Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

March 31, 2016

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 876364**
AT&T Site ID: CT5272
201 Main Street, Cromwell, CT 06416
Latitude: 41° 35' 0.11"/ Longitude: -72° 38' 59.14"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 117-foot level of the existing 125-foot self-support tower at 201 Main Street in Cromwell, CT. The tower and property is owned by Crown Castle. AT&T now intends to replace three (3) antennas with three (3) new antennas. These antennas would be installed at the 125-foot level of the tower.

This facility was approved by the by the Town of Cromwell Planning and Zoning Commission on March 8, 2000. There were no conditions listed in this approval.

This modification complies with the aforementioned condition(s).

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Enzo Faienza, Mayor, Town of Cromwell, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: The Honorable Enzo Faienza, Mayor
Town of Cromwell
41 West Street Town Hall 1st Floor
Cromwell, CT 06416

TOWN OF CROMWELL PLANNING AND ZONING COMMISSION
ZONING PERMIT

Date of Application 2-21-00 Permit Number _____

Name of Permit Requester SPRINT SPECTRUM L.P. A DELAWARE LIMITED PARTNERSHIP

Address of Permit Requester ONE INTERNATIONAL BLVD. STE 800, MAHWAH, NJ 07495

Phone Number: Day (860) 919-7204/(201) 684-4065 Evening (203) 748-6404, PG: (860) 588-2783

Property Owner if different S+S PARTNERS, INC.

Property Owner Address if different S+S PARTNERS, INC., ATTN: ARTHUR SIBLEY P.O. BOX 301, CROMWELL, CT 06416 (860) 434-0079

Type of Permit:

☐ Sign ☐ Filling ☒ New Construction

☐ Addition ☐ Other ☐ Swimming Pool

E & S Bond required ☒ Yes ☐ No Permit Number 00624

Zoning District F Assessor's Map# 51 Block# 47 Lot# 36

ZBA Approved ☐ Yes ☐ No Volume 412 Page 142

Wetlands/watercourses on property ☒ Yes ☐ No Permit# N/A

Description of proposed activity PROPOSED SPRINT PCS ANTENNA FACILITY WITH A 125-FOOT MONOPOLE, RELATED CABLES, EQUIPMENT CABINETS, AND POWER + TELCO HOOKUPS

NOTE: ALL CONSTRUCTION IS OUTSIDE THE REGULATED AREAS

Dimensions: H 125' W SEE PLANS L SEE PLANS

Livable Floor Area: First N/A (NONE) Second N/A (NONE)

Garage Area N/A (NONE) Special Permit needed ☒ Yes ☐ No

Volume 412 Page 142 ☒ Plot Plan attached

This permit, if issued, is based upon the plot plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the Town of Cromwell Zoning Regulations.

Signature _____ Marc Goodman

Check one: ☐ Owner ☐ Applicant ☒ Agent

Conditions of approval _____

Approved by _____ Date 3/6/00

Rejected by _____ Date _____

TOWN OF CROMWELL
PLANNING AND ZONING COMMISSION

APPLICATION FOR AMENDMENT TO THE ZONING REGULATIONS

Applicant's Name: SPRINT SPECTRUM, L.P.

Address: 9 Barnes Industrial Road
Wallingford, CT 06492

Telephone: (203) 294-5600

- - - - Complete Paragraph A OR B, and Paragraph C: - - - -

A. Request to Change an Existing Regulation:

1. Article/Section/Paragraph of Current Regulation:

Section XII, Paragraph 12.1 h. 1. a.

2. Wording of Current Regulation: (attach if necessary)

See attached

B. Request to Create a New Regulation:

1. Article/Section/Paragraph of New Regulation:

2. Zoning District(s) to be Affected by New Regulation:

3. Wording of New Regulation: (attach if necessary)

C. Reason for Proposed Change or New Regulation:

To allow for telecommunications tower in a Flood Plain District

(applicant) - Thomas J. Regan

July 28, 1999
(date)

Brown, Rudnick, Freed & Gesmer, P.C.
185 Asylum Street, 38th Floor
Hartford, CT 06103-3402
Telephone: (860) 509-6522

PROJECT INFORMATION

SCOPE OF WORK: • ADD (1) RRH PER SECTOR (TOTAL OF 3 NEW RRHs)

SITE ADDRESS:	201 MAIN ST CROMWELL, CT 06416
LATITUDE:	41.5832919 41° 34' 59.85084"N
LONGITUDE:	−72.6496969 72° 38' 58.91604"W
USID:	25920
TOWER OWNER:	TBD
TYPE OF SITE:	WATER TOWER/INDOOR EQUIPMENT
TOWER HEIGHT:	125−0"±
RAD CENTER:	117'−0"±
CURRENT USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY
PROPOSED USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

at&t MOBILITY

FA CODE: 10070985
SITE NUMBER: CT5272
SITE NAME: CROMWELL SE
BUN# 876364

PROJECT TEAM

CLIENT REPRESENTATIVE
COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617−639−4908
EMAIL: dcooper@empiretelecomm.com

SITE ACQUISITION:
COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617−639−4908
EMAIL: dcooper@empiretelecomm.com

ZONING:
COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617−639−4908
EMAIL: dcooper@empiretelecomm.com

ENGINEERING:
COMPANY: COM−EX CONSULTANTS, LLC
ADDRESS: 115 ROUTE 46, SUITE E39, MOUNTAIN LAKES, NJ 07046
CONTACT: NICHOLAS D. BARILE, P.E.
PHONE: 862−209−4300
EMAIL: nbarile@comexconsultants.com

RF ENGINEER:
COMPANY: AT&T MOBILITY − NEW ENGLAND
ADDRESS: 550 COCHITUATE ROAD, SUITE 550 13 & 14, FRAMINGHAM, MA 01701
CONTACT: CAMERON SYME
PHONE: 508−596−7146
EMAIL: cs6970@att.com

CONSTRUCTION MANAGEMENT:
COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: GRZEGORZ "GREG" DORMAN
PHONE: 484−683−1750
EMAIL: gdorman@empiretelecomm.com

DRAWING INDEX

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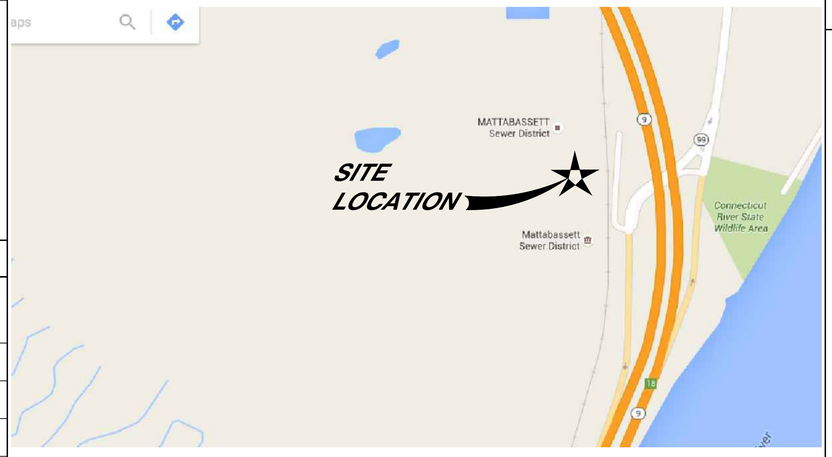
VICINITY MAP

FROM ROCKY HILL, HEAD SOUTHWEST ON CONCRIB LN. TURN LEFT ONTO SOLO DR. TURN RIGHT ONTO GILBERT AVE. TURN RIGHT ONTO STATE HWY 411. TURN LEFT TO MERGE ONTO I−91 N. TAKE EXIT 29 TO MERGE ONTO CT−15 N. CONTINUE ONTO CT−15 N. MERGE ONTO I−84 E TOWARD BOSTON. TAKE EXIT 63 FOR CT−83. TURN LEFT ONTO CT−30 N. TURN RIGHT ONTO MAIN STREET, SITE WILL BE ON LEFT.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

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

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AMD MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

DISCIPLINE:	NAME:	DATE:
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

CONNECTICUT ONE CALL SYSTEM, INC. 1-800-922-4455 STOP - CALL BEFORE YOU DIG!

CONNECTICUT LAW REQUIRES
TWO WORKING DAYS NOTICE PRIOR TO
ANY EARTH MOVING ACTIVITIES BY
CALLING 800−922−4455 OR DIAL 811

COM−EX Consultants
115 ROUTE 46
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PHONE: 862.209.4300
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0	02/22/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:
STATE OF CONNECTICUT
NICHOLAS D. BARILE
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
15153−EMP	T−1	2

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   - CONTRACTOR – EMPIRE TELECOM
   - SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   - OWNER – AT&T MOBILITY
   - OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE 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 CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR 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. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

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 SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR

9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF 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.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
   - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
   - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
   - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS

20. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST 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, THIRTEENTH EDITION
   - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
   - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
   - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
   - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
   - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
   - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

21. 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.

22. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

23. INFORMATION SHOWN ON THIS SET OF PLANS TAKEN FROM DRAWINGS PREPARED BY DEWBERRY ENGINEERING FOR A RECENT UPGRADE DATED 04/25/2011. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

COM-EX Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5272

SITE NAME: CROMWELL SE

201 MAIN STREET
CROMWELL, CT 06416
MIDDLESEX COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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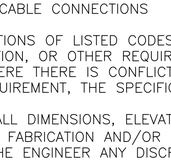
SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:

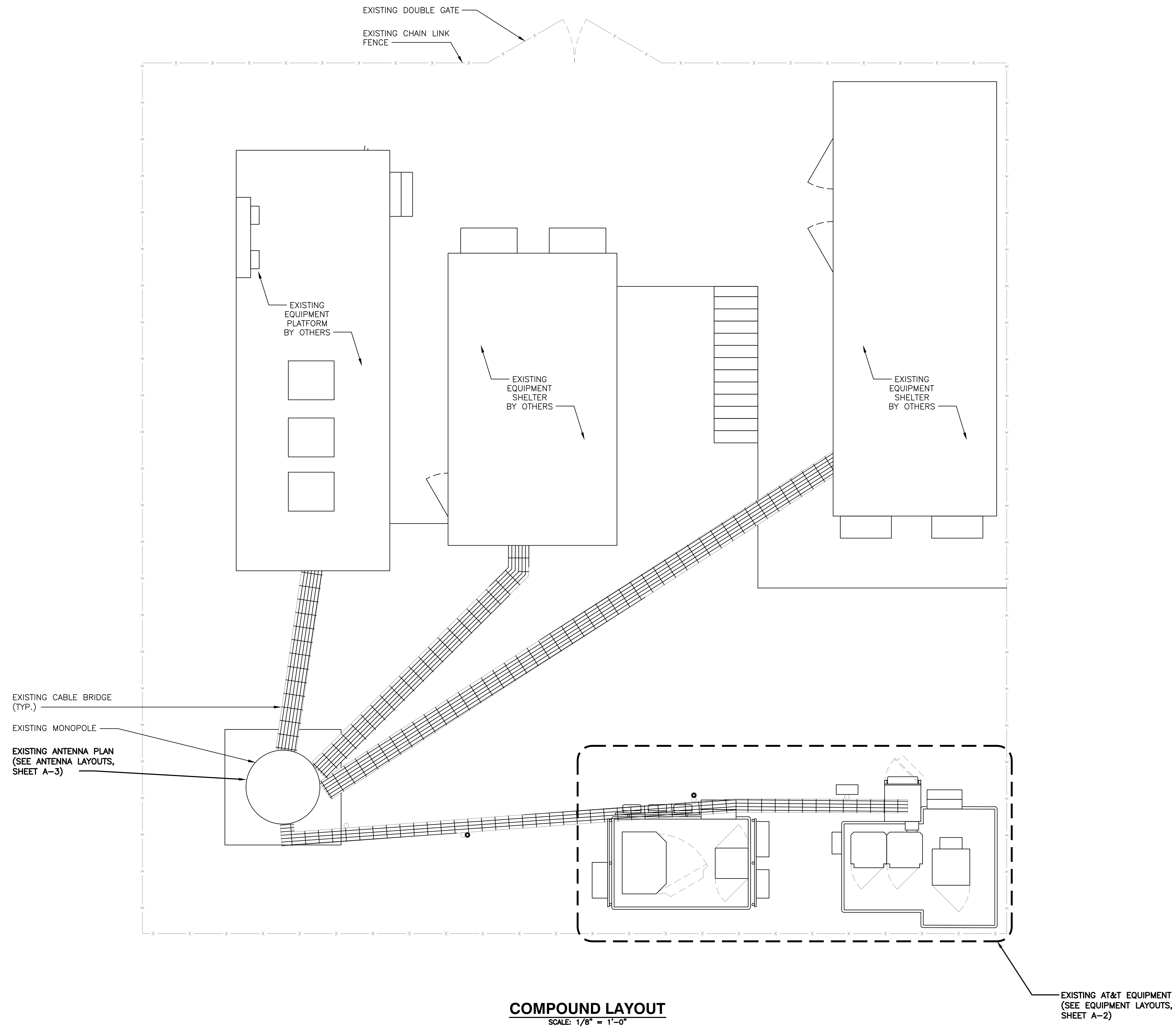


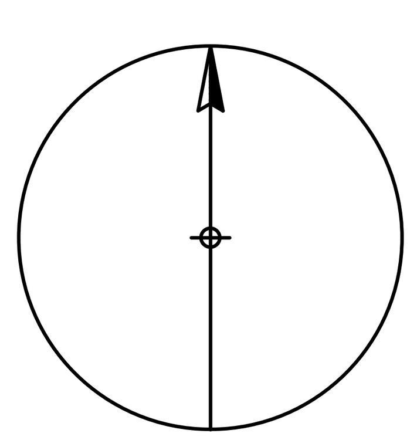
PROFESSIONAL ENGINEER
CT LICENSE NO. 23643

AT&T

DRAWING TITLE:
GROUNDING NOTES & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
15153-EMP	GN-1	2





NORTH

COMPOUND LAYOUT

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

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SUITE E39
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PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
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SITE NUMBER: CT5272
SITE NAME: CROMWELL SE

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0	02/22/16	ISSUED AS FINAL	JW	NDB	NDB

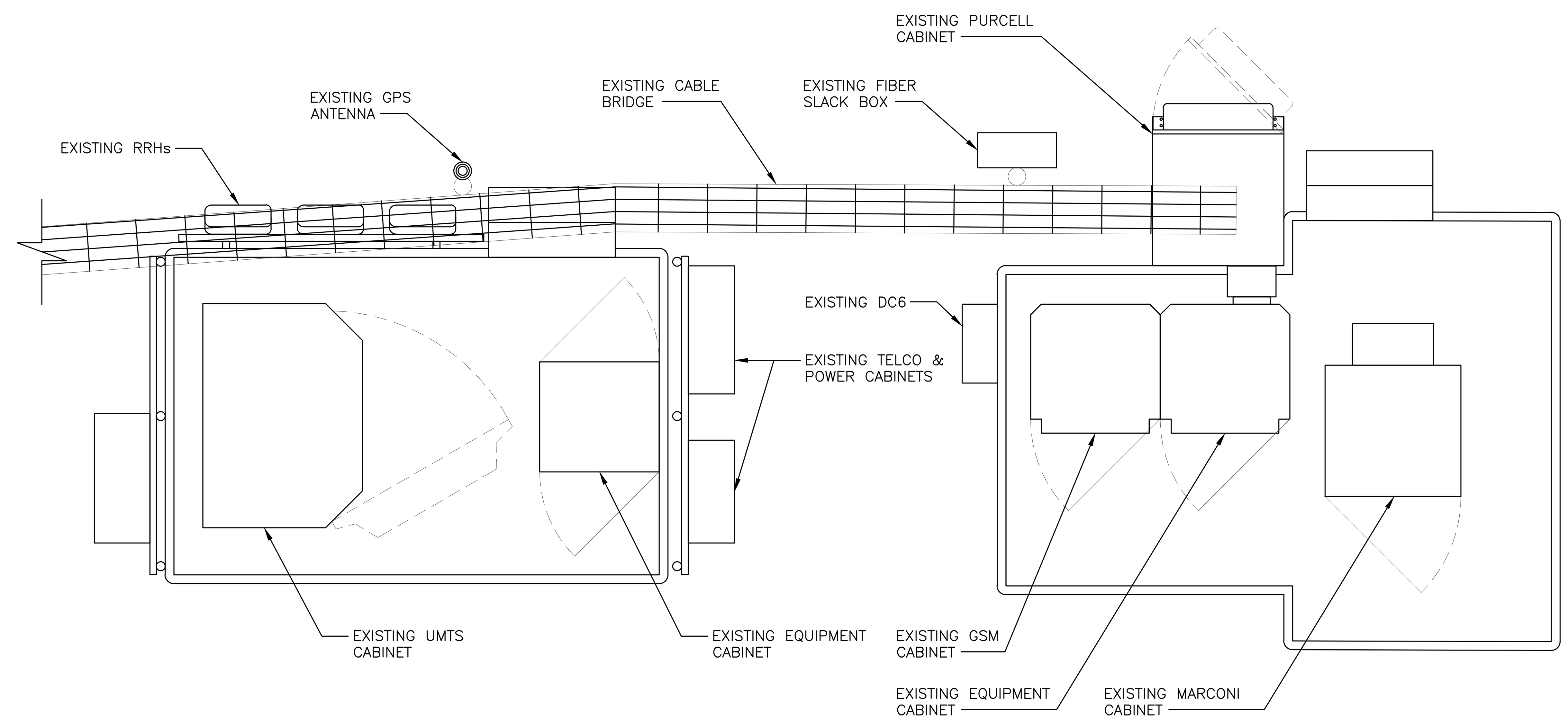
SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

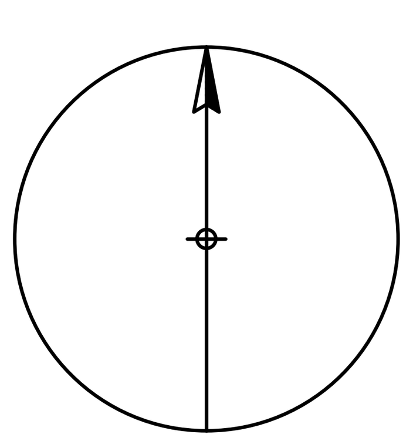
SEAL:
STATE OF CONNECTICUT NICHOLAS D. BARILE No. 28643 LICENSED PROFESSIONAL ENGINEER
NICHOLAS D. BARILE
PROFESSIONAL ENGINEER
CT LIC. NO. 28643

AT&T

DRAWING TITLE:
COMPOUND LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
15153-EMP	A-1	2





EXISTING EQUIPMENT LAYOUT

SCALE: 1/2" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot

COM-EX Consultants
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BILLERICA, MA 01821

SITE NUMBER: CT5272
SITE NAME: CROMWELL SE
201 MAIN STREET
CROMWELL, CT 06416
MIDDLESEX COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:

AT&T

DRAWING TITLE:
EQUIPMENT LAYOUTS

JOB NUMBER	DRAWING NUMBER	REV
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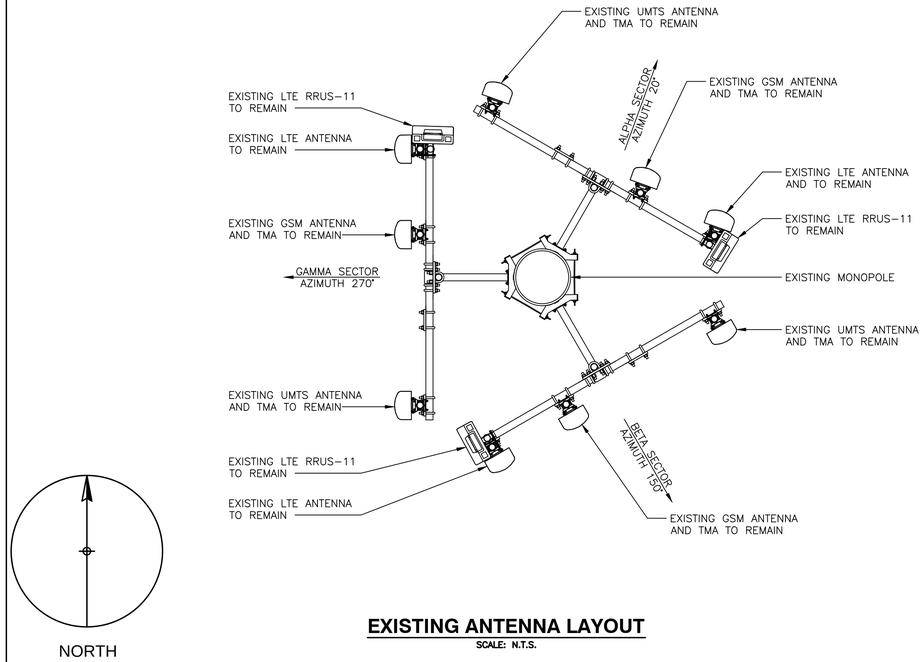

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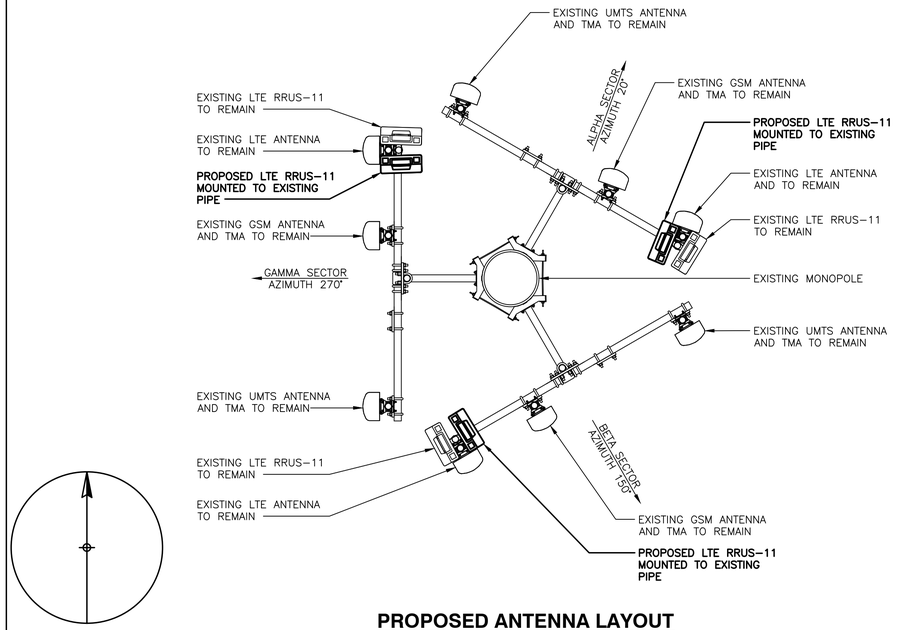
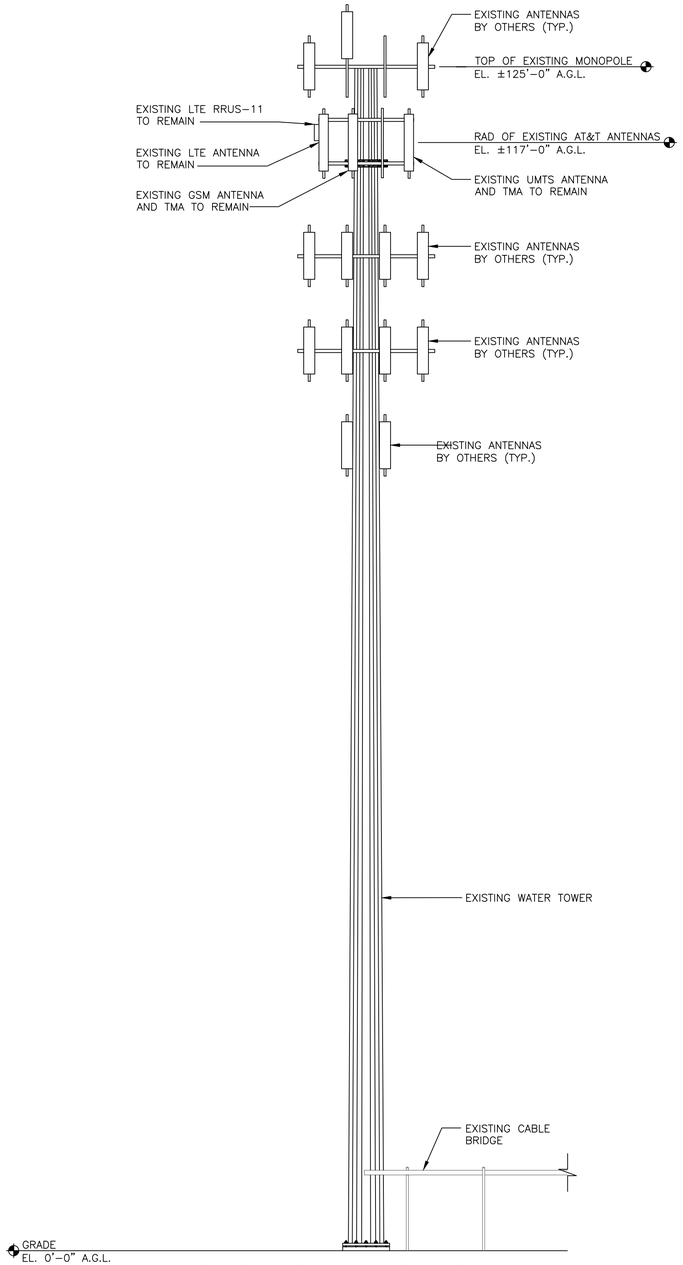
SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.



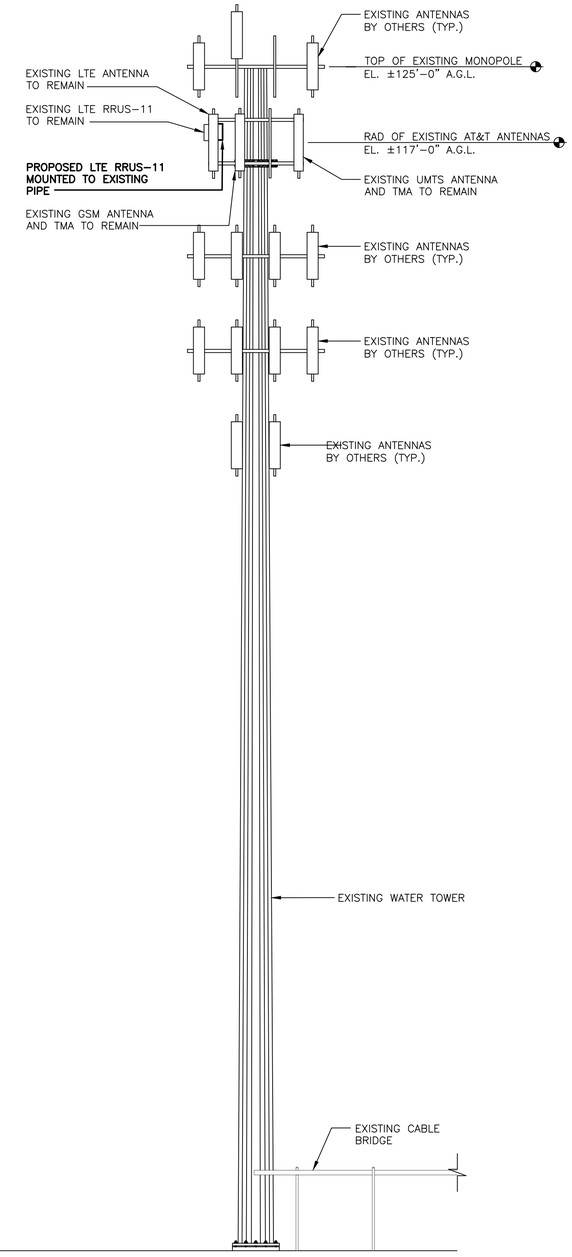
EXISTING TOWER ELEVATION

SCALE: 1/8" = 1'–0"

0 4 8 16

GRAPHIC SCALE: 1/8"=1'–0"

PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.



PROPOSED TOWER ELEVATION

SCALE: 1/8" = 1'–0"

0 4 8 16

GRAPHIC SCALE: 1/8"=1'–0"

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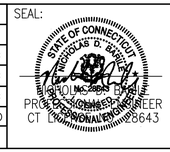
SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:



AT&T

DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
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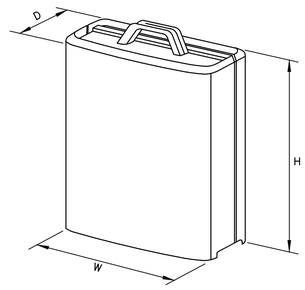

MODEL	L x W x H	WEIGHT
* RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS

* DENOTES EXISTING

RRUS DETAIL

SCALE: N.T.S.

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SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:

STATE OF CONNECTICUT
DOUGLAS B. BERGER
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER
PRINCIPAL ENGINEER
CT 28643

AT&T

DRAWING TITLE:
DETAILS

JOB NUMBER	DRAWING NUMBER	REV
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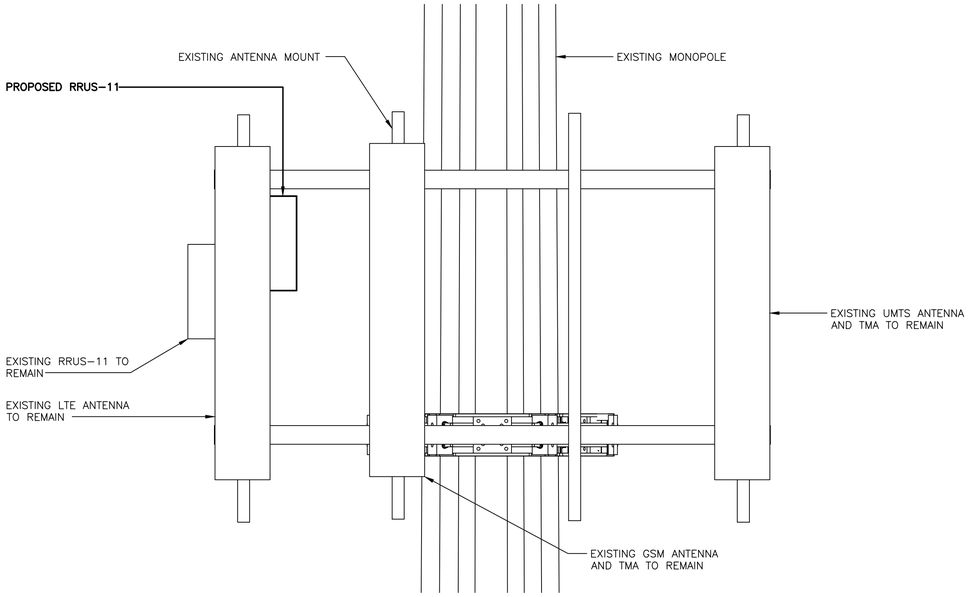
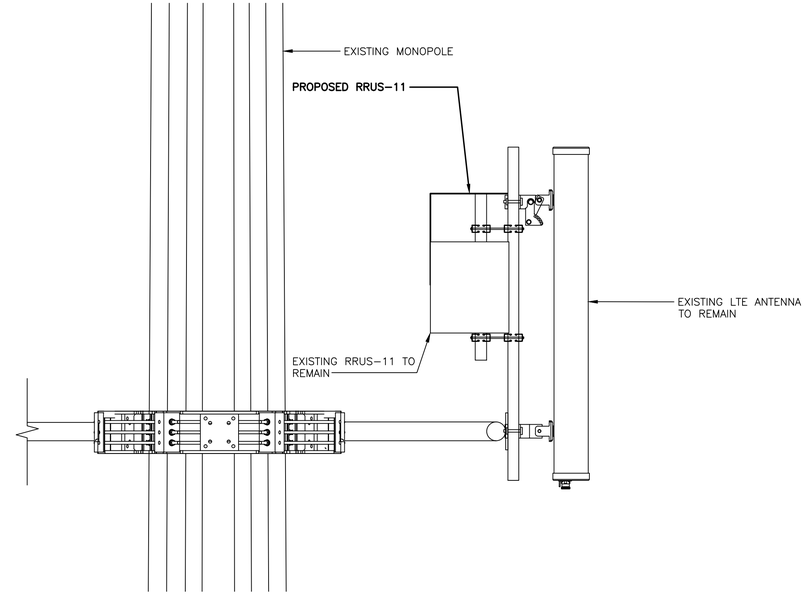


PROPOSED RRU MOUNTING DETAIL (FRONT VIEW)

SCALE: N.T.S.



PROPOSED RRU MOUNTING DETAIL (SIDE VIEW)

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	A2	–	–	–
	A3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	A4	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
BETA	B1	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	B2	–	–	–
	B3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	B4	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
GAMMA	C1	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	C2	–	–	–
	C3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	C4	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	A2	–	–	–
	A3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	A4	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
BETA	B1	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	B2	–	–	–
	B3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	B4	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
GAMMA	C1	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	C2	–	–	–
	C3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	C4	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"

PROPOSED RRU SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS–11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	**RRUS–11**	**19.7"x16.9"x7.2"**		
BETA	ERICSSON	RRUS–11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	**RRUS–11**	**19.7"x16.9"x7.2"**		
GAMMA	ERICSSON	RRUS–11 (EXISTING)	19.7"x16.9"x7.2"		
	ERICSSON	**RRUS–11**	**19.7"x16.9"x7.2"**		

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BILLERICA, MA 01821

SITE NUMBER: CT5272

SITE NAME: CROMWELL SE

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CROMWELL, CT 06416
MIDDLESEX COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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0	02/22/16	ISSUED AS FINAL	JW	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

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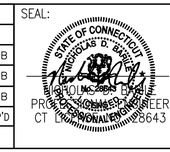
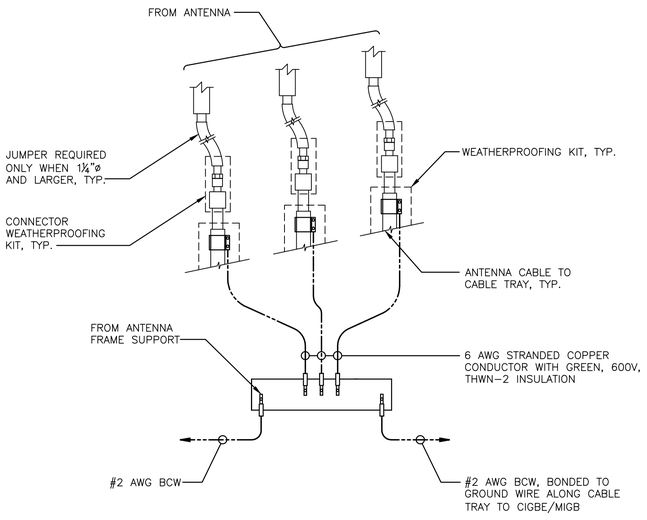


AT&T

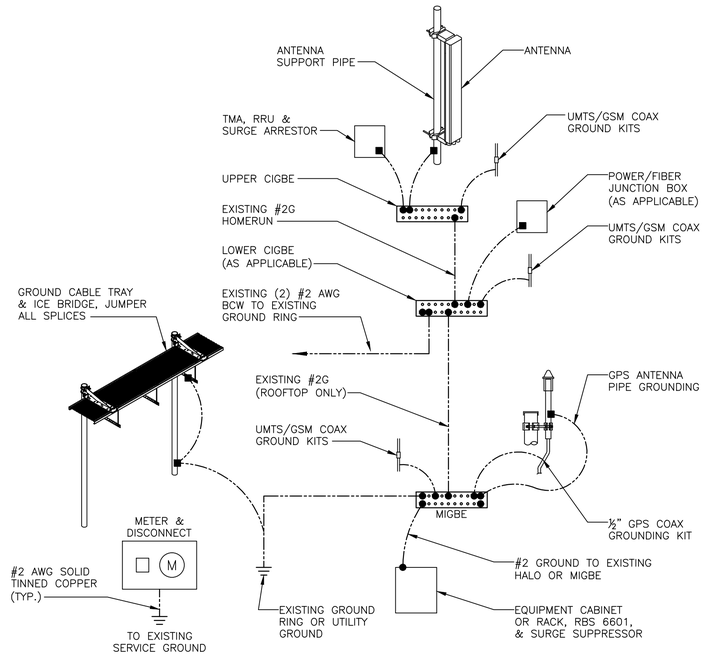
DRAWING TITLE:
ANTENNA MOUNTING DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15153–EMP	A–5	2



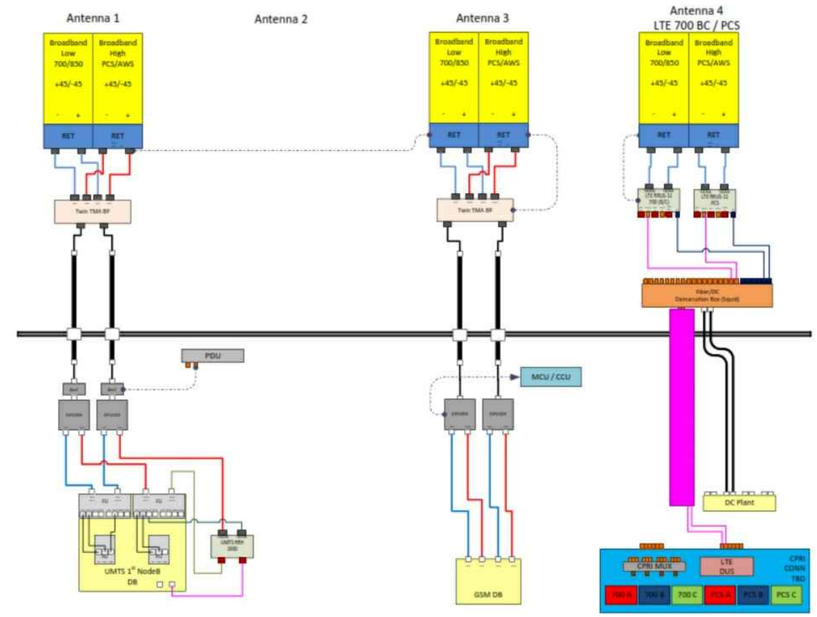
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



GROUNDING RISER DIAGRAM

SCALE: N.T.S.



TYPICAL PLUMBING DIAGRAM (PER SECTOR)

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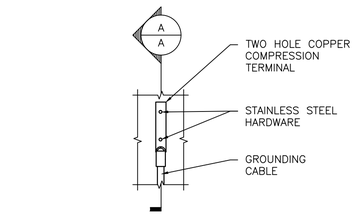
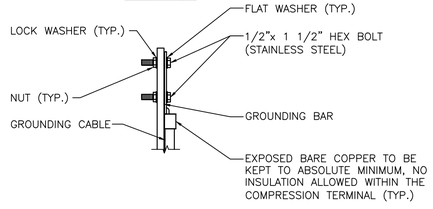


ELEVATION



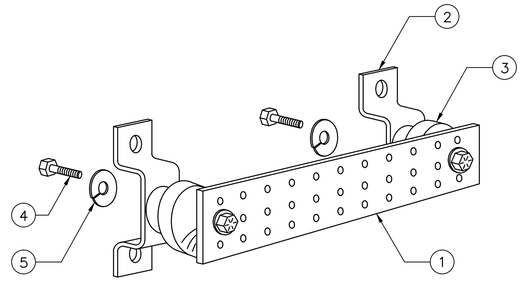
SECTION "A–A"

NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x ¼")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	⅝"–11x1" H.H.C.S.
5	4	⅝" LOCK WASHER

NOTES:

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" – SURGE PRODUCERS
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- –48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES

SECTION "A" – SURGE ABSORBERS
- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

GROUND BAR DETAIL

SCALE: N.T.S.

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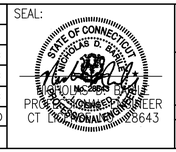

PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T

DRAWING TITLE:

GROUNDING DETAILS

JOB NUMBER	DRAWING NUMBER	REV
15153–EMP	G–1	2

February 5th, 2016

Sean Dempsey
Crown Castle
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Charlotte, NC 28277
(704) 405-6565

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT5272
	Carrier Site Name:	Cromwell SE
Crown Castle Designation:	**Crown Castle BU Number:**	876364
	Crown Castle Site Name:	Cromwell / First Line Emergenc
	Crown Castle JDE Job Number:	358482
	Crown Castle Work Order Number:	1188318
	Crown Castle Application Number:	322881 Rev. 5
Engineering Firm Designation:	**B+T Group Project Number:**	84470.014.01
Site Data:	**201 Main St., Cromwell, Middlesex County, CT** **Latitude *41° 35' 0.11"*, Longitude *-72° 38' 59.14"*** **125 Foot - Monopole Tower**	

Dear Sean Dempsey,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 869549, in accordance with application 322881, revision 5.

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

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 85 mph fastest mile.

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

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
B+T Engineering, Inc.

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

2/5/16

Tharun Cheriyan, E.I.T.
Project Engineer

Chad E. Tuttle, P.E.
Engineer of Record
COA: PEC.0001564 Expires: 02/10/2017

tnxTower Report - version 6.1.4.1

TABLE OF CONTENTS

1) INTRODUCTION

This is a 125 ft. monopole designed by Engineered Endeavors, Inc. in February of 2002. The monopole was originally designed for a wind speed of 90 mph per TIA/EIA-222-F. This monopole was modified several times and those modifications were incorporated in this analysis.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 37.6 mph with 0.75 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
115.0	117.0	3	Ericsson	RRUS 11 B12	--	--	--

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
125.0	129.0	3	Argus Techn.	LLPX310R-V1	3 3 2 4	5/16 1/4 1/2 1-1/4	1
	127.0	3	Alcatel Lucent	TD-RRH8x20-25			
		3	RFS Celwave	APXVSPP18-C-A20			
		3	RFS Celwave	APXVTM14-C-120			
	125.0	2	Dragonwave	Horizon Compact			
		3	Samsung Telecomm.	WIMAX DAP HEAD			
		1	--	Platform Mount [LP 714-1]			
	124.0	1	Andrew	VHLP2-11			
		1	Andrew	VHLP2-18			
123.0	123.0	3	Alcatel Lucent	800MHZ 2X50W RRH W/FILTER	--	--	1
		3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz			
		1	--	Side Arm Mount [SO 102-3]			
115.0	117.0	6	Communication Components Inc.	DTMABP7819VG12A	1 2 12	3/8 3/4 1-1/4	1
		3	Ericsson	RRUS 11 B12			
		9	KMW Comm.	AM-X-CD-16-65-00T-RET			
		1	Raycap	DC6-48-60-18-8F			
	115.0	1	--	Platform Mount [LP 304-1]			
105.0	105.0	3	Alcatel Lucent	RRH2x60-700	1	1-5/8	2
		3	Commscope	LNX-6514DS-A1M			
		1	RFS Celwave	DB-T1-6Z-8AB-0Z			
		3	Alcatel Lucent	RRH2X60-AWS	13	1-5/8	1
		3	Alcatel Lucent	RRH2X60-PCS			
		3	Andrew	LNX-6514DS-A1M			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
		6	Commscope	HBXX-6517DS-A2M			
		1	RFS Celwave	DB-T1-6Z-8AB-0Z			
		1	--	Platform Mount [LP 1201-1]			
82.0	85.0	3	Ericsson	Ericsson Air 21 B2A B4P	1 6	1-3/16 1-5/8	1
		3	Ericsson	Ericsson Air 21 B4A B2P			
	82.0	1	--	T-Arm Mount [TA 602-3]			

Notes:
1) Existing Equipment
2) Reserved Equipment

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
125	125	1	Generic	L.P. Platform	--	--
		6	Decibel	DB980H65		
		3	Decibel	DB980H90		
115	115	1	Generic	T-Arm	--	--
		6	Allgon	7250		
105	105	1	Generic	L.P. Platform	--	--
		12	Decibel	DB844		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	Verizon Wireless Co-Locate, Rev# 0	292878	CCI Sites
Tower Manufacturer Drawing	EEI, Job No. 10554	2068958	CCI Sites
Tower Modification Drawing	Semaan Engineering Solutions, Date: 12/08/2004	2055765	CCI Sites
Post Modification Inspection	VSI, Date: 10/11/2007	1956332	CCI Sites
Tower Modification Drawing	VSI, Date: 10/09/2007	2296089	CCI Sites
Post Modification Inspection	VSI, Date: 10/11/2007	2182292	CCI Sites
Tower Modification Drawing	B+T Group, Date: 07/11/2012	3373019	CCI Sites
Post Modification Inspection	B+T Group, Date: 12/07/2012	3394680	CCI Sites
Tower Modification Drawing	B+T Group, Date: 03/01/2013	3669962	CCI Sites
Post-Modification Inspection	TEP, Date: 09/10/2013	4009982	CCI Sites
Tower Modification Drawing	B+T Group, Date: 05/21/2015	5685167	CCI Sites
Post-Modification Inspection	ETS, Date: 10/21/2015	5947318	CCI Sites
Foundation Drawing	EEI, Project No. 6464	1613909	CCI Sites
Base Plate Details	Crown, Project No. 320820	2608627	CCI Sites
Geotech Report	Dr. Clarence Welti, P.E., Date: 08/02/1999	1532312	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 02/02/2016	CCI Sites

3.1) Analysis Method

tnxTower (version 6.1.4.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
5) Mount areas and weights are assumed based on photographs provided.
6) The existing base plate grout was not considered in this analysis.

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	125 - 99.375	Pole	TP24.008x18.5x0.188	1	-9.008	736.992	90.9	Pass
L2	99.375 - 94.458	Pole	TP25.065x24.008x0.409	2	-9.735	1030.434	83.5	Pass
L3	94.458 - 89	Pole	TP26.239x25.065x0.571	3	-10.752	1496.266	70.5	Pass
L4	89 - 85.04	Pole	TP27.09x26.239x0.676	4	-10.769	1738.605	61.3	Pass
L5	85.04 - 73.583	Pole	TP29.14x25.873x0.475	5	-15.525	1628.979	96.7	Pass
L6	73.583 - 73	Pole	TP29.264x29.14x0.609	6	-15.665	2088.598	77.0	Pass
L7	73 - 63	Pole	TP31.389x29.264x0.369	7	-17.486	1884.862	99.8	Pass
L8	63 - 57.333	Pole	TP32.594x31.389x0.566	8	-18.843	2399.840	86.1	Pass
L9	57.333 - 40.457	Pole	TP36.18x32.594x0.436	9	-21.392	2481.993	95.0	Pass
L10	40.457 - 37.833	Pole	TP36.233x34.6x0.493	10	-24.008	2901.714	89.4	Pass
L11	37.833 - 12.25	Pole	TP41.654x36.233x0.466	11	-30.594	3162.849	99.9	Pass
L12	12.25 - 0	Pole	TP44.25x41.654x0.589	12	-34.878	3699.635	92.6	Pass
							Summary	
						Pole (L11)	99.9	Pass
						Rating =	99.9	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component		Elevation	% Capacity	Pass / Fail
1	Anchor Rods		Base	98.8	Pass
1	Base Plate		Base	95.4	Pass
1	Base Foundation	Structure	Base	57.6	Pass
		Soil	Base	93.4	Pass

Structure Rating (max from all components) =	99.9%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) The percent capacities shown above (excluding foundations) include the 1/3 increase in allowable stresses as allowed by TIA/EIA-222-F.

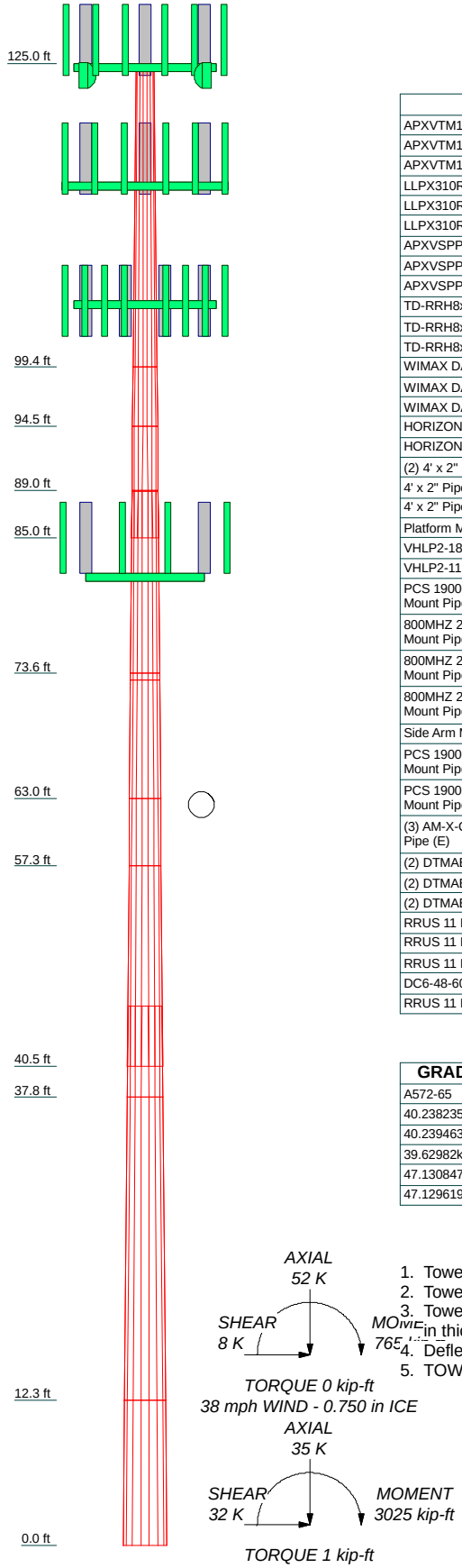
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	5	6	7	8	9	10	11	12
Length (ft)	25.625	4.917	5.458	3.960	15.374	0.583	10.000	5.667	16.876	7.707	25.583	12.250
Number of Sides	18	18	18	18	18	18	18	18	18	18	18	18
Thickness (in)	0.188	0.409	0.571	0.676	0.475	0.609	0.369	0.566	0.436	0.493	0.466	0.589
Socket Length (ft)				3.917					5.083			
Top Dia (in)	18.500	24.008	25.065	26.239	25.873	29.140	29.264	31.389	32.594	34.600	36.233	41.654
Bot Dia (in)	24.008	25.065	26.239	27.090	29.140	29.264	31.389	32.594	36.180	36.233	41.654	44.250
Grade	A572-65	40.238235ksi	40.239463ksi	40	39.62982ksi	47.130847ksi	47.129619ksi	64.911173ksi	52.1915ksi	64.735565ksi	64.830575ksi	64.844758ksi
Weight (K)	1.1	0.5	0.8	0.7	2.0	0.1	1.2	1.0	2.6	1.4	4.8	3.5



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVTM14-C-120 w/ Mount Pipe (E)	125	RRUS 11 B12 (P)	115
APXVTM14-C-120 w/ Mount Pipe (E)	125	RRUS 11 B12 (P)	115
APXVTM14-C-120 w/ Mount Pipe (E)	125	3' x 2" Pipe Mount (E)	115
LLPX310R-V1 w/ Mount Pipe (E)	125	3' x 2" Pipe Mount (E)	115
LLPX310R-V1 w/ Mount Pipe (E)	125	3' x 2" Pipe Mount (E)	115
LLPX310R-V1 w/ Mount Pipe (E)	125	Platform Mount [LP 304-1] (E)	115
APXVSPP18-C-A20 w/ Mount Pipe (E)	125	(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	115
APXVSPP18-C-A20 w/ Mount Pipe (E)	125		
APXVSPP18-C-A20 w/ Mount Pipe (E)	125	(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	115
TD-RRH8x20-25 (E)	125		
TD-RRH8x20-25 (E)	125	LNX-6514DS-A1M w/ Mount Pipe (E)	105
TD-RRH8x20-25 (E)	125	(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	105
WIMAX DAP HEAD (E)	125		
WIMAX DAP HEAD (E)	125	(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	105
WIMAX DAP HEAD (E)	125		
HORIZON COMPACT (E)	125	(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	105
HORIZON COMPACT (E)	125		
(2) 4' x 2" Pipe Mount (E)	125	RRH2X60-AWS (E)	105
4' x 2" Pipe Mount (E)	125	RRH2X60-AWS (E)	105
4' x 2" Pipe Mount (E)	125	RRH2X60-AWS (E)	105
Platform Mount [LP 714-1] (E)	125	RRH2X60-PCS (E)	105
VHLP2-18 (E)	125	RRH2X60-PCS (E)	105
VHLP2-11 (E)	125	RRH2X60-PCS (E)	105
PCS 1900MHz 4x45W-65MHz w / Mount Pipe (E)	123	DB-T1-6Z-8AB-0Z (E)	105
		LNX-6514DS-A1M w/ Mount Pipe (R)	105
800MHZ 2X50W RRH W/FILTER w / Mount Pipe (E)	123	LNX-6514DS-A1M w/ Mount Pipe (R)	105
		LNX-6514DS-A1M w/ Mount Pipe (R)	105
800MHZ 2X50W RRH W/FILTER w / Mount Pipe (E)	123	RRH2x60-700 (R)	105
		RRH2x60-700 (R)	105
800MHZ 2X50W RRH W/FILTER w / Mount Pipe (E)	123	RRH2x60-700 (R)	105
		DB-T1-6Z-8AB-0Z (R)	105
Side Arm Mount [SO 102-3] (E)	123	Platform Mount [LP 1201-1] (E)	105
PCS 1900MHz 4x45W-65MHz w / Mount Pipe (E)	123	LNX-6514DS-A1M w/ Mount Pipe (E)	105
		LNX-6514DS-A1M w/ Mount Pipe (E)	105
PCS 1900MHz 4x45W-65MHz w / Mount Pipe (E)	123	(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	82
(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe (E)	115	(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E)	82
(2) DTMABP7819VG12A (E)	115	4' x 2" Pipe Mount (E)	82
(2) DTMABP7819VG12A (E)	115	4' x 2" Pipe Mount (E)	82
(2) DTMABP7819VG12A (E)	115	4' x 2" Pipe Mount (E)	82
RRUS 11 B12 (E)	115	T-Arm Mount [TA 601-3] (E)	82
RRUS 11 B12 (E)	115	ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	82
RRUS 11 B12 (E)	115		
DC6-48-60-18-8F (E)	115	ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E)	82
RRUS 11 B12 (P)	115		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	64.911173ksi	65 ksi	80 ksi
40.238235ksi	40 ksi	55 ksi	52.1915ksi	52 ksi	67 ksi
40.239463ksi	40 ksi	55 ksi	64.735565ksi	65 ksi	80 ksi
39.62982ksi	40 ksi	55 ksi	64.830575ksi	65 ksi	80 ksi
47.130847ksi	47 ksi	62 ksi	64.844758ksi	65 ksi	80 ksi
47.129619ksi	47 ksi	62 ksi	56.706718ksi	57 ksi	72 ksi

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 99.9%

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 84470.014.01 - Cromwell/First Line Emergenc, CT (BU# 87636			
Project:			
Client: Crown Castle	Drawn by: Harisha H K	App'd:	
Code: TIA/EIA-222-F	Date: 02/04/16	Scale: NTS	
Path:		Dwg No. E-1	

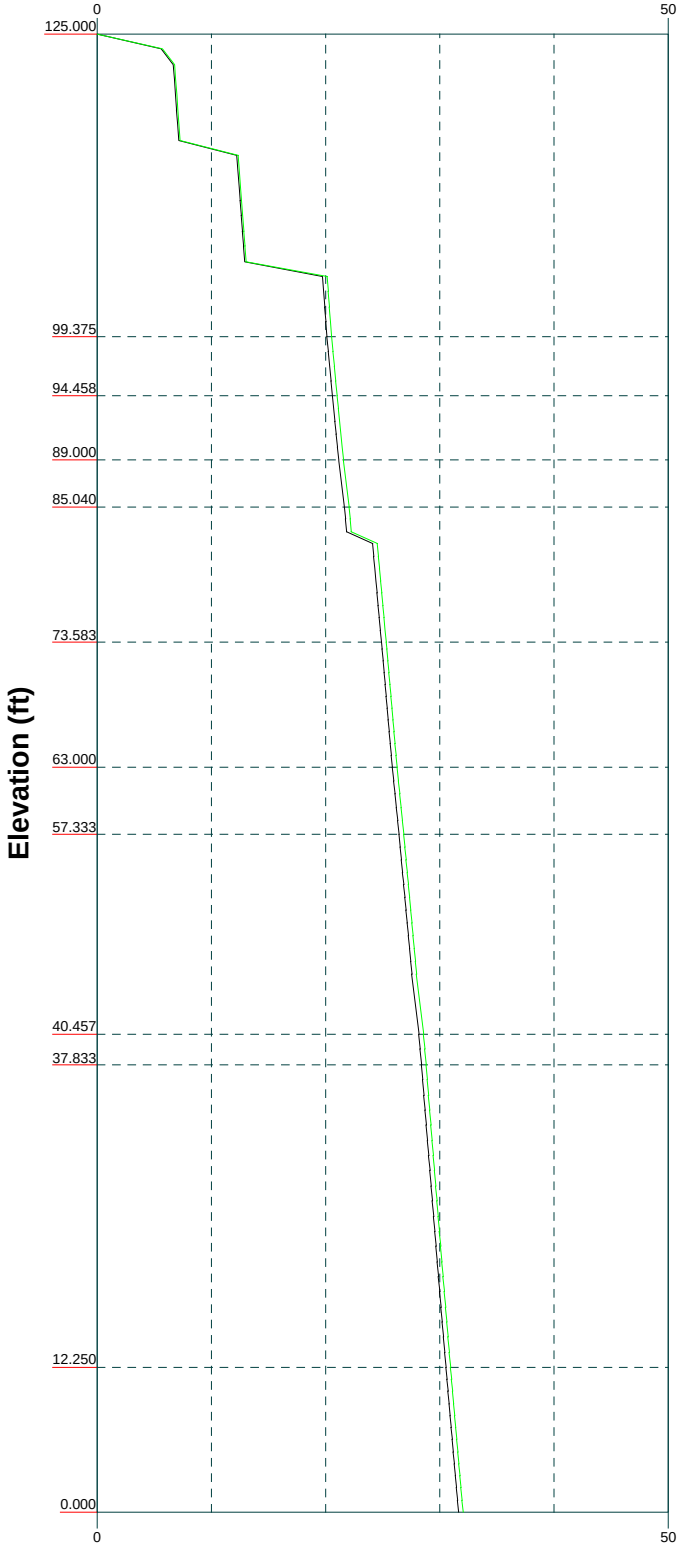
TIA/EIA-222-F - 85 mph/38 mph 0.750 in Ice

Vx Vz

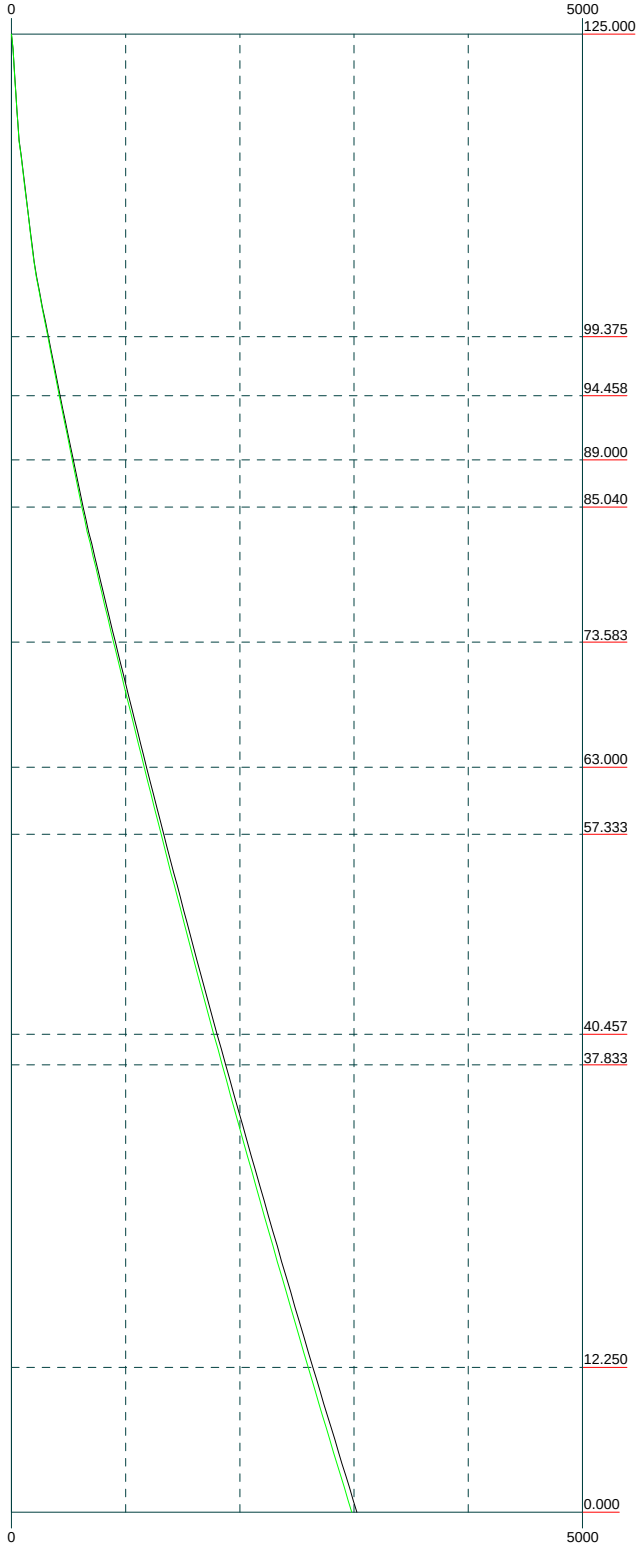
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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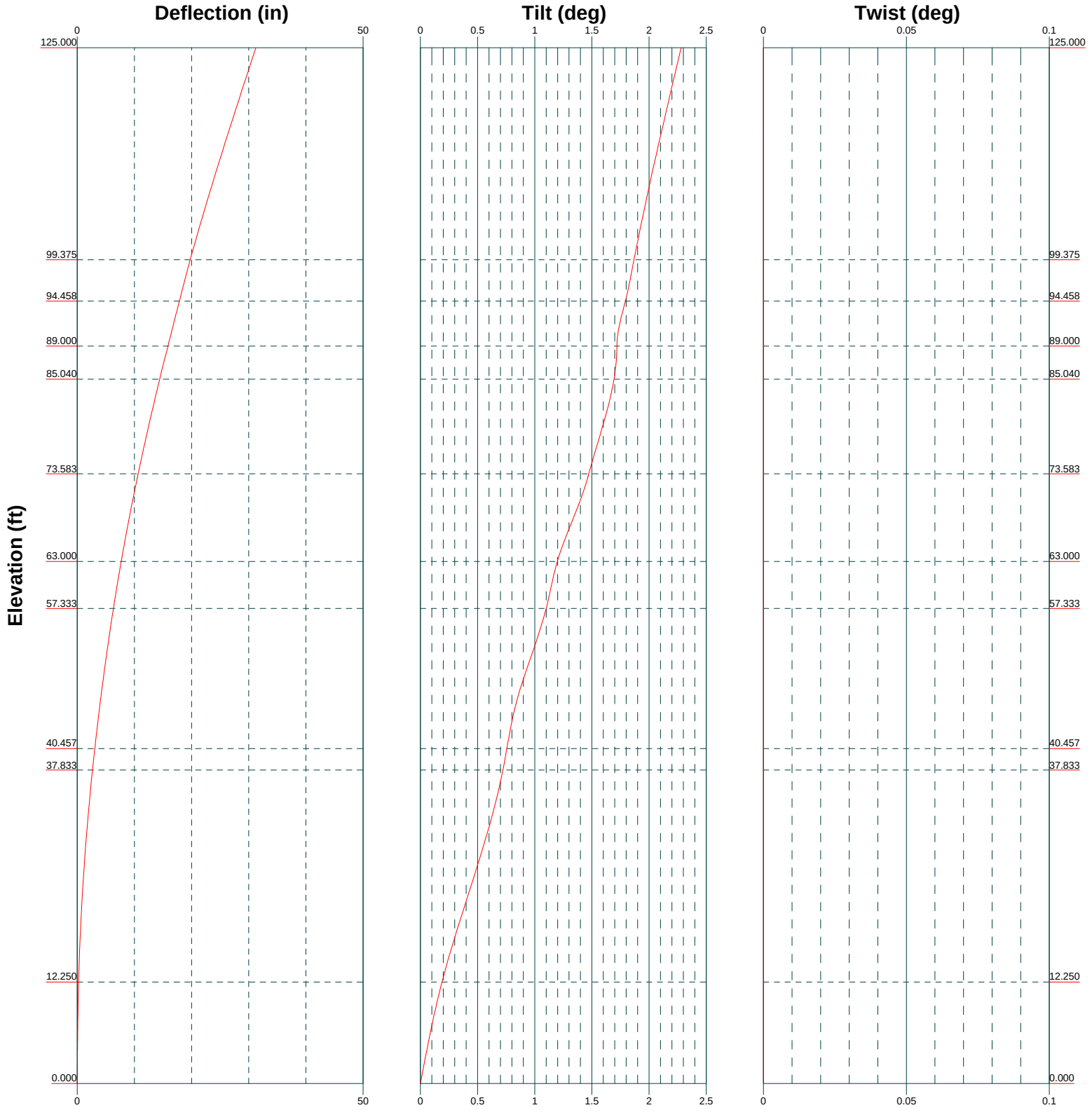
Project:			
Client: Crown Castle	Drawn by: Harisha H K	App'd:	
Code: TIA/EIA-222-F	Date: 02/04/16	Scale: NTS	
Path:		Dwg No. E-4	

TIA/EIA-222-F - Service - 50 mph

Maximum Values



B+T GRP

B+T Group
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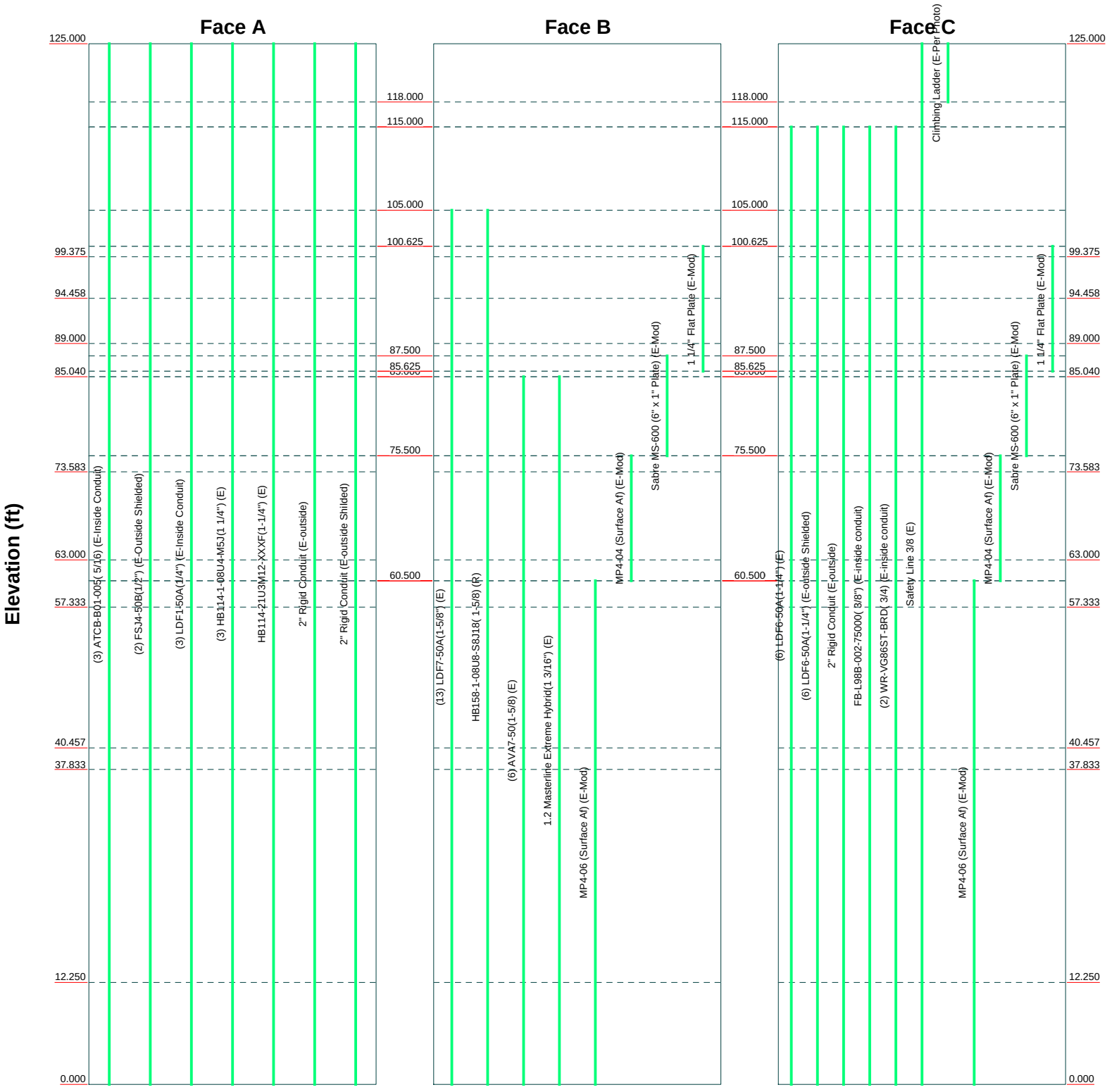
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *84470.014.01 - Cromwell/First Line Emergenc, CT (BU# 87636*			
Project:			
Client: Crown Castle	Drawn by: Harisha H K	App'd:	
Code: TIA/EIA-222-F	Date: 02/04/16	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 125'

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



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FAX: (918) 295-0265

Job:	***84470.014.01 - Cromwell/First Line Emergenc, CT (BU# 87636***		
Project:			
Client: Crown Castle	Drawn by: Harisha H K	App'd:	
Code: TIA/EIA-222-F	Date: 02/04/16	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Middlesex County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °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 pole design is 1.333.
Local bending stresses due to climbing loads, feed line 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		Use TIA-222-G Tension Splice Capacity Exemption		

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	125.000-99.375	25.625	0.000	18	18.500	24.008	0.188	0.750	A572-65 (65 ksi)
L2	99.375-94.458	4.917	0.000	18	24.008	25.065	0.409	1.637	40.238235ksi (40 ksi)
L3	94.458-89.000	5.458	0.000	18	25.065	26.239	0.571	2.283	40.239463ksi (40 ksi)
L4	89.000-85.040	3.960	3.917	18	26.239	27.090	0.676	2.703	39.62982ksi (40 ksi)
L5	85.040-73.583	15.374	0.000	18	25.873	29.140	0.475	1.900	47.130847ksi

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L6	73.583-73.000	0.583	0.000	18	29.140	29.264	0.609	2.437	(47 ksi) 47.129619ksi
L7	73.000-63.000	10.000	0.000	18	29.264	31.389	0.369	1.475	(47 ksi) 64.911173ksi
L8	63.000-57.333	5.667	0.000	18	31.389	32.594	0.566	2.262	(65 ksi) 52.1915ksi
L9	57.333-40.457	16.876	5.083	18	32.594	36.180	0.436	1.743	(52 ksi) 64.735565ksi
L10	40.457-37.833	7.707	0.000	18	34.600	36.233	0.493	1.973	(65 ksi) 64.830575ksi
L11	37.833-12.250	25.583	0.000	18	36.233	41.654	0.466	1.866	(65 ksi) 64.844758ksi
L12	12.250-0.000	12.250		18	41.654	44.250	0.589	2.354	(65 ksi) 56.706718ksi (57 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	18.785	10.898	461.730	6.501	9.398	49.131	924.069	5.450	2.926	15.605
	24.379	14.176	1016.306	8.456	12.196	83.329	2033.949	7.090	3.895	20.776
L2	24.379	30.646	2156.297	8.378	12.196	176.799	4315.432	15.326	3.505	8.568
	25.452	32.018	2459.201	8.753	12.733	193.132	4921.638	16.012	3.691	9.023
L3	25.452	44.367	3363.118	8.696	12.733	264.121	6730.661	22.188	3.407	5.971
	26.644	46.492	3869.907	9.112	13.329	290.331	7744.905	23.250	3.614	6.332
L4	26.644	54.833	4526.868	9.075	13.329	339.618	9059.693	27.422	3.429	5.073
	27.508	56.659	4994.338	9.377	13.762	362.915	9995.247	28.335	3.578	5.295
L5	27.117	38.289	3120.402	9.016	13.143	237.411	6244.910	19.148	3.718	7.827
	29.590	43.214	4486.191	10.176	14.803	303.055	8978.284	21.611	4.293	9.038
L6	29.590	55.169	5673.738	10.128	14.803	383.277	11354.941	27.590	4.056	6.658
	29.716	55.409	5747.975	10.172	14.866	386.648	11503.512	27.710	4.078	6.694
L7	29.716	33.819	3567.394	10.258	14.866	239.967	7139.482	16.913	4.501	12.208
	31.873	36.306	4413.813	11.012	15.946	276.802	8833.434	18.156	4.876	13.222
L8	31.873	55.329	6641.447	10.942	15.946	416.503	13291.632	27.670	4.529	8.009
	33.096	57.491	7450.731	11.370	16.558	449.990	14911.267	28.751	4.741	8.383
L9	33.096	44.472	5810.281	11.416	16.558	350.915	11628.208	22.240	4.970	11.406
	36.738	49.432	7979.124	12.689	18.379	434.133	15968.747	24.720	5.601	12.855
L10	36.227	53.405	7848.573	12.108	17.577	446.533	15707.473	26.707	5.221	10.584
	36.792	55.962	9030.892	12.688	18.406	490.640	18073.668	27.986	5.509	11.166
L11	36.792	52.958	8558.953	12.697	18.406	465.000	17129.169	26.484	5.556	11.91
	42.297	60.985	13070.561	14.622	21.160	617.692	26158.321	30.498	6.510	13.955
L12	42.297	76.722	16346.109	14.578	21.160	772.489	32713.726	38.368	6.295	10.695
	44.933	81.572	19646.021	15.500	22.479	873.972	39317.892	40.794	6.752	11.471

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 125.000-99.375				1	1	1		
L2 99.375-94.458				1	1	0.970813		

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L3 94.458-89.000				1	1	0.942063		
L4 89.000-85.040				1	1	0.908095		
L5 85.040-73.583				1	1	0.947761		
L6 73.583-73.000				1	1	0.93408		
L7 73.000-63.000				1	1	0.975654		
L8 63.000-57.333				1	1	0.946262		
L9 57.333-40.457				1	1	0.959022		
L10 40.457-37.833				1	1	0.964013		
L11 37.833-12.250				1	1	0.972895		
L12 12.250-0.000				1	1	1.05815		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
hh										

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 ft^2/ft	Weight klf
ATCB-B01-005(5/16) (E-Inside Conduit)	A	No	CaAa (Out Of Face)	125.000 - 0.000	0.000	0	3	No Ice	0.000	0.000
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.002
								2" Ice	0.000	0.006
								4" Ice	0.000	0.021
FSJ4-50B(1/2") (E-Outside Shielded)	A	No	CaAa (Out Of Face)	125.000 - 0.000	0.000	0	2	No Ice	0.000	0.000
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.002
								2" Ice	0.000	0.006
								4" Ice	0.000	0.022
LDF1-50A(1/4") (E-Inside Conduit)	A	No	CaAa (Out Of Face)	125.000 - 0.000	0.000	0	3	No Ice	0.000	0.000
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.002
								2" Ice	0.000	0.006
								4" Ice	0.000	0.021
HB114-1-08U4-M5J(1 1/4") (E)	A	No	Inside Pole	125.000 - 0.000	0.000	0	3	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
								4" Ice	0.000	0.001
HB114-21U3 M12-XXXF(1 -1/4") (E)	A	No	Inside Pole	125.000 - 0.000	0.000	0	1	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
2" Rigid Conduit (E-outside)	A	No	CaAa (Out Of Face)	125.000 - 0.000	0.000	0	1	No Ice	0.200	0.003
								1/2" Ice	0.300	0.004
								1" Ice	0.400	0.006
								2" Ice	0.600	0.013
								4" Ice	1.000	0.032
2" Rigid Conduit (E-outside Shilded)	A	No	CaAa (Out Of Face)	125.000 - 0.000	0.000	0	1	No Ice	0.000	0.003
								1/2" Ice	0.000	0.004
								1" Ice	0.000	0.006
								2" Ice	0.000	0.013
								4" Ice	0.000	0.032
hh LDF6-50A(1-1/4") (E)	C	No	Inside Pole	115.000 - 0.000	0.000	0	6	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
LDF6-50A(1-1/4") (E-outside Shielded)	C	No	CaAa (Out Of Face)	115.000 - 0.000	0.000	0	6	No Ice	0.000	0.001
								1/2" Ice	0.000	0.002
								1" Ice	0.000	0.004
								2" Ice	0.000	0.009
								4" Ice	0.000	0.028
2" Rigid Conduit (E-outside)	C	No	CaAa (Out Of Face)	115.000 - 0.000	0.000	0	1	No Ice	0.200	0.003
								1/2" Ice	0.300	0.004
								1" Ice	0.400	0.006
								2" Ice	0.600	0.013
								4" Ice	1.000	0.032
FB-L98B-002-75000(3/8") (E-inside conduit)	C	No	CaAa (Out Of Face)	115.000 - 0.000	0.000	0	1	No Ice	0.000	0.000
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.002
								2" Ice	0.000	0.006
								4" Ice	0.000	0.022
WR-VG86ST-BRD(3/4) (E-inside conduit)	C	No	CaAa (Out Of Face)	115.000 - 0.000	0.000	0	2	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.003
								2" Ice	0.000	0.007
								4" Ice	0.000	0.024
hh LDF7-50A(1-5/8") (E)	B	No	Inside Pole	105.000 - 0.000	0.000	0	13	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
HB158-1-08U 8-S8J18(1-5/8) (R)	B	No	Inside Pole	105.000 - 0.000	0.000	0	1	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
hh AVA7-50(1-5/8) (E)	B	No	Inside Pole	85.000 - 0.000	0.000	0	6	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001
								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
1.2 Masterline Extreme	B	No	Inside Pole	85.000 - 0.000	0.000	0	1	No Ice	0.000	0.001
								1/2" Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight klf
Hybrid(1 3/16") (E) *hh*								1" Ice	0.000	0.001
								2" Ice	0.000	0.001
								4" Ice	0.000	0.001
Safety Line 3/8 (E)	C	No	CaAa (Out Of Face)	125.000 - 0.000	0.000	0	1	No Ice	0.037	0.000
								1/2" Ice	0.137	0.001
								1" Ice	0.238	0.001
								2" Ice	0.437	0.002
								4" Ice	0.838	0.004
Climbing Ladder (E-Per Photo) *hh*	C	No	CaAa (Out Of Face)	125.000 - 118.000	30.000	0	1	No Ice	0.500	0.008
								1/2" Ice	0.611	0.014
								1" Ice	0.722	0.019
								2" Ice	0.944	0.029
								4" Ice	1.389	0.049
MP4-06 (Surface Af) (E-Mod)	B	No	CaAa (Out Of Face)	60.500 - 0.000	0.000	0	1	No Ice	0.434	0.000
								1/2" Ice	0.518	0.000
								1" Ice	0.601	0.000
								2" Ice	0.768	0.000
								4" Ice	1.101	0.000
MP4-06 (Surface Af) (E-Mod) *hh*	C	No	CaAa (Out Of Face)	60.500 - 0.000	0.000	0	1	No Ice	0.434	0.000
								1/2" Ice	0.518	0.000
								1" Ice	0.601	0.000
								2" Ice	0.768	0.000
								4" Ice	1.101	0.000
MP4-04 (Surface Af) (E-Mod)	B	No	CaAa (Out Of Face)	75.500 - 60.500	0.000	0	1	No Ice	0.268	0.000
								1/2" Ice	0.352	0.000
								1" Ice	0.435	0.000
								2" Ice	0.602	0.000
								4" Ice	0.935	0.000
MP4-04 (Surface Af) (E-Mod) *hh*	C	No	CaAa (Out Of Face)	75.500 - 60.500	0.000	0	1	No Ice	0.268	0.000
								1/2" Ice	0.352	0.000
								1" Ice	0.435	0.000
								2" Ice	0.602	0.000
								4" Ice	0.935	0.000
Sabre MS-600 (6" x 1" Plate) (E-Mod)	B	No	CaAa (Out Of Face)	87.500 - 75.500	0.000	0	1	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
Sabre MS-600 (6" x 1" Plate) (E-Mod) *hh*	C	No	CaAa (Out Of Face)	87.500 - 75.500	0.000	0	1	No Ice	0.167	0.000
								1/2" Ice	0.250	0.000
								1" Ice	0.333	0.000
								2" Ice	0.500	0.000
								4" Ice	0.833	0.000
1 1/4" Flat Plate (E-Mod)	B	No	CaAa (Out Of Face)	100.625 - 85.625	0.000	0	1	No Ice	0.208	0.000
								1/2" Ice	0.292	0.000
								1" Ice	0.375	0.000
								2" Ice	0.542	0.000
								4" Ice	0.875	0.000
1 1/4" Flat Plate (E-Mod) *hh*	C	No	CaAa (Out Of Face)	100.625 - 85.625	0.000	0	1	No Ice	0.208	0.000
								1/2" Ice	0.292	0.000
								1" Ice	0.375	0.000
								2" Ice	0.542	0.000
								4" Ice	0.875	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	125.000-99.375	A	0.000	0.000	0.000	5.125	0.275
		B	0.000	0.000	0.000	0.260	0.067
		C	0.000	0.000	0.000	7.846	0.251
L2	99.375-94.458	A	0.000	0.000	0.000	0.983	0.053
		B	0.000	0.000	0.000	1.024	0.059
		C	0.000	0.000	0.000	2.192	0.060
L3	94.458-89.000	A	0.000	0.000	0.000	1.092	0.059
		B	0.000	0.000	0.000	1.137	0.065
		C	0.000	0.000	0.000	2.433	0.066
L4	89.000-85.040	A	0.000	0.000	0.000	0.792	0.043
		B	0.000	0.000	0.000	1.113	0.047
		C	0.000	0.000	0.000	2.054	0.048
L5	85.040-73.583	A	0.000	0.000	0.000	2.291	0.123
		B	0.000	0.000	0.000	2.104	0.196
		C	0.000	0.000	0.000	4.825	0.140
L6	73.583-73.000	A	0.000	0.000	0.000	0.117	0.006
		B	0.000	0.000	0.000	0.156	0.010
		C	0.000	0.000	0.000	0.295	0.007
L7	73.000-63.000	A	0.000	0.000	0.000	2.000	0.107
		B	0.000	0.000	0.000	2.683	0.171
		C	0.000	0.000	0.000	5.058	0.122
L8	63.000-57.333	A	0.000	0.000	0.000	1.133	0.061
		B	0.000	0.000	0.000	2.046	0.097
		C	0.000	0.000	0.000	3.392	0.069
L9	57.333-40.457	A	0.000	0.000	0.000	3.375	0.181
		B	0.000	0.000	0.000	7.330	0.289
		C	0.000	0.000	0.000	11.338	0.206
L10	40.457-37.833	A	0.000	0.000	0.000	0.525	0.028
		B	0.000	0.000	0.000	1.140	0.045
		C	0.000	0.000	0.000	1.763	0.032
L11	37.833-12.250	A	0.000	0.000	0.000	5.117	0.275
		B	0.000	0.000	0.000	11.112	0.438
		C	0.000	0.000	0.000	17.188	0.312
L12	12.250-0.000	A	0.000	0.000	0.000	2.450	0.132
		B	0.000	0.000	0.000	5.321	0.210
		C	0.000	0.000	0.000	8.230	0.149

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	125.000-99.375	A	0.868	0.000	0.000	0.000	9.574	0.717
		B		0.000	0.000	0.000	0.441	0.067
		C		0.000	0.000	0.000	16.540	0.709
L2	99.375-94.458	A	0.853	0.000	0.000	0.000	1.823	0.136
		B		0.000	0.000	0.000	1.724	0.059
		C		0.000	0.000	0.000	4.570	0.179
L3	94.458-89.000	A	0.848	0.000	0.000	0.000	2.017	0.150
		B		0.000	0.000	0.000	1.908	0.065
		C		0.000	0.000	0.000	5.056	0.198
L4	89.000-85.040	A	0.843	0.000	0.000	0.000	1.459	0.108
		B		0.000	0.000	0.000	1.932	0.047
		C		0.000	0.000	0.000	4.208	0.143

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 K
L5	85.040-73.583	A	0.833	0.000	0.000	0.000	4.222	0.313
		B		0.000	0.000	0.000	3.713	0.196
		C		0.000	0.000	0.000	10.295	0.413
L6	73.583-73.000	A	0.825	0.000	0.000	0.000	0.213	0.016
		B		0.000	0.000	0.000	0.237	0.010
		C		0.000	0.000	0.000	0.568	0.021
L7	73.000-63.000	A	0.818	0.000	0.000	0.000	3.636	0.266
		B		0.000	0.000	0.000	4.046	0.171
		C		0.000	0.000	0.000	9.693	0.352
L8	63.000-57.333	A	0.806	0.000	0.000	0.000	2.047	0.149
		B		0.000	0.000	0.000	2.808	0.097
		C		0.000	0.000	0.000	5.981	0.197
L9	57.333-40.457	A	0.786	0.000	0.000	0.000	6.028	0.435
		B		0.000	0.000	0.000	9.540	0.289
		C		0.000	0.000	0.000	18.854	0.574
L10	40.457-37.833	A	0.766	0.000	0.000	0.000	0.937	0.068
		B		0.000	0.000	0.000	1.483	0.045
		C		0.000	0.000	0.000	2.932	0.089
L11	37.833-12.250	A	0.750	0.000	0.000	0.000	8.954	0.635
		B		0.000	0.000	0.000	14.309	0.438
		C		0.000	0.000	0.000	28.060	0.838
L12	12.250-0.000	A	0.750	0.000	0.000	0.000	4.287	0.304
		B		0.000	0.000	0.000	6.852	0.210
		C		0.000	0.000	0.000	13.436	0.401

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	125.000-99.375	-0.291	-0.051	-0.485	-0.039
L2	99.375-94.458	-0.218	0.134	-0.401	0.215
L3	94.458-89.000	-0.220	0.136	-0.408	0.219
L4	89.000-85.040	-0.213	0.207	-0.387	0.317
L5	85.040-73.583	-0.229	0.115	-0.428	0.209
L6	73.583-73.000	-0.220	0.200	-0.416	0.275
L7	73.000-63.000	-0.223	0.203	-0.421	0.279
L8	63.000-57.333	-0.215	0.293	-0.411	0.352
L9	57.333-40.457	-0.212	0.364	-0.408	0.413
L10	40.457-37.833	-0.215	0.369	-0.416	0.421
L11	37.833-12.250	-0.220	0.378	-0.421	0.433
L12	12.250-0.000	-0.226	0.388	-0.438	0.449

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft	C_AA_A Front ft²	C_AA_A Side ft²	Weight K

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVTM14-C-120 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
APXVTM14-C-120 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
APXVTM14-C-120 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.134 7.662 8.183 9.256 11.526	4.959 5.754 6.472 8.010 11.412	0.077 0.131 0.193 0.338 0.752
LLPX310R-V1 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 4.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.704	2.983 3.526 4.086 5.313 8.131	0.045 0.083 0.126 0.232 0.544
LLPX310R-V1 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 4.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.704	2.983 3.526 4.086 5.313 8.131	0.045 0.083 0.126 0.232 0.544
LLPX310R-V1 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 4.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.065 5.480 5.905 6.788 8.704	2.983 3.526 4.086 5.313 8.131	0.045 0.083 0.126 0.232 0.544
APXVSPP18-C-A20 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.151 0.227 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.151 0.227 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.151 0.227 0.406 0.909
TD-RRH8x20-25 (E)	A	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
TD-RRH8x20-25 (E)	B	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.720 5.014 5.316 5.948 7.314	1.703 1.920 2.145 2.622 3.680	0.070 0.097 0.128 0.201 0.397
TD-RRH8x20-25 (E)	C	From Leg	4.000 0.000	0.000	125.000	No Ice 1/2" Ice	4.720 5.014	1.703 1.920	0.070 0.097

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.000					1" Ice	5.316	2.145	0.128
								2" Ice	5.948	2.622	0.201
								4" Ice	7.314	3.680	0.397
WIMAX DAP HEAD	A	From Leg	4.000			0.000	125.000	No Ice	1.804	0.778	0.033
(E)			0.000					1/2" Ice	1.988	0.918	0.045
			0.000					1" Ice	2.180	1.067	0.058
								2" Ice	2.589	1.391	0.094
								4" Ice	3.512	2.143	0.201
WIMAX DAP HEAD	B	From Leg	4.000			0.000	125.000	No Ice	1.804	0.778	0.033
(E)			0.000					1/2" Ice	1.988	0.918	0.045
			0.000					1" Ice	2.180	1.067	0.058
								2" Ice	2.589	1.391	0.094
								4" Ice	3.512	2.143	0.201
WIMAX DAP HEAD	C	From Leg	4.000			0.000	125.000	No Ice	1.804	0.778	0.033
(E)			0.000					1/2" Ice	1.988	0.918	0.045
			0.000					1" Ice	2.180	1.067	0.058
								2" Ice	2.589	1.391	0.094
								4" Ice	3.512	2.143	0.201
HORIZON COMPACT	B	From Leg	4.000			0.000	125.000	No Ice	0.841	0.429	0.012
(E)			0.000					1/2" Ice	0.966	0.525	0.018
			0.000					1" Ice	1.099	0.629	0.026
								2" Ice	1.392	0.863	0.048
								4" Ice	2.082	1.435	0.122
HORIZON COMPACT	C	From Leg	4.000			0.000	125.000	No Ice	0.841	0.429	0.012
(E)			0.000					1/2" Ice	0.966	0.525	0.018
			0.000					1" Ice	1.099	0.629	0.026
								2" Ice	1.392	0.863	0.048
								4" Ice	2.082	1.435	0.122
(2) 4' x 2" Pipe Mount	A	From Leg	4.000			0.000	125.000	No Ice	0.785	0.785	0.029
(E)			0.000					1/2" Ice	1.028	1.028	0.035
			0.000					1" Ice	1.281	1.281	0.044
								2" Ice	1.814	1.814	0.072
								4" Ice	3.111	3.111	0.167
4' x 2" Pipe Mount	B	From Leg	4.000			0.000	125.000	No Ice	0.785	0.785	0.029
(E)			0.000					1/2" Ice	1.028	1.028	0.035
			0.000					1" Ice	1.281	1.281	0.044
								2" Ice	1.814	1.814	0.072
								4" Ice	3.111	3.111	0.167
4' x 2" Pipe Mount	C	From Leg	4.000			0.000	125.000	No Ice	0.785	0.785	0.029
(E)			0.000					1/2" Ice	1.028	1.028	0.035
			0.000					1" Ice	1.281	1.281	0.044
								2" Ice	1.814	1.814	0.072
								4" Ice	3.111	3.111	0.167
Platform Mount [LP 714-1]	C	None				0.000	125.000	No Ice	37.470	37.470	1.600
(E)								1/2" Ice	44.230	44.230	2.040
								1" Ice	50.990	50.990	2.480
								2" Ice	64.510	64.510	3.360
								4" Ice	91.550	91.550	5.119
hh											
PCS 1900MHz 4x45W-65MHz w / Mount Pipe	A	From Leg	1.000			0.000	123.000	No Ice	2.905	3.218	0.071
			0.000					1/2" Ice	3.206	3.647	0.101
(E)			0.000					1" Ice	3.519	4.094	0.138
								2" Ice	4.187	5.064	0.225
								4" Ice	5.703	7.343	0.480
PCS 1900MHz 4x45W-65MHz w / Mount Pipe	B	From Leg	1.000			0.000	123.000	No Ice	2.905	3.218	0.071
			0.000					1/2" Ice	3.206	3.647	0.101
			0.000					1" Ice	3.519	4.094	0.138

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)						2" Ice	4.187	5.064	0.225
						4" Ice	5.703	7.343	0.480
PCS 1900MHz 4x45W-65MHz w / Mount Pipe	C	From Leg	1.000 0.000 0.000	0.000	123.000	No Ice 1/2" Ice 1" Ice	2.905 3.206 3.519	3.218 3.647 4.094	0.071 0.101 0.138
(E)						2" Ice	4.187	5.064	0.225
						4" Ice	5.703	7.343	0.480
800MHZ 2X50W RRH W/FILTER w / Mount Pipe	A	From Leg	1.000 0.000 0.000	0.000	123.000	No Ice 1/2" Ice 1" Ice	2.586 2.861 3.149	2.731 3.102 3.490	0.073 0.101 0.135
(E)						2" Ice	3.780	4.371	0.216
						4" Ice	5.207	6.396	0.453
800MHZ 2X50W RRH W/FILTER w / Mount Pipe	B	From Leg	1.000 0.000 0.000	0.000	123.000	No Ice 1/2" Ice 1" Ice	2.586 2.861 3.149	2.731 3.102 3.490	0.073 0.101 0.135
(E)						2" Ice	3.780	4.371	0.216
						4" Ice	5.207	6.396	0.453
800MHZ 2X50W RRH W/FILTER w / Mount Pipe	C	From Leg	1.000 0.000 0.000	0.000	123.000	No Ice 1/2" Ice 1" Ice	2.586 2.861 3.149	2.731 3.102 3.490	0.073 0.101 0.135
(E)						2" Ice	3.780	4.371	0.216
						4" Ice	5.207	6.396	0.453
Side Arm Mount [SO 102-3]	C	None		0.000	123.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
						2" Ice	4.920	4.920	0.201
						4" Ice	6.840	6.840	0.321
hh									
(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice	8.498 9.149 9.767	6.304 7.479 8.368	0.074 0.139 0.212
(E)						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice	8.498 9.149 9.767	6.304 7.479 8.368	0.074 0.139 0.212
(E)						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice	8.498 9.149 9.767	6.304 7.479 8.368	0.074 0.139 0.212
(E)						2" Ice	11.031	10.179	0.385
						4" Ice	13.679	14.024	0.874
(2) DTMABP7819VG12A	A	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice	1.139 1.284 1.437	0.391 0.488 0.595	0.019 0.026 0.036
(E)						2" Ice	1.769	0.833	0.060
						4" Ice	2.538	1.414	0.140
(2) DTMABP7819VG12A	B	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice	1.139 1.284 1.437	0.391 0.488 0.595	0.019 0.026 0.036
(E)						2" Ice	1.769	0.833	0.060
						4" Ice	2.538	1.414	0.140
(2) DTMABP7819VG12A	C	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice	1.139 1.284 1.437	0.391 0.488 0.595	0.019 0.026 0.036
(E)						2" Ice	1.769	0.833	0.060

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	2.538	1.414	0.140
RRUS 11 B12	A	From Leg	4.000	0.000	115.000	No Ice	3.306	1.361	0.051
(E)			0.000			1/2" Ice	3.550	1.540	0.072
			2.000			1" Ice	3.802	1.728	0.095
						2" Ice	4.334	2.130	0.153
						4" Ice	5.501	3.038	0.314
RRUS 11 B12	B	From Leg	4.000	0.000	115.000	No Ice	3.306	1.361	0.051
(E)			0.000			1/2" Ice	3.550	1.540	0.072
			2.000			1" Ice	3.802	1.728	0.095
						2" Ice	4.334	2.130	0.153
						4" Ice	5.501	3.038	0.314
RRUS 11 B12	C	From Leg	4.000	0.000	115.000	No Ice	3.306	1.361	0.051
(E)			0.000			1/2" Ice	3.550	1.540	0.072
			2.000			1" Ice	3.802	1.728	0.095
						2" Ice	4.334	2.130	0.153
						4" Ice	5.501	3.038	0.314
DC6-48-60-18-8F	A	From Leg	4.000	0.000	115.000	No Ice	1.467	1.467	0.019
(E)			0.000			1/2" Ice	1.667	1.667	0.037
			2.000			1" Ice	1.878	1.878	0.057
						2" Ice	2.333	2.333	0.105
						4" Ice	3.378	3.378	0.239
RRUS 11 B12	A	From Leg	4.000	0.000	115.000	No Ice	3.306	1.361	0.051
(P)			0.000			1/2" Ice	3.550	1.540	0.072
			2.000			1" Ice	3.802	1.728	0.095
						2" Ice	4.334	2.130	0.153
						4" Ice	5.501	3.038	0.314
RRUS 11 B12	B	From Leg	4.000	0.000	115.000	No Ice	3.306	1.361	0.051
(P)			0.000			1/2" Ice	3.550	1.540	0.072
			2.000			1" Ice	3.802	1.728	0.095
						2" Ice	4.334	2.130	0.153
						4" Ice	5.501	3.038	0.314
RRUS 11 B12	C	From Leg	4.000	0.000	115.000	No Ice	3.306	1.361	0.051
(P)			0.000			1/2" Ice	3.550	1.540	0.072
			2.000			1" Ice	3.802	1.728	0.095
						2" Ice	4.334	2.130	0.153
						4" Ice	5.501	3.038	0.314
3' x 2" Pipe Mount	A	From Leg	4.000	0.000	115.000	No Ice	0.583	0.583	0.011
(E)			0.000			1/2" Ice	0.770	0.770	0.017
			0.000			1" Ice	0.967	0.967	0.024
						2" Ice	1.417	1.417	0.047
						4" Ice	2.536	2.536	0.126
3' x 2" Pipe Mount	B	From Leg	4.000	0.000	115.000	No Ice	0.583	0.583	0.011
(E)			0.000			1/2" Ice	0.770	0.770	0.017
			0.000			1" Ice	0.967	0.967	0.024
						2" Ice	1.417	1.417	0.047
						4" Ice	2.536	2.536	0.126
3' x 2" Pipe Mount	C	From Leg	4.000	0.000	115.000	No Ice	0.583	0.583	0.011
(E)			0.000			1/2" Ice	0.770	0.770	0.017
			0.000			1" Ice	0.967	0.967	0.024
						2" Ice	1.417	1.417	0.047
						4" Ice	2.536	2.536	0.126
Platform Mount [LP 304-1]	C	None		0.000	115.000	No Ice	17.460	17.460	1.349
(E)						1/2" Ice	22.440	22.440	1.625
						1" Ice	27.420	27.420	1.900
						2" Ice	37.380	37.380	2.451
						4" Ice	57.300	57.300	3.554
hh									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
LNX-6514DS-A1M w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.648 9.305 9.930 11.204 13.872	7.082 8.273 9.185 11.023 15.063	0.065 0.134 0.211 0.393 0.902
LNX-6514DS-A1M w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.648 9.305 9.930 11.204 13.872	7.082 8.273 9.185 11.023 15.063	0.065 0.134 0.211 0.393 0.902
LNX-6514DS-A1M w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.648 9.305 9.930 11.204 13.872	7.082 8.273 9.185 11.023 15.063	0.065 0.134 0.211 0.393 0.902
(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.976 9.647 10.291 11.595 14.321	6.963 8.182 9.144 11.022 15.027	0.067 0.137 0.215 0.398 0.914
(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.976 9.647 10.291 11.595 14.321	6.963 8.182 9.144 11.022 15.027	0.067 0.137 0.215 0.398 0.914
(2) HBXX-6517DS-A2M w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.976 9.647 10.291 11.595 14.321	6.963 8.182 9.144 11.022 15.027	0.067 0.137 0.215 0.398 0.914
RRH2X60-AWS (E)	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.957 4.272 4.596 5.271 6.722	1.816 2.075 2.360 2.957 4.253	0.060 0.083 0.109 0.173 0.354
RRH2X60-AWS (E)	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.957 4.272 4.596 5.271 6.722	1.816 2.075 2.360 2.957 4.253	0.060 0.083 0.109 0.173 0.354
RRH2X60-AWS (E)	C	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.957 4.272 4.596 5.271 6.722	1.816 2.075 2.360 2.957 4.253	0.060 0.083 0.109 0.173 0.354
RRH2X60-PCS (E)	A	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.567 2.791 3.025 3.517 4.606	2.011 2.218 2.435 2.894 3.915	0.055 0.075 0.099 0.155 0.313
RRH2X60-PCS (E)	B	From Leg	4.000 0.000 0.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.567 2.791 3.025 3.517 4.606	2.011 2.218 2.435 2.894 3.915	0.055 0.075 0.099 0.155 0.313
RRH2X60-PCS (E)	C	From Leg	4.000 0.000	0.000	105.000	No Ice 1/2" Ice	2.567 2.791	2.011 2.218	0.055 0.075

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000					1" Ice	3.025	2.435	0.099
								2" Ice	3.517	2.894	0.155
								4" Ice	4.606	3.915	0.313
DB-T1-6Z-8AB-0Z	A	From Leg	4.000			0.000	105.000	No Ice	5.600	2.333	0.044
(E)			0.000					1/2" Ice	5.915	2.558	0.080
			0.000					1" Ice	6.240	2.791	0.120
								2" Ice	6.914	3.284	0.213
								4" Ice	8.365	4.373	0.455
LNX-6514DS-A1M w/ Mount Pipe	A	From Leg	4.000			0.000	105.000	No Ice	8.648	7.082	0.065
(R)			0.000					1/2" Ice	9.305	8.273	0.134
			0.000					1" Ice	9.930	9.185	0.211
								2" Ice	11.204	11.023	0.393
								4" Ice	13.872	15.063	0.902
LNX-6514DS-A1M w/ Mount Pipe	B	From Leg	4.000			0.000	105.000	No Ice	8.648	7.082	0.065
(R)			0.000					1/2" Ice	9.305	8.273	0.134
			0.000					1" Ice	9.930	9.185	0.211
								2" Ice	11.204	11.023	0.393
								4" Ice	13.872	15.063	0.902
LNX-6514DS-A1M w/ Mount Pipe	C	From Leg	4.000			0.000	105.000	No Ice	8.648	7.082	0.065
(R)			0.000					1/2" Ice	9.305	8.273	0.134
			0.000					1" Ice	9.930	9.185	0.211
								2" Ice	11.204	11.023	0.393
								4" Ice	13.872	15.063	0.902
RRH2x60-700	A	From Leg	4.000			0.000	105.000	No Ice	3.957	1.816	0.060
(R)			0.000					1/2" Ice	4.272	2.075	0.083
			0.000					1" Ice	4.596	2.360	0.109
								2" Ice	5.271	2.957	0.173
								4" Ice	6.722	4.253	0.354
RRH2x60-700	B	From Leg	4.000			0.000	105.000	No Ice	3.957	1.816	0.060
(R)			0.000					1/2" Ice	4.272	2.075	0.083
			0.000					1" Ice	4.596	2.360	0.109
								2" Ice	5.271	2.957	0.173
								4" Ice	6.722	4.253	0.354
RRH2x60-700	C	From Leg	4.000			0.000	105.000	No Ice	3.957	1.816	0.060
(R)			0.000					1/2" Ice	4.272	2.075	0.083
			0.000					1" Ice	4.596	2.360	0.109
								2" Ice	5.271	2.957	0.173
								4" Ice	6.722	4.253	0.354
DB-T1-6Z-8AB-0Z	A	From Leg	4.000			0.000	105.000	No Ice	5.600	2.333	0.044
(R)			0.000					1/2" Ice	5.915	2.558	0.080
			0.000					1" Ice	6.240	2.791	0.120
								2" Ice	6.914	3.284	0.213
								4" Ice	8.365	4.373	0.455
Platform Mount [LP 1201-1]	C	None				0.000	105.000	No Ice	23.100	23.100	2.100
(E)								1/2" Ice	26.800	26.800	2.500
								1" Ice	30.500	30.500	2.900
								2" Ice	37.900	37.900	3.700
								4" Ice	52.700	52.700	5.300
hh ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.000			0.000	82.000	No Ice	6.825	5.642	0.112
(E)			0.000					1/2" Ice	7.347	6.480	0.169
			3.000					1" Ice	7.863	7.257	0.233
								2" Ice	8.926	8.864	0.383
								4" Ice	11.175	12.293	0.807
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.000			0.000	82.000	No Ice	6.825	5.642	0.112
(E)			0.000					1/2" Ice	7.347	6.480	0.169
			3.000					1" Ice	7.863	7.257	0.233

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 K
						2" Ice	8.926	8.864	0.383
						4" Ice	11.175	12.293	0.807
(2) ERICSSON AIR 21 B2A B4P w/ Mount Pipe (E)	B	From Leg	4.000 0.000 3.000	0.000	82.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E)	C	From Leg	4.000 0.000 3.000	0.000	82.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.825 7.347 7.863 8.926 11.175	5.642 6.480 7.257 8.864 12.293	0.112 0.169 0.233 0.383 0.807
4' x 2" Pipe Mount (E)	A	From Leg	4.000 0.000 0.000	0.000	82.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.785 1.028 1.281 1.814 3.111	0.785 1.028 1.281 1.814 3.111	0.029 0.035 0.044 0.072 0.167
4' x 2" Pipe Mount (E)	B	From Leg	4.000 0.000 0.000	0.000	82.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.785 1.028 1.281 1.814 3.111	0.785 1.028 1.281 1.814 3.111	0.029 0.035 0.044 0.072 0.167
4' x 2" Pipe Mount (E)	C	From Leg	4.000 0.000 0.000	0.000	82.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.785 1.028 1.281 1.814 3.111	0.785 1.028 1.281 1.814 3.111	0.029 0.035 0.044 0.072 0.167
T-Arm Mount [TA 601-3] (E)	C	None		0.000	82.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.900 14.650 18.400 25.900 40.900	10.900 14.650 18.400 25.900 40.900	0.726 0.926 1.125 1.524 2.322
hh									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2-18 (E)	B	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 -1.000	62.000		125.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.720 4.010 4.300 4.880 6.040	0.031 0.050 0.070 0.110 0.200
VHLP2-11 (E)	C	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 -1.000	90.000		125.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.720 4.010 4.300 4.880 6.040	0.027 0.050 0.070 0.110 0.190

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft^2	Weight K
hh										

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	125 - 99.375	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-19.464	0.554	1.398
			Max. Mx	11	-9.078	318.666	1.641

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-9.008	1.445	323.798
			Max. Vy	5	20.122	-318.594	-2.468
			Max. Vx	2	-20.532	1.445	323.798
			Max. Torque	5			-0.919
L2	99.375 - 94.458	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-20.478	0.709	1.446
			Max. Mx	11	-9.803	418.736	1.888
			Max. My	2	-9.735	1.746	425.893
			Max. Vy	5	20.598	-418.629	-3.056
			Max. Vx	2	-21.008	1.746	425.893
			Max. Torque	12			-0.913
L3	94.458 - 89	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-21.837	0.888	1.499
			Max. Mx	11	-10.817	532.649	2.162
			Max. My	2	-10.752	2.083	542.059
			Max. Vy	5	21.156	-532.501	-3.708
			Max. Vx	2	-21.567	2.083	542.059
			Max. Torque	12			-0.904
L4	89 - 85.04	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-21.849	0.889	1.500
			Max. Mx	11	-10.834	533.559	2.164
			Max. My	2	-10.769	2.086	542.986
			Max. Vy	5	21.157	-533.410	-3.713
			Max. Vx	2	-21.568	2.086	542.986
			Max. Torque	12			-0.894
L5	85.04 - 73.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-28.783	1.428	1.660
			Max. Mx	11	-15.585	894.392	2.944
			Max. My	2	-15.525	3.050	910.203
			Max. Vy	5	24.898	-894.105	-5.563
			Max. Vx	2	-25.313	3.050	910.203
			Max. Torque	12			-0.885
L6	73.583 - 73	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-28.949	1.449	1.666
			Max. Mx	11	-15.725	908.921	2.974
			Max. My	2	-15.665	3.087	924.975
			Max. Vy	5	24.954	-908.628	-5.633
			Max. Vx	2	-25.369	3.087	924.975
			Max. Torque	12			-0.862
L7	73 - 63	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-31.217	1.820	1.771
			Max. Mx	11	-17.537	1162.876	3.480
			Max. My	2	-17.486	3.722	1183.083
			Max. Vy	5	25.853	-1162.477	-6.834
			Max. Vx	2	-26.267	3.722	1183.083
			Max. Torque	12			-0.861
L8	63 - 57.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-32.874	2.034	1.829
			Max. Mx	11	-18.889	1310.996	3.766
			Max. My	2	-18.843	4.083	1333.548
			Max. Vy	5	26.440	-1310.531	-7.511
			Max. Vx	2	-26.853	4.083	1333.548
			Max. Torque	12			-0.836
L9	57.333 - 40.457	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-35.961	2.474	1.935
			Max. Mx	11	-21.428	1629.317	4.360
			Max. My	2	-21.392	4.839	1656.734
			Max. Vy	5	27.569	-1628.699	-8.911
			Max. Vx	2	-27.980	4.839	1656.734

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	12			-0.817
L10	40.457 - 37.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-39.185	2.766	2.006
			Max. Mx	11	-24.039	1845.117	4.747
			Max. My	2	-24.008	5.333	1875.702
			Max. Vy	5	28.409	-1844.396	-9.823
			Max. Vx	2	-28.819	5.333	1875.702
			Max. Torque	9			-0.767
L11	37.833 - 12.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-46.861	3.801	2.253
			Max. Mx	11	-30.603	2598.720	6.015
			Max. My	2	-30.594	6.980	2639.685
			Max. Vy	5	30.554	-2597.601	-12.801
			Max. Vx	2	-30.956	6.980	2639.685
			Max. Torque	9			-0.767
L12	12.25 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-51.762	4.347	2.384
			Max. Mx	11	-34.878	2979.554	6.612
			Max. My	2	-34.878	7.768	3025.393
			Max. Vy	5	31.649	-2978.217	-14.196
			Max. Vx	2	-32.046	7.768	3025.393
			Max. Torque	9			-0.766

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	51.762	0.000	0.000
	Max. H_x	11	34.891	31.628	0.045
	Max. H_z	2	34.891	0.051	32.032
	Max. M_x	2	3025.393	0.051	32.032
	Max. M_z	5	2978.217	-31.635	-0.117
	Max. Torsion	3	0.437	-15.747	27.767
	Min. Vert	1	34.891	0.000	0.000
	Min. H_x	5	34.891	-31.635	-0.117
	Min. H_z	8	34.891	-0.066	-32.032
	Min. M_x	8	-3023.635	-0.066	-32.032
	Min. M_z	11	-2979.554	31.628	0.045
	Min. Torsion	9	-0.766	15.707	-27.752

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	34.891	0.000	0.000	-0.836	1.133	0.000
Dead+Wind 0 deg - No Ice	34.891	-0.051	-32.032	-3025.393	7.768	-0.134
Dead+Wind 30 deg - No Ice	34.891	15.747	-27.767	-2623.687	-1479.404	-0.437
Dead+Wind 60 deg - No Ice	34.891	27.339	-16.063	-1519.297	-2571.548	-0.391
Dead+Wind 90 deg - No Ice	34.891	31.635	0.117	14.196	-2978.217	-0.132
Dead+Wind 120 deg - No Ice	34.891	27.401	16.107	1523.124	-2579.509	-0.150

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 150 deg - No Ice	34.891	15.832	27.768	2622.059	-1490.231	0.063
Dead+Wind 180 deg - No Ice	34.891	0.066	32.032	3023.635	-7.286	0.481
Dead+Wind 210 deg - No Ice	34.891	-15.707	27.752	2620.018	1476.515	0.766
Dead+Wind 240 deg - No Ice	34.891	-27.366	15.991	1508.279	2577.368	0.332
Dead+Wind 270 deg - No Ice	34.891	-31.628	-0.045	-6.612	2979.554	0.214
Dead+Wind 300 deg - No Ice	34.891	-27.358	-16.110	-1525.333	2576.346	0.588
Dead+Wind 330 deg - No Ice	34.891	-15.819	-27.775	-2624.594	1490.938	0.316
Dead+Ice+Temp	51.762	-0.000	-0.000	-2.384	4.347	-0.000
Dead+Wind 0 deg+Ice+Temp	51.762	-0.011	-7.874	-764.948	5.952	-0.089
Dead+Wind 30 deg+Ice+Temp	51.762	3.880	-6.825	-663.585	-369.832	-0.148
Dead+Wind 60 deg+Ice+Temp	51.762	6.734	-3.947	-385.093	-645.700	-0.114
Dead+Wind 90 deg+Ice+Temp	51.762	7.791	0.026	1.015	-748.259	-0.023
Dead+Wind 120 deg+Ice+Temp	51.762	6.748	3.957	381.493	-647.534	0.002
Dead+Wind 150 deg+Ice+Temp	51.762	3.898	6.825	658.735	-372.318	0.069
Dead+Wind 180 deg+Ice+Temp	51.762	0.015	7.874	760.063	2.499	0.166
Dead+Wind 210 deg+Ice+Temp	51.762	-3.871	6.822	658.258	377.508	0.218
Dead+Wind 240 deg+Ice+Temp	51.762	-6.740	3.931	378.083	655.374	0.098
Dead+Wind 270 deg+Ice+Temp	51.762	-7.789	-0.010	-3.757	756.904	0.043
Dead+Wind 300 deg+Ice+Temp	51.762	-6.738	-3.958	-386.480	655.144	0.100
Dead+Wind 330 deg+Ice+Temp	51.762	-3.896	-6.827	-663.798	380.819	0.019
Dead+Wind 0 deg - Service	34.891	-0.018	-11.084	-1049.134	3.460	-0.047
Dead+Wind 30 deg - Service	34.891	5.449	-9.608	-909.896	-511.962	-0.155
Dead+Wind 60 deg - Service	34.891	9.460	-5.558	-527.122	-890.452	-0.139
Dead+Wind 90 deg - Service	34.891	10.947	0.040	4.346	-1031.383	-0.045
Dead+Wind 120 deg - Service	34.891	9.481	5.573	527.300	-893.223	-0.051
Dead+Wind 150 deg - Service	34.891	5.478	9.608	908.182	-515.720	0.023
Dead+Wind 180 deg - Service	34.891	0.023	11.084	1047.369	-1.759	0.167
Dead+Wind 210 deg - Service	34.891	-5.435	9.603	907.463	512.492	0.266
Dead+Wind 240 deg - Service	34.891	-9.469	5.533	522.146	894.003	0.115
Dead+Wind 270 deg - Service	34.891	-10.944	-0.015	-2.870	1033.381	0.076
Dead+Wind 300 deg - Service	34.891	-9.467	-5.574	-529.219	893.656	0.209
Dead+Wind 330 deg - Service	34.891	-5.474	-9.611	-910.217	517.499	0.113

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-34.891	0.000	0.000	34.891	0.000	0.000%
2	-0.051	-34.891	-32.032	0.051	34.891	32.032	0.000%
3	15.747	-34.891	-27.767	-15.747	34.891	27.767	0.000%
4	27.339	-34.891	-16.063	-27.339	34.891	16.063	0.000%
5	31.635	-34.891	0.117	-31.635	34.891	-0.117	0.000%
6	27.401	-34.891	16.107	-27.401	34.891	-16.107	0.000%
7	15.832	-34.891	27.768	-15.832	34.891	-27.768	0.000%
8	0.066	-34.891	32.032	-0.066	34.891	-32.032	0.000%
9	-15.707	-34.891	27.752	15.707	34.891	-27.752	0.000%
10	-27.366	-34.891	15.991	27.366	34.891	-15.991	0.000%
11	-31.628	-34.891	-0.045	31.628	34.891	0.045	0.000%
12	-27.358	-34.891	-16.110	27.358	34.891	16.110	0.000%
13	-15.819	-34.891	-27.775	15.819	34.891	27.775	0.000%
14	0.000	-51.762	0.000	0.000	51.762	0.000	0.000%
15	-0.011	-51.762	-7.874	0.011	51.762	7.874	0.000%
16	3.880	-51.762	-6.825	-3.880	51.762	6.825	0.000%
17	6.734	-51.762	-3.947	-6.734	51.762	3.947	0.000%
18	7.791	-51.762	0.026	-7.791	51.762	-0.026	0.000%
19	6.748	-51.762	3.957	-6.748	51.762	-3.957	0.000%
20	3.898	-51.762	6.825	-3.898	51.762	-6.825	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
21	0.015	-51.762	7.874	-0.015	51.762	-7.874	0.000%
22	-3.871	-51.762	6.822	3.871	51.762	-6.822	0.000%
23	-6.740	-51.762	3.931	6.740	51.762	-3.931	0.000%
24	-7.789	-51.762	-0.010	7.789	51.762	0.010	0.000%
25	-6.738	-51.762	-3.958	6.738	51.762	3.958	0.000%
26	-3.896	-51.762	-6.827	3.896	51.762	6.827	0.000%
27	-0.018	-34.891	-11.084	0.018	34.891	11.084	0.000%
28	5.449	-34.891	-9.608	-5.449	34.891	9.608	0.000%
29	9.460	-34.891	-5.558	-9.460	34.891	5.558	0.000%
30	10.947	-34.891	0.040	-10.947	34.891	-0.040	0.000%
31	9.481	-34.891	5.573	-9.481	34.891	-5.573	0.000%
32	5.478	-34.891	9.608	-5.478	34.891	-9.608	0.000%
33	0.023	-34.891	11.084	-0.023	34.891	-11.084	0.000%
34	-5.435	-34.891	9.603	5.435	34.891	-9.603	0.000%
35	-9.469	-34.891	5.533	9.469	34.891	-5.533	0.000%
36	-10.944	-34.891	-0.015	10.944	34.891	0.015	0.000%
37	-9.467	-34.891	-5.574	9.467	34.891	5.574	0.000%
38	-5.474	-34.891	-9.611	5.474	34.891	9.611	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	6	0.00000001	0.00009303
3	Yes	7	0.00000001	0.00038048
4	Yes	7	0.00000001	0.00038859
5	Yes	6	0.00000001	0.00005905
6	Yes	7	0.00000001	0.00038242
7	Yes	7	0.00000001	0.00038557
8	Yes	6	0.00000001	0.00004508
9	Yes	7	0.00000001	0.00038973
10	Yes	7	0.00000001	0.00038101
11	Yes	6	0.00000001	0.00019606
12	Yes	7	0.00000001	0.00039250
13	Yes	7	0.00000001	0.00038121
14	Yes	5	0.00000001	0.00038733
15	Yes	7	0.00000001	0.00029150
16	Yes	7	0.00000001	0.00044013
17	Yes	7	0.00000001	0.00044488
18	Yes	7	0.00000001	0.00028446
19	Yes	7	0.00000001	0.00043839
20	Yes	7	0.00000001	0.00043923
21	Yes	7	0.00000001	0.00028852
22	Yes	7	0.00000001	0.00044523
23	Yes	7	0.00000001	0.00043966
24	Yes	7	0.00000001	0.00028775
25	Yes	7	0.00000001	0.00045324
26	Yes	7	0.00000001	0.00045028
27	Yes	5	0.00000001	0.00055640
28	Yes	7	0.00000001	0.00004675
29	Yes	7	0.00000001	0.00004848
30	Yes	5	0.00000001	0.00057025
31	Yes	7	0.00000001	0.00004706
32	Yes	7	0.00000001	0.00004774
33	Yes	5	0.00000001	0.00073379

34	Yes	7	0.00000001	0.00004845
35	Yes	7	0.00000001	0.00004608
36	Yes	5	0.00000001	0.00099817
37	Yes	7	0.00000001	0.00004942
38	Yes	7	0.00000001	0.00004705

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 99.375	31.246	27	2.283	0.003
L2	99.375 - 94.458	19.758	27	1.870	0.002
L3	94.458 - 89	17.872	27	1.791	0.001
L4	89 - 85.04	15.866	27	1.719	0.001
L5	88.957 - 73.583	15.850	27	1.718	0.001
L6	73.583 - 73	10.657	27	1.470	0.001
L7	73 - 63	10.478	27	1.461	0.001
L8	63 - 57.333	7.691	27	1.199	0.001
L9	57.333 - 40.457	6.327	27	1.099	0.001
L10	45.54 - 37.833	3.942	27	0.832	0.000
L11	37.833 - 12.25	2.672	27	0.724	0.000
L12	12.25 - 0	0.243	27	0.191	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	APXVTM14-C-120 w/ Mount Pipe	27	31.246	2.283	0.003	9976
124.000	VHLP2-18	27	30.772	2.267	0.003	9976
123.000	PCS 1900MHz 4x45W-65MHz w / Mount Pipe	27	30.297	2.251	0.003	9976
115.000	(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe	27	26.539	2.124	0.002	4988
105.000	LNX-6514DS-A1M w/ Mount Pipe	27	22.073	1.963	0.002	2493
82.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	27	13.403	1.614	0.001	3746

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	125 - 99.375	89.873	2	6.568	0.008
L2	99.375 - 94.458	56.873	2	5.383	0.005
L3	94.458 - 89	51.451	2	5.156	0.004
L4	89 - 85.04	45.681	2	4.948	0.004
L5	88.957 - 73.583	45.637	2	4.947	0.004
L6	73.583 - 73	30.696	2	4.234	0.003
L7	73 - 63	30.181	2	4.207	0.003

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L8	63 - 57.333	22.159	2	3.455	0.002
L9	57.333 - 40.457	18.231	2	3.167	0.002
L10	45.54 - 37.833	11.362	2	2.399	0.001
L11	37.833 - 12.25	7.703	2	2.086	0.001
L12	12.25 - 0	0.700	2	0.550	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	APXVTM14-C-120 w/ Mount Pipe	2	89.873	6.568	0.008	3551
124.000	VHLP2-18	2	88.510	6.522	0.008	3551
123.000	PCS 1900MHz 4x45W-65MHz w / Mount Pipe	2	87.148	6.477	0.008	3551
115.000	(3) AM-X-CD-16-65-00T-RET w/ Mount Pipe	2	76.356	6.111	0.007	1774
105.000	LNX-6514DS-A1M w/ Mount Pipe	2	63.528	5.648	0.005	885
82.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	38.599	4.647	0.003	1319

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	125 - 123.719	TP24.008x18.5x0.188	25.625	0.000	0.0	39.000	11.062	-2.162	431.423	0.005
	123.719 - 122.438					39.000	11.226	-2.636	437.816	0.006
	122.438 - 121.156					39.000	11.390	-2.707	444.209	0.006
	121.156 - 119.875					39.000	11.554	-2.779	450.601	0.006
	119.875 - 118.594					39.000	11.718	-2.852	456.994	0.006
	118.594 - 117.313					39.000	11.882	-2.927	463.386	0.006
	117.313 - 116.031					39.000	12.046	-3.002	469.779	0.006
	116.031 - 114.75					39.000	12.210	-5.023	476.171	0.011
	114.75 - 113.469					39.000	12.373	-5.105	482.564	0.011
	113.469 - 112.188					39.000	12.537	-5.190	488.956	0.011
	112.188 - 110.906					39.000	12.701	-5.277	495.349	0.011
	110.906 -					39.000	12.865	-5.367	501.741	0.011

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
	109.625									
	109.625 - 108.344					39.000	13.029	-5.458	508.134	0.011
	108.344 - 107.063					39.000	13.193	-5.551	514.527	0.011
	107.063 - 105.781					39.000	13.357	-5.646	520.919	0.011
	105.781 - 104.5					39.000	13.521	-8.559	527.312	0.016
	104.5 - 103.219					39.000	13.685	-8.658	533.704	0.016
	103.219 - 101.938					39.000	13.849	-8.771	540.097	0.016
	101.938 - 100.656					39.000	14.012	-8.888	546.489	0.016
	100.656 - 99.375					39.000	14.177	-9.008	552.882	0.016
L2	99.375 - 98.1458	TP25.065x24.008x0.409	4.917	0.000	0.0	24.143	30.989	-9.195	748.165	0.012
	98.1458 - 96.9165					24.143	31.332	-9.373	756.450	0.012
	96.9165 - 95.6873					24.143	31.675	-9.553	764.734	0.012
	95.6873 - 94.458					24.143	32.018	-9.735	773.019	0.013
L3	94.458 - 93.3664	TP26.239x25.065x0.571	5.458	0.000	0.0	24.144	44.792	-9.938	1081.440	0.009
	93.3664 - 92.2748					24.144	45.217	-10.139	1091.700	0.009
	92.2748 - 91.1832					24.144	45.642	-10.341	1101.960	0.009
	91.1832 - 90.0916					24.144	46.067	-10.546	1112.220	0.009
	90.0916 - 89					24.144	46.492	-10.752	1122.480	0.010
L4	89 - 88.957	TP27.09x26.239x0.676	3.960	0.000	0.0	23.778	54.853	-10.769	1304.280	0.008
	88.957 - 85.04					23.778	56.659	-7.111	1347.220	0.005
L5	88.957 - 85.04	TP29.14x25.873x0.475	15.374	0.000	0.0	28.279	39.544	-4.938	1118.240	0.004
	85.04 - 83.9985					28.279	39.878	-12.241	1127.680	0.011
	83.9985 - 82.9569					28.279	40.211	-12.430	1137.120	0.011
	82.9569 - 81.9154					28.279	40.545	-13.930	1146.550	0.012
	81.9154 - 80.8738					28.279	40.879	-14.124	1155.990	0.012
	80.8738 - 79.8323					28.279	41.212	-14.320	1165.420	0.012
	79.8323 - 78.7907					28.279	41.546	-14.517	1174.860	0.012
	78.7907 - 77.7492					28.279	41.880	-14.716	1184.300	0.012
	77.7492 - 76.7076					28.279	42.213	-14.916	1193.730	0.012
	76.7076 - 75.6661					28.279	42.547	-15.117	1203.170	0.013
	75.6661 - 74.6245					28.279	42.881	-15.320	1212.610	0.013
	74.6245 - 73.583					28.279	43.215	-15.525	1222.040	0.013
L6	73.583 - 73 (6)	TP29.264x29.14x0.609	0.583	0.000	0.0	28.278	55.409	-15.665	1566.840	0.010
L7	73 - 72	TP31.389x29.264x0.369	10.000	0.000	0.0	38.947	34.068	-15.833	1326.820	0.012
	72 - 71					38.947	34.316	-16.012	1336.500	0.012
	71 - 70					38.947	34.565	-16.192	1346.190	0.012

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
	70 - 69					38.947	34.814	-16.374	1355.880	0.012
	69 - 68					38.947	35.062	-16.556	1365.560	0.012
	68 - 67					38.947	35.311	-16.740	1375.250	0.012
	67 - 66					38.947	35.560	-16.925	1384.940	0.012
	66 - 65					38.947	35.809	-17.111	1394.630	0.012
	65 - 64					38.947	36.057	-17.298	1404.310	0.012
	64 - 63					38.947	36.306	-17.486	1414.000	0.012
L8	63 - 61.8666	TP32.594x31.389x0.566	5.667	0.000	0.0	31.315	55.762	-17.758	1746.170	0.010
	61.8666 - 60.7332					31.315	56.194	-18.026	1759.710	0.010
	60.7332 - 59.5998					31.315	56.626	-18.297	1773.250	0.010
	59.5998 - 58.4664					31.315	57.059	-18.569	1786.790	0.010
	58.4664 - 57.333					31.315	57.491	-18.843	1800.330	0.010
L9	57.333 - 56.2609	TP36.18x32.594x0.436	16.876	0.000	0.0	38.841	44.787	-19.065	1739.580	0.011
	56.2609 - 55.1888					38.841	45.102	-19.292	1751.820	0.011
	55.1888 - 54.1167					38.841	45.417	-19.520	1764.060	0.011
	54.1167 - 53.0446					38.841	45.732	-19.750	1776.300	0.011
	53.0446 - 51.9725					38.841	46.047	-19.980	1788.540	0.011
	51.9725 - 50.9005					38.841	46.362	-20.212	1800.770	0.011
	50.9005 - 49.8284					38.841	46.677	-20.446	1813.010	0.011
	49.8284 - 48.7563					38.841	46.993	-20.680	1825.250	0.011
	48.7563 - 47.6842					38.841	47.307	-20.916	1837.490	0.011
	47.6842 - 46.6121					38.841	47.623	-21.154	1849.730	0.011
	46.6121 - 45.54					38.841	47.938	-21.392	1861.960	0.011
	45.54 - 40.457					38.841	49.431	-11.084	1919.990	0.006
L10	45.54 - 40.457	TP36.233x34.6x0.493	7.707	0.000	0.0	38.898	55.091	-12.253	2142.960	0.006
	40.457 - 39.145					38.898	55.527	-23.682	2159.900	0.011
	39.145 - 37.833					38.898	55.962	-24.008	2176.830	0.011
L11	37.833 - 36.5538	TP41.654x36.233x0.466	25.583	0.000	0.0	38.907	53.359	-24.319	2076.040	0.012
	36.5538 - 35.2747					38.907	53.761	-24.632	2091.660	0.012
	35.2747 - 33.9956					38.907	54.162	-24.948	2107.270	0.012
	33.9956 - 32.7164					38.907	54.563	-25.265	2122.890	0.012
	32.7164 - 31.4373					38.907	54.965	-25.584	2138.510	0.012
	31.4373 - 30.1581					38.907	55.366	-25.905	2154.120	0.012
	30.1581 - 28.879					38.907	55.767	-26.228	2169.740	0.012
	28.879 - 27.5998					38.907	56.169	-26.553	2185.350	0.012
	27.5998 - 26.3207					38.907	56.570	-26.880	2200.970	0.012
	26.3207 -					38.907	56.972	-27.208	2216.580	0.012

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
	25.0415									
	25.0415 - 23.7624					38.907	57.373	-27.538	2232.200	0.012
	23.7624 - 22.4832					38.907	57.774	-27.870	2247.810	0.012
	22.4832 - 21.204					38.907	58.175	-28.204	2263.430	0.012
	21.204 - 19.9249					38.907	58.577	-28.540	2279.040	0.013
	19.9249 - 18.6458					38.907	58.978	-28.878	2294.660	0.013
	18.6458 - 17.3666					38.907	59.380	-29.217	2310.270	0.013
	17.3666 - 16.0875					38.907	59.781	-29.559	2325.890	0.013
	16.0875 - 14.8083					38.907	60.182	-29.902	2341.500	0.013
	14.8083 - 13.5292					38.907	60.584	-30.247	2357.120	0.013
	13.5292 - 12.25					38.907	60.985	-30.594	2372.730	0.013
L12	12.25 - 11.2292	TP44.25x41.654x0.589	12.250	0.000	0.0	34.024	77.127	-30.949	2624.160	0.012
	11.2292 - 10.2083					34.024	77.531	-31.298	2637.910	0.012
	10.2083 - 9.1875					34.024	77.935	-31.649	2651.660	0.012
	9.1875 - 8.16667					34.024	78.339	-32.002	2665.410	0.012
	8.16667 - 7.14583					34.024	78.743	-32.356	2679.160	0.012
	7.14583 - 6.125					34.024	79.147	-32.712	2692.910	0.012
	6.125 - 5.10417					34.024	79.551	-33.069	2706.660	0.012
	5.10417 - 4.08333					34.024	79.956	-33.428	2720.410	0.012
	4.08333 - 3.0625					34.024	80.360	-33.788	2734.160	0.012
	3.0625 - 2.04167					34.024	80.764	-34.150	2747.910	0.012
	2.04167 - 1.02083					34.024	81.168	-34.513	2761.670	0.012
	1.02083 - 0					34.024	81.572	-34.878	2775.420	0.013

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	125 - 123.719	TP24.008x18.5x0.188	13.858	3.285	39.000	0.084	0.000	0.000	39.000	0.000
	123.719 - 122.438		21.784	5.013	39.000	0.129	0.000	0.000	39.000	0.000
	122.438 - 121.156		30.527	6.823	39.000	0.175	0.000	0.000	39.000	0.000
	121.156 - 119.875		39.389	8.555	39.000	0.219	0.000	0.000	39.000	0.000
	119.875 - 118.594		48.372	10.213	39.000	0.262	0.000	0.000	39.000	0.000
	118.594 -		57.478	11.801	39.000	0.303	0.000	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	117.313									
	117.313 - 116.031		66.707	13.324	39.000	0.342	0.000	0.000	39.000	0.000
	116.031 - 114.75		85.104	16.543	39.000	0.424	0.000	0.000	39.000	0.000
	114.75 - 113.469		100.992	19.113	39.000	0.490	0.000	0.000	39.000	0.000
	113.469 - 112.188		117.004	21.565	39.000	0.553	0.000	0.000	39.000	0.000
	112.188 - 110.906		133.141	23.907	39.000	0.613	0.000	0.000	39.000	0.000
	110.906 - 109.625		149.404	26.146	39.000	0.670	0.000	0.000	39.000	0.000
	109.625 - 108.344		165.794	28.285	39.000	0.725	0.000	0.000	39.000	0.000
	108.344 - 107.063		182.311	30.332	39.000	0.778	0.000	0.000	39.000	0.000
	107.063 - 105.781		198.957	32.291	39.000	0.828	0.000	0.000	39.000	0.000
	105.781 - 104.5		219.575	34.775	39.000	0.892	0.000	0.000	39.000	0.000
	104.5 - 103.219		245.465	37.946	39.000	0.973	0.000	0.000	39.000	0.000
	103.219 - 101.938		271.453	40.971	39.000	1.051	0.000	0.000	39.000	0.000
	101.938 - 100.656		297.565	43.864	39.000	1.125	0.000	0.000	39.000	0.000
	100.656 - 99.375		323.801	46.630	39.000	1.196	0.000	0.000	39.000	0.000
L2	99.375 - 98.1458	TP25.065x24.008x0.409	349.104	23.169	24.143	0.960	0.000	0.000	24.143	0.000
	98.1458 - 96.9165		374.554	24.312	24.143	1.007	0.000	0.000	24.143	0.000
	96.9165 - 95.6873		400.151	25.409	24.143	1.052	0.000	0.000	24.143	0.000
	95.6873 - 94.458		425.897	26.462	24.143	1.096	0.000	0.000	24.143	0.000
L3	94.458 - 93.3664	TP26.239x25.065x0.571	448.886	20.005	24.144	0.829	0.000	0.000	24.144	0.000
	93.3664 - 92.2748		471.997	20.637	24.144	0.855	0.000	0.000	24.144	0.000
	92.2748 - 91.1832		495.229	21.247	24.144	0.880	0.000	0.000	24.144	0.000
	91.1832 - 90.0916		518.584	21.836	24.144	0.904	0.000	0.000	24.144	0.000
	90.0916 - 89		542.063	22.405	24.144	0.928	0.000	0.000	24.144	0.000
L4	89 - 88.957	TP27.09x26.239x0.676	542.990	19.172	23.778	0.806	0.000	0.000	23.778	0.000
	88.957 - 85.04		372.259	12.309	23.778	0.518	0.000	0.000	23.778	0.000
L5	88.957 - 85.04	TP29.14x25.873x0.475	256.174	12.133	28.279	0.429	0.000	0.000	28.279	0.000
	85.04 - 83.9985		651.459	30.335	28.279	1.073	0.000	0.000	28.279	0.000
	83.9985 - 82.9569		674.584	30.888	28.279	1.092	0.000	0.000	28.279	0.000
	82.9569 - 81.9154		702.584	31.638	28.279	1.119	0.000	0.000	28.279	0.000
	81.9154 - 80.8738		728.185	32.253	28.279	1.141	0.000	0.000	28.279	0.000
	80.8738 - 79.8323		753.886	32.848	28.279	1.162	0.000	0.000	28.279	0.000
	79.8323 -		779.687	33.424	28.279	1.182	0.000	0.000	28.279	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	78.7907									
	78.7907 - 77.7492		805.588	33.982	28.279	1.202	0.000	0.000	28.279	0.000
	77.7492 - 76.7076		831.591	34.522	28.279	1.221	0.000	0.000	28.279	0.000
	76.7076 - 75.6661		857.692	35.045	28.279	1.239	0.000	0.000	28.279	0.000
	75.6661 - 74.6245		883.900	35.551	28.279	1.257	0.000	0.000	28.279	0.000
	74.6245 - 73.583		910.208	36.041	28.279	1.275	0.000	0.000	28.279	0.000
L6	73.583 - 73 (6)	TP29.264x29.14x0.609	924.983	28.708	28.278	1.015	0.000	0.000	28.278	0.000
L7	73 - 72	TP31.389x29.264x0.369	950.392	46.830	38.947	1.202	0.000	0.000	38.947	0.000
	72 - 71		975.892	47.388	38.947	1.217	0.000	0.000	38.947	0.000
	71 - 70		1001.483	47.929	38.947	1.231	0.000	0.000	38.947	0.000
	70 - 69		1027.158	48.453	38.947	1.244	0.000	0.000	38.947	0.000
	69 - 68		1052.925	48.962	38.947	1.257	0.000	0.000	38.947	0.000
	68 - 67		1078.775	49.456	38.947	1.270	0.000	0.000	38.947	0.000
	67 - 66		1104.717	49.935	38.947	1.282	0.000	0.000	38.947	0.000
	66 - 65		1130.750	50.400	38.947	1.294	0.000	0.000	38.947	0.000
	65 - 64		1156.875	50.852	38.947	1.306	0.000	0.000	38.947	0.000
	64 - 63		1183.092	51.290	38.947	1.317	0.000	0.000	38.947	0.000
L8	63 - 61.8666	TP32.594x31.389x0.566	1212.917	34.401	31.315	1.099	0.000	0.000	31.315	0.000
	61.8666 - 60.7332		1242.875	34.706	31.315	1.108	0.000	0.000	31.315	0.000
	60.7332 - 59.5998		1272.967	35.001	31.315	1.118	0.000	0.000	31.315	0.000
	59.5998 - 58.4664		1303.192	35.286	31.315	1.127	0.000	0.000	31.315	0.000
	58.4664 - 57.333		1333.558	35.562	31.315	1.136	0.000	0.000	31.315	0.000
L9	57.333 - 56.2609	TP36.18x32.594x0.436	1362.392	45.931	38.841	1.183	0.000	0.000	38.841	0.000
	56.2609 - 55.1888		1391.333	46.250	38.841	1.191	0.000	0.000	38.841	0.000
	55.1888 - 54.1167		1420.383	46.558	38.841	1.199	0.000	0.000	38.841	0.000
	54.1167 - 53.0446		1449.550	46.858	38.841	1.206	0.000	0.000	38.841	0.000
	53.0446 - 51.9725		1478.817	47.148	38.841	1.214	0.000	0.000	38.841	0.000
	51.9725 - 50.9005		1508.192	47.429	38.841	1.221	0.000	0.000	38.841	0.000
	50.9005 - 49.8284		1537.683	47.701	38.841	1.228	0.000	0.000	38.841	0.000
	49.8284 - 48.7563		1567.283	47.965	38.841	1.235	0.000	0.000	38.841	0.000
	48.7563 - 47.6842		1596.992	48.222	38.841	1.242	0.000	0.000	38.841	0.000
	47.6842 - 46.6121		1626.808	48.470	38.841	1.248	0.000	0.000	38.841	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	46.6121 - 45.54		1656.742	48.711	38.841	1.254	0.000	0.000	38.841	0.000
	45.54 - 40.457		866.067	23.939	38.841	0.616	0.000	0.000	38.841	0.000
L10	45.54 - 40.457	TP36.233x34.6x0.493	934.367	23.586	38.898	0.606	0.000	0.000	38.898	0.000
	40.457 - 39.145		1837.992	45.666	38.898	1.174	0.000	0.000	38.898	0.000
	39.145 - 37.833		1875.708	45.876	38.898	1.179	0.000	0.000	38.898	0.000
L11	37.833 - 36.5538	TP41.654x36.233x0.466	1912.625	48.614	38.907	1.249	0.000	0.000	38.907	0.000
	36.5538 - 35.2747		1949.675	48.813	38.907	1.255	0.000	0.000	38.907	0.000
	35.2747 - 33.9956		1986.850	49.005	38.907	1.260	0.000	0.000	38.907	0.000
	33.9956 - 32.7164		2024.167	49.189	38.907	1.264	0.000	0.000	38.907	0.000
	32.7164 - 31.4373		2061.617	49.366	38.907	1.269	0.000	0.000	38.907	0.000
	31.4373 - 30.1581		2099.200	49.535	38.907	1.273	0.000	0.000	38.907	0.000
	30.1581 - 28.879		2136.917	49.698	38.907	1.277	0.000	0.000	38.907	0.000
	28.879 - 27.5998		2174.767	49.853	38.907	1.281	0.000	0.000	38.907	0.000
	27.5998 - 26.3207		2212.758	50.003	38.907	1.285	0.000	0.000	38.907	0.000
	26.3207 - 25.0415		2250.883	50.146	38.907	1.289	0.000	0.000	38.907	0.000
	25.0415 - 23.7624		2289.142	50.283	38.907	1.292	0.000	0.000	38.907	0.000
	23.7624 - 22.4832		2327.542	50.414	38.907	1.296	0.000	0.000	38.907	0.000
	22.4832 - 21.204		2366.075	50.540	38.907	1.299	0.000	0.000	38.907	0.000
	21.204 - 19.9249		2404.750	50.661	38.907	1.302	0.000	0.000	38.907	0.000
	19.9249 - 18.6458		2443.558	50.776	38.907	1.305	0.000	0.000	38.907	0.000
	18.6458 - 17.3666		2482.508	50.886	38.907	1.308	0.000	0.000	38.907	0.000
	17.3666 - 16.0875		2521.592	50.992	38.907	1.311	0.000	0.000	38.907	0.000
	16.0875 - 14.8083		2560.825	51.093	38.907	1.313	0.000	0.000	38.907	0.000
	14.8083 - 13.5292		2600.192	51.190	38.907	1.316	0.000	0.000	38.907	0.000
	13.5292 - 12.25		2639.692	51.282	38.907	1.318	0.000	0.000	38.907	0.000
L12	12.25 - 11.2292	TP44.25x41.654x0.589	2671.325	41.060	34.024	1.207	0.000	0.000	34.024	0.000
	11.2292 - 10.2083		2703.050	41.113	34.024	1.208	0.000	0.000	34.024	0.000
	10.2083 - 9.1875		2734.867	41.163	34.024	1.210	0.000	0.000	34.024	0.000
	9.1875 - 8.16667		2766.775	41.212	34.024	1.211	0.000	0.000	34.024	0.000
	8.16667 - 7.14583		2798.775	41.259	34.024	1.213	0.000	0.000	34.024	0.000
	7.14583 - 6.125		2830.867	41.304	34.024	1.214	0.000	0.000	34.024	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	6.125 - 5.10417		2863.058	41.347	34.024	1.215	0.000	0.000	34.024	0.000
	5.10417 - 4.08333		2895.342	41.389	34.024	1.216	0.000	0.000	34.024	0.000
	4.08333 - 3.0625		2927.717	41.429	34.024	1.218	0.000	0.000	34.024	0.000
	3.0625 - 2.04167		2960.183	41.468	34.024	1.219	0.000	0.000	34.024	0.000
	2.04167 - 1.02083		2992.750	41.505	34.024	1.220	0.000	0.000	34.024	0.000
	1.02083 - 0		3025.400	41.540	34.024	1.221	0.000	0.000	34.024	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	125 - 123.719	TP24.008x18.5x0.188	5.720	0.517	26.000	0.040	0.387	0.045	26.000	0.002
	123.719 - 122.438		6.782	0.604	26.000	0.046	0.389	0.044	26.000	0.002
	122.438 - 121.156		6.875	0.604	26.000	0.046	0.391	0.043	26.000	0.002
	121.156 - 119.875		6.969	0.603	26.000	0.046	0.392	0.041	26.000	0.002
	119.875 - 118.594		7.064	0.603	26.000	0.046	0.394	0.041	26.000	0.002
	118.594 - 117.313		7.160	0.603	26.000	0.046	0.395	0.040	26.000	0.002
	117.313 - 116.031		7.258	0.603	26.000	0.046	0.397	0.039	26.000	0.001
	116.031 - 114.75		12.349	1.011	26.000	0.078	0.146	0.014	26.000	0.001
	114.75 - 113.469		12.446	1.006	26.000	0.077	0.146	0.013	26.000	0.001
	113.469 - 112.188		12.544	1.001	26.000	0.077	0.144	0.013	26.000	0.000
	112.188 - 110.906		12.642	0.995	26.000	0.077	0.142	0.012	26.000	0.000
	110.906 - 109.625		12.741	0.990	26.000	0.076	0.140	0.012	26.000	0.000
	109.625 - 108.344		12.841	0.986	26.000	0.076	0.138	0.012	26.000	0.000
	108.344 - 107.063		12.941	0.981	26.000	0.075	0.137	0.011	26.000	0.000
	107.063 - 105.781		13.041	0.976	26.000	0.075	0.135	0.011	26.000	0.000
	105.781 - 104.5		20.073	1.485	26.000	0.114	0.622	0.048	26.000	0.002
	104.5 - 103.219		20.240	1.479	26.000	0.114	0.065	0.005	26.000	0.000
	103.219 - 101.938		20.337	1.469	26.000	0.113	0.063	0.005	26.000	0.000
	101.938 - 100.656		20.434	1.458	26.000	0.112	0.060	0.004	26.000	0.000
	100.656 -		20.532	1.448	26.000	0.111	0.058	0.004	26.000	0.000

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	99.375									
L2	99.375 - 98.1458	TP25.065x24.008x0.409	20.646	0.666	16.095	0.083	0.055	0.002	16.095	0.000
	98.1458 - 96.9165		20.766	0.663	16.095	0.082	0.053	0.002	16.095	0.000
	96.9165 - 95.6873		20.886	0.659	16.095	0.082	0.051	0.002	16.095	0.000
	95.6873 - 94.458		21.008	0.656	16.095	0.082	0.049	0.001	16.095	0.000
L3	94.458 - 93.3664	TP26.239x25.065x0.571	21.117	0.471	16.096	0.059	0.047	0.001	16.096	0.000
	93.3664 - 92.2748		21.228	0.469	16.096	0.058	0.045	0.001	16.096	0.000
	92.2748 - 91.1832		21.340	0.468	16.096	0.058	0.043	0.001	16.096	0.000
	91.1832 - 90.0916		21.453	0.466	16.096	0.058	0.041	0.001	16.096	0.000
	90.0916 - 89		21.567	0.464	16.096	0.058	0.040	0.001	16.096	0.000
L4	89 - 88.957	TP27.09x26.239x0.676	21.568	0.393	15.852	0.050	0.038	0.001	15.852	0.000
	88.957 - 85.04		13.150	0.232	15.852	0.029	0.024	0.000	15.852	0.000
L5	88.957 - 85.04	TP29.14x25.873x0.475	8.915	0.225	18.852	0.024	0.014	0.000	18.852	0.000
	85.04 - 83.9985		22.158	0.556	18.852	0.059	0.031	0.001	18.852	0.000
	83.9985 - 82.9569		22.254	0.553	18.852	0.059	0.029	0.001	18.852	0.000
	82.9569 - 81.9154		24.536	0.605	18.852	0.064	0.027	0.001	18.852	0.000
	81.9154 - 80.8738		24.632	0.603	18.852	0.064	0.026	0.001	18.852	0.000
	80.8738 - 79.8323		24.728	0.600	18.852	0.064	0.024	0.001	18.852	0.000
	79.8323 - 78.7907		24.825	0.598	18.852	0.063	0.022	0.000	18.852	0.000
	78.7907 - 77.7492		24.922	0.595	18.852	0.063	0.020	0.000	18.852	0.000
	77.7492 - 76.7076		25.019	0.593	18.852	0.063	0.018	0.000	18.852	0.000
	76.7076 - 75.6661		25.117	0.590	18.852	0.063	0.017	0.000	18.852	0.000
	75.6661 - 74.6245		25.215	0.588	18.852	0.062	0.015	0.000	18.852	0.000
	74.6245 - 73.583		25.313	0.586	18.852	0.062	0.013	0.000	18.852	0.000
L6	73.583 - 73 (6)	TP29.264x29.14x0.609	25.369	0.458	18.852	0.049	0.011	0.000	18.852	0.000
L7	73 - 72	TP31.389x29.264x0.369	25.463	0.747	25.965	0.058	0.010	0.000	25.965	0.000
	72 - 71		25.552	0.745	25.965	0.057	0.008	0.000	25.965	0.000
	71 - 70		25.640	0.742	25.965	0.057	0.006	0.000	25.965	0.000
	70 - 69		25.729	0.739	25.965	0.057	0.004	0.000	25.965	0.000
	69 - 68		25.818	0.736	25.965	0.057	0.003	0.000	25.965	0.000
	68 - 67		25.907	0.734	25.965	0.057	0.001	0.000	25.965	0.000
	67 - 66		25.997	0.731	25.965	0.056	0.003	0.000	25.965	0.000
	66 - 65		26.087	0.728	25.965	0.056	0.005	0.000	25.965	0.000
	65 - 64		26.177	0.726	25.965	0.056	0.007	0.000	25.965	0.000
	64 - 63		26.267	0.723	25.965	0.056	0.009	0.000	25.965	0.000
L8	63 - 61.8666	TP32.594x31.389x0.566	26.381	0.473	20.877	0.045	0.011	0.000	20.877	0.000
	61.8666 - 60.7332		26.498	0.472	20.877	0.045	0.013	0.000	20.877	0.000
	60.7332 - 59.5998		26.616	0.470	20.877	0.045	0.015	0.000	20.877	0.000
	59.5998 -		26.734	0.469	20.877	0.045	0.017	0.000	20.877	0.000

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	58.4664									
	58.4664 - 57.333		26.853	0.467	20.877	0.045	0.020	0.000	20.877	0.000
L9	57.333 - 56.2609	TP36.18x32.594x0.436	26.956	0.602	25.894	0.046	0.022	0.000	25.894	0.000
	56.2609 - 55.1888		27.057	0.600	25.894	0.046	0.024	0.000	25.894	0.000
	55.1888 - 54.1167		27.158	0.598	25.894	0.046	0.026	0.000	25.894	0.000
	54.1167 - 53.0446		27.259	0.596	25.894	0.046	0.028	0.000	25.894	0.000
	53.0446 - 51.9725		27.361	0.594	25.894	0.046	0.030	0.000	25.894	0.000
	51.9725 - 50.9005		27.464	0.592	25.894	0.046	0.032	0.000	25.894	0.000
	50.9005 - 49.8284		27.566	0.591	25.894	0.046	0.034	0.001	25.894	0.000
	49.8284 - 48.7563		27.669	0.589	25.894	0.045	0.036	0.001	25.894	0.000
	48.7563 - 47.6842		27.772	0.587	25.894	0.045	0.038	0.001	25.894	0.000
	47.6842 - 46.6121		27.876	0.585	25.894	0.045	0.040	0.001	25.894	0.000
	46.6121 - 45.54		27.980	0.584	25.894	0.045	0.042	0.001	25.894	0.000
	45.54 - 40.457		13.907	0.281	25.894	0.022	0.028	0.000	25.894	0.000
L10	45.54 - 40.457	TP36.233x34.6x0.493	14.691	0.267	25.932	0.021	0.025	0.000	25.932	0.000
	40.457 - 39.145		28.700	0.517	25.932	0.040	0.055	0.001	25.932	0.000
	39.145 - 37.833		28.820	0.515	25.932	0.040	0.058	0.001	25.932	0.000
L11	37.833 - 36.5538	TP41.654x36.233x0.466	28.924	0.542	25.938	0.042	0.060	0.001	25.938	0.000
	36.5538 - 35.2747		29.028	0.540	25.938	0.042	0.062	0.001	25.938	0.000
	35.2747 - 33.9956		29.133	0.538	25.938	0.041	0.065	0.001	25.938	0.000
	33.9956 - 32.7164		29.237	0.536	25.938	0.041	0.067	0.001	25.938	0.000
	32.7164 - 31.4373		29.342	0.534	25.938	0.041	0.069	0.001	25.938	0.000
	31.4373 - 30.1581		29.448	0.532	25.938	0.041	0.072	0.001	25.938	0.000
	30.1581 - 28.879		29.554	0.530	25.938	0.041	0.074	0.001	25.938	0.000
	28.879 - 27.5998		29.660	0.528	25.938	0.041	0.077	0.001	25.938	0.000
	27.5998 - 26.3207		29.766	0.526	25.938	0.041	0.079	0.001	25.938	0.000
	26.3207 - 25.0415		29.872	0.524	25.938	0.040	0.082	0.001	25.938	0.000
	25.0415 - 23.7624		29.980	0.523	25.938	0.040	0.084	0.001	25.938	0.000
	23.7624 - 22.4832		30.087	0.521	25.938	0.040	0.087	0.001	25.938	0.000
	22.4832 - 21.204		30.194	0.519	25.938	0.040	0.089	0.001	25.938	0.000
	21.204 - 19.9249		30.302	0.517	25.938	0.040	0.092	0.001	25.938	0.000
	19.9249 -		30.410	0.516	25.938	0.040	0.094	0.001	25.938	0.000

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	18.6458									
	18.6458 - 17.3666		30.519	0.514	25.938	0.040	0.097	0.001	25.938	0.000
	17.3666 - 16.0875		30.628	0.512	25.938	0.039	0.100	0.001	25.938	0.000
	16.0875 - 14.8083		30.737	0.511	25.938	0.039	0.102	0.001	25.938	0.000
	14.8083 - 13.5292		30.846	0.509	25.938	0.039	0.105	0.001	25.938	0.000
	13.5292 - 12.25		30.956	0.508	25.938	0.039	0.107	0.001	25.938	0.000
L12	12.25 - 11.2292	TP44.25x41.654x0.589	31.039	0.402	22.683	0.035	0.110	0.001	22.683	0.000
	11.2292 - 10.2083		31.130	0.402	22.683	0.035	0.112	0.001	22.683	0.000
	10.2083 - 9.1875		31.221	0.401	22.683	0.035	0.114	0.001	22.683	0.000
	9.1875 - 8.16667		31.312	0.400	22.683	0.035	0.116	0.001	22.683	0.000
	8.16667 - 7.14583		31.403	0.399	22.683	0.035	0.118	0.001	22.683	0.000
	7.14583 - 6.125		31.495	0.398	22.683	0.035	0.120	0.001	22.683	0.000
	6.125 - 5.10417		31.586	0.397	22.683	0.035	0.123	0.001	22.683	0.000
	5.10417 - 4.08333		31.678	0.396	22.683	0.035	0.125	0.001	22.683	0.000
	4.08333 - 3.0625		31.770	0.395	22.683	0.035	0.127	0.001	22.683	0.000
	3.0625 - 2.04167		31.861	0.395	22.683	0.035	0.129	0.001	22.683	0.000
	2.04167 - 1.02083		31.954	0.394	22.683	0.035	0.131	0.001	22.683	0.000
	1.02083 - 0		32.046	0.393	22.683	0.035	0.134	0.001	22.683	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	125 - 123.719	0.005	0.084	0.000	0.040	0.002	0.090 ✔	1.333	H1-3+VT ✔
	123.719 - 122.438	0.006	0.129	0.000	0.046	0.002	0.135 ✔	1.333	H1-3+VT ✔
	122.438 - 121.156	0.006	0.175	0.000	0.046	0.002	0.182 ✔	1.333	H1-3+VT ✔
	121.156 - 119.875	0.006	0.219	0.000	0.046	0.002	0.226 ✔	1.333	H1-3+VT ✔
	119.875 - 118.594	0.006	0.262	0.000	0.046	0.002	0.269 ✔	1.333	H1-3+VT ✔
	118.594 - 117.313	0.006	0.303	0.000	0.046	0.002	0.310 ✔	1.333	H1-3+VT ✔
	117.313 -	0.006	0.342	0.000	0.046	0.001	0.349	1.333	H1-3+VT ✔

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	116.031						✔		
	116.031 - 114.75	0.011	0.424	0.000	0.078	0.001	0.436 ✔	1.333	H1-3+VT ✔
	114.75 - 113.469	0.011	0.490	0.000	0.077	0.001	0.502 ✔	1.333	H1-3+VT ✔
	113.469 - 112.188	0.011	0.553	0.000	0.077	0.000	0.565 ✔	1.333	H1-3+VT ✔
	112.188 - 110.906	0.011	0.613	0.000	0.077	0.000	0.625 ✔	1.333	H1-3+VT ✔
	110.906 - 109.625	0.011	0.670	0.000	0.076	0.000	0.683 ✔	1.333	H1-3+VT ✔
	109.625 - 108.344	0.011	0.725	0.000	0.076	0.000	0.737 ✔	1.333	H1-3+VT ✔
	108.344 - 107.063	0.011	0.778	0.000	0.075	0.000	0.790 ✔	1.333	H1-3+VT ✔
	107.063 - 105.781	0.011	0.828	0.000	0.075	0.000	0.840 ✔	1.333	H1-3+VT ✔
	105.781 - 104.5	0.016	0.892	0.000	0.114	0.002	0.911 ✔	1.333	H1-3+VT ✔
	104.5 - 103.219	0.016	0.973	0.000	0.114	0.000	0.992 ✔	1.333	H1-3+VT ✔
	103.219 - 101.938	0.016	1.051	0.000	0.113	0.000	1.070 ✔	1.333	H1-3+VT ✔
	101.938 - 100.656	0.016	1.125	0.000	0.112	0.000	1.144 ✔	1.333	H1-3+VT ✔
	100.656 - 99.375	0.016	1.196	0.000	0.111	0.000	1.215 ✔	1.333	H1-3+VT ✔
L2	99.375 - 98.1458	0.012	0.960	0.000	0.083	0.000	0.974 ✔	1.333	H1-3+VT ✔
	98.1458 - 96.9165	0.012	1.007	0.000	0.082	0.000	1.021 ✔	1.333	H1-3+VT ✔
	96.9165 - 95.6873	0.012	1.052	0.000	0.082	0.000	1.067 ✔	1.333	H1-3+VT ✔
	95.6873 - 94.458	0.013	1.096	0.000	0.082	0.000	1.110 ✔	1.333	H1-3+VT ✔
L3	94.458 - 93.3664	0.009	0.829	0.000	0.059	0.000	0.839 ✔	1.333	H1-3+VT ✔
	93.3664 - 92.2748	0.009	0.855	0.000	0.058	0.000	0.865 ✔	1.333	H1-3+VT ✔
	92.2748 - 91.1832	0.009	0.880	0.000	0.058	0.000	0.890 ✔	1.333	H1-3+VT ✔
	91.1832 - 90.0916	0.009	0.904	0.000	0.058	0.000	0.915 ✔	1.333	H1-3+VT ✔
	90.0916 - 89	0.010	0.928	0.000	0.058	0.000	0.938 ✔	1.333	H1-3+VT ✔
L4	89 - 88.957	0.008	0.806	0.000	0.050	0.000	0.815 ✔	1.333	H1-3+VT ✔
	88.957 - 85.04	0.005	0.518	0.000	0.029	0.000	0.523 ✔	1.333	H1-3+VT ✔
L5	88.957 - 85.04	0.004	0.429	0.000	0.024	0.000	0.434 ✔	1.333	H1-3+VT ✔
	85.04 - 83.9985	0.011	1.073	0.000	0.059	0.000	1.084 ✔	1.333	H1-3+VT ✔

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	83.9985 - 82.9569	0.011	1.092	0.000	0.059	0.000	1.104	1.333	H1-3+VT
	82.9569 - 81.9154	0.012	1.119	0.000	0.064	0.000	1.132	1.333	H1-3+VT
	81.9154 - 80.8738	0.012	1.141	0.000	0.064	0.000	1.154	1.333	H1-3+VT
	80.8738 - 79.8323	0.012	1.162	0.000	0.064	0.000	1.175	1.333	H1-3+VT
	79.8323 - 78.7907	0.012	1.182	0.000	0.063	0.000	1.195	1.333	H1-3+VT
	78.7907 - 77.7492	0.012	1.202	0.000	0.063	0.000	1.215	1.333	H1-3+VT
	77.7492 - 76.7076	0.012	1.221	0.000	0.063	0.000	1.234	1.333	H1-3+VT
	76.7076 - 75.6661	0.013	1.239	0.000	0.063	0.000	1.253	1.333	H1-3+VT
	75.6661 - 74.6245	0.013	1.257	0.000	0.062	0.000	1.271	1.333	H1-3+VT
	74.6245 - 73.583	0.013	1.275	0.000	0.062	0.000	1.288	1.333	H1-3+VT
L6	73.583 - 73 (6)	0.010	1.015	0.000	0.049	0.000	1.026	1.333	H1-3+VT
L7	73 - 72	0.012	1.202	0.000	0.058	0.000	1.215	1.333	H1-3+VT
	72 - 71	0.012	1.217	0.000	0.057	0.000	1.230	1.333	H1-3+VT
	71 - 70	0.012	1.231	0.000	0.057	0.000	1.243	1.333	H1-3+VT
	70 - 69	0.012	1.244	0.000	0.057	0.000	1.257	1.333	H1-3+VT
	69 - 68	0.012	1.257	0.000	0.057	0.000	1.270	1.333	H1-3+VT
	68 - 67	0.012	1.270	0.000	0.057	0.000	1.283	1.333	H1-3+VT
	67 - 66	0.012	1.282	0.000	0.056	0.000	1.295	1.333	H1-3+VT
	66 - 65	0.012	1.294	0.000	0.056	0.000	1.307	1.333	H1-3+VT
	65 - 64	0.012	1.306	0.000	0.056	0.000	1.319	1.333	H1-3+VT
	64 - 63	0.012	1.317	0.000	0.056	0.000	1.330	1.333	H1-3+VT
L8	63 - 61.8666	0.010	1.099	0.000	0.045	0.000	1.109	1.333	H1-3+VT
	61.8666 - 60.7332	0.010	1.108	0.000	0.045	0.000	1.119	1.333	H1-3+VT
	60.7332 - 59.5998	0.010	1.118	0.000	0.045	0.000	1.129	1.333	H1-3+VT
	59.5998 - 58.4664	0.010	1.127	0.000	0.045	0.000	1.138	1.333	H1-3+VT
	58.4664 - 57.333	0.010	1.136	0.000	0.045	0.000	1.147	1.333	H1-3+VT

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L9	57.333 - 56.2609	0.011	1.183	0.000	0.046	0.000	1.194	1.333	H1-3+VT
	56.2609 - 55.1888	0.011	1.191	0.000	0.046	0.000	1.202	1.333	H1-3+VT
	55.1888 - 54.1167	0.011	1.199	0.000	0.046	0.000	1.210	1.333	H1-3+VT
	54.1167 - 53.0446	0.011	1.206	0.000	0.046	0.000	1.218	1.333	H1-3+VT
	53.0446 - 51.9725	0.011	1.214	0.000	0.046	0.000	1.226	1.333	H1-3+VT
	51.9725 - 50.9005	0.011	1.221	0.000	0.046	0.000	1.233	1.333	H1-3+VT
	50.9005 - 49.8284	0.011	1.228	0.000	0.046	0.000	1.240	1.333	H1-3+VT
	49.8284 - 48.7563	0.011	1.235	0.000	0.045	0.000	1.247	1.333	H1-3+VT
	48.7563 - 47.6842	0.011	1.242	0.000	0.045	0.000	1.253	1.333	H1-3+VT
	47.6842 - 46.6121	0.011	1.248	0.000	0.045	0.000	1.260	1.333	H1-3+VT
	46.6121 - 45.54	0.011	1.254	0.000	0.045	0.000	1.266	1.333	H1-3+VT
	45.54 - 40.457	0.006	0.616	0.000	0.022	0.000	0.622	1.333	H1-3+VT
L10	45.54 - 40.457	0.006	0.606	0.000	0.021	0.000	0.612	1.333	H1-3+VT
	40.457 - 39.145	0.011	1.174	0.000	0.040	0.000	1.185	1.333	H1-3+VT
	39.145 - 37.833	0.011	1.179	0.000	0.040	0.000	1.191	1.333	H1-3+VT
L11	37.833 - 36.5538	0.012	1.249	0.000	0.042	0.000	1.262	1.333	H1-3+VT
	36.5538 - 35.2747	0.012	1.255	0.000	0.042	0.000	1.267	1.333	H1-3+VT
	35.2747 - 33.9956	0.012	1.260	0.000	0.041	0.000	1.272	1.333	H1-3+VT
	33.9956 - 32.7164	0.012	1.264	0.000	0.041	0.000	1.277	1.333	H1-3+VT
	32.7164 - 31.4373	0.012	1.269	0.000	0.041	0.000	1.281	1.333	H1-3+VT
	31.4373 - 30.1581	0.012	1.273	0.000	0.041	0.000	1.286	1.333	H1-3+VT
	30.1581 - 28.879	0.012	1.277	0.000	0.041	0.000	1.290	1.333	H1-3+VT
	28.879 - 27.5998	0.012	1.281	0.000	0.041	0.000	1.294	1.333	H1-3+VT
	27.5998 - 26.3207	0.012	1.285	0.000	0.041	0.000	1.298	1.333	H1-3+VT
	26.3207 - 25.0415	0.012	1.289	0.000	0.040	0.000	1.302	1.333	H1-3+VT
	25.0415 - 23.7624	0.012	1.292	0.000	0.040	0.000	1.305	1.333	H1-3+VT

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	23.7624 - 22.4832	0.012	1.296	0.000	0.040	0.000	1.309 ✔	1.333	H1-3+VT ✔
	22.4832 - 21.204	0.012	1.299	0.000	0.040	0.000	1.312 ✔	1.333	H1-3+VT ✔
	21.204 - 19.9249	0.013	1.302	0.000	0.040	0.000	1.315 ✔	1.333	H1-3+VT ✔
	19.9249 - 18.6458	0.013	1.305	0.000	0.040	0.000	1.318 ✔	1.333	H1-3+VT ✔
	18.6458 - 17.3666	0.013	1.308	0.000	0.040	0.000	1.321 ✔	1.333	H1-3+VT ✔
	17.3666 - 16.0875	0.013	1.311	0.000	0.039	0.000	1.324 ✔	1.333	H1-3+VT ✔
	16.0875 - 14.8083	0.013	1.313	0.000	0.039	0.000	1.326 ✔	1.333	H1-3+VT ✔
	14.8083 - 13.5292	0.013	1.316	0.000	0.039	0.000	1.329 ✔	1.333	H1-3+VT ✔
	13.5292 - 12.25	0.013	1.318	0.000	0.039	0.000	1.331 ✔	1.333	H1-3+VT ✔
L12	12.25 - 11.2292	0.012	1.207	0.000	0.035	0.000	1.219 ✔	1.333	H1-3+VT ✔
	11.2292 - 10.2083	0.012	1.208	0.000	0.035	0.000	1.221 ✔	1.333	H1-3+VT ✔
	10.2083 - 9.1875	0.012	1.210	0.000	0.035	0.000	1.222 ✔	1.333	H1-3+VT ✔
	9.1875 - 8.16667	0.012	1.211	0.000	0.035	0.000	1.224 ✔	1.333	H1-3+VT ✔
	8.16667 - 7.14583	0.012	1.213	0.000	0.035	0.000	1.225 ✔	1.333	H1-3+VT ✔
	7.14583 - 6.125	0.012	1.214	0.000	0.035	0.000	1.226 ✔	1.333	H1-3+VT ✔
	6.125 - 5.10417	0.012	1.215	0.000	0.035	0.000	1.228 ✔	1.333	H1-3+VT ✔
	5.10417 - 4.08333	0.012	1.216	0.000	0.035	0.000	1.229 ✔	1.333	H1-3+VT ✔
	4.08333 - 3.0625	0.012	1.218	0.000	0.035	0.000	1.230 ✔	1.333	H1-3+VT ✔
	3.0625 - 2.04167	0.012	1.219	0.000	0.035	0.000	1.232 ✔	1.333	H1-3+VT ✔
	2.04167 - 1.02083	0.012	1.220	0.000	0.035	0.000	1.233 ✔	1.333	H1-3+VT ✔
	1.02083 - 0	0.013	1.221	0.000	0.035	0.000	1.234 ✔	1.333	H1-3+VT ✔

Section Capacity Table

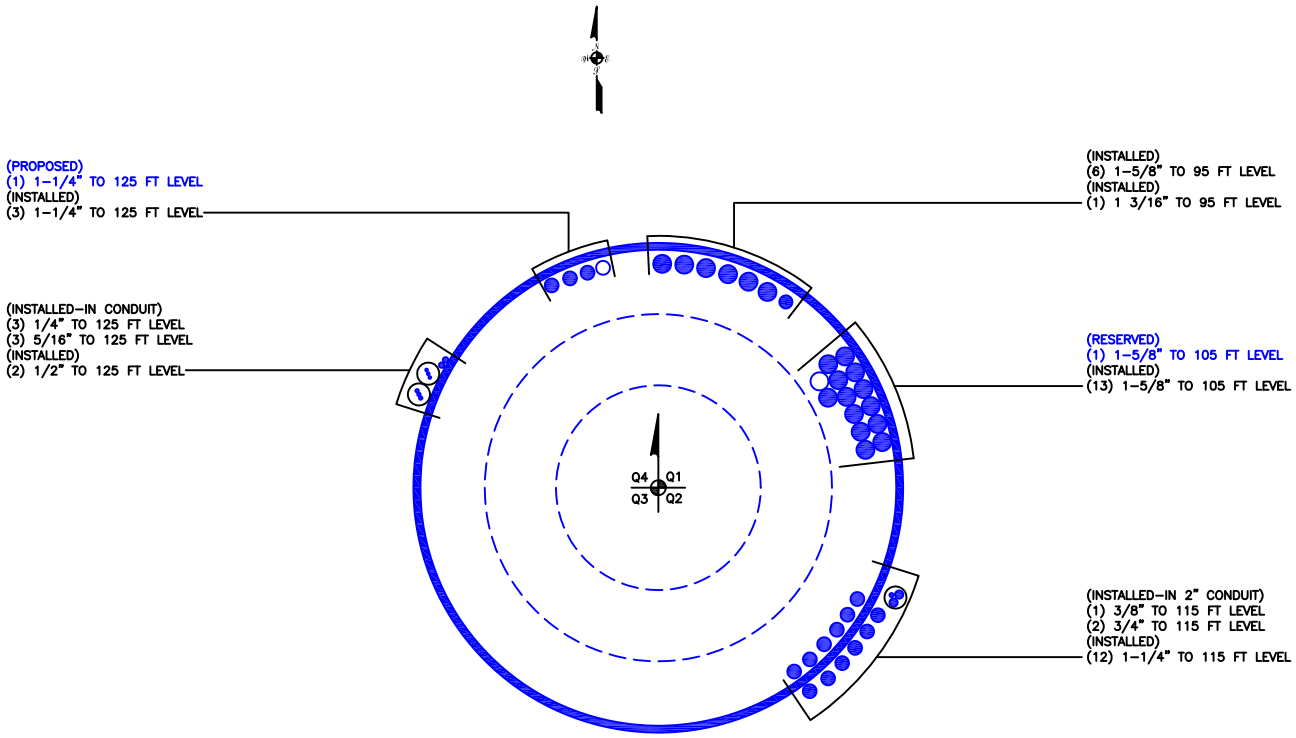
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	125 - 99.375	Pole	TP24.008x18.5x0.188	1	-9.008	736.992	**	**
L2	99.375 - 94.458	Pole	TP25.065x24.008x0.409	2	-9.735	1030.434	**	**
L3	94.458 - 89	Pole	TP26.239x25.065x0.571	3	-10.752	1496.266	**	**
L4	89 - 85.04	Pole	TP27.09x26.239x0.676	4	-10.769	1738.605	**	**
L5	85.04 - 73.583	Pole	TP29.14x25.873x0.475	5	-15.525	1628.979	**	**
L6	73.583 - 73	Pole	TP29.264x29.14x0.609	6	-15.665	2088.598	**	**
L7	73 - 63	Pole	TP31.389x29.264x0.369	7	-17.486	1884.862	**	**
L8	63 - 57.333	Pole	TP32.594x31.389x0.566	8	-18.843	2399.840	**	**
L9	57.333 - 40.457	Pole	TP36.18x32.594x0.436	9	-21.392	2481.993	**	**
L10	40.457 - 37.833	Pole	TP36.233x34.6x0.493	10	-24.008	2901.714	**	**
L11	37.833 - 12.25	Pole	TP41.654x36.233x0.466	11	-30.594	3162.849	**	**
L12	12.25 - 0	Pole	TP44.25x41.654x0.589	12	-34.878	3699.635	**	**
							Summary	
						Pole (L11)	**	**
						RATING =	**	**

** See Additional Calculations

Program Version 6.1.4.1

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876364

APPENDIX C

ADDITIONAL CALCULATIONS

Reinforcement 1						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	37.833	3	MP406	F	0	T&C
37.833	57.333	3	MP406	F	0	T&C
57.333	73.583	3	MP404	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 2						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
73	89	3	MS-600 K-1	F	0	T&C
89	94.458	3	MS-600	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

Reinforcement 3						
Bottom	Top	QTY	Type	Position	Gap	Ten/Comp
0	12.25	3	CCI-1.25x6.5	F	0	T&C
57.333	63	3	CCI-1x6	F	0	T&C
86.875	99.375	4	CCI-1.25x3.25	F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C
				F	0	T&C

	Bottom Elevation	Top Elevation	Original Thickness	Original Yield Stress	Original Ultimate Stress	Reinforced Shaft Capacity	Reinf. 1 QTY	Reinf. 1 Type	Rein. 1 Capacity	Reinf. 2 QTY	Reinf. 2 Type	Rein. 2 Capacity	Reinf. 3 QTY	Reinf. 3 Type	Rein. 3 Capacity	Control Stress Ratio	Top Height	Section Length	Lap Splice	# of Sides	Top Diameter	Bottom Diameter	Equivalent Shaft Thickness	Equivalent Shaft Fy	Equivalent Weight Mult.
1	99.3750	125.0000	0.1875	65	80	90.9%										**90.9%**	125.0000	25.6250	0.0000	18	18.5000	24.0085	0.1875	65.0	1.00
2	94.4580	99.3750	0.1875	65	80	53.6%							4	CCI-1.25x3.25	83.5%	**83.5%**	99.3750	4.9170	0.0000	18	24.0085	25.0655	0.4091	40.2	0.97
3	89.0000	94.4580	0.1875	65	80	45.3%				3	MS-600	60.9%	4	CCI-1.25x3.25	70.5%	**70.5%**	94.4580	5.4580	0.0000	18	25.0655	26.2387	0.5707	39.9	0.94
4	85.0400	89.0000	0.1875	65	80	39.0%				3	MS-600 K-1	54.5%	4	CCI-1.25x3.25	61.3%	**61.3%**	89.0000	3.9600	3.9170	18	26.2387	27.0900	0.6758	39.5	0.91
5	73.5830	88.9570	0.2500	65	80	69.5%				3	MS-600 K-1	96.7%				**96.7%**	88.9570	15.3740	0.0000	18	25.8730	29.1402	0.4750	45.9	0.95
6	73.0000	73.5830	0.2500	65	80	55.7%	3	MP404	50.9%	3	MS-600 K-1	77.0%				**77.0%**	73.5830	0.5830	0.0000	18	29.1402	29.2641	0.6092	45.9	0.93
7	63.0000	73.0000	0.2500	65	80	99.8%	3	MP404	95.1%							**99.8%**	73.0000	10.0000	0.0000	18	29.2641	31.3893	0.3687	65.0	0.98
8	57.3330	63.0000	0.2500	65	80	68.7%	3	MP404	62.9%				3	CCI-1x6	86.1%	**86.1%**	63.0000	5.6670	0.0000	18	31.3893	32.5936	0.5655	50.9	0.95
9	40.4570	57.3330	0.2500	65	80	95.0%	3	MP406	90.5%							**95.0%**	57.3330	16.8760	5.0830	18	32.5936	36.1800	0.4357	65.0	0.96
10	37.8330	45.5400	0.3125	65	80	89.4%	3	MP406	85.2%							**89.4%**	45.5400	7.7070	0.0000	18	34.5998	36.2329	0.4933	65.0	0.96
11	12.2500	37.8330	0.3125	65	80	99.9%	3	MP406	94.8%							**99.9%**	37.8330	25.5830	0.0000	18	36.2329	41.6541	0.4665	65.0	0.97
12	0.0000	12.2500	0.3125	65	80	87.3%	3	MP406	66.6%				3	CCI-1.25x6.5	92.6%	**92.6%**	12.2500	12.2500	0.0000	18	41.6541	44.2500	0.5886	56.7	1.06
13																									
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	Bottom Elevation Failure	Top Elevation Failure	Section Failure %
1	73.5	74.5	100.2%
2	62.5	66.5	103.6%
3	12	20.5	102.6%
4			
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AeroSolutions LLC
Optimizing Your Tower Infrastructure
5500 Flatirons Parkway, Suite 100
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720-304-6882

Section / Loads / Pole

Section	Elevation (ft)	Moment (ft-kip)	Compression (kip)	Shear (kip)	Torsion (kip-ft)	Number of Sides	OD (in)	Thickness (in)	Yield Strength (ksi)	Flat Width (in)	Area (in²)	Moment of Inertia (in⁴)	Percent of Composite Moment of Inertia	Angle Offset to Pole Flat
Section	*Elevation*	*Moment*	*Compression*	*Shear*	*Torsion*	*PoleSides*	*PoleOD*	*PoleT*	*PoleFy*	*PoleW*	*PoleA*	*PoleI*	*PoleIPer*	*PoleCPoint*
1	125	7.0	2.7	5.0	0.0	18	18.5000	0.1875	65	2.93	10.9	461	100%	TRUE
2	99.375	323.9	9.0	20.5	0.1	18	24.0085	0.1875	65	3.90	14.2	1015	100%	TRUE
3	94.458	425.9	9.7	21.0	0.0	18	25.0655	0.1875	65	4.09	14.8	1159	47%	10
4	89	542.1	10.8	21.6	0.0	18	26.2387	0.1875	65	4.30	15.5	1329	34%	10
5	88.957	543.1	10.8	21.6	0.0	18	26.2480	0.1875	65	4.30	15.5	1331	29%	0
6	86.875	588.9	11.5	21.7	0.0	18	26.6955	0.4375	65	3.94	36.4	3172	49%	0
7	85.04	628.4	12.1	22.1	0.0	18	27.0900	0.4375	65	4.01	37.0	3315	65%	0
8	73.583	910.1	15.5	25.3	0.0	18	29.1402	0.2500	65	4.70	22.9	2414	54%	0
9	73	925.0	15.7	25.4	0.0	18	29.2641	0.2500	65	4.72	23.0	2446	43%	0
10	63	1183.1	17.5	26.3	0.0	18	31.3893	0.2500	65	5.09	24.7	3024	69%	10
11	57.333	1333.5	18.8	26.9	0.0	18	32.5936	0.2500	65	5.31	25.6	3388	45%	0
12	45.54	1656.7	21.4	28.0	0.0	18	35.0998	0.2500	65	5.75	27.6	4239	58%	10
13	40.457	1800.5	23.4	28.5	0.1	18	36.1800	0.5625	65	5.39	63.5	10173	76%	10
14	37.833	1875.6	24.0	28.8	0.1	18	36.2329	0.3125	65	5.84	35.6	5801	64%	10
15	12.25	2639.7	30.6	31.0	0.1	18	41.6541	0.3125	65	6.79	41.0	8845	68%	10
16	0	3025.4	34.9	32.0	0.1	18	44.2500	0.3125	65	7.25	43.6	10795	55%	0

Pole (cont.) / Unreinforced Pole - Rev. F

Section	Distance to Extreme Fiber (in)	Section Modulus (in³)	Torsion Constant (in⁴)	Polygonal Compact Criterion	Allowable Bending Stress (ksi)	Allowable Bending Moment Strength (ft-kip)	Allowable Axial Stress (ksi)	Allowable Shear Stress (ksi)	Bending Stress (ksi)	Axial Stress (ksi)	Shear Stress (ksi)	Torsion Shear Stress (ksi)	**Stress Ratio**
Section	*PoleC*	*PoleS*	*PoleJ*	*PoleWTf*	*PoleFb*	*PoleMall*	*PoleFa*	*PoleFv*	*PoleFbAct*	*PoleFaAct*	*PoleFvAct*	*PoleFvtAct*	***PoleSR***
1	9.38	49	914	126	52.0	213.0	52.0	34.7	1.7	0.24	0.00	0.00	**0.038**
2	12.17	83	2012	168	52.0	361.2	52.0	34.7	46.6	0.64	0.00	0.00	**0.909**
3	13.10	88	2292	176	52.0	383.3	52.0	34.7	57.8	0.66	0.00	0.00	**1.124**
4	13.59	98	2632	185	52.0	423.7	52.0	34.7	66.5	0.69	0.00	0.00	**1.293**
5	13.45	99	2635	185	52.0	428.8	52.0	34.7	65.8	0.69	0.00	0.00	**1.280**
6	13.58	234	6292	73	52.0	1012.1	52.0	34.7	30.2	0.32	0.00	0.00	**0.588**
7	13.55	245	6579	74	52.0	1060.4	52.0	34.7	30.8	0.33	0.00	0.00	**0.599**
8	14.57	166	4786	151	52.0	717.9	52.0	34.7	65.9	0.68	0.00	0.00	**1.281**
9	14.63	167	4848	152	52.0	724.1	52.0	34.7	66.4	0.68	0.00	0.00	**1.291**
10	15.92	190	5993	164	52.0	822.9	52.0	34.7	74.7	0.71	0.00	0.00	**1.451**
11	16.30	208	6716	171	52.0	900.7	52.0	34.7	77.0	0.73	0.00	0.00	**1.495**
12	17.80	238	8401	185	52.0	1031.6	52.0	34.7	83.5	0.77	0.00	0.00	**1.621**
13	18.33	555	20188	77	52.0	2405.0	52.0	34.7	38.9	0.37	0.00	0.00	**0.756**
14	18.37	316	11500	151	52.0	1367.9	52.0	34.7	71.3	0.67	0.00	0.00	**1.384**
15	21.12	419	17531	175	52.0	1813.9	52.0	34.7	75.7	0.75	0.00	0.00	**1.470**
16	24.14	447	21044	187	52.0	1937.3	52.0	34.7	81.2	0.80	0.00	0.00	**1.577**
													1.621

Reinforced Pole / Rev. F / Reinforcement 1

Section	Moment in Pole when Reinforced	Bending Stress (ksi)	Axial Stress (ksi)	Shear Stress (ksi)	Torsion Shear Stress (ksi)	**Reinforced Pole Stress Ratio**	Qty	**Model**	Position (F-Flat, C-Corner)	Gap Between Pole and Back of Rein. (in)	Tension only or Tension & Comp.	Total Moment of Inertia (in⁴)	Axial Force (kip)	**Stress Ratio**
Section	*RPoleMome*	*RPoleFbAct*	*RPoleFaAct*	*RPoleFvAct*	*RPoleFvtAct*	***RPoleSR***	*Rein1Qty*	***Rein1Model***	*Rein1Pos*	*Rein1Gap*	*Rein1TC*	*Rein1ITotal*	*Rein1P*	***Rein1SR***
1	7.0	1.7	0.24	0.00	0.00	**0.038**								
2	323.9	46.6	0.64	0.00	0.00	**0.909**								
3	200.7	27.2	0.66	0.00	0.00	**0.536**								
4	186.2	22.8	0.69	0.00	0.00	**0.453**								
5	159.5	19.3	0.69	0.00	0.00	**0.385**								
6	288.4	14.8	0.32	0.00	0.00	**0.291**								
7	407.1	20.0	0.33	0.00	0.00	**0.390**								
8	489.8	35.5	0.68	0.00	0.00	**0.695**								
9	393.6	28.3	0.68	0.00	0.00	**0.557**	**3**	**MP404**	**F**	0	T&C	1214	97.1	**0.509**
10	810.4	51.2	0.71	0.00	0.00	**0.998**	**3**	**MP404**	**F**	0	T&C	1390	181.4	**0.951**
11	606.4	35.0	0.73	0.00	0.00	**0.687**	**3**	**MP404**	**F**	0	T&C	1496	120.0	**0.629**
12	965.0	48.6	0.77	0.00	0.00	**0.950**	**3**	**MP406**	**F**	0	T&C	3039	298.1	**0.905**
13	1367.6	29.6	0.37	0.00	0.00	**0.576**	**3**	**MP406**	**F**	0	T&C	3221	181.3	**0.550**
14	1204.8	45.8	0.67	0.00	0.00	**0.894**	**3**	**MP406**	**F**	0	T&C	3230	280.5	**0.852**
15	1786.3	51.2	0.75	0.00	0.00	**0.999**	**3**	**MP406**	**F**	0	T&C	4226	312.1	**0.948**
16	1662.4	44.6	0.80	0.00	0.00	**0.873**	**3**	**MP406**	**F**	0	T&C	4824	219.5	**0.666**
						0.999								**0.951**

Reinforcement 2

Section	Qty	**Model**	Position (F-Flat, C-Corner)	Gap Between Pole and Back of Rein. (in)	Tension only or Tension & Comp.	Total Moment of Inertia (in⁴)	Axial Force (kip)	**Stress Ratio**
Section	*Rein2Qty*	***Rein2Model***	*Rein2Pos*	*Rein2Gap*	*Rein2TC*	*Rein2ITotal*	*Rein2P*	***Rein2SR***
1								
2								
3								
4	**3**	**MS-600**	**F**	0	T&C	1122	88.3	**0.609**
5	**3**	**MS-600 K-1**	**F**	0	T&C	1700	114.8	**0.504**
6	**3**	**MS-600 K-1**	**F**	0	T&C	1755	89.2	**0.392**
7	**3**	**MS-600 K-1**	**F**	0	T&C	1803	124.2	**0.545**
8	**3**	**MS-600 K-1**	**F**	0	T&C	2072	220.2	**0.967**
9	**3**	**MS-600 K-1**	**F**	0	T&C	2089	175.4	**0.770**
10								
11								
12								
13								
14								
15								
16								
								0.967

Reinforcement 3

Section	Qty	**Model**	Position (F-Flat, C-Corner)	Gap Between Pole and Back of Rein. (in)	Tension only or Tension & Comp.	Total Moment of Inertia (in⁴)	Axial Force (kip)	**Stress Ratio**
Section	*Rein3Qty*	***Rein3Model***	*Rein3Pos*	*Rein3Gap*	*Rein3TC*	*Rein3ITotal*	*Rein3P*	***Rein3SR***
1								
2								
3	**4**	**CCI-1.25x3.25**	**F**	0	T&C	1301	109.5	**0.835**
4	**4**	**CCI-1.25x3.25**	**F**	0	T&C	1418	92.5	**0.705**
5	**4**	**CCI-1.25x3.25**	**F**	0	T&C	1501	80.4	**0.613**
6	**4**	**CCI-1.25x3.25**	**F**	0	T&C	1550	62.0	**0.472**
7								
8								
9								
10								
11	**3**	**CCI-1x6**	**F**	0	T&C	2567	216.5	**0.861**
12								
13								
14								
15								
16	**3**	**CCI-1.25x6.5**	**F**	0	T&C	4027	321.4	**0.926**
								0.926

Composite

Section	Centroid Offset (in)	Area (in²)	Moment of Inertia (in⁴)	**Controlling Stress Ratio**	**Thickness (in)**	**Weight Multiplier**	**Derated Yield Stress (ksi)**	**% Error in Derated Yield Stress**
Section	*CompYBar*	*CompA*	*CompI*	***CompSR***	***EPoleT***	***EPoleWM***	***EDPoleFy***	***EDPoleSRCheck***
1	0.000	10.9	461	**0.038**	**0.1875**	**1.00**	**65.0**	**28.9%**
2	0.000	14.2	1015	**0.909**	**0.1875**	**1.00**	**65.0**	**0.6%**
3	0.384	31.0	2459	**0.835**	**0.4091**	**0.97**	**40.2**	**0.1%**
4	0.285	43.7	3870	**0.705**	**0.5707**	**0.94**	**39.9**	**0.8%**
5	0.322	49.7	4532	**0.613**	**0.6758**	**0.91**	**39.5**	**0.4%**
6	0.231	70.7	6476	**0.472**	**0.9459**	**0.92**	**39.2**	**1.0%**
7	0.000	55.0	5118	**0.545**	**0.6940**	**0.95**	**45.8**	**2.8%**
8	0.000	40.9	4486	**0.967**	**0.4750**	**0.95**	**45.9**	**2.7%**
9	0.000	51.7	5748	**0.770**	**0.6092**	**0.93**	**45.9**	**2.7%**
10	0.000	35.4	4414	**0.998**	**0.3687**	**0.98**	**65.0**	**0.1%**
11	0.000	54.3	7451	**0.861**	**0.5655**	**0.95**	**50.9**	**2.6%**
12	0.000	45.9	7277	**0.950**	**0.4357**	**0.96**	**65.0**	**0.4%**
13	0.000	81.8	13394	**0.576**	**0.7511**	**0.97**	**65.0**	**0.1%**
14	0.000	53.9	9031	**0.894**	**0.4933**	**0.96**	**65.0**	**0.3%**
15	0.000	59.3	13071	**0.999**	**0.4665**	**0.97**	**65.0**	**0.2%**
16	2.015	86.2	19646	**0.926**	**0.5886**	**1.06**	**56.7**	**0.1%**
				0.999				

Rein1

Bottom	Top	Qty	Model	Position	T or T&C
0	37.833	3	MP406	F	T&C
37.833	57.333	3	MP406	F	T&C
57.333	73.583	3	MP404	F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C

Flats (Used for relative orientation only. Actual flat numbers may vary.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
				1						1						1	
			1						1						1		
				1						1						1	

Rein2

Bottom	Top	Qty	Model	Position	T or T&C
73	89	3	MS-600 K-1	F	T&C
89	94.458	3	MS-600	F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1						1						1					
	1						1						1				

Rein3

Bottom	Top	Qty	Model	Position	T or T&C
0	12.25	3	CI-1.25x6.5	F	T&C
57.333	63	3	CCI-1x6	F	T&C
86.875	99.375	4	I-1.25x3.25	F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C
				F	T&C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1						1			1								
1						1						1					
				1					1					1			1

Reinforcement Capacity

AeroSolutions LLC
Optimizing Your Tower Infrastructure
5500 Flatirons Parkway, Suite 100
Boulder, CO 80301
720-304-6882

Dimensions and Properties														Compression				Axial				
																		ASD-9			LRFD	
Model	Weight (lb/ft)	Area (in^2)	Moment of Inertia (in^4)	Moment of Inertia (in^4)	Centroid from Mating Edge (in)	Centroid from Bolt Hole Center (in)	Web Thickness (in)	Width (in)	Flange Width (in)	Flange Thickness (in)	Hole Diameter (in)	Yield Stress (ksi)	Ultimate Stress (ksi)	Slender. Ratio Coefficient	Unbraced Length (in)	Slender. Ratio Coefficient	Unbraced Length (in)	Allowable Axial (kip)	Allowable Axial w/ increase (kip)	Governing Axial	Design Axial Strength (kip)	Governing Axial
Model	*Wt*	*A*	*Ix*	*Iy*	*Y*	*X*	*Tw*	*W*	*Wf*	*Tf*	*Dh*	*Fy*	*Fu*	*Kx*	*Lx*	*Ky*	*Ly*	*PAll*	*Pall.inc*	*Ptype.ASD*	*phiPn*	*Ptype.LRFD*
MP404	12.1	3.56	0.17	6.70	0.375	0	0.75	4.75	0	0	1.21875	100	110	0.80	14	1.00	14	143.1	190.8	Rupture	**214.6**	Rupture
MP406	20.7	6.09	0.79	12.07	0.625	0	1.25	4.875	0	0	1.21875	100	110	0.80	23	1.00	23	247.1	329.4	Rupture	**370.6**	Rupture
MS-600	13.6	4.00	0.33	5.33	0.5	0	1	4	0	0	1.21875	65	80	0.80	16.375	1.00	16.375	108.8	145.0	Rupture	163.1	Rupture
MS-600 K-1	20.4	6.00	0.50	18.00	0.5	0	1	6	0	0	1.21875	65	80	1.00	16.375	1.00	16.375	170.8	227.8	Compress.	258.5	Compress.
CCI-1.25x3.25	13.8	4.06	0.53	3.58	0.625	0	1.25	3.25	0	0	1.21875	65	80	0.80	24	1.00	24	98.4	131.3	Rupture	147.7	Rupture
CCI-1x6	20.4	6.00	0.50	18.00	0.5	0	1	6	0	0	1.21875	65	80	0.80	16	1.00	16	188.8	251.7	Rupture	283.1	Rupture
CCI-1.25x6.5	27.6	8.13	1.06	28.61	0.625	0	1.25	6.5	0	0	1.21875	65	80	0.80	19	1.00	19	260.4	347.2	Compress.	391.4	Rupture

Anchor Rod Information for TIA/EIA-222-F and TIA-222-G-2

Site Information	
ID:	876364
Name:	CROMWELL - FIRST LINE EMERGENC
App. #:	292878; Revision # 0

AeroSolutions LLC
Optimizing Your Tower Infrastructure

Base Reactions		
Moment:	3025	ft-kip
Axial:	35	kip
Shear:	32	kip
Base Plate Type:	Circular	

Design Information	
TIA Code:	F
ASIF:	1.333
Failure:	100%
eta Factor:	0.50

Original Anchor Rod Data

Quantity:	12	
Diameter:	2.25	in
Material:	A615 GR 75	
Bolt Circle:	53.0	in
Bolt Spacing:		in
Bolt Group Area:	47.71	in^2
Bolt Group MOIx:	16753	in^4

Reactions Seen by Original AR Group

Moment:	2537.6	kip-ft
Axial:	34.9	kip
Shear:	32.0	kip

Original AR Capacity Check

Tension Load:	185.7	kip
Allowable load:	194.8	kip
AR Capacity:	95.3%	**Pass**

First Added Anchor Rod Data

Quantity:	3	
Diameter:	1.75	in
Material:	A193 B7	
Bolt Circle:	59.8	in
Bolt Group Area:	7.22	in^2
Bolt Group MOIx:	3220	in^4

Reactions Seen by First Added AR Group

Moment:	487.8	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

First Added AR Capacity Check

Tension Load:	130.6	kip
Allowable load:	132.3	kip
AR Capacity:	98.8%	**Pass**

Second Added Anchor Rod Data

Quantity:		
Diameter:		in
Material:		
Bolt Circle:		in
Bolt Group Area:	0.00	in^2
Bolt Group MOIx:	0	in^4

Reactions Seen by Second Added AR Group

Moment:	0.0	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

Second Added AR Capacity Check

Tension Load:	0.0	kip
Allowable load:	0.0	kip
AR Capacity:	0.0%	

Third Added Anchor Rod Data

Quantity:		
Diameter:		in
Material:		
Bolt Circle:		in
Bolt Group Area:	0.00	in^2
Bolt Group MOIx:	0	in^4

Reactions Seen by Second Added AR Group

Moment:	0.0	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

Second Added AR Capacity Check

Tension Load:	0.0	kip
Allowable load:	0.0	kip
AR Capacity:	0.0%	

Rev.4.1

Rev.4.1

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#: *876364*
Site Name: *CROMWELL - FIRST LINE*
App #: *292878; Revision # 0*

Pole Manufacturer:	*Other*

	12	
	2.25	
	A615-J	
	100	
	75	
	53	

Plate Data

Diam:	59	in
Thick:	1.75	in
Grade:	60	ksi
Single-Rod B-eff:	11.70	in

Stiffener Data (Welding at both sides)

Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.625	in
Fillet V. Weld:	0.375	in
Width:	7	in
Height:	22	in
Thick:	0.75	in
Notch:	0.75	in
Grade:	50	ksi
Weld str.:	70	ksi

Pole Data

Diam:	44.25	in
Thick:	0.3125	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor

ASIF:	1.333	

Reactions

Moment:	2537.6431	ft-kips
Axial:	34.878	kips
Shear:	32.045741	kips

If No stiffeners, Criteria: AISC ASD <-Only Applcable to Unstiffened Cases

Stiffened
Service, ASD
Fty*ASIF

Base Plate Results — Flexural Check

Base Plate Stress:	57.2 ksi	
Allowable Plate Stress:	60.0 ksi	
Base Plate Stress Ratio:	95.4%	**Pass**

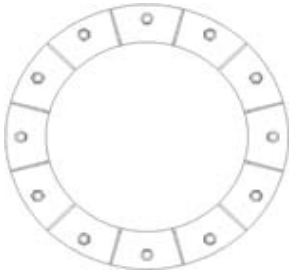
Stiffened
Service, ASD
0.75*Fy*ASIF
Y.L. Length:
N/A, Roark

Stiffener Results

Horizontal Weld :	84.6%	**Pass**
Vertical Weld:	45.0%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	19.0%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	74.6%	**Pass**
Plate Comp. (AISC Bracket):	74.3%	**Pass**

Pole Results

Pole Punching Shear Check:	14.0%	**Pass**



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**84470.013.01 - CROMWELL / FIRST LINE EMERGENC, CT**				
SUBJECT	**Foundation Analysis**				
DATE	**02-04-16**	PAGE	1	OF	1

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Monopole Pad & Pier Foundation Analysis

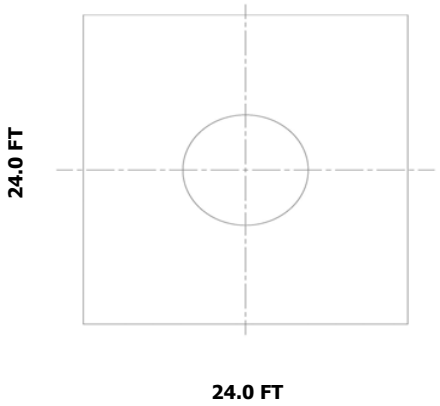
Rev. Type: F

Design Loads:

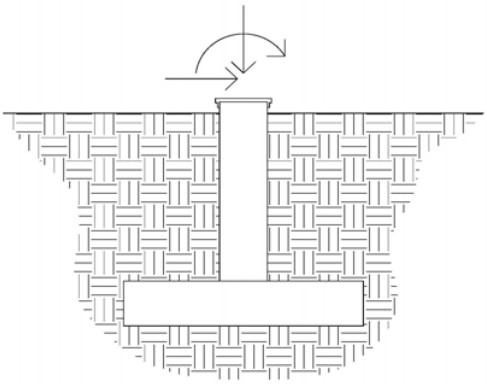
	Input unfactored loads	
Shear:	32.0	kips
Moment:	3,025.0	ft-kips
Tower Height:	125.0	ft
Tower Weight:	35.0	kips

Pad & Pier Dimensions / Properties:

Pole Diameter at Base:	44.25	in
Bearing Depth:	5.0	ft
Pad Width:	24.0	ft
Neglected Depth:	3.3	ft
Thickness:	3.0	ft
Pier Diameter:	14.0	ft
Pier Height Above Grade:	1.0	ft
BP Dist. Above Pier:	0.0	in
Clear Cover:	3.0	in
Pier Rebar Size:	8	
Pier Rebar Quanity:	24	
Pad Rebar Size:	8	
Pad Rebar Quanity:	30	
Pier Tie Size:	4	
Tie Quanity:	7	
Rebar Yield Strength:	60000	psi
Concrete Strength:	3000	psi
Concrete Unit Weight:	0.15	kcf



Elevation Overview



Soil Data:

	Allowable Values	
Soil Unit Weight:	0.125	kcf
Ult. Bearing Capacity:	8.000	ksf
Angle of Friction:	30.000	deg
Cohesion:	0.000	ksf
Passive Pressure:	0.000	ksf
Base Friction:	0.300	

** Notes:

Summary of Results

Req'd Pier Diam.	OK
Overturning	93.4%
Shear Capacity	44.1%
Bearing	53.6%
Pad Shear - 1-way	21.7%
Pad Shear - 2-way	6.7%
Pad Moment Capacity	17.1%
Pier Moment Capacity	57.6%

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT5272

Cromwell SE
201 Main Street
Cromwell, CT 06416

February 29, 2016

EBI Project Number: 6216000907

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	12.26 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

February 29, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT5272 – Cromwell SE**

EBI Consulting was directed to analyze the proposed AT&T facility located at **201 Main Street, Cromwell, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. 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.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **201 Main Street, Cromwell, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 UMTS channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 GSM channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel

7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

8) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the **CCI HPA-65R-BUU-H6 and the KMW AM-X-CD-16-65-00T-RET** for transmission in the 700 MHz, 850 MHz and1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is **117 feet** above ground level (AGL).

11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

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AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET
Gain:	13.85 / 15.25 dBd	Gain:	13.85 / 15.25 dBd	Gain:	13.85 / 15.25 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	3,465.76	ERP (W):	3,465.76	ERP (W):	3,465.76
Antenna A1 MPE%	**1.34**	Antenna B1 MPE%	**1.34**	Antenna C1 MPE%	**1.34**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET
Gain:	13.85 / 15.25 dBd	Gain:	13.85 / 15.25 dBd	Gain:	13.85 / 15.25 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	3,465.76	ERP (W):	3,465.76	ERP (W):	3,465.76
Antenna A2 MPE%	**1.34**	Antenna B2 MPE%	**1.34**	Antenna C2 MPE%	**1.34**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI OPA-65R-BUU-H6	Make / Model:	CCI OPA-65R-BUU-H6	Make / Model:	CCI OPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A3 MPE%	**2.22**	Antenna B3 MPE%	**2.22**	Antenna C3 MPE%	**2.22**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**4.89 %**
Sprint	1.02 %
Clearwire	0.14 %
MetroPCS	2.20 %
Verizon Wireless	3.05 %
Nextel	0.96 %
Site Total MPE %:	**12.26 %**

AT&T Sector 1 Total:	4.89 %
AT&T Sector 2 Total:	4.89 %
AT&T Sector 3 Total:	4.89 %
Site Total:	12.26 %

AT&T _ Per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	727.98	117	4.25	850	567	0.75 %
AT&T 1900 MHz (PCS) UMTS	2	1004.90	117	5.86	1900	1000	0.59 %
AT&T 850 MHz GSM	2	727.98	117	4.25	850	567	0.75 %
AT&T 1900 MHz (PCS) GSM	2	1004.90	117	5.86	1900	1000	0.59 %
AT&T 700 MHz LTE	2	940.05	117	5.49	700	467	1.17 %
AT&T 1900 MHz (PCS) LTE	2	1791.23	117	10.45	1900	1000	1.05 %
						Total:	4.89 %

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Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector 1:	4.89 %
Sector 2:	4.89 %
Sector 3 :	4.89 %
AT&T Maximum Total (per sector):	4.89 %
Site Total:	12.26 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **12.26%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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