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
Web Site: www.state.ct.us/csc/index.htm

February 11, 2003

Stephen J. Humes
LeBoeuf, Lamb, Greene & MacRae
Goodwin Square
225 Asylum Street
Hartford, CT 06103

RE: **TS-T-MOBILE-111-030128** - Omnipoint Communications, Inc, a subsidiary of T-Mobile USA, request for an order to approve tower sharing at a telecommunications facility located at 170 Mount Tobe Road, Plymouth, Connecticut.

Dear Attorney Humes:

At a public meeting held February 11, 2003, 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 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.

The proposed shared use is to be implemented as specified in your letter dated January 28, 2003.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz
Chairman

PBK/laf

c: Honorable David C. Mischke, Mayor, Town of Plymouth
William Kuehn, Town Planner, Town of Plymouth
Sheila Becker, SBA Inc.
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP

I:\siting\em\t-mobile\dc021103.doc

TS-T-Mobile-111-030128

LEBOEUF, LAMB, GREENE & MACRAE
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A LIMITED LIABILITY PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

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WRITER'S DIRECT DIAL:
(860) 293-3744

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January 28, 2003

RECEIVED
JAN 28 2003
CONNECTICUT
SITING COUNCIL

Mortimer A. Gelston, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Request by T-Mobile for an Order to Approve the Shared Use of a Tower Facility at 170 Mount Tobe Road, Plymouth, Connecticut

Dear Chairman Gelston and Members of the Council:

Please be advised that LeBoeuf, Lamb, Greene & MacRae, L.L.P. represents Omnipoint Communications, Inc., a subsidiary of T-Mobile USA, Inc. (hereinafter T-Mobile) in the above-referenced matter. T-Mobile is the successor to VoiceStream Wireless Corp. by virtue of a recent corporate name change and nationwide re-branding strategy. Pursuant to Connecticut General Statutes §16-50aa, T-Mobile hereby requests an order from the Connecticut Siting Council ("Council") approving T-Mobile's proposed shared use of an existing tower located at 170 Mount Tobe Road in Plymouth, Connecticut. T-Mobile proposes to install antennas on the existing tower, and the equipment associated with this facility would be located near the base of the tower within and adjacent to the existing compound (see drawing A-1 attached as part of Exhibit B). T-Mobile requests that the Council find that the proposed shared use of the tower satisfies the criteria stated in §16-50aa and issue an order approving the proposed use.

Background

Omnipoint Communications, Inc., under the brand name of T-Mobile, operates "Wideband PCS" licenses for the 2-Ghz PCS frequencies for the greater New York City area, including the entire State of Connecticut. Omnipoint is licensed by the Federal Communications Commission (FCC) to provide PCS wireless telecommunications service in Connecticut, which includes the area to be served by the proposed installation.

The tower at 170 Mount Tobe Road, Plymouth is a one hundred sixty foot (160') SBA, Inc. monopole, fabricated by Summit Manufacturing. The coordinates for the site are **41°-37'-48" N** and **73°-03'-24" W**. The tower is located west of Mount Tobe Road, approximately four thousand feet (4,000') east of Route 8 in Plymouth. The site is approximately nine hundred feet (900') east of the Thomaston town line. The tower is owned by SBA, Inc. The underlying property is owned by Susan and Walter MacDonald of 42 South Street, Plymouth. The site is in a relatively remote area and is bounded on the west and south by The Mattatuck State Forest. T-Mobile and the owner have agreed to mutually acceptable terms and conditions for the proposed shared use of this tower, and the owner has authorized T-Mobile to act on its behalf to apply for all necessary local, state and federal permits, approvals and authorizations which may be required for the proposed shared use of this facility. The tower is designed and built to hold multiple carrier antennas at multiple elevations above ground level ("AGL"). These elevations are listed on the second page of the structural analysis attached as Exhibit D and the existing and proposed elevations are also shown on the elevation drawing 3, A-1 attached as part of Exhibit B. Currently, Sprint has antennas at the one hundred fifty foot (150'-0") centerline AGL.

T-Mobile proposes to install an antenna cluster comprised of three (3) sectors, with three (3) antennas per sector for a total of nine (9) antennas. The model number for each antenna is EMS RR90-17-02 DP. The antennas would be mounted on an existing low profile triangular platform at the one hundred sixty foot (160'-0") centerline AGL. The radio transmission equipment associated with these antennas, three (3) Nortel S8000 BTS cabinets, would be located near the base of the tower on two proposed five foot by ten foot (5'-0" x 10'-0") concrete pads. The tower and all of the equipment for all existing and proposed carriers is within an existing sixty-eight foot by sixty-eight foot (68' x 68') compound, surrounded by a gated, chain link fence (shown on drawing 2, A-1, attached as part of Exhibit B). T-Mobile is leasing a fifteen foot by fifteen foot (15' x 15') area for its equipment. Access to the compound is via an access road that winds roughly half a mile off of Mount Tobe Road and into the compound. Utilities will be run from an existing utility backboard within the compound via underground conduit. T-Mobile will also place a new power and telco cabinet on one of the proposed concrete pads (shown in drawing 1, A-1, attached as part of Exhibit B). As required by the FCC regulations, T-Mobile also proposes to install Enhanced 911 (E-911) position location equipment to meet the nationwide standard for wireless communications systems, including approximately two (2) small measurement function receiver antennas on the tower and one (1) global positioning system antenna on one of the BTS equipment cabinets.

C.G.S. §16-50aa (c) (1) provides, in pertinent part, that upon written request for approval of a proposed shared use, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use." The shared use of the tower satisfies those criteria as follows:

A. **<u>Technical Feasibility</u>** - The existing tower and compound were designed to accommodate multiple carriers. A structural analysis of the tower with the proposed T-Mobile installation has been performed and is attached as Exhibit D. The proposed shared use of this tower therefore is technically feasible.

B. **Legal Feasibility** Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the proposed shared use of an existing tower facility such as the facility at Mount Tobe Road in Plymouth. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. C.G.S. § 16-50x(a) vests exclusive jurisdiction over these facilities in the Council, which shall "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under this statutory authority vested in the Council, an order by the Council approving the shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. **Environmental Feasibility** The proposed shared use would have minimal environmental effects, if any, for the following reasons:

1. The proposed installations (i.e., three (3) sectors with three (3) antennas per sector) would have an insignificant incremental visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing site. In particular, the proposed installations would not increase the height of the existing tower, and would not extend the boundaries of the existing compound area. The tower is designed to accommodate multiple carriers

2. The proposed installations would not increase the noise levels at the existing facility by six decibels or more.

3. Operation of antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the American National Standards Institute ("ANSI"). The "worst-case" exposure calculated for operation of this facility (i.e., calculated at the base of the tower, which represents the closest publicly accessible point within the broadcast field of the antennas) will be 0.01834 mW/cm^2, which is 1.834% of the Maximum Permissible Emission (MPE). The combined power density calculations from other carriers is 6.17% of the MPE. This accounts for a combined power density of 8.0043% of the MPE standard. These calculations are attached as Exhibit E.

4. The proposed installations would not require any water or sanitary facilities, or generate air emissions or discharges to water or sanitary facilities, or generate air emissions or discharges to water bodies. After construction is complete (approximately two (2) weeks), the proposed installations would not generate any traffic other than periodic maintenance visits.

The proposed use of this facility would therefore have a minimal environmental effect, if any, and is environmentally feasible.

D. **Economic Feasibility** As previously mentioned, the owner and T-Mobile have entered into a mutual agreement to share the use of the existing tower on terms agreeable to the parties. The proposed tower sharing is therefore economically feasible.

E. **Public Safety Concerns** As stated above, the existing tower is structurally capable of supporting the proposed T-Mobile antennas. The tower stands on a compound accessible from Tobe Mountain Road, via an existing access road. T-Mobile is not aware of any

public safety concerns relative to the proposed sharing of the existing tower. In fact, the provision of new or improved phone service through shared use of the existing tower, as well as the installation of E-911 equipment, will enhance the safety and welfare of area residents and the public.

Conclusion

For the reasons discussed above, the proposed shared use of the existing tower facility at Mount Tobe Road in Plymouth, Connecticut satisfies the criteria stated in C.G.S. §16-50aa, and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. T-Mobile therefore respectfully requests that the Council issue an order approving the proposed shared use of this tower.

Thank you for your consideration of this matter.

Respectfully submitted,

T-MOBILE USA, INC.

By: _____

Its Counsel
Diane W. Whitney
Stephen J. Humes

Attachments

cc: David C. Mischke, Mayor, Town of Plymouth

Exhibit A

Site Map
Mount Tobe Road
Plymouth, Connecticut

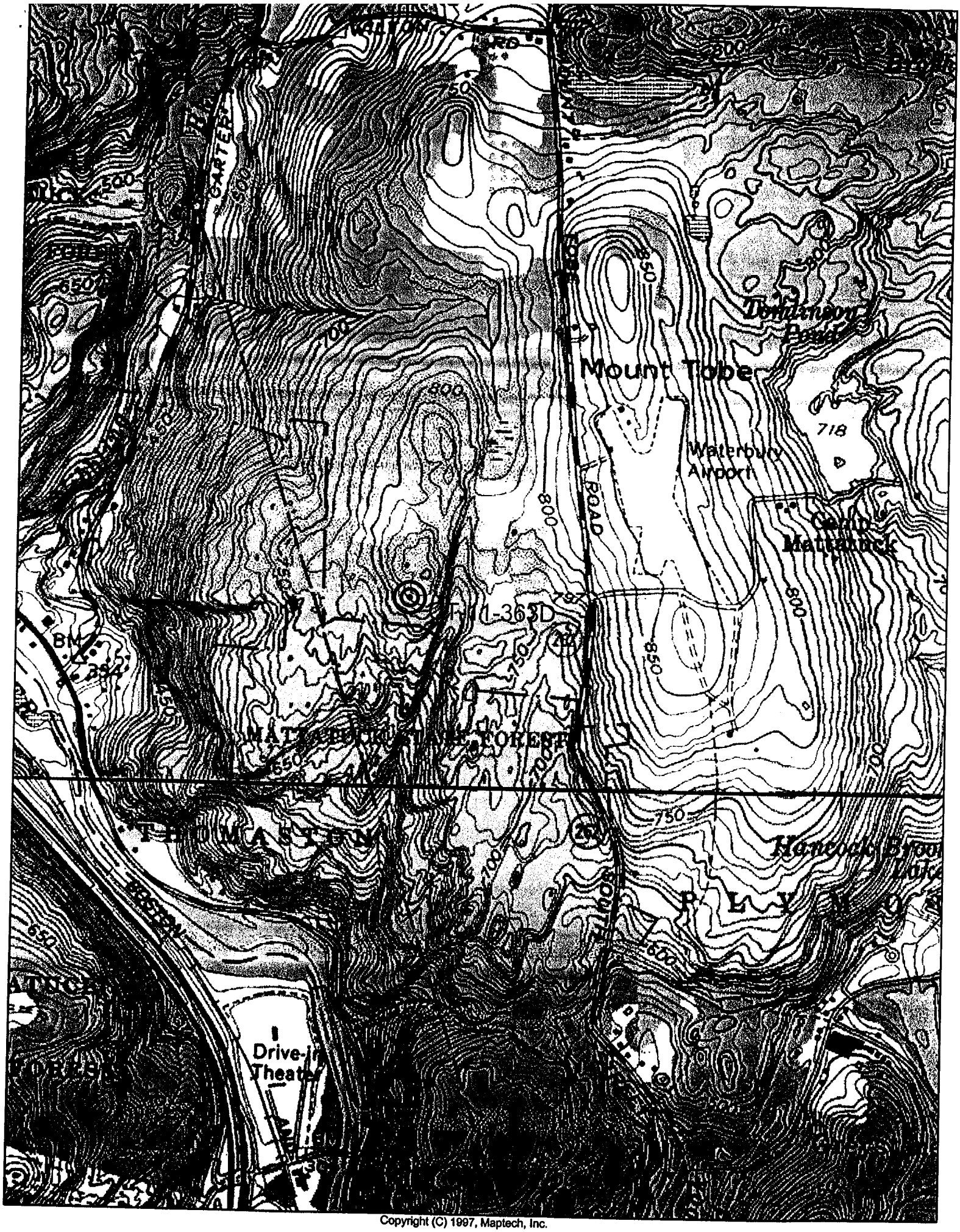


Exhibit B

Design Drawings

Mount Tobe Road
Plymouth, Connecticut

T-Mobile

SBA SOUTH PLYMOUTH

170 MOUNT TOBE ROAD

PLYMOUTH, CT 06782

CT-11-363-D

CO-LOCATE

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 T-MOBILE REPRESENTATIVE of ANY CONFLICTS, ERRORS, or OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTORS 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 MANUFACTURERS/VENDORS 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 & ADDENDUMS 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 REQD TO CONSTRUCT ALL IMPROVEMENTS as SHOWN HEREIN

11) THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS & INSPECTIONS WHICH MAY BE REQD 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.

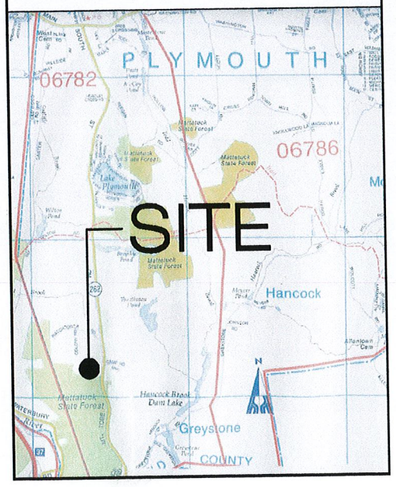
14) THE CONTRACTOR SHALL COMPLY W/ ALL OSHA REQUIREMENTS as THEY APPLY TO THIS PROJECT.

15) THE CONTRACTOR SHALL NOTIFY THE T-MOBILE 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 T-MOBILE 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 DIG-SAFE AT 1-888-DIG SAFE (1-888-344-7233) A MINIMUM of 72 HOURS PRIOR TO PLANNED ACTIVITY.

VICINITY MAP NTS



SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET & INDEX	1
A-1	SITE PLAN & ANTENNA DETAILS	1
S-1	STRUCTURAL NOTES, SECTIONS & DETAILS	1
E-1	ELEC. & GROUNDING NOTES, RISERS & DETAILS	1

DO NOT SCALE DRAWINGS

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

PROJECT SUMMARY

SITE NUMBER:	CT-11-363-D
SITE NAME:	SBA SOUTH PLYMOUTH
SITE ADDRESS:	170 MOUNT TOBE ROAD PLYMOUTH, CT 06782
ASSESSORS PARCEL NO.:	MAP: 93 BLOCK: 138 LOT: 003 VOLUME: 230 PAGE: 661
CONSTRUCTION TYPE:	CO-LOCATION
STRUCTURE OWNER:	SBA TOWERS, Inc. ONE CENTER ROAD BOCA RATON, FL 33486
PROPERTY OWNER:	SUSAN A. & WALTER T. MAC DONALD. 42 SOUTH STREET PLYMOUTH, CT 06782
APPLICANT:	OMNIPOINT COMMUNICATIONS, INC. 100 FILLEY STREET BLOOMFIELD, CT 06002

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

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
711 N. MOUNTAIN ROAD
NEWINGTON, CT. 06111
PHONE: (860)-953-4444
FAX: (860)-953-1181
www.allpointstech.com

STATE OF CONNECTICUT
SCOTT M. CHASSE
No.19728
LICENSED
PROFESSIONAL ENGINEER

APPROVALS

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

PROJECT NO: CT-11-363-D

DRAWN BY: GWA

CHECKED BY: SMC

SUBMITTALS

1	12/24/02	CONSTRUCTION FINAL: GWA
0	12/16/02	CONSTRUCTION REVIEW: GWA

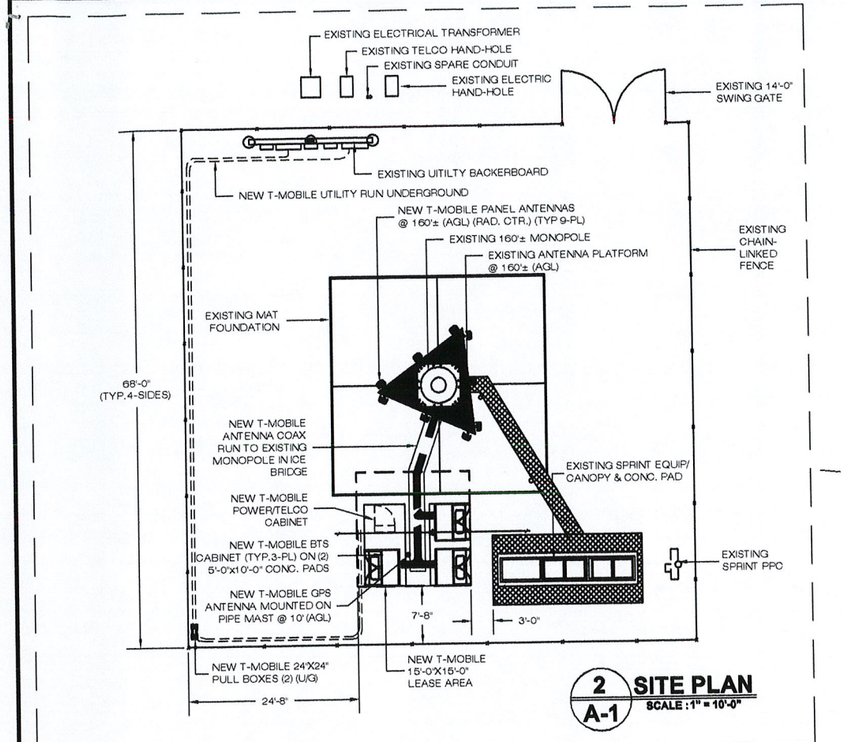
CT-11-363-D
SBA
SOUTH PLYMOUTH
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE

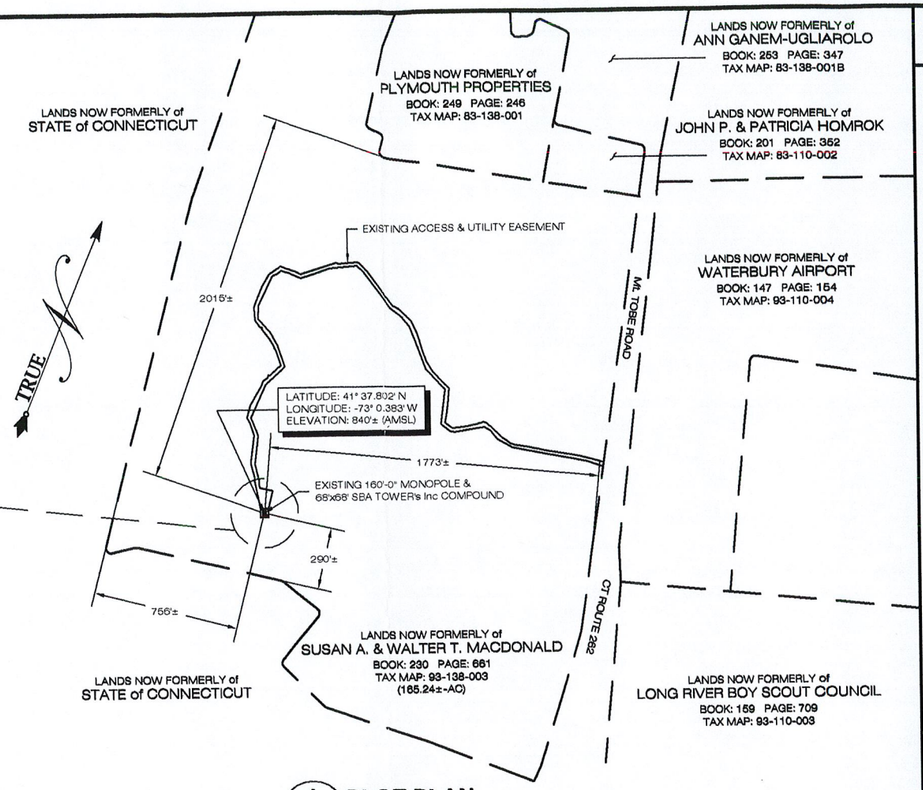
TITLE SHEET & INDEX

SHEET NUMBER

T-1

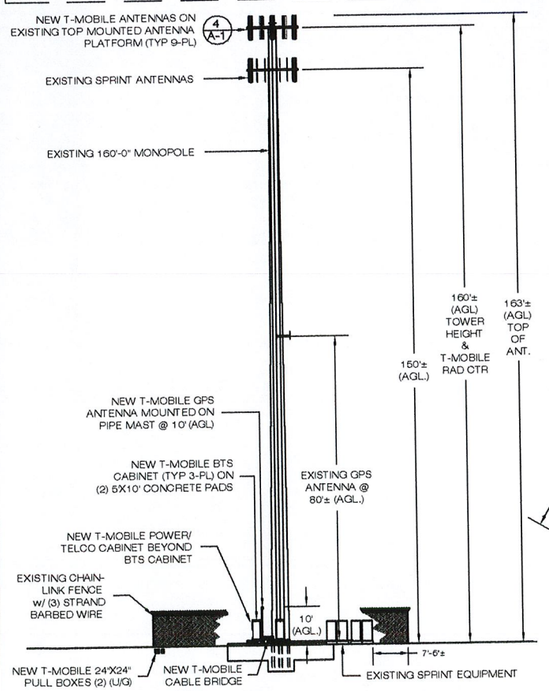


2 A-1 SITE PLAN
SCALE : 1" = 10'-0"



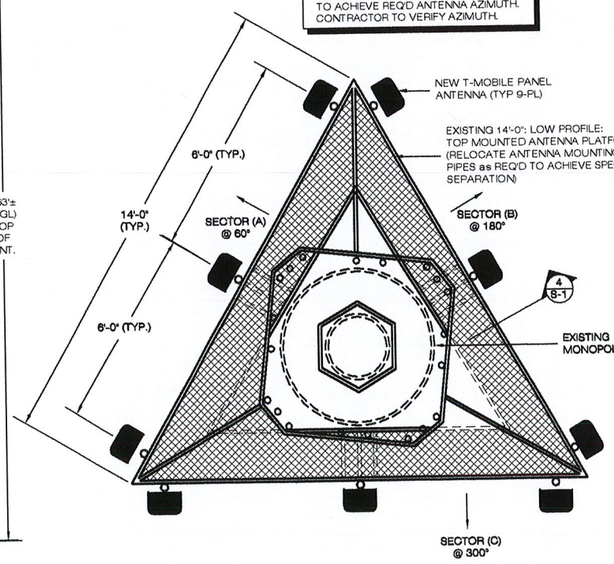
1 A-1 PLOT PLAN
SCALE : 1" = 400'-0"

NOTE:
BASE MAPPING FROM SOUTH PLYMOUTH COMMUNICATION FACILITY (A-2) SITE SURVEY DATED: 03/16/00; PREPARED BY ERDMAN ANTHONY CONSULTING ENGINEERS of TROY NY.



3 A-1 MONOPOLE ELEVATION
SCALE : 1" = 20'-0"

NOTE:
CONTRACTOR TO ROTATE EXISTING SUMMITT TOP MOUNTED ANTENNA PLATFORM APPROX. 40° CLOCKWISE TO ACHIEVE REQ'D ANTENNA AZIMUTH. CONTRACTOR TO VERIFY AZIMUTH.



4 A-1 ANTENNA PLATFORM DETAIL
SCALE : NTS

NOTES

1) ALL DIMENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & ELEVATIONS WHICH EFFECTS THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS w/ OWNER PRIOR TO CONSTRUCTION.
2) NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH & INFORM CONSTRUCTION MANAGER of ANY DISCREPANCIES BEFORE STARTING CONSTRUCTION.
3) 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.
4) ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY & ERECTION of RADIO ANTENNAS, TRANSMISSION LINES & SUPPORT STRUCTURES.
5) COAXIAL CABLE CONNECTORS & TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE OWNER & IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE of OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE ATTACHMENT K). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
6) 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 & T-MOBILE GUIDELINES.
7) 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.
8) EQUIPMENT WILL BE INDEPENDENTLY POWERED w/ SEPARATE METER.
9) PRIOR TO EXCAVATION NEAR TOWER, CONTRACTOR TO CONTACT & COORDINATE w/ PROPERTY OWNER.
10) 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.
11) ALL INACTIVE SEWER, WATER, GAS, ELECTRIC & OTHER UTILITIES, WHICH INTERFERE w/ THE EXECUTION of THE WORK, SHALL BE REMOVED and/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 ENGINEERING.
12) 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.
13) THE CONTRACTOR SHALL ESTABLISH & MAINTAIN SOIL EROSION & SEDIMENTATION CONTROLS AT ALL TIMES DURING CONSTRUCTION.
14) ALL UTILITY WORK SHALL BE IN ACCORDANCE w/ LOCAL UTILITY COMPANY REQUIREMENTS & SPECIFICATIONS.
15) PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE REQ'D TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. T-MOBILE IMPLEMENTATION REQUIRES DEPLOYMENT of EQUIPMENT & ANTENNAS GENERALLY DEPICTED on THIS PLAN, ATTACHED TO or MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. T-MOBILE RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO (E911) EQUIPMENT & LOCATION as TECHNOLOGY EVOLVES TO MEET REQ'D SPECIFICATION.

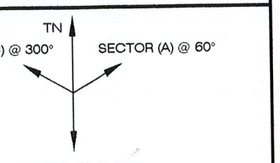
ABBREVIATIONS

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
		UON	UNLESS OTHERWISE NOTED
EA	EACH	WWF	WELDED WIRE FABRIC
ELEC	ELECTRICAL	BTS	BASE TRANSMISSION STATION
EL	ELEVATION	w/	WITH
EQ	EQUAL	LNA	LOW NOISE AMPLIFIER
EQUIP	EQUIPMENT	POS	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		

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.# / SHT.#)
- ELEVATION (D / SH)
- SECTIONS & DETAILS (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



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STATE OF CONNECTICUT
SCOTT M. CHASE
No.16728
LICENSED PROFESSIONAL ENGINEER

APPROVALS

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

PROJECT NO: CT-11-363-D

DRAWN BY: GWA

CHECKED BY: SMC

SUBMITTALS

1	12/24/02	CONSTRUCTION FINAL: GWA
0	12/16/02	CONSTRUCTION REVIEW: GWA

CT-11-363-D
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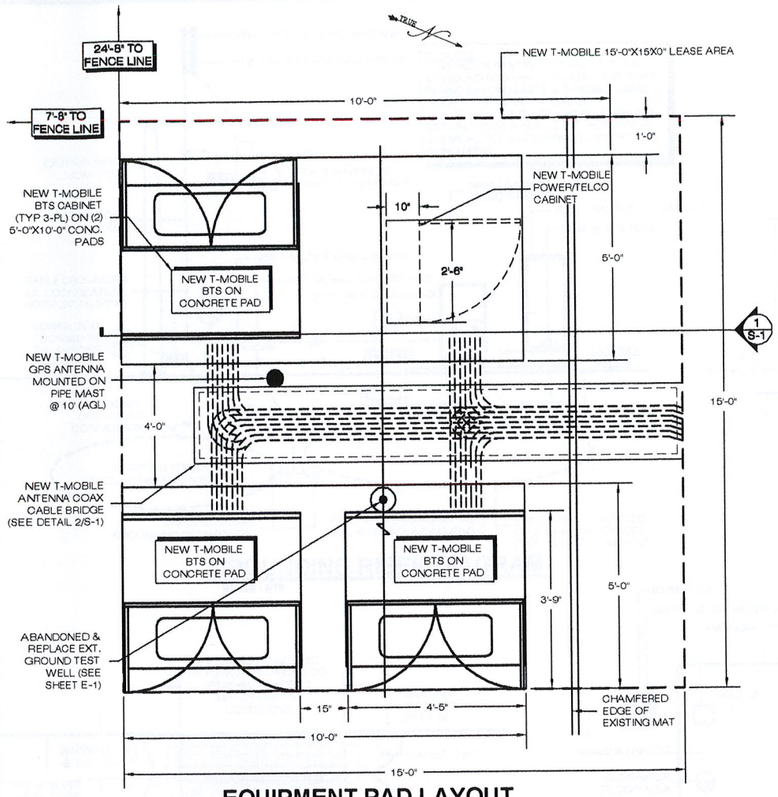
PLYMOUTH, CT 06782

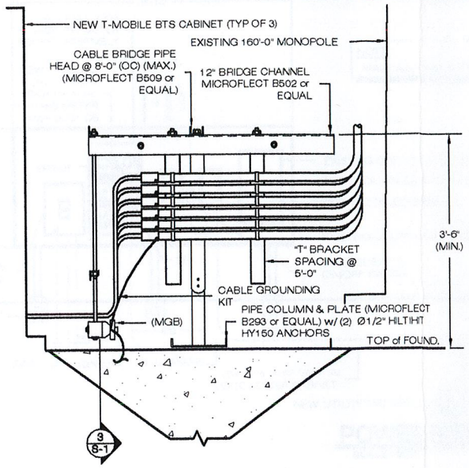
SHEET TITLE
SITE PLAN & ANTENNA DETAILS

SHEET NUMBER
A-1

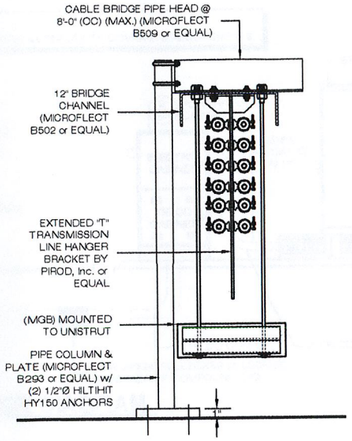


EQUIPMENT PAD LAYOUT
SCALE : 1/2" = 1'-0"

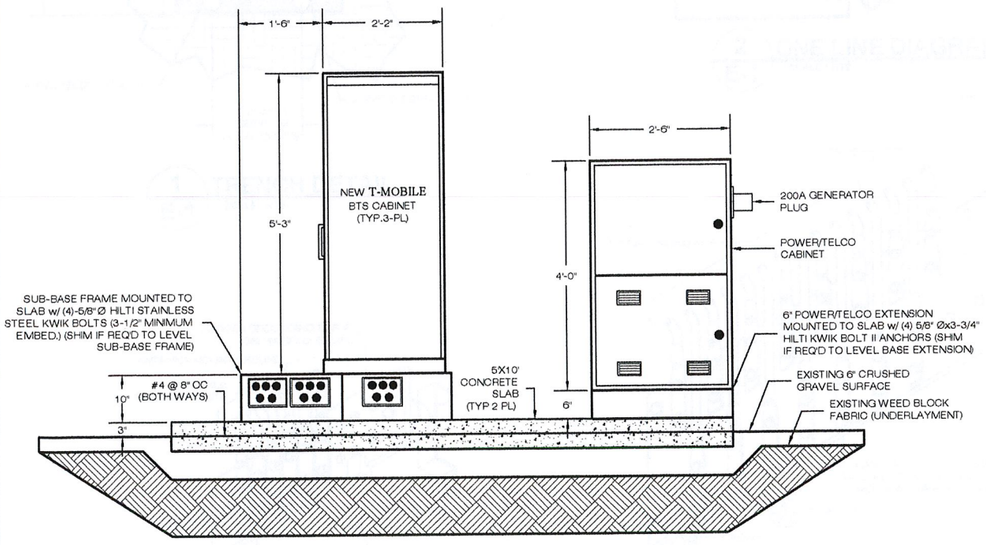
NOTICE TO CONTRACTOR:
FOR CABLE BRIDGE PIPE ON GROUND, USE 8" Ø X42" CONCRETE PIERS W/ 3-1/2" Ø SCH. 40 SUPPORT POSTS (2' MIN EMBED), 8' O.C. (MAX); FASTEN TO BRIDGE SUPPORT W/ (2) 3/8" U-BOLTS.



2 S-1 CABLE BRIDGE DETAIL
SCALE : NTS

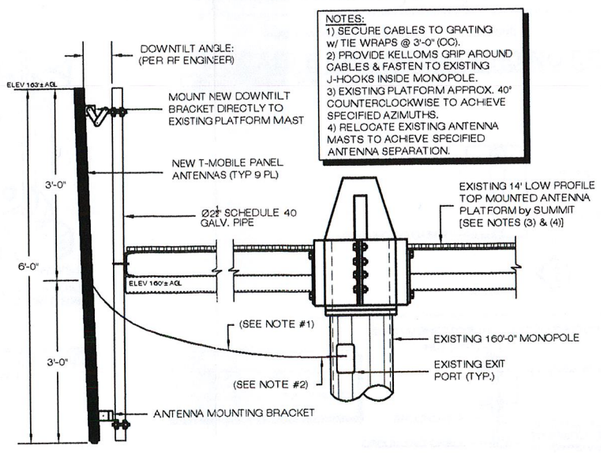


3 S-1 SECTION VIEW
SCALE : NTS



1 S-1 EQUIPMENT SLAB SECTION VIEW
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.
3) EXISTING PLATFORM APPROX. 40° COUNTERCLOCKWISE TO ACHIEVE SPECIFIED AZIMUTHS.
4) RELOCATE EXISTING ANTENNA MASTS TO ACHIEVE SPECIFIED ANTENNA SEPARATION.



4 S-1 ANTENNA MOUNTING DETAIL
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 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 % DI.I. 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 ASSOCIATIONS 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. T-MOBILE IMPLEMENTATION REQUIRES DEPLOYMENT of EQUIPMENT & ANTENNAS GENERALLY DEPICTED on THIS PLAN, ATTACHED TO or MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. T-MOBILE RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO (E911) EQUIPMENT & LOCATION as TECHNOLOGY EVOLVES TO MEET REQ'D SPECIFICATION.

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STATE OF CONNECTICUT
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PROFESSIONAL ENGINEER

APPROVALS

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A/E _____

PROJECT NO: CT-11-363-D

DRAWN BY: GWA

CHECKED BY: SMC

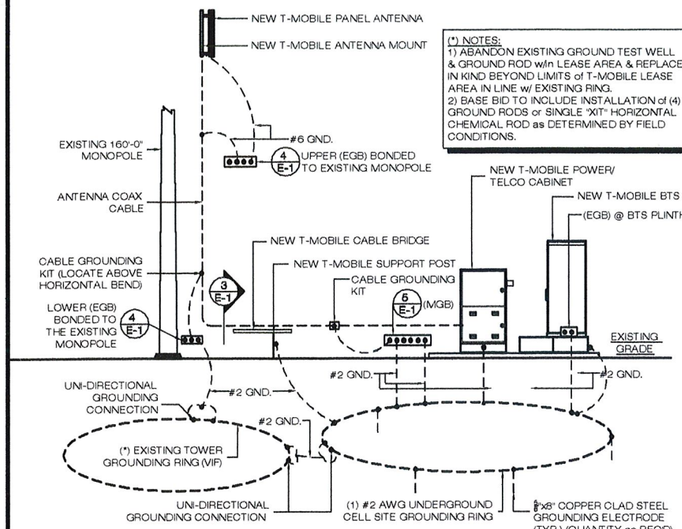
SUBMITTALS

1	12/24/02	CONSTRUCTION FINAL: GWA
0	12/18/02	CONSTRUCTION REVIEW: GWA

CT-11-363-D
SBA
SOUTH PLYMOUTH
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

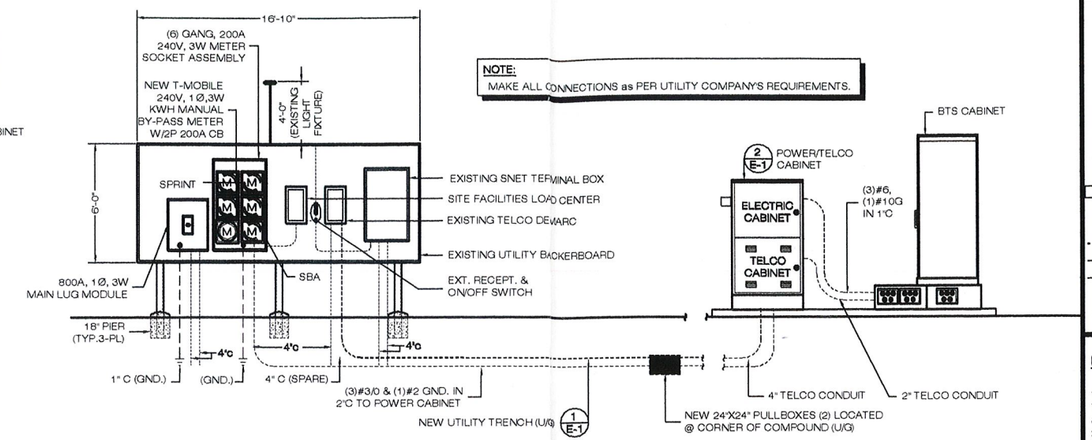
SHEET TITLE
STRUCTURAL NOTES, SECTIONS & DETAILS

SHEET NUMBER
S-1



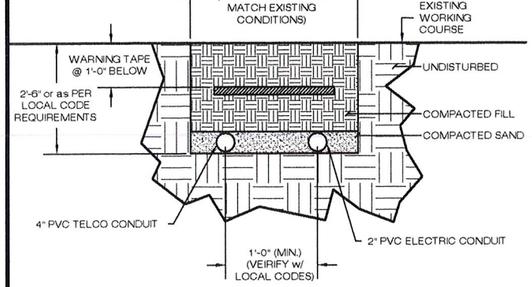
(*) NOTES:
1) ABANDON EXISTING GROUND TEST WELL & GROUND ROD w/in LEASE AREA & REPLACE IN KIND BEYOND LIMITS of T-MOBILE LEASE AREA IN LINE w/ EXISTING RING.
2) BASE BID TO INCLUDE INSTALLATION of (4) GROUND RODS or SINGLE "XIT" HORIZONTAL CHEMICAL ROD as DETERMINED BY FIELD CONDITIONS.

GROUNDING RISER DIAGRAM
SCALE : NTS

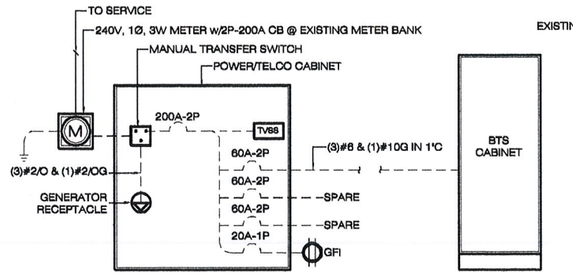


NOTE:
MAKE ALL CONNECTIONS as PER UTILITY COMPANY'S REQUIREMENTS.

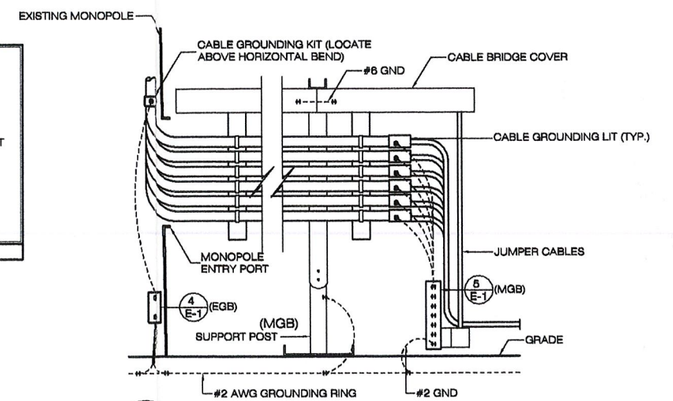
POWER RISER DIAGRAM
SCALE : NTS



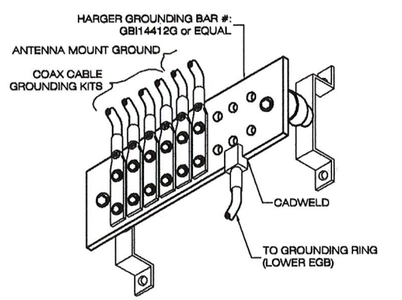
1 E-1 TRENCH DETAIL
SCALE : NTS



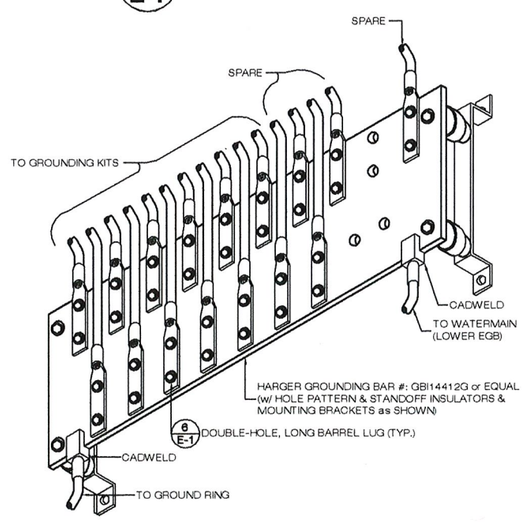
2 E-1 ONE LINE DIAGRAM
SCALE : NTS



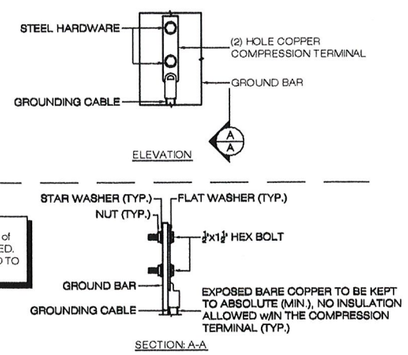
3 E-1 CABLE BRIDGE GROUNDING DETAIL
SCALE : NTS



4 E-1 EQUIPMENT GROUND BAR (EGB)
SCALE : NTS



5 E-1 MASTER GROUND BAR (MGB)
SCALE : NTS



NOTES:
1) "DOUBLING UP" or "STACKING" of CONNECTIONS IS NOT PERMITTED.
2) OXIDE INHIBITING COMPOUND TO BE USED @ ALL LOCATIONS.

6 E-1 GROUND BAR CONNECTION DETAIL
SCALE : NTS

ELECTRICAL LEGEND

U.O.N. UNLESS OTHERWISE NOTED	NEW PANEL BOARD, SURFACE MOUNTED
WP WEATHERPROOF	EXISTING PANEL BOARD, SURFACE MOUNTED
GFI GROUND FAULT INTERRUPTER	T DRY TYPE TRANSFORMER
A AMPERE	M METER
V VOLT	CIRCUIT BREAKER
KWH KILOWATT - HOUR	NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 64" A.F.F.
C CONDUIT	FUSIBLE DISCONNECT SWITCH, MOUNTED 64"A.F.F.
G GROUND	TVSS TRANSIENT VOLTAGE SURGE SUPPRESSER w/ BUILT-IN FUSES, SURFACE MOUNTED
GROUND	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
MGB MASTER GROUND BAR 1/4"x9"x24" COPPER	J JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
EGB EQUIPMENT GROUND BAR 1/4"x4"x12" OR 1/4"x4"x18" COPPER	EXPOSED WIRING
GROUND COPPER WIRE, SIZE AS NOTED	HOME RUNS, MINIMUM 2#10 +1#10G IN 3/4" CONDUIT U.O.N.
EXPOSED WIRING	A.F.F. ABOVE FINISHED FLOOR
COAXIAL CABLE	
5/8"x8' COPPER CLAD STEEL GROUND ROD	
EXOTHERMIC (CADWELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION	

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 & MATERIAL 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 OF 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 THININSULATION.
8) RUN ELECTRICAL CONDUIT or CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT & T-MOBILE 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 & T-MOBILE 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 & T-MOBILE CELL SITE POWER PEDESTAL & BETWEEN BTS & 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) POWER PEDESTAL SUPPLIED BY T-MOBILE.
13) GROUNDING SHALL COMPLY w/ NEC ART. 250.
14) GROUND COAXIAL CABLE SHIELDS MINIMUM @ BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY T-MOBILE.
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 @ 8" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS w/IN 7 FEET of T-MOBILE 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.

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STATE OF CONNECTICUT SCOTT M. CHAMPAGNE No. 19728 LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____
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CT-11-363-D
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SOUTH PLYMOUTH
170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET TITLE
ELECTRICAL & GROUNDING NOTES, RISERS & DETAILS

SHEET NUMBER
E-1

Exhibit C

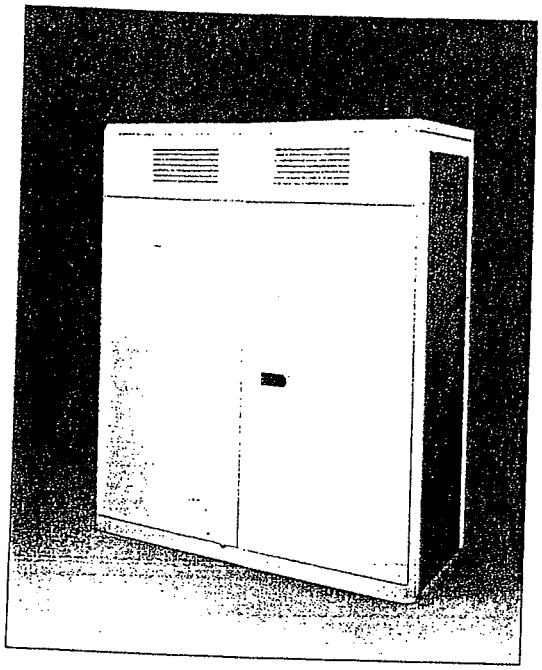
Equipment Specifications

Mount Tobe Road
Plymouth, Connecticut

GSM 900 / DCS 1800 / PCS 1900

NORTEL
NORTHERN TELECOM

S8000 Outdoor Base Transceiver Station



Nortel's S8000 Outdoor Base Transceiver Station has been designed to meet the economic and performance requirements of network operators. Based on a highly integrated RF and digital design, the S8000 Outdoor Base Transceiver Station represents a major technology advancement and delivers all the benefits of a compact, modular, high quality and high performance product.

Nortel's S8000 Outdoor BTS: Radio Performance Leadership - Reduced Site Acquisition and Operating Costs

Installation

- The S8000 Outdoor Base Transceiver Station (BTS) offers compact packaging and requires minimal floor space, only .88 sq m (9.5 sq ft.). Front only access keeps total space required, including maintenance access, to only 1.8 sq m (19.4 sq ft) per cabinet.

Transmission

- Integrated drop and insert connection to the Base Station Controller (BSC) and signaling concentration on the A-bis interface provide significant transmission cost reduction.
- Optional integrated digital microwave radio.

Maintenance

- Highly reliable technology, redundant architecture and integrated battery backup ensure high availability service.
- Front access and interconnections, as well as powerful fault detection, help reduce lifetime maintenance costs.

Industry leading performance

- New RF technology and advanced digital processing techniques provide very high receive sensitivity (-108 dBm guaranteed) and improved diversity gain (up to 6 dB). This provides higher resistance to interference, as well as, improved speech quality and cell coverage.
- Nortel's proven experience in frequency hopping, 1*3 frequency reuse, sophisticated microcellular handover algorithms and support of half-rate vocoders enables the operator to maximize use of available spectrum and deploy fewer cell sites.

Fast network deployment

- The S8000 BTS can be shipped fully equipped and tested, which provides fast network roll out to meet operator time to market requirements.

Modular and flexible configuration

- The S8000 supports eight transceivers (TRX) per cabinet in Omni and sectored configurations. The typical one cabinet S222 configuration may be expanded up to S332 or S422 without an additional cabinet.

Technical Data

• Frequency range		900 MHz GSM
		900 MHz GSM extended
		1800 MHz DCS
		1900 MHz PCS
• Receive sensitivity (guaranteed)		-108 dBm
• Dimensions	Height	1600 mm / 5 ft. 3 in.
	Width	1350 mm / 4 ft. 5 in.
	Depth	650 mm / 2 ft. 1 in.
• Weight	Fully equipped	600 kg / 1300 lbs.
• Capacity		8 TRX per cabinet
		up to 3 cabinets
• Configuration	Trisectorial	up to S888
	Omnidirectional	up to O16
• Amplifier output power		30 W (± 1.5 dB)
• Power control	Static	6 steps of 2 dB
	Dynamic	15 steps of 2 dB
• Frequency hopping		RF synthesized
		baseband
• Supported vocoders		Full rate
		Enhanced full rate
		Half rate
• Encryption algorithms		A5/1 A5/2
• Power supply		230V AC 50/60 Hz
• Power back-up		Integrated battery back-up plus optional battery cabinet allows provisioning up to 8 hours back-up time.
• Operating temperature range		-40°C to +50°C
		-40°F to +122°F

For more information,
please contact your local Nortel account representative.

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Telephone: 1-800-4 NORTEL

In the Caribbean and Latin America:
Northern Telecom (CALA) Corporation
1500 Concord Terrace
Sunrise FL 33323
USA
Telephone: (305) 851-8400

In Asia:
Northern Telecom (Asia) Limited
151 Lorong Chuan
#02-01 New Tech Park
Singapore 1955
Telephone: (65) 287-2877

Nortel China Ltd.
34th Floor, Central Plaza
18 Harbour Road, Wanchai
Hong Kong
Telephone (852) 2585 2888

In Europe:
Nortel Limited
Stafferton Way
Maidenhead
Berkshire SL6 1AY
England
Telephone: (44) (1628) 812000

Nortel Matra Cellular
BP 50
1 place des Frères Montgolfier
78042 Guyancourt Cedex
France
Telephone (33) (1) 34 52 52 52

Nortel Europe
12-12bis rue Jean Jaurès
92807 Puteaux
France
Telephone (33) (1) 46 96 15 15

Publication Reference S8O.INS.0696
Printed in France

NORTEL
NORTHERN TELECOM

3 CABINET DESCRIPTION

3.1 PHYSICAL CHARACTERISTICS

3.1.1 S8000 Outdoor BTS

3.1.1.1 BTS cabinet

Dimensions

The BTS S8000 Outdoor has the following dimensions:

- height: 160 cm (63 in.)
- width: 135 cm (52.8 in.)
- depth: 65 cm (25.6 in.)

Weight

The weight of the cabinet when empty, that is, without its battery, fan units or boards, is 164 kg (361 lb). Depending on the configuration, a fully equipped cabinet weighs approximately 480 kg (1056 lb) with ACU unit or 440 kg (968 lb) with DACS unit.

These weights do not include the plinth.

Operating temperature

To operate correctly, the BTS requires a temperature greater than –40°C (–40°F) and less than +50°C (+122°F).

Consumption

BTS input voltage:

- GSM 900/1800
  - nominal voltage contained between 220V AC and 240V AC
  - minimum voltage: 220 – 10% = 198V AC
  - maximum voltage: 240 + 6% = 254V AC
- GSM 1900 (with DACS)
  - nominal voltage: 208V AC to 240V AC
  - minimum voltage: 208 – 10% = 187V AC
  - maximum voltage: 240 + 6% = 254V AC

NON - PREMIUM BTS ONLY

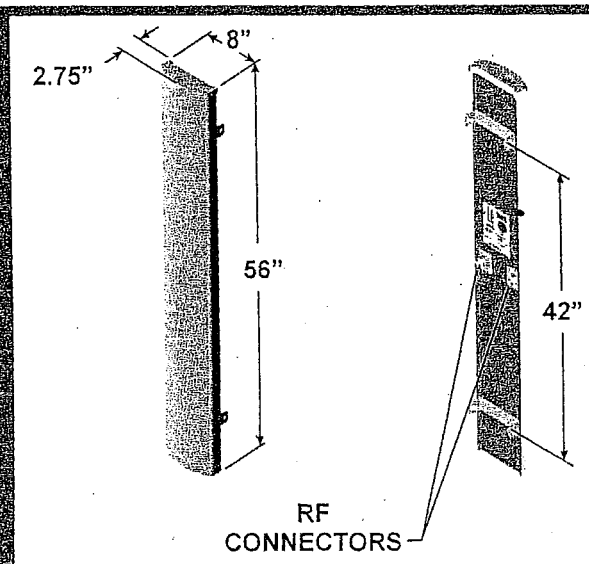
- GSM 1900 (with ACU and/or the power system six–rectifier type)
  - nominal voltage: 240V AC
  - minimum voltage: 240 – 10% = 187V AC
  - maximum voltage: 240 + 6% = 254V AC

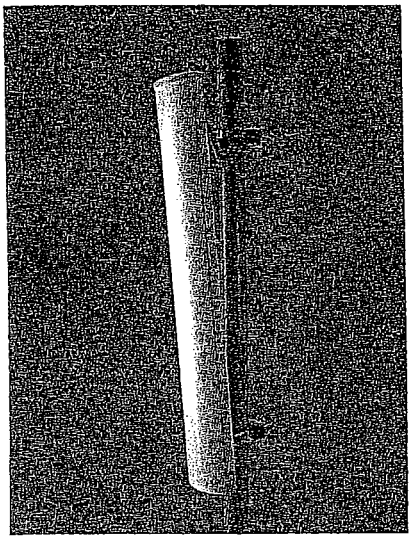
EMS WIRELESS

OptiRange™

RR90-17-XXXP

1850 MHz - 1990 MHz (P)





90° beamwidth

16.5 dBi gain

±45° DualPol™

56 inch

SPECIFICATIONS

Electrical

Azimuth Beamwidth	90°
Elevation Beamwidth	6°
Gain	16.5 dBi (14.4 dBd)
Polarization	Slant, ±45°
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	≥ 25 dB (≥ 30 dB Typ.)
Electrical Downtilt Options	0°, 2°, 4°, 6°
VSWR	1.35:1 Max
Connectors	2;Type N or 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	<-147 dBc (2 tone @ +43 dBm {20W} ea.)
Lightning Protection	Chassis Ground

Mechanical

Dimensions (L x W x D)	56in x 8in x 2.75in (142 cm x 20.3 cm x 7.0 cm)
Rated Wind Velocity	150 mph (241 km/hr)
Equivalent Flat Plate Area	3.1ft² (.29 m²)
Front Wind Load @ 100 mph (161 kph)	90 lbs (400 N)
Side Wind Load @ 100 mph (161 kph)	31 lbs (139 N)
Weight	18 lbs (8.2 kg)

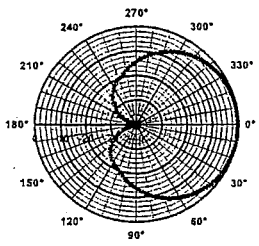
Note: Patent Pending and US Patent number 5, 757, 246.

Values and patterns are representative and variations may occur. Specifications may change without notice due to continuous product enhancements. Digitized pattern data is available from the factory or via the web site www.emswireless.com and reflect all updates.

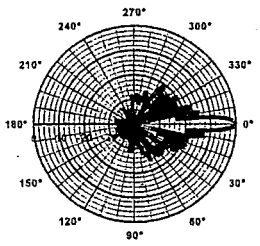
MOUNTING OPTIONS

Model Number	Description	Comments
MTG-P00-10	Standard Mount (Supplied with antenna)	Mounts to Wall or 1.5 inch to 5.0 inch O.D. Pole (3.8 cm to 12.7 cm)
MTG-S02-10	Swivel Mount	Mounting kit providing azimuth adjustment.
MTG-DXX-20*	Mechanical Downtilt Kits	0° - 10° or 0° - 15° Mechanical Downtilt
MTG-CXX-10*	Cluster Mount Kits	3 antennas 120° apart or 2 antennas 180° apart
MTG-C02-10	U-Bolt Cluster Mount Kit	3 antennas 120° apart , 4.5" O.D. pole.
MTG-TXX-10*	Steel Band Mount	Pole diameters 7.5" - 45"

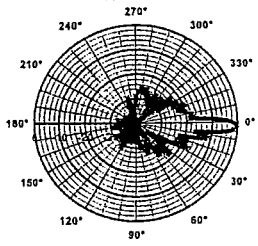
* Model number shown represents a series of products. See mounting options section for specific model number.



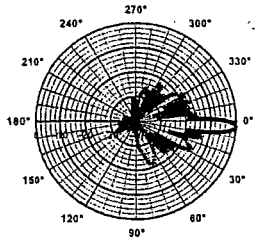
Azimuth



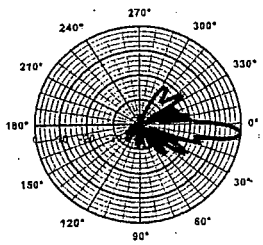
Elevation
0° Downtilt



Elevation
2° Downtilt



Elevation
4° Downtilt



Elevation
6° Downtilt

Exhibit D

Structural Analysis

Mount Tobe Road
Plymouth, Connecticut

ALL-POINTS TECHNOLOGY CORPORATION, P.C.

December 6, 2002

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

Attn: Debra Overbey
Re: 160' Summit Monopole Tower
Plymouth, Connecticut
T-Mobile Site #CT-11-363D

Dear Debra,

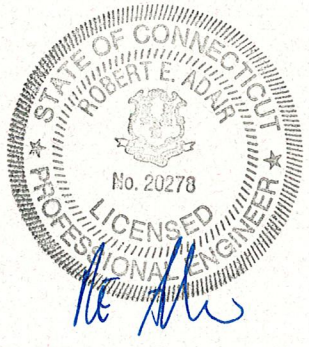
All-Points Technology Corporation, P.C. conducted a third-party review of SBA, Inc.'s 160' monopole tower located in Plymouth, Connecticut and fabricated by Summit Manufacturing. The review was conducted in accordance with EIA/TIA-222-F, *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures* (EIA). I reviewed the 160-foot Summit monopole and foundation design drawings prepared by Paul J. Ford & Company dated August 21, 2001. The monopole was designed to accommodate six 12-panel antenna arrays at a design wind loading of 80-mph per EIA requirements. The proposed T-Mobile antenna array meets the specifications of the original design.

It is my conclusion that the existing monopole can safely accommodate the proposed T-Mobile antennas. The anticipated stress levels in the monopole and foundation are well within the limits of the original design and meet the requirements of EIA/TIA-222-F.

We appreciate the opportunity to provide our services to you. Please call if you have questions.

Sincerely,
All-Points Technology Corporation, P.C.

Robert E. Adair, P.E.
Principal



C:\Docs\Jobs\ CT107170 Plymouth 12-6-02 ltr.doc

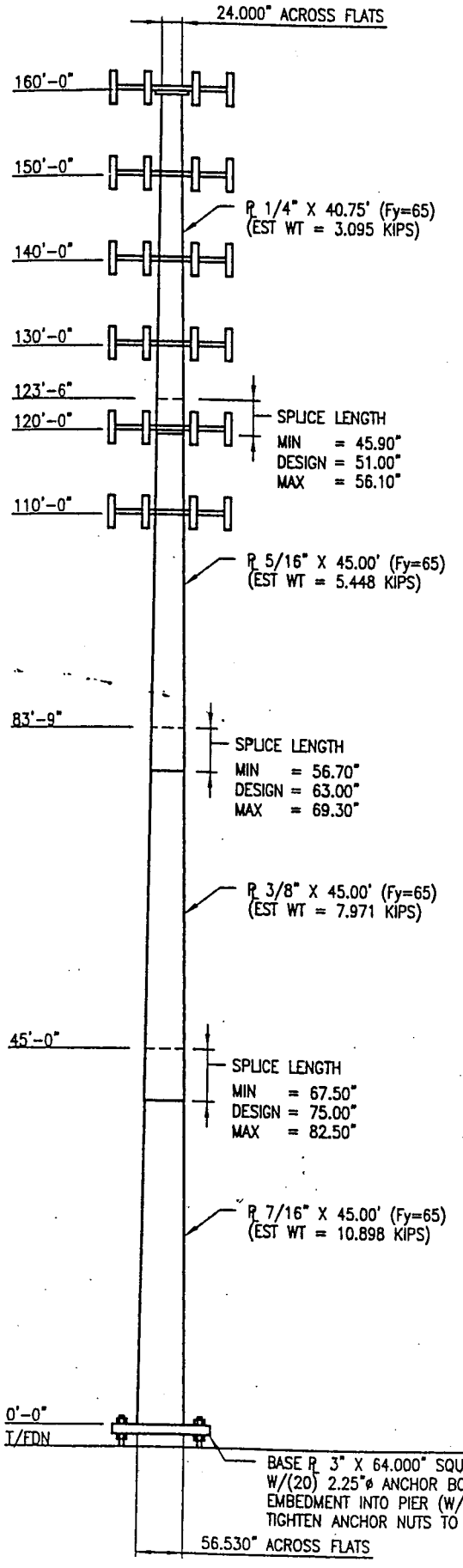
☐ 711 NORTH MOUNTAIN ROAD • NEWINGTON, CONNECTICUT 06111 • PHONE: 860-953-4444 • FAX: 860-953-1181
☒ 150 OLD WESTSIDE ROAD • NORTH CONWAY, NEW HAMPSHIRE 03860 • PHONE/FAX: 603-356-5214

CT-11-363D

SUMMIT MANUFACTURING, LLC

225 KIWANIS BOULEVARD, WEST HAZLETON, PA 18201
PHONE: (888) 847-6537 FAX: (888) 460-6885
VISIT US AT WWW.SUMMITMFG.COM

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



JOB DATA			
Page 1 of 2		Job No.	29201-1019
By	CMM	Design No.	SUMMIT #15616
Chk'd By	KJS	Date	08-21-2001
		Rev. No.	Rev. Date
Pole	160-FT MONOPOLE		
Site	10125-059, SOUTH PLYMOUTH, LITCHFIELD CO., CT		
Owner	SBA INC.		
Ref. No.			
Design	80 MPH / 69 MPH + 1/2" RADIAL ICE ACCORDING TO TIA/EIA-222-F 1996		

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

POLE SPECIFICATIONS	
Pole Shape Type:	18-SIDED POLYGON
Taper:	0.215031 IN/FT
Shaft Steel:	ASTM A607 GRADE 65
Base PL Steel:	ASTM A572 GRADE 55 (55 KSI)
Anchor Bolts:	2 1/4"ø x 8'-0" LONG #18J ASTM A615 GRADE 75

ANTENNA LIST

No.	Elev.	Description
-	TOP	5/8" LIGHTNING ROD
1-12	TOP	(12) DB896H PANEL
-	TOP	14' LOW PROFILE PLATFORM
13-24	150.00	(12) DB896H PANEL
-	150.00	14' LOW PROFILE PLATFORM
25-36	140.00	(12) DB896H PANEL
-	140.00	14' LOW PROFILE PLATFORM
37-48	130.00	(12) DB896H PANEL
-	130.00	14' LOW PROFILE PLATFORM
49-60	120.00	(12) DB896H PANEL
-	120.00	14' LOW PROFILE PLATFORM
61-72	110.00	(12) DB896H PANEL
-	110.00	14' LOW PROFILE PLATFORM

STATE OF CONNECTICUT * KEVIN P. BAUMAN * No. 17891 LICENSED PROFESSIONAL ENGINEER

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

8-21-01

Elevation	80 MPH WIND		50 MPH WIND	
	Lateral Deflection (Inches)	Rotation (sway) (degrees)	Lateral Deflection (Inches)	Rotation (sway) (degrees)
TOP	118.2	6.188	46.1	2.417

SHAFT SECTION DATA

Shaft Section	Section Length (feet)	Plate Thickness (in.)	Lap Splice (in.)	Diameter Across Flats (inches) @ Top	Diameter Across Flats (inches) @ Bottom
1	40.75	0.2500	51.00	24.000	32.763
2	45.00	0.3125	63.00	31.349	41.025
3	45.00	0.3750	75.00	39.271	48.947
4	45.00	0.4375		46.854	56.530

NOTE: DIMENSIONS SHOWN DO NOT INCLUDE GALVANIZING TOLERANCES

FACTORED BASE REACTIONS FOR FOUNDATION DESIGN

MOMENT =	4450 ft-kips
SHEAR =	38 kips
AXIAL =	37 kips

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SUMMIT MANUFACTURING, LLC

225 KIWANIS BOULEVARD, WEST HAZLETON, PA 18201
PHONE: (888) 847-6537 FAX: (888) 460-6885
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PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street, Suite 500, Columbus, Ohio 43215
(614) 221-6679 Fax: (614) 448-4105 www.PJFweb.com

NOTES:

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

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

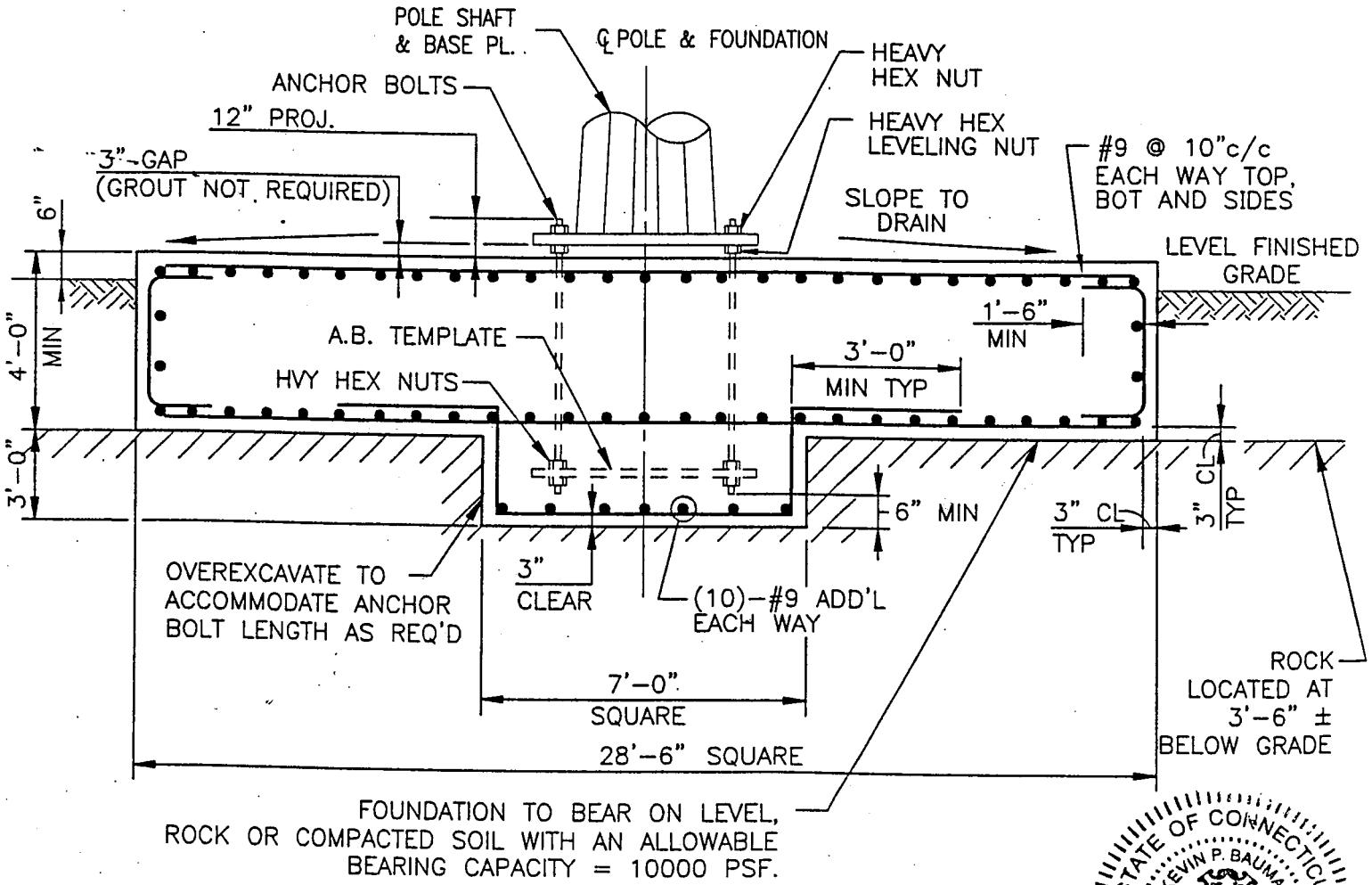
3. SEE PAGE 1 FOR ANCHOR BOLT QUANTITY, SIZE, LENGTH, AND BOLT CIRCLE.

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

JOB DATA			
Page 2 of 2		Job No.	29201-1019
By	CMM	Design No.	SUMMIT JOB #15616
Chk'd By	KJS	Date	08-21-2001
		Rev. No.	Rev. Date
Pole	120-FT MONOPOLE		
Site	10125-059, SOUTH PLYMOUTH, LITCHIELD CO., CT		
Owner	SBA INC.		
Ref. No.			
Design	80 MPH / 69 MPH + 1/2" RADIAL ICE ACCORDING TO TIA/EIA-222-F 1996		

FOUDATION SPECIFICATIONS	
Volume Concrete Required:	126 CUBIC YARDS
Soils Report:	JAWORSKI GEOTECH, INC. 00244G 07-31-2001

DESIGN CRITERIA	
Moment:	4450 FT-KIPS
Shear:	38 KIPS
Axial:	37 KIPS



MAT FOUNDATION

STATE OF CONNECTICUT
KEVIN P. BAUMAN
No. 17891
LICENSED PROFESSIONAL ENGINEER

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Exhibit E

Power Density Calculations

Mount Tobe Road

Plymouth, Connecticut

VOICESTREAM WIRELESS CORPORATION
100 Filley St, Bloomfield, CT 06002-1853
Phone: (860) 692-7100
Fax: (860) 692-7159

Technical Memo

To: Karina Hansen
From: Hassan Syed - Radio Frequency Engineer
cc: Mike Fulton
Subject: Power Density Report for CT11363D
Date: January 20, 2003

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the Voicestream Wireless Corporation PCS antenna installation on a Monopole at SBA Tower, Plymouth, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from several locations surrounding the transmitting location.

2. Discussion:

The following assumptions were used in the calculations:

1) The emissions from Voicestream Wireless transmitters are in the 1935-1945 MHz frequency band.
2) The antenna cluster 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 160 ft.
5) The maximum transmit power from each sector is 1982.82 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 significantly change 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 VoiceStream Wireless Corporation PCS antenna installation on a Monopole at SBA Tower, Plymouth, CT, is 0.01834 mW/cm^2. This value represents 1.834% of the Maximum Permissible Emission (MPE) standard of 1 milliwatt per square centimeter (mW/cm^2) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for VoiceStream Wireless 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.

New England Market

Connecticut

Worst Case Power Density

VoiceStream

Global Wireless by T··Mobile·

Site:	**CT11363D**
Site Address:	**SBA Tower**
Town:	**Plymouth**
Tower Height:	**160 ft.**
Tower Style:	**Monopole**
Base Station TX output	11 W
Number of channels	8
Antenna Model	EMS RR90-17-02DP
Cable Size	1 5/8 in.
Cable Length	170 ft.
Antenna Height	160.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	1.00 dB
Antenna Gain	16.5 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.9720 dB
Total Attenuation	2.9720 dB
Total EIRP per Channel	53.94 dBm
(In Watts)	247.85 W
Total EIRP per Sector	62.97 dBm
(In Watts)	1982.82 W
nsg	13.5280
Power Density (S) =	**0.018343 mW/cm^2**
Voicestream Worst Case % MPE =	**1.8343%**

Equation Used :

$$S = \frac{(1000)(grf)^2(Power)*10^{(nsg/10)}}{4\pi(R)^2}$$

Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997

Co-Location Total

Carrier	**% of Standard**
Verizon	
Cingular	
Sprint PCS	6.17
AT&T Wireless	
Nextel	
Total Excluding Voicestream	**6.17**
Voicestream	1.8343
Total % MPE for Site	**8.0043%**

TS-T-Mobile 0111-030128
170 Mount Tobe Road
Plymouth 1/30/03


TS-T-Mobile 0111-030128
170 Mount Tobe Road
Plymouth 1/30/03