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

July 21, 2005

Christine Farrell
T-Mobile USA, Inc.
100 Filley Street
Bloomfield, CT 06002

RE: **TS-T-MOBILE-107A-050713** – T-Mobile USA, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at Grassy Hill Road, Orange, Connecticut.

Dear Ms. Farrell:

At a public meeting held July 20, 2005, 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 July 13, 2005 and additional information dated July 15, 2005, 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/jkl

c: The Honorable Mitchell R. Goldblatt, First Selectman, Town of Orange
Paul Dinice, Zoning Enforcement Officer, Town of Orange
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
Christopher B. Fisher, Esq., Cuddy and Feder LLP
Kenneth C. Baldwin, Esq., Robinson and Cole LLP

T-Mobile

TS-T-MOBILE-107A-050713

July 13, 2005

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
Sprint Wireless Telecommunications Facility
Grassy Hill Road, Orange, Connecticut
Latitude: 41' 17' 7.75" Longitude: 73'-02'-33.27"

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 Sprint Sites USA ("Sprint") communications tower, located at Grassy Hill Road in the Town of Orange ("Facility"). T-Mobile and the Sprint have agreed to the shared use of the Facility, as detailed below.

GRASSY HILL FACILITY

The Siting Council has approved the shared use of this Facility by AT&T at the 140' level, Sprint at the 130' level, and Verizon at the 110' level. A chain link fence surrounds this Facility. A copy of this letter is being sent to Orange First Selectman, Mitch Goldblatt.

As shown on the enclosed plans prepared by Natcomm, LLC, including a site plan and tower elevation of the Facility, annexed hereto as Exhibit A, T-Mobile proposes a shared use of the Facility by placing antennas on the 110' level of the Tower and equipment needed to provide personal communications services ("PCS") within the existing Sprint leased space. The fence will be bumped out to accommodate the ground equipment. T-Mobile will install up to twelve (12) 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.

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

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

approvals are required C.G.S. §16-50x. Shared use of the 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 multiply carriers has been performed and is attached as Exhibit B. The structural analysis concludes that the existing tower can safely accommodate the proposed T-Mobile antennas. The proposed shared use of this Tower is technically feasible. Further, there is sufficient room in the leased area for our 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 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 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 17% of the standard. See Cumulative Emissions Compliance Report dated July 13, 2005, prepared by Mike Walker, T-Mobile Radio Frequency Engineer, annexed hereto as Exhibit C;

5.) The proposed shared use of the 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 share use of the 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 Orange area through shared use of the 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.

Conclusion

As delineated above, the proposed shared use of the 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 Facility.

Respectfully submitted,

Christine Farrell
T-Mobile
100 Filley St.
Bloomfield, CT 06002
(860) 6794-6427

cc: Mitchell Goldblatt, First Selectman

EXHIBIT A

SPRINT ORANGE

GRASSY HILL ROAD
ORANGE, CT. 06477

SITE NUMBER: CT-11-083Q

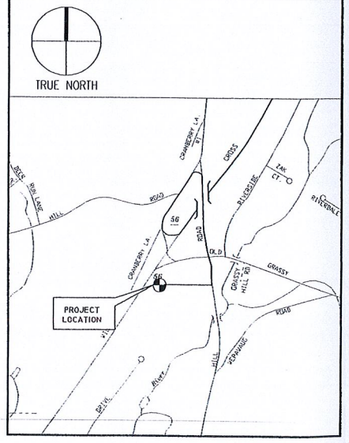
SITE TYPE: CO-LOCATE

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 LESSEE/LICENSEE 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 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 LESSEE/LICENSEE 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

NO SCALE



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
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S-1	STRUCT. NOTES, PLANS, SECTIONS & DETAILS	1
E-1	ELEC. & GROUNDING NOTES, RISERS & DETAILS	1

PROJECT SUMMARY

SITE NUMBER:	CT-11-083Q
SITE NAME:	GRASSY HILL
SITE ADDRESS:	GRASSY HILL ROAD ORANGE, CT 06477
CONSTRUCTION TYPE:	COLOCATION
STRUCTURE OWNER:	SPRINT SPECTRUM LP 1 INTERNATIONAL BLVD, SUITE 300 MAHWAH, NJ 07495
APPLICANT:	OMNIPOINT COMMUNICATIONS, INC. 100 FILLEY STREET BLOOMFIELD, CT 06002

OMNIPOINT COMMUNICATIONS INC.

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

NATCOMM
Natcomm LLC
834 North Branford Road
Branford, Connecticut 06405
PH: (203) 488-0580
Fax: (203) 488-8587
Consulting Engineering Project Management
Civil - Structural - Mechanical - Electrical

STATE OF CONNECTICUT
NO. 18594
LICENSED
PROFESSIONAL ENGINEER

APPROVALS

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

PROJECT NO: 05066

DRAWN BY: AAJ

CHECKED BY: CFC

SUBMITTALS

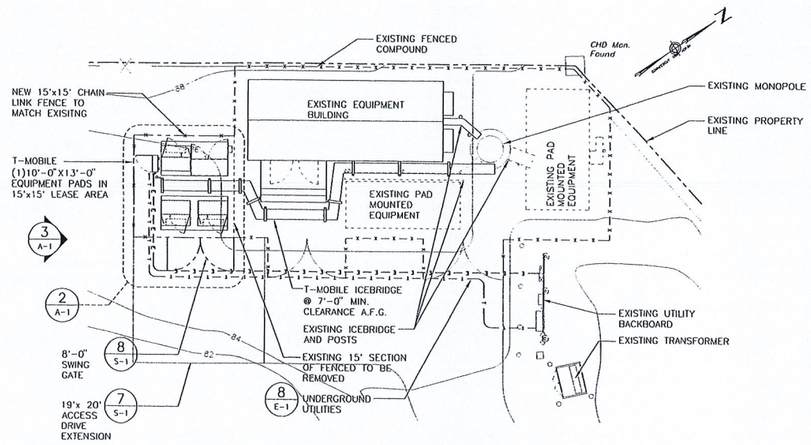
1	06/23/05	CONSTRUCTION
0	06/16/05	CONSTRUCTION

CT-11-083Q
GRASSY HILL

GRASSY HILL ROAD
ORANGE, CT. 06477

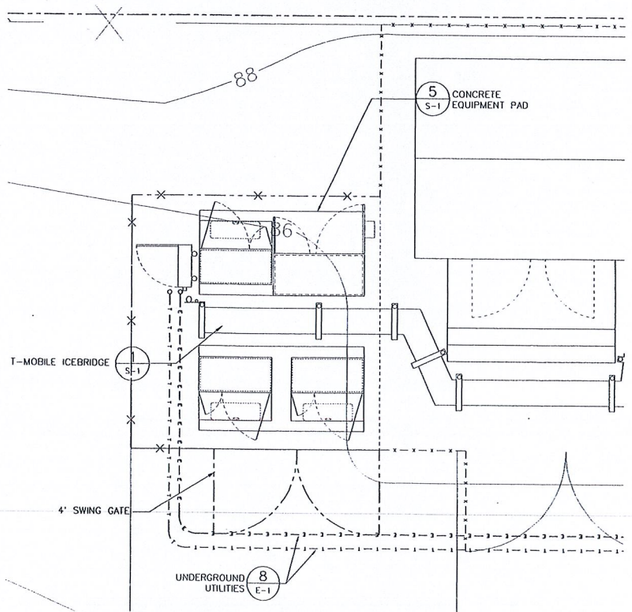
SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



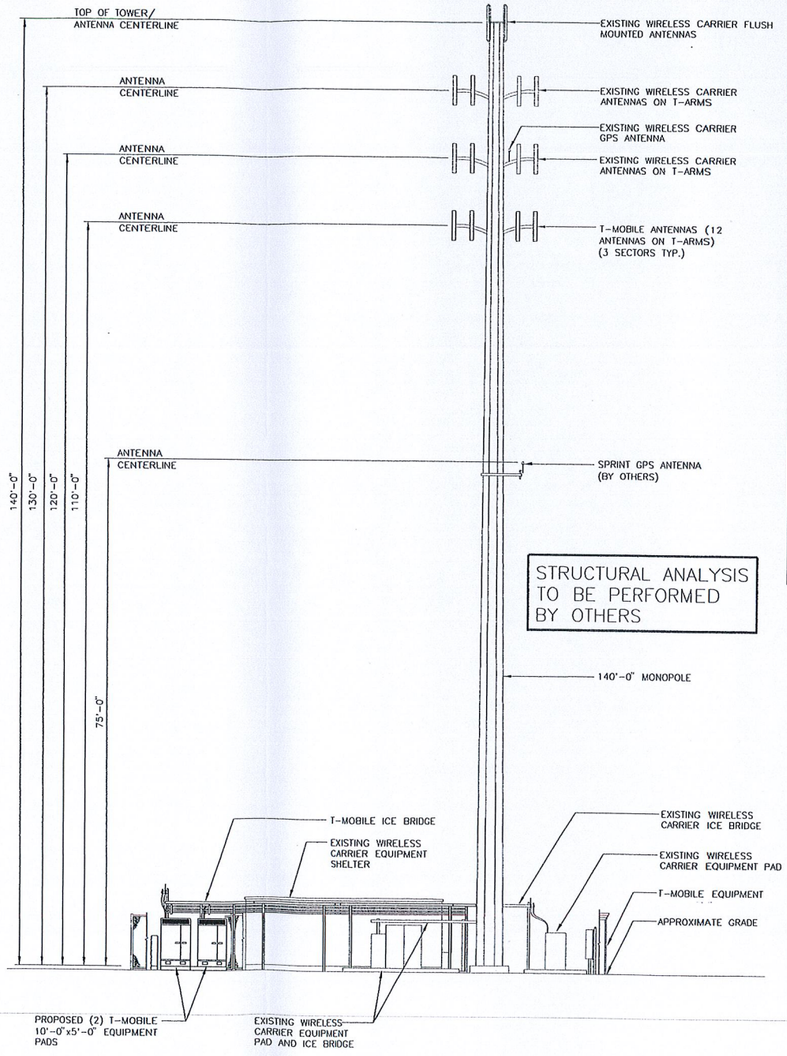
1 C-1 **COMPOUND PLAN**
SCALE: 1" = 10'-0"

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.



2 A-1 **EQUIPMENT PLATFORM LAYOUT**
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE
4 0 2 4 8 16
(IN FEET)
1 inch = 4 ft.



3 A-1 **FLAGPOLE ELEVATION**
SCALE: 1" = 10'-0"

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

STRUCTURAL ANALYSIS TO BE PERFORMED BY OTHERS

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 & ELEVATIONS WHICH EFFECTS THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH LESSEE/LICENSEE PRIOR TO CONSTRUCTION.

3) NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH & INFORM CONSTRUCTION MANAGER OF ANY DISCREPANCIES BEFORE STARTING CONSTRUCTION.

4) THE GENERAL CONTRACTOR AND/OR HIS SUB CONSULTANT SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS & INSPECTIONS WHICH MAY BE REQ'D FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTRY OR LOCAL GOVERNMENT AUTHORITY.

5) ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY & ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES & SUPPORT STRUCTURES.

6) COAXIAL CABLE CONNECTORS & TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE LESSEE/LICENSEE & IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF LESSEE/UCENSEE 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) ANY EQUIPMENT THAT IS TO BE PAINTED SHALL BE PAINTED TO MATCH EXISTING. PAINT SHALL BE SHERWIN WILLIAMS, COROTHANE II. SURFACE PREPARATION & APPLICATION SHALL BE IN ACCORDANCE WITH MANF'S SPECIFICATIONS & LESSEE/LICENSEE GUIDELINES.

8) COORDINATION, LAYOUT, & FURNISHING OF CONDUIT, CABLE & ALL APPURTENANCES REQ'D FOR PROPER INSTALLATION OF ELECTRICAL & TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

9) EQUIPMENT WILL BE INDEPENDENTLY POWERED WITH SEPARATE METER.

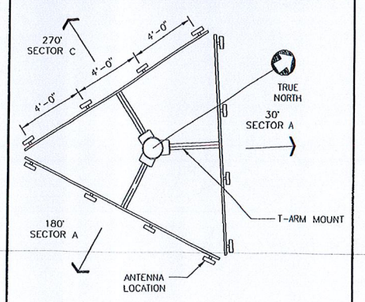
10) ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS & SPECIFICATIONS.

11) ALL ACTIVE SEWER, WATER, GAS, ELECTRIC, & OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, & WHERE REQ'D 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.

12) ALL INACTIVE SEWER, WATER, GAS, ELECTRIC & OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED &/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.

13) PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE REQ'D TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. LESSEE/LICENSEE IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT & 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 & LOCATION AS TECHNOLOGY EVOLVES TO MEET REQ'D SPECIFICATION.

ANTENNA ORIENTATION KEY



OMNIPOINT COMMUNICATIONS INC.
100 FILLEY STREET
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
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NATCOMM, LLC
Telecommunications Consulting Services
Natcomm, LLC
163-2 North Branford Road
Branford, Connecticut 06405
Tel. (203) 488-0580
Fax (203) 488-8587
Consulting Engineering - Project Management
Civil - Structural - Architectural - Electrical

STATE OF CONNECTICUT
No. 16645
LICENSED PROFESSIONAL ENGINEER

APPROVALS

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

PROJECT NO:	05066
DRAWN BY:	AAJ
CHECKED BY:	CFC

SUBMITTALS

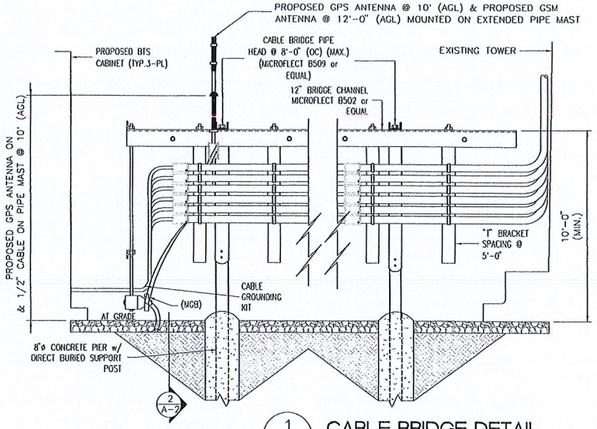
1	06/23/05	CONSTRUCTION
0	06/16/05	CONSTRUCTION

CT-11-083Q
GRASSY HILL

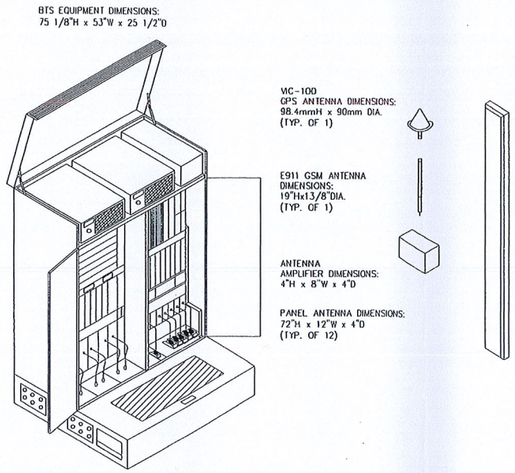
GRASSY HILL ROAD
ORANGE, CT. 06477

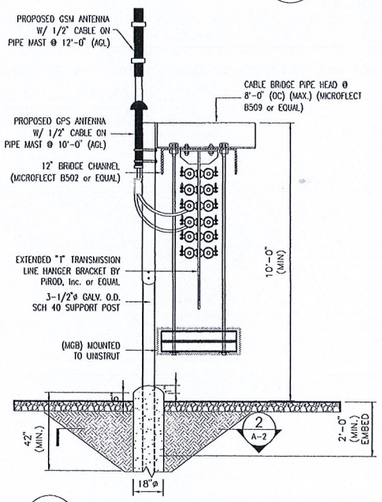
SHEET TITLE
PLANS, ELEVATIONS, DETAILS & NOTES

SHEET NUMBER
A-1

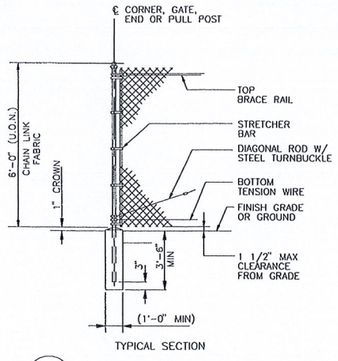


1 S-1 **CABLE BRIDGE DETAIL**
NOT TO SCALE



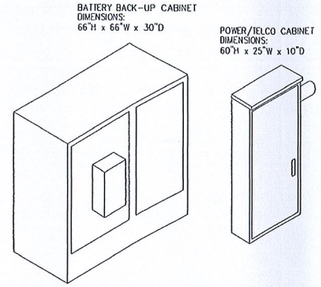


2 S-1 **CABLE BRIDGE DETAIL**
NOT TO SCALE

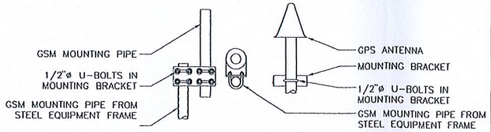


TYPICAL SECTION

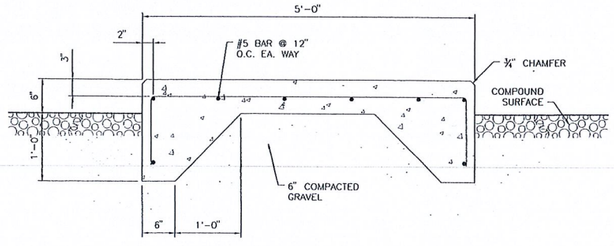
8 S-1 **WOVEN WIRE FENCE DETAIL**
SCALE: N.T.S.



3 S-1 **EQUIPMENT AND ANTENNA DETAILS**
NOT TO SCALE



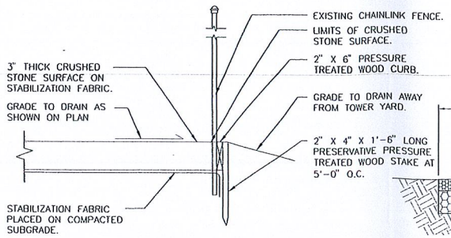
4 S-1 **GPS/GSM MOUNTING DETAIL**
SCALE: 1 1/2" = 1'-0"



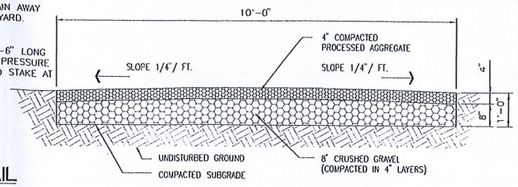
5 S-1 **EQUIPMENT SLAB SECTION VIEW**
SCALE: 1" = 1'-0"

GRAPHIC SCALE

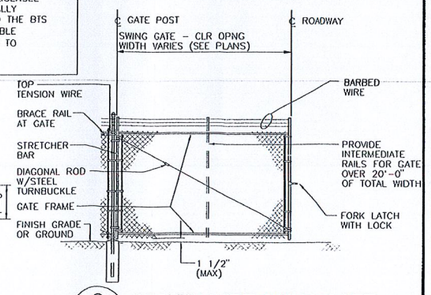
(IN FEET)
1 inch = 1 ft.



6 S-1 **COMPOUND SURFACING DETAIL**
NOT TO SCALE



7 S-1 **ACCESS DRIVE DETAIL**
NOT TO SCALE



8 S-1 **WOVEN WIRE SWING GATE**
NOT TO SCALE

STRUCTURAL NOTES:

1) DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE & APPLICABLE SUPPLEMENTS, ANSI/ASCE7, EIA/TIA-222-F STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.

2) CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD PRIOR TO FABRICATION & ERECTION of ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION of THE CONSTRUCTION MANAGER.

3) DESIGN & CONSTRUCTION of STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE of STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION & ERECTION of STRUCTURAL STEEL FOR BUILDINGS".

4) STRUCTURAL & MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 STRUCT. STEEL UNLESS OTHERWISE INDICATED.

5) STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE A, or ASTM A53 PIPE STEEL BLACK & HOT-DIPPED ZINC-COATED WELDED & 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) & CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS & PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE ø5/8" UON.

7) ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE w/ ASTM A123 "ZINC (HOT-DIP GALVANIZED COATINGS on IRON & STEEL PRODUCTS", UNLESS OTHERWISE NOTED.

8) ALL BOLTS, ANCHORS & MISCELLANEOUS HARDWARE SHALL BE GALV. IN ACCORDANCE w/ ASTM A153 "ZINC-COATING (HOT-DIP) on IRON & STEEL HARDWARE", UNLESS OTHERWISE NOTED.

9) FIELD WELDS, DRILL HOLES, SAW CUTS & ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED w/ AN ORGANIC ZINC REPAIR PAINT COMPLYING w/ 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 DRY TIME BETWEEN COATS) w/A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 or A153 as APPLICABLE.

10) CONTRACTOR SHALL COMPLY w/ AWS CODE FOR PROCEDURES, APPEARANCE & QUALITY of WELDS, & FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS & WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE w/ AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES & WELDING SHALL CONFORM TO AISC % 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.

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"x 1-5/8"x12GA. UNLESS OTHERWISE NOTED, & SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

13) EPOXY ANCHOR ASSEMBLY SHALL CONSIST of 1/2" DIAMETER STAINLESS STEEL ANCHOR ROD w/ NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE & A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 and/or HY-150 SYSTEMS (as SPECIFIED AN DWG.) or ENGINEERS APPROVED EQUAL w/ 4-1/4" MIN. EMBEDMENT DEPTH.

14) EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT II or APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE w/ THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE & ONE HALF (3 1/2) INCHES.

15) GRAVEL SUB BASE & CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.

16) CONCRETE FOR FENCE & ICE BRIDGE SUPPORT SHALL BE 3000 PSI AIR ENTRAINED (4%-6%) NORMAL WEIGHT CONCRETE.

17) ALL CAST IN PLACE CONCRETE SHALL BE MIXED & PLACED IN ACCORDANCE w/ THE REQUIREMENTS OF ACI 318 & 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 & LARGER .....2 INCHES
#5 & SMALLER .....1 1/2 INCHES
ALL EXPOSED EDGES SHALL BE PROVIDED w/ A 3/4"x3/4" CHAMFER UNLESS NOTED OTHERWISE.

19) LUMBER SHALL COMPLY w/ THE REQUIREMENTS of THE AMERICAN INSTITUTE of TIMBER CONSTRUCTION & THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED & SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.

20) WHERE ROOF PENETRATIONS ARE REQ'D, THE CONTRACTOR SHALL CONTACT & COORDINATE RELATED WORK w/ THE BUILDING OWNER & THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER as TO NOT VOID THE EXISTING ROOF WARRANTY.

21) PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE REQ'D TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. LESSEE/LICENSEE IMPLEMENTATION REQUIRES DEPLOYMENT of EQUIPMENT & 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 & LOCATION as TECHNOLOGY EVOLVES TO MEET REQ'D SPECIFICATION.

ABBREVIATIONS

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

SYMBOLS AND MATERIALS

- NEW ANTENNA
- EXISTING ANTENNA
- ASPHALT
- NEW ACCESS EASEMENT
- CONCRETE
- ELECTRIC BOX
- LIGHT POLE
- FND. MONUMENT
- SPOT ELEVATION
- SET POINT
- REVISION
- GRID REFERENCE
- DETAIL REFERENCE (DET. 9 on S-1)
- ELEVATION (D, SH)
- SECTION (D, SH)
- GROUT or PLASTER
- BRICK
- MASONRY
- CONCRETE
- EARTH
- GRAVEL
- PLYWOOD
- SAND
- WOOD CONT.
- WOOD BLOCKING
- STEEL
- CENTERLINE
- PROPERTY LINE
- STEPPED FOOTING
- TELCO WIRE
- ELECTRICAL WIRE
- GROUND WIRE
- COAXIAL CABLE

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

NATCOMM
Natcomm, LLC
63-2 North Branford Road
Branford, Connecticut 06405
Tel: (203) 488-0580
Fax: (203) 488-8587
Consulting Engineers Project Management
Civil, Structural, Mechanical, Electrical

STATE OF CONNECTICUT
No. 16614
LICENSED
PROFESSIONAL ENGINEER

APPROVALS

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

PROJECT NO: 05066
DRAWN BY: AAJ
CHECKED BY: CFC

SUBMITTALS

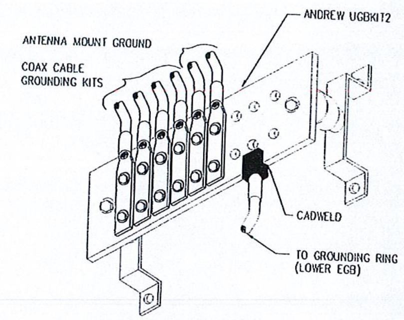
1	06/23/05	CONSTRUCTION
0	06/16/05	CONSTRUCTION

CT-11-083Q
GRASSY HILL

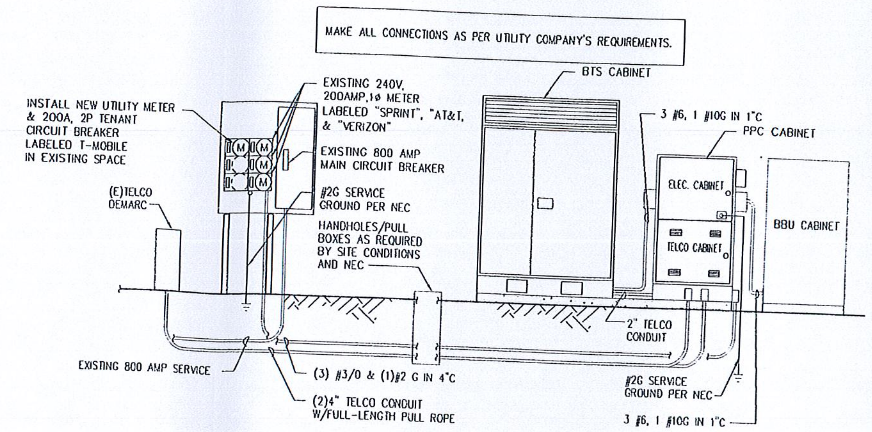
GRASSY HILL ROAD
ORANGE, CT. 06477

SHEET TITLE
STRUCT. NOTES, PLANS, SECTIONS & DETAILS

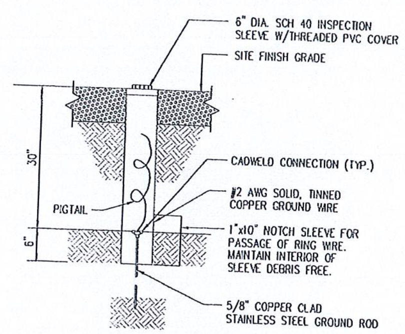
SHEET NUMBER
S-1



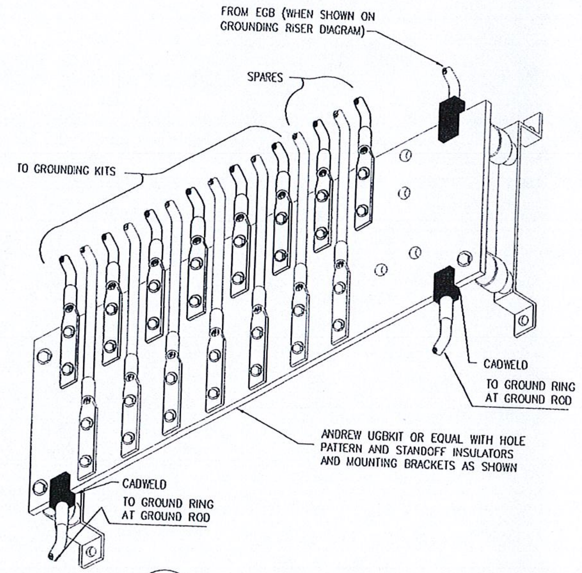
1 E-1 EQUIPMENT GROUND BAR (EGB)
SCALE: N.T.S.



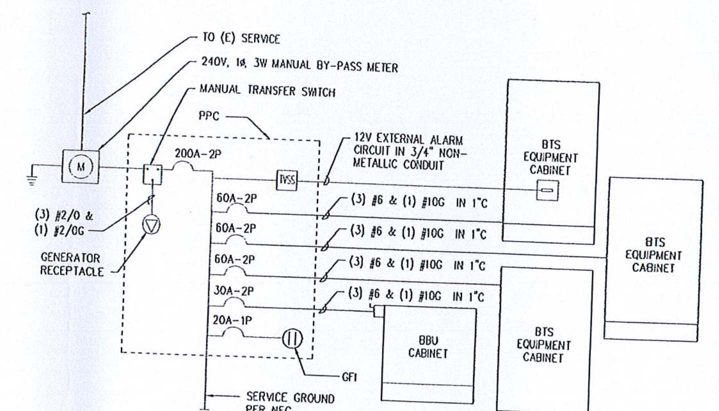
2 E-1 POWER RISER DIAGRAM
SCALE: N.T.S.



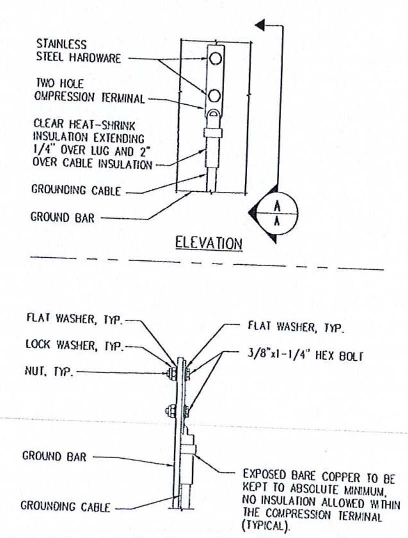
3 E-1 GROUND ROD TEST WELL DETAIL
SCALE: N.T.S.



4 E-1 MASTER GROUND BAR (MGB)
SCALE: N.T.S.



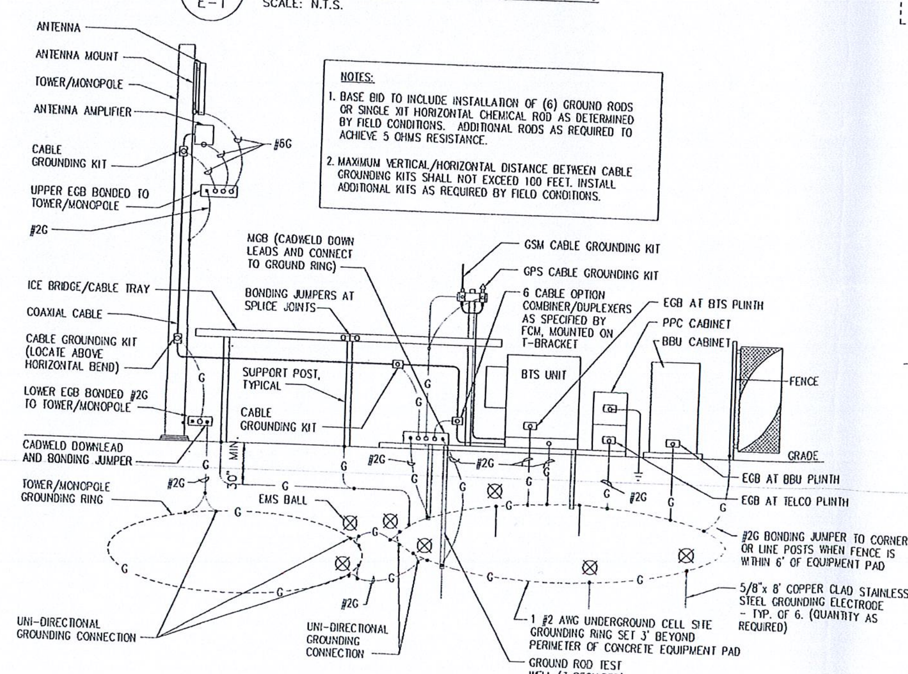
5 E-1 ONE LINE DIAGRAM
SCALE: N.T.S.



NOTES:

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

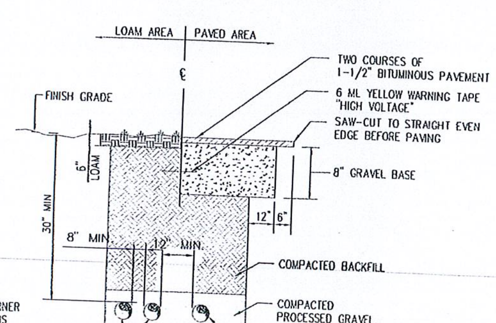
6 E-1 TYPICAL GROUND BAR CONNECTIONS DETAIL
SCALE: N.T.S.



NOTES:

1. BASE BID TO INCLUDE INSTALLATION OF (6) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY FIELD CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
2. MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE GROUNDING KITS SHALL NOT EXCEED 100 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.

7 E-1 GROUNDING RISER DIAGRAM
SCALE: N.T.S.



SCHEDULE 40 CONDUITS FOR NEW ELECTRICAL AND TELEPHONE SERVICES SEE UTILITY AND SITE PLANS. PROVIDE APPROVED PULL BOXES AS REQUIRED, AND COORDINATE INSTALLATION W/ ALL UTILITY COMPANIES FOR INTERFACING AT TERMINATION POINTS. PROVIDE FULL LENGTH PULL ROPES (TYP.).

NOTE:
DETAIL AS SHOWN IS FOR SECONDARY ELECTRIC SERVICE. PRIMARY HIGH VOLTAGE SERVICE REQUIRES 4" CONCRETE ENCASEMENT.

8 E-1 BURIED CONDUIT DETAIL
SCALE: N.T.S.

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.
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 STAINLESS STEEL GROUND ROD
	•EXOTHERMIC (CADWELD) OR ○MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC 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 CODES.
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 SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE 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 WATER TIGHT 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, ORTHWN.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND T-MOBILE 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 T-MOBILE CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND T-MOBILE CELL SITE PPC AND BETWEEN BTS AND T-MOBILE CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY T-MOBILE.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250.
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY T-MOBILE.
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 THE 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 ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF T-MOBILE EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS 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.

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

NATCOMM
Natcomm, LLC
63-2 North Branford Road
Branford, Connecticut 06405
Tel: (203) 488-0580
Fax: (203) 488-8587
Consulting Engineers-Project Management
Civil-Structural-Mechanical-Electrical

STATE OF CONNECTICUT ... No. 16694 LICENSED PROFESSIONAL ENGINEER

APPROVALS

Omnipoint ______
LANDLORD ______
LEASING ______
R.F. ______
ZONING ______
CONSTRUCTION ______
A/E ______

PROJECT NO:	05066
DRAWN BY:	AAJ
CHECKED BY:	FRC

SUBMITTALS

1	06/23/05	CONSTRUCTION
0	06/16/05	CONSTRUCTION

CT-11-083Q
GRASSY HILL

GRASSY HILL ROAD
ORANGE, CT. 06477

SHEET TITLE
ELEC. & GROUNDING NOTES, RISERS, & DETAILS

SHEET NUMBER
E-1

EXHIBIT B

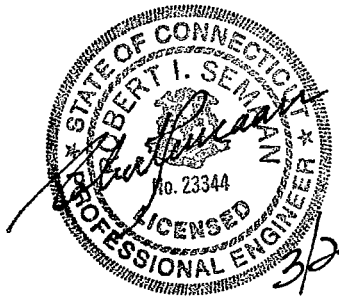
1079 N. 204th Avenue
Elkhorn, NE 68022
Ph: 402-289-1888
Fax: 402-289-1861

SEMAAN ENGINEERING SOLUTIONS

140 ft EEI Monopole
Structural Analysis

Prepared for:
Sprint Sites USA
1 International Blvd
Mahwah, NJ 07645

Site: CT23XC313
T-Mobile
Orange, CT



March 23, 2005

Ms. Kim Cornelisse
Sprint Sites USA
1 International Blvd
Mahwah, NJ 07645

Re: Site Number CT23XC313 – Orange, CT.

Dear Ms. Cornelisse:

We have completed the structural analysis for the existing monopole, located at the above referenced site. The purpose of this analysis is to determine that the existing monopole design is in conformance with the EIA/TIA-222-F standard and local building codes for the proposed antennae loads installation. Refer to the Review and Recommendations section at the end of this report for the analysis results.

Description of Structure:

The structure is a 140 ft EEI Monopole.

Refer to EEI job # 12364 dated March 3, 2004 for a detailed description of the structure.

Method of analysis:

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. The analysis was performed in conformance with **EIA/TIA-222-F and local building codes for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed (fastest mile)**. This is in conformance with the IBC 2003: Section 1609.1.1, Exception (5) and Section 3108.4. Wind is applied to the structure, accessories and antennas.

Structure loading:
Per the loading sheet supplied, the analysis was performed using the following loading: (Proposed loading in bold)

Elev. (ft)	Qty	Antennas and Mounts	Coax	Owner
140.0	3	Allgon 7721 On (3) Standoff Arms	(6) 1-5/8	AT&T
130.0	12	DB950F65 On a Low Profile Platform	(12) 1-1/4	Sprint
120.0	12	DB844H90 On a Low Profile Platform	(12) 1-5/8	Verizon
110.0	**6**	**RR90-17 On a Low Profile Platform**	**(12) 1-5/8**	**T-Mobile**
	9	**TMA On the same Low Profile Platform**	**-**	

All new access holes shall be reinforced with welded rims that are compatible with the pole and to be sized and supplied by pole manufacturer.

All transmission lines are assumed running inside of pole shaft.

Results of Analysis:
Refer to the attached Computer Summary sheets for detailed analysis results.

Structure:
The existing monopole is structurally capable of supporting the existing and proposed antennas. The maximum structure usage is: 69.4% (shaft) approx. 90.0% (baseplate).

Foundation:

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	2,561.00	2,022.19	79.0

The analysis reactions are less than the design reactions therefore no foundation modifications are required.

Review and Recommendations:
Based on the analysis results, the existing structure meets the requirements per the EIA/TIA-222-F standards for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed.

SEMAAN ENGINEERING SOLUTIONS
1079 N.204th Avenue
Elkhorn, NE 68022
Phone: 402-289-1888
Fax: 402-289-1861

Job Information

Pole :	CT23XC313		
Description :			
Client :	Sprint Sites USA - NJ		
Location :	Orange, CT		
Type :	18 Sides	Base Elev (ft):	0.00
Height :(ft)	139.50	Taper:	0.245520 (in/ft)

Sections Properties

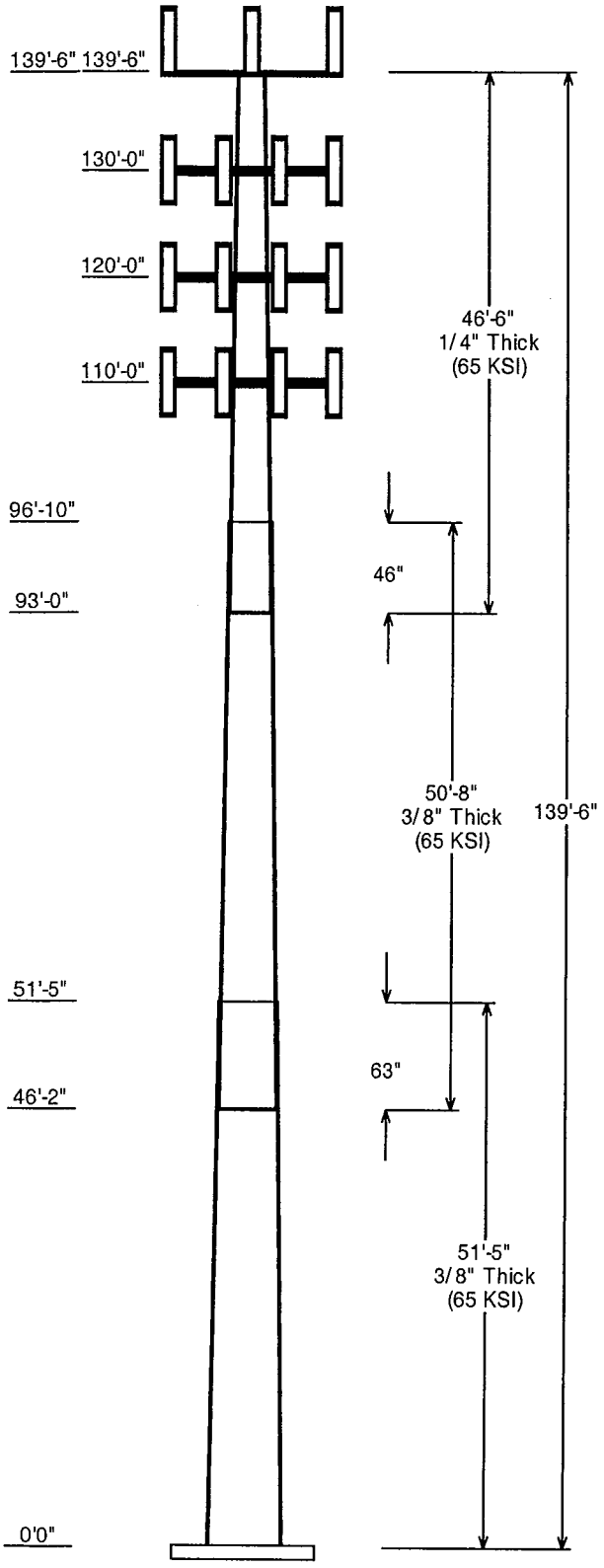
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	51.417	35.87	48.50	0.375		0.000	0.245520	65
2	50.667	25.47	37.91	0.375	Slip Joint	63.000	0.245520	65
3	46.499	15.50	26.91	0.250	Slip Joint	46.000	0.245520	65

Discrete Appurtenance

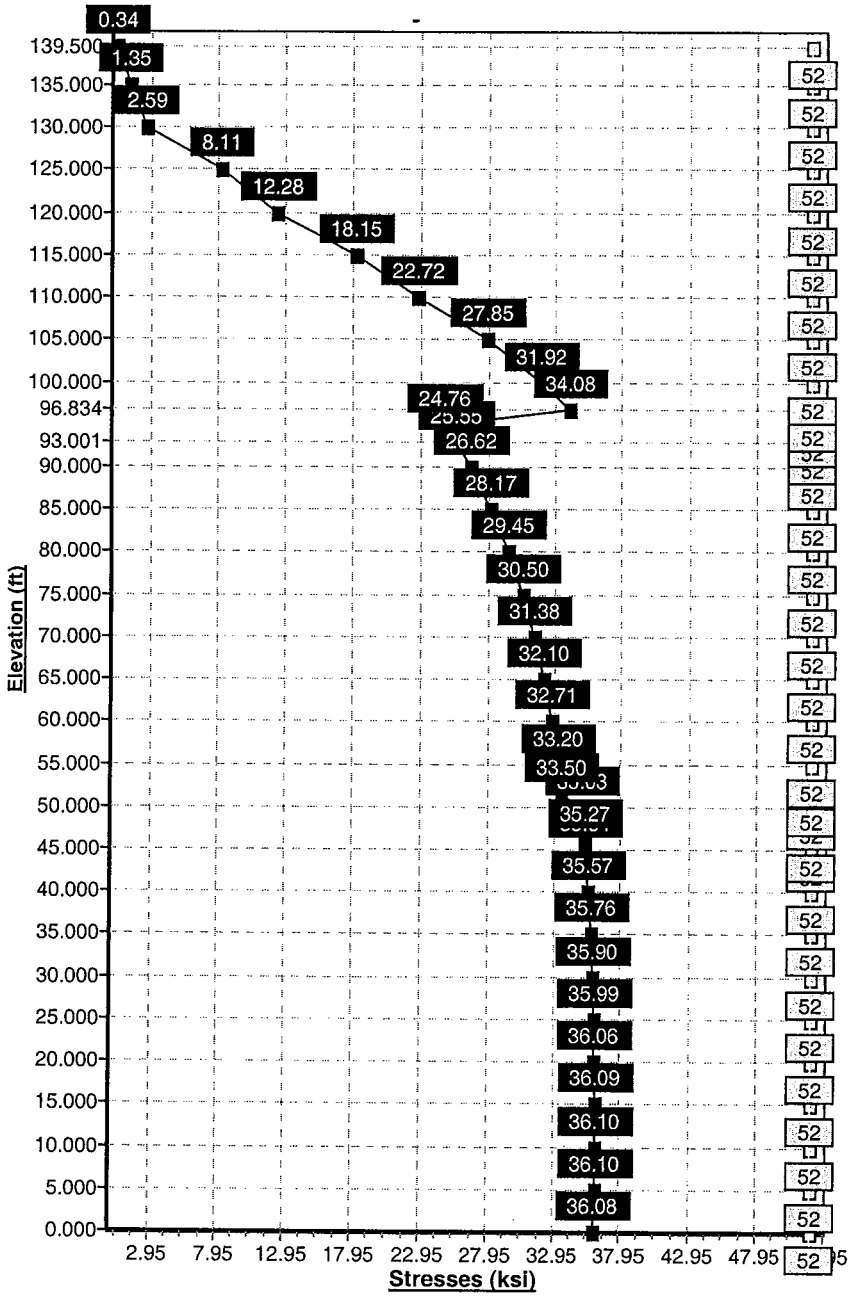
Attach Elev (ft)	Force Elev (ft)	Qty	Description
139.500	139.500	3	Standoff Arms
139.500	140.000	3	Allgon 7721
130.000	130.000	1	Low Profile Platform
130.000	130.000	12	DB950F65
120.000	120.000	1	Low Profile Platform
120.000	120.000	12	DB844H90
110.000	110.000	9	TMA
110.000	110.000	1	Low Profile Platform
110.000	110.000	6	RR90-17

Reactions

Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
85.00 mph Wind w/ No Ice	2,022.186	20.143	-23.253
73.61 mph Wind w/ 0.50 in Ice	1,697.291	16.463	-28.509



Load Case : No Ice



Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		

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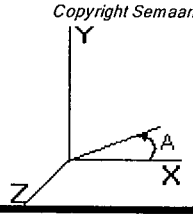


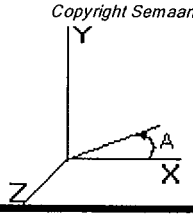
Shaft Section Properties

Sect Num	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (sqin)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (sqin)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1	51.417	0.3750	65		0.00	8,707	48.50	0.000	57.28	16760.5	21.39	129.3	35.87	51.41	42.25	6728.2	15.46	95.67	0.24552
2	50.667	0.3750	65	Slip Joint	63.00	6,427	37.91	46.16	44.68	7955.4	16.42	101.1	25.47	96.83	29.87	2378.0	10.57	67.93	0.24552
3	46.499	0.2500	65	Slip Joint	46.00	2,631	26.91	93.00	21.16	1901.0	17.57	107.6	15.50	139.5	12.10	355.5	9.52	62.00	0.24552
				Shaft Weight		17,765													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Distance From Face (ft)	X Angle (deg)	Vert Ecc (ft)
139.5	Standoff Arms	3	53.32	3.500	1.00	84.00	5.790	1.00	0.000	0.00	0.000
139.5	Allgon 7721	3	22.32	3.330	1.00	41.77	3.840	1.00	0.000	0.00	0.500
130.0	Low Profile Platform	1	1600.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
130.0	DB950F65	12	15.00	6.250	1.00	45.00	7.000	1.00	0.000	0.00	0.000
120.0	Low Profile Platform	1	1600.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
120.0	DB844H90	12	10.00	3.960	1.00	35.00	4.520	1.00	0.000	0.00	0.000
110.0	TMA	9	13.20	0.690	0.67	18.25	0.870	0.67	0.000	0.00	0.000
110.0	Low Profile Platform	1	1600.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
110.0	RR90-17	6	12.00	5.230	0.67	35.00	5.800	0.67	0.000	0.00	0.000
	Totals	48	5517.72			8011.56			Number of Loadings :		9

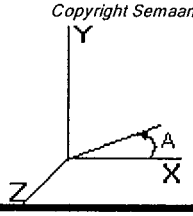
Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		



Segment Properties (Max Len : 5 ft)

Seg Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.3750	48.500	57.279	16,760.5	21.39	129.33	65	52	0.0
5.00		0.3750	47.272	55.818	15,510.4	20.82	126.06	65	52	962.1
10.00		0.3750	46.045	54.357	14,324.0	20.24	122.79	65	52	937.2
15.00		0.3750	44.817	52.895	13,199.6	19.66	119.51	65	52	912.4
20.00		0.3750	43.590	51.434	12,135.8	19.09	116.24	65	52	887.5
25.00		0.3750	42.362	49.973	11,130.6	18.51	112.97	65	52	862.7
30.00		0.3750	41.134	48.512	10,182.6	17.93	109.69	65	52	837.8
35.00		0.3750	39.907	47.051	9,290.0	17.35	106.42	65	52	813.0
40.00		0.3750	38.679	45.590	8,451.1	16.78	103.14	65	52	788.1
45.00		0.3750	37.452	44.129	7,664.3	16.20	99.87	65	52	763.2
46.17	Bot - Section 2	0.3750	37.165	43.788	7,488.0	16.06	99.11	65	52	174.6
50.00		0.3750	36.224	42.668	6,928.0	15.62	96.60	65	52	1,139.3
51.42	Top - Section 1	0.3750	36.626	43.146	7,163.7	15.81	97.67	65	52	413.8
55.00		0.3750	35.746	42.099	6,654.8	15.40	95.32	65	52	519.7
60.00		0.3750	34.519	40.638	5,985.6	14.82	92.05	65	52	703.8
65.00		0.3750	33.291	39.177	5,363.0	14.24	88.78	65	52	679.0
70.00		0.3750	32.064	37.716	4,785.0	13.67	85.50	65	52	654.1
75.00		0.3750	30.836	36.255	4,250.2	13.09	82.23	65	52	629.3
80.00		0.3750	29.608	34.794	3,756.8	12.51	78.96	65	52	604.4
85.00		0.3750	28.381	33.333	3,303.1	11.93	75.68	65	52	579.5
90.00		0.3750	27.153	31.872	2,887.5	11.36	72.41	65	52	554.7
93.00	Bot - Section 3	0.3750	26.416	30.995	2,655.7	11.01	70.44	65	52	321.0
95.00		0.3750	25.926	30.411	2,508.3	10.78	69.13	65	52	351.5
96.83	Top - Section 2	0.2500	25.975	20.412	1,706.7	16.91	103.90	65	52	316.6
100.00		0.2500	25.198	19.796	1,556.7	16.36	100.79	65	52	216.6
105.00		0.2500	23.970	18.821	1,338.0	15.50	95.88	65	52	328.5
110.00		0.2500	22.743	17.847	1,140.8	14.63	90.97	65	52	311.9
115.00		0.2500	21.515	16.873	964.0	13.76	86.06	65	52	295.4
120.00		0.2500	20.288	15.899	806.5	12.90	81.15	65	52	278.8
125.00		0.2500	19.060	14.925	667.2	12.03	76.24	65	52	262.2
130.00		0.2500	17.832	13.951	544.9	11.17	71.33	65	52	245.6
135.00		0.2500	16.605	12.977	438.6	10.30	66.42	65	52	229.1
139.50		0.2500	15.500	12.100	355.5	9.52	62.00	65	52	192.0
										17,765.4

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		

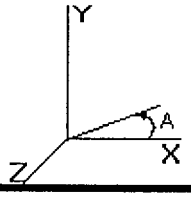


Load Case: No Ice — 85 mph - No Ice — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 85.00 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Forces

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Wind Force Z (lb)	Weight (lb)
0.00		1.00	18.49	31.25	343.54	0.650	0.00	0.000	0.000	0.00	0.00	0.0
5.00		1.00	18.49	31.25	334.85	0.650	5.00	19.953	12.969	405.39	0.00	962.1
10.00		1.00	18.49	31.25	326.15	0.650	5.00	19.441	12.637	395.00	0.00	937.2
15.00		1.00	18.49	31.25	317.46	0.650	5.00	18.930	12.304	384.61	0.00	912.4
20.00		1.00	18.49	31.25	308.76	0.650	5.00	18.418	11.972	374.22	0.00	887.5
25.00		1.00	18.49	31.25	300.06	0.650	5.00	17.907	11.639	363.82	0.00	862.7
30.00		1.00	18.49	31.25	291.37	0.650	5.00	17.395	11.307	353.43	0.00	837.8
35.00		1.01	18.81	31.78	285.06	0.650	5.00	16.884	10.974	348.85	0.00	813.0
40.00		1.05	19.54	33.02	281.61	0.650	5.00	16.372	10.642	351.44	0.00	788.1
45.00		1.09	20.21	34.15	277.30	0.650	5.00	15.861	10.309	352.11	0.00	763.2
46.17	Bot - Section 2	1.10	20.35	34.40	276.19	0.650	1.17	3.628	2.358	81.14	0.00	174.6
50.00		1.12	20.82	35.19	272.28	0.650	3.83	11.960	7.774	273.64	0.00	1,139.3
51.42	Top - Section 1	1.13	20.99	35.48	270.74	0.650	1.42	4.345	2.825	100.22	0.00	413.8
55.00		1.15	21.40	36.17	272.37	0.650	3.58	10.805	7.023	254.02	0.00	519.7
60.00		1.18	21.94	37.08	266.31	0.650	5.00	14.639	9.515	352.82	0.00	703.8
65.00		1.21	22.44	37.93	259.79	0.650	5.00	14.127	9.183	348.37	0.00	679.0
70.00		1.24	22.92	38.75	252.87	0.650	5.00	13.616	8.850	342.94	0.00	654.1
75.00		1.26	23.38	39.52	245.60	0.650	5.00	13.104	8.518	336.63	0.00	629.3
80.00		1.28	23.82	40.25	238.01	0.650	5.00	12.593	8.185	329.51	0.00	604.4
85.00		1.31	24.23	40.96	230.12	0.650	5.00	12.081	7.853	321.65	0.00	579.5
90.00		1.33	24.63	41.63	221.98	0.650	5.00	11.570	7.520	313.10	0.00	554.7
93.00	Bot - Section 3	1.34	24.86	42.02	216.97	0.650	3.00	6.698	4.354	182.96	0.00	321.0
95.00		1.35	25.02	42.28	213.58	0.650	2.00	4.444	2.888	122.13	0.00	351.5
96.83	Top - Section 2	1.36	25.15	42.51	210.45	0.650	1.83	4.004	2.603	110.66	0.00	316.6
100.00		1.37	25.38	42.90	209.12	0.650	3.17	6.751	4.388	188.27	0.00	216.6
105.00		1.39	25.74	43.51	200.32	0.650	5.00	10.243	6.658	289.70	0.00	328.5
110.00	Appertunance(s)	1.41	26.09	44.09	191.33	0.650	5.00	9.732	6.326	278.91	0.00	311.9
115.00		1.42	26.42	44.65	182.15	0.650	5.00	9.220	5.993	267.63	0.00	295.4
120.00	Appertunance(s)	1.44	26.74	45.20	172.81	0.650	5.00	8.709	5.661	255.88	0.00	278.8
125.00		1.46	27.06	45.73	163.30	0.650	5.00	8.197	5.328	243.67	0.00	262.2
130.00	Appertunance(s)	1.48	27.36	46.24	153.64	0.650	5.00	7.686	4.996	231.04	0.00	245.6
135.00		1.49	27.66	46.74	143.84	0.650	5.00	7.174	4.663	218.01	0.00	229.1
139.50	Appertunance(s)	1.51	27.92	47.18	134.90	0.650	4.50	6.020	3.913	184.64	0.00	192.0
					Totals:		139.50			8,956.46	0.00	17,765.4



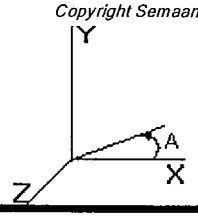
Load Case: No Ice — 85 mph - No Ice — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 85.00 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Discrete Appurtenance Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Total CaAa (sf)	CaAa Factor	Horiz Ecc (ft)	Vert Ecc (ft)	X Angle (deg)	Wind Force X (lb)	Wind Force Z (lb)	Mom X (lb-ft)	Mom Y (lb-ft)	Mom Z (lb-ft)	Weight (lb)
110.00	TMA	9	26.09	44.09	4.141	0.667	0.000	0.0	0.0	182.61	0.00	0.00	0.00	0.00	118.8
110.00	Low Profile Platform	1	26.09	44.09	25.550	1.000	0.000	0.0	0.0	1126.54	0.00	0.00	0.00	0.00	1600.0
110.00	RR90-17	6	26.09	44.09	20.930	0.667	0.000	0.0	0.0	922.86	0.00	0.00	0.00	0.00	72.0
120.00	Low Profile Platform	1	26.74	45.20	25.550	1.000	0.000	0.0	0.0	1154.90	0.00	0.00	0.00	0.00	1600.0
120.00	DB844H90	12	26.74	45.20	47.520	1.000	0.000	0.0	0.0	2147.99	0.00	0.00	0.00	0.00	120.0
130.00	Low Profile Platform	1	27.36	46.24	25.550	1.000	0.000	0.0	0.0	1181.62	0.00	0.00	0.00	0.00	1600.0
130.00	DB950F65	12	27.36	46.24	75.000	1.000	0.000	0.0	0.0	3468.55	0.00	0.00	0.00	0.00	180.0
139.50	Standoff Arms	3	27.92	47.18	10.500	1.000	0.000	0.0	0.0	495.48	0.00	0.00	0.00	0.00	160.0
139.50	Allgon 7721	3	27.95	47.23	9.990	1.000	0.000	0.5	0.0	471.90	0.00	0.00	0.00	235.95	67.0
										11,152.4	0.00				5,517.7

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		



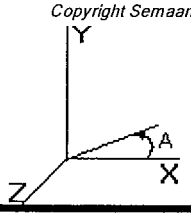
Load Case: No Ice 85 mph - No Ice 23 Iterations

Gust Response Factor : 1.69 Effective Wind Speed : 85.00 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Forces Summary

Seg Elev (ft)	X Coord (ft)	Z Coord (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Lateral FZ (lb)	Moment MX (lb-ft)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	405.39	962.10	0.00	0.00	0.00	0.00
10.00	0.00	0.00	395.00	937.25	0.00	0.00	0.00	0.00
15.00	0.00	0.00	384.61	912.39	0.00	0.00	0.00	0.00
20.00	0.00	0.00	374.22	887.53	0.00	0.00	0.00	0.00
25.00	0.00	0.00	363.82	862.67	0.00	0.00	0.00	0.00
30.00	0.00	0.00	353.43	837.81	0.00	0.00	0.00	0.00
35.00	0.00	0.00	348.85	812.95	0.00	0.00	0.00	0.00
40.00	0.00	0.00	351.44	788.09	0.00	0.00	0.00	0.00
45.00	0.00	0.00	352.11	763.23	0.00	0.00	0.00	0.00
46.17	0.00	0.00	81.14	174.56	0.00	0.00	0.00	0.00
50.00	0.00	0.00	273.64	1,139.27	0.00	0.00	0.00	0.00
51.42	0.00	0.00	100.22	413.77	0.00	0.00	0.00	0.00
55.00	0.00	0.00	254.02	519.66	0.00	0.00	0.00	0.00
60.00	0.00	0.00	352.82	703.84	0.00	0.00	0.00	0.00
65.00	0.00	0.00	348.37	678.98	0.00	0.00	0.00	0.00
70.00	0.00	0.00	342.94	654.13	0.00	0.00	0.00	0.00
75.00	0.00	0.00	336.63	629.27	0.00	0.00	0.00	0.00
80.00	0.00	0.00	329.51	604.41	0.00	0.00	0.00	0.00
85.00	0.00	0.00	321.65	579.55	0.00	0.00	0.00	0.00
90.00	0.00	0.00	313.10	554.69	0.00	0.00	0.00	0.00
93.00	0.00	0.00	182.96	320.95	0.00	0.00	0.00	0.00
95.00	0.00	0.00	122.13	351.50	0.00	0.00	0.00	0.00
96.83	0.00	0.00	110.66	316.61	0.00	0.00	0.00	0.00
100.00	0.00	0.00	188.27	216.58	0.00	0.00	0.00	0.00
105.00	0.00	0.00	289.70	328.51	0.00	0.00	0.00	0.00
110.00	0.00	0.00	2,510.92	2,102.74	0.00	0.00	0.00	0.00
115.00	0.00	0.00	267.63	295.37	0.00	0.00	0.00	0.00
120.00	0.00	0.00	3,558.76	1,998.79	0.00	0.00	0.00	0.00
125.00	0.00	0.00	243.67	262.22	0.00	0.00	0.00	0.00
130.00	0.00	0.00	4,881.22	2,025.65	0.00	0.00	0.00	0.00
135.00	0.00	0.00	218.01	229.08	0.00	0.00	0.00	0.00
139.50	0.00	0.00	1,152.02	418.92	0.00	0.00	0.00	235.95
	Totals:		20,108.91	23,283.08	0.00	0.00	0.00	235.95

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		



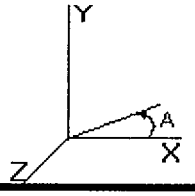
Load Case: No Ice — 85 mph - No Ice — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 85.00 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	20.143	23.253	0.000	0.000	0.000	2,022.186	0.000	0.000	0.000	0.000
5.00	19.802	22.233	0.000	0.000	0.000	1,921.473	-0.090	0.000	0.090	-0.167
10.00	19.467	21.238	0.000	0.000	0.000	1,822.465	-0.357	0.000	0.357	-0.339
15.00	19.139	20.269	0.000	0.000	0.000	1,725.129	-0.807	0.000	0.807	-0.515
20.00	18.817	19.326	0.000	0.000	0.000	1,629.435	-1.443	0.000	1.443	-0.696
25.00	18.502	18.408	0.000	0.000	0.000	1,535.348	-2.272	0.000	2.272	-0.881
30.00	18.194	17.515	0.000	0.000	0.000	1,442.838	-3.297	0.000	3.297	-1.072
35.00	17.886	16.648	0.000	0.000	0.000	1,351.871	-4.524	0.000	4.524	-1.267
40.00	17.572	15.806	0.000	0.000	0.000	1,262.443	-5.958	0.000	5.958	-1.467
45.00	17.232	15.015	0.000	0.000	0.000	1,174.586	-7.605	0.000	7.605	-1.672
46.17	17.174	14.810	0.000	0.000	0.000	1,154.476	-8.020	0.000	8.020	-1.723
50.00	16.891	13.647	0.000	0.000	0.000	1,088.651	-9.470	0.000	9.470	-1.886
51.42	16.802	13.205	0.000	0.000	0.000	1,064.717	-10.039	0.000	10.039	-1.949
55.00	16.570	12.642	0.000	0.000	0.000	1,004.514	-11.562	0.000	11.562	-2.105
60.00	16.234	11.893	0.000	0.000	0.000	921.663	-13.877	0.000	13.877	-2.311
65.00	15.898	11.171	0.000	0.000	0.000	840.494	-16.410	0.000	16.410	-2.521
70.00	15.565	10.475	0.000	0.000	0.000	761.003	-19.163	0.000	19.163	-2.733
75.00	15.235	9.806	0.000	0.000	0.000	683.178	-22.140	0.000	22.140	-2.948
80.00	14.908	9.164	0.000	0.000	0.000	607.005	-25.342	0.000	25.342	-3.164
85.00	14.586	8.549	0.000	0.000	0.000	532.466	-28.770	0.000	28.770	-3.379
90.00	14.264	7.973	0.000	0.000	0.000	459.536	-32.423	0.000	32.423	-3.593
93.00	14.075	7.638	0.000	0.000	0.000	416.737	-34.722	0.000	34.722	-3.723
95.00	13.940	7.275	0.000	0.000	0.000	388.597	-36.299	0.000	36.299	-3.809
96.83	13.821	6.941	0.000	0.000	0.000	363.031	-37.777	0.000	37.777	-3.887
100.00	13.642	6.691	0.000	0.000	0.000	319.273	-40.397	0.000	40.397	-4.016
105.00	13.357	6.327	0.000	0.000	0.000	251.063	-44.744	0.000	44.744	-4.277
110.00	10.708	4.383	0.000	0.000	0.000	184.281	-49.348	0.000	49.348	-4.508
115.00	10.430	4.078	0.000	0.000	0.000	130.740	-54.175	0.000	54.175	-4.705
120.00	6.723	2.368	0.000	0.000	0.000	78.588	-59.186	0.000	59.186	-4.859
125.00	6.461	2.118	0.000	0.000	0.000	44.976	-64.332	0.000	64.332	-4.968
130.00	1.422	0.525	0.000	0.000	0.000	12.674	-69.567	0.000	69.567	-5.029
135.00	1.184	0.316	0.000	0.000	0.000	5.566	-74.842	0.000	74.842	-5.053
139.50	1.152	0.000	0.000	0.000	0.000	0.236	-79.604	0.000	79.604	-5.062

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		



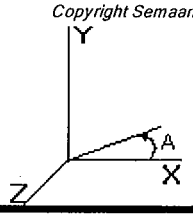
Load Case: No Ice — 85 mph - No Ice — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 85.00 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)	Stress Ratio
0.00	0.406	0.709	0.000	0.000	0.000	35.651	36.078	52.0	0.694
5.00	0.398	0.715	0.000	0.000	0.000	35.680	36.099	52.0	0.695
10.00	0.391	0.722	0.000	0.000	0.000	35.692	36.105	52.0	0.695
15.00	0.383	0.729	0.000	0.000	0.000	35.686	36.092	52.0	0.694
20.00	0.376	0.737	0.000	0.000	0.000	35.658	36.056	52.0	0.694
25.00	0.368	0.746	0.000	0.000	0.000	35.601	35.993	52.0	0.692
30.00	0.361	0.756	0.000	0.000	0.000	35.511	35.896	52.0	0.691
35.00	0.354	0.766	0.000	0.000	0.000	35.381	35.759	52.0	0.688
40.00	0.347	0.777	0.000	0.000	0.000	35.203	35.575	52.0	0.684
45.00	0.340	0.787	0.000	0.000	0.000	34.969	35.335	52.0	0.680
46.17	0.338	0.790	0.000	0.000	0.000	34.910	35.275	52.0	0.679
50.00	0.320	0.798	0.000	0.000	0.000	34.680	35.027	52.0	0.674
51.42	0.306	0.785	0.000	0.000	0.000	33.165	33.499	52.0	0.645
55.00	0.300	0.793	0.000	0.000	0.000	32.874	33.203	52.0	0.639
60.00	0.293	0.805	0.000	0.000	0.000	32.383	32.705	52.0	0.629
65.00	0.285	0.818	0.000	0.000	0.000	31.788	32.104	52.0	0.618
70.00	0.278	0.832	0.000	0.000	0.000	31.068	31.379	52.0	0.604
75.00	0.270	0.847	0.000	0.000	0.000	30.198	30.504	52.0	0.587
80.00	0.263	0.864	0.000	0.000	0.000	29.147	29.448	52.0	0.567
85.00	0.256	0.882	0.000	0.000	0.000	27.874	28.172	52.0	0.542
90.00	0.250	0.902	0.000	0.000	0.000	26.328	26.624	52.0	0.512
93.00	0.246	0.915	0.000	0.000	0.000	25.256	25.552	52.0	0.492
95.00	0.239	0.924	0.000	0.000	0.000	24.471	24.762	52.0	0.476
96.83	0.340	1.365	0.000	0.000	0.000	33.662	34.084	52.0	0.656
100.00	0.338	1.389	0.000	0.000	0.000	31.487	31.916	52.0	0.614
105.00	0.336	1.430	0.000	0.000	0.000	27.404	27.850	52.0	0.536
110.00	0.246	1.209	0.000	0.000	0.000	22.382	22.725	52.0	0.437
115.00	0.242	1.246	0.000	0.000	0.000	17.777	18.147	52.0	0.349
120.00	0.149	0.852	0.000	0.000	0.000	12.044	12.282	52.0	0.236
125.00	0.142	0.872	0.000	0.000	0.000	7.828	8.112	52.0	0.156
130.00	0.038	0.205	0.000	0.000	0.000	2.527	2.589	52.0	0.050
135.00	0.024	0.184	0.000	0.000	0.000	1.284	1.346	52.0	0.026
139.50	0.000	0.192	0.000	0.000	0.000	0.063	0.338	52.0	0.007

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		

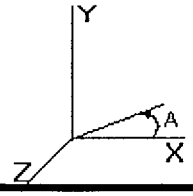


Load Case: Ice — 85 mph - With Ice - Ice Thickness = 0.5 in — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 73.61 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Forces

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Wind Force Z (lb)	Weight (lb)
0.00		1.00	13.87	23.44	297.51	0.650	0.00	0.000	0.000	0.00	0.00	0.0
5.00		1.00	13.87	23.44	289.98	0.650	5.00	20.369	13.240	310.38	0.00	1,109.5
10.00		1.00	13.87	23.44	282.45	0.650	5.00	19.858	12.908	302.58	0.00	1,080.9
15.00		1.00	13.87	23.44	274.92	0.650	5.00	19.346	12.575	294.79	0.00	1,052.2
20.00		1.00	13.87	23.44	267.39	0.650	5.00	18.835	12.243	286.99	0.00	1,023.6
25.00		1.00	13.87	23.44	259.86	0.650	5.00	18.323	11.910	279.20	0.00	994.9
30.00		1.00	13.87	23.44	252.32	0.650	5.00	17.812	11.578	271.41	0.00	966.3
35.00		1.01	14.10	23.84	246.86	0.650	5.00	17.300	11.245	268.08	0.00	937.6
40.00		1.05	14.65	24.76	243.88	0.650	5.00	16.789	10.913	270.27	0.00	909.0
45.00		1.09	15.15	25.61	240.14	0.650	5.00	16.277	10.580	271.01	0.00	880.3
46.17	Bot - Section 2	1.10	15.26	25.80	239.18	0.650	1.17	3.725	2.422	62.48	0.00	201.7
50.00		1.12	15.62	26.39	235.79	0.650	3.83	12.280	7.982	210.70	0.00	1,227.9
51.42	Top - Section 1	1.13	15.74	26.60	234.46	0.650	1.42	4.464	2.901	77.20	0.00	446.2
55.00		1.15	16.05	27.12	235.87	0.650	3.58	11.103	7.217	195.77	0.00	599.8
60.00		1.18	16.45	27.80	230.62	0.650	5.00	15.055	9.786	272.13	0.00	811.9
65.00		1.21	16.83	28.45	224.98	0.650	5.00	14.544	9.453	268.97	0.00	783.3
70.00		1.24	17.19	29.06	218.99	0.650	5.00	14.032	9.121	265.06	0.00	754.6
75.00		1.26	17.53	29.63	212.69	0.650	5.00	13.521	8.788	260.49	0.00	726.0
80.00		1.28	17.86	30.19	206.11	0.650	5.00	13.009	8.456	255.30	0.00	697.3
85.00		1.31	18.17	30.71	199.29	0.650	5.00	12.498	8.124	249.54	0.00	668.7
90.00		1.33	18.47	31.22	192.23	0.650	5.00	11.986	7.791	243.27	0.00	640.0
93.00	Bot - Section 3	1.34	18.65	31.51	187.89	0.650	3.00	6.948	4.516	142.34	0.00	370.8
95.00		1.35	18.76	31.71	184.96	0.650	2.00	4.610	2.997	95.03	0.00	384.7
96.83	Top - Section 2	1.36	18.86	31.88	182.25	0.650	1.83	4.157	2.702	86.16	0.00	346.6
100.00		1.37	19.04	32.17	181.09	0.650	3.17	7.014	4.559	146.71	0.00	266.8
105.00		1.39	19.30	32.63	173.48	0.650	5.00	10.660	6.929	226.10	0.00	404.0
110.00	Appertunance(s)	1.41	19.56	33.06	165.69	0.650	5.00	10.149	6.597	218.13	0.00	383.7
115.00		1.42	19.81	33.49	157.74	0.650	5.00	9.637	6.264	209.78	0.00	363.3
120.00	Appertunance(s)	1.44	20.05	33.89	149.65	0.650	5.00	9.126	5.932	201.08	0.00	342.9
125.00		1.46	20.29	34.29	141.42	0.650	5.00	8.614	5.599	192.03	0.00	322.6
130.00	Appertunance(s)	1.48	20.52	34.68	133.05	0.650	5.00	8.103	5.267	182.67	0.00	302.2
135.00		1.49	20.74	35.05	124.56	0.650	5.00	7.591	4.934	172.99	0.00	281.9
139.50	Appertunance(s)	1.51	20.94	35.38	116.82	0.650	4.50	6.395	4.157	147.10	0.00	236.4
					Totals:		139.50			6,935.72	0.00	20,517.6



Load Case: Ice — 85 mph - With Ice - Ice Thickness = 0.5 in — 23 Iterations

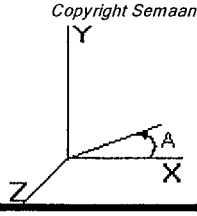
Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Effective Wind Speed : 73.61 (mph)

Discrete Appurtenance Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Total CaAa (sf)	CaAa Factor	Horiz Ecc (ft)	Vert Ecc (ft)	X Angle (deg)	Wind Force X (lb)	Wind Force Z (lb)	Mom X (lb-ft)	Mom Y (lb-ft)	Mom Z (lb-ft)	Weight (lb)
110.00	TMA	9	19.56	33.06	5.223	0.667	0.000	0.0	0.0	172.70	0.00	0.00	0.00	0.00	164.3
110.00	Low Profile Platform	1	19.56	33.06	27.320	1.000	0.000	0.0	0.0	903.38	0.00	0.00	0.00	0.00	2100.0
110.00	RR90-17	6	19.56	33.06	23.212	0.667	0.000	0.0	0.0	767.53	0.00	0.00	0.00	0.00	210.0
120.00	Low Profile Platform	1	20.05	33.89	27.320	1.000	0.000	0.0	0.0	926.12	0.00	0.00	0.00	0.00	2100.0
120.00	DB844H90	12	20.05	33.89	54.240	1.000	0.000	0.0	0.0	1838.69	0.00	0.00	0.00	0.00	420.0
130.00	Low Profile Platform	1	20.52	34.68	27.320	1.000	0.000	0.0	0.0	947.55	0.00	0.00	0.00	0.00	2100.0
130.00	DB950F65	12	20.52	34.68	84.000	1.000	0.000	0.0	0.0	2913.41	0.00	0.00	0.00	0.00	540.0
139.50	Standoff Arms	3	20.94	35.38	17.370	1.000	0.000	0.0	0.0	614.71	0.00	0.00	0.00	0.00	252.0
139.50	Allgon 7721	3	20.96	35.42	11.520	1.000	0.000	0.5	0.0	408.10	0.00	0.00	0.00	204.05	125.3
										9,492.21	0.00				8,011.6

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		



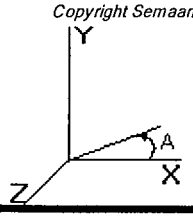
Load Case: Ice — 85 mph - With Ice - Ice Thickness = 0.5 in — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 73.61 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Forces Summary

Seg Elev (ft)	X Coord (ft)	Z Coord (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Lateral FZ (lb)	Moment MX (lb-ft)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	310.38	1,109.52	0.00	0.00	0.00	0.00
10.00	0.00	0.00	302.58	1,080.87	0.00	0.00	0.00	0.00
15.00	0.00	0.00	294.79	1,052.22	0.00	0.00	0.00	0.00
20.00	0.00	0.00	286.99	1,023.58	0.00	0.00	0.00	0.00
25.00	0.00	0.00	279.20	994.93	0.00	0.00	0.00	0.00
30.00	0.00	0.00	271.41	966.28	0.00	0.00	0.00	0.00
35.00	0.00	0.00	268.08	937.63	0.00	0.00	0.00	0.00
40.00	0.00	0.00	270.27	908.99	0.00	0.00	0.00	0.00
45.00	0.00	0.00	271.01	880.34	0.00	0.00	0.00	0.00
46.17	0.00	0.00	62.48	201.69	0.00	0.00	0.00	0.00
50.00	0.00	0.00	210.70	1,227.91	0.00	0.00	0.00	0.00
51.42	0.00	0.00	77.20	446.24	0.00	0.00	0.00	0.00
55.00	0.00	0.00	195.77	599.81	0.00	0.00	0.00	0.00
60.00	0.00	0.00	272.13	811.90	0.00	0.00	0.00	0.00
65.00	0.00	0.00	268.97	783.25	0.00	0.00	0.00	0.00
70.00	0.00	0.00	265.06	754.61	0.00	0.00	0.00	0.00
75.00	0.00	0.00	260.49	725.96	0.00	0.00	0.00	0.00
80.00	0.00	0.00	255.30	697.31	0.00	0.00	0.00	0.00
85.00	0.00	0.00	249.54	668.67	0.00	0.00	0.00	0.00
90.00	0.00	0.00	243.27	640.02	0.00	0.00	0.00	0.00
93.00	0.00	0.00	142.34	370.80	0.00	0.00	0.00	0.00
95.00	0.00	0.00	95.03	384.73	0.00	0.00	0.00	0.00
96.83	0.00	0.00	86.16	346.58	0.00	0.00	0.00	0.00
100.00	0.00	0.00	146.71	266.79	0.00	0.00	0.00	0.00
105.00	0.00	0.00	226.10	404.02	0.00	0.00	0.00	0.00
110.00	0.00	0.00	2,061.74	2,857.91	0.00	0.00	0.00	0.00
115.00	0.00	0.00	209.78	363.30	0.00	0.00	0.00	0.00
120.00	0.00	0.00	2,965.90	2,862.94	0.00	0.00	0.00	0.00
125.00	0.00	0.00	192.03	322.58	0.00	0.00	0.00	0.00
130.00	0.00	0.00	4,043.62	2,942.22	0.00	0.00	0.00	0.00
135.00	0.00	0.00	172.99	281.86	0.00	0.00	0.00	0.00
139.50	0.00	0.00	1,169.91	613.74	0.00	0.00	0.00	204.05
	Totals:		16,427.93	28,529.20	0.00	0.00	0.00	204.05

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		



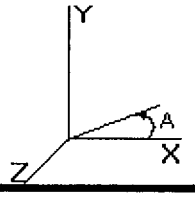
Load Case: Ice — 85 mph - With Ice - Ice Thickness = 0.5 in — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 73.61 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	16.463	28.509	0.000	0.000	0.000	1,697.291	0.000	0.000	0.000	0.000
5.00	16.219	27.359	0.000	0.000	0.000	1,614.977	-0.075	0.000	0.075	-0.141
10.00	15.980	26.239	0.000	0.000	0.000	1,533.881	-0.300	0.000	0.300	-0.285
15.00	15.745	25.147	0.000	0.000	0.000	1,453.983	-0.678	0.000	0.678	-0.433
20.00	15.514	24.084	0.000	0.000	0.000	1,375.261	-1.214	0.000	1.214	-0.586
25.00	15.287	23.050	0.000	0.000	0.000	1,297.695	-1.911	0.000	1.911	-0.742
30.00	15.064	22.045	0.000	0.000	0.000	1,221.263	-2.775	0.000	2.775	-0.903
35.00	14.842	21.069	0.000	0.000	0.000	1,145.942	-3.810	0.000	3.810	-1.069
40.00	14.614	20.122	0.000	0.000	0.000	1.071.734	-5.020	0.000	5.020	-1.239
45.00	14.359	19.221	0.000	0.000	0.000	998.666	-6.410	0.000	6.410	-1.413
46.17	14.321	18.998	0.000	0.000	0.000	981.910	-6.761	0.000	6.761	-1.456
50.00	14.108	17.753	0.000	0.000	0.000	927.017	-7.987	0.000	7.987	-1.595
51.42	14.046	17.286	0.000	0.000	0.000	907.026	-8.469	0.000	8.469	-1.648
55.00	13.878	16.655	0.000	0.000	0.000	856.699	-9.757	0.000	9.757	-1.782
60.00	13.628	15.810	0.000	0.000	0.000	787.310	-11.717	0.000	11.717	-1.957
65.00	13.379	14.995	0.000	0.000	0.000	719.169	-13.862	0.000	13.862	-2.136
70.00	13.130	14.209	0.000	0.000	0.000	652.275	-16.197	0.000	16.197	-2.318
75.00	12.883	13.453	0.000	0.000	0.000	586.624	-18.724	0.000	18.724	-2.502
80.00	12.638	12.727	0.000	0.000	0.000	522.210	-21.444	0.000	21.444	-2.688
85.00	12.395	12.032	0.000	0.000	0.000	459.022	-24.358	0.000	24.358	-2.874
90.00	12.148	11.374	0.000	0.000	0.000	397.048	-27.467	0.000	27.467	-3.058
93.00	12.004	10.992	0.000	0.000	0.000	360.596	-29.424	0.000	29.424	-3.170
95.00	11.900	10.598	0.000	0.000	0.000	336.597	-30.767	0.000	30.767	-3.245
96.83	11.811	10.239	0.000	0.000	0.000	314.772	-32.027	0.000	32.027	-3.313
100.00	11.679	9.946	0.000	0.000	0.000	277.379	-34.261	0.000	34.261	-3.425
105.00	11.464	9.513	0.000	0.000	0.000	218.986	-37.971	0.000	37.971	-3.651
110.00	9.242	6.767	0.000	0.000	0.000	161.666	-41.905	0.000	41.905	-3.854
115.00	9.025	6.394	0.000	0.000	0.000	115.458	-46.035	0.000	46.035	-4.027
120.00	5.869	3.739	0.000	0.000	0.000	70.335	-50.328	0.000	50.328	-4.164
125.00	5.659	3.423	0.000	0.000	0.000	40.989	-54.742	0.000	54.742	-4.262
130.00	1.407	0.792	0.000	0.000	0.000	12.696	-59.237	0.000	59.237	-4.319
135.00	1.213	0.523	0.000	0.000	0.000	5.663	-63.770	0.000	63.770	-4.343
139.50	1.170	0.000	0.000	0.000	0.000	0.204	-67.865	0.000	67.865	-4.352

Pole :	CT23XC313	Sprint Sites USA - NJ	
Location:	Orange, CT		
Height :	139.5 (ft)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Base Dia :	48.50 (in)	Top Dia : 15.50 (in)	
Taper :	0.245520 (in/ft)		

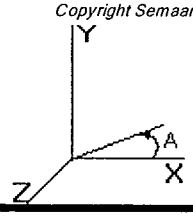


Load Case: Ice — 85 mph - With Ice - Ice Thickness = 0.5 in — 23 Iterations

Gust Response Factor : 1.69 — Effective Wind Speed : 73.61 (mph)
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)	Stress Ratio
0.00	0.498	0.579	0.000	0.000	0.000	29.923	30.438	52.0	0.586
5.00	0.490	0.586	0.000	0.000	0.000	29.988	30.495	52.0	0.587
10.00	0.483	0.592	0.000	0.000	0.000	30.041	30.541	52.0	0.588
15.00	0.475	0.600	0.000	0.000	0.000	30.077	30.571	52.0	0.588
20.00	0.468	0.608	0.000	0.000	0.000	30.095	30.582	52.0	0.588
25.00	0.461	0.617	0.000	0.000	0.000	30.090	30.570	52.0	0.588
30.00	0.454	0.626	0.000	0.000	0.000	30.058	30.531	52.0	0.587
35.00	0.448	0.636	0.000	0.000	0.000	29.991	30.459	52.0	0.586
40.00	0.441	0.646	0.000	0.000	0.000	29.885	30.347	52.0	0.584
45.00	0.436	0.656	0.000	0.000	0.000	29.731	30.188	52.0	0.581
46.17	0.434	0.659	0.000	0.000	0.000	29.692	30.147	52.0	0.580
50.00	0.416	0.666	0.000	0.000	0.000	29.531	29.969	52.0	0.577
51.42	0.401	0.656	0.000	0.000	0.000	28.253	28.677	52.0	0.552
55.00	0.396	0.664	0.000	0.000	0.000	28.037	28.456	52.0	0.547
60.00	0.389	0.676	0.000	0.000	0.000	27.662	28.076	52.0	0.540
65.00	0.383	0.688	0.000	0.000	0.000	27.199	27.608	52.0	0.531
70.00	0.377	0.702	0.000	0.000	0.000	26.629	27.033	52.0	0.520
75.00	0.371	0.716	0.000	0.000	0.000	25.930	26.331	52.0	0.507
80.00	0.366	0.732	0.000	0.000	0.000	25.075	25.473	52.0	0.490
85.00	0.361	0.749	0.000	0.000	0.000	24.029	24.425	52.0	0.470
90.00	0.357	0.768	0.000	0.000	0.000	22.748	23.143	52.0	0.445
93.00	0.355	0.781	0.000	0.000	0.000	21.854	22.249	52.0	0.428
95.00	0.349	0.789	0.000	0.000	0.000	21.196	21.588	52.0	0.415
96.83	0.502	1.166	0.000	0.000	0.000	29.187	29.757	52.0	0.573
100.00	0.502	1.189	0.000	0.000	0.000	27.356	27.934	52.0	0.537
105.00	0.505	1.228	0.000	0.000	0.000	23.902	24.500	52.0	0.471
110.00	0.379	1.044	0.000	0.000	0.000	19.636	20.096	52.0	0.387
115.00	0.379	1.078	0.000	0.000	0.000	15.699	16.186	52.0	0.311
120.00	0.235	0.744	0.000	0.000	0.000	10.779	11.089	52.0	0.213
125.00	0.229	0.764	0.000	0.000	0.000	7.134	7.482	52.0	0.144
130.00	0.057	0.203	0.000	0.000	0.000	2.531	2.612	52.0	0.050
135.00	0.040	0.188	0.000	0.000	0.000	1.306	1.386	52.0	0.027
139.50	0.000	0.195	0.000	0.000	0.000	0.054	0.342	52.0	0.007



Load Case: No Ice — 85 mph - No Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Effective Wind Speed : 85.00 (mph)

Analysis Summary

	Reactions						Max Stresses			
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	20.143	0.000	23.253	0.000	0.000	2,022.186	36.078	52.0	0.000	0.694
Ice	16.463	0.000	28.509	0.000	0.000	1,697.291	30.571	52.0	15.000	0.588

EXHIBIT C

T-Mobile

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

Technical Memo

To: Christine Farrell
From: Mike Walker - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11083
Date: July 13, 2005

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 Grassy Hill Road, Orange, 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 1791.93 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 Grassy Hill Road, Orange, CT, is 0.03635 mW/cm^2. This value represents 3.635% of the Maximum Permissible Exposure (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 13.47%. The combined Power Density for the site is 17.105% of the M.P.E. standard.

New England Market

Connecticut

Worst Case Power Density

Site:	**CT11083**
Site Address:	**Grassy Hill Road**
Town:	**Orange**
Tower Height:	**140 ft.**
Tower Style:	**Monopole**
Base Station TX output	20 W
Number of channels	8
Antenna Model	EMS RR90-17-02DP
Cable Size	1 5/8 in.
Cable Length	130 ft.
Antenna Height	110.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	4.50 dB
Antenna Gain	16.5 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.5080 dB
Total Attenuation	6.0080 dB
Total EIRP per Channel	53.50 dBm
(In Watts)	223.99 W
Total EIRP per Sector	62.53 dBm
(In Watts)	1791.93 W
nsg	10.4920
Power Density (S) =	**0.036347 mW/cm^2**
T-Mobile Worst Case % MPE =	**3.6347%**

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	1.2300 %
Cingular	
Sprint PCS	6.7400 %
AT&T Wireless	5.5000 %
Nextel	
Total Excluding T-Mobile	**13.4700 %**
T-Mobile	3.6347
Total % MPE for Site	**17.1047%**

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

July 15, 2005

The Honorable Mitchell R. Goldblatt
First Selectman
Town of Orange
Town Hall
617 Orange Center Road

Orange, CT 06477-2423

RE: **TS-T-MOBILE-107A-050713** – T-Mobile USA, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at Grassy Hill Road, Orange, Connecticut.

Dear Mr. Goldblatt:

The Connecticut Siting Council (Council) received this request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting scheduled for Wednesday, July 20, 2005, at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by noon on July 20, 2005.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/jkl

Enclosure: Notice of Tower Sharing

c: Paul Dinice, Zoning Enforcement Officer, Town of Orange