Sprint

Together with Nextel

48 Spruce Street
Oakland, NJ 07436
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Jennifer Notaro
Real Estate Consultant

March, 31st 2014

Hand Delivered

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

RE: Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 430 Boston Post Rd, Milford, CT 06461. Known to Sprint Spectrum L.P. as site CT23XC552.

Dear Ms. Roberts:

In order to accommodate technological changes, implement Code Division Multiple Access ("CDMA") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the state of Connecticut, Sprint Spectrum L.P. plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

CDMA employs Spread-Spectrum technology and special coding scheme to allow multiple users to be multiplexed over the same physical channel. LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

As part of the project the new multi-mode 800/1900 antenna will replace existing antennas. These antennas will provide more flexibility for optimization by allowing fast and easy electrical tilt adjustment from remote location and will enable the transmission of multiple technologies from a single antenna. As Sprint Nextel's network evolves to meet the demands of its customers, it is essential for Sprint Nextel to install modern

equipment and antennas in order to provide reliable wireless voice and data services. The proposed equipment will include multi-mode radios that will allow Sprint Nextel to transmit at different frequencies using different technologies, including LTE technology. Likewise, the proposed antennas are quad-pole multi-band high gain antennas that will allow Sprint to operate using its multiple frequency bands and technologies, including LTE technology. The proposed equipment and antennas will improve the reliability, coverage and capacity of Sprint Nextel's voice and data networks across Sprint Nextel's various FCC licensed frequency bands and significantly increase the data speeds of Sprint Nextel's network by utilizing the latest LTE technology. Without the proposed modifications Sprint Nextel will be unable to provide reliable wireless voice and data service using the latest technologies.

Sprint Spectrum L.P. will have an interim (testing) period during the modification/installation prior to the final configuration. This antenna configuration is shown on the attached drawings of the planned modifications. Also included is the power density calculation reflecting the change in Sprint's operations at the site and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modification as defined Connecticut General Statues ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for the R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not be affected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by 6 decibels or more.
4. Radio Frequency power density may increase due to the use of one or more CDMA transmissions. Moreover, LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

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

Please feel free to call me at (845)-499-4712 or email jnotaro@Transcendwireless.com with questions concerning this matter.
Thank you for your consideration.

Sincerely,

Jennifer Notaro
Real Estate Consultant

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

Sprint Existing Facility

Site ID: CT23XC552

Milford AT&T
430 Boston Post Road
Milford, CT 06460

August 28, 2012

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

EBI Consulting
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August 28, 2012

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

Re: Emissions Values for Site **CT23XC552 – Milford AT&T**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 430 Boston Post Road, Milford, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 430 Boston Post Road, Milford, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. 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 emissions were calculated using the following assumptions:

1) 3 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) 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.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antenna used in this modeling is the RFS APXVSPP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

6) The antenna mounting height centerline of the proposed antennas is **100.3 feet** above ground level (AGL)
7) 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 calculation were done with respect to uncontrolled / general public and Controlled / Occupational threshold limits

Site ID	CT23XC552 - Milford AT&T
Site Addresss	430 Boston Post Road, Milford, CT 06460
Site Type	Self Support Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	100.3	94.3	1/2 "	0.5	0	2080.4211	84.10733	8.41073%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	100.3	94.3	1/2 "	0.5	0	389.96892	15.76568	2.78054%
														Sector total Power Density Value:		11.191%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	100.3	94.3	1/2 "	0.5	0	2080.4211	84.10733	8.41073%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	100.3	94.3	1/2 "	0.5	0	389.96892	15.76568	2.78054%
														Sector total Power Density Value:		11.191%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	100.3	94.3	1/2 "	0.5	0	2080.4211	84.10733	8.41073%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	100.3	94.3	1/2 "	0.5	0	389.96892	15.76568	2.78054%
														Sector total Power Density Value:		11.191%	

Site Composite MPE %

Carrier	MPE %
Sprint	33.574%
Town	0.300%
T-Mobile	7.350%
Pocket	10.640%
XM	21.120%
Clearwire	3.300%
Verizon Wireless	26.540%
AT&T	12.270%
Total Site MPE %	**115.094%**

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Summary

All calculations performed for this analysis yielded results that were above the allowable limits for general public exposure to RF Emissions. However, the area surrounding the tower is a controlled fenced compound, occupational threshold limits would apply to this area.

The anticipated Maximum Composite contributions from the Sprint facility are **33.574% (11.191% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level. This is equal to **6.715% (2.238% from each sector)** of the allowable FCC established occupational limit considering all three sectors simultaneously sampled at the ground level

The anticipated composite MPE value for this site assuming all carriers present is **115.094%** of the allowable FCC established general public limit sampled at the ground level. This is equal to **23.019%** of the allowable FCC established occupational 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. Although values could potentially exceed the FCC established general public limit at the base of the tower, this area is well within the FCC established occupational limit for this same area and should be considered in compliance since it is a controlled area.

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

Date: **March 07, 2014**

Patrick Byrum
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Crown Castle
2000 Corporate Drive
Canonsburg, PA
(724) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation:	***Sprint PCS* Co-Locate**	
	Carrier Site Number:	CT23XC552
	Carrier Site Name:	Milford / AT&T
Crown Castle Designation:	**Crown Castle BU Number:**	842870
	Crown Castle Site Name:	MILFORD
	Crown Castle JDE Job Number:	262584
	Crown Castle Work Order Number:	717495
	Crown Castle Application Number:	220333 Rev. 4
Engineering Firm Designation:	**Crown Castle Project Number:**	717495
Site Data:	**434 BOSTON POST ROAD, MILFORD, New Haven County, CT** **Latitude *41° 13' 42.7"*, Longitude *-73° 4' 12.5"*** **150 Foot - Self Support Tower**	

Dear Patrick Byrum,

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 717495, in accordance with application 220333, revision 4.

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

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

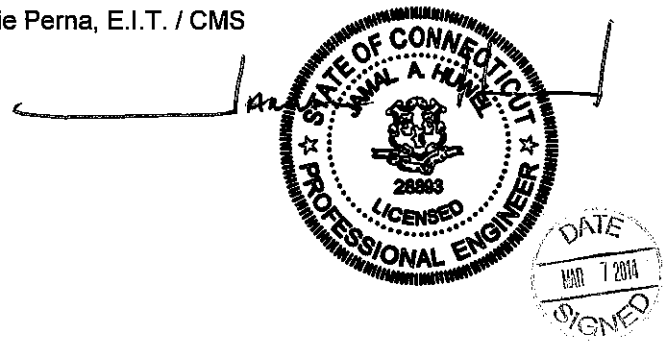
The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 85 mph fastest mile.

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

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

Structural analysis prepared by: Melanie Perna, E.I.T. / CMS

Respectfully submitted by:



Jamal A. Huwel, P.E.
Manager Engineering

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150 ft Self Support tower designed by PiROD Inc. in March of 2000. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

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

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
100.0	100.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	3	1-1/4	-
		3	alcatel lucent	PCS 1900MHz 2x40W			
		6	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
151.0	151.0	3	scala	PR-950	3	1-5/8	1
		1	tower mounts	Platform Mount [LP 405-1]			
141.0	141.0	3	ericsson	RRUS 11-700	3	1-1/4	2
		3	ericsson	RRUS 11-AWS			
		1	raycap	DC6-48-60-18-8F			
		3	kmw communications	AM-X-CD-14-65-00T-RET w/ Mount Pipe			
		6	powerwave technologies	7770.00 w/ Mount Pipe	12	1-5/8	1
		6	powerwave technologies	LGP21401			
		1	tower mounts	Sector Mount [SM 411-3]			
133.0	138.0	2	generic	10' x 2" Omni	2	1-5/8	1
	133.0	2	tower mounts	Side Arm Mount [SO 301-1]			
127.0	137.0	1	generic	20" x 2" Omni	1	1-5/8	1
	127.0	1	tower mounts	Side Arm Mount [SO 301-1]			
117.0	117.0	1	generic	1 sq. ft antenna	2	1-5/8	1
		1	tower mounts	Side Arm Mount [SO 301-1]			
112.0	112.0	1	tower mounts	Sector Mount [SM 307-3]	18	1-5/8	1
	109.0	6	andrew	ETW200VS12UB			
		6	ems wireless	RR90-17-02DP			
		3	rfs celwave	APX16DWV-16DWVS-C			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
100.0	100.0	9	andrew	HBX-6516DS-R2M w/ Mount Pipe	3	1-1/4	3
		2	cci	CE-1819-200MC			
		1	tower mounts	Sector Mount [SM 407-3]	6	1-1/4	1
88.0	90.0	6	andrew	ETB19G8-12UB	12	1-5/8	1
		6	antel	LPA-185063/8CFx2 w/ Mount Pipe			
		6	antel	LPA-80063/4CF w/ Mount Pipe			
	88.0	1	tower mounts	Sector Mount [SM 408-3]			
85.0	85.0	1	allgon	7130.14.05.00 w/ Mount Pipe	1	1-5/8	1
		1	tower mounts	Side Arm Mount [SO 301-1]			
65.0	65.0	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8	1
50.0	50.0	1	pctel	GPS-TMG-26N	1	1/2	1
43.0	43.0	1	gabriel electronics	SSP2-23	1	7/8	1
		1	tower mounts	Side Arm Mount [SO 301-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment to be Removed; Not Considered in Analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150	150	4	celwave	PD201	7	1-5/8
		3	scala	PR950		
140	140	12	allgon	7184	12	1-5/8
125	125	1	celwave	PD201	1	1-5/8
115	115	1	celwave	PD201	2	1-5/8
		1	celwave	PD220-DT		
110	110	12	allgon	7184	12	1-5/8
100	100	12	allgon	7184	12	1-5/8
90	90	12	allgon	7184	12	1-5/8
80	80	12	allgon	7184	12	1-5/8

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clarence Welti Associates, Inc.	4529406	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	PiROD	4529405	CCISITES
4-TOWER MANUFACTURER DRAWINGS	PiROD	4480661	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	B&T Engineering	4529407	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	150 - 130	Leg	1 1/2	1	19.75	33.50	59.0	Pass
T2	130 - 110	Leg	2	67	-58.97	97.25	60.6	Pass
T3	110 - 100	Leg	Pirod 105244	131	-60.65	122.94	49.3	Pass
T4	100 - 80	Leg	Pirod 105216	143	-95.66	122.94	77.8	Pass
T5	80 - 60	Leg	Pirod 105217	164	-138.99	184.67	75.3	Pass
T6	60 - 40	Leg	Pirod 105218	182	-174.50	258.24	67.6	Pass
T7	40 - 20	Leg	Pirod 105218	197	-208.26	258.24	80.6	Pass
T8	20 - 0	Leg	Pirod 105219	212	-239.75	343.62	69.8	Pass
T1	150 - 130	Diagonal	3/4	10	-2.67	4.34	61.5	Pass
T2	130 - 110	Diagonal	7/8	76	-3.69	6.87	53.7	Pass
T3	110 - 100	Diagonal	L2 1/2x2 1/2x3/16	137	-7.12	12.23	58.2 59.7 (b)	Pass
T4	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	149	-9.57	9.65	99.2	Pass
T5	80 - 60	Diagonal	L3x3x3/16	170	-7.16	13.37	53.5 64.1 (b)	Pass
T6	60 - 40	Diagonal	L3x3x3/16	188	-7.18	10.67	67.3	Pass
T7	40 - 20	Diagonal	L3x3x5/16	203	-7.75	13.74	56.4	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T8	20 - 0	Diagonal	L3x3x5/16	218	-9.17	11.34	80.9	Pass
T1	150 - 130	Horizontal	3/4	23	-0.26	2.43	10.8	Pass
T2	130 - 110	Horizontal	3/4	122	-0.72	2.26	31.7	Pass
T4	100 - 80	Horizontal	L3x3x3/16	153	-4.55	15.58	29.2 50.5 (b)	Pass
T1	150 - 130	Top Girt	7/8	5	-0.44	5.37	8.2	Pass
T2	130 - 110	Top Girt	7/8	70	-1.33	4.30	31.0	Pass
T3	110 - 100	Top Girt	L3x3x3/16	132	-0.67	17.74	3.8 8.2 (b)	Pass
T4	100 - 80	Top Girt	L3x3x3/16	144	-3.83	17.44	22.0 42.2 (b)	Pass
T5	80 - 60	Top Girt	L3x3x3/16	165	-4.07	12.35	32.9 43.8 (b)	Pass
T1	150 - 130	Bottom Girt	7/8	7	-1.22	4.27	28.5	Pass
T2	130 - 110	Bottom Girt	7/8	71	-1.15	3.49	32.9	Pass
							Summary	
						Leg (T7)	80.6	Pass
						Diagonal (T4)	99.2	Pass
						Horizontal (T4)	50.5	Pass
						Top Girt (T5)	43.8	Pass
						Bottom Girt (T2)	32.9	Pass
						Bolt Checks	79.4	Pass
						Rating =	99.2	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
-	Anchor Rods	0	43.1	Pass
1, 2	Base Foundation (Compared w/ Design Loads)	0	92.4	Pass

Structure Rating (max from all components) =	99.2%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Foundation capacity determined by comparing analysis reactions to original design reactions.

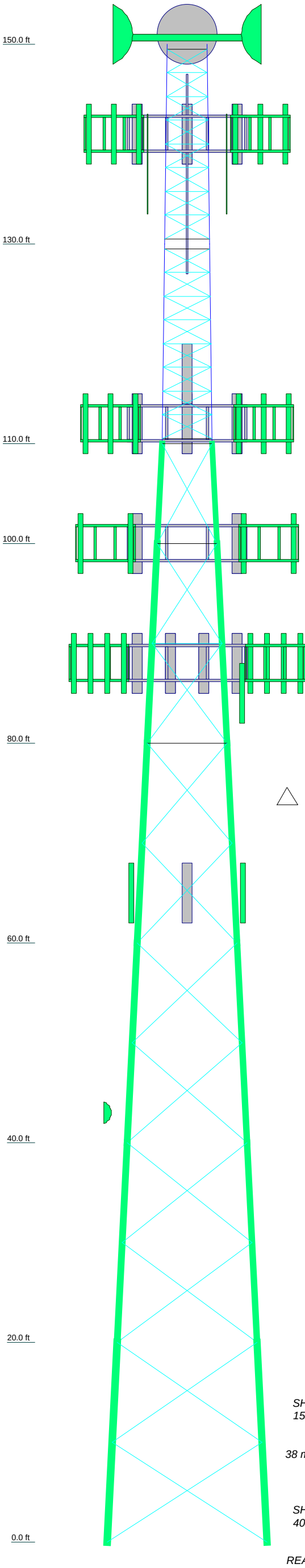
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section		Leg Grade	Diagonals	Diagonal Grade	Top Girts	Bottom Girts	Horizontals	Face Width (ft)	# Panels @ (ft)	Weight (K)
T1	SR 1 1/2	A572-50	L2 1/2x2 1/2x3/16	A36	L3x3x3/16	N.A.	L3x3x3/16	4 @ 2.375	16 @ 2.375	0.8
T2	SR 2		SR 7/8		SR 7/8		SR 3/4	4.5		1.3
T3	Pirod 105244						N.A.	5		1.1
T4	Pirod 105216		L3x3x3/16				L3x3x3/16	6		2.0
T5	Pirod 105217							8		2.5
T6	Pirod 105218						N.A.	10	11 @ 10	2.9
T7			L3x3x5/16		N.A.			12		3.4
T8	Pirod 105219							14		4.6
								16		18.7



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
PR-950	151	(2) RR90-17-02DP	112
PR-950	151	APX16DWV-16DWVS-C	112
PR-950	151	APX16DWV-16DWVS-C	112
Platform Mount [LP 405-1]	151	APX16DWV-16DWVS-C	112
(3) 6' x 2" Mount Pipe	151	(2) ETW200VS12UB	112
(3) 6' x 2" Mount Pipe	151	(2) ETW200VS12UB	112
(3) 6' x 2" Mount Pipe	151	(2) ETW200VS12UB	112
(2) 7770.00 w/ Mount Pipe	141	Sector Mount [SM 307-3]	112
(2) 7770.00 w/ Mount Pipe	141	800MHz 2X50W RRH W/FILTER	100
(2) 7770.00 w/ Mount Pipe	141	PCS 1900MHz 2x40W	100
(2) LGP21401	141	(2) APXVSPP18-C-A20 w/ Mount Pipe	100
(2) LGP21401	141	800MHz 2X50W RRH W/FILTER	100
(2) LGP21401	141	PCS 1900MHz 2x40W	100
Sector Mount [SM 411-3]	141	(2) APXVSPP18-C-A20 w/ Mount Pipe	100
AM-X-CD-14-65-00T-RET w/ Mount Pipe	141	800MHz 2X50W RRH W/FILTER	100
AM-X-CD-14-65-00T-RET w/ Mount Pipe	141	PCS 1900MHz 2x40W	100
AM-X-CD-14-65-00T-RET w/ Mount Pipe	141	(2) APXVSPP18-C-A20 w/ Mount Pipe	100
RRUS 11-700	141	Sector Mount [SM 407-3]	100
RRUS 11-700	141	(2) LPA-80063/4CF w/ Mount Pipe	88
RRUS 11-700	141	(2) LPA-80063/4CF w/ Mount Pipe	88
RRUS 11-AWS	141	(2) LPA-80063/4CF w/ Mount Pipe	88
RRUS 11-AWS	141	(2) LPA-185063/8CFx2 w/ Mount Pipe	88
RRUS 11-AWS	141	(2) LPA-185063/8CFx2 w/ Mount Pipe	88
DC6-48-60-18-8F	141	(2) LPA-185063/8CFx2 w/ Mount Pipe	88
6' x 2" Mount Pipe	141	(2) ETB19G8-12UB	88
6' x 2" Mount Pipe	141	(2) ETB19G8-12UB	88
6' x 2" Mount Pipe	141	(2) ETB19G8-12UB	88
10' x 2" Omni	133	Sector Mount [SM 408-3]	88
10' x 2" Omni	133	7130.14.05.00 w/ Mount Pipe	85
Side Arm Mount [SO 301-1]	133	Side Arm Mount [SO 301-1]	85
Side Arm Mount [SO 301-1]	133	APXV18-206517S-C w/ Mount Pipe	65
20" x 2" Omni	127	APXV18-206517S-C w/ Mount Pipe	65
Side Arm Mount [SO 301-1]	127	APXV18-206517S-C w/ Mount Pipe	65
1 sq. ft antenna	117	GPS-TMG-26N	50
Side Arm Mount [SO 301-1]	117	Side Arm Mount [SO 301-1]	43
(2) RR90-17-02DP	112	SSP2-23	43
(2) RR90-17-02DP	112		

MATERIAL STRENGTH

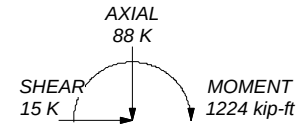
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

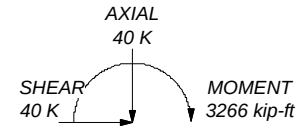
1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 99.2%

MAX. CORNER REACTIONS AT BASE:
DOWN: 249 K
SHEAR: 27 K

UPLIFT: -217 K
SHEAR: 24 K



TORQUE 2 kip-ft
38 mph WIND - 0.7500 in ICE



TORQUE 9 kip-ft
REACTIONS - 85 mph WIND

We Are Solutions	**Crown Castle** 2000 Corporate Drive Canonsburg, PA 15317 Phone: (724) 416-2000 FAX:	Job: **BU# 842870**	
		Project:	
		Client: Crown Castle	Drawn by: cschanck / App'd:
		Code: TIA/EIA-222-F	Date: 03/06/14 / Scale: NTS
		Path: R:\SA Models - Letters\Work Area\MPerna\842870\temp\842870.eri	Dwg No. E-1

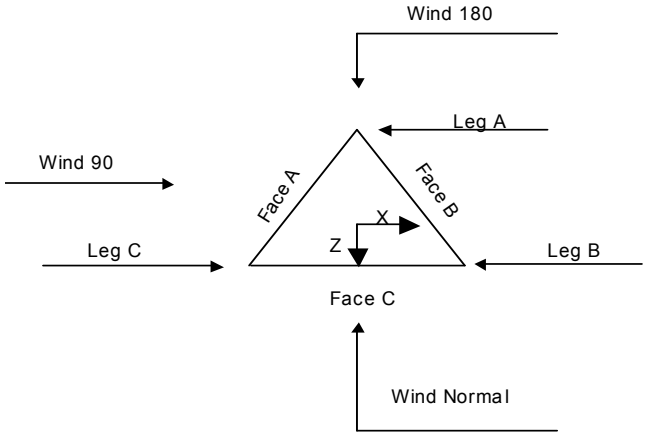
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 4' at the top and 16' at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

1) Tower is located in New Haven County, Connecticut.
2) Basic wind speed of 85 mph.
3) Nominal ice thickness of 0.7500 in.
4) Ice thickness is considered to increase with height.
5) Ice density of 56 pcf.
6) A wind speed of 38 mph is used in combination with ice.
7) Temperature drop of 50 °F.
8) Deflections calculated using a wind speed of 50 mph.
9) Pressures are calculated at each section.
10) Stress ratio used in tower member design is 1.333.
11) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Treat Feedline Bundles As Cylinder
	Consider Moments - Horizontals		Assume Legs Pinned		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Diagonals	√	Assume Rigid Index Plate	√	Calculate Redundant Bracing Forces
	Use Moment Magnification	√	Use Clear Spans For Wind Area		Ignore Redundant Members in FEA
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r	√	SR Leg Bolts Resist Compression
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension	√	All Leg Panels Have Same Allowable
√	Escalate Ice	√	Bypass Mast Stability Checks	√	Offset Girt At Foundation
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Consider Feedline Torque
	Use Special Wind Profile	√	Project Wind Area of Appurt.	√	Include Angle Block Shear Check
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Poles
	Leg Bolts Are At Top Of Section		SR Members Have Cut Ends		Include Shear-Torsion Interaction
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Always Use Sub-Critical Flow
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Use Top Mounted Sockets
	Add IBC .6D+W Combination		Use TIA-222-G Tension Splice Capacity Exemption		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	150'-130'			4'	1	20'
T2	130'-110'			4'6"	1	20'
T3	110'-100'			5'	1	10'
T4	100'-80'			6'	1	20'
T5	80'-60'			8'	1	20'
T6	60'-40'			10'	1	20'
T7	40'-20'			12'	1	20'
T8	20'-0'			14'	1	20'

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	150'-130'	2'4-9/16"	X Brace	No	Steps	6.0000	6.0000
T2	130'-110'	2'4-9/16"	X Brace	No	Steps	6.0000	6.0000
T3	110'-100'	10'	X Brace	No	Yes	0.0000	0.0000
T4	100'-80'	10'	X Brace	No	Yes	0.0000	0.0000
T5	80'-60'	10'	X Brace	No	No	0.0000	0.0000
T6	60'-40'	10'	X Brace	No	No	0.0000	0.0000
T7	40'-20'	10'	X Brace	No	No	0.0000	0.0000
T8	20'-0'	10'	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 150'-130'	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 130'-110'	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 110'-100'	Truss Leg	Pirod 105244	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 100'-80'	Truss Leg	Pirod 105216	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 80'-60'	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 60'-40'	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 40'-20'	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T8 20'-0'	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 150'-130'	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 130'-110'	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 110'-100'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T4 100'-80'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T5 80'-60'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 150'-130'	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 130'-110'	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T4 100'-80'	None	Flat Bar		A36 (36 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 150'-130'	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T2 130'-110'	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 110'-100'	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000
T4 100'-80'	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000
T5 80'-60'	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000
T6 60'-40'	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000
T7 40'-20'	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000
T8 20'-0'	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 150'-130'	No	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 130'-110'	No	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 110'-100'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 100'-80'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 80'-60'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 60'-40'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 40'-20'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T8 20'-0'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

	Truss-Leg K Factors					
	Truss-Legs Used As Leg Members			Truss-Legs Used As Inner Members		
Tower Elevation ft	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T3 110'-100'	1	0.5	0.85	1	0.5	0.85
T4 100'-80'	1	0.5	0.85	1	0.5	0.85
T5 80'-60'	1	0.5	0.85	1	0.5	0.85
T6 60'-40'	1	0.5	0.85	1	0.5	0.85
T7 40'-20'	1	0.5	0.85	1	0.5	0.85
T8 20'-0'	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 150'-130'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 130'-110'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 110'-100'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 100'-80'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 80'-60'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 60'-40'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 40'-20'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 20'-0'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 150'-130'	Sleeve DS	0.6250 A325N	5	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 130'-110'	Flange	1.0000 A325N	6	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 110'-100'	Flange	1.0000 A325N	6	1.0000 A325N	1	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 100'-80'	Flange	1.0000 A325N	6	1.0000 A325N	1	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	1.0000 A325N	1	0.6250 A325N	0
T5 80'-60'	Flange	1.0000 A325N	6	1.0000 A325N	1	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 60'-40'	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 40'-20'	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 20'-0'	Flange	1.2500 A687	6	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A(1 5/8")	B	No	Ar (Leg)	150' - 133'	0.0000	0.1	3	3	0.7500	1.9800		0.82
LDF7-50A(1 5/8")	B	No	Ar (Leg)	133' - 127'	0.0000	0.1	5	5	0.7500	1.9800		0.82
LDF7-50A(1 5/8")	B	No	Ar (Leg)	127' - 117'	0.0000	0.1	6	6	0.7500	1.9800		0.82
LDF7-50A(1 5/8")	B	No	Ar (Leg)	117' - 85'	0.0000	0.1	8	6	0.7500	1.9800		0.82
LDF7-50A(1 5/8")	B	No	Ar (Leg)	85' - 0'	0.0000	0.1	9	6	0.7500	1.9800		0.82
T-Brackets (Af) ***	B	No	Af (Leg)	150' - 0'	0.0000	0.1	1	1	1.0000	1.0000	4.0000	8.40
LDF7-50A(1 5/8")	A	No	Ar (Leg)	141' - 0'	0.0000	0.1	12	6	0.7500	1.9800		0.82

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF6-50A(1-1/4")	A	No	Ar (Leg)	141' - 0'	0.0000	0.16	3	2	0.7500	1.5500		0.66
T-Brackets (Af) ***	A	No	Af (Leg)	150' - 0'	0.0000	0.1	1	1	1.0000	1.0000	4.0000	8.40
LDF7-50A(1 5/8")	C	No	Ar (Leg)	112' - 0'	0.0000	0.1	18	6	0.7500	1.9800		0.82
T-Brackets (Af) ***	C	No	Af (Leg)	112' - 0'	0.0000	0.1	1	1	1.0000	1.0000	4.0000	8.40
LDF6-50A(1-1/4")	B	Yes	Ar (CfAe)	100' - 0'	-2.5000	-0.06	9	6	0.7500	1.5500		0.66
Feedline Ladder (Af) ***	B	Yes	Af (CfAe)	100' - 0'	-0.0100	-0.06	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A(1 5/8")	A	Yes	Ar (CfAe)	88' - 0'	0.0000	-0.18	12	12	0.7500	1.9800		0.82
Feedline Ladder (Af) ***	A	Yes	Af (CfAe)	88' - 0'	0.0000	-0.18	1	1	3.0000	3.0000	12.0000	8.40
LDF7-50A(1 5/8")	B	Yes	Ar (CfAe)	65' - 0'	-0.0100	-0.23	6	6	0.7500	1.9800		0.82
Feedline Ladder (Af) ***	B	Yes	Af (CfAe)	65' - 0'	-0.0100	-0.23	1	1	3.0000	3.0000	12.0000	8.40
LDF4-50A(1/2) ***	B	Yes	Ar (CfAe)	50' - 0'	-0.5000	-0.11	1	1	0.6300	0.6300		0.15
LDF5-50A(7/8") ***	B	No	Ar (Leg)	43' - 0'	0.0000	0.06	1	1	0.7500	1.0900		0.33

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	150'-130'	A	13.732	1.667	0.000	0.000	0.30
		B	24.622	3.333	0.000	0.000	0.22
		C	10.890	1.667	0.000	0.000	0.00
T2	130'-110'	A	26.947	1.833	0.000	0.000	0.40
		B	44.272	3.333	0.000	0.000	0.28
		C	21.285	1.833	0.000	0.000	0.05
T3	110'-100'	A	22.383	1.667	0.000	0.000	0.20
		B	22.383	1.667	0.000	0.000	0.15
		C	19.800	1.667	0.000	0.000	0.23
T4	100'-80'	A	60.607	5.333	0.000	0.000	0.55
		B	60.267	8.333	0.000	0.000	0.59
		C	39.600	3.333	0.000	0.000	0.46
T5	80'-60'	A	84.367	8.333	0.000	0.000	0.77
		B	65.217	9.583	0.000	0.000	0.67
		C	39.600	3.333	0.000	0.000	0.46
T6	60'-40'	A	84.367	8.333	0.000	0.000	0.77
		B	80.864	13.333	0.000	0.000	0.87
		C	39.873	3.333	0.000	0.000	0.46
T7	40'-20'	A	84.367	8.333	0.000	0.000	0.77
		B	82.933	13.333	0.000	0.000	0.88
		C	41.417	3.333	0.000	0.000	0.46
T8	20'-0'	A	84.367	8.333	0.000	0.000	0.77
		B	82.933	13.333	0.000	0.000	0.88
		C	41.417	3.333	0.000	0.000	0.46

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	150'-130'	A	0.892	6.507	18.270	0.000	0.000	0.74
		B		12.780	32.384	0.000	0.000	0.46
		C		6.273	14.114	0.000	0.000	0.00
T2	130'-110'	A	0.876	12.343	32.832	0.000	0.000	1.15
		B		17.940	55.876	0.000	0.000	0.68
		C		6.841	28.316	0.000	0.000	0.13
T3	110'-100'	A	0.862	8.900	28.248	0.000	0.000	0.57
		B		8.900	28.248	0.000	0.000	0.38
		C		6.173	26.332	0.000	0.000	0.65
T4	100'-80'	A	0.846	20.091	79.198	0.000	0.000	1.58
		B		23.046	82.473	0.000	0.000	1.51
		C		12.240	52.593	0.000	0.000	1.29
T5	80'-60'	A	0.821	23.428	113.189	0.000	0.000	2.22
		B		24.220	89.699	0.000	0.000	1.70
		C		12.072	52.481	0.000	0.000	1.28
T6	60'-40'	A	0.788	22.995	112.972	0.000	0.000	2.18
		B		30.711	111.591	0.000	0.000	2.20
		C		12.522	52.337	0.000	0.000	1.26
T7	40'-20'	A	0.750	22.483	112.717	0.000	0.000	2.13
		B		35.433	111.250	0.000	0.000	2.19
		C		15.917	52.167	0.000	0.000	1.24
T8	20'-0'	A	0.750	22.483	112.717	0.000	0.000	2.13
		B		35.433	111.250	0.000	0.000	2.19
		C		15.917	52.167	0.000	0.000	1.24

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	150'-130'	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T2	130'-110'	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T3	110'-100'	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T4	100'-80'	A	0.000	1.624	1.747	2.506
		B	0.000	2.055	2.007	3.171
		C	0.000	0.000	0.000	0.000
T5	80'-60'	A	0.000	3.052	3.897	5.577
		B	0.000	1.977	2.333	3.613
		C	0.000	0.000	0.000	0.000
T6	60'-40'	A	0.000	2.261	3.017	4.302
		B	0.000	2.494	3.100	4.745
		C	0.000	0.000	0.000	0.000
T7	40'-20'	A	0.000	1.999	2.815	3.999
		B	0.000	2.252	2.926	4.504
		C	0.000	0.000	0.000	0.000
T8	20'-0'	A	0.000	1.904	2.681	3.808
		B	0.000	2.145	2.786	4.289
		C	0.000	0.000	0.000	0.000

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T1	150'-130'	2.9964	-2.4955	1.6370	-1.5053
T2	130'-110'	3.1227	-2.7628	2.0943	-1.6310
T3	110'-100'	0.0000	-0.5825	0.0000	-0.2376
T4	100'-80'	-0.7150	-1.6137	-0.5069	-0.9235
T5	80'-60'	-3.1706	-2.4687	-2.3262	-1.5289
T6	60'-40'	-2.7461	-5.0301	-2.0559	-3.3740
T7	40'-20'	-2.7972	-5.7015	-1.8699	-3.8116
T8	20'-0'	-3.0998	-6.3969	-2.0686	-4.2771

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
PR-950	A	From Leg	4.00 0' 0'	0.0000	151'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.35 11.43 16.51 26.67 46.99	6.35 11.43 16.51 26.67 46.99	0.04 0.05 0.06 0.08 0.13
PR-950	B	From Leg	4.00 0' 0'	0.0000	151'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.35 11.43 16.51 26.67 46.99	6.35 11.43 16.51 26.67 46.99	0.04 0.05 0.06 0.08 0.13
PR-950	C	From Leg	4.00 0' 0'	0.0000	151'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.35 11.43 16.51 26.67 46.99	6.35 11.43 16.51 26.67 46.99	0.04 0.05 0.06 0.08 0.13
Platform Mount [LP 405-1]	C	None		0.0000	151'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	20.80 28.10 35.40 50.00 79.20	20.80 28.10 35.40 50.00 79.20	1.80 2.07 2.33 2.86 3.93
(3) 6' x 2" Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	151'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
(3) 6' x 2" Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	151'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
(3) 6' x 2" Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	151'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
***									
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	141'	No Ice 1/2" Ice 1" Ice	6.12 6.63 7.13 8.16	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
						2" Ice	10.36	10.41	0.66
						4" Ice			
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	141'	No Ice	6.12	4.25	0.06
						1/2" Ice	6.63	5.01	0.10
						1" Ice	7.13	5.71	0.16
						2" Ice	8.16	7.16	0.29
						4" Ice	10.36	10.41	0.66
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	141'	No Ice	6.12	4.25	0.06
						1/2" Ice	6.63	5.01	0.10
						1" Ice	7.13	5.71	0.16
						2" Ice	8.16	7.16	0.29
						4" Ice	10.36	10.41	0.66
(2) LGP21401	A	From Leg	4.00 0' 0'	0.0000	141'	No Ice	1.29	0.23	0.01
						1/2" Ice	1.45	0.31	0.02
						1" Ice	1.61	0.40	0.03
						2" Ice	1.97	0.61	0.05
						4" Ice	2.79	1.12	0.14
(2) LGP21401	B	From Leg	4.00 0' 0'	0.0000	141'	No Ice	1.29	0.23	0.01
						1/2" Ice	1.45	0.31	0.02
						1" Ice	1.61	0.40	0.03
						2" Ice	1.97	0.61	0.05
						4" Ice	2.79	1.12	0.14
(2) LGP21401	C	From Leg	4.00 0' 0'	0.0000	141'	No Ice	1.29	0.23	0.01
						1/2" Ice	1.45	0.31	0.02
						1" Ice	1.61	0.40	0.03
						2" Ice	1.97	0.61	0.05
						4" Ice	2.79	1.12	0.14
Sector Mount [SM 411-3]	C	None		0.0000	141'	No Ice	21.88	21.88	1.07
						1/2" Ice	30.68	30.68	1.48
						1" Ice	39.48	39.48	1.90
						2" Ice	57.08	57.08	2.73
						4" Ice	92.28	92.28	4.40
AM-X-CD-14-65-00T-RET w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	141'	No Ice	5.74	4.02	0.03
						1/2" Ice	6.20	4.63	0.08
						1" Ice	6.66	5.28	0.13
						2" Ice	7.62	6.68	0.25
						4" Ice	9.67	9.74	0.61
AM-X-CD-14-65-00T-RET w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	141'	No Ice	5.74	4.02	0.03
						1/2" Ice	6.20	4.63	0.08
						1" Ice	6.66	5.28	0.13
						2" Ice	7.62	6.68	0.25
						4" Ice	9.67	9.74	0.61
AM-X-CD-14-65-00T-RET w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	141'	No Ice	5.74	4.02	0.03
						1/2" Ice	6.20	4.63	0.08
						1" Ice	6.66	5.28	0.13
						2" Ice	7.62	6.68	0.25
						4" Ice	9.67	9.74	0.61
RRUS 11-700	A	From Leg	4.00 0' 0'	0.0000	141'	No Ice	2.94	1.25	0.06
						1/2" Ice	3.17	1.41	0.07
						1" Ice	3.41	1.59	0.10
						2" Ice	3.91	1.96	0.15
						4" Ice	5.02	2.82	0.30
RRUS 11-700	B	From Leg	4.00 0' 0'	0.0000	141'	No Ice	2.94	1.25	0.06
						1/2" Ice	3.17	1.41	0.07
						1" Ice	3.41	1.59	0.10

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
RRUS 11-700	C	From Leg	4.00	0.0000	141'	No Ice	2.94	1.25	0.06
			0'			1/2"	3.17	1.41	0.07
			0'			Ice	3.41	1.59	0.10
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
RRUS 11-AWS	A	From Leg	4.00	0.0000	141'	No Ice	2.94	1.25	0.06
			0'			1/2"	3.17	1.41	0.07
			0'			Ice	3.41	1.59	0.10
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
RRUS 11-AWS	B	From Leg	4.00	0.0000	141'	No Ice	2.94	1.25	0.06
			0'			1/2"	3.17	1.41	0.07
			0'			Ice	3.41	1.59	0.10
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
RRUS 11-AWS	C	From Leg	4.00	0.0000	141'	No Ice	2.94	1.25	0.06
			0'			1/2"	3.17	1.41	0.07
			0'			Ice	3.41	1.59	0.10
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
DC6-48-60-18-8F	C	From Leg	4.00	0.0000	141'	No Ice	1.27	1.27	0.02
			0'			1/2"	1.46	1.46	0.04
			0'			Ice	1.66	1.66	0.05
						1" Ice	2.09	2.09	0.10
						2" Ice	3.10	3.10	0.21
						4" Ice			
6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	141'	No Ice	1.43	1.43	0.02
			0'			1/2"	1.92	1.92	0.03
			0'			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23
						4" Ice			
6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	141'	No Ice	1.43	1.43	0.02
			0'			1/2"	1.92	1.92	0.03
			0'			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23
						4" Ice			
6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	141'	No Ice	1.43	1.43	0.02
			0'			1/2"	1.92	1.92	0.03
			0'			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23
						4" Ice			
***									
10' x 2" Omni	B	From Leg	2.00	0.0000	133'	No Ice	2.00	2.00	0.02
			0'			1/2"	3.02	3.02	0.03
			5'			Ice	4.05	4.05	0.05
						1" Ice	6.10	6.10	0.08
						2" Ice	10.20	10.20	0.15
						4" Ice			
10' x 2" Omni	C	From Leg	2.00	0.0000	133'	No Ice	2.00	2.00	0.02
			0'			1/2"	3.02	3.02	0.03
			5'			Ice	4.05	4.05	0.05
						1" Ice	6.10	6.10	0.08
						2" Ice	10.20	10.20	0.15
						4" Ice			
Side Arm Mount [SO 301-	B	From Leg	1.00	0.0000	133'	No Ice	1.00	0.90	0.02

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
1]			0' 0'			1/2" Ice 1" Ice 2" Ice 4" Ice	1.39 1.78 2.56 4.12	1.42 1.94 2.98 5.06	0.03 0.04 0.06 0.10
Side Arm Mount [SO 301-1]	C	From Leg	1.00 0' 0'	0.0000	133'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.78 2.56 4.12	0.90 1.42 1.94 2.98 5.06	0.02 0.03 0.04 0.06 0.10
***									
20" x 2" Omni	A	From Leg	2.00 0' 10'	0.0000	127'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.00 6.03 8.05 12.10 20.20	4.00 6.03 8.05 12.10 20.20	0.03 0.06 0.09 0.15 0.27
Side Arm Mount [SO 301-1]	A	From Leg	1.00 0' 0'	0.0000	127'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.78 2.56 4.12	0.90 1.42 1.94 2.98 5.06	0.02 0.03 0.04 0.06 0.10
***									
1 sq. ft antenna	A	From Leg	2.00 0' 0'	0.0000	117'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.40 1.56 1.72 2.04 2.68	0.23 0.33 0.43 0.63 1.03	0.02 0.03 0.03 0.05 0.08
Side Arm Mount [SO 301-1]	A	From Leg	1.00 0' 0'	0.0000	117'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.78 2.56 4.12	0.90 1.42 1.94 2.98 5.06	0.02 0.03 0.04 0.06 0.10
***									
(2) RR90-17-02DP	A	From Leg	4.00 0' -3'	0.0000	112'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.36 4.77 5.20 6.08 7.95	1.97 2.31 2.66 3.37 4.89	0.02 0.04 0.07 0.14 0.33
(2) RR90-17-02DP	B	From Leg	4.00 0' -3'	0.0000	112'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.36 4.77 5.20 6.08 7.95	1.97 2.31 2.66 3.37 4.89	0.02 0.04 0.07 0.14 0.33
(2) RR90-17-02DP	C	From Leg	4.00 0' -3'	0.0000	112'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.36 4.77 5.20 6.08 7.95	1.97 2.31 2.66 3.37 4.89	0.02 0.04 0.07 0.14 0.33
APX16DWV-16DWVS-C	A	From Leg	4.00 0' -3'	0.0000	112'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.23 7.68 8.14 9.09 11.09	2.15 2.49 2.84 3.55 5.08	0.04 0.07 0.11 0.20 0.46
APX16DWV-16DWVS-C	B	From Leg	4.00 0' -3'	0.0000	112'	No Ice 1/2" Ice	7.23 7.68 8.14	2.15 2.49 2.84	0.04 0.07 0.11

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
						1" Ice	9.09	3.55	0.20
						2" Ice	11.09	5.08	0.46
						4" Ice			
APX16DWV-16DWVS-C	C	From Leg	4.00 0' -3'	0.0000	112'	No Ice	7.23	2.15	0.04
						1/2" Ice	7.68	2.49	0.07
						1" Ice	8.14	2.84	0.11
						2" Ice	9.09	3.55	0.20
						4" Ice	11.09	5.08	0.46
(2) ETW200VS12UB	A	From Leg	4.00 0' -3'	0.0000	112'	No Ice	0.18	0.47	0.01
						1/2" Ice	0.25	0.57	0.01
						1" Ice	0.32	0.67	0.02
						2" Ice	0.49	0.90	0.03
						4" Ice	0.94	1.47	0.09
(2) ETW200VS12UB	B	From Leg	4.00 0' -3'	0.0000	112'	No Ice	0.18	0.47	0.01
						1/2" Ice	0.25	0.57	0.01
						1" Ice	0.32	0.67	0.02
						2" Ice	0.49	0.90	0.03
						4" Ice	0.94	1.47	0.09
(2) ETW200VS12UB	C	From Leg	4.00 0' -3'	0.0000	112'	No Ice	0.18	0.47	0.01
						1/2" Ice	0.25	0.57	0.01
						1" Ice	0.32	0.67	0.02
						2" Ice	0.49	0.90	0.03
						4" Ice	0.94	1.47	0.09
Sector Mount [SM 307-3]	C	None		0.0000	112'	No Ice	26.22	26.22	1.62
						1/2" Ice	36.28	36.28	2.15
						1" Ice	46.34	46.34	2.68
						2" Ice	66.46	66.46	3.73
						4" Ice	106.70	106.70	5.85
***									
800MHz 2X50W RRH W/FILTER	A	From Leg	4.00 0' 0'	0.0000	100'	No Ice	2.40	2.25	0.06
						1/2" Ice	2.61	2.46	0.09
						1" Ice	2.83	2.68	0.11
						2" Ice	3.30	3.13	0.17
						4" Ice	4.34	4.15	0.34
PCS 1900MHz 2x40W	A	From Leg	4.00 0' 0'	0.0000	100'	No Ice	2.74	1.46	0.04
						1/2" Ice	2.97	1.65	0.06
						1" Ice	3.21	1.84	0.08
						2" Ice	3.71	2.27	0.14
						4" Ice	4.82	3.22	0.28
(2) APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	100'	No Ice	8.50	6.95	0.08
						1/2" Ice	9.15	8.13	0.15
						1" Ice	9.77	9.02	0.23
						2" Ice	11.03	10.84	0.41
						4" Ice	13.68	14.85	0.91
800MHz 2X50W RRH W/FILTER	B	From Leg	4.00 0' 0'	0.0000	100'	No Ice	2.40	2.25	0.06
						1/2" Ice	2.61	2.46	0.09
						1" Ice	2.83	2.68	0.11
						2" Ice	3.30	3.13	0.17
						4" Ice	4.34	4.15	0.34
PCS 1900MHz 2x40W	B	From Leg	4.00 0' 0'	0.0000	100'	No Ice	2.74	1.46	0.04
						1/2" Ice	2.97	1.65	0.06
						1" Ice	3.21	1.84	0.08
						2" Ice	3.71	2.27	0.14
						4" Ice	4.82	3.22	0.28
(2) APXVSPP18-C-A20 w/	B	From Leg	4.00	0.0000	100'	No Ice	8.50	6.95	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mount Pipe			0' 0'			1/2" Ice 1" Ice 2" Ice 4" Ice	9.15 9.77 11.03 13.68	8.13 9.02 10.84 14.85	0.15 0.23 0.41 0.91
800MHz 2X50W RRH W/FILTER	C	From Leg	4.00 0' 0'	0.0000	100'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.40 2.61 2.83 3.30 4.34	2.25 2.46 2.68 3.13 4.15	0.06 0.09 0.11 0.17 0.34
PCS 1900MHz 2x40W	C	From Leg	4.00 0' 0'	0.0000	100'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.74 2.97 3.21 3.71 4.82	1.46 1.65 1.84 2.27 3.22	0.04 0.06 0.08 0.14 0.28
(2) APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	100'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.23 0.41 0.91
Sector Mount [SM 407-3]	C	None		0.0000	100'	No Ice 1/2" Ice Ice 1" Ice 2" Ice 4" Ice	20.49 30.39 40.29 60.09 99.69	20.49 30.39 40.29 60.09 99.69	0.96 1.38 1.80 2.64 4.32
***									
(2) LPA-80063/4CF w/ Mount Pipe	A	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice Ice 1" Ice 2" Ice 4" Ice	7.25 7.72 8.20 9.19 11.32	7.26 7.96 8.67 10.16 13.39	0.04 0.10 0.18 0.34 0.80
(2) LPA-80063/4CF w/ Mount Pipe	B	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice Ice 1" Ice 2" Ice 4" Ice	7.25 7.72 8.20 9.19 11.32	7.26 7.96 8.67 10.16 13.39	0.04 0.10 0.18 0.34 0.80
(2) LPA-80063/4CF w/ Mount Pipe	C	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice Ice 1" Ice 2" Ice 4" Ice	7.25 7.72 8.20 9.19 11.32	7.26 7.96 8.67 10.16 13.39	0.04 0.10 0.18 0.34 0.80
(2) LPA-185063/8CFx2 w/ Mount Pipe	A	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice Ice 1" Ice 2" Ice 4" Ice	3.21 3.60 4.02 4.90 6.79	3.92 4.52 5.16 6.54 9.58	0.03 0.06 0.10 0.20 0.51
(2) LPA-185063/8CFx2 w/ Mount Pipe	B	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice Ice 1" Ice 2" Ice 4" Ice	3.21 3.60 4.02 4.90 6.79	3.92 4.52 5.16 6.54 9.58	0.03 0.06 0.10 0.20 0.51
(2) LPA-185063/8CFx2 w/ Mount Pipe	C	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.21 3.60 4.02 4.90 6.79	3.92 4.52 5.16 6.54 9.58	0.03 0.06 0.10 0.20 0.51

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* °	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
						4" Ice			
(2) ETB19G8-12UB	A	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.06 1.21 1.37 1.72 2.51	0.45 0.57 0.71 1.00 1.69	0.02 0.03 0.03 0.06 0.14
(2) ETB19G8-12UB	B	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.06 1.21 1.37 1.72 2.51	0.45 0.57 0.71 1.00 1.69	0.02 0.03 0.03 0.06 0.14
(2) ETB19G8-12UB	C	From Leg	4.00 0' 2'	0.0000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.06 1.21 1.37 1.72 2.51	0.45 0.57 0.71 1.00 1.69	0.02 0.03 0.03 0.06 0.14
Sector Mount [SM 408-3]	C	None		0.0000	88'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	22.45 33.50 44.55 66.65 110.85	22.45 33.50 44.55 66.65 110.85	1.02 1.47 1.93 2.84 4.66
***									
7130.14.05.00 w/ Mount Pipe	B	From Leg	2.00 0' 0'	0.0000	85'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.17 3.48 3.81 4.50 6.06	3.62 4.07 4.54 5.55 7.93	0.02 0.06 0.09 0.19 0.46
Side Arm Mount [SO 301-1]	B	From Leg	1.00 0' 0'	0.0000	85'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.78 2.56 4.12	0.90 1.42 1.94 2.98 5.06	0.02 0.03 0.04 0.06 0.10
***									
APXV18-206517S-C w/ Mount Pipe	A	From Leg	1.00 0' 0'	0.0000	65'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.40 5.96 6.48 7.55 9.92	4.70 5.86 6.73 8.51 12.28	0.05 0.10 0.15 0.28 0.68
APXV18-206517S-C w/ Mount Pipe	B	From Leg	1.00 0' 0'	0.0000	65'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.40 5.96 6.48 7.55 9.92	4.70 5.86 6.73 8.51 12.28	0.05 0.10 0.15 0.28 0.68
APXV18-206517S-C w/ Mount Pipe	C	From Leg	1.00 0' 0'	0.0000	65'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.40 5.96 6.48 7.55 9.92	4.70 5.86 6.73 8.51 12.28	0.05 0.10 0.15 0.28 0.68
***									
GPS-TMG-26N	C	From Leg	1.00 0' 0'	0.0000	50'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.16 0.21 0.28 0.44 0.86	0.16 0.21 0.28 0.44 0.86	0.00 0.00 0.01 0.01 0.05
***									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Side Arm Mount [SO 301-1]	C	From Leg	1.00 0' 0'	0.0000	43'	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.78 2.56 4.12	0.90 1.42 1.94 2.98 5.06	0.02 0.03 0.04 0.06 0.10
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
SSP2-23	C	Paraboloid w/o Radome	From Leg	2.00 0' 0'	0.0000		43'	2.15	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.58 3.92 0.00 0.00 0.00	0.04 0.06 0.08 0.12 0.20
***											

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105244	1026.8606	2520.2170	0.56	0.49	7.1310	17.5015	3.6816
Pirod 105216	2169.0308	4785.0529	0.47	0.96	7.5314	16.6148	3.6816
Pirod 105217	2296.2363	4895.6001	0.59	0.94	7.9730	16.9986	5.3014
Pirod 105218	2425.3141	4973.0624	0.72	0.90	8.4212	17.2676	7.2158
Pirod 105218	2425.3141	4788.5245	0.72	0.83	8.4212	16.6268	7.2158
Pirod 105219	2597.9095	5128.1841	1.09	0.88	9.0205	17.8062	9.4248

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice

Comb. No.	Description
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	150 - 130	Leg	Max Tension	4	19.75	-0.45	-0.00
			Max. Compression	6	-23.51	0.45	0.01
			Max. Mx	10	-23.39	-0.62	-0.01
			Max. My	3	-1.84	-0.00	0.55
			Max. Vy	2	-2.14	0.46	-0.01
			Max. Vx	9	-1.87	-0.01	0.38
		Diagonal	Max Tension	13	2.58	0.00	0.00
			Max. Compression	11	-2.67	0.00	0.00
			Max. Mx	26	0.87	-0.00	-0.00
			Max. My	5	-2.16	-0.00	0.00
			Max. Vy	26	0.00	-0.00	-0.00
			Max. Vx	5	-0.00	-0.00	0.00
		Horizontal	Max Tension	8	0.39	0.00	0.00
			Max. Compression	2	-0.26	0.00	0.00
			Max. Mx	14	0.14	0.01	0.00
			Max. Vy	14	0.01	0.00	0.00
		Top Girt	Max Tension	6	0.42	0.00	0.00
			Max. Compression	4	-0.44	0.00	0.00
			Max. Mx	14	-0.02	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
		Bottom Girt	Max Tension	8	1.31	0.00	0.00
			Max. Compression	2	-1.22	0.00	0.00
			Max. Mx	14	0.02	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
T2	130 - 110	Leg	Max Tension	4	52.24	0.21	-0.01
			Max. Compression	2	-58.97	1.77	-0.04
			Max. Mx	8	51.81	-1.78	0.04
			Max. My	9	-1.90	-0.02	1.32
			Max. Vy	8	3.99	-1.78	0.04
			Max. Vx	11	2.70	-0.01	-1.29
		Diagonal	Max Tension	13	3.65	0.00	0.00
			Max. Compression	7	-3.69	0.00	0.00
			Max. Mx	15	1.10	-0.00	-0.00
			Max. My	5	-3.15	-0.00	0.00
			Max. Vy	15	0.01	-0.00	-0.00
			Max. Vx	5	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Horizontal	Max Tension	8	0.82	0.00	0.00
			Max. Compression	2	-0.72	0.00	0.00
			Max. Mx	14	0.11	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
		Top Girt	Max Tension	10	1.35	0.00	0.00
			Max. Compression	12	-1.33	0.00	0.00
			Max. Mx	14	0.01	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
		Bottom Girt	Max Tension	8	1.24	0.00	0.00
			Max. Compression	2	-1.15	0.00	0.00
			Max. Mx	14	0.07	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
T3	110 - 100	Leg	Max Tension	4	54.82	-1.77	0.03
			Max. Compression	2	-60.65	3.16	0.00
			Max. Mx	2	-60.65	3.16	0.00
			Max. My	5	-3.02	0.01	3.20
			Max. Vy	4	0.22	-3.13	0.02
			Max. Vx	13	-0.28	-0.01	3.18
		Diagonal	Max Tension	5	6.17	0.00	0.00
			Max. Compression	5	-7.12	0.00	0.00
			Max. Mx	5	3.43	0.05	0.00
			Max. My	6	-6.95	-0.04	0.01
			Max. Vy	16	0.02	0.03	-0.00
			Max. Vx	26	0.00	0.00	0.00
		Top Girt	Max Tension	8	0.93	0.00	0.00
			Max. Compression	2	-0.67	0.00	0.00
			Max. Mx	14	0.24	-0.03	0.00
			Max. My	14	0.23	0.00	0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00
T4	100 - 80	Leg	Max Tension	4	84.74	-3.57	0.00
			Max. Compression	2	-95.66	5.12	-0.03
			Max. Mx	2	-95.66	5.12	-0.03
			Max. My	3	-4.08	-0.09	-4.17
			Max. Vy	4	-0.84	-3.13	0.02
			Max. Vx	3	-0.96	-0.09	-4.17
		Diagonal	Max Tension	12	8.21	0.00	0.00
			Max. Compression	6	-9.57	0.00	0.00
			Max. Mx	2	2.31	0.06	-0.00
			Max. My	19	-4.46	0.00	0.00
			Max. Vy	16	0.02	0.04	-0.00
			Max. Vx	19	-0.00	0.00	0.00
		Horizontal	Max Tension	4	5.67	0.00	0.00
			Max. Compression	2	-4.55	0.00	0.00
			Max. Mx	14	1.18	-0.05	0.00
			Max. My	14	1.12	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00
		Top Girt	Max Tension	4	4.74	0.00	0.00
			Max. Compression	2	-3.83	0.00	0.00
			Max. Mx	14	0.91	-0.04	0.00
			Max. My	14	0.84	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	14	0.00	0.00	0.00
T5	80 - 60	Leg	Max Tension	12	122.49	-3.22	-0.02
			Max. Compression	2	-138.99	4.72	0.01
			Max. Mx	2	-118.15	5.12	-0.03
			Max. My	13	-6.90	-0.29	6.34
			Max. Vy	6	-0.34	4.70	0.01
			Max. Vx	5	0.48	-0.28	6.32
		Diagonal	Max Tension	7	7.20	0.00	0.00
			Max. Compression	6	-7.26	0.00	0.00
			Max. Mx	2	6.15	0.10	-0.01
			Max. My	13	-7.04	-0.05	-0.02
			Max. Vy	15	-0.03	0.07	0.01
			Max. Vx	13	0.00	0.00	0.00
		Top Girt	Max Tension	4	4.92	0.00	0.00
			Max. Compression	2	-4.07	0.00	0.00
			Max. Mx	14	0.94	-0.07	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	0.90	0.00	0.00
			Max. Vy	14	0.04	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00
T6	60 - 40	Leg	Max Tension	12	154.10	-3.96	0.00
			Max. Compression	2	-174.50	5.35	0.05
			Max. Mx	2	-174.50	5.35	0.05
			Max. My	5	-9.34	0.08	5.00
			Max. Vy	4	0.25	-5.16	0.09
			Max. Vx	5	-0.26	0.08	5.00
		Diagonal	Max Tension	9	7.16	0.00	0.00
			Max. Compression	9	-7.21	0.00	0.00
			Max. Mx	2	6.11	0.08	0.00
			Max. My	23	-2.57	0.03	-0.01
			Max. Vy	25	0.03	0.06	-0.01
			Max. Vx	23	0.00	0.00	0.00
T7	40 - 20	Leg	Max Tension	12	183.32	-3.87	-0.01
			Max. Compression	2	-208.26	4.79	0.00
			Max. Mx	2	-191.37	5.35	0.05
			Max. My	5	-9.94	0.08	5.00
			Max. Vy	21	0.52	-4.69	-0.02
			Max. Vx	11	-0.29	-0.15	-4.85
		Diagonal	Max Tension	9	7.59	0.00	0.00
			Max. Compression	9	-7.75	0.00	0.00
			Max. Mx	2	5.98	0.12	0.01
			Max. My	24	3.13	0.09	-0.01
			Max. Vy	25	0.05	0.09	0.01
			Max. Vx	24	0.00	0.00	0.00
T8	20 - 0	Leg	Max Tension	12	209.62	-4.45	-0.02
			Max. Compression	2	-239.75	0.00	0.00
			Max. Mx	15	-114.88	6.42	-0.04
			Max. My	11	-12.52	-0.31	-7.44
			Max. Vy	21	-0.86	-4.69	-0.02
			Max. Vx	11	-0.84	-0.31	-7.44
		Diagonal	Max Tension	4	8.47	0.00	0.00
			Max. Compression	10	-9.17	0.00	0.00
			Max. Mx	25	0.46	0.12	-0.01
			Max. My	5	7.78	0.10	0.02
			Max. Vy	25	0.05	0.12	-0.01
			Max. Vx	24	0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	10	248.36	22.89	-13.61
	Max. H_x	10	248.36	22.89	-13.61
	Max. H_z	4	-217.00	-20.38	12.11
	Min. Vert	4	-217.00	-20.38	12.11
	Min. H_x	4	-217.00	-20.38	12.11
	Min. H_z	10	248.36	22.89	-13.61
Leg B	Max. Vert	6	247.71	-22.95	-13.47
	Max. H_x	12	-217.25	20.40	11.98
	Max. H_z	12	-217.25	20.40	11.98
	Min. Vert	12	-217.25	20.40	11.98
	Min. H_x	6	247.71	-22.95	-13.47
	Min. H_z	6	247.71	-22.95	-13.47
Leg A	Max. Vert	2	249.10	-0.15	26.66
	Max. H_x	11	13.85	1.60	1.14
	Max. H_z	2	249.10	-0.15	26.66
	Min. Vert	8	-216.43	0.12	-23.65
	Min. H_x	5	14.18	-1.64	1.20
	Min. H_z	8	-216.43	0.12	-23.65

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	40.08	0.00	0.00	-7.44	4.77	0.00
Dead+Wind 0 deg - No Ice	40.08	0.14	-40.35	-3266.48	-1.44	-3.48
Dead+Wind 30 deg - No Ice	40.08	19.81	-34.18	-2786.72	-1601.81	-6.82
Dead+Wind 60 deg - No Ice	40.08	33.95	-19.63	-1605.59	-2758.77	-8.63
Dead+Wind 90 deg - No Ice	40.08	39.47	-0.09	-11.41	-3201.51	-8.32
Dead+Wind 120 deg - No Ice	40.08	34.98	20.05	1616.70	-2816.20	-5.59
Dead+Wind 150 deg - No Ice	40.08	19.68	34.13	2769.46	-1595.79	-1.09
Dead+Wind 180 deg - No Ice	40.08	-0.02	39.15	3184.07	5.90	3.53
Dead+Wind 210 deg - No Ice	40.08	-19.72	34.18	2771.73	1607.39	7.23
Dead+Wind 240 deg - No Ice	40.08	-34.91	20.18	1622.46	2823.29	9.07
Dead+Wind 270 deg - No Ice	40.08	-39.42	0.01	-6.83	3208.97	7.91
Dead+Wind 300 deg - No Ice	40.08	-33.87	-19.56	-1602.21	2764.71	5.10
Dead+Wind 330 deg - No Ice	40.08	-19.68	-34.13	-2784.29	1605.41	1.09
Dead+Ice+Temp	88.29	0.00	-0.00	-19.86	16.62	0.00
Dead+Wind 0 deg+Ice+Temp	88.29	0.01	-14.96	-1223.76	16.03	-0.93
Dead+Wind 30 deg+Ice+Temp	88.29	7.20	-12.47	-1039.52	-571.98	-1.75
Dead+Wind 60 deg+Ice+Temp	88.29	12.25	-7.08	-601.86	-990.41	-2.13
Dead+Wind 90 deg+Ice+Temp	88.29	14.39	-0.01	-20.29	-1159.86	-2.06
Dead+Wind 120 deg+Ice+Temp	88.29	12.95	7.47	581.57	-1025.27	-1.44
Dead+Wind 150 deg+Ice+Temp	88.29	7.19	12.46	999.49	-571.32	-0.28
Dead+Wind 180 deg+Ice+Temp	88.29	-0.00	14.15	1143.55	16.83	0.84
Dead+Wind 210 deg+Ice+Temp	88.29	-7.20	12.47	999.78	604.93	1.78
Dead+Wind 240 deg+Ice+Temp	88.29	-12.95	7.48	582.21	1058.45	2.37
Dead+Wind 270 deg+Ice+Temp	88.29	-14.39	0.00	-19.70	1192.94	2.03
Dead+Wind 300 deg+Ice+Temp	88.29	-12.25	-7.07	-601.39	1023.26	1.30
Dead+Wind 330 deg+Ice+Temp	88.29	-7.19	-12.46	-1039.22	604.57	0.28
Dead+Wind 0 deg - Service	40.08	0.05	-13.96	-1135.13	2.62	-1.20
Dead+Wind 30 deg - Service	40.08	6.86	-11.83	-969.13	-551.14	-2.36
Dead+Wind 60 deg - Service	40.08	11.75	-6.79	-560.44	-951.47	-2.99
Dead+Wind 90 deg - Service	40.08	13.66	-0.03	-8.82	-1104.67	-2.88
Dead+Wind 120 deg - Service	40.08	12.10	6.94	554.55	-971.35	-1.93
Dead+Wind 150 deg - Service	40.08	6.81	11.81	953.42	-549.06	-0.38
Dead+Wind 180 deg - Service	40.08	-0.01	13.55	1096.89	5.16	1.22
Dead+Wind 210 deg - Service	40.08	-6.82	11.83	954.21	559.31	2.50
Dead+Wind 240 deg - Service	40.08	-12.08	6.98	556.54	980.03	3.14
Dead+Wind 270 deg - Service	40.08	-13.64	0.00	-7.23	1113.49	2.74
Dead+Wind 300 deg - Service	40.08	-11.72	-6.77	-559.26	959.76	1.76
Dead+Wind 330 deg - Service	40.08	-6.81	-11.81	-968.29	558.62	0.38

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-40.08	0.00	0.00	40.08	0.00	0.000%
2	0.14	-40.08	-40.35	-0.14	40.08	40.35	0.000%
3	19.81	-40.08	-34.18	-19.81	40.08	34.18	0.000%
4	33.95	-40.08	-19.63	-33.95	40.08	19.63	0.000%
5	39.47	-40.08	-0.09	-39.47	40.08	0.09	0.000%
6	34.98	-40.08	20.05	-34.98	40.08	-20.05	0.000%
7	19.68	-40.08	34.13	-19.68	40.08	-34.13	0.000%
8	-0.02	-40.08	39.15	0.02	40.08	-39.15	0.000%
9	-19.72	-40.08	34.18	19.72	40.08	-34.18	0.000%
10	-34.91	-40.08	20.18	34.91	40.08	-20.18	0.000%
11	-39.42	-40.08	0.01	39.42	40.08	-0.01	0.000%
12	-33.87	-40.08	-19.56	33.87	40.08	19.56	0.000%
13	-19.68	-40.08	-34.13	19.68	40.08	34.13	0.000%
14	0.00	-88.29	0.00	0.00	88.29	0.00	0.000%
15	0.01	-88.29	-14.96	-0.01	88.29	14.96	0.000%
16	7.20	-88.29	-12.47	-7.20	88.29	12.47	0.000%
17	12.25	-88.29	-7.08	-12.25	88.29	7.08	0.000%
18	14.39	-88.29	-0.01	-14.39	88.29	0.01	0.000%
19	12.95	-88.29	7.47	-12.95	88.29	-7.47	0.000%
20	7.19	-88.29	12.46	-7.19	88.29	-12.46	0.000%
21	-0.00	-88.29	14.15	0.00	88.29	-14.15	0.000%
22	-7.20	-88.29	12.47	7.20	88.29	-12.47	0.000%
23	-12.95	-88.29	7.48	12.95	88.29	-7.48	0.000%
24	-14.39	-88.29	0.00	14.39	88.29	-0.00	0.000%
25	-12.25	-88.29	-7.07	12.25	88.29	7.07	0.000%
26	-7.19	-88.29	-12.46	7.19	88.29	12.46	0.000%
27	0.05	-40.08	-13.96	-0.05	40.08	13.96	0.000%
28	6.86	-40.08	-11.83	-6.86	40.08	11.83	0.000%
29	11.75	-40.08	-6.79	-11.75	40.08	6.79	0.000%
30	13.66	-40.08	-0.03	-13.66	40.08	0.03	0.000%
31	12.10	-40.08	6.94	-12.10	40.08	-6.94	0.000%
32	6.81	-40.08	11.81	-6.81	40.08	-11.81	0.000%
33	-0.01	-40.08	13.55	0.01	40.08	-13.55	0.000%
34	-6.82	-40.08	11.83	6.82	40.08	-11.83	0.000%
35	-12.08	-40.08	6.98	12.08	40.08	-6.98	0.000%
36	-13.64	-40.08	0.00	13.64	40.08	-0.00	0.000%
37	-11.72	-40.08	-6.77	11.72	40.08	6.77	0.000%
38	-6.81	-40.08	-11.81	6.81	40.08	11.81	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 130	6.177	27	0.3800	0.0191
T2	130 - 110	4.563	27	0.3543	0.0185
T3	110 - 100	3.134	27	0.2942	0.0133
T4	100 - 80	2.539	27	0.2611	0.0097
T5	80 - 60	1.557	27	0.1883	0.0062
T6	60 - 40	0.854	27	0.1292	0.0044
T7	40 - 20	0.373	27	0.0835	0.0027
T8	20 - 0	0.099	27	0.0362	0.0014

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151'	PR-950	27	6.177	0.3800	0.0191	103351
141'	(2) 7770.00 w/ Mount Pipe	27	5.439	0.3716	0.0192	57417
133'	10' x 2" Omni	27	4.797	0.3602	0.0188	30397

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
127'	20" x 2" Omni	27	4.332	0.3471	0.0181	22470
117'	1 sq. ft antenna	27	3.601	0.3174	0.0157	15630
112'	(2) RR90-17-02DP	27	3.263	0.3008	0.0140	13708
100'	800MHz 2X50W RRH W/FILTER	27	2.539	0.2611	0.0097	18077
88'	(2) LPA-80063/4CF w/ Mount Pipe	27	1.917	0.2173	0.0071	16962
85'	7130.14.05.00 w/ Mount Pipe	27	1.776	0.2062	0.0067	16532
65'	APXV18-206517S-C w/ Mount Pipe	27	1.007	0.1421	0.0048	20885
50'	GPS-TMG-26N	27	0.587	0.1060	0.0036	23260
43'	SSP2-23	27	0.432	0.0904	0.0029	23198

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 130	17.779	2	1.0927	0.0552
T2	130 - 110	13.136	2	1.0189	0.0535
T3	110 - 100	9.026	2	0.8466	0.0383
T4	100 - 80	7.313	2	0.7515	0.0280
T5	80 - 60	4.486	2	0.5421	0.0178
T6	60 - 40	2.460	2	0.3717	0.0128
T7	40 - 20	1.073	2	0.2404	0.0077
T8	20 - 0	0.284	2	0.1041	0.0040

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151'	PR-950	2	17.779	1.0927	0.0552	36107
141'	(2) 7770.00 w/ Mount Pipe	2	15.658	1.0687	0.0554	20060
133'	10' x 2" Omni	2	13.812	1.0361	0.0544	10619
127'	20" x 2" Omni	2	12.473	0.9985	0.0522	7842
117'	1 sq. ft antenna	2	10.371	0.9132	0.0454	5450
112'	(2) RR90-17-02DP	2	9.398	0.8657	0.0405	4781
100'	800MHz 2X50W RRH W/FILTER	2	7.313	0.7515	0.0280	6290
88'	(2) LPA-80063/4CF w/ Mount Pipe	2	5.520	0.6255	0.0206	5894
85'	7130.14.05.00 w/ Mount Pipe	2	5.116	0.5936	0.0194	5743
65'	APXV18-206517S-C w/ Mount Pipe	2	2.900	0.4091	0.0139	7253
50'	GPS-TMG-26N	2	1.692	0.3050	0.0103	8076
43'	SSP2-23	2	1.243	0.2602	0.0085	8053

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	150	Leg	A325N	0.6250	5	4.70	12.89	0.365 ✔	1.333	Bolt DS
T2	130	Leg	A325N	1.0000	6	8.71	34.53	0.252 ✔	1.333	Bolt Tension
T3	110	Leg	A325N	1.0000	6	9.14	34.56	0.264 ✔	1.333	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	1.0000	1	6.17	7.75	0.796 ✔	1.333	Member Block Shear
		Top Girt	A325N	1.0000	1	0.93	8.43	0.110 ✔	1.333	Member Block Shear
T4	100	Leg	A325N	1.0000	6	14.12	34.56	0.409 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	8.21	7.75	1.059 ✔	1.333	Member Block Shear
		Horizontal	A325N	1.0000	1	5.67	8.43	0.673 ✔	1.333	Member Block Shear
		Top Girt	A325N	1.0000	1	4.74	8.43	0.562 ✔	1.333	Member Block Shear
T5	80	Leg	A325N	1.0000	6	20.41	34.56	0.591 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	7.20	8.43	0.855 ✔	1.333	Member Block Shear
		Top Girt	A325N	1.0000	1	4.92	8.43	0.584 ✔	1.333	Member Block Shear
T6	60	Leg	A325N	1.0000	6	25.68	34.56	0.743 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	7.16	8.43	0.849 ✔	1.333	Member Block Shear
T7	40	Leg	A325N	1.0000	6	30.55	34.56	0.884 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	7.59	14.05	0.540 ✔	1.333	Member Block Shear
T8	20	Leg	A687	1.2500	6	34.94	60.75	0.575 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.2500	1	8.47	14.95	0.566 ✔	1.333	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	150 - 130	1 1/2	20'	2'4-9/16"	76.0 K=1.00	19.799	1.7672	-23.51	34.99	0.672 ✔
T2	130 - 110	2	20'	2'4-9/16"	57.0 K=1.00	23.222	3.1416	-58.97	72.95	0.808 ✔
T3	110 - 100	Pirod 105244	10'1/4"	10'1/4"	45.4 K=1.00	25.051	3.6816	-60.65	92.23	0.658 ✔
T4	100 - 80	Pirod 105216	20'3/8"	10'1/4"	45.4 K=1.00	25.051	3.6816	-95.66	92.23	1.037 ✔
T5	80 - 60	Pirod 105217	20'3/8"	10'1/4"	37.8 K=1.00	26.132	5.3014	-138.99	138.54	1.003 ✔
T6	60 - 40	Pirod 105218	20'3/8"	10'1/4"	32.4 K=1.00	26.848	7.2158	-174.50	193.73	0.901 ✔
T7	40 - 20	Pirod 105218	20'3/8"	10'1/4"	32.4 K=1.00	26.848	7.2158	-208.26	193.73	1.075 ✔
T8	20 - 0	Pirod 105219	20'3/8"	10'1/4"	28.4 K=1.00	27.351	9.4248	-239.75	257.78	0.930 ✔

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V K	Allow. V_a K	Stress Ratio
T3	110 - 100	0.5	1'5-3/4"	121.0	10.193	0.1963	0.28	2.24	0.125 ✔
T4	100 - 80	0.5	1'5-3/4"	121.0	10.133	0.1963	0.96	2.23	0.431 ✔
T5	80 - 60	0.5	1'5-5/8"	120.0	10.279	0.1963	0.48	2.26	0.212 ✔
T6	60 - 40	0.5	1'5-17/32"	119.0	10.423	0.1963	0.27	2.29	0.117 ✔
T7	40 - 20	0.5	1'5-17/32"	119.0	10.423	0.1963	0.52	2.29	0.226 ✔
T8	20 - 0	0.625	1'5-13/32"	94.4	13.671	0.3068	0.87	4.69	0.185 ✔

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	3/4	5'19/32"	2'5-5/8"	142.4 K=0.90	7.368	0.4418	-2.67	3.26	0.820 ✔
T2	130 - 110	7/8	5'6"	2'8-1/32"	132.0 K=0.90	8.576	0.6013	-3.69	5.16	0.716 ✔
T3	110 - 100	L2 1/2x2 1/2x3/16	11'5-1/32"	4'11-3/4"	120.8 K=1.00	10.170	0.9020	-7.12	9.17	0.776 ✔
T4	100 - 80	L2 1/2x2 1/2x3/16	12'6"	5'7-9/16"	136.4 K=1.00	8.025	0.9020	-9.57	7.24	1.322 ✔
T5	80 - 60	L3x3x3/16	13'9-19/32"	6'3-31/32"	127.4 K=1.00	9.200	1.0900	-7.16	10.03	0.714 ✔
T6	60 - 40	L3x3x3/16	15'2-7/8"	7'31/32"	142.6 K=1.00	7.345	1.0900	-7.18	8.01	0.897 ✔
T7	40 - 20	L3x3x5/16	16'9-19/32"	7'10-9/16"	160.6 K=1.00	5.791	1.7800	-7.75	10.31	0.752 ✔
T8	20 - 0	L3x3x5/16	18'5-13/32"	8'8-5/32"	176.8 K=1.00	4.779	1.7800	-9.17	8.51	1.078 ✔

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	3/4	4'4-7/16"	4'2-7/8"	190.1 K=0.70	4.131	0.4418	-0.26	1.83	0.144 ✔
T2	130 - 110	3/4	4'6-27/32"	4'4-29/32"	197.4 K=0.70	3.834	0.4418	-0.72	1.69	0.423 ✔
T4	100 - 80	L3x3x3/16	7'	5'6-31/32"	116.2 K=1.03	10.720	1.0900	-4.55	11.68	0.390 ✔

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	7/8	4'1/8"	3'10-	149.3	6.701	0.6013	-0.44	4.03	0.109

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
				11/16"	K=0.70					✔
T2	130 - 110	7/8	4'6-1/8"	4'4-3/16"	166.9	5.362	0.6013	-1.33	3.22	0.413 ✔
T3	110 - 100	L3x3x3/16	5'	4'5-1/32"	K=0.70 104.5	12.208	1.0900	-0.67	13.31	0.050 ✔
T4	100 - 80	L3x3x3/16	6'	4'6-31/32"	K=1.17 106.1	12.002	1.0900	-3.83	13.08	0.293 ✔
T5	80 - 60	L3x3x3/16	8'	6'6-31/32"	K=1.15 132.6	8.499	1.0900	-4.07	9.26	0.439 ✔
					K=1.00					

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	7/8	4'5-7/8"	4'4-5/16"	167.5 K=0.70	5.321	0.6013	-1.22	3.20	0.380 ✔
T2	130 - 110	7/8	4'11-7/8"	4'9-27/32"	185.1 K=0.70	4.358	0.6013	-1.15	2.62	0.439 ✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	1 1/2	20'	2'4-9/16"	76.0	32.500	0.7732	19.75	25.13	0.786 ✔
T2	130 - 110	2	20'	2'4-9/16"	57.0	30.000	3.1416	52.24	94.25	0.554 ✔
T3	110 - 100	Pirod 105244	10'1/4"	10'1/4"	45.4	30.000	3.6816	54.82	110.45	0.496 ✔
T4	100 - 80	Pirod 105216	20'3/8"	10'1/4"	45.4	30.000	3.6816	84.74	110.45	0.767 ✔
T5	80 - 60	Pirod 105217	20'3/8"	10'1/4"	37.8	30.000	5.3014	122.49	159.04	0.770 ✔
T6	60 - 40	Pirod 105218	20'3/8"	10'1/4"	32.4	30.000	7.2158	154.10	216.47	0.712 ✔
T7	40 - 20	Pirod 105218	20'3/8"	10'1/4"	32.4	30.000	7.2158	183.32	216.47	0.847 ✔
T8	20 - 0	Pirod 105219	20'3/8"	10'1/4"	28.4	30.000	9.4248	209.63	282.74	0.741 ✔

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V K	Allow. V_a K	Stress Ratio
T3	110 - 100	0.5	1'5-3/4"	121.0	10.193	0.1963	0.28	2.24	0.125 ✔

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V K	Allow. V_a K	Stress Ratio
T4	100 - 80	0.5	1'5-3/4"	121.0	10.133	0.1963	0.96	2.23	0.431 ✔
T5	80 - 60	0.5	1'5-5/8"	120.0	10.279	0.1963	0.48	2.26	0.212 ✔
T6	60 - 40	0.5	1'5-17/32"	119.0	10.423	0.1963	0.27	2.29	0.117 ✔
T7	40 - 20	0.5	1'5-17/32"	119.0	10.423	0.1963	0.52	2.29	0.226 ✔
T8	20 - 0	0.625	1'5-13/32"	94.4	13.671	0.3068	0.87	4.69	0.185 ✔

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	3/4	5'19/32"	2'5-5/8"	158.2	30.000	0.4418	2.58	13.25	0.195 ✔
T2	130 - 110	7/8	5'6"	2'8-1/32"	146.6	30.000	0.6013	3.65	18.04	0.203 ✔
T3	110 - 100	L2 1/2x2 1/2x3/16	11'5-1/32"	4'11-3/4"	80.1	29.000	0.5183	6.17	15.03	0.410 ✔
T4	100 - 80	L2 1/2x2 1/2x3/16	12'6"	5'7-9/16"	90.0	29.000	0.5183	8.21	15.03	0.546 ✔
T5	80 - 60	L3x3x3/16	13'9-19/32"	6'3-31/32"	83.5	29.000	0.6593	7.20	19.12	0.377 ✔
T6	60 - 40	L3x3x3/16	14'6"	6'8-3/4"	88.6	29.000	0.6593	7.16	19.12	0.374 ✔
T7	40 - 20	L3x3x5/16	16'1/8"	7'5-7/8"	100.3	29.000	1.0713	7.59	31.07	0.244 ✔
T8	20 - 0	L3x3x5/16	18'5-13/32"	8'8-5/32"	116.2	29.000	1.0127	8.47	29.37	0.288 ✔

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	3/4	4'4-7/16"	4'2-7/8"	271.6	30.000	0.4418	0.39	13.25	0.030 ✔
T2	130 - 110	3/4	4'6-27/32"	4'4-29/32"	281.9	30.000	0.4418	0.82	13.25	0.062 ✔
T4	100 - 80	L3x3x3/16	7'	5'6-31/32"	76.7	29.000	0.6593	5.67	19.12	0.297 ✔

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	7/8	4'1/8"	3'10-11/16"	213.3	30.000	0.6013	0.42	18.04	0.023 ✔
T2	130 - 110	7/8	4'6-1/8"	4'4-3/16"	238.4	30.000	0.6013	1.35	18.04	0.075

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T3	110 - 100	L3x3x3/16	5'	4'5-1/32"	61.8	29.000	0.6593	0.93	19.12	0.048 ✔
T4	100 - 80	L3x3x3/16	6'	4'6-31/32"	63.9	29.000	0.6593	4.74	19.12	0.248 ✔
T5	80 - 60	L3x3x3/16	8'	6'6-31/32"	89.5	29.000	0.6593	4.92	19.12	0.257 ✔

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	150 - 130	7/8	4'5-7/8"	4'4-5/16"	239.3	30.000	0.6013	1.31	18.04	0.072 ✔
T2	130 - 110	7/8	4'11-7/8"	4'9-27/32"	264.5	30.000	0.6013	1.24	18.04	0.069 ✔

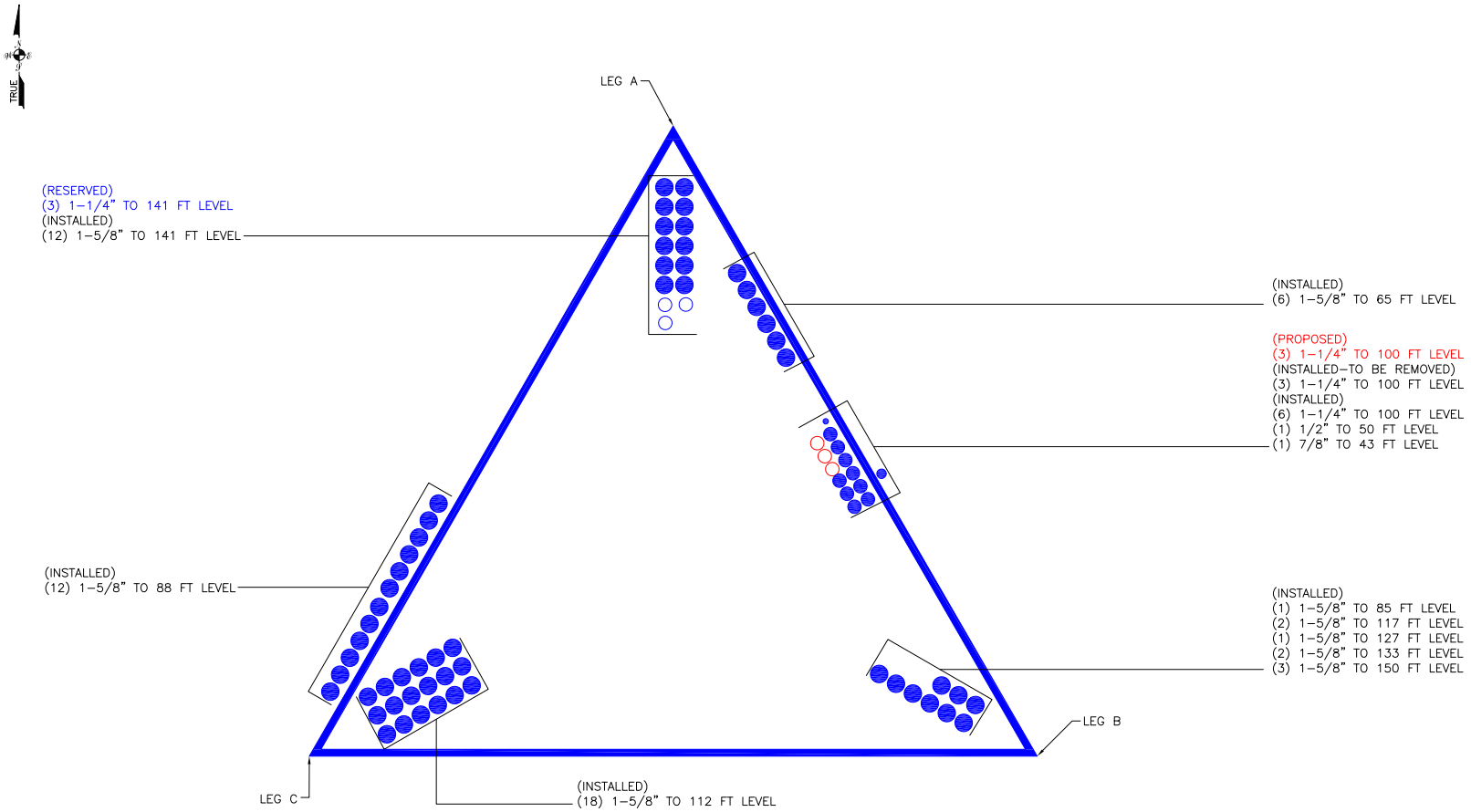
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	150 - 130	Leg	1 1/2	1	19.75	33.50	59.0	Pass
T2	130 - 110	Leg	2	67	-58.97	97.25	60.6	Pass
T3	110 - 100	Leg	Pirod 105244	131	-60.65	122.94	49.3	Pass
T4	100 - 80	Leg	Pirod 105216	143	-95.66	122.94	77.8	Pass
T5	80 - 60	Leg	Pirod 105217	164	-138.99	184.67	75.3	Pass
T6	60 - 40	Leg	Pirod 105218	182	-174.50	258.24	67.6	Pass
T7	40 - 20	Leg	Pirod 105218	197	-208.26	258.24	80.6	Pass
T8	20 - 0	Leg	Pirod 105219	212	-239.75	343.62	69.8	Pass
T1	150 - 130	Diagonal	3/4	10	-2.67	4.34	61.5	Pass
T2	130 - 110	Diagonal	7/8	76	-3.69	6.87	53.7	Pass
T3	110 - 100	Diagonal	L2 1/2x2 1/2x3/16	137	-7.12	12.23	58.2 59.7 (b)	Pass
T4	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	149	-9.57	9.65	99.2	Pass
T5	80 - 60	Diagonal	L3x3x3/16	170	-7.16	13.37	53.5 64.1 (b)	Pass
T6	60 - 40	Diagonal	L3x3x3/16	188	-7.18	10.67	67.3	Pass
T7	40 - 20	Diagonal	L3x3x5/16	203	-7.75	13.74	56.4	Pass
T8	20 - 0	Diagonal	L3x3x5/16	218	-9.17	11.34	80.9	Pass
T1	150 - 130	Horizontal	3/4	23	-0.26	2.43	10.8	Pass
T2	130 - 110	Horizontal	3/4	122	-0.72	2.26	31.7	Pass
T4	100 - 80	Horizontal	L3x3x3/16	153	-4.55	15.58	29.2 50.5 (b)	Pass
T1	150 - 130	Top Girt	7/8	5	-0.44	5.37	8.2	Pass
T2	130 - 110	Top Girt	7/8	70	-1.33	4.30	31.0	Pass
T3	110 - 100	Top Girt	L3x3x3/16	132	-0.67	17.74	3.8 8.2 (b)	Pass
T4	100 - 80	Top Girt	L3x3x3/16	144	-3.83	17.44	22.0 42.2 (b)	Pass
T5	80 - 60	Top Girt	L3x3x3/16	165	-4.07	12.35	32.9 43.8 (b)	Pass
T1	150 - 130	Bottom Girt	7/8	7	-1.22	4.27	28.5	Pass
T2	130 - 110	Bottom Girt	7/8	71	-1.15	3.49	32.9	Pass
							Summary	
						Leg (T7)	80.6	Pass
						Diagonal (T4)	99.2	Pass
						Horizontal	50.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
						(T4) Top Girt	43.8	Pass
						(T5) Bottom Girt	32.9	Pass
						(T2) Bolt Checks	79.4	Pass
						RATING =	**99.2**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842870 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

FOUNDATION REACTION COMPARISON

BU# 842870
WO# 717495

REACTIONS	DESIGN REACTIONS	CURRENT REACTIONS	% CAPACITY
UPLIFT (kips)	237.8	217.0	91.3%
COMPRESSION (kips)	269.5	249.0	92.4%
MAX SHEAR (kips)	44.7	40.0	89.5%

Design loads from: CCIsites Doc #4480661

Know what's **below.**
Call before you dig.

APPROVALS				
		APPROVED	APPROVED AS NOTED	DISAPPROVED REVISE
SPRINT REPRESENTATIVES	DATE	☐	☐	☐
SPRINT RF ENGINEER	DATE	☐	☐	☐
SITE OWNER	DATE	☐	☐	☐
	DATE	☐	☐	☐

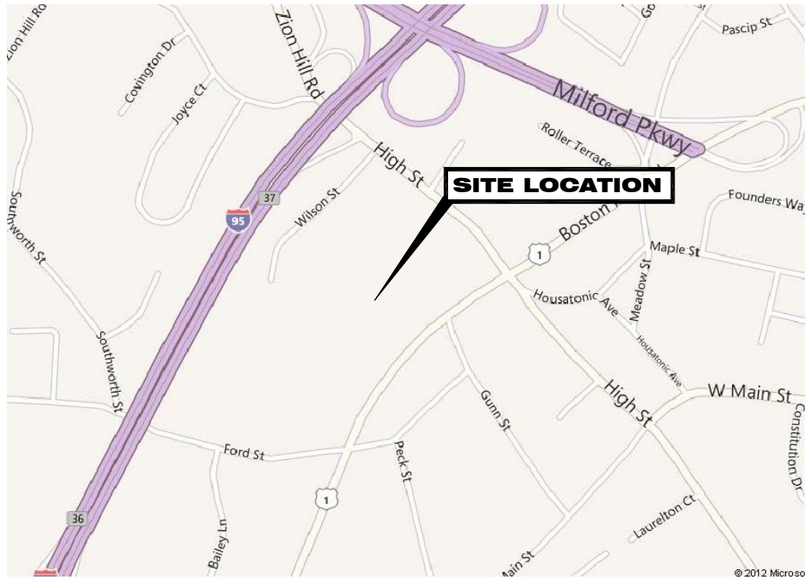
Sprint®

SITE ID: CT23XC552
SITE NAME: MILFORD / AT&T

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

NETWORK VISION CONSTRUCTION DRAWINGS

AERIAL VIEW
SCALE: NTS



LOCATION MAP
SCALE: NTS

DRAWING INDEX

DWG #	DRAWING TITLES
A01	COVER SHEET
C01	GENERAL NOTES 1 OF 2
C01A	GENERAL NOTES 2 OF 2
C02	COMPOUND PLAN
C02A	ELEVATION
C03	EQUIPMENT PLANS
C03A	EQUIPMENT & ANTENNA SPECIFICATIONS
C04	EXISTING ANTENNA PLAN (ALL SECTORS)
C04A	INTERIM ANTENNA PLAN (ALL SECTORS)
C04B	FINAL ANTENNA PLAN (ALL SECTORS)
C04C	RRH PLANS & DETAILS (ALL SECTORS)
C05	SITE DETAILS
C06	RF SCHEDULE
C06A	RF DATA SHEET
C07	AAV DRAWINGS - COVER SHEET
C07A	AAV DRAWINGS - SITE PHOTOS
C07B	AAV DRAWINGS - KEY & EQUIPMENT PLAN
C07C	AAV DRAWINGS - DETAILS
E01	ELECTRICAL NOTES
E02	ELECTRICAL & GROUNDING DETAILS

CODES & STANDARDS

These documents are in compliance & all construction to be in accordance with the following codes & standards as applicable:

State Building Code: 2005 Connecticut Supplement *which includes the 2009 Amendment (effective August 1, 2009) to the 2005 State Building Code.*
2003 International Building Code
2003 International Residential Code
2003 International Existing Building Code
2003 International Mechanic Code
2003 International Plumbing Code
2006 International Energy Conservation Code *(new edition adopted with changes-effective August 1, 2009)*
2009 International Energy Conservation Code with Connecticut Amendments *(effective October 7, 2011)*
ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities
2005 National Electrical Code (NFPA-70)

DRIVING DIRECTIONS

1. DEPART 1 INTERNATIONAL BLVD, MAHWAH, NJ 07495
2. HEAD NORTH ON INTERNATIONAL BLVD TOWARD QUEENSLAND RD.
3. TURN RIGHT ONTO PARK LN.
4. CONTINUE STRAIGHT ONTO LEISURE LN
5. SLIGHT RIGHT ONTO NJ-17 N
6. MERGE ONTO I-287 N/NJ-17 N VIA THE RAMP ON THE LEFT TO I-87/NY THRUWAY
7. ENTER NEW YORK
8. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-87 S/I-287/TAPPAN ZEE BR/NEW YORK CITY/NEW YORK THRUWAY AND MERGE ONTO I-287 E/I-87 N
9. CONTINUE TO FOLLOW I-287 E
10. TAKE THE EXIT ONTO I-95 N
11. ENTER CONNECTICUT
12. TAKE EXIT 33 FOR US-1/CT-130/FERRY BLVD TOWARD DEVON
13. MERGE ONTO CT-130 E/FERRY BLVD
14. CONTINUE TO FOLLOW FERRY BLVD
15. CONTINUE ONTO BRIDGEPORT AVE
16. CONTINUE ONTO BOSTON POST RD
17. DESTINATION WILL BE ON THE LEFT

SITE INFORMATION

PARCEL ID: 64-930-6

ZONING CLASSIFICATION: GU (GOVERMENT USE)
ZONING JURISDICTION: MILFORD TOWNSHIP

PROJECT INFORMATION:

SITE ADDRESS:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

COORDINATES:
LATITUDE: N 41° 13' 42.65"
LONGITUDE: W 73° 4' 12.46"
DATUM : NAD 83

STRUCTURE HEIGHT:
±150'-0" (TOP OF LATTICE TOWER)

PROJECT DIRECTORY:

PROPERTY OWNER:
TOWN OF MILFORD
70 W. RIVER STREET, 2ND FLOOR
MILFORD, CT 06460

APPLICANT:
SPRINT-NEXTEL
6200 SPRINT PARKWAY
OVERLAND PARK, KS 66251

ENGINEER:
KMB DESIGN GROUP, LLC
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
KEITH DRENNAN - PROJECT MANAGER
(732) 280-5623

POWER COMPANY:
THE UNITED ILLUMINATING CO.
157 CHURCH STREET
NEW HAVEN, CT 06510
1-800-7-CALL UI

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
0	09-26-12	ISSUED FOR CONSTRUCTION	CCR	KCD

KMB DESIGN GROUP
kmbdg.com
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT
STEPHEN A BRAY
No. 26657
LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
COVER SHEET

SHEET NUMBER:	REV.:
A01	1

GENERAL CONSTRUCTION NOTES:

1. This set of plans has been prepared for the purposes of municipal and agency review and approval. This set of plans shall not be utilized as construction documents until all drawings have been revised to indicate "ISSUED FOR CONSTRUCTION." Contractor shall e-mail plans@kmbdg.com to ensure that they have the latest set of construction drawings prior to commencing any work whatsoever.
2. ADA compliance: The facility is a normally unoccupied mobile radio facility.
3. These plans are intended to be used to direct the proposed layout. Drawings should not be scaled unless otherwise noted. Plans, elevations and details are intended to show the end result of design. Minor modifications may be required to suit job dimensions or conditions.
4. The contractor shall verify all dimensions and conditions and notify the Project Manager of any discrepancies before starting any work.
5. These plans are designed to reflect observed field conditions. Certain conditions are assumed to comply with general standard construction design methods and principles, and the Contractor shall note that not all areas of structural attachment have been opened or specifically verified. The Contractor is therefore requested to notify the Engineer immediately should encountered field conditions vary from those depicted on the drawings. KMB Design Group, LLC will issue field change direction if required. The Project Manager is referenced on the cover sheet.
6. All equipment and materials shall be installed in accordance with the manufacturer's recommendations unless otherwise noted by the Engineer of Record.
7. The Contractor shall be responsible for all work performed and materials installed to be in strict conformance, as a minimum standard, with all applicable codes, regulations and ordinances having jurisdiction. Electrical systems shall be installed in conformance with the National Electrical Code, and all other local and state jurisdictional codes, ordinances, and with local utility company specifications, whichever is more stringent.
8. The Contractor shall keep contract area clean, hazard free and dispose of all dirt, stumps, stones, rubbish or debris in accordance with all local and environmental laws. No materials or equipment shall be placed anywhere on or in the structure without making adequate provisions to protect existing property. Upon completion, repair any damage that may have occurred during construction. Repair all existing wall surfaces damaged during construction such that they match and blend with adjacent surfaces.
9. The Contractor shall be solely responsible and have control over construction means, methods, techniques, sequences, and procedures.

SPRINT SPECIFICATIONS:

1. Contractor shall ensure that they obtain the latest copy of the following documents from ALU:

   A. Cell Site Installation & De-Installation Services - Attachment G-1
   B. Sprint Integrated Construction Standards for Wireless Sites
   C. Standard Construction Specifications for Wireless Sites

2. Contractor shall notify the Engineer immediately if any of the Sprint standards contradict the standards provided by KMB Design Group, LLC so that the Engineer can provide direction.
3. State, Federal and Local codes prevail.

DIVISION 1 - GENERAL REQUIREMENTS SECTION 01010 SUMMARY OF WORK:

1. The Contractor shall review and become familiar with specifications contained in the bid package prepared by KMB Design Group, LLC and the client. The Contractor shall e-mail plans@kmbdg.com to ensure that they have the latest set of construction drawings prior to commencing any work whatsoever.
2. In the event of a conflict between the bid package specifications and these notes, the provisions of the clients specifications shall take precedence.
3. The Contractor shall visit the site of the proposed work and fully acquaint themselves with the conditions as they exist in order that any restrictions pertaining to the work are understood. All areas and dimensions are indicated on the drawings as accurately as possible, but all conditions shall be verified by each contractor and/or subcontractor at the site. The failure of the contractor to examine or receive any form, instrument or document, or to visit the site shall not relieve the Contractor from any obligation with respect to their quoted price. The submission of a quotation shall acknowledge that the Contractor and their Subcontractors have fully examined the site and know the existing conditions and have made provisions for operating under the conditions as they exist at the site and have included all necessary items.
4. The General Contractor's responsibilities shall include, but not be limited to, construction of the equipment foundation, including electrical service, telephone conduits, grounding system and coordination with local utility companies.
5. The antenna installers responsibilities shall include, but not be limited to, cable tray installation, routing of cables from radio equipment to antennas, associated hardware for securing antenna cables, antenna mounts, determining supplier of antennas, grounding of antennas to grounding system, installing antennas and verifying with Radio Frequency Engineers, the alignment, location, and proper orientation of antennas.
6. The Contractors shall coordinate construction activities with the building Landlord in order to avoid conflicts with current use of the site.
7. The Owner may have work performed under separate contracts, concurrently, with the work of this contract.
8. The General Contractor shall permit access to the project to these contractors to perform their work.
9. The Contractor shall conform to all applicable local, county, state, and federal codes, laws and requirements, including OSHA.
10. The Contractor shall apply and pay for the construction permit, certificate of occupancy and all other required permits or licenses. The Contractor is responsible for obtaining all inspections.
11. Care shall be exercised in protecting the building occupants during the demolition and construction periods of this project. Every effort shall be made to maintain a clean operation. Debris shall not accumulate. All debris will be deposited in a suitable container on a daily basis and shall be emptied on a regular schedule. The location of the container shall be coordinated with the Building Manager.
12. Safety procedures: Attention is directed to federal, state, and local laws, rules and regulations concerning construction safety and health standards. The construction company awarded this project shall ensure all working surroundings and conditions are sanitary, and are not hazardous or dangerous to the health or safety of the work crews or building occupants. Precaution shall be exercised at all times for the protection of persons and property. It is mandatory that the safety provisions of applicable local laws, OSHA regulations and building and construction codes, be observed for all contractors and antenna riggers.
13. The General Contractor must coordinate all roof related work with the Landlord's pre-approved roofer. The General Contractor must confirm the compatibility of all materials and ensure that all existing roof warranties, if any, remain in effect.

SECTION 01613 - DELIVERY, STORAGE AND HANDLING:

1. The Contractor shall be responsible for all procedures and scheduling associated with hoisting, staging, and erecting of materials and equipment to and/or upon the site.
2. All elements of the existing site, i.e. structures, site plantings, etc. shall be protected as necessary from said actions. This work must be done in a safe, secure nondestructive manner for protecting personnel and property.

SECTION 01740 WARRANTIES AND BONDS:

1. The Contractor shall guarantee all labor and materials used in this project for a minimum period of one (1) year commencing from the date of final acceptance by the client. The Contractor is not required to guarantee material supplied by the Owner.
2. Final date of acceptance is deemed as the date that all required state and federal approval have been obtained including, but not limited to:
   A. Final inspection - D14
   B. Certificate of Occupancy
3. Any deficiencies that come evident during this one (1) year period shall be corrected by the Contractor at the Contractor's expense.

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
0	09-26-12	ISSUED FOR CONSTRUCTION	CCR	KCD

KMB DESIGN GROUP
kmbdg.com
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A BRAY · NO. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
GENERAL NOTES
1 OF 2

SHEET NUMBER:	REV.:
C01	1

K:\332_Sprint_332.1000_Acatel-Lucent\332.1487_CT23XC552_430 Boston Post Road\332.1487_CAD\332.1487_Construction\332.1487.C01.dwg, 11/5/2012 4:46:44 PM, jspyrinewski

DIVISION 2 - SITE WORK

1. The Contractor shall call utilities prior to the start of construction.

2. All existing active sewer, water, gas, electric, and other utilities where encountered in the work, shall be protected at all times, and where required for the proper execution of the work, shall be relocated as directed by Engineers. Extreme caution should be used by the Contractor when excavating or pier drilling around or near utilities. The Contractor shall provide safety training for the working crew. This will include but not limited to:
   A. Fall protection
   B. Confined space
   C. Electrical safety
   D. Trenching & excavation

3. All site work shall be as indicated on the drawing and stipulated in the specification project summary.

4. If necessary, rubbish, stumps, debris, sticks, stones, and other refuse shall be removed from the site and disposed of legally.

5. The site shall be graded to cause surface water flow away from the equipment shelter and monopole areas.

6. No fill or embankment material shall be placed on frozen ground. Frozen materials, snow or ice shall not be placed in any fill or embankment.

7. The sub grade shall be compacted and brought to a smooth uniform grade prior to finished surface application.

8. All existing inactive sewer, water, gas, electric and other utilities, which interfere with the execution of the work, shall be removed and/or capped, plugged or otherwise discontinued at points which will not interfere with the execution of the work, subject to the approval of engineering.

9. The areas of the Owners property disturbed by the work and not covered by the building or driveway, shall be graded to a uniform slope, fertilized, seeded, and covered with mulch as specified in the specification of landscape work.

10. The Contractor shall minimize disturbance to existing site during construction. Erosion control measures, shall be in conformance with the local guidelines for erosion and sediment control.

11. All back fill shall be compacted to 95% modified proctor density as determined by ASTM standard test procedures.

DIVISION 3 - CONCRETE

1. Design and construction of all concrete elements shall conform to the latest editions of the following applicable codes: ACI 301 "Specifications for Structural Concrete for Buildings"; ACI 318 "Building Code Requirements for Reinforced Concrete".

2. Mix design shall be approved by Owner's representative prior to placing concrete.

3. Concrete shall be normal weight, 6% air entrained (±1.5%) with a maximum 4" slump, and have a minimum 28-day compressive strength of 3000 psi unless otherwise noted.

4. Maximum aggregate size shall be 1".

5. The following materials shall be used:

Portland cement:	ASTM C 150, TYPE I
Reinforcement:	ASTM A 185
Normal weight aggregate:	ASTM C 33
Water:	Drinkable
Admixtures:	Non-chloride containing

6. Reinforcing details shall be in accordance with the latest edition of ACI 315.

7. Reinforcing steel shall conform to ASTM A 615, grade 60, deformed unless noted otherwise. Welded wire fabric shall conform to ASTM A 185 welded steel wire fabric unless noted otherwise. Splices shall be class "B" and all hooks shall be standard, unless otherwise noted.

8. The following minimum concrete cover shall be provided for reinforcing steel unless shown otherwise on drawings:
   - Concrete cast against earth ..... 3"
   - Concrete exposed to earth or weather:

   #6 and larger ..... 2"
   #5 and smaller ..... 1 1/2"
   - Concrete not exposed to earth or weather or not cast against the ground:

   Slab and wall ..... 3/4"
   Beams and columns ..... 1 1/2"

9. A 1" chamfer shall be provided at all exposed edges of concrete, unless otherwise noted, in accordance with ACI 30 section 4.2.4.

10. Installation of concrete anchor, shall be per manufacturers written recommended procedure, the anchor bolt, dowel or rod shall conform to manufacturer's recommendation for embedment depth or as shown on the drawing. No rebar shall be cut without prior engineering approval when drilling holes in concrete.

11. Curing compounds shall conform to ASTM C-309.

12. Admixtures shall conform to the appropriate ASTM standard as referenced in ACI-301.

13. Do not weld or tack weld reinforcing steel.

14. All dowels, anchor bolts, embedded steel, electrical conduits, pipe sleeves, grounds and all other embedded items and formed details shall be in place before start of concrete placement.

15. Locate additional construction joints required to facilitate construction as acceptable to Engineer. Place reinforcement continuously through joint.

16. Reinforcement shall be cold bent whenever bending is required.

17. Place concrete in a uniform manner to prevent the formation of cold joints and other planes of weakness. Vibrate the concrete to fully embed reinforcing. Do not use vibrators to transport concrete thorough chutes or formwork.

18. Do not place concrete in water, ice, or on frozen ground.

19. Do not allow concrete sub base to freeze during concrete curing and setting period, or a minimum of 14 days after placement.

20. For cold -weather and hot-weather concrete placement, conform to applicable ACI codes and recommendations. In either case, materials containing chloride, calcium, salts, etc. shall not be used. Protect fresh concrete from weather for 7 days minimum.

DIVISION 5 - METALS

SECTION 05120 - STRUCTURAL STEEL

1. Codes and specifications:
   A. The fabrication/erection shall conform to the requirements of the following codes and specifications, latest edition, unless otherwise noted:
      - The local building code.
      - AISC-specification for structural steel buildings, allowable stress design, 1989.
      - ASTM A992 structural steel (for all w sections only).
      - ASTM A36 structural steel (all other sections).
      - ASTM A53, type E, grade B, electric resistance welded steel pipe.
      - ASTM 123 zinc (hot-dip galvanized) coatings on iron and steel products.
      - ASTM 153 zinc coated (hot-dip) iron and steel hardware.
      - AWS D1.1 structural welding code.
      - EIA/TIA-222 structural standards for steel antenna towers and antenna supporting structures.

2. Design parameters:
   A. The structural steel antenna mounting frames are designed to provide support for antennas and all hardware and accessories associated with antennas.

3. Fabrication and installation requirements:
   A. The antenna supports, antennas and mounting hardware shall be constructed plumb, level and true.
   B. All structural elements and fasteners shall be galvanized in accordance with ASTM A123 and A153.
   C. Welds should be shop made wherever possible, conforming to AISC specification and AWS requirements. All welds are to be of the size and type indicated. Contractor shall employ a licensed welder and shall provide the engineer with their name and a copy of their license prior to commencing any field welding.
   D. Contractor shall provide fire watch during all welding operations, brazing and soldering and other work requiring the use of an open flame. Two (2) hand held 30 lb fire extinguishers and adequate water supply shall be maintained on site. Fire watch plan shall be submitted to the client for approval prior to welding.
   E. All bolted connections shall be A325 high strength bolts 5/8" diameter minimum size unless otherwise noted. Bolts shall be supplied with flat washers. Bolts shall be tightened in accordance with the AISC snug tight condition, unless otherwise noted.
   F. Protective galvanized coatings which were damaged or removed during erection or transportation shall be restored by painting with zinc-rich primer.
   G. All threaded rods shall be 1/2" diameter A36 steel unless otherwise noted.
   H. Temporary structures for staging and construction shall be capable of withstanding forces specified by the local building code current edition.

4. Inspections:
   A. All structural steel antenna frames, and connections shall be inspected prior to installation of antennas.
   B. All antenna cable trays, supports, channels and clamps shall be inspected prior to installation of antenna cables.
   C. Coordinate all inspections with the client's Construction Manager.
   D. Contractor to make notifications 72 hours prior to any required inspections.

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1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
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(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A BRAY · NO. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

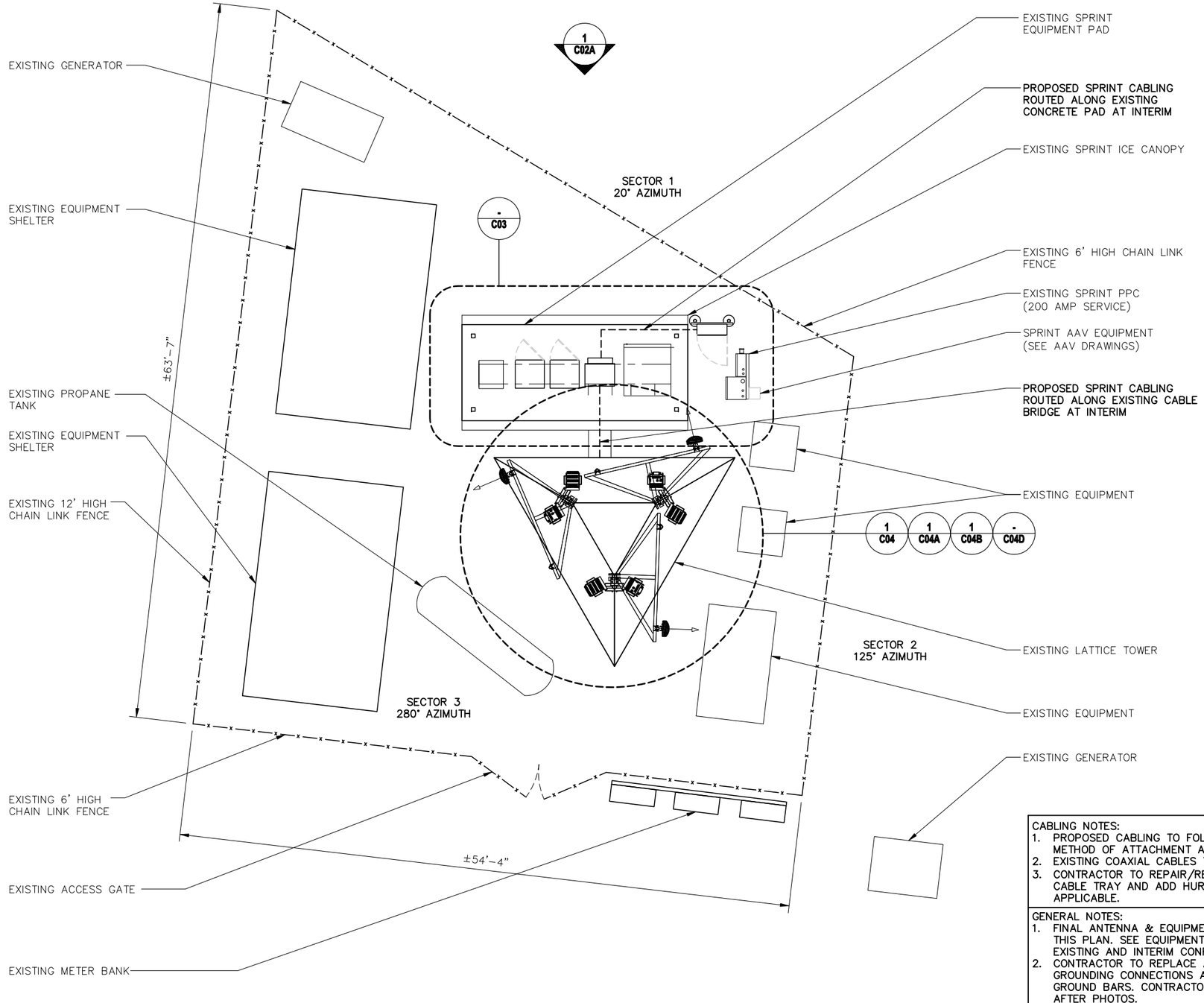
CT23XC552

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
GENERAL NOTES
2 OF 2

SHEET NUMBER:	REV.:
C01A	1



2.5 0 2.5 5 10
(IN FEET)

CABLING NOTES:
1. PROPOSED CABLING TO FOLLOW EXISTING ROUTE AND METHOD OF ATTACHMENT AT INTERIM.
2. EXISTING COAXIAL CABLES TO BE REMOVED AT FINAL.
3. CONTRACTOR TO REPAIR/REPLACE ANY MISSING/DAMAGED CABLE TRAY AND ADD HURRICANE STRAPS AS REQUIRED IF APPLICABLE.

GENERAL NOTES:
1. FINAL ANTENNA & EQUIPMENT CONFIGURATION SHOWN ON THIS PLAN. SEE EQUIPMENT & ANTENNA PLAN SHEETS FOR EXISTING AND INTERIM CONFIGURATION.
2. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED WITH GALVANIZED GROUND BARS. CONTRACTOR SHALL PROVIDE BEFORE & AFTER PHOTOS.
3. CONTRACTOR TO RESTORE ANY RUST AREA TO ORIGINAL CONDITION AND PROTECTIVE COATING TO BE APPLIED.
4. STRUCTURAL ANALYSIS PROVIDED UNDER SEPARATE COVER.

1 COMPOUND PLAN

11x17 SCALE: 1" = 10' | **24x36 SCALE: 1" = 5'**

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NEW HAVEN COUNTY

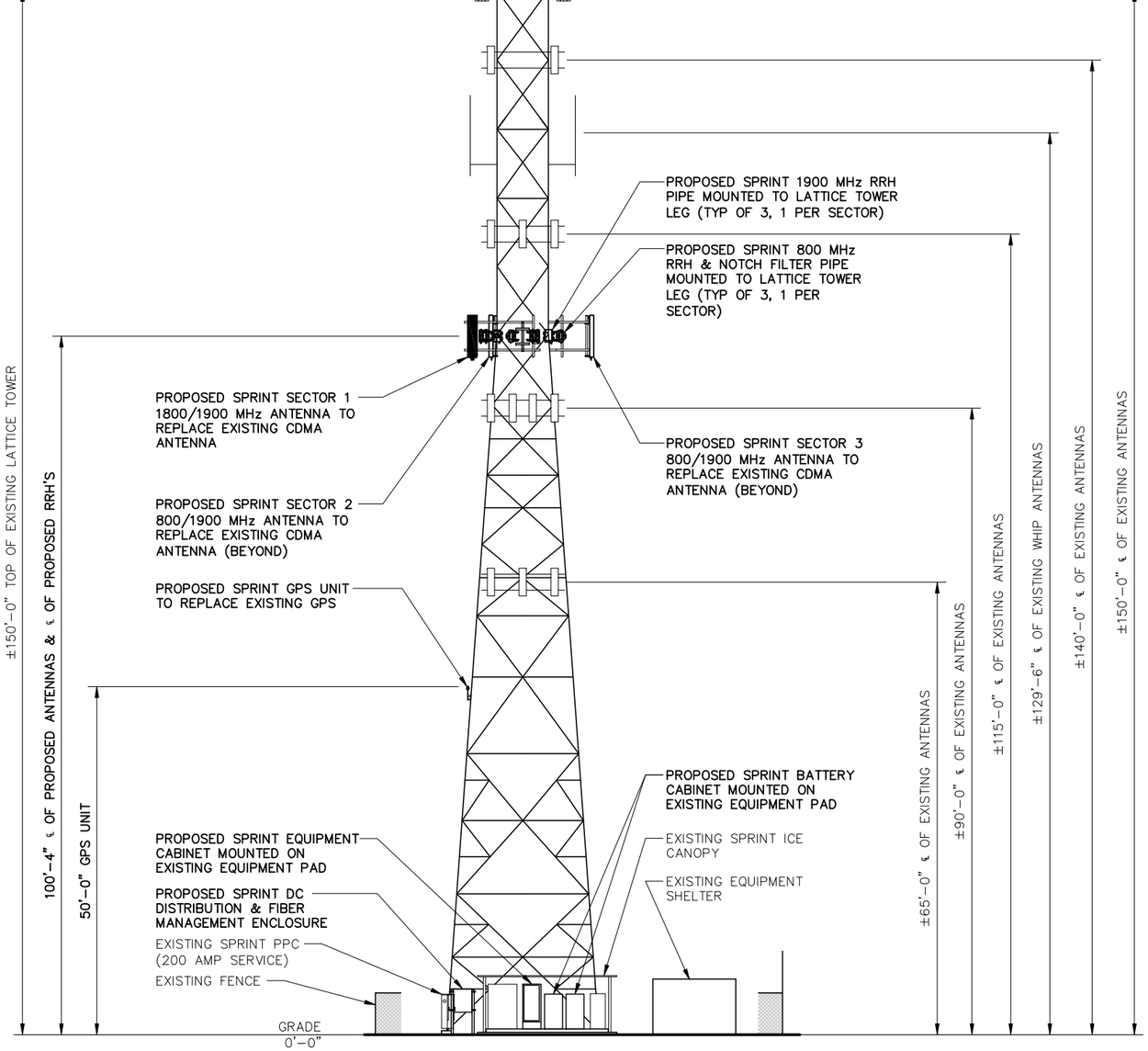
CT23XC552

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE: COMPOUND PLAN

SHEET NUMBER: **C02** REV.: **1**



5 0 5 10 20
(IN FEET)

1 NORTHEAST ELEVATION

11x17 SCALE: 1" = 20' | 24x36 SCALE: 1" = 10'

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

NOTES:
1. FINAL ANTENNA & EQUIPMENT CONFIGURATION SHOWN ON THIS PLAN. SEE EQUIPMENT & ANTENNA PLAN SHEETS FOR EXISTING AND INTERIM CONFIGURATION.
2. EXISTING TOWER INVENTORY PROVIDED BY OTHERS.
3. ALL ANTENNA AND CABLING WORK ON THE TOWER SHALL BE IN ACCORDANCE WITH STRUCTURAL REPORT FOR THE TOWER (BY OTHERS).

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SITE INFORMATION:
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MILFORD, CT 06460
NEW HAVEN COUNTY

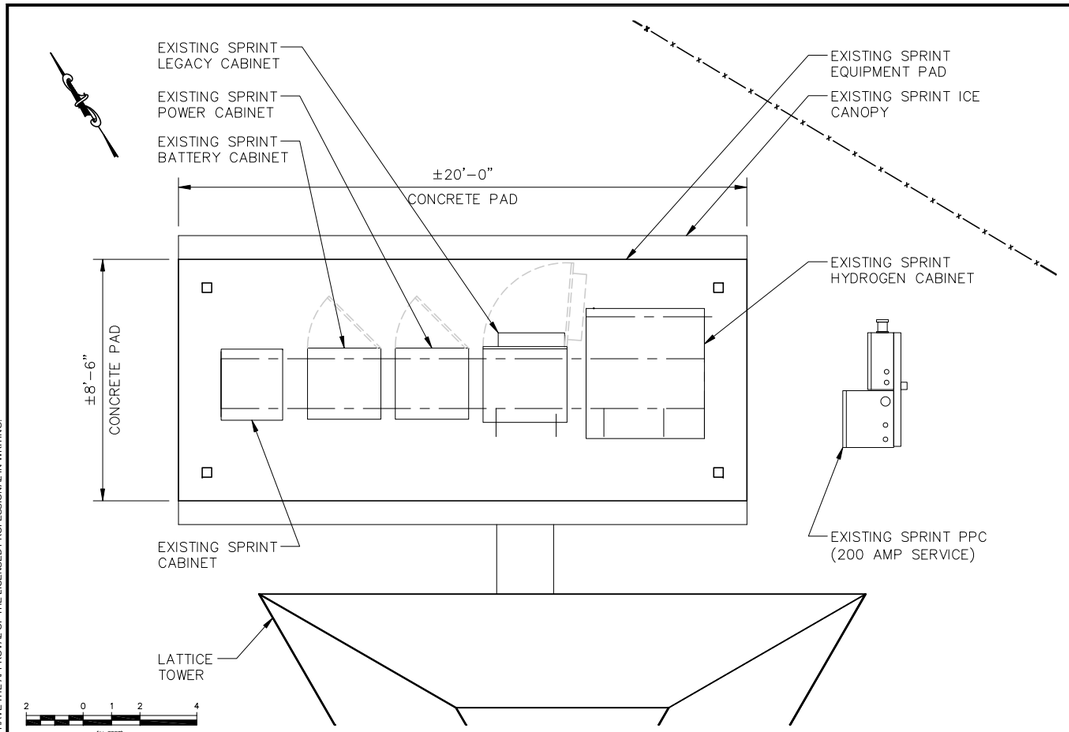
CT23XC552

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

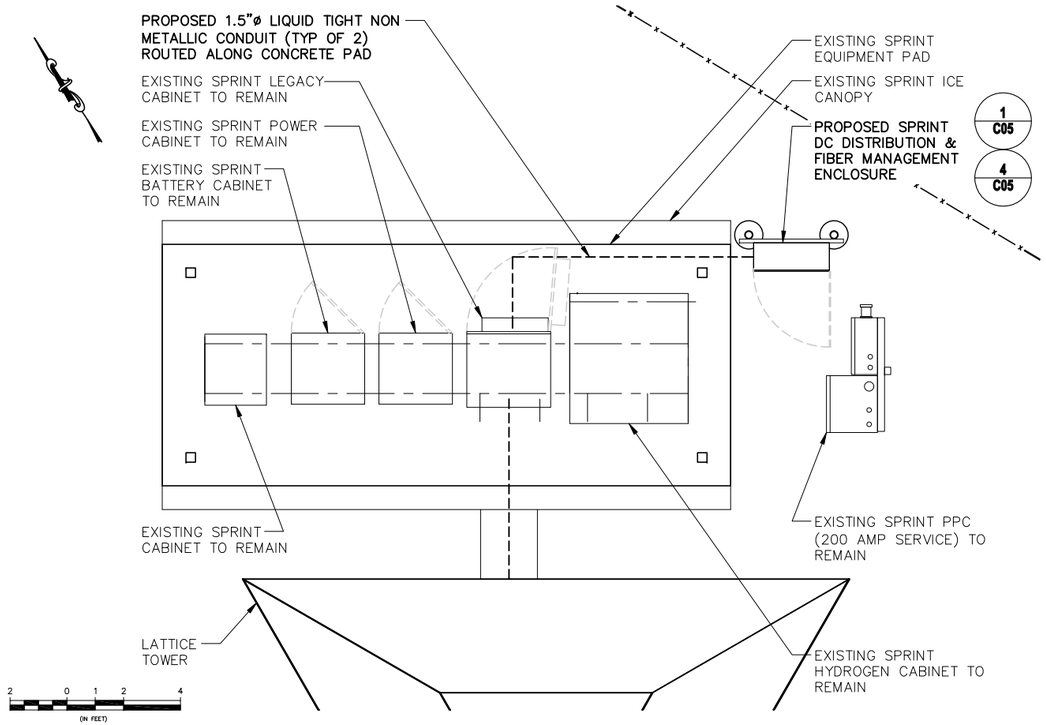
SHEET TITLE: ELEVATION

SHEET NUMBER: C02A | REV.: 1



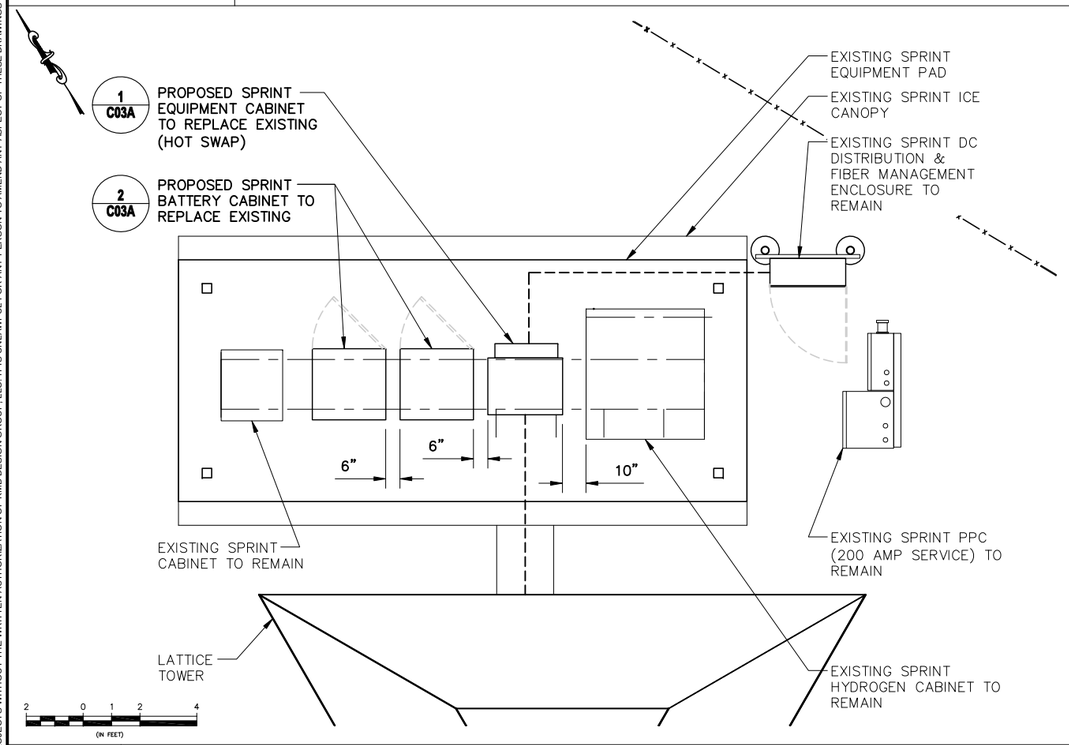
1 EXISTING EQUIPMENT PLAN

11x17 SCALE: 3/16" = 1'-0" | 24x36 SCALE: 3/8" = 1'-0"



2 INTERIM EQUIPMENT PLAN

11x17 SCALE: 3/16" = 1'-0" | 24x36 SCALE: 3/8" = 1'-0"



3 FINAL EQUIPMENT PLAN

11x17 SCALE: 3/16" = 1'-0" | 24x36 SCALE: 3/8" = 1'-0"

NOTE:
1. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED.

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NEW HAVEN COUNTY

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PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE: EQUIPMENT PLANS

SHEET NUMBER: C03 | REV.: 1

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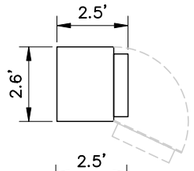
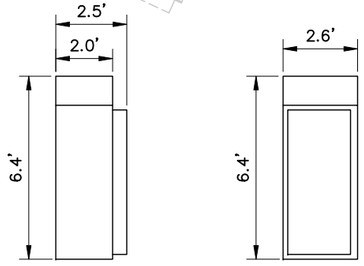


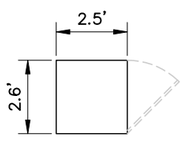
9927
EQUIPMENT CABINET
CABINET WEIGHT: 1020 lbs
FOOTPRINT: 5.3 SF



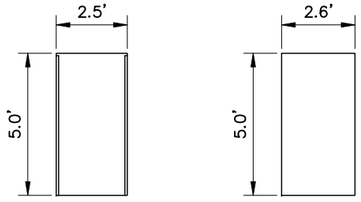
1 EQUIPMENT CABINET SPECIFICATIONS

11x17 SCALE: 3/16" = 1'-0" | 24x36 SCALE: 3/8" = 1'-0"

DETAIL NOT USED



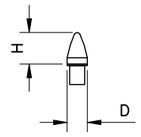
AVAYA 60ECv2
BATTERY CABINET
CABINET WEIGHT: 1625 lbs
FOOTPRINT: 6.5 SF



2 BATTERY CABINET SPECIFICATION

11x17 SCALE: 3/16" = 1'-0" | 24x36 SCALE: 3/8" = 1'-0"

DETAIL NOT USED



MANUF.: PCTEL
MODEL #: GPS-TMG-HR-26NCM
HEIGHT: 5.0"
DIAMETER: 3.2"
WEIGHT: 0.6 lbs

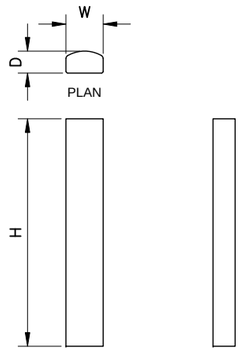
3 GPS UNIT SPECIFICATIONS

11x17 SCALE: 1/4" = 1'-0" | 24x36 SCALE: 1/2" = 1'-0"

DETAIL NOT USED

4

DETAIL NOT USED



MANUF.: RFS
MODEL: APXVSPP18-C-A20
LENGTH 72.0"
WIDTH: 11.8"
DEPTH: 7.0"
WEIGHT: 64.5 lbs
AREA: 5.9 SF

5

DETAIL NOT USED

6

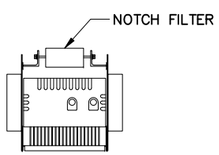
DETAIL NOT USED

7 ANTENNA SPECIFICATIONS - 800/1900 MHz

SCALE: NTS

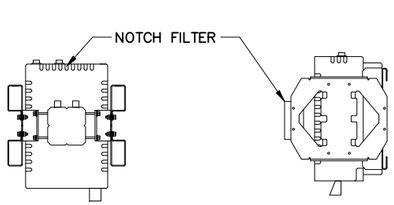
8

DETAIL NOT USED



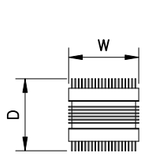
MANUF.: ALCATEL LUCENT
MODEL #: FD-RRH-2x50-800
HEIGHT: 19"
WIDTH: 13"
DEPTH: 12.2"
WEIGHT: ±64 lbs

DIMENSIONS AND WEIGHT
INCLUDES FILTER

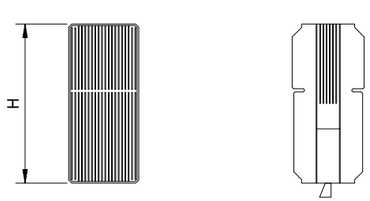


9 RRH SPECIFICATIONS - 800 MHz

11x17 SCALE: 1/2" = 1'-0" | 24x36 SCALE: 1" = 1'-0"



MANUF.: ALCATEL LUCENT
MODEL #: RRH 1900 4x45 65MHz
HEIGHT: 25.1"
WIDTH: 11.1"
DEPTH: 10.69"
WEIGHT: ±59.5 lbs



10 RRH SPECIFICATIONS - 1900 MHz

11x17 SCALE: 1/2" = 1'-0" | 24x36 SCALE: 1" = 1'-0"

DETAIL NOT USED

11

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Stephen A. Bray
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STEPHEN A BRAY
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LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER: **332.1487**

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

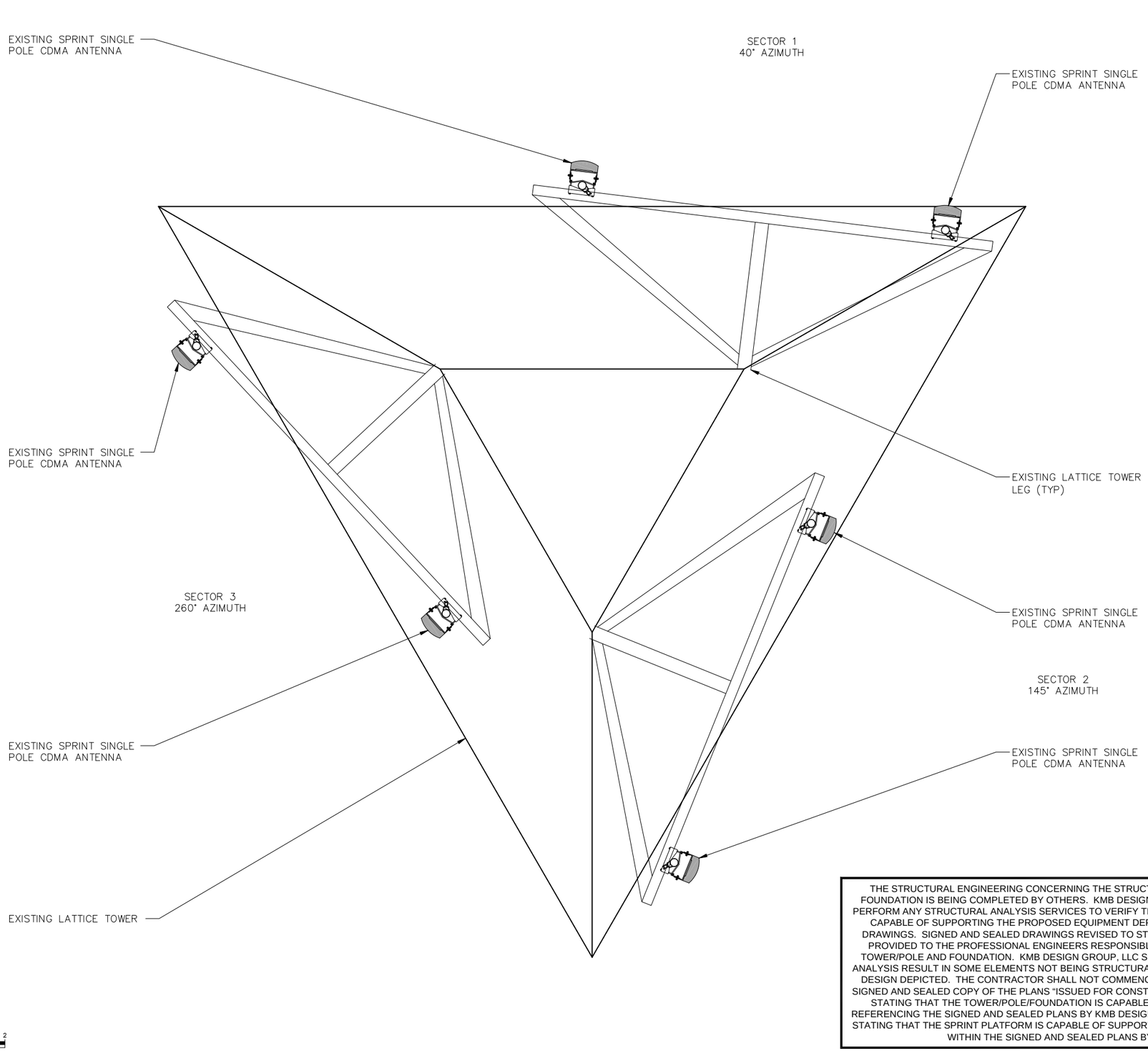
CT23XC552

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE: EQUIPMENT & ANTENNA SPECIFICATIONS

SHEET NUMBER: C03A | REV.: 1



1 0 1 2
(IN FEET)

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

1 EXISTING ANTENNA PLAN @ ±100'-4" AGL (ALL SECTORS)

11x17 SCALE: 3/8" = 1'-0" | **24x36 SCALE: 3/4" = 1'-0"**

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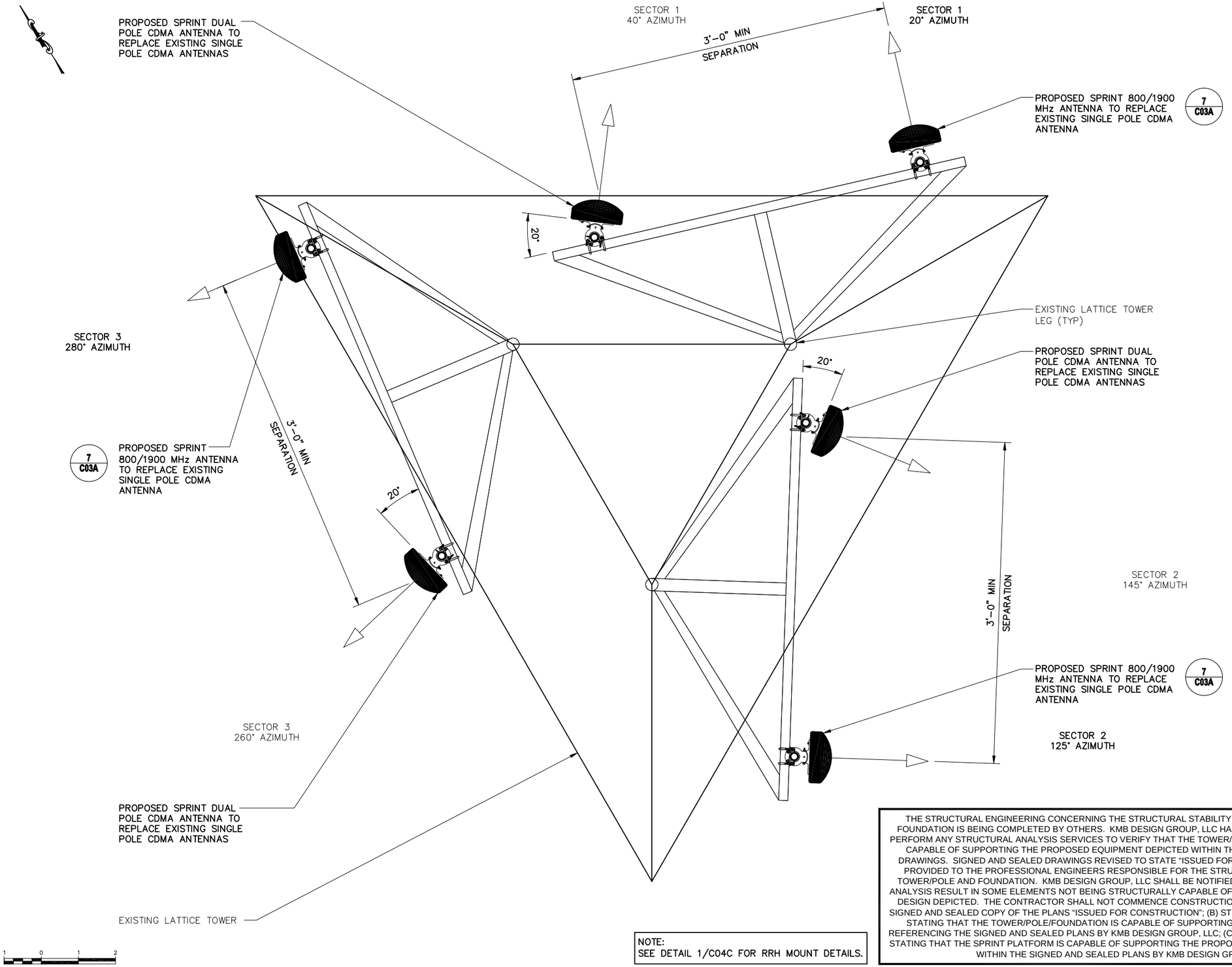
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
EXISTING ANTENNA PLAN
(ALL SECTORS)

SHEET NUMBER:	REV.:
C04	1

K:\332_Sprint_332.1000_Alcatel-Lucent\332.1487_CT23XC552_430 Boston Post Road\332.1487_CAD\332.1487_Construction\332.1487_C04.dwg, 11/5/2012 4:47:14 PM, jspriniewski



NOTE:
SEE DETAIL 1/C04C FOR RRH MOUNT DETAILS.

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

1 INTERIM ANTENNA PLAN @ ±100'-4" AGL (ALL SECTORS)

11x17 SCALE: 3/8" = 1'-0" | **24x36 SCALE: 3/4" = 1'-0"**

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CT23XC552

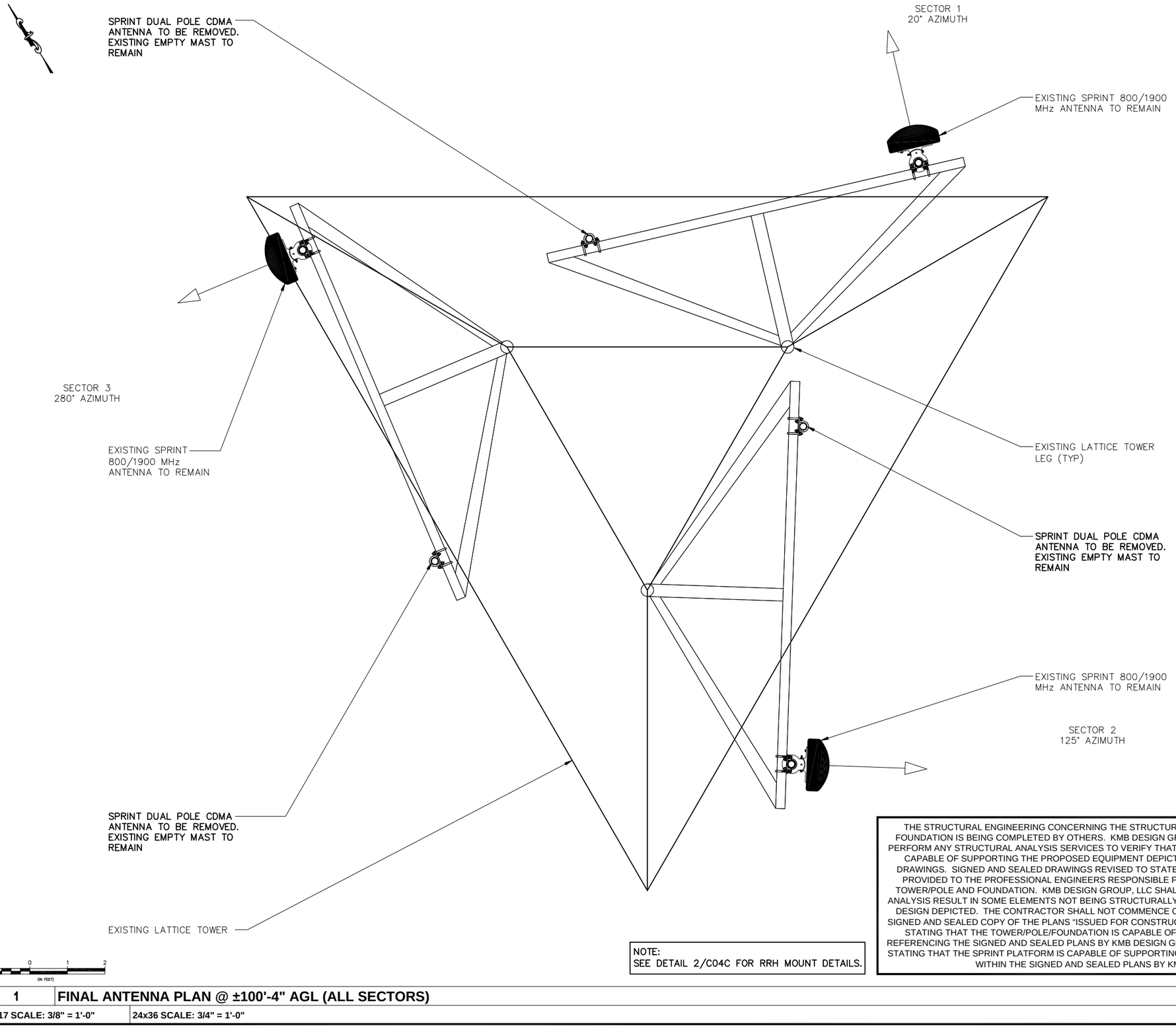
PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
INTERIM ANTENNA PLAN
(ALL SECTORS)

SHEET NUMBER: C04A

REV.: 1



1 0 1 2
(IN FEET)

NOTE:
SEE DETAIL 2/C04C FOR RRH MOUNT DETAILS.

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE AND FOUNDATION IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. SIGNED AND SEALED DRAWINGS REVISED TO STATE "ISSUED FOR CONSTRUCTION" SHALL BE PROVIDED TO THE PROFESSIONAL ENGINEERS RESPONSIBLE FOR THE STRUCTURAL ANALYSIS OF THE TOWER/POLE AND FOUNDATION. KMB DESIGN GROUP, LLC SHALL BE NOTIFIED SHOULD THE STRUCTURAL ANALYSIS RESULT IN SOME ELEMENTS NOT BEING STRUCTURALLY CAPABLE OF SUPPORTING THE PROPOSED DESIGN DEPICTED. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION WITHOUT OBTAINING (A) A SIGNED AND SEALED COPY OF THE PLANS "ISSUED FOR CONSTRUCTION"; (B) STRUCTURAL ANALYSIS REPORT STATING THAT THE TOWER/POLE/FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED LOADING REFERENCING THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC; (C) SPRINT PLATFORM ANALYSIS STATING THAT THE SPRINT PLATFORM IS CAPABLE OF SUPPORTING THE PROPOSED DESIGN AS REFERENCED WITHIN THE SIGNED AND SEALED PLANS BY KMB DESIGN GROUP, LLC.

1 FINAL ANTENNA PLAN @ ±100'-4" AGL (ALL SECTORS)

11x17 SCALE: 3/8" = 1'-0" | **24x36 SCALE: 3/4" = 1'-0"**

Sprint®

Alcatel·Lucent

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
0	09-26-12	ISSUED FOR CONSTRUCTION	CCR	KCD

KMB DESIGN GROUP
kmbdg.com
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A BRAY · No. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

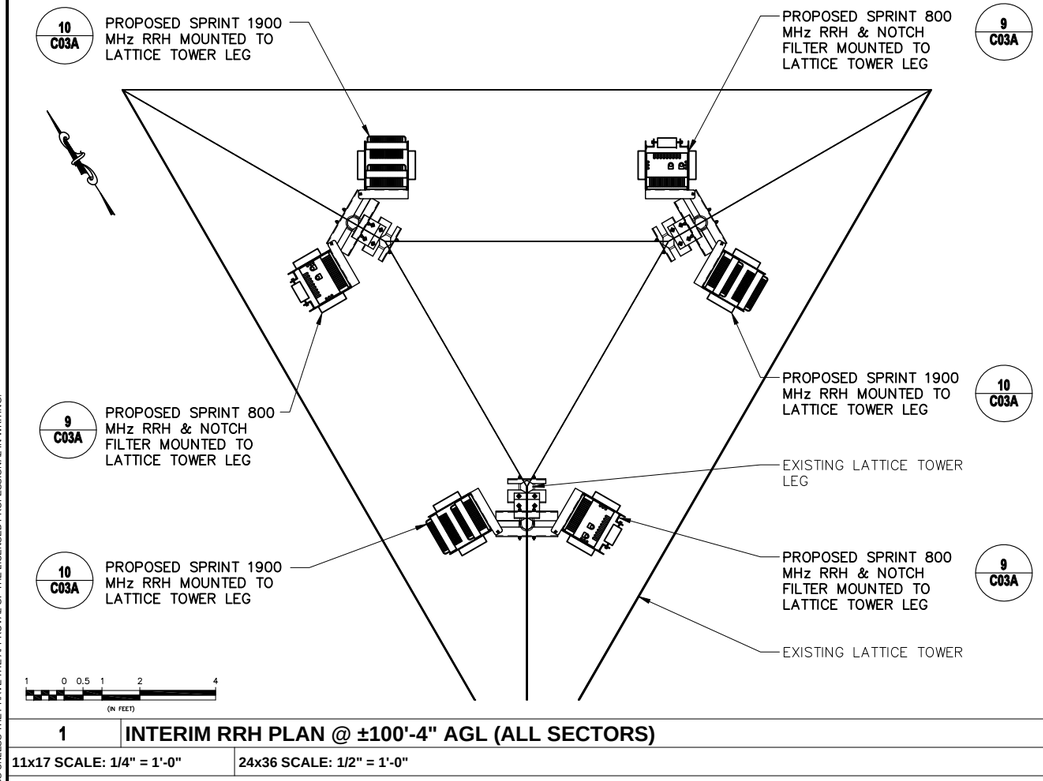
PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
FINAL ANTENNA PLAN
(ALL SECTORS)

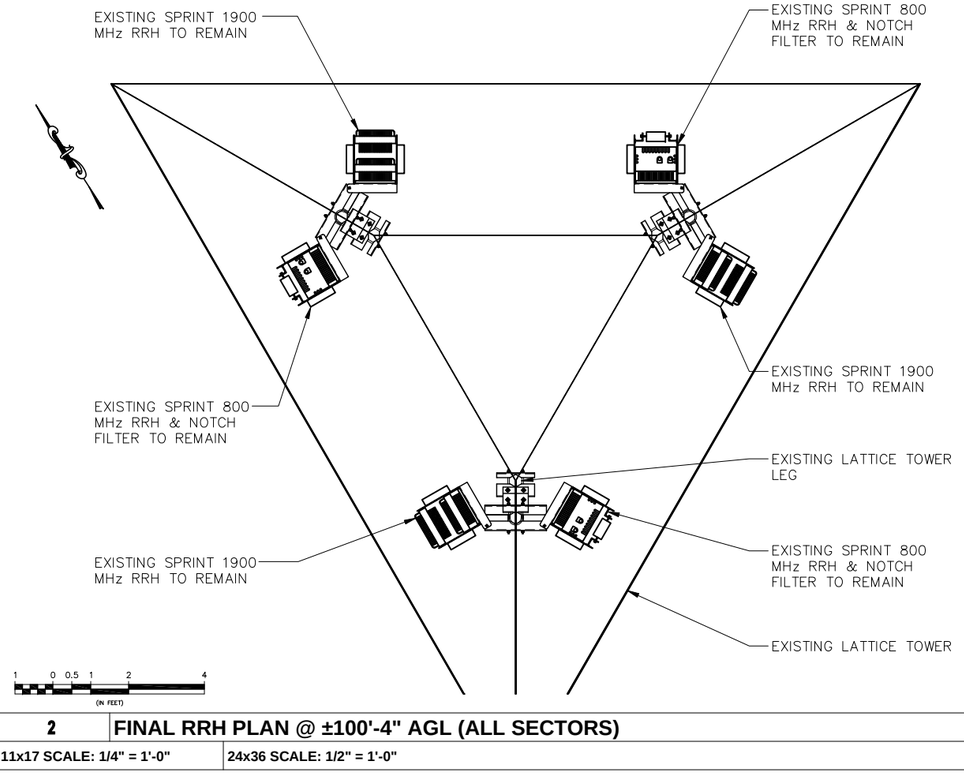
SHEET NUMBER:	REV.:
C04B	1

K:\332_Sprint_332.1000_Alcatel-Lucent\332.1487_CT23XC552_430 Boston Post Road\332.1487_CAD\332.1487_Construction\332.1487_C04B.dwg, 11/5/2012 4:47:25 PM, jspyniewski



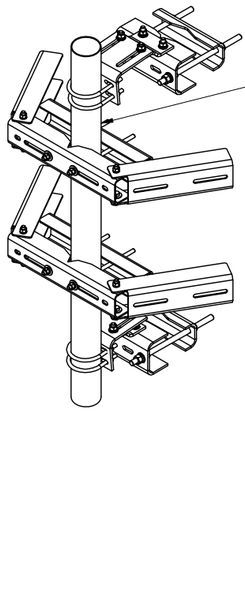
1 INTERIM RRH PLAN @ ±100'-4" AGL (ALL SECTORS)

11x17 SCALE: 1/4" = 1'-0" | **24x36 SCALE: 1/2" = 1'-0"**



2 FINAL RRH PLAN @ ±100'-4" AGL (ALL SECTORS)

11x17 SCALE: 1/4" = 1'-0" | **24x36 SCALE: 1/2" = 1'-0"**



NOTE:
RRHs NOT SHOWN FOR CLARITY.

UNIVERSAL SLIDING PIPE MOUNT KIT BY COMMSCOPE, PART # PM-SU35-48 OR AN APPROVED EQUAL
KIT INCLUDES:
UNIVERSAL SADDLE MOUNT, SLIDING PIPE MOUNT BRACKETS, PIPE & HARDWARE

UNIVERSAL RRU MOUNT KIT BY COMMSCOPE, PART # RM-RU3 OR AN APPROVED EQUAL
KIT INCLUDES:
BRACKETS & HARDWARE

1 RRH MOUNT DETAIL

SCALE: NTS

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
0	09-26-12	ISSUED FOR CONSTRUCTION	CCR	KCD

KMB DESIGN GROUP
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Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT
STEPHEN A BRAY
No. 26657
LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

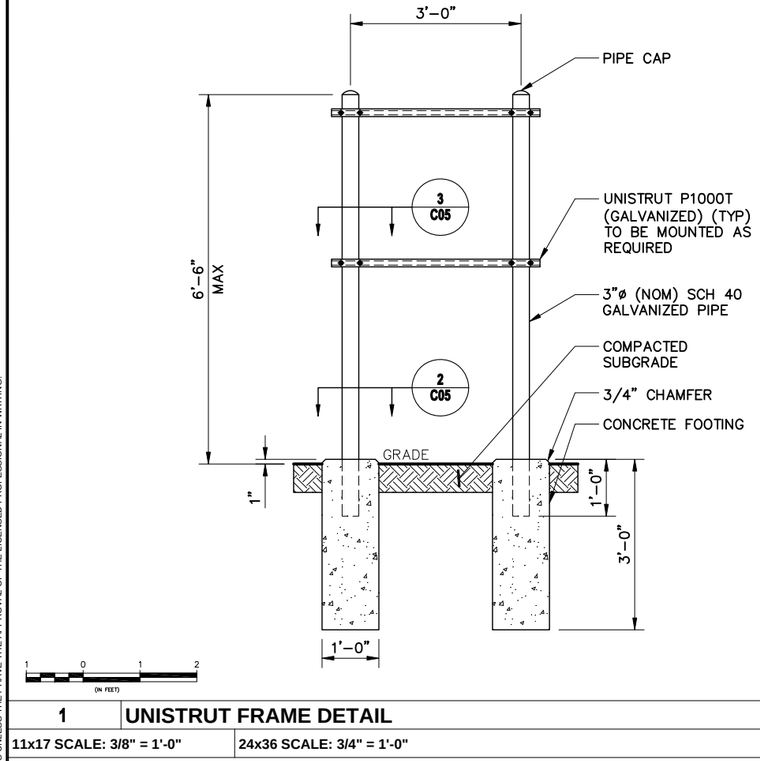
PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
RRH PLANS & DETAILS
(ALL SECTORS)

SHEET NUMBER: C04C

REV.: 1



1 UNISTRUT FRAME DETAIL

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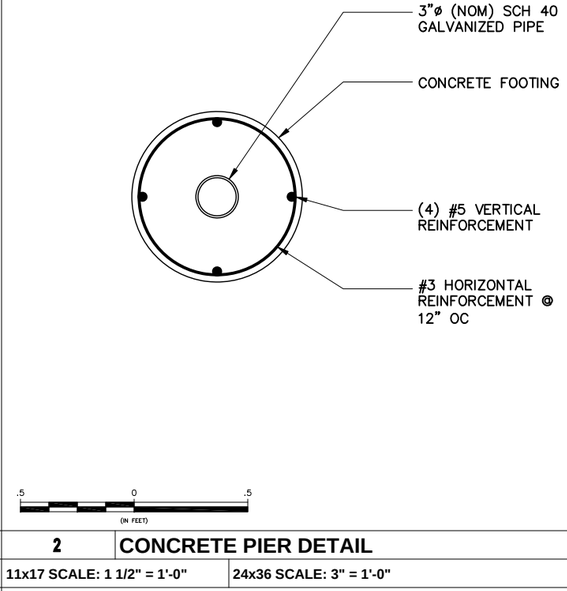
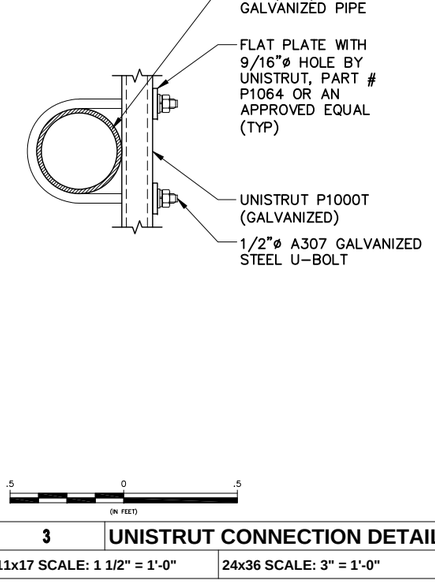


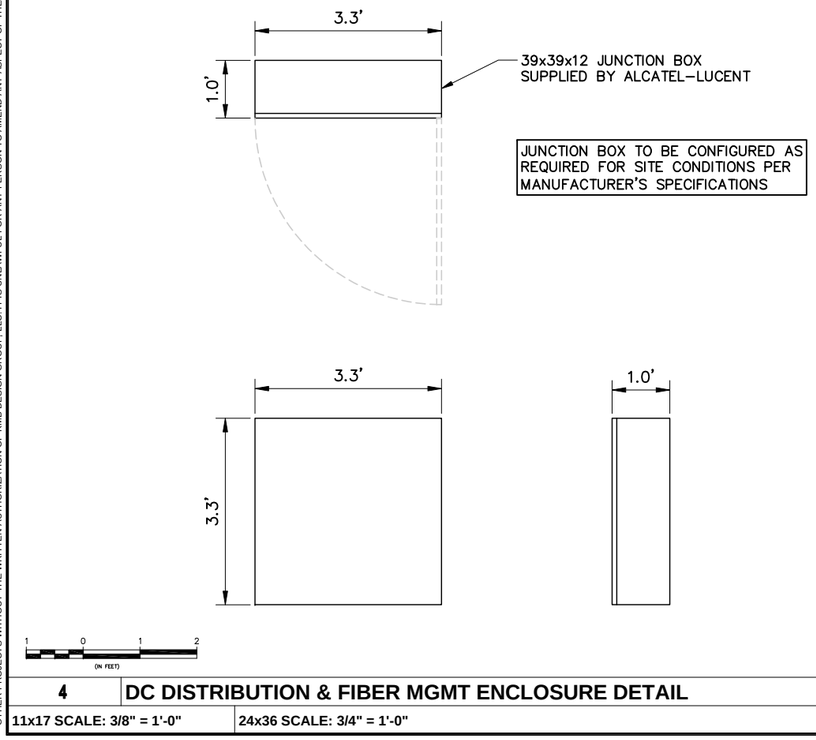
2 CONCRETE PIER DETAIL

11x17 SCALE: 1 1/2" = 1'-0" | 24x36 SCALE: 3" = 1'-0"



3 UNISTRUT CONNECTION DETAIL

11x17 SCALE: 1 1/2" = 1'-0" | 24x36 SCALE: 3" = 1'-0"



4 DC DISTRIBUTION & FIBER MGMT ENCLOSURE DETAIL

11x17 SCALE: 3/8" = 1'-0" | 24x36 SCALE: 3/4" = 1'-0"

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
0	09-26-12	ISSUED FOR CONSTRUCTION	CCR	KCD

KMB DESIGN GROUP
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Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A BRAY · NO. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
SITE
DETAILS

SHEET NUMBER: C05 REV.: 1

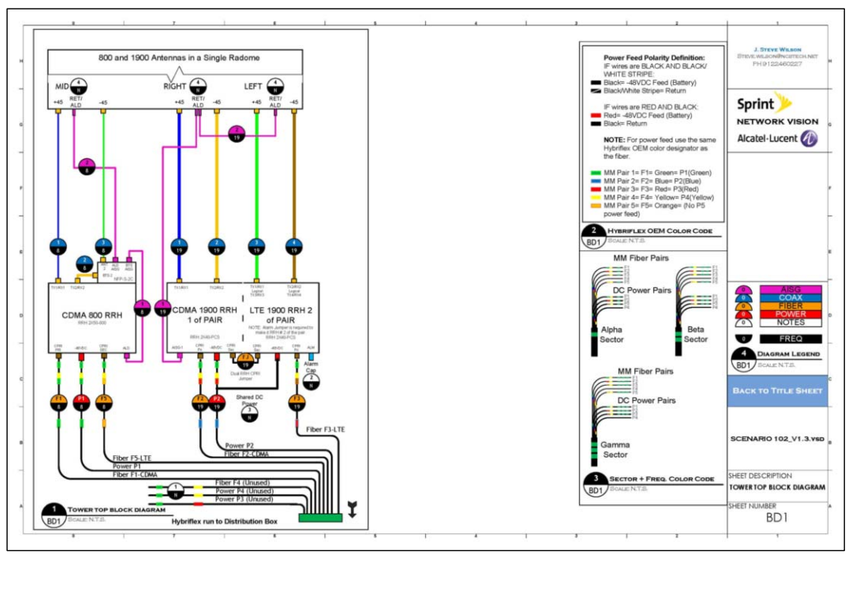
K:\332_Sprint_332.1000_Alcatel-Lucent\332.1487_CT23XC552_430 Boston Post Road\332.1487_CAD\332.1487_Construction\332.1487_C05.dwg, 11/5/2012 4:47:39 PM, jsprinewski

FINAL ANTENNA AND CABLE SCHEDULE

SECTOR	ANTENNA	AZIMUTH (DEGREES)	MECHANICAL DT (DEGREES)	ELECTRICAL DT (DEGREES)	RAD CENTER AGL (FT)	ANTENNA MAKE	ANTENNA MODEL	RRH QTY	TOP COAX JUMPER QTY	TOP COAX JUMPER LENGTH (FT)	COMBINER JUMPER QTY	COMBINER JUMPER LENGTH (FT)	NOTCH FILTER JUMPER QTY	NOTCH FILTER JUMPER LENGTH (FT)	HYBRIFLEX LENGTH (FT)
1															–
	800/1900	20	0	800: −8 / 1900: −1	100.3	RFS	APXVSPP18−C−A20	800: 1 / 1900: 1	6	10			1	3	
2															–
	800/1900	125	0	800: −1 / 1900: 0	100.3	RFS	APXVSPP18−C−A20	800: 1 / 1900: 1	6	10			1	3	
3															–
	800/1900	280	0	800: −8 / 1900: 0	100.3	RFS	APXVSPP18−C−A20	800: 1 / 1900: 1	6	10			1	3	

NOTES:
1. DUE TO FIELD MEASUREMENTS AND THE INSTALLATION OF NEW ANTENNAS THAT VARY IN SIZE FROM THE EXISTING ANTENNAS, THE ANTENNA RAD CENTER HAS CHANGED FROM WHAT IS ON RECORD. THE DATABASE MAY NEED TO BE UPDATED TO MATCH THESE PLANS.
2. SOME CABLING MAY CHANGE AT THE TIME OF CONSTRUCTION. CONTRACTOR TO CONFIRM ALL CABLE LENGTHS, TYPE, QUANTITIES, AND CONFIGURATION PRIOR TO CONSTRUCTION.
3. ALL UNUSED POWER AND FIBER MUST BE PROPERLY TERMINATED AND WEATHERPROOFED.

CONTRACTOR TO VERIFY & USE THE LATEST TOWER TOP SCENARIO AS PROVIDED BY ALCATEL−LUCENT CONSTRUCTION MANAGER



ALL SECTORS

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Alcatel·Lucent

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1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
0	09-26-12	ISSUED FOR CONSTRUCTION	CCR	KCD

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Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A BRAY · No. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER: **332.1487**

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE: RF SCHEDULE

SHEET NUMBER: C06 REV.: 1

	Market	Southern Connecticut		
	Cascade ID	CT23XC552		
		SECTOR 1	SECTOR 2	SECTOR 3
	Split sector present	No	No	No
1900	1900MHz_Azimuth	20	125	280
1900	1900MHz_No_of_Antennas	1	1	1
1900	1900MHz_RADCenter(ft)	100.3	100.3	100.3
1900	1900MHz_Antenna Make	RFS	RFS	RFS
1900	1900MHz_Antenna Model	APXVSPP18-C-A20	APXVSPP18-C-A20	APXVSPP18-C-A20
1900	1900MHz_Horizontal_Beamwidth	65	65	65
1900	1900MHz_Vertical_Beamwidth	5.5	5.5	5.5
1900	1900MHz_AntennaHeight (ft)	6	6	6
1900	1900MHz_AntennaGain(dBd)	15.9	15.9	15.9
1900	1900MHz_E_Tilt	-1	0	0
1900	1900MHz _M_Tilt	0	0	0
1900	1900MHz_Carrier_Forecast_Year_2013	3	3	3
1900	1900MHz_RRH Manufacturer	ALU	ALU	ALU
1900	1900MHz_RRH Model	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz
1900	1900MHz_RRH Count	1	1	1
1900	1900MHz_RRH Location	Top of the Tower/Pole	Top of the Tower/Pole	Top of the Tower/Pole
1900	1900MHz Combiner Model	No Combiner needed	No Combiner needed	No Combiner needed
1900	1900MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10
1900	1900MHz_Top_Jumper #1_Cable_Model (RRH or Combiner-to-Antenna)	LCF12-50J	LCF12-50J	LCF12-50J
1900	1900MHz_Top_Jumper #2_Length (RRH-to-Combiner, ft)	N/A	N/A	N/A
1900	1900MHz_Top_Jumper #2_Cable_Model (RRH-to-Combiner)	N/A	N/A	N/A
1900	1900MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
1900	1900MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
1900	1900MHz_Bottom_Jumper #1_Length (Ground-based-RRH-OR_Combiner-to-Main-Coax, ft)	N/A	N/A	N/A
1900	1900MHz_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A
1900	1900MHz_Bottom_Jumper #2_Length (Ground-based-Combiner-to-Main-	N/A	N/A	N/A
1900	1900MHz_Bottom_Jumper #2_Cable_Model (Ground-based-Combiner-to-Main-Coax)	N/A	N/A	N/A
800	800MHz_Azimuth	20	125	280
800	800MHz_No_of_Antennas	0	0	0
800	800MHz_RADCenter(ft)	100.3	100.3	100.3
800	800MHz_AntennaMake	RFS	RFS	RFS
800	800MHz_AntennaModel	APXV5PP18-C-A20 (Shared w/1900)	APXV5PP18-C-A20 (Shared w/1900)	APXV5PP18-C-A20 (Shared w/1900)
800	800MHz_Horizontal_Beamwidth	65	65	65
800	800MHz_Vertical_Beamwidth	11.5	11.5	11.5
800	800MHz_AntennaHeight (ft)	6	6	6
800	800MHz_AntennaGain (dBd)	13.4	13.4	13.4
800	800MHz_E_Tilt	-8	-1	-8
800	800MHz_M_Tilt	0	0	0
800	800MHz_RRH Manufacturer	ALU	ALU	ALU
800	800MHz_RRH Model	FD-RRH-2x50-800	FD-RRH-2x50-800	FD-RRH-2x50-800
800	800MHz_RRH Count	1	1	1
800	800MHz_RRH Location	Top of the Tower/Pole	Top of the Tower/Pole	Top of the Tower/Pole
800	800MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10
800	800MHz_Top_Jumper_Cable_Model (RRH or Combiner-to-Antenna)	LCF12-50J	LCF12-50J	LCF12-50J
800	800MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
800	800MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
800	800MHz_Bottom_Jumper #1_Length (Ground-based-RRH-Main-Coax, ft)	N/A	N/A	N/A
800	800MHz_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A
Comments	5/22/2012			
Comments	0			
Comments	0			

DUE TO FIELD MEASUREMENTS AND THE INSTALLATION OF NEW ANTENNAS THAT VARY IN SIZE FROM THE EXISTING ANTENNAS, THE ANTENNA RAD CENTER HAS CHANGED FROM WHAT IS ON RECORD. THE DATABASE NEEDS TO BE UPDATED TO MATCH THESE PLANS.

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Alcatel·Lucent

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
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CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
RF DATA SHEET

SHEET NUMBER: C06A REV.: 1

Know what's **below.**
Call before you dig.

APPROVALS				
		APPROVED	APPROVED AS NOTED	DISAPPROVED REVISE
SPRINT REPRESENTATIVES	DATE	☐	☐	☐
SPRINT RF ENGINEER	DATE	☐	☐	☐
SITE OWNER	DATE	☐	☐	☐
	DATE	☐	☐	☐

Sprint®

SITE ID: CT23XC552
SITE NAME: MILFORD-AT&T

AAV CONSTRUCTION DRAWINGS

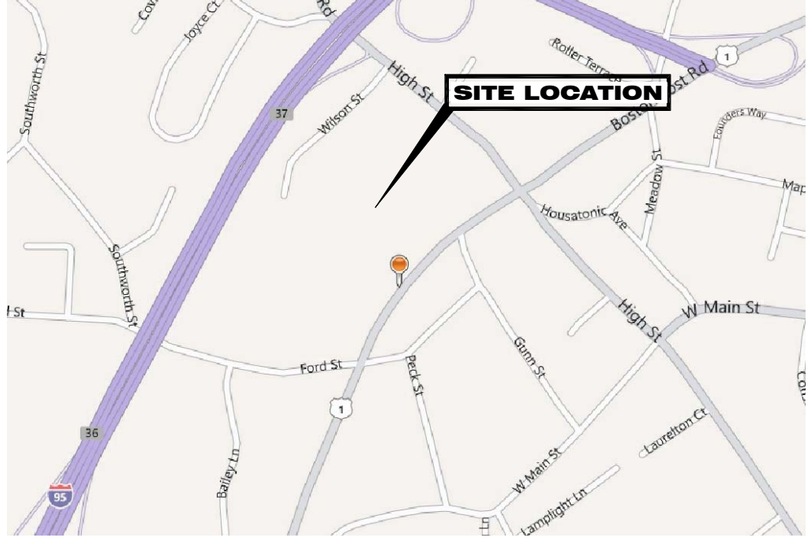
GENERAL NOTES

GENERAL NOTES:

1. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL DRAWINGS HAVE BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION." CONTRACTOR SHALL E-MAIL PLANS@KMBDG.COM TO ENSURE THAT THEY HAVE THE LATEST SET OF CONSTRUCTION DRAWINGS PRIOR TO COMMENCING ANY WORK WHATSOEVER.
2. ADA COMPLIANCE: THE FACILITY IS A NORMALLY UNOCCUPIED MOBILE RADIO FACILITY.
3. THESE PLANS ARE INTENDED TO BE USED TO DIRECT THE PROPOSED LAYOUT. DRAWINGS SHOULD NOT BE SCALED UNLESS OTHERWISE NOTED. PLANS, ELEVATIONS AND DETAILS ARE INTENDED TO SHOW THE END RESULT OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES BEFORE STARTING ANY WORK.
5. ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED BY THE ENGINEER OF RECORD.
6. THESE PLANS ARE DESIGNED TO REFLECT OBSERVED FIELD CONDITIONS. CERTAIN CONDITIONS ARE ASSUMED TO COMPLY WITH THE GENERAL STANDARD CONSTRUCTION DESIGN METHODS AND PRINCIPLES, AND THE CONTRACTOR SHALL NOTE THAT NOT ALL AREAS OF STRUCTURAL ATTACHMENT HAVE BEEN OPENED OR SPECIFICALLY VERIFIED. THE CONTRACTOR IS THEREFORE REQUESTED TO NOTIFY THE ENGINEER IMMEDIATELY SHOULD ENCOUNTERED FIELD CONDITIONS VARY FROM THOSE DEPICTED ON THE DRAWINGS. KMB DESIGN GROUP, LLC WILL ISSUE FIELD CHANGE DIRECTION IF REQUIRED. THE PROJECT MANAGER IS REFERENCED ON THE DRAWING BORDER.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK PERFORMED AND MATERIALS INSTALLED TO BE IN STRICT CONFORMANCE, AS A MINIMUM STANDARD, WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION. ELECTRICAL SYSTEMS SHALL BE INSTALLED IN CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE, AND ALL OTHER LOCAL AND STATE JURISDICTIONAL CODES, ORDINANCES, AND WITH LOCAL UTILITY COMPANY SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
8. THE CONTRACTOR SHALL KEEP CONTRACT AREA CLEAN, HAZARD FREE AND DISPOSE OF ALL DIRT, STUMPS, STONES, RUBBISH OR DEBRIS IN ACCORDANCE WITH ALL LOCAL AND ENVIRONMENTAL LAWS. NO MATERIALS OR EQUIPMENT SHALL BE PLACED ANYWHERE ON OR IN THE STRUCTURE WITHOUT MAKING ADEQUATE PROVISIONS TO PROTECT EXISTING PROPERTY. UPON COMPLETION, REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DURING CONSTRUCTION. REPAIR ALL EXISTING WALL SURFACES DAMAGED DURING CONSTRUCTION SUCH THAT THEY MATCH AND BLEND WITH ADJACENT SURFACES.
9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES.

DIVISION 2 - SITE WORK:

1. THE CONTRACTOR SHALL CALL UTILITIES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT LIMITED TO:
   A. FALL PROTECTION
   B. CONFINED SPACE
   C. ELECTRICAL SAFETY
   D. TRENCHING & EXCAVATION
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWING AND STIPULATED IN THE SPECIFICATION PROJECT SUMMARY.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER FLOW AWAY FROM THE EQUIPMENT SHELTER AND MONOPOLE AREAS.
6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION OF LANDSCAPE WORK.
10. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
11. ALL BACK FILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY AS DETERMINED BY ASTM STANDARD TEST PROCEDURES.



LOCATION MAP
SCALE: NTS

CODES & STANDARDS

These documents are in compliance & all construction to be in accordance with the following codes & standards as applicable:

Building/Dwelling Code	2003 IBC; 2003 IRC (State Building Code, 2005 CT supplement)
Structural Codes	2003 IBC; 2003 IRC (State Building Code, 2005 CT supplement)
Plumbing Code	IPC 2003 (State Building Code, 2005 CT supplement)
Mechanical Code	IMC 2003 (State Building Code, 2005 CT supplement)
Electrical Code	2005 NEC (NFPA-70)
Fire/Life Safety Code	2005 State Fire Safety Code (2003 IFC); NFPA 101-2003 for existing buildings. Portions of the IFC used in the state fire code
Accessibility Code	ICC/ANSI A117.1 2003
Energy Code	2006 International Energy Conservation Code (re-adopted with changes

DRAWING INDEX

DWG #	DRAWING TITLES
C07	COVER SHEET
C07A	SITE PHOTOS
C07B	KEY PLAN & EQUIPMENT PLAN
C07C	DETAILS

SITE INFORMATION

PARCEL ID: 64-930-6

ZONING CLASSIFICATION: GU (GOVERMENT USE)
ZONING JURISDICTION: MILFORD TOWNSHIP

PROJECT INFORMATION:

SITE ADDRESS:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

COORDINATES:
LATITUDE: N 41° 13' 42.65"
LONGITUDE: W 73° 4' 12.46"
DATUM : NAD 83

STRUCTURE HEIGHT:
±150'-0" (TOP OF LATTICE TOWER)

PROJECT DIRECTORY:

PROPERTY OWNER:
TOWN OF MILFORD
70 W. RIVER STREET 2ND FLOOR
MILFORD, CT 06460

APPLICANT:
SPRINT-NEXTEL
1 INTERNATIONAL BOULEVARD
MAHWAH, NJ 07495

ENGINEER:
KMB DESIGN GROUP, LLC
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
BRIAN POHL - PROJECT MANAGER
(732) 280-5623

POWER COMPANY:
THE UNITED ILLUMINATING CO.
157 CHURCH STREET
NEW HAVEN, CT 06510
1-800-7-CALL UI

AAV PROVIDER:
AT&T

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
1	11-06-12	REVISED PER CLIENT COMMENTS	JLS	KCD
0	09-26-12	ISSUED FOR CONSTRUCTION	CCR	KCD

KMB DESIGN GROUP
kmbdg.com
1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray
PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · STEPHEN A BRAY · No. 26657 · LICENSED PROFESSIONAL ENGINEER

CT LICENSE: 26657 11/5/12

PROJECT NUMBER:
332.1487

SITE INFORMATION:
430 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
AAV DRAWINGS
COVER SHEET

SHEET NUMBER:	REV.:
C07	1

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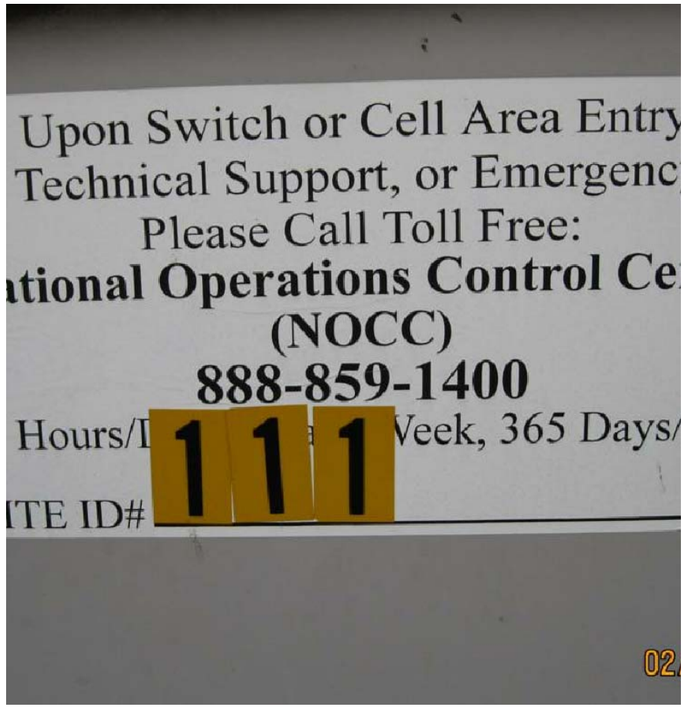

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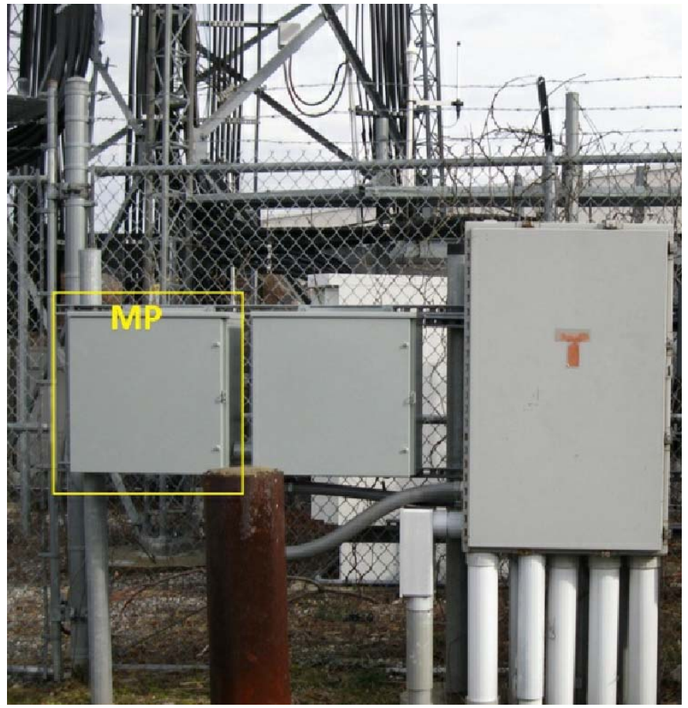

2 PROPOSED MEET POINT

3 EXISTING EQUIPMENT AREA

4 EXISTING TELCO CABINET

5 EXISTING POWER SOURCE

6 PROPOSED NID EQUIPMENT LOCATION

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NEW HAVEN COUNTY

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PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
AAV DRAWINGS
SITE PHOTOS

SHEET NUMBER:	REV.:
C07A	1

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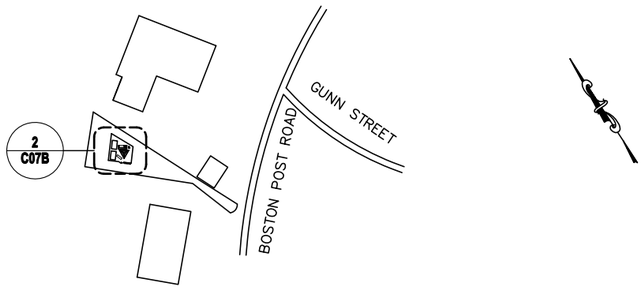
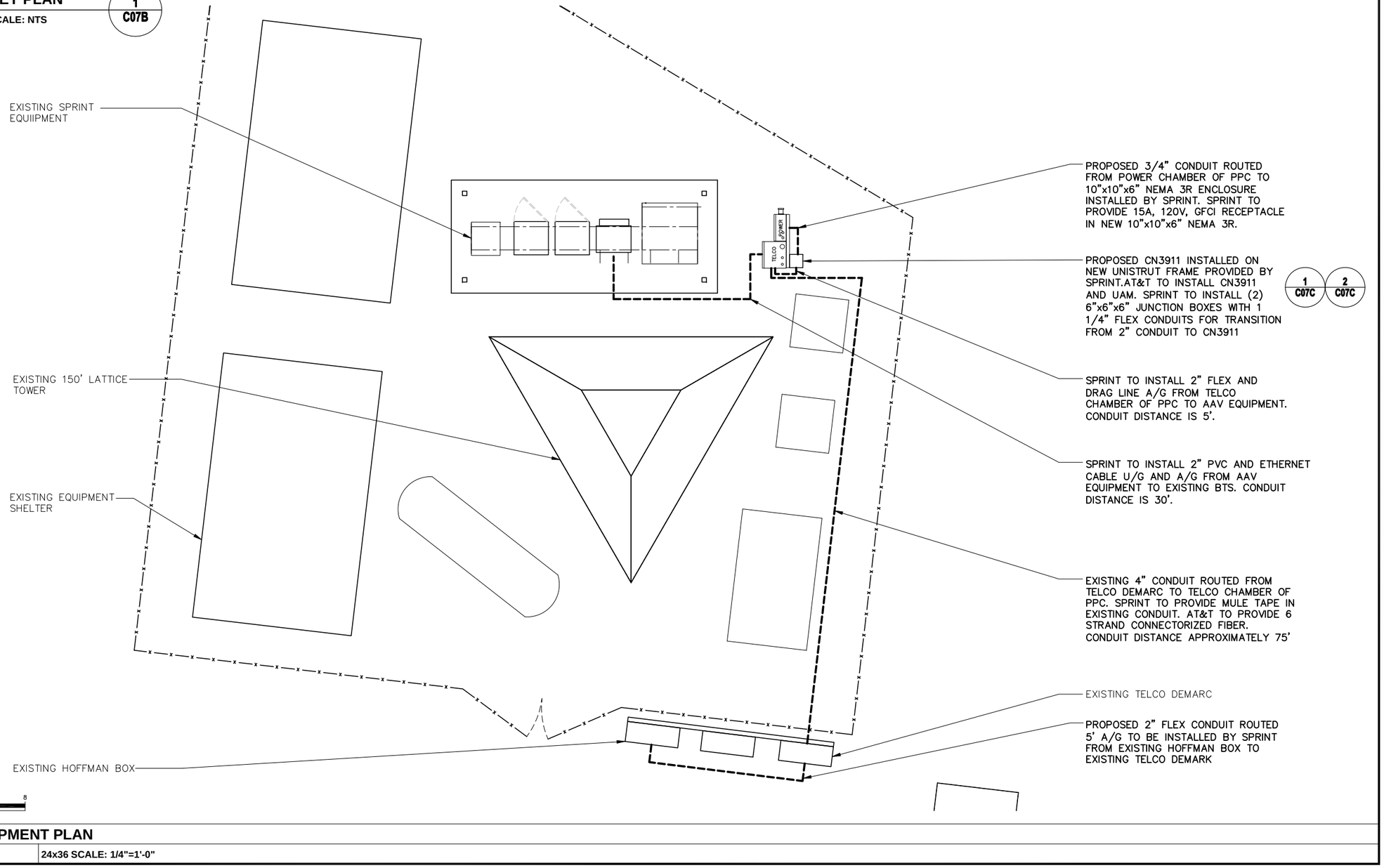


KEY PLAN 1 C07B

SCALE: NTS

AAV SCOPE OF WORK NOTES:

1. FIBER RUN: PROPOSED AT&T 6 STRAND FIBER AND MULE TAPE TO ORIGINATE FROM EXISTING TELCO DEMARC AND RUN WITHIN EXISTING 4"ø CONDUIT TO TELCO CHAMBER OF PPC. (APPROX ±75')
2. INSTALL CIENA 3911 ON NEW UNISTRUT FRAME. UNISTRUT FRAME TO BE PROVIDED AND INSTALLED BY SPRINT.
3. PROPOSED ETHERNET CABLE AND DRAG LINE TO BE ROUTED FROM TELCO CHAMBER TO CIENA 3911 VIA PROPOSED 2" FLEX A/G CONDUIT INSTALLED BY SPRINT. (APPROX. DISTANCE IS 5')
4. PROPOSED ETHERNET CABLE ROUTED FROM TELCO CHAMBER TO EXISTING SPRINT BTS CABINET VIA PROPOSED 2" PVC CONDUIT (APPROX ±30' TOTAL)
5. POWER RUN: PROPOSED 3/4"ø CONDUIT ROUTED FROM THE POWER CHAMBER OF PPC TO PROPOSED 10"x10"x6" NEMA 3R ENCLOSURE.
6. INSTALL NEW 15A, 120V, GFCI ON NEW UNISTRUT FRAME IN 10"x10"x6" ENCOUSER.



2 EQUIPMENT PLAN

11x17 SCALE: 1/8"=1'-0" | 24x36 SCALE: 1/4"=1'-0"

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MILFORD, CT 06460
NEW HAVEN COUNTY

CT23XC552

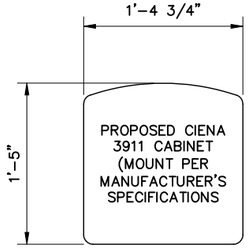
PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE: AAV DRAWINGS EQUIPMENT PLAN

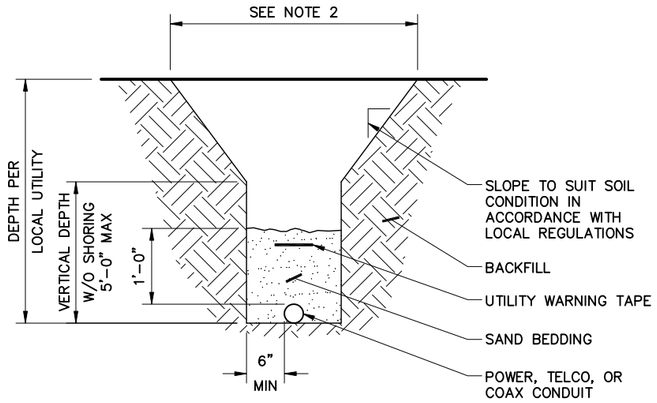
SHEET NUMBER: C07B REV.: 1

K:\332_Sprint_332.1000_Alcatel-Lucent\332.1487_CT23XC552_430 Boston Post Road\332.1487_CAD\332.1487_Construction\332.1487.C07B.dwg, 11/5/2012 4:46:18 PM, jspriniewski



1 TYP CIENA 3911 SPECIFICATIONS

SCALE: NTS

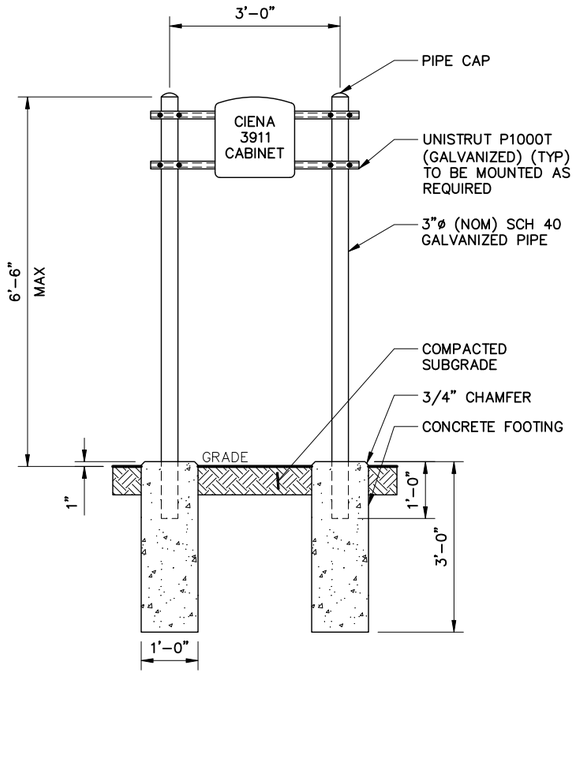


3 TYP TRENCH DETAIL

SCALE: NTS

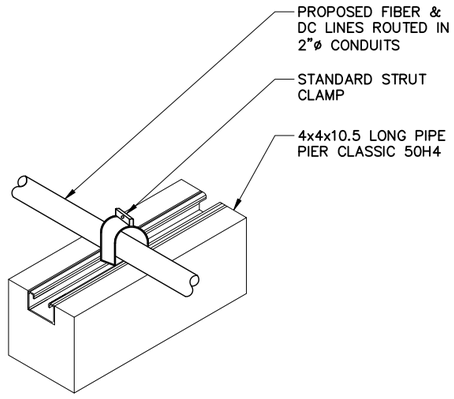
NOTES:

1. DETAIL SHOWN IS FOR ONE CONDUIT. MULTIPLE CONDUITS CAN BE PLACED IN THE SAME TRENCH AS LONG AS A MINIMUM SEPARATION PER THE LOCAL UTILITY COMPANIES IS MAINTAINED. IN ALL CASES THE MINIMUM CENTER TO CENTER SPACING BETWEEN CONDUITS IS 1'-0" (NOT REQUIRED FOR COAX).
2. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.



2 UNISTRUT FRAME DETAIL

11x17 SCALE: 3/8" = 1'-0" | 24x36 SCALE: 3/4" = 1'-0"



4 TYP CONDUIT ALONG CONCRETE DETAIL

SCALE: NTS

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PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE: AAV DRAWINGS DETAILS

SHEET NUMBER: C07C REV.: 1

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GENERAL SPECIFICATIONS

1. Contractor shall verify that the total number of service entrance disconnects in the existing utility company pedestal must not exceed six. If the new service added exceeds this value, contractor must coordinate with the utility company and authority having jurisdiction. Run an additional exclusive and dedicated service lateral set for the new load added to the compound as per NEC Article # 230-2(B)
2. All work should be done in a neat workmanlike manner, left clean and free from defects, and completely operable. The contractor shall provide all equipment as scheduled on the drawings. All materials shall be new and all work and materials shall be guaranteed by the contractor for a period of one (1) year from the date of acceptance by the owner.
3. All work shall be carefully coordinated with the landlord and all trades involved, and the contractor shall provide proper connections, fittings, valves, piping, etc. for all equipment furnished by carrier or other trades involved in this contract.
4. Contractor shall inform the engineer immediately of any conflict discovered before performing any work related to such conflict.
5. Provide all required temporary utilities and pay all associated fees and operating costs.
6. Before submitting this bid, the contractor shall visit the job site to examine and fully acquaint himself with the existing job conditions, paying particular attention to the location of existing conditions to make a complete and operable system without additional cost to the carrier or the engineer.
7. Obtain all permits and approvals from authorities having jurisdiction and paying all fees required.
8. Label all equipment served from Sprint panelboard with phenolic labels sized in relation to usage.
9. Contractor to provide and install engraved label on the Sprint meter socket enclosure.
10. Redlined As-Builts are to be delivered to a Sprint representative.
11. The equipment/protections must be rated for standard of AIC rate higher than incoming equipment and/or utility company AIC rate.

GROUNDING NOTES

1. The subcontractor is responsible for properly sequencing grounding and underground conduit installation as to prevent any loss of continuity in the grounding system or damage to the conduit.
2. All exterior ground conductors shall be #2 AWG solid tinned copper unless otherwise indicated.
3. All ground connections above grade (interior & exterior) shall be formed using high press crimps.
4. All ground connections below grade shall be exothermic (Cadweld).
5. Connections to equipment and enclosures shall be made utilizing two-hole ground lugs with an antioxidant compound.
6. Maximum resistance of the completed ground system shall not exceed 5 Ohms. Testing shall be performed in accordance with technical specification for facility grounding, using fall potential method.
7. Where grounding connections are made to painted metal surfaces shall be scraped clean to bear metal to ensure proper contact. Surfaces shall be restored to match original finishes.
8. Use of 90° bends in the protection grounding conductors shall be avoided when 45° bends can be adequately supported.
9. Ground depth shall be 30" minimum below finished grade, or 6" below frost line, whichever is greater.

ELECTRICAL SYMBOLS		ABBREVIATIONS	
WIRING SYMBOLS		AWG	AMERICAN WIRE GAUGE
	DISCONNECT SWITCH	BCW	BARE COPPER WIRE
M	METER	DWG	DRAWING
	CIRCUIT BREAKER	EMT	ELECTRICAL METALLIC TUBING
	CADWELD TYPE CONNECTION	GEN	GENERATOR
	COMPRESSION TYPE CONNECTION	MGB	MASTER GROUND BAR
	GROUND ROD WITH ACCESS	PVC	RIGID (SCH 40) PVC CONDUIT
	CHEMICAL GROUND ROD	RGS	RIGID GALVANIZED STEEL
	GROUND ROD	RWY	RACEWAY
	CONDUIT TURNING DOWN	TYP	TYPICAL
	CONDUIT TURNING UP		
JB	JUNCTION BOX		
PB	PULL BOX		
	CONDUIT RUNNING ABOVE GRADE		
	CONDUIT RUNNING UNDER GROUND		

ELECTRICAL SPECIFICATIONS

1. General:
   - A. The electrical contractor shall furnish all labor,materials, tools, transportation equipment, services and facilities required for the complete, proper and substantial installation of all electrical work. All fixtures, devices, and equipment shown, noted or required on these drawings, and/or contained herein shall be connected from the source of electric power to the final connection, tested and made ready for satisfactory operation.
   - B. Service equipment shall be 120/240 VAC, 100 Amp, single phase, unless otherwise directed by the Sprint Construction Manager.
   - C. Unless otherwise indicated, the arrangement, position, connections, etc. shown on the drawings shall be taken on a diagram basis. The right is reserved by the engineer to make minor changes in locations and arrangements when required by job development without additional compensation to the contractor.
   - D. All work shall conform to the adopted edition of the National Electrical Code and local, state and applicable codes.
   - E. When a utility company meter is specified, the contractor shall obtain all associated cut-in cards, inspections, etc., necessary to have the meter set. It is the responsibility of the contractor to meet with utility company prior to construction to verify source of electric service, tap and meter location.
2. Identification:
   - A. Provide typewritten directories for panels, indicating use of each branch circuit and designating spare circuits. Handwritten directories are not acceptable.
   - B. All panel boards, switches and other equipment enclosures shall bear engraved nameplates as manufactured by Seton Nameplate Corp., or equal lettering to be 1/2" white letters on black background unless noted otherwise.
3. Raceways:
   - A. Minimum conduit size shall be 3/4" unless otherwise noted on the drawings.
   - B. Exposed raceways shall be run true, plumb, and parallel or perpendicular to building lines.
   - C. Conduit routings are schematic. Sub contractor shall install conduits so that access to equipment is not blocked.
4. Wiring Methods:
   - A. All feeders shall consist of pulled conductors in conduit. All branch circuits shall consist of pulled conductors in conduit. Except 15 and 20 Ampere 1 pole lighting receptacles, miscellaneous branch circuits concealed above suspended ceilings or within dry walls shall consist of type MC metal clad cable if allowed by code. Connections to communications cabinets and vibrating equipment shall consist of pulled conductors in LFMC, maximum 6' in length.
   - B. Conductors shall be continuous from origin to panel or equipment without splices. Where tap splices are necessary and approved, they shall be made with suitable connectors in junction boxes.
   - C. Equipment ground conductors shall be provided for all feeders and branch circuits.
   - D. The contractor shall conceal all conduit routing passing through finished areas. Conduit routing through unfinished shall be supported as specified in drawings. Unless clearly specified, no conduits shall be routed on exterior surface of buildings.
   - E. All conductor terminals shall be U.L. listed for minimum of 75° C.
   - F. Provide fire stopping around all conduits at wall and floor penetrations.
   - G. Seal all exterior wall penetrations as required.
   - H. Underground conduits shall be a minimum of 24" below finished grade. All underground work shall be documented by photograph before any backfill is begun. Photos will be required at time punchlist is performed. Feeders shall be individual conductors in schedule 40 PVC, direct burial conduit. When buried conduits are subject to vehicular traffic, conduits shall be encased in concrete. All sweeps below grade shall be schedule 80 PVC.
   - I. All feeders in "damp" or "wet" locations shall consist of individual conductor in rigid galvanized steel or rigid aluminum conduit. Liquid-tight flexible metallic conduit shall be utilized when connecting to equipment cabinets and vibrating equipment. The maximum length for flexible conduit shall be 6'-0".
5. Wiring Devices:
   - A. Switches, receptacles and other wiring devices shall be specification grade of type, size and rating indicated on the drawings.
6. Disconnect Switches:
   - A. Switches shall be quick-make, quick-break NEMA 1 for indoor use and NEMA 3R for outdoor use as manufactured by General Electric, Square D or equal. Electrical contractor to provide all safety disconnects.
7. Special Requirements:
   - A. The electrical contractor shall furnish and install all power and control wiring for equipment contained in contract documents.
   - B. All work requiring an outage or interruption of service (power, telephone) shall be scheduled only at such time permitted by owner.
8. Lighting fixtures and lamps:
   - A. Lighting fixtures shall be furnished complete with necessary hardware and lamps.
9. Transformers:
   - A. Transformers shall be dry type with average temperature rise not to exceed 150° C (115° C)(80° C)
   - B. Transformers shall be as manufactured by Square D, General Electric, or Siemens.

The contractor is required to contact the utility companies prior to starting construction. This is necessary to reconfirm that the utility points have remained consistent with the contractor documents:

* Telephone Demarcation Point
* Electrical Service Tap Point
* New Utility Meter Location

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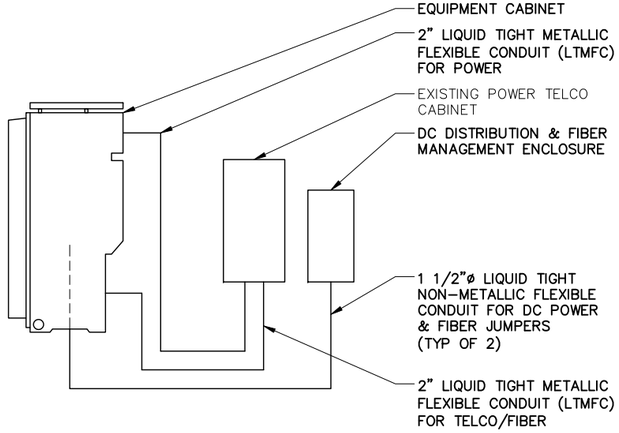
CT23XC552

PROJECT TYPE: NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

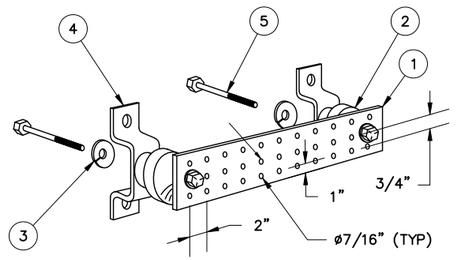
SHEET TITLE: GENERAL NOTES

SHEET NUMBER: E01 REV.: 1



1 PLUMBING SCHEMATIC (IF REQUIRED)

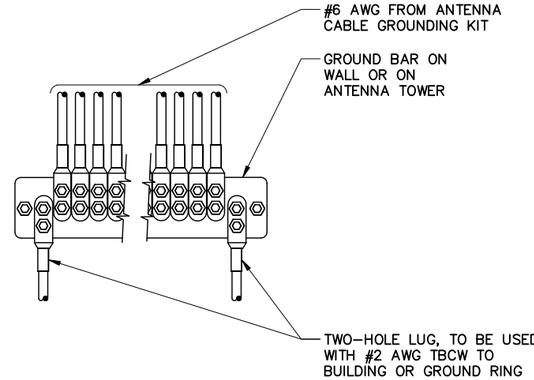
SCALE: NTS



1. GALVANIZED STEEL GROUND BAR, 1/4" x 4" x 20", HAGER PART NO TGBI-14420C OR A.L.T. PART NO. 382227. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
5. 5/8-11 X 1" H.H.C.S.BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

2 GROUND BAR DETAIL

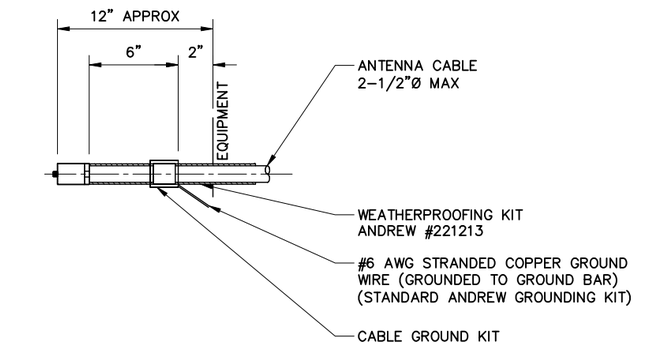
SCALE: NTS



NOTE:
CONTRACTOR TO UTILIZE KOPR-SHIELD (THOMAS & BETTS) ON ALL LUG CONNECTIONS

3 GROUND LUG TO GROUND BAR CONNECTION DETAIL

SCALE: NTS



NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

4 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NTS

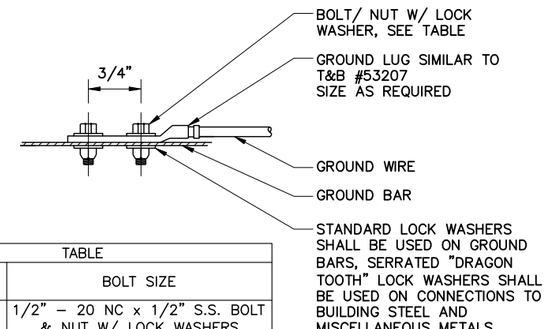
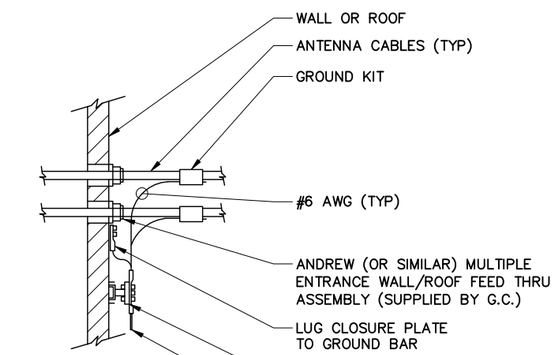


TABLE		
WIRE SIZE	LUG #	BOLT SIZE
#4/0	53212	1/2" – 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#2	53207	1/4" – 20 NC x 1/2" S.S. BOLT & NUT W/ LOCK WASHERS
#6	53205	

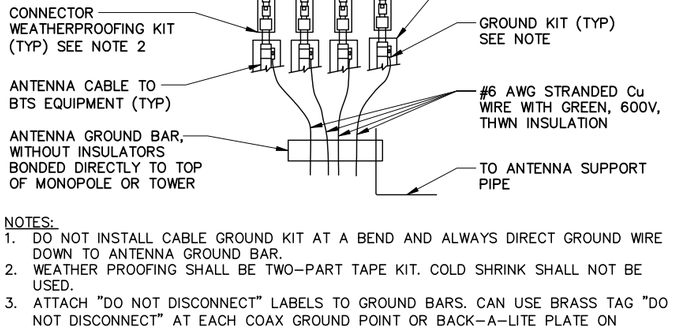
5 GROUND LUG CONNECTION DETAIL

SCALE: NTS



6 CABLE GROUNDING DETAIL

SCALE: NTS



NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.
3. ATTACH "DO NOT DISCONNECT" LABELS TO GROUND BARS. CAN USE BRASS TAG "DO NOT DISCONNECT" AT EACH COAX GROUND POINT OR BACK-A-LITE PLATE ON GROUND BAR.

7 GROUND BAR TO GROUND WIRE CONNECTION DETAIL

SCALE: NTS

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PROJECT TYPE:
NETWORK VISION

DRAWN BY:	CHECKED BY:	DATE:
KAZ		03-15-12

SHEET TITLE:
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER: E02 REV.: 1