



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@ct.gov

www.ct.gov/csc

August 10, 2015

Camille M. Mulligan
Alcatel-Lucent
1 Robbins Road
Westford, MA 01886

RE: Compliance Extension Request

EM-SPRINT-008-130130	93 Old Amity Road	Bethany
EM-SPRINT-009-131008	8 Sky Edge Drive	Bethel
EM-SPRINT-017-131008	371 Terryville Avenue	Bristol
EM-SPRINT-018-130322	39 Carmen Hill Road	Brookfield
EM-SPRINT-033-130920	179 Shunpike Road	Cromwell
EM-SPRINT-034-130920	41 Padanaram Road	Danbury
EM-SPRINT-069-130409	246 East Franklin Street	Danielson
EM-SPRINT-035-130322	126 Ledge Road	Darien
EM-SPRINT-043-130311	310 Prestige Park Road	East Hartford
EM-SPRINT-047-131008	232 South Main Street	East Windsor
EM-SPRINT-051-130606	280 Morehouse Drive	Fairfield
EM-SPRINT-052-130606	45 Maple Ridge Road	Farmington
EM-SPRINT-057-120122	363 Riversville Road	Greenwich
EM-SPRINT-057-131127	9 Sound Shore Dr., a/k/a 12 Sound Shore Drive	Greenwich
EM-SPRINT-059-130819	99 Briar Road	Groton
EM-SPRINT-062-130509	Tahmadge Road	Hamden
EM-SPRINT-068-121226	136 Bulls Bridge Road	Kent
EM-SPRINT-076-130819	135 New Road	Madison
EM-SPRINT-077-130828	Olcott Street a/k/a 250 Olcott Street	Manchester
EM-SPRINT-080-131024	21 West Peak Drive	Meriden
EM-SPRINT-081-130716	1 Service Road	Middlebury
EM-SPRINT-084-130124	528 Wheeler's Farm Rd.	Milford
EM-SPRINT-091-130606	302 Ball Pond Road	New Fairfield
EM-SPRINT-095-131008	26 Washinton Street	New London
EM-SPRINT-097-131008	8 Ferris Road	Newtown
EM-SPRINT-097-131129	201 South Main St.	Newtown
EM-SPRINT-103-121226	173/177 West Rocks Road	Norwalk
EM-SPRINT-104-131112	2 Hinkley Hill Road	Norwich
EM-SPRINT-108-130215	20 Great Oak Road	Oxford
EM-SPRINT-108-130401	133 Coppermine Road	Oxford
EM-SPRINT-108-130712	338 Oxford Road	Oxford
EM-SPRINT-119-130314	47 Inwood Road	Rocky Hill

EM-SPRINT-119-130819	52 New Britain Avenue	Rocky Hill
EM-SPRINT-120-130828	Lower County Road a/k/a 35 Lower County Road	Roxbury
EM-SPRINT-126-130325	219 Nells Rock Road	Shelton
EM-SPRINT-126-130515	70 Platt Road	Shelton
EM-SPRINT-128-131112	22 Wintonbury Road (aka 49a and 53 Wintonbury Road)	Simsbury
EM-SPRINT-130-130531	1432 Old Waterbury Road	Southbury
EM-SPRINT-135-130128	69 Guinea Road	Stamford
EM-SPRINT-135-131112	366 Old Long Ridge Road	Stamford
EM-SPRINT-143-130712	350 Burr Mountain Road	Torrington
EM-SPRINT-151-131209	184 Garden Circle	Waterbury
EM-SPRINT-155-130828	345 North Main Street a/k/a 333 North Main Street	West Hartford
EM-SPRINT-157-130701	56 Norfield Road	Weston
EM-SPRINT-164-130920	Windsor Avenue a/k/a 494 Windsor Avenue	Windsor
EM-SPRINT-NEXTEL-166-130116	164 County Road	Wolcott

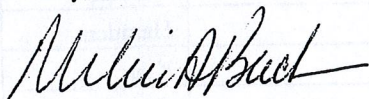
Dear Ms. Mulligan:

The Connecticut Siting Council (Council) is in receipt of your letter dated August 10, 2015, submitted on behalf of Sprint, requesting an extension of time to submit notices of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications that were approved in 2013.

Please be advised that Council approval of these exempt modifications has expired. Therefore, any additional changes to these facilities will require explicit notice to the Council pursuant to Regulations of Connecticut State Agencies Section 16-50j-73 and a filing fee.

Thank you for your attention to this matter.

Sincerely,



Melanie A. Bachman
Acting Executive Director

MAB/cm



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May 31, 2013

Tom Kincaid
Sprint
48 Spruce Street
Oakland, NJ 07436

RE: **EM-SPRINT-126-130515** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 70 Platt Road, Shelton, Connecticut.

Dear Mr. Kincaid:

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

- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;
- Prior to antenna installation, Sprint shall verify that the modifications identified in Appendix C of the Structural Modification Report prepared by B+T GRP dated December 28, 2012 for the CSC filing EM-VER-126-130128 have been completed; and
- Within 45 days following completion of the antenna installation, Sprint shall provide documentation certified by a professional engineer that its installation complied with the recommendations of the Structural Analysis prepared by B+T GRP dated March 20, 2013 and stamped by Chad Tuttle.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated May 7, 2013. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73.



Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

A handwritten signature in black ink, appearing to read "Melanie A. Bachman".

Melanie A. Bachman
Acting Executive Director

MAB/CDM/cm

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



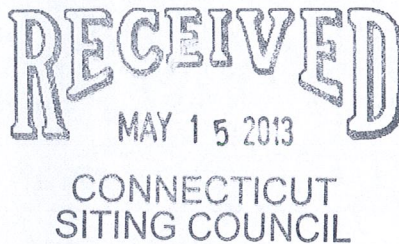
Together with Nextel

48 Spruce Street
Oakland, NJ 07436
Phone: (201)-951-3869
Tom Kincaid
Real Estate Consultant

May 7, 2013

Hand Delivered

Ms. Linda Roberts
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 70 Platt Road, Shelton, CT 06484. Known to Sprint Spectrum L.P. as site CT43XC864.

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

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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 Statutes ("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 JPalumbo@Transcendwireless.com with questions concerning this matter.
Thank you for your consideration.

Sincerely,

Jennifer Palumbo
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: CT43XC864

Brennan AT&T
70 Platt Road
Shelton, CT 06484

September 9, 2012



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September 9, 2012

Sprint

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

Re: Emissions Values for Site **CT43XC864 - Brennan AT&T**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 70 Platt Road, Shelton, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the cellular band is approximately 567 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is 1000 $\mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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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 70 Platt Road, Shelton, 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) 4 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.



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- 6) The antenna mounting height centerline of the proposed antennas is **74.7 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 IDCT43XC864 - Brennan AT&T																	
Site Address70 Platt Road, Shelton, CT 06484																	
Site TypeMonopole																	
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	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	74.7	68.7	1/2 "	0.5	0	2773.8948	211.2917	21.12917%
1a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	74.7	68.7	1/2 "	0.5	0	389.96892	29.70452	5.23889%
Sector total Power Density Value: 26.368%																	
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	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	74.7	68.7	1/2 "	0.5	0	2773.8948	211.2917	21.12917%
2a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	74.7	68.7	1/2 "	0.5	0	389.96892	29.70452	5.23889%
Sector total Power Density Value: 26.368%																	
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	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	74.7	68.7	1/2 "	0.5	0	2773.8948	211.2917	21.12917%
3a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	74.7	68.7	1/2 "	0.5	0	389.96892	29.70452	5.23889%
Sector total Power Density Value: 26.368%																	

Site Composite MPE %	
Carrier	MPE %
Sprint	79.104%
AT&T	2.650%
Metro PCS	3.950%
T-Mobile	3.240%
J. Brennan Const.	19.350%
Nextel	7.990%
Cleerwire	3.300%
Verizon Wireless	6.730%
Total Site MPE %	126.314%



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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 **79.104% (26.368% 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 **15.821% (5.274% 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 **126.314%** of the allowable FCC established general public limit sampled at the ground level. This is equal to **25.263%** 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

**AT&T Towers**

5405 Windward Parkway
Alpharetta, GA 30004

March 20, 2013

**B+T GRP**

1717 S. Boulder, Suite 300
Tulsa, OK 74119

B+T No.: 84720.004.01

**STRUCTURAL ANALYSIS
140' Monopole Tower**

AT&T DESIGNATION:	Site ID:	24519
	Site FA:	10071231
	Site Name:	Shelton NE
	AT&T Project:	Sprint Vision Modification 5-15-2012 (2nd in line)

ANALYSIS CRITERIA:	Codes:	TIA/EIA-222-F (85 mph fastest mile) IBC 2003 2005 Connecticut Building Code
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SITE DATA:	Oliver Terrace, Shelton , CT, Fairfield County Latitude 41.29379°, Longitude -73.1073° Market MA/RI/VT/NH/ME/CT
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Ms. Charlotte Malone,

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

Analysis Results

Tower Stress Level with Proposed Equipment:	98.1%	Pass
Foundation Ratio with Proposed Equipment:	69.4%	Pass

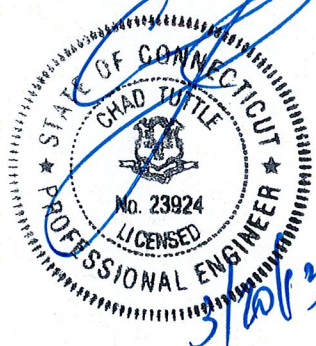
The modifications designed 12/28/12 by B+T Group must be installed for this analysis to be valid.

We at B+T Group appreciate the opportunity of providing our continuing professional services to you and AT&T Towers. If you have any questions or need further assistance on this or any other project please give us a call.

Respectfully Submitted by: B+T Engineering, Inc.

Analysis Prepared by: Zach Smith

Analysis Reviewed by: Chad E. Tuttle, P.E.

**AT&T Proprietary (Internal use Only)**

Not for use or disclosure outside the AT&T companies
except under written agreement

ANALYSIS RESULTS:

Table 1 - Section Capacity (Summary)

Component (Tower Section)	% Capacity	Pass/Fail
140 - 101.58	98.1	Pass
101.58 - 70	96.9	Pass
70 - 59	84.5	Pass
59 - 48.6	93.9	Pass
48.6 - 30.5	85.7	Pass
30.5 - 0	90.8	Pass

Table 2 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass/Fail
1	Anchor Rods	Base	81.4	Pass
1	Base Plate	Base	75.8	Pass
1	Flange	101.5	76.7	Pass
1	Base Foundation	Base	69.4	Pass

Structure Rating (max from all components) =	98.1%
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Notes:

- 1.) See additional documentation in "Appendix B - Calculations" for calculation supporting the % capacity consumed.

Recommendations:

N/A

ANALYSIS PROCEDURE:

Table 4 - Documents Provided

Document	Description	Date	Source
Tower Data	FWT, Inc Job# J030219001	1/24/2003	Siterra
Foundation Information	SA Report by B&T Project 84720.002	11/27/2012	On File
Geotech Report	Clarence Welti Assoc., Inc	12/13/2002	Siterra
Loading	Site Lease Application	7/26/2012	Siterra
Previous Structural Analysis	B&T Project 84720.002	11/27/2012	On File
	Centek project # 11021.C045	4/13/2011	Siterra
	GPD Associates GPD#2010266.16	4/15/2010	Siterra
Modification Drawings	B+T Group #84720.002.01	12/28/2012	Siterra
	GPD Associates GPD#2010266.16	9/17/2010	Siterra

ANALYSIS METHOD:

tnxTower, 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 B.

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 specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Appendix A of this report.
4. Mount areas and weights are assumed based on photographs provided.
5. Refer to the base level drawing for transmission line distribution.
6. All existing loading obtained from the 11/27/12 analysis by B+T Group
7. Generic AT&T future loading was considered.

If any of these assumptions have been made in error, B+T Group should be notified to determine the effect on the structural integrity of the tower.

APPENDIX A
TOWER ANALYSIS LOADING

TOWER ANALYSIS LOADING:

Existing / Reserved Loading

Antenna			Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity
Unknown	138	144.5	1	Unknown	9ft Omni	1
Verizon	138	140	3	Antel	BXA-70063-6CF	12
Verizon	138	140	6	Andrew	DB846F6ZAXY	7/8"
Verizon	138	140	3	Antel	BXA-171063-88F	
Verizon	138	140	6	RFS	FD9R6004/2C-3L	
T-Mobile	120	120	6	RFS	APX16PV-16PVL-E	18
T-Mobile	120	120	6	CCI	DTMA-1819-DD-12	1-5/8"
MetroPCS	110	110	3	Kathrein	800-10504	12
MetroPCS	110	110	3	Kathrein	742-351	1-5/8"
MetroPCS	110	110	6	Kathrein	860-10025 RET	
AT&T	95	95	3	Powerwave	7770	6
AT&T	95	95	3	Powerwave	P65-16-XLH-RR	7/8"
AT&T	95	95	6	Powerwave	LGP21401	
AT&T	99	99	6	Ericsson	RRUS-11	2
AT&T	99	99	1	Raycap	DC6-48-60-18-8F	DC
Clearwire	73	75	3	Argus	LLPX310R	1
Clearwire	73	75	3	Samsung	FDD R6 RRH	6
Clearwire	73	75	2	Dragonwave	Horizon DUO	5/16"
Clearwire	73	75	2	Dragonwave	A-Ant-23G-2-C	2
Sprint/Nextel	73	75	4*	EMS	RV65-18-04DPL2	1/2"
Sprint/Nextel	73	75	2*	EMS	RV90-17-04DPL2	1 1/4"

*Equipment to be Removed

Proposed Loading

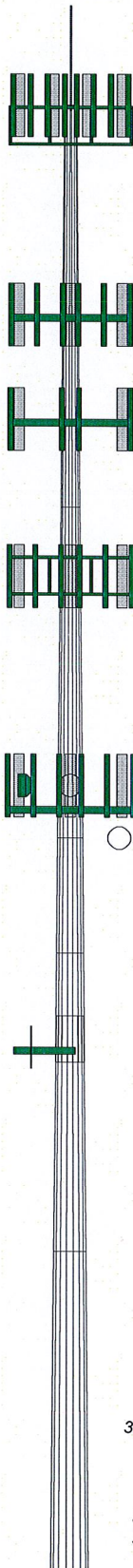
Antenna			Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity
Sprint/Nextel	73	75	6	RFS	APXVSP18-C-A20	3
Sprint/Nextel	72.667	73	3	Andrew	800MHz 2x50w	1-1/4"
Sprint/Nextel	72.667	73	3	Panasonic	1900Hz 2x40w	
Sprint/Nextel	72.667	73	3	Andrew	800MHz 2x50w(Notch Filter)	
Sprint/Nextel	50	50	1	Maxrad	GPS-TMG-HR-26NCM	

Future Loading

Antenna			Mount		Transmission Line	
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Manufacturer	Model	Quantity
AT&T	95	95	3	Powerwave	P65-16-XLH-RR	6
						1-5/8"

Section	1	2	3	4	5	6
Length (ft)	38.420	31.580	11.000	10.400	22.520	30.500
Number of Sides	18	18	18	18	18	18
Thickness (in)	0.188	0.313	0.523	0.456	0.594	0.597
Socket Length (ft)				4.420		
Top Dia (in)	13.161	21.882	29.055	31.550	31.997	37.400
Bot Dia (in)	21.882	29.055	31.550	33.913	37.400	44.317
Grade		A572-65		50.8 ksi	54.3 ksi	52.6 ksi
Weight (K)	1.3	2.7	1.8	1.7	4.9	7.9

140.0 ft
101.6 ft
70.0 ft
59.0 ft
48.6 ft
30.5 ft
0.0 ft



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
9' Omni (E)	138	7770.00 w/ Mount Pipe (ATI-E)	95
BXA-70063/6CF w/ Mount Pipe (Verizon-E)	138	P65-16-XLH-RR w/Mount Pipe (ATI-E)	95
BXA-70063/6CF w/ Mount Pipe (Verizon-E)	138	P65-16-XLH-RR w/Mount Pipe (ATI-E)	95
BXA-70063/6CF w/ Mount Pipe (Verizon-E)	138	P65-16-XLH-RR w/Mount Pipe (ATI-E)	95
(2) DB846F65ZAXY w/ Mount Pipe (Verizon-E)	138	(2) LGP21401 (ATI-E)	95
(2) DB846F65ZAXY w/ Mount Pipe (Verizon-E)	138	(2) LGP21401 (ATI-E)	95
(2) DB846F65ZAXY w/ Mount Pipe (Verizon-E)	138	P65-16-XLH-RR w/Mount Pipe (ATI-Future)	95
BXA 171063/8BF w/Mount Pipe (Verizon-E)	138	P65-16-XLH-RR w/Mount Pipe (ATI-Future)	95
BXA 171063/8BF w/Mount Pipe (Verizon-E)	138	P65-16-XLH-RR w/Mount Pipe (ATI-Future)	95
BXA 171063/8BF w/Mount Pipe (Verizon-E)	138	6' x 2" Mount Pipe (ATI-E)	95
(2) FD9R6004/2C-3L (Verizon-E)	138	6' x 2" Mount Pipe (ATI-E)	95
(2) FD9R6004/2C-3L (Verizon-E)	138	6' x 2" Mount Pipe (ATI-E)	95
(2) FD9R6004/2C-3L (Verizon-E)	138	Platform Mount [LP 602-1] (ATI-E)	95
Platform Mount [LP 712-1] (Verizon-E)	138	LLPX310R w/ Mount Pipe (Clearwire-E)	73
(2) APX16PV-16PVL-E w/ Mount Pipe (T-Mobile-E)	120	LLPX310R w/ Mount Pipe (Clearwire-E)	73
(2) APX16PV-16PVL-E w/ Mount Pipe (T-Mobile-E)	120	LLPX310R w/ Mount Pipe (Clearwire-E)	73
(2) APX16PV-16PVL-E w/ Mount Pipe (T-Mobile-E)	120	FDD_R6_RRH (Clearwire-E)	73
(2) DTMA-1819-DD-12 (T-Mobile-E)	120	FDD_R6_RRH (Clearwire-E)	73
(2) DTMA-1819-DD-12 (T-Mobile-E)	120	FDD_R6_RRH (Clearwire-E)	73
(2) DTMA-1819-DD-12 (T-Mobile-E)	120	HORIZON DUO (Clearwire-E)	73
(2) DTMA-1819-DD-12 (T-Mobile-E)	120	HORIZON DUO (Clearwire-E)	73
(2) DTMA-1819-DD-12 (T-Mobile-E)	120	(2) APXVSPP18-C-A20 w/ Mount Pipe (Sprint/Nextel-P)	73
6' x 2" Mount Pipe (T-Mobile-E)	120	(2) APXVSPP18-C-A20 w/ Mount Pipe (Sprint/Nextel-P)	73
6' x 2" Mount Pipe (T-Mobile-E)	120	(2) APXVSPP18-C-A20 w/ Mount Pipe (Sprint/Nextel-P)	73
6' x 2" Mount Pipe (T-Mobile-E)	120	(2) APXVSPP18-C-A20 w/ Mount Pipe (Sprint/Nextel-P)	73
T-Arm Mount [TA 602-3] (T-Mobile-E)	120	800MHz 2x50w (Sprint/Nextel-P)	73
800 10504 w/ Mount Pipe (MetroPCS-E)	110	800MHz 2x50w (Sprint/Nextel-P)	73
800 10504 w/ Mount Pipe (MetroPCS-E)	110	800MHz 2x50w (Sprint/Nextel-P)	73
800 10504 w/ Mount Pipe (MetroPCS-E)	110	800MHz 2x50w (Sprint/Nextel-P)	73
800 10504 w/ Mount Pipe (MetroPCS-E)	110	800MHz 2x50w (Sprint/Nextel-P)	73
742 351 w/ Mount Pipe (MetroPCS-E)	110	800MHz 2x50w (Sprint/Nextel-P)	73
742 351 w/ Mount Pipe (MetroPCS-E)	110	1900MHz 2x40w (Sprint/Nextel-P)	73
742 351 w/ Mount Pipe (MetroPCS-E)	110	1900MHz 2x40w (Sprint/Nextel-P)	73
742 351 w/ Mount Pipe (MetroPCS-E)	110	1900MHz 2x40w (Sprint/Nextel-P)	73
(2) 860 10025 (MetroPCS-E)	110	Platform Mount [LP 602-1] (Sprint/Nextel-E)	73
(2) 860 10025 (MetroPCS-E)	110	A-ANT-23G-2-C (Nextel-E)	73
(2) 860 10025 (MetroPCS-E)	110	A-ANT-23G-2-C (Nextel-E)	73
(2) 860 10025 (MetroPCS-E)	110	(2) 3' x 2" Pipe Mount (Sprint/Nextel-P)	72.667
T-Arm Mount [TA 702-3] (MetroPCS-E)	110	Pipe Ring Mount (Sprint/Nextel-P)	72.667
(2) RRUS-11 (ATI-E)	99	(2) 3' x 2" Pipe Mount (Sprint/Nextel-P)	72.667
(2) RRUS-11 (ATI-E)	99	(2) 3' x 2" Pipe Mount (Sprint/Nextel-P)	72.667
(2) RRUS-11 (ATI-E)	99	(2) 3' x 2" Pipe Mount (Sprint/Nextel-P)	72.667
(2) RRUS-11 (ATI-E)	99	(2) 3' x 2" Pipe Mount (Sprint/Nextel-P)	72.667
DC6-48-60-18-8F (ATI-E)	99	GPS-TMG-HR-26NCM (Sprint/Nextel-P)	50
Valmont Uni-Tri Bracket (ATI-E)	99	Side Arm Mount [SO 701-1] (Sprint/Nextel-P)	50
7770.00 w/ Mount Pipe (ATI-E)	95		
7770.00 w/ Mount Pipe (ATI-E)	95		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi	52.6 ksi	53 ksi	80 ksi
50.8 ksi	51 ksi	80 ksi	51.5 ksi	52 ksi	65 ksi
54.3 ksi	54 ksi	65 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield 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: 98.1%



B+T Group
1717 S. Boulder Ave.
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

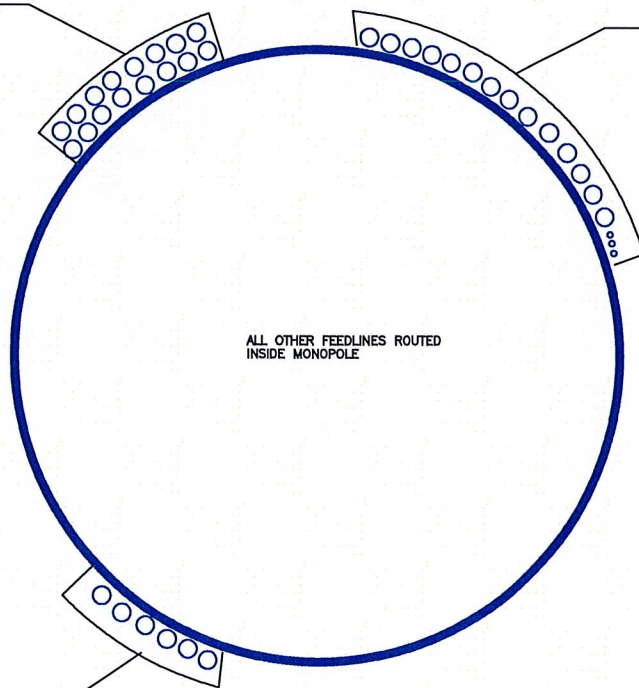
Job: **84720.004.01- Shelton NE, CT (Site# 24519)**
Project: **140' FWT Monopole / Fairfield County**
Client: **AT&T Towers** Drawn by: **zsmith** App'd:
Code: **TIA/EIA-222-F** Date: **03/20/13** Scale: **NTS**
Path: **Dwg No. E-1**

(EXISTING)
(18) 1-5/8" TO 120 FT LEVEL

(EXISTING)
(12) 1-5/8" TO 110 FT LEVEL

ALL OTHER FEEDLINES ROUTED
INSIDE MONOPOLE

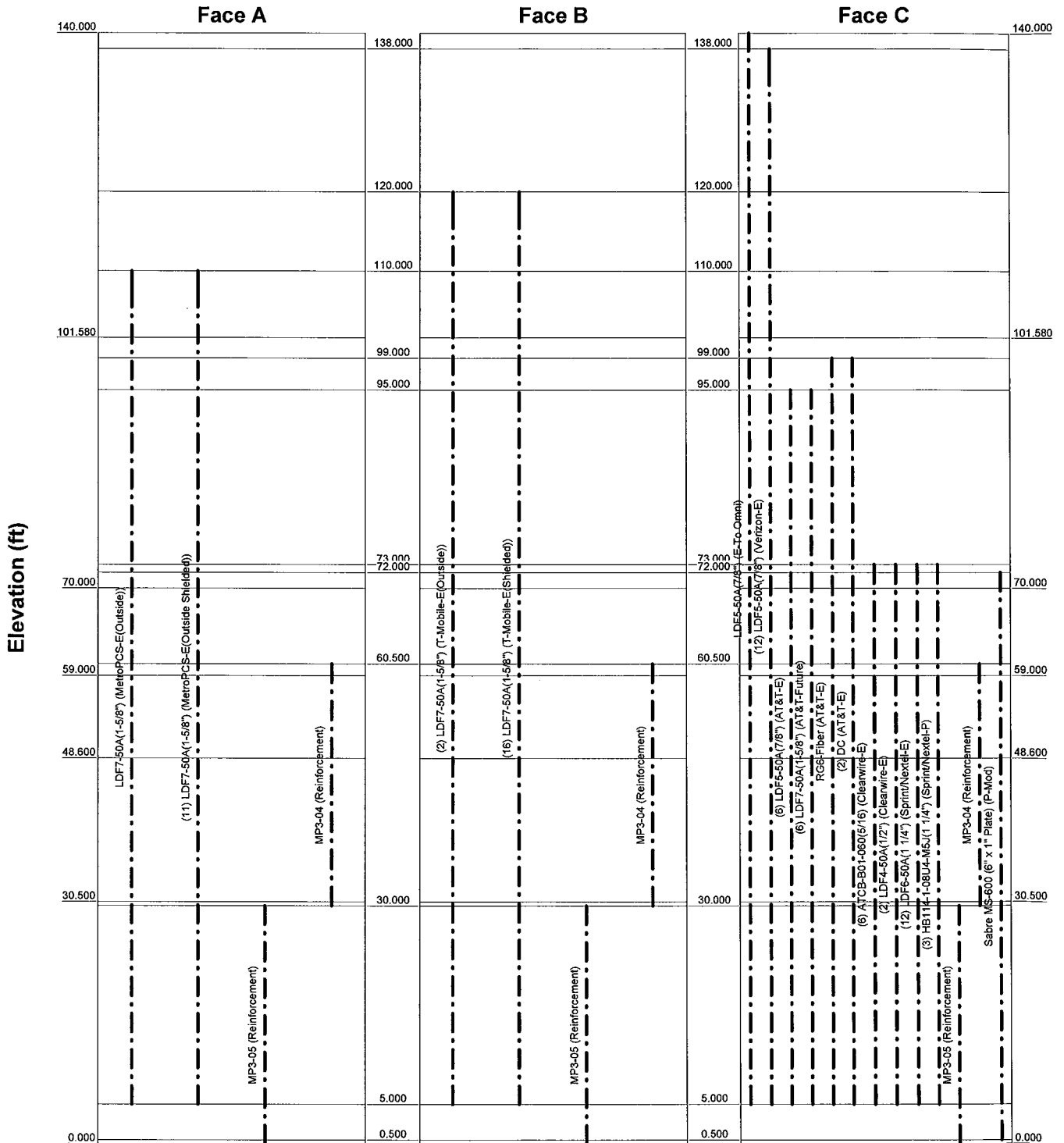
(EXISTING)
(6) 1-5/8" TO 138 FT LEVEL



Feedline Distribution Chart

0' - 140'

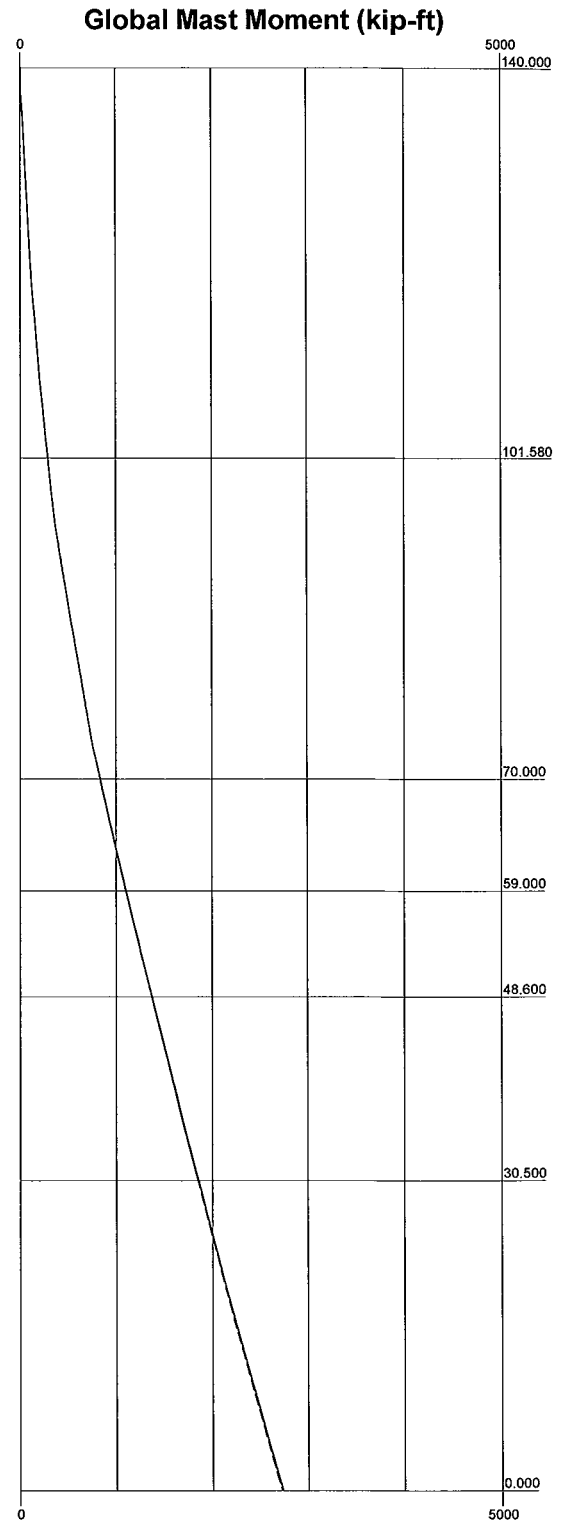
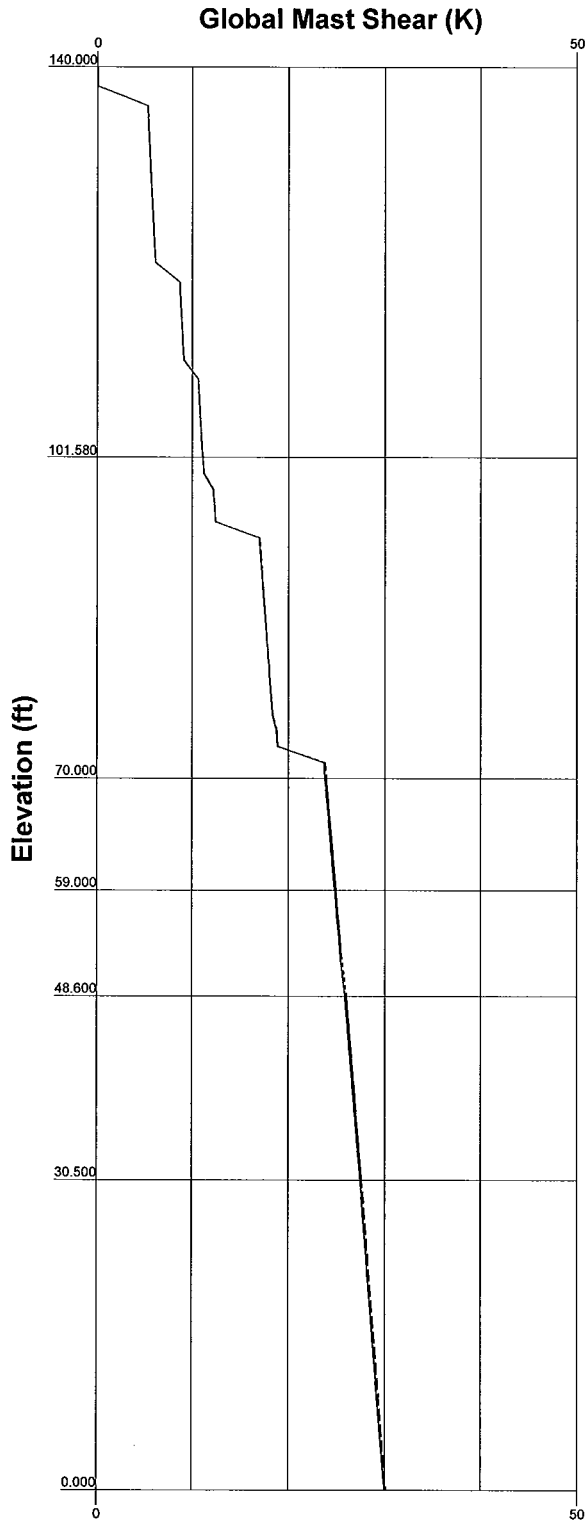
Round Flat App In Face App Out Face Truss Leg



B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265		Job: 84720.004.01- Shelton NE, CT (Site# 24519) Project: 140' FWT Monopole / Fairfield County Client: AT&T Towers Code: TIA/EIA-222-F Path:		Drawn by: zsmith Date: 03/20/13 Scale: NTS Dwg No. E-7	
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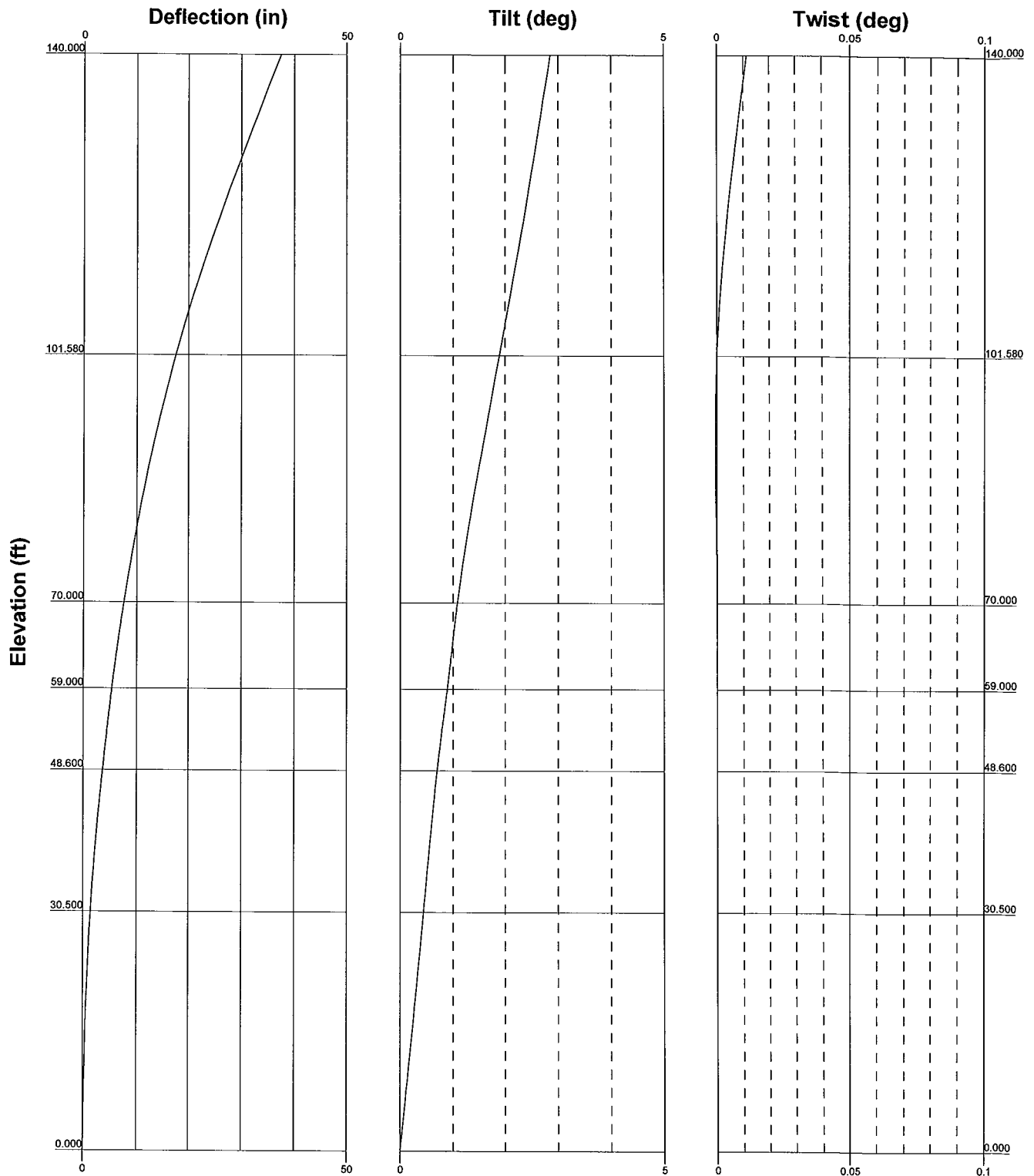
—— Vx - - - - - Vz

—— Mx - - - - - Mz



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Tulsa, OK 74119
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Job: 84720.004.01- Shelton NE, CT (Site# 24519)			
Project: 140' FWT Monopole / Fairfield County			
Client: AT&T Towers	Drawn by: zsmith	App'd:	
Code: TIA/EIA-222-F	Date: 03/20/13	Scale: NTS	
Path:	Dwg No. E-4		

**B+T Group**

1717 S. Boulder Ave.

Tulsa, OK 74119

Phone: (918) 587-4630

FAX: (918) 295-0265

Job: 84720.004.01- Shelton NE, CT (Site# 24519)		
Project: 140' FWT Monopole / Fairfield County		
Client: AT&T Towers	Drawn by: zsmith	App'd:
Code: TIA/EIA-222-F	Date: 03/20/13	Scale: NTS
Path:	Dwg No. E-5	

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	1 of 31
	Project	140' FWT Monopole / Fairfield County	Date	10:54:55 03/20/13
	Client	AT&T Towers	Designed by	zsmith

Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.750 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

A wind speed of 38 mph is used in combination with ice.

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 50 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

Local bending stresses due to climbing loads, feedline 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		

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	140.000-101.580	38.420	0.000	18	13.161	21.882	0.188	0.750	A572-65 (65 ksi)
L2	101.580-70.000	31.580	0.000	18	21.882	29.055	0.313	1.250	A572-65 (65 ksi)
L3	70.000-59.000	11.000	0.000	18	29.055	31.550	0.523	2.091	50.8 ksi (51 ksi)
L4	59.000-48.600	10.400	4.420	18	31.550	33.913	0.456	1.824	54.3 ksi (54 ksi)
L5	48.600-30.500	22.520	0.000	18	31.997	37.400	0.594	2.375	52.6 ksi (53 ksi)
L6	30.500-0.000	30.500		18	37.400	44.317	0.597	2.389	51.5 ksi (52 ksi)

tnxTower

B+T Group
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 FAX: (918) 295-0265

Job

84720.004.01- Shelton NE, CT (Site# 24519)

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Project

140' FWT Monopole / Fairfield County

Date

10:54:55 03/20/13

Client

AT&T Towers

Designed by

zsmith

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	Iu/Q in ³	w in	w/t
L1	13.364	7.721	164.179	4.606	6.686	24.556	328.574	3.861	1.986	10.594
	22.220	12.911	767.705	7.702	11.116	69.063	1536.421	6.457	3.521	18.78
L2	22.220	21.394	1257.519	7.657	11.116	113.126	2516.693	10.699	3.301	10.564
	29.503	28.509	2975.555	10.204	14.760	201.597	5955.026	14.257	4.564	14.604
L3	29.503	47.345	4869.515	10.129	14.760	329.914	9745.438	23.677	4.194	8.021
	32.037	51.486	6261.923	11.015	16.027	390.701	12532.085	25.748	4.633	8.861
L4	32.037	45.004	5497.168	11.038	16.027	342.986	11001.569	22.506	4.750	10.417
	34.436	48.424	6848.102	11.877	17.228	397.503	13705.214	24.216	5.166	11.329
L5	33.567	59.176	7372.688	11.148	16.254	453.583	14755.078	29.594	4.587	7.725
	37.977	69.358	11870.743	13.066	18.999	624.802	23757.106	34.686	5.537	9.327
L6	37.977	69.760	11937.318	13.065	18.999	628.306	23890.343	34.887	5.531	9.262
	45.001	82.871	20012.377	15.521	22.513	888.924	40051.086	41.444	6.749	11.301

Tower Elevation	Gusset Area (per face)	Gusset Thickness	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
ft	ft ²	in						
L1				1	1	1		
140.000-101.5								
80								
L2				1	1	1		
101.580-70.00								
0								
L3				1	1	1		
70.000-59.000								
L4				1	1	1		
59.000-48.600								
L5				1	1	1		
48.600-30.500								
L6				1	1	1		
30.500-0.000								

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf
LDF5-50A(7/8") (E-To Omni)	C	No	Inside Pole	140.000 - 5.000	1	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000 2" Ice 0.000 4" Ice 0.000	0.000 0.000 0.000 0.000 0.000
LDF5-50A(7/8") (Verizon-E)	C	No	Inside Pole	138.000 - 5.000	12	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000 2" Ice 0.000 4" Ice 0.000	0.000 0.000 0.000 0.000 0.000

LDF7-50A(1-5/8") (T-Mobile-E(Outside))	B	No	CaAa (Out Of Face)	120.000 - 5.000	2	No Ice 0.198 1/2" Ice 0.298 1" Ice 0.398 2" Ice 0.598 4" Ice 0.998	0.001 0.002 0.004 0.011 0.030

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	3 of 31
	Project	140' FWT Monopole / Fairfield County	Date	10:54:55 03/20/13
	Client	AT&T Towers	Designed by	zsmith

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf
LDF7-50A(1-5/8") (T-Mobile-E(Shielded))	B	No	CaAa (Out Of Face)	120.000 - 5.000	16	No Ice	0.000	0.001
						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030

LDF7-50A(1-5/8") (MetroPCS-E(Outside))	A	No	CaAa (Out Of Face)	110.000 - 5.000	1	No Ice	0.198	0.001
						1/2" Ice	0.298	0.002
						1" Ice	0.398	0.004
						2" Ice	0.598	0.011
						4" Ice	0.998	0.030
LDF7-50A(1-5/8") (MetroPCS-E(Outside Shielded))	A	No	CaAa (Out Of Face)	110.000 - 5.000	11	No Ice	0.000	0.001
						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004
						2" Ice	0.000	0.011
						4" Ice	0.000	0.030

LDF5-50A(7/8") (AT&T-E)	C	No	Inside Pole	95.000 - 5.000	6	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF7-50A(1-5/8") (AT&T-Future)	C	No	Inside Pole	95.000 - 5.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
RG6-Fiber (AT&T-E)	C	No	Inside Pole	99.000 - 5.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
DC (AT&T-E)	C	No	Inside Pole	99.000 - 5.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000

ATCB-B01-060(5/16) (Clearwire-E)	C	No	Inside Pole	73.000 - 5.000	6	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF4-50A(1/2") (Clearwire-E)	C	No	Inside Pole	73.000 - 5.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF6-50A(1 1/4") (Sprint/Nextel-E)	C	No	Inside Pole	73.000 - 5.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
HB114-1-08U4-M5J(1 1/4") (Sprint/Nextel-P)	C	No	Inside Pole	73.000 - 5.000	3	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001

MP3-05 (Reinforcement)	C	No	CaAa (Out Of Face)	30.000 - 0.000	1	No Ice	0.348	0.019
						1/2" Ice	0.432	0.021

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	4 of 31
	Project	140' FWT Monopole / Fairfield County	Date	10:54:55 03/20/13
	Client	AT&T Towers	Designed by	zsmith

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_{AA} ft^2/ft	Weight klf
MP3-05 (Reinforcement)	B	No	CaAa (Out Of Face)	30.000 - 0.000	1	1" Ice	0.515	0.023
						2" Ice	0.682	0.029
						4" Ice	1.015	0.044
						No Ice	0.000	0.019
						1/2" Ice	0.000	0.021
						1" Ice	0.000	0.023
MP3-05 (Reinforcement)	A	No	CaAa (Out Of Face)	30.000 - 0.000	1	2" Ice	0.000	0.029
						4" Ice	0.000	0.044
						No Ice	0.000	0.019
						1/2" Ice	0.000	0.021
						1" Ice	0.000	0.023
						2" Ice	0.000	0.029
MP3-04 (Reinforcement)	C	No	CaAa (Out Of Face)	60.500 - 30.000	1	4" Ice	0.000	0.044
						No Ice	0.268	0.014
						1/2" Ice	0.352	0.016
						1" Ice	0.435	0.018
						2" Ice	0.602	0.022
						4" Ice	0.935	0.036
MP3-04 (Reinforcement)	B	No	CaAa (Out Of Face)	60.500 - 30.000	1	No Ice	0.000	0.014
						1/2" Ice	0.000	0.016
						1" Ice	0.000	0.018
						2" Ice	0.000	0.022
						4" Ice	0.000	0.036
						No Ice	0.000	0.014
MP3-04 (Reinforcement)	A	No	CaAa (Out Of Face)	60.500 - 30.000	1	1/2" Ice	0.000	0.016
						1" Ice	0.000	0.018
						2" Ice	0.000	0.022
						4" Ice	0.000	0.036
						No Ice	0.000	0.014
						1/2" Ice	0.000	0.016
*** Sabre MS-600 (6" x 1" Plate) (P-Mod)	C	No	CaAa (Out Of Face)	72.000 - 0.500	1	1" Ice	0.000	0.018
						2" Ice	0.000	0.022
						4" Ice	0.000	0.036
						No Ice	0.167	0.000
						1/2" Ice	0.250	0.000
						1" Ice	0.333	0.000
						2" Ice	0.500	0.000
						4" Ice	0.833	0.000

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	140.000-101.580	A	0.000	0.000	0.000	1.667	0.083
		B	0.000	0.000	0.000	7.294	0.272
		C	0.000	0.000	0.000	0.000	0.157
L2	101.580-70.000	A	0.000	0.000	0.000	6.253	0.311
		B	0.000	0.000	0.000	12.506	0.466
		C	0.000	0.000	0.000	0.333	0.357
L3	70.000-59.000	A	0.000	0.000	0.000	2.178	0.129
		B	0.000	0.000	0.000	4.356	0.184
		C	0.000	0.000	0.000	2.236	0.280
L4	59.000-48.600	A	0.000	0.000	0.000	2.059	0.249
		B	0.000	0.000	0.000	4.118	0.300
		C	0.000	0.000	0.000	4.524	0.392
L5	48.600-30.500	A	0.000	0.000	0.000	3.584	0.433
		B	0.000	0.000	0.000	7.168	0.522
		C	0.000	0.000	0.000	7.873	0.682
L6	30.500-0.000	A	0.000	0.000	0.000	5.049	0.835
		B	0.000	0.000	0.000	10.098	0.960
		C	0.000	0.000	0.000	15.584	1.184

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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} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	140.000-101.580	A	0.875	0.000	0.000	0.000	3.141	0.397
		B		0.000	0.000	0.000	13.742	1.303
		C		0.000	0.000	0.000	0.000	0.157
L2	101.580-70.000	A	0.840	0.000	0.000	0.000	11.561	1.433
		B		0.000	0.000	0.000	23.123	2.150
		C		0.000	0.000	0.000	0.613	0.357
L3	70.000-59.000	A	0.813	0.000	0.000	0.000	3.966	0.509
		B		0.000	0.000	0.000	7.932	0.751
		C		0.000	0.000	0.000	3.929	0.284
L4	59.000-48.600	A	0.795	0.000	0.000	0.000	3.713	0.623
		B		0.000	0.000	0.000	7.426	0.847
		C		0.000	0.000	0.000	7.281	0.420
L5	48.600-30.500	A	0.766	0.000	0.000	0.000	6.462	1.084
		B		0.000	0.000	0.000	12.925	1.474
		C		0.000	0.000	0.000	12.671	0.731
L6	30.500-0.000	A	0.750	0.000	0.000	0.000	8.874	1.715
		B		0.000	0.000	0.000	17.748	2.234
		C		0.000	0.000	0.000	23.147	1.276

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	140.000-101.580	0.240	0.072	0.375	0.112
L2	101.580-70.000	0.388	0.007	0.579	0.010
L3	70.000-59.000	0.189	0.117	0.290	0.166
L4	59.000-48.600	-0.037	0.237	0.011	0.309
L5	48.600-30.500	-0.038	0.242	0.011	0.319
L6	30.500-0.000	-0.185	0.296	-0.158	0.375

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
9' Omni (E)	A	From Leg	4.000	0.000	138.000	No Ice	2.250	0.030
			0.000			1/2" Ice	3.180	0.050
			6.500			1" Ice	4.110	0.070
						2" Ice	5.970	0.110
						4" Ice	9.690	0.190
BXA-70063/6CF w/ Mount Pipe (Verizon-P)	C	From Leg	3.000	-20.000	138.000	No Ice	7.979	0.042
			0.000			1/2" Ice	8.621	0.098
			2.000			1" Ice	9.228	0.166
						2" Ice	10.473	0.328

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	6 of 31
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{A1} Front ft ²	C _{A1} Side ft ²	Weight K
BXA-70063/6CF w/ Mount Pipe (Verizon-P)	B	From Leg	3.000 0.000 2.000	0.000	138.000	4" Ice 13.082 No Ice 7.979 1/2" Ice 8.621 1" Ice 9.228 2" Ice 10.473 4" Ice 13.082	12.952 5.407 6.558 7.422 9.198 12.952	0.788 0.042 0.098 0.166 0.328 0.788
BXA-70063/6CF w/ Mount Pipe (Verizon-P)	A	From Leg	3.000 0.000 2.000	30.000	138.000	No Ice 7.979 1/2" Ice 8.621 1" Ice 9.228 2" Ice 10.473 4" Ice 13.082	5.407 6.558 7.422 9.198 12.952	0.042 0.098 0.166 0.328 0.788
(2) DB846F65ZAXY w/ Mount Pipe (Verizon-P)	C	From Leg	3.000 0.000 2.000	-20.000	138.000	No Ice 7.271 1/2" Ice 7.877 1" Ice 8.484 2" Ice 9.724 4" Ice 12.325	7.821 9.010 9.912 11.812 15.978	0.047 0.111 0.188 0.367 0.867
(2) DB846F65ZAXY w/ Mount Pipe (Verizon-P)	B	From Leg	3.000 0.000 2.000	0.000	138.000	No Ice 7.271 1/2" Ice 7.877 1" Ice 8.484 2" Ice 9.724 4" Ice 12.325	7.821 9.010 9.912 11.812 15.978	0.047 0.111 0.188 0.367 0.867
(2) DB846F65ZAXY w/ Mount Pipe (Verizon-P)	A	From Leg	3.000 0.000 2.000	30.000	138.000	No Ice 7.271 1/2" Ice 7.877 1" Ice 8.484 2" Ice 9.724 4" Ice 12.325	7.821 9.010 9.912 11.812 15.978	0.047 0.111 0.188 0.367 0.867
BXA 171063/8BF w/Mount Pipe (Verizon-P)	C	From Leg	3.000 0.000 2.000	-20.000	138.000	No Ice 3.367 1/2" Ice 3.843 1" Ice 4.302 2" Ice 5.310 4" Ice 7.466	3.541 4.343 5.022 6.429 9.587	0.023 0.055 0.096 0.197 0.509
BXA 171063/8BF w/Mount Pipe (Verizon-P)	B	From Leg	3.000 0.000 2.000	0.000	138.000	No Ice 3.367 1/2" Ice 3.843 1" Ice 4.302 2" Ice 5.310 4" Ice 7.466	3.541 4.343 5.022 6.429 9.587	0.023 0.055 0.096 0.197 0.509
BXA 171063/8BF w/Mount Pipe (Verizon-P)	A	From Leg	3.000 0.000 2.000	30.000	138.000	No Ice 3.367 1/2" Ice 3.843 1" Ice 4.302 2" Ice 5.310 4" Ice 7.466	3.541 4.343 5.022 6.429 9.587	0.023 0.055 0.096 0.197 0.509
(2) FD9R6004/2C-3L (Verizon-P)	C	From Leg	4.000 0.000 2.000	30.000	138.000	No Ice 0.367 1/2" Ice 0.451 1" Ice 0.543 2" Ice 0.755 4" Ice 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (Verizon-P)	B	From Leg	4.000 0.000 2.000	30.000	138.000	No Ice 0.367 1/2" Ice 0.451 1" Ice 0.543 2" Ice 0.755 4" Ice 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L (Verizon-P)	A	From Leg	4.000 0.000 2.000	30.000	138.000	No Ice 0.367 1/2" Ice 0.451 1" Ice 0.543 2" Ice 0.755 4" Ice 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
Platform Mount [LP 712-1]	C	None		0.000	138.000	No Ice 24.530	24.530	1.335

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	Project	140' FWT Monopole / Fairfield County	Date	10:54:55 03/20/13
	Client	AT&T Towers	Designed by	zsmith

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(Verizon-E)						1/2" Ice	29.940	29.940	1.646
						1" Ice	35.350	35.350	1.956
						2" Ice	46.170	46.170	2.577
						4" Ice	67.810	67.810	3.820

(2) APX16PV-16PVL-E w/ Mount Pipe (T-Mobile-E)	C	From Leg	3.000 0.000 0.000	0.000	120.000	No Ice	7.075	3.428	0.062
						1/2" Ice	7.639	4.251	0.106
						1" Ice	8.177	4.951	0.161
						2" Ice	9.286	6.400	0.292
						4" Ice	11.638	9.513	0.671
(2) APX16PV-16PVL-E w/ Mount Pipe (T-Mobile-E)	B	From Leg	3.000 0.000 0.000	0.000	120.000	No Ice	7.075	3.428	0.062
						1/2" Ice	7.639	4.251	0.106
						1" Ice	8.177	4.951	0.161
						2" Ice	9.286	6.400	0.292
						4" Ice	11.638	9.513	0.671
(2) APX16PV-16PVL-E w/ Mount Pipe (T-Mobile-E)	A	From Leg	3.000 0.000 0.000	0.000	120.000	No Ice	7.075	3.428	0.062
						1/2" Ice	7.639	4.251	0.106
						1" Ice	8.177	4.951	0.161
						2" Ice	9.286	6.400	0.292
						4" Ice	11.638	9.513	0.671
(2) DTMA-1819-DD-12 (T-Mobile-E)	C	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice	0.706	0.411	0.014
						1/2" Ice	0.831	0.521	0.019
						1" Ice	0.966	0.641	0.026
						2" Ice	1.260	0.905	0.045
						4" Ice	1.952	1.538	0.111
(2) DTMA-1819-DD-12 (T-Mobile-E)	B	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice	0.706	0.411	0.014
						1/2" Ice	0.831	0.521	0.019
						1" Ice	0.966	0.641	0.026
						2" Ice	1.260	0.905	0.045
						4" Ice	1.952	1.538	0.111
(2) DTMA-1819-DD-12 (T-Mobile-E)	A	From Leg	4.000 0.000 0.000	0.000	120.000	No Ice	0.706	0.411	0.014
						1/2" Ice	0.831	0.521	0.019
						1" Ice	0.966	0.641	0.026
						2" Ice	1.260	0.905	0.045
						4" Ice	1.952	1.538	0.111
6' x 2" Mount Pipe (T-Mobile-E)	C	From Leg	3.000 0.000 0.000	0.000	120.000	No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe (T-Mobile-E)	B	From Leg	3.000 0.000 0.000	0.000	120.000	No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe (T-Mobile-E)	A	From Leg	3.000 0.000 0.000	0.000	120.000	No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
T-Arm Mount [TA 602-3] (T-Mobile-E)	C	None		0.000	120.000	No Ice	11.590	11.590	0.774
						1/2" Ice	15.440	15.440	0.990
						1" Ice	19.290	19.290	1.206
						2" Ice	26.990	26.990	1.639
						4" Ice	42.390	42.390	2.503

800 10504 w/ Mount Pipe	C	From Leg	3.000	0.000	110.000	No Ice	3.589	3.178	0.038

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	Project	140' FWT Monopole / Fairfield County	Date	10:54:55 03/20/13
	Client	AT&T Towers	Designed by	zsmith

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(MetroPCS-E)			0.000 0.000			1/2" Ice 4.007 1" Ice 4.422 2" Ice 5.339 4" Ice 7.385	3.905 4.581 5.982 8.983	0.068 0.108 0.207 0.513
800 10504 w/ Mount Pipe (MetroPCS-E)	B	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 3.589 1/2" Ice 4.007 1" Ice 4.422 2" Ice 5.339 4" Ice 7.385	3.178 3.905 4.581 5.982 8.983	0.038 0.068 0.108 0.207 0.513
800 10504 w/ Mount Pipe (MetroPCS-E)	A	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 3.589 1/2" Ice 4.007 1" Ice 4.422 2" Ice 5.339 4" Ice 7.385	3.178 3.905 4.581 5.982 8.983	0.038 0.068 0.108 0.207 0.513
742 351 w/ Mount Pipe (MetroPCS-E)	C	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 6.123 1/2" Ice 6.604 1" Ice 7.088 2" Ice 8.087 4" Ice 10.213	2.984 3.652 4.298 5.640 8.538	0.049 0.088 0.136 0.253 0.596
742 351 w/ Mount Pipe (MetroPCS-E)	B	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 6.123 1/2" Ice 6.604 1" Ice 7.088 2" Ice 8.087 4" Ice 10.213	2.984 3.652 4.298 5.640 8.538	0.049 0.088 0.136 0.253 0.596
742 351 w/ Mount Pipe (MetroPCS-E)	A	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 6.123 1/2" Ice 6.604 1" Ice 7.088 2" Ice 8.087 4" Ice 10.213	2.984 3.652 4.298 5.640 8.538	0.049 0.088 0.136 0.253 0.596
(2) 860 10025 (MetroPCS-E)	C	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 0.163 1/2" Ice 0.229 1" Ice 0.302 2" Ice 0.476 4" Ice 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
(2) 860 10025 (MetroPCS-E)	B	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 0.163 1/2" Ice 0.229 1" Ice 0.302 2" Ice 0.476 4" Ice 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
(2) 860 10025 (MetroPCS-E)	A	From Leg	3.000 0.000 0.000	0.000	110.000	No Ice 0.163 1/2" Ice 0.229 1" Ice 0.302 2" Ice 0.476 4" Ice 0.927	0.136 0.199 0.270 0.439 0.879	0.001 0.003 0.005 0.014 0.051
T-Arm Mount [TA 702-3] (MetroPCS-E)	C	None		0.000	110.000	No Ice 5.640 1/2" Ice 6.550 1" Ice 7.460 2" Ice 9.280 4" Ice 12.920	5.640 6.550 7.460 9.280 12.920	0.339 0.429 0.519 0.699 1.059
*** (2) RRUS-11 (AT&T-E)	C	From Leg	1.000 0.000 0.000	0.000	99.000	No Ice 3.249 1/2" Ice 3.491 1" Ice 3.741 2" Ice 4.268 4" Ice 5.426	1.183 1.344 1.513 1.878 2.711	0.051 0.072 0.096 0.153 0.313
(2) RRUS-11 (AT&T-E)	B	From Leg	1.000 0.000	0.000	99.000	No Ice 3.249 1/2" Ice 3.491	1.183 1.344	0.051 0.072

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	Project	140' FWT Monopole / Fairfield County	Date	10:54:55 03/20/13
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A ₁ Front ft ²	C _A A ₁ Side ft ²	Weight K
			0.000			1" Ice 3.741	1.513	0.096
						2" Ice 4.268	1.878	0.153
						4" Ice 5.426	2.711	0.313
(2) RRUS-11 (AT&T-E)	A	From Leg	1.000	0.000	99.000	No Ice 3.249	1.183	0.051
			0.000			1/2" Ice 3.491	1.344	0.072
			0.000			1" Ice 3.741	1.513	0.096
						2" Ice 4.268	1.878	0.153
						4" Ice 5.426	2.711	0.313
DC6-48-60-18-8F (AT&T-E)	C	From Leg	1.000	0.000	99.000	No Ice 2.567	4.317	0.019
			0.000			1/2" Ice 2.798	4.596	0.050
			0.000			1" Ice 3.038	4.885	0.085
						2" Ice 3.543	5.488	0.167
						4" Ice 4.658	6.797	0.383
Valmont Uni-Tri Bracket (AT&T-E)	C	None		0.000	99.000	No Ice 1.750	1.750	0.290
						1/2" Ice 1.940	1.940	0.306
						1" Ice 2.130	2.130	0.322
						2" Ice 2.510	2.510	0.354
						4" Ice 3.270	3.270	0.418

7770.00 w/ Mount Pipe (AT&T-E)	C	From Leg	3.000	0.000	95.000	No Ice 6.218	4.353	0.057
			0.000			1/2" Ice 6.769	5.198	0.103
			0.000			1" Ice 7.296	5.919	0.159
						2" Ice 8.385	7.411	0.293
						4" Ice 10.691	10.763	0.680
7770.00 w/ Mount Pipe (AT&T-E)	B	From Leg	3.000	0.000	95.000	No Ice 6.218	4.353	0.057
			0.000			1/2" Ice 6.769	5.198	0.103
			0.000			1" Ice 7.296	5.919	0.159
						2" Ice 8.385	7.411	0.293
						4" Ice 10.691	10.763	0.680
7770.00 w/ Mount Pipe (AT&T-E)	A	From Leg	3.000	0.000	95.000	No Ice 6.218	4.353	0.057
			0.000			1/2" Ice 6.769	5.198	0.103
			0.000			1" Ice 7.296	5.919	0.159
						2" Ice 8.385	7.411	0.293
						4" Ice 10.691	10.763	0.680
P65-16-XLH-RR w/Mount Pipe (AT&T-E)	C	From Leg	3.000	0.000	95.000	No Ice 8.637	6.362	0.079
			0.000			1/2" Ice 9.290	7.538	0.141
			0.000			1" Ice 9.910	8.427	0.216
						2" Ice 11.176	10.239	0.393
						4" Ice 13.829	14.099	0.886
P65-16-XLH-RR w/Mount Pipe (AT&T-E)	B	From Leg	3.000	0.000	95.000	No Ice 8.637	6.362	0.079
			0.000			1/2" Ice 9.290	7.538	0.141
			0.000			1" Ice 9.910	8.427	0.216
						2" Ice 11.176	10.239	0.393
						4" Ice 13.829	14.099	0.886
P65-16-XLH-RR w/Mount Pipe (AT&T-E)	A	From Leg	3.000	0.000	95.000	No Ice 8.637	6.362	0.079
			0.000			1/2" Ice 9.290	7.538	0.141
			0.000			1" Ice 9.910	8.427	0.216
						2" Ice 11.176	10.239	0.393
						4" Ice 13.829	14.099	0.886
(2) LGP21401 (AT&T-E)	C	From Leg	4.000	0.000	95.000	No Ice 1.288	0.233	0.014
			0.000			1/2" Ice 1.445	0.313	0.021
			0.000			1" Ice 1.611	0.403	0.030
						2" Ice 1.969	0.608	0.055
						4" Ice 2.788	1.121	0.135
(2) LGP21401 (AT&T-E)	B	From Leg	4.000	0.000	95.000	No Ice 1.288	0.233	0.014
			0.000			1/2" Ice 1.445	0.313	0.021
			0.000			1" Ice 1.611	0.403	0.030

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	Project	140' FWT Monopole / Fairfield County	Date	10:54:55 03/20/13
	Client	AT&T Towers	Designed by	zsmith

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(2) LGP21401 (AT&T-E)	A	From Leg	4.000 0.000 0.000	0.000	95.000	2" Ice	1.969	0.608	0.055
						4" Ice	2.788	1.121	0.135
						No Ice	1.288	0.233	0.014
						1/2" Ice	1.445	0.313	0.021
						1" Ice	1.611	0.403	0.030
						2" Ice	1.969	0.608	0.055
P65-16-XLH-RR w/Mount Pipe (AT&T-Future)	C	From Leg	3.000 0.000 0.000	0.000	95.000	4" Ice	2.788	1.121	0.135
						No Ice	8.637	6.362	0.079
						1/2" Ice	9.290	7.538	0.141
						1" Ice	9.910	8.427	0.216
						2" Ice	11.176	10.239	0.393
						4" Ice	13.829	14.099	0.886
P65-16-XLH-RR w/Mount Pipe (AT&T-Future)	B	From Leg	3.000 0.000 0.000	0.000	95.000	No Ice	8.637	6.362	0.079
						1/2" Ice	9.290	7.538	0.141
						1" Ice	9.910	8.427	0.216
						2" Ice	11.176	10.239	0.393
						4" Ice	13.829	14.099	0.886
						No Ice	8.637	6.362	0.079
P65-16-XLH-RR w/Mount Pipe (AT&T-Future)	A	From Leg	3.000 0.000 0.000	0.000	95.000	1/2" Ice	9.290	7.538	0.141
						1" Ice	9.910	8.427	0.216
						2" Ice	11.176	10.239	0.393
						4" Ice	13.829	14.099	0.886
						No Ice	8.637	6.362	0.079
						1/2" Ice	9.290	7.538	0.141
6' x 2" Mount Pipe (AT&T-E)	C	From Leg	3.000 0.000 0.000	0.000	95.000	1" Ice	9.910	8.427	0.216
						2" Ice	11.176	10.239	0.393
						4" Ice	13.829	14.099	0.886
						No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe (AT&T-E)	B	From Leg	3.000 0.000 0.000	0.000	95.000	2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
						No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe (AT&T-E)	A	From Leg	3.000 0.000 0.000	0.000	95.000	4" Ice	4.702	4.702	0.231
						No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 602-1] (AT&T-E)	C	None		0.000	95.000	No Ice	32.030	32.030	1.343
						1/2" Ice	38.710	38.710	1.800
						1" Ice	45.390	45.390	2.257
						2" Ice	58.750	58.750	3.170
						4" Ice	85.470	85.470	4.998

LLPX310R w/ Mount Pipe (Clearwire-E)	C	From Leg	3.000 0.000 2.000	0.000	73.000	No Ice	5.065	2.985	0.045
						1/2" Ice	5.480	3.528	0.081
						1" Ice	5.905	4.087	0.125
						2" Ice	6.788	5.314	0.232
						4" Ice	8.705	8.133	0.544
						No Ice	5.065	2.985	0.045
LLPX310R w/ Mount Pipe (Clearwire-E)	B	From Leg	3.000 0.000 2.000	0.000	73.000	1/2" Ice	5.480	3.528	0.081
						1" Ice	5.905	4.087	0.125
						2" Ice	6.788	5.314	0.232
						4" Ice	8.705	8.133	0.544
						No Ice	5.065	2.985	0.045
						1/2" Ice	5.480	3.528	0.081
LLPX310R w/ Mount Pipe (Clearwire-E)	A	From Leg	3.000 0.000 2.000	0.000	73.000	1" Ice	5.905	4.087	0.125
						2" Ice	6.788	5.314	0.232

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
FDD_R6_RRH (Clearwire-E)	C	From Leg	3.000 0.000 2.000	0.000	73.000	4" Ice 8.705 No Ice 1.789 1/2" Ice 1.971 1" Ice 2.163 2" Ice 2.571 4" Ice 3.491	8.133 0.778 0.918 1.067 1.391 2.143	0.544 0.033 0.045 0.058 0.094 0.200
FDD_R6_RRH (Clearwire-E)	B	From Leg	3.000 0.000 2.000	0.000	73.000	No Ice 1.789 1/2" Ice 1.971 1" Ice 2.163 2" Ice 2.571 4" Ice 3.491	0.778 0.918 1.067 1.391 2.143	0.033 0.045 0.058 0.094 0.200
FDD_R6_RRH (Clearwire-E)	A	From Leg	3.000 0.000 2.000	0.000	73.000	No Ice 1.789 1/2" Ice 1.971 1" Ice 2.163 2" Ice 2.571 4" Ice 3.491	0.778 0.918 1.067 1.391 2.143	0.033 0.045 0.058 0.094 0.200
HORIZON DUO (Clearwire-E)	A	From Leg	4.000 0.000 0.000	0.000	73.000	No Ice 0.547 1/2" Ice 0.648 1" Ice 0.759 2" Ice 1.005 4" Ice 1.601	0.343 0.426 0.518 0.728 1.252	0.007 0.012 0.018 0.036 0.097
HORIZON DUO (Clearwire-E)	C	From Leg	4.000 0.000 0.000	0.000	73.000	No Ice 0.547 1/2" Ice 0.648 1" Ice 0.759 2" Ice 1.005 4" Ice 1.601	0.343 0.426 0.518 0.728 1.252	0.007 0.012 0.018 0.036 0.097
(2) APXVSP18-C-A20 w/ Mount Pipe (Sprint/Nextel-P)	A	From Leg	4.000 0.000 2.000	30.000	73.000	No Ice 8.498 1/2" Ice 9.149 1" Ice 9.767 2" Ice 11.031 4" Ice 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
(2) APXVSP18-C-A20 w/ Mount Pipe (Sprint/Nextel-P)	B	From Leg	4.000 0.000 2.000	50.000	73.000	No Ice 8.498 1/2" Ice 9.149 1" Ice 9.767 2" Ice 11.031 4" Ice 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
(2) APXVSP18-C-A20 w/ Mount Pipe (Sprint/Nextel-P)	C	From Leg	4.000 0.000 2.000	20.000	73.000	No Ice 8.498 1/2" Ice 9.149 1" Ice 9.767 2" Ice 11.031 4" Ice 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
800MHz 2x50w (Sprint/Nextel-P)	A	From Leg	4.000 0.000 0.000	30.000	73.000	No Ice 2.490 1/2" Ice 2.706 1" Ice 2.931 2" Ice 3.407 4" Ice 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800MHz 2x50w (Sprint/Nextel-P)	B	From Leg	4.000 0.000 0.000	50.000	73.000	No Ice 2.490 1/2" Ice 2.706 1" Ice 2.931 2" Ice 3.407 4" Ice 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800MHz 2x50w (Sprint/Nextel-P)	C	From Leg	4.000 0.000 0.000	20.000	73.000	No Ice 2.490 1/2" Ice 2.706 1" Ice 2.931 2" Ice 3.407 4" Ice 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
800MHz 2x50w (Notch	A	From Leg	4.000	30.000	73.000	No Ice 0.848	0.372	0.011

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
Filter)			0.000			1/2" Ice	0.973	0.017
(Sprint/Nextel-P)			0.000			1" Ice	1.108	0.025
						2" Ice	1.402	0.047
						4" Ice	2.094	0.119
800MHz 2x50w (Notch Filter)	B	From Leg	4.000	50.000	73.000	No Ice	0.848	0.372
(Sprint/Nextel-P)			0.000			1/2" Ice	0.973	0.017
			0.000			1" Ice	1.108	0.025
						2" Ice	1.402	0.047
						4" Ice	2.094	0.119
800MHz 2x50w (Notch Filter)	C	From Leg	4.000	20.000	73.000	No Ice	0.848	0.372
(Sprint/Nextel-P)			0.000			1/2" Ice	0.973	0.017
			0.000			1" Ice	1.108	0.025
						2" Ice	1.402	0.047
						4" Ice	2.094	0.119
1900MHz 2x40w	A	From Leg	4.000	30.000	73.000	No Ice	0.848	0.372
(Sprint/Nextel-P)			0.000			1/2" Ice	0.973	0.017
			0.000			1" Ice	1.108	0.025
						2" Ice	1.402	0.047
						4" Ice	2.094	0.119
1900MHz 2x40w	B	From Leg	4.000	50.000	73.000	No Ice	0.848	0.372
(Sprint/Nextel-P)			0.000			1/2" Ice	0.973	0.017
			0.000			1" Ice	1.108	0.025
						2" Ice	1.402	0.047
						4" Ice	2.094	0.119
1900MHz 2x40w	C	From Leg	4.000	20.000	73.000	No Ice	0.848	0.372
(Sprint/Nextel-P)			0.000			1/2" Ice	0.973	0.017
			0.000			1" Ice	1.108	0.025
						2" Ice	1.402	0.047
						4" Ice	2.094	0.119
Pipe Ring Mount	C	None		0.000	72.667	No Ice	0.000	0.000
(Sprint/Nextel-P)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
(2) 3' x 2" Pipe Mount	A	From Leg	0.500	0.000	72.667	No Ice	0.583	0.011
(Sprint/Nextel-P)			0.000			1/2" Ice	0.770	0.017
			0.000			1" Ice	0.967	0.024
						2" Ice	1.417	0.047
						4" Ice	2.536	0.126
(2) 3' x 2" Pipe Mount	B	From Leg	0.500	0.000	72.667	No Ice	0.583	0.011
(Sprint/Nextel-P)			0.000			1/2" Ice	0.770	0.017
			0.000			1" Ice	0.967	0.024
						2" Ice	1.417	0.047
						4" Ice	2.536	0.126
(2) 3' x 2" Pipe Mount	C	From Leg	0.500	0.000	72.667	No Ice	0.583	0.011
(Sprint/Nextel-P)			0.000			1/2" Ice	0.770	0.017
			0.000			1" Ice	0.967	0.024
						2" Ice	1.417	0.047
						4" Ice	2.536	0.126
Platform Mount [LP 602-1]	C	None		0.000	73.000	No Ice	32.030	1.343
(Sprint/Nextel-E)						1/2" Ice	38.710	1.800
						1" Ice	45.390	2.257
						2" Ice	58.750	3.170
						4" Ice	85.470	4.998

GPS-TMG-HR-26NCM	C	From Leg	3.000	0.000	50.000	No Ice	0.089	0.001
(Sprint/Nextel-P)			0.000			1/2" Ice	0.140	0.002

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
			0.000			1" Ice 0.202	0.202	0.004
						2" Ice 0.360	0.360	0.011
						4" Ice 0.809	0.809	0.041
Side Arm Mount [SO 701-1] (Sprint/Nextel-P)	C	From Leg	1.500	0.000	50.000	No Ice 0.850	1.670	0.065
			0.000			1/2" Ice 1.140	2.340	0.079
			0.000			1" Ice 1.430	3.010	0.093
						2" Ice 2.010	4.350	0.121
						4" Ice 3.170	7.030	0.177

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
A-ANT-23G-2-C (Nextel-E)	A	Paraboloid w/Shroud (HP)	From Leg	3.000 0.000 2.000	0.000		73.000	2.175	No Ice 3.715 1/2" Ice 4.006 1" Ice 4.296 2" Ice 4.876 4" Ice 6.037	0.012 0.021 0.030 0.047 0.082
A-ANT-23G-2-C (Nextel-E)	C	Paraboloid w/Shroud (HP)	From Leg	3.000 0.000 2.000	0.000		73.000	2.175	No Ice 3.715 1/2" Ice 4.006 1" Ice 4.296 2" Ice 4.876 4" Ice 6.037	0.012 0.021 0.030 0.047 0.082

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
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp

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<i>Comb. No.</i>	<i>Description</i>
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

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Force K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
L1	140 - 101.58	Pole	Max Tension	2	0.000	-0.000	-0.000
			Max. Compression	14	-11.210	-1.041	0.130
			Max. Mx	5	-4.578	-289.876	1.273
			Max. My	2	-4.574	-1.409	290.214
			Max. Vy	5	11.068	-289.876	1.273
			Max. Vx	2	-11.079	-1.409	290.214
			Max. Torque	5			0.604
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-28.363	-2.870	0.560
			Max. Mx	5	-13.542	-834.286	2.151
L2	101.58 - 70	Pole	Max. My	2	-13.531	-2.603	836.235
			Max. Vy	5	23.778	-834.286	2.151
			Max. Vx	8	23.931	1.321	-835.965
			Max. Torque	4			0.826
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-32.100	-3.715	0.722
			Max. Mx	5	-16.179	-1101.281	3.707
			Max. My	2	-16.169	-4.500	1104.456
			Max. Vy	5	24.763	-1101.281	3.707
			Max. Vx	8	24.916	2.470	-1104.426
L3	70 - 59	Pole	Max. Torque	4			0.776
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-34.319	-4.197	0.815
			Max. Mx	5	-17.774	-1251.073	4.553
			Max. My	8	-17.764	3.086	-1255.005
			Max. Vy	5	25.319	-1251.073	4.553
			Max. Vx	8	25.472	3.086	-1255.005
			Max. Torque	4			0.759
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-45.055	-5.834	1.040
L4	59 - 48.6	Pole	Max. Mx	5	-25.889	-1846.262	7.405
			Max. My	8			
			Max. Vy	5			
L5	48.6 - 30.5	Pole	Max. Vx	8			
			Max. Torque	4			
			Max Tension	1			

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L6	30.5 - 0	Pole	Max. My	8	-25.882	5.293	-1853.675
			Max. Vy	5	27.433	-1846.262	7.405
			Max. Vx	8	27.600	5.293	-1853.675
			Max. Torque	4			0.743
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-59.375	-8.101	1.476
			Max. Mx	5	-37.381	-2720.898	11.286
			Max. My	8	-37.381	7.995	-2732.711
			Max. Vy	5	29.936	-2720.898	11.286
			Max. Vx	8	30.100	7.995	-2732.711
			Max. Torque	4			0.714

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	18	59.375	-7.421	0.006
	Max. H _x	11	37.396	29.880	-0.079
	Max. H _z	2	37.396	-0.141	30.053
	Max. M _x	2	2731.305	-0.141	30.053
	Max. M _z	5	2720.898	-29.916	0.122
	Max. Torsion	4	0.672	-25.929	15.132
	Min. Vert	1	37.396	0.000	0.000
	Min. H _x	5	37.396	-29.916	0.122
	Min. H _z	8	37.396	0.106	-30.081
	Min. M _x	8	-2732.711	0.106	-30.081
	Min. M _z	11	-2714.834	29.880	-0.079
	Min. Torsion	9	-0.654	15.011	-26.091

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	37.396	0.000	0.000	-0.350	-1.599	-0.000
Dead+Wind 0 deg - No Ice	37.396	0.141	-30.053	-2731.305	-13.959	-0.539
Dead+Wind 30 deg - No Ice	37.396	15.030	-26.080	-2370.261	-1368.122	-0.651
Dead+Wind 60 deg - No Ice	37.396	25.929	-15.132	-1375.240	-2358.926	-0.672
Dead+Wind 90 deg - No Ice	37.396	29.916	-0.122	-11.286	-2720.898	-0.530
Dead+Wind 120 deg - No Ice	37.396	25.858	14.969	1359.382	-2351.973	-0.047
Dead+Wind 150 deg - No Ice	37.396	14.852	26.038	2364.860	-1351.807	0.449
Dead+Wind 180 deg - No Ice	37.396	-0.106	30.081	2732.711	7.995	0.628
Dead+Wind 210 deg - No Ice	37.396	-15.011	26.091	2370.406	1363.352	0.654
Dead+Wind 240 deg - No Ice	37.396	-25.887	15.148	1375.785	2352.467	0.586
Dead+Wind 270 deg - No Ice	37.396	-29.880	0.079	7.263	2714.834	0.518
Dead+Wind 300 deg - No Ice	37.396	-25.844	-14.961	-1359.474	2347.607	0.044
Dead+Wind 330 deg - No Ice	37.396	-14.871	-25.985	-2361.513	1349.995	-0.441
Dead+Ice+Temp	59.375	0.000	-0.000	-1.476	-8.101	-0.000
Dead+Wind 0 deg+Ice+Temp	59.375	0.010	-7.440	-699.695	-8.426	-0.074
Dead+Wind 30 deg+Ice+Temp	59.375	3.708	-6.445	-605.975	-355.941	-0.101
Dead+Wind 60 deg+Ice+Temp	59.375	6.421	-3.726	-350.512	-610.903	-0.119
Dead+Wind 90 deg+Ice+Temp	59.375	7.421	-0.006	-1.413	-704.994	-0.110

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 120 deg+Ice+Temp	59.375	6.426	3.725	348.512	-611.868	-0.028
Dead+Wind 150 deg+Ice+Temp	59.375	3.705	6.457	604.466	-356.664	0.061
Dead+Wind 180 deg+Ice+Temp	59.375	-0.003	7.447	697.189	-8.565	0.091
Dead+Wind 210 deg+Ice+Temp	59.375	-3.704	6.447	603.183	339.220	0.100
Dead+Wind 240 deg+Ice+Temp	59.375	-6.412	3.729	347.810	593.800	0.102
Dead+Wind 270 deg+Ice+Temp	59.375	-7.413	-0.003	-2.318	687.980	0.110
Dead+Wind 300 deg+Ice+Temp	59.375	-6.423	-3.724	-351.357	595.237	0.028
Dead+Wind 330 deg+Ice+Temp	59.375	-3.709	-6.445	-606.536	340.607	-0.061
Dead+Wind 0 deg - Service	37.396	0.049	-10.399	-946.693	-5.910	-0.190
Dead+Wind 30 deg - Service	37.396	5.201	-9.024	-821.588	-475.161	-0.229
Dead+Wind 60 deg - Service	37.396	8.972	-5.236	-476.789	-818.496	-0.236
Dead+Wind 90 deg - Service	37.396	10.352	-0.042	-4.149	-943.919	-0.186
Dead+Wind 120 deg - Service	37.396	8.947	5.180	470.810	-816.074	-0.018
Dead+Wind 150 deg - Service	37.396	5.139	9.010	819.228	-469.502	0.155
Dead+Wind 180 deg - Service	37.396	-0.037	10.409	946.705	1.695	0.218
Dead+Wind 210 deg - Service	37.396	-5.194	9.028	821.160	471.359	0.230
Dead+Wind 240 deg - Service	37.396	-8.958	5.242	476.497	814.106	0.208
Dead+Wind 270 deg - Service	37.396	-10.339	0.027	2.278	939.664	0.185
Dead+Wind 300 deg - Service	37.396	-8.942	-5.177	-471.316	812.409	0.018
Dead+Wind 330 deg - Service	37.396	-5.146	-8.991	-818.542	466.723	-0.154

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-37.396	0.000	0.000	37.396	0.000	0.000%
2	0.141	-37.396	-30.053	-0.141	37.396	30.053	0.000%
3	15.030	-37.396	-26.080	-15.030	37.396	26.080	0.000%
4	25.929	-37.396	-15.132	-25.929	37.396	15.132	0.000%
5	29.916	-37.396	-0.122	-29.916	37.396	0.122	0.000%
6	25.858	-37.396	14.969	-25.858	37.396	-14.969	0.000%
7	14.852	-37.396	26.038	-14.852	37.396	-26.038	0.000%
8	-0.106	-37.396	30.081	0.106	37.396	-30.081	0.000%
9	-15.011	-37.396	26.091	15.011	37.396	-26.091	0.000%
10	-25.887	-37.396	15.148	25.887	37.396	-15.148	0.000%
11	-29.880	-37.396	0.079	29.880	37.396	-0.079	0.000%
12	-25.844	-37.396	-14.961	25.844	37.396	14.961	0.000%
13	-14.871	-37.396	-25.985	14.871	37.396	25.985	0.000%
14	0.000	-59.375	0.000	-0.000	59.375	0.000	0.000%
15	0.010	-59.375	-7.440	-0.010	59.375	7.440	0.000%
16	3.708	-59.375	-6.445	-3.708	59.375	6.445	0.000%
17	6.421	-59.375	-3.726	-6.421	59.375	3.726	0.000%
18	7.421	-59.375	-0.006	-7.421	59.375	0.006	0.000%
19	6.426	-59.375	3.725	-6.426	59.375	-3.725	0.000%
20	3.705	-59.375	6.456	-3.705	59.375	-6.457	0.000%
21	-0.003	-59.375	7.446	0.003	59.375	-7.447	0.000%
22	-3.704	-59.375	6.447	3.704	59.375	-6.447	0.000%
23	-6.412	-59.375	3.729	6.412	59.375	-3.729	0.000%
24	-7.413	-59.375	-0.003	7.413	59.375	0.003	0.000%
25	-6.423	-59.375	-3.724	6.423	59.375	3.724	0.000%
26	-3.709	-59.375	-6.445	3.709	59.375	6.445	0.000%
27	0.049	-37.396	-10.399	-0.049	37.396	10.399	0.000%
28	5.201	-37.396	-9.024	-5.201	37.396	9.024	0.000%
29	8.972	-37.396	-5.236	-8.972	37.396	5.236	0.000%
30	10.352	-37.396	-0.042	-10.352	37.396	0.042	0.000%
31	8.947	-37.396	5.180	-8.947	37.396	-5.180	0.000%
32	5.139	-37.396	9.010	-5.139	37.396	-9.010	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
33	-0.037	-37.396	10.409	0.037	37.396	-10.409	0.000%
34	-5.194	-37.396	9.028	5.194	37.396	-9.028	0.000%
35	-8.958	-37.396	5.242	8.958	37.396	-5.242	0.000%
36	-10.339	-37.396	0.027	10.339	37.396	-0.027	0.000%
37	-8.942	-37.396	-5.177	8.942	37.396	5.177	0.000%
38	-5.146	-37.396	-8.991	5.146	37.396	8.991	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00017951
3	Yes	5	0.00000001	0.00039234
4	Yes	5	0.00000001	0.00040629
5	Yes	4	0.00000001	0.00047345
6	Yes	5	0.00000001	0.00039290
7	Yes	5	0.00000001	0.00039228
8	Yes	4	0.00000001	0.00037513
9	Yes	5	0.00000001	0.00040373
10	Yes	5	0.00000001	0.00039176
11	Yes	4	0.00000001	0.00029266
12	Yes	5	0.00000001	0.00039699
13	Yes	5	0.00000001	0.00039659
14	Yes	4	0.00000001	0.00006881
15	Yes	5	0.00000001	0.00034772
16	Yes	5	0.00000001	0.00039632
17	Yes	5	0.00000001	0.00039732
18	Yes	5	0.00000001	0.00035103
19	Yes	5	0.00000001	0.00039706
20	Yes	5	0.00000001	0.00039689
21	Yes	5	0.00000001	0.00034622
22	Yes	5	0.00000001	0.00038672
23	Yes	5	0.00000001	0.00038546
24	Yes	5	0.00000001	0.00034208
25	Yes	5	0.00000001	0.00038957
26	Yes	5	0.00000001	0.00039009
27	Yes	4	0.00000001	0.00009369
28	Yes	4	0.00000001	0.00094019
29	Yes	5	0.00000001	0.00003988
30	Yes	4	0.00000001	0.00011491
31	Yes	4	0.00000001	0.00093778
32	Yes	4	0.00000001	0.00093890
33	Yes	4	0.00000001	0.00010302
34	Yes	4	0.00000001	0.00098847
35	Yes	4	0.00000001	0.00092890
36	Yes	4	0.00000001	0.00010619
37	Yes	4	0.00000001	0.00095474
38	Yes	4	0.00000001	0.00095473

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Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 101.58	37.483	28	2.853	0.009
L2	101.58 - 70	17.516	28	1.893	0.002
L3	70 - 59	7.596	28	1.080	0.001
L4	59 - 48.6	5.325	28	0.890	0.000
L5	53.02 - 30.5	4.285	28	0.771	0.000
L6	30.5 - 0	1.376	28	0.440	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.000	9' Omni	28	36.343	2.805	0.009	11753
120.000	(2) APX16PV-16PVL-E w/ Mount Pipe	28	26.354	2.372	0.005	2937
110.000	800 10504 w/ Mount Pipe	28	21.302	2.119	0.003	1957
99.000	(2) RRUS-11	28	16.461	1.821	0.002	1595
95.000	7770.00 w/ Mount Pipe	28	14.925	1.708	0.001	1693
75.000	A-ANT-23G-2-C	28	8.795	1.183	0.001	2529
73.000	LLPX310R w/ Mount Pipe	28	8.302	1.140	0.001	2657
72.667	Pipe Ring Mount	28	8.222	1.133	0.001	2679
50.000	GPS-TMG-HR-26NCM	28	3.800	0.716	0.000	4184

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 101.58	107.545	3	8.193	0.027
L2	101.58 - 70	50.396	3	5.446	0.005
L3	70 - 59	21.884	3	3.113	0.002
L4	59 - 48.6	15.346	3	2.565	0.001
L5	53.02 - 30.5	12.349	3	2.222	0.001
L6	30.5 - 0	3.967	3	1.269	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.000	9' Omni	3	104.285	8.057	0.025	4236
120.000	(2) APX16PV-16PVL-E w/ Mount Pipe	3	75.709	6.820	0.014	1055
110.000	800 10504 w/ Mount Pipe	3	61.245	6.094	0.009	701
99.000	(2) RRUS-11	3	47.371	5.240	0.005	568
95.000	7770.00 w/ Mount Pipe	3	42.960	4.916	0.004	601

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<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection</i>	<i>Tilt</i>	<i>Twist</i>	<i>Radius of Curvature</i>
<i>ft</i>			<i>in</i>	<i>°</i>	<i>°</i>	<i>ft</i>
75.000	A-ANT-23G-2-C	3	25.335	3.406	0.002	885
73.000	LLPX310R w/ Mount Pipe	3	23.916	3.283	0.002	928
72.667	Pipe Ring Mount	3	23.685	3.263	0.002	936
50.000	GPS-TMG-HR-26NCM	3	10.951	2.063	0.001	1457

Compression Checks

Pole Design Data

<i>Section No.</i>	<i>Elevation</i>	<i>Size</i>	<i>L</i>	<i>L_u</i>	<i>Kl/r</i>	<i>F_a</i>	<i>A</i>	<i>Actual P</i>	<i>Allow. P_a</i>	<i>Ratio P</i>
	<i>ft</i>		<i>ft</i>	<i>ft</i>		<i>ksi</i>	<i>in²</i>	<i>K</i>	<i>K</i>	<i>P_a</i>
L1	140 - 138.079	TP21.882x13.161x0.188	38.420	0.000	0.0	39,000	7.980	-0.182	311.234	0.001*
	138.079 - 136.158					39,000	8.240	-1.270	321.355	0.004
	136.158 - 134.237					39,000	8.499	-1.342	331.475	0.004
	134.237 - 132.316					39,000	8.759	-1.418	341.596	0.004
	132.316 - 130.395					39,000	9.018	-1.496	351.717	0.004
	130.395 - 128.474					39,000	9.278	-1.579	361.837	0.004
	128.474 - 126.553					39,000	9.537	-1.664	371.958	0.004
	126.553 - 124.632					39,000	9.797	-1.752	382.079	0.005
	124.632 - 122.711					39,000	10.056	-1.842	392.199	0.005
	122.711 - 120.79					39,000	10.316	-1.936	402.320	0.005
	120.79 - 118.869					39,000	10.575	-3.030	412.441	0.007
	118.869 - 116.948					39,000	10.835	-3.136	422.561	0.007
	116.948 - 115.027					39,000	11.094	-3.245	432.682	0.007
	115.027 - 113.106					39,000	11.354	-3.357	442.803	0.008
	113.106 - 111.185					39,000	11.613	-3.473	452.923	0.008
	111.185 - 109.264					39,000	11.873	-4.046	463.044	0.009
	109.264 - 107.343					39,000	12.132	-4.172	473.165	0.009
	107.343 - 105.422					39,000	12.392	-4.301	483.285	0.009
	105.422 - 103.501					39,000	12.651	-4.434	493.406	0.009
	103.501 - 101.58					39,000	12.911	-4.570	503.527	0.009
	101.58 - 100.001					39,000	21.750	-4.761	848.249	0.006
	100.001 - 100.001					39,000	22.106	-5.486	862.123	0.006
L2	101.58 - 100.001	TP29.055x21.882x0.313	31.580	0.000	0.0	39,000	21.750	-4.761	848.249	0.006
	100.001 - 100.001					39,000	22.106	-5.486	862.123	0.006

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Section No.	Elevation ft	Size	L ft	L _a ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
	98.422									
	98.422 - 96.843					39.000	22.462	-5.673	875.997	0.006
	96.843 - 95.264					39.000	22.817	-5.863	889.871	0.007
	95.264 - 93.685					39.000	23.173	-7.814	903.744	0.009
	93.685 - 92.106					39.000	23.529	-8.017	917.618	0.009
	92.106 - 90.527					39.000	23.884	-8.224	931.492	0.009
	90.527 - 88.948					39.000	24.240	-8.434	945.365	0.009
	88.948 - 87.369					39.000	24.596	-8.647	959.239	0.009
	87.369 - 85.79					39.000	24.952	-8.862	973.113	0.009
	85.79 - 84.211					39.000	25.307	-9.080	986.986	0.009
	84.211 - 82.632					39.000	25.663	-9.301	1000.860	0.009
	82.632 - 81.053					39.000	26.019	-9.524	1014.730	0.009
	81.053 - 79.474					39.000	26.375	-9.751	1028.610	0.009
	79.474 - 77.895					39.000	26.730	-9.979	1042.480	0.010
	77.895 - 76.316					39.000	27.086	-10.211	1056.350	0.010
	76.316 - 74.737					39.000	27.442	-10.449	1070.230	0.010
	74.737 - 73.158					39.000	27.798	-10.686	1084.100	0.010
	73.158 - 71.579					39.000	28.153	-13.272	1097.980	0.012
	71.579 - 70					39.000	28.509	-13.525	1111.850	0.012
L3	70 - 69	TP31.55x29.055x0.523	11.000	0.000	0.0	30.480	47.722	-13.773	1454.560	0.009
	69 - 68					30.480	48.098	-14.005	1466.030	0.010
	68 - 67					30.480	48.474	-14.239	1477.500	0.010
	67 - 66					30.480	48.851	-14.475	1488.980	0.010
	66 - 65					30.480	49.227	-14.712	1500.450	0.010
	65 - 64					30.480	49.604	-14.950	1511.920	0.010
	64 - 63					30.480	49.980	-15.190	1523.390	0.010
	63 - 62					30.480	50.356	-15.431	1534.860	0.010
	62 - 61					30.480	50.733	-15.674	1546.330	0.010
	61 - 60					30.480	51.109	-15.919	1557.810	0.010
	60 - 59					30.480	51.486	-16.164	1569.280	0.010
L4	59 - 57.804	TP33.913x31.55x0.456	10.400	0.000	0.0	32.580	45.397	-16.477	1479.040	0.011
	57.804 - 56.608					32.580	45.790	-16.795	1491.850	0.011
	56.608 - 55.412					32.580	46.184	-17.115	1504.660	0.011
	55.412 - 54.216					32.580	46.577	-17.437	1517.480	0.011
	54.216 - 53.02					32.580	46.970	-17.761	1530.290	0.012
	53.02 - 48.6					32.580	48.424	-8.916	1577.650	0.006
L5	53.02 - 48.6	TP37.4x31.997x0.594	22.520	0.000	0.0	31.560	61.174	-10.954	1930.660	0.006
	48.6 - 47.5944					31.560	61.629	-20.205	1945.010	0.010
	47.5944 - 46.5889					31.560	62.084	-20.526	1959.360	0.010
	46.5889 - 45.5833					31.560	62.538	-20.848	1973.710	0.011
	45.5833 - 44.5778					31.560	62.993	-21.173	1988.060	0.011
	44.5778 - 43.5722					31.560	63.448	-21.499	2002.410	0.011
	43.5722 - 42.5667					31.560	63.902	-21.826	2016.750	0.011
	42.5667 - 41.5611					31.560	64.357	-22.155	2031.100	0.011
	41.5611 - 40.5556					31.560	64.812	-22.486	2045.450	0.011
	40.5556 - 39.55					31.560	65.266	-22.818	2059.800	0.011
	39.55 - 38.5444					31.560	65.721	-23.152	2074.150	0.011
	38.5444 - 37.5389					31.560	66.175	-23.488	2088.500	0.011
	37.5389 - 36.5333					31.560	66.630	-23.825	2102.850	0.011
	36.5333 - 35.5278					31.560	67.085	-24.163	2117.190	0.011

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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
L6	35.5278 - 34.5222	TP44.317x37.4x0.597	30.500	0.000	0.0	31.560	67.539	-24.504	2131.540	0.011
	34.5222 - 33.5167					31.560	67.994	-24.846	2145.890	0.012
	33.5167 - 32.5111					31.560	68.449	-25.189	2160.240	0.012
	32.5111 - 31.5056					31.560	68.903	-25.534	2174.590	0.012
	31.5056 - 30.5					31.560	69.358	-25.881	2188.940	0.012
	30.5 - 28.975					30.900	70.416	-26.417	2175.850	0.012
	28.975 - 27.45					30.900	71.071	-26.963	2196.100	0.012
	27.45 - 25.925					30.900	71.727	-27.512	2216.360	0.012
	25.925 - 24.4					30.900	72.382	-28.064	2236.620	0.013
	24.4 - 22.875					30.900	73.038	-28.620	2256.870	0.013
	22.875 - 21.35					30.900	73.694	-29.180	2277.130	0.013
	21.35 - 19.825					30.900	74.349	-29.743	2297.390	0.013
	19.825 - 18.3					30.900	75.005	-30.310	2317.640	0.013
	18.3 - 16.775					30.900	75.660	-30.880	2337.900	0.013
	16.775 - 15.25					30.900	76.316	-31.453	2358.160	0.013
	15.25 - 13.725					30.900	76.971	-32.030	2378.420	0.013
	13.725 - 12.2					30.900	77.627	-32.611	2398.670	0.014
	12.2 - 10.675					30.900	78.283	-33.195	2418.930	0.014
	10.675 - 9.15					30.900	78.938	-33.782	2439.190	0.014
	9.15 - 7.625					30.900	79.594	-34.373	2459.440	0.014
	7.625 - 6.1					30.900	80.249	-34.968	2479.700	0.014
	6.1 - 4.575					30.900	80.905	-35.566	2499.960	0.014
	4.575 - 3.05					30.900	81.560	-36.167	2520.210	0.014
	3.05 - 1.525					30.900	82.216	-36.772	2540.470	0.014
	1.525 - 0					30.900	82.871	-37.381	2560.730	0.015

* DL controls

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	140 - 138.079	TP21.882x13.161x0.188	0.048	0.022	39.000	0.001	0.000	0.000	39.000	0.000
	138.079 - 136.158		17.968	7.702	39.000	0.197	0.000	0.000	39.000	0.000
	136.158 - 134.237		28.302	11.398	39.000	0.292	0.000	0.000	39.000	0.000
	134.237 - 132.316		38.819	14.715	39.000	0.377	0.000	0.000	39.000	0.000
	132.316 - 130.395		49.524	17.702	39.000	0.454	0.000	0.000	39.000	0.000
	130.395 - 128.474		60.420	20.398	39.000	0.523	0.000	0.000	39.000	0.000
	128.474 - 126.553		71.511	22.839	39.000	0.586	0.000	0.000	39.000	0.000
	126.553 - 124.632		82.799	25.055	39.000	0.642	0.000	0.000	39.000	0.000
	124.632 - 122.711		94.289	27.070	39.000	0.694	0.000	0.000	39.000	0.000
	122.711 - 120.79		105.983	28.908	39.000	0.741	0.000	0.000	39.000	0.000

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	22 of 31
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	Client	AT&T Towers	Designed by	zsmith

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	120.79 - 118.869		120.641	31.302	39.000	0.803	0.000	0.000	39.000	0.000
	118.869 - 116.948		137.432	33.963	39.000	0.871	0.000	0.000	39.000	0.000
	116.948 - 115.027		154.430	36.390	39.000	0.933	0.000	0.000	39.000	0.000
	115.027 - 113.106		171.641	38.609	39.000	0.990	0.000	0.000	39.000	0.000
	113.106 - 111.185		189.065	40.641	39.000	1.042	0.000	0.000	39.000	0.000
	111.185 - 109.264		207.735	42.714	39.000	1.095	0.000	0.000	39.000	0.000
	109.264 - 107.343		228.276	44.942	39.000	1.152	0.000	0.000	39.000	0.000
	107.343 - 105.422		249.036	46.989	39.000	1.205	0.000	0.000	39.000	0.000
	105.422 - 103.501		270.017	48.870	39.000	1.253	0.000	0.000	39.000	0.000
	103.501 - 101.58		291.222	50.601	39.000	1.297	0.000	0.000	39.000	0.000
L2	101.58 - 100.001	TP29.055x21.882x0.313	308.853	31.692	39.000	0.813	0.000	0.000	39.000	0.000
	100.001 - 98.422		327.124	32.487	39.000	0.833	0.000	0.000	39.000	0.000
	98.422 - 96.843		346.447	33.318	39.000	0.854	0.000	0.000	39.000	0.000
	96.843 - 95.264		365.967	34.099	39.000	0.874	0.000	0.000	39.000	0.000
	95.264 - 93.685		391.559	35.365	39.000	0.907	0.000	0.000	39.000	0.000
	93.685 - 92.106		418.527	36.659	39.000	0.940	0.000	0.000	39.000	0.000
	92.106 - 90.527		445.687	37.876	39.000	0.971	0.000	0.000	39.000	0.000
	90.527 - 88.948		473.040	39.022	39.000	1.001	0.000	0.000	39.000	0.000
	88.948 - 87.369		500.587	40.101	39.000	1.028	0.000	0.000	39.000	0.000
	87.369 - 85.79		528.330	41.118	39.000	1.054	0.000	0.000	39.000	0.000
	85.79 - 84.211		556.268	42.077	39.000	1.079	0.000	0.000	39.000	0.000
	84.211 - 82.632		584.403	42.981	39.000	1.102	0.000	0.000	39.000	0.000
	82.632 - 81.053		612.734	43.833	39.000	1.124	0.000	0.000	39.000	0.000
	81.053 - 79.474		641.263	44.638	39.000	1.145	0.000	0.000	39.000	0.000
	79.474 - 77.895		669.991	45.398	39.000	1.164	0.000	0.000	39.000	0.000
	77.895 - 76.316		698.918	46.115	39.000	1.182	0.000	0.000	39.000	0.000
	76.316 - 74.737		728.125	46.798	39.000	1.200	0.000	0.000	39.000	0.000
	74.737 - 73.158		757.936	47.468	39.000	1.217	0.000	0.000	39.000	0.000
	73.158 - 71.579		799.717	48.820	39.000	1.252	0.000	0.000	39.000	0.000
L3	71.579 - 70	TP31.55x29.055x0.523	837.450	49.849	39.000	1.278	0.000	0.000	39.000	0.000
	70 - 69		861.458	30.837	30.480	1.012	0.000	0.000	30.480	0.000
	69 - 68		885.558	31.201	30.480	1.024	0.000	0.000	30.480	0.000
	68 - 67		909.742	31.553	30.480	1.035	0.000	0.000	30.480	0.000

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	23 of 31
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	Client	AT&T Towers	Designed by	zsmith

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	67 - 66		934.017	31.894	30.480	1.046	0.000	0.000	30.480	0.000
	66 - 65		958.375	32.223	30.480	1.057	0.000	0.000	30.480	0.000
	65 - 64		982.833	32.541	30.480	1.068	0.000	0.000	30.480	0.000
	64 - 63		1007.37	32.849	30.480	1.078	0.000	0.000	30.480	0.000
			5							
	63 - 62		1032.00	33.147	30.480	1.087	0.000	0.000	30.480	0.000
			8							
	62 - 61		1056.73	33.435	30.480	1.097	0.000	0.000	30.480	0.000
			3							
	61 - 60		1081.55	33.714	30.480	1.106	0.000	0.000	30.480	0.000
			0							
	60 - 59		1106.45	33.984	30.480	1.115	0.000	0.000	30.480	0.000
			8							
L4	59 - 57.804	TP33.913x31.55x0.456	1136.37	39.067	32.580	1.199	0.000	0.000	32.580	0.000
			5							
	57.804 - 56.608		1166.41	39.410	32.580	1.210	0.000	0.000	32.580	0.000
			7							
	56.608 - 55.412		1196.59	39.739	32.580	1.220	0.000	0.000	32.580	0.000
			2							
	55.412 - 54.216		1226.90	40.055	32.580	1.229	0.000	0.000	32.580	0.000
			0							
	54.216 - 53.02		1257.34	40.360	32.580	1.239	0.000	0.000	32.580	0.000
			2							
	53.02 - 48.6		627.663	18.948	32.580	0.582	0.000	0.000	32.580	0.000
L5	53.02 - 48.6	TP37.4x31.997x0.594	743.408	18.392	31.560	0.583	0.000	0.000	31.560	0.000
	48.6 - 47.5944		1397.30	34.058	31.560	1.079	0.000	0.000	31.560	0.000
			0							
	47.5944 - 46.5889		1423.62	34.188	31.560	1.083	0.000	0.000	31.560	0.000
			5							
	46.5889 - 45.5833		1450.02	34.313	31.560	1.087	0.000	0.000	31.560	0.000
			5							
	45.5833 - 44.5778		1476.51	34.434	31.560	1.091	0.000	0.000	31.560	0.000
			7							
	44.5778 - 43.5722		1503.09	34.548	31.560	1.095	0.000	0.000	31.560	0.000
			2							
	43.5722 - 42.5667		1529.75	34.658	31.560	1.098	0.000	0.000	31.560	0.000
			8							
	42.5667 - 41.5611		1556.50	34.764	31.560	1.102	0.000	0.000	31.560	0.000
			8							
	41.5611 - 40.5556		1583.35	34.865	31.560	1.105	0.000	0.000	31.560	0.000
			0							
	40.5556 - 39.55		1610.28	34.961	31.560	1.108	0.000	0.000	31.560	0.000
			3							
	39.55 - 38.5444		1637.29	35.054	31.560	1.111	0.000	0.000	31.560	0.000
			2							
	38.5444 - 37.5389		1664.40	35.142	31.560	1.113	0.000	0.000	31.560	0.000
			0							
	37.5389 - 36.5333		1691.59	35.226	31.560	1.116	0.000	0.000	31.560	0.000
			2							
	36.5333 - 35.5278		1718.87	35.307	31.560	1.119	0.000	0.000	31.560	0.000
			5							
	35.5278 - 34.5222		1746.25	35.384	31.560	1.121	0.000	0.000	31.560	0.000
			0							
	34.5222 - 33.5167		1773.70	35.458	31.560	1.123	0.000	0.000	31.560	0.000
			8							
	33.5167 - 32.5111		1801.25	35.528	31.560	1.126	0.000	0.000	31.560	0.000
			8							
	32.5111 - 31.5056		1828.90	35.595	31.560	1.128	0.000	0.000	31.560	0.000
			0							
	31.5056 - 30.5		1856.63	35.659	31.560	1.130	0.000	0.000	31.560	0.000

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	24 of 31
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	Client	AT&T Towers	Designed by	zsmith

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L6	30.5 - 28.975	TP44.317x37.4x0.597	3 1898.85	35.589	30.900	1.152	0.000	0.000	30.900	0.000
	28.975 - 27.45		0 1941.25	35.710	30.900	1.156	0.000	0.000	30.900	0.000
	27.45 - 25.925		0 1983.84	35.824	30.900	1.159	0.000	0.000	30.900	0.000
	25.925 - 24.4		2 2026.61	35.932	30.900	1.163	0.000	0.000	30.900	0.000
	24.4 - 22.875		7 2069.57	36.033	30.900	1.166	0.000	0.000	30.900	0.000
	22.875 - 21.35		5 2112.72	36.128	30.900	1.169	0.000	0.000	30.900	0.000
	21.35 - 19.825		5 2156.05	36.217	30.900	1.172	0.000	0.000	30.900	0.000
	19.825 - 18.3		8 2199.59	36.300	30.900	1.175	0.000	0.000	30.900	0.000
	18.3 - 16.775		2 2243.30	36.378	30.900	1.177	0.000	0.000	30.900	0.000
	16.775 - 15.25		0 2287.20	36.451	30.900	1.180	0.000	0.000	30.900	0.000
	15.25 - 13.725		8 2331.30	36.519	30.900	1.182	0.000	0.000	30.900	0.000
	13.725 - 12.2		0 2375.58	36.582	30.900	1.184	0.000	0.000	30.900	0.000
	12.2 - 10.675		3 2420.05	36.641	30.900	1.186	0.000	0.000	30.900	0.000
	10.675 - 9.15		8 2464.72	36.696	30.900	1.188	0.000	0.000	30.900	0.000
	9.15 - 7.625		5 2509.58	36.746	30.900	1.189	0.000	0.000	30.900	0.000
	7.625 - 6.1		3 2554.63	36.793	30.900	1.191	0.000	0.000	30.900	0.000
	6.1 - 4.575		3 2599.87	36.836	30.900	1.192	0.000	0.000	30.900	0.000
	4.575 - 3.05		5 2645.30	36.876	30.900	1.193	0.000	0.000	30.900	0.000
	3.05 - 1.525		8 2690.94	36.912	30.900	1.195	0.000	0.000	30.900	0.000
	1.525 - 0		2 2736.76	36.945	30.900	1.196	0.000	0.000	30.900	0.000
			7							

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	140 - 138.079	TP21.882x13.161x0.188	0.000	0.000	26.000	0.000	0.000	0.000	26.000	0.000
	138.079 - 136.158		5.331	0.647	26.000	0.050	0.427	0.089	26.000	0.003
	136.158 - 134.237		5.426	0.638	26.000	0.049	0.427	0.083	26.000	0.003
	134.237 - 132.316		5.523	0.631	26.000	0.048	0.425	0.078	26.000	0.003
	132.316 - 130.395		5.622	0.623	26.000	0.048	0.423	0.073	26.000	0.003

tnxTower B+T Group 1717 S. Boulder Ave. Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	84720.004.01- Shelton NE, CT (Site# 24519)	Page	26 of 31
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Section No.	Elevation ft	Size	Actual V K	Actual f _v ksi	Allow. F _v ksi	Ratio f _v / F _v	Actual T kip-ft	Actual f _{vt} ksi	Allow. F _{vt} ksi	Ratio f _{vt} / F _{vt}
	76.316 - 74.737		18.819	0.686	26.000	0.053	0.754	0.024	26.000	0.001
	74.737 - 73.158		18.946	0.682	26.000	0.052	0.754	0.023	26.000	0.001
	73.158 - 71.579		23.844	0.847	26.000	0.065	0.750	0.022	26.000	0.001
L3	71.579 - 70	TP31.55x29.055x0.523	23.966	0.841	26.000	0.065	0.602	0.017	26.000	0.001
	70 - 69		24.047	0.504	20.320	0.050	0.598	0.010	20.320	0.001
	69 - 68		24.136	0.502	20.320	0.049	0.596	0.010	20.320	0.000
	68 - 67		24.225	0.500	20.320	0.049	0.594	0.010	20.320	0.000
	67 - 66		24.315	0.498	20.320	0.049	0.593	0.010	20.320	0.000
	66 - 65		24.405	0.496	20.320	0.049	0.591	0.010	20.320	0.000
	65 - 64		24.495	0.494	20.320	0.049	0.589	0.009	20.320	0.000
	64 - 63		24.586	0.492	20.320	0.048	0.587	0.009	20.320	0.000
	63 - 62		24.677	0.490	20.320	0.048	0.586	0.009	20.320	0.000
	62 - 61		24.768	0.488	20.320	0.048	0.584	0.009	20.320	0.000
	61 - 60		24.860	0.486	20.320	0.048	0.582	0.009	20.320	0.000
	60 - 59		24.952	0.485	20.320	0.048	0.580	0.009	20.320	0.000
L4	59 - 57.804	TP33.913x31.55x0.456	25.064	0.552	21.720	0.051	0.578	0.010	21.720	0.000
	57.804 - 56.608		25.174	0.550	21.720	0.051	0.578	0.009	21.720	0.000
	56.608 - 55.412		25.285	0.547	21.720	0.050	0.577	0.009	21.720	0.000
	55.412 - 54.216		25.396	0.545	21.720	0.050	0.576	0.009	21.720	0.000
	54.216 - 53.02		25.507	0.543	21.720	0.050	0.575	0.009	21.720	0.000
L5	53.02 - 48.6	TP37.4x31.997x0.594	12.089	0.250	21.720	0.023	0.342	0.005	21.720	0.000
	53.02 - 48.6		13.963	0.228	21.040	0.022	0.320	0.004	21.040	0.000
	48.6 - 47.5944		26.126	0.424	21.040	0.040	0.662	0.008	21.040	0.000
	47.5944 - 46.5889		26.212	0.422	21.040	0.040	0.661	0.008	21.040	0.000
	46.5889 - 45.5833		26.298	0.421	21.040	0.040	0.660	0.008	21.040	0.000
	45.5833 - 44.5778		26.384	0.419	21.040	0.040	0.659	0.007	21.040	0.000
	44.5778 - 43.5722		26.471	0.417	21.040	0.040	0.659	0.007	21.040	0.000
	43.5722 - 42.5667		26.558	0.416	21.040	0.039	0.658	0.007	21.040	0.000
	42.5667 - 41.5611		26.645	0.414	21.040	0.039	0.657	0.007	21.040	0.000
	41.5611 - 40.5556		26.732	0.412	21.040	0.039	0.657	0.007	21.040	0.000
	40.5556 - 39.55		26.820	0.411	21.040	0.039	0.656	0.007	21.040	0.000
	39.55 - 38.5444		26.908	0.409	21.040	0.039	0.655	0.007	21.040	0.000
	38.5444 - 37.5389		26.996	0.408	21.040	0.039	0.654	0.007	21.040	0.000
	37.5389 - 36.5333		27.084	0.406	21.040	0.039	0.654	0.007	21.040	0.000
	36.5333 - 35.5278		27.173	0.405	21.040	0.038	0.653	0.006	21.040	0.000
	35.5278 - 34.5222		27.262	0.404	21.040	0.038	0.652	0.006	21.040	0.000
	34.5222 - 33.5167		27.351	0.402	21.040	0.038	0.651	0.006	21.040	0.000
	33.5167 - 32.5111		27.441	0.401	21.040	0.038	0.650	0.006	21.040	0.000
	32.5111 -		27.531	0.400	21.040	0.038	0.650	0.006	21.040	0.000

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Section No.	Elevation ft	Size	Actual V K	Actual f _v ksi	Allow. F _v ksi	Ratio f _v F _v	Actual T kip-ft	Actual f _{vt} ksi	Allow. F _{vt} ksi	Ratio f _{vt} F _{vt}
L6	31.5056	TP44.317x37.4x0.597								
	31.5056 - 30.5		27.621	0.398	21.040	0.038	0.649	0.006	21.040	0.000
	30.5 - 28.975		27.748	0.394	20.600	0.038	0.648	0.006	20.600	0.000
	28.975 - 27.45		27.870	0.392	20.600	0.038	0.648	0.006	20.600	0.000
	27.45 - 25.925		27.992	0.390	20.600	0.038	0.649	0.006	20.600	0.000
	25.925 - 24.4		28.115	0.388	20.600	0.038	0.649	0.006	20.600	0.000
	24.4 - 22.875		28.238	0.387	20.600	0.038	0.649	0.005	20.600	0.000
	22.875 - 21.35		28.361	0.385	20.600	0.037	0.649	0.005	20.600	0.000
	21.35 - 19.825		28.484	0.383	20.600	0.037	0.649	0.005	20.600	0.000
	19.825 - 18.3		28.608	0.381	20.600	0.037	0.649	0.005	20.600	0.000
	18.3 - 16.775		28.733	0.380	20.600	0.037	0.649	0.005	20.600	0.000
	16.775 - 15.25		28.857	0.378	20.600	0.037	0.649	0.005	20.600	0.000
	15.25 - 13.725		28.982	0.377	20.600	0.037	0.650	0.005	20.600	0.000
	13.725 - 12.2		29.107	0.375	20.600	0.036	0.650	0.005	20.600	0.000
	12.2 - 10.675		29.233	0.373	20.600	0.036	0.650	0.005	20.600	0.000
	10.675 - 9.15		29.358	0.372	20.600	0.036	0.650	0.005	20.600	0.000
	9.15 - 7.625		29.485	0.370	20.600	0.036	0.650	0.005	20.600	0.000
	7.625 - 6.1		29.611	0.369	20.600	0.036	0.650	0.005	20.600	0.000
	6.1 - 4.575		29.738	0.368	20.600	0.036	0.650	0.004	20.600	0.000
	4.575 - 3.05		29.865	0.366	20.600	0.036	0.651	0.004	20.600	0.000
	3.05 - 1.525		29.993	0.365	20.600	0.035	0.651	0.004	20.600	0.000
	1.525 - 0		30.120	0.363	20.600	0.035	0.651	0.004	20.600	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P P _a	Ratio f _{bx} F _{bx}	Ratio f _{by} F _{by}	Ratio f _v F _v	Ratio f _{vt} F _{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	140 - 138.079	0.001	0.001	0.000	0.000	0.000	0.001*	1.000	H1-3+VT ✓
	138.079 - 136.158	0.004	0.197	0.000	0.050	0.003	0.202	1.333	H1-3+VT ✓
	136.158 - 134.237	0.004	0.292	0.000	0.049	0.003	0.297	1.333	H1-3+VT ✓
	134.237 - 132.316	0.004	0.377	0.000	0.048	0.003	0.382	1.333	H1-3+VT ✓
	132.316 - 130.395	0.004	0.454	0.000	0.048	0.003	0.459	1.333	H1-3+VT ✓
	130.395 - 128.474	0.004	0.523	0.000	0.047	0.003	0.528	1.333	H1-3+VT ✓
	128.474 - 126.553	0.004	0.586	0.000	0.047	0.003	0.591	1.333	H1-3+VT ✓
	126.553 - 124.632	0.005	0.642	0.000	0.047	0.002	0.648	1.333	H1-3+VT ✓
	124.632 - 122.711	0.005	0.694	0.000	0.046	0.002	0.699	1.333	H1-3+VT ✓
	122.711 - 120.79	0.005	0.741	0.000	0.046	0.002	0.747	1.333	H1-3+VT ✓
	120.79 - 118.869	0.007	0.803	0.000	0.063	0.002	0.811	1.333	H1-3+VT ✓
	118.869 - 116.948	0.007	0.871	0.000	0.062	0.002	0.879	1.333	H1-3+VT ✓

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Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	116.948 - 115.027	0.007	0.933	0.000	0.062	0.002	0.942	1.333	H1-3+VT ✓
	115.027 - 113.106	0.008	0.990	0.000	0.061	0.002	0.999	1.333	H1-3+VT ✓
	113.106 - 111.185	0.008	1.042	0.000	0.060	0.002	1.051	1.333	H1-3+VT ✓
	111.185 - 109.264	0.009	1.095	0.000	0.069	0.002	1.105	1.333	H1-3+VT ✓
	109.264 - 107.343	0.009	1.152	0.000	0.068	0.001	1.162	1.333	H1-3+VT ✓
	107.343 - 105.422	0.009	1.205	0.000	0.067	0.001	1.215	1.333	H1-3+VT ✓
	105.422 - 103.501	0.009	1.253	0.000	0.067	0.001	1.263	1.333	H1-3+VT ✓
	103.501 - 101.58	0.009	1.297	0.000	0.066	0.001	1.308	1.333	H1-3+VT ✓
L2	101.58 - 100.001	0.006	0.813	0.000	0.040	0.001	0.819	1.333	H1-3+VT ✓
	100.001 - 98.422	0.006	0.833	0.000	0.042	0.001	0.840	1.333	H1-3+VT ✓
	98.422 - 96.843	0.006	0.854	0.000	0.042	0.001	0.861	1.333	H1-3+VT ✓
	96.843 - 95.264	0.007	0.874	0.000	0.042	0.001	0.881	1.333	H1-3+VT ✓
	95.264 - 93.685	0.009	0.907	0.000	0.056	0.001	0.916	1.333	H1-3+VT ✓
	93.685 - 92.106	0.009	0.940	0.000	0.056	0.001	0.950	1.333	H1-3+VT ✓
	92.106 - 90.527	0.009	0.971	0.000	0.056	0.001	0.981	1.333	H1-3+VT ✓
	90.527 - 88.948	0.009	1.001	0.000	0.055	0.001	1.010	1.333	H1-3+VT ✓
	88.948 - 87.369	0.009	1.028	0.000	0.055	0.001	1.038	1.333	H1-3+VT ✓
	87.369 - 85.79	0.009	1.054	0.000	0.054	0.001	1.064	1.333	H1-3+VT ✓
	85.79 - 84.211	0.009	1.079	0.000	0.054	0.001	1.089	1.333	H1-3+VT ✓
	84.211 - 82.632	0.009	1.102	0.000	0.054	0.001	1.112	1.333	H1-3+VT ✓
	82.632 - 81.053	0.009	1.124	0.000	0.053	0.001	1.134	1.333	H1-3+VT ✓
	81.053 - 79.474	0.009	1.145	0.000	0.053	0.001	1.155	1.333	H1-3+VT ✓
	79.474 - 77.895	0.010	1.164	0.000	0.053	0.001	1.174	1.333	H1-3+VT ✓
	77.895 - 76.316	0.010	1.182	0.000	0.052	0.001	1.193	1.333	H1-3+VT ✓
	76.316 - 74.737	0.010	1.200	0.000	0.053	0.001	1.210	1.333	H1-3+VT ✓
	74.737 - 73.158	0.010	1.217	0.000	0.052	0.001	1.228	1.333	H1-3+VT ✓

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Section No.	Elevation ft	Ratio P P_a	Ratio f_{bx} F_{bx}	Ratio f_{by} F_{by}	Ratio f_v F_v	Ratio f_{vt} F_{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	73.158 - 71.579	0.012	1.252	0.000	0.065	0.001	1.265	1.333	H1-3+VT ✓
	71.579 - 70	0.012	1.278	0.000	0.065	0.001	1.291	1.333	H1-3+VT ✓
	70 - 69	0.009	1.012	0.000	0.050	0.001	1.022	1.333	H1-3+VT ✓
	69 - 68	0.010	1.024	0.000	0.049	0.000	1.034	1.333	H1-3+VT ✓
	68 - 67	0.010	1.035	0.000	0.049	0.000	1.045	1.333	H1-3+VT ✓
	67 - 66	0.010	1.046	0.000	0.049	0.000	1.057	1.333	H1-3+VT ✓
	66 - 65	0.010	1.057	0.000	0.049	0.000	1.068	1.333	H1-3+VT ✓
	65 - 64	0.010	1.068	0.000	0.049	0.000	1.078	1.333	H1-3+VT ✓
	64 - 63	0.010	1.078	0.000	0.048	0.000	1.088	1.333	H1-3+VT ✓
	63 - 62	0.010	1.087	0.000	0.048	0.000	1.098	1.333	H1-3+VT ✓
	62 - 61	0.010	1.097	0.000	0.048	0.000	1.108	1.333	H1-3+VT ✓
	61 - 60	0.010	1.106	0.000	0.048	0.000	1.117	1.333	H1-3+VT ✓
	60 - 59	0.010	1.115	0.000	0.048	0.000	1.126	1.333	H1-3+VT ✓
	59 - 57.804	0.011	1.199	0.000	0.051	0.000	1.211	1.333	H1-3+VT ✓
L4	57.804 - 56.608	0.011	1.210	0.000	0.051	0.000	1.222	1.333	H1-3+VT ✓
	56.608 - 55.412	0.011	1.220	0.000	0.050	0.000	1.232	1.333	H1-3+VT ✓
	55.412 - 54.216	0.011	1.229	0.000	0.050	0.000	1.242	1.333	H1-3+VT ✓
	54.216 - 53.02	0.012	1.239	0.000	0.050	0.000	1.251	1.333	H1-3+VT ✓
	53.02 - 48.6	0.006	0.582	0.000	0.023	0.000	0.587	1.333	H1-3+VT ✓
	53.02 - 48.6	0.006	0.583	0.000	0.022	0.000	0.589	1.333	H1-3+VT ✓
	48.6 - 47.5944	0.010	1.079	0.000	0.040	0.000	1.090	1.333	H1-3+VT ✓
	47.5944 - 46.5889	0.010	1.083	0.000	0.040	0.000	1.094	1.333	H1-3+VT ✓
	46.5889 - 45.5833	0.011	1.087	0.000	0.040	0.000	1.098	1.333	H1-3+VT ✓
	45.5833 - 44.5778	0.011	1.091	0.000	0.040	0.000	1.102	1.333	H1-3+VT ✓
L5	44.5778 - 43.5722	0.011	1.095	0.000	0.040	0.000	1.106	1.333	H1-3+VT ✓
	43.5722 - 42.5667	0.011	1.098	0.000	0.039	0.000	1.109	1.333	H1-3+VT ✓

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Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	42.5667 - 41.5611	0.011	1.102	0.000	0.039	0.000	1.113	1.333	H1-3+VT ✓
	41.5611 - 40.5556	0.011	1.105	0.000	0.039	0.000	1.116	1.333	H1-3+VT ✓
	40.5556 - 39.55	0.011	1.108	0.000	0.039	0.000	1.119	1.333	H1-3+VT ✓
	39.55 - 38.5444	0.011	1.111	0.000	0.039	0.000	1.122	1.333	H1-3+VT ✓
	38.5444 - 37.5389	0.011	1.113	0.000	0.039	0.000	1.125	1.333	H1-3+VT ✓
	37.5389 - 36.5333	0.011	1.116	0.000	0.039	0.000	1.128	1.333	H1-3+VT ✓
	36.5333 - 35.5278	0.011	1.119	0.000	0.038	0.000	1.131	1.333	H1-3+VT ✓
	35.5278 - 34.5222	0.011	1.121	0.000	0.038	0.000	1.133	1.333	H1-3+VT ✓
	34.5222 - 33.5167	0.012	1.123	0.000	0.038	0.000	1.135	1.333	H1-3+VT ✓
	33.5167 - 32.5111	0.012	1.126	0.000	0.038	0.000	1.138	1.333	H1-3+VT ✓
	32.5111 - 31.5056	0.012	1.128	0.000	0.038	0.000	1.140	1.333	H1-3+VT ✓
	31.5056 - 30.5	0.012	1.130	0.000	0.038	0.000	1.142	1.333	H1-3+VT ✓
L6	30.5 - 28.975	0.012	1.152	0.000	0.038	0.000	1.164	1.333	H1-3+VT ✓
	28.975 - 27.45	0.012	1.156	0.000	0.038	0.000	1.168	1.333	H1-3+VT ✓
	27.45 - 25.925	0.012	1.159	0.000	0.038	0.000	1.172	1.333	H1-3+VT ✓
	25.925 - 24.4	0.013	1.163	0.000	0.038	0.000	1.176	1.333	H1-3+VT ✓
	24.4 - 22.875	0.013	1.166	0.000	0.038	0.000	1.179	1.333	H1-3+VT ✓
	22.875 - 21.35	0.013	1.169	0.000	0.037	0.000	1.182	1.333	H1-3+VT ✓
	21.35 - 19.825	0.013	1.172	0.000	0.037	0.000	1.185	1.333	H1-3+VT ✓
	19.825 - 18.3	0.013	1.175	0.000	0.037	0.000	1.188	1.333	H1-3+VT ✓
	18.3 - 16.775	0.013	1.177	0.000	0.037	0.000	1.191	1.333	H1-3+VT ✓
	16.775 - 15.25	0.013	1.180	0.000	0.037	0.000	1.193	1.333	H1-3+VT ✓
	15.25 - 13.725	0.013	1.182	0.000	0.037	0.000	1.196	1.333	H1-3+VT ✓
	13.725 - 12.2	0.014	1.184	0.000	0.036	0.000	1.198	1.333	H1-3+VT ✓
	12.2 - 10.675	0.014	1.186	0.000	0.036	0.000	1.200	1.333	H1-3+VT ✓
	10.675 - 9.15	0.014	1.188	0.000	0.036	0.000	1.202	1.333	H1-3+VT ✓

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Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	9.15 - 7.625	0.014	1.189	0.000	0.036	0.000	1.204	1.333	H1-3+VT ✓
	7.625 - 6.1	0.014	1.191	0.000	0.036	0.000	1.205	1.333	H1-3+VT ✓
	6.1 - 4.575	0.014	1.192	0.000	0.036	0.000	1.207	1.333	H1-3+VT ✓
	4.575 - 3.05	0.014	1.193	0.000	0.036	0.000	1.208	1.333	H1-3+VT ✓
	3.05 - 1.525	0.014	1.195	0.000	0.035	0.000	1.209	1.333	H1-3+VT ✓
	1.525 - 0	0.015	1.196	0.000	0.035	0.000	1.211	1.333	H1-3+VT ✓

* DL controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
L1	140 - 101.58	Pole	TP21.882x13.161x0.188	1	-4.570	671.201	98.1	Pass
L2	101.58 - 70	Pole	TP29.055x21.882x0.313	2	-13.525	1482.096	96.9	Pass
L3	70 - 59	Pole	TP31.55x29.055x0.523	3	-16.164	2091.850	84.5	Pass
L4	59 - 48.6	Pole	TP33.913x31.55x0.456	4	-17.761	2039.876	93.9	Pass
L5	48.6 - 30.5	Pole	TP37.4x31.997x0.594	5	-25.881	2917.857	85.7	Pass
L6	30.5 - 0	Pole	TP44.317x37.4x0.597	6	-37.381	3413.453	90.8	Pass
							Summary	
							Pole (L1)	98.1 Pass
							RATING =	98.1 Pass

PROJECT	24519 - Shelton NE, CT		
SUBJECT	Flange Analysis		
DATE	03/20/13	PAGE 1	OF 1



B&T Engineering, Inc.
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

Exterior Flange Plate - TIA-222-F

Flange Elevation: 101.58 (ft)

Reactions:

Moment: 308.853 (k-ft)
 Axial: 4.6 (k)
 Shear: 11.2 (k)

Bolt Data:

Qty: 16
 Diam: 1.00 (in)
 Bolt Material: A325
 Strength (Fu): A325 (ksi)
 Yield (Fy): A325 (ksi)
 Bolt Circle: 26.0 (in)

Bolt Tension: 35.3 (k)
 Allowable Tension: 46.1 (k)
 Bolt Capacity: 76.7% Pass

Plate Data:

Diam: 30 (in)
 Thick: 1.50 (in)
 Grade: 50 (ksi)

Flange Plate Stress: 27.5 (ksi)
 Allowable Stress: 50.0 (ksi)
 Flange Plate Capacity: 55.1% Pass

Pole Data:

Diam: 21.882 (in)
 Thick: 0.19 (in)
 Grade: 65 (ksi)
 # of Sides: 18
 Fu: 80 (ksi)

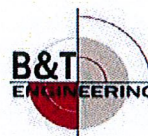
Punching Shear Capacity: n/a

Stiffener Data:

Qty: None
 Wld Type: _____
 Groove Depth: _____ (in)
 Groove Angle: _____ (degrees)
 Fillet H. Weld: _____ (in)
 Fillet V. Weld: _____ (in)
 Width: _____ (in)
 Height: _____ (in)
 Thick: _____ (in)
 Notch: _____ (in)
 Grade: _____ (ksi)
 Weld Str.: _____ (ksi)

Horizontal Weld: n/a
 Vertical Weld: n/a
 Plate Flex + Shear: n/a
 Plate Tension + Shear: n/a
 Plate Compression: n/a

PROJECT	24519 - Shelton NE, CT		
SUBJECT	Base Analysis		
DATE	03/20/13	PAGE 1	OF 1



B&T Engineering, Inc.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Circular Base Plate & Anchor Rods - TIA-222-F

Base Reactions:

Moment:	<u>2737</u>	(k-ft)
Axial:	<u>37</u>	(k)
Shear:	<u>30</u>	(k)

Anchor Rod Data:

Qty:	<u>16</u>	
Diam:	<u>2.25</u>	(in)
Rod Material:	<u>A615-J</u>	
Strength (Fu):	<u>100</u>	(ksi)
Yield (Fy):	<u>75</u>	(ksi)
Bolt Circle:	<u>51.0</u>	(in)

Anchor Rod Tension:	<u>158.7</u>	(k)
Allowable Tension:	<u>195.0</u>	(k)
Anchor Rod Capacity:	<u>81.4%</u>	Pass

Base Plate Data:

Diam:	<u>57</u>	(in)
Thick:	<u>2.25</u>	(in)
Grade:	<u>60</u>	(ksi)

Base Plate Stress:	<u>45.5</u>	(ksi)
Allowable Stress:	<u>60.0</u>	(ksi)
Base Plate Capacity:	<u>75.8%</u>	Pass

Pole Data:

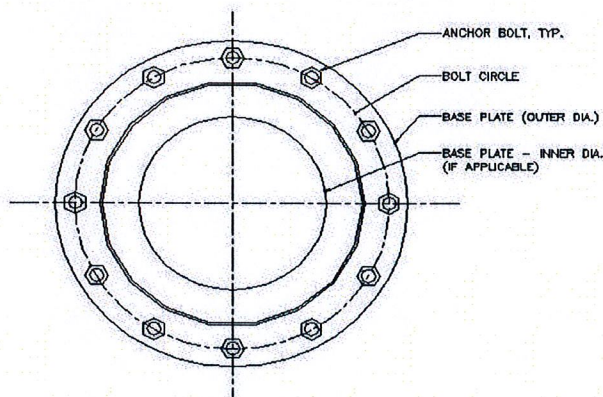
Diam:	<u>44.317</u>	(in)
Thick:	<u>0.31</u>	(in)
Grade:	<u>65</u>	(ksi)
# of Sides:	<u>18</u>	
Fu:	<u>80</u>	(ksi)

Punching Shear Capacity: n/a

Stiffener Data:

Qty:	<u>None</u>	
Wld Type:		
Groove Depth:		(in)
Groove Angle:		(degrees)
Fillet H. Weld:		(in)
Fillet V. Weld:		(in)
Width:		(in)
Height:		(in)
Thick:		(in)
Notch:		(in)
Grade:		(ksi)
Weld Str.:		(ksi)

Horizontal Weld:	n/a
Vertical Weld:	n/a
Plate Flex + Shear:	n/a
Plate Tension + Shear:	n/a
Plate Compression:	n/a



CAISSON Version 10.35 10:38:24 AM Wednesday, March 20, 2013
B&T Engineering

* * CAISSON - Pier Foundations Analysis and Design - Copyright Power Line Systems, Inc. 1993-2010 * *

Project Title: 84720.004- Shelton NE, CT (Site# 24519)
Project Notes: 140' FWT Monopole- 6' Dia, 14.5' Depth (14' Bearing)

Calculation Method: Full 8CD

***** I N P U T D A T A

Pier Properties

Diameter (ft)	Distance of Top of Pier above Ground (ft)	Concrete Strength (ksi)	Steel Yield Strength (ksi)
6.00	0.50		

Soil Properties

Layer	Type	Thickness (ft)	Depth at Top of Layer (ft)	Density (lbs/ft^3)	CU (psf)	KP	PHI (deg)
1	Clay	3.00	0.00	100.0			
2	Clay	5.50	3.00	130.0	4000.0		
3	Clay	20.00	8.50	130.0	12000.0		

Design (Factored) Loads at Top of Pier

Moment (ft-k)	Axial Load (kips)	Shear Load (kips)	Additional Safety Factor Against Soil Failure
2737.0	37.0	30.00	3.15

Soil Interaction: 2/3.15 * 100 = 63.5%

***** R E S U L T S

Calculated Pier Properties

Length (ft)	Weight (kips)	End Bearing Pressure (psf)
14.500	61.497	1308.6

Ultimate Resisting Forces Along Pier

Type	Distance of Top of Layer to Top of Pier (ft)	Thickness (ft)	Density (lbs/ft^3)	CU (psf)	KP	Force (kips)	Arm (ft)
Clay	0.50	3.00	100.0			0.00	2.00
Clay	3.50	5.50	130.0	4000.0		1056.00	6.25
Clay	9.00	1.92	130.0	12000.0		1103.65	9.96
Clay	10.92	3.58	130.0	12000.0		-2064.34	12.71

Shear and Moments Along Pier

Distance below Top of Pier (ft)	Shear (with Safety Factor) (kips)	Moment (with Safety Factor) (ft-k)	Shear (without Safety Factor) (kips)	Moment (without Safety Factor) (ft-k)
0.00	95.3	8643.6	30.3	2744.0
1.45	95.3	8781.8	30.3	2787.9
2.90	95.3	8919.9	30.3	2831.7
4.35	-67.9	8988.8	-21.6	2853.6
5.80	-346.3	8688.5	-109.9	2758.3
7.25	-624.7	7984.5	-198.3	2534.8
8.70	-903.1	6876.9	-286.7	2183.1
10.15	-1623.1	5111.6	-515.3	1622.7
11.60	-1670.4	2422.1	-530.3	768.9
13.05	-835.2	605.5	-265.1	192.2
14.50	-0.0	0.0	-0.0	0.0

Max Bending Moment: 2857.27 Kip-ft

Moment Capacity of Drilled Concrete Shaft (Caisson) for TIA Rev F or G

Note: Shaft assumed to have ties, not spiral, transverse reinforcing

Site Data

Site#: 24519
Site Name: Shelton NE, CT
County #: Fairfield

Enter Load Factors Below:

For M (WL) 1.3 <---- Enter Factor
For P (DL) 1.3 <---- Enter Factor

Pier Properties

Concrete:

Pier Diameter = 6.0 ft
Concrete Area = 4071.5 in²

Reinforcement:

Clear Cover to Tie = 3.00 in
Horiz. Tie Bar Size = 4
Vert. Cage Diameter = 5.30 ft
Vert. Cage Diameter = 63.59 in
Vertical Bar Size = 11
Bar Diameter = 1.41 in
Bar Area = 1.56 in²
Number of Bars = 26
As Total = 40.56 in²
A s/ Aconc, Rho: 0.0100 1.00%

ACI 10.5, ACI 21.10.4, and IBC 1810.

Min As for Flexural, Tension Controlled, Shafts:

(3)*(Sqrt(fc)/Fy: 0.0032
200 / Fy: 0.0033

Minimum Rho Check:

Actual Req'd Min. Rho: 0.33% Flexural
Provided Rho: 1.00% **OK**

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = ($\phi=0.65$) Pn:		
Pn per ACI 318 (10-2)	8392.18	kips
at Mu=($\phi=0.65$)Mn=	4351.05	ft-kips
Max Tu, ($\phi=0.9$) Tn =	2190.24	kips
at Mu= $\phi=(0.90)$ Mn=	0.00	ft-kips

Maximum Shaft Superimposed Forces

TIA Revision: F
Max. Service Shaft M: 2857.27 ft-kips (* Note)
Max. Service Shaft P: 37 kips
Max Axial Force Type: Comp.

(* Note: Max Shaft Superimposed Moment does not necessarily equal to the shaft top reaction moment

Load Factor	Shaft Factored Loads
1.30	Mu: 3714.451 ft-kips
1.30	Pu: 48.1 kips

Material Properties

Concrete Comp. strength, f_c = 4000 psi
Reinforcement yield strength, F_y = 60 ksi
Reinforcing Modulus of Elasticity, E = 29000 ksi
Reinforcement yield strain = 0.00207
Limiting compressive strain = 0.003

ACI 318 Code

Select Analysis ACI Code= 2008

Seismic Properties

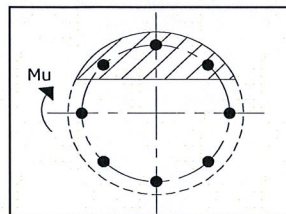
Seismic Design Category = D
Seismic Risk = High

Solve
(Run)

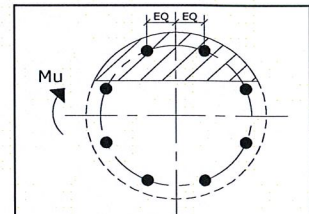
<-- Press Upon Completing All Input

Results:

Governing Orientation Case: 1



Case 1



Case 2

Dist. From Edge to Neutral Axis: 13.22 in

Extreme Steel Strain, ϵ_t : 0.0124

$\epsilon_t > 0.0050$, Tension Controlled

Reduction Factor, ϕ : 0.900

Output Note: Negative Pu=Tension

For Axial Compression, ϕ Pn = Pu: 48.10 kips
Drilled Shaft Moment Capacity, ϕ Mn: 5355.67 ft-kips
Drilled Shaft Superimposed Mu: 3714.45 ft-kips

(Mu/ ϕ Mn, Drilled Shaft Flexure CSR: 69.4%

Analysis Date: 3/20/2013



Know what's below.
Call before you dig.

APPROVALS			
SPRINT REPRESENTATIVES	DATE	☐	☐
SPRINT RF ENGINEER	DATE	☐	☐
SITE OWNER	DATE	☐	☐
	DATE	☐	☐

Sprint[®]

SITE ID: CT43XC864
SITE NAME: BRENNAN-AT&T



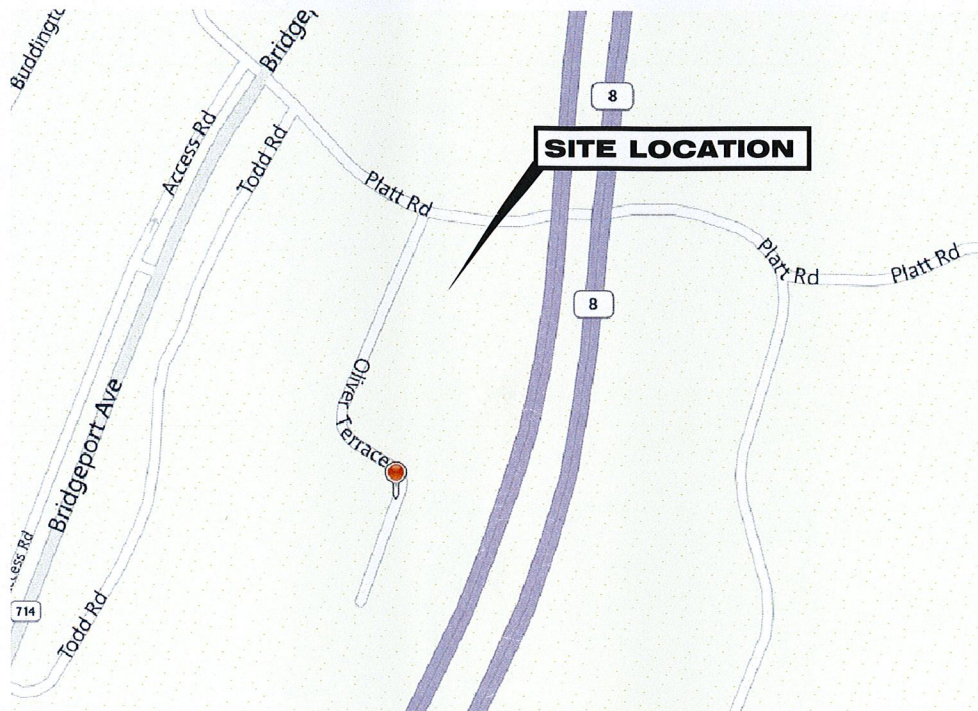
THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE, FOUNDATION, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. FURTHERMORE KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PHYSICALLY CONFIRM THE EXISTING MOUNT CONFIGURATION AND PERFORM A STRUCTURAL ANALYSIS TO VERIFY THAT THE EXISTING, INTERIM AND PROPOSED ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT CAN BE SAFELY SUPPORTED. 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, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT. 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

SITE INFORMATION

BLOCK TBD
LOT TBD
MAP TBD
ZONING CLASSIFICATION TBD
ZONING JURISDICTION TBD

PROJECT INFORMATION:

SITE ADDRESS:
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

COORDINATES:
LATITUDE: N 41° 17' 36.99" DATUM: NAD 83
LONGITUDE: W 73° 06' 24.99"

STRUCTURE HEIGHT:
±140'-0" (TOP OF MONOPOLE)

PROJECT DIRECTORY:

PROPERTY OWNER:
AT&T WIRELESS SERVICES INC
BRENNAN REALTY LLC

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

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

POWER COMPANY:
CONNECTICUT LIGHT & POWER
P.O. BOX 270
HARTFORD, CT 06141-0270
(800) 286-2000

CONSTRUCTION MANAGER:
TODD AMANN
(914) 715-9363

NOTE:
THE MODIFICATIONS DESIGNED 12/28/12 BY B+T GROUP MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION.

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	RRH PLANS & DETAILS (ALL SECTORS)
C05	SITE DETAILS
C06	RF SCHEDULE
C06A	RF DATA SHEET
C06B	TOWER MOUNTED RRH CONNECTIONS
C07	AAV DRAWINGS - SITE PHOTOS
C07A	AAV DRAWINGS - KEY & EQUIPMENT PLAN
C07B	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:

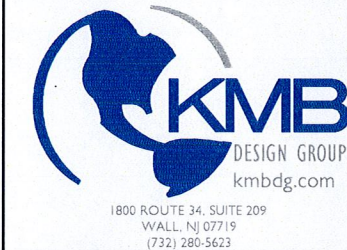
State Building Code: 2005 Connecticut Supplement

2003 International Building Code
2003 International Residential Code
2003 International Existing Building Code
2003 International Mechanic Code
2003 International Plumbing Code
2003 International Energy Conservation Code (re-adopted with changes)
ICC/ANSI A117.1-2003 Assessible and Usable Buildings and Facilities

2005 National Electrical Code (NFPA-70)

DRIVING DIRECTIONS

- Depart 1 International BLVD, Mahwah, NJ 07495
- Take 3rd exit from roundabout International Blvd onto Leisure Ln
- Take ramp onto State Highway 17 (RT-17 N)
- Continue on I-287 N
- Take the I-87 S/I-287/New York State Thruway South/Tappan Zee Br/New York City exit onto New York State Thruway South (I-287 E, I-87 S) (partial toll road)
- Keep left onto Cross Westchester Expy (I-287 E) at exit #8 toward White Plains/Rye
- Take exit #9S-N/Hutchinson Pkwy/Whitestone Br/Merritt Pkwy onto Westchester Ave (CR-62 E)
- Take exit #9N/Hutchinson Pkwy North/Merritt Pkwy onto Hutchinson River Pky N. 33.7 mi/54.2 kmContinue on Merritt Pky (CT-15 N)
- Take exit #52/CT-8 N/Waterbury onto CT-8 N. 0.2 mi/304 mTake exit #12/Old Stratford Road
- Turn left onto Old Stratford Rd
- Turn right onto Bridgeport Ave (CT-714)
- Turn right onto Platt Rd. Your destination on Platt Rd is on the right



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER
332.1526

SITE INFORMATION:
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

CT43XC864

DESIGN TYPE:
COLOCATION

DRAWN BY: CCR CHECKED BY: DATE: 04-05-12

SHEET TITLE:
COVER SHEET

SHEET NUMBER: REV.:

A01

0

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.

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 ($\pm 1.5\%$) 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 manufacturer's 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 through 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.

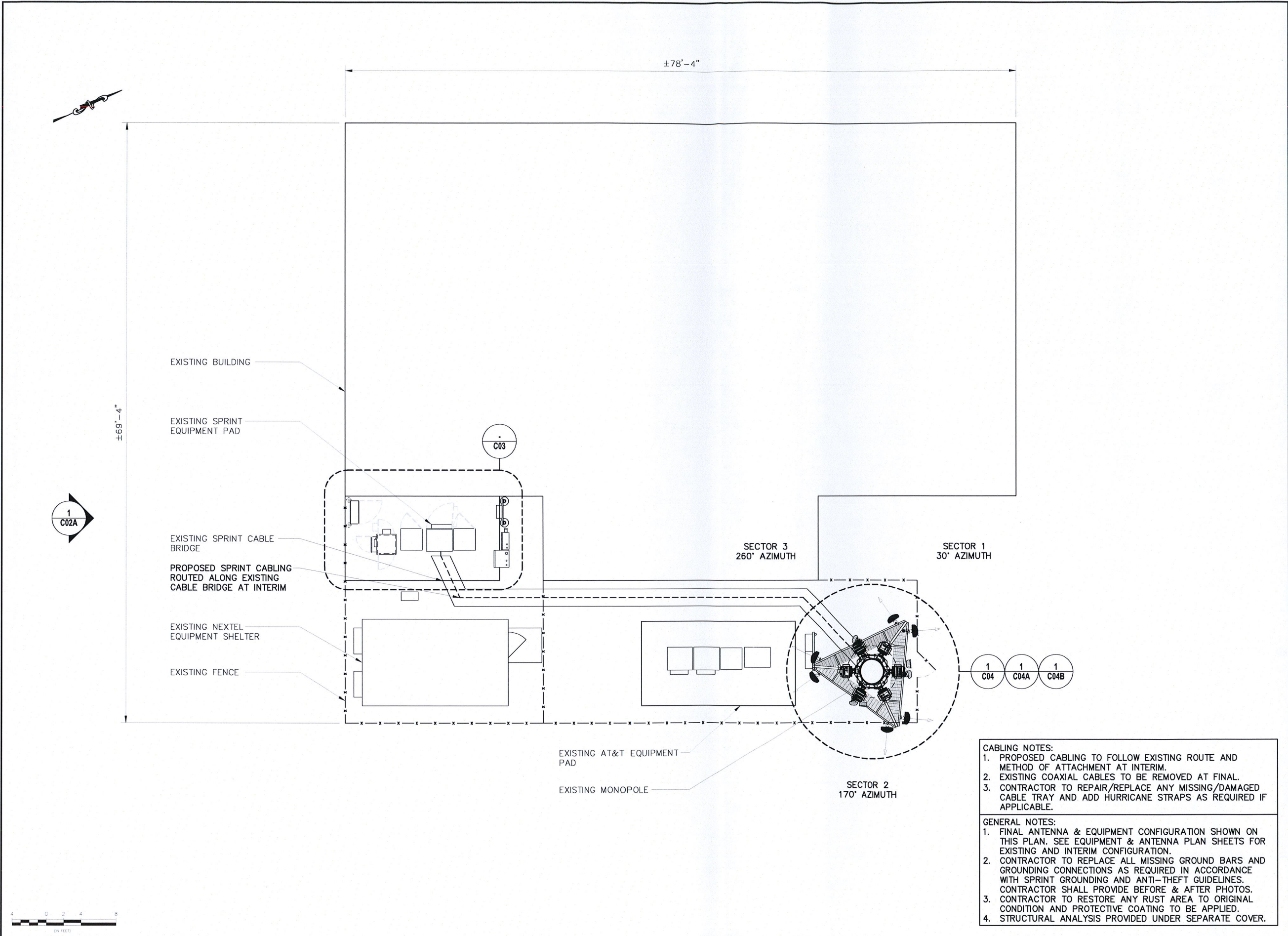
1. Codes and specifications:
 - A. The fabrication/erection shall conform to the requirements of the following codes and specifications, latest edition, unless otherwise noted:
 - The local building code.
 - AISC-specification for structural steel buildings, allowable stress design, 1989.
 - ASTM A992 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.



A circular blue ink seal for a Professional Engineer in the State of Connecticut. The outer ring contains the text "STATE OF CONNECTICUT" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. Inside the ring, the name "STEVEN A. BRAY" is at the top and "LICENSED" is at the bottom. In the center is a crest featuring a shield with a ship, a plow, and a sheaf of wheat, topped by a sunburst. Below the crest is the license number "No. 26657". A handwritten signature in blue ink is written across the center of the seal.

0

OWNERSHIP OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF KMB DESIGN GROUP, LLC AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR OTHER PROJECTS WITHOUT THE WRITTEN AUTHORIZATION OF KMB DESIGN GROUP, LLC. IT IS UNLAWFUL FOR ANY PERSON TO REPRODUCE OR TRANSMIT ANY PART OF THESE DRAWINGS OR ANY INFORMATION CONTAINED HEREIN WITHOUT THE WRITTEN AUTHORIZATION OF KMB DESIGN GROUP, LLC.



- 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 IN ACCORDANCE WITH SPRINT GROUNDING AND ANTI-THEFT GUIDELINES. 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.



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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER:
332.1526

SITE INFORMATION:
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY
CT43XC864

DESIGN TYPE:
COLOCATION

DRAWN BY: CCR	CHECKED BY:	DATE: 04-05-12
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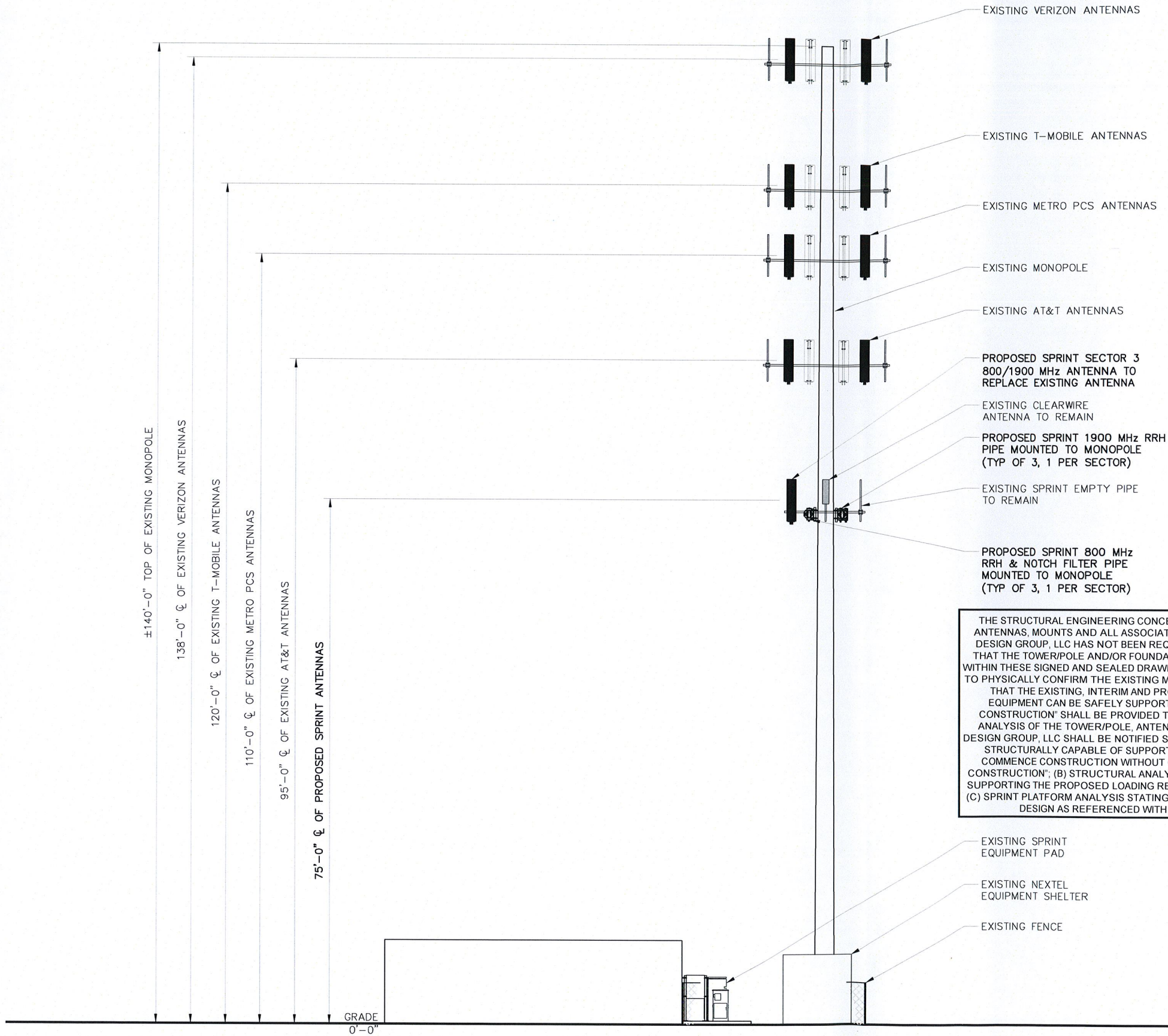
SHEET TITLE:
COMPOUND PLAN

SHEET NUMBER: C02	REV.: 0
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1
11x17 SCALE: 3/32" = 1'-0"
24x36 SCALE: 3/16" = 1'-0"

K:\332_Sprint_332.1000_Alcatel-Lucent\332.1526_Construction\332.1526_C02.dwg, 4/24/2013 7:14:37 AM, ccretu

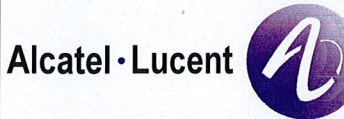
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THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE, FOUNDATION, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL 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. FURTHERMORE KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PHYSICALLY CONFIRM THE EXISTING MOUNT CONFIGURATION AND PERFORM A STRUCTURAL ANALYSIS TO VERIFY THAT THE EXISTING, INTERIM AND PROPOSED ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT CAN BE SAFELY SUPPORTED. 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, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT. 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.

NOTE:
THE MODIFICATIONS DESIGNED 12/28/12 BY B+T GROUP MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION.

NOTES:
1. FINAL ANTENNA & EQUIPMENT CONFIGURATION SHOWN ON THIS PLAN. SEE EQUIPMENT & ANTENNA PLAN SHEETS FOR EXISTING AND INTERIM CONFIGURATION.



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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER
332.1526

SITE INFORMATION:
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

CT43XC864

DESIGN TYPE:
COLOCATION

DRAWN BY: CCR CHECKED BY: DATE: 04-05-12

SHEET TITLE:
ELEVATION

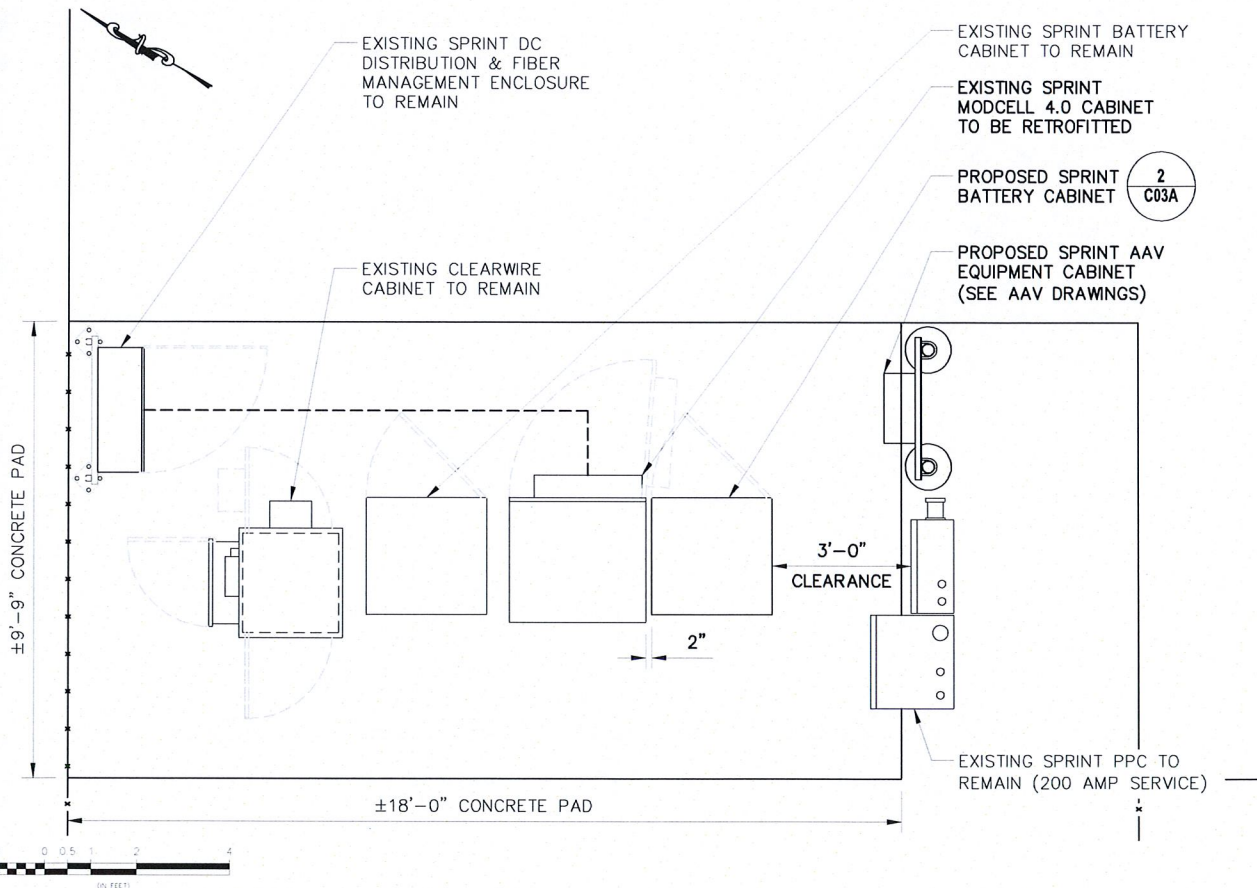
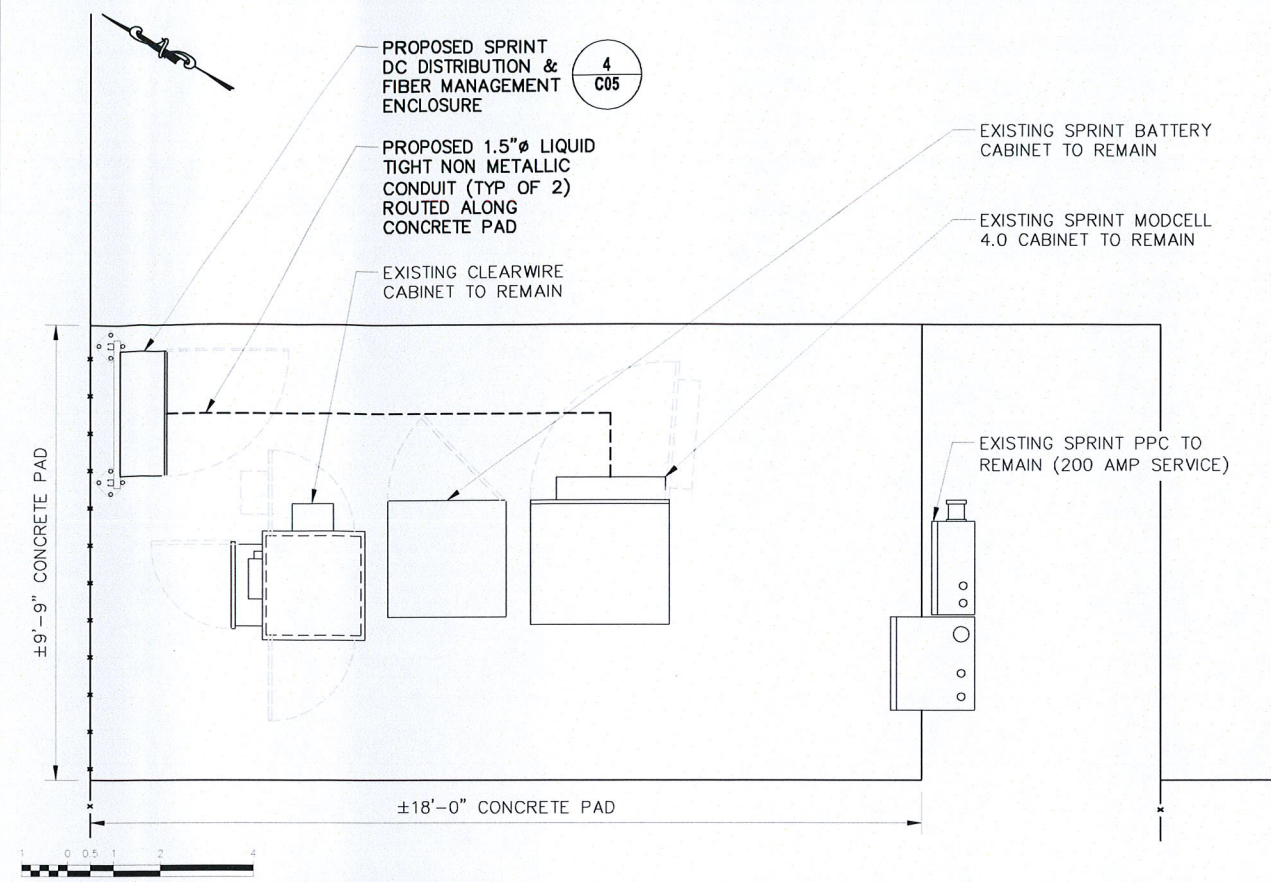
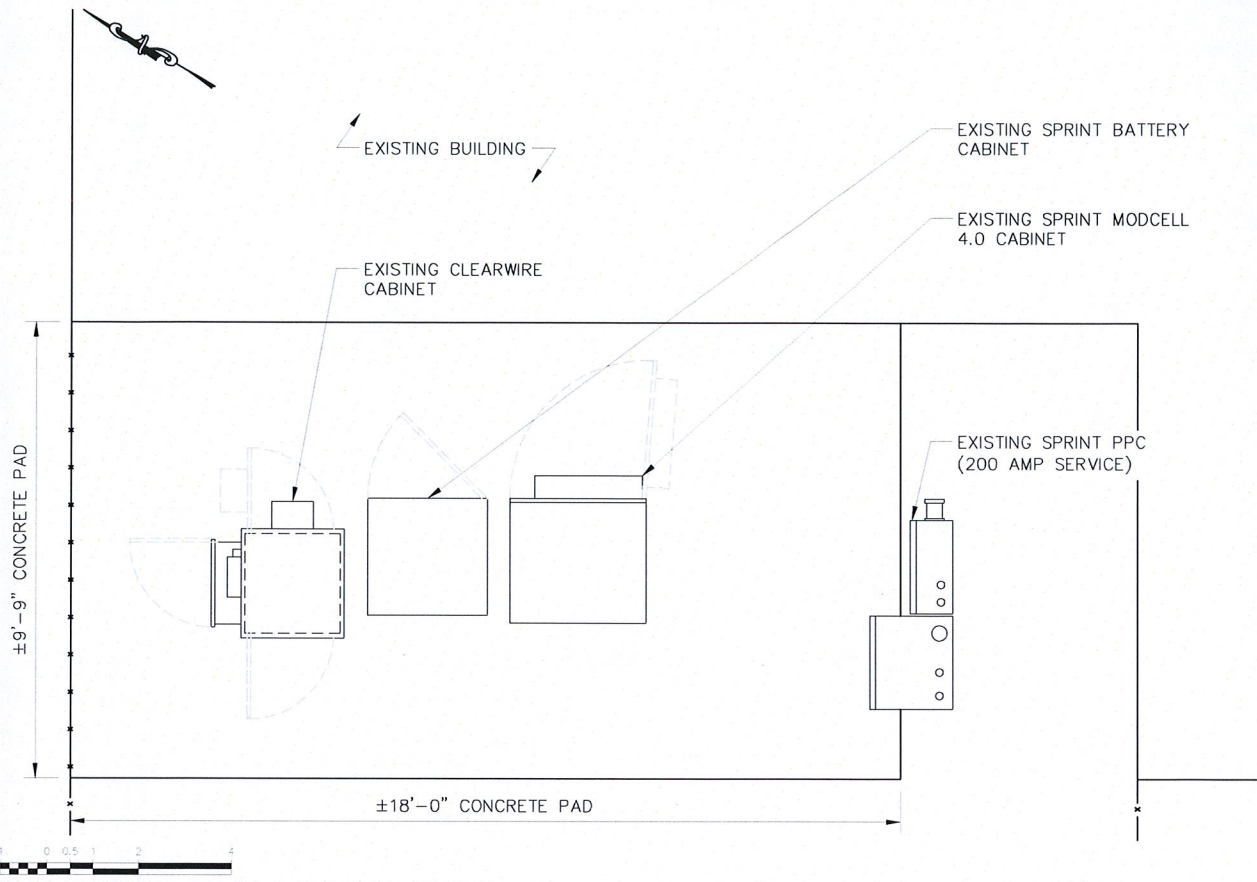
SHEET NUMBER: REV.:

C02A 0

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

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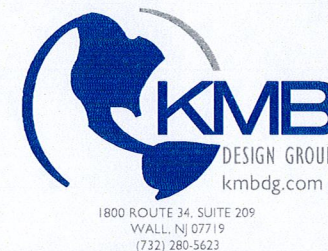
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NOTE:
1. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED IN ACCORDANCE WITH SPRINT GROUNDING AND ANTI-THEFT GUIDELINES. CONTRACTOR SHALL PROVIDE BEFORE & AFTER PHOTOS.



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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray
PROFESSIONAL ENGINEER



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PROJECT NUMBER:
332.1526

SITE INFORMATION:
70 PLATT ROAD
SHELTON, CT 06484
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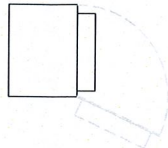
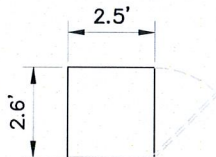
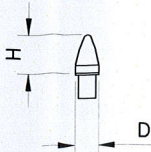
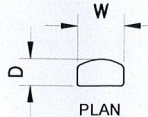
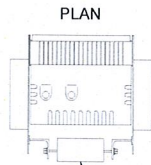
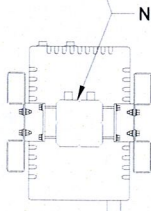
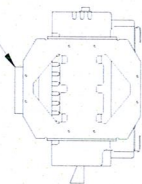
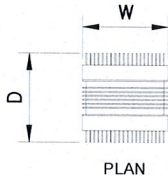
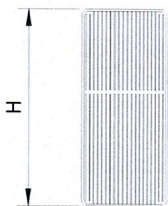
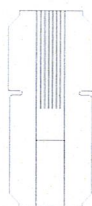
DESIGN TYPE:
COLOCATION

DRAWN BY: CCR	CHECKED BY:	DATE: 04-05-12
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SHEET TITLE:
EQUIPMENT PLANS

SHEET NUMBER: C03	REV.: 0
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 RETROFITTED EQUIPMENT CABINET CABINET WEIGHT: 1074 lbs		 AVAYA 60ECv2 BATTERY CABINET CABINET WEIGHT: 2830 lbs FOOTPRINT: 6.5 SF		 MANUF.: PCTEL MODEL #: GPS-TMG-HR-26NCM HEIGHT: 5.0" DIAMETER: 3.2" WEIGHT: 0.6 lbs		SPECIFICATIONS TO BE PROVIDED			
1RETROFITTED EQUIPMENT CABINET		2BATTERY CABINET SPECIFICATION		3GPS UNIT SPECIFICATIONS		4ANTENNA SPECIFICATIONS - CDMA			
SCALE: NTS		11x17 SCALE: 3/16" = 1'-0"		24x36 SCALE: 3/8" = 1'-0"		11x17 SCALE: 1/4" = 1'-0"		24x36 SCALE: 1/2" = 1'-0"	
DETAIL NOT USED		DETAIL NOT USED		 MANUF.: RFS MODEL: APXVSP18-C-A20 LENGTH: 72.0" WIDTH: 11.8" DEPTH: 7.0" WEIGHT: 64.5 lbs AREA: 5.9 SF		DETAIL NOT USED			
5		6		7ANTENNA SPECIFICATIONS - 800/1900 MHz		8			
				SCALE: NTS					
 MANUF.: ALCATEL-LUCENT MODEL #: 800MHZ 2x50W HEIGHT: 15.7" WIDTH: 13.0" DEPTH: 9.8" WEIGHT: ±53 lbs 800MHZ NOTCH FILTER: HEIGHT: 8.9" WIDTH: 8.9" DEPTH: 3.9" WEIGHT: ±11 lbs   FRONT ELEVATION SIDE		 MANUF.: ALCATEL LUCENT MODEL #: 1900MHz (65MHz) HEIGHT: 25.0" (25") WIDTH: 11.1" (12.4") DEPTH: 11.4" (12.2") WEIGHT: ±60.0 lbs DIMENSIONS IN PARENTHESIS INCLUDE OPTIONAL SOLAR SHIELD   FRONT ELEVATION SIDE		DETAIL NOT USED					
9RRH SPECIFICATIONS - 800 MHz		10RRH SPECIFICATIONS - 1900 MHz		11					
11x17 SCALE: 1/2" = 1'-0"		24x36 SCALE: 1" = 1'-0"		11x17 SCALE: 1/2" = 1'-0"		24x36 SCALE: 1" = 1'-0"			

	
	
	
	
	
	
	
	
	
	
REV.	DATE
ISSUED FOR CONSTRUCTION	CCR
REVISION DESCRIPTION	CHKD. BY
DRAWN BY	BY
 1800 ROUTE 34, SUITE 209 WALL, NJ 07719 (732) 280-5623	
Stephen A. Bray PROFESSIONAL ENGINEER 	
CT LICENSE: 266574/24/13	
PROJECT NUMBER: 332.1526	
SITE INFORMATION: 70 PLATT ROAD SHELTON, CT 06484 FAIRFIELD COUNTY CT43XC864	
DESIGN TYPE: COLOCATION	
DRAWN BY: CCR	CHECKED BY: DATE: 04-05-12
SHEET TITLE: EQUIPMENT & ANTENNA SPECIFICATIONS	
SHEET NUMBER: C03A	REV.: 0



EXISTING SPRINT SINGLE
POLE CDMA ANTENNA

SECTOR 3
230° AZIMUTH

EXISTING CLEARWIRE
ANTENNA

EXISTING SPRINT SINGLE
POLE CDMA ANTENNA

EXISTING SPRINT SINGLE
POLE CDMA ANTENNA

EXISTING CLEARWIRE
ANTENNA

EXISTING SPRINT GPS
UNIT

EXISTING SPRINT SINGLE
POLE CDMA ANTENNA

SECTOR 1
20° AZIMUTH

EXISTING CLEARWIRE
DISH ANTENNA

EXISTING CLEARWIRE
ANTENNA

EXISTING MONOPOLE

EXISTING SPRINT SINGLE
POLE CDMA ANTENNA

EXISTING SPRINT SINGLE
POLE CDMA ANTENNA

EXISTING CLEARWIRE
DISH ANTENNA

SECTOR 2
120° AZIMUTH

±5'-0"
TYP



1

EXISTING ANTENNA PLAN @ ±75'-0" AGL (ALL SECTORS)

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

24x36 SCALE: 1" = 1'-0"



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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER:
332.1526

SITE INFORMATION:
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY
CT43XC864

DESIGN TYPE:
COLOCATION

DRAWN BY: CCR	CHECKED BY:	DATE: 04-05-12
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SHEET TITLE:
**EXISTING ANTENNA PLAN
(ALL SECTORS)**

SHEET NUMBER: C04	REV.: 0
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OWNERSHIP OF DOCUMENTS: THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF KMB DESIGN GROUP, LLC AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR OTHER PROJECTS WITHOUT THE WRITTEN AUTHORIZATION OF KMB DESIGN GROUP, LLC. IT IS UNLAWFUL FOR ANY PERSON TO AMEND ANY ASPECT OF THESE DRAWINGS UNLESS THEY HAVE THE APPROVAL OF THE LICENSED PROFESSIONAL IN WRITING.

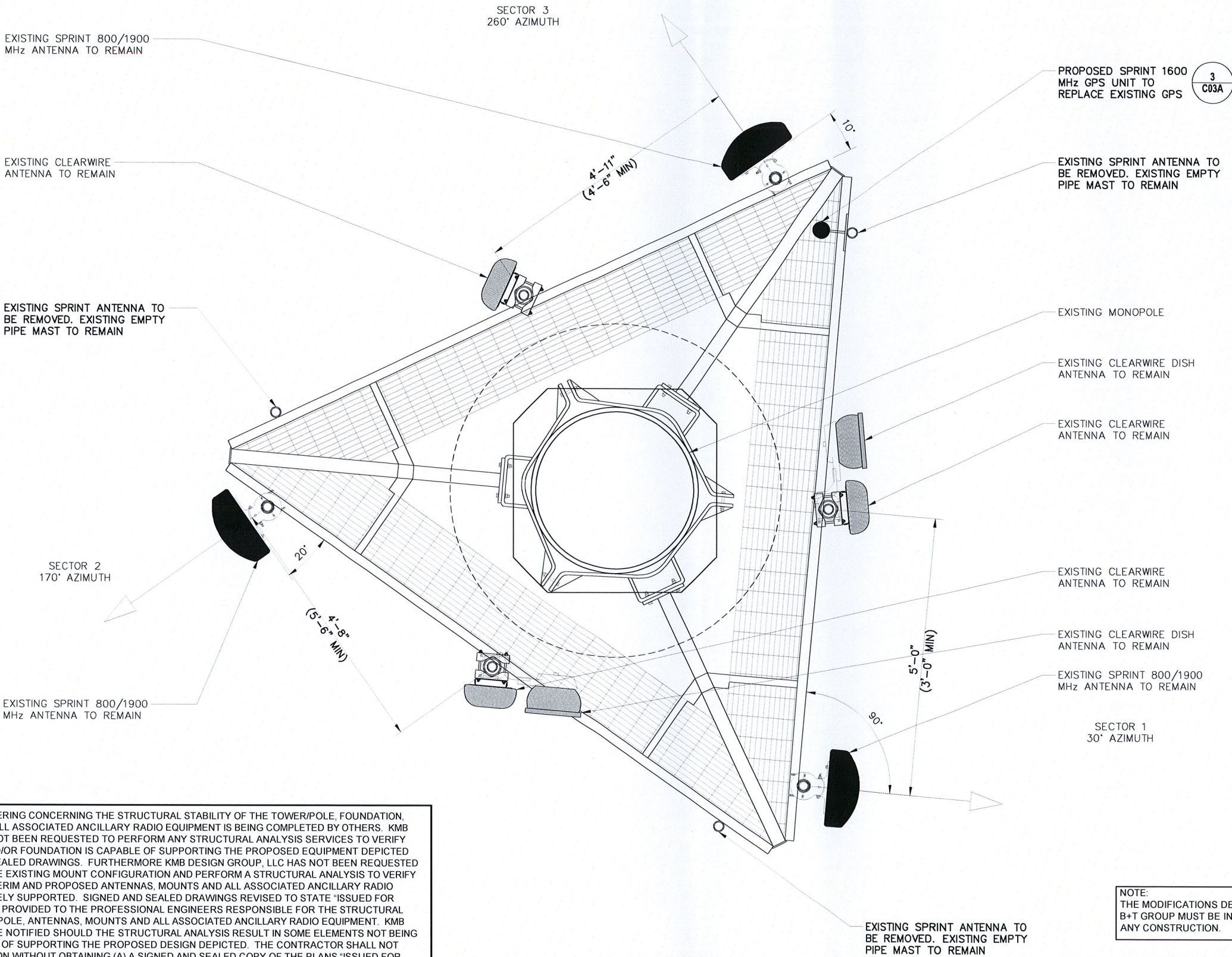
THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE, FOUNDATION, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT IS BEING COMPLETED BY OTHERS. KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PERFORM ANY STRUCTURAL ANALYSIS SERVICES TO VERIFY THAT THE TOWER/POLE AND/OR FOUNDATION IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT DEPICTED WITHIN THESE SIGNED AND SEALED DRAWINGS. FURTHERMORE KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PHYSICALLY CONFIRM THE EXISTING MOUNT CONFIGURATION AND PERFORM A STRUCTURAL ANALYSIS TO VERIFY THAT THE EXISTING, INTERIM AND PROPOSED ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT CAN BE SAFELY SUPPORTED. 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, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT. 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 @ ±75'-0" AGL (ALL SECTORS)

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

24x36 SCALE: 1" = 1'-0"



NOTE:
THE MODIFICATIONS DESIGNED 12/28/12 BY B+T GROUP MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION.

- NOTE:
- CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED IN ACCORDANCE WITH SPRINT GROUNDING AND ANTI-THEFT GUIDELINES. CONTRACTOR SHALL PROVIDE BEFORE & AFTER PHOTOS.
 - SEE DETAIL 1/C04C FOR RRR MOUNT DETAILS.

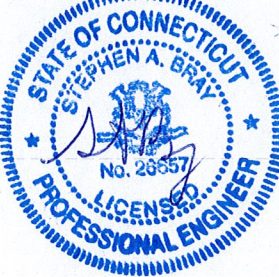
Sprint

Alcatel-Lucent

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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY

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

Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER
332.1526

SITE INFORMATION:
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

CT43XC864

DESIGN TYPE:
COLOCATION

DRAWN BY: CCR	CHECKED BY:	DATE: 04-05-12
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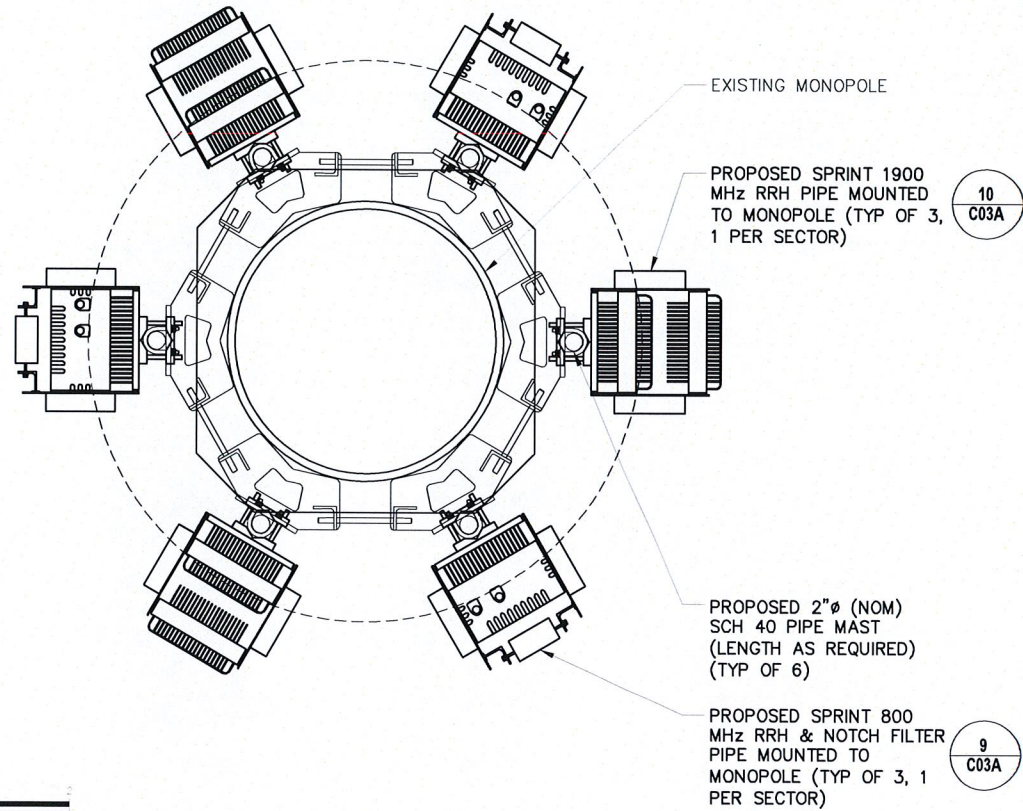
SHEET TITLE:
FINAL ANTENNA PLAN
(ALL SECTORS)

SHEET NUMBER:	REV.:
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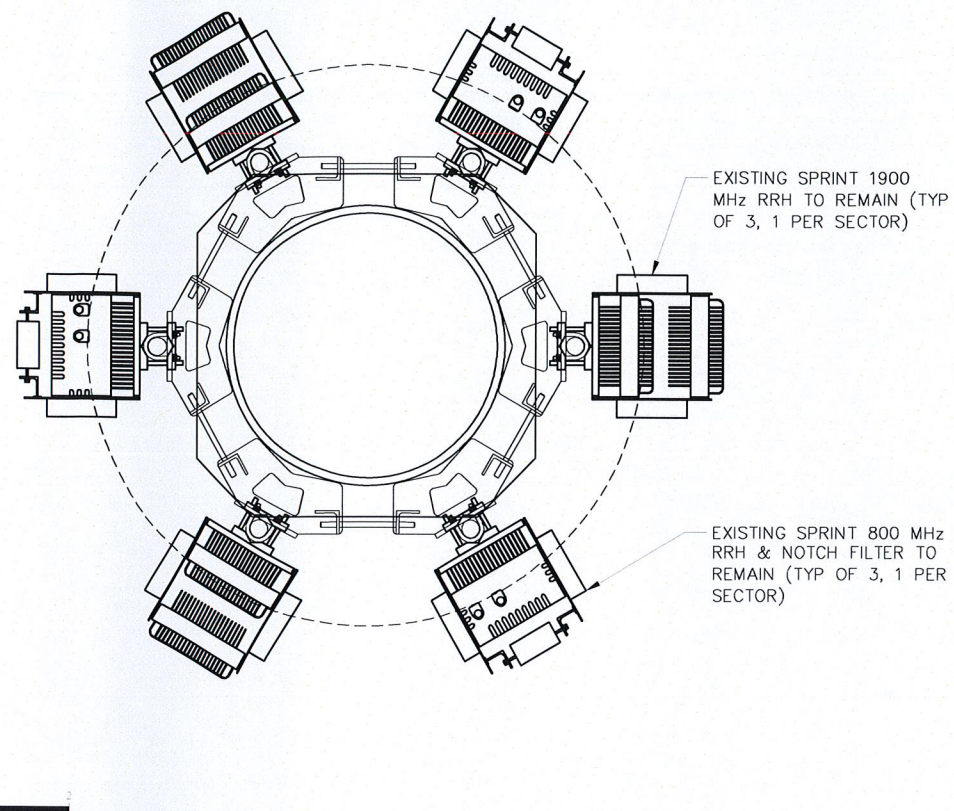
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1 INTERIM RRH PLAN @ ±73'-0" AGL (ALL SECTORS)

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

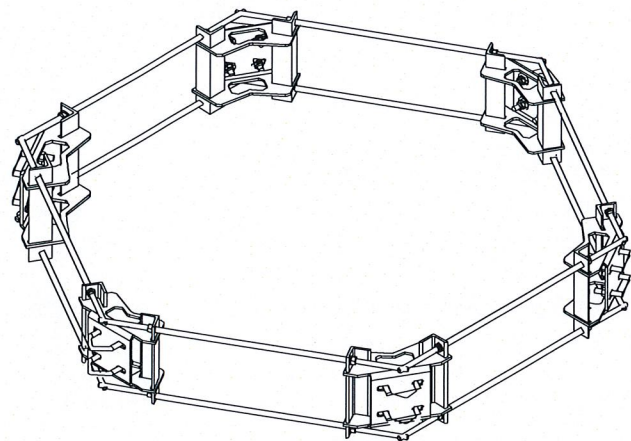
24x36 SCALE: 1" = 1'-0"



2 FINAL RRH PLAN @ ±73'-0" AGL (ALL SECTORS)

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

24x36 SCALE: 1" = 1'-0"



3 RRH MOUNT DETAIL

SCALE: NTS

THE STRUCTURAL ENGINEERING CONCERNING THE STRUCTURAL STABILITY OF THE TOWER/POLE, FOUNDATION, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT 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. FURTHERMORE KMB DESIGN GROUP, LLC HAS NOT BEEN REQUESTED TO PHYSICALLY CONFIRM THE EXISTING MOUNT CONFIGURATION AND PERFORM A STRUCTURAL ANALYSIS TO VERIFY THAT THE EXISTING, INTERIM AND PROPOSED ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT CAN BE SAFELY SUPPORTED. 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, ANTENNAS, MOUNTS AND ALL ASSOCIATED ANCILLARY RADIO EQUIPMENT. 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.

NOTE:
THE MODIFICATIONS DESIGNED 12/28/12 BY B+T GROUP MUST BE INSTALLED PRIOR TO ANY CONSTRUCTION.

NOTE:
1. CONTRACTOR TO REPLACE ALL MISSING GROUND BARS AND GROUNDING CONNECTIONS AS REQUIRED IN ACCORDANCE WITH SPRINT GROUNDING AND ANTI-THEFT GUIDELINES. CONTRACTOR SHALL PROVIDE BEFORE & AFTER PHOTOS.

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Alcatel-Lucent

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REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY

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

Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER
332.1526

SITE INFORMATION
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY
CT43XC864

DESIGN TYPE
COLOCATION

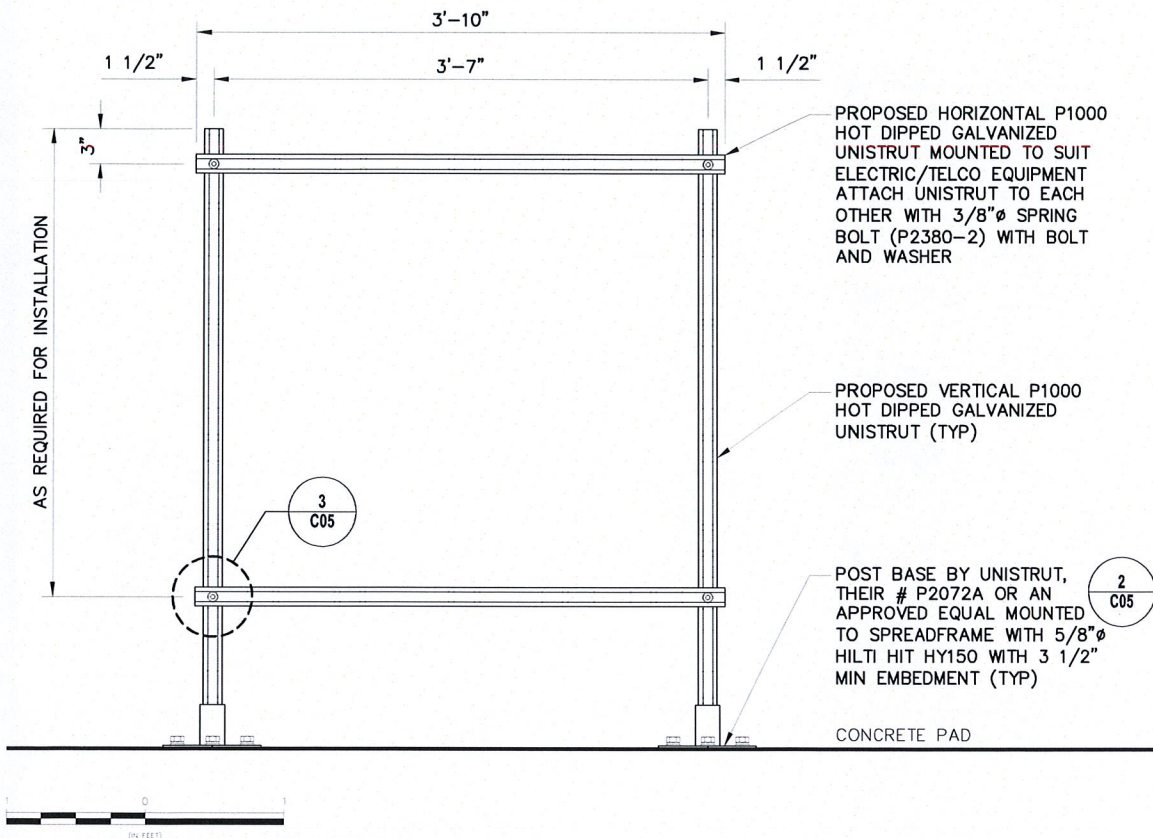
DRAWN BY: CCR CHECKED BY: DATE: 04-05-12

SHEET TITLE
RRH PLANS & DETAILS
(ALL SECTORS)

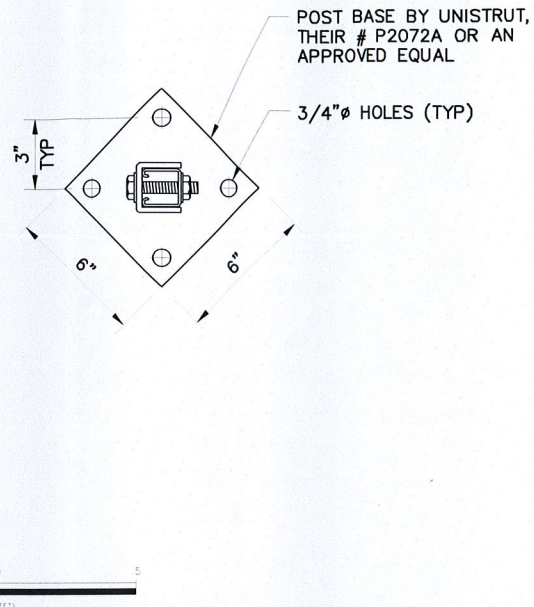
SHEET NUMBER
C04C
REV.: 0

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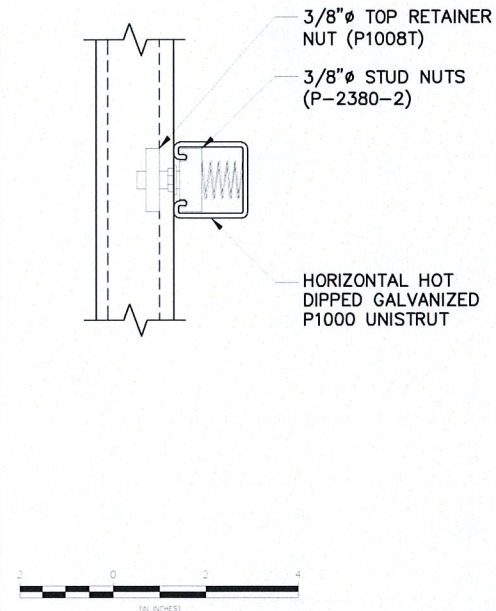
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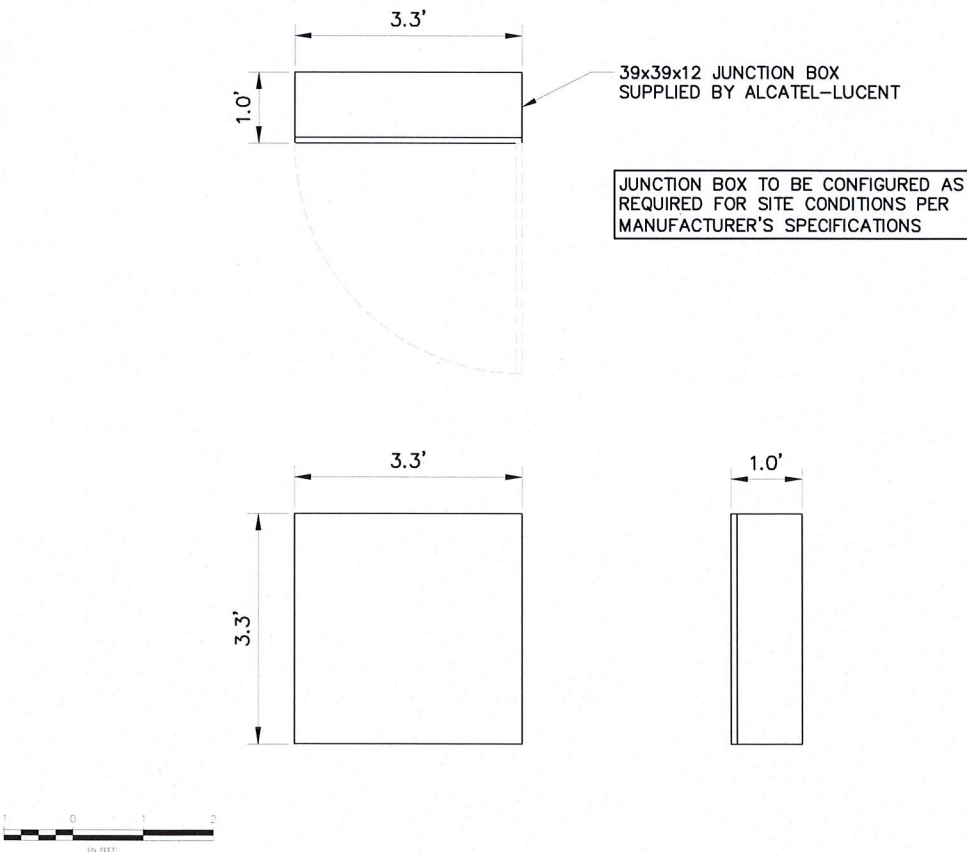
1 UNISTRUT BACKBOARD ELEVATION
11x17 SCALE: 3/4" = 1'-0" 24x36 SCALE: 1 1/2" = 1'-0"



2 POST BASE DETAIL
11x17 SCALE: 1 1/2" = 1'-0" 24x36 SCALE: 3" = 1'-0"



3 UNISTRUT CONNECTION DETAIL
11x17 SCALE: 3" = 1'-0" 24x36 SCALE: 6" = 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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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
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FAIRFIELD COUNTY

CT43XC864

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COLOCATION

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SHEET TITLE:
SITE DETAILS

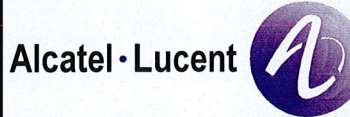
SHEET NUMBER: REV.:

C05 0

FINAL ANTENNA AND CABLE SCHEDULE																		
SECTOR	ANTENNA	AZIMUTH (DEGREES)	MECHANICAL DT (DEGREES)	ELECTRICAL DT (DEGREES)		RAD CENTER AGL (FT)	ANTENNA		RRH		TOP COAX JUMPER		COMBINER JUMPER		NOTCH FILTER JUMPER		HYBRIFLEX LENGTH (FT)	PLUMBING SCENARIO
							MAKE	MODEL	QTY	QTY	LENGTH (FT)	QTY	LENGTH (FT)	QTY	LENGTH (FT)			
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	124	
	CW																	
	800/1900	30	0	800 -8	1900 -4	75.0	RFS	APXVSPP18-C-A20	800 1	1900 1	6	10	-	-	1			3
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	124	
	CW																	
	800/1900	170	0	800 0	1900 0	75.0	RFS	APXVSPP18-C-A20	800 1	1900 1	6	10	-	-	1			3
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	150	124	
	CW																	
	800/1900	260	0	800 -4	1900 -1	75.0	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.





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04-24-13

ISSUED FOR CONSTRUCTION

CCR

KCD

REV.

DATE

REVISION DESCRIPTION

DRAWN BY

CHKD. BY



1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray

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SHELTON, CT 06484
FAIRFIELD COUNTY

CT43XC864

DESIGN TYPE

COLOCATION

DRAWN BY: CCR

CHECKED BY:

DATE: 04-05-12

SHEET TITLE

RF SCHEDULE

SHEET NUMBER

REV.

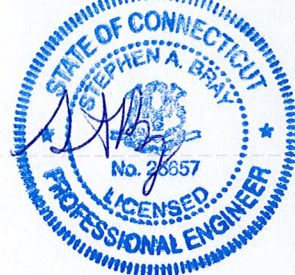
C06

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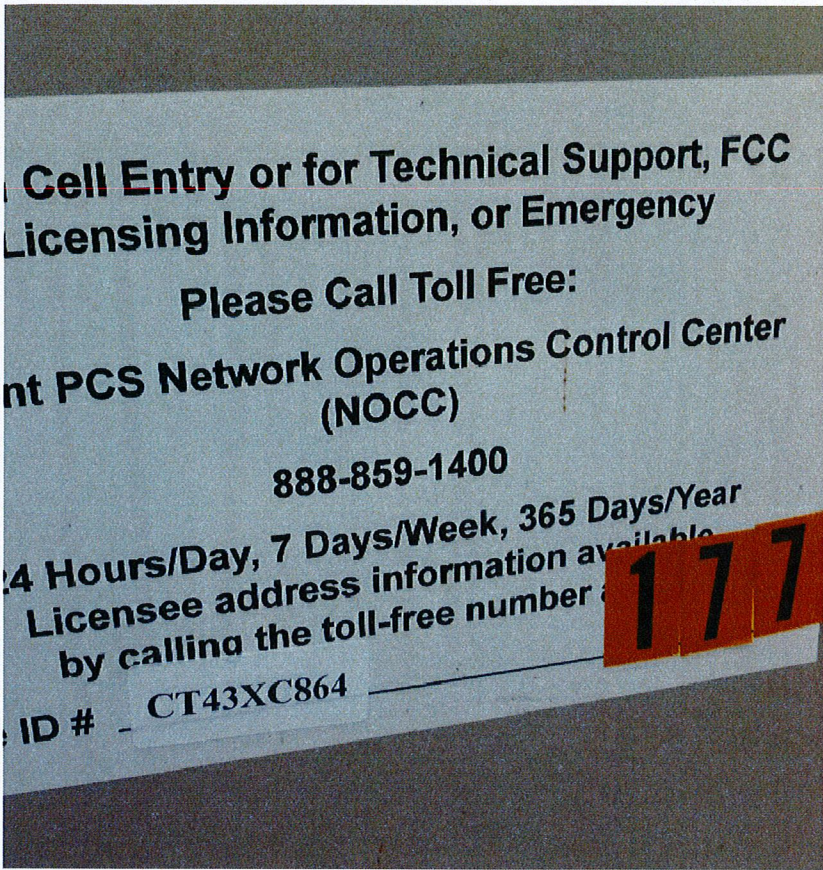
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Market Southern Connecticut				
Cascade ID CT43XC864				
		SECTOR 1	SECTOR 2	SECTOR 3
Split sector present		No	No	No
1900	1900MHz_Azimuth	30	170	260
	1900MHz_No_of_Antennas	1	1	1
	1900MHz_RADCenter(ft)	75	75	75
	1900MHz_Antenna Make	RFS	RFS	RFS
	1900MHz_Antenna Model	APXVSP18-C-A20	APXVSP18-C-A20	APXVSP18-C-A20
	1900MHz_Horizontal_Beam width	65	65	65
	1900MHz_Vertical_Beam width	5.5	5.5	5.5
	1900MHz_AntennaHeight (ft)	6	6	6
	1900MHz_AntennaGain(dBd)	15.9	15.9	15.9
	1900MHz_E_Tilt	-4	0	-1
	1900MHz_M_Tilt	0	0	0
	1900MHz_Carrier_Forecast_Year_2013	4	4	4
	1900MHz_RRH Manufacturer	ALU	ALU	ALU
	1900MHz_RRH Model	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz
	1900MHz_RRH Count	1	1	1
	1900MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
	1900MHz Combiner Model	No Combiner Required	No Combiner Required	No Combiner Required
	1900MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna for TT or Main Coax to	10	10	10
	1900MHz_Top_Jumper #1_Cable_Model (RRH or Combiner-to-Antenna for TT or Main Coax	LCF12-50J	LCF12-50J	LCF12-50J
	1900MHz_Top_Jumper #2_Length (RRH to Combiner for TT if applicable, ft)	N/A	N/A	N/A
	1900MHz_Top_Jumper #2_Cable_Model (RRH to Combiner for TT if applicable)	N/A	N/A	N/A
	1900MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
	1900MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #1_Length (Ground based RRH to Combiner-OR-Main Coax, ft)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #1_Cable_Model (Ground based RRH to Combiner-OR-Main Coax)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #2_Length (Ground based-Combiner to Main Coax, ft)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #2_Cable_Model (Ground based-Combiner to Main Coax)	N/A	N/A	N/A
800	800MHz_Azimuth	30	170	260
	800MHz_No_of_Antennas	0	0	0
	800MHz_RADCenter(ft)	75	75	75
	800MHz_AntennaMake	RFS	RFS	RFS
	800MHz_AntennaModel	APXVSP18-C-A20 (Shared w/1900)	APXVSP18-C-A20 (Shared w/1900)	APXVSP18-C-A20 (Shared w/1900)
	800MHz_Horizontal_Beam width	65	65	65
	800MHz_Vertical_Beam width	11.5	11.5	11.5
	800MHz_AntennaHeight (ft)	6	6	6
	800MHz_AntennaGain (dBd)	13.4	13.4	13.4
	800MHz_E_Tilt	-8	0	-4
	800MHz_M_Tilt	0	0	0
	800MHz_RRH Manufacturer	ALU	ALU	ALU
	800MHz_RRH Model	RRH 800 MHz 2x50W	RRH 800 MHz 2x50W	RRH 800 MHz 2x50W
	800MHz_RRH Count	1	1	1
	800MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
	800_Top_Jumper #1_Length (RRH to Antenna for TT or Main Coax to Antenna for GM)	10	10	10
	800_Top_Jumper_Cable_Model (RRH to Antenna for TT or Main Coax to Antenna for GM)	LCF12-50J	LCF12-50J	LCF12-50J
	800MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
	800MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
	800_Bottom_Jumper #1_Length (Ground based RRH to Main Coax)	N/A	N/A	N/A
	800_Bottom_Jumper #1_Cable_Model (Ground based RRH to Main Coax)	N/A	N/A	N/A
Comments	Plumbing Scenario *	124	124	124
	* If plumbing scenario does not match the material received, please contact your Construction Manager			
	11/9/2012			

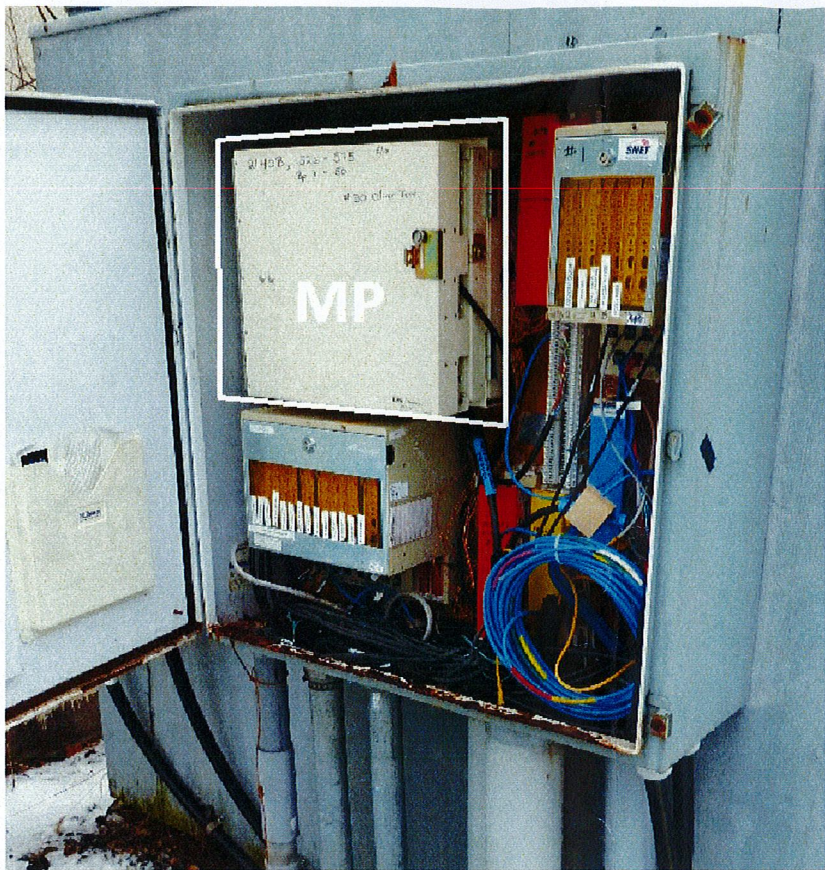
DUE TO FIELD MEASUREMENTS AND THE INSTALLATION OF NEW ANTENNAS THAT VARY IN SIZE FROM THE EXISTING ANTENNAS, THE ANTENNA RAD CENTER HAS CHANGED FROM WHAT IS ON RECORD. THE DATABASE NEEDS TO BE UPDATED TO MATCH THESE PLANS.

				
				
				
				
				
				
				
				
				
	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
				
Stephen A. Bray PROFESSIONAL ENGINEER				
				
CT LICENSE: 26657 4/24/13				
PROJECT NUMBER: 332.1526				
SITE INFORMATION: 70 PLATT ROAD SHELTON, CT 06484 FAIRFIELD COUNTY CT43XC864				
DESIGN TYPE: COLOCATION				
DRAWN BY: CCR		CHECKED BY:	DATE: 04-05-12	
SHEET TITLE: RF DATA SHEET				
SHEET NUMBER: C06A				REV.: 0

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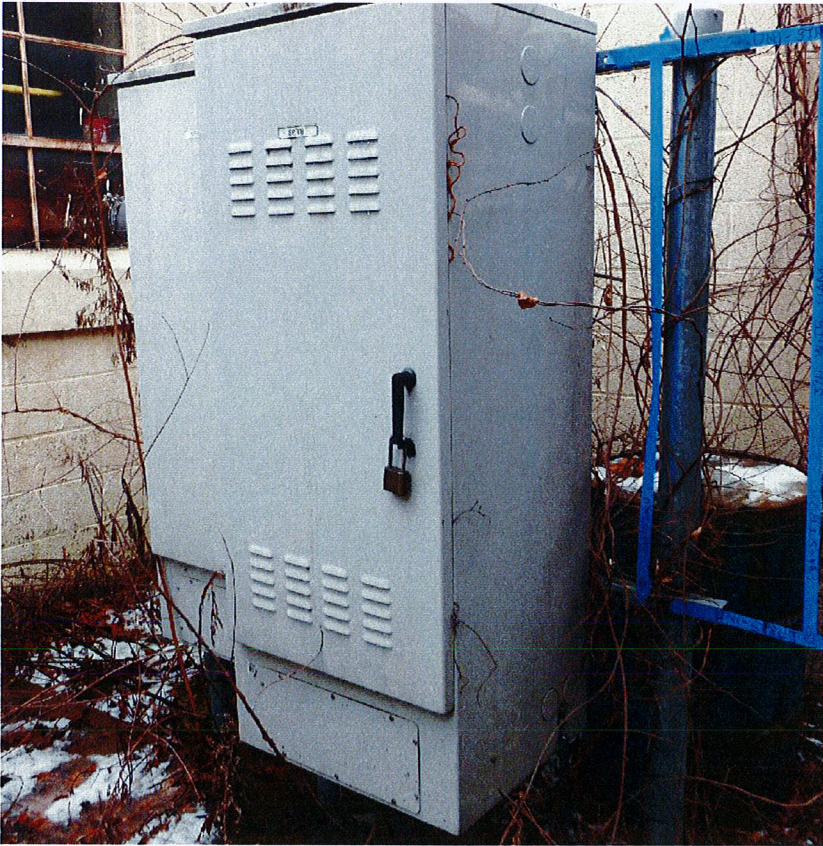
1 EXISTING SIGNAGE



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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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER
332.1526

SITE INFORMATION
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY
CT43XC864

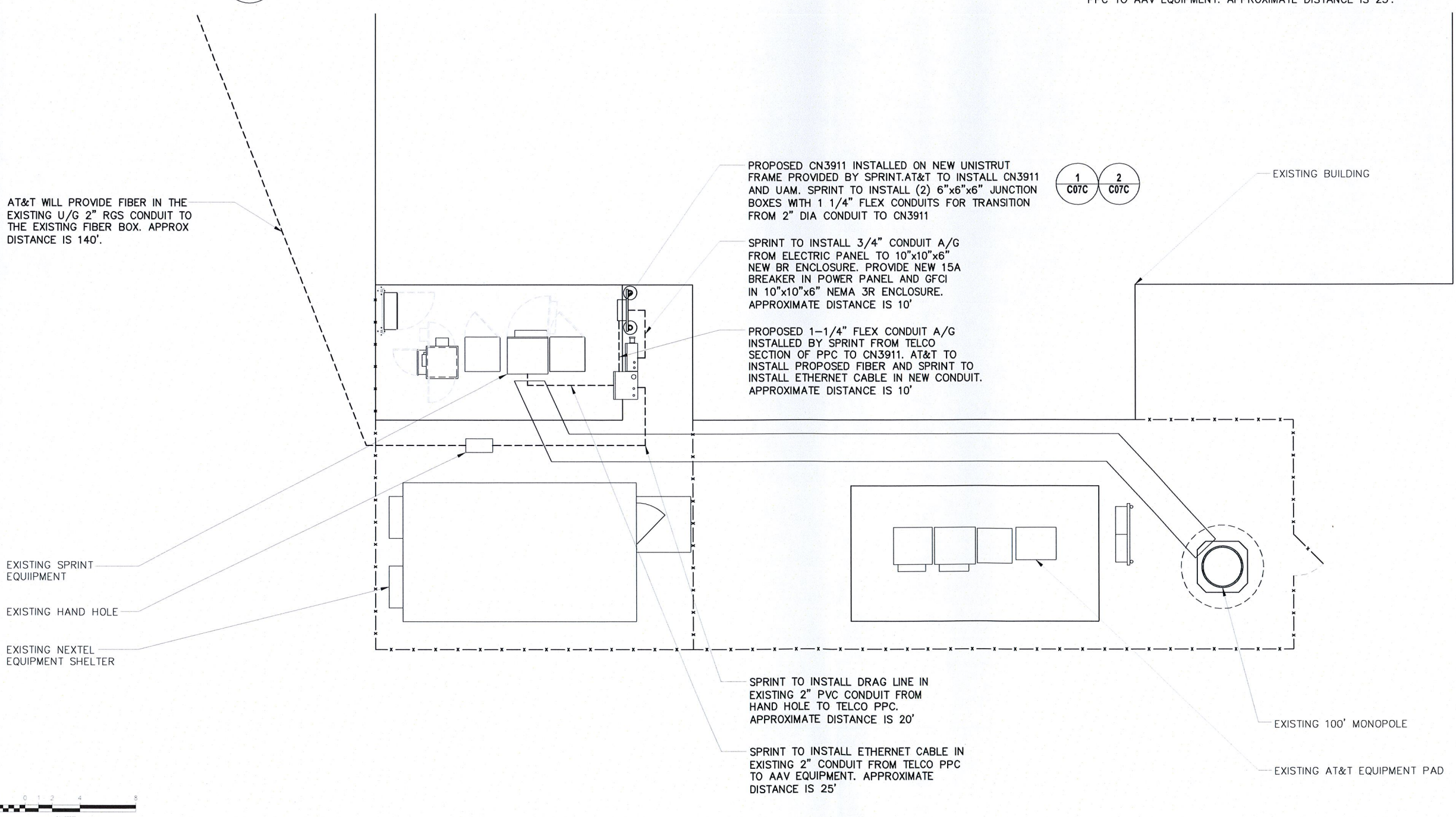
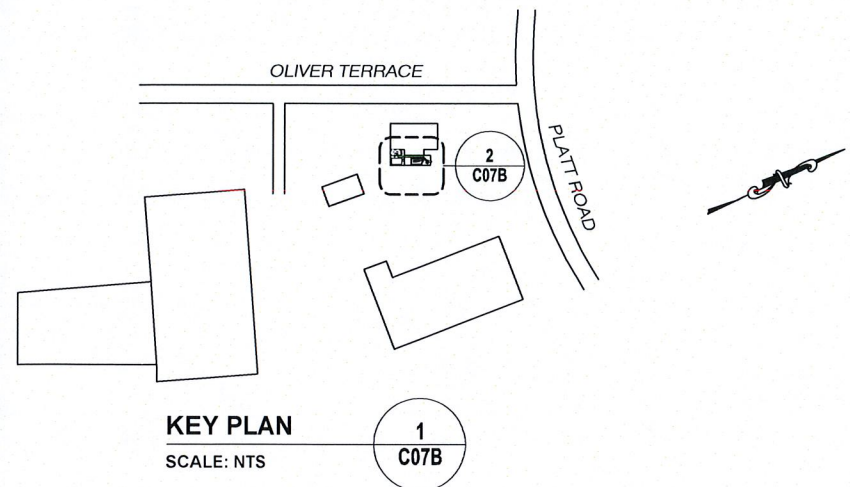
DESIGN TYPE
COLOCATION

DRAWN BY: CCR CHECKED BY: DATE: 04-05-12

SHEET TITLE
SITE
PHOTOS

SHEET NUMBER: C07 REV: 0

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- AAV SCOPE OF WORK NOTES:
1. AT&T WILL PROVIDE FIBER IN THE EXISTING U/G 2" RGS CONDUIT TO THE EXISTING FIBER BOX. APPROX. DISTANCE IS 140'.
 2. SPRINT TO INSTALL DRAG LINE IN EXISTING 2" PVC CONDUIT FROM HAND HOLE TO TELCO PPC. APPROXIMATE DISTANCE IS 20'.
 3. PROPOSED CN3911 INSTALLED ON NEW UNISTRUT FRAME PROVIDED BY SPRINT. AT&T TO INSTALL CN3911 AND UAM. SPRINT TO INSTALL (2) 6"x6"x6" JUNCTION BOXES WITH 1 1/4" FLEX CONDUITS FOR TRANSITION FROM 2" DIA CONDUIT TO CN3911.
 4. PROPOSED 1-1/4" FLEX CONDUIT A/G INSTALLED BY SPRINT FROM TELCO SECTION OF PPC TO CN3911. AT&T TO INSTALL PROPOSED FIBER AND SPRINT TO INSTALL ETHERNET CABLE IN NEW CONDUIT. APPROXIMATE DISTANCE IS 10'.
 5. SPRINT TO INSTALL 3/4" CONDUIT A/G FROM ELECTRIC PANEL TO 10"x10"x6" NEW BR ENCLOSURE. PROVIDE NEW 15A BREAKER IN POWER PANEL AND GFCI IN 10"x10"x6" NEMA 3R ENCLOSURE. APPROXIMATE DISTANCE IS 10'.
 6. SPRINT TO INSTALL ETHERNET CABLE IN EXISTING 2" CONDUIT FROM TELCO PPC TO AAV EQUIPMENT. APPROXIMATE DISTANCE IS 25'.



2 EQUIPMENT PLAN
11x17 SCALE: 1/8"=1'-0" 24x36 SCALE: 1/4"=1'-0"

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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY

1800 ROUTE 34, SUITE 209
WALL, NJ 07719
(732) 280-5623

Stephen A. Bray

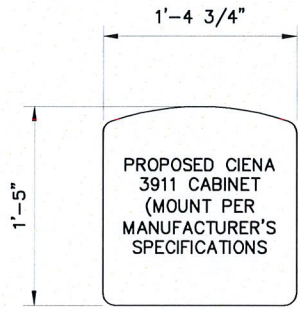
PROFESSIONAL ENGINEER

CT LICENSE: 26657 4/24/13

PROJECT NUMBER: 332.1526		
SITE INFORMATION: 70 PLATT ROAD SHELTON, CT 06484 FAIRFIELD COUNTY CT43XC864		
DESIGN TYPE: COLOCATION		
DRAWN BY: CCR	CHECKED BY:	DATE: 04-05-12
SHEET TITLE: KEY PLAN & EQUIPMENT PLAN		
SHEET NUMBER: C07A		REV.: 0

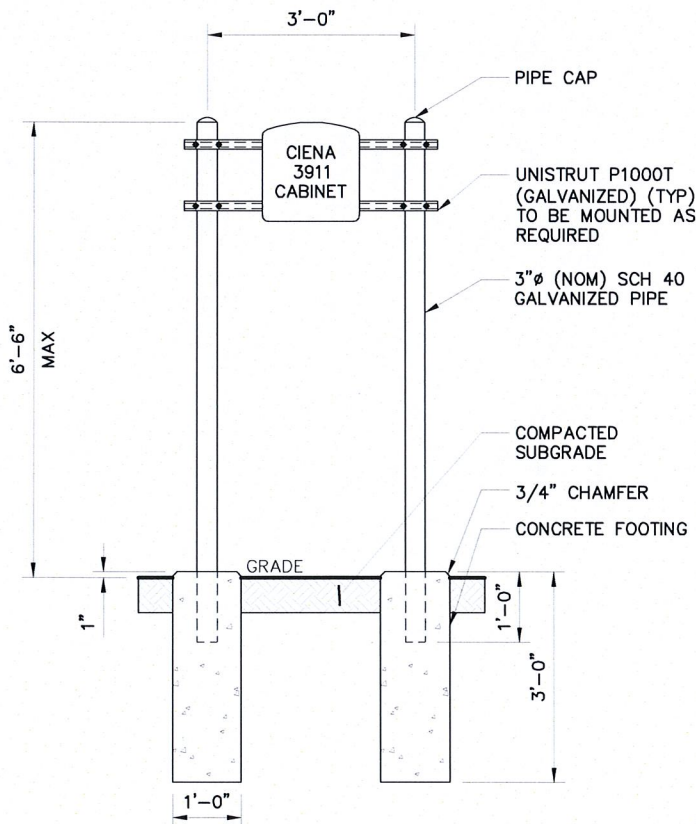
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1 TYP CIENA 3911 SPECIFICATIONS

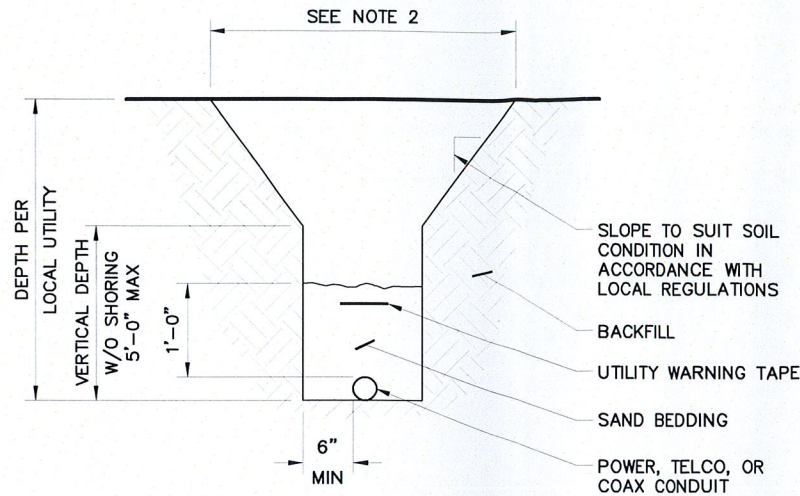
SCALE: NTS



2 UNISTRUT FRAME DETAIL

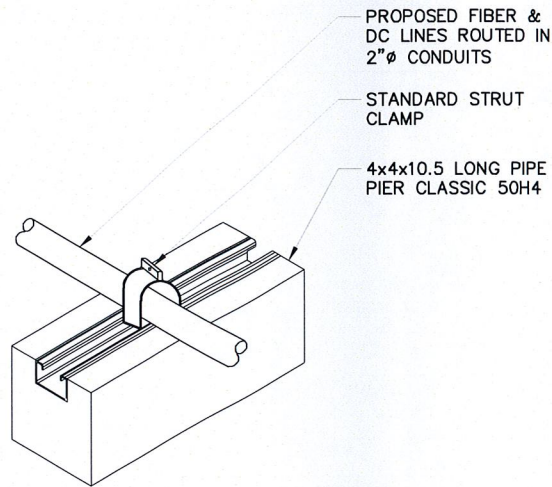
11x17 SCALE: 3/8" = 1'-0"

24x36 SCALE: 3/4" = 1'-0"



3 TYP TRENCH DETAIL

SCALE: NTS

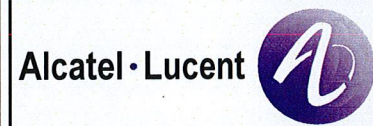


4 TYP CONDUIT ALONG CONCRETE DETAIL

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.

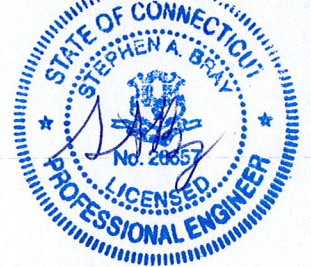


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△	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray

PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER: 332.1526

SITE INFORMATION:
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

CT43XC864

DESIGN TYPE: COLOCATION

DRAWN BY: CCR CHECKED BY: DATE: 04-05-12

SHEET TITLE: DETAILS

SHEET NUMBER: C07B REV.: 0

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GENERAL SPECIFICATIONS

- 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)
- 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.
- 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.
- Contractor shall inform the engineer immediately of any conflict discovered before performing any work related to such conflict.
- Provide all required temporary utilities and pay all associated fees and operating costs.
- 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.
- Obtain all permits and approvals from authorities having jurisdiction and paying all fees required.
- Label all equipment served from Sprint panelboard with phenolic labels sized in relation to usage.
- Contractor to provide and install engraved label on the Sprint meter socket enclosure.
- Redlined As-Builts are to be delivered to a Sprint representative.
- The equipment/protections must be rated for standard of AIC rate higher than incoming equipment and/or utility company AIC rate.

GROUNDING NOTES

- 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.
- All exterior ground conductors shall be #2 AWG solid tinned copper unless otherwise indicated.
- All ground connections above grade (interior & exterior) shall be formed using high press crimps.
- All ground connections below grade shall be exothermic (Cadweld).
- Connections to equipment and enclosures shall be made utilizing two-hole ground lugs with an antioxidant compound.
- 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.
- 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.
- Use of 90° bends in the protection grounding conductors shall be avoided when 45° bends can be adequately supported.
- 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
	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		
	JUNCTION BOX		
	PULL BOX		
	CONDUIT RUNNING ABOVE GRADE		
	CONDUIT RUNNING UNDER GROUND		

ELECTRICAL SPECIFICATIONS

- General:
 - 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.
 - Service equipment shall be 120/240 VAC, 100 Amp, single phase, unless otherwise directed by the Sprint Construction Manager.
 - 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.
 - All work shall conform to the adopted edition of the National Electrical Code and local, state and applicable codes.
 - 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.
- Identification:
 - Provide typewritten directories for panels, indicating use of each branch circuit and designating spare circuits. Handwritten directories are not acceptable.
 - 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.
- Raceways:
 - Minimum conduit size shall be 3/4" unless otherwise noted on the drawings.
 - Exposed raceways shall be run true, plumb, and parallel or perpendicular to building lines.
 - Conduit routings are schematic. Sub contractor shall install conduits so that access to equipment is not blocked.
- Wiring Methods:
 - 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.
 - 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.
 - Equipment ground conductors shall be provided for all feeders and branch circuits.
 - 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.
 - All conductor terminals shall be U.L. listed for minimum of 75° C.
 - Provide fire stopping around all conduits at wall and floor penetrations.
 - Seal all exterior wall penetrations as required.
 - 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.
 - 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".
- Wiring Devices:
 - Switches, receptacles and other wiring devices shall be specification grade of type, size and rating indicated on the drawings.
- Disconnect Switches:
 - 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.
- Special Requirements:
 - The electrical contractor shall furnish and install all power and control wiring for equipment contained in contract documents.
 - All work requiring an outage or interruption of service (power, telephone) shall be scheduled only at such time permitted by owner.
- Lighting fixtures and lamps:
 - Lighting fixtures shall be furnished complete with necessary hardware and lamps.
- Transformers:
 - Transformers shall be dry type with average temperature rise not to exceed 150° C (115° C)(80° C)
- 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



				
				
				
				
				
				
				
				
	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY



Stephen A. Bray
PROFESSIONAL ENGINEER



CT LICENSE: 26657 4/24/13

PROJECT NUMBER:
332.1526

SITE INFORMATION
70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

CT43XC864

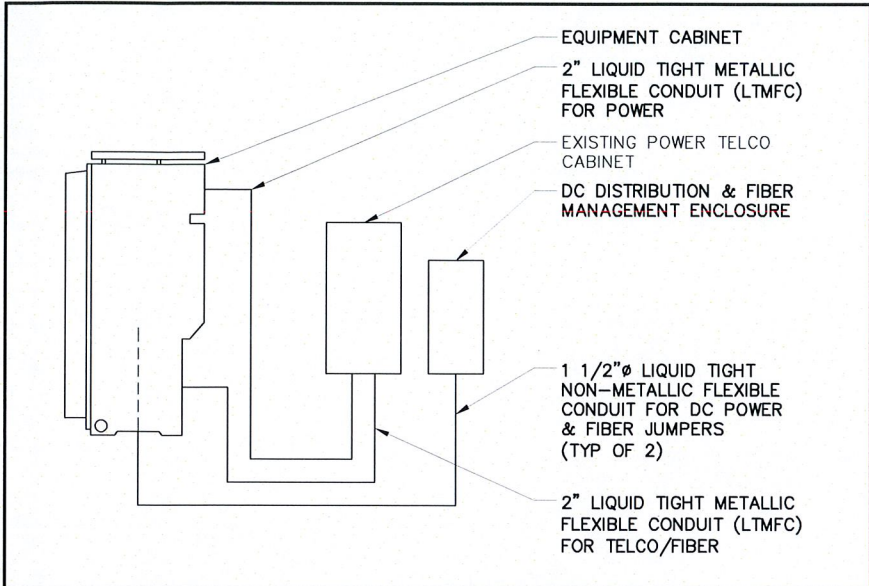
DESIGN TYPE:
COLOCATION

DRAWN BY: CCR	CHECKED BY:	DATE: 04-05-12
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SHEET TITLE:
ELECTRICAL NOTES

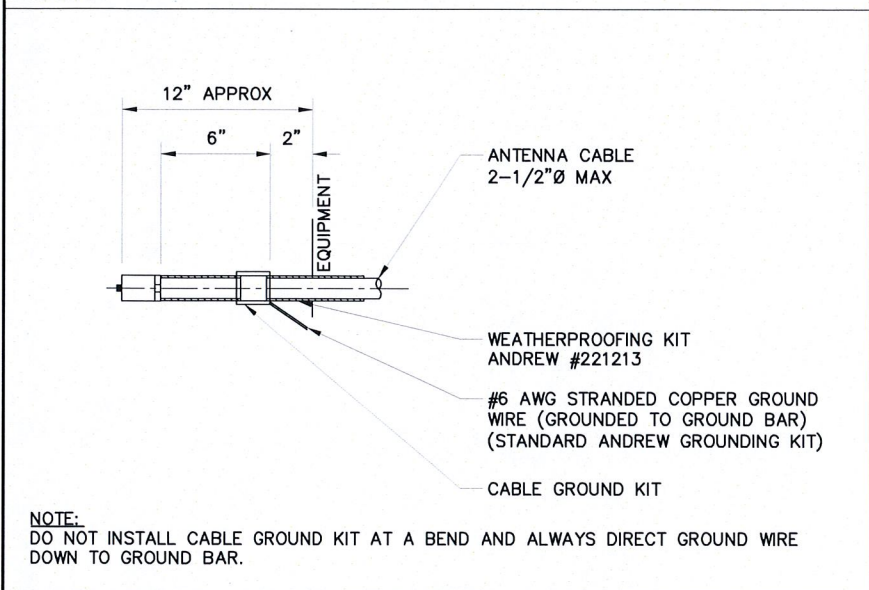
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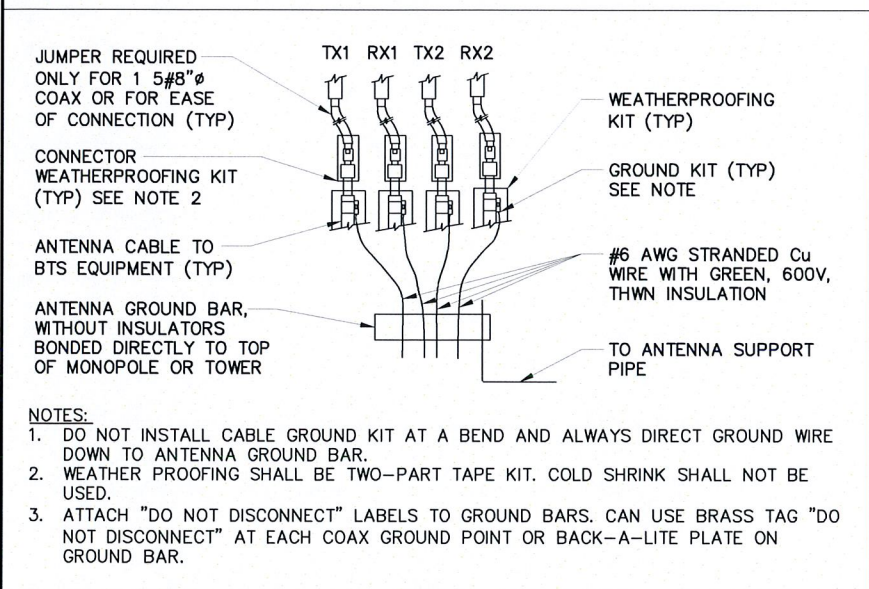
1 PLUMBING SCHEMATIC (IF REQUIRED)

SCALE: NTS



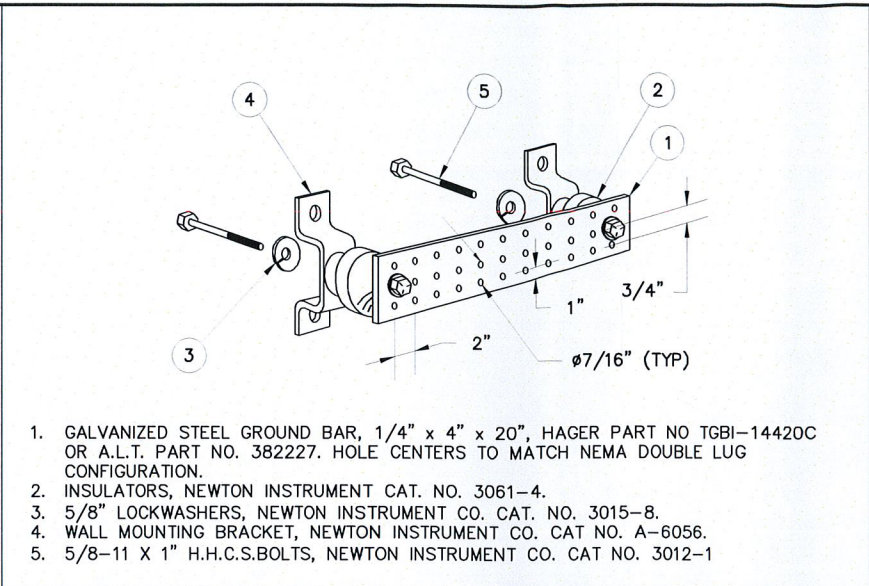
4 CABLE GROUND KIT CONNECTION DETAIL

SCALE: NTS



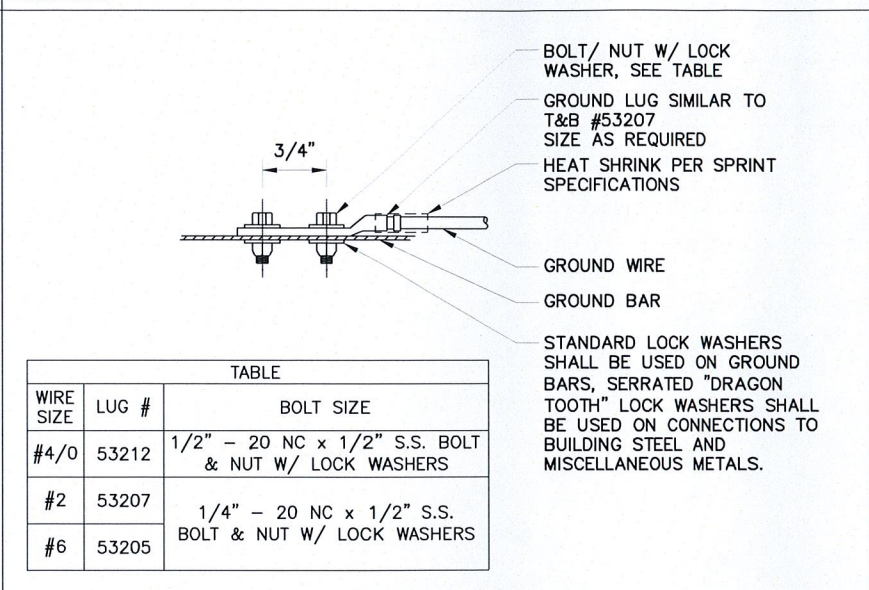
7 GROUND BAR TO GROUND WIRE CONNECTION DETAIL

SCALE: NTS



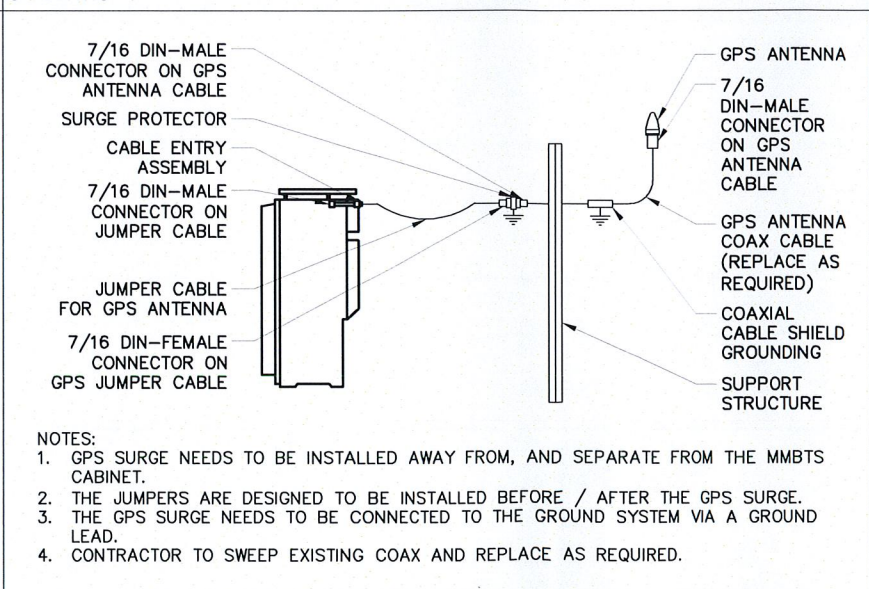
2 GROUND BAR DETAIL

SCALE: NTS



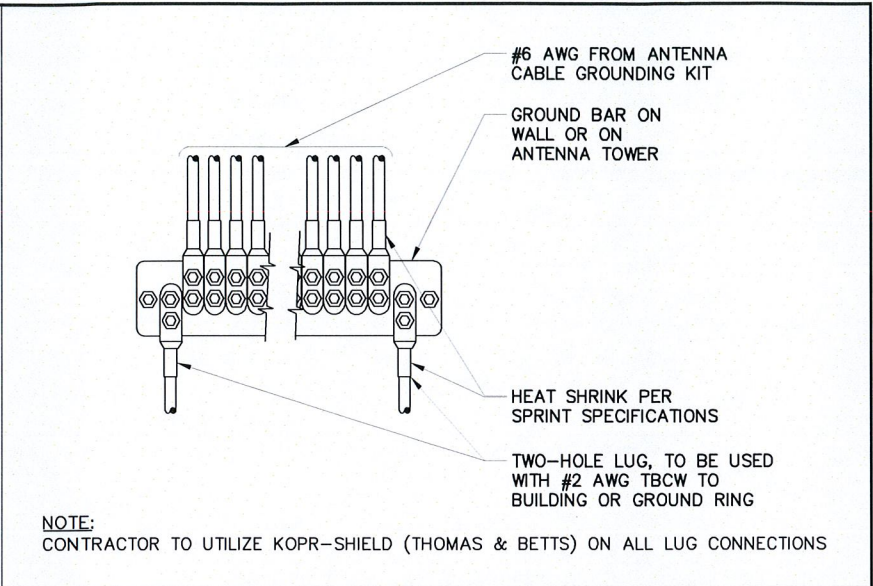
5 GROUND LUG CONNECTION DETAIL

SCALE: NTS



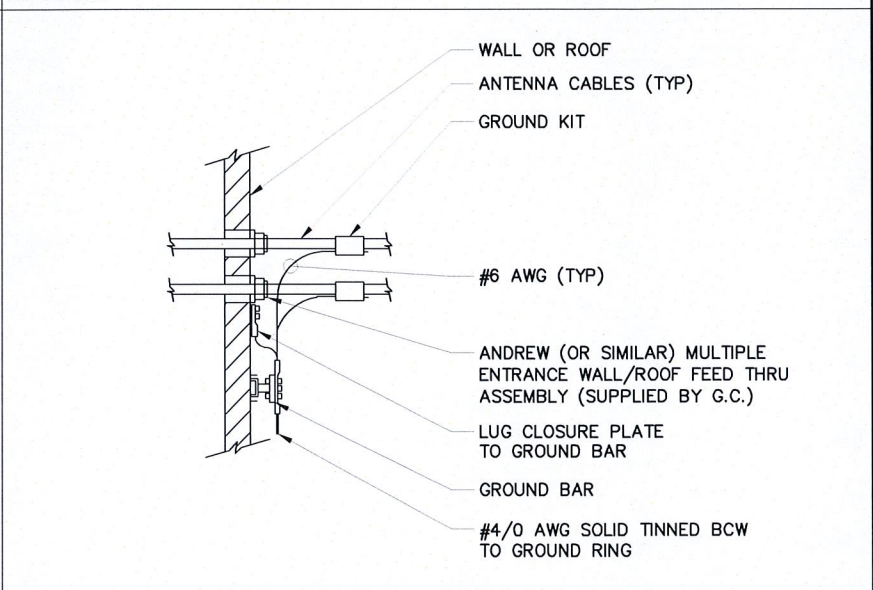
8 GPS SURGE ARRESTOR & GROUNDING SCHEMATIC

SCALE: NTS



3 GROUND LUG TO GROUND BAR CONNECTION DETAIL

SCALE: NTS



6 CABLE GROUNDING DETAIL

SCALE: NTS

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0	04-24-13	ISSUED FOR CONSTRUCTION	CCR	KCD
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CT LICENSE: 26657 4/24/13

PROJECT NUMBER

332.1526

SITE INFORMATION

70 PLATT ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

CT43XC864

DESIGN TYPE

COLOCATION

DRAWN BY: CCR

CHECKED BY:

DATE: 04-05-12

SHEET TITLE

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER

E02

REV.

0

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