

Daniel F. Caruso
Chairman

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@ct.gov

Internet: ct.gov/csc

May 6, 2009

Mark R. Richard
UMTS Project Manager
T-Mobile USA, Inc.
35 Griffin Road South
Bloomfield, CT 06002

RE: **EM-T-MOBILE-034-090409** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 7 Westview Drive, Danbury, Connecticut.

Dear Mr. Richard:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- The tower shall be reinforced per page 9 of the structural analysis report dated February 23, 2009 and sealed by Martin Piercey, P.E. prior to the antenna swap;
- The tower and foundation shall not exceed 100 percent of their respective post-construction structural ratings; and
- A signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the reinforcements were properly completed, and the tower and foundation do not exceed 100 percent of their respective post-construction structural ratings.

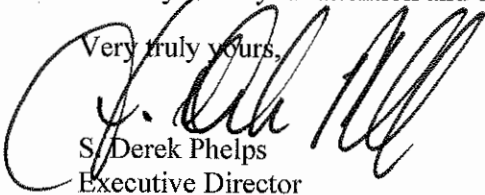
The proposed modifications are to be implemented as specified here and in your notice dated April 10, 2009, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations 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. Please be advised that the validity of this action shall expire one year from the date of this letter. 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,



S/ Derek Phelps
Executive Director

SDP/MP/laf

- c: The Honorable Mark D. Boughton, Mayor, City of Danbury
- Dennis Elpern, City Planner, City of Danbury
- Carrie L. Larson, Esq., Pullman & Comley, LLC
- Robert Kaufman



April 10, 2009

EM-T-MOBILE-034-090409

Via Federal Express

S. Derek Phelps, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RECEIVED
APR - 9 2009

ORIGINAL

CONNECTICUT
SITING COUNCIL

Re: **Notice of Exempt Modification
Robert Kaufman Telecommunications Facility
7 Westview Drive, Danbury, Connecticut
T-Mobile Site CT11923C**

Dear Mr. Phelps:

Omnipoint Communications, a subsidiary of T-Mobile USA, Inc. ("T-Mobile"), intends to replace existing antennas with new model antennas and supplement existing ground equipment at a 133-foot self-supporting lattice tower facility owned by Robert Kaufman and located at 7 Westview Drive, Danbury, Connecticut ("Facility"). 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. This installation constitutes an exempt modification pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes Section 16-50g *et. seq.* ("PUESA"), and Section 16-50j-72(b)(2) of the Regulations of the Connecticut State Agencies adopted pursuant to PUESA. In accordance with R.C.S.A. Section 16-50j-73, a copy of this notice has been sent to Mark D. Boughton, Mayor, Town of Danbury.

The existing Facility consists of a 133-foot self-supporting lattice tower facility capable of supporting multiple antennas within a fenced compound. The coordinates for the Facility are **Lat: 41°-23'-45" and Long: 73°-25'-26"**. The tower is located in the southeastern portion of Danbury, in a residential area, approximately 60 feet west of Westview Drive, roughly 1,800 feet southeast of Newtown Road, and roughly 1.5 miles southeast of Interstate 84 (see Site Map, attached as Exhibit A). The tower currently supports multiple communication, whip and satellite dish antennas at various levels. These antenna locations are shown in detail on pages 5 through 7 of the attached structural analysis (Exhibit E). The current T-Mobile antenna configuration is two per sector, for a total of six antennas. T-Mobile proposes to replace three of the existing antennas with three new antennas. The current configuration of six total antennas will remain the same. T-Mobile proposes to install three new APX16DWV antennas on existing mounts (one new per sector) replacing existing antennas at the same elevation, (50') level centerline AGL. T-Mobile also intends to add a UMTS 3106 BTS equipment cabinet to its current configuration of two existing S8000 equipment cabinets. The three cabinets will both be mounted on an existing concrete pad, located within the compound. T-Mobile's equipment will be contained within it's existing lease area, underneath the tower. T-Mobile intends to run new coaxial cable on its existing ice canopy from its current equipment pad to the existing tower. Utilities will be run from existing utility sources at the Facility (See Design Drawings and Equipment Specifications, attached as Exhibits B and C respectively).

T-Mobile USA, Inc.
Office: (860) 692-7100
Fax: (860) 692-7159
35 Griffin Rd S
Bloomfield, CT 06002

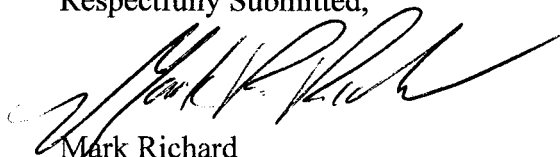
For the following reasons, the proposed modifications to the Westview Drive Facility meet the exempt modification criteria set forth in R.C.S.A. Section 16-50j-72(b)(2):

1. The proposed modification will not increase the height of the tower as T-Mobile seeks to install 3 new antennas to replace three existing ones, at a center line height of approximately 50 feet.
2. The installation and replacement of T-Mobile's antennas and ground equipment will not require an extension of the site boundaries.
3. The proposed modifications will not increase the noise levels at the existing Facility by six decibels or more.
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 standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. The worst-case RF power density calculations for the proposed T-Mobile antennas would be 57.029% of the FCC standard (see general power density calculations table, attached as Exhibit D).

Also attached, Exhibit E, is a structural analysis report. As is mentioned in the test portion of the structural report, modifications will need to be made to the lattice tower, including reinforcing the legs and structure. Per the specifications of the structural report and as detailed in the Proposed Structural Modification Drawings (see attached Exhibit F), T-Mobile intends to carry out the necessary modifications to insure the structural integrity and proper capacity for the tower.

For the foregoing reasons, T-Mobile respectfully submits that the proposed antenna installation and equipment at the Danbury Facility constitutes an exempt modification under R.C.S.A. Section 16-50j-72(b)(2).

Respectfully Submitted,



Mark Richard
UMTS Project Manager
Agent for T-Mobile

cc: Mark D. Boughton, Mayor, Town of Danbury
Robert Kaufman, underlying property owner

Exhibit A

Site Map

T-Mobile Site CT11923C

7 West View Drive

Danbury, Connecticut

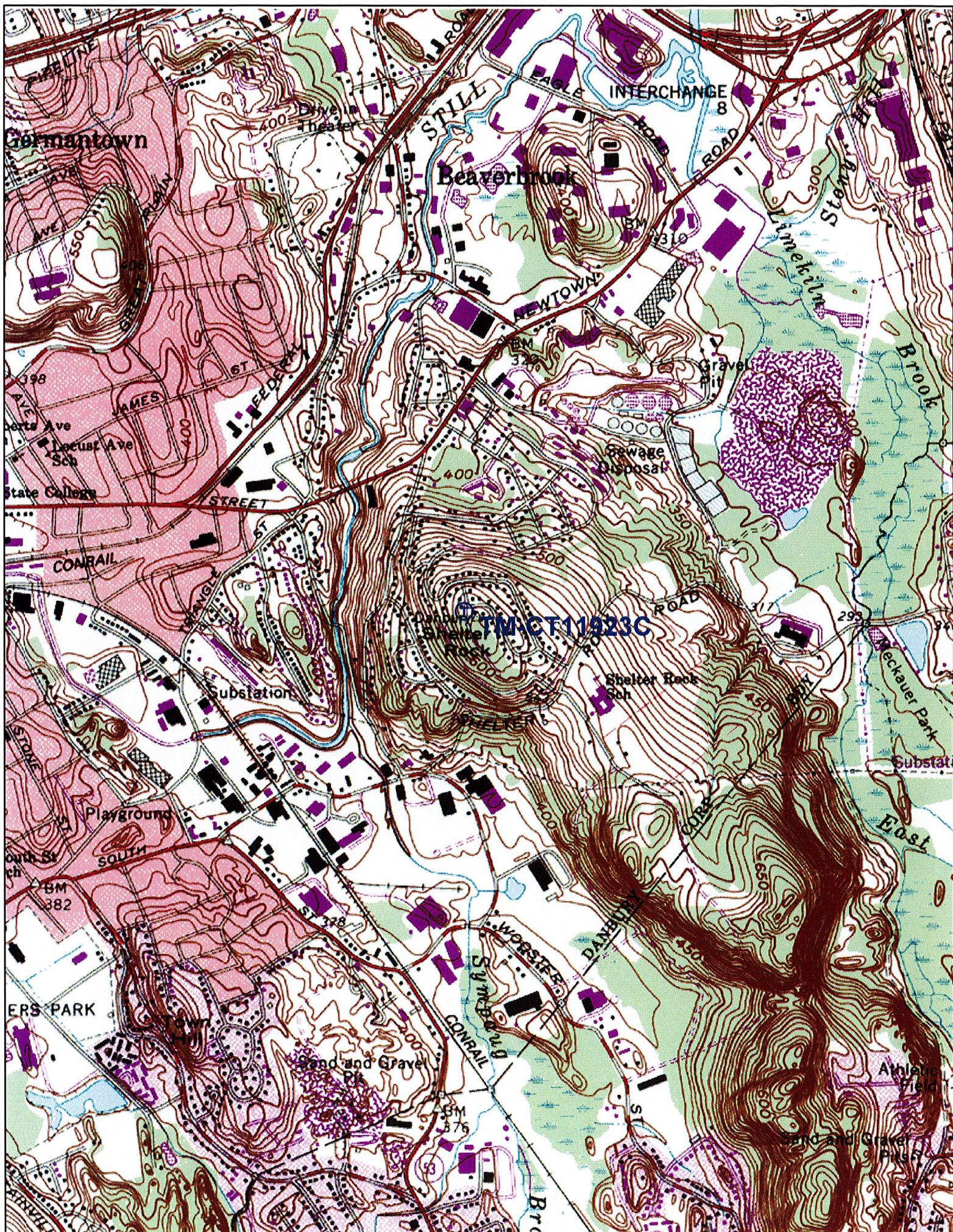


Exhibit B

Design Drawings

T-Mobile Site CT11923C

7 West View Drive

Danbury, Connecticut



35 GREEN HAVEN SOUTH
BLOOMFIELD, CT 06002



12 NORTH AVENUE
SOUTH BRITAIN, CT 06487
Phone: (860) 294-9833
Fax: (860) 294-9835



BAY STATE DESIGN
1000 S. MAIN STREET
MIDDLETOWN, CT 06450
Phone: (860) 253-7871
Fax: (860) 253-7872



PROJECT NO.: 2899.289
ENGINEER

DRAWN BY: NO
CHECKED BY: RB

SUBMITTALS	

SITE
CT11923C
W VIEW DR GT
7 WESTBY DR
DANSHRY, CT 06810

SHEET TITLE
EQUIPMENT LAYOUT
& ANTENNA
AZIMUTH PLANS

SHEET NUMBER
A-1

ABBREVIATIONS

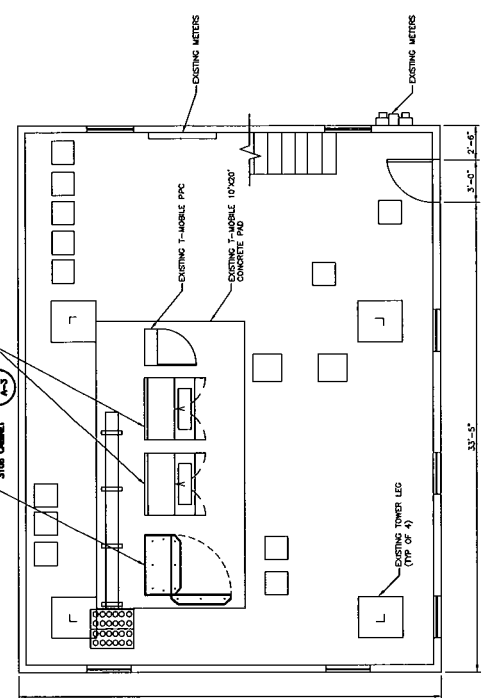
ADU	ADJUSTABLE	NTS	NOT TO SCALE
APP	APPROXIMATE	OC	ON CENTER
BT	BASE TRANSMISSION	OP	OPPOSITE
C	CONDUIT	PR	PREPARED
CMU	CONCRETE MASONRY UNIT	SP	SQUARE FOOT
CONC	CONCRETE	SKT	SHEET
CONT	CONTINUOUS	SM	SIMILAR
CI	CONSTRUCTION JOINT	STL	STEEL
DM	DRAWING	TOP	TOP OF CONCRETE
DWG	DRAWING	TYP	TYPICAL
EGB	EQUIPMENT GROUND BAR	VF	VERIFY IN FIELD
ELE	ELECTRICAL	WFR	WIRELESS OTHERWISE NOTED
ELEC	ELECTRICAL	WFR	WIRELESS OTHERWISE NOTED
EQ	EQUAL	WFR	WIRELESS OTHERWISE NOTED
EQIP	EQUIPMENT	PCS	PERSONAL COMMUNICATIONS SERVICES
EXIST	EXISTING	A-1	ANTENNA MARK NO.
EXT	EXTERIOR	E	PLATE
FF	FINISHED FLOOR	&	AND
FR	FRAMED CHASE	AT	AT
GA	GAUGE		
DA	DRAWING		
CC	GENERAL CONTRACTOR		
OWB	OVERHEAD WIRE BUNDLING		
LC	LOW LOSS		
LMA	LOW LOSS AMPLIFIER		
MK	MECHANICAL		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MB	MASTER GROUND BAR		
MTR	METRIC		
MFL	NOT IN CONTRACT		
NEL	NOT IN CONTRACT		

SYMBOLS AND MATERIALS

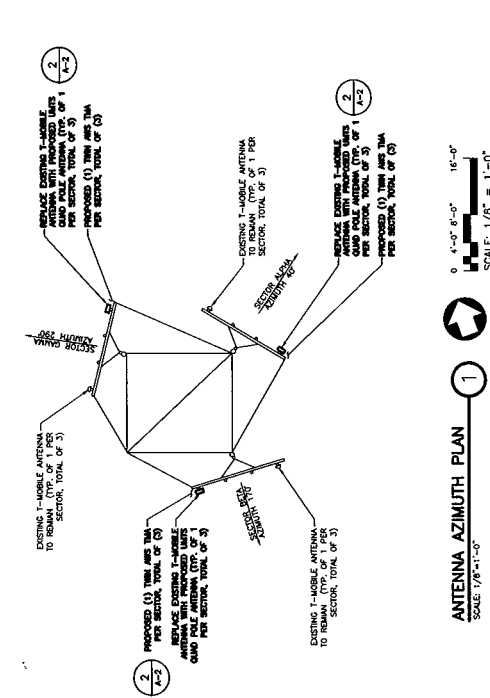
NEW ANTENNA	GROUT OR PLASTER
EXISTING ANTENNA	ONB
ASPHALT	EXISTING CONSTRUCTION
NEW ACCESS CASING	CONCRETE
CONCRETE	CONCRETE
ELECTRIC BOX	GRAVEL
LIGHT POLE	PLYWOOD
PLG. MONUMENT	SAND
SPOT ELEVATION	WOOD CONTE.
SET POINT	WOOD BLOCCING
REVISION	STEEL
GRID REFERENCE	PROPERTY LINE
DETAIL REFERENCE	STEPPED FOOTING
ELEVATION	MATCH LINE
WORK POINT	WORK POINT
GROUND WIRE	GROUND WIRE
COAXIAL CABLE	COAXIAL CABLE
CHAIN LINK FENCE	CHAIN LINK FENCE
WATER MARK	WATER MARK

CONTRACTOR TO IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE EXISTING SITE CONDITIONS AND THAT WHICH IS REPRESENTED HEREIN.

DO NOT INSTALL EQUIPMENT WITHOUT STRUCTURAL ENGINEER'S APPROVAL.



EQUIPMENT LAYOUT PLAN
SCALE: 1/8" = 1'-0"



ANTENNA AZIMUTH PLAN
SCALE: 1/8" = 1'-0"

- ### NOTES
1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH OWNER PRIOR TO CONSTRUCTION.
 2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH OWNER PRIOR TO CONSTRUCTION.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND APPROVALS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
 4. ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD SERVICE ENGINEERS, THE ASSEMBLY AND DISASSEMBLY OF EACH ANTENNA, TRANSDUCERS FOR EACH ANTENNA SHALL BE PROVIDED BY THE OWNER AND NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF OWNER SUPPLIED MATERIALS IS ATTACHED TO THESE CONSTRUCTION DOCUMENTS. ALL MATERIALS, HARDWARE TO BE PROVIDED BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE CONTRACT DOCUMENTS.
 5. ANTENNAS, SUPPORTS AND CABLE MOUNTS SHALL BE PROVIDED TO MATCH EXISTING SURFACES TO WHICH THEY ARE TO BE ATTACHED. PAINT SHALL BE SHERWIN WILLIAMS CORONAFLAKE 2 SURFACE PREPARATION AND FINISH. ALL MATERIALS SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND LESSEE/USER'S REQUIREMENTS.
 6. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ALL APPOINTMENTS REQUIRED FOR THE INSTALLATION OF THE ANTENNAS AND TRANSDUCERS AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 7. PER FCC LICENSE ENHANCED EMERGENCY (911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. LESSEE/USER'S IMPLEMENTATION SHALL BE IN ACCORDANCE WITH THE FCC REQUIREMENTS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ALL APPOINTMENTS REQUIRED FOR THE ANTENNAS AND TRANSDUCERS AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 8. THE CONTRACTOR SHALL SUBMIT ALL WORK WITH THE ENGINEER'S SIGNATURE AND THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE BUILDING OFFICE FOR ALL PERMITS AND APPROVALS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE BUILDING OFFICE FOR PERMITS AND APPROVALS.

PROPOSED = PROPOSED
EXISTING = EXISTING

T-Mobile
35 GREEN ROAD SOUTH
BLOOMFIELD, CT 06002

MAXTON
58 Elmwood St.
South Grafton, MA 02775
Phone: (508) 344-4383
Fax: (508) 344-4382

DAY STANTZ
INCORPORATED
300 Main Street
Bloomfield, CT 06002
Tel: 860-241-9911
Fax: 860-241-9911



[Signature]
ENGINEER

PROJECT NO: 2698.289
DRAWN BY: KO
CHECKED BY: RB

SUBMITTALS

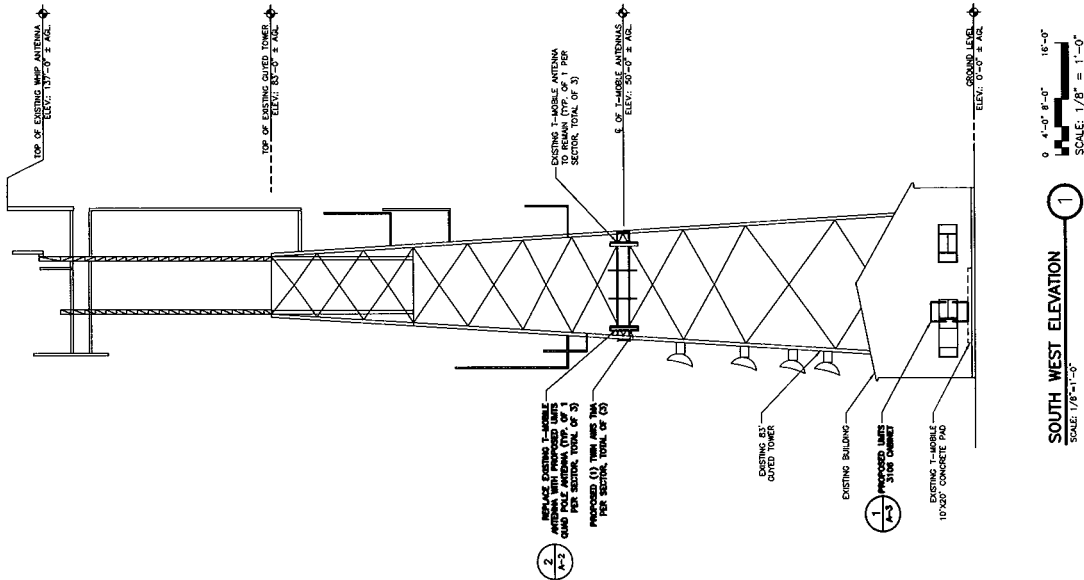
REV	DATE	BY	DESCRIPTION
001	12-24-09	PER CONSULTANTS	REV D [12-16-09] CONSTRUCTION

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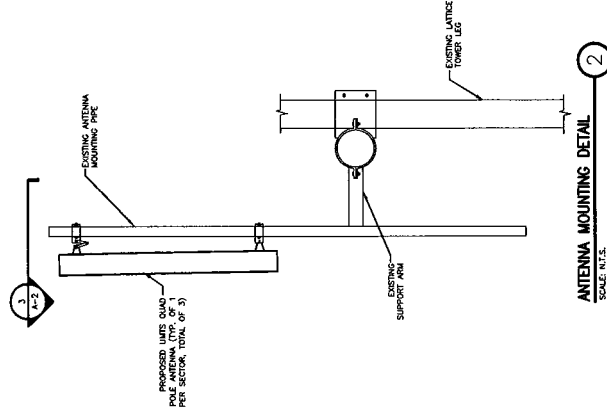
SITE
CT11923C
W VIEW DR GT
7 WESTVIEW DR
DANBURY, CT 06810

SHEET TITLE
ELEVATION

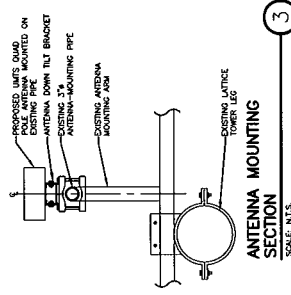
SHEET NUMBER
A-2



0' 4'-0" 8'-0" 16'-0"
SCALE: 1/8" = 1'-0"



ANTENNA MOUNTING DETAIL
SCALE: N.T.S.



ANTENNA MOUNTING SECTION
SCALE: N.T.S.

PROPOSED = PROPOSED
EXISTING = EXISTING

T-Mobile
35 GREEN ROAD SOUTH
BLOOMFIELD, CT 06002

MIXTON
65 SHELTON ST.
SOUTH BRITAIN, CT 06258
PHONE (860) 338-5283
FAX (860) 338-1055

RAY STANT
DESIGN
1000
SOUTH BRITAIN, CT 06258
PHONE (860) 338-1055



ENGINEER
PROJECT NO.: 26898.ZBB
DRAWN BY: KO
CHECKED BY: RB

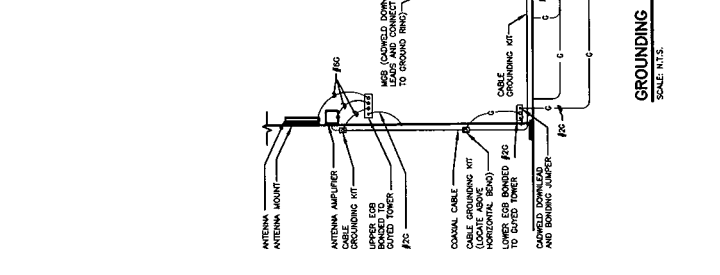
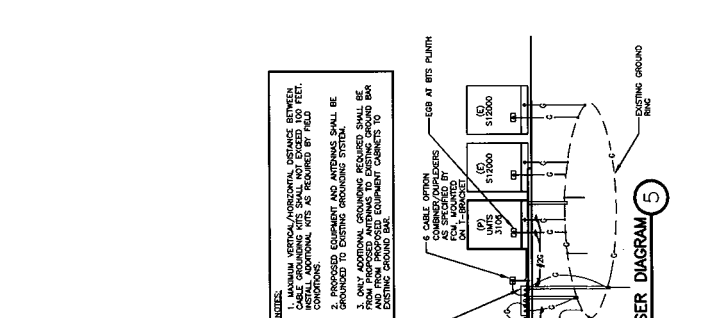
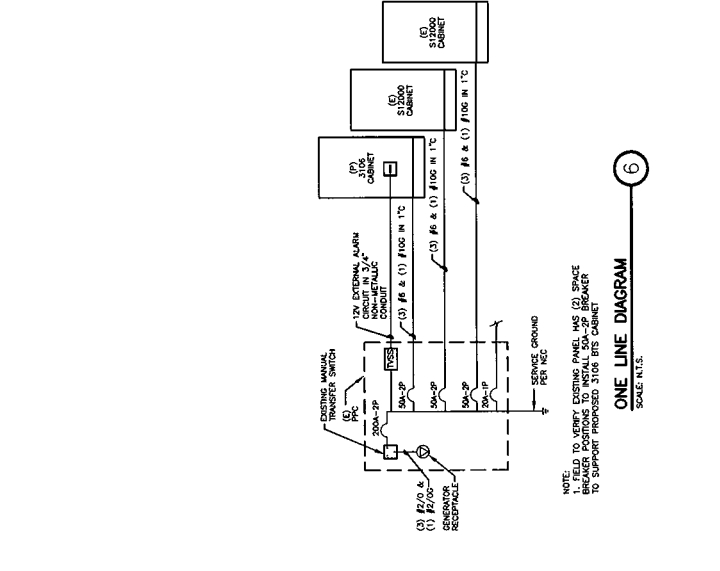
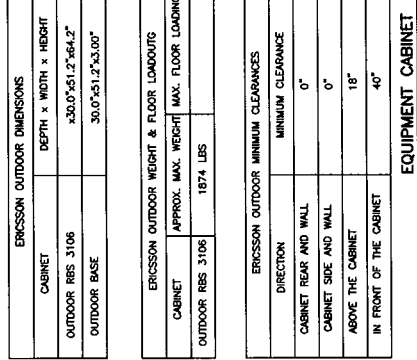
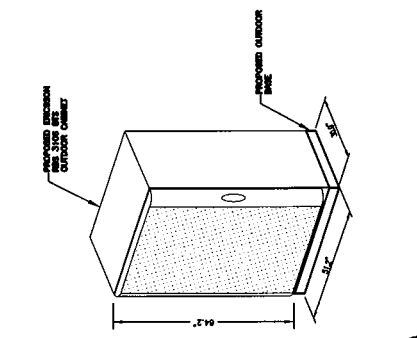
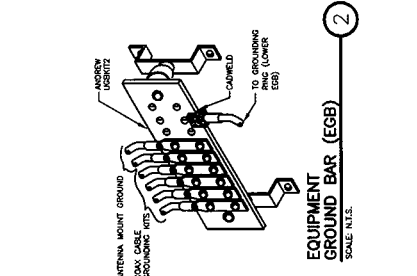
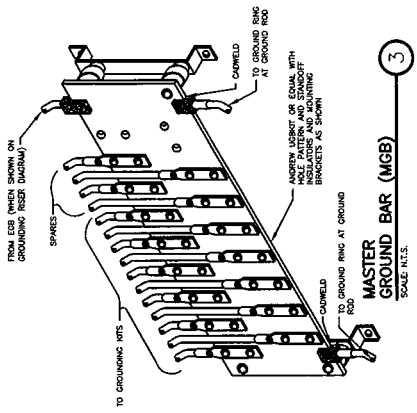
SUBMITTALS	
REV.	DATE

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SITE
CTI1923C
W VIEW DR GT
7 BERRY ST.
DANBURY, CT 06810

SHEET TITLE
CONSTRUCTION
DETAILS

SHEET NUMBER
A-3



ERICSSON OUTDOOR DIMENSIONS	
CABINET	DEPTH x WIDTH x HEIGHT
OUTDOOR RBS 3106	30.0" x 51.2" x 64.2"
OUTDOOR BASE	30.0" x 51.2" x 3.00"

ERICSSON OUTDOOR WEIGHT & FLOOR LOADOUTG	
CABINET	APPROX. MAX. WEIGHT MAX. FLOOR LOADING
OUTDOOR RBS 3106	1874 LBS

ERICSSON OUTDOOR MINIMUM CLEARANCES	
DIRECTION	MINIMUM CLEARANCE
CABINET REAR AND WALL	0"
CABINET SIDE AND WALL	0"
ABOVE THE CABINET	18"
IN FRONT OF THE CABINET	40"

1. MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN INSTALL ADDITIONAL RISERS AS REQUIRED BY FIELD CONDITIONS.
2. ONLY ADDITIONAL GROUNDING REQUIRED SHALL BE FROM PROPOSED ANTENNAS TO EXISTING GROUND BAR OR EXISTING GROUNDING SYSTEM.
3. MAXIMUM RISER HEIGHT SHALL NOT EXCEED 12 FEET.

SCALE N.T.S.

NOTE: 1. RISERS 48" OR TOLERANCES OF CONNECTION IS NOT PERMITTED. 2. DO NOT WELD TO GROUNDING CABLE. 3. WELDED CONNECTIONS FROM UPPER EGC, LOWER EGC, AND MGB.

Exhibit C

Equipment Specifications

T-Mobile Site CT11923C

7 West View Drive

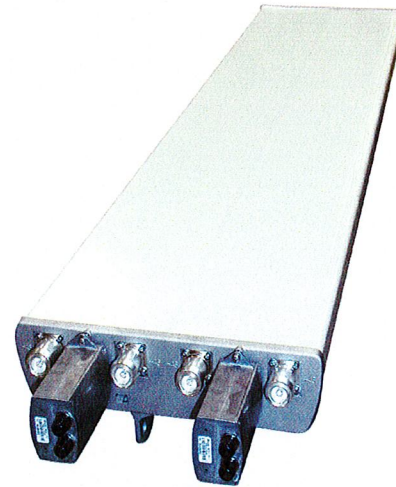
Danbury, Connecticut



Product Description

Gathering two X-Polarized antennas in a single radome this pair of variable tilt antenna provides exceptional suppression of all upper sidelobes at all downtilt angles. It also features a wide downtilt range with optional remote tilt.

This antenna is optimized for performance across the entire AWS frequency band (1710-2170 MHz). The antenna comes pre-connected with the antenna control unit (ACU).



Features/Benefits

- Variable electrical downtilt - provides enhanced precision in controlling intercell interference. The tilt is infield adjustable 0-10 deg.
- High Suppression of all Upper Sidelobes (Typically <-20dB).
- Gain difference between UL and DL <1dB.
- Two X-Polarised panels in a single radome.
- Azimuth horizontal beamwidth difference <7deg between UL and DL (1710-1755 & 2110-2155).
- Low profile for low visual impact.
- Dual polarization; Broadband design.

Technical Features

Frequency Band	3G/UMTS
Horizontal Pattern	Directional
Antenna Type	Panel Dual Polarized
Electrical Down Tilt Option	Variable
Gain, dBi (dBd)	18.0 (16.0) Avg. across band
Frequency Range, MHz	1710-2170

All information contained in the present datasheet is subject to confirmation at time of ordering.



Optimizer® Panel Dual Polarized Antenna equipped with (2) ACU motors

Connector Type	(4) 7-16 DIN Female
Connector Location	Bottom
Mount Type	Downtilt Kit w/Scissor Kit
Electrical Downtilt, deg	0-10 , 0-10
Horizontal Beamwidth, deg	65 ±5 (65.9 average across band)
Mounting Hardware	APM40-2 + APM40-E2
Rated Wind Speed, km/h (mph)	160 (100)
VSWR	< 1.4:1
Vertical Beamwidth, deg	5.8 to 7.8 across band
1st Upper Sidelobe Suppression, dB	> 18 (typically > 20)
Upper Sidelobe Suppression, dB	> 18 all (typically > 20)
Polarization	Dual pol +/-45°
Front-To-Back Ratio, dB	>28
Maximum Power Input, W	300
Isolation between Ports, dB	> 30
Lightning protection	Direct Ground
3rd Order IMP @ 2 x 43 dBm, dBc	> 150 (155 Typical)
Overall Length, m (ft)	1.35 (4.42)
Dimensions - HxWxD, mm (in)	1349 x 330 x 80 (53 x 13 x 3.15)
Radiating Element Material	Brass
Radome Material	Fiberglass
Reflector Material	Aluminum
Max Wind Loading Area, m ² (ft ²)	0.64 (6.6)
Survival Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	787 (177)
Front Thrust @ Rated Wind, N (lbf)	787 (177)
Shipping Weight, kg (lb)	24.1 (52.7)
Packing Dimensions, HxWxD, mm (in)	1550 x 420 x 210 (61 x 16.5 x 8.3)
Weight w/o Mtg Hardware, kg (lb)	18.0 (39.6)

Note

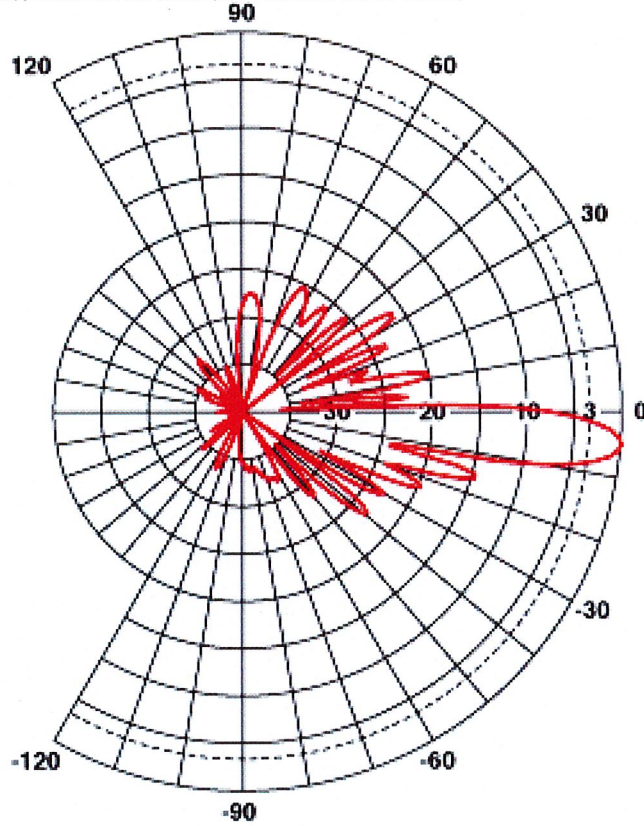
This data is provisional and subject to change.

All information contained in the present datasheet is subject to confirmation at time of ordering.



Vertical Pattern

(This is a general representation of the antenna family pattern. For the latest detailed pattern contact Applications Engineering. You may also download the CELplot(TM) pattern reader and antenna pattern data fields from our website.)

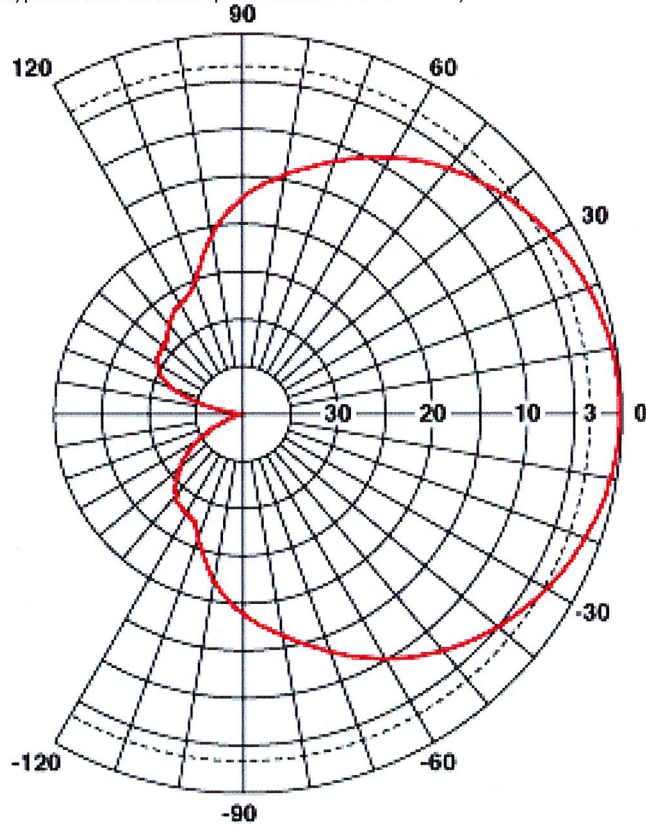


All information contained in the present datasheet is subject to confirmation at time of ordering.



Horizontal Pattern

(This is a general representation of the antenna family pattern. For the latest detailed pattern contact Applications Engineering. You may also download the CELplot(TM) pattern reader and antenna pattern data fields from our website.)



All information contained in the present datasheet is subject to confirmation at time of ordering.

2 Product Overview

The RBS 3106 is an outdoor macro RBS, based on the RBS 3000 R3 hardware, and a member of the RBS 3000 family.

The figure below shows the RBS.

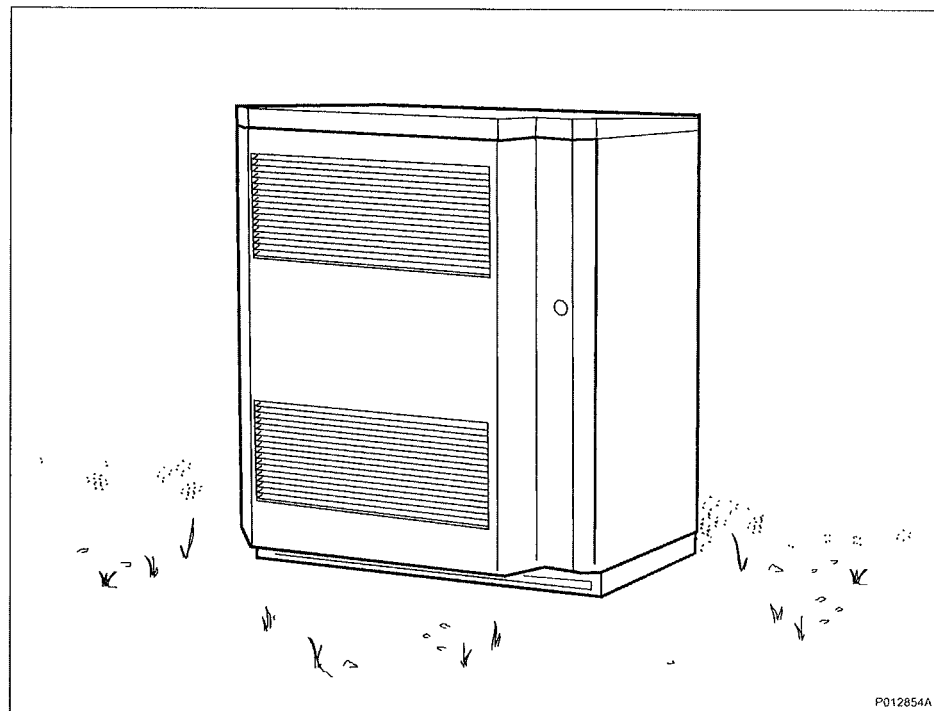


Figure 1 RBS 3106

2.1 Main Features

Not all features are supported by all RBS configurations. For current RBS configurations, see Section 6 on page 21.

The main features of RBS 3106 are the following:

- A complete RBS in a four-subrack cabinet with a standard footprint
- Can be equipped with various Radio Units (RU)
- Can be equipped with transport network interface boards, which support E1, T1, J1, E3, T3, STM-1/OC-3c, STM-1/OC-3, or Ethernet 10/100/1000 Mbps

- Ethernet (optical or electrical) can be used along with the other transmission types in Dual Stack configurations
- Can perform antenna sharing with Global System for Mobile Communications (GSM) and Time-Division Multiple Access (TDMA) systems
- Variable baseband capacity of up to 1536 Channel Elements (CE) uplink and downlink
- Supports High-Speed Downlink Packet Access (HSDPA)–enhanced uplink, up to 180 HS codes
- Power supply: 100 to 250 V AC or –40.0 to –57.6 V DC
- Two-way RX diversity, two-way TX diversity (optional), and four-way RX diversity (optional)
- Can be equipped and configured to support multiple frequency bands
- Can be configured for 1 – 6 sectors, with up to four carriers per sector
- Supports external alarm equipment
- Supports the Global Positioning System (GPS) as a synchronization source
- Supports Ethernet-based site Local Area Networks (LAN) (optional)
- Supports GSM or WCDMA Tower-Mounted Amplifiers (TMA) and Remote Electrical Tilt Units (RETU)

2.2 Optional Equipment

The following equipment is optional and can be ordered separately. It is not necessary for basic RBS functions.

The optional equipment presented in this section is located outside the RBS. Optional equipment located inside the RBS is described in Section 7.2 on page 30.

RBS Base Frame and Battery Base Unit (BBU)

The RBS 3106 is mounted on its installation frame and the frame can be installed to either the ground, an RBS base frame, or a battery base unit.

ASC, TMA, RETU, and RIU

The GSM or WCDMA TMA, the Antenna System Controller (ASC), the RETU, and the RET Interface Unit (RIU), are mast-mounted units placed close to the antenna.

The TMA and the ASC are uplink amplifiers and improve the RX sensitivity.

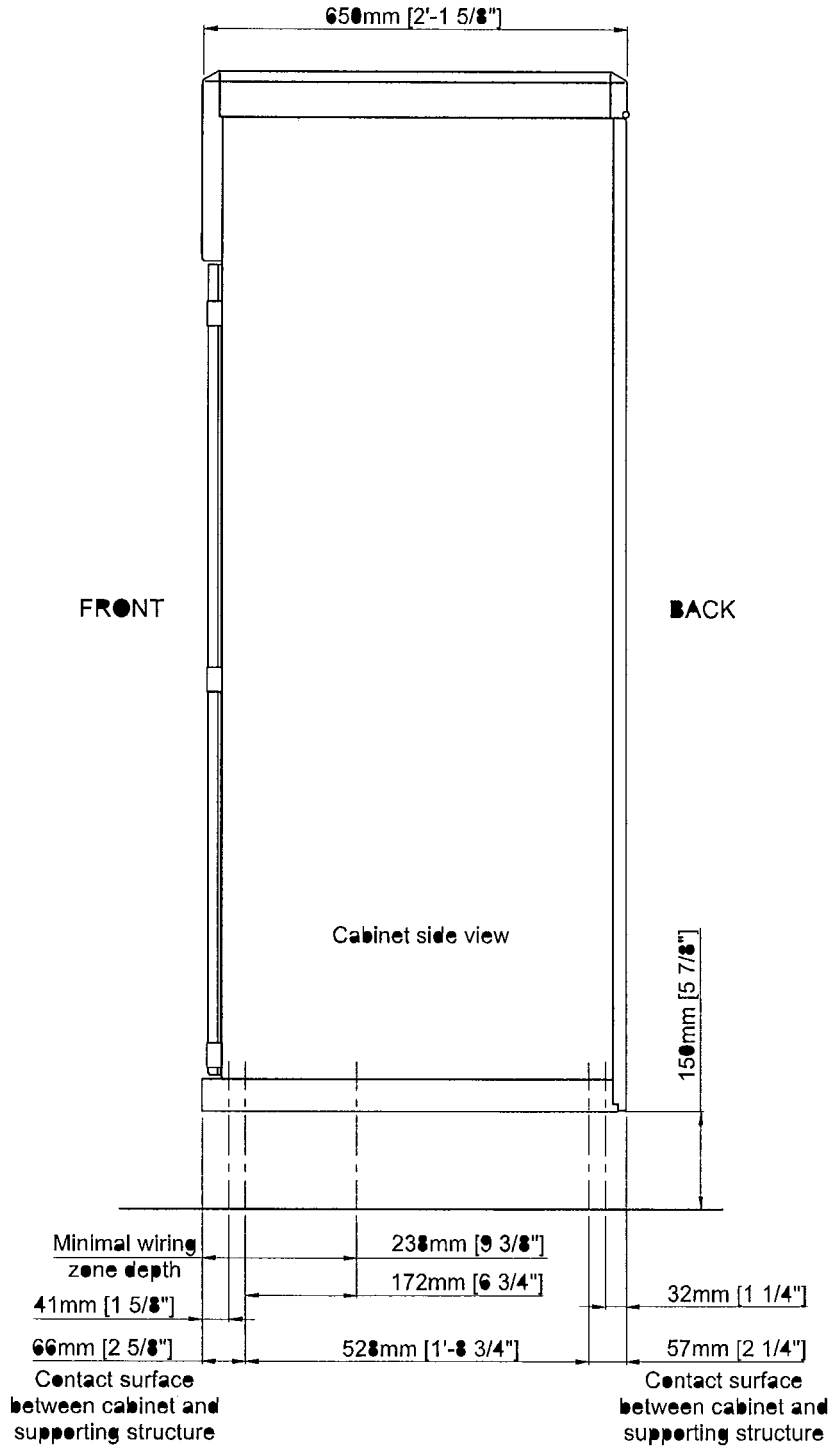
The RETU enables remote tilt of the antenna system. An ASC or a RIU is required to enable the RBS to communicate with the RETU.

There also exist 3GPP/AISG defined components as ATMA and ARET. These components are supported for P6.

External Battery Backup

Battery backup can be achieved with an external battery cabinet. The external batteries are connected to an optional DC filter (DCF) inside the RBS.

Cabinet side view



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Exhibit D

Power Density Calculations

T-Mobile Site CT11923C

7 West View Drive

Danbury, Connecticut

Technical Memo

To: Maxton
From: Farid Marbough - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CT11923C
Date: April 4, 2009

1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile antenna installation on a Guyed Tower at 7 West View Dr, Danbury, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location.

2. Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from T-Mobile transmitters are in the (1940-1949.8), (2140-2145), (2110-2120)MHz frequency Band.
- 2) The antenna array consists of three sectors, with 2 antennas per sector.
- 3) The model number for GSM antenna is APX15PV-15PVL.
- 3) The model number for UMTS antenna is APX16DWV-16DWV.
- 4) GSM antenna center line height is 50 ft.
- 4) UMTS antenna center line height is 50 ft.
- 5) The maximum transmit power from any GSM sector is 1710.88 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
- 5) The maximum transmit power from any UMTS sector is 3003.93 Watts Effective Radiated Power (EiRP) assuming 2 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 antenna installation on a Guyed Tower at 7 West View Dr, Danbury, CT, is 0.53429 mW/cm². This value represents 53.429% of the Maximum Permissible Exposure (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 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 3.6%. The combined Power Density for the site is 57.029% of the M.P.E. standard.

Connecticut Market



Worst Case Power Density

Site: CT11923C
Site Address: 7 West View Dr
Town: Danbury
Tower Height: 100 ft.
Tower Style: Guyed Tower

GSM Data		UMTS Data	
Base Station TX output	20 W	Base Station TX output	40 W
Number of channels	8	Number of channels	2
Antenna Model	APX15PV-15PVL	Antenna Model	APX16DWV-16DWV
Cable Size	7/8 in.	Cable Size	7/8 in.
Cable Length	65 ft.	Cable Length	65 ft.
Antenna Height	50.0 ft.	Antenna Height	50.0 ft.
Ground Reflection	1.6	Ground Reflection	1.6
Frequency	1945.0 MHz	Frequency	2.1 GHz
Jumper & Connector loss	4.50 dB	Jumper & Connector loss	1.50 dB
Antenna Gain	16.0 dBi	Antenna Gain	18.0 dBi
Cable Loss per foot	0.0186 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	1.2090 dB	Total Cable Loss	0.7540 dB
Total Attenuation	5.7090 dB	Total Attenuation	2.2540 dB
Total EIRP per Channel (In Watts)	53.30 dBm 213.86 W	Total EIRP per Channel (In Watts)	61.77 dBm 1501.97 W
Total EIRP per Sector (In Watts)	62.33 dBm 1710.88 W	Total EIRP per Sector (In Watts)	64.78 dBm 3003.93 W
nsg	10.2910	nsg	15.7460
Power Density (S) = 0.193881 mW/cm ²		Power Density (S) = 0.340412 mW/cm ²	
T-Mobile Worst Case % MPE =		53.4293%	
Equation Used : $S = \frac{(1000)(grf)^2(Power) \cdot 10^{(nsg/10)}}{4\pi(R)^2}$			
Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997			

Co-Location Total	
Carrier	% of Standard
Verizon	
Cingular	
Sprint	
AT&T Wireless	
Nextel	
MetroPCS	
Other Antenna Systems	3.6000 %
Total Excluding T-Mobile	3.6000 %
T-Mobile	53.4293
Total % MPE for Site	57.0293%

Exhibit E

Structural Analysis

T-Mobile Site CT11923C

7 West View Drive

Danbury, Connecticut



Pier Structural Engineering Corp.
55 Northfield Drive E, Suite 198
Waterloo, ON N2K 3T6
TEL: 519-885-3806
FAX: 519-886-0076
www.p-sec.ca

Specializing in Communication Tower Engineering

◀ **STRUCTURAL ANALYSIS** ▶

FOR



**133-ft SELF SUPPORT TOWER
CT11923C
DANBURY, CT**

PREPARED FOR:



PREPARED BY:

Iain Harrison, P.Eng.

February 23, 2009

PSEC Job #2695



RECEIVED
MAY 13 2009
CONNECTICUT
SITING COUNCIL

CITY OF DANBURY

OFFICE OF THE MAYOR
155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

MARK D. BOUGHTON
MAYOR

ORIGINAL

(203) 797-4511
FAX (203) 796-1666
m.boughton@ci.danbury.ct.us

May 6, 2009

Hon. Daniel F. Caruso, Chairman
and Members of the Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

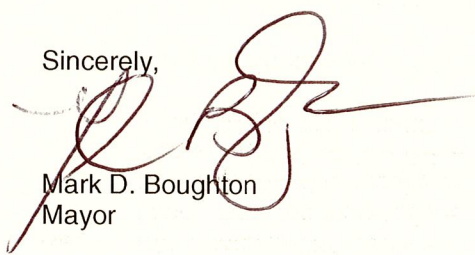
Re: EM-T-Mobile-034-090409
Omnipoint Communications, as subsidiary of T-Mobile USA, Inc.
Notice of Intent to modify an existing telecommunications facility
located at 7 Westview Drive, Danbury
T-Mobile Site CT 11923C

Dear Chairman Caruso and Members of the Council:

I write in response to correspondence to me dated April 23, 2009 from S. Derek Phelps, Executive Director, requesting the City's comments regarding the above mentioned proposal. I wish to direct the Council's attention to the Structural Analysis dated February 23, 2009, prepared by Pier Structural Engineering Corp., Exhibit E of the submission. The conclusion of the report indicates that the existing tower "is not structurally acceptable". The results are of concern to me, as this applicant's retained engineering firm has determined that the existing tower is "not structurally capable of supporting the existing and proposed antennas and transmission lines." The existing tower is located in a residential neighborhood with homes in close proximity to each other.

I respectfully request that the Council require the applicant to make the necessary structurally modifications to the existing tower immediately to ensure that it is safe for the residents of Danbury. Thank you for your consideration of the City's concerns and attention to this matter.

Sincerely,


Mark D. Boughton
Mayor

cc: Dennis I. Elpern, Planning Director



CITY OF DANBURY

OFFICE OF THE MAYOR
155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

MARK D. BOUGHTON
MAYOR

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10 Franklin Square
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RECEIVED
MAY - 7 2009

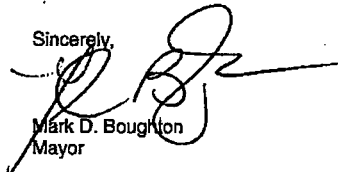
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Sincerely,



Mark D. Boughton
Mayor

cc: Dennis I. Elpern, Planning Director



◀ **STRUCTURAL ANALYSIS** ▶

**133-ft SELF SUPPORT TOWER
CT11923C
DANBURY, CT**

PREPARED FOR:



TABLE OF CONTENTS

INTRODUCTION

- Description of Structure
- Method of Analysis
- Design Parameters
- Documents Provided
- Analysis Considerations

APPURTENANCE INFORMATION

- Proposed Loading
- Existing Loading

RESULTS

- Tower Summary
- Structure
- Foundations

CONCLUSIONS

STRUCTURE PROFILE.....Attached

SOFTWARE OUTPUT.....Attached

INTRODUCTION:**ATTENTION:** Kostandin Butka, Bay State Design**CARRIER INFO:** Co-Locate Applicant: T-Mobile
Carrier Site Name: CT11923C**SITE DATA:** 7 West View Drive, Danbury, CT 06515
Latitude: 41.39625°, Longitude: 73.42392°
133 ft. Self Support Tower

We have completed the structural analysis for the existing 133 ft. Self Support Tower, located at the above referenced site. The purpose of this analysis is to determine that the existing structure design is in conformance with the TIA/EIA-222-F Standard and local code requirements for the proposed antenna installation. Refer to the Results and Conclusions section at the end of this report for the analysis results.

Description of Structure:

The structure is a 100 ft. Self Support Tower with (2) Rohn 25G extensions, the tallest extending the tower elevation to 133 ft. All information pertaining to the structure comes from a previous analysis by APT, dated April 15, 2004. The tower, for the purpose of this analysis, is considered to be in good condition with no defects.

Method of Analysis:

The structure was analyzed using TSTower software suite for communication structures. The software creates a three-dimensional model of the structure and calculates member stresses for various loading cases that account for second order geometric effects due to the displacements. The analysis was performed **in conformance with TIA/EIA-222-F Standard and local code requirements for 85 mph (fastest mile; 105 mph 3-second gust)**. The wind is applied to the structure, all appurtenances and antennas.

Design Parameters:

The following design parameters have been used in our analysis:

Design Standard:	TIA/EIA-222-F
County/State:	Fairfield County, CT
Wind Speeds:	CASE 1 85 mph (fastest mile; 105 mph 3-second gust) CASE 2 74 mph (fastest mile) with 1/2" radial solid ice CASE 3 50 mph (fastest mile) for Serviceability
Allowable Stress:	Increased 1/3 rd

Documents Provided:

Document	Remarks	Reference	Source
Tower Information	Profile Drawings – CT107680	April 15, 2004	APT
Tower Foundations and Base Plate	No Information	-----	-----
Geotechnical Report	No Information	-----	-----
Site Drawings	No Information	-----	-----
Existing Loading	Structural Analysis – CT107680	April 15, 2004	APT
Final Antenna Configuration	RFDS_CT11923C_v0_013009.xls	EXCEL Spreadsheet	Maxton

Analysis Considerations:

Please note the following assumptions and limitations inherent in this analysis and report:

- A) P-SEC has not field verified the condition of this structure. We have assumed that this tower is in good condition and in accordance with the information provided.
- B) We assumed the tower foundations have been designed and installed in accordance with the drawings provided (if any). In the event that neither the foundation drawings or geotechnical report were missing, foundations will not be checked.
- C) Assumptions were made on the mount sizes and exact locations of all appurtenances and lines. No photos (recent or otherwise) were provided and the information available is listed in the chart above. Connections were assumed to develop the full strength of the member. Steel grades assumed to be minimum 36 ksi.
- D) The items checked were as follows:
 - a) factored resistance of tower members;

APPURTENANCE INFORMATION:

Proposed Loading:

Height (ft)	Antenna			TX Line		Carrier
	Qty	Description / Type	Mount	Qty	Type	
50	3	RFS APX16DWV-16DWVS-A20	On Existing Mounts	--	--	T-Mobile
50	3	TMA				

* Final loading from spreadsheets provided by client.
 Proposed loading will replace (3) existing antennas at 50ft, all tx lines will be reused.

Existing Loading:

Height (ft)	Antenna			TX Line		Carrier
	Qty	Description / Type	Mount	Qty	Type	
135	1	4' Omni Whip	Pipe on upper X-Arm	1	7/8"	--
132	1	9' Omni Whip	Leg on Southern	1	7/8"	--
129	1	4' Omni Whip	Pipe on upper X-Arm	1	7/8"	--
129	1	7' Omni Whip	Pipe on upper X-Arm	1	7/8"	--
127	1	8' Omni Whip	Pipe on lower X-Arm	1	7/8"	--
127	1	4' Omni Whip	Pipe on lower X-Arm	1	7/8"	--
127	1	4' Omni Whip	Pipe on lower X-Arm	1	7/8"	--
124	1	1-Bay FM	2' Standoff on Northern	1	7/8"	--
118	1	4-Bay FM	Leg Mounted on Southern	1	7/8"	--
111	1	10' Omni Whip	18" Sidearm on Southern	1	1-5/8"	--
104	1	18' Omni Whip	Pipe Extension on Eastern Face	1	7/8"	--
104	1	10' Omni Whip	Pipe Extension on Eastern Face	1	1-1/4"	--
104	1	9' Omni Whip	Pipe Extension on Eastern Face	1	7/8"	--
102	2	9' Omni Whips	(2) 2' Sidearms on Pipe in Center	2	7/8"	--
100	1	14' Omni Whip	Diagonal Cross Arm on SW Leg	1	7/8"	--
100	1	8-Bay Antenna	Plate on Horiz. Brace on W Face	1	1-5/8"	--

96	2	9' Omni Whips (1 inverted)	6' Standoff on NW Leg	2	7/8"	--
96	1	30' Omni Whip	6' Standoff on NE Leg	1	7/8"	1
96	1	10' Horizontal Rohn 25G w/ 6' Standoff	SW Leg	--	--	--
93	1	5' Omni Whip	4' Sidearm on E Face	1	7/8"	--
93	1	6' Yagi	Pipe Mount On SE Leg	1	1/2"	--
89	1	Empty 6' Sidearm	N Face	--	--	--
88	1	3' x 6' Grid	3' Standoff On SW Leg	1	1/2"	--
88	1	4' Yagi	Pipe Mount On E Face	1	7/8"	--
85	1	3' Yagi	Pipe Mount On E Face	1	1/2"	--
83	2	Empty 6' Standoffs	NE and NW Legs	--	--	--
83	1	12' Omni Whip	6' Standoff On SE Leg	1	7/8"	--
83	1	2' Omni Whip	Pipe Mount On W Face	2	3/8"	--
83	2	2' x 3' Grids		2	3/8"	--
83	1	4' Yagi	Pipe Mount On S Face	1	1/2"	--
83	1	7' Omni Whip	6' Standoff On SW Leg	1	1/2"	--
83	1	9' Whip (inverted)		1	7/8"	--
82	1	9' Omni Whip	4' Sidearm On SE Leg	2	7/8"	--
81	1	3' Omni Whip	4' Sidearm On E Face	1	1-1/4"	--
76	1	Empty 6' Sidearm	SE Leg	--	--	--
75	3	Panels	Pipe Mounts on SE & SW legs, W Face	3	1/2"	--
66	1	DB809M	1' Sidearm On SE Leg	2	7/8"	--
64	1	Directional Whip	1' Standoff On NW Leg	1	1/2"	--
58	1	4' Yagi	6' Standoff On NE Leg	1	1/2"	--
58	1	16' Omni Whip		1	1/2"	--

58	1	11' Omni Whip		1	7/8"	--
58	1	20' Omni Whip	6' Standoff On SW Leg	1	1/2"	--
58	1	18' Omni Whip	6' Standoff On SE Leg	1	1/2"	--
58	1	6' Omni Whip		1	7/8"	--
55	3	7' Omni Whips	(3) 2' Sidearms on SW NW & NE legs	3	7/8"	--
50	12	DR65-19	(3) 12' Sector Mounts	24	1-5/8"	--
50	1	1.2M Satellite Dish	Pipe Mount On SW Leg	1	3/8"	--
46	1	0.75M Satellite Dish	Pipe Mount On S Face	1	1/4"	--
42	1	1.0M Satellite Dish	2' Standoff On S Face	1	1/4"	--
36	1	0.75M Satellite Dish	Pipe Mount On S Face	1	1/4"	--
34	1	3' Yagi	Pipe Mount On W Face	1	1/4"	--
34	1	2' x 3' Grid		1	1/2"	--
33	1	1.0M Satellite Dish	2' Standoff On S Face	1	1/4"	--
28	1	1.0M Satellite Dish	2' Standoff On S Face	1	1/4"	--
26	1	1.2M Satellite Dish	2' Standoff On S Face	1	3/8"	--
23	1	GPS	1' Standoff On S Face	1	1/4"	--
21	1	1.2M Satellite Dish	18" Sidearm On SW Leg	1	3/8"	--
20	1	GPS	4' Standoff On N Face	1	1/2"	--

* There are (2) cross-arms (refer to as upper and lower X-Arm) joining the (2) Rohn 25G towers (refer to as Northern and Southern). Assumptions on exact sizes, orientation and loading of mounts, antennas and lines have been made. Tx lines assumed to be distributed evenly on all four faces.

RESULTS:

Refer to the attached Computer Summary sheets for detailed analysis results.

Tower Summary:

<u>Tower Member</u>	<u>Elevation (ft)</u>	<u>% Capacity</u>	<u>Result</u>
Legs	0 – 133	150	Overstressed
Diagonals	0 – 133	100	Satisfactory
Horizontals	0 – 133	65	Satisfactory
<u>Foundations</u>		<u>% Capacity</u>	<u>Result</u>
O.T.M.	----	No Info	No Info
Tower Rating: 150%			

1) Stresses up to 105% are within engineering tolerances and considered acceptable.

Structure:

The existing self support tower is **NOT structurally capable** of supporting the existing and proposed antennas and transmission lines. There are overloads in the bottom panel of 150%.

Foundations:

The existing foundations of the self support tower **could not be checked**. For a detailed breakdown of the calculated base reactions, refer to the attached numerical output.

CONCLUSIONS:

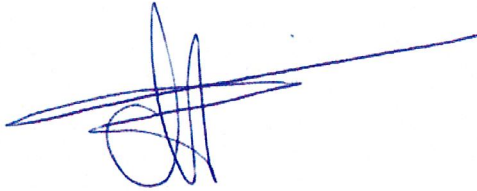
The existing 133 ft. Self Support Tower located in Danbury, CT, **is NOT structurally acceptable** based on the TIA/EIA-222-F Standard and the local building code with a basic wind speed of 85 mph (fastest mile; 105 mph 3-second gust)) and a reduced wind speed with 1/2" solid radial ice. Foundations and connections should be verified.

Bracing the legs at their midpoint between 0-15 ft. elevation would remove any overloads from the tower.

This analysis may be affected if any assumptions or considerations noted in our report and output are not valid or have been made in error. PSEC should be allowed to review any new information to determine the effect on the structural integrity of the tower

Should you have any questions, please call us any time at 519-885-3806.

Sincerely,



Iain Harrison, P.Eng.



Martin Piercey, PE

◀ **ANALYSIS OUTPUT** ▶

**133-ft SELF SUPPORT TOWER
CT11923C
DANBURY, CT**



Section A: PROJECT DATA

Project Title: 120' SST + 33' ROHN 25G
Customer Name: MAXTON BAY STATE DESIGN
Site: CT11923C
Contract No.: 2695
Revision: 000
Engineer: I M H
Date: Feb 24 2009
Time: 12:14:04 PM

Design Standard: TIA/EIA-222-F-1996

GENERAL DESIGN CONDITIONS

Start Wind direction: 0.00 (Deg)
End Wind direction: 330.00 (Deg)
Increment wind direction: 30.00 (Deg)
Elevation above ground: 0.00 (ft)
Gust Response Factor Gh: 1.16
Material Density: 490.1 (lbs/ft³)
Young's Modulus: 29000.0 (ksi)
Poisson Ratio: 0.3
Weight Multiplier: 1.00
Allowable Stress Incr. Factor: 1.333
Increase allowable stress: Yes

WIND ONLY CONDITIONS:
Basic Wind Speed: 85.00 (mph)

WIND AND ICE CONDITIONS:
Basic Wind Speed: 85.00 (mph)
Ice Thickness: 0.50 (in)
Ice density: 56.19 (lbs/ft³)
Wind pressure reduction
for iced conditions: 0.75

WIND ONLY SERVICEABILITY CONDITIONS:
Operational Wind Speed: 50.00 (mph)

WIND AND ICE SERVICEABILITY CONDITIONS:
Operational Wind Speed: 50.00 (mph)
Ice Thickness: 0.50 (in)
Ice density: 56.19 (lbs/ft³)
Wind pressure reduction
for iced conditions: 0.75

Analysis performed using: TowerSoft Finite Element Analysis Program



Section B: STRUCTURE GEOMETRY

TOWER GEOMETRY

Cross-Section	Height (ft)	Tot Height (ft)	# of Section	Bot Width (in)	Top Width (in)
Square	100.00	110.00	4	252.00	108.00

SECTION GEOMETRY

Sec Brcg.	Sec. Name	Elevation		Widths		Masses					
		Bottom (ft)	Top (ft)	Bottom (in)	Top (in)	Legs (lbs)	Brcg. (lbs)	Sec.Brc (lbs)	Int.Brc (lbs)	Sect. (lbs)	Database (lbs)
#											
4	New Section	80.00	100.00	137	108	986.2	778.9	0.0	0.0	1765.1	0.0
3	New Section	50.00	80.00	180	137	1786.8	1573.7	0.0	0.0	3360.5	0.0
2	New Section	20.00	50.00	223	180	2356.5	2195.4	0.0	0.0	4551.9	0.0
1	New Section	0.00	20.00	252	223	1571.0	2069.7	0.0	253.8	3894.5	0.0
Total Mass:						6700.6	6617.6	0.0	253.8	13572.0	0.0

PANEL GEOMETRY

Sec#	Pnl#	Type	SecBrcg	Mid. Horiz Continuous	Horiz	Height (ft)	Bottom Width (in)	Top Width (in)	Plan Bracing	Hip Bracing	Gusset Plate Area (ft^2)
4	3	X	(None)		Yes	6.7	117.6	108.0	(None)	(None)	0.000
4	2	X	(None)		None	6.7	127.2	117.6	(None)	(None)	0.000
4	1	X	(None)		None	6.7	136.8	127.2	(None)	(None)	0.000
3	4	X	(None)		Yes	7.5	147.6	136.8	(None)	(None)	0.000
3	3	X	(None)		None	7.5	158.4	147.6	(None)	(None)	0.000
3	2	X	(None)		None	7.5	169.2	158.4	(None)	(None)	0.000
3	1	X	(None)		None	7.5	180.0	169.2	(None)	(None)	0.000
2	3	X	(None)		Yes	10.0	194.4	180.0	(None)	(None)	0.000
2	2	X	(None)		None	10.0	208.8	194.4	(None)	(None)	0.000
2	1	X	(None)		None	10.0	223.2	208.8	(None)	(None)	0.000
1	2	K	(None)		Yes	5.0	230.4	223.2	2-Subdiv.	(None)	0.000
1	1	X	(None)		None	15.0	252.0	230.4	(None)	(None)	0.000

MEMBER PROPERTIES

Sec/ Pnl	Type	Description	Steel Grade	Conn. Type	Bolt #-Size	Bolt Grade	End Dist.	Edge Dist.	Gusset Thick.	Bolt Space
					(in)	(in)		(in)	(in)	
4/3	Leg	L5x5x3/8	A36	D. Shear	12-0.625	A325X				
4/3	Diag	L2x2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.375	1.875
4/3	Horiz	L2x2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.375	1.875
4/2	Leg	L5x5x3/8	A36	D. Shear	12-0.625	A325X				
4/2	Diag	L2x2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.250	1.875
4/1	Leg	L5x5x3/8	A36	D. Shear	12-0.625	A325X				
4/1	Diag	L2x2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.250	1.875
3/4	Leg	L6x6x3/8	A36	D. Shear	14-0.625	A325X				
3/4	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.375	1.875
3/4	Horiz	L2x2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.250	1.875
3/3	Leg	L6x6x3/8	A36	D. Shear	14-0.625	A325X				
3/3	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.375	1.875
3/2	Leg	L6x6x3/8	A36	D. Shear	14-0.625	A325X				
3/2	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.375	1.875
3/1	Leg	L6x6x3/8	A36	D. Shear	14-0.625	A325X				
3/1	Diag	L2 1/2x2 1/2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.375	1.875
2/3	Leg	L6x6x1/2	A36	D. Shear	16-0.625	A325X				
2/3	Diag	L3x3x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.500	1.875
2/3	Horiz	L2x2x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.250	1.875
2/2	Leg	L6x6x1/2	A36	D. Shear	16-0.625	A325X				
2/2	Diag	L3x3x3/16	A36	Bolted	1-0.625	A325X	0.938	0.938	0.500	1.875
2/1	Leg	L6x6x1/2	A36	D. Shear	16-0.625	A325X				
2/1	Diag	L3 1/2x3 1/2x1/4	A36	Bolted	1-0.625	A325X	0.938	0.938	0.500	1.875
1/2	Leg	L6x6x1/2	A36	D. Shear	18-0.625	A325X				
1/2	Diag	L2 1/2x2 1/2x1/4	A36	Bolted	1-0.625	A325X	0.938	0.938	0.500	1.875
1/2	Horiz	L3x3x1/4	A36	Bolted	1-0.625	A325X	0.938	0.938	0.500	1.875
1/2	PlanH1	L3x3x1/4	A36	Bolted	1-0.625	A325X	0.938	0.938	0.250	1.875
1/1	Leg	L6x6x1/2	A36	D. Shear	18-0.625	A325X				
1/1	Diag	L4x4x1/4	A36	Bolted	1-0.625	A325X	0.938	0.938	0.500	1.875

Section N: LEG REACTION DATA

Load Combination Wind Direction	Max Envelope Maximum				
	Force-Y Download (Kips)	Force-Y Uplift (Kips)	Shear-X (Kips)	Shear-Z (Kips)	Max Shear (Kips)
	79.75	62.07			12.77

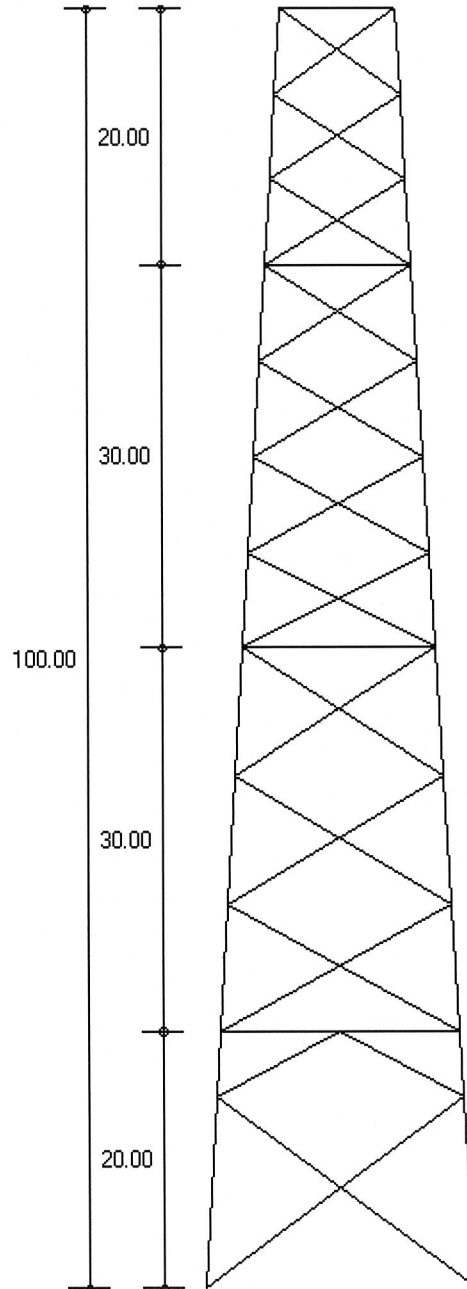
Section O: TOWER FOUNDATION DATA

Load Combination Wind Direction	Max Envelope Maximum						Total Moment
Axial Load (Kips)	Shear Load-X (Kips)	Shear Load-Z (Kips)	Total Shear (Kips)	Moment-X (Kipsft)	Moment-Y (Kipsft)	Moment-Z (Kipsft)	Total Moment (Kipsft)
35.45	-30.89	-18.81	36.16	-1145.29	-0.25	1792.85	2127.44
35.45	-30.89	-18.81	36.16	-1145.29	-0.25	1792.85	2127.44

DESIGN SPECIFICATION

Design Standard: TIA/EIA-222-F-1996
 Basic Wind speed = 85.0 (mph)
 Service Wind speed = 50.0 (mph)
 Ice thickness = 0.50 (in)

Sct.	Length (ft)	Top Width (in)	Bot Width (in)
1	20.00	223.20	252.00
2	30.00	180.00	223.20
3	30.00	136.80	180.00
4	20.00	108.00	136.80

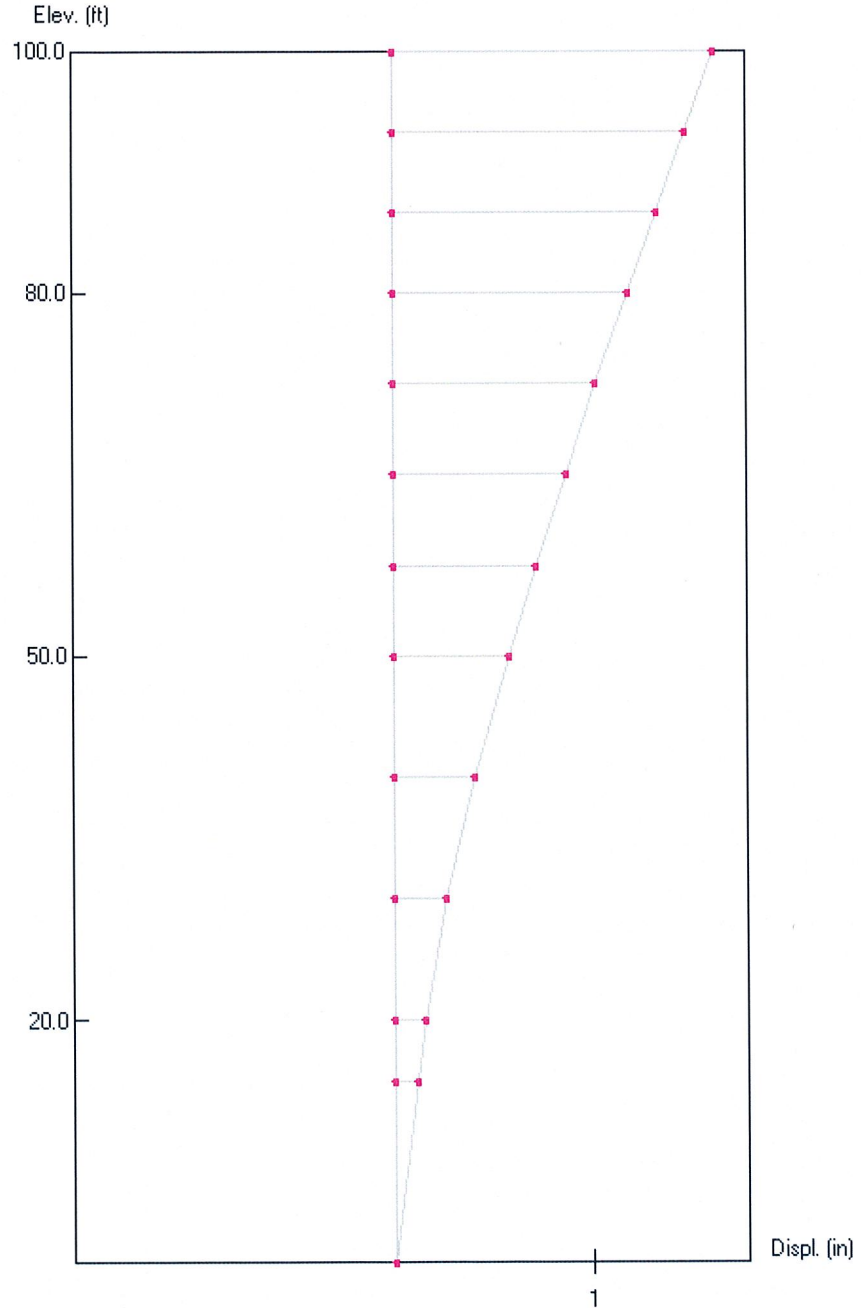


MAXIMUM BASE REACTIONS

	Bare	Iced
Download (Kips)	71.4	79.7
Uplift (Kips)	60.1	62.1
Shear (Kips)	12.1	12.8

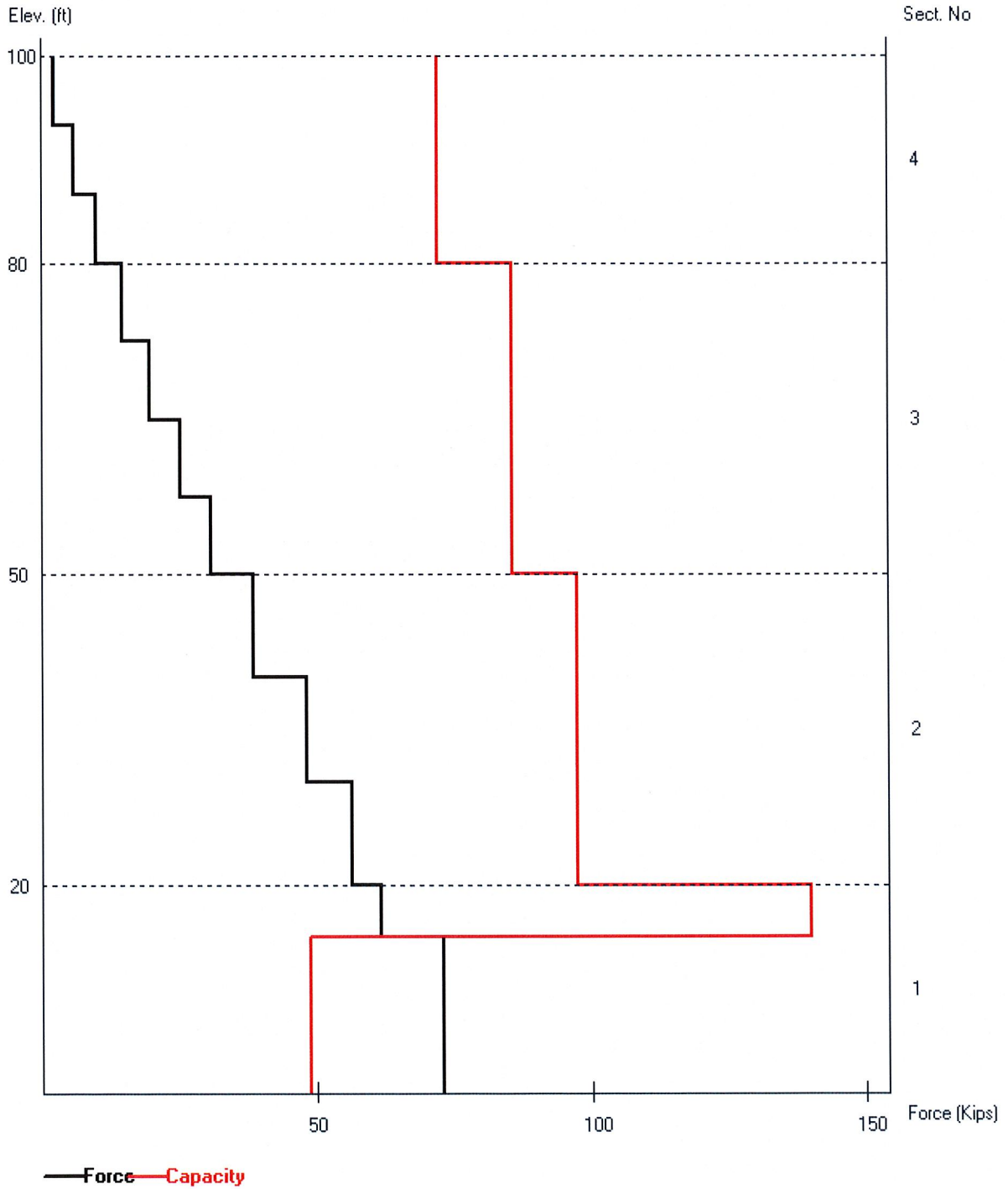
Appendix 1

Horiz. Disp. Diagram
Max. Envelope [All Loading Cases]



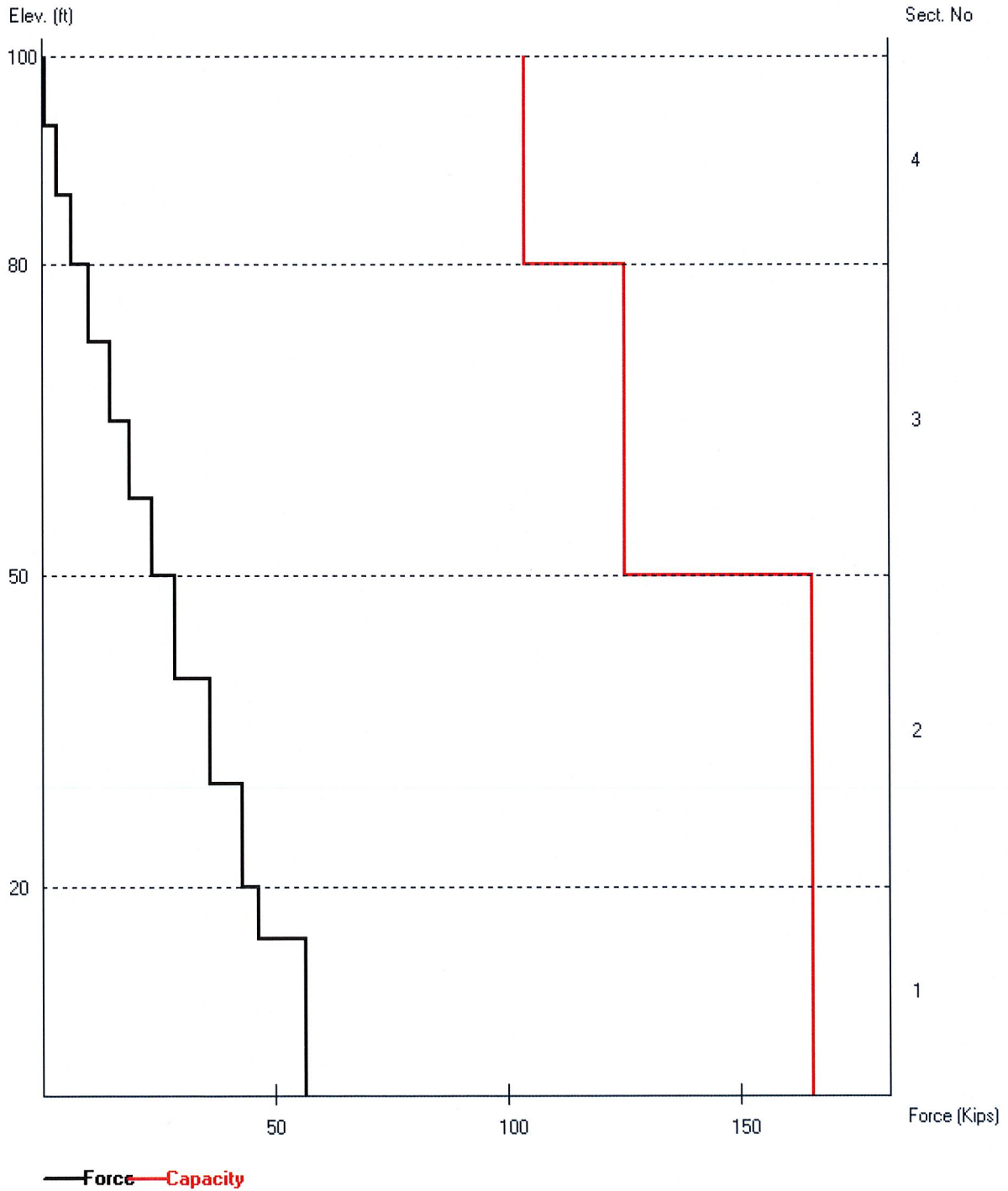
Appendix 2

**Leg Load Compression Diagram
 Max. Envelope (All Loading Cases)**



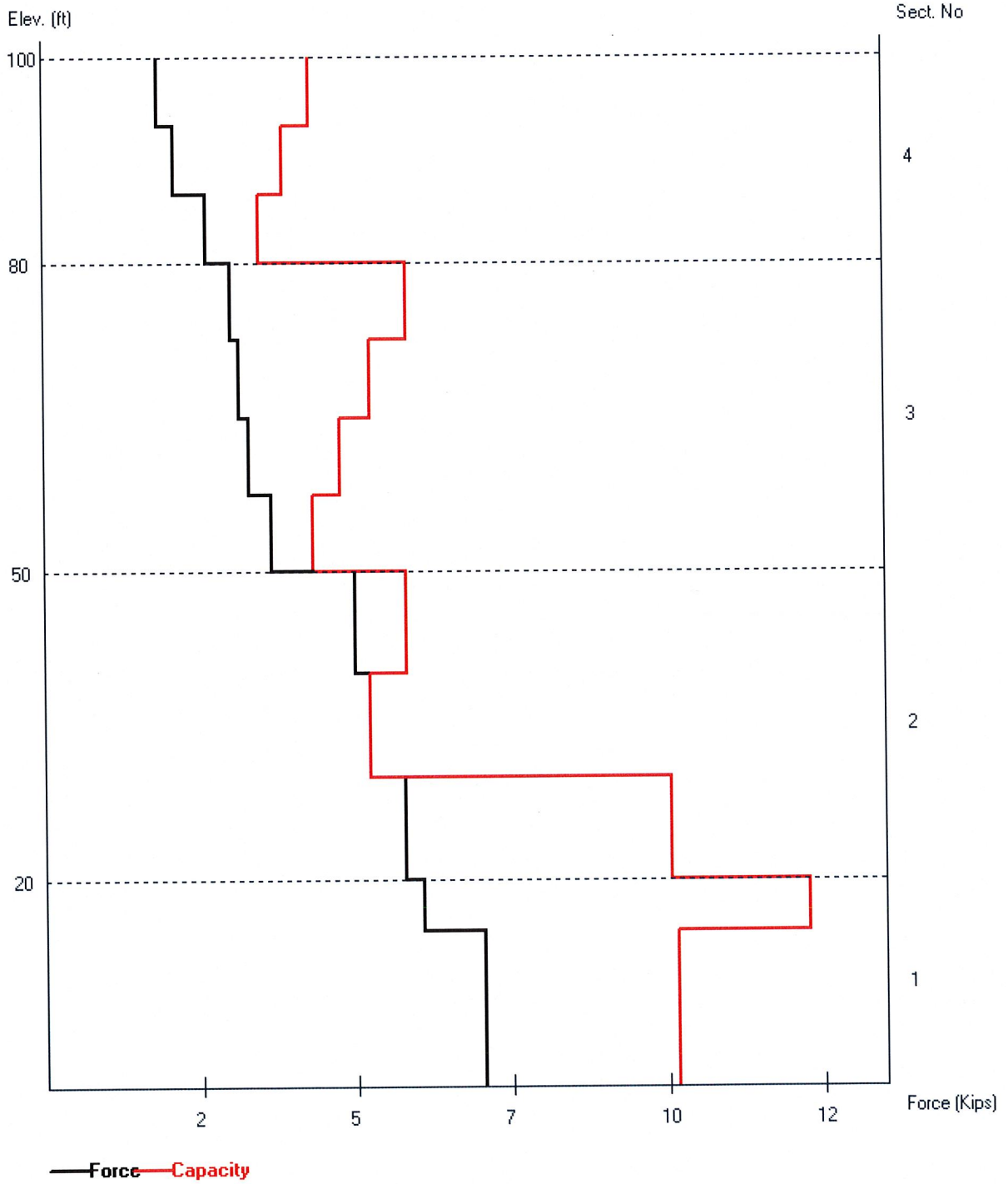
Appendix 3

Leg Load Tension Diagram
Max. Envelope (All Loading Cases)



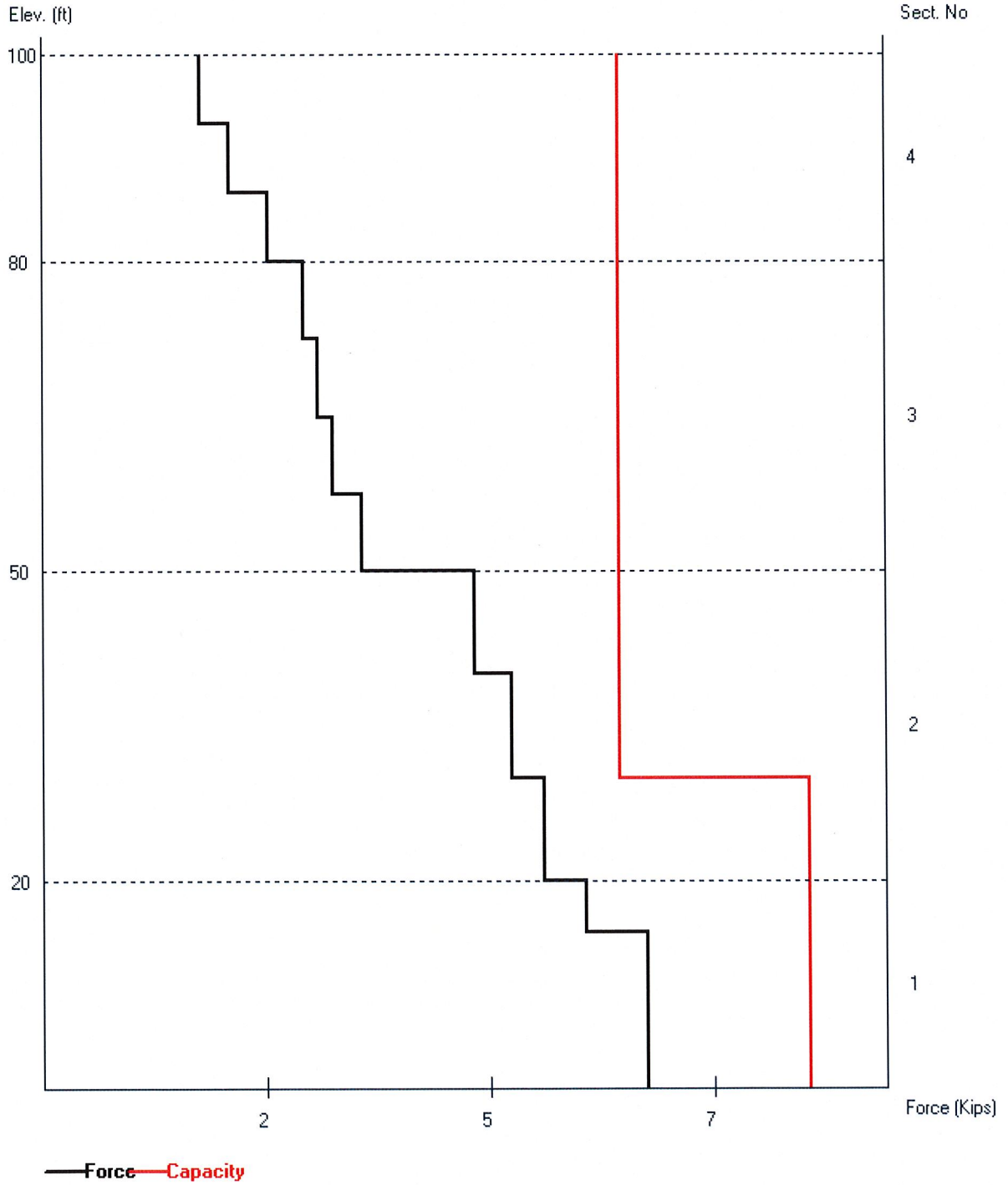
Appendix 4

**Diag. Load Compression Diagram
 Max. Envelope (All Loading Cases)**



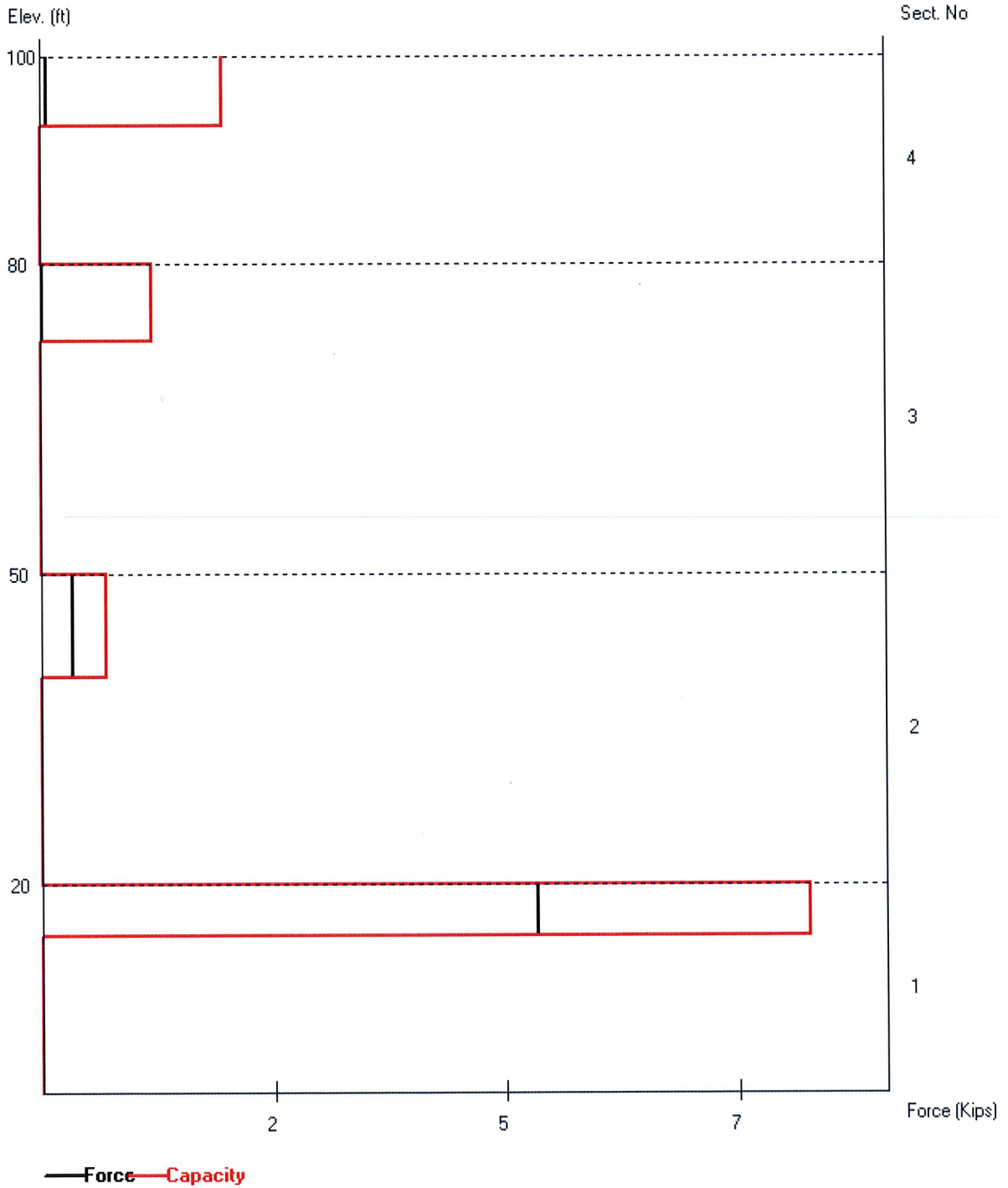
Appendix 5

**Diag. Load Tension Diagram
 Max. Envelope (All Loading Cases)**



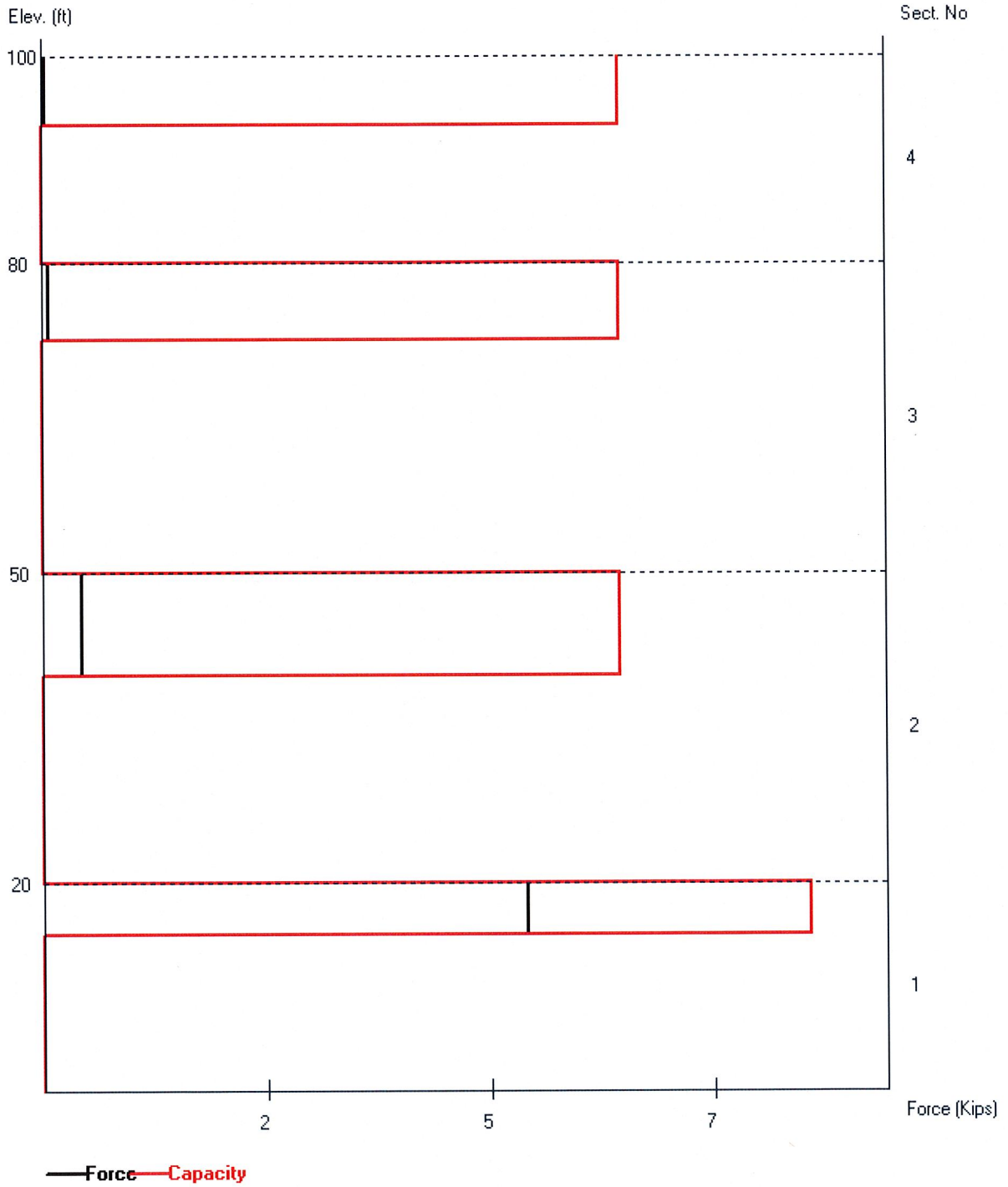
Appendix 6

**Horiz. Load Compression Diagram
 Max. Envelope (All Loading Cases)**



Appendix 7

**Horiz. Load Tension Diagram
 Max. Envelope (All Loading Cases)**



Appendix 8

Exhibit F

Structural Modification

Drawings

T-Mobile Site CT11923C

7 West View Drive

Danbury, Connecticut

APPLICABLE CODES

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: CONNECTICUT BUILDING CODE (IBC 2003)

ELECTRICAL CODE: NATIONAL ELECTRICAL ASSOCIATION (NEPA) 70 - 1999
 NATIONAL ELECTRICAL CODE 2005
 CONNECTICUT FIRE CODE (LATEST EDITION)

LIGHTNING PROTECTION CODE: NEPA - 2000, LIGHTNING PROTECTION CODE

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
 AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
 AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, LRFD (LATEST EDITION)

TELECOMMUNICATIONS INDUSTRY ASSOCIATION/ELECTRONICS INDUSTRIES ASSOCIATION (TIA/EIA) 222-F, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES.

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERING (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM.
 IEEE 1100 (1999), RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY 'C3' AND HIGH SYSTEM EXPOSURE)

TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS.

TELECOM, GR-1503 COAXIAL CABLE CONNECTIONS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT & ENGINEER. IN THE EVENT OF A CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GENERAL CONTRACTOR NOTES

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

DO NOT SCALE DRAWINGS

REVIEW/APPROVAL

SITE MANAGER	DATE
CONSTRUCTION MANAGER	DATE
ZONING MANAGER	DATE
RF ENGINEER	DATE
PROJECT MANAGER	DATE

SHEET INDEX

SHEET	DESCRIPTION
T-1	TITLE PAGE
A-1	TOWER PROFILE
A-2	TOWER REINFORCING
F-1F-2	FABRICATION DRAWINGS

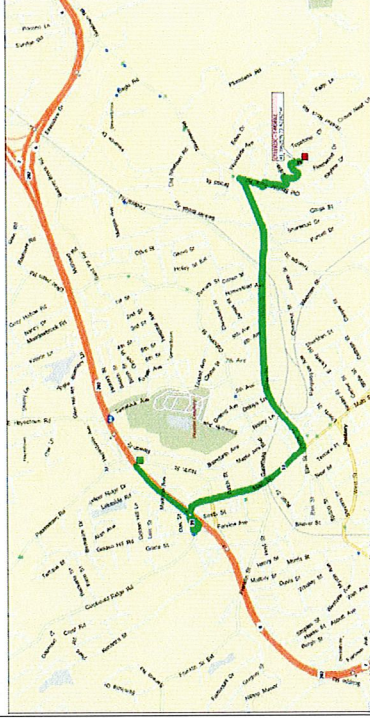
STANDARDIZED CONSTRUCTION SPECIFICATIONS DETAILS & GUIDELINES.

G-1 GENERAL NOTES & SPECIFICATIONS



TOWER UPGRADE CT11923C

VICINITY MAP



PROJECT SUMMARY

APPLICANT/LESSEE: NOT APPLICABLE

ENGINEERING FIRM: P-SEC
 PROJECT LOCATION: SUITE 100, 55 NORTHFIELD DR E
 WATERLOO, CN N2K 3T6
 (PH) 519-885-3806

PROPERTY INFORMATION:
 SITE TYPE: 133' SELF SUPPORT TOWER
 7 WEST VIEW DRIVE, DANBURY, CT 06515

APPROXIMATE CENTER OF AREAS:
 LATITUDE: 41° 23' 48.5"
 LONGITUDE: 73° 25' 26.1"

DRIVING DIRECTIONS

FROM -84 DANBURY, CT TRAVEL WEST, AT EXIT 5 TURN RIGHT ONTO RAMP, TURN RIGHT ONTO MAIN ST, TURN LEFT ONTO WHITE ST, TURN RIGHT ONTO SHELTER ROCK RD, TURN LEFT ONTO WOODSIDE AVE, THEN IMMEDIATELY RIGHT ONTO TOPSTONE DR, TURN RIGHT ONTO WEST VIEW DR.

OWNER: CT11923C - T-MOBILE

PROJECT SUMMARY:

THIS PROJECT IS FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY, CONSISTING OF ONE EXISTING TOWER. SEE ATTACHED PLANS FOR COMPLETE SCOPE OF WORK.

FACILITY IS UNMANNED AND NOT CAPABLE OF REMOTE HANDLING. CAPPED ACCESS NOT REQUIRED.

MIXTON
 Clients
 100 Main Street, Suite 200
 Danbury, CT 06810
 Tel: 203-748-1234
 Fax: 203-748-1235

BAY STATE DESIGN
 Bay State Design, Inc.
 200 Main Street, Suite 200
 Danbury, CT 06810
 Tel: 203-748-1237
 Fax: 203-748-1238



No.	Description	Date
A	CONSTRUCTION	03.24.09

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P-SEC
 PROJECT LOCATION: SUITE 100, 55 NORTHFIELD DR E
 WATERLOO, CN N2K 3T6
 (PH) 519-885-3806

CT11923C
 DANBURY
 CONNECTICUT

7 WEST VIEW DRIVE,
 DANBURY,
 CT 06515

TITLE PAGE

Checked By	MS
Drawn By	IMH
Approved By	MLP

T-1

Clients
MIXTON
 55 Jackson St.
 Danbury, CT 06810
 Tel: 203-748-1400
 Fax: 203-748-1401
 www.mixon.com

BAY STATE
 PROFESSIONAL ENGINEERS
 100 State Street
 Danbury, CT 06810
 Tel: 203-748-1977
 Fax: 203-748-1978
 www.baystatepe.com



Revisions

No.	Description	Date
A	CONSTRUCTION	03.24.09

No. 032409
 Date 03/24/09
 The undersigned hereby certifies that he/she is a duly Licensed Professional Engineer in the State of Connecticut and is duly qualified to prepare and seal the above drawings and specifications in accordance with the laws and regulations of the State of Connecticut.

Company: P-SEC
 PE: 218-882-2008
 Tel: 203-748-1400
 www.p-sec.com
 100 STATE STREET, SUITE 100
 DANBURY, CT 06810
 WATERLOO, ON N2K 3T6

Project: CT11923C
 DANBURY
 CONNECTICUT

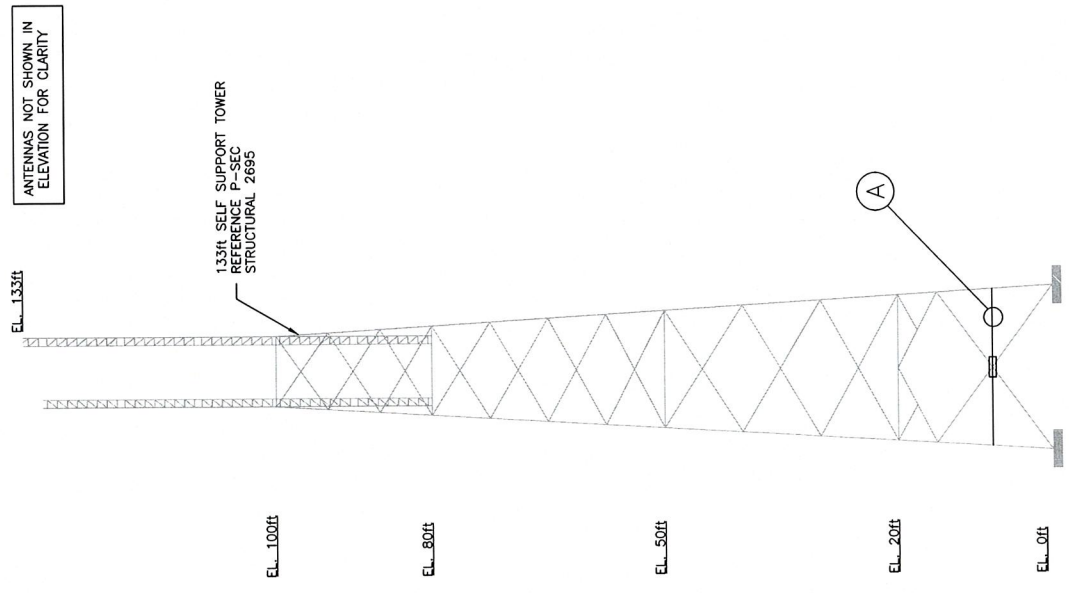
7 WEST VIEW DRIVE,
 DANBURY,
 CT 06515

TOWER PROFILE

Drawn by: MS	A-1
Checked by: IMH	
Approved by: MLP	

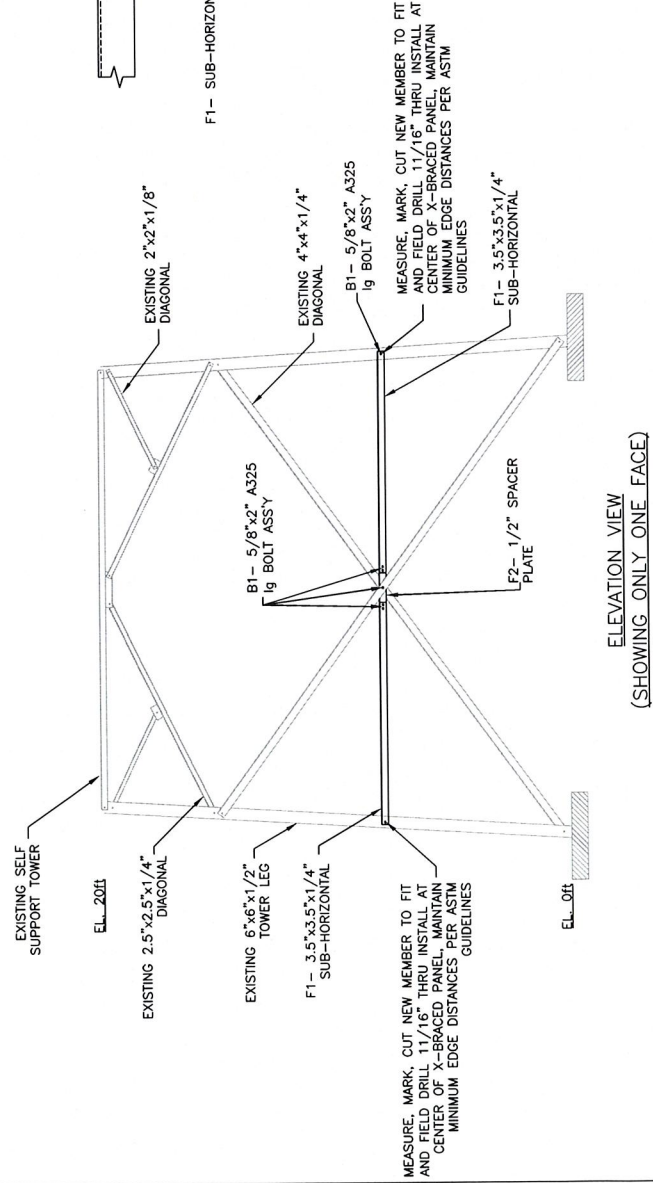
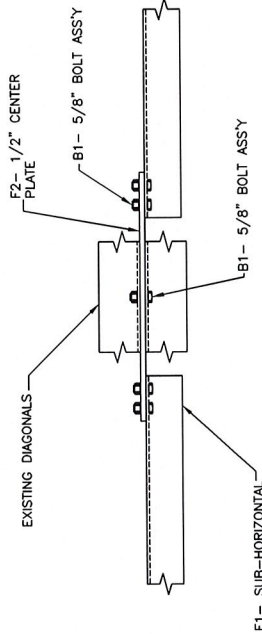
- NOTES:**
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE PROCEEDING WITH FABRICATION AND INSTALLATION OF ANY MATERIALS. ANY DISCREPANCIES SHOULD IMMEDIATELY BE FORWARDED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
 - THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES. OUR TOWER MODIFICATION LIST IS ONLY AN ILLUSTRATED SEQUENCE.
 - STRICT ADHERENCE TO THE COUSA CUTTING, WELDING, AND SAFETY GUIDELINES ARE TO BE FOLLOWED.
 - REQUIRED MODIFICATIONS TO BE COMPLETED IN CALM WEATHER WITH WIND VELOCITY LESS THAN 20 MPH AT GROUND ELEVATION.
 - TEMPORARILY SUPPORT THE TOWER AS REQUIRED.
 - ALL STEEL FABRICATION AND CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF AISC AND EIA/TIA-222-F STANDARDS
 - ALL NEW STEEL SHALL BE HOT DIP GALVANIZED PER ASTM A123 STANDARD.
 - ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A-36 MATERIAL & AISC STANDARDS UNLESS OTHERWISE NOTED.
 - ANY DAMAGE TO GALVANIZING SHALL BE COATED WITH ZINC RICH PAINT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - SEE GENERAL NOTES FOR FURTHER GENERAL & INSTALLATION NOTES.

SCOPE OF WORK:
 A. REINFORCE TOWER WITH NEW SUB-HORIZONTALS. SEE DWG A-2 FOR FURTHER DETAILS.



BILL OF MATERIAL		
PART NO.	DESCRIPTION	QTY
F1	SUB-HORIZONTAL	8
F2	1/2" CENTER PLATE	4
B1	5/8"x2" A325 lg BOLT ASSY	28

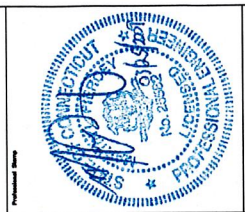
NOTES:
 1. SUB-HORIZONTAL REINFORCING MUST BE INSTALLED ON EACH FACE OF THE TOWER.



Client:

MIXTON
 100 Main Street, 10th Floor
 Danbury, CT 06810
 Tel: 203.748.4300

By: Steve Dwyer, Inc.
 20 State Street, 10th Floor
 Danbury, CT 06810
 Tel: 203.748.4300
 Fax: 203.748.4300



No.	Description	Date
A	CONSTRUCTION	03.24.09

Company File: P-SEC
 PE: 3118-2003-20065
 EC: 3118-2003-20065

PER. STRUCTURAL ENGINEERING CORP.
 100 MAIN STREET, SUITE 100
 WATERLOO, OH 43082

Site Address: CT11923C
 DANBURY
 CONNECTICUT

Site Address: 7 WEST VIEW DRIVE,
 DANBURY,
 CT 06515

Sheet Title: TOWER REINFORCING

Drawn by: MS
 Checked by: IMH
 Approved by: MLP

A-2

MIXTON
 250 Main St., CT07
 Danbury, CT 06810
 Tel: 203-753-2200
 Fax: 203-753-2201

Bay State Design, Inc.
 20 Union Avenue, 2nd Fl.
 Danbury, CT 06810
 Tel: 203-753-2200
 Fax: 203-753-2201



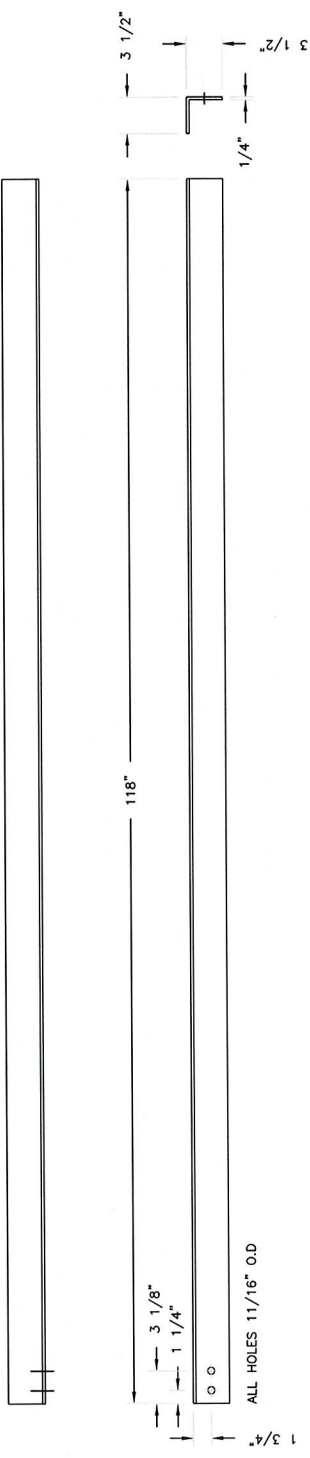
No.	Description	Date
A.	CONSTRUCTION	03/24/09

P-SEC
 PEER STRUCTURAL ENGINEERING CORP.
 1000 MAIN STREET, SUITE 100
 WATERBURY, CT 06706

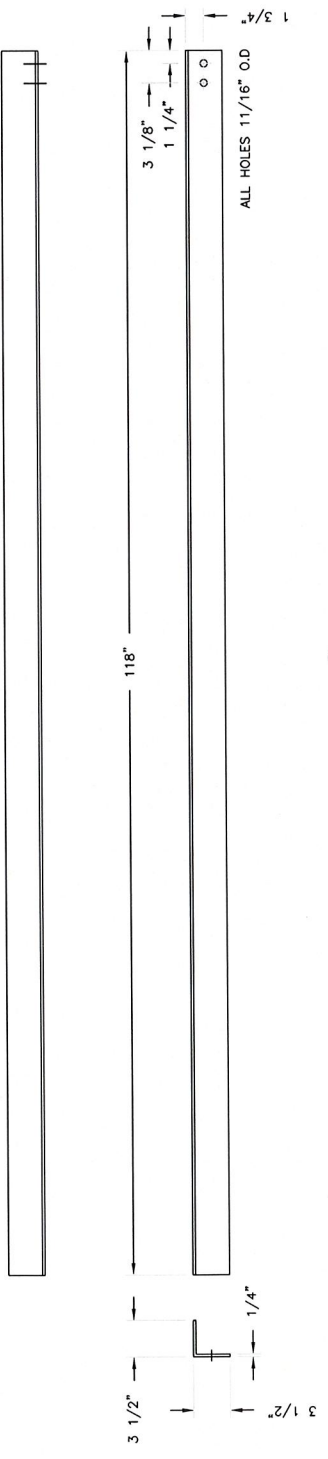
CT11923C
 DANBURY
 CONNECTICUT

7 WEST VIEW DRIVE,
 DANBURY,
 CT 06515

F-1
 MS
 IMH
 MLP



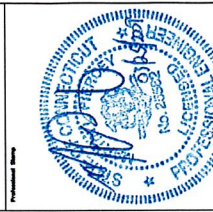
F1
 NAME: SUB-HORIZONTAL
 MATERIAL: 3-1/2"x3-1/2"x1/4" ANGLE
 GRADE: ASTM A36
 FINISH: HDG
 WEIGHT: 57.0 LBS
 QTY: 4



F1
 NAME: SUB-HORIZONTAL
 MATERIAL: 3-1/2"x3-1/2"x1/4" ANGLE
 GRADE: ASTM A36
 FINISH: HDG
 WEIGHT: 57.0 LBS
 QTY: 4

Client:
MIXTON
 100 Main St., 2nd Fl.
 Danbury, CT 06810
 Tel: 860 763-2828

Bay Stair Design, Inc.
 20 Danbury Ave., 2nd Fl.
 Danbury, CT 06810
 Tel: 860 763-2828
 Fax: 860 763-2877
 Website: www.baystair.com



Revisions

No.	Description	Date
A	CONSTRUCTION	03.24.09

THE USER OF THIS DOCUMENT ASSUMES ALL LIABILITY FOR ANY DAMAGE OR LOSS OF PROPERTY OR PERSONAL INJURY THAT MAY BE CAUSED BY ANY FAILURE OF THE DESIGN OR CONSTRUCTION OF THE PROJECT.

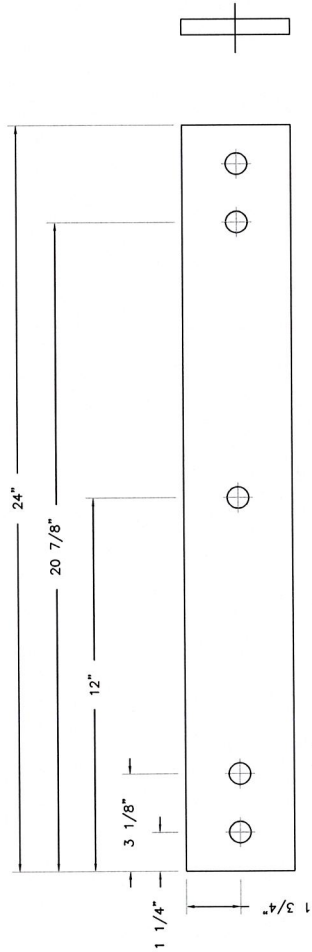
P-SEC
 PEER STRUCTURAL ENGINEERING CORP
 100 WATERLOO STREET, SUITE 100
 WATERLOO, ON N2K 3T6
 Tel: 519-883-3000
 Fax: 519-883-3015
 www.p-sec.co

Project No.: CT11923C
Location: DANBURY CONNECTICUT

Site Address:
 7 WEST VIEW DRIVE,
 DANBURY,
 CT 06515

Sheet No.: PARTS


Scale:
Drawn by: MS
Checked by: IMH
Approved by: MLP
Sheet: F-2



ALL HOLES 11/16" O.D

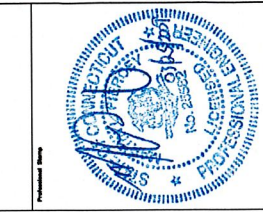
F2
NAME: 1/2" CENTER PLATE
MATERIAL: 1/2" PLATE
GRADE: ASTM A36
FINISH: HDG
WEIGHT: 11.90 LBS
QTY: 4

CLIENTS



MIXTON
100 Main Street, Danbury, CT 06810
Tel: 203-755-1234 Fax: 203-755-1234

BAY STATE DESIGN
100 Main Street, Danbury, CT 06810
Tel: 203-755-1234 Fax: 203-755-1234



No.	Description	Date
A	CONSTRUCTION	03.24.09

P-SEC
PEER STRUCTURAL ENGINEERING CORP
100 Main Street, Danbury, CT 06810
Tel: 203-755-1234 Fax: 203-755-1234

CT11923C
DANBURY
CONNECTICUT

7 WEST VIEW DRIVE,
DANBURY,
CT 06515

GENERAL NOTES

MS
IMH
MLP

FIELD ERECTION

- THE CREW SHOULD COMPLY WITH ALL INSTALLATION PROCEDURES, SAFEGUARDS AND MEANS AND METHODS OF CONSTRUCTION. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF OSHA AND THE CONNECTICUT LABOR CODE. (LATEST EDITION)
- ERECTION METHODS AND TOLERANCES SHALL COMPLY WITH TIA/EIA-222-F STANDARD MINIMUM RECOMMENDED WEATHER CONDITIONS THAT SHOULD BE OBSERVED TO ENSURE A SAFE WORKING CONDITION SHALL BE: WIND SPEED NOT TO EXCEED 20mph GUST AT GROUND LEVEL, AND NO THUNDERSTORMS FORECAST.
- ALL PRECAUTIONS AND EFFORTS SHALL BE TAKEN TO ENSURE TOWER STABILITY DURING ERECTION. THIS WILL REQUIRE TEMPORARY SUPPORTS WHEN REPLACING PRIMARY STRUCTURAL MEMBERS SUCH AS DIAGONALS AND HORIZONTALS.
- TEMPORARY GUYS, IF REQUIRED BY INSTALLATION PROCEDURE, SHALL BE REMOVED AFTER THE NEXT PERMANENT GUY WIRE HAS BEEN INSTALLED BEFORE CONTINUING TOWER ERECTION. ALL BOLTS SHALL BE INSTALLED AND TIGHTENED AS ERECTION PROGRESSES ABOVE PERMANENT GUYS.
- TOWER SHALL BE PLUMBED AND RE-TENSIONED IN CALM WEATHER. INITIAL TENSION (10% OF BREAKING VALUES) SHOWN ON PLANS ARE FOR NORMAL TEMPERATURES FOR THE SITE.
- INSTALLATION OF THE TRANSMISSION LINES (IF APPLICABLE) SHALL BE AS SHOWN ON THE LAYOUT DRAWINGS, AND IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS AND INSTALLATION INSTRUCTIONS.
- ANY STRUCTURAL MEMBERS THAT HAVE DAMAGED GALVANIZED SURFACES SHALL BE CLEANED AND REPAIRED WITH THREE COATS OF ZINC-RICH PAINT, ACCORDING TO ASTM A123 AND TIA/EIA-222-F STANDARDS.
- UPON COMPLETION OF ALL WORK, THE SITE SHALL BE CLEANED OF ALL DEBRIS AS REQUIRED. ANY SURPLUS MATERIALS NOT REMOVED FROM THE SITE SHALL BE NEARLY STORED IN AN AREA DESIGNATED BY THE OWNER'S REPRESENTATIVE.

ROCK ANCHORS

- ROCK ANCHORS SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ALL LOOSE AND WEATHERED ROCK IS TO BE REMOVED BEFORE INSTALLATION.
 - THE ANCHORS SHALL BE SECURELY FASTENED IN PLACE TO PREVENT MOVEMENT DURING GROUTING, GROUTING OPERATIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S PRACTICE, AND ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
 - ALL EXPOSED STEEL ITEMS FOR ANCHORAGES, INCLUDING ANCHOR BOLTS, SHALL BE ZINC-COATED IN ACCORDANCE WITH THE MANUFACTURER'S PRACTICE. OTHERWISE GALVANIZED STEEL IS PARTIALLY EMBEDDED IN CONCRETE THE ZINC COATING SHALL EXTEND A MINIMUM OF 2" INTO THE CONCRETE.
 - ANCHORAGE STEEL BELOW GRADE THAT IS NOT ENCASED IN CONCRETE SHALL BE GALVANIZED, AND FURTHER CORROSION PROTECTION SHALL BE PROVIDED.
- CASE-IN-LINE CONCRETE**
- CONCRETE MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO REQUIREMENTS OF ACI 318. TESTING METHODS SHALL CONFORM TO THIS STANDARD.
 - ALL CONCRETE SHALL HAVE A MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH OF 4000psi, UNLESS NOTED OTHERWISE.
 - ALL REINFORCING STEEL BARS SHALL CONFORM TO ASTM A-615, AND HAVE A YIELD STRENGTH OF 60KSI (GRADE 60), UNLESS NOTED OTHERWISE.
 - LAPS, ANCHORAGES AND SPLICES SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318.
 - CONCRETE SHALL BE PLACED WITHIN 3 HOURS OF MIXING.

STRUCTURAL STEEL

- ALL STEEL FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH AISC (LATEST EDITION) AND TIA/EIA-222-F.
- ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AWS (LATEST EDITION) STANDARD. ALL WELDING TO BE COMPLETED IN A AWS REGISTERED SHOP UNLESS OTHERWISE PERMITTED UNLESS APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
- BASE MATERIAL SHALL BE CORRECTLY PREHEATED BEFORE WELDING AND POST HEATED AFTER WELDING IN ACCORDANCE WITH THE ENGINEERED WELDING PROCEDURE, WHICH MUST BE APPROVED BY THE AWS CERTIFIED WELDING INSPECTOR.
- ALL STEEL SOLID ROUND MEMBERS SHALL CONFORM TO ASTM A-36 (GRADE 36ksi)
- ALL STEEL ANGLE, PLATE AND MISCELLANEOUS MEMBERS SHALL CONFORM TO ASTM A-36 (GRADE 36ksi) STEEL SPECIFICATION.
- ALL STEEL CHANNEL MEMBERS SHALL CONFORM ASTM A-36 (GRADE 36ksi) STEEL SPECIFICATION
- THE FINISHED DIAMETER OF BOLT HOLES SHALL NOT BE MORE THAN 1/16 inch LARGER THAN THE NOMINAL BOLT DIAMETER UNLESS OTHERWISE NOTED.
- MATERIAL MAY BE CUT BY SHEARING, SAWING, OR CUTTING WITH A ROUTER OR GAS CUT. MATERIAL GREATER THAN 2 inch THICKNESS SHALL NOT BE SHARED.
- CUT EDGES SHALL BE TRUE AND SMOOTH, AND FREE FROM EXCESSIVE BURRS AND RAGGED BREAKS. SHEARED EDGES OF THICK PLATES SHALL BE PLANNED TO A DEPTH OF 1/4inch RE-ENTRANT CUTS SHALL BE AVOIDED. IF USED, THEY SHALL BE FILLETED BY DRILLING PRIOR TO CUTTING.
- TOLERANCES AS INDICATED IN AISC AND TIA/EIA-222-F STANDARDS SHALL BE CAREFULLY FOLLOWED DURING FABRICATION.
- PROB TO GALVANIZING ALL FABRICATED STEEL SHALL BE THOROUGHLY SHOP INSPECTED AND QUANTITIES COUNTED.
- ALL BOLTS, WASHERS AND NUTS SHALL CONFORM TO ASTM A325 TYPE N, 5/8" UNLESS NOTED OTHERWISE.
- BOLTS SHALL BE TIGHTENED USING THE TURN-OF-THE-NUT METHOD AS DESCRIBED IN AISC (LATEST EDITION) STANDARD, UNLESS NOTED OTHERWISE.
- ALL EXPOSED STEEL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED PER ASTM STANDARD A123, AFTER FABRICATION, UNLESS NOTED OTHERWISE.

GUY WIRES

- ALL NEW GUY WIRES SHALL MEET ALL TIA/EIA-222 PROVISIONS, USING HOT ZINC GALVANIZED STEEL WIRE. GALVANIZATION SHALL BE FOR A MINIMUM OF 100% OF THE GUY BREAKING STRENGTH OR HIGHER, UNLESS OTHERWISE NOTED.
- GROUNDING OF THE GUYS AT ANCHORS SHALL MEET THE MINIMUM REQUIREMENTS OF TIA/EIA-222-F PROVISIONS.

GENERAL

- THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS AND/OR THE GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
- THE STRUCTURE IS DESIGNED TO BE STABLE AFTER THE CONSTRUCTION IS FULLY COMPLETED. THE CREW MUST FOLLOW APPROVED ERECTION PROCEDURES IN ORDER TO ENSURE THE SAFETY OF THE CONSTRUCTION AND ITS PARTS DURING ERECTION.
- ALL CONSTRUCTION SHALL COMPLY FULLY WITH THE APPLICABLE PROVISIONS OF THE WISCONSIN CODE, AND ALL LOCAL GOVERNING CODES. ALL REQUIREMENTS SPECIFIED IN THE CODES SHALL BE ADHERED TO AS IF THEY WERE CALLED FOR OR SHOWN ON THE DRAWINGS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE FOR COMPENSATION WILL BE ALLOWED FOR CONSTRUCTION ERRORS. ANY SUCH DISCREPANCY IN THE DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER/CLIENT FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREA.
- ANY SUBSTITUTIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ALL WORK CONSTRUCTED ACCORDING TO THESE DRAWINGS SHALL BE CHECKED AND VERIFIED BY QUALITY ASSURANCE AS DETERMINED BY THE ENGINEER.
- WHERE STANDARDS ARE IDENTIFIED WITHOUT A RELEASE DATE IN THESE GENERAL NOTES, THE MOST RECENT VERSION SHALL APPLY.

DESIGN LOADS

- WIND AND ICE LOADS AS PER TIA/EIA-222-F, TAKEN FROM PSEC STRUCTURAL ANALYSIS DATED FEBRUARY 23, 2009, REF NO. 2695.

FOUNDATIONS

- THE FOUNDATION DESIGNS ARE BASED ON LOADS SHOWN ON THE PSEC ANALYSIS PROFILE AND REPORT MENTIONED ABOVE.
- FOUNDATION INFORMATION AND GEOTECHNICAL INFORMATION WAS UNAVAILABLE.
- WHERE SITE CONDITIONS DIFFER FROM THESE DRAWINGS, CONSULT THE ENGINEER ON RECORD.
- A QUALIFIED FOREMAN OR SUPERVISOR SHALL PERFORM A SITE INSPECTION OF THE FOUNDATION INSTALLATION TO INSURE COMPLIANCE WITH THE PLANS.
- CHECK AREA FOR LOCATION OF UNDERGROUND PIPES, CABLES, CONDUITS, ETC., PRIOR TO EXCAVATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND SAFETY REGULATIONS. PROCEDURES FOR PROTECTION OF EXISTING EXCAVATIONS, UNDERGROUND PIPES AND UTILITIES SHALL BE ESTABLISHED PRIOR TO COMMENCEMENT OF FOUNDATION WORK.
- BRACING, SHORING, AND SLOPING OF EXCAVATIONS SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL AND FEDERAL CODES AND SAFETY REGULATIONS.
- WELDING OF REINFORCING STEEL AND EMBEDMENTS IS PROHIBITED UNLESS NOTED OTHERWISE ON DRAWINGS.
- CONCRETE COVER OVER ALL STEEL SHALL CONFORM TO ACI 318, APPLICABLE BUILDING CODE MINIMUM REQUIREMENTS, AND AS SHOWN IN STRUCTURAL DETAILS. THE MINIMUM CONCRETE COVER OVER REBAR SHALL BE 3 INCHES.
- INSURE BOTTOM OF EXCAVATION PRIOR TO PLACING STEEL CAGE AND CONCRETE TO BEARING SURFACES TO BE PLACED ON UNDISTURBED SOIL OR ROCK.
- SPACING DEVICES SHALL BE USED AS REQUIRED TO MAINTAIN SIDE CLEARANCE BETWEEN THE STEEL REINFORCEMENT AND EXCAVATION WALL.
- CONCRETE SHALL BE PLACED IN THE EXCAVATION WITHOUT UNDUE DELAY. WITH THE USE OF A CHUTE OR HOPPER DEVICE TO DIRECT THE CONCRETE TO FALL WITHIN THE CENTER OF THE STEEL CAGE. CONCRETE SHALL NOT BE ALLOWED TO HIT THE STEEL CAGE, WHICH COULD CAUSE SEGREGATION OF THE MATERIAL.
- BACK FILL SHALL BE PLACED IN 9"-12" HORIZONTAL LIFTS AND COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY. ALL DEBRIS AND SHALL BE PLACED AT OR NEAR THE OPTIMUM MOISTURE CONTENT. ALSO REFER TO THE SOIL REPORT FOR RECOMMENDED BACKFILL/COMPACTED FILL PROCEDURES.
- CONCRETE MIXED ON SITE IS NOT PERMITTED UNLESS APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.