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
www.ct.gov/csc

March 16, 2009

Carrie L. Larson, Esq.
Pullman & Comley, LLC
90 State House Square
Hartford, CT 06103-3702

RE: **EM-POCKET-166-090225** - Youghiogheny Communications-Northeast, LLC d/b/a Pocket Communications notice of intent to modify an existing telecommunications facility located at 347 East Street, Wolcott, Connecticut.

Dear Attorney Larson:

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.

The proposed modifications are to be implemented as specified here and in your notice dated February 24, 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/CDM/laf

c: The Honorable Thomas G. Dunn, Mayor, Town of Wolcott
David Kalinowski, Zoning Enforcement Officer, Town of Wolcott
Crown Castle USA, Inc.

PULLMAN & COMLEY, LLC
ATTORNEYS AT LAW

CARRIE L. LARSON
90 State House Square
Hartford, CT 06103-3702
p (860) 424-4312
f (860) 424-4370

www.pullcom.com

EM-POCKET-166-090225

ORIGINAL

February 24, 2009

Via Federal Express

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

Re: Notice of Exempt Modification
Crown Castle USA, Inc. Telecommunications Facility
347 East Street, Wolcott, Connecticut

Dear Mr. Phelps:

Youghiogheny Communications-Northeast, LLC, doing business as Pocket Communications ("Pocket"), intends to install antennas and appurtenant equipment at the existing 180-foot lattice facility owned by Crown Castle USA, Inc. and located at 347 East Street, Wolcott, Connecticut ("Facility"). Pocket Communications provides prepaid, flat rate wireless voice and data services to more than a quarter of a million subscribers. Pocket 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 Thomas G. Dunn, Mayor, Town of Wolcott.

The existing Facility consists of a 180-foot self-supporting lattice tower capable of supporting multiple carriers within a fenced compound. The coordinates for the Facility are **Lat: 41°-33'-34" and Long: 72°–56 '-51".** The tower is located on the east side of East Street. It is in the southeastern corner of Wolcott approximately 600 feet west of the Southington Town Line and approximately 700 feet north of the Cheshire Town Line, and roughly one and a half miles north of Interstate 84. (see Site Map, attached as Exhibit A). The tower currently supports T-Mobile antennas at the one hundred eight-eight foot level (188') AGL (above ground level); Verizon antennas at the one hundred seventy-seven foot level centerline AGL (Verizon also currently has microwave dishes at the 70' and 112' level); and AT&T antennas at the one hundred fifty-eight foot level (158) AGL; and. Pocket proposes to install three RFS APXV18-206517S-C antennas at the one hundred forty-eight foot level (148') AGL, and a Nortel CDMA Micro BTS 3231 cabinet, mounted on an "H-Frame," contained within a six foot by six foot (6'-

0" x 6'-0") lease area. A small GPS antenna will be mounted to the tower at the one hundred fifty-two foot level (150) AGL. An ice bridge which will run from the lease area to the tower. Utilities will be run via a proposed underground conduit from an existing utilities. (See Design Drawings and Equipment Specifications, attached as Exhibits B and C respectively).

For the following reasons, the proposed modifications to the East Street 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 Pocket's antennas will be installed at a center line height of approximately 148 feet.

2. The installation of Pocket's equipment and shelter 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 Pocket antennas would be 18.75% of the FCC standard (see general power density calculations table, attached as Exhibit D).

Also attached, Exhibit E, is a structural analysis confirming that the tower can support the existing and proposed antennas and associated equipment.

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

Respectfully Submitted,

Carrie L. Larson

cc: Thomas G. Dunn, Mayor
Agostinho and Joanne Rodrigues, underlying property owner

Exhibit A

Site Map

Pocket Site NHCT0484B

347 East Street

Wolcott, Connecticut

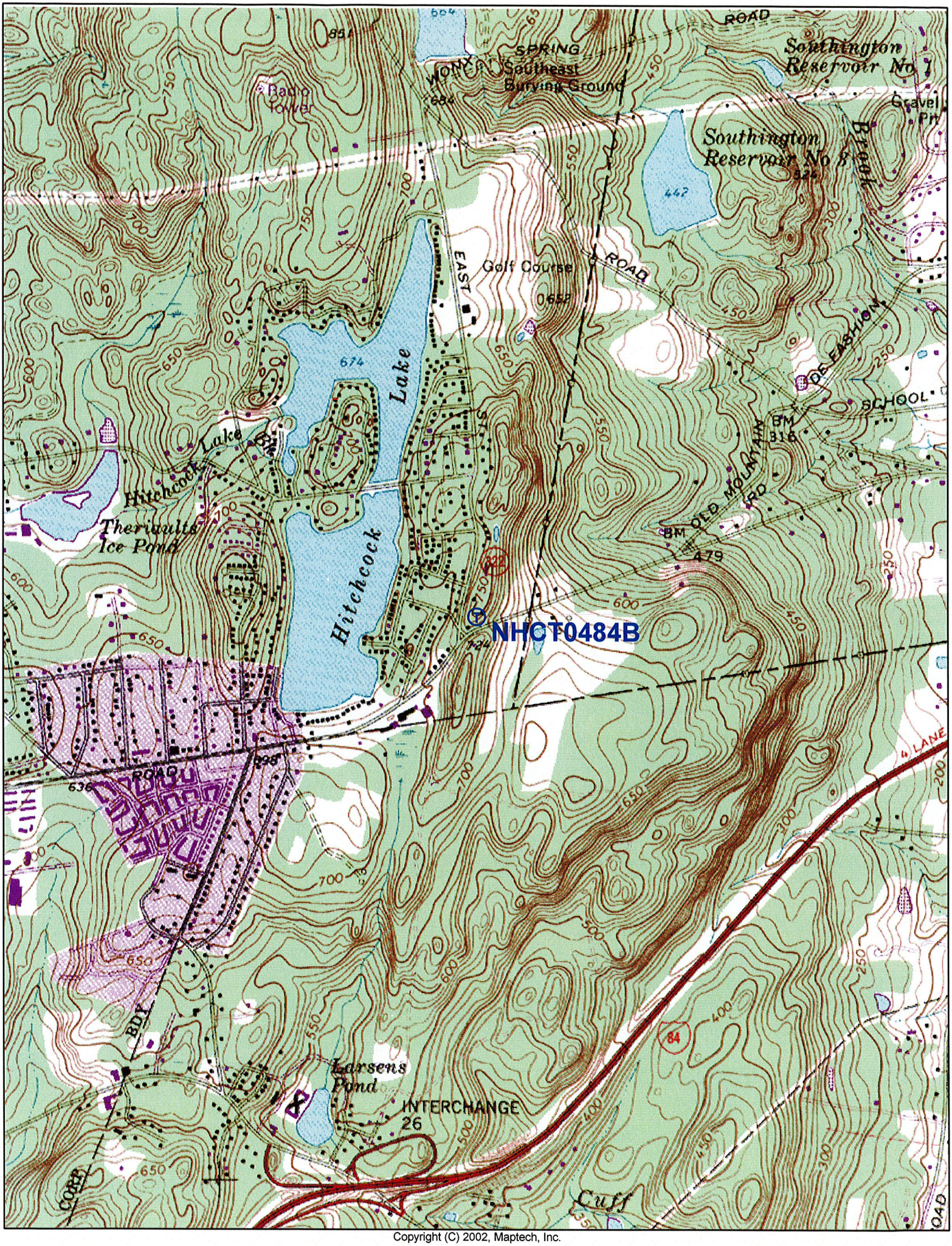


Exhibit B

Design Drawings

Pocket Site NHCT0484B

347 East Street

Wolcott, Connecticut

PROJECT INFORMATION

TOWER OWNER:	CCI 500 WEST CUMMINGS PARK, SUITE 3600 WOBURN, MA 01801
OWNER SITE ID#:	806362
APPLICANT:	YOUGHIOGHENY COMMUNICATIONS-NORTHEAST LLC 2519 NW LOOP 410 SAN ANTONIO, TX 78230
SITE ADDRESS:	347 EAST STREET WOLCOTT, CT 06716
COUNTY:	NEW HAVEN
LATITUDE:	41.55956°
LONGITUDE:	-72.94697°
STRUCTURE HEIGHT:	180' AGL
ZONING CLASSIFICATION:	N/A
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
POWER COMPANY	CL&P 1-860-947-2121
TELEPHONE COMPANY:	AT&T 1-888-727-8368
DESIGN FIRM:	URS CORPORATION AES 500 ENTERPRISE DRIVE, SUITE 3B ROCKY HILL, CT 06067 PHONE: 860-529-8882

DRAWING INDEX

STRUCTURAL REVIEW

FOR ADDITIONAL TOWER AND FOUNDATION INFORMATION REFER TO STRUCTURAL ANALYSIS REPORT OF 180 FOOT SELF SUPPORT TOWER, INTERSECTION OF RTE. 322/MERIDIAN RD., WOLCOTT, CT, PREPARED BY FDH ENGINEERING, INC., DATED NOVEMBER 3, 2008. ALL REINFORCEMENT (IF REQUIRED) SHALL BE PERFORMED PRIOR TO ANY WORK UNDER THIS CONTRACT BEING PERFORMED.

APPROVALS

_____ REAL ESTATE

_____ RF

_____ OPS/CONSTRUCTION

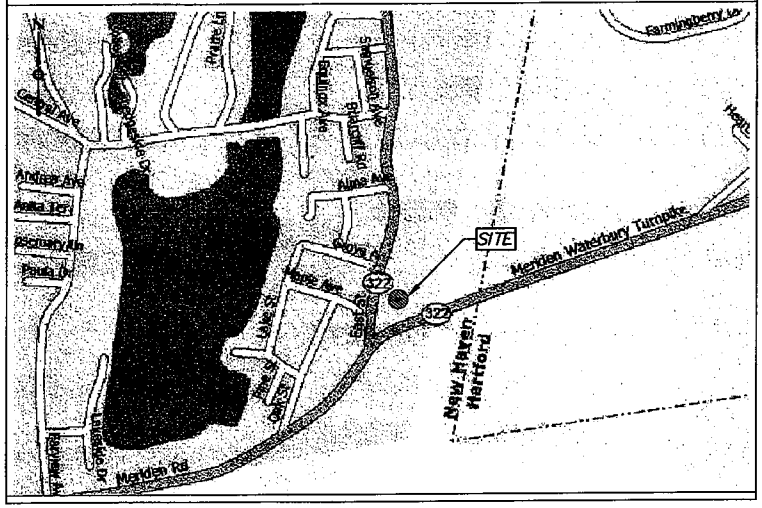
_____ LEGAL/COMPLIANCE

_____ NET DESIGN

pocket™
SMART WIRELESS

NHCT0484X
347 EAST STREET
180' LATTICE TOWER

LOCATION MAP



DRIVING DIRECTIONS

FROM HARTFORD:
MERGE ONTO I-84 WEST TOWARD WATERBURY. TAKE THE CT-322 EXIT, EXIT 28, RT. 322 WEST TO MERIDEN RD., TAKE FIRST DRIVEWAY OFF MERIDEN RD. ON RIGHT. TOWER AT TOP OF HILL.

APPLICABLE BUILDING CODES AND STANDARDS

CONTRACTOR'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 STATE BUILDING CODE
- 2003 INTERNATIONAL BUILDING CODE
- 2003 INTERNATIONAL PLUMBING CODE
- 2003 INTERNATIONAL MECHANICAL CODE
- 2003 INTERNATIONAL EXISTING BUILDING CODE
- 2005 CONNECTICUT SUPPLEMENT

ELECTRICAL CODE:
- 2005 NATIONAL ELECTRICAL CODE

CONNECTICUT STATE FIRE SAFETY CODE
- 2003 INTERNATIONAL FIRE CODE

CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST APPROVED EDITION OF THE FOLLOWING STANDARDS.

AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARD FOR STRUCTURAL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:

TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM

IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1275 GENERAL INSTALLATION REQUIREMENTS

TELCORDIA GR-1503 COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM - DC POWER SYSTEMS - TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

SITE NOTES

1. THIS SITE IS UNMANNED AND IS RESTRICTED TO OUTDOOR EQUIPMENT. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
2. POCKET COMMUNICATIONS CERTIFIES THAT THIS TELEPHONE EQUIPMENT FACILITY WILL BE SERVICED ONLY BY POCKET COMMUNICATIONS EMPLOYEES AND THE WORK ASSOCIATED WITH ANY EQUIPMENT CANNOT BE PERFORMED BY HANDICAPPED PERSONS. THIS FACILITY WILL BE FREQUENTED ONLY BY SERVICE PERSONNEL FOR REPAIR PURPOSES ONLY. THIS FACILITY IS EXEMPT FROM THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) APPENDIX B, SECTION 4.11.(5)(B)
3. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
4. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
5. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.
6. POCKET COMMUNICATIONS MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.

NO.	DATE	REVISIONS	BY
A	01/22/09	ISSUED FOR REVIEW	JCF

pocket SMART WIRELESS

PROJECT NAME: HFCT0484X, 347 EAST STREET

SHEET: TITLE SHEET

URS
URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067

CHECKED BY: JCF
DRAWN BY: BAL
DATE: 01/22/09
URS JOB NUMBER: PC1060/36923980
DRAWING NUMBER: 01

CONSTRUCTION NOTES

1. FIELD VERIFICATION: CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, POCKET COMMUNICATIONS ANTENNA MOUNT LOCATION AND ANTENNAS TO BE INSTALLED.
2. COORDINATION OF WORK: CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH POCKET COMMUNICATIONS.
3. GRAVEL SURFACE IN AREAS OF COMPOUND THAT ARE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED TO ORIGINAL CONDITION BY CONTRACTOR.

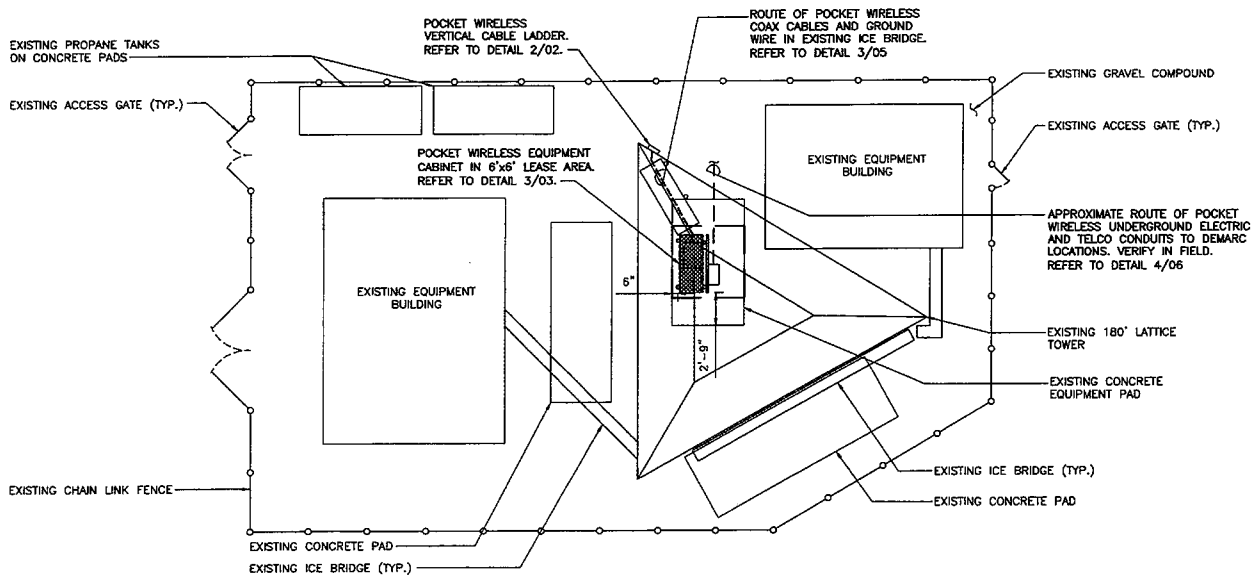
GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – POCKET COMMUNICATIONS
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND THE ENGINEER.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, AND GROUNDING CABLES AS SHOWN ON THE SITE PLAN
8. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
9. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
10. CONTRACTOR TO OBTAIN REQUIRED NOTICE TO PROCEED DOCUMENTS FROM THE TOWER OWNER BEFORE COMMENCING CONSTRUCTION.

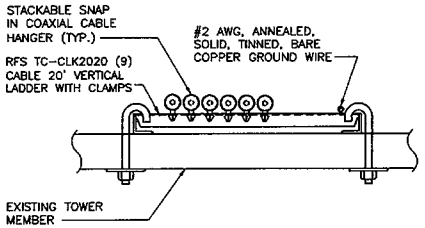
NOTE:
REFER TO DRAWING 06 FOR ADDITIONAL UTILITY INFORMATION

SITE PLAN INFORMATION

THIS SITE PLAN DRAWING WAS COMPILED FROM DATA PROVIDED BY GRAPEVINE SOLUTIONS AND AVAILABLE EXISTING DRAWINGS OF THE SUBJECT AREA.



1/02 COMPOUND PLAN
SCALE: 1" = 10'-0"



2/02 VERTICAL CABLE LADDER DETAIL
SCALE: N.T.S.

NO.	DATE	REVISIONS	BY
A	01/22/09	ISSUED FOR REVIEW	JCF

pocket WIRELESS

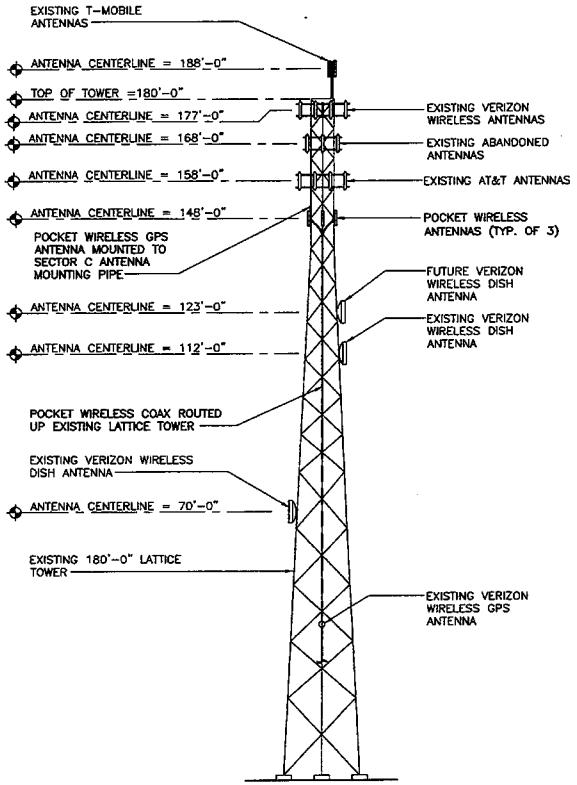
HFCT04484X, 347 EAST STREET

PROJECT NAME: SITE PLAN, DETAILS AND NOTES

URS
URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
1-(860)-529-8882

CHECKED BY: JCF
DRAWN BY: BAL
DATE: 01/22/09
URS JOB NUMBER: PC1060/36923980
DRAWING NUMBER: 02

FOR ADDITIONAL TOWER AND FOUNDATION INFORMATION REFER TO STRUCTURAL ANALYSIS REPORT OF 180 FOOT SELF SUPPORT TOWER, INTERSECTION OF RTE. 322/MERIDIAN RD., WOLCOTT, CT, PREPARED BY FDH ENGINEERING, INC., DATED NOVEMBER 3, 2008. ALL REINFORCEMENT (IF REQUIRED) SHALL BE PERFORMED PRIOR TO ANY WORK UNDER THIS CONTRACT BEING PERFORMED.



1/03 TOWER ELEVATION
SCALE: 1/32" = 1'-0"

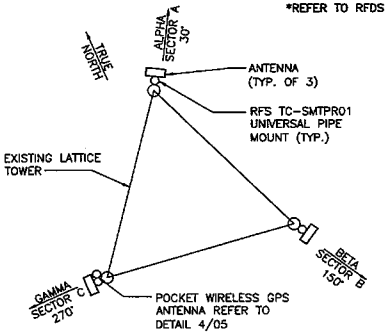
ANTENNA KEY

	# ANTENNAS PER SECTOR	ANTENNA NUMBER	COAX COLOR CODE	ANTENNA VENDOR	MODEL NUMBER	AZIMUTH	C/L HEIGHT	MECHANICAL DOWNTILT*	ELECTRICAL DOWNTILT*	COAX SIZE	CABLES PER ANTENNA	COAX MANUFACTURER
ALPHA	1	A-1	(1) RED BAND	RFS	APXV18-206517S-C	30°	148'-0"	0°	0°	1 5/8"ø	2 @ 165'	RFS
BETA	1	B-1	(1) BLUE BAND	RFS	APXV18-206517S-C	150°	148'-0"	0°	0°	1 5/8"ø	2 @ 165'	RFS
GAMMA	1	C-1	(1) GREEN BAND	RFS	APXV18-206517S-C	270°	148'-0"	0°	0°	1 5/8"ø	2 @ 165'	RFS
GPS	1	-	YELLOW	NORTEL	NTGB01MA	-	152'-0"	-	-	1/2"ø	(1) @ 170'	RFS

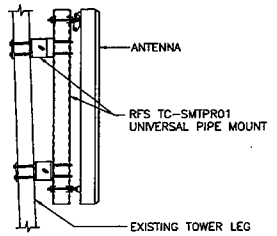
*REFER TO RFDS ANTENNA SHEET FOR FINAL TILT AND AZIMUTHS

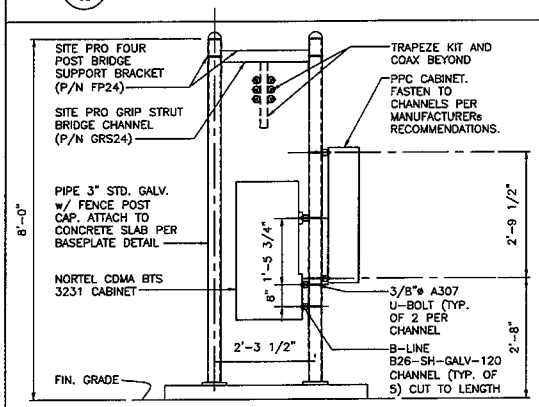
TOWER NOTES:
1. FOR DETAILED TOWER INFORMATION, REFER TO TOWER ERECTION DRAWINGS BY OTHERS. THE TOWER SHOWN ON THIS SHEET IS SHOWN FOR GENERAL CONFIGURATION PURPOSES ONLY.
2. ANTENNA CONFIGURATION IS SUBJECT TO CHANGE. VERIFY ANTENNA HEIGHT, DOWN-TILT, AND AZIMUTH WITH PROJECT MANAGER PRIOR TO CONSTRUCTION.

ANTENNA NOTES:
1. ALL COAX SHALL BE COLOR CODED AT THE ANTENNA AND AT THE EQUIPMENT CABINET.
2. (2) COLOR BANDS DENOTES TRANSMIT. TRANSMITS TO BE CONNECTED TO THE +45 PORTS OF THE ANTENNAS.
3. PRIOR TO ORDERING ANY ANTENNAS OR COAX, CONTRACTOR SHALL CONTACT POCKETS CONSTRUCTION MANAGER AND OBTAIN APPROVAL FOR MATERIALS LISTED. CONTRACTOR IS SOLELY RESPONSIBLE FOR THIS COORDINATION.

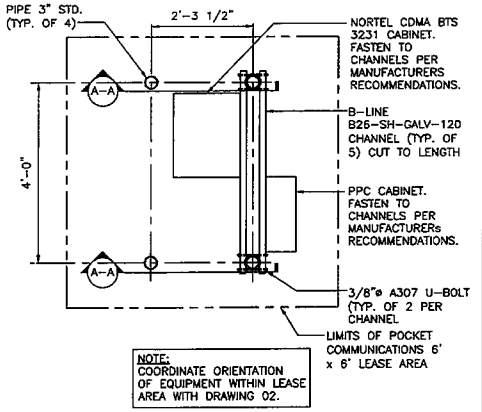


2/03 ANTENNA SECTOR PLAN
SCALE: N.T.S.



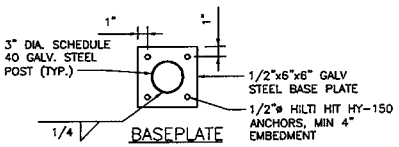


A-A ELEVATION



NOTE:
COORDINATE ORIENTATION OF EQUIPMENT WITHIN LEASE AREA WITH DRAWING 02.

SECTION



BASEPLATE

3/03 CABINET SUPPORT FRAME
SCALE: N.T.S.

NO.	DATE	REVISIONS	BY
A	01/22/09	ISSUED FOR REVIEW	JCF

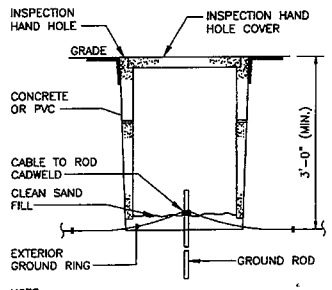
pocket SMART WIRELESS

PROJECT NAME: HFCT04849X, 347 EAST STREET

SHEET: TOWER ELEVATION, ANTENNA PLAN AND DETAILS

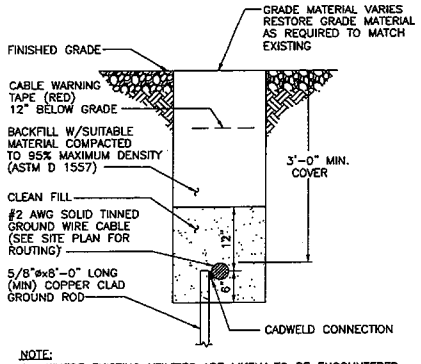
URS
URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
1-(860)-529-8882

CHECKED BY: JCF
DRAWN BY: BAL
DATE: 01/22/09
URS JOB NUMBER: PC1060/36923980
DRAWING NUMBER: 03



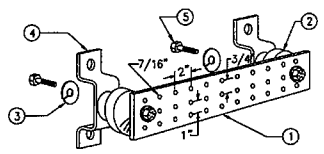
NOTE:
INSPECTION HAND HOLE MAY BE CONCRETE OR PVC AND SHALL BE A MINIMUM OF 8" IN WIDTH/DIAMETER

7 / 04 GROUND ROD WITH INSPECTION HANDHOLE
SCALE: N.T.S.



NOTE:
1. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.
2. CADWELD GROUND ROD TO GROUND RING AFTER GROUND ROD HAS BEEN DRIVEN INTO PLACE

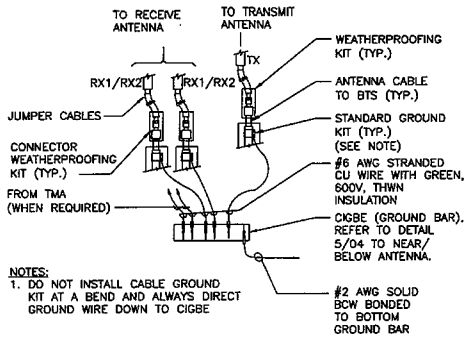
6 / 04 EGR DETAIL
SCALE: N.T.S.



LEGEND

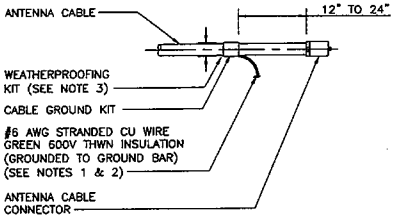
1- COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION. (ACTUAL GROUND BAR SIZE WILL VARY BASED ON NUMBER OF GROUND CONNECTIONS)
2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4 OR EQUAL
3- 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUAL
4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056 OR EQUAL
5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1 OR EQUAL

5 / 04 MASTER/EQUIPMENT GROUND BAR DETAIL
SCALE: N.T.S.



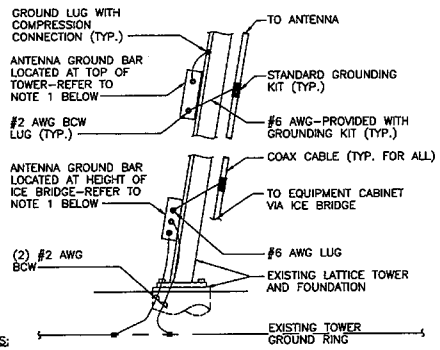
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

4 / 04 CONNECTION OF GROUND WIRE TO GROUND BAR
SCALE: N.T.S.



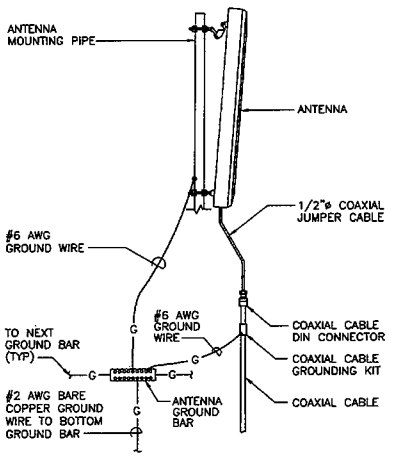
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.

3 / 04 CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE
SCALE: N.T.S.



NOTES:
1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATIONS AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. NO WELDING OR DRILLING SHALL BE ALLOWED ON THE TOWER.
3. DO NOT INSTALL ANTENNA GROUND KIT ON CABLE BEND (TYP.)

2 / 04 LATTICE TOWER - ANTENNA CABLE GROUNDING
SCALE: N.T.S.



1 / 04 TYPICAL ANTENNA GROUNDING DETAIL
SCALE: N.T.S.

NO.	DATE	REVISIONS	BY
A	01/22/09	ISSUED FOR REVIEW	JCF

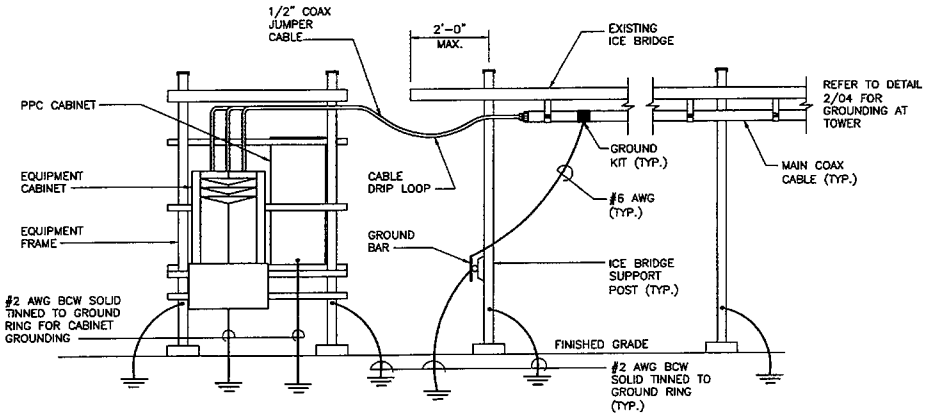
pocket. SMART WIRELESS

PROJECT MANAGER: RJB
SHEET: GROUNDING DETAILS

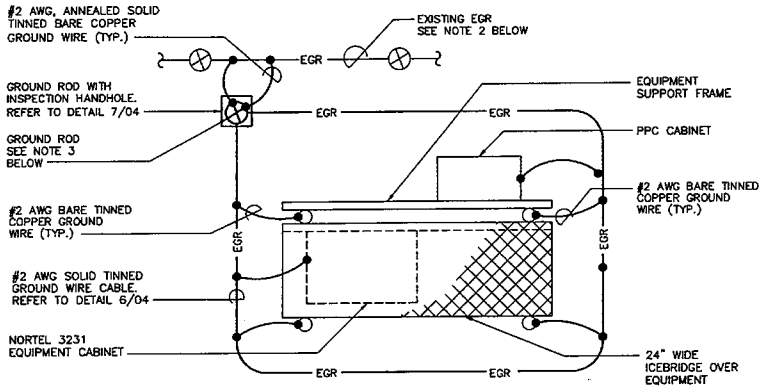
HFCT0484X, 347 EAST STREET

URS
URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
1-(860)-563-4888

CHECKED BY: JCF
DRAWN BY: BAL
DATE: 01/22/09
URS JOB NUMBER: PC1060/36923980
DRAWING NUMBER: 04



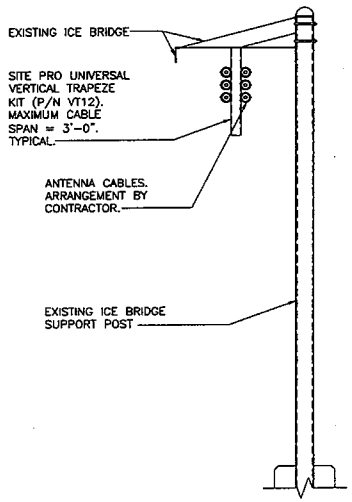
1 / 05 **GROUNDING AT EQUIPMENT CABINET**
SCALE: N.T.S.



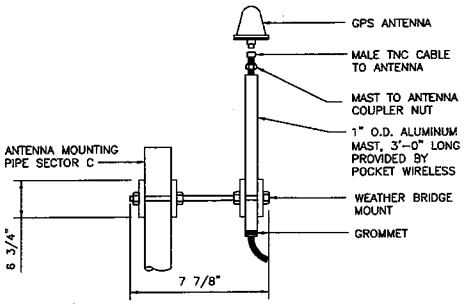
NOTES:

1. SEE SHEET 02 FOR EQUIPMENT ORIENTATION AND LOCATION.
2. EXISTING EGR. VERIFY LOCATION IN FIELD. CONTRACTOR SHALL HAND DIG AND LOCATE EXISTING EGR. IF ANY DAMAGE IS CAUSED TO EXISTING EGR, THE CONTRACTOR SHALL REPAIR THE DAMAGE AT HIS OWN COST TO THE SATISFACTION OF RESPECTIVE CELL ENGINEERS.
3. GROUNDING ELECTRODE SHALL BE 5/8" DIA. x 8'-0"L. COPPER CLAD STEEL ROD. ADJUST LOCATION OF GROUNDING ELECTRODE IF SOIL CONDITION IS NOT CONDUCTIVE (GRAVEL, SANDY SOIL, ROCKS). SPACING OF GROUNDING ELECTRODES SHALL NOT BE LESS THAN 8' O.C. ELECTRODES SHALL BE DRIVEN ONLY WITH PROPER DRIVER SLEEVE TO PREVENT MUSHROOMING TOP OF ROD. WHEN ROCK BOTTOM IS ENCOUNTERED, THE ELECTRODE SHALL BE DRIVEN AT AN OBLIQUE ANGLE NOT TO EXCEED 45° FROM THE VERTICAL AWAY FROM STRUCTURES. TOP OF GROUNDING ELECTRODE SHALL BE MIN. 3'-6" BELOW FINISH GRADE. IF IT IS IMPRACTICAL TO DRIVE THE 8'-0" GROUND ROD, CONTRACTOR SHALL INSTALL THE GROUND ROD HORIZONTALLY IN A TRENCH AWAY FROM STRUCTURE, NOT LESS THEN 36" BELOW FINISHED GRADE. UNDER NO CIRCUMSTANCES SHALL THE GROUND ROD BE CUT OR MODIFIED TO ACCOMMODATE VERTICAL INSTALLATION INTO LEDGE. REFER TO THE NEC 2005, ARTICLE #250 FOR MORE INFORMATION ON GROUNDING.

2 / 05 **EQUIPMENT GROUNDING PLAN**
SCALE: N.T.S.



3 / 05 **ICE BRIDGE DETAIL**
SCALE: N.T.S.



4 / 05 **GPS MOUNTING DETAIL**
SCALE: N.T.S.

NOTES:

1. LOCATION OF ANTENNA MUST HAVE A CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF A SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.
2. ALL GPS ANTENNA LOCATIONS MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF 4 SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.

NO.	DATE	REVISIONS	BY
A	01/22/09	ISSUED FOR REVIEW	JCF

pocket SMART WIRELESS

PROJECT NAME: HFCT04847, 347 EAST STREET

SHEET: GROUNDING PLAN AND DETAILS

URS

URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
T:(860)-529-8882

CHECKED BY: JCF
DRAWN BY: BAL
DATE: 01/22/09
URS JOB NUMBER: PC1060/36923980
DRAWING NUMBER: 05

PANEL SSC

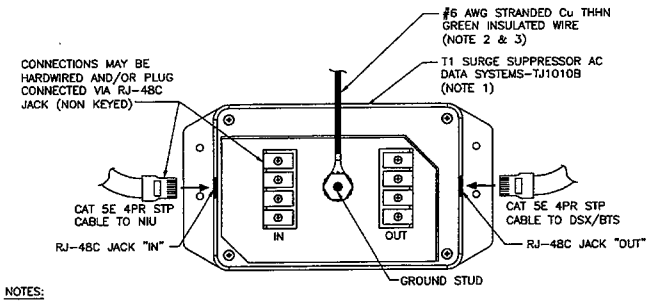
LOAD DESCRIPTION	LOAD (kVA)	BRKR SIZE	CCT NO.	PHASE A	PHASE B	CCT NO.	BRKR SIZE	LOAD (kVA)	LOAD DESCRIPTION
BTS CABINET	2.5	30/2	1			2	30/2	2.2	BTS CABINET
	2.5		3			4		2.2	
LIGHTING	1.9	10/1	5			6	20/1	0.2	GFI OUTLET
SPACE	–	–	7			8	–	–	SPACE
SPACE	–	–	9			10	–	–	SPACE
SPACE	–	–	11			12	–	–	SPACE
SPACE	–	–	13			14	–	–	SPACE
SPACE	–	–	15			16	–	–	SPACE
SPACE	–	–	17			18	–	–	SPACE
SPACE	–	–	19			20	–	–	SPACE
SPACE	–	–	21			22	–	–	SPACE
SPACE	–	–	23			24	–	–	SPACE
LOAD SUB–TOTAL	6.9	LOAD TOTAL		11.5 kVA				4.6	LOAD SUB–TOTAL

100A MCB, 120/208/240V, 1Ø, 3 WIRE, 65,000 AIC		
TOTAL CONNECTED LOAD	11.5 KW	
25% OF LARGEST CONT. LOAD	1.25 KW	
TOTAL LOADS	12.75 KW	
NOTE: ALL NON–OPTIONAL BREAKERS PROVIDED BY SSC MFR		

1/06 PANEL SCHEDULE
SCALE: N.T.S.

GENERAL ELECTRIC NOTES:

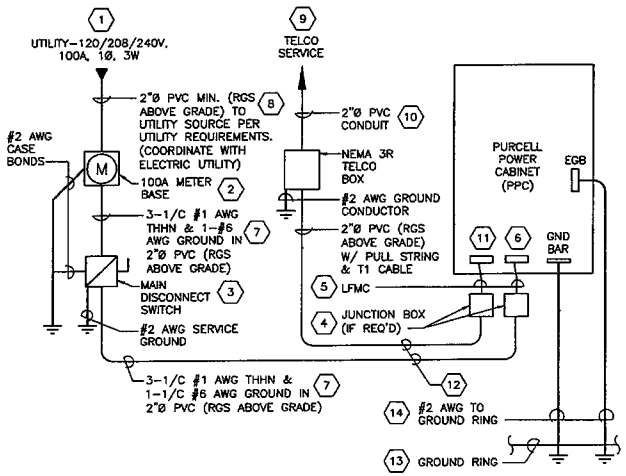
1. ALL ELECTRICAL AND GROUNDING WORK SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC, CONTRACTOR SHALL VERIFY ROUTING AND LENGTHS PRIOR TO CONSTRUCTION.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
4. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
5. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES, AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.



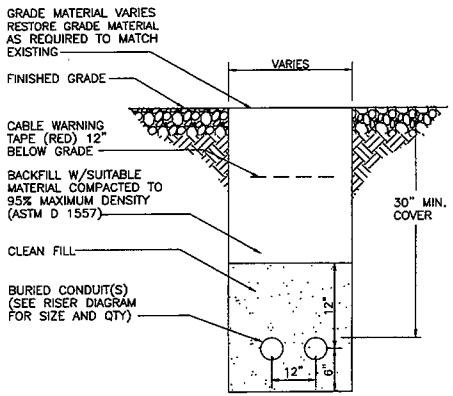
NOTES:

1. MOUNT T1–TVSS UNIT ON EQUIPMENT FRAME HOUSING THE DSX UNIT. USE APPROPRIATE STAINLESS STEEL BOLTS WITH FLAT WASHERS AND A LOCK WASHER ON THE NUT SIDE. THE TVSS MAY BE LOCATED ON THE TELCO BACKBOARD. REFER TO MANUFACTURER'S INSTRUCTIONS.
2. ATTACH RING TERMINAL FROM SUPPLIED GROUND CONDUCTOR TO TVSS GROUND STUD SECURELY FASTEN WITH SUPPLIED WASHER AND NUT. REFER TO MANUFACTURER'S INSTRUCTIONS. FOR PROPER PERFORMANCE, THE GROUND CONDUCTOR LENGTH SHOULD BE LIMITED WITH NO SHARP BENDS ON COILS.
3. WHEN TVSS IS MOUNTED ON EQUIPMENT FRAME, BOND THE GROUND CONDUCTOR TO THE EQUIPMENT FRAME GROUND. ENSURE PROPER GROUNDING SURFACES. WHEN TVSS IS MOUNTED ON THE TELCO BACK BOARD, BOND THE GROUND CONDUCTOR TO THE TELCO (BOARD) GROUND BAR OR NEAREST GROUND BAR.

3/06 TVSS DETAIL
SCALE: N.T.S.



2/06 POWER, TELCO, GROUND SINGLE LINE DIAGRAM FOR OUTDOOR CABINET
SCALE: N.T.S.



ELECTRICAL/TELEPHONE TRENCH DETAIL NOTES:

1. THE CLEAN FILL SHALL PASS THROUGH A 3/8" MESH SCREEN AND SHALL NOT CONTAIN SHARP STONES. OTHER BACKFILL SHALL NOT CONTAIN ASHES, CINDERS, SHELLS, FROZEN MATERIAL, LOOSE DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIMENSION. THE TRENCH SHALL BE BACKFILLED IMMEDIATELY FOLLOWING PLACEMENT OF THE CONDUITS.
2. WHERE EXISTING UTILITIES ARE LIKELY TO BE ENCOUNTERED, CONTRACTOR SHALL HAND DIG AND PROTECT EXISTING UTILITIES.

4/06 TYPICAL ELECTRICAL/ TELEPHONE TRENCH DETAIL
SCALE: N.T.S.

REFERENCE NOTES:

1. ELECTRICAL DEMARCATION POINT. ELECTRICAL CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY FOR SERVICE TO METER.
2. CONTRACTOR TO SUPPLY AND INSTALL A 100A, 120/208/240V 1ø, 3W METER BASE. METER BASE TO BE NEMA 3R RATED AND ACCEPTABLE TO LOCAL UTILITY. PROVIDE WITH MECHANICALLY ATTACHED ENGRAVED IDENTIFICATION LABEL INDICATING "POCKET COMMUNICATIONS METER".
3. CONTRACTOR TO SUPPLY AND INSTALL NEMA 3R 100A FUSIBLE DISCONNECT SWITCH WITH LOCKABLE HANDLE. PROVIDE WITH TWO (2) 100A FUSES. AIC RATING TO COORDINATE WITH LOCAL UTILITY REQUIREMENTS. PROVIDE WITH MECHANICALLY ATTACHED ENGRAVED IDENTIFICATION LABEL INDICATING "POCKET COMMUNCATIONS SERVICE DISCONNECT".
4. WEATHER TIGHT NEMA 3R JUNCTION BOX (IF REQUIRED). SIZE TO NEC CODE FOR APPLICATION.
5. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT W/ WEATHER TIGHT FITTINGS AND SUPPORTS. SIZE AND CONTENTS TO MATCH ASSOCIATED USE (POWER OR TELCO) SEE NOTE #5 BELOW
6. UTILITY POWER ENTRY INTO CABINET. COORDINATE TERMINATION WITH CABINET MANUFACTURER.
7. CONTRACTOR SHALL SUPPLY AND INSTALL 2" GRC. AFG AND PVC 36" BFG C/W 3–#1 & 1–#6G AWG THHN FOR UTILITY SERVICE.
8. CONTRACTOR SHALL SUPPLY AND INSTALL 2" GRC. AFG AND PVC 36" BFG C/W 3–#1 & 1–#6G, AWG THHN FOR UTILITY SERVICE.
9. TELCO DEMARCATION POINT. ELECTRICAL CONTRACTOR TO COORDINATE WITH LOCAL TELCO FOR SERVICE TO TELCO BOX OR CABINET.
10. CONTRACTOR TO SUPPLY AND INSTALL (1) 2" GRC AFG AND PVC 36" BFG C/W PULL CORDS FOR TELCO SERVICE TO CABINET TERMINATION POINT.
11. TELCO SERVICE ENTRY INTO CABINET. COORDINATE TERMINATION WITH CABINET MANUFACTURER.
12. CONTRACTOR TO ARRANGE AND PAY FOR UNDERGROUND UTILITY LOCATION SURVEYS FOR ALL TRENCHING. REUSE NATIVE BACKFILL AND RE–INSTATE TO ORIGINAL CONDITION. INSTALL 6" WIDE METALLIC LINED RED PLASTIC MARK TAPE 8" ABOVE ALL BURIED CONDUIT.
13. PORTION OF EXTERIOR GROUND RING
14. (1) #2 SOLID BARE TINNED COPPER EQUIPMENT GROUND CONDUCTOR BONDED TO 5/8"x8' COPPER CLAD STEEL GROUNDING ELECTRODES. LOCATE GROUNDING ELECTRODE ADJACENT TO CABINET. BOND GROUNDING ELECTRODE SYSTEM TO CABINET GROUND RING.

NOTES:

1. CONTRACTOR SHALL PROVIDE 100 AMP, SINGLE PHASE, 120/208/240 VAC. 60 HZ ELECTRIC SERVICE FOR SITE.
2. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY BEFORE THE START OF CONSTRUCTION. POWER AND TELCO CONDUIT SHALL BE PROVIDED AND INSTALLED PER UTILITY REQUIREMENTS.
3. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO DRAWINGS PROVIDED BY AC OR TELCO PANEL MANUFACTURER.
4. ALL SERVICE EQUIPMENT AND INSTALLATIONS SHALL COMPLY WITH THE N.E.C. AND UTILITY COMPANY AND LOCAL CODE REQUIREMENTS.
5. CONTRACTOR SHALL INSTALL SUFFICIENT LENGTHS OF LFMC (NOT EXCEEDING 6'–0") INCLUDING ALL CONDUIT FITTINGS (NUTS, REDUCING BUSHINGS, ELBOWS, COUPLINGS, ETC.) NECESSARY FOR CONNECTION FROM IMC CONDUIT TO THE PURCELL POWER CABINET, (PPC).
6. CONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE EQUIPMENT WITH FAULT CURRENT RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT FROM THE POWER UTILITY.
7. CONTRACTOR SHALL VERIFY THAT THE MAIN BONDING JUMPER AND GROUNDING ELECTRODE CONDUCTOR IS INSTALLED PROPERLY IN MAIN DISCONNECT SWITCH.

NO.	DATE	REVISIONS	BY
A	01/22/09	ISSUED FOR REVIEW	JCF

pocket SMART WIRELESS

PROJECT NAME: HPCT0484X, 347 EAST STREET
SHEET: ELECTRICAL DETAILS

URS
URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
1-(860)-529-8882

CHECKED BY: JCF
DRAWN BY: BAL
DATE: 01/22/09
URS JOB NUMBER: PC1060/36923980
DRAWING NUMBER: 06

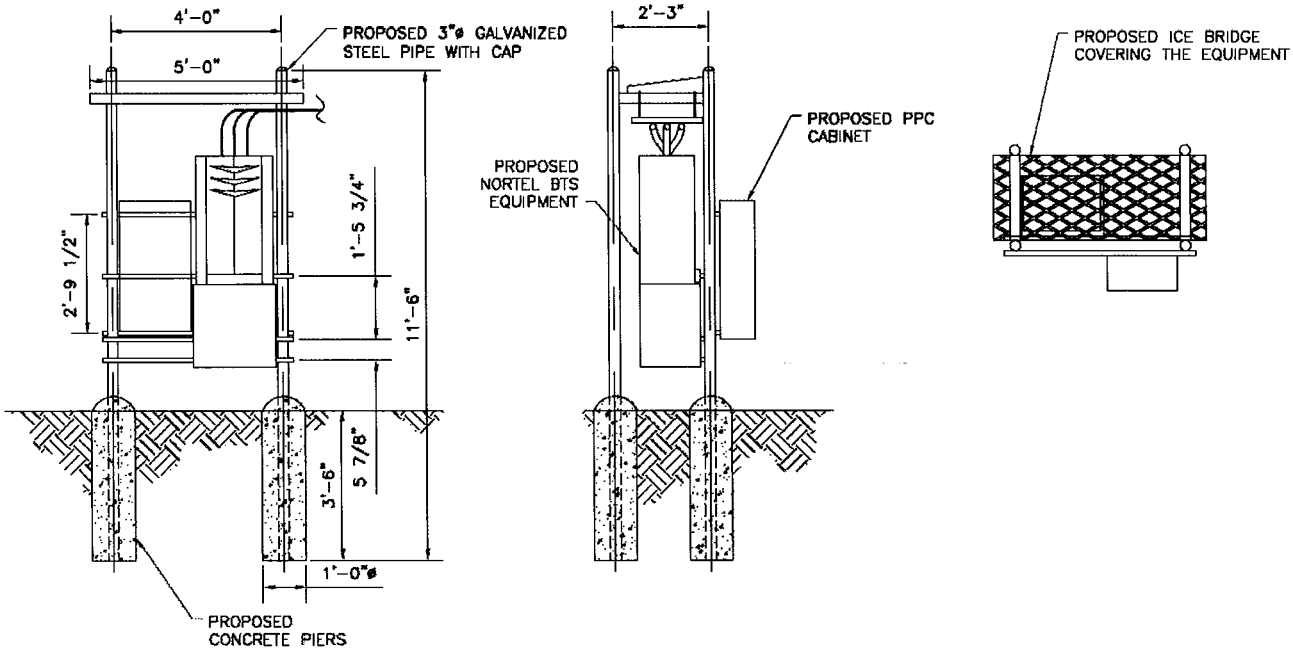
Exhibit C

Equipment Specifications

Pocket Site NHCT0484B

347 East Street

Wolcott, Connecticut



Pocket/Youghiogheny Communications – Northeast, LLC
Rack Detail

>BUSINESS MADE **SIMPLE**

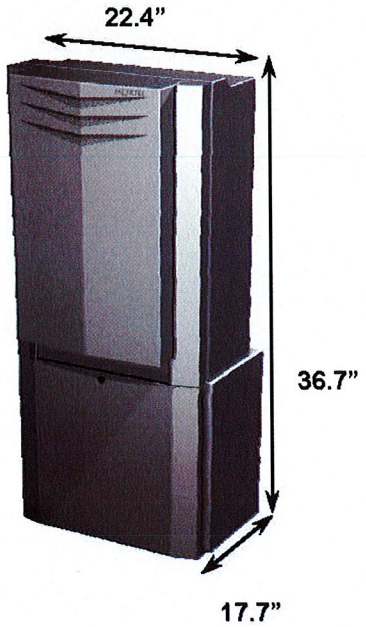
NORTEL

CDMA BTS 3231 AWS 1.7/2.1 GHz (Outdoor/Indoor)

CDMA BTS 3231

Industry's Highest Capacity AWS Micro BTS

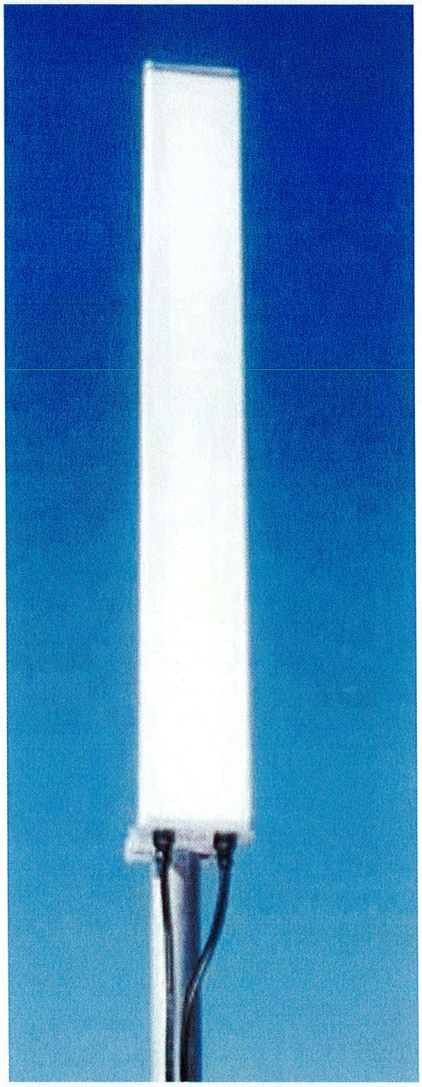
The CDMA BTS 3231 is the latest extension to Nortel Networks BTS (Base Transceiver Station) portfolio providing the ideal solution for urban, sub-urban and rural deployments. The CDMA BTS 3231 is a 3-carrier, 3-sector outdoor/indoor BTS operating at the AWS band of 1.7/2.1 GHz supporting IS-95, 1XRTT and 1xEV-DO simultaneously. BTS 3231 provides flexible deployments solutions including floor, rack, and wall mount options. The power consumption of BTS3231 is industry leading consuming only 630W for 3C3S. The BTS 3231 is also very light at 240lbs making it easy to transport to hard to reach locations such as the top of a high rise building.



Technical Data Sheet	APXV18-206517S-C

Product Description

This variable tilt antenna provides exceptional suppression of all upper sidelobes at all downtilt angles. It also features null fill and a wide downtilt range with optional remote tilt.



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).
- Optional remote tilt - can be retrofitted.
- Broadband design.
- Dual polarization.
- Low profile for low visual impact.

Technical Features

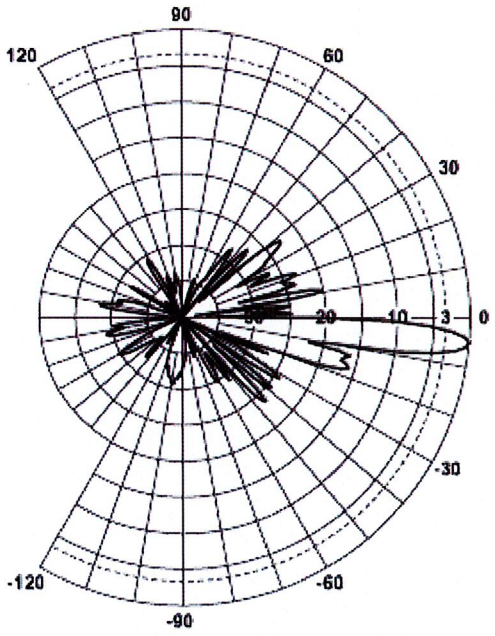
Frequency Band	3G/UMTS (Single, Broad, Dual and Triple-Band)
Horizontal Pattern	Directional
Antenna Type	Panel Dual Polarized
Electrical Down Tilt Option	Variable

Technical Data Sheet	APXV18-206517S-C

Gain, dBi (dBd)	18.8 (16.7) , 19.0 (16.9)
Frequency Range, MHz	1710-1900, 1900-2170
Connector Type	(2) 7-16 DIN Female
Connector Location	Bottom
Mount Type	Downtilt
Electrical Downtilt, deg	0-10
Horizontal Beamwidth, deg	67 , 63
Mounting Hardware	APM40-2
Rated Wind Speed, km/h (mph)	160 (100)
VSWR	< 1.5:1
Vertical Beamwidth, deg	5.0 , 4.6
Upper Sidelobe Suppression, dB	>17 , >18 all (Typically >20)
Polarization	Dual pol +/-45°
Front-To-Back Ratio, dB	>30
Maximum Power Input, W	300
Isolation between Ports, dB	>30
Lightning Protection	Direct Ground
3rd Order IMP @ 2 x 43 dBm, dBc	>150
7th Order IMP @ 2x46 dBm, dBc	>170
Impedance, Ohms	50
Overall Length, m (ft)	1.85 (6.06)
Mounting Hardware Weight, kg (lb)	3.4 (7.5)
Dimensions - HxWxD, mm (in)	1850 x 175 x 80 (72.0 x 6.8 x 3.15)
Weight w/o Mtg Hardware, kg (lb)	12 (26.4)
Weight w/ Mtg Hardware, kg (lb)	14.8 (32.5)
Radiating Element Material	Brass
Radome Color	Light Grey RAL7035
Radome Material	Fiberglass
Mounting Hardware Material	Diecasted Aluminum
Reflector Material	Aluminum
Max Wind Loading Area, m² (ft²)	0.31 (3.3)
Survival Wind Speed, km/h (mph)	200 (125)
Maximum Thrust @ Rated Wind, N (lbf)	558 (125)
Front Thrust @ Rated Wind, N (lbf)	558 (125)
Shipping Weight, kg (lb)	18.3 (39.8)
Packing Dimensions, HxWxD, mm (in)	2021 x 260 x 200 (79.5 x 10.2 x 7.8)
Packing Dimensions - HxWxD, m (ft)	2.0 x 0.26 x 0.2 (6.6 x 0.85 x 0.65)

Notes

For additional mounting information please click "External Document Link" below.



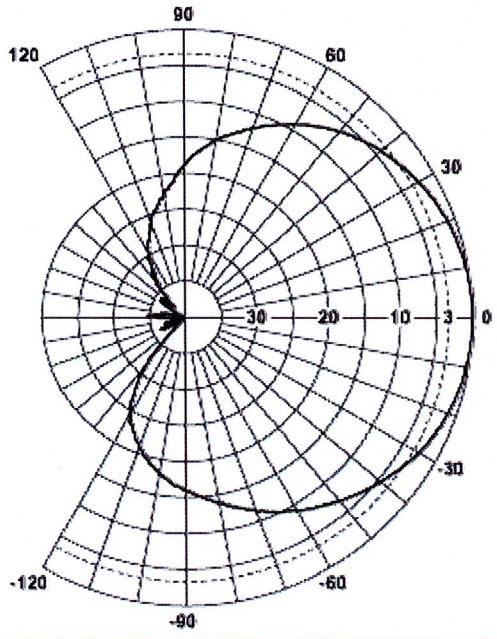


Exhibit D

Power Density Calculations

Pocket Site NHCT0484B

347 East Street

Wolcott, Connecticut

C Squared Systems, LLC
920 Candia Road
Manchester, NH 03109
Phone: (603) 657 9702
E-mail:
support@csquaredsystems.com

Calculated Radio Frequency Emissions

NHCT0484B

347 East Street, Wolcott, CT

Table of Contents

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed Pocket antennas to be installed on the existing tower at 347 East Street, Wolcott, CT.

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are much more conservative (higher) than the actual signal levels will be from the finished installation.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (mW/ cm^2). The number of mW/cm^2 emitted is called the power density. The general population exposure limit for the cellular band is 0.567-0.593 mW/ cm^2, and the general population exposure limit for the PCS/AWS band is 1.0 mW/ cm^2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

The FCC general population / uncontrolled limits set the maximum exposure to which most people may be subjected. General population / uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Higher exposure limits are permitted under the occupational / controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure (through training), and they must be able to exercise control over their exposure. General population / uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals.

The FCC describes exposure to radio frequency (RF) energy in terms of percentage of maximum permissible exposure (MPE) with 100% being the maximum allowed. Rather than the FCC presenting the user specification in terms of complex power density figures over a specified surface area, this MPE measure is particularly useful, and even more so when considering that power density limits actually vary by frequency because of the different absorptive properties of the human body at different frequencies.

MPE limits are specified as time-averaged exposure limits. This means that exposure can be averaged over 30 minutes for general population / uncontrolled exposure (or 6 minutes for occupational / controlled exposure). However, for the case of exposure of the general public, time averaging is usually not applied because of uncertainties over exact exposure conditions and difficulty in controlling time of exposure. Therefore, the typical conservative approach is to assume that any RF exposure to the general public will be continuous.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population / uncontrolled exposure and for occupational / controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include limits for Maximum Permissible Exposure (MPE) for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP), the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit. As shown in these excerpts, each frequency band has different exposure limits, requiring power density to be reported as a percent of Maximum Permissible Exposure (MPE) when dealing with carriers transmitting in different frequency bands.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{0.64 \times EIRP}{\pi \times R^2} \right)$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna

V = Vertical Distance from bottom of antenna

Off Beam Loss is determined by the selected antenna patterns

4. Calculation Results

Table 1 below outlines the power density information for the site. All information for carriers other than Pocket was obtained from current CSC database, except where otherwise noted.

Carrier	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Antenna Height (Feet)	Operating Frequency (MHz)	Total ERP (Watts)	Power Density (mw/cm^2)	Limit	%MPE
Cingular UMTS	1	500	158	880	500	0.0072	0.5867	1.23%
Cingular/GSM	8	296	158	880	2368	0.0341	0.5867	5.81%
Cingular/GSM	2	427	158	1900	854	0.0123	1.0000	1.23%
Verizon	9	285	177	880	2565	0.0294	0.5867	5.02%
Verizon	3	400	177	1900	1200	0.0138	1.0000	1.38%
T-Mobile	8	122	190	1935	976	0.0097	1.0000	0.97%
Pocket	3	631	148	2130-2133.75	1893	0.0311	1.0000	3.11%
							Total	18.75%

Table 1: Proposed Carrier Information

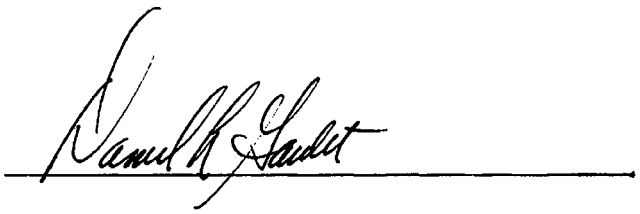
5. Conclusion

The above analysis verifies that emissions from the proposed site will be well below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at the base of the tower is 18.75% of the FCC limit.

As noted in the introduction, obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished installation.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



February 19, 2009
Date

Daniel l. Goulet
C Squared Systems, LLC

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits For Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure

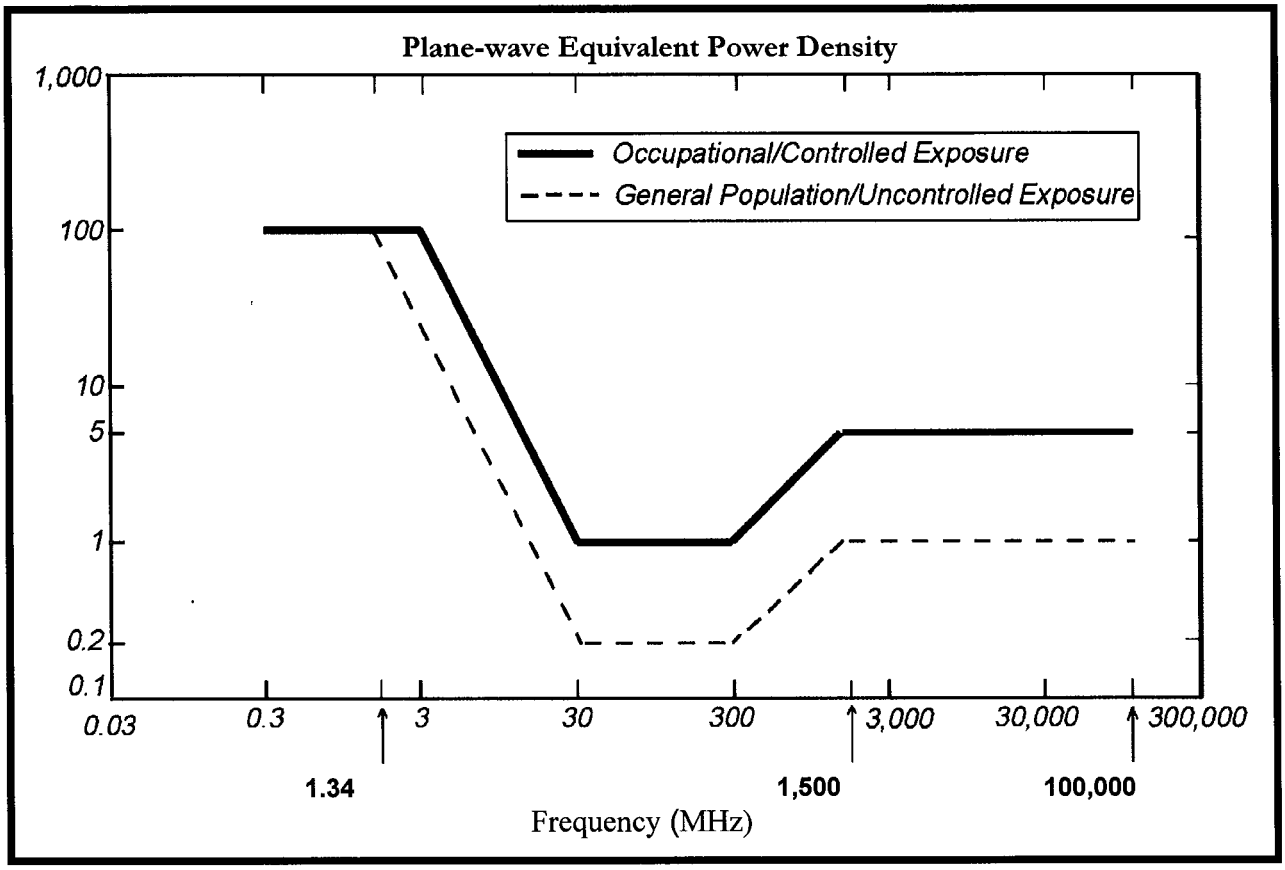
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

NOTE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
NOTE 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.



• FCC Limits for Maximum Permissible Exposure (MPE)

Exhibit E

Structural Analysis

Pocket Site NHCT0484B

347 East Street

Wolcott, Connecticut

Date: **November 3, 2008**

Ms. Veronica Harris
Crown Castle International
2000 Corporate Dr.
Canonsburg, PA 15317

FDH Engineering, Inc.
2730 Rowland Rd., Suite 100
Raleigh, NC 27615
(919) 755-1012
info@FDH-Inc.com

Subject: Structural Analysis Report

Carrier Designation:	**Youghiogheny Communications**	
	Carrier Site Number:	NHCT0484X
	Carrier Site Name:	347 East Street, Wolcott
Crown Castle Designation:	**Crown Castle BU Number:**	806362
	Crown Castle Site Name:	NHV 108 943133
	Crown Castle JDE Job Number:	111564
Engineering Firm Designation:	**FDH Engineering, Inc. Project Number:**	***08-01300E S2***
Site Data:	**Intersection of Rte 322/Meridian Rd, Wolcott, CT, New Haven Co.** **Latitude *41°-33'-34.41"*, Longitude *-72°-56'-49.1"*** **180 Foot – Self Support Tower**	

Dear Ms. Harris,

FDH Engineering, Inc. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the aforementioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 308379, in accordance with application 70231, revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC1: Existing + Reserved + Proposed Equipment — Sufficient Capacity
Note: See Table I and Table II for the proposed and existing/reserved loading.

The analysis has been performed in accordance with the TIA/EIA-222-F standard based upon a wind speed of 85 mph without ice and 74 mph with 1/2" ice (fastest mile).

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at FDH Engineering, Inc. appreciate the opportunity of providing our continuing professional services to you and Crown Castle International. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted.

Bradley Newman, EI
Project Engineer

Christopher M. Murphy, PE
Vice President
CT PE License No. 25842

TABLE OF CONTENTS

1) INTRODUCTION

The subject tower is a 180 foot self support tower manufactured in 1986 by Rohn.

2) ANALYSIS CRITERIA

- TIA-222-F – Structural Standard for Steel Antenna Towers and Antenna Supporting Structures
- TIA-222-F – Wind speed without ice: 85 mph (fastest mile)
- TIA-222-F – Wind speed with 1/2" ice: 74 mph (fastest mile)

Table 1 – Proposed Antenna and Cable Information

Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount Information	Number of Feed Lines	Feed Line Size (in)
148	3	RFS	APXV18-206517S-C	Flush Mount	6	1-5/8

Table 2 – Existing and Reserved Antenna and Cable Information

Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
188	3 6	RFS Decibel	APX15PV-15PV-2 PCS 1900 TMAs	12 1	1-5/8 3/8
177	4 2 6 12	Antel Antel Decibel MLA	LPD-4019 LPA-80063/8CF DB948F65T2E-M MLA	12 12	1-5/8 1-5/8
168[1]	3	EMS	RR90-17-02DP	6	1-5/8
158	6 3 6 6	CSS Powerwave ADC Powerwave	DUO1417/8686 7770.00 DB800/1900 TMAs LGP13519 diplexers	9	1-1/4
123	1	Andrew	HP8-59E	1	EW52
112	1	Andrew	HP8-59E	2	EW63
70	1	Andrew	HP10-59E	1	WE61
40	1	---	GPS	1	1/2

1 The existing coax, antennas, and mounts at 168' will be removed.

Table 3 – Design Antenna and Cable Information

Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
180	4	Cellwave	PD10017	4 (assumed)	1-5/8 (assumed)
170	3	Cellwave	PD1132D	3 (assumed)	1-5/8 (assumed)
160	2	---	6' Dishes	2 (assumed)	1-5/8 (assumed)

3) ANALYSIS PROCEDURE

Table 4 – Documents Provided

Document	Remarks	Reference	Source
Tower Design Drawings	Rohn File No. 21817JC	Doc # 529684	Crown Castle
Foundation Modification Drawings	All-Points Technology Corp, P.C. Job No. CT105680	Doc # 903539	Crown Castle
CAD Level Drawings	BU806362	---	Crown Castle

3.1) Analysis Method

RISA Tower (version 5.3.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various dead, live, wind, and ice load cases. All loads were computed in accordance with the TIA/EIA-222-F and the local building code requirements. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1. Tower and structures were built in accordance with the manufacturer's specifications.
2. The tower and structures have been maintained in accordance with the manufacturer's specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the reference drawings.
4. All pipe steel has F_y = 50 ksi and all angles have F_y = 36 ksi.
5. Analysis performed with the existing abandoned coax, antennas, and mounts at 168' removed.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and FDH Engineering, Inc. should be allowed to review any new information to determine its effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 – Tower Component Stresses vs. Capacity – LC1

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	180 - 160	Leg	ROHN 2.5 STD	2	-13.53	41.14	32.9	Pass
		Diagonal	ROHN 2 STD	21	-4.82	15.56	31.0	Pass
		Horizontal	ROHN 1.5 STD	19	-2.56	20.32	12.6	Pass
							15.1 (b)	
		Top Girt	ROHN 1.5 STD	5	-1.95	20.34	9.6	Pass
		Inner Bracing	L2x2x1/8	28	-0.04	5.84	0.8	Pass
T2	160 - 140	Leg	ROHN 3 X-STR	41	-37.73	83.78	45.0	Pass
		Diagonal	ROHN 2 STD	47	-5.99	13.38	44.8	Pass
		Horizontal	ROHN 1.5 STD	46	-3.70	17.38	21.3	Pass
							21.6 (b)	
		Inner Bracing	L2x2x1/8	52	-0.06	4.29	1.5	Pass
T3	140 - 120	Leg	ROHN 4 X-STR	80	-61.54	139.07	44.3	Pass
		Diagonal	ROHN 2 STD	84	-6.15	11.51	53.4	Pass
		Horizontal	ROHN 2 STD	82	-4.18	24.65	16.9	Pass
							24.7 (b)	
		Inner Bracing	L2x2x1/8	91	-0.07	2.93	2.5	Pass
T4	120 - 100	Leg	ROHN 5 X-STR	118	-81.05	177.42	45.7	Pass
		Diagonal	ROHN 2.5 STD	123	-9.29	14.43	64.4	Pass
		Horizontal	ROHN 2 STD	121	-5.43	20.43	26.6	Pass
							32.4 (b)	
		Inner Bracing	L2x2x1/8	130	-0.09	2.21	4.2	Pass
T5	100 - 80	Leg	ROHN 5 X-STR	145	-104.06	177.36	58.7	Pass
		Diagonal	ROHN 2.5 STD	150	-8.06	12.62	63.9	Pass
		Horizontal	ROHN 2 STD	148	-5.24	14.80	35.4	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	159	-0.09	4.64	2.0	Pass
T6	80 - 60	Leg	ROHN 6 EHS	172	-124.33	212.12	58.6	Pass
		Diagonal	ROHN 2.5 STD	177	-9.02	11.15	80.9	Pass
		Horizontal	ROHN 2.5 STD	175	-6.39	25.46	25.1	Pass
							37.3 (b)	
		Inner Bracing	L3x3x3/16	184	-0.11	6.07	1.8	Pass
T7	60 - 40	Leg	ROHN 6 EH	199	-145.58	264.22	55.1	Pass
		Diagonal	ROHN 2.5 X-STR	204	-9.05	12.32	73.5	Pass
		Horizontal	ROHN 2.5 STD	202	-6.54	19.69	33.2	Pass
							38.7 (b)	
		Inner Bracing	L3 1/2x3 1/2x1/4	211	-0.11	9.94	1.1	Pass
T8	40 - 20	Leg	ROHN 6 EH	226	-165.27	264.18	62.6	Pass
		Diagonal	ROHN 3 STD	231	-8.44	16.86	50.1	Pass
		Horizontal	ROHN 2.5 STD	229	-6.32	15.59	40.5	Pass
		Inner Bracing	L3 1/2x3 1/2x1/4	238	-0.11	7.92	1.4	Pass
T9	20 - 0	Leg	HSS8.75x.375	253	-174.05	316.36	55.0	Pass
		Diagonal	ROHN 3 STD	260	-13.05	28.18	46.3	Pass
							50.6 (b)	
		Horizontal	ROHN 3 STD	256	-7.05	27.51	25.6	Pass
							41.1 (b)	
		Redund Horz 1 Bracing	ROHN 1.5 STD	258	-3.02	12.18	24.8	Pass
		Redund Diag 1 Bracing	ROHN 1.5 STD	259	-2.76	3.58	77.1	Pass
		Redund Hip 1 Bracing	ROHN 1.5 STD	281	-0.04	10.81	0.3	Pass
		Redund Hip Diagonal Bracing	ROHN 2.5 STD	280	-0.04	6.98	0.6	Pass
		Inner Bracing	ROHN 3 STD	283	-0.12	26.32	0.5	Pass
							Summary	
						Leg (T8)	62.6	Pass
						Diagonal (T6)	80.9	Pass
						Horizontal (T9)	41.1	Pass
						Top Girt (T1)	9.6	Pass
						Redund Horz 1 Bracing (T9)	24.8	Pass
						Redund Diag 1	77.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
						Bracing (T9) Redund Hip 1 Bracing (T9)	0.3	Pass
						Redund Hip Diagonal Bracing (T9)	0.6	Pass
						Inner Bracing (T4)	4.2	Pass
						Bolt Checks	50.6	Pass
						RATING =	**80.9**	**Pass**

Notes	Component	Elevation (ft)	% Capacity	Pass/Fail
Individual Components:				
Notes:	**Component**	**Elevation**	**% Capacity**	**Pass/Fail**
2	Base Foundation	---	71.6%	Pass
Structure Rating (max from all components) =				**80.9%**

*Notes:

1) Capacities up to 105% are considered acceptable by engineering standards.
2) Foundation capacity based upon foundation modification design reactions.

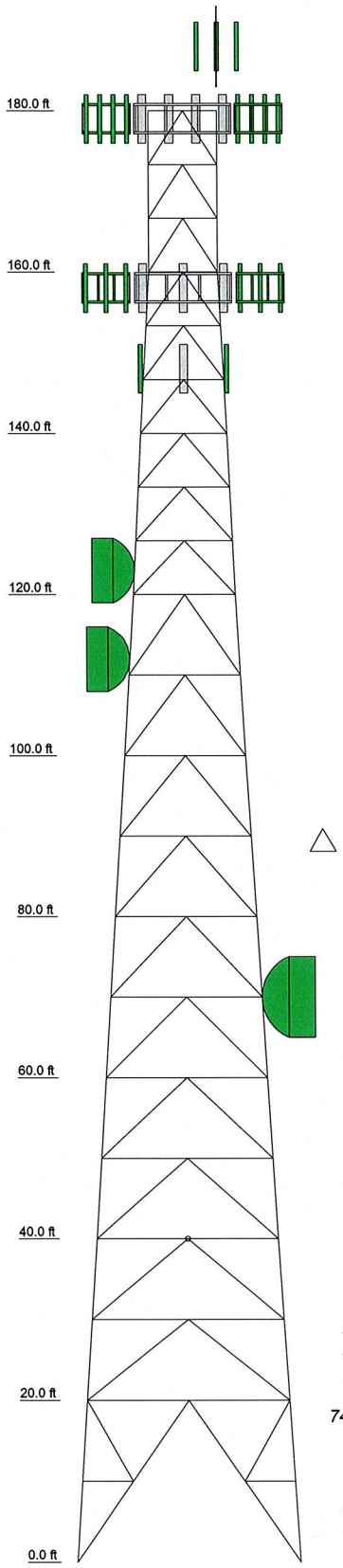
4.1) Recommendations

1. The proposed coax should be installed per the Base Level Drawing. See Appendix B.
2. The existing abandoned coax, antennas, and mounts at 168' should be removed prior to installation of proposed loading.

APPENDIX A

RISA TOWER OUTPUT

Section	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	HSS8.75x.375	ROHN 6 EH		ROHN 6 EHS	A572-50	ROHN 5 X-STR	ROHN 4 X-STR	ROHN 3 X-STR	ROHN 2.5 STD
Leg Grade									
Diagonals	ROHN 3 STD		ROHN 2.5 X-STR		ROHN 2.5 STD				
Diagonal Grade					A572-50				
Top Girts					N.A.				ROHN 1.5 STD
Horizontals	ROHN 3 STD		ROHN 2.5 STD			ROHN 2 STD		ROHN 1.5 STD	
Red. Horizontals	ROHN 1.5 STD					N.A.			
Red. Diagonals	ROHN 1.5 STD					N.A.			
Red. Hips	ROHN 1.5 STD					N.A.			
Inner Bracing	ROHN 3 STD		L3 1/2x3 1/2x1/4	L3x3x3/16	L2 1/2x2 1/2x3/16		L2x2x1/8		
Face Width (ft)	27.677	25.177	22.512	20.042	17.512	14.958	12.708	10.625	8.542
# Panels @ (ft)	1 @ 20			10 @ 10				9 @ 6.66667	8.5
Weight (K)	25.8	4.5	4.4	4.2	3.2	2.6	2.5	1.9	1.5	1.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(3) APX15PV-15PV-2	188	T-Frame Sector Mount (1)	158
(6) TMA	188	(2) TMA	158
10' Mount Extension	188	(2) TMA	158
(3) Pipe Mount	188	(2) TMA	158
(2) LPA-80063/8CF	179	(2) diplexer	158
(2) LPD-4019 w/Mount Pipe	179	(2) diplexer	158
(2) DB948F65T2E-M w/Mount Pipe	179	(2) diplexer	158
(2) DB948F65T2E-M w/Mount Pipe	179	APXV18-206517S-C	148
(2) DB948F65T2E-M w/Mount Pipe	179	APXV18-206517S-C	148
(2) LPD-4019 w/Mount Pipe	179	APXV18-206517S-C	148
T-Frame Sector Mount (1)	177	Pipe Mount	148
T-Frame Sector Mount (1)	177	Pipe Mount	148
T-Frame Sector Mount (1)	177	Pipe Mount	148
(2) DUO1417-8686 w/Mount Pipe	158	Pipe Mount	123
(2) DUO1417-8686 w/Mount Pipe	158	HP8-59E	123
(2) DUO1417-8686 w/Mount Pipe	158	Pipe Mount	112
7770.00	158	HP8-59E	112
7770.00	158	Pipe Mount	70
7770.00	158	HP10-59E	70
T-Frame Sector Mount (1)	158	GPS	40
T-Frame Sector Mount (1)	158		

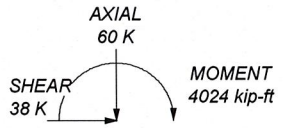
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

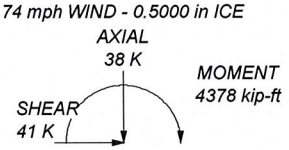
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 80.9%

MAX. CORNER REACTIONS AT BASE:
DOWN: 192 K
UPLIFT: -169 K
SHEAR: 24 K



TORQUE 9 kip-ft
74 mph WIND - 0.5000 in ICE



TORQUE 12 kip-ft
REACTIONS - 85 mph WIND

FDH Engineering, Inc.
2730 Rowland Rd, Ste 100
Raleigh, NC 27615
Phone: (919) 755-1012
FAX: (919) 755-1031

Job: NVH 108 943133, CT 806362		
Project: 08-01300E S2		
Client: Crown Castle	Drawn by: BRN	App'd:
Code: TIA/EIA-222-F	Date: 11/04/08	Scale: NTS
Path:		Dwg No. E-1

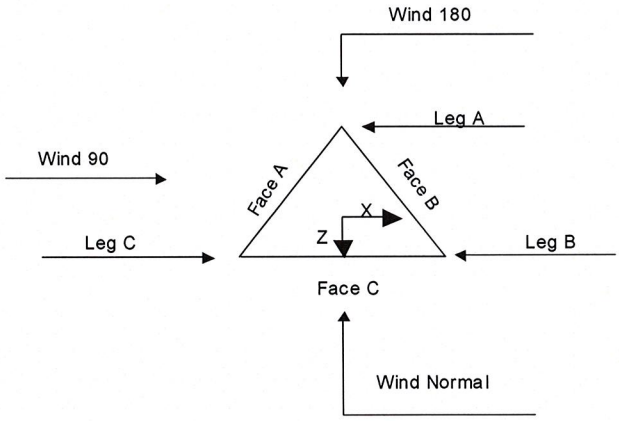
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 8.50 ft at the top and 27.68 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	Include Angle Block Shear Check
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	√ Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	180.00-160.00			8.50	1	20.00
T2	160.00-140.00			8.54	1	20.00
T3	140.00-120.00			10.63	1	20.00
T4	120.00-100.00			12.71	1	20.00
T5	100.00-80.00			14.96	1	20.00
T6	80.00-60.00			17.51	1	20.00
T7	60.00-40.00			20.04	1	20.00
T8	40.00-20.00			22.51	1	20.00
T9	20.00-0.00			25.18	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	180.00-160.00	6.67	K Brace Down	No	Yes	0.0000	0.0000
T2	160.00-140.00	6.67	K Brace Down	No	Yes	0.0000	0.0000
T3	140.00-120.00	6.67	K Brace Down	No	Yes	0.0000	0.0000
T4	120.00-100.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T5	100.00-80.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T6	80.00-60.00	10.00	K Brace Down	No	Yes	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T7	60.00-40.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T8	40.00-20.00	10.00	K Brace Down	No	Yes	0.0000	0.0000
T9	20.00-0.00	20.00	K1 Down	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.00-160.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T2 160.00-140.00	Pipe	ROHN 3 X-STR	A572-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T3 140.00-120.00	Pipe	ROHN 4 X-STR	A572-50 (50 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T4 120.00-100.00	Pipe	ROHN 5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T5 100.00-80.00	Pipe	ROHN 5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T6 80.00-60.00	Pipe	ROHN 6 EHS	A572-50 (50 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T7 60.00-40.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)
T8 40.00-20.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T9 20.00-0.00	Pipe	HSS8.75x.375	A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 180.00-160.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 1.5 STD	A572-50 (50 ksi)
T2 160.00-140.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 1.5 STD	A572-50 (50 ksi)
T3 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T4 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T5 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 2 STD	A572-50 (50 ksi)
T6 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T7 60.00-40.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T8 40.00-20.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)
T9 20.00-0.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 180.00-160.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T2 160.00-140.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T3 140.00-120.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T4 120.00-100.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2x2x1/8	A36 (36 ksi)
T5 100.00-80.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 80.00-60.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 60.00-40.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T8 40.00-20.00	Solid Round		A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T9 20.00-0.00	Solid Round		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T9 20.00-0.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 1.5 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal		ROHN 2.5 STD	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T5 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T6 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T8 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T9 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 180.00-160.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 160.00-140.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 140.00-120.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 120.00-100.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 100.00-80.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 80.00-60.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 60.00-40.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T8 40.00-20.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T9 20.00-0.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T2 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.00-160.00	Flange	0.7500 A325N	4	0.6250 A325N	3	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T2 160.00-140.00	Flange	0.8750 A325N	4	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T3 140.00-120.00	Flange	1.0000 A325N	4	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T4 120.00-100.00	Flange	1.0000 A325N	4	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T5 100.00-80.00	Flange	1.0000 A325N	6	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T6 80.00-60.00	Flange	1.0000 A325N	6	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T7 60.00-40.00	Flange	1.0000 A325N	6	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T8 40.00-20.00	Flange	1.0000 A325N	8	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T9 20.00-0.00	Flange	0.7500 A325N	0	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8	A	Yes	Ar (CfAe)	177.00 - 5.00	12	2	1.9800	1.9800		1.04
FSJ2-50 (3/8 SUPERFLEX. FOAM)	C	Yes	Ar (CfAe)	180.00 - 158.00	1	1	0.4300	0.4300		0.08
1 5/8	C	Yes	Ar (CfAe)	180.00 - 158.00	12	6	1.9800	1.9800		1.04

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1/2	A	Yes	Ar (CfAe)	40.00 - 5.00	1	1	0.5800	0.0000		0.25
EW63	A	Yes	Af (CfAe)	112.00 - 5.00	2	1	1.5742	1.5742	5.0668	0.51
1 5/8	C	Yes	Ar (CfAe)	158.00 - 5.00	18	6	1.9800	1.9800		1.04
EW52	A	Yes	Af (CfAe)	123.00 - 5.00	1	1	1.7426	0.0000	0.5000	0.59
1 5/8	A	Yes	Ar (CfAe)	148.00 - 5.00	6	6	1.9800	1.9800		1.04
1 1/4	C	Yes	Ar (CfAe)	158.00 - 5.00	6	6	1.5500	1.5500		0.66

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	180.00-160.00	A	5.610	0.000	0.000	0.000	0.21
		B	0.000	0.000	0.000	0.000	0.00
		C	20.517	0.000	0.000	0.000	0.25
T2	160.00-140.00	A	14.520	0.000	0.000	0.000	0.30
		B	0.000	0.000	0.000	0.000	0.00
		C	33.822	0.000	0.000	0.000	0.43
T3	140.00-120.00	A	26.400	0.000	0.000	0.000	0.38
		B	0.000	0.000	0.000	0.000	0.00
		C	35.300	0.000	0.000	0.000	0.45
T4	120.00-100.00	A	26.400	1.574	0.000	0.000	0.40
		B	0.000	0.000	0.000	0.000	0.00
		C	35.300	0.000	0.000	0.000	0.45
T5	100.00-80.00	A	26.400	2.624	0.000	0.000	0.41
		B	0.000	0.000	0.000	0.000	0.00
		C	35.300	0.000	0.000	0.000	0.45
T6	80.00-60.00	A	26.400	2.624	0.000	0.000	0.41
		B	0.000	0.000	0.000	0.000	0.00
		C	35.300	0.000	0.000	0.000	0.45
T7	60.00-40.00	A	26.400	2.624	0.000	0.000	0.41
		B	0.000	0.000	0.000	0.000	0.00
		C	35.300	0.000	0.000	0.000	0.45
T8	40.00-20.00	A	26.400	2.624	0.000	0.000	0.41
		B	0.000	0.000	0.000	0.000	0.00
		C	35.300	0.000	0.000	0.000	0.45
T9	20.00-0.00	A	19.800	1.968	0.000	0.000	0.31
		B	0.000	0.000	0.000	0.000	0.00
		C	26.475	0.000	0.000	0.000	0.34

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	180.00-160.00	A	0.500	8.443	0.000	0.000	0.000	0.52
		B		0.000	0.000	0.000	0.000	0.00
		C		32.183	0.000	0.000	0.000	0.63
T2	160.00-140.00	A	0.500	21.853	0.000	0.000	0.000	0.74
		B		0.000	0.000	0.000	0.000	0.00
		C		52.988	0.000	0.000	0.000	1.10
T3	140.00-120.00	A	0.500	39.733	0.167	0.000	0.000	0.92
		B		0.000	0.000	0.000	0.000	0.00
		C		55.300	0.000	0.000	0.000	1.15
T4	120.00-100.00	A	0.500	39.733	3.352	0.000	0.000	0.99

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.000	0.000	0.00
		C		55.300	0.000	0.000	0.000	1.15
T5	100.00-80.00	A	0.500	39.733	4.846	0.000	0.000	1.02
		B		0.000	0.000	0.000	0.000	0.00
		C		55.300	0.000	0.000	0.000	1.15
T6	80.00-60.00	A	0.500	39.733	4.846	0.000	0.000	1.02
		B		0.000	0.000	0.000	0.000	0.00
		C		55.300	0.000	0.000	0.000	1.15
T7	60.00-40.00	A	0.500	39.733	4.846	0.000	0.000	1.02
		B		0.000	0.000	0.000	0.000	0.00
		C		55.300	0.000	0.000	0.000	1.15
T8	40.00-20.00	A	0.500	41.400	4.846	0.000	0.000	1.03
		B		0.000	0.000	0.000	0.000	0.00
		C		55.300	0.000	0.000	0.000	1.15
T9	20.00-0.00	A	0.500	31.050	3.634	0.000	0.000	0.77
		B		0.000	0.000	0.000	0.000	0.00
		C		41.475	0.000	0.000	0.000	0.86

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	180.00-160.00	A	0.442	0.967	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	1.618	3.687	0.000	0.000
T2	160.00-140.00	A	1.068	2.339	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	2.487	5.671	0.000	0.000
T3	140.00-120.00	A	1.956	4.210	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	2.615	5.822	0.000	0.000
T4	120.00-100.00	A	1.701	3.669	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	2.147	4.614	0.000	0.000
T5	100.00-80.00	A	1.653	3.574	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	2.011	4.326	0.000	0.000
T6	80.00-60.00	A	1.694	3.595	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	2.060	4.351	0.000	0.000
T7	60.00-40.00	A	1.637	3.474	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	1.991	4.205	0.000	0.000
T8	40.00-20.00	A	1.788	3.822	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	2.175	4.463	0.000	0.000
T9	20.00-0.00	A	1.396	3.133	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	1.698	3.659	0.000	0.000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) DB948F65T2E-M w/Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	179.00	No Ice 1/2" Ice	5.65 6.35	4.96 6.06	0.04 0.09
(2) DB948F65T2E-M w/Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	179.00	No Ice 1/2" Ice	5.65 6.35	4.96 6.06	0.04 0.09
(2) DB948F65T2E-M w/Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	179.00	No Ice 1/2" Ice	5.65 6.35	4.96 6.06	0.04 0.09
(2) LPD-4019 w/Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	179.00	No Ice 1/2" Ice	19.55 20.32	14.44 15.97	0.10 0.18
(2) LPA-80063/8CF	B	From Leg	3.00 0.00 0.00	0.0000	179.00	No Ice 1/2" Ice	13.97 14.68	12.17 12.83	0.04 0.14
(2) LPD-4019 w/Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	179.00	No Ice 1/2" Ice	19.55 20.32	14.44 15.97	0.10 0.18
T-Frame Sector Mount (1)	A	From Leg	0.00 0.00 0.00	0.0000	177.00	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	0.47 0.60
T-Frame Sector Mount (1)	B	From Leg	0.00 0.00 0.00	0.0000	177.00	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	0.47 0.60
T-Frame Sector Mount (1)	C	From Leg	0.00 0.00 0.00	0.0000	177.00	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	0.47 0.60
***									
(3) APX15PV-15PV-2	B	From Leg	0.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice	6.71 7.15	2.03 2.35	0.04 0.07
(6) TMA	B	From Leg	0.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice	0.00 0.00	0.55 0.67	0.00 0.01
10' Mount Extension	B	From Leg	0.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice	3.00 4.03	3.00 4.03	0.02 0.04
(3) Pipe Mount	B	From Leg	0.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice	1.30 1.57	1.30 1.57	0.03 0.05
*** ***									
(2) DUO1417-8686 w/Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	7.25 7.96	5.86 6.96	0.05 0.10
(2) DUO1417-8686 w/Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	7.25 7.96	5.86 6.96	0.05 0.10
(2) DUO1417-8686 w/Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	7.25 7.96	5.86 6.96	0.05 0.10
7770.00	A	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	6.79 7.28	3.51 3.90	0.04 0.07
7770.00	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	6.79 7.28	3.51 3.90	0.04 0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
7770.00	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	6.79 7.28	3.51 3.90	0.04 0.07
T-Frame Sector Mount (1)	A	From Leg	0.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	0.47 0.60
T-Frame Sector Mount (1)	B	From Leg	0.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	0.47 0.60
T-Frame Sector Mount (1)	C	From Leg	0.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	0.47 0.60
(2) TMA	A	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	0.00 0.00	0.55 0.67	0.00 0.01
(2) TMA	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	0.00 0.00	0.55 0.67	0.00 0.01
(2) TMA	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	0.00 0.00	0.55 0.67	0.00 0.01
(2) diplexer	A	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	1.40 1.56	0.55 0.67	0.00 0.01
(2) diplexer	B	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	1.40 1.56	0.55 0.67	0.00 0.01
(2) diplexer	C	From Leg	3.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice	1.40 1.56	0.55 0.67	0.00 0.01
***									
Pipe Mount	C	From Leg	0.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice	0.00 0.00	2.60 3.01	0.07 0.09
***									
Pipe Mount	C	From Leg	0.00 0.00 0.00	0.0000	112.00	No Ice 1/2" Ice	0.00 0.00	2.60 3.01	0.07 0.09
***									
Pipe Mount	C	From Leg	0.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice	0.00 0.00	2.60 3.01	0.07 0.09
***									
APXV18-206517S-C	A	From Leg	0.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	5.17 5.62	3.04 3.47	0.03 0.06
APXV18-206517S-C	B	From Leg	0.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	5.17 5.62	3.04 3.47	0.03 0.06
APXV18-206517S-C	C	From Leg	0.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	5.17 5.62	3.04 3.47	0.03 0.06
Pipe Mount	A	From Leg	0.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	0.00 0.00	2.60 3.01	0.07 0.09
Pipe Mount	B	From Leg	0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	0.00 0.00	2.60 3.01	0.07 0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe Mount	C	From Leg	0.00 0.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	0.00 0.00	2.60 3.01	0.07 0.09

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
HP8-59E	C	Paraboloid w/Shroud (HP)	From Leg	0.00 0.00 0.00	0.0000		123.00	8.00	No Ice 1/2" Ice	50.26 51.29	0.25 0.51
HP8-59E	C	Paraboloid w/Shroud (HP)	From Leg	0.00 0.00 0.00	0.0000		112.00	8.00	No Ice 1/2" Ice	50.26 51.29	0.25 0.51
HP10-59E	B	Paraboloid w/Shroud (HP)	From Leg	0.00 0.00 0.00	0.0000		70.00	10.00	No Ice 1/2" Ice	78.54 79.81	0.32 0.73
GPS	A	Paraboloid w/Radome	From Leg	0.00 0.00 0.00	0.0000		40.00	0.75	No Ice 1/2" Ice	0.44 0.55	0.00 0.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp

Comb. No.	Description
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	180 - 160	Leg	Max Tension	12	11.18	0.23	-0.00
			Max. Compression	6	-13.53	0.44	-0.00
			Max. Mx	4	-0.10	1.38	0.03
			Max. My	11	-0.97	-0.01	1.39
			Max. Vy	10	1.39	0.00	0.00
			Max. Vx	11	-1.39	-0.00	-0.00
		Diagonal	Max Tension	5	4.76	0.00	0.00
			Max. Compression	5	-4.82	0.00	0.00
			Max. Mx	18	4.21	0.02	0.00
			Max. My	19	-0.03	0.00	-0.00
			Max. Vy	18	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Horizontal	Max Tension	7	2.59	-0.01	-0.00
			Max. Compression	11	-2.56	-0.01	0.00
			Max. Mx	25	0.02	-0.02	-0.00
			Max. My	12	-0.49	-0.01	-0.01
			Max. Vy	25	-0.01	-0.02	-0.00
			Max. Vx	12	0.00	-0.01	-0.01
		Top Girt	Max Tension	4	1.96	-0.01	0.00
			Max. Compression	2	-1.95	-0.01	-0.00
			Max. Mx	17	-0.73	-0.01	-0.00
			Max. My	12	-0.96	-0.01	-0.01
			Max. Vy	17	0.01	-0.01	-0.00
			Max. Vx	6	-0.00	0.00	0.00
		Inner Bracing	Max Tension	11	0.04	0.00	0.00
			Max. Compression	11	-0.04	0.00	0.00
			Max. Mx	14	-0.00	-0.01	0.00
			Max. My	19	0.04	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
T2	160 - 140	Leg	Max Tension	12	32.62	-0.05	-0.00
			Max. Compression	6	-37.73	0.11	-0.01
			Max. Mx	12	17.21	1.17	-0.00
			Max. My	5	-1.60	-0.02	-1.15

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	4	-0.82	-0.46	-0.00
			Max. Vx	7	-0.80	-0.01	-0.43
		Diagonal	Max Tension	5	6.03	0.00	0.00
			Max. Compression	5	-6.10	0.00	0.00
			Max. Mx	18	5.44	0.03	0.00
			Max. My	25	-0.03	0.00	0.00
			Max. Vy	18	-0.01	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
		Horizontal	Max Tension	7	3.70	-0.01	-0.00
			Max. Compression	13	-3.70	-0.01	-0.00
			Max. Mx	25	-0.17	-0.02	-0.01
			Max. My	6	0.90	0.00	0.01
			Max. Vy	25	-0.02	-0.02	-0.01
			Max. Vx	6	-0.00	0.00	0.01
		Inner Bracing	Max Tension	13	0.06	0.00	0.00
			Max. Compression	13	-0.06	0.00	0.00
			Max. Mx	14	-0.00	-0.01	0.00
			Max. My	19	0.05	0.00	-0.00
			Max. Vy	14	0.01	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00
T3	140 - 120	Leg	Max Tension	12	54.66	-0.27	0.16
			Max. Compression	6	-61.54	0.66	-0.46
			Max. Mx	4	53.51	-0.89	-0.00
			Max. My	7	-3.36	0.03	-0.89
			Max. Vy	4	0.48	-0.89	-0.00
			Max. Vx	7	0.49	0.03	-0.89
		Diagonal	Max Tension	5	6.05	0.00	0.00
			Max. Compression	5	-6.15	0.00	0.00
			Max. Mx	18	5.61	0.04	0.00
			Max. My	25	-0.05	0.00	0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
		Horizontal	Max Tension	5	4.25	-0.02	0.00
			Max. Compression	11	-4.18	-0.02	-0.00
			Max. Mx	25	-0.19	-0.04	-0.01
			Max. My	4	-0.24	-0.04	-0.01
			Max. Vy	25	-0.02	-0.04	-0.01
			Max. Vx	12	0.00	-0.03	-0.01
		Inner Bracing	Max Tension	11	0.07	0.00	0.00
			Max. Compression	11	-0.07	0.00	0.00
			Max. Mx	14	-0.00	-0.02	0.00
			Max. My	25	0.06	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T4	120 - 100	Leg	Max Tension	12	72.13	-0.51	0.19
			Max. Compression	10	-81.05	0.31	0.00
			Max. Mx	4	60.77	-0.89	-0.00
			Max. My	7	-3.60	0.03	-0.89
			Max. Vy	4	0.56	-0.64	-0.00
			Max. Vx	13	-0.58	0.01	0.63
		Diagonal	Max Tension	5	9.14	0.00	0.00
			Max. Compression	5	-9.29	0.00	0.00
			Max. Mx	18	8.26	0.09	0.00
			Max. My	25	-0.19	0.00	0.00
			Max. Vy	18	0.03	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
		Horizontal	Max Tension	5	5.57	-0.02	0.00
			Max. Compression	5	-5.43	-0.02	0.00
			Max. Mx	25	-0.28	-0.05	-0.01
			Max. My	4	-0.50	-0.04	-0.01
			Max. Vy	25	-0.03	-0.05	-0.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	4	0.00	-0.04	-0.01
		Inner Bracing	Max Tension	5	0.09	0.00	0.00
			Max. Compression	5	-0.09	0.00	0.00
			Max. Mx	14	0.00	-0.02	0.00
			Max. My	17	0.07	0.00	0.00
			Max. Vy	14	0.01	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T5	100 - 80	Leg	Max Tension	4	93.45	-0.35	0.00
			Max. Compression	10	-104.06	0.40	0.03
			Max. Mx	4	93.26	-0.42	-0.02
			Max. My	3	-7.89	-0.00	-0.44
			Max. Vy	12	0.08	-0.42	0.02
			Max. Vx	9	-0.08	-0.02	0.44
		Diagonal	Max Tension	5	8.11	0.00	0.00
			Max. Compression	5	-8.29	0.00	0.00
			Max. Mx	18	7.21	0.11	0.00
			Max. My	25	-0.27	0.00	0.00
			Max. Vy	18	-0.03	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
		Horizontal	Max Tension	5	5.21	-0.03	0.00
			Max. Compression	5	-5.24	-0.03	0.00
			Max. Mx	17	-0.25	-0.06	-0.01
			Max. My	4	-0.42	-0.05	-0.01
			Max. Vy	17	-0.03	-0.06	-0.01
			Max. Vx	4	0.00	-0.05	-0.01
		Inner Bracing	Max Tension	5	0.09	0.00	0.00
			Max. Compression	5	-0.09	0.00	0.00
			Max. Mx	14	-0.00	-0.04	0.00
			Max. My	17	0.07	0.00	0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T6	80 - 60	Leg	Max Tension	4	111.84	-0.47	0.09
			Max. Compression	10	-124.33	0.46	0.06
			Max. Mx	4	111.59	-0.50	-0.05
			Max. My	3	-10.65	-0.00	-0.54
			Max. Vy	12	-0.96	-0.43	0.01
			Max. Vx	9	0.89	-0.03	0.34
		Diagonal	Max Tension	5	8.75	0.00	0.00
			Max. Compression	5	-9.02	0.00	0.00
			Max. Mx	18	7.89	0.14	0.00
			Max. My	17	-0.19	0.00	-0.00
			Max. Vy	18	-0.04	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00
		Horizontal	Max Tension	11	6.42	-0.07	0.00
			Max. Compression	5	-6.39	-0.07	-0.00
			Max. Mx	17	-0.48	-0.12	-0.01
			Max. My	12	-0.82	-0.10	-0.01
			Max. Vy	17	-0.05	-0.12	-0.01
			Max. Vx	12	0.00	-0.10	-0.01
		Inner Bracing	Max Tension	5	0.11	0.00	0.00
			Max. Compression	5	-0.11	0.00	0.00
			Max. Mx	14	-0.01	-0.07	0.00
			Max. My	17	0.07	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T7	60 - 40	Leg	Max Tension	4	130.43	-0.49	0.01
			Max. Compression	10	-145.58	0.38	0.01
			Max. Mx	4	121.28	-0.50	-0.05
			Max. My	3	-11.66	-0.00	-0.54
			Max. Vy	4	-0.08	-0.49	0.01
			Max. Vx	3	-0.08	-0.00	-0.54

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max Tension	5	8.78	0.00	0.00
			Max. Compression	5	-9.14	0.00	0.00
			Max. Mx	18	7.87	0.21	0.00
			Max. My	17	-0.29	0.00	-0.00
			Max. Vy	18	-0.05	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00
		Horizontal	Max Tension	5	6.64	-0.08	-0.00
			Max. Compression	5	-6.54	-0.08	-0.00
			Max. Mx	17	-0.17	-0.14	-0.01
			Max. My	12	-0.27	-0.10	-0.01
			Max. Vy	17	-0.05	-0.14	-0.01
			Max. Vx	12	0.00	-0.10	-0.01
		Inner Bracing	Max Tension	5	0.11	0.00	0.00
			Max. Compression	5	-0.11	0.00	0.00
			Max. Mx	14	-0.01	-0.13	0.00
			Max. My	17	0.09	0.00	0.00
			Max. Vy	14	-0.05	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T8	40 - 20	Leg	Max Tension	4	147.03	-0.79	0.01
			Max. Compression	10	-165.27	-1.32	0.08
			Max. Mx	10	-165.27	-1.32	0.08
			Max. My	3	-15.81	-0.27	-1.76
			Max. Vy	10	0.27	0.86	-0.01
			Max. Vx	3	0.22	-0.27	-1.76
		Diagonal	Max Tension	5	8.03	0.00	0.00
			Max. Compression	5	-8.45	0.00	0.00
			Max. Mx	18	7.28	0.25	0.00
			Max. My	17	-0.33	0.00	-0.00
			Max. Vy	18	-0.06	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00
		Horizontal	Max Tension	11	6.48	-0.11	-0.00
			Max. Compression	5	-6.32	-0.10	-0.00
			Max. Mx	17	0.08	-0.16	-0.01
			Max. My	12	-0.58	-0.12	-0.01
			Max. Vy	17	-0.06	-0.16	-0.01
			Max. Vx	12	0.00	-0.12	-0.01
		Inner Bracing	Max Tension	5	0.11	0.00	0.00
			Max. Compression	5	-0.11	0.00	0.00
			Max. Mx	14	-0.01	-0.16	0.00
			Max. My	17	0.08	0.00	0.00
			Max. Vy	14	0.05	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T9	20 - 0	Leg	Max Tension	4	153.00	0.81	-0.05
			Max. Compression	10	-174.05	-0.00	0.00
			Max. Mx	10	-173.78	5.08	-0.12
			Max. My	3	-16.89	-0.27	-1.76
			Max. Vy	10	-0.71	5.08	-0.12
			Max. Vx	13	0.37	-0.25	1.74
		Diagonal	Max Tension	5	12.58	-0.16	0.08
			Max. Compression	5	-13.05	0.00	0.00
			Max. Mx	25	9.39	-0.19	0.05
			Max. My	11	-12.59	0.02	-0.09
			Max. Vy	25	0.05	-0.19	0.05
			Max. Vx	11	-0.01	0.00	0.00
		Horizontal	Max Tension	11	7.00	-0.16	-0.00
			Max. Compression	11	-7.05	-0.16	0.00
			Max. Mx	17	-0.12	-0.25	-0.02
			Max. My	12	-0.36	-0.23	-0.02
			Max. Vy	17	0.08	-0.25	-0.02
			Max. Vx	12	0.00	-0.23	-0.02
		Redund Horz 1	Max Tension	10	3.02	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Bracing					
			Max. Compression	10	-3.02	0.00	0.00
			Max. Mx	25	1.56	0.02	0.00
			Max. Vy	25	-0.01	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	10	2.76	0.00	0.00
			Max. Compression	10	-2.76	0.00	0.00
			Max. Mx	19	2.66	0.03	0.00
			Max. My	25	0.81	0.00	0.00
			Max. Vy	19	-0.01	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-0.04	0.00	0.00
			Max. Mx	14	-0.01	0.02	0.00
			Max. Vy	14	-0.01	0.00	0.00
		Redund Hip Diagonal Bracing	Max Tension	18	0.07	0.00	0.00
			Max. Compression	22	-0.06	0.00	0.00
			Max. Mx	17	0.06	0.17	0.00
			Max. My	17	0.06	0.00	-0.00
			Max. Vy	17	-0.04	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00
		Inner Bracing	Max Tension	11	0.12	0.00	0.00
			Max. Compression	11	-0.12	0.00	0.00
			Max. Mx	14	-0.01	0.20	0.00
			Max. My	17	0.09	0.00	-0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	10	191.82	20.82	-11.63
	Max. H_x	10	191.82	20.82	-11.63
	Max. H_z	3	-146.09	-15.73	10.92
	Min. Vert	4	-169.25	-19.26	10.74
	Min. H_x	4	-169.25	-19.26	10.74
	Min. H_z	9	167.56	17.17	-11.69
Leg B	Max. Vert	6	191.34	-20.84	-11.64
	Max. H_x	12	-166.35	19.11	10.65
	Max. H_z	13	-142.67	15.56	10.80
	Min. Vert	12	-166.35	19.11	10.65
	Min. H_x	6	191.34	-20.84	-11.64
	Min. H_z	6	191.34	-20.84	-11.64
Leg A	Max. Vert	2	188.88	-0.00	23.54
	Max. H_x	11	11.08	3.53	1.12
	Max. H_z	2	188.88	-0.00	23.54
	Min. Vert	8	-162.57	0.00	-21.22
	Min. H_x	5	15.63	-3.53	1.41
	Min. H_z	8	-162.57	0.00	-21.22

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	38.30	-0.00	0.00	4.62	1.63	0.00
Dead+Wind 0 deg - No Ice	38.30	0.46	-39.19	-4221.15	-110.07	-0.55
Dead+Wind 30 deg - No Ice	38.30	21.06	-33.81	-3659.30	-2284.09	9.22
Dead+Wind 60 deg - No Ice	38.30	35.33	-19.40	-2119.16	-3814.32	11.05
Dead+Wind 90 deg - No Ice	38.30	40.51	-0.39	-68.66	-4377.20	10.79
Dead+Wind 120 deg - No Ice	38.30	35.32	18.31	1958.93	-3811.37	9.82
Dead+Wind 150 deg - No Ice	38.30	19.87	33.63	3636.58	-2118.45	11.37
Dead+Wind 180 deg - No Ice	38.30	-0.23	38.88	4202.59	63.06	0.62
Dead+Wind 210 deg - No Ice	38.30	-20.11	33.50	3621.46	2193.37	-10.28
Dead+Wind 240 deg - No Ice	38.30	-35.05	18.68	2059.99	3766.26	-9.28
Dead+Wind 270 deg - No Ice	38.30	-40.26	0.01	40.40	4327.83	-10.78
Dead+Wind 300 deg - No Ice	38.30	-35.23	-19.08	-2029.71	3785.51	-11.65
Dead+Wind 330 deg - No Ice	38.30	-20.82	-33.66	-3613.75	2215.52	-10.32
Dead+Ice+Temp	60.33	-0.00	-0.00	9.75	0.48	0.00
Dead+Wind 0 deg+Ice+Temp	60.33	0.33	-36.52	-3896.23	-82.08	-0.56
Dead+Wind 30 deg+Ice+Temp	60.33	19.36	-31.51	-3374.62	-2082.76	6.99
Dead+Wind 60 deg+Ice+Temp	60.33	32.67	-18.09	-1948.79	-3501.52	8.49
Dead+Wind 90 deg+Ice+Temp	60.33	37.52	-0.28	-43.17	-4024.17	8.39
Dead+Wind 120 deg+Ice+Temp	60.33	32.70	17.30	1844.15	-3502.57	7.69
Dead+Wind 150 deg+Ice+Temp	60.33	18.48	31.39	3372.98	-1961.49	8.88
Dead+Wind 180 deg+Ice+Temp	60.33	-0.16	36.27	3894.53	44.41	0.61
Dead+Wind 210 deg+Ice+Temp	60.33	-18.63	31.28	3358.08	2011.85	-7.80
Dead+Wind 240 deg+Ice+Temp	60.33	-32.46	17.55	1916.13	3463.09	-7.14
Dead+Wind 270 deg+Ice+Temp	60.33	-37.33	-0.01	34.07	3984.70	-8.38
Dead+Wind 300 deg+Ice+Temp	60.33	-32.62	-17.88	-1885.74	3481.14	-9.09
Dead+Wind 330 deg+Ice+Temp	60.33	-19.21	-31.41	-3342.90	2034.21	-8.08
Dead+Wind 0 deg - Service	38.30	0.16	-13.56	-1457.59	-37.02	-0.19
Dead+Wind 30 deg - Service	38.30	7.29	-11.70	-1263.18	-789.27	3.19
Dead+Wind 60 deg - Service	38.30	12.22	-6.71	-730.23	-1318.74	3.82
Dead+Wind 90 deg - Service	38.30	14.02	-0.13	-20.73	-1513.54	3.73
Dead+Wind 120 deg - Service	38.30	12.22	6.34	680.87	-1317.75	3.40
Dead+Wind 150 deg - Service	38.30	6.87	11.64	1261.37	-731.97	3.94
Dead+Wind 180 deg - Service	38.30	-0.08	13.45	1457.19	22.89	0.21
Dead+Wind 210 deg - Service	38.30	-6.96	11.59	1256.14	760.03	-3.56
Dead+Wind 240 deg - Service	38.30	-12.13	6.47	715.83	1304.29	-3.21
Dead+Wind 270 deg - Service	38.30	-13.93	0.00	17.01	1498.60	-3.73
Dead+Wind 300 deg - Service	38.30	-12.19	-6.60	-699.28	1310.92	-4.03
Dead+Wind 330 deg - Service	38.30	-7.20	-11.65	-1247.43	767.66	-3.57

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-38.30	0.00	0.00	38.30	-0.00	0.000%
2	0.46	-38.30	-39.19	-0.46	38.30	39.19	0.001%
3	21.06	-38.30	-33.81	-21.06	38.30	33.81	0.001%
4	35.33	-38.30	-19.40	-35.33	38.30	19.40	0.001%
5	40.51	-38.30	-0.39	-40.51	38.30	0.39	0.001%
6	35.33	-38.30	18.31	-35.32	38.30	-18.31	0.001%
7	19.87	-38.30	33.63	-19.87	38.30	-33.63	0.001%
8	-0.23	-38.30	38.88	0.23	38.30	-38.88	0.001%
9	-20.11	-38.30	33.50	20.11	38.30	-33.50	0.001%
10	-35.05	-38.30	18.68	35.05	38.30	-18.68	0.001%
11	-40.26	-38.30	0.01	40.26	38.30	-0.01	0.001%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
12	-35.23	-38.30	-19.08	35.23	38.30	19.08	0.001%
13	-20.82	-38.30	-33.66	20.82	38.30	33.66	0.001%
14	0.00	-60.33	0.00	0.00	60.33	0.00	0.000%
15	0.33	-60.33	-36.52	-0.33	60.33	36.52	0.001%
16	19.36	-60.33	-31.51	-19.36	60.33	31.51	0.001%
17	32.67	-60.33	-18.09	-32.67	60.33	18.09	0.001%
18	37.52	-60.33	-0.28	-37.52	60.33	0.28	0.001%
19	32.70	-60.33	17.30	-32.70	60.33	-17.30	0.001%
20	18.48	-60.33	31.39	-18.48	60.33	-31.39	0.001%
21	-0.16	-60.33	36.28	0.16	60.33	-36.27	0.001%
22	-18.63	-60.33	31.28	18.63	60.33	-31.28	0.001%
23	-32.47	-60.33	17.55	32.46	60.33	-17.55	0.001%
24	-37.33	-60.33	-0.01	37.33	60.33	0.01	0.001%
25	-32.62	-60.33	-17.88	32.62	60.33	17.88	0.001%
26	-19.21	-60.33	-31.41	19.21	60.33	31.41	0.001%
27	0.16	-38.30	-13.56	-0.16	38.30	13.56	0.000%
28	7.29	-38.30	-11.70	-7.29	38.30	11.70	0.000%
29	12.22	-38.30	-6.71	-12.22	38.30	6.71	0.000%
30	14.02	-38.30	-0.13	-14.02	38.30	0.13	0.000%
31	12.22	-38.30	6.34	-12.22	38.30	-6.34	0.000%
32	6.87	-38.30	11.64	-6.87	38.30	-11.64	0.000%
33	-0.08	-38.30	13.45	0.08	38.30	-13.45	0.000%
34	-6.96	-38.30	11.59	6.96	38.30	-11.59	0.000%
35	-12.13	-38.30	6.47	12.13	38.30	-6.47	0.000%
36	-13.93	-38.30	0.00	13.93	38.30	-0.00	0.000%
37	-12.19	-38.30	-6.60	12.19	38.30	6.60	0.000%
38	-7.20	-38.30	-11.65	7.20	38.30	11.65	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	8	0.00000001	0.00006367
3	Yes	8	0.00000001	0.00005966
4	Yes	8	0.00000001	0.00005590
5	Yes	8	0.00000001	0.00005970
6	Yes	8	0.00000001	0.00006369
7	Yes	8	0.00000001	0.00006014
8	Yes	8	0.00000001	0.00005622
9	Yes	8	0.00000001	0.00006022
10	Yes	8	0.00000001	0.00006372
11	Yes	8	0.00000001	0.00006021
12	Yes	8	0.00000001	0.00005610
13	Yes	8	0.00000001	0.00005972
14	Yes	6	0.00000001	0.00000001
15	Yes	8	0.00000001	0.00010104
16	Yes	8	0.00000001	0.00009725
17	Yes	8	0.00000001	0.00009375
18	Yes	8	0.00000001	0.00009734
19	Yes	8	0.00000001	0.00010115
20	Yes	8	0.00000001	0.00009775
21	Yes	8	0.00000001	0.00009407
22	Yes	8	0.00000001	0.00009776
23	Yes	8	0.00000001	0.00010114
24	Yes	8	0.00000001	0.00009775

25	Yes	8	0.00000001	0.00009392
26	Yes	8	0.00000001	0.00009730
27	Yes	8	0.00000001	0.00005927
28	Yes	8	0.00000001	0.00005790
29	Yes	8	0.00000001	0.00005676
30	Yes	8	0.00000001	0.00005795
31	Yes	8	0.00000001	0.00005933
32	Yes	8	0.00000001	0.00005812
33	Yes	8	0.00000001	0.00005691
34	Yes	8	0.00000001	0.00005816
35	Yes	8	0.00000001	0.00005936
36	Yes	8	0.00000001	0.00005815
37	Yes	8	0.00000001	0.00005687
38	Yes	8	0.00000001	0.00005799

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	180	Leg	A325N	0.7500	4	2.80	19.44	0.144 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	1.61	6.44	0.249 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1.30	6.44	0.201 ✓	1.333	Bolt Shear
T2	160	Leg	A325N	0.8750	4	8.16	26.46	0.308 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	2.03	6.44	0.315 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1.85	6.44	0.287 ✓	1.333	Bolt Shear
T3	140	Leg	A325N	1.0000	4	13.66	34.56	0.395 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	2.05	6.44	0.318 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	2.13	6.44	0.330 ✓	1.333	Bolt Shear
T4	120	Leg	A325N	1.0000	4	18.03	34.56	0.522 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	3.10	6.44	0.481 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	2.79	6.44	0.432 ✓	1.333	Bolt Shear
T5	100	Leg	A325N	1.0000	6	15.58	34.56	0.451 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	2.76	6.44	0.429 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	2.62	6.44	0.407 ✓	1.333	Bolt Shear
T6	80	Leg	A325N	1.0000	6	18.63	34.56	0.539 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	3.01	6.44	0.467 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	3.21	6.44	0.498 ✓	1.333	Bolt Shear
T7	60	Leg	A325N	1.0000	6	21.74	34.56	0.629 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	3.05	6.44	0.473 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	3.32	6.44	0.515 ✓	1.333	Bolt Shear
T8	40	Leg	A325N	1.0000	8	18.38	34.56	0.532 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	3	2.82	6.44	0.437 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	3.24	6.44	0.503 ✓	1.333	Bolt Shear
T9	20	Diagonal	A325N	0.6250	3	4.35	6.44	0.675 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	3.53	6.44	0.547 ✓	1.333	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	180 - 160	ROHN 2.5 STD	20.00	6.67	84.4 K=1.00	18.110	1.7040	-13.53	30.86	0.438 ✓
T2	160 - 140	ROHN 3 X-STR	20.04	6.68	70.5 K=1.00	20.840	3.0159	-37.73	62.85	0.600 ✓
T3	140 - 120	ROHN 4 X-STR	20.04	6.68	54.3 K=1.00	23.671	4.4074	-61.54	104.33	0.590 ✓
T4	120 - 100	ROHN 5 X-STR	20.04	10.02	65.4 K=1.00	21.776	6.1120	-81.05	133.10	0.609 ✓
T5	100 - 80	ROHN 5 X-STR	20.05	10.03	65.4 K=1.00	21.769	6.1120	-104.06	133.05	0.782 ✓
T6	80 - 60	ROHN 6 EHS	20.05	10.03	54.1 K=1.00	23.704	6.7133	-124.33	159.13	0.781 ✓
T7	60 - 40	ROHN 6 EH	20.05	10.03	54.8 K=1.00	23.583	8.4049	-145.58	198.22	0.734 ✓
T8	40 - 20	ROHN 6 EH	20.06	10.03	54.8 K=1.00	23.580	8.4049	-165.27	198.19	0.834 ✓
T9	20 - 0	HSS8.75x.375	20.05	10.03	40.5 K=1.00	25.766	9.2110	-174.05	237.33	0.733 ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	180 - 160	ROHN 2 STD	7.91	7.69	117.3 K=1.00	10.860	1.0745	-4.82	11.67	0.413 ✓
T2	160 - 140	ROHN 2 STD	8.53	8.29	126.4 K=1.00	9.342	1.0745	-5.99	10.04	0.597 ✓
T3	140 - 120	ROHN 2 STD	9.21	8.94	136.3 K=1.00	8.039	1.0745	-6.15	8.64	0.712 ✓
T4	120 - 100	ROHN 2.5 STD	12.49	12.10	153.3 K=1.00	6.353	1.7040	-9.29	10.83	0.858 ✓
T5	100 - 80	ROHN 2.5 STD	13.30	12.95	164.0 K=1.00	5.555	1.7040	-8.06	9.47	0.852 ✓
T6	80 - 60	ROHN 2.5 STD	14.16	13.77	174.4 K=1.00	4.908	1.7040	-9.02	8.36	1.078

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T7	60 - 40	ROHN 2.5 X-STR	15.06	14.69	190.8 K=1.00	4.102	2.2535	-9.05	9.25	0.979
T8	40 - 20	ROHN 3 STD	16.08	15.73	162.2 K=1.00	5.675	2.2285	-8.44	12.65	0.667
T9	20 - 0	ROHN 3 STD	24.33	12.17	125.5 K=1.00	9.486	2.2285	-13.05	21.14	0.617

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	ROHN 1.5 STD	8.51	4.14	79.7 K=1.00	19.064	0.7995	-2.56	15.24	0.168
T2	160 - 140	ROHN 1.5 STD	9.93	4.82	92.9 K=1.00	16.309	0.7995	-3.70	13.04	0.284
T3	140 - 120	ROHN 2 STD	12.01	5.82	88.7 K=1.00	17.212	1.0745	-4.18	18.50	0.226
T4	120 - 100	ROHN 2 STD	13.83	6.68	101.9 K=1.00	14.261	1.0745	-5.43	15.32	0.354
T5	100 - 80	ROHN 2 STD	16.24	7.89	120.2 K=1.00	10.332	1.0745	-5.24	11.10	0.472
T6	80 - 60	ROHN 2.5 STD	18.78	9.11	115.4 K=1.00	11.210	1.7040	-6.39	19.10	0.334
T7	60 - 40	ROHN 2.5 STD	21.28	10.36	131.3 K=1.00	8.669	1.7040	-6.54	14.77	0.443
T8	40 - 20	ROHN 2.5 STD	23.84	11.65	147.5 K=1.00	6.863	1.7040	-6.32	11.69	0.540
T9	20 - 0	ROHN 3 STD	25.18	12.31	127.0 K=1.00	9.262	2.2285	-7.05	20.64	0.342

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	ROHN 1.5 STD	8.50	4.13	79.6 K=1.00	19.091	0.7995	-1.95	15.26	0.128

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T9	20 - 0	ROHN 1.5 STD	6.29	5.93	114.3 K=1.00	11.433	0.7995	-3.02	9.14	0.330 ✓

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T9	20 - 0	ROHN 1.5 STD	11.50	10.94	210.9 K=1.00	3.357	0.7995	-2.76	2.68	1.028 ✓

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T9	20 - 0	ROHN 1.5 STD	6.29	6.29	121.3 K=1.00	10.147	0.7995	-0.04	8.11	0.005 ✓

Redundant Hip Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T9	20 - 0	ROHN 2.5 STD	15.07	15.07	190.9 K=1.00	4.096	1.7040	-0.04	6.98	0.006* ✓

* DL controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	L2x2x1/8	4.26	4.26	128.5 K=1.00	9.044	0.4844	-0.04	4.38	0.010 ✓
T2	160 - 140	L2x2x1/8	4.97	4.97	149.9 K=1.00	6.648	0.4844	-0.06	3.22	0.020 ✓
T3	140 - 120	L2x2x1/8	6.01	6.01	181.3 K=1.00	4.542	0.4844	-0.07	2.20	0.033 ✓
T4	120 - 100	L2x2x1/8	6.92	6.92	208.8 K=1.00	3.426	0.4844	-0.09	1.66	0.057

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T5	100 - 80	L2 1/2x2 1/2x3/16	8.12	8.12	196.8 K=1.00	3.856	0.9020	-0.09	3.48	0.026
T6	80 - 60	L3x3x3/16	9.39	9.39	189.0 K=1.00	4.179	1.0900	-0.11	4.56	0.024
T7	60 - 40	L3 1/2x3 1/2x1/4	10.64	10.64	184.0 K=1.00	4.413	1.6900	-0.11	7.46	0.015
T8	40 - 20	L3 1/2x3 1/2x1/4	11.92	11.92	206.1 K=1.00	3.514	1.6900	-0.11	5.94	0.018
T9	20 - 0	ROHN 3 STD	12.59	12.59	129.8 K=1.00	8.860	2.2285	-0.12	19.74	0.006

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	ROHN 2.5 STD	20.00	6.67	84.4	30.000	1.7040	11.18	51.12	0.219
T2	160 - 140	ROHN 3 X-STR	20.04	6.68	70.5	30.000	3.0159	32.62	90.48	0.361
T3	140 - 120	ROHN 4 X-STR	20.04	6.68	54.3	30.000	4.4074	54.66	132.22	0.413
T4	120 - 100	ROHN 5 X-STR	20.04	10.02	65.4	30.000	6.1120	72.13	183.36	0.393
T5	100 - 80	ROHN 5 X-STR	20.05	10.03	65.4	30.000	6.1120	93.45	183.36	0.510
T6	80 - 60	ROHN 6 EHS	20.05	10.03	54.1	30.000	6.7133	111.81	201.40	0.555
T7	60 - 40	ROHN 6 EH	20.05	10.03	54.8	30.000	8.4049	130.43	252.15	0.517
T8	40 - 20	ROHN 6 EH	20.06	10.03	54.8	30.000	8.4049	147.03	252.15	0.583
T9	20 - 0	HSS8.75x.375	20.05	10.03	40.5	30.000	9.2110	153.00	276.33	0.554

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	ROHN 2 STD	7.91	7.69	117.3	30.000	1.0745	4.76	32.24	0.148

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T2	160 - 140	ROHN 2 STD	8.31	8.08	123.2	30.000	1.0745	6.03	32.24	0.187 ✓
T3	140 - 120	ROHN 2 STD	9.21	8.94	136.3	30.000	1.0745	6.05	32.24	0.188 ✓
T4	120 - 100	ROHN 2.5 STD	12.49	12.10	153.3	30.000	1.7040	9.14	51.12	0.179 ✓
T5	100 - 80	ROHN 2.5 STD	12.89	12.53	158.8	30.000	1.7040	8.11	51.12	0.159 ✓
T6	80 - 60	ROHN 2.5 STD	14.16	13.77	174.4	30.000	1.7040	8.75	51.12	0.171 ✓
T7	60 - 40	ROHN 2.5 X-STR	14.60	14.24	184.9	30.000	2.2535	8.78	67.61	0.130 ✓
T8	40 - 20	ROHN 3 STD	15.57	15.21	156.9	30.000	2.2285	8.03	66.85	0.120 ✓
T9	20 - 0	ROHN 3 STD	24.33	12.17	125.5	30.000	2.2285	12.58	66.85	0.188 ✓

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	ROHN 1.5 STD	8.51	4.14	79.7	30.000	0.7995	2.59	23.98	0.108 ✓
T2	160 - 140	ROHN 1.5 STD	9.93	4.82	92.9	30.000	0.7995	3.70	23.98	0.154 ✓
T3	140 - 120	ROHN 2 STD	12.01	5.82	88.7	30.000	1.0745	4.25	32.24	0.132 ✓
T4	120 - 100	ROHN 2 STD	13.83	6.68	101.9	30.000	1.0745	5.57	32.24	0.173 ✓
T5	100 - 80	ROHN 2 STD	16.24	7.89	120.2	30.000	1.0745	5.21	32.24	0.162 ✓
T6	80 - 60	ROHN 2.5 STD	18.78	9.11	115.4	30.000	1.7040	6.42	51.12	0.125 ✓
T7	60 - 40	ROHN 2.5 STD	21.28	10.36	131.3	30.000	1.7040	6.64	51.12	0.130 ✓
T8	40 - 20	ROHN 2.5 STD	23.84	11.65	147.5	30.000	1.7040	6.48	51.12	0.127 ✓
T9	20 - 0	ROHN 3 STD	25.18	12.31	127.0	30.000	2.2285	7.00	66.85	0.105 ✓

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	ROHN 1.5 STD	8.50	4.13	79.6	30.000	0.7995	1.96	23.98	0.082

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
										✓

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T9	20 - 0	ROHN 1.5 STD	6.29	5.93	114.3	30.000	0.7995	3.02	23.98	0.126 ✓

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T9	20 - 0	ROHN 1.5 STD	11.50	10.94	210.9	30.000	0.7995	2.76	23.98	0.115 ✓

Redundant Hip Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T9	20 - 0	ROHN 2.5 STD	15.07	15.07	190.9	30.000	1.7040	0.07	51.12	0.001 ✓

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	180 - 160	L2x2x1/8	4.26	4.26	81.6	21.600	0.4844	0.04	10.46	0.004 ✓
T2	160 - 140	L2x2x1/8	4.97	4.97	95.1	21.600	0.4844	0.06	10.46	0.006 ✓
T3	140 - 120	L2x2x1/8	6.01	6.01	115.1	21.600	0.4844	0.07	10.46	0.007 ✓
T4	120 - 100	L2x2x1/8	6.92	6.92	132.5	21.600	0.4844	0.09	10.46	0.009 ✓
T5	100 - 80	L2 1/2x2 1/2x3/16	8.12	8.12	125.2	21.600	0.9020	0.09	19.48	0.005 ✓

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T6	80 - 60	L3x3x3/16	9.39	9.39	120.0	21.600	1.0900	0.11	23.54	0.005 ✓
T7	60 - 40	L3 1/2x3 1/2x1/4	10.64	10.64	117.1	21.600	1.6900	0.11	36.50	0.003 ✓
T8	40 - 20	L3 1/2x3 1/2x1/4	11.92	11.92	131.3	21.600	1.6900	0.11	36.50	0.003 ✓
T9	20 - 0	ROHN 3 STD	12.59	12.59	129.8	21.600	2.2285	0.12	48.13	0.003 ✓

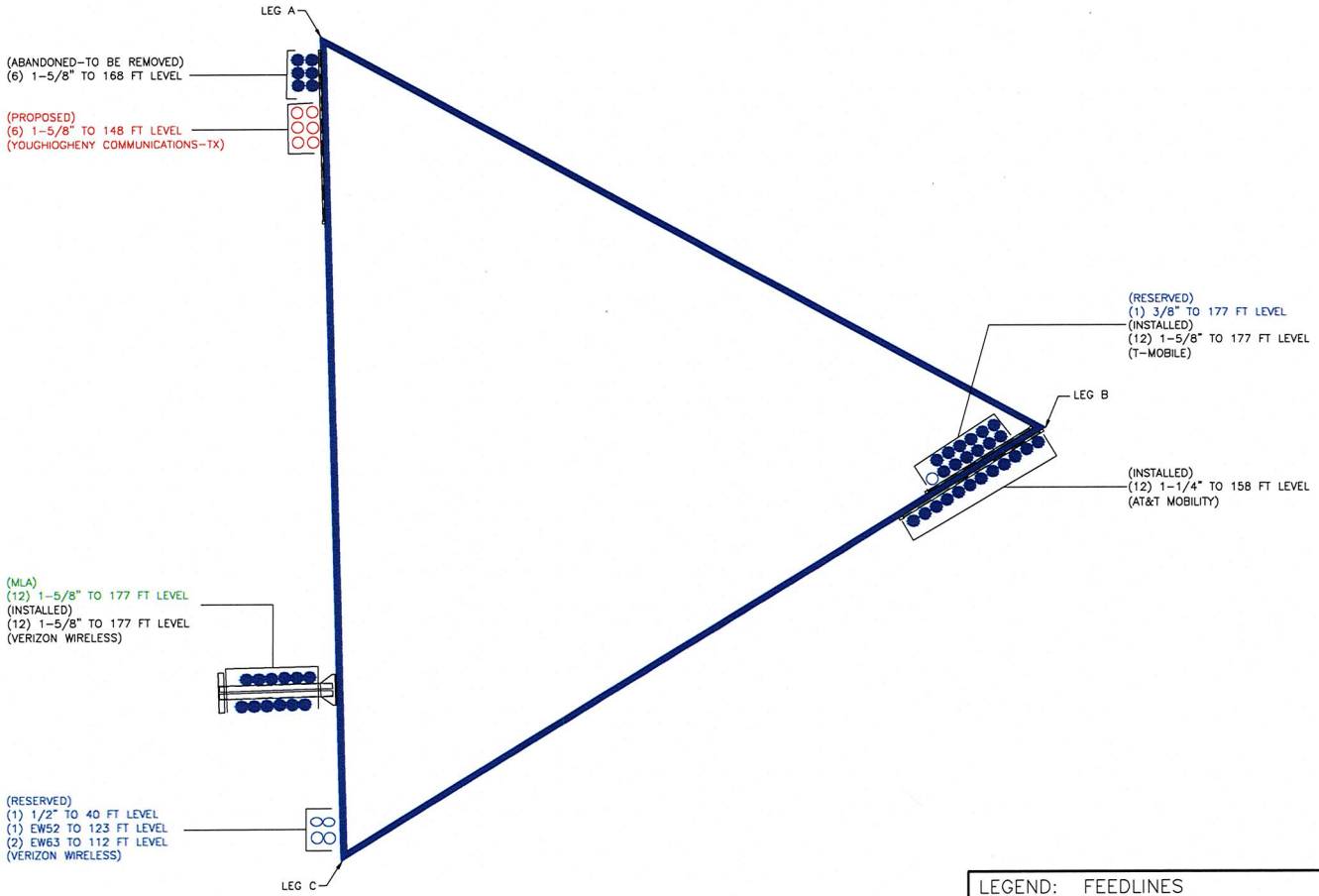
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	180 - 160	Leg	ROHN 2.5 STD	2	-13.53	41.14	32.9	Pass
		Diagonal	ROHN 2 STD	21	-4.82	15.56	31.0	Pass
		Horizontal	ROHN 1.5 STD	19	-2.56	20.32	12.6	Pass
							15.1 (b)	
		Top Girt	ROHN 1.5 STD	5	-1.95	20.34	9.6	Pass
		Inner Bracing	L2x2x1/8	28	-0.04	5.84	0.8	Pass
T2	160 - 140	Leg	ROHN 3 X-STR	41	-37.73	83.78	45.0	Pass
		Diagonal	ROHN 2 STD	47	-5.99	13.38	44.8	Pass
		Horizontal	ROHN 1.5 STD	46	-3.70	17.38	21.3	Pass
							21.6 (b)	
		Inner Bracing	L2x2x1/8	52	-0.06	4.29	1.5	Pass
T3	140 - 120	Leg	ROHN 4 X-STR	80	-61.54	139.07	44.3	Pass
		Diagonal	ROHN 2 STD	84	-6.15	11.51	53.4	Pass
		Horizontal	ROHN 2 STD	82	-4.18	24.65	16.9	Pass
							24.7 (b)	
		Inner Bracing	L2x2x1/8	91	-0.07	2.93	2.5	Pass
T4	120 - 100	Leg	ROHN 5 X-STR	118	-81.05	177.42	45.7	Pass
		Diagonal	ROHN 2.5 STD	123	-9.29	14.43	64.4	Pass
		Horizontal	ROHN 2 STD	121	-5.43	20.43	26.6	Pass
							32.4 (b)	
		Inner Bracing	L2x2x1/8	130	-0.09	2.21	4.2	Pass
T5	100 - 80	Leg	ROHN 5 X-STR	145	-104.06	177.36	58.7	Pass
		Diagonal	ROHN 2.5 STD	150	-8.06	12.62	63.9	Pass
		Horizontal	ROHN 2 STD	148	-5.24	14.80	35.4	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	159	-0.09	4.64	2.0	Pass
T6	80 - 60	Leg	ROHN 6 EHS	172	-124.33	212.12	58.6	Pass
		Diagonal	ROHN 2.5 STD	177	-9.02	11.15	80.9	Pass
		Horizontal	ROHN 2.5 STD	175	-6.39	25.46	25.1	Pass
							37.3 (b)	
		Inner Bracing	L3x3x3/16	184	-0.11	6.07	1.8	Pass
T7	60 - 40	Leg	ROHN 6 EH	199	-145.58	264.22	55.1	Pass
		Diagonal	ROHN 2.5 X-STR	204	-9.05	12.32	73.5	Pass
		Horizontal	ROHN 2.5 STD	202	-6.54	19.69	33.2	Pass
							38.7 (b)	
		Inner Bracing	L3 1/2x3 1/2x1/4	211	-0.11	9.94	1.1	Pass
T8	40 - 20	Leg	ROHN 6 EH	226	-165.27	264.18	62.6	Pass
		Diagonal	ROHN 3 STD	231	-8.44	16.86	50.1	Pass
		Horizontal	ROHN 2.5 STD	229	-6.32	15.59	40.5	Pass
		Inner Bracing	L3 1/2x3 1/2x1/4	238	-0.11	7.92	1.4	Pass
T9	20 - 0	Leg	HSS8.75x.375	253	-174.05	316.36	55.0	Pass
		Diagonal	ROHN 3 STD	260	-13.05	28.18	46.3	Pass
							50.6 (b)	

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
		Horizontal	ROHN 3 STD	256	-7.05	27.51	25.6 41.1 (b)	Pass
		Redund Horz 1 Bracing	ROHN 1.5 STD	258	-3.02	12.18	24.8	Pass
		Redund Diag 1 Bracing	ROHN 1.5 STD	259	-2.76	3.58	77.1	Pass
		Redund Hip 1 Bracing	ROHN 1.5 STD	281	-0.04	10.81	0.3	Pass
		Redund Hip Diagonal Bracing	ROHN 2.5 STD	280	-0.04	6.98	0.6	Pass
		Inner Bracing	ROHN 3 STD	283	-0.12	26.32	0.5	Pass
							Summary	
						Leg (T8)	62.6	Pass
						Diagonal (T6)	80.9	Pass
						Horizontal (T9)	41.1	Pass
						Top Girt (T1)	9.6	Pass
						Redund Horz 1 Bracing (T9)	24.8	Pass
						Redund Diag 1 Bracing (T9)	77.1	Pass
						Redund Hip 1 Bracing (T9)	0.3	Pass
						Redund Hip Diagonal Bracing (T9)	0.6	Pass
						Inner Bracing (T4)	4.2	Pass
						Bolt Checks	50.6	Pass
						RATING =	**80.9**	**Pass**

APENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 806362 TOWER ID: C_BASELEVEL

LEGEND: FEEDLINES

- ● SOLID BLUE CIRCLE DENOTES EXISTING FEEDLINE
- ○ OPEN RED CIRCLE DENOTES PROPOSED FEEDLINE
- ○ OPEN BLUE CIRCLE DENOTES RESERVED FEEDLINE
- X BLUE "X" DENOTES LOCATION NOT GIVEN

NOTE: ASSUME FEEDLINE ATTACHMENT HEIGHT TO TOWER STEEL AT 8–FEET ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED

CROWN CASTLE

REVISIONS			
NO.	DATE	DESCRIPTION	BY
1	03/09/06	UPDATED PER WORK ORDER # 103340	JW
2	11/05/06	UPDATED PER WORK ORDER # 103435	RWT
3	27/07/06	UPDATED PER WORK ORDER # 105586	JW
4	28/12/06	AS–BUILT INFORMATION ADDED PER WORK ORDER # 132765	SAC
5	05/03/07	AS–BUILT INFORMATION ADDED PER WORK ORDER # 129261	MB
6	17/05/07	APPLICATION ADDED PER WORK ORDER # 140833	SES
7	15/01/08	APPLICATION ADDED PER WORK ORDER # 190170	MCS
8	15/01/08	AS–BUILT INFORMATION ADDED PER WORK ORDER # 190128	MCS
9	24/10/08	APPLICATION ADDED PER WORK ORDER # 237417	VDB

ENG-PLN-10050 REV(-) DATE:7/13/06