



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

July 9, 2003

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

RE: **EM-T-MOBILE-057-030609** - Omnipoint Facilities Network 2, LLC, a subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 363 Riversville Road, Greenwich, Connecticut.

Dear Attorney Humes:

At a public meeting held on July 8, 2003, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated June 9, 2003, and additional correspondence dated June 16, 2003. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. 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 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 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.

Thank you for your attention and cooperation.

Very truly yours,


Pamela B. Katz, P.E.

Chairman

PBK/laf

c: Honorable Richard Dergstresser, First Selectman, Town of Greenwich
Diane Fox, Town Planner, Town of Greenwich
Michele G. Briggs, Southwestern Bell Mobile Systems
Sandy M. Carter, Verizon Wireless
Thomas F. Flynn III, Nextel Communications

LEBOEUF, LAMB, GREENE & MACRAE
L.L.P.

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

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June 16, 2003

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JUN 16 2003

CONNECTICUT
SITING COUNCIL

Pamela Katz, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Notice of Exempt Modification
363 Riversville Road, Greenwich, Connecticut

Dear Chairman Katz and Members of the Council:

With respect to the above-referenced Notice of Exempt Modification, please find attached a Revised Structural Analysis intended to replace the previously-filed Exhibit E in its entirety. Also, although the text of the Notice of Exempt Modification indicated that structural changes were required to accommodate T-Mobile's proposed installation, the attached analysis from engineers at URS Corporation confirms that the tower was originally designed to accommodate T-Mobile's currently proposed configuration. Therefore, no structural enhancements are required.

If you or the staff have any follow-up questions or concerns with regard to this matter, please let us know. Thank you for your consideration of this matter.

Respectfully submitted,

By:


Its Counsel

Stephen J. Humes

cc: Greenwich First Selectman Richard Bergstresser

Exhibit E

REVISED

Structural Analysis
363 Riversville Road
Greenwich, Connecticut



June 16, 2003

Ms. Pamela Katz, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Reference: Proposed Telecommunications Facility
T-Mobile Site No.11-069A
Boy Scouts Camp
363 Riverville Road
Greenwich Connecticut
36922003/VS2-008

Dear Ms. Katz:

URS Corporation (URS) conducted a review and evaluation of the newly erected 150' monopole structure located at 363 Riverville Road Greenwich, Connecticut. The purpose of this review was to evaluate the effect of the proposed T-Mobile antennas and mount on the monopole structure. The monopole and its foundation were designed by Engineered Endeavors Incorporated, Project No. 5590 revision 8 dated April 10, 2003, approved by Michael Moroi, Connecticut P.E. The structure was designed to support seven telecommunications carriers between the elevations of 90' through 150' and a 10' extension to support additional carrier. The original design considered (12) ALP 11011 directional antennas on 12' low profile platforms for each carrier. The tower is constructed to 150' in height and currently no telecommunication carriers have been installed on the tower to this date. The proposed T-Mobile antennas and mount considered in this review are as following:

<u>Antenna and Mount</u>	<u>Carrier</u>	<u>Antenna Center Elevation</u>
(12) EMS DR65-18-02DP antennas on 10' extension and 12' low profile Platform with (24) 1-5/8" coax cables Within the monopole	T-Mobile (Proposed)	160'

This evaluation is based on the requirements that all antenna cables are to be placed within the monopole. It is our determination that the existing 150' monopole and its foundation have sufficient structural capacity to support the T-Mobile antennas and mount on the 10' extension as specified above. This evaluation is based on requirements of the TIA/EIA-222-F dated March 1996 and the BOCA 1996 with Connecticut State Building Code supplement dated 1999 and the latest amendments. Any future modification or addition other than proposed T-mobile installation as specified above will require that the tower and its foundation to be analyzed and evaluated.

If you should have any questions, please call

Sincerely,

URS Corporation

Mohsen Sahirad, P.E.
Senior Structural Engineer

MS/ldm

cc: Joe Deker - T-Mobile
Stephen Humes - LLG&M
Peter Van Wilgen - Cingular
Doug Roberts, AIA - URS
N.A., A.A. - URS
CF/Book



URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Tel: 860.529.8882
Fax: 860.529.3991

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L.L.P.

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CONNECTICUT
SITING COUNCIL

June 9, 2003

EM-T-MOBILE-057-030609

Pamela Katz, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Notice of Exempt Modification
363 Riversville Road, Greenwich, Connecticut

Dear Chairman Katz and Members of the Council:

Please be advised that LeBoeuf, Lamb, Greene & MacRae, L.L.P. represents Omnipoint Facilities Network 2, LLC, a subsidiary of T-Mobile USA, Inc. (hereinafter T-Mobile) in the above-referenced matter. T-Mobile intends to replace its approved flush-mounted antenna array attached on a pipe mast at the above-referenced site and replace them with twelve (12) new panel antennas mounted on a low profile platform on the existing monopole facility in Greenwich. Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Greenwich First Selectman Richard Bergstresser.

Background

T-Mobile holds the "A block" "Wideband PCS" license for the 2-GHz PCS frequencies for the greater New York City area, including the entire State of Connecticut. T-Mobile is licensed by the Federal Communications Commission (FCC) to provide PCS wireless telecommunications service in the State of Connecticut, which includes the area to be served by the proposed installation.

Discussion

By Petition No. 495 approved by the Connecticut Siting Council on December 14, 2000, Springwch Cellular Limited Partnership (SCLP) received permission to replacing the existing tower facility with a new one hundred fifty-two (152') foot monopole facility on Riversville Road, Greenwich. T-Mobile's proposed installation, as approved, called for the installation of a pipe mast pole extension and three (3) flush mounted antennas at the one hundred sixty (160') foot centerline (see design drawing SC-2 attached as part of Exhibit C) location on the tower. The coordinates for the site are **41°-03'-59.25" N** and **73°-40'-18.64" W**. The monopole is located adjacent to the Merritt Parkway in Greenwich. While the new monopole has not yet been built, T-Mobile proposes to change its antenna configuration at the same approved height.

T-Mobile's proposal calls for the replacement of its approved three (3) panel antenna array. This configuration would be replaced with twelve (12) panel antennas on a flange mounted low profile platform. The configuration is a cluster of three sectors with four antennas per sector. A structure elevation is shown in drawing SC-2, attached as part of Exhibit C. The model number for the replacement antennas is EMS-DR65-18-02DP. A new structural analysis and design calculations of the tower has been completed and is attached as Exhibit E. The calculations conclude that reinforcing steel and concrete is required at the base of the tower to support T-Mobile's proposed installation. As the calculations in the structural analysis show, after reinforcement features, the new monopole tower structure is capable of supporting the proposed T-Mobile installation. Three new Nortel S8000 equipment cabinets will be installed on a ten foot by twenty foot (10' x 20') concrete pad (see pad detail on drawing SC-1, attached as part of Exhibit C). Other design features of the tower remain as that approved by the Siting Council in Petition No. 495.

The planned modifications to the Greenwich facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

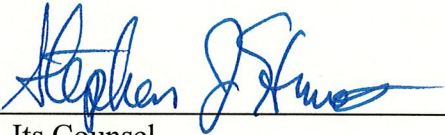
1. The proposed modification will not increase the height of T-Mobile's approved antennas on the tower and will not extend the boundaries of the existing compound area. The enclosed tower drawings confirm that the planned changes will not increase the overall height of the tower.
2. The installation of T-Mobile equipment, as reflected on the attached site plan, will not require an extension of the site boundaries.
3. The proposed modification to the facility will not increase the noise levels at the existing facility by six decibels or more. T-Mobile's equipment is self-contained and requires no additional heating, ventilation or cooling equipment.
4. The operation of the additional antennas will not increase the total radio frequency (RF) power density, measured at the site boundary, to a level at or above the applicable standard. The "worst-case" RF power density calculations, for a point at the site boundary, are attached hereto as Exhibit F.

For the foregoing reasons, T-Mobile respectfully submits that the proposed addition of antennas and equipment at the Greenwich facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Thank you for your consideration of this matter.

Respectfully submitted,

OMNIPOINT FACILITIES NETWORK 2, LLC

By: 
Its Counsel
Stephen J. Humes

cc: Greenwich First Selectman Richard Bergstresser

Exhibit A
Site Map
363 Riversville Road
Greenwich, Connecticut

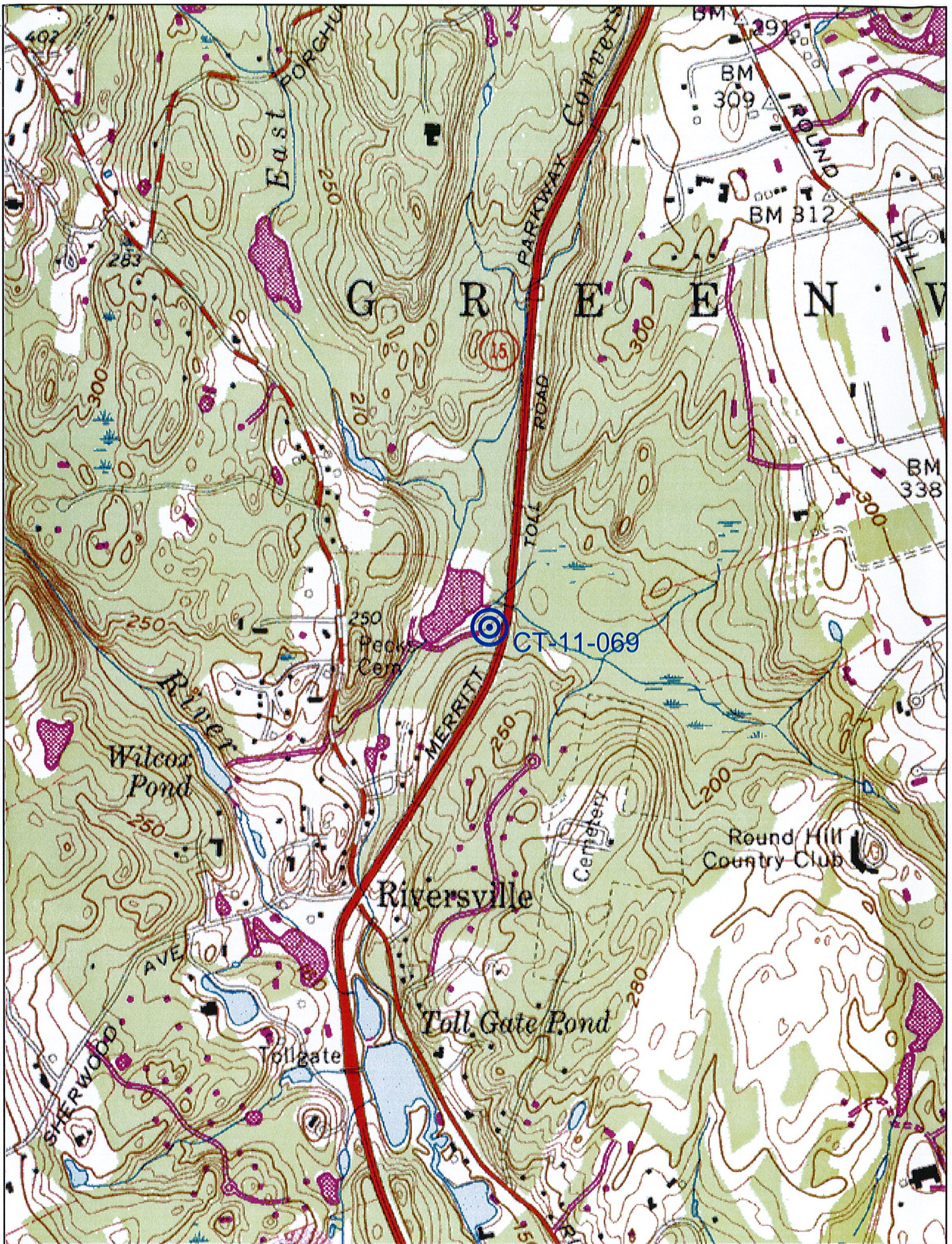


Exhibit C

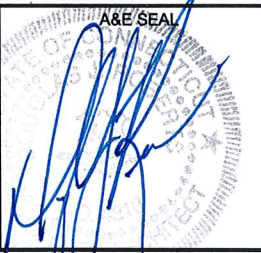
Design Drawings

**363 Riversville Road
Greenwich, Connecticut**

T-Mobile

78 PROGRESS DRIVE, 2ND FLOOR, STAMFORD, CT, 06902
OFFICE: (203) 328-8923 FAX: (203) 328-8955

A&E FIRM
URS CORPORATION AES
795 BROOK STREET, BLDG 5
ROCKY HILL, CT. 06067
1-(860)-529-8882



APPROVALS

T-Mobile _____
LANDLORD _____
LEASING _____
RF. _____
ZONING _____
CONSTRUCTION _____
AE _____

PROJECT NO.: V52008/36422003

DRAWN BY: CRS

CHECKED BY:

SUBMITTALS

DWG NO.	DESCRIPTION
T-1	TITLE SHEET
SC-1	APPROVED SITE PLAN
SC-2	EXTERIOR ELEVATIONS

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CT-11-069A
BOY SCOUTS

363 RIVERSVILLE ROAD
GREENWICH, CONNECTICUT

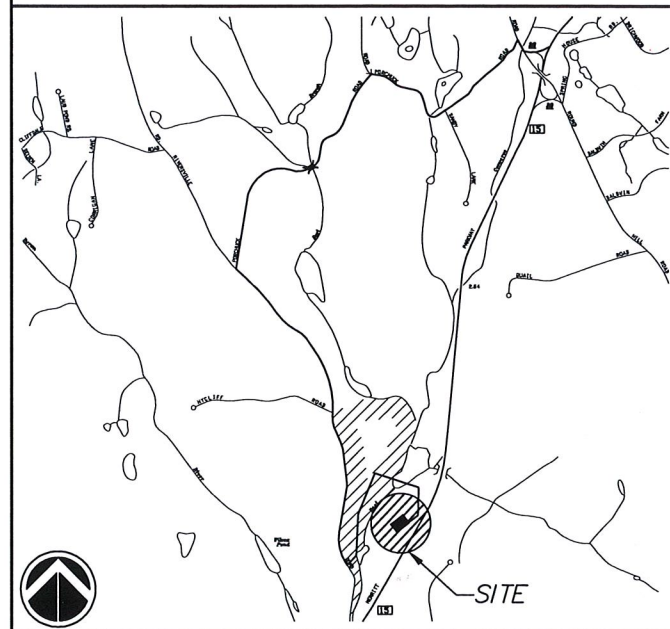
TITLE SHEET

T-1

T-Mobile®

363 RIVERSVILLE ROAD GREENWICH, CONNECTICUT SITE NO.: CT-11-069A MONOPOLE

LOCATION MAP SCALE: N.T.S.



SITE DIRECTIONS

TAKE I-91 SOUTH TO ROUTE 15 SOUTH TO EXIT 28 (ROUND HILL ROAD). TAKE A RIGHT AT THE END OF THE EXIT RAMP AND THEN A QUICK LEFT ONTO PORCHUCK ROAD. BEAR LEFT AT THE FORK IN THE ROAD AND FOLLOW TO RIVERSVILLE ROAD. TAKE A LEFT ONTO RIVERSVILLE ROAD AND FOLLOW FOR APPROXIMATELY 1 MILE. THE ENTRANCE TO THE BOY SCOUTS' CAMP IS ON THE LEFT. FOLLOW INTO CAMP. TAKE A RIGHT AND GO OVER BRIDGE. BEAR RIGHT AFTER STORAGE BUILDING AND FOLLOW UP TO TELECOMMUNICATIONS COMPOUND.

PROJECT SUMMARY

SITE NUMBER: CT-11-069A	A&E: URS CORPORATION, A.E.S. ADDRESS: 795 BROOK STREET, BLDG 5 CITY, STATE, ZIP: ROCKY HILL, CT 06067 CONTACT: DOUGLAS J. ROBERTS, A.J.A. PHONE: (860) 529-8882
SITE NAME: BOY SCOUTS	ZONING: T-MOBILE ADDRESS: 100 FILLEY STREET CITY, STATE, ZIP: BLOOMFIELD, CT 06002 CONTACT: KARINA HANSEN PHONE: (860) 642-7145
SITE ADDRESS: 363 RIVERSVILLE ROAD GREENWICH, CT	SITE ACQUISITION: T-MOBILE ADDRESS: 76 PROGRESS DRIVE, 2ND FLOOR CITY, STATE, ZIP: STAMFORD, CT 06402 CONTACT: JOHN LAMONTAGNE PHONE: (203) 512-TTTT
CURRENT ZONING: RA-4	RF ENGINEER: T-MOBILE ADDRESS: 76 PROGRESS DRIVE, 2ND FLOOR CITY, STATE, ZIP: STAMFORD, CT 06402 CONTACT: _____ PHONE: (203) 328-8400
ZONING JURISDICTION: CONNECTICUT SITING COUNCIL	
PROPERTY OWNER: GREENWICH COUNCIL BOY SCOUTS OF AMERICA ADDRESS: 363 RIVERSVILLE ROAD CITY, STATE, ZIP: GREENWICH, CT	
APPLICANT/LESSEE: OMNIPONT COMMUNICATIONS, INC. AS AGENT FOR OMNIPONT FACILITIES NETWORK 2, LLC ADDRESS: 76 PROGRESS DRIVE, 2ND FLOOR CITY, STATE, ZIP: STAMFORD, CT 06402 PHONE: (203) 328-8400	
EQUIPMENT LOCATION: OUTDOOR <input checked="" type="checkbox"/> INDOOR <input type="checkbox"/>	
ANTENNA LOCATION: GUY TOWER <input type="checkbox"/> SELF SUPPORT TWR <input type="checkbox"/> EX. LATTICE TOWER <input type="checkbox"/> MONOPOLE <input checked="" type="checkbox"/> EX. MONOPOLE <input type="checkbox"/> ROOF TOP <input type="checkbox"/> WATERTANK <input type="checkbox"/> SMOKE STACK <input type="checkbox"/> CHURCH <input type="checkbox"/>	

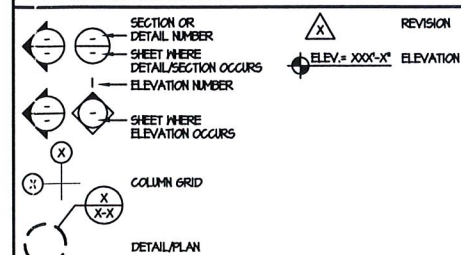
SHEET INDEX

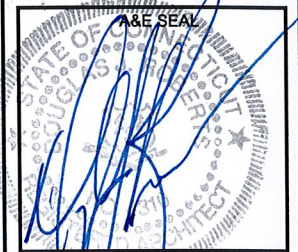
DWG NO.	DESCRIPTION
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ABBREVIATION LIST

C. CENTERLINE	GA. GAUGE
FL. FLATE	GALV. GALVANIZED
AF. ABOVE FINISH FLOOR	I.D. INSIDE DIAMETER
AFG. ABOVE FINISH GRADE	IN. INCHES
B.O. BOTTOM OF	MAX. MAXIMUM
CL. CEILING	MIN. MINIMUM
CMU. CONCRETE MASONRY UNIT	N/A. NOT APPLICABLE
COL. COLUMN	N.I.C. NOT IN CONTRACT
CONC. CONCRETE	N.T.S. NOT TO SCALE
CONT. CONTINUOUS	O.C. ON CENTER
DIA. DIAMETER	O.D. OUTSIDE DIAMETER
EA. EACH	R. RADIUS
EL. ELEVATION (DATUM)	REV. REVISION(S), REVISED
ELEC. ELECTRICAL	RF. RADIO FREQUENCY
EQ. EQUAL	V.I.F. VERIFY IN FIELD
FT. FOOT/FEET	

SYMBOL LEGEND





APPROVALS

T-Mobile _____
LANDLORD _____
LEASING _____
RF. _____
ZONING _____
CONSTRUCTION _____
AE _____

PROJECT NO: V52008/36A22003

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DATE	DESCRIPTION
04-10-08	SITING COUNCIL

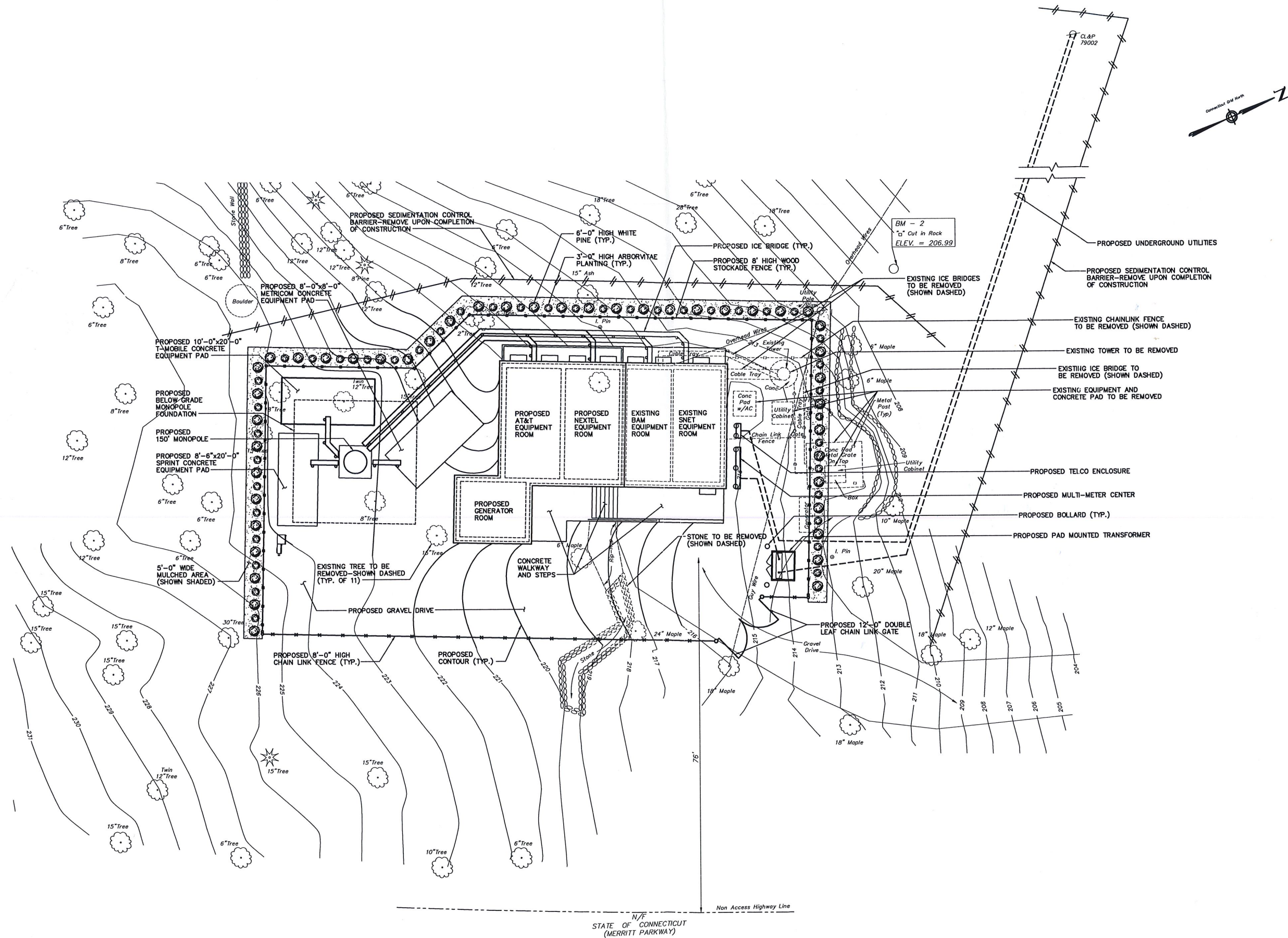
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**CT-II-069A
BOY SCOUTS**

363 RIVERSVILLE ROAD
GREENWICH, CONNECTICUT

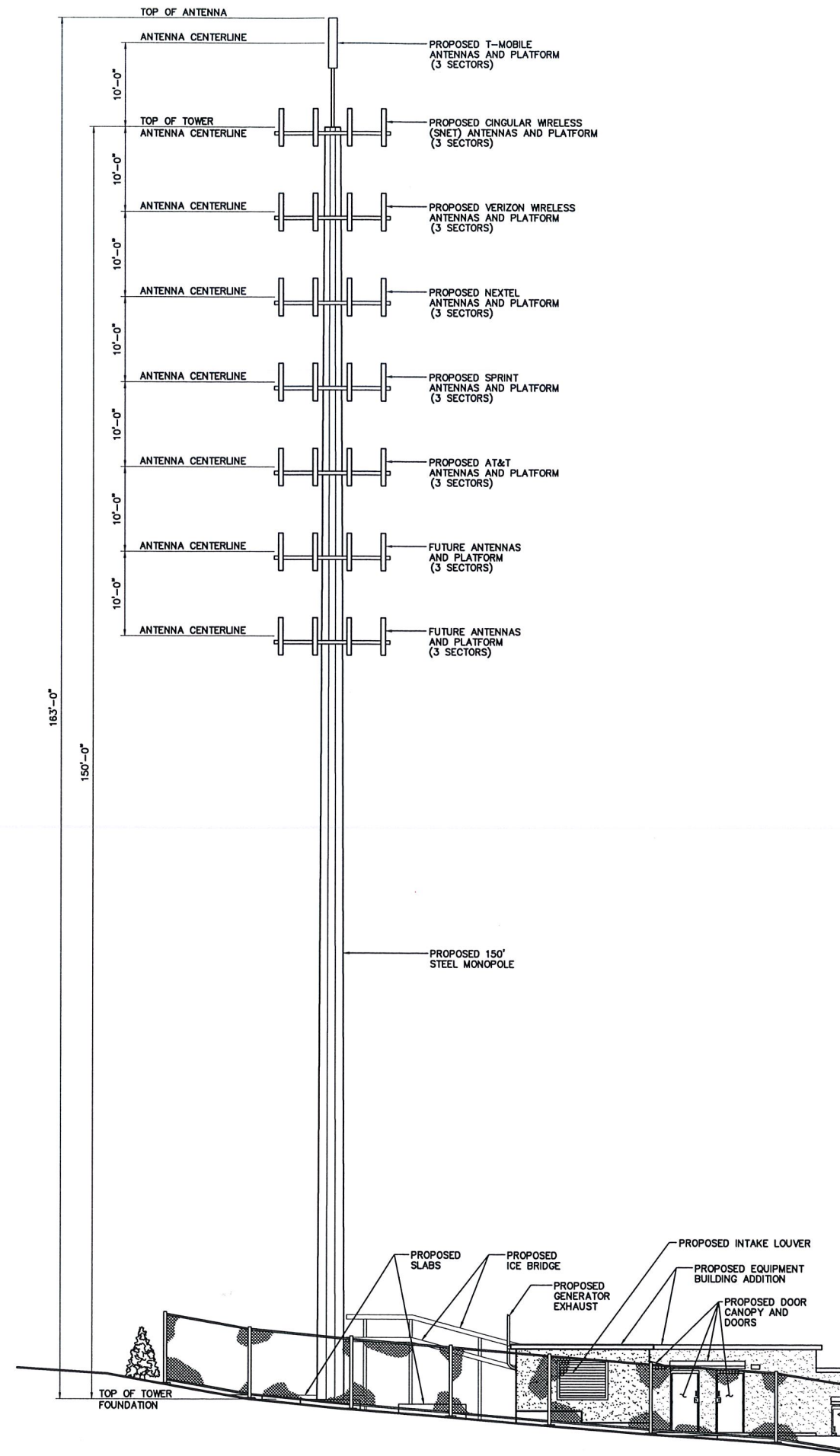
**APPROVED
SITE PLAN**

SC-1

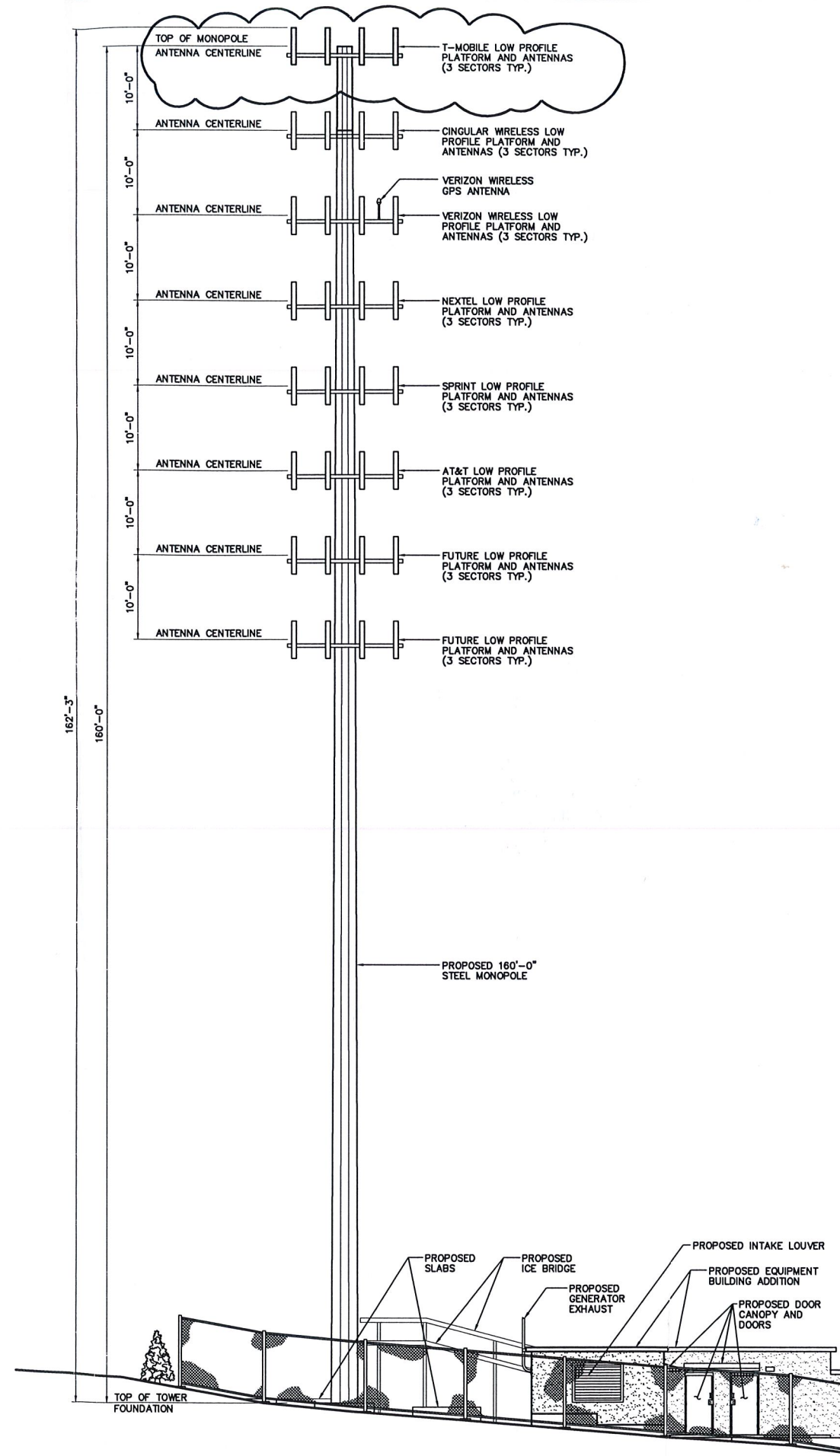


1 APPROVED SITE PLAN
SCALE: 1" = 10'-0"





2 PARTIAL EAST ELEVATION-APPROVED
 SCALE: 1/8" = 1'-0"
 0 4 8 16 32

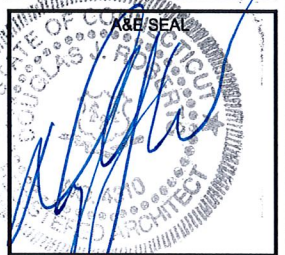


1 PARTIAL EAST ELEVATION-PROPOSED
 SCALE: 1/8" = 1'-0"
 0 4 8 16 32

T-Mobile

76 PROGRESS DRIVE, 2ND FLOOR, STAMFORD, CT. 06902
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T-Mobile _____

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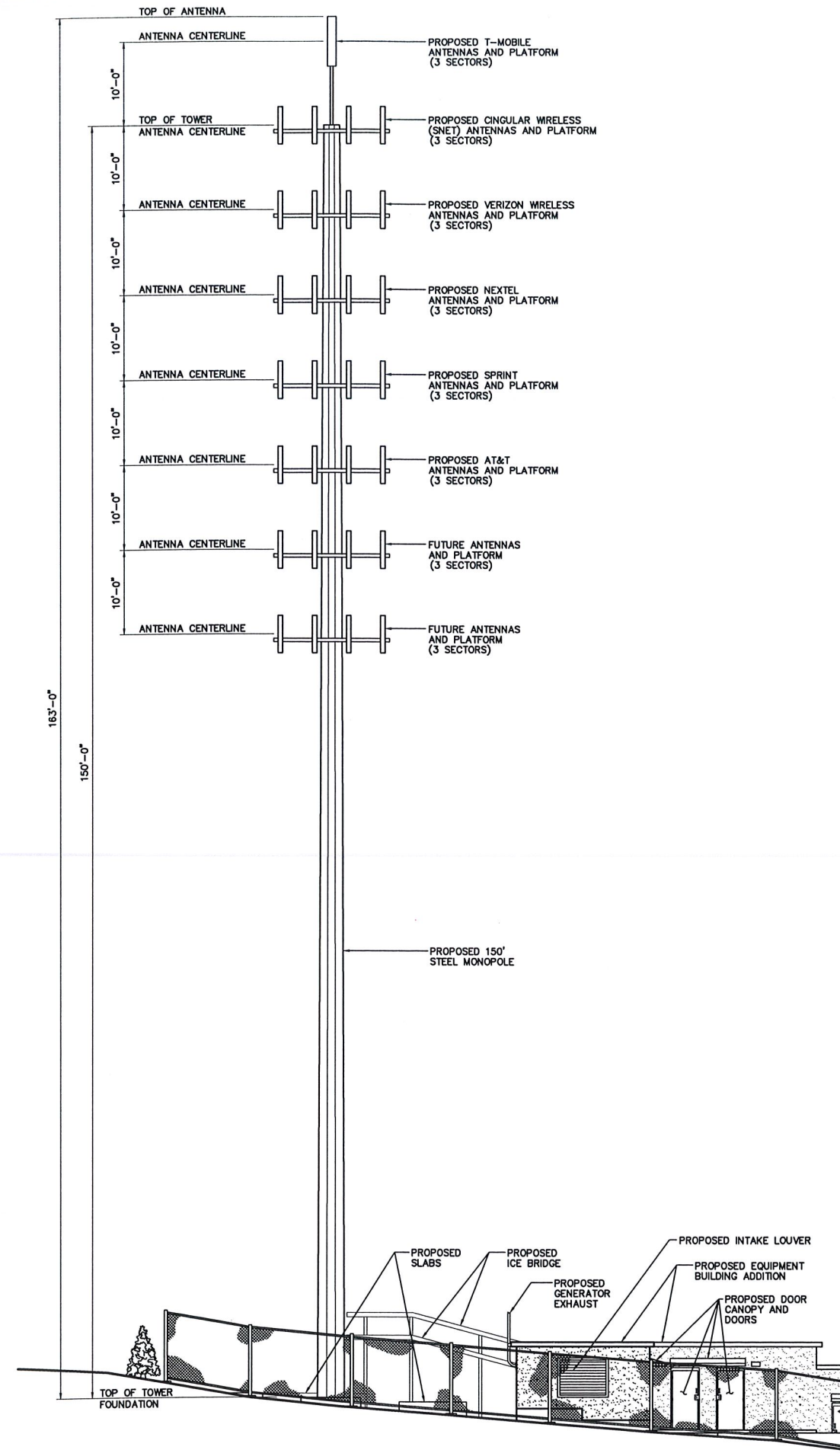
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04-10-09	SITING COUNCIL

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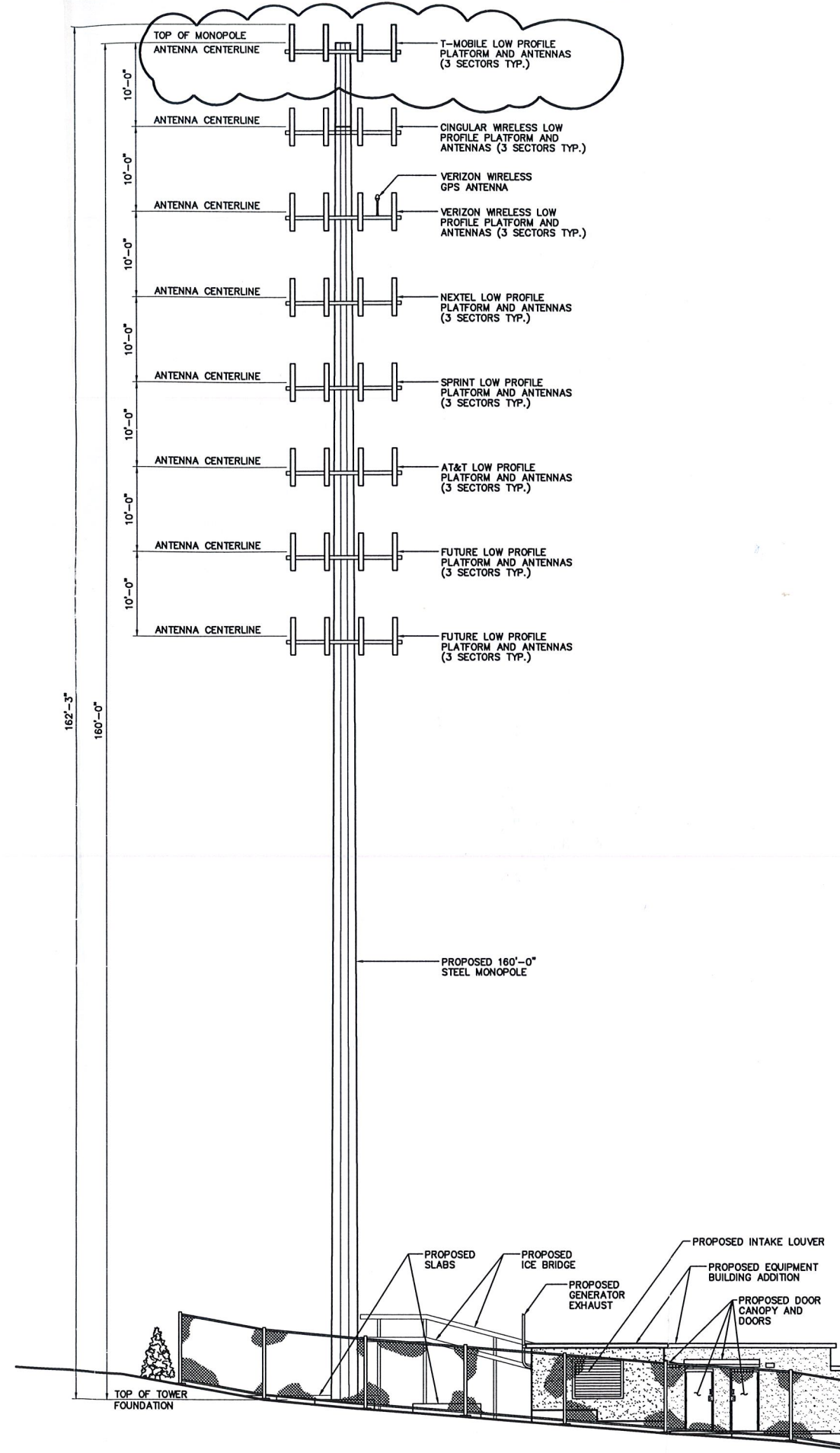
CT-II-069A
 BOY SCOUTS
 363 RIVERSVILLE ROAD
 GREENWICH, CONNECTICUT

EXTERIOR ELEVATIONS

SC-2



2 PARTIAL EAST ELEVATION-APPROVED
 SC-2 SCALE: 1/8" = 1'-0"
 0 4 8 16 32

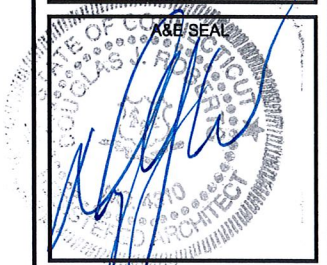


1 PARTIAL EAST ELEVATION-PROPOSED
 SC-2 SCALE: 1/8" = 1'-0"
 0 4 8 16 32

T-Mobile

76 PROGRESS DRIVE, 2ND FLOOR, STAMFORD, CT. 06902
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CT-II-069A
 BOY SCOUTS
 363 RIVERSVILLE ROAD
 GREENWICH, CONNECTICUT

EXTERIOR
 ELEVATIONS

SC-2

Exhibit D

Equipment Specifications

363 Riversville Road

Greenwich, Connecticut



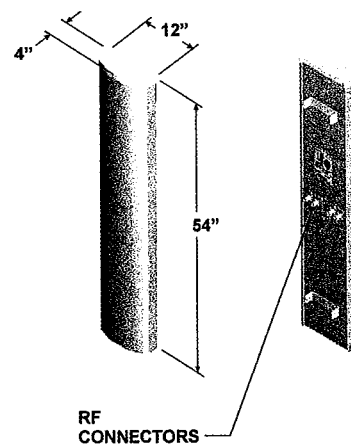
DR65-18-XXDPL2Q

Dual DualPol® Polarization
1850 MHz - 1990 MHz

OptiRange™
Suppressor™

Electrical Specifications

Azimuth Beamwidth (-3 dB)	65°
Elevation Beamwidth (-3 dB)	6°
Elevation Sidelobes (Upper)	≥ 18 dB
Gain	17.3 dBi (15.2 dBd)
Polarization	Quad Linear, Slant (± 45°)
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	≥ 35 dB
Electrical Downtilt Options	0°, 2°, 4°, 6°
VSWR	1.35:1 Max
Connectors	4; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -150 dBc [2 x 20W (+ 43 dBm)]
Lightning Protection	Chassis Ground



Mechanical Specifications

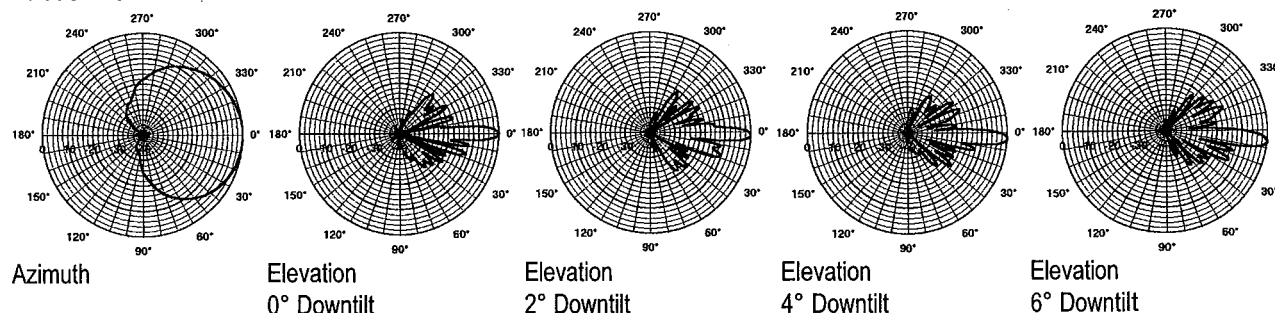
Dimensions (L x W x D)	54 in x 12 in x 4 in (137.2 cm x 30.5 cm x 10.2 cm)
Rated Wind Velocity	130 mph (209 km/hr)
Equivalent Flat Plate Area	4.5ft² (.42 m²)
Front Wind Load @ 100 mph (161 kph)	130 lbs (576 N)
Side Wind Load @ 100 mph (161 kph)	43 lbs (192 N)
Weight	24 lbs (11 kg)

Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20*, MTG-CXX-10*, MTG-C02-10, MTG-TXX-10*

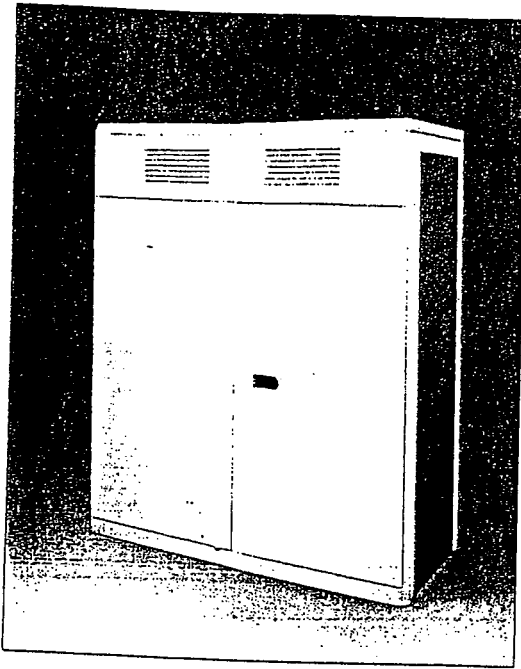
Note: *Model number shown represents a series of products. See Mounting Options section for specific model number.

Patterns



Revised 05/14/02

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.

• 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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Richardson TX 75082
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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 $+50^{\circ}\text{C}$ ($+122^{\circ}\text{F}$).

Consumption

BTS input voltage:

- GSM 900/1800
 - nominal voltage contained between 220V AC and 240V AC
 - minimum voltage: $220 - 10\% = 198\text{V AC}$
 - maximum voltage: $240 + 6\% = 254\text{V AC}$
- GSM 1900 (with DACS)
 - nominal voltage: 208V AC to 240V AC
 - minimum voltage: $208 - 10\% = 187\text{V AC}$
 - maximum voltage: $240 + 6\% = 254\text{V AC}$
- GSM 1900 (with ACU and/or the power system six-rectifier type)
 - nominal voltage: 240V AC
 - minimum voltage: $240 - 10\% = 187\text{V AC}$
 - maximum voltage: $240 + 6\% = 254\text{V AC}$

NON - PREMIUM
BTS ONLY

Exhibit E

Structural Analysis

363 Riversville Road

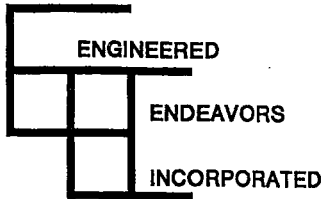
Greenwich, Connecticut



URS
Structure & Foundation
Design Calculations
150' Pole
Site: Boys Scouts Council
EEI Job #: 05590-E02 Rev. 6

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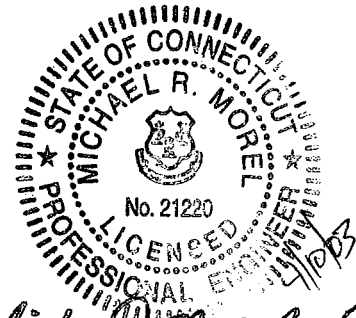
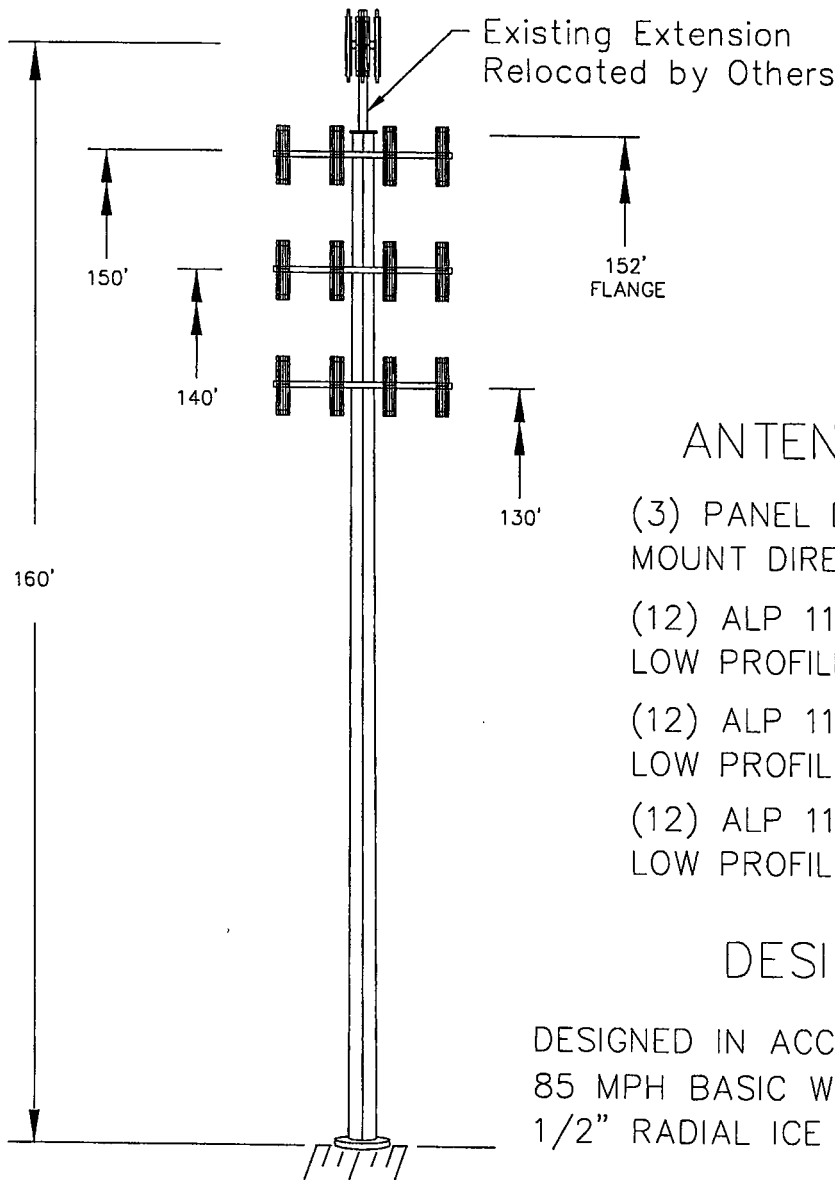
**URS
Structure & Foundation
Design Calculations
150' Pole
Site: Boys Scouts Council
EEI Job #: 05590-E02 Rev. 6**



Customer URS CORP. By L. PADGETT Date 4/10/03
 Structure 150' GROWABLE MONOPOLE Checked _____ Date 5590
 Job/Quote No. _____

SITE LOCATION - GREENWICH, FAIRFIELD COUNTY, CT
 SITE NAME - BOY SCOUTS COUNCIL

REVISION 6
 INITIAL CONFIGURATION



Michael R. Morel

ANTENNA LOADING:

- (3) PANEL DIRECTIONAL ANTENNAS @ 160' MOUNT DIRECTLY TO PIPE EXTENSION
- (12) ALP 11011 DIRECTIONAL ANTENNAS LOW PROFILE PLATFORM @ 150'
- (12) ALP 11011 DIRECTIONAL ANTENNAS LOW PROFILE PLATFORM @ 140'
- (12) ALP 11011 DIRECTIONAL ANTENNAS LOW PROFILE PLATFORM @ 130'

DESIGN NOTES:

DESIGNED IN ACCORDANCE WITH TIA/EIA 222 F
 85 MPH BASIC WIND SPEED
 1/2" RADIAL ICE

CASE I - 85 MPH BASIC WIND SPEED

CASE II - 75% OF 85 MPH BASIC WIND WITH 1/2" SIMULTANEOUS ICE

NOTE: IT IS THE RESPONSIBILITY OF THE PURCHASER TO VERIFY THAT THE WIND LOADS AND DESIGN CRITERIA SPECIFIED MEET THE REQUIREMENTS OF ALL LOCAL BUILDING CODES

Exhibit F

Power Density Calculations

363 Riversville Road

Greenwich, Connecticut

Technical Memo

To: Steve Humes, Esq.
From: Chetan Dhaduk - Radio Frequency Engineer
cc: Roni Zola
Subject: Power Density Report for CT11069 A
Date: April 9, 2003

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile USA, Inc. PCS antenna installation on a New Monopole at 363 Riversville Road, Greenwich, 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 Wireless transmitters are in the 1930-1950 MHz frequency band.
- 2) The antenna array consists of three sectors, with 4 antennas per sector.
- 3) The model number for each antenna is EMS RR65-18-02DP.
- 4) The antenna center line height is 160 ft.
- 5) The maximum transmit power from any sector is 3938.4 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 USA, Inc. PCS antenna installation on a New Monopole at 363 Riversville Road, Greenwich, CT, is 0.03643 mW/cm². This value represents 3.643% of the Maximum Permissible Emission (MPE) standard of 1 milliwatt per square centimeter (mW/cm²) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile USA 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 22.4673%. The combined Power Density for the site is 26.111% of the M.P.E. standard.

New York Market**Connecticut****Worst Case Power Density**

Site:	CT11069 A
Site Address:	363 Riversville Road
Town:	Greenwich
Tower Height:	160 ft.
Tower Style:	New Monopole
Base Station TX output	20 W
Number of channels	8
Antenna Model	EMS RR65-18-02DP
Cable Size	1 5/8 in.
Cable Length	180 ft.
Antenna Height	160.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	1.00 dB
Antenna Gain	17.0 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	2.0880 dB
Total Attenuation	3.0880 dB
Total EIRP per Channel	56.92 dBm
(In Watts)	492.30 W
Total EIRP per Sector	65.95 dBm
(In Watts)	3938.40 W
nsg	13.9120
Power Density (S) =	0.036433 mW/cm^2
T-Mobile Worst Case % MPE =	3.6433%

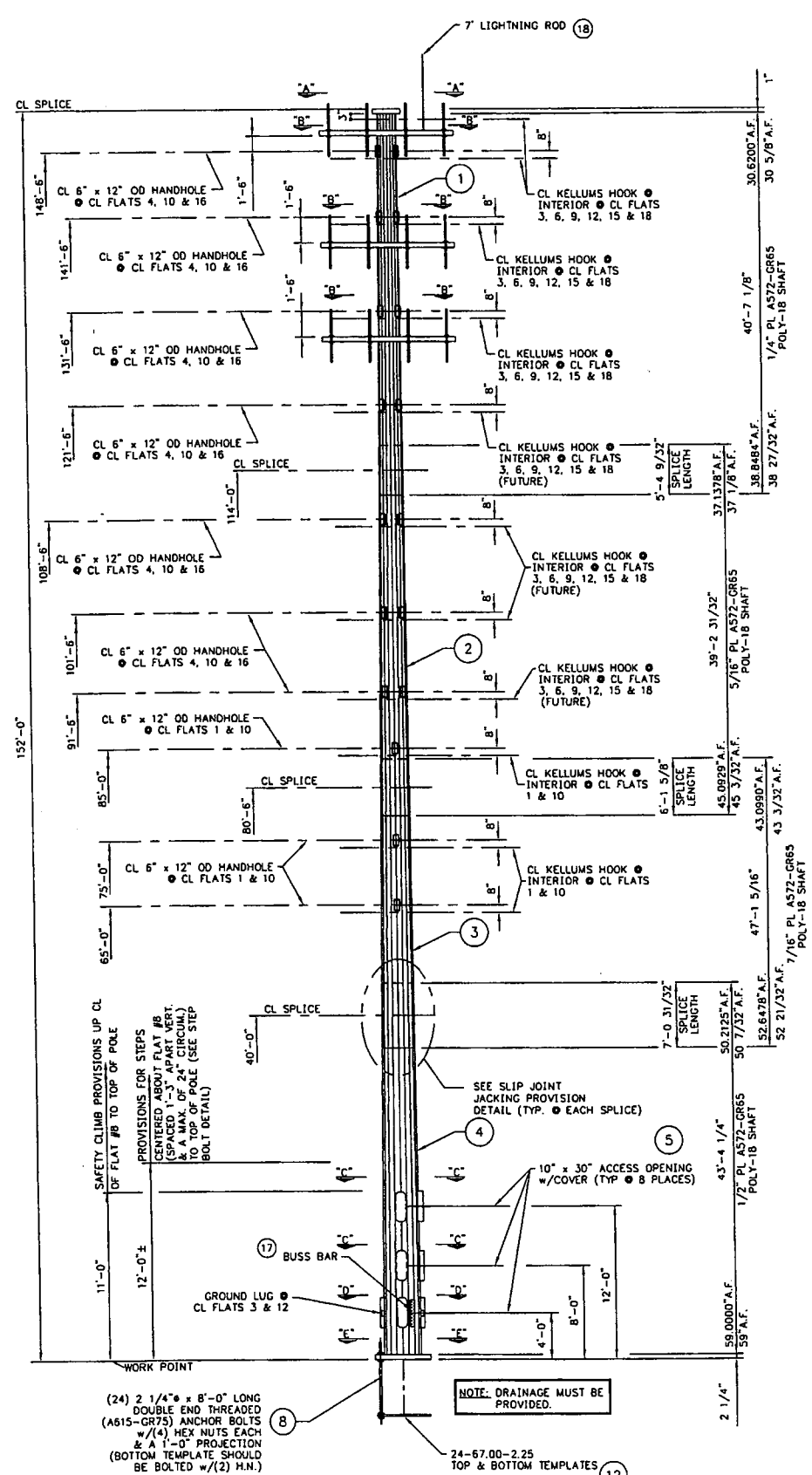
Equation Used :

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

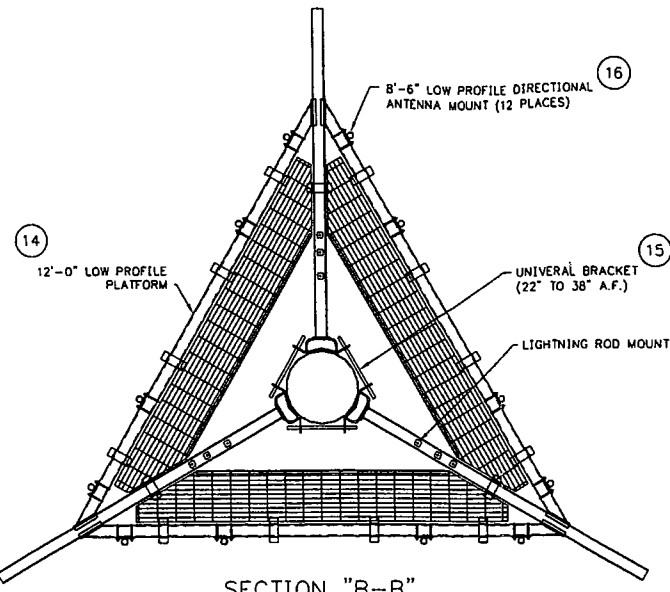
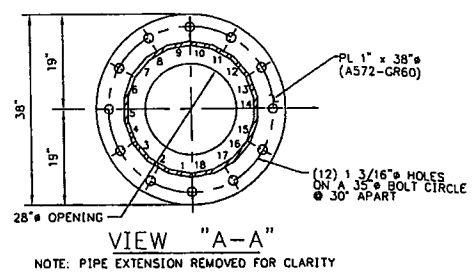
Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997

Co-Location Total	
Carrier	% of Standard
Verizon	6.6236 %
Cingular	5.6606 %
Sprint PCS	3.7503 %
AT&T Wireless	2.6888 %
Nextel	3.7440 %
Total Excluding T-Mobile	22.4673 %
T-Mobile	3.6433
Total % MPE for Site	26.1106%

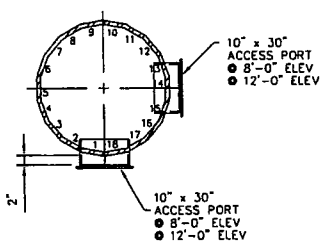
Relative Gain Power Density	
Antenna Relative Gain Factor	0.0 dBi
Total Attenuation	3.0880 dB
Total EIRP per Channel	56.92 dBm
(In Watts)	492.30 W
Total EIRP per Sector	65.95 dBm
(In Watts)	3938.40 W
nsg	13.9120
Power Density (S) =	0.036433 mW/cm^2
T-Mobile Relative Gain % MPE =	3.6433%



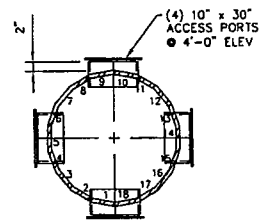
ERECTOR VIEW
SCALE NONE



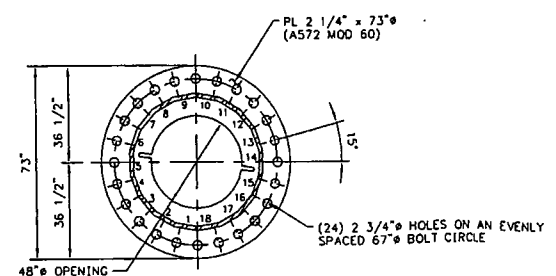
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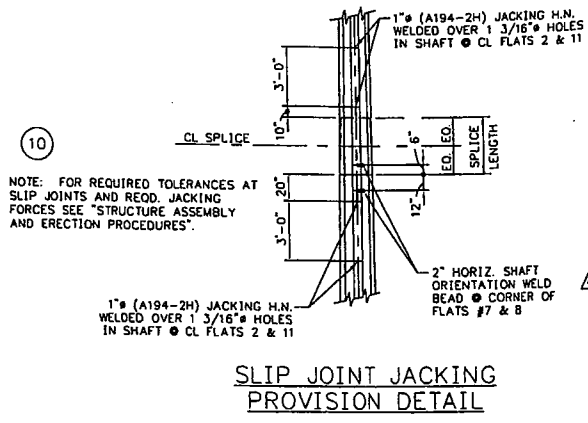
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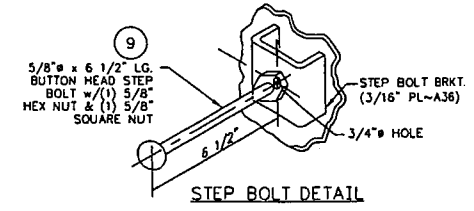
SECTION "D-D"



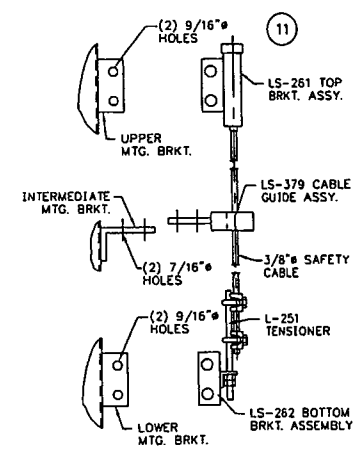
SECTION "E-E"



SLIP JOINT JACKING PROVISION DETAIL



STEP BOLT DETAIL



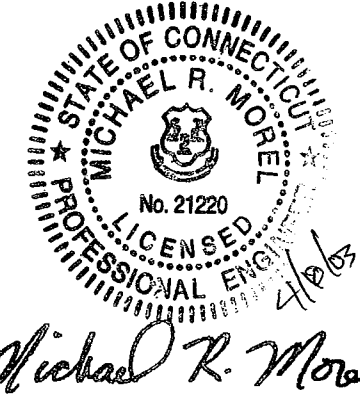
SAFETY CLIMB ATTACHMENT DETAILS
(LOCATED ALONG CL OF FLAT #8)

MATERIAL REQ'D. PER ASSEMBLY				
GALV. WT.	QTY.	ITEM	MK. NO.	DESCRIPTION
---	1	(1)	---	SHAFT ASSY. (UP. MID. SECTION)
---	1	(2)	---	SHAFT ASSY. (MIDDLE)
---	1	(3)	---	SHAFT ASSY. (LOW MID. SECTION)
---	1	(4)	---	SHAFT ASSY. (BOTTOM SECTION)
---	8	(5)	---	10" x 30" ACCESS PORT COVER &
---	---	(6)	---	HARDWARE AS FOLLOWS:
6.87	27	(7)	K11097	6" x 12" HANDHOLE COVER PLATE
---	---	(8)	---	---
129.50	24	(8)	2.25-A880DE-4	2 1/4" x 8"-0" LG. (A615-GR75) ANCHOR BOLTS w/ (4) HEX NUTS (A194-GR2H), EACH
1.08	---	(9)	S10006	5/8" x 6 1/2" LG. BUTTON HEAD STEP BOLT w/ (1) HEX & (1) SQUARE NUT EACH
---	1	(10)	---	STRUCTURE ASSEMBLY AND ERECTION PROCEDURES
---	1	(11)	DBI-150	150'-0" SAFETY CLIMB KIT
---	1	(11)	L2010	SAFETY CLIMB HARNESS
---	---	(12)	---	---
164.01	2	(12)	24-67.00-2.25	SETTING TEMPLATE
1.50	30	(13)	GS13625	5/8" KELLUMS HOOK ASSY.
1566.30	3	(14)	K10994A	12'-0" LOW PROFILE PLATFORM
343.14	3	(15)	K10462	UNIVERSAL BRACKET (22" TO 38" A.F.)
41.71	36	(16)	K11014	8'-6" LOW PROFILE DIRECTIONAL ANTENNA MOUNTS
7.50	1	(17)	K10062	BUSS BAR KIT
28.60	1	(18)	K10333	7' LIGHTNING ROD KIT
---	1	(19)	---	1" x 38" FLANGE PLATE (A36)
---	12	(20)	---	1 1/2" x 4" LG. (A325T) FULL THREADED BOLT w/ (3) H.N., (1) F.W. & (1) PALNUT
---	---	(21)	---	---

TOTAL GALV. STR. & ACCES. WT. #
TOTAL ANCHOR BOLT & TEMPLATE WT. 3430.69#

GENERAL NOTES

- MONOPOLE IS DESIGNED IN ACCORDANCE WITH TIA/EIA-222F FOR 85 MPH BASIC WIND SPEED AND 1/2" RADIAL ICE (NON-CONCURRENTLY).
 - ALL WELDS SHALL BE IN ACCORDANCE WITH AWS D.1.1. (LATEST EDITION). LONGITUDINAL SEAM WELDS WITHIN SLIP-JOINT AREA IN FEMALE SECTION SHALL BE 100% PENETRATION.
 - MONOPOLE SHALL BE HOT DIP GALVANIZED PER ASTM A123.
 - CONTRACTOR SHALL THOROUGHLY REVIEW EET'S ASSEMBLY & ERECTION PROCEDURE PRIOR TO INITIATING THE ERECTION OF THE MONOPOLE.
 - THE ORIENTATION OF THE MONOPOLE SHALL BE VERIFIED PRIOR TO ERECTION OF THE POLE.
 - SECTIONS OF THE MONOPOLE SHALL BE JACKED TOGETHER WITH A MINIMUM JACKING FORCE OF 10,000 LB APPLIED TO EACH SIDE, FOR A MAXIMUM RECOMMENDED JACKING FORCE, SPLICE LENGTH TOLERANCE, AND AIR GAP BETWEEN SECTIONS REFER TO EET ASSEMBLY & ERECTION PROCEDURE.
 - FOR PROPER SHAFT ALIGNMENT A 2" HORIZONTAL WELD BEAD AND A MARK ARE POSITIONED ON EACH SHAFT AT EACH SPLICE. THE 2" HORIZONTAL WELD BEADS ARE ON THE MATCHING CORNERS. THE MARK NUMBER IS ON THE ADJACENT FLAT. THE CORNERS WITH WELD BEADS SHALL BE ALIGNED FROM TOP TO BOTTOM OF THE POLE. MARK NUMBERS SHALL BE MATCHED FOR EACH SIDE & THE DISTANCE BETWEEN TWO WELD BEADS SHOULD BE 18" (±4").
 - FIELD ASSEMBLY NUTS (1") FOR JACKING SECTIONS TOGETHER ARE LOCATED ON OPPOSING SECTION FLATS ABOVE AND BELOW SPLICES.
 - ALL BOLTED CONNECTIONS WITH A325 HIGH-STRENGTH BOLTS SHALL BE ASSEMBLED IN ACCORDANCE WITH SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS. BOLTS SHALL BE BROUGHT TO SNUG-TIGHT CONDITIONS AS RECOMMENDED BY THE FLANGE SPECIFICATIONS IN FLANGE-TYPE JOINTS AND SHOULD BE SHIMMED IF NECESSARY. THE SHIMS WILL BE SUPPLIED BY EET.
 - ANCHOR BOLTS SHALL BE TIGHTENED AFTER THE STRUCTURE IS PLUMB. BOTH TOP & BOTTOM NUT SHALL BE TIGHTENED TO 600 FT-LBS MOMENT (APPROXIMATELY THE FULL EFFORT OF A MAN ON A FOUR FOOT WRENCH). FOR DETAIL ANCHOR BOLT INSTALLATION REFER TO EET ASSEMBLY AND ERECTION PROCEDURE.
 - GAP BETWEEN TOP OF THE FOUNDATION AND BOTTOM OF THE BASE PLATE MAY BE FILLED WITH A NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF f' = 2000 psi.
- WATER DRAINAGE MUST BE PROVIDED UNDERNEATH THE BASE PLATE TO ENSURE THAT MOISTURE DOES NOT COLLECT INSIDE THE MONOPOLE
- 12) POLE TAPER = 0.2027in/ft.



Michael R. Morel

ASSEMBLY MARKING PROCEDURE
EACH INDIVIDUAL ASSEMBLY SHALL HAVE A METAL TAG WELDED TO IT WHICH WILL BE ENGRAVED WITH THE ASSEMBLY MARK NO. AS SHOWN IN THE MATERIAL BLOCK. (MINIMUM OF 5/8" HIGH LETTERS)

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REV.	DESCRIPTION	DATE	DRW.	APP.
5	REMOVED PIPE EXT. & ADDED FLANGE & BOLTS	4/9/03	RVH	
4	STRUCTURE RE-DESIGN	4/7/03	RVH	
3	STRUCTURE RE-DESIGN	6/26/01	S.S.	
2	STRUCTURE RE-DESIGN	6/21/01	S.S.	
1	STRUCTURE RE-DESIGN	7/19/00	M.A.S.	

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