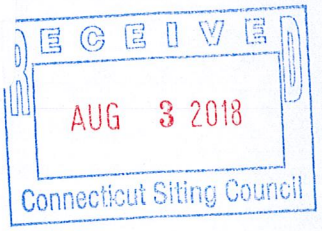
Cherundolo Consulting

1280 Route 46 West, Suite 9, Parsippany NJ, 07054

Melanie Bachman
Executive Director
CT Siting Council
10 Franklin Square
New Britain, CT 06051

EM-SPRINT-126-180803



Re: Notice of Exempt Modification Application
219 Nells Rock Rd, Shelton, CT

Latitude: N41.300422
Longitude: W73.1184

ORIGINAL

Dear Ms. Bachman:

Sprint currently maintains 3 existing panel antennas and 6 remote radio units at the 149' centerline level of the existing lattice tower. Sprint proposes to add 3 panel antennas and 3 remote radio unit at the 149' centerline on the tower. Sprint further proposes to add 3 hybrid cable. Sprint is performing a new high-performance upgrade for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, for construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to Mayor Mark A Lauretti of the City of Shelton as well as Rick Schultz, Planning and Zoning Administrator for the City of Shelton and AT&T, owner of the tower.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in Sprint's operations at the site. Also included is documentation of the structural sufficiency of the tower with proposed modifications to accommodate the revised antenna configuration as well as the latest CSC decision, tax sheet and tax map.

Existing Facility

CSC Summary Statement – CT03XC371 – 219 Nells Rock Rd, Shelton CT 06484

The Communications Tower facility is located at 219 Nells Rock Rd, Shelton CT and is owned by AT&T, the Site coordinates are: N41.30422 W73.11842.

The existing facility consists of a 162'5" Lattice Tower. Sprint currently operates wireless communications equipment inside a shelter at the facility and has 3 antennas and 6 RRU's mounted on at centerline of 149' feet.

Statutory Considerations

The planned modifications to the facility fall within the activities explicitly provided for in R.C.S.A. 16-50j-72(b)(2)

1. The height of the overall structure will be unaffected.

2. The proposed changes will not require an extension of the property boundaries.

3. The proposed additions will not increase the noise level at the existing facility by

six decibels or more, or to levels that exceed state and/or local criteria

4. The changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the Federal Communications Commission safety standard.

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

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

For the foregoing reasons, Sprint respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A Section §16-50j-72(b)(2).

Respectfully submitted,

Ryan G Bailey
Charles Cherundolo Consulting
856-625-1596
ryan@mackenzierealtyconsulting.com

Additional Recipients:
Mayor Mark A. Lauretti for the City of Shelton– Via FedEx
Rick Shultz, Planning and Zoning Administrator for the City of Shelton - Via FedEx
AT&T, owner of the tower – Via FedEx

City of Shelton

City of Shelton

Bill Information

Taxpayer Information			
Bill #	2017-2-0041697 (PERSONALPROPERTY)	Town Benefit	
Unique ID	P43729	Elderly Benefit	
District/Flag			
Name	SPRINT SPECTRUM LP CT03XC371	Assessment	36,730
Care of/DBA	/SPRINT WIRELESS	Exemption	0
Address		Net	36,730
Detail Information	219 NELLS ROCK RD		
Volume/Page		Mill Rate	Town 22.15

Bill Information As of 06/22/2018

Installment	Due Date	Town/City	District	Other
Inst #1	07/01/2018	813.57		
Inst #2	01/01/2019			
Inst #3				
Inst #4				
Total Adjustments		0.00		
Total Installment + Adjustment		813.57		
Total Payments		0.00		

Total Due	
Tax/ Princ/ Bond Due	0.00
Interest Due	0.00
Lien Due	0.00
Fee Due	0.00
Total Due Now	0.00
Balance Due	813.57

***** Note: This is not a tax form, please contact your financial advisor for information regarding tax reporting. *****

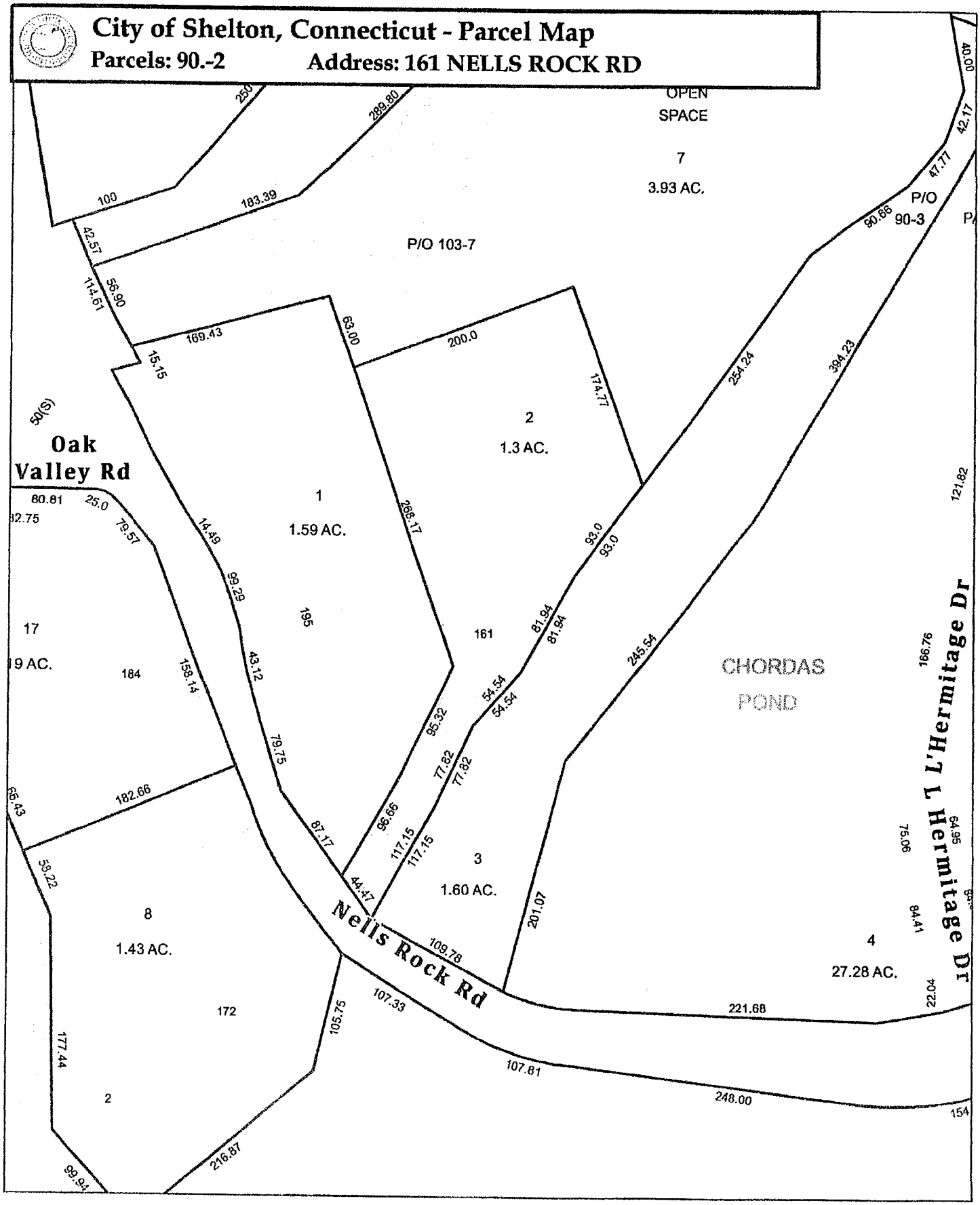
Payment History

Payment Date	Type	Tax/Principal/Bond	Interest	Lien	Fee	Total

***** Total payments made to taxes in** 2017	$0.00

City of Shelton, Connecticut - Parcel Map

Parcels: 90.-2 **Address: 161 NELLS ROCK RD**



N

Approximate Scale: 1:1,200

Map Produced October 2014

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The City of Shelton and its mapping contractors assume

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

May 14, 2018

Nicole Caplan
Site Acquisition Specialist
Empire Telecom
16 Esquire Road
Billerica, MA 01862

RE: **EM-AT&T-126-180424** - AT&T notice of intent to modify an existing telecommunications facility located at 219 Nells Rock Road, Shelton, Connecticut.

Dear Ms. Caplan:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function;

5. The validity of this action shall expire one year from the date of this letter; and

6. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated April 11, 2018. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/CMW/laf

c: The Honorable Mark A. Lauretti, Mayor, City of Shelton
Richard Schultz, AICP, Planning & Zoning Administrator, City of Shelton

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

SPRINT Existing Facility

Site ID: CT03XC371

SNET
219 Nells Rock Road
Shelton, CT 06484

June 27, 2018

EBI Project Number: 6218004704

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	12.23 %

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

EBI Consulting
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June 27, 2018

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

Emissions Analysis for Site: **CT03XC371 – SNET**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **219 Nells Rock Road, Shelton, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

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

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **219 Nells Rock Road, Shelton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 50 Watts per Channel.

3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

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

7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **RFS APXVSPP18-C-A20 and the Nokia AAHC** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **149 feet** above ground level (AGL) for **Sector A**, **149 feet** above ground level (AGL) for **Sector B** and **149 feet** above ground level (AGL) for Sector C.

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

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

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SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	**149 feet**	Height (AGL):	**149 feet**	Height (AGL):	**149 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	8,850.04	ERP (W):	8,850.04	ERP (W):	8,850.04
Antenna A1 MPE%	**1.91 %**	Antenna B1 MPE%	**1.91 %**	Antenna C1 MPE%	**1.91 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Nokia AAHC	Make / Model:	Nokia AAHC	Make / Model:	Nokia AAHC
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**149 feet**	Height (AGL):	**149 feet**	Height (AGL):	**149 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**0.90 %**	Antenna B2 MPE%	**0.90 %**	Antenna C2 MPE%	**0.90 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.81 %**
AT&T	2.29 %
Verizon Wireless	4.74 %
Clearwire	0.15 %
PageNet	0.27 %
Arrow Bus	0.04 %
T-Mobile	1.93 %
Metricom	0.00 %
Site Total MPE %:	**12.23 %**

SPRINT Sector A Total:	2.81 %
SPRINT Sector B Total:	2.81 %
SPRINT Sector C Total:	2.81 %
Site Total:	12.23 %

SPRINT _ Frequency Band / Technology (All Sectors)	**# Channels**	**Watts ERP (Per Channel)**	**Height (feet)**	**Total Power Density ($\mu W/cm^2$)**	**Frequency (MHz)**	**Allowable MPE ($\mu W/cm^2$)**	**Calculated % MPE**
Sprint 850 MHz CDMA	1	437.55	149	0.77	850 MHz	567	0.13%
Sprint 850 MHz LTE	2	1,093.88	149	3.85	850 MHz	567	0.68%
Sprint 1900 MHz (PCS) CDMA	5	622.47	149	5.47	1900 MHz (PCS)	1000	0.55%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	149	5.47	1900 MHz (PCS)	1000	0.55%
Sprint 2500 MHz (BRS) LTE	8	639.78	149	9.00	2500 MHz (BRS)	1000	0.90%
						Total:	**2.81%**

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Summary

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

The anticipated maximum composite contributions from the SPRINT facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

SPRINT Sector	Power Density Value (%)
Sector A:	2.81 %
Sector B:	2.81 %
Sector C:	2.81 %
SPRINT Maximum Total (per sector):	2.81 %
Site Total:	12.23 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **12.23 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

AT&T Towers
5600 Glenridge Drive
Atlanta, GA 30342
(404) 532-5855

GPD Engineering and Architecture
Professional Corporation
Brian Daugherty
520 South Main St, Suite 2531
Akron, OH 44311
(216) 927-8687
bdaugherty@gpdgroup.com

GPD# 2018723.01.SNET025.10
June 28, 2018

RIGOROUS STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	Site USID:	27016
	Alternate USID:	SNET025
	Site FA:	10034975
	Site Name:	SHELTON EAST CENTRAL
	AT&T Project:	Sprint Modification 1-3-2018
ANALYSIS CRITERIA:	**Codes:**	**TIA-222-G, 2016 Connecticut State Building Code & 2012 IBC**
		125-mph Ultimate 3 second gust with 0" ice
		97-mph Nominal 3 second gust with 0" ice
		50-mph Nominal 3 second gust with 3/4" ice
SITE DATA:		**219 Nells Rock Road, Shelton, CT 06484, Fairfield County**
		Latitude 41° 18' 15.070" N, Longitude 73° 7' 5.898" W
		Market: NEW ENGLAND
		162.5' Modified Self Support Tower

Ms. Deborah Krenc,

GPD is pleased to submit this Rigorous Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	92.6%	Pass
Foundation Ratio with Proposed Equipment:	46.6%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T Towers. If you have any questions or need further assistance on this or any other projects, please do not hesitate to call.

Respectfully submitted,

Christopher J. Scheks, P.E.
Connecticut #: 0030026

STATE OF CONNECTICUT
CHRISTOPHER J. SCHEKS
No. 30026
LICENSED
PROFESSIONAL ENGINEER

6/28/18

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing modified structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility to AT&T Towers. This report was commissioned by Ms. Deborah Krenc of AT&T Towers.

All proposed coax shall be installed with the existing coax on Face A for the analysis results to be valid. See Appendix C for the coax layout.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

All modifications designed by GPD (Project #: 2013723.SNET025.01, dated 3/1/2013 & Project #: 2014701.02, dated 2/10/2014) were considered in the analysis.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Legs	44.1%	Pass
Leg Bolts	54.5%	Pass
Diagonals	92.6%	Pass
Horizontals	71.8%	Pass
Redundant Members	87.3%	Pass
Inner Bracing	42.6%	Pass
Member Bolts	74.0%	Pass
Anchor Rods	46.8%	Pass
Foundations	46.6%	Pass

ANALYSIS METHOD

RISA-3D (Version 16.0.1) and tnxTower (Version 7.0.7.0), commercially available software programs, were used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a recent detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Site Lease Application	Sprint Application	AT&T
Construction Drawings	Not Provided	N/A
Tower Design	Not Provided	N/A
Foundation Design	Not Provided	N/A
Foundation Mapping	GPD Project #: 2016713.69, dated 9/28/2016	GPD
Geotechnical Report	GPD Project #: 2016713.69, dated 9/28/2016	GPD
Previous Structural Analysis	GPD Project #: 2018702.01, dated 3/2/2018	GPD
Tower Mapping	GPD Project #: 2016713.69, dated 10/14/2016	GPD
Modification Drawings	GPD Project #: 2013723.01.SNET025.01, dated 3/1/2013	GPD
Modification Drawings	GPD Project #: 2014701.02, dated 2/10/2014	GPD
Post Modification Inspection	GPD Project #: 2013723.01.SNET025.03, dated 9/26/2013	GPD
Post Modification Inspection	GPD Project #: 2014723.01.SNET025.07, dated 6/4/2014	GPD
Tower Sketch	AT&T Tower Sketch Issue 6, dated 6/6/2010	AT&T

ASSUMPTIONS

This rigorous structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Foundation steel was not able to be determined through testing. Therefore, it was assumed that the foundation steel in place is equal to or in excess of the code required minimums.
11. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
12. All existing loading was obtained from the previous analysis by GPD (Project #: 2018702.01, dated 3/2/2018), site photos, and the provided Site Lease Application and is assumed to be accurate.
13. The existing loading elevations found in the previous analysis by GPD (Project #: 2018702.01, dated 3/2/2018) was found to vary from that listed within the provided Site Lease Application. The existing and proposed elevations have been modeled based on the elevations reflected within the previous analysis.
14. All proposed coax shall be installed with the existing coax on Face A for the analysis results to be valid. See Appendix C for the coax layout.
15. Face A azimuth of 57° assumed based on the AT&T Tower Sketch Issue 6, dated 6/6/2010.

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

DISCLAIMER OF WARRANTIES

GPD has not performed a recent site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Rigorous Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	SHELTON EAST CENTRAL
Site Number	27016
FA Number	10034975
Date of Analysis	6/8/2018
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	SST	
Tower Height (top of steel AGL)	162.5'	
Tower Manufacturer	n/a	
Tower Model	n/a	
Tower Design	n/a	
Foundation Design	n/a	
Geotech Report	GPD Project #: 2016713.69	9/28/2016
Tower Mapping	GPD Project #: 2016713.69	10/14/2016
Previous Structural Analysis	GPD Project #: 2018702.01	3/2/2018
Modification Drawings	GPD Project #: 2013723.01.SNET025.01	3/1/2013
Modification Drawings	GPD Project #: 2014701.02	2/10/2014
Post Modification Inspection	GPD Project #: 2013723.01.SNET025.03	9/26/2013
Post Modification Inspection	GPD Project #: 2014723.01.SNET025.07	6/4/2014
Foundation Mapping	GPD Project #: 2016713.69	9/28/2016

Design Parameters

Design Code Used	TIA-222-G & 2012 IBC 2016 CT Building Code
Location of Tower (County, State)	Fairfield, CT
Nominal Wind Speed (mph)	97-3 Second Gust
Ice Thickness (in)	0.75
Risk Category (I, II, III)	II
Exposure Category (B, C, D)	B
Topographic Category (1 to 5)	1

All modifications designed by GPD (Project #: 2013723.SNET025.01, dated 3/1/2013 & Project #: 2014701.02, dated 2/10/2014) were considered in the analysis.

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	92.6%
Anchor Rods (%)	46.8%
Foundation (%)	46.6%
Foundation Adequate?	YES

Steel Yield Strength (ksi)

Legs	36
Bracing	36
Member Bolts	A307/A325
Anchor Rods	C-1015

Note: Material grades assumed based on previous analysis.

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Unknown	162.5	170	1	Dipole	Unknown	10' Dipole		1	Unknown	28' Sq. Platform w/ Rails	1	Unknown	1/2"	Face D
Unknown	162.5	156	1	Dipole	Unknown	15' Dipole				on the same mount	1	Conduit	1-1/2"	Face D
Misc.	162.5	175	1	Light	Unknown	Beacon		1	Unknown	13' W5 x 13' Post	2	Unknown	7/8"	Face D
Unknown	162.5	184	1	Dipole	Unknown	15' Dipole		2	Unknown	14' Post w/ (2) 2' Side Arms	1	Unknown	3/4"	Face D
Unknown	162.5	183	1	Omni	Unknown	10' Omni				on the same mounts	1	Unknown	7/8"	Face C
AT&T Mobility	162.5	163	3	Panel	Quintel	QS66512-2	90/210/340	2	Unknown	W8 x 19' Beams	12	Unknown	1-5/8"	Face D
AT&T Mobility	162.5	163	3	Panel	CCI	HPA-65R-BUU-H6	90/210/340			on the same mounts				
AT&T Mobility	162.5	163	3	Panel	Powerwave	RA21.7770.00	25/143/265			on the same mounts				
AT&T Mobility	162.5	163	3	Panel	Kathrein	80010965	90/210/340			on the same mounts				
AT&T Mobility	162.5	163	6	RET	Powerwave	7020.00				on the same mounts				
AT&T Mobility	162.5	163	6	Triplexer	CCI	TPX-070821				on the same mounts				
AT&T Mobility	162.5	163	3	Kaelus	Bias-T	Smart Bias-T				on the same mounts				
AT&T Mobility	162.5	163	6	TMA	Powerwave	LGP 21401				on the same mounts				
AT&T Mobility	162.5	163	2	Filter	Commscope	WCS-MFQ-AMT				on the same mounts				
AT&T Mobility	162.5	165	3	RRU	Ericsson	RRUS 11		1	Unknown	RRU Mount	6	DC Power	7/8"	Face D
AT&T Mobility	162.5	165	3	RRU	Ericsson	RRUS 12				on the same mount	3	Fiber Line	1/2"	Face D
AT&T Mobility	162.5	165	3	RRU	Ericsson	RRUS B14 4478				on the same mount				
AT&T Mobility	162.5	165	3	RRU	Ericsson	RRUS 32				on the same mount				
AT&T Mobility	162.5	165	3	RRU	Ericsson	RRUS 32 B2				on the same mount				
AT&T Mobility	162.5	165	3	RRU	Ericsson	RRUS 32 B66				on the same mount				
AT&T Mobility	162.5	167	3	Surge	Raycap	DC6-48-60-18-8F				on the same mount				
Sprint	153	152	3	RRH	Alcatel Lucent	RRH2X50-800		3	Unknown	Dual Standoff Mounts	3	Hybriflex	1-1/4"	Face B
Sprint	153	152	3	RRH	Alcatel Lucent	RRH1900-4X45				on the same mounts				
Sprint	153	152	3	RRH	Alcatel Lucent	RRH8X20				on the same mounts				
Sprint	148	149	3	Panel	RFS	APXVSPP18	50/270/250	3	Unknown	14' Sector Frames	1	Hybrid	1/2"	Face B
Sprint	148	149	3	Panel	RFS	APXVTM14-C-120	50/270/250			on the same mounts	3	RET Cable	3/8"	Face B
Misc.	144							1	Unknown	30' x 30' Cross Catwalk w/ Rails				
T-Mobile	135	135	3	Panel	Ericsson	AIR21 B4A/B2P (Reserved)	60/180/300	3	Unknown	2' Standoffs	6	Unknown	1-5/8"	Face D
T-Mobile	135	135	3	Panel	Andrew	DBXNH-6565A-A2M (Reserved)	60/180/300			on the same mounts				
T-Mobile	135	135	3	RRU	Ericsson	RRUS 11 (Reserved)				on the same mounts				
T-Mobile	135	135	3	RRU	Ericsson	RRUS 11 B12 (Reserved)				on the same mounts				
T-Mobile	135	135	3	TMA	Ericsson	KRY 112 144				on the same mounts				
Verizon	124	125	6	Panel	Andrew	DB846F65ZAXY	20/190/270	3	Unknown	12' Sector Frames	17	Unknown	1-5/8"	Face C
Verizon	124	125	4	Panel	Andrew	SBNHH-1D65B	20/270			on the same mounts	2	Hybrid Cable	1-5/8"	Face C
Verizon	124	125	2	Panel	Andrew	SBNHH-1D45B	190			on the same mounts				
Verizon	124	125	2	Panel	Antel	BXA 185063/12CF (Reserved)	190/270			on the same mounts				
Verizon	124	125	1	Panel	Antel	BXA 185085/12CF (Reserved)	20			on the same mounts				
Verizon	124	125	3	RRU	Alcatel Lucent	B13 RRH 4X30				on the same mounts				
Verizon	124	125	3	RRU	Alcatel Lucent	B25 RRH 4X30				on the same mounts				
Verizon	124	125	3	RRU	Alcatel Lucent	B66 RRH 4x45				on the same mounts				
Verizon	124	125	1	DC Box	RFS	DB-T1-6Z-8AB-0Z				on the same mounts				
Verizon	124	125	1	DC Box	RFS	DB-T1-6Z-8AB-0Z (Reserved)				on the same mounts				
Misc.	112.5							1	Unknown	4.25' x 7' Catwalk				
Misc.	87.5							2	Unknown	23' x 3' Catwalks				
Sprint	65	65	1	GPS	PCTEL	GPS-TMG-HR-26NCM				Leg Mounted	1	Unknown	1/2"	Face D
Misc.	62.5							1	Unknown	13' x 4.25' Catwalk				
Misc.	25							1	Unknown	13' x 4.25' Catwalk				

Note: (3) APXVTM14-C-120 antennas at 149' and (3) RRH1900-4X45 & (3) RRH8X20 RRHs at 152' shall be removed prior to the installation of the proposed loading and were not considered in this analysis. All remaining loading shall be reused.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face
Sprint	153	152	3	RRH	Alcatel Lucent	RRH1900-4X40				on the existing mounts				
Sprint	153	152	3	RRH	Alcatel Lucent	TD-RRH8X20-25				on the same mounts				
Sprint	153	152	3	RRH	Alcatel Lucent	RRH-2x50-800				on the same mounts				
Sprint	148	149	3	Panel	Nokia	AAHC	50/270/250			on the existing mounts	2	Hybrid	1/2"	Face B

Note: The proposed loading shall be installed in addition to the remaining existing loading at the same elevation. All proposed coax shall be installed with the existing coax on Face A for the analysis results to be valid.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Leg/Face

APPENDIX B

Software Output Files and Calculations

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 162.50 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 12.25 ft at the top and 36.25 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement ft*	*Face Offset in*	*Lateral Offset (Frac FW)*	*#*	*# Per Row*	*Clear Spacing in*	*Width or Diameter in*	*Perimeter in*	*Weight plf*
Climbing Ladder (Af)	B	No	Af (CaAa)	162.50 - 10.00	-36.0000	0.4	1	1	3.8400	3.8400		4.81
Safety Line (3/8")	B	No	Ar (CaAa)	162.50 - 10.00	-36.0000	0.4	1	1	0.3750	0.3750		0.22
LDF4P-50A (1/2 FOAM)	C	No	Ar (CaAa)	162.50 - 65.00	0.0000	-0.45	1	1	0.6300	0.6300		0.15
LDF4P-50A (1/2 FOAM)	C	No	Ar (CaAa)	65.00 - 10.00	0.0000	-0.45	2	2	0.6300	0.6300		0.15
1-1/2" Rigid Conduit	C	No	Ar (CaAa)	162.50 - 10.00	0.0000	-0.44	1	1	1.5000	1.5000		1.00
LDF5-50A (7/8 FOAM)	C	No	Ar (CaAa)	162.50 - 10.00	0.0000	0.03	2	2	1.0000	1.0900		0.33
3/4" Lighting Cable	C	No	Ar (CaAa)	162.50 - 10.00	0.0000	0.03	1	1	0.7500	0.7500		0.35
LDF5-50A (7/8 FOAM)	D	No	Ar (CaAa)	162.50 - 10.00	0.0000	0.48	1	1	1.0000	1.0900		0.33
Feedline Ladder (Af)	C	No	Af (CaAa)	162.50 - 10.00	-1.0000	0.2	1	1	3.0000	3.0000		8.40
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	162.50 - 10.00	-6.0000	0.2	12	4	1.0000	1.9800		0.82
7/8" DC Power Cable	C	No	Ar (CaAa)	162.50 - 10.00	-5.0000	0.18	6	3	0.8750	0.8750		0.60
1/2" Fiber Cable	C	No	Ar (CaAa)	162.50 - 10.00	-5.0000	0.18	3	2	0.6300	0.6300		0.15
Feedline Ladder (Af)	A	No	Af (CaAa)	149.00 - 10.00	0.0000	0	1	1	3.0000	3.0000		8.40
1-1/4" Hybrid Cable	A	No	Ar (CaAa)	149.00 - 10.00	0.0000	0.04	3	3	1.0000	1.2500		1.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1/2" Hybrid Cable	A	No	Ar (CaAa)	149.00 - 10.00	0.0000	0.03	3	2	0.5000	0.5000		30.00
3/8" RET Cable	A	No	Ar (CaAa)	149.00 - 10.00	0.0000	0.02	3	2	0.3750	0.3750		0.10
Feedline Ladder (Af)	C	No	Af (CaAa)	135.00 - 10.00	0.0000	0	1	1	3.0000	3.0000		8.40
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	135.00 - 10.00	0.0000	0.03	6	6	1.9800	1.9800		0.82
Feedline Ladder (Af)	D	No	Af (CaAa)	124.00 - 10.00	0.0000	0.45	1	1	3.0000	3.0000		8.40
LDF7-50A (1-5/8 FOAM)	D	No	Ar (CaAa)	124.00 - 10.00	0.0000	0.45	17	9	1.0000	1.9800		0.82
1-5/8" Hybrid Cable	D	No	Ar (CaAa)	124.00 - 10.00	0.0000	0.49	2	1	1.0000	1.9800		0.82

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
28' Square Platform w/ Rails	C	None		0.0000	162.50	No Ice	100.20	100.20	11871.000
						1/2" Ice	111.30	111.30	15623.000
						1" Ice	122.40	122.40	19375.000
Flash Beacon Lighting	C	From Leg	0.00	0.0000	162.50	No Ice	2.70	2.70	50.000
			0.00			1/2" Ice	3.10	3.10	70.000
			12.50			1" Ice	3.50	3.50	90.000
W5 x 13' Mount	C	From Leg	0.00	0.0000	162.50	No Ice	5.42	5.42	210.000
			0.00			1/2" Ice	7.00	7.00	280.000
			6.25			1" Ice	8.58	8.58	350.000
15' Dipole	B	From Face	7.00	0.0000	162.50	No Ice	3.00	3.00	40.000
			-3.00			1/2" Ice	4.53	4.53	63.137
			-6.50			1" Ice	6.07	6.07	95.792
10' Dipole	D	From Face	7.00	0.0000	162.50	No Ice	2.00	2.00	20.000
			5.00			1/2" Ice	3.02	3.02	35.501
			7.50			1" Ice	4.07	4.07	57.466
Pipe Mount 14'x2.875"	B	From Face	7.00	0.0000	162.50	No Ice	4.03	4.03	90.000
			-5.00			1/2" Ice	5.46	5.46	119.246
			5.50			1" Ice	6.91	6.91	157.489
2' Standoff	B	From Face	6.50	0.0000	162.50	No Ice	1.14	1.62	37.400
			-5.00			1/2" Ice	1.79	2.41	55.340
			9.50			1" Ice	2.44	3.20	73.280
2' Standoff	B	From Face	7.50	0.0000	162.50	No Ice	1.14	1.62	37.400
			-5.00			1/2" Ice	1.79	2.41	55.340
			9.50			1" Ice	2.44	3.20	73.280
15' Dipole	B	From Face	7.00	0.0000	162.50	No Ice	3.00	3.00	40.000
			5.00			1/2" Ice	4.53	4.53	63.137
			21.50			1" Ice	6.07	6.07	95.792
Pipe Mount 14'x2.875"	D	From Face	7.00	0.0000	162.50	No Ice	4.03	4.03	90.000
			-5.00			1/2" Ice	5.46	5.46	119.246
			5.50			1" Ice	6.91	6.91	157.489
2' Standoff	D	From Face	6.50	0.0000	162.50	No Ice	1.14	1.62	37.400
			-5.00			1/2" Ice	1.79	2.41	55.340
			9.50			1" Ice	2.44	3.20	73.280
2' Standoff	D	From Face	7.50	0.0000	162.50	No Ice	1.14	1.62	37.400

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			-5.00			1/2" Ice	1.79	2.41	55.340
			9.50			1" Ice	2.44	3.20	73.280
10' Omni	D	From Face	8.00	0.0000	162.50	No Ice	2.00	2.00	25.000
			-5.00			1/2" Ice	3.02	3.02	40.501
			20.50			1" Ice	4.07	4.07	62.466
***									
W8 x 19' Beams	A	From Leg	5.00	13.0000	162.50	No Ice	17.00	1.00	290.000
			0.00			1/2" Ice	19.00	1.50	340.000
			1.00			1" Ice	21.00	2.00	330.000
W8 x 19' Beams	D	From Leg	5.00	-17.0000	162.50	No Ice	17.00	1.00	290.000
			0.00			1/2" Ice	19.00	1.50	340.000
			1.00			1" Ice	21.00	2.00	330.000
RA21.7770.00 w/Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	6.88	5.13	65.550
			0.00			1/2" Ice	7.47	6.25	121.085
			0.50			1" Ice	7.98	7.08	183.814
RA21.7770.00 w/Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	6.88	5.13	65.550
			0.00			1/2" Ice	7.47	6.25	121.085
			0.50			1" Ice	7.98	7.08	183.814
RA21.7770.00 w/Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	6.88	5.13	65.550
			0.00			1/2" Ice	7.47	6.25	121.085
			0.50			1" Ice	7.98	7.08	183.814
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	9.90	8.11	76.550
			0.00			1/2" Ice	10.47	9.30	158.030
			0.50			1" Ice	11.01	10.21	247.793
HPA-65R-BUU-H6 w/ Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	9.90	8.11	76.550
			0.00			1/2" Ice	10.47	9.30	158.030
			0.50			1" Ice	11.01	10.21	247.793
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	9.90	8.11	76.550
			0.00			1/2" Ice	10.47	9.30	158.030
			0.50			1" Ice	11.01	10.21	247.793
QS66512-2 w/ Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	8.37	8.46	136.550
			0.00			1/2" Ice	8.93	9.66	212.242
			0.50			1" Ice	9.46	10.55	296.075
QS66512-2 w/ Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	8.37	8.46	136.550
			0.00			1/2" Ice	8.93	9.66	212.242
			0.50			1" Ice	9.46	10.55	296.075
QS66512-2 w/ Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	8.37	8.46	136.550
			0.00			1/2" Ice	8.93	9.66	212.242
			0.50			1" Ice	9.46	10.55	296.075
80010965 w/ Mount Pipe	A	From Leg	5.00	13.0000	162.50	No Ice	14.05	7.63	125.188
			0.00			1/2" Ice	14.69	8.90	221.670
			0.50			1" Ice	15.30	9.96	327.183
80010965 w/ Mount Pipe	D	From Leg	5.00	-17.0000	162.50	No Ice	14.05	7.63	125.188
			0.00			1/2" Ice	14.69	8.90	221.670
			0.50			1" Ice	15.30	9.96	327.183
80010965 w/ Mount Pipe	C	From Face	7.00	-4.0000	162.50	No Ice	14.05	7.63	125.188
			0.00			1/2" Ice	14.69	8.90	221.670
			0.50			1" Ice	15.30	9.96	327.183
(2) 7020.00 RET	A	From Leg	5.00	13.0000	162.50	No Ice	0.10	0.17	2.200
			0.00			1/2" Ice	0.15	0.24	5.156
			0.50			1" Ice	0.20	0.31	9.330
(2) 7020.00 RET	D	From Leg	5.00	-17.0000	162.50	No Ice	0.10	0.17	2.200
			0.00			1/2" Ice	0.15	0.24	5.156
			0.50			1" Ice	0.20	0.31	9.330
(2) 7020.00 RET	C	From Face	7.00	-4.0000	162.50	No Ice	0.10	0.17	2.200
			0.00			1/2" Ice	0.15	0.24	5.156
			0.50			1" Ice	0.20	0.31	9.330

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft / ft / ft	°	ft		ft^2	ft^2	lb
(2) LGP21401	A	From Leg	5.00	13.0000	162.50	No Ice	1.10	0.21	14.100
			0.00			1/2" Ice	1.24	0.27	21.263
			0.50			1" Ice	1.38	0.35	30.319
(2) LGP21401	D	From Leg	5.00	-17.0000	162.50	No Ice	1.10	0.21	14.100
			0.00			1/2" Ice	1.24	0.27	21.263
			0.50			1" Ice	1.38	0.35	30.319
(2) LGP21401	C	From Face	7.00	-4.0000	162.50	No Ice	1.10	0.21	14.100
			0.00			1/2" Ice	1.24	0.27	21.263
			0.50			1" Ice	1.38	0.35	30.319
(2) TPX-070821	A	From Leg	5.00	13.0000	162.50	No Ice	0.47	0.10	7.500
			0.00			1/2" Ice	0.56	0.15	10.952
			0.50			1" Ice	0.66	0.20	15.735
(2) TPX-070821	D	From Leg	5.00	-17.0000	162.50	No Ice	0.47	0.10	7.500
			0.00			1/2" Ice	0.56	0.15	10.952
			0.50			1" Ice	0.66	0.20	15.735
(2) TPX-070821	C	From Face	7.00	-4.0000	162.50	No Ice	0.47	0.10	7.500
			0.00			1/2" Ice	0.56	0.15	10.952
			0.50			1" Ice	0.66	0.20	15.735
Smart Bias-T	A	From Leg	5.00	-17.0000	162.50	No Ice	0.14	0.08	3.300
			0.00			1/2" Ice	0.19	0.12	4.693
			0.50			1" Ice	0.25	0.17	6.947
Smart Bias-T	D	From Leg	5.00	-4.0000	162.50	No Ice	0.14	0.08	3.300
			0.00			1/2" Ice	0.19	0.12	4.693
			0.50			1" Ice	0.25	0.17	6.947
Smart Bias-T	C	From Face	7.00	13.0000	162.50	No Ice	0.14	0.08	3.300
			0.00			1/2" Ice	0.19	0.12	4.693
			0.50			1" Ice	0.25	0.17	6.947
WCS-IMFT-AMT	A	From Leg	5.00	-17.0000	162.50	No Ice	0.64	0.47	18.700
			0.00			1/2" Ice	0.75	0.56	24.918
			0.50			1" Ice	0.86	0.66	32.828
WCS-IMFT-AMT	C	From Face	7.00	13.0000	162.50	No Ice	0.64	0.47	18.700
			0.00			1/2" Ice	0.75	0.56	24.918
			0.50			1" Ice	0.86	0.66	32.828
(3) RRUS 11	C	None		0.0000	165.00	No Ice	2.78	1.19	50.700
						1/2" Ice	2.99	1.33	71.500
						1" Ice	3.21	1.49	95.335
(3) RRUS 32	C	None		0.0000	165.00	No Ice	3.31	2.42	77.000
						1/2" Ice	3.56	2.64	104.928
						1" Ice	3.81	2.86	136.466
(3) RRUS 32 B2	C	None		0.0000	165.00	No Ice	2.73	1.67	52.900
						1/2" Ice	2.95	1.86	73.957
						1" Ice	3.18	2.05	98.206
(3) RRUS 12	C	None		0.0000	165.00	No Ice	3.15	1.29	58.000
						1/2" Ice	3.36	1.44	81.222
						1" Ice	3.59	1.60	107.645
(3) RRUS B14 4478	C	None		0.0000	165.00	No Ice	1.65	0.81	60.000
						1/2" Ice	1.81	0.93	74.366
						1" Ice	1.98	1.06	91.233
(3) RRUS 32 B66	C	None		0.0000	165.00	No Ice	2.74	1.67	53.000
						1/2" Ice	2.96	1.86	74.114
						1" Ice	3.19	2.05	98.424
(3) DC6-48-60-18-8F Surge Suppression Unit	C	None		0.0000	167.00	No Ice	0.92	0.92	18.900
						1/2" Ice	1.46	1.46	36.615
						1" Ice	1.64	1.64	56.825
***									
14' Sector Frame	A	From Leg	2.00	-2.0000	148.00	No Ice	25.00	25.00	380.000
			0.00			1/2" Ice	33.12	33.12	556.690

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00				1" Ice	41.24	41.24	733.380
14' Sector Frame	B	From Leg	1.90		18.0000	148.00	No Ice	25.00	25.00	380.000
			0.62				1/2" Ice	33.12	33.12	556.690
			0.00				1" Ice	41.24	41.24	733.380
14' Sector Frame	C	From Leg	1.41		45.0000	148.00	No Ice	25.00	25.00	380.000
			1.41				1/2" Ice	33.12	33.12	556.690
			0.00				1" Ice	41.24	41.24	733.380
Pipe Mount 6'x2.375"	A	From Leg	4.00		-2.0000	148.00	No Ice	1.43	1.43	26.100
			0.00				1/2" Ice	1.92	1.92	36.927
			1.00				1" Ice	2.29	2.29	51.814
Pipe Mount 6'x2.375"	B	From Leg	3.80		18.0000	148.00	No Ice	1.43	1.43	26.100
			1.24				1/2" Ice	1.92	1.92	36.927
			1.00				1" Ice	2.29	2.29	51.814
Pipe Mount 6'x2.375"	C	From Leg	2.82		45.0000	148.00	No Ice	1.43	1.43	26.100
			2.82				1/2" Ice	1.92	1.92	36.927
			1.00				1" Ice	2.29	2.29	51.814
APXVSPP18 w/ Mount Pipe	A	From Leg	4.00		-2.0000	148.00	No Ice	8.02	6.71	78.900
			0.00				1/2" Ice	8.48	7.66	144.306
			1.00				1" Ice	8.94	8.49	217.469
APXVSPP18 w/ Mount Pipe	B	From Leg	3.80		18.0000	148.00	No Ice	8.02	6.71	78.900
			1.24				1/2" Ice	8.48	7.66	144.306
			1.00				1" Ice	8.94	8.49	217.469
APXVSPP18 w/ Mount Pipe	C	From Leg	2.82		58.0000	148.00	No Ice	8.02	6.71	78.900
			2.82				1/2" Ice	8.48	7.66	144.306
			1.00				1" Ice	8.94	8.49	217.469
AAHC w/ Mount Pipe	A	From Leg	1.00		0.0000	153.00	No Ice	4.89	3.26	121.870
			0.00				1/2" Ice	5.32	3.76	167.528
			0.00				1" Ice	5.77	4.28	218.421
AAHC w/ Mount Pipe	B	From Leg	1.00		0.0000	153.00	No Ice	4.89	3.26	121.870
			0.00				1/2" Ice	5.32	3.76	167.528
			0.00				1" Ice	5.77	4.28	218.421
AAHC w/ Mount Pipe	C	From Leg	1.00		0.0000	153.00	No Ice	4.89	3.26	121.870
			0.00				1/2" Ice	5.32	3.76	167.528
			0.00				1" Ice	5.77	4.28	218.421
RRH2X50-800	A	From Leg	1.00		0.0000	153.00	No Ice	1.70	1.28	52.900
			0.00				1/2" Ice	1.86	1.43	69.909
			0.00				1" Ice	2.03	1.58	89.609
RRH2X50-800	B	From Leg	1.00		0.0000	153.00	No Ice	1.70	1.28	52.900
			0.00				1/2" Ice	1.86	1.43	69.909
			0.00				1" Ice	2.03	1.58	89.609
RRH2X50-800	C	From Leg	1.00		0.0000	153.00	No Ice	1.70	1.28	52.900
			0.00				1/2" Ice	1.86	1.43	69.909
			0.00				1" Ice	2.03	1.58	89.609
1900MHz 4X40W RRH	A	From Leg	1.00		0.0000	153.00	No Ice	2.32	2.24	59.500
			0.00				1/2" Ice	2.53	2.44	82.622
			0.00				1" Ice	2.74	2.65	108.978
1900MHz 4X40W RRH	B	From Leg	1.00		0.0000	153.00	No Ice	2.32	2.24	59.500
			0.00				1/2" Ice	2.53	2.44	82.622
			0.00				1" Ice	2.74	2.65	108.978
1900MHz 4X40W RRH	C	From Leg	1.00		0.0000	153.00	No Ice	2.32	2.24	59.500
			0.00				1/2" Ice	2.53	2.44	82.622
			0.00				1" Ice	2.74	2.65	108.978
TD-RRH8x20-25	A	From Leg	1.00		0.0000	153.00	No Ice	3.70	1.29	66.000
			0.00				1/2" Ice	3.95	1.46	89.937
			0.00				1" Ice	4.20	1.64	117.219
TD-RRH8x20-25	B	From Leg	1.00		0.0000	153.00	No Ice	3.70	1.29	66.000
			0.00				1/2" Ice	3.95	1.46	89.937

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	4.20	1.64	117.219
TD-RRH8x20-25	C	From Leg	1.00	0.0000	153.00	No Ice	3.70	1.29	66.000
			0.00			1/2" Ice	3.95	1.46	89.937
			0.00			1" Ice	4.20	1.64	117.219
RRH 2x50 800 MHz	A	From Leg	1.00	0.0000	153.00	No Ice	1.73	1.33	53.000
			0.00			1/2" Ice	1.90	1.48	70.435
			0.00			1" Ice	2.07	1.64	90.593
RRH 2x50 800 MHz	B	From Leg	1.00	0.0000	153.00	No Ice	1.73	1.33	53.000
			0.00			1/2" Ice	1.90	1.48	70.435
			0.00			1" Ice	2.07	1.64	90.593
RRH 2x50 800 MHz	C	From Leg	1.00	0.0000	153.00	No Ice	1.73	1.33	53.000
			0.00			1/2" Ice	1.90	1.48	70.435
			0.00			1" Ice	2.07	1.64	90.593
(2) 2.5" x 3.5' Mount Pipe	A	From Leg	0.50	0.0000	153.00	No Ice	0.74	0.74	20.000
			0.00			1/2" Ice	0.96	0.96	26.726
			0.00			1" Ice	1.18	1.18	35.997
(2) 2.5" x 3.5' Mount Pipe	B	From Leg	0.50	0.0000	153.00	No Ice	0.74	0.74	20.000
			0.00			1/2" Ice	0.96	0.96	26.726
			0.00			1" Ice	1.18	1.18	35.997
(2) 2.5" x 3.5' Mount Pipe	C	From Leg	0.50	0.0000	153.00	No Ice	0.74	0.74	20.000
			0.00			1/2" Ice	0.96	0.96	26.726
			0.00			1" Ice	1.18	1.18	35.997
***									
30' x 30' Cross Catwalk w/ Handrails	C	None		0.0000	144.00	No Ice	78.00	78.00	5664.000
						1/2" Ice	84.00	84.00	7807.000
						1" Ice	90.00	90.00	9950.000
***									
2' Standoff	A	From Leg	1.00	0.0000	135.00	No Ice	1.14	1.62	37.400
			0.00			1/2" Ice	1.79	2.41	55.340
			0.00			1" Ice	2.44	3.20	73.280
2' Standoff	B	From Leg	1.00	0.0000	135.00	No Ice	1.14	1.62	37.400
			0.00			1/2" Ice	1.79	2.41	55.340
			0.00			1" Ice	2.44	3.20	73.280
2' Standoff	D	From Leg	1.00	0.0000	135.00	No Ice	1.14	1.62	37.400
			0.00			1/2" Ice	1.79	2.41	55.340
			0.00			1" Ice	2.44	3.20	73.280
AIR21 B4A/B2P w/ mount pipe	A	From Leg	2.00	48.0000	135.00	No Ice	6.13	5.54	101.250
			1.00			1/2" Ice	6.52	6.20	156.434
			0.00			1" Ice	6.92	6.87	218.215
AIR21 B4A/B2P w/ mount pipe	B	From Leg	2.00	78.0000	135.00	No Ice	6.13	5.54	101.250
			1.00			1/2" Ice	6.52	6.20	156.434
			0.00			1" Ice	6.92	6.87	218.215
AIR21 B4A/B2P w/ mount pipe	D	From Leg	2.00	18.0000	135.00	No Ice	6.13	5.54	101.250
			1.00			1/2" Ice	6.52	6.20	156.434
			0.00			1" Ice	6.92	6.87	218.215
DBXNH-6565A-A2M w/ mount pipe	A	From Leg	2.00	-72.0000	135.00	No Ice	5.45	4.67	60.255
			-1.00			1/2" Ice	5.80	5.27	110.757
			0.00			1" Ice	6.17	5.88	167.983
DBXNH-6565A-A2M w/ mount pipe	B	From Leg	2.00	-42.0000	135.00	No Ice	5.45	4.67	60.255
			-1.00			1/2" Ice	5.80	5.27	110.757
			0.00			1" Ice	6.17	5.88	167.983
DBXNH-6565A-A2M w/ mount pipe	D	From Leg	2.00	18.0000	135.00	No Ice	5.45	4.67	60.255
			-1.00			1/2" Ice	5.80	5.27	110.757
			0.00			1" Ice	6.17	5.88	167.983
RRUS 11 B2	A	From Leg	2.00	0.0000	135.00	No Ice	2.83	1.18	50.700
			0.00			1/2" Ice	3.04	1.33	71.570
			0.00			1" Ice	3.26	1.48	95.487

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
RRUS 11 B2	B	From Leg	2.00	0.0000	135.00	No Ice	2.83	1.18	50.700
			0.00			1/2" Ice	3.04	1.33	71.570
			0.00			1" Ice	3.26	1.48	95.487
RRUS 11 B2	D	From Leg	2.00	0.0000	135.00	No Ice	2.83	1.18	50.700
			0.00			1/2" Ice	3.04	1.33	71.570
			0.00			1" Ice	3.26	1.48	95.487
RRUS 11 B12	A	From Leg	2.00	0.0000	135.00	No Ice	2.83	1.18	50.700
			0.00			1/2" Ice	3.04	1.33	71.570
			0.00			1" Ice	3.26	1.48	95.487
RRUS 11 B12	B	From Leg	2.00	0.0000	135.00	No Ice	2.83	1.18	50.700
			0.00			1/2" Ice	3.04	1.33	71.570
			0.00			1" Ice	3.26	1.48	95.487
RRUS 11 B12	D	From Leg	2.00	0.0000	135.00	No Ice	2.83	1.18	50.700
			0.00			1/2" Ice	3.04	1.33	71.570
			0.00			1" Ice	3.26	1.48	95.487
KRY 112 144/1	A	From Leg	2.00	0.0000	135.00	No Ice	0.35	0.17	11.000
			0.00			1/2" Ice	0.43	0.23	14.176
			0.00			1" Ice	0.51	0.30	18.583
KRY 112 144/1	B	From Leg	2.00	0.0000	135.00	No Ice	0.35	0.17	11.000
			0.00			1/2" Ice	0.43	0.23	14.176
			0.00			1" Ice	0.51	0.30	18.583
KRY 112 144/1	D	From Leg	2.00	0.0000	135.00	No Ice	0.35	0.17	11.000
			0.00			1/2" Ice	0.43	0.23	14.176
			0.00			1" Ice	0.51	0.30	18.583
***									
12' Sector Frame	A	From Leg	0.50	8.0000	124.00	No Ice	18.81	10.62	513.500
			0.00			1/2" Ice	24.75	15.16	719.590
			0.00			1" Ice	30.69	19.70	925.680
12' Sector Frame	C	From Leg	0.50	-2.0000	124.00	No Ice	18.81	10.62	513.500
			0.00			1/2" Ice	24.75	15.16	719.590
			0.00			1" Ice	30.69	19.70	925.680
12' Sector Frame	D	From Leg	0.50	-12.0000	124.00	No Ice	18.81	10.62	513.500
			0.00			1/2" Ice	24.75	15.16	719.590
			0.00			1" Ice	30.69	19.70	925.680
(2) DB846F65ZAXY w/Mount Pipe	A	From Leg	1.00	8.0000	124.00	No Ice	7.27	7.82	46.550
			0.00			1/2" Ice	7.88	9.01	113.929
			1.00			1" Ice	8.48	9.91	189.249
(2) DB846F65ZAXY w/Mount Pipe	C	From Leg	1.00	-2.0000	124.00	No Ice	7.27	7.82	46.550
			0.00			1/2" Ice	7.88	9.01	113.929
			1.00			1" Ice	8.48	9.91	189.249
(2) DB846F65ZAXY w/Mount Pipe	D	From Leg	1.00	-12.0000	124.00	No Ice	7.27	7.82	46.550
			0.00			1/2" Ice	7.88	9.01	113.929
			1.00			1" Ice	8.48	9.91	189.249
BXA-185085/12CF w/ Mount Pipe	A	From Leg	1.00	8.0000	124.00	No Ice	4.77	5.36	47.740
			0.00			1/2" Ice	5.22	6.17	93.913
			1.00			1" Ice	5.68	6.98	148.113
BXA-185063/12CF w/ mount pipe	C	From Leg	1.00	-2.0000	124.00	No Ice	5.00	5.30	40.550
			0.00			1/2" Ice	5.55	6.47	86.486
			1.00			1" Ice	6.07	7.35	139.852
BXA-185063/12CF w/ mount pipe	D	From Leg	1.00	-12.0000	124.00	No Ice	5.00	5.30	40.550
			0.00			1/2" Ice	5.55	6.47	86.486
			1.00			1" Ice	6.07	7.35	139.852
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	1.00	8.0000	124.00	No Ice	8.16	6.16	59.300
			0.00			1/2" Ice	8.62	6.82	120.285
			1.00			1" Ice	9.09	7.51	189.029
(2) SBNHH-1D45B w/ Mount Pipe	C	From Leg	1.00	-2.0000	124.00	No Ice	11.40	6.71	83.600
			0.00			1/2" Ice	11.89	7.66	165.080

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert ft / ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			1.00			1" Ice	12.38	8.49	254.719
(2) SBNHH-1D65B w/ Mount Pipe	D	From Leg	1.00 0.00 1.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	6.16 6.82 7.51	59.300 120.285 189.029
B13 RRH 4X30	A	From Leg	1.00 0.00 1.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice	2.06 2.24 2.43	1.32 1.48 1.64	55.600 72.875 92.951
B13 RRH 4X30	C	From Leg	1.00 0.00 1.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice	2.06 2.24 2.43	1.32 1.48 1.64	55.600 72.875 92.951
B13 RRH 4X30	D	From Leg	1.00 0.00 1.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice	2.06 2.24 2.43	1.32 1.48 1.64	55.600 72.875 92.951
B25 RRH4X30	A	From Leg	1.00 0.00 1.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.74 1.92 2.11	55.000 75.465 98.944
B25 RRH4X30	C	From Leg	1.00 0.00 1.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.74 1.92 2.11	55.000 75.465 98.944
B25 RRH4X30	D	From Leg	1.00 0.00 1.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice	2.20 2.39 2.59	1.74 1.92 2.11	55.000 75.465 98.944
B66A RRH4X45	A	From Leg	1.00 0.00 1.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice	2.54 2.75 2.97	1.61 1.79 1.98	56.800 76.924 100.146
B66A RRH4X45	C	From Leg	1.00 0.00 1.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice	2.54 2.75 2.97	1.61 1.79 1.98	56.800 76.924 100.146
B66A RRH4X45	D	From Leg	1.00 0.00 1.00	-12.0000	124.00	No Ice 1/2" Ice 1" Ice	2.54 2.75 2.97	1.61 1.79 1.98	56.800 76.924 100.146
DB-T1-6Z-8AB-0Z	A	From Leg	1.00 0.00 1.00	8.0000	124.00	No Ice 1/2" Ice 1" Ice	4.80 5.07 5.35	2.00 2.19 2.39	44.000 80.134 120.222
DB-T1-6Z-8AB-0Z	C	From Leg	1.00 0.00 1.00	-2.0000	124.00	No Ice 1/2" Ice 1" Ice	4.80 5.07 5.35	2.00 2.19 2.39	44.000 80.134 120.222
***									
4.25' x 7' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	112.50	No Ice 1/2" Ice 1" Ice	11.50 13.40 15.30	8.90 10.50 12.10	750.000 1000.000 1250.000
23' x 3' Catwalk	A	From Face	0.00 0.00 0.00	0.0000	87.50	No Ice 1/2" Ice 1" Ice	31.40 36.80 42.20	12.80 15.70 18.60	1784.000 2514.000 3244.000
23' x 3' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	87.50	No Ice 1/2" Ice 1" Ice	31.40 36.80 42.20	12.80 15.70 18.60	1784.000 2514.000 3244.000
GPS-TMG-HR-26N	B	From Leg	0.50 0.00 0.00	0.0000	65.00	No Ice 1/2" Ice 1" Ice	0.13 0.18 0.24	0.13 0.18 0.24	0.600 2.371 5.075
13' x 4.25' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	62.50	No Ice 1/2" Ice 1" Ice	18.85 26.00 33.15	7.00 8.00 9.00	1250.000 1750.000 2250.000
13' x 4.25' Catwalk	B	From Face	0.00 0.00 0.00	0.0000	25.00	No Ice 1/2" Ice 1" Ice	18.85 26.00 33.15	7.00 8.00 9.00	1250.000 1750.000 2250.000
Side Light	A	From Leg	1.00	0.0000	92.00	No Ice	0.33	0.33	7.000

tnxTower	Job	Page
	27016 SHELTON EAST CENTRAL	9 of 9
GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project 2018723.01.SNET025.10	Date 6/8/2018
	Client AT&T Towers	Designed by lrife

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1/2" Ice	0.47	0.47	7.050
			0.00			1" Ice	0.60	0.60	7.100
Side Light	D	From Leg	1.00	0.0000	92.00	No Ice	0.33	0.33	7.000
			0.00			1/2" Ice	0.47	0.47	7.050
			0.00			1" Ice	0.60	0.60	7.100

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36	29000	11200	.295	.65	.49	36	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	TWR_LEG_T1	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.9	19.9	.501
2	TWR_TOP_GIRT_T1	MC18x58_HRA	Beam	Channel	A36	Typical	17.1	17.8	676	2.81
3	TWR_DIAG_T1	L 3-1/2x3-1/2x1/4	Column	Single Angle	A36	Typical	1.688	2.01	2.01	.035
4	TWR_STEP_T1	L3x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.313	.743	1.173	.027
5	TWR_RED_VERT_T1	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
6	TWR_LEG_T2	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.9	19.9	.501
7	TWR_TOP_GIRT_T2	2L3-1/2x3x5/16x3/8	Beam	None	A36	Typical	3.87	6.995	4.66	.126
8	TWR_DIAG_T2	L3-1/2x3x1/4	Column	Single Angle	A36	Typical	1.563	1.304	1.913	.033
9	TWR_STEP_T2	C6x8.2	Beam	Channel	A36	Typical	2.39	.687	13.1	.074
10	TWR_RED_VERT_T2	L2.5x2.5x3	Beam	Channel	A36	Typical	.901	.535	.535	.011
11	TWR_LEG_T3	L6x6x5/8	Column	Single Angle	A36	Typical	7.109	24.158	24.158	.926
12	TWR_TOP_GIRT_T3	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
13	TWR_INNER_SUPP_T3	2L2-1/2x2x3/16x3/8	Beam	None	A36	Typical	1.64	1.374	1.017	.019
14	TWR_DIAG_T3	L4x3x1/4	Column	Single Angle	A36	Typical	1.688	1.355	2.769	.035
15	TWR_STEP_T3	L3x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.313	.743	1.173	.027
16	TWR_RED_VERT_T3	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
17	TWR_INNER_SQ_T3	L3x2.5x4	Beam	Single Angle	A36	Typical	1.32	.734	1.16	.03
18	TWR_INNER_CORNER_T3	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
19	TWR_INNER_TRI_T3	L2X2.5X3	Beam	Single Angle	A36	Typical	.809	.509	.291	.009
20	TWR_INNER_LADDER_T3	L2X2.5X3	Beam	Single Angle	A36	Typical	.809	.509	.291	.009
21	TWR_LEG_T4	L6x6x5/8	Column	Single Angle	A36	Typical	7.109	24.158	24.158	.926
22	TWR_DIAG_T4mods	L4x3x1/4	Column	Single Angle	A36	Typical	1.688	1.355	2.769	.035
23	TWR_TOP_GIRT_T4	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
24	TWR_RED_VERT_T4	L2.5x2.5x3	Beam	None	A36	Typical	.901	.535	.535	.011
25	TWR_STEP_T4	L3x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.313	.743	1.173	.027
26	TWR_LEG_T5	L6x6x3/4	Column	Single Angle	A36	Typical	8.438	28.155	28.155	1.582
27	TWR_HORZ_T5	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
28	TWR_DIAG_T5	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
29	TWR_RED_HORZ_T5	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
30	TWR_RED_DIAG_T5	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
31	TWR_INNER_SUPP_T5	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
32	TWR_INNER_SQ_T5	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
33	TWR_INNER_CORNER_T5	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
34	TWR_INNER_TRI_T5	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
35	TWR_INNER_LADDER_T5	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
36	TWR_LEG_T6	L6x6x3/4	Column	Single Angle	A36	Typical	8.438	28.155	28.155	1.582
37	TWR_HORZ_T6	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
38	TWR_DIAG_T6	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
39	TWR_RED_HORZ_T6	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
40	TWR_RED_DIAG_T6	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
41	TWR_INNER_SUPP_T6	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
42	TWR_INNER_SQ_T6	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
43	TWR_INNER_CORNER_T6	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
44	TWR_INNER_TRI_T6	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
45	TWR_INNER_LADDER_T6	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
46	TWR_LEG_T7	L6x6x7/8	Column	Single Angle	A36	Typical	9.734	31.917	31.917	2.484
47	TWR_HORZ_T7	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
48	TWR_DIAG_T7	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
49	TWR_RED_HORZ_T7	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
50	TWR_RED_DIAG_T7	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
51	TWR_INNER_SUPP_T7	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
52	TWR_INNER_SQ_T7	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
53	TWR_INNER_CORNER_T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
54	TWR_INNER_BRACE_T7	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
55	TWR_INNER_GIRT_T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
56	TWR_INNER_TRI_T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
57	TWR_INNER_LADDER_T7	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
58	TWR_LEG_T8	L6x6x7/8	Column	Single Angle	A36	Typical	9.734	31.917	31.917	2.484
59	TWR_HORZ_T8	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
60	TWR_DIAG_T8	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
61	TWR_RED_HORZ_T8	L2-1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.009
62	TWR_RED_DIAG_T8	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
63	TWR_INNER_SUPP_T8	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
64	TWR_INNER_SQ_T8	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
65	TWR_INNER_CORNER_T8	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
66	TWR_INNER_TRI_T8	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
67	TWR_INNER_LADDER_T8	L2X2.5X3	Beam	None	A36	Typical	.809	.509	.291	.009
68	TWR_LEG_T9	L8x8x3/4	Column	Single Angle	A36	Typical	11.438	69.738	69.738	2.145
69	TWR_HORZ_T9	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
70	TWR_DIAG_T9	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
71	TWR_RED_HORZ_T9	L 2-1/2x2-1/2x1/4	Beam	Single Angle	A36	Typical	1.188	.703	.703	.025
72	TWR_RED_DIAG_T9	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
73	TWR_INNER_SUPP_T9	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
74	TWR_INNER_SQ_T9	LL2.5x2x3x3	Beam	None	A36	Typical	1.64	1.38	1.02	.021
75	TWR_INNER_CORNER_T9	L3x3x4	Beam	None	A36	Typical	1.44	1.23	1.23	.031
76	TWR_INNER_BRACE_T9	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
77	TWR_INNER_TRI_T9	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
78	TWR_INNER_LADDER_T9	2L2-1/2x2-1/2x3/16x3/8	Beam	None	A36	Typical	1.8	2.499	1.09	.021
79	TWR_LEG_T10	L8x8x7/8	Column	Single Angle	A36	Typical	13.234	79.581	79.581	3.378
80	TWR_HORZ_T10	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
81	TWR_DIAG_T10	2L3x3x3/8x3/8	Column	None	A36	Typical	4.22	8.394	3.52	.198
82	TWR_RED_HORZ_T10	L2-1/2x2x3/16	Beam	None	A36	Typical	.809	.291	.509	.009
83	TWR_RED_HORZ_2_T10	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
84	TWR_RED_DIAG_T10	L2-1/2x2-1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
85	TWR_RED_DIAG_2_T10	L3x3-1/2x1/4	Column	Single Angle	A36	Typical	1.563	1.913	1.304	.033
86	TWR_RED_HIP_2_T10	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
87	TWR_RED_HIPDIA_2_T10	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
88	TWR_INNER_SUPP_T10	L3x3x1/4	Beam	Single Angle	A36	Typical	1.438	1.244	1.244	.03
89	TWR_INNER_SQ_T10	2L3x2-1/2x1/4x3/8	Beam	Single Angle	A36	Typical	2.63	3.373	2.35	.055
90	TWR_INNER_CORNER_T10	L3x3x1/4	Beam	Single Angle	A36	Typical	1.438	1.244	1.244	.03
91	TWR_INNER_BRACE_T10	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
92	TWR_INNER_TRI_T10	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
93	TWR_INNER_LADDER_T10	L4x4x6	Beam	Single Angle	A36	Typical	2.86	4.32	4.32	.141
94	TWR_LEG_T11	L8X8X1_HRA	Column	Single Angle	A36	Typical	15	88.983	88.983	5
95	TWR_HORZ_T11	2L3x3x3/8x3/8	Beam	None	A36	Typical	4.22	8.394	3.52	.198
96	TWR_DIAG_T11	2L3x3-1/2x3/8x3/8	Column	None	A36	Typical	4.59	12.838	3.69	.215
97	TWR_RED_HORZ_T11	L2-1/2x2-1/2x3/16	Beam	None	A36	Typical	.902	.547	.547	.011
98	TWR_RED_HORZ_2_T11	2L2-1/2x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.38	3.347	1.41	.049
99	TWR_RED_DIAG_T11	L2-1/2x2-1/2x3/16	Column	None	A36	Typical	.902	.547	.547	.011
100	TWR_RED_DIAG_2_T11	2L2-1/2x2x1/4x3/8	Column	None	A36	Typical	2.13	1.858	1.31	.044
101	TWR_RED_SUBHOR_T11	2L2-1/2x3-1/2x1/4x3/8	Beam	None	A36	Typical	2.88	8.466	1.55	.06
102	TWR_RED_BRACE_T11	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
103	TWR_RED_VERT_T11	L3x3x1/4	Beam	None	A36	Typical	1.438	1.244	1.244	.03
104	TWR_RED_HIP_2_T11	L4x4x3/8	Beam	Single Angle	A36	Typical	2.86	4.36	4.36	.141
105	TWR_RED_HIPDIA_2_T11	2L2-1/2x2-1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
106	TWR_RED_HIPBRACE_T11	L2x2x3	Column	None	A36	Typical	.722	.271	.271	.009
107	TWR_INNER_SUPP_T11	2L3x2-1/2x1/4x3/8	Beam	None	A36	Typical	2.63	3.373	2.35	.055
108	TWR_INNER_SQ_T11	LL2.5x2.5x4x3	Beam	None	A36	Typical	2.38	3.31	1.38	.052
109	TWR_INNER_CORNER_T11	L3.5x3.5x5	Beam	None	A36	Typical	2.1	2.44	2.44	.073
110	TWR_INNER_BRACE_T11	L2.5x2.5x3	Beam	None	A36	Typical	.901	.535	.535	.011
111	TWR_INNER_TRI_T11	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026
112	TWR_INNER_LADDER_T11	L2.5x2.5x4	Beam	None	A36	Typical	1.19	.692	.692	.026

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(Plate/Wall)
1	Dead	None		-1		60	498	44		
2	No Ice Wind 0 deg	None				60	1206	132		
3	No Ice Wind 45 deg	None				120	1168	176		
4	No Ice Wind 90 deg	None				60	1198	132		
5	No Ice Wind 135 deg	None				120	1172	176		
6	No Ice Wind 180 deg	None				60	1206	132		
7	No Ice Wind 225 deg	None				120	1168	176		
8	No Ice Wind 270 deg	None				60	1198	132		
9	No Ice Wind 315 deg	None				120	1172	176		
10	Ice	None				60	494	440		
11	Temperature Drop	None						396		
12	Ice Wind 0 deg	None				60	1176	132		
13	Ice Wind 45 deg	None				120	1120	176		
14	Ice Wind 90 deg	None				60	1176	108		
15	Ice Wind 135 deg	None				120	1122	176		
16	Ice Wind 180 deg	None				60	1176	132		
17	Ice Wind 225 deg	None				120	1120	176		
18	Ice Wind 270 deg	None				60	1176	108		
19	Ice Wind 315 deg	None				120	1122	176		
20	Service Wind 0 deg	None				60	1158	76		
21	Service Wind 45 deg	None				120	1116	176		
22	Service Wind 90 deg	None				60	1166	132		
23	Service Wind 135 deg	None				120	1122	176		
24	Service Wind 180 deg	None				60	1158	76		
25	Service Wind 225 deg	None				120	1116	176		
26	Service Wind 270 deg	None				60	1166	132		
27	Service Wind 315 deg	None				120	1122	176		

Load Combinations

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Dead Only	Yes			1	1	28	1	29	1	0		0		0		0		0		0			
2	1.2 Dead+1.6 Wind 0 deg - No Ice	Yes			1	1.2	2	1.6	28	1.2	29	1	0		0		0		0		0			
3	0.9 Dead+1.6 Wind 0 deg - No Ice	Yes			1	.9	2	1.6	28	.9	29	1	0		0		0		0		0			
4	1.2 Dead+1.6 Wind 45 deg - No I...	Yes			1	1.2	3	1.6	28	1.2	29	1	0		0		0		0		0			
5	0.9 Dead+1.6 Wind 45 deg - No I...	Yes			1	.9	3	1.6	28	.9	29	1	0		0		0		0		0			
6	1.2 Dead+1.6 Wind 90 deg - No I...	Yes			1	1.2	4	1.6	28	1.2	29	1	0		0		0		0		0			
7	0.9 Dead+1.6 Wind 90 deg - No I...	Yes			1	.9	4	1.6	28	.9	29	1	0		0		0		0		0			

Load Combinations (Continued)

	Description	Solve	PDelta	SR...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
8	1.2 Dead+1.6 Wind 135 deg - No ..	Yes			1	1.2	5	1.6	28	1.2	29	1	0		0		0		0			
9	0.9 Dead+1.6 Wind 135 deg - No ..	Yes			1	.9	5	1.6	28	.9	29	1	0		0		0		0			
10	1.2 Dead+1.6 Wind 180 deg - No ..	Yes			1	1.2	6	1.6	28	1.2	29	1	0		0		0		0			
11	0.9 Dead+1.6 Wind 180 deg - No ..	Yes			1	.9	6	1.6	28	.9	29	1	0		0		0		0			
12	1.2 Dead+1.6 Wind 225 deg - No ..	Yes			1	1.2	7	1.6	28	1.2	29	1	0		0		0		0			
13	0.9 Dead+1.6 Wind 225 deg - No ..	Yes			1	.9	7	1.6	28	.9	29	1	0		0		0		0			
14	1.2 Dead+1.6 Wind 270 deg - No ..	Yes			1	1.2	8	1.6	28	1.2	29	1	0		0		0		0			
15	0.9 Dead+1.6 Wind 270 deg - No ..	Yes			1	.9	8	1.6	28	.9	29	1	0		0		0		0			
16	1.2 Dead+1.6 Wind 315 deg - No ..	Yes			1	1.2	9	1.6	28	1.2	29	1	0		0		0		0			
17	0.9 Dead+1.6 Wind 315 deg - No ..	Yes			1	.9	9	1.6	28	.9	29	1	0		0		0		0			
18	1.2 Dead+1.0 Ice+1.0 Temp	Yes			1	1.2	10	1	11	1	28	1.2	29	1	0		0		0			
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice..	Yes			1	1.2	12	1	10	1	11	1	28	1.2	29	1	0		0			
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ic..	Yes			1	1.2	13	1	10	1	11	1	28	1.2	29	1	0		0			
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ic..	Yes			1	1.2	14	1	10	1	11	1	28	1.2	29	1	0		0			
22	1.2 Dead+1.0 Wind 135 deg+1.0 ..	Yes			1	1.2	15	1	10	1	11	1	28	1.2	29	1	0		0			
23	1.2 Dead+1.0 Wind 180 deg+1.0 ..	Yes			1	1.2	16	1	10	1	11	1	28	1.2	29	1	0		0			
24	1.2 Dead+1.0 Wind 225 deg+1.0 ..	Yes			1	1.2	17	1	10	1	11	1	28	1.2	29	1	0		0			
25	1.2 Dead+1.0 Wind 270 deg+1.0 ..	Yes			1	1.2	18	1	10	1	11	1	28	1.2	29	1	0		0			
26	1.2 Dead+1.0 Wind 315 deg+1.0 ..	Yes			1	1.2	19	1	10	1	11	1	28	1.2	29	1	0		0			
27	Dead+Wind 0 deg - Service	Yes			1	1	20	1	28	1	29	1	0		0		0		0			
28	Dead+Wind 45 deg - Service	Yes			1	1	21	1	28	1	29	1	0		0		0		0			
29	Dead+Wind 90 deg - Service	Yes			1	1	22	1	28	1	29	1	0		0		0		0			
30	Dead+Wind 135 deg - Service	Yes			1	1	23	1	28	1	29	1	0		0		0		0			
31	Dead+Wind 180 deg - Service	Yes			1	1	24	1	28	1	29	1	0		0		0		0			
32	Dead+Wind 225 deg - Service	Yes			1	1	25	1	28	1	29	1	0		0		0		0			
33	Dead+Wind 270 deg - Service	Yes			1	1	26	1	28	1	29	1	0		0		0		0			
34	Dead+Wind 315 deg - Service	Yes			1	1	27	1	28	1	29	1	0		0		0		0			

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N189	max	24.459	12	200.329	12	18.092	5	0	1	.073	17	0	1
2		min	-18.4	5	-129.177	5	-24.51	12	0	1	-.162	22	0	1
3	N190	max	18.605	17	196.299	8	18.488	17	0	1	.066	13	0	1
4		min	-24.637	8	-134.7	17	-24.258	8	0	1	-.18	20	0	1
5	N191	max	18.032	13	195.826	4	24.385	4	0	1	.066	8	0	1
6		min	-24.26	4	-132.303	13	-18.656	13	0	1	-.16	26	0	1
7	N192	max	24.383	16	202.919	16	25.002	16	0	1	.066	5	0	1
8		min	-18.179	9	-129.731	9	-18.544	9	0	1	-.184	24	0	1

Envelope Joint Reactions (Continued)

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
9	Totals:	max	78.596	15	327.443	22	79.776	3						
10		min	-78.596	6	115.378	17	-79.776	10						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
1	M9	L 3-1/2x3-1/2x1/4	.267	7.008	14	.005	9.66	z	24	17.938	54.675	.918	3.864	1	H2-1
2	M10	L 3-1/2x3-1/2x1/4	.270	7.576	6	.006	9.66	z	23	17.938	54.675	.918	3.864	1	H2-1
3	M11	L 3-1/2x3-1/2x1/4	.262	7.008	10	.005	9.66	z	22	17.938	54.675	.918	3.864	1	H2-1
4	M12	L 3-1/2x3-1/2x1/4	.262	7.576	2	.006	9.66	z	21	17.938	54.675	.918	3.864	1	H2-1
5	M13	L 3-1/2x3-1/2x1/4	.267	6.819	6	.005	9.66	z	20	17.938	54.675	.918	3.864	1	H2-1
6	M14	L 3-1/2x3-1/2x1/4	.265	7.576	14	.006	9.66	z	19	17.938	54.675	.918	3.864	1	H2-1
7	M15	L 3-1/2x3-1/2x1/4	.288	6.819	2	.005	9.66	z	25	17.938	54.675	.918	3.864	1	H2-1
8	M16	L 3-1/2x3-1/2x1/4	.288	7.576	10	.006	9.66	z	25	17.938	54.675	.918	3.864	1	H2-1
9	M29	L3-1/2x3x1/4	.585	7.336	14	.005	10.189	z	24	12.408	50.625	.764	3.012	1	H2-1
10	M30	L3-1/2x3x1/4	.579	0	6	.006	10.189	z	23	12.408	50.625	.764	3.069	1	H2-1
11	M31	L3-1/2x3x1/4	.612	7.336	10	.005	10.189	z	22	12.408	50.625	.764	3.012	1	H2-1
12	M32	L3-1/2x3x1/4	.601	0	2	.006	10.189	z	21	12.408	50.625	.764	3.069	1	H2-1
13	M33	L3-1/2x3x1/4	.608	7.336	6	.005	10.189	z	20	12.408	50.625	.764	3.012	1	H2-1
14	M34	L3-1/2x3x1/4	.602	0	14	.006	10.189	z	19	12.408	50.625	.764	3.069	1	H2-1
15	M35	L3-1/2x3x1/4	.601	7.336	2	.005	10.189	z	26	12.408	50.625	.764	3.012	1	H2-1
16	M36	L3-1/2x3x1/4	.596	0	10	.006	10.189	z	25	12.408	50.625	.764	3.069	1	H2-1
17	M54	L4x3x1/4	.668	10.944	14	.006	10.944	z	23	12.882	54.675	.824	3.521	1	H2-1
18	M55	L4x3x1/4	.690	10.944	6	.006	10.944	z	23	12.882	54.675	.824	3.521	1	H2-1
19	M56	L4x3x1/4	.697	10.944	10	.006	10.944	z	22	12.882	54.675	.824	3.521	1	H2-1
20	M57	L4x3x1/4	.707	10.944	2	.006	10.944	z	20	12.882	54.675	.824	3.521	1	H2-1
21	M58	L4x3x1/4	.704	10.944	6	.006	10.944	z	20	12.882	54.675	.824	3.521	1	H2-1
22	M59	L4x3x1/4	.714	10.944	14	.006	10.944	z	26	12.882	54.675	.824	3.521	1	H2-1
23	M60	L4x3x1/4	.689	10.944	2	.006	10.944	z	26	12.882	54.675	.824	3.521	1	H2-1
24	M61	L4x3x1/4	.709	10.944	10	.006	10.944	z	21	12.882	54.675	.824	3.521	1	H2-1
25	M91	2L2-1/2x2-1/2x1/4x...	.676	8.253	14	.003	8.253	y	26	20.24	77.112	5.381	2.133	1	H1-1a
26	M94	2L2-1/2x2-1/2x1/4x...	.690	8.253	6	.003	8.253	y	20	20.24	77.112	5.381	2.133	1	H1-1a
27	M98	2L2-1/2x2-1/2x1/4x...	.677	8.253	10	.004	8.253	y	24	20.24	77.112	5.381	2.133	1	H1-1a
28	M101	2L2-1/2x2-1/2x1/4x...	.674	8.253	2	.004	8.253	y	26	20.24	77.112	5.381	2.133	1	H1-1a
29	M105	2L2-1/2x2-1/2x1/4x...	.680	8.253	6	.004	8.253	y	22	20.24	77.112	5.381	2.133	1	H1-1a
30	M108	2L2-1/2x2-1/2x1/4x...	.668	8.253	14	.004	8.253	y	24	20.24	77.112	5.381	2.133	1	H1-1a
31	M112	2L2-1/2x2-1/2x1/4x...	.700	8.253	2	.003	8.253	y	20	20.24	77.112	5.381	2.133	1	H1-1a
32	M115	2L2-1/2x2-1/2x1/4x...	.700	8.253	10	.003	8.253	y	22	20.24	77.112	5.381	2.133	1	H1-1a
33	M128	2L2-1/2x2-1/2x1/4x...	.690	8.561	14	.004	8.561	y	19	18.729	77.112	5.381	2.133	1	H1-1a

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
34	M131	2L2-1/2x2-1/2x1/4x..	.707	8.561	6	.004	8.561	y	20	18.729	77.112	5.381	2.133	1	H1-1a
35	M135	2L2-1/2x2-1/2x1/4x..	.693	8.561	10	.004	8.561	y	25	18.729	77.112	5.381	2.133	1	H1-1a
36	M138	2L2-1/2x2-1/2x1/4x..	.693	8.561	2	.004	8.561	y	26	18.729	77.112	5.381	2.133	1	H1-1a
37	M142	2L2-1/2x2-1/2x1/4x..	.693	8.561	6	.004	8.561	y	22	18.729	77.112	5.381	2.133	1	H1-1a
38	M145	2L2-1/2x2-1/2x1/4x..	.676	8.561	14	.004	8.561	y	23	18.729	77.112	5.381	2.133	1	H1-1a
39	M149	2L2-1/2x2-1/2x1/4x..	.708	8.561	2	.004	8.561	y	21	18.729	77.112	5.381	2.133	1	H1-1a
40	M152	2L2-1/2x2-1/2x1/4x..	.708	8.561	10	.004	8.561	y	22	18.729	77.112	5.381	2.133	1	H1-1a
41	M165	2L2-1/2x2-1/2x1/4x..	.777	8.881	14	.004	8.881	y	26	17.34	77.112	5.381	2.133	1	H1-1a
42	M168	2L2-1/2x2-1/2x1/4x..	.804	8.881	6	.004	8.881	y	20	17.34	77.112	5.381	2.133	1	H1-1a
43	M172	2L2-1/2x2-1/2x1/4x..	.785	8.881	10	.004	8.881	y	25	17.34	77.112	5.381	2.133	1	H1-1a
44	M175	2L2-1/2x2-1/2x1/4x..	.779	8.881	2	.004	8.881	y	26	17.34	77.112	5.381	2.133	1	H1-1a
45	M179	2L2-1/2x2-1/2x1/4x..	.791	8.881	6	.004	8.881	y	23	17.34	77.112	5.381	2.133	1	H1-1a
46	M182	2L2-1/2x2-1/2x1/4x..	.765	8.881	14	.004	8.881	y	24	17.34	77.112	5.381	2.133	1	H1-1a
47	M186	2L2-1/2x2-1/2x1/4x..	.802	8.881	2	.004	8.881	y	20	17.34	77.112	5.381	2.133	1	H1-1a
48	M189	2L2-1/2x2-1/2x1/4x..	.807	8.881	10	.004	8.881	y	22	17.34	77.112	5.381	2.133	1	H1-1a
49	M202	2L2-1/2x2-1/2x1/4x..	.852	9.214	14	.004	9.214	y	26	16.045	77.112	5.381	2.133	1	H1-1a
50	M205	2L2-1/2x2-1/2x1/4x..	.883	9.214	6	.004	9.214	y	20	16.045	77.112	5.381	2.133	1	H1-1a
51	M209	2L2-1/2x2-1/2x1/4x..	.858	9.214	10	.004	9.214	y	25	16.045	77.112	5.381	2.133	1	H1-1a
52	M212	2L2-1/2x2-1/2x1/4x..	.853	9.214	2	.004	9.214	y	26	16.045	77.112	5.381	2.133	1	H1-1a
53	M216	2L2-1/2x2-1/2x1/4x..	.861	9.214	6	.004	9.214	y	22	16.045	77.112	5.381	2.133	1	H1-1a
54	M219	2L2-1/2x2-1/2x1/4x..	.833	9.214	14	.004	9.214	y	23	16.045	77.112	5.381	2.133	1	H1-1a
55	M223	2L2-1/2x2-1/2x1/4x..	.874	9.214	2	.004	9.214	y	20	16.045	77.112	5.381	2.133	1	H1-1a
56	M226	2L2-1/2x2-1/2x1/4x..	.877	9.214	10	.004	9.214	y	22	16.045	77.112	5.381	2.133	1	H1-1a
57	M239	2L2-1/2x2-1/2x1/4x..	.895	9.558	14	.004	9.558	y	26	15.651	77.112	5.381	2.133	1	H1-1a
58	M242	2L2-1/2x2-1/2x1/4x..	.926	9.558	6	.004	9.558	y	20	15.651	77.112	5.381	2.133	1	H1-1a
59	M246	2L2-1/2x2-1/2x1/4x..	.909	9.558	10	.004	9.558	y	25	15.651	77.112	5.381	2.133	1	H1-1a
60	M249	2L2-1/2x2-1/2x1/4x..	.900	9.558	2	.004	9.558	y	26	15.651	77.112	5.381	2.133	1	H1-1a
61	M253	2L2-1/2x2-1/2x1/4x..	.904	9.558	6	.004	9.558	y	22	15.651	77.112	5.381	2.133	1	H1-1a
62	M256	2L2-1/2x2-1/2x1/4x..	.874	9.558	14	.004	9.558	y	23	15.651	77.112	5.381	2.133	1	H1-1a
63	M260	2L2-1/2x2-1/2x1/4x..	.919	9.558	2	.004	9.558	y	20	15.651	77.112	5.381	2.133	1	H1-1a
64	M263	2L2-1/2x2-1/2x1/4x..	.925	9.558	10	.004	9.558	y	22	15.651	77.112	5.381	2.133	1	H1-1a
65	M276	2L3x3x3/8x3/8	.584	19.927	14	.002	19.927	y	25	35.431	136.728	11.376	4.498	1	H1-1a
66	M281	2L3x3x3/8x3/8	.605	19.927	6	.003	19.927	y	21	35.431	136.728	11.376	4.498	1	H1-1a
67	M287	2L3x3x3/8x3/8	.590	19.927	10	.003	19.927	y	24	35.431	136.728	11.376	4.498	1	H1-1a
68	M292	2L3x3x3/8x3/8	.587	19.927	2	.003	19.927	y	19	35.431	136.728	11.376	4.498	1	H1-1a
69	M300	2L3x3x3/8x3/8	.585	19.927	6	.003	19.927	y	21	35.431	136.728	11.376	4.498	1	H1-1a
70	M305	2L3x3x3/8x3/8	.565	19.927	14	.003	19.927	y	25	35.431	136.728	11.376	4.498	1	H1-1a
71	M313	2L3x3x3/8x3/8	.596	19.927	2	.002	19.927	y	19	35.431	136.728	11.376	4.498	1	H1-1a
72	M318	2L3x3x3/8x3/8	.599	19.927	10	.003	19.927	y	23	35.431	136.728	11.376	4.498	1	H1-1a
73	M337	2L3x3-1/2x3/8x3/8	.480	0	14	.005	15.467	y	10	48.209	148.716	15.04	4.593	1	H1-1a

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
74	M342	2L3x3-1/2x3/8x3/8	.496	0	6	.005	15.467	y	10	48.209	148.716	15.04	4.593	1	H1-1a
75	M349	2L3x3-1/2x3/8x3/8	.488	0	10	.005	15.467	y	6	48.209	148.716	15.04	4.593	1	H1-1a
76	M354	2L3x3-1/2x3/8x3/8	.484	0	2	.005	15.467	y	6	48.209	148.716	15.04	4.593	1	H1-1a
77	M363	2L3x3-1/2x3/8x3/8	.480	0	6	.005	15.467	y	2	48.209	148.716	15.04	4.593	1	H1-1a
78	M368	2L3x3-1/2x3/8x3/8	.465	0	14	.005	15.467	y	2	48.209	148.716	15.04	4.593	1	H1-1a
79	M377	2L3x3-1/2x3/8x3/8	.492	0	2	.005	15.467	y	14	48.209	148.716	15.04	4.593	1	H1-1a
80	M382	2L3x3-1/2x3/8x3/8	.495	0	10	.005	15.467	y	14	48.209	148.716	15.04	4.593	1	H1-1a
81	M90	2L3x2-1/2x1/4x3/8	.192	0	6	.006	9.817	y	24	40.651	85.212	5.423	4.855	1	H1-1b*
82	M97	2L3x2-1/2x1/4x3/8	.189	0	3	.007	9.817	y	23	40.651	85.212	5.423	4.855	1	H1-1b*
83	M104	2L3x2-1/2x1/4x3/8	.190	9.817	6	.006	9.817	y	25	40.651	85.212	5.423	3.034	1	H1-1b*
84	M111	2L3x2-1/2x1/4x3/8	.195	9.817	3	.006	9.817	y	24	40.651	85.212	5.423	3.034	1	H1-1b*
85	M127	2L2-1/2x2-1/2x1/4x...	.427	10.517	6	.007	10.74	y	23	21.014	77.112	5.381	2.133	1	H1-1a
86	M134	2L2-1/2x2-1/2x1/4x...	.430	10.517	2	.007	10.74	y	23	21.014	77.112	5.381	2.133	1	H1-1a
87	M141	2L2-1/2x2-1/2x1/4x...	.429	10.964	6	.007	10.74	y	22	21.014	77.112	5.381	2.133	1	H1-1a
88	M148	2L2-1/2x2-1/2x1/4x...	.428	10.964	2	.007	10.74	y	25	21.014	77.112	5.381	2.133	1	H1-1a
89	M164	2L2-1/2x2-1/2x1/4x...	.592	11.663	6	.007	11.663	y	26	17.698	77.112	5.381	2.133	1	H1-1a
90	M171	2L2-1/2x2-1/2x1/4x...	.583	11.663	2	.008	11.663	y	26	17.698	77.112	5.381	2.133	1	H1-1a
91	M178	2L2-1/2x2-1/2x1/4x...	.600	11.663	6	.008	11.663	y	24	17.698	77.112	5.381	2.133	1	H1-1a
92	M185	2L2-1/2x2-1/2x1/4x...	.608	11.663	10	.008	11.663	y	21	17.698	77.112	5.381	2.133	1	H1-1a
93	M201	2L2-1/2x2-1/2x1/4x...	.718	12.587	6	.008	12.587	y	23	15.084	77.112	5.381	2.133	1	H1-1a
94	M208	2L2-1/2x2-1/2x1/4x...	.705	12.587	2	.008	12.587	y	26	15.084	77.112	5.381	2.133	1	H1-1a
95	M215	2L2-1/2x2-1/2x1/4x...	.712	12.587	6	.008	12.587	y	22	15.084	77.112	5.381	2.133	1	H1-1a
96	M222	2L2-1/2x2-1/2x1/4x...	.715	12.587	10	.008	12.587	y	25	15.084	77.112	5.381	2.133	1	H1-1a
97	M238	2L3x2-1/2x1/4x3/8	.536	13.51	6	.008	13.51	y	23	21.715	85.212	5.423	3.034	1	H1-1a
98	M245	2L3x2-1/2x1/4x3/8	.537	13.51	2	.008	13.51	y	21	21.715	85.212	5.423	3.034	1	H1-1a
99	M252	2L3x2-1/2x1/4x3/8	.541	13.51	6	.008	13.51	y	19	21.715	85.212	5.423	3.034	1	H1-1a
100	M259	2L3x2-1/2x1/4x3/8	.538	13.51	10	.008	13.51	y	25	21.715	85.212	5.423	3.034	1	H1-1a
101	M275	2L3x2-1/2x1/4x3/8	.651	14.433	6	.008	14.433	y	23	19.415	85.212	5.423	3.034	1	H1-1a
102	M286	2L3x2-1/2x1/4x3/8	.650	14.433	2	.009	14.433	y	22	19.415	85.212	5.423	3.034	1	H1-1a
103	M299	2L3x2-1/2x1/4x3/8	.651	14.433	6	.009	14.433	y	19	19.415	85.212	5.423	3.034	1	H1-1a
104	M312	2L3x2-1/2x1/4x3/8	.647	14.433	10	.008	14.433	y	25	19.415	85.212	5.423	3.034	1	H1-1a
105	M336	2L3x3x3/8x3/8	.272	16.279	6	.005	8.139	y	24	51.173	136.728	11.376	4.498	2....	H1-1a
106	M348	2L3x3x3/8x3/8	.262	16.279	2	.005	24.418	y	20	51.173	136.728	11.376	4.498	2....	H1-1a
107	M362	2L3x3x3/8x3/8	.263	16.279	6	.005	8.139	y	20	51.173	136.728	11.376	4.498	2....	H1-1a
108	M376	2L3x3x3/8x3/8	.272	16.279	10	.005	24.418	y	24	51.173	136.728	11.376	4.498	1....	H1-1a
109	M490	L2.5x2.5x4	.022	2.916	19	.002	0	y	6	12.752	38.556	1.114	2.159	1	H2-1
110	M491	L2.5x2.5x4	.022	2.916	25	.002	0	y	10	12.752	38.556	1.114	2.159	1	H2-1
111	M466	L2.5x2.5x4	.029	3.377	26	.002	0	y	14	9.505	38.556	1.114	2.076	1	H2-1
112	M467	L2.5x2.5x4	.029	3.377	22	.002	0	y	10	9.505	38.556	1.114	2.076	1	H2-1
113	M468	L2.5x2.5x4	.029	3.377	23	.002	0	y	2	9.505	38.556	1.114	2.076	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
114	M469	L2.5x2.5x4	.029	3.377	25	.002	0	y	6	9.505	38.556	1.114	2.076	1	H2-1
115	M452	L2.5x2.5x3	.037	3.608	25	.002	7.216	y	6	6.307	29.192	.873	1.417	1	H2-1
116	M453	L2.5x2.5x3	.037	3.608	22	.003	7.216	y	2	6.307	29.192	.873	1.417	1	H2-1
117	M454	L2.5x2.5x3	.037	3.608	26	.003	7.216	y	6	6.307	29.192	.873	1.417	1	H2-1
118	M455	L2.5x2.5x3	.037	3.608	23	.002	7.216	y	2	6.307	29.192	.873	1.417	1	H2-1
119	M420	L2.5x2.5x3	.044	4.07	19	.002	8.139	y	22	4.957	29.192	.873	1.349	1	H2-1
120	M421	L2.5x2.5x3	.044	4.07	22	.002	8.139	y	23	4.957	29.192	.873	1.349	1	H2-1
121	M422	L2.5x2.5x3	.044	4.07	26	.002	8.139	y	25	4.957	29.192	.873	1.349	1	H2-1
122	M423	L2.5x2.5x3	.044	4.07	21	.002	8.139	y	26	4.957	29.192	.873	1.349	1	H2-1
123	M530	L2.5x2.5x3	.013	0	8	.001	0	y	12	10.337	29.192	.873	1.606	1....	H2-1*
124	M531	L2.5x2.5x3	.016	0	12	.001	0	y	8	10.337	29.192	.873	1.606	1....	H2-1*
125	M532	L2.5x2.5x3	.013	0	16	.001	0	y	12	10.337	29.192	.873	1.606	1....	H2-1*
126	M512	L2X2.5X3	.042	0	8	.002	0	y	4	4.806	26.198	1.609	.704	1....	H2-1*
127	M513	L2X2.5X3	.047	0	12	.002	0	y	8	4.806	26.198	1.609	.704	1....	H2-1*
128	M514	L2X2.5X3	.041	0	17	.002	0	y	4	4.806	26.198	1.609	.704	1....	H2-1*
129	M502	L2X2.5X3	.064	0	8	.002	0	y	4	4.016	26.198	1.609	.704	1....	H2-1*
130	M503	L2X2.5X3	.071	0	12	.002	0	y	8	4.016	26.198	1.609	.704	1....	H2-1*
131	M504	L2X2.5X3	.063	0	16	.002	0	y	4	4.016	26.198	1.609	.704	1....	H2-1*
132	M487	L2X2.5X3	.055	0	8	.002	0	y	4	3.405	26.198	1.609	.704	1....	H2-1*
133	M488	L2X2.5X3	.060	0	13	.002	0	y	8	3.405	26.198	1.609	.704	1....	H2-1*
134	M489	L2X2.5X3	.053	0	17	.002	8.247	y	4	3.405	26.198	1.609	.704	1....	H2-1*
135	M477	L2X2.5X3	.060	0	8	.003	0	y	4	2.924	26.198	1.609	.704	1....	H2-1*
136	M478	L2X2.5X3	.065	0	12	.003	0	y	8	2.924	26.198	1.609	.704	1....	H2-1*
137	M479	L2X2.5X3	.058	0	16	.003	0	y	4	2.924	26.198	1.609	.704	1....	H2-1*
138	M463	L3x3x4	.044	0	12	.003	0	y	8	8.472	46.656	1.688	2.845	1....	H2-1*
139	M464	L3x3x4	.042	0	8	.003	0	y	4	8.472	46.656	1.688	2.845	1....	H2-1*
140	M465	L3x3x4	.041	0	17	.003	9.553	y	4	8.472	46.656	1.688	2.845	1....	H2-1*
141	M449	L3x3x1/4	.049	0	8	.003	0	y	4	7.598	46.575	.67	2.794	1....	H2-1*
142	M450	L3x3x1/4	.050	0	13	.003	0	y	8	7.598	46.575	.67	2.794	1....	H2-1*
143	M451	L3x3x1/4	.047	0	17	.003	0	y	4	7.598	46.575	.67	2.794	1....	H2-1*
144	M417	L3.5x3.5x5	.030	0	8	.003	11.511	y	12	11.667	68.04	2.882	4.892	1....	H2-1*
145	M418	L3.5x3.5x5	.032	0	13	.003	11.511	y	8	11.667	68.04	2.882	4.892	1....	H2-1*
146	M419	L3.5x3.5x5	.029	0	17	.003	11.511	y	4	11.667	68.04	2.882	4.892	1....	H2-1*
147	M492	L2X2.5X3	.035	2.916	21	.002	5.832	y	24	6.81	26.198	1.609	.644	1	H2-1
148	M493	L2X2.5X3	.045	2.916	22	.002	0	y	26	6.81	26.198	1.609	.644	1	H2-1
149	M494	L2X2.5X3	.045	2.916	23	.002	5.832	y	26	6.81	26.198	1.609	.644	1	H2-1
150	M535	L2X2.5X3	.115	4	20	.002	8	y	16	3.619	26.198	1.609	.627	1	H2-1
151	M517	L2X2.5X3	.226	4	6	.002	8	y	8	3.619	26.198	1.609	.627	1	H2-1
152	M507	L2X2.5X3	.329	4	2	.002	8	y	8	3.619	26.198	1.609	.627	1	H2-1
153	M497	L2X2.5X3	.290	4	6	.002	0	y	16	3.619	26.198	1.609	.627	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
154	M482	L2X2.5X3	.310	4	6	.002	0	y	8	3.619	26.198	1.609	.627	1	H2-1
155	M472	2L2-1/2x2-1/2x3/16...	.048	0	6	.002	8	y	8	26.081	58.32	4.017	2.611	1	H1-1b*
156	M458	L4x4x6	.057	4	6	.002	0	y	16	41.657	92.664	4.398	8.566	1	H2-1
157	M426	L2.5x2.5x4	.209	4	6	.002	0	y	16	6.777	38.556	1.114	1.972	1	H2-1
158	M526	L3x2.5x4	.045	3.986	16	.002	7.971	y	16	8.813	42.768	1.251	2.172	1	H2-1
159	M527	L3x2.5x4	.045	3.986	8	.002	7.971	y	8	8.813	42.768	1.251	2.172	1	H2-1
160	M528	L3x2.5x4	.045	3.986	14	.001	7.971	y	10	8.813	42.768	1.251	2.172	1	H2-1
161	M529	L3x2.5x4	.045	3.986	10	.002	7.971	y	14	8.813	42.768	1.251	2.172	1	H2-1
162	M508	LL2.5x2x3x3	.043	4.909	14	.002	0	z	2	16.604	53.136	2.725	2.524	1	H1-1b
163	M509	LL2.5x2x3x3	.043	4.909	10	.002	0	z	6	16.604	53.136	2.725	2.524	1	H1-1b
164	M510	LL2.5x2x3x3	.041	4.909	14	.002	0	z	10	16.604	53.136	2.725	2.524	1	H1-1b
165	M511	LL2.5x2x3x3	.041	4.909	10	.002	0	z	14	16.604	53.136	2.725	2.524	1	H1-1b
166	M498	LL2.5x2x3x3	.058	5.37	14	.003	0	z	2	13.873	53.136	2.725	2.524	1	H1-1b
167	M499	LL2.5x2x3x3	.059	5.37	10	.003	0	z	6	13.873	53.136	2.725	2.524	1	H1-1b
168	M500	LL2.5x2x3x3	.051	5.37	14	.003	0	z	10	13.873	53.136	2.725	2.524	1	H1-1b
169	M501	LL2.5x2x3x3	.052	5.37	10	.003	0	z	14	13.873	53.136	2.725	2.524	1	H1-1b
170	M483	LL2.5x2x3x3	.095	5.832	24	.003	0	z	6	11.764	53.136	2.725	2.524	1	H1-1b
171	M484	LL2.5x2x3x3	.091	5.832	21	.003	11.663	z	2	11.764	53.136	2.725	2.524	1	H1-1b
172	M485	LL2.5x2x3x3	.056	5.832	2	.003	0	z	14	11.764	53.136	2.725	2.524	1	H1-1b
173	M486	LL2.5x2x3x3	.067	5.832	12	.003	0	z	2	11.764	53.136	2.725	2.524	1	H1-1b
174	M473	LL2.5x2x3x3	.083	6.293	12	.003	12.587	z	2	10.1	53.136	2.725	2.524	1	H1-1b
175	M474	LL2.5x2x3x3	.086	6.293	12	.003	12.587	z	6	10.1	53.136	2.725	2.524	1	H1-1b
176	M475	LL2.5x2x3x3	.068	6.293	6	.003	12.587	z	10	10.1	53.136	2.725	2.524	1	H1-1b
177	M476	LL2.5x2x3x3	.068	6.293	2	.003	12.587	z	14	10.1	53.136	2.725	2.524	1	H1-1b
178	M459	LL2.5x2x3x3	.120	6.755	12	.004	13.51	z	2	10.465	53.136	2.725	1.577	1	H1-1b
179	M460	LL2.5x2x3x3	.124	6.755	12	.004	0	z	6	10.465	53.136	2.725	1.577	1	H1-1b
180	M461	LL2.5x2x3x3	.102	6.755	6	.004	13.51	z	10	10.465	53.136	2.725	1.577	1	H1-1b
181	M462	LL2.5x2x3x3	.101	6.755	2	.004	0	z	14	10.465	53.136	2.725	1.577	1	H1-1b
182	M441	2L3x2-1/2x1/4x3/8	.107	7.216	22	.004	14.433	z	14	22.832	85.212	5.423	3.034	1	H1-1b
183	M442	2L3x2-1/2x1/4x3/8	.107	7.216	26	.004	0	z	10	22.832	85.212	5.423	3.034	1	H1-1b
184	M443	2L3x2-1/2x1/4x3/8	.108	7.216	24	.004	14.433	z	6	22.832	85.212	5.423	3.034	1	H1-1b
185	M444	2L3x2-1/2x1/4x3/8	.108	7.216	24	.004	0	z	2	22.832	85.212	5.423	3.034	1	H1-1b
186	M409	LL2.5x2.5x4x3	.112	8.139	22	.004	16.279	z	14	18.589	77.112	5.321	2.083	1	H1-1b
187	M410	LL2.5x2.5x4x3	.112	8.139	26	.004	16.279	z	2	18.589	77.112	5.321	2.083	1	H1-1b
188	M411	LL2.5x2.5x4x3	.113	8.139	24	.004	16.279	z	6	18.589	77.112	5.321	2.083	1	H1-1b
189	M412	LL2.5x2.5x4x3	.113	8.139	24	.004	0	z	2	18.589	77.112	5.321	2.083	1	H1-1b
190	M49	2L2-1/2x2x3/16x3/8	.220	5.636	25	.010	11.273	z	24	14.189	53.136	2.713	1.572	1	H1-1b
191	M50	2L2-1/2x2x3/16x3/8	.197	5.636	20	.010	0	z	26	14.189	53.136	2.713	1.572	1	H1-1b
192	M51	2L2-1/2x2x3/16x3/8	.220	5.636	25	.010	0	z	24	14.189	53.136	2.713	1.572	1	H1-1b
193	M52	2L2-1/2x2x3/16x3/8	.192	5.636	20	.010	0	z	26	14.189	53.136	2.713	1.572	1	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
194	M118	2L2-1/2x2-1/2x3/16..	.239	6.942	24	.011	13.884	z	24	18.665	58.32	4.017	1.632	1	H1-1b
195	M119	2L2-1/2x2-1/2x3/16..	.208	6.942	20	.011	13.884	z	22	18.665	58.32	4.017	1.632	1	H1-1b
196	M120	2L2-1/2x2-1/2x3/16..	.239	6.942	24	.011	0	z	24	18.665	58.32	4.017	1.632	1	H1-1b
197	M121	2L2-1/2x2-1/2x3/16..	.206	6.942	20	.011	13.884	z	22	18.665	58.32	4.017	1.632	1	H1-1b
198	M155	2L2-1/2x2-1/2x3/16..	.268	7.595	24	.011	15.189	z	25	15.733	58.32	4.017	1.632	1	H1-1b
199	M156	2L2-1/2x2-1/2x3/16..	.242	7.595	20	.012	15.189	z	22	15.733	58.32	4.017	1.632	1	H1-1b
200	M157	2L2-1/2x2-1/2x3/16..	.268	7.595	24	.011	0	z	23	15.733	58.32	4.017	1.632	1	H1-1b
201	M158	2L2-1/2x2-1/2x3/16..	.239	7.595	20	.011	15.189	z	23	15.733	58.32	4.017	1.632	1	H1-1b
202	M192	2L2-1/2x2-1/2x3/16..	.310	8.247	24	.012	16.495	z	25	13.428	58.32	4.017	1.632	1	H1-1b
203	M193	2L2-1/2x2-1/2x3/16..	.293	8.247	20	.013	16.495	z	22	13.428	58.32	4.017	1.632	1	H1-1b
204	M194	2L2-1/2x2-1/2x3/16..	.342	8.247	24	.013	0	z	24	13.428	58.32	4.017	1.632	1	H1-1b
205	M195	2L2-1/2x2-1/2x3/16..	.295	8.247	20	.013	0	z	22	13.428	58.32	4.017	1.632	1	H1-1b
206	M229	2L2-1/2x2-1/2x3/16..	.355	8.9	24	.013	17.8	z	25	11.811	58.32	4.017	1.632	1	H1-1b
207	M230	2L2-1/2x2-1/2x3/16..	.331	8.9	24	.013	0	z	22	11.811	58.32	4.017	2.611	1	H1-1b
208	M231	2L2-1/2x2-1/2x3/16..	.355	8.9	24	.013	0	z	23	11.811	58.32	4.017	1.632	1	H1-1b
209	M232	2L2-1/2x2-1/2x3/16..	.325	8.9	24	.013	17.8	z	23	11.811	58.32	4.017	2.611	1	H1-1b
210	M266	2L2-1/2x2-1/2x3/16..	.426	9.553	24	.015	19.105	z	25	10.292	58.32	4.017	1.632	1	H1-1b
211	M267	2L2-1/2x2-1/2x3/16..	.403	9.553	24	.015	0	z	22	10.292	58.32	4.017	2.611	1	H1-1b
212	M268	2L2-1/2x2-1/2x3/16..	.426	9.553	24	.015	0	z	23	10.292	58.32	4.017	1.632	1	H1-1b
213	M269	2L2-1/2x2-1/2x3/16..	.397	9.553	24	.014	19.105	z	23	10.292	58.32	4.017	2.611	1	H1-1b
214	M327	L3x3x1/4	.142	0	14	.008	10.205	z	24	7.598	46.575	.67	2.658	1	H2-1
215	M328	L3x3x1/4	.147	0	10	.008	10.205	z	20	7.598	46.575	.67	2.658	1	H2-1
216	M329	L3x3x1/4	.146	20.411	10	.008	10.205	z	24	7.598	46.575	.67	2.658	1	H2-1
217	M330	L3x3x1/4	.114	20.411	6	.008	10.205	z	21	7.598	46.575	.67	2.658	1	H2-1
218	M392	2L3x2-1/2x1/4x3/8	.121	11.511	23	.007	11.511	z	21	27.824	85.212	5.423	3.034	1	H1-1b
219	M393	2L3x2-1/2x1/4x3/8	.076	11.511	20	.007	11.511	z	19	27.824	85.212	5.423	4.855	1	H1-1b
220	M394	2L3x2-1/2x1/4x3/8	.122	11.511	25	.007	11.511	z	25	27.824	85.212	5.423	3.034	1	H1-1b
221	M395	2L3x2-1/2x1/4x3/8	.078	11.511	24	.007	11.511	z	23	27.824	85.212	5.423	4.855	1	H1-1b
222	M533	L2X2.5X3	.013	2.161	4	.001	0	y	10	12.015	26.198	1.609	.655	1	H2-1
223	M534	L2X2.5X3	.013	2.161	4	.001	0	y	14	12.015	26.198	1.609	.655	1	H2-1
224	M515	L2X2.5X3	.053	2.483	12	.002	4.965	y	22	9.396	26.198	1.609	.651	1	H2-1
225	M516	L2X2.5X3	.053	2.483	12	.002	0	y	26	9.396	26.198	1.609	.651	1	H2-1
226	M505	L2X2.5X3	.076	2.689	12	.002	0	y	20	8.008	26.198	1.609	.648	1	H2-1
227	M506	L2X2.5X3	.076	2.689	12	.002	5.378	y	20	8.008	26.198	1.609	.648	1	H2-1
228	M495	L2X2.5X3	.107	2.917	12	.002	0	y	20	6.805	26.198	1.609	.644	1	H2-1
229	M496	L2X2.5X3	.106	2.917	12	.002	5.834	y	20	6.805	26.198	1.609	.644	1	H2-1
230	M480	L2X2.5X3	.134	3.163	12	.002	6.325	y	20	5.79	26.198	1.609	.641	1	H2-1
231	M481	L2X2.5X3	.134	3.163	12	.002	6.325	y	20	5.79	26.198	1.609	.641	1	H2-1
232	M470	L2.5x2.5x4	.116	3.422	12	.002	6.843	y	12	9.262	38.556	1.114	2.068	1	H2-1
233	M471	L2.5x2.5x4	.116	3.422	12	.002	0	y	12	9.262	38.556	1.114	2.068	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
234	M456	L2.5x2.5x3	.191	3.691	12	.002	7.383	y	12	6.025	29.192	.873	1.404	1	H2-1
235	M457	L2.5x2.5x3	.191	3.691	12	.002	7.383	y	12	6.025	29.192	.873	1.404	1	H2-1
236	M424	L2.5x2.5x4	.184	4.255	12	.003	0	y	20	5.989	38.556	1.114	1.932	1	H2-1
237	M425	L2.5x2.5x4	.184	4.255	12	.003	0	y	20	5.989	38.556	1.114	1.932	1	H2-1
238	M1	L6x6x1/2	.086	1.702	24	.004	0	y	6	145.646	186.3	5.312	28.768	1	H2-1
239	M2	L6x6x1/2	.089	1.178	22	.006	0	y	2	145.646	186.3	5.312	28.768	1	H2-1
240	M3	L6x6x1/2	.089	1.571	20	.006	0	z	10	145.646	186.3	5.312	28.768	1	H2-1
241	M4	L6x6x1/2	.089	2.356	26	.005	0	z	6	145.646	186.3	5.312	28.768	1	H2-1
242	M21	L6x6x1/2	.150	3.142	24	.008	12.568	y	6	146.222	186.3	5.312	28.808	1	H2-1
243	M22	L6x6x1/2	.156	2.88	22	.011	12.568	y	2	146.222	186.3	5.312	28.808	1	H2-1
244	M23	L6x6x1/2	.163	3.535	20	.011	12.568	z	10	146.222	186.3	5.312	28.808	1	H2-1
245	M24	L6x6x1/2	.155	3.666	26	.011	12.568	z	6	146.222	186.3	5.312	28.808	1	H2-1
246	M41	L6x6x5/8	.198	7.986	12	.004	12.568	z	2	181.223	230.344	6.62	36.329	1	H2-1
247	M42	L6x6x5/8	.196	11.913	8	.003	12.568	y	2	181.223	230.344	6.62	36.329	1	H2-1
248	M43	L6x6x5/8	.199	7.986	4	.004	12.568	y	14	181.223	230.344	6.62	36.329	1	H2-1
249	M44	L6x6x5/8	.202	7.986	16	.005	12.568	z	6	181.223	230.344	6.62	36.329	1	H2-1
250	M66	L6x6x5/8	.279	2.88	12	.017	12.568	z	2	181.667	230.344	6.62	36.356	1	H2-1
251	M67	L6x6x5/8	.272	2.88	8	.016	12.568	z	14	181.667	230.344	6.62	36.356	1	H2-1
252	M68	L6x6x5/8	.270	3.011	4	.012	12.568	z	10	181.667	230.344	6.62	36.356	1	H2-1
253	M69	L6x6x5/8	.279	2.88	16	.016	12.568	y	10	181.667	230.344	6.62	36.356	1	H2-1
254	M86	L6x6x3/4	.269	3.797	12	.005	0	y	8	219.956	273.375	7.874	42.663	1	H2-1
255	M87	L6x6x3/4	.262	9.95	8	.005	0	z	12	219.956	273.375	7.874	42.663	1	H2-1
256	M88	L6x6x3/4	.260	9.95	4	.004	0	y	16	219.956	273.375	7.874	42.663	1	H2-1
257	M89	L6x6x3/4	.272	3.797	16	.004	0	y	12	219.956	273.375	7.874	42.663	1	H2-1
258	M123	L6x6x3/4	.356	3.273	12	.005	0	y	8	219.956	273.375	7.874	42.663	1	H2-1
259	M124	L6x6x3/4	.348	9.688	8	.005	0	z	12	219.956	273.375	7.874	42.663	1	H2-1
260	M125	L6x6x3/4	.343	9.688	4	.005	0	y	16	219.956	273.375	7.874	42.663	1	H2-1
261	M126	L6x6x3/4	.360	3.273	16	.005	0	y	12	219.956	273.375	7.874	42.663	1	H2-1
262	M160	L6x6x7/8	.371	3.273	12	.005	0	y	8	253.44	315.394	9.128	48.216	1	H2-1
263	M161	L6x6x7/8	.363	3.273	8	.005	0	z	12	253.44	315.394	9.128	48.216	1	H2-1
264	M162	L6x6x7/8	.363	9.426	4	.005	0	z	8	253.44	315.394	9.128	48.216	1	H2-1
265	M163	L6x6x7/8	.379	3.273	16	.005	0	z	4	253.44	315.394	9.128	48.216	1	H2-1
266	M197	L6x6x7/8	.436	3.273	12	.006	0	y	8	253.44	315.394	9.128	48.216	1	H2-1
267	M198	L6x6x7/8	.422	9.557	8	.005	0	z	12	253.44	315.394	9.128	48.216	1	H2-1
268	M199	L6x6x7/8	.422	9.557	4	.005	0	z	8	253.44	315.394	9.128	48.216	1	H2-1
269	M200	L6x6x7/8	.441	3.273	16	.005	0	z	4	253.44	315.394	9.128	48.216	1	H2-1
270	M234	L8x8x3/4	.384	2.88	12	.009	0	y	8	328.455	370.575	14.199	79.541	1	H2-1
271	M235	L8x8x3/4	.372	2.88	8	.008	0	z	12	328.455	370.575	14.199	79.541	1	H2-1
272	M236	L8x8x3/4	.374	2.88	4	.008	0	z	8	328.455	370.575	14.199	79.541	1	H2-1
273	M237	L8x8x3/4	.390	2.88	16	.008	0	z	4	328.455	370.575	14.199	79.541	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y..	phi*Mn z-z..	Cb	Eqn
274	M271	L8x8x7/8	.409	17.543	12	.006	0	y	8	345.459	428.794	16.437	90.618	1	H2-1
275	M272	L8x8x7/8	.396	17.543	8	.006	0	z	12	345.459	428.794	16.437	90.618	1	H2-1
276	M273	L8x8x7/8	.395	17.805	4	.005	0	y	16	345.459	428.794	16.437	90.618	1	H2-1
277	M274	L8x8x7/8	.414	17.543	16	.006	0	z	4	345.459	428.794	16.437	90.618	1	H2-1
278	M332	L8X8X1_HRA	.426	16.495	12	.007	16.757	y	24	391.033	486	18.665	101.127	1	H2-1
279	M333	L8X8X1_HRA	.411	16.234	8	.006	16.757	z	22	391.033	486	18.665	101.127	1	H2-1
280	M334	L8X8X1_HRA	.413	16.495	4	.006	16.757	y	20	391.033	486	18.665	101.127	1	H2-1
281	M335	L8X8X1_HRA	.433	16.495	16	.006	16.757	z	26	391.033	486	18.665	101.127	1	H2-1
282	M401	L2.5x2.5x4	.122	2.47	22	.001	0	y	8	16.194	38.556	1.114	2.224	1	H2-1
283	M402	L2.5x2.5x4	.052	1.357	22	.001	2.713	y	16	30.324	38.556	1.114	2.505	1	H2-1
284	M403	L2.5x2.5x4	.122	2.47	24	.001	5.156	y	24	16.194	38.556	1.114	2.224	1	H2-1
285	M404	L2.5x2.5x4	.052	1.357	24	.001	0	y	20	30.324	38.556	1.114	2.505	1	H2-1
286	M405	L2.5x2.5x4	.120	2.47	20	.002	5.156	y	20	16.194	38.556	1.114	2.224	1	H2-1
287	M406	L2.5x2.5x4	.051	1.357	20	.001	0	y	24	30.324	38.556	1.114	2.505	1	H2-1
288	M407	L2.5x2.5x4	.123	2.47	26	.001	0	y	16	16.194	38.556	1.114	2.224	1	H2-1
289	M408	L2.5x2.5x4	.052	1.357	26	.001	2.713	y	8	30.324	38.556	1.114	2.505	1	H2-1
290	M280	L3x3-1/2x1/4	.038	0	11	.006	0	z	19	6.974	50.625	1.301	3.568	1	H2-1
291	M285	L3x3-1/2x1/4	.038	1.152	11	.005	0	z	19	6.974	50.625	1.301	2.891	1	H2-1
292	M291	L3x3-1/2x1/4	.035	0	7	.006	0	z	25	6.974	50.625	1.301	3.568	1	H2-1
293	M296	L3x3-1/2x1/4	.044	1.152	7	.005	12.286	z	24	6.974	50.625	1.301	2.891	1	H2-1
294	M304	L3x3-1/2x1/4	.040	0	3	.006	12.286	z	24	6.974	50.625	1.301	3.568	1	H2-1
295	M309	L3x3-1/2x1/4	.039	1.152	3	.005	0	z	23	6.974	50.625	1.301	2.891	1	H2-1
296	M317	L3x3-1/2x1/4	.041	0	15	.006	12.286	z	21	6.974	50.625	1.301	3.568	1	H2-1
297	M322	L3x3-1/2x1/4	.033	1.152	15	.005	0	z	21	6.974	50.625	1.301	2.891	1	H2-1
298	M341	2L2-1/2x2x1/4x3/8	.118	6.607	26	.005	13.214	y	25	12.583	69.012	3.669	3.3	1	H1-1b
299	M346	2L2-1/2x2x1/4x3/8	.119	6.607	20	.004	0	y	21	12.583	69.012	3.669	3.3	1	H1-1b
300	M353	2L2-1/2x2x1/4x3/8	.117	6.607	25	.005	0	y	23	12.583	69.012	3.669	3.3	1	H1-1b
301	M358	2L2-1/2x2x1/4x3/8	.118	6.607	25	.004	0	y	19	12.583	69.012	3.669	3.3	1	H1-1b
302	M367	2L2-1/2x2x1/4x3/8	.118	6.607	22	.005	0	y	21	12.583	69.012	3.669	3.3	1	H1-1b
303	M372	2L2-1/2x2x1/4x3/8	.119	6.607	24	.004	0	y	25	12.583	69.012	3.669	3.3	1	H1-1b
304	M381	2L2-1/2x2x1/4x3/8	.117	6.607	21	.005	13.214	y	19	12.583	69.012	3.669	3.3	1	H1-1b
305	M386	2L2-1/2x2x1/4x3/8	.118	6.607	21	.004	0	y	23	12.583	69.012	3.669	3.3	1	H1-1b
306	M93	L2-1/2x2-1/2x3/16	.041	0	11	.004	0	z	25	6.596	29.236	.351	1.426	1	H2-1
307	M96	L2-1/2x2-1/2x3/16	.039	0	11	.004	7.685	z	21	6.596	29.236	.351	1.426	1	H2-1
308	M100	L2-1/2x2-1/2x3/16	.038	0	7	.004	0	z	23	6.596	29.236	.351	1.426	1	H2-1
309	M103	L2-1/2x2-1/2x3/16	.042	0	7	.004	0	z	19	6.596	29.236	.351	1.426	1	H2-1
310	M107	L2-1/2x2-1/2x3/16	.042	0	17	.004	7.685	z	21	6.596	29.236	.351	1.426	1	H2-1
311	M110	L2-1/2x2-1/2x3/16	.042	0	5	.004	0	z	25	6.596	29.236	.351	1.426	1	H2-1
312	M114	L2-1/2x2-1/2x3/16	.041	0	13	.004	0	z	19	6.596	29.236	.351	1.426	1	H2-1
313	M117	L2-1/2x2-1/2x3/16	.038	0	17	.004	0	z	23	6.596	29.236	.351	1.426	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
314	M130	L2-1/2x2-1/2x3/16	.065	0	9	.004	7.961	z	24	6.066	29.236	.351	1.402	1	H2-1
315	M133	L2-1/2x2-1/2x3/16	.062	0	13	.004	0	z	22	6.066	29.236	.351	1.402	1	H2-1
316	M137	L2-1/2x2-1/2x3/16	.062	0	5	.004	0	z	22	6.066	29.236	.351	1.402	1	H2-1
317	M140	L2-1/2x2-1/2x3/16	.064	0	9	.004	7.961	z	20	6.066	29.236	.351	1.402	1	H2-1
318	M144	L2-1/2x2-1/2x3/16	.065	0	17	.004	0	z	20	6.066	29.236	.351	1.402	1	H2-1
319	M147	L2-1/2x2-1/2x3/16	.065	0	5	.004	7.961	z	26	6.066	29.236	.351	1.402	1	H2-1
320	M151	L2-1/2x2-1/2x3/16	.065	0	13	.004	7.961	z	26	6.066	29.236	.351	1.402	1	H2-1
321	M154	L2-1/2x2-1/2x3/16	.064	0	17	.004	0	z	24	6.066	29.236	.351	1.402	1	H2-1
322	M167	L2-1/2x2-1/2x3/16	.075	0	9	.004	0	z	20	5.598	29.236	.351	1.379	1	H2-1
323	M170	L2-1/2x2-1/2x3/16	.071	0	13	.004	0	z	22	5.598	29.236	.351	1.379	1	H2-1
324	M174	L2-1/2x2-1/2x3/16	.071	0	5	.004	0	z	26	5.598	29.236	.351	1.379	1	H2-1
325	M177	L2-1/2x2-1/2x3/16	.074	0	9	.004	0	z	20	5.598	29.236	.351	1.379	1	H2-1
326	M181	L2-1/2x2-1/2x3/16	.074	0	17	.004	8.253	z	20	5.598	29.236	.351	1.379	1	H2-1
327	M184	L2-1/2x2-1/2x3/16	.076	0	5	.004	8.253	z	26	5.598	29.236	.351	1.379	1	H2-1
328	M188	L2-1/2x2-1/2x3/16	.075	0	13	.004	0	z	22	5.598	29.236	.351	1.379	1	H2-1
329	M191	L2-1/2x2-1/2x3/16	.074	0	17	.004	8.253	z	24	5.598	29.236	.351	1.379	1	H2-1
330	M204	L2-1/2x2-1/2x3/16	.092	0	9	.004	8.561	z	19	5.169	29.236	.351	1.355	1	H2-1
331	M207	L2-1/2x2-1/2x3/16	.087	0	13	.004	8.561	z	23	5.169	29.236	.351	1.355	1	H2-1
332	M211	L2-1/2x2-1/2x3/16	.087	0	5	.004	8.561	z	26	5.169	29.236	.351	1.355	1	H2-1
333	M214	L2-1/2x2-1/2x3/16	.090	0	9	.004	8.561	z	24	5.169	29.236	.351	1.355	1	H2-1
334	M218	L2-1/2x2-1/2x3/16	.090	0	17	.004	8.561	z	20	5.169	29.236	.351	1.355	1	H2-1
335	M221	L2-1/2x2-1/2x3/16	.092	0	5	.004	0	z	26	5.169	29.236	.351	1.355	1	H2-1
336	M225	L2-1/2x2-1/2x3/16	.092	0	13	.004	0	z	22	5.169	29.236	.351	1.355	1	H2-1
337	M228	L2-1/2x2-1/2x3/16	.091	0	17	.004	8.561	z	24	5.169	29.236	.351	1.355	1	H2-1
338	M241	L2-1/2x2-1/2x3/16	.169	0	8	.005	8.881	z	20	4.765	29.236	.351	1.33	1	H2-1
339	M244	L2-1/2x2-1/2x3/16	.162	0	13	.005	8.881	z	22	4.765	29.236	.351	1.33	1	H2-1
340	M248	L2-1/2x2-1/2x3/16	.162	0	5	.005	0	z	26	4.765	29.236	.351	1.33	1	H2-1
341	M251	L2-1/2x2-1/2x3/16	.164	0	8	.005	0	z	20	4.765	29.236	.351	1.33	1	H2-1
342	M255	L2-1/2x2-1/2x3/16	.163	0	17	.005	0	z	20	4.765	29.236	.351	1.33	1	H2-1
343	M258	L2-1/2x2-1/2x3/16	.168	0	4	.005	8.881	z	26	4.765	29.236	.351	1.33	1	H2-1
344	M262	L2-1/2x2-1/2x3/16	.166	0	12	.005	0	z	26	4.765	29.236	.351	1.33	1	H2-1
345	M265	L2-1/2x2-1/2x3/16	.167	0	17	.005	0	z	24	4.765	29.236	.351	1.33	1	H2-1
346	M279	L2-1/2x2-1/2x3/16	.141	0	11	.003	0	z	25	4.666	29.236	.351	1.324	1	H2-1
347	M284	L2-1/2x2-1/2x3/16	.136	0	11	.003	0	z	21	4.666	29.236	.351	1.324	1	H2-1
348	M290	L2-1/2x2-1/2x3/16	.137	0	7	.003	9.35	z	23	4.666	29.236	.351	1.324	1	H2-1
349	M295	L2-1/2x2-1/2x3/16	.143	0	7	.003	0	z	19	4.666	29.236	.351	1.324	1	H2-1
350	M303	L2-1/2x2-1/2x3/16	.138	0	3	.003	9.35	z	21	4.666	29.236	.351	1.324	1	H2-1
351	M308	L2-1/2x2-1/2x3/16	.143	0	3	.003	9.35	z	25	4.666	29.236	.351	1.324	1	H2-1
352	M316	L2-1/2x2-1/2x3/16	.143	0	15	.003	9.35	z	19	4.666	29.236	.351	1.324	1	H2-1
353	M321	L2-1/2x2-1/2x3/16	.137	0	15	.003	0	z	23	4.666	29.236	.351	1.324	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
354	M340	L2-1/2x2-1/2x3/16	.427	9.642	12	.003	4.821	y	24	4.299	29.236	.351	1.298	1	H2-1
355	M345	L2-1/2x2-1/2x3/16	.427	9.441	8	.004	4.821	y	22	4.299	29.236	.351	1.298	1	H2-1
356	M352	L2-1/2x2-1/2x3/16	.102	0	9	.004	9.642	y	22	4.299	29.236	.351	1.298	1	H2-1
357	M357	L2-1/2x2-1/2x3/16	.106	0	5	.004	9.642	y	20	4.299	29.236	.351	1.298	1	H2-1
358	M366	L2-1/2x2-1/2x3/16	.419	9.642	4	.003	4.821	y	20	4.299	29.236	.351	1.298	1	H2-1
359	M371	L2-1/2x2-1/2x3/16	.429	9.542	16	.004	4.821	y	26	4.299	29.236	.351	1.298	1	H2-1
360	M380	L2-1/2x2-1/2x3/16	.107	0	17	.004	9.642	y	26	4.299	29.236	.351	1.298	1	H2-1
361	M385	L2-1/2x2-1/2x3/16	.101	0	13	.004	9.642	y	24	4.299	29.236	.351	1.298	1	H2-1
362	M427	L2x2x3	.100	3.837	26	.002	0	y	10	2.911	23.393	.558	.875	1	H2-1
363	M428	L2x2x3	.050	3.837	24	.002	0	y	23	2.911	23.393	.558	.875	1	H2-1
364	M429	L2x2x3	.100	3.837	22	.002	0	y	2	2.911	23.393	.558	.875	1	H2-1
365	M430	L2x2x3	.040	2.716	26	.002	5.431	y	4	5.811	23.393	.558	.988	1	H2-1
366	M431	L2x2x3	.040	2.716	22	.002	5.431	y	4	5.811	23.393	.558	.988	1	H2-1
367	M432	L2x2x3	.054	4	24	.002	8	y	8	2.678	23.393	.558	.861	1	H2-1
368	M298	2L2-1/2x2-1/2x1/4x...	.090	5.667	21	.004	11.575	y	22	16.51	77.112	5.381	3.414	1	H1-1b
369	M311	2L2-1/2x2-1/2x1/4x...	.090	5.667	19	.004	11.575	y	20	16.51	77.112	5.381	3.414	1	H1-1b
370	M324	2L2-1/2x2-1/2x1/4x...	.090	5.667	24	.004	11.575	y	26	16.51	77.112	5.381	3.414	1	H1-1b
371	M326	2L2-1/2x2-1/2x1/4x...	.090	5.667	22	.004	11.575	y	24	16.51	77.112	5.381	3.414	1	H1-1b
372	M445	2L2-1/2x2-1/2x1/4x...	.034	5.667	19	.002	11.575	z	16	16.51	77.112	5.381	3.414	1	H1-1b
373	M446	2L2-1/2x2-1/2x1/4x...	.034	5.667	21	.002	11.575	z	12	16.51	77.112	5.381	3.414	1	H1-1b
374	M447	2L2-1/2x2-1/2x1/4x...	.034	5.667	26	.002	0	z	12	16.51	77.112	5.381	3.414	1	H1-1b
375	M448	2L2-1/2x2-1/2x1/4x...	.034	5.667	24	.002	11.575	z	8	16.51	77.112	5.381	3.414	1	H1-1b
376	M361	2L2-1/2x2-1/2x1/4x...	.100	6.006	20	.004	12.268	y	24	14.698	77.112	5.381	3.414	1	H1-1b
377	M375	2L2-1/2x2-1/2x1/4x...	.099	6.006	26	.004	12.268	y	22	14.698	77.112	5.381	3.414	1	H1-1b
378	M389	2L2-1/2x2-1/2x1/4x...	.100	6.006	24	.004	12.268	y	20	14.698	77.112	5.381	3.414	1	H1-1b
379	M391	2L2-1/2x2-1/2x1/4x...	.100	6.006	23	.004	12.268	y	26	14.698	77.112	5.381	3.414	1	H1-1b
380	M413	2L2-1/2x2-1/2x1/4x...	.060	6.262	22	.002	12.268	y	8	14.698	77.112	5.381	3.414	1	H1-1b
381	M414	2L2-1/2x2-1/2x1/4x...	.061	6.006	20	.002	12.268	y	4	14.698	77.112	5.381	3.414	1	H1-1b
382	M415	2L2-1/2x2-1/2x1/4x...	.060	6.006	26	.002	0	y	16	14.698	77.112	5.381	3.414	1	H1-1b
383	M416	2L2-1/2x2-1/2x1/4x...	.060	6.006	23	.002	12.268	y	12	14.698	77.112	5.381	3.414	1	H1-1b
384	M297	L4x4x3/8	.003	0	22	.006	0	z	20	15.047	92.664	1.773	7.349	1	H2-1
385	M310	L4x4x3/8	.003	0	20	.006	0	z	26	15.047	92.664	1.773	7.349	1	H2-1
386	M323	L4x4x3/8	.003	0	26	.006	0	z	24	15.047	92.664	1.773	7.349	1	H2-1
387	M325	L4x4x3/8	.003	0	24	.006	0	z	22	15.047	92.664	1.773	7.349	1	H2-1
388	M360	L4x4x3/8	.003	0	22	.007	15.348	z	24	11.828	92.664	1.773	7.016	1	H2-1
389	M374	L4x4x3/8	.004	0	20	.007	0	z	22	11.828	92.664	1.773	7.016	1	H2-1
390	M388	L4x4x3/8	.003	0	26	.007	15.348	z	20	11.828	92.664	1.773	7.016	1	H2-1
391	M390	L4x4x3/8	.005	0	24	.007	15.348	z	26	11.828	92.664	1.773	7.016	1	H2-1
392	M278	2L2-1/2x2-1/2x1/4x...	.086	4.811	26	.005	9.622	y	24	25.631	77.112	5.381	3.414	1	H1-1b
393	M283	2L2-1/2x2-1/2x1/4x...	.085	4.811	20	.005	9.622	y	22	25.631	77.112	5.381	3.414	1	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
394	M289	2L2-1/2x2-1/2x1/4x..	.085	4.811	24	.005	9.622	y	22	25.631	77.112	5.381	3.414	1	H1-1b
395	M294	2L2-1/2x2-1/2x1/4x..	.084	4.811	26	.005	9.622	y	20	25.631	77.112	5.381	3.414	1	H1-1b
396	M302	2L2-1/2x2-1/2x1/4x..	.084	4.811	22	.005	9.622	y	24	25.631	77.112	5.381	3.414	1	H1-1b
397	M307	2L2-1/2x2-1/2x1/4x..	.085	4.811	24	.005	9.622	y	26	25.631	77.112	5.381	3.414	1	H1-1b
398	M315	2L2-1/2x2-1/2x1/4x..	.085	4.811	20	.005	9.622	y	26	25.631	77.112	5.381	3.414	1	H1-1b
399	M320	2L2-1/2x2-1/2x1/4x..	.086	4.811	22	.005	9.622	y	24	25.631	77.112	5.381	3.414	1	H1-1b
400	M339	2L2-1/2x2-1/2x1/4x..	.107	5.426	26	.005	0	y	24	19.988	77.112	5.381	3.414	1	H1-1b
401	M344	2L2-1/2x2-1/2x1/4x..	.102	5.426	20	.005	0	y	22	19.988	77.112	5.381	3.414	1	H1-1b
402	M351	2L2-1/2x2-1/2x1/4x..	.098	5.426	25	.005	0	y	22	19.988	77.112	5.381	3.414	1	H1-1b
403	M356	2L2-1/2x2-1/2x1/4x..	.123	5.2	25	.005	0	y	20	19.988	77.112	5.381	3.414	1	H1-1b
404	M365	2L2-1/2x2-1/2x1/4x..	.127	5.652	22	.005	10.853	y	20	19.988	77.112	5.381	3.414	1	H1-1b
405	M370	2L2-1/2x2-1/2x1/4x..	.101	5.426	24	.005	0	y	26	19.988	77.112	5.381	3.414	1	H1-1b
406	M379	2L2-1/2x2-1/2x1/4x..	.097	5.426	21	.005	0	y	26	19.988	77.112	5.381	3.414	1	H1-1b
407	M384	2L2-1/2x2-1/2x1/4x..	.103	5.426	21	.005	0	y	24	19.988	77.112	5.381	3.414	1	H1-1b
408	M92	L2-1/2x2x3/16	.033	0	3	.004	0	z	26	10.615	26.198	.264	1.286	1	H2-1
409	M95	L2-1/2x2x3/16	.030	0	3	.004	0	z	20	10.615	26.198	.264	1.286	1	H2-1
410	M99	L2-1/2x2x3/16	.029	0	15	.004	0	z	24	10.615	26.198	.264	1.286	1	H2-1
411	M102	L2-1/2x2x3/16	.031	0	15	.004	0	z	26	10.615	26.198	.264	1.286	1	H2-1
412	M106	L2-1/2x2x3/16	.031	0	9	.004	0	z	22	10.615	26.198	.264	1.286	1	H2-1
413	M109	L2-1/2x2x3/16	.032	0	13	.004	0	z	24	10.615	26.198	.264	1.286	1	H2-1
414	M113	L2-1/2x2x3/16	.032	0	5	.004	0	z	20	10.615	26.198	.264	1.286	1	H2-1
415	M116	L2-1/2x2x3/16	.031	0	9	.004	0	z	22	10.615	26.198	.264	1.286	1	H2-1
416	M129	L2-1/2x2x3/16	.054	0	17	.004	5.37	z	19	8.835	26.198	.264	1.249	1	H2-1
417	M132	L2-1/2x2x3/16	.051	0	5	.004	5.37	z	23	8.835	26.198	.264	1.249	1	H2-1
418	M136	L2-1/2x2x3/16	.051	0	13	.004	5.37	z	21	8.835	26.198	.264	1.249	1	H2-1
419	M139	L2-1/2x2x3/16	.053	0	17	.004	5.37	z	25	8.835	26.198	.264	1.249	1	H2-1
420	M143	L2-1/2x2x3/16	.053	0	9	.004	5.37	z	23	8.835	26.198	.264	1.249	1	H2-1
421	M146	L2-1/2x2x3/16	.054	0	13	.004	5.37	z	19	8.835	26.198	.264	1.249	1	H2-1
422	M150	L2-1/2x2x3/16	.054	0	5	.004	5.37	z	21	8.835	26.198	.264	1.249	1	H2-1
423	M153	L2-1/2x2x3/16	.054	0	9	.004	5.37	z	25	8.835	26.198	.264	1.249	1	H2-1
424	M166	L2-1/2x2x3/16	.073	0	17	.004	5.832	z	19	7.439	26.198	.264	1.213	1	H2-1
425	M169	L2-1/2x2x3/16	.069	0	5	.004	5.832	z	19	7.439	26.198	.264	1.213	1	H2-1
426	M173	L2-1/2x2x3/16	.069	0	13	.004	5.832	z	21	7.439	26.198	.264	1.213	1	H2-1
427	M176	L2-1/2x2x3/16	.070	0	17	.004	5.832	z	25	7.439	26.198	.264	1.213	1	H2-1
428	M180	L2-1/2x2x3/16	.071	0	9	.004	5.832	z	26	7.439	26.198	.264	1.213	1	H2-1
429	M183	L2-1/2x2x3/16	.072	0	13	.004	5.832	z	23	7.439	26.198	.264	1.213	1	H2-1
430	M187	L2-1/2x2x3/16	.072	0	5	.004	5.832	z	21	7.439	26.198	.264	1.213	1	H2-1
431	M190	L2-1/2x2x3/16	.072	0	9	.004	5.832	z	25	7.439	26.198	.264	1.213	1	H2-1
432	M203	L2-1/2x2x3/16	.100	0	17	.004	6.293	z	26	6.349	26.198	.264	1.179	1	H2-1
433	M206	L2-1/2x2x3/16	.097	0	5	.004	6.293	z	20	6.349	26.198	.264	1.179	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
434	M210	L2-1/2x2x3/16	.096	0	13	.004	6.293	z	24	6.349	26.198	.264	1.179	1	H2-1
435	M213	L2-1/2x2x3/16	.096	0	17	.004	6.293	z	26	6.349	26.198	.264	1.179	1	H2-1
436	M217	L2-1/2x2x3/16	.098	0	9	.004	6.293	z	22	6.349	26.198	.264	1.179	1	H2-1
437	M220	L2-1/2x2x3/16	.098	0	13	.004	6.293	z	20	6.349	26.198	.264	1.179	1	H2-1
438	M224	L2-1/2x2x3/16	.098	0	5	.004	6.293	z	20	6.349	26.198	.264	1.179	1	H2-1
439	M227	L2-1/2x2x3/16	.099	0	9	.004	6.293	z	22	6.349	26.198	.264	1.179	1	H2-1
440	M240	L 2-1/2x2-1/2x1/4	.100	0	17	.004	0	z	19	10.917	38.475	.461	2.121	1	H2-1
441	M243	L 2-1/2x2-1/2x1/4	.099	0	5	.004	0	z	19	10.917	38.475	.461	2.121	1	H2-1
442	M247	L 2-1/2x2-1/2x1/4	.098	0	13	.004	0	z	25	10.917	38.475	.461	2.121	1	H2-1
443	M250	L 2-1/2x2-1/2x1/4	.097	0	17	.004	0	z	25	10.917	38.475	.461	2.121	1	H2-1
444	M254	L 2-1/2x2-1/2x1/4	.098	0	9	.004	0	z	23	10.917	38.475	.461	2.121	1	H2-1
445	M257	L 2-1/2x2-1/2x1/4	.097	0	13	.004	0	z	19	10.917	38.475	.461	2.121	1	H2-1
446	M261	L 2-1/2x2-1/2x1/4	.097	0	5	.004	0	z	21	10.917	38.475	.461	2.121	1	H2-1
447	M264	L 2-1/2x2-1/2x1/4	.100	0	9	.004	0	z	21	10.917	38.475	.461	2.121	1	H2-1
448	M277	L2-1/2x2x3/16	.053	0	3	.005	0	y	26	11.352	26.198	.264	1.301	1	H2-1
449	M282	L2-1/2x2x3/16	.052	0	3	.005	0	y	20	11.352	26.198	.264	1.301	1	H2-1
450	M288	L2-1/2x2x3/16	.051	0	15	.005	0	y	20	11.352	26.198	.264	1.301	1	H2-1
451	M293	L2-1/2x2x3/16	.052	0	15	.006	0	y	26	11.352	26.198	.264	1.301	1	H2-1
452	M301	L2-1/2x2x3/16	.052	0	11	.005	0	y	26	11.352	26.198	.264	1.301	1	H2-1
453	M306	L2-1/2x2x3/16	.052	0	11	.006	0	y	24	11.352	26.198	.264	1.301	1	H2-1
454	M314	L2-1/2x2x3/16	.052	0	7	.005	0	y	24	11.352	26.198	.264	1.301	1	H2-1
455	M319	L2-1/2x2x3/16	.052	0	7	.006	0	y	22	11.352	26.198	.264	1.301	1	H2-1
456	M338	L2-1/2x2-1/2x3/16	.019	0	4	.005	5.426	y	21	13.065	29.236	.351	1.609	1	H2-1
457	M343	L2-1/2x2-1/2x3/16	.018	0	16	.005	5.426	y	21	13.065	29.236	.351	1.609	1	H2-1
458	M350	L2-1/2x2-1/2x3/16	.028	0	16	.005	5.426	y	26	13.065	29.236	.351	1.609	1	H2-1
459	M355	L2-1/2x2-1/2x3/16	.029	0	12	.005	5.426	y	20	13.065	29.236	.351	1.609	1	H2-1
460	M364	L2-1/2x2-1/2x3/16	.017	0	12	.005	5.426	y	25	13.065	29.236	.351	1.609	1	H2-1
461	M369	L2-1/2x2-1/2x3/16	.017	0	8	.005	5.426	y	25	13.065	29.236	.351	1.609	1	H2-1
462	M378	L2-1/2x2-1/2x3/16	.030	0	8	.005	5.426	y	22	13.065	29.236	.351	1.609	1	H2-1
463	M383	L2-1/2x2-1/2x3/16	.029	0	4	.005	5.426	y	24	13.065	29.236	.351	1.609	1	H2-1
464	M347	2L2-1/2x3-1/2x1/4x...	.107	9.063	23	.005	9.063	y	25	7.402	93.312	9.918	2.218	1	H1-1b
465	M359	2L2-1/2x3-1/2x1/4x...	.106	9.063	21	.005	9.063	y	23	7.402	93.312	9.918	2.218	1	H1-1b
466	M373	2L2-1/2x3-1/2x1/4x...	.107	9.063	19	.005	9.063	y	21	7.402	93.312	9.918	2.218	1	H1-1b
467	M387	2L2-1/2x3-1/2x1/4x...	.107	9.063	25	.005	9.063	y	19	7.402	93.312	9.918	2.218	1	H1-1b
468	M540	L2.5x2.5x3	.012	3.702	19	.000	0	y	12	7.302	29.192	.873	1.457	1	H2-1
469	M541	L2.5x2.5x3	.012	3.702	25	.000	6.706	y	8	7.302	29.192	.873	1.457	1	H2-1
470	M542	L2.5x2.5x3	.012	3.702	23	.000	6.706	y	21	7.302	29.192	.873	1.457	1	H2-1
471	M543	L2.5x2.5x3	.012	3.702	21	.000	0	y	25	7.302	29.192	.873	1.457	1	H2-1
472	M536	L2.5x2.5x3	.022	3.673	19	.000	6.652	y	23	7.422	29.192	.873	1.461	1	H2-1
473	M537	L2.5x2.5x3	.022	3.673	25	.001	6.652	y	21	7.422	29.192	.873	1.461	1	H2-1

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
474	M538	L2.5x2.5x3	.022	3.673	23	.001	6.652	y	22	7.422	29.192	.873	1.461	1	H2-1
475	M539	L2.5x2.5x3	.022	3.673	21	.000	6.652	y	25	7.422	29.192	.873	1.461	1	H2-1
476	M522	L2.5x2.5x3	.012	3.649	19	.000	0	y	10	7.516	29.192	.873	1.465	1	H2-1
477	M523	L2.5x2.5x3	.012	3.649	25	.000	0	y	4	7.516	29.192	.873	1.465	1	H2-1
478	M524	L2.5x2.5x3	.012	3.649	23	.000	6.61	y	16	7.516	29.192	.873	1.465	1	H2-1
479	M525	L2.5x2.5x3	.012	3.649	21	.000	6.61	y	12	7.516	29.192	.873	1.465	1	H2-1
480	M518	L2.5x2.5x3	.873	1.918	23	.000	0	y	14	7.594	29.192	.873	1.467	1	H2-1
481	M519	L2.5x2.5x3	.852	1.918	21	.001	6.576	y	26	7.594	29.192	.873	1.467	1	H2-1
482	M520	L2.5x2.5x3	.854	1.918	19	.001	0	y	22	7.594	29.192	.873	1.467	1	H2-1
483	M521	L2.5x2.5x3	.873	1.918	25	.000	0	y	2	7.594	29.192	.873	1.467	1	H2-1
484	M397	L3x3x1/4	.007	12.534	23	.000	12.534	y	14	5.037	46.575	.67	2.421	1	H2-1
485	M398	L3x3x1/4	.007	12.534	21	.000	0	y	19	5.037	46.575	.67	2.421	1	H2-1
486	M399	L3x3x1/4	.007	12.534	25	.000	12.534	y	2	5.037	46.575	.67	2.421	1	H2-1
487	M400	L3x3x1/4	.007	12.534	19	.000	0	y	21	5.037	46.575	.67	2.421	1	H2-1
488	M433	L3x3x1/4	.039	0	22	.001	0	y	6	10.663	46.575	.67	2.836	1	H2-1
489	M434	L3x3x1/4	.039	0	22	.001	0	y	23	10.663	46.575	.67	2.836	1	H2-1
490	M435	L3x3x1/4	.039	0	24	.001	8.615	y	25	10.663	46.575	.67	2.836	1	H2-1
491	M436	L3x3x1/4	.039	0	24	.001	0	y	10	10.663	46.575	.67	2.836	1	H2-1
492	M437	L3x3x1/4	.039	0	26	.001	0	y	19	10.663	46.575	.67	2.836	1	H2-1
493	M438	L3x3x1/4	.039	0	26	.001	8.615	y	14	10.663	46.575	.67	2.836	1	H2-1
494	M439	L3x3x1/4	.043	0	20	.001	8.615	y	21	10.663	46.575	.67	2.836	1	H2-1
495	M440	L3x3x1/4	.043	0	20	.001	0	y	2	10.663	46.575	.67	2.836	1	H2-1
496	M17	L3x2-1/2x1/4	.019	8.466	25	.005	6.554	z	24	20.579	42.525	.536	2.498	1	H2-1
497	M18	L3x2-1/2x1/4	.021	8.466	23	.005	6.554	z	21	20.579	42.525	.536	2.498	1	H2-1
498	M19	L3x2-1/2x1/4	.018	8.602	6	.005	6.554	z	26	20.579	42.525	.536	2.498	1	H2-1
499	M20	L3x2-1/2x1/4	.016	8.466	19	.005	6.554	z	24	20.579	42.525	.536	2.498	1	H2-1
500	M37	C6x8.2	.050	7.481	21	.006	7.481	y	26	20.619	77.436	2.108	10.347	1	H1-1b
501	M38	C6x8.2	.052	7.481	10	.006	7.481	y	24	20.619	77.436	2.108	10.347	1	H1-1b*
502	M39	C6x8.2	.051	7.481	6	.006	7.481	y	23	20.619	77.436	2.108	10.347	1	H1-1b*
503	M40	C6x8.2	.050	7.481	23	.006	7.481	y	21	20.619	77.436	2.108	10.347	1	H1-1b
504	M62	L3x2-1/2x1/4	.025	6.13	25	.006	8.407	z	20	14.249	42.525	.536	2.295	1	H2-1
505	M63	L3x2-1/2x1/4	.024	6.13	23	.006	8.407	z	25	14.249	42.525	.536	2.295	1	H2-1
506	M64	L3x2-1/2x1/4	.023	6.13	22	.006	8.407	z	23	14.249	42.525	.536	2.295	1	H2-1
507	M65	L3x2-1/2x1/4	.023	6.13	19	.006	8.407	z	21	14.249	42.525	.536	2.295	1	H2-1
508	M82	L3x2-1/2x1/4	.031	12.055	17	.007	9.333	z	20	12.021	42.525	.536	2.202	1	H2-1
509	M83	L3x2-1/2x1/4	.023	12.055	13	.007	9.333	z	26	12.021	42.525	.536	2.202	1	H2-1
510	M84	L3x2-1/2x1/4	.020	6.611	13	.007	9.333	z	22	12.021	42.525	.536	2.202	1	H2-1
511	M85	L3x2-1/2x1/4	.033	6.611	9	.007	9.333	z	20	12.021	42.525	.536	2.202	1	H2-1
512	M5	MC18x58_HRA	.019	6.125	19	.003	0	y	26	202.265	554.04	23.037	198.366	1	H1-1b
513	M6	MC18x58_HRA	.019	6.125	25	.003	12.25	y	20	202.265	554.04	23.037	198.366	1	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y...	phi*Mn z-z...	Cb	Eqn
514	M7	MC18x58_HRA	.019	6.125	23	.003	12.25	y	24	202.265	554.04	23.037	198.366	1	H1-1b
515	M8	MC18x58_HRA	.019	6.125	21	.003	0	y	20	202.265	554.04	23.037	198.366	1	H1-1b
516	M25	2L3-1/2x3x5/16x3/8	.036	10.572	23	.003	7.048	y	21	54.189	125.388	9.481	8.24	1	H1-1b
517	M26	2L3-1/2x3x5/16x3/8	.036	10.572	21	.003	7.048	y	23	54.189	125.388	9.481	8.24	1	H1-1b
518	M27	2L3-1/2x3x5/16x3/8	.036	10.572	19	.003	7.048	y	21	54.189	125.388	9.481	8.24	1	H1-1b
519	M28	2L3-1/2x3x5/16x3/8	.036	10.572	25	.003	7.048	y	23	54.189	125.388	9.481	8.24	1	H1-1b
520	M45	2L3x2-1/2x1/4x3/8	.059	7.971	23	.004	7.971	y	20	51.046	85.212	5.423	3.034	1	H1-1b
521	M46	2L3x2-1/2x1/4x3/8	.100	7.971	21	.008	10.13	z	22	51.046	85.212	5.423	3.034	1	H1-1b
522	M47	2L3x2-1/2x1/4x3/8	.100	7.971	19	.008	5.812	z	26	51.046	85.212	5.423	3.034	1	H1-1b
523	M48	2L3x2-1/2x1/4x3/8	.059	7.971	25	.004	7.971	y	23	51.046	85.212	5.423	3.034	1	H1-1b
524	M70	2L3x2-1/2x1/4x3/8	.111	8.894	23	.005	8.894	y	20	17.249	85.212	5.423	3.034	1	H1-1b
525	M71	2L3x2-1/2x1/4x3/8	.111	8.894	21	.005	8.894	y	26	17.249	85.212	5.423	3.034	1	H1-1b
526	M72	2L3x2-1/2x1/4x3/8	.112	8.894	19	.005	8.894	y	22	17.249	85.212	5.423	3.034	1	H1-1b
527	M73	2L3x2-1/2x1/4x3/8	.111	8.894	25	.005	8.894	y	20	17.249	85.212	5.423	3.034	1	H1-1b

Project #: 2018723.01.SNET025.10

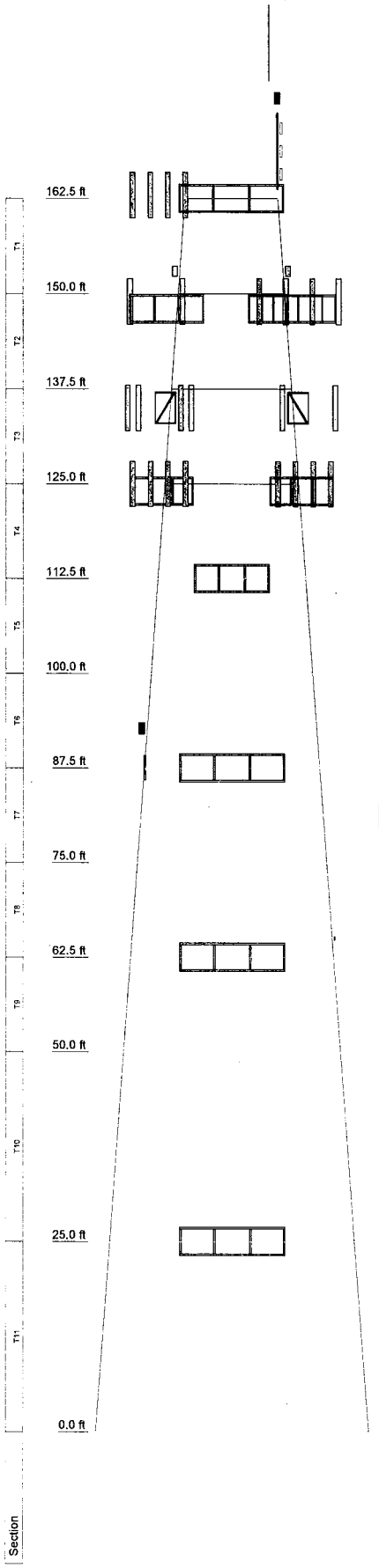
Bolt Checks

Date: 6/8/2018

Section #	Elevation	Component Type	Bolt Grade	Bolt Size (in)	# of Bolts	Maximum Load (k)	Maximum Load per Bolt (k)	Allowable Load per Bolt (k)	Ratio	Allowable Ratio	% Capacity	Criteria
T1	162.5	Diagonal	A307	0.75	5	5.156	1.031	8.946	0.115	1.000	11.5%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.28	0.14	8.946	0.016	1.000	1.6%	Bolt Shear
T2	150	Leg	A307	0.75	16	23.98	2.998	17.892	0.168	1.000	16.8%	Bolt DS
		Diagonal	A307	0.75	4	7.518	1.88	8.946	0.210	1.000	21.0%	Bolt Shear
		Secondary Horizontal	A307	0.75	3	1.076	0.359	8.946	0.040	1.000	4.0%	Bolt Shear
T3	137.5	Diagonal	A307	0.75	5	8.03	1.606	8.946	0.180	1.000	18.0%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.27	0.135	8.946	0.015	1.000	1.5%	Bolt Shear
T4	125	Leg	A307	0.75	16	51.103	6.388	17.892	0.357	1.000	35.7%	Bolt DS
		Top Girt	A307	0.75	2	4.522	2.261	17.892	0.126	1.000	12.6%	Bolt Shear
		Redundant Vertical	A307	0.75	1	6.623	6.623	8.946	0.740	1.000	74.0%	Bolt Shear
		Secondary Horizontal	A307	0.75	2	0.354	0.177	8.946	0.020	1.000	2.0%	Bolt Shear
		Diagonal	A307	0.75	4	9.978	2.494	8.946	0.279	1.000	27.9%	Bolt Shear
T5	112.5	Horizontal	A307	0.75	2	7.919	3.96	17.892	0.221	1.000	22.1%	Bolt Shear
		Diagonal	A307	0.75	2	13.567	6.784	17.892	0.379	1.000	37.9%	Bolt Shear
T6	100	Leg	A307	0.75	20	79.63	7.963	17.892	0.445	1.000	44.5%	Bolt DS
		Horizontal	A307	0.75	2	8.816	4.408	17.892	0.246	1.000	24.6%	Bolt Shear
		Diagonal	A307	0.75	2	12.686	6.343	17.892	0.355	1.000	35.5%	Bolt Shear
		Inner Corner	A307	0.75	2	1.868	0.934	8.057	0.116	1.000	11.6%	Member Block Shear
T7	87.5	Horizontal	A307	0.75	2	9.295	4.648	17.892	0.260	1.000	26.0%	Bolt Shear
		Diagonal	A307	0.75	2	13.376	6.688	17.892	0.374	1.000	37.4%	Bolt Shear
T8	75	Leg	A307	0.75	28	112.869	8.062	17.892	0.451	1.000	45.1%	Bolt DS
		Horizontal	A307	0.75	2	9.557	4.778	17.892	0.267	1.000	26.7%	Bolt Shear
		Diagonal	A307	0.75	2	13.521	6.76	17.892	0.378	1.000	37.8%	Bolt Shear
		Inner Corner	A307	0.75	2	1.699	0.85	8.057	0.105	1.000	10.5%	Member Block Shear
T9	62.5	Leg	A307	0.75	28	128.937	9.21	17.892	0.515	1.000	51.5%	Bolt DS
		Horizontal	A307	0.75	2	10.016	5.008	17.892	0.280	1.000	28.0%	Bolt Shear
		Diagonal	A307	0.75	3	13.796	4.599	17.892	0.257	1.000	25.7%	Bolt Shear
		Inner Corner	A307	0.75	2	2.043	1.022	8.946	0.114	1.000	11.4%	Bolt Shear
T10	50	Leg	A307	0.75	32	144.867	9.054	17.892	0.506	1.000	50.6%	Bolt DS
		Horizontal	A307	0.75	3	10.907	3.636	17.892	0.203	1.000	20.3%	Bolt Shear
		Diagonal	A325N	0.75	3	20.835	6.945	31.266	0.222	1.000	22.2%	Member Block Shear
		Inner Corner	A307	0.75	2	2.326	1.163	8.946	0.130	1.000	13.0%	Bolt Shear
T11	25	Leg	A307	0.75	36	175.663	9.759	17.892	0.545	1.000	54.5%	Bolt DS
		Horizontal	A307	0.75	3	12.092	4.031	17.892	0.225	1.000	22.5%	Bolt Shear
		Diagonal	A307	0.75	5	21.838	4.368	17.892	0.244	1.000	24.4%	Bolt Shear
		Redundant Diagonal	A307	0.75	2	1.861	0.93	8.057	0.115	1.000	11.5%	Member Block Shear
		Redundant Brace	A307	0.75	2	1.859	0.93	8.946	0.104	1.000	10.4%	Bolt Shear
		Inner Corner	A307	0.75	2	2.19	1.095	8.946	0.122	1.000	12.2%	Bolt Shear
										Maximum Capacity	74.0%	

APPENDIX C

Tower Elevation Drawing



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(3) DC6-48-60-18-8F Surge Suppression Unit	167	RRH 2x50 800 MHz	153
		(2) 2.5" x 3.5' Mount Pipe	153
(3) RRUS 11	165	(2) 2.5" x 3.5' Mount Pipe	153
(3) RRUS 32	165	(2) 2.5" x 3.5' Mount Pipe	153
(3) RRUS 32 B2	165	14' Sector Frame	148
(3) RRUS 12	165	14' Sector Frame	148
(3) RRUS B14 4478	165	14' Sector Frame	148
(3) RRUS 32 B66	165	Pipe Mount 6'x2.375"	148
2' Standoff	162.5	Pipe Mount 6'x2.375"	148
15' Dipole	162.5	Pipe Mount 6'x2.375"	148
Pipe Mount 14'x2.875"	162.5	APXVSPP18 w/ Mount Pipe	148
2' Standoff	162.5	APXVSPP18 w/ Mount Pipe	148
2' Standoff	162.5	APXVSPP18 w/ Mount Pipe	148
10' Omni	162.5	30' x 30' Cross Catwalk w/ Handrails	144
W8 x 19' Beams	162.5	2' Standoff	135
W8 x 19' Beams	162.5	2' Standoff	135
RA21.7770.00 w/Mount Pipe	162.5	2' Standoff	135
RA21.7770.00 w/Mount Pipe	162.5	AIR21 B4A/B2P w/ mount pipe	135
RA21.7770.00 w/Mount Pipe	162.5	AIR21 B4A/B2P w/ mount pipe	135
HPA-65R-BUU-H6 w/ Mount Pipe	162.5	AIR21 B4A/B2P w/ mount pipe	135
HPA-65R-BUU-H6 w/ Mount Pipe	162.5	DBXNH-6565A-A2M w/ mount pipe	135
HPA-65R-BUU-H6 w/ Mount Pipe	162.5	DBXNH-6565A-A2M w/ mount pipe	135
QS66512-2 w/ Mount Pipe	162.5	DBXNH-6565A-A2M w/ mount pipe	135
QS66512-2 w/ Mount Pipe	162.5	RRUS 11 B2	135
QS66512-2 w/ Mount Pipe	162.5	RRUS 11 B2	135
80010965 w/ Mount Pipe	162.5	RRUS 11 B2	135
80010965 w/ Mount Pipe	162.5	RRUS 11 B12	135
80010965 w/ Mount Pipe	162.5	RRUS 11 B12	135
(2) 7020.00 RET	162.5	RRUS 11 B12	135
(2) 7020.00 RET	162.5	KRY 112 144/1	135
(2) 7020.00 RET	162.5	KRY 112 144/1	135
(2) LGP21401	162.5	KRY 112 144/1	135
(2) LGP21401	162.5	12' Sector Frame	124
(2) LGP21401	162.5	12' Sector Frame	124
(2) TPX-070821	162.5	12' Sector Frame	124
(2) TPX-070821	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
(2) TPX-070821	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
Smart Bias-T	162.5	(2) DB846F65ZAXY w/Mount Pipe	124
Smart Bias-T	162.5	BXA-185085/12CF w/ Mount Pipe	124
Smart Bias-T	162.5	BXA-185063/12CF w/ mount pipe	124
WCS-IMFT-AMT	162.5	BXA-185063/12CF w/ mount pipe	124
WCS-IMFT-AMT	162.5	(2) SBNHH-1D65B w/ Mount Pipe	124
Flash Beacon Lighting	162.5	(2) SBNHH-1D45B w/ Mount Pipe	124
W5 x 13' Mount	162.5	(2) SBNHH-1D65B w/ Mount Pipe	124
15' Dipole	162.5	B13 RRH 4X30	124
10' Dipole	162.5	B13 RRH 4X30	124
Pipe Mount 14'x2.875"	162.5	B13 RRH 4X30	124
2' Standoff	162.5	B25 RRH4X30	124
28' Square Platform w/ Rails	162.5	B25 RRH4X30	124
AAHC w/ Mount Pipe	153	B25 RRH4X30	124
AAHC w/ Mount Pipe	153	B66A RRH4X45	124
AAHC w/ Mount Pipe	153	B66A RRH4X45	124
RRH2X50-800	153	B66A RRH4X45	124
RRH2X50-800	153	DB-T1-6Z-8AB-0Z	124
RRH2X50-800	153	DB-T1-6Z-8AB-0Z	124
1900MHz 4X40W RRH	153	4.25' x 7' Catwalk	112.5
1900MHz 4X40W RRH	153	Side Light	92
1900MHz 4X40W RRH	153	Side Light	92
TD-RRH8x20-25	153	23' x 3' Catwalk	87.5
TD-RRH8x20-25	153	23' x 3' Catwalk	87.5
TD-RRH8x20-25	153	GPS-TMG-HR-26N	65
RRH 2x50 800 MHz	153	13' x 4.25' Catwalk	62.5
RRH 2x50 800 MHz	153	13' x 4.25' Catwalk	25

MATERIAL STRENGTH

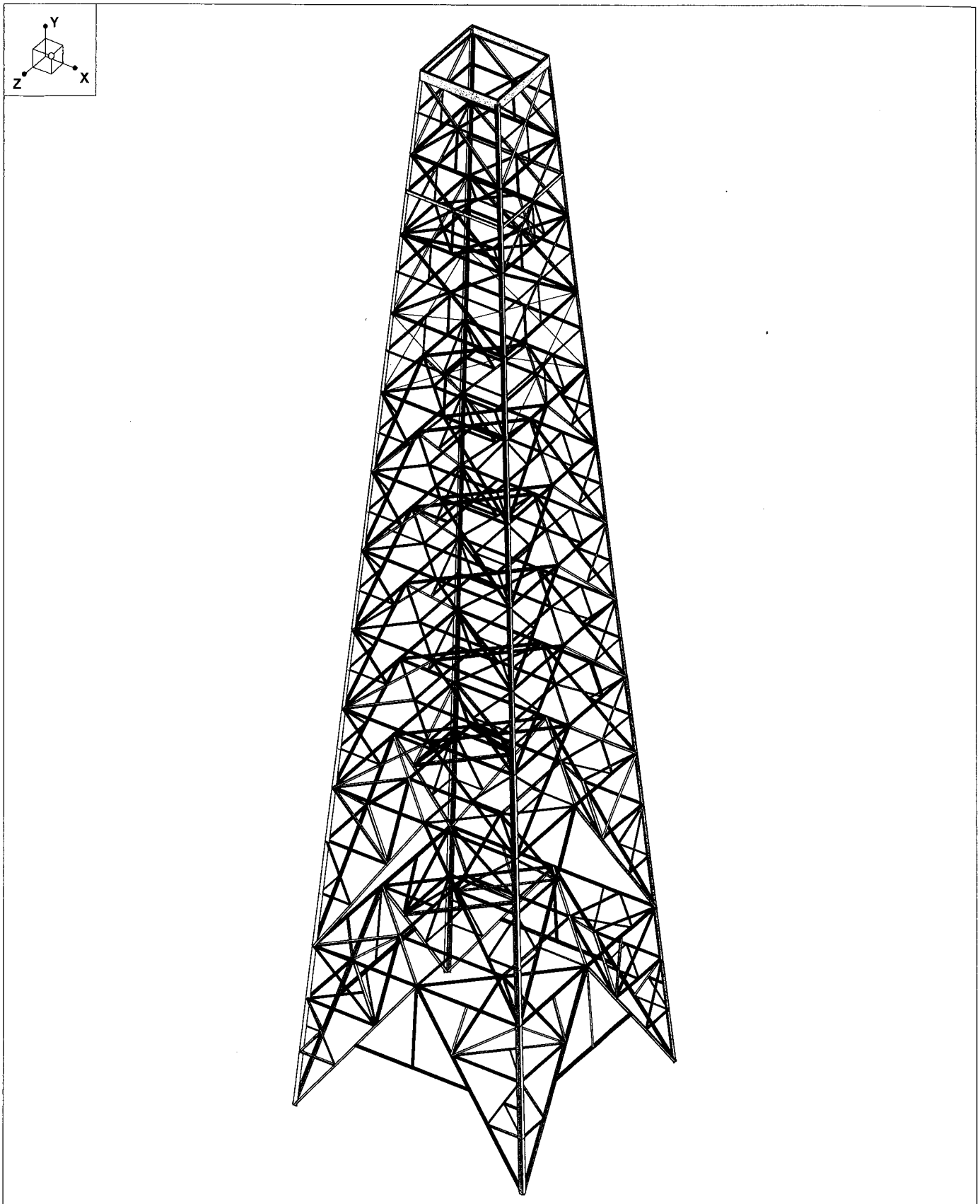
GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

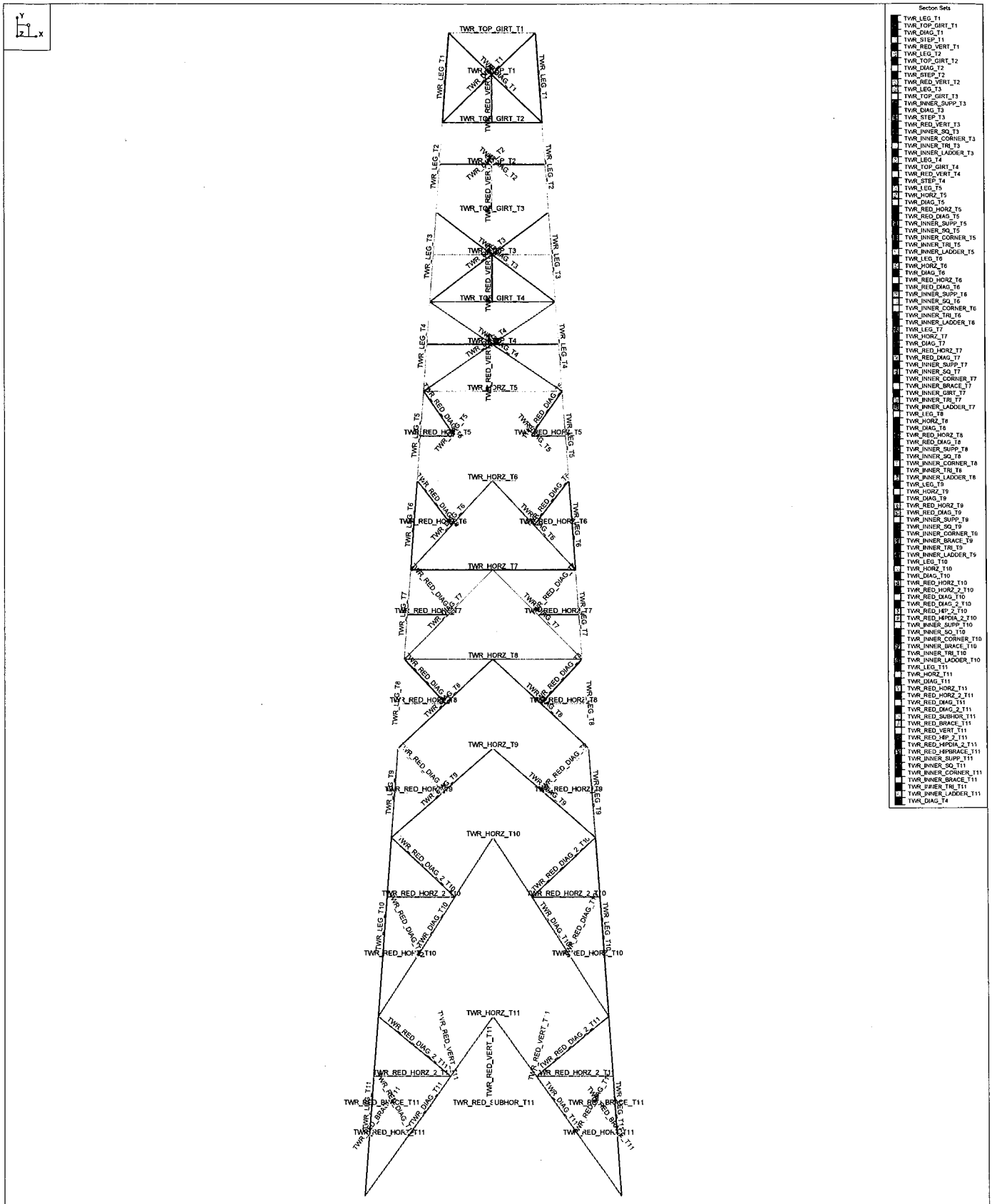
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft

GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: 27016 SHELTON EAST CENTRAL		
Project: 2018723.01.SNET025.10		
Client: AT&T Towers	Drawn by: lrife	App'd:
Code: TIA-222-G	Date: 06/08/18	Scale: NTS
Path: T:\A Tarot\T\SNET025\18 2018723.01 SNET025.10 AT&T SA\Software Models\TNX\SNET025.eri		Dwg No. E-1



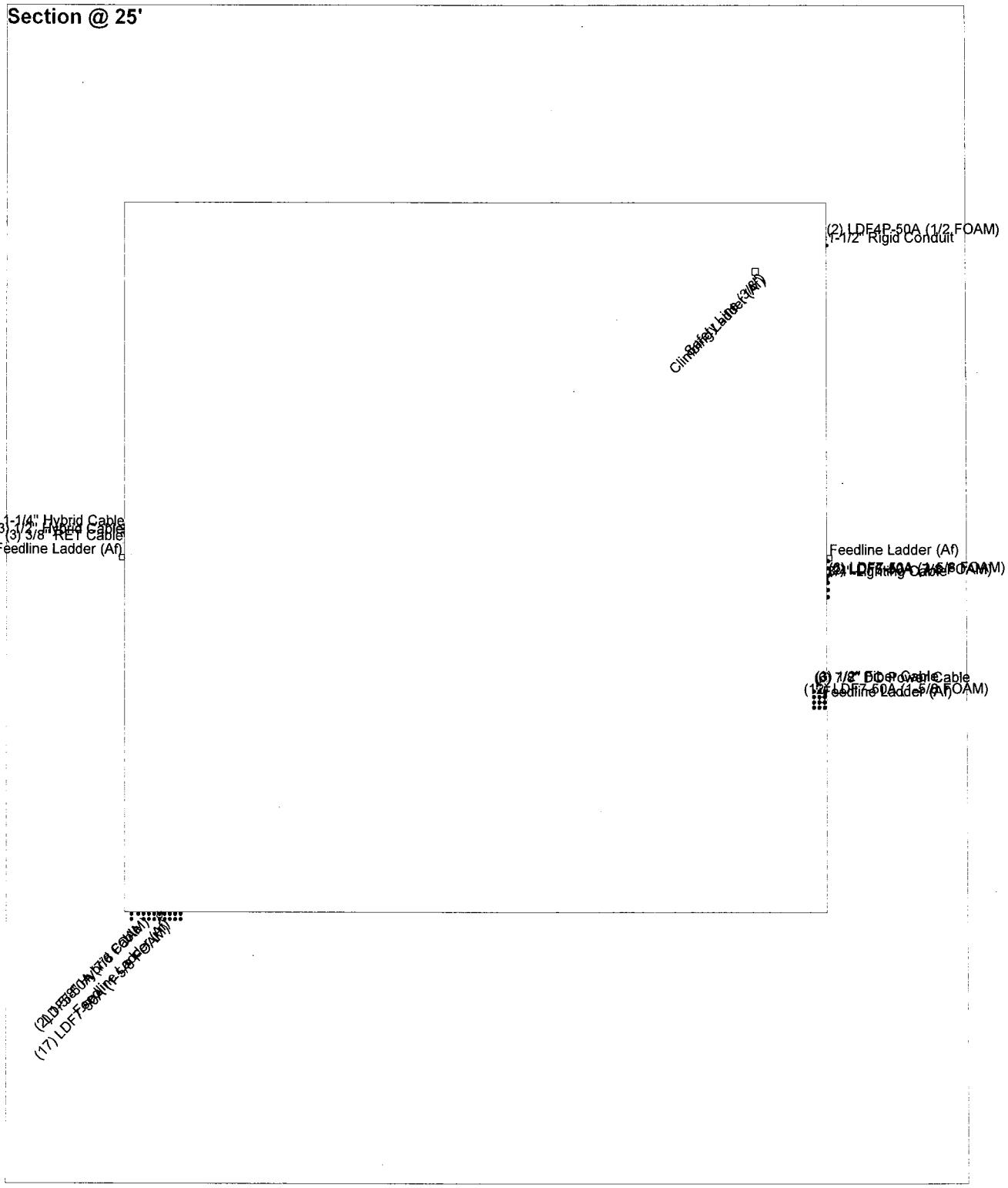
GPD	27016 SHELTON EAST CENTRAL	
Irife		
2018723.01.SNET025.10		SNET025.r3d



GPD	27016 SHELTON EAST CENTRAL	
Irife		
2018723.01.SNET025.10		SNET025.r3d

Feed Line Plan
25'

_____ Round _____ Flat _____ App In Face App Out Face



GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: 27016 SHELTON EAST CENTRAL		
Project: 2018723.01.SNET025.10		
Client: AT&T Towers	Drawn by: lrife	App'd:
Code: TIA-222-G	Date: 06/08/18	Scale: NTS
Path: T:\ATandT\SNET025\t18 2018723.01.SNET025.10 AT&T SA\Software Models\TNX\SNET025.eti		Dwg No. E-7

APPENDIX D

Anchor Rod Analysis

Self-Support Anchor Rod Analysis
27016 SHELTON EAST CENTRAL
2018723.01.SNET025.10

General Info	
Code	TIA-222-G
Modified Anchor Rods	No
Clear Distance > d_b	No
Leg Eccentricity	No
Max Capacity	1.05

Tower Reactions		
Detail Type =	d	
Eta Factor, η =	0.50	
Down Load, P_u =	202.92	kips
Down Load Shear, V_u =	34.92	kips
Uplift, P_u =	134.70	kips
Uplift Shear, V_u =	26.23	kips

Anchor Rods		
Number of Anchor Rods, N =	4	
Anchor Rod Grade =	C-1015	
Anchor Rod Diameter, d_d =	2.25	in
Tensile, F_{ub} =	56	ksi

Anchor Rod Results		
$(P_u + V_u/\eta)$	68.2	kips
$\phi*R_{nt} = \phi*F_{ub}*A_n$ =	145.6	kips
Anchor Rod Stress Ratio =	46.8%	**OK**

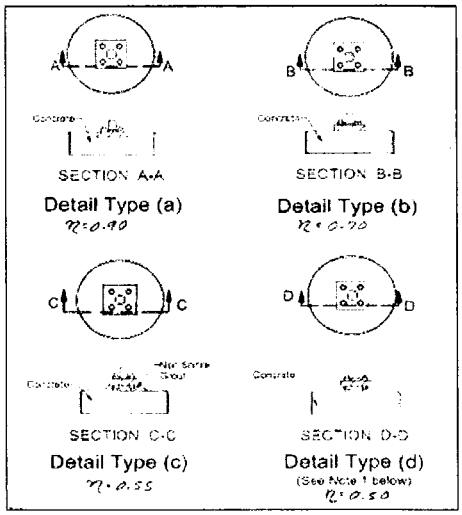


Figure 4-4 of TIA-222-G

APPENDIX E

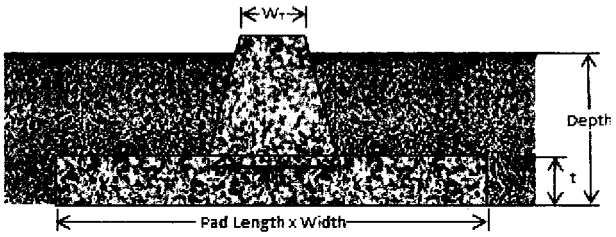
Foundation Analysis

Individual Pad and Frustum Uplift Check
27016 SHELTON EAST CENTRAL
2018723.01.SNET025.10

Tower Reactions	
Uplift	134.7 k

Uplift Summary		
Capacity	46.6%	OK

General Info	
Code	TIA-222-G
Max Capacity	1.05



Pad & Pier Geometry		
Pier Top Width W_T	3.5	ft
Pier Bottom Widthm W_B	7.5	ft
Pad Length, L	15	ft
Pad Width, W	15	ft
Pad Thickness, t	2	ft
Depth, D	8	ft
Height Above Grade, HG	1	ft

Soil Capacity Calculations		
W_s	220.76	k
W_c	100.66	k
Uplift Resistance	289.28	k

Soil Properties

Ignored Depth	3.5	ft	Water Table	8	ft
Layer	C, psf	ϕ, degrees	γ_{soil}, pcf	$\gamma_{concrete}$, pcf	d, ft
1	0	0	125	150	3.5
2	0	38	125	150	4.5
3	0	42	145	150	1
4	12000	0	155	150	5

Mat Foundation Analysis
27016 SHELTON EAST CENTRAL
2018723.01.SNET025.10

General Info	
Foundation Criteria	GPD
TIA Code	TIA-222-G
Soil Code	AASHTO 2012
Concrete Code	ACI 318-11
Seismic Design Category	B
Tower Height	162.5 ft
Bearing On	Soil
Foundation Type	SS Individual Pad
Pier Type	Square
Reinforcing Known	No
Max Bearing Capacity	105%
Max Overturning Capacity	105%

Tower Reactions	
Moment, M	
Axial, P	202.919 k
Shear, V	34.923 k

Pad & Pier Geometry	
Pier Width, ø	5.62 ft
Pad Length, L [y]	15 ft
Pad Width, W [x]	15 ft
Pad Thickness, t	2 ft
Depth, D	8 ft
Height Above Grade, HG	1 ft
Tower Centroid, X	7.5 ft
Tower Centroid, Y	7.5 ft
Tower Eccentricity	0.0000 ft

Pad & Pier Reinforcing	
Rebar Fy	60 ksi
Concrete F'c	3 ksi
Pier Reinforcing Clear Cover	3 in
Shear Rebar Type	Tie
Shear Rebar Size	# 4
Pad Reinforcing Clear Cover	3 in
Reinforced Top & Bottom?	Yes
Pad Reinforcing Size	# 8
Pad Quantity Per Layer	15
Pier Rebar Size	# 10
Pier Quantity of Rebar	7

Soil Properties	
Soil Type	Granular
Soil Unit Weight	125 pcf
Angle of Friction, ø	38
Base Friction Coeff. Provided in Geo?	Yes
Base Friction Coefficient, μ	0.5
Bearing Type	Net
Ultimate Bearing	18 ksf
Water Table Depth	99 ft
Frost Depth	3.5 ft

GPD Mat Foundation Analysis - V3.2

Bearing Summary

Case	Demand/Limits	Capacity/Availability	Check	Eccentricity	Load Case
Qxmax	2.61 ksf	14.25 ksf	OK, <= 105%	L/150000.0	1.2D+1.6W
Qymax	2.61 ksf	14.25 ksf	OK, <= 105%	W/150000.0	1.2D+1.6W
Qmax @ 45°	2.21 ksf	14.25 ksf	OK, <= 105%	W/25000.0	1.2D+1.6W
Controlling Capacity		18.3%	Pass		

Overturning Summary

Case	Demand/Limits	Capacity/Availability	Check		Load Case
Ovtx	0.1 k-ft	2800.1 k-ft	0.0%	OK	0.9D+1.6W
Ovty	0.1 k-ft	2800.1 k-ft	0.0%	OK	0.9D+1.6W
Ovtxy	0.3 k-ft	3733.4 k-ft	0.0%	OK	0.9D+1.6W
Controlling Capacity		0.0%	Pass		

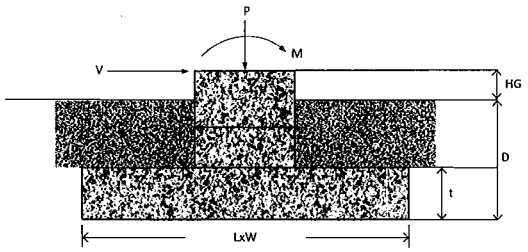
Sliding Summary

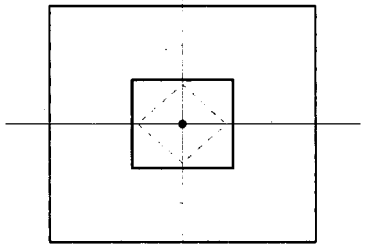
Case	Demand/Limits	Capacity/Availability	Check		Load Case
Slidingx	34.9 k	249.1 k	14.0%	OK	0.9D+1.6W
Slidingy	34.9 k	249.1 k	14.0%	OK	0.9D+1.6W
Controlling Capacity		14.0%	Pass		

Reinforcement Summary

Component	Demand/Limits	Capacity/Availability	Check		Load Case
Pad Flexural Bending	13.9 k-ft	66.6 k-ft	20.9%	OK	1.2D+1.6W
One-Way Shear in Pad	58.3 k	288.4 k	20.2%	OK	1.2D+1.6W
Two-Way Shear in Pad	214.5 k	1114.3 k	19.3%	OK	0.9D+1.6W
Compression on Pier	242.7 k	13917.4 k	1.7%	OK	1.2D+1.6W
Moment on Pier	214.5 k-ft	1359.0 k-ft	15.8%	OK	1.2D+1.6W
As Min Pad Met?	1.58 sq. in.	0.21 sq. in.	Yes		
As Min Pier Met?	8.89 sq. in.	22.74 sq. in.	No		
Controlling Capacity		20.9%	Pass		

<-- Minimum reinforcement assumed





Sprint

PROJECT:	DO MACRO UPGRADE
SITE NAME:	SNET
SITE CASCADE:	CT03XC371
SITE ADDRESS:	219 NELLS ROCK ROAD SHELTON, CT 06484
SITE TYPE:	SELF SUPPORT TOWER
MARKET:	SOUTHERN CONNECTICUT

SITE INFORMATION

PROPERTY OWNER:
AT&T TOWERS
5405 WINDWARD PARKWAY #1291B
ALPHARETTA, GA 30004

LATITUDE (NAD83):
41° 18' 15.08" N
41.30421944

LONGITUDE (NAD83):
73° 7' 5.91" W
-73.11841666

COUNTY:
FAIRFIELD

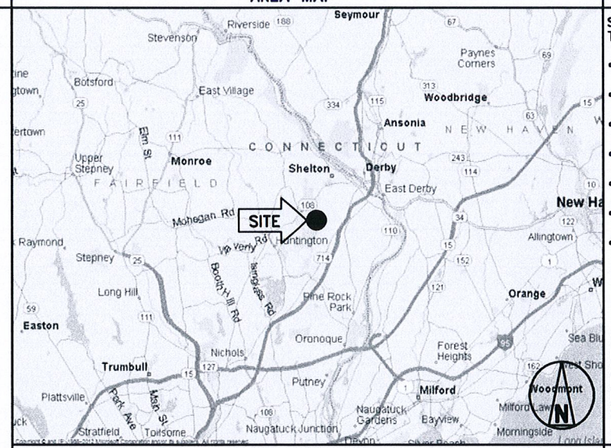
ZONING JURISDICTION:
SHELTON

ZONING DISTRICT:
R-1

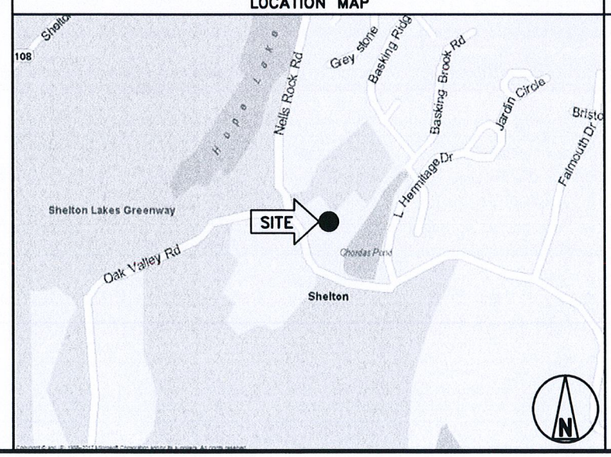
POWER COMPANY:
THE UNITED ILLUMINATING COMPANY
(800) 722-5584

SPRINT CM:
JESSE ROSENTHAL
(862) 226-9768

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL EQUIPMENT IN EXISTING N.V. MMBS CABINET
- INSTALL (3) PANEL ANTENNAS
- REPLACE (3) PANEL ANTENNAS
- INSTALL (3) RRU'S TO TOWER
- INSTALL (30) JUMPER CABLES
- INSTALL (3) HYBRID CABLES
- INSTALL (4) BATTERIES IN EXISTING BBU CABINET

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

APPLICABLE CODES

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

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

811 Know what's **below.** **Call** before you dig.
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DRAWING INDEX

SHEET NO.	SHEET TITLE	REV.
T-1	TITLE SHEET & PROJECT DATA	2
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SP-2	SPRINT SPECIFICATIONS	2
SP-3	SPRINT SPECIFICATIONS	2
A-1	SITE PLAN	2
A-2	TOWER ELEVATION & CABLE PLAN	2
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	2
A-4	COLOR CODING & NOTES	2
A-5	EQUIPMENT & MOUNTING DETAILS	2
A-6	CIVIL DETAILS	2
A-7	PLUMBING DIAGRAM	2
E-1	ELECTRICAL & GROUNDING PLAN	2
E-2	ELECTRICAL & GROUNDING DETAILS	2

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

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
JUN 19 2018
PROFESSIONAL ENGINEER
LICENSED

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	05/16/18	MAP	2
REVISED SCOPE	04/17/18	MAP	1
ISSUED FOR PERMIT	11/10/17	ASW	0

SITE NAME:
SNET

SITE CASCADE:
CT03XC371

SITE ADDRESS:
219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET DESCRIPTION:
TITLE SHEET
& PROJECT DATA

SHEET NUMBER:
T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:

1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
7. AMERICAN CONCRETE INSTITUTE (ACI)
8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
11. PORTLAND CEMENT ASSOCIATION (PCA)
12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13. BRICK INDUSTRY ASSOCIATION (BIA)
14. AMERICAN WELDING SOCIETY (AWS)
15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
17. DOOR AND HARDWARE INSTITUTE (DHI)
18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.

B. COMPANY: SPRINT CORPORATION

C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.

D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.

E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.

1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.

C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:

1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.

1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

NOTE: IN SHORT-FORM SPECIFICATIONS ON THE DRAWINGS, A/E TO INSERT LIST OF APPLICABLE MOPS INCLUDING EN-2012-001, EN-2013-002, EL-0568, AND TS-0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.

3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.

4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.

5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.

6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 NOTICE TO PROCEED

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.

B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.

B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

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Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER
JUN 19 2018

DRAWING NOTICE:

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DESCRIPTION	DATE	BY	REV
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REVISED SCOPE	04/17/18	MAP	1
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SITE NAME:

SNET

SITE CASCADE:

CT03XC371

SITE ADDRESS:

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SHELTON, CT 06484

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

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SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.

1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER

B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.

1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
2. PROJECT PROGRESS REPORTS.
3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN

D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

1. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
2. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)

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7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.

8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.

9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.

10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.

2. STRUCTURAL BACKFILL COMPACTION REPORTS.

3. SITE RESISTANCE TO EARTH TEST.

4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION

5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.

6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.

2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;

3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.

4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;

6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.

7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.

8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.

9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:

1. 1SHELTER AND TOWER OVERVIEW.

2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).

3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).

4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).

5. PHOTOS OF TOWER SECTION STACKING.

6. CONCRETE TESTING / SAMPLES.

7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.

8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.

9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.

10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.

11. COAX CABLE ENTRY INTO SHELTER.

12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.

14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.

15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.

16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.

17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.

18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.

19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.

21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

25. ALL BTS GROUND CONNECTIONS.

26. ALL GROUND TEST WELLS.

27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.

28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.

29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.

30. GPS ANTENNAS.

31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.

32. DOGHOUSE/CABLE EXIT FROM ROOF.

33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.

34. MASTER BUS BAR.

35. TELCO BOARD AND NIU.

36. ELECTRICAL DISTRIBUTION WALL.

37. CABLE ENTRY WITH SURGE SUPPRESSION.

38. ENTRANCE TO EQUIPMENT ROOM.

39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.

40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.

41. ANTENNA AND MAST GROUNDING.

42. LANDSCAPING – WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

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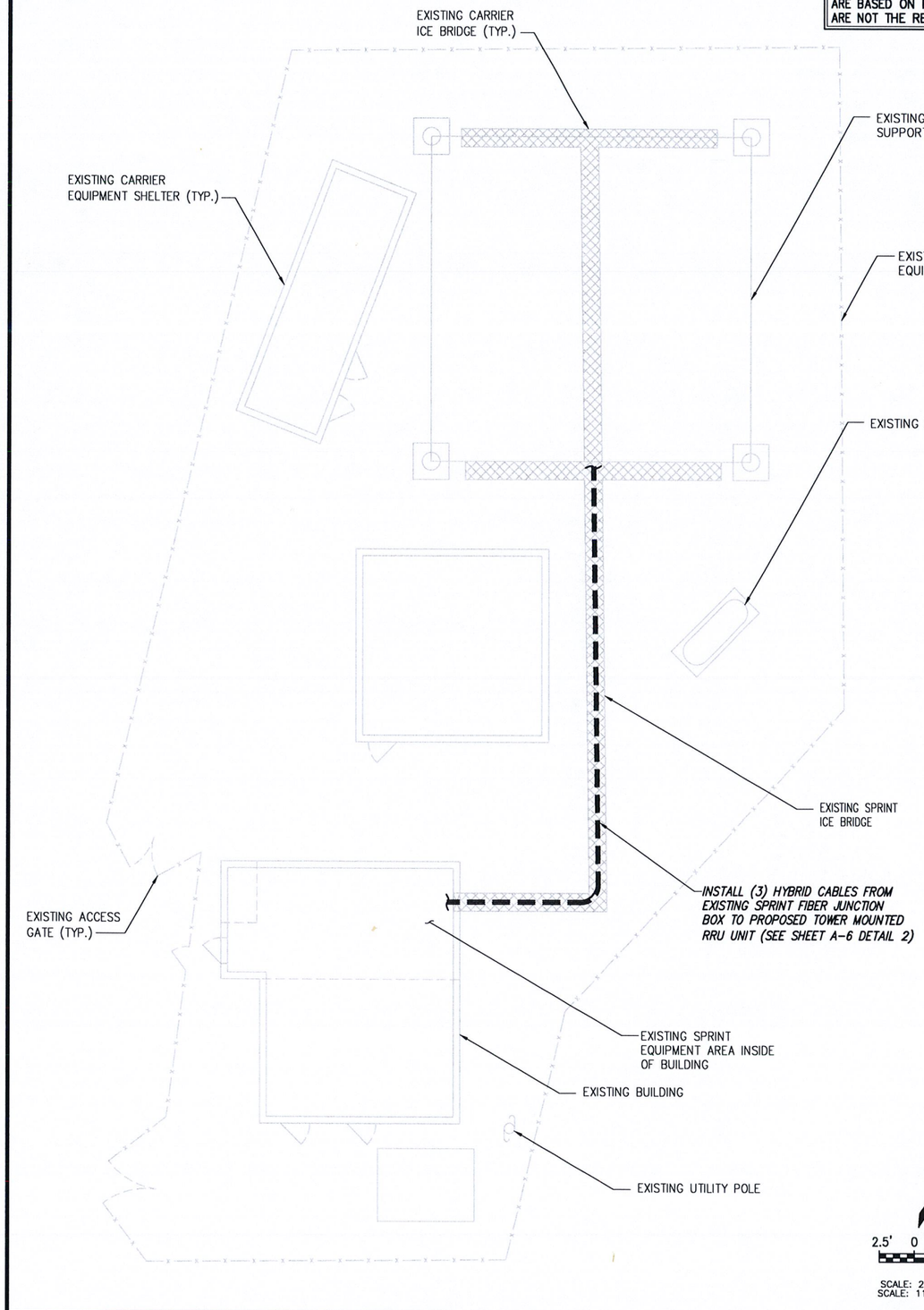
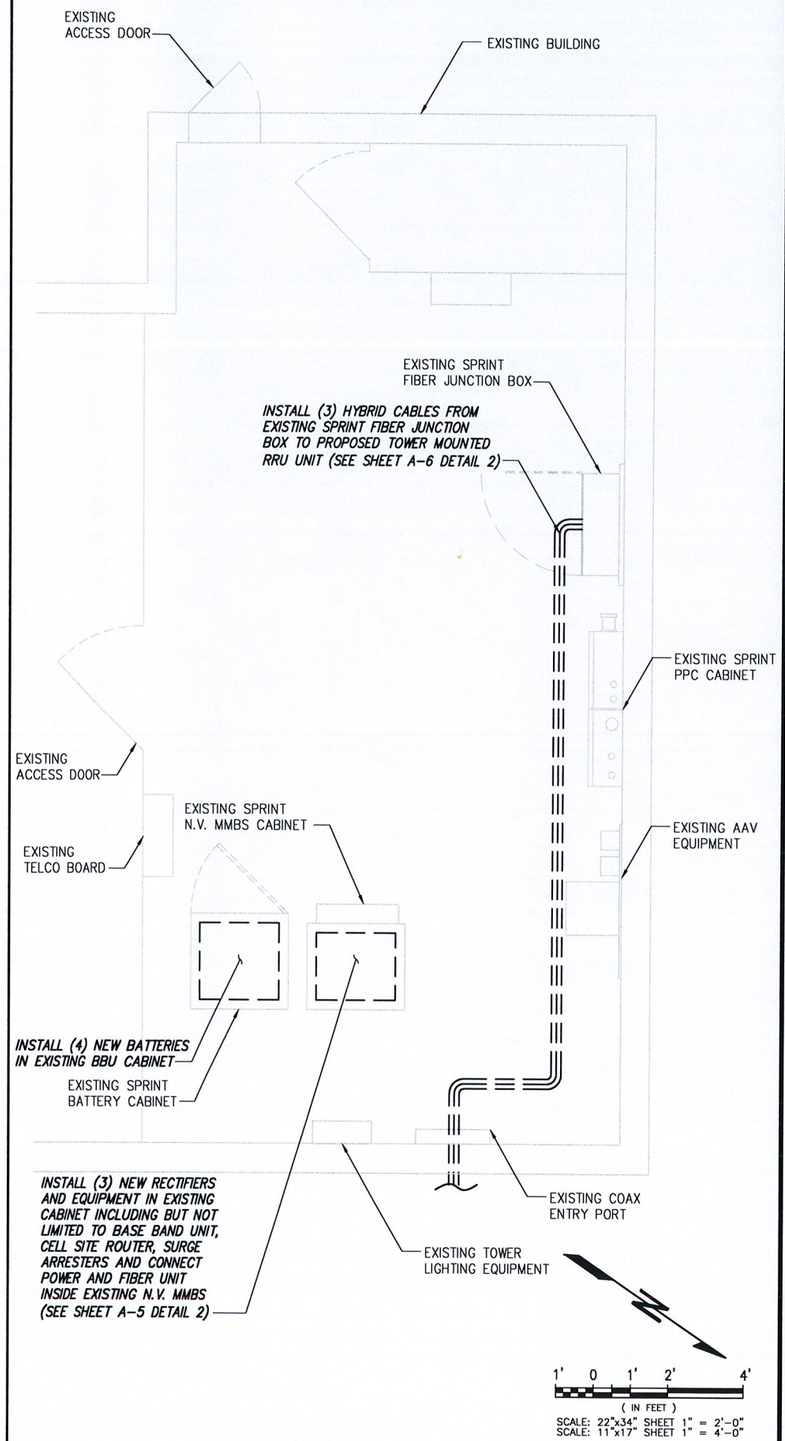
SHEET NUMBER:

SP-3

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



OVERALL SITE PLAN | SCALE: AS NOTED | 1



SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY

FROM ZERO TO INFINIGY
the solutions are endless

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

JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
REGISTERED
PROFESSIONAL ENGINEER

JOHN S. STEVENS
JUN 12 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	05/16/18	MAP	2
REVISED SCOPE	04/17/18	MAP	1
ISSUED FOR PERMIT	11/10/17	ASW	0

SITE NAME:

SNET

SITE CASCADE:

CT03XC371

SITE ADDRESS:

219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET DESCRIPTION:

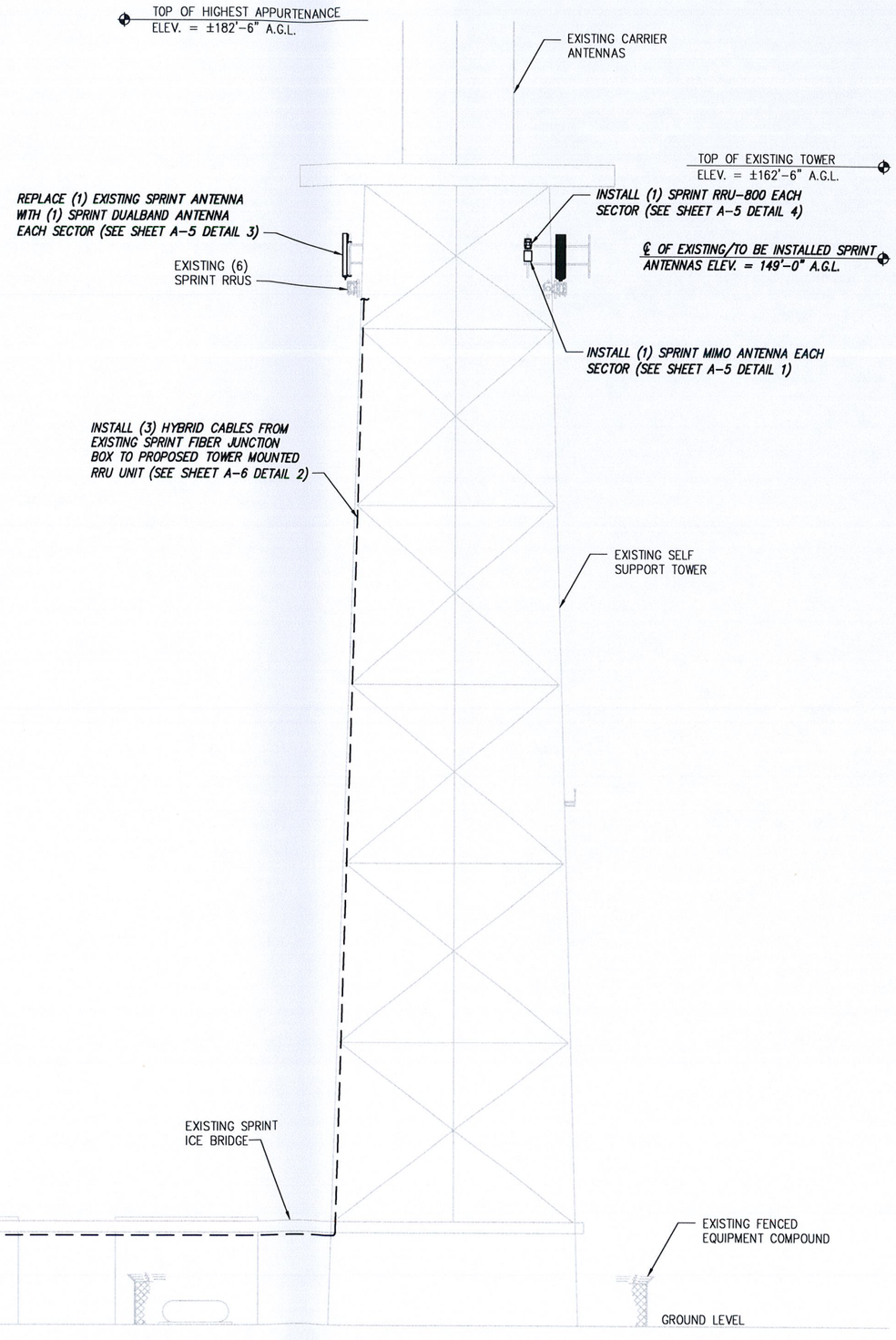
SITE PLAN

SHEET NUMBER:

A-1

NOTE:
- INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.
- FOR ADDITIONAL INFORMATION PERTAINING TO THE ANTENNA MOUNT, SEE 'MOUNT ANALYSIS REPORT' COMPLETED BY INFINIGY, DATED 5/16/18.

NOTE:
SEE DETAIL 2 ON A-3 FOR ANTENNA LAYOUT



TOWER ELEVATION | NO SCALE | 1

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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Cherundolo Consulting

ENGINEERING LICENSE:

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JOHN S. STEVENS
No. 24705
REGISTERED PROFESSIONAL ENGINEER
6/19/2018

DRAWING NOTICE:

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ISSUED FOR PERMIT	11/10/17	ASW	0

SITE NAME:

SNET

SITE CASCADE:

CT03XC371

SITE ADDRESS:

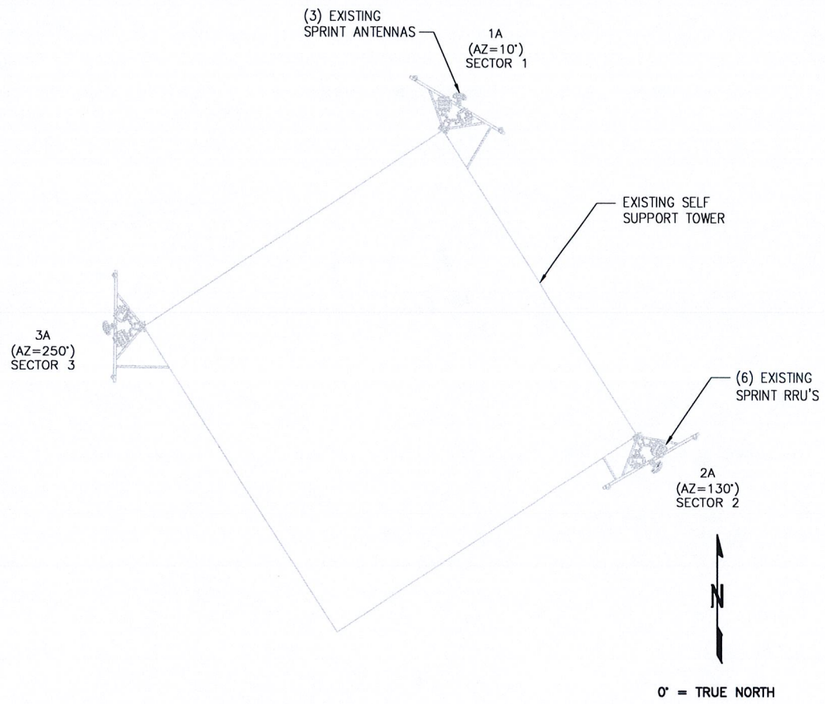
219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET DESCRIPTION:

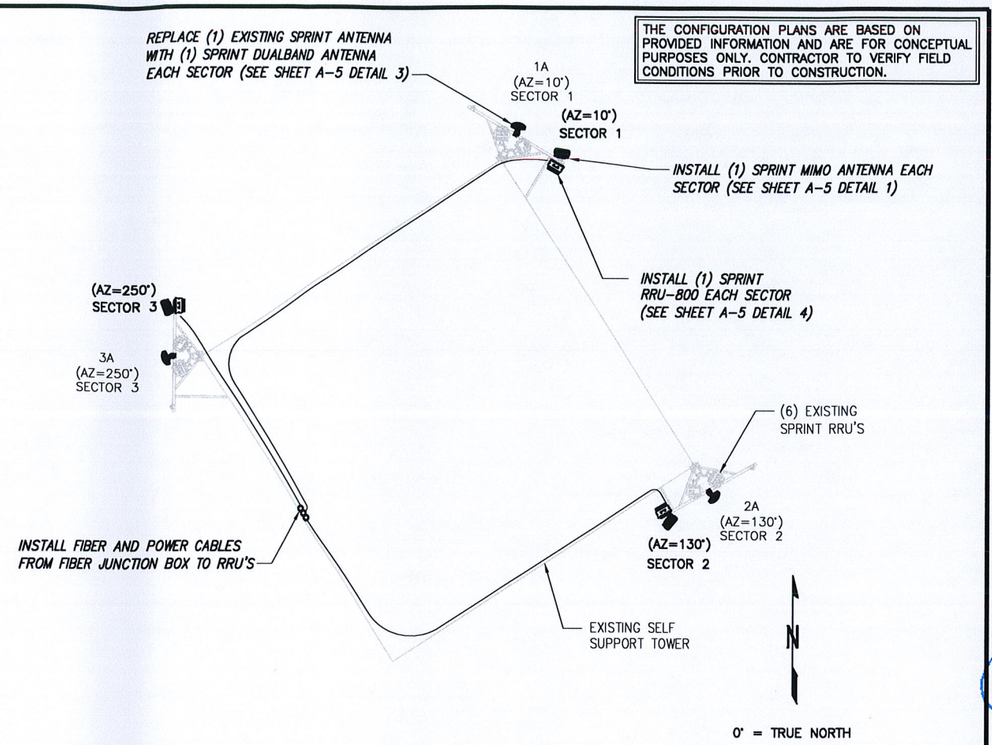
TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:

A-2



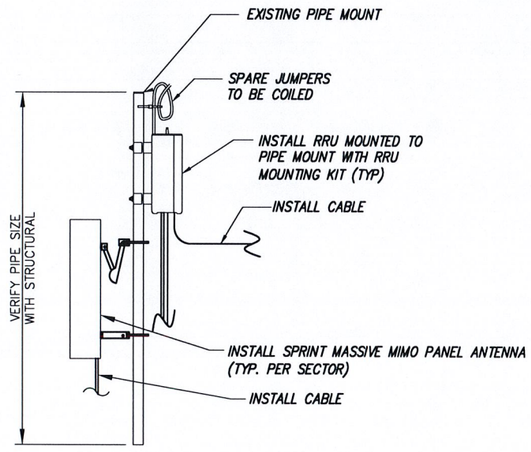
EXISTING ANTENNA & RRU LAYOUT | NO SCALE | 1



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

FINAL ANTENNA LAYOUT | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3



NOTE:
CONTRACTOR TO POSITION RRU ON MOUNT BEHIND ANTENNA SUCH THAT THE RRU DOES NOT INTERFERE WITH THE EXISTING MOUNTING HARDWARE.

NOTE:
THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRU MOUNTING DETAILS

TYPICAL ANTENNA & RRU MOUNTING DETAILS | NO SCALE | 4

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

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PROFESSIONAL ENGINEER
JUN 19 2018

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ISSUED FOR PERMIT	11/10/17	ASW	0

SITE NAME:

SNET

SITE CASCADE:

CT03XC371

SITE ADDRESS:

219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET DESCRIPTION:

ANTENNA LAYOUT
& MOUNTING DETAILS

SHEET NUMBER:

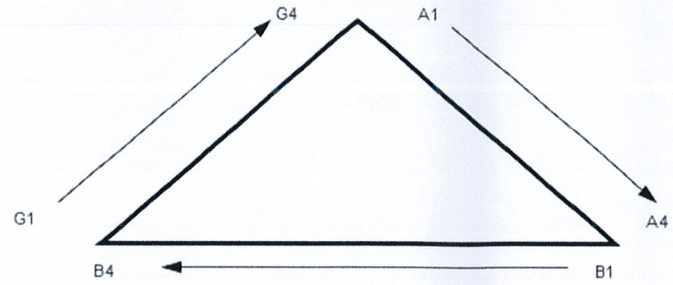
A-3

NV CABLES				
BAND	INDICATOR		PORT	COLOR
800-1	YEL	GRN	NV-1	GRN
1900-1	YEL	RED	NV-2	BLU
1900-2	YEL	BRN	NV-3	BRN
1900-3	YEL	BLU	NV-4	WHT
1900-4	YEL	SLT	NV-5	RED
800-2	YEL	ORG	NV-6	SLT
SPARE	YEL	WHT	NV-7	PPL
2500	YEL	PPL	NV-8	ORG

HYBRID	
HYBRID	COLOR
1	GRN
2	BLU
3	BRN
4	WHT
5	RED
6	SLT
7	PPL
8	ORG

2.5 Band		
2500 Radio 1		COLOR
YEL	WHT	GRN
YEL	WHT	BLU
YEL	WHT	BRN
YEL	WHT	WHT
YEL	WHT	RED
YEL	WHT	SLT
YEL	WHT	PPL
YEL	WHT	ORG

Figure 1: Antenna Orientation



NOTES:

1. ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.

2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER. THERE SHALL BE A 1" SPACE BETWEEN EACH RING FOR THE CABLE IDENTIFIER, AND NO SPACES BETWEEN THE FREQUENCY BANDS.

3. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.

4. THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.

5. SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE NEXT COLOR IN THE SEQUENCE FOR ADDITIONAL CABLES IN EACH SECTOR.

6. HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.

7. HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.

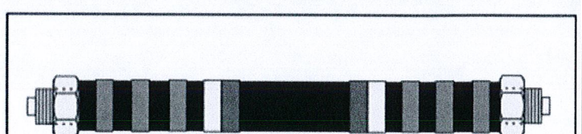
8. INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
1	2	Blue	No Tape	No Tape
1	3	Brown	No Tape	No Tape
1	4	White	No Tape	No Tape
1	5	Red	No Tape	No Tape
1	6	Grey	No Tape	No Tape
1	7	Purple	No Tape	No Tape
1	8	Orange	No Tape	No Tape
2 Beta	1	Green	Green	No Tape
2	2	Blue	Blue	No Tape
2	3	Brown	Brown	No Tape
2	4	White	White	No Tape
2	5	Red	Red	No Tape
2	6	Grey	Grey	No Tape
2	7	Purple	Purple	No Tape
2	8	Orange	Orange	No Tape
3 Gamma	1	Green	Green	Green
3	2	Blue	Blue	Blue
3	3	Brown	Brown	Brown
3	4	White	White	White
3	5	Red	Red	Red
3	6	Grey	Grey	Grey
3	7	Purple	Purple	Purple
3	8	Orange	Orange	Orange

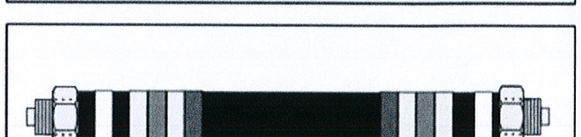
NV FREQUENCY	INDICATOR	ID
800-1	YEL	GRN
1900-1	YEL	RED
1900-2	YEL	BRN
1900-3	YEL	BLU
1900-4	YEL	SLT
800-1	YEL	ORG
RESERVED	YEL	WHT
RESERVED	YEL	PPL

2.5 FREQUENCY	INDICATOR		ID
2500 -1	YEL	WHT	GRN
2500 -2	YEL	WHT	RED
2500 -3	YEL	WHT	BRN
2500 -4	YEL	WHT	BLU
2500 -5	YEL	WHT	SLT
2500 -6	YEL	WHT	ORG
2500 -7	YEL	WHT	WHT
2500 -8	YEL	WHT	PPL

Example – Sector 2, Cable 2, 800mhz Radio #1



Example – Sector 3, Cable 1, 1900mhz Radio #1



Example – Sector 1, Cable 4, 800 mhz Radio #1 and 1900mhz Radio #1

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Overland Park, Kansas 66251

PLANS PREPARED BY:
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JOB NUMBER 526-102

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ENGINEERING LICENSE:

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APR 19 2018

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SITE NAME:
SNET

SITE CASCADE:
CT03XC371

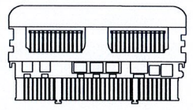
SITE ADDRESS:
219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET DESCRIPTION:
COLOR CODING AND NOTES

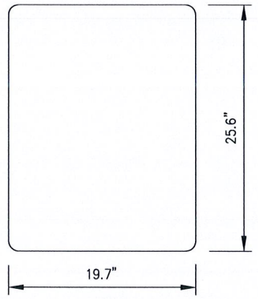
SHEET NUMBER:
A-4

ANTENNA: NOKIA AAHC

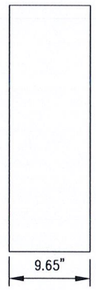
RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.in(mim):	25.6"x19.7"x9.65" (651x501x245mm)
WEIGHT:	103.6 lbs



TOP

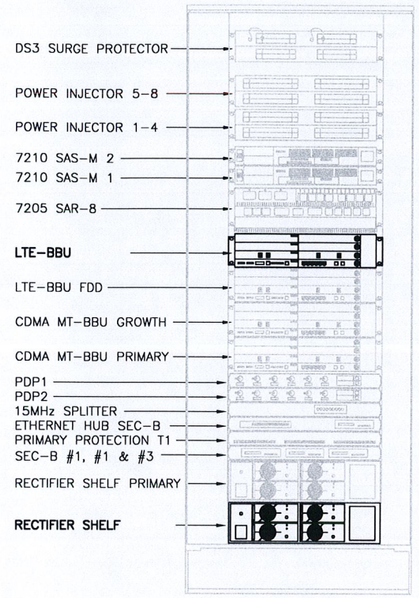


FRONT



SIDE

NOKIA ANTENNA DETAIL | NO SCALE | 1

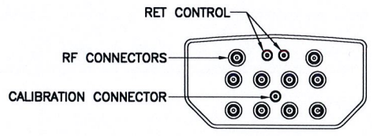


FRONT VIEW

EQUIPMENT IN EXISTING N.V. MMBS | NO SCALE | 2

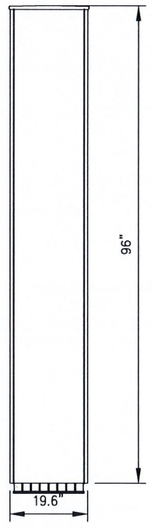
ANTENNA COMMSCOPE NNVV-65C-R4

RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.in:	96"x19.6"x7.8"
WEIGHT:	99 lbs
CONNECTORS:	(2) 7/16" DIN FEMALE
	(8) 4.1/9.5 DIN FEMALE



PLAN VIEW

SIDE VIEW

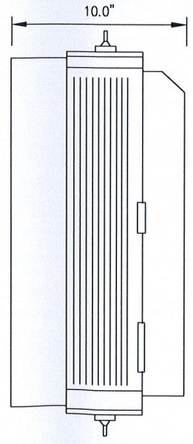


FRONT VIEW

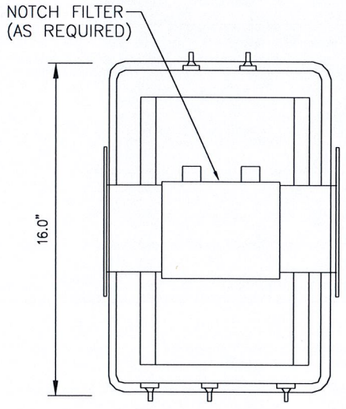
DUAL BAND ANTENNA | NO SCALE | 3

RRU: ALCATEL LUCENT RRH 800 MHz 2x50-800

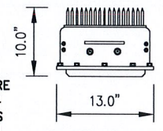
COLOR: LIGHT GREY
WEIGHT: 69.1 LBS.



SIDE VIEW



FRONT VIEW

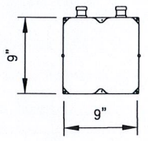


PLAN VIEW

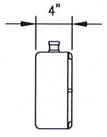
NOTES

COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRU'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRU PACKAGES IN THE RAIN.

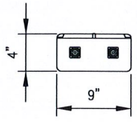
850 MHZ NOTCH FILTERS
WEIGHT = 11 LBS.



FRONT VIEW



SIDE VIEW



PLAN VIEW

800 RRU DETAIL | NO SCALE | 4

PLANS PREPARED FOR:
Sprint
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Overland Park, Kansas 66251

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CT03XC371

SITE ADDRESS:
219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-5

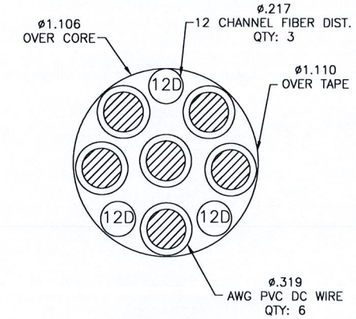
RFS HYBRIFLEX RISER CABLE SCHEDULE

Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	MN: HB058-M12-200F	200 ft
8 AWG Power	**Hybrid cable** MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft
	MN: HB114-08U3M12-200F	200 ft
6 AWG Power	**Hybrid cable** MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft *
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	**Hybrid cable** MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

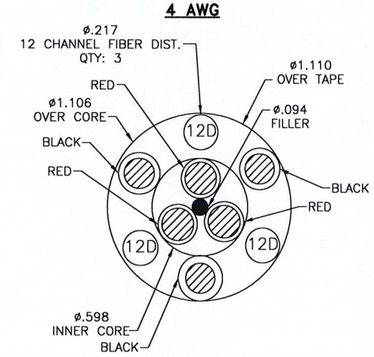
RFS HYBRIFLEX JUMPER CABLE SCHEDULE

Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft
6 AWG Power	**Hybrid Jumper cable** MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-13U1M3-10F1	10 ft
	MN: HBF058-13U1M3-15F1	15 ft
	MN: HBF058-13U1M3-20F1	20 ft
	MN: HBF058-13U1M3-25F1	25 ft
	MN: HBF058-13U1M3-30F1	30 ft *
4 AWG Power	**Hybrid Jumper cable** MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1	30 ft

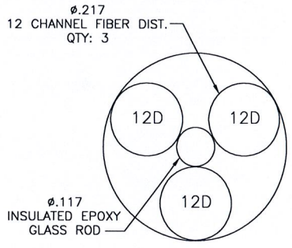
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG

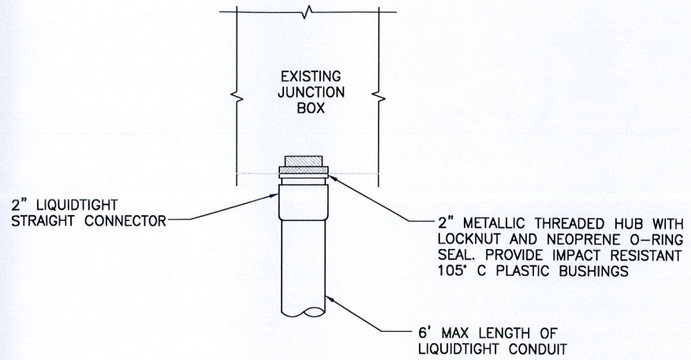


8 & 6 AWG



FIBER ONLY

2.5 CABLE CROSS SECTION DATA | NO SCALE | 1



FIBER JUNCTION BOX PENETRATION | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

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

PLANS PREPARED BY:
INFINIGY
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Office # (518) 690-0790
JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
JUN 19 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	05/16/18	MAP	2
REVISED SCOPE	04/17/18	MAP	1
ISSUED FOR PERMIT	11/10/17	ASW	0

SITE NAME:
SNET

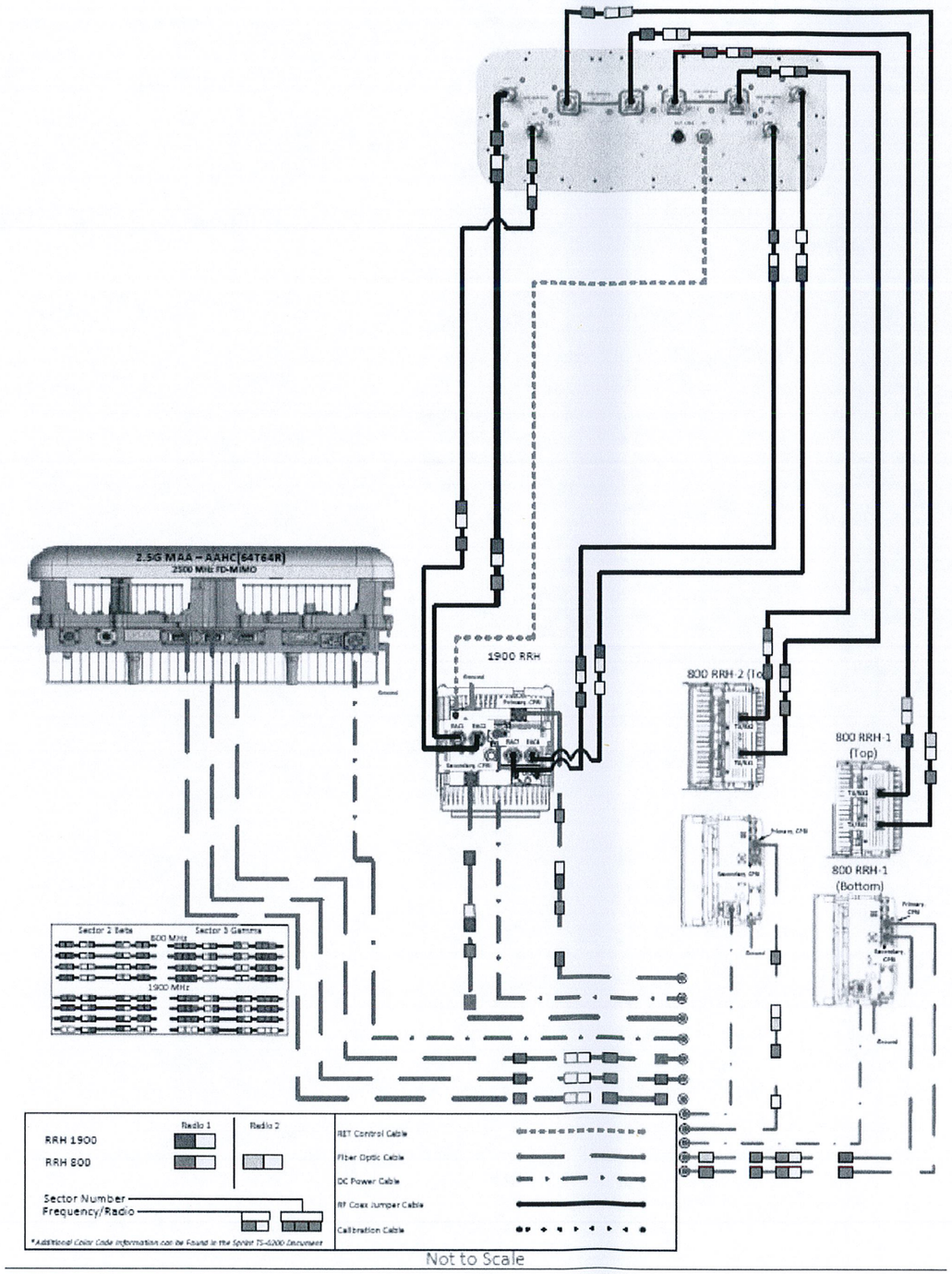
SITE CASCADE:
CT03XC371

SITE ADDRESS:
219 NELLS ROCK ROAD
SHELTON, CT 06484

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-6

ALU 21-MIMO NNVV-65B-R4 wo Filters



Not to Scale

PLUMBING DIAGRAM | NO SCALE | 1

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SHELTON, CT 06484

SHEET DESCRIPTION:

PLUMBING DIAGRAM

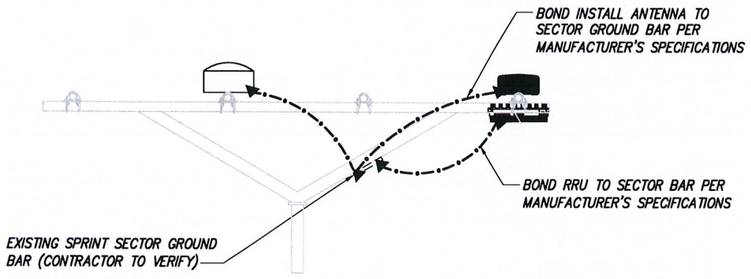
SHEET NUMBER:

A-7

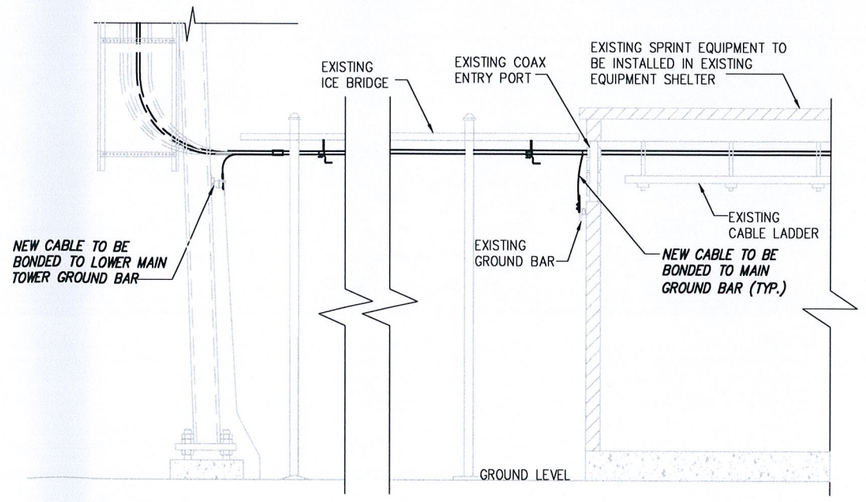
PLAN NOT USED | NO SCALE | 1

LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD
- CABLE GROUND KIT



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2



NOTE:
DEPICTION IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO FIELD VERIFY PRIOR TO CONSTRUCTION

TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION) | NO SCALE | 3

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SITE NAME:

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CT03XC371

SITE ADDRESS:

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SHELTON, CT 06484

SHEET DESCRIPTION:

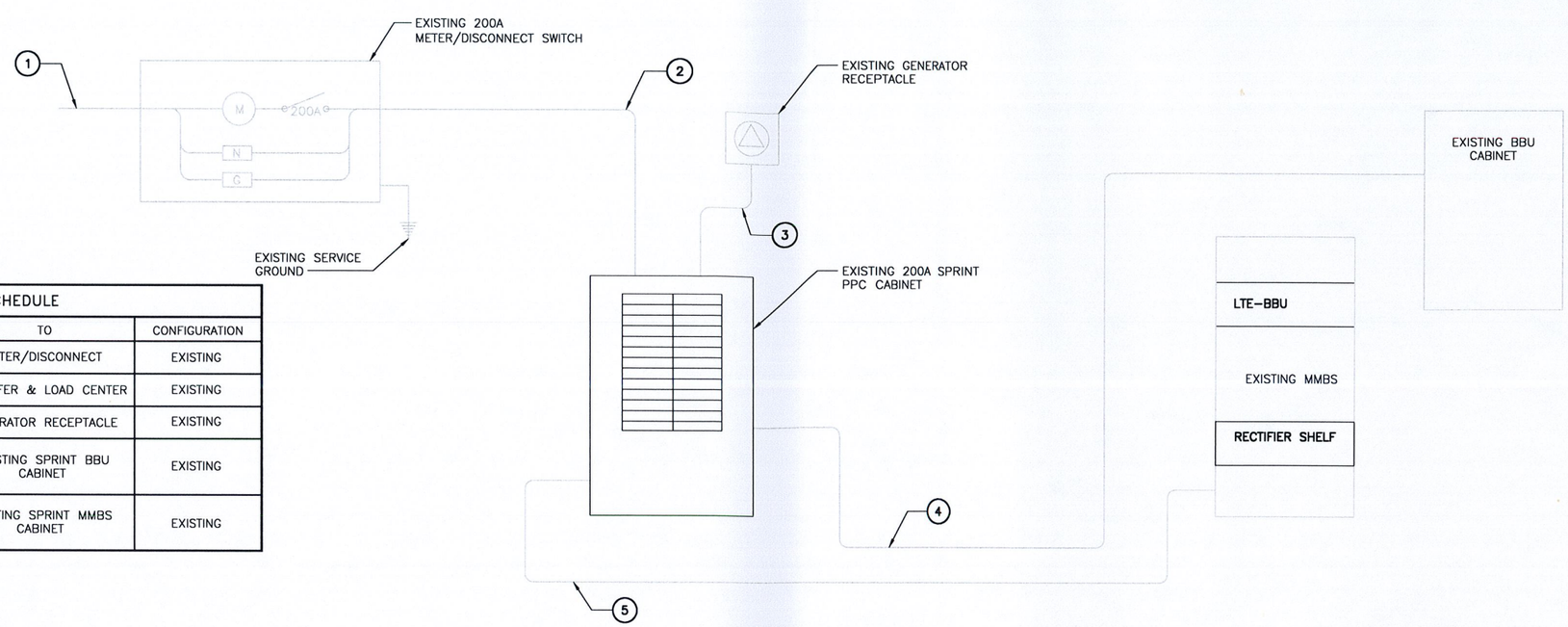
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-1

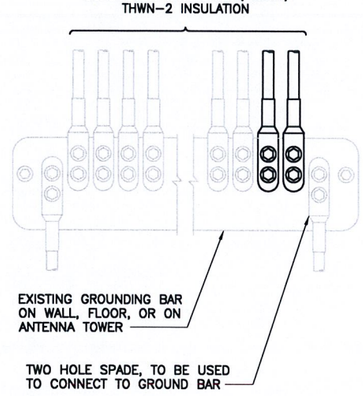
NOTES

CG SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.



CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	EXISTING SPRINT BBU CABINET	EXISTING
5	TRANSFER & LOAD CENTER	EXISTING SPRINT MMBS CABINET	EXISTING

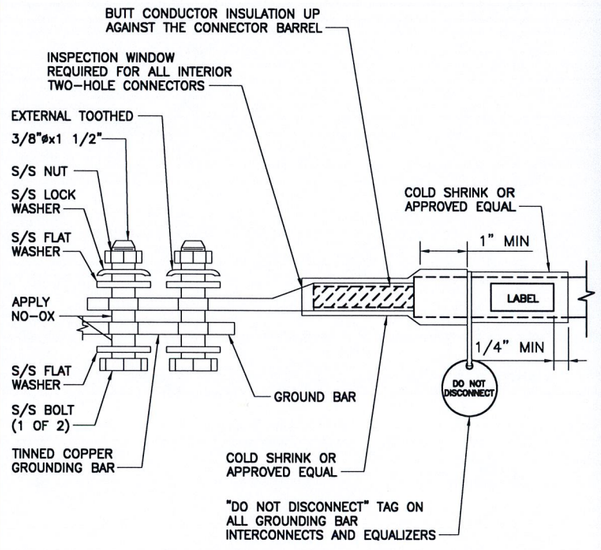
ELECTRICAL ONE-LINE DIAGRAM | NO SCALE | 1



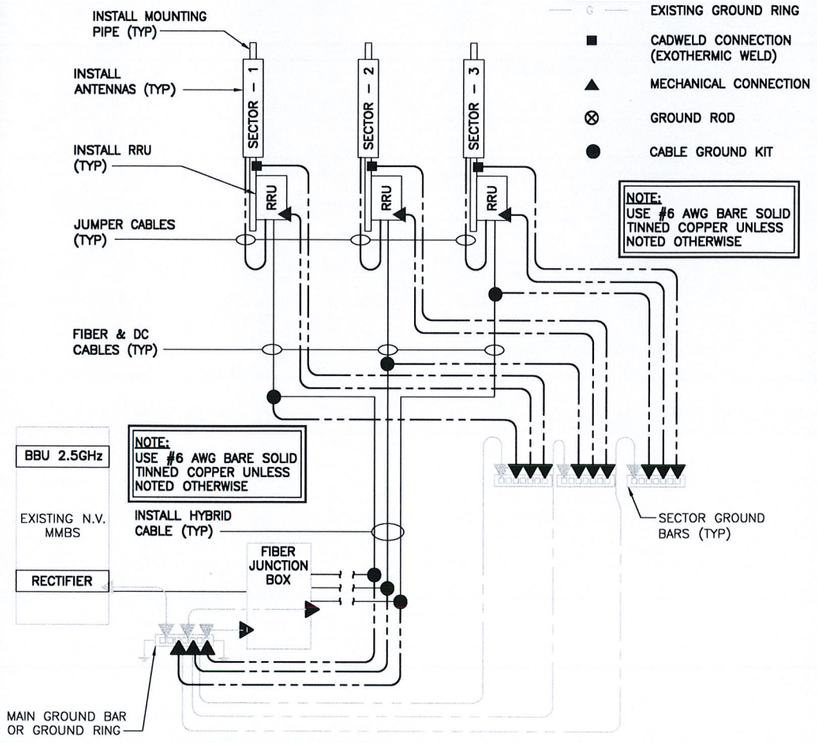
NOTES

1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR | NO SCALE | 2



TWO HOLE LUG | NO SCALE | 3



GROUNDING RISER DIAGRAM | NO SCALE | 4

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JOHN S. STEVENS
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No. 24206
JUN 19 2018

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ISSUED FOR PERMIT	11/10/17	ASW	0

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SHELTON, CT 06484

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2