

## E X C E R P T

From the meeting of the Transmission Facility Coordinating Group (TFCG) held on March 3, 2010. The following people were in attendance:

### MEMBERS

Marjorie Williams	OCCS	(240) 777-3762
Helen Mu (via phone)	DTS	(240) 777-2804
Carlton Gilbert	M-NCPPC	(301) 495-4577
Mary Pat Wilson	MCPS	(240) 314-4707
David Niblock	DPS	(240) 777-6252

### STAFF

Bob Hunnicutt	CTC	(301) 933-1488
David Doulong	CTC	(301) 933-1488
Shivani Gandhi	CTC	(301) 933-1488

### OTHER ATTENDEES

Carmen Charalambous	NB&C/T-Mobile	(301) 775-5826
Hillorie Morrison	NB&C/T-Mobile	hillorie.morrison@t-mobile.com
Chris Brown	NextG Networks	cbrown@nextgnetworks.net
Harold Bernadzikowski	NB&C/Verizon	hbernadzikowski@nbcllc.com
Paul Whitley	NB&C	pwhitley@nbcllc.com
John Kessler	Newpath	ohn.kessler@newpathnetworks.net
Charles Ryan	SCE/Verizon	cryan@sceeng.com
Rebecca Hunter	NB&C	rhunter@nbcllc.com
Gregory Tully	NB&C	gtully@nbcllc.com
Pam Kooker	Bechtel	pakooker@bechtel.com
Mustaque Mohamed	AT&T	mm3773@att.com
Sean Hughes	Sean Hughes Law Offices	

**Action Item:** T-Mobile application to attach antennas at the 147' level on a 150' high monopole to be constructed on the Carlisle property, 22730 Mt. Ephraim Road, Dickerson (Application #200907-11).

Bob Hunnicutt summarized the application and reminded the group that they had reviewed an application from T-Mobile in 2009 to attach antennas to a monopole in Dickerson just a little less than a mile from the proposed location of this new monopole. He stated that since that time T-Mobile had expanded their intended coverage area for antennas in this part of the county to include an area farther east of Dickerson. Based on the T-Mobile RF maps, the signals from the Dickerson monopole signals may not extend to the new target service area.

Shivani Gandhi summarized the engineering review of the documentation provided by T-Mobile and noted that T-Mobile had documented the need for antennas in this area including service along Mount Ephraim Road and Barnesville Road. She noted that there was a section of Barnesville Road where the terrain fell and signal levels dropped below the target levels where

the road crossed the Little Monocacy River. She said that T-Mobile's RF maps showed that antennas at all three elevations may address coverage needs along Barnesville Road, but signal levels high enough for in-vehicle coverage did not appear to extend as far to the east with antennas at the lower elevations as with the antennas at the proposed height above ground. She added that she had asked for coverage information about the orientation of antennas from the Dickerson monopole to see if redirecting those antennas to the east might better meet the new coverage area along Mt. Ephraim Road, but T-Mobile had not provided that information.

Mr. Hunnicutt mentioned that because of this relatively flat area around the monopole it would be highly visible from most places, as can be seen in the photo simulations. He also mentioned that he had received a copy of a letter to T-Mobile from the Rustic Roads Committee which stated that the Committee preferred a unipole design for all the up-County sites for which T-Mobile had filed applications recently, and that the monopoles in all those cases appeared to be too close to the roadway. He said that for this application, the applicant had reported that for engineering reasons a unipole design could not be used. He noted, however, that T-Mobile had not provided any documentation to support that claim and, in the Tower Coordinator's opinion, a unipole design could be provided just as well as it had been provided for those other rural areas where T-Mobile had recently submitted applications in recent months.

Mary Pat Wilson asked if the utility poles that ran from Mount Ephraim Road across the farm property could be used to support the antennas. Mr. Hunnicutt replied that those poles were approximately 22' above ground which would be too low for antenna attachment to meet T-Mobile's coverage objective for this area. Hillorie Morrison added that T-Mobile had used utility poles in some cases, but for those locations, the coverage objective had been for just a small area. She said that in this case T-Mobile is looking to provide coverage over a very large area of the county to minimize the need for additional antenna sites to serve this area.

Mr. Hunnicutt noted that the design plans did not show the ground space of sufficient size to accommodate additional carriers. He stated that, if requested by the applicant, the Board of Appeals could reduce the requirement for additional carriers based on certain conditions specified in the code. Ms Morrison reported that the space would be designed to support additional carriers.

Carlton Gilbert asked what T-Mobile's response had been to the Rustic Roads requests and why the monopole is not designed to support additional carriers. Hillorie Morrison replied that T-Mobile would address that matter before the Board of Appeals.

**Motion:** David Niblock moved the application be recommended conditioned on approval of a Special Exception by the Board of Appeals, a unipole-designed monopole as recommended by the Rustic Roads Committee, and either approval of a monopole for less than three carriers if requested by the applicant, or a monopole designed to accommodate three carrier's antennas and ground equipment. Helen Mu seconded the motion and it was approved with Carlton Gilbert abstaining.



**MONTGOMERY COUNTY, MARYLAND**  
**TELECOMMUNICATIONS TRANSMISSION**  
**FACILITY COORDINATING GROUP**  
**RECORD OF ACTION**

APPLICATION NUMBER: 200907-11

MEETING DATE: 3 March 2010

<b>Application Review:</b>	
Applicant:	T-Mobile
Description:	Construct a 150'-high monopole and attach up to nine 52"-high panel antennas at the 147' level.
Site Location:	Carlisle Monopole 22730 Mt. Ephraim Road, Dickerson
Property Owner:	J. Maurice & M. A. Carlisle
Group Comments:	

<b>TFCG Action</b>		
Recommended <input type="checkbox"/>	Not recommended <input type="checkbox"/>	Recommended with Conditions <input checked="" type="checkbox"/>
Recommendation conditioned on: Approval of a Special Exception by the Board of Appeals, a unipole-designed monopole as recommended by the Rustic Roads Committee, and either approval of a monopole for less than three carriers if requested by the applicant, or a monopole designed to accommodate three carrier's antennas and ground equipment.		

**Vote on recommendation of approval:** For: 4 Against: 0 Abstain: 1

<i>Maryanne Lewis</i>	
Signature	Date: <u>3/3/10</u>

**Number of days in process since deemed complete until TFCG Action:** 21 *02/15/10*



**MONTGOMERY COUNTY, MARYLAND**  
**TOWER COORDINATOR**  
**RECOMMENDATION**

APPLICATION NUMBER: 200907-11

DATE: 22 May 2009

<b>Application Information:</b>	
Applicant:	T-Mobile
Description:	Construct a 150'-high monopole and attach up to nine 52"-high panel antennas at the 147' level.
Site Location:	Carlisle Monopole 22730 Mt. Ephraim Road, Dickerson
Property Owner:	J. Maurice & M..A. Carlisle
Classification in accordance with Zoning Ordinance: RDT	
Private Property:	<input checked="" type="checkbox"/>
Public Property:	<input type="checkbox"/>
By right:	<input type="checkbox"/>
Mandatory Referral:	<input type="checkbox"/>
Minor Modification:	<input type="checkbox"/>
Special Exception:	<input checked="" type="checkbox"/>
Special Exception	<input type="checkbox"/>
Modification:	<input type="checkbox"/>
Impact on land-owning agency: N/A	
Existing or future public safety telecommunications facilities and plans: N/A	
<p>Co-location options: T-Mobile filed an application to attach antennas to the monopole at the Dickerson Auto property approximately a mile to the southwest of the Carlisle property. That application (TFCG #200904-09) was reviewed and recommended by the TFCG in May 2009. At that time, the reported coverage objective, in general, was to improve service along Mouth of Monocacy Road, Dickerson Road and Big Woods Road, all roads which converge in Dickerson near the monopole. With this application for a new monopole, the applicant now reports that because they have changed their service improvement objectives for this part of the County they have determined that the Dickerson Auto monopole will not meet the new coverage objective, which is generally to improve service over a much wider area a mile north and east of the Dickerson Auto monopole site.</p> <p>Based on our site visit and search of the TFCG database, there does not appear to be other existing structures in that vicinity to which T-Mobile could attach its antennas and meet the present coverage objective. Additionally, we note that on the initial RF contour maps submitted with this application, there is another search ring which was not "turned-on" in the model. That search ring may, in conjunction with antennas on the Dickerson Auto monopole, meet the current coverage objective for this area. However, in reply to our questions about that site, the applicant answered that, after more than a year of searching, T-Mobile has been unable to find leasable property for that site and though they would like to expand coverage in that area, think it is unlikely that they will be able to find a willing property owner. Therefore, the applicant reports this monopole at the Carlisle property will eliminate the need for any additional sites in the area.</p> <p>Based on the plans, the enclosed equipment area will accommodate T-Mobile's equipment but</p>	

there will be little room to accommodate additional equipment for up to two additional carriers as is required by §59-G of the Zoning Ordinance. Further, the applicant did not state, nor did the plans show, that the monopole is designed to accommodate more than the T-Mobile antennas and equipment. However, §59-G-2.58 states that if the Board of Appeals decides that collocation at the site is not essential to the public interest and that construction of a lower monopole, with fewer telecommunications carriers, will promote community compatibility, the Board may approve a support structure holding antennas and equipment for less than three carriers if so requested by the applicant.

Implications to surrounding area: Based on our site visit and the photo simulations provided by the applicant, it appears that given the relatively flat terrain and lack of any natural tall obstructions which may otherwise screen the monopole from view, it appears the monopole will be plainly visible on the horizon from most directions. Of course, for those residents living closest to the monopole it will be quite imposing. The County GIS image below shows the Carlisle property (circled) and vicinity.



The applicant reported that the Rustic Roads Committee (Mt. Ephraim Road is a designated Rustic Road) asked that the monopole be designed to be a unipole structure to minimize the visual impact of the monopole. A unipole design is one with which the antennas would be concealed within the exterior of a slender flag pole-like structure instead of the traditional monopole design where the antennas are attached to a large triangular array atop the monopole. T-Mobile has used these designs at numerous other locations in the County. The applicant stated that T-Mobile considered that option but thought it would not meet their coverage objectives. We asked for supporting engineering documentation to support that claim but none was provided. Without evidence in the form of engineering documentation which demonstrates that a unipole will not serve T-Mobile's coverage objective, we conclude that there is no reason why a unipole design could not be used in this case.



antennas as proposed and also with antennas at the 127' and 107' levels above ground. Based on our review of the map illustrating existing coverage, it appears that those roadways are presently covered with signal levels for "in-vehicle" service with the exception of a section of low ground along Barnesville Road (where signal levels fall as the roadway elevation drops significantly) where it crosses the Little Monocacy River, and points over a mile and a quarter northeast of the Carlisle property along Mt. Ephraim Road. The map illustrating coverage from antennas as proposed at the 147' level above ground shows that antennas as proposed fill in the low signal area along Barnesville Road and extends in-vehicle signal levels along Mt. Ephraim Road to nearly where it intersects with Comus Road nearly two miles to the northeast in Frederick County. Antennas at the 147' level also extend coverage with signal levels for indoor service to the residences within at least three-quarters of a mile of the monopole.

Based on the RF maps illustrating coverage with antennas at the lower elevations, it appears that the area of coverage with signals at levels for indoor service diminishes in size the lower above ground the antennas are positioned on the monopole. For in-vehicle service, antennas at both lower elevations also appear to eliminate the low signal area along Barnesville Road. In-vehicle signal levels at the lower elevations appear to be generally the same as with antennas at the 147' level except that coverage along Mt. Ephraim Road may not extend as far toward Comus Road by perhaps three-quarters of a mile. If T-Mobile were ever to be successful in locating another site farther from the Carlisle property in that direction, antennas there might compensate for that shortfall along Mt. Ephraim Road, but according to the applicant, they have not been successful in that effort so far.

Equipment cabinets will be placed on a 10' x 20' concrete slab to be constructed in a 35' x 25' area at the base of the monopole and enclosed by a 7'-high chain-link fence.

Based on the site plans it appears that the location for the monopole on the property meets setback requirements from property line. Based on our site visit and measurements using the County GIS measuring tool, the location meets the requirement of being at least 300' from the nearest off-site dwelling.

<b>Tower Coordinator Recommendation:</b>	Recommended: <input type="checkbox"/>
	Recommended with conditions: <input checked="" type="checkbox"/>
	Not recommended: <input type="checkbox"/>

Conditions: On approval of a Special Exception by the Board of Appeals, a unipole-designed monopole as recommended by the Rustic Roads Committee, and either approval of a monopole for less than three carriers if requested by the applicant, or a monopole designed to accommodate three carrier's antennas and ground equipment.



3/1/10

Signature

Date

February 3, 2010

Ms. Hillorie Morrison  
Senior Zoning Manager  
Network Building & consulting, LLC  
7380 Coca Cola Drive, Suite 106  
Hanover, MD 21076

Re: T-Mobile Cell Tower Sites

Dear Ms.Morrison:

We are writing to thank you for briefing us at our October meeting and to advise you of our comments regarding the five proposed cell towers along rustic roads (West Offutt Road, Wasche Road, Wildcat Road, Old Hundred Road and Mt. Ephraim Road).

In general, we believe all the sites are located too close to the road and may have a negative impact on the surrounding scenery. In particular, we are concerned with the site on Mt. Ephraim Road (22730) and a potential negative impact to the views towards Sugarloaf Mountain. We also have concerns about the proposed new driveway location on West Offutt Road (21600) which will cut through a stand of roadside trees. We would prefer that the existing driveway be used for access at that site as you have proposed at the other sites.

In all cases we prefer the use of a monopole with internal antennae and an unobtrusive color.

We appreciate the opportunity to review these plans. If you have any questions regarding our comments, you may contact us through our staff coordinator, Ms. Sarah Navid in the Department of Permitting Services at 240-777-6304.

Sincerely,

Kevin Foster, Chair  
Rustic Roads Advisory Committee

Committee Members: James Arnoult, Robert Goldberg, Marc Miller  
Fred Lechluder, Eric Spates, Robin Ziek

cc: Leslie Saville – MNCPPC  
Bob Hunnicutt – Tower Committee



**MONTGOMERY COUNTY, MARYLAND**  
**APPLICATION FOR WIRELESS COMMUNICATIONS**  
**SITE COORDINATION**

DATE: May 22 2009 NUMBER: 200907-11  
*REVISED JAN 13 2010* (To be filled in by County)

Applicant Name: **T-Mobile Northeast LLC**  
DBA: **T-Mobile**  
Address: **12050 Baltimore Avenue Beltsville MD 20705**  
Contact Person  
and Phone No.: **Hillorie S. Morrison, 443-570-0014, Hillorie.morrison@t-mobile.com**

*25' x 35' RPH 2/26/10*

Provide a description of the proposed installation, including the type and height of the structure (i.e. monopole, rooftop, water tank, guyed tower, self-support tower, etc.) and whether it is existing, modified, or new. Describe any modifications that will be made to existing structure. Proposed Telecommunications facility consisting of a new 150' high monopole, 50' x 50' compound to house associated equipment including a 10' x 20' concrete pad, three associated equipment cabinets and other related equipment. Nine panel antennas will be mounted to the proposed monopole at 147' AGL. In addition, a 7' high chain link fence (with 1' high barbed wire) will surround the compound. The Rustic Roads commission reviewed the plan in October, 2009 and expressed concerns about visual impacts. T-Mobile's RF engineers considered a unipole design but that design will not meet coverage objectives for this site. Historic Preservation did not have comments.

Address/City: ~~21600 Offutt Road, Poolesville, MD 20837~~ *22730 Mt. Ephraim Road, Dickerson*  
Site Name: **WAN540B (Carlisle Property)** Zoning: **RDT**  
Site Owner/Landlord: ~~Summit LLC~~ *J. Maurice + M.A. Carlisle*  
Structure Owner: **T-Mobile Northeast LLC**

*RPH 2/26/10*

Latitude/Longitude (NAD27 degrees/minutes/seconds): **N39 13 50.69 W77 24 59.03**

Ground Elevation AMSL in feet: **425'**

Antenna Height AGL in feet **147**

Frequency bands to be used: **1850-1900 MHz (Rx) 1850-1900 MHz (Tx)**

Maximum Effective Radiation Power (ERP): **300 watts**

Federal Communication Commission (FCC) Emission Designator: **1G90GXW**  
FCC Antenna Structure Registration Number: **NA**

Description of antenna(s), including physical size, patterns, gain and orientation (include copy of spec sheet or drawings): **Nine (6) ADFD1820-9090B-3D Panel Antennas 51.6' x 12.1' x 4.5'**  
Orientation: **15, 135, 255**  
Gain: **16.4**

Describe area to be served by the proposed installation. Attach a map of the general area showing the location of the site. Upon request, attach RF propagation studies showing service area coverage surrounding the proposed site with and without the proposed site. The purpose of the site is to provide coverage along Mt. Ephraim, Barnesville and Monacfacy Roads and the surrounding residential areas.

Will antennas be installed on an existing structure? **NO**

If not, describe results of investigation about possible co-location. Include a listing of alternative sites considered and an explanation as to why each possible alternative was not selected. If a site was ruled out because of radio frequency (RF) issues, provide RF propagation maps documenting inadequate coverage: **Due to the rural nature of this area, no co-location opportunities were identified.**

Justification of why this site was selected: **The site is well-located to meet T-Mobile's coverage objectives. There is a large gap between T-Mobile's existing sites, as shown on the enclosed propagation maps. T-Mobile is trying to minimize the number of antenna support facilities in this area. Locating the monopole elsewhere would require additional facilities. . T-Mobile's RF engineers considered a unipole at this site (antennas enclosed within the pole) but that design would not meet T-Mobile's coverage objectives. Note that drive tests have not been performed for this site.**

Will site be used to support government telecommunications facilities or other equipment for government use? **See below.**

If yes, describe: **Space can be available for government-owned telecommunications facilities, with leasing terms to be negotiated with T-Mobile.**

Attach a site plan of the proposed facility showing location of monopole, tower, or structure on the property, location of existing and proposed equipment buildings or cabinets, and distance of any new structures or buildings from property lines and other buildings or residences within 300 feet. Clearly identify existing versus proposed facilities by carrier. Also provide an elevation sketch of the structure showing major dimensions, existing attachments, and mounting height of proposed antennas. If a balloon test has been performed, please provide copies of the photographs.

Will the antenna installation be in compliance with the maximum permissible RF exposure limits set forth in §1.1310 of the FCC Rules and Regulations? Yes  No

If the answer is no, please attach an explanation.

Type of compliance study required under §1.1307 of the FCC Rules and Regulations:

Categorically Excluded   
Routine Environmental Evaluation   
Environmental Assessment

If antennas will be located on a rooftop, please attach a description of any steps that have been or will be taken to prevent the aggregate RF from exceeding exposure limits. **NA**

Montgomery County Code, Chapter 2-58E requires applicants to submit a facility location plan indicating the location of every existing telecommunications transmission facility and the general location of facilities that are anticipated to be built in the near future. Has a new or updated plan been filed with the County within the last year? Yes  No  If the answer if no, please submit a plan with this application.

If an application for an FAA review has been submitted or an FAA determination has been issued, please attach a copy. Note that the FAA determination has not yet been received

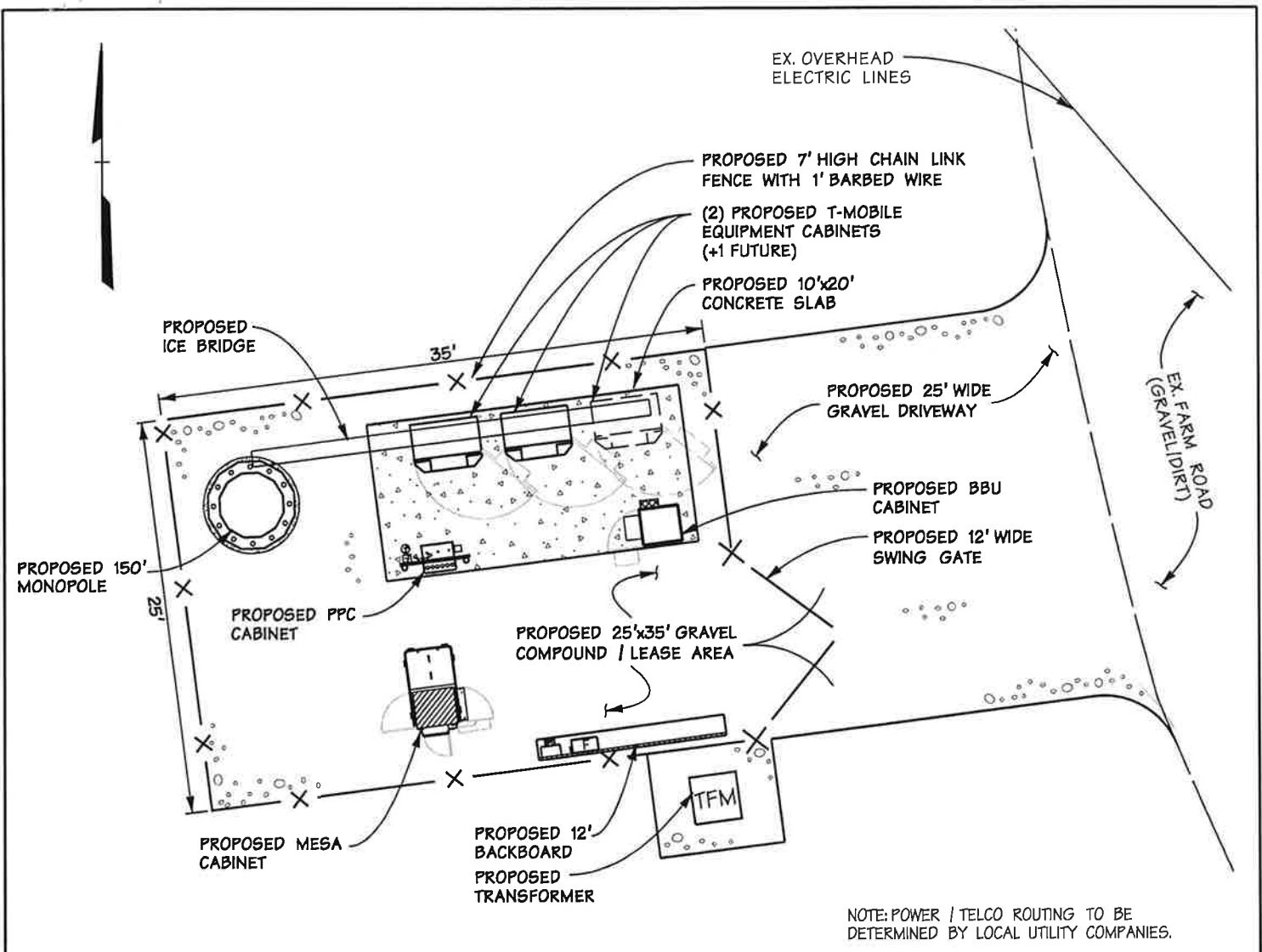
Submit the application fee, **with a copy of this Application Form**, to:

Office of Cable and Communication Services  
100 Maryland Avenue, Room 250  
Rockville, MD 20850

State the fee category selected for this application and the amount and date paid:

Attachment 1

Revised 8/15/07



## COMPOUND DETAIL

SCALE: 1"=10'

**DATA SOURCE:**

THE INFORMATION SHOWN HEREON IS BASED ON MONTGOMERY COUNTY TAX MAPS & SITE VISIT BY DMW ON 4/15/09. THIS PLAN IS NOT THE RESULT OF A DMW BOUNDARY OR TOPOGRAPHIC SURVEY. TO BE USED FOR INFORMATION PURPOSES ONLY.

DATE	REVISION / ISSUE	BY
A	5-11-09	ISSUED FOR REVIEW
		MTS

DEPT.	INIT.	DATE	APP'D	REVISIONS
RF ENGINEER				
RF MANAGER				
ZONING				
OPS				
CONSTRUCTION				
SITE AC.				

SITE NO. 7WAN540B  
CARLISLE PROPERTY

**T-Mobile Northeast LLC**  
12050 BALTIMORE AVENUE  
BELTSVILLE, MD 20705  
(240) 264-8600 FAX: (240) 264-8610

22730 MT EPHRAIM ROAD  
DICKERSON, MD 20842

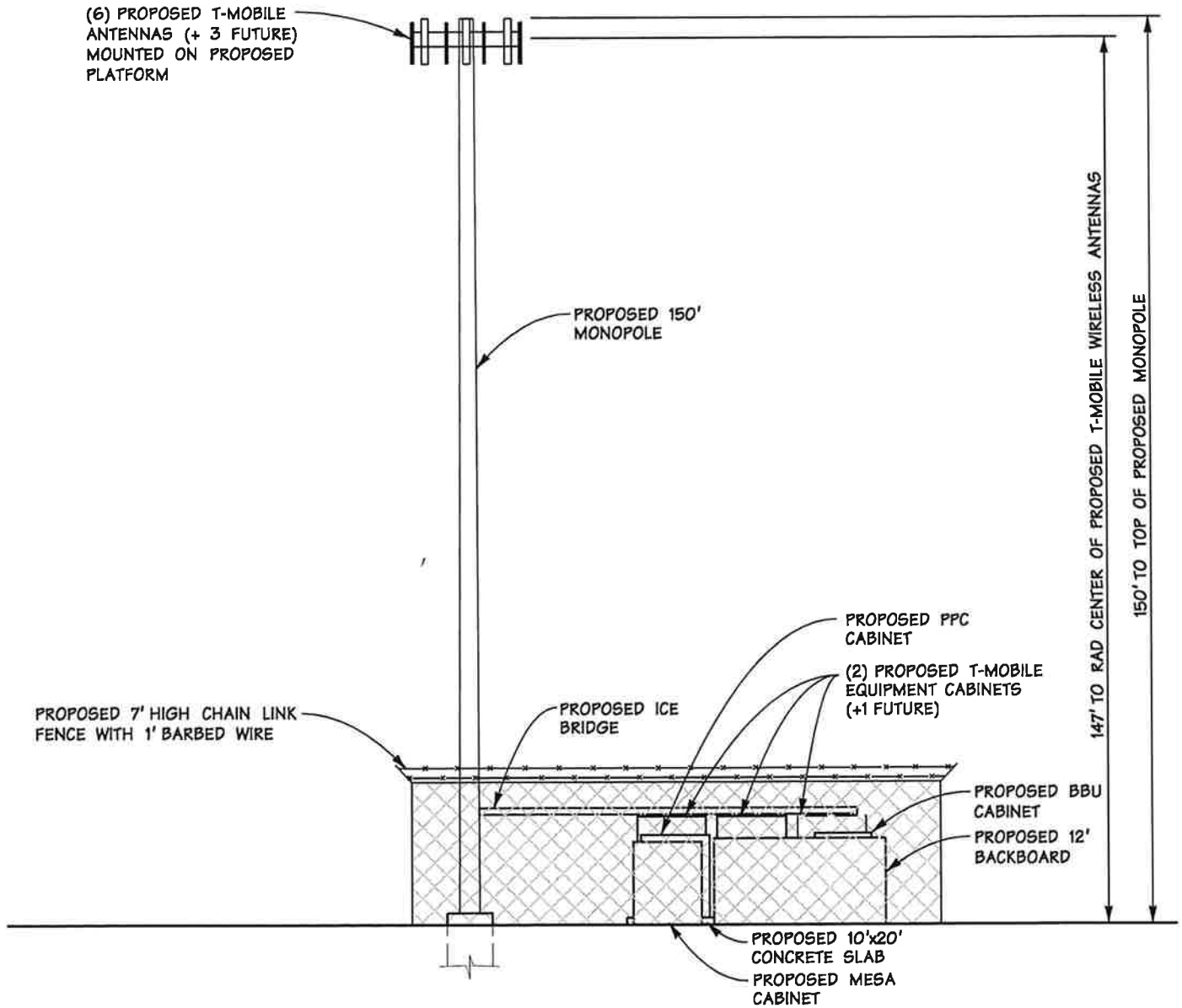
DRAWING TITLE: <b>LEASE EXHIBIT</b>	
SCALE: AS SHOWN	DRAWN BY: MTS
PROJECT #: 09063	CHECKED BY: MDM
SHEET 2 OF 3	DATE: 5-11-09

TAX MAP CW21 PARCEL P530

# DMW

DAFT McCUNE WALKER INC

200 EAST PENNSYLVANIA AVENUE • TOWSON, MD 21286  
P : 410 296 3333 F : 410 296 4705 WWW.DMW.COM



**COMPOUND ELEVATION**

NOT TO SCALE

NOTE: ALL REFERENCES TO THE MONOPOLE AND ITS FOUNDATION ARE DIRECTED TO THE DESIGN AND DETAIL DRAWINGS BY THE POLE SUPPLIER.

**NOTE:**

TO BE USED FOR ILLUSTRATIVE PURPOSES ONLY.

DEPT.	INIT.	DATE	APP'D	REVISIONS
RF ENGINEER				
RF MANAGER				
ZONING				
OPS				
CONSTRUCTION				
SITE AC.				

DATE	REVISION / ISSUE	BY
A	5-11-09	ISSUED FOR REVIEW
		MTS

SITE NO. 7WAN540B

CARLISLE PROPERTY

22730 MT EPHRAIM ROAD  
DICKERSON, MD 20842

TAX MAP CW21 PARCEL P530

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BELTSVILLE, MD 20705  
(240) 264-8600 FAX: (240) 264-8610

DRAWING TITLE:

**LEASE EXHIBIT**

SCALE: AS SHOWN DRAWN BY: MTS

PROJECT #: 09063 CHECKED BY: MDM

SHEET 3 OF 3 DATE: 5-11-09

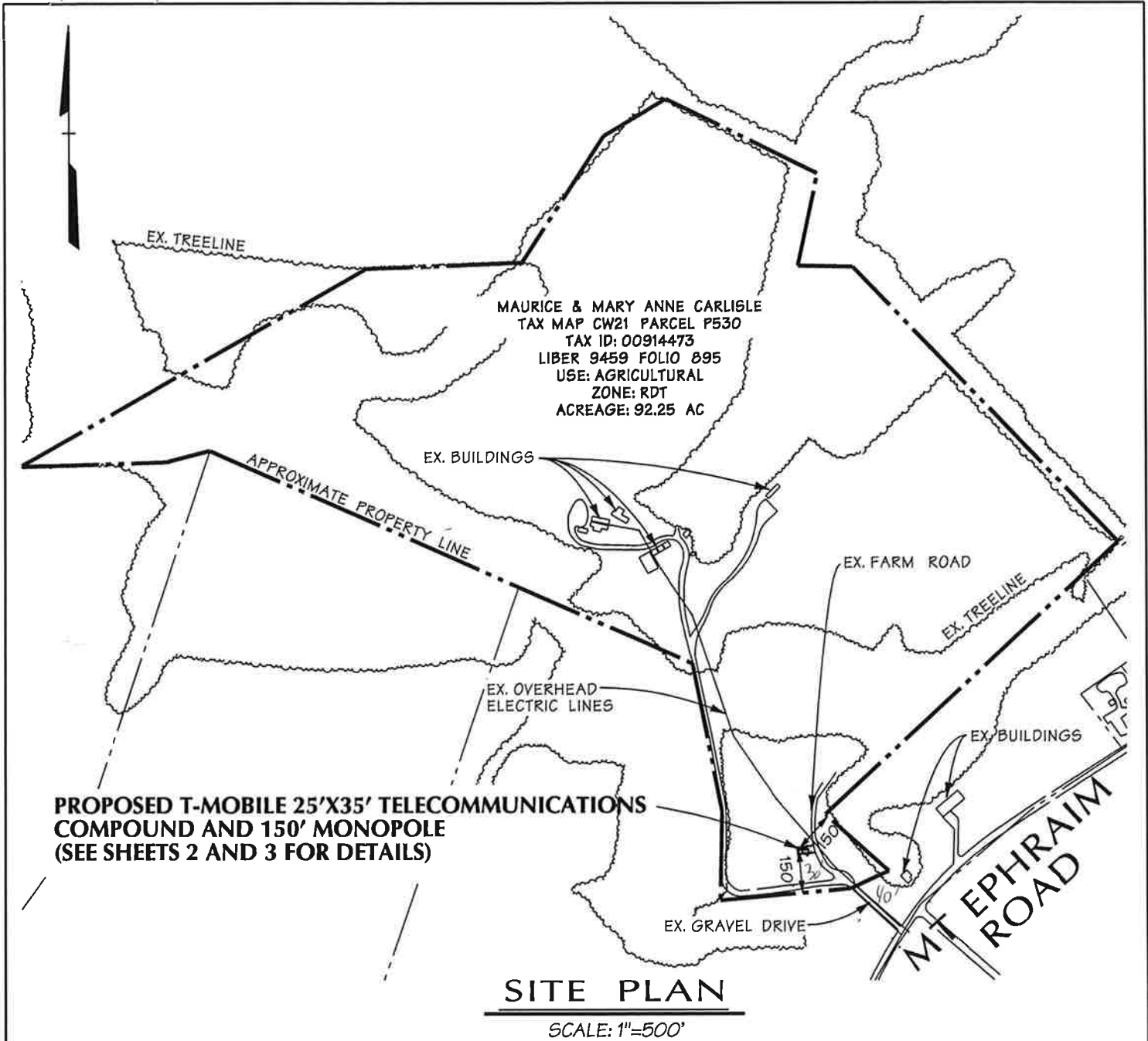
**DMW**

DAFT McCUNE WALKER INC

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P: 410 296 3333 F: 410 296 4705 WWW.DMW.COM

11th DISTRICT

MONTGOMERY COUNTY, MD



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A	5-11-09	ISSUED FOR REVIEW
		MTS

DEPT.	INIT.	DATE	APP'D	REVISIONS
RF ENGINEER				
RF MANAGER				
ZONING				
OPS				
CONSTRUCTION				
SITE AC.				

**SITE NO. 7WAN540B**  
**CARLISLE PROPERTY**

**T-Mobile Northeast LLC**  
 12050 BALTIMORE AVENUE  
 BELTSVILLE, MD 20705  
 (240) 264-8600 FAX: (240) 264-8610

22730 MT EPHRAIM ROAD  
 DICKERSON, MD 20842

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TAX MAP CW21 PARCEL P530

DMW

DAFT McCUNE WALKER INC

200 EAST PENNSYLVANIA AVENUE • TOWSON, MD 21286  
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# TMBXX-6516-R2M

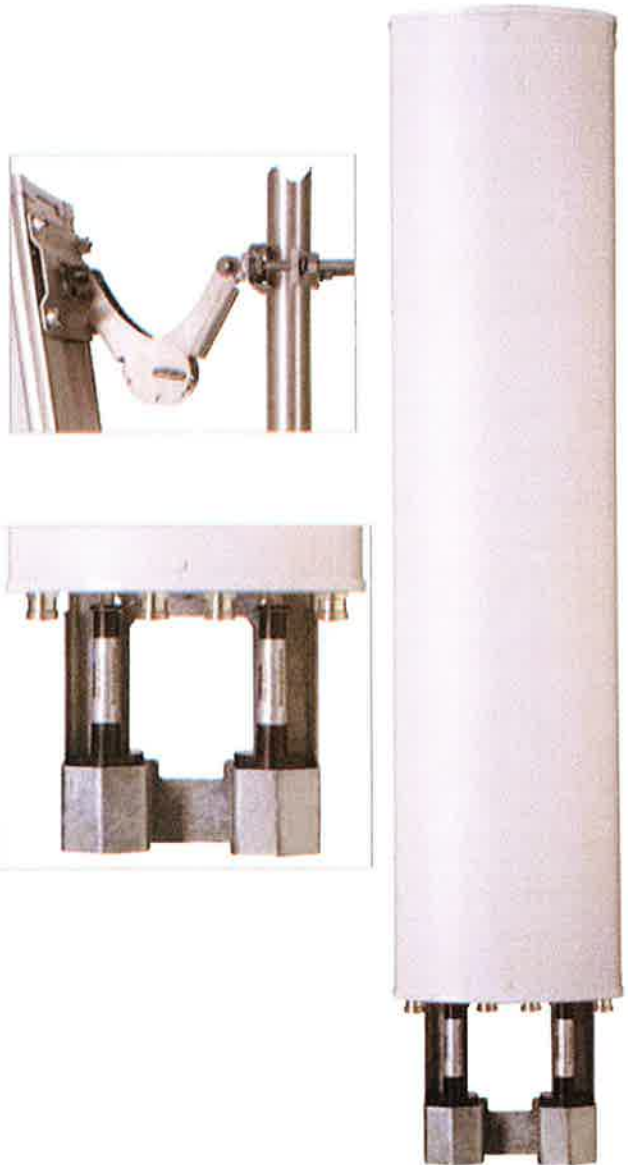
±45° Dual Band Quad Antenna

**Decibel®**  
Base Station Antennas

- Patented cross dipole and feed system
- Rugged, reliable design with excellent PIM suppression
- Includes factory installed AISG RET actuator
- Fully compatible with Andrew Teletilt® remote control antenna system

## ELECTRICAL

<b>Frequency Range (MHz):</b>	1710–2155				
<b>Characteristic Impedance (Ohms):</b>	50				
<b>Azimuth BW (Deg):</b>	64.5 ± 8				
<b>Elevation BW (Deg):</b>	7.2 ± 1.2				
<b>Gain (dBi) :</b>	17.5 ± 8				
<b>Polarization:</b>	±45°				
<b>Front-to-Back Ratio (dB)</b>	<b>2°</b>	<b>4°</b>	<b>6°</b>	<b>8°</b>	<b>10°</b>
Copol, 180° ± 30°:	>24	>24	>24	>24	>24
Total Power, 180° ± 30°:	>24	>23	>22	>23	>23
<b>Upper Sidelobe (dB)</b>	<b>2°</b>	<b>4°</b>	<b>6°</b>	<b>8°</b>	<b>10°</b>
Main Beam to +20°:	>18	>17	>15	>14	>11
<b>VSWR / Return Loss (dB):</b>	1.35:1 / 16.5				
<b>Port-to-Port Isolation (dB):</b>	>30				
<b>Electrical Tilt Range (Deg):</b>	2–10				
<b>Electrical Downtilt Accuracy (Deg):</b>	± 0.9				
<b>Cross-pol (dBc)</b>	<b>2°</b>	<b>4°</b>	<b>6°</b>	<b>8°</b>	<b>10°</b>
3 dB Beamwidth:	>13	>13	>12	>12	>12
<b>Intermodulation Products (dBc)</b>					
3rd Order, 2 x 20 Watts:	155				
<b>Max. Input Power (Watts):</b>	250				
<b>Lightning Protection:</b>	DC Ground				



## PERFORMANCE TRACKING

<b>Gain Variation (dB)</b> (between UL and DL frequency pair):	1.3
<b>Electrical Tilt Accuracy (Deg)</b> (between UL and DL frequency pair within 0.5°):	<0.55
<b>Azimuth HPBW (Deg)</b> (between UL and DL frequency pair):	11.5

## MECHANICAL

<b>Net Weight (kg / lbs):</b>	15.7 / 34.6
<b>Dimensions–LxWxD:</b> (with actuator)	1499 x 302 x 160 mm 59 x 11.9 x 6.3 inch
<b>Max. Wind Area (m<sup>2</sup> / ft<sup>2</sup>):</b>	0.27 / 2.9
<b>Max. Wind Load (N / lbf):</b>	729.4 / 164
<b>Max. Wind Speed (km/h / mph):</b>	241 / 150
<b>Hardware Material:</b>	Hot Dip Galvanized
<b>Connector Type:</b>	7-16 DIN, Female (4)
<b>Color:</b>	Off White
<b>Standard Mounting Hardware:</b>	TM600899A-2

**Andrew Corporation**  
2601 Telecom Parkway  
Richardson, Texas U.S.A. 755082-3521  
Tel: 214.631.0310

Fax: 214.688.0089  
Toll Free Tel: 1.800.676.5342  
Fax: 1.800.229.4706  
[www.andrew.com](http://www.andrew.com)

11/27/2006  
Page 1 of 3  
[dbtech@andrew.com](mailto:dbtech@andrew.com)

