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-107-050713** – T-Mobile USA, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at South Orange Center 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, 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 F. Flynn III, Nextel Communications, Inc.
Christopher B. Fisher, Esq., Cuddy & Feder LLP
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
Kenneth C. Baldwin, Esq., Robinson & Cole LLP

T-Mobile

TS-T-MOBILE-107-050713

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
Municipal Tower Facility - Orange
South Orange Center Road, Orange, CT
Latitude: 41-15-19 / Longitude 73-00-41:

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 municipal communications tower, located at South Orange Center Road in the Town of Orange ("Town of Orange Facility"), owned by the Town of Orange ("Tower Owner"). T-Mobile and the Tower Owner have agreed to the shared use of the Town of Orange Facility, as detailed below.

TOWN OF ORANGE FACILITY

The Town of Orange Facility consists of a one hundred eighty (180) foot high monopole tower ("Tower"). T-Mobile will be at a mounting height of One Hundred Forty Eight (148') feet. A chain link fence surrounds the Town of Orange Facility. AT&T is approved to locate at the One Hundred Seventy Eight (178) foot level, Nextel at the One Hundred Thirty Eight (138) foot level, Sprint at the One Hundred Twenty Eight (128) foot level and Verizon at the One Hundred Eighteen (118) foot level.

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

T-MOBILE FACILITY

As shown on the enclosed plans prepared by Diversified Technology Consultants, including a site plan and tower elevation of the Town of Orange Facility, annexed hereto as Exhibit A, T-Mobile proposes a shared use of the Facility by placing antennas on the Tower and equipment needed to provide personal communications services ("PCS") within the existing fenced compound. T-Mobile will install up to nine (9) antennas at approximately the One Hundred Forty Eight (148) foot level of the Tower. Associated unmanned equipment cabinets will be located on a concrete pad near the base of the tower within the existing compound.

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 Town of Orange 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 fenced compound 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 Town of Orange 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 30.5% of the standard. See Cumulative Emissions Compliance Report dated February, 2004, prepared by Hassan Syed, T-Mobile Radio Frequency Engineer, annexed hereto as Exhibit C;

5.) The proposed shared use of the Town of Orange 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.

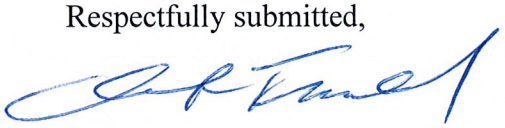
D. Economic Feasibility The Applicant and the tower owner have agreed to share use of the Town of Orange Facility on terms agreeable to both parties. The proposed tower sharing is therefore economically feasible.

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 Town of Orange 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 Town of Orange 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 Town of Orange Facility.

Respectfully submitted,



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

cc: Mitchell Goldblatt, First Selectman

EXHIBIT A

TOWN OF ORANGE, MP

26 S. ORANGE CENTER RD
ORANGE, CT 06477

SITE NUMBER: CT-11-720-A

GENERAL NOTES

1) THE CONTRACTOR SHALL GIVE ALL NOTICES & COMPLY w/ ALL LAWS, ORDINANCES, RULES, REGULATIONS & LAWFUL ORDERS of ANY PUBLIC AUTHORITY, MUNICIPAL & UTILITY COMPANY SPECIFICATIONS, & LOCAL & STATE JURISDICTIONAL CODES BEARING on THE PERFORMANCE of THE WORK. THE WORK PERFORMED on THE PROJECT & THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE w/ ALL APPLICABLE CODES, REGULATIONS, & ORDINANCES.

2) THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION & 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 & IMPROVEMENTS IN ACCORDANCE w/ 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 & ALL OTHER MATERIALS & 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 w/ THE FIELD CONDITIONS & TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED in ACCORDANCE w/ THE CONTRACT DOCUMENTS.

6) THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED w/ CONSTRUCTION PRIOR TO STARTING WORK on ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.

7) THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT & 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 w/ THE LATEST REVISIONS & ADDENDUM'S or CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED w/ THE PROJECT.

9) THE CONTRACTOR SHALL SUPERVISE & DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES & PROCEDURES & FOR COORDINATING ALL PORTIONS of THE WORK UNDER THE CONTRACT.

10) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS & ESTABLISHING & MAINTAINING ALL LINES & GRADES REQ'D TO CONSTRUCT ALL IMPROVEMENTS as SHOWN HEREIN.

11) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS & INSPECTIONS WHICH MAY BE REQ'D 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 & HAZARD FREE DURING CONSTRUCTION & DISPOSE of ALL DIRT, DEBRIS, RUBBISH & REMOVE EQUIPMENT NOT SPECIFIED as REMAINING on THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION & FREE FROM PAINT SPOTS, DUST, or SMUDGES of ANY NATURE.

14) THE CONTRACTOR SHALL COMPLY W/ 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.

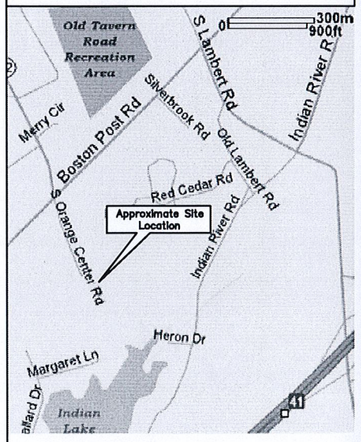
16) THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. on THE JOB.

17) ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS & 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 72hr 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

18) 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 MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

VICINITY MAP

AS SHOWN



SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET & INDEX	1
A-1	PLANS, ELEVATIONS, DETAILS AND NOTES	1
S-1	EQUIPMENT ELEVATIONS, STRUCTURAL NOTES & DETAILS	1
E-1	ELECTRICAL PLANS, DETAILS AND NOTES	1

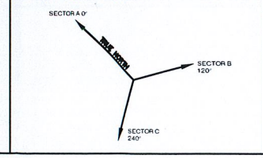
PROJECT SUMMARY

SITE NUMBER:	CT-11-720-A
SITE NAME:	TOWN OF ORANGE, MP
SITE ADDRESS:	26 S. ORANGE CENTER RD ORANGE, CT 06477
ASSESSORS PARCEL NO.:	MAP: 13, BLK: 07, LOT: 01A
CONSTRUCTION TYPE:	CO-LOCATION
PROPERTY OWNER:	TOWN OF ORANGE 617 ORANGE CENTER ROAD ORANGE, CT 06477
STRUCTURE OWNER:	TOWN OF ORANGE 617 ORANGE CENTER ROAD ORANGE, CT 06477
APPLICANT:	OMNIPOINT FACILITIES NETWORK 2, LLC 100 FILLEY STREET BLOOMFIELD, CT 06002

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.

ANTENNA ORIENTATION KEY



OMNIPOINT COMMUNICATIONS, INC.

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

dtc
DIVERSIFIED TECHNOLOGY CONSULTANTS
556 WASHINGTON AVENUE NORTH HAVEN CT 06473
203 239 4396 203 234 7378 FAX

STATE OF CONNECTICUT
MURALI D. ATLURU
No. 11589
LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 05-151-130

DRAWN BY: STE

CHECKED BY: AGS

SUBMITTALS

1	05.25.05	CONSTRUCTION
0	05.18.05	CONSTRUCTION

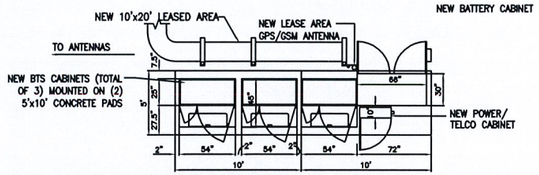
CT-11-720-A
TOWN OF ORANGE, MP
26 S. ORANGE CENTER ROAD
ORANGE, CT 06477

SHEET TITLE

TITLE SHEET AND INDEX

SHEET NUMBER

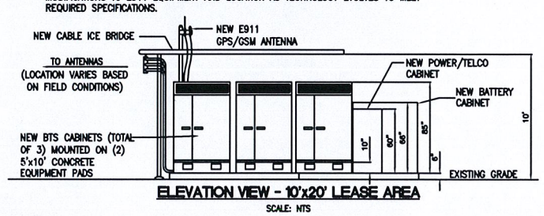
T-1



PLAN VIEW - 10'x20' LEASE AREA

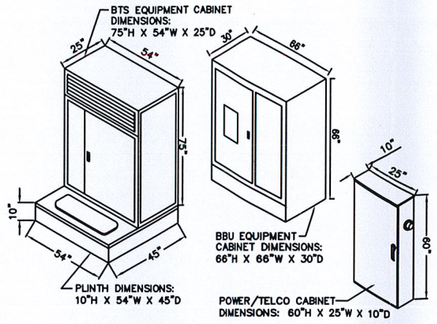
SCALE: NTS

NOTE:
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.



ELEVATION VIEW - 10'x20' LEASE AREA

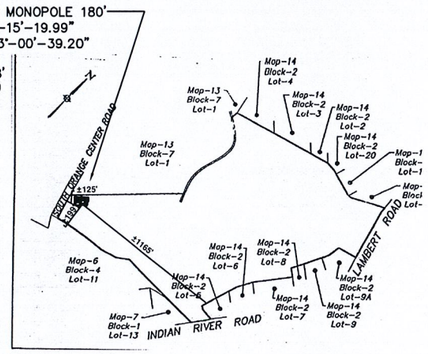
SCALE: NTS



CABINET DETAIL

SCALE: NONE

EXISTING MONOPOLE 180'
LAT. 41°-15'-19.99"
LONG. 73°-00'-39.20"
NAD. 83
ELEV. 48'
NGVD 29

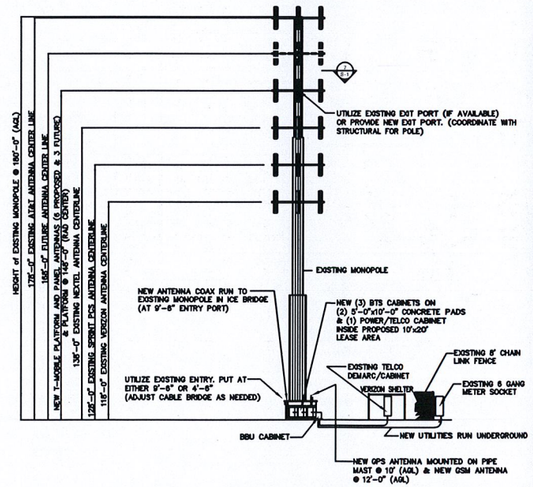


PLOT PLAN

SCALE: 1"=500'

0 250 500 1000

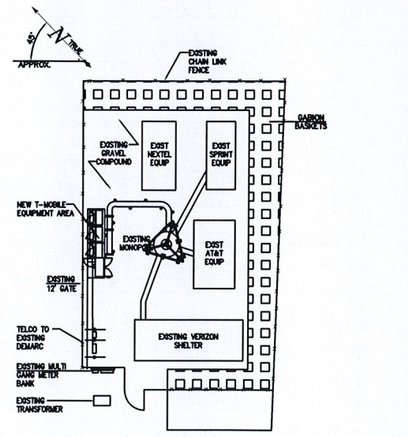
NOTE: SITE PLAN BASED ON MAP FROM URS CORPORATION A.E.S. PARTIAL BOUNDARY & TOPOGRAPHIC SURVEY LAND OF TOWN OF ORANGE, DATED MARCH, 2001. FIELD MEASUREMENTS USED TO LOCATE BUILDINGS. ALL DIMENSIONS ARE APPROXIMATE AND SCALED.



ELEVATION

SCALE: 1"=40'

0 20 40 80



COMPOUND PLAN

SCALE: 1"=20'

0 10 20 40

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 W/ 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 CONTRACTORS 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/LICENSEE 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 W/ 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) WHEN "PAINT TO MATCH" IS SPECIFIED FOR ANTENNA CONCEALMENT, PAINT PRODUCT FOR ANTENNA RADOME SHALL BE SHERMAN WILLIAMS COROTHANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND PROJECT OWNERS GUIDELINES
10) PRIOR TO EXCAVATION NEAR BUILDING, CONTRACTOR TO CONTACT & COORDINATE W/ PROPERTY LESSEE/LICENSEE.
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 W/ THE EXECUTION OF THE WORK, SHALL BE REMOVED OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE W/ THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF UTILITY COMPANY.
13) THE AREAS OF THE PROPERTY DISTURBED BY THE WORK & NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED & COVERED W/MULCH.
14) THE CONTRACTOR SHALL ESTABLISH & MAINTAIN SOIL EROSION & SEDIMENTATION CONTROLS AT ALL TIMES DURING CONSTRUCTION.
15) ALL UTILITY WORK SHALL BE IN ACCORDANCE W/ LOCAL UTILITY COMPANY REQUIREMENTS & SPECIFICATIONS.
16) 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.

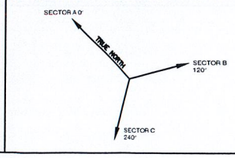
ABBREVIATIONS

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	w/	WITH
EQUIP	EQUIPMENT	LNA	LOW NOISE AMPLIFIER
EXT	EXTERIOR	PCS	PERSONAL COMM. SERVICES
FF	FINISHED FLOOR	A-1	ANTENNA MARK NO.
FG	FINISHED GRADE	&	AND
GA	GAUGE	@	AT
GALV	GALVANIZED	℄	PLATE BAR
GC	GENERAL CONTRACTOR	MIN	MINIMUM
LG	LONG	MTL	METAL
MAX	MAXIMUM	NIC	NOT IN CONTRACT
MECH	MECHANICAL	NTS	NOT TO SCALE
MFR	MANUFACTURER	OC	ON CENTER
MGB	MASTER GROUND	OPP	OPPOSITE
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 (SHT # / SHT #)
- ELEVATION (D / SH)
- GROUT or PLASTER
- BRICK
- MASONRY
- CONCRETE
- EARTH
- GRAVEL
- PLYWOOD
- SAND
- WOOD CONT.
- WOOD BLOCKING
- STEEL
- CENTERLINE
- PROPERTY LINE
- STEPPED FOOTING
- MATCH LINE
- WORK POINT
- GROUND WIRE
- COAXIAL CABLE

ANTENNA ORIENTATION KEY



OMNIPOINT COMMUNICATIONS, INC.
100 FILLEY STREET
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STATE OF CONNECTICUT
MURALI D. ATLURU
No. 11668
LICENSED
PROFESSIONAL ENGINEER

APPROVALS

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

PROJECT NO: 05-151-130

DRAWN BY: STE

CHECKED BY: AGS

SUBMITTALS

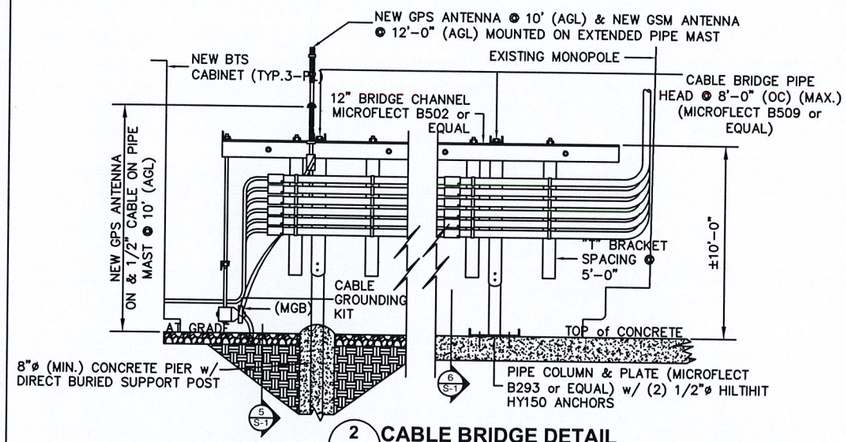
1	05.25.05	CONSTRUCTION
0	05.18.05	CONSTRUCTION

CT-11-720-A
TOWN OF ORANGE, MP
26 S. ORANGE CENTER ROAD
ORANGE, CT 06477

SHEET TITLE
PLANS, ELEVATIONS, DETAILS, AND NOTES

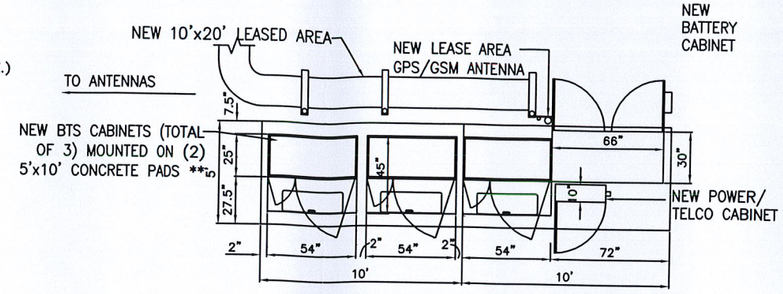
SHEET NUMBER
A-1

R:\05151-000 T Mobile\130-Orange\CD\Rev1\CT-11-720-A CD 05-18-2005 Rev1 SOUTH ORANGE CENTER RD.dwg, A-1, 5/25/2005 3:20:23 PM, joe.viola, Diversified Technology Consultants.



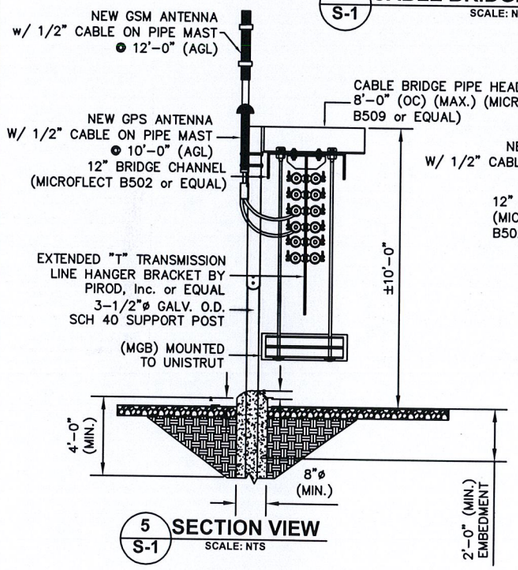
2 S-1 CABLE BRIDGE DETAIL

SCALE: NTS



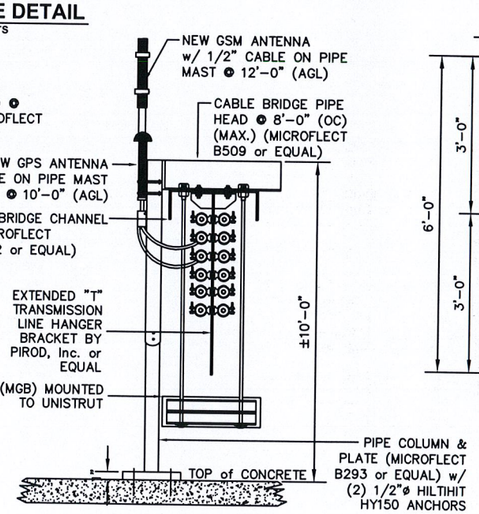
PLAN VIEW - EQUIPMENT SLAB

SCALE: NTS



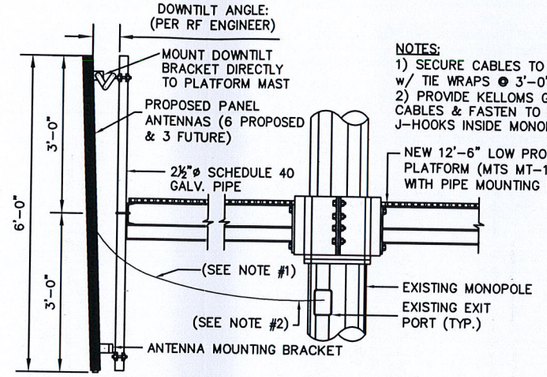
5 S-1 SECTION VIEW

SCALE: NTS



6 S-1 SECTION VIEW

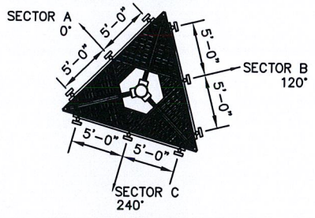
SCALE: NTS



4 S-1 ANTENNA MOUNTING DETAIL

SCALE: NTS

NOTES:
1) SECURE CABLES TO GRATING w/ TIE WRAPS @ 3'-0" (OC).
2) PROVIDE KELLOMS GRIP AROUND CABLES & FASTEN TO EXISTING J-HOOKS INSIDE MONOPOLE.



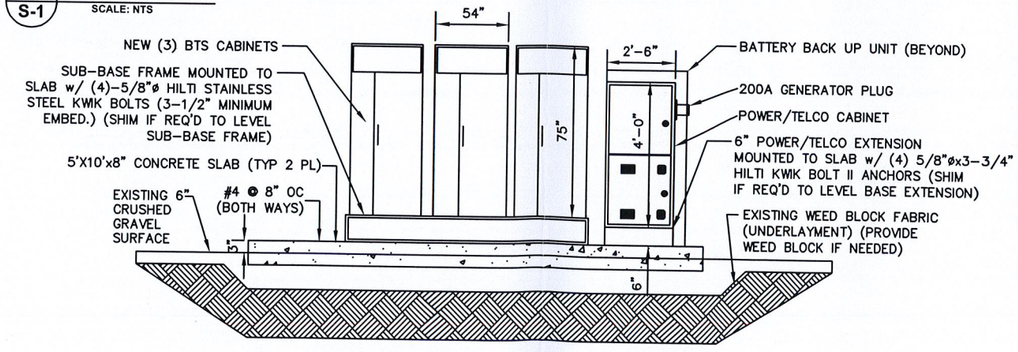
ANTENNA MOUNTING PLAN

SCALE: 1"=40'

7 S-1

NORTH

0 10 20 40



3 S-1 EQUIPMENT SLAB SECTION VIEW

SCALE: NTS

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 #5/8" 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 % DI. 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 I, 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.

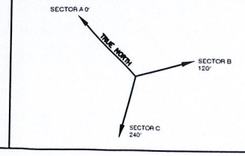
18) THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE as FOLLOWS UNLESS NOTED OTHERWISE:
CONCRETE CAST AGAINST EARTH ... 3 INCHES.
CONCRETE EXPOSED TO EARTH or WATER
#6 & LARGER .....2 INCHES
#5 & SMALLER .....1 1/2 INCHES
ALL EXPOSED EDGES SHALL BE PROVIDED w/ A 3/4"x3/4" CHAMFER 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.

ANTENNA ORIENTATION KEY



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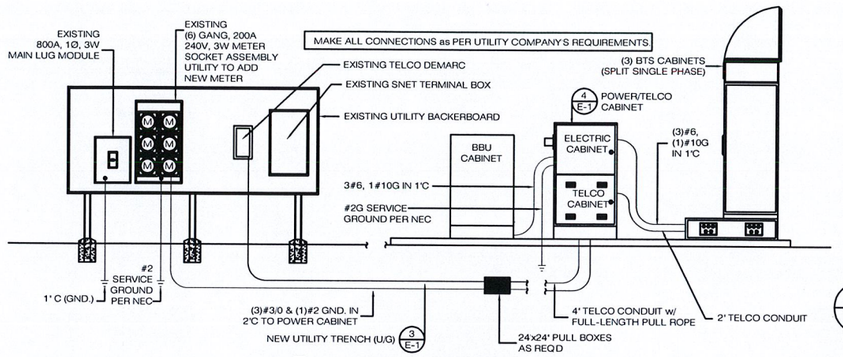
SHEET TITLE
EQUIPMENT ELEVATIONS, STRUCTURAL NOTES AND DETAILS

SHEET NUMBER
S-1

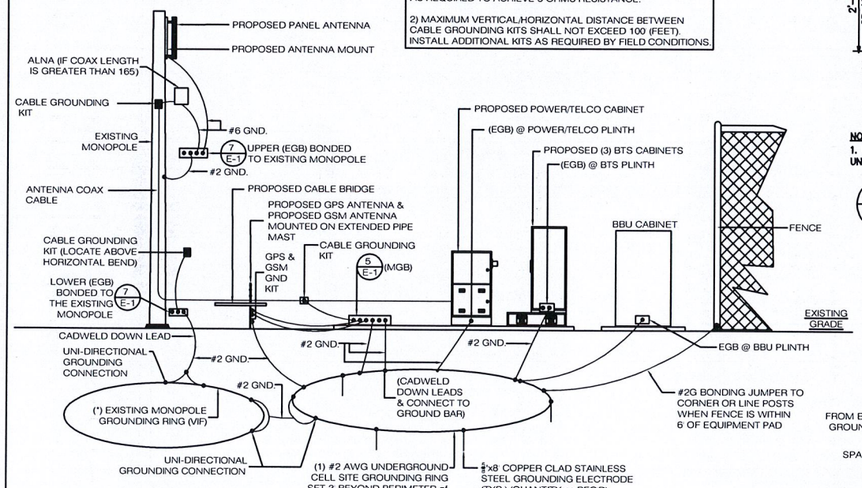


2 E-1 POWER RISER DIAGRAM

SCALE: NTS

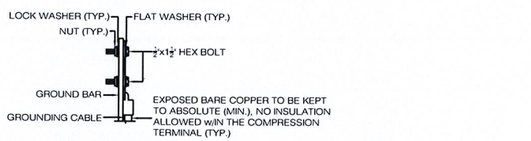
(1) NOTES:
1) BASE BID TO INCLUDE INSTALLATION of (6) GROUND RODS or SINGLE "KIT" HORIZONTAL CHEMICAL ROD AS DETERMINED BY FIELD CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.

2) MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE GROUNDING KITS SHALL NOT EXCEED 100 (FEET). INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.



1 E-1 GROUNDING RISER DIAGRAM

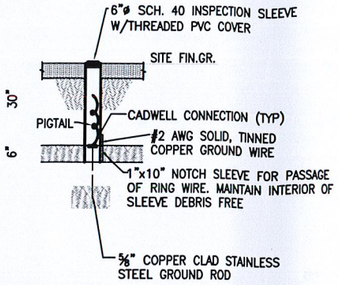
SCALE: NTS



NOTES:
1) 'DOUBLING UP' or 'STACKING' of CONNECTIONS IS NOT PERMITTED.
2) OXIDE INHIBITING COMPOUND TO BE USED @ ALL LOCATIONS.
3) CADWELD DOWN LEADS FROM UPPER EGB, LOWER EGB & MGB.

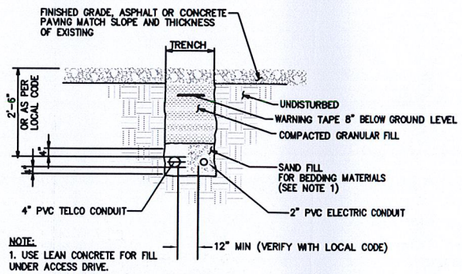
8 E-1 GROUND BAR CONNECTION DETAIL

SCALE: NTS



9 E-1 GROUND ROD TEST WELL DETAIL

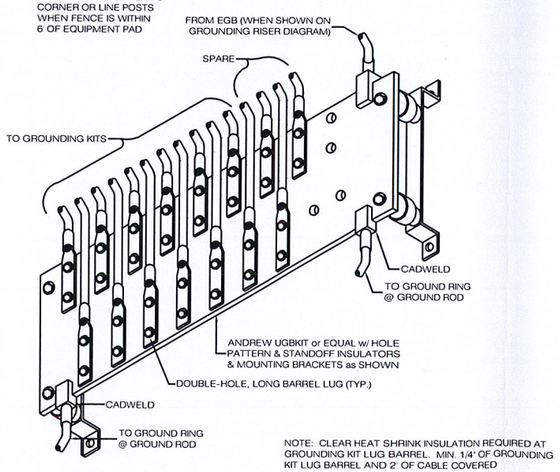
SCALE: NTS



NOTE:
1. USE LEAN CONCRETE FOR FILL UNDER ACCESS DRIVE.

3 E-1 TRENCH DETAIL

SCALE: NTS



NOTE: CLEAR HEAT SHRINK INSULATION REQUIRED AT GROUNDING KIT LUG BARREL. MIN. 1/4' OF GROUNDING KIT LUG BARREL AND 2' OF CABLE COVERED

5 E-1 MASTER GROUND BAR (MGB)

SCALE: NTS

RISER DIAGRAM FEEDER SCHEDULE NOTES:

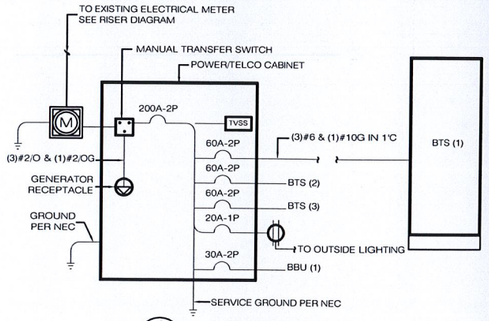
1. THE CONTRACTOR SHALL INSTALL GROUNDING BUSHINGS ON ALL CONDUITS AS INDICATED.
2. ALL CONDUITS SHALL BE EMT UNLESS INDICATED OTHERWISE.
3. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL (1) GFI SERVICE DUPLEX RECEPTACLE WITH NEMA 3R IN-USE COVER, (AS REQUIRED BY NEC). (2) SURFACE MOUNTED, NONMETALLIC, GASKETED, CORROSION RESISTANT, 26W TRIPLE TUBE COMPACT FLUORESCENT FIXTURE WITH ELECTRONIC BALLAST. FIXTURE SHALL BE CANLET #GFWF26H1G-GSC OR EQUAL. (1) SINGLE POLE SWITCH IN WEATHER-TIGHT ENCLOSURE. FURNISH AND INSTALL (2) #12, (1) #12 GND. IN 3/4" CONDUIT TO NEW 20AMP, 1-POLE CIRCUIT BREAKER IN T-MOBILE POWER / TELCO CABINET. MOUNT DEVICES AND LIGHTING ON EQUIPMENT MOUNTING RACK.

SHEET NOTES:

1. REMOVE INTERIOR OF EXISTING BOX. EXTEND MAIN FEEDER TO FEED TO NEW WIREWAY.
2. EXISTING PANEL BOX TO REMAIN. SHOWN FOR REFERENCE ONLY.
3. PROVIDE NEW WIREWAY SIZED BY CONTRACTOR.
4. REMOVE CONDUIT AND WRING BACK TO BOX. INSTALL SHEETMETAL COVER OVER HOLE IN BOX.
5. EXISTING FEEDER TO REMAIN. PROVIDE NEW SPLICE IN BOX AND FEED FROM NEW DISCONNECT AS SHOWN.
6. PROVIDE NEW FEED FROM EXISTING TELCO DEMARK. LOCATE TELCO BOX IN CORRIDOR BETWEEN STAIRWELL AND ELEVATOR.
7. FIRE SEAL ALL WALL AND FLOOR PENETRATIONS EQUAL TO WALL AND FLOOR FIRE RATINGS (TYPICAL).
8. PROVIDE NEW PRESSURE TREATED SLEEPERS INSTALLED 5' OC.

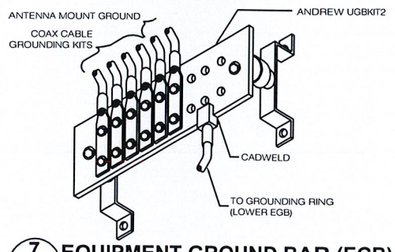
ELECTRICAL RISER DIAGRAM SCHEDULE

TYPE	WIRING	CONDUIT
A	4 #4/0, 1 #2 GROUND	2" CONDUIT
B	4 #2, 1 #2 GROUND	1 1/2" CONDUIT
C	3 #6 , 1 #1	1" CONDUIT FROM ELECTRIC CABINET TO BTS CABINET
D	PROVIDED BY T-MOBILE	2" CONDUIT FROM TELCO CABINET TO BTS CABINET
E	1/4" METERED NYLON PULL CORD	2" CONDUIT FROM TELCO DEMARK CABINET TO POWER/TELCO CABINET
G	1 #2/0 GROUND TO MAIN WATER SERVICE WITH JUMPER ACROSS WATER METER AND (2) 3/4"x10' COPPER CLAD DRIVEN GROUND RODS	1" CONDUIT



4 E-1 ONE LINE DIAGRAM

SCALE: NTS



7 E-1 EQUIPMENT GROUND BAR (EGB)

SCALE: NTS

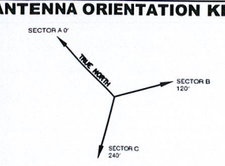
ELECTRICAL LEGEND

U.O.N. UNLESS OTHERWISE NOTED
WP WEATHERPROOF
GFI GROUND FAULT INTERRUPTER
A AMPERE
V VOLT
KWH KILOWATT - HOUR
C CONDUIT
G GROUND
GROUND
MGB MASTER GROUND BAR 1/4"x8'x24" COPPER
EGB EQUIPMENT GROUND BAR 1/4"x4'x12" OR 1/4"x4'x18" COPPER
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
NEW PANEL BOARD, SURFACE MOUNTED
EXISTING PANEL BOARD, SURFACE MOUNTED
DRY TYPE TRANSFORMER
METER
CIRCUIT BREAKER
NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
FUSIBLE DISCONNECT SWITCH, MOUNTED 54"A.F.F.
TVSS TRANSIENT VOLTAGE SURGE SUPPRESSER w/ 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 + #10G IN 3/4" CONDUIT U.O.N.
A.F.F. ABOVE FINISHED FLOOR

ELECTRICAL AND GROUNDING NOTES

1) ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS of THE NATIONAL ELECTRICAL CODE (NEC) as WELL as APPLICABLE STATE & LOCAL CODES.
2) ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED PROCURED PER SPECIFICATION REQUIREMENTS.
3) THE ELECTRICAL WORK INCLUDES ALL LABOR & MATERIALS DESCRIBED BY DRAWINGS & SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING & APPROVED ELECTRICAL SYSTEM.
4) GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, & IS RESPONSIBLE FOR OBTAINING SAID PERMITS & COORDINATION FOR INSPECTIONS.
5) ELECTRICAL & TELCO WIRING OUTSIDE A BUILDING & EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS or SCHEDULE 80 PVC (as PERMITTED BY CODE) & WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL or NONMETALLIC CONDUITS.
6) BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7) ELECTRICAL WIRING SHALL BE COPPER w/ TYPE XHHW, THWN, or THHN INSULATION.
8) RUN ELECTRICAL CONDUIT or CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT & LESSEE/LICENSEE CELL SITE POWER PEDESTAL as INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION w/ UTILITY COMPANY.
9) RUN TELCO CONDUIT or CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT & LESSEE/LICENSEE CELL SITE TELCO CABINET & BTS CABINET as INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE @ EACH END.
10) WHERE CONDUIT BETWEEN BTS & LESSEE/LICENSEE CELL SITE POWER PEDESTAL & BETWEEN BTS & LESSEE/LICENSEE CELL SITE TELCO SERVICE CABINET ARE U/G USE PVC, SCH. 40 CONDUIT. ABOVE THE GROUND PORTION of THESE CONDUITS SHALL BE PVC CONDUIT.
11) ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12) POWER PEDESTAL SUPPLIED BY LESSE/LICENSEE.
13) GROUNDING SHALL COMPLY w/ NEC ART. 250.
14) GROUND COAXIAL CABLE SHIELDS MINIMUM @ BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY LESSEE/LICENSEE.
15) USE #6 COPPER STRANDED WIRE w/ GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) & #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 w/ GALVANIZED STEEL.
17) ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST & STRAIGHTEST PATH POSSIBLE, EXCEPT as OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT @ RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT @ 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS w/IN 7 FEET of LESSEE/LICENSEE EQUIPMENT or CABINET TO MASTER GROUND BAR.
18) CONNECTIONS TO GROUND BARS SHALL BE MADE w/ 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) BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, & ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
21) BOND ANTENNA EGB'S & MGB TO GROUND RING.
22) TEST COMPLETED GROUND SYSTEM & RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
23) ALL CURRENT CARRYING MATERIALS SHALL BE COPPER INCLUDING PANEL BOARD PHASE, NEUTRAL AND GROUND BUSSING.

ANTENNA ORIENTATION KEY



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CHECKED BY: AGS

SUBMITTALS

1	05.25.05	CONSTRUCTION
0	05.18.05	CONSTRUCTION

CT-11-720-A
TOWN OF ORANGE, MP
26 S. ORANGE CENTER ROAD
ORANGE, CT 06477

SHEET TITLE
ELECTRICAL PLANS, DETAILS AND NOTES

SHEET NUMBER
E-1

EXHIBIT B

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215

Structural Analysis Report

PJF Project No.: **31205-0019 Rev. 1**

Structure: Existing 180-ft Monopole

Manufacturer: Rohn Industries
Location: Orange, CT
Site Number: CT-11-720A

Prepared For:

Omnipoint Communications, Inc.
100 Filley Street
Bloomfield, CT 06002
Attn: Charmaine Simpson

July 12, 2005

1-12-05

Analyzed by:
Kurt J. Swarts, P.E.
Project Manager
kswarts@pjfweb.com

Reviewed by:
Kevin P. Bauman
Department Manager
kbauman@pjfweb.com

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215

Executive Summary

Design Standard:

Paul J. Ford and Company has analyzed the existing monopole in accordance with the Telecommunications Industry Association Standard TIA/EIA-222-F for the following *fastest mile* design wind velocities:

85 mph Basic Wind Velocity without ice
74 mph Basic Wind Velocity with 1/2" radial ice
50 mph (Operational) Basic Wind Velocity without ice

Antenna Loads:

The existing monopole was analyzed for the following antenna loading:

Status	Elevation	Description	Coax	Owner
Existing	178'	(6) EMS RR90-17-02DP (3) Decibel 776QNB120EXM 12' Low Profile Platform	(12) 1 5/8" (12) 1 5/8" + (3) 1/2"	AT&T
Proposed	148'	(9) EMS DR65-190XXDPQ + (6) PCS 1900 10' Low Profile Platform	(24) 1 5/8"	T-Mobile
Proposed	137'	(12) DB844H80 12' Low Profile Platform	(12) 1 5/8"	Nextel
Existing	128'	(12) Decibel DB980H65T2E 12' Low Profile Platform	(12) 1 5/8"	Sprint
Existing	117'	(12) Decibel DB844H90 12' Low Profile Platform	(12) 1 5/8"	Verizon

Results:

The monopole and foundation have sufficient capacity to support the above antenna loading while meeting the local minimum wind requirements. The existing monopole is loaded to 67% of its allowable capacity

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Project Description:

Paul J. Ford and Company has analyzed the existing monopole for T-Mobile in accordance with the Telecommunications Industry Association / Electronic Industry Association, TIA/EIA-222-F, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." The TIA/EIA standard was developed by professional engineers experienced in the design of communication structures.

Pole History:

The monopole was manufactured by Rohn Industries in 1991 per job number 44820TT, and Paul J. Ford and Company job number 20501-0701. The monopole was originally designed in accordance with TIA/EIA-222-F for an 85 mph design wind for the following antenna loading:

Elevation	Description
180'	(12) Swedcom ALP-9212-N + (4) Celwave PD220 12' Low Profile Platform
168'	(12) Swedcom ALP-9212-N 12' Low Profile Platform
158'	(12) Swedcom ALP-9212-N 12' Low Profile Platform
148'	(12) Swedcom ALP-9212-N 12' Low Profile Platform
138'	(12) Swedcom ALP-9212-N 12' Low Profile Platform
128'	(12) Swedcom ALP-9212-N 12' Low Profile Platform

Structural Analysis:

Our analysis was completed according to the recommendations of the TIA/EIA-222-F 1996. This standard recommends a minimum design wind velocity of 85 mph (no ice) for New Haven County. If ice accumulation is considered, the TIA/EIA standard allows the design wind velocity reduced by 25% in conjunction with ½" radial ice. Our analysis was completed in compliance with the minimum wind requirements under the following load cases:

85 mph Basic Wind Velocity without ice
74 mph Basic Wind Velocity with 1/2" radial ice
50 mph (Operational) Basic Wind Velocity without ice

Existing & Proposed Antenna Loading:

Our analysis was completed using the following existing and proposed antenna loading:

Status	Elevation	Description	Coax	Owner
Existing	178'	(6) EMS RR90-17-02DP (3) Decibel 776QNB120EXM 12' Low Profile Platform	(12) 1 5/8" (12) 1 5/8" + (3) 1/2"	AT&T
Proposed	148'	(9) EMS DR65-190XXDPQ + (6) PCS 1900 10' Low Profile Platform	(24) 1 5/8"	T-Mobile
Proposed	137'	(12) DB844H80 12' Low Profile Platform	(12) 1 5/8"	Nextel
Existing	128'	(12) Decibel DB980H65T2E 12' Low Profile Platform	(12) 1 5/8"	Sprint
Existing	117'	(12) Decibel DB844H90 12' Low Profile Platform	(12) 1 5/8"	Verizon

Coaxial cable for this analysis was assumed internally mounted and not exposed to the wind.

Results:

When the new antenna configuration is considered, the monopole has sufficient capacity to safely support the new loading while maintaining the minimum wind rating:

Member	Elevation	Actual Stress	Allowable Stress	Percent Capacity	
Shaft #1	174'	3.2 ksi	52.0 ksi	6.2%	☑
Shaft #2	131'	20.5 ksi	52.0 ksi	39.4%	☑
Shaft #3	89'	32.9 ksi	52.0 ksi	63.2%	☑
Shaft #4	48'	34.7 ksi	52.0 ksi	66.7%	☑
Shaft #5	0'	33.5 ksi	52.0 ksi	64.4%	☑
Base Plate	0'	37.0 ksi	60.0 ksi	61.7%	☑
Anchor Bolts	0'	43.9 ksi	66.0 ksi	66.5%	☑

The existing drilled pier foundation has sufficient capacity to support the new loading while maintaining the minimum required safety factors. ☑

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Conclusion:

The existing monopole and foundation have sufficient capacity to support the new antenna loading while meeting the minimum wind requirements of this analysis.

If you have any questions concerning our analysis, or if we can be of further service to you, please feel free to contact us at (614) 221-6679.

Sincerely,

Paul J. Ford and Company

Kurt J. Swarts, P.E.
Project Manager

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES BY PAUL J. FORD AND COMPANY

1. Paul J. Ford and Company has not made a field inspection to verify the monopole dimensions or the antenna/coax loading. If the existing conditions are not as represented on these sketches, we should be contacted immediately to reevaluate any conclusions stated in this report.

2. No allowance was made for any damaged, missing, or rusted monopole parts. The analysis of this pole assumes that no physical deterioration has occurred in any of the structural components of the pole and that all the pole members have the same capacity as the day the pole was erected.

3. It is not possible to have all of the very detailed information to perform a thorough analysis of every structural sub-component of an existing monopole. The structural analysis provided by Paul J. Ford and Company verifies the adequacy of the main structural members of the monopole. Paul J. Ford and Company provides a limited scope of service in that we cannot verify the adequacy of every weld, plate, connection detail, etc.

4. It is the owner's responsibility to determine the amount of ice accumulation, if any, that shall be used in the structural analysis.

5. The monopole has been analyzed according to the minimum basic design wind velocity recommended by the Electronics Industry Association Standard ANSI/EIA-222-F. If the owner or local or state agencies require a higher design wind velocity, Paul J. Ford and Company should be made aware of this requirement.

6. The enclosed sketches are a schematic representation of the monopole we have analyzed. If any material is fabricated from these sketches, the fabricator shall be responsible for field verifying the existing conditions and for proper fit and clearance in the field.

7. Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

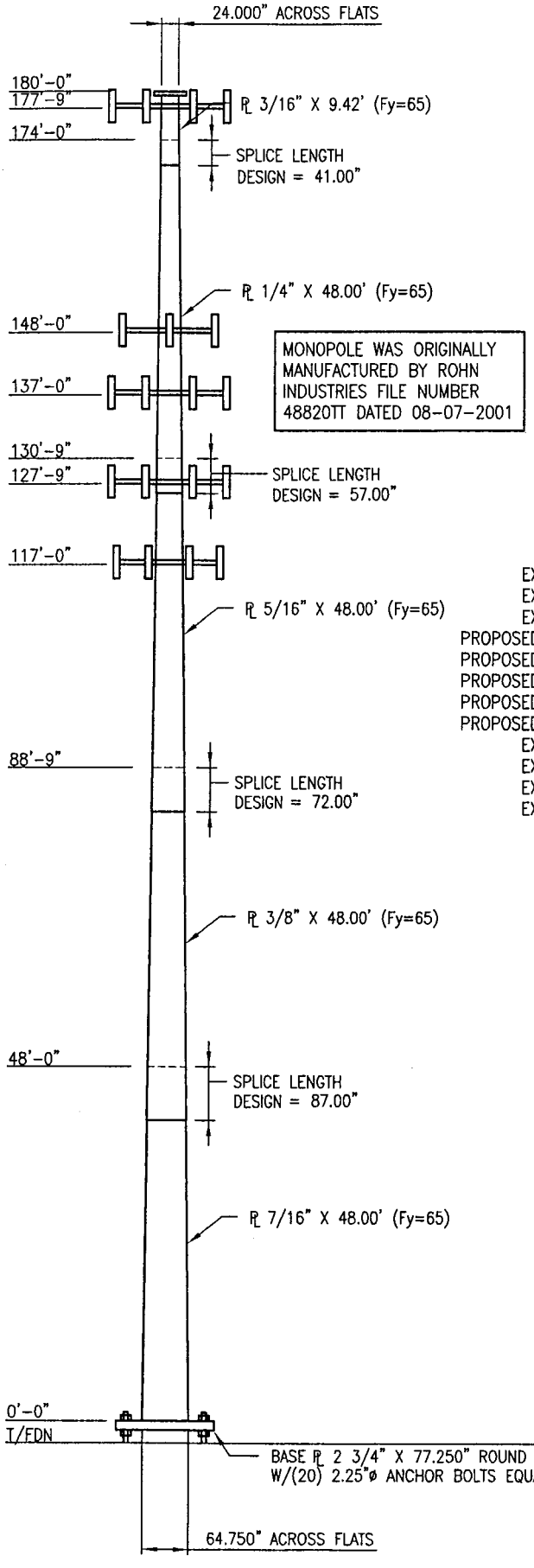
8. Installation of new hand hole ports and/or cable access ports will not reduce the structural capacity of the monopole shaft, if the hand hole frames and/or cable access ports are properly designed and installed in accordance to proper procedures. Paul J. Ford and Company recommends that new hand holes and/or cable access port hole frames be purchased from the original pole manufacturer. The new hand hole and/or cable access frames shall be installed per the original manufacturer's installation procedures. Paul J. Ford and Company will design and provide installation procedures for new hand holes and/or cable access ports if required, as an additional scope of services.

Omnipoint Communications, Inc.

100 Filley Street, Bloomfield, CT 06002

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 1500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com

IF EXISTING CONDITIONS ARE NOT AS REPRESENTED ON THESE SKETCHES, PJF SHOULD BE CONTACTED IMMEDIATELY TO RE-EVALUATE THE STRUCTURAL ADEQUACY OF THE POLE.



JOB DATA			
Page 1 of 2		Job No.	31205-0019
By	KJS	Design No.	ROHN #48820TT
Chk'd By	KJS	Date	06-15-2005
		Rev. No. 1 Rev. Date	07-12-2005
Pole	180-FT MONOPOLE		
Site	CT-11-720A: ORANGE, CT		
Owner	AT&T		
Ref. No.	20501-0701		
Design	85 MPH / 74 MPH + 1/2" RADIAL ICE ACCORDING TO TIA/EIA-222-F 1996		

PLEASE NOTE: THE MAXIMUM WIND RATING FOR THIS MONOPOLE IS 103 MPH.

LOAD CASES		
CASE 1	85 MPH WITH NO ICE	DESIGN WIND
CASE 2	74 MPH WITH 1/2" RADIAL ICE	REDUCED WIND WITH ICE
CASE 3	50 MPH WITH NO ICE	OPERATIONAL WIND

POLE SPECIFICATIONS	
Pole Shape Type:	18-SIDED POLYGON
Taper:	0.238889 IN/FT
Shaft Steel:	ASTM A572 GRADE 65
Base PL Steel:	ASTM A633 GR. E (60 KSI)
Anchor Bolts:	2 1/4"ø #18J ASTM A615 GRADE 75

ANTENNA LIST				
	No.	Elev.	Description	
	-	TOP	3/4" LIGHTNING ROD	
EX	1-3	177.75	(3) 776QNB120EXM W/ (12) 1 5/8" & (3) 1/2" COAX	<AT&T>
EX	4-9	177.75	(6) EMS RR90-17-02DP W/ (12) 1 5/8" COAX	<AT&T>
EX	-	177.75	12' LOW PROFILE PLATFORM	
PROPOSED	10-18	148.00	(9) EMS DR65-19-XXDPQ W/ (24) 1 5/8" COAX	<T-MOBILE>
PROPOSED	19-24	148.00	(6) PCS 1900	<T-MOBILE>
PROPOSED	-	148.00	10' LOW PROFILE PLATFORM	
PROPOSED	25-36	137.00	(12) DB844H80	<NEXTEL>
PROPOSED	-	137.00	12' LOW PROFILE PLATFORM	
EX	37-48	127.75	(12) DECIBEL DB980H65T2E W/ (12) 1 5/8" COAX	<SPRINT>
EX	-	127.75	12' LOW PROFILE PLATFORM	
EX	48-60	117.00	(12) DB844H90 W/ (12) 1 5/8" COAX	<VERIZON>
EX	-	117.00	12' LOW PROFILE PLATFORM	

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

Elevation	85 MPH WIND		50 MPH WIND	
	Lateral Deflection (Inches)	Rotation (sway) (degrees)	Lateral Deflection (Inches)	Rotation (sway) (degrees)
TOP	91.8	4.341	31.7	1.502

SHAFT SECTION DATA					
Shaft Section	Section Length (feet)	Plate Thickness (in.)	Lap Splice (in.)	Diameter Across Flats (inches) @ Top	@ Bottom
1	9.42	0.1875	41.00	24.000	26.250
2	48.00	0.2500	57.00	25.058	36.525
3	48.00	0.3125	72.00	34.890	46.357
4	48.00	0.3750	87.00	44.299	55.765
5	48.00	0.4375		53.283	64.750

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES

UNFACTORED BASE REACTIONS

MOMENT =	3888 ft-kips
SHEAR =	33 kips
AXIAL =	51 kips

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Omnipoint Communications, Inc.
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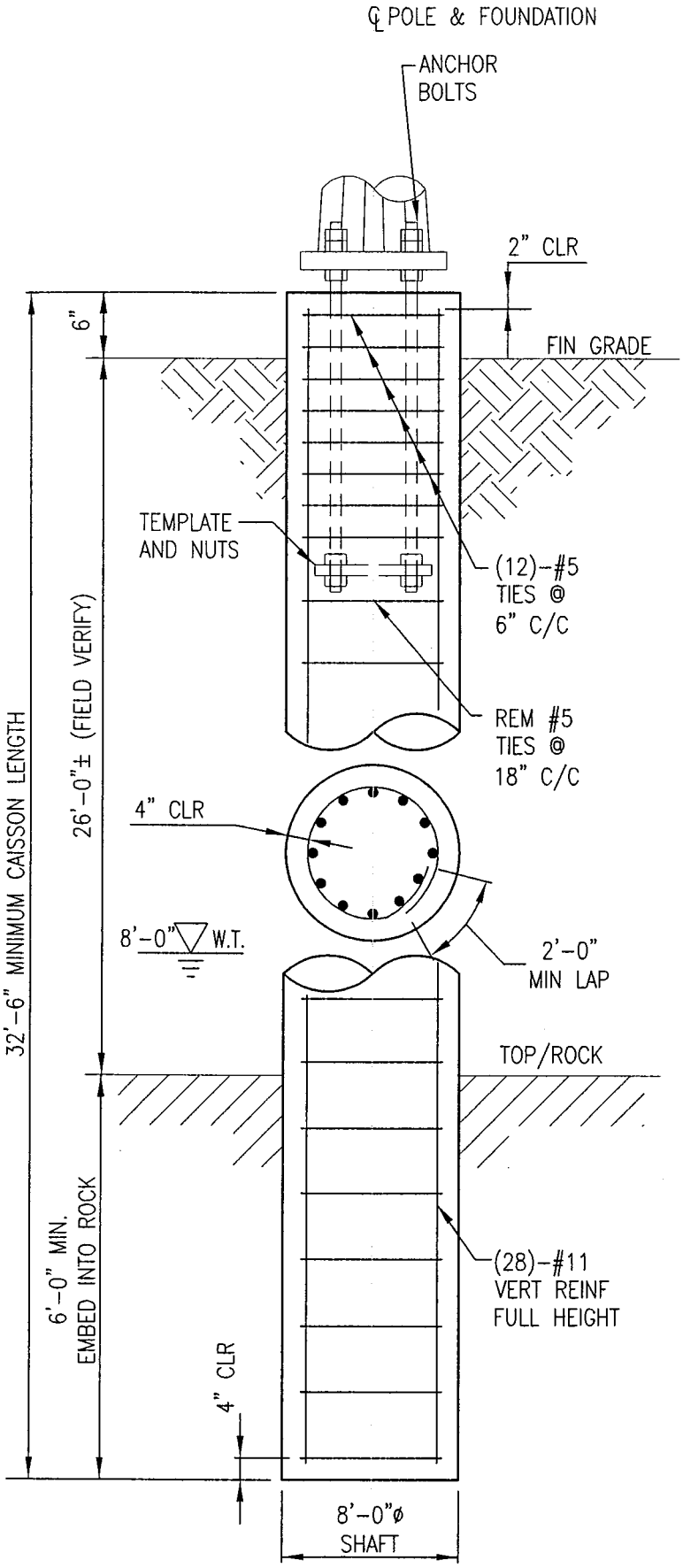

JOB DATA			
Page 2 of 2		Job No.	31205-0019
By	KJS	Design No.	ROHN #48820TT
Chk'd By	KJS	Date	06-15-2005
		Rev. No. 1 Rev. Date	07-12-2005
Pole	180-FT MONOPOLE		
Site	CT-11-720A: ORANGE, CT		
Owner	AT&T		
Ref. No.	20501-0701		
Design	85 MPH / 74 MPH + 1/2" RADIAL ICE ACCORDING TO TIA/EIA-222-F 1996		

NOTES:

1. ALL CONCRETE ASSUMED TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. CONCRETE SHALL BE AIR ENTRAINED (6±1.5%).

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

3. SEE PAGE 1 FOR ANCHOR BOLT QUANTITY, SIZE, LENGTH, AND BOLT CIRCLE.

4. FOUNDATION ANALYSIS IS BASED UPON GEOTECHNICAL EXPLORATION REPORT
PREPARED BY: CLARENCE WELTI ASSOC.
REPORT NO.: 2014895605
DATED: 06-07-2001

5. THE FOUNDATION WAS ANALYZED USING THE FOLLOWING SERVICE LOADS:
MOMENT: 3888 FT-KIPS
SHEAR: 33 KIPS
AXIAL: 51 KIPS
THE EXISTING FOUNDATION HAS SUFFICIENT CAPACITY TO SAFELY SUPPORT THE NEW LOADING.

6. ORIGINAL FOUNDATION DESIGN COMPLETED BY PAUL J. FORD & CO., PER PJF JOB #20501-0701 DATED 08-27-2001. ANALYSIS ASSUMES THE AS BUILT CONDITION OF THE FOUNDATION IS PER THE ORIGINAL DESIGN DRAWINGS. IF AS BUILT CONDITIONS ARE NOT AS SHOWN ON THIS SKETCH, PAUL J. FORD & CO. SHALL BE NOTIFIED SO THAT THE EXISTING CONDITION OF THE FOUNDATION MAY BE RE-EVALUATED.

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EXISTING DRILLED PIER FOUNDATION

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Jul 12, 2005 - 9:48:55 am
(c) 1993 to 2000 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

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.....: 180.00 ft
Top Diameter.....: 24.000 in
Bottom Diameter.....: 64.750 in
Pole Shape.....: 18-Sided Polygon
Splice Joint Type.....: Taper shaft - Slip Joint
Shaft Taper.....: 0.238889 (in/ft)
Shaft Steel Weight.....: 33.903 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.	9.417	0.18750	65	24.000	26.250	41.00
2.	48.000	0.25000	65	25.058	36.525	57.00
3.	48.000	0.31250	65	34.890	46.357	72.00
4.	48.000	0.37500	65	44.299	55.765	87.00
5.	48.000	0.43750	65	53.283	64.750	

POLE SHAFT SECTION MAXIMUM FORCES AND MOMENTS:

				At Base of Section				Max. Ratio
Shaft Section Number	Wind Load No.	Wind Speed (mph)	Radial Ice (in)	Sect. Elev. (ft)	Axial Load (kips)	Horiz. Shear (kips)	Bending Moment (ft-kips)	Actual/ Allowable [Ftot/Fb]
1.	1	85.0	0.00	174.00	2.330	5.122	19.736	0.0623
2.	1	85.0	0.00	130.75	10.357	14.696	402.877	0.3942
3.	1	85.0	0.00	88.75	21.416	23.946	1312.548	0.6322
4.	1	85.0	0.00	48.00	34.073	28.134	2405.381	0.6669
5.	1	85.0	0.00	0.00	51.019	32.916	3888.023	0.6439
>> MAXIMUM BASE REACTIONS :					51.019	32.916	3888.023 <<	

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.	85.0	0.00	Top	180.00	91.776	4.341	
2.	73.6	0.50	Top	180.00	75.729	3.590	
3.	50.0	0.00	Top	180.00	31.723	1.502	

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Jul 12, 2005 - 9:49:01 am
(c) 1993 to 2000 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

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.....: 180.00 ft
Top Diameter.....: 24.000 in
Bottom Diameter.....: 64.750 in
Pole Shape.....: 18-Sided Polygon
Splice Joint Type.....: Taper shaft - Slip Joint
Shaft Taper.....: 0.238889 (in/ft)
Shaft Steel Weight.....: 33.903 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.	9.417	0.18750	65	24.000	26.250	41.00
2.	48.000	0.25000	65	25.058	36.525	57.00
3.	48.000	0.31250	65	34.890	46.357	72.00
4.	48.000	0.37500	65	44.299	55.765	87.00
5.	48.000	0.43750	65	53.283	64.750	

POLE SHAFT SECTION MAXIMUM FORCES AND MOMENTS:

				At Base of Section				Max. Ratio
Shaft Section Number	Wind Load No.	Wind Speed (mph)	Radial Ice (in)	Sect. Elev. (ft)	Axial Load (kips)	Horiz. Shear (kips)	Bending Moment (ft-kips)	Actual/ Allowable [Ftot/Fb]
1.	1	85.0	0.00	174.00	2.330	5.122	19.736	0.0623
2.	1	85.0	0.00	130.75	10.357	14.696	402.877	0.3942
3.	1	85.0	0.00	88.75	21.416	23.946	1312.548	0.6322
4.	1	85.0	0.00	48.00	34.073	28.134	2405.381	0.6669
5.	1	85.0	0.00	0.00	51.019	32.916	3888.023	0.6439
>> MAXIMUM BASE REACTIONS :					51.019	32.916	3888.023 <<	

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.	85.0	0.00	Top	180.00	91.776	4.341	

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Jul 12, 2005 - 9:49:01 am

Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

Pole Height : 180 ft
Pole Shape : 18-Sided Polygon
Pole Type : Taper shaft - Slip Joint
Pole Taper : 0.238889 (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.	180.00	170.58	9.417	0.18750	65	24.000	26.250	41.00
2.	174.00	126.00	48.000	0.25000	65	25.058	36.525	57.00
3.	130.75	82.75	48.000	0.31250	65	34.890	46.357	72.00
4.	88.75	40.75	48.000	0.37500	65	44.299	55.765	87.00
5.	48.00	0.00	48.000	0.43750	65	53.283	64.750	

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	0.476	@Top	180.0	24.000	0.1875	20.81	128.00	14.17	1014.9
		@Splice	174.0	25.433		22.15	135.64	15.02	1209.4
		@Bot	170.6	26.250		22.92	140.00	15.51	1330.5
2	3.958	@Top	174.0	25.058	0.2500	15.91	100.23	19.68	1530.2
		@Splice	130.8	35.390		23.20	141.56	27.88	4348.6
		@Bot	126.0	36.525		24.00	146.10	28.78	4783.7
3	6.530	@Top	130.8	34.890	0.3125	17.92	111.65	34.30	5179.1
		@Splice	88.8	44.924		23.58	143.76	44.25	11121.8
		@Bot	82.8	46.357		24.39	148.34	45.67	12228.7
4	9.653	@Top	88.8	44.299	0.3750	19.07	118.13	52.28	12738.9
		@Splice	48.0	54.033		23.64	144.09	63.86	23224.2
		@Bot	40.8	55.765		24.46	148.71	65.93	25546.4
5	13.286	@Top	48.0	53.283	0.4375	19.71	121.79	73.38	25883.1
		@Bot	0.0	64.750		24.33	148.00	89.30	46651.3

Total Shaft Steel Weight = 33.903 kips

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Jul 12, 2005 - 9:49:01 am
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Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

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	180.000	24.000	0.18750	20.81	128.00	14.17	1014.9
2.	<arm [1]>	180.000	24.000	0.18750	20.81	128.00	14.17	1014.9
3.	<arm [2]>	177.750	24.538	0.18750	21.31	130.87	14.49	1085.2
4.	<arm [3]>	177.750	24.538	0.18750	21.31	130.87	14.49	1085.2
5.	<arm [4]>	177.750	24.538	0.18750	21.31	130.87	14.49	1085.2
6.	top sec(2)	174.000	25.433	0.18750	22.15	135.64	15.02	1209.4
7.	bot sec(1)	170.583	25.875	0.25000	16.49	103.50	20.33	1686.3
8.		170.000	26.014	0.25000	16.58	104.06	20.44	1713.9
9.		160.000	28.403	0.25000	18.27	113.61	22.34	2236.2
10.		150.000	30.792	0.25000	19.95	123.17	24.23	2855.1
11.	<arm [5]>	148.000	31.269	0.25000	20.29	125.08	24.61	2991.2
12.	<arm [6]>	148.000	31.269	0.25000	20.29	125.08	24.61	2991.2
13.	<arm [7]>	148.000	31.269	0.25000	20.29	125.08	24.61	2991.2
14.		140.000	33.181	0.25000	21.64	132.72	26.13	3578.8
15.	<arm [8]>	137.000	33.897	0.25000	22.14	135.59	26.70	3817.6
16.	<arm [9]>	137.000	33.897	0.25000	22.14	135.59	26.70	3817.6
17.	top sec(3)	130.750	35.390	0.25000	23.20	141.56	27.88	4348.6
18.		130.000	35.069	0.31250	18.02	112.22	34.47	5260.0
19.	<arm [10]>	127.750	35.607	0.31250	18.33	113.94	35.01	5507.8
20.	<arm [11]>	127.750	35.607	0.31250	18.33	113.94	35.01	5507.8
21.	bot sec(2)	126.000	36.525	0.31250	18.85	116.88	35.92	5948.9
22.		120.000	37.458	0.31250	19.37	119.87	36.84	6420.8
23.	<arm [12]>	117.000	38.175	0.31250	19.78	122.16	37.55	6799.6
24.	<arm [13]>	117.000	38.175	0.31250	19.78	122.16	37.55	6799.6
25.		110.000	39.847	0.31250	20.72	127.51	39.21	7740.9
26.		100.000	42.236	0.31250	22.07	135.16	41.58	9230.5
27.		90.000	44.625	0.31250	23.42	142.80	43.95	10900.0
28.	top sec(4)	88.750	44.924	0.31250	23.58	143.76	44.25	11121.8
29.	bot sec(3)	82.750	45.732	0.37500	19.74	121.95	53.98	14027.1
30.		80.000	46.389	0.37500	20.05	123.70	54.77	14645.5
31.		70.000	48.778	0.37500	21.17	130.07	57.61	17046.9
32.		60.000	51.167	0.37500	22.30	136.44	60.45	19697.4
33.		50.000	53.555	0.37500	23.42	142.81	63.30	22609.3
34.	top sec(5)	48.000	54.033	0.37500	23.64	144.09	63.86	23224.2
35.	bot sec(4)	40.750	55.015	0.43750	20.41	125.75	75.79	28512.1
36.		40.000	55.194	0.43750	20.48	126.16	76.03	28793.8
37.		30.000	57.583	0.43750	21.44	131.62	79.35	32729.0
38.		20.000	59.972	0.43750	22.41	137.08	82.67	37007.4
39.		10.000	62.361	0.43750	23.37	142.54	85.99	41643.3
40.	base	0.000	64.750	0.43750	24.33	148.00	89.30	46651.3

Total Number of Antennas / Arms = 13

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Jul 12, 2005 - 9:49:01 am
(c) 1993 to 2000 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

ANTENNA AND ARM PROPERTIES AND LOAD DATA:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 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]	180.000	183.000	2.0000	No Ice:	1.00	50.99	108.00
Description: 3/4" Lightning Rod							
		[Gh] 1.69	[Kz] 1,631	No Ice:	[qz] (psf) 30.174	[qz][Gh] (psf) 50.994	
[2]	177.750	177.750	0.0000	No Ice:	50.81	2569.54	330.00
Description: (3) 776QNB120EXM							
		[Gh] 1.69	[Kz] 1.618	No Ice:	[qz] (psf) 29.924	[qz][Gh] (psf) 50.572	
[3]	177.750	177.750	0.0000	No Ice:	18.85	953.27	108.00
Description: (6) EMS RR90-17-02DP							
		[Gh] 1.69	[Kz] 1.618	No Ice:	[qz] (psf) 29.924	[qz][Gh] (psf) 50.572	
[4]	177.750	177.750	2.0000	No Ice:	21.22	1073.13	1100.00
Description: 12' Low Profile Platform							
		[Gh] 1.69	[Kz] 1.618	No Ice:	[qz] (psf) 29.924	[qz][Gh] (psf) 50.572	
[5]	148.000	148.000	0.0000	No Ice:	54.32	2606.98	288.00
Description: (9) EMS DR65-19-XXDPQ							
		[Gh] 1.69	[Kz] 1.535	No Ice:	[qz] (psf) 28.398	[qz][Gh] (psf) 47.993	
[6]	148.000	148.000	0.0000	No Ice:	3.78	181.41	108.00
Description: (6) PCS 1900							
		[Gh] 1.69	[Kz] 1.535	No Ice:	[qz] (psf) 28.398	[qz][Gh] (psf) 47.993	
[7]	148.000	148.000	2.0000	No Ice:	13.84	664.22	1200.00
Description: 10' Low Profile Platform							
		[Gh] 1.69	[Kz] 1.535	No Ice:	[qz] (psf) 28.398	[qz][Gh] (psf) 47.993	
[8]	137.000	137.000	2.0000	No Ice:	38.54	1809.28	180.00
Description: (12) Decibel DB844H80 Panel							

					[qz]	[qz][Gh]	
		[Gh]	[Kz]		(psf)	(psf)	
		1.69	1.502	No Ice:	27.778	46.946	
[9]	137.000	137.000	2.0000	No Ice:	19.07	895.25	1100.00
	Description: 12' Low Profile Platform						
					[qz]	[qz][Gh]	
		[Gh]	[Kz]		(psf)	(psf)	
		1.69	1.502	No Ice:	27.778	46.946	
[10]	127.750	127.750	2.0000	No Ice:	36.09	1660.76	108.00
	Description: (12) Decibel DB980H65T2E						
					[qz]	[qz][Gh]	
		[Gh]	[Kz]		(psf)	(psf)	
		1.69	1.472	No Ice:	27.229	46.017	
[11]	127.750	127.750	2.0000	No Ice:	20.68	951.64	1100.00
	Description: 12' Low Profile Platform						
					[qz]	[qz][Gh]	
		[Gh]	[Kz]		(psf)	(psf)	
		1.69	1.472	No Ice:	27.229	46.017	
[12]	117.000	117.000	0.0000	No Ice:	37.90	1700.80	228.00
	Description: (12) DB844H90						
					[qz]	[qz][Gh]	
		[Gh]	[Kz]		(psf)	(psf)	
		1.69	1.436	No Ice:	26.554	44.876	
[13]	117.000	117.000	2.0000	No Ice:	20.82	934.32	1100.00
	Description: 12' Low Profile Platform						
					[qz]	[qz][Gh]	
		[Gh]	[Kz]		(psf)	(psf)	
		1.69	1.436	No Ice:	26.554	44.876	

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Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

POLE SHAFT LOADS:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 mph

Design Loads per TIA/EIA-222-F Standard; Gust Factor ..... Gh = 1.69
Pole DL Overload Factor = 1.3
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 [Ae] (sf)	Segment [Cf Ae] (sf)	Segment Wind Force (lbs)	Shaft Segment Weight (lbs)
180.000	1.624	30.03	216.62	0.650	0.000	0.000	0.00	0.00
180.000	1.624	30.03	216.62	0.650	2.010	1.306	66.31	63.00
177.750	1.618	29.92	221.07	0.650	2.540	1.651	83.65	79.64
177.750	1.618	29.92	221.07	0.650	0.000	0.000	0.00	0.00
177.750	1.618	29.92	221.07	0.650	1.539	1.000	50.60	48.25
174.000	1.608	29.74	228.45	0.650	8.383	5.449	274.54	493.57
170.583	1.599	29.57	231.75	0.650	6.414	4.169	208.83	267.52
170.000	1.597	29.55	232.89	0.650	2.178	1.416	70.68	90.85
160.000	1.570	29.04	252.08	0.650	22.873	14.867	735.29	954.62
150.000	1.541	28.51	270.78	0.650	24.863	16.161	785.09	1038.47
148.000	1.535	28.40	274.45	0.650	2.596	1.687	81.13	108.46
148.000	1.535	28.40	274.45	0.650	0.000	0.000	0.00	0.00
148.000	1.535	28.40	274.45	0.650	2.616	1.700	81.60	109.30
140.000	1.511	27.95	288.92	0.650	21.643	14.068	669.15	904.57
137.000	1.502	27.78	294.25	0.650	5.610	3.646	171.71	234.53
137.000	1.502	27.78	294.25	0.650	2.835	1.843	86.50	118.52
130.750	1.482	27.41	305.17	0.650	17.411	11.317	527.30	1323.41
130.000	1.480	27.37	302.15	0.650	2.932	1.906	88.15	153.02
127.750	1.472	27.23	306.02	0.650	3.693	2.401	110.74	192.75
127.750	1.472	27.23	306.02	0.650	2.231	1.450	66.73	116.44
126.000	1.466	27.12	313.29	0.650	6.046	3.930	180.33	315.57
120.000	1.446	26.75	319.07	0.650	18.490	12.019	546.44	965.29
117.000	1.436	26.55	324.00	0.650	6.323	4.110	185.10	330.15
117.000	1.436	26.55	324.00	0.650	3.191	2.074	93.09	166.65
110.000	1.411	26.09	335.22	0.650	22.896	14.882	661.19	1195.87
100.000	1.373	25.39	350.51	0.650	34.400	22.360	971.36	1797.48
90.000	1.332	24.64	364.81	0.650	36.391	23.654	998.44	1902.29
88.750	1.327	24.54	366.51	0.650	3.729	2.424	100.54	1388.22
82.750	1.300	24.05	369.40	0.650	22.597	14.688	602.52	1415.85
80.000	1.288	23.82	372.90	0.650	11.567	7.519	303.75	724.90
70.000	1.240	22.93	384.69	0.650	39.852	25.904	1021.48	2498.10
60.000	1.186	21.94	394.74	0.650	41.843	27.198	1029.17	2623.87
50.000	1.126	20.83	402.55	0.650	43.833	28.492	1027.37	2749.65
48.000	1.113	20.59	403.78	0.650	8.974	5.833	203.54	2644.31
40.750	1.062	19.65	401.61	0.650	31.709	20.611	699.09	2318.46
40.000	1.057	19.54	401.85	0.650	4.609	2.996	98.95	337.08
30.000	1.000	18.50	407.88	0.650	47.190	30.673	975.27	3451.49
20.000	1.000	18.50	424.80	0.650	49.180	31.967	999.24	3598.23
10.000	1.000	18.50	441.72	0.650	51.171	33.261	1039.69	3744.96

```
 1.000    1.000    18.50  456.95  0.650    47.756    31.042     970.30    3495.93

                                          Summation TOTAL =   16864.86   43961.24
---------( END LOAD CASE 1  --  POLE SHAFT LOADS )-------------------------------
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Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

POLE SHAFT SEGMENTS -- AXIAL AND SHEAR FORCES:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 mph

Tube Segment No.	Segment Elevation (ft)	Axial Load (kips)	Cumulative Axial Load (kips)	Horiz. Shear (kips)	Cumulative Horiz. Shear (kips)
1.	180.000	0.000	0.000	0.000	0.000
2.	180.000	0.171	0.171	0.117	0.117
3.	177.750	0.410	0.581	2.653	2.770
4.	177.750	0.108	0.689	0.953	3.724
5.	177.750	1.148	1.837	1.124	4.847
6.	174.000	0.494	2.330	0.275	5.122
7.	170.583	0.268	2.598	0.209	5.331
8.	170.000	0.091	2.689	0.071	5.402
9.	160.000	0.955	3.643	0.735	6.137
10.	150.000	1.038	4.682	0.785	6.922
11.	148.000	0.396	5.078	2.688	9.610
12.	148.000	0.108	5.186	0.181	9.791
13.	148.000	1.309	6.496	0.746	10.537
14.	140.000	0.905	7.400	0.669	11.206
15.	137.000	0.415	7.815	1.981	13.187
16.	137.000	1.219	9.033	0.982	14.169
17.	130.750	1.323	10.357	0.527	14.696
18.	130.000	0.153	10.510	0.088	14.785
19.	127.750	0.301	10.810	1.771	16.556
20.	127.750	1.216	12.027	1.018	17.574
21.	126.000	0.316	12.342	0.180	17.755
22.	120.000	0.965	13.308	0.546	18.301
23.	117.000	0.558	13.866	1.886	20.187
24.	117.000	1.267	15.133	1.027	21.215
25.	110.000	1.196	16.328	0.661	21.876
26.	100.000	1.797	18.126	0.971	22.847
27.	90.000	1.902	20.028	0.998	23.846
28.	88.750	1.388	21.416	0.101	23.946
29.	82.750	1.416	22.832	0.603	24.549
30.	80.000	0.725	23.557	0.304	24.852
31.	70.000	2.498	26.055	1.021	25.874
32.	60.000	2.624	28.679	1.029	26.903
33.	50.000	2.750	31.429	1.027	27.930
34.	48.000	2.644	34.073	0.204	28.134
35.	40.750	2.318	36.392	0.699	28.833
36.	40.000	0.337	36.729	0.099	28.932
37.	30.000	3.451	40.180	0.975	29.907
38.	20.000	3.598	43.778	0.999	30.906
39.	10.000	3.745	47.523	1.040	31.946
40.	1.000	3.496	51.019	0.970	32.916
Base	0.000		51.019		32.916

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

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Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

POLE SHAFT SEGMENTS -- MOMENTS and DEFLECTIONS:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 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)
180.00	0.153	0.000	0.000	0.153	88.504	91.776	4.341
180.00	0.153	0.000	0.000	0.153	87.627	90.865	4.341
177.75	0.268	0.237	0.017	0.522	86.531	89.726	4.341
177.75	0.268	0.237	0.017	0.522	86.531	89.726	4.341
177.75	0.268	0.237	0.057	0.561	85.873	89.043	4.341
174.00	17.694	1.399	0.644	19.736	82.367	85.402	4.332
170.58	33.571	3.300	1.194	38.065	79.746	82.680	4.314
170.00	36.281	3.699	1.390	41.370	78.875	81.775	4.310
160.00	82.751	14.511	3.709	100.971	70.260	72.828	4.209
150.00	129.220	32.903	6.675	168.799	61.901	64.147	4.059
148.00	138.514	37.534	7.007	183.056	61.081	63.295	4.025
148.00	138.514	37.534	7.007	183.056	61.081	63.295	4.025
148.00	138.514	37.534	7.372	183.421	60.268	62.451	4.025
140.00	203.311	59.359	11.174	273.844	53.886	55.823	3.867
137.00	227.609	68.937	12.178	308.725	52.330	54.208	3.800
137.00	227.609	68.937	12.698	309.244	51.563	53.411	3.800
130.75	295.135	91.396	16.346	402.877	47.045	48.721	3.645
130.00	303.238	94.316	17.004	414.557	46.311	47.959	3.627
127.75	327.547	103.388	17.837	448.772	45.397	47.010	3.576
127.75	327.547	103.388	18.344	449.279	44.855	46.448	3.576
126.00	351.026	110.755	19.848	481.629	43.419	44.956	3.535
120.00	431.525	138.144	24.470	594.139	39.223	40.602	3.384
117.00	471.774	153.076	26.045	650.895	37.863	39.191	3.304
117.00	471.774	153.076	26.845	651.695	37.196	38.499	3.304
110.00	584.135	191.190	32.974	808.300	32.662	33.795	3.104
100.00	744.652	253.779	41.795	1040.225	26.696	27.609	2.794
90.00	905.168	326.206	50.504	1281.878	21.375	22.095	2.466
88.75	925.232	335.955	51.361	1312.548	20.881	21.583	2.424
82.75	1021.542	384.957	56.754	1463.252	18.041	18.641	2.245
80.00	1065.684	408.627	59.420	1533.731	16.702	17.255	2.163
70.00	1226.200	501.221	68.085	1795.506	12.624	13.035	1.864
60.00	1386.716	604.072	76.224	2067.012	9.151	9.442	1.565
50.00	1547.232	717.215	83.606	2348.052	6.279	6.476	1.268
48.00	1579.335	741.075	84.971	2405.381	5.777	5.957	1.209
40.75	1695.709	830.932	89.743	2616.384	4.194	4.322	1.017
40.00	1707.748	840.517	90.382	2638.647	3.990	4.112	0.997
30.00	1868.264	973.722	96.166	2938.153	2.227	2.294	0.739
20.00	2028.780	1116.742	100.621	3246.143	0.982	1.011	0.487
10.00	2189.296	1269.936	103.487	3562.719	0.244	0.251	0.240
0.00	2349.813	1433.708	104.503	3888.023	0.000	0.000	0.000

---------(END LOAD CASE 1 -- MOMENTS AND DEFLECTIONS)----------

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Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

POLE SHAFT SEGMENTS -- ACTUAL VS. ALLOWABLE STRESSES:

LOAD CASE 1: BASIC WIND VELOCITY = 85.00 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

	[---------- ACTUAL STRESSES ----------]					Allow.	Actual/
Segmnt Elev (ft)	Bending [fb] (ksi)	Axial [fa] (ksi)	Torsion [ft] (ksi)	Shear [fv] (ksi)	Combined [Ftot] (ksi)	Stress [Fb] (ksi)	Allowable [Ftot/Fb] Ratio
180.00	0.022	0.000	0.000	0.000	0.022	52.00	0.0004
180.00	0.022	0.012	0.007	0.017	0.053	52.00	0.0010
177.75	0.072	0.040	0.183	0.381	0.985	52.00	0.0189
177.75	0.072	0.048	0.249	0.513	1.324	52.00	0.0255
177.75	0.077	0.127	0.393	0.667	1.848	52.00	0.0355
174.00	2.529	0.155	0.365	0.680	3.238	52.00	0.0623
170.58	3.559	0.128	0.266	0.523	3.932	52.00	0.0756
170.00	3.826	0.132	0.263	0.527	4.187	52.00	0.0805
160.00	7.813	0.163	0.220	0.548	8.087	52.00	0.1555
150.00	11.091	0.193	0.187	0.570	11.360	52.00	0.2185
148.00	11.659	0.206	0.287	0.779	12.008	52.00	0.2309
148.00	11.659	0.211	0.294	0.794	12.018	52.00	0.2311
148.00	11.682	0.264	0.335	0.854	12.122	52.00	0.2331
140.00	15.468	0.283	0.298	0.856	15.878	52.00	0.3053
137.00	16.701	0.293	0.381	0.986	17.158	52.00	0.3300
137.00	16.729	0.338	0.428	1.059	17.261	52.00	0.3319
130.75	19.976	0.371	0.392	1.052	20.500	52.00	0.3942
130.00	16.839	0.305	0.321	0.856	17.265	52.00	0.3320
127.75	17.676	0.309	0.375	0.944	18.129	52.00	0.3486
127.75	17.696	0.344	0.411	1.002	18.205	52.00	0.3501
126.00	18.016	0.344	0.391	0.986	18.514	52.00	0.3560
120.00	21.118	0.361	0.371	0.991	21.608	52.00	0.4155
117.00	22.264	0.369	0.402	1.073	22.777	52.00	0.4380
117.00	22.291	0.403	0.434	1.127	22.855	52.00	0.4395
110.00	25.350	0.416	0.398	1.113	25.899	52.00	0.4981
100.00	28.999	0.436	0.354	1.096	29.542	52.00	0.5681
90.00	31.974	0.456	0.316	1.083	32.520	52.00	0.6254
88.75	32.301	0.484	0.312	1.080	32.873	52.00	0.6322
82.75	29.065	0.423	0.252	0.907	29.556	52.00	0.5684
80.00	29.598	0.430	0.245	0.905	30.094	52.00	0.5787
70.00	31.301	0.452	0.221	0.896	31.813	52.00	0.6118
60.00	32.713	0.474	0.201	0.888	33.241	52.00	0.6392
50.00	33.886	0.497	0.183	0.880	34.432	52.00	0.6622
48.00	34.096	0.534	0.180	0.879	34.678	52.00	0.6669
40.75	30.758	0.480	0.149	0.759	31.278	52.00	0.6015
40.00	30.816	0.483	0.148	0.759	31.338	52.00	0.6027
30.00	31.495	0.506	0.136	0.752	32.038	52.00	0.6161
20.00	32.050	0.530	0.125	0.746	32.614	52.00	0.6272
10.00	32.505	0.553	0.116	0.741	33.091	52.00	0.6364
0.00	32.878	0.571	0.107	0.735	33.481	52.00	0.6439

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Jul 12, 2005 - 10:50:12 am
(c) 1993 to 2000 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

M O N O P O L E B A S E P L A T E D E S I G N D E T A I L S

Shaft Shape .....:	18 Sided Polygon	Stress Increase ...:	1.333 Factor
Base Dia, DF ....:	64.750 Inches	Base Plate Shape ..:	Round
PT-to-PT, DP ....:	65.749 Inches		
Min Bolt Circle .:	71.999 Inches	Use Bolt Circle ...:	72.000 Inches

---

Base Reactions :	DESIGN	USER
Moment .....:	3888.02 Ft-Kips	3888.02 Ft-Kips
Axial Load .....:	51.02 Kips	51.02 Kips

Anchor Bolt Details :	DESIGN	USER
Number of Bolts .....:	16	20
Bolt Diameter .....:	2.250 Inches	2.250 Inches
Bolt Type .....:	#18J ASTM A615	#18J ASTM A615
Y-Distance .....:	9	12
Mom. of Inertia .....:	10367.71 In^4	12960.00 In^4
Bolt Tension, T .....:	162.00 Kips	129.60 Kips
Allowable Tension ...:	194.81 Kips	194.81 Kips
Bolt Compression, C .:	165.19 Kips	132.15 Kips

Base Plate Details :	DESIGN	USER
Plate Moment, MPL ...:	598.74 In-Kips	479.05 In-Kips
Bend Plane, W .....:	12.84 Inches	10.28 Inches
Plate Thickness, t ..:	2.159 Inches	2.750 Inches
Plate Width .....:	77.249 Inches	77.250 Inches
Plate Steel .....:	ASTM A633 GR. E (60 KSI)	ASTM A633 GR. E (60 KSI)
Gross Weight .....:	2869.50 Lbs	3655.10 Lbs
Net Weight .....:	2100.30 Lbs	2661.60 Lbs
Allowable Stress ....:	59.99 Ksi	59.99 Ksi
Actual Stress .....:	59.99 Ksi	36.99 Ksi
Act./Allow Ratio ....:	1.00	0.62

B A S E P L A T E D E S I G N S U M M A R Y

USE FOLLOWING SPECIFICATIONS:

Plate Thickness .....:	2.750 Inches		Number of Bolts ..:	20	
Plate Width/Diameter :	77.250 Inches	(Round)	Bolt Circle .....:	72.00	Inches
Plate Weight .....:	3.655 Kips		Bolt Diameter ....:	2.25	Inches
			Bolt Type .....:	#18J ASTM A615	

PJF_Pole (tm) - Monopole Design Program
Windows Version 3.04.0000 Tue Jul 12, 2005 - 10:08:04 am
(c) 1993 to 2000 PAUL J. FORD AND COMPANY, Columbus, Ohio

Job No.....: 31205-0019 Design No: ROHN #48820TT Engineer : KJS
Description : 180-Ft Monopole - CT-11-720A: ORANGE, CT
Design..... : 85 mph / 74 mph + 1/2" radial ice
Owner..... : AT&T Client: T-Mobile
Status..... : Final Design Revision: 1 Rev. Date : 7/12/2005

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) .....:	8.00	Compression (kips):	51.02	Friction S.F .....:	2.00
Min. Depth (ft) ...:	24.50	Horizontal (kips) :	32.92	Lateral S.F .....:	2.00
Depth Used (ft) ...:	32.00	Uplift (kips) ....:	0.00	Concrete S.F .....:	1.30
Rebar Area (in^2) .:	43.68	Moment (Ft-kips) .:	3888.0	Concrete F'c (psi) :	3000.0
Rebar Used .....:	(28)#11	Full Cohesion (ft):	24.00	Steel Cover (in) ..:	4.00
Water at (ft) .....:	8.00	Rock at (ft) .....:	26.00		

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	6.00	100.00	0.00	0.00	0.00	1.000	0.00
2	2.00	130.00	0.00	0.00	34.00	3.537	0.00
3	16.00	70.00	0.00	0.00	34.00	3.537	0.00
4	10.00	70.00	0.00	20000.00	34.00	3.537	0.00

LATERAL / MOMENT CAPACITY (CHECK) :	Min Design	Actual Design
Caisson Diameter (ft) .....:	8.00	8.00
Height Above Grade (ft) .....:	0.50	0.50
Depth Below Grade (ft) .....:	24.50	32.00
Concrete Volume (CY) .....:	46.54	60.50
Applied Moment From Loads (Working), Mwork(Ft-kip):	4485.52	4650.12
Resisting Moment From Soil (Ult), Mult(Ft-kip) ...:	9086.06	18979.69
Moment S.F. (Mult / Mwork) .....:	2.03	4.08
Applied Horizontal Load (Working), Hwork (Kips) ..:	32.92	32.92
Horizontal Soil Resistance (Ultimate), Hult (Kips):	72.82	74.81
Horizontal S.F. (Hult / Hwork) .....:	2.21	2.27
Center of Rotation (from grade) (ft) .....:	17.65	22.65
Inflection Point (Max Design Moment Location (ft) :	7.30	7.30
Maximum Factored Design Moment for Reinf. (Ft-kip):	5522.36	5522.36
Area Steel Required From Loads (in^2) .....:	27.60	27.60
ACI Minimum Steel (0.5%) (in^2) .....:	36.19	36.19
Area Reinf. Steel Provided (in^2) .....:	43.68	43.68

UPLIFT CAPACITY CHECK :		
Actual Uplift on Caisson (Kips) .....:	0.00	0.00
Allowable Uplift Capacity (Kips) .....:	109.39	135.81

COMPRESSION CAPACITY CHECK :		
Actual Compression on Caisson (Kips) .....:	51.02	51.02
Total Compression (Includes Concrete Wt.) (Kips) .:	116.37	135.21
Allowable Compression Capacity (Kips) .....:	1005.31	1005.31

CAISSON DESIGN:
USE: 8.00 ft Diameter X 32.50 ft Long (Concrete Volume = 60.50 CY)
Reinf: (28)#11 Vert, w/Closed Ties: (12)#5 @6.0", remaining ties @18.0" (ASTM A615)

EXHIBIT C

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 CT11720A
Date: June 2, 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 26 South Orange Center Rd, 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 APX15PV-15PV-2.
4) The antenna center line height is 148 ft.
5) The maximum transmit power from any sector is 1765.71 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 26 South Orange Center Rd, Orange, CT, is 0.01921 mW/cm^2. This value represents 1.921% 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 28.568%. The combined Power Density for the site is 30.489% of the M.P.E. standard.

New England Market

Connecticut

Worst Case Power Density

Site:	**CT11720A**
Site Address:	**26 South Orange Center Rd**
Town:	**Orange**
Tower Height:	**180 ft.**
Tower Style:	**Monopole**
Base Station TX output	20 W
Number of channels	8
Antenna Model	APX15PV-15PV-2
Cable Size	1 5/8 in.
Cable Length	170 ft.
Antenna Height	148.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	4.50 dB
Antenna Gain	16.9 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.9720 dB
Total Attenuation	6.4720 dB
Total EIRP per Channel	53.44 dBm
(In Watts)	220.71 W
Total EIRP per Sector	62.47 dBm
(In Watts)	1765.71 W
nsg	10.4280
Power Density (S) =	**0.019212 mW/cm^2**
T-Mobile Worst Case % MPE =	**1.9212%**

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	8.3400 %
Cingular	0.9770 %
Sprint PCS	14.8213 %
AT&T Wireless	0.0000 %
Nextel	4.4297 %
Total Excluding T-Mobile	**28.5680 %**
T-Mobile	1.9212
Total % MPE for Site	**30.4892%**

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-107-050713** – T-Mobile USA, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at South Orange Center 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

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CSC
CONNECTICUT SITING COUNCIL