STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
www.ct.gov/csc

June 29, 2006

Karina Fournier
Zoning Department
T-Mobile
30 Cold Spring Road
Rocky Hill, CT 06067

RE: **TS-T-MOBILE-128-060606** - Omnipoint Communications, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at 344 Firetown Road, Simsbury, Connecticut.

Dear Ms. Fournier:

At a public meeting held June 27, 2006, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated June 6, 2006, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: The Honorable Thomas E. Vincent, First Selectman, Town of Simsbury
John Loomis, Chairman of the Planning Commission, Town of Simsbury
Simsbury Fire Department

G:\EM\T-MOBILE\Simsbury\dc062706.DOC

CSC
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30 Cold Spring Road, Rocky Hill, CT 06067
Karina.Fournier@T-mobile.com
860-796-3988

TS-T-MOBILE-128-060606

June 6, 2006

BY HAND

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

RE: **Tower Sharing Request by T-Mobile**
344 Firetown Road Simsbury, CT
Latitude: 41 54 11 / Longitude: 72 49 16

Dear Ms. Katz and Members of the Siting Council:

Pursuant to Connecticut General Statutes (C.G.S.) § 16-50aa, Omnipoint Communications, Inc. a.k.a. T-Mobile (formerly Voicestream Wireless Corp.) hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed ("Firetown FireS_MP"), in Simsbury, CT owned by the Simsbury Fire Department. T-Mobile and the Simsbury Fire Deaprtment have agreed to the shared use of the Firetown FireS_MP Tower, as detailed below.

Firetown FireS_ MP

The Firetown FireS_MP Tower facility consists of an eighty foot (80') monopole ("Tower") owned and operated by the Simsbury Fire Department. T-Mobile proposes to locate antennas at a centerline mounting height of seventy seven (77') feet. The equipment will be located within a compound at the base of the tower.

FiretownFireS_MP

As shown on the enclosed plans prepared by Clough Harbour, & Associates including a site plan and tower elevation of the May 24, 2006, drawings annexed hereto as Exhibit 1, 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 site plan. T-Mobile will install three (3) antennas at the seventy seven (77') foot level of the Tower. Three (3) associated unmanned equipment cabinets will be located at the base of the tower.

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 FiretownFireS_MP Tower 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 the proposed T-Mobile installation has been performed and is attached as Exhibit 2. The structural analysis concludes that, the tower can safely accommodate the proposed T-Mobile antennas. The proposed shared use of this Tower is technically feasible. Further there is sufficient room at the base of the facility, 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 Cingular FiretownFireS_MP. (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 nor expand the site plan at the FiretownFireS_MP Tower and will be of minimal impact to the 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 T-Mobile would be approximately 11.455% of the standard. See Radio Frequency Memo dated June 1, 2006, annexed hereto as Exhibit 3.

5.) The proposed shared use of the FiretownFireS_MP Tower will 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 share use of the FiretownFireS_MP Tower on terms agreeable to both parties. The proposed tower sharing is therefore economically feasible.

E. Public Safety As stated above and evidenced in the Radio Frequency Field Survey annexed hereto as Exhibit 3, 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 Simsbury area through shared use of the FiretownFire_MP Tower 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.

Conclusion

FiretownFire_MP Tower 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 FiretownFireS_MP Tower.

Respectfully submitted,

Karina Fournier
Zoning Dept.
T-Mobile
30 Cold Spring Road
Rocky Hill, CT 06067
(860) 796-3988

cc: First Selectmen, Thomas E. Vincent

Exhibit 1

FIRETOWN FIRESTATION MP

344 FIRETOWN ROAD
SIMSBURY, CT 06070

SITE NUMBER: CTHA152A

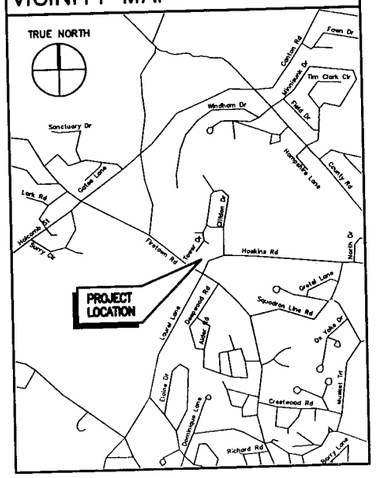
SITE TYPE: CO-LOCATE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE PROJECT OWNER'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM THE PROJECT OWNER'S REPRESENTATIVE TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY:
   DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233
   CALL BEFORE YOU DIG (CT): 1-800-922-4455

VICINITY MAP

SCALE: 1" = 2,000'



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE LESSEE/LICENSEE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
A-1	PLANS, ELEVATION, DETAILS & NOTES	1
S-1	STRUCTURAL NOTES, PLANS, SECTIONS & DETAILS	1
E-1	ELECTRICAL NOTES, RISERS & DETAILS	1
E-2	GROUNDING DETAILS	1

PROJECT SUMMARY

SITE NUMBER:	CTHA152A
SITE NAME:	FIRETOWN FIRESTATION MP
SITE ADDRESS:	344 FIRETOWN ROAD SIMSBURY, CT 06070
ASSESSOR'S PARCEL NO.:	MAP: F05 BLOCK: 302 LOT: 001
ZONING DISTRICT:	R-40
SITE TYPE:	CO-LOCATE
STRUCTURE OWNER & PROPERTY OWNER:	SIMSBURY FIRE DISTRICT 869 HOPMEADOW STREET SIMSBURY, CT 06070 CONTACT: PETER N. INGVERTSEN PHONE: (860) 858-1971
APPLICANT, LESSEE/LICENSEE, PROJECT OWNER:	OMNIPOINT COMMUNICATIONS, INC. 100 FILLEY STREET BLOOMFIELD, CT 06002

OMNIPOINT COMMUNICATIONS, INC.
A WHOLLY-OWNED SUBSIDIARY OF T-MOBILE USA, INC.
100 FILLEY STREET
BLOOMFIELD, CT 06002
OFFICE: (860)-692-7100
FAX: (860)-692-7159

CLOUGH HARBOUR & ASSOCIATES LLP
2139 Silas Deane Highway, Suite 212 - Rocky Hill, CT 06067-2336
Main: (860) 257-4567 - www.cloughharbour.com

STATE SEAL
STATE OF CONNECTICUT
JOHN P. SOBIECKI
No. 17827
LICENSED
PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 10585-1122

DRAWN BY: PAL

CHECKED BY: FM

SUBMITTALS

1	05/24/08	CONSTRUCTION FINAL
0	05/10/08	CONSTRUCTION

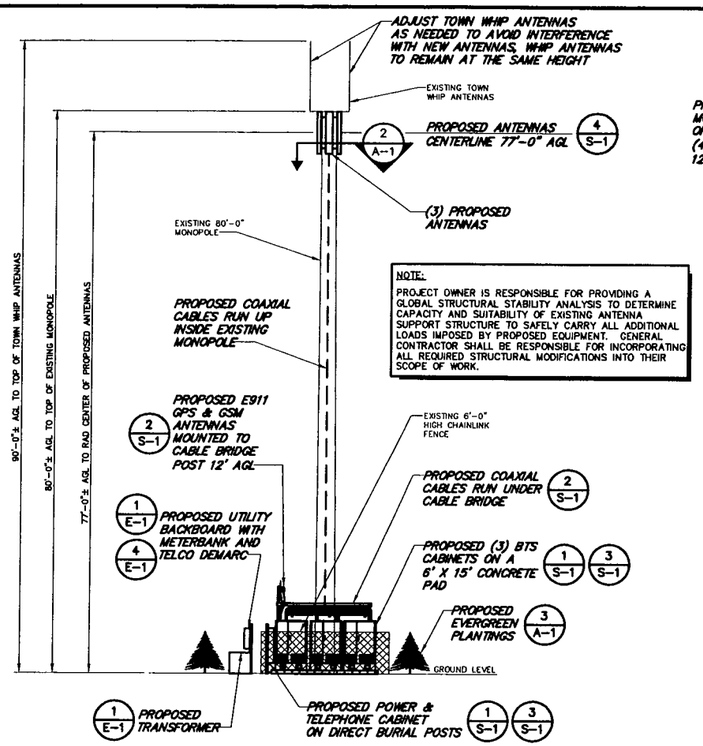
CTHA152A
FIRETOWN
FIRESTATION MP
344 FIRETOWN ROAD
SIMSBURY, CT 06070

SHEET TITLE

TITLE SHEET

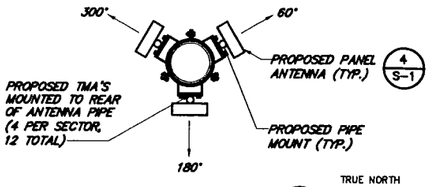
SHEET NUMBER

T-1



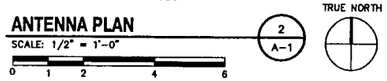
NORTH ELEVATION

SCALE: 1" = 10'

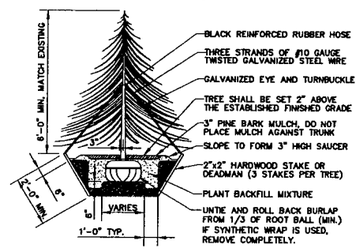


ANTENNA PLAN

SCALE: 1/2" = 1'-0"

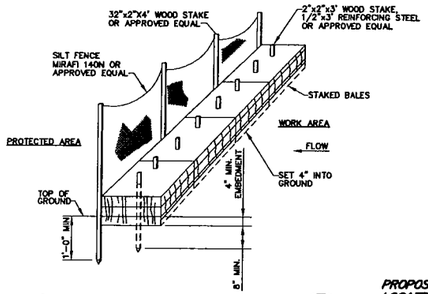


TRUE NORTH



EVERGREEN TREE DETAIL

SCALE: NONE

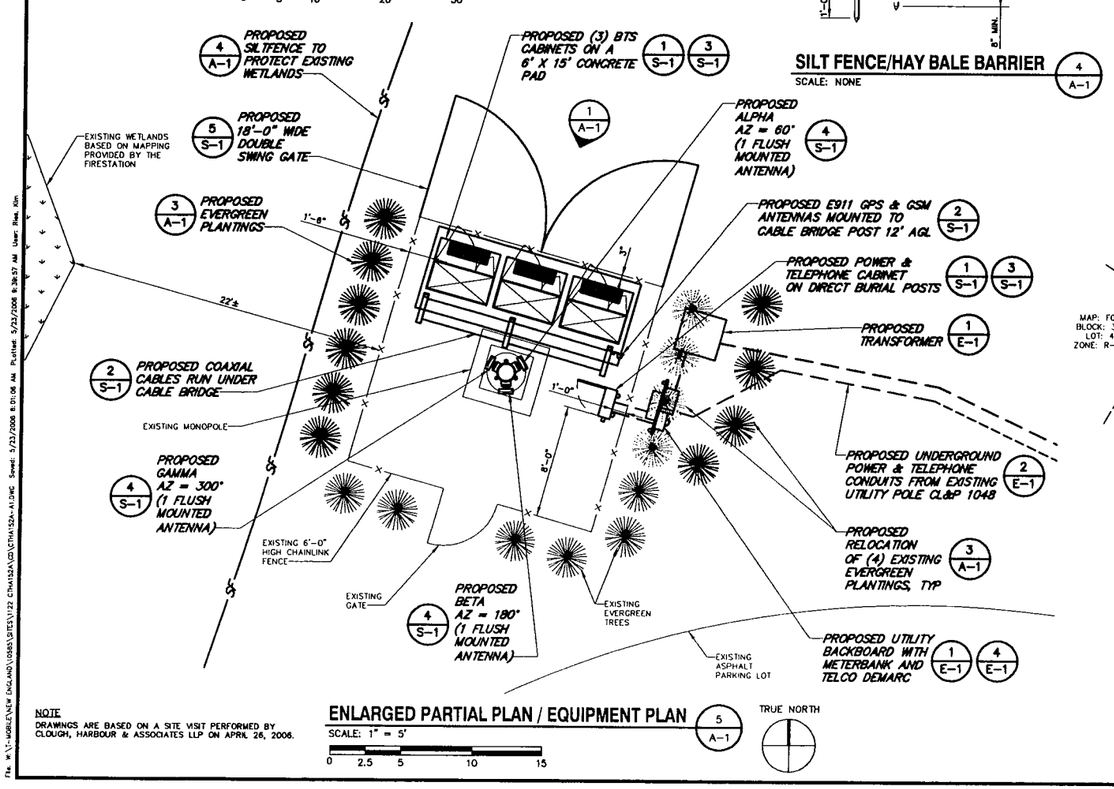


SILT FENCE/HAY BALE BARRIER

SCALE: NONE

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS SHOWN HEREIN.
2. ALL DIMENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH OWNER PRIOR TO CONSTRUCTION.
3. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. PRIOR TO THE START OF CONSTRUCTION, ORDERING OR FABRICATION OF ANTENNA MOUNTS, CONTRACTOR SHALL CONSULT WITH PROJECT OWNER'S RF ENGINEER AND FIELD VERIFY ALL ANTENNA SECTOR LOCATIONS AND ANTENNA AZIMUTHS.
4. THE CONTRACTOR AND OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
5. ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURES.
6. COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE ATTACHMENT K). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
7. ANTENNAS, SUPPORTS AND CABLE MOUNTS SHALL BE PAINTED TO MATCH EXISTING SURFACES TO WHICH IT IS ATTACHED. PAINT SHALL BE SHERWIN WILLIAMS, COROTHANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND LESSEE/LICENSEE GUIDELINES.
8. COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
9. EQUIPMENT WILL BE INDEPENDENTLY POWERED WITH SEPARATE METER.
10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
11. PRIOR TO EXCAVATION NEAR (E)TOWER, CONTRACTOR TO CONTACT AND COORDINATE WITH PROPERTY OWNER.
12. ALL (E)ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
13. ALL (E)INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF UTILITY COMPANY ENGINEERING.
14. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH.
15. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES DURING CONSTRUCTION.
16. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. LESSEE/LICENSEE IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. LESSEE/LICENSEE RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

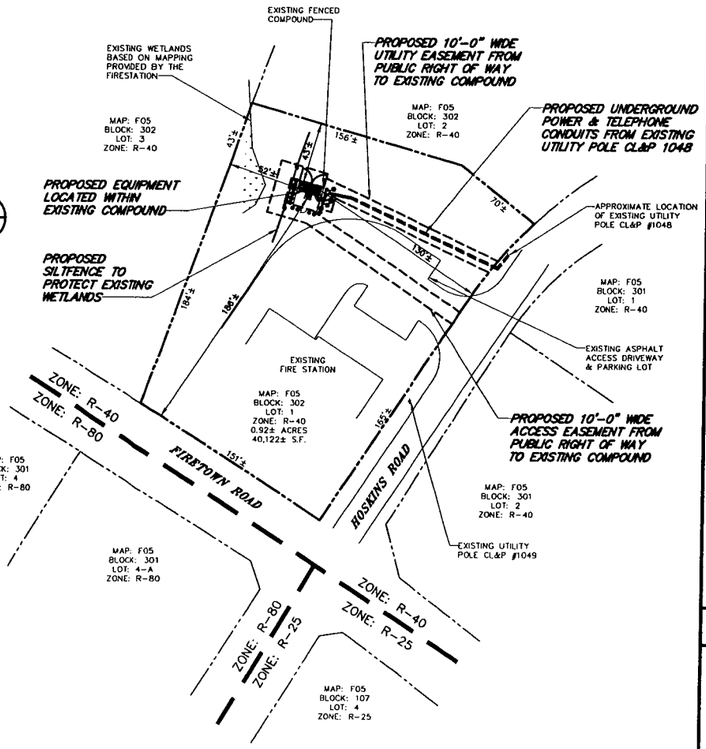


NOTE
DRAWINGS ARE BASED ON A SITE VISIT PERFORMED BY CLOUGH, HARBOUR & ASSOCIATES LLP ON APRIL 26, 2006.

ENLARGED PARTIAL PLAN / EQUIPMENT PLAN

SCALE: 1" = 5'

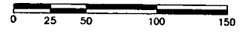
TRUE NORTH



NOTE:
1. PLOT PLAN BASED ON TAX MAP FROM THE TOWN OF SIMSBURY AND A PARTIAL SITE PLAN PROVIDED BY THE FIRESTATION.
2. SET BACKS ARE TAKEN FROM PROPOSED EQUIPMENT TO PROPERTY LINES.

PLOT PLAN

SCALE: 1" = 50'



TRUE NORTH

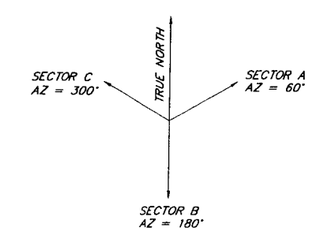
ABBREVIATIONS

ADJ	ADJUSTABLE	OC	ON CENTER
AGL	ABOVE GROUND LEVEL	OPP	OPPOSITE
ARL	ABOVE ROOF LEVEL	SF	SQUARE FOOT
APPROX	APPROXIMATE	SHT	SHEET
C	CONDUIT	SIM	SIMILAR
CONC	CONCRETE	STL	STEEL
CONT	CONTINUOUS	TOC	TOP OF CONCRETE
CJ	CONSTRUCTION JOINT	TOM	TOP OF MASONRY
DIA	DIAMETER	TYP	TYPICAL
DWG	DRAWING	VIF	VERIFY IN FIELD
EGB	EQUIPMENT GROUND BAR	UG	UNDERGROUND
EA	EACH	UON	UNLESS OTHERWISE NOTED
ELEC	ELECTRICAL	WWF	WELDED WIRE FABRIC
EL	ELEVATION	W/	WITH
EQ	EQUAL	BTS	BASE TRANSMISSION STATION
EQUIP	EQUIPMENT	LNA	LOW NOISE AMPLIFIER
(E)	EXISTING	PCS	PERSONAL COMMUNICATIONS SERVICES
EXT	EXTERIOR	A-1	ANTENNA MARK NO.
FCM	FIELD CONSTRUCTION MANAGER	PL	PLATE
FF	FINISHED FLOOR	&	AND
FG	FINISHED GRADE	@	AT
GA	GAUGE		
GALV	GALVANIZED		
GC	GENERAL CONTRACTOR		
LG	LONG		
MAX	MAXIMUM		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MGB	MASTER GROUND BAR		
MIN	MINIMUM		
MTL	METAL		
NIC	NOT IN CONTRACT		
NTS	NOT TO SCALE		

SYMBOLS AND MATERIALS

	NEW ANTENNA		GROUT / PLASTER
	EXISTING ANTENNA		BRICK
	ASPHALT		MASONRY
	NEW ACCESS EASEMENT		CONCRETE
	CONCRETE		EARTH
	ELECTRIC BOX		GRAVEL
	LIGHT POLE		PLYWOOD
	FND. MONUMENT		SAND
100	SPOT ELEVATION		WOOD CONT.
	SET POINT		WOOD BLOCKING
	REVISION		STEEL
	GRID REFERENCE		CENTER LINE
DET. # SHT. #	DETAIL REFERENCE		PROPERTY LINE
			STEPPED FOOTING
DET. # SHT. #	ELEVATION		MATCH LINE
			WORK POINT
DET. # SHT. #	SECTIONS & DETAILS	G	GROUND WIRE
			COAXIAL CABLE

ANTENNA ORIENTATION KEY



OMNIPOINT COMMUNICATIONS, INC.
A WHOLLY-OWNED SUBSIDIARY OF T-MOBILE USA, INC.
100 FILLEY STREET
BLOOMFIELD, CT 06002
OFFICE: (860)-692-7100
FAX: (860)-692-7159

CLOUGH HARBOUR & ASSOCIATES LLP
2139 Silas Deane Highway, Suite 212 - Rocky Hill, CT 06067-2336
Main: (860) 257-4557 - www.cloughharbour.com

STATE OF CONNECTICUT
JOHN P. SOBIECH
No. 17827
LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 10585-1122

DRAWN BY: PAL

CHECKED BY: FM

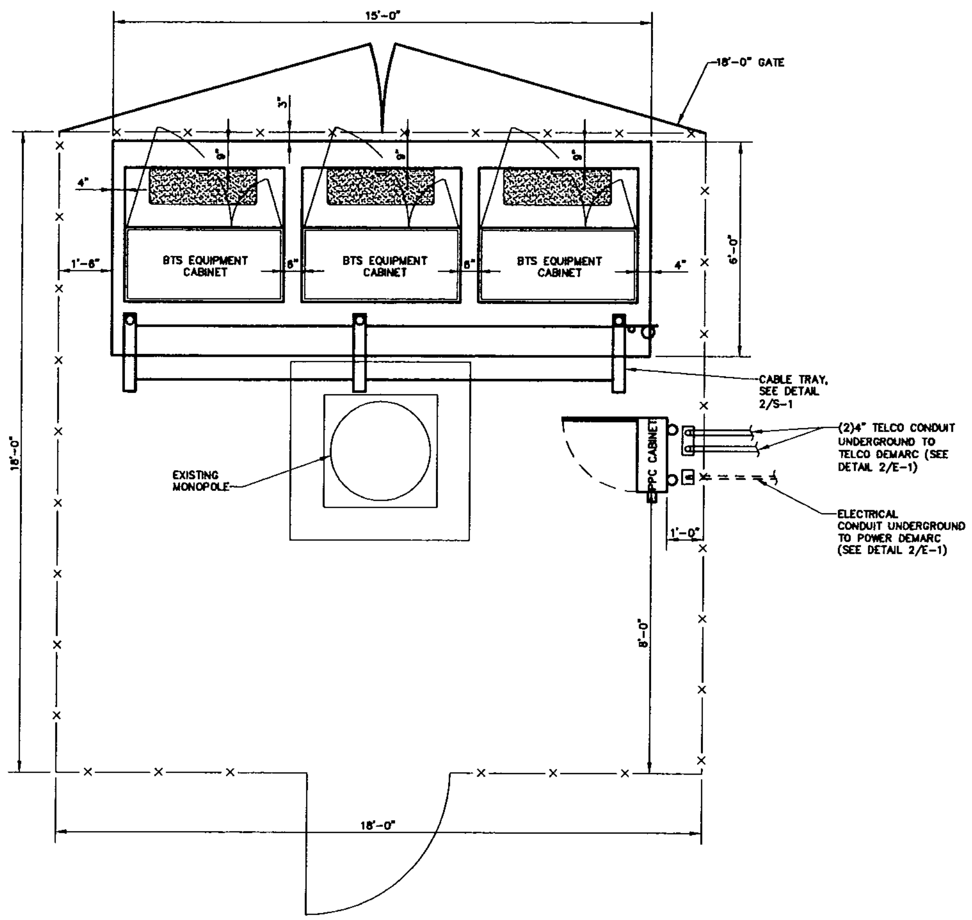
SUBMITTALS

1	05/24/06	CONSTRUCTION FINAL
0	05/10/06	CONSTRUCTION

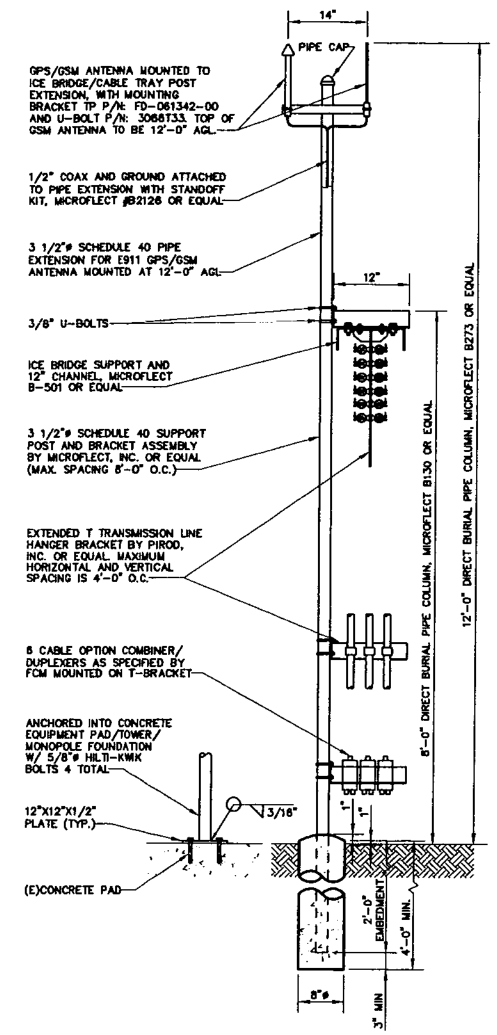
CTHA152A
FIRETOWN
FIRESTATION MP
344 FIRETOWN ROAD
SIMSBURY, CT 06070

SHEET TITLE
PLANS, ELEVATION, DETAILS & NOTES

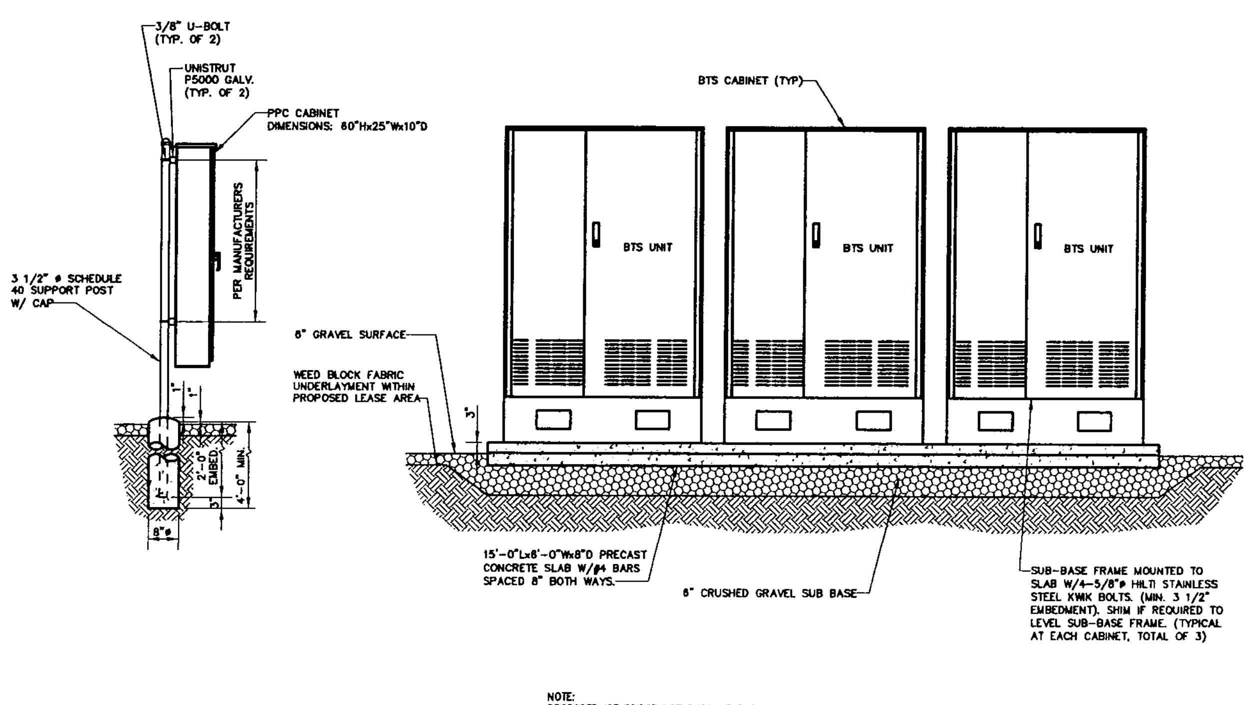
SHEET NUMBER
A-1



EQUIPMENT SLAB LAYOUT (1/S-1)
NO SCALE

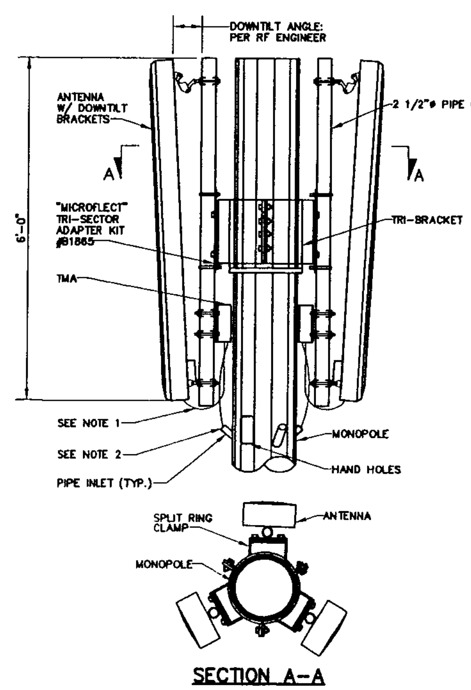


PROFILE AT CABLE BRIDGE (2/S-1)
NO SCALE



NOTE:
PROPOSED ICE BRIDGE NOT SHOWN FOR CLARITY.

EQUIPMENT SLAB LAYOUT (3/S-1)
NO SCALE



NOTES:

1. SECURE CABLES WITH TIE WRAPS AT 3'-0" O.C.
2. PROVIDE KELLOMS GRIP AROUND CABLES AND FASTEN TO EXISTING J-HOOKS INSIDE MONOPOLE.

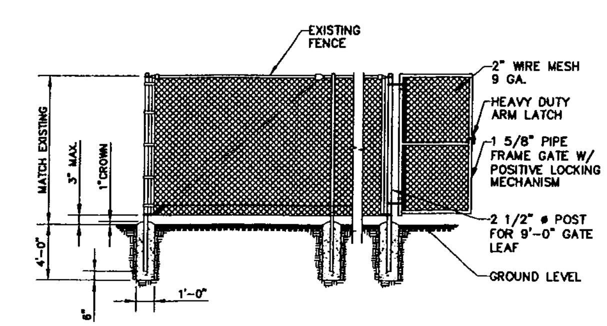
ANTENNA MOUNTING DETAIL (4/S-1)
NO SCALE

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, ANSI/ASCE7, EIA/TIA-222-F STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 STRUCTURAL STEEL UNLESS OTHERWISE NOTED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE A, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE)AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 5/8" DIA UNLESS OTHERWISE NOTED.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". 9TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP, WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSISIT OF 1/2" DIAMETER STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSYTEMS (AS SPECIFIED ON DWG.) OR ENGINEERS APPROVED EQUAL WITH 4-1/4" MIN. EMBEDMENT DEPTH, UNLESS NOTED OTHERWISE.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE AND ONE HALF (3 1/2) INCHES.
15. GRAVEL SUB BASE AND CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.
16. CONCRETE FOR FENCE AND ICE BRIDGE SUPPORT SHALL BE 3000 PSI AIR ENTRAINED (4%-6%) NORMAL WEIGHT CONCRETE.
17. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301.
18. THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

    CONCRETE CAST AGAINST EARTH ... 3 INCHES.
    CONCRETE EXPOSED TO EARTH OR WATER
    #6 AND LARGER ....2 INCHES
    #5 AND SMALLER ....1 1/2 INCHES

    ALL EXPOSED EDGES SHALL BE PROVIDED WITH A 3/4"x3/4" CHAMFER UNLESS OTHERWISE NOTED.
19. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.



TYPICAL GATE DETAIL (5/S-1)
NO SCALE

FENCE NOTES:

1. INSTALL SWING GATE PER ASTM F-900.
2. ALL POSTS FOR GATE LEAF AND PIPES FOR GATE FRAME SHALL BE SCHEDULE 40 PIPE PER ASTM F-1083.
3. FABRIC SHALL BE 12 GA. CORE WIRE SIZE 2" MESH CONFORMING TO ASTM A-392.
4. TENSION WIRE SHALL BE 7 GA. GALV. STEEL.
5. TIE WIRE SHALL BE 11 GA. GALV. STEEL (MIN.) AT POSTS AND RAILS. A SINGLE WRAP FABRIC TIE AT TENSION WIRE BY HOG RINGS SPACED MAX. OF 24" INTERVALS
6. STEEL FENCE SYSTEM SHALL INCLUDE THE FENCE POSTS, FABRIC, GATE SYSTEM AND ALL NECESSARY ERECTION ACCESSORIES, FITTINGS AND FASTENINGS. ALL FENCE SYSTEM COMPONENTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. GATES SHALL BE SWING GATES WITH 9'-0" LEAFS. REFER TO TYPICAL GATE DETAIL FOR ADDITIONAL INFORMATION. INSTALL FENCE AFTER CONCRETE HAS ATTAINED 75% OF 28 DAY DESIGN STRENGTH.
7. GATE TO MATCH EXISTING FENCE COMPONENTS, STYLE, HEIGHT AND COLOR.

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STATE OF CONNECTICUT · JOHN P. SOBIECK · No. 17827 · LICENSED · PROFESSIONAL ENGINEER

APPROVALS

LANDLORD	
LEASING	
R.F.	
ZONING	
CONSTRUCTION	
A/E	

PROJECT NO: 10585-1122

DRAWN BY: PAL

CHECKED BY: FM

SUBMITTALS

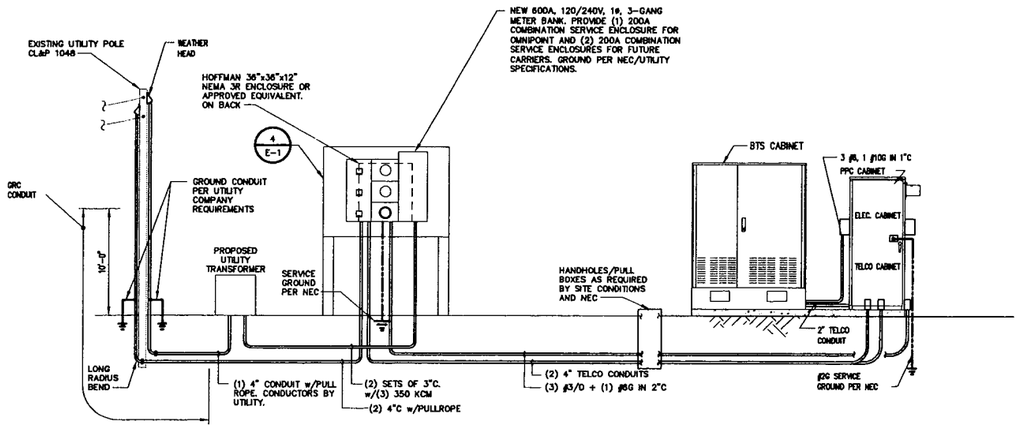
1	05/24/06	CONSTRUCTION FINAL
0	05/10/06	CONSTRUCTION

CTHA152A
FIRETOWN
FIRESTATION MP
344 FIRETOWN ROAD
SIMSBURY, CT 06070

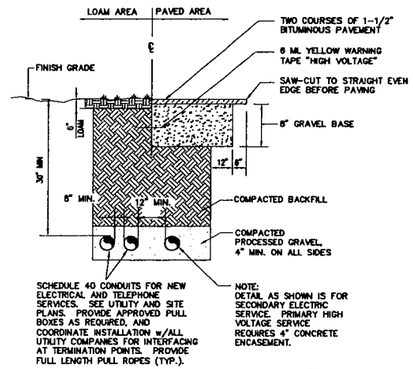
SHEET TITLE
STRUCTURAL NOTES, PLANS, SECTIONS & DETAILS

SHEET NUMBER
S-1

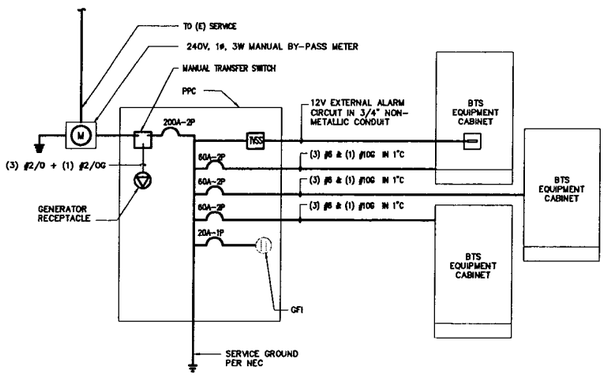
MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS.



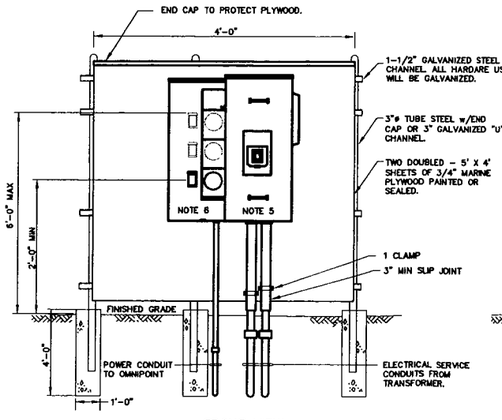
POWER RISER DIAGRAM 1 E-1
NO SCALE



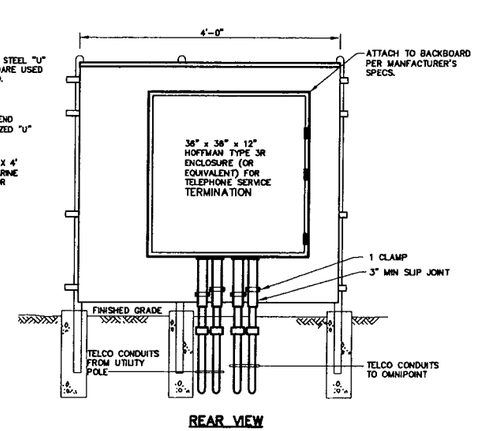
BURIED CONDUIT DETAIL 2 E-1
NO SCALE



ONE LINE DIAGRAM 3 E-1
NO SCALE



FRONT VIEW



REAR VIEW

NOTES:
1. ALL UNUSED METERS TO BE BARREL LOCKED BY CL&P.
2. INDIVIDUAL METER SOCKETS WITH INDIVIDUAL BARRIERS AS WELL AS PROVISIONS FOR SEALS AND BARREL LOCKS.
3. SINGLE-PHASE 120/208 VOLT NETWORK, THREE-PHASE 208/102 VOLT NETWORK AND THREE-PHASE 480/277 VOLT SERVICES SHALL BE COLD SEQUENCED.
4. ALL METERS MUST BE PROPERLY IDENTIFIED "UNIT #".
5. SQUARE D MAIN LUG CATALOG #EZM1600CBU OR APPROVED EQUIVALENT.
6. SQUARE D METER PACK CATALOG #EZMR113200 OR APPROVED EQUIVALENT.

METERBANK - ELEVATION 4 E-1
NO SCALE

ELECTRICAL LEGEND

	NEW PANEL BOARD, SURFACE MOUNTED
	EXISTING PANEL BOARD, SURFACE MOUNTED
T	DRY TYPE TRANSFORMER
M	METER
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
	FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED
	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
J	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	EXPOSED WIRING
	HOME RUNS, MINIMUM (2)#10 + (1)#10G IN 3/4" CONDUIT U.O.N.
A.F.F.	ABOVE FINISHED FLOOR
U.O.N.	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
GFI	GROUND FAULT INTERRUPTER
A	AMPERE
V	VOLT
KWH	KILOWATT-HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
G	GROUND
⏚	GROUND
MGB	MASTER GROUND BAR ⊙ MECHANICAL CONNECTION • CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR ⊙ MECHANICAL CONNECTION • CADWELD CONNECTION
—G—	GROUND COPPER WIRE, SIZE AS NOTED
	EXPOSED WIRING
	COAXIAL CABLE
⊙	5/8"x8' COPPER CLAD STEEL GROUND ROD
	⊙EXOTHERMIC (CADWELD) OR •MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊠	OMNI-DIRECTIONAL ELECTRONBIS MARKER SYSTEM (EMS) BALL

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL LAWS.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE A COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATERTIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND, WHERE REQUIRED, IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHNINSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE INSTALLED IN TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND, USE PVC, SCHEDULE 40 CONDUIT. ABOVE GROUND PORTIONS OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE A NEMA 3R ENCLOSURE.
12. PPC PROVIDED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ARTICLE 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURER'S COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THIS DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLES. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 8" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR.
18. CONNECTION TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

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STATE OF CONNECTICUT
JOHN P. SOBICK
No. 17827
LICENSED PROFESSIONAL ENGINEER

LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

PROJECT NO: 10585-1122
DRAWN BY: JRM
CHECKED BY: CMM

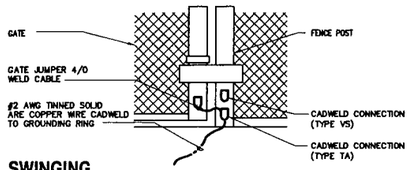
SUBMITTALS

1	05/24/06	CONSTRUCTION FINAL
0	05/10/06	CONSTRUCTION

CTHA152A
FIRETOWN
FIRESTATION MP
344 FIRETOWN ROAD
SIMSBURY, CT 06070

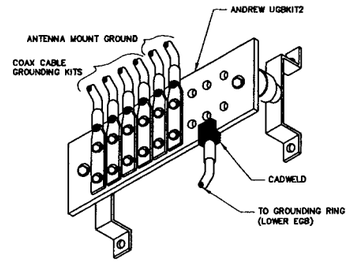
SHEET TITLE
ELECTRICAL NOTES, RISERS & DETAILS

SHEET NUMBER
E-1



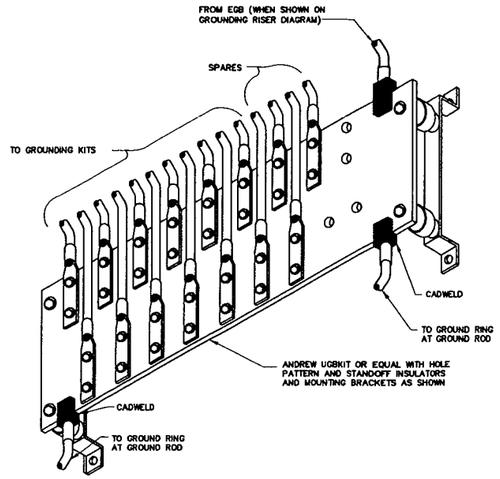
SWINGING GATE GROUNDING DETAIL (1 / E-2)

NO SCALE



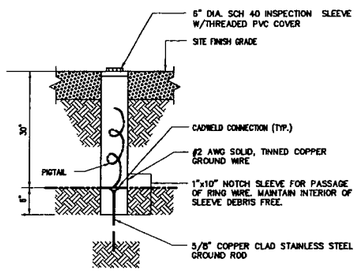
EQUIPMENT GROUND BAR (EGB) (2 / E-2)

NO SCALE



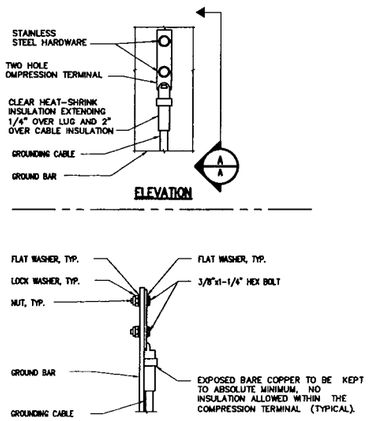
MASTER GROUND BAR (MGB) (3 / E-2)

NO SCALE



GROUND ROD TEST WELL DETAIL (4 / E-2)

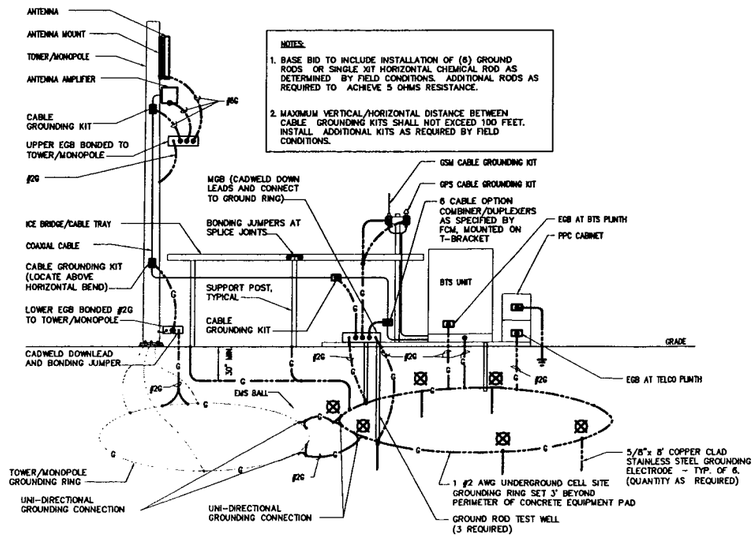
NO SCALE



NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTIONS DETAIL (5 / E-2)

NO SCALE



GROUNDING RISER DIAGRAM (6 / E-2)

NO SCALE

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A&E SEAL

STATE OF CONNECTICUT · JOHN P. SOBIECH · No. 17827 · LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 10585-1122

DRAWN BY: JRM

CHECKED BY: CMM

SUBMITTALS

1	05/24/06	CONSTRUCTION FINAL
0	05/10/06	CONSTRUCTION

CTHA152A
FIRETOWN
FIRESTATION MP
344 FIRETOWN ROAD
SIMSBURY, CT 06070

SHEET TITLE

GROUNDING DETAILS

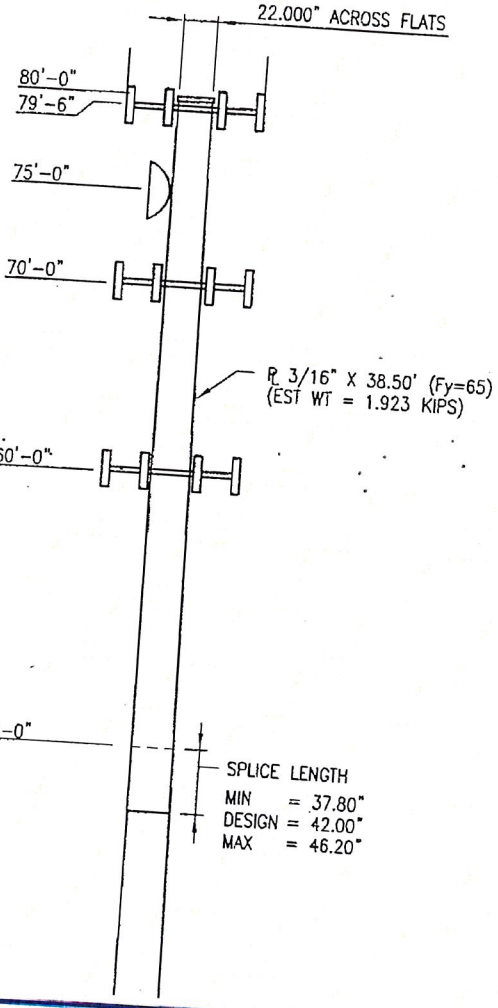
SHEET NUMBER

E-2

Exhibit 2

PennSummit Tubular, LLC
225 Kiwanis Boulevard, West Hazleton, PA 18202
Phone: (888) 847-6537 Fax: (888) 460-6885
www.pennsummit.com

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com



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JOB DATA

Page 1 of 2	Job No. 29204-0034
By MFP	Design No. #21696
Chk'd By MFP	Date 02-16-2004
Pole 80-FT MONOPOLE	Rev. No. Rev. Date
Site FIRETOWN ROAD SITE, HARTFORD CO., CT	
Owner NORTHEAST TOWERS	
Ref. No.	
Design 80 MPH / 69 MPH + 1/2" RADIAL ICE ACCORDING TO TIA/EIA-222-F 1996	

LOAD CASES

CASE 1	80 MPH WITH NO ICE	DESIGN WIND
CASE 2	69 MPH WITH 1/2" RADIAL ICE	REDUCED WIND WITH ICE
CASE 3	50 MPH WITH NO ICE	OPERATIONAL WIND

POLE SPECIFICATIONS

Pole Shape Type:	18-SIDED POLYGON
Taper:	0.148062 IN/FT
Shaft Steel:	ASTM A607 GRADE 65
Base PL Steel:	ASTM A572 GRADE 60 (60 KSI)
Anchor Bolts:	2 1/4"ø x 7'-0" LONG #18J ASTM A615 GRADE 75

ANTENNA LIST

No.	Elev.	Description
-	TOP	5/8" DIAM. X 8' LIGHTNING ROD
1-12	TOP	(12) 48" X 12" X 3" PANEL ANTENNA
13-16	TOP	(4) 20' WHIP ANTENNA
-	TOP	14' LOW PROFILE PLATFORM
17	75.00	(1) 6' DIAM. STD. DISH (6 GHz)
18-29	70.00	(12) 48" X 12" X 3" PANEL ANTENNA
-	70.00	14' LOW PROFILE PLATFORM
30-41	60.00	(12) 48" X 12" X 3" PANEL ANTENNA
-	60.00	14' LOW PROFILE PLATFORM

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

STATE OF CONNECTICUT
KIRK R. HALL
No. PEN23050
LICENSED
PROFESSIONAL ENGINEER
12-17-04

APPROVED

T-Mobile Site No: CTHA152A
A & E Manager: D. O'Connor
Date: 6/1/06

Antenna Make: RFS No.: APX15PV-16PVL-E
Number Antennas: 3 Rad. Center (AGL).: 77 Feet
Coax Cables: Number: 12 X 8" ☐ 1-5/8" ☐ 2-1/4"

X Tower and Foundation Acceptable: No Upgrades Required
☐ Tower Upgrades Required
☐ Foundation Upgrades Required
☐ Special Coax Placement or Bundling Required

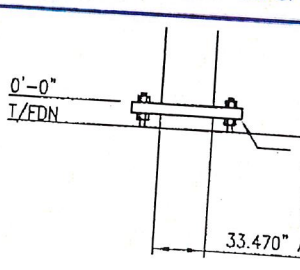
Elevation	80 MPH WIND		50 MPH WIND	
	Lateral Deflection (Inches)	Rotation (sway) (degrees)	Lateral Deflection (Inches)	Rotation (sway) (degrees)
TOP	36.7	3.510	14.3	1.371
75.0'	32.3	3.486	12.6	1.362

NOTE: MONOPOLE WAS DESIGNED TO MEET MAXIMUM TWIST AND SWAY REQUIREMENTS OF 1.47° FOR A 6.0'ø DISH (6.0 GHz) AT ELEV. 75.0' WITH A 50 MPH WIND.

SHAFT SECTION DATA

Shaft Section	Section Length (feet)	Plate Thickness (in.)	Lap Splice (in.)	Diameter Across Flats (inches) @ Top	Diameter Across Flats (inches) @ Bottom
1	38.50	0.1875	42.00	22.000	27.700
2	45.00	0.2500		26.807	33.470

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES



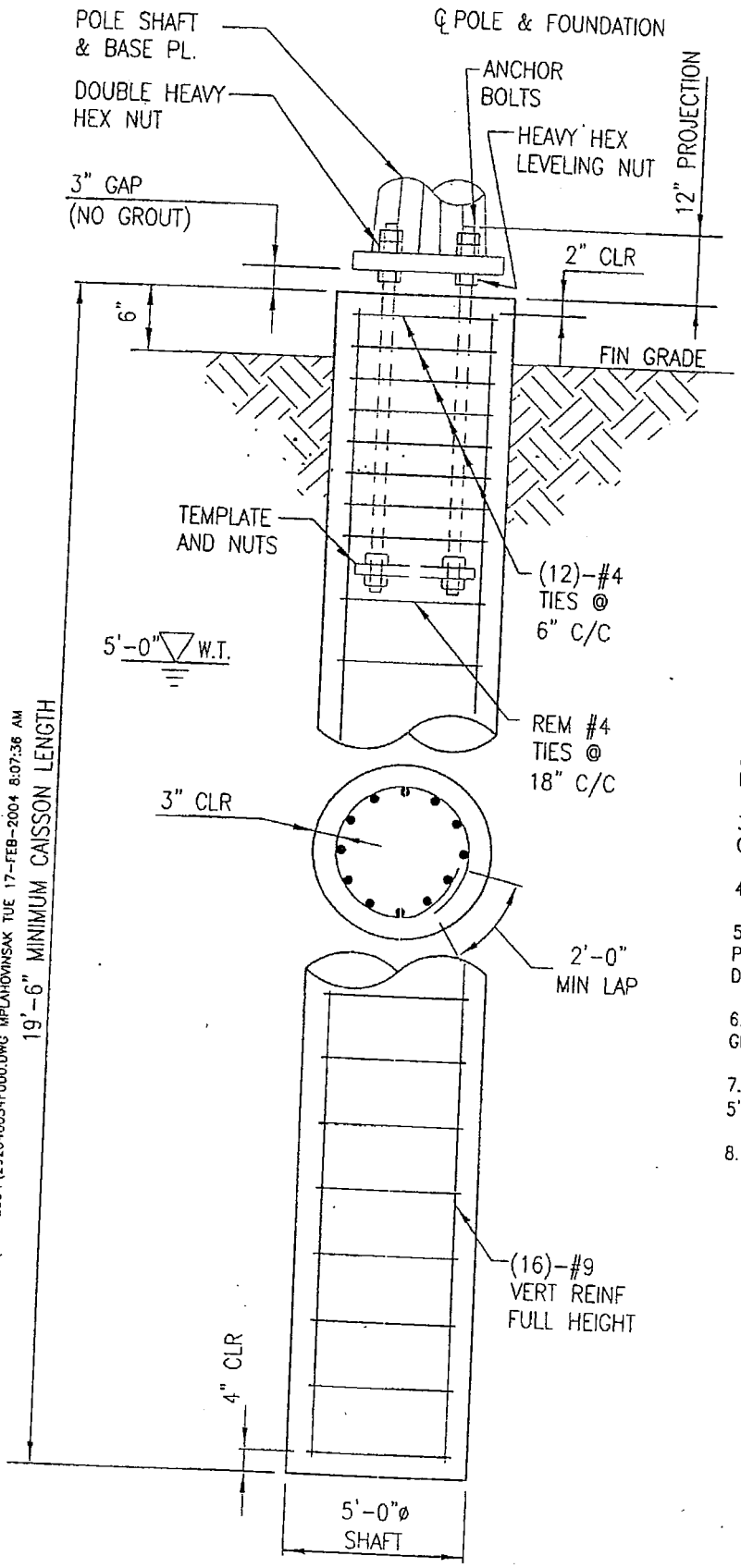
G:\TOWER\DRAWINGS\.MC

BASE REACTIONS FOR FOUNDATION DESIGN

MOMENT =	950 ft-kips
SHEAR =	15 kips
AXIAL =	12 kips

PennSummit Tubular, LLC
www.pennsummit.com
225 Kiwanis Boulevard, West Hazleton, PA 18202
Phone: (888) 847-6537 Fax: (888) 460-6885

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com



JOB DATA			
Page 2 of 2	Job No.	29204-0034	
By MFP	Design No.	#21696	
Chk'd By MFP	Date	02-16-2004	
	Rev. No.	Rev. Date	
Pole	80-FT MONOPOLE		
Site	FIRETOWN ROAD SITE, HARTFORD CO., CT		
Owner	NORTHEAST TOWERS		
Ref. No.			
Design	80 MPH / 69 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 PENNSUMMIT TUBULAR 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.

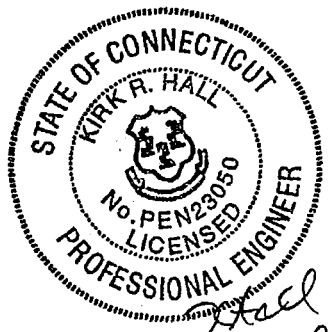
4. TOTAL CONCRETE = 15 CUBIC YARDS.

5. FOUNDATION DESIGN IS BASED UPON GEOTECHNICAL EXPLORATION REPORT
PREPARED BY: DR. CLARENCE WELTI, P.E., P.C.
DATED: 11-12-2003

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'-0" BELOW GRADE.

8. THE FOUNDATION WAS DESIGNED USING THE FOLLOWING SERVICE LOADS:
MOMENT: 950 FT-KIPS
SHEAR: 15 KIPS
AXIAL: 12 KIPS



2-17-04

CAISSON (DRILLED PIER) FOUNDATION

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Feb 17, 2004 - 7:59:29 am
(c) 1993 to 2000 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 29204-0034 Design No: #21696 Engineer : MFP
Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : -
Status..... : Final Design Client: PennSummit Tubular, LLC
Revision: Rev. Date :

S U M M A R Y O F A N A L Y S I S R E S U L T S

Pole Height.....: 80.00 ft
Top Diameter.....: 22.000 in
Bottom Diameter.....: 33.470 in
Pole Shape.....: 18-Sided Polygon
Splice Joint Type.....: Taper shaft - Slip Joint
Shaft Taper.....: 0.148063 (in/ft)
Shaft Steel Weight.....: 5.554 kips

POLE SHAFT PROPERTIES:

Shaft Section Number	Section Length (ft)	Wall Thickness [t] (in)	Steel Yield [Fy] (ksi)	Top Diameter [Dt] (in)	Bottom Diameter [Db] (in)	Slip Joint Overlap (in)
1.	38.500	0.18750	65	22.000	27.700	42.00
2.	45.000	0.25000	65	26.807	33.470	

POLE SHAFT SECTION MAXIMUM FORCES AND MOMENTS:

Shaft Section Number	Wind Load No.	Wind Speed (mph)	Radial Ice (in)	At Base of Section: Sect. Elev. (ft)	Axial Load (kips)	Horiz. Shear (kips)	Bending Moment (ft-kips)	Max. Ratio Actual/ Allowable [Ftot/Fb]
1.	1	80.0	0.00	45.00	7.173	10.613	285.653	0.6286
2.	1	80.0	0.00	0.00	11.088	12.628	816.211	0.8806
>> MAXIMUM BASE REACTIONS :					11.088	12.628	816.211 <<	

POLE DEFLECTION AND ROTATION AT TOP AND AT HIGHEST MICROWAVE DISH ELEVATION:

Wind Load No.	Wind Speed (mph)	Radial Ice (in)	Location	Elev (ft)	Deflection (in)	Rotation (deg)	Max. Allowable Rotation Limit (deg)	
1.	80.0	0.00	Top	80.00	36.684	3.510		
			Dish	75.00	32.278	3.486		
2.	69.3	0.50	Top	80.00	31.554	3.035		
			Dish	75.00	27.747	3.012		
3.	50.0	0.00	Top	80.00	14.320	1.371		
			Dish	75.00	12.601	1.362	1.467	(O.K.)

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Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : -
Status..... : Final Design Client: PennSummit Tubular, LLC
Revision: Rev. Date :

Pole Height : 80 ft
Pole Shape : 18-Sided Polygon
Pole Type : Taper shaft - Slip Joint
Pole Taper : 0.148063 (in/ft)

INPUT TUBE PROPERTIES:

Tube Sect No.	Top / Splice Elev (ft)	Bot Tube Elev (ft)	Tube Length (ft)	Wall Thick. [t] (in)	Steel [Fy] (ksi)	Top Diam [Dt] (in)	Bot Diam [Db] (in)	Slip Joint Overlap (in)
1.	80.00	41.50	38.500	0.18750	65	22.000	27.700	42.00
2.	45.00	0.00	45.000	0.25000	65	26.807	33.470	

TUBE SECTION PROPERTIES:

Tube Sect No.	Section Weight (kips)	Location	Elev (ft)	Diam. Across Flats (in)	Wall Thick [t] (in)	[W/t] Ratio	Diam/ Thick [D/t] Ratio	Area (in^2)	Ix (in^4)
1	1.923	@Top	80.0	22.000	0.1875	18.93	117.33	12.98	780.1
		@Splice	45.0	27.182		23.80	144.97	16.06	1478.6
		@Bot	41.5	27.700		24.29	147.74	16.37	1565.3
2	3.631	@Top	45.0	26.807	0.2500	17.14	107.23	21.07	1877.2
		@Bot	0.0	33.470		21.84	133.88	26.36	3674.0

Total Shaft Steel Weight = 5.554 kips

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Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : -
Status..... : Final Design Client: PennSummit Tubular, LLC
Revision: Rev. Date :

Segment Properties:

(@ Max Segment = 10 ft)

Tube Segmt No.	Segment Feature Location	Segment Elev. (ft)	Diam. Across Flats (in)	Wall Thick [t] (in)	[W/t] Ratio	Diam/ Thick [D/t] Ratio	Area (in^2)	Ix (in^4)
1.	top	80.000	22.000	0.18750	18.93	117.33	12.98	780.1
2.	<arm [1]>	80.000	22.000	0.18750	18.93	117.33	12.98	780.1
3.	<arm [2]>	79.500	22.074	0.18750	19.00	117.73	13.02	788.0
4.	<arm [3]>	79.500	22.074	0.18750	19.00	117.73	13.02	788.0
5.	<arm [4]>	79.500	22.074	0.18750	19.00	117.73	13.02	788.0
6.	<arm [5]>	75.000	22.740	0.18750	19.62	121.28	13.42	862.2
7.		70.000	23.481	0.18750	20.32	125.23	13.86	949.9
8.	<arm [6]>	70.000	23.481	0.18750	20.32	125.23	13.86	949.9
9.	<arm [7]>	70.000	23.481	0.18750	20.32	125.23	13.86	949.9
10.		60.000	24.961	0.18750	21.71	133.13	14.74	1142.8
11.	<arm [8]>	60.000	24.961	0.18750	21.71	133.13	14.74	1142.8
12.	<arm [9]>	60.000	24.961	0.18750	21.71	133.13	14.74	1142.8
13.		50.000	26.442	0.18750	23.10	141.02	15.62	1360.2
14.	top sec(2)	45.000	27.182	0.18750	23.80	144.97	16.06	1478.6
15.	bot sec(1)	41.500	27.325	0.25000	17.51	109.30	21.48	1989.2
16.		40.000	27.548	0.25000	17.67	110.19	21.66	2038.6
17.		30.000	29.028	0.25000	18.71	116.11	22.83	2388.6
18.		20.000	30.509	0.25000	19.75	122.04	24.01	2776.5
19.		10.000	31.989	0.25000	20.80	127.96	25.18	3204.4
20.	base	0.000	33.470	0.25000	21.84	133.88	26.36	3674.0

Total Number of Antennas / Arms = 9

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Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : -
Status..... : Final Design Client: PennSummit Tubular, LLC
Revision: Rev. Date :

ANTENNA AND ARM PROPERTIES AND LOAD DATA:

LOAD CASE 1: BASIC WIND VELOCITY = 80.00 mph

Ant Arm No.	Arm Mount. Elev. (ft)	Load Applic. Elev. (ft)	Arm Length (ft)	Ice Load Case	Antenna Area [CaAa] (sf)	Antenna Force [qzGhCaAa] (lbs)	Antenna Weight (lbs)
[1]	80.000	83.000	2.0000	No Ice:	0.25	9.01	75.00
	Description: 5/8" Diam. x 8' Lightning Rod						
	[Gh] 1.69	[Kz] 1.302		No Ice:	[qz] (psf) 21.324	[qz] [Gh] (psf) 36.037	
[2]	79.500	79.500	2.0000	No Ice:	44.87	1597.22	240.00
	Description: (12) 48" x 12" x 3" Panel Antenna						
	[Gh] 1.69	[Kz] 1.286		No Ice:	[qz] (psf) 21.063	[qz] [Gh] (psf) 35.597	
[3]	79.500	87.500	2.0000	No Ice:	24.00	878.04	160.00
	Description: (4) 20' Whip Antenna						
	[Gh] 1.69	[Kz] 1.321		No Ice:	[qz] (psf) 21.648	[qz] [Gh] (psf) 36.585	
[4]	79.500	79.500	2.0000	No Ice:	19.37	689.50	1300.00
	Description: 14' Low Profile Platform						
	[Gh] 1.69	[Kz] 1.286		No Ice:	[qz] (psf) 21.063	[qz] [Gh] (psf) 35.597	
[5]	75.000	75.000	2.0000	No Ice:	43.85	1535.14	143.00
	Description: (1) 6' Diam. Std. Dish(6.00 GHz)						
	[Gh] 1.69	[Kz] 1.264		No Ice:	[qz] (psf) 20.715	[qz] [Gh] (psf) 35.009	
[6]	70.000	70.000	2.0000	No Ice:	44.87	1540.18	240.00
	Description: (12) 48" x 12" x 3" Panel Antenna						
	[Gh] 1.69	[Kz] 1.240		No Ice:	[qz] (psf) 20.311	[qz] [Gh] (psf) 34.325	
[7]	70.000	70.000	2.0000	No Ice:	19.37	664.88	1300.00
	Description: 14' Low Profile Platform						
	[Gh] 1.69	[Kz] 1.240		No Ice:	[qz] (psf) 20.311	[qz] [Gh] (psf) 34.325	
[8]	60.000	60.000	2.0000	No Ice:	44.87	1473.82	240.00
	Description: (12) 48" x 12" x 3" Panel Antenna						

	[Gh] 1.69	[Kz] 1.186	No Ice:	(psf) 19.436	(psf) 32.846	
[9]	60.000	60.000	2.0000	No Ice:	19.37	636.24	1300.00
Description: 14' Low Profile Platform						
	[Gh] 1.69	[Kz] 1.186	No Ice:	[qz] (psf) 19.436	[qz] [Gh] (psf) 32.846	

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Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : -
Status..... : Final Design Client: PennSummit Tubular, LLC
Revision: Rev. Date :

POLE SHAFT LOADS:

LOAD CASE 1: BASIC WIND VELOCITY = 80.00 mph

Design Loads per TIA/EIA-222-F Standard; Gust Factor ..... Gh = 1.69
Pole DL Overload Factor = 1.1
Per TIA/EIA Table 1: Note 3: For all cross sectional shapes,
Force Coefficient [Cf] need not exceed 1.2
for any value of C. (Where C=sqrt(Kz)*V*D.)

Top of Segment Elev. (ft)	Expos Coeff [Kz]	Veloc Press [qz] (psf)	Pole Veloc Coeff [C]	Force Coeff [Cf]	Projected Area Shaft Segment [Ae] (sf)	[Cf Ae] (sf)	Segment Wind Force (lbs)	Shaft Segment Weight (lbs)
80.000	1.288	21.10	166.45	0.650	0.000	0.000	0.00	0.00
80.000	1.288	21.10	166.45	0.650	0.918	0.597	21.28	24.33
79.500	1.286	21.06	166.86	0.650	0.000	0.000	0.00	0.00
79.500	1.286	21.06	166.86	0.650	0.000	0.000	0.00	0.00
79.500	1.286	21.06	166.86	0.650	0.921	0.599	21.32	24.42
75.000	1.264	20.72	170.47	0.650	9.383	6.099	215.10	248.71
70.000	1.240	20.31	174.29	0.650	7.728	5.023	174.16	204.90
70.000	1.240	20.31	174.29	0.650	0.000	0.000	0.00	0.00
70.000	1.240	20.31	174.29	0.650	1.963	1.276	43.80	52.05
60.000	1.186	19.44	181.25	0.650	18.221	11.844	397.89	483.30
60.000	1.186	19.44	181.25	0.650	0.000	0.000	0.00	0.00
60.000	1.186	19.44	181.25	0.650	2.086	1.356	44.54	55.35
50.000	1.126	18.45	187.06	0.650	21.541	14.002	447.21	571.63
45.000	1.093	17.90	189.42	0.650	11.218	7.292	223.33	510.24
41.500	1.068	17.49	188.23	0.650	6.794	4.416	131.81	239.92
40.000	1.057	17.31	188.77	0.650	4.591	2.984	87.61	162.15
30.000	1.000	16.38	193.52	0.650	23.697	15.403	433.80	837.12
20.000	1.000	16.38	203.39	0.650	24.930	16.205	448.69	881.10
10.000	1.000	16.38	213.26	0.650	26.164	17.007	470.90	925.07
1.000	1.000	16.38	222.15	0.650	24.603	15.992	442.80	870.16
					Summation TOTAL =		3604.23	6090.46

---------(END LOAD CASE 1 -- POLE SHAFT LOADS)----------

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Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : - Client: PennSummit Tubular, LLC
Status..... : Final Design Revision: Rev. Date :

POLE SHAFT SEGMENTS -- AXIAL AND SHEAR FORCES:

LOAD CASE 1: BASIC WIND VELOCITY = 80.00 mph

Tube Segment No.	Segment Elevation (ft)	Axial Load (kips)	Cumulative Axial Load (kips)	Horiz. Shear (kips)	Cumulative Horiz. Shear (kips)
1.	80.000	0.000	0.000	0.000	0.000
2.	80.000	0.099	0.099	0.030	0.030
3.	79.500	0.240	0.339	1.597	1.628
4.	79.500	0.160	0.499	0.878	2.506
5.	79.500	1.324	1.824	0.711	3.216
6.	75.000	0.392	2.215	1.750	4.967
7.	70.000	0.205	2.420	0.174	5.141
8.	70.000	0.240	2.660	1.540	6.681
9.	70.000	1.352	4.012	0.709	7.390
10.	60.000	0.483	4.496	0.398	7.788
11.	60.000	0.240	4.736	1.474	9.261
12.	60.000	1.355	6.091	0.681	9.942
13.	50.000	0.572	6.663	0.447	10.389
14.	45.000	0.510	7.173	0.223	10.613
15.	41.500	0.240	7.413	0.132	10.744
16.	40.000	0.162	7.575	0.088	10.832
17.	30.000	0.837	8.412	0.434	11.266
18.	20.000	0.881	9.293	0.449	11.715
19.	10.000	0.925	10.218	0.471	12.185
20.	1.000	0.870	11.088	0.443	12.628
Base	0.000		11.088		12.628

---------(END LOAD CASE 1 -- AXIAL AND SHEAR FORCE)----------

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Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : - Client: PennSummit Tubular, LLC
Status..... : Final Design Revision: Rev. Date :

POLE SHAFT SEGMENTS -- MOMENTS and DEFLECTIONS:

LOAD CASE 1: BASIC WIND VELOCITY = 80.00 mph

Segmnt Elev (ft)	MOMENTS (ft-kips) From Ant/ Arm	From Shaft Wind	From P-Delta Effects	Total Moment	DEFLECTIONS (inch) No P-Delta Effects	Total W/ P-Delta Effects	Total Rotation (deg)
80.00	6.612	0.000	0.000	6.612	35.701	36.684	3.510
80.00	6.612	0.000	0.000	6.612	35.343	36.316	3.510
79.50	7.056	0.011	0.000	7.067	35.343	36.316	3.509
79.50	7.056	0.011	0.000	7.067	35.343	36.316	3.509
79.50	7.056	0.011	0.015	7.082	34.985	35.948	3.509
75.00	21.338	0.631	0.603	22.572	31.417	32.278	3.486
70.00	44.882	2.355	1.159	48.396	28.588	29.369	3.431
70.00	44.882	2.355	1.159	48.396	28.588	29.369	3.431
70.00	44.882	2.355	1.318	48.555	27.889	28.649	3.431
60.00	114.022	9.096	3.537	126.656	21.757	22.343	3.195
60.00	114.022	9.096	3.537	126.656	21.757	22.343	3.195
60.00	114.022	9.096	3.802	126.920	21.106	21.673	3.195
50.00	204.263	20.288	7.131	231.682	14.976	15.370	2.790
45.00	249.383	27.562	8.708	285.653	12.260	12.579	2.531
41.50	280.967	33.309	9.643	323.919	10.756	11.034	2.369
40.00	294.503	35.933	10.251	340.688	9.802	10.054	2.299
30.00	384.743	55.968	13.089	453.800	5.621	5.761	1.789
20.00	474.984	80.387	15.403	570.774	2.536	2.597	1.224
10.00	565.224	109.393	16.965	691.582	0.642	0.657	0.624
0.00	655.464	143.208	17.539	816.211	0.000	0.000	0.000

(END LOAD CASE 1 -- MOMENTS AND DEFLECTIONS)

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Feb 17, 2004 - 7:59:29 am
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Job No.....: 29204-0034 Design No: #21696 Engineer : MFP
Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : - Client: PennSummit Tubular, LLC
Status..... : Final Design Revision: Rev. Date :

POLE SHAFT SEGMENTS -- ACTUAL VS. ALLOWABLE STRESSES:

LOAD CASE 1: BASIC WIND VELOCITY = 80.00 mph
Note: Per TIA/EIA Sec. 3.1.1.1: Allow a 1/3 stress increase for poles under 700 feet in height. The allowable stresses shown include the factor of 1.333

Segmnt Elev (ft)	[---------- ACTUAL STRESSES ----------] Bending [fb] (ksi)	Axial [fa] (ksi)	Torsion [ft] (ksi)	Shear [fv] (ksi)	Combined [Ftot] (ksi)	Allow. Stress [Fb] (ksi)	Actual/ Allowable [Ftot/Fb] Ratio
80.00	1.136	0.000	0.000	0.000	1.136	52.00	0.0218
80.00	1.136	0.008	0.002	0.005	1.144	52.00	0.0220
79.50	1.206	0.026	0.267	0.249	1.522	52.00	0.0293
79.50	1.206	0.038	0.413	0.384	1.858	52.00	0.0357
79.50	1.209	0.140	0.528	0.493	2.223	52.00	0.0427
75.00	3.627	0.165	0.737	0.738	4.573	52.00	0.0879
70.00	7.288	0.175	0.691	0.740	7.864	52.00	0.1512
70.00	7.288	0.192	0.917	0.962	8.157	52.00	0.1569
70.00	7.312	0.289	1.015	1.064	8.411	52.00	0.1617
60.00	16.854	0.305	0.897	1.054	17.489	52.00	0.3363
60.00	16.854	0.321	1.088	1.253	17.648	52.00	0.3394
60.00	16.889	0.413	1.171	1.346	17.843	52.00	0.3431
50.00	27.439	0.426	1.042	1.327	28.166	52.00	0.5417
45.00	31.995	0.447	0.986	1.318	32.686	52.00	0.6286
41.50	27.109	0.345	0.735	0.998	27.618	52.00	0.5311
40.00	28.049	0.350	0.723	0.998	28.555	52.00	0.5491
30.00	33.600	0.368	0.651	0.984	34.087	52.00	0.6555
20.00	38.211	0.387	0.589	0.974	38.693	52.00	0.7441
10.00	42.064	0.406	0.535	0.965	42.549	52.00	0.8182
0.00	45.302	0.421	0.488	0.956	45.791	52.00	0.8806

---------(END LOAD CASE 1 -- ACTUAL VS. ALLOWABLE STRESSES)----------

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Job No.....: 29204-0034 Design No: #21696 Engineer : MFP
Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : - Client: PennSummit Tubular, LLC
Status..... : Final Design Revision: Rev. Date :

MONOPOLE BASE PLATE DESIGN DETAILS

Shaft Shape .....:	18 Sided Polygon	Stress Increase ...:	1.333 Factor
Base Dia, DF ....:	33.470 Inches	Base Plate Shape ..:	Square
PT-to-PT, DP ....:	33.986 Inches		
Min Bolt Circle .:	40.470 Inches	Use Bolt Circle ...:	39.000 Inches

---

Base Reactions :	DESIGN	USER
Moment .....:	816.21 Ft-Kips	816.21 Ft-Kips
Axial Load .....:	11.09 Kips	11.09 Kips

Anchor Bolt Details :	DESIGN	USER
Number of Bolts .....:	8	8
Bolt Diameter .....:	2.250 Inches	2.250 Inches
Bolt Type .....:	#18J ASTM A615	#18J ASTM A615
Y-Distance .....:	3	3
Mom. of Inertia .....:	1637.82 In^4	1521.00 In^4
Bolt Tension, T .....:	121.01 Kips	125.57 Kips
Allowable Tension ...:	194.81 Kips	194.81 Kips
Bolt Compression, C .:	122.40 Kips	126.96 Kips

Base Plate Details :	DESIGN	USER
Plate Moment, MPL ...:	856.77 In-Kips	702.07 In-Kips
Bend Plane, W .....:	21.04 Inches	20.27 Inches
Plate Thickness, t ..:	2.018 Inches	2.000 Inches
Plate Width .....:	38.543 Inches	38.000 Inches
Plate Steel .....:	ASTM A572 GRADE 60 (60 KSI)	ASTM A572 GRADE 60 (60 KSI)
Gross Weight .....:	850.10 Lbs	819.00 Lbs
Net Weight .....:	648.60 Lbs	619.20 Lbs
Allowable Stress ....:	59.99 Ksi	59.99 Ksi
Actual Stress .....:	59.99 Ksi	51.95 Ksi
Act./Allow Ratio ....:	1.00	0.87

BASE PLATE DESIGN SUMMARY

USE FOLLOWING SPECIFICATIONS:

Plate Thickness .....:	2.000 Inches	Number of Bolts ..:	8
Plate Width/Diameter :	38.000 Inches (Square)	Bolt Circle .....:	39.00 Inches
Plate Weight .....:	0.819 Kips	Bolt Diameter ....:	2.25 Inches
		Bolt Type .....:	#18J ASTM A615

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Feb 17, 2004 - 8:06:41 am
(c) 1993 to 2000 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 29204-0034 Design No: #21696 Engineer : MFP
Description : 80-ft Monopole - FIRETOWN ROAD SITE, HARTFORD CO., CT
Design..... : 80 MPH / 69 MPH + 1/2" RADIAL ICE
Owner..... : - Client: PennSummit Tubular, LLC
Status..... : Final Design Revision: Rev. Date :

S U M M A R Y O F C U R R E N T C A I S S O N D E S I G N

Diameter (ft) .....:	5.00	Compression (kips):	12.00	Friction S.F .....:	2.00
Min. Depth (ft) ...:	19.00	Horizontal (kips) :	15.00	Lateral S.F .....:	2.00
Depth Used (ft) ...:	19.00	Uplift (kips) ....:	0.00	Concrete S.F .....:	1.30
Rebar Area (in^2) .:	16.00	Moment (Ft-kips) .:	950.0	Concrete F'c (psi) :	3000.0
Rebar Used .....:	(16)#9	Full Cohesion (ft):	15.00	Steel Cover (in) ..:	3.00
Water at (ft) .....:	5.00	Rock at (ft) .....:	99.00		

SOIL PROFILE :

Soil Layer	Layer Thickness (ft)	Unit Weight (pcf)	Ult. Skin Friction (psf)	Allowable Bearing (psf)	Friction Angle- Phi (deg)	Passive Coeff.- KP	Cohesion (c) (psf)
1	4.00	100.00	0.00	0.00	0.00	1.000	0.00
2	1.00	135.00	0.00	0.00	34.00	3.537	0.00
3	15.00	75.00	0.00	3000.00	34.00	3.537	0.00

LATERAL / MOMENT CAPACITY (CHECK) :	Min Design	Actual Design
Caisson Diameter (ft) .....:	5.00	5.00
Height Above Grade (ft) .....:	0.50	0.50
Depth Below Grade (ft) .....:	19.00	19.00
Concrete Volume (CY) .....:	14.18	14.18
Applied Moment From Loads (Working), Mwork(Ft-kip):	1163.00	1163.00
Resisting Moment From Soil (Ult), Mult(Ft-kip) ...:	2820.96	2820.96
Moment S.F. (Mult / Mwork) .....:	2.43	2.43
Applied Horizontal Load (Working), Hwork (Kips) ..:	15.00	15.00
Horizontal Soil Resistance (Ultimate), Hult (Kips):	32.54	32.54
Horizontal S.F. (Hult / Hwork) .....:	2.17	2.17
Center of Rotation (from grade) (ft) .....:	13.70	13.70
Inflection Point (Max Design Moment Location (ft) :	5.30	5.30
Maximum Factored Design Moment for Reinf. (Ft-kip):	1642.60	1642.60
Area Steel Required From Loads (in^2) .....:	13.20	13.20
ACI Minimum Steel (0.5%) (in^2) .....:	14.14	14.14
Area Reinf. Steel Provided (in^2) .....:	16.00	16.00

UPLIFT CAPACITY CHECK :		
Actual Uplift on Caisson (Kips) .....:	0.00	0.00
Allowable Uplift Capacity (Kips) .....:	32.22	32.22

COMPRESSION CAPACITY CHECK :		
Actual Compression on Caisson (Kips) .....:	12.00	12.00
Total Compression (Includes Concrete Wt.) (Kips) .:	32.13	32.13
Allowable Compression Capacity (Kips) .....:	58.90	58.90

CAISSON DESIGN:
USE: 5.00 ft Diameter X 19.50 ft Long (Concrete Volume = 14.18 CY)
Reinf: (16)#9 Vert, w/Closed Ties: (12)#4 @6.0", remaining ties @18.0" (ASTM A615)

PennSummit Tubular, LLC
225 Kiwanis Boulevard, West Hazleton, PA 18202
Phone: (888) 847-6537 Fax: (888) 460-6885

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com

NOTES:

1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.

2. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615 (GRADE 60) EXCEPT THAT PIER TIES MAY BE ASTM A-615 (GRADE 40).

3. SEE POLE DRAWING DATED 02-16-2004 FOR ANCHOR BOLT QUANTITY, SIZE, LENGTH, AND BOLT CIRCLE.

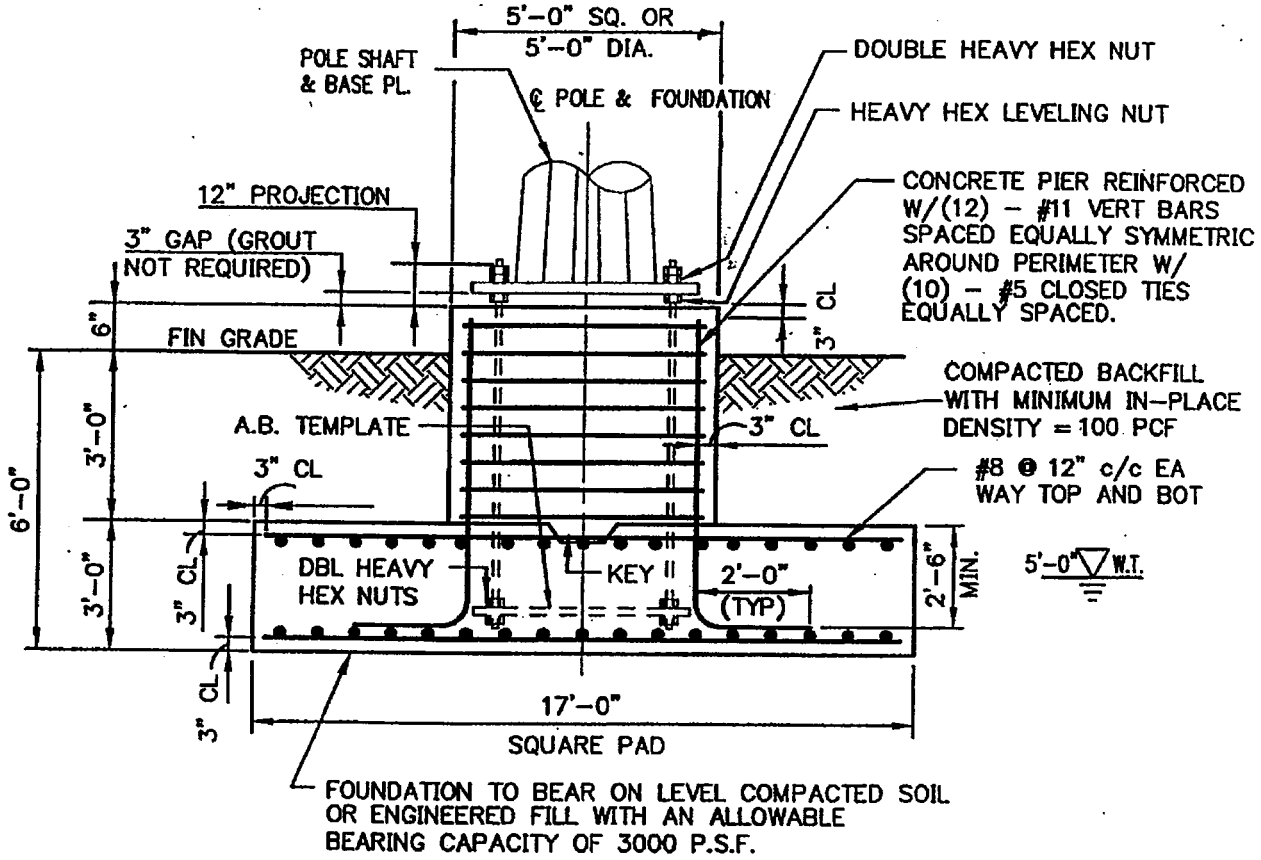
4. CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.

5. GEOTECHNICAL REPORT INDICATES GROUNDWATER WAS ENCOUNTERED AT 5'-0" BELOW GRADE.

JOB DATA			
Page 1 of 1		Job No.	29204-0034
By	MFP	Design No.	#21696
Chk'd By	MFP	Date	02-24-2004
		Rev. No.	Rev. Date
Pole	80-FT MONOPOLE		
Site	FIRETOWN ROAD SITE, HARTFORD CO., CT		
Owner	NORTHEAST TOWERS		
Ref. No.			
Design	80 MPH / 69 MPH + 1/2" RADIAL ICE ACCORDING TO TIA/EIA-222-F 1996		

FOUNDATION SPECIFICATIONS	
Volume Concrete Required:	36 CUBIC YARDS
Soils Report:	DR. CLARENCE WELTI, P.E., P.C. 11-12-2003

DESIGN CRITERIA	
Moment:	950 FT-KIPS
Shear:	15 KIPS
Axial:	12 KIPS



PAD AND PIER FOUNDATION

G:\TOWER\DRAWINGS\MONOPOLE\292-PennSummit\292-2004\29204034F001.dwg | 24-Feb-2004 2:50pm |

Exhibit 3

T-Mobile

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

Technical Memo

To: Karina Fournier
From: Anand Rapolu - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CTHA152A
Date: June 1, 2006

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 344 Firetown Road, Simsbury, 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 1 antennas per sector.
3) The model number for each antenna is RFS APX16PV-16PVL-E.
4) The antenna center line height is 77 ft.
5) The maximum transmit power from any sector is 2482.68 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 344 Firetown Road, Simsbury, CT, is 0.10805 mW/cm^2. This value represents 10.805% of the Maximum Permissible Emission (MPE) standard of 1 milliwatt per square centimeter (mW/cm^2) 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 0.65%. The combined Power Density for the site is 11.455% of the M.P.E. standard.

New England Market

Connecticut

Worst Case Power Density

Site:	**CTHA152A**
Site Address:	**344 Firetown Road**
Town:	**Simsbury**
Tower Height:	**80 ft.**
Tower Style:	**Monopole**
Base Station TX output	20 W
Number of channels	8
Antenna Model	RFS APX16PV-16PVL-E
Cable Size	1 5/8 in.
Cable Length	120 ft.
Antenna Height	77.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	4.50 dB
Antenna Gain	17.8 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.3920 dB
Total Attenuation	5.8920 dB
Total EIRP per Channel	54.92 dBm
(In Watts)	310.33 W
Total EIRP per Sector	63.95 dBm
(In Watts)	2482.68 W
nsg	11.9080
Power Density (S) =	**0.108050 mW/cm^2**
T-Mobile Worst Case % MPE =	**10.8050%**

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
Simsbury Fire Department	0.6500 %
Total Excluding T-Mobile	**0.6500 %**
T-Mobile	10.8050
Total % MPE for Site	**11.4550%**