



012  
TS-T-MOBILE-139-031114

November 14, 2003

**BY HAND**

Pamela B. Katz, Chairman and  
Members of the Siting Council  
Connecticut Siting Council  
Ten Franklin Square  
New Britain, CT 06051

RECEIVED  
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CONNECTICUT  
SITING COUNCIL

RE: Tower Sharing Request by T-Mobile  
Future AT&T Tower Facility at  
49 South Road, Bolton, CT  
Latitude: 41-47-21 / Longitude: 72-25-46

Dear Ms. Katz and Members of the Siting Council:

Pursuant to Connecticut General Statutes (C.G.S.) § 16-50aa, T-Mobile USA, Inc. acting through its wholly owned subsidiary Omnipoint Communications, Inc. ("T-Mobile") hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed shared use of a future communications tower, located at 49 South Road in the Town of Bolton ("AT&T Facility"), owned by AT&T Wireless ("AT&T"). T-Mobile and AT&T have agreed to the shared use of the AT&T Facility, as detailed below. AT&T received approval to construct said Facility on July 8, 2003 and have already or will start construction shortly.

**AT&T FACILITY**

The AT&T Facility will consist of an approximately one hundred twenty (120) foot high monopole tower ("Tower") owned and operated by AT&T. T-Mobile will be at a mounting height of one hundred ten (110) feet. A chain link fence will surround the AT&T Facility, sufficient ground space exists within the fenced compound as designed to accommodate T-Mobile's ground equipment.



### T-MOBILE FACILITY

As shown on the enclosed plans prepared by All-Points Technology Corporation, Inc., including a site plan and tower elevation of the AT&T Facility, annexed hereto as Exhibit A, T-Mobile proposes a shared use of the Facility by placing antennas on the Tower and equipment needed to provide personal communications services ("PCS") within the existing fenced compound. T-Mobile will install up to nine (9) antennas at approximately the one hundred ten (110) foot level of the Tower. Associated unmanned equipment cabinets will be located on a concrete pad near the base of the tower within the compound as originally designed.

Connecticut General Statutes § 16-50aa provides that, upon written request for shared use approval, an order approving such use shall be issued, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns." (C.G.S. § 16-50aa(c)(1).) Further, upon approval of such shared use, it is exclusive and no local zoning or land use approvals are required C.G.S. §16-50x. Shared use of the AT&T Facility satisfies the approval criteria set forth in C.G.S. § 16-50aa as follows:

- A. Technical Feasibility The existing Tower and compound were designed to accommodate multiple carriers. A structural analysis of the Tower with multiple carriers has been performed and is attached as Exhibit B. The structural analysis concludes that the tower as designed will be able to safely accommodate the proposed T-Mobile antennas. The proposed shared use of this Tower is technically feasible. Further the design of the facility provides sufficient room in the fenced compound for our equipment, thus the site plan will not have to be altered.
- B. Legal Feasibility Pursuant to C.G.S. § 16-50aa, the Council has been authorized to issue an order approving shared use of the existing AT&T Facility. (C.G.S. § 16-50aa (C)(1)). Under the authority vested in the Council by C.G.S. § 16-50aa, an order by the Council approving the shared use of a tower would permit the Applicant to obtain a building permit for the proposed installation.
- C. Environmental Feasibility The proposed shared use would have a minimal environmental effect, for the following reasons:
  - 1.) The proposed installation would have a de minimis visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing facility;

- 2.) The proposed installation by T-Mobile would not increase the height of the tower or extend the boundaries of the AT&T Facility;
- 3.) The proposed installation would not increase the noise levels at the existing facility boundaries by six decibels or more;
- 4.) Operation of T-Mobile's antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the FCC and Connecticut Department of Health. The "worst case" exposure calculated for the operation of this facility for all carriers, would be approximately 14.087 % of the standard. See Cumulative Emissions Compliance Report dated September 3, 2003, prepared by Hassan Syed, T-Mobile Radio Frequency Engineer, annexed hereto as Exhibit C;
- 5.) The proposed shared use of the AT&T Facility would not require any water or sanitary facilities, or generate any air emissions or discharges to water bodies. Further, the installation will not generate any traffic other than for periodic maintenance visits.

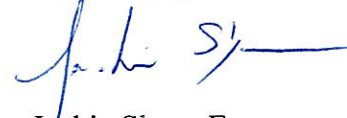
- D. Economic Feasibility The Applicant and the tower owner have agreed to shared use of the AT&T Facility on terms agreeable to both parties. The proposed tower sharing is therefore economically feasible.
- E. Public Safety As stated above and evidenced in the Cumulative Emissions Compliance Report annexed hereto as Exhibit C, the operation of T-Mobile's antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the FCC and Connecticut Department of Health. Further, the addition of T-Mobile's telecommunications service in the Bolton area through shared use of the AT&T Facility is expected to enhance the safety and welfare of local residents and travelers through the area resulting in an improvement to public safety in this area.

November 14, 2003  
Page 4

Conclusion

As delineated above, the proposed shared use of the AT&T Facility satisfies the criteria set forth in C.G.S. § 16-50aa, and advances the General Assembly's and the Siting Council's goal of preventing the proliferation of tower in the State of Connecticut. T-Mobile therefore requests the Siting Council issue an order approving the proposed shared use of the AT&T Facility.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "J. Slaga", followed by a horizontal line.

Jackie Slaga, Esq.  
Project Manager  
T-Mobile  
100 Filley St.  
Bloomfield, CT 06002  
(860) 692-7100

cc: Robert R. Morra, First Selectman

# **Exhibit A**

## **Design Drawings**

**49 South Road  
Bolton, Connecticut**



100 FILLEY STREET BLOOMFIELD, CT 06002 OFFICE: (860)-692-7100 FAX: (860)-692-7159	

<b>ALL-POINTS TECHNOLOGY CORPORATION, P.C.</b>  3 SADDLEBROOK DRIVE KILLINGWORTH, CT. 06419 PHONE: (860)-863-1897 FAX: (860)-863-0935 <a href="http://www.allpointstech.com">www.allpointstech.com</a>		
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 <b>APPROVALS</b>		
LANDLORD _____  LEASING _____  R.F. _____  ZONING _____  CONSTRUCTION _____  A/E _____		
PROJECT NO: CT-11-500-E		
DRAWN BY: GWA		
CHECKED BY: SMC		
<b>SUBMITTALS</b>		
0	10/24/03	CONSTRUCTION : GWA

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<b>CT-11-500-E</b> <b>AT&amp;T BOLTON</b>  49 SOUTH ROAD BOLTON, CT 06043
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<u><b>SHEET TITLE</b></u>  <b>SITE &amp; COMPOUND PLAN, ELEVATION &amp; DETAILS</b>
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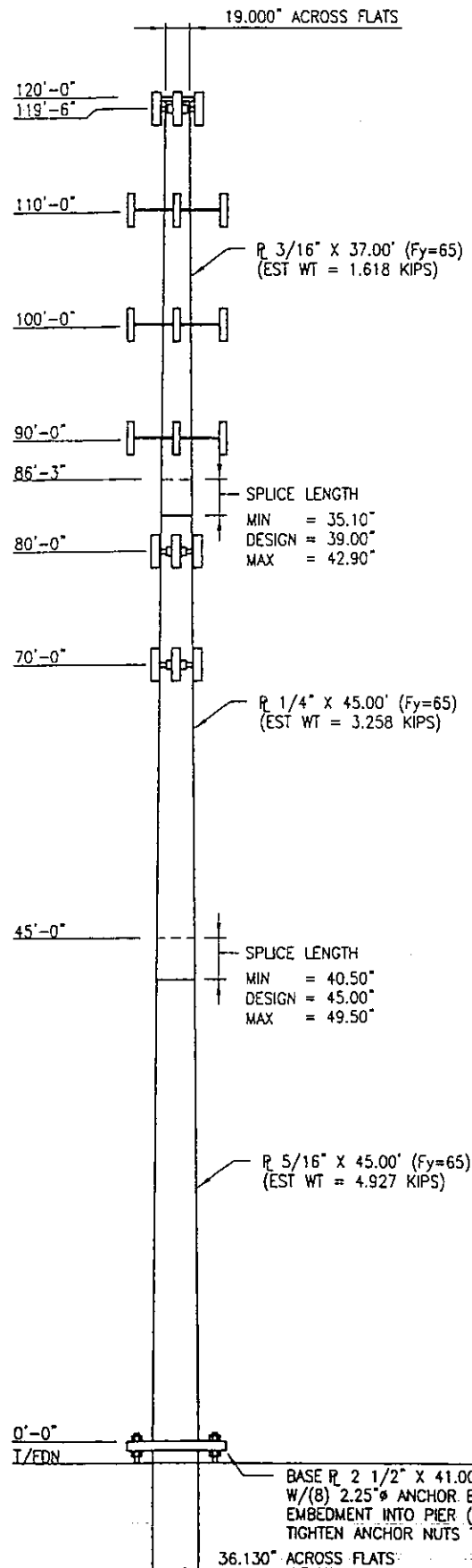
<u><b>SHEET NUMBER</b></u>  <h1 style="margin: 0;">A-1</h1>
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## **Exhibit B**

### **Structural Analysis**

**49 South Road  
Bolton, Connecticut**



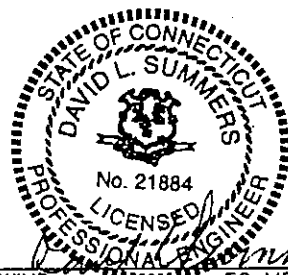
J O B   D A T A			
Page 1 of 2	Job No.	29203-0231	
By MFP	Design No.	#20471	
Chk'd By MFP	Date		
Pole 120-FT MONOPOLE	Rev. No. 2	Rev. Date	08-15-2003
Site CT-819, COVENTRY TOWBRIDGE ROAD, TOLLAND CO., CT			
Owner AT&T			
Ref. No.			
Design 85 MPH / 74 MPH + 1/2" RADIAL ICE			
ACCORDING TO TIA/EIA-222-F 1996			

L O A D   C A S E S			
CASE 1	85 MPH WITH NO ICE	DESIGN WIND	
CASE 2	74 MPH WITH 1/2" RADIAL ICE	REDUCED WIND WITH ICE	
CASE 3	50 MPH WITH NO ICE	OPERATIONAL WIND	

P O L E   S P E C I F I C A T I O N S	
Pole Shape Type:	18-SIDED POLYGON
Taper:	0.150042 IN/FT
Shaft Steel:	ASTM A607 GRADE 65
Base PL Steel:	ASTM A572 GRADE 55 (55 KSI)
Anchor Bolts:	2 1/4" x 8'-0" LONG #18J ASTM A615 GRADE 75

A N T E N N A   L I S T		
No.	Elev.	Description
-	TOP	5/8" DIAM. X 8' LIGHTNING ROD
1-6	119.50	(6) ALLGON 7920 PANEL
-	119.50	TRI-ANTENNA MOUNT
7-12	110.00	(6) 48" X 12" X 3" PANEL ANTENNA
-	110.00	(3) 10' T-ARM MOUNTS
13-18	100.00	(6) 48" X 12" X 3" PANEL ANTENNA
-	100.00	(3) 10' T-ARM MOUNTS
19-24	90.00	(6) 48" X 12" X 3" PANEL ANTENNA
-	90.00	(3) 10' T-ARM MOUNTS
25-27	80.00	(3) 48" X 12" X 3" PANEL ANTENNA
-	80.00	TRI-ANTENNA MOUNT
28-30	70.00	(3) 48" X 12" X 3" PANEL ANTENNA
-	70.00	TRI-ANTENNA MOUNT

STEP BOLTS FULL HEIGHT.  
ANTENNA FEED LINES RUN INSIDE OF POLE.



Elevation	85 MPH WIND		50 MPH WIND	
	Lateral Deflection (Inches)	Rotation (sway) (degrees)	Lateral Deflection (Inches)	Rotation (sway) (degrees)
TOP	92.9	6.113	32.1	2.115

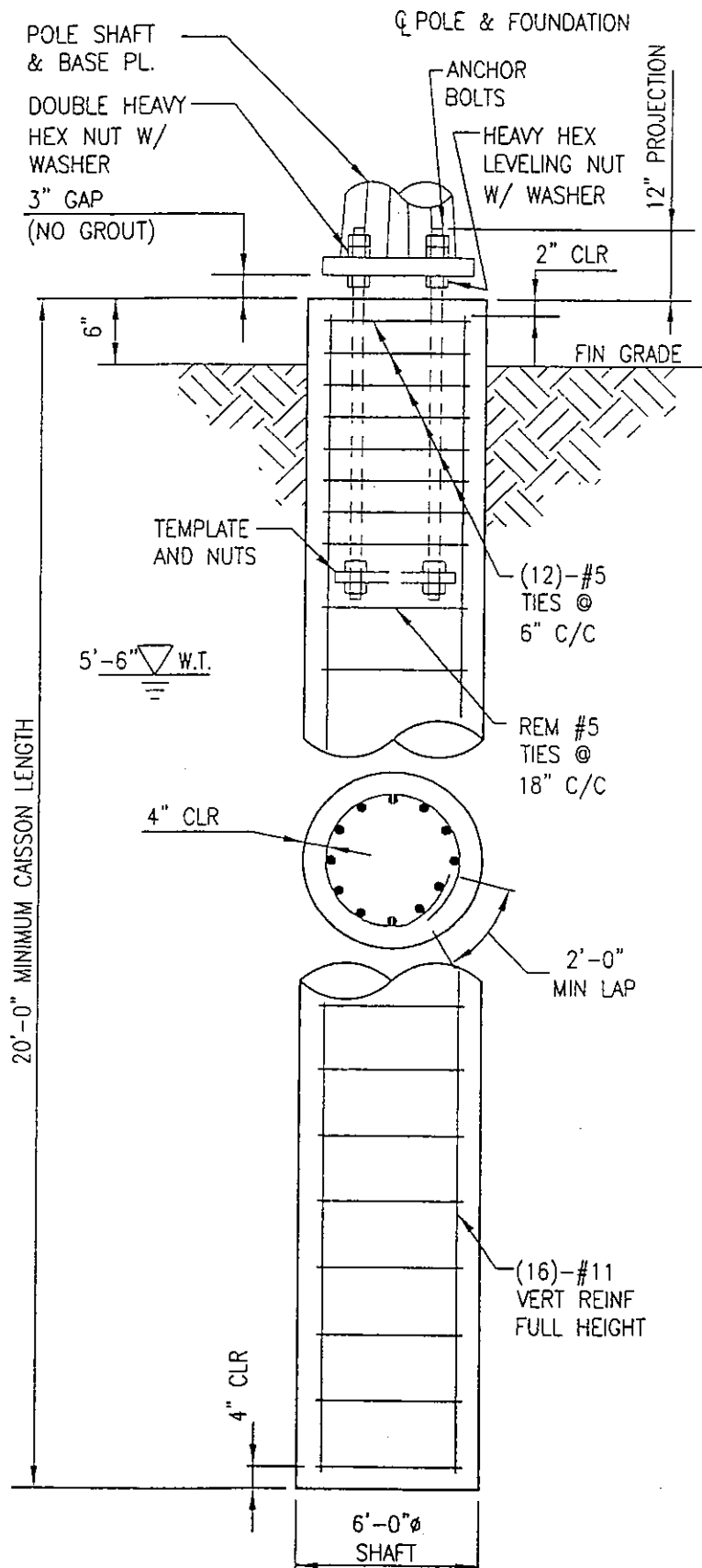
S H A F T   S E C T I O N   D A T A					
Shaft Section	Section Length (feet)	Plate Thickness (in.)	Lap Splice (in.)	Diameter Across Flats (inches)	
				@ Top	@ Bottom
1	37.00	0.1875	39.00	19.000	24.552
2	45.00	0.2500	45.00	23.689	30.441
3	45.00	0.3125		29.378	36.130

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES

BASE REACTIONS FOR FOUNDATION DESIGN

MOMENT = 1350 ft-kips  
SHEAR = 16 kips  
AXIAL = 16 kips



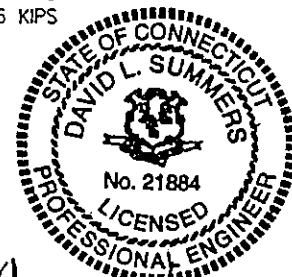


J O B   D A T A			
Page 2 of 2		Job No.	29203-0231
By	MFP	Design No.	#20471
Chk'd By	MFP	Date	07-29-2003
		Rev. No. 2	Rev. Date 08-15-2003
Pole 120-FT MONOPOLE, TOLLAND CO., CT			
Site CT-819, COVENTRY TOWBRIDGE ROAD			
Owner AT&T			
Ref. No.			
Design 85 MPH / 74 MPH + 1/2" RADIAL ICE ACCORDING TO TIA/EIA-222-F 1996			

THERE ARE TWO NOTCHES ON THE ANCHOR BOLT TEMPLATES LOCATED 180° APART. THE CONTRACTOR SHALL POSITION THE ANCHOR BOLTS AND TEMPLATES IN THE FOUNDATION PER THE SUMMIT MANUFACTURING ANCHOR BOLT TEMPLATE DRAWING.

NOTES:

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE SHALL BE AIR ENTRAINED (6±1.5%). CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.46. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318, LATEST EDITION. FOUNDATION INSTALLATION SHALL BE IN ACCORDANCE WITH ACI 336, "STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF DRILLED PIERS", LATEST EDITION.
2. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615 (GRADE 60) EXCEPT THAT CAISSON TIES MAY BE ASTM A-615 (GRADE 40). ALL REINFORCING DETAILS SHALL CONFORM TO "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315, LATEST EDITION, UNLESS DETAILED OTHERWISE ON THIS DRAWING.
3. SEE PAGE 1 FOR ANCHOR BOLT QUANTITY, SIZE, LENGTH, AND BOLT CIRCLE.
4. TOTAL CONCRETE = 21 CUBIC YARDS.
5. FOUNDATION DESIGN IS BASED UPON GEOTECHNICAL EXPLORATION REPORT PREPARED BY: VN ENGINEERS, INC.  
REPORT NO.: 23-112  
DATED: 08-14-2003
6. CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.
7. GEOTECHNICAL REPORT INDICATES GROUNDWATER WAS ENCOUNTERED AT 5'-6" BELOW GRADE.
8. THE FOUNDATION WAS DESIGNED USING THE FOLLOWING SERVICE LOADS:  
MOMENT: 1350 FT-KIPS  
SHEAR: 16 KIPS  
AXIAL: 16 KIPS



*David L. Summers*

**CAISSON (DRILLED PIER) FOUNDATION**

SOME QUANTITIES SHOWN ARE OPTIONAL. REFER TO PACKING LIST FOR THE EXACT QUANTITIES.


BILL OF MATERIALS			MATERIAL	QTY.
ITEM NO.	ITEM NAME	DESCRIPTION		
1	1-2037-7-01	DISK 18" AMTAC CLAMP AND 4145 7-PT. FPC	1	
3	1-2037-012	SUPPORT ARM W/ELIMINATOR GALVZ	165	
SHIP LUGS HARDWARE				
3	2543B-R4	PER ARM NUT, KNOTS BUSH (10000)	604 LV	-
4	18	3/4-10 AL THREAID ROD - 9 L.G. 4537	1	-
5	36	3000-20	1	-
6	36	3000-20	1	-
7	72	3/4-10 HEX WASHER GALVZ	A-563	21
		3/4-10 HEX NUT GALVZ	A-563	21

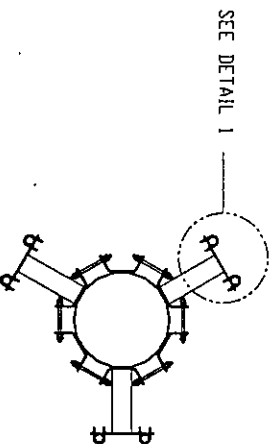
## FABRICATION NOTES

1. ALL STEEL, EXCEPT PIPES SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS OF THE "STANDARD SPECIFICATION FOR STRUCTURAL STEEL" ASTM A36.
2. HEAVY STEEL PIPE SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS OF THE "STANDARD SPECIFICATION FOR STRUCTURAL STEEL" ASTM A500.
3. ALL BOLTS SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR HIGH STRENGTH BOLTS FOR STRUCTURAL STEEL" ASTM A325.
4. ALL WELDS AND FLANGES SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR WELDED JOINTS IN STEEL PLATE OR PLATE HEAVYER THAN 5/16" THICK TO THE "SPECIFICATIONS FOR HIGH STRENGTH BOLTS FOR STRUCTURAL STEEL" ASTM A325.
5. WELDED CONNECTIONS SHALL CONFORM TO THE LATEST REVISED CODE OF THE AMERICAN WELDING SOCIETY A5.1.
6. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATION FOR ZINC AND ZINC ALLOYED COATINGS OF STEEL PRODUCTS FABRICATED FOR HOT-DIP, PRESSURE AND CRYSTAL COATING" ASTM A123.
7. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATION FOR ZINC AND ZINC ALLOYED COATINGS OF STEEL PRODUCTS FABRICATED FOR HOT-DIP, PRESSURE AND CRYSTAL COATING" ASTM A123.
8. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. GALVANIZING SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATION FOR ZINC AND ZINC ALLOYED COATINGS OF STEEL PRODUCTS FABRICATED FOR HOT-DIP, PRESSURE AND CRYSTAL COATING" ASTM A123.

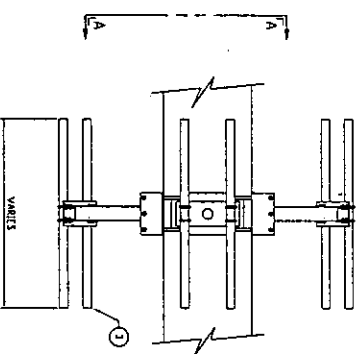
**ERECTION NOTES**

1. ASSIGNED SITE-ONE OR GREATER, ATTEND THE ANTENNA ROAMING SPOTS AT THE CUSTOMER SPECIFIED LOCATIONS.
2. SITE-ONE TO BE MONITORED OR PLOT AT CUSTOMER SPECIFIED LOCATION.
3. CLAMES TO BE EXACTLY SPACED.
4. BRIGHT SITE-ONE TO CUSTOMER SPECIFIED AZIMUTH.
5. TIGHTEN THE HARDWARE TO THE AISC. SNUG TIGHT REQUIREMENTS. EXISTING WHEN ALL PILES IN A JOINT ARE IN FIRM CONTACT. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS THAT PREVENTS THE FULL EFFORT OF A MAN USING AN ORDINARY BRUSH WRENCH.

 <b>PennSummit</b> <b>Tubular, LLC</b> 325 KILBURN BOULEVARD WEST MEADOW, PA 15380 www.pennsummit.com PHONE: 888-947-6537 FAX: 888-466-6885	PAGE OF DATE 03/12/03 RIT DRAWING
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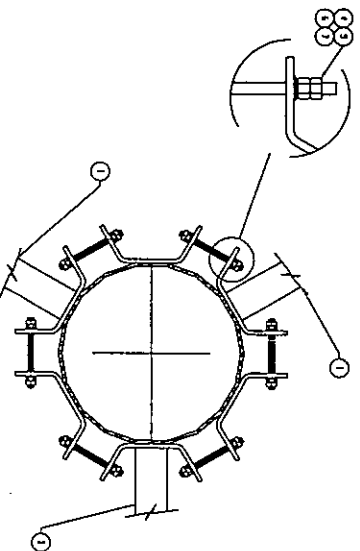


SEE DETAIL 1

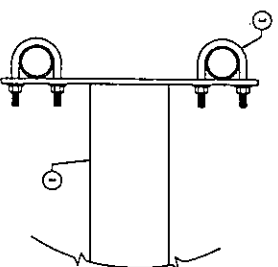


(3) CUSTOM TRI ANTENNA MOUNT-PLAN VIEW

(3) CUSTOM TRI ANTENNA MOUNT-ELEVATION VIEW



VIEW A-A

DETAIL 1

JOB # 20577  
STR. # D1931

[illegible]



# **Exhibit C**

## **Power Density Calculations**

**49 South Road  
Bolton, Connecticut**



T-Mobile USA Inc.  
100 Filley St, Bloomfield, CT 06002-1853  
Phone: (860) 692-7100  
Fax: (860) 692-7159

# Technical Memo

To: Karen Bartholomew  
From: Hassan Syed - Radio Frequency Engineer  
cc: Jason Overbey  
Subject: Power Density Report for CT11500E  
Date: September 3, 2003

## 1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile PCS antenna installation on a Monopole at 49 South Road, Bolton, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location.

## 2. Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from T-Mobile transmitters are in the 1935-1945 MHz frequency band.
- 2) The antenna array consists of three sectors, with 3 antennas per sector.
- 3) The model number for each antenna is EMS RR90-17-02DP.
- 4) The antenna center line height is 110 ft.
- 5) The maximum transmit power from any sector is 3252.45 Watts Effective Radiated Power (EIRP) assuming 8 channels per sector.
- 6) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 7) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) The average ground level of the studied area does not change significantly with respect to the transmitting location

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

## 3. Conclusion:

Based on the above worst case assumptions, the power density calculation from the T-Mobile PCS antenna installation on a Monopole at 49 South Road, Bolton, CT, is 0.06597 mW/cm<sup>2</sup>. This value represents 6.597% of the Maximum Permissible Emission (MPE) standard of 1 milliwatt per square centimeter (mW/cm<sup>2</sup>) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area. The combined Power Density from other carriers is 7.49%. The combined Power Density for the site is 14.087% of the M.P.E. standard.



**New England Market**

**Connecticut**

**Worst Case Power Density**

**T-Mobile**

Site:	CT11500E
Site Address:	49 South Road
Town:	Bolton
Tower Height:	120 ft.
Tower Style:	Monopole
Base Station TX output	16 W
Number of channels	8
Antenna Model	EMS RR90-17-02DP
Cable Size	1 5/8 in.
Cable Length	125 ft.
Antenna Height	110.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	1.00 dB
Antenna Gain	16.5 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.4500 dB
Total Attenuation	2.4500 dB
Total EIRP per Channel	56.09 dBm
(In Watts)	406.56 W
Total EIRP per Sector	65.12 dBm
(In Watts)	3252.45 W
nsg	14.0500
Power Density (S) =	0.065973 mW/cm^2
Voicestream Worst Case % MPE =	6.5973%
Equation Used :	$S = \frac{(1000)(grf)^2 (Power) 10^{(nsg/10)}}{4 \pi (R)^2}$
Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997	

Co-Location Total	
Carrier	% of Standard
Verizon	
Cingular	
Sprint PCS	
AT&T Wireless	7.4900 %
Nextel	
Total Excluding Voicestream	7.4900 %
Voicestream	6.5973
Total % MPE for Site	14.0873%