Transcend Wireless

10 Industrial Ave. Suite 3
Mahwah, NJ 07430
Phone: 201.684.0055
Fax: 201.684.0066

March 8, 2017

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

Notice of Exempt Modification
605 Willard Avenue Newington, CT 06111
Latitude: 41.698372
Longitude: -72.737147

Dear Ms. Bachman,

Sprint currently maintains three existing antennas at the 140' level of the existing 180' tower at 605 Willard Avenue Newington, CT 06111. The tower and property is owned by American Tower Corporation. Sprint now intends to install three new antennas. These antennas would be installed at the same 140' of the tower. Sprint also plans to install three remote radio heads and two conduit lines.

The facility was approved by the Town of Newington. Please see enclosed correspondence with the Town Planner of Newington, Craig Minor.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for constructions that constitutes an exempt modifications pursuant to R.C.S.A 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to The Honorable Stephen Woods, Mayor of Town of Newington, as well as the property owner/tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A 16-50j-72(b)(2).
1.The proposed modification will not result in an increase in the height of the existing structure.
2.The proposed modifications will not require the extension of the site boundary.
3.The proposed modifications 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 Communications Commission safety standard.
5.The proposed modification 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, Sprint respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A 16-50j-72(b)(2).

Sincerely,

Jennifer Ardis

Jennifer Ardis
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, NJ 07430
Cell: 201-704-8157
jardis@TranscendWireless.com

Attachments:

Cc: The Honorable Stephen Woods, Mayor, Town of Newington
American Tower Corp., - as tower and property owner
Town of Newington, Zoning Department

Sprint

PROJECT:	2.5 MM OVERLAY ON NETWORK VISION
SITE NAME:	MARCUS GROUP COMM. TOWER
SITE CASCADE:	CT60XC018
SITE NUMBER:	370627
SITE ADDRESS:	605 WILLARD AVE NEWINGTON, CT 06111
SITE TYPE:	MONOPOLE TOWER
MARKET:	NORTHERN CONNECTICUT

SITE INFORMATION

TOWER OWNER:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801

LATITUDE (NAD83):
41° 41' 54.14" N
41.698372°

LONGITUDE (NAD83):
72° 44' 13.73" W
-72.737147°

COUNTY:
HARTFORD

ZONING JURISDICTION:
TOWN OF NEWINGTON

ZONING DISTRICT:
TBD

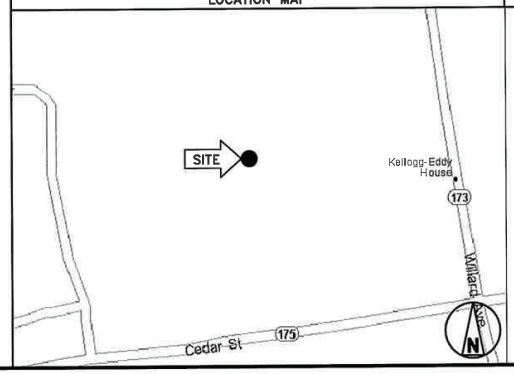
POWER COMPANY:
CONNECTICUT LIGHT & POWER
(800) 286-2000

AAV PROVIDER:
AT&T
(888) 944-0447

SPRINT CM:
MIKE DELIA
(781) 316-6348
MICHAEL.DELIA@SPRINT.COM

AREA MAP

LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL (3) MINI MACRO RADIOS
- INSTALL (3) PANEL ANTENNAS
- INSTALL (1) DIN-RAIL IN EXISTING PPC
- INSTALL (2) 10"x8"x8" POLY-CARBONATE JUNCTION BOXES
- INSTALL (2) 1" CORRUGATED PVC CONDUITS

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (2012 IBC)
2. TIA-EIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

811 Know what's below. Call before you dig. www.call811.com

DRAWING INDEX

SHEET NO.	SHEET TITLE	REV.
T-1	TITLE SHEET & PROJECT DATA	0
SP-1	SPRINT SPECIFICATIONS	0
A-1	OVERALL COMPOUND SITE PLAN	0
A-2	TOWER ELEVATION & DETAILS	0
A-3	DETAILS	0
A-4	EQUIPMENT ELEVATION & DETAILS	0
A-5	WIRING DIAGRAM	0

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 340-000

Transcend Wireless

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
DEC 06 2016
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	12/8/16	SKB	0

SITE NAME:
MARCUS GROUP COMM. TOWER

SITE CASCADE:
CT60XC018

SITE ADDRESS:
605 WILLARD AVE
NEWINGTON, CT 06111

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

SPRINT CONSTRUCTION SPECIFICATIONS
MINI-MACRO CELL SITES
REV. 0 7/25/16

1) BASIC REQUIREMENTS

a) MEET ALL REQUIREMENTS OF JURISDICTIONS.

b) IF EQUIPMENT FURNISHED BY COMPANY DOES NOT MATCH THE EQUIPMENT LISTED ON THE RFDS AND SHOWN ON THE PERMITTING DRAWINGS, RESOLVE DISCREPANCY THROUGH INSTALLER'S CONSTRUCTION MANAGER AND COMPANY'S POINT OF CONTACT.

c) CABLE INSTALLATIONS

I) ALL CABLES MUST BE OUTDOOR RATED AND HAVE UV RESISTANT OUTER JACKETS.

II) CABLE BENDS MUST NOT EXCEED MANUFACTURER'S ALLOWABLE CABLE BEND RADII.

III) AT RADIOS INSTALL SERVICE LOOPS FOR POWER, FIBER AND ETHERNET SECURED AT LEAST TWICE AT 180 TO THE STRUCTURE.

IV) SPARE FIBERS MUST BE ENCASED IN A LOW PROFILE WEATHERTIGHT ASSEMBLY

d) FIBERS MUST BE FIELD-TERMINATED WITH LC-TYPE CONNECTORS.

e) CONDUITS IN EARTH: PROVIDE PVC. CONDUITS EXPOSED AND IN FACILITIES: PROVIDE RGS. HAND DIG TRENCHES IN COMPOUNDS.

f) SECURE AND SUPPORT CONDUITS AND CABLES ON NO MORE THAN 48" INTERVALS.

g) ON TOWER SITES RGS CONDUITS MAY BE SURFACE MOUNTED AWAY FROM WALKWAYS AND ACCESS/EGRESS PATHS. IF INSTALLATIONS IN WALKWAYS AND ACCESS/EGRESS PATHS CANNOT BE AVOIDED, IDENTIFY THE CONDUIT ENVELOPE / TRIP HAZARD BY ALTERNATING YELLOW AND BLACK STRIPES PAINTED ON CONCRETE AND CONDUIT.

2) SPRINT-FURNISHED EQUIPMENT

a) INSTALL THE FOLLOWING EQUIPMENT AT LOCATIONS AND AZIMUTHS SHOWN ON THE CONSTRUCTION DRAWINGS.

I) PANEL ANTENNAS

II) RADIOS

III) GPS ANTENNAS

IV) FILTERS

V) 120 VOLT DIN-RAIL CIRCUIT BREAKER ASSEMBLY

3) TOWER INSTALLATIONS

a) MEET ALL REQUIREMENTS OF THE TOWER OWNER.

b) INSTALL CORRUGATED FLEXIBLE CONDUIT UP THE TOWER TO COMPANY'S RAD CENTER.

c) PROVIDE HANGING GRIPS OR CONDUIT CLAMPS AND ENSURE CONDUITS AS WELL AS INNER CABLES ARE SUPPORTED.

d) CONDUIT RISERS: AT TOP OF TOWER TURN CONDUIT DOWN AND PROVIDE CABLE TERMINATION FITTINGS. EXTEND CABLES TO RADIOS EXPOSED AND SECURED TO STRUCTURE. AT CONDUIT EXIT FROM TOWER, PROVIDE DRIP LOOPS AND WEEP HOLES.

e) AT ICE BRIDGE RUN CABLES IN RGS CONDUIT. UTILIZE CONDULETS TO MAKE COMPACT 90 DEGREE TURNS.

4) AC POWER TIE-IN

a) INSTALL SPRINT'S 120 VOLT DIN-RAIL CIRCUIT BREAKER ASSEMBLY IN THE EXISTING POWER PROTECTION CABINET TELCO SECTION.

b) INSTALL A 20 AMPERE MOLDED CASE CIRCUIT BREAKER IN AVAILABLE SPACE IN THE ADJACENT PPC POWER SECTION LOAD CENTER.

5) GROUNDING

a) 120 VOLT CIRCUITS: POWER CABLES MUST BE 3-WIRE WITH EQUIPMENT GROUNDING CONDUCTOR.

b) SUPPLEMENTAL GROUNDING: ALL GROUNDING HARDWARE MUST BE UL STAMPED AS SUITABLE FOR GROUNDING HARDWARE.

c) RADIOS: BOND RADIO TO THE TOWER TOP OR SECTOR GROUND BAR WITH #8 BARE TINNED COPPER WIRE (GREEN INSULATED ON ROOFTOPS).

d) DIN-RAIL CIRCUIT BREAKER ASSEMBLY: BOND SURGE ARRESTOR TO PPC TELCO BOARD GROUND BAR.

6) MINOR MATERIALS

a) CONDUIT

I) RIGID GALVANIZED STEEL CONDUIT (RGS): UL LISTED, COMPLIANT WITH ANSI STANDARD C80, HOT-DIP GALVANIZED, WITH THREADED FITTINGS. MANUFACTURERS: ALLIED, REPUBLIC, WHEATLAND, OR EQUAL.

II) CORRUGATED FLEXIBLE CONDUIT: DURALINE OR EQUAL.

III) LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LFMC): UL LABELED, UV RESISTANT, FLAME RETARDANT PVC JACKET, HOT-DIP GALVANIZED, GREY. MANUFACTURERS: AFC, ANACONDA, SOUTHWIRE OR EQUAL.

IV) PVC CONDUIT: SCHEDULE 40. CARLON OR EQUAL.

V) CABINET HUBS AND CABLE TERMINATION FITTINGS: OZ GEDNEY OR ROXTEC

b) COAXIAL CABLE JUMPERS: ½" LDF-4. MANUFACTURERS: COMMSCOPE, RFS OR FCT.

c) FASTENERS AND HARDWARE

I) TO SECURE RACEWAYS, UTILIZE NON CORRODING NON-MAGNETIC METALLIC FASTENERS AND HARDWARE SUITABLE FOR THE PURPOSE.

d) POWER CABLES - 3/C #12 SOOW BY SOUTHWIRE OR EQUAL.

e) ETHERNET CABLES AND CONNECTORS: OUTDOOR RATED, CAT 5E, BELDEN OR EQUAL.

f) FIBER CABLES: CORNING "FREEDOM FAN OUT" OUTDOOR RISER CABLE, 4F, SINGLE MODE, OR EQUAL.

g) RF TRANSPARENT PAINT FOR ANTENNA CONCEALMENT: SELECT NO/LOW CARBON PAINTS, WITH NO/LOW TITANIUM DIOXIDE, AND WITHOUT SUSPENDED METAL PARTICLES (ALUMINUM, ZINC, COPPER, ETC.)

7) COLOR CODING

a) COLOR CODE CABLES AND CONDUITS AS REQUIRED BY SPRINT STANDARD TS-0200.

8) TESTING AND CONSTRUCTION COMPLETE

a) SWEEP ALL COAXIAL CABLES ACCORDING TO SPRINT STANDARD TS-0200.

b) PANEL ANTENNA ALIGNMENT - USING ELECTRONIC ALIGNMENT TOOL. AZIMUTH/DOWNTILT +/- 1 DEGREE.

c) LEAVE EQUIPMENT DE-ENERGIZED UNTIL INSTRUCTED BY THE COMMISSIONING AND INTEGRATION TEAM TO ENERGIZE.

d) OTHER REQUIREMENTS AND DELIVERABLES MAY BE REQUIRED BEFORE THE CONSTRUCTION COMPLETE MILESTONE CAN BE ACTUALIZED IN SITERRA (SPRINT'S DATABASE-OF-RECORD).

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0700
Fax # (518) 690-0793
JOB NUMBER 340-000

Transcend Wireless

ENGINEERING LICENSE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	12/6/16	SKB	0

SITE NAME:
MARCUS GROUP
COMM. TOWER

SITE CASCADE:
CT60XC018

SITE ADDRESS:
605 WILLARD AVE
NEWINGTON, CT 06111

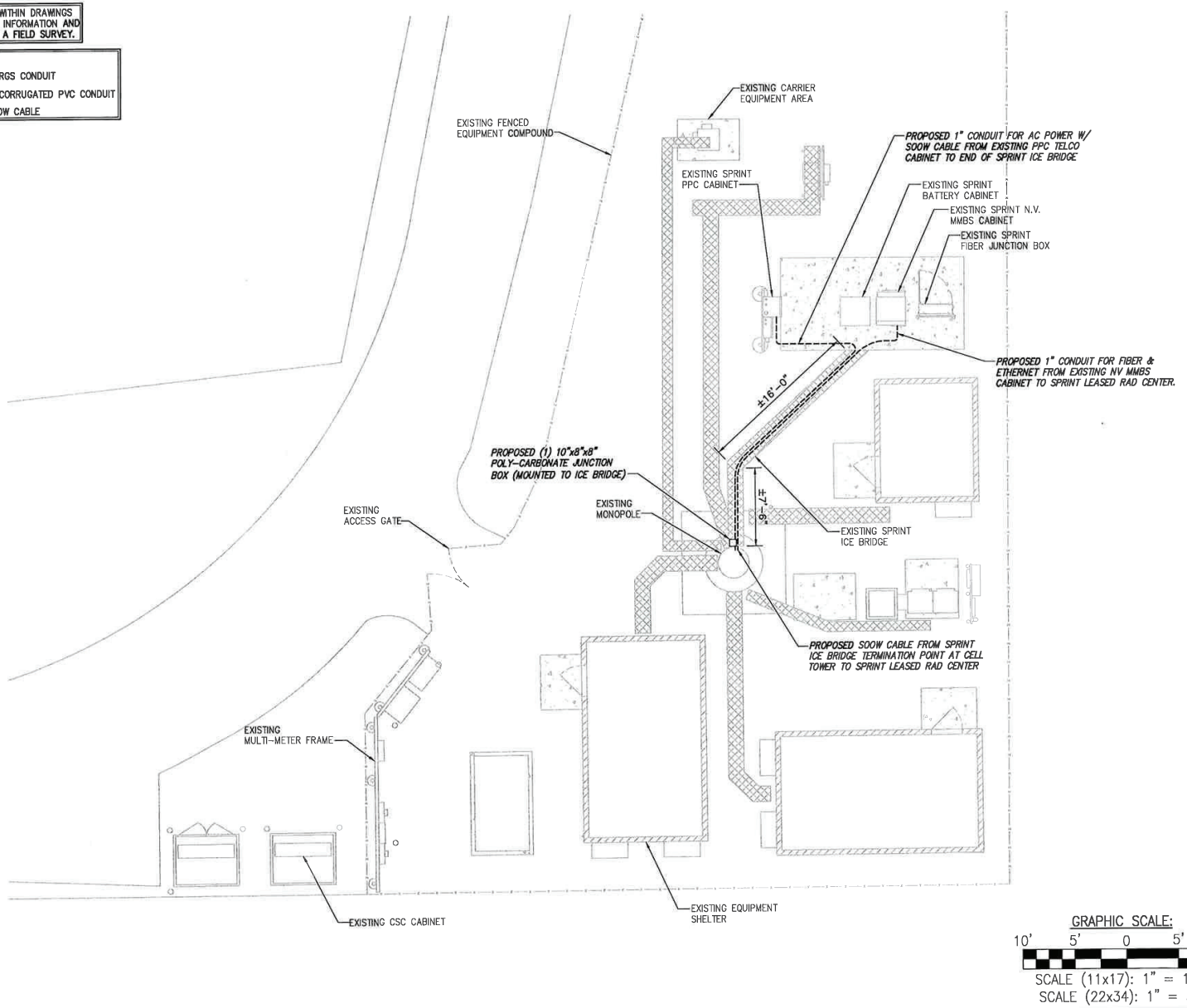
SHEET DESCRIPTION:
SPRINT
SPECIFICATIONS

SHEET NUMBER:
SP-1

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

LEGEND:

- 1" RGS CONDUIT
- 1" CORRUGATED PVC CONDUIT
- P — SOOW CABLE



GRAPHIC SCALE:

10' 5' 0 5' 10'

SCALE (11x17): 1" = 10'-0"

SCALE (22x34): 1" = 5'-0"

OVERALL SITE PLAN | SCALE: AS NOTED | 1

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Sprint

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Overland Park, Kansas 66251

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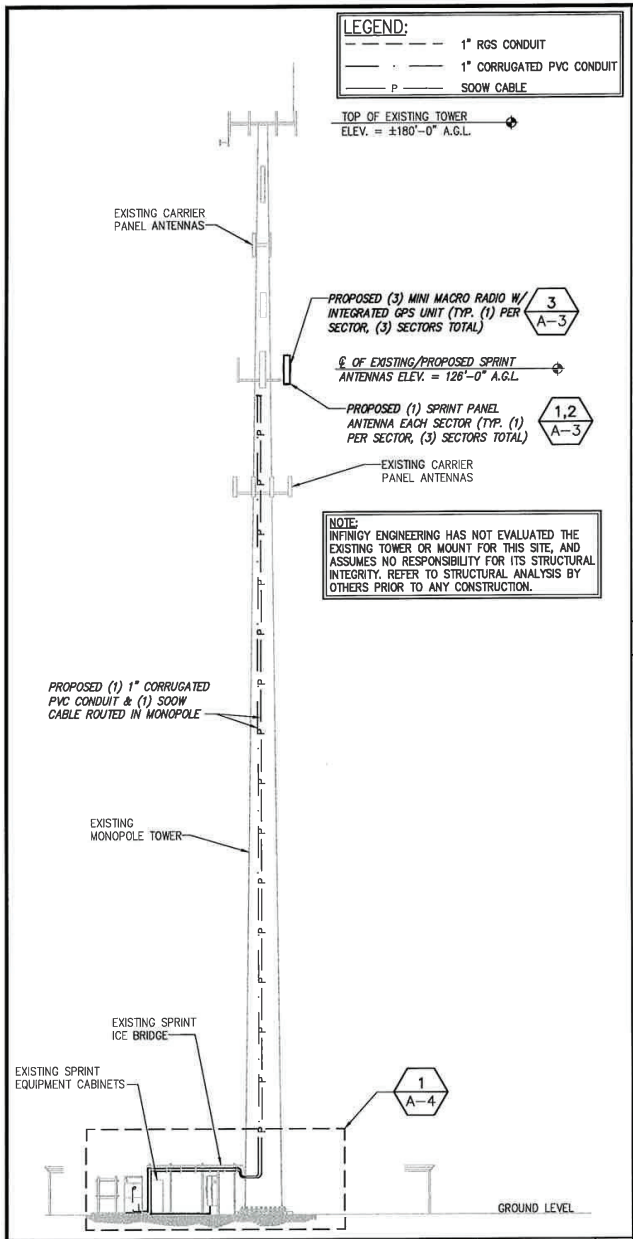
SHEET DESCRIPTION:

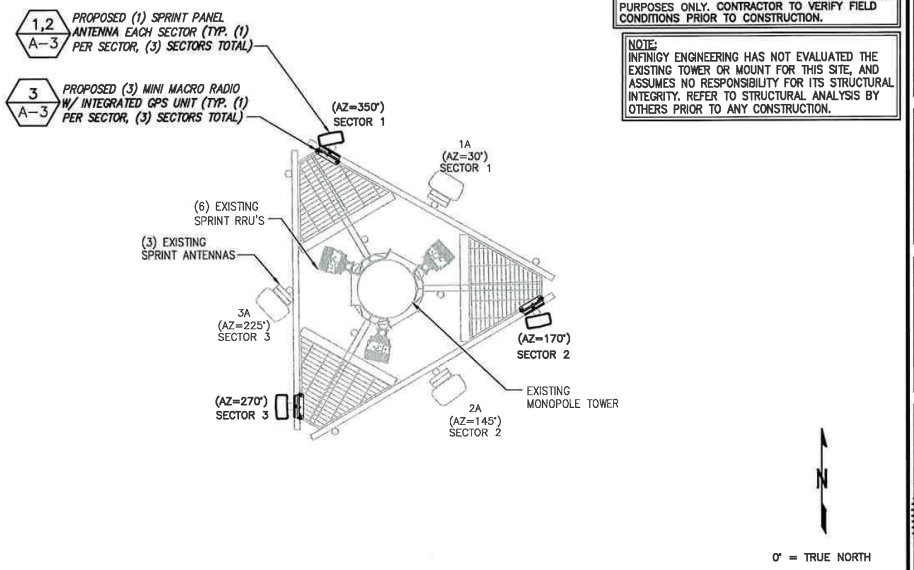
OVERALL COMPOUND SITE PLAN

SHEET NUMBER:

A-1



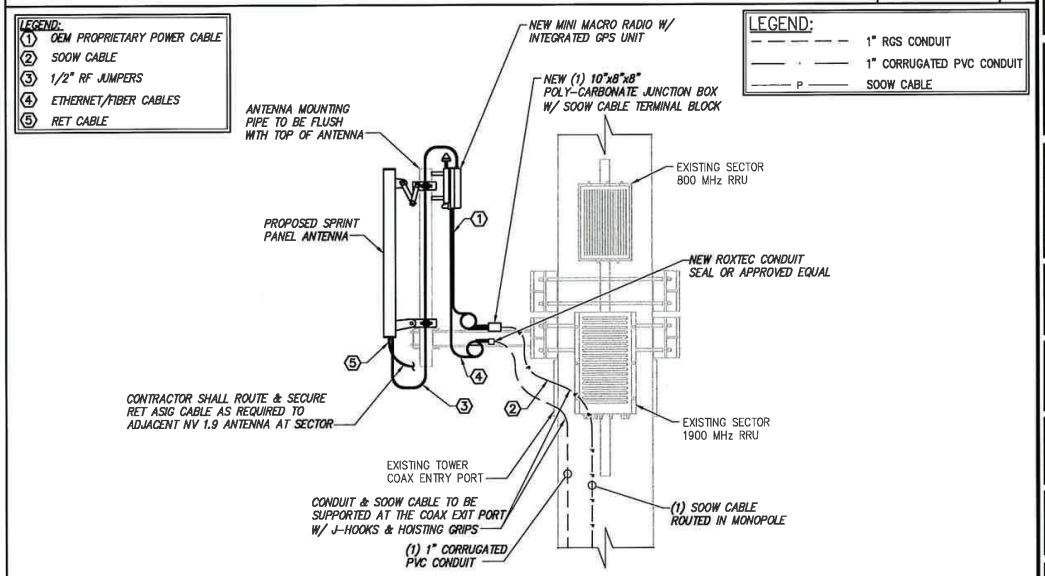
TOWER ELEVATION | NO SCALE | 1



THE CONFIGURATION PLANS ARE BASED ON PROVIDED INFORMATION AND ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.

NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING TOWER OR MOUNT FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

FINAL ANTENNA LAYOUT | NO SCALE | 2



ANTENNA MOUNTING ELEVATION | NO SCALE | 3

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DEC 13 2016
No. 24705
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PROFESSIONAL ENGINEER

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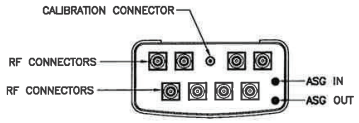
NEWINGTON, CT 06111

SHEET DESCRIPTION:
TOWER ELEVATION & CABLE PLAN

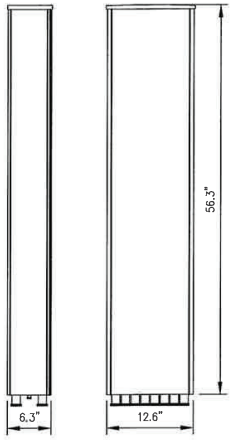
SHEET NUMBER:
A-2

RFS: APXVTM14-C-I20

RADOME MATERIAL:	ASA
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.:	56.3"x12.6"x6.3"
WEIGHT:	52.9 lbs
CONNECTORS:	(8) 4.1/9.5 DIN FEMALE (1) NF-CALIBRATION CONNECTOR



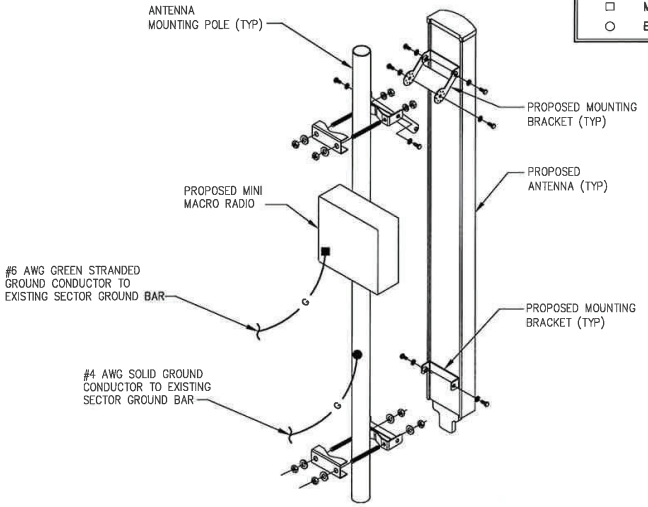
PLAN VIEW



SIDE VIEW FRONT VIEW

PROPOSED ANTENNA DETAIL | NO SCALE | 1

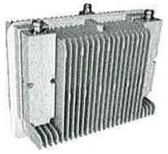
LEGEND:
- G — GROUND CONDUCTOR
- □ MECHANICAL CONNECTION
- ○ EXOTHERMIC CONNECTION



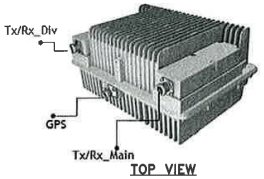
ANTENNA & MMBTS MOUNTING DETAIL | NO SCALE | 2

NOKIA: FWHR 2500 MHz 2 x 20W Micro BTS

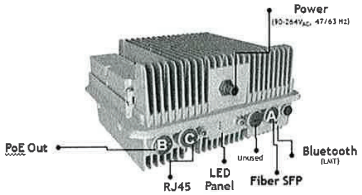
OPERATING AC VOLTAGE:	90-264 VAC
DIMENSION (H×W×D):	9.72"x12.87"x9.30"
WEIGHT:	24.7 LBS.



FRONT VIEW



TOP VIEW



BOTTOM VIEW

MINI MACRO RADIO DETAIL | NO SCALE | 3

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PLANS PREPARED BY:

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NEWINGTON, CT 06111

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EQUIPMENT DETAILS

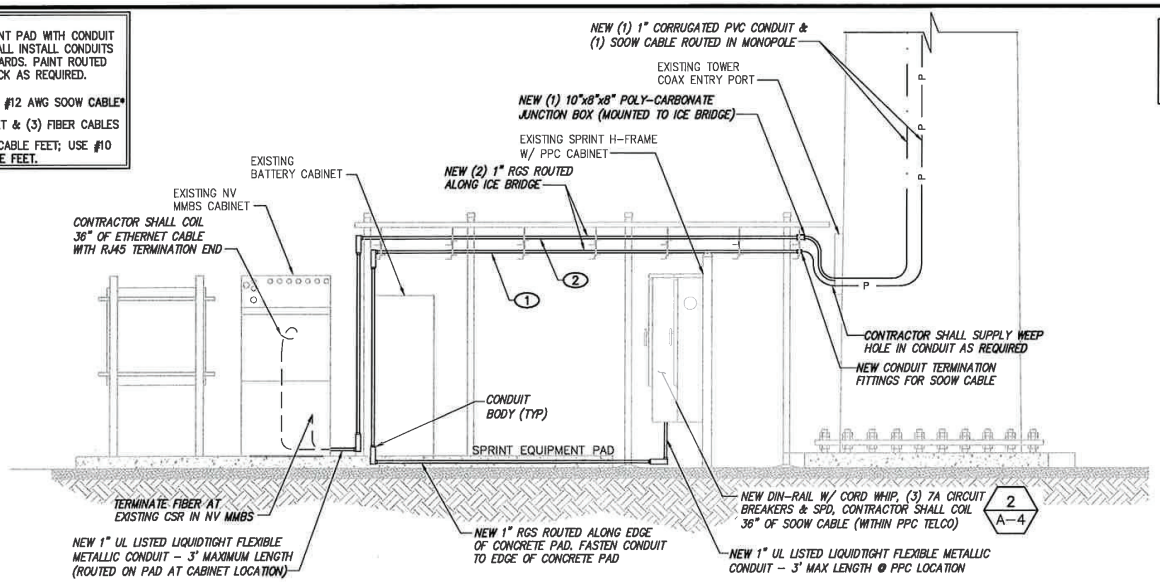
SHEET NUMBER:

A-3

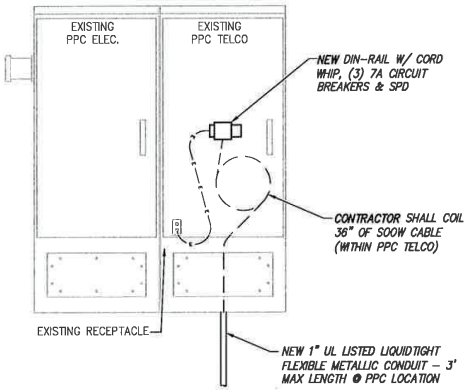
NOTE:
1. SECURE CONDUITS TO EXISTING EQUIPMENT PAD WITH CONDUIT CLAMPS AS REQUIRED. CONTRACTOR SHALL INSTALL CONDUITS IN A MANNER TO REDUCE TRIPPING HAZARDS. PAINT ROUTED COMMON ACCESS PATHS YELLOW & BLACK AS REQUIRED.
2. CONDUIT FILL: (1) – 9/C #10 OR #12 AWG SOOW CABLE*
   (2) – (3) ETHERNET & (3) FIBER CABLES

* USE #12 AWG FOR RUNS LESS THAN 200 CABLE FEET; USE #10 AWG FOR RUNS GREATER THAN 200 CABLE FEET.

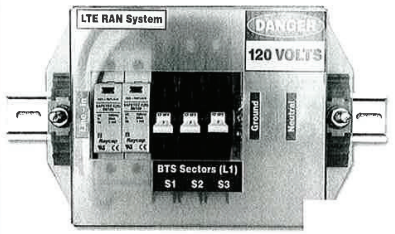
LEGEND:
- 1" RGS CONDUIT
- 1" CORRUGATED PVC
- P — SOOW CABLE



EQUIPMENT ELEVATION DETAIL | NO SCALE | 1

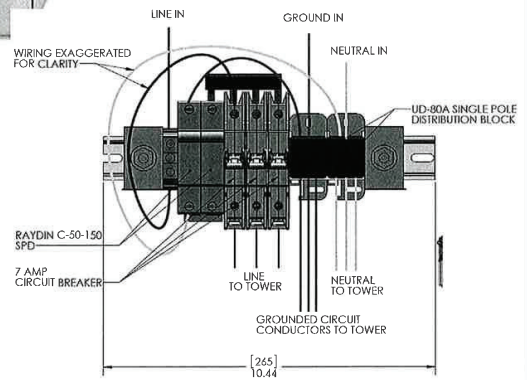


STANDARD PPC DETAIL | NO SCALE | 2



RAYCAP: RSTAC-4569-P-120

OPERATING AC VOLTAGE:	120 1 PHASE 2 W+G
LOAD CENTER:	3 POSITION
OPERATING TEMPERATURE:	(°C) -40° C TO +75° C
DIMENSION (H×W×D):	10.44"x5.18"x2.71"
WEIGHT:	2.5 LBS.



DIN-RAIL W/ CORD WHIP & SPD DETAIL | NO SCALE | 3

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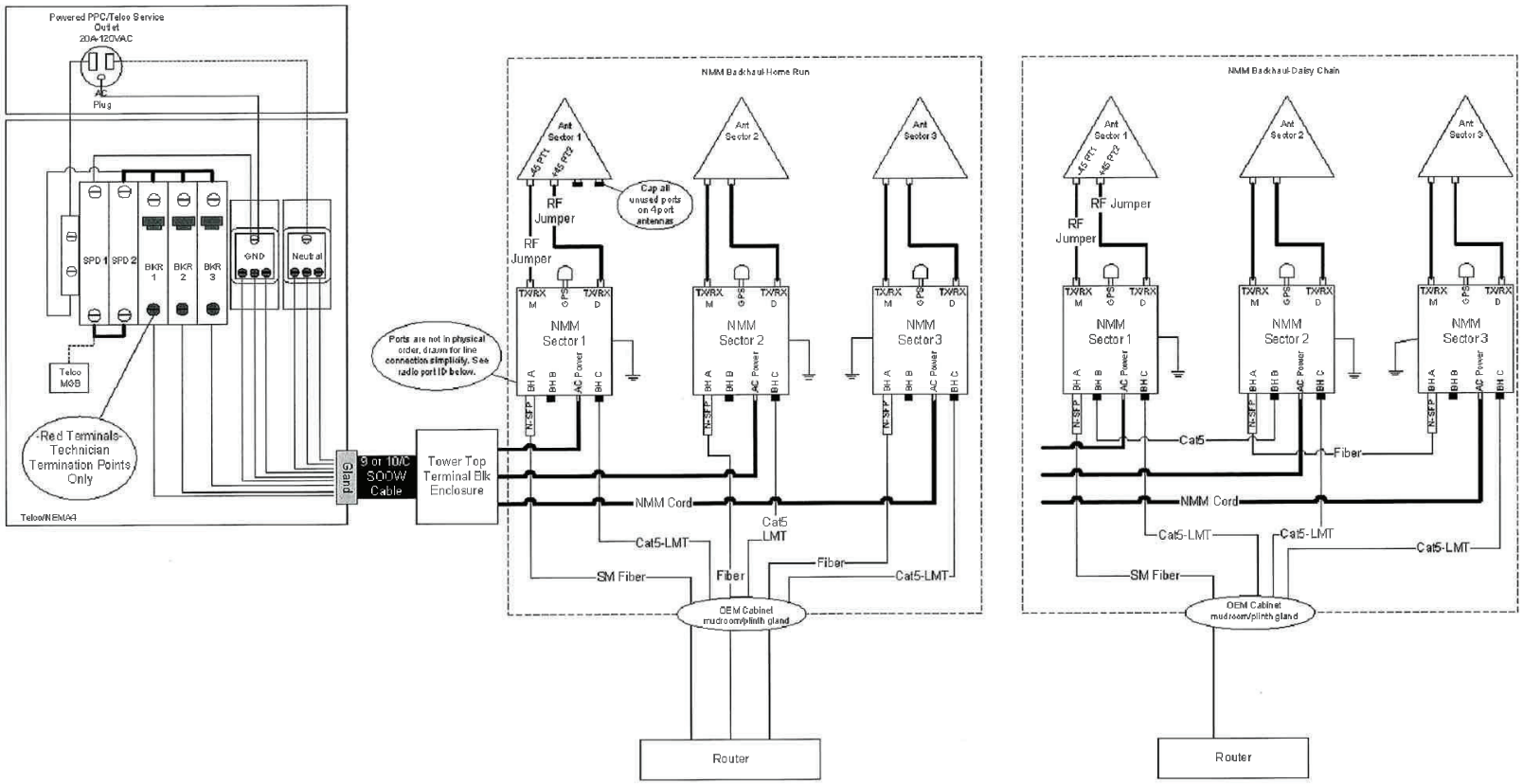
EQUIPMENT ELEVATION & DETAILS

SHEET NUMBER:
A-4



WIRING DIAGRAM | NO SCALE | 1

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 340-000

Transcend Wireless

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
DEC 2016
No. 24705
LICENSED
PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	12/6/16	SKB	0

SITE NAME:

MARCUS GROUP
COMM. TOWER

SITE CASCADE:

CT60XC018

SITE ADDRESS:

605 WILLARD AVE
NEWINGTON, CT 06111

SHEET DESCRIPTION:

WIRING DIAGRAM

SHEET NUMBER:

A-5

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**179 ft Monopole**
ATC Site Name	:	**Newington CT, CT**
ATC Site Number	:	**370627**
Engineering Number	:	**OAA692375_C3_01**
Proposed Carrier	:	**Sprint Nextel**
Carrier Site Name	:	**N/A**
Carrier Site Number	:	**CT60XC018**
Site Location	:	**605 Willard Ave.** **Newington, CT 06111-0000** **41.698372,-72.737147**
County	:	**Hartford**
Date	:	**January 6, 2017**
Max Usage	:	**64%**
Result	:	**Pass**

Prepared By:
Timothy Kassakatis

Reviewed By:

STATE OF CONNECTICUT
SCOTT A. WIRGAU
30575
LICENSED
PROFESSIONAL ENGINEER

Jan 6 2017 5:55 PM cosign

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 179 ft monopole to reflect the change in loading by Sprint Nextel.

Supporting Documents

Tower Drawings	PiRod Engineering File #A-118092, dated August 10, 2001
Foundation Drawing	PiRod Engineering File #A-118092, dated August 10, 2001
Geotechnical Report	Clarence Welti, dated August 1, 2001

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
179.0	188.0	1	18' Dipole	Low Profile Platform	(3) 7/8" Coax	Town Of Newington, CT
	180.0	1	10' Omni			
	176.0	1	8' Yagi			
170.0	170.0	3	Ericsson KRY 112 144/1	Low Profile Platform	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	Metro PCS
		3	Ericsson RRUS 11 B12			
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Andrew LNX-6515DS-VTM			
160.0	160.0	3	RCU	Side Arms	(3) 0.28" Fiber (3) 5/8" Coax (2) 2" Conduit (3) 1/2" Coax (1) 0.32" Cable	Clearwire
		3	DragonWave Horizon Compact			
		1	12" x 12" Junction Box			
		3	Samsung U-RAS Premium-F FRH			
		3	Argus LLPX310R			
		3	DragonWave A-ANT-18G-2-C			
154.0	154.0	6	Powerwave LGP21401	Low Profile Platform	(6) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 12 w/ RRUS A2			
		3	Powerwave 7770.00			
		3	CCI OPA-65R-LCUU-H8			
140.0	140.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Low Profile Platform	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20			
		3	RFS APXVTM14-C-I20			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
110.0	110.0	3	Alcatel-Lucent RRH2X60-1900	Low Profile Platform	(12) 1 5/8" Coax (1) 1 5/8" Fiber (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2X60-AWS			
		3	Alcatel-Lucent RRH2x60 700			
		3	Antel BXA-80063/4CF ___ 5°			
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70063-6CF-EDIN-X			
		6	Commscope SBNHH-1D65B			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Nokia FWHR	Low Profile Platform	(2) 1" Conduit	Sprint Nextel
		3	RFS APXVTM14-C-I20			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	51%	Pass
Shaft	64%	Pass
Base Plate	5%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,601.2	6,211.6	3,716.7	60%
Shear (Kips)	37.2	50.2	29.8	58%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
160.0	DragonWave A-ANT-18G-2-C	Clearwire	2.015	1.583
140.0	Nokia FWHR	Sprint Nextel	1.498	1.367
	RFS APXVTM14-C-I20			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

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Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

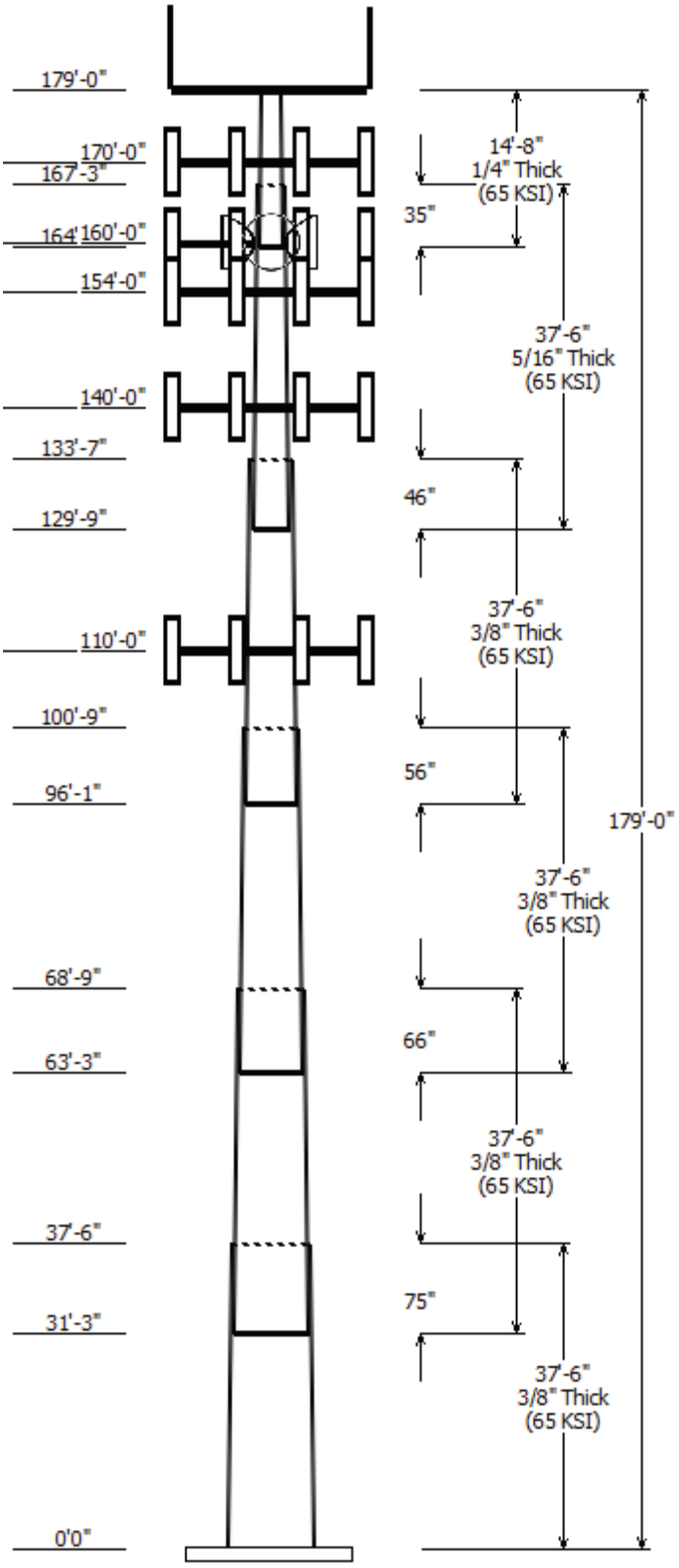
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Job Information

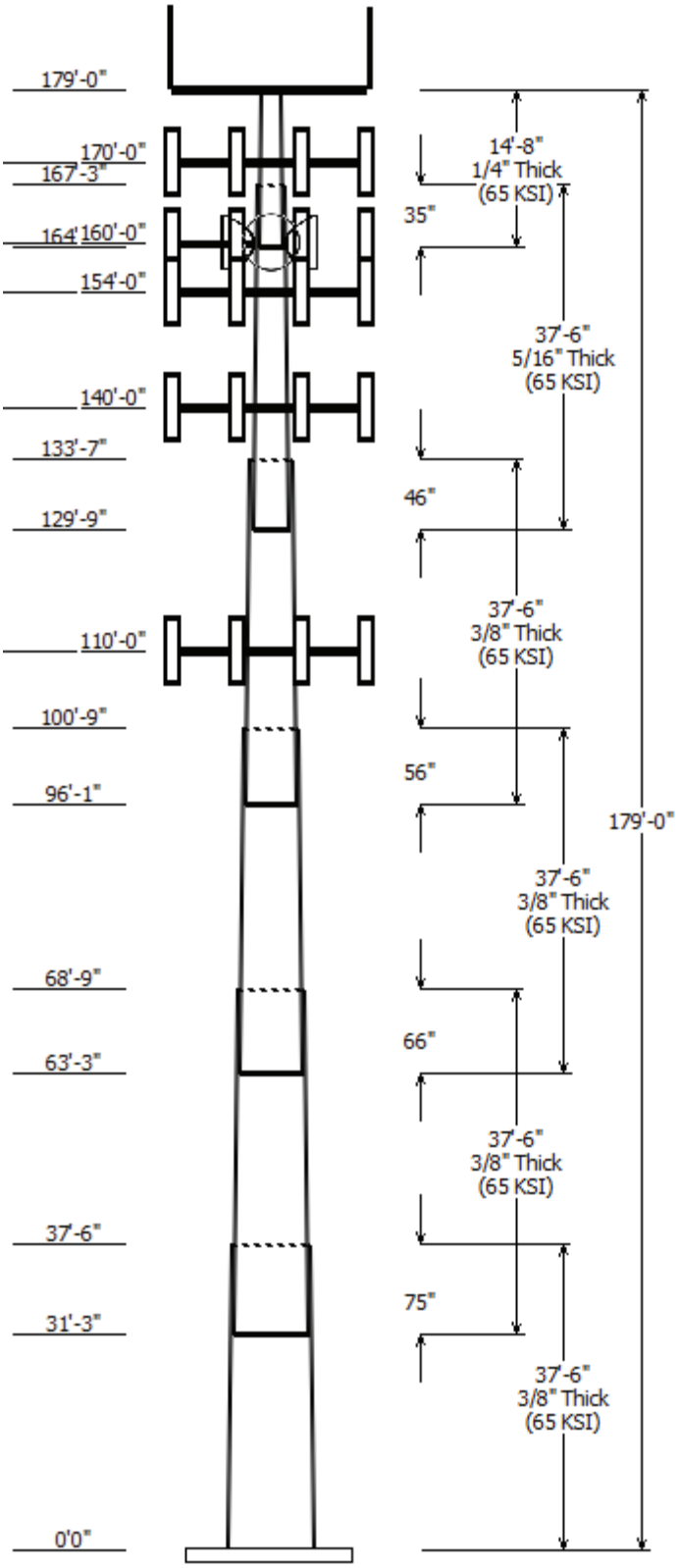
Pole :	370627	Code:	ANSI/TIA-222-G
Description :	179' Pirod Monopole		
Client :	Sprint Nextel	Struct Class :	II
Location :	Newington CT, CT		
Shape :	18 Sides	Exposure :	B
Height :	179.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.303771 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	37.500	51.60	63.00	0.375		0.000	0.303800	65
2	37.500	42.86	54.25	0.375	Slip Joint	75.000	0.303800	65
3	37.500	33.89	45.28	0.375	Slip Joint	66.000	0.303800	65
4	37.500	24.67	36.06	0.375	Slip Joint	56.000	0.303800	65
5	37.500	15.06	26.46	0.313	Slip Joint	46.000	0.303800	65
6	14.667	12.00	16.45	0.250	Slip Joint	35.000	0.303800	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
179.000	180.000	1	10' Omni
179.000	179.000	1	Round Low Profile Platform
179.000	176.000	1	8' Yagi
179.000	188.000	1	18' Dipole
170.000	170.000	3	Andrew LNX-6515DS-VTM
170.000	170.000	3	Ericsson RRUS 11 B12
170.000	170.000	3	Ericsson AIR 21, 1.3M, B4A B2P
170.000	170.000	3	Ericsson AIR 21, 1.3 M, B2A B4
170.000	170.000	3	Ericsson KRY 112 144/1
170.000	170.000	1	Round Low Profile Platform
160.000	160.000	1	12" x 12" Junction Box
160.000	160.000	3	Argus LLPX310R
160.000	160.000	3	Samsung U-RAS Premium-F
160.000	160.000	3	DragonWave A-ANT-18G-2-C
160.000	160.000	3	DragonWave Horizon Compact
160.000	160.000	3	RCU
160.000	160.000	1	Side Arms
154.000	154.000	3	CCI OPA-65R-LCUU-H8
154.000	154.000	3	Ericsson RRUS 12 w/ RRUS A2
154.000	154.000	3	Powerwave 7770.00
154.000	154.000	6	Ericsson RRUS 11 (Band 12) (55
154.000	154.000	1	Raycap DC6-48-60-18-8F
154.000	154.000	6	Powerwave LGP21401
154.000	154.000	1	Round Low Profile Platform
140.000	140.000	3	RFS APXVTM14-C-I20
140.000	140.000	3	Nokia FWHR
140.000	140.000	3	RFS APXVTM14-C-I20
140.000	140.000	3	Alcatel-Lucent TD-RRH8x20
140.000	140.000	2	RFS APXVSPP18-C-A20
140.000	140.000	1	RFS APXV9ERR18-C-A20
140.000	140.000	3	Alcatel-Lucent 1900MHz RRH
140.000	140.000	3	Alcatel-Lucent 800 MHz 2X50W
140.000	140.000	1	Round Low Profile Platform
110.000	110.000	6	Commscope SBNHH-1D65B
110.000	110.000	1	Flat Low Profile Platform
110.000	110.000	3	Antel BXA-70063-6CF-EDIN-X
110.000	110.000	1	RFS DB-T1-6Z-8AB-0Z
110.000	110.000	3	Antel BXA-80063/4CF ___ 5°
110.000	110.000	3	Alcatel-Lucent RRH2x60 700
110.000	110.000	3	Alcatel-Lucent RRH2X60-1900
110.000	110.000	3	Alcatel-Lucent RRH2X60-AWS



Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	110.0	1 5/8" Coax	No
0.000	110.0	1 5/8" Fiber	No
0.000	110.0	1 5/8" Hybriflex	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	140.0	1" Conduit	No
0.000	154.0	0.39" Fiber Trunk	No
0.000	154.0	0.78" 8 AWG 6	No
0.000	154.0	1 5/8" Coax	No
0.000	154.0	3" Conduit	No
0.000	160.0	0.28" Fiber	No
0.000	160.0	0.32" Cable	No
0.000	160.0	1/2" Coax	No
0.000	160.0	2" Conduit	No
0.000	160.0	5/8" Coax	No
0.000	170.0	1 1/4" Hybriflex	No
0.000	170.0	1 5/8" Coax	No
0.000	179.0	7/8" Coax	No

Load Cases

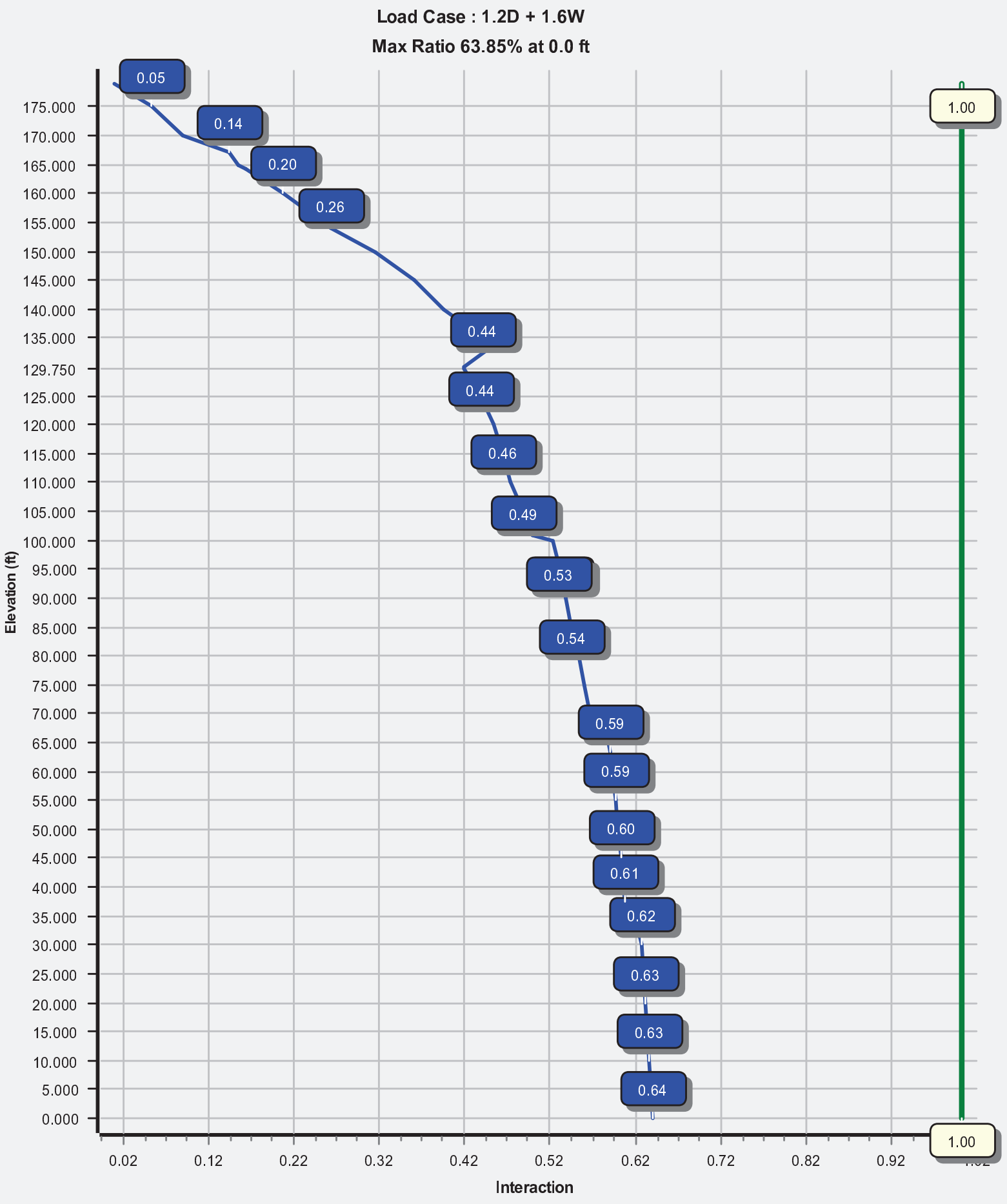
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3716.69	29.76	59.69
0.9D + 1.6W	3661.47	29.74	44.76
1.2D + 1.0Di + 1.0Wi	1210.01	9.19	97.36
(1.2 + 0.2Sds) * DL + E ELFM	279.76	1.95	59.77
(1.2 + 0.2Sds) * DL + E EMAM	299.43	2.28	59.77
(0.9 - 0.2Sds) * DL + E ELFM	274.55	1.94	41.55
(0.9 - 0.2Sds) * DL + E EMAM	293.11	2.28	41.55
1.0D + 1.0W	881.10	7.11	49.77

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	160.00	24.183	1.583


Load Case : 1.2D + 1.6W
Max Ratio 63.85% at 0.0 ft
0.05
0.14
0.20
0.26
0.44
0.44
0.46
0.49
0.53
0.54
0.59
0.59
0.60
0.61
0.62
0.63
0.63
0.64
1.00
1.00
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
129.750
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	370627	Code: ANSI/TIA-222-G	
Site Name:	Newington CT, CT	Engineering Number: OAA 692375_C3_01	1/6/2017 4:42:33 PM
Customer:	Sprint Nextel		

Analysis Parameters

Location:	Hartford County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	179
Shape:	18 Sides	Base Diameter (in):	63.00
Pole Type:	Taper	Top Diameter (in):	12.00
Pole Manfacturer:	Pirod	Taper (in/ft):	0.304

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.85				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.182	S_1:	0.064	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.194	S_{d1}:	0.102		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 370627		Code: ANSI/TIA-222-G	
Site Name: Newington CT, CT		Engineering Number: OAA692375_C3_01	1/6/2017 4:42:33 PM
Customer: Sprint Nextel			

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	37.500	0.3750	65		0.00	8,646	63.00	0.00	74.54	36933.4	27.86	168.00	51.60	37.50	60.98	20222.7	22.50	137.62	0.303771
2-18	37.500	0.3750	65	Slip	75.00	7,318	54.25	31.25	64.13	23524.0	23.75	144.69	42.86	68.75	50.57	11536.1	18.39	114.31	0.303771
3-18	37.500	0.3750	65	Slip	66.00	5,956	45.28	63.25	53.45	13622.2	19.53	120.76	33.89	100.75	39.90	5663.6	14.17	90.39	0.303771
4-18	37.500	0.3750	65	Slip	56.00	4,555	36.06	96.08	42.48	6834.9	15.19	96.17	24.67	133.58	28.92	2156.7	9.84	65.79	0.303771
5-18	37.500	0.3125	65	Slip	46.00	2,589	26.46	129.75	25.93	2240.4	13.17	84.67	15.06	167.25	14.64	402.7	6.74	48.22	0.303771
6-18	14.667	0.2500	65	Slip	35.00	554	16.45	164.33	12.86	426.6	9.84	65.82	12.00	179.00	9.32	162.6	6.70	48.00	0.303771
				Shaft Weight		29,617													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
179.00	10' Omni	1	25.00	3.000	1.00	231.63	6.717	1.00	0.000	1.000
179.00	18' Dipole	1	55.00	6.770	1.00	325.75	21.287	1.00	0.000	9.000
179.00	8' Yagi	1	30.00	12.000	1.00	490.05	57.366	1.00	0.000	-3.000
179.00	Round LowProfile Platform	1	1500.00	21.700	1.00	2,380.07	47.779	1.00	0.000	0.000
170.00	AndrewLNX-6515DS-VTM	3	51.30	11.430	0.84	429.85	13.705	0.84	0.000	0.000
170.00	Ericsson AIR 21, 1.3 M) B2A	3	83.00	6.050	0.86	326.70	7.565	0.86	0.000	0.000
170.00	Ericsson AIR 21, 1.3M) B4A	3	81.50	6.090	0.85	325.14	7.610	0.85	0.000	0.000
170.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	37.57	0.761	0.50	0.000	0.000
170.00	Ericsson RRUS 11 B12	3	50.70	2.790	0.67	176.97	3.735	0.67	0.000	0.000
170.00	Round LowProfile Platform	1	1500.00	21.700	1.00	2,375.82	47.653	1.00	0.000	0.000
160.00	12" x 12" Junction Box	1	10.00	1.200	0.50	86.92	1.852	0.50	0.000	0.000
160.00	Argus LLPX310R	3	28.60	4.290	0.73	185.36	5.538	0.73	0.000	0.000
160.00	DragonWave A-ANT-18G-2-C	3	27.10	4.690	0.67	158.12	6.401	0.67	0.000	0.000
160.00	DragonWave Horizon	3	11.50	0.840	0.50	57.86	1.256	0.50	0.000	0.000
160.00	RCU	3	1.00	0.160	0.50	18.28	0.467	0.50	0.000	0.000
160.00	Samsung U-RAS Premium-F	3	33.00	1.560	0.50	110.19	2.290	0.50	0.000	0.000
160.00	Side Arms	1	560.00	8.500	1.00	1,188.54	18.040	1.00	0.000	0.000
154.00	CCI OPA-65R-LCUU-H8	3	88.00	12.980	0.79	498.26	15.180	0.79	0.000	0.000
154.00	Ericsson RRUS 11 (Band 12)	6	55.00	2.520	0.67	171.20	3.409	0.67	0.000	0.000
154.00	Ericsson RRUS 12 w/RRUS	3	71.40	3.150	0.67	207.73	4.132	0.67	0.000	0.000
154.00	Powerwave 7770.00	3	35.00	5.510	0.77	229.45	6.953	0.77	0.000	0.000
154.00	Powerwave LGP21401	6	14.10	1.100	0.50	65.09	1.744	0.50	0.000	0.000
154.00	Raycap DC6-48-60-18-8F	1	31.80	1.280	1.00	165.47	3.098	1.00	0.000	0.000
154.00	Round LowProfile Platform	1	1500.00	21.700	1.00	2,366.77	47.385	1.00	0.000	0.000
140.00	Alcatel-Lucent 1900MHz RRH	3	44.00	3.260	0.67	219.95	4.259	0.67	0.000	0.000
140.00	Alcatel-Lucent 800 MHz	3	64.00	2.060	0.67	192.79	2.874	0.67	0.000	0.000
140.00	Alcatel-Lucent TD-RRH8x20	3	66.10	3.690	0.67	181.56	5.740	0.67	0.000	0.000
140.00	Nokia FWHR	3	26.50	1.030	0.50	89.43	1.647	0.50	0.000	0.000
140.00	RFS APXV9ERR18-C-A20	1	62.00	8.020	0.86	354.45	9.768	0.86	0.000	0.000
140.00	RFS APXVSPP18-C-A20	2	57.00	8.020	0.83	337.55	9.768	0.83	0.000	0.000
140.00	RFS APXVTM14-C-I20	3	56.20	6.340	0.78	249.94	9.224	0.78	0.000	0.000
140.00	RFS APXVTM14-C-I20	3	52.90	6.340	0.78	249.94	9.224	0.78	0.000	0.000
140.00	Round LowProfile Platform	1	1500.00	21.700	1.00	2,358.13	47.129	1.00	0.000	0.000
110.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	158.85	3.015	0.67	0.000	0.000
110.00	Alcatel-Lucent RRH2X60-	3	43.00	1.880	0.50	145.15	3.015	0.50	0.000	0.000
110.00	Alcatel-Lucent RRH2X60-	3	44.00	1.880	0.50	146.15	3.015	0.50	0.000	0.000
110.00	Antel BXA-70063-6CF-EDIN-X	3	17.00	7.570	0.77	246.62	9.218	0.77	0.000	0.000
110.00	Antel BXA-80063/4CF ___ 5°	3	9.90	4.710	0.74	170.20	5.972	0.74	0.000	0.000
110.00	Commscope SBNHH-1D65B	6	40.60	8.080	0.83	315.20	9.780	0.83	0.000	0.000
110.00	Flat LowProfile Platform	1	1500.00	26.100	1.00	2,337.26	50.772	1.00	0.000	0.000
110.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	231.43	5.949	0.67	0.000	0.000
	Totals	105	12250.20			33,312.47			Number of Loadings :	41

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	179.00	3	7/8" Coax	1.09	0.33	N	0.00	N	Town of Newington, CT
0.00	170.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Metro PCS
0.00	170.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Metro PCS
0.00	160.00	3	0.28" Fiber	0.28	0.03	N	0.00	N	Clearwire
0.00	160.00	1	0.32" Cable	0.32	0.06	N	0.00	N	Clearwire
0.00	160.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire
0.00	160.00	2	2" Conduit	2.38	3.65	N	0.00	N	Clearwire
0.00	160.00	3	5/8" Coax	0.87	0.15	N	0.00	N	Clearwire
0.00	154.00	1	0.39" Fiber Trunk	0.39	0.07	N	0.00	N	AT&T Mobility
0.00	154.00	2	0.78" 8AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	154.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	154.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	140.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	140.00	2	1" Conduit	1.30	1.68	N	0.00	N	Sprint Nextel
0.00	110.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	110.00	1	1 5/8" Fiber	1.63	1.61	N	0.00	N	Verizon
0.00	110.00	1	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	N	Verizon

Segment Properties (Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	63.000	74.537	36,933.4	27.86	168.00	68.6	1154.	0.0	0.0
5.00		0.3750	61.481	72.729	34,310.8	27.15	163.95	69.5	1099.	0.0	1,252.8
10.00		0.3750	59.962	70.921	31,815.3	26.43	159.90	70.3	1045.	0.0	1,222.0
15.00		0.3750	58.443	69.113	29,443.9	25.72	155.85	71.2	992.3	0.0	1,191.3
20.00		0.3750	56.925	67.306	27,193.4	25.00	151.80	72.0	940.9	0.0	1,160.5
25.00		0.3750	55.406	65.498	25,060.6	24.29	147.75	72.8	890.9	0.0	1,129.8
30.00		0.3750	53.887	63.690	23,042.3	23.57	143.70	73.7	842.2	0.0	1,099.0
31.25	Bot - Section 2	0.3750	53.507	63.238	22,555.3	23.40	142.69	73.9	830.3	0.0	269.9
35.00		0.3750	52.368	61.882	21,135.4	22.86	139.65	74.5	794.9	0.0	1,608.0
37.50	Top - Section 1	0.3750	52.359	61.871	21,123.9	22.86	139.62	74.5	794.6	0.0	1,052.8
40.00		0.3750	51.599	60.967	20,211.6	22.50	137.60	74.9	771.5	0.0	522.5
45.00		0.3750	50.080	59.160	18,466.5	21.78	133.55	75.8	726.3	0.0	1,021.9
50.00		0.3750	48.561	57.352	16,824.8	21.07	129.50	76.6	682.4	0.0	991.2
55.00		0.3750	47.043	55.544	15,283.5	20.36	125.45	77.5	639.9	0.0	960.4
60.00		0.3750	45.524	53.736	13,839.3	19.64	121.40	78.3	598.8	0.0	929.6
63.25	Bot - Section 3	0.3750	44.536	52.561	12,951.1	19.18	118.76	78.8	572.8	0.0	587.8
65.00		0.3750	44.005	51.929	12,489.0	18.93	117.35	79.1	559.0	0.0	627.5
68.75	Top - Section 2	0.3750	43.616	51.465	12,157.8	18.75	116.31	79.4	549.0	0.0	1,319.4
70.00		0.3750	43.236	51.014	11,840.3	18.57	115.30	79.6	539.4	0.0	217.9
75.00		0.3750	41.717	49.206	10,625.7	17.85	111.25	80.4	501.7	0.0	852.6
80.00		0.3750	40.198	47.398	9,497.0	17.14	107.20	81.2	465.3	0.0	821.8
85.00		0.3750	38.679	45.590	8,451.3	16.42	103.15	82.1	430.4	0.0	791.0
90.00		0.3750	37.161	43.783	7,485.3	15.71	99.09	82.6	396.7	0.0	760.3
95.00		0.3750	35.642	41.975	6,595.9	15.00	95.04	82.6	364.5	0.0	729.5
96.08	Bot - Section 4	0.3750	35.313	41.583	6,412.9	14.84	94.17	82.6	357.7	0.0	154.0
100.0		0.3750	34.123	40.167	5,779.8	14.28	90.99	82.6	333.6	0.0	1,101.4
100.7	Top - Section 3	0.3750	34.645	40.788	6,052.3	14.53	92.39	82.6	344.1	0.0	206.6
105.0		0.3750	33.354	39.252	5,393.7	13.92	88.94	82.6	318.5	0.0	578.8
110.0		0.3750	31.835	37.444	4,682.3	13.21	84.89	82.6	289.7	0.0	652.4
115.0		0.3750	30.316	35.636	4,036.4	12.49	80.84	82.6	262.2	0.0	621.7
120.0		0.3750	28.797	33.829	3,452.7	11.78	76.79	82.6	236.2	0.0	590.9
125.0		0.3750	27.279	32.021	2,928.3	11.06	72.74	82.6	211.4	0.0	560.2
129.7	Bot - Section 5	0.3750	25.836	30.304	2,481.9	10.38	68.90	82.6	189.2	0.0	503.7
130.0		0.3750	25.760	30.213	2,459.8	10.35	68.69	82.6	188.1	0.0	47.8
133.5	Top - Section 4	0.3125	25.296	24.780	1,954.2	12.51	80.95	82.6	152.2	0.0	669.2
135.0		0.3125	24.866	24.353	1,854.9	12.27	79.57	82.6	146.9	0.0	118.4
140.0		0.3125	23.347	22.847	1,531.6	11.41	74.71	82.6	129.2	0.0	401.5
145.0		0.3125	21.828	21.340	1,248.1	10.55	69.85	82.6	112.6	0.0	375.9
150.0		0.3125	20.309	19.834	1,002.0	9.70	64.99	82.6	97.2	0.0	350.3
154.0		0.3125	19.094	18.629	830.2	9.01	61.10	82.6	85.6	0.0	261.8
155.0		0.3125	18.791	18.327	790.6	8.84	60.13	82.6	82.9	0.0	62.9
160.0		0.3125	17.272	16.821	611.2	7.98	55.27	82.6	69.7	0.0	299.0
164.3	Bot - Section 6	0.3125	15.955	15.515	479.7	7.24	51.06	82.6	59.2	0.0	238.4
165.0		0.3125	15.753	15.314	461.3	7.13	50.41	82.6	57.7	0.0	64.0
167.2	Top - Section 5	0.2500	15.569	12.155	360.4	9.22	62.28	82.6	45.6	0.0	209.8
170.0		0.2500	14.734	11.493	304.6	8.63	58.94	82.6	40.7	0.0	110.6
175.0		0.2500	13.215	10.287	218.5	7.56	52.86	82.6	32.6	0.0	185.3
179.0		0.2500	12.000	9.323	162.6	6.70	48.00	82.6	26.7	0.0	133.5
											29,617.5

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 Iterations

Gust Response Factor: 1.10 Wind Importance Factor: 1.00
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		241.3	0.0					0.0	0.0	241.3	0.0	0.0	0.0
5.00		476.7	1,503.3					0.0	324.2	476.7	1,827.6	0.0	0.0
10.00		464.9	1,466.4					0.0	324.2	464.9	1,790.7	0.0	0.0
15.00		453.1	1,429.5					0.0	324.2	453.1	1,753.8	0.0	0.0
20.00		441.3	1,392.6					0.0	324.2	441.3	1,716.9	0.0	0.0
25.00		429.6	1,355.7					0.0	324.2	429.6	1,679.9	0.0	0.0
30.00		264.2	1,318.8					0.0	324.2	264.2	1,643.0	0.0	0.0
31.25	Bot - Section 2	213.1	323.9					0.0	81.1	213.1	405.0	0.0	0.0
35.00		268.7	1,929.6					0.0	243.2	268.7	2,172.8	0.0	0.0
37.50	Top - Section 1	216.5	1,263.3					0.0	162.1	216.5	1,425.4	0.0	0.0
40.00		326.4	627.0					0.0	162.1	326.4	789.1	0.0	0.0
45.00		436.1	1,226.3					0.0	324.2	436.1	1,550.5	0.0	0.0
50.00		435.8	1,189.4					0.0	324.2	435.8	1,513.6	0.0	0.0
55.00		433.9	1,152.5					0.0	324.2	433.9	1,476.7	0.0	0.0
60.00		355.7	1,115.6					0.0	324.2	355.7	1,439.8	0.0	0.0
63.25	Bot - Section 3	215.4	705.3					0.0	210.8	215.4	916.1	0.0	0.0
65.00		237.6	753.0					0.0	113.5	237.6	866.5	0.0	0.0
68.75	Top - Section 2	215.2	1,583.2					0.0	243.2	215.2	1,826.4	0.0	0.0
70.00		265.6	261.5					0.0	81.1	265.6	342.6	0.0	0.0
75.00		420.5	1,023.1					0.0	324.2	420.5	1,347.3	0.0	0.0
80.00		412.7	986.2					0.0	324.2	412.7	1,310.4	0.0	0.0
85.00		404.0	949.3					0.0	324.2	404.0	1,273.5	0.0	0.0
90.00		394.6	912.3					0.0	324.2	394.6	1,236.6	0.0	0.0
95.00		236.3	875.4					0.0	324.2	236.3	1,199.7	0.0	0.0
96.08	Bot - Section 4	192.7	184.8					0.0	70.3	192.7	255.1	0.0	0.0
100.00		179.8	1,321.7					0.0	254.0	179.8	1,575.7	0.0	0.0
100.75	Top - Section 3	188.0	247.9					0.0	48.6	188.0	296.6	0.0	0.0
105.00		341.5	694.5					0.0	275.6	341.5	970.1	0.0	0.0
110.00	Appertunance(s)	358.0	782.9	3,729.4	0.0	0.0	2,759.3	0.0	324.2	4,087.4	3,866.5	0.0	0.0
115.00		345.3	746.0					0.0	247.7	345.3	993.8	0.0	0.0
120.00		332.0	709.1					0.0	247.7	332.0	956.9	0.0	0.0
125.00		310.6	672.2					0.0	247.7	310.6	920.0	0.0	0.0
129.75	Bot - Section 5	155.7	604.4					0.0	235.4	155.7	839.8	0.0	0.0
130.00		117.5	57.3					0.0	12.4	117.5	69.7	0.0	0.0
133.58	Top - Section 4	152.0	803.1					0.0	177.5	152.0	980.6	0.0	0.0
135.00		186.8	142.1					0.0	70.2	186.8	212.3	0.0	0.0
140.00	Appertunance(s)	281.3	481.8	3,388.2	0.0	0.0	3,126.1	0.0	247.7	3,669.5	3,855.7	0.0	0.0
145.00		265.6	451.1					0.0	203.6	265.6	654.7	0.0	0.0
150.00		226.1	420.3					0.0	203.6	226.1	623.9	0.0	0.0
154.00	Appertunance(s)	120.7	314.1	3,301.5	0.0	0.0	3,035.5	0.0	162.9	3,422.2	3,512.5	0.0	0.0
155.00		135.8	75.5					0.0	24.2	135.8	99.7	0.0	0.0
160.00	Appertunance(s)	202.8	358.8	1,234.0	0.0	0.0	1,048.3	0.0	121.1	1,436.8	1,528.2	0.0	0.0
164.33	Bot - Section 6	104.2	286.1					0.0	61.5	104.2	347.6	0.0	0.0
165.00		59.1	76.7					0.0	9.5	59.1	86.2	0.0	0.0
167.25	Top - Section 5	98.2	251.8					0.0	31.9	98.2	283.7	0.0	0.0
170.00	Appertunance(s)	142.3	132.8	3,456.6	0.0	0.0	2,799.0	0.0	39.0	3,598.9	2,970.8	0.0	0.0
175.00		154.3	222.3					0.0	5.9	154.3	228.3	0.0	0.0
179.00	Appertunance(s)	65.0	160.2	1,840.1	0.0	1,089.3	1,932.0	0.0	4.8	1,905.1	2,096.9	0.0	0.0

Site Number:	370627	Code: ANSI/TIA-222-G	
Site Name:	Newington CT, CT	Engineering Number: OAA 692375_C3_01	1/6/2017 4:42:35 PM
Customer:	Sprint Nextel		

Load Case: 1.2D + 1.6W — 97 mph with No Ice — 27 Iterations

Gust Response Factor: 1.10 — Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Wind Load Factor: 1.60

Totals:	29,924.3	59,728.9	0.00	0.00

Load Case: 1.2D + 1.6W — 97 mph with No Ice — 27 Iterations

Gust Response Factor: 1.10 — Wind Importance Factor: 1.00
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-59.69	-29.76	0.00	-3,716.69	0.00	3,716.69	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.638
5.00	-57.79	-29.42	0.00	-3,567.91	0.00	3,567.91	4,547.42	2,273.71	11,437.5	5,727.26	0.08	-0.14	0.636
10.00	-55.93	-29.09	0.00	-3,420.80	0.00	3,420.80	4,488.01	2,244.00	11,005.7	5,511.07	0.30	-0.29	0.633
15.00	-54.10	-28.77	0.00	-3,275.33	0.00	3,275.33	4,425.86	2,212.93	10,575.0	5,295.36	0.68	-0.43	0.631
20.00	-52.31	-28.46	0.00	-3,131.46	0.00	3,131.46	4,360.98	2,180.49	10,145.6	5,080.38	1.22	-0.59	0.629
25.00	-50.56	-28.16	0.00	-2,989.15	0.00	2,989.15	4,293.36	2,146.68	9,718.32	4,866.39	1.92	-0.75	0.626
30.00	-48.87	-27.96	0.00	-2,848.38	0.00	2,848.38	4,223.01	2,111.51	9,293.47	4,653.64	2.80	-0.92	0.624
31.25	-48.42	-27.81	0.00	-2,813.43	0.00	2,813.43	4,205.00	2,102.50	9,187.70	4,600.68	3.04	-0.96	0.623
35.00	-46.20	-27.59	0.00	-2,709.14	0.00	2,709.14	4,149.93	2,074.96	8,871.62	4,442.40	3.85	-1.09	0.621
37.50	-44.74	-27.42	0.00	-2,640.16	0.00	2,640.16	4,149.47	2,074.73	8,869.01	4,441.10	4.44	-1.18	0.605
40.00	-43.89	-27.18	0.00	-2,571.61	0.00	2,571.61	4,111.89	2,055.95	8,659.38	4,336.13	5.09	-1.27	0.604
45.00	-42.27	-26.84	0.00	-2,435.72	0.00	2,435.72	4,034.69	2,017.35	8,243.04	4,127.64	6.51	-1.45	0.601
50.00	-40.68	-26.49	0.00	-2,301.53	0.00	2,301.53	3,954.76	1,977.38	7,830.99	3,921.31	8.13	-1.63	0.597
55.00	-39.13	-26.15	0.00	-2,169.06	0.00	2,169.06	3,872.09	1,936.05	7,423.76	3,717.40	9.93	-1.82	0.594
60.00	-37.63	-25.85	0.00	-2,038.33	0.00	2,038.33	3,786.70	1,893.35	7,021.86	3,516.15	11.94	-2.01	0.590
63.25	-36.67	-25.67	0.00	-1,954.31	0.00	1,954.31	3,729.72	1,864.86	6,763.73	3,386.89	13.36	-2.15	0.587
65.00	-35.77	-25.47	0.00	-1,909.39	0.00	1,909.39	3,698.56	1,849.28	6,625.81	3,317.83	14.16	-2.22	0.585
68.75	-33.90	-25.25	0.00	-1,813.87	0.00	1,813.87	3,675.54	1,837.77	6,525.34	3,267.52	15.97	-2.38	0.565
70.00	-33.51	-25.04	0.00	-1,782.31	0.00	1,782.31	3,652.91	1,826.45	6,427.71	3,218.63	16.60	-2.44	0.563
75.00	-32.10	-24.68	0.00	-1,657.09	0.00	1,657.09	3,560.66	1,780.33	6,041.44	3,025.21	19.27	-2.64	0.557
80.00	-30.72	-24.32	0.00	-1,533.68	0.00	1,533.68	3,465.68	1,732.84	5,662.31	2,835.36	22.15	-2.86	0.550
85.00	-29.37	-23.97	0.00	-1,412.07	0.00	1,412.07	3,367.96	1,683.98	5,290.83	2,649.35	25.26	-3.08	0.542
90.00	-28.06	-23.62	0.00	-1,292.22	0.00	1,292.22	3,252.82	1,626.41	4,905.37	2,456.33	28.60	-3.31	0.535
95.00	-26.82	-23.38	0.00	-1,174.12	0.00	1,174.12	3,118.51	1,559.26	4,506.69	2,256.70	32.19	-3.54	0.529
96.08	-26.53	-23.23	0.00	-1,148.79	0.00	1,148.79	3,089.41	1,544.71	4,422.54	2,214.56	33.00	-3.59	0.528
100.00	-24.92	-23.00	0.00	-1,057.81	0.00	1,057.81	2,984.21	1,492.10	4,124.91	2,065.52	36.03	-3.79	0.521
100.75	-24.59	-22.85	0.00	-1,040.57	0.00	1,040.57	3,030.38	1,515.19	4,254.26	2,130.29	36.62	-3.82	0.497
105.00	-23.56	-22.53	0.00	-943.48	0.00	943.48	2,916.22	1,458.11	3,938.09	1,971.97	40.12	-4.04	0.487
110.00	-19.92	-18.26	0.00	-830.83	0.00	830.83	2,781.91	1,390.96	3,581.76	1,793.54	44.47	-4.27	0.471
115.00	-18.88	-17.91	0.00	-739.56	0.00	739.56	2,647.61	1,323.80	3,242.33	1,623.58	49.07	-4.51	0.463
120.00	-17.88	-17.58	0.00	-649.98	0.00	649.98	2,513.30	1,256.65	2,919.79	1,462.07	53.92	-4.75	0.452
125.00	-16.91	-17.27	0.00	-562.07	0.00	562.07	2,378.99	1,189.50	2,614.15	1,309.02	59.03	-5.00	0.437
129.75	-16.06	-17.07	0.00	-480.04	0.00	480.04	2,251.40	1,125.70	2,339.44	1,171.46	64.12	-5.24	0.417
130.00	-15.97	-16.98	0.00	-475.77	0.00	475.77	2,244.69	1,122.34	2,325.40	1,164.43	64.40	-5.26	0.416
133.58	-14.97	-16.77	0.00	-414.94	0.00	414.94	1,841.02	920.51	1,881.29	942.04	68.41	-5.44	0.449
135.00	-14.72	-16.61	0.00	-391.18	0.00	391.18	1,809.31	904.65	1,816.65	909.67	70.03	-5.52	0.438
140.00	-11.19	-12.63	0.00	-308.14	0.00	308.14	1,697.39	848.69	1,597.52	799.95	75.95	-5.79	0.392
145.00	-10.51	-12.34	0.00	-245.00	0.00	245.00	1,585.46	792.73	1,392.48	697.27	82.14	-6.04	0.358
150.00	-9.87	-12.09	0.00	-183.29	0.00	183.29	1,473.54	736.77	1,201.51	601.65	88.59	-6.29	0.312
154.00	-6.75	-8.31	0.00	-134.95	0.00	134.95	1,384.00	692.00	1,058.88	530.23	93.93	-6.47	0.260
155.00	-6.64	-8.18	0.00	-126.64	0.00	126.64	1,361.62	680.81	1,024.63	513.08	95.28	-6.51	0.252
160.00	-5.27	-6.59	0.00	-85.76	0.00	85.76	1,249.70	624.85	861.82	431.55	102.20	-6.70	0.203
164.33	-4.93	-6.45	0.00	-57.21	0.00	57.21	1,152.70	576.35	732.11	366.60	108.34	-6.85	0.160
165.00	-4.85	-6.39	0.00	-52.91	0.00	52.91	1,137.78	568.89	713.10	357.08	109.29	-6.87	0.153
167.25	-4.57	-6.26	0.00	-38.54	0.00	38.54	903.09	451.54	563.74	282.29	112.54	-6.93	0.142
170.00	-2.06	-2.33	0.00	-21.33	0.00	21.33	853.84	426.92	503.47	252.11	116.54	-6.99	0.087
175.00	-1.85	-2.15	0.00	-9.69	0.00	9.69	764.30	382.15	402.61	201.60	123.89	-7.06	0.050
179.00	0.00	-1.91	0.00	-1.09	0.00	1.09	692.67	346.34	330.04	165.26	129.80	-7.09	0.007

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor: 1.10 — Wind Importance Factor: 1.00
Dead Load Factor: 0.90
Wind Load Factor: 1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		241.3	0.0					0.0	0.0	241.3	0.0	0.0	0.0
5.00		476.7	1,127.5					0.0	243.2	476.7	1,370.7	0.0	0.0
10.00		464.9	1,099.8					0.0	243.2	464.9	1,343.0	0.0	0.0
15.00		453.1	1,072.1					0.0	243.2	453.1	1,315.3	0.0	0.0
20.00		441.3	1,044.5					0.0	243.2	441.3	1,287.6	0.0	0.0
25.00		429.6	1,016.8					0.0	243.2	429.6	1,260.0	0.0	0.0
30.00		264.2	989.1					0.0	243.2	264.2	1,232.3	0.0	0.0
31.25	Bot - Section 2	213.1	242.9					0.0	60.8	213.1	303.7	0.0	0.0
35.00		268.7	1,447.2					0.0	182.4	268.7	1,629.6	0.0	0.0
37.50	Top - Section 1	216.5	947.5					0.0	121.6	216.5	1,069.1	0.0	0.0
40.00		326.4	470.2					0.0	121.6	326.4	591.8	0.0	0.0
45.00		436.1	919.7					0.0	243.2	436.1	1,162.9	0.0	0.0
50.00		435.8	892.0					0.0	243.2	435.8	1,135.2	0.0	0.0
55.00		433.9	864.4					0.0	243.2	433.9	1,107.5	0.0	0.0
60.00		355.7	836.7					0.0	243.2	355.7	1,079.9	0.0	0.0
63.25	Bot - Section 3	215.4	529.0					0.0	158.1	215.4	687.1	0.0	0.0
65.00		237.6	564.8					0.0	85.1	237.6	649.9	0.0	0.0
68.75	Top - Section 2	215.2	1,187.4					0.0	182.4	215.2	1,369.8	0.0	0.0
70.00		265.6	196.2					0.0	60.8	265.6	256.9	0.0	0.0
75.00		420.5	767.3					0.0	243.2	420.5	1,010.5	0.0	0.0
80.00		412.7	739.6					0.0	243.2	412.7	982.8	0.0	0.0
85.00		404.0	711.9					0.0	243.2	404.0	955.1	0.0	0.0
90.00		394.6	684.3					0.0	243.2	394.6	927.4	0.0	0.0
95.00		236.3	656.6					0.0	243.2	236.3	899.8	0.0	0.0
96.08	Bot - Section 4	192.7	138.6					0.0	52.7	192.7	191.3	0.0	0.0
100.00		179.8	991.3					0.0	190.5	179.8	1,181.8	0.0	0.0
100.75	Top - Section 3	188.0	185.9					0.0	36.5	188.0	222.4	0.0	0.0
105.00		341.5	520.9					0.0	206.7	341.5	727.6	0.0	0.0
110.00	Appertunance(s)	358.0	587.2	3,729.4	0.0	0.0	2,069.5	0.0	243.2	4,087.4	2,899.8	0.0	0.0
115.00		345.3	559.5					0.0	185.8	345.3	745.3	0.0	0.0
120.00		332.0	531.8					0.0	185.8	332.0	717.6	0.0	0.0
125.00		310.6	504.2					0.0	185.8	310.6	690.0	0.0	0.0
129.75	Bot - Section 5	155.7	453.3					0.0	176.5	155.7	629.8	0.0	0.0
130.00		117.5	43.0					0.0	9.3	117.5	52.3	0.0	0.0
133.58	Top - Section 4	152.0	602.3					0.0	133.2	152.0	735.5	0.0	0.0
135.00		186.8	106.6					0.0	52.6	186.8	159.2	0.0	0.0
140.00	Appertunance(s)	281.3	361.4	3,388.2	0.0	0.0	2,344.6	0.0	185.8	3,669.5	2,891.8	0.0	0.0
145.00		265.6	338.3					0.0	152.7	265.6	491.0	0.0	0.0
150.00		226.1	315.2					0.0	152.7	226.1	467.9	0.0	0.0
154.00	Appertunance(s)	120.7	235.6	3,301.5	0.0	0.0	2,276.6	0.0	122.1	3,422.2	2,634.4	0.0	0.0
155.00		135.8	56.6					0.0	18.2	135.8	74.8	0.0	0.0
160.00	Appertunance(s)	202.8	269.1	1,234.0	0.0	0.0	786.2	0.0	90.8	1,436.8	1,146.2	0.0	0.0
164.33	Bot - Section 6	104.2	214.6					0.0	46.1	104.2	260.7	0.0	0.0
165.00		59.1	57.6					0.0	7.1	59.1	64.7	0.0	0.0
167.25	Top - Section 5	98.2	188.8					0.0	24.0	98.2	212.8	0.0	0.0
170.00	Appertunance(s)	142.3	99.6	3,456.6	0.0	0.0	2,099.2	0.0	29.3	3,598.9	2,228.1	0.0	0.0
175.00		154.3	166.8					0.0	4.5	154.3	171.2	0.0	0.0
179.00	Appertunance(s)	65.0	120.1	1,840.1	0.0	1,089.3	1,449.0	0.0	3.6	1,905.1	1,572.7	0.0	0.0

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 27 Iterations

Gust Response Factor: 1.10 Wind Importance Factor: 1.00
Dead Load Factor: 0.90
Wind Load Factor: 1.60

Totals:	29,924.3	44,796.6	0.00	0.00

Site Number: 370627 Code: ANSI/TIA-222-G

Site Name: Newington CT, CT Engineering Number: OAA692375_C3_01 1/6/2017 4:42:38 PM

Customer: Sprint Nextel

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 27 Iterations

Gust Response Factor: 1.10 Wind Importance Factor: 1.00

Dead Load Factor: 0.90

Wind Load Factor: 1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-44.76	-29.74	0.00	-3,661.47	0.00	3,661.47	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.626
5.00	-43.32	-29.37	0.00	-3,512.79	0.00	3,512.79	4,547.42	2,273.71	11,437.5	5,727.26	0.07	-0.14	0.623
10.00	-41.90	-29.00	0.00	-3,365.96	0.00	3,365.96	4,488.01	2,244.00	11,005.7	5,511.07	0.30	-0.28	0.620
15.00	-40.52	-28.65	0.00	-3,220.95	0.00	3,220.95	4,425.86	2,212.93	10,575.0	5,295.36	0.67	-0.43	0.618
20.00	-39.16	-28.30	0.00	-3,077.72	0.00	3,077.72	4,360.98	2,180.49	10,145.6	5,080.38	1.20	-0.58	0.615
25.00	-37.82	-27.96	0.00	-2,936.22	0.00	2,936.22	4,293.36	2,146.68	9,718.32	4,866.39	1.89	-0.74	0.612
30.00	-36.55	-27.75	0.00	-2,796.41	0.00	2,796.41	4,223.01	2,111.51	9,293.47	4,653.64	2.75	-0.90	0.610
31.25	-36.20	-27.58	0.00	-2,761.73	0.00	2,761.73	4,205.00	2,102.50	9,187.70	4,600.68	2.99	-0.94	0.609
35.00	-34.53	-27.35	0.00	-2,658.30	0.00	2,658.30	4,149.93	2,074.96	8,871.62	4,442.40	3.79	-1.07	0.607
37.50	-33.42	-27.16	0.00	-2,589.93	0.00	2,589.93	4,149.47	2,074.73	8,869.01	4,441.10	4.37	-1.16	0.591
40.00	-32.77	-26.90	0.00	-2,522.02	0.00	2,522.02	4,111.89	2,055.95	8,659.38	4,336.13	5.00	-1.25	0.590
45.00	-31.54	-26.53	0.00	-2,387.52	0.00	2,387.52	4,034.69	2,017.35	8,243.04	4,127.64	6.40	-1.42	0.586
50.00	-30.33	-26.17	0.00	-2,254.85	0.00	2,254.85	3,954.76	1,977.38	7,830.99	3,921.31	7.99	-1.60	0.583
55.00	-29.16	-25.80	0.00	-2,124.02	0.00	2,124.02	3,872.09	1,936.05	7,423.76	3,717.40	9.77	-1.79	0.579
60.00	-28.02	-25.48	0.00	-1,995.05	0.00	1,995.05	3,786.70	1,893.35	7,021.86	3,516.15	11.74	-1.98	0.575
63.25	-27.29	-25.29	0.00	-1,912.23	0.00	1,912.23	3,729.72	1,864.86	6,763.73	3,386.89	13.13	-2.11	0.572
65.00	-26.60	-25.08	0.00	-1,867.97	0.00	1,867.97	3,698.56	1,849.28	6,625.81	3,317.83	13.92	-2.18	0.570
68.75	-25.20	-24.86	0.00	-1,773.92	0.00	1,773.92	3,675.54	1,837.77	6,525.34	3,267.52	15.69	-2.34	0.550
70.00	-24.90	-24.64	0.00	-1,742.84	0.00	1,742.84	3,652.91	1,826.45	6,427.71	3,218.63	16.31	-2.39	0.548
75.00	-23.82	-24.26	0.00	-1,619.64	0.00	1,619.64	3,560.66	1,780.33	6,041.44	3,025.21	18.92	-2.59	0.542
80.00	-22.77	-23.89	0.00	-1,498.34	0.00	1,498.34	3,465.68	1,732.84	5,662.31	2,835.36	21.75	-2.80	0.535
85.00	-21.74	-23.52	0.00	-1,378.90	0.00	1,378.90	3,367.96	1,683.98	5,290.83	2,649.35	24.80	-3.02	0.527
90.00	-20.75	-23.16	0.00	-1,261.31	0.00	1,261.31	3,252.82	1,626.41	4,905.37	2,456.33	28.08	-3.24	0.520
95.00	-19.81	-22.92	0.00	-1,145.54	0.00	1,145.54	3,118.51	1,559.26	4,506.69	2,256.70	31.59	-3.47	0.514
96.08	-19.58	-22.75	0.00	-1,120.71	0.00	1,120.71	3,089.41	1,544.71	4,422.54	2,214.56	32.38	-3.52	0.513
100.00	-18.37	-22.53	0.00	-1,031.60	0.00	1,031.60	2,984.21	1,492.10	4,124.91	2,065.52	35.35	-3.71	0.506
100.75	-18.11	-22.37	0.00	-1,014.70	0.00	1,014.70	3,030.38	1,515.19	4,254.26	2,130.29	35.94	-3.75	0.483
105.00	-17.32	-22.05	0.00	-919.62	0.00	919.62	2,916.22	1,458.11	3,938.09	1,971.97	39.36	-3.95	0.473
110.00	-14.65	-17.82	0.00	-809.38	0.00	809.38	2,781.91	1,390.96	3,581.76	1,793.54	43.62	-4.18	0.457
115.00	-13.86	-17.48	0.00	-720.26	0.00	720.26	2,647.61	1,323.80	3,242.33	1,623.58	48.12	-4.41	0.449
120.00	-13.10	-17.15	0.00	-632.86	0.00	632.86	2,513.30	1,256.65	2,919.79	1,462.07	52.87	-4.65	0.438
125.00	-12.37	-16.83	0.00	-547.11	0.00	547.11	2,378.99	1,189.50	2,614.15	1,309.02	57.86	-4.89	0.423
129.75	-11.72	-16.65	0.00	-467.16	0.00	467.16	2,251.40	1,125.70	2,339.44	1,171.46	62.85	-5.13	0.404
130.00	-11.65	-16.55	0.00	-462.99	0.00	462.99	2,244.69	1,122.34	2,325.40	1,164.43	63.11	-5.14	0.403
133.58	-10.90	-16.35	0.00	-403.70	0.00	403.70	1,841.02	920.51	1,881.29	942.04	67.04	-5.32	0.435
135.00	-10.71	-16.18	0.00	-380.54	0.00	380.54	1,809.31	904.65	1,816.65	909.67	68.63	-5.39	0.425
140.00	-8.13	-12.29	0.00	-299.62	0.00	299.62	1,697.39	848.69	1,597.52	799.95	74.41	-5.65	0.380
145.00	-7.61	-12.01	0.00	-238.18	0.00	238.18	1,585.46	792.73	1,392.48	697.27	80.46	-5.90	0.347
150.00	-7.13	-11.76	0.00	-178.15	0.00	178.15	1,473.54	736.77	1,201.51	601.65	86.76	-6.14	0.301
154.00	-4.87	-8.08	0.00	-131.12	0.00	131.12	1,384.00	692.00	1,058.88	530.23	91.98	-6.32	0.251
155.00	-4.79	-7.95	0.00	-123.04	0.00	123.04	1,361.62	680.81	1,024.63	513.08	93.30	-6.36	0.243
160.00	-3.80	-6.40	0.00	-83.31	0.00	83.31	1,249.70	624.85	861.82	431.55	100.06	-6.55	0.196
164.33	-3.54	-6.27	0.00	-55.57	0.00	55.57	1,152.70	576.35	732.11	366.60	106.05	-6.69	0.155
165.00	-3.48	-6.21	0.00	-51.39	0.00	51.39	1,137.78	568.89	713.10	357.08	106.99	-6.71	0.147
167.25	-3.27	-6.09	0.00	-37.42	0.00	37.42	903.09	451.54	563.74	282.29	110.16	-6.77	0.136
170.00	-1.49	-2.25	0.00	-20.68	0.00	20.68	853.84	426.92	503.47	252.11	114.07	-6.83	0.084
175.00	-1.33	-2.08	0.00	-9.41	0.00	9.41	764.30	382.15	402.61	201.60	121.24	-6.90	0.048
179.00	0.00	-1.91	0.00	-1.09	0.00	1.09	692.67	346.34	330.04	165.26	127.02	-6.92	0.007

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 27 Iterations

Gust Response Factor: 1.10 | Ice Dead Load Factor: 1.00 | Wind Importance Factor: 1.00
Dead Load Factor: 1.20 | Ice Importance Factor: 1.00
Wind Load Factor: 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		77.6	0.0					0.0	0.0	77.6	0.0	0.0	0.0
5.00		153.8	2,113.4					0.0	324.2	153.8	2,437.6	0.0	0.0
10.00		150.8	2,132.8					0.0	324.2	150.8	2,457.1	0.0	0.0
15.00		147.6	2,114.6					0.0	324.2	147.6	2,438.8	0.0	0.0
20.00		144.2	2,084.0					0.0	324.2	144.2	2,408.2	0.0	0.0
25.00		140.8	2,046.9					0.0	324.2	140.8	2,371.1	0.0	0.0
30.00		86.8	2,005.8					0.0	324.2	86.8	2,330.0	0.0	0.0
31.25	Bot - Section 2	70.1	496.4					0.0	81.1	70.1	577.5	0.0	0.0
35.00		88.5	2,447.6					0.0	243.2	88.5	2,690.8	0.0	0.0
37.50	Top - Section 1	71.4	1,607.1					0.0	162.1	71.4	1,769.2	0.0	0.0
40.00		107.9	968.3					0.0	162.1	107.9	1,130.4	0.0	0.0
45.00		144.5	1,896.0					0.0	324.2	144.5	2,220.3	0.0	0.0
50.00		144.9	1,847.2					0.0	324.2	144.9	2,171.4	0.0	0.0
55.00		144.7	1,797.2					0.0	324.2	144.7	2,121.4	0.0	0.0
60.00		119.0	1,746.3					0.0	324.2	119.0	2,070.5	0.0	0.0
63.25	Bot - Section 3	72.2	1,109.7					0.0	210.8	72.2	1,320.5	0.0	0.0
65.00		79.8	972.7					0.0	113.5	79.8	1,086.2	0.0	0.0
68.75	Top - Section 2	72.3	2,044.5					0.0	243.2	72.3	2,287.7	0.0	0.0
70.00		89.5	414.6					0.0	81.1	89.5	495.7	0.0	0.0
75.00		142.1	1,617.6					0.0	324.2	142.1	1,941.9	0.0	0.0
80.00		140.1	1,564.2					0.0	324.2	140.1	1,888.4	0.0	0.0
85.00		137.7	1,510.2					0.0	324.2	137.7	1,834.4	0.0	0.0
90.00		135.1	1,455.8					0.0	324.2	135.1	1,780.0	0.0	0.0
95.00		81.2	1,401.0					0.0	324.2	81.2	1,725.2	0.0	0.0
96.08	Bot - Section 4	66.4	298.1					0.0	70.3	66.4	368.3	0.0	0.0
100.00		62.0	1,727.5					0.0	254.0	62.0	1,981.5	0.0	0.0
100.75	Top - Section 3	65.1	325.3					0.0	48.6	65.1	374.0	0.0	0.0
105.00		118.7	1,119.0					0.0	275.6	118.7	1,394.6	0.0	0.0
110.00	Appertunance(s)	125.1	1,263.2	900.9	0.0	0.0	7,320.7	0.0	324.2	1,026.0	8,908.1	0.0	0.0
115.00		121.4	1,207.1					0.0	247.7	121.4	1,454.9	0.0	0.0
120.00		117.6	1,150.7					0.0	247.7	117.6	1,398.5	0.0	0.0
125.00		110.9	1,094.1					0.0	247.7	110.9	1,341.9	0.0	0.0
129.75	Bot - Section 5	55.9	987.2					0.0	235.4	55.9	1,222.6	0.0	0.0
130.00		42.3	77.9					0.0	12.4	42.3	90.3	0.0	0.0
133.58	Top - Section 4	54.8	1,087.4					0.0	177.5	54.8	1,264.9	0.0	0.0
135.00		68.0	253.0					0.0	70.2	68.0	323.2	0.0	0.0
140.00	Appertunance(s)	103.0	852.2	902.5	0.0	0.0	6,938.6	0.0	247.7	1,005.5	8,038.5	0.0	0.0
145.00		98.5	800.8					0.0	203.6	98.5	1,004.4	0.0	0.0
150.00		84.8	749.3					0.0	203.6	84.8	952.9	0.0	0.0
154.00	Appertunance(s)	45.7	564.0	847.1	0.0	0.0	7,062.2	0.0	162.9	892.8	7,789.1	0.0	0.0
155.00		52.2	137.1					0.0	24.2	52.2	161.4	0.0	0.0
160.00	Appertunance(s)	78.7	645.6	329.5	0.0	0.0	2,835.6	0.0	121.1	408.2	3,602.3	0.0	0.0
164.33	Bot - Section 6	40.9	518.7					0.0	61.5	40.9	580.2	0.0	0.0
165.00		23.3	113.2					0.0	9.5	23.3	122.6	0.0	0.0
167.25	Top - Section 5	39.1	370.3					0.0	31.9	39.1	402.3	0.0	0.0
170.00	Appertunance(s)	57.7	271.1	871.7	0.0	0.0	6,531.0	0.0	39.0	929.4	6,841.2	0.0	0.0
175.00		63.8	452.1					0.0	5.9	63.8	458.1	0.0	0.0
179.00	Appertunance(s)	27.3	330.1	906.2	0.0	185.8	3,395.1	0.0	4.8	933.5	3,730.0	0.0	0.0

Site Number:	370627	Code: ANSI/TIA-222-G	
Site Name:	Newington CT, CT	Engineering Number: OAA 692375_C3_01	1/6/2017 4:42:40 PM
Customer:	Sprint Nextel		

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	27 Iterations
Gust Response Factor: 1.10	Ice Dead Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20		Ice Importance Factor: 1.00
Wind Load Factor: 1.00		

Totals:	9,223.88	97,360.0	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 27 Iterations

Gust Response Factor: 1.10 Ice Dead Load Factor: 1.00 Wind Importance Factor: 1.00
Dead Load Factor: 1.20 Ice Importance Factor: 1.00
Wind Load Factor: 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-97.36	-9.19	0.00	-1,210.01	0.00	1,210.01	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.225
5.00	-94.91	-9.11	0.00	-1,164.08	0.00	1,164.08	4,547.42	2,273.71	11,437.5	5,727.26	0.02	-0.05	0.224
10.00	-92.45	-9.03	0.00	-1,118.54	0.00	1,118.54	4,488.01	2,244.00	11,005.7	5,511.07	0.10	-0.09	0.224
15.00	-90.00	-8.96	0.00	-1,073.39	0.00	1,073.39	4,425.86	2,212.93	10,575.0	5,295.36	0.22	-0.14	0.223
20.00	-87.58	-8.89	0.00	-1,028.60	0.00	1,028.60	4,360.98	2,180.49	10,145.6	5,080.38	0.40	-0.19	0.223
25.00	-85.21	-8.82	0.00	-984.17	0.00	984.17	4,293.36	2,146.68	9,718.32	4,866.39	0.63	-0.25	0.222
30.00	-82.87	-8.77	0.00	-940.10	0.00	940.10	4,223.01	2,111.51	9,293.47	4,653.64	0.91	-0.30	0.222
31.25	-82.29	-8.74	0.00	-929.14	0.00	929.14	4,205.00	2,102.50	9,187.70	4,600.68	0.99	-0.31	0.222
35.00	-79.59	-8.68	0.00	-896.38	0.00	896.38	4,149.93	2,074.96	8,871.62	4,442.40	1.26	-0.36	0.221
37.50	-77.82	-8.64	0.00	-874.67	0.00	874.67	4,149.47	2,074.73	8,869.01	4,441.10	1.45	-0.39	0.216
40.00	-76.68	-8.58	0.00	-853.08	0.00	853.08	4,111.89	2,055.95	8,659.38	4,336.13	1.67	-0.42	0.215
45.00	-74.46	-8.50	0.00	-810.16	0.00	810.16	4,034.69	2,017.35	8,243.04	4,127.64	2.14	-0.48	0.215
50.00	-72.28	-8.41	0.00	-767.66	0.00	767.66	3,954.76	1,977.38	7,830.99	3,921.31	2.67	-0.54	0.214
55.00	-70.15	-8.33	0.00	-725.60	0.00	725.60	3,872.09	1,936.05	7,423.76	3,717.40	3.26	-0.60	0.213
60.00	-68.07	-8.25	0.00	-683.97	0.00	683.97	3,786.70	1,893.35	7,021.86	3,516.15	3.93	-0.67	0.213
63.25	-66.75	-8.20	0.00	-657.15	0.00	657.15	3,729.72	1,864.86	6,763.73	3,386.89	4.40	-0.71	0.212
65.00	-65.66	-8.15	0.00	-642.80	0.00	642.80	3,698.56	1,849.28	6,625.81	3,317.83	4.66	-0.74	0.212
68.75	-63.36	-8.09	0.00	-612.22	0.00	612.22	3,675.54	1,837.77	6,525.34	3,267.52	5.26	-0.79	0.205
70.00	-62.86	-8.04	0.00	-602.11	0.00	602.11	3,652.91	1,826.45	6,427.71	3,218.63	5.47	-0.81	0.204
75.00	-60.91	-7.95	0.00	-561.89	0.00	561.89	3,560.66	1,780.33	6,041.44	3,025.21	6.35	-0.88	0.203
80.00	-59.02	-7.85	0.00	-522.15	0.00	522.15	3,465.68	1,732.84	5,662.31	2,835.36	7.31	-0.95	0.201
85.00	-57.18	-7.76	0.00	-482.88	0.00	482.88	3,367.96	1,683.98	5,290.83	2,649.35	8.35	-1.03	0.199
90.00	-55.39	-7.67	0.00	-444.07	0.00	444.07	3,252.82	1,626.41	4,905.37	2,456.33	9.46	-1.10	0.198
95.00	-53.66	-7.60	0.00	-405.72	0.00	405.72	3,118.51	1,559.26	4,506.69	2,256.70	10.66	-1.18	0.197
96.08	-53.29	-7.57	0.00	-397.48	0.00	397.48	3,089.41	1,544.71	4,422.54	2,214.56	10.93	-1.20	0.197
100.00	-51.30	-7.50	0.00	-367.84	0.00	367.84	2,984.21	1,492.10	4,124.91	2,065.52	11.95	-1.27	0.195
100.75	-50.92	-7.46	0.00	-362.22	0.00	362.22	3,030.38	1,515.19	4,254.26	2,130.29	12.15	-1.28	0.187
105.00	-49.52	-7.38	0.00	-330.50	0.00	330.50	2,916.22	1,458.11	3,938.09	1,971.97	13.33	-1.36	0.185
110.00	-40.63	-6.20	0.00	-293.60	0.00	293.60	2,781.91	1,390.96	3,581.76	1,793.54	14.79	-1.44	0.178
115.00	-39.17	-6.10	0.00	-262.62	0.00	262.62	2,647.61	1,323.80	3,242.33	1,623.58	16.35	-1.52	0.177
120.00	-37.77	-6.00	0.00	-232.14	0.00	232.14	2,513.30	1,256.65	2,919.79	1,462.07	17.99	-1.61	0.174
125.00	-36.42	-5.91	0.00	-202.15	0.00	202.15	2,378.99	1,189.50	2,614.15	1,309.02	19.72	-1.70	0.170
129.75	-35.20	-5.84	0.00	-174.10	0.00	174.10	2,251.40	1,125.70	2,339.44	1,171.46	21.46	-1.79	0.164
130.00	-35.10	-5.82	0.00	-172.64	0.00	172.64	2,244.69	1,122.34	2,325.40	1,164.43	21.55	-1.79	0.164
133.58	-33.84	-5.75	0.00	-151.80	0.00	151.80	1,841.02	920.51	1,881.29	942.04	22.93	-1.86	0.180
135.00	-33.51	-5.71	0.00	-143.65	0.00	143.65	1,809.31	904.65	1,816.65	909.67	23.48	-1.89	0.176
140.00	-25.50	-4.48	0.00	-115.11	0.00	115.11	1,697.39	848.69	1,597.52	799.95	25.51	-1.99	0.159
145.00	-24.49	-4.38	0.00	-92.73	0.00	92.73	1,585.46	792.73	1,392.48	697.27	27.64	-2.08	0.148
150.00	-23.54	-4.30	0.00	-70.82	0.00	70.82	1,473.54	736.77	1,201.51	601.65	29.88	-2.18	0.134
154.00	-15.79	-3.11	0.00	-53.63	0.00	53.63	1,384.00	692.00	1,058.88	530.23	31.73	-2.25	0.113
155.00	-15.63	-3.07	0.00	-50.52	0.00	50.52	1,361.62	680.81	1,024.63	513.08	32.20	-2.26	0.110
160.00	-12.04	-2.53	0.00	-35.17	0.00	35.17	1,249.70	624.85	861.82	431.55	34.62	-2.34	0.091
164.33	-11.46	-2.47	0.00	-24.21	0.00	24.21	1,152.70	576.35	732.11	366.60	36.77	-2.40	0.076
165.00	-11.34	-2.45	0.00	-22.56	0.00	22.56	1,137.78	568.89	713.10	357.08	37.11	-2.41	0.073
167.25	-10.94	-2.40	0.00	-17.05	0.00	17.05	903.09	451.54	563.74	282.29	38.25	-2.44	0.073
170.00	-4.14	-1.18	0.00	-10.46	0.00	10.46	853.84	426.92	503.47	252.11	39.66	-2.47	0.046
175.00	-3.69	-1.10	0.00	-4.57	0.00	4.57	764.30	382.15	402.61	201.60	42.27	-2.50	0.027
179.00	0.00	-0.93	0.00	-0.19	0.00	0.19	692.67	346.34	330.04	165.26	44.37	-2.51	0.001

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

Gust Response Factor: 1.10 Wind Importance Factor: 1.00
Dead Load Factor: 1.00
Wind Load Factor: 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		57.7	0.0					0.0	0.0	57.7	0.0	0.0	0.0
5.00		114.0	1,252.8					0.0	270.2	114.0	1,523.0	0.0	0.0
10.00		111.2	1,222.0					0.0	270.2	111.2	1,492.2	0.0	0.0
15.00		108.4	1,191.3					0.0	270.2	108.4	1,461.5	0.0	0.0
20.00		105.5	1,160.5					0.0	270.2	105.5	1,430.7	0.0	0.0
25.00		102.7	1,129.8					0.0	270.2	102.7	1,400.0	0.0	0.0
30.00		63.2	1,099.0					0.0	270.2	63.2	1,369.2	0.0	0.0
31.25	Bot - Section 2	51.0	269.9					0.0	67.6	51.0	337.5	0.0	0.0
35.00		64.3	1,608.0					0.0	202.7	64.3	1,810.6	0.0	0.0
37.50	Top - Section 1	51.8	1,052.8					0.0	135.1	51.8	1,187.9	0.0	0.0
40.00		78.0	522.5					0.0	135.1	78.0	657.6	0.0	0.0
45.00		104.3	1,021.9					0.0	270.2	104.3	1,292.1	0.0	0.0
50.00		104.2	991.2					0.0	270.2	104.2	1,261.4	0.0	0.0
55.00		103.8	960.4					0.0	270.2	103.8	1,230.6	0.0	0.0
60.00		85.1	929.6					0.0	270.2	85.1	1,199.8	0.0	0.0
63.25	Bot - Section 3	51.5	587.8					0.0	175.6	51.5	763.4	0.0	0.0
65.00		56.8	627.5					0.0	94.6	56.8	722.1	0.0	0.0
68.75	Top - Section 2	51.5	1,319.4					0.0	202.7	51.5	1,522.0	0.0	0.0
70.00		63.5	217.9					0.0	67.6	63.5	285.5	0.0	0.0
75.00		100.5	852.6					0.0	270.2	100.5	1,122.8	0.0	0.0
80.00		98.7	821.8					0.0	270.2	98.7	1,092.0	0.0	0.0
85.00		96.6	791.0					0.0	270.2	96.6	1,061.2	0.0	0.0
90.00		94.4	760.3					0.0	270.2	94.4	1,030.5	0.0	0.0
95.00		56.5	729.5					0.0	270.2	56.5	999.7	0.0	0.0
96.08	Bot - Section 4	46.1	154.0					0.0	58.5	46.1	212.6	0.0	0.0
100.00		43.0	1,101.4					0.0	211.7	43.0	1,313.1	0.0	0.0
100.75	Top - Section 3	45.0	206.6					0.0	40.5	45.0	247.1	0.0	0.0
105.00		81.7	578.8					0.0	229.7	81.7	808.4	0.0	0.0
110.00	Appertunance(s)	85.6	652.4	891.8	0.0	0.0	2,299.4	0.0	270.2	977.4	3,222.0	0.0	0.0
115.00		82.6	621.7					0.0	206.5	82.6	828.1	0.0	0.0
120.00		79.4	590.9					0.0	206.5	79.4	797.4	0.0	0.0
125.00		74.3	560.2					0.0	206.5	74.3	766.6	0.0	0.0
129.75	Bot - Section 5	37.2	503.7					0.0	196.1	37.2	699.8	0.0	0.0
130.00		28.1	47.8					0.0	10.3	28.1	58.1	0.0	0.0
133.58	Top - Section 4	36.3	669.2					0.0	148.0	36.3	817.2	0.0	0.0
135.00		44.7	118.4					0.0	58.5	44.7	176.9	0.0	0.0
140.00	Appertunance(s)	67.3	401.5	810.2	0.0	0.0	2,605.1	0.0	206.5	877.5	3,213.1	0.0	0.0
145.00		63.5	375.9					0.0	169.7	63.5	545.5	0.0	0.0
150.00		54.1	350.3					0.0	169.7	54.1	519.9	0.0	0.0
154.00	Appertunance(s)	28.9	261.8	789.5	0.0	0.0	2,529.6	0.0	135.7	818.4	2,927.1	0.0	0.0
155.00		32.5	62.9					0.0	20.2	32.5	83.1	0.0	0.0
160.00	Appertunance(s)	48.5	299.0	295.1	0.0	0.0	873.6	0.0	100.9	343.6	1,273.5	0.0	0.0
164.33	Bot - Section 6	24.9	238.4					0.0	51.3	24.9	289.7	0.0	0.0
165.00		14.1	64.0					0.0	7.9	14.1	71.8	0.0	0.0
167.25	Top - Section 5	23.5	209.8					0.0	26.6	23.5	236.4	0.0	0.0
170.00	Appertunance(s)	34.0	110.6	826.6	0.0	0.0	2,332.5	0.0	32.5	860.6	2,475.7	0.0	0.0
175.00		36.9	185.3					0.0	5.0	36.9	190.2	0.0	0.0
179.00	Appertunance(s)	15.5	133.5	440.0	0.0	260.5	1,610.0	0.0	4.0	455.6	1,747.4	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

Gust Response Factor: 1.10 Wind Importance Factor: 1.00
Dead Load Factor: 1.00
Wind Load Factor: 1.00

Totals:	7,155.88	49,774.1	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

Gust Response Factor: 1.10 Wind Importance Factor: 1.00
Dead Load Factor: 1.00
Wind Load Factor: 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.77	-7.11	0.00	-881.10	0.00	881.10	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.159
5.00	-48.24	-7.03	0.00	-845.54	0.00	845.54	4,547.42	2,273.71	11,437.5	5,727.26	0.02	-0.03	0.158
10.00	-46.75	-6.94	0.00	-810.42	0.00	810.42	4,488.01	2,244.00	11,005.7	5,511.07	0.07	-0.07	0.157
15.00	-45.28	-6.86	0.00	-775.71	0.00	775.71	4,425.86	2,212.93	10,575.0	5,295.36	0.16	-0.10	0.157
20.00	-43.85	-6.78	0.00	-741.41	0.00	741.41	4,360.98	2,180.49	10,145.6	5,080.38	0.29	-0.14	0.156
25.00	-42.44	-6.70	0.00	-707.51	0.00	707.51	4,293.36	2,146.68	9,718.32	4,866.39	0.46	-0.18	0.155
30.00	-41.07	-6.65	0.00	-674.01	0.00	674.01	4,223.01	2,111.51	9,293.47	4,653.64	0.66	-0.22	0.155
31.25	-40.73	-6.61	0.00	-665.69	0.00	665.69	4,205.00	2,102.50	9,187.70	4,600.68	0.72	-0.23	0.154
35.00	-38.92	-6.56	0.00	-640.89	0.00	640.89	4,149.93	2,074.96	8,871.62	4,442.40	0.91	-0.26	0.154
37.50	-37.73	-6.52	0.00	-624.49	0.00	624.49	4,149.47	2,074.73	8,869.01	4,441.10	1.05	-0.28	0.150
40.00	-37.07	-6.46	0.00	-608.20	0.00	608.20	4,111.89	2,055.95	8,659.38	4,336.13	1.20	-0.30	0.149
45.00	-35.77	-6.37	0.00	-575.92	0.00	575.92	4,034.69	2,017.35	8,243.04	4,127.64	1.54	-0.34	0.148
50.00	-34.51	-6.28	0.00	-544.07	0.00	544.07	3,954.76	1,977.38	7,830.99	3,921.31	1.92	-0.39	0.147
55.00	-33.27	-6.20	0.00	-512.65	0.00	512.65	3,872.09	1,936.05	7,423.76	3,717.40	2.35	-0.43	0.147
60.00	-32.07	-6.13	0.00	-481.66	0.00	481.66	3,786.70	1,893.35	7,021.86	3,516.15	2.83	-0.48	0.145
63.25	-31.30	-6.08	0.00	-461.75	0.00	461.75	3,729.72	1,864.86	6,763.73	3,386.89	3.16	-0.51	0.145
65.00	-30.58	-6.03	0.00	-451.11	0.00	451.11	3,698.56	1,849.28	6,625.81	3,317.83	3.35	-0.53	0.144
68.75	-29.05	-5.98	0.00	-428.48	0.00	428.48	3,675.54	1,837.77	6,525.34	3,267.52	3.78	-0.56	0.139
70.00	-28.77	-5.93	0.00	-421.01	0.00	421.01	3,652.91	1,826.45	6,427.71	3,218.63	3.93	-0.58	0.139
75.00	-27.64	-5.84	0.00	-391.37	0.00	391.37	3,560.66	1,780.33	6,041.44	3,025.21	4.56	-0.63	0.137
80.00	-26.54	-5.75	0.00	-362.17	0.00	362.17	3,465.68	1,732.84	5,662.31	2,835.36	5.24	-0.68	0.135
85.00	-25.48	-5.67	0.00	-333.40	0.00	333.40	3,367.96	1,683.98	5,290.83	2,649.35	5.98	-0.73	0.133
90.00	-24.44	-5.58	0.00	-305.07	0.00	305.07	3,252.82	1,626.41	4,905.37	2,456.33	6.77	-0.78	0.132
95.00	-23.44	-5.53	0.00	-277.15	0.00	277.15	3,118.51	1,559.26	4,506.69	2,256.70	7.62	-0.84	0.130
96.08	-23.23	-5.49	0.00	-271.17	0.00	271.17	3,089.41	1,544.71	4,422.54	2,214.56	7.81	-0.85	0.130
100.00	-21.91	-5.44	0.00	-249.67	0.00	249.67	2,984.21	1,492.10	4,124.91	2,065.52	8.53	-0.89	0.128
100.75	-21.66	-5.40	0.00	-245.60	0.00	245.60	3,030.38	1,515.19	4,254.26	2,130.29	8.67	-0.90	0.122
105.00	-20.85	-5.32	0.00	-222.66	0.00	222.66	2,916.22	1,458.11	3,938.09	1,971.97	9.50	-0.95	0.120
110.00	-17.64	-4.31	0.00	-196.04	0.00	196.04	2,781.91	1,390.96	3,581.76	1,793.54	10.52	-1.01	0.116
115.00	-16.81	-4.23	0.00	-174.51	0.00	174.51	2,647.61	1,323.80	3,242.33	1,623.58	11.61	-1.07	0.114
120.00	-16.01	-4.15	0.00	-153.38	0.00	153.38	2,513.30	1,256.65	2,919.79	1,462.07	12.76	-1.12	0.111
125.00	-15.24	-4.07	0.00	-132.64	0.00	132.64	2,378.99	1,189.50	2,614.15	1,309.02	13.97	-1.18	0.108
129.75	-14.54	-4.03	0.00	-113.29	0.00	113.29	2,251.40	1,125.70	2,339.44	1,171.46	15.17	-1.24	0.103
130.00	-14.48	-4.01	0.00	-112.28	0.00	112.28	2,244.69	1,122.34	2,325.40	1,164.43	15.24	-1.24	0.103
133.58	-13.66	-3.96	0.00	-97.93	0.00	97.93	1,841.02	920.51	1,881.29	942.04	16.19	-1.29	0.111
135.00	-13.49	-3.92	0.00	-92.32	0.00	92.32	1,809.31	904.65	1,816.65	909.67	16.57	-1.30	0.109
140.00	-10.29	-2.98	0.00	-72.72	0.00	72.72	1,697.39	848.69	1,597.52	799.95	17.97	-1.37	0.097
145.00	-9.74	-2.91	0.00	-57.82	0.00	57.82	1,585.46	792.73	1,392.48	697.27	19.44	-1.43	0.089
150.00	-9.22	-2.85	0.00	-43.26	0.00	43.26	1,473.54	736.77	1,201.51	601.65	20.96	-1.49	0.078
154.00	-6.32	-1.96	0.00	-31.85	0.00	31.85	1,384.00	692.00	1,058.88	530.23	22.23	-1.53	0.065
155.00	-6.23	-1.93	0.00	-29.89	0.00	29.89	1,361.62	680.81	1,024.63	513.08	22.55	-1.54	0.063
160.00	-4.97	-1.55	0.00	-20.24	0.00	20.24	1,249.70	624.85	861.82	431.55	24.18	-1.58	0.051
164.33	-4.68	-1.52	0.00	-13.50	0.00	13.50	1,152.70	576.35	732.11	366.60	25.64	-1.62	0.041
165.00	-4.61	-1.51	0.00	-12.49	0.00	12.49	1,137.78	568.89	713.10	357.08	25.86	-1.62	0.039
167.25	-4.37	-1.48	0.00	-9.09	0.00	9.09	903.09	451.54	563.74	282.29	26.63	-1.64	0.037
170.00	-1.92	-0.55	0.00	-5.03	0.00	5.03	853.84	426.92	503.47	252.11	27.58	-1.65	0.022
175.00	-1.73	-0.51	0.00	-2.29	0.00	2.29	764.30	382.15	402.61	201.60	29.32	-1.67	0.014
179.00	0.00	-0.46	0.00	-0.26	0.00	0.26	692.67	346.34	330.04	165.26	30.72	-1.67	0.002

Equivalent Lateral Forces Method Analysis

(Based on ASCE 7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.85
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	49.77 k
Seismic Base Shear (E):	1.94 k

Load Case (1.2 + 0.2Sds) * DL + E ELFM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	4,305	0.008	16	170
46	172.50	190	5,661	0.011	21	236
45	168.63	143	4,071	0.008	15	177
44	166.13	236	6,524	0.012	24	293
43	164.67	72	1,948	0.004	7	89
42	162.17	290	7,618	0.014	28	359
41	157.50	400	9,920	0.019	36	495
40	154.50	83	1,983	0.004	7	103
39	152.00	397	9,183	0.017	33	492
38	147.50	520	11,311	0.021	41	644
37	142.50	546	11,078	0.021	40	676
36	137.50	608	11,495	0.022	42	753
35	134.29	177	3,191	0.006	12	219
34	131.79	817	14,194	0.027	52	1,012
33	129.88	58	980	0.002	4	72
32	127.38	700	11,354	0.021	41	867
31	122.50	767	11,504	0.022	42	950
30	117.50	797	11,009	0.021	40	988
29	112.50	828	10,481	0.020	38	1,026
28	107.50	923	10,662	0.020	39	1,143
27	102.88	808	8,556	0.016	31	1,002
26	100.38	247	2,490	0.005	9	306
25	98.04	1,313	12,622	0.024	46	1,627

24	95.54	213	1,940	0.004	7	263
23	92.50	1,000	8,554	0.016	31	1,238
22	87.50	1,030	7,890	0.015	29	1,277
21	82.50	1,061	7,223	0.014	26	1,315
20	77.50	1,092	6,559	0.012	24	1,353
19	72.50	1,123	5,902	0.011	21	1,391
18	69.38	285	1,374	0.003	5	354
17	66.88	1,522	6,807	0.013	25	1,885
16	64.13	722	2,969	0.006	11	895
15	61.63	763	2,899	0.005	11	946
14	57.50	1,200	3,967	0.007	14	1,486
13	52.50	1,231	3,392	0.006	12	1,524
12	47.50	1,261	2,846	0.005	10	1,563
11	42.50	1,292	2,334	0.004	8	1,601
10	38.75	658	987	0.002	4	815
9	36.25	1,188	1,561	0.003	6	1,472
8	33.13	1,811	1,987	0.004	7	2,243
7	30.63	337	317	0.001	1	418
6	27.50	1,369	1,035	0.002	4	1,696
5	22.50	1,400	709	0.001	3	1,734
4	17.50	1,431	438	0.001	2	1,772
3	12.50	1,461	228	0.000	1	1,811
2	7.50	1,492	84	0.000	0	1,849
1	2.50	1,523	10	0.000	0	1,887
10' Omni	179.00	25	801	0.001	3	31
18' Dipole	179.00	55	1,762	0.003	6	68
8' Yagi	179.00	30	961	0.002	3	37
Round LowProfile Pl	179.00	1,500	48,062	0.090	175	1,858
Ericsson KRY 112 144	170.00	33	954	0.002	3	41
Ericsson RRUS 11 B12	170.00	152	4,396	0.008	16	188
Ericsson AIR 21, 1.3	170.00	249	7,196	0.013	26	308
Ericsson AIR 21, 1.3	170.00	244	7,066	0.013	26	303
AndrewLNX-6515DS-VT	170.00	154	4,448	0.008	16	191
Round LowProfile Pl	170.00	1,500	43,350	0.081	157	1,858
RCU	160.00	3	77	0.000	0	4
DragonWave Horizon C	160.00	34	883	0.002	3	43
12' x 12' Junction B	160.00	10	256	0.000	1	12
Samsung U-RAS Premiu	160.00	99	2,534	0.005	9	123
Argus LLPX310R	160.00	86	2,196	0.004	8	106
DragonWave A-ANT-18G	160.00	81	2,081	0.004	8	101
Side Arms	160.00	560	14,336	0.027	52	694
Powerwave LGP21401	154.00	85	2,006	0.004	7	105
Raycap DC6-48-60-18-	154.00	32	754	0.001	3	39
Ericsson RRUS 11 (Ba	154.00	330	7,826	0.015	28	409
Ericsson RRUS 12 w/	154.00	214	5,080	0.010	18	265
Powerwave 7770.00	154.00	105	2,490	0.005	9	130
CCI OPA-65R-LCUU-H8	154.00	264	6,261	0.012	23	327
Round LowProfile Pl	154.00	1,500	35,574	0.067	129	1,858
Nokia FWHR	140.00	79	1,558	0.003	6	98
Alcatel-Lucent 800 M	140.00	192	3,763	0.007	14	238
Alcatel-Lucent 1900M	140.00	132	2,587	0.005	9	164
Alcatel-Lucent TD-RR	140.00	198	3,887	0.007	14	246
RFS APXVTM14-C-I20	140.00	169	3,305	0.006	12	209
RFS APXVTM14-C-I20	140.00	159	3,111	0.006	11	197
RFS APXV9ERR18-C-A20	140.00	62	1,215	0.002	4	77
RFS APXVSPP18-C-A20	140.00	114	2,234	0.004	8	141
Round LowProfile Pl	140.00	1,500	29,400	0.055	107	1,858
Alcatel-Lucent RRH2X	110.00	132	1,597	0.003	6	164
Alcatel-Lucent RRH2X	110.00	129	1,561	0.003	6	160
Alcatel-Lucent RRH2x	110.00	170	2,058	0.004	7	211
Antel BXA-80063/4CF	110.00	30	359	0.001	1	37
RFS DB-T1-6Z-8AB-0Z	110.00	44	532	0.001	2	55
Antel BXA-70063-6CF-	110.00	51	617	0.001	2	63
Commscope SBNHH-1D65	110.00	244	2,948	0.006	11	302

Flat Low Profile Pla	110.00	1,500	18,150	0.034	66	1,858
		49,774	534,384	1.000	1,941	61,661

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	4,305	0.008	16	118
46	172.50	190	5,661	0.011	21	164
45	168.63	143	4,071	0.008	15	123
44	166.13	236	6,524	0.012	24	204
43	164.67	72	1,948	0.004	7	62
42	162.17	290	7,618	0.014	28	249
41	157.50	400	9,920	0.019	36	344
40	154.50	83	1,983	0.004	7	72
39	152.00	397	9,183	0.017	33	342
38	147.50	520	11,311	0.021	41	448
37	142.50	546	11,078	0.021	40	470
36	137.50	608	11,495	0.022	42	524
35	134.29	177	3,191	0.006	12	152
34	131.79	817	14,194	0.027	52	704
33	129.88	58	980	0.002	4	50
32	127.38	700	11,354	0.021	41	603
31	122.50	767	11,504	0.022	42	660
30	117.50	797	11,009	0.021	40	687
29	112.50	828	10,481	0.020	38	713
28	107.50	923	10,662	0.020	39	795
27	102.88	808	8,556	0.016	31	696
26	100.38	247	2,490	0.005	9	213
25	98.04	1,313	12,622	0.024	46	1,131
24	95.54	213	1,940	0.004	7	183
23	92.50	1,000	8,554	0.016	31	861
22	87.50	1,030	7,890	0.015	29	887
21	82.50	1,061	7,223	0.014	26	914
20	77.50	1,092	6,559	0.012	24	940
19	72.50	1,123	5,902	0.011	21	967
18	69.38	285	1,374	0.003	5	246
17	66.88	1,522	6,807	0.013	25	1,311
16	64.13	722	2,969	0.006	11	622
15	61.63	763	2,899	0.005	11	657
14	57.50	1,200	3,967	0.007	14	1,033
13	52.50	1,231	3,392	0.006	12	1,060
12	47.50	1,261	2,846	0.005	10	1,086
11	42.50	1,292	2,334	0.004	8	1,113
10	38.75	658	987	0.002	4	566
9	36.25	1,188	1,561	0.003	6	1,023
8	33.13	1,811	1,987	0.004	7	1,559
7	30.63	337	317	0.001	1	291
6	27.50	1,369	1,035	0.002	4	1,179
5	22.50	1,400	709	0.001	3	1,206
4	17.50	1,431	438	0.001	2	1,232
3	12.50	1,461	228	0.000	1	1,259
2	7.50	1,492	84	0.000	0	1,285
1	2.50	1,523	10	0.000	0	1,312
10' Omni	179.00	25	801	0.001	3	22
18' Dipole	179.00	55	1,762	0.003	6	47
8' Yagi	179.00	30	961	0.002	3	26
Round Low Profile Pl	179.00	1,500	48,062	0.090	175	1,292
Ericsson KRY 112 144	170.00	33	954	0.002	3	28
Ericsson RRUS 11 B12	170.00	152	4,396	0.008	16	131

Ericsson AIR 21, 1.3	170.00	249	7,196	0.013	26	214
Ericsson AIR 21, 1.3	170.00	244	7,066	0.013	26	211
AndrewLNX-6515DS-VT	170.00	154	4,448	0.008	16	133
Round LowProfile Pl	170.00	1,500	43,350	0.081	157	1,292
RCU	160.00	3	77	0.000	0	3
DragonWave Horizon C	160.00	34	883	0.002	3	30
12' x 12' Junction B	160.00	10	256	0.000	1	9
Samsung U-RAS Premiu	160.00	99	2,534	0.005	9	85
Argus LLPX310R	160.00	86	2,196	0.004	8	74
DragonWave A-ANT-18G	160.00	81	2,081	0.004	8	70
Side Arms	160.00	560	14,336	0.027	52	482
Powerwave LGP21401	154.00	85	2,006	0.004	7	73
Raycap DC6-48-60-18-	154.00	32	754	0.001	3	27
Ericsson RRUS 11 (Ba	154.00	330	7,826	0.015	28	284
Ericsson RRUS 12 w/	154.00	214	5,080	0.010	18	184
Powerwave 7770.00	154.00	105	2,490	0.005	9	90
CCI OPA-65R-LCUU-H8	154.00	264	6,261	0.012	23	227
Round LowProfile Pl	154.00	1,500	35,574	0.067	129	1,292
Nokia FWHR	140.00	79	1,558	0.003	6	68
Alcatel-Lucent 800 M	140.00	192	3,763	0.007	14	165
Alcatel-Lucent 1900M	140.00	132	2,587	0.005	9	114
Alcatel-Lucent TD-RR	140.00	198	3,887	0.007	14	171
RFS APXVTM14-C-I20	140.00	169	3,305	0.006	12	145
RFS APXVTM14-C-I20	140.00	159	3,111	0.006	11	137
RFS APXV9ERR18-C-A20	140.00	62	1,215	0.002	4	53
RFS APXVSPP18-C-A20	140.00	114	2,234	0.004	8	98
Round LowProfile Pl	140.00	1,500	29,400	0.055	107	1,292
Alcatel-Lucent RRH2X	110.00	132	1,597	0.003	6	114
Alcatel-Lucent RRH2X	110.00	129	1,561	0.003	6	111
Alcatel-Lucent RRH2x	110.00	170	2,058	0.004	7	146
Antel BXA-80063/4CF	110.00	30	359	0.001	1	26
RFS DB-T1-6Z-8AB-0Z	110.00	44	532	0.001	2	38
Antel BXA-70063-6CF-	110.00	51	617	0.001	2	44
Commscope SBNHH-1D65	110.00	244	2,948	0.006	11	210
Flat LowProfile Pla	110.00	1,500	18,150	0.034	66	1,292
		49,774	534,384	1.000	1,941	42,864

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-59.77	-1.95	0.00	-279.76	0.00	279.76	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.060
5.00	-57.93	-1.96	0.00	-270.04	0.00	270.04	4,547.42	2,273.71	11,437.5	5,727.26	0.01	-0.01	0.060
10.00	-56.11	-1.97	0.00	-260.26	0.00	260.26	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.060
15.00	-54.34	-1.97	0.00	-250.43	0.00	250.43	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.03	0.060
20.00	-52.61	-1.98	0.00	-240.56	0.00	240.56	4,360.98	2,180.49	10,145.6	5,080.38	0.09	-0.04	0.059
25.00	-50.91	-1.99	0.00	-230.65	0.00	230.65	4,293.36	2,146.68	9,718.32	4,866.39	0.15	-0.06	0.059
30.00	-50.49	-1.99	0.00	-220.72	0.00	220.72	4,223.01	2,111.51	9,293.47	4,653.64	0.21	-0.07	0.059
31.25	-48.25	-1.99	0.00	-218.22	0.00	218.22	4,205.00	2,102.50	9,187.70	4,600.68	0.23	-0.07	0.059
35.00	-46.78	-1.99	0.00	-210.77	0.00	210.77	4,149.93	2,074.96	8,871.62	4,442.40	0.29	-0.08	0.059
37.50	-45.96	-1.99	0.00	-205.80	0.00	205.80	4,149.47	2,074.73	8,869.01	4,441.10	0.34	-0.09	0.057
40.00	-44.36	-1.99	0.00	-200.83	0.00	200.83	4,111.89	2,055.95	8,659.38	4,336.13	0.39	-0.10	0.057
45.00	-42.80	-1.98	0.00	-190.90	0.00	190.90	4,034.69	2,017.35	8,243.04	4,127.64	0.50	-0.11	0.057
50.00	-41.27	-1.98	0.00	-180.98	0.00	180.98	3,954.76	1,977.38	7,830.99	3,921.31	0.62	-0.13	0.057
55.00	-39.79	-1.97	0.00	-171.09	0.00	171.09	3,872.09	1,936.05	7,423.76	3,717.40	0.76	-0.14	0.056
60.00	-38.84	-1.97	0.00	-161.24	0.00	161.24	3,786.70	1,893.35	7,021.86	3,516.15	0.92	-0.16	0.056
63.25	-37.95	-1.96	0.00	-154.85	0.00	154.85	3,729.72	1,864.86	6,763.73	3,386.89	1.03	-0.17	0.056
65.00	-36.06	-1.93	0.00	-151.42	0.00	151.42	3,698.56	1,849.28	6,625.81	3,317.83	1.09	-0.17	0.055
68.75	-35.71	-1.93	0.00	-144.16	0.00	144.16	3,675.54	1,837.77	6,525.34	3,267.52	1.23	-0.19	0.054
70.00	-34.31	-1.91	0.00	-141.75	0.00	141.75	3,652.91	1,826.45	6,427.71	3,218.63	1.28	-0.19	0.053
75.00	-32.96	-1.90	0.00	-132.18	0.00	132.18	3,560.66	1,780.33	6,041.44	3,025.21	1.49	-0.21	0.053
80.00	-31.65	-1.87	0.00	-122.70	0.00	122.70	3,465.68	1,732.84	5,662.31	2,835.36	1.71	-0.22	0.052
85.00	-30.37	-1.85	0.00	-113.34	0.00	113.34	3,367.96	1,683.98	5,290.83	2,649.35	1.96	-0.24	0.052
90.00	-29.13	-1.82	0.00	-104.09	0.00	104.09	3,252.82	1,626.41	4,905.37	2,456.33	2.22	-0.26	0.051
95.00	-28.87	-1.82	0.00	-94.98	0.00	94.98	3,118.51	1,559.26	4,506.69	2,256.70	2.50	-0.28	0.051
96.08	-27.24	-1.77	0.00	-93.01	0.00	93.01	3,089.41	1,544.71	4,422.54	2,214.56	2.56	-0.28	0.051
100.00	-26.93	-1.76	0.00	-86.07	0.00	86.07	2,984.21	1,492.10	4,124.91	2,065.52	2.80	-0.30	0.051
100.75	-25.93	-1.73	0.00	-84.75	0.00	84.75	3,030.38	1,515.19	4,254.26	2,130.29	2.85	-0.30	0.048
105.00	-24.79	-1.70	0.00	-77.39	0.00	77.39	2,916.22	1,458.11	3,938.09	1,971.97	3.12	-0.32	0.048
110.00	-20.91	-1.54	0.00	-68.91	0.00	68.91	2,781.91	1,390.96	3,581.76	1,793.54	3.47	-0.34	0.046
115.00	-19.93	-1.50	0.00	-61.20	0.00	61.20	2,647.61	1,323.80	3,242.33	1,623.58	3.83	-0.36	0.045
120.00	-18.98	-1.46	0.00	-53.68	0.00	53.68	2,513.30	1,256.65	2,919.79	1,462.07	4.22	-0.38	0.044
125.00	-18.11	-1.42	0.00	-46.38	0.00	46.38	2,378.99	1,189.50	2,614.15	1,309.02	4.62	-0.40	0.043
129.75	-18.04	-1.42	0.00	-39.63	0.00	39.63	2,251.40	1,125.70	2,339.44	1,171.46	5.03	-0.42	0.042
130.00	-17.02	-1.36	0.00	-39.27	0.00	39.27	2,244.69	1,122.34	2,325.40	1,164.43	5.05	-0.42	0.041
133.58	-16.81	-1.35	0.00	-34.38	0.00	34.38	1,841.02	920.51	1,881.29	942.04	5.37	-0.43	0.046
135.00	-16.05	-1.31	0.00	-32.47	0.00	32.47	1,809.31	904.65	1,816.65	909.67	5.50	-0.44	0.045
140.00	-12.15	-1.06	0.00	-25.92	0.00	25.92	1,697.39	848.69	1,597.52	799.95	5.98	-0.46	0.040
145.00	-11.51	-1.02	0.00	-20.62	0.00	20.62	1,585.46	792.73	1,392.48	697.27	6.47	-0.48	0.037
150.00	-11.01	-0.98	0.00	-15.54	0.00	15.54	1,473.54	736.77	1,201.51	601.65	6.99	-0.51	0.033
154.00	-7.78	-0.73	0.00	-11.61	0.00	11.61	1,384.00	692.00	1,058.88	530.23	7.42	-0.52	0.028
155.00	-7.28	-0.69	0.00	-10.88	0.00	10.88	1,361.62	680.81	1,024.63	513.08	7.53	-0.52	0.027
160.00	-5.84	-0.57	0.00	-7.43	0.00	7.43	1,249.70	624.85	861.82	431.55	8.09	-0.54	0.022
164.33	-5.76	-0.56	0.00	-4.96	0.00	4.96	1,152.70	576.35	732.11	366.60	8.59	-0.55	0.019
165.00	-5.46	-0.54	0.00	-4.59	0.00	4.59	1,137.78	568.89	713.10	357.08	8.67	-0.56	0.018
167.25	-5.29	-0.52	0.00	-3.38	0.00	3.38	903.09	451.54	563.74	282.29	8.93	-0.56	0.018
170.00	-2.16	-0.22	0.00	-1.95	0.00	1.95	853.84	426.92	503.47	252.11	9.26	-0.57	0.010
175.00	-1.99	-0.21	0.00	-0.83	0.00	0.83	764.30	382.15	402.61	201.60	9.85	-0.57	0.007
179.00	0.00	-0.19	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	10.33	-0.57	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.55	-1.94	0.00	-274.55	0.00	274.55	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.055
5.00	-40.27	-1.95	0.00	-264.83	0.00	264.83	4,547.42	2,273.71	11,437.5	5,727.26	0.01	-0.01	0.055
10.00	-39.01	-1.96	0.00	-255.07	0.00	255.07	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.055
15.00	-37.78	-1.96	0.00	-245.29	0.00	245.29	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.03	0.055
20.00	-36.57	-1.97	0.00	-235.48	0.00	235.48	4,360.98	2,180.49	10,145.6	5,080.38	0.09	-0.04	0.055
25.00	-35.39	-1.97	0.00	-225.64	0.00	225.64	4,293.36	2,146.68	9,718.32	4,866.39	0.14	-0.06	0.055
30.00	-35.10	-1.97	0.00	-215.79	0.00	215.79	4,223.01	2,111.51	9,293.47	4,653.64	0.21	-0.07	0.055
31.25	-33.54	-1.97	0.00	-213.33	0.00	213.33	4,205.00	2,102.50	9,187.70	4,600.68	0.23	-0.07	0.054
35.00	-32.52	-1.97	0.00	-205.95	0.00	205.95	4,149.93	2,074.96	8,871.62	4,442.40	0.29	-0.08	0.054
37.50	-31.95	-1.96	0.00	-201.04	0.00	201.04	4,149.47	2,074.73	8,869.01	4,441.10	0.33	-0.09	0.053
40.00	-30.84	-1.96	0.00	-196.12	0.00	196.12	4,111.89	2,055.95	8,659.38	4,336.13	0.38	-0.10	0.053
45.00	-29.75	-1.95	0.00	-186.32	0.00	186.32	4,034.69	2,017.35	8,243.04	4,127.64	0.49	-0.11	0.053
50.00	-28.69	-1.95	0.00	-176.55	0.00	176.55	3,954.76	1,977.38	7,830.99	3,921.31	0.61	-0.12	0.052
55.00	-27.66	-1.94	0.00	-166.81	0.00	166.81	3,872.09	1,936.05	7,423.76	3,717.40	0.75	-0.14	0.052
60.00	-27.00	-1.93	0.00	-157.12	0.00	157.12	3,786.70	1,893.35	7,021.86	3,516.15	0.90	-0.15	0.052
63.25	-26.38	-1.92	0.00	-150.84	0.00	150.84	3,729.72	1,864.86	6,763.73	3,386.89	1.01	-0.16	0.052
65.00	-25.07	-1.90	0.00	-147.48	0.00	147.48	3,698.56	1,849.28	6,625.81	3,317.83	1.07	-0.17	0.051
68.75	-24.82	-1.90	0.00	-140.36	0.00	140.36	3,675.54	1,837.77	6,525.34	3,267.52	1.20	-0.18	0.050
70.00	-23.85	-1.88	0.00	-137.99	0.00	137.99	3,652.91	1,826.45	6,427.71	3,218.63	1.25	-0.19	0.049
75.00	-22.91	-1.86	0.00	-128.61	0.00	128.61	3,560.66	1,780.33	6,041.44	3,025.21	1.45	-0.20	0.049
80.00	-22.00	-1.83	0.00	-119.33	0.00	119.33	3,465.68	1,732.84	5,662.31	2,835.36	1.67	-0.22	0.048
85.00	-21.11	-1.81	0.00	-110.17	0.00	110.17	3,367.96	1,683.98	5,290.83	2,649.35	1.91	-0.24	0.048
90.00	-20.25	-1.78	0.00	-101.14	0.00	101.14	3,252.82	1,626.41	4,905.37	2,456.33	2.17	-0.25	0.047
95.00	-20.06	-1.77	0.00	-92.25	0.00	92.25	3,118.51	1,559.26	4,506.69	2,256.70	2.44	-0.27	0.047
96.08	-18.93	-1.73	0.00	-90.33	0.00	90.33	3,089.41	1,544.71	4,422.54	2,214.56	2.50	-0.28	0.047
100.00	-18.72	-1.72	0.00	-83.56	0.00	83.56	2,984.21	1,492.10	4,124.91	2,065.52	2.74	-0.29	0.047
100.75	-18.02	-1.69	0.00	-82.28	0.00	82.28	3,030.38	1,515.19	4,254.26	2,130.29	2.78	-0.29	0.045
105.00	-17.23	-1.65	0.00	-75.10	0.00	75.10	2,916.22	1,458.11	3,938.09	1,971.97	3.05	-0.31	0.044
110.00	-14.54	-1.50	0.00	-66.85	0.00	66.85	2,781.91	1,390.96	3,581.76	1,793.54	3.39	-0.33	0.042
115.00	-13.85	-1.46	0.00	-59.35	0.00	59.35	2,647.61	1,323.80	3,242.33	1,623.58	3.74	-0.35	0.042
120.00	-13.19	-1.42	0.00	-52.04	0.00	52.04	2,513.30	1,256.65	2,919.79	1,462.07	4.12	-0.37	0.041
125.00	-12.59	-1.38	0.00	-44.94	0.00	44.94	2,378.99	1,189.50	2,614.15	1,309.02	4.51	-0.39	0.040
129.75	-12.54	-1.38	0.00	-38.39	0.00	38.39	2,251.40	1,125.70	2,339.44	1,171.46	4.91	-0.41	0.038
130.00	-11.83	-1.32	0.00	-38.04	0.00	38.04	2,244.69	1,122.34	2,325.40	1,164.43	4.93	-0.41	0.038
133.58	-11.68	-1.31	0.00	-33.30	0.00	33.30	1,841.02	920.51	1,881.29	942.04	5.24	-0.42	0.042
135.00	-11.16	-1.27	0.00	-31.44	0.00	31.44	1,809.31	904.65	1,816.65	909.67	5.37	-0.43	0.041
140.00	-8.44	-1.03	0.00	-25.10	0.00	25.10	1,697.39	848.69	1,597.52	799.95	5.83	-0.45	0.036
145.00	-8.00	-0.98	0.00	-19.97	0.00	19.97	1,585.46	792.73	1,392.48	697.27	6.31	-0.47	0.034
150.00	-7.65	-0.95	0.00	-15.04	0.00	15.04	1,473.54	736.77	1,201.51	601.65	6.82	-0.49	0.030
154.00	-5.41	-0.71	0.00	-11.24	0.00	11.24	1,384.00	692.00	1,058.88	530.23	7.24	-0.51	0.025
155.00	-5.06	-0.67	0.00	-10.54	0.00	10.54	1,361.62	680.81	1,024.63	513.08	7.34	-0.51	0.024
160.00	-4.06	-0.55	0.00	-7.19	0.00	7.19	1,249.70	624.85	861.82	431.55	7.89	-0.53	0.020
164.33	-4.00	-0.54	0.00	-4.81	0.00	4.81	1,152.70	576.35	732.11	366.60	8.37	-0.54	0.017
165.00	-3.80	-0.52	0.00	-4.44	0.00	4.44	1,137.78	568.89	713.10	357.08	8.45	-0.54	0.016
167.25	-3.67	-0.50	0.00	-3.27	0.00	3.27	903.09	451.54	563.74	282.29	8.70	-0.55	0.016
170.00	-1.50	-0.22	0.00	-1.89	0.00	1.89	853.84	426.92	503.47	252.11	9.02	-0.55	0.009
175.00	-1.38	-0.20	0.00	-0.80	0.00	0.80	764.30	382.15	402.61	201.60	9.60	-0.56	0.006
179.00	0.00	-0.19	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	10.07	-0.56	0.000

Equivalent Modal Forces Analysis

(Based on ASCE 7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.85
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM — Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	1.848	1.766	1.062	0.339	40	170
46	172.50	190	1.755	1.343	0.902	0.281	46	236
45	168.63	143	1.677	1.038	0.780	0.236	29	177
44	166.13	236	1.628	0.867	0.709	0.208	43	293
43	164.67	72	1.599	0.777	0.669	0.192	12	89
42	162.17	290	1.551	0.635	0.606	0.167	42	359
41	157.50	400	1.463	0.415	0.500	0.123	43	495
40	154.50	83	1.408	0.299	0.440	0.098	7	103
39	152.00	397	1.363	0.217	0.394	0.078	27	492
38	147.50	520	1.283	0.098	0.322	0.046	21	644
37	142.50	546	1.198	0.003	0.253	0.016	7	676
36	137.50	608	1.115	-0.061	0.196	-0.009	-5	753
35	134.29	177	1.064	-0.088	0.165	-0.022	-3	219
34	131.79	817	1.025	-0.103	0.144	-0.031	-22	1,012
33	129.88	58	0.995	-0.111	0.129	-0.037	-2	72
32	127.38	700	0.957	-0.118	0.111	-0.044	-26	867
31	122.50	767	0.885	-0.121	0.082	-0.052	-35	950
30	117.50	797	0.814	-0.114	0.058	-0.055	-38	988
29	112.50	828	0.747	-0.100	0.040	-0.053	-38	1,026
28	107.50	923	0.682	-0.081	0.026	-0.046	-37	1,143
27	102.88	808	0.624	-0.062	0.018	-0.034	-24	1,002
26	100.38	247	0.594	-0.051	0.014	-0.027	-6	306
25	98.04	1,313	0.567	-0.041	0.011	-0.020	-22	1,627
24	95.54	213	0.538	-0.030	0.009	-0.011	-2	263
23	92.50	1,000	0.505	-0.018	0.007	-0.001	-1	1,238
22	87.50	1,030	0.452	0.001	0.006	0.016	14	1,277
21	82.50	1,061	0.401	0.018	0.006	0.030	28	1,315
20	77.50	1,092	0.354	0.032	0.008	0.041	39	1,353
19	72.50	1,123	0.310	0.043	0.011	0.049	47	1,391
18	69.38	285	0.284	0.049	0.014	0.052	13	354
17	66.88	1,522	0.264	0.053	0.016	0.054	71	1,885
16	64.13	722	0.243	0.057	0.018	0.055	35	895
15	61.63	763	0.224	0.059	0.020	0.056	37	946
14	57.50	1,200	0.195	0.063	0.024	0.056	59	1,486

13	52.50	1,231	0.163	0.067	0.028	0.056	60	1,524
12	47.50	1,261	0.133	0.069	0.033	0.055	61	1,563
11	42.50	1,292	0.107	0.071	0.036	0.054	61	1,601
10	38.75	658	0.089	0.071	0.039	0.054	31	815
9	36.25	1,188	0.078	0.072	0.040	0.053	55	1,472
8	33.13	1,811	0.065	0.072	0.041	0.052	82	2,243
7	30.63	337	0.055	0.071	0.042	0.052	15	418
6	27.50	1,369	0.045	0.071	0.042	0.051	60	1,696
5	22.50	1,400	0.030	0.068	0.040	0.049	60	1,734
4	17.50	1,431	0.018	0.063	0.037	0.046	57	1,772
3	12.50	1,461	0.009	0.054	0.031	0.041	52	1,811
2	7.50	1,492	0.003	0.039	0.022	0.032	41	1,849
1	2.50	1,523	0.000	0.016	0.008	0.015	19	1,887
10' Omni	179.00	25	1.890	1.980	1.140	0.366	8	31
18' Dipole	179.00	55	1.890	1.980	1.140	0.366	17	68
8' Yagi	179.00	30	1.890	1.980	1.140	0.366	10	37
Round LowProfile Pl	179.00	1,500	1.890	1.980	1.140	0.366	476	1,858
Ericsson KRY 112 144	170.00	33	1.705	1.140	0.822	0.251	7	41
Ericsson RRUS 11 B12	170.00	152	1.705	1.140	0.822	0.251	33	188
Ericsson AIR 21, 1.3	170.00	249	1.705	1.140	0.822	0.251	54	308
Ericsson AIR 21, 1.3	170.00	244	1.705	1.140	0.822	0.251	53	303
AndrewLNX-6515DS-VT	170.00	154	1.705	1.140	0.822	0.251	34	191
Round LowProfile Pl	170.00	1,500	1.705	1.140	0.822	0.251	327	1,858
RCU	160.00	3	1.510	0.526	0.555	0.146	0	4
DragonWave Horizon C	160.00	34	1.510	0.526	0.555	0.146	4	43
12" x 12" Junction B	160.00	10	1.510	0.526	0.555	0.146	1	12
Samsung U-RAS	160.00	99	1.510	0.526	0.555	0.146	13	123
Argus LLPX310R	160.00	86	1.510	0.526	0.555	0.146	11	106
DragonWave A-ANT-18G	160.00	81	1.510	0.526	0.555	0.146	10	101
Side Arms	160.00	560	1.510	0.526	0.555	0.146	71	694
Powerwave LGP21401	154.00	85	1.399	0.282	0.431	0.094	7	105
Raycap DC6-48-60-18-	154.00	32	1.399	0.282	0.431	0.094	3	39
Ericsson RRUS 11 (Ba	154.00	330	1.399	0.282	0.431	0.094	27	409
Ericsson RRUS 12 w/	154.00	214	1.399	0.282	0.431	0.094	17	265
Powerwave 7770.00	154.00	105	1.399	0.282	0.431	0.094	9	130
CCI OPA-65R-LCUU-H8	154.00	264	1.399	0.282	0.431	0.094	21	327
Round LowProfile Pl	154.00	1,500	1.399	0.282	0.431	0.094	122	1,858
Nokia FWHR	140.00	79	1.156	-0.033	0.223	0.003	0	98
Alcatel-Lucent 800 M	140.00	192	1.156	-0.033	0.223	0.003	0	238
Alcatel-Lucent 1900M	140.00	132	1.156	-0.033	0.223	0.003	0	164
Alcatel-Lucent TD-RR	140.00	198	1.156	-0.033	0.223	0.003	0	246
RFS APXVTM14-C-I20	140.00	169	1.156	-0.033	0.223	0.003	0	209
RFS APXVTM14-C-I20	140.00	159	1.156	-0.033	0.223	0.003	0	197
RFS APXV9ERR18-C-A20	140.00	62	1.156	-0.033	0.223	0.003	0	77
RFS APXVSPP18-C-A20	140.00	114	1.156	-0.033	0.223	0.003	0	141
Round LowProfile Pl	140.00	1,500	1.156	-0.033	0.223	0.003	3	1,858
Alcatel-Lucent RRH2X	110.00	132	0.714	-0.091	0.033	-0.050	-6	164
Alcatel-Lucent RRH2X	110.00	129	0.714	-0.091	0.033	-0.050	-6	160
Alcatel-Lucent RRH2x	110.00	170	0.714	-0.091	0.033	-0.050	-7	211
Antel BXA-80063/4CF	110.00	30	0.714	-0.091	0.033	-0.050	-1	37
RFS DB-T1-6Z-8AB-0Z	110.00	44	0.714	-0.091	0.033	-0.050	-2	55
Antel BXA-70063-6CF-	110.00	51	0.714	-0.091	0.033	-0.050	-2	63
Commscope SBNHH-	110.00	244	0.714	-0.091	0.033	-0.050	-11	302
Flat LowProfile Pla	110.00	1,500	0.714	-0.091	0.033	-0.050	-65	1,858
		49,774	85.673	26.930	26.871	6.638	2,294	61,661

Load Case (0.9 - 0.2Sds) * DL + E EMAM — Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	1.848	1.766	1.062	0.339	40	118
46	172.50	190	1.755	1.343	0.902	0.281	46	164
45	168.63	143	1.677	1.038	0.780	0.236	29	123
44	166.13	236	1.628	0.867	0.709	0.208	43	204
43	164.67	72	1.599	0.777	0.669	0.192	12	62
42	162.17	290	1.551	0.635	0.606	0.167	42	249
41	157.50	400	1.463	0.415	0.500	0.123	43	344
40	154.50	83	1.408	0.299	0.440	0.098	7	72
39	152.00	397	1.363	0.217	0.394	0.078	27	342
38	147.50	520	1.283	0.098	0.322	0.046	21	448
37	142.50	546	1.198	0.003	0.253	0.016	7	470
36	137.50	608	1.115	-0.061	0.196	-0.009	-5	524
35	134.29	177	1.064	-0.088	0.165	-0.022	-3	152
34	131.79	817	1.025	-0.103	0.144	-0.031	-22	704
33	129.88	58	0.995	-0.111	0.129	-0.037	-2	50
32	127.38	700	0.957	-0.118	0.111	-0.044	-26	603
31	122.50	767	0.885	-0.121	0.082	-0.052	-35	660
30	117.50	797	0.814	-0.114	0.058	-0.055	-38	687
29	112.50	828	0.747	-0.100	0.040	-0.053	-38	713
28	107.50	923	0.682	-0.081	0.026	-0.046	-37	795
27	102.88	808	0.624	-0.062	0.018	-0.034	-24	696
26	100.38	247	0.594	-0.051	0.014	-0.027	-6	213
25	98.04	1,313	0.567	-0.041	0.011	-0.020	-22	1,131
24	95.54	213	0.538	-0.030	0.009	-0.011	-2	183
23	92.50	1,000	0.505	-0.018	0.007	-0.001	-1	861
22	87.50	1,030	0.452	0.001	0.006	0.016	14	887
21	82.50	1,061	0.401	0.018	0.006	0.030	28	914
20	77.50	1,092	0.354	0.032	0.008	0.041	39	940
19	72.50	1,123	0.310	0.043	0.011	0.049	47	967
18	69.38	285	0.284	0.049	0.014	0.052	13	246
17	66.88	1,522	0.264	0.053	0.016	0.054	71	1,311
16	64.13	722	0.243	0.057	0.018	0.055	35	622
15	61.63	763	0.224	0.059	0.020	0.056	37	657
14	57.50	1,200	0.195	0.063	0.024	0.056	59	1,033
13	52.50	1,231	0.163	0.067	0.028	0.056	60	1,060
12	47.50	1,261	0.133	0.069	0.033	0.055	61	1,086
11	42.50	1,292	0.107	0.071	0.036	0.054	61	1,113
10	38.75	658	0.089	0.071	0.039	0.054	31	566
9	36.25	1,188	0.078	0.072	0.040	0.053	55	1,023
8	33.13	1,811	0.065	0.072	0.041	0.052	82	1,559
7	30.63	337	0.055	0.071	0.042	0.052	15	291
6	27.50	1,369	0.045	0.071	0.042	0.051	60	1,179
5	22.50	1,400	0.030	0.068	0.040	0.049	60	1,206
4	17.50	1,431	0.018	0.063	0.037	0.046	57	1,232
3	12.50	1,461	0.009	0.054	0.031	0.041	52	1,259
2	7.50	1,492	0.003	0.039	0.022	0.032	41	1,285
1	2.50	1,523	0.000	0.016	0.008	0.015	19	1,312
10' Omni	179.00	25	1.890	1.980	1.140	0.366	8	22
18' Dipole	179.00	55	1.890	1.980	1.140	0.366	17	47
8' Yagi	179.00	30	1.890	1.980	1.140	0.366	10	26
Round LowProfile Pl	179.00	1,500	1.890	1.980	1.140	0.366	476	1,292
Ericsson KRY 112 144	170.00	33	1.705	1.140	0.822	0.251	7	28
Ericsson RRUS 11 B12	170.00	152	1.705	1.140	0.822	0.251	33	131
Ericsson AIR 21, 1.3	170.00	249	1.705	1.140	0.822	0.251	54	214
Ericsson AIR 21, 1.3	170.00	244	1.705	1.140	0.822	0.251	53	211
AndrewLNX-6515DS-VT	170.00	154	1.705	1.140	0.822	0.251	34	133

Round LowProfile Pl	170.00	1,500	1.705	1.140	0.822	0.251	327	1,292
RCU	160.00	3	1.510	0.526	0.555	0.146	0	3
DragonWave Horizon C	160.00	34	1.510	0.526	0.555	0.146	4	30
12' x 12' Junction B	160.00	10	1.510	0.526	0.555	0.146	1	9
Samsung U-RAS	160.00	99	1.510	0.526	0.555	0.146	13	85
Argus LLPX310R	160.00	86	1.510	0.526	0.555	0.146	11	74
DragonWave A-ANT-18G	160.00	81	1.510	0.526	0.555	0.146	10	70
Side Arms	160.00	560	1.510	0.526	0.555	0.146	71	482
Powerwave LGP21401	154.00	85	1.399	0.282	0.431	0.094	7	73
Raycap DC6-48-60-18-	154.00	32	1.399	0.282	0.431	0.094	3	27
Ericsson RRUS 11 (Ba	154.00	330	1.399	0.282	0.431	0.094	27	284
Ericsson RRUS 12 w/	154.00	214	1.399	0.282	0.431	0.094	17	184
Powerwave 7770.00	154.00	105	1.399	0.282	0.431	0.094	9	90
CCI OPA-65R-LCUU-H8	154.00	264	1.399	0.282	0.431	0.094	21	227
Round LowProfile Pl	154.00	1,500	1.399	0.282	0.431	0.094	122	1,292
Nokia FWHR	140.00	79	1.156	-0.033	0.223	0.003	0	68
Alcatel-Lucent 800 M	140.00	192	1.156	-0.033	0.223	0.003	0	165
Alcatel-Lucent 1900M	140.00	132	1.156	-0.033	0.223	0.003	0	114
Alcatel-Lucent TD-RR	140.00	198	1.156	-0.033	0.223	0.003	0	171
RFS APXVTM14-C-I20	140.00	169	1.156	-0.033	0.223	0.003	0	145
RFS APXVTM14-C-I20	140.00	159	1.156	-0.033	0.223	0.003	0	137
RFS APXV9ERR18-C-A20	140.00	62	1.156	-0.033	0.223	0.003	0	53
RFS APXVSPP18-C-A20	140.00	114	1.156	-0.033	0.223	0.003	0	98
Round LowProfile Pl	140.00	1,500	1.156	-0.033	0.223	0.003	3	1,292
Alcatel-Lucent RRH2X	110.00	132	0.714	-0.091	0.033	-0.050	-6	114
Alcatel-Lucent RRH2X	110.00	129	0.714	-0.091	0.033	-0.050	-6	111
Alcatel-Lucent RRH2x	110.00	170	0.714	-0.091	0.033	-0.050	-7	146
Antel BXA-80063/4CF	110.00	30	0.714	-0.091	0.033	-0.050	-1	26
RFS DB-T1-6Z-8AB-0Z	110.00	44	0.714	-0.091	0.033	-0.050	-2	38
Antel BXA-70063-6CF-	110.00	51	0.714	-0.091	0.033	-0.050	-2	44
Commscope SBNHH-	110.00	244	0.714	-0.091	0.033	-0.050	-11	210
Flat LowProfile Pla	110.00	1,500	0.714	-0.091	0.033	-0.050	-65	1,292
		49,774	85,673	26,930	26,871	6,638	2,294	42,864

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-59.77	-2.28	0.00	-299.43	0.00	299.43	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.063
5.00	-57.93	-2.25	0.00	-288.02	0.00	288.02	4,547.42	2,273.71	11,437.5	5,727.26	0.01	-0.01	0.063
10.00	-56.11	-2.21	0.00	-276.77	0.00	276.77	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.063
15.00	-54.34	-2.16	0.00	-265.72	0.00	265.72	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.04	0.062
20.00	-52.61	-2.11	0.00	-254.91	0.00	254.91	4,360.98	2,180.49	10,145.6	5,080.38	0.10	-0.05	0.062
25.00	-50.91	-2.06	0.00	-244.33	0.00	244.33	4,293.36	2,146.68	9,718.32	4,866.39	0.16	-0.06	0.062
30.00	-50.49	-2.06	0.00	-234.01	0.00	234.01	4,223.01	2,111.51	9,293.47	4,653.64	0.23	-0.07	0.062
31.25	-48.25	-1.98	0.00	-231.44	0.00	231.44	4,205.00	2,102.50	9,187.70	4,600.68	0.25	-0.08	0.062
35.00	-46.78	-1.93	0.00	-224.03	0.00	224.03	4,149.93	2,074.96	8,871.62	4,442.40	0.31	-0.09	0.062
37.50	-45.96	-1.90	0.00	-219.21	0.00	219.21	4,149.47	2,074.73	8,869.01	4,441.10	0.36	-0.10	0.060
40.00	-44.36	-1.85	0.00	-214.46	0.00	214.46	4,111.89	2,055.95	8,659.38	4,336.13	0.41	-0.10	0.060
45.00	-42.80	-1.79	0.00	-205.22	0.00	205.22	4,034.69	2,017.35	8,243.04	4,127.64	0.53	-0.12	0.060
50.00	-41.27	-1.74	0.00	-196.25	0.00	196.25	3,954.76	1,977.38	7,830.99	3,921.31	0.66	-0.13	0.060
55.00	-39.79	-1.69	0.00	-187.54	0.00	187.54	3,872.09	1,936.05	7,423.76	3,717.40	0.81	-0.15	0.061
60.00	-38.84	-1.66	0.00	-179.08	0.00	179.08	3,786.70	1,893.35	7,021.86	3,516.15	0.98	-0.17	0.061
63.25	-37.95	-1.63	0.00	-173.68	0.00	173.68	3,729.72	1,864.86	6,763.73	3,386.89	1.10	-0.18	0.061
65.00	-36.06	-1.56	0.00	-170.82	0.00	170.82	3,698.56	1,849.28	6,625.81	3,317.83	1.16	-0.19	0.061
68.75	-35.71	-1.55	0.00	-164.97	0.00	164.97	3,675.54	1,837.77	6,525.34	3,267.52	1.31	-0.20	0.060
70.00	-34.32	-1.51	0.00	-163.03	0.00	163.03	3,652.91	1,826.45	6,427.71	3,218.63	1.37	-0.21	0.060
75.00	-32.96	-1.47	0.00	-155.49	0.00	155.49	3,560.66	1,780.33	6,041.44	3,025.21	1.59	-0.22	0.061
80.00	-31.65	-1.45	0.00	-148.12	0.00	148.12	3,465.68	1,732.84	5,662.31	2,835.36	1.84	-0.24	0.061
85.00	-30.37	-1.45	0.00	-140.85	0.00	140.85	3,367.96	1,683.98	5,290.83	2,649.35	2.11	-0.27	0.062
90.00	-29.13	-1.45	0.00	-133.62	0.00	133.62	3,252.82	1,626.41	4,905.37	2,456.33	2.40	-0.29	0.063
95.00	-28.87	-1.46	0.00	-126.37	0.00	126.37	3,118.51	1,559.26	4,506.69	2,256.70	2.71	-0.31	0.065
96.08	-27.24	-1.48	0.00	-124.78	0.00	124.78	3,089.41	1,544.71	4,422.54	2,214.56	2.78	-0.32	0.065
100.00	-26.93	-1.49	0.00	-118.99	0.00	118.99	2,984.21	1,492.10	4,124.91	2,065.52	3.06	-0.34	0.067
100.75	-25.93	-1.51	0.00	-117.87	0.00	117.87	3,030.38	1,515.19	4,254.26	2,130.29	3.11	-0.35	0.064
105.00	-24.79	-1.56	0.00	-111.43	0.00	111.43	2,916.22	1,458.11	3,938.09	1,971.97	3.43	-0.37	0.065
110.00	-20.91	-1.68	0.00	-103.65	0.00	103.65	2,781.91	1,390.96	3,581.76	1,793.54	3.83	-0.40	0.065
115.00	-19.92	-1.72	0.00	-95.26	0.00	95.26	2,647.61	1,323.80	3,242.33	1,623.58	4.26	-0.43	0.066
120.00	-18.97	-1.76	0.00	-86.66	0.00	86.66	2,513.30	1,256.65	2,919.79	1,462.07	4.73	-0.46	0.067
125.00	-18.10	-1.79	0.00	-77.87	0.00	77.87	2,378.99	1,189.50	2,614.15	1,309.02	5.23	-0.49	0.067
129.75	-18.03	-1.80	0.00	-69.38	0.00	69.38	2,251.40	1,125.70	2,339.44	1,171.46	5.74	-0.53	0.067
130.00	-17.02	-1.81	0.00	-68.93	0.00	68.93	2,244.69	1,122.34	2,325.40	1,164.43	5.77	-0.53	0.067
133.58	-16.80	-1.82	0.00	-62.43	0.00	62.43	1,841.02	920.51	1,881.29	942.04	6.18	-0.56	0.075
135.00	-16.04	-1.82	0.00	-59.86	0.00	59.86	1,809.31	904.65	1,816.65	909.67	6.34	-0.57	0.075
140.00	-12.14	-1.78	0.00	-50.73	0.00	50.73	1,697.39	848.69	1,597.52	799.95	6.96	-0.61	0.071
145.00	-11.49	-1.76	0.00	-41.83	0.00	41.83	1,585.46	792.73	1,392.48	697.27	7.63	-0.65	0.067
150.00	-11.00	-1.74	0.00	-33.03	0.00	33.03	1,473.54	736.77	1,201.51	601.65	8.34	-0.70	0.062
154.00	-7.77	-1.48	0.00	-26.09	0.00	26.09	1,384.00	692.00	1,058.88	530.23	8.93	-0.73	0.055
155.00	-7.27	-1.44	0.00	-24.60	0.00	24.60	1,361.62	680.81	1,024.63	513.08	9.09	-0.74	0.053
160.00	-5.83	-1.27	0.00	-17.41	0.00	17.41	1,249.70	624.85	861.82	431.55	9.88	-0.78	0.045
164.33	-5.74	-1.26	0.00	-11.90	0.00	11.90	1,152.70	576.35	732.11	366.60	10.60	-0.81	0.037
165.00	-5.45	-1.21	0.00	-11.06	0.00	11.06	1,137.78	568.89	713.10	357.08	10.72	-0.81	0.036
167.25	-5.27	-1.18	0.00	-8.33	0.00	8.33	903.09	451.54	563.74	282.29	11.10	-0.82	0.035
170.00	-2.16	-0.58	0.00	-5.08	0.00	5.08	853.84	426.92	503.47	252.11	11.58	-0.84	0.023
175.00	-1.99	-0.54	0.00	-2.16	0.00	2.16	764.30	382.15	402.61	201.60	12.47	-0.85	0.013
179.00	0.00	-0.51	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	13.19	-0.86	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.55	-2.28	0.00	-293.11	0.00	293.11	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.058
5.00	-40.27	-2.24	0.00	-281.72	0.00	281.72	4,547.42	2,273.71	11,437.5	5,727.26	0.01	-0.01	0.058
10.00	-39.01	-2.20	0.00	-270.50	0.00	270.50	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.058
15.00	-37.78	-2.15	0.00	-259.50	0.00	259.50	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.03	0.058
20.00	-36.57	-2.10	0.00	-248.75	0.00	248.75	4,360.98	2,180.49	10,145.6	5,080.38	0.10	-0.05	0.057
25.00	-35.39	-2.04	0.00	-238.26	0.00	238.26	4,293.36	2,146.68	9,718.32	4,866.39	0.15	-0.06	0.057
30.00	-35.10	-2.03	0.00	-228.05	0.00	228.05	4,223.01	2,111.51	9,293.47	4,653.64	0.22	-0.07	0.057
31.25	-33.54	-1.95	0.00	-225.50	0.00	225.50	4,205.00	2,102.50	9,187.70	4,600.68	0.24	-0.08	0.057
35.00	-32.52	-1.90	0.00	-218.18	0.00	218.18	4,149.93	2,074.96	8,871.62	4,442.40	0.30	-0.09	0.057
37.50	-31.95	-1.88	0.00	-213.42	0.00	213.42	4,149.47	2,074.73	8,869.01	4,441.10	0.35	-0.09	0.056
40.00	-30.84	-1.82	0.00	-208.73	0.00	208.73	4,111.89	2,055.95	8,659.38	4,336.13	0.40	-0.10	0.056
45.00	-29.75	-1.76	0.00	-199.64	0.00	199.64	4,034.69	2,017.35	8,243.04	4,127.64	0.52	-0.12	0.056
50.00	-28.69	-1.71	0.00	-190.82	0.00	190.82	3,954.76	1,977.38	7,830.99	3,921.31	0.65	-0.13	0.056
55.00	-27.66	-1.66	0.00	-182.28	0.00	182.28	3,872.09	1,936.05	7,423.76	3,717.40	0.79	-0.15	0.056
60.00	-27.00	-1.62	0.00	-174.00	0.00	174.00	3,786.70	1,893.35	7,021.86	3,516.15	0.95	-0.16	0.057
63.25	-26.38	-1.59	0.00	-168.73	0.00	168.73	3,729.72	1,864.86	6,763.73	3,386.89	1.07	-0.17	0.057
65.00	-25.07	-1.52	0.00	-165.94	0.00	165.94	3,698.56	1,849.28	6,625.81	3,317.83	1.13	-0.18	0.057
68.75	-24.82	-1.51	0.00	-160.24	0.00	160.24	3,675.54	1,837.77	6,525.34	3,267.52	1.28	-0.19	0.056
70.00	-23.85	-1.47	0.00	-158.35	0.00	158.35	3,652.91	1,826.45	6,427.71	3,218.63	1.33	-0.20	0.056
75.00	-22.91	-1.43	0.00	-151.03	0.00	151.03	3,560.66	1,780.33	6,041.44	3,025.21	1.55	-0.22	0.056
80.00	-22.00	-1.41	0.00	-143.87	0.00	143.87	3,465.68	1,732.84	5,662.31	2,835.36	1.79	-0.24	0.057
85.00	-21.11	-1.40	0.00	-136.84	0.00	136.84	3,367.96	1,683.98	5,290.83	2,649.35	2.05	-0.26	0.058
90.00	-20.25	-1.40	0.00	-129.86	0.00	129.86	3,252.82	1,626.41	4,905.37	2,456.33	2.34	-0.28	0.059
95.00	-20.07	-1.41	0.00	-122.85	0.00	122.85	3,118.51	1,559.26	4,506.69	2,256.70	2.64	-0.31	0.061
96.08	-18.93	-1.43	0.00	-121.32	0.00	121.32	3,089.41	1,544.71	4,422.54	2,214.56	2.71	-0.31	0.061
100.00	-18.72	-1.44	0.00	-115.73	0.00	115.73	2,984.21	1,492.10	4,124.91	2,065.52	2.98	-0.33	0.062
100.75	-18.02	-1.46	0.00	-114.65	0.00	114.65	3,030.38	1,515.19	4,254.26	2,130.29	3.03	-0.34	0.060
105.00	-17.23	-1.50	0.00	-108.44	0.00	108.44	2,916.22	1,458.11	3,938.09	1,971.97	3.34	-0.36	0.061
110.00	-14.53	-1.63	0.00	-100.93	0.00	100.93	2,781.91	1,390.96	3,581.76	1,793.54	3.73	-0.39	0.062
115.00	-13.85	-1.67	0.00	-92.79	0.00	92.79	2,647.61	1,323.80	3,242.33	1,623.58	4.15	-0.42	0.062
120.00	-13.18	-1.71	0.00	-84.44	0.00	84.44	2,513.30	1,256.65	2,919.79	1,462.07	4.61	-0.45	0.063
125.00	-12.58	-1.74	0.00	-75.91	0.00	75.91	2,378.99	1,189.50	2,614.15	1,309.02	5.09	-0.48	0.063
129.75	-12.53	-1.74	0.00	-67.67	0.00	67.67	2,251.40	1,125.70	2,339.44	1,171.46	5.59	-0.51	0.063
130.00	-11.83	-1.76	0.00	-67.23	0.00	67.23	2,244.69	1,122.34	2,325.40	1,164.43	5.62	-0.52	0.063
133.58	-11.67	-1.77	0.00	-60.93	0.00	60.93	1,841.02	920.51	1,881.29	942.04	6.01	-0.54	0.071
135.00	-11.15	-1.77	0.00	-58.43	0.00	58.43	1,809.31	904.65	1,816.65	909.67	6.18	-0.55	0.070
140.00	-8.43	-1.74	0.00	-49.58	0.00	49.58	1,697.39	848.69	1,597.52	799.95	6.78	-0.60	0.067
145.00	-7.99	-1.72	0.00	-40.89	0.00	40.89	1,585.46	792.73	1,392.48	697.27	7.43	-0.64	0.064
150.00	-7.64	-1.69	0.00	-32.31	0.00	32.31	1,473.54	736.77	1,201.51	601.65	8.12	-0.68	0.059
154.00	-5.39	-1.45	0.00	-25.55	0.00	25.55	1,384.00	692.00	1,058.88	530.23	8.70	-0.71	0.052
155.00	-5.05	-1.41	0.00	-24.10	0.00	24.10	1,361.62	680.81	1,024.63	513.08	8.85	-0.72	0.051
160.00	-4.05	-1.24	0.00	-17.06	0.00	17.06	1,249.70	624.85	861.82	431.55	9.63	-0.76	0.043
164.33	-3.99	-1.23	0.00	-11.67	0.00	11.67	1,152.70	576.35	732.11	366.60	10.33	-0.79	0.035
165.00	-3.78	-1.19	0.00	-10.85	0.00	10.85	1,137.78	568.89	713.10	357.08	10.44	-0.79	0.034
167.25	-3.66	-1.16	0.00	-8.17	0.00	8.17	903.09	451.54	563.74	282.29	10.81	-0.80	0.033
170.00	-1.50	-0.57	0.00	-4.99	0.00	4.99	853.84	426.92	503.47	252.11	11.28	-0.82	0.022
175.00	-1.38	-0.53	0.00	-2.12	0.00	2.12	764.30	382.15	402.61	201.60	12.15	-0.83	0.012
179.00	0.00	-0.51	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	12.85	-0.84	0.000

Analysis Summary

Load Case	Reactions: Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage: Elev (ft)	Interaction Ratio
1.2D + 1.6W	29.76	0.00	59.69	0.00	0.00	3716.69	0.00	0.64
0.9D + 1.6W	29.74	0.00	44.76	0.00	0.00	3661.47	0.00	0.63
1.2D + 1.0Di + 1.0Wi	9.19	0.00	97.36	0.00	0.00	1210.01	0.00	0.22
(1.2 + 0.2Sds) * DL + E ELFM	1.95	0.00	59.77	0.00	0.00	279.76	0.00	0.06
(1.2 + 0.2Sds) * DL + E EMAM	2.28	0.00	59.77	0.00	0.00	299.43	133.58	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.94	0.00	41.55	0.00	0.00	274.55	0.00	0.06
(0.9 - 0.2Sds) * DL + E EMAM	2.28	0.00	41.55	0.00	0.00	293.11	133.58	0.07
1.0D + 1.0W	7.11	0.00	49.77	0.00	0.00	881.10	0.00	0.16

Base/Flange Plate	Plate Type	***Baseplate***	
	Pole Diameter	63	in
	Pole Thickness	0.375	in
	Plate Diameter	73	in
	Plate Thickness	1.5	in
	Plate Fy	50	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	1731.33	k-in
	Applied	93.16	k-in
Stiffeners	#	***45***	***Show***
	Thickness	1	in
	Length	4	in
	Height	12	in
	Chamfer	0	in
	Offset Angle	0	°
	Fy	50	ksi

Bolts	#	***45***	
	Bolt Circle	68	in
	(R)adial / (S)quare	R	
●	Diameter	1.25	in
	Hole Diameter	1.375	in
	Type	A687	
	Fy	105	ksi
	Fu	150	ksi
	ϕ_s Resistance	116.29	k
	Applied	59.62	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment 3716.7 k-ft

Axial 59.7 k

Date	1/6/2017
Engineer	T. Kassakatis
Site #	370627
Carrier	Sprint Nextel

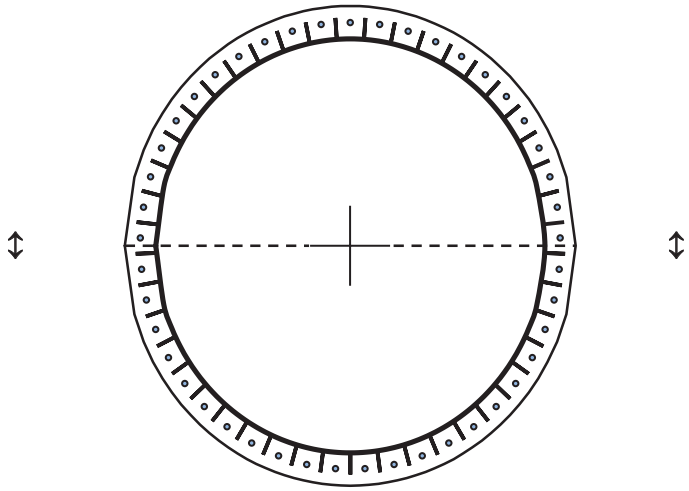


Plate Stress Ratio:

0.05 (Pass)

Bolt Stress Ratio:

0.51 (Pass)

EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT60XC018

Marcus Group Comm Tower
605 Willard Ave
Newington, CT 06111

September 26, 2016

EBI Project Number: 6216004301

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	12.72 %

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

EBI Consulting
environmental | engineering | due diligence

September 26, 2016

SPRINT
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Emissions Analysis for Site: **CT60XC018 – Marcus Group Comm Tower**

Site Composite MPE Value: **12.72%** - MPE% in full compliance

EBI Consulting was directed to analyze the proposed SPRINT facility located at **605 Willard Ave, Newington, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT 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 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz 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 SPRINT Wireless antenna facility located at **605 Willard Ave, Newington, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT 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) 1 LTE channel (850 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

2) 3 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

3) 2 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 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.

5) For the following calculations the sample point was the top of a 6-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.

6) The antennas used in this modeling are the **RFS APXSPP18-C-A20, RFS APXV9ERR18-C-A20 and the RFS APXVTMM14-C-120** for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2500 MHz 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.

7) The antenna mounting height centerlines of the proposed antennas are **140 feet** above ground level (AGL) for **Sector A**, **140 feet** above ground level (AGL) for **Sector B** and **140 feet** above ground level (AGL) for Sector C.

8) 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.

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXV9ERR18-C-A20	Make / Model:	RFS APXSPP18-C-A20	Make / Model:	RFS APXSPP18-C-A20
Gain:	11.9 / 14.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	**140 feet**	Height (AGL):	**140 feet**	Height (AGL):	**140 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):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	6,491.82	ERP (W):	8,315.47	ERP (W):	8,315.47
Antenna A1 MPE%	**1.44 %**	Antenna B1 MPE%	**1.87 %**	Antenna C1 MPE%	**1.87 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVTMM14-C-120	Make / Model:	RFS APXVTMM14-C-120	Make / Model:	RFS APXVTMM14-C-120
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	**140 feet**	Height (AGL):	**140 feet**	Height (AGL):	**140 feet**
Frequency Bands	2500 MHz	Frequency Bands	2500 MHz	Frequency Bands	2500 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	**0.93 %**	Antenna B2 MPE%	**0.93 %**	Antenna C2 MPE%	**0.93 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.80 %**
Nextel	0.44 %
Town of Newington	0.03 %
Verizon Wireless	5.09 %
Clearwire	0.08 %
T-Mobile	1.50 %
AT&T	2.78 %
Site Total MPE %:	**12.72 %**

SPRINT Sector A Total:	2.38 %
SPRINT Sector B Total:	2.80 %
SPRINT Sector C Total:	2.80 %
Site Total:	12.72 %

SPRINT _ Frequency Band / Technology (Max Values: Sectors B&C)	# 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 LTE	1	1,312.66	140	2.63	850 MHz	567	0.46%
AT&T 1900 MHz (PCS) LTE	3	2,334.27	140	14.02	1900 MHz (PCS)	1000	1.40%
AT&T 2500 MHz (BRS) LTE	2	2,334.27	140	9.35	2500 MHz (BRS)	1000	0.93%
						Total:	2.80%

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 SPRINT 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:

SPRINT Sector	Power Density Value (%)
Sector A:	2.38 %
Sector B:	2.80 %
Sector C:	2.80 %
SPRINT Maximum Total (per sector):	2.80 %
Site Total:	12.72 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **12.72 %** 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.

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2015.

Information on the Property Records for the Municipality of Newington was last updated on 9/14/2016.

Property Summary Information

Parcel Data And Values | Building | Outbuildings | Sales | Permits | Google Map

Parcel Information

Location:	605 WILLARD AVE	Property Use:	School	Primary Use:	Elementary School
Unique ID:	N0046500	Map Block Lot:	09/300/000	Acres:	80.59
490 Acres:	0.00	Zone:	R-12/	Volume / Page:	0182/0151
Developers Map / Lot:	N/W 1860 & 1969	Census:			

Value Information

	Appraised Value	70% Assessed Value
Land	8,147,790	5,703,450
Buildings	22,609,625	15,826,740

	Appraised Value	70% Assessed Value
Detached Outbuildings	784,775	549,340
Total	31,542,190	22,079,530

Owner's Information

Owner's Data
NEWINGTON TOWN OF 605 WILLARD AVE Newington CT 06111

Back To Search (JavaScript:window.history.back(1);)

Print View (PrintPage.aspx?towncode=094&uniqueid=N0046500)

Jennifer Ardis

Subject: RE: 605 Willard Ave. - Sprint Monopole - CT60XC018

-----Original Message-----
From: Minor, Craig [mailto:CMinor@NewingtonCT.Gov]
Sent: Wednesday, September 14, 2016 11:01 AM
To: Jennifer Ardis <jardis@transcendwireless.com>
Subject: RE: 605 Willard Ave. - Sprint Monopole - CT60XC018

Jennifer:

I do not have a copy of the original approval, which apparently took place prior to 2004.

Craig Minor, AICP
Town Planner

-----Original Message-----
From: Jennifer Ardis [mailto:jardis@transcendwireless.com]
Sent: Wednesday, September 14, 2016 10:18 AM
To: Minor, Craig <CMinor@NewingtonCT.Gov>
Subject: 605 Willard Ave. - Sprint Monopole - CT60XC018
Importance: High

Good Morning Craig,

A newer requirement of the Connecticut Siting Council (CSC) is to provide them with the original conditions of approval for the site. Can you kindly send this over to me, as we'll need it in order to proceed with Connecticut Siting Council (CSC). Site address is in the subject line of the e-mail.

Please let me know and thank you in advance for the assistance.

Thanks,

Jennifer Ardis

Transcend Wireless

10 Industrial Ave., Suite 3

Mahwah, NJ 07430

Cell: 201-704-8157

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