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

April 19, 2013

Patricia Masterson
Site Acquisition Manager
Goodman Networks
Two Willow Street, Suite 101
Southborough, MA 01745

RE: **EM-SPRINT-047-130405** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 236 South Main Street, East Windsor, Connecticut.

Dear Ms. Masterson:

The Connecticut Siting Council (Council) hereby does not acknowledge your notice of intent to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies. This modification would load the tower to a maximum of 104.7 percent of its capacity, which is above the 100% limit established by the Council.

This modification, as proposed, is not in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies.

Very truly yours,

L Roberts

Linda Roberts
Executive Director

LR/CDM/cm

EM-SPRINT-047-130405

Goodman Networks
Network Knowledge... Delivered.

ORIGINAL

April 3, 2013

Linda Roberts
Executive Director
Connecticut Siting Counsel
Ten Franklin Square
New Britain, CT 06051
Linda Roberts, Executive Director

Re: Notice of Exempt Modification – Antenna Swap
236 South Main Street, East Windsor, CT 06088–Sprint ID CT03XC090

Dear Ms. Roberts:

Sprint Spectrum is planning to consolidate multiple network technologies into one seamless network with the goal of increasing efficiency and enhancing network coverage, call quality and data speeds for customers across Connecticut. Pursuant §16-50j-73 to of the Regulations of Connecticut State Agencies (RCSA), please accept this letter and attachments as notification of Sprint's intent to make exempt modifications, under RCSA §16-50j-72(b)(2), to its existing telecommunications facility at 236 South Main Street, East Windsor, Connecticut. In accordance with RCSA §16-50j-73, a copy of this letter was sent to Denise Menard, First Selectman, Town of East Windsor.

Sprint currently maintains six (6) antennas at 120 feet on the existing 180 foot tower at the address referenced above. Sprint intends to replace its existing six (6) CDMA antennas with three (3) Multimodal antennas at their same height of 120 feet. Sprint will be replacing its existing six (6) lines of coaxial cable with three (3) smaller lines of Hybriflex cable and installing six (6) RRH's. Sprint will also be swapping two (2) existing ground cabinets with two (2) new cabinets and adding one (1) cabinet and one (1) fiber junction box. This work will result in a net reduction of antennas from six (6) to three (3) and will not increase the height of the tower or the size of the compound. Please find included with this letter compound, elevation and overhead drawings which depict Sprint's proposed modifications.

Sprint's planned modifications fall squarely within the activities permitted in RCSA §16-50j-72(b)(2) in that:

1. The proposed modifications will not increase the existing tower height;

2. The proposed modifications will not extend the boundaries of the site by any dimension;

3. The proposed modifications will not increase the noise levels at the existing facility by six (6) decibels or more;

4. The proposed modifications will not increase the total radio frequency electromagnetic radiation power density to or above the standards adopted by the Federal Communications Commission. Please find included with this letter a Radio Frequency Emissions Analysis Report.

Also included with this letter is a Structural Assessment confirming that the foundation and tower are sufficient to support Sprint's proposed modifications.

For the foregoing reasons, Sprint respectfully requests that its proposed modifications to the existing tower located at the address referenced above constitute an exempt modification under RSCA §16-50j-72(b)(2).

Please do not hesitate to contact me should you have any questions. Thank you for your consideration.

Respectfully,

Patricia Masterson
Site Acquisition Manager
Goodman Networks, *an authorized representative of Sprint Nextel*
Two Willow Street, Suite 101
Southborough, MA 01745
Office: (972) 421-5903
Mobile: (214) 534-7276
Fax: (972) 421-5909

Attachments

cc: Denise Menard, First Selectman, Town of East Windsor

RAMAKER
& ASSOCIATES, INC.

BALCH TOWER (CT03XC090)

PREPARED FOR:
ALCATEL-LUCENT ON BEHALF OF SPRINT

PREPARED BY:
RAMAKER & ASSOCIATES, INC.
JOB NUMBER: 22997

STRUCTURAL ASSESSMENT
188-FOOT SELF-SUPPORT TOWER

1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 ▲ Fax: 608-643-7999
www.ramaker.com

BALCH TOWER (CT03XC090)

SITE:

Balch Tower (CT03XC090)
236 South Main Street
East Windsor, Hartford County, CT 06088

CONTACT PERSON:

John Szilezy
Alcatel-Lucent
Site Acquisition Manager
600 Mountain Avenue, Murray Hill, NJ 07974
Email: john.szilezy@alcatel-lucent.com

PREPARED BY:

Ramaker & Associates, Inc.
1120 Dallas Street
Sauk City, Wisconsin 53583
Telephone: (608) 643-4100
Facsimile: (608) 643-7999

RAMAKER JOB NUMBER: 22997

DATE OF REPORT ISSUANCE: March 26, 2012

Jeffrey H. Zander, P.E.
Structural Engineer

03/26/13
Date

James R. Skowronski, P.E.
Supervising Engineer

03/26/13
Date

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SECTION 1
EXECUTIVE SUMMARY

This report summarizes the structural analysis conducted by Ramaker & Associates, Inc. (Ramaker & Associates) for Alcatel-Lucent on behalf of Sprint, who intends to install additional equipment on an existing 188-foot self-support tower.

Alcatel-Lucent is proposing to remove all six (6) existing Sprint panel antennas and coax at 124 feet AGL and replaced them with two (2) RFS APXV9ERR18-C-A20 panel antennas, one (1) RFS APXVSPP18-C-A20 panel antenna, and six (6) Alcatel-Lucent RRHs at a centerline elevation of 124 feet AGL. The proposed antennas shall be mounted to the existing three (3) T-frames and they shall be fed with three (3) 1-1/4-inch fiber/power hybrid cables. The proposed hybrid cables were assumed to be routed up the tower next to the existing Sprint coax.

Results of our analysis show that the tower will be stressed to a maximum of 104.7 percent of capacity under proposed loading conditions. The foundation was analyzed under proposed loading conditions with the TIA-222-G and the geotechnical report providing design capacities for the soils. The foundations are adequate to support the proposed loading conditions.

Results of our mount assessment show that by engineering calculation and inspection, the antenna and RRH mounting structure is capable of supporting the existing and proposed Sprint Network Vision equipment deployment without causing an overstress condition in the antenna and RRH mounting structure.

In summary, the tower will pass and the mounting structure will pass the TIA-222-G code requirements under proposed loading conditions.

SECTION 2
INTRODUCTION

2.1 PROJECT INFORMATION

This report summarizes the structural analysis conducted by Ramaker & Associates, Inc. (Ramaker & Associates) for Alcatel-Lucent on behalf of Sprint, who intends to install additional equipment on an existing tower.

2.2 PURPOSE OF REPORT

The analysis activities of this report were conducted for the purposes of creating and analyzing a model of the subject structure under the required loading conditions. Base reactions from the resulting model were also determined for tower foundation and support development. Recommendations regarding the analysis results, loading configuration, and structural modifications are also provided.

2.3 SCOPE OF SERVICES

Ramaker & Associates developed a finite element model (FEM) of the tower, using tnxTower, for member force, joint deflection, and structure reaction determinations. Subsequently, this report was drafted to provide our engineering recommendations. All information contained herein is valid only for the described structure configuration and loading conditions. Ramaker & Associates reserves the right to modify our recommendations should alterations to the tower loading occur.

SECTION 3
MODEL DEVELOPMENT

3.1 INTRODUCTION

Ramaker & Associates developed a FEM of the tower superstructure using the tower drawings and site photos. Required static loads consisting of the antenna configuration, wind forces, ice loads, and linear appurtenances (including cable loads) were then applied to the FEM. As a result, all member forces, allowable capacities, and base reactions were computed.

3.2 EXISTING STRUCTURE INFORMATION

Tower information was gathered from the original tower drawings by Rohn, project number SS-974, dated October 25, 2000.

3.3 EXISTING TOWER LOADS

Ramaker & Associates understands that the existing antenna, cable, and appurtenance configurations are as shown in the following chart:

Elevation	Appurtenance	Mount	Coax
188	10' Omni	Platform	1-5/8
	(9) Decibel DB844H90E-XY		***(9) 1-5/8***
176	(3) 6' x 1' Panel Antennas	Leg Mounted	(6) 1-5/8
168	(6) CSS DU01417-8686	(3) T-Frames	(12) 1-5/8
	(3) Powerwave 7770.00		
	(3) Powerwave LGP186nn		
155	(6) Allgon 7250.03	(3) T-Frames	(9) 1-5/8
	(3) 5' x 1.5' Panel Antennas		
141	(6) Decibel DB844H90E-XY	(3) T-Frames	(15) 1-5/8
	(3) 4' x 1' Panel Antennas		
	(3) 5' x 8" Panel Antennas		
123	** (6) Decibel DB980H90E-M **	(3) T-Frames	** (6) 1-5/8 **

**The six (6) existing panel antennas and their corresponding coax at 123-feet AGL shall remain during the interim phase, and then shall be removed for the final antenna layout.

***Three (3) existing panel antennas and their corresponding coax at 188-feet AGL shall be removed in the interim phase.

3.4 PROPOSED TOWER LOADS

Ramaker & Associates understands that the total antenna loading for the tower will consist of the aforementioned existing antennas and the following proposed antennas:

Elevation	Appurtenance	Mount	Coax
123	(2) RFS APXV9ERR18-C	Existing (3) T-Frames	(3) 1-1/4 Hybrid Cables
	(1) RFS APXVSPP18-C		
	(3) ALU 1900MHz 4x40W RRH		
	(3) ALU 800MHz 2x50W RRH		

Proposed hybrid cables were assumed to be routed up the tower nest to the existing Sprint coax.

Details regarding the antenna and RRH mounting structure and proposed equipment modifications can be found in the construction drawings by Ramaker & Associates, Inc., project number 22997, dated October 29, 2012.

3.5 WIND AND ICE LOAD

Wind forces used in model development are in compliance with the TIA-222-G Standard. These guidelines, in accordance with the ATC website, call for an analysis to be performed, which assumes a basic wind speed (3-second gust) of 98 miles-per-hour (mph) without ice in Hartford County. The tower is also designed for a 50 mph basic wind speed with 1.0-inch of radial ice. The tower was analyzed using the following parameters: Structure Class II, Topographic Category 1, and Exposure Category C.

SECTION 4
ANALYSIS RESULTS

4.1 ANALYSIS RESULTS

The tower superstructure was analyzed with the combined existing and proposed antenna loading with and without radial ice. The computed maximum tower member stress capacities are as follows:

Component Type	Percent Capacity
Legs	80.2
Diagonals	104.7
Bolts	96.7
RATING =	**104.7**

Two levels of diagonals from 0 to 40 feet fail.

4.2 BASE REACTIONS

The computed maximum factored reactions correlated to maximum moment are as follows:

Load Type	Original Design	Original Design * 1.35	Proposed Model
Total Axial (k)	--	--	71.0
Total Shear (k)	63.8	86.1	82.1
Total Moment (k-ft)	6790.7	9167.4	8249.3
Leg Uplift (k)	292.0	394.2	346.9
Leg Compression (k)	379.0	511.7	404.1
Leg Shear (k)	42.7	57.6	49.5

The TIA-222-G code in Section 15.5.1 specifies to multiply original ASD reactions by 1.35 when comparing them with reactions determined using the TIA-222-G code. All proposed model foundation reactions were found to be less than the modified original design reactions. The foundation was analyzed under proposed loading conditions with the TIA-222-G and the geotechnical report providing design capacities for the soils. The foundations are adequate to support the proposed loading conditions.

4.3 MOUNTING STRUCTURE ASSESSMENT

The antenna and RRH mounting structure is capable of supporting the existing and proposed Sprint Network Vision equipment deployment without causing an overstress condition in the antenna and RRH mounting structure.

This assessment is inclusive of the entire antenna and RRH mounting structure, including tower platforms, arms, and all other aspects of the mounting structure that will support the Sprint Network Vision equipment deployment.

SECTION 5
LIMITATIONS

The recommendations contained within this report were developed using general project information provided by the owner, tower manufacturer, general field observations, reference information and laboratory testing data, as applicable. All recommendations pertain only to the proposed tower construction, location, and loading as described in this report. Ramaker & Associates assumes no responsibility for failures caused by factors beyond our control. These include but are not limited to the following:

1. Missing, corroding, and/or deteriorating members
2. Improper manufacturing and/or construction
3. Improper maintenance

Ramaker & Associates assumes no responsibility for modifications completed prior to or hereafter in which Ramaker & Associates was not directly involved. These modifications include but are not limited to the following:

1. Replacing or strengthening bracing members
2. Reinforcing or extending vertical members
3. Installing or removing antenna mounting gates or side arms
4. Changing loading configurations

Furthermore, Ramaker & Associates hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations and conclusions are based on the information contained and set forth herein. If you are aware of any information contrary to that contained herein, or if you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact Ramaker & Associates. Ramaker & Associates isn't liable for any representation, recommendation or conclusion not expressly stated herein.

The tower owner is responsible for verifying that the existing loading on the tower is consistent with the loading applied to the tower within this report.

SECTION 6
REFERENCES

1. 2009 International Building Code.

2. Telecommunications Industries Association, Structural Standard for Antenna Supporting Structures and Antennas, TIA Standard ANSI/TIA-222-G 2005, Washington, D.C.

EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT03XC090

Balch Tower
236 South Main Street
East Windsor, CT 06088

October 17, 2012

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

EBI Consulting
environmental | engineering | due diligence

October 17, 2012

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

Re: Emissions Values for Site: **CT03XC090 – Balch Tower**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 236 South Main Street, East Windsor, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 236 South Main Street, East Windsor, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

1) 3 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antenna used in this modeling is the APXVSPP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

6) The antenna mounting height centerline of the proposed antennas is **120 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 threshold limits

Site ID	CT03XC090 - Balch Tower
Site Addresss	236 South Main Street, East Windsor, CT, 06088
Site Type	Self Support Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	120	114	1/2 "	0.5	0	2080.4211	57.55029	5.75503%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	120	114	1/2 "	0.5	0	389.96892	10.78764	1.90258%
														Sector total Power Density Value:		7.658%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	120	114	1/2 "	0.5	0	2080.4211	57.55029	5.75503%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	120	114	1/2 "	0.5	0	389.96892	10.78764	1.90258%
														Sector total Power Density Value:		7.658%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	120	114	1/2 "	0.5	0	2080.4211	57.55029	5.75503%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	120	114	1/2 "	0.5	0	389.96892	10.78764	1.90258%
														Sector total Power Density Value:		7.658%	

Site Composite MPE %	
Carrier	MPE %
Sprint	22.973%
Nextel	2.270%
Town	1.680%
T-Mobile	3.640%
Pocket	2.170%
Verizon Wireless	11.360%
AT&T	15.200%
Total Site MPE %	**59.293%**

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Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **22.973% (7.658% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **59.293%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

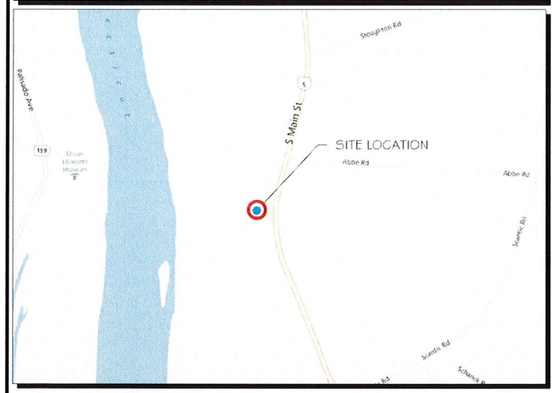
Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

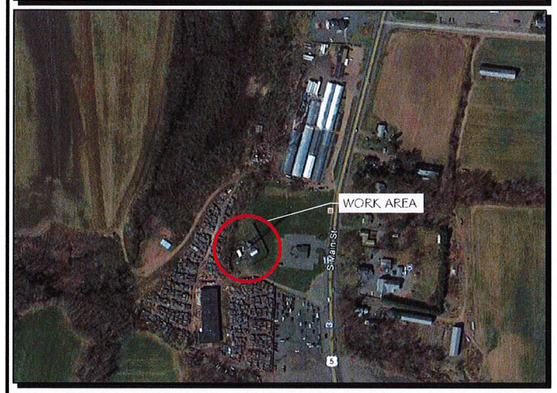
DRAWN BY: KJG CHECKED BY: KAB

i:\22900\22997\CADTelecomWorking\22997 Vision Project-CT.dwg Printed by: THelson on Apr 03, 2013 - 1:20pm

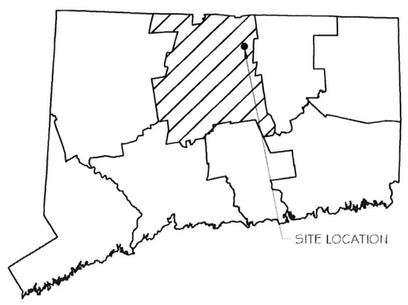
VICINITY MAP



AERIAL VIEW OF SITE



GENERAL LOCATION



DRIVING DIRECTIONS:

FROM ROCKY HILL, CT:

I-91 NORTH TO EXIT 44 (ROUTE 5). AT THE END OF THE RAMP TAKE A RIGHT ONTO ROUTE 5 SOUTH. FOLLOW ROUTE 5 SOUTH FOR APPROXIMATELY 1.5 MILES. ON THE RIGHT YOU WILL SEE NATIONWIDE AUTO AND A DINER. IN BETWEEN THE TWO IS A ACCESS ROAD THAT LEADS TO THE SITE WHICH IS ABOUT 200 YARDS FROM ROUTE 5.

CODE COMPLIANCE

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

1. INTERNATIONAL BUILDING CODE 2009
2. ACCESSIBILITY CODE IBC 2009, CHAPTER 11 & ICC/ ANSI A117.1-2003
3. 2008 NATIONAL ELECTRIC CODE
4. FIRE/ LIFE SAFETY CODE- IFC 2009
5. ENERGY CODE IECC 2009

PROJECT NOTES

1. THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY CONSISTING OF BTS EQUIPMENT AND ANTENNAS.
2. SIGNALS FROM THE ANTENNA SHALL NOT INTERFERE WITH ANY EXISTING COMMUNICATION SITES. ALL ITEMS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED.
3. THE PROPOSED ANTENNAS ARE ATTACHED TO EITHER BUILDING OR ANTENNA FRAME OR TO BOTH.
4. THE PROPOSED WORK WILL HAVE NO EFFECT ON STRUCTURAL STABILITY. ALL WORK SHALL BE PERFORMED IN STRICT ADHERENCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS.
5. REFERENCE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES FOR GENERAL REQUIREMENTS.
6. THIS IS AN UNMANNED FACILITY- NO SOLID WASTE. THE SITE WILL CREATE NO TRASH, THUS REQUIRES NO DUMPSTER.
7. EQUIPMENT IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS IS THEREFORE NOT REQUIRED.
8. OWNER & TENANT MAY, FROM TIME TO TIME AT TENANTS OPTION, REPLACE THIS EXHIBIT WITH AN EXHIBIT SETTING FORTH THE LEGAL DESCRIPTION OF THE SITE, OR WITH ENGINEERED OR AS-BUILT DRAWING DEPICTING THE SITE OR ILLUSTRATING STRUCTURAL MODIFICATIONS OR CONSTRUCTION PLANS OF THE SITE. ANY VISUAL OR TEXTUAL REPRESENTATION OF THE EQUIPMENT LOCATED WITHIN THE SITE CONTAINED IN THESE OTHER DOCUMENTS IS ILLUSTRATIVE ONLY, AND DOES NOT LIMIT THE RIGHTS OF SPRINT AS PROVIDED FOR IN THE AGREEMENT. THE LOCATIONS OF ANY ACCESS AND UTILITY EASEMENTS ARE ILLUSTRATIVE ONLY. ACTUAL LOCATIONS MAY BE DETERMINED BY TENANT AND/OR THE SERVICING UTILITY COMPANY IN COMPLIANCE WITH LOCAL LAWS AND REGULATIONS.

PROJECT DESCRIPTION

APPLICANT PROPOSED TO INSTALL ANTENNAS AND WEATHERPROOF EQUIPMENT CABINETS FOR AN UNMANNED PERSONAL COMMUNICATIONS SYSTEM WIRELESS CALL SITE AT AN EXISTING TELECOMMUNICATIONS FACILITY. PROPOSED FACILITY IS NOT STAFFED AND IS VISITED ONCE A MONTH FOR MAINTENANCE PURPOSES ONLY; THEREFORE, SANITARY, SEWER, GAS, POTABLE WATER AND PLUMBING ARE NOT REQUIRED.

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT

CALL BEFORE YOU DIG 811 OR 1-800-922-4455

CONNECTICUT PUBLIC ACT 87-71 REQUIRES MIN. 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE.

DO NOT SCALE DRAWINGS:

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

APPROVALS

CONSTRUCTION PROJECT MANAGER: _____

SITE ACQUISITION: _____

SPRINT REPRESENTATIVE: _____

RF ENGINEER: _____

LANDLORD/ OWNER: _____

CONSTRUCTION DRAWINGS

Sprint®

BALCH TOWER
SITE #: CT03XC090

236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SELF-SUPPORT TOWER

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PROJECT INFORMATION

APPLICANT ID:

SITE NAME: BALCH TOWER
SITE #: CT03XC090

PROPERTY LANDLORD:

BALCH BRIDGE STREET CORPORATION
250 SOUTH MAIN STREET
EAST WINDSOR, CT 06088

SITE ADDRESS:

236 SOUTH MAIN ST.
EAST WINDSOR, CT 06088
HARTFORD COUNTY
ZONING CLASSIFICATION: MI (INDUSTRIAL)

SITE DATA:

LATITUDE: 41°-52'-37.92" N (41.8772°)
LONGITUDE: 72°-36'-38.88" W (-72.6108°)
GROUND ELEVATION: 35 FT AMSL

POWER COMPANY:

CONNECTICUT LIGHT & POWER
PH.: (800) 286-2000

TELEPHONE COMPANY:

AT&T
PH.: (210) 821-4105

HOSPITAL

71 HAYNES STREET
MANCHESTER, CT 06040
PH.: (860) 646-1222

FIRE HOUSE

SOUTH WINDSOR FIRE DEPARTMENT
1175 ELLINGTON ROAD
SOUTH WINDSOR, CT 06074
PH.:(860) 644-8547

APPLICANT:

SPRINT
6391 SPRINT PARKWAY
OVERLAND PARK, KS 66251

PLANS PREPARED BY:

RAMAKER & ASSOCIATES, INC.
1120 DALLAS STREET
SAUK CITY, WI 53583
CONTACT: KEITH BOHNSACK, P.E., PROJECT MANAGER
PH.: (608) 643-4100
FAX: (608) 643-7999

Sprint
6391 Sprint Parkway
Overland Park, KS 66251

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RAMAKER & ASSOCIATES, INC.
1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 Fax: 608-643-7999
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NETWORK VISION
MMBTS LAUNCH
NORTHERN CT MARKET

Certification & Seal:

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Connecticut.

STATE OF CONNECTICUT ★ JAMES R. SKOWRONSKI ★ No. 26266 LICENSED PROFESSIONAL ENGINEER

James R Skowronski 4/03/2013
Signature Date:

MARK	DATE	DESCRIPTION
C	4/03/12	PRELIMINARY PERMIT CDS
B	10/29/12	FINAL PRELIMINARY CDS
A	10/03/12	90% CD REVIEW

ISSUE PHASE: PRELIM PERMIT DATE ISSUED: 04/03/2013

PROJECT TITLE:

BALCH TOWER
SITE #: CT03XC090

PROJECT INFORMATION:
236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:

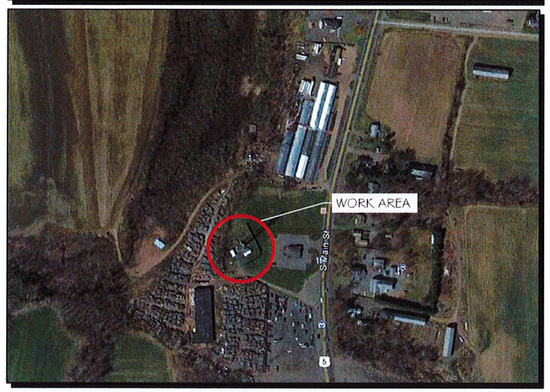
TITLE SHEET

SCALE: NONE

PROJECT NUMBER: 22997

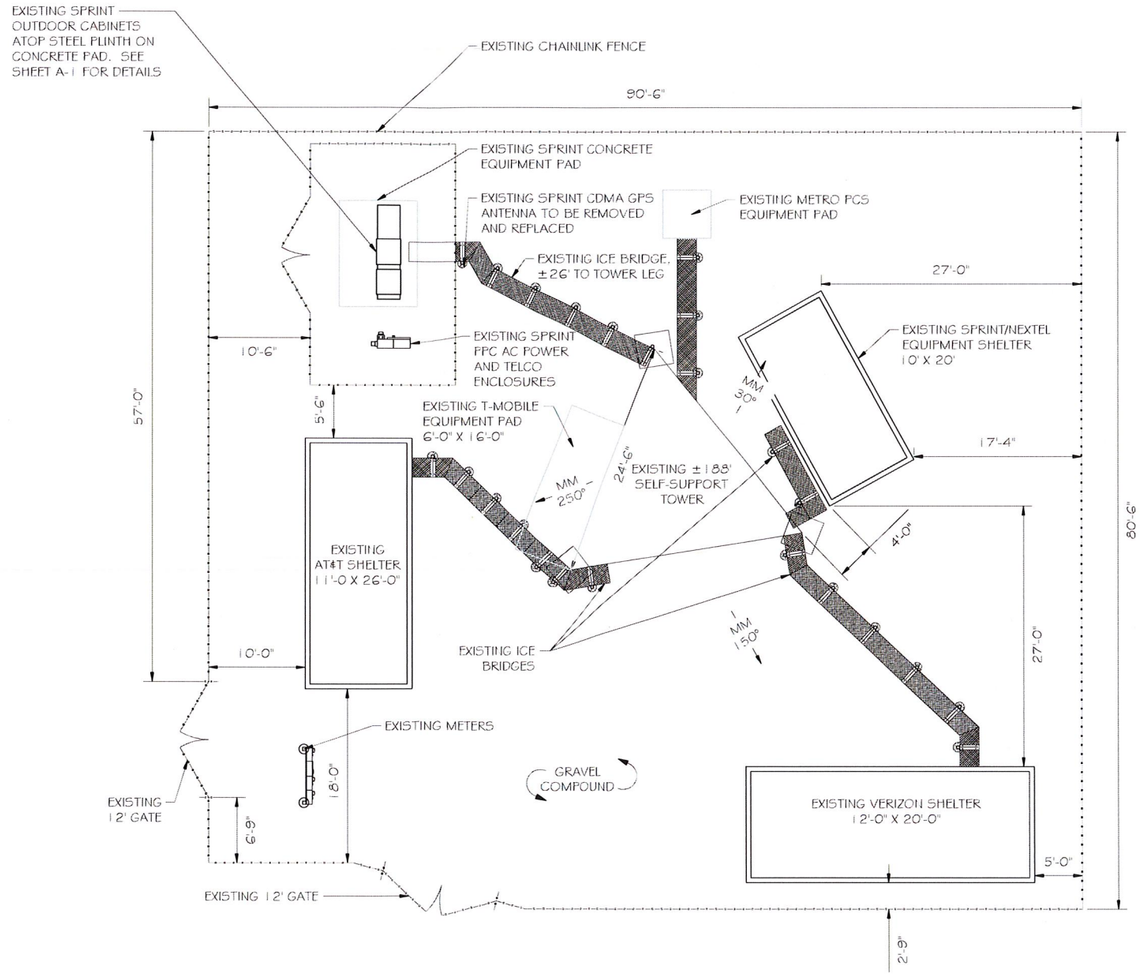
SHEET NUMBER: T-1

VICINITY MAP



GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS, AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY, OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY, OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THE FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/EIA/TIA 222-G REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
10. CONTRACTOR SHALL MAKE A UTILITY "ONE-CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
13. RAMAKER & ASSOCIATES HAS NOT PERFORMED A STRUCTURAL ANALYSIS FOR THIS PROJECT. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY SPRINT'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES, AND OTHER APPURTENANCES.
14. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
15. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
16. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF; THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
17. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
18. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
19. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.



SITE PLAN (1)
SCALE: 1" = 15'-0"

Sprint
6391 Sprint Parkway
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STATE OF CONNECTICUT ★ JAMES R. SKOWRONSKI ★ No. 28266 LICENSED PROFESSIONAL ENGINEER

Signature: 4/03/2013 Date:

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EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:

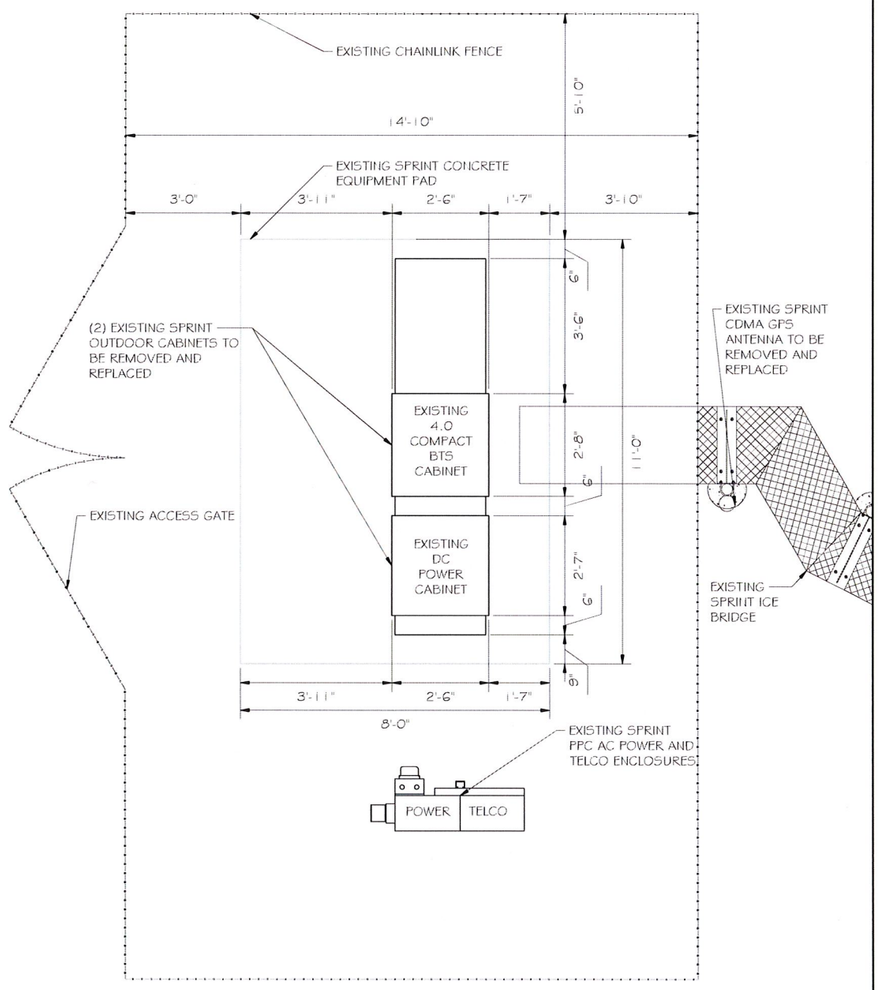
OVERALL SITE PLAN

0 7.5' 15' 30'

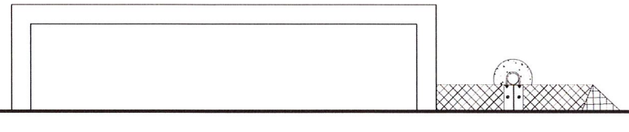
11" x 17" - 1" = 15'
22" x 34" - 1" = 7.5'

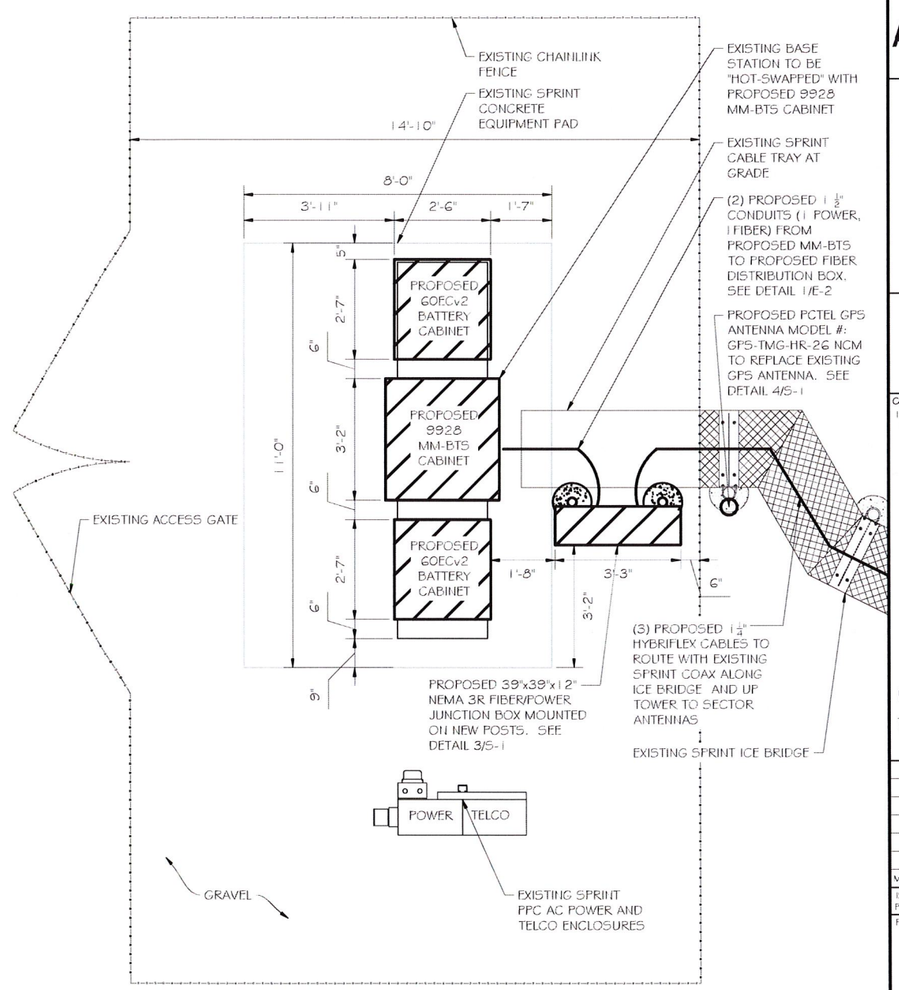
PROJECT NUMBER: 22997
SHEET NUMBER: C-1

DRAWN BY: KJG CHECKED BY: KAB

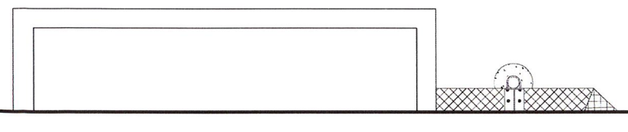


EXISTING EQUIPMENT PLAN (1)
SCALE: 1" = 3.75'





PROPOSED EQUIPMENT PLAN (2)
SCALE: 1" = 3.75'



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STATE OF CONNECTICUT ★ JAMES R. SKOWRONSKI ★ No. 28286 LICENSED PROFESSIONAL ENGINEER

Signature Date: 4/03/2013

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PROJECT INFORMATION:
236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:
EQUIPMENT PLAN

0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

PROJECT NUMBER: 22997
SHEET NUMBER: A-1

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DRAWN BY: KJG CHECKED BY: KAB

NOTES:

I. SCOPE

A. THIS SECTION COVERS THE SPECIFICATIONS FOR ANTENNA AND COAXIAL CABLE INSTALLATION OF: ANTENNAS, COAXIAL CONNECTIONS, AND ICE BRIDGE.

B. REFERENCE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES FOR GENERAL REQUIREMENTS.

II. ANTENNAS:

A. ANTENNAS SHALL BE PLUMB AND INSTALLED SO THAT THE ENTIRE WHIP EXTENDS ABOVE VERTICAL PIPE MOUNT. DIRECTIONAL ANTENNAS SHALL BE ORIENTED TO PROPER AZIMUTH, PROVIDED ON THE RF SPECIFICATION SHEET. NOTE: THE ANTENNA MAY BE ORIENTED USING THE REFLECTOR AS THE REFERENCE. ADJUSTING ITS AZIMUTH 180 DEGREES FROM MAXIMUM ANTENNA RADIATION.

B. MICROWAVE ANTENNAS (DISHES) SHALL BE ASSEMBLED PER MANUFACTURER'S DRAWINGS. STIFF ARMS AND RADOMES SHALL BE INSTALLED WITH POLARIZATION PROVIDED BY RF SPECIFICATION SHEET. IF PATH IS NOT READY TO ALIGN, DISH SHOULD BE POINTED TOWARD CALCULATED AZIMUTH, OR DIRECTION OF FIELD STAKE DENOTING OPPOSITE END. 2 STIFF ARMS SHALL BE PROVIDED FOR MICROWAVE DISHES 6'-0" IN DIAMETER OR GREATER.

C. A TRANSIT SHALL BE USED TO PROPERLY ALIGN CELLULAR AND MICROWAVE ANTENNAS.

III. COAXIAL CABLE:

A. COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP-IN HANGERS. SNAP-IN HANGERS SHOULD BE USED EVERY 3 FEET THE ENTIRE HEIGHT OF THE TOWER. ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS WITH BUTTERFLY CLAMPS SHALL BE USED ELSEWHERE, I.E. SIDEARMS, PLATFORMS, AND MICROWAVE MOUNTS.

B. COAXIAL CABLE SHALL ALSO BE SUPPORTED WITH HOISTING GRIPS, INSTALLED AT MAXIMUM INTERVALS OF 200 FEET. HOISTING GRIPS SHALL BE ATTACHED WITH SHACKLES, BOLTED IN THE 7/8" HOLE OF WAVEGUIDE LADDER.

C. ALL JUMPERS USED BETWEEN COAXIAL CABLE AND ANTENNA SHALL BE SUPPORTED WITHIN 18 INCHES OF ANTENNA, USING BUTTERFLY CLAMPS WITH ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS AROUND PIPES. CELLULAR ANTENNAS TYPICALLY USE 6' JUMPERS; MICROWAVE DISHES USE 3' JUMPERS.

D. COAXIAL CABLE SHALL BE NEATLY BENT WHEN REQUIRED. USING A MINIMUM BENDING RADIUS OF 10 TIMES THE DIAMETER OF THE COAXIAL CABLE. DRIP LOOPS SHOULD BEGIN AT THE ICE BRIDGE. THE END IN THE COAXIAL CABLE SHOULD BE AT A LOWER HEIGHT THAN THE ENTRY PORT.

E. COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP-IN HANGERS ON THE WAVEGUIDE LADDER UNDER ICE BRIDGE. COAXIAL CABLE SHOULD BE NEATLY CUT 16" INSIDE BUILDING AND TERMINATED AT THE QUARTER WAVE SHORTS.

F. CONNECTORS WILL NORMALLY BE PROVIDED FIRST OFF REEL FROM FACTORY. CONNECTORS TERMINATED IN BUILDING SHALL BE NEATLY INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

G. COAXIAL CABLES SHOULD BE LABELED WITH TAGS INSIDE THE BUILDING.

H. USE 2" WIDE COLORED TAPE TO INDICATE SECTORS. CONTRACTOR TO USE SECTOR COLOR CODING AS INDICATED IN THESE DRAWINGS OR AS PROVIDED BY SPRINT.

I. ALL EXCEPTIONS NEED TO BE VERIFIED WITH THE PROJECT MANAGER.

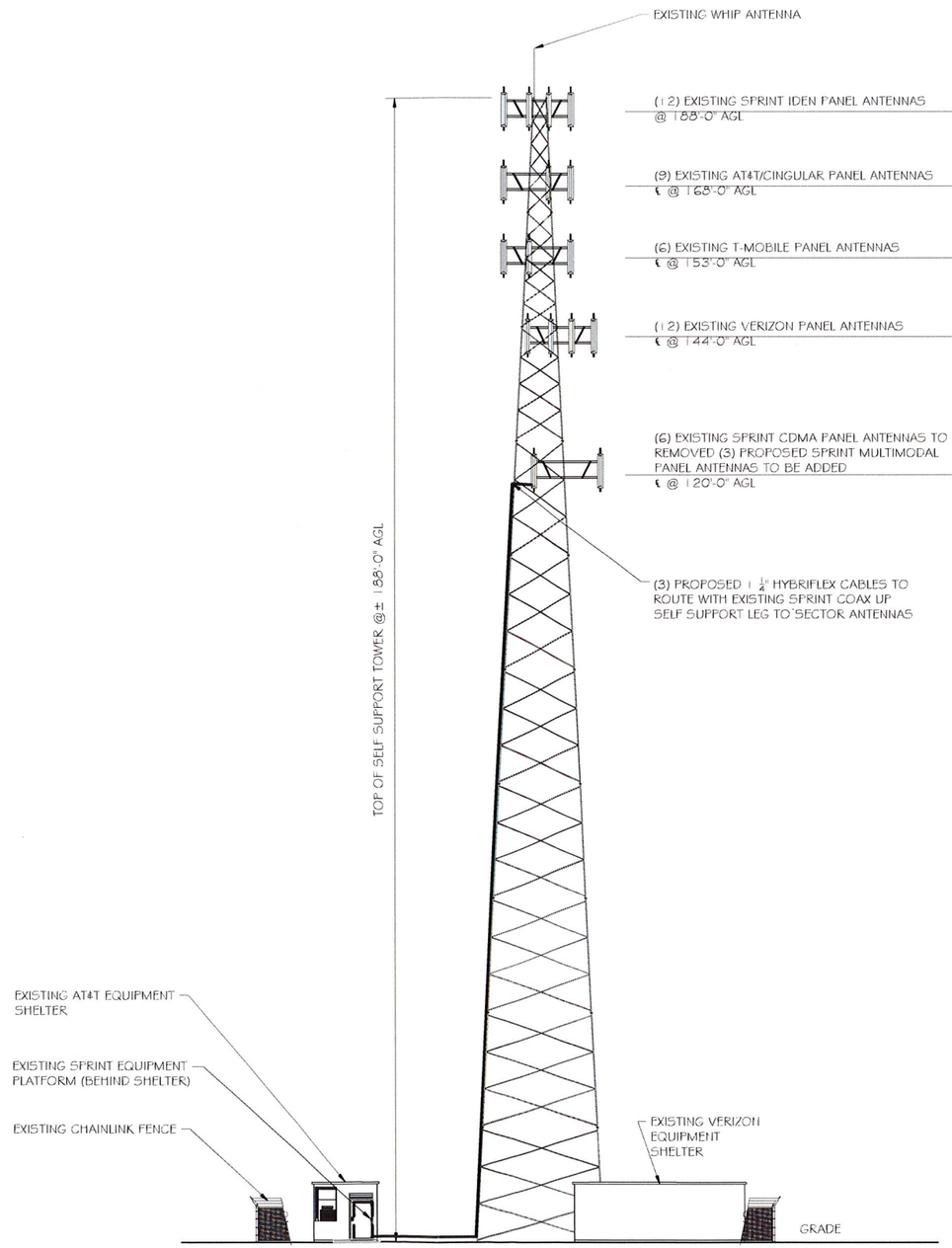
IV. CONNECTORS:

A. ALL CONNECTIONS AND GROUNDING KITS SHALL BE WEATHERPROOFED USING COLD SHRINK OR ANDREW APPROVED WEATHER STRIPPING. NOTE: NO PORTION OF CONNECTOR SHALL BE EXPOSED TO THE ELEMENTS.

B. COAXIAL CABLE SHALL BE GROUNDED USING GROUNDING KITS AT THE TOP (BELOW THE BEND), BOTTOM (ABOVE THE BEND ON TOWER GROUND BAR), AND ON BUILDING GROUND BAR BEFORE ENTRY INTO WAVEGUIDE PORTS. 4" CABLE BOOTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

C. GROUNDING KITS SHALL BE NEATLY INSTALLED SO THAT THE JUMPER RUNS IN THE SAME DIRECTION AS THE COAXIAL AND GROUND BAR. JUMPER WIRE SHOULD RUN IN A DIRECT PATH TO THE GROUND BAR/ TOWER LADDER, BUT HAVE ADEQUATE SLACK FOR EXPANSION, CONTRACTION, AND REPAIR. NON-OXIDE GREASE SHOULD BE APPLIED BETWEEN LUG AND BAR/TOWER.

D. TOWER GROUND BAR SHALL BE INSTALLED ON THE ANGLE BEHIND THE FIRST DIAGONAL WAVEGUIDE LADDER RUNG, ABOVE 8'-6". GROUND BAR SHALL BE ISOLATED FROM ANGLE USING NEWTON BUSHINGS PROVIDED.



ELEVATION 1
SCALE: 1"= 25'-0"

Sprint
6391 Sprint Parkway
Overland Park, KS 66251

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Signature: James R. Skowronski Date: 4/03/2013

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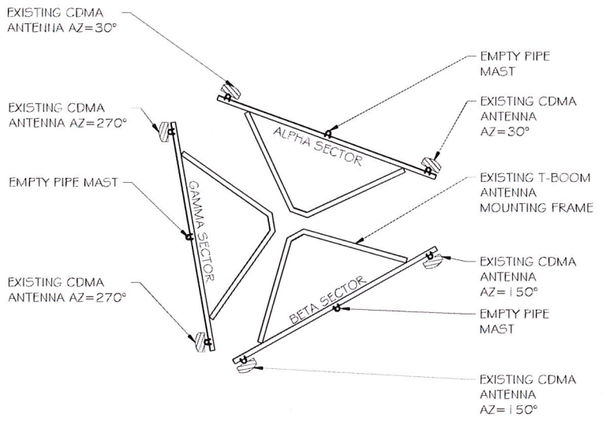
PROJECT INFORMATION:
236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:
SITE ELEVATION & NOTES

0 12.5' 25' 50'
11" x 17" - 1" = 25'
22" x 34" - 1" = 12.5'

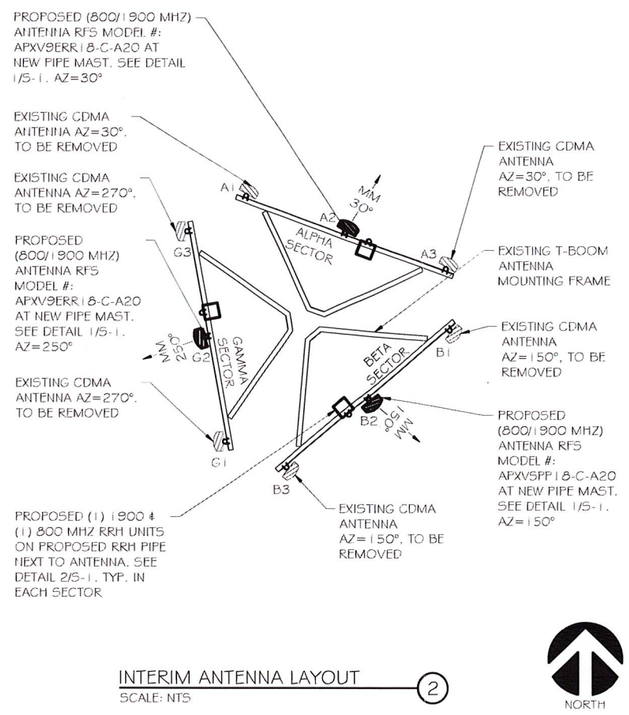
PROJECT NUMBER: 22997
SHEET NUMBER: A-2

DRAWN BY: KJG CHECKED BY: KAB



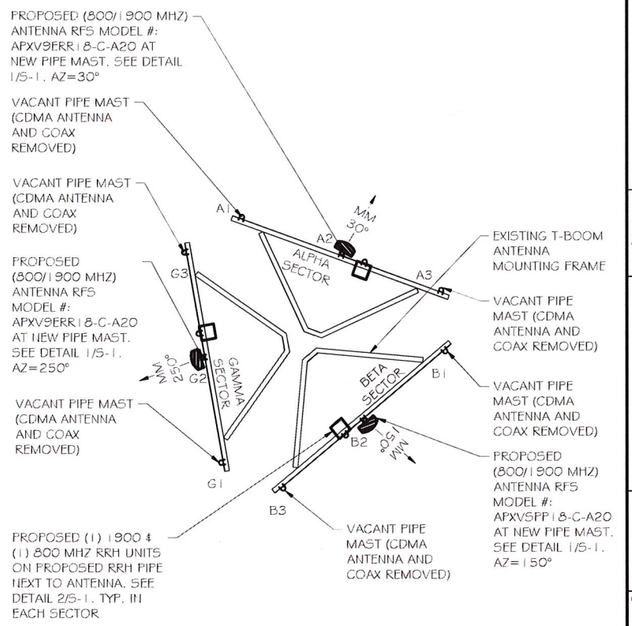
EXISTING ANTENNA LAYOUT (1)
SCALE: NTS

NORTH



INTERIM ANTENNA LAYOUT (2)
SCALE: NTS

NORTH



FINAL ANTENNA LAYOUT (3)
SCALE: NTS

NORTH

ANTENNA AND COAXIAL CABLE SCHEDULE

SECTOR	POS.	AZIMUTH	ANTENNA CENTERLINE	ANTENNA STATUS	TECH.	ANTENNA MAKE/ MODEL	MECH. DOWNTILT (°)	ELEC. DOWNTILT (°)	RRHs	CABLE SIZE	CABLE LENGTH
ALPHA	A-1	30°	120'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
	A-2	30°	120'-0"	PROPOSED	MULTIMODAL	RFS/APXV9ERR18-C-A20	1900(-3), 800(-3)	1900(0), 800(-3)	1900(1), 800(1)	(1) 1 1/2" HYBRIFLEX RFS MODEL #: HB114-1-08U4-M5J	±185'-0"
	A-3	30°	120'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
BETA	B-1	150°	120'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
	B-2	150°	120'-0"	PROPOSED	MULTIMODAL	RFS/APXV5PP18-C-A20	1900(0), 800(0)	1900(-1), 800(-8)	1900(1), 800(1)	(1) 1 1/2" HYBRIFLEX RFS MODEL #: HB114-1-08U4-M5J	±185'-0"
	B-3	150°	120'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
GAMMA	G-1	270°	120'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
	G-2	250°	120'-0"	PROPOSED	MULTIMODAL	RFS/APXV9ERR18-C-A20	1900(0), 800(0)	1900(0), 800(0)	1900(1), 800(1)	(1) 1 1/2" HYBRIFLEX RFS MODEL #: HB114-1-08U4-M5J	±185'-0"
	G-3	270°	120'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-

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SHEET TITLE:
ANTENNA DETAILS & COAX SCHEDULE

SCALE: NONE

PROJECT NUMBER: 22997
SHEET NUMBER: A-3

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