



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

VIA ELECTRONIC MAIL

April 17, 2018

Arthur Perkowski
Airosmith Development Incorporated
32 Clinton Street
Saratoga Springs, NY 12866

RE: **EM-SPRINT-119-180329** - Sprint notice of intent to modify an existing telecommunications facility located at 47 Inwood Road, Rocky Hill, Connecticut.

Dear Mr. Perkowski:

The Connecticut Siting Council (Council) is in receipt of your correspondence received on April 16, 2018 submitted in response to the Council's April 10, 2018 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MB/FOC/cg



STATE OF CONNECTICUT

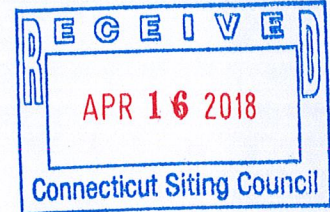
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April 10, 2018

Arthur Perkowski
Airosmith Development, Inc.
32 Clinton Street
Saratoga Springs, NY 12866

RE: **EM-SPRINT-119-180329** - Sprint notice of intent to modify an existing telecommunications facility located at 47 Inwood Road, Rocky Hill, Connecticut.

Dear Mr. Perkowski:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on March 29, 2018.

According to Section 16-50j-71 of the Regulations of Connecticut State Agencies, "...any modification, as defined in Section 16-50j-2a of the Regulations of Connecticut State Agencies, to an existing tower site, except as specified in Sections 16-50j-72 and 16-50j-88 of the Regulations of Connecticut State Agencies, may have a substantial adverse environmental effect."

Staff has reviewed this exempt modification request for completeness and has identified a discrepancy between the Structural Analysis Report ATC Site Number 302537 dated October 6, 2017 and the site plan sheet number A-2 which references a "Sprint DO Macro Project Mount Analysis dated January 18, 2018." The Structural Analysis Report does not account for the data referenced in the Mount Analysis which requires replacement of the platform mount.

Therefore, the exempt modification request is incomplete at this time. The Council recommends that Airosmith Development provide an Updated Structural Analysis Report including the replacement mount on or before May 11, 2018. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to May 11, 2018.

This notice of incompleteness shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

Melanie Bachman
Executive Director

MAB/FC

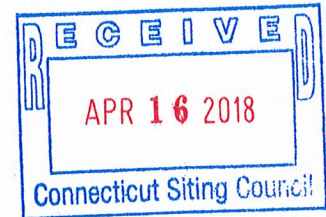
- c: The Honorable Claudia Baio, Mayor, Town of Rocky Hill
Kimberly Ricci, Zoning Enforcement Officer, Town Planner, Town of Rocky Hill
Merrifield LLC, property owner
Justine Paul, American Tower Corporation



CONNECTICUT SITING COUNCIL
Affirmative Action / Equal Opportunity Employer



AMERICAN TOWER®
CORPORATION



This report was prepared for American Tower Corporation by



**TOWER
ENGINEERING
PROFESSIONALS**

Structural Analysis Report

Structure : 185 ft Monopole
ATC Site Name : Middletown CT 3, CT
ATC Site Number : 302537
Engineering Number : OAA713643_C3_02
Proposed Carrier : Sprint Nextel
Carrier Site Name : Middletown CT 3 - Nextel Tower
Carrier Site Number : CT03XC070
Site Location : 47 Inwood Road
Rocky Hill, CT 06067-3453
41.638600,-72.679300
County : Hartford
Date : February 22, 2018
Max Usage : 83%
Result : Pass

Prepared By:
Maria Lopez
TEP

Reviewed By:



02/22/2018

COA: PEC.0001553



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Calculations Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 185 ft monopole to reflect the change in loading by Sprint Nextel.

Supporting Documents

| | |
|----------------------------|--|
| Tower Drawings | Valmont Drawing #DC1646Z, dated November 2, 1993 |
| Foundation Drawing | H. Edmund Bergeron Civil Engineers Project #93127, dated December 21, 1993 |
| Geotechnical Report | Materials Testing Inc File #99 GT 93, dated December 2, 1993 |
| Modifications | ATC Project #51430332, dated December 12, 2012 |

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) / 124 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: | $S_s = 0.18, S_1 = 0.06$ |
| 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 | | | | | |
| 181.0 | 181.0 | 4 | Decibel 844G90VTA-SX | Platform w/ Handrails | (12) 1 5/8" Coax | Sprint Nextel |
| | | 4 | Decibel DB844H90E-XY | | | |
| | | 4 | Decibel 844G65VTZASX | | | |
| 168.0 | 168.0 | 6 | Powerwave LGP21401 | Low Profile Platform | (12) 1 5/8" Coax (6) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (1) 3" conduit | AT&T Mobility |
| | | 2 | Raycap DC6-48-60-18-8F (23.5" Height) | | | |
| | | 1 | Raycap DC6-48-60-0-8F | | | |
| | | 3 | Ericsson RRUS 11 (Band 4) (17" Width) | | | |
| | | 3 | Ericsson RRUS 32 B2 | | | |
| | | 3 | Ericsson RRUS 32 B66 | | | |
| | | 3 | Ericsson RRUS 12 | | | |
| | | 3 | Ericsson RRUS-32 (77 lbs) | | | |
| | | 3 | Powerwave 7770.00 | | | |
| | | 3 | Quintel QS66512-2 | | | |
| | | 3 | CCI HPA-65R-BUU-H6 | | | |
| 140.0 | 140.0 | 3 | Alcatel-Lucent 800MHz 2X50W RRH w/ Filter | Platform w/ Handrails | (4) 1 1/4" Hybriflex | Sprint Nextel |
| | | 3 | Alcatel-Lucent 4x40W RRH (88 lb) | | | |
| | | 3 | RFS APXVSP18-C-A20 | | | |
| 98.0 | 98.0 | 1 | GPS | Stand-Off | - | |

Equipment to be Removed

| Elevation ¹ (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|-----------------------------|-------|-----|---------------------------|------------|-------|---------------|
| Mount | RAD | | | | | |
| 140.0 | 140.0 | 3 | Alcatel-Lucent TD-RRH8x20 | - | - | Sprint Nextel |
| | | 3 | RFS APXVTM14-C-120 | | | |

Proposed Equipment

| Elevation ¹ (ft) | | Qty | Antenna | Mount Type | Lines | Carrier |
|-----------------------------|-------|-----|---|-----------------------|-------|---------------|
| Mount | RAD | | | | | |
| 140.0 | 140.0 | 3 | Alcatel-Lucent RRH2x50-08 | Platform w/ Handrails | - | Sprint Nextel |
| | | 3 | Commscope DT465B-2XR | | | |
| | | 3 | Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield | | | |

¹Mount 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).



Structure Usages

| Structural Component | Controlling Usage | Pass/Fail |
|----------------------|-------------------|-----------|
| Anchor Bolts | 71% | Pass |
| Shaft | 83% | Pass |
| Base Plate | 33% | Pass |
| Reinforcement | 62% | Pass |

Foundations

| Reaction Component | Original Design Reactions | Factored Design Reactions* | Analysis Reactions | % of Design |
|--------------------|---------------------------|----------------------------|--------------------|-------------|
| Moment (Kips-Ft) | 3,821.4 | 5,158.9 | 4,479.3 | 87% |
| Shear (Kips) | 32.1 | 43.4 | 38.8 | 89% |

* 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) (°) |
|------------------------|---|---------------|-----------------|---------------------|
| 140.0 | Alcatel-Lucent RRH2x50-08 | Sprint Nextel | 1.828 | 1.653 |
| | Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield | | | |

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



Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

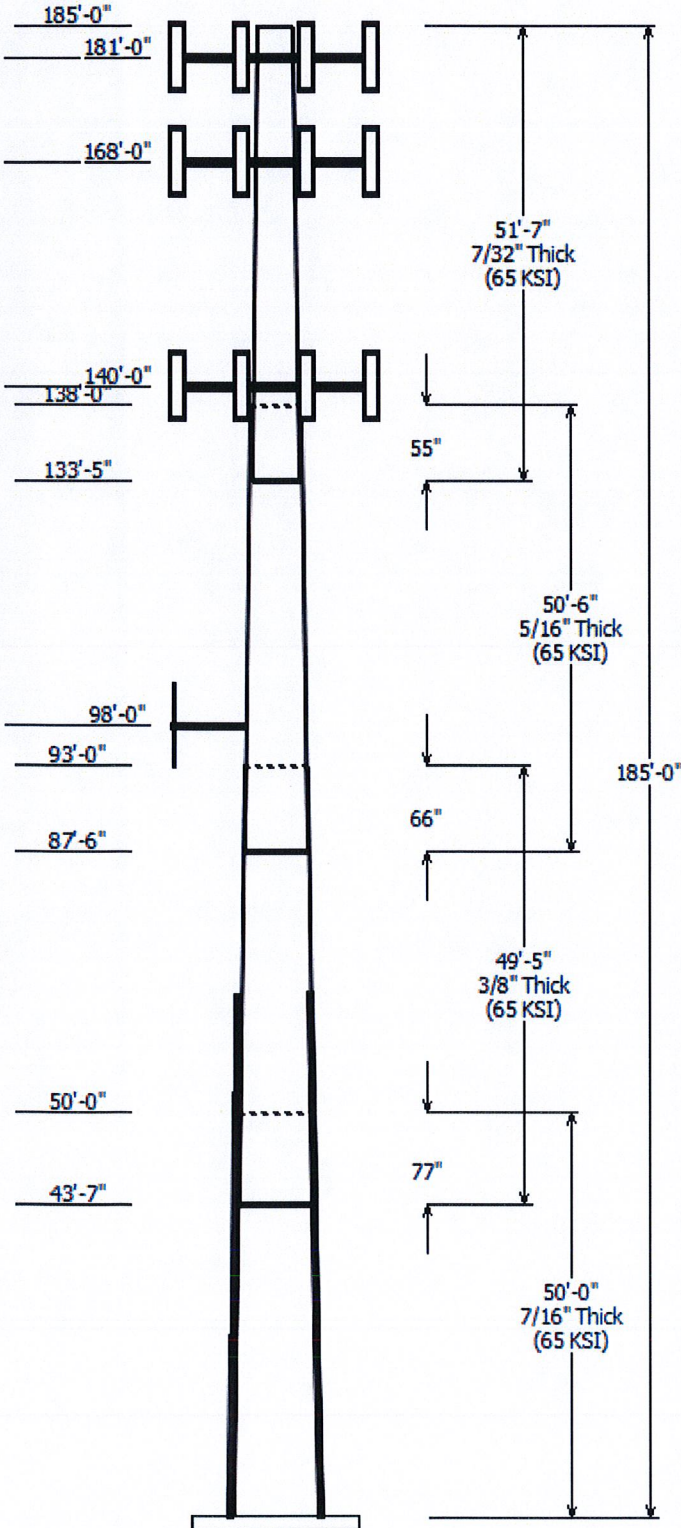
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 supplied herein.

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| Job Information | |
|--|----------------------|
| Pole : 302537 | Code: ANSI/TIA-222-G |
| Location : Middletown CT 3, CT | |
| Description : 185 ft Valmont pole - Model verified 5/30/12 | |
| Client : SPRINT NEXTEL | Struct Class : II |
| Shape : 12 Sides | Exposure : B |
| Height : 185.00 (ft) | Topo : 1 |
| Base Elev (ft): 0.00 | |
| Taper: 0.188014in/ft) | |



| Sections Properties | | | | | | | |
|---------------------|-------------|------------------|---------------------|------------------|---------------------|-------------|----------|
| Shaft Section | Length (ft) | Diameter (in) | | Thick Joint (in) | Overlap Length (in) | Steel Grade | Shape |
| | | Across Flats Top | Across Flats Bottom | | | | |
| 1 | 50.000 | 42.59 | 52.00 | 0.438 | 0.000 | 65 | 12 Sides |
| 2 | 49.417 | 35.26 | 44.55 | 0.375 | 77.000 | 65 | 12 Sides |
| 3 | 50.500 | 27.42 | 36.92 | 0.313 | 66.000 | 65 | 12 Sides |
| 4 | 51.583 | 19.03 | 28.72 | 0.219 | 55.000 | 65 | 12 Sides |

| Discrete Appurtenance | | | |
|-----------------------|-----------------|-----|--------------------------------|
| Attach Elev (ft) | Force Elev (ft) | Qty | Description |
| 181.000 | 181.000 | 4 | Decibel 844G65VTZASX |
| 181.000 | 181.000 | 4 | Decibel DB844H90E-XY |
| 181.000 | 181.000 | 4 | Decibel 844G90VTA-SX |
| 181.000 | 181.000 | 1 | Flat Platform w/ Handrails |
| 168.000 | 168.000 | 3 | Ericsson RRUS 32 B2 |
| 168.000 | 168.000 | 3 | CCI HPA-65R-BUU-H6 |
| 168.000 | 168.000 | 3 | Ericsson RRUS 32 B66 |
| 168.000 | 168.000 | 1 | Raycap DC6-48-60-0-8F |
| 168.000 | 168.000 | 2 | Raycap DC6-48-60-18-8F (23.5" |
| 168.000 | 168.000 | 3 | Powerwave Allgon 7770.00 |
| 168.000 | 168.000 | 3 | Quintel QS66512-2 |
| 168.000 | 168.000 | 3 | Ericsson RRUS 11 (Band 4) (17" |
| 168.000 | 168.000 | 3 | Ericsson RRUS 12 |
| 168.000 | 168.000 | 3 | Ericsson RRUS-32 (77 lbs) |
| 168.000 | 168.000 | 6 | Powerwave Allgon LGP21401 |
| 168.000 | 168.000 | 1 | Round Low Profile Platform |
| 140.000 | 140.000 | 1 | Flat Platform w/ Handrails |
| 140.000 | 140.000 | 3 | Commscope DT465B-2XR |
| 140.000 | 140.000 | 3 | RFS APXVSP18-C-A20 |
| 140.000 | 140.000 | 3 | Alcatel-Lucent TD-RRH8x20-25 |
| 140.000 | 140.000 | 3 | Alcatel-Lucent 4x40W RRH (88 l |
| 140.000 | 140.000 | 3 | Alcatel-Lucent 800 MHz 2X50W |
| 140.000 | 140.000 | 3 | Alcatel-Lucent RRH2x50-08 |
| 98.000 | 98.000 | 1 | Stand-Off |
| 98.000 | 98.000 | 1 | GPS |

| Linear Appurtenance | | | |
|---------------------|--------|------------------|-----------------|
| Elev (ft) | | Description | Exposed To Wind |
| From | To | | |
| 0.000 | 73.620 | #20 Dywidag | Yes |
| 0.000 | 140.0 | 1 1/4" Hybriflex | Yes |
| 0.000 | 168.0 | 0.39" (10mm) | No |
| 0.000 | 168.0 | 0.78" (19.7mm) 8 | No |
| 0.000 | 168.0 | 1 5/8" Coax | Yes |
| 0.000 | 168.0 | 3" conduit | Yes |
| 0.000 | 181.0 | 1 5/8" Coax | No |

| Load Cases | |
|-------------|---------------------------------|
| 1.2D + 1.6W | 97 mph with No Ice |
| 0.9D + 1.6W | 97 mph with No Ice (Reduced DL) |

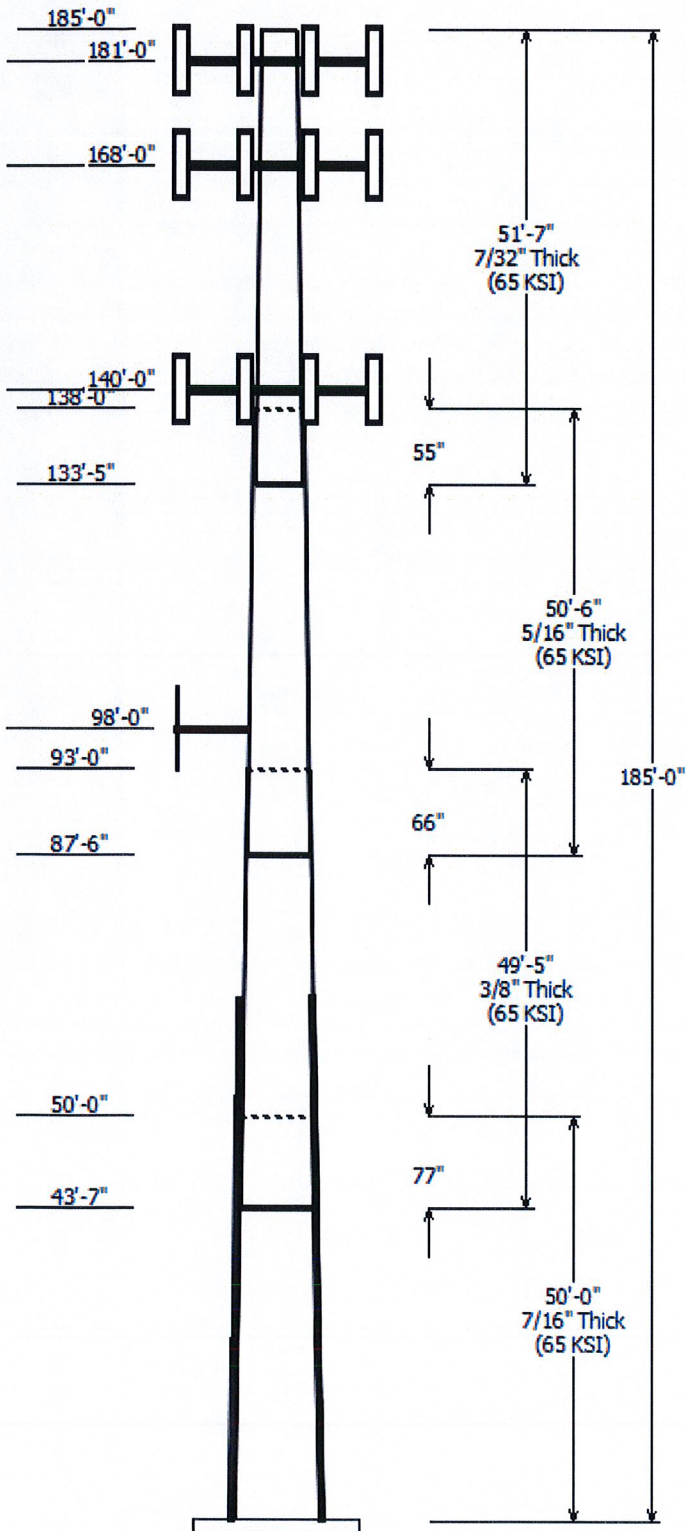
| | |
|-------------------------|--|
| 1.2D + 1.0Di + 1.0Wi | 50 mph with 1.00 in Radial Ice |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Lateral Forces Method |
| (1.2 + 0.2Sds) * DL + E | Seismic Equivalent Modal Analysis Method |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Lateral |
| (0.9 - 0.2Sds) * DL + E | Seismic (Reduced DL) Equivalent Modal |
| 1.0D + 1.0W | Serviceability 60 mph |

Reactions

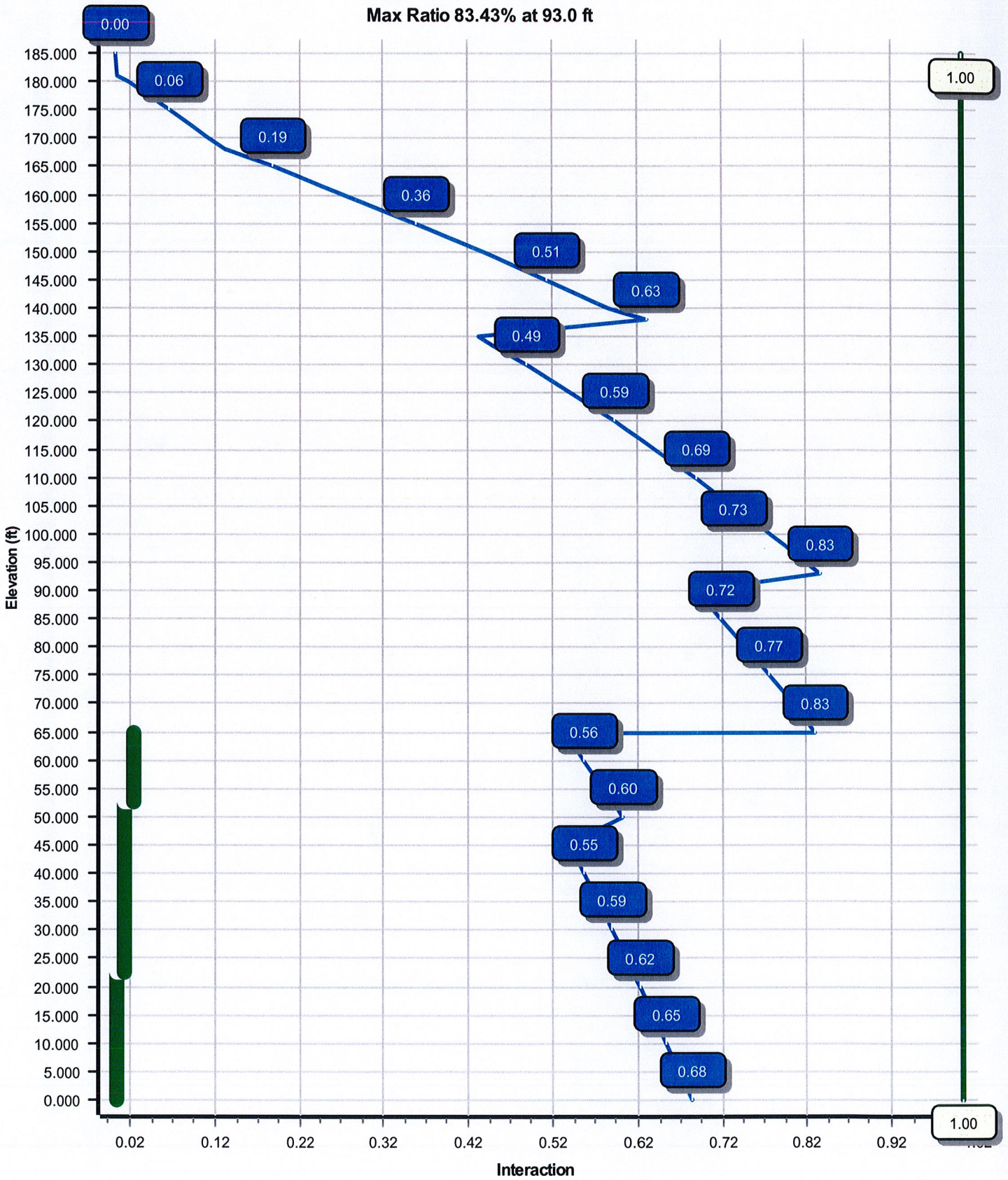
| Load Case | Moment (kip-ft) | Shear (kip) | Axial (kip) |
|------------------------------|-----------------|-------------|-------------|
| 1.2D + 1.6W | 4479.29 | 38.75 | 61.56 |
| 0.9D + 1.6W | 4388.59 | 37.47 | 46.16 |
| 1.2D + 1.0Di + 1.0Wi | 1155.76 | 8.83 | 107.47 |
| (1.2 + 0.2Sds) * DL + E ELFM | 292.29 | 2.01 | 61.05 |
| (1.2 + 0.2Sds) * DL + E EMAM | 276.59 | 2.37 | 61.05 |
| (0.9 - 0.2Sds) * DL + E ELFM | 287.22 | 2.01 | 42.46 |
| (0.9 - 0.2Sds) * DL + E EMAM | 271.56 | 2.37 | 42.46 |
| 1.0D + 1.0W | 1084.23 | 9.19 | 51.35 |

Dish Deflections

| Load Case | Attach Elev (ft) | Deflection (in) | Rotation (deg) |
|-----------|------------------|-----------------|----------------|
| | 0.00 | 0.000 | 0.000 |



Load Case : 1.2D + 1.6W
Max Ratio 83.43% at 93.0 ft



Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:31 PM

Customer: SPRINT NEXTEL

Analysis Parameters

| | | | |
|---------------------|---------------------|----------------------|-------|
| Location : | HARTFORD County, CT | Height (ft) : | 185 |
| Code : | ANSI/TIA-222-G | Base Diameter (in) : | 52.00 |
| Shape : | 12 Sides | Top Diameter (in) : | 19.03 |
| Pole Type : | Taper | Taper (in/ft) : | 0.188 |
| Pole Manufacturer : | Valmont | Rotation (deg) : | 0.00 |

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 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): | 2.79 | | |
| T _L (sec): | 6 | p: | 1.3 |
| S _s : | 0.181 | S ₁ : | 0.063 |
| F _a : | 1.600 | F _v : | 2.400 |
| S _{ds} : | 0.193 | S _{d1} : | 0.101 |
| | | C _s : | 0.030 |
| | | C _s Max: | 0.030 |
| | | C _s Min: | 0.030 |

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: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

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Customer: SPRINT NEXTEL

Shaft Section Properties

| Sect Info | Length (ft) | Thick (in) | Fy (ksi) | Slip | | Weight (lb) | Bottom | | | | | | Top | | | | | | |
|--------------|-------------|------------|----------|------------|----------------|-------------|----------|-----------|-------------------------|-----------------------|-----------|-----------|----------|-----------|-------------------------|-----------------------|-----------|-----------|---------------|
| | | | | Joint Type | Joint Len (in) | | Dia (in) | Elev (ft) | Area (in ²) | Ix (in ⁴) | W/t Ratio | D/t Ratio | Dia (in) | Elev (ft) | Area (in ²) | Ix (in ⁴) | W/t Ratio | D/t Ratio | Taper (in/ft) |
| 1-12 | 50.000 | 0.4375 | 65 | | 0.00 | 11,232 | 52.00 | 0.00 | 72.64 | 24650.3 | 29.70 | 118.86 | 42.59 | 50.00 | 59.40 | 13476.5 | 23.95 | 97.37 | 0.188013 |
| 2-12 | 49.417 | 0.3750 | 65 | Slip | 77.00 | 8,028 | 44.55 | 43.58 | 53.35 | 13291.4 | 29.69 | 118.82 | 35.26 | 93.00 | 42.13 | 6545.8 | 23.05 | 94.04 | 0.188013 |
| 3-12 | 50.500 | 0.3125 | 65 | Slip | 66.00 | 5,510 | 36.92 | 87.50 | 36.84 | 6302.8 | 29.52 | 118.16 | 27.42 | 138.00 | 27.29 | 2560.9 | 21.38 | 87.77 | 0.188013 |
| 4-12 | 51.583 | 0.2188 | 65 | Slip | 55.00 | 2,925 | 28.72 | 133.42 | 20.08 | 2083.3 | 33.05 | 131.33 | 19.03 | 185.00 | 13.25 | 598.5 | 21.17 | 86.99 | 0.188013 |
| Shaft Weight | | | | | | 27,695 | | | | | | | | | | | | | |

Discrete Appurtenance Properties

| Attach Elev (ft) | Description | Qty | Distance From Face (ft) | Vert Ecc (ft) | Weight (lb) | No Ice EPAa (sf) | Orientation Factor |
|------------------|--------------------------------|-----|-------------------------|---------------|-------------|------------------|--------------------|
| 181.00 | Decibel 844G65VTZASX | 4 | 0.000 | 0.000 | 16.00 | 5.310 | 0.71 |
| 181.00 | Decibel 844G90VTA-SX | 4 | 0.000 | 0.000 | 11.50 | 3.610 | 0.74 |
| 181.00 | Decibel DB844H90E-XY | 4 | 0.000 | 0.000 | 14.00 | 3.610 | 0.74 |
| 181.00 | Flat Platform w/ Handrails | 1 | 0.000 | 0.000 | 2000.00 | 42.400 | 1.00 |
| 168.00 | CCI HPA-65R-BUU-H6 | 3 | 0.000 | 0.000 | 51.00 | 9.660 | 0.69 |
| 168.00 | Ericsson RRUS 11 (Band 4) (17" | 3 | 0.000 | 0.000 | 50.00 | 2.520 | 0.67 |
| 168.00 | Ericsson RRUS 12 | 3 | 0.000 | 0.000 | 50.00 | 3.150 | 0.67 |
| 168.00 | Ericsson RRUS 32 B2 | 3 | 0.000 | 0.000 | 53.00 | 2.740 | 0.67 |
| 168.00 | Ericsson RRUS 32 B66 | 3 | 0.000 | 0.000 | 53.00 | 2.740 | 0.67 |
| 168.00 | Ericsson RRUS-32 (77 lbs) | 3 | 0.000 | 0.000 | 77.00 | 3.310 | 0.67 |
| 168.00 | Powerwave Allgon 7770.00 | 3 | 0.000 | 0.000 | 35.00 | 5.510 | 0.65 |
| 168.00 | Powerwave Allgon LGP21401 | 6 | 0.000 | 0.000 | 14.10 | 1.100 | 0.50 |
| 168.00 | Quintel QS66512-2 | 3 | 0.000 | 0.000 | 111.00 | 8.130 | 0.74 |
| 168.00 | Raycap DC6-48-60-0-8F | 1 | 0.000 | 0.000 | 32.80 | 1.190 | 1.00 |
| 168.00 | Raycap DC6-48-60-18-8F (23.5" | 2 | 0.000 | 0.000 | 20.00 | 1.110 | 1.00 |
| 168.00 | Round Low Profile Platform | 1 | 0.000 | 0.000 | 1500.00 | 21.700 | 1.00 |
| 140.00 | Alcatel-Lucent 4x40W RRH (88 I | 3 | 0.000 | 0.000 | 88.00 | 3.260 | 0.67 |
| 140.00 | Alcatel-Lucent 800 MHz 2X50W R | 3 | 0.000 | 0.000 | 64.00 | 2.060 | 0.67 |
| 140.00 | Alcatel-Lucent RRH2x50-08 | 3 | 0.000 | 0.000 | 52.90 | 1.700 | 0.50 |
| 140.00 | Alcatel-Lucent TD-RRH8x20-25 w | 3 | 0.000 | 0.000 | 70.00 | 4.050 | 0.67 |
| 140.00 | Commscope DT465B-2XR | 3 | 0.000 | 0.000 | 58.00 | 9.100 | 0.69 |
| 140.00 | Flat Platform w/ Handrails | 1 | 0.000 | 0.000 | 2000.00 | 42.400 | 1.00 |
| 140.00 | RFS APXVSP18-C-A20 | 3 | 0.000 | 0.000 | 57.00 | 8.020 | 0.69 |
| 98.00 | GPS | 1 | 0.000 | 0.000 | 10.00 | 1.000 | 1.00 |
| 98.00 | Stand-Off | 1 | 0.000 | 0.000 | 75.00 | 2.500 | 0.67 |
| Totals | Num Loadings:25 | 68 | | | 8518.10 | | |

Linear Appurtenance Properties

| Elev From (ft) | Elev To (ft) | Qty | Description | Coax Diameter (in) | Coax Weight (lb/ft) | Projected Flat | Projected Width (in) | Exposed To Wind | Carrier |
|----------------|--------------|-----|------------------------|--------------------|---------------------|----------------|----------------------|-----------------|---------------|
| 0.00 | 181.00 | 12 | 1 5/8" Coax | 1.98 | 0.82 | N | 0.00 | N | Sprint Nextel |
| 0.00 | 168.00 | 2 | 0.39" (10mm) Fiber | 0.39 | 0.06 | N | 0.00 | N | AT&T MOBILITY |
| 0.00 | 168.00 | 6 | 0.78" (19.7mm) 8 | 0.78 | 0.59 | N | 0.00 | N | AT&T MOBILITY |
| 0.00 | 168.00 | 12 | 1 5/8" Coax | 1.98 | 0.82 | N | 5.94 | Y | AT&T MOBILITY |
| 0.00 | 168.00 | 1 | 3" conduit | 3.50 | 7.58 | N | 0.00 | Y | AT&T MOBILITY |
| 0.00 | 140.00 | 4 | 1 1/4" Hybriflex Cable | 1.54 | 1.00 | N | 3.08 | Y | Sprint Nextel |
| 0.00 | 73.62 | 4 | #20 Dywidag | 2.75 | 16.70 | N | 0.00 | Y | -- |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:32 PM

Customer: SPRINT NEXTEL

Additional Steel

| Elev From (ft) | Elev To (ft) | Qty | Description | Fy (ksi) | Offset (in) | — Intermediate Connections — | | | Connectors | Continuation? |
|----------------|--------------|-----|--------------------|----------|-------------|------------------------------|--------------|----------|-----------------|---------------|
| | | | | | | Description | Spacing (in) | Len (in) | | |
| 0.00 | 22.50 | 4 | SOL #20 All Thread | 80 | 2.19 | 6" Angle Bracket | 30.0 | 3.31 | 5/8" A36 U-Bolt | No |
| 22.50 | 52.50 | 4 | SOL #20 All Thread | 80 | 2.19 | 6" Angle Bracket | 30.0 | 3.31 | 5/8" A36 U-Bolt | Yes |
| 52.50 | 65.00 | 4 | SOL #20 All Thread | 80 | 2.19 | 6" Angle Bracket | 30.0 | 3.31 | 5/8" A36 U-Bolt | Yes |

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) | Additional Reinforcing | | |
|-------------------|------------------|------------|---------------|-------------------------|-----------------------|-----------|-----------|-----------|----------------------|----------------------|-------------|-------------------------|-----------------------|-------------|
| | | | | | | | | | | | | Area (in ²) | Ix (in ⁴) | Weight (lb) |
| 0.00 | | 0.4375 | 52.000 | 72.639 | 24,650.3 | 29.70 | 118.86 | 72.3 | 915.8 | 0.0 | 0.0 | 19.64 | 8,518 | 0.0 |
| 5.00 | | 0.4375 | 51.060 | 71.314 | 23,326.5 | 29.13 | 116.71 | 72.9 | 882.6 | 0.0 | 1,224.6 | 19.64 | 8,249 | 334.0 |
| 10.00 | | 0.4375 | 50.120 | 69.990 | 22,050.9 | 28.55 | 114.56 | 73.6 | 849.9 | 0.0 | 1,202.1 | 19.64 | 7,983 | 334.0 |
| 15.00 | | 0.4375 | 49.180 | 68.666 | 20,822.7 | 27.98 | 112.41 | 74.2 | 817.9 | 0.0 | 1,179.5 | 19.64 | 7,723 | 334.0 |
| 20.00 | | 0.4375 | 48.240 | 67.341 | 19,641.0 | 27.40 | 110.26 | 74.8 | 786.6 | 0.0 | 1,157.0 | 19.64 | 7,466 | 334.0 |
| 22.50 | Reinf. Top Reinf | 0.4375 | 47.770 | 66.679 | 19,067.3 | 27.11 | 109.19 | 75.1 | 771.1 | 0.0 | 570.1 | 19.64 | 7,339 | 167.0 |
| 25.00 | | 0.4375 | 47.300 | 66.017 | 18,504.9 | 26.83 | 108.11 | 75.5 | 755.8 | 0.0 | 564.4 | 19.64 | 7,214 | 167.0 |
| 30.00 | | 0.4375 | 46.360 | 64.693 | 17,413.5 | 26.25 | 105.96 | 76.1 | 725.6 | 0.0 | 1,111.9 | 19.64 | 6,966 | 334.0 |
| 35.00 | | 0.4375 | 45.420 | 63.368 | 16,365.8 | 25.67 | 103.82 | 76.7 | 696.1 | 0.0 | 1,089.4 | 19.64 | 6,722 | 334.0 |
| 40.00 | | 0.4375 | 44.479 | 62.044 | 15,361.0 | 25.10 | 101.67 | 77.3 | 667.2 | 0.0 | 1,066.9 | 19.64 | 6,483 | 334.0 |
| 43.58 | Bot - Section 2 | 0.4375 | 43.806 | 61.095 | 14,666.8 | 24.69 | 100.13 | 77.8 | 646.8 | 0.0 | 750.7 | 19.64 | 6,314 | 239.4 |
| 45.00 | | 0.4375 | 43.539 | 60.720 | 14,398.2 | 24.52 | 99.52 | 78.0 | 638.9 | 0.0 | 550.0 | 19.64 | 6,435 | 94.6 |
| 50.00 | Top - Section 1 | 0.3750 | 43.349 | 51.891 | 12,232.1 | 28.83 | 115.60 | 73.3 | 545.1 | 0.0 | 1,914.3 | 19.64 | 6,201 | 334.0 |
| 52.50 | Reinf. Top Reinf | 0.3750 | 42.879 | 51.324 | 11,835.1 | 28.50 | 114.34 | 73.6 | 533.2 | 0.0 | 439.0 | 19.64 | 6,086 | 167.0 |
| 55.00 | | 0.3750 | 42.409 | 50.756 | 11,446.8 | 28.16 | 113.09 | 74.0 | 521.4 | 0.0 | 434.2 | 19.64 | 5,971 | 167.0 |
| 60.00 | | 0.3750 | 41.469 | 49.621 | 10,695.8 | 27.49 | 110.58 | 74.7 | 498.3 | 0.0 | 853.9 | 19.64 | 5,746 | 334.0 |
| 65.00 | Reinf. Top | 0.3750 | 40.529 | 48.486 | 9,978.5 | 26.82 | 108.08 | 75.5 | 475.6 | 0.0 | 834.6 | 19.64 | 5,525 | 334.0 |
| 70.00 | | 0.3750 | 39.589 | 47.351 | 9,293.9 | 26.14 | 105.57 | 76.2 | 453.5 | 0.0 | 815.3 | | | |
| 75.00 | | 0.3750 | 38.649 | 46.216 | 8,641.4 | 25.47 | 103.06 | 76.9 | 431.9 | 0.0 | 796.0 | | | |
| 80.00 | | 0.3750 | 37.709 | 45.081 | 8,020.2 | 24.80 | 100.56 | 77.7 | 410.9 | 0.0 | 776.7 | | | |
| 85.00 | | 0.3750 | 36.769 | 43.946 | 7,429.5 | 24.13 | 98.05 | 78.4 | 390.3 | 0.0 | 757.3 | | | |
| 87.50 | Bot - Section 3 | 0.3750 | 36.299 | 43.378 | 7,145.3 | 23.79 | 96.80 | 78.8 | 380.3 | 0.0 | 371.5 | | | |
| 90.00 | | 0.3750 | 35.829 | 42.810 | 6,868.5 | 23.46 | 95.54 | 79.1 | 370.3 | 0.0 | 677.9 | | | |
| 93.00 | Top - Section 2 | 0.3125 | 35.890 | 35.800 | 5,783.7 | 28.63 | 114.85 | 73.5 | 311.3 | 0.0 | 802.0 | | | |
| 95.00 | | 0.3125 | 35.514 | 35.421 | 5,602.3 | 28.31 | 113.64 | 73.8 | 304.7 | 0.0 | 242.3 | | | |
| 98.00 | | 0.3125 | 34.950 | 34.854 | 5,337.3 | 27.82 | 111.84 | 74.4 | 295.0 | 0.0 | 358.7 | | | |
| 100.0 | | 0.3125 | 34.574 | 34.475 | 5,165.3 | 27.50 | 110.64 | 74.7 | 288.6 | 0.0 | 235.9 | | | |
| 105.0 | | 0.3125 | 33.634 | 33.529 | 4,751.7 | 26.70 | 107.63 | 75.6 | 272.9 | 0.0 | 578.5 | | | |
| 110.0 | | 0.3125 | 32.694 | 32.583 | 4,360.8 | 25.89 | 104.62 | 76.5 | 257.7 | 0.0 | 562.4 | | | |
| 115.0 | | 0.3125 | 31.753 | 31.637 | 3,991.9 | 25.08 | 101.61 | 77.4 | 242.9 | 0.0 | 546.3 | | | |
| 120.0 | | 0.3125 | 30.813 | 30.692 | 3,644.4 | 24.28 | 98.60 | 78.2 | 228.5 | 0.0 | 530.2 | | | |
| 125.0 | | 0.3125 | 29.873 | 29.746 | 3,317.7 | 23.47 | 95.59 | 79.1 | 214.6 | 0.0 | 514.1 | | | |
| 130.0 | | 0.3125 | 28.933 | 28.800 | 3,011.2 | 22.66 | 92.59 | 80.0 | 201.1 | 0.0 | 498.0 | | | |
| 133.4 | Bot - Section 4 | 0.3125 | 28.291 | 28.153 | 2,812.9 | 22.11 | 90.53 | 80.6 | 192.1 | 0.0 | 331.1 | | | |
| 135.0 | | 0.3125 | 27.993 | 27.854 | 2,724.1 | 21.86 | 89.58 | 80.9 | 188.0 | 0.0 | 258.4 | | | |
| 138.0 | Top - Section 3 | 0.2188 | 27.867 | 19.474 | 1,900.1 | 31.99 | 127.39 | 69.8 | 131.7 | 0.0 | 482.3 | | | |
| 140.0 | | 0.2188 | 27.491 | 19.210 | 1,823.6 | 31.53 | 125.67 | 70.3 | 128.2 | 0.0 | 131.6 | | | |
| 145.0 | | 0.2188 | 26.551 | 18.547 | 1,641.5 | 30.38 | 121.37 | 71.6 | 119.4 | 0.0 | 321.2 | | | |
| 150.0 | | 0.2188 | 25.610 | 17.885 | 1,471.9 | 29.23 | 117.08 | 72.8 | 111.0 | 0.0 | 309.9 | | | |
| 155.0 | | 0.2188 | 24.670 | 17.223 | 1,314.4 | 28.08 | 112.78 | 74.1 | 102.9 | 0.0 | 298.7 | | | |
| 160.0 | | 0.2188 | 23.730 | 16.561 | 1,168.5 | 26.92 | 108.48 | 75.4 | 95.1 | 0.0 | 287.4 | | | |
| 165.0 | | 0.2188 | 22.790 | 15.899 | 1,033.9 | 25.77 | 104.18 | 76.6 | 87.6 | 0.0 | 276.1 | | | |
| 168.0 | | 0.2188 | 22.226 | 15.502 | 958.3 | 25.08 | 101.61 | 77.4 | 83.3 | 0.0 | 160.3 | | | |
| 170.0 | | 0.2188 | 21.850 | 15.237 | 910.0 | 24.62 | 99.89 | 77.9 | 80.5 | 0.0 | 104.6 | | | |
| 175.0 | | 0.2188 | 20.910 | 14.575 | 796.5 | 23.47 | 95.59 | 79.1 | 73.6 | 0.0 | 253.6 | | | |
| 180.0 | | 0.2188 | 19.970 | 13.912 | 692.8 | 22.32 | 91.29 | 80.4 | 67.0 | 0.0 | 242.3 | | | |
| 181.0 | | 0.2188 | 19.782 | 13.780 | 673.2 | 22.09 | 90.43 | 80.6 | 65.7 | 0.0 | 47.1 | | | |
| 185.0 | | 0.2188 | 19.030 | 13.250 | 598.5 | 21.17 | 86.99 | 81.6 | 60.8 | 0.0 | 184.0 | | | |
| | | | | | | | | | | | 27,694.6 | | | |
| | | | | | | | | | | | | 4,342.0 | | |

| | | |
|-----------------------------------|---------------------------|-------------------------------------|
| Load Case: 1.2D + 1.6W | 97 mph with No Ice | 28 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

| Seg Elev (ft) | Description | Shaft Forces | | Discrete Forces | | | Linear Forces | | | Sum of Forces | | | |
|---------------|------------------|--------------|----------------|-----------------|--------------------|-------------------|----------------|--------------|----------------|---------------|----------------|--------------------|----------------|
| | | 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 | | 378.3 | 0.0 | | | | | 0.0 | 0.0 | 378.3 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 752.5 | 1,469.5 | | | | | 0.0 | 1,011.1 | 752.5 | 2,480.6 | 0.0 | 0.0 |
| 10.00 | | 744.5 | 1,442.5 | | | | | 0.0 | 1,011.1 | 744.5 | 2,453.6 | 0.0 | 0.0 |
| 15.00 | | 736.5 | 1,415.4 | | | | | 0.0 | 1,011.1 | 736.5 | 2,426.6 | 0.0 | 0.0 |
| 20.00 | | 547.9 | 1,388.4 | | | | | 0.0 | 1,011.1 | 547.9 | 2,399.5 | 0.0 | 0.0 |
| 22.50 | Reinf. Top Reinf | 362.3 | 684.1 | | | | | 0.0 | 505.6 | 362.3 | 1,189.6 | 0.0 | 0.0 |
| 25.00 | | 538.9 | 677.3 | | | | | 0.0 | 505.6 | 538.9 | 1,182.9 | 0.0 | 0.0 |
| 30.00 | | 721.0 | 1,334.3 | | | | | 0.0 | 1,011.1 | 721.0 | 2,345.4 | 0.0 | 0.0 |
| 35.00 | | 736.4 | 1,307.3 | | | | | 0.0 | 1,011.1 | 736.4 | 2,318.4 | 0.0 | 0.0 |
| 40.00 | | 647.1 | 1,280.3 | | | | | 0.0 | 1,011.1 | 647.1 | 2,291.4 | 0.0 | 0.0 |
| 43.58 | Bot - Section 2 | 384.6 | 900.9 | | | | | 0.0 | 724.6 | 384.6 | 1,625.5 | 0.0 | 0.0 |
| 45.00 | | 476.1 | 660.0 | | | | | 0.0 | 286.5 | 476.1 | 946.5 | 0.0 | 0.0 |
| 50.00 | Top - Section 1 | 548.3 | 2,297.2 | | | | | 120.8 | 1,011.1 | 669.1 | 3,308.3 | 0.0 | 0.0 |
| 52.50 | Reinf. Top Reinf | 367.4 | 526.8 | | | | | 61.3 | 505.6 | 428.7 | 1,032.4 | 0.0 | 0.0 |
| 55.00 | | 552.8 | 521.0 | | | | | 61.9 | 505.6 | 614.7 | 1,026.6 | 0.0 | 0.0 |
| 60.00 | | 738.1 | 1,024.7 | | | | | 125.6 | 1,011.1 | 863.6 | 2,035.8 | 0.0 | 0.0 |
| 65.00 | Reinf. Top | 738.1 | 1,001.5 | | | | | 127.7 | 1,011.1 | 865.8 | 2,012.6 | 0.0 | 0.0 |
| 70.00 | | 736.4 | 978.3 | | | | | 129.7 | 610.3 | 866.1 | 1,588.7 | 0.0 | 0.0 |
| 75.00 | | 733.2 | 955.2 | | | | | 131.6 | 499.7 | 864.8 | 1,454.9 | 0.0 | 0.0 |
| 80.00 | | 728.7 | 932.0 | | | | | 133.4 | 209.5 | 862.1 | 1,141.5 | 0.0 | 0.0 |
| 85.00 | | 543.5 | 908.8 | | | | | 135.1 | 209.5 | 678.6 | 1,118.3 | 0.0 | 0.0 |
| 87.50 | Bot - Section 3 | 363.0 | 445.8 | | | | | 68.2 | 104.8 | 431.2 | 550.5 | 0.0 | 0.0 |
| 90.00 | | 400.6 | 813.5 | | | | | 68.6 | 104.7 | 469.1 | 918.2 | 0.0 | 0.0 |
| 93.00 | Top - Section 2 | 362.5 | 962.4 | | | | | 82.8 | 125.7 | 445.3 | 1,088.1 | 0.0 | 0.0 |
| 95.00 | | 360.0 | 290.8 | | | | | 55.5 | 83.8 | 415.5 | 374.6 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 358.4 | 430.4 | 105.9 | 0.0 | 0.0 | 102.0 | 83.7 | 125.7 | 547.9 | 658.1 | 0.0 | 0.0 |
| 100.00 | | 496.6 | 283.1 | | | | | 56.1 | 83.8 | 552.7 | 366.9 | 0.0 | 0.0 |
| 105.00 | | 702.5 | 694.2 | | | | | 141.3 | 209.5 | 843.8 | 903.7 | 0.0 | 0.0 |
| 110.00 | | 692.0 | 674.9 | | | | | 142.6 | 209.5 | 834.7 | 884.4 | 0.0 | 0.0 |
| 115.00 | | 680.7 | 655.6 | | | | | 144.0 | 209.5 | 824.7 | 865.1 | 0.0 | 0.0 |
| 120.00 | | 668.7 | 636.3 | | | | | 145.3 | 209.5 | 813.9 | 845.8 | 0.0 | 0.0 |
| 125.00 | | 655.9 | 617.0 | | | | | 146.5 | 209.5 | 802.4 | 826.5 | 0.0 | 0.0 |
| 130.00 | | 542.6 | 597.6 | | | | | 147.7 | 209.5 | 690.3 | 807.2 | 0.0 | 0.0 |
| 133.42 | Bot - Section 4 | 319.3 | 397.3 | | | | | 101.6 | 143.2 | 420.9 | 540.5 | 0.0 | 0.0 |
| 135.00 | | 291.5 | 310.1 | | | | | 47.3 | 66.3 | 338.8 | 376.5 | 0.0 | 0.0 |
| 138.00 | Top - Section 3 | 315.4 | 578.8 | | | | | 89.9 | 125.7 | 405.4 | 704.5 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 433.3 | 157.9 | 3,725.1 | 0.0 | 0.0 | 3,803.6 | 60.2 | 83.8 | 4,218.5 | 4,045.4 | 0.0 | 0.0 |
| 145.00 | | 608.2 | 385.4 | | | | | 83.4 | 185.5 | 691.5 | 571.0 | 0.0 | 0.0 |
| 150.00 | | 592.4 | 371.9 | | | | | 83.8 | 185.5 | 676.1 | 557.4 | 0.0 | 0.0 |
| 155.00 | | 576.0 | 358.4 | | | | | 84.2 | 185.5 | 660.2 | 543.9 | 0.0 | 0.0 |
| 160.00 | | 559.1 | 344.9 | | | | | 84.6 | 185.5 | 643.6 | 530.4 | 0.0 | 0.0 |
| 165.00 | | 436.2 | 331.4 | | | | | 84.9 | 185.5 | 521.1 | 516.9 | 0.0 | 0.0 |
| 168.00 | Appurtenance(s) | 248.8 | 192.3 | 4,124.3 | 0.0 | 0.0 | 3,716.9 | 51.1 | 111.3 | 4,424.3 | 4,020.5 | 0.0 | 0.0 |
| 170.00 | | 302.4 | 125.5 | | | | | 0.0 | 23.6 | 302.4 | 149.1 | 0.0 | 0.0 |
| 175.00 | | 421.2 | 304.3 | | | | | 0.0 | 59.0 | 421.2 | 363.4 | 0.0 | 0.0 |
| 180.00 | | 247.1 | 290.8 | | | | | 0.0 | 59.0 | 247.1 | 349.8 | 0.0 | 0.0 |
| 181.00 | Appurtenance(s) | 198.8 | 56.5 | 3,288.3 | 0.0 | 0.0 | 2,599.2 | 0.0 | 11.8 | 3,487.1 | 2,667.5 | 0.0 | 0.0 |
| 185.00 | | 158.4 | 220.7 | | | | | 0.0 | 0.0 | 158.4 | 220.7 | 0.0 | 0.0 |

Site Number: 302537

Code: ANSI/TIA-222-G © 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:35 PM

Customer: SPRINT NEXTEL

| | | |
|-------------------------------|--------------------|------------------------------|
| Load Case: 1.2D + 1.6W | 97 mph with No Ice | 28 Iterations |
| Gust Response Factor :1.10 | | Wind Importance Factor :1.00 |
| Dead Load Factor :1.20 | | |
| Wind Load Factor :1.60 | | |

Totals: 39,027.7 61,625.9 0.00 0.00

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:35 PM

Customer: SPRINT NEXTEL

| | | |
|-----------------------------------|---------------------------|------------------------------------|
| Load Case: 1.2D + 1.6W | 97 mph with No Ice | 28 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 | -61.56 | -38.75 | 0.00 | -4,479.29 | 0.00 | 4,479.29 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.681 |
| 5.00 | -58.96 | -38.19 | 0.00 | -4,285.53 | 0.00 | 4,285.53 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.10 | -0.19 | 0.666 |
| 10.00 | -56.38 | -37.62 | 0.00 | -4,094.58 | 0.00 | 4,094.58 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.40 | -0.38 | 0.651 |
| 15.00 | -53.84 | -37.04 | 0.00 | -3,906.48 | 0.00 | 3,906.48 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.90 | -0.57 | 0.635 |
| 20.00 | -51.36 | -36.59 | 0.00 | -3,721.28 | 0.00 | 3,721.28 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 1.59 | -0.76 | 0.620 |
| 22.50 | -50.11 | -36.30 | 0.00 | -3,629.79 | 0.00 | 3,629.79 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 2.01 | -0.85 | 0.612 |
| 22.50 | -50.11 | -36.30 | 0.00 | -3,629.79 | 0.00 | 3,629.79 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 2.01 | -0.85 | 0.612 |
| 25.00 | -48.85 | -35.87 | 0.00 | -3,539.04 | 0.00 | 3,539.04 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 2.49 | -0.95 | 0.604 |
| 30.00 | -46.40 | -35.26 | 0.00 | -3,359.72 | 0.00 | 3,359.72 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 3.58 | -1.14 | 0.588 |
| 35.00 | -43.98 | -34.62 | 0.00 | -3,183.44 | 0.00 | 3,183.44 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 4.88 | -1.33 | 0.571 |
| 40.00 | -41.61 | -34.03 | 0.00 | -3,010.36 | 0.00 | 3,010.36 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 6.38 | -1.52 | 0.555 |
| 43.58 | -39.94 | -33.67 | 0.00 | -2,888.41 | 0.00 | 2,888.41 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 7.57 | -1.66 | 0.542 |
| 45.00 | -38.93 | -33.25 | 0.00 | -2,840.72 | 0.00 | 2,840.72 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 8.07 | -1.71 | 0.533 |
| 50.00 | -35.57 | -32.56 | 0.00 | -2,674.47 | 0.00 | 2,674.47 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 9.97 | -1.90 | 0.600 |
| 52.50 | -34.50 | -32.16 | 0.00 | -2,593.07 | 0.00 | 2,593.07 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 10.99 | -2.00 | 0.589 |
| 52.50 | -34.50 | -32.16 | 0.00 | -2,593.07 | 0.00 | 2,593.07 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 10.99 | -2.00 | 0.589 |
| 55.00 | -33.41 | -31.60 | 0.00 | -2,512.67 | 0.00 | 2,512.67 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 12.07 | -2.10 | 0.578 |
| 60.00 | -31.30 | -30.76 | 0.00 | -2,354.70 | 0.00 | 2,354.70 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 14.37 | -2.30 | 0.556 |
| 65.00 | -29.23 | -29.91 | 0.00 | -2,200.88 | 0.00 | 2,200.88 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 16.89 | -2.49 | 0.533 |
| 65.00 | -29.23 | -29.91 | 0.00 | -2,200.88 | 0.00 | 2,200.88 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 16.89 | -2.49 | 0.827 |
| 70.00 | -27.55 | -29.10 | 0.00 | -2,051.32 | 0.00 | 2,051.32 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 19.60 | -2.69 | 0.800 |
| 75.00 | -25.99 | -28.30 | 0.00 | -1,905.83 | 0.00 | 1,905.83 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 22.58 | -2.99 | 0.773 |
| 80.00 | -24.75 | -27.51 | 0.00 | -1,764.34 | 0.00 | 1,764.34 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 25.88 | -3.29 | 0.745 |
| 85.00 | -23.57 | -26.85 | 0.00 | -1,626.82 | 0.00 | 1,626.82 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 29.49 | -3.60 | 0.717 |
| 87.50 | -22.98 | -26.45 | 0.00 | -1,559.67 | 0.00 | 1,559.67 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 31.41 | -3.75 | 0.702 |
| 90.00 | -22.02 | -25.98 | 0.00 | -1,493.56 | 0.00 | 1,493.56 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 33.41 | -3.90 | 0.687 |
| 93.00 | -20.90 | -25.52 | 0.00 | -1,415.60 | 0.00 | 1,415.60 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 35.92 | -4.08 | 0.834 |
| 95.00 | -20.49 | -25.14 | 0.00 | -1,364.57 | 0.00 | 1,364.57 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 37.65 | -4.20 | 0.818 |
| 98.00 | -19.80 | -24.60 | 0.00 | -1,289.16 | 0.00 | 1,289.16 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 40.36 | -4.40 | 0.792 |
| 100.00 | -19.38 | -24.10 | 0.00 | -1,239.97 | 0.00 | 1,239.97 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 42.23 | -4.54 | 0.775 |
| 105.00 | -18.42 | -23.29 | 0.00 | -1,119.48 | 0.00 | 1,119.48 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 47.15 | -4.86 | 0.732 |
| 110.00 | -17.49 | -22.47 | 0.00 | -1,003.06 | 0.00 | 1,003.06 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 52.41 | -5.18 | 0.687 |
| 115.00 | -16.59 | -21.66 | 0.00 | -890.69 | 0.00 | 890.69 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 58.00 | -5.49 | 0.640 |
| 120.00 | -15.72 | -20.85 | 0.00 | -782.40 | 0.00 | 782.40 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 63.90 | -5.79 | 0.591 |
| 125.00 | -14.88 | -20.04 | 0.00 | -678.17 | 0.00 | 678.17 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 70.11 | -6.07 | 0.540 |
| 130.00 | -14.08 | -19.32 | 0.00 | -577.99 | 0.00 | 577.99 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 76.60 | -6.34 | 0.486 |
| 133.42 | -13.55 | -18.87 | 0.00 | -511.99 | 0.00 | 511.99 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 81.20 | -6.52 | 0.448 |
| 135.00 | -13.18 | -18.51 | 0.00 | -482.12 | 0.00 | 482.12 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 83.37 | -6.60 | 0.430 |
| 138.00 | -12.49 | -18.05 | 0.00 | -426.58 | 0.00 | 426.58 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 87.55 | -6.74 | 0.629 |
| 140.00 | -8.93 | -13.42 | 0.00 | -390.48 | 0.00 | 390.48 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 90.39 | -6.83 | 0.586 |
| 145.00 | -8.39 | -12.70 | 0.00 | -323.39 | 0.00 | 323.39 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 97.68 | -7.11 | 0.512 |
| 150.00 | -7.87 | -11.99 | 0.00 | -259.90 | 0.00 | 259.90 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 105.24 | -7.36 | 0.436 |
| 155.00 | -7.37 | -11.29 | 0.00 | -199.94 | 0.00 | 199.94 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 113.05 | -7.58 | 0.356 |
| 160.00 | -6.90 | -10.60 | 0.00 | -143.48 | 0.00 | 143.48 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 121.08 | -7.77 | 0.273 |
| 165.00 | -6.45 | -10.03 | 0.00 | -90.46 | 0.00 | 90.46 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 129.27 | -7.91 | 0.186 |
| 168.00 | -3.07 | -5.09 | 0.00 | -60.37 | 0.00 | 60.37 | 1,079.27 | 539.64 | 978.54 | 483.26 | 134.25 | -7.98 | 0.128 |
| 170.00 | -2.96 | -4.78 | 0.00 | -50.19 | 0.00 | 50.19 | 1,067.72 | 533.86 | 951.36 | 469.84 | 137.59 | -8.01 | 0.110 |
| 175.00 | -2.66 | -4.31 | 0.00 | -26.31 | 0.00 | 26.31 | 1,037.79 | 518.90 | 884.11 | 436.63 | 145.98 | -8.07 | 0.063 |
| 180.00 | -2.35 | -4.02 | 0.00 | -4.77 | 0.00 | 4.77 | 1,006.37 | 503.18 | 817.98 | 403.97 | 154.42 | -8.10 | 0.014 |
| 181.00 | -0.20 | -0.19 | 0.00 | -0.75 | 0.00 | 0.75 | 999.90 | 499.95 | 804.90 | 397.51 | 156.11 | -8.10 | 0.002 |
| 185.00 | 0.00 | -0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 162.87 | -8.10 | 0.000 |

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 | | Discrete Forces | | | Linear Forces | | | Sum of Forces | | | |
|---------------|------------------|--------------|----------------|-----------------|--------------------|-------------------|----------------|--------------|----------------|---------------|----------------|--------------------|----------------|
| | | 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 | | 313.3 | 0.0 | | | | | 0.0 | 0.0 | 313.3 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 620.9 | 1,102.1 | | | | | 0.0 | 758.3 | 620.9 | 1,860.5 | 0.0 | 0.0 |
| 10.00 | | 609.5 | 1,081.9 | | | | | 0.0 | 758.3 | 609.5 | 1,840.2 | 0.0 | 0.0 |
| 15.00 | | 598.1 | 1,061.6 | | | | | 0.0 | 758.3 | 598.1 | 1,819.9 | 0.0 | 0.0 |
| 20.00 | | 442.1 | 1,041.3 | | | | | 0.0 | 758.3 | 442.1 | 1,799.6 | 0.0 | 0.0 |
| 22.50 | Reinf. Top Reinf | 290.5 | 513.0 | | | | | 0.0 | 379.2 | 290.5 | 892.2 | 0.0 | 0.0 |
| 25.00 | | 429.3 | 508.0 | | | | | 0.0 | 379.2 | 429.3 | 887.1 | 0.0 | 0.0 |
| 30.00 | | 570.5 | 1,000.7 | | | | | 0.0 | 758.3 | 570.5 | 1,759.1 | 0.0 | 0.0 |
| 35.00 | | 577.3 | 980.5 | | | | | 0.0 | 758.3 | 577.3 | 1,738.8 | 0.0 | 0.0 |
| 40.00 | | 503.2 | 960.2 | | | | | 0.0 | 758.3 | 503.2 | 1,718.5 | 0.0 | 0.0 |
| 43.58 | Bot - Section 2 | 297.3 | 675.7 | | | | | 0.0 | 543.5 | 297.3 | 1,219.1 | 0.0 | 0.0 |
| 45.00 | | 450.5 | 495.0 | | | | | 0.0 | 214.9 | 450.5 | 709.9 | 0.0 | 0.0 |
| 50.00 | Top - Section 1 | 548.3 | 1,722.9 | | | | | 120.8 | 758.3 | 669.1 | 2,481.3 | 0.0 | 0.0 |
| 52.50 | Reinf. Top Reinf | 367.4 | 395.1 | | | | | 61.3 | 379.2 | 428.7 | 774.3 | 0.0 | 0.0 |
| 55.00 | | 552.8 | 390.8 | | | | | 61.9 | 379.2 | 614.7 | 769.9 | 0.0 | 0.0 |
| 60.00 | | 738.1 | 768.5 | | | | | 125.6 | 758.3 | 863.6 | 1,526.9 | 0.0 | 0.0 |
| 65.00 | Reinf. Top | 738.1 | 751.1 | | | | | 127.7 | 758.3 | 865.8 | 1,509.5 | 0.0 | 0.0 |
| 70.00 | | 736.4 | 733.8 | | | | | 129.7 | 457.7 | 866.1 | 1,191.5 | 0.0 | 0.0 |
| 75.00 | | 733.2 | 716.4 | | | | | 131.6 | 374.8 | 864.8 | 1,091.1 | 0.0 | 0.0 |
| 80.00 | | 728.7 | 699.0 | | | | | 133.4 | 157.1 | 862.1 | 856.1 | 0.0 | 0.0 |
| 85.00 | | 543.5 | 681.6 | | | | | 135.1 | 157.1 | 678.6 | 838.7 | 0.0 | 0.0 |
| 87.50 | Bot - Section 3 | 363.0 | 334.3 | | | | | 68.2 | 78.6 | 431.2 | 412.9 | 0.0 | 0.0 |
| 90.00 | | 400.6 | 610.1 | | | | | 68.6 | 78.6 | 469.1 | 688.7 | 0.0 | 0.0 |
| 93.00 | Top - Section 2 | 362.5 | 721.8 | | | | | 82.8 | 94.3 | 445.3 | 816.1 | 0.0 | 0.0 |
| 95.00 | | 360.0 | 218.1 | | | | | 55.5 | 62.8 | 415.5 | 280.9 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 358.4 | 322.8 | 105.9 | 0.0 | 0.0 | 76.5 | 83.7 | 94.3 | 547.9 | 493.6 | 0.0 | 0.0 |
| 100.00 | | 496.6 | 212.3 | | | | | 56.1 | 62.9 | 552.7 | 275.2 | 0.0 | 0.0 |
| 105.00 | | 702.5 | 520.7 | | | | | 141.3 | 157.1 | 843.8 | 677.8 | 0.0 | 0.0 |
| 110.00 | | 692.0 | 506.2 | | | | | 142.6 | 157.1 | 834.7 | 663.3 | 0.0 | 0.0 |
| 115.00 | | 680.7 | 491.7 | | | | | 144.0 | 157.1 | 824.7 | 648.8 | 0.0 | 0.0 |
| 120.00 | | 668.7 | 477.2 | | | | | 145.3 | 157.1 | 813.9 | 634.3 | 0.0 | 0.0 |
| 125.00 | | 655.9 | 462.7 | | | | | 146.5 | 157.1 | 802.4 | 619.9 | 0.0 | 0.0 |
| 130.00 | | 542.6 | 448.2 | | | | | 147.7 | 157.1 | 690.3 | 605.4 | 0.0 | 0.0 |
| 133.42 | Bot - Section 4 | 319.3 | 298.0 | | | | | 101.6 | 107.4 | 420.9 | 405.4 | 0.0 | 0.0 |
| 135.00 | | 291.5 | 232.6 | | | | | 47.3 | 49.8 | 338.8 | 282.4 | 0.0 | 0.0 |
| 138.00 | Top - Section 3 | 315.4 | 434.1 | | | | | 89.9 | 94.3 | 405.4 | 528.4 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 433.3 | 118.5 | 3,725.1 | 0.0 | 0.0 | 2,852.7 | 60.2 | 62.8 | 4,218.5 | 3,034.0 | 0.0 | 0.0 |
| 145.00 | | 608.2 | 289.1 | | | | | 83.4 | 139.1 | 691.5 | 428.2 | 0.0 | 0.0 |
| 150.00 | | 592.4 | 278.9 | | | | | 83.8 | 139.1 | 676.1 | 418.1 | 0.0 | 0.0 |
| 155.00 | | 576.0 | 268.8 | | | | | 84.2 | 139.1 | 660.2 | 407.9 | 0.0 | 0.0 |
| 160.00 | | 559.1 | 258.7 | | | | | 84.6 | 139.1 | 643.6 | 397.8 | 0.0 | 0.0 |
| 165.00 | | 436.2 | 248.5 | | | | | 84.9 | 139.1 | 521.1 | 387.7 | 0.0 | 0.0 |
| 168.00 | Appurtenance(s) | 248.8 | 144.2 | 4,124.3 | 0.0 | 0.0 | 2,787.7 | 51.1 | 83.5 | 4,424.3 | 3,015.4 | 0.0 | 0.0 |
| 170.00 | | 302.4 | 94.1 | | | | | 0.0 | 17.7 | 302.4 | 111.8 | 0.0 | 0.0 |
| 175.00 | | 421.2 | 228.2 | | | | | 0.0 | 44.3 | 421.2 | 272.5 | 0.0 | 0.0 |
| 180.00 | | 247.1 | 218.1 | | | | | 0.0 | 44.3 | 247.1 | 262.4 | 0.0 | 0.0 |
| 181.00 | Appurtenance(s) | 198.8 | 42.4 | 3,288.3 | 0.0 | 0.0 | 1,949.4 | 0.0 | 8.9 | 3,487.1 | 2,000.7 | 0.0 | 0.0 |
| 185.00 | | 158.4 | 165.6 | | | | | 0.0 | 0.0 | 158.4 | 165.6 | 0.0 | 0.0 |

Site Number: 302537

Code: ANSI/TIA-222-G © 2007 - 2018 by ATC IP LLC. All rights reserved.

Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:38 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

Totals: 37,704.1 46,219.4 0.00 0.00

| | | |
|-------------------------------|--|------------------------------|
| 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 | -46.16 | -37.47 | 0.00 | -4,388.59 | 0.00 | 4,388.59 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.665 |
| 5.00 | -44.18 | -36.98 | 0.00 | -4,201.26 | 0.00 | 4,201.26 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.10 | -0.18 | 0.650 |
| 10.00 | -42.22 | -36.50 | 0.00 | -4,016.34 | 0.00 | 4,016.34 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.39 | -0.37 | 0.636 |
| 15.00 | -40.29 | -36.02 | 0.00 | -3,833.83 | 0.00 | 3,833.83 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.88 | -0.56 | 0.621 |
| 20.00 | -38.41 | -35.65 | 0.00 | -3,653.73 | 0.00 | 3,653.73 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 1.56 | -0.74 | 0.607 |
| 22.50 | -37.46 | -35.41 | 0.00 | -3,564.60 | 0.00 | 3,564.60 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 1.98 | -0.84 | 0.599 |
| 22.50 | -37.46 | -35.41 | 0.00 | -3,564.60 | 0.00 | 3,564.60 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 1.98 | -0.84 | 0.599 |
| 25.00 | -36.50 | -35.06 | 0.00 | -3,476.07 | 0.00 | 3,476.07 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 2.44 | -0.93 | 0.591 |
| 30.00 | -34.64 | -34.57 | 0.00 | -3,300.77 | 0.00 | 3,300.77 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 3.52 | -1.12 | 0.576 |
| 35.00 | -32.80 | -34.06 | 0.00 | -3,127.92 | 0.00 | 3,127.92 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 4.79 | -1.31 | 0.560 |
| 40.00 | -31.00 | -33.61 | 0.00 | -2,957.60 | 0.00 | 2,957.60 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 6.26 | -1.49 | 0.543 |
| 43.58 | -29.73 | -33.33 | 0.00 | -2,837.18 | 0.00 | 2,837.18 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 7.43 | -1.63 | 0.531 |
| 45.00 | -28.97 | -32.92 | 0.00 | -2,789.97 | 0.00 | 2,789.97 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 7.92 | -1.68 | 0.521 |
| 50.00 | -26.43 | -32.23 | 0.00 | -2,625.39 | 0.00 | 2,625.39 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 9.78 | -1.87 | 0.588 |
| 52.50 | -25.62 | -31.82 | 0.00 | -2,544.81 | 0.00 | 2,544.81 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 10.79 | -1.96 | 0.576 |
| 52.50 | -25.62 | -31.82 | 0.00 | -2,544.81 | 0.00 | 2,544.81 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 10.79 | -1.96 | 0.576 |
| 55.00 | -24.79 | -31.25 | 0.00 | -2,465.26 | 0.00 | 2,465.26 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 11.84 | -2.06 | 0.565 |
| 60.00 | -23.19 | -30.40 | 0.00 | -2,309.03 | 0.00 | 2,309.03 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 14.11 | -2.26 | 0.543 |
| 65.00 | -21.62 | -29.55 | 0.00 | -2,157.02 | 0.00 | 2,157.02 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 16.57 | -2.45 | 0.521 |
| 65.00 | -21.62 | -29.55 | 0.00 | -2,157.02 | 0.00 | 2,157.02 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 16.57 | -2.45 | 0.808 |
| 70.00 | -20.35 | -28.72 | 0.00 | -2,009.27 | 0.00 | 2,009.27 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 19.24 | -2.64 | 0.782 |
| 75.00 | -19.15 | -27.90 | 0.00 | -1,865.69 | 0.00 | 1,865.69 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 22.16 | -2.94 | 0.755 |
| 80.00 | -18.21 | -27.09 | 0.00 | -1,726.19 | 0.00 | 1,726.19 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 25.40 | -3.23 | 0.727 |
| 85.00 | -17.31 | -26.43 | 0.00 | -1,590.75 | 0.00 | 1,590.75 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 28.94 | -3.53 | 0.699 |
| 87.50 | -16.86 | -26.01 | 0.00 | -1,524.68 | 0.00 | 1,524.68 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 30.82 | -3.68 | 0.684 |
| 90.00 | -16.13 | -25.55 | 0.00 | -1,459.65 | 0.00 | 1,459.65 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 32.79 | -3.82 | 0.670 |
| 93.00 | -15.28 | -25.09 | 0.00 | -1,383.00 | 0.00 | 1,383.00 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 35.24 | -4.00 | 0.813 |
| 95.00 | -14.96 | -24.69 | 0.00 | -1,332.84 | 0.00 | 1,332.84 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 36.94 | -4.12 | 0.797 |
| 98.00 | -14.44 | -24.15 | 0.00 | -1,258.76 | 0.00 | 1,258.76 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 39.59 | -4.32 | 0.772 |
| 100.00 | -14.11 | -23.64 | 0.00 | -1,210.45 | 0.00 | 1,210.45 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 41.43 | -4.45 | 0.755 |
| 105.00 | -13.38 | -22.81 | 0.00 | -1,092.27 | 0.00 | 1,092.27 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 46.25 | -4.76 | 0.712 |
| 110.00 | -12.67 | -21.99 | 0.00 | -978.20 | 0.00 | 978.20 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 51.40 | -5.07 | 0.668 |
| 115.00 | -11.99 | -21.18 | 0.00 | -868.23 | 0.00 | 868.23 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 56.87 | -5.38 | 0.622 |
| 120.00 | -11.34 | -20.36 | 0.00 | -762.35 | 0.00 | 762.35 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 62.65 | -5.67 | 0.574 |
| 125.00 | -10.71 | -19.55 | 0.00 | -660.55 | 0.00 | 660.55 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 68.73 | -5.94 | 0.524 |
| 130.00 | -10.11 | -18.84 | 0.00 | -562.80 | 0.00 | 562.80 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 75.08 | -6.21 | 0.472 |
| 133.42 | -9.72 | -18.40 | 0.00 | -498.43 | 0.00 | 498.43 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 79.58 | -6.38 | 0.434 |
| 135.00 | -9.44 | -18.05 | 0.00 | -469.30 | 0.00 | 469.30 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 81.70 | -6.46 | 0.417 |
| 138.00 | -8.93 | -17.60 | 0.00 | -415.16 | 0.00 | 415.16 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 85.80 | -6.59 | 0.610 |
| 140.00 | -6.36 | -13.08 | 0.00 | -379.96 | 0.00 | 379.96 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 88.57 | -6.68 | 0.568 |
| 145.00 | -5.96 | -12.37 | 0.00 | -314.56 | 0.00 | 314.56 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 95.70 | -6.95 | 0.496 |
| 150.00 | -5.58 | -11.67 | 0.00 | -252.71 | 0.00 | 252.71 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 103.10 | -7.20 | 0.422 |
| 155.00 | -5.22 | -10.98 | 0.00 | -194.36 | 0.00 | 194.36 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 110.74 | -7.41 | 0.345 |
| 160.00 | -4.88 | -10.31 | 0.00 | -139.46 | 0.00 | 139.46 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 118.58 | -7.60 | 0.264 |
| 165.00 | -4.55 | -9.74 | 0.00 | -87.93 | 0.00 | 87.93 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 126.59 | -7.73 | 0.179 |
| 168.00 | -2.16 | -4.96 | 0.00 | -58.69 | 0.00 | 58.69 | 1,079.27 | 539.64 | 978.54 | 483.26 | 131.46 | -7.79 | 0.124 |
| 170.00 | -2.09 | -4.64 | 0.00 | -48.78 | 0.00 | 48.78 | 1,067.72 | 533.86 | 951.36 | 469.84 | 134.72 | -7.83 | 0.106 |
| 175.00 | -1.87 | -4.19 | 0.00 | -25.57 | 0.00 | 25.57 | 1,037.79 | 518.90 | 884.11 | 436.63 | 142.93 | -7.88 | 0.060 |
| 180.00 | -1.64 | -3.91 | 0.00 | -4.63 | 0.00 | 4.63 | 1,006.37 | 503.18 | 817.98 | 403.97 | 151.18 | -7.91 | 0.013 |
| 181.00 | -0.14 | -0.18 | 0.00 | -0.72 | 0.00 | 0.72 | 999.90 | 499.95 | 804.90 | 397.51 | 152.83 | -7.91 | 0.002 |
| 185.00 | 0.00 | -0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 159.44 | -7.91 | 0.000 |

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 | | Discrete Forces | | | Linear Forces | | | Sum of Forces | | | |
|---------------|------------------|--------------|----------------|-----------------|--------------------|-------------------|----------------|--------------|----------------|---------------|----------------|--------------------|----------------|
| | | 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 | | 66.1 | 0.0 | | | | | 0.0 | 0.0 | 66.1 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 131.4 | 1,995.9 | | | | | 0.0 | 1,377.7 | 131.4 | 3,373.6 | 0.0 | 0.0 |
| 10.00 | | 129.7 | 2,021.4 | | | | | 0.0 | 1,423.0 | 129.7 | 3,444.4 | 0.0 | 0.0 |
| 15.00 | | 127.8 | 2,014.6 | | | | | 0.0 | 1,446.5 | 127.8 | 3,461.1 | 0.0 | 0.0 |
| 20.00 | | 94.7 | 1,997.4 | | | | | 0.0 | 1,462.8 | 94.7 | 3,460.2 | 0.0 | 0.0 |
| 22.50 | Reinf. Top Reinf | 62.4 | 991.8 | | | | | 0.0 | 736.3 | 62.4 | 1,728.1 | 0.0 | 0.0 |
| 25.00 | | 92.4 | 985.7 | | | | | 0.0 | 739.1 | 92.4 | 1,724.8 | 0.0 | 0.0 |
| 30.00 | | 123.1 | 1,948.6 | | | | | 0.0 | 1,485.9 | 123.1 | 3,434.5 | 0.0 | 0.0 |
| 35.00 | | 124.9 | 1,920.2 | | | | | 0.0 | 1,494.8 | 124.9 | 3,415.0 | 0.0 | 0.0 |
| 40.00 | | 109.1 | 1,890.0 | | | | | 0.0 | 1,502.6 | 109.1 | 3,392.6 | 0.0 | 0.0 |
| 43.58 | Bot - Section 2 | 64.5 | 1,336.4 | | | | | 0.0 | 1,081.2 | 64.5 | 2,417.6 | 0.0 | 0.0 |
| 45.00 | | 84.7 | 835.1 | | | | | 0.0 | 428.4 | 84.7 | 1,263.4 | 0.0 | 0.0 |
| 50.00 | Top - Section 1 | 99.5 | 2,907.0 | | | | | 46.3 | 1,515.9 | 145.7 | 4,422.8 | 0.0 | 0.0 |
| 52.50 | Reinf. Top Reinf | 66.8 | 831.0 | | | | | 23.7 | 760.1 | 90.5 | 1,591.1 | 0.0 | 0.0 |
| 55.00 | | 100.7 | 823.5 | | | | | 24.1 | 761.5 | 124.8 | 1,585.0 | 0.0 | 0.0 |
| 60.00 | | 134.7 | 1,621.0 | | | | | 49.3 | 1,526.9 | 184.0 | 3,147.9 | 0.0 | 0.0 |
| 65.00 | Reinf. Top | 135.1 | 1,590.0 | | | | | 50.7 | 1,531.8 | 185.8 | 3,121.8 | 0.0 | 0.0 |
| 70.00 | | 135.2 | 1,558.5 | | | | | 52.0 | 1,135.5 | 187.2 | 2,694.1 | 0.0 | 0.0 |
| 75.00 | | 135.0 | 1,526.5 | | | | | 53.3 | 992.3 | 188.3 | 2,518.8 | 0.0 | 0.0 |
| 80.00 | | 134.6 | 1,494.1 | | | | | 54.5 | 608.3 | 189.1 | 2,102.4 | 0.0 | 0.0 |
| 85.00 | | 100.6 | 1,461.3 | | | | | 55.6 | 611.1 | 156.2 | 2,072.4 | 0.0 | 0.0 |
| 87.50 | Bot - Section 3 | 67.3 | 720.0 | | | | | 28.2 | 306.6 | 95.5 | 1,026.6 | 0.0 | 0.0 |
| 90.00 | | 74.3 | 1,089.6 | | | | | 28.5 | 307.2 | 102.8 | 1,396.8 | 0.0 | 0.0 |
| 93.00 | Top - Section 2 | 67.4 | 1,290.0 | | | | | 34.6 | 369.6 | 101.9 | 1,659.6 | 0.0 | 0.0 |
| 95.00 | | 67.0 | 507.6 | | | | | 23.2 | 246.8 | 90.3 | 754.4 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 66.8 | 751.7 | 30.9 | 0.0 | 0.0 | 103.2 | 35.2 | 371.1 | 132.9 | 1,225.9 | 0.0 | 0.0 |
| 100.00 | | 92.9 | 495.7 | | | | | 23.7 | 247.9 | 116.5 | 743.5 | 0.0 | 0.0 |
| 105.00 | | 131.7 | 1,214.0 | | | | | 59.8 | 621.3 | 191.6 | 1,835.3 | 0.0 | 0.0 |
| 110.00 | | 130.2 | 1,183.6 | | | | | 60.8 | 623.6 | 191.0 | 1,807.2 | 0.0 | 0.0 |
| 115.00 | | 128.6 | 1,153.0 | | | | | 61.7 | 625.8 | 190.4 | 1,778.7 | 0.0 | 0.0 |
| 120.00 | | 126.9 | 1,122.1 | | | | | 62.6 | 627.9 | 189.5 | 1,750.0 | 0.0 | 0.0 |
| 125.00 | | 125.0 | 1,091.1 | | | | | 63.5 | 629.9 | 188.5 | 1,720.9 | 0.0 | 0.0 |
| 130.00 | | 103.8 | 1,059.8 | | | | | 64.4 | 631.8 | 168.2 | 1,691.7 | 0.0 | 0.0 |
| 133.42 | Bot - Section 4 | 61.3 | 707.8 | | | | | 44.5 | 432.9 | 105.7 | 1,140.6 | 0.0 | 0.0 |
| 135.00 | | 56.0 | 454.9 | | | | | 20.7 | 200.8 | 76.8 | 655.7 | 0.0 | 0.0 |
| 138.00 | Top - Section 3 | 60.7 | 848.6 | | | | | 39.5 | 381.2 | 100.3 | 1,229.8 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 83.8 | 335.9 | 943.0 | 0.0 | 0.0 | 7,922.7 | 26.5 | 254.4 | 1,053.2 | 8,512.9 | 0.0 | 0.0 |
| 145.00 | | 118.0 | 817.4 | | | | | 38.7 | 521.2 | 156.7 | 1,338.6 | 0.0 | 0.0 |
| 150.00 | | 115.6 | 791.3 | | | | | 39.1 | 522.5 | 154.7 | 1,313.8 | 0.0 | 0.0 |
| 155.00 | | 113.1 | 765.1 | | | | | 39.5 | 523.7 | 152.7 | 1,288.9 | 0.0 | 0.0 |
| 160.00 | | 110.5 | 738.8 | | | | | 39.9 | 525.0 | 150.5 | 1,263.7 | 0.0 | 0.0 |
| 165.00 | | 86.7 | 712.3 | | | | | 40.4 | 526.1 | 127.1 | 1,238.5 | 0.0 | 0.0 |
| 168.00 | Appurtenance(s) | 53.3 | 416.4 | 1,096.8 | 0.0 | 0.0 | 8,632.8 | 24.4 | 316.2 | 1,174.4 | 9,365.4 | 0.0 | 0.0 |
| 170.00 | | 73.0 | 272.8 | | | | | 0.0 | 23.6 | 73.0 | 296.4 | 0.0 | 0.0 |
| 175.00 | | 102.3 | 659.0 | | | | | 0.0 | 59.0 | 102.3 | 718.1 | 0.0 | 0.0 |
| 180.00 | | 60.3 | 632.2 | | | | | 0.0 | 59.0 | 60.3 | 691.2 | 0.0 | 0.0 |
| 181.00 | Appurtenance(s) | 48.9 | 124.4 | 848.5 | 0.0 | 0.0 | 6,040.1 | 0.0 | 11.8 | 897.4 | 6,176.2 | 0.0 | 0.0 |
| 185.00 | | 39.0 | 483.2 | | | | | 0.0 | 0.0 | 39.0 | 483.2 | 0.0 | 0.0 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:41 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: 8,845.75 107,475. 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 | -107.47 | -8.83 | 0.00 | -1,155.76 | 0.00 | 1,155.76 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.191 |
| 5.00 | -104.09 | -8.78 | 0.00 | -1,111.64 | 0.00 | 1,111.64 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.03 | -0.05 | 0.188 |
| 10.00 | -100.64 | -8.73 | 0.00 | -1,067.73 | 0.00 | 1,067.73 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.10 | -0.10 | 0.184 |
| 15.00 | -97.17 | -8.68 | 0.00 | -1,024.06 | 0.00 | 1,024.06 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.23 | -0.15 | 0.181 |
| 20.00 | -93.71 | -8.64 | 0.00 | -980.65 | 0.00 | 980.65 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 0.41 | -0.20 | 0.177 |
| 22.50 | -91.97 | -8.61 | 0.00 | -959.05 | 0.00 | 959.05 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.52 | -0.22 | 0.175 |
| 22.50 | -91.97 | -8.61 | 0.00 | -959.05 | 0.00 | 959.05 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.52 | -0.22 | 0.175 |
| 25.00 | -90.24 | -8.57 | 0.00 | -937.52 | 0.00 | 937.52 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 0.65 | -0.25 | 0.173 |
| 30.00 | -86.80 | -8.51 | 0.00 | -894.66 | 0.00 | 894.66 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 0.93 | -0.30 | 0.169 |
| 35.00 | -83.38 | -8.44 | 0.00 | -852.11 | 0.00 | 852.11 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 1.27 | -0.35 | 0.165 |
| 40.00 | -79.98 | -8.37 | 0.00 | -809.91 | 0.00 | 809.91 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 1.67 | -0.40 | 0.161 |
| 43.58 | -77.56 | -8.32 | 0.00 | -779.92 | 0.00 | 779.92 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 1.98 | -0.44 | 0.158 |
| 45.00 | -76.29 | -8.27 | 0.00 | -768.13 | 0.00 | 768.13 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 2.12 | -0.45 | 0.156 |
| 50.00 | -71.87 | -8.14 | 0.00 | -726.77 | 0.00 | 726.77 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 2.62 | -0.50 | 0.176 |
| 52.50 | -70.27 | -8.07 | 0.00 | -706.42 | 0.00 | 706.42 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 2.89 | -0.53 | 0.173 |
| 52.50 | -70.27 | -8.07 | 0.00 | -706.42 | 0.00 | 706.42 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 2.89 | -0.53 | 0.173 |
| 55.00 | -68.68 | -7.98 | 0.00 | -686.26 | 0.00 | 686.26 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 3.17 | -0.56 | 0.170 |
| 60.00 | -65.53 | -7.82 | 0.00 | -646.38 | 0.00 | 646.38 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 3.79 | -0.61 | 0.165 |
| 65.00 | -62.40 | -7.66 | 0.00 | -607.27 | 0.00 | 607.27 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 4.46 | -0.67 | 0.159 |
| 65.00 | -62.40 | -7.66 | 0.00 | -607.27 | 0.00 | 607.27 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 4.46 | -0.67 | 0.245 |
| 70.00 | -59.70 | -7.51 | 0.00 | -568.97 | 0.00 | 568.97 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 5.18 | -0.72 | 0.238 |
| 75.00 | -57.18 | -7.37 | 0.00 | -531.41 | 0.00 | 531.41 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 5.98 | -0.80 | 0.231 |
| 80.00 | -55.07 | -7.24 | 0.00 | -494.54 | 0.00 | 494.54 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 6.87 | -0.89 | 0.224 |
| 85.00 | -52.99 | -7.10 | 0.00 | -458.36 | 0.00 | 458.36 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 7.85 | -0.97 | 0.217 |
| 87.50 | -51.96 | -7.03 | 0.00 | -440.60 | 0.00 | 440.60 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 8.37 | -1.02 | 0.213 |
| 90.00 | -50.56 | -6.94 | 0.00 | -423.03 | 0.00 | 423.03 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 8.91 | -1.06 | 0.209 |
| 93.00 | -48.90 | -6.85 | 0.00 | -402.20 | 0.00 | 402.20 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 9.59 | -1.11 | 0.255 |
| 95.00 | -48.14 | -6.78 | 0.00 | -388.50 | 0.00 | 388.50 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 10.07 | -1.14 | 0.251 |
| 98.00 | -46.91 | -6.66 | 0.00 | -368.16 | 0.00 | 368.16 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 10.81 | -1.20 | 0.244 |
| 100.00 | -46.16 | -6.58 | 0.00 | -354.84 | 0.00 | 354.84 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 11.32 | -1.24 | 0.239 |
| 105.00 | -44.32 | -6.42 | 0.00 | -321.93 | 0.00 | 321.93 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 12.67 | -1.33 | 0.227 |
| 110.00 | -42.51 | -6.25 | 0.00 | -289.82 | 0.00 | 289.82 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 14.11 | -1.43 | 0.215 |
| 115.00 | -40.73 | -6.08 | 0.00 | -258.55 | 0.00 | 258.55 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 15.66 | -1.52 | 0.202 |
| 120.00 | -38.97 | -5.90 | 0.00 | -228.14 | 0.00 | 228.14 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 17.29 | -1.60 | 0.188 |
| 125.00 | -37.25 | -5.72 | 0.00 | -198.64 | 0.00 | 198.64 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 19.01 | -1.69 | 0.174 |
| 130.00 | -35.56 | -5.54 | 0.00 | -170.05 | 0.00 | 170.05 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 20.82 | -1.76 | 0.158 |
| 133.42 | -34.42 | -5.42 | 0.00 | -151.13 | 0.00 | 151.13 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 22.10 | -1.82 | 0.147 |
| 135.00 | -33.76 | -5.34 | 0.00 | -142.55 | 0.00 | 142.55 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 22.71 | -1.84 | 0.142 |
| 138.00 | -32.53 | -5.22 | 0.00 | -126.53 | 0.00 | 126.53 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 23.88 | -1.88 | 0.210 |
| 140.00 | -24.05 | -3.91 | 0.00 | -116.09 | 0.00 | 116.09 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 24.67 | -1.91 | 0.192 |
| 145.00 | -22.72 | -3.74 | 0.00 | -96.54 | 0.00 | 96.54 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 26.72 | -1.99 | 0.170 |
| 150.00 | -21.41 | -3.56 | 0.00 | -77.85 | 0.00 | 77.85 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 28.84 | -2.07 | 0.147 |
| 155.00 | -20.12 | -3.39 | 0.00 | -60.03 | 0.00 | 60.03 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 31.04 | -2.13 | 0.123 |
| 160.00 | -18.86 | -3.20 | 0.00 | -43.10 | 0.00 | 43.10 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 33.31 | -2.19 | 0.097 |
| 165.00 | -17.63 | -3.04 | 0.00 | -27.08 | 0.00 | 27.08 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 35.63 | -2.23 | 0.070 |
| 168.00 | -8.31 | -1.50 | 0.00 | -17.97 | 0.00 | 17.97 | 1,079.27 | 539.64 | 978.54 | 483.26 | 37.04 | -2.25 | 0.045 |
| 170.00 | -8.02 | -1.42 | 0.00 | -14.97 | 0.00 | 14.97 | 1,067.72 | 533.86 | 951.36 | 469.84 | 37.98 | -2.26 | 0.039 |
| 175.00 | -7.31 | -1.29 | 0.00 | -7.88 | 0.00 | 7.88 | 1,037.79 | 518.90 | 884.11 | 436.63 | 40.36 | -2.28 | 0.025 |
| 180.00 | -6.62 | -1.20 | 0.00 | -1.43 | 0.00 | 1.43 | 1,006.37 | 503.18 | 817.98 | 403.97 | 42.75 | -2.29 | 0.010 |
| 181.00 | -0.48 | -0.06 | 0.00 | -0.23 | 0.00 | 0.23 | 999.90 | 499.95 | 804.90 | 397.51 | 43.23 | -2.29 | 0.001 |
| 185.00 | 0.00 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 45.15 | -2.29 | 0.000 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:41 PM

Customer: SPRINT NEXTEL

| | | |
|-----------------------------------|------------------------------|------------------------------------|
| Load Case: 1.0D + 1.0W | Serviceability 60 mph | 26 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 | | Discrete Forces | | | Linear Forces | | | Sum of Forces | | | |
|---------------|------------------|--------------|----------------|-----------------|--------------------|-------------------|----------------|--------------|----------------|---------------|----------------|--------------------|----------------|
| | | 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 | | 74.9 | 0.0 | | | | | 0.0 | 0.0 | 74.9 | 0.0 | 0.0 | 0.0 |
| 5.00 | | 148.5 | 1,224.6 | | | | | 0.0 | 842.6 | 148.5 | 2,067.2 | 0.0 | 0.0 |
| 10.00 | | 145.8 | 1,202.1 | | | | | 0.0 | 842.6 | 145.8 | 2,044.7 | 0.0 | 0.0 |
| 15.00 | | 143.0 | 1,179.5 | | | | | 0.0 | 842.6 | 143.0 | 2,022.1 | 0.0 | 0.0 |
| 20.00 | | 105.7 | 1,157.0 | | | | | 0.0 | 842.6 | 105.7 | 1,999.6 | 0.0 | 0.0 |
| 22.50 | Reinf. Top Reinf | 69.5 | 570.1 | | | | | 0.0 | 421.3 | 69.5 | 991.4 | 0.0 | 0.0 |
| 25.00 | | 102.6 | 564.4 | | | | | 0.0 | 421.3 | 102.6 | 985.7 | 0.0 | 0.0 |
| 30.00 | | 136.4 | 1,111.9 | | | | | 0.0 | 842.6 | 136.4 | 1,954.5 | 0.0 | 0.0 |
| 35.00 | | 138.0 | 1,089.4 | | | | | 0.0 | 842.6 | 138.0 | 1,932.0 | 0.0 | 0.0 |
| 40.00 | | 120.3 | 1,066.9 | | | | | 0.0 | 842.6 | 120.3 | 1,909.5 | 0.0 | 0.0 |
| 43.58 | Bot - Section 2 | 71.1 | 750.7 | | | | | 0.0 | 603.9 | 71.1 | 1,354.6 | 0.0 | 0.0 |
| 45.00 | | 107.7 | 550.0 | | | | | 0.0 | 238.7 | 107.7 | 788.7 | 0.0 | 0.0 |
| 50.00 | Top - Section 1 | 131.1 | 1,914.3 | | | | | 34.7 | 842.6 | 165.8 | 2,756.9 | 0.0 | 0.0 |
| 52.50 | Reinf. Top Reinf | 87.9 | 439.0 | | | | | 17.7 | 421.3 | 105.6 | 860.3 | 0.0 | 0.0 |
| 55.00 | | 132.2 | 434.2 | | | | | 18.0 | 421.3 | 150.2 | 855.5 | 0.0 | 0.0 |
| 60.00 | | 176.5 | 853.9 | | | | | 36.6 | 842.6 | 213.1 | 1,696.5 | 0.0 | 0.0 |
| 65.00 | Reinf. Top | 176.5 | 834.6 | | | | | 37.5 | 842.6 | 214.0 | 1,677.2 | 0.0 | 0.0 |
| 70.00 | | 176.1 | 815.3 | | | | | 38.4 | 508.6 | 214.5 | 1,323.9 | 0.0 | 0.0 |
| 75.00 | | 175.3 | 796.0 | | | | | 39.2 | 416.4 | 214.5 | 1,212.4 | 0.0 | 0.0 |
| 80.00 | | 174.3 | 776.7 | | | | | 39.9 | 174.6 | 214.2 | 951.3 | 0.0 | 0.0 |
| 85.00 | | 130.0 | 757.3 | | | | | 40.6 | 174.6 | 170.6 | 931.9 | 0.0 | 0.0 |
| 87.50 | Bot - Section 3 | 86.8 | 371.5 | | | | | 20.6 | 87.3 | 107.4 | 458.8 | 0.0 | 0.0 |
| 90.00 | | 95.8 | 677.9 | | | | | 20.7 | 87.3 | 116.5 | 765.2 | 0.0 | 0.0 |
| 93.00 | Top - Section 2 | 86.7 | 802.0 | | | | | 25.1 | 104.8 | 111.8 | 906.8 | 0.0 | 0.0 |
| 95.00 | | 86.1 | 242.3 | | | | | 16.9 | 69.8 | 103.0 | 312.1 | 0.0 | 0.0 |
| 98.00 | Appurtenance(s) | 85.7 | 358.7 | 25.3 | 0.0 | 0.0 | 85.0 | 25.5 | 104.8 | 136.5 | 548.5 | 0.0 | 0.0 |
| 100.00 | | 118.8 | 235.9 | | | | | 17.1 | 69.8 | 135.9 | 305.8 | 0.0 | 0.0 |
| 105.00 | | 168.0 | 578.5 | | | | | 43.2 | 174.6 | 211.2 | 753.1 | 0.0 | 0.0 |
| 110.00 | | 165.5 | 562.4 | | | | | 43.8 | 174.6 | 209.3 | 737.0 | 0.0 | 0.0 |
| 115.00 | | 162.8 | 546.3 | | | | | 44.4 | 174.6 | 207.2 | 720.9 | 0.0 | 0.0 |
| 120.00 | | 159.9 | 530.2 | | | | | 44.9 | 174.6 | 204.8 | 704.8 | 0.0 | 0.0 |
| 125.00 | | 156.8 | 514.1 | | | | | 45.5 | 174.6 | 202.3 | 688.7 | 0.0 | 0.0 |
| 130.00 | | 129.7 | 498.0 | | | | | 46.0 | 174.6 | 175.8 | 672.6 | 0.0 | 0.0 |
| 133.42 | Bot - Section 4 | 76.4 | 331.1 | | | | | 31.7 | 119.3 | 108.1 | 450.4 | 0.0 | 0.0 |
| 135.00 | | 69.7 | 258.4 | | | | | 14.8 | 55.3 | 84.5 | 313.7 | 0.0 | 0.0 |
| 138.00 | Top - Section 3 | 75.4 | 482.3 | | | | | 28.2 | 104.8 | 103.6 | 587.1 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 103.6 | 131.6 | 890.8 | 0.0 | 0.0 | 3,169.7 | 18.9 | 69.8 | 1,013.2 | 3,371.1 | 0.0 | 0.0 |
| 145.00 | | 145.4 | 321.2 | | | | | 31.3 | 154.6 | 176.7 | 475.8 | 0.0 | 0.0 |
| 150.00 | | 141.7 | 309.9 | | | | | 31.6 | 154.6 | 173.2 | 464.5 | 0.0 | 0.0 |
| 155.00 | | 137.7 | 298.7 | | | | | 31.9 | 154.6 | 169.6 | 453.3 | 0.0 | 0.0 |
| 160.00 | | 133.7 | 287.4 | | | | | 32.2 | 154.6 | 165.9 | 442.0 | 0.0 | 0.0 |
| 165.00 | | 104.3 | 276.1 | | | | | 32.5 | 154.6 | 136.8 | 430.7 | 0.0 | 0.0 |
| 168.00 | Appurtenance(s) | 59.5 | 160.3 | 986.3 | 0.0 | 0.0 | 3,097.4 | 19.6 | 92.8 | 1,065.4 | 3,350.4 | 0.0 | 0.0 |
| 170.00 | | 72.3 | 104.6 | | | | | 0.0 | 19.7 | 72.3 | 124.3 | 0.0 | 0.0 |
| 175.00 | | 100.7 | 253.6 | | | | | 0.0 | 49.2 | 100.7 | 302.8 | 0.0 | 0.0 |
| 180.00 | | 59.1 | 242.3 | | | | | 0.0 | 49.2 | 59.1 | 291.5 | 0.0 | 0.0 |
| 181.00 | Appurtenance(s) | 47.5 | 47.1 | 786.3 | 0.0 | 0.0 | 2,166.0 | 0.0 | 9.8 | 833.9 | 2,223.0 | 0.0 | 0.0 |
| 185.00 | | 37.9 | 184.0 | | | | | 0.0 | 0.0 | 37.9 | 184.0 | 0.0 | 0.0 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

Load Case: 1.0D + 1.0W

Serviceability 60 mph

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Totals: 9,248.68 51,354.9 0.00 0.00

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

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2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

Load Case: 1.0D + 1.0W

Serviceability 60 mph

26 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 | -51.35 | -9.19 | 0.00 | -1,084.23 | 0.00 | 1,084.23 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.171 |
| 5.00 | -49.28 | -9.08 | 0.00 | -1,038.26 | 0.00 | 1,038.26 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.02 | -0.05 | 0.167 |
| 10.00 | -47.23 | -8.97 | 0.00 | -992.84 | 0.00 | 992.84 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.10 | -0.09 | 0.163 |
| 15.00 | -45.20 | -8.86 | 0.00 | -947.98 | 0.00 | 947.98 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.22 | -0.14 | 0.160 |
| 20.00 | -43.19 | -8.78 | 0.00 | -903.67 | 0.00 | 903.67 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 0.39 | -0.18 | 0.156 |
| 22.50 | -42.20 | -8.72 | 0.00 | -881.72 | 0.00 | 881.72 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.49 | -0.21 | 0.154 |
| 22.50 | -42.20 | -8.72 | 0.00 | -881.72 | 0.00 | 881.72 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.49 | -0.21 | 0.154 |
| 25.00 | -41.21 | -8.64 | 0.00 | -859.92 | 0.00 | 859.92 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 0.60 | -0.23 | 0.152 |
| 30.00 | -39.25 | -8.53 | 0.00 | -816.72 | 0.00 | 816.72 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 0.87 | -0.28 | 0.148 |
| 35.00 | -37.31 | -8.41 | 0.00 | -774.08 | 0.00 | 774.08 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 1.18 | -0.32 | 0.144 |
| 40.00 | -35.39 | -8.30 | 0.00 | -732.03 | 0.00 | 732.03 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 1.55 | -0.37 | 0.139 |
| 43.58 | -34.04 | -8.24 | 0.00 | -702.29 | 0.00 | 702.29 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 1.84 | -0.40 | 0.136 |
| 45.00 | -33.24 | -8.14 | 0.00 | -690.62 | 0.00 | 690.62 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 1.96 | -0.42 | 0.134 |
| 50.00 | -30.48 | -7.97 | 0.00 | -649.92 | 0.00 | 649.92 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 2.42 | -0.46 | 0.150 |
| 52.50 | -29.62 | -7.87 | 0.00 | -629.99 | 0.00 | 629.99 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 2.67 | -0.49 | 0.148 |
| 52.50 | -29.62 | -7.87 | 0.00 | -629.99 | 0.00 | 629.99 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 2.67 | -0.49 | 0.148 |
| 55.00 | -28.76 | -7.73 | 0.00 | -610.32 | 0.00 | 610.32 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 2.93 | -0.51 | 0.145 |
| 60.00 | -27.06 | -7.53 | 0.00 | -571.66 | 0.00 | 571.66 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 3.49 | -0.56 | 0.139 |
| 65.00 | -25.38 | -7.32 | 0.00 | -534.04 | 0.00 | 534.04 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 4.10 | -0.61 | 0.133 |
| 65.00 | -25.38 | -7.32 | 0.00 | -534.04 | 0.00 | 534.04 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 4.10 | -0.61 | 0.206 |
| 70.00 | -24.05 | -7.11 | 0.00 | -497.46 | 0.00 | 497.46 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 4.76 | -0.65 | 0.199 |
| 75.00 | -22.83 | -6.91 | 0.00 | -461.91 | 0.00 | 461.91 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 5.48 | -0.73 | 0.192 |
| 80.00 | -21.88 | -6.71 | 0.00 | -427.35 | 0.00 | 427.35 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 6.28 | -0.80 | 0.186 |
| 85.00 | -20.94 | -6.55 | 0.00 | -393.79 | 0.00 | 393.79 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 7.16 | -0.87 | 0.178 |
| 87.50 | -20.48 | -6.45 | 0.00 | -377.41 | 0.00 | 377.41 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 7.63 | -0.91 | 0.175 |
| 90.00 | -19.71 | -6.33 | 0.00 | -361.30 | 0.00 | 361.30 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 8.11 | -0.95 | 0.171 |
| 93.00 | -18.80 | -6.22 | 0.00 | -342.30 | 0.00 | 342.30 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 8.72 | -0.99 | 0.207 |
| 95.00 | -18.49 | -6.12 | 0.00 | -329.87 | 0.00 | 329.87 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 9.14 | -1.02 | 0.203 |
| 98.00 | -17.94 | -5.99 | 0.00 | -311.50 | 0.00 | 311.50 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 9.80 | -1.07 | 0.197 |
| 100.00 | -17.63 | -5.86 | 0.00 | -299.53 | 0.00 | 299.53 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 10.25 | -1.10 | 0.193 |
| 105.00 | -16.87 | -5.66 | 0.00 | -270.22 | 0.00 | 270.22 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 11.45 | -1.18 | 0.182 |
| 110.00 | -16.13 | -5.46 | 0.00 | -241.92 | 0.00 | 241.92 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 12.72 | -1.26 | 0.171 |
| 115.00 | -15.41 | -5.25 | 0.00 | -214.64 | 0.00 | 214.64 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 14.08 | -1.33 | 0.159 |
| 120.00 | -14.70 | -5.05 | 0.00 | -188.38 | 0.00 | 188.38 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 15.51 | -1.40 | 0.147 |
| 125.00 | -14.01 | -4.85 | 0.00 | -163.13 | 0.00 | 163.13 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 17.02 | -1.47 | 0.135 |
| 130.00 | -13.34 | -4.66 | 0.00 | -138.90 | 0.00 | 138.90 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 18.59 | -1.54 | 0.122 |
| 133.42 | -12.89 | -4.55 | 0.00 | -122.97 | 0.00 | 122.97 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 19.71 | -1.58 | 0.112 |
| 135.00 | -12.58 | -4.46 | 0.00 | -115.76 | 0.00 | 115.76 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 20.23 | -1.60 | 0.108 |
| 138.00 | -11.99 | -4.35 | 0.00 | -102.37 | 0.00 | 102.37 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 21.25 | -1.63 | 0.158 |
| 140.00 | -8.65 | -3.25 | 0.00 | -93.67 | 0.00 | 93.67 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 21.94 | -1.65 | 0.146 |
| 145.00 | -8.18 | -3.07 | 0.00 | -77.43 | 0.00 | 77.43 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 23.70 | -1.72 | 0.128 |
| 150.00 | -7.71 | -2.89 | 0.00 | -62.11 | 0.00 | 62.11 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 25.54 | -1.78 | 0.109 |
| 155.00 | -7.26 | -2.71 | 0.00 | -47.68 | 0.00 | 47.68 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 27.43 | -1.83 | 0.090 |
| 160.00 | -6.83 | -2.53 | 0.00 | -34.14 | 0.00 | 34.14 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 29.37 | -1.88 | 0.070 |
| 165.00 | -6.40 | -2.38 | 0.00 | -21.47 | 0.00 | 21.47 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 31.36 | -1.91 | 0.049 |
| 168.00 | -3.09 | -1.21 | 0.00 | -14.32 | 0.00 | 14.32 | 1,079.27 | 539.64 | 978.54 | 483.26 | 32.57 | -1.93 | 0.032 |
| 170.00 | -2.96 | -1.13 | 0.00 | -11.90 | 0.00 | 11.90 | 1,067.72 | 533.86 | 951.36 | 469.84 | 33.37 | -1.93 | 0.028 |
| 175.00 | -2.67 | -1.02 | 0.00 | -6.24 | 0.00 | 6.24 | 1,037.79 | 518.90 | 884.11 | 436.63 | 35.41 | -1.95 | 0.017 |
| 180.00 | -2.38 | -0.95 | 0.00 | -1.13 | 0.00 | 1.13 | 1,006.37 | 503.18 | 817.98 | 403.97 | 37.45 | -1.95 | 0.005 |
| 181.00 | -0.18 | -0.04 | 0.00 | -0.18 | 0.00 | 0.18 | 999.90 | 499.95 | 804.90 | 397.51 | 37.86 | -1.95 | 0.001 |
| 185.00 | 0.00 | -0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 39.50 | -1.95 | 0.000 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

| | |
|--|---------|
| Spectral Response Acceleration for Short Period (S_g): | 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 Coefficient 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): | 2.79 |
| Redundancy Factor (p): | 1.30 |
| Seismic Force Distribution Exponent (k): | 2.00 |
| Total Unfactored Dead Load: | 51.35 k |
| Seismic Base Shear (E): | 2.00 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 | 183.00 | 184 | 6,160 | 0.013 | 26 | 228 |
| 46 | 180.50 | 57 | 1,856 | 0.004 | 8 | 71 |
| 45 | 177.50 | 292 | 9,185 | 0.019 | 38 | 361 |
| 44 | 172.50 | 303 | 9,010 | 0.019 | 37 | 375 |
| 43 | 169.00 | 124 | 3,549 | 0.007 | 15 | 154 |
| 42 | 166.50 | 253 | 7,015 | 0.015 | 29 | 313 |
| 41 | 162.50 | 431 | 11,374 | 0.024 | 47 | 534 |
| 40 | 157.50 | 442 | 10,964 | 0.023 | 46 | 547 |
| 39 | 152.50 | 453 | 10,541 | 0.022 | 44 | 561 |
| 38 | 147.50 | 465 | 10,106 | 0.021 | 42 | 575 |
| 37 | 142.50 | 476 | 9,662 | 0.020 | 40 | 589 |
| 36 | 139.00 | 201 | 3,892 | 0.008 | 16 | 250 |
| 35 | 136.50 | 587 | 10,939 | 0.023 | 45 | 727 |
| 34 | 134.21 | 314 | 5,651 | 0.012 | 23 | 389 |
| 33 | 131.71 | 450 | 7,814 | 0.016 | 32 | 558 |
| 32 | 127.50 | 673 | 10,935 | 0.023 | 45 | 833 |
| 31 | 122.50 | 689 | 10,335 | 0.021 | 43 | 853 |
| 30 | 117.50 | 705 | 9,731 | 0.020 | 40 | 873 |
| 29 | 112.50 | 721 | 9,124 | 0.019 | 38 | 893 |
| 28 | 107.50 | 737 | 8,517 | 0.018 | 35 | 913 |
| 27 | 102.50 | 753 | 7,912 | 0.016 | 33 | 933 |
| 26 | 99.00 | 306 | 2,997 | 0.006 | 12 | 379 |
| 25 | 96.50 | 463 | 4,316 | 0.009 | 18 | 574 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

| | | | | | | |
|----------------------|--------|--------|---------|-------|-------|--------|
| 24 | 94.00 | 312 | 2,758 | 0.006 | 11 | 387 |
| 23 | 91.50 | 907 | 7,592 | 0.016 | 32 | 1,123 |
| 22 | 88.75 | 765 | 6,027 | 0.012 | 25 | 948 |
| 21 | 86.25 | 459 | 3,413 | 0.007 | 14 | 568 |
| 20 | 82.50 | 932 | 6,343 | 0.013 | 26 | 1,154 |
| 19 | 77.50 | 951 | 5,713 | 0.012 | 24 | 1,178 |
| 18 | 72.50 | 1,212 | 6,373 | 0.013 | 26 | 1,502 |
| 17 | 67.50 | 1,324 | 6,032 | 0.013 | 25 | 1,640 |
| 16 | 62.50 | 1,677 | 6,552 | 0.014 | 27 | 2,077 |
| 15 | 57.50 | 1,697 | 5,609 | 0.012 | 23 | 2,101 |
| 14 | 53.75 | 855 | 2,472 | 0.005 | 10 | 1,060 |
| 13 | 51.25 | 860 | 2,260 | 0.005 | 9 | 1,066 |
| 12 | 47.50 | 2,757 | 6,220 | 0.013 | 26 | 3,415 |
| 11 | 44.29 | 789 | 1,547 | 0.003 | 6 | 977 |
| 10 | 41.79 | 1,355 | 2,366 | 0.005 | 10 | 1,678 |
| 9 | 37.50 | 1,909 | 2,685 | 0.006 | 11 | 2,365 |
| 8 | 32.50 | 1,932 | 2,041 | 0.004 | 8 | 2,393 |
| 7 | 27.50 | 1,955 | 1,478 | 0.003 | 6 | 2,421 |
| 6 | 23.75 | 986 | 556 | 0.001 | 2 | 1,221 |
| 5 | 21.25 | 991 | 448 | 0.001 | 2 | 1,228 |
| 4 | 17.50 | 2,000 | 612 | 0.001 | 3 | 2,477 |
| 3 | 12.50 | 2,022 | 316 | 0.001 | 1 | 2,505 |
| 2 | 7.50 | 2,045 | 115 | 0.000 | 0 | 2,533 |
| 1 | 2.50 | 2,067 | 13 | 0.000 | 0 | 2,560 |
| Decibel 844G90VTA-SX | 181.00 | 46 | 1,507 | 0.003 | 6 | 57 |
| Decibel DB844H90E-XY | 181.00 | 56 | 1,835 | 0.004 | 8 | 69 |
| Decibel 844G65VTZASX | 181.00 | 64 | 2,097 | 0.004 | 9 | 79 |
| Flat Platform w/ Han | 181.00 | 2,000 | 65,522 | 0.136 | 272 | 2,477 |
| Powerwave Allgon LGP | 168.00 | 85 | 2,388 | 0.005 | 10 | 105 |
| Raycap DC6-48-60-18- | 168.00 | 40 | 1,129 | 0.002 | 5 | 50 |
| Raycap DC6-48-60-0-8 | 168.00 | 33 | 926 | 0.002 | 4 | 41 |
| Ericsson RRUS 11 (Ba | 168.00 | 150 | 4,234 | 0.009 | 18 | 186 |
| Ericsson RRUS 32 B2 | 168.00 | 159 | 4,488 | 0.009 | 19 | 197 |
| Ericsson RRUS 32 B66 | 168.00 | 159 | 4,488 | 0.009 | 19 | 197 |
| Ericsson RRUS 12 | 168.00 | 150 | 4,234 | 0.009 | 18 | 186 |
| Ericsson RRUS-32 (77 | 168.00 | 231 | 6,520 | 0.014 | 27 | 286 |
| Powerwave Allgon 777 | 168.00 | 105 | 2,964 | 0.006 | 12 | 130 |
| Quintel QS66512-2 | 168.00 | 333 | 9,399 | 0.019 | 39 | 412 |
| CCI HPA-65R-BUU-H6 | 168.00 | 153 | 4,318 | 0.009 | 18 | 190 |
| Round Low Profile PI | 168.00 | 1,500 | 42,336 | 0.088 | 176 | 1,858 |
| Alcatel-Lucent RRH2x | 140.00 | 159 | 3,111 | 0.006 | 13 | 197 |
| Alcatel-Lucent 800 M | 140.00 | 192 | 3,763 | 0.008 | 16 | 238 |
| Alcatel-Lucent 4x40W | 140.00 | 264 | 5,174 | 0.011 | 21 | 327 |
| Alcatel-Lucent TD-RR | 140.00 | 210 | 4,116 | 0.009 | 17 | 260 |
| RFS APXVSP18-C-A20 | 140.00 | 171 | 3,352 | 0.007 | 14 | 212 |
| Commscope DT465B-2XR | 140.00 | 174 | 3,410 | 0.007 | 14 | 216 |
| Flat Platform w/ Han | 140.00 | 2,000 | 39,200 | 0.081 | 163 | 2,477 |
| GPS | 98.00 | 10 | 96 | 0.000 | 0 | 12 |
| Stand-Off | 98.00 | 75 | 720 | 0.001 | 3 | 93 |
| | | 51,355 | 482,450 | 1.000 | 2,003 | 63,609 |

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 | 183.00 | 184 | 6,160 | 0.013 | 26 | 158 |
| 46 | 180.50 | 57 | 1,856 | 0.004 | 8 | 49 |
| 45 | 177.50 | 292 | 9,185 | 0.019 | 38 | 251 |
| 44 | 172.50 | 303 | 9,010 | 0.019 | 37 | 261 |
| 43 | 169.00 | 124 | 3,549 | 0.007 | 15 | 107 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

| | | | | | | |
|----------------------|--------|-------|--------|-------|-----|-------|
| 42 | 166.50 | 253 | 7,015 | 0.015 | 29 | 218 |
| 41 | 162.50 | 431 | 11,374 | 0.024 | 47 | 371 |
| 40 | 157.50 | 442 | 10,964 | 0.023 | 46 | 381 |
| 39 | 152.50 | 453 | 10,541 | 0.022 | 44 | 390 |
| 38 | 147.50 | 465 | 10,106 | 0.021 | 42 | 400 |
| 37 | 142.50 | 476 | 9,662 | 0.020 | 40 | 410 |
| 36 | 139.00 | 201 | 3,892 | 0.008 | 16 | 174 |
| 35 | 136.50 | 587 | 10,939 | 0.023 | 45 | 506 |
| 34 | 134.21 | 314 | 5,651 | 0.012 | 23 | 270 |
| 33 | 131.71 | 450 | 7,814 | 0.016 | 32 | 388 |
| 32 | 127.50 | 673 | 10,935 | 0.023 | 45 | 579 |
| 31 | 122.50 | 689 | 10,335 | 0.021 | 43 | 593 |
| 30 | 117.50 | 705 | 9,731 | 0.020 | 40 | 607 |
| 29 | 112.50 | 721 | 9,124 | 0.019 | 38 | 621 |
| 28 | 107.50 | 737 | 8,517 | 0.018 | 35 | 635 |
| 27 | 102.50 | 753 | 7,912 | 0.016 | 33 | 649 |
| 26 | 99.00 | 306 | 2,997 | 0.006 | 12 | 263 |
| 25 | 96.50 | 463 | 4,316 | 0.009 | 18 | 399 |
| 24 | 94.00 | 312 | 2,758 | 0.006 | 11 | 269 |
| 23 | 91.50 | 907 | 7,592 | 0.016 | 32 | 781 |
| 22 | 88.75 | 765 | 6,027 | 0.012 | 25 | 659 |
| 21 | 86.25 | 459 | 3,413 | 0.007 | 14 | 395 |
| 20 | 82.50 | 932 | 6,343 | 0.013 | 26 | 803 |
| 19 | 77.50 | 951 | 5,713 | 0.012 | 24 | 819 |
| 18 | 72.50 | 1,212 | 6,373 | 0.013 | 26 | 1,044 |
| 17 | 67.50 | 1,324 | 6,032 | 0.013 | 25 | 1,140 |
| 16 | 62.50 | 1,677 | 6,552 | 0.014 | 27 | 1,445 |
| 15 | 57.50 | 1,697 | 5,609 | 0.012 | 23 | 1,461 |
| 14 | 53.75 | 855 | 2,472 | 0.005 | 10 | 737 |
| 13 | 51.25 | 860 | 2,260 | 0.005 | 9 | 741 |
| 12 | 47.50 | 2,757 | 6,220 | 0.013 | 26 | 2,375 |
| 11 | 44.29 | 789 | 1,547 | 0.003 | 6 | 679 |
| 10 | 41.79 | 1,355 | 2,366 | 0.005 | 10 | 1,167 |
| 9 | 37.50 | 1,909 | 2,685 | 0.006 | 11 | 1,645 |
| 8 | 32.50 | 1,932 | 2,041 | 0.004 | 8 | 1,664 |
| 7 | 27.50 | 1,955 | 1,478 | 0.003 | 6 | 1,684 |
| 6 | 23.75 | 986 | 556 | 0.001 | 2 | 849 |
| 5 | 21.25 | 991 | 448 | 0.001 | 2 | 854 |
| 4 | 17.50 | 2,000 | 612 | 0.001 | 3 | 1,722 |
| 3 | 12.50 | 2,022 | 316 | 0.001 | 1 | 1,742 |
| 2 | 7.50 | 2,045 | 115 | 0.000 | 0 | 1,761 |
| 1 | 2.50 | 2,067 | 13 | 0.000 | 0 | 1,781 |
| Decibel 844G90VTA-SX | 181.00 | 46 | 1,507 | 0.003 | 6 | 40 |
| Decibel DB844H90E-XY | 181.00 | 56 | 1,835 | 0.004 | 8 | 48 |
| Decibel 844G65VTZASX | 181.00 | 64 | 2,097 | 0.004 | 9 | 55 |
| Flat Platform w/ Han | 181.00 | 2,000 | 65,522 | 0.136 | 272 | 1,723 |
| Powerwave Allgon LGP | 168.00 | 85 | 2,388 | 0.005 | 10 | 73 |
| Raycap DC6-48-60-18- | 168.00 | 40 | 1,129 | 0.002 | 5 | 34 |
| Raycap DC6-48-60-0-8 | 168.00 | 33 | 926 | 0.002 | 4 | 28 |
| Ericsson RRUS 11 (Ba | 168.00 | 150 | 4,234 | 0.009 | 18 | 129 |
| Ericsson RRUS 32 B2 | 168.00 | 159 | 4,488 | 0.009 | 19 | 137 |
| Ericsson RRUS 32 B66 | 168.00 | 159 | 4,488 | 0.009 | 19 | 137 |
| Ericsson RRUS 12 | 168.00 | 150 | 4,234 | 0.009 | 18 | 129 |
| Ericsson RRUS-32 (77 | 168.00 | 231 | 6,520 | 0.014 | 27 | 199 |
| Powerwave Allgon 777 | 168.00 | 105 | 2,964 | 0.006 | 12 | 90 |
| Quintel QS66512-2 | 168.00 | 333 | 9,399 | 0.019 | 39 | 287 |
| CCI HPA-65R-BUU-H6 | 168.00 | 153 | 4,318 | 0.009 | 18 | 132 |
| Round Low Profile PI | 168.00 | 1,500 | 42,336 | 0.088 | 176 | 1,292 |
| Alcatel-Lucent RRH2x | 140.00 | 159 | 3,111 | 0.006 | 13 | 137 |
| Alcatel-Lucent 800 M | 140.00 | 192 | 3,763 | 0.008 | 16 | 165 |
| Alcatel-Lucent 4x40W | 140.00 | 264 | 5,174 | 0.011 | 21 | 227 |
| Alcatel-Lucent TD-RR | 140.00 | 210 | 4,116 | 0.009 | 17 | 181 |
| RFS APXVSP18-C-A20 | 140.00 | 171 | 3,352 | 0.007 | 14 | 147 |
| Commscope DT465B-2XR | 140.00 | 174 | 3,410 | 0.007 | 14 | 150 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

| | | | | | | |
|----------------------|--------|--------|---------|-------|-------|--------|
| Flat Platform w/ Han | 140.00 | 2,000 | 39,200 | 0.081 | 163 | 1,723 |
| GPS | 98.00 | 10 | 96 | 0.000 | 0 | 9 |
| Stand-Off | 98.00 | 75 | 720 | 0.001 | 3 | 65 |
| | | 51,355 | 482,450 | 1.000 | 2,003 | 44,236 |

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 | -61.05 | -2.01 | 0.00 | -292.29 | 0.00 | 292.29 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.054 |
| 5.00 | -58.52 | -2.02 | 0.00 | -282.25 | 0.00 | 282.25 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.01 | -0.01 | 0.053 |
| 10.00 | -56.01 | -2.03 | 0.00 | -272.14 | 0.00 | 272.14 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.03 | -0.02 | 0.052 |
| 15.00 | -53.53 | -2.04 | 0.00 | -261.99 | 0.00 | 261.99 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.06 | -0.04 | 0.051 |
| 20.00 | -52.30 | -2.04 | 0.00 | -251.80 | 0.00 | 251.80 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 0.11 | -0.05 | 0.050 |
| 22.50 | -51.08 | -2.05 | 0.00 | -246.68 | 0.00 | 246.68 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.13 | -0.06 | 0.050 |
| 22.50 | -51.08 | -2.05 | 0.00 | -246.68 | 0.00 | 246.68 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.13 | -0.06 | 0.050 |
| 25.00 | -48.66 | -2.05 | 0.00 | -241.57 | 0.00 | 241.57 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 0.16 | -0.06 | 0.049 |
| 30.00 | -46.27 | -2.05 | 0.00 | -231.33 | 0.00 | 231.33 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 0.24 | -0.08 | 0.048 |
| 35.00 | -43.90 | -2.04 | 0.00 | -221.10 | 0.00 | 221.10 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 0.33 | -0.09 | 0.047 |
| 40.00 | -42.23 | -2.04 | 0.00 | -210.89 | 0.00 | 210.89 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 0.43 | -0.10 | 0.046 |
| 43.58 | -41.25 | -2.03 | 0.00 | -203.59 | 0.00 | 203.59 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 0.51 | -0.11 | 0.045 |
| 45.00 | -37.83 | -2.01 | 0.00 | -200.71 | 0.00 | 200.71 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 0.54 | -0.12 | 0.044 |
| 50.00 | -36.77 | -2.00 | 0.00 | -190.68 | 0.00 | 190.68 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 0.67 | -0.13 | 0.050 |
| 52.50 | -35.71 | -1.99 | 0.00 | -185.67 | 0.00 | 185.67 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.74 | -0.14 | 0.049 |
| 52.50 | -35.71 | -1.99 | 0.00 | -185.67 | 0.00 | 185.67 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.74 | -0.14 | 0.049 |
| 55.00 | -33.61 | -1.97 | 0.00 | -180.69 | 0.00 | 180.69 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 0.81 | -0.14 | 0.048 |
| 60.00 | -31.53 | -1.95 | 0.00 | -170.83 | 0.00 | 170.83 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 0.97 | -0.16 | 0.047 |
| 65.00 | -29.89 | -1.92 | 0.00 | -161.10 | 0.00 | 161.10 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.15 | -0.17 | 0.045 |
| 65.00 | -29.89 | -1.92 | 0.00 | -161.10 | 0.00 | 161.10 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.15 | -0.17 | 0.045 |
| 70.00 | -28.39 | -1.90 | 0.00 | -151.47 | 0.00 | 151.47 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 1.33 | -0.19 | 0.067 |
| 75.00 | -27.21 | -1.89 | 0.00 | -141.96 | 0.00 | 141.96 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 1.54 | -0.21 | 0.065 |
| 80.00 | -26.05 | -1.86 | 0.00 | -132.54 | 0.00 | 132.54 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 1.77 | -0.23 | 0.064 |
| 85.00 | -25.48 | -1.86 | 0.00 | -123.21 | 0.00 | 123.21 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 2.03 | -0.25 | 0.062 |
| 87.50 | -24.53 | -1.83 | 0.00 | -118.57 | 0.00 | 118.57 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 2.17 | -0.27 | 0.061 |
| 90.00 | -23.41 | -1.80 | 0.00 | -113.99 | 0.00 | 113.99 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 2.31 | -0.28 | 0.060 |
| 93.00 | -23.02 | -1.79 | 0.00 | -108.59 | 0.00 | 108.59 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 2.49 | -0.29 | 0.073 |
| 95.00 | -22.45 | -1.78 | 0.00 | -105.01 | 0.00 | 105.01 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 2.61 | -0.30 | 0.072 |
| 98.00 | -21.97 | -1.76 | 0.00 | -99.69 | 0.00 | 99.69 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 2.81 | -0.32 | 0.070 |
| 100.00 | -21.03 | -1.73 | 0.00 | -96.16 | 0.00 | 96.16 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 2.94 | -0.33 | 0.069 |
| 105.00 | -20.12 | -1.70 | 0.00 | -87.51 | 0.00 | 87.51 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 3.30 | -0.35 | 0.065 |
| 110.00 | -19.23 | -1.66 | 0.00 | -79.02 | 0.00 | 79.02 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 3.68 | -0.38 | 0.062 |
| 115.00 | -18.35 | -1.62 | 0.00 | -70.71 | 0.00 | 70.71 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 4.09 | -0.40 | 0.059 |
| 120.00 | -17.50 | -1.58 | 0.00 | -62.59 | 0.00 | 62.59 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 4.52 | -0.43 | 0.055 |
| 125.00 | -16.67 | -1.54 | 0.00 | -54.67 | 0.00 | 54.67 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 4.98 | -0.45 | 0.051 |
| 130.00 | -16.11 | -1.51 | 0.00 | -46.99 | 0.00 | 46.99 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 5.46 | -0.47 | 0.047 |
| 133.42 | -15.72 | -1.48 | 0.00 | -41.84 | 0.00 | 41.84 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 5.80 | -0.48 | 0.044 |
| 135.00 | -14.99 | -1.43 | 0.00 | -39.50 | 0.00 | 39.50 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 5.96 | -0.49 | 0.042 |
| 138.00 | -14.74 | -1.42 | 0.00 | -35.20 | 0.00 | 35.20 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 6.28 | -0.50 | 0.063 |
| 140.00 | -10.23 | -1.08 | 0.00 | -32.37 | 0.00 | 32.37 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 6.49 | -0.51 | 0.056 |
| 145.00 | -9.65 | -1.04 | 0.00 | -26.96 | 0.00 | 26.96 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 7.04 | -0.53 | 0.050 |
| 150.00 | -9.09 | -0.99 | 0.00 | -21.77 | 0.00 | 21.77 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 7.61 | -0.55 | 0.044 |
| 155.00 | -8.55 | -0.94 | 0.00 | -16.81 | 0.00 | 16.81 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 8.20 | -0.57 | 0.037 |
| 160.00 | -8.01 | -0.89 | 0.00 | -12.09 | 0.00 | 12.09 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 8.81 | -0.59 | 0.030 |
| 165.00 | -7.70 | -0.86 | 0.00 | -7.63 | 0.00 | 7.63 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 9.43 | -0.60 | 0.022 |
| 168.00 | -3.71 | -0.44 | 0.00 | -5.04 | 0.00 | 5.04 | 1,079.27 | 539.64 | 978.54 | 483.26 | 9.81 | -0.61 | 0.014 |
| 170.00 | -3.34 | -0.40 | 0.00 | -4.16 | 0.00 | 4.16 | 1,067.72 | 533.86 | 951.36 | 469.84 | 10.06 | -0.61 | 0.012 |
| 175.00 | -2.98 | -0.36 | 0.00 | -2.15 | 0.00 | 2.15 | 1,037.79 | 518.90 | 884.11 | 436.63 | 10.70 | -0.61 | 0.008 |
| 180.00 | -2.91 | -0.35 | 0.00 | -0.35 | 0.00 | 0.35 | 1,006.37 | 503.18 | 817.98 | 403.97 | 11.35 | -0.62 | 0.004 |
| 181.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 999.90 | 499.95 | 804.90 | 397.51 | 11.48 | -0.62 | 0.000 |
| 185.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 11.99 | -0.62 | 0.000 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

Load Case (0.9 - 0.2Sds) * DL + E EFLM

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 | -42.46 | -2.01 | 0.00 | -287.22 | 0.00 | 287.22 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.050 |
| 5.00 | -40.69 | -2.01 | 0.00 | -277.19 | 0.00 | 277.19 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.01 | -0.01 | 0.049 |
| 10.00 | -38.95 | -2.02 | 0.00 | -267.12 | 0.00 | 267.12 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.03 | -0.02 | 0.048 |
| 15.00 | -37.23 | -2.03 | 0.00 | -257.01 | 0.00 | 257.01 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.06 | -0.04 | 0.047 |
| 20.00 | -36.37 | -2.03 | 0.00 | -246.88 | 0.00 | 246.88 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 0.10 | -0.05 | 0.047 |
| 22.50 | -35.53 | -2.03 | 0.00 | -241.81 | 0.00 | 241.81 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.13 | -0.06 | 0.046 |
| 22.50 | -35.53 | -2.03 | 0.00 | -241.81 | 0.00 | 241.81 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.13 | -0.06 | 0.046 |
| 25.00 | -33.84 | -2.03 | 0.00 | -236.73 | 0.00 | 236.73 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 0.16 | -0.06 | 0.046 |
| 30.00 | -32.18 | -2.02 | 0.00 | -226.59 | 0.00 | 226.59 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 0.23 | -0.07 | 0.045 |
| 35.00 | -30.53 | -2.02 | 0.00 | -216.47 | 0.00 | 216.47 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 0.32 | -0.09 | 0.044 |
| 40.00 | -29.36 | -2.01 | 0.00 | -206.38 | 0.00 | 206.38 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 0.42 | -0.10 | 0.043 |
| 43.58 | -28.68 | -2.01 | 0.00 | -199.17 | 0.00 | 199.17 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 0.50 | -0.11 | 0.042 |
| 45.00 | -26.31 | -1.98 | 0.00 | -196.32 | 0.00 | 196.32 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 0.53 | -0.11 | 0.041 |
| 50.00 | -25.57 | -1.97 | 0.00 | -186.42 | 0.00 | 186.42 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 0.66 | -0.13 | 0.047 |
| 52.50 | -24.83 | -1.97 | 0.00 | -181.48 | 0.00 | 181.48 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.73 | -0.13 | 0.046 |
| 52.50 | -24.83 | -1.97 | 0.00 | -181.48 | 0.00 | 181.48 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.73 | -0.13 | 0.046 |
| 55.00 | -23.37 | -1.94 | 0.00 | -176.56 | 0.00 | 176.56 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 0.80 | -0.14 | 0.045 |
| 60.00 | -21.92 | -1.92 | 0.00 | -166.85 | 0.00 | 166.85 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 0.95 | -0.16 | 0.044 |
| 65.00 | -20.78 | -1.89 | 0.00 | -157.26 | 0.00 | 157.26 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.12 | -0.17 | 0.042 |
| 65.00 | -20.78 | -1.89 | 0.00 | -157.26 | 0.00 | 157.26 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.12 | -0.17 | 0.065 |
| 70.00 | -19.74 | -1.87 | 0.00 | -147.79 | 0.00 | 147.79 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 1.31 | -0.18 | 0.063 |
| 75.00 | -18.92 | -1.85 | 0.00 | -138.43 | 0.00 | 138.43 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 1.51 | -0.20 | 0.061 |
| 80.00 | -18.12 | -1.83 | 0.00 | -129.17 | 0.00 | 129.17 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 1.74 | -0.23 | 0.060 |
| 85.00 | -17.72 | -1.82 | 0.00 | -120.03 | 0.00 | 120.03 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 1.99 | -0.25 | 0.058 |
| 87.50 | -17.06 | -1.79 | 0.00 | -115.48 | 0.00 | 115.48 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 2.12 | -0.26 | 0.057 |
| 90.00 | -16.28 | -1.76 | 0.00 | -110.99 | 0.00 | 110.99 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 2.26 | -0.27 | 0.056 |
| 93.00 | -16.01 | -1.75 | 0.00 | -105.70 | 0.00 | 105.70 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 2.44 | -0.29 | 0.068 |
| 95.00 | -15.61 | -1.74 | 0.00 | -102.20 | 0.00 | 102.20 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 2.56 | -0.29 | 0.067 |
| 98.00 | -15.27 | -1.72 | 0.00 | -96.99 | 0.00 | 96.99 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 2.75 | -0.31 | 0.065 |
| 100.00 | -14.62 | -1.69 | 0.00 | -93.55 | 0.00 | 93.55 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 2.88 | -0.32 | 0.064 |
| 105.00 | -13.99 | -1.66 | 0.00 | -85.09 | 0.00 | 85.09 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 3.23 | -0.34 | 0.061 |
| 110.00 | -13.37 | -1.62 | 0.00 | -76.81 | 0.00 | 76.81 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 3.60 | -0.37 | 0.058 |
| 115.00 | -12.76 | -1.58 | 0.00 | -68.70 | 0.00 | 68.70 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 4.00 | -0.39 | 0.055 |
| 120.00 | -12.17 | -1.54 | 0.00 | -60.79 | 0.00 | 60.79 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 4.42 | -0.42 | 0.051 |
| 125.00 | -11.59 | -1.49 | 0.00 | -53.10 | 0.00 | 53.10 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 4.87 | -0.44 | 0.047 |
| 130.00 | -11.20 | -1.46 | 0.00 | -45.63 | 0.00 | 45.63 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 5.34 | -0.46 | 0.043 |
| 133.42 | -10.93 | -1.44 | 0.00 | -40.63 | 0.00 | 40.63 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 5.67 | -0.47 | 0.040 |
| 135.00 | -10.42 | -1.39 | 0.00 | -38.35 | 0.00 | 38.35 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 5.83 | -0.48 | 0.039 |
| 138.00 | -10.25 | -1.37 | 0.00 | -34.18 | 0.00 | 34.18 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 6.13 | -0.49 | 0.058 |
| 140.00 | -7.11 | -1.05 | 0.00 | -31.43 | 0.00 | 31.43 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 6.34 | -0.50 | 0.052 |
| 145.00 | -6.71 | -1.01 | 0.00 | -26.17 | 0.00 | 26.17 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 6.87 | -0.52 | 0.046 |
| 150.00 | -6.32 | -0.96 | 0.00 | -21.13 | 0.00 | 21.13 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 7.43 | -0.54 | 0.040 |
| 155.00 | -5.94 | -0.92 | 0.00 | -16.32 | 0.00 | 16.32 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 8.01 | -0.56 | 0.034 |
| 160.00 | -5.57 | -0.87 | 0.00 | -11.74 | 0.00 | 11.74 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 8.60 | -0.57 | 0.027 |
| 165.00 | -5.35 | -0.84 | 0.00 | -7.40 | 0.00 | 7.40 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 9.21 | -0.59 | 0.020 |
| 168.00 | -2.58 | -0.43 | 0.00 | -4.90 | 0.00 | 4.90 | 1,079.27 | 539.64 | 978.54 | 483.26 | 9.58 | -0.59 | 0.013 |
| 170.00 | -2.32 | -0.39 | 0.00 | -4.04 | 0.00 | 4.04 | 1,067.72 | 533.86 | 951.36 | 469.84 | 9.82 | -0.59 | 0.011 |
| 175.00 | -2.07 | -0.35 | 0.00 | -2.09 | 0.00 | 2.09 | 1,037.79 | 518.90 | 884.11 | 436.63 | 10.45 | -0.60 | 0.007 |
| 180.00 | -2.02 | -0.34 | 0.00 | -0.34 | 0.00 | 0.34 | 1,006.37 | 503.18 | 817.98 | 403.97 | 11.07 | -0.60 | 0.003 |
| 181.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 999.90 | 499.95 | 804.90 | 397.51 | 11.20 | -0.60 | 0.000 |
| 185.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 11.70 | -0.60 | 0.000 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:44 PM

Customer: SPRINT NEXTEL

Equivalent Modal Forces Analysis

(Based on ASCE7-10 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 |
| Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}): | 0.10 |
| Period Based on Rayleigh Method (sec): | 2.79 |
| Redundancy Factor (ρ): | 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 | 183.00 | 184 | 1.849 | 1.772 | 1.065 | 0.338 | 54 | 228 |
| 46 | 180.50 | 57 | 1.799 | 1.535 | 0.976 | 0.307 | 15 | 71 |
| 45 | 177.50 | 292 | 1.740 | 1.279 | 0.877 | 0.271 | 68 | 361 |
| 44 | 172.50 | 303 | 1.643 | 0.919 | 0.730 | 0.215 | 57 | 375 |
| 43 | 169.00 | 124 | 1.577 | 0.710 | 0.640 | 0.180 | 19 | 154 |
| 42 | 166.50 | 253 | 1.531 | 0.580 | 0.580 | 0.156 | 34 | 313 |
| 41 | 162.50 | 431 | 1.458 | 0.403 | 0.494 | 0.121 | 45 | 534 |
| 40 | 157.50 | 442 | 1.370 | 0.229 | 0.401 | 0.081 | 31 | 547 |
| 39 | 152.50 | 453 | 1.284 | 0.099 | 0.322 | 0.047 | 18 | 561 |
| 38 | 147.50 | 465 | 1.201 | 0.006 | 0.256 | 0.017 | 7 | 575 |
| 37 | 142.50 | 476 | 1.121 | -0.057 | 0.200 | -0.007 | -3 | 589 |
| 36 | 139.00 | 201 | 1.067 | -0.087 | 0.167 | -0.021 | -4 | 250 |
| 35 | 136.50 | 587 | 1.029 | -0.102 | 0.146 | -0.030 | -15 | 727 |
| 34 | 134.21 | 314 | 0.995 | -0.111 | 0.129 | -0.036 | -10 | 389 |
| 33 | 131.71 | 450 | 0.958 | -0.118 | 0.112 | -0.043 | -17 | 558 |
| 32 | 127.50 | 673 | 0.898 | -0.122 | 0.086 | -0.050 | -29 | 833 |
| 31 | 122.50 | 689 | 0.829 | -0.117 | 0.062 | -0.054 | -32 | 853 |
| 30 | 117.50 | 705 | 0.762 | -0.104 | 0.044 | -0.053 | -32 | 873 |
| 29 | 112.50 | 721 | 0.699 | -0.087 | 0.030 | -0.047 | -29 | 893 |
| 28 | 107.50 | 737 | 0.638 | -0.067 | 0.019 | -0.037 | -23 | 913 |
| 27 | 102.50 | 753 | 0.580 | -0.046 | 0.012 | -0.023 | -15 | 933 |
| 26 | 99.00 | 306 | 0.541 | -0.031 | 0.009 | -0.011 | -3 | 379 |
| 25 | 96.50 | 463 | 0.514 | -0.021 | 0.008 | -0.003 | -1 | 574 |
| 24 | 94.00 | 312 | 0.488 | -0.012 | 0.007 | 0.005 | 1 | 387 |
| 23 | 91.50 | 907 | 0.462 | -0.003 | 0.006 | 0.013 | 10 | 1,123 |
| 22 | 88.75 | 765 | 0.435 | 0.007 | 0.006 | 0.021 | 14 | 948 |
| 21 | 86.25 | 459 | 0.411 | 0.015 | 0.006 | 0.028 | 11 | 568 |
| 20 | 82.50 | 932 | 0.376 | 0.025 | 0.007 | 0.036 | 29 | 1,154 |
| 19 | 77.50 | 951 | 0.332 | 0.038 | 0.010 | 0.045 | 37 | 1,178 |
| 18 | 72.50 | 1,212 | 0.290 | 0.047 | 0.013 | 0.051 | 53 | 1,502 |
| 17 | 67.50 | 1,324 | 0.252 | 0.055 | 0.017 | 0.054 | 62 | 1,640 |
| 16 | 62.50 | 1,677 | 0.216 | 0.061 | 0.021 | 0.056 | 81 | 2,077 |
| 15 | 57.50 | 1,697 | 0.183 | 0.065 | 0.026 | 0.056 | 82 | 2,101 |
| 14 | 53.75 | 855 | 0.160 | 0.067 | 0.029 | 0.056 | 41 | 1,060 |

| | | | | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 13 | 51.25 | 860 | 0.145 | 0.068 | 0.031 | 0.055 | 41 | 1,066 |
| 12 | 47.50 | 2,757 | 0.125 | 0.070 | 0.034 | 0.055 | 130 | 3,415 |
| 11 | 44.29 | 789 | 0.108 | 0.071 | 0.036 | 0.054 | 37 | 977 |
| 10 | 41.79 | 1,355 | 0.096 | 0.071 | 0.038 | 0.053 | 63 | 1,678 |
| 9 | 37.50 | 1,909 | 0.078 | 0.072 | 0.040 | 0.052 | 87 | 2,365 |
| 8 | 32.50 | 1,932 | 0.058 | 0.072 | 0.041 | 0.051 | 86 | 2,393 |
| 7 | 27.50 | 1,955 | 0.042 | 0.070 | 0.042 | 0.050 | 85 | 2,421 |
| 6 | 23.75 | 986 | 0.031 | 0.068 | 0.041 | 0.049 | 42 | 1,221 |
| 5 | 21.25 | 991 | 0.025 | 0.066 | 0.039 | 0.048 | 41 | 1,228 |
| 4 | 17.50 | 2,000 | 0.017 | 0.062 | 0.037 | 0.045 | 78 | 2,477 |
| 3 | 12.50 | 2,022 | 0.009 | 0.053 | 0.030 | 0.040 | 70 | 2,505 |
| 2 | 7.50 | 2,045 | 0.003 | 0.038 | 0.021 | 0.031 | 55 | 2,533 |
| 1 | 2.50 | 2,067 | 0.000 | 0.015 | 0.008 | 0.014 | 25 | 2,560 |
| Decibel 844G90VTA-SX | 181.00 | 46 | 1.809 | 1.580 | 0.993 | 0.313 | 12 | 57 |
| Decibel DB844H90E-XY | 181.00 | 56 | 1.809 | 1.580 | 0.993 | 0.313 | 15 | 69 |
| Decibel 844G65VTZASX | 181.00 | 64 | 1.809 | 1.580 | 0.993 | 0.313 | 17 | 79 |
| Flat Platform w/ Han | 181.00 | 2,000 | 1.809 | 1.580 | 0.993 | 0.313 | 542 | 2,477 |
| Powerwave Allgon LGP | 168.00 | 85 | 1.559 | 0.656 | 0.615 | 0.170 | 12 | 105 |
| Raycap DC6-48-60-18- | 168.00 | 40 | 1.559 | 0.656 | 0.615 | 0.170 | 6 | 50 |
| Raycap DC6-48-60-0-8 | 168.00 | 33 | 1.559 | 0.656 | 0.615 | 0.170 | 5 | 41 |
| Ericsson RRUS 11 (Ba | 168.00 | 150 | 1.559 | 0.656 | 0.615 | 0.170 | 22 | 186 |
| Ericsson RRUS 32 B2 | 168.00 | 159 | 1.559 | 0.656 | 0.615 | 0.170 | 23 | 197 |
| Ericsson RRUS 32 B66 | 168.00 | 159 | 1.559 | 0.656 | 0.615 | 0.170 | 23 | 197 |
| Ericsson RRUS 12 | 168.00 | 150 | 1.559 | 0.656 | 0.615 | 0.170 | 22 | 186 |
| Ericsson RRUS-32 (77 | 168.00 | 231 | 1.559 | 0.656 | 0.615 | 0.170 | 34 | 286 |
| Powerwave Allgon 777 | 168.00 | 105 | 1.559 | 0.656 | 0.615 | 0.170 | 15 | 130 |
| Quintel QS66512-2 | 168.00 | 333 | 1.559 | 0.656 | 0.615 | 0.170 | 49 | 412 |
| CCI HPA-65R-BUU-H6 | 168.00 | 153 | 1.559 | 0.656 | 0.615 | 0.170 | 23 | 190 |
| Round Low Profile PI | 168.00 | 1,500 | 1.559 | 0.656 | 0.615 | 0.170 | 221 | 1,858 |
| Alcatel-Lucent RRH2x | 140.00 | 159 | 1.082 | -0.079 | 0.176 | -0.017 | -2 | 197 |
| Alcatel-Lucent 800 M | 140.00 | 192 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 238 |
| Alcatel-Lucent 4x40W | 140.00 | 264 | 1.082 | -0.079 | 0.176 | -0.017 | -4 | 327 |
| Alcatel-Lucent TD-RR | 140.00 | 210 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 260 |
| RFS APXVSP18-C-A20 | 140.00 | 171 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 212 |
| Commscope DT465B- | 140.00 | 174 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 216 |
| Flat Platform w/ Han | 140.00 | 2,000 | 1.082 | -0.079 | 0.176 | -0.017 | -30 | 2,477 |
| GPS | 98.00 | 10 | 0.530 | -0.027 | 0.009 | -0.008 | 0 | 12 |
| Stand-Off | 98.00 | 75 | 0.530 | -0.027 | 0.009 | -0.008 | -1 | 93 |
| | | 51,355 | 65.003 | 21.209 | 20.558 | 5.489 | 2,392 | 63,609 |

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 | 183.00 | 184 | 1.849 | 1.772 | 1.065 | 0.338 | 54 | 158 |
| 46 | 180.50 | 57 | 1.799 | 1.535 | 0.976 | 0.307 | 15 | 49 |
| 45 | 177.50 | 292 | 1.740 | 1.279 | 0.877 | 0.271 | 68 | 251 |
| 44 | 172.50 | 303 | 1.643 | 0.919 | 0.730 | 0.215 | 57 | 261 |
| 43 | 169.00 | 124 | 1.577 | 0.710 | 0.640 | 0.180 | 19 | 107 |
| 42 | 166.50 | 253 | 1.531 | 0.580 | 0.580 | 0.156 | 34 | 218 |
| 41 | 162.50 | 431 | 1.458 | 0.403 | 0.494 | 0.121 | 45 | 371 |
| 40 | 157.50 | 442 | 1.370 | 0.229 | 0.401 | 0.081 | 31 | 381 |
| 39 | 152.50 | 453 | 1.284 | 0.099 | 0.322 | 0.047 | 18 | 390 |
| 38 | 147.50 | 465 | 1.201 | 0.006 | 0.256 | 0.017 | 7 | 400 |
| 37 | 142.50 | 476 | 1.121 | -0.057 | 0.200 | -0.007 | -3 | 410 |
| 36 | 139.00 | 201 | 1.067 | -0.087 | 0.167 | -0.021 | -4 | 174 |
| 35 | 136.50 | 587 | 1.029 | -0.102 | 0.146 | -0.030 | -15 | 506 |
| 34 | 134.21 | 314 | 0.995 | -0.111 | 0.129 | -0.036 | -10 | 270 |
| 33 | 131.71 | 450 | 0.958 | -0.118 | 0.112 | -0.043 | -17 | 388 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:45 PM

Customer: SPRINT NEXTEL

| | | | | | | | | |
|----------------------|--------|--------|--------|--------|--------|--------|-------|--------|
| 32 | 127.50 | 673 | 0.898 | -0.122 | 0.086 | -0.050 | -29 | 579 |
| 31 | 122.50 | 689 | 0.829 | -0.117 | 0.062 | -0.054 | -32 | 593 |
| 30 | 117.50 | 705 | 0.762 | -0.104 | 0.044 | -0.053 | -32 | 607 |
| 29 | 112.50 | 721 | 0.699 | -0.087 | 0.030 | -0.047 | -29 | 621 |
| 28 | 107.50 | 737 | 0.638 | -0.067 | 0.019 | -0.037 | -23 | 635 |
| 27 | 102.50 | 753 | 0.580 | -0.046 | 0.012 | -0.023 | -15 | 649 |
| 26 | 99.00 | 306 | 0.541 | -0.031 | 0.009 | -0.011 | -3 | 263 |
| 25 | 96.50 | 463 | 0.514 | -0.021 | 0.008 | -0.003 | -1 | 399 |
| 24 | 94.00 | 312 | 0.488 | -0.012 | 0.007 | 0.005 | 1 | 269 |
| 23 | 91.50 | 907 | 0.462 | -0.003 | 0.006 | 0.013 | 10 | 781 |
| 22 | 88.75 | 765 | 0.435 | 0.007 | 0.006 | 0.021 | 14 | 659 |
| 21 | 86.25 | 459 | 0.411 | 0.015 | 0.006 | 0.028 | 11 | 395 |
| 20 | 82.50 | 932 | 0.376 | 0.025 | 0.007 | 0.036 | 29 | 803 |
| 19 | 77.50 | 951 | 0.332 | 0.038 | 0.010 | 0.045 | 37 | 819 |
| 18 | 72.50 | 1,212 | 0.290 | 0.047 | 0.013 | 0.051 | 53 | 1,044 |
| 17 | 67.50 | 1,324 | 0.252 | 0.055 | 0.017 | 0.054 | 62 | 1,140 |
| 16 | 62.50 | 1,677 | 0.216 | 0.061 | 0.021 | 0.056 | 81 | 1,445 |
| 15 | 57.50 | 1,697 | 0.183 | 0.065 | 0.026 | 0.056 | 82 | 1,461 |
| 14 | 53.75 | 855 | 0.160 | 0.067 | 0.029 | 0.056 | 41 | 737 |
| 13 | 51.25 | 860 | 0.145 | 0.068 | 0.031 | 0.055 | 41 | 741 |
| 12 | 47.50 | 2,757 | 0.125 | 0.070 | 0.034 | 0.055 | 130 | 2,375 |
| 11 | 44.29 | 789 | 0.108 | 0.071 | 0.036 | 0.054 | 37 | 679 |
| 10 | 41.79 | 1,355 | 0.096 | 0.071 | 0.038 | 0.053 | 63 | 1,167 |
| 9 | 37.50 | 1,909 | 0.078 | 0.072 | 0.040 | 0.052 | 87 | 1,645 |
| 8 | 32.50 | 1,932 | 0.058 | 0.072 | 0.041 | 0.051 | 86 | 1,664 |
| 7 | 27.50 | 1,955 | 0.042 | 0.070 | 0.042 | 0.050 | 85 | 1,684 |
| 6 | 23.75 | 986 | 0.031 | 0.068 | 0.041 | 0.049 | 42 | 849 |
| 5 | 21.25 | 991 | 0.025 | 0.066 | 0.039 | 0.048 | 41 | 854 |
| 4 | 17.50 | 2,000 | 0.017 | 0.062 | 0.037 | 0.045 | 78 | 1,722 |
| 3 | 12.50 | 2,022 | 0.009 | 0.053 | 0.030 | 0.040 | 70 | 1,742 |
| 2 | 7.50 | 2,045 | 0.003 | 0.038 | 0.021 | 0.031 | 55 | 1,761 |
| 1 | 2.50 | 2,067 | 0.000 | 0.015 | 0.008 | 0.014 | 25 | 1,781 |
| Decibel 844G90VTA-SX | 181.00 | 46 | 1.809 | 1.580 | 0.993 | 0.313 | 12 | 40 |
| Decibel DB844H90E-XY | 181.00 | 56 | 1.809 | 1.580 | 0.993 | 0.313 | 15 | 48 |
| Decibel 844G65VTZASX | 181.00 | 64 | 1.809 | 1.580 | 0.993 | 0.313 | 17 | 55 |
| Flat Platform w/ Han | 181.00 | 2,000 | 1.809 | 1.580 | 0.993 | 0.313 | 542 | 1,723 |
| Powerwave Allgon LGP | 168.00 | 85 | 1.559 | 0.656 | 0.615 | 0.170 | 12 | 73 |
| Raycap DC6-48-60-18- | 168.00 | 40 | 1.559 | 0.656 | 0.615 | 0.170 | 6 | 34 |
| Raycap DC6-48-60-0-8 | 168.00 | 33 | 1.559 | 0.656 | 0.615 | 0.170 | 5 | 28 |
| Ericsson RRUS 11 (Ba | 168.00 | 150 | 1.559 | 0.656 | 0.615 | 0.170 | 22 | 129 |
| Ericsson RRUS 32 B2 | 168.00 | 159 | 1.559 | 0.656 | 0.615 | 0.170 | 23 | 137 |
| Ericsson RRUS 32 B66 | 168.00 | 159 | 1.559 | 0.656 | 0.615 | 0.170 | 23 | 137 |
| Ericsson RRUS 12 | 168.00 | 150 | 1.559 | 0.656 | 0.615 | 0.170 | 22 | 129 |
| Ericsson RRUS-32 (77 | 168.00 | 231 | 1.559 | 0.656 | 0.615 | 0.170 | 34 | 199 |
| Powerwave Allgon 777 | 168.00 | 105 | 1.559 | 0.656 | 0.615 | 0.170 | 15 | 90 |
| Quintel QS66512-2 | 168.00 | 333 | 1.559 | 0.656 | 0.615 | 0.170 | 49 | 287 |
| CCI HPA-65R-BUU-H6 | 168.00 | 153 | 1.559 | 0.656 | 0.615 | 0.170 | 23 | 132 |
| Round Low Profile PI | 168.00 | 1,500 | 1.559 | 0.656 | 0.615 | 0.170 | 221 | 1,292 |
| Alcatel-Lucent RRH2x | 140.00 | 159 | 1.082 | -0.079 | 0.176 | -0.017 | -2 | 137 |
| Alcatel-Lucent 800 M | 140.00 | 192 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 165 |
| Alcatel-Lucent 4x40W | 140.00 | 264 | 1.082 | -0.079 | 0.176 | -0.017 | -4 | 227 |
| Alcatel-Lucent TD-RR | 140.00 | 210 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 181 |
| RFS APXVSP18-C-A20 | 140.00 | 171 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 147 |
| Commscope DT465B- | 140.00 | 174 | 1.082 | -0.079 | 0.176 | -0.017 | -3 | 150 |
| Flat Platform w/ Han | 140.00 | 2,000 | 1.082 | -0.079 | 0.176 | -0.017 | -30 | 1,723 |
| GPS | 98.00 | 10 | 0.530 | -0.027 | 0.009 | -0.008 | 0 | 9 |
| Stand-Off | 98.00 | 75 | 0.530 | -0.027 | 0.009 | -0.008 | -1 | 65 |
| | | 51,355 | 65.003 | 21.209 | 20.558 | 5.489 | 2,392 | 44,236 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:45 PM

Customer: SPRINT NEXTEL

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 | -61.05 | -2.37 | 0.00 | -276.59 | 0.00 | 276.59 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.052 |
| 5.00 | -58.52 | -2.33 | 0.00 | -264.73 | 0.00 | 264.73 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.01 | -0.01 | 0.050 |
| 10.00 | -56.01 | -2.27 | 0.00 | -253.08 | 0.00 | 253.08 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.02 | -0.02 | 0.049 |
| 15.00 | -53.53 | -2.20 | 0.00 | -241.73 | 0.00 | 241.73 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.06 | -0.03 | 0.048 |
| 20.00 | -52.30 | -2.17 | 0.00 | -230.73 | 0.00 | 230.73 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 0.10 | -0.05 | 0.047 |
| 22.50 | -51.08 | -2.13 | 0.00 | -225.31 | 0.00 | 225.31 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.12 | -0.05 | 0.046 |
| 22.50 | -51.08 | -2.13 | 0.00 | -225.31 | 0.00 | 225.31 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.12 | -0.05 | 0.046 |
| 25.00 | -48.66 | -2.05 | 0.00 | -219.98 | 0.00 | 219.98 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 0.15 | -0.06 | 0.045 |
| 30.00 | -46.27 | -1.97 | 0.00 | -209.73 | 0.00 | 209.73 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 0.22 | -0.07 | 0.044 |
| 35.00 | -43.90 | -1.89 | 0.00 | -199.87 | 0.00 | 199.87 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 0.30 | -0.08 | 0.043 |
| 40.00 | -42.23 | -1.83 | 0.00 | -190.42 | 0.00 | 190.42 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 0.39 | -0.09 | 0.042 |
| 43.58 | -41.25 | -1.80 | 0.00 | -183.85 | 0.00 | 183.85 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 0.47 | -0.10 | 0.041 |
| 45.00 | -37.83 | -1.67 | 0.00 | -181.30 | 0.00 | 181.30 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 0.50 | -0.11 | 0.040 |
| 50.00 | -36.77 | -1.63 | 0.00 | -172.97 | 0.00 | 172.97 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 0.62 | -0.12 | 0.046 |
| 52.50 | -35.71 | -1.59 | 0.00 | -168.89 | 0.00 | 168.89 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.68 | -0.13 | 0.045 |
| 52.50 | -35.71 | -1.59 | 0.00 | -168.89 | 0.00 | 168.89 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.68 | -0.13 | 0.045 |
| 55.00 | -33.61 | -1.51 | 0.00 | -164.92 | 0.00 | 164.92 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 0.75 | -0.13 | 0.045 |
| 60.00 | -31.53 | -1.43 | 0.00 | -157.37 | 0.00 | 157.37 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 0.90 | -0.14 | 0.043 |
| 65.00 | -29.89 | -1.37 | 0.00 | -150.21 | 0.00 | 150.21 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.05 | -0.16 | 0.042 |
| 65.00 | -29.89 | -1.37 | 0.00 | -150.21 | 0.00 | 150.21 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.05 | -0.16 | 0.065 |
| 70.00 | -28.39 | -1.32 | 0.00 | -143.36 | 0.00 | 143.36 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 1.23 | -0.17 | 0.064 |
| 75.00 | -27.21 | -1.29 | 0.00 | -136.75 | 0.00 | 136.75 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 1.42 | -0.19 | 0.063 |
| 80.00 | -26.05 | -1.27 | 0.00 | -130.29 | 0.00 | 130.29 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 1.63 | -0.22 | 0.063 |
| 85.00 | -25.49 | -1.26 | 0.00 | -123.94 | 0.00 | 123.94 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 1.87 | -0.24 | 0.062 |
| 87.50 | -24.54 | -1.25 | 0.00 | -120.78 | 0.00 | 120.78 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 2.00 | -0.25 | 0.062 |
| 90.00 | -23.41 | -1.24 | 0.00 | -117.66 | 0.00 | 117.66 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 2.13 | -0.26 | 0.061 |
| 93.00 | -23.03 | -1.24 | 0.00 | -113.93 | 0.00 | 113.93 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 2.30 | -0.28 | 0.076 |
| 95.00 | -22.45 | -1.25 | 0.00 | -111.45 | 0.00 | 111.45 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 2.42 | -0.29 | 0.076 |
| 98.00 | -21.97 | -1.25 | 0.00 | -107.71 | 0.00 | 107.71 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 2.60 | -0.30 | 0.075 |
| 100.00 | -21.04 | -1.27 | 0.00 | -105.21 | 0.00 | 105.21 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 2.73 | -0.31 | 0.074 |
| 105.00 | -20.12 | -1.30 | 0.00 | -98.86 | 0.00 | 98.86 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 3.07 | -0.34 | 0.073 |
| 110.00 | -19.23 | -1.33 | 0.00 | -92.37 | 0.00 | 92.37 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 3.45 | -0.37 | 0.071 |
| 115.00 | -18.35 | -1.37 | 0.00 | -85.72 | 0.00 | 85.72 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 3.85 | -0.40 | 0.069 |
| 120.00 | -17.50 | -1.40 | 0.00 | -78.88 | 0.00 | 78.88 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 4.28 | -0.43 | 0.067 |
| 125.00 | -16.67 | -1.43 | 0.00 | -71.87 | 0.00 | 71.87 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 4.75 | -0.46 | 0.064 |
| 130.00 | -16.11 | -1.45 | 0.00 | -64.70 | 0.00 | 64.70 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 5.24 | -0.49 | 0.061 |
| 133.42 | -15.72 | -1.46 | 0.00 | -59.73 | 0.00 | 59.73 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 5.60 | -0.51 | 0.059 |
| 135.00 | -14.99 | -1.48 | 0.00 | -57.42 | 0.00 | 57.42 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 5.77 | -0.52 | 0.058 |
| 138.00 | -14.74 | -1.48 | 0.00 | -52.99 | 0.00 | 52.99 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 6.10 | -0.53 | 0.089 |
| 140.00 | -10.22 | -1.49 | 0.00 | -50.03 | 0.00 | 50.03 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 6.33 | -0.55 | 0.082 |
| 145.00 | -9.65 | -1.49 | 0.00 | -42.56 | 0.00 | 42.56 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 6.92 | -0.58 | 0.074 |
| 150.00 | -9.09 | -1.47 | 0.00 | -35.13 | 0.00 | 35.13 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 7.54 | -0.62 | 0.066 |
| 155.00 | -8.54 | -1.43 | 0.00 | -27.79 | 0.00 | 27.79 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 8.21 | -0.65 | 0.056 |
| 160.00 | -8.01 | -1.39 | 0.00 | -20.62 | 0.00 | 20.62 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 8.90 | -0.67 | 0.045 |
| 165.00 | -7.69 | -1.35 | 0.00 | -13.69 | 0.00 | 13.69 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 9.61 | -0.69 | 0.034 |
| 168.00 | -3.71 | -0.83 | 0.00 | -9.63 | 0.00 | 9.63 | 1,079.27 | 539.64 | 978.54 | 483.26 | 10.05 | -0.70 | 0.023 |
| 170.00 | -3.33 | -0.77 | 0.00 | -7.98 | 0.00 | 7.98 | 1,067.72 | 533.86 | 951.36 | 469.84 | 10.35 | -0.71 | 0.020 |
| 175.00 | -2.97 | -0.69 | 0.00 | -4.15 | 0.00 | 4.15 | 1,037.79 | 518.90 | 884.11 | 436.63 | 11.09 | -0.72 | 0.012 |
| 180.00 | -2.90 | -0.68 | 0.00 | -0.68 | 0.00 | 0.68 | 1,006.37 | 503.18 | 817.98 | 403.97 | 11.85 | -0.72 | 0.005 |
| 181.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 999.90 | 499.95 | 804.90 | 397.51 | 12.00 | -0.72 | 0.000 |
| 185.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 12.60 | -0.72 | 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 | -42.46 | -2.37 | 0.00 | -271.56 | 0.00 | 271.56 | 4,727.77 | 2,363.89 | 10,057.5 | 4,967.06 | 0.00 | 0.00 | 0.048 |
| 5.00 | -40.69 | -2.32 | 0.00 | -259.71 | 0.00 | 259.71 | 4,681.88 | 2,340.94 | 9,776.84 | 4,828.41 | 0.01 | -0.01 | 0.047 |
| 10.00 | -38.95 | -2.26 | 0.00 | -248.09 | 0.00 | 248.09 | 4,634.49 | 2,317.25 | 9,496.63 | 4,690.03 | 0.02 | -0.02 | 0.045 |
| 15.00 | -37.23 | -2.19 | 0.00 | -236.79 | 0.00 | 236.79 | 4,585.61 | 2,292.80 | 9,217.11 | 4,551.98 | 0.05 | -0.03 | 0.044 |
| 20.00 | -36.37 | -2.15 | 0.00 | -225.84 | 0.00 | 225.84 | 4,535.23 | 2,267.61 | 8,938.46 | 4,414.37 | 0.10 | -0.05 | 0.043 |
| 22.50 | -35.53 | -2.11 | 0.00 | -220.46 | 0.00 | 220.46 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.12 | -0.05 | 0.043 |
| 22.50 | -35.53 | -2.11 | 0.00 | -220.46 | 0.00 | 220.46 | 4,509.47 | 2,254.74 | 8,799.52 | 4,345.75 | 0.12 | -0.05 | 0.043 |
| 25.00 | -33.84 | -2.03 | 0.00 | -215.17 | 0.00 | 215.17 | 4,483.35 | 2,241.67 | 8,660.87 | 4,277.28 | 0.15 | -0.06 | 0.042 |
| 30.00 | -32.18 | -1.95 | 0.00 | -205.01 | 0.00 | 205.01 | 4,429.97 | 2,214.99 | 8,384.50 | 4,140.79 | 0.22 | -0.07 | 0.041 |
| 35.00 | -30.53 | -1.87 | 0.00 | -195.25 | 0.00 | 195.25 | 4,375.10 | 2,187.55 | 8,109.53 | 4,004.99 | 0.30 | -0.08 | 0.040 |
| 40.00 | -29.36 | -1.81 | 0.00 | -185.90 | 0.00 | 185.90 | 4,318.73 | 2,159.36 | 7,836.14 | 3,869.97 | 0.39 | -0.09 | 0.039 |
| 43.58 | -28.69 | -1.77 | 0.00 | -179.42 | 0.00 | 179.42 | 4,277.41 | 2,138.70 | 7,641.28 | 3,773.74 | 0.46 | -0.10 | 0.038 |
| 45.00 | -26.31 | -1.64 | 0.00 | -176.90 | 0.00 | 176.90 | 4,260.86 | 2,130.43 | 7,564.50 | 3,735.82 | 0.49 | -0.10 | 0.037 |
| 50.00 | -25.57 | -1.61 | 0.00 | -168.68 | 0.00 | 168.68 | 3,421.90 | 1,710.95 | 6,065.62 | 2,995.58 | 0.61 | -0.12 | 0.043 |
| 52.50 | -24.83 | -1.57 | 0.00 | -164.67 | 0.00 | 164.67 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.67 | -0.12 | 0.042 |
| 52.50 | -24.83 | -1.57 | 0.00 | -164.67 | 0.00 | 164.67 | 3,401.39 | 1,700.70 | 5,962.76 | 2,944.78 | 0.67 | -0.12 | 0.042 |
| 55.00 | -23.37 | -1.48 | 0.00 | -160.76 | 0.00 | 160.76 | 3,380.51 | 1,690.25 | 5,860.04 | 2,894.05 | 0.73 | -0.13 | 0.041 |
| 60.00 | -21.93 | -1.40 | 0.00 | -153.34 | 0.00 | 153.34 | 3,337.62 | 1,668.81 | 5,655.16 | 2,792.87 | 0.88 | -0.14 | 0.040 |
| 65.00 | -20.79 | -1.34 | 0.00 | -146.32 | 0.00 | 146.32 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.03 | -0.15 | 0.039 |
| 65.00 | -20.79 | -1.34 | 0.00 | -146.32 | 0.00 | 146.32 | 3,293.24 | 1,646.62 | 5,451.16 | 2,692.12 | 1.03 | -0.15 | 0.061 |
| 70.00 | -19.74 | -1.29 | 0.00 | -139.60 | 0.00 | 139.60 | 3,247.36 | 1,623.68 | 5,248.22 | 2,591.90 | 1.20 | -0.17 | 0.060 |
| 75.00 | -18.92 | -1.26 | 0.00 | -133.13 | 0.00 | 133.13 | 3,199.99 | 1,599.99 | 5,046.50 | 2,492.28 | 1.39 | -0.19 | 0.059 |
| 80.00 | -18.12 | -1.24 | 0.00 | -126.83 | 0.00 | 126.83 | 3,151.11 | 1,575.56 | 4,846.18 | 2,393.35 | 1.60 | -0.21 | 0.059 |
| 85.00 | -17.72 | -1.23 | 0.00 | -120.65 | 0.00 | 120.65 | 3,100.74 | 1,550.37 | 4,647.45 | 2,295.20 | 1.83 | -0.23 | 0.058 |
| 87.50 | -17.06 | -1.22 | 0.00 | -117.58 | 0.00 | 117.58 | 3,074.99 | 1,537.50 | 4,548.71 | 2,246.44 | 1.95 | -0.24 | 0.058 |
| 90.00 | -16.28 | -1.21 | 0.00 | -114.54 | 0.00 | 114.54 | 3,048.88 | 1,524.44 | 4,450.47 | 2,197.92 | 2.08 | -0.25 | 0.057 |
| 93.00 | -16.01 | -1.21 | 0.00 | -110.92 | 0.00 | 110.92 | 2,367.81 | 1,183.91 | 3,474.51 | 1,715.93 | 2.25 | -0.27 | 0.071 |
| 95.00 | -15.61 | -1.21 | 0.00 | -108.51 | 0.00 | 108.51 | 2,354.00 | 1,177.00 | 3,417.42 | 1,687.74 | 2.36 | -0.28 | 0.071 |
| 98.00 | -15.28 | -1.21 | 0.00 | -104.88 | 0.00 | 104.88 | 2,332.83 | 1,166.41 | 3,331.94 | 1,645.52 | 2.54 | -0.29 | 0.070 |
| 100.00 | -14.63 | -1.23 | 0.00 | -102.45 | 0.00 | 102.45 | 2,318.41 | 1,159.21 | 3,275.08 | 1,617.44 | 2.67 | -0.31 | 0.070 |
| 105.00 | -13.99 | -1.26 | 0.00 | -96.30 | 0.00 | 96.30 | 2,281.33 | 1,140.66 | 3,133.47 | 1,547.50 | 3.00 | -0.33 | 0.068 |
| 110.00 | -13.37 | -1.29 | 0.00 | -90.01 | 0.00 | 90.01 | 2,242.75 | 1,121.37 | 2,992.76 | 1,478.01 | 3.37 | -0.36 | 0.067 |
| 115.00 | -12.76 | -1.32 | 0.00 | -83.56 | 0.00 | 83.56 | 2,202.67 | 1,101.33 | 2,853.13 | 1,409.06 | 3.76 | -0.39 | 0.065 |
| 120.00 | -12.17 | -1.36 | 0.00 | -76.94 | 0.00 | 76.94 | 2,161.09 | 1,080.55 | 2,714.76 | 1,340.72 | 4.18 | -0.42 | 0.063 |
| 125.00 | -11.59 | -1.39 | 0.00 | -70.15 | 0.00 | 70.15 | 2,118.02 | 1,059.01 | 2,577.82 | 1,273.09 | 4.64 | -0.45 | 0.061 |
| 130.00 | -11.20 | -1.41 | 0.00 | -63.20 | 0.00 | 63.20 | 2,073.45 | 1,036.73 | 2,442.48 | 1,206.25 | 5.12 | -0.48 | 0.058 |
| 133.42 | -10.93 | -1.42 | 0.00 | -58.39 | 0.00 | 58.39 | 2,042.13 | 1,021.07 | 2,351.01 | 1,161.07 | 5.47 | -0.49 | 0.056 |
| 135.00 | -10.42 | -1.43 | 0.00 | -56.14 | 0.00 | 56.14 | 2,027.39 | 1,013.69 | 2,308.93 | 1,140.29 | 5.63 | -0.50 | 0.054 |
| 138.00 | -10.25 | -1.44 | 0.00 | -51.85 | 0.00 | 51.85 | 1,223.81 | 611.90 | 1,396.77 | 689.81 | 5.95 | -0.52 | 0.084 |
| 140.00 | -7.11 | -1.46 | 0.00 | -48.98 | 0.00 | 48.98 | 1,215.85 | 607.93 | 1,368.67 | 675.93 | 6.18 | -0.53 | 0.078 |
| 145.00 | -6.71 | -1.45 | 0.00 | -41.67 | 0.00 | 41.67 | 1,194.91 | 597.45 | 1,298.35 | 641.21 | 6.75 | -0.57 | 0.071 |
| 150.00 | -6.31 | -1.44 | 0.00 | -34.40 | 0.00 | 34.40 | 1,172.46 | 586.23 | 1,228.11 | 606.52 | 7.36 | -0.60 | 0.062 |
| 155.00 | -5.93 | -1.40 | 0.00 | -27.22 | 0.00 | 27.22 | 1,148.52 | 574.26 | 1,158.12 | 571.95 | 8.01 | -0.63 | 0.053 |
| 160.00 | -5.56 | -1.36 | 0.00 | -20.21 | 0.00 | 20.21 | 1,123.08 | 561.54 | 1,088.54 | 537.59 | 8.68 | -0.66 | 0.043 |
| 165.00 | -5.35 | -1.32 | 0.00 | -13.43 | 0.00 | 13.43 | 1,096.15 | 548.08 | 1,019.57 | 503.53 | 9.38 | -0.68 | 0.032 |
| 168.00 | -2.58 | -0.81 | 0.00 | -9.46 | 0.00 | 9.46 | 1,079.27 | 539.64 | 978.54 | 483.26 | 9.81 | -0.69 | 0.022 |
| 170.00 | -2.32 | -0.75 | 0.00 | -7.84 | 0.00 | 7.84 | 1,067.72 | 533.86 | 951.36 | 469.84 | 10.10 | -0.69 | 0.019 |
| 175.00 | -2.07 | -0.68 | 0.00 | -4.08 | 0.00 | 4.08 | 1,037.79 | 518.90 | 884.11 | 436.63 | 10.83 | -0.70 | 0.011 |
| 180.00 | -2.02 | -0.67 | 0.00 | -0.67 | 0.00 | 0.67 | 1,006.37 | 503.18 | 817.98 | 403.97 | 11.56 | -0.70 | 0.004 |
| 181.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 999.90 | 499.95 | 804.90 | 397.51 | 11.71 | -0.70 | 0.000 |
| 185.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 973.45 | 486.72 | 753.15 | 371.95 | 12.30 | -0.70 | 0.000 |

Site Number: 302537

Code: ANSI/TIA-222-G

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Site Name: Middletown CT 3, CT

Engineering Number: OAA713643_C3_02

2/22/2018 3:44:45 PM

Customer: SPRINT NEXTEL

Analysis Summary

| Load Case | Reactions | | | | | | Max Usage | |
|------------------------------|-----------------|-----------------|-----------------|---------------------|---------------------|---------------------|-----------|-------------------|
| | Shear FX (kips) | Shear FZ (kips) | Axial FY (kips) | Moment MX (ft-kips) | Moment MY (ft-kips) | Moment MZ (ft-kips) | Elev (ft) | Interaction Ratio |
| 1.2D + 1.6W | 38.75 | 0.00 | 61.56 | 0.00 | 0.00 | 4479.29 | 93.00 | 0.83 |
| 0.9D + 1.6W | 37.47 | 0.00 | 46.16 | 0.00 | 0.00 | 4388.59 | 93.00 | 0.81 |
| 1.2D + 1.0Di + 1.0Wi | 8.83 | 0.00 | 107.47 | 0.00 | 0.00 | 1155.76 | 93.00 | 0.26 |
| (1.2 + 0.2Sds) * DL + E ELFM | 2.01 | 0.00 | 61.05 | 0.00 | 0.00 | 292.29 | 93.00 | 0.07 |
| (1.2 + 0.2Sds) * DL + E EMAM | 2.37 | 0.00 | 61.05 | 0.00 | 0.00 | 276.59 | 138.00 | 0.09 |
| (0.9 - 0.2Sds) * DL + E ELFM | 2.01 | 0.00 | 42.46 | 0.00 | 0.00 | 287.22 | 93.00 | 0.07 |
| (0.9 - 0.2Sds) * DL + E EMAM | 2.37 | 0.00 | 42.46 | 0.00 | 0.00 | 271.56 | 138.00 | 0.08 |
| 1.0D + 1.0W | 9.19 | 0.00 | 51.35 | 0.00 | 0.00 | 1084.23 | 93.00 | 0.21 |

Additional Steel Summary

| Elev From (ft) | Elev To (ft) | Member | Intermediate Connectors | | | Upper Termination Connectors | | | | Lower Termination Connectors | | | | Max Member | | |
|----------------|--------------|----------------------|-------------------------|----------------------|--------------------|------------------------------|--------------|----------|------------|------------------------------|--------------|----------|------------|------------|-------------|-------|
| | | | VQ/I (lb/in) | Shear Applied (kips) | Shear phiVn (kips) | MQ/I (kips) | phiVn (kips) | Num Reqd | Num Actual | MQ/I (kips) | phiVn (kips) | Num Reqd | Num Actual | Pu (kip) | phiPn (kip) | Ratio |
| 0.00 | 22.5 | (4) SOL-#20 All Thre | 184.4 | 5.5 | 16.8 | 0.0 | 12.0 | 0 | 0 | 0.0 | 12.0 | 0 | 0 | 237.5 | 330.5 | 0.719 |
| 22.5 | 52.5 | (4) SOL-#20 All Thre | 219.2 | 6.6 | 16.8 | 0.0 | 12.0 | 0 | 0 | 0.0 | 12.0 | 0 | 0 | 224.2 | 330.5 | 0.678 |
| 52.5 | 65.0 | (4) SOL-#20 All Thre | 224.6 | 6.7 | 16.8 | 198.3 | 12.0 | 17 | 24 | 0.0 | 12.0 | 0 | 0 | 214.5 | 330.5 | 0.649 |

Base Plate & Anchor Rod Analysis

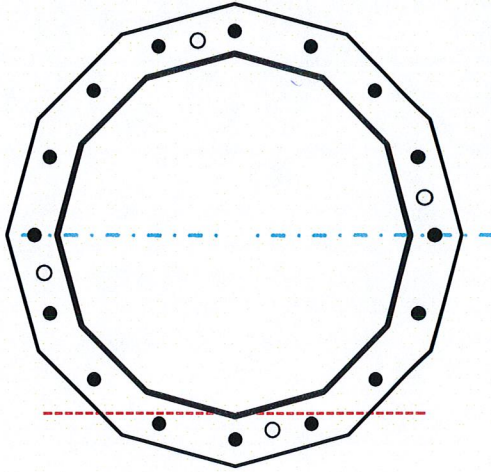
| Pole Dimensions | | |
|--------------------|-------|----|
| Number of Sides | 12 | - |
| Diameter | 52.00 | in |
| Thickness | 0.438 | in |
| Orientation Offset | 0 | ° |

| Base Reactions | | |
|----------------|--------|------|
| Moment, Mu | 4479.3 | k-ft |
| Axial, Pu | 61.6 | k |
| Shear, Vu | 38.8 | k |
| Neutral Axis | 180 | ° |

| Report Capacities | | |
|-------------------|----------|--------|
| Component | Capacity | Result |
| Base Plate | 33% | Pass |
| Anchor Rods | 71% | Pass |
| Dwyidag | 62% | Pass |

| Base Plate | | |
|---------------------------|---------|-------------|
| Number of Sides | 12 | - |
| Diameter, ϕ | 66.34 | in |
| Thickness | 2 3/4 | in |
| Grade | A572-60 | - |
| Yield Strength, Fy | 60 | ksi |
| Tensile Strength, Fu | 75 | ksi |
| Clip | N/A | in |
| Orientation Offset | 0 | ° |
| Anchor Rod Detail | c | $\eta=0.55$ |
| Clear Distance | N/A | in |
| Applied Moment, Mu | 1327.0 | k |
| Bending Stress, ϕMn | 3980.1 | k |

| Dwyidag Reinforcement | | |
|------------------------|-------|----|
| Quantity | 4 | - |
| Bar Size | #20 | in |
| Diameter, ϕ | 2.5 | in |
| Bracket Type | Angle | - |
| Circle | 58.88 | in |
| Orientation Offset | 11 | ° |
| Applied Force, Pu | 243.9 | k |
| Dwyidag Bar, ϕPn | 392.7 | k |



| Original Anchor Rods | | |
|------------------------|---------|-----|
| Arrangement | Radial | - |
| Quantity | 16 | - |
| Diameter, ϕ | 2 1/4 | in |
| Bolt Circle | 60.64 | in |
| Grade | A615-75 | - |
| Yield Strength, Fy | 75 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Spacing | 11.9 | in |
| Orientation Offset | 0 | ° |
| Applied Force, Pu | 165.0 | k |
| Anchor Rods, ϕPn | 259.8 | k |