PULLMAN & COMLEY, LLC
ATTORNEYS AT LAW

EM-POCKET-054-080930

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

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September 29, 2008

ORIGINAL

Via Federal Express

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

Re: Notice of Exempt Modification
Cox Communications Telecommunications Facility
577 Bell Street, Glastonbury, Connecticut

Dear Mr. Phelps:

Youghiogheny Communications-Northeast, LLC, doing business as Pocket Communications ("Pocket"), intends to install antennas and appurtenant equipment at the existing 90-foot lattice facility owned by Cox Communications and located at 577 Bell Street, Glastonbury, 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 Richard J. Johnson, Town Manager, Town of Glastonbury.

The existing Facility consists of a 90-foot self-supporting monopole tower capable of supporting multiple carriers within a fenced compound. The coordinates for the Facility are **Lat: 41°-43'-45" and Long: 72°–33'-00".** The tower is located in the northern portion of Glastonbury, roughly 2,400 feet south of the Manchester town line. The Facility is approximately 200 feet west of Bell Street, and approximately 4,800 feet north of Hebron Avenue (Route 94) (see Site Map, attached as Exhibit A). The tower currently supports AT&T antennas at the eighty eight foot (88') level centerline AGL (above ground level). Cox Communications and the Town of Glastonbury have whip style antennas at multiple elevations, listed in the application materials. Pocket proposes to install three APXV 18-206517S-C panel antennas to the tower legs at the sixty five foot centerline (65') 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 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 utility pole (SNET 2053) on Bell Street to the east (See Design Drawings and Equipment Specifications, attached as Exhibits B and C respectively).

For the following reasons, the proposed modifications to the Bell 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 65 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 44.85% 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 Glastonbury Facility constitutes an exempt modification under R.C.S.A. Section 16-50j-72(b)(2)

Respectfully Submitted,

Carrie L. Larson

cc: Richard J. Johnson, Town Manager
John B. Spencer, Trustee, underlying property owner

Exhibit A

Site Map

Pocket Site HFCT1514A

577 Bell Street

Glastonbury, Connecticut

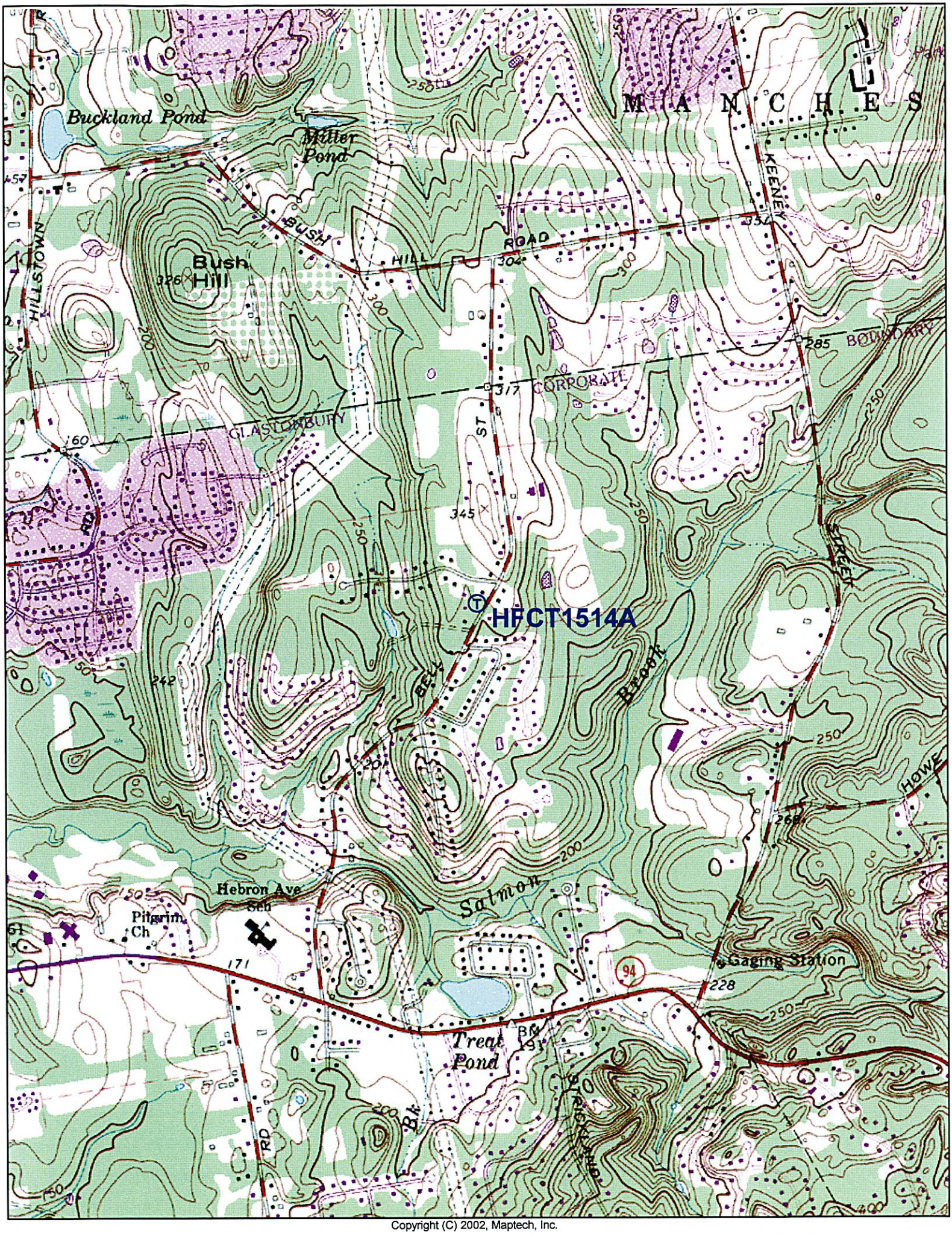


Exhibit B

Design Drawings

Pocket Site HFCT1514A

577 Bell Street

Glastonbury, Connecticut

PROJECT INFORMATION

TOWER OWNER:	COX COMMUNICATIONS 1400 LAKE HEAM DRIVE ATLANTA, GA 30319
OWNER SITE ID#:	N/A
APPLICANT:	YOUGHIOGHENY COMMUNICATIONS-NORTHEAST LLC 2819 NW LOOP 410 SAN ANTONIO, TX 78230
SITE ADDRESS:	577 BELL STREET GLASTONBURY, CT 06033
COUNTY:	HARTFORD
LATITUDE:	41.7336°
LONGITUDE:	-72.5498°
STRUCTURE HEIGHT:	90' 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

A TOWER ANALYSIS HAS NOT BEEN PERFORMED FOR THE PREPARATION OF THESE PLANS. AS OF THE ISSUANCE OF THESE DRAWINGS, THE EXISTING TOWER HAS NOT BEEN EVALUATED FOR REPLACEMENT/ADDITION OF ANTENNAS, COAX CABLES AND EQUIPMENT. NO WORK SHALL OCCUR ON THIS TOWER PRIOR TO THE ISSUANCE OF A PASSING STRUCTURAL TOWER ANALYSIS. A COPY OF THE TOWER ANALYSIS SHALL BE FORWARDED TO URS CORPORATION. ALL REINFORCEMENT (IF REQUIRED) SHALL BE PERFORMED PRIOR TO ANY WORK UNDER THIS CONTRACT BEING PERFORMED.

APPROVALS

_____ REAL ESTATE

_____ RF

_____ OPS/CONSTRUCTION

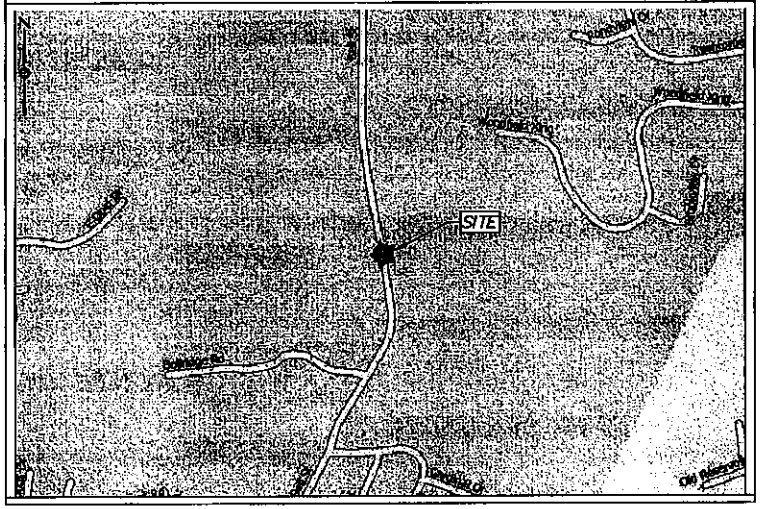
_____ LEGAL/COMPLIANCE

_____ NET DESIGN

pocket™
SMART WIRELESS

HFCT1514
577 BELL STREET
90' LATTICE TOWER

LOCATION MAP



DRIVING DIRECTIONS

FROM HARTFORD:
TAKE I-84 EAST TO EXIT #55 FOR CT-2 EAST TOWARD NORWICH/NEW LONDON. TAKE THE HEBRON AVENUE/CT-94 EXIT #8. TURN SLIGHT LEFT ONTO HEBRON AVENUE/CT-94. TURN LEFT ONTO BELL STREET.

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.

CALL before you DIG FOR CT 1-800-922-4455

STATE OF CONNECTICUT IGNACIO C. ARIAS No. 8704 LICENSED ARCHITECT

NO.	DATE	REVISIONS	BY
0	09/15/08	ISSUED FOR CONSTRUCTION	JCF

pocket
PROJECT NAME: HFCT1514, 577 BELL STREET
SHEET TITLE: TITLE SHEET

URS

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

CHECKED BY: JCF
DRAWN BY: PD
DATE: 09/05/08
URS JOB NUMBER: PC1028/36923948
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.

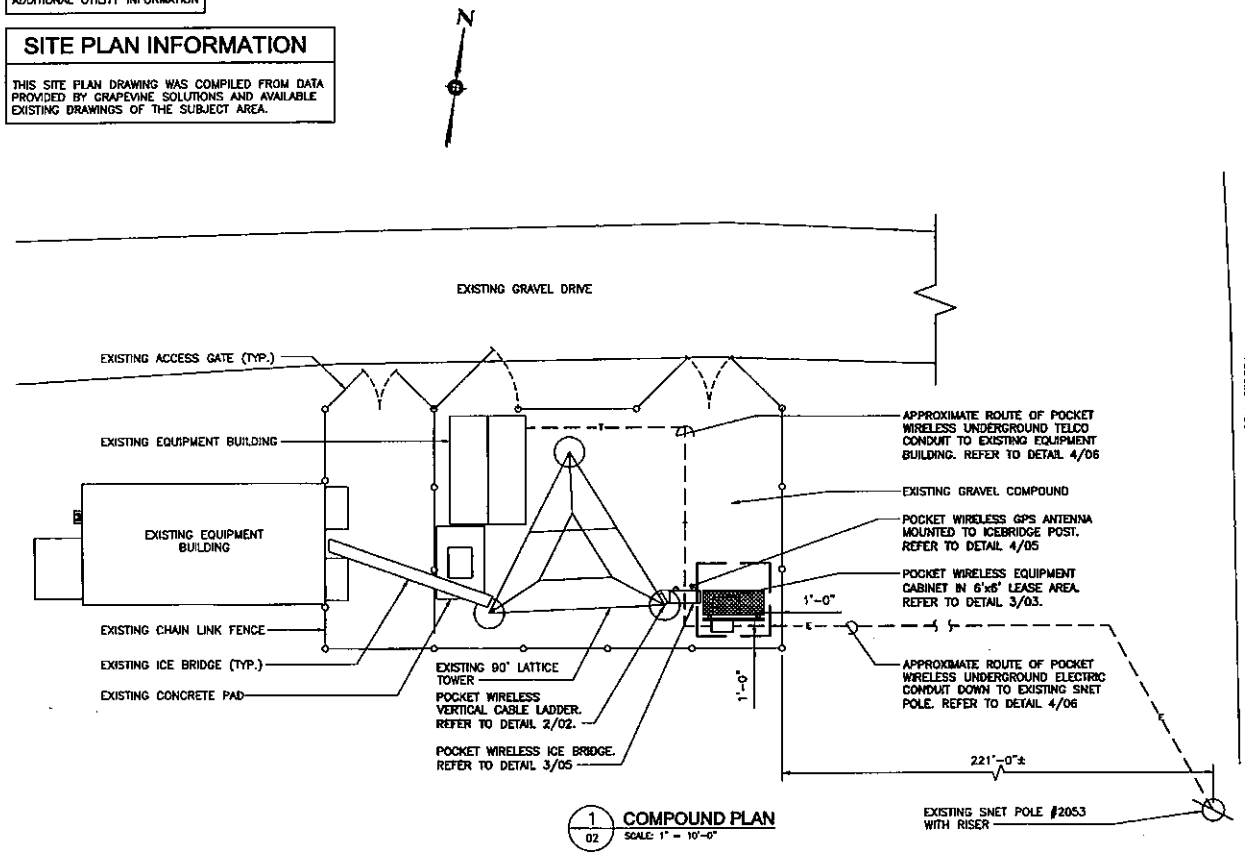
GENERAL NOTES

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.

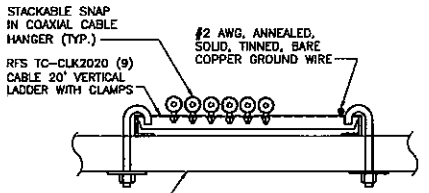
NOTE:
REFER TO DRAWING 06 FOR ADDITIONAL UTILITY INFORMATION

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.

STATE OF CONNECTICUT
IGNACIO C. ARIAS
No. 8704
LICENSED ARCHITECT

NO.	DATE	REVISIONS	BY
0	09/15/08	ISSUED FOR CONSTRUCTION	JCF

pocket SMART WIRELESS

PROJECT NAME: HFCT1514, 677 BELL STREET

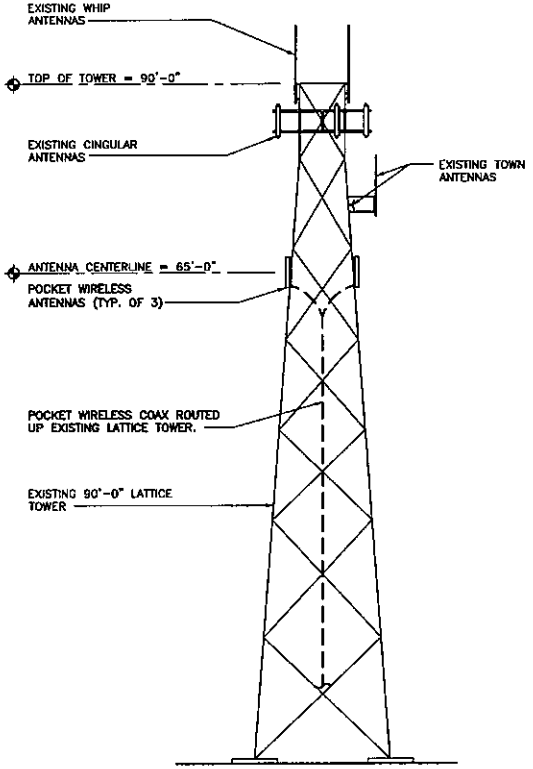
SHEET TITLE: SITE PLAN, DETAILS AND NOTES

URS

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

CHECKED BY: JCF
DRAWN BY: PD
DATE: 09/05/08
URS JOB NUMBER: PC1028/38923948
DRAWING NUMBER: 02

A TOWER ANALYSIS HAS NOT BEEN PERFORMED FOR THE PREPARATION OF THESE PLANS. AS OF THE ISSUANCE OF THESE DRAWINGS, THE EXISTING TOWER HAS NOT BEEN EVALUATED FOR REPLACEMENT/ADDITION OF ANTENNAS, COAX CABLES AND EQUIPMENT. NO WORK SHALL OCCUR ON THIS TOWER PRIOR TO THE ISSUANCE OF A PASSING STRUCTURAL TOWER ANALYSIS. A COPY OF THE TOWER ANALYSIS SHALL BE FORWARDED TO URS CORPORATION. ALL REINFORCEMENT (IF REQUIRED) SHALL BE PERFORMED PRIOR TO ANY WORK UNDER THIS CONTRACT BEING PERFORMED.



1/03 TOWER ELEVATION
SCALE: 1/16" = 1'-0"

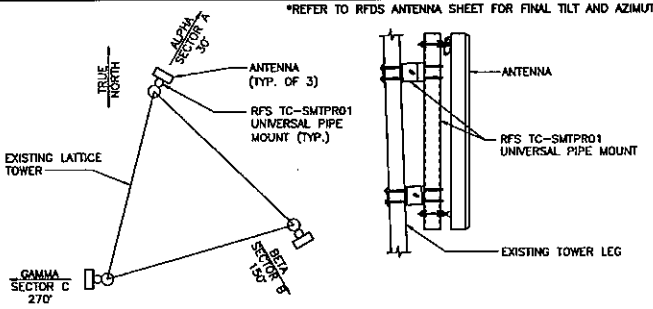
ANTENNA KEY

	# 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°	120'-0"	0°	0°	1 5/8"ø	2 @ 80'	RFS
BETA	1	B-1	(1) BLUE BAND	RFS	APXV18-206517S-C	150°	120'-0"	0°	0°	1 5/8"ø	2 @ 80'	RFS
GAMMA	1	C-1	(1) GREEN BAND	RFS	APXV18-206517S-C	270°	120'-0"	0°	0°	1 5/8"ø	2 @ 80'	RFS

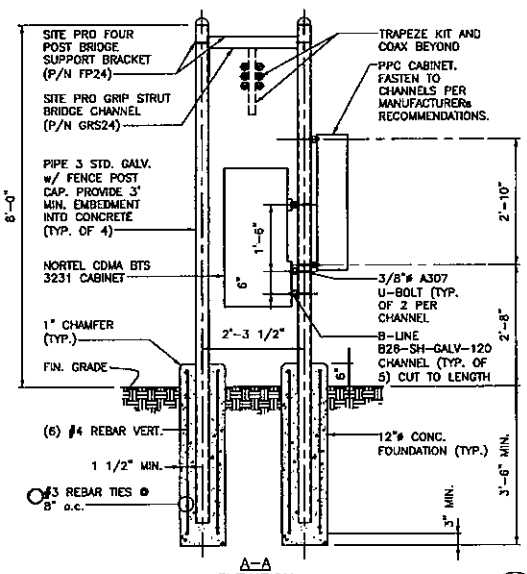
*REFER TO RFDS ANTENNA SHEET FOR FINAL TILT AND AZIMUTHS

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.

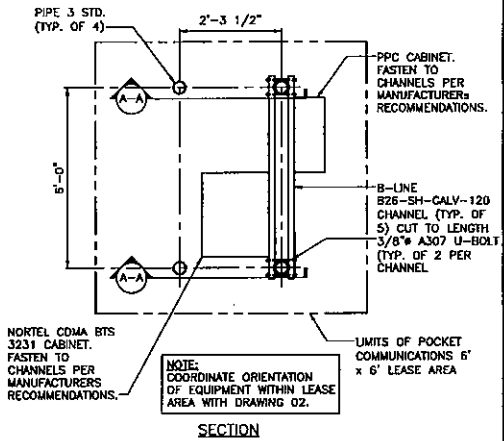
ANTENNA NOTES:
1. ALL COAX SHALL BE COLOR CODED AT THE ANTENNA AND AT THE EQUIPMENT CABINET.
2. (2) COLOR BANDS DENOTES TRANSMIT. TRANSMITS TO BE CONNECTED TO THE +45 PORTS OF THE ANTENNAS.
3. PRIOR TO ORDERING ANY ANTENNAS OR COAX, CONTRACTOR SHALL CONTACT POCKETS CONSTRUCTION MANAGER AND OBTAIN APPROVAL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

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

STATE OF CONNECTICUT
IGNACIO C. A...
No. 18704
LICENSED ARCHITECT

NO.	DATE	REVISIONS	BY
0	09/15/08	ISSUED FOR CONSTRUCTION	JCF

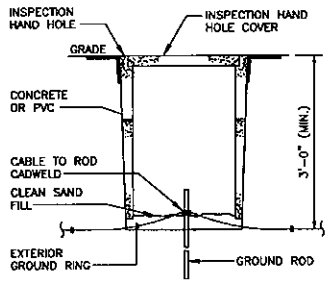
pocket. SMART WIRELESS

PROJECT: HFCT1514, 577 BELL STREET

SHEET: TOWER ELEVATION, ANTENNA PLAN AND DETAILS

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

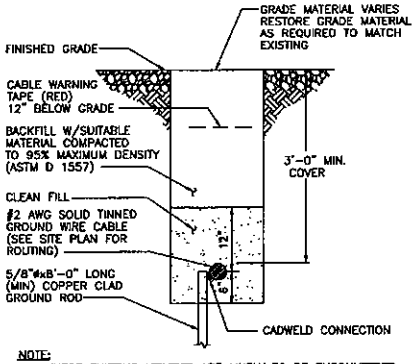
CHECKED BY: JCF
DRAWN BY: PD
DATE: 09/05/08
URS JOB NUMBER: PC1028/36923648
DRAWING NUMBER: 03



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

GROUND ROD WITH INSPECTION HANDHOLE

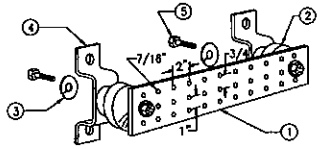
7/04 SCALE: N.T.S.



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

EGR DETAIL

6/04 SCALE: N.T.S.

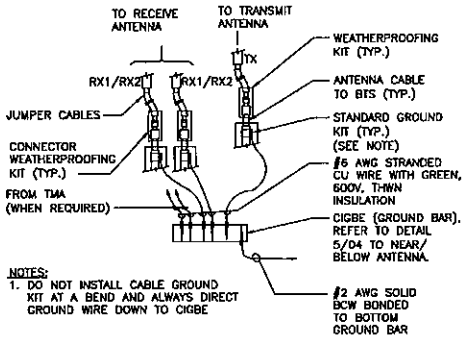


LEGEND

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-B 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

MASTER/EQUIPMENT GROUND BAR DETAIL

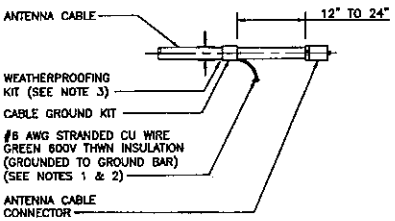
5/04 SCALE: N.T.S.



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

CONNECTION OF GROUND WIRE TO GROUND BAR

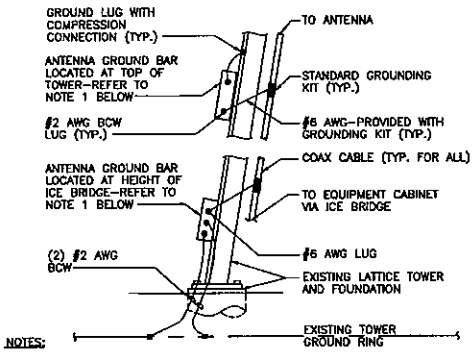
4/04 SCALE: N.T.S.



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.

CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

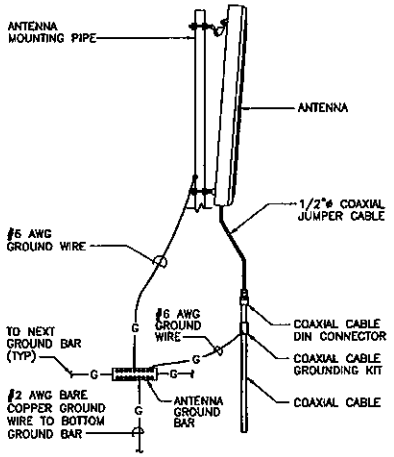
3/04 SCALE: N.T.S.



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.)

LATTICE TOWER - ANTENNA CABLE GROUNDING

2/04 SCALE: N.T.S.



TYPICAL ANTENNA GROUNDING DETAIL

1/04 SCALE: N.T.S.

STATE OF CONNECTICUT
IGNACIO C. ARIAS
No. 8704
LICENSED ARCHITECT

NO.	DATE	REVISIONS
0	09/15/08	ISSUED FOR CONSTRUCTION

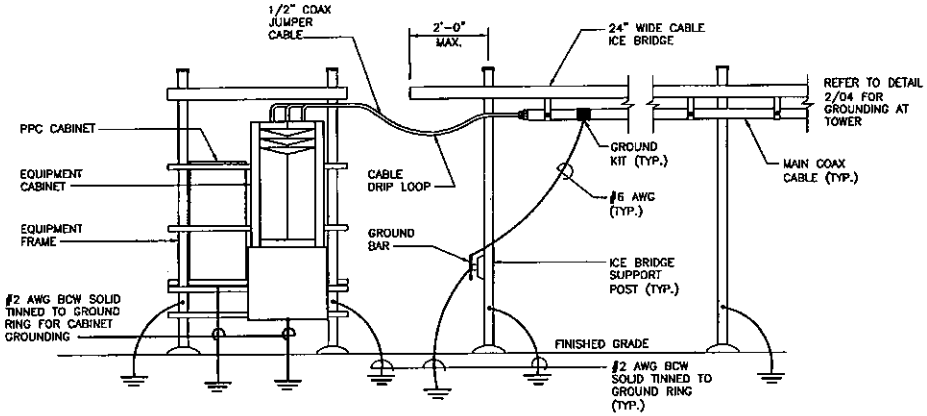
pocket SMART WIRELESS

PROJECT NUMBER: HFCT1614, 577 BELL STREET

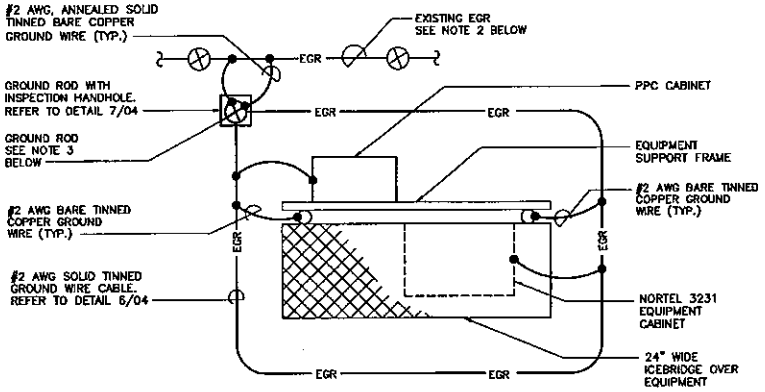
SHEET TITLE: GROUNDING DETAILS

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

CHECKED BY: JCF
DRAWN BY: PD
DATE: 09/05/08
URS JOB NUMBER: PC1028/36923948
DRAWING NUMBER: 04



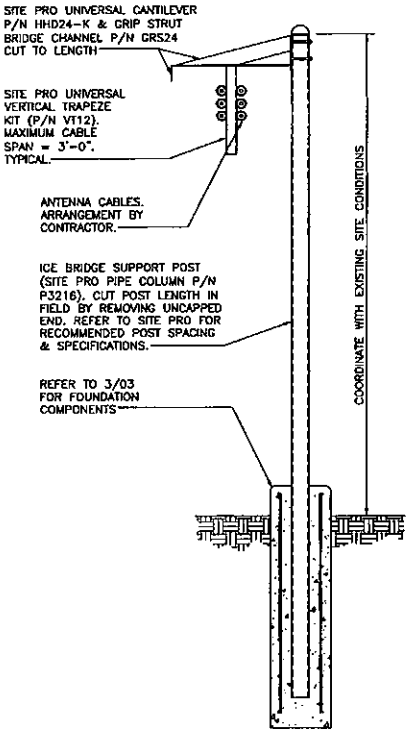
1/05 GROUNDING AT EQUIPMENT CABINET
SCALE: N.T.S.



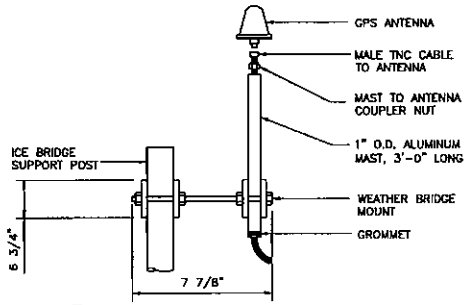
NOTES:

1. SEE SHEET D2 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.

NO.	DATE	REVISIONS	BY
0	09/10/08	ISSUED FOR CONSTRUCTION	JCF

pocket. COMMUNICATIONS

PROJECT NAME: HFCT1614, 577 BELL STREET

SHEET: GROUNDING PLAN AND DETAILS

URS

500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067

CHECKED BY: JCF
DRAWN BY: PD
DATE: 09/05/08
JOB NUMBER: PC1028/36923948
DRAWING NUMBER: 05

PANEL SSC

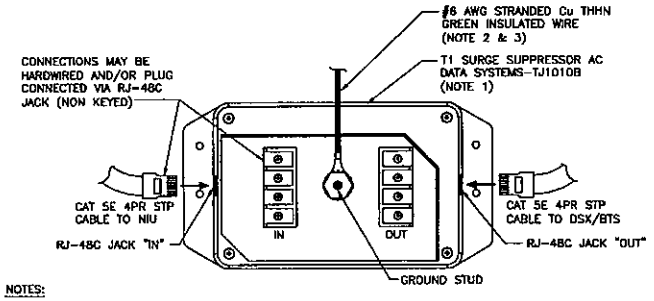
LOAD DESCRIPTION	LOAD (kVA)	BRKR SIZE	CCT NO.	PHASE A	PHASE B	CCT NO.	BRKR SIZE	LOAD (kVA)	LOAD DESCRIPTION
BTS CABINET	2.5	30/2	1			2	30/2	2.2	BTS CABINET
	2.5		3			4		2.2	
LIGHTING	1.9	10/1	5			6	20/1	0.2	GFI OUTLET
SPACE	–	–	7			8	–	–	SPACE
SPACE	–	–	9			10	–	–	SPACE
SPACE	–	–	11			12	–	–	SPACE
SPACE	–	–	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:

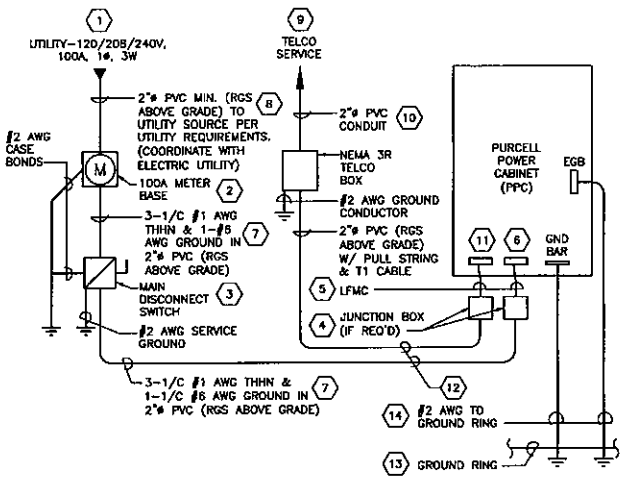
1. ALL ELECTRICAL AND GROUNDING WORK SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC, CONTRACTOR SHALL VERIFY ROUTING AND LENGTHS PRIOR TO CONSTRUCTION.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY 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.



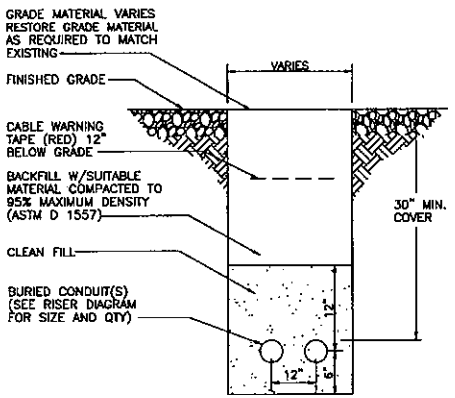
NOTES:

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.



POWER, TELCO, GROUND
2 / 06 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.

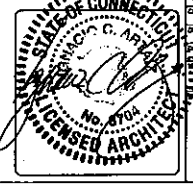
4 / 06 TYPICAL ELECTRICAL/ TELEPHONE TRENCH DETAIL
SCALE: N.T.S.

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 COMMUNICATIONS 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
0	09/16/08	ISSUED FOR CONSTRUCTION	JCF

pocket
HFCT1514, 677 BELL STREET
ELECTRICAL DETAILS

URS
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067

CHECKED BY: JCF
DRAWN BY: PD
DATE: 09/05/08
URS JOB NUMBER: 38923948
DRAWING NUMBER: 06

Exhibit C

Equipment Specifications

Pocket Site HFCT1514A

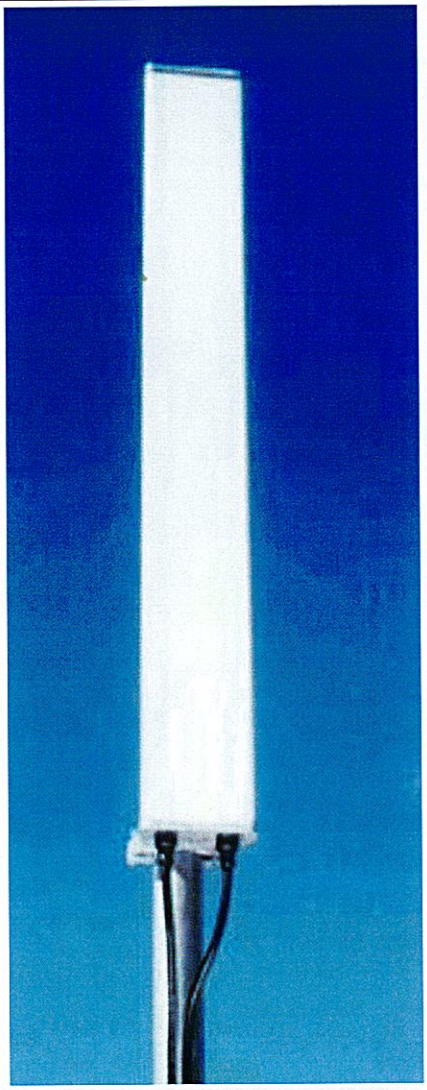
577 Bell Street

Glastonbury, Connecticut

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

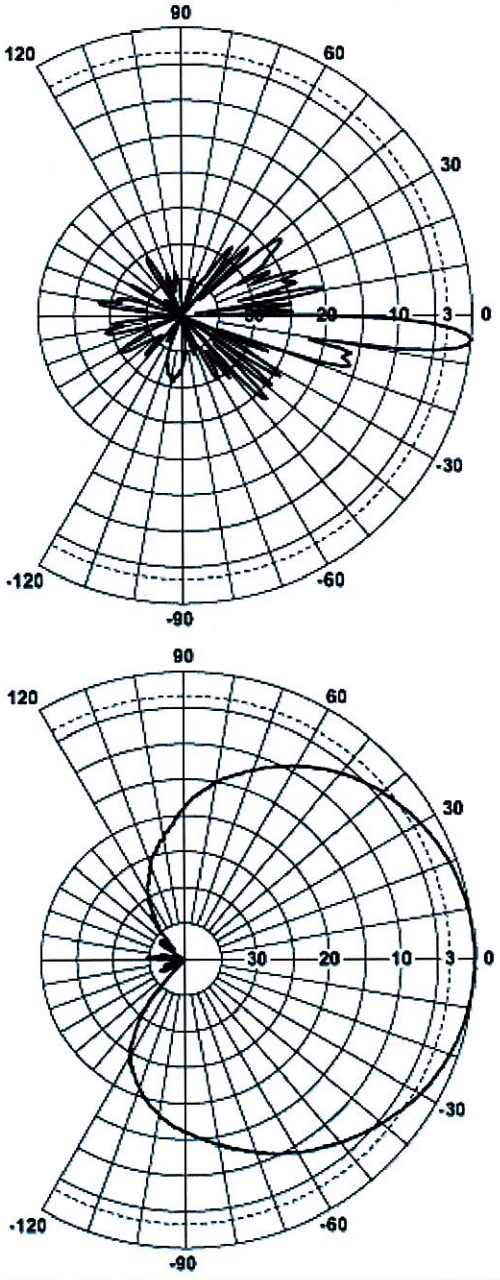
Frequency Band	3G/UMTS (Single, Broad, Dual and Triple-Band)
Horizontal Pattern	Directional
Antenna Type	Panel Dual Polarized
Electrical Down Tilt Option	Variable

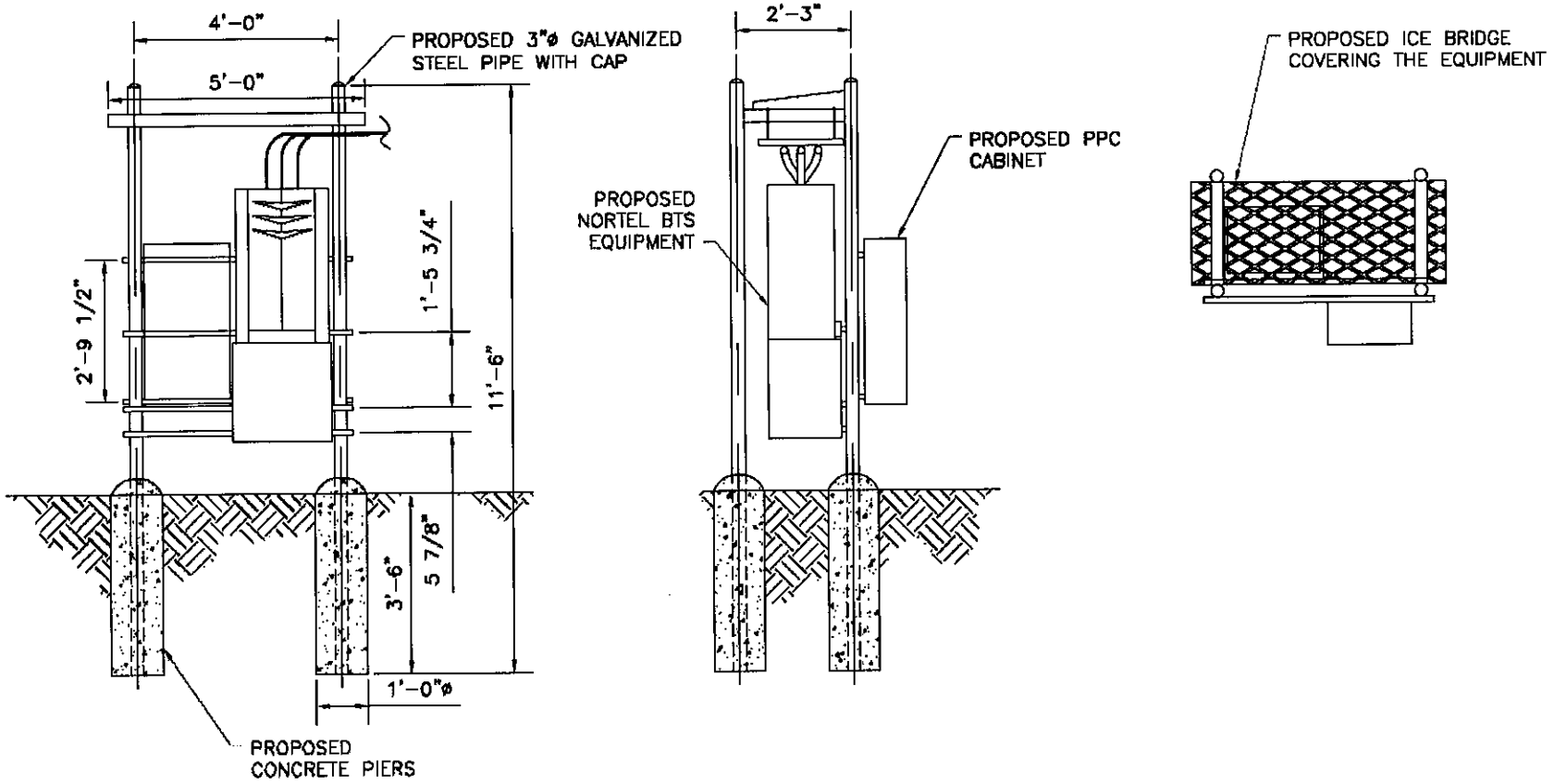
Technical Data Sheet	APXV18-206517S-C

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, m^2 (ft^2)	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.





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.

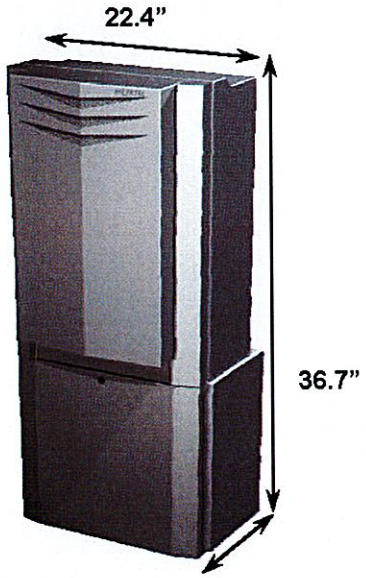


Exhibit D

Power Density Calculations

Pocket Site HFCT1514A

577 Bell Street

Glastonbury, Connecticut

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

Calculated Radio Frequency Emissions

CT-1514

577 Bell Street, Glastonbury, 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 577 Bell Street, Glastonbury, 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:

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

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.

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
Town	1	16.829	75	960	17	0.0011	0.6400	0.17%
AT&T GSM	2	296	88	880	592	0.0275	0.5867	4.69%
AT&T GSM	2	427	88	1,930	854	0.0397	1.0000	3.97%
AT&T UMTS	1	500	88	880	500	0.0232	0.5867	3.96%
Cox	1	100	94	451	100	0.0041	0.3007	1.35%
Cox	6	100	70	452	600	0.0440	0.3013	14.61%
Pocket	3	631	65	2130-2133.75	1,893	0.1611	1.0000	16.11%
							Total	44.85%

Table 1: Proposed Carrier Information

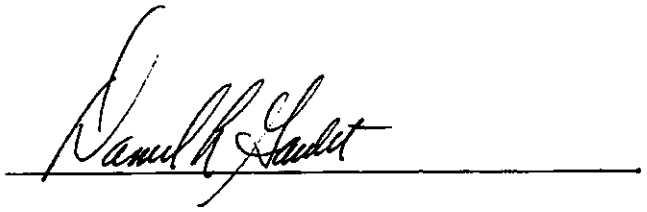
5. Conclusion

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 44.85% 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.



September 12, 2008
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

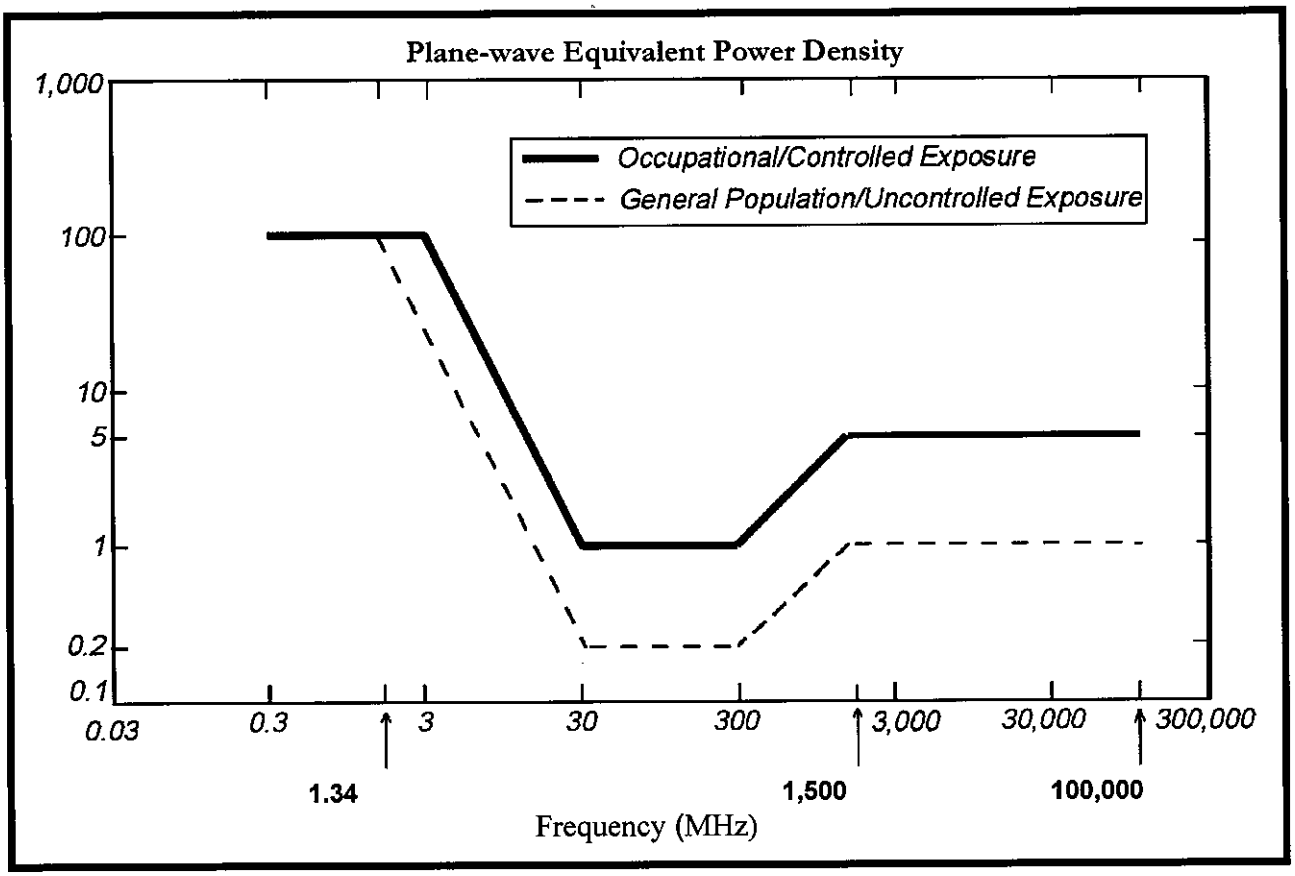
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(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 HFCT1514A

577 Bell Street

Glastonbury, Connecticut

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF AN EXISTING 92' SELF SUPPORT LATTICE TOWER FOR PROPOSED ANTENNA ARRANGEMENT

Site I.D. HFCT 1514
577 Bell Street
Glastonbury, CT

prepared for

POCKET WIRELESS
2810 NW Loop 410
San Antonio, Texas 06108

prepared by

URS CORPORATION
500 ENTERPRISE DRIVE, SUITE 3B
ROCKY HILL, CT 06067
TEL. 860-529-8882

36923537.00000
PWS-007

September 25, 2008

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 92' self support ROHN (SSV) lattice tower located at 577 Bell Street in Glastonbury, CT. The analysis was conducted in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F standard for a wind velocity of 80 mph (fastest mile) and 69 mph (fastest mile) concurrent with ½" ice. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Introduction Section of this report. The proposed Pocket Wireless installation is as follows:

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
Install: **(3) RFS APXV18-206517S-C** **(6) RFS 1-5/8" Coax Cables**	**Pocket Wireless (Proposed)**	**@ 65'**

The results of the analysis indicate that the tower superstructure steel stresses are within the allowable limits. There was not sufficient information for a foundation analysis. The tower is considered structurally adequate with the wind load classification specified above and the existing and proposed antenna loading.

This analysis is based on:

1) The tower structure's theoretical capacity, not including any assessment of the condition of the tower.
2) Tower geometry and structural member sizes taken from structural analysis report documents prepared by Paul J. Ford and Company; project number 34804-018, dated 05/14/04 on behalf of Cingular Wireless.
3) Field observations noted by URS Corporation conducted during April 2007.
4) Antenna and mount configuration as specified on the following page of this report.

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The user of this report shall field verify the assumption of the antenna and mount configuration as well as the physical condition of the tower and connections. Notify the engineer in writing immediately if any of the information in this report is found to be other than specified.

If you should have any questions, please call.

Sincerely,

URS Corporation

Richard A. Sambor, P.E.
Senior Structural Engineer

RAS/kab

cc: AA, DR, IA, CF/Book – URS

2. INTRODUCTION

The subject tower is located at 577 Bell Street in Glastonbury, CT. The structure is a 92' self support ROHN (SSV) lattice tower.

Tower geometry and structural member sizes taken from structural analysis report documents prepared by Paul J. Ford and Company; project number 34804-018, dated 05/14/04 on behalf of Cingular Wireless.

The inventory is summarized in the table below:

Antenna Type	Carrier	Mount	Antenna Centerline Elevation	Cable
(1) Decibel DB 420 Dipole Quasi - Omni antenna (1) Decibel ASP 705 Omni antenna, (1)Decibel ASPA685 Omni antenna	Unknown (existing)	(3) Leg mounts	*92'	(3) 7/8" coax cables
(9) CSS DUO1417-8686 antennas and (9) TMA/MHA's	Cingular (existing)	(3) 12' T-frames	88'	(9) 1 5/8" coax cables (bundled in groups of 3 per leg)
(1) Decibel DB806E-XT Omni antenna and (1) Kathrein PR-950 Half Parabolic antenna	Unknown (existing)	(1) 6' Stand-off	73'	(2) 1/2" coax cables
(3) RFS APXV18-206517S-C antenna	**Pocket Wireless (proposed)**	**(3) Leg Mounts**	**65'**	**(6) 1-5/8" coax**

*Note :Omni-directional antenna elevations taken as base of antenna.

This structural analysis of the communications tower was performed by URS Corporation (URS) for Pocket Wireless. The purpose of this analysis was to investigate the structural integrity of the existing tower with its existing and proposed antenna loads. This analysis was conducted to evaluate stress on the the tower resulting from existing and proposed antenna arrangements.

3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS

The structural analysis was done in accordance with the 2005 Connecticut State Building Code, TIA/EIA-222-F—Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, and the American Institute of Steel Construction (AISC) Manual of Steel Construction—Allowable Stress Design (ASD).

The analysis was conducted using RISA Tower 5.0.2. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA.

Load Condition 1 = 80 mph (fastest mile) Wind Load (without ice) + Tower Dead Load
Load Condition 2 = 69 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load

Please note that wind pressure is a function of velocity squared. Under Load Condition 2, a 25 percent reduction in wind pressure is allowed by code to account for the unlikelihood of the full wind pressure and ice load occurring at the same time. The same results may be achieved by utilizing a lower wind pressure without taking the 25 percent reduction, as shown above.

The TIA/EIA standard permits a one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For the purposes of this analysis, in computing the load capacity the allowable stresses of the tower members were increased by one-third.

4. FINDINGS AND EVALUATION

Stresses on the tower structure were evaluated to compare with allowable stresses in accordance with AISC. The calculated stresses under the proposed loading were within the allowable stresses. Detailed analysis and calculations for the proposed load conditions are provided in section 6 of this report. No analysis was performed on the foundation since no foundation information was available.

Proposed Tower Base Reactions vs. Paul J. Ford & Co. Design Reactions

Base Reactions	Paul J. Ford & Co. Design Reactions	Proposed Reactions
Axial Load (kips)	-	13
Shear per Leg (kips)	8	8
Total Shear (kips)	-	13
Uplift per Leg (kips)	55	53
Comp.per Leg (kips)	67	62
O.T. Moment (ft-kips)	-	734

Proposed Tower Component Stress vs. Capacity Summary

Component (Section No.)	Controlling Component/Elevation	Stress (% capacity)	Pass/Fail	Comments
Tower Leg (T4)	Compression/20'-40'	86.7%	**Pass**	
Diagonal (T4)	Compression/ 20'-40'	91.6%	**Pass**	
Top Girt (T1)	Compression/80'-92'	3.4%	**Pass**	
Anchor Bolts	Min area as req'd per ASCE 10-97	52%	**Pass**	

5. CONCLUSIONS AND RECOMMENDATIONS

The results of the analysis indicate that the tower superstructure steel stresses within the allowable limits for the proposed loading conditions. The tower is considered structurally adequate with the wind load classification specified above and the existing and proposed antenna loading.

Limitations/Assumptions:

This report is based on the following:

1. Tower inventory as listed in this report.
2. Tower is properly installed and maintained.
3. All members are as specified in the original design documents and are in good condition.
4. All required members are in place.
5. All bolts are in place and are properly tightened.
6. Tower is in plumb condition.
7. All member protective coatings are in good condition.
8. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
9. Foundations were properly constructed to support original design loads as specified in the original design documents.
10. All coaxial cable is installed as specified in Section 6 of this report.

URS is not responsible for any modifications completed prior to or hereafter in which URS is not or was not directly involved. Modifications include but are not limited to:

A. Adding antennas
B. Removing/replacing antennas
C. Adding coaxial cables

URS hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon information contained and set forth herein. If you are aware of any information which conflicts with that which is contained herein, or you are aware of any defects arising from original design, material, fabrication, or erection deficiencies, you should disregard this report and immediately contact URS. URS disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

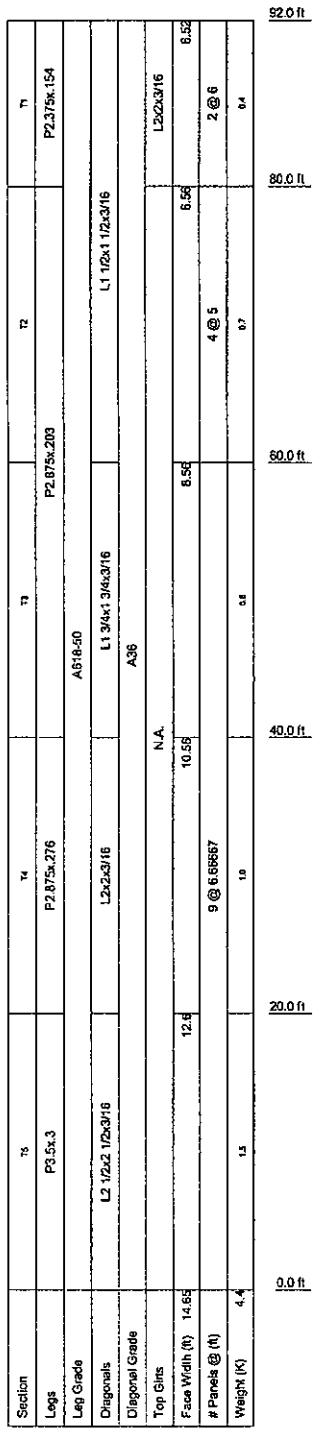
Ongoing and Periodic Inspection and Maintenance:

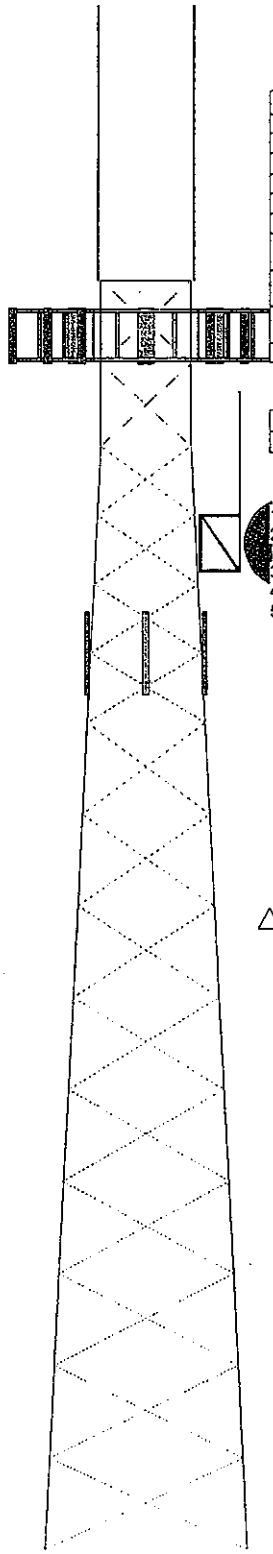
After the Contractor has successfully completed the installation and the work has been accepted, the owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system be performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-F section 14.1, Note 1: It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.

6. DRAWINGS AND DATA

RISA TOWER INPUT/OUTPUT SUMMARY





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DB420 (Existing)	102	(3) DUO1417-8686 (Cingular)	88
ASP-705 (Existing)	102	(3) DUO1417-8686 (Cingular)	88
ASPA685 (Existing)	102	DB806-XT (Town)	79
(3) TMA 10"x8"x3" (Cingular)	88	PR-950 (Town)	73
(3) TMA 10"x8"x3" (Cingular)	88	Pirod 6' Side Mount Standoff (1) (Town)	73
(3) TMA 10"x8"x3" (Cingular)	88		
12' T-Frame Sector Mount (1) (Cingular)	88	APXV18-206517S-C w/ mounting hardware (Pocket Wireless)	65
12' T-Frame Sector Mount (1) (Cingular)	88	APXV18-206517S-C w/ mounting hardware (Pocket Wireless)	65
12' T-Frame Sector Mount (1) (Cingular)	88	APXV18-206517S-C w/ mounting hardware (Pocket Wireless)	65
(3) DUO1417-8686 (Cingular)	88		

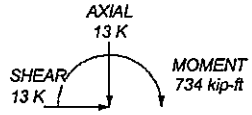
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A618-60	50 ksi	70 ksi	A36	36 ksi	58 ksi

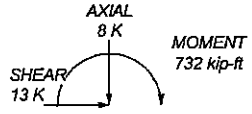
TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 91.6%

MAX. CORNER REACTIONS AT BASE:
DOWN: 62 K
UPLIFT: -53 K
SHEAR: 8 K



TORQUE 2 kip-ft
69 mph WIND - 0.5000 in ICE



TORQUE 2 kip-ft
REACTIONS - 80 mph WIND

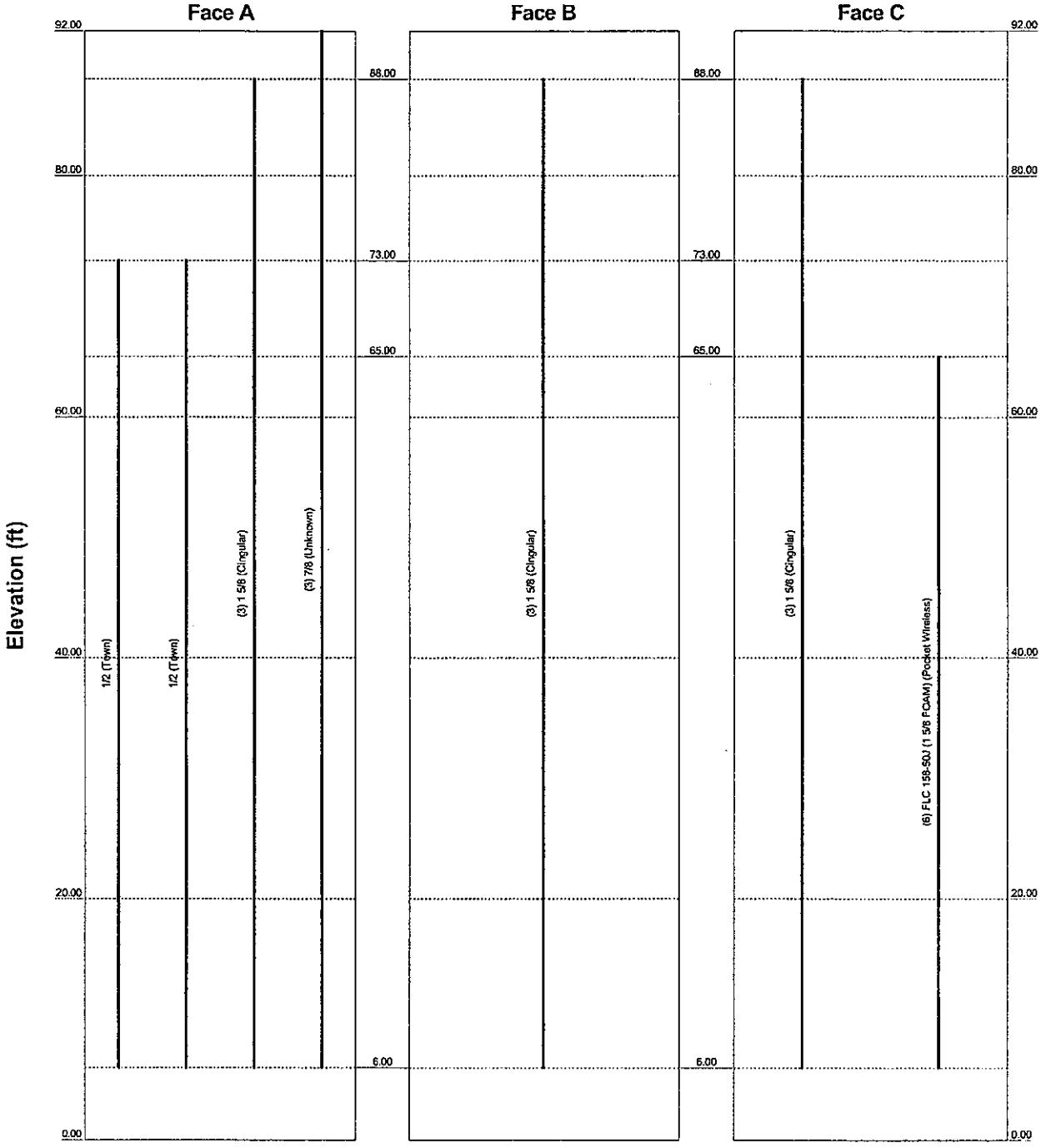
URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Phone: (860) 529-8882
FAX: (860) 529-3991

Job: *92' Rohn SSV*			
Project: *Glastonbury North*			
Client: Nextel Communications	Drawn by: Kevin Barker		App'd:
Code: TIA/EIA-222-F	Date: 09/25/08		Scale: NTS
Path: P:\08\ERI Files\PC1-028 92' Lattice Tower.eri			Dwg No. E-1

RISA TOWER FEEDLINE DISTRIBUTION

Feedline Distribution Chart
0' - 92'

_____ Round _____ Flat _____ App In Face _____ App Out Face _____ Truss Leg



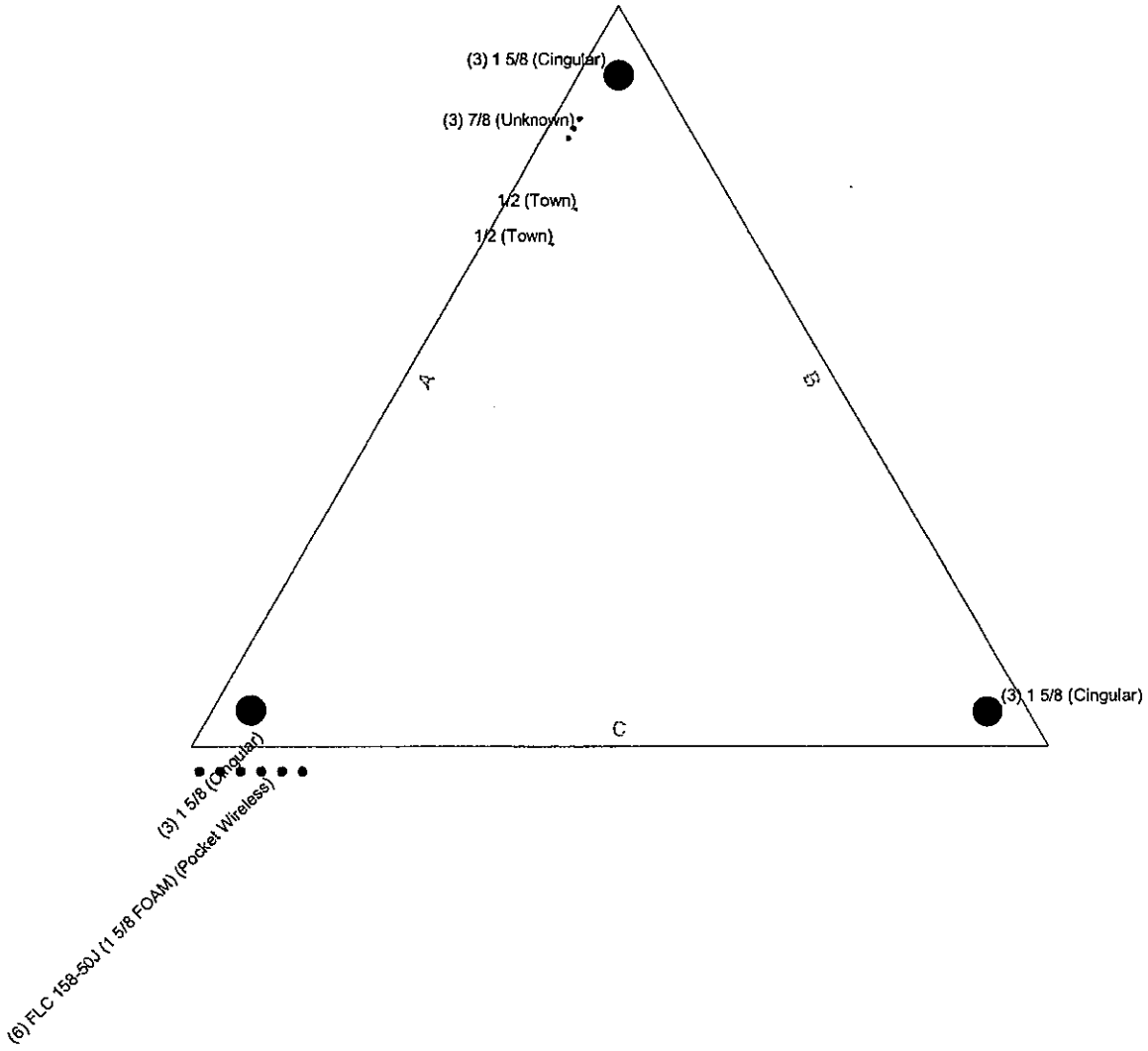
URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Phone: (860) 529-8882
FAX: (860) 529-3991

Job: *92' Rohn SSV*			
Project: *Glastonbury North*			
Client: Nextel Communications	Drawn by: Kevin Barker	App'd:	
Code: TIA/EIA-222-F	Date: 09/25/08	Scale: NTS	
Path: P:\08\ERI Files\PC1-026 92' Lattice Tower.ei		Dwg No. E-7	

RISA TOWER FEEDLINE PLAN

Feedline Plan

_____ Round _____ Flat _____ App In Face . . . . . App Out Face



URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Job: *92' Rohn SSV*		
	Project: *Glastonbury North*		
	Client: Nextel Communications	Drawn by: Kevin Barker	App'd:
	Code: TIA/EIA-222-F	Date: 09/25/08	Scale: NTS
	Path: P:\08\ERI Files\PC1-028 92' Lattice Tower.ari		Dwg No. E-7

RISA TOWER DETAILED OUTPUT

RISATower	Job	Page
	92' Rohn SSV	1 of 25
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project Glastonbury North	Date 09:32:36 09/25/08
	Client Nextel Communications	Designed by Kevin Barker

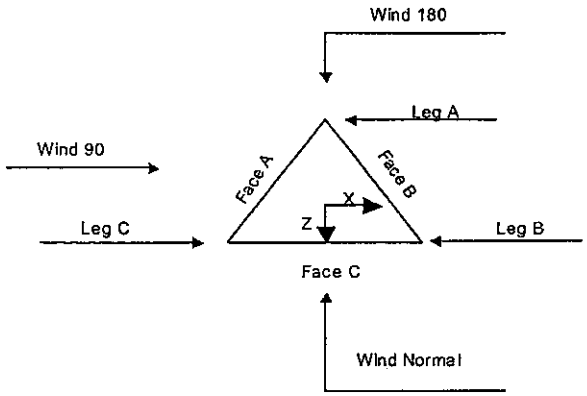
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 92.00 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 6.52 ft at the top and 14.65 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 69 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 ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	92.00-80.00			6.52	1	12.00
T2	80.00-60.00			6.56	1	20.00
T3	60.00-40.00			8.56	1	20.00
T4	40.00-20.00			10.56	1	20.00
T5	20.00-0.00			12.60	1	20.00

Tower Section Geometry *(cont'd)*

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
T1	92.00-80.00	6.00	X Brace	No	No	0.0000	0.0000
T2	80.00-60.00	5.00	X Brace	No	No	0.0000	0.0000
T3	60.00-40.00	6.67	X Brace	No	No	0.0000	0.0000
T4	40.00-20.00	6.67	X Brace	No	No	0.0000	0.0000
T5	20.00-0.00	6.67	X Brace	No	No	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 92.00-80.00	Pipe	P2.375x.154	A618-50 (50 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T2 80.00-60.00	Pipe	P2.875x.203	A618-50 (50 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 60.00-40.00	Pipe	P2.875x.203	A618-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T4 40.00-20.00	Pipe	P2.875x.276	A618-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T5 20.00-0.00	Pipe	P3.5x.3	A618-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 92.00-80.00	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

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
T1 92.00-80.00	0.00	0.2500	A36 (36 ksi)	1.02	1	1	36.0000	36.0000
T2 80.00-60.00	0.00	0.2500	A36 (36 ksi)	1.02	1	1	36.0000	36.0000
T3 60.00-40.00	0.00	0.2500	A36 (36 ksi)	1.02	1	1	36.0000	36.0000
T4 40.00-20.00	0.00	0.2500	A36 (36 ksi)	1.02	1	1	36.0000	36.0000
T5 20.00-0.00	0.00	0.2500	A36 (36 ksi)	1.02	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 92.00-80.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors[1] X Brace Diags X	K Factors[1] K Brace Diags X	K Factors[1] Single Diags X	K Factors[1] Girts X	K Factors[1] Horiz. X	K Factors[1] Sec. Horiz. X	K Factors[1] Inner Brace X
				Y	Y	Y	Y	Y	Y	Y
T2 80.00-60.00	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 60.00-40.00	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 40.00-20.00	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 20.00-0.00	Yes	Yes	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 Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 92.00-80.00	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
T2 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
T3 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
T4 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
T5 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 Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T1 92.00-80.00	Flange	0.6300 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T2 80.00-60.00	Flange	0.6300 A325N	4	0.5000 A325N	1	0.5000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T3 60.00-40.00	Flange	0.6300 A325N	4	0.5000 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T4 40.00-20.00	Flange	0.6300 A325N	4	0.5000 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T5 20.00-0.00	Flange	0.7500 A325N	4	0.5000 A325N	1	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1/2 (Town)	A	No	Ar (CfAe)	73.00 - 6.00	-12.5000	0.27	1	1	0.5800	0.5800		0.25
1/2 (Town)	A	No	Ar (CfAe)	73.00 - 6.00	-12.0000	0.22	1	1	0.5800	0.5800		0.25
FLC 158-50J (1 5/8 FOAM) (Pocket Wireless)	C	No	Ar (CfAe)	65.00 - 6.00	4.0000	0.43	6	6	2.0200	2.0200		0.92
7/8 (Unknown)	A	No	Ar (CfAe)	92.00 - 6.00	-4.0000	0.35	3	3	1.1100	1.1100		0.54

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft²/ft	Weight plf
1 5/8 (Cingular)	A	No	CaAa (In Face)	88.00 - 6.00	-4.0000	0.43	3	No Ice	0.20	1.04
								1/2" Ice	0.30	2.55
1 5/8 (Cingular)	B	No	CaAa (In Face)	88.00 - 6.00	-4.0000	0.43	3	No Ice	0.20	1.04
								1/2" Ice	0.30	2.55
1 5/8 (Cingular)	C	No	CaAa (In Face)	88.00 - 6.00	-4.0000	0.43	3	No Ice	0.20	1.04
								1/2" Ice	0.30	2.55

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	92.00-80.00	A	3.330	0.000	4.752	0.000	44.40
		B	0.000	0.000	4.752	0.000	24.96
		C	0.000	0.000	4.752	0.000	24.96
T2	80.00-60.00	A	6.807	0.000	11.880	0.000	101.30
		B	0.000	0.000	11.880	0.000	62.40
		C	5.050	0.000	11.880	0.000	90.00
T3	60.00-40.00	A	7.483	0.000	11.880	0.000	104.80
		B	0.000	0.000	11.880	0.000	62.40
		C	20.200	0.000	11.880	0.000	172.80
T4	40.00-20.00	A	7.483	0.000	11.880	0.000	104.80
		B	0.000	0.000	11.880	0.000	62.40
		C	20.200	0.000	11.880	0.000	172.80
T5	20.00-0.00	A	5.238	0.000	8.316	0.000	73.36
		B	0.000	0.000	8.316	0.000	43.68
		C	14.140	0.000	8.316	0.000	120.96

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T1	92.00-80.00	A	0.500	6.330	0.000	7.152	0.000	116.05
		B		0.000	0.000	7.152	0.000	61.20

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 lb
		C		0.000	0.000	7.152	0.000	61.20
T2	80.00-60.00	A	0.500	13.973	0.000	17.880	0.000	268.06
		B		0.000	0.000	17.880	0.000	153.00
		C		7.550	0.000	17.880	0.000	226.78
T3	60.00-40.00	A	0.500	15.817	0.000	17.880	0.000	280.80
		B		0.000	0.000	17.880	0.000	153.00
		C		30.200	0.000	17.880	0.000	448.13
T4	40.00-20.00	A	0.500	15.817	0.000	17.880	0.000	280.80
		B		0.000	0.000	17.880	0.000	153.00
		C		30.200	0.000	17.880	0.000	448.13
T5	20.00-0.00	A	0.500	11.072	0.000	12.516	0.000	196.56
		B		0.000	0.000	12.516	0.000	107.10
		C		21.140	0.000	12.516	0.000	313.69

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	92.00-80.00	-0.0710	-1.2017	-0.0884	-1.4956
T2	80.00-60.00	-1.1136	-0.3647	-1.1215	-0.7623
T3	60.00-40.00	-4.4867	1.8780	-4.4936	1.3017
T4	40.00-20.00	-5.2540	2.0720	-5.3163	1.4006
T5	20.00-0.00	-4.8129	1.8269	-5.0463	1.2492

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(3) DUO1417-8686 (Cingular)	A	From Leg	4.50 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	6.53 6.94	4.20 4.57	20.30 62.49
(3) DUO1417-8686 (Cingular)	B	From Leg	4.50 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	6.53 6.94	4.20 4.57	20.30 62.49
(3) DUO1417-8686 (Cingular)	C	From Leg	4.50 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	6.53 6.94	4.20 4.57	20.30 62.49
(3) TMA 10"x8"x3" (Cingular)	A	From Leg	4.00 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	0.78 0.90	0.29 0.38	15.00 20.06
(3) TMA 10"x8"x3" (Cingular)	B	From Leg	4.00 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	0.78 0.90	0.29 0.38	15.00 20.06
(3) TMA 10"x8"x3" (Cingular)	C	From Leg	4.00 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	0.78 0.90	0.29 0.38	15.00 20.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
12' T-Frame Sector Mount (1)	A	From Leg	4.00	0.0000	88.00	No Ice	13.60	13.60	465.00
(Cingular)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
12' T-Frame Sector Mount (1)	B	From Leg	4.00	0.0000	88.00	No Ice	13.60	13.60	465.00
(Cingular)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
12' T-Frame Sector Mount (1)	C	From Leg	4.00	0.0000	88.00	No Ice	13.60	13.60	465.00
(Cingular)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
DB806-XT	B	From Leg	4.00	0.0000	79.00	No Ice	1.14	1.14	21.00
(Town)			0.00			1/2" Ice	1.68	1.68	29.93
			0.00						
PR-950	B	From Leg	4.00	0.0000	73.00	No Ice	6.35	6.35	38.00
(Town)			0.00			1/2" Ice	11.43	11.43	49.40
			0.00						
Pirod 6' Side Mount Standoff	B	From Leg	2.00	0.0000	73.00	No Ice	4.97	4.97	70.00
(1)			0.00			1/2" Ice	6.12	6.12	130.00
(Town)			0.00						
DB420	A	From Leg	0.25	0.0000	102.00	No Ice	3.33	3.33	34.00
(Existing)			0.00			1/2" Ice	5.99	5.99	44.20
			0.00						
ASP-705	B	From Leg	0.25	0.0000	102.00	No Ice	5.88	5.88	25.00
(Existing)			0.00			1/2" Ice	8.01	8.01	67.70
			0.00						
ASPA685	C	From Leg	0.25	0.0000	102.00	No Ice	5.25	5.25	21.50
(Existing)			0.00			1/2" Ice	7.38	7.38	60.30
			0.00						
APXV18-206517S-C w/	A	From Leg	0.25	30.0000	65.00	No Ice	5.17	3.62	43.45
mounting hardware			0.00			1/2" Ice	5.62	4.24	76.89
(Pocket Wireless)			0.00						
APXV18-206517S-C w/	B	From Leg	0.25	30.0000	65.00	No Ice	5.17	3.62	43.45
mounting hardware			0.00			1/2" Ice	5.62	4.24	76.89
(Pocket Wireless)			0.00						
APXV18-206517S-C w/	C	From Leg	0.25	30.0000	65.00	No Ice	5.17	3.62	43.45
mounting hardware			0.00			1/2" Ice	5.62	4.24	76.89
(Pocket Wireless)			0.00						

Tower Pressures - No Ice

$G_H = 1.168$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1 92.00-80.00	86.00	1.315	22	80.855	A	5.464	8.080	4.750	35.07	4.752	0.000
					B	5.464	4.750		46.50	4.752	0.000
					C	5.464	4.750		46.50	4.752	0.000
T2 80.00-60.00	70.00	1.24	20	155.998	A	8.965	16.406	9.599	37.84	11.880	0.000
					B	8.965	9.599		51.71	11.880	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	8.965	14.649		40.65	11.880	0.000
T3 60.00-40.00	50.00	1.126	18	195.998	A	10.146	17.083	9.599	35.25	11.880	0.000
					B	10.146	9.599		48.62	11.880	0.000
					C	10.146	29.799		24.03	11.880	0.000
T4 40.00-20.00	30.00	1	16	236.398	A	13.351	17.083	9.600	31.54	11.880	0.000
					B	13.351	9.600		41.83	11.880	0.000
					C	13.351	29.800		22.25	11.880	0.000
T5 20.00-0.00	10.00	1	16	278.341	A	18.942	16.925	11.687	32.58	8.316	0.000
					B	18.942	11.687		38.16	8.316	0.000
					C	18.942	25.827		26.11	8.316	0.000

Tower Pressure - With Ice

$G_H = 1.168$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 92.00-80.00	86.00	1.315	16	0.5000	81.855	A	5.464	16.476	6.750	30.77	7.152	0.000
						B	5.464	10.146		43.24	7.152	0.000
						C	5.464	10.146		43.24	7.152	0.000
T2 80.00-60.00	70.00	1.24	15	0.5000	157.666	A	8.965	32.771	12.938	31.00	17.880	0.000
						B	8.965	18.797		46.60	17.880	0.000
						C	8.965	26.347		36.64	17.880	0.000
T3 60.00-40.00	50.00	1.126	14	0.5000	197.666	A	10.146	34.439	12.938	29.02	17.880	0.000
						B	10.146	18.622		44.97	17.880	0.000
						C	10.146	48.822		21.94	17.880	0.000
T4 40.00-20.00	30.00	1	12	0.5000	238.067	A	13.351	35.301	12.939	26.60	17.880	0.000
						B	13.351	19.484		39.41	17.880	0.000
						C	13.351	49.684		20.53	17.880	0.000
T5 20.00-0.00	10.00	1	12	0.5000	280.010	A	18.942	33.526	15.026	28.64	12.516	0.000
						B	18.942	22.455		36.30	12.516	0.000
						C	18.942	43.595		24.03	12.516	0.000

Tower Pressure - Service

$G_H = 1.168$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 92.00-80.00	86.00	1.315	8	80.855	A	5.464	8.080	4.750	35.07	4.752	0.000
					B	5.464	4.750		46.50	4.752	0.000
					C	5.464	4.750		46.50	4.752	0.000
T2 80.00-60.00	70.00	1.24	8	155.998	A	8.965	16.406	9.599	37.84	11.880	0.000
					B	8.965	9.599		51.71	11.880	0.000
					C	8.965	14.649		40.65	11.880	0.000
T3 60.00-40.00	50.00	1.126	7	195.998	A	10.146	17.083	9.599	35.25	11.880	0.000
					B	10.146	9.599		48.62	11.880	0.000
					C	10.146	29.799		24.03	11.880	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{LeG} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T4 40.00-20.00	30.00	1	6	236.398	A	13.351	17.083	9.600	31.54	11.880	0.000
					B	13.351	9.600		41.83	11.880	0.000
					C	13.351	29.800		22.25	11.880	0.000
T5 20.00-0.00	10.00	1	6	278.341	A	18.942	16.925	11.687	32.58	8.316	0.000
					B	18.942	11.687		38.16	8.316	0.000
					C	18.942	25.827		26.11	8.316	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	1	1	10.185	1052.91	87.74	A
			B	0.126	2.861	0.578	1	1	8.210			
			C	0.126	2.861	0.578	1	1	8.210			
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	1	1	18.537	2044.53	102.23	A
			B	0.119	2.889	0.577	1	1	14.506			
			C	0.151	2.766	0.582	1	1	17.486			
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	1	1	20.051	2314.00	115.70	C
			B	0.101	2.961	0.575	1	1	15.667			
			C	0.204	2.583	0.591	1	1	27.763			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	1	1	23.233	2249.82	112.49	C
			B	0.097	2.976	0.575	1	1	18.869			
			C	0.183	2.655	0.587	1	1	30.844			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	1	1	28.733	2255.69	112.78	C
			B	0.11	2.924	0.576	1	1	25.676			
			C	0.161	2.732	0.583	1	1	34.005			
Sum Weight:	1266.02	4402.83						OTM	439418.87 lb-ft	9916.95		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	0.825	1	9.229	987.74	82.31	A
			B	0.126	2.861	0.578	0.825	1	7.254			
			C	0.126	2.861	0.578	0.825	1	7.254			
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	0.825	1	16.969	1943.07	97.15	A
			B	0.119	2.889	0.577	0.825	1	12.937			
			C	0.151	2.766	0.582	0.825	1	15.917			
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	0.825	1	18.276	2215.13	110.76	C
			B	0.101	2.961	0.575	0.825	1	13.892			
			C	0.204	2.583	0.591	0.825	1	25.987			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	0.825	1	20.897	2131.06	106.55	C
			B	0.097	2.976	0.575	0.825	1	16.533			
			C	0.183	2.655	0.587	0.825	1	28.507			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	0.825	1	25.418	2082.35	104.12	C
			B	0.11	2.924	0.576	0.825	1	22.361			
			C	0.161	2.732	0.583	0.825	1	30.690			
Sum Weight:	1266.02	4402.83						OTM	416473.05	9359.36		

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
									lb-ft			

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	0.8	1	9.093	978.43	81.54	A
			B	0.126	2.861	0.578	0.8	1	7.118			
			C	0.126	2.861	0.578	0.8	1	7.118			
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	0.8	1	16.744	1928.58	96.43	A
			B	0.119	2.889	0.577	0.8	1	12.713			
			C	0.151	2.766	0.582	0.8	1	15.693			
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	0.8	1	18.022	2201.01	110.05	C
			B	0.101	2.961	0.575	0.8	1	13.638			
			C	0.204	2.583	0.591	0.8	1	25.734			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	0.8	1	20.563	2114.10	105.70	C
			B	0.097	2.976	0.575	0.8	1	16.199			
			C	0.183	2.655	0.587	0.8	1	28.173			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	0.8	1	24.945	2057.58	102.88	C
			B	0.11	2.924	0.576	0.8	1	21.888			
			C	0.161	2.732	0.583	0.8	1	30.216			
Sum Weight:	1266.02	4402.83						OTM	413195.08 lb-ft	9279.70		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	0.85	1	9.366	997.05	83.09	A
			B	0.126	2.861	0.578	0.85	1	7.391			
			C	0.126	2.861	0.578	0.85	1	7.391			
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	0.85	1	17.193	1957.57	97.88	A
			B	0.119	2.889	0.577	0.85	1	13.161			
			C	0.151	2.766	0.582	0.85	1	16.141			
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	0.85	1	18.529	2229.26	111.46	C
			B	0.101	2.961	0.575	0.85	1	14.146			
			C	0.204	2.583	0.591	0.85	1	26.241			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	0.85	1	21.231	2148.03	107.40	C
			B	0.097	2.976	0.575	0.85	1	16.867			
			C	0.183	2.655	0.587	0.85	1	28.841			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	0.85	1	25.892	2107.11	105.36	C
			B	0.11	2.924	0.576	0.85	1	22.835			
			C	0.161	2.732	0.583	0.85	1	31.163			
Sum Weight:	1266.02	4402.83						OTM	419751.03 lb-ft	9439.01		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	238.45	636.37	A	0.268	2.385	0.607	1	1	15.459	1100.71	91.73	A
			B	0.191	2.627	0.589	1	1	11.435			
			C	0.191	2.627	0.589	1	1	11.435			
T2 80.00-60.00	647.84	1200.10	A	0.265	2.394	0.606	1	1	28.815	2182.27	109.11	A
			B	0.176	2.678	0.586	1	1	19.976			
			C	0.224	2.518	0.596	1	1	24.657			
T3 60.00-40.00	881.92	1281.82	A	0.226	2.513	0.596	1	1	30.670	2361.66	118.08	C
			B	0.146	2.788	0.581	1	1	20.962			
			C	0.298	2.3	0.615	1	1	40.191			
T4 40.00-20.00	881.92	1636.28	A	0.204	2.581	0.591	1	1	34.225	2263.12	113.16	C
			B	0.138	2.816	0.58	1	1	24.646			
			C	0.265	2.394	0.606	1	1	43.448			
T5 20.00-0.00	617.35	2237.18	A	0.187	2.639	0.588	1	1	38.653	2163.25	108.16	C
			B	0.148	2.779	0.581	1	1	31.992			
			C	0.223	2.52	0.595	1	1	44.900			
Sum Weight:	3267.49	6991.75						OTM	455028.92 lb-ft	10071.01		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	238.45	636.37	A	0.268	2.385	0.607	0.825	1	14.503	1057.67	88.14	A
			B	0.191	2.627	0.589	0.825	1	10.479			
			C	0.191	2.627	0.589	0.825	1	10.479			
T2 80.00-60.00	647.84	1200.10	A	0.265	2.394	0.606	0.825	1	27.246	2115.43	105.77	A
			B	0.176	2.678	0.586	0.825	1	18.408			
			C	0.224	2.518	0.596	0.825	1	23.088			
T3 60.00-40.00	881.92	1281.82	A	0.226	2.513	0.596	0.825	1	28.894	2295.63	114.78	C
			B	0.146	2.788	0.581	0.825	1	19.186			
			C	0.298	2.3	0.615	0.825	1	38.415			
T4 40.00-20.00	881.92	1636.28	A	0.204	2.581	0.591	0.825	1	31.888	2182.83	109.14	C
			B	0.138	2.816	0.58	0.825	1	22.310			
			C	0.265	2.394	0.606	0.825	1	41.111			
T5 20.00-0.00	617.35	2237.18	A	0.187	2.639	0.588	0.825	1	35.338	2043.34	102.17	C
			B	0.148	2.779	0.581	0.825	1	28.677			
			C	0.223	2.52	0.595	0.825	1	41.585			
Sum Weight:	3267.49	6991.75						OTM	439739.53 lb-ft	9694.89		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	238.45	636.37	A	0.268	2.385	0.607	0.8	1	14.366	1051.52	87.63	A
			B	0.191	2.627	0.589	0.8	1	10.343			
			C	0.191	2.627	0.589	0.8	1	10.343			
T2 80.00-60.00	647.84	1200.10	A	0.265	2.394	0.606	0.8	1	27.022	2105.88	105.29	A
			B	0.176	2.678	0.586	0.8	1	18.183			
			C	0.224	2.518	0.596	0.8	1	22.864			
T3 60.00-40.00	881.92	1281.82	A	0.226	2.513	0.596	0.8	1	28.641	2286.20	114.31	C
			B	0.146	2.788	0.581	0.8	1	18.933			
			C	0.298	2.3	0.615	0.8	1	38.162			
T4 40.00-20.00	881.92	1636.28	A	0.204	2.581	0.591	0.8	1	31.554	2171.35	108.57	C
			B	0.138	2.816	0.58	0.8	1	21.976			
			C	0.265	2.394	0.606	0.8	1	40.777			
T5 20.00-0.00	617.35	2237.18	A	0.187	2.639	0.588	0.8	1	34.864	2026.20	101.31	C
			B	0.148	2.779	0.581	0.8	1	28.203			
			C	0.223	2.52	0.595	0.8	1	41.112			
Sum Weight:	3267.49	6991.75						OTM	437555.33 lb-ft	9641.16		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	238.45	636.37	A	0.268	2.385	0.607	0.85	1	14.639	1063.82	88.65	A
			B	0.191	2.627	0.589	0.85	1	10.616			
			C	0.191	2.627	0.589	0.85	1	10.616			
T2 80.00-60.00	647.84	1200.10	A	0.265	2.394	0.606	0.85	1	27.470	2124.98	106.25	A
			B	0.176	2.678	0.586	0.85	1	18.632			
			C	0.224	2.518	0.596	0.85	1	23.312			
T3 60.00-40.00	881.92	1281.82	A	0.226	2.513	0.596	0.85	1	29.148	2305.07	115.25	C
			B	0.146	2.788	0.581	0.85	1	19.440			
			C	0.298	2.3	0.615	0.85	1	38.669			
T4 40.00-20.00	881.92	1636.28	A	0.204	2.581	0.591	0.85	1	32.222	2194.30	109.71	C
			B	0.138	2.816	0.58	0.85	1	22.643			
			C	0.265	2.394	0.606	0.85	1	41.445			
T5 20.00-0.00	617.35	2237.18	A	0.187	2.639	0.588	0.85	1	35.811	2060.47	103.02	C
			B	0.148	2.779	0.581	0.85	1	29.150			
			C	0.223	2.52	0.595	0.85	1	42.059			
Sum Weight:	3267.49	6991.75						OTM	441923.73 lb-ft	9748.62		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	1	1	10.185	411.29	34.27	A
			B	0.126	2.861	0.578	1	1	8.210			
			C	0.126	2.861	0.578	1	1	8.210			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	1	1	18.537	798.65	39.93	A
			B	0.119	2.889	0.577	1	1	14.506			
			C	0.151	2.766	0.582	1	1	17.486			
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	1	1	20.051	903.90	45.20	C
			B	0.101	2.961	0.575	1	1	15.667			
			C	0.204	2.583	0.591	1	1	27.763			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	1	1	23.233	878.83	43.94	C
			B	0.097	2.976	0.575	1	1	18.869			
			C	0.183	2.655	0.587	1	1	30.844			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	1	1	28.733	881.13	44.06	C
			B	0.11	2.924	0.576	1	1	25.676			
			C	0.161	2.732	0.583	1	1	34.005			
Sum Weight:	1266.02	4402.83						OTM	171648.00 lb-ft	3873.81		

Tower Forces - Service - Wind 45 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	0.825	1	9.229	385.84	32.15	A
			B	0.126	2.861	0.578	0.825	1	7.254			
			C	0.126	2.861	0.578	0.825	1	7.254			
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	0.825	1	16.969	759.01	37.95	A
			B	0.119	2.889	0.577	0.825	1	12.937			
			C	0.151	2.766	0.582	0.825	1	15.917			
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	0.825	1	18.276	865.29	43.26	C
			B	0.101	2.961	0.575	0.825	1	13.892			
			C	0.204	2.583	0.591	0.825	1	25.987			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	0.825	1	20.897	832.45	41.62	C
			B	0.097	2.976	0.575	0.825	1	16.533			
			C	0.183	2.655	0.587	0.825	1	28.507			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	0.825	1	25.418	813.42	40.67	C
			B	0.11	2.924	0.576	0.825	1	22.361			
			C	0.161	2.732	0.583	0.825	1	30.690			
Sum Weight:	1266.02	4402.83						OTM	162684.79 lb-ft	3656.00		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	0.8	1	9.093	382.20	31.85	A
			B	0.126	2.861	0.578	0.8	1	7.118			
			C	0.126	2.861	0.578	0.8	1	7.118			
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	0.8	1	16.744	753.35	37.67	A
			B	0.119	2.889	0.577	0.8	1	12.713			
			C	0.151	2.766	0.582	0.8	1	15.693			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	0.8	1	18.022	859.77	42.99	C
			B	0.101	2.961	0.575	0.8	1	13.638			
			C	0.204	2.583	0.591	0.8	1	25.734			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	0.8	1	20.563	825.82	41.29	C
			B	0.097	2.976	0.575	0.8	1	16.199			
			C	0.183	2.655	0.587	0.8	1	28.173			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	0.8	1	24.945	803.74	40.19	C
			B	0.11	2.924	0.576	0.8	1	21.888			
			C	0.161	2.732	0.583	0.8	1	30.216			
Sum Weight:	1266.02	4402.83						OTM	161404.33 lb-ft	3624.88		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 92.00-80.00	94.32	370.33	A	0.168	2.708	0.584	0.85	1	9.366	389.47	32.46	A
			B	0.126	2.861	0.578	0.85	1	7.391			
			C	0.126	2.861	0.578	0.85	1	7.391			
T2 80.00-60.00	253.70	739.12	A	0.163	2.726	0.583	0.85	1	17.193	764.67	38.23	A
			B	0.119	2.889	0.577	0.85	1	13.161			
			C	0.151	2.766	0.582	0.85	1	16.141			
T3 60.00-40.00	340.00	792.09	A	0.139	2.813	0.58	0.85	1	18.529	870.80	43.54	C
			B	0.101	2.961	0.575	0.85	1	14.146			
			C	0.204	2.583	0.591	0.85	1	26.241			
T4 40.00-20.00	340.00	1046.25	A	0.129	2.851	0.578	0.85	1	21.231	839.07	41.95	C
			B	0.097	2.976	0.575	0.85	1	16.867			
			C	0.183	2.655	0.587	0.85	1	28.841			
T5 20.00-0.00	238.00	1455.04	A	0.129	2.851	0.578	0.85	1	25.892	823.09	41.15	C
			B	0.11	2.924	0.576	0.85	1	22.835			
			C	0.161	2.732	0.583	0.85	1	31.163			
Sum Weight:	1266.02	4402.83						OTM	163965.24 lb-ft	3687.11		

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	1906.34					
Bracing Weight	2496.49					
Total Member Self-Weight	4402.83			893.48	816.17	
Total Weight	7721.40			893.48	816.17	
Wind 0 deg - No Ice		0.00	-13284.01	-728803.75	816.17	-980.99
Wind 30 deg - No Ice		6403.04	-11090.39	-614010.00	-354198.52	386.45
Wind 45 deg - No Ice		8998.94	-8998.94	-498855.23	-498932.54	991.33
Wind 60 deg - No Ice		10952.42	-6323.38	-350843.24	-608409.69	1517.09
Wind 90 deg - No Ice		12806.07	0.00	893.48	-709213.20	2222.20

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Wind 120 deg - No Ice		11504.29	6642.00	365742.09	-631120.16	2454.14
Wind 135 deg - No Ice		8998.94	8998.94	500642.18	-498932.54	2140.68
Wind 150 deg - No Ice		6403.04	11090.39	615796.95	-354198.52	1835.75
Wind 180 deg - No Ice		0.00	12646.76	704366.90	816.17	788.67
Wind 210 deg - No Ice		-6403.04	11090.39	615796.95	355830.86	-386.45
Wind 225 deg - No Ice		-8998.94	8998.94	500642.18	500564.88	-991.33
Wind 240 deg - No Ice		-11504.29	6642.00	365742.09	632752.50	-1473.15
Wind 270 deg - No Ice		-12806.07	0.00	893.48	710845.55	-2222.20
Wind 300 deg - No Ice		-10952.42	-6323.38	-350843.24	610042.03	-2305.76
Wind 315 deg - No Ice		-8998.94	-8998.94	-498855.23	500564.88	-2140.68
Wind 330 deg - No Ice		-6403.04	-11090.39	-614010.00	355830.86	-1835.75
Member Ice	2588.92					
Total Weight Ice	13414.38			1898.16	3066.02	
Wind 0 deg - Ice		0.00	-13241.76	-727145.36	3066.02	-704.08
Wind 30 deg - Ice		6459.69	-11188.51	-618122.62	-354903.14	424.25
Wind 45 deg - Ice		9097.39	-9097.39	-502802.23	-501634.36	922.29
Wind 60 deg - Ice		11095.44	-6405.96	-353886.81	-613171.61	1350.32
Wind 90 deg - Ice		12919.38	0.00	1898.16	-712872.31	1893.87
Wind 120 deg - Ice		11467.70	6620.88	366419.92	-628304.19	2006.58
Wind 135 deg - Ice		9097.39	9097.39	506598.54	-501634.36	1752.13
Wind 150 deg - Ice		6459.69	11188.51	621918.94	-354903.14	1469.62
Wind 180 deg - Ice		0.00	12811.91	713468.09	3066.02	570.03
Wind 210 deg - Ice		-6459.69	11188.51	621918.94	361035.19	-424.25
Wind 225 deg - Ice		-9097.39	9097.39	506598.54	507766.41	-922.29
Wind 240 deg - Ice		-11467.70	6620.88	366419.92	634436.23	-1302.51
Wind 270 deg - Ice		-12919.38	0.00	1898.16	719004.35	-1893.87
Wind 300 deg - Ice		-11095.44	-6405.96	-353886.81	619303.66	-1920.35
Wind 315 deg - Ice		-9097.39	-9097.39	-502802.23	507766.41	-1752.13
Wind 330 deg - Ice		-6459.69	-11188.51	-618122.62	361035.19	-1469.62
Total Weight	7721.40			893.48	816.17	
Wind 0 deg - Service		0.00	-5189.07	-284626.41	-799.76	-383.20
Wind 30 deg - Service		2501.19	-4332.18	-239785.11	-139477.38	150.96
Wind 45 deg - Service		3515.21	-3515.21	-194802.77	-196014.10	387.24
Wind 60 deg - Service		4278.29	-2470.07	-136985.59	-238778.61	592.61
Wind 90 deg - Service		5002.37	0.00	411.56	-278154.99	868.05
Wind 120 deg - Service		4493.86	2594.53	142930.55	-247649.89	958.65
Wind 135 deg - Service		3515.21	3515.21	195625.90	-196014.10	836.20
Wind 150 deg - Service		2501.19	4332.18	240608.24	-139477.38	717.09
Wind 180 deg - Service		0.00	4940.14	275205.87	-799.76	308.07
Wind 210 deg - Service		-2501.19	4332.18	240608.24	137877.85	-150.96
Wind 225 deg - Service		-3515.21	3515.21	195625.90	194414.58	-387.24
Wind 240 deg - Service		-4493.86	2594.53	142930.55	246050.37	-575.45
Wind 270 deg - Service		-5002.37	0.00	411.56	276555.46	-868.05
Wind 300 deg - Service		-4278.29	-2470.07	-136985.59	237179.09	-900.69
Wind 315 deg - Service		-3515.21	-3515.21	-194802.77	194414.58	-836.20
Wind 330 deg - Service		-2501.19	-4332.18	-239785.11	137877.85	-717.09

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 45 deg - No Ice
5	Dead+Wind 60 deg - No Ice

Comb. No.	Description
6	Dead+Wind 90 deg - No Ice
7	Dead+Wind 120 deg - No Ice
8	Dead+Wind 135 deg - No Ice
9	Dead+Wind 150 deg - No Ice
10	Dead+Wind 180 deg - No Ice
11	Dead+Wind 210 deg - No Ice
12	Dead+Wind 225 deg - No Ice
13	Dead+Wind 240 deg - No Ice
14	Dead+Wind 270 deg - No Ice
15	Dead+Wind 300 deg - No Ice
16	Dead+Wind 315 deg - No Ice
17	Dead+Wind 330 deg - No Ice
18	Dead+Ice+Temp
19	Dead+Wind 0 deg+Ice+Temp
20	Dead+Wind 30 deg+Ice+Temp
21	Dead+Wind 45 deg+Ice+Temp
22	Dead+Wind 60 deg+Ice+Temp
23	Dead+Wind 90 deg+Ice+Temp
24	Dead+Wind 120 deg+Ice+Temp
25	Dead+Wind 135 deg+Ice+Temp
26	Dead+Wind 150 deg+Ice+Temp
27	Dead+Wind 180 deg+Ice+Temp
28	Dead+Wind 210 deg+Ice+Temp
29	Dead+Wind 225 deg+Ice+Temp
30	Dead+Wind 240 deg+Ice+Temp
31	Dead+Wind 270 deg+Ice+Temp
32	Dead+Wind 300 deg+Ice+Temp
33	Dead+Wind 315 deg+Ice+Temp
34	Dead+Wind 330 deg+Ice+Temp
35	Dead+Wind 0 deg - Service
36	Dead+Wind 30 deg - Service
37	Dead+Wind 45 deg - Service
38	Dead+Wind 60 deg - Service
39	Dead+Wind 90 deg - Service
40	Dead+Wind 120 deg - Service
41	Dead+Wind 135 deg - Service
42	Dead+Wind 150 deg - Service
43	Dead+Wind 180 deg - Service
44	Dead+Wind 210 deg - Service
45	Dead+Wind 225 deg - Service
46	Dead+Wind 240 deg - Service
47	Dead+Wind 270 deg - Service
48	Dead+Wind 300 deg - Service
49	Dead+Wind 315 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	92 - 80	Leg	Max Tension	5	3128.13	-528.65	1.82
			Max. Compression	19	-4861.68	-138.67	5.62
			Max. Mx	7	-1667.63	-749.67	2.65
			Max. My	6	-693.17	-2.38	-769.12
			Max. Vy	2	-649.14	528.09	-0.93
			Max. Vx	6	-646.03	-2.38	501.99
		Diagonal	Max Tension	14	1736.12	0.00	0.00
			Max. Compression	6	-1789.95	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	23	925.16	9.04	0.22
			Max. My	6	-1775.44	2.21	-2.04
			Max. Vy	23	7.53	9.04	0.22
			Max. Vx	6	0.46	0.00	0.00
		Top Girt	Max Tension	10	94.40	0.00	0.00
			Max. Compression	24	-146.90	0.00	0.00
			Max. Mx	18	-63.54	-23.22	0.00
			Max. My	28	-61.53	0.00	0.02
			Max. Vy	18	14.25	0.00	0.00
			Max. Vx	28	-0.01	0.00	0.00
T2	80 - 60	Leg	Max Tension	5	15345.40	-54.60	12.47
			Max. Compression	24	-18480.94	82.98	-4.05
			Max. Mx	32	5887.59	-167.38	0.07
			Max. My	28	-1662.87	19.49	-231.49
			Max. Vy	10	-137.50	-54.68	-11.63
			Max. Vx	28	192.86	-25.04	134.65
		Diagonal	Max Tension	14	1914.90	0.00	0.00
			Max. Compression	34	-2019.04	0.00	0.00
			Max. Mx	21	1442.36	13.33	0.88
			Max. My	27	-1779.21	9.23	2.86
			Max. Vy	21	9.83	13.33	0.88
			Max. Vx	27	-0.84	0.00	0.00
T3	60 - 40	Leg	Max Tension	10	27198.00	-56.67	-8.69
			Max. Compression	30	-32008.10	-14.76	-2.34
			Max. Mx	22	25954.88	-140.97	1.97
			Max. My	9	-1138.75	-3.90	-97.74
			Max. Vy	22	51.60	-140.97	1.97
			Max. Vx	17	46.20	-3.90	97.54
		Diagonal	Max Tension	23	2527.24	0.00	0.00
			Max. Compression	31	-2439.67	0.00	0.00
			Max. Mx	27	1681.19	22.81	2.07
			Max. My	22	-2130.77	13.43	-3.18
			Max. Vy	27	13.34	22.81	2.07
			Max. Vx	22	0.88	0.00	0.00
T4	40 - 20	Leg	Max Tension	10	39391.02	-62.76	-8.50
			Max. Compression	30	-45922.07	270.39	-1.76
			Max. Mx	24	-45625.52	272.85	-6.19
			Max. My	9	-2019.68	-5.63	-121.09
			Max. Vy	22	-78.39	-202.52	2.44
			Max. Vx	17	-44.94	-5.63	121.04
		Diagonal	Max Tension	23	2774.66	0.00	0.00
			Max. Compression	23	-2979.60	0.00	0.00
			Max. Mx	27	1997.39	40.14	-3.45
			Max. My	22	-2577.51	28.18	-4.15
			Max. Vy	27	19.36	40.14	3.48
			Max. Vx	22	1.05	0.00	0.00
T5	20 - 0	Leg	Max Tension	10	51123.59	-89.61	-8.04
			Max. Compression	30	-60458.72	0.00	0.01
			Max. Mx	22	46279.88	-423.49	1.74
			Max. My	9	-2522.16	-9.37	-202.59
			Max. Vy	22	-127.78	-423.49	1.74
			Max. Vx	9	-67.16	-9.37	-202.59
		Diagonal	Max Tension	23	3442.56	0.00	0.00
			Max. Compression	23	-3335.41	0.00	0.00
			Max. Mx	33	1509.28	71.58	-4.21
			Max. My	31	-3303.69	47.27	7.90
			Max. Vy	33	28.03	71.58	-4.21
			Max. Vx	31	-1.66	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	30	62351.42	6297.39	-3576.64
	Max. H_x	13	60268.99	6834.22	-3878.51
	Max. H_z	21	-49710.20	-6456.00	4021.87
	Min. Vert	5	-52868.97	-6142.02	3476.96
	Min. H_x	22	-51458.96	-6803.75	3866.27
	Min. H_z	13	60268.99	6834.22	-3878.51
Leg B	Max. Vert	24	61932.39	-6306.75	-3545.19
	Max. H_x	32	-51877.88	6819.47	3854.15
	Max. H_z	33	-50129.04	6476.82	4000.66
	Min. Vert	15	-52980.38	6158.79	3451.78
	Min. H_x	7	60157.54	-6852.23	-3843.42
	Min. H_z	7	60157.54	-6852.23	-3843.42
Leg A	Max. Vert	19	61916.91	-31.91	7234.07
	Max. H_x	14	2502.64	1078.88	212.50
	Max. H_z	2	60107.44	-39.39	7855.03
	Min. Vert	10	-53030.48	30.19	-7060.44
	Min. H_x	6	2502.67	-1081.12	212.58
	Min. H_z	27	-51893.37	18.35	-7833.23

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	7721.40	0.00	0.00	893.33	816.43	0.00
Dead+Wind 0 deg - No Ice	7721.40	0.01	-13283.58	-729944.96	814.50	-981.26
Dead+Wind 30 deg - No Ice	7721.40	6402.75	-11089.99	-614971.97	-354754.33	384.66
Dead+Wind 45 deg - No Ice	7721.40	8998.54	-8998.59	-499633.90	-499713.77	992.60
Dead+Wind 60 deg - No Ice	7721.40	10951.95	-6323.10	-351387.49	-609362.95	1519.26
Dead+Wind 90 deg - No Ice	7721.40	12805.59	0.07	902.46	-710325.26	2228.27
Dead+Wind 120 deg - No Ice	7721.40	11503.91	6641.79	366317.13	-632108.44	2456.82
Dead+Wind 135 deg - No Ice	7721.40	8998.66	8998.59	501427.66	-499718.81	2141.27
Dead+Wind 150 deg - No Ice	7721.40	6402.85	11089.93	616759.91	-354757.29	1834.50
Dead+Wind 180 deg - No Ice	7721.40	0.01	12646.22	705466.63	814.79	788.84
Dead+Wind 210 deg - No Ice	7721.40	-6402.84	11089.94	616761.44	356387.64	-384.67
Dead+Wind 225 deg - No Ice	7721.40	-8998.65	8998.60	501429.56	501349.89	-991.57
Dead+Wind 240 deg - No Ice	7721.40	-11503.91	6641.80	366318.76	633740.28	-1475.57
Dead+Wind 270 deg - No Ice	7721.40	-12805.59	0.07	902.80	711957.69	-2228.27
Dead+Wind 300 deg - No Ice	7721.40	-10951.95	-6323.11	-351388.58	610994.40	-2308.10
Dead+Wind 315 deg - No Ice	7721.40	-8998.53	-8998.60	-499635.25	501344.33	-2142.19
Dead+Wind 330 deg - No Ice	7721.40	-6402.74	-11090.00	-614973.19	356384.07	-1834.49
Dead+Ice+Temp	13414.38	0.00	-0.00	1902.46	3069.03	-0.01
Dead+Wind 0 deg+Ice+Temp	13414.38	0.01	-13241.01	-728826.10	3066.36	-708.41
Dead+Wind 30 deg+Ice+Temp	13414.38	6459.24	-11187.84	-619552.15	-355726.80	426.09
Dead+Wind 45 deg+Ice+Temp	13414.38	9096.76	-9096.81	-503962.10	-502798.63	922.18
Dead+Wind 60 deg+Ice+Temp	13414.38	11094.70	-6405.51	-354700.51	-614594.27	1352.56
Dead+Wind 90 deg+Ice+Temp	13414.38	12918.57	0.07	1911.07	-714524.69	1896.53
Dead+Wind 120 deg+Ice+Temp	13414.38	11467.05	6620.50	367268.81	-629759.95	2013.14
Dead+Wind 135 deg+Ice+Temp	13414.38	9096.88	9096.81	507771.54	-502802.59	1759.05
Dead+Wind 150 deg+Ice+Temp	13414.38	6459.35	11187.77	623353.96	-355732.12	1479.07
Dead+Wind 180 deg+Ice+Temp	13414.38	0.01	12811.04	715116.00	3067.38	574.31
Dead+Wind 210 deg+Ice+Temp	13414.38	-6459.33	11187.78	623356.33	361867.83	-426.12
Dead+Wind 225 deg+Ice+Temp	13414.38	-9096.89	9096.81	507773.33	508939.90	-925.76

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 240 deg+Ice+Temp	13414.38	-11467.04	6620.51	367271.17	635897.34	-1304.82
Dead+Wind 270 deg+Ice+Temp	13414.38	-12918.57	0.07	1911.68	720662.82	-1896.50
Dead+Wind 300 deg+Ice+Temp	13414.38	-11094.69	-6405.52	-354701.81	620730.66	-1926.88
Dead+Wind 315 deg+Ice+Temp	13414.38	-9096.75	-9096.82	-503963.78	508933.71	-1758.14
Dead+Wind 330 deg+Ice+Temp	13414.38	-6459.22	-11187.84	-619553.68	361860.59	-1479.06
Dead+Wind 0 deg - Service	7721.40	0.00	-5188.88	-284589.59	815.88	-383.35
Dead+Wind 30 deg - Service	7721.40	2501.08	-4332.02	-239678.78	-138079.16	149.93
Dead+Wind 45 deg - Service	7721.40	3515.07	-3515.07	-194625.71	-194704.65	386.63
Dead+Wind 60 deg - Service	7721.40	4278.12	-2469.97	-136717.30	-237536.55	593.50
Dead+Wind 90 deg - Service	7721.40	5002.18	0.01	896.09	-276974.47	870.65
Dead+Wind 120 deg - Service	7721.40	4493.70	2594.44	143637.55	-246420.53	959.68
Dead+Wind 135 deg - Service	7721.40	3515.08	3515.07	196416.02	-194705.03	836.27
Dead+Wind 150 deg - Service	7721.40	2501.10	4332.01	241468.46	-138079.48	716.23
Dead+Wind 180 deg - Service	7721.40	0.00	4939.94	276120.61	816.02	308.14
Dead+Wind 210 deg - Service	7721.40	-2501.10	4332.01	241468.75	139711.64	-149.94
Dead+Wind 225 deg - Service	7721.40	-3515.08	3515.08	196416.38	196337.29	-387.18
Dead+Wind 240 deg - Service	7721.40	-4493.70	2594.44	143637.90	248052.89	-576.40
Dead+Wind 270 deg - Service	7721.40	-5002.18	0.01	896.22	278606.89	-870.65
Dead+Wind 300 deg - Service	7721.40	-4278.12	-2469.97	-136717.42	239168.77	-901.67
Dead+Wind 315 deg - Service	7721.40	-3515.07	-3515.08	-194625.87	196336.71	-835.74
Dead+Wind 330 deg - Service	7721.40	-2501.08	-4332.02	-239678.94	139711.07	-716.23

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-7721.40	0.00	-0.00	7721.40	-0.00	0.000%
2	-0.00	-7721.40	-13284.01	-0.01	7721.40	13283.58	0.003%
3	6403.04	-7721.40	-11090.39	-6402.75	7721.40	11089.99	0.003%
4	8998.94	-7721.40	-8998.94	-8998.54	7721.40	8998.59	0.004%
5	10952.42	-7721.40	-6323.38	-10951.95	7721.40	6323.10	0.004%
6	12806.07	-7721.40	-0.00	-12805.59	7721.40	-0.07	0.003%
7	11504.29	-7721.40	6642.00	-11503.91	7721.40	-6641.79	0.003%
8	8998.94	-7721.40	8998.94	-8998.66	7721.40	-8998.59	0.003%
9	6403.04	-7721.40	11090.39	-6402.85	7721.40	-11089.93	0.003%
10	0.00	-7721.40	12646.76	-0.01	7721.40	-12646.22	0.004%
11	-6403.04	-7721.40	11090.39	6402.84	7721.40	-11089.94	0.003%
12	-8998.94	-7721.40	8998.94	8998.65	7721.40	-8998.60	0.003%
13	-11504.29	-7721.40	6642.00	11503.91	7721.40	-6641.80	0.003%
14	-12806.07	-7721.40	-0.00	12805.59	7721.40	-0.07	0.003%
15	-10952.42	-7721.40	-6323.38	10951.95	7721.40	6323.11	0.004%
16	-8998.94	-7721.40	-8998.94	8998.53	7721.40	8998.60	0.004%
17	-6403.04	-7721.40	-11090.39	6402.74	7721.40	11090.00	0.003%
18	-0.00	-13414.38	0.00	-0.00	13414.38	0.00	0.000%
19	0.00	-13414.38	-13241.76	-0.01	13414.38	13241.01	0.004%
20	6459.69	-13414.38	-11188.51	-6459.24	13414.38	11187.84	0.004%
21	9097.39	-13414.38	-9097.39	-9096.76	13414.38	9096.81	0.005%
22	11095.44	-13414.38	-6405.96	-11094.70	13414.38	6405.51	0.005%
23	12919.38	-13414.38	-0.00	-12918.57	13414.38	-0.07	0.004%
24	11467.70	-13414.38	6620.88	-11467.05	13414.38	-6620.50	0.004%
25	9097.39	-13414.38	9097.39	-9096.88	13414.38	-9096.81	0.004%
26	6459.69	-13414.38	11188.51	-6459.35	13414.38	-11187.77	0.004%
27	0.00	-13414.38	12811.91	-0.01	13414.38	-12811.04	0.005%
28	-6459.69	-13414.38	11188.51	6459.33	13414.38	-11187.78	0.004%
29	-9097.39	-13414.38	9097.39	9096.89	13414.38	-9096.81	0.004%
30	-11467.70	-13414.38	6620.88	11467.04	13414.38	-6620.51	0.004%
31	-12919.38	-13414.38	-0.00	12918.57	13414.38	-0.07	0.004%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
32	-11095.44	-13414.38	-6405.96	11094.69	13414.38	6405.52	0.005%
33	-9097.39	-13414.38	-9097.39	9096.75	13414.38	9096.82	0.005%
34	-6459.69	-13414.38	-11188.51	6459.22	13414.38	11187.84	0.004%
35	-0.00	-7721.40	-5189.07	-0.00	7721.40	5188.88	0.002%
36	2501.19	-7721.40	-4332.18	-2501.08	7721.40	4332.02	0.002%
37	3515.21	-7721.40	-3515.21	-3515.07	7721.40	3515.07	0.002%
38	4278.29	-7721.40	-2470.07	-4278.12	7721.40	2469.97	0.002%
39	5002.37	-7721.40	-0.00	-5002.18	7721.40	-0.01	0.002%
40	4493.86	-7721.40	2594.53	-4493.70	7721.40	-2594.44	0.002%
41	3515.21	-7721.40	3515.21	-3515.08	7721.40	-3515.07	0.002%
42	2501.19	-7721.40	4332.18	-2501.10	7721.40	-4332.01	0.002%
43	-0.00	-7721.40	4940.14	-0.00	7721.40	-4939.94	0.002%
44	-2501.19	-7721.40	4332.18	2501.10	7721.40	-4332.01	0.002%
45	-3515.21	-7721.40	3515.21	3515.08	7721.40	-3515.08	0.002%
46	-4493.86	-7721.40	2594.53	4493.70	7721.40	-2594.44	0.002%
47	-5002.37	-7721.40	-0.00	5002.18	7721.40	-0.01	0.002%
48	-4278.29	-7721.40	-2470.07	4278.12	7721.40	2469.97	0.002%
49	-3515.21	-7721.40	-3515.21	3515.07	7721.40	3515.08	0.002%
50	-2501.19	-7721.40	-4332.18	2501.08	7721.40	4332.02	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00010854
3	Yes	4	0.00000001	0.00012544
4	Yes	4	0.00000001	0.00013614
5	Yes	4	0.00000001	0.00014050
6	Yes	4	0.00000001	0.00012601
7	Yes	4	0.00000001	0.00010854
8	Yes	4	0.00000001	0.00011431
9	Yes	4	0.00000001	0.00012592
10	Yes	4	0.00000001	0.00014044
11	Yes	4	0.00000001	0.00012539
12	Yes	4	0.00000001	0.00011397
13	Yes	4	0.00000001	0.00010851
14	Yes	4	0.00000001	0.00012587
15	Yes	4	0.00000001	0.00014031
16	Yes	4	0.00000001	0.00013625
17	Yes	4	0.00000001	0.00012583
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00018831
20	Yes	4	0.00000001	0.00020470
21	Yes	4	0.00000001	0.00021561
22	Yes	4	0.00000001	0.00022008
23	Yes	4	0.00000001	0.00020515
24	Yes	4	0.00000001	0.00018846
25	Yes	4	0.00000001	0.00019391
26	Yes	4	0.00000001	0.00020524
27	Yes	4	0.00000001	0.00021997
28	Yes	4	0.00000001	0.00020459
29	Yes	4	0.00000001	0.00019348
30	Yes	4	0.00000001	0.00018822
31	Yes	4	0.00000001	0.00020476
32	Yes	4	0.00000001	0.00021966

33	Yes	4	0.00000001	0.00021554
34	Yes	4	0.00000001	0.00020497
35	Yes	4	0.00000001	0.00011755
36	Yes	4	0.00000001	0.00012402
37	Yes	4	0.00000001	0.00012828
38	Yes	4	0.00000001	0.00013001
39	Yes	4	0.00000001	0.00012412
40	Yes	4	0.00000001	0.00011772
41	Yes	4	0.00000001	0.00011980
42	Yes	4	0.00000001	0.00012411
43	Yes	4	0.00000001	0.00012992
44	Yes	4	0.00000001	0.00012393
45	Yes	4	0.00000001	0.00011959
46	Yes	4	0.00000001	0.00011748
47	Yes	4	0.00000001	0.00012377
48	Yes	4	0.00000001	0.00012965
49	Yes	4	0.00000001	0.00012800
50	Yes	4	0.00000001	0.00012385

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	92 - 80	1.640	40	0.1397	0.0090
T2	80 - 60	1.284	40	0.1342	0.0086
T3	60 - 40	0.744	46	0.1106	0.0050
T4	40 - 20	0.337	46	0.0707	0.0026
T5	20 - 0	0.093	46	0.0325	0.0011

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
102.00	DB420	40	1.640	0.1397	0.0090	219981
88.00	(3) DUO1417-8686	40	1.521	0.1382	0.0090	219981
79.00	DB806-XT	40	1.255	0.1335	0.0085	84146
73.00	PR-950	40	1.084	0.1283	0.0075	56292
65.00	APXV18-206517S-C w/ mounting hardware	46	0.869	0.1184	0.0060	38959

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	92 - 80	4.190	7	0.3563	0.0240
T2	80 - 60	3.282	7	0.3423	0.0235
T3	60 - 40	1.907	30	0.2824	0.0131
T4	40 - 20	0.864	30	0.1811	0.0065

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T5	20 - 0	0.238	30	0.0834	0.0028

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
102.00	DB420	7	4.190	0.3563	0.0240	86779
88.00	(3) DUO1417-8686	7	3.885	0.3526	0.0242	86779
79.00	DB806-XT	7	3.208	0.3406	0.0232	33145
73.00	PR-950	30	2.773	0.3274	0.0207	22196
65.00	APXV18-206517S-C w/ mounting hardware	30	2.226	0.3024	0.0160	15383

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	92	Leg	A325N	0.6300	4	221.77	13711.70	0.016 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	1789.95	4123.34	0.434 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	1	146.90	4123.34	0.036 ✓	1.333	Bolt Shear
T2	80	Leg	A325N	0.6300	4	1652.17	13715.80	0.120 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	2019.04	4123.34	0.490 ✓	1.333	Bolt Shear
T3	60	Leg	A325N	0.6300	4	4735.67	13715.90	0.345 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	2527.24	4123.34	0.613 ✓	1.333	Bolt Shear
T4	40	Leg	A325N	0.6300	4	7831.16	13715.90	0.571 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	2979.60	4123.34	0.723 ✓	1.333	Bolt Shear
T5	20	Leg	A325N	0.7500	4	10833.50	19438.60	0.557 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	3442.56	4123.34	0.835 ✓	1.333	Bolt Shear

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	92 - 80	P2.375x.154	12.00	6.00	91.5 K=1.00	16.619	1.0745	-4861.68	17858.20	0.272 ✓
T2	80 - 60	P2.875x.203	20.03	5.01	63.4 K=1.00	22.122	1.7040	-18480.90	37697.80	0.490 ✓
T3	60 - 40	P2.875x.203	20.03	6.68	84.6 K=1.00	18.081	1.7040	-32008.10	30810.90	1.039 ✓
T4	40 - 20	P2.875x.276	20.03	6.68	86.7 K=1.00	17.634	2.2535	-45922.10	39739.10	1.156 ✓
T5	20 - 0	P3.5x.3	20.03	6.68	70.5 K=1.00	20.840	3.0159	-60458.70	62852.90	0.962 ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	92 - 80	L1 1/2x1 1/2x3/16	8.88	4.15	169.7 K=1.00	5.188	0.5273	-1789.95	2736.11	0.654 ✓
T2	80 - 60	L1 1/2x1 1/2x3/16	9.70	4.69	191.8 K=1.00	4.059	0.5273	-2019.04	2140.32	0.943 ✓
T3	60 - 40	L1 3/4x1 3/4x3/16	12.21	5.99	209.4 K=1.00	3.405	0.6211	-2408.24	2114.67	1.139 ✓
T4	40 - 20	KL/R > 200 (C) - 49 L2x2x3/16	13.96	6.87	209.2 K=1.00	3.412	0.7150	-2979.60	2439.58	1.221 ✓
T5	20 - 0	KL/R > 200 (C) - 71 L2 1/2x2 1/2x3/16	15.17	7.45	180.5 K=1.00	4.581	0.9020	-3335.41	4132.15	0.807 ✓

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	92 - 80	L2x2x3/16	6.52	5.99	182.4 K=1.00	4.489	0.7150	-146.90	3209.33	0.046 ✓

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 lb	Allow. P_a lb	Ratio P / P_a
T1	92 - 80	P2.375x.154	12.00	6.00	91.5	30.000	1.0745	3128.13	32235.90	0.097 ✓
T2	80 - 60	P2.875x.203	20.03	5.01	63.4	30.000	1.7040	15308.40	51121.50	0.299 ✓
T3	60 - 40	P2.875x.203	20.03	6.68	84.6	30.000	1.7040	27198.00	51121.50	0.532 ✓
T4	40 - 20	P2.875x.276	20.03	6.68	86.7	30.000	2.2535	39391.00	67606.20	0.583 ✓
T5	20 - 0	P3.5x.3	20.03	6.68	70.5	30.000	3.0159	51123.60	90477.90	0.565 ✓

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio P / P_a
T1	92 - 80	L1 1/2x1 1/2x3/16	8.88	4.15	113.4	29.000	0.3076	1736.12	8920.90	0.195 ✓
T2	80 - 60	L1 1/2x1 1/2x3/16	9.70	4.69	127.6	29.000	0.3076	1914.90	8920.90	0.215 ✓
T3	60 - 40	L1 3/4x1 3/4x3/16	12.21	5.99	137.7	29.000	0.3779	2527.24	10960.00	0.231 ✓
T4	40 - 20	L2x2x3/16	13.36	6.57	131.1	29.000	0.4484	2774.66	13002.40	0.213 ✓
T5	20 - 0	L2 1/2x2 1/2x3/16	15.79	7.75	122.2	29.000	0.5886	3442.56	17069.70	0.202 ✓

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 lb	Allow. P_a lb	Ratio P / P_a
T1	92 - 80	L2x2x3/16	6.52	5.99	123.0	29.000	0.4484	94.40	13002.40	0.007 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass / Fail
T1	92 - 80	Leg	P2.375x.154	3	-4861.68	23804.98	20.4	Pass
T2	80 - 60	Leg	P2.875x.203	20	-18480.90	50251.17	36.8	Pass
T3	60 - 40	Leg	P2.875x.203	46	-32008.10	41070.93	77.9	Pass
T4	40 - 20	Leg	P2.875x.276	67	-45922.10	52972.22	86.7	Pass
T5	20 - 0	Leg	P3.5x.3	88	-60458.70	83782.91	72.2	Pass
T1	92 - 80	Diagonal	L1 1/2x1 1/2x3/16	8	-1789.95	3647.23	49.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T2	80 - 60	Diagonal	L1 1/2x1 1/2x3/16	25	-2019.04	2853.05	70.8	Pass
T3	60 - 40	Diagonal	L1 3/4x1 3/4x3/16	49	-2408.24	2818.85	85.4	Pass
T4	40 - 20	Diagonal	L2x2x3/16	71	-2979.60	3251.96	91.6	Pass
T5	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	98	-3335.41	5508.16	60.6	Pass
							62.6 (b)	
T1	92 - 80	Top Girt	L2x2x3/16	6	-146.90	4278.04	3.4	Pass
							Summary	
							Leg (T4) 86.7	Pass
							Diagonal (T4) 91.6	Pass
							Top Girt (T1) 3.4	Pass
							Bolt Checks 62.6	Pass
							RATING = 91.6	**Pass**

Anchor Bolt Analysis

URS				Page	of
Job	92' Self Support Lattice Tower - Glastonbury, CT	Project No.	PC1-028	Sheet 1	of 3
Description	Anchor Bolt Analysis	Computed by	KAB	Date	09/25/08
		Checked by		Date	

ANCHOR BOLT ANALYSIS

Input Data

Max Pier Reactions:

Uplift:	$Uplift := 53 \cdot kips$	*user input*	
Shear:	$Shear := 8 \cdot kips$	*user input*	
Compression:	$Compression := 62 \cdot kips$	*user input*	

Anchor Bolt Data:

Use ASTM A354BC

Number of Anchor Bolts = N	$N := 4$	*user input*	
Bolt Ultimate Strength:	$F_u := 125 \cdot ksi$	*user input*	
Bolt Yield Strength:	$Fy := 109 \cdot ksi$	*user input*	
Bolt Modulus:	$E := 29000 \cdot ksi$	*user input*	
Thickness of Anchor Bolts	$D := 0.75in$	*user input*	
Threads per Inch:	$n := 7$	*user input*	
Coefficient of Friction:	$\mu := 0.55$	*user input*	(for baseplate with grout ASCE 10-97)

Anchor Bolt Area:

Gross Area of Bolt:

$A_g := \frac{\pi}{4} \cdot D^2$ $\quad A_g = 0.442 \cdot in^2$

Net Area of Bolt:

$A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot in}{n}\right)^2$ $\quad A_n = 0.293 \cdot in^2$

Check Tensile Forces:

Maximum Tensile Force (Gross Area):

$AllowableTension := 1.333 \cdot (0.33 \cdot A_g \cdot F_u)$ $\quad AllowableTension = 24.3 \cdot kips$

Note: 1.333 increase allowed per TIA/EIA

Maximum Tensile Force (Net Area):

$F_{net.area} := 1.333 \cdot (0.60 \cdot A_n \cdot Fy)$ $\quad F_{net.area} = 25.5 \cdot kips$

Note: 1.333 increase allowed per TIA/EIA

Applied Tension:

$MaxTension := \frac{Uplift}{N}$ $\quad MaxTension = 13.3 \cdot kips$

Check Stresses:

$\frac{MaxTension}{F_{net.area}} = 0.52$

$Condition1 := if\left(\frac{MaxTension}{F_{net.area}} \le 1.00, "OK", "Overstressed"\right)$

$Condition1 = "OK"$

Check Anchor Bolt Area:

Based on the ASCE 10-97 Design of Latticed Steel Transmission Structures

Required Area:

$$A_{s1} := \frac{Uplift}{Fy} + \frac{Shear}{\mu \cdot 0.85 \cdot Fy} \qquad A_{s1} = 0.6 \cdot in^2$$

$$A_{s2} := \left| \frac{Shear - (0.3 \cdot Compression)}{\mu \cdot 0.85 \cdot Fy} \right| \qquad A_{s2} = 0.2 \cdot in^2$$

Provided Area:

$$A_{sprovided} := A_n \cdot N \qquad A_{sprovided} = 1.2 \cdot in^2$$

$$Condition2 := if\left(\frac{A_{s1}}{A_{sprovided}} \le 1.00, "OK", "Overstressed" \right) \qquad \frac{A_{s1}}{A_{sprovided}} = 0.5$$

Condition2 = "OK"

$$Condition3 := if\left(\frac{A_{s2}}{A_{sprovided}} \le 1.00, "OK", "Overstressed" \right) \qquad \frac{A_{s2}}{A_{sprovided}} = 0.2$$

Condition3 = "OK"

Units

Angular

$rad \equiv 1$ $\qquad deg \equiv \pi \cdot \frac{rad}{180}$

Weight

$lb \equiv lbf$

$kips \equiv 1000 \cdot lb$ $\qquad k \equiv kips$

$tons \equiv 2000 \cdot lb$

Unit Weight

$plf \equiv \frac{lb}{ft}$ $\qquad klf \equiv \frac{kips}{ft}$

Pressure

$psf \equiv \frac{lb}{ft^2}$ $\qquad psi \equiv \frac{lb}{in^2}$

$ksf \equiv \frac{kips}{ft^2}$ $\qquad ksi \equiv \frac{kips}{in^2}$

Density

$pcf \equiv \frac{lb}{ft^3}$