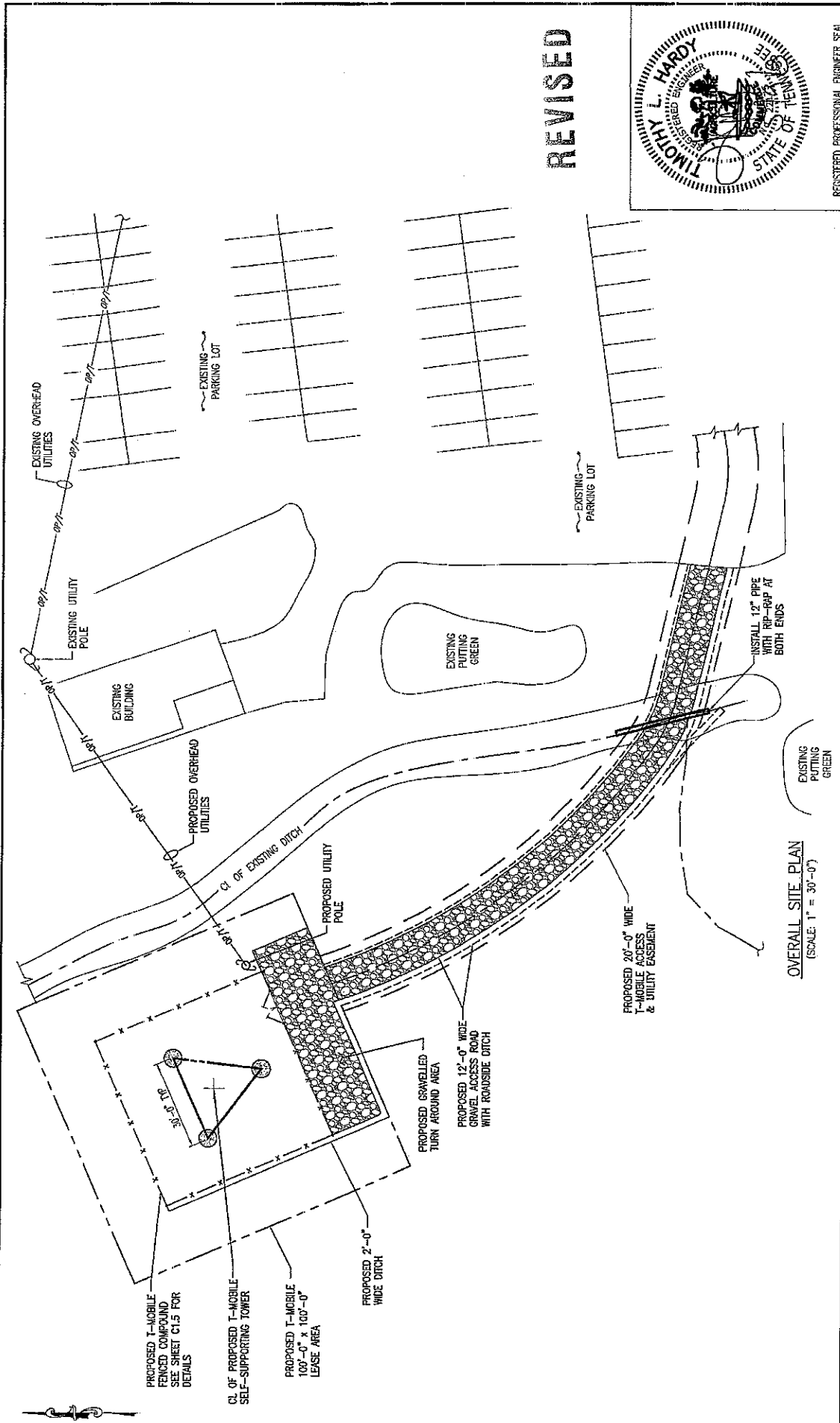
**LEGEND**

	DRAINAGE FLOW LINE
	PROPOSED CONTOURS
	EXISTING CONTOURS
	CHAIN-LINK FENCE
	SILT FENCE
	LEASE LINE



**REVISED**

REGISTERED PROFESSIONAL ENGINEER SEAL <b>SITE GRADING PLAN</b> 9X0030 SITE WARD ROAD MAXWELL, TENNESSEE T-MOBILE SOUTH LLC NASHVILLE, TENNESSEE		DATE: 1-24-08 DRAWN BY: T.L. HARDY CHECKED BY: A. KIRK	HARDY ENGINEERING, INC. ENGINEERING AND CONSULTING 208 LINDEN STREET, P.O. BOX 708 TRUSSVILLE, AL 36170 PHONE: (205) 665-1427 FAX: (205) 661-9927	PROJECT NO: R30039_00 DRAWING NO: C0
SCALE: 1" = 30'-0"		REVISIONS REVISIONS BY CHK BY DATE REVISIONS BY CHK BY DATE REVISIONS BY CHK BY DATE		



REVISED



REGISTERED PROFESSIONAL ENGINEER SEAL  
 OVERALL SITE PLAN  
 9X00039 SITE: WARD ROAD  
 KNOXVILLE, TENNESSEE  
 FOR  
 T-MOBILE SOUTH LLC  
 NASHVILLE, TENNESSEE  
 9085 KY0039, C1A AS SHOWN REC. NO. C1

**J.E. STEGER** DATE: 1-25-08  
 HARDY ENGINEERING, INC.  
 ENGINEERING AND CONSULTING  
 209 JINDBER STREET, P.O. BOX 708  
 TRUSSVILLE, AL 35173  
 PHONE: (205) 655-1427 FAX: (205) 661-6027

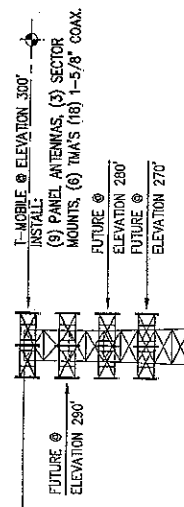
DESIGN BY: **J.L. HARDY** DATE: 1-25-08  
 APPROVED BY: [Signature]

REVISIONS	BY	CHK. BY	DATE
REVISED SITE LAYOUT	JS	TH	5-20-08

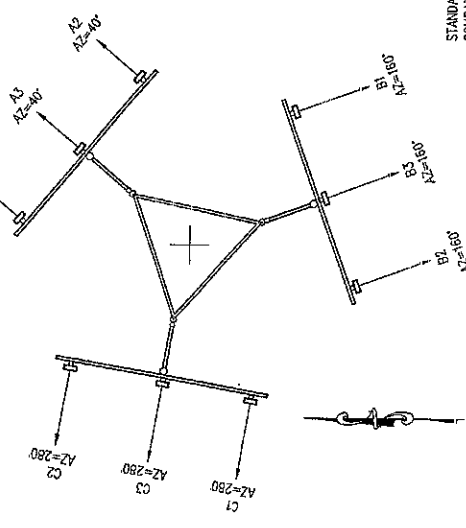
### ANTENNA AND COAX SCHEDULE

ANTENNA MARK	SECTOR	ANTENNA (1)	COAX FEED LOCATION	HEIGHT (0' = NORTH)	COAX COLOR CODE	COAX CABLE SIZE	MECHANICAL DOWN TILT (2)	ELECTRICAL DOWN TILT	RADIATION CENTER	
A1	A	TMBX-6517-R2M	BOTTOM	40'	TX/RX - RED	(6) 1 5/8"	0'	2'	300'	
A2	A	TMBX-6517-R2M	BOTTOM	40'	TX/RX - RED-RED-GRAY		(9) 1 5/8"	0'	2'	300'
A3	A	TMBX-6517-R2M	BOTTOM	40'	TX/RX - RED-RED-RED			(6) 1 5/8"	0'	2'
B1	B	TMBX-6517-R2M	BOTTOM	180'	TX/RX - BLUE	(9) 1 5/8"			0'	2'
B2	B	TMBX-6517-R2M	BOTTOM	180'	TX/RX - BLUE-BLUE-GRAY		(6) 1 5/8"		0'	2'
B3	B	TMBX-6517-R2M	BOTTOM	180'	TX/RX - BLUE-BLUE-BLUE			(6) 1 5/8"	0'	2'
C1	C	TMBX-6517-R2M	BOTTOM	280'	TX/RX - GREEN	(9) 1 5/8"			0'	2'
C2	C	TMBX-6517-R2M	BOTTOM	280'	TX/RX - GREEN-GREEN-GRAY		(6) 1 5/8"		0'	2'
C3	C	TMBX-6517-R2M	BOTTOM	280'	TX/RX - GREEN-GREEN-GREEN			(6) 1 5/8"	0'	2'

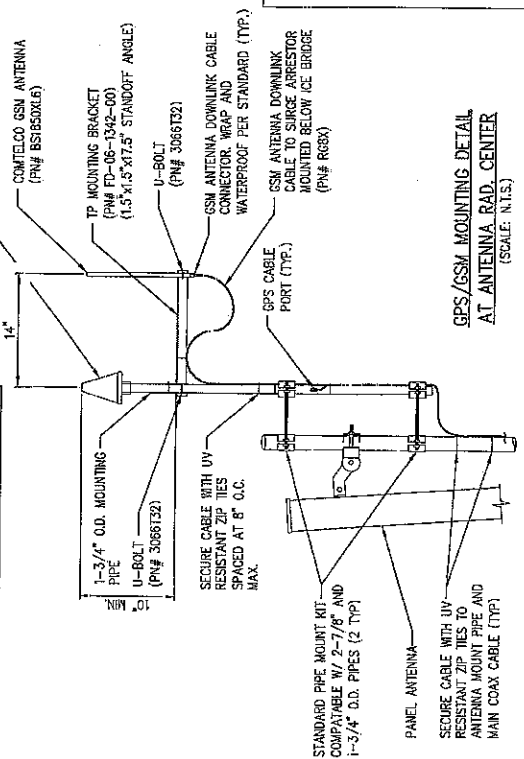
① FINAL ANTENNA TYPE TO BE DETERMINED BY T-MOBILE. ANTENNAS TO BE PROVIDED BY T-MOBILE AND INSTALLED BY CONTRACTOR.  
 ② ALL ANTENNAS TO BE INSTALLED WITH DOWNTILT BRACKETS.



T-MOBILE WILL PROVIDE TOWER WITH (1) SET OF MOUNTS, (1) WAVEGUIDE LADDER, SPECT CLIMB AND TOWER LIGHTING.



**GPS POSITIONING NOTE**  
 THE CONTRACTOR SHALL FIELD VERIFY THE GPS LINE OF SIGHT TO THE SKY AND RELOCATE THE GPS ANTENNA ACCORDINGLY AS REQUIRED IF OBSTRUCTED BY EQUIPMENT ABOVE. COORDINATE DETAILS WITH THE CONSTRUCTION MANAGER.



GPS/GSM MOUNTING DETAIL AT ANTENNA RAD. CENTER (SCALE: N.T.S.)

REVISED



DATE: 06-20-08	BY: JS	CHK. BY: JH	DATE: 5-09-08
DESIGNED BY: J.E. STEGER	DATE: 1-25-08	APPROVED BY: T.L. HARDY	DATE: 1-25-08
HARDY ENGINEERING, INC.		REGISTERED PROFESSIONAL ENGINEER SEAL	
ENGINEERING AND CONSULTING		MONOPOLE ELEVATION	
209 LINDEN STREET, P.O. BOX 708		9KX0039 - SITE: WARD ROAD	
TRUSSVILLE, AL 35173		KNOXVILLE, TENNESSEE	
PHONE: (205) 655-1427 FAX: (205) 661-8927		T-MOBILE SOUTH LLC	
KX0039-C2		NASHVILLE, TENNESSEE	
AS SHOWN		C-2	

PROPOSED SELF SUPPORTING TOWER ELEVATION (NOT TO SCALE)

TOWER FOUNDATION TO BE PROVIDED AND INSTALLED BY CONTRACTOR PER DESIGN PROVIDED BY OTHERS.





## PYRAMID NETWORK SERVICES, LLC.

TELECOMMUNICATIONS CONSTRUCTION SERVICES AND CONSULTING

2393 Pendley Road  
Suite 200  
Cumming, GA  
30041

678-679-0920  
678-679-0934 Fax

February 1, 2008

Knoxville-Knox County  
Metropolitan Planning Commission  
400 Main Street, Suite 403  
City County Building  
Knoxville, TN 37902

RE: T RE: T-Mobile Proposed 180' Monopole Tower @ 6909 Ward Road  
(Parcel ID -- 057-135): 9KX0039/Ward Road

Dear Honorable Commission Members:

On behalf of T-Mobile and the land owner, Loyal Order of Moose Lodge #1560, I respectfully submit this application for a Use on Review of a wireless telecommunications facility. This facility is to be built for T-Mobile's wireless network. The proposed project includes a 180' monopole tower to be located within a heavily wooded area on a 21 acre tract that is zoned A, Agricultural at 6909 Ward Road. The proposed facility will be well screened by significant, existing vegetation and we therefore request relief from the landscaping requirements.

T-Mobile is a building a new wireless network for the metropolitan Knoxville area. This new network will provide a new choice for wireless users in the Knoxville area and in northeast Tennessee. T-Mobile has already co-located or in the process of co-locating on several sites in Knox County and the City of Knoxville. In some cases T-Mobile has gone through the added expense of making significant modifications to make existing structures work.

Unfortunately, there were no existing or acceptable structures within a mile of the target area available for co-location. The search radius is very specific due to T-Mobile's proposed network which includes the above mentioned sites that are currently slated for co-location. As apart of our due diligence, we investigated the following:

- Crown Castle facility at 711 Callahan Drive; site is over a mile southwest from the target area and will not meet T-Mobiles coverage requirements.
- SBA Tower facility at 6155 Primus Road; site is over a mile southwest from the target area and will not meet T-Mobiles coverage requirements.
- TVA structures located nearby along the same ridge; the transmission structures are not tall enough and TVA was not willing to replace with a taller structure.
- Hallsdale-Powell Utility District water tank, adjacent to proposed site; at 18 feet, this tank is not tall enough.

The Land Use/Wireless Facilities Matrix is neutral to the proposed facility because of the monopole tower's proposed height within a "Rural/Heavily Wooded" area. The proposed facility will not be within 500' of a residence or a buildable residential lot which is encouraged.

Due to the proposed height of 180' and the fact that it is located on a ridge the Land Use/Wireless Facilities Matrix discourages the proposal. We attempted to avoid the ridge but due to the ground elevation the required coverage needs of T-Mobile could not be met. There are currently existing structures located on this ridge and therefore the proposal will not significantly impact the current aesthetics of the ridge.

I submit the following Pursuant to the Facilities Plan adopted by the Metropolitan Planning Commission in 2002:

- (1) View Protection -- The monopole tower is proposed to be at a maximum height of 190' (including lightning rod) and due to the existing TVA structures along this ridge the proposed facility will have a minimal impact on surrounding properties. Due to the proposed height of 190' there will be no lighting on the structure.
- (2) Land Use Compatibility - The subject property is zoned A, Agricultural Zone. The proposed site is located on a parcel that is over 20 acres. The facility will not be within 500' of any residential developments. The proposed facility is to be located to the rear of the property away from any developed areas. It is located in a heavily wooded area adjacent to existing utility uses, which include a water tank and power lines. This facility will be unmanned and will add no substantial increase in noise, air pollution, or traffic. Furthermore the proposed facility will not burden any county services.

Adjacent and surrounding properties are zoned A, Agricultural Zone and RB, General Residential Zone. The surrounding properties are generally large undeveloped and heavily wooded lots. Although, The Land Use/Wireless Facilities Matrix discourages the proposal because it is located on a ridge, this property and area are already impacted by a water tank and a power lines.

- (3) Design Compatibility -- The facility design, which will include a monopole tower will not impact the existing uses of surrounding properties due to its location on a 21 acre parcel. The proposed facility and monopole is well buffered by naturally thick wooded areas surrounding it. Monopoles are often considered the least obtrusive type of structure.

Included with this application package are the following items:

- A letter that commits T-Mobile to co-location of other carriers
- 10 sets of site plans
- Coverage maps depicting before and after the proposed site

Finally, the proposed site meets the intent of the Knox County Ordinance and will meet all local, state, and federal requirements in its design, construction, and operation. I appreciate your time in reviewing this application. If you require additional documentation or information please feel free to give me a call at (678) 920 – 1262.

Sincerely:



Lannie Greene

Pyramid Network Services for T-Mobile & Loyal Order of Moose Lodge #1560.



**PYRAMID NETWORK SERVICES, LLC.**

*TELECOMMUNICATIONS CONSTRUCTION SERVICES AND CONSULTING*

2393 Pendley Road  
Suite 200  
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Knoxville-Knox County  
Metropolitan Planning Commission  
400 Main Street, Suite 403  
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Knoxville, TN 37902

RE: T-Mobile Proposed 180' Monopole Tower @ 6909 Ward Road  
(Parcel ID – 057-135): 9KX0039/Ward Road

Dear Honorable Commission Members:

Please allow this letter to confirm that T-Mobile agrees to make all of its wireless telecommunications facilities in Knox County and the City of Knoxville available to other wireless providers for co-location, provided such facilities are structurally and technically able to accommodate additional providers and provided that the wireless provider and T-Mobile can agree to all reasonable terms and conditions.

Sincerely:

Lannie Greene

Pyramid Network Services for T-Mobile

**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						
	Rural/Heavily Wooded						
	Pasture						
	Central Business District						
	Office/Commercial Corridor						
Shopping Center							
<b>Sensitive Areas</b>	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						
<b>Avoidance Areas</b>	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