

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

August 18, 1999

J. Brendan Sharkey
Omnipoint Communications, Inc.
100 Filley Street
Bloomfield, CT 06002

RE: TS-OCI-013-990719 - Omnipoint Communications request for an order to approve tower sharing at an existing telecommunications facility located at 131 Gifford Lane in Bozrah, Connecticut.

Dear Mr. Sharkey:

At a public meeting held August 16, 1999, 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 been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequency now used on this tower. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such 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 July 16, 1999. Please notify the Council when all work is complete.

Very truly yours,

Mortimer A. Gelston
Mortimer A. Gelston
Chairman

MAG/RKE/tsg

c: Honorable Raymond C. Barber, First Selectman, Town of Bozrah

FILED
COPIED

100 Filley Street, Bloomfield, CT 06002

(860) 692-7154 phone

(860) 692-7159 fax

16 July, 1999

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

RECEIVED
JUL 19 1999
 CONNECTICUT
 SITING COUNCIL

**Re: Request by Omnipoint Communications, Inc. for an
 Order to Approve the Shared Use of a Tower Facility
131 Gifford Lane, Bozrah, Connecticut**

Dear Chairman Gelston and Members of the Council:

Pursuant to Connecticut General Statutes §16-50aa, Omnipoint Communications, Inc. ("Omnipoint") hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed shared use by Omnipoint of an existing tower located at 131 Gifford Lane in Bozrah, Connecticut. The tower is owned and operated by SBA Towers, Inc. ("SBA"). Omnipoint proposes to install antennas on the existing tower located within the existing compound area, and the equipment associated with this facility would be located near the base of the tower (see "Exhibit A"). Omnipoint 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. is licensed by the Federal Communications Commission (FCC) to provide PCS wireless telephone service in the State of Connecticut, which includes the area to be served by Omnipoint's proposed installation.

The tower at 131 Gifford Lane in Bozrah is an approximately 193-foot lattice structure located on an approximately 76'x 59', or 4,484 sq. ft. fenced and gated compound. This tower is privately owned and has been approved by the Bozrah Planning and Zoning Commission. With its approval of the tower, the Commission also approved the antenna installation of Sprint Spectrum ("Sprint") at the 178-foot level. At least three additional antenna installations are planned for the tower in the future.

Omnipoint and SBA have since agreed to the proposed shared use of this tower pursuant to mutually acceptable terms and conditions. SBA has also authorized Omnipoint 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.

Omnipoint proposes to install six (6) DAPA 59212 antennas, two per sector, at Sectors 60°, 180° and 300°. The platform supporting all six antennas will be at the top of the tower, with a centerline at 193 feet AGL. The radio transmission equipment associated with these antennas, a Nortel S8000 cabinet, would be located near the base of the tower. Exhibit B contains specifications for the proposed antennas and equipment cabinet.

C.G.S. §16-50aa (c) (1) provides 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. Technical Feasibility The existing tower is structurally sound and capable of supporting the proposed Omnipoint antennas. 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 on Gifford Lane in Bozrah. (Public Acts 93-268, Section 2; and 94-242, Section 6 (c)). 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 towers 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 a minimal environmental effect, for the following reasons:

1. The proposed installations 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 will not extend the boundaries of the existing SBA compound area.
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), with

the Sprint and Omnipoint antennas combined, would be 0.023308 mW/cm² (2.33% of the ANSI standard). These calculations are attached as Exhibit C.

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 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, and is environmentally feasible.

E. Economic Feasibility As previously mentioned, SBA and Omnipoint 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.

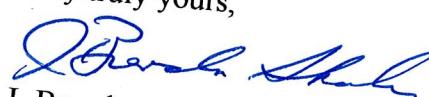
F. Public Safety Concerns As stated above, the existing tower is structurally capable of supporting the proposed Omnipoint antennas. The tower stands on a compound accessible from an existing driveway off Gifford Lane, and is surrounded by a eight-foot-high, gated chain link fence. Omnipoint is not aware of any other public safety concerns relative to the proposed sharing of the existing tower. In fact, the Bozrah Planning and Zoning Commission recently approved the construction of this tower, taking into consideration all public safety concerns as part of its review.

Conclusion

For the reasons discussed above, the proposed shared use of the existing tower facility on Gifford Lane in Bozrah, Connecticut satisfies the criteria stated in C.G.S. §16-50aa, and advances the General Assembly's and the Siting Council's goal of preventing the proliferation of towers in Connecticut. Omnipoint therefore requests that the Siting Council issue an order approving the proposed shared use.

Thank you for your consideration of this matter.

Very truly yours,



J. Brendan Sharkey
for Omnipoint Communications, Inc.

Attachments

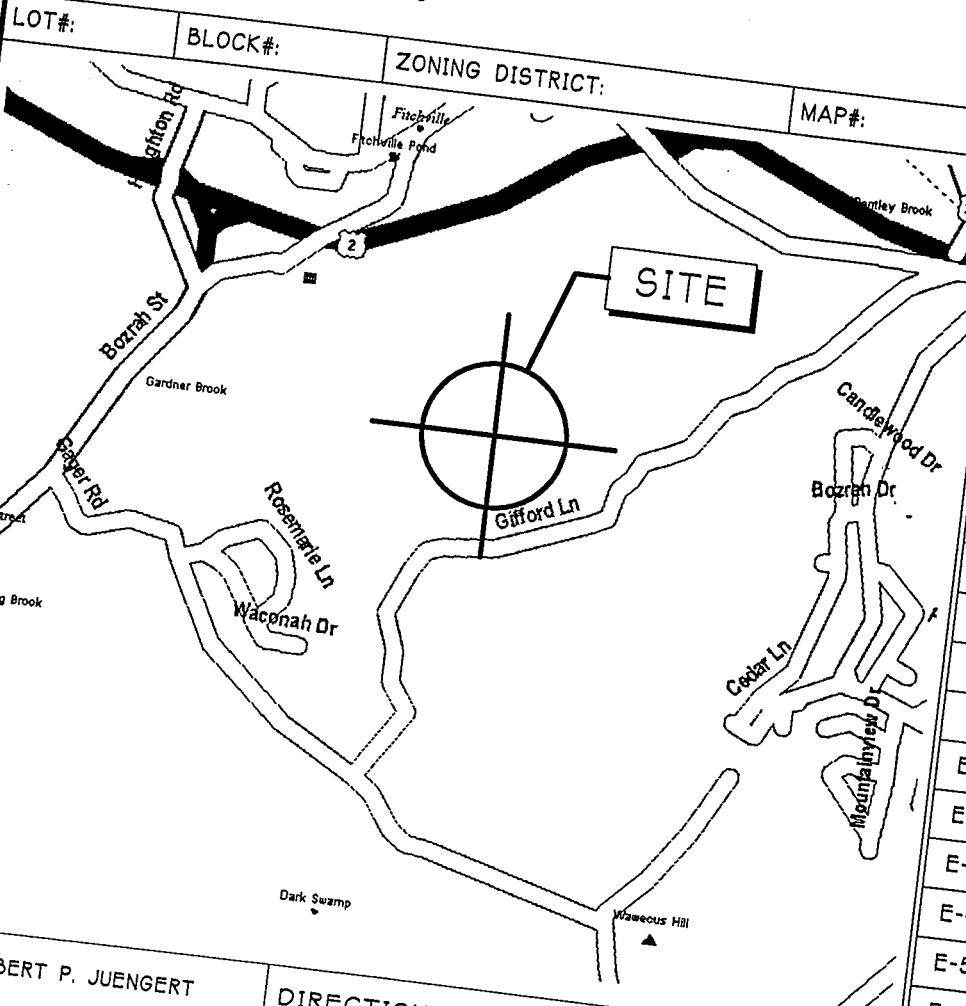


Exhibit A

Design Drawings
131 Gifford Lane
Bozrah, CT

BOZRAH 131 GIFFORD LANE BOZRAH, CT

SEARCH AREA: **BOZRAH**
SITE I.D. #: **CT-11-313A**



ROBERT P. JUENGERT

DIRECTIONS TO SITE:
HIGHWAY 2 SOUTH TO EXIT 23 (BOZRAH ST.) GO
STRAIGHT THROUGH STOP SIGN. GO
APPROXIMATELY 1/2 MILE, MAKE A LEFT ON
GAGER RD. APPROXIMATELY 2 MILES MAKE A
LEFT ON GIFFORD LN. DRIVEWAY IS ON THE LEFT
SIDE FOLLOW ACCESS ROAD TO SITE.

CT-4208

SITE LOCATION MAP

SCALE:
NTS

ARCNET PROJECT NO.
A99.506-858A

P.C.
JDI

DATE:
8/28/99

CIVIL ENGINEER:

LAPATKA ASSOCIATES
12 ROUTE 17 NORTH
PAULUS, NJ 07875
(201)547-1800
ENGINEERS - LANDSCAPE ARCHITECTS - SURVEYORS

ELECTRICAL ENGINEER:

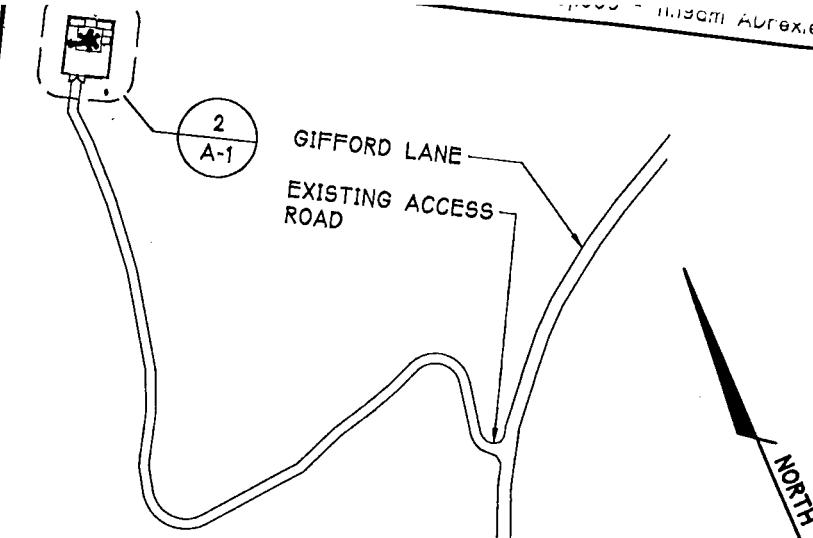


DLB ASSOCIATES, INC.
Electrical/Mechanical
Consulting Engineers
Wanamassa, NJ

STRUCTURAL ENGINEER:



PAUL BECK ASSOCIATES, P.A.
Structural Engineers



NOTES:

- 1.) FOR A LIST OF ITEMS SUPPLIED BY OTHERS, (SEE MATERIAL LIST, DRAWING A-18)
- 2.) CONTRACTOR TO LOCATE AND MARK-OUT ALL PUBLIC & PRIVATE UNDERGROUND UTILITIES AND STRUCTURES THROUGH THE USE OF A LOCATING SERVICE PRIOR TO ANY EXCAVATION WORK. HAND DIG IN AREAS OF EXISTING UTILITIES AND/OR STRUCTURES
- 4.) TRUE NORTH TO BE CONFIRMED BY CIVIL ENGINEER

1
A-1

KEY LAYOUT
SCALE: N.T.S.

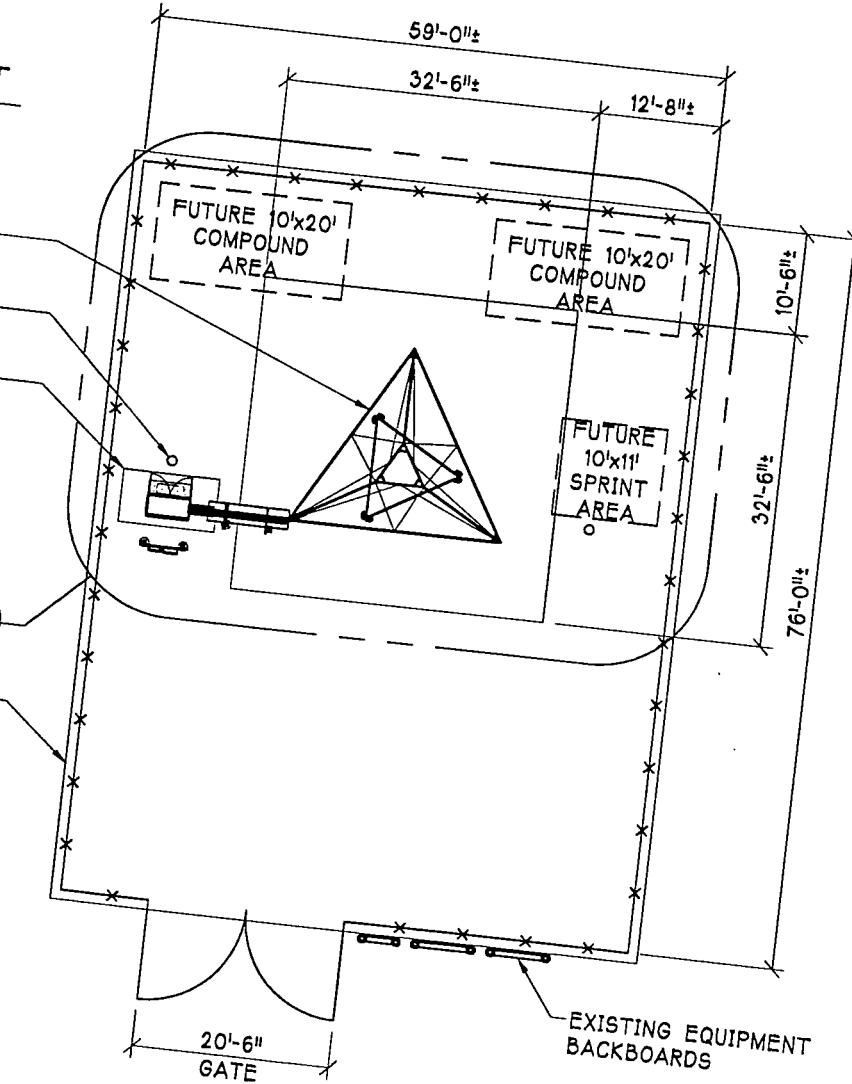
EXISTING PIROD TOWER
193'-0" ABOVE GRADE

EXISTING GROUND TEST
WELL (TYPICAL)

NEW OMNIPOINT LOCATION
(SEE DRAWING A-2 FOR
DETAILS)

EXISTING (1'-0") EDGING
PLACED AROUND PERIMETER

2
A-2



ROBERT P. JUENGERT

CT- 4208

2
A-1

SITE LAYOUT
SCALE: 1"=20'-0"

ARCNET
ARCHITECTS, INC.
32.739.3200
North Beers Street, Building 2, Holmdel, NJ 07733
Fax: 732.739.0440

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Drawing Title:
KEY & SITE LAYOUT

Client:

OCS

ARCNET Project No.
A99.506-858A

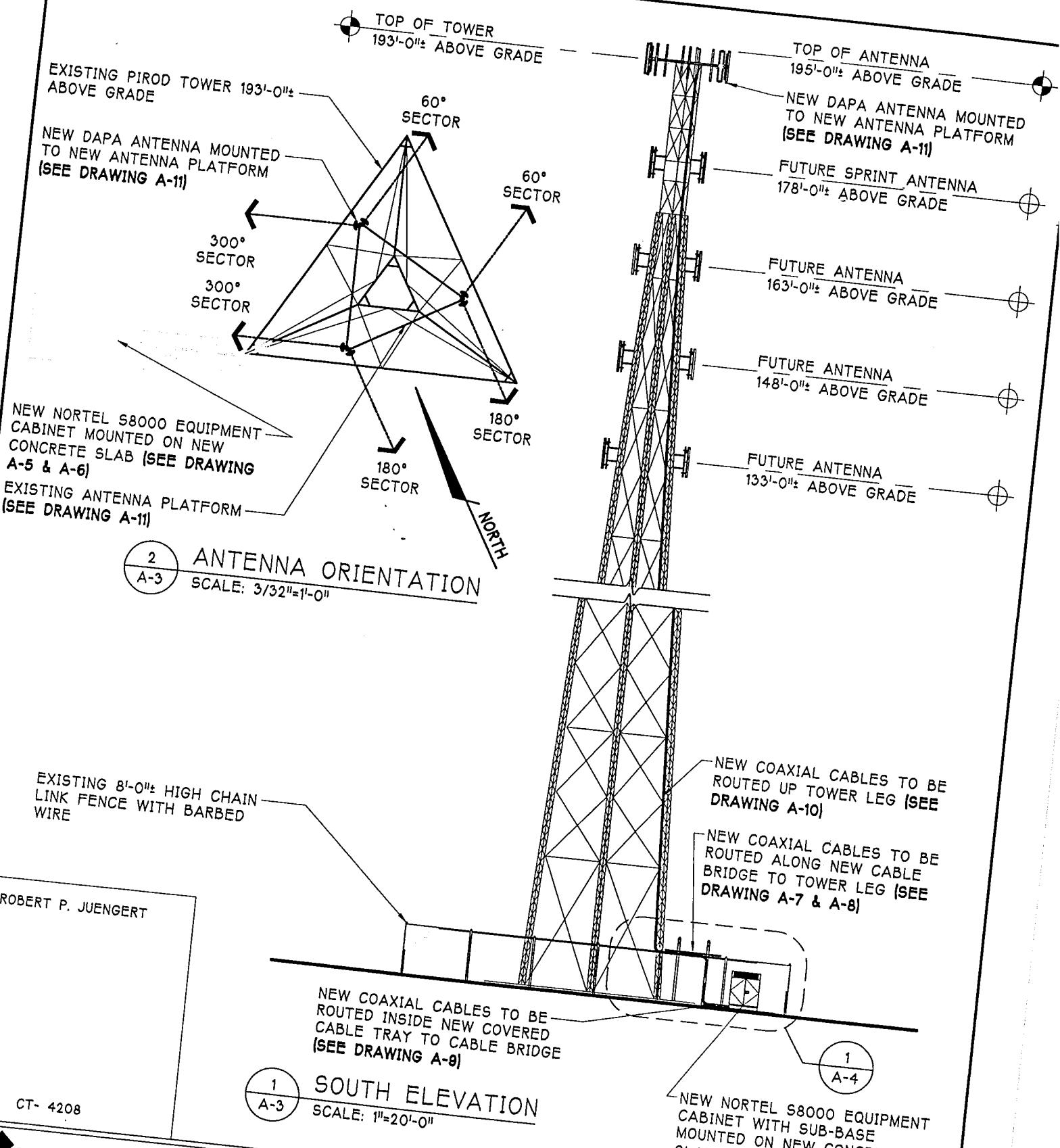
Drawn: ADR Date: 6/28/99

Project: **BOZRAH**
Address: 131 GIFFORD LANE
BOZRAH, CT

Search Area:
BOZRAH
Site ID No.:
CT-11-313A

Approved By:
CLIENT:

Revision No. Date:
Drawing No.:
DATE: **A-1**



ARCNET
ARCHITECTS, INC.

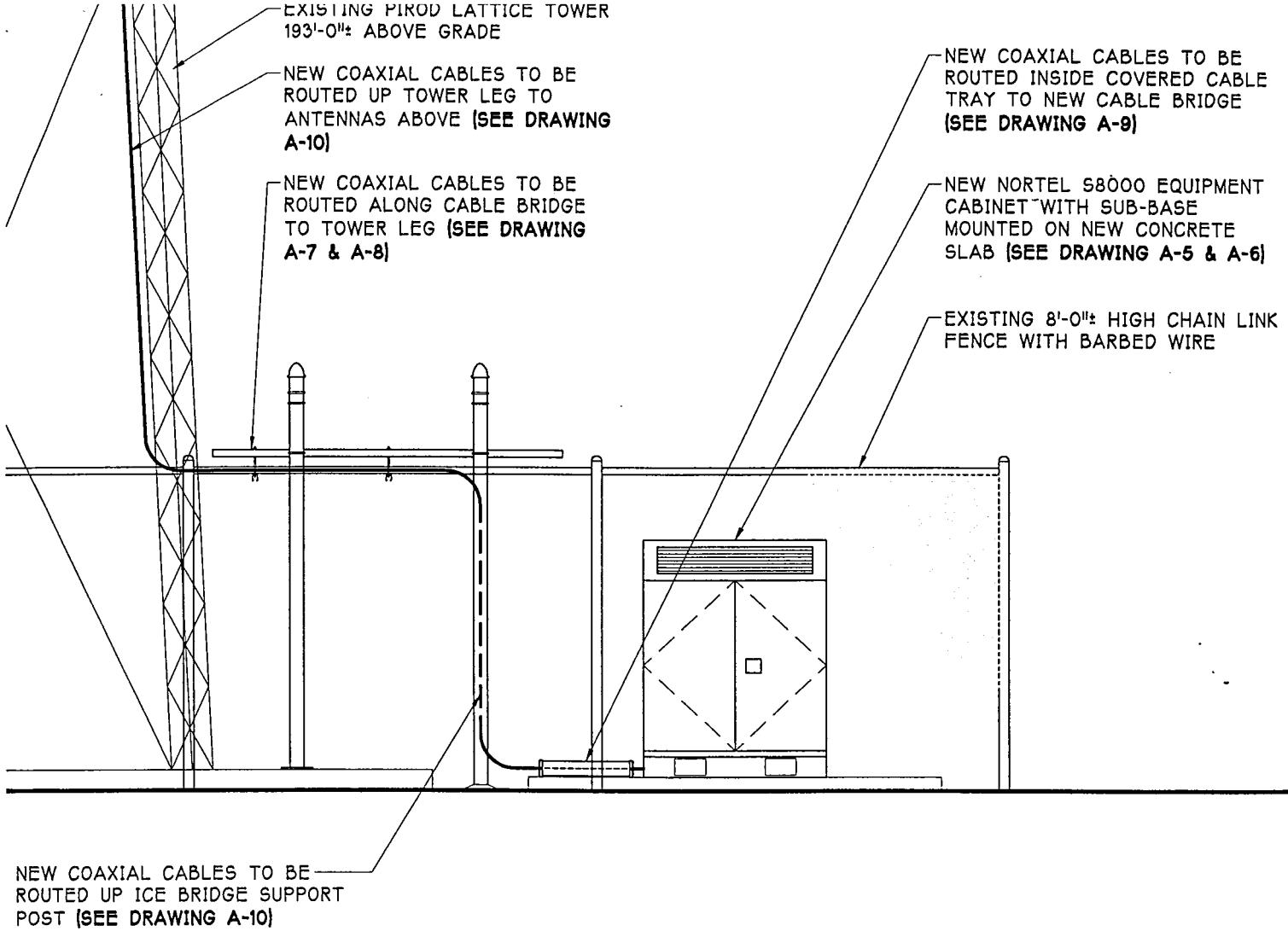
North Beers Street, Building 2, Holmdel, NJ 07733
732.739.3200
Fax: 732.739.0440

P.C.	P.C. Chkd.	Chkd. By:
JDi		

Drawing Title: ELEVATION
Client: **OCS**
ARCNET Project No. A99.506-858A
Drawn: 6/28/99
Date:

Project: **BOZRAH**
Address: 131 GIFFORD LANE
BOZRAH, CT
Search Area: BOZRAH
Site ID No.: CT-11-313A
Approved By: CLIENT: _____

Revision No. Date: _____
Drawing No. Date: _____
A-3



1
A-4 EQUIPMENT ELEVATION
SCALE: 1/4"=1'-0"

ROBERT P. JUENGERT

CT- 4208

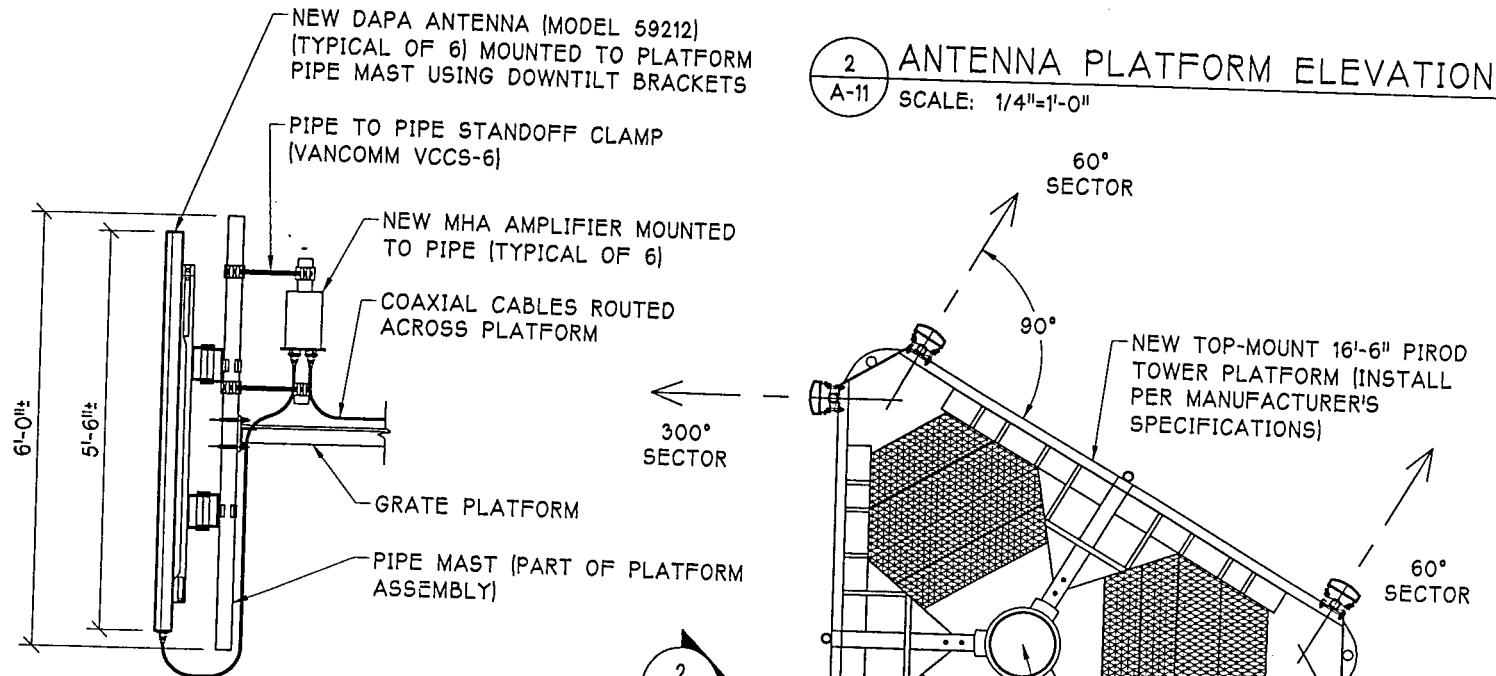
 ARCNET ARCHITECTS, INC.			Drawing Title: EQUIPMENT ELEVATION Client:  OCS			Project: BOZRAH Address: 131 GIFFORD LANE BOZRAH, CT Search Area: BOZRAH Site ID No.: CT-11-313A				
P.C.	P.C. Chkd:	Chkd by:	ARCNET Project No.	Drawn:	Date:				Revision No.	Date:
	JDi		A99.506-858A	ADT	6/28/99					
Approved By: _____ CLIENT: _____ DATE: _____						Drawing No. A-4				

NEW TOP-MOUNT PIROD MONPOLE
PLATFORM (INSTALL PER
MANUFACTURER'S SPECIFICATIONS)

NEW DAPA ANTENNA (MODEL 59212)
(TYPICAL OF 6) MOUNTED TO
PLATFORM PIPE MAST USING
DOWNTILT BRACKETS (SEE DRAWING
3/A-11)

ATTACH HOISTING GRIPS TO TOWER
AS PER MANUFACTURERS
SPECIFICATIONS

NEW COAXIAL CABLES TO BE
ROUTED UP INSIDE MONPOLE
EXISTING PIROD LATTICE
TOWER 193'-0" ABOVE GRADE



3 A-11 ANTENNA MOUNT DETAIL
SCALE: 3/8"=1'-0"

ROBERT P. JUENGERT

NORTH

1 A-11 ANTENNA PLATFORM PLAN
SCALE: 1/4"=1'-0"

CT- 4208

90°

300° SECTOR

180° SECTOR

90°

SECURE NEW PLATFORM TO
TOWER HUB (BY PIROD)
MOUNTED TO TOP OF TOWER

NEW DAPA ANTENNA (MODEL
NUMBER 59212) (TYPICAL OF
6) WITH DOWNTILT BRACKET
MOUNTED TO PLATFORM PIPE
MAST AZIMUTH BEARINGS
SHOWN (SEE DRAWING 3/A-11)



670 North Beers Street, Building 2, Holmdel, NJ 07733
Tel: 732.739.3200 Fax: 732.739.0440

P.C. JDi

P.C. Chkd. Enkd. by

ARCNET Project No.

Drawn Date:

A99.506-858A

6/28/99



Project: BOZRAH

Address: 131 GIFFORD LANE
BOZRAH, CT

Search Area:
BOZRAH

Site ID No.:
CT-11-313A

Approved by:
CLIENT: _____

DATE: _____

Revision No. Date:
Drawing No. A-11

Electrical Specifications

Split Single-Phase

3 wires plus ground

L1: Black 6 gauge

L2: Red 6 gauge

Neutral: White 6 gauge

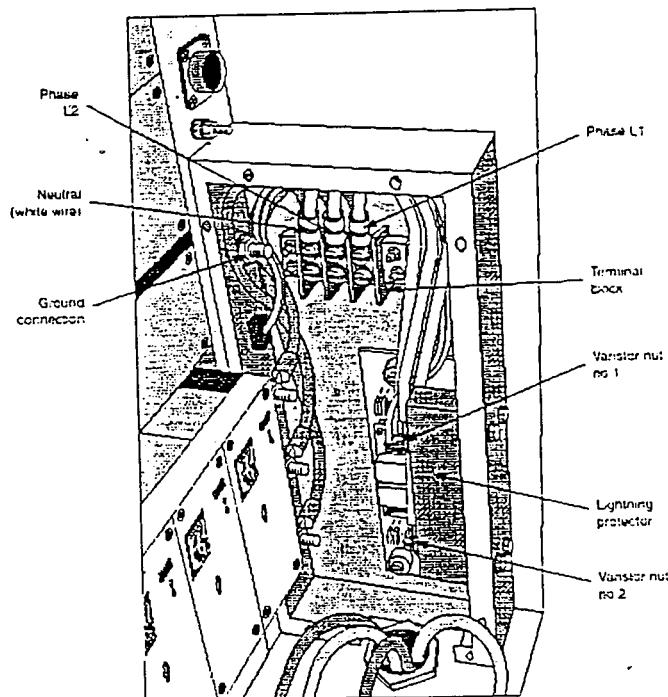
Ground: Yellow/Green 6 gauge

Maximum distance between AC box and BTS: 105 feet

187 ~ 254 VAC between L1 and L2

99 ~ 127 VAC between Neutral and L1 or L2

45 ~ 65 Hertz



AC connection to BTS located at the front, lower, right-hand side of BTS

Circuit Breaker in AC Box

Up to 4 transmitters

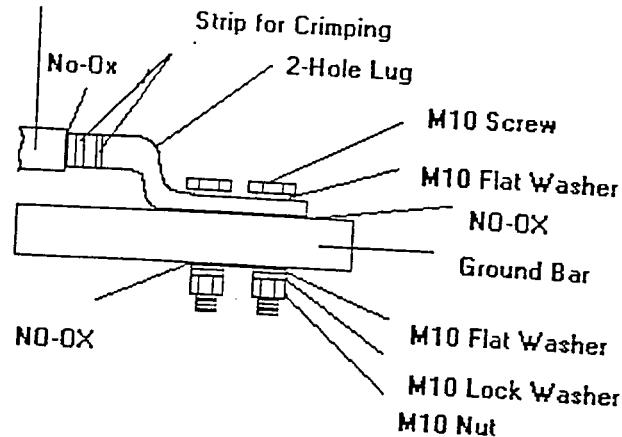
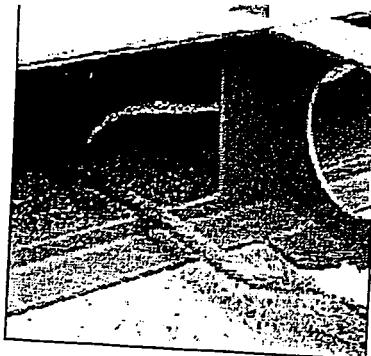
30 A, bipolar, C curve

5 or more transmitters

40A, bipolar, C curve

BTS to Ground connection

Minimum 2 AWG, run in most direct route as possible towards true earth, minimizing bends. No bend shall be less than 90 degrees.



Apply a light coating of No Oxidation (NO-OX) to the ground bar area.

Dimensions, Weights & Clearances

BTS

Weight: 915 pounds

Dimensions: 53.2" W x 26" D x 63" H

Clearances while transporting in building:

Door Access:

Height: 6.6 feet

Width 3 feet

Corridor Access:

Height: 6.6 feet

Width: 3.6 feet (straight), 6.6 feet (right angle)

Clearances when installed:

Above: 28 inches for opening of hood

Rear: 8 inches for installation of outer skin

Sides: 8 inches for adjustment of door hinges

Front: 54 inches to open door and technician access

Plinth

Weight:

87 pounds

Dimensions:

53.2" W x 44" D x 10.2" H

Floor Characteristics

Minimum Floor Resistance:
123 pounds/foot²

Flatness:
1/4 inch over 78 inches

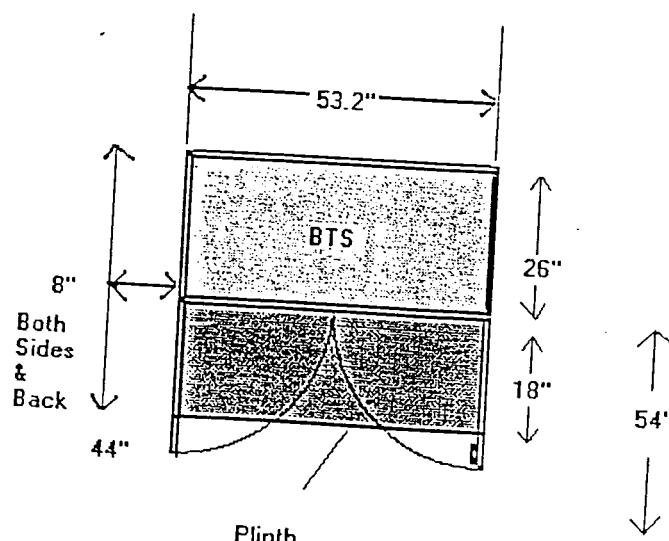
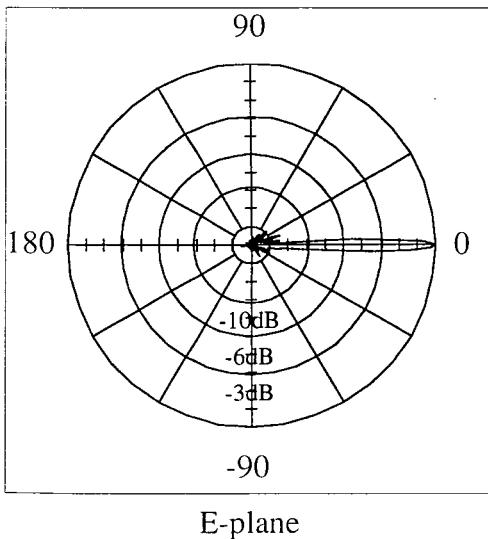
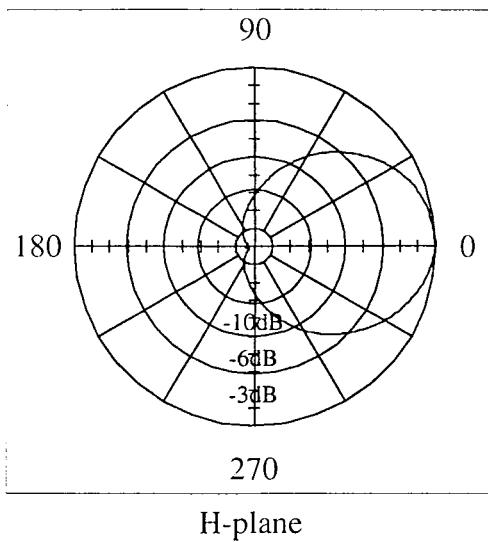
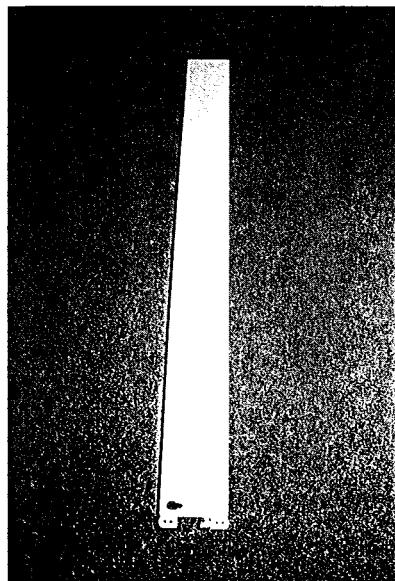


Exhibit B

Equipment Specifications

131 Gifford Lane
Bozrah, CT

Model 59000 / 59010 92°, 16.4 dBd Panel



GENERAL CHARACTERISTICS

Frequency Range	1710 - 1990 MHz
Impedance	50 Ω
VSWR	< 1.4:1
Polarization	Vertical
Rated Power	500 W

ELECTRICAL CHARACTERISTICS

Beamwidth:	H-plane	$92^\circ \pm 3^\circ$ (at -3 dB)
	E-plane	$5.5^\circ \pm 1^\circ$ (at -3 dB)
Maximum / Minimum Gain		16.4 dBd / 15.4 dBd
Electrical Downtilt		0° (available -1° to -15°)
Side Lobes		< -15 dB
Front-to-Back Ratio		< -25 dB

MECHANICAL CHARACTERISTICS

Height x Width x Depth	70.3" x 6.3" x 2.7" (1785 x 159 x 68 mm)
Weight	14.6 lbs (6.6 kg)
Wind Survival Rating	125 mph (200 km/h)
Wind Load (at 100 mph)	510 N (frontal F1) 217 N (lateral F2)
Flat Plate Equivalent Area	3.05 ft ² (0.28 m ²)
Connector Types (Female)	Type N, or 7/16 DIN
Materials: Antenna / Radome	Aluminum / ABS

Model 59000 / 59010 92°, 16.4 dBd Panel

MOUNTING HARDWARE (INFORMATION AND DRAWINGS)

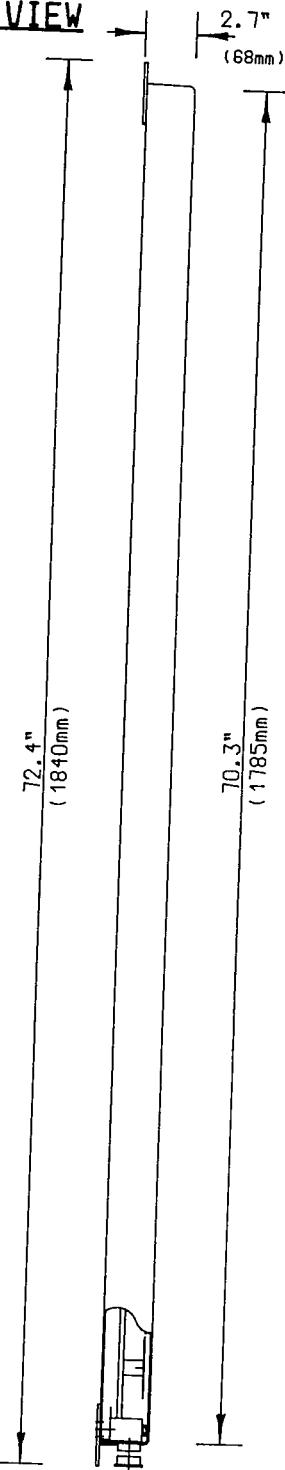
Pipe Mount Brackets

Fix 903 (1.25" - 3.5" OD pipe)

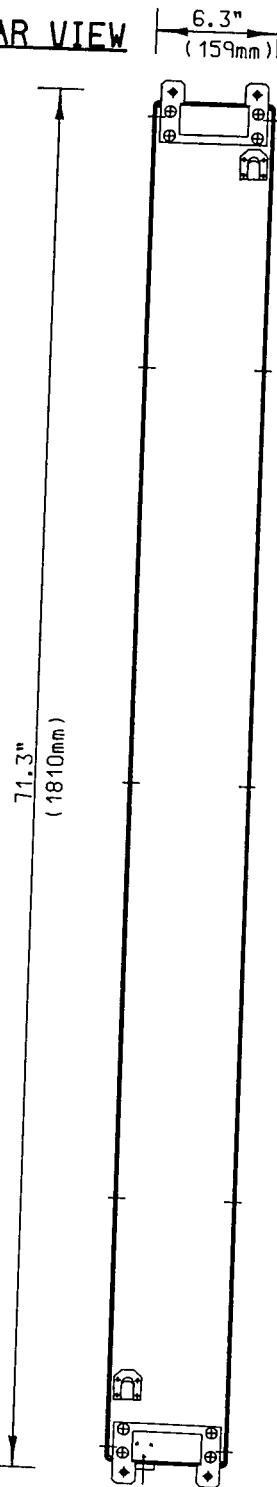
Mechanical Tilt Bracket (optional)

Model TB-9

SIDE VIEW

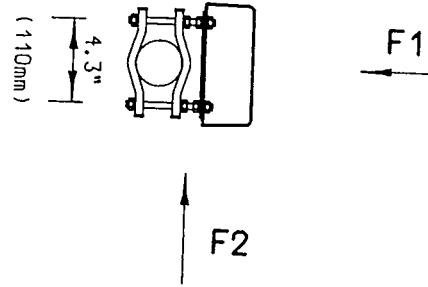


REAR VIEW



NOTE: Mechanical specifications on these pages would apply to all other electrical tilt and/or connector location options.

TOP VIEW

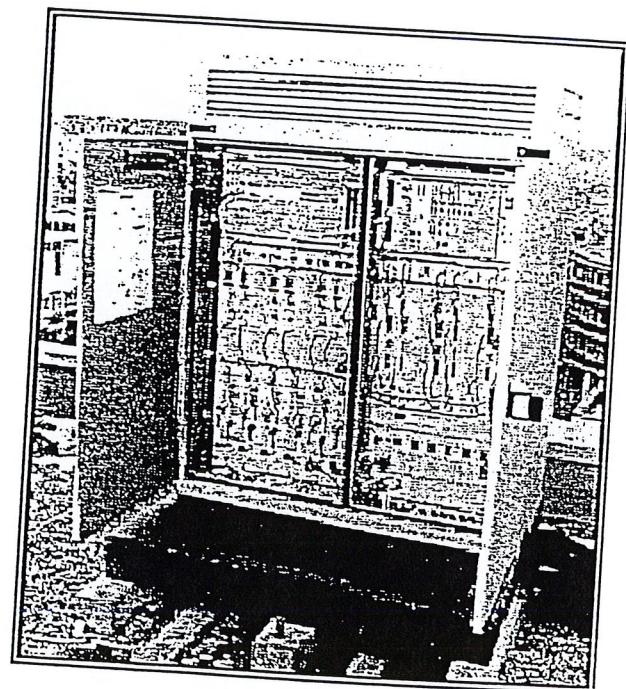
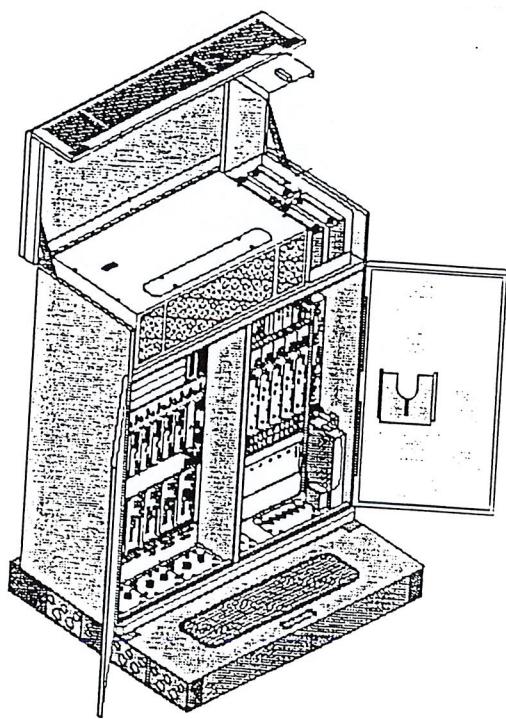


F1

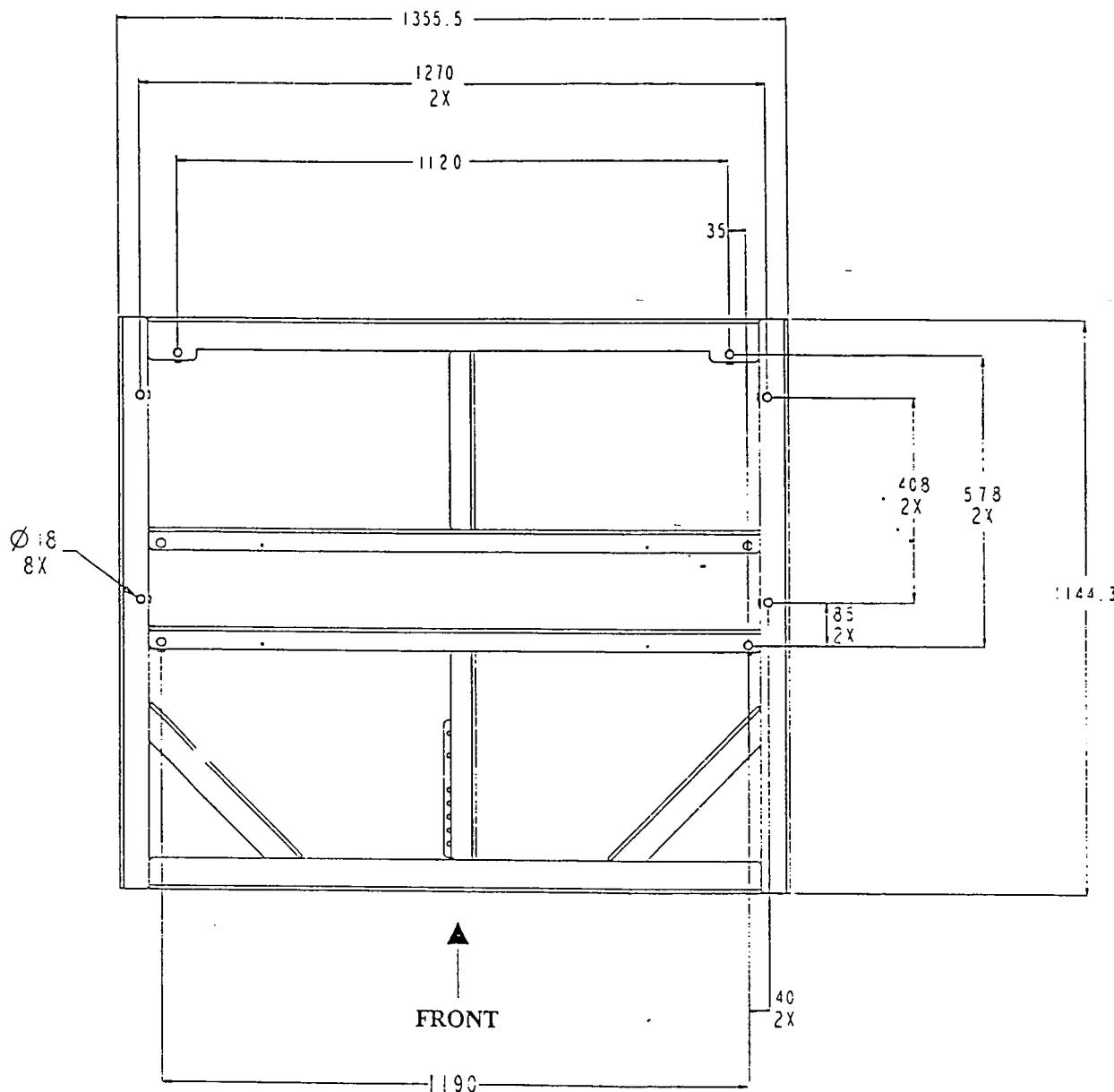
F2

NORTEL
NETWORKS™

S8000 BTS Site Specifications



Appendix 3 BTS plinth type 1 floor print

BTS Plinth type 1 Top View

The BTS plinth type 1 floor print can be directly deducted from the dimensions given above for the top view.

All dimensions are expressed in mm.

Mention '2X' or '8X' means that the same dimension applies to another part of the print (symmetrical part).

Exhibit C

Power Density Calculations

131 Gifford Lane
Bozrah, CT

Technical Memo

To: Brendan Sharkey
From: Michael Walker (Radio Engineering Consultant)
cc: Mike Fulton
Subject: Power Density Report for CT11313A
Date: 7/16/99

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the proposed OMNIPOINT Communications Inc. PCS antenna installation on SBA Tower at 131 Gifford Lane, Bozrah, CT. This study incorporates the most conservative considerations 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 the OCI transmitters are in the 1930-1950 MHZ frequency band.
- 2) The antenna cluster consists of three sectors, with 2 antenna per sector. The model number for each antenna is DAPA 59212.
- 3) The antenna height is 192.07 feet Center Line.
- 4) The maximum transmit power from each sector is 1120.0 Watts Effective Isotropic Radiated Power (EiRP).
- 5) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 6) 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.
- 7) 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 worse case assumptions, the power density calculations from the proposed OMNIPOINT Communications Inc., PCS antenna installation are on the order of 1,000 to 10,000 times less than the FCC/ANSI/IEEE C95.1-1991 standard of 1000 microwatts per square centimeter ($\mu\text{w}/\text{cm}^2$). Details are shown in the attachment. Furthermore, the proposed antenna location for Omnipoint Communications at SBA Tower at 131 Gifford Lane, Bozrah, CT will not interfere with existing public safety telecommunications, AM band and FM band radio broadcast, TV, Police Communication, HAM Radio communications and other signals in the area.

Region 11 - Connecticut Power Density Calculation - Worst Case	
Base Station TX output	20 W
Number of channels	2
Antenna Model	DAPA: 59210 ▶
Antenna Gain	18.5 dBi
Cable Size	1 5/8" ▶
Cable Length	215 ft
Jumper & Connector loss	1 dB
Cable Loss per foot	0.0116
Total Cable Loss	2.494 dB
Total Attenuation	3.494 dB
Total EIRP per channel	58.02 dB
Total EIRP per sector	61.03 dB
Ground Reflection	1.6
Frequency	1930 MHz
Antenna Height	192.07 ft
nsng	15.006
Power Density (S) =	0.007533 mW / cm²
% MPE =	0.7533%

Equation Used :

$$S = \frac{(1000(gr)^2(Power) * 10^{(msg10)})}{4\pi (R)^2}$$

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

Sprint's worst case power density of 0.015775 at the base of the tower (0 ft) and, the combination of Sprint's and Omnipoint's power densities will be 0.023308 mW/cm², which 42.903 times lower than the Federal Standard of 1.0 mW/cm².