



March 26<sup>th</sup>, 2018

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

**RE: Notice of Exempt Modification – Antenna Swap for wireless facility located at MOHAWK MOUNTAIN ROAD, LITCHFIELD (Cornwall), CT 06759 – CT72XC030 (lat. 41° 40' 16.56" N, long. - 73° 17' 47.36" W)**

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the (60-foot level) on an existing (65-foot self-support tower) at the above-referenced address. The property is owned by Connecticut Department of Energy and Environmental Protection, and the tower is owned by American Tower Corporation.

Sprint's proposed work involves antenna replacement and tower work. Sprint intends to replace three (3) antennas and add six (6) new RRHs onto the tower. All the proposed work is contained within the existing fenced area. Please refer to the attached drawings for site plans prepared by Infinigy Engineering.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to GORDON RIDGWAY, FIRST SELECTMAN, and DAVID COLBERT, CHAIR of the PLANNING AND ZONING COMMISSION of the Town of CORNWALL. A copy of this letter is also being sent to JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the site and to the STATE OF CONNECTICUT who owns the land.

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

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The antennas work is a one-for-one replacement of facility components.

3. The proposed modifications will include the addition of ground base equipment as depicted on the attached drawings; however, the proposed equipment will not require an extension of the site boundaries.
4. The proposed modifications will not increase noise levels at the facility by six decibels or more.
5. The additional ground based equipment will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard.

For the foregoing reasons, Sprint respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b).

If you have any questions or require any additional information regarding this request, please do not hesitate to give me a call at (518) 350-4222 or email me to [aperkowski@airosmithdevelopment.com](mailto:aperkowski@airosmithdevelopment.com)

Kind Regards,



Arthur Perkowski  
Airosmith Development Inc.  
32 Clinton Street  
Saratoga Springs, NY 12866  
518-306-1711 desk & fax  
518-871-3707 cell  
[aperkowski@airosmithdevelopment.com](mailto:aperkowski@airosmithdevelopment.com)

Attachment

CC: GORDON RIDWAY, (FIRST SELECTMAN, CORNWALL, CT)  
JUSTINE PAUL (Manager, AMERICAN TOWER CORPORATION)  
DAVID COLBERT (CHAIR of the PLANNING AND ZONING COMMISSION/ CORNWALL, CT)  
STATE of CONNECTICUT (Land Owner)

7017 3040 0000 7659 3961

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Total Postage and Fees	\$6.70

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**HARTFORD, CT 06134**

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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$0.50
Total Postage and Fees	\$6.70

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David Colbert CT Taxico  
Street and Apt. No., or PO Box No.  
26 Pine St P.O. Box 97  
City, State, ZIP+4®  
Cornwall CT 06753

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

CURRENT OWNER	TOPO	UTILITIES	STRT./ROAD	LOCATION	DESCRIPTION	Code	Appraised Value	Assessed Value
CONNECTICUT STATE OF					VAC RSLN	5-1	563,900	394,800
79 ELM ST					FOREST	6-2	4,091,600	245,500
HARTFORD, CT 06134					6031 CORNWALL, CT			
Additional Owners:					VISION			
Other ID: CENSUS TRAC 2632 SURVEY #								
ASSOC PID#					Total: 4,655,500 640,300			

RECORD OF OWNERSHIP

BK-VOL/PAGE	SALE DATE	q/u	w/l	SALE PRICE	V.C.
043/ 472	10/01/1963				

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2015	5-1	394,800	2010	5-1	656,310	2007	5-1	8,802,990
2015	6-2	133,000	2010	6-2	194,350	2007	6-2	193,120
Total:		527,800	Total:		850,660	Total:		8,996,110

EXEMPTIONS

Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.
Total:								

OTHER ASSESSMENTS

Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.
Total:								

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD NAME	STREET INDEX NAME	TRACING	BATCH
0001/A				

NOTES

LAND FOR SKI AREA

2009 CORR AC PER GIS & DEP

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	CD	Purpose/Result
6246	09/15/2000	RP	Repair	10,000		0								
6247	09/15/2000	AD	Addition	15,000										

LAND LINE VALUATION SECTION

B Use #	Code	Use Description	Zone	D	Frontage	Depth	Units	Unit Price	Factor	I	Acres	Disc	Factor	C	ST	Adj.	Notes-Adj	Special Pricing	Adj. Unit Price	Land Value
1	5-1	VAC LAND	R-5				5.00	336,000.00	0.28	A	1.0000		1.00			0.00	SKI AREA			470,100
1	6-2	FOREST LAND	R-5				1,461.30	10,000.00	1.00	0	0.2800		1.00			0.00				4,091,600
1	5-1	VAC LAND	R-5				6.70	10,000.00	5.00	0	0.2800		1.00			0.00	DEVELOPED SKI SLOPES	490-240		93,800
Total Card Land Units: 1,473.00 AC Parcel Total Land Area: 1,473 AC Total Land Value: 4,655,500																				

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	CD	Purpose/Result

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	0
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	563,900
Special Land Value	4,091,600
Total Appraised Parcel Value	4,655,500
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	4,655,500

CONSTRUCTION DETAIL

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch. Description	Element	Cd.	Ch. Description
Model	00	Vacant			

MIXED USE

Code	Description	Percentage
S-1	VAC LAND	100

COST/MARKET VALUATION

Adj. Base Rate:	0.00
Replace Cost	0
AYB	0
EYB	0
Dep Code	
Remodel Rating	
Year Remodeled	
Dep %	
Functional Obshnc	
External Obshnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	
Apprais Val	
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	

OB-OUTBUILDING & YARD ITEMS(D) /XF-BUILDING EXTRA FEATURES(B)

Code	Description	Sub	Sub Descript	L/B	Unit	Unit Price	Yr	Gde	Dep Rt	Cond	%Cond	App Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undepec. Value

Ttl. Gross Liv/Lense Area:

0

0

No Photo On Record





## PROPERTY DETAIL REPORT

Prepared Exclusively for Eric Proulx

Created: 9/16/2016  
Expires: 10/16/2016



**TARGET PROPERTY****36 MOHAWK MOUNTAIN RD CORNWALL, CT 06753-****Owner Information**

**Owner Name:** AMERICAN TOWER MGMT INC  
**Mailing Address:** PO BOX 723597 ATLANTA GA 31139-0597 B006  
**Phone Number:**  
**Owner Occupied Indicator:** UNKNOWN  
**Corporate Owner:**

**Vesting Codes:**  
**Pending Record Indicator:**

**Location Information**

**Legal Description:**

<b>County:</b>	LITCHFIELD	<b>APN:</b>	CORN-000004-000001-F000000
<b>Census Tract / Block:</b>	2632.00	<b>Alternate APN:</b>	804122
<b>Township-Range-Sect:</b>		<b>Subdivision:</b>	
<b>Legal Book - Page:</b>		<b>Map Reference:</b>	/
<b>Legal Lot:</b>		<b>Tract #:</b>	
<b>Legal Block:</b>		<b>School District:</b>	
<b>Market Area:</b>		<b>Munic / Township:</b>	CORNWALL
<b>Neighbor Code:</b>			

**Owner Transfer Information**

<b>Recording / Sale Date:</b>		<b>Sale Price:</b>	
<b>Document #:</b>		<b>Deed Type:</b>	
<b>Instrument #:</b>		<b>1st Mtg Document #:</b>	
<b>Book - Page:</b>			

**Last Market Sale Information**

<b>Recording / Sale Date:</b>	/	<b>1st Mtg Amount / Type:</b>	/
<b>Sale Price:</b>		<b>1st Mtg Int. Rate / Type:</b>	/
<b>Sale Type:</b>		<b>1st Mtg Term:</b>	
<b>Document #:</b>		<b>1st Mtg Document #:</b>	
<b>Instrument #:</b>		<b>1st Mtg Instrument #:</b>	
<b>Book - Page:</b>		<b>1st Mtg Book - Page:</b>	
<b>Deed Type:</b>		<b>2nd Mtg Amount / Type:</b>	/
<b>Transfer Document #:</b>		<b>2nd Mtg Int. Rate / Type:</b>	/
<b>New Construction:</b>		<b>2nd Mtg Term:</b>	
<b>Multi / Split Sale:</b>		<b>Price per SqFt:</b>	
<b>Cash Down Payment:</b>		<b>Stamps Amount:</b>	
<b>Title Company:</b>			
<b>Lender:</b>			
<b>Seller Name:</b>			

**Prior Sale Information**

<b>Prior Rec / Sale Date:</b>	/	<b>Prior Deed Type:</b>	
<b>Prior Sale Price:</b>		<b>Prior Lender:</b>	
<b>Prior Sale Type:</b>		<b>Prior 1stMtg Amount/Type:</b>	/
<b>Prior Doc #:</b>		<b>Prior 1stMtg Int. Rate/Type:</b>	/
<b>Prior Instrument #:</b>		<b>Prior Stamps Amount:</b>	
<b>Prior Book - Page:</b>			

**Site Information**

<b>Land Use:</b>	COMMERCIAL BUILDING	<b>Acres:</b>		<b>County Use:</b>	
<b>Flood Zone:</b>		<b>Lot Area:</b>	1	<b>State Use:</b>	COMMERCIAL LAND
<b>Flood Zone Map:</b>		<b>Lot Width / Depth:</b>	/	<b>Site Influence:</b>	
<b>Flood Panel Date:</b>		<b>Usable Lot:</b>		<b>Sewer Type:</b>	
<b>Res / Comm Units:</b>		<b>Lot Shape:</b>		<b>Topography:</b>	

<b># of Buildings:</b>	1	<b>Bldg Width / Depth:</b>	/	<b>Water Type:</b>		
<b>Zoning:</b>		<b>Building Class:</b>		<b>Water District:</b>		
<b>Tax Information</b>						
<b>Total Value:</b>	\$36,300.00	<b>Assessed Year:</b>	2016	<b>Property Tax:</b>	\$556.00	
<b>Land Value:</b>		<b>Improve %:</b>		<b>Tax Area:</b>	210	
<b>Improvement Value:</b>	\$36,300.00	<b>Dist:</b>		<b>Tax Year:</b>	2016	
<b>Total Taxable Value:</b>		<b>Fire Dist:</b>		<b>Tax Exemption:</b>		
<b>Market Value:</b>		<b>Garbage Dist:</b>		<b>Equal Rate:</b>		
		<b>Delinquent Date:</b>		<b>Equal Year:</b>		
<b>Property Characteristics</b>						
<b>Gross Area:</b>		<b>Parking Type:</b>		<b>Construction:</b>		
<b>Living Area:</b>		<b>Garage Area:</b>		<b>Heat Type:</b>		
<b>Tot Adj Area:</b>		<b>Garage 2 Area:</b>		<b>Heat Fuel:</b>		
<b>Above Grade:</b>		<b>Garage Capacity:</b>		<b>Parcel Fuel:</b>		
<b>Ground Floor Area:</b>		<b>Parking Spaces:</b>		<b>Exterior Wall:</b>		
<b>Base / Main Area:</b>	/	<b>Carport:</b>		<b>Interior Wall:</b>		
<b>Upper Area:</b>		<b>Basement Area:</b>		<b>Foundation:</b>		
<b>2nd Floor Area:</b>		<b>Finish Bsmnt Area:</b>		<b>Air Cond:</b>		
<b>3rd Floor Area:</b>		<b>Basement Type:</b>		<b>Roof Type:</b>		
<b>Rentable Area:</b>		<b>Attic Type:</b>		<b>Roof Shape:</b>		
<b>Additional Area:</b>		<b>Porch Type:</b>		<b>Roof Frame:</b>		
<b>Total Rooms:</b>		<b>Porch 1 Area:</b>		<b>Roof Material:</b>		
<b>Bedrooms:</b>		<b>Porch 2 Area:</b>		<b>Floor Type:</b>		
<b>Bath (F/H):</b>	/	<b>Patio Type:</b>		<b>Floor Cover:</b>		
<b>Total Baths / Fixtures:</b>	/	<b>Patio 1 Area:</b>		<b>Style:</b>		
<b>Year Built / Eff:</b>	/	<b>Pool:</b>		<b>Quality:</b>		
<b>Fireplace:</b>		<b>Pool Area:</b>		<b>Condition:</b>		
<b>Fireplace Description:</b>				<b># of Stories:</b>		
<b>Basement Description:</b>				<b>Other Rooms:</b>		
<b>Other Improvements:</b>						
<b>Bldg Comments:</b>						
<b>Parcel Comments:</b>						
<b>Extra Features</b>						
<b>Description:</b>	<b>Unit:</b>	<b>Size / Qty:</b>	<b>Width:</b>	<b>Depth:</b>	<b>Year Built:</b>	<b>Improvement Value:</b>
L						

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

SPRINT Existing Facility

Site ID: CT72XC030

CT0046 ~ Ring to Existing - (R2E) PH 1A  
Mohawk Mountain Road  
Litchfield, CT 06759

**March 4, 2018**

**EBI Project Number: 6218001769**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>58.88 %</b>



March 4, 2018

SPRINT

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

## Emissions Analysis for Site: **CT72XC030 – CT0046 ~ Ring to Existing - (R2E) PH 1A**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **Mohawk Mountain Road, Litchfield, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  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 ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 850 MHz Band is approximately  $567 \mu\text{W}/\text{cm}^2$ . The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands is  $1000 \mu\text{W}/\text{cm}^2$ . 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 **Mohawk Mountain Road, Litchfield, 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 20 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 APXVSP18-C-A20** and the **Commscope DT465B-2XR** 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 **60 feet** above ground level (AGL) for **Sector A**, **60 feet** above ground level (AGL) for **Sector B** and **60 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.



## SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	<b>1</b>	Antenna #:	<b>1</b>	Antenna #:	<b>1</b>
Make / Model:	RFS APXVSP18-C-A20	Make / Model:	RFS APXVSP18-C-A20	Make / Model:	RFS APXVSP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	<b>60 feet</b>	Height (AGL):	<b>60 feet</b>	Height (AGL):	<b>60 feet</b>
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts
ERP (W):	6,662.27	ERP (W):	6,662.27	ERP (W):	6,662.27
Antenna A1 MPE%	<b>8.63 %</b>	Antenna B1 MPE%	<b>8.63 %</b>	Antenna C1 MPE%	<b>8.63 %</b>
Antenna #:	<b>2</b>	Antenna #:	<b>2</b>	Antenna #:	<b>2</b>
Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR
Gain:	15.05 / 13.35 dBd	Gain:	15.05 / 13.35 dBd	Gain:	15.05 / 13.35 dBd
Height (AGL):	<b>60 feet</b>	Height (AGL):	<b>60 feet</b>	Height (AGL):	<b>60 feet</b>
Frequency Bands	2500 MHz (BRS) / 850 MHz	Frequency Bands	2500 MHz (BRS) / 850 MHz	Frequency Bands	2500 MHz (BRS) / 850 MHz
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	200 Watts	Total TX Power(W):	200 Watts	Total TX Power(W):	200 Watts
ERP (W):	5,983.32	ERP (W):	5,983.32	ERP (W):	5,983.32
Antenna A2 MPE%	<b>8.19 %</b>	Antenna B2 MPE%	<b>8.19 %</b>	Antenna C2 MPE%	<b>8.19 %</b>

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	<b>16.82 %</b>
T-Mobile	13.71 %
AT&T	12.41 %
Verizon Wireless	14.80 %
Dept Homeland Security - ICE	1.14 %
<b>Site Total MPE %:</b>	<b>58.88 %</b>

SPRINT Sector A Total:	16.82 %
SPRINT Sector B Total:	16.82 %
SPRINT Sector C Total:	16.82 %
<b>Site Total:</b>	<b>58.88 %</b>

SPRINT _ Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
Sprint 850 MHz CDMA	1	437.55	60	5.39	850 MHz	567	0.95%
Sprint 1900 MHz (PCS) CDMA	5	622.47	60	38.37	1900 MHz (PCS)	1000	3.84%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	60	38.37	1900 MHz (PCS)	1000	3.84%
Sprint 2500 MHz (BRS) LTE	8	639.78	60	63.10	2500 MHz (BRS)	1000	6.31%
Sprint 850 MHz LTE	2	432.54	60	10.67	850 MHz	567	1.88%
						<b>Total:</b>	<b>16.82%</b>



## 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:	16.82 %
Sector B:	16.82 %
Sector C:	16.82 %
SPRINT Maximum Total (per sector):	16.82 %
Site Total:	58.88 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **58.88 %** 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.



**AMERICAN TOWER\***  
CORPORATION

This report was prepared for American Tower Corporation by



**T O W E R**  
**E N G I N E E R I N G**  
**P R O F E S S I O N A L S**

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## Structural Analysis Report

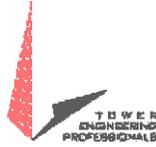
**Structure** : 65 ft Self Supported Tower  
**ATC Site Name** : Cornwall CT, CT  
**ATC Site Number** : 88009  
**Engineering Number** : OAA714883\_C3\_01  
**Proposed Carrier** : Sprint Nextel  
**Carrier Site Name** : CT0046 ~ Ring to Existing - (R2E) PH 1A  
**Carrier Site Number** : CT72XC030  
**Site Location** : 36 Toomey Rd.  
Cornwall, CT 06759-4232  
41.821300,-73.296400  
**County** : Litchfield  
**Date** : October 30, 2017  
**Max Usage** : 93%  
**Result** : Pass

Prepared By:  
Aaron T. Rucker  
TEP

Reviewed By:



COA: PEC.0001553



**Table of Contents**

Introduction .....	1
Supporting Documents .....	1
Analysis .....	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	2
Proposed Equipment .....	3
Structure Usages .....	3
Foundations .....	3
Deflection, Twist, and Sway.....	3
Standard Conditions .....	4
Calculations .....	Attached



## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 65 ft self supported tower to reflect the change in loading by Sprint Nextel.

## Supporting Documents

<b>Tower Drawings</b>	CSEI ATC Engineering #26472221, dated September 19, 2006
<b>Foundation Drawing</b>	TEP Project #74252-101870, dated November 22, 2016
<b>Geotechnical Report</b>	FDH Project #16PWAQ1600, dated November 30, 2016

## Analysis

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

<b>Basic Wind Speed:</b>	90 (3-Second Gust, $V_{asd}$ ) / 115 mph (3-second Gust, $V_{ult}$ )
<b>Basic Wind Speed w/ Ice:</b>	40 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	B
<b>Topographic Category:</b>	3
<b>Crest Height:</b>	214 ft
<b>Spectral Response:</b>	$S_s = 0.18$ , $S_1 = 0.06$
<b>Site Class:</b>	D - Stiff Soil

## Conclusion

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

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



**Existing and Reserved Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
69.0	75.0	1	12' Dipole	Leg	-	Other
	72.0	1	6' Omni			
67.0	67.0	2	CCI HPA-65R-BUU-H6	Sector Frames	(12) 1 1/4" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk	AT&T Mobility
		1	Andrew SBNHH-1D65A (33.5 lbs)			
		6	Powerwave 7770.00A			
		3	Ericsson RRUS 32 (50.8 lbs)			
		3	Ericsson RRUS 11 (Band 12)			
		1	Raycap DC6-48-60-18-8F			
	6	Powerwave TT19-08BP111-001				
	65.0	1	Andrew ABT-DFDM-ADB			
63.0	74.0	1	18' Omni	Leg	(2) 7/8" Coax	US Dept Of Homeland Security
	63.0	1	Sinclair SV228-HF2SNM			
60.0	60.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	Stand-Offs	(3) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 800MHz RRH			
		3	Alcatel-Lucent RRH2x40 (700)			
		3	RFS APXVSP18-C-A20			
59.0	59.0	1	10' Std. Dish	Leg	-	Other
		3	10' HP Dish			
56.0	56.0	3	Commscope LNX-6515DS-A1M (50.3 lb)	T-Arms	(2) 1 5/8" Hybriflex (1) 1/2" Coax	T-Mobile
		3	RFS APX16DWV-16DWVS-E-A20			
		3	Ericsson RRUS 11 B2			
		3	Ericsson RRUS 11 B4			
		3	Ericsson RRUS 11 B12			
		1	Symmetricon 58532A			
50.0	47.0	3	Decibel 776QNB120EXM	Platform w/ Handrails	(12) 7/8" Coax (12) 1 5/8" Coax (3) 1/2" Coax	Alltel
		6	Antel LPA-80063/6CF			
		3	Antel BXA-70063-6CF-EDIN-X			
		3	Antel BXA-171063/12CF_2 FP			
		6	RFS FD9R6004/2C-3L (3.1 lbs)			
37.5	37.5	-	-	Access Platform	-	-

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
60.0	60.0	3	RFS APXV9TM14-ALU-I20	-	(1) 1 1/4" Fiber	Sprint Nextel



**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
60.0	60.0	3	Commscope DT465B-2XR	Stand-Offs	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent RRH2x50-08			

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

Install proposed coax alongside existing Sprint Nextel coax.

**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Legs	55%	Pass
Diagonals	93%	Pass
Horizontals	28%	Pass

**Foundations**

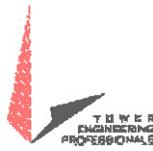
Reaction Component	Analysis Reactions	% of Usage
Overturning Moment (Kip-Ft)	2727.9	33%
Axial (Kips)	49.8	4%
Total Shear (Kips)	58.5	23%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

**Deflection, Twist and Sway\***

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
63.0	Sinclair SV228-HF2SNM	US Dept of Homeland	0.163	0.029	0.557
60.0	Alcatel-Lucent RRH2x50-08	Sprint Nextel	0.088	0.031	0.890
	Commscope DT465B-2XR				
59.0	10' HP Dish	Other			
	10' Std. Dish				

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



## **Standard Conditions**

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

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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

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

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

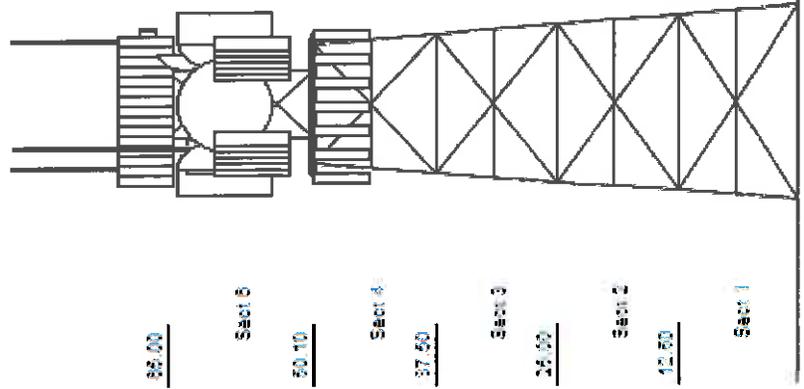
Job Information		
Tower : 88009	Location : CORNWALL CT, CT	Base Width : 20.00 ft
Code : ANSI/TIA-222-G	Shape : Square	Top Width : 7.00 ft
Client : SPRINT NEXTEL		

Loads: 90 mph no ice  
 40 mph w/ 3/4" radial ice  
 Site Class: D Ss: 0.18 S1: 0.06  
 60 mph Serviceability

Sections Properties			
Section	Leg Members	Diagonal Members	Horizontal Members
1-2	SAE 33 ksi 6X6X0.625	SAU 36 ksi 4X3X0.25	DAL 36 ksi 3X2.5X0.25
3	SAE 33 ksi 6X6X0.5	SAU 36 ksi 3.5X3X0.25	DAL 36 ksi 3.5X3X0.3125
4	SAE 33 ksi 6X6X0.5	SAE 36 ksi 3.5X3.5X0.25	DAL 36 ksi 3.5X3X0.3125
5	SAE 33 ksi 6X6X0.5		
6	SAE 33 ksi 6X6X0.5	SAU 36 ksi 3X2X0.25	DAL 36 ksi 2.5X2X0.25

Discrete Appurtenance			
Elev (ft)	Type	Qty	Description
69.00	Whip	1	6' Omni
69.00	Whip	1	12' Dipole
67.00	Mounting Frame	3	Round Sector Frame
67.00	Panel	2	CCI HPA-65R-BUU-H6
67.00	Panel	1	Andrew SBNHH-1D65A (33.5 lbs)
67.00	Panel	6	Powerwave Alligon 7770.00A
67.00	Panel	3	Ericsson RRUS 32 (50.8 lbs)
67.00	Panel	3	Ericsson RRUS 11 (Band 12)
67.00	Panel	1	Raycap DC8-48-60-18-8F
67.00	Panel	6	Powerwave Alligon TT19-08BP111-
67.00	Panel	1	Andrew ABT-DFDM-ADB
65.01	Other	1	Fire Warden Cab
63.00	Whip	1	18' Omni
63.00	Dish	1	Sinclair SY228-HF2SNM
60.00	Panel	3	Commscope DT465B-2XR
60.00	Panel	3	Alcatel-Lucent RRH2x50-08
60.00	Panel	3	Alcatel-Lucent TD-RRH8x20-25 w
60.00	Panel	3	Alcatel-Lucent 800 MHz RRH
60.00	Panel	3	RFS APXVSP18-C-A20
60.00	Panel	6	Stand-Off
59.00	Dish	1	10' Std. Dish
59.00	Dish	3	10' HP Dish
56.00	Panel	3	Commscope LNX-6515DS-A1M
56.00	Panel	3	RFS APX16DWV-16DWYS-E-A20
56.00	Panel	3	Ericsson RRUS 11 B2
56.00	Panel	3	Ericsson RRUS 11 B4
56.00	Panel	3	Ericsson RRUS 11 B12
56.00	Panel	1	Symmetricom 58532A
56.00	Straight Arm	3	Flat T-Arm
50.00	Panel	3	Decibel 776QNB120EXM
50.00	Panel	6	Antel LPA-90063/6CF
50.00	Panel	3	Amphenol Antel BXA-70063-8CF-E
50.00	Panel	6	Antel BXA-171063/12CF_2 FP
50.00	Panel	6	RFS FD9R6004/2C-3L (3.1 lbs)
50.00	Platform	1	Platform w/ Handrails
37.50	Platform	1	Access Platform

Linear Appurtenance			
Elev (ft)	From	To	Description
0.00	67.00	1	Waveguide
0.00	67.00	1	Climbing Ladder
0.00	67.00	12	1 1/4" Coax
0.00	67.00	2	0.78" (19.7mm) 8 AWG
0.00	67.00	1	0.39" (10mm) Fiber T
0.00	63.00	1	7/8" Coax
0.00	63.00	1	7/8" Coax
0.00	60.00	4	1 1/4" Hybriflex Cab
0.00	60.00	3	1 1/4" Hybriflex Cab
0.00	56.00	1	Waveguide



Job Information	
Tower : 88009	Location : CORNWALL CT, CT
Code : ANS/TIA-222-G	Shape : Square
Client : SPRINT NEXTEL	Base Width : 20.00 ft
	Top Width : 7.00 ft

0.00	56.00	1	1/2" Coax
0.00	56.00	2	1 5/8" Hybriflex Cab
0.00	50.00	12	7/8" Coax
0.00	50.00	3	1/2" Coax
0.00	50.00	12	1 5/8" Coax

Global Base Foundation Design Loads			
Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	2,727.85	49.81	58.51
DL + WL + IL	707.51	144.03	14.57

Individual Base Foundation Design Loads		
Vertical (kip)	Uplift (kip)	Horizontal (kip)
108.88	87.06	24.22

Site Number: 88009  
Site Name: CORNWALL CT, CT  
Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
Engineering Number: OAA714883\_C3\_01

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### Analysis Parameters

Location:	LITCHFIELD County, CT	Height (ft):	65
Code:	ANSI/TIA-222-G	Base Elevation (ft):	0.00
Shape:	Square	Bottom Face Width (ft):	20.00
Tower Manufacturer:	CSEI	Top Face Width (ft):	7.00
Tower Type:	Self Support	Anchor Bolt Detail Type	c

### Ice & Wind Parameters

Structure Class:	II	Design Windspeed Without Ice:	90 mph
Exposure Category:	B	Design Windspeed With Ice:	40 mph
Topographic Category:	3	Operational Windspeed:	60 mph
Crest Height:	214.2 ft	Design Ice Thickness:	0.75 in

### Seismic Parameters

Analysis Method: Equivalent Modal Analysis & Equivalent Lateral Force Methods

Site Class: D - Stiff Soil

Period Based on Rayleigh Method (sec): 0.48

$T_L$ (sec):	6	p:	1.3	$C_S$ :	0.064
$S_S$ :	0.181	$S_1$ :	0.065	$C_S$ , Max:	0.072
$F_a$ :	1.600	$F_v$ :	2.400	$C_S$ , Min:	0.030
$S_{ds}$ :	0.193	$S_{d1}$ :	0.104		

### Load Cases

1.2D + 1.6W Normal	90 mph Normal to Face with No Ice
1.2D + 1.6W 45 deg	90 mph 45 degree with No Ice
1.2D + 1.6W 90 deg	90 mph 90 degree with No Ice
1.2D + 1.6W 135 deg	90 mph 135 degree with No Ice
1.2D + 1.6W 180 deg	90 mph 180 degree with No Ice
1.2D + 1.6W 225 deg	90 mph 225 degree with No Ice
1.2D + 1.6W 270 deg	90 mph 270 degree with No Ice
1.2D + 1.6W 315 deg	90 mph 315 degree with No Ice
0.9D + 1.6W Normal	90 mph Normal to Face with No Ice (Reduced DL)
0.9D + 1.6W 45 deg	90 mph 45 deg with No Ice (Reduced DL)
0.9D + 1.6W 90 deg	90 mph 90 deg with No Ice (Reduced DL)
0.9D + 1.6W 135 deg	90 mph 135 deg with No Ice (Reduced DL)
0.9D + 1.6W 180 deg	90 mph 180 deg with No Ice (Reduced DL)
0.9D + 1.6W 225 deg	90 mph 225 deg with No Ice (Reduced DL)
0.9D + 1.6W 270 deg	90 mph 270 deg with No Ice (Reduced DL)
0.9D + 1.6W 315 deg	90 mph 315 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	40 mph Normal with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 45 deg	40 mph 45 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	40 mph 90 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 135 deg	40 mph 135 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 180 deg	40 mph 180 deg with 0.75 in Radial Ice

Site Number: 88009  
Site Name: CORNWALL CT, CT  
Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
Engineering Number: OAA714883\_C3\_01

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### Analysis Parameters

1.2D + 1.0Di + 1.0Wi 225 deg	40 mph 225 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 270 deg	40 mph 270 deg with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 315 deg	40 mph 315 deg with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E Normal	Seismic Normal
(1.2 + 0.2Sds) * DL + E 45 deg	Seismic 45 deg
(1.2 + 0.2Sds) * DL + E 90 deg	Seismic 90 deg
(1.2 + 0.2Sds) * DL + E 135 deg	Seismic 135 deg
(1.2 + 0.2Sds) * DL + E 180 deg	Seismic 180 deg
(1.2 + 0.2Sds) * DL + E 225 deg	Seismic 225 deg
(1.2 + 0.2Sds) * DL + E 270 deg	Seismic 270 deg
(1.2 + 0.2Sds) * DL + E 315 deg	Seismic 315 deg
(0.9 - 0.2Sds) * DL + E Normal	Seismic (Reduced DL) Normal
(0.9 - 0.2Sds) * DL + E 45 deg	Seismic (Reduced DL) 45 deg
(0.9 - 0.2Sds) * DL + E 90 deg	Seismic (Reduced DL) 90 deg
(0.9 - 0.2Sds) * DL + E 135 deg	Seismic (Reduced DL) 135 deg
(0.9 - 0.2Sds) * DL + E 180 deg	Seismic (Reduced DL) 180 deg
(0.9 - 0.2Sds) * DL + E 225 deg	Seismic (Reduced DL) 225 deg
(0.9 - 0.2Sds) * DL + E 270 deg	Seismic (Reduced DL) 270 deg
(0.9 - 0.2Sds) * DL + E 315 deg	Seismic (Reduced DL) 315 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 45 deg	Serviceability - 60 mph Wind 45 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg
1.0D + 1.0W Service 135 deg	Serviceability - 60 mph Wind 135 deg
1.0D + 1.0W Service 180 deg	Serviceability - 60 mph Wind 180 deg
1.0D + 1.0W Service 225 deg	Serviceability - 60 mph Wind 225 deg
1.0D + 1.0W Service 270 deg	Serviceability - 60 mph Wind 270 deg
1.0D + 1.0W Service 315 deg	Serviceability - 60 mph Wind 315 deg

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Site Number: 88009

Code: ANSI/TIA-222-G

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Site Name: CORNWALL CT, CT

Engineering Number: OAA714883\_C3\_01

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Customer: SPRINT NEXTEL

### Tower Loading

#### Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
69.00	6' Omni	1	25	1.8	6.0	3.0	3.0	1.00	1.00	3.0	176.1	24.52	59	36
69.00	12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	6.0	903.2	24.54	151	58
67.00	Andrew ABT-DFDM-	1	1	0.1	0.3	1.7	1.6	0.80	0.50	-2.0	1.3	24.45	1	2
67.00	Powerwave Allgon	6	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.0	24.48	51	138
67.00	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	24.48	30	29
67.00	Ericsson RRUS 11	3	50	2.6	1.5	17.3	7.2	0.80	0.50	0.0	0.0	24.48	103	216
67.00	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	24.48	107	219
67.00	Powerwave Allgon	6	27	5.6	4.6	11.0	4.9	0.80	0.76	0.0	0.0	24.48	675	233
67.00	Andrew SBNHH-	1	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	24.48	108	48
67.00	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	24.48	355	147
67.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	24.48	809	1296
65.01	Fire Warden Cab	1	2000	150.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	24.45	4988	2880
63.00	18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	11.0	1982.2	24.54	180	79
63.00	Sinclair SV228-	1	93	15.8	6.0	116.0	62.0	1.00	1.00	0.0	0.0	24.42	526	134
60.00	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	24.37	68	229
60.00	Alcatel-Lucent	3	50	2.1	1.7	12.2	10.6	0.80	0.50	0.0	0.0	24.37	84	216
60.00	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	24.37	85	229
60.00	Stand-Off	6	100	3.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	24.37	400	864
60.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.50	0.0	0.0	24.37	161	302
60.00	RFS APXVSP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	24.37	440	246
60.00	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	24.37	499	251
59.00	10' HP Dish	3	705	99.1	10.0	0.0	0.0	1.00	1.00	0.0	0.0	24.35	9846	3046
59.00	10' Std. Dish	1	512	130.7	10.0	0.0	0.0	1.00	1.00	0.0	0.0	24.35	4329	737
56.00	Symmetricom	1	0	0.2	0.5	3.5	3.5	0.80	1.00	0.0	0.0	24.29	6	1
56.00	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	24.29	111	219
56.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	24.29	111	219
56.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	24.29	111	219
56.00	RFS APX16DWV-	3	41	6.6	4.7	13.3	3.1	0.80	0.60	0.0	0.0	24.29	313	176
56.00	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	24.29	635	217
56.00	Flat T-Arm	3	250	12.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	24.29	642	1080
50.00	RFS FD9R6004/2C-3L	6	3	0.4	0.5	6.5	1.5	0.75	0.50	-3.0	79.3	24.00	26	27
50.00	Antel BXA-	3	15	4.8	6.0	6.1	4.1	0.75	0.66	-3.0	696.6	24.00	232	65
50.00	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	0.75	0.76	-3.0	1267.7	24.00	423	73
50.00	Antel LPA-80063/6CF	6	27	9.6	5.9	15.0	13.1	0.75	0.59	-3.0	2493.4	24.00	831	233
50.00	Decibel	3	117	22.2	6.0	37.0	9.5	0.75	0.65	-3.0	3179.5	24.00	1060	505
50.00	Platfrom w/	1	5000	70.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	24.11	2296	7200
37.50	Access Platform	1	5000	45.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	23.50	1438	7200
Totals		101	20187	1223.9										

#### Discrete Appurtenance Properties 0.9D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
69.00	6' Omni	1	25	1.8	6.0	3.0	3.0	1.00	1.00	3.0	176.1	24.52	59	20
69.00	12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	6.0	903.2	24.54	151	32
67.00	Andrew ABT-DFDM-	1	1	0.1	0.3	1.7	1.6	0.80	0.50	-2.0	1.3	24.45	1	1
67.00	Powerwave Allgon	6	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.0	24.48	51	78
67.00	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	24.48	30	16
67.00	Ericsson RRUS 11	3	50	2.6	1.5	17.3	7.2	0.80	0.50	0.0	0.0	24.48	103	122
67.00	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	24.48	107	123
67.00	Powerwave Allgon	6	27	5.6	4.6	11.0	4.9	0.80	0.76	0.0	0.0	24.48	675	131
67.00	Andrew SBNHH-	1	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	24.48	108	27

Site Number: 88009

Code:

ANSI/TIA-222-G

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Site Name: CORNWALL CT, CT

Engineering Number: OAA714883\_C3\_01

10/30/2017 4:08:29 PM

Customer: SPRINT NEXTEL

### Tower Loading

67.00	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	24.48	355	83
67.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	24.48	809	729
65.01	Fire Warden Cab	1	2000	150.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	24.45	4988	1620
63.00	18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	11.0	1982.2	24.54	180	45
63.00	Sinclair SV228-	1	93	15.8	6.0	116.0	62.0	1.00	1.00	0.0	0.0	24.42	526	75
60.00	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	24.37	68	129
60.00	Alcatel-Lucent	3	50	2.1	1.7	12.2	10.6	0.80	0.50	0.0	0.0	24.37	84	122
60.00	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	24.37	85	129
60.00	Stand-Off	6	100	3.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	24.37	400	486
60.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.50	0.0	0.0	24.37	161	170
60.00	RFS APXVSP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	24.37	440	139
60.00	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	24.37	499	141
59.00	10' HP Dish	3	705	99.1	10.0	0.0	0.0	1.00	1.00	0.0	0.0	24.35	9846	1713
59.00	10' Std. Dish	1	512	130.7	10.0	0.0	0.0	1.00	1.00	0.0	0.0	24.35	4329	415
56.00	Symmetricom	1	0	0.2	0.5	3.5	3.5	0.80	1.00	0.0	0.0	24.29	6	0
56.00	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	24.29	111	123
56.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	24.29	111	123
56.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	24.29	111	123
56.00	RFS APX16DWV-	3	41	6.6	4.7	13.3	3.1	0.80	0.60	0.0	0.0	24.29	313	99
56.00	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	24.29	635	122
56.00	Flat T-Arm	3	250	12.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	24.29	642	608
50.00	RFS FD9R6004/2C-3L	6	3	0.4	0.5	6.5	1.5	0.75	0.50	-3.0	79.3	24.00	26	15
50.00	Antel BXA-	3	15	4.8	6.0	6.1	4.1	0.75	0.66	-3.0	696.6	24.00	232	36
50.00	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	0.75	0.76	-3.0	1267.7	24.00	423	41
50.00	Antel LPA-80063/6CF	6	27	9.6	5.9	15.0	13.1	0.75	0.59	-3.0	2493.4	24.00	831	131
50.00	Decibel	3	117	22.2	6.0	37.0	9.5	0.75	0.65	-3.0	3179.5	24.00	1060	284
50.00	Platform w/	1	5000	70.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	24.11	2296	4050
37.50	Access Platform	1	5000	45.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	23.50	1438	4050
Totals		101	20187	1223.9										

### Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
69.00	6' Omni	1	116	3.2	6.0	3.0	3.0	1.00	1.00	3.0	39.3	4.84	13	146
69.00	12' Dipole	1	217	7.8	12.0	3.0	3.0	1.00	1.00	6.0	194.0	4.85	32	270
67.00	Andrew ABT-DFDM-	1	4	0.3	0.3	1.7	1.6	0.80	0.50	-2.0	0.8	4.83	0	4
67.00	Powerwave Allgon	6	38	1.3	0.8	6.7	5.4	0.80	0.50	0.0	0.0	4.83	13	296
67.00	Raycap DC6-48-60-	1	77	1.7	2.0	9.7	9.7	0.80	1.00	0.0	0.0	4.83	6	97
67.00	Ericsson RRUS 11	3	124	3.7	1.5	17.3	7.2	0.80	0.50	0.0	0.0	4.83	18	481
67.00	Ericsson RRUS 32	3	145	3.5	2.2	12.1	6.7	0.80	0.50	0.0	0.0	4.83	17	558
67.00	Powerwave Allgon	6	150	7.9	4.6	11.0	4.9	0.80	0.76	0.0	0.0	4.83	118	1121
67.00	Andrew SBNHH-	1	180	8.2	4.6	11.9	7.1	0.80	0.69	0.0	0.0	4.83	19	224
67.00	CCI HPA-65R-BUU-H6	2	288	12.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	4.83	57	716
67.00	Round Sector Frame	3	698	32.3	0.0	0.0	0.0	0.75	0.75	0.0	0.0	4.83	224	2728
65.01	Fire Warden Cab	1	6521	771.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.83	3168	8305
63.00	18' Omni	1	318	12.4	18.0	3.0	3.0	1.00	1.00	11.0	561.6	4.85	51	395
63.00	Sinclair SV228-	1	610	64.1	6.0	116.0	62.0	1.00	1.00	0.0	0.0	4.82	263	755
60.00	Alcatel-Lucent	3	132	2.3	1.3	13.0	9.8	0.80	0.50	0.0	0.0	4.81	11	512
60.00	Alcatel-Lucent	3	129	3.2	1.7	12.2	10.6	0.80	0.50	0.0	0.0	4.81	16	502
60.00	Alcatel-Lucent 800	3	133	3.2	1.6	13.0	10.8	0.80	0.50	0.0	0.0	4.81	16	516
60.00	Stand-Off	6	153	4.7	0.0	0.0	0.0	1.00	0.67	0.0	0.0	4.81	77	1244
60.00	Alcatel-Lucent TD-	3	172	5.5	2.2	18.6	6.7	0.80	0.50	0.0	0.0	4.81	27	670
60.00	RFS APXVSP18-C-	3	244	11.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	4.81	75	918
60.00	Commscope	3	310	10.6	6.0	13.8	8.2	0.80	0.69	0.0	0.0	4.81	71	1157
59.00	10' HP Dish	3	2811	105.4	10.0	0.0	0.0	1.00	1.00	0.0	0.0	4.81	1293	10626

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
 Engineering Number: OAA714883\_C3\_01

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### Tower Loading

Altitude	Equipment	Qty	Wt.	EPA	Length	Width	Depth	K <sub>a</sub>	Orient.	Vert.	M <sub>u</sub>	Q <sub>z</sub>	F <sub>a</sub> (WL)	P <sub>a</sub> (DL)
59.00	10' Std. Dish	1	2379	140.5	10.0	0.0	0.0	1.00	1.00	0.0	0.0	4.81	575	2978
56.00	Symmetricom	1	9	0.6	0.5	3.5	3.5	0.80	1.00	0.0	0.0	4.80	2	11
56.00	Ericsson RRUS 11	3	146	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	4.80	17	561
56.00	Ericsson RRUS 11 B4	3	146	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	4.80	17	561
56.00	Ericsson RRUS 11 B2	3	146	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	4.80	17	561
56.00	RFS APX16DWV-	3	193	7.8	4.7	13.3	3.1	0.80	0.60	0.0	0.0	4.80	46	723
56.00	Commscope LNX-	3	339	13.2	8.0	11.9	7.1	0.80	0.70	0.0	0.0	4.80	91	1256
56.00	Flat T-Arm	3	476	21.7	0.0	0.0	0.0	0.75	0.67	0.0	0.0	4.80	134	1894
50.00	RFS FD9R6004/2C-3L	6	12	0.8	0.5	6.5	1.5	0.75	0.50	-3.0	22.7	4.74	8	89
50.00	Antel BXA-	3	118	7.3	6.0	6.1	4.1	0.75	0.66	-3.0	131.5	4.74	44	435
50.00	Amphenol Antel BXA-	3	176	10.5	5.9	11.2	5.2	0.75	0.76	-3.0	217.8	4.74	73	646
50.00	Antel LPA-80063/6CF	6	339	11.1	5.9	15.0	13.1	0.75	0.59	-3.0	354.9	4.74	118	2480
50.00	Decibel	3	621	24.3	6.0	37.0	9.5	0.75	0.65	-3.0	428.8	4.74	143	2320
50.00	Platform w/	1	18097	331.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.76	1344	22916
37.50	Access Platform	1	18296	211.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.64	833	23155
Totals		101	73318	2561.5										

### Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc.(ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
69.00	6' Omni	1	25	1.8	6.0	3.0	3.0	1.00	1.00	3.0	48.9	10.90	16	25
69.00	12' Dipole	1	40	4.5	12.0	3.0	3.0	1.00	1.00	6.0	250.9	10.91	42	40
67.00	Andrew ABT-DFDM-	1	1	0.1	0.3	1.7	1.6	0.80	0.50	-2.0	0.4	10.87	0	1
67.00	Powerwave Allgon	6	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.0	10.88	14	96
67.00	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	10.88	8	20
67.00	Ericsson RRUS 11	3	50	2.6	1.5	17.3	7.2	0.80	0.50	0.0	0.0	10.88	29	150
67.00	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	10.88	30	152
67.00	Powerwave Allgon	6	27	5.6	4.6	11.0	4.9	0.80	0.76	0.0	0.0	10.88	188	162
67.00	Andrew SBNHH-	1	34	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	10.88	30	34
67.00	CCI HPA-65R-BUU-H6	2	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.0	10.88	99	102
67.00	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	10.88	225	900
65.01	Fire Warden Cab	1	2000	150.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.87	1386	2000
63.00	18' Omni	1	55	5.4	18.0	3.0	3.0	1.00	1.00	11.0	550.6	10.91	50	55
63.00	Sinclair SV228-	1	93	15.8	6.0	116.0	62.0	1.00	1.00	0.0	0.0	10.85	146	93
60.00	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	10.83	19	159
60.00	Alcatel-Lucent	3	50	2.1	1.7	12.2	10.6	0.80	0.50	0.0	0.0	10.83	23	150
60.00	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	10.83	24	159
60.00	Stand-Off	6	100	3.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	10.83	111	600
60.00	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.50	0.0	0.0	10.83	45	210
60.00	RFS APXVSP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	0.0	0.0	10.83	122	171
60.00	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	10.83	139	174
59.00	10' HP Dish	3	705	99.1	10.0	0.0	0.0	1.00	1.00	0.0	0.0	10.82	2735	2115
59.00	10' Std. Dish	1	512	130.7	10.0	0.0	0.0	1.00	1.00	0.0	0.0	10.82	1202	512
56.00	Symmetricom	1	0	0.2	0.5	3.5	3.5	0.80	1.00	0.0	0.0	10.79	2	0
56.00	Ericsson RRUS 11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	10.79	31	152
56.00	Ericsson RRUS 11 B4	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	10.79	31	152
56.00	Ericsson RRUS 11 B2	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	10.79	31	152
56.00	RFS APX16DWV-	3	41	6.6	4.7	13.3	3.1	0.80	0.60	0.0	0.0	10.79	87	122
56.00	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	10.79	176	151
56.00	Flat T-Arm	3	250	12.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.79	178	750
50.00	RFS FD9R6004/2C-3L	6	3	0.4	0.5	6.5	1.5	0.75	0.50	-3.0	22.0	10.67	7	19
50.00	Antel BXA-	3	15	4.8	6.0	6.1	4.1	0.75	0.66	-3.0	193.5	10.67	64	45
50.00	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	0.75	0.76	-3.0	352.1	10.67	117	51
50.00	Antel LPA-80063/6CF	6	27	9.6	5.9	15.0	13.1	0.75	0.59	-3.0	692.6	10.67	231	162
50.00	Decibel	3	117	22.2	6.0	37.0	9.5	0.75	0.65	-3.0	883.2	10.67	294	351

Site Number: 88009  
Site Name: CORNWALL CT, CT  
Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
Engineering Number: OAA714883\_C3\_01

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10/30/2017 4:08:29 PM

Tower Loading

50.00	Platform w/	1	5000	70.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.72	638	5000
37.50	Access Platform	1	5000	45.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.44	399	5000
	Totals	101	20187	1223.9										

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
 Engineering Number: OAA714883\_C3\_01

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### Tower Loading

#### Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	67.00	0.39" (10mm) Fiber	1	0.39	0.06	0	1	Individual	0.00	N	1.00	1.00	0.01
0.00	67.00	0.78" (19.7mm) 8	2	0.78	0.59	0	1	Individual	0.00	N	1.00	1.00	0.01
0.00	67.00	1 1/4" Coax	12	1.55	0.63	33	1	Block	0.00	N	0.00	1.00	0.00
0.00	67.00	Climbing Ladder	1	2.00	6.90	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	67.00	Waveguide	1	2.00	6.00	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	63.00	7/8" Coax	1	1.09	0.33	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	63.00	7/8" Coax	1	1.09	0.33	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	60.00	1 1/4" Hybriflex	3	1.54	1.00	0	1	Individual	0.00	N	0.00	1.00	0.00
0.00	60.00	1 1/4" Hybriflex	4	1.54	1.00	50	1	Block	0.00	N	0.00	1.00	0.00
0.00	56.00	1 5/8" Hybriflex	2	1.98	1.30	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	56.00	1/2" Coax	1	0.63	0.15	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	56.00	Waveguide	1	2.00	6.00	0	Lin App	Individual	0.00	N	1.00	1.00	0.00
0.00	50.00	1 5/8" Coax	12	1.98	0.82	33	1	Block	0.00	N	0.00	1.00	0.00
0.00	50.00	1/2" Coax	3	0.63	0.15	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	50.00	7/8" Coax	12	1.09	0.33	33	1	Block	0.00	N	0.00	1.00	0.00

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
 Engineering Number: OAA714883\_C3\_01

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### Force/Stress Summary

Section: 1		1		Bot Elev (ft): 0.00				Height (ft): 12.500									
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls		
<b>Max Compression Member</b>																	
LEG	SAE - 6X6X0.625	-96.93	1.2D + 1.6W	45	12.57	50	50	50	63.9	33.0	173.38	0	0	0.00	0.00	55	Member Z
HORIZ	DAL - 3X2.5X0.25	-4.22	0.9D + 1.6W		18.12	50	100	13	199.8	36.0	14.89	0	0	0.00	0.00	28	Member Y
DIAG	SAU - 4X3X0.25	-11.12	1.2D + 1.6W		22.81	47	47	47	179.2	36.0	11.89	0	0	0.00	0.00	93	Member Z
<b>Max Tension Member</b>																	
		Pu (kip)	Load Case		Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls			
LEG	SAE - 6X6X0.625	77.54	0.9D + 1.6W	45	33	45	211.17	0	0	0.00	0.00			36	Member		
HORIZ	DAL - 3X2.5X0.25	5.33	1.2D + 1.6W		36	58	85.21	0	0	0.00	0.00	0.00		6	Member		
DIAG	SAU - 4X3X0.25	9.96	0.9D + 1.6W		36	58	54.76	0	0	0.00	0.00	0.00		18	Member		

Section: 2		1		Bot Elev (ft): 12.50				Height (ft): 12.500									
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls		
<b>Max Compression Member</b>																	
LEG	SAE - 6X6X0.625	-78.68	1.2D + 1.6W	45	12.57	50	50	50	63.9	33.0	173.38	0	0	0.00	0.00	45	Member Z
HORIZ	DAL - 3X2.5X0.25	-2.85	0.9D + 1.6W	90	16.25	50	50	17	106.7	36.0	46.79	0	0	0.00	0.00	6	Member Y
DIAG	SAU - 4X3X0.25	-11.69	1.2D + 1.6W		21.27	47	47	47	169.0	36.0	13.36	0	0	0.00	0.00	87	Member Z
<b>Max Tension Member</b>																	
		Pu (kip)	Load Case		Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls			
LEG	SAE - 6X6X0.625	60.58	0.9D + 1.6W	45	33	45	211.17	0	0	0.00	0.00			28	Member		
HORIZ	DAL - 3X2.5X0.25	3.55	1.2D + 1.6W		36	58	85.21	0	0	0.00	0.00	0.00		4	Member		
DIAG	SAU - 4X3X0.25	10.43	1.2D + 1.6W		36	58	54.76	0	0	0.00	0.00	0.00		19	Member		

Section: 3		1		Bot Elev (ft): 25.00				Height (ft): 12.500									
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls		
<b>Max Compression Member</b>																	
LEG	SAE - 6X6X0.5	-56.37	1.2D + 1.6W	45	12.57	50	50	50	63.9	33.0	140.22	0	0	0.00	0.00	40	Member Z
HORIZ	DAL - 3.5X3X0.3125	-4.30	0.9D + 1.6W		14.37	50	100	17	136.1	36.0	47.22	0	0	0.00	0.00	9	Member Y
DIAG	SAU - 3.5X3X0.25	-12.16	1.2D + 1.6W		19.78	47	47	47	163.4	36.0	13.20	0	0	0.00	0.00	92	Member Z
<b>Max Tension Member</b>																	
		Pu (kip)	Load Case		Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls			
LEG	SAE - 6X6X0.5	41.15	0.9D + 1.6W	45	33	45	170.77	0	0	0.00	0.00			24	Member		
HORIZ	DAL - 3.5X3X0.3125	6.00	1.2D + 1.6W		36	58	125.39	0	0	0.00	0.00	0.00		4	Member		
DIAG	SAU - 3.5X3X0.25	10.74	1.2D + 1.6W	90	36	58	50.54	0	0	0.00	0.00	0.00		21	Member		

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
 Engineering Number: OAA714883\_C3\_01

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### Force/Stress Summary

Section: 4		1		Bot Elev (ft): 37.50				Height (ft): 12.500				Shear		Bear		Use	
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	phiRnv (kip)	phiRn (kip)	%	Controls		
LEG	SAE - 6X6X0.5	-33.63	1.2D + 1.6W	45	12.57	50	50	50	63.9	33.0	140.22	0	0	0.00	0.00	23	Member Z
HORIZ	DAL - 3.5X3X0.3125	-6.64	1.2D + 1.6W	90	12.50	100	100	17	136.4	36.0	47.01	0	0	0.00	0.00	14	Member X
DIAG	SAE - 3.5x3.5x0.25	-11.47	1.2D + 1.6W		18.37	47	47	47	143.4	36.0	18.57	0	0	0.00	0.00	61	Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	SAE - 6X6X0.5	23.56	0.9D + 1.6W	45	33	45	170.77	0	0	0.00	0.00		13 Member
HORIZ	DAL - 3.5X3X0.3125	5.11	1.2D + 1.6W		36	58	125.39	0	0	0.00	0.00		4 Member
DIAG	SAE - 3.5x3.5x0.25	9.93	1.2D + 1.6W		36	58	54.76	0	0	0.00	0.00		18 Member

Section: 5		1		Bot Elev (ft): 50.00				Height (ft): 0.100				Shear		Bear		Use	
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	phiRnv (kip)	phiRn (kip)	%	Controls		
LEG	SAE - 6X6X0.5	-12.44	1.2D + 1.6W	45	0.39	50	50	50	2.0	33.0	170.74	0	0	0.00	0.00	7	Member Z
HORIZ		0.00			0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG		0.00			0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00		

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	SAE - 6X6X0.5	17.22	1.2D + 1.6W	45	33	45	170.77	0	0	0.00	0.00		10 Member
HORIZ		0.00			0	0	0.00	0	0	0.00	0.00		0
DIAG		0.00			0	0	0.00	0	0	0.00	0.00		0

Section: 6		1		Bot Elev (ft): 50.10				Height (ft): 14.900				Shear		Bear		Use	
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	phiRnv (kip)	phiRn (kip)	%	Controls		
LEG	SAE - 6X6X0.5	-16.03	1.2D + 1.6W	45	7.45	100	100	100	75.8	33.0	129.46	0	0	0.00	0.00	12	Member Z
HORIZ	DAL - 2.5X2X0.25	-4.38	1.2D + 1.6W	90	7.000	100	100	50	133.7	36.0	26.92	0	0	0.00	0.00	16	Member Y
DIAG	SAU - 3X2X0.25	-5.76	1.2D + 1.6W		10.22	50	50	50	136.0	36.0	14.52	0	0	0.00	0.00	39	Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	SAE - 6X6X0.5	4.12	1.2D + 1.6W	45	33	45	170.77	0	0	0.00	0.00		2 Member
HORIZ	DAL - 2.5X2X0.25	1.59	1.2D + 1.6W	90	36	58	69.01	0	0	0.00	0.00		2 Member
DIAG	SAU - 3X2X0.25	10.09	1.2D + 1.6W	45	36	58	38.56	0	0	0.00	0.00		26 Member

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
 Engineering Number: OAA714883\_C3\_01

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10/30/2017 4:08:29 PM

### Detailed Reactions

Load Case	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal	1	-8.79	78.24	-15.35	
	1a	6.02	-53.34	-12.62	
	1b	-6.02	-53.34	-12.62	
	1c	8.79	78.24	-15.35	
1.2D + 1.6W 45 deg	1	-17.10	108.88	-17.15	
	1a	-6.32	12.64	-3.50	
	1b	-14.41	-84.00	-14.43	
	1c	-3.53	12.29	-6.29	
1.2D + 1.6W 90 deg	1	-15.34	78.49	-8.84	
	1a	-15.34	78.49	8.84	
	1b	-12.63	-53.59	-6.05	
	1c	-12.63	-53.59	6.05	
1.2D + 1.6W 135 deg	1	-6.32	12.64	3.50	
	1a	-17.10	108.88	17.15	
	1b	-3.53	12.29	6.29	
	1c	-14.41	-84.00	14.43	
1.2D + 1.6W 180 deg	1	6.02	-53.34	12.62	
	1a	-8.79	78.24	15.35	
	1b	8.79	78.24	15.35	
	1c	-6.02	-53.34	12.62	
1.2D + 1.6W 225 deg	1	14.41	-84.00	14.43	
	1a	3.53	12.29	6.29	
	1b	17.10	108.88	17.15	
	1c	6.32	12.64	3.50	
1.2D + 1.6W 270 deg	1	12.63	-53.59	6.05	
	1a	12.63	-53.59	-6.05	
	1b	15.34	78.49	8.84	
	1c	15.34	78.49	-8.84	
1.2D + 1.6W 315 deg	1	3.53	12.29	-6.29	
	1a	14.41	-84.00	-14.43	
	1b	6.32	12.64	-3.50	
	1c	17.10	108.88	-17.15	
0.9D + 1.6W Normal	1	-8.44	75.09	-15.00	
	1a	6.36	-56.41	-12.97	
	1b	-6.36	-56.41	-12.97	
	1c	8.44	75.09	-15.00	
0.9D + 1.6W 45 deg	1	-16.75	105.72	-16.80	
	1a	-5.98	9.53	-3.85	
	1b	-14.76	-87.06	-14.78	
	1c	-3.88	9.18	-5.95	
0.9D + 1.6W 90 deg	1	-14.99	75.34	-8.49	
	1a	-14.99	75.34	8.49	
	1b	-12.98	-56.66	-6.40	
	1c	-12.98	-56.66	6.40	
0.9D + 1.6W 135 deg	1	-5.98	9.53	3.85	
	1a	-16.75	105.72	16.80	
	1b	-3.88	9.18	5.95	
	1c	-14.76	-87.06	14.78	

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G  
 Engineering Number: OAA714883\_C3\_01

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10/30/2017 4:08:29 PM

0.9D + 1.6W 180 deg	1	6.36	-56.41	12.97
	1a	-8.44	75.09	15.00
	1b	8.44	75.09	15.00
	1c	-6.36	-56.41	12.97
0.9D + 1.6W 225 deg	1	14.76	-87.06	14.78
	1a	3.88	9.18	5.95
	1b	16.75	105.72	16.80
	1c	5.98	9.53	3.85
0.9D + 1.6W 270 deg	1	12.98	-56.66	6.40
	1a	12.98	-56.66	-6.40
	1b	14.99	75.34	8.49
	1c	14.99	75.34	-8.49
0.9D + 1.6W 315 deg	1	3.88	9.18	-5.95
	1a	14.76	-87.06	-14.78
	1b	5.98	9.53	-3.85
	1c	16.75	105.72	-16.80
1.2D + 1.0Di + 1.0Wi Normal	1	-3.90	53.17	-5.47
	1a	-0.03	18.85	-1.51
	1b	0.03	18.85	-1.51
	1c	3.90	53.17	-5.47
1.2D + 1.0Di + 1.0Wi 45 deg	1	-5.95	61.02	-5.97
	1a	-3.13	36.03	0.83
	1b	-2.02	10.99	-2.01
	1c	0.80	35.99	-3.15
1.2D + 1.0Di + 1.0Wi 90 deg	1	-5.45	53.21	-3.93
	1a	-5.45	53.21	3.93
	1b	-1.52	18.81	0.04
	1c	-1.52	18.81	-0.04
1.2D + 1.0Di + 1.0Wi 135 deg	1	-3.13	36.03	-0.83
	1a	-5.95	61.02	5.97
	1b	0.80	35.99	3.15
	1c	-2.02	10.99	2.01
1.2D + 1.0Di + 1.0Wi 180 deg	1	-0.03	18.85	1.51
	1a	-3.90	53.17	5.47
	1b	3.90	53.17	5.47
	1c	0.03	18.85	1.51
1.2D + 1.0Di + 1.0Wi 225 deg	1	2.02	10.99	2.01
	1a	-0.80	35.99	3.15
	1b	5.95	61.02	5.97
	1c	3.13	36.03	-0.83
1.2D + 1.0Di + 1.0Wi 270 deg	1	1.52	18.81	-0.04
	1a	1.52	18.81	0.04
	1b	5.45	53.21	3.93
	1c	5.45	53.21	-3.93
1.2D + 1.0Di + 1.0Wi 315 deg	1	-0.80	35.99	-3.15
	1a	2.02	10.99	-2.01
	1b	3.13	36.03	0.83
	1c	5.95	61.02	-5.97
(1.2 + 0.2Sds) * DL + E Normal M1	1	-1.83	15.63	-2.19
	1a	-0.92	7.56	0.58
	1b	0.92	7.56	0.58
	1c	1.83	15.63	-2.19

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
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 Engineering Number: OAA714883\_C3\_01

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10/30/2017 4:08:29 PM

(1.2 + 0.2Sds) * DL + E Normal M2	1	-1.82	15.50	-2.11
	1a	-0.94	7.69	0.66
	1b	0.94	7.69	0.66
	1c	1.82	15.50	-2.11
(1.2 + 0.2Sds) * DL + E 45 deg M1	1	-2.27	17.30	-2.27
	1a	-1.62	11.60	1.14
	1b	0.49	5.88	0.49
	1c	1.13	11.59	-1.63
(1.2 + 0.2Sds) * DL + E 45 deg M2	1	-2.20	17.12	-2.21
	1a	-1.58	11.60	1.18
	1b	0.55	6.07	0.56
	1c	1.18	11.59	-1.58
(1.2 + 0.2Sds) * DL + E 90 deg M1	1	-2.18	15.63	-1.84
	1a	-2.18	15.63	1.84
	1b	0.58	7.56	0.93
	1c	0.58	7.56	-0.93
(1.2 + 0.2Sds) * DL + E 90 deg M2	1	-2.10	15.50	-1.83
	1a	-2.10	15.50	1.83
	1b	0.65	7.69	0.94
	1c	0.65	7.69	-0.94
(1.2 + 0.2Sds) * DL + E 135 deg M1	1	-1.62	11.60	-1.14
	1a	-2.27	17.30	2.27
	1b	1.13	11.59	1.63
	1c	0.49	5.88	-0.49
(1.2 + 0.2Sds) * DL + E 135 deg M2	1	-1.58	11.60	-1.18
	1a	-2.20	17.12	2.21
	1b	1.18	11.59	1.58
	1c	0.55	6.07	-0.56
(1.2 + 0.2Sds) * DL + E 180 deg M1	1	-0.92	7.56	-0.58
	1a	-1.83	15.63	2.19
	1b	1.83	15.63	2.19
	1c	0.92	7.56	-0.58
(1.2 + 0.2Sds) * DL + E 180 deg M2	1	-0.94	7.69	-0.66
	1a	-1.82	15.50	2.11
	1b	1.82	15.50	2.11
	1c	0.94	7.69	-0.66
(1.2 + 0.2Sds) * DL + E 225 deg M1	1	-0.49	5.88	-0.49
	1a	-1.13	11.59	1.63
	1b	2.27	17.30	2.27
	1c	1.62	11.60	-1.14
(1.2 + 0.2Sds) * DL + E 225 deg M2	1	-0.55	6.07	-0.56
	1a	-1.18	11.59	1.58
	1b	2.20	17.12	2.21
	1c	1.58	11.60	-1.18
(1.2 + 0.2Sds) * DL + E 270 deg M1	1	-0.58	7.56	-0.93
	1a	-0.58	7.56	0.93
	1b	2.18	15.63	1.84
	1c	2.18	15.63	-1.84
(1.2 + 0.2Sds) * DL + E 270 deg M2	1	-0.65	7.69	-0.94
	1a	-0.65	7.69	0.94
	1b	2.10	15.50	1.83
	1c	2.10	15.50	-1.83
(1.2 + 0.2Sds) * DL + E 315 deg M1	1	-1.13	11.59	-1.63

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code:  
 Engineering Number:

ANSI/TIA-222-G

OAA714883\_C3\_01

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10/30/2017 4:08:29 PM

	1a	-0.49	5.88	0.49
	1b	1.62	11.60	1.14
	1c	2.27	17.30	-2.27
(1.2 + 0.2Sds) * DL + E 315 deg M2	1	-1.18	11.59	-1.58
	1a	-0.55	6.07	0.56
	1b	1.58	11.60	1.18
	1c	2.20	17.12	-2.21
(0.9 - 0.2Sds) * DL + E Normal M1	1	-1.41	12.10	-1.76
	1a	-0.50	4.03	0.16
	1b	0.50	4.03	0.16
	1c	1.41	12.10	-1.76
(0.9 - 0.2Sds) * DL + E Normal M2	1	-1.40	11.97	-1.69
	1a	-0.52	4.16	0.24
	1b	0.52	4.16	0.24
	1c	1.40	11.97	-1.69
(0.9 - 0.2Sds) * DL + E 45 deg M1	1	-1.85	13.77	-1.85
	1a	-1.20	8.06	0.72
	1b	0.07	2.36	0.07
	1c	0.71	8.06	-1.21
(0.9 - 0.2Sds) * DL + E 45 deg M2	1	-1.78	13.58	-1.79
	1a	-1.16	8.06	0.76
	1b	0.13	2.54	0.14
	1c	0.76	8.06	-1.16
(0.9 - 0.2Sds) * DL + E 90 deg M1	1	-1.76	12.10	-1.42
	1a	-1.76	12.10	1.42
	1b	0.16	4.03	0.51
	1c	0.16	4.03	-0.51
(0.9 - 0.2Sds) * DL + E 90 deg M2	1	-1.68	11.97	-1.40
	1a	-1.68	11.97	1.40
	1b	0.23	4.16	0.52
	1c	0.23	4.16	-0.52
(0.9 - 0.2Sds) * DL + E 135 deg M1	1	-1.20	8.06	-0.72
	1a	-1.85	13.77	1.85
	1b	0.71	8.06	1.21
	1c	0.07	2.36	-0.07
(0.9 - 0.2Sds) * DL + E 135 deg M2	1	-1.16	8.06	-0.76
	1a	-1.78	13.58	1.79
	1b	0.76	8.06	1.16
	1c	0.13	2.54	-0.14
(0.9 - 0.2Sds) * DL + E 180 deg M1	1	-0.50	4.03	-0.16
	1a	-1.41	12.10	1.76
	1b	1.41	12.10	1.76
	1c	0.50	4.03	-0.16
(0.9 - 0.2Sds) * DL + E 180 deg M2	1	-0.52	4.16	-0.24
	1a	-1.40	11.97	1.69
	1b	1.40	11.97	1.69
	1c	0.52	4.16	-0.24
(0.9 - 0.2Sds) * DL + E 225 deg M1	1	-0.07	2.36	-0.07
	1a	-0.71	8.06	1.21
	1b	1.85	13.77	1.85
	1c	1.20	8.06	-0.72
(0.9 - 0.2Sds) * DL + E 225 deg M2	1	-0.13	2.54	-0.14
	1a	-0.76	8.06	1.16

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

Code:  
 Engineering Number: OAA714883\_C3\_01

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10/30/2017 4:08:29 PM

	1b	1.78	13.58	1.79
	1c	1.16	8.06	-0.76
(0.9 - 0.2Sds) * DL + E 270 deg M1	1	-0.16	4.03	-0.51
	1a	-0.16	4.03	0.51
	1b	1.76	12.10	1.42
	1c	1.76	12.10	-1.42
(0.9 - 0.2Sds) * DL + E 270 deg M2	1	-0.23	4.16	-0.52
	1a	-0.23	4.16	0.52
	1b	1.68	11.97	1.40
	1c	1.68	11.97	-1.40
(0.9 - 0.2Sds) * DL + E 315 deg M1	1	-0.71	8.06	-1.21
	1a	-0.07	2.36	0.07
	1b	1.20	8.06	0.72
	1c	1.85	13.77	-1.85
(0.9 - 0.2Sds) * DL + E 315 deg M2	1	-0.76	8.06	-1.16
	1a	-0.13	2.54	0.14
	1b	1.16	8.06	0.76
	1c	1.78	13.58	-1.79
1.0D + 1.0W Service Normal	1	-3.22	28.65	-5.05
	1a	0.90	-7.89	-2.72
	1b	-0.90	-7.89	-2.72
	1c	3.22	28.65	-5.05
1.0D + 1.0W Service 45 deg	1	-5.53	37.16	-5.55
	1a	-2.53	10.43	-0.19
	1b	-3.22	-16.41	-3.22
	1c	-0.21	10.33	-2.53
1.0D + 1.0W Service 90 deg	1	-5.04	28.71	-3.23
	1a	-5.04	28.71	3.23
	1b	-2.73	-7.96	-0.90
	1c	-2.73	-7.96	0.90
1.0D + 1.0W Service 135 deg	1	-2.53	10.43	0.19
	1a	-5.53	37.16	5.55
	1b	-0.21	10.33	2.53
	1c	-3.22	-16.41	3.22
1.0D + 1.0W Service 180 deg	1	0.90	-7.89	2.72
	1a	-3.22	28.65	5.05
	1b	3.22	28.65	5.05
	1c	-0.90	-7.89	2.72
1.0D + 1.0W Service 225 deg	1	3.22	-16.41	3.22
	1a	0.21	10.33	2.53
	1b	5.53	37.16	5.55
	1c	2.53	10.43	0.19
1.0D + 1.0W Service 270 deg	1	2.73	-7.96	0.90
	1a	2.73	-7.96	-0.90
	1b	5.04	28.71	3.23
	1c	5.04	28.71	-3.23
1.0D + 1.0W Service 315 deg	1	0.21	10.33	-2.53
	1a	3.22	-16.41	-3.22
	1b	2.53	10.43	-0.19
	1c	5.53	37.16	-5.55

Site Number: 88009

Code: ANSI/TIA-222-G

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Site Name: CORNWALL CT, CT

Engineering Number: OAA714883\_C3\_01

10/30/2017 4:08:29 PM

Customer: SPRINT NEXTEL

Max Uplift:	87.06 (kip)	Moment Ice:	707.51 (kip-ft)	Moment:	2,727.85 (kip-ft)	1.2D + 1.6W 225 deg
Max Down:	108.88 (kip)	Total Down Ice:	144.03 (kip)	Total Down:	49.81 (kip)	
Max Shear:	24.22 (kip)	Total Shear Ice:	14.57 (kip)	Total Shear:	58.51 (kip)	

Site Number: 88009

Code:

ANSI/TIA-222-G

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Site Name: CORNWALL CT, CT

Engineering Number:

OAA714883\_C3\_01

10/30/2017 4:08:29 PM

Customer: SPRINT NEXTEL

### Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
90 mph Normal to Face with No Ice	37.50	0.035	0.0316	0.7628	0.7629
90 mph Normal to Face with No Ice	50.00	0.053	0.0637	2.6629	2.6636
90 mph Normal to Face with No Ice	57.55	0.303	0.1796	2.2981	2.3052
90 mph Normal to Face with No Ice	65.00	0.551	0.1535	1.8317	1.8318
90 mph 45 degree with No Ice	37.50	0.037	-0.0699	1.0211	1.0235
90 mph 45 degree with No Ice	50.00	0.055	-0.0621	3.4722	3.4728
90 mph 45 degree with No Ice	57.55	0.329	-0.0205	3.0080	3.0081
90 mph 45 degree with No Ice	65.00	0.597	-0.0312	1.9828	1.9917
90 mph 90 degree with No Ice	37.50	0.035	0.0132	0.7706	0.7708
90 mph 90 degree with No Ice	50.00	0.053	0.0289	2.6534	2.6534
90 mph 90 degree with No Ice	57.55	0.328	0.0841	2.8427	2.8439
90 mph 90 degree with No Ice	65.00	0.600	0.0692	1.8095	1.8095
90 mph 135 degree with No Ice	37.50	0.037	0.1006	1.0211	1.0235
90 mph 135 degree with No Ice	50.00	0.055	0.1619	3.4722	3.4728
90 mph 135 degree with No Ice	57.55	0.329	0.1945	3.0080	3.0081
90 mph 135 degree with No Ice	65.00	0.597	0.1877	1.9828	1.9917
90 mph 180 degree with No Ice	37.50	0.035	0.0316	0.7628	0.7629
90 mph 180 degree with No Ice	50.00	0.053	0.0637	2.6629	2.6636
90 mph 180 degree with No Ice	57.55	0.303	0.1796	2.2981	2.3052
90 mph 180 degree with No Ice	65.00	0.551	0.1535	1.8317	1.8318
90 mph 225 degree with No Ice	37.50	0.037	-0.0590	1.0211	1.0235
90 mph 225 degree with No Ice	50.00	0.055	-0.1000	3.4722	3.4728
90 mph 225 degree with No Ice	57.55	0.329	-0.0754	3.0080	3.0081
90 mph 225 degree with No Ice	65.00	0.597	-0.0807	1.9828	1.9917
90 mph 270 degree with No Ice	37.50	0.035	0.0132	0.7706	0.7708
90 mph 270 degree with No Ice	50.00	0.053	0.0289	2.6534	2.6534
90 mph 270 degree with No Ice	57.55	0.328	0.0841	2.8427	2.8439
90 mph 270 degree with No Ice	65.00	0.600	0.0692	1.8095	1.8095
90 mph 315 degree with No Ice	37.50	0.037	0.1006	1.0211	1.0235
90 mph 315 degree with No Ice	50.00	0.055	0.1619	3.4722	3.4728
90 mph 315 degree with No Ice	57.55	0.329	0.1945	3.0080	3.0081
90 mph 315 degree with No Ice	65.00	0.597	0.1877	1.9828	1.9917
90 mph Normal to Face with No Ice (Reduced DL)	37.50	0.035	0.0406	0.7113	0.7115
90 mph Normal to Face with No Ice (Reduced DL)	50.00	0.053	0.0506	2.4708	2.4714
90 mph Normal to Face with No Ice (Reduced DL)	57.55	0.301	0.1591	2.2594	2.2650
90 mph Normal to Face with No Ice (Reduced DL)	65.00	0.547	0.1350	1.8118	1.8120
90 mph 45 deg with No Ice (Reduced DL)	37.50	0.037	-0.0653	0.9676	0.9698
90 mph 45 deg with No Ice (Reduced DL)	50.00	0.055	-0.0578	3.2702	3.2708
90 mph 45 deg with No Ice (Reduced DL)	57.55	0.326	-0.0176	2.9509	2.9510
90 mph 45 deg with No Ice (Reduced DL)	65.00	0.592	-0.0276	1.9607	1.9671
90 mph 90 deg with No Ice (Reduced DL)	37.50	0.035	0.0178	0.7187	0.7189
90 mph 90 deg with No Ice (Reduced DL)	50.00	0.053	0.0226	2.4595	2.4595
90 mph 90 deg with No Ice (Reduced DL)	57.55	0.325	0.0741	2.7874	2.7884
90 mph 90 deg with No Ice (Reduced DL)	65.00	0.595	0.0603	1.7792	1.7792
90 mph 135 deg with No Ice (Reduced DL)	37.50	0.037	0.1029	0.9676	0.9698
90 mph 135 deg with No Ice (Reduced DL)	50.00	0.055	0.1383	3.2702	3.2708
90 mph 135 deg with No Ice (Reduced DL)	57.55	0.326	0.1634	2.9509	2.9510
90 mph 135 deg with No Ice (Reduced DL)	65.00	0.592	0.1584	1.9607	1.9671
90 mph 180 deg with No Ice (Reduced DL)	37.50	0.035	0.0406	0.7113	0.7115
90 mph 180 deg with No Ice (Reduced DL)	50.00	0.053	0.0506	2.4708	2.4714
90 mph 180 deg with No Ice (Reduced DL)	57.55	0.301	0.1591	2.2594	2.2650
90 mph 180 deg with No Ice (Reduced DL)	65.00	0.547	0.1350	1.8118	1.8120
90 mph 225 deg with No Ice (Reduced DL)	37.50	0.037	-0.0478	0.9676	0.9698
90 mph 225 deg with No Ice (Reduced DL)	50.00	0.055	-0.0862	3.2702	3.2708
90 mph 225 deg with No Ice (Reduced DL)	57.55	0.326	-0.0610	2.9509	2.9510

Site Number: 88009

Code:

ANSI/TIA-222-G

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Site Name: CORNWALL CT, CT

Engineering Number:

OAA714883\_C3\_01

10/30/2017 4:08:29 PM

Customer: SPRINT NEXTEL

90 mph 225 deg with No Ice (Reduced DL)	65.00	0.592	-0.0667	1.9607	1.9671
90 mph 270 deg with No Ice (Reduced DL)	37.50	0.035	0.0178	0.7187	0.7189
90 mph 270 deg with No Ice (Reduced DL)	50.00	0.053	0.0226	2.4595	2.4595
90 mph 270 deg with No Ice (Reduced DL)	57.55	0.325	0.0741	2.7874	2.7884
90 mph 270 deg with No Ice (Reduced DL)	65.00	0.595	0.0603	1.7792	1.7792
90 mph 315 deg with No Ice (Reduced DL)	37.50	0.037	0.1029	0.9676	0.9698
90 mph 315 deg with No Ice (Reduced DL)	50.00	0.055	0.1383	3.2702	3.2708
90 mph 315 deg with No Ice (Reduced DL)	57.55	0.326	0.1634	2.9509	2.9510
90 mph 315 deg with No Ice (Reduced DL)	65.00	0.592	0.1584	1.9607	1.9671
40 mph Normal with 0.75 in Radial Ice	37.50	0.010	0.0116	0.7257	0.7257
40 mph Normal with 0.75 in Radial Ice	50.00	0.015	0.0498	2.6796	2.6801
40 mph Normal with 0.75 in Radial Ice	57.55	0.092	0.0841	0.9892	0.9927
40 mph Normal with 0.75 in Radial Ice	65.00	0.169	0.0765	0.6595	0.6601
40 mph 45 deg with 0.75 in Radial Ice	37.50	0.011	-0.0472	0.8048	0.8061
40 mph 45 deg with 0.75 in Radial Ice	50.00	0.016	-0.0338	2.9417	2.9419
40 mph 45 deg with 0.75 in Radial Ice	57.55	0.102	-0.0249	1.2913	1.2916
40 mph 45 deg with 0.75 in Radial Ice	65.00	0.186	-0.0275	0.7124	0.7256
40 mph 90 deg with 0.75 in Radial Ice	37.50	0.010	0.0068	0.7349	0.7350
40 mph 90 deg with 0.75 in Radial Ice	50.00	0.015	0.0271	2.7050	2.7050
40 mph 90 deg with 0.75 in Radial Ice	57.55	0.102	0.0411	1.2529	1.2530
40 mph 90 deg with 0.75 in Radial Ice	65.00	0.189	0.0391	0.7464	0.7474
40 mph 135 deg with 0.75 in Radial Ice	37.50	0.011	0.0554	0.8048	0.8061
40 mph 135 deg with 0.75 in Radial Ice	50.00	0.016	0.1140	2.9417	2.9419
40 mph 135 deg with 0.75 in Radial Ice	57.55	0.102	0.1463	1.2913	1.2916
40 mph 135 deg with 0.75 in Radial Ice	65.00	0.186	0.1400	0.7124	0.7256
40 mph 180 deg with 0.75 in Radial Ice	37.50	0.010	0.0116	0.7257	0.7257
40 mph 180 deg with 0.75 in Radial Ice	50.00	0.015	0.0498	2.6796	2.6801
40 mph 180 deg with 0.75 in Radial Ice	57.55	0.092	0.0841	0.9892	0.9927
40 mph 180 deg with 0.75 in Radial Ice	65.00	0.169	0.0765	0.6595	0.6601
40 mph 225 deg with 0.75 in Radial Ice	37.50	0.011	-0.0554	0.8048	0.8061
40 mph 225 deg with 0.75 in Radial Ice	50.00	0.016	-0.0647	2.9417	2.9419
40 mph 225 deg with 0.75 in Radial Ice	57.55	0.102	-0.0658	1.2913	1.2916
40 mph 225 deg with 0.75 in Radial Ice	65.00	0.186	-0.0648	0.7124	0.7256
40 mph 270 deg with 0.75 in Radial Ice	37.50	0.010	0.0068	0.7349	0.7350
40 mph 270 deg with 0.75 in Radial Ice	50.00	0.015	0.0271	2.7050	2.7050
40 mph 270 deg with 0.75 in Radial Ice	57.55	0.102	0.0411	1.2529	1.2530
40 mph 270 deg with 0.75 in Radial Ice	65.00	0.189	0.0391	0.7464	0.7474
40 mph 315 deg with 0.75 in Radial Ice	37.50	0.011	0.0554	0.8048	0.8061
40 mph 315 deg with 0.75 in Radial Ice	50.00	0.016	0.1140	2.9417	2.9419
40 mph 315 deg with 0.75 in Radial Ice	57.55	0.102	0.1463	1.2913	1.2916
40 mph 315 deg with 0.75 in Radial Ice	65.00	0.186	0.1400	0.7124	0.7256
Seismic Normal M1	37.50	0.002	0.0071	0.1973	0.1975
Seismic Normal M1	50.00	0.003	0.0008	0.7299	0.7299
Seismic Normal M1	57.55	0.016	0.0035	0.2154	0.2154
Seismic Normal M1	65.00	0.028	0.0032	0.1272	0.1272
Seismic Normal M2	37.50	0.002	0.0077	0.2036	0.2037
Seismic Normal M2	50.00	0.003	0.0008	0.7534	0.7534
Seismic Normal M2	57.55	0.019	0.0042	0.2402	0.2402
Seismic Normal M2	65.00	0.034	0.0038	0.1473	0.1473
Seismic 45 deg M1	37.50	0.002	0.0070	0.2108	0.2109
Seismic 45 deg M1	50.00	0.003	0.0004	0.7726	0.7726
Seismic 45 deg M1	57.55	0.017	0.0020	0.2705	0.2705
Seismic 45 deg M1	65.00	0.030	0.0019	0.1472	0.1472
Seismic 45 deg M2	37.50	0.002	0.0075	0.2201	0.2202
Seismic 45 deg M2	50.00	0.003	0.0003	0.8072	0.8072
Seismic 45 deg M2	57.55	0.020	0.0023	0.3063	0.3063
Seismic 45 deg M2	65.00	0.037	0.0021	0.1681	0.1681
Seismic 90 deg M1	37.50	0.002	0.0058	0.2002	0.2002
Seismic 90 deg M1	50.00	0.003	0.0003	0.7381	0.7381
Seismic 90 deg M1	57.55	0.018	0.0016	0.2657	0.2657
Seismic 90 deg M1	65.00	0.032	0.0015	0.1547	0.1547
Seismic 90 deg M2	37.50	0.002	0.0061	0.2070	0.2071

Site Number: 88009

Code:

ANSI/TIA-222-G

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Site Name: CORNWALL CT, CT

Engineering Number:

OAA714883\_C3\_01

10/30/2017 4:08:29 PM

Customer: SPRINT NEXTEL

Seismic 90 deg M2	50.00	0.003	0.0004	0.7639	0.7639
Seismic 90 deg M2	57.55	0.021	0.0017	0.3009	0.3009
Seismic 90 deg M2	65.00	0.039	0.0015	0.1781	0.1781
Seismic 135 deg M1	37.50	0.002	0.0060	0.2108	0.2109
Seismic 135 deg M1	50.00	0.003	0.0008	0.7726	0.7726
Seismic 135 deg M1	57.55	0.017	0.0033	0.2705	0.2705
Seismic 135 deg M1	65.00	0.030	0.0029	0.1472	0.1472
Seismic 135 deg M2	37.50	0.002	0.0063	0.2201	0.2202
Seismic 135 deg M2	50.00	0.003	0.0010	0.8072	0.8072
Seismic 135 deg M2	57.55	0.020	0.0039	0.3063	0.3063
Seismic 135 deg M2	65.00	0.037	0.0035	0.1681	0.1681
Seismic 180 deg M1	37.50	0.002	0.0071	0.1973	0.1975
Seismic 180 deg M1	50.00	0.003	-0.0008	0.7299	0.7299
Seismic 180 deg M1	57.55	0.016	0.0035	0.2154	0.2154
Seismic 180 deg M1	65.00	0.028	0.0032	0.1272	0.1272
Seismic 180 deg M2	37.50	0.002	0.0077	0.2036	0.2037
Seismic 180 deg M2	50.00	0.003	-0.0008	0.7534	0.7534
Seismic 180 deg M2	57.55	0.019	0.0042	0.2402	0.2402
Seismic 180 deg M2	65.00	0.034	0.0038	0.1473	0.1473
Seismic 225 deg M1	37.50	0.002	0.0070	0.2108	0.2109
Seismic 225 deg M1	50.00	0.003	-0.0008	0.7726	0.7726
Seismic 225 deg M1	57.55	0.017	0.0020	0.2705	0.2705
Seismic 225 deg M1	65.00	0.030	0.0019	0.1472	0.1472
Seismic 225 deg M2	37.50	0.002	0.0075	0.2201	0.2202
Seismic 225 deg M2	50.00	0.003	-0.0010	0.8072	0.8072
Seismic 225 deg M2	57.55	0.020	0.0023	0.3063	0.3063
Seismic 225 deg M2	65.00	0.037	0.0021	0.1681	0.1681
Seismic 270 deg M1	37.50	0.002	-0.0058	0.2002	0.2002
Seismic 270 deg M1	50.00	0.003	-0.0003	0.7381	0.7381
Seismic 270 deg M1	57.55	0.018	0.0016	0.2657	0.2657
Seismic 270 deg M1	65.00	0.032	0.0015	0.1547	0.1547
Seismic 270 deg M2	37.50	0.002	0.0061	0.2070	0.2071
Seismic 270 deg M2	50.00	0.003	0.0004	0.7639	0.7639
Seismic 270 deg M2	57.55	0.021	0.0017	0.3009	0.3009
Seismic 270 deg M2	65.00	0.039	0.0015	0.1781	0.1781
Seismic 315 deg M1	37.50	0.002	-0.0070	0.2108	0.2109
Seismic 315 deg M1	50.00	0.003	0.0008	0.7726	0.7726
Seismic 315 deg M1	57.55	0.017	0.0033	0.2705	0.2705
Seismic 315 deg M1	65.00	0.030	0.0029	0.1472	0.1472
Seismic 315 deg M2	37.50	0.002	-0.0075	0.2201	0.2202
Seismic 315 deg M2	50.00	0.003	0.0010	0.8072	0.8072
Seismic 315 deg M2	57.55	0.020	0.0039	0.3063	0.3063
Seismic 315 deg M2	65.00	0.037	0.0035	0.1681	0.1681
Seismic (Reduced DL) Normal M1	37.50	0.002	0.0063	0.1449	0.1451
Seismic (Reduced DL) Normal M1	50.00	0.003	0.0005	0.5324	0.5324
Seismic (Reduced DL) Normal M1	57.55	0.016	0.0018	0.1794	0.1794
Seismic (Reduced DL) Normal M1	65.00	0.028	0.0016	0.1127	0.1127
Seismic (Reduced DL) Normal M2	37.50	0.002	0.0070	0.1511	0.1513
Seismic (Reduced DL) Normal M2	50.00	0.003	0.0006	0.5557	0.5557
Seismic (Reduced DL) Normal M2	57.55	0.019	0.0023	0.2051	0.2051
Seismic (Reduced DL) Normal M2	65.00	0.034	0.0020	0.1336	0.1336
Seismic (Reduced DL) 45 deg M1	37.50	0.002	0.0062	0.1582	0.1583
Seismic (Reduced DL) 45 deg M1	50.00	0.003	0.0008	0.5743	0.5743
Seismic (Reduced DL) 45 deg M1	57.55	0.016	0.0011	0.2300	0.2300
Seismic (Reduced DL) 45 deg M1	65.00	0.030	0.0010	0.1272	0.1272
Seismic (Reduced DL) 45 deg M2	37.50	0.002	0.0069	0.1674	0.1675
Seismic (Reduced DL) 45 deg M2	50.00	0.003	0.0009	0.6086	0.6086
Seismic (Reduced DL) 45 deg M2	57.55	0.020	0.0013	0.2654	0.2654
Seismic (Reduced DL) 45 deg M2	65.00	0.036	0.0012	0.1480	0.1480
Seismic (Reduced DL) 90 deg M1	37.50	0.002	0.0048	0.1477	0.1478
Seismic (Reduced DL) 90 deg M1	50.00	0.003	0.0010	0.5404	0.5404
Seismic (Reduced DL) 90 deg M1	57.55	0.017	0.0004	0.2260	0.2260

Site Number: 88009

Code:

ANSI/TIA-222-G

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Site Name: CORNWALL CT, CT

Engineering Number:

OAA714883\_C3\_01

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Customer: SPRINT NEXTEL

Seismic (Reduced DL) 90 deg M1	65.00	0.032	0.0003	0.1354	0.1354
Seismic (Reduced DL) 90 deg M2	37.50	0.002	0.0051	0.1545	0.1546
Seismic (Reduced DL) 90 deg M2	50.00	0.003	0.0011	0.5660	0.5660
Seismic (Reduced DL) 90 deg M2	57.55	0.021	0.0003	0.2610	0.2610
Seismic (Reduced DL) 90 deg M2	65.00	0.039	0.0002	0.1587	0.1587
Seismic (Reduced DL) 135 deg M1	37.50	0.002	0.0049	0.1582	0.1583
Seismic (Reduced DL) 135 deg M1	50.00	0.003	0.0009	0.5743	0.5743
Seismic (Reduced DL) 135 deg M1	57.55	0.016	0.0015	0.2300	0.2300
Seismic (Reduced DL) 135 deg M1	65.00	0.030	0.0012	0.1272	0.1272
Seismic (Reduced DL) 135 deg M2	37.50	0.002	0.0052	0.1674	0.1675
Seismic (Reduced DL) 135 deg M2	50.00	0.003	0.0010	0.6086	0.6086
Seismic (Reduced DL) 135 deg M2	57.55	0.020	0.0018	0.2654	0.2654
Seismic (Reduced DL) 135 deg M2	65.00	0.036	0.0015	0.1480	0.1480
Seismic (Reduced DL) 180 deg M1	37.50	0.002	0.0063	0.1449	0.1451
Seismic (Reduced DL) 180 deg M1	50.00	0.003	0.0005	0.5324	0.5324
Seismic (Reduced DL) 180 deg M1	57.55	0.016	0.0018	0.1794	0.1794
Seismic (Reduced DL) 180 deg M1	65.00	0.028	0.0016	0.1127	0.1127
Seismic (Reduced DL) 180 deg M2	37.50	0.002	0.0070	0.1511	0.1513
Seismic (Reduced DL) 180 deg M2	50.00	0.003	0.0006	0.5557	0.5557
Seismic (Reduced DL) 180 deg M2	57.55	0.019	0.0023	0.2051	0.2051
Seismic (Reduced DL) 180 deg M2	65.00	0.034	0.0020	0.1336	0.1336
Seismic (Reduced DL) 225 deg M1	37.50	0.002	0.0062	0.1582	0.1583
Seismic (Reduced DL) 225 deg M1	50.00	0.003	-0.0009	0.5743	0.5743
Seismic (Reduced DL) 225 deg M1	57.55	0.016	0.0011	0.2300	0.2300
Seismic (Reduced DL) 225 deg M1	65.00	0.030	0.0010	0.1272	0.1272
Seismic (Reduced DL) 225 deg M2	37.50	0.002	0.0069	0.1674	0.1675
Seismic (Reduced DL) 225 deg M2	50.00	0.003	-0.0010	0.6086	0.6086
Seismic (Reduced DL) 225 deg M2	57.55	0.020	0.0013	0.2654	0.2654
Seismic (Reduced DL) 225 deg M2	65.00	0.036	0.0012	0.1480	0.1480
Seismic (Reduced DL) 270 deg M1	37.50	0.002	-0.0048	0.1477	0.1478
Seismic (Reduced DL) 270 deg M1	50.00	0.003	0.0010	0.5404	0.5404
Seismic (Reduced DL) 270 deg M1	57.55	0.017	0.0004	0.2260	0.2260
Seismic (Reduced DL) 270 deg M1	65.00	0.032	0.0003	0.1354	0.1354
Seismic (Reduced DL) 270 deg M2	37.50	0.002	0.0051	0.1545	0.1546
Seismic (Reduced DL) 270 deg M2	50.00	0.003	-0.0011	0.5660	0.5660
Seismic (Reduced DL) 270 deg M2	57.55	0.021	0.0003	0.2610	0.2610
Seismic (Reduced DL) 270 deg M2	65.00	0.039	0.0002	0.1587	0.1587
Seismic (Reduced DL) 315 deg M1	37.50	0.002	-0.0062	0.1582	0.1583
Seismic (Reduced DL) 315 deg M1	50.00	0.003	0.0009	0.5743	0.5743
Seismic (Reduced DL) 315 deg M1	57.55	0.016	0.0015	0.2300	0.2300
Seismic (Reduced DL) 315 deg M1	65.00	0.030	0.0012	0.1272	0.1272
Seismic (Reduced DL) 315 deg M2	37.50	0.002	-0.0069	0.1674	0.1675
Seismic (Reduced DL) 315 deg M2	50.00	0.003	0.0010	0.6086	0.6086
Seismic (Reduced DL) 315 deg M2	57.55	0.020	0.0018	0.2654	0.2654
Seismic (Reduced DL) 315 deg M2	65.00	0.036	0.0015	0.1480	0.1480
Serviceability - 60 mph Wind Normal	37.50	0.010	0.0116	0.3128	0.3130
Serviceability - 60 mph Wind Normal	50.00	0.015	0.0082	1.1175	1.1175
Serviceability - 60 mph Wind Normal	57.55	0.084	0.0239	0.6955	0.6959
Serviceability - 60 mph Wind Normal	65.00	0.153	0.0209	0.5276	0.5276
Serviceability - 60 mph Wind 45 deg	37.50	0.010	-0.0166	0.3832	0.3836
Serviceability - 60 mph Wind 45 deg	50.00	0.015	-0.0091	1.3396	1.3396
Serviceability - 60 mph Wind 45 deg	57.55	0.090	-0.0037	0.9096	0.9096
Serviceability - 60 mph Wind 45 deg	65.00	0.165	-0.0048	0.5703	0.5711
Serviceability - 60 mph Wind 90 deg	37.50	0.010	0.0082	0.3152	0.3152
Serviceability - 60 mph Wind 90 deg	50.00	0.015	0.0025	1.1152	1.1152
Serviceability - 60 mph Wind 90 deg	57.55	0.091	-0.0103	0.8690	0.8691
Serviceability - 60 mph Wind 90 deg	65.00	0.167	-0.0086	0.5411	0.5411
Serviceability - 60 mph Wind 135 deg	37.50	0.010	0.0166	0.3832	0.3836
Serviceability - 60 mph Wind 135 deg	50.00	0.015	0.0211	1.3396	1.3396
Serviceability - 60 mph Wind 135 deg	57.55	0.090	0.0318	0.9096	0.9096
Serviceability - 60 mph Wind 135 deg	65.00	0.165	0.0301	0.5703	0.5711
Serviceability - 60 mph Wind 180 deg	37.50	0.010	0.0116	0.3128	0.3130

Site Number: 88009  
 Site Name: CORNWALL CT, CT  
 Customer: SPRINT NEXTEL

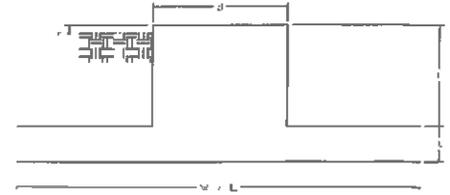
Code: ANSI/TIA-222-G  
 Engineering Number: OAA714883\_C3\_01

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Serviceability - 60 mph Wind 180 deg	50.00	0.015	0.0082	1.1175	1.1175
Serviceability - 60 mph Wind 180 deg	57.55	0.084	0.0239	0.6955	0.6959
Serviceability - 60 mph Wind 180 deg	65.00	0.153	0.0209	0.5276	0.5276
Serviceability - 60 mph Wind 225 deg	37.50	0.010	-0.0107	0.3832	0.3836
Serviceability - 60 mph Wind 225 deg	50.00	0.015	-0.0162	1.3396	1.3396
Serviceability - 60 mph Wind 225 deg	57.55	0.090	-0.0146	0.9096	0.9096
Serviceability - 60 mph Wind 225 deg	65.00	0.165	-0.0147	0.5703	0.5711
Serviceability - 60 mph Wind 270 deg	37.50	0.010	-0.0082	0.3152	0.3152
Serviceability - 60 mph Wind 270 deg	50.00	0.015	0.0025	1.1152	1.1152
Serviceability - 60 mph Wind 270 deg	57.55	0.091	0.0103	0.8690	0.8691
Serviceability - 60 mph Wind 270 deg	65.00	0.167	0.0086	0.5411	0.5411
Serviceability - 60 mph Wind 315 deg	37.50	0.010	0.0166	0.3832	0.3836
Serviceability - 60 mph Wind 315 deg	50.00	0.015	0.0211	1.3396	1.3396
Serviceability - 60 mph Wind 315 deg	57.55	0.090	0.0318	0.9096	0.9096
Serviceability - 60 mph Wind 315 deg	65.00	0.165	0.0301	0.5703	0.5711

Site Name: Cornwall, CT  
 Site Number: 88009  
 Engineering Number: OAA714883  
 Engineer: Aaron.Rucker  
 Date: 10/30/17  
 Tower Type: SST w/4 Legs

Program Last Updated: #REF!



**Design Loads (Factored) - Analysis per TIA-222-G Standards**

Design / Analysis / Mapping:	Mapping
Compression/Leg:	108.9 k
Uplift/Leg:	87.1 k
Total Shear:	58.5 k
Moment:	2727.9 k-ft
Tower + Appurtenance Weight:	49.8 k
Depth to Base of Foundation (l + t - h):	4.92 ft
Diameter of Pier (d):	4.00 ft
Height of Pier above Ground (h):	0.50
Width of Pad (W):	30.00 ft
Length of Pad (L):	30.00 ft
Thickness of Pad (t):	2.92 ft
Tower Leg Center to Center:	20.00 ft
Number of Tower Legs:	4.0 (1 if MP or GT)
Tower Center from Mat Center:	0.00 ft
Depth Below Ground Surface to Water Table:	99.00 ft
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Soil Above Water Table:	110.0 pcf
Unit Weight of Water:	62.4 pcf
Unit Weight of Soil Below Water Table:	67.0 pcf
Friction Angle of Uplift:	35.0 Degrees
Ultimate Coefficient of Shear Friction:	0.30
Ultimate Compressive Bearing Pressure:	40000.0 psf
Ultimate Passive Pressure on Pad Face:	1914.0 psf
$\phi_{\text{Soil and Concrete Weight}}$ :	0.9
$\phi_{\text{Soil}}$ :	0.75

**Overturning Moment Usage**

Design OTM:	3044.7 k-ft
OTM Resistance:	9144.9 k-ft
Design OTM / OTM Resistance:	0.33 Result: OK

**Soil Bearing Pressure Usage**

Net Bearing Pressure:	1163 psf
Factored Nominal Bearing Pressure:	30000 psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.04 Result: OK
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge

**Sliding Factor of Safety**

Total Factored Sliding Resistance:	257.3 k
Sliding Design / Sliding Resistance:	0.23 Result: OK

# Sprint



**PROJECT:** DO MACRO UPGRADE  
**SITE NAME:** CT0046 ~ RING TO EXISTING - (R2E) PH 1A  
**SITE CASCADE:** CT72XC030  
**SITE ADDRESS:** MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759  
**SITE TYPE:** LATTICE TOWER  
**MARKET:** NORTHERN CONNECTICUT

PLANS PREPARED FOR:

PLANS PREPARED BY:

FROM ZERO TO INFINIGY  
the solutions are endless

1033 Watervliet Shaker Rd | Albany, NY 12205  
Phone: 518-690-0790 | Fax: 518-690-0793  
www.infinigy.com  
JOB NUMBER 526-104

PROJECT MANAGER:

32 CLINTON ST.  
SARATOGA SPRINGS, NY 12866  
OFFICER (518) 306-3740

ENGINEERING LICENSE:

DRAWING NOTICE:  
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REVISIONS:	DESCRIPTION	DATE	BY	REV.

ISSUED FOR PERMIT: 1/30/18 ETC 0

SITE NAME:  
**CT0046 ~ RING TO EXISTING - (R2E) PH 1A**

SITE NUMBER:  
**CT72XC030**

SITE ADDRESS:  
**MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759**

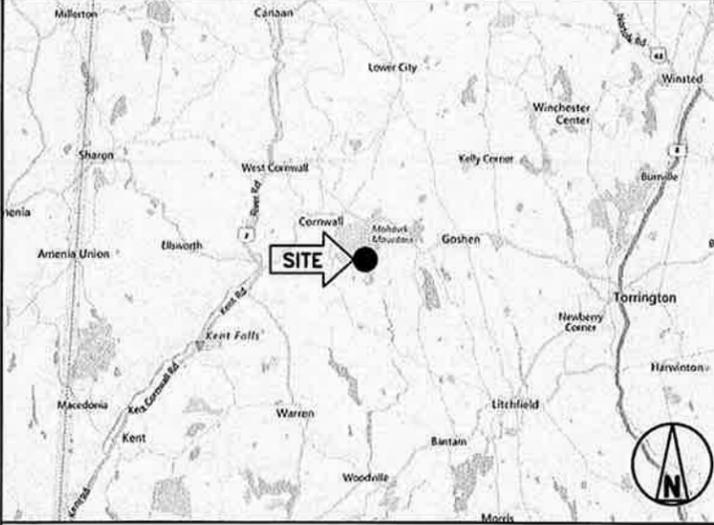
SHEET DESCRIPTION:  
**TITLE SHEET & PROJECT DATA**

SHEET NUMBER:  
**T-1**

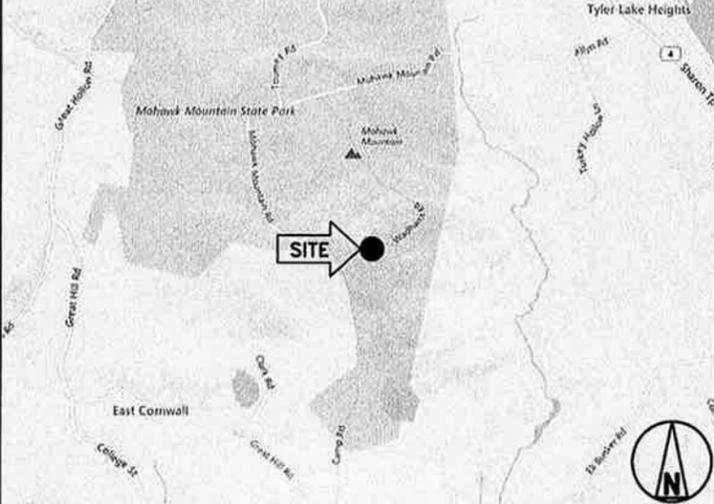
**SITE INFORMATION**

**TOWER OWNER:**  
AMERICAN TOWER CORPORATION  
10 PRESIDENTIAL WAY  
WOBBURN, MA 01801  
  
**LATITUDE (NAD83):**  
41° 49' 16.56" N  
41.82126666  
  
**LONGITUDE (NAD83):**  
73° 17' 47.36" W  
-73.29648888  
  
**COUNTY:**  
LITCHFIELD  
  
**ZONING JURISDICTION:**  
CONNECTICUT SITING COUNCIL  
  
**ZONING DISTRICT:**  
TBD  
  
**POWER COMPANY:**  
CL&P  
PHONE: (800) 286-2000  
  
**AAV PROVIDER:**  
AT&T  
PHONE: (800) 288-2020  
  
**PROJECT MANAGER:**  
AIROSMITH DEVELOPMENT  
TERRI BURKHOLDER  
(315) 719-2928  
TBURKHOLDER@AIROSMITHDEVELOPMENT.COM

**AREA MAP**



**LOCATION MAP**



**PROJECT DESCRIPTION**

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) 800 MHz RRH'S BEHIND ANTENNAS
- INSTALL (3) 2.5 GHz RRH'S BEHIND ANTENNAS
- INSTALL (30) JUMPER CABLES
- INSTALL (1) HYBRID CABLE
- INSTALL 2.5 EQUIPMENT INSIDE EXISTING N.V. MMBS 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 (2015 IBC)
2. TIA-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

**DRAWING INDEX**

SHEET NO.	SHEET TITLE	REV.
T-1	TITLE SHEET & PROJECT DATA	0
SP-1	SPRINT SPECIFICATIONS	0
SP-2	SPRINT SPECIFICATIONS	0
SP-3	SPRINT SPECIFICATIONS	0
A-1	SITE PLAN	0
A-2	TOWER ELEVATION	0
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0
A-4	EQUIPMENT & MOUNTING DETAILS	0
A-5	CIVIL DETAILS	0
A-6	PLUMBING DIAGRAM	0
E-1	ELECTRICAL & GROUNDING PLAN	0
E-2	ELECTRICAL & GROUNDING DETAILS	0



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:

PLANS PREPARED FOR:



PLANS PREPARED BY:



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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/30/18	ETC	0

SITE NAME:

**CT0046 ~ RING TO EXISTING - (R2E) PH 1A**

SITE NUMBER:

**CT72XC030**

SITE ADDRESS:

**MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759**

SHEET DESCRIPTION:

**SPRINT SPECIFICATIONS**

SHEET NUMBER:

**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 ANTENNA 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)

PLANS PREPARED FOR:



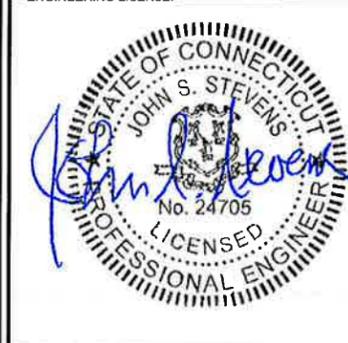
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JOB NUMBER 526-104

PROJECT MANAGER:

**AIROSMITH**  
DEVELOPMENT  
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OFFICE: (518) 308-3740

ENGINEERING LICENSE:



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REVISIONS:

DESCRIPTION	DATE	BY	REV.
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SITE NAME:

**CT0046 ~ RING TO EXISTING - (R2E) PH 1A**

SITE NUMBER:

**CT72XC030**

SITE ADDRESS:

**MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759**

SHEET DESCRIPTION:

**SPRINT SPECIFICATIONS**

SHEET NUMBER:

**SP-2**



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SITE NAME:

CT0046 ~ RING TO EXISTING - (R2E) PH 1A

SITE NUMBER:

CT72XC030

SITE ADDRESS:

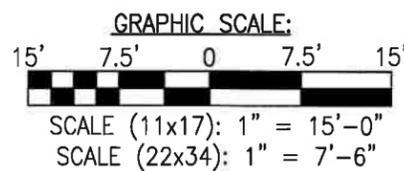
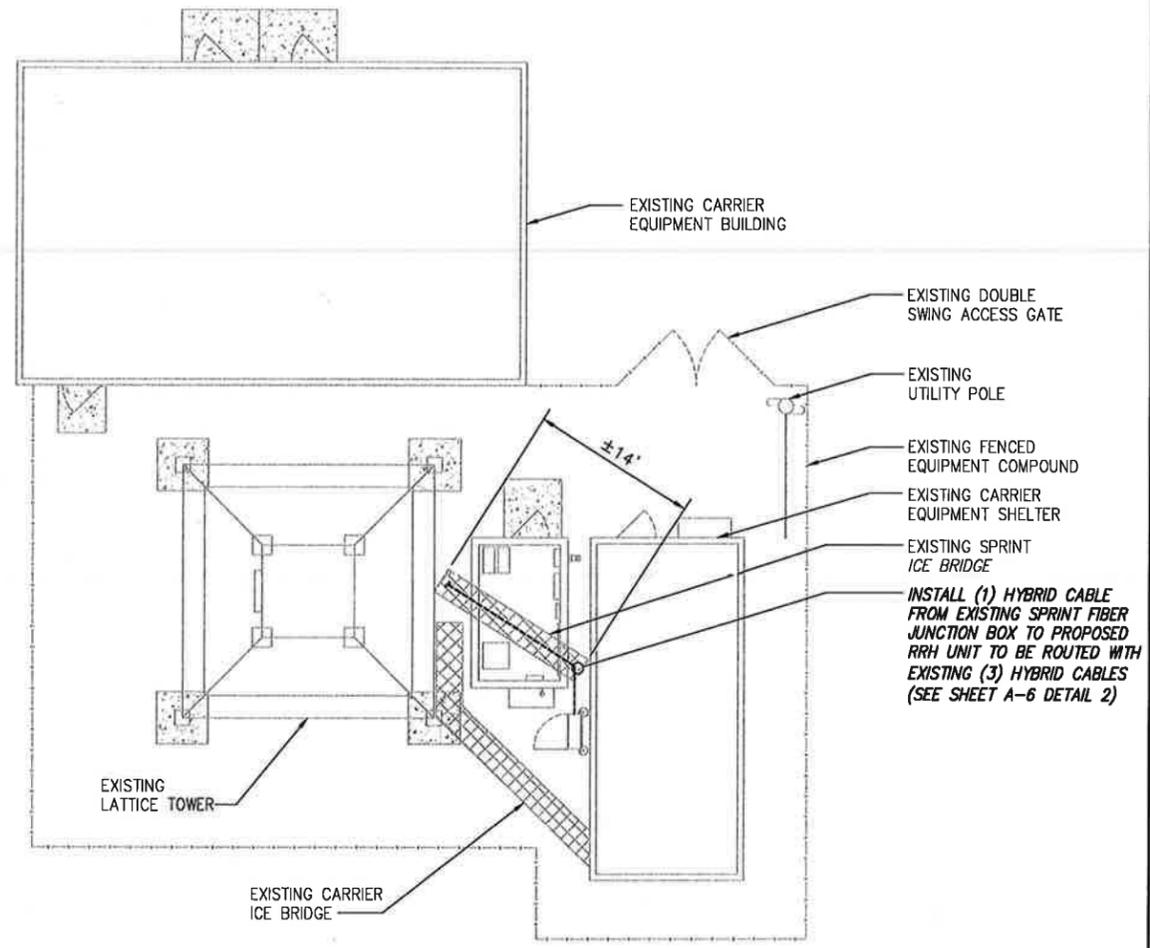
MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759

SHEET DESCRIPTION:

SITE PLAN

SHEET NUMBER:

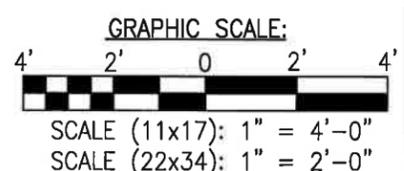
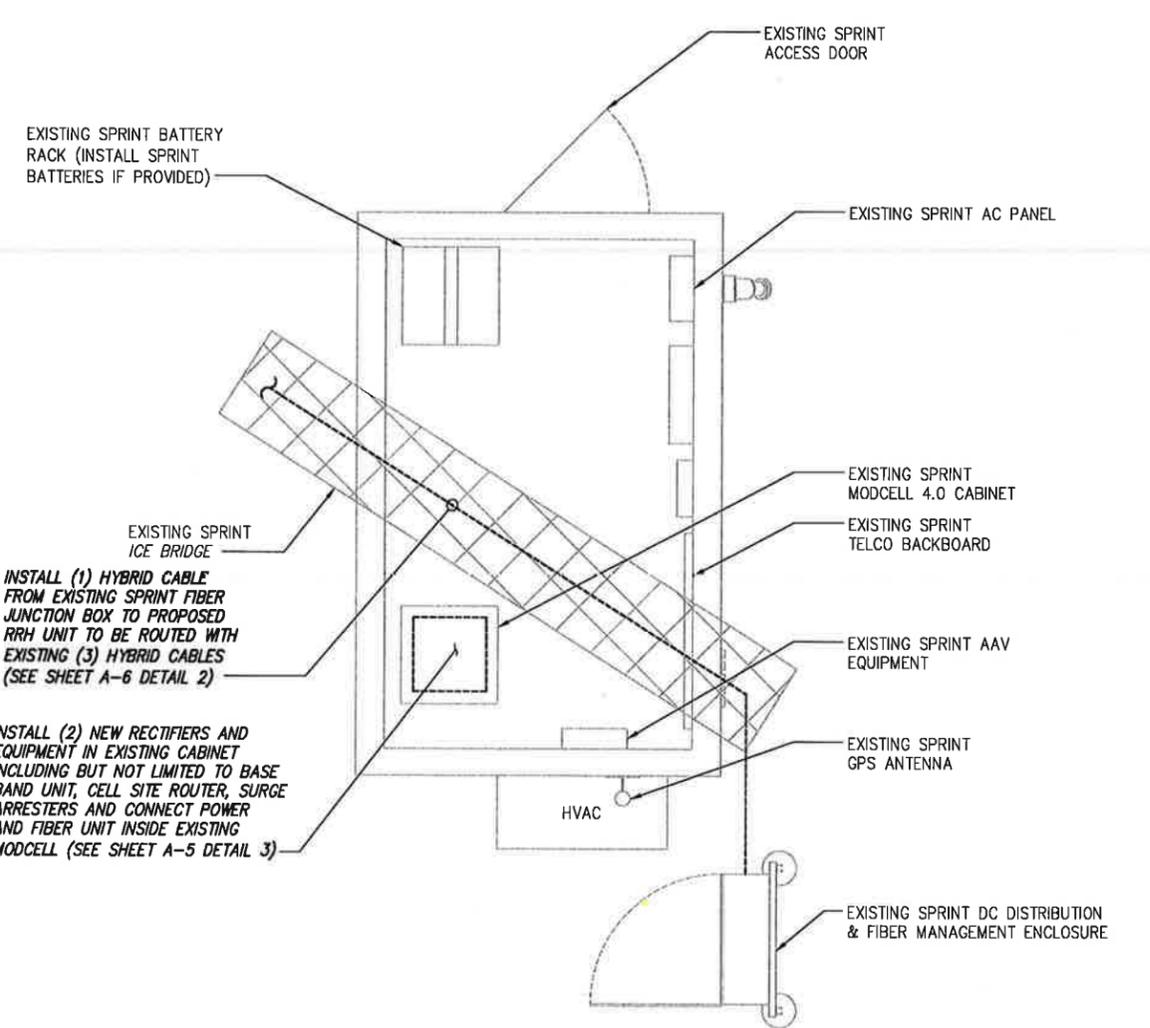
A-1



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OVERALL SITE PLAN

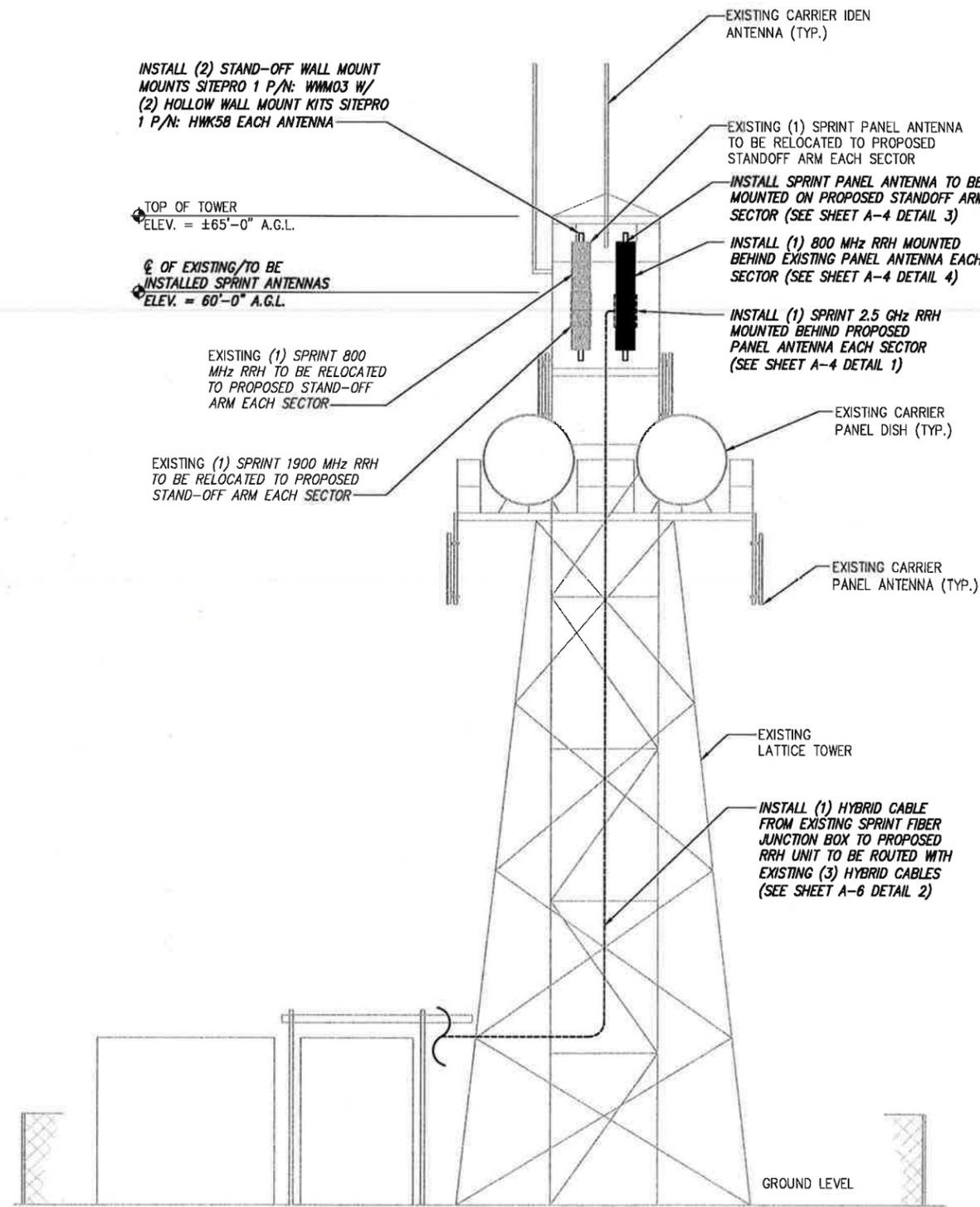
SCALE: AS NOTED 1



SPRINT EQUIPMENT PLAN

SCALE: AS NOTED 2

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



TOWER ELEVATION

NO SCALE

1

SITE LOADING CHART										
SECTOR	EXISTING/PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	PROPOSED	DT465B-2XR	COMMSCOPE	310°	1	-	(2) 800 MHZ 2X50W RRH W/ FILTER (1) TD-RRHBX20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1	±60' AGL	
	EXISTING	APXVSP18-C-A20	RFS	310°	1	REMAIN	(1) 1900 MHZ 4X45 RRH	EXISTING HYBRID		
BETA	PROPOSED	DT465B-2XR	COMMSCOPE	80°	1	-	(2) 800 MHZ 2X50W RRH W/ FILTER (1) TD-RRHBX20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1	±98'-0"	±60' AGL
	EXISTING	APXVSP18-C-A20	RFS	80°	1	REMAIN	(1) 1900 MHZ 4X45 RRH	EXISTING HYBRID		
GAMMA	PROPOSED	DT465B-2XR	COMMSCOPE	200°	1	-	(2) 800 MHZ 2X50W RRH W/ FILTER (1) TD-RRHBX20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1	±60' AGL	
	EXISTING	APXVSP18-C-A20	RFS	200°	1	REMAIN	(1) 1900 MHZ 4X45 RRH	EXISTING HYBRID		

PROJECT SCOPE:

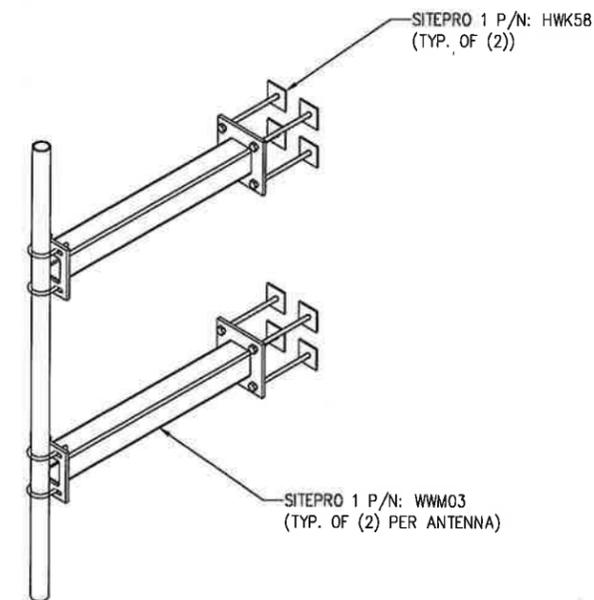
INSTALL: (3) PANEL ANTENNAS AND (6) RRH'S

\* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

SITE LOADING CHART

NO SCALE

2



MOUNT DETAIL

NO SCALE

3

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PLANS PREPARED BY:



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www.infinigy.com

JOB NUMBER 526-104

PROJECT MANAGER:



32 CLINTON ST.

SARATOGA SPRINGS, NY 12866

OFFICE: (518) 306-3740

ENGINEERING LICENSE:



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DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/30/18	ETC	D

SITE NAME:

CT0046 ~ RING TO EXISTING - (R2E) PH 1A

SITE NUMBER:

CT72XC030

SITE ADDRESS:

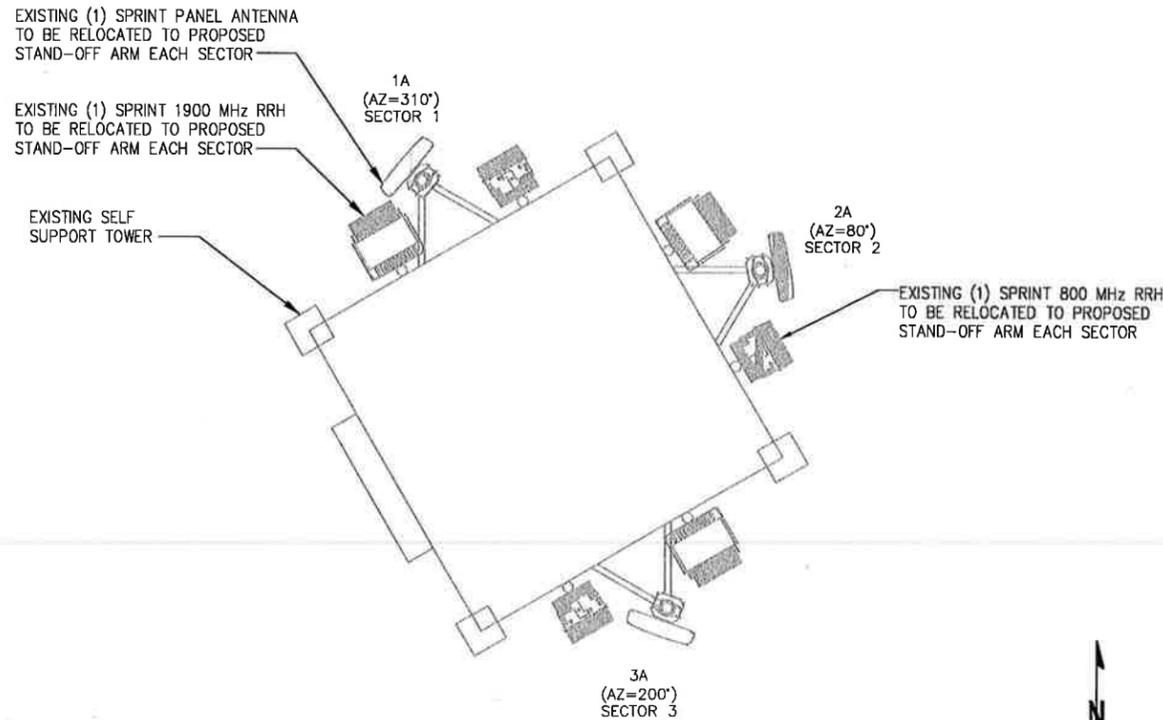
MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759

SHEET DESCRIPTION:

TOWER ELEVATION

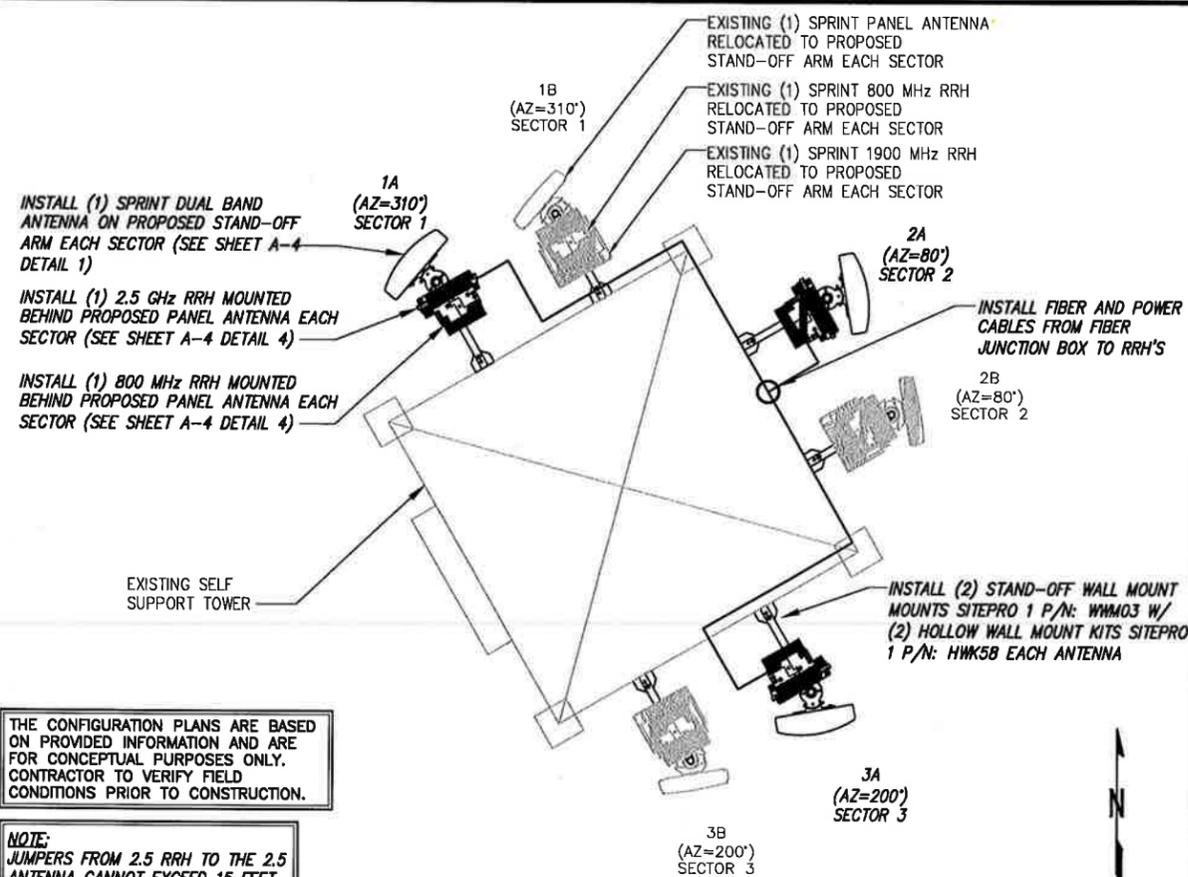
SHEET NUMBER:

A-2



EXISTING ANTENNA & RRH LAYOUT

NO SCALE 1

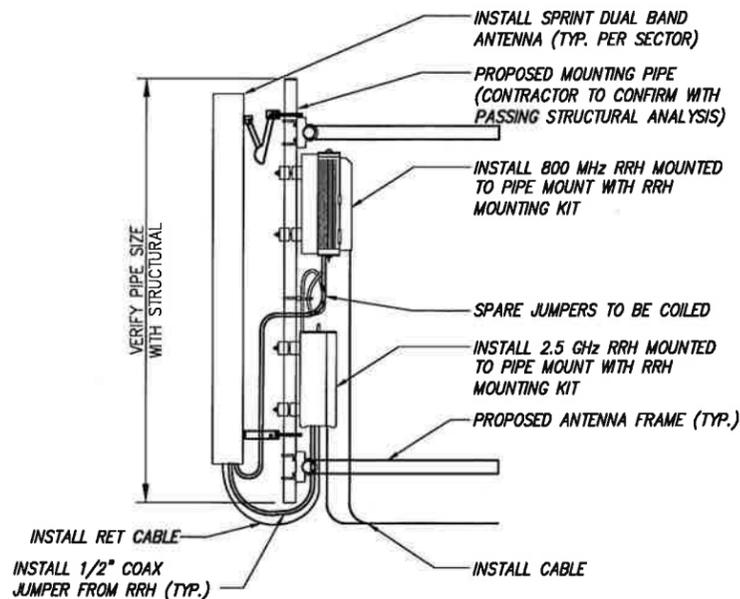


FINAL ANTENNA & RRH LAYOUT

NO SCALE 2

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

NOTE: JUMPERS FROM 2.5 RRH TO THE 2.5 ANTENNA CANNOT EXCEED 15 FEET



TYPICAL ANTENNA & RRH MOUNTING DETAILS

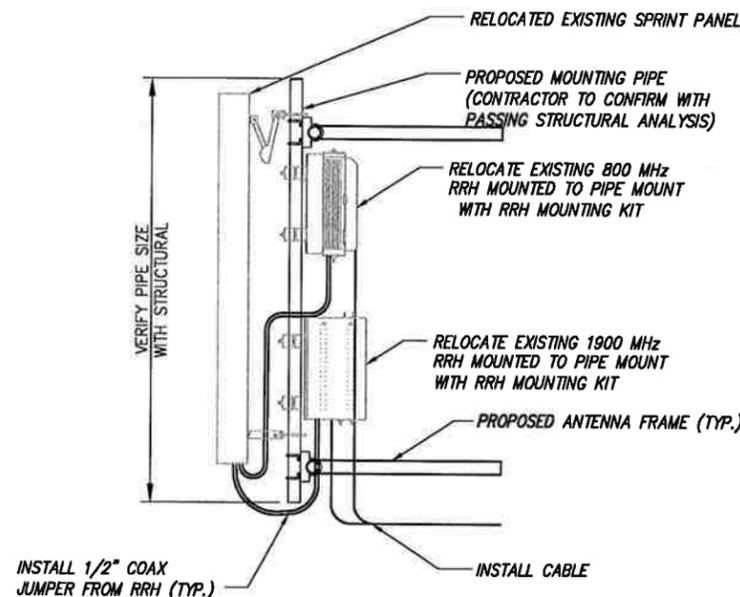
NO SCALE 3

NOTE: CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

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

NOTES:

1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
3. DO NO EXCEED BEND RADIUS.



TYPICAL ANTENNA & RRH MOUNTING DETAILS

NO SCALE 4

NOTE: CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

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

NOTES:

1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
3. DO NO EXCEED BEND RADIUS.

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PLANS PREPARED BY:

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DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/30/18	ETC	0

SITE NAME:

CT0046 ~ RING TO EXISTING - (R2E) PH 1A

SITE NUMBER:

CT72XC030

SITE ADDRESS:

MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759

SHEET DESCRIPTION:

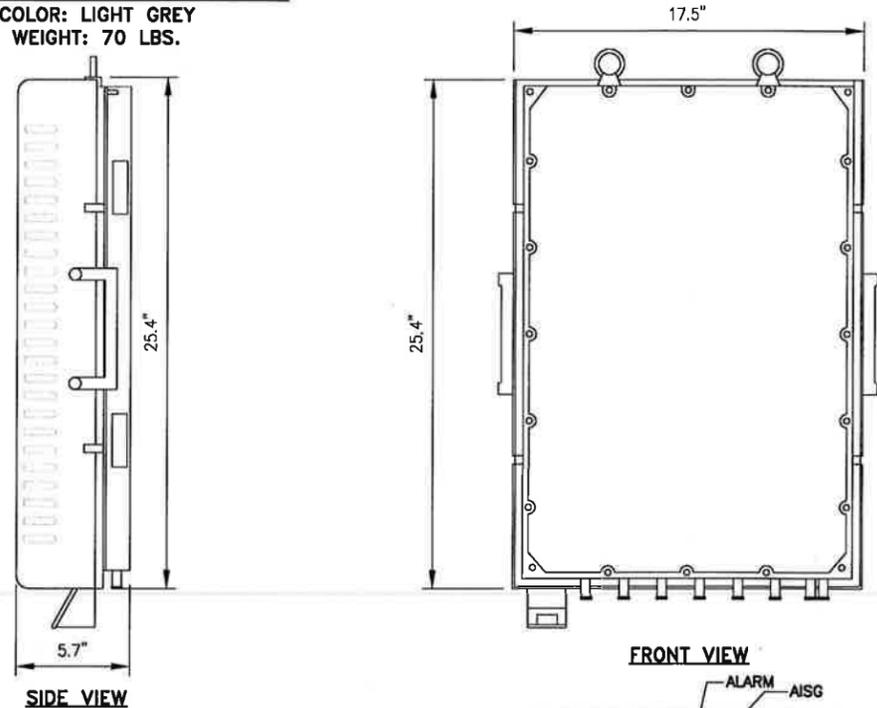
ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER:

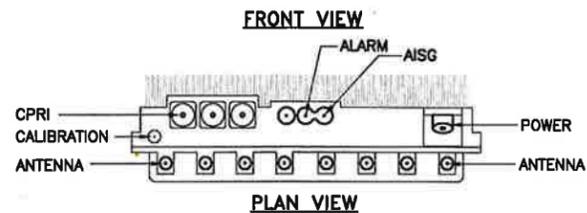
A-3

RRH: ALCATEL LUCENT TD-RRH8X20

COLOR: LIGHT GREY  
WEIGHT: 70 LBS.



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

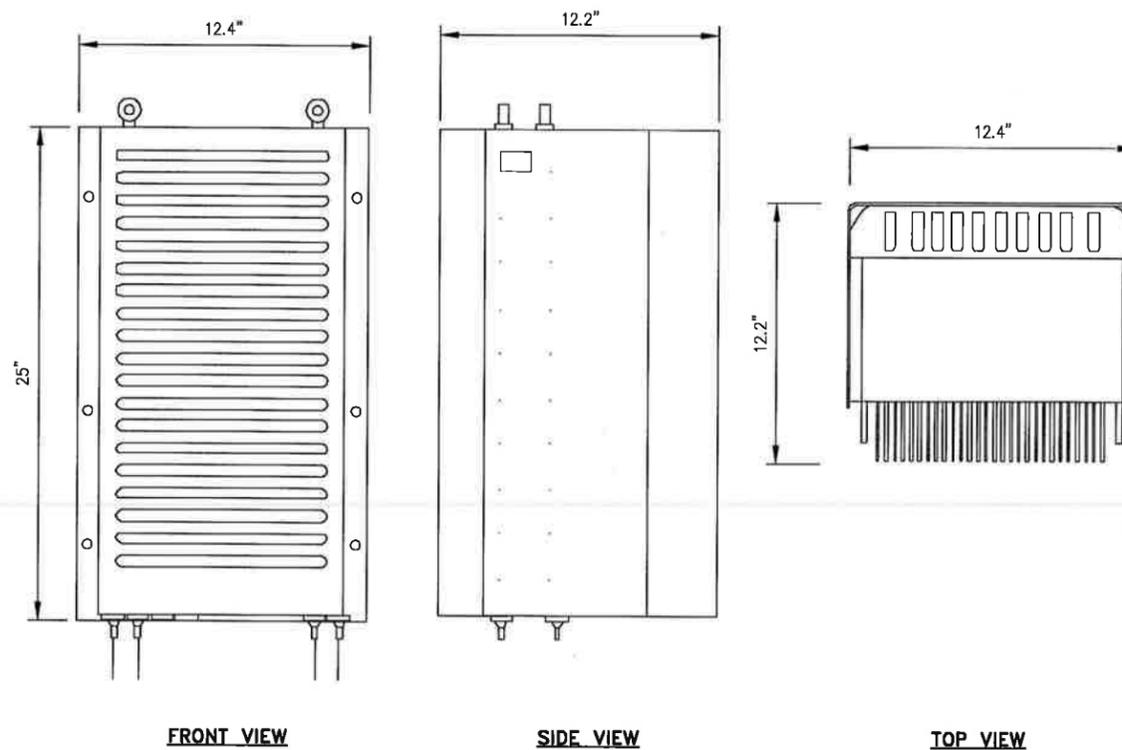


2.5 GHz RRH

NO SCALE

1

RRH: ALCATEL LUCENT 1900 MHz  
COLOR: LIGHT GREY  
WEIGHT: 70 LBS.  
(INCLUDING OPTIONAL SOLAR SHIELD)



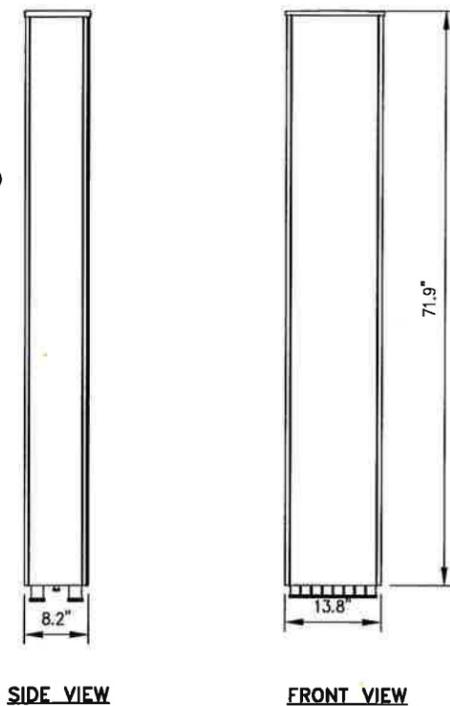
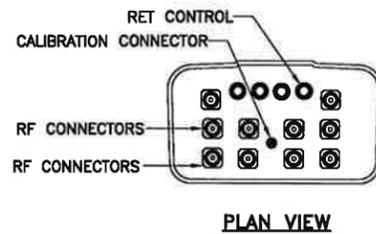
EXISTING 1900 MHz RRH

NO SCALE

2

**ANTENNA COMMSCOPE DT465B-2XR**

RADOME MATERIAL: FIBERGLASS  
RADOME COLOR: LIGHT GREY  
DIMENSIONS, HxWxD.in(mim): 71.9"x13.8"x8.2" (1825x350x209mm)  
WEIGHT: 58 lbs  
CONNECTORS: (2) 7/16" DIN FEMALE  
(8) 4.1/9.5 DIN FEMALE



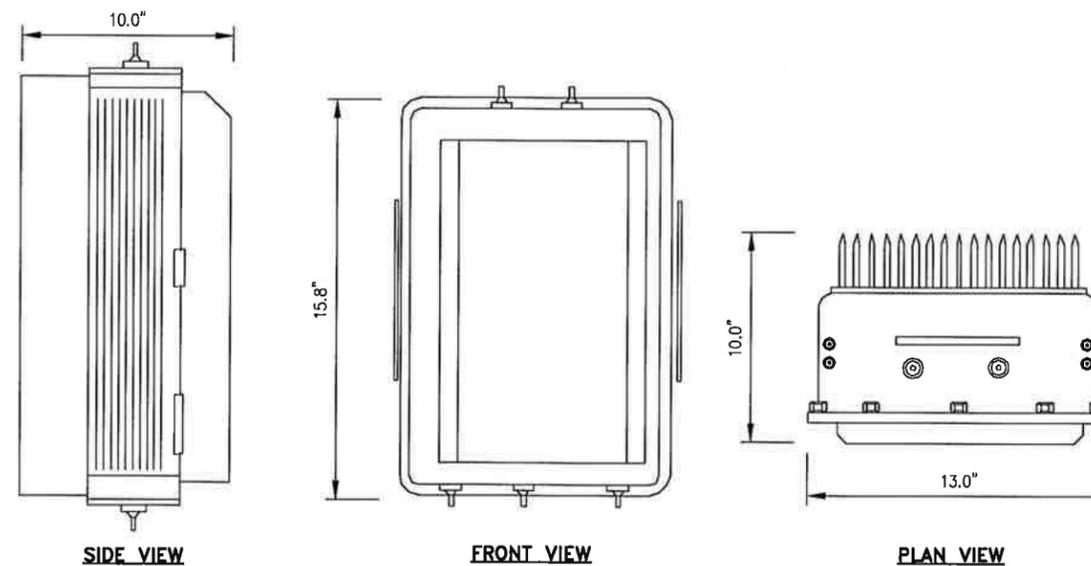
DUAL BAND ANTENNA

NO SCALE

3

RRH: ALCATEL LUCENT RRH 800 MHz 2x50W  
COLOR: LIGHT GREY  
WEIGHT: 53 LBS.

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



800 MHz RRH

NO SCALE

4

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**AIROSMITH**  
DEVELOPMENT

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SITE NAME:

CT0046 ~ RING TO  
EXISTING - (R2E) PH 1A

SITE NUMBER:

CT72XC030

SITE ADDRESS:

MOHAWK MOUNTAIN  
ROAD  
LITCHFIELD, CT 06759

SHEET DESCRIPTION:

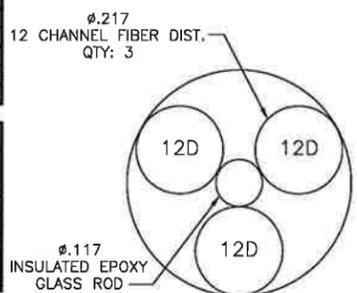
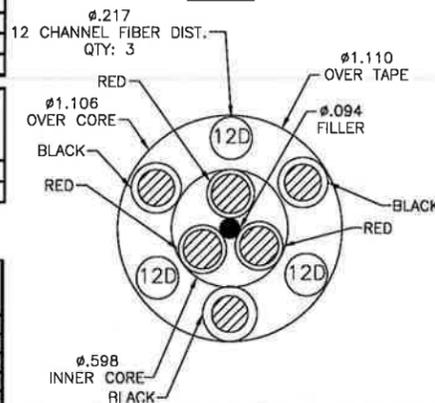
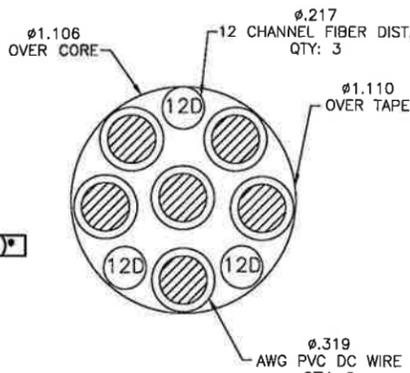
EQUIPMENT &  
MOUNTING DETAILS

SHEET NUMBER:

A-4

**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**

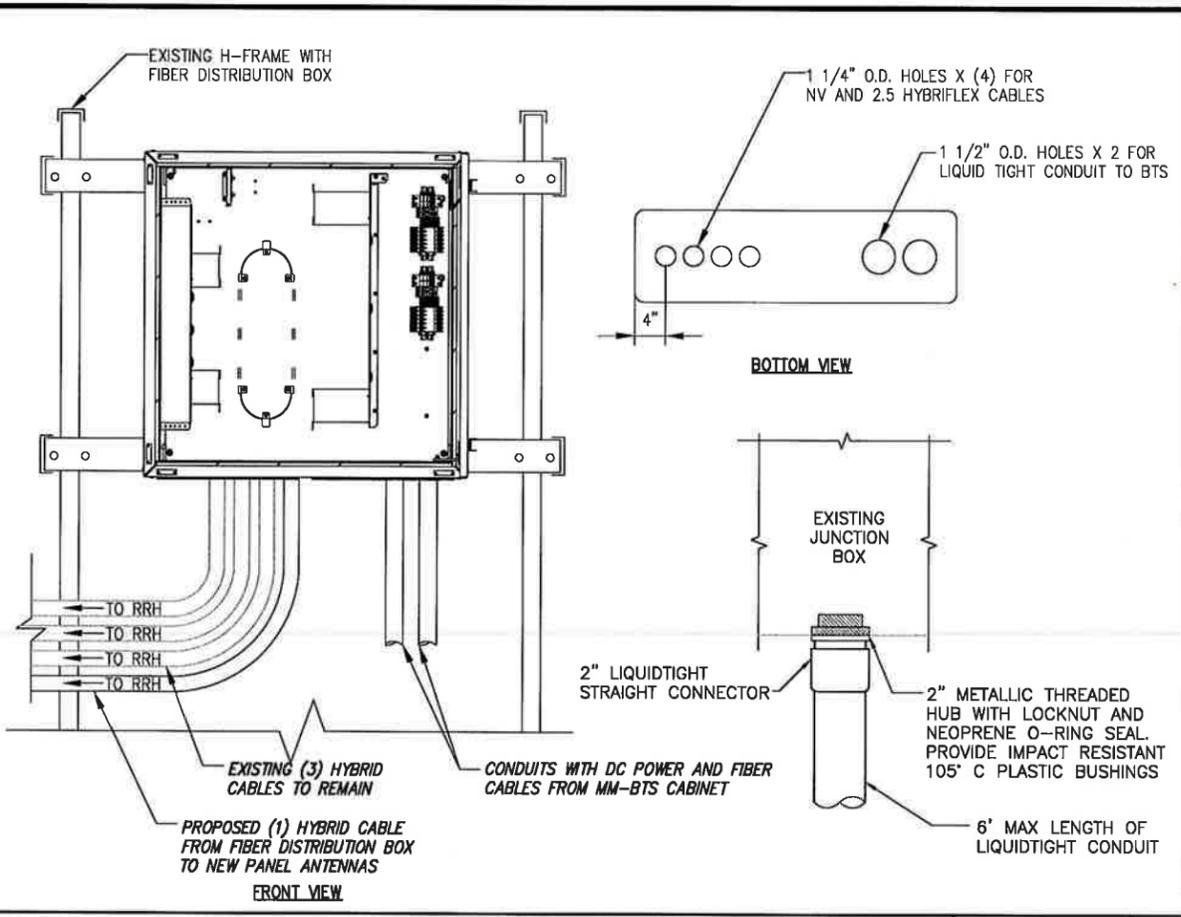
Fiber Only	Hybrid Jumper cable MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	Hybrid Jumper cable MN: HBF058-08U1M3-5F1 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.

\* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF  
ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN  
ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

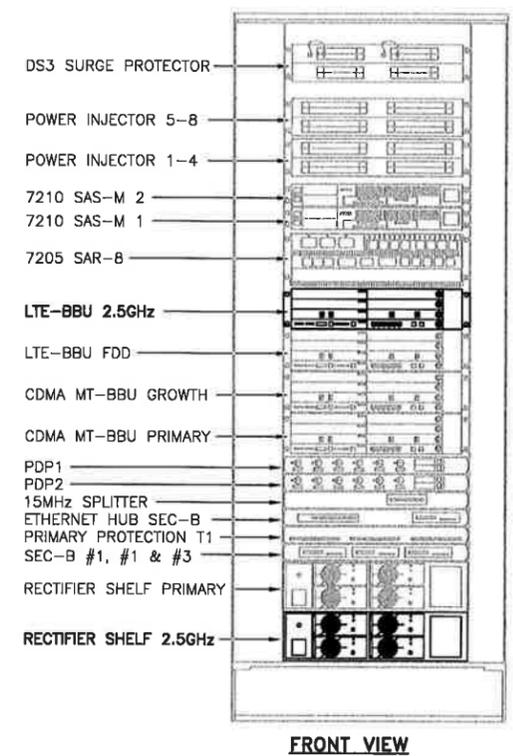
**800/1900/2500 CABLE CROSS SECTION DATA**

NO SCALE 1



**FIBER JUNCTION BOX & PENETRATION**

NO SCALE 2



**FRONT VIEW**

**NEW EQUIPMENT IN EXISTING CABINET**

NO SCALE 3

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JOB NUMBER 526-104

PROJECT MANAGER:  
**AIRSMITH**  
DEVELOPMENT  
32 CLINTON ST.  
SARATOGA SPRINGS, NY 12866  
OFFICE# (518) 306-3740

ENGINEERING LICENSE:  
STATE OF CONNECTICUT  
JOHN S. STEVENS  
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LICENSED PROFESSIONAL ENGINEER

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SITE NAME:  
**CT0046 ~ RING TO  
EXISTING - (R2E) PH 1A**

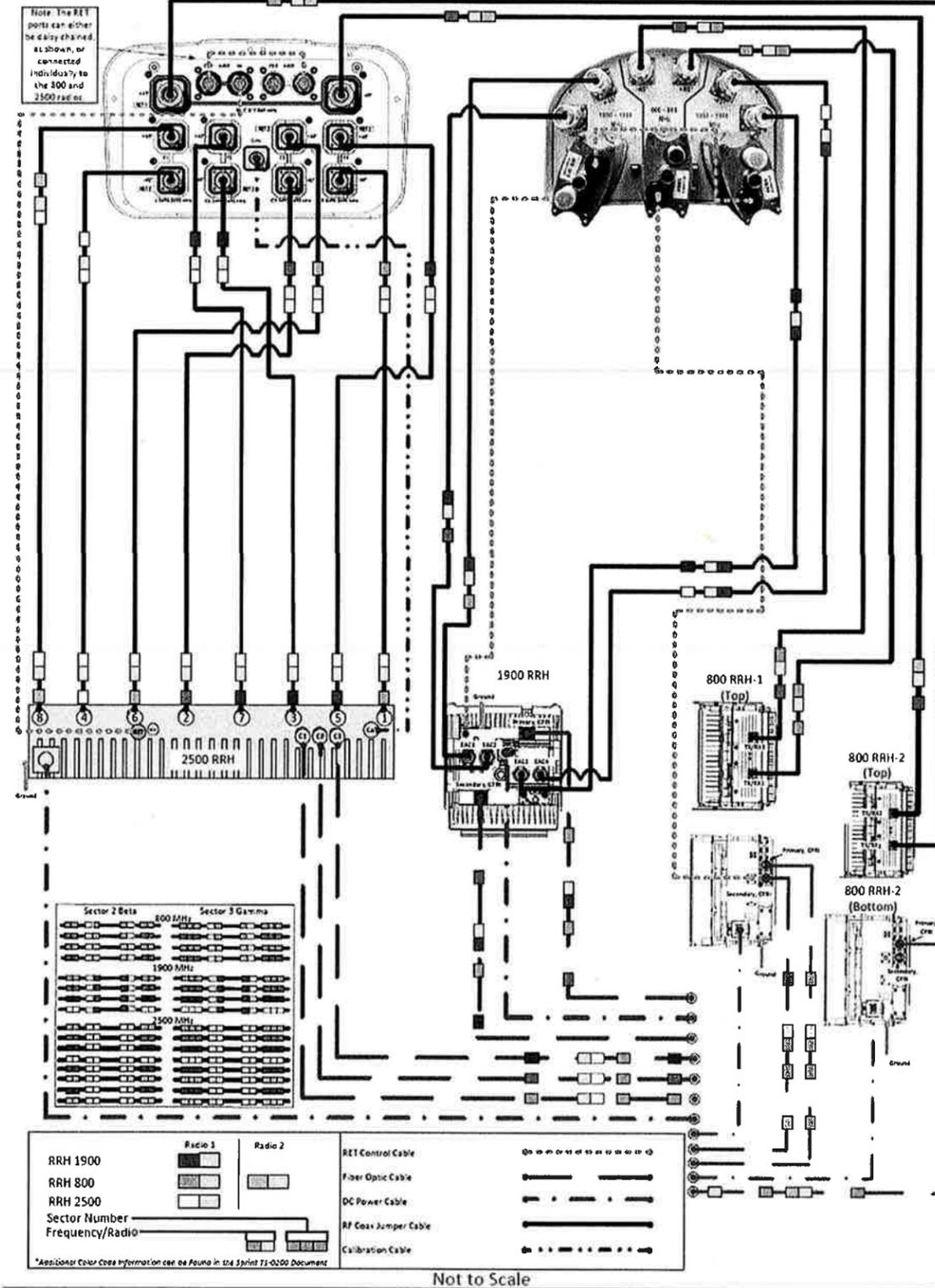
SITE NUMBER:  
**CT72XC030**

SITE ADDRESS:  
**MOHAWK MOUNTAIN  
ROAD  
LITCHFIELD, CT 06759**

SHEET DESCRIPTION:  
**CIVIL DETAILS**

SHEET NUMBER:  
**A-5**

ALU 211 DT465B-2XR & APXVSP18-C-A20 wo Filters



PLUMBING DIAGRAM

NO SCALE

1

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SITE NAME:

CT0046 ~ RING TO EXISTING - (R2E) PH 1A

SITE NUMBER:

CT72XC030

SITE ADDRESS:

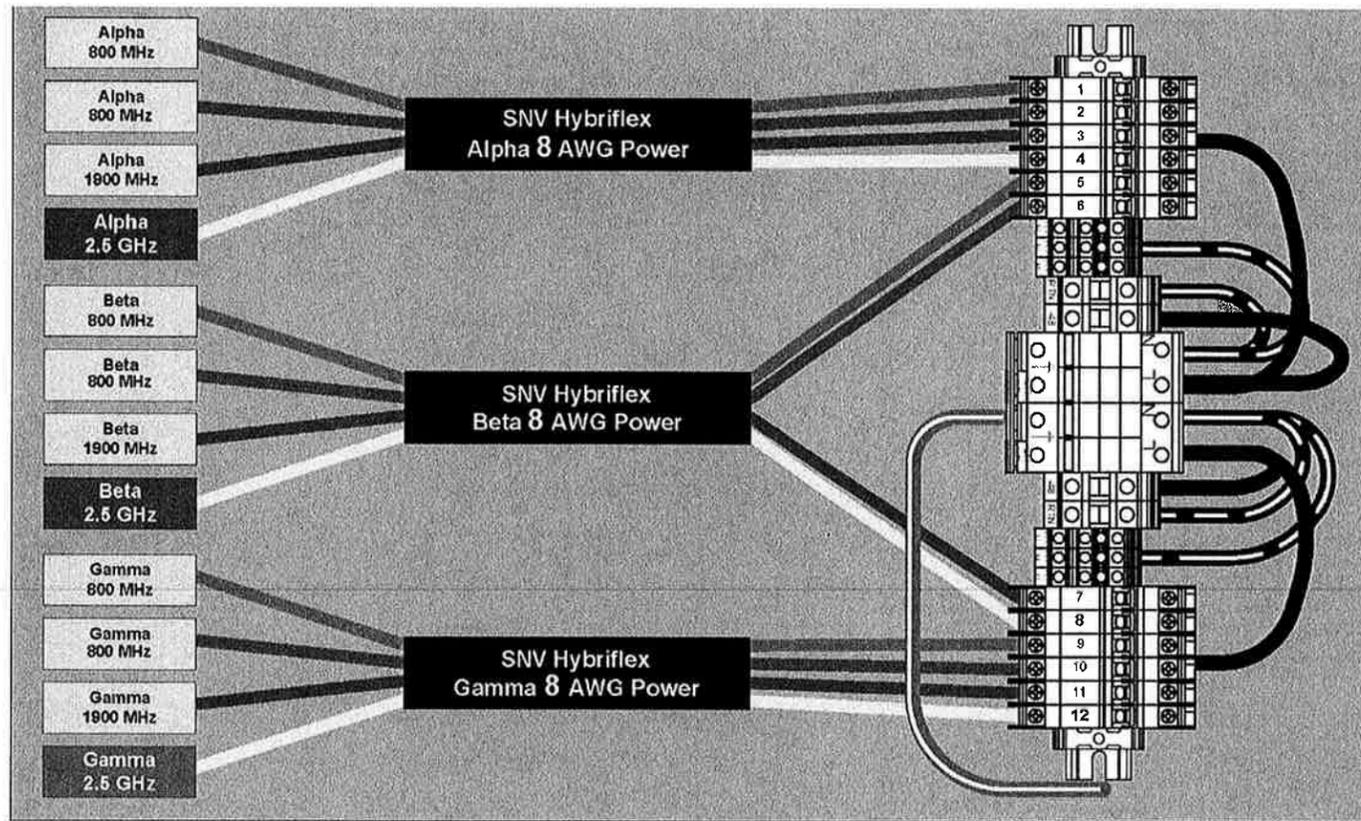
MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

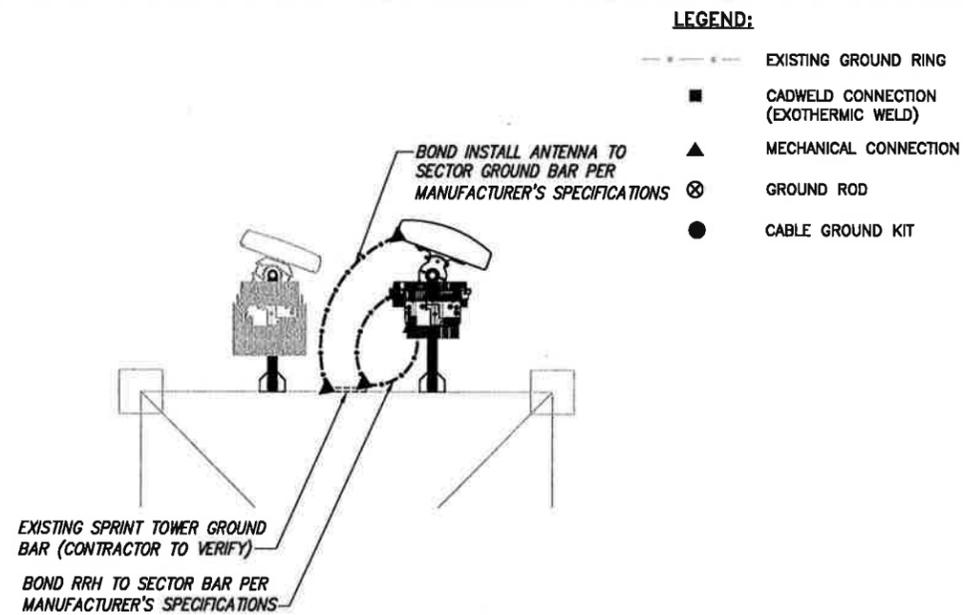
A-6



RRH TO DISTRIBUTION BOX POWER CONNECTIVITY

NO SCALE

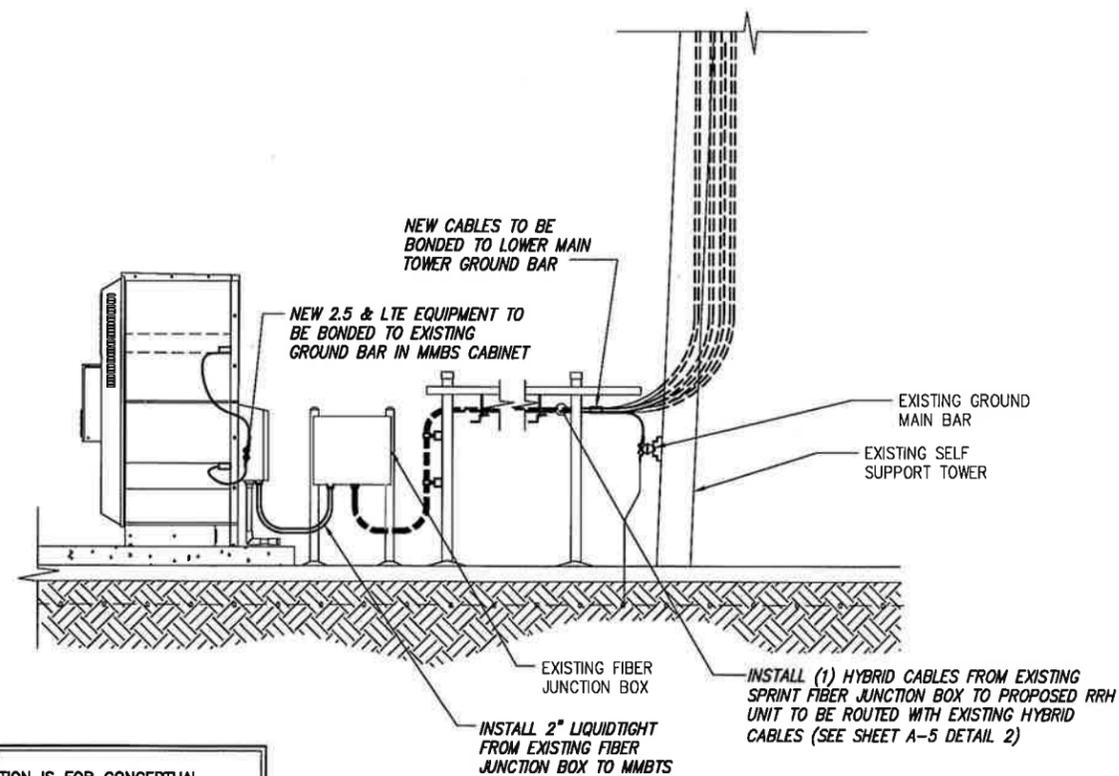
1



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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PLANS PREPARED BY:

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DESCRIPTION	DATE	BY	REV.

ISSUED FOR PERMIT: 1/30/18 ETC 0

SITE NAME:  
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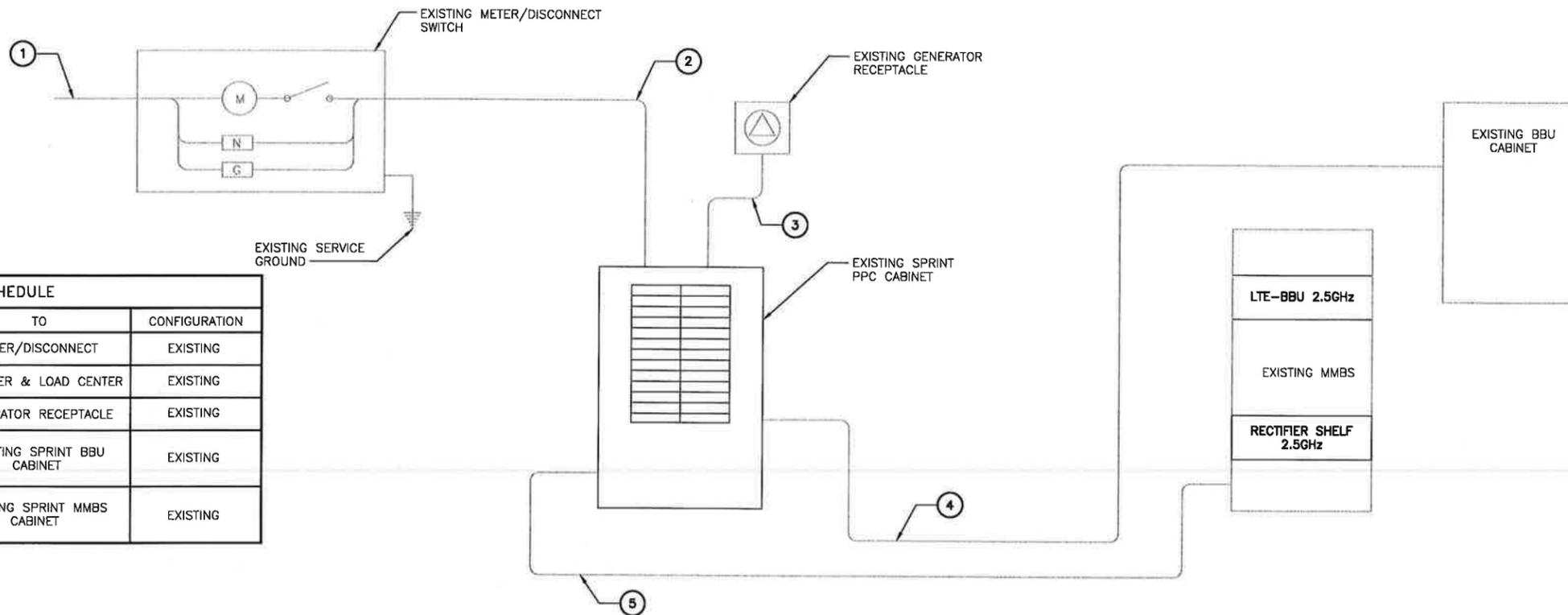
SITE NUMBER:  
**CT72XC030**

SITE ADDRESS:  
**MOHAWK MOUNTAIN ROAD  
LITCHFIELD, CT 06759**

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.

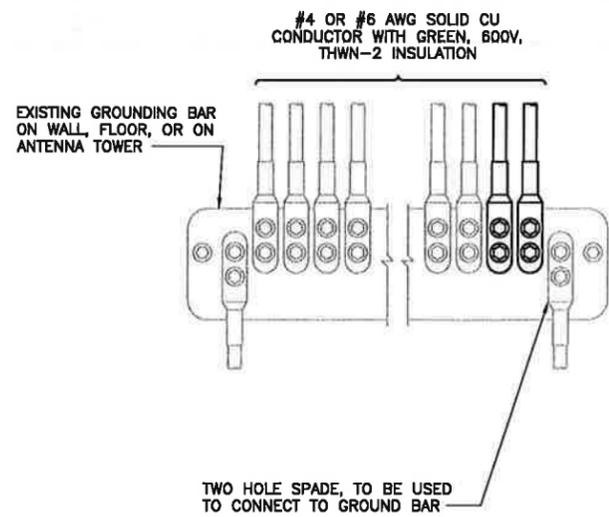


CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
①	UTILITY SOURCE	METER/DISCONNECT	EXISTING
②	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
③	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
④	TRANSFER & LOAD CENTER	EXISTING SPRINT BBU CABINET	EXISTING
⑤	TRANSFER & LOAD CENTER	EXISTING SPRINT MMBS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

**ELECTRICAL ONE-LINE DIAGRAM**

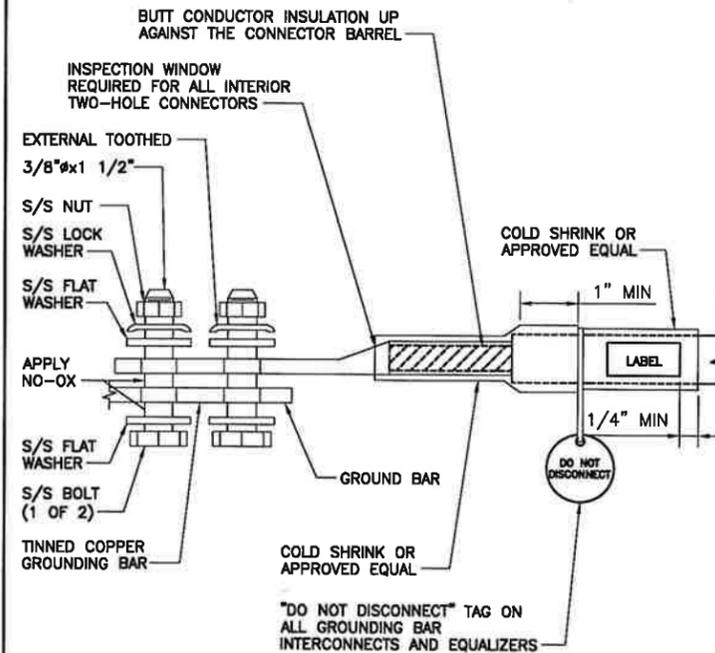
NO SCALE

1



**NOTES**

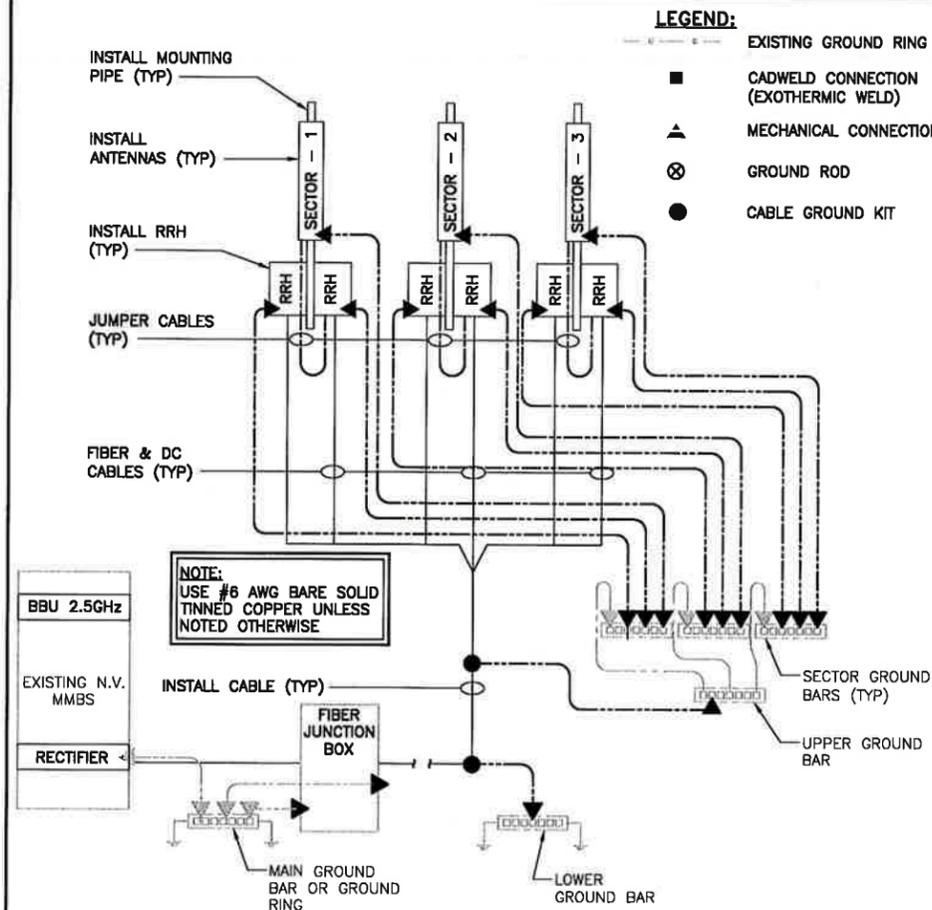
1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.



**TWO HOLE LUG**

NO SCALE

3



**GROUNDING RISER DIAGRAM**

NO SCALE

4

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PLANS PREPARED BY:

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DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/30/18	ETC	0

SITE NAME:

CT0046 ~ RING TO EXISTING - (R2E) PH 1A

SITE NUMBER:

CT72XC030

SITE ADDRESS:

MOHAWK MOUNTAIN ROAD  
 LITCHFIELD, CT 06759

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-2

**INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR**

NO SCALE

2